

MPEA SITE IMPROVEMENTS

HOWARD COUNTY, MARYLAND

CAPITAL PROJECT NO. N-3965

SITE DEVELOPMENT PLAN SDP-14-055

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 NT AND R20 PER THE COMPREHENSIVE ZONING PLAN, EFFECTIVE OCTOBER 6, 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.
- WATER IS PROVIDED BY CONTRACT 34-4170-D.
- SEWER IS PROVIDED BY CONTRACT 34-4345.
- 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.
- THERE ARE NO FLOODPLAINS ON THE SITE AS SHOWN ON NFIP FIRM PANEL 240044 0033B, DATE 12/4/1986.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH ONE FOOT CONTOUR INTERVALS PREPARED BY KCI DATED 2007. 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.
- ENVIRONMENTAL SITE DESIGN (ESD) IS INCORPORATED INTO THE DEVELOPMENT AT THE MAXIMUM EXTENT POSSIBLE. ESD FACILITIES INCLUDE AN M-6 MICRO-BIORETENTION AND A-2 PERVIOUS CONCRETE. NON-STRUCTURAL PRACTICES INCLUDE N-1 DISCONNECTION OF ROOFTOP RUNOFF. HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS WILL BE RESPONSIBLE FOR MAINTENANCE OF ALL STORMWATER MANAGEMENT FACILITIES.
- A PERENNIAL STREAM AND 100-FOOT BUFFER ARE LOCATED TO THE SOUTH OF THE PROJECT. THE PROJECT WILL DISTURB THE 100-FOOT BUFFER AND WILL THEREFORE REQUIRE A WAIVER.
- WAIVER PETITION WP-14-052 HAS BEEN APPROVED ON NOVEMBER 22, 2013. REQUIREMENTS OF SECTION 16.116(A)(2)(iii) HAVE BEEN WAIVED PENDING THESE CONDITIONS:
 - THE APPLICANT SHALL ACQUIRE ALL REQUIRED STATE AND/OR CORPS OF ENGINEERS PERMITS FOR DISTURBANCE WITHIN THE 100-FOOT STREAM BUFFER.
 - FOREST CONSERVATION FOR THE LIMIT OF DISTURBANCE (LOD) MUST BE ADDRESSED ONLY FOR THE R-20 ZONED PORTION OF THIS ENVIRONMENTAL AREA ON THE FORTHCOMING SDP SUBMISSION AND AREAS IDENTIFIED AS HIGH PRIORITY FOR FOREST RETENTION MUST BE DELINEATED AND PROTECTED FROM DISTURBANCE TO THE MAXIMUM EXTENT POSSIBLE.
 - NO DISTURBANCE IS PERMITTED BEYOND THE LIMIT OF DISTURBANCE SHOWN ON THE WAIVER PETITION PLAN EXHIBIT UNLESS IT CAN SUFFICIENTLY BE DEMONSTRATED TO BE NECESSARY OR ESSENTIAL.
 - ON THE FORTHCOMING SITE DEVELOPMENT PLAN, PROVIDE A BRIEF DESCRIPTION OF THE WAIVER PETITION (WP-14-052), AS A GENERAL NOTE TO INCLUDE REQUEST(S), SECTION(S) OF THE REGULATIONS, ACTION AND DATE.
 - ALL DISTURBED AREAS MUST BE STABILIZED AND REPLANTED AS APPROPRIATE IMMEDIATELY UPON COMPLETION OF THE PROJECT.
- A PRE-SUBMISSION COMMUNITY MEETING AS REQUIRED UNDER SECTION 16.156(A)(2) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS MUST BE HELD TO PROVIDE RESIDENTIALLY ZONED PROPERTY OWNERS THAT ARE ADJACENT TO THIS ENVIRONMENTAL AREA THE OPPORTUNITY TO HEAR AND COMMENT ON THIS PROPOSAL.
- TO THE BEST OF OUR KNOWLEDGE THERE ARE NO CEMETERIES LOCATED ON THIS SITE.
- THE REQUIRED PERIMETER PLANTINGS AND PARKING LOT PLANTINGS ARE PROVIDED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
- THE FOREST CONSERVATION OBLIGATION FOR THIS PLAN HAS BEEN MET BY PROVIDING A FEE IN LIEU TOTAL OF \$3,920.40. THE FEE-IN-LIEU AMOUNT IS BASED ON A TOTAL AFFORESTATION REQUIREMENT OF 5,227 SQUARE FEET X 0.75 PER SQUARE FOOT. THE FOREST CONSERVATION OBLIGATION IS ONLY FOR THE R-20 PORTION OF THE SITE. THE NT ZONED PORTION OF THE SITE IS EXEMPT FROM FOREST CONSERVATION OBLIGATIONS ACCORDING TO SECTION 16.1202(b)(v) OF THE HOWARD COUNTY CODE FOR A PLANNED UNIT DEVELOPMENT APPROVED PRIOR TO 12/31/92.
- ALL OUTDOOR LIGHTING SHALL COMPLY WITH THE REQUIREMENTS OF ZONING SECTION 134. ALL PROPOSED EXTERIOR LIGHTING SHALL BE DIRECTED/REFLECTED AWAY FROM ALL ADJACENT PUBLIC ROADS AND RESIDENTIAL ZONING DISTRICTS. LIGHT TRESPASS ONTO ANY PROPERTY ZONED OR USED FOR RESIDENTIAL PURPOSES SHALL BE LIMITED TO 0.5 FOOT CANDLES.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)" A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREETLIGHT AND ANY TREE.
- 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.
- THERE ARE NO WETLANDS ON THIS SITE.
- NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT.
- THIS PLAN IS IN ACCORDANCE WITH SECTION 128.0A.10 AND 11 OF THE ZONING REGULATIONS WHEN 2 OR MORE CONTIGUOUS LOTS OR PARCELS ARE TREATED AS A SINGLE PARCEL FOR DEVELOPMENT PURPOSES. THE ZONING STRUCTURE AND USE SETBACKS FROM INTERNAL LOT LINES SHALL NOT APPLY AND IF THE DEVELOPMENT PLAN SHOWS AN INTEGRATED DESIGN, THAT INCORPORATES MORE THAN ONE ZONING DISTRICT, THERE IS NO REQUIRED SETBACK FROM AN INTERNAL ZONING DISTRICT BOUNDARY.
- A COMMUNITY MEETING WAS HELD ON JUNE 25, 2014 TO PROVIDE THE COMMUNITY WITH INFORMATION ON THIS PROPOSED PROJECT.
- ON AUGUST 21, 2014, THIS SDP WAS APPROVED BY THE PLANNING BOARD WITHOUT ANY CONDITIONS.
- THIS SDP IS SUBJECT TO FDP-201-A-1, WHICH WAS AMENDED AND APPROVED BY THE HOWARD COUNTY PLANNING BOARD ON JULY 17, 2014.
- THE FOLLOWING DESIGN MANUAL WAIVERS WERE APPROVED BY DPW ON JUNE 24, 2014: MATCH CROWN OF PIPES (SECTION 4.1.1.d.9), CRITERIA FOR ESD PRACTICES (SECTION 5.2.4), EXISTING ROADWAY WIDENING STRIP (DETAIL R-1.08), TROTTER ROAD CENTERLINE STATION TIE IN.
- ALL TRASH AND REFUSE WILL BE THE RESPONSIBILITY OF THE DEPARTMENT OF RECREATION AND PARKS. DURING CONSTRUCTION, ALL TRASH AND REFUSE WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

SITE ANALYSIS DATA CHART*

TOTAL PROPERTY AREA: 648.98 AC
 AREA OF PLAN SUBMISSION: 2.44 AC
 LIMIT OF DISTURBED AREA: 2.44 AC
 PROPOSED IMPERVIOUS COVER: 0.75 AC

PRESENT ZONING DESIGNATION: NT & R-20, PER THE COMPREHENSIVE ZONING PLAN, EFFECTIVE OCTOBER 8, 2013

EXISTING/PROPOSED USES: TRAILHEAD - FOR INDIVIDUALS TO PARK AND GATHER PRIOR TO ENTERING THE PARK.

FLOOR SPACE:
 STORAGE BUILDING: 1520 SF;
 COMFORT STATION: 302 SF

PARKING SPACES PROVIDED AS DETERMINED BY THE DEPARTMENT OF RECREATION AND PARKS
 PARKING SPACES PROVIDED: 34 SPACES,
 3 HANDICAP (37 TOTAL)

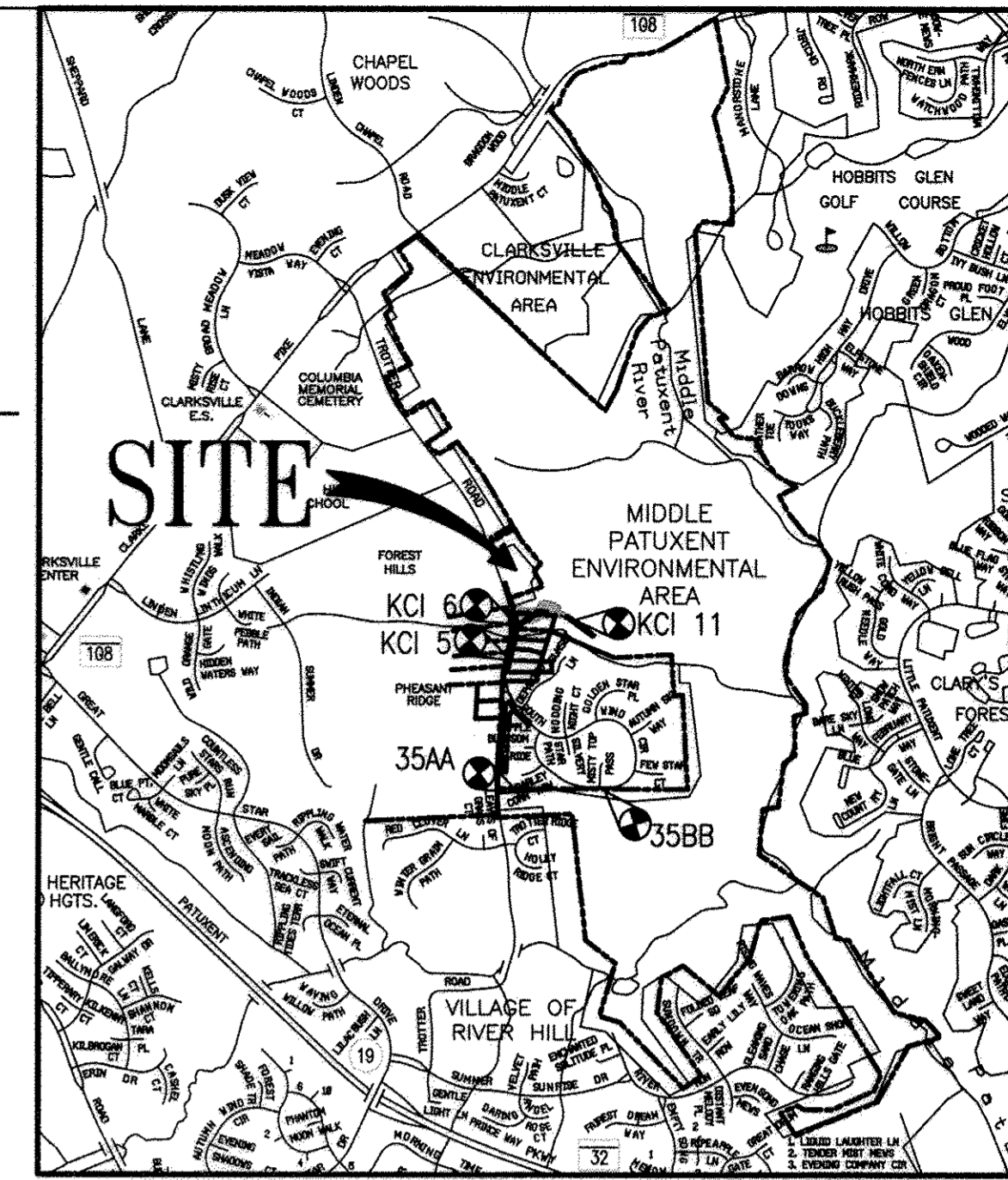
AREA OF RIGHT OF WAY: 0.00 AC
 AREA OF WETLANDS/BUFFER: N/A
 AREA OF FLOODPLAINS/BUFFER: N/A
 AREA OF STREAM BUFFER IMPACT: 0.80 AC
 AREA OF STEEP SLOPES >15%: 0.71 AC
 AREA OF ERODIBLE SOILS: 1.86 AC
 AREA OF GREEN OPEN SPACE: 1.62 AC

APPLICABLE DPZ FILE NUMBERS: ECP-14-031, WP-14-052, FDP PHASE 201-A MIDDLE PATUXENT ENVIRONMENTAL AREA (APPROVED 5/6/1999), FDP PHASE 201-A-1 (APPROVED 7/17/2014)

*NOTE: THIS PLAN AND ALL AREAS IN THIS SITE ANALYSIS DATA CHART ARE WITHIN THE 2.44 ACRES THAT THIS SUBMISSION COVERS, NOT THE ENTIRE 648.98 ACRE PROPERTY.

BENCHMARK DATA

35AA: N 560767.7, E 1335483.83, ELEV. 430.95
 35BB: N 560790.42, E 1336537.22, ELEV. 394.26
 KCI 5: N 562367.39, E 1335373.4, ELEV. 380.99
 KCI 6: N 562794.28, E 1335445.76, ELEV. 371.28
 KCI 11: N 562850.49, E 1336162.86, ELEV. 363.65
 NOTE: KCI BENCHMARKS USED TO ESTABLISH THE PROJECT CONTROL

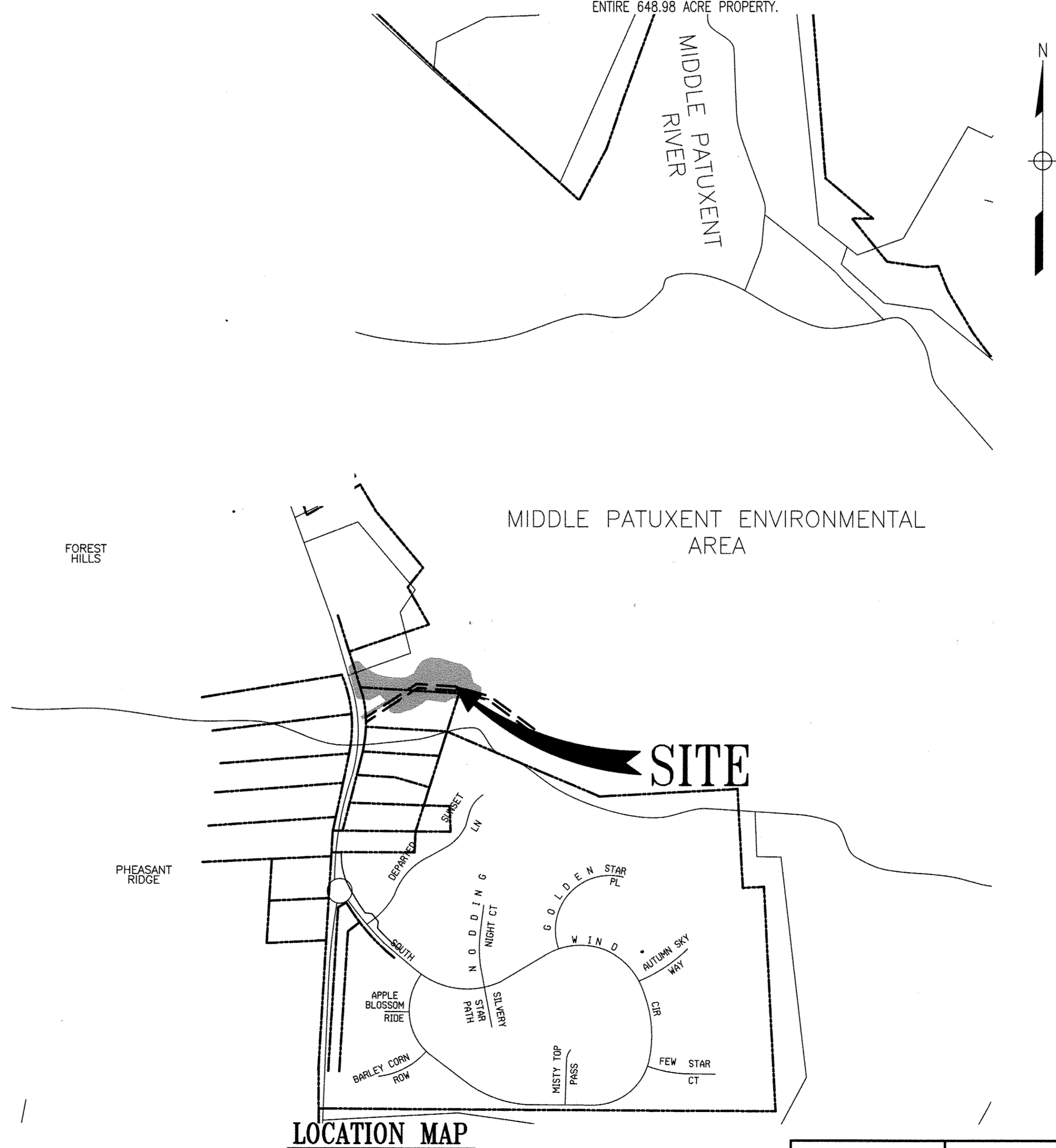


ADC MAP: 4934
 GRID: D8

VICINITY MAP
 1" = 2000'

LIST OF DRAWINGS

- | CIVIL | LANDSCAPE | FOREST CONSERVATION | CIVIL CONTINUED |
|---|---|--|--|
| 1. C0.1 COVER SHEET | 21. L1.0 LANDSCAPE PLAN | 24. F2.1 FOREST CONSERVATION COVER SHEET | 27. 3.2 ENLARGED SUBMERGED GRAVEL WETLAND PLAN |
| 2. C0.2 ABBREVIATIONS, NOTES, AND LEGENDS | 21. L1.1 MINIMUM LANDSCAPE REQUIREMENTS | 25. F2.2 FOREST CONSERVATION PLAN | |
| 3. C1.0 EXISTING SITE PLAN | 23. L1.2 PLANTING DETAILS | 26. F2.3 FOREST CONSERVATION NOTES AND DETAILS | |
| 4. C1.1 SITE DEMOLITION PLAN | | | |
| 5. C1.2 SITE AND UTILITY PLAN | | | |
| 6. C1.3 STAKEOUT PLAN | | | |
| 7. C1.4 GRADING AND STORMWATER MANAGEMENT PLAN | | | |
| 8. C1.5 EROSION AND SEDIMENT CONTROL PLAN | | | |
| 9. C2.1 STORM DRAIN PROFILES | | | |
| 10. C3.1 ENLARGED SITE PLANS | | | |
| 11. C4.1 SITE DETAILS | | | |
| 12. C4.2 SITE DETAILS | | | |
| 13. C4.3 STORMWATER MANAGEMENT DETAILS AND NOTES | | | |
| 14. C5.1 EROSION AND SEDIMENT CONTROL - NOTES | | | |
| 15. C5.2 EROSION AND SEDIMENT CONTROL - NOTES/DETAILS | | | |
| 16. C5.3 SOIL BORING LOGS | | | |
| 17. C6.1 OVERALL ESD DRAINAGE AREA MAP | | | |
| 18. C6.2 STORMWATER DRAINAGE AREA MAP | | | |
| 19. C6.3 INLET DRAINAGE AREA MAP | | | |
| 20. C6.4 EROSION AND SEDIMENT CONTROL DRAINAGE AREA MAP | | | |



LOCATION MAP
 1" = 400'

REVISIONS		
ADD SHEET 27, PARKING	SPACE NUMBER	DATE
		6/28/17

ADDRESS CHART	
PARCEL #	STREET ADDRESS
512/467/427	STORAGE BUILDING: 5787 TROTTER ROAD COMFORT STATION: 5791 TROTTER ROAD

OWNER:		DEVELOPER:		PERMIT INFORMATION CHART			
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS 7120 OAKLAND MILLS ROAD COLUMBIA, MD 21046 ATTN: MR. RAUL DELERME		HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS 9250 BENDIX ROAD COLUMBIA, MD 21045 ATTN: MR. TOM AUYEUNG		WATER CODE:	SEWER CODE:	BUILDING	
VOICE 410-313-4689 FAX 410-313-4646		VOICE 410-313-6142 FAX 410-313-6161		PUBLIC	PUBLIC	N/A	
				PROJECT NAME:		SECTION/AREA	PARCEL
				MPEA SITE IMPROVEMENTS		N/A	512/467/427
L/F	GRID	ZONING	TAX MAP	BLOCK	ELEC. DIST.	CENSUS TRACT	
4718/06	#3.9.2	NT & R-20	35	N/A	05	605505	
4718/41							

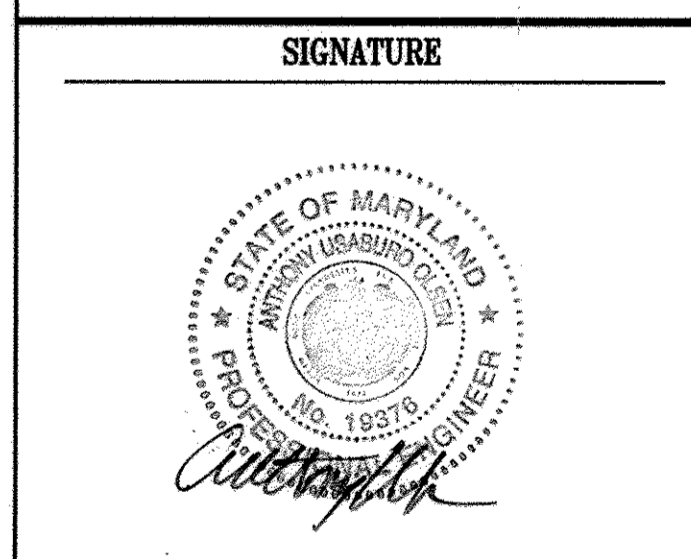
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	8-29-17
CHIEF, DIVISION OF LAND DEVELOPMENT	9-13-17
DIRECTOR	9-13-17

APPROVED: PLANNING BOARD OF HOWARD COUNTY	
	08/21/2014
	DATE



Whitman, Requardt & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231
 Phone: 410-238-3450 Fax: 410-243-5715

GRAPHIC SCALES	
0 2000' 4000'	SCALE: 1" = 2000'
0 400' 800'	SCALE: 1" = 400'



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: 09/22/2017

MPEA SITE IMPROVEMENTS

COVER SHEET	
Drawing No.	
C0.1	
Scale: AS SHOWN	
Date: 09/12/2014	Sheet 1 of 27
Des: BWJ	Drawn: SAD
Check: AUO	

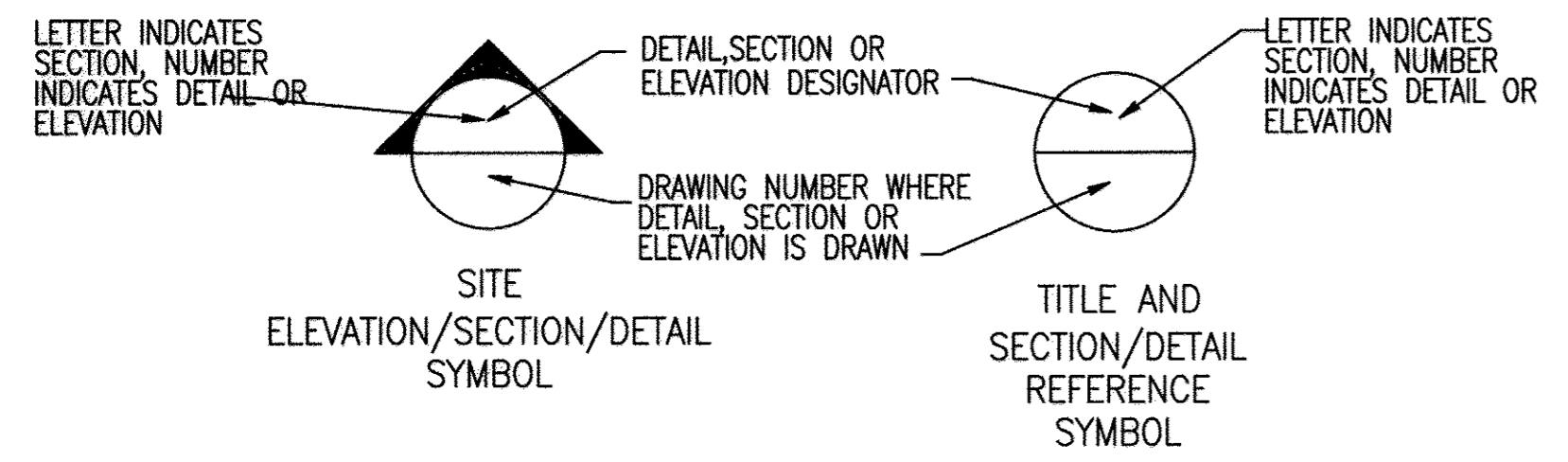
ABBREVIATIONS

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	OD	OUTSIDE DIAMETER
ABAN, ABAND	ABANDON	OHE	OVERHEAD ELECTRIC
APPROX	APPROXIMATELY	OHT	OVERHEAD TELEPHONE
ASTM	ASSOCIATION FOR STANDARD TESTING METHODS	PC	POINT OF CURVATURE
BLDG	BUILDING	PCC	POINT OF COMPOUND CURVATURE
BIT	BITUMINOUS	PERF	PERFORATED
B.M.	BENCH MARK	PI	POINT OF INTERSECTION, POST INDICATOR
CFS	CUBIC FEET PER SECOND	POB	POINT OF BEGINNING
C.I.	CAST IRON	POC	POINT ON CURVE
C.I.P	CAST IRON PIPE	POE	POINT OF END
C/L	CENTERLINE	POT	POINT ON TRAVERSE
CO	CLEAN OUT	PT	POINT OF TANGENCY
COMM	COMMUNICATION	PVC	POLYVINYL CHLORIDE, POINT OF VERTICAL CURVE
CONTR. JT	CONTRACTION JOINT	PVI	POINT OF VERTICAL INTERSECTION
CONC	CONCRETE	PVMT	PAVEMENT
CMP	CORRUGATED METAL PIPE	PVT	POINT OF VERTICAL TANGENCY
DEMO	DEMOLITION	PP	POWER POLE
DIP	DUCTILE IRON PIPE	PV	POST INDICATOR VALVE
DIA, DIAM	DIAMETER	PROP	PROPOSED
DWG, DRWG	DRAWING	R	RADIUS, RIGHT
E	EAST	RD	ROAD
EL, ELEV	ELEVATION	RCCP	REINFORCED CONCRETE CULVERT PIPE
ELECT, ELEC	ELECTRICAL	RCP	REINFORCED CONCRETE PIPE
EMBED	EMBEDDED	REIN, REINF	REINFORCED
EX	EXISTING	RR	RAILROAD
EXP JT	EXPANSION JOINT	S	SOUTH, SLOPE, SANITARY
EW	EACH WAY	SAN	SANITARY
F&C	FRAME AND COVER	SCE	STABILIZED CONSTRUCTION ENTRANCE
FH	FIRE HYDRANT	SCH	SCHEDULE
FIN, FL, F.F.	FINISHED FLOOR	SD	STORM DRAIN
FT	FEET	SDR	STANDARD DIMENSION RATIO
FPS	FEET PER SECOND	SE	SOUTHEAST
HB	HORIZONTAL BEND	SF	SILT FENCE
HO, CO	HOWARD COUNTY	SHT	SHEET
HC	HANDICAPPED	SP	STUDY POINT
HP	HIGH POINT	SS	STAINLESS STEEL
IN	INCH	STA	STATION
INV	INVERT	STD	STANDARD
IP	INLET PROTECTION	STRUCT, STR	STRUCTURAL
JT	JOINT	SW	SOUTHWEST
LD	LEFT	TEL	TELEPHONE
LOD	LIMIT OF DISTURBANCE	TS&V	TAPPING SLEEVE & VALVE
LP	LOW POINT	T/C	TOP OF CURB
MAX	MAXIMUM	TC	TOP OF COVER
MECH	MECHANICAL	TG	TOP OF GRATE
MH	MANHOLE	TW	TOP OF WALL
MIN	MINIMUM	TYP	TYPICAL
MW	MONITORING WELL	UG	UNDERGROUND
N	NORTH	UD	UNDERDRAIN
NE	NORTHEAST	UE	UNDERGROUND ELECTRIC DUCT
NIC	NOT IN CONTRACT	UMH	UNKNOWN MANHOLE
NTS	NOT TO SCALE	UT	UNDERGROUND TELEPHONE DUCT
NW	NORTHWEST	UFA	UNDERGROUND FIRE ALARM
OC, O/C	ON CENTER	VB	VERTICAL BEND
		VC	VERTICAL CURVE
		W	WEST, WATT, WATER, WIDE
		W/	WITH
		WWF	WELDED WIRE FABRIC

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		CONTOUR
		SPOT ELEVATION
		STORM DRAIN
		WATER
		SANITARY SEWER
		UNDERGROUND ELECTRIC
		UNDERGROUND TELEPHONE
		CONCRETE CURB AND GUTTER
		FENCE
		BUILDING
		GRAVEL PAVEMENT
		ASPHALT PAVEMENT
		PARKING PERVIOUS PAVERS
		CONCRETE SIDEWALK
		WATER VALVE
		WATER METER
		FIRE HYDRANT
		STORM DRAIN INLET
		STORM DRAIN MANHOLE
		STORM DRAIN END SECTION
		STORM DRAIN ENDWALL
		RAIN BARREL
		SANITARY SEWER MANHOLE
		ELECTRIC MANHOLE
		TELEPHONE MANHOLE
		LIGHT POLE
		UTILITY POLE
		TRANSFORMER
		GUY WIRE
		SIGN
		EVERGREEN TREE
		DECIDUOUS TREE
		WOODSLIME/CLEARING LIMITS
		RIPRAP
		STREAM
		100' STREAM BUFFER
		SURVEY TRAVERSE MONUMENT
		PROPERTY LINE
		35' SCENIC ROADS BUFFER
		EASEMENT LINE
		SOIL BORING LOCATION
		REMOVE TREES
		REMOVE GRAVEL ROADWAY
		15-24.9% SLOPES
		>25% SLOPES

EXISTING	PROPOSED	DESCRIPTION
		LIMIT OF DISTURBANCE
		SILT FENCE
		SUPER SILT FENCE
		TREE PROTECTION FENCE
		DIVERSION FENCE
		INLET PROTECTION
		TEMPORARY STONE OUTLET STRUCTURE
		LIMITS OF WET MEADOW AND RAIN GARDEN
		STABILIZED CONSTRUCTION ENTRANCE
		SOIL DIVIDE



APPROVED: DEPARTMENT OF PLANNING AND ZONING

John Chubb 8-29-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Kevin J. ... 9-13-17
CHIEF, DIVISION OF LAND DEVELOPMENT

... 9-13-17
DIRECTOR

REVISIONS	
▲	REVISED SITE DEVELOPMENT PLAN 6/28/17
	PERVIOUS PAVER DESCRIPTION

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: 410-243-5716

PROPERTY

TAX MAP 35, GRID 3, PARCEL 512
TAX MAP 35, GRID 2, PARCEL 427

ZONING: NEWTOWN & R-20
ELECTION DISTRICT 05

GRAPHIC SCALES

SIGNATURE

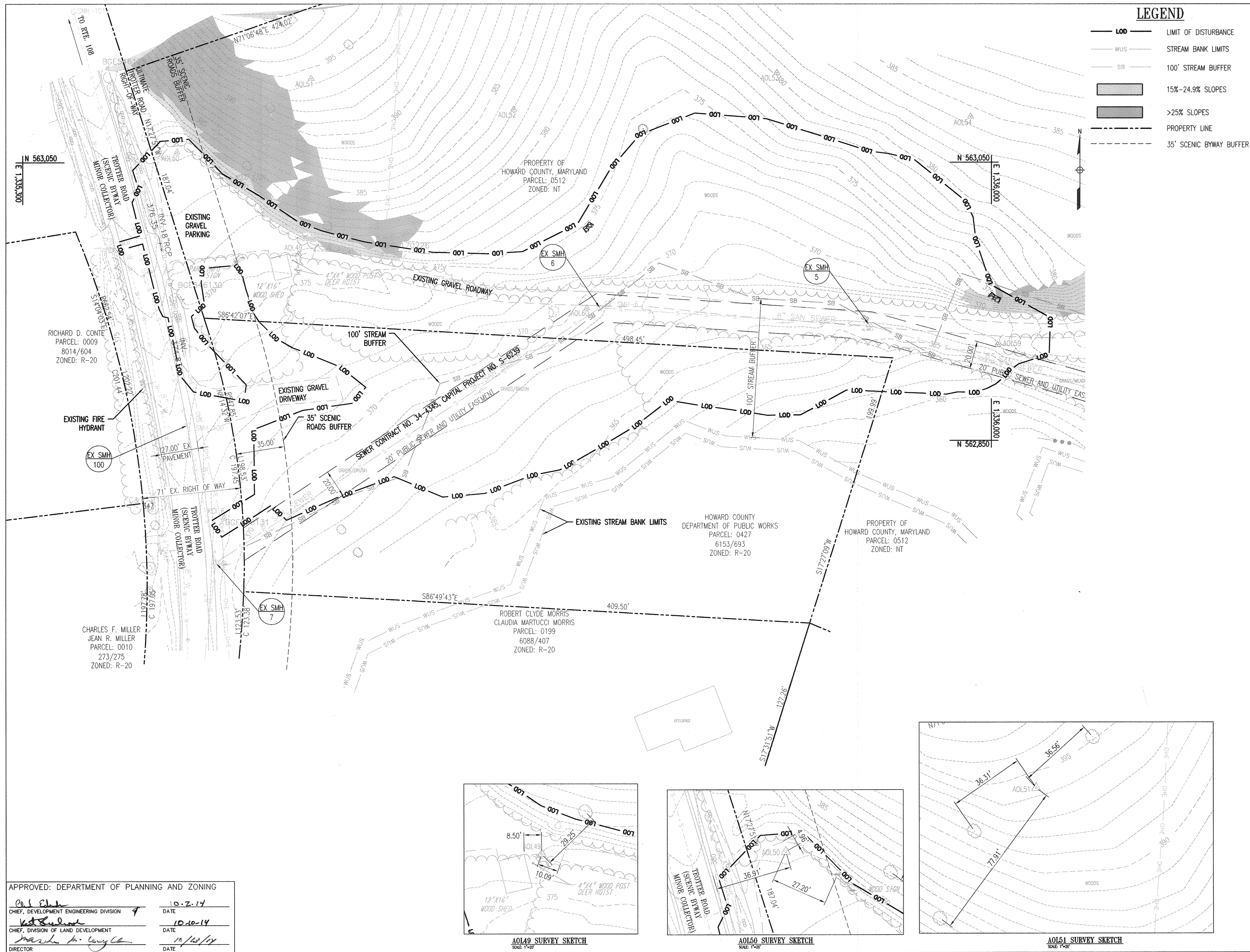
PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2017

MPEA - SITE IMPROVEMENTS

ABBREVIATIONS, NOTES AND LEGENDS

Drawing No.
C0.2

Scale: NONE
Date: 09/12/2014 Sheet 2 of 27
Des: BWJ/SAD Drawn: SAD Check: AUO



LEGEND

- LOD — LIMIT OF DISTURBANCE
- WUS — STREAM BANK LIMITS
- SB — 100' STREAM BUFFER
- ▨ 15%–24.9% SLOPES
- ▨ >25% SLOPES
- - - - - PROPERTY LINE
- - - - - 35' SCENIC BYWAY BUFFER

REVISIONS	
△	REVISED SHEET TOTAL 6/28/17

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

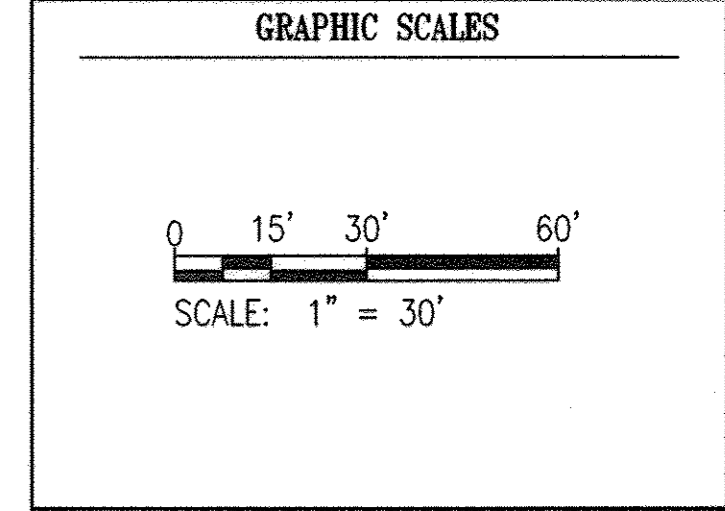
DEPARTMENT OF PUBLIC WORKS
 9250 BENDIX ROAD
 ELLICOTT CITY, MD 21043

WR&A
 WHITMAN, REQUARDT & ASSOCIATES, LLP
 801 South Caroline Street, Baltimore, Maryland 21231
 Phone: 410-235-3450 Fax: 410-243-0716

PROPERTY

TAX MAP 35, GRID 3, PARCEL 512
 TAX MAP 35, GRID 2, PARCEL 427

ZONING: NEWTOWN & R-20
 ELECTION DISTRICT 05



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: 09/22/2015.

MPEA - SITE IMPROVEMENTS

EXISTING SITE PLAN

Drawing No.
C1.0

Scale: 1" = 30'

Date: 09/12/2014 Sheet 3 of 27

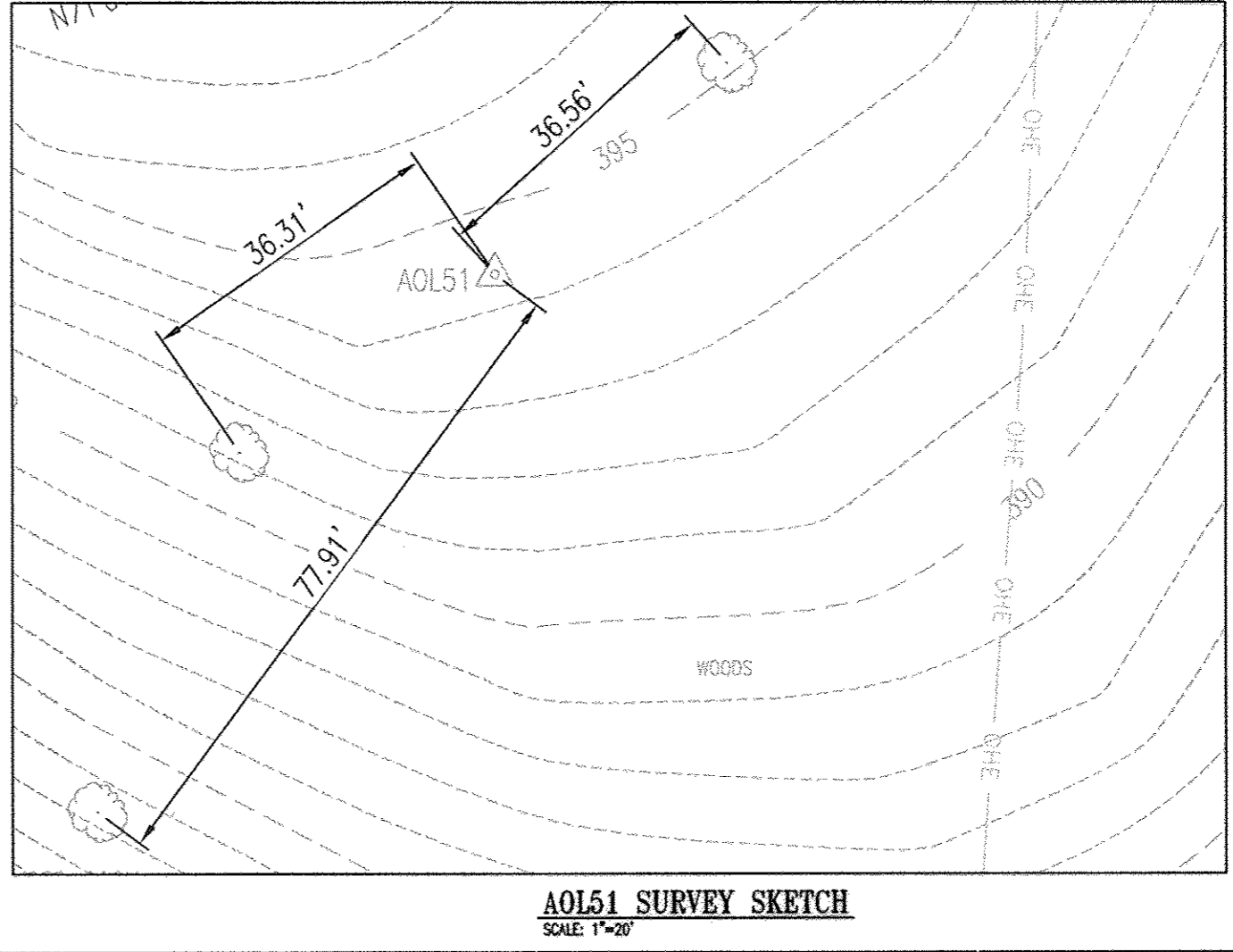
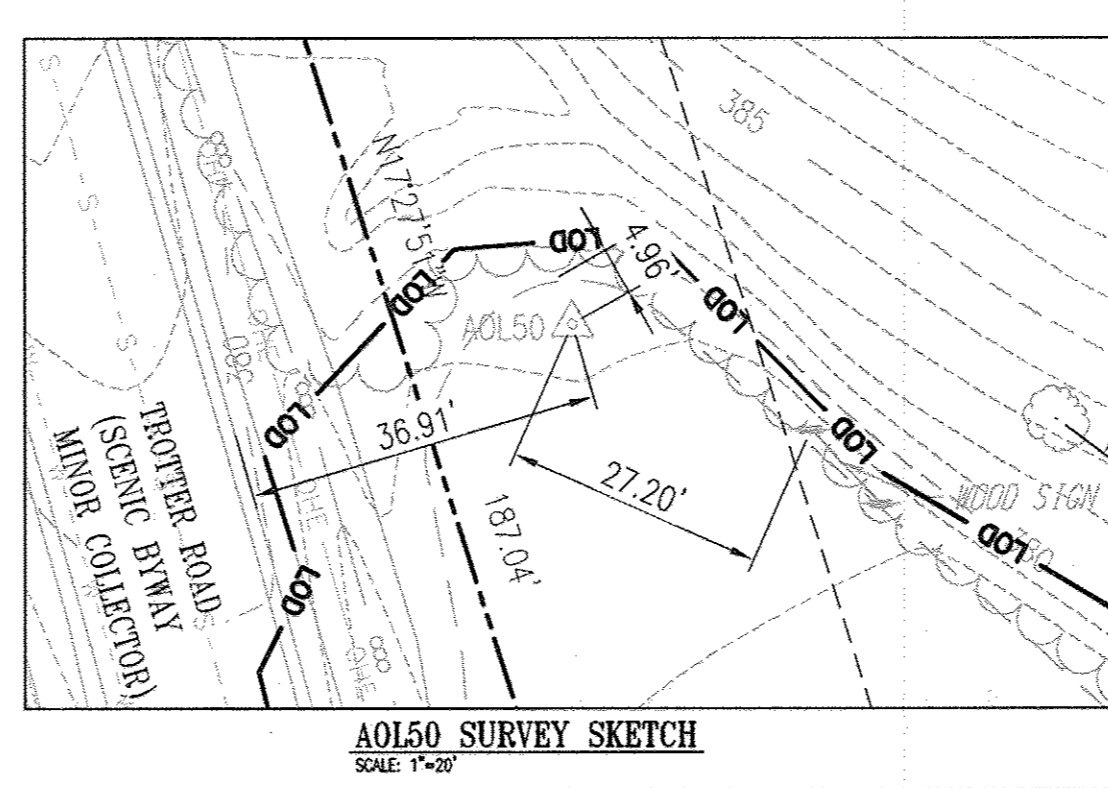
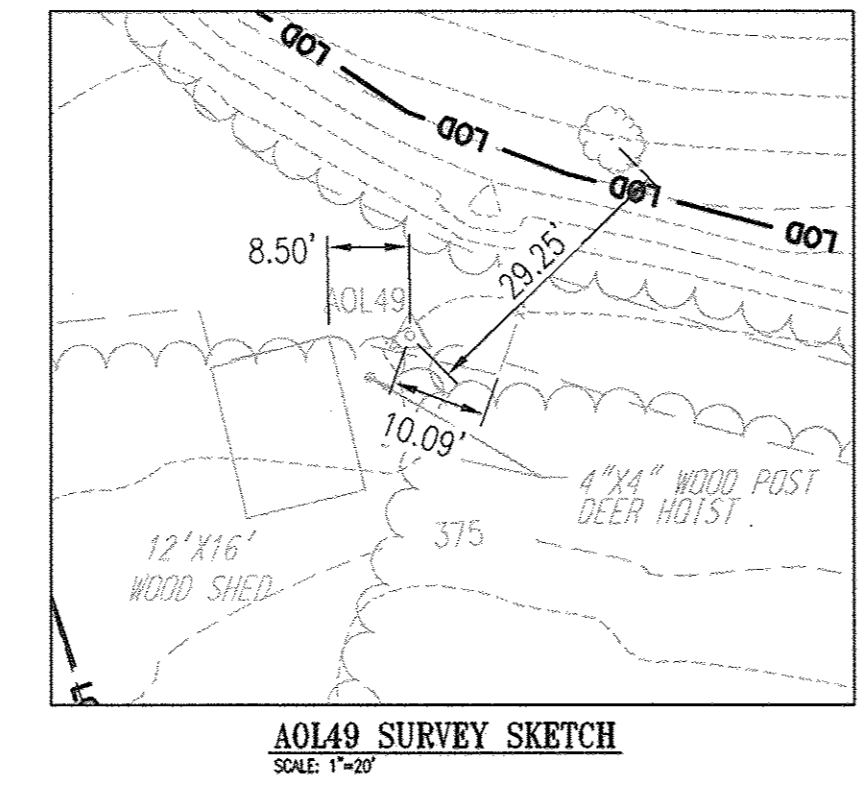
Des: BWJ/SAD Drawn: SAD Check: AUO

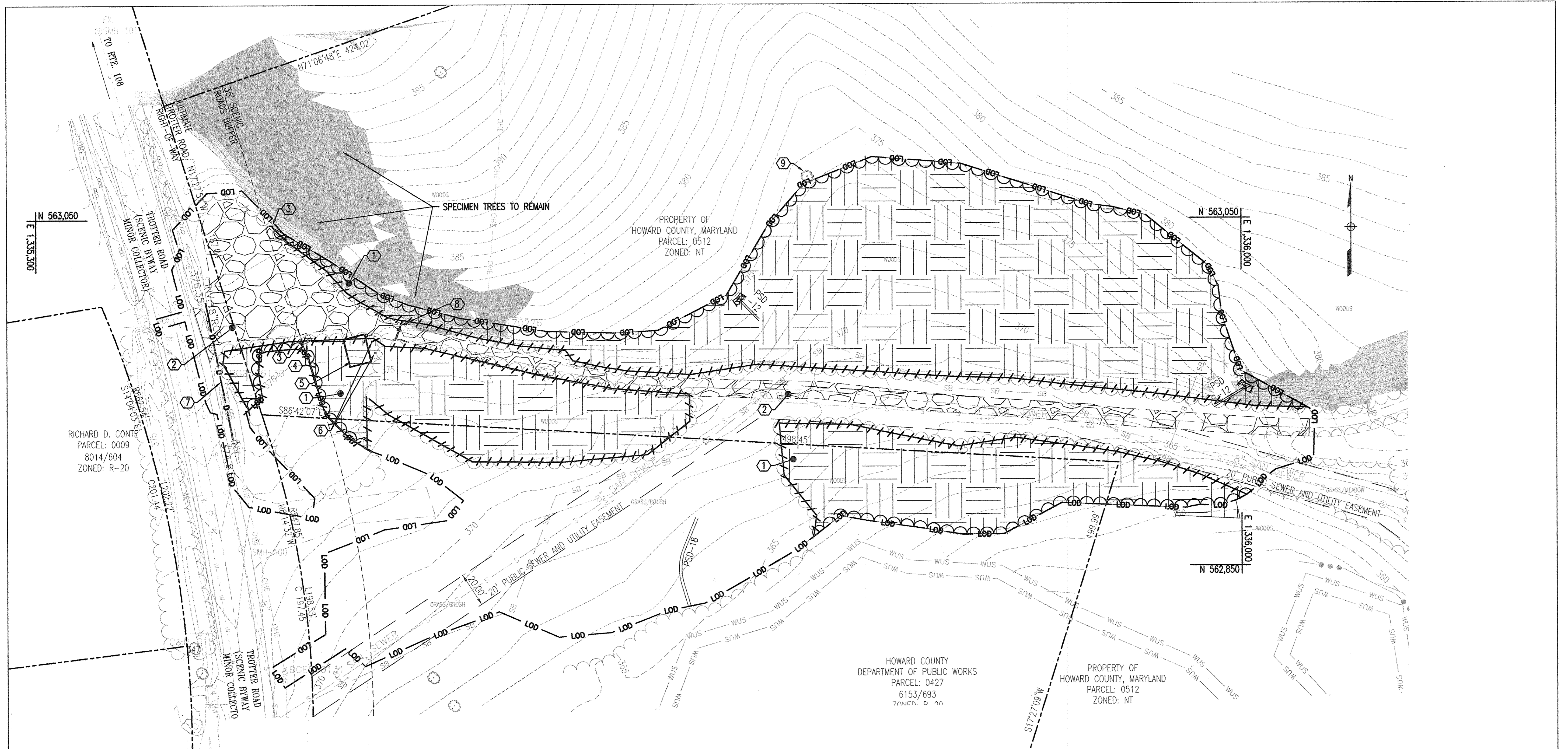
APPROVED: DEPARTMENT OF PLANNING AND ZONING

Ch. J. ...
 CHIEF, DEVELOPMENT ENGINEERING DIVISION 9 DATE 10-7-14

... ..
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE 10-10-14

... ..
 DIRECTOR DATE 10/12/14





- DEMOLITION NOTES**
- 1 REMOVE TREE(S)
 - 2 REMOVE APPROXIMATELY 12" THICK GRAVEL ROADWAY
 - 3 REMOVE SIGN
 - 4 REMOVE 8" THICK CONCRETE PAD
 - 5 12'X16' WOOD SHED TO BE RELOCATED BY OTHERS PRIOR TO CONSTRUCTION SEE SHEET C1.2 FOR PROPOSED RELOCATION
 - 6 REMOVE 4"X4" WOOD POST-DEER HOIST, HOWARD COUNTY TO SALVAGE. COORDINATE WITH OWNER.
 - 7 REMOVE 18" RCP CULVERT
 - 8 REMOVE METAL SECURITY GATE
 - 9 APPROXIMATE LOCATION OF EXISTING 31" TULIP POPLAR. AFTER STAKING OUT CLEARING LIMITS NOTIFY OWNER AND ATTEMPT TO SAVE EXISTING TREE. PERMITTING WILL ALLOW FOR TREE TO BE REMOVED.

- LEGEND**
- LOD LIMIT OF DISTURBANCE
 - WUS STREAM
 - SB 100' STREAM BUFFER
 - TREE REMOVAL
 - GRAVEL ROADWAY REMOVAL
 - PROPOSED TREELINE
 - EXISTING TREELINE
 - LIMITS OF TREE REMOVAL
 - EXISTING CONTOUR
 - 15%-24.9% SLOPES
 - >25% SLOPES

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature]
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 10-7-14

[Signature]
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 10-10-14

[Signature]
 DIRECTOR
 DATE: 10/10/14

REVISIONS	
Δ	REVISED SHEET TOTAL 6/28/17

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

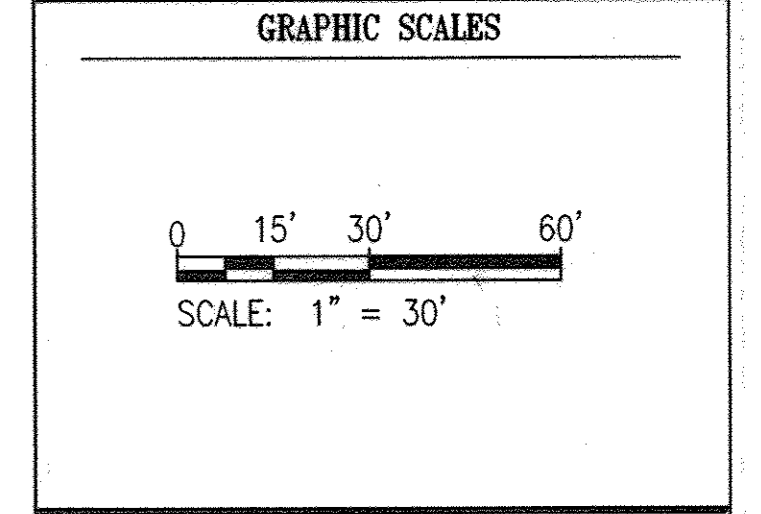
WR&A

WHITMAN, REQUARDT & ASSOCIATES, LLP
 801 South Caroline Street, Baltimore, Maryland 21201
 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 35, GRID 3, PARCEL 512
 TAX MAP 35, GRID 2, PARCEL 427

ZONING: NEWTOWN & R-20
 ELECTION DISTRICT 05



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: 09/22/2015.

MPEA - SITE IMPROVEMENTS

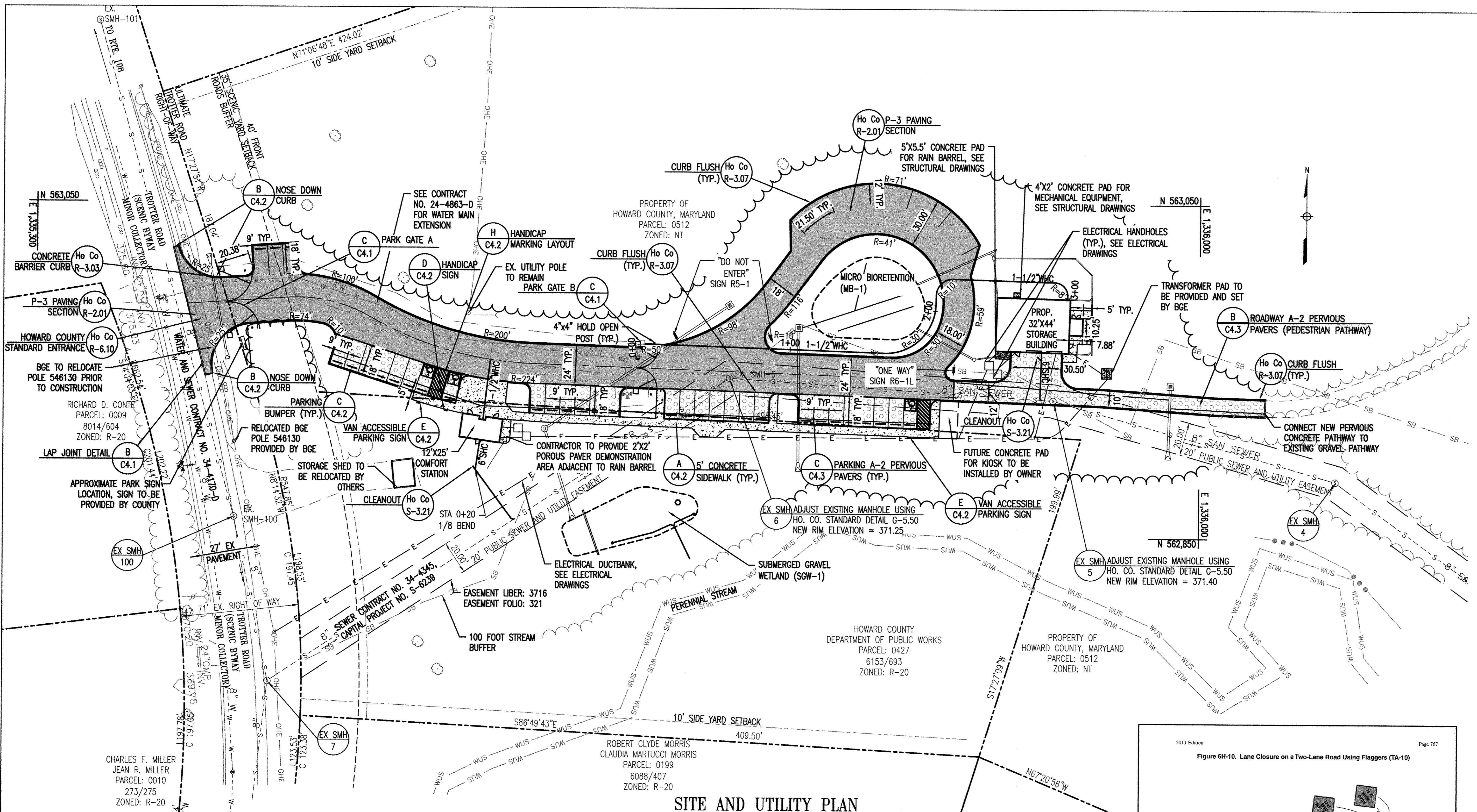
SITE DEMOLITION PLAN

Drawing No.
C1.1

Scale: 1" = 30'

Date: 09/12/2014 Sheet 4 of 27.

Des: BWJ/SAD Drawn: SAD Check: AUO



- LEGEND**
- WUS ——— STREAM
 - SB ——— 100' STREAM BUFFER
 - ASPHALT PAVEMENT
 - PARKING PERVIOUS PAVERS
 - CONCRETE SIDEWALK
- DRAWING NOTES:**
- CURB FLUSH SHALL BE PROVIDED AROUND ALL PERVIOUS PAVERS EXCEPT WHERE PERVIOUS PAVERS ARE ADJACENT TO CONCRETE SIDEWALK.
 - CURB RADII SHALL BE 5' UNLESS OTHERWISE NOTED.
 - ALL CURB RADII ARE MEASURED FROM FACE OF CURB UNLESS OTHERWISE NOTED.
 - SEE WATER AND SEWER DRAWINGS FOR WATER AND SEWER PLANS AND PROFILES.
 - SEE DETAIL THIS SHEET FOR MAINTENANCE OF TRAFFIC DURING CONSTRUCTION.

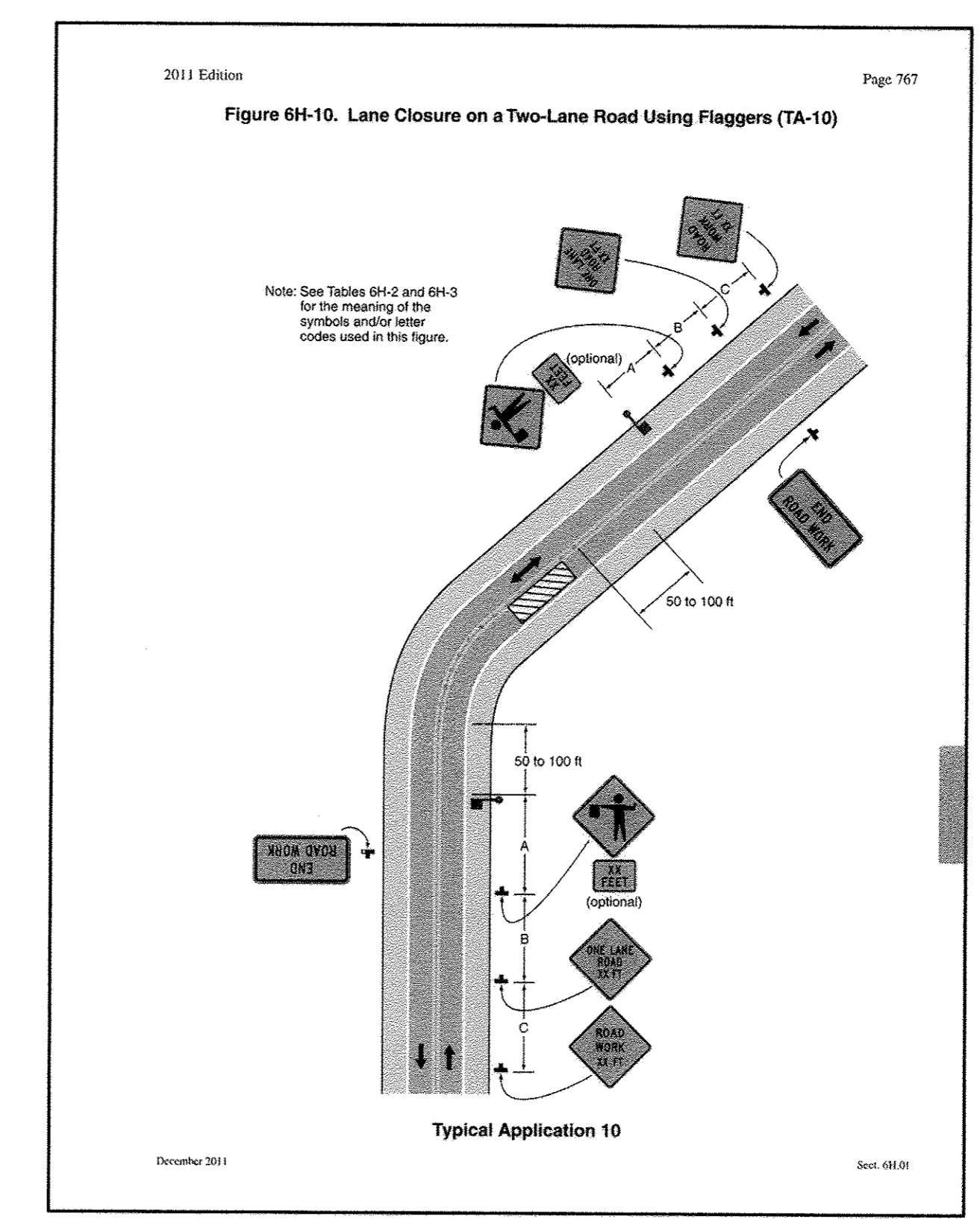
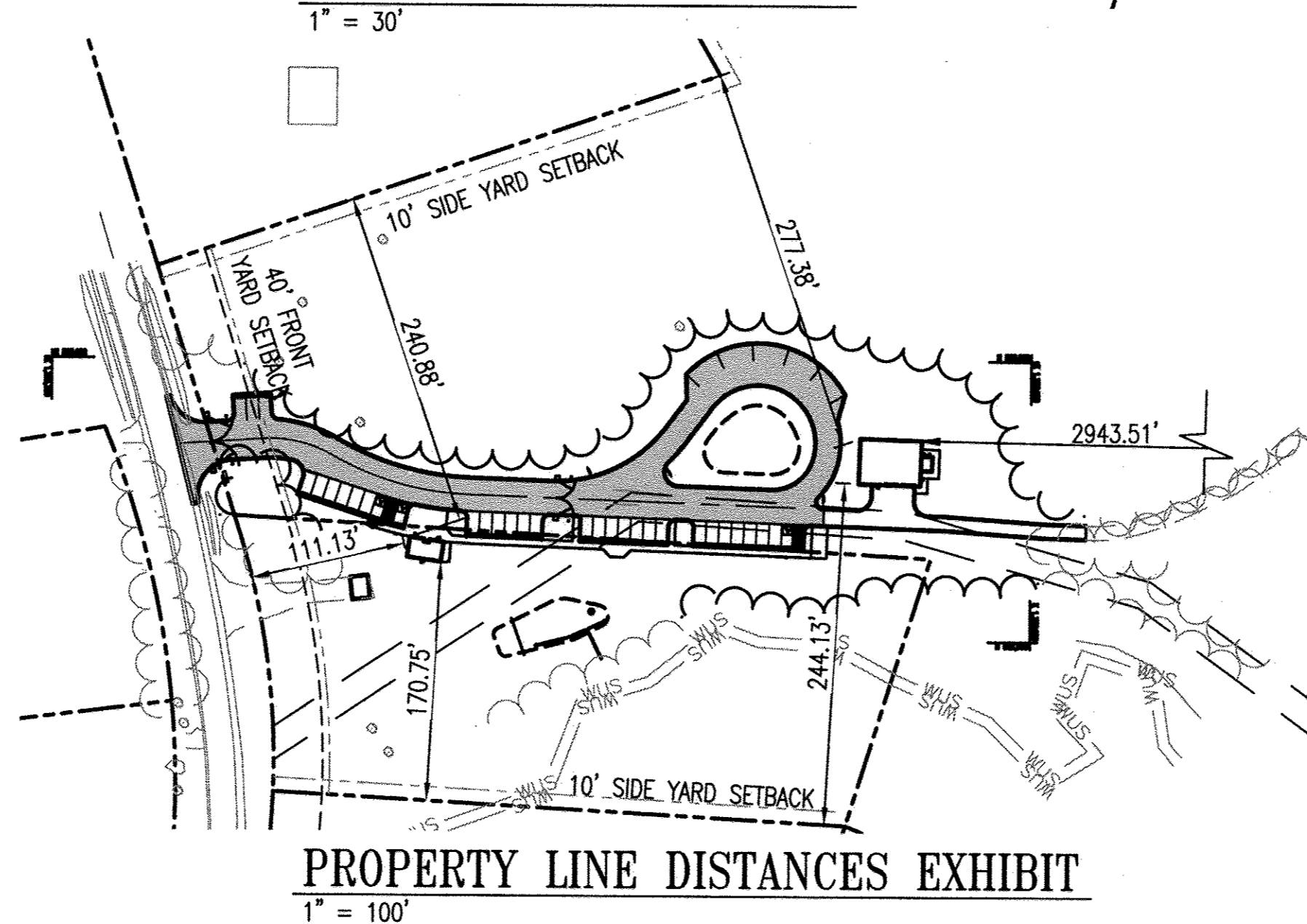
REVISED SITE DEVELOPMENT PURPOSE STATEMENT:
 THE PLAN HAS BEEN REVISED TO REMOVE PERVIOUS PAVEMENT FROM THE ACCESS DRIVE LANE AND REPLACE WITH ASPHALT. A SUBMERGED GRAVEL WETLAND AND ASSOCIATED STORM DRAIN CHANGES HAVE BEEN INCLUDED TO TREAT THE STORMWATER REQUIREMENTS FOR THE NEW ASPHALT AREA. PERVIOUS PAVEMENT IN THE PARKING SPOTS HAS BEEN REPLACED WITH PERVIOUS PAVERS.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chad Chilton 8-29-17
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Katrina Lewis 9-13-17
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Nickolas J. Miller 9-18-17
 DIRECTOR DATE



REVISIONS	
▲	REVISED SITE DEVELOPMENT PLAN 6/28/17
	PERVIOUS PAVER, SWM,
	STORM DRAINS

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: 410-235-3450 Fax: 410-243-6716

PROPERTY

TAX MAP 35, GRID 3, PARCEL 512
 TAX MAP 35, GRID 2, PARCEL 427

ZONING: NEWTOWN & R-20
 ELECTION DISTRICT 05

GRAPHIC SCALES

0 15' 30' 60'
 SCALE: 1" = 30'

0 50' 100' 200'
 SCALE: 1" = 100'

SIGNATURE

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 License No. 18376
 EXPIRATION DATE: 09/22/2017

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: 09/22/2017.

MPEA - SITE IMPROVEMENTS

SITE AND UTILITY PLAN

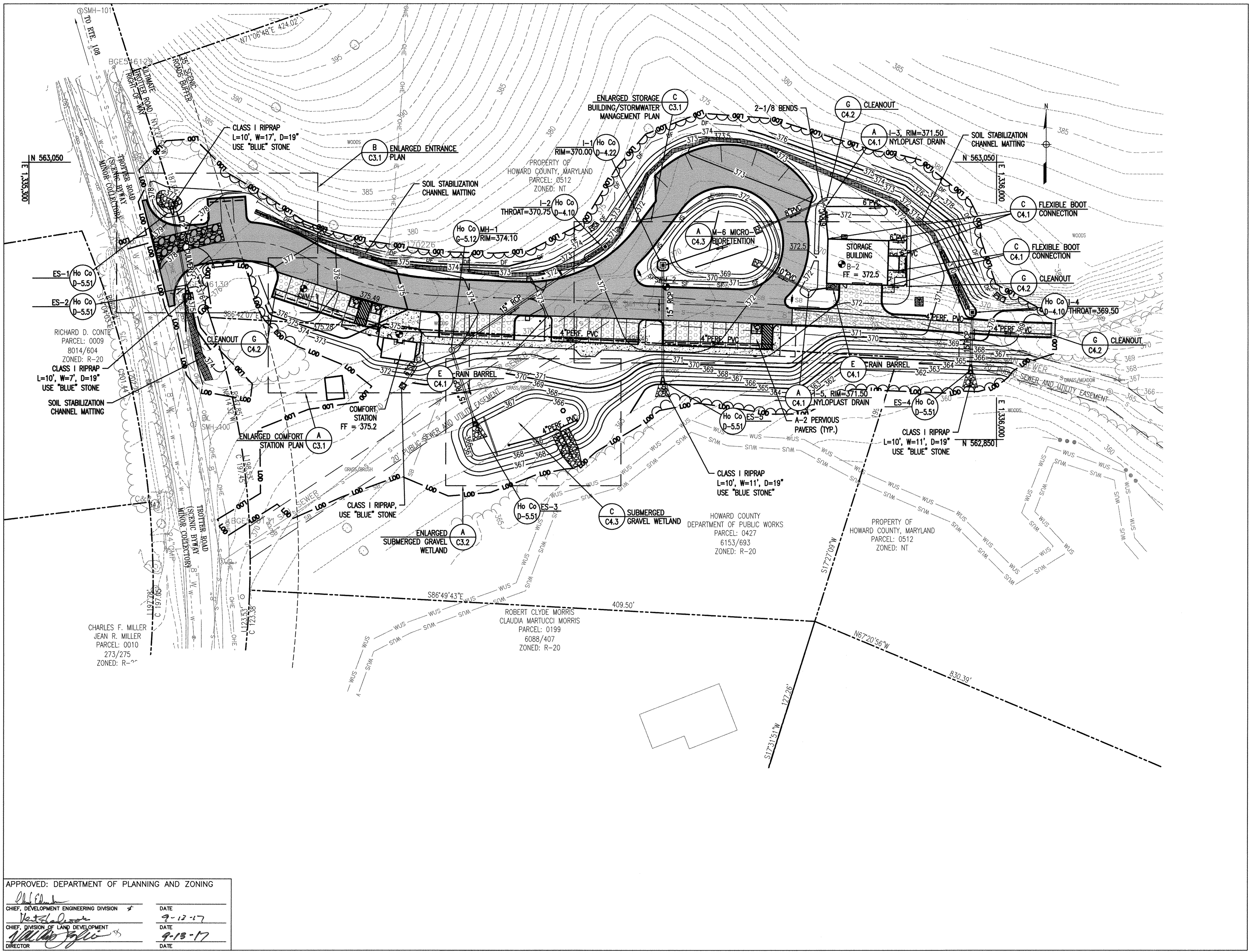
Drawing No.
C1.2

Scale: 1" = 30'

Date: 09/12/2014 Sheet 5 of 27

Des: BWJ/SAD Drawn: SAD Check: AUO

SDP-14-055



REVISIONS	
▲	REVISED SITE DEVELOPMENT PLAN 6/28/17
	GRADING, SWM, SD

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

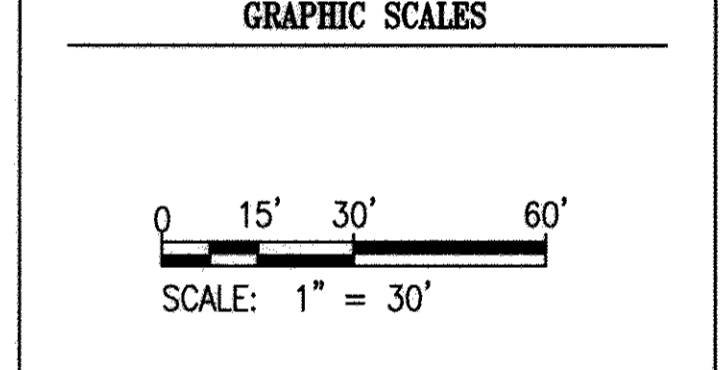
WRA

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

PROPERTY

TAX MAP 35, GRID 3, PARCEL 512
TAX MAP 35, GRID 2, PARCEL 427

ZONING: NEWTOWN & R-20
ELECTION DISTRICT 05



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: 09/22/2017

**MPEA - SITE
IMPROVEMENTS**

**GRADING AND STORMWATER
MANAGEMENT PLAN**

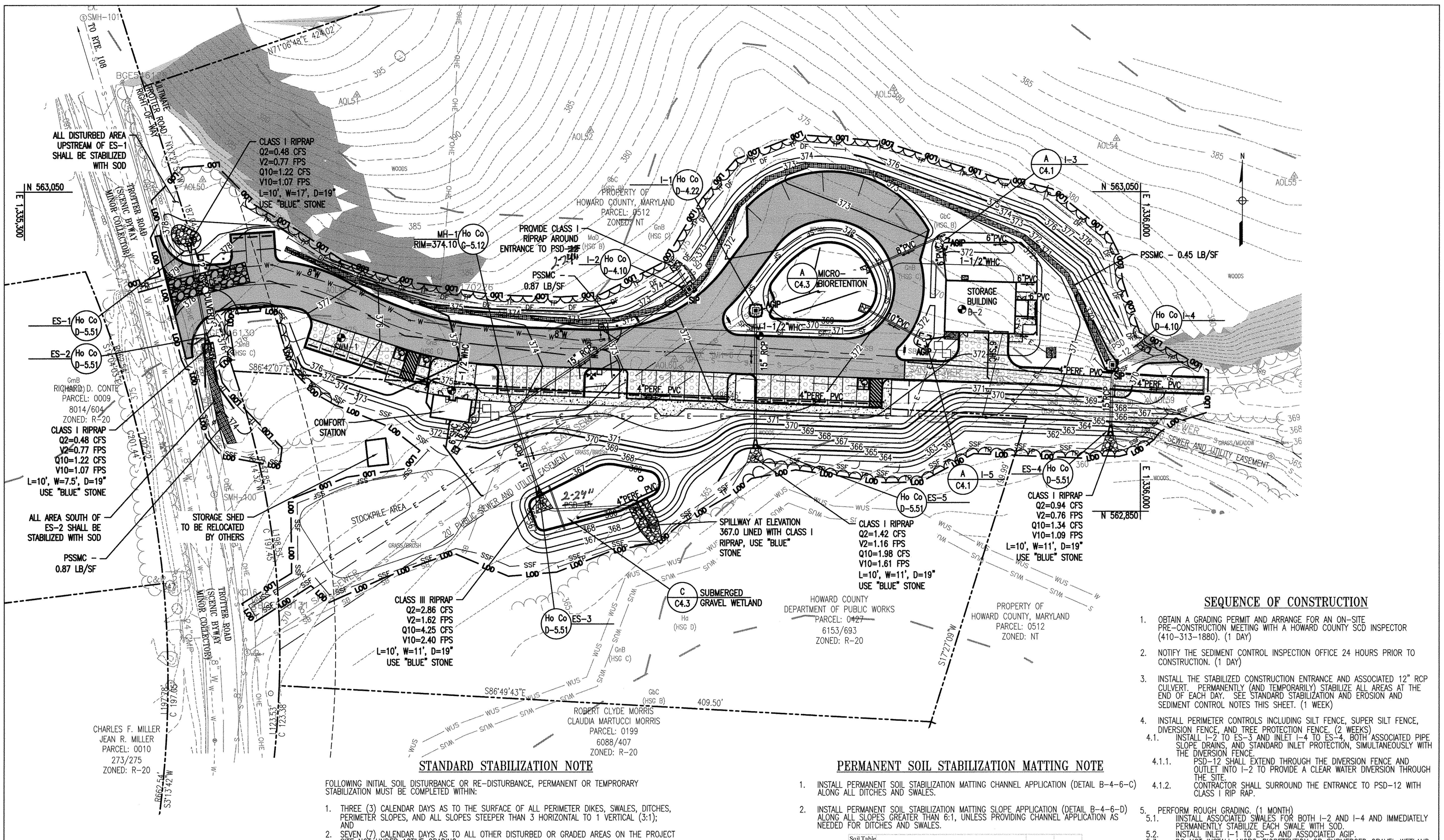
Drawing No.
C1.4

Scale: 1" = 30'

Date: 09/12/2014 Sheet 7 of 27
Des: BWJ/SAD Drawn: SAD Check: AUO

APPROVED: DEPARTMENT OF PLANNING AND ZONING

<i>[Signature]</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 9-12-17
<i>[Signature]</i> CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 9-13-17
<i>[Signature]</i> DIRECTOR	DATE



REVISIONS	
▲	REVISED SITE DEVELOPMENT PLAN 6/28/17
	OUTLET PROTECTION, SOC
	SSF, ESC MATTING

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: 410-243-5716

PROPERTY

TAX MAP 35, GRID 3, PARCEL 512
TAX MAP 35, GRID 2, PARCEL 427

ZONING: NEWTOWN & R-20
ELECTION DISTRICT 05

GRAPHIC SCALES

0 15' 30' 60'

SCALE: 1" = 30'

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: 09/22/2017.

MPEA - SITE IMPROVEMENTS

EROSION AND SEDIMENT CONTROL PLAN

Drawing No.
C1.5

Scale: 1" = 30'

Date: 09/12/2014 Sheet 8 of 27
Des: BWJ/SAD Drawn: SAD Check: AUO

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

- THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER 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 OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

NOTE TO CONTRACTOR:
EROSION AND SEDIMENT CONTROL SHALL BE STRICTLY ENFORCED.

EROSION AND SEDIMENT CONTROL NOTES

- NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS RUNOFF IS DIRECTED TO AN ADE APPROVED SEDIMENT CONTROL DEVICE.
- CLEAR WATER DISCHARGE FROM DEWATERING DEVICES (PORTABLE SEDIMENT TANK) SHALL BE DISCHARGED TO A STABILIZED OUTFALL AT A NON-EROSIVE VELOCITY.
- EITHER TEMPORARY OR PERMANENT STABILIZATION MATTING IS TO BE PROVIDED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR OR WITHIN THE TIME FRAMES REQUIRED BY THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, WHICHEVER IS MORE STRINGENT.

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: *Michael M. M... 8-11-17*
DATE: 8-11-17

PERMANENT SOIL STABILIZATION MATTING NOTE

- INSTALL PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION (DETAIL B-4-6-C) ALONG ALL DITCHES AND SWALES.
- INSTALL PERMANENT SOIL STABILIZATION MATTING SLOPE APPLICATION (DETAIL B-4-6-D) ALONG ALL SLOPES GREATER THAN 6:1, UNLESS PROVIDING CHANNEL APPLICATION AS NEEDED FOR DITCHES AND SWALES.

Soil Table	Soil Name	K Factor	HSG
GnB	Glenville-Bald silt loams, 0 to 8 percent slopes	0.37	C
MaD	Manor loam, 15 to 25 percent slopes	0.24	B
GbC	Gladstone loam, 8 to 15 percent slopes	0.20	B
Ia	Hatboro-Codors silt loams, 0 to 3 percent slopes	0.37	D
GmJ	Glenville silt loam, 3 to 8 percent slopes	0.37	C

***ALL ROOT PRUNING SHALL BE COMPLETED PRIOR TO ANY CONSTRUCTION ACTIVITIES

***NO CLEARING OR GRUBBING SHALL COMMENCE PRIOR TO THE INSTALLATION OF THE TREE PROTECTION FENCING AND SIGNAGE ADJACENT TO THE CLEARING/GRUBBING AREA WHERE APPLICABLE.

***TREE PROTECTION FENCING AND SIGNAGE SHOULD BE INSTALLED SIMULTANEOUSLY WITH SUPER SILT FENCE. (STEP 3)

***ALL TREE PROTECTION FENCING AND SIGNAGE AS INDICATED ON FOREST CONSERVATION PLAN SHEET F2.2 SHALL BE INSTALLED IN STEPS 1 THROUGH 3, BEFORE BEGINNING ROUGH GRADING OF THE ENTIRE SITE.

***TREE PROTECTION FENCING AND SPECIMEN TREE SIGNAGE SHALL BE REMOVED UPON PERMANENT STABILIZATION OF ALL DISTURBED AREAS. FOREST RETENTION SIGNAGE SHALL REMAIN. (STEP 11)

***IF STOCKPILE AREA EXCEEDS 15 FEET IN HEIGHT, BENCHING WILL BE REQUIRED.

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

Signature: *John P. Robertson* 8/23/17
DATE: 8/23/17

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."

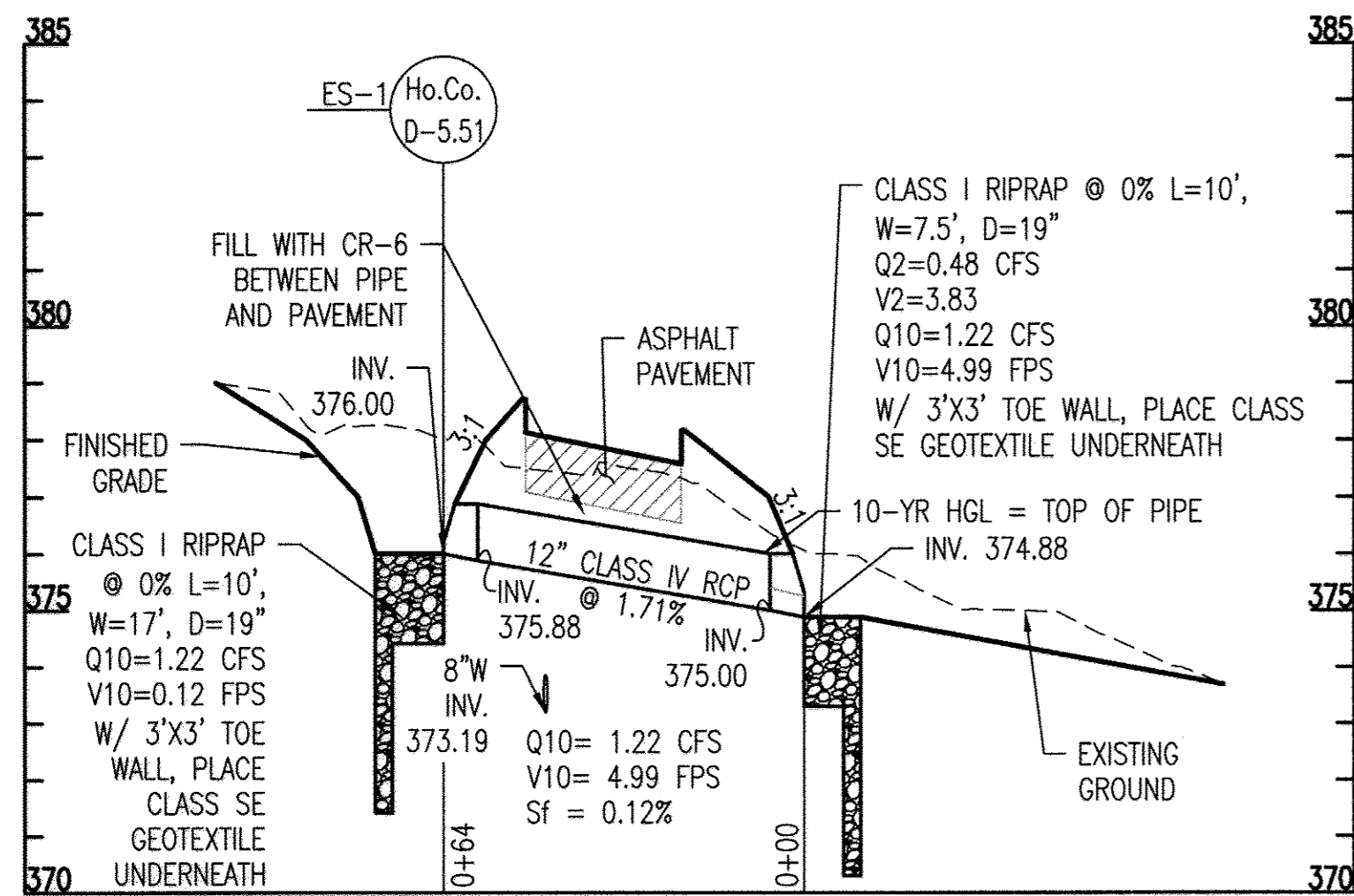
Signature: *Anthony M. Miller* 9/16/17
DATE: 9/16/17

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Signature: *John C. ...* 8-29-17
DATE: 8-29-17

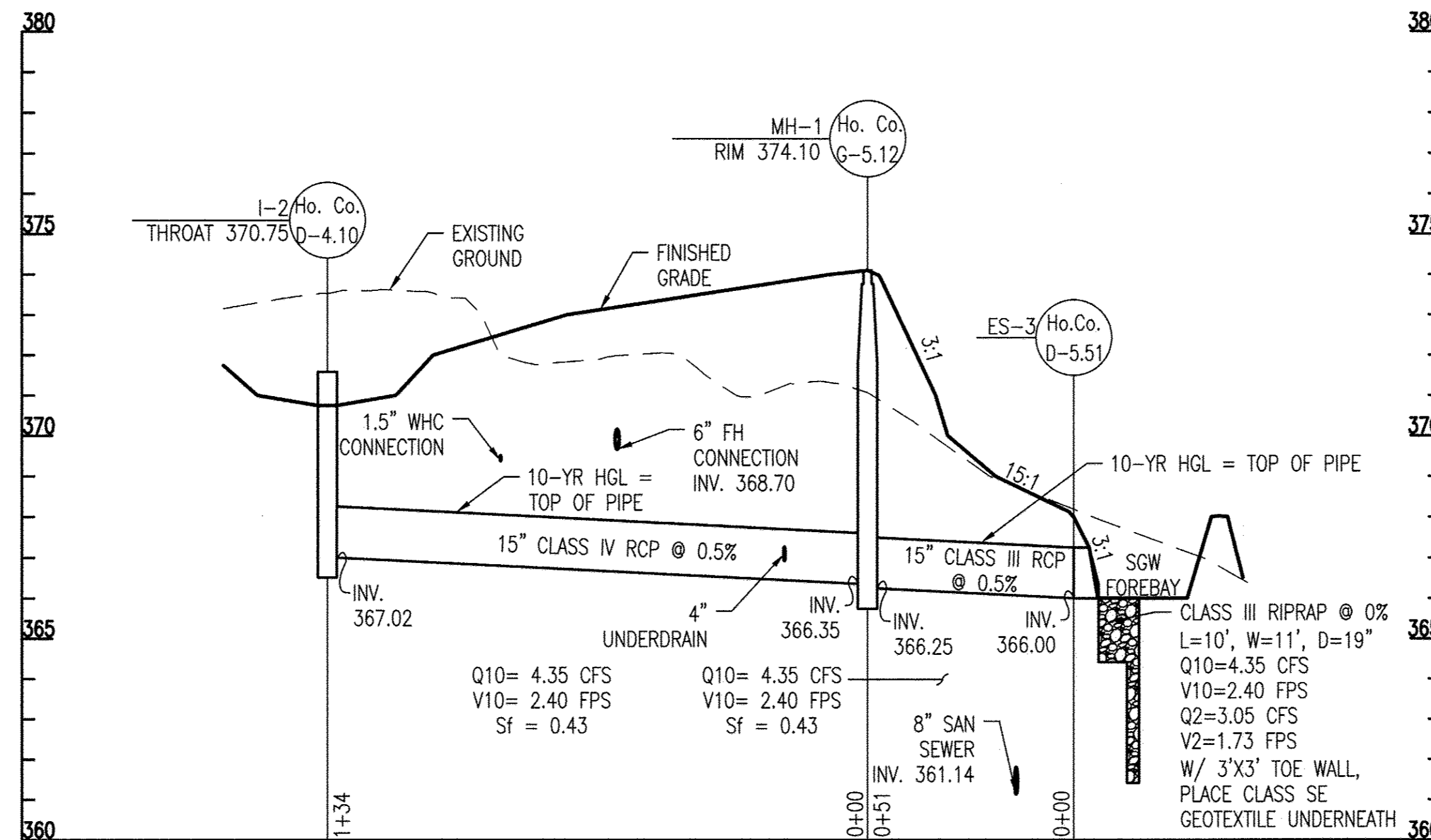
Signature: *... 9-13-17*
DATE: 9-13-17

Signature: *... 9-13-17*
DATE: 9-13-17



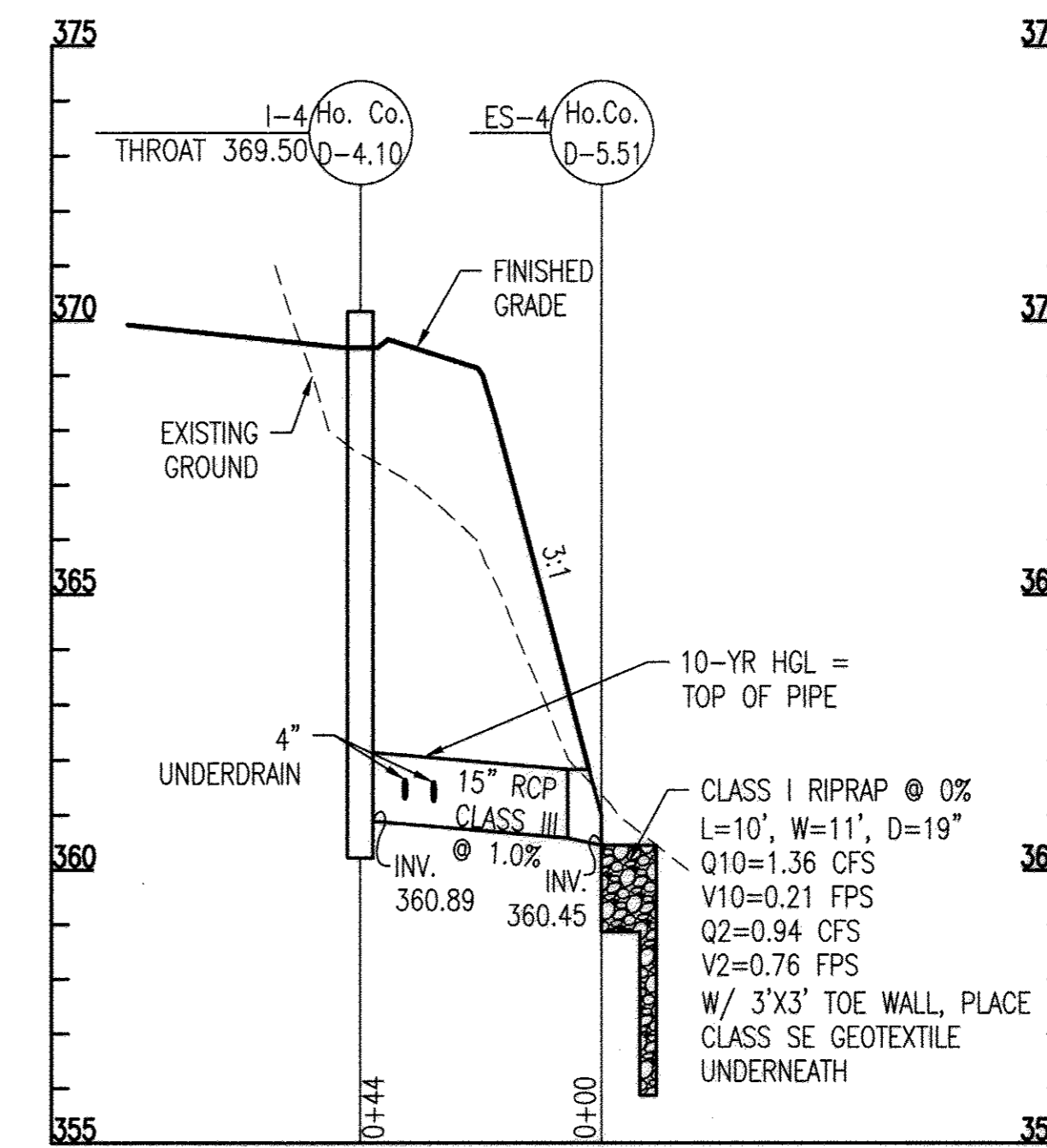
ES-1 TO ES-2 STORM DRAIN PROFILE

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



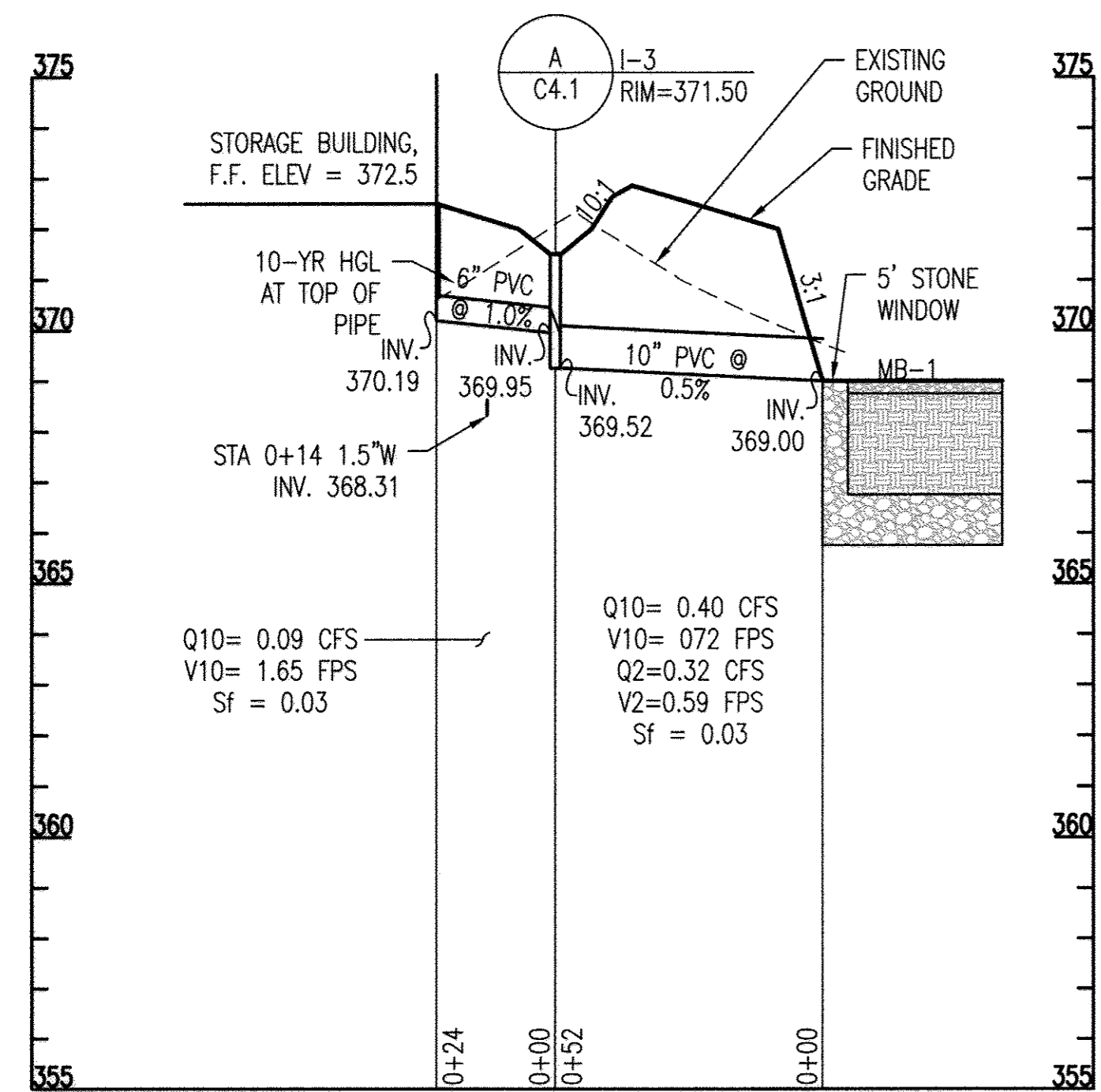
I-2 to ES-3 STORM DRAIN PROFILE

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



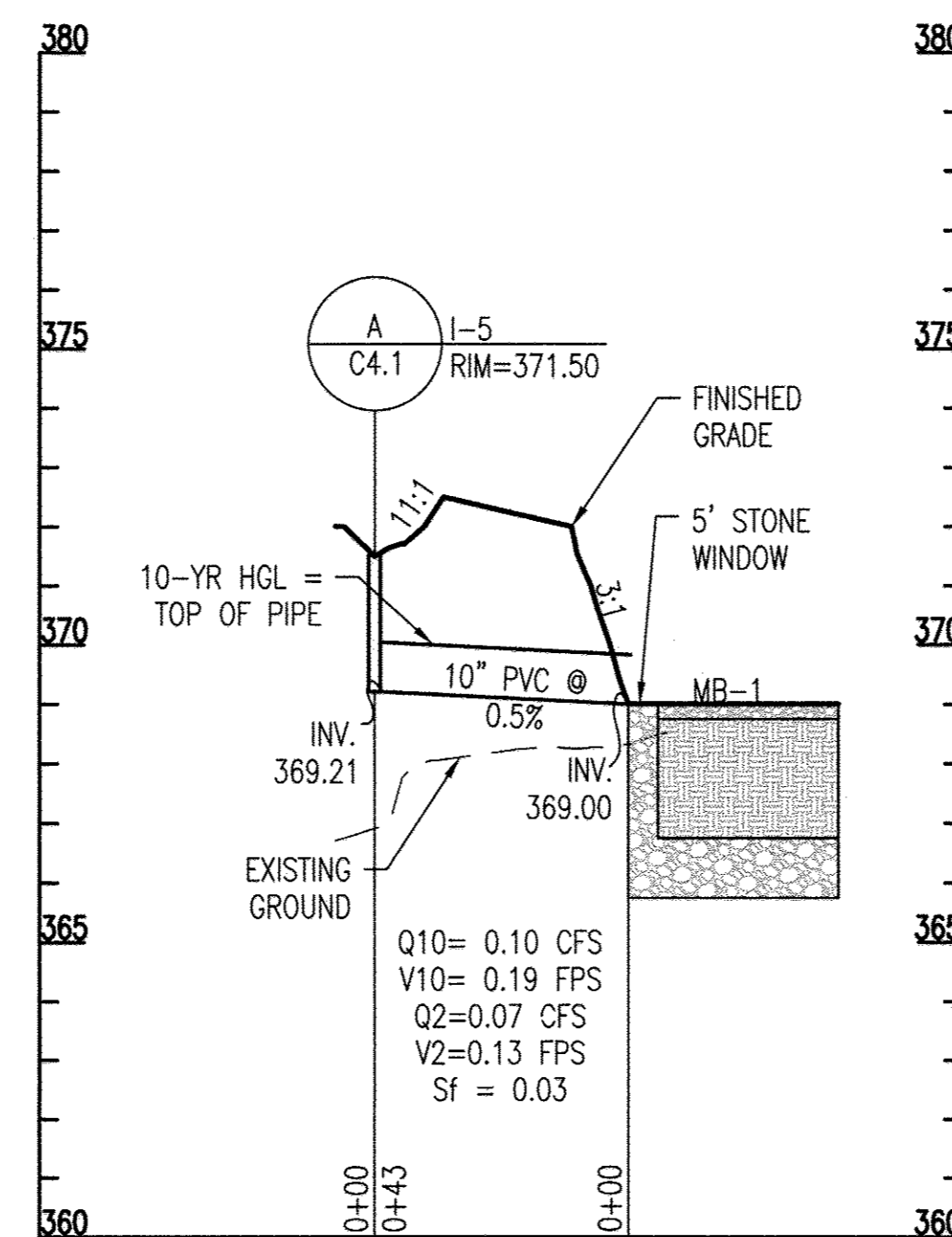
I-4 to ES-4 STORM DRAIN PROFILE

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



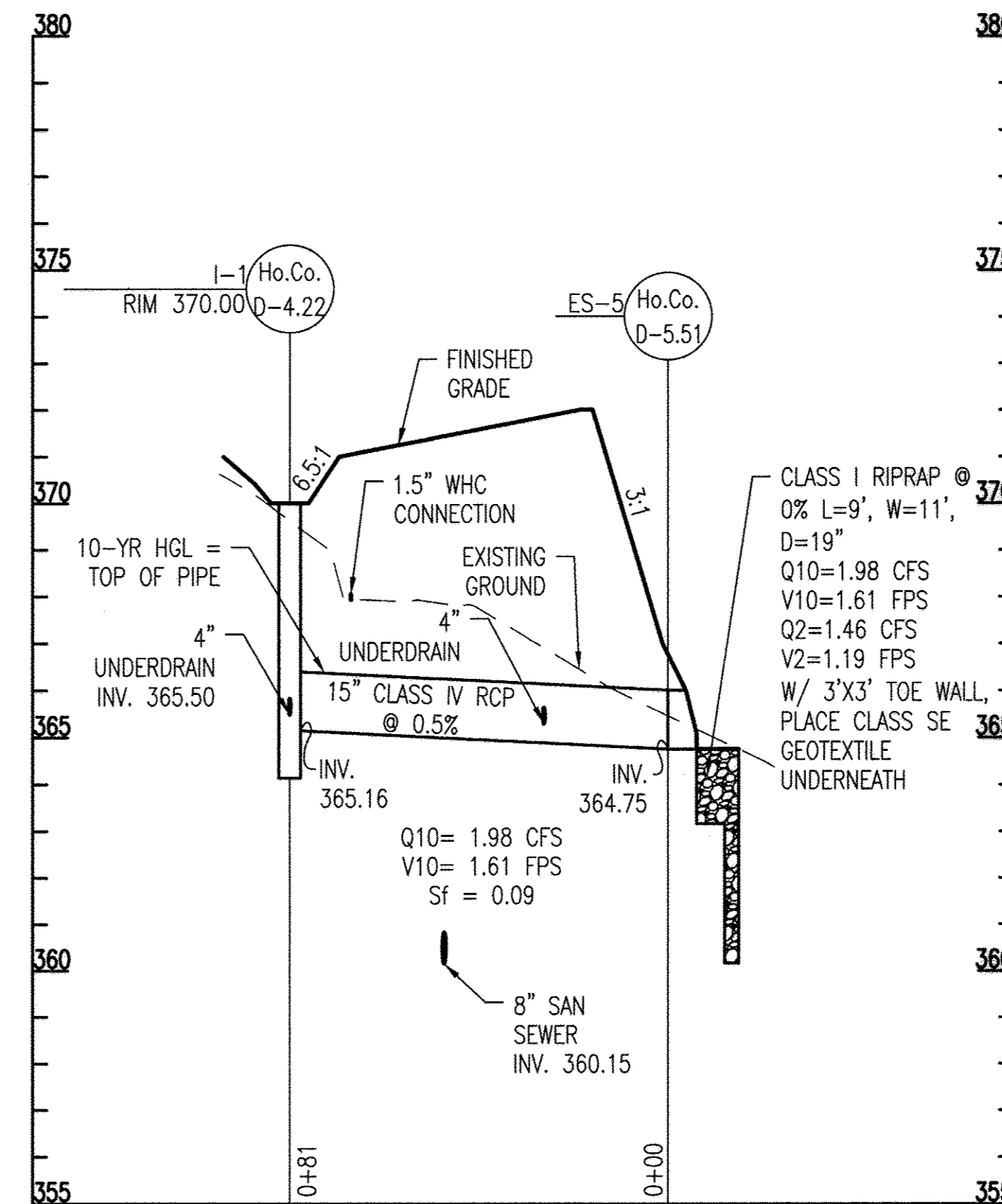
STORAGE BUILDING TO MB-1 STORM DRAIN PROFILE

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



I-5 to MB-1 STORM DRAIN PROFILE

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



I-1 to ES-5 STORM DRAIN PROFILE

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

STORM DRAIN STRUCTURE SCHEDULE				
NO.	TYPE	STANDARD DETAIL	RIM ELEV.	THROAT ELEV.
I-1	TYPE 'S' INLET	HO.CO. D-4.22	370.00	-
I-2	TYPE 'D' INLET	HO.CO. D-4.10	-	370.75
I-3	24" NYLOPLAST DRAIN	HO.CO. D-4.10	371.50	-
I-4	TYPE 'D' INLET	HO.CO. D-4.10	-	370.00
I-5	24" NYLOPLAST DRAIN	HO.CO. D-4.10	371.50	-
MH-1	48" PRECAST MANHOLE	HO.CO. G-5.12	374.10	-
ES-1	CONCRETE END SECTION	HO.CO. D-5.51	-	-
ES-2	CONCRETE END SECTION	HO.CO. D-5.51	-	-
ES-3	CONCRETE END SECTION	HO.CO. D-5.51	-	-
ES-4	CONCRETE END SECTION	HO.CO. D-5.51	-	-
ES-5	CONCRETE END SECTION	HO.CO. D-5.51	-	-

STORM DRAIN PIPE SCHEDULE				
FROM	TO	SIZE	TYPE	LENGTH
I-1	ES-5	15	RCP CL IV	81
I-2	MH-1	15	RCP CL IV	134
MH-1	ES-3	15	RCP CL III	51
I-4	ES-4	15	RCP CL III	44
BLDG	I-3	6	PVC	24
I-3	MB-1	10	PVC	52
BLDG	I-3	6	PVC	145
I-5	MB-1	10	PVC	43
ES-1	ES-2	12	RCP	64
	UNDERDRAIN	4	PERF. PVC	514

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 8-29-17
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 9-13-17
 DIRECTOR
 DATE: 9-13-17

REVISIONS	
REVISION	DATE
REVISED SITE DEVELOPMENT PLAN	6/28/17
Q10/V10, I-2 TO ES-3	
I-5 TO MB-1, I-1 TO ES-5	

HOWARD COUNTY

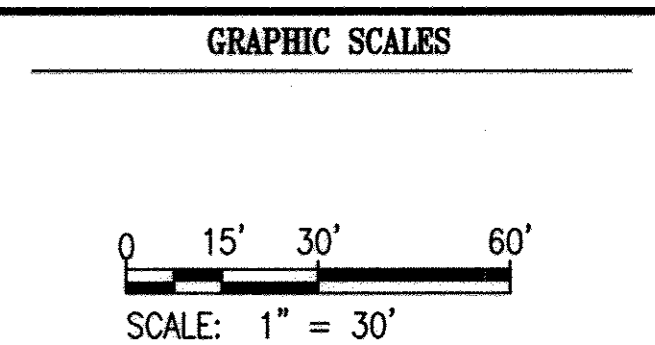
DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046

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



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

PROPERTY
 TAX MAP 35, GRID 3, PARCEL 512
 TAX MAP 35, GRID 2, PARCEL 427
 ZONING: NEWTOWN & R-20
 ELECTION DISTRICT 05



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: 09/22/2017.

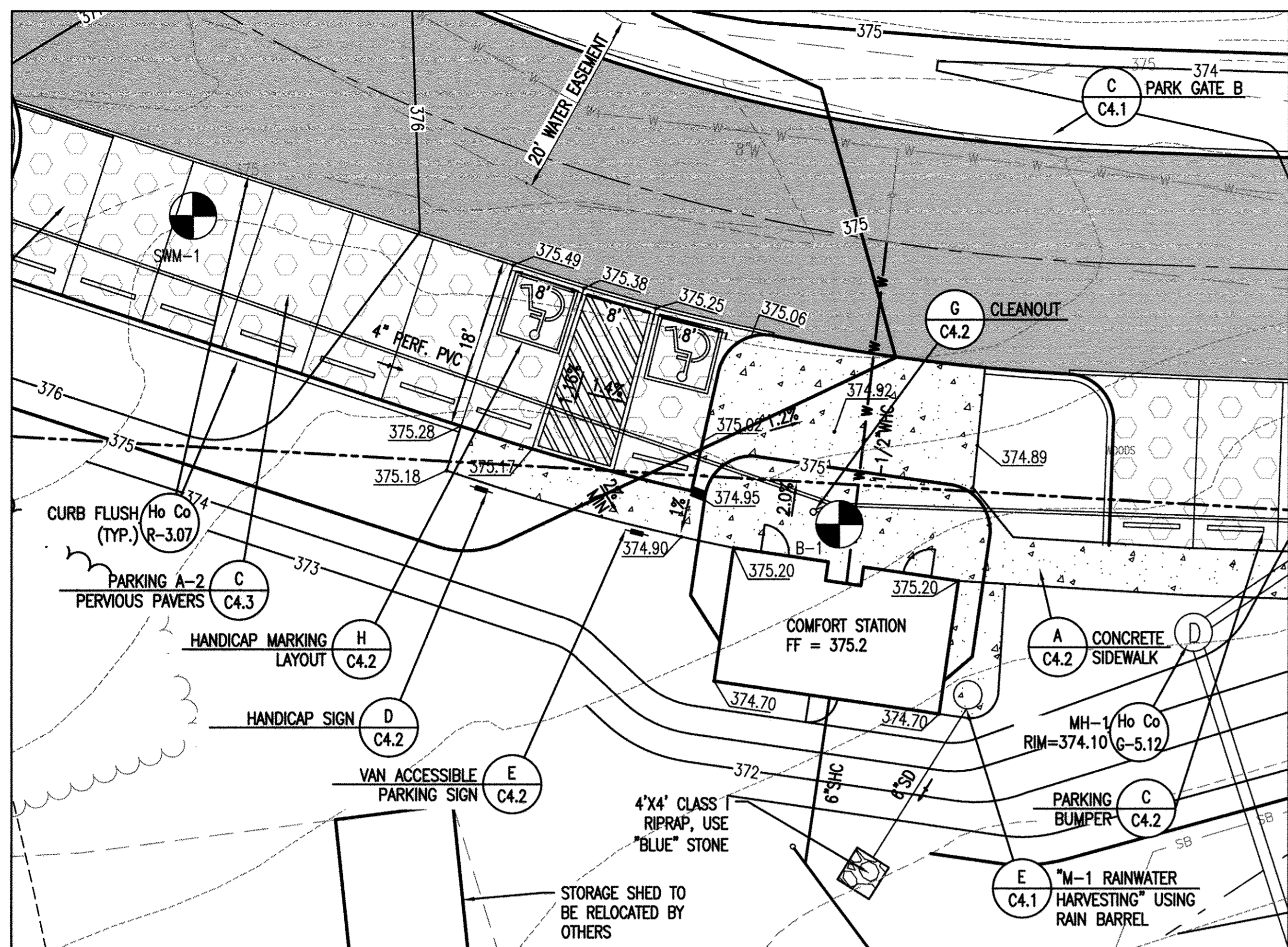
MPEA - SITE IMPROVEMENTS

STORM DRAIN PROFILES

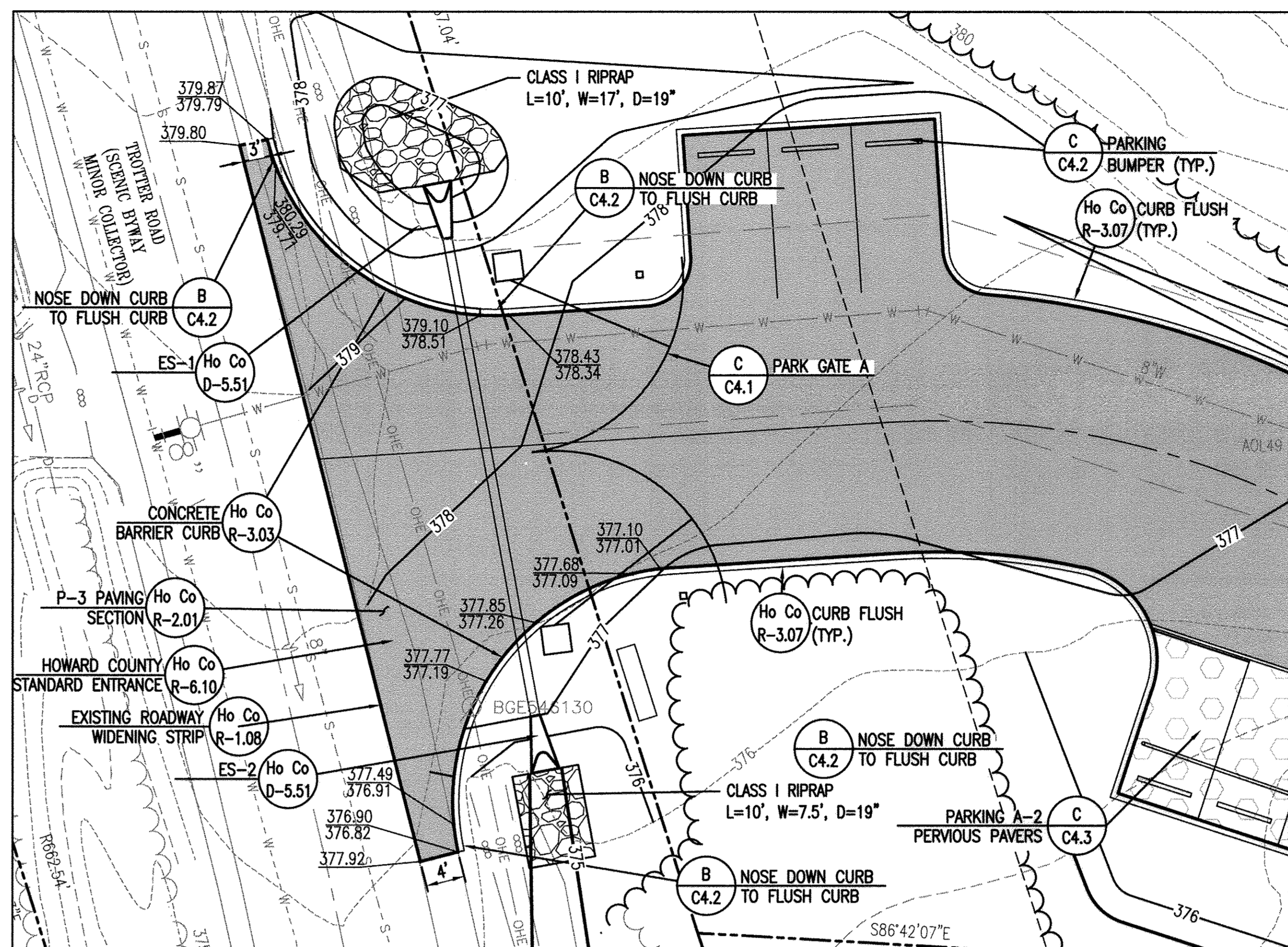
Drawing No.

C2.1

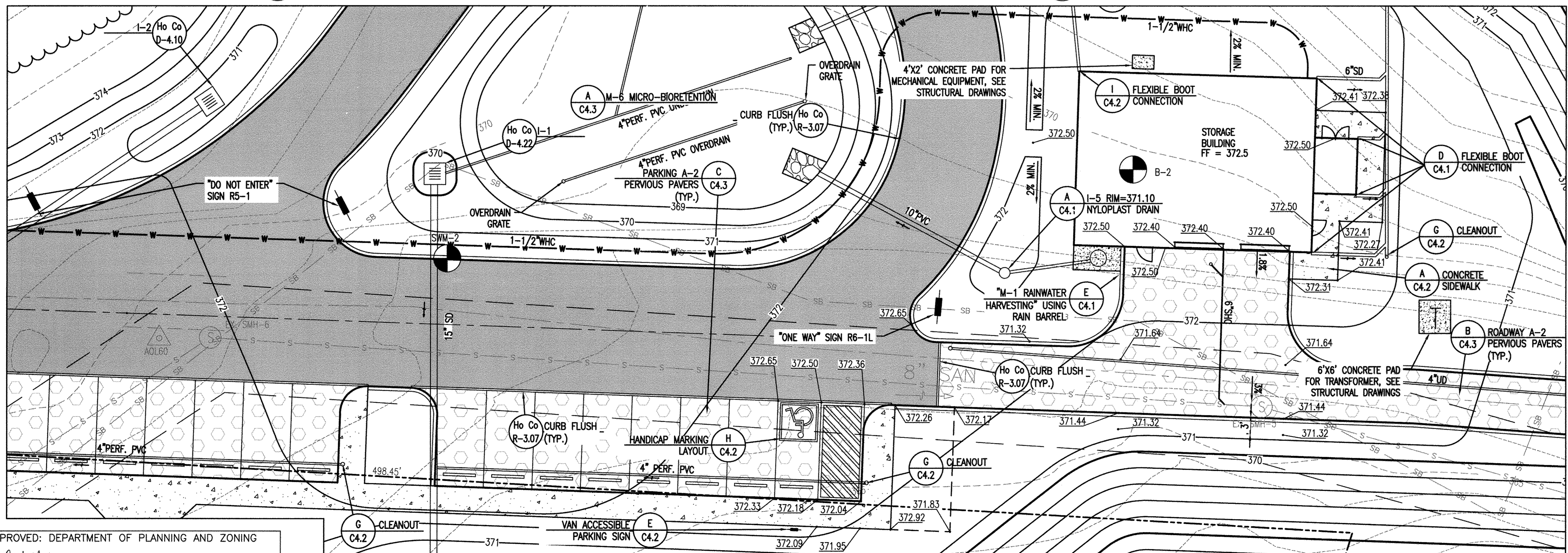
Scale: 1" = 30'
 Date: 09/12/2014 Sheet 9 of 27
 Des: BWJ/SAD Drawn: SAD Check: AUO



A ENLARGED COMFORT STATION PLAN
C3.1 SCALE: 1" = 10'



B ENLARGED ENTRANCE PLAN
C3.1 SCALE: 1" = 10'



C ENLARGED STORAGE BUILDING/STORMWATER MANAGEMENT PLAN
C3.1 SCALE: 1" = 10'

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division: *[Signature]* DATE: 8-29-17
 Chief, Division of Land Development: *[Signature]* DATE: 9-13-17
 Director: *[Signature]* DATE: 9-13-17

DRAWING NOTE:
INSTALL FLUSH CURB BETWEEN ALL ASPHALT AND PERVIOUS PAVERS TRANSITIONS.

REVISIONS	
▲	REVISED SITE DEVELOPMENT PLAN 6/28/17
	ADA SPOT SHOTS, PERVIOUS PAVERS, UNDERDRAINS

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: 410-235-3450 Fax: 410-243-5716

PROPERTY
 TAX MAP 35, GRID 3, PARCEL 512
 TAX MAP 35, GRID 2, PARCEL 427
 ZONING: NEWTOWN & R-20
 ELECTION DISTRICT 05

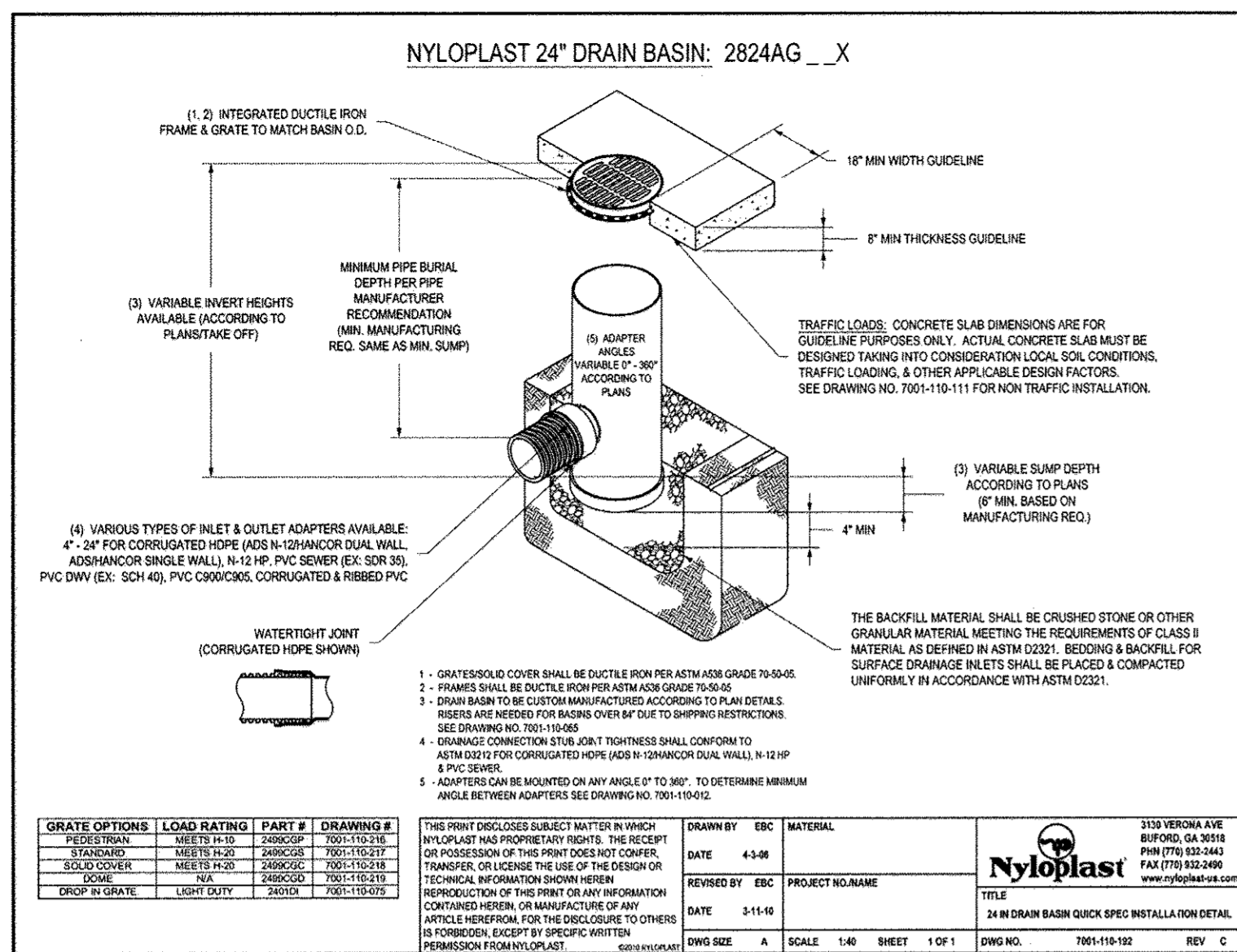
GRAPHIC SCALES
 0 5' 10' 20'
 SCALE: 1" = 10'

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: 09/22/2017.

MPEA - SITE IMPROVEMENTS

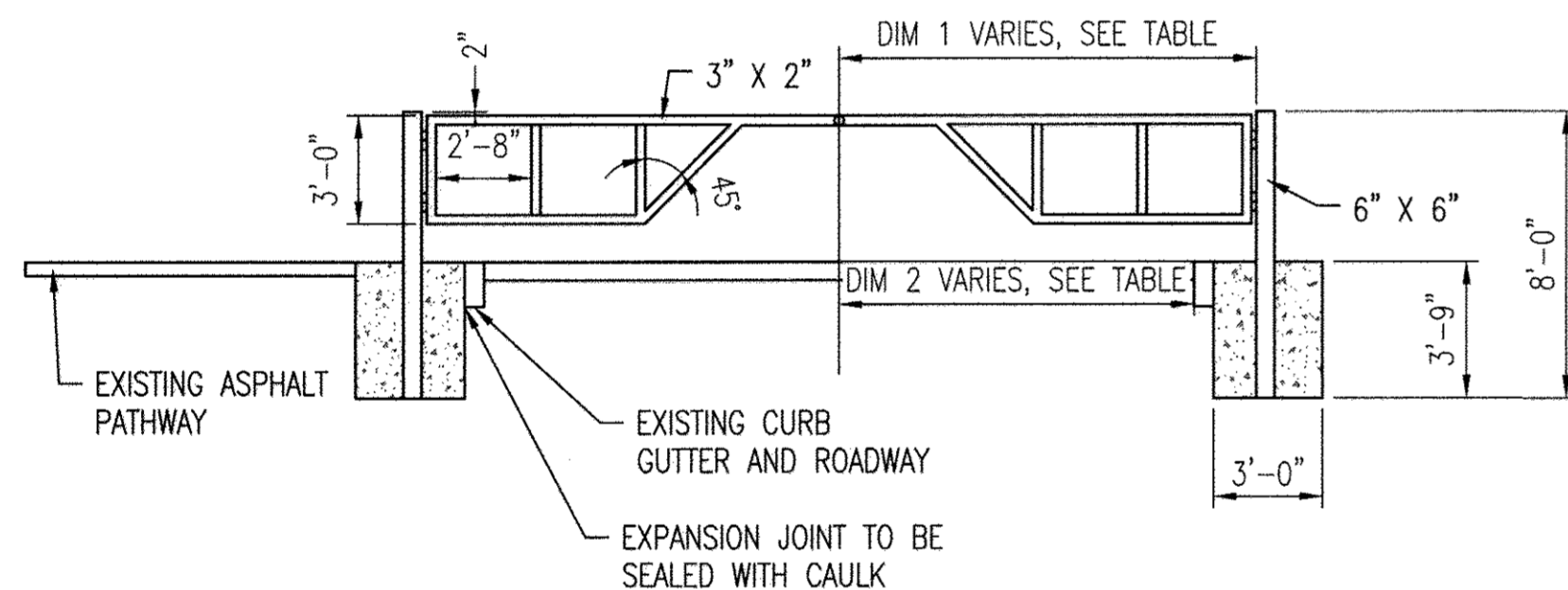
ENLARGED SITE PLANS
 Drawing No.
C3.1
 Scale: 1"=10'
 Date: 09/12/2014 Sheet 10 of 27
 Des: BWJ/SAD Drawn: SAD Check: AUO



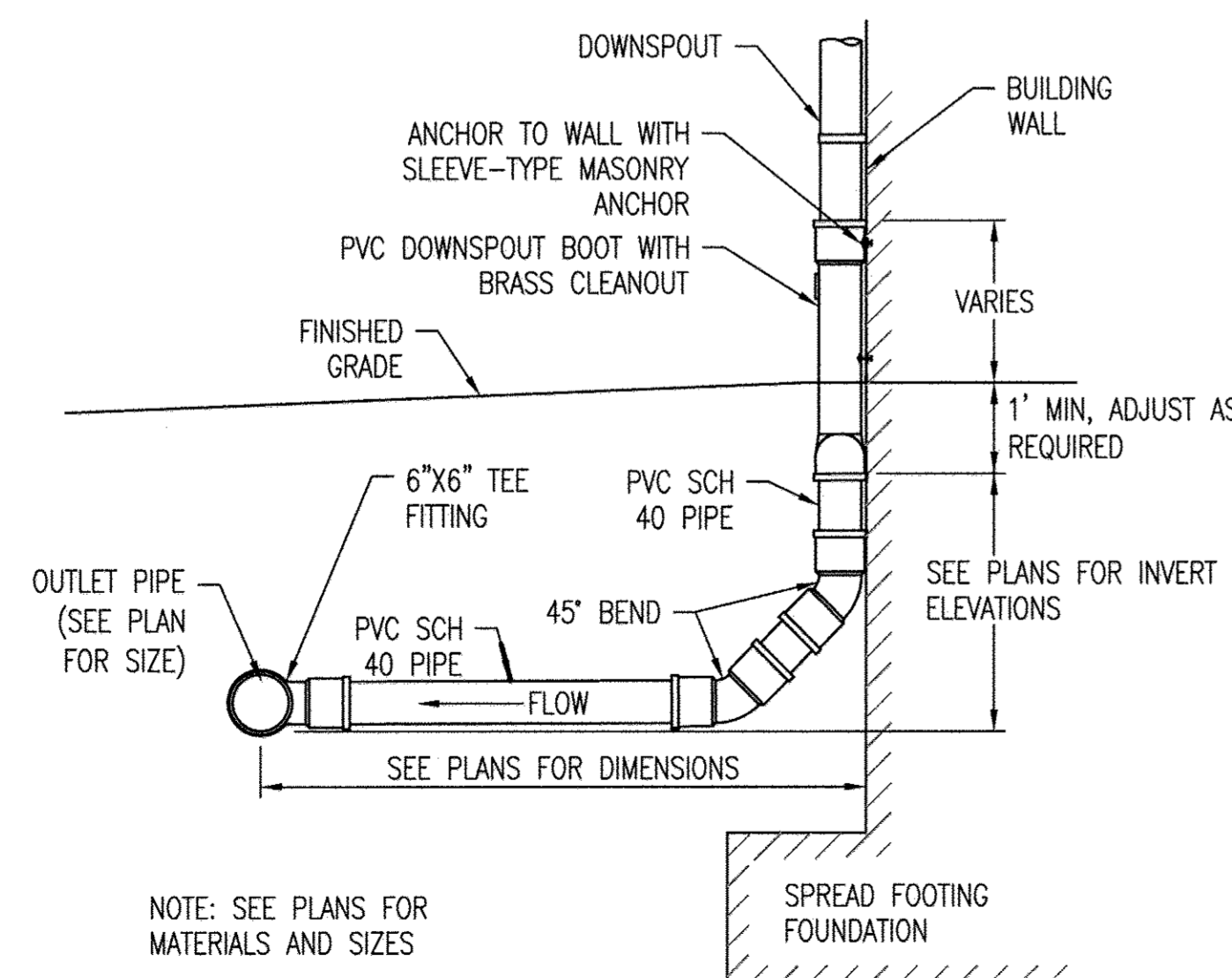
A 24\"/>

NOTES:

- GATE SHALL SWING IN TOWARDS PARK.
- ALL WELDING TO BE CLEANED AND GROUND SMOOTH.
- WELD FLANGES AT ENDS OF TOP RAILS, ONE SIDE TO HAVE SLOT OPENING TO FIT OVER WELDED U-BOLT ON OTHER SIDE FOR PADLOCK ATTACHMENT.
- INSTALL 4"x4" HOLD-OPEN POSTS ON EACH SIDE OF GATE, 2 FT. 7 IN FROM EDGE OF ROADWAY, AND APPROPRIATE DISTANCE FROM GATEPOSTS.
- GREASE ALL FITTINGS.
- ATTACH U-BOLT WITH STAINLESS STEEL CLIP TO HOLD OPEN POST AND WELD U-BOLT TO GATE FOR EASY ATTACHMENT AND RELEASE OF GATE.
- USE 7" BARREL HINGES WITH STAINLESS PIN, AND WELD PADS 3"x1-1/2"x3/8" THICK. GATE HINGES TO BE PLUMB AND SQUARE WITH GATE POST.

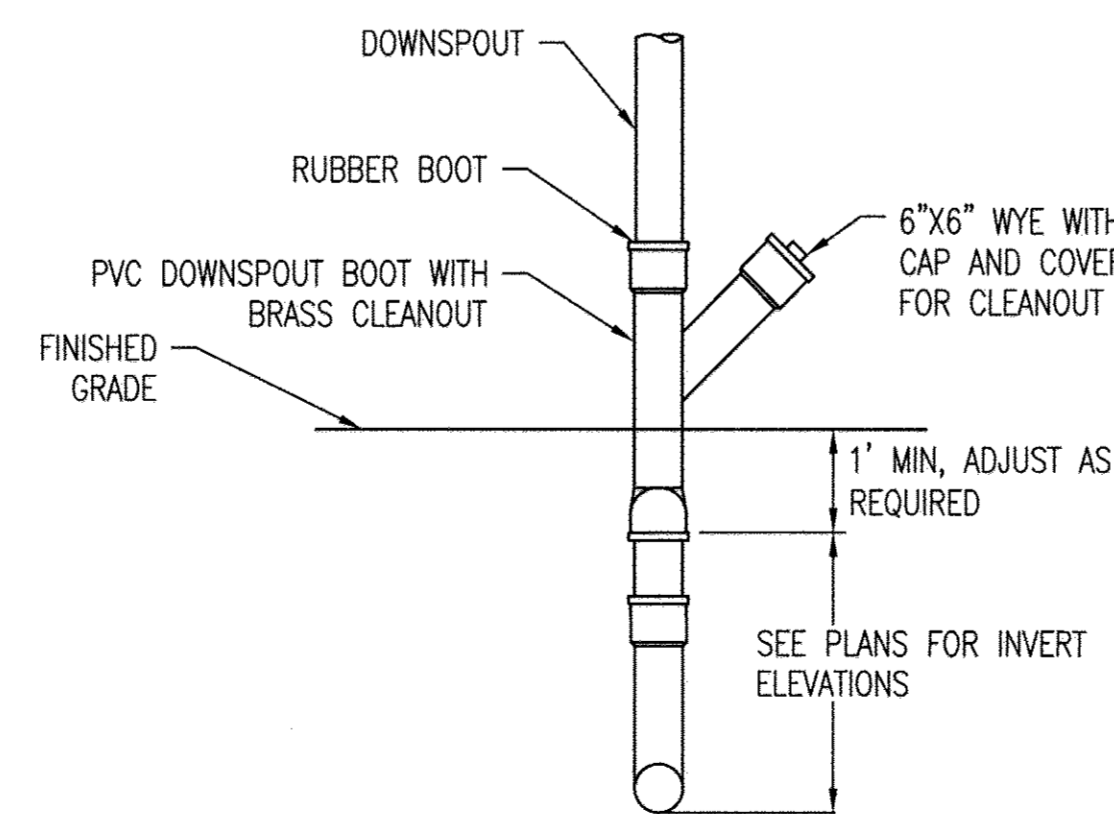


C PARK GATE DETAIL
C4.1 NOT TO SCALE



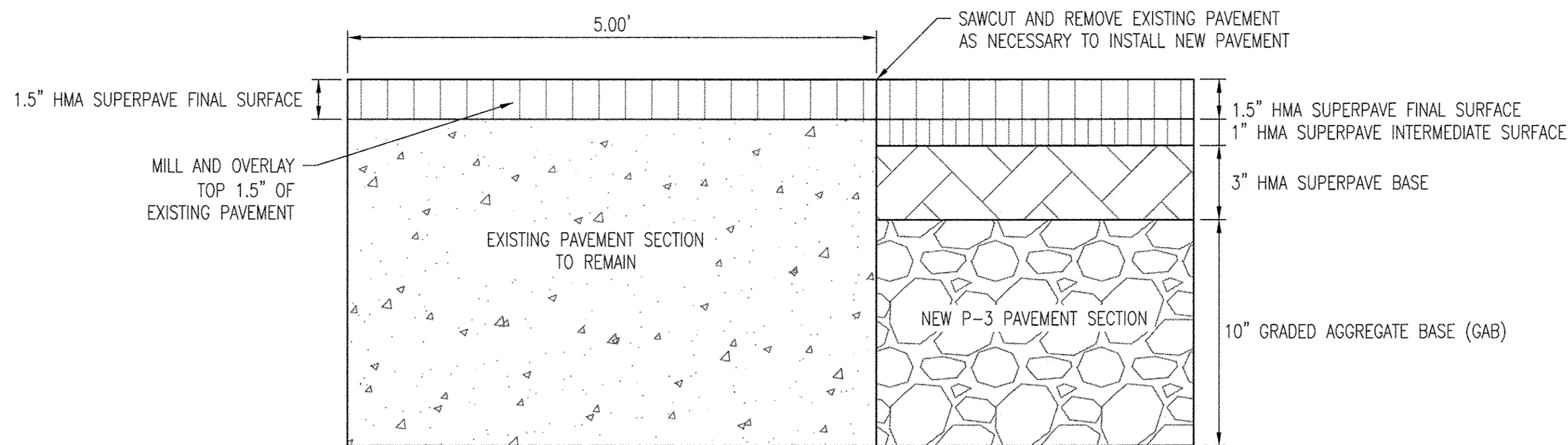
SIDE VIEW

GATE	DIM 1	DIM 2
A	20.00'	16.88'
B	14.14'	11.97'

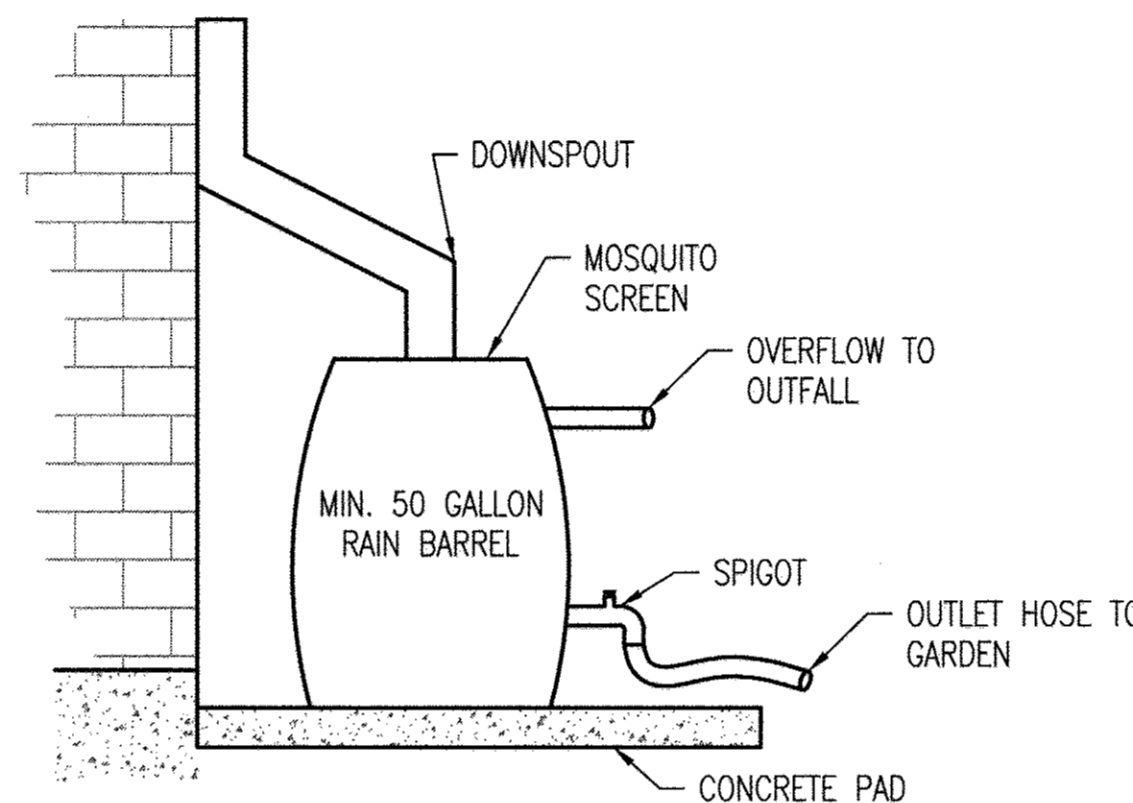


FRONT VIEW

D FLEXIBLE BOOT CONNECTION
C4.1 NOT TO SCALE



B LAP JOINT DETAIL
C4.1 NOT TO SCALE

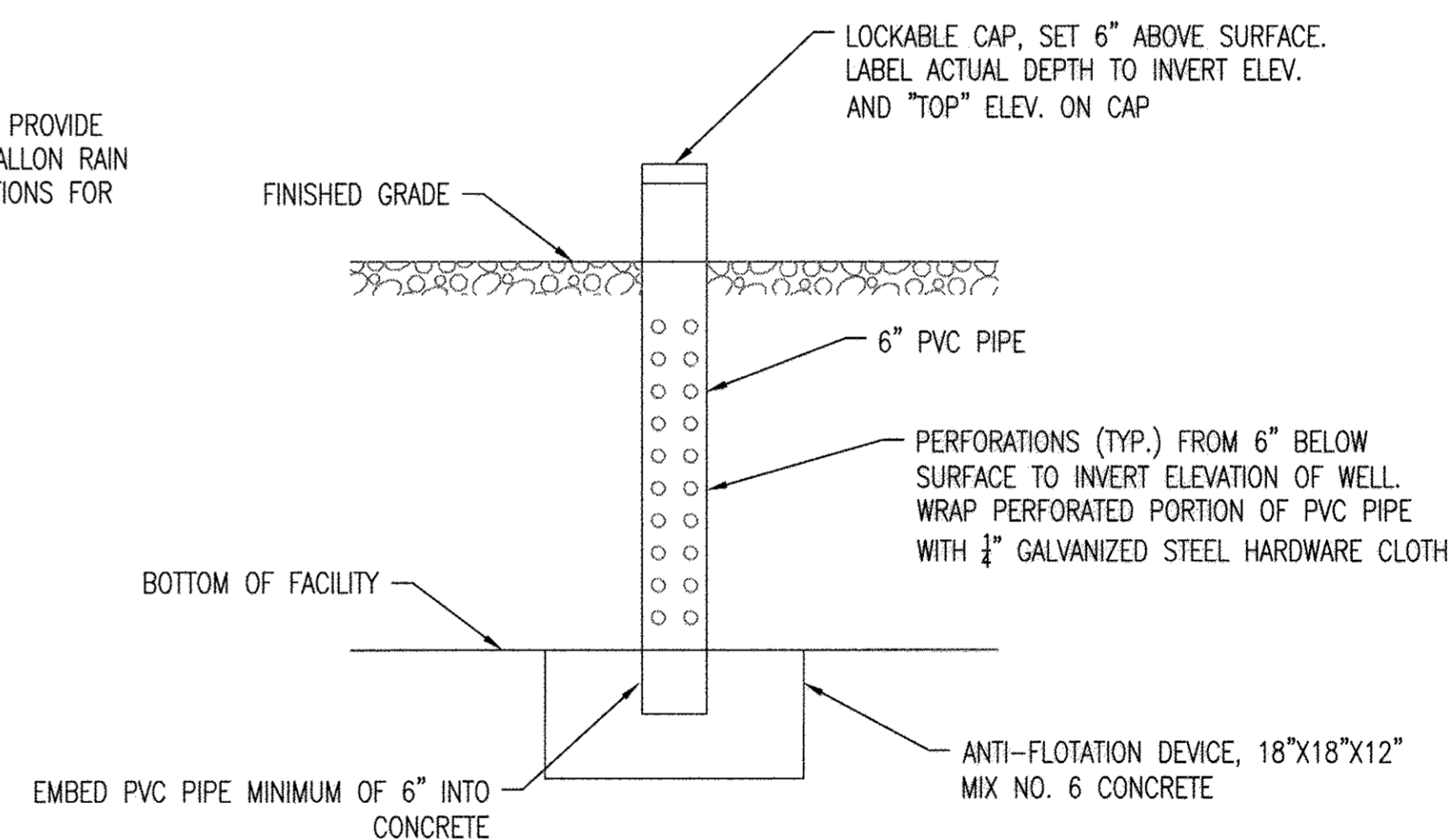


E RAIN BARREL
C4.1 NOT TO SCALE

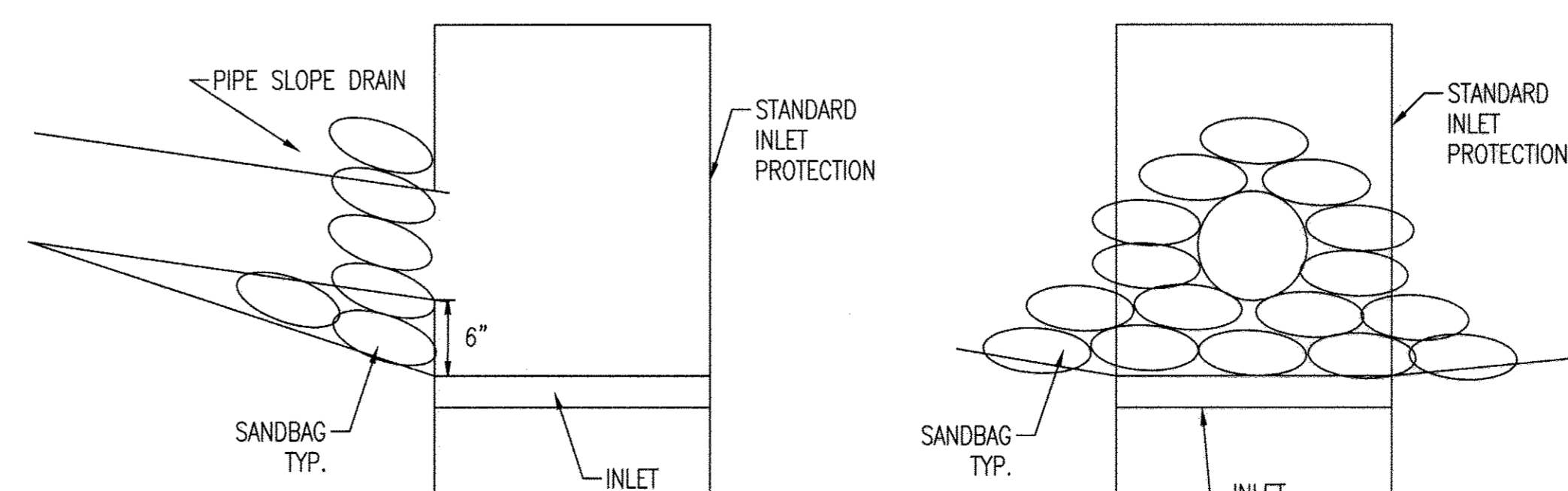
NOTE: CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF 50 GALLON RAIN BARREL AND ALL CONNECTIONS FOR APPROVAL BY ENGINEER

OPERATION AND MAINTENANCE SCHEDULE FOR RAIN BARRELS

- LEAF SCREENS, GUTTERS, AND DOWNSPOUTS SHOULD BE CLEANED TO PREVENT CLOGGING. BUILT-UP DEBRIS CAN ALSO FOSTER BACTERIAL GROWTH IN GUTTERS AND DOWNSPOUTS.
- STORAGE TANK LIDS AND MOSQUITO SCREENS SHOULD BE INSPECTED AND CLEANED.
- DAMAGED COMPONENTS SHOULD BE REPLACED AS NEEDED.
- TO AVOID FREEZING OF COMPONENTS, ABOVE GROUND SYSTEMS SHOULD BE DISCONNECTED, DRAINED, AND CLEANED AT THE START OF THE WINTER SEASON.
- UNDERGROUND SYSTEM CONNECTIONS SHOULD BE CHECKED FOR FROZEN LINES AND ICE BLOCKAGES DURING WINTER.
- INDOOR SYSTEMS MAY REQUIRE MORE SPECIFIC MAINTENANCE.



F OBSERVATION WELL
C4.1 N.T.S.



G PIPE SLOPE DRAIN/INLET PROTECTION CONNECTION
C4.3 NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

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

8-29-17
 9-13-17
 9-13-17

REVISIONS	
REVISIONED SITE DEVELOPMENT PLAN	6/28/17
PSD/INLET CONNECTION,	
OBSERVATION WELL	

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: 410-235-3450 Fax: 410-243-5716

PROPERTY
 TAX MAP 35, GRID 3, PARCEL 512
 TAX MAP 35, GRID 2, PARCEL 427
 ZONING: NEWTOWN & R-20
 ELECTION DISTRICT 05

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. 19376
 EXPIRATION DATE: 09/22/2017

MPEA - SITE IMPROVEMENTS

SITE DETAILS

Drawing No.
C4.1

Scale: NOT TO SCALE
 Date: 09/12/2014 Sheet 11 of 27
 Des: BWJ/SAD Drawn: SAD Check: AUO

REVISIONS	
△	REVISED SHEET TOTAL 6/28/17

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

WR&A
 WHITMAN, REQUARDT
 & ASSOCIATES, LLP
 801 South Caroline Street, Baltimore, Maryland 21203
 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 35, GRID 3, PARCEL 512
 TAX MAP 35, GRID 2, PARCEL 427

**ZONING: NEWTOWN & R-20
 ELECTION DISTRICT 05**

GRAPHIC SCALES

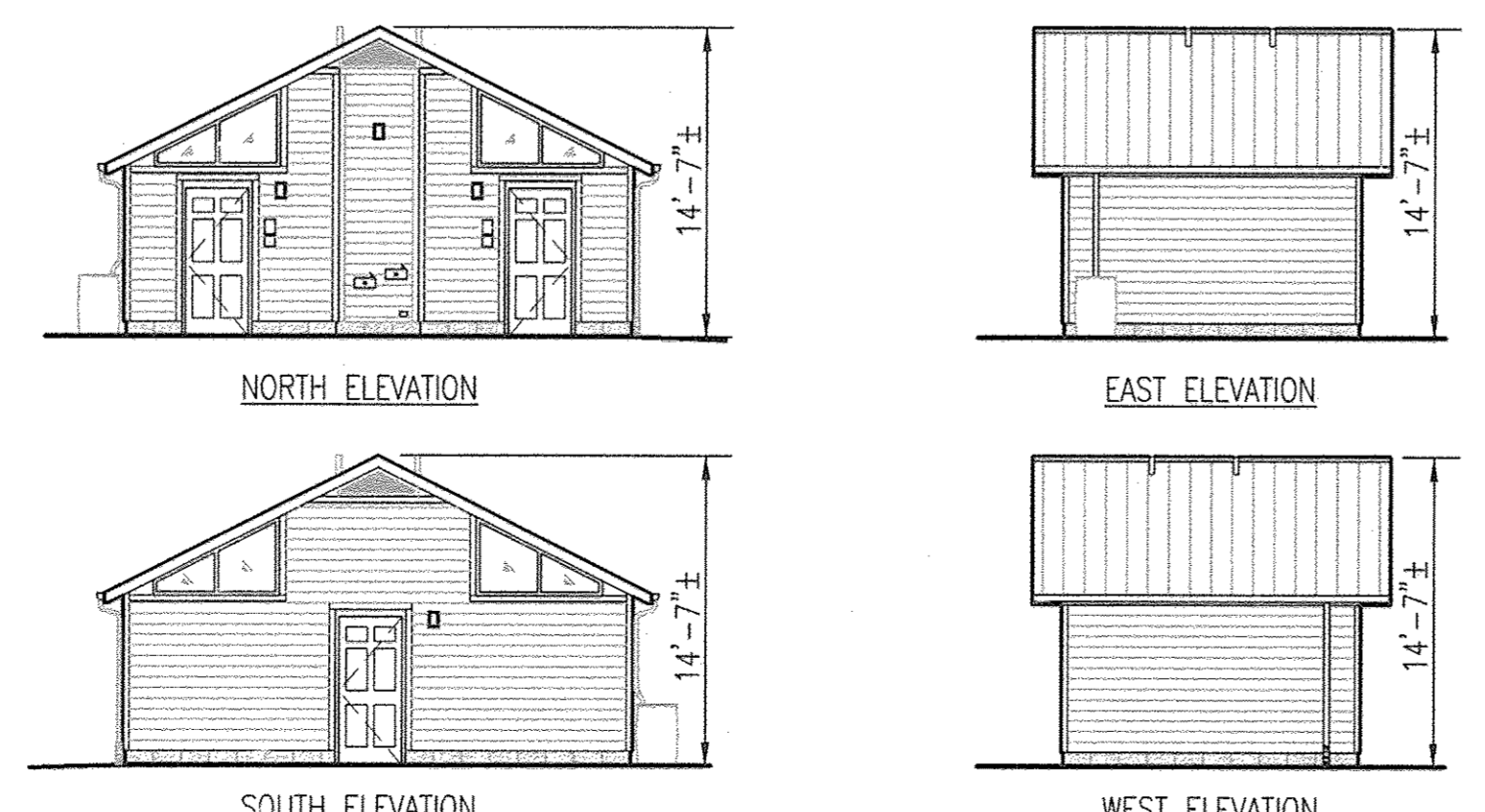
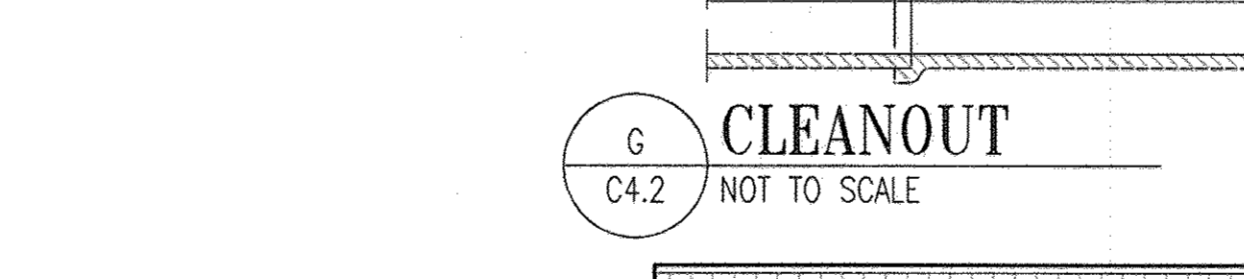
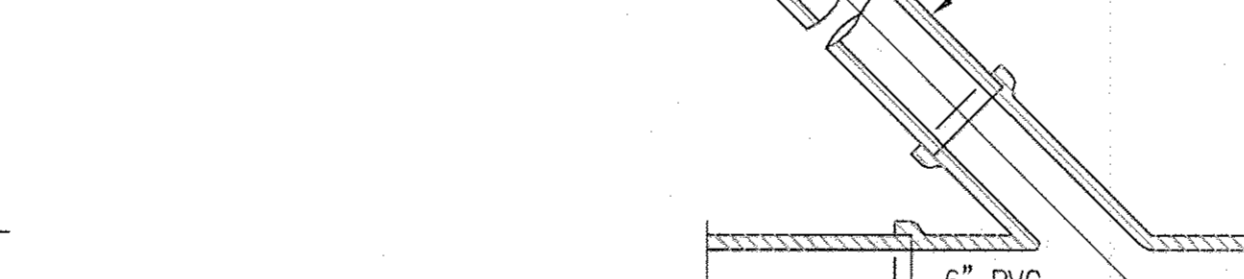
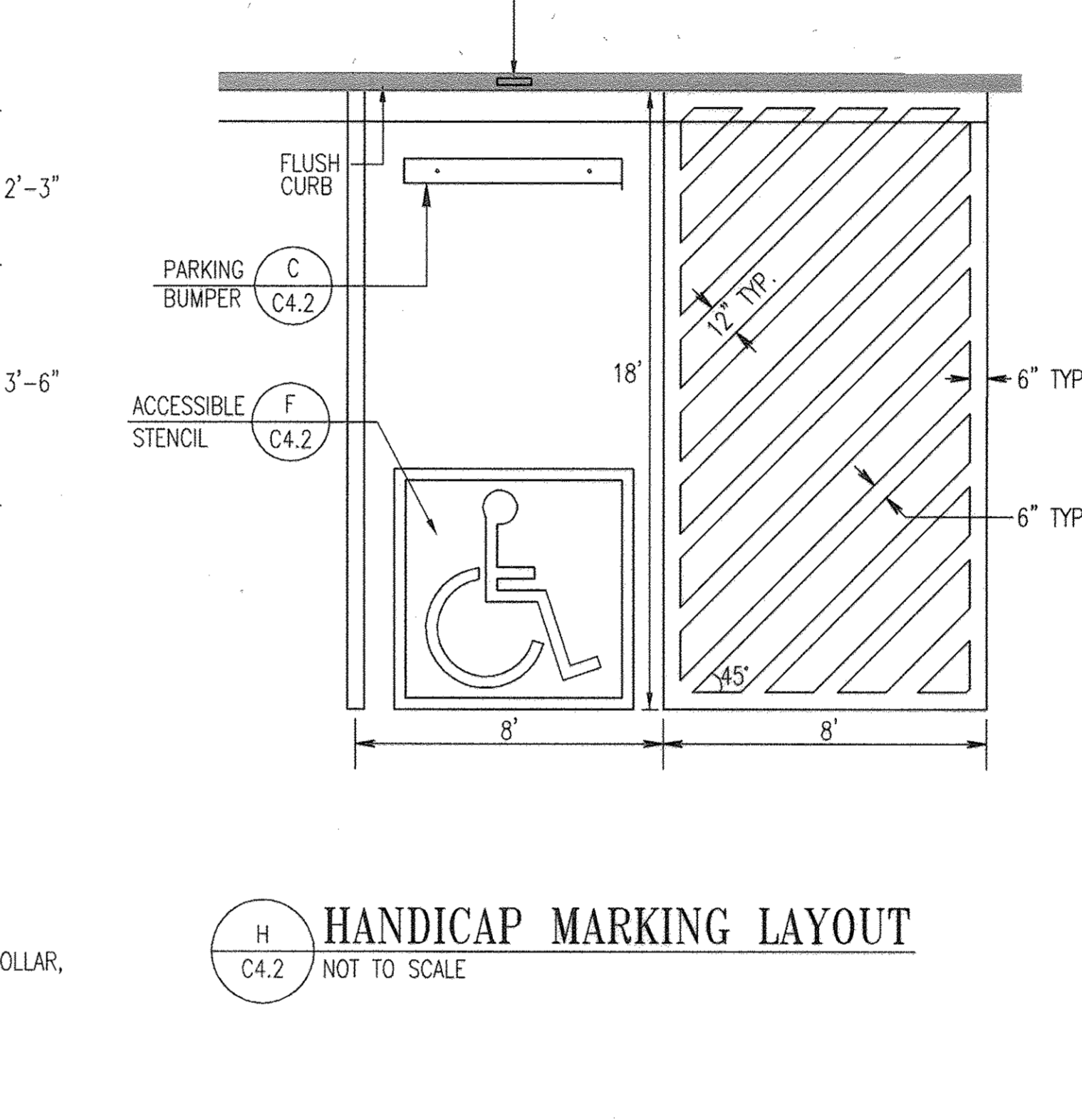
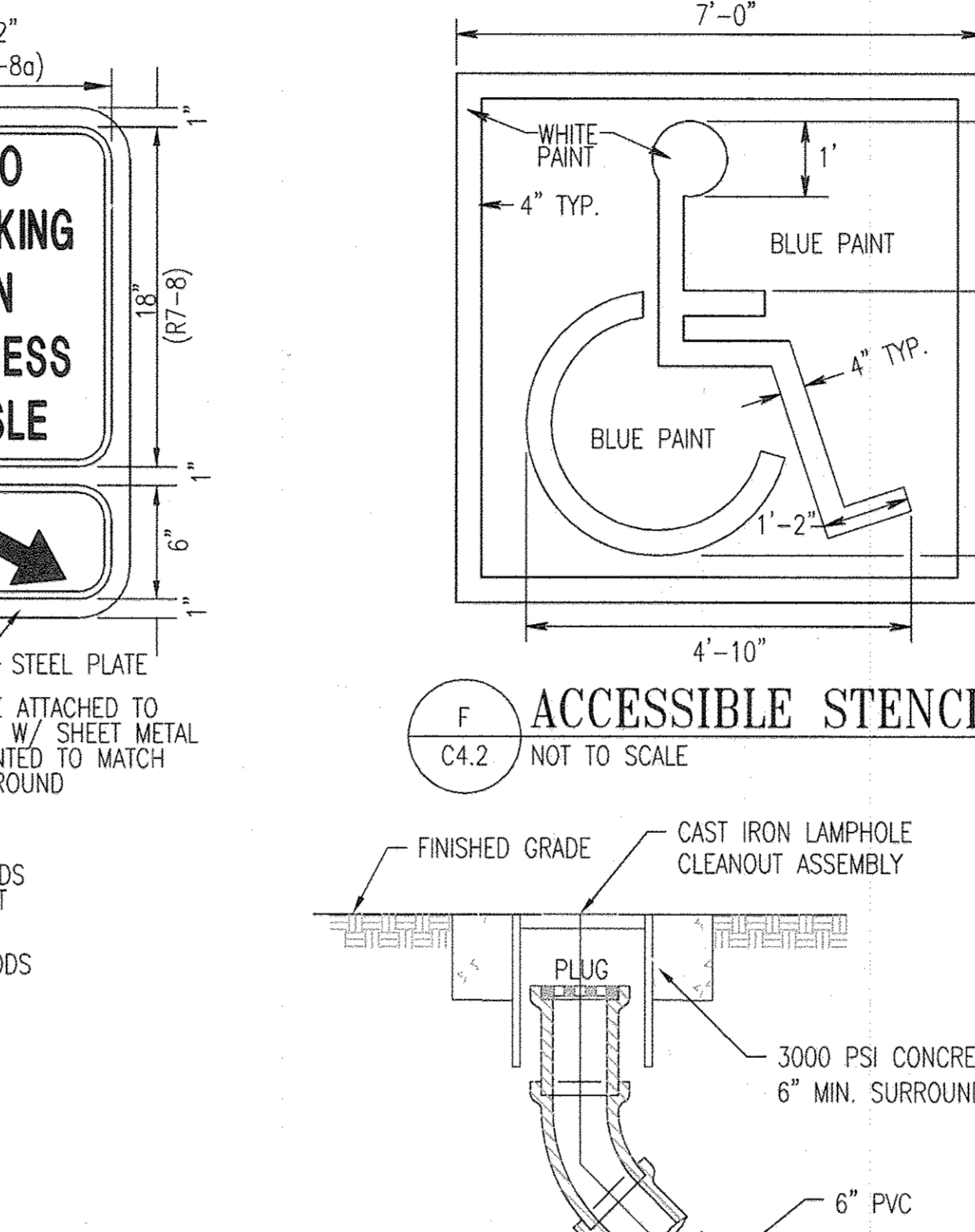
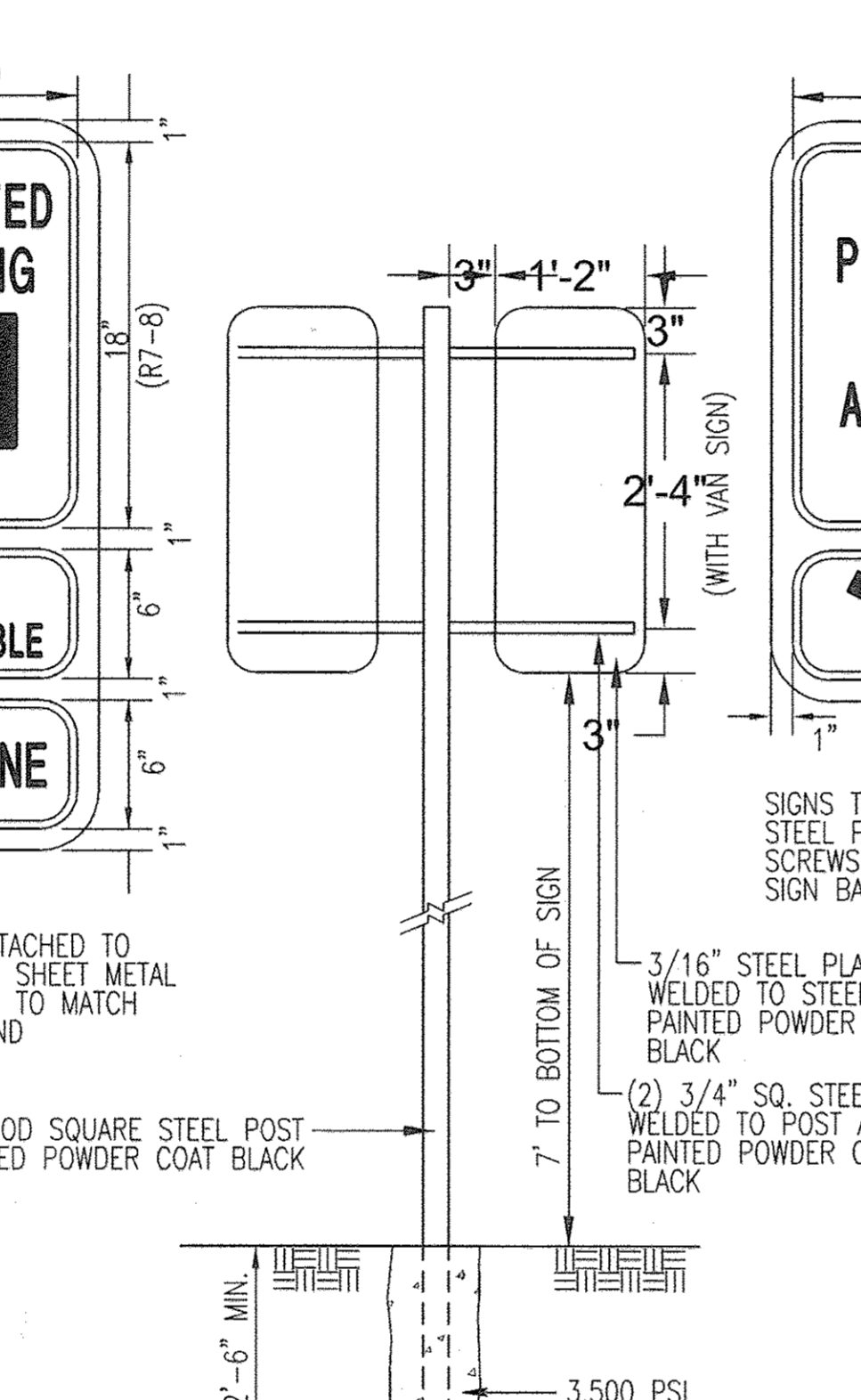
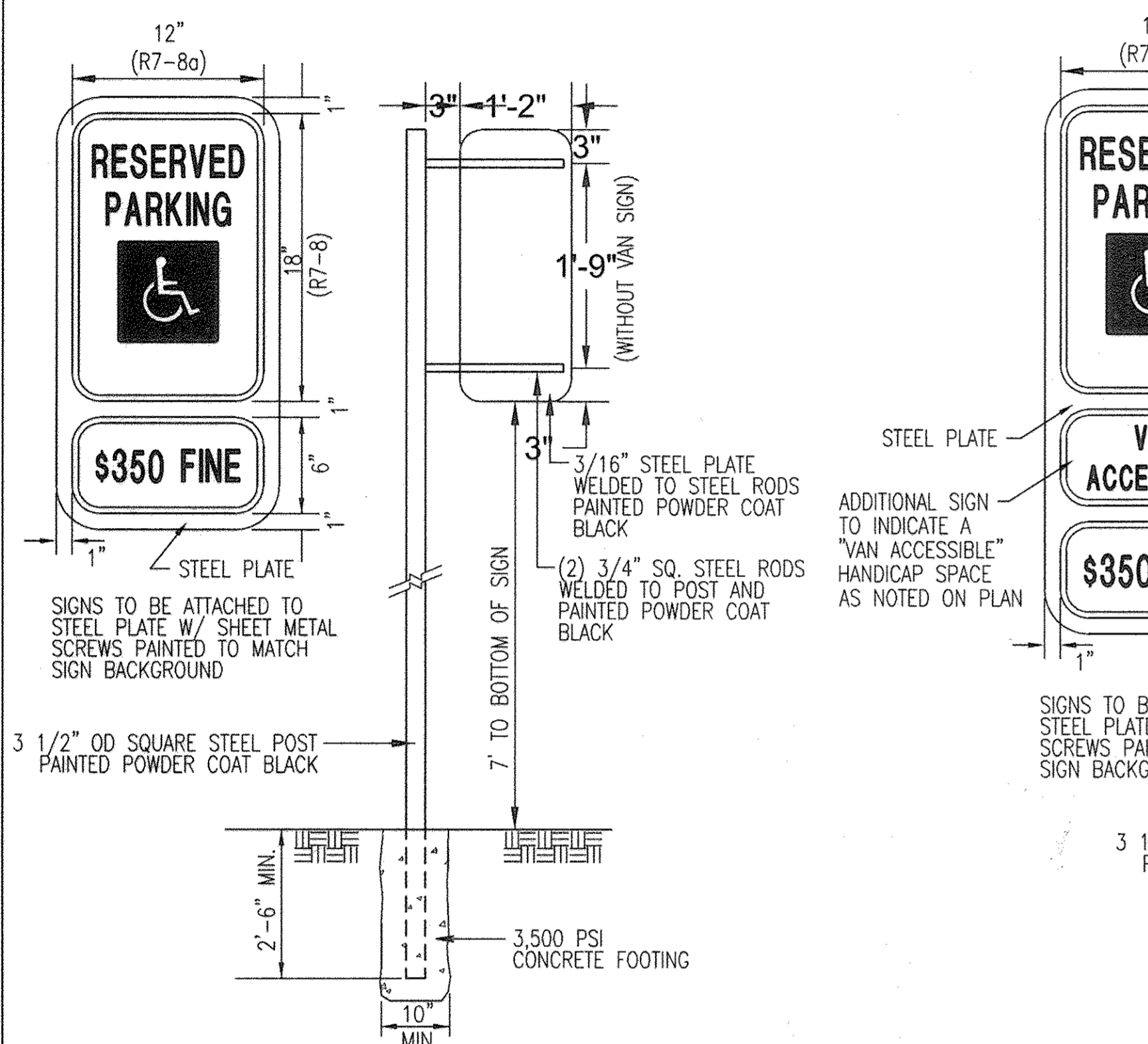
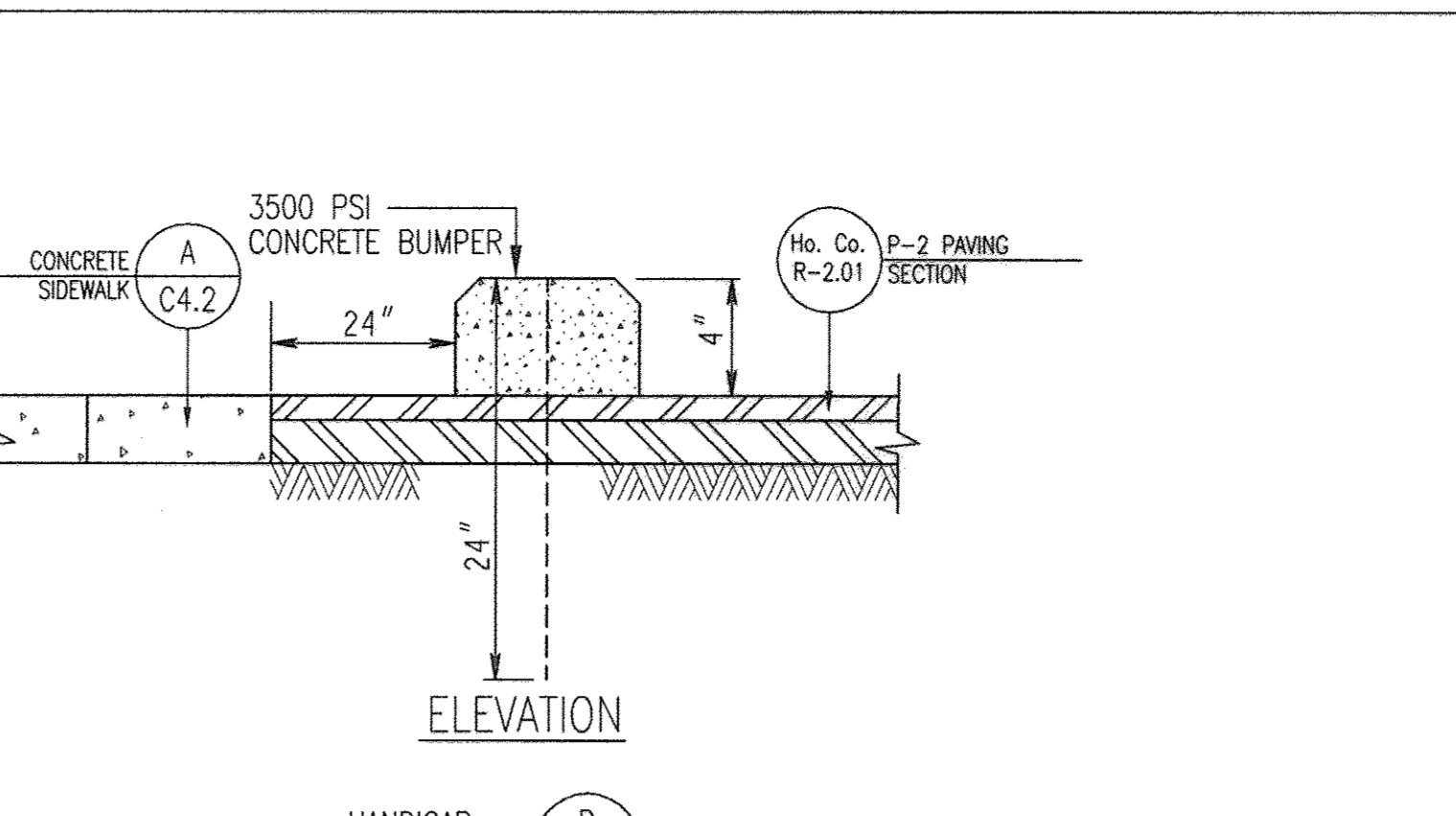
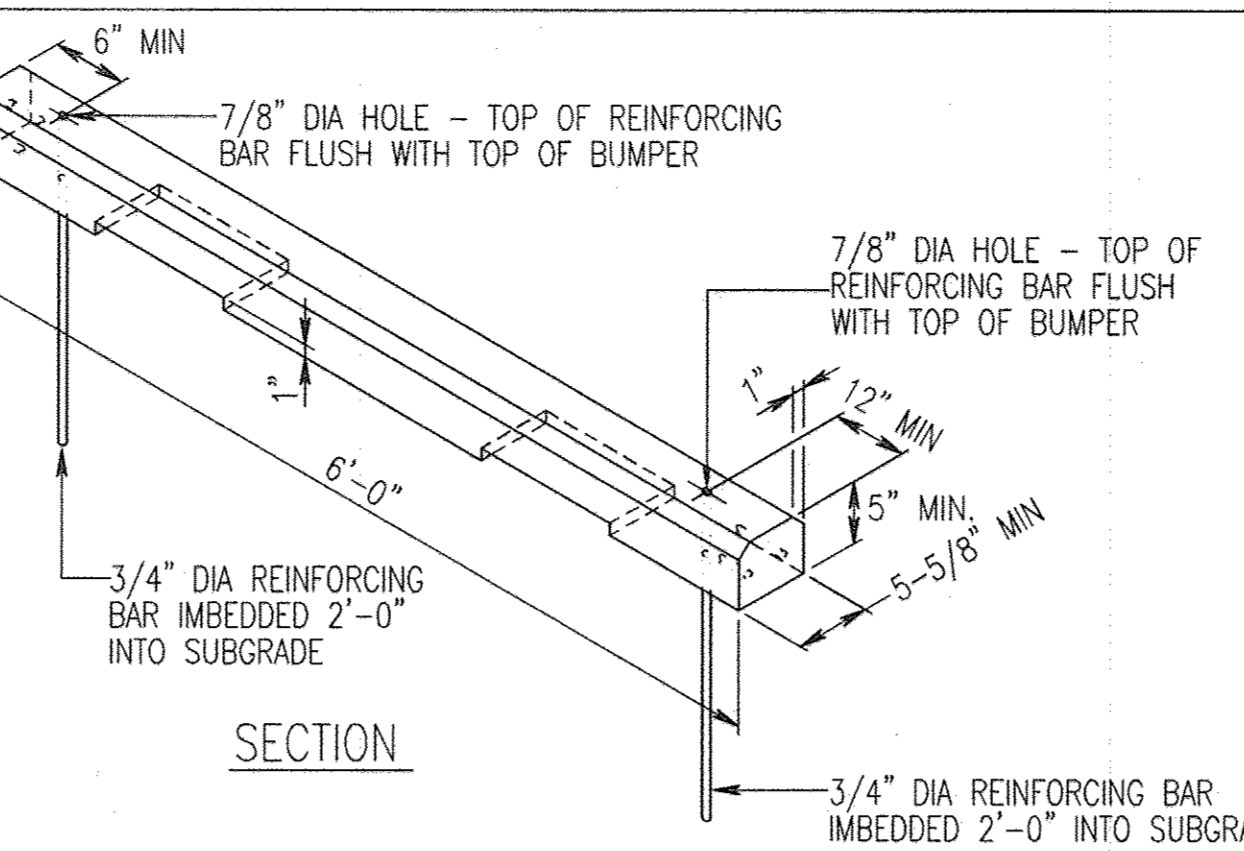
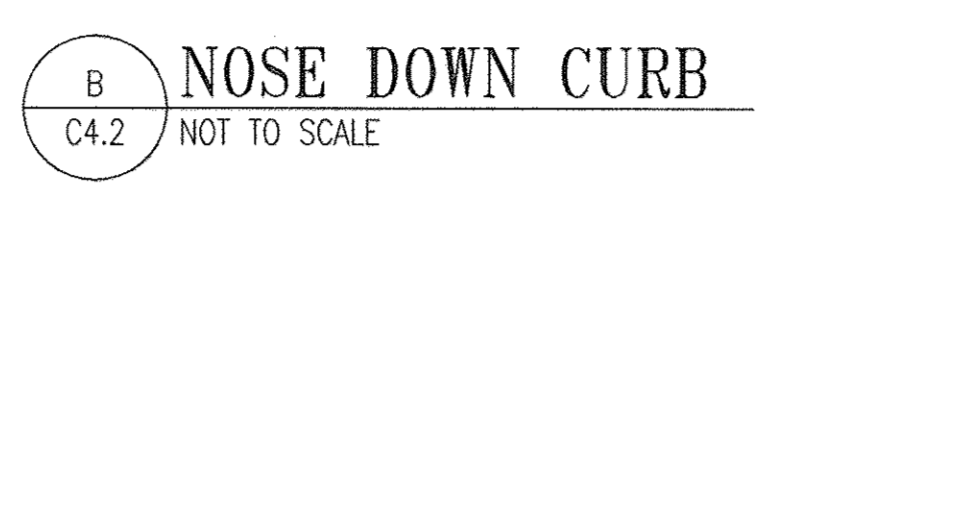
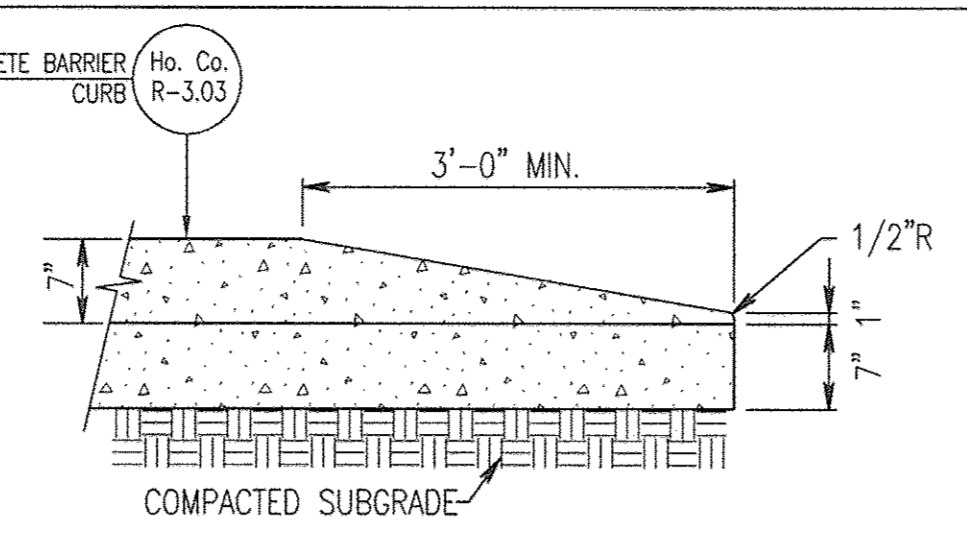
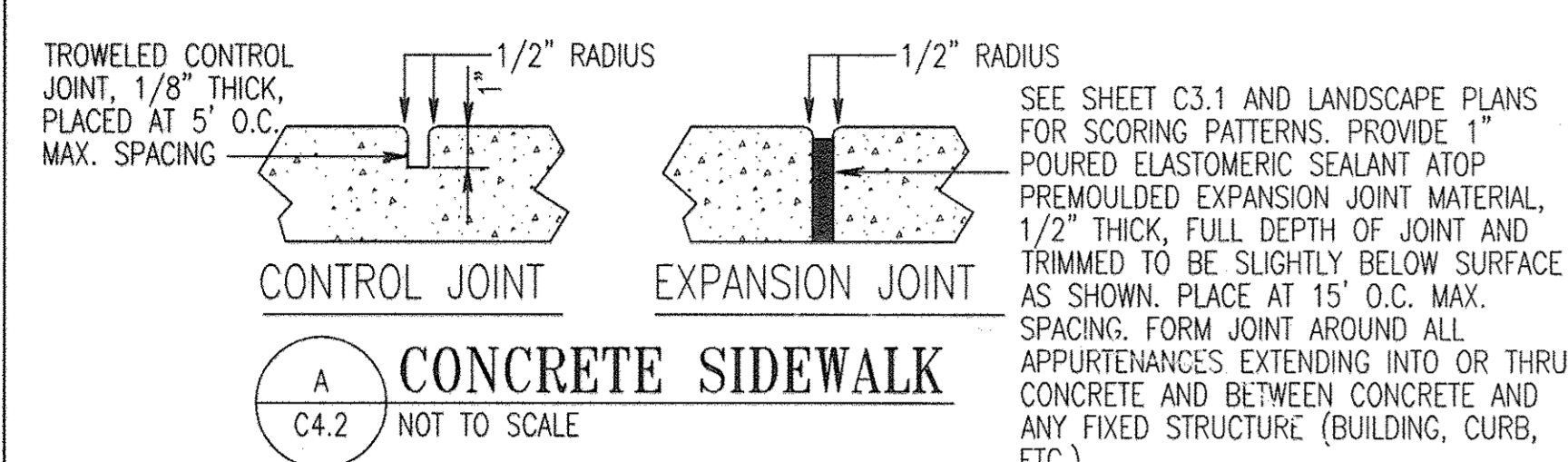
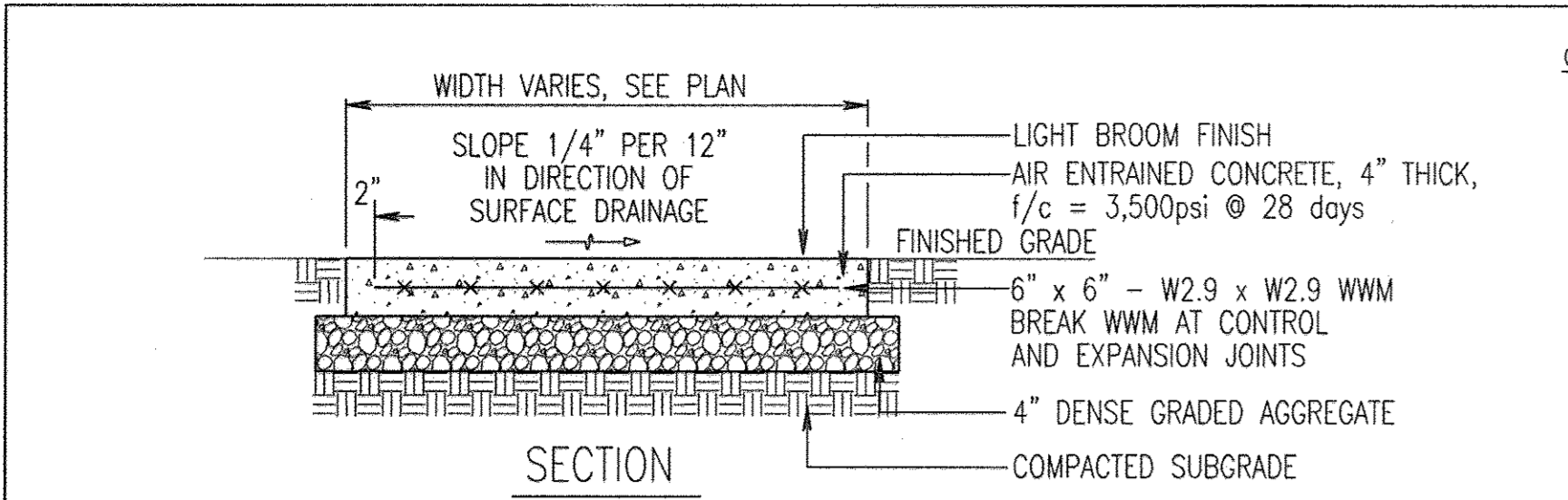
SIGNATURE



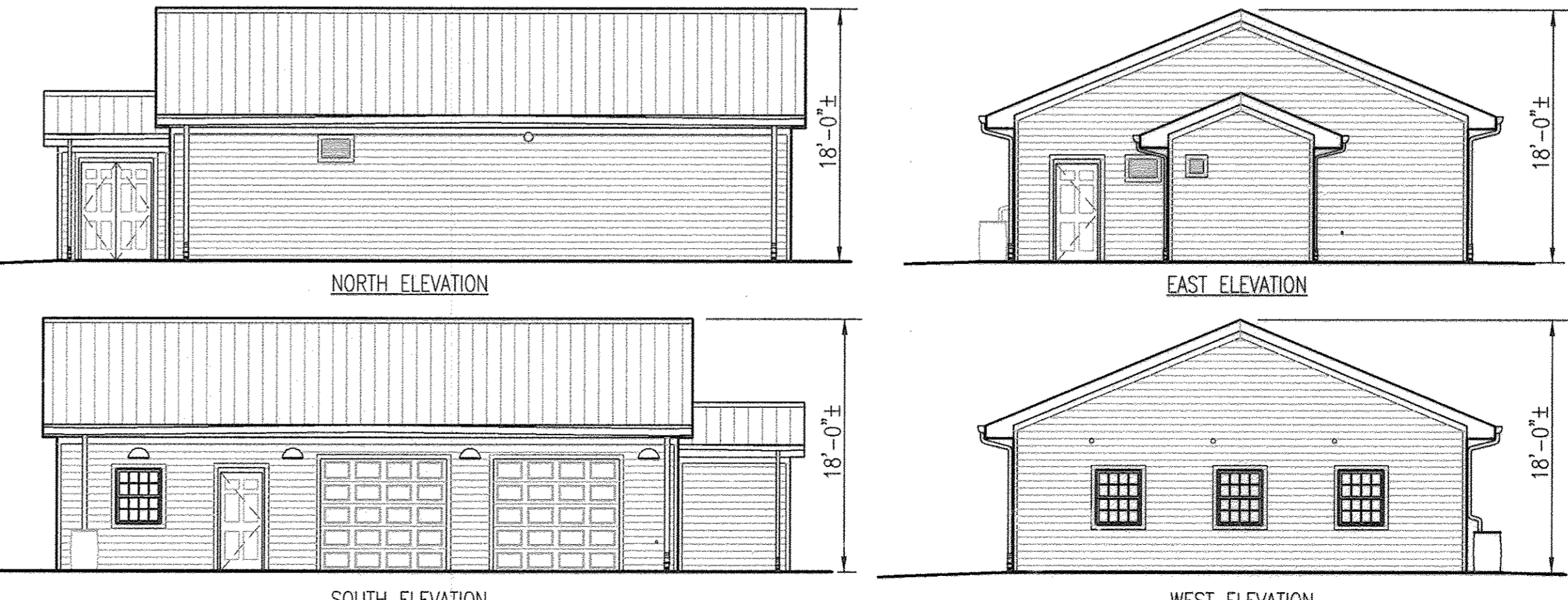
PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE
 PREPARED OR APPROVED BY ME, AND THAT I AM A DULY
 LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF
 THE STATE OF MARYLAND, LICENSE NO. 19376
 EXPIRATION DATE: 09/22/2015

**MPEA - SITE
 IMPROVEMENTS**

SITE DETAILS	
Drawing No.	C4.2
Scale:	NOT TO SCALE
Date:	09/12/2014
Sheet:	12 of 27
Des:	BWJ/SAD
Drawn:	SAD
Check:	AUO



I COMFORT STATION ELEVATIONS
 C4.2 NOT TO SCALE



J STORAGE BUILDING ELEVATIONS
 C4.2 NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development & Planning Division 10-2-14
 Chief, Division of Land Dev. 10-10-14
 10/10/14

SOIL BORING LOG																																																																																																									
Client: <u>Whitman, Reardon & Associates, LLP</u>			Boring #: <u>B-1</u>			Project Name: <u>Middle Palmetum Environmental Area</u>		Job #: <u>HRGA H.O.# 31750</u>																																																																																																	
Location: <u>5795 Trotter Road - Clarksville Maryland 21032</u>						Date Started: <u>08/22/2013</u> Date Completed: <u>08/22/2013</u>																																																																																																			
<table border="1"> <tr> <th>DEPTH (FEET)</th> <th>SOIL DESCRIPTION</th> <th>BLK.</th> <th>NO.</th> <th>TYPE</th> <th>REV./IN.</th> <th>REMARKS</th> <th>DEPTH (FEET)</th> <th>NO.</th> <th>TYPE</th> <th>REV./IN.</th> <th>REMARKS</th> </tr> <tr> <td>0.0</td> <td>Brown, dry, very loose to medium dense, fine, sandy silty, with trace of clay, gravel and glass fragments, FLL.</td> <td></td> <td>1</td> <td>SPT</td> <td>1-1-2</td> <td>10"</td> <td>0</td> <td></td> <td></td> <td></td> <td>0 No water encountered.</td> </tr> <tr> <td>4.0</td> <td>Brown, dry, medium dense, SANDY SILT, with trace of clay and mica</td> <td></td> <td>2</td> <td>SPT</td> <td>3-7-14</td> <td>15"</td> <td></td> <td></td> <td></td> <td></td> <td>2) Boring grouted from 0.0 to 15.0 ft with portland cement at completion.</td> </tr> <tr> <td></td> <td></td> <td></td> <td>3</td> <td>SPT</td> <td>7-9-11</td> <td>15"</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>4</td> <td>SPT</td> <td>8-7-5</td> <td>12"</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>5</td> <td>SPT</td> <td>8-7-5</td> <td>10"</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>15.0</td> <td></td> <td></td> <td>6</td> <td>SPT</td> <td>8-7-8</td> <td>10"</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="11">Bottom of test boring 15.0 feet.</td> </tr> </table>											DEPTH (FEET)	SOIL DESCRIPTION	BLK.	NO.	TYPE	REV./IN.	REMARKS	DEPTH (FEET)	NO.	TYPE	REV./IN.	REMARKS	0.0	Brown, dry, very loose to medium dense, fine, sandy silty, with trace of clay, gravel and glass fragments, FLL .		1	SPT	1-1-2	10"	0				0 No water encountered.	4.0	Brown, dry, medium dense, SANDY SILT , with trace of clay and mica		2	SPT	3-7-14	15"					2) Boring grouted from 0.0 to 15.0 ft with portland cement at completion.				3	SPT	7-9-11	15"									4	SPT	8-7-5	12"									5	SPT	8-7-5	10"						15.0			6	SPT	8-7-8	10"						Bottom of test boring 15.0 feet.										
DEPTH (FEET)	SOIL DESCRIPTION	BLK.	NO.	TYPE	REV./IN.	REMARKS	DEPTH (FEET)	NO.	TYPE	REV./IN.	REMARKS																																																																																														
0.0	Brown, dry, very loose to medium dense, fine, sandy silty, with trace of clay, gravel and glass fragments, FLL .		1	SPT	1-1-2	10"	0				0 No water encountered.																																																																																														
4.0	Brown, dry, medium dense, SANDY SILT , with trace of clay and mica		2	SPT	3-7-14	15"					2) Boring grouted from 0.0 to 15.0 ft with portland cement at completion.																																																																																														
			3	SPT	7-9-11	15"																																																																																																			
			4	SPT	8-7-5	12"																																																																																																			
			5	SPT	8-7-5	10"																																																																																																			
15.0			6	SPT	8-7-8	10"																																																																																																			
Bottom of test boring 15.0 feet.																																																																																																									

SOIL BORING LOG																																																																																																																					
Client: <u>Whitman, Reardon & Associates, LLP</u>			Boring #: <u>B-2</u>			Project Name: <u>Middle Palmetum Environmental Area</u>		Job #: <u>HRGA H.O.# 31750</u>																																																																																																													
Location: <u>5795 Trotter Road - Clarksville Maryland 21032</u>						Date Started: <u>08/22/2013</u> Date Completed: <u>08/22/2013</u>																																																																																																															
<table border="1"> <tr> <th>DEPTH (FEET)</th> <th>SOIL DESCRIPTION</th> <th>BLK.</th> <th>NO.</th> <th>TYPE</th> <th>REV./IN.</th> <th>REMARKS</th> <th>DEPTH (FEET)</th> <th>NO.</th> <th>TYPE</th> <th>REV./IN.</th> <th>REMARKS</th> </tr> <tr> <td>0.0</td> <td>Brown, dry to damp, loose to medium dense, fine, silty SAND with trace of gravel, clay and mica</td> <td></td> <td>1</td> <td>SPT</td> <td>3-4-4</td> <td>8"</td> <td>0</td> <td></td> <td></td> <td></td> <td>0 Water encountered at 8.0 feet.</td> </tr> <tr> <td></td> <td></td> <td></td> <td>2</td> <td>SPT</td> <td>3-3-4</td> <td>14"</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>3</td> <td>SPT</td> <td>2-3-8</td> <td>12"</td> <td></td> <td></td> <td></td> <td></td> <td>2) Boring offset 8.0 feet south of location.</td> </tr> <tr> <td></td> <td></td> <td></td> <td>4</td> <td>SPT</td> <td>10-2-0</td> <td>10"</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8.0</td> <td>Brown, moist, very dense, silty SAND, with small gravel.</td> <td></td> <td>5</td> <td>SPT</td> <td>17-24-61/3"</td> <td>9"</td> <td></td> <td></td> <td></td> <td></td> <td>3) Boring grouted from 0.0 to 8.0 feet at completion with portland cement.</td> </tr> <tr> <td></td> <td></td> <td></td> <td>6</td> <td>SPT</td> <td>5/7"</td> <td>1"</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>15.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>4) Slight grinding of auger tip 1.0 to 1.5 feet.</td> </tr> <tr> <td colspan="11">Bottom of test boring 15.0 feet.</td> </tr> </table>											DEPTH (FEET)	SOIL DESCRIPTION	BLK.	NO.	TYPE	REV./IN.	REMARKS	DEPTH (FEET)	NO.	TYPE	REV./IN.	REMARKS	0.0	Brown, dry to damp, loose to medium dense, fine, silty SAND with trace of gravel, clay and mica		1	SPT	3-4-4	8"	0				0 Water encountered at 8.0 feet.				2	SPT	3-3-4	14"									3	SPT	2-3-8	12"					2) Boring offset 8.0 feet south of location.				4	SPT	10-2-0	10"						8.0	Brown, moist, very dense, silty SAND , with small gravel.		5	SPT	17-24-61/3"	9"					3) Boring grouted from 0.0 to 8.0 feet at completion with portland cement.				6	SPT	5/7"	1"						15.0											4) Slight grinding of auger tip 1.0 to 1.5 feet.	Bottom of test boring 15.0 feet.										
DEPTH (FEET)	SOIL DESCRIPTION	BLK.	NO.	TYPE	REV./IN.	REMARKS	DEPTH (FEET)	NO.	TYPE	REV./IN.	REMARKS																																																																																																										
0.0	Brown, dry to damp, loose to medium dense, fine, silty SAND with trace of gravel, clay and mica		1	SPT	3-4-4	8"	0				0 Water encountered at 8.0 feet.																																																																																																										
			2	SPT	3-3-4	14"																																																																																																															
			3	SPT	2-3-8	12"					2) Boring offset 8.0 feet south of location.																																																																																																										
			4	SPT	10-2-0	10"																																																																																																															
8.0	Brown, moist, very dense, silty SAND , with small gravel.		5	SPT	17-24-61/3"	9"					3) Boring grouted from 0.0 to 8.0 feet at completion with portland cement.																																																																																																										
			6	SPT	5/7"	1"																																																																																																															
15.0											4) Slight grinding of auger tip 1.0 to 1.5 feet.																																																																																																										
Bottom of test boring 15.0 feet.																																																																																																																					

SOIL BORING LOG																																																																																													
Client: <u>Whitman, Reardon & Associates, LLP</u>			Boring #: <u>SHM-1</u>			Project Name: <u>Middle Palmetum Environmental Area</u>		Job #: <u>HRGA H.O.# 31750</u>																																																																																					
Location: <u>5795 Trotter Road - Clarksville Maryland 21032</u>						Date Started: <u>08/22/2013</u> Date Completed: <u>08/22/2013</u>																																																																																							
<table border="1"> <tr> <th>DEPTH (FEET)</th> <th>SOIL DESCRIPTION</th> <th>BLK.</th> <th>NO.</th> <th>TYPE</th> <th>REV./IN.</th> <th>REMARKS</th> <th>DEPTH (FEET)</th> <th>NO.</th> <th>TYPE</th> <th>REV./IN.</th> <th>REMARKS</th> </tr> <tr> <td>0.0</td> <td>Brown, moist, loose, SANDY SILT.</td> <td></td> <td>1</td> <td>SPT</td> <td>1-1-2</td> <td>8"</td> <td>0</td> <td></td> <td></td> <td></td> <td>0 No water encountered.</td> </tr> <tr> <td>2.0</td> <td>Brown, dry, very dense to dense, fine, SANDY SILT, with rock fragments, trace of clay and mica.</td> <td></td> <td>2</td> <td>SPT</td> <td>9-21-45</td> <td>12"</td> <td></td> <td></td> <td></td> <td></td> <td>2) Infiltration pipe set to 8.0 feet, located 5.0 feet south of SHM-1 pipe removed and boring grouted after test completed.</td> </tr> <tr> <td>7.0</td> <td>Brown, dry to moist, medium dense, SANDY SILT, with a little mica.</td> <td></td> <td>3</td> <td>SPT</td> <td>28-24-95</td> <td>10"</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>4</td> <td>SPT</td> <td>4-9-5</td> <td>10"</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>11.5</td> <td></td> <td></td> <td>5</td> <td>SPT</td> <td>5-6-8</td> <td>15"</td> <td></td> <td></td> <td></td> <td></td> <td>3) Boring grouted from 8.0 to 11.5 feet at completion, with portland cement.</td> </tr> <tr> <td colspan="11">Bottom of test boring 11.5 feet.</td> </tr> </table>											DEPTH (FEET)	SOIL DESCRIPTION	BLK.	NO.	TYPE	REV./IN.	REMARKS	DEPTH (FEET)	NO.	TYPE	REV./IN.	REMARKS	0.0	Brown, moist, loose, SANDY SILT .		1	SPT	1-1-2	8"	0				0 No water encountered.	2.0	Brown, dry, very dense to dense, fine, SANDY SILT , with rock fragments, trace of clay and mica.		2	SPT	9-21-45	12"					2) Infiltration pipe set to 8.0 feet, located 5.0 feet south of SHM-1 pipe removed and boring grouted after test completed.	7.0	Brown, dry to moist, medium dense, SANDY SILT , with a little mica.		3	SPT	28-24-95	10"									4	SPT	4-9-5	10"						11.5			5	SPT	5-6-8	15"					3) Boring grouted from 8.0 to 11.5 feet at completion, with portland cement.	Bottom of test boring 11.5 feet.										
DEPTH (FEET)	SOIL DESCRIPTION	BLK.	NO.	TYPE	REV./IN.	REMARKS	DEPTH (FEET)	NO.	TYPE	REV./IN.	REMARKS																																																																																		
0.0	Brown, moist, loose, SANDY SILT .		1	SPT	1-1-2	8"	0				0 No water encountered.																																																																																		
2.0	Brown, dry, very dense to dense, fine, SANDY SILT , with rock fragments, trace of clay and mica.		2	SPT	9-21-45	12"					2) Infiltration pipe set to 8.0 feet, located 5.0 feet south of SHM-1 pipe removed and boring grouted after test completed.																																																																																		
7.0	Brown, dry to moist, medium dense, SANDY SILT , with a little mica.		3	SPT	28-24-95	10"																																																																																							
			4	SPT	4-9-5	10"																																																																																							
11.5			5	SPT	5-6-8	15"					3) Boring grouted from 8.0 to 11.5 feet at completion, with portland cement.																																																																																		
Bottom of test boring 11.5 feet.																																																																																													

SOIL BORING LOG																																																																																	
Client: <u>Whitman, Reardon & Associates, LLP</u>			Boring #: <u>SHM-2</u>			Project Name: <u>Middle Palmetum Environmental Area</u>		Job #: <u>HRGA H.O.# 31750</u>																																																																									
Location: <u>5795 Trotter Road - Clarksville Maryland 21032</u>						Date Started: <u>08/22/2013</u> Date Completed: <u>08/22/2013</u>																																																																											
<table border="1"> <tr> <th>DEPTH (FEET)</th> <th>SOIL DESCRIPTION</th> <th>BLK.</th> <th>NO.</th> <th>TYPE</th> <th>REV./IN.</th> <th>REMARKS</th> <th>DEPTH (FEET)</th> <th>NO.</th> <th>TYPE</th> <th>REV./IN.</th> <th>REMARKS</th> </tr> <tr> <td>0.0</td> <td>Brown, dry, medium dense, silty fine SAND, with gravel.</td> <td></td> <td>1</td> <td>SPT</td> <td>7-9-9</td> <td>8"</td> <td>0</td> <td></td> <td></td> <td></td> <td>0 No water encountered.</td> </tr> <tr> <td>2.0</td> <td>Brown, dry, medium dense to loose, fine, SANDY SAND TO SANDY SILT with clay and mica.</td> <td></td> <td>2</td> <td>SPT</td> <td>0-9-5</td> <td>5"</td> <td></td> <td></td> <td></td> <td></td> <td>2) Infiltration pipe set to 8.0 feet, located 5.0 feet west of SHM-2 pipe removed and boring grouted after test completed.</td> </tr> <tr> <td>8.0</td> <td>Brown, dry, medium dense, fine, silty SAND, with gravel & trace of clay.</td> <td></td> <td>3</td> <td>SPT</td> <td>3-4-3</td> <td>12"</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>10.0</td> <td></td> <td></td> <td>4</td> <td>SPT</td> <td>7-10-11</td> <td>12"</td> <td></td> <td></td> <td></td> <td></td> <td>3) Boring grouted from 8.0 to 10.0 feet at completion, with portland cement.</td> </tr> <tr> <td colspan="11">Bottom of test boring 10.0 feet.</td> </tr> </table>											DEPTH (FEET)	SOIL DESCRIPTION	BLK.	NO.	TYPE	REV./IN.	REMARKS	DEPTH (FEET)	NO.	TYPE	REV./IN.	REMARKS	0.0	Brown, dry, medium dense, silty fine SAND , with gravel.		1	SPT	7-9-9	8"	0				0 No water encountered.	2.0	Brown, dry, medium dense to loose, fine, SANDY SAND TO SANDY SILT with clay and mica.		2	SPT	0-9-5	5"					2) Infiltration pipe set to 8.0 feet, located 5.0 feet west of SHM-2 pipe removed and boring grouted after test completed.	8.0	Brown, dry, medium dense, fine, silty SAND , with gravel & trace of clay.		3	SPT	3-4-3	12"						10.0			4	SPT	7-10-11	12"					3) Boring grouted from 8.0 to 10.0 feet at completion, with portland cement.	Bottom of test boring 10.0 feet.										
DEPTH (FEET)	SOIL DESCRIPTION	BLK.	NO.	TYPE	REV./IN.	REMARKS	DEPTH (FEET)	NO.	TYPE	REV./IN.	REMARKS																																																																						
0.0	Brown, dry, medium dense, silty fine SAND , with gravel.		1	SPT	7-9-9	8"	0				0 No water encountered.																																																																						
2.0	Brown, dry, medium dense to loose, fine, SANDY SAND TO SANDY SILT with clay and mica.		2	SPT	0-9-5	5"					2) Infiltration pipe set to 8.0 feet, located 5.0 feet west of SHM-2 pipe removed and boring grouted after test completed.																																																																						
8.0	Brown, dry, medium dense, fine, silty SAND , with gravel & trace of clay.		3	SPT	3-4-3	12"																																																																											
10.0			4	SPT	7-10-11	12"					3) Boring grouted from 8.0 to 10.0 feet at completion, with portland cement.																																																																						
Bottom of test boring 10.0 feet.																																																																																	

REVISIONS	
REVISED SITE DEVELOPMENT PLAN 6/28/17	
IN-SITU INFILTRATION TESTS	

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



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

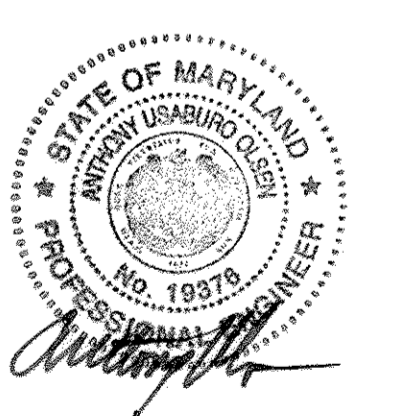
WR & A IN-SITU INFILTRATION TEST							
Inspector: <u>Ganesh</u>				Location: <u>Accident, Maryland</u>			
Date of saturation: <u>5/28/2013</u>				Boring Number: <u>SHM-1</u>			
Depth to top of pipe above ground: <u>2.0 Feet</u>				Depth to Bottom: <u>4.0 Feet</u>			
Beginning: <u>WET</u>				Water at beginning: <u>Wet</u>			
Infiltration Rate: <u>0</u> inch/Hour				Infiltration Rate: <u>0</u> inch/Hour			
Date	Time	Duration	Initial Reading in Ft. From Top of Pipe to Top of Water	Final Reading in Ft. From Top of Pipe to Top of Water	Difference	Infiltration Rate	Remarks
5/29	7:00am	4.0	4.0	4.0	0	0	
	8:00am	4.0	4.0	4.0	0	0	
	9:00am	4.0	4.0	4.0	0	0	
	10:00am	4.0	4.0	4.0	0	0	
	11:00am	4.0	4.0	4.0	0	0	

WR & A IN-SITU INFILTRATION TEST							
Inspector: <u>Ganesh</u>				Location: <u>Accident, Maryland</u>			
Date of saturation: <u>5/28/2013</u>				Boring Number: <u>SHM-2</u>			
Depth to top of pipe above ground: <u>2.0 Feet</u>				Depth to Bottom: <u>5.0 Feet</u>			
Beginning: <u>Dry</u>				Water at beginning: <u>Wet</u>			
Infiltration Rate: <u>0</u> inch/Hour				Infiltration Rate: <u>0</u> inch/Hour			
Date	Time	Duration	Initial Reading in Ft. From Top of Pipe to Top of Water	Final Reading in Ft. From Top of Pipe to Top of Water	Difference	Infiltration Rate	Remarks
5/29	7:00am	4.83	4.83	4.83	0	0	
	8:00am	4.83	4.83	4.83	0	0	
	9:00am	4.83	4.83	4.83	0	0	
	10:00am	4.83	4.83	4.83	0	0	
	11:00am	4.83	4.83	4.83	0	0	

PROPERTY
 TAX MAP 35, GRID 3, PARCEL 512
 TAX MAP 35, GRID 2, PARCEL 427
 ZONING: **NEWTOWN & R-20**
 ELECTION DISTRICT 05




GRAPHIC SCALES

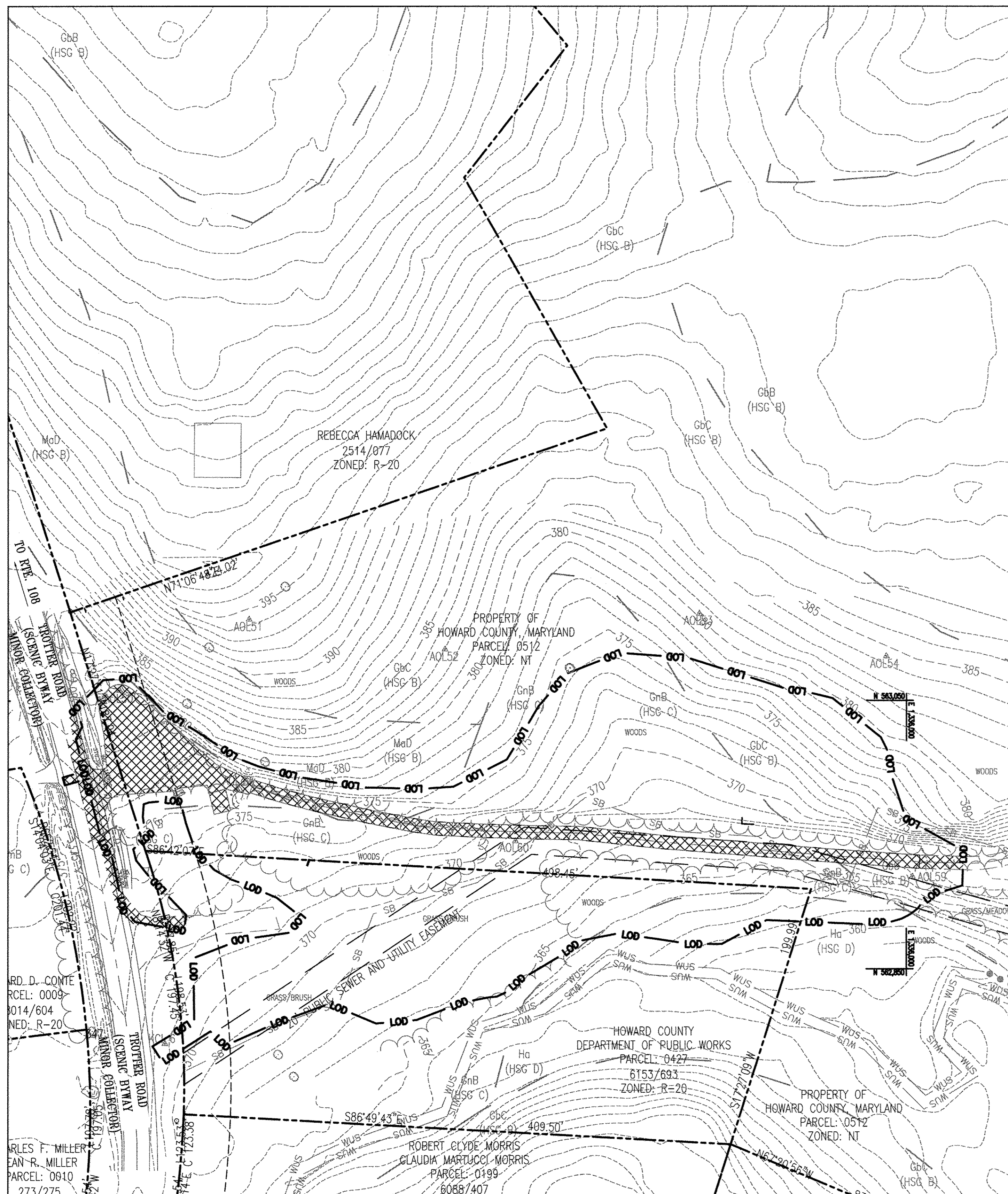
SIGNATURE


 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. 19376
 EXPIRATION DATE: 09/22/2017

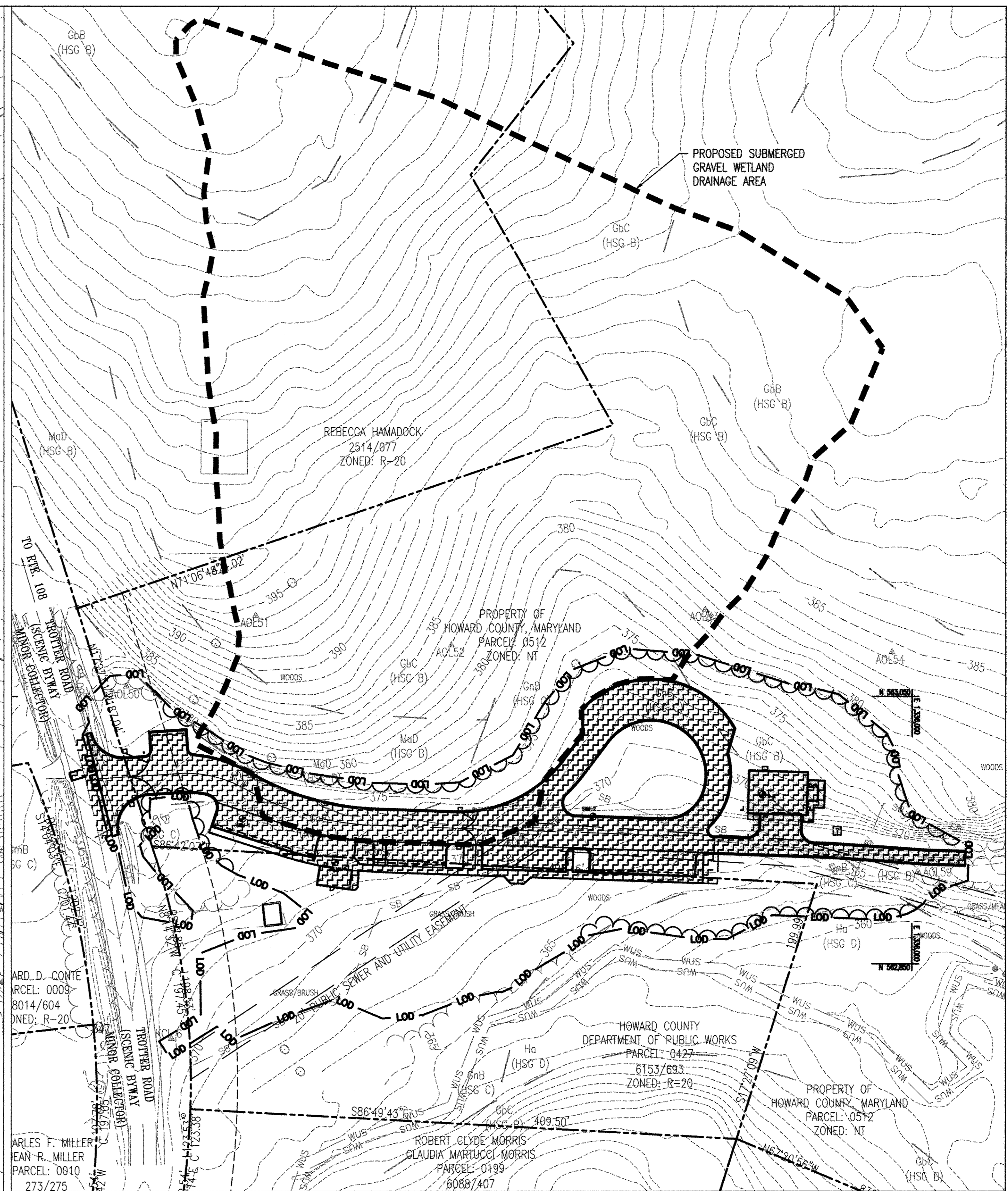
MPEA - SITE IMPROVEMENTS

SOIL BORING LOGS	
Drawing No. C5.3	
Scale: NOT TO SCALE	Date: 09/12/2014 Sheet 16 of 27
Des: BWJ/SAD	Drawn: SAD Check: AUO

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
	8-29-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
	9-13-17
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
	9-13-17
DIRECTOR	DATE



EXISTING DRAINAGE AREA
1" = 50'



PROPOSED DRAINAGE AREA
1" = 50'

LEGEND

	SOIL DIVIDE
	EXISTING IMPERVIOUS AREA
	PROPOSED IMPERVIOUS AREA

ESD Requirement						
LOD (sf)	Target RCN	Existing Imp. Area (sf)	Proposed Imp. Area (sf)	Target Pe	Rv	ESD Requirement (cf)
106,484	67	12,857	32,595	1.6	$Rv = 0.05 + .009 \times \%$	$(Pe)(Rv)(DA) / 12$
						4,671

DRAWING NOTES

- THE PROPOSED IMPERVIOUS SHOWN ON THIS MAP IS ONLY USED FOR CALCULATING ESD VOLUME REQUIREMENTS. ALTERNATIVE SURFACES HAVE BEEN INCLUDED AS PART OF THE IMPERVIOUS AREAS SHOWN FOR CALCULATING OVERALL ESDv REQUIREMENTS ONLY. THE INDIVIDUAL DRAINAGE AREAS SHOWN FOR EACH ESD FEATURE SHALL INDICATE TRUE CHARACTERISTICS OF THE ALTERNATIVE SURFACES.
- THE PROPOSED SUBMERGED GRAVEL WETLAND DRAINAGE AREA IS SHOWN ON THIS SHEET. SEE DRAWING C6.2 FOR ALL OTHER ESD FACILITY DRAINAGE AREAS.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chad Plante 8-29-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Natalie Davis 9-13-17
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Natalie Davis 9-13-17
DIRECTOR DATE

REVISIONS	
	REVISED SITE DEVELOPMENT PLAN 6/28/17
	SGW DA BOUNDARY

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



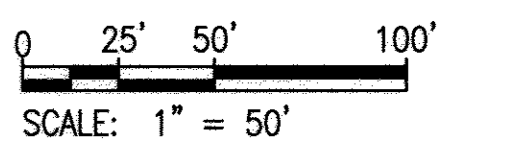
Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

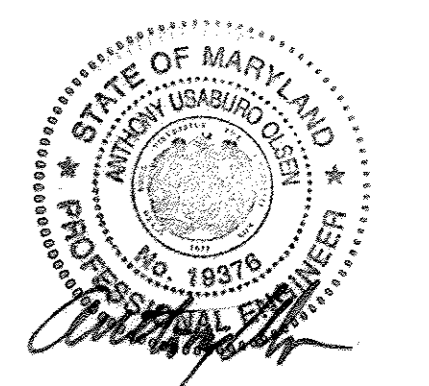
TAX MAP 35, GRID 3, PARCEL 512
TAX MAP 35, GRID 2, PARCEL 427

ZONING: NEWTOWN & R-20
ELECTION DISTRICT 05

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. 19376.
EXPIRATION DATE: 09/22/2017

MPEA - SITE IMPROVEMENTS

OVERALL ESD DRAINAGE AREA MAP

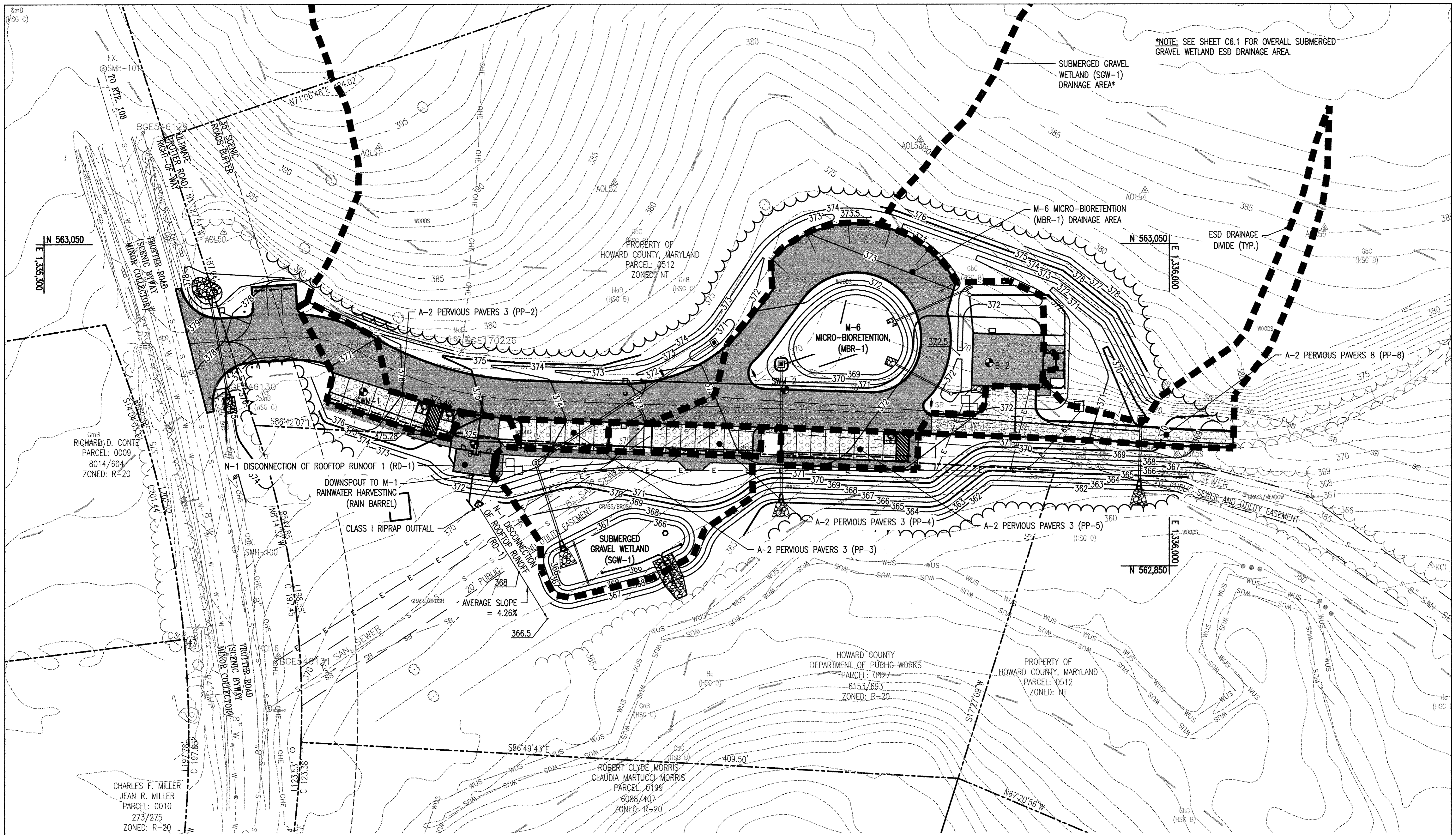
Drawing No.

C6.1

Scale: 1" = 100'

Date: 09/12/2014 Sheet 17 of 27

Des: BWJ/SAD Drawn: SAD Check: AUO



REVISIONS	
▲	REVISED SITE DEVELOPMENT PLAN 6/28/17
	MICRO-BIO, SGW, PERVIOUS PAVERS DA
	PAVERS DA

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

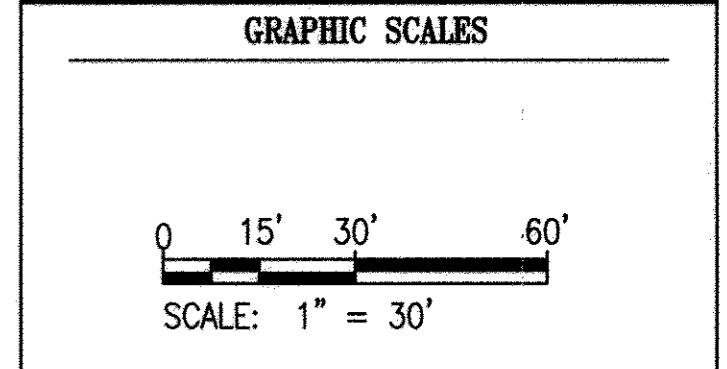
WRA

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

PROPERTY

TAX MAP 35, GRID 3, PARCEL 512
TAX MAP 35, GRID 2, PARCEL 427

ZONING: NEWTOWN & R-20
ELECTION DISTRICT 05



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: 09/22/2017

MPEA - SITE IMPROVEMENTS

STORMWATER DRAINAGE AREA MAP

Drawing No.
C6.2

Scale: 1" = 30'

Date: 09/12/2014 Sheet 18 of 27

Des: BWJ/SAD Drawn: SAD Check: AUO

LEGEND

	SOIL DIVIDE
	ESD DRAINAGE DIVIDE
	IMPERVIOUS AREA
	PERVIOUS PAVERS AREA

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 8-29-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 9-17-17
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 9-13-17
DIRECTOR DATE

Facility ID	Facility Type	ESDv Provided (cf)	Rev Provided (cf)	Imp Area Treated (ac)	Pe Treated (in)
MBR-1	M-6 Micro-Bioretentment	2395	0	0.26	2.6
PP-2	A-2 Pervious Pavers	336	107	0.03	1.5
PP-3	A-2 Pervious Pavers	149	62	0.02	2.6
PP-4	A-2 Pervious Pavers	233	98	0.03	2.6
PP-5	A-2 Pervious Pavers	295	110	0.03	2.3
PP-8	A-2 Pervious Pavers	481	197	0.07	2.6
SGW-1	Submerged Gravel Wetl	2548	0	0.14	1.8
RD-1	N-1 Disconnection of Rooftop Runoff	28	0	0.01	1.0
Sub Total =		6465	574	0.60	2.21

NOTE: M-1 RAINWATER HARVESTING ARE SHOWN FOR PRESENTATION PURPOSES ONLY. THEY ARE NOT BEING COUNTED TOWARDS THE ESDv PROVIDED.



REVISIONS	
▲	REVISED SITE DEVELOPMENT PLAN 6/28/17
	INLET DA

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

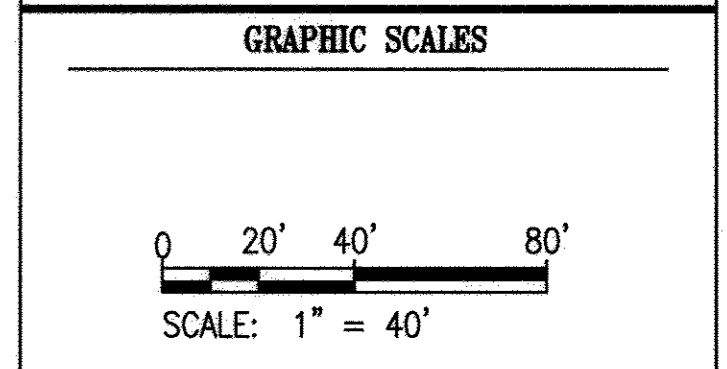
WRA

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

PROPERTY

TAX MAP 35, GRID 3, PARCEL 512
TAX MAP 35, GRID 2, PARCEL 427

ZONING: NEWTOWN & R-20
ELECTION DISTRICT 05



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: 09/22/2017.

MPEA - SITE IMPROVEMENTS

INLET DRAINAGE AREA MAP

Drawing No.
C6.3

Scale: 1" = 40'

Date: 09/12/2014 Sheet 19 of 27
Des: BWJ/SAD Drawn: SAD Check: AUO

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 8-29-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

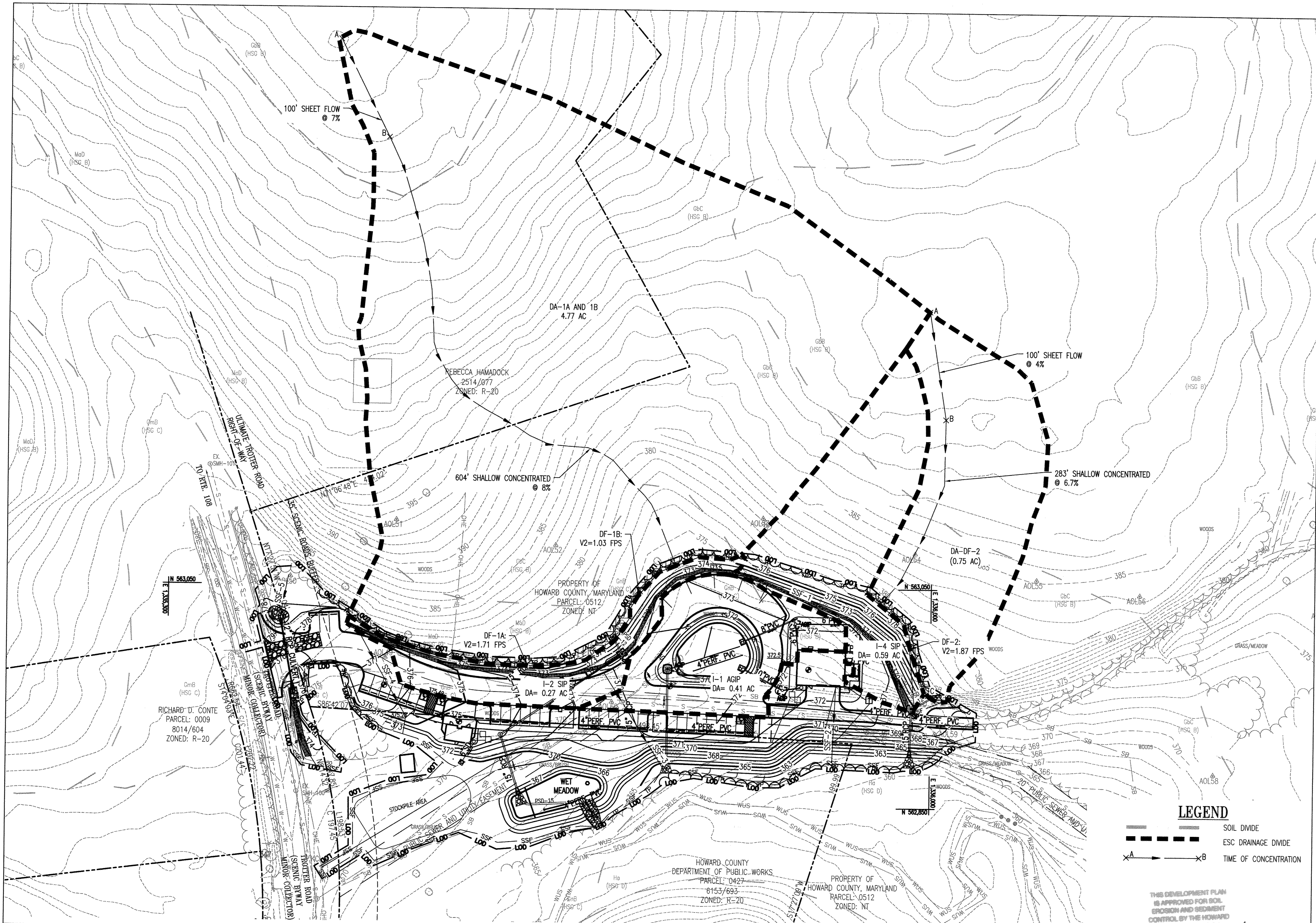
[Signature] 9-13-17
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 9-13-17
DIRECTOR DATE

DRAINAGE AREA	TOTAL DRAINAGE AREA (AC)	IMP. AREA	PERCENT IMPERVIOUS	Cw
A	0.36	0.225	63.03%	0.66
B	4.79	0.12	2.55%	0.20
C	0.11	0.00	0.00%	0.43
D	1.39	0.00	0.32%	0.19
E	0.03	0.01	28.78%	0.44
F	0.46	0.00	0.00%	0.25

LEGEND

- SOIL DIVIDE
- INLET DRAINAGE DIVIDE
- IMPERVIOUS
- WOODS
- OPEN SPACE
- TIME OF CONCENTRATION



REVISIONS	
▲	REVISED SITE DEVELOPMENT PLAN 6/28/17
	INLET PROTECTION DA

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

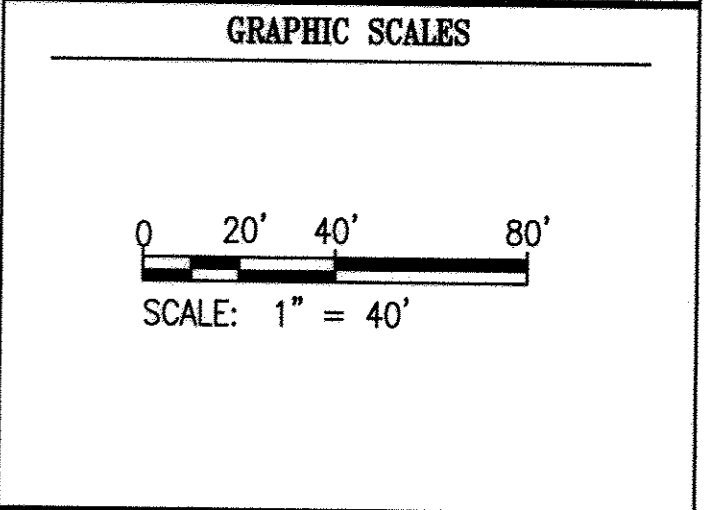
WRA

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

PROPERTY

TAX MAP 35, GRID 3, PARCEL 512
TAX MAP 35, GRID 2, PARCEL 427

ZONING: NEWTOWN & R-20
ELECTION DISTRICT 05



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: 08/22/2017

MPEA - SITE IMPROVEMENTS

EROSION AND SEDIMENT CONTROL DRAINAGE AREA MAP

Drawing No.
C6.4

Scale: 1" = 40'
Date: 09/12/2014 Sheet 20 of 27
Des: BWJ/SAD Drawn: SAD Check: AUO

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 8-29-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 9-13-17
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

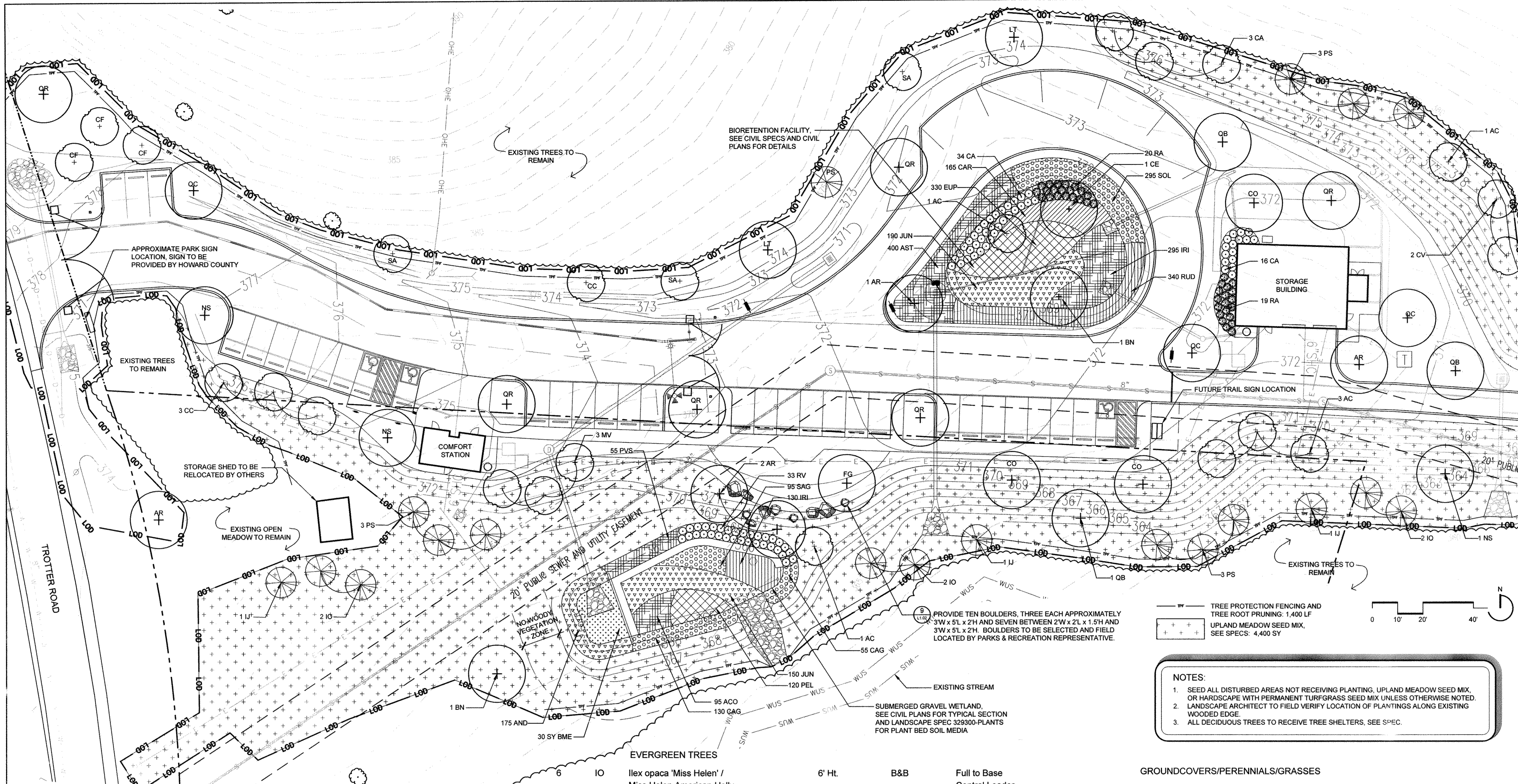
[Signature] 9-13-17
DIRECTOR DATE

Silt Fence #	Starting Elevation (A)	Ending Elevation (B)	Length of Flow Path (FT)	Slope (%)	Maximum Fence Length (FT) (Table E.3)	Actual Fence Length (FT)
SSF-1	373.50	370.00	222.00	1.58	Unlimited	41
SSF-2	372.50	361.50	69.25	15.88	1500	218
SSF-3	372.00	364.50	108.80	6.89	Unlimited	538
SSF-4	377.80	372.50	103.93	5.10	Unlimited	219
SSF-5	379.50	373.25	180.40	3.46	Unlimited	114

LEGEND

--- SOIL DIVIDE
- - - ESC DRAINAGE DIVIDE
--->---> TIME OF CONCENTRATION

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] 8/23/17



TREE PROTECTION FENCING AND TREE ROOT PRUNING: 1,400 LF
 UPLAND MEADOW SEED MIX, SEE SPECS: 4,400 SY
 PROVIDE TEN BOULDERS, THREE EACH APPROXIMATELY 3'W x 5'L x 2'H AND SEVEN BETWEEN 2'W x 2'L x 1.5'H AND 3'W x 5'L x 2'H. BOULDERS TO BE SELECTED AND FIELD LOCATED BY PARKS & RECREATION REPRESENTATIVE.
 SUBMERGED GRAVEL WETLAND, SEE CIVIL PLANS FOR TYPICAL SECTION AND LANDSCAPE SPEC 329300-PLANTS FOR PLANT BED SOIL MEDIA
 EXISTING STREAM
 NOTES:
 1. SEED ALL DISTURBED AREAS NOT RECEIVING PLANTING, UPLAND MEADOW SEED MIX, OR HARDSCAPE WITH PERMANENT TURFGRASS SEED MIX UNLESS OTHERWISE NOTED.
 2. LANDSCAPE ARCHITECT TO FIELD VERIFY LOCATION OF PLANTINGS ALONG EXISTING WOODED EDGE.
 3. ALL DECIDUOUS TREES TO RECEIVE TREE SHELTERS, SEE SPEC.

PLANT SCHEDULE (THIS SHEET ONLY)

QTY.	KEY	BOTANICAL/Common Name	SIZE	ROOT	COMMENTS
TREES					
5	AR	Acer rubrum 'October Glory' / October Glory Red Maple	2 1/2" Cal.	B&B	Full Central Leader
2	BN	Betula nigra 'Dura Heat' / Dura Heat River Birch	2 1/2" Cal.	B&B	Full
3	CO	Carya ovata / Shagbark Hickory	2 1/2" Cal.	B&B	Full Central Leader
1	CE	Celtis occidentalis / Hackberry	2 1/2" Cal.	B&B	Full Central Leader
1	FG	Fagus grandifolia / American Beech	2 1/2" Cal.	B&B	Full Central Leader
2	LT	Liriodendron tulipifera / Tuliptree	2 1/2" Cal.	B&B	Full Central Leader
3	NS	Nyssa sylvatica / Black Gum	2 1/2" Cal.	B&B/Cont.	Full Central Leader
3	QB	Quercus bicolor / Swamp White Oak	2 1/2" Cal.	B&B	Full Central Leader
3	QC	Quercus coccinea / Scarlet Oak	2 1/2" Cal.	B&B	Full Central Leader
6	QR	Quercus rubra / Northern Red Oak	2 1/2" Cal.	B&B	Full Central Leader

QTY.	KEY	BOTANICAL/Common Name	SIZE	ROOT	COMMENTS
6	IO	Ilex opaca 'Miss Helen' / Miss Helen American Holly	6' Ht.	B&B	Full to Base Central Leader
3	IJ	Ilex opaca 'Jersey Knight' / Jersey Knight American Holly	6' Ht.	B&B	Full to Base Central Leader
10	PS	Pinus strobus / Eastern White Pine	5' Ht.	B&B	Full Central Leader
UNDERSTORY TREES					
6	AC	Amelanchier canadensis / Serviceberry	6' Ht.	B&B	Multi-Stem 3-5 Canes, Matched
3	CA	Carpinus caroliniana / American Hornbeam	6' Ht.	Cont.	Multi-Stem, 3-5 Canes
4	CC	Cercis canadensis / Eastern Redbud	6' Ht.	Cont.	Multi-Stem, 3-5 Canes
3	CF	Cornus florida / Flowering Dogwood	6' Ht.	B&B	Multi-Stem, 3-5 Canes, Matched
2	CV	Chionanthus virginicus / White Fringetree	6' Ht.	B&B	Multi-Stem, 3-5 Canes, Matched
3	MV	Magnolia virginiana / Sweetbay Magnolia	6' Ht.	B&B	Multi-Stem 3-5 Canes, Matched
3	SA	Sassafras albidum / Sassafras	2" Cal.	Cont.	
SHRUBS					
50	CA	Clethra alnifolia 'Hummingbird' / Hummingbird Summersweet	#3	Cont.	24" Ht.
39	RA	Rhus aromatica 'Gro-low' / Gro-Low Fragrant Sumac	#3	Cont.	24" Spd.
33	RV	Rhododendron viscosum / Swamp Azalea	#3	Cont.	24" Spd.

QTY.	KEY	BOTANICAL/Common Name	SIZE	ROOT	COMMENTS
GROUNDCOVERS/PERENNIALS/GRASSES					
95	ACO	Acorus calamus / Sweet Flag	#1	Cont.	18" O.C.
175	AND	Andropogon gerardii / Big Bluestem	#1	Cont.	24" O.C.
400	AST	Aster novae-angliae 'Purple Dome' / New England Aster	#1	Cont.	18" O.C.
185	CAG	Carex grayi / Gray's Sedge	#1	Cont.	18" O.C.
165	CAR	Carex stricta / Tussock Sedge	#1	Cont.	18" O.C.
330	EUP	Eupatorium dubium 'Little Joe' / Joe Pye Weed	#1	Cont.	18" O.C.
425	IRI	Iris versicolor / Blue Flag Iris	#1	Cont.	18" O.C.
340	JUN	Juncus effusus / Common Rush	#1	Cont.	24" O.C.
120	PEL	Peltandra virginica / Green Arrow Arum	#1	Cont.	18" O.C.
55	PVS	Panicum virgatum 'Shenandoah' / Shenandoah Switchgrass	#1	Cont.	24" O.C.
340	RUD	Rudbeckia fulgida 'Goldsturm' / Black-Eyed Susan	#1	Cont.	18" O.C.
95	SAG	Sagittaria latifolia / Broadleaf Arrowhead	#1	Cont.	18" O.C.
295	SOL	Solidago shortii 'Solar Cascade' / Goldenrod	#1	Cont.	18" O.C.
30 SY	BME	Bioretention Meadow Establishment			

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DIRECTOR

MAHAN RYKIEL ASSOCIATES INC
 Whitehall Mill 3300 Clipper Mill Road
 Suite 200 Baltimore, MD 21211 410.235.6001

REVISIONS	
REV. SITE DEVELOPMENT PLAN	6/28/17
MICRO-BIO & SGW PLANTINGS	
SITE PLANTINGS	

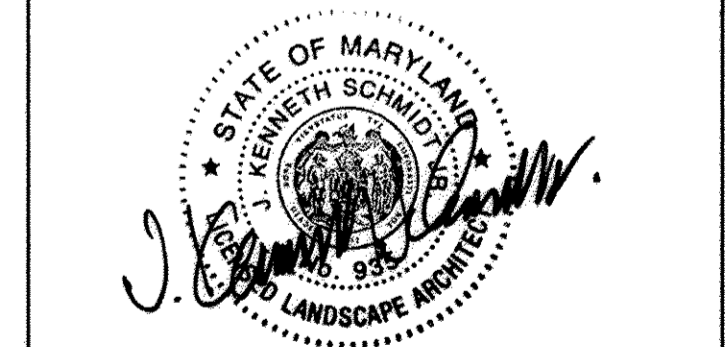
HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046
 DEPARTMENT OF PUBLIC WORKS
 9250 BENDIX ROAD
 ELLICOTT CITY, MD 21043

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

PROPERTY
 TAX MAP 35, GRID 3, PARCEL 512
 TAX MAP 35, GRID 2, PARCEL 427
 ZONING: NEWTOWN & R-20
 ELECTION DISTRICT 05

GRAPHIC SCALES

SIGNATURE



MPEA - SITE IMPROVEMENTS

Landscape Plan
 Drawing No. **L1.0**
 Scale: As Shown
 Date: 09/12/2014 Sheet 21 of 27
 Des: CB/CO Drawn: CO Check: CB/KS

REVISIONS	
REV. SITE DEVELOPMENT PLAN	6/28/17
PLANTINGS, NO WOODY ZONE	

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 35, GRID 3, PARCEL 512
TAX MAP 35, GRID 2, PARCEL 427

ZONING: NEWTOWN & R-20
ELECTION DISTRICT 05

GRAPHIC SCALES

SIGNATURE

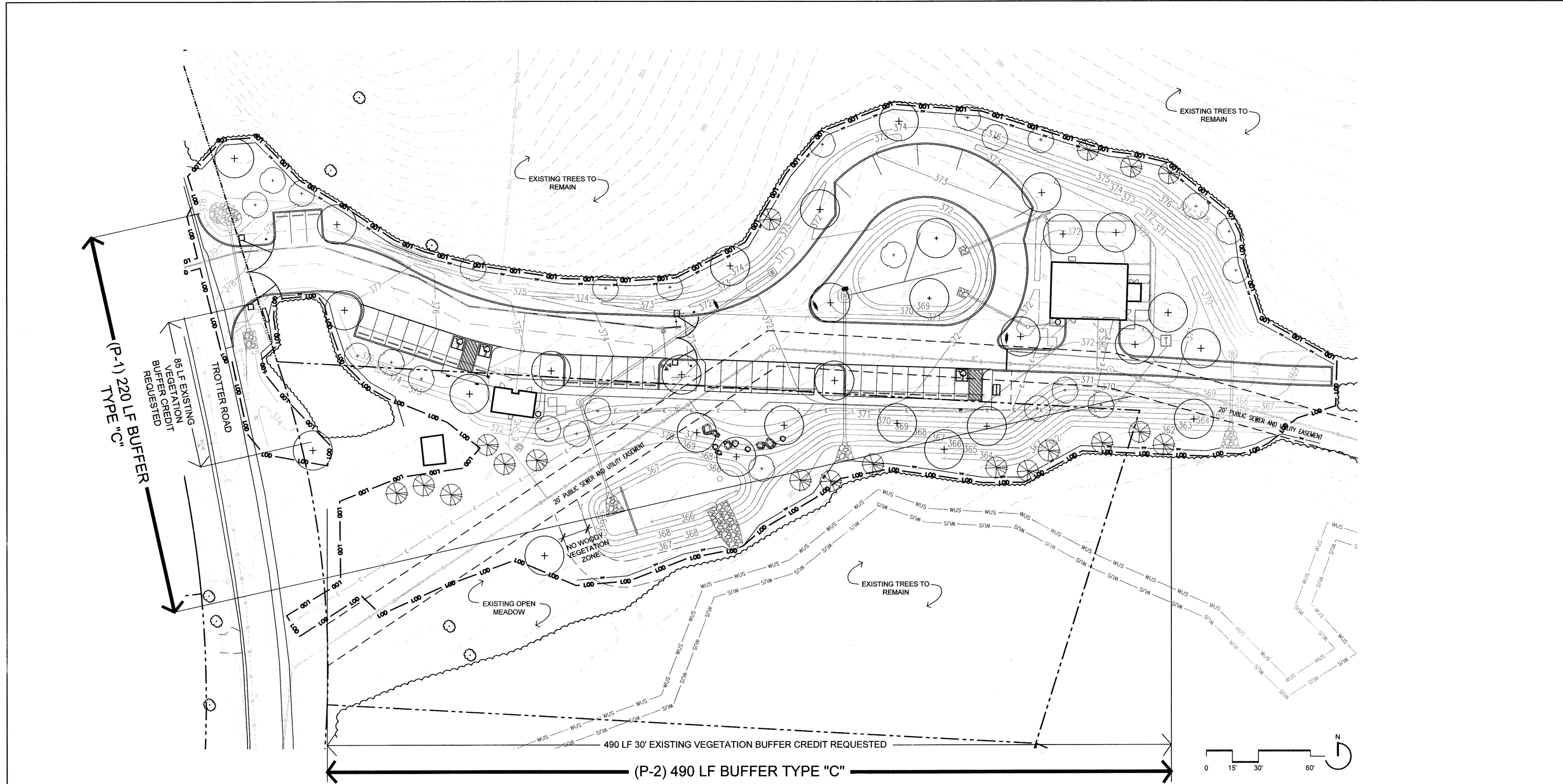


MPEA - SITE IMPROVEMENTS

Minimum Landscape Requirements

Drawing No.
L1.1

Scale: As Shown
Date: 09/12/2014 Sheet 22 of 27
Des: CB/CO Drawn: CO Check: CB/KS



SCHEDULE B PARKING LOT INTERNAL LANDSCAPING	
Number of parking spaces	37
Number of trees required (1 TREE: 20 SPACES)	2
Number of trees provided	
Shade Trees	2
Other Trees (2:1 Substitution)	-

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.

Howard County Department of Public Works, Developer
Howard County Department of Recreation and Parks, Owner

Developer's/Owner's Name
Michael Milani

CATEGORY	SCHEDULE A PERIMETER LANDSCAPE EDGE ADJACENT TO PERIMETER AND ROADWAYS	
	P-1	P-2
Perimeter	220	490
Perimeter/Frontage Designation Landscape Type	C	C
Linear Feet of Roadway Frontage/Perimeter	220	490
Credit for Existing Vegetation (Yes, No, Linear Feet Describe below if needed)	YES 85	YES 490
Credit for Wall, Fence or Berm (Yes, No, Linear Feet Describe below if needed)	NO	NO
Subtotal (linear feet of perimeter - credits)	135	0
Number of Plants Required		
Shade Trees	1:40=3	1:40=0
Evergreen Trees	1:20=7	1:20=0
Shrubs	-	-
Number of Plants Provided		
Shade Trees	3	0
Evergreen Trees	7	0
Other Trees (2:1 Substitution)	-	-
Shrubs (10:1 Substitution)	-	-
Describe Plant Substitution Credits Below if needed		

At the time of plant installation, all shrubs and trees listed and approved on the Landscape Plan, shall comply with the proper height requirement in accordance with the Howard County Landscape Manual. In addition, no substitutions or relocations of the required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviation from the approved Landscape Plan may result in denial or delay in the final release of the landscape plan until such time as all required materials are planted and/or revisions are made to the applicable plans.

The owner, tenants, 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. All other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.

This plan has been prepared in accordance with Section 16.124 of the Howard County Code and Landscape Manual with 29 shade trees, 24 ornamental trees, 19 evergreen trees and 122 shrubs.

LEGEND:

- SHADE TREE
- EVERGREEN TREE
- UNDERSTORY TREE

NOTE:
SEE L1.0 FOR PLANTING PLAN

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Oliver...
CHIEF, DEVELOPMENT ENGINEERING DIVISION

...
CHIEF, DIVISION OF LAND DEVELOPMENT

...
DIRECTOR

DATE: 8-23-17
DATE: 9-13-17
DATE: 9-13-17

MAHAN RYKIEL ASSOCIATES INC
Whitehall Mill 3300 Clipper Mill Road
Suite 200 Baltimore, MD 21211 410.235.6001

REVISIONS		
▲	REVISED SHEET TOTAL	6/28/17

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

WR&A

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 35, GRID 3, PARCEL 512
TAX MAP 35, GRID 9, PARCEL 467
TAX MAP 35, GRID 2, PARCEL 427

ZONING: NEWTOWN & R-20
ELECTION DISTRICT 05

GRAPHIC SCALES

SIGNATURE

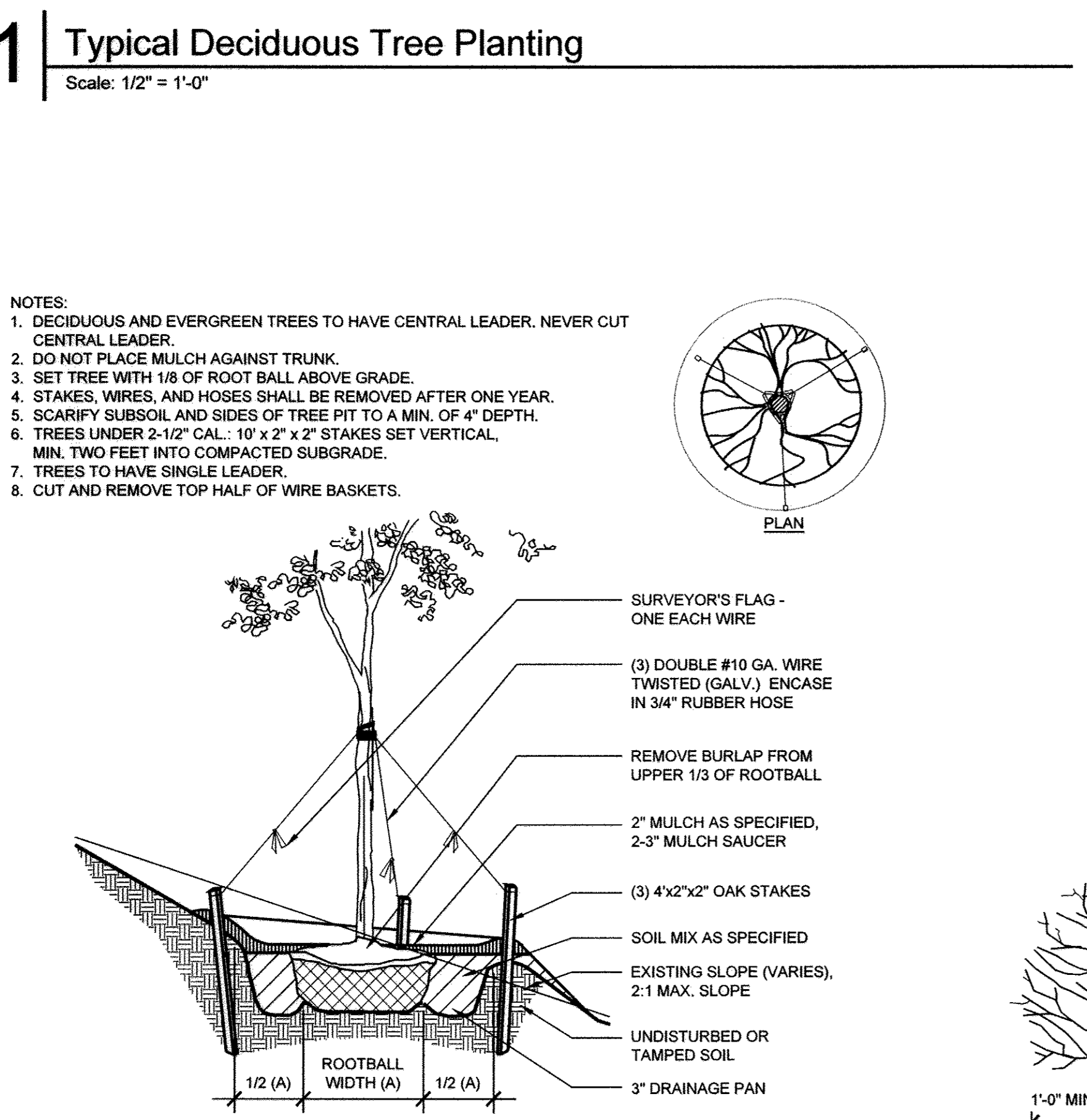
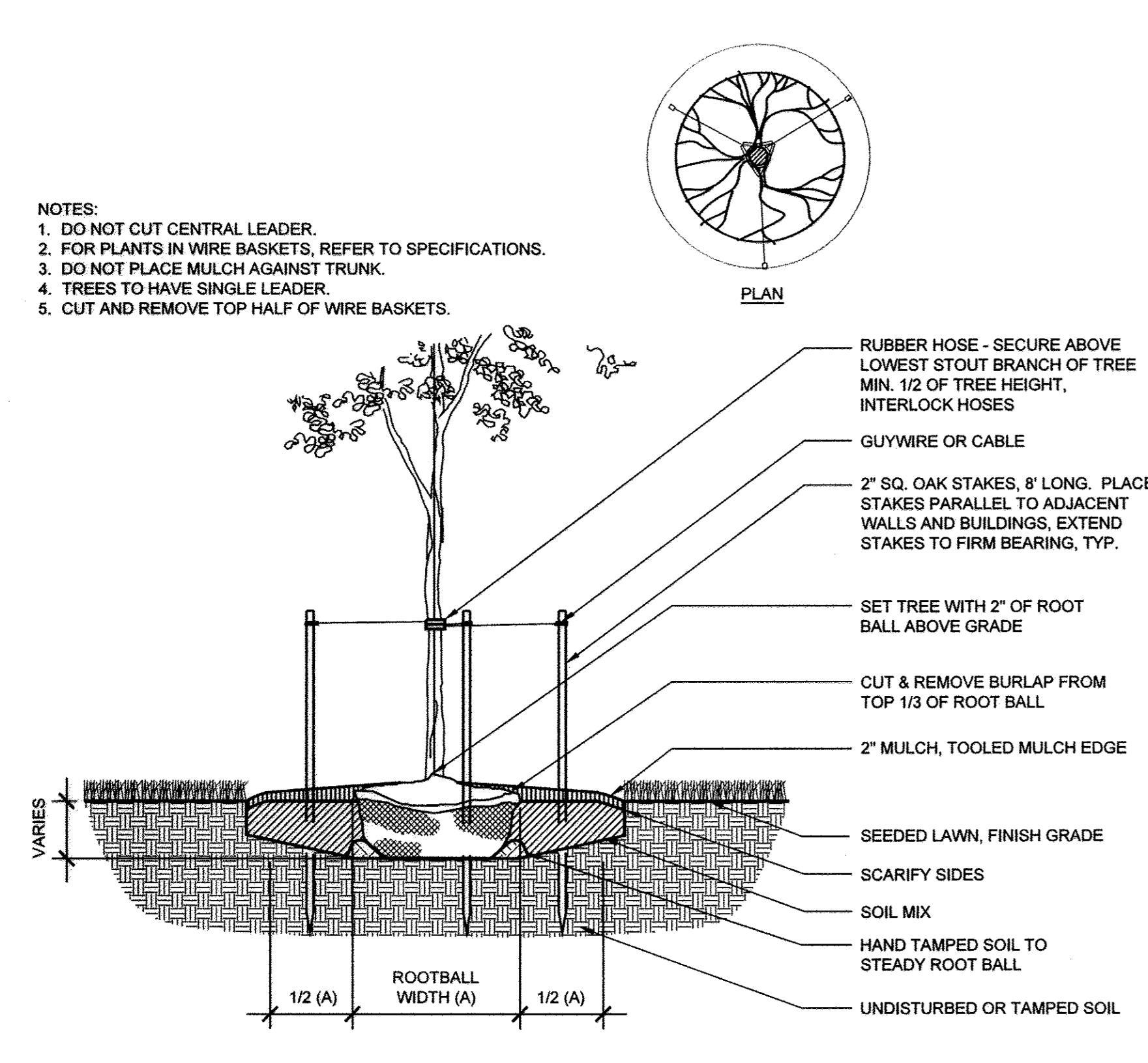
100% CONSTRUCTION DRAWINGS

MPEA - SITE IMPROVEMENTS

Landscape Details

Drawing No.
L1.2

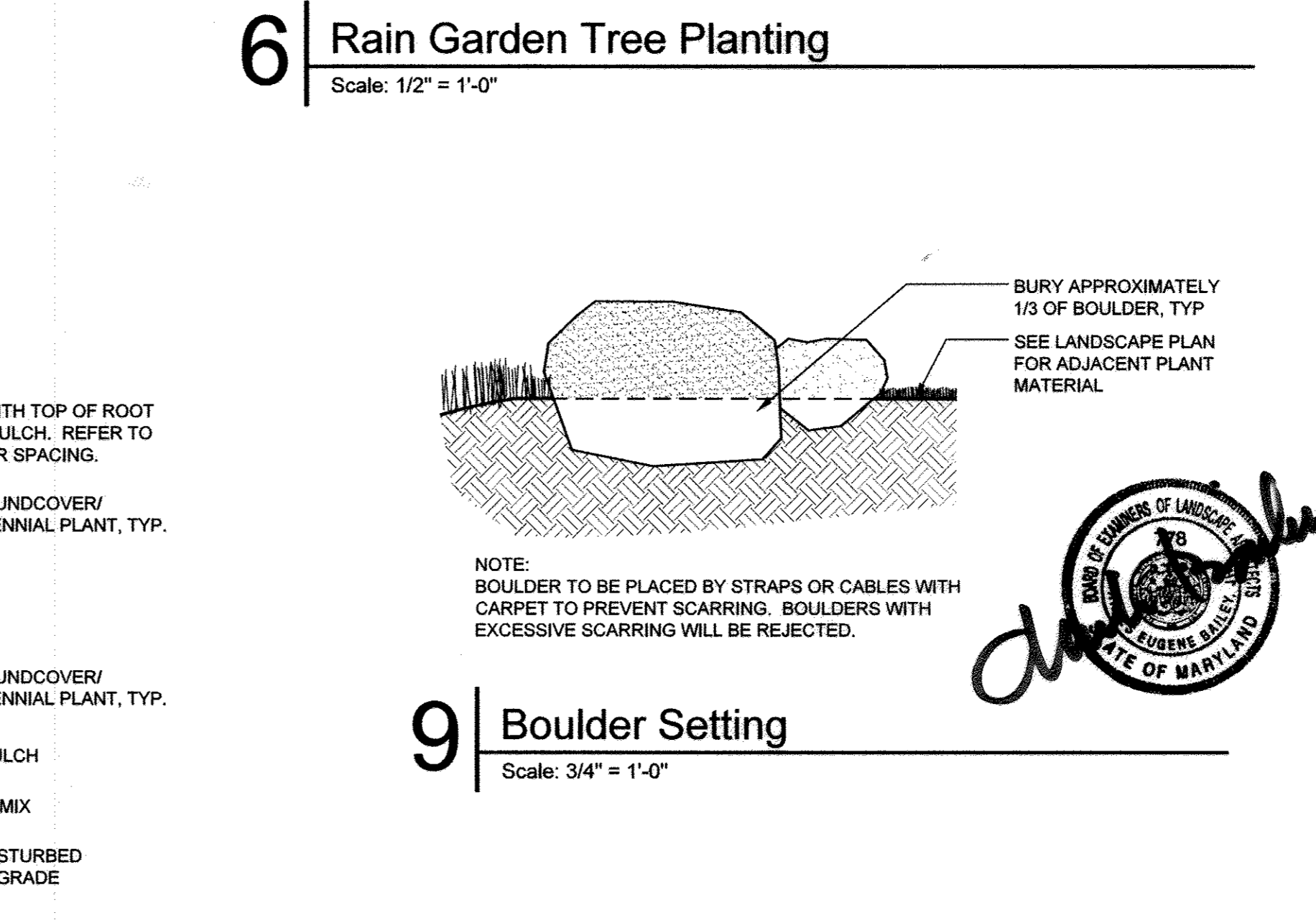
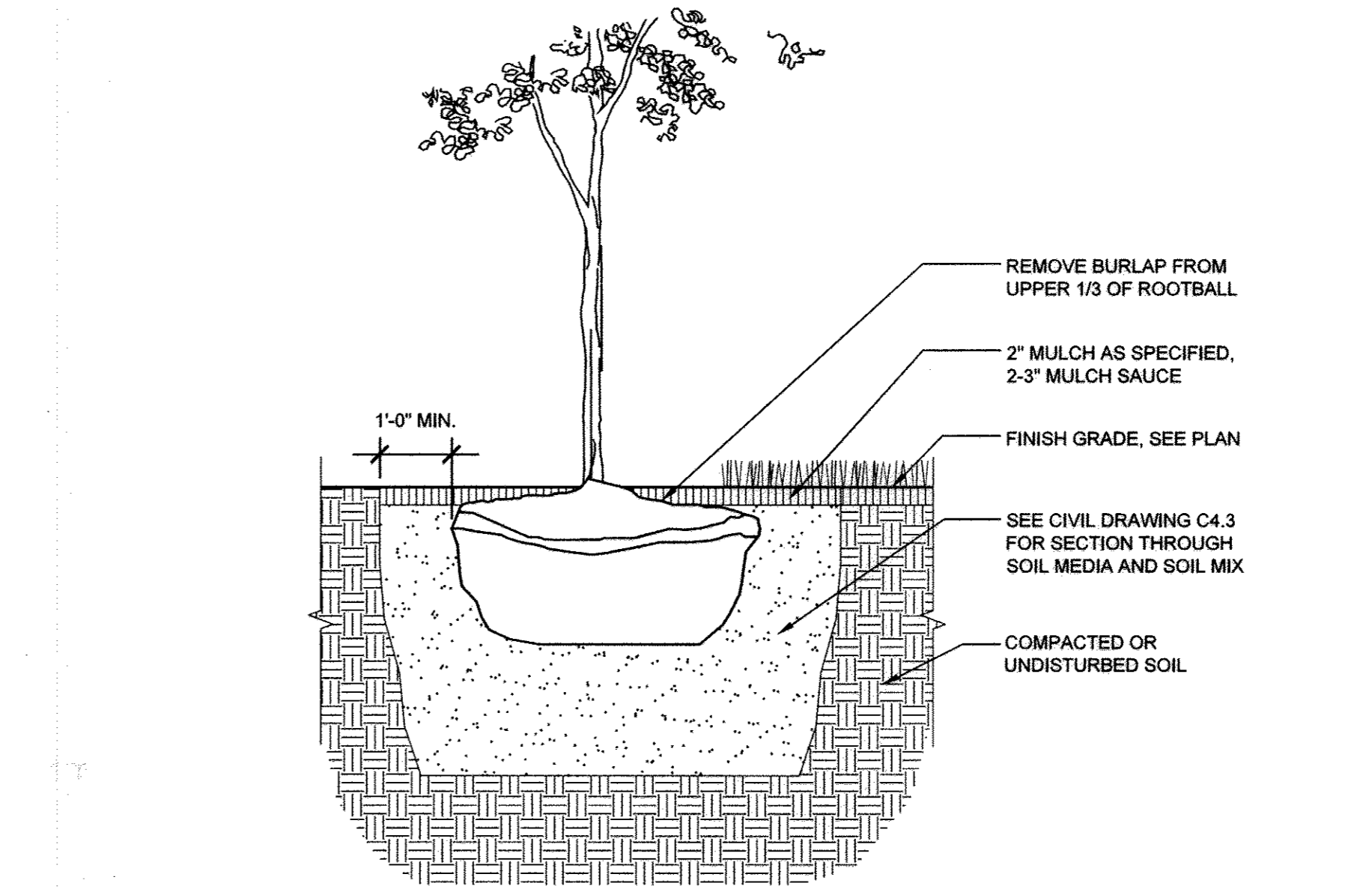
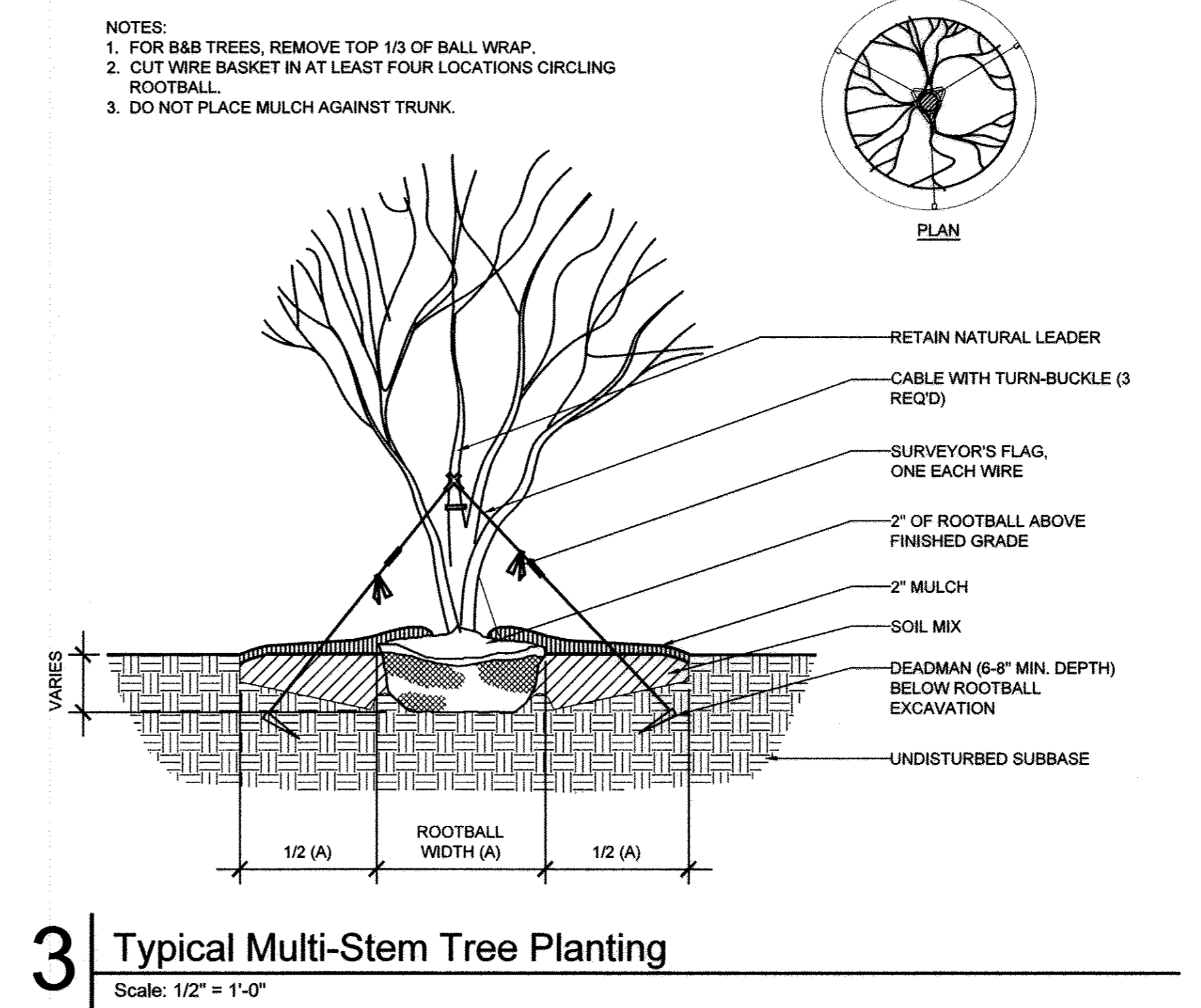
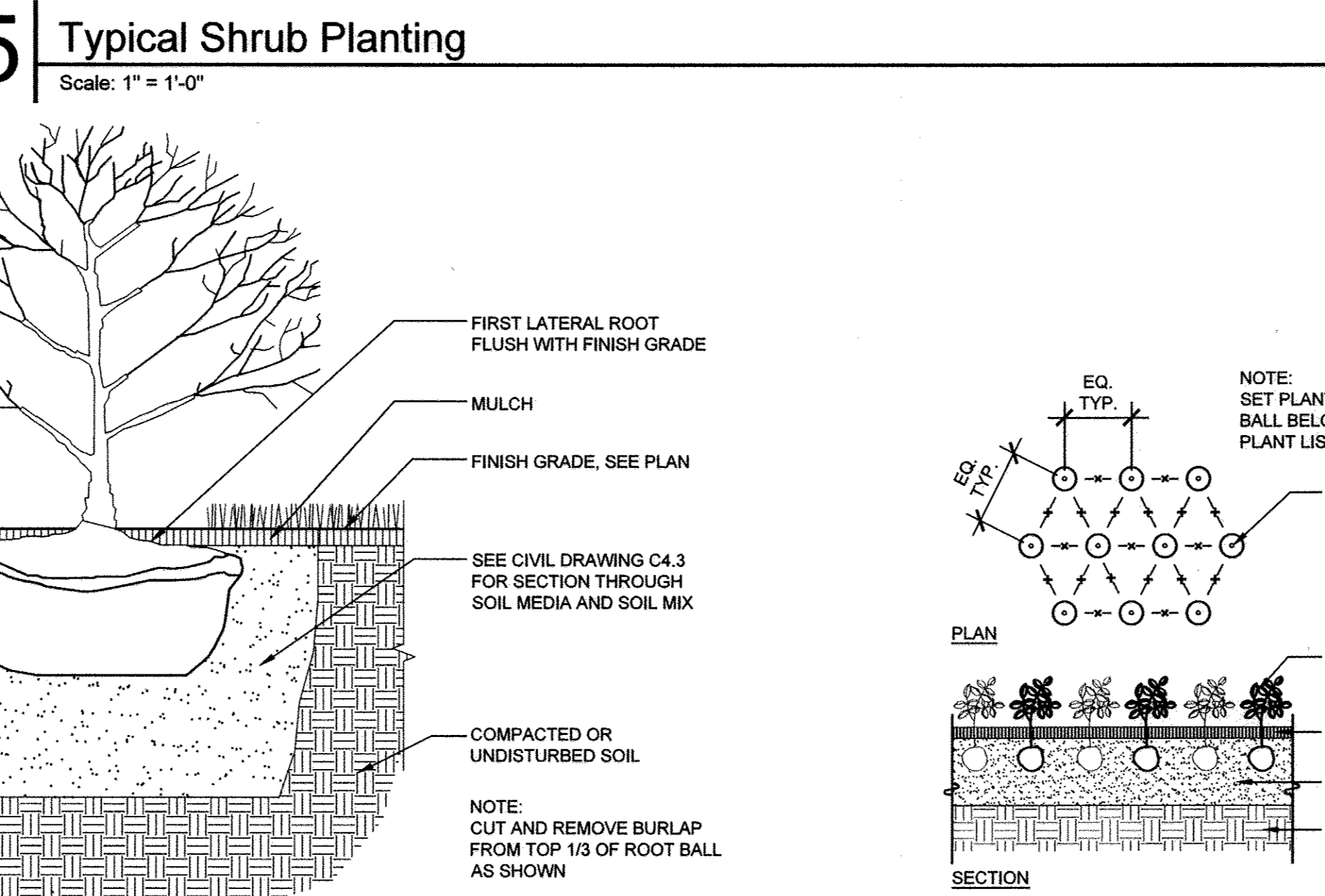
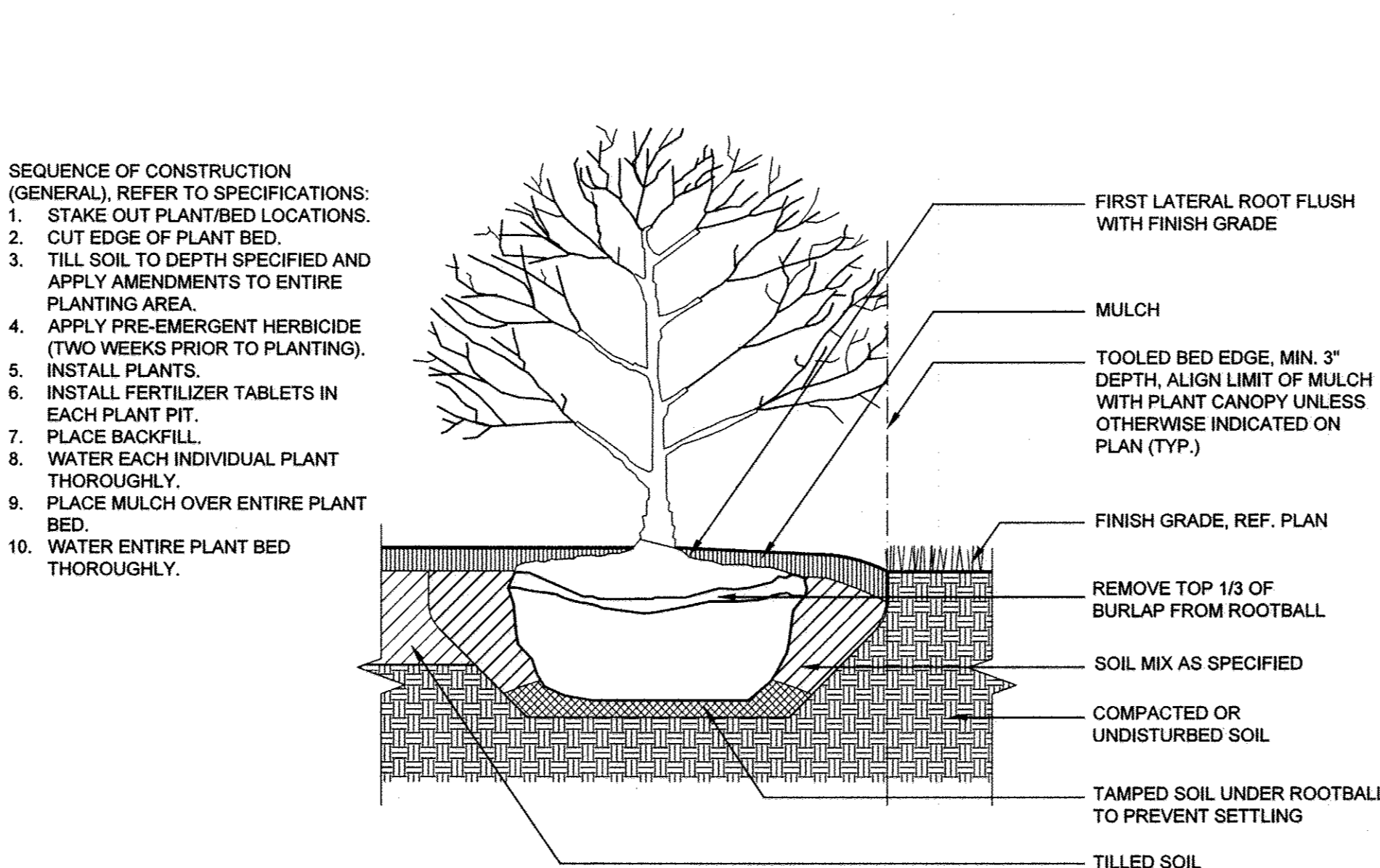
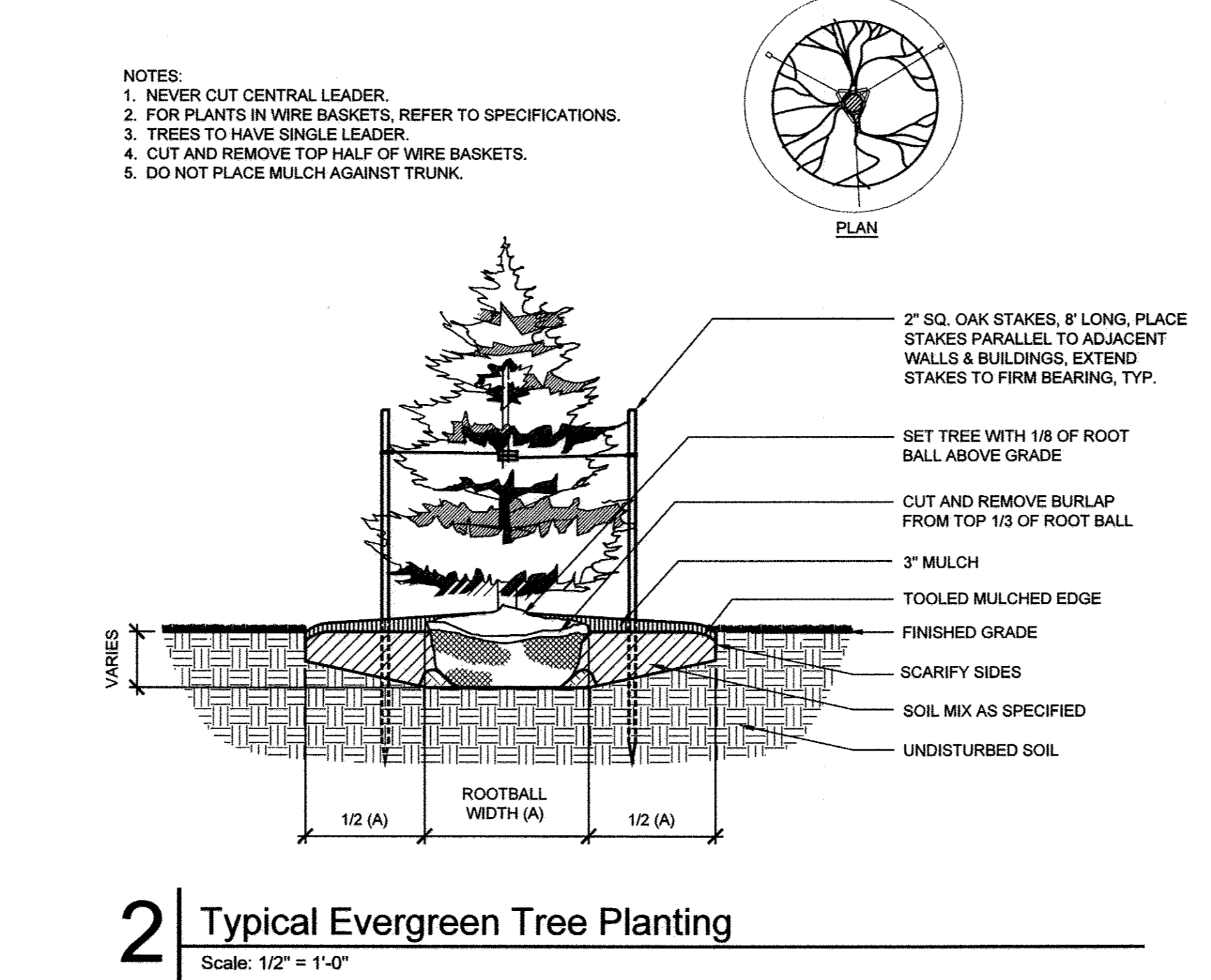
Scale: As Shown
Date: 09/12/2014 Sheet 23 of 27
Des: CB/CO Drawn: CO Check: CB



APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division
Chief, Division of Land Development

DATE: 10-2-14
DATE: 10-15-14
DATE: 11/02/14

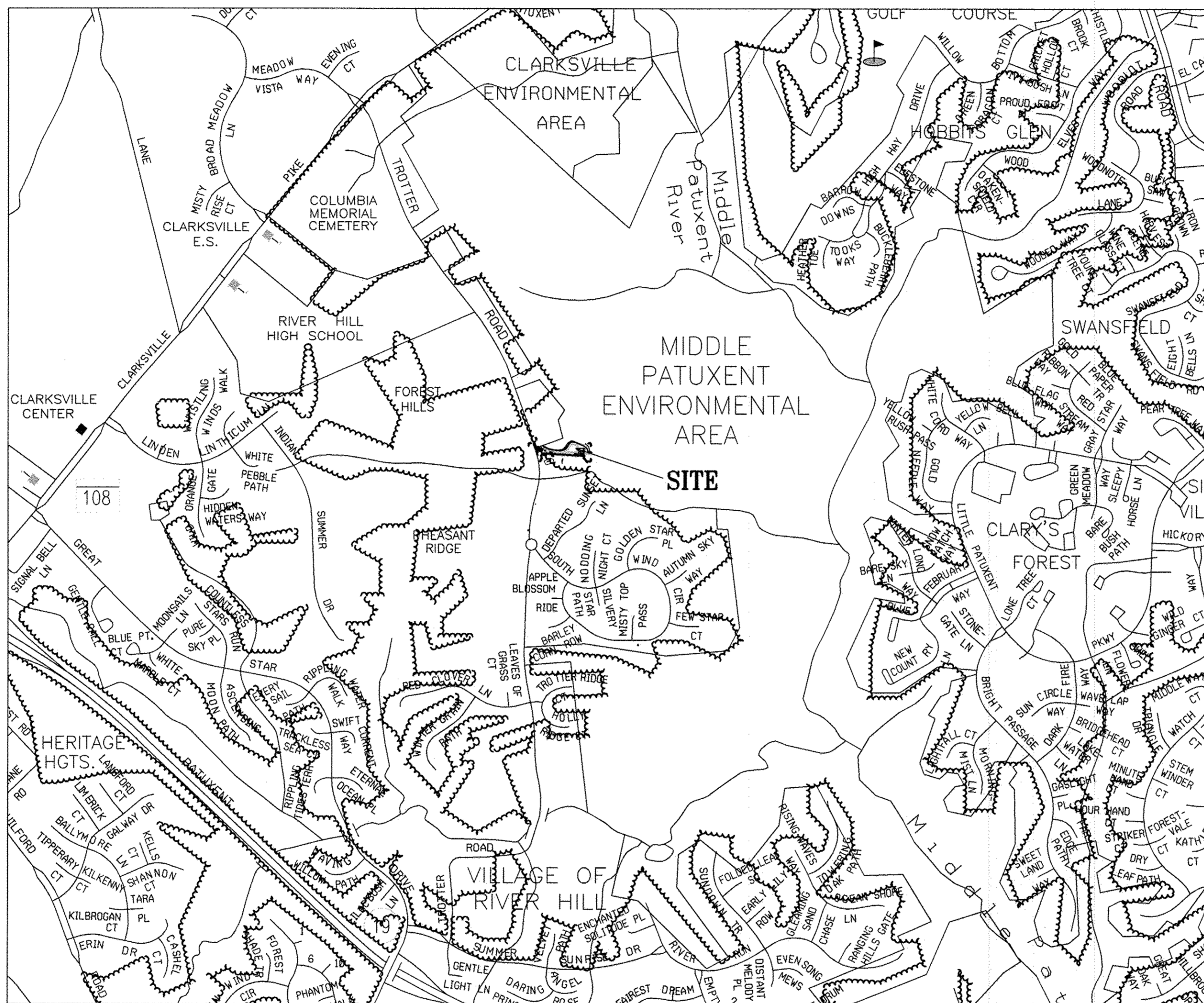


MAHAN RYKIEL ASSOCIATES INC
The Steiff Silver Building, 800 Wyman Park Drive., Suite 100, Baltimore, MD 21211 410.235.6001

MIDDLE PATUXENT ENVIRONMENTAL AREA FOREST STAND DELINEATION AND FOREST DATA SUMMARY

GENERAL NOTES

1. FOR THIS PROJECT THE LIMIT OF DISTURBANCE (LOD) HAS BEEN USED TO DEFINE THE PROJECT AREA. A LARGER STUDY AREA WAS USED TO GATHER ADDITIONAL INFORMATION ABOUT THE AREAS SURROUNDING THE PROJECT LIMITS.
2. TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED IN 2007 BY JOHNSON, MIRMIRAN & THOMPSON (JMT) AND KCI COMMUNICATIONS INFRASTRUCTURE.
3. THERE ARE NO NON-TIDAL WETLAND SYSTEMS IN THE PROJECT AREA.
4. ACCORDING TO FEMA MAP 2400440033B, DATED 12/4/1986 THERE ARE NO FLOODPLAINS IN THE PROJECT AREA.
5. THROUGH U.S. FISH AND WILDLIFE'S ONLINE CERTIFICATION PROCESS IT WAS DETERMINED THAT EXCEPT FOR THE OCCASIONAL TRANSIENT INDIVIDUALS, THERE ARE NO STATE OR FEDERAL RECORDS FOR RARE, THREATENED OR ENDANGERED SPECIES WITHIN THE CLARKSVILLE USGS GRID.
6. THERE ARE 4 SPECIMEN TREES LOCATED IN OR NEAR THE STUDY AREA. ALL TREES WERE FIELD SURVEYED.
7. THIS SITE DOES LIE WITHIN A COUNTY GREEN INFRASTRUCTURE EVALUATION AREA.
8. ACCORDING TO MERLIN ONLINE DATABASE NO HISTORIC PROPERTIES ARE LOCATED WITHIN 1000 FEET OF THE PROJECT AREA.
9. THE PROJECT AREA AND THE SURROUNDING PARCELS ARE CONSIDERED NT (NEWTOWN) & R-20 (RESIDENTIAL-SINGLE 20,000 SF).
10. THIS PROJECT LIES WITHIN THE MIDDLE PATUXENT RIVER BRANCH MARYLAND WATERSHED AND IS ASSOCIATED WITH HUC CODE 02131106(0959).
11. THERE ARE STEEP SLOPES WITHIN THE 15-25% RANGE OF NOTABLE SIZE (GREATER THAN OR EQUAL TO 10,000 SQUARE FEET) WITHIN THE STUDY AREA.
12. A FOREST STAND ANALYSIS TABLE WAS NOT COMPLETED, DUE TO NO PRESENCE OF A FOREST STAND IN THE R-20 ZONE.



SITE DESCRIPTION

ON BEHALF OF THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS (DPW), WHITMAN, REQUARDT & ASSOCIATES, LLP (WR&A) IS PROVIDING DESIGN SERVICES FOR THE DESIGN PHASE OF THE MIDDLE PATUXENT ENVIRONMENTAL AREA SITE IMPROVEMENTS PROJECT. HOWARD COUNTY IS PLANNING TO EXPAND THE TROTTER ROAD PARKING LOT AND PARK ENTRANCE ROAD TO THE MIDDLE PATUXENT ENVIRONMENTAL AREA INCLUDING SITE AMENITIES TO ADDRESS THE EXPANDING OUTREACH PROGRAMS OFFERED BY THE COUNTY.

THE STUDY AREA FOR THIS PROJECT HAS BEEN EXTENDED BEYOND THE LIMIT OF DISTURBANCE (LOD) TO ENSURE THE MAPPING OF ALL ENVIRONMENTAL FEATURES WITHIN AND IN CLOSE PROXIMITY TO THE PROJECT AREA. THE PROJECT AREA CONSISTS OF TWO ZONING DESIGNATIONS. THE NEWTOWN (NT) ZONING DESIGNATION IS EXEMPT FROM FOREST CONSERVATION REQUIREMENTS AND ONLY REQUIRES A FOREST STAND DATA SUMMARY, WHICH INCLUDES A BRIEF DESCRIPTION OF THE FOREST ON-SITE AND SPECIMEN TREE MAPPING. THE NEWTOWN ZONING IS LOCATED ON THE NORTHERN PORTION OF THE PROJECT AREA. THE SOUTHERN PORTION OF THE PROJECT AREA IS ZONED RESIDENTIAL 20 (R-20) AND IS SUBJECT TO STANDARD FOREST CONSERVATION REGULATIONS.

WITHIN THE STUDY AREA THERE ARE 2 FOREST STANDS AND 3 HEDGEROWS. THE DESCRIPTIONS OF THESE AREAS CAN BE FOUND ON SHEETS FCP-2 THROUGH FCP-6 AS THEY APPEAR ON EACH PLAN SHEET. THE STUDY AREA ALSO CONTAINS 3 NON-TIDAL WETLANDS AND A 100-YEAR FLOODPLAIN.

METHODOLOGY

USING THE SAMPLE PLOT METHOD AS DEFINED IN THE STATE FOREST CONSERVATION TECHNICAL 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 EVERY 4 ACRES OF FOREST STAND AREA, WITH A MINIMUM OF TWO SAMPLE PLOTS FOR EACH FOREST STAND AND A MINIMUM OF THREE PLOTS TOTAL.

FOR EACH PLOT, DATA WAS RECORDED USING THE "FOREST SAMPLING DATA WORKSHEET" FROM THE STATE FOREST CONSERVATION TECHNICAL MANUAL (DNR, 1997). 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 TECHNICAL MANUAL.

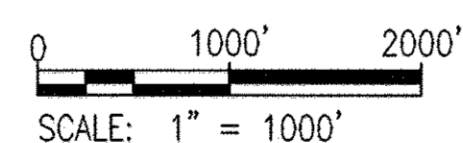
CLEARING NARRATIVE

ALL FOREST STAND CLEARING IS GOING TO TAKE PLACE IN THE NEWTOWN (NT) ZONE WHICH IS EXEMPT FROM FOREST CONSERVATION. CLEARING IN THE RESIDENTIAL (R-20) ZONE IS BEING LIMITED TO HEDGEROWS AND OPEN MEADOW. THE PROJECT WAS SOMEWHAT CONSTRAINED BY THE LOCATION OF THE EXISTING PATH, GATE AND PARKING AREA. THERE HAS BEEN AN EFFORT TO AVOID AND MINIMIZE REMOVAL OF SPECIMEN TREES AND WOODED STREAM BUFFER.

Soil Map Unit	Soil Name	K-Factor Waste Soil	Hydric Soils	Hydrologic Soil Group	Drainage Class
GbC	Gladstone loam, 8-15% slopes	0.24	Not Hydric	B	Well drained
GmB	Glenville silt loam, 3-8% slopes	0.43	Partially Hydric (5%)	C	Moderately well drained
GnB	Glenville-Baie silt loams, 0-8% slopes	0.43	Partially Hydric (35%)	C/D	Moderately well drained
Ha	Hatboro-Codorus silt loam, 0-3% slopes	0.37	Dominantly Hydric (60%)	D/C	Poorly drained
MaD	Manor loam, 15-25% slopes	0.28	Not Hydric	B	well drained

SPECIMEN TREE CHART

TREE #	SPECIES	SIZE (inches)	CONDITION
1	TULIP POPLAR (<i>LIRIODENDRON TULIPIFERA</i>)	30 dbh	GOOD
2	WHITE OAK (<i>QUERCUS ALBA</i>)	33 dbh	GOOD
3	SCARLET OAK (<i>QUERCUS COCCINEA</i>)	37 dbh	GOOD
4	SCARLET OAK (<i>QUERCUS COCCINEA</i>)	33 dbh	POOR



VICINITY MAP
SCALE: 1"=1000'

TOTAL TRACT AREA	2.46 ACRES
AREA IN THE NT ZONE	1.66 ACRES
NET TRACT AREA	0.80 ACRES
FOREST IN NET TRACT	0.00 ACRES
FOREST CLEARING	0.00 ACRES
FOREST RETENTION	0.00 ACRES
AFFORESTATION REQUIREMENT	0.12 ACRES

LEGEND

	TREELINE/BUSHLINE
	LIMIT OF DISTURBANCE (PROJECT AREA/NET TRACT)
	SOILS
	WATERS OF THE U.S. (STREAM)
	STREAM BUFFER
	15-25% SLOPES
	GREATER THAN 25% SLOPES
	SPECIMEN TREE

REVISIONS	
△ REVISED SHEET TOTAL	6/28/17

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

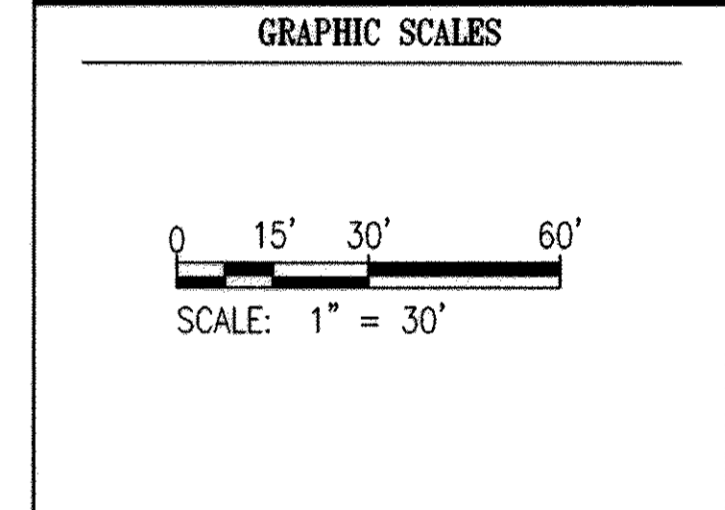
WR&A

WHITMAN, REQUARDT
& ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21213
Phone: 410-235-3450 Fax: 410-243-9716

PROPERTY

TAX MAP 35, GRID 3, PARCEL 512
TAX MAP 35, GRID 2, PARCEL 427

ZONING: NEWTOWN & R-20
ELECTION DISTRICT 05



SIGNATURE

TIMOTHY R. HESS
MD DNR QUALIFIED PROFESSIONAL
3/5/14 DATE

**MPEA - SITE
IMPROVEMENTS**

**FOREST CONSERVATION
COVER SHEET**

Drawing No.
F2.1

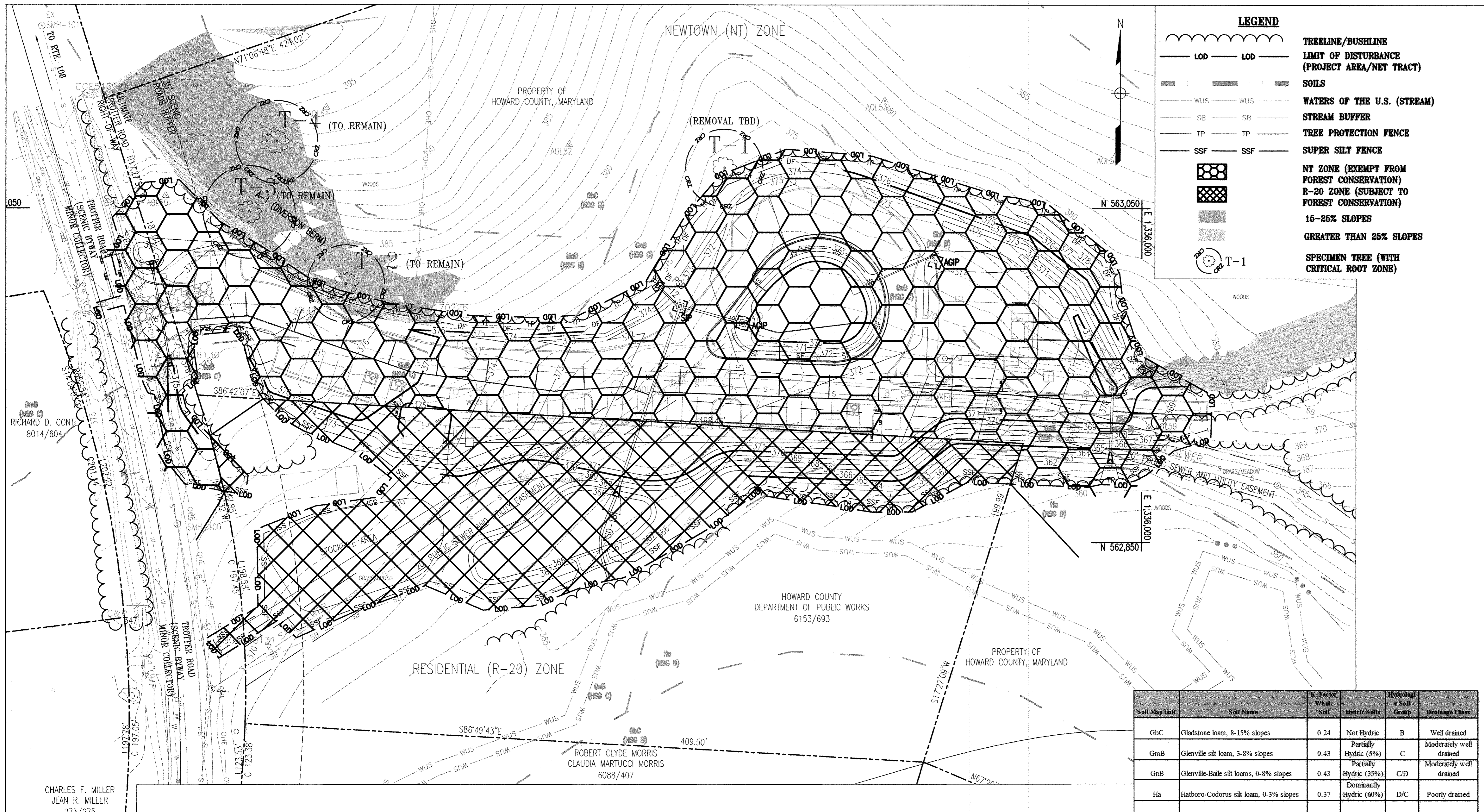
Scale: 1" = 30'
Date: 09/12/2014 Sheet 24 of 27
Des: TRH Drawn: TRH Check: JNA

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 10-2-14

CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 10-10-14

DIRECTOR DATE: 10/13/14



LEGEND

	TREELINE/BUSHLINE
	LIMIT OF DISTURBANCE (PROJECT AREA/NET TRACT)
	SOILS
	WATERS OF THE U.S. (STREAM)
	STREAM BUFFER
	TREE PROTECTION FENCE
	SUPER SILT FENCE
	NT ZONE (EXEMPT FROM FOREST CONSERVATION)
	R-20 ZONE (SUBJECT TO FOREST CONSERVATION)
	15-25% SLOPES
	GREATER THAN 25% SLOPES
	SPECIMEN TREE (WITH CRITICAL ROOT ZONE)

Soil Map Unit	Soil Name	K-Factor Whole Soil	Hydric Soils	Hydrology & Soil Group	Drainage Class
GbC	Gladstone loam, 8-15% slopes	0.24	Not Hydric	B	Well drained
GmB	Glenville silt loam, 3-8% slopes	0.43	Partially Hydric (5%)	C	Moderately well drained
GnB	Glenville-Baile silt loams, 0-8% slopes	0.43	Partially Hydric (35%)	C/D	Moderately well drained
Ha	Hatboro-Codorus silt loam, 0-3% slopes	0.37	Dominantly Hydric (60%)	D/C	Poorly drained
MaD	Manor loam, 15-25% slopes	0.28	Not Hydric	B	well drained

HEDGEROW 1

HEDGEROW 1 IS LOCATED IN BOTH THE NEWTOWN (NT) AND RESIDENTIAL (R-20) ZONES. THIS AREA IS DOMINATED BY RED MAPLE (*Acer rubrum*), BLACK LOCUST (*Robinia pseudoacacia*), NORTHERN SPICEBUSH (*Lindera benzoin*), MULTIFLORA ROSE (*Rosa multiflora*) AND ALLEGHENY BLACKBERRY (*Rubus allegheniensis*). THE AVERAGE SIZE FOR THE DOMINANT TREES IN THIS AREA IS APPROXIMATELY 8-10"dbh. THERE ARE NO SPECIMEN TREES WITHIN THE STUDY AREA OF HEDGEROW 1. WHILE HEDGEROW 1 DOES CONTAIN A 100 FT STREAM BUFFER THERE ARE NO OTHER ENVIRONMENTAL CONSTRAINTS (STREAMS, WETLANDS, OR FLOODPLAINS). THERE ARE SEVERAL INVASIVE SPECIES PRESENT INCLUDING JAPANESE HONEYSUCKLE (*Lonicera japonica*) AND MULTIFLORA ROSE (*Rosa multiflora*). HEDGEROW 1 IS PRIMARILY LOCATED IN THE Gnb SOIL TYPE, WHICH IS ASSOCIATED WITH THE WOODLAND SUSTAINABILITY GROUPS 1 AND 12. THESE TWO GROUPS TYPICALLY ARE OCCUPIED BY A VARIETY OF PINES, SWEET GUM AND YELLOW POPLAR. SEASONAL WETNESS AND FLOODING CAN SEVERELY LIMIT THE USE OF EQUIPMENT IN THESE AREAS. GIVEN THE PRESENCE OF THE STREAM BUFFER THIS AREA IS DETERMINED TO HAVE A HIGH RETENTION VALUE.

OPEN MEADOW 1

OPEN MEADOW 1 IS LOCATED IN BOTH THE NEWTOWN (NT) AND RESIDENTIAL (R-20) ZONES BETWEEN HEDGEROW 1 AND HEDGEROW 2. THIS AREA IS DOMINATED BY BLACK CHERRY (*Prunus serotina*), JAPANESE HONEYSUCKLE (*Lonicera japonica*), MULTIFLORA ROSE (*Rosa multiflora*) AND MILE-A-MINUTE (*Polygonum perfoliatum*). WHILE OPEN MEADOW 1 DOES CONTAIN A 100 FT STREAM BUFFER THERE ARE NO OTHER ENVIRONMENTAL CONSTRAINTS WITHIN THE PROPOSED LIMIT OF DISTURBANCE (STREAMS, WETLANDS, OR FLOODPLAINS). THERE ARE SEVERAL INVASIVE SPECIES PRESENT INCLUDING JAPANESE HONEYSUCKLE (*Lonicera japonica*), MILE-A-MINUTE (*Polygonum perfoliatum*) AND MULTIFLORA ROSE (*Rosa multiflora*). OPEN MEADOW 1 IS PRIMARILY LOCATED IN THE Gnb SOIL TYPE, WHICH IS ASSOCIATED WITH THE WOODLAND SUSTAINABILITY GROUPS 1 AND 12. THESE TWO GROUPS TYPICALLY ARE OCCUPIED BY A VARIETY OF PINES, SWEET GUM AND YELLOW POPLAR. SEASONAL WETNESS AND FLOODING CAN SEVERELY LIMIT THE USE OF EQUIPMENT IN THESE AREAS. GIVEN THE PRESENCE OF THE STREAM BUFFER THIS AREA IS DETERMINED TO HAVE A HIGH RETENTION VALUE.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

10-2-14

10-10-14

11/12/14

HEDGEROW 2

HEDGEROW 2 IS LOCATED IN BOTH THE NEWTOWN (NT) AND RESIDENTIAL (R-20) ZONES. THIS AREA IS DOMINATED BY RED MAPLE (*Acer rubrum*), BLACK LOCUST (*Robinia pseudoacacia*), BOXELDER (*Acer negundo*), MULTIFLORA ROSE (*Rosa multiflora*) AND ALLEGHENY BLACKBERRY (*Rubus allegheniensis*). THE AVERAGE SIZE FOR THE DOMINANT TREES IN THIS AREA IS APPROXIMATELY 10-12"dbh. THERE ARE NO SPECIMEN TREES WITHIN THE STUDY AREA OF HEDGEROW 2. WHILE HEDGEROW 2 DOES CONTAIN A 100 FT STREAM BUFFER THERE ARE NO OTHER ENVIRONMENTAL CONSTRAINTS WITHIN THE PROPOSED LIMIT OF DISTURBANCE (STREAMS, WETLANDS, OR FLOODPLAINS). THERE ARE SEVERAL INVASIVE SPECIES PRESENT INCLUDING JAPANESE HONEYSUCKLE (*Lonicera japonica*) AND MULTIFLORA ROSE (*Rosa multiflora*). HEDGEROW 2 IS PRIMARILY LOCATED IN THE Gnb AND Ha SOIL TYPES, WHICH IS ASSOCIATED WITH THE WOODLAND SUSTAINABILITY GROUPS 1, 2 AND 12. THESE THREE GROUPS TYPICALLY ARE OCCUPIED BY A VARIETY OF PINES, OAKS, SWEET GUM AND YELLOW POPLAR. SEASONAL WETNESS AND FLOODING CAN SEVERELY LIMIT THE USE OF EQUIPMENT IN THESE AREAS. GIVEN THE PRESENCE OF THE STREAM BUFFER THIS AREA IS DETERMINED TO HAVE A HIGH RETENTION VALUE.

FOREST DATA SUMMARY (REQUIRED FOR NEWTOWN ZONE)

FOREST STAND 1 IS LOCATED ENTIRELY WITHIN THE NEWTOWN (NT) ZONE. FULL DATA SHEETS ARE NOT REQUIRED FOR THE NT ZONED AREA, HOWEVER THE CANOPY IS DOMINATED BY WHITE OAK (*Quercus alba*), NORTHERN RED OAK (*Quercus rubra*), TULIP POPLAR (*Liriodendron tulipifera*), AND BLACK LOCUST (*Robinia pseudoacacia*). THE AVERAGE SIZE FOR THE DOMINANT TREES IN THIS AREA IS APPROXIMATELY 12-15"dbh. THE UNDERSTORY AND HERBACEOUS LAYERS ARE DOMINATED BY JAPANESE HONEYSUCKLE (*Lonicera japonica*), LOWBUSH BLUEBERRY (*Vaccinium angustifolium*), AMERICAN HORNBEAM (*Carpinus caroliniana*), POISON IVY (*Toxicodendron radicans*), BLACK CHERRY (*Prunus serotina*), VIRGINIA CREEPER (*Parthenocissus quinquefolia*) AND AMERICAN BEECH (*Fagus grandifolia*). THERE ARE 4 SPECIMEN TREES WITHIN THE STUDY AREA. OTHER THAN A SMALL SECTION OF 100 FT STREAM BUFFER THERE ARE NO OTHER ENVIRONMENTAL CONSTRAINTS (STREAMS, WETLANDS, OR FLOODPLAINS) WITHIN FOREST STAND 1. THERE ARE SEVERAL INVASIVE SPECIES PRESENT INCLUDING JAPANESE HONEYSUCKLE (*Lonicera japonica*), SERICEA LESPEDEZA (*Lespedeza cuneata*), MILE-A-MINUTE (*Polygonum perfoliatum*), AND MULTIFLORA ROSE (*Rosa multiflora*). EDGEROW 2 IS PRIMARILY LOCATED IN THE Gnb, GbC, MaD AND Ha SOIL TYPES, WHICH IS ASSOCIATED WITH THE WOODLAND SUSTAINABILITY GROUPS 1, 2, 12, 44 AND GbC IS NOT LISTED IN THE SOIL SURVEY. THESE FOUR GROUPS TYPICALLY ARE OCCUPIED BY A VARIETY OF PINES, OAKS, SWEET GUM AND YELLOW POPLAR. SEASONAL WETNESS, SLOPES AND FLOODING CAN SEVERELY LIMIT THE USE OF EQUIPMENT IN THESE AREAS. GIVEN THE PRESENCE OF SPECIMEN TREES AND THE STREAM BUFFER THIS AREA IS DETERMINED TO HAVE A HIGH RETENTION VALUE.

TREE #	SPECIES	SIZE (inches)	CONDITION
1	TULIP POPLAR (<i>LIRIODENDRON TULIPIFERA</i>)	31 dbh	GOOD
2	WHITE OAK (<i>QUERCUS ALBA</i>)	33 dbh	GOOD
3	SCARLET OAK (<i>QUERCUS COCCINEA</i>)	37 dbh	GOOD
4	SCARLET OAK (<i>QUERCUS COCCINEA</i>)	33 dbh	POOR

REVISIONS

△	REVISED SHEET TOTAL	6/28/17

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

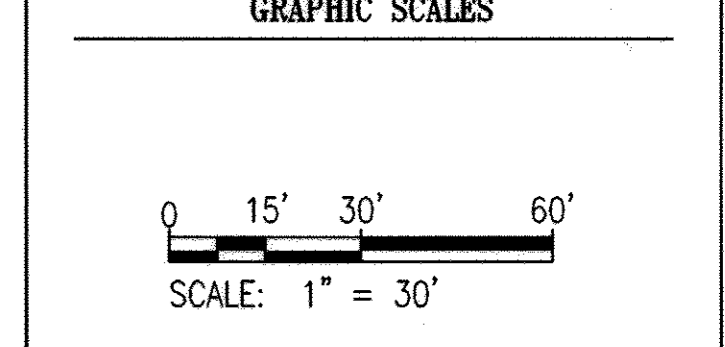
WR&A

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 35, GRID 3, PARCEL 512
TAX MAP 35, GRID 2, PARCEL 427

ZONING: NEWTOWN & R-20
ELECTION DISTRICT 05



SIGNATURE

TIMOTHY R. HESS
MD DNR QUALIFIED PROFESSIONAL

3/5/14
DATE

MPEA - SITE IMPROVEMENTS

FOREST CONSERVATION PLAN

Drawing No.
F2.2

Scale: 1" = 30'

Date: 09/12/2014 Sheet 25 of 27

Des: TRH Drawn: TRH Check: JNA

NET TRACT AREA:

A. Total tract area.....=	2.46
B. Area within NT Zone.....=	1.66
C. Area to remain in agricultural production.....=	0.00
D. Net tract area.....=	0.80

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	CA
0	0	1	0	0	0

E. Afforestation Threshold.....	15% x D =	0.12
F. Conservation Threshold.....	20% x D =	0.16

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:

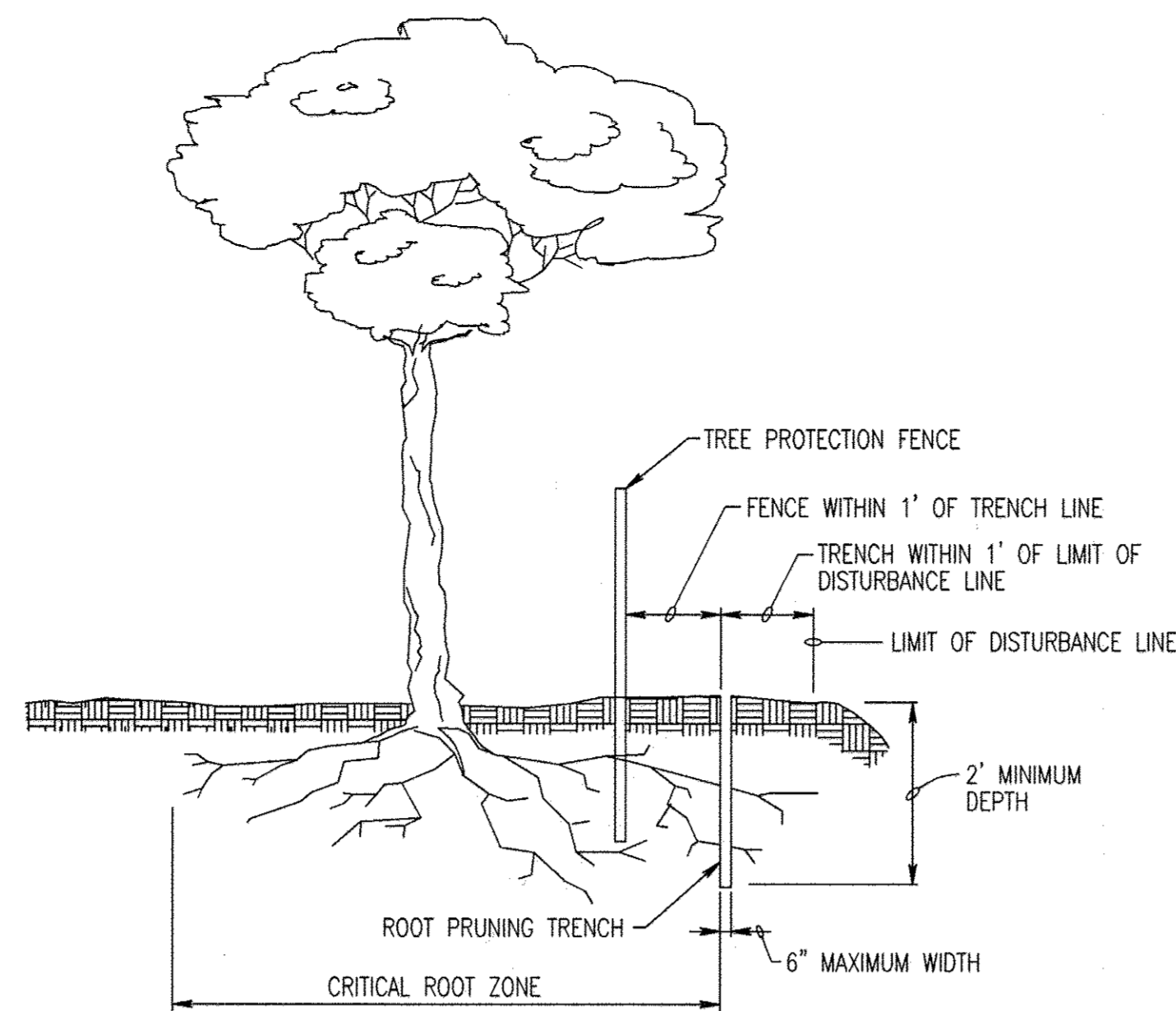
N. Reforestation for clearing above conservation threshold...=	0.00
P. Reforestation for clearing below conservation threshold...=	0.00
Q. Credit for retention above conservation threshold.....=	0.00
R. Total reforestation required.....=	0.00
S. Total afforestation required.....=	0.12
T. Total reforestation and afforestation required.....=	0.12

FOREST MITIGATION OBLIGATION

DUE TO THE MINIMAL AFFORESTATION OBLIGATION AND TO PREVENT RESTRICTION FOR FUTURE EXPANSION HOWARD COUNTY HAS ELECTED TO FULFILL THE REFORESTATION OBLIGATION FOR THIS PROJECT VIA THE FEE-IN-LIEU PROGRAM. AT A REQUIREMENT OF 0.12 ACRES (5,227 SQ. FT.) AND A FOREST CONSERVATION FEE-IN-LIEU OF \$0.75 A SQUARE FOOT HOWARD COUNTY WILL HAVE A FOREST CONSERVATION OBLIGATION OF \$3,920.

SURETY

BY COMPLETING THE FOREST MITIGATION OBLIGATION VIA THE FEE-IN-LIEU PROGRAM A SURETY DEPOSIT IS NOT REQUIRED.

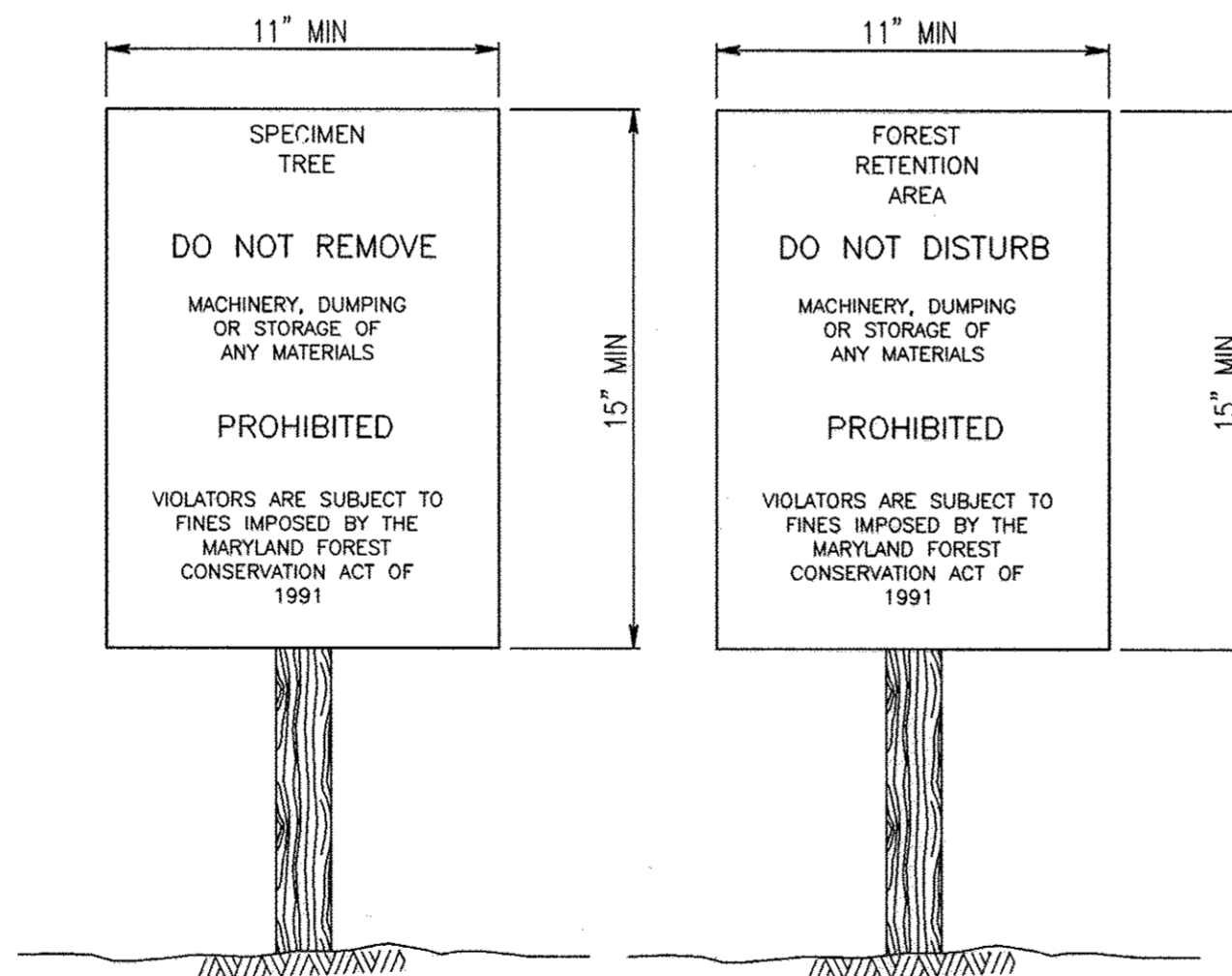


NOTES:

1. RETENTION AREAS TO BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
2. BOUNDARIES OF RETENTION AREAS TO BE STAKED AND FLAGGED PRIOR TO TRENCHING.
3. EXACT LOCATION OF TRENCH SHALL BE IDENTIFIED.
4. TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH SOIL REMOVED OR OTHER HIGH ORGANIC SOIL.
5. ROOTS SHOULD BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.

ROOT PRUNING

NO SCALE



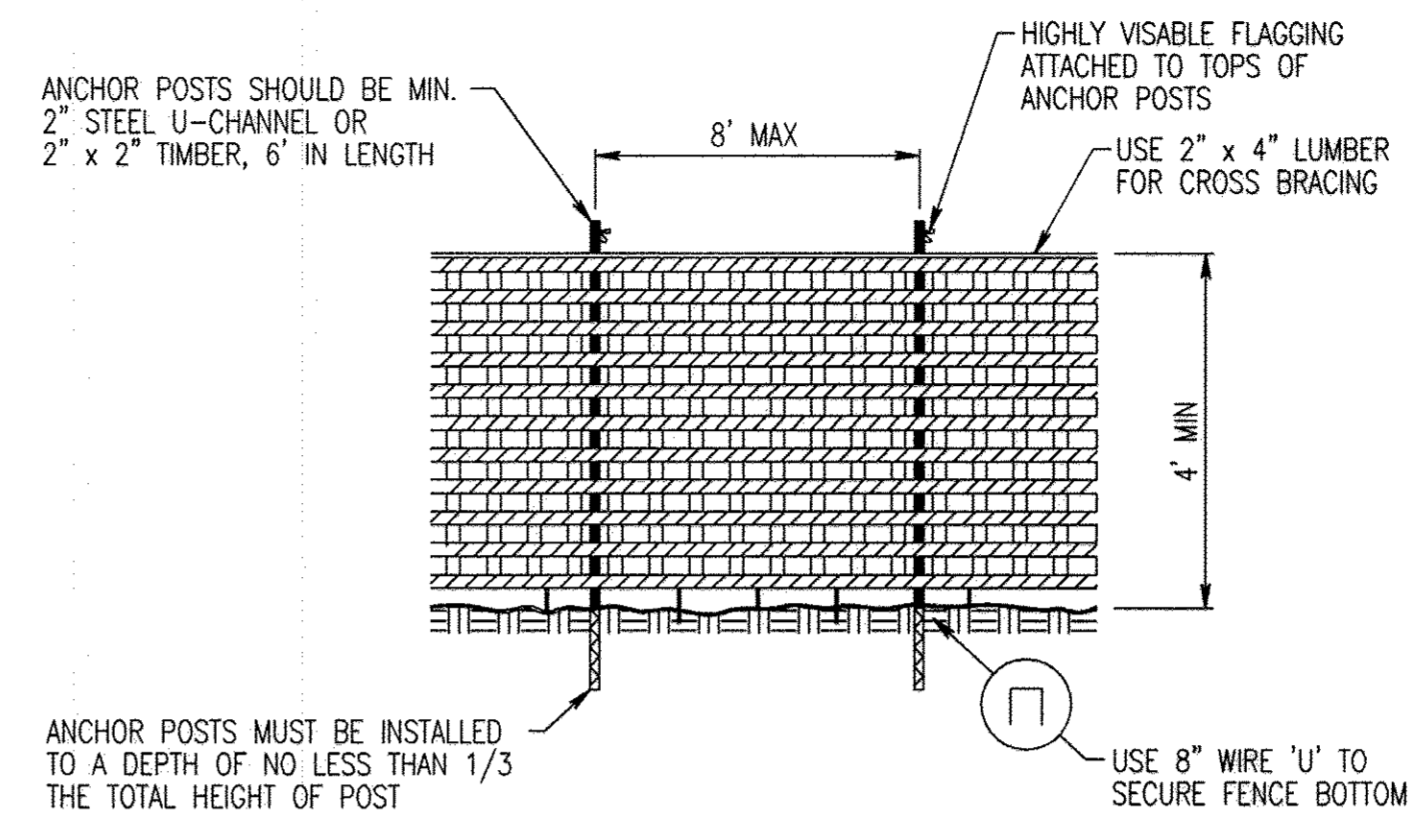
NOTES:

1. BOTTOM OF SIGN TO BE HIGHER THAN TOP OF TREE PROTECTION FENCE.
2. SIGNS TO BE PLACED APPROXIMATELY 50' APART. CONDITIONS ON SITE AFFECTING VISIBILITY MAY WARRANT PLACING SIGNS CLOSER OR FARTHER APART.
3. ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.

CONSTRUCTION SIGNS

NO SCALE

AT THIS TIME IT HAS BEEN DETERMINED THAT NO SIGNS ARE NEEDED AS THERE ARE NO FOREST CONSERVATION EASEMENTS. IF DURING CONSTRUCTION IT IS DETERMINED THAT ANY ARE REQUIRED THIS DETAIL HAS BEEN INCLUDED.



NOTES:

1. BLAZE ORANGE OR BLUE PLASTIC MESH FENCE FOR FOREST PROTECTION DEVICE, ONLY.
2. BOUNDARIES OF RETENTION AREA WILL BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
4. AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS.
5. PROTECTION SIGNAGE IS REQUIRED.
6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

PLASTIC MESH TREE PROTECTION FENCE

NO SCALE

CONSTRUCTION PERIOD PROTECTION PROGRAM

1. PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL LOCATE THE LIMITS OF DISTURBANCE (LOD) IN THE FIELD.
2. PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES, BLAZE ORANGE FENCING SHALL BE INSTALLED AS PER DETAIL THIS SHEET ALONG ALL LIMITS OF DISTURBANCE ADJACENT TO WOODLANDS AND AS INDICATED ON FOREST CONSERVATION PLAN SHEETS FCP02.
3. TREES TO BE REMOVED SHALL BE TAKEN OUT WITHOUT DAMAGING PROTECTED TREES.
4. ALL EQUIPMENT AND MACHINERY SHALL BE KEPT INSIDE THE BLAZE ORANGE FENCING AND WITHIN THE LOD.
5. ANY TYPE OF DISTURBANCE BEYOND THE LOD IS STRICTLY PROHIBITED.
6. PLACEMENT OF EXCAVATED/BACKFILL MATERIAL AND STORAGE OF EQUIPMENT/MACHINERY SHALL BE AVOIDED WITHIN THE CRITICAL ROOT ZONE AREAS OF SPECIMEN TREES IN ORDER TO MINIMIZE SOIL COMPACTION IN THESE SENSITIVE AREAS.
7. ROOT PRUNING AS PER DETAIL THIS SHEET SHALL BE UTILIZED FOR PROTECTION OF SPECIMEN TREES IN AREAS WHERE SPECIMEN TREE CRITICAL ROOT ZONES ARE LOCATED INSIDE THE LOD.

POST-CONSTRUCTION PERIOD PROTECTION PROGRAM

TYPICALLY A POST CONSTRUCTION PROTECTION PROGRAM IS REQUIRED TO GIVE THE FOREST RESOURCES SAVED OR PLANTED AS PART OF THE DEVELOPMENT PROPOSAL A HIGH PROBABILITY OF ACHIEVING THE SURVIVAL RATES REQUIRED FOR RELEASE OF SURETY, AS WELL AS LONG-TERM SURVIVAL. THE POST-CONSTRUCTION PROTECTION PROGRAM PERIOD TYPICALLY SHALL BE FOR A MINIMUM OF TWO GROWING SEASONS, AS SPECIFIED IN THE HOWARD COUNTY FOREST CONSERVATION MANUAL. HOWEVER THERE ARE NO PLANTING AREAS ASSOCIATED WITH THIS PROJECT AND THEREFORE NO SURETY IS REQUIRED.

REVISIONS	
REVIS	DATE
1	6/28/17

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



WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 35, GRID 3, PARCEL 512
TAX MAP 35, GRID 2, PARCEL 427

ZONING: NEWTOWN & R-20
ELECTION DISTRICT 05

GRAPHIC SCALES

SCALE: 1" = 30'

SIGNATURE

[Signature]

TIMOTHY R. HESS
MD DNR QUALIFIED PROFESSIONAL

3/5/14
DATE

MPEA - SITE IMPROVEMENTS

FOREST CONSERVATION NOTES AND DETAILS

Drawing No.
F2.3

Scale: 1" = 30'

Date: 09/12/2014 Sheet 26 of 27

Des: TRH Drawn: TRH Check: JNA

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 10.2.14
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 10-10-14
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

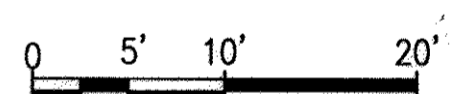
[Signature] 11/12/14
DIRECTOR DATE


REVISIONS	
▲	REVISED SITE DEVELOPMENT PLAN 6/28/17
	NEW SHEET, SGW DETAILS & PROFILES

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: 410-235-3450 Fax: 410-243-9716

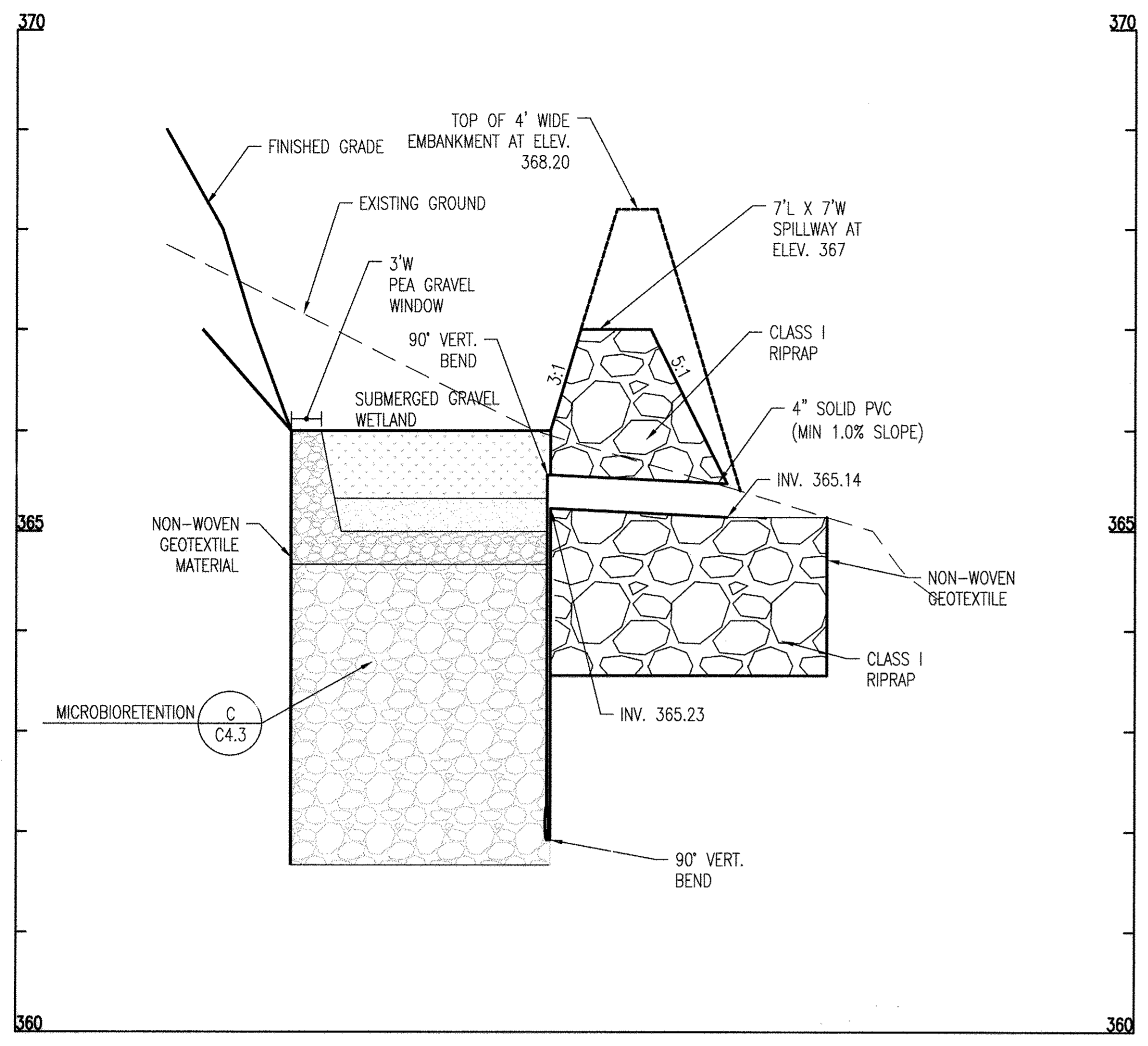
PROPERTY
 TAX MAP 35, GRID 3, PARCEL 512
 TAX MAP 35, GRID 2, PARCEL 427
 ZONING: NEWTOWN & R-20
 ELECTION DISTRICT 05

GRAPHIC SCALES

 SCALE: 1" = 10'

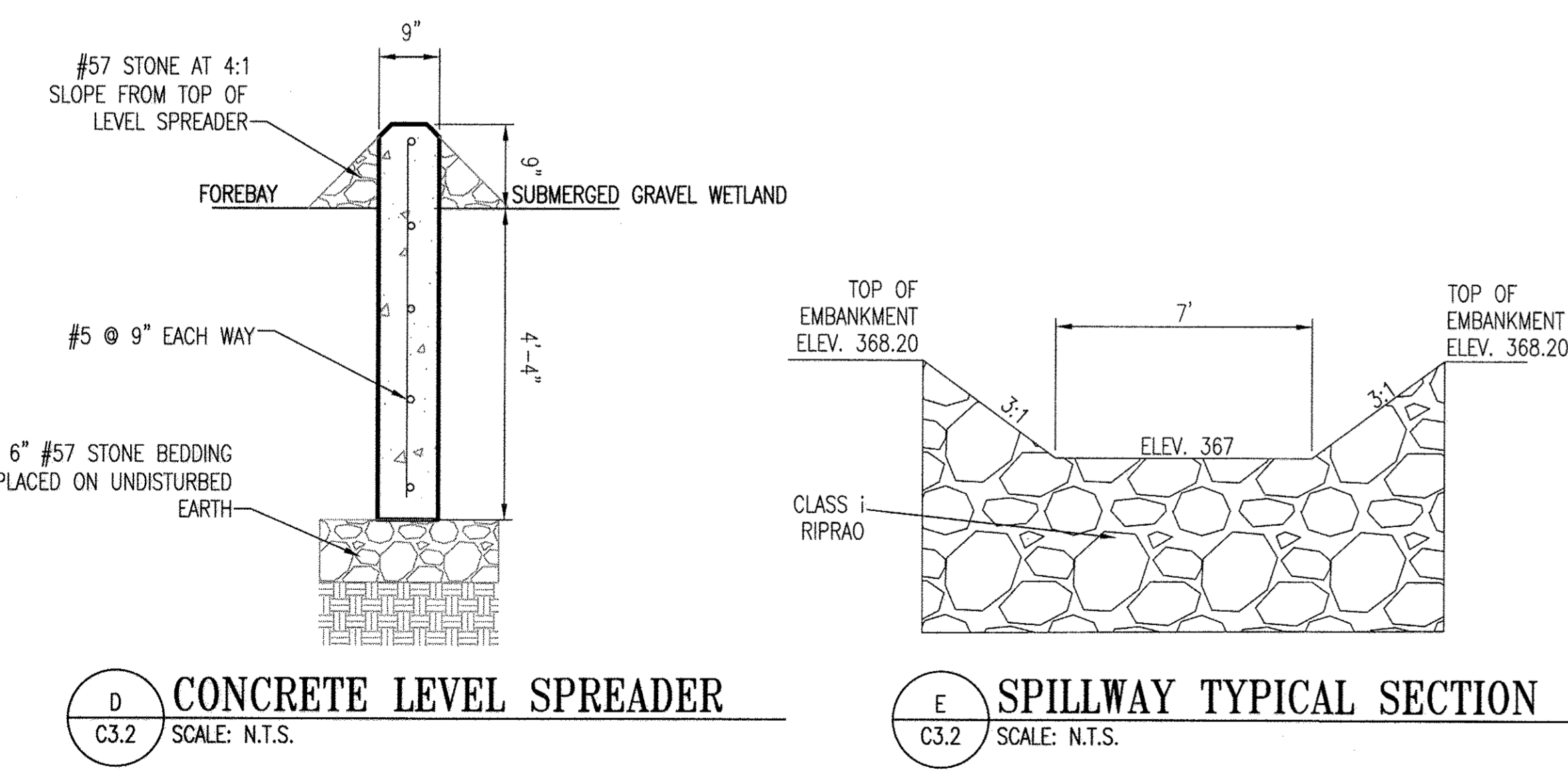
SIGNATURE

 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: 09/22/2017

MPEA - SITE IMPROVEMENTS

ENLARGED SUBMERGED GRAVEL WETLAND PLAN
 Drawing No.
C3.2
 Scale: 1"=10'
 Date: 09/12/2014 Sheet 27 of 27
 Des: BWJ/SAD Drawn: SAD Check: AUO

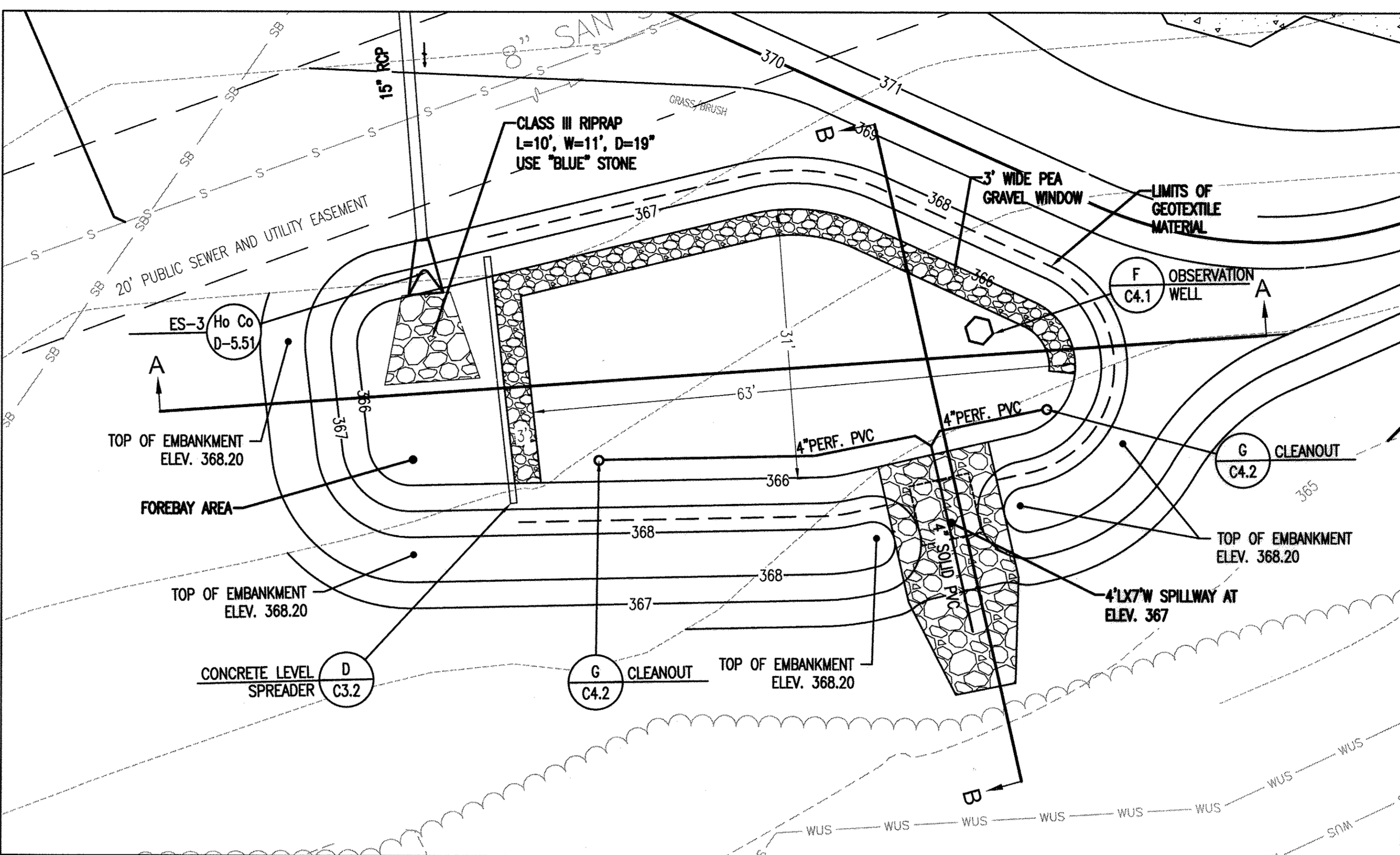


C SUBMERGED GRAVEL WETLAND PROFILE B-B
 C3.2 SCALE: 1" = 10' HORIZ.
 1" = 1' VERT.

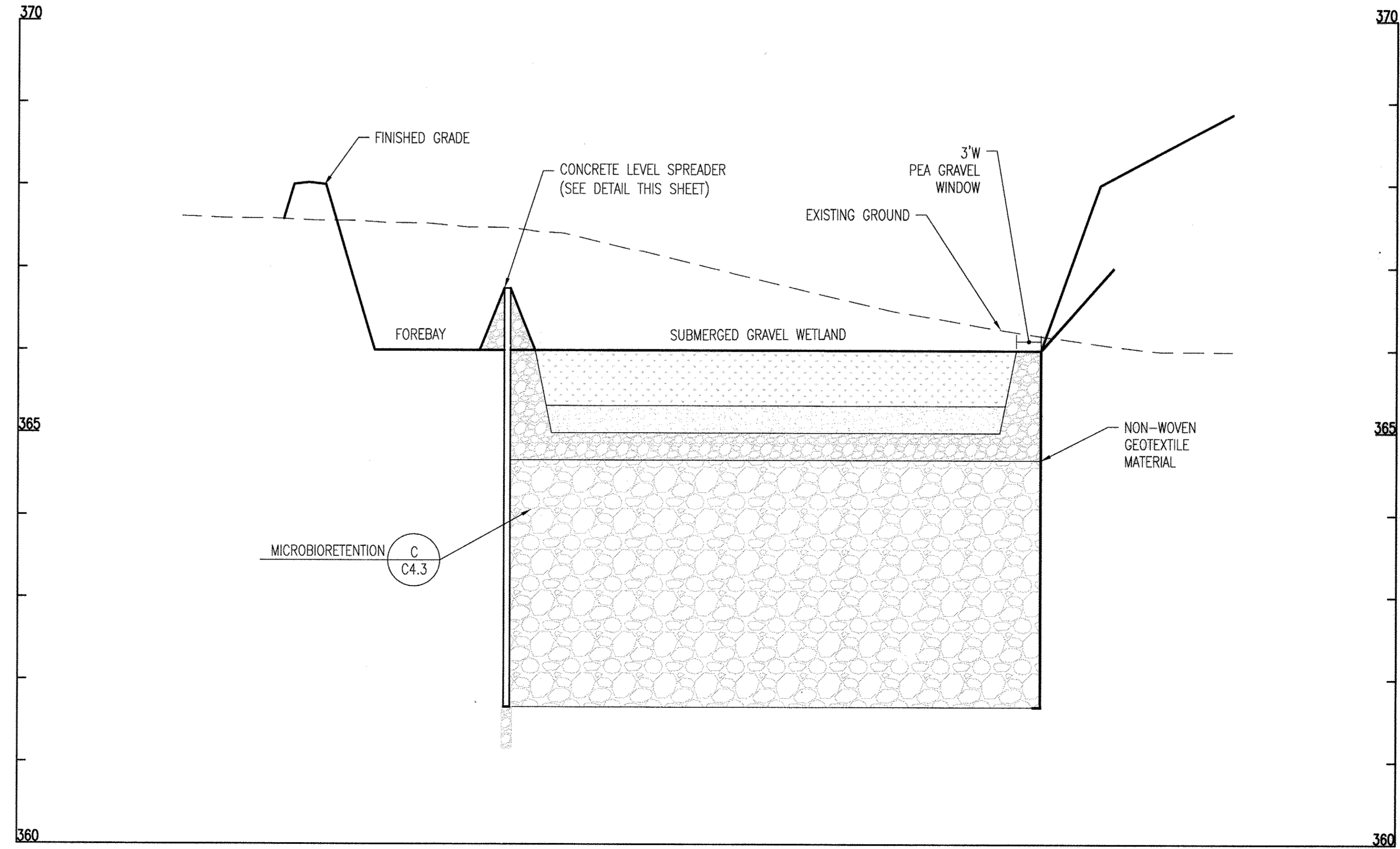


D CONCRETE LEVEL SPREADER
 C3.2 SCALE: N.T.S.




E SPILLWAY TYPICAL SECTION
 C3.2 SCALE: N.T.S.



A ENLARGED SUBMERGED GRAVEL WETLAND STORMWATER MANAGEMENT PLAN
 C3.2 SCALE: 1" = 10'



B SUBMERGED GRAVEL WETLAND PROFILE A-A
 C3.2 SCALE: 1" = 10' HORIZ.
 1" = 1' VERT.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 DATE: 8-29-17
 DATE: 9-13-17
 DATE: 9-13-17