

GENERAL NOTES

- THIS PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- THE SUBJECT PROPERTY IS ZONED R-SC PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM, HOWARD COUNTY MONUMENTS NO. 43EB AND 43EC WERE USED FOR THIS PROJECT.
- TRACT BOUNDARY IS BASED ON A FIELD RUN BOUNDARY SURVEY PERFORMED ON OR ABOUT AUGUST, 2015 BY BENCHMARK ENGINEERING, INC.
- TOPOGRAPHY SHOWN ON-SITE AND ALONG LINCOLN DRIVE IS BASED ON FIELD SURVEY BY BENCHMARK ENGINEERING, INC., DATED AUGUST, 2015. TOPOGRAPHY SHOWN ON ADJACENT PROPERTIES IS BASED ON HOWARD COUNTY GIS. ALL CONTOURS ARE A MAXIMUM OF 2' INTERVALS.
- A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT SINCE THE SITE IS LOCATED MORE THAN 1,000 FEET FROM ROUTE 1 AND INTERSTATE 95.
- THE TRAFFIC STUDY WAS PREPARED BY MARS GROUP, INC. IN AUGUST, 2015 AND APPROVED BY HOWARD COUNTY DPZ ON 11-20-2015. A FEE-IN-LIEU IN THE AMOUNT OF \$8,820.00 FOR THE REQUIRED ROAD MITIGATION SHALL BE PAID AS PART OF THE DPW DEVELOPERS AGREEMENT PER DEVELOPMENT ENGINEERING DIVISION LETTER DATED APRIL 25, 2016.
- THE GEOTECHNICAL REPORT WAS PREPARED BY GEOLABS, INC. IN MARCH, 2016.
- FOREST STAND AND WETLAND DELINEATION WAS PERFORMED BY ECO-SCIENCE PROFESSIONALS, INC. IN AUGUST, 2015. THERE ARE NO WETLANDS, DELINEATION BUFFER, STRIPES, STREAM BUFFERS, 100-YR FLOODPLAIN OR 25% OR GREATER STEEP SLOPES WITH MORE THAN 20,000 SF OF CONTIGUOUS AREA LOCATED WITHIN THE PROJECT SITE.
- TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO CEMETERY LOCATIONS ON-SITE.
- THERE ARE NO HISTORIC SITES/FEATURES OR FLOODPLAINS LOCATED ON THIS SITE.
- THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT. THE DRAINAGE AREA IS THE MIDDLE PATUXENT. THE WATER AND SEWER IS PUBLIC. THE CONTRACT NUMBER IS 24-4969-D.
- THIS SUBDIVISION IS SUBJECT TO SECTION 18.122B OF THE HOWARD COUNTY CODE. PUBLIC WATER AND SEWERAGE ALLOCATIONS WILL BE GRANTED AT TIME OF ISSUANCE OF BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
- STORMWATER MANAGEMENT HAS BEEN PROVIDED IN ACCORDANCE WITH THE "MARYLAND DEPARTMENT OF THE ENVIRONMENT STORMWATER MANAGEMENT ACT OF 2007" AND THE "HOWARD COUNTY DESIGN MANUAL VOLUME I, CHAPTER 5" TO THE MAXIMUM EXTENT PRACTICAL (MEP) VIA THE (F-1) SURFACE SAND FILTER, WHICH IS A PRIVATELY OWNED AND MAINTAINED FACILITY.
- LANDSCAPING IS PROVIDED WITH A CERTIFIED LANDSCAPE PLAN IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. FINANCIAL SURETY IN THE AMOUNT OF \$3,900.00 FOR THE REQUIRED PERIMETER LANDSCAPING AND TWO ADDITIONAL SHADE TREES AS A CONDITION ON WP-16-072 APPROVAL. (\$3,900.00 FOR 11 SHADE TREES AND \$600.00 FOR 20 SHRUBS) SHALL BE POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT.
- THIS SUBDIVISION COMPLIES WITH THE REQUIREMENTS OF SECTION 16.200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION. THE ON-SITE RETENTION OF 0.23 ACRES OF FOREST WITHIN A FOREST CONSERVATION EASEMENT AND BY 0.50 ACRES OFF-SITE WITHIN THE FOREST MITIGATION BANK ESTABLISHED UNDER PHELPS PROPERTY, SDP-14-026FC, RECORDED AS PLAT #22843.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 - WIDTH - 12' (16' SERVING MORE THAN ONE RESIDENCE).
 - SURFACE - 6" OF COMPACT CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2" MIN).
 - GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM 45' TURNING RADIUS.
 - STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING).
 - DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOODPLAIN WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY.
 - MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
- FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND ROAD RIGHT-OF-WAY LINE AND NOT ONTO THE PIPESTEM LOT DRIVEWAY.
- THE PRIVATE MAINTENANCE ACCESS AGREEMENT FOR LOTS 3-6 SHALL BE RECORDED SIMULTANEOUSLY WITH THE RECORDATION OF THE PLAT.
- THE PURPOSE OF OPEN SPACE LOT 7 IS FOR THE PROTECTION OF ENVIRONMENTAL AREAS SUCH AS EXISTING TREES AND VEGETATION. IT WILL ALSO CONTAIN AN ESD SWM PRACTICE WHICH TREATS THE LOTS AND USE-IN-COMMON DRIVEWAY. IT SHALL BE DEDICATED TO THE HOMEOWNERS ASSOCIATION.
- THERE IS NO RECREATIONAL OPEN SPACE REQUIREMENT FOR THIS PROJECT SINCE THERE ARE LESS THAN 10 LOTS.
- THE MODERATE INCOME HOUSING UNIT REQUIREMENT (COUNCIL BILL 35-2013) SHALL BE FULFILLED BY PAYMENT OF A FEE-IN-LIEU IN AN AMOUNT THAT IS TO BE CALCULATED BY THE DEPARTMENT OF INSPECTIONS LICENSES AND PERMITS AT THE TIME OF BUILDING PERMIT. THE FEE-IN-LIEU SHALL BE PAID FOR LOTS/RESIDENTIAL UNITS 2 THROUGH 6 WITHIN THIS SUBDIVISION AT TIME OF BUILDING PERMIT ISSUANCE.
- WP-16-072, A REQUEST TO WAIVE SECTION 16.1205(a)(7) OF THE HOWARD COUNTY SUBDIVISION REGULATIONS WAS APPROVED ON JANUARY 14, 2016 AND SECTIONS 16.144(a) AND 16.145 OF THE HOWARD COUNTY SUBDIVISION REGULATIONS WAS APPROVED ON FEBRUARY 24, 2016 SUBJECT TO THE FOLLOWING CONDITIONS:
 - THE REMOVAL OF THE ONE SPECIMEN TREE WILL REQUIRE MITIGATION WITH THE PLANTING OF 2:1 REPLACEMENT TREES (TOTAL) WITH A MINIMUM CALIPER NATIVE PLANT SPECIES. THE REPLACEMENT TREES SHALL BE BONDED AND SHOWN ON THE LANDSCAPE PLAN.
 - THE FINAL PLAN FOR THIS PROJECT MUST PROVIDE ALL OF THE REQUIRED INFORMATION THAT WILL ADDRESS HOW STORMWATER MANAGEMENT WILL BE PROVIDED, ANY REQUIRED PUBLIC ROAD RIGHT-OF-WAY IMPROVEMENTS, AND HOW FOREST CONSERVATION AND LANDSCAPING SHALL BE SATISFIED.
- THIS DEVELOPMENT IS DESIGNED TO BE IN ACCORDANCE WITH SECTION 16.127 - RESIDENTIAL INFILL DEVELOPMENT - OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. THE DEVELOPER OF THIS PROJECT SHALL CREATE COMPATIBILITY WITH THE EXISTING NEIGHBORHOOD THROUGH THE USE OF ENHANCED PERIMETER LANDSCAPING, BERMS, FENCES, SIMILAR HOUSING UNIT TYPES AND THE DIRECTIONAL ORIENTATION OF THE PROPOSED HOUSES.
- A PRIVATE DRIVEWAY SIGN SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS EXPENSE.
- PUBLIC SIDEWALK HAS BEEN PROVIDED ALONG THE PROPERTY FRONTAGE OF LINCOLN DRIVE. SIDEWALK IS NOT BEING PROPOSED BEYOND THE PROJECT LIMITS TO THE WEST DUE TO THE LACK OF AVAILABLE PUBLIC ROAD RIGHT-OF-WAY OR TO THE EAST SINCE THERE IS NO EXISTING ADJACENT SIDEWALK TO MAKE A CONNECTION TO AND SINCE THERE IS NO NEED FOR SIDEWALKS TO SERVE COMMERCIAL OR INSTITUTIONAL USES, SCHOOLS, PARKS OR OTHER PUBLIC FACILITIES WITHIN 1000 FEET OF THE PROPERTY.
- SIGHT DISTANCE ANALYSIS WAS APPROVED UNDER S-16-002.
- APPLICABLE DPZ FILE NUMBERS: ECP-16-009, S-16-002, WP-16-072 *68-10-091*
- HOWARD COUNTY STANDARD DETAIL R-6.03 SHALL BE UTILIZED FOR THE DRIVEWAY APRONS.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- 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.
- 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 PLACED PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURES AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHT IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)." A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREETLIGHT AND ANY TREE. THERE ARE NO STREET LIGHTS REQUIRED FOR THIS PROJECT.
- 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.
- EXISTING UTILITIES SHOWN ARE BASED ON CONTRACT DRAWINGS, AERIAL, GIS DATA AND FIELD SURVEYED LOCATIONS.
- THE WETLAND DELINEATION STUDY WAS PERFORMED BY ECO-SCIENCE PROFESSIONALS, INC. IN AUGUST, 2015, AND WAS APPROVED ON 11/09/2015.
- A PRE-SUBMISSION COMMUNITY MEETING WAS HELD ON AUGUST 20, 2015, PER SECTION 16.128 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.

THE CEDARS EXTENDED

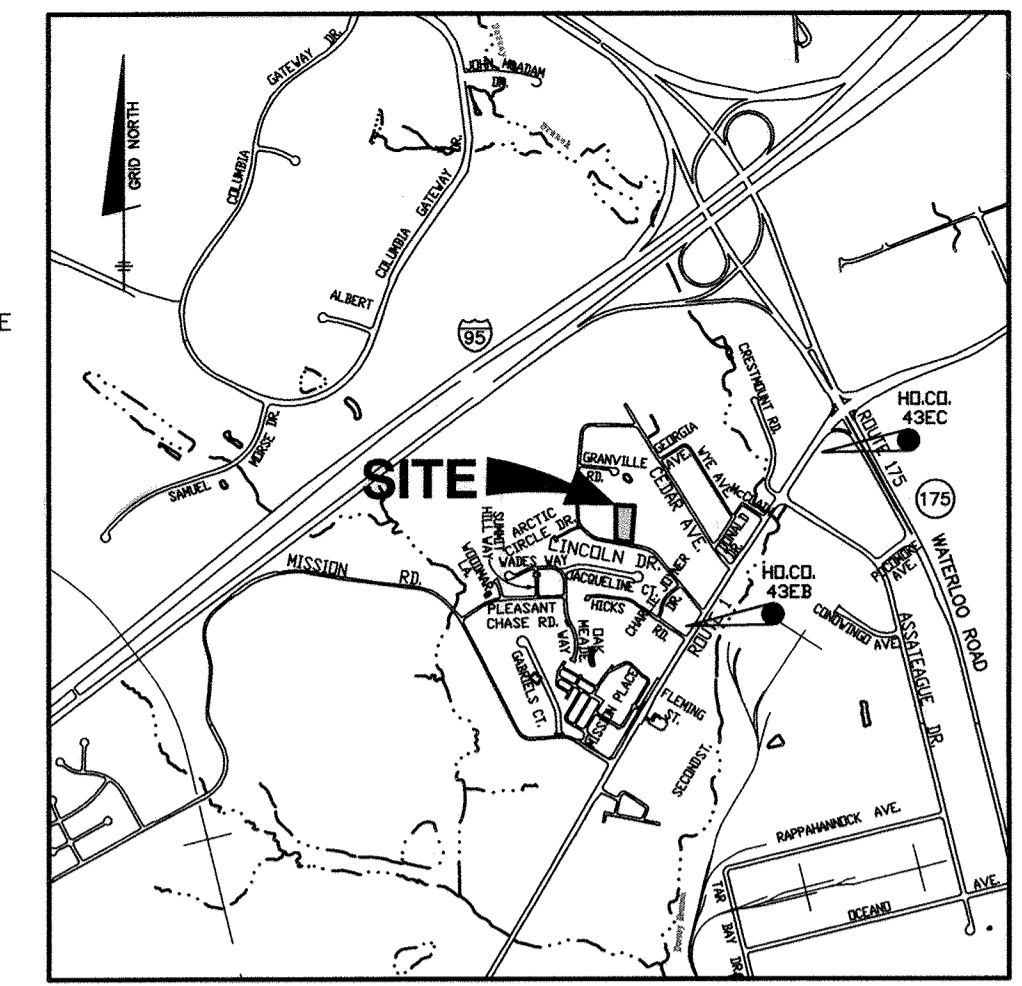
LOTS 1 thru 6 AND OPEN SPACE LOT 7

A RESUBDIVISION OF LOT 'R' OF THE CEDARS EXTENDED

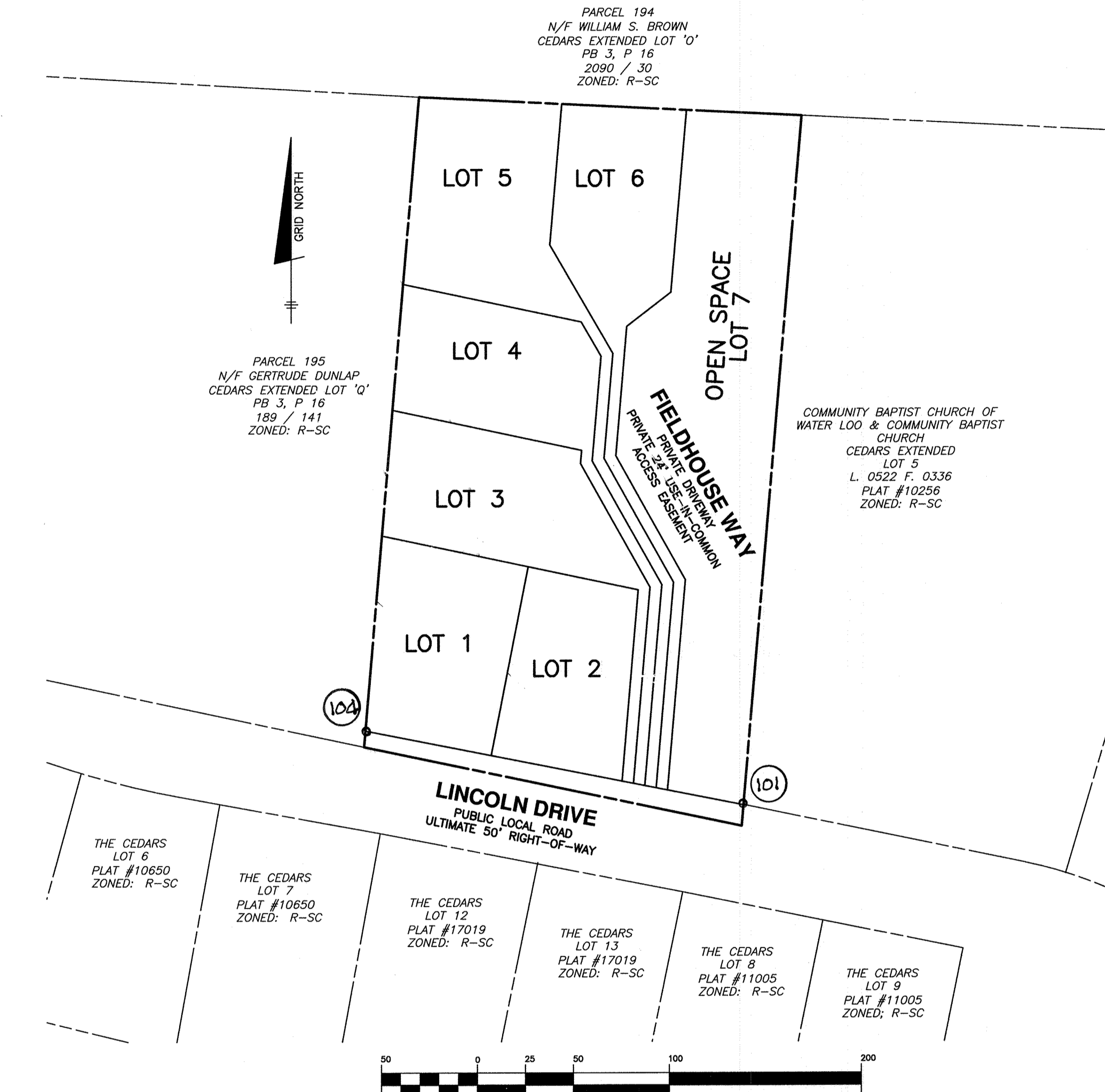
PB 3 P 16

FINAL ROAD CONSTRUCTION PLANS

BENCH MARKS (NAD83)
 HO. CO. No. 43EB ELEV. 216.312'
 WEST SIDE OF ROUTE 1, 6.7' FROM FACE
 OF CURB, 78 FEET NORTH FROM CENTERLINE
 OF HICK ROAD.
 N 545963.613 E 1371573.894
 HO. CO. No. 43EC ELEV. 219.698'
 EAST SIDE OF ROUTE 1, 2.5' FROM FACE
 OF CURB, 500 FEET SOUTH FROM CENTERLINE
 OF ROUTE 175.
 N 547821.247 E 1372882.507



VICINITY MAP ADC MAP: 34
 SCALE: 1" = 2000' ADC GRID: C8



MINIMUM LOT SIZE CHART

LOT	GROSS AREA	PIPESTEM AREA	MINIMUM LOT SIZE
3	8,417	1,691	6,726
4	7,950	1,098	6,852
5	9,750	2,020	7,730
6	8,227	1,505	6,722

MINIMUM LOT SIZE ALLOWED PER ZONING (SECTION 110.0.D.2): 6,000 SF

SITE ANALYSIS DATA CHART

GENERAL SITE DATA

- PRESENT ZONING: R-SC
- APPLICABLE DPZ FILE REFERENCES: ECP-16-009, S-16-002, WP-16-072
- PROPOSED USE OF SITE: RESIDENTIAL - SFD
- PROPOSED WATER AND SEWER SYSTEMS: PUBLIC

AREA TABULATION

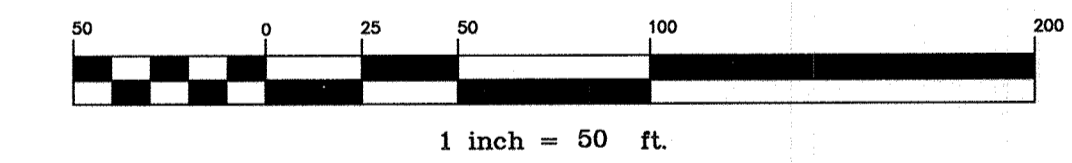
- GROSS TRACT AREA: 1.62± AC.
- AREA WITHIN 100-YEAR FLOODPLAIN: 0.00 AC.
- TOTAL AREA OF 25% OR GREATER STEEP SLOPES: 0.00 AC. AREA NOT IN FLOODPLAIN (FOR NTA CALC): 0.00 AC.
- NET TRACT AREA: 1.62± AC.
- TOTAL NUMBER OF LOTS ALLOWED PER ZONING (4.0 DWELLING UNITS PER NET ACRE): 6
- TOTAL NUMBER OF RESIDENTIAL UNITS/LOTS PROPOSED ON THIS SUBMISSION: 6
- TOTAL OPEN SPACE REQUIRED (25% OF NET AREA): 0.41 AC. RECREATIONAL OPEN SPACE IS NOT REQUIRED SINCE THERE ARE LESS THAN 10 PROPOSED LOTS
- TOTAL OPEN SPACE PROVIDED: 0.48± AC. NON-CREDITED OPEN SPACE: 0.00± AC. CREDITED OPEN SPACE PROVIDED: 0.48± AC.
- AREA OF BUILDABLE LOTS: 1.10± AC. AREA OF OPEN SPACE LOTS: 0.48± AC. AREA OF BUILDABLE BULK PARCELS: 0.00± AC. AREA OF PUBLIC RIGHT-OF-WAY: 0.04± AC.

SHEET INDEX

NO.	TITLE
1	COVER SHEET
2	ROAD IMPROVEMENT, MAINTENANCE OF TRAFFIC, GRADING PLAN, AND DETAILS
3	STORM DRAIN AND STORMWATER MANAGEMENT PROFILES AND DETAILS
4	STORM DRAIN DRAINAGE AREA MAP
5	PERIMETER LANDSCAPE AND STREET TREE PLAN AND FOREST CONSERVATION PLAN
6	SOIL BORING LOGS AND FOREST CONSERVATION NOTES AND DETAILS
7	SEDIMENT AND EROSION CONTROL PLAN
8	SEDIMENT AND EROSION CONTROL NOTES AND DETAILS

RIGHT OF WAY ELEVATION CHART NAD83

R/W PT NO.	DESCRIPTION	ELEVATION
101	REBAR & CAP	269.32'
104	REBAR & CAP	257.05'



AS-BUILT CERTIFICATION
 I hereby certify, by my seal, that to the best of my knowledge and belief the facilities shown on this "AS-BUILT" Plan meet the Approved Plans and Specifications
 Donald Mason, P.E. Date: 1-20-19

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. 21443, Expiration Date: 12-21-20



- AS-BUILT NOTES:**
- HORIZONTAL DATUM FOR THIS AS-BUILT IS BASED ON THE MARYLAND STATE REFERENCE SYSTEM NAD 83 / ADJ 07 AS PROJECTED FROM HO. CO. GEODETIC CONTROL STATION 43EB AND 43EC. VERTICAL DATUM FOR THIS AS-BUILT IS NORTH AMERICAN VERTICAL DATUM NVD 88 AS PROJECTED FROM THE ABOVE MENTIONED HOWARD COUNTY GEODETIC CONTROL STATIONS.
 - THE INSTRUMENTS USED IN PERFORMING THE AS-BUILT WERE A 5" TOTAL STATION AND PRISM.
 - THIS AS-BUILT WAS PERFORMED BY BENCHMARK ENGINEERING, INC.

STORMWATER MANAGEMENT SUMMARY TABLE

Practice	DA to practice (sf)	Imp Area to practice (sf)	Pe	Af (s.f.)		ESDv			REv		Ownership	
				Required	Provided	Required	Provided	Pe Provided	Required	Provided		
(F-1) Surface Sand Filter #1	39,000	17,085	1.6	339	1042	PASS	2796	2796	1.6	227 of or 0.06 acres	250 cf	Private
Total Treated	39,000	17,085		339	1042		2796	2796				
Site Totals		19,367										

Site Discharge Comparison

	Storm	2-year	10-year	25-year
pre-developed	6.78 cfs	15.59 cfs	18.06 cfs	
post-developed	6.19 cfs	14.90 cfs	17.94 cfs	

Notes:
 1. Rev is provided via 0.6' deep stone chamber below outfall pipe within the (F-1) Surface Sand Filter.
 2. The 2,282 sf of impervious area not draining to the (F-1) Surface Sand Filter is the individual Lincoln Drive improvements, driveways for Lot 1 and 2 and the beginning portion of the use-in-common driveway. This area will drain into Lincoln Drive. There is not sufficient room between the garage and public right-of-way for ESD practice. Overcompensation has been provided within (F-1) Surface Sand Filter for this area. The total ESDv required for the site is provided.

STORMWATER MANAGEMENT PRACTICE(S)

LOT NUMBER	ADDRESS	SURFACE SAND FILTER F-1 (QUANTITY)
LOT 7	LINCOLN DRIVE	1

APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] 9/26/2016
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 9-30-16
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 9-29-16
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

BENCHMARK ENGINEERING, INC.
 ENGINEERS & LAND SURVEYORS & PLANNERS
 8480 BALTIMORE NATIONAL PIKE & SUITE 315 • ELLICOTT CITY, MARYLAND 21043
 (P) 410-465-6105 (F) 410-465-6844
 WWW.BE-CIVILENGINEERING.COM

OWNER:
 CEDARS EXTENDED LOT 'R' LLC
 8359 OLD FREDERICK ROAD
 ELLICOTT CITY, MARYLAND 21043
 443-812-4806

DEVELOPER:
 CEDARS EXTENDED LOT 'R' LLC
 8359 OLD FREDERICK ROAD
 ELLICOTT CITY, MARYLAND 21043
 443-812-4806

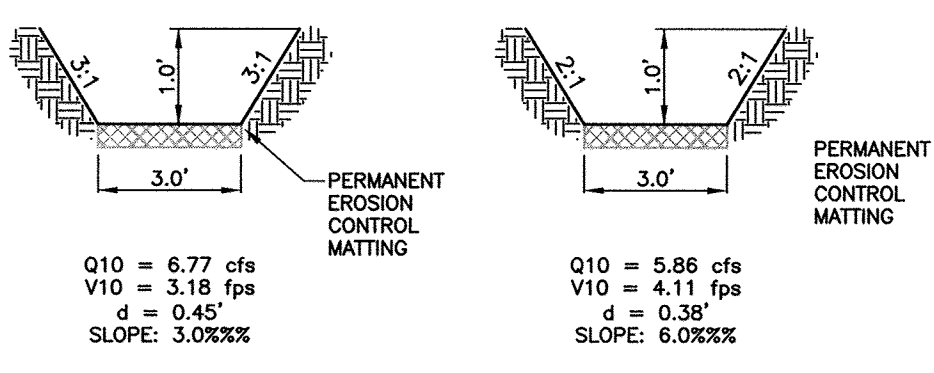
THE CEDARS EXTENDED
 LOTS 1 thru 6 AND OPEN SPACE LOT 7
 (A RESUBDIVISION OF LOT 'R' OF THE CEDARS EXTENDED PB 3 P 16)
 TAX MAP: 43 - GRID: 8 - PARCEL: 451
 ZONED: R-SC
 ELECTION DISTRICT NO. 6 - HOWARD COUNTY, MARYLAND

COVER SHEET

DATE: AUGUST 29, 2016 SHEET PROJECT NO. 2717
 SCALE: AS SHOWN SHEET 1 OF 8

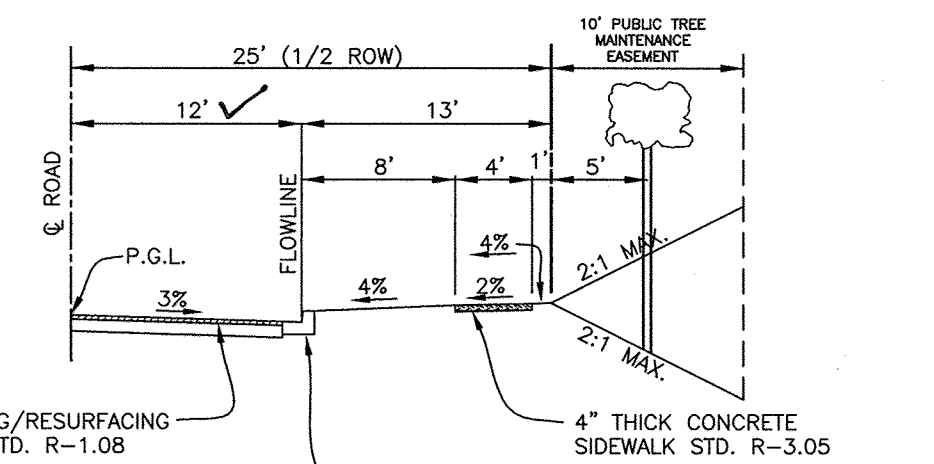
LEGEND

- EXISTING CONTOURS
- EXISTING TREELINE
- PROPOSED TREELINE
- PROJECT BOUNDARY
- DRIVEWAYS
- FOREST CONSERVATION EASEMENT (RETENTION)
- STORMWATER MANAGEMENT SURFACE SAND FILTER
- SURFACE MILLING LIMITS
- INDICATES A WALK-OUT BASEMENT
- 30' BRL BUILDING RESTRICTION LINE
- SOILS DELINEATION
- SOILS TYPE
- FIRST FLOOR & BASEMENT FLOOR ELEVATIONS
- PROPOSED STORM DRAIN PIPE
- SOIL BORING LOCATION

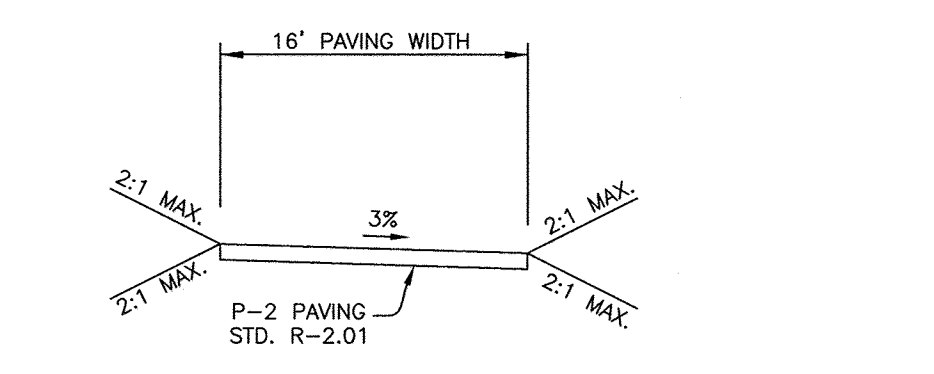


BYPASS SWALE #1
DETAIL
NOT TO SCALE

BYPASS SWALE #2
DETAIL
NOT TO SCALE



LINCOLN DRIVE
TYPICAL ROADWAY SECTION
PUBLIC LOCAL ROAD
DESIGN SPEED: 35 MPH
SCALE: 1" = 10'

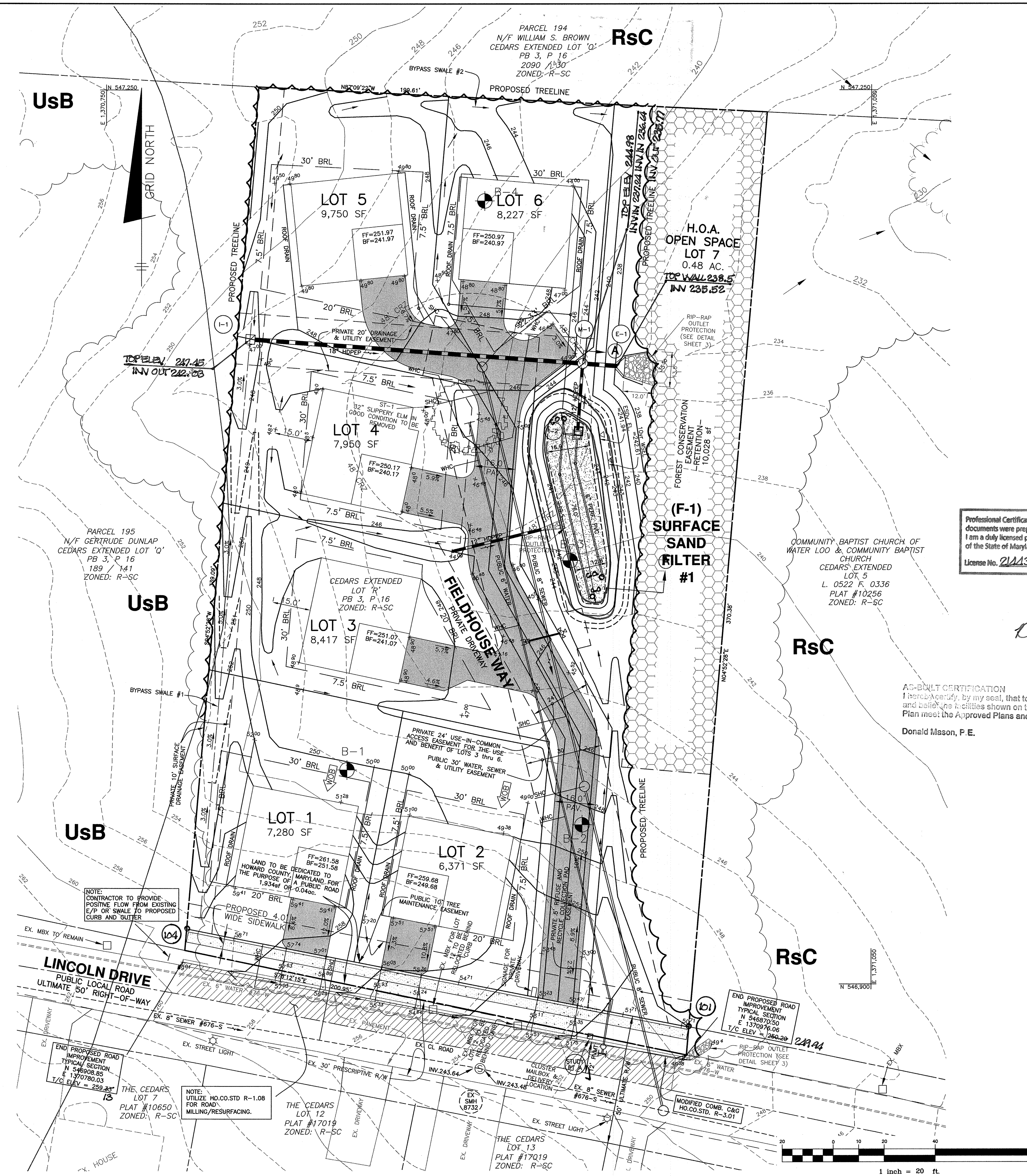


PRIVATE USE-IN-COMMON
DRIVEWAY TYPICAL SECTION
SCALE: 1" = 10'

APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 7/26/2016
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 9-30-16
CHIEF, DIVISION OF LAND DEVELOPMENT

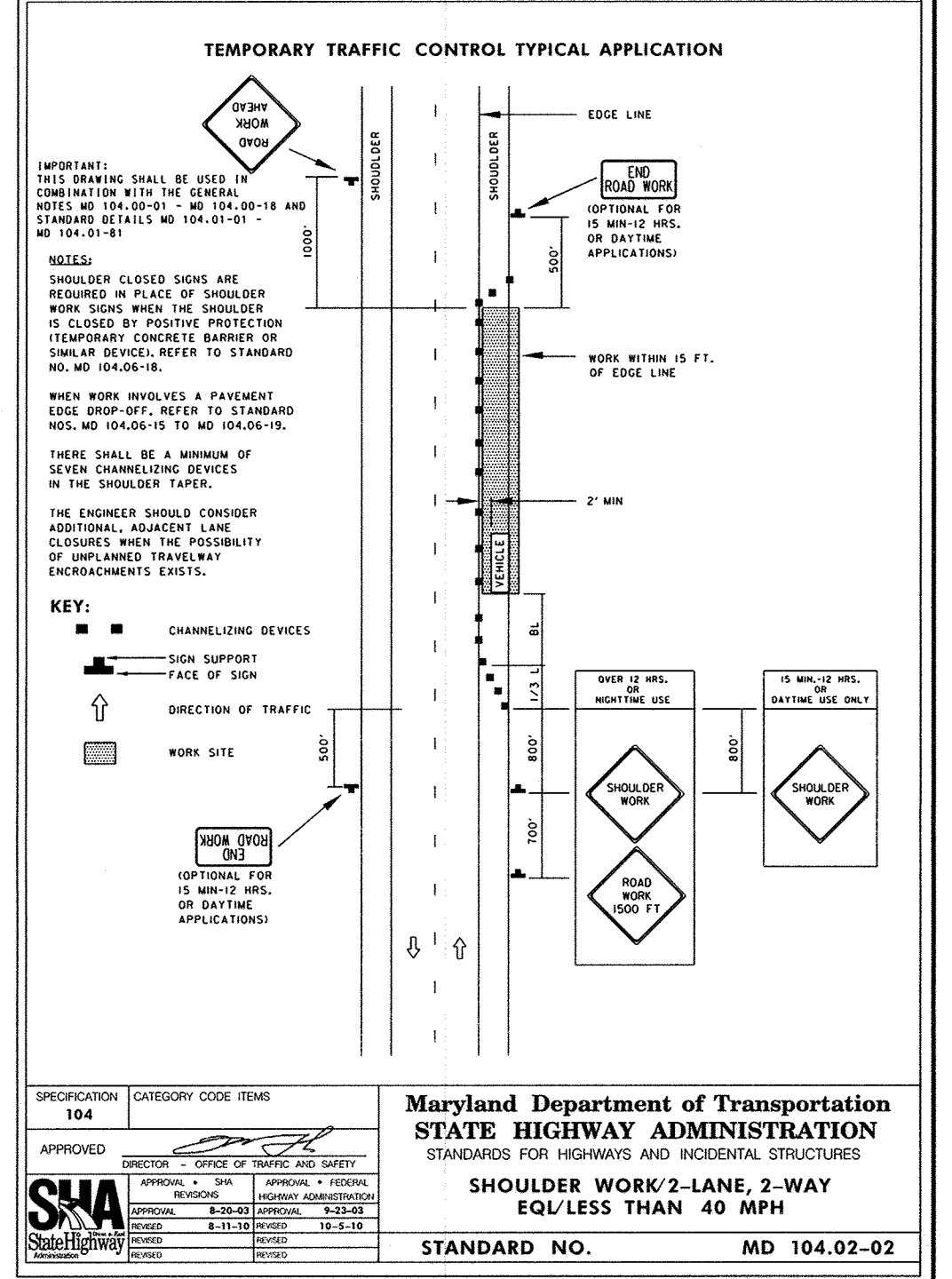
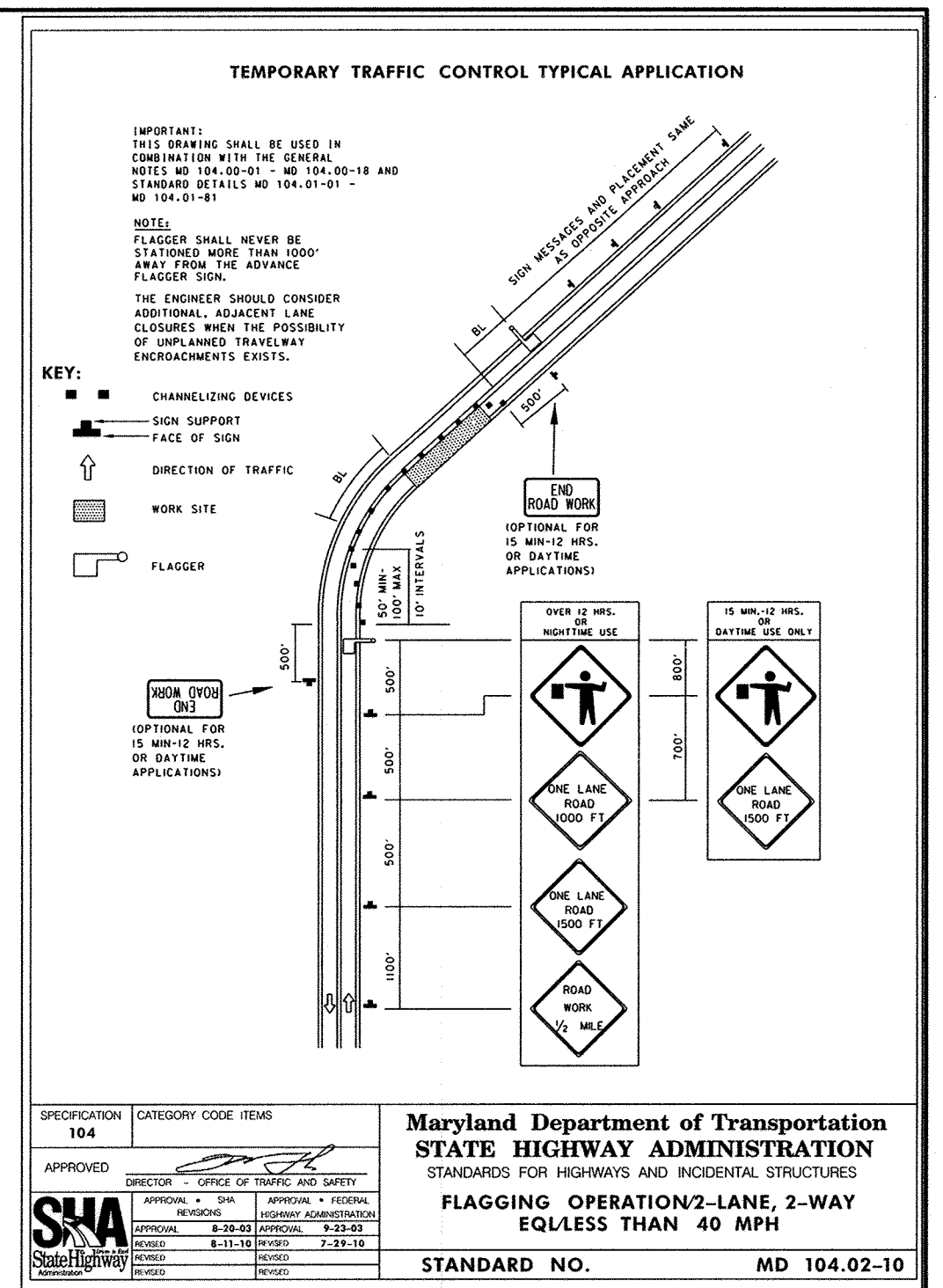
[Signature] 9-29-16
CHIEF, DEVELOPMENT ENGINEERING DIVISION



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. 21443 Expiration Date: 12-21-20



AS-BUILT CERTIFICATION
I hereby certify, by my seal, that to the best of my knowledge and belief, as a civil engineer, the AS-BUILT Plan meets the Approved Plans and Specifications.
Donald Mason, P.E. Date: 1/30/19



Practice	DA to practice (ac)	Imp Area to practice (ac)	ESDv (ac-ft)		Rev (ac-ft)	
			Required	Provided	Required	Provided
(F-1) Surface Sand Filter #1	0.895	0.392	0.064	0.064	0.005	0.006

1 12-14-18 REMOVE REFUSE PAD.
NO. DATE REVISION

BENCHMARK
ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE A SUITE 315 ELLICOTT CITY, MARYLAND 21043
(P) 410-465-8100 (F) 410-465-8644
WWW.BE-CIVILENGINEERING.COM

OWNER:
CEDARS EXTENDED LOT 'R' LLC
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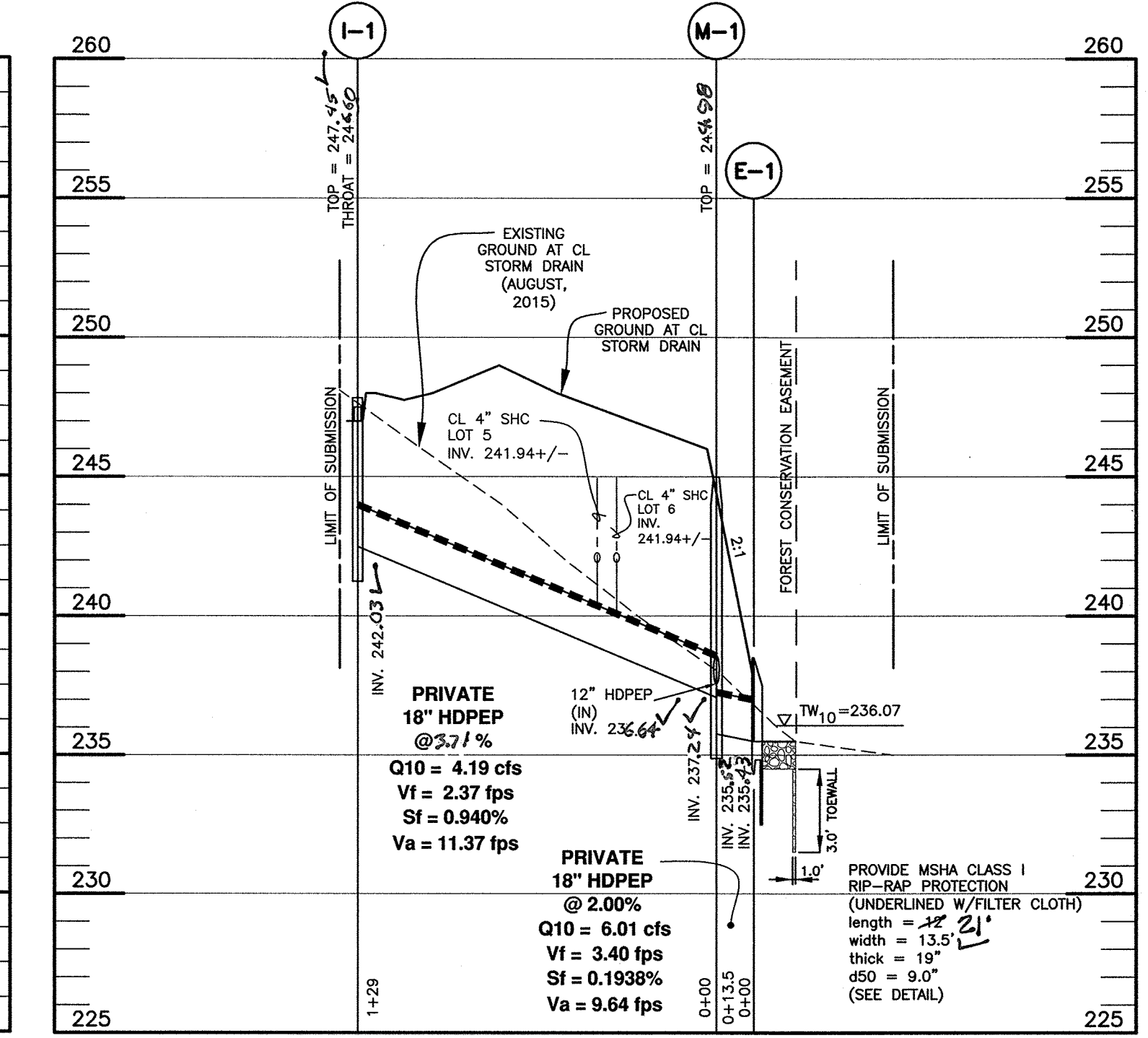
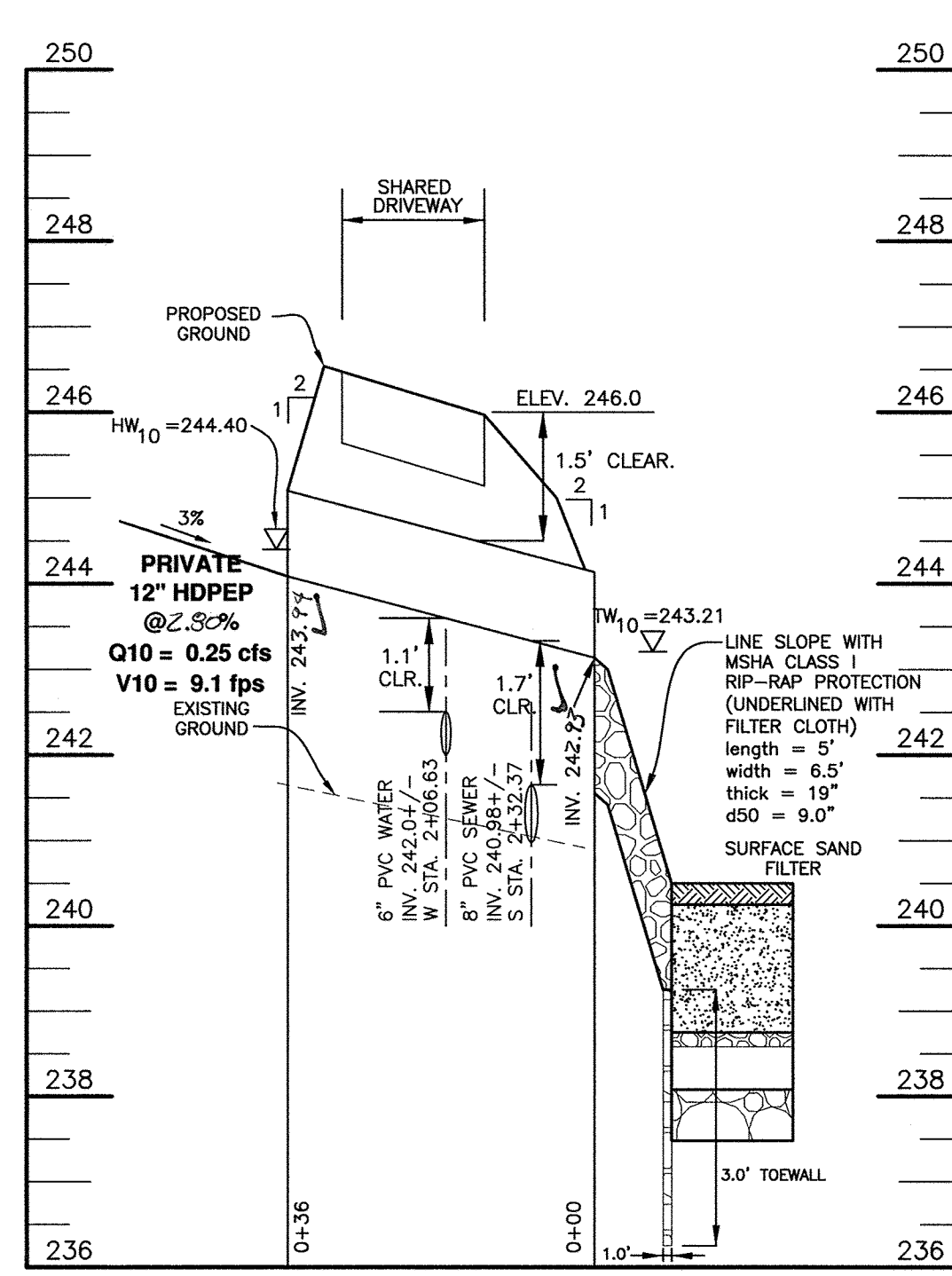
DEVELOPER:
CEDARS EXTENDED LOT 'R' LLC
8369 OLD FREDERICK ROAD
ELLICOTT CITY, MARYLAND 21043
443-812-4806

THE CEDARS EXTENDED
LOTS 1 - 6 AND OPEN SPACE LOT 7
(A RESUBDIVISION OF LOT 'R' OF THE CEDARS EXTENDED PB 3 P 16)

TAX MAP: 43 - GRID: R-SC - PARCEL: 451
ZONED: R-SC
ELECTION DISTRICT NO. 6 - HOWARD COUNTY, MARYLAND

ROAD IMPROVEMENT, MAINTENANCE OF TRAFFIC, GRADING PLAN, AND DETAILS

DATE: AUGUST 29, 2016 BEI PROJECT NO. 2717
SCALE: AS SHOWN SHEET 2 OF 8



DRIVEWAY CULVERT #1 PROFILE
SCALE: 1"=20' HORIZ., 1"=2' VERT.

STORM DRAIN PROFILE
SCALE: 1"=50' HORIZ., 1"=5' VERT.

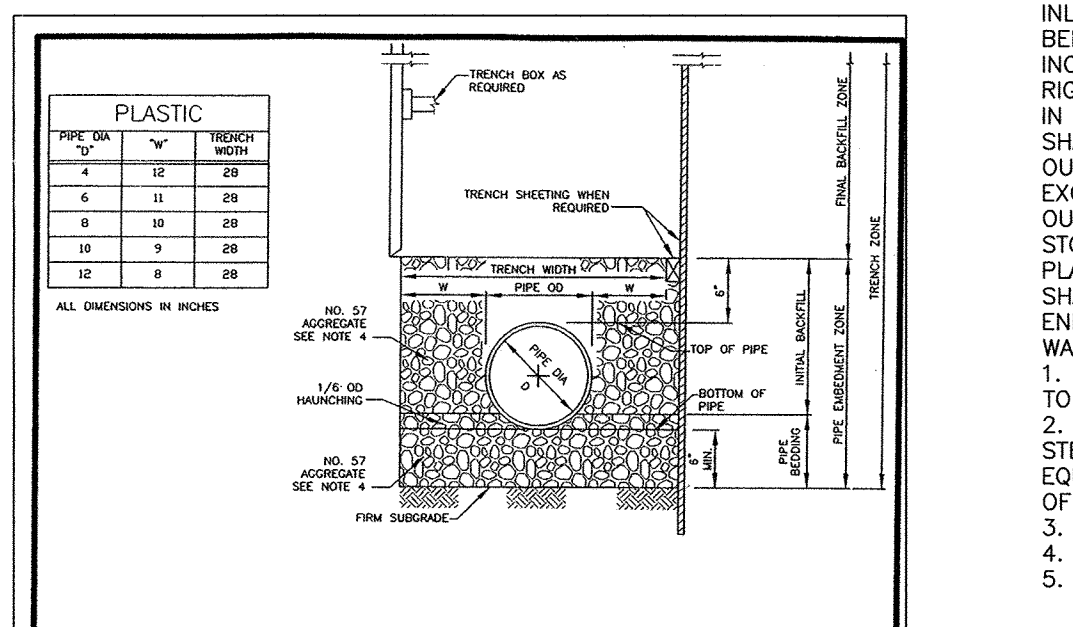
STRUCTURE	TYPE	LOCATION	INVERT IN	INVERT OUT	TOP ELEV.	THROAT ELEV.	STD. DETAIL	NOTES	MAINTENANCE
INLETS									
I-1	D	N 547182.54 E 1370806.44	242.03(18")	242.03(18")	247.95	246.60	HO.CO.STD. D-4.10		PRIVATE
I-2	D	N 547103.14 E 1370933.85	238.07(6")	238.07(6")	243.03	242.20	HO.CO.STD. D-4.10	OPEN 2 SIDE ONLY	PRIVATE
MANHOLES									
M-1	4" DIA	N 547143.03 E 1370936.76	237.24(18")	237.24(18")	244.9		HO.CO.STD. G-5.12		PRIVATE
END SECTIONS									
E-1	TYPE 'A' HEADWALL	N 547141.83 E 1370933.27	235.93	238.50			D-5.11		PRIVATE

STRUCTURE LOCATION FOR MANHOLES IS AT THE CENTER OF THE MANHOLE RIM.
STRUCTURE LOCATION FOR 'D' INLETS IS AT THE CENTER OF THE TOP OF SLAB.
STRUCTURE LOCATION FOR 'A-10' INLETS IS AT THE MIDPOINT ALONG FRONT FACE.
STRUCTURE LOCATION FOR END SECTIONS IS AT THE MIDPOINT OF THE END OF THE STRUCTURE.
ALL INVERTS ARE AT THE CENTER OF STRUCTURE.
PRECAST STRUCTURES MEETING HS-20 LOADING MAY BE USED.

I-2 TO HAVE WEIRS ON TWO SIDES ONLY.

SIZE	TYPE	LENGTH (L.F.)	MAINTENANCE
12"	HDPEP	64	PRIVATE
18"	HDPEP	143	PRIVATE
6"	PVC (roof leader drains)	628	PRIVATE

All pipes shall have smooth interior. No interior corrugations.



Appendix B.4. Construction Specifications for Environmental Site Design Practices

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil	loamy sand (60-65%) & compost (35-40%) or sandy loam (30%), cooling sand (30%) & compost (70%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		spot 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile			PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" TO 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipe; not necessary underdrain pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth.
Poured in place concrete (if required)	MPSHA Mix No. 3; f' = 3500 psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350R/89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil properties) and analysis of potential cracking.
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO #10 are not acceptable. No calcium carbonate or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 9/26/2016
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 9-30-16
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: DEPARTMENT OF ENGINEERING
[Signature] 9/29/16
CHIEF, DEVELOPMENT ENGINEERING DIVISION

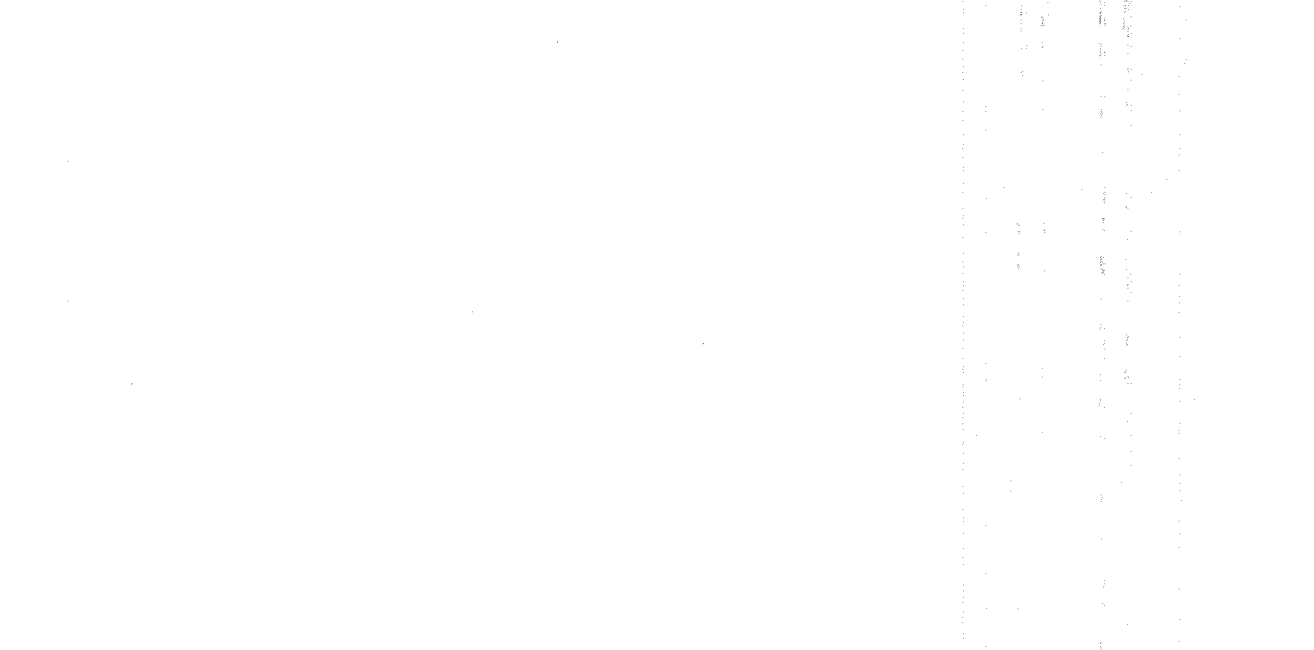
EXCAVATED PONDS
GENERAL - EXCAVATED PONDS THAT CREATE A FAILURE POTENTIAL THROUGH A CONSTRUCTED OR CREATED EMBANKMENT WILL BE DESIGNED AS EMBANKMENT PONDS EXCAVATED PONDS THAT INCLUDE A PIPE OR WEIR OUTLET CONTROL SYSTEM FOR URBAN STORMWATER MANAGEMENT SHALL BE DESIGNED USING THE PRINCIPAL AND EMERGENCY SPILLWAY HYDROLOGIC CRITERIA FOR EMBANKMENT PONDS, TABLE 1. SIDE SLOPES - SIDE SLOPES OF EXCAVATED PONDS SHALL BE SUCH THAT THEY WILL BE STABLE AND SHALL NOT BE STEEPER THAN 1 HORIZONTAL TO 1 VERTICAL. FILTER SLOPES ARE TO BE UTILIZED WHERE SAFETY FOR CHILDREN, LIVESTOCK WATERING, ETC. IS A DESIGN FACTOR. PERIMETER FORM - WHERE THE STRUCTURES ARE USED FOR RECREATION OR ARE LOCATED IN HIGH PUBLIC VIEW, THE PERIMETER OR EDGE SHOULD BE SHAPED TO A CURVILINEAR FORM. INLET PROTECTION - WHEN THE EXCAVATED POND IS A BYPASS TYPE AND WATER IS BEING DIVERTED FROM A STREAM, THE MINIMUM SIZE INLET LINE SHALL BE A 4-INCH DIAMETER PIPE. ALL STATE LAWS CONCERNING WATER USE AND DOWNSTREAM RIGHTS SHALL BE STRICTLY ADHERED TO. WHERE SURFACE WATER ENTERS THE POND IN A NATURAL OR EXCAVATED CHANNEL, THE SIDE SLOPE OF THE POND SHALL BE PROTECTED AGAINST EROSION. OUTLET PROTECTION - AN EXCAVATED POND WITH A LOW EMBANKMENT (COMBINATION EXCAVATION / EMBANKMENT POND SHALL BE DESIGNED TO ENSURE A STABLE OUTFALL FOR THE 10-YEAR, 24-HOUR FREQUENCY STORM. PLACEMENT OF EXCAVATED MATERIAL - THE MATERIAL EXCAVATED FROM THE POND SHALL BE PLACED IN ONE OF THE FOLLOWING WAYS SO THAT ITS WEIGHT WILL NOT ENDANGER THE STABILITY OF THE POND SIDE SLOPES AND WHERE IT WILL NOT BE WASHED BACK INTO THE POND BY RAINFALL:
1. UNIFORMLY SPREAD TO A HEIGHT NOT EXCEEDING 3 FEET WITH THE TOP GRADED TO A CONTINUOUS SLOPE AWAY FROM THE POND;
2. UNIFORMLY PLACED OR SHAPED REASONABLY WELL WITH SIDE SLOPES NOT STEEPER THAN 2 TO 1. THE EXCAVATED MATERIAL WILL BE PLACED AT A DISTANCE EQUAL TO THE DEPTH OF THE POND, BUT NOT LESS THAN 12 FEET FROM THE EDGE OF THE POND.
3. SHAPED TO A DESIGNED FORM THAT BLENDS VISUALLY WITH THE LANDSCAPE;
4. USED FOR LOW EMBANKMENT AND LEVELING; OR
5. HAULED AWAY.

Appendix B.3.1. Materials Specifications for Micro-Bioremediation, Rain Gardens & Landscape Infiltration

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil	loamy sand (60-65%) & compost (35-40%) or sandy loam (30%), cooling sand (30%) & compost (70%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		spot 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile			PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" TO 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipe; not necessary underdrain pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth.
Poured in place concrete (if required)	MPSHA Mix No. 3; f' = 3500 psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350R/89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil properties) and analysis of potential cracking.
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO #10 are not acceptable. No calcium carbonate or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

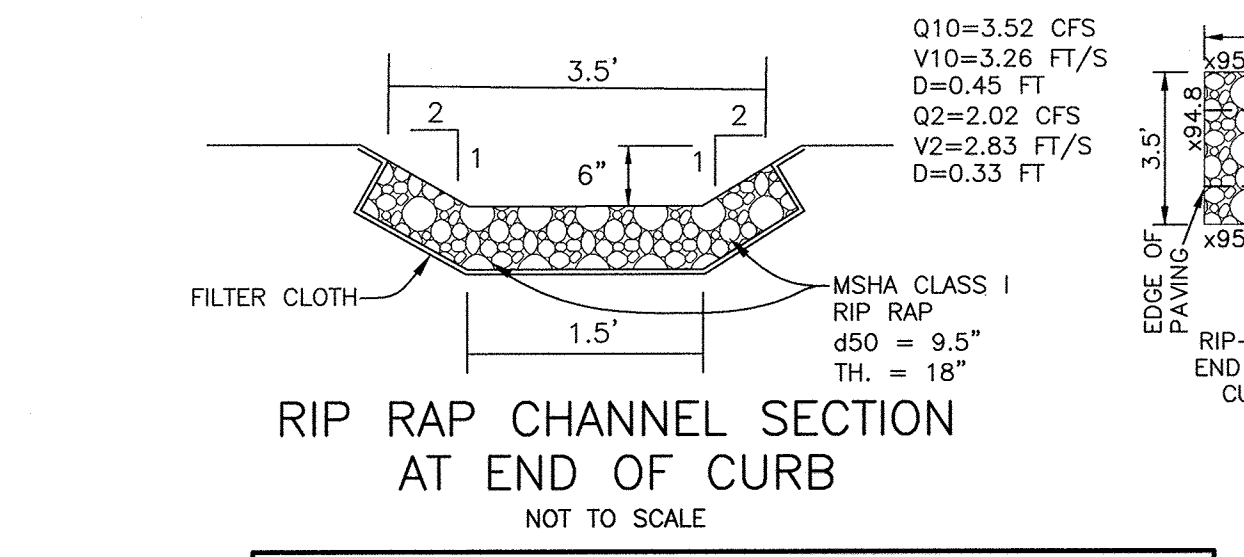
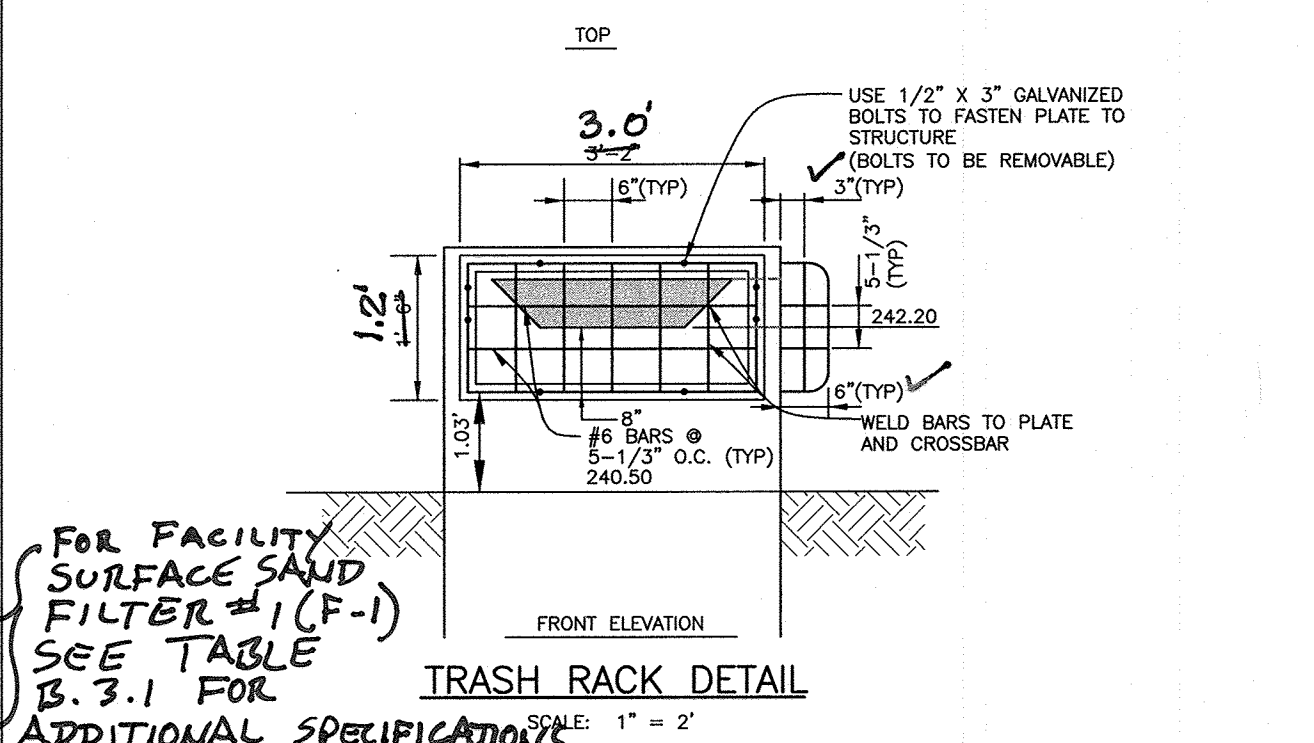
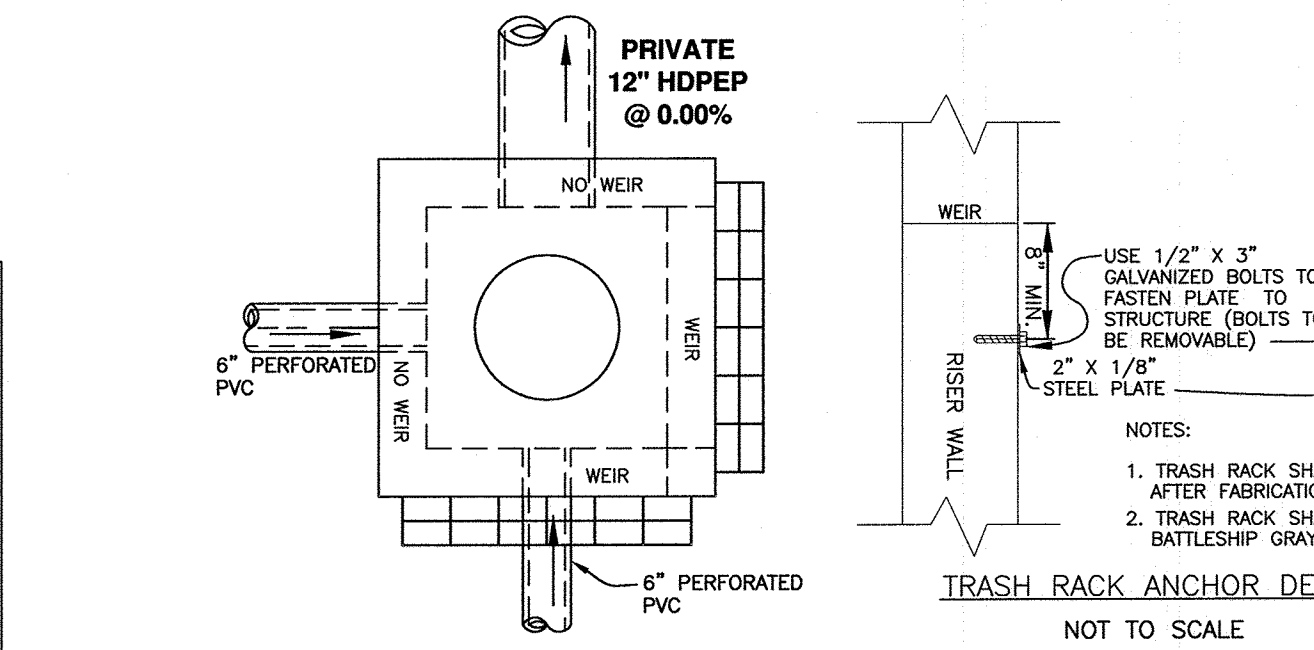
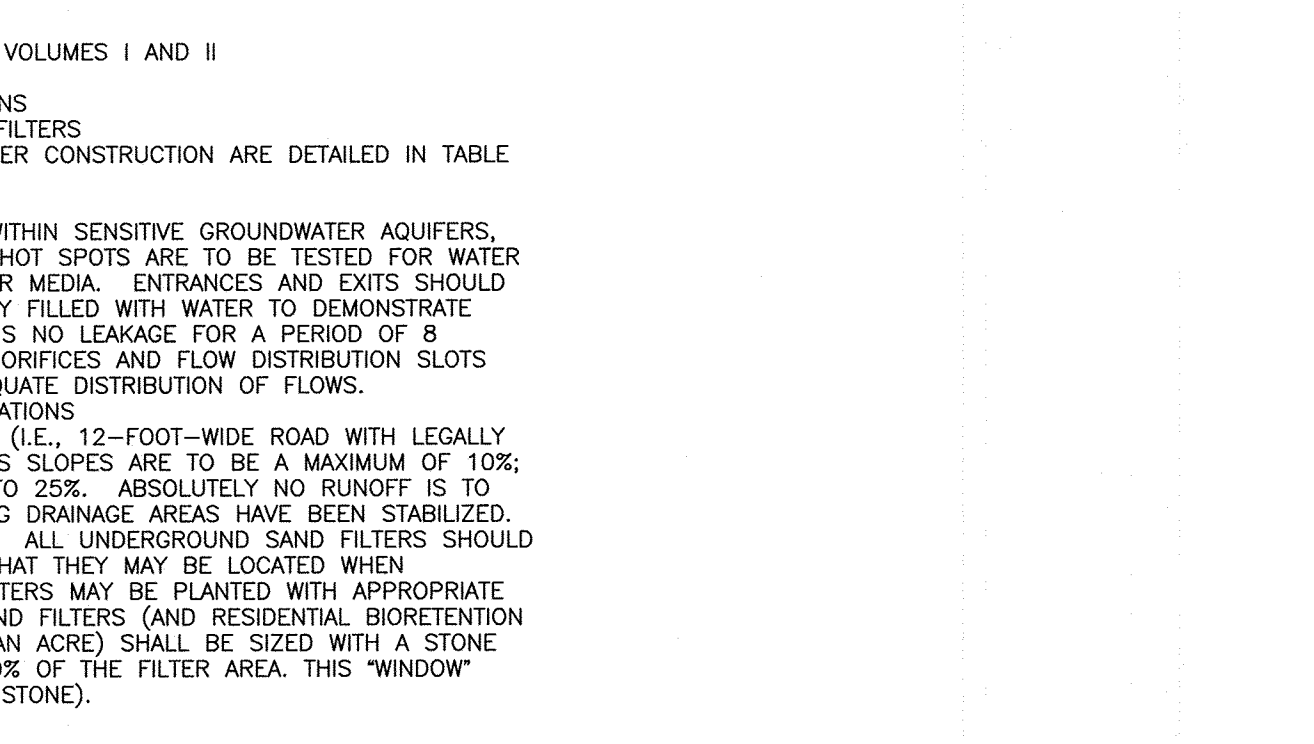
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 21443, Expiration Date: 12-21-20

AS-BUILT CERTIFICATION
I hereby certify, by my seal, that to the best of my knowledge and belief the facilities shown on this "AS-BUILT" Plan meet the Approved Plans and Specifications
Donald Mason, P.E. Date: 1/30/19



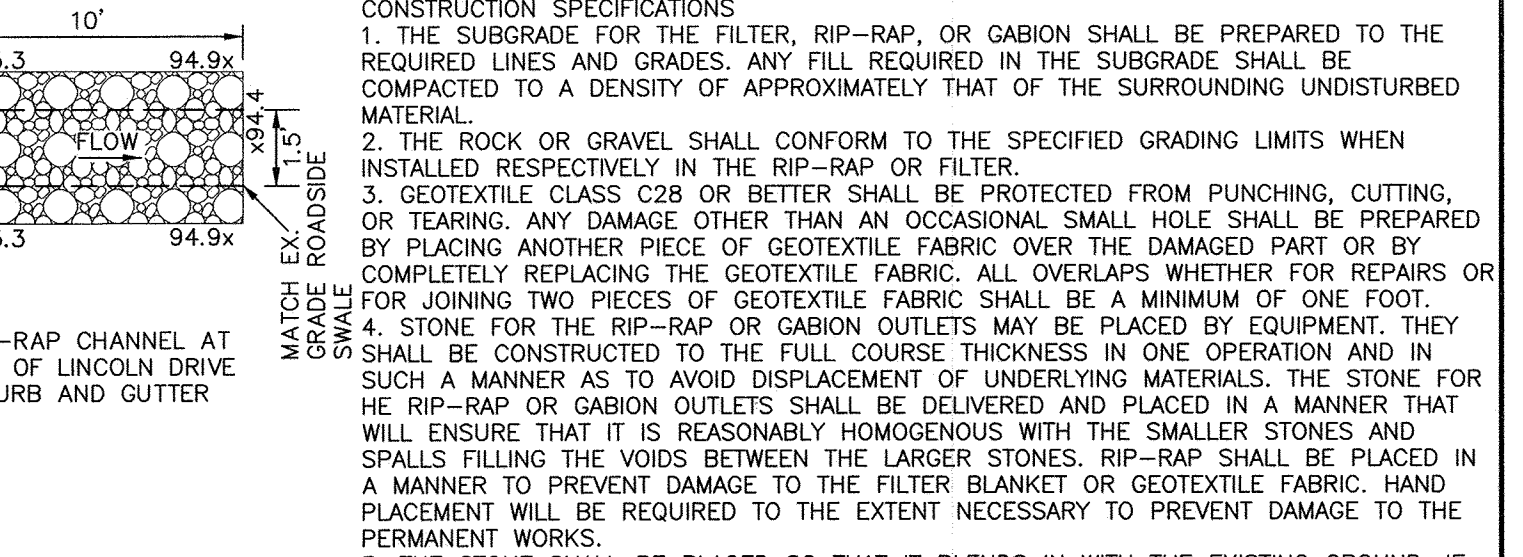
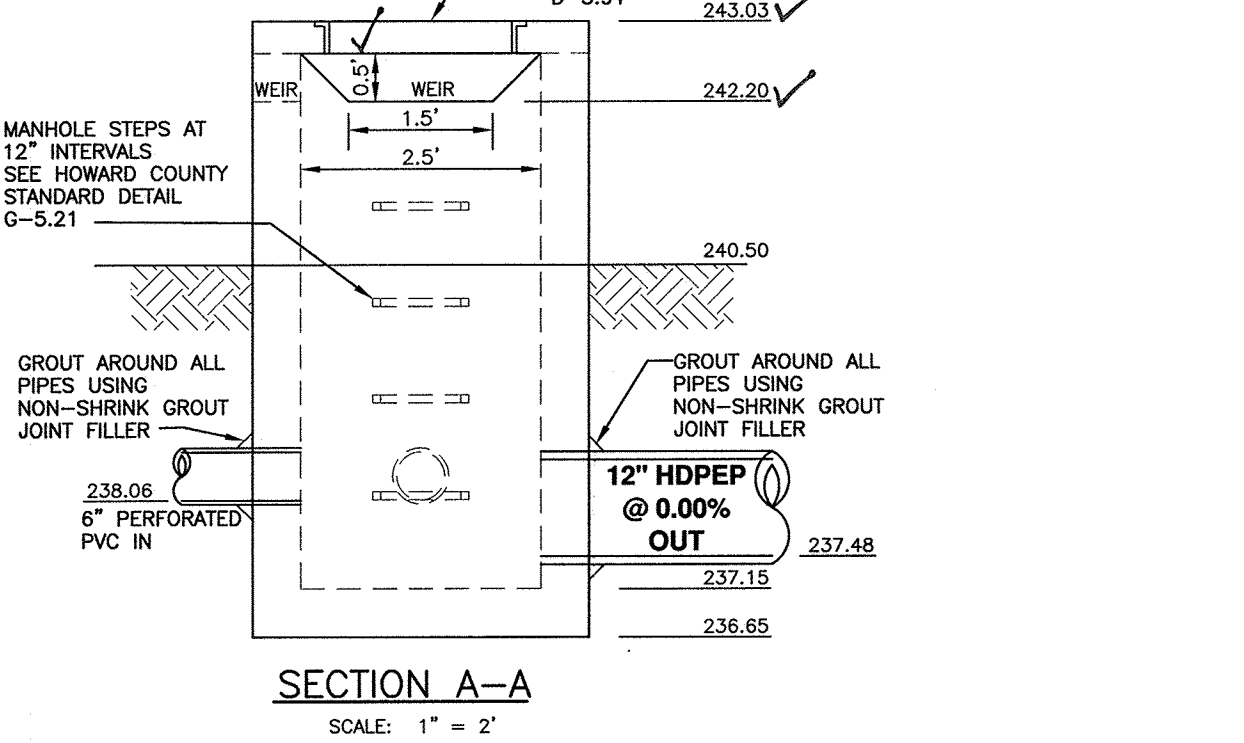
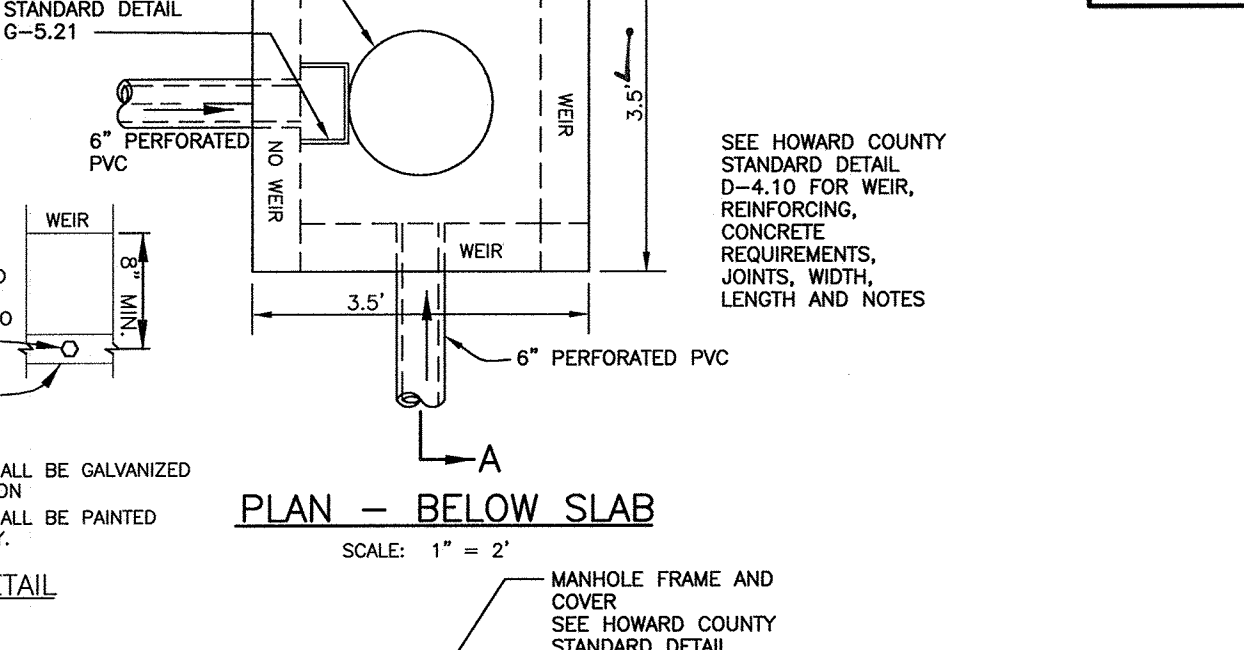
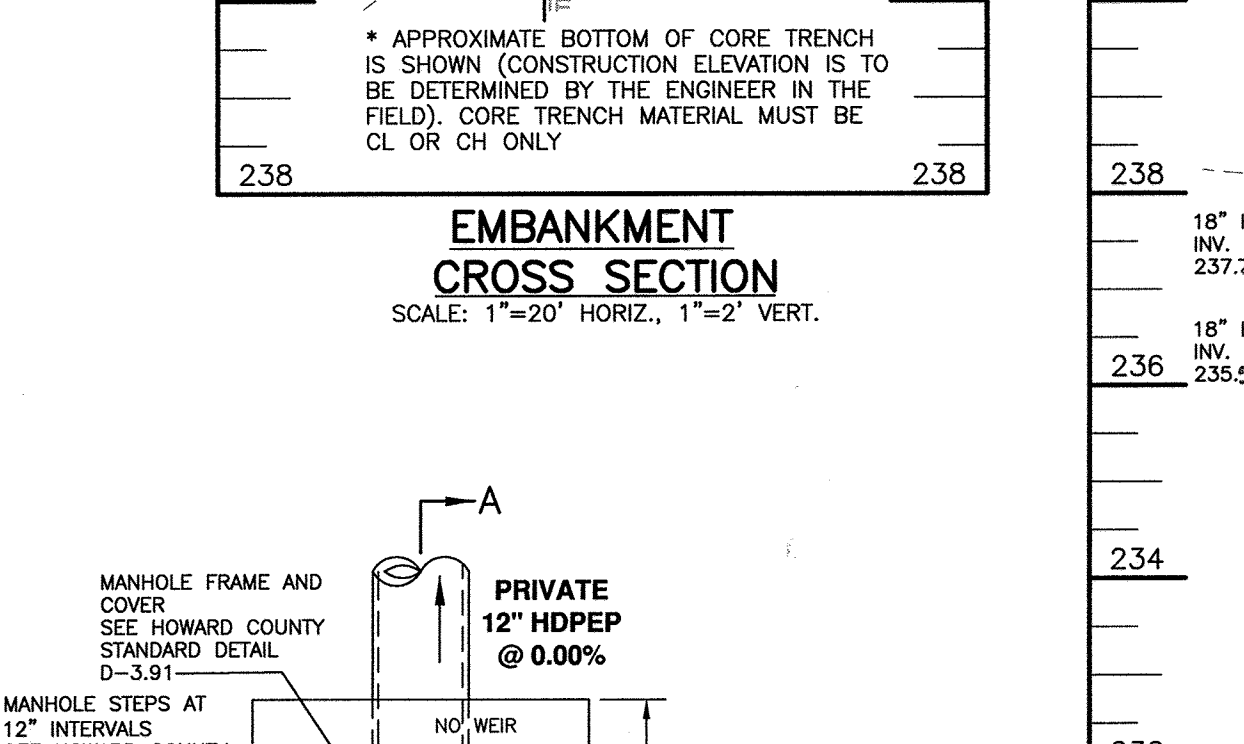
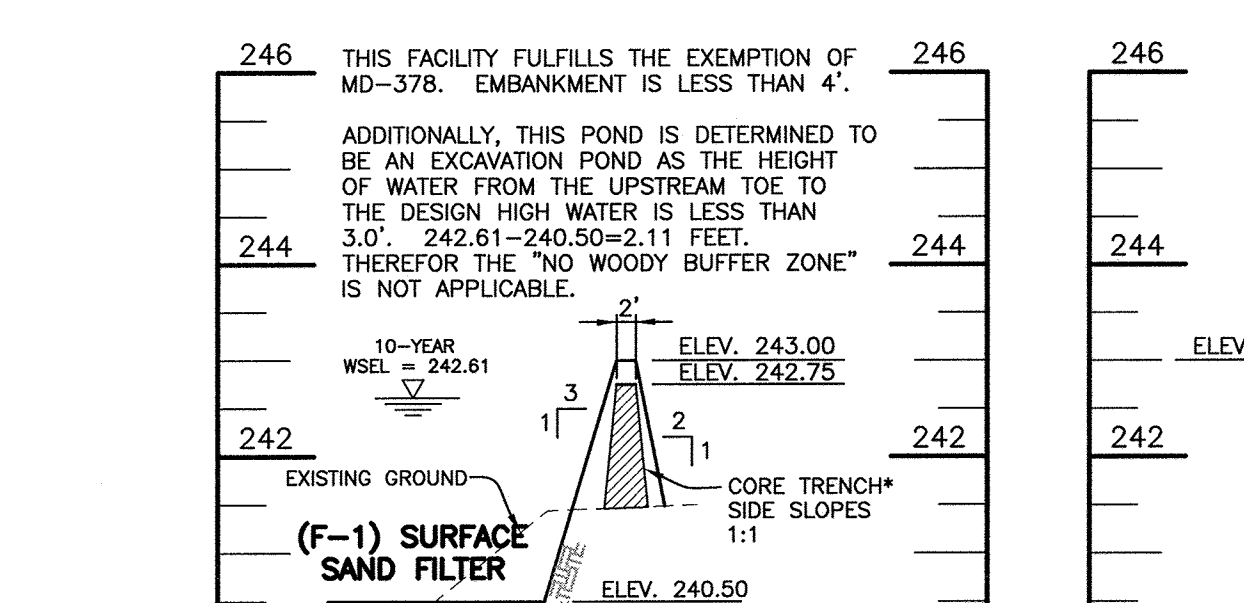
OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED (F-1) SURFACE SAND FILTER

1. THE STORMWATER WETLAND FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE FACILITY IS FUNCTIONING PROPERLY.
2. THE TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF ONCE PER YEAR, WHEN VEGETATION REACHES 18" IN HEIGHT OR AS NEEDED.
3. FILTERS THAT HAVE A GRASS COVER SHALL BE MOWED A MINIMUM OF THREE (3) TIMES PER GROWING SEASON TO MAINTAIN A MAXIMUM GRASS HEIGHT OF LESS THAN 12 INCHES.
4. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
5. VISIBLE SIGNS OF EROSION IN THE FACILITY SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
6. REMOVE SILT WHEN IT EXCEEDS FOUR (4) INCHES DEEP IN THE FOREBAY, IF APPLICABLE.
7. WHEN WATER POUNDS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 72 HOURS, THE TOP FEW INCHES OF DISCOLORED MATERIAL SHALL BE REPLACED WITH FRESH MATERIAL. PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIALS AND LIQUID MUST BE FOLLOWED BY THE OWNER.
8. A LOGBOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
9. THE MAINTENANCE LOGBOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
10. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION SYSTEM HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.



CONSTRUCTION SPECIFICATIONS

1. THE SUBGRADE FOR THE FILTER, RIP-RAP OR GABION SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
2. THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED RESPECTIVELY IN THE RIP-RAP OR FILTER.
3. GEOTEXTILE CLASS C28 OR BETTER SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE PREPARED BY PLACING ANOTHER PIECE OF GEOTEXTILE FABRIC OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE FABRIC. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC SHALL BE A MINIMUM OF ONE FOOT.
4. STONE FOR THE RIP-RAP OR GABION OUTLETS MAY BE PLACED BY EQUIPMENT, THEY WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. RIP-RAP SHALL BE PLACED IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE FABRIC. HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS.
5. THE STONE SHALL BE PLACED SO THAT IT BLENDS IN WITH THE EXISTING GROUND. IF THE STONE IS PLACED TOO HIGH THEN THE FLOW WILL BE FORCED OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.

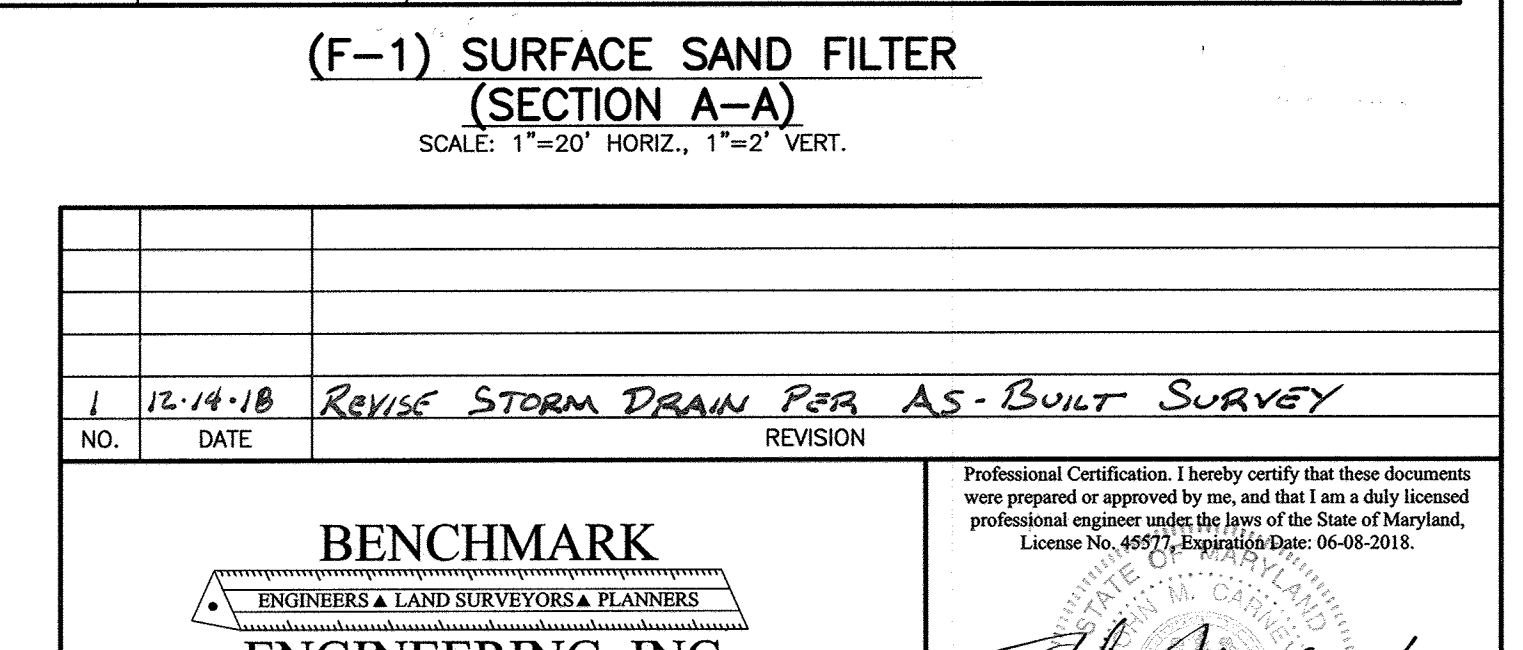
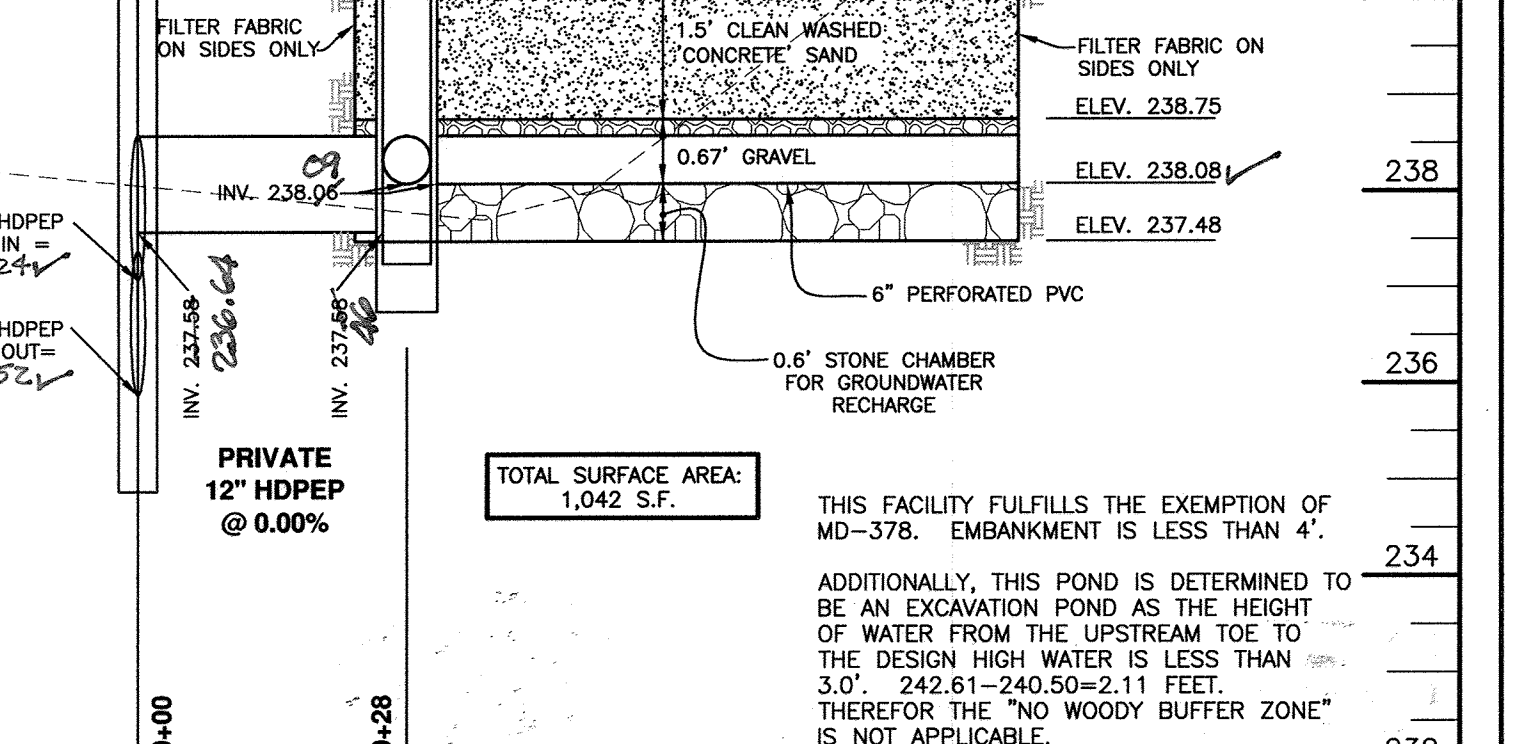
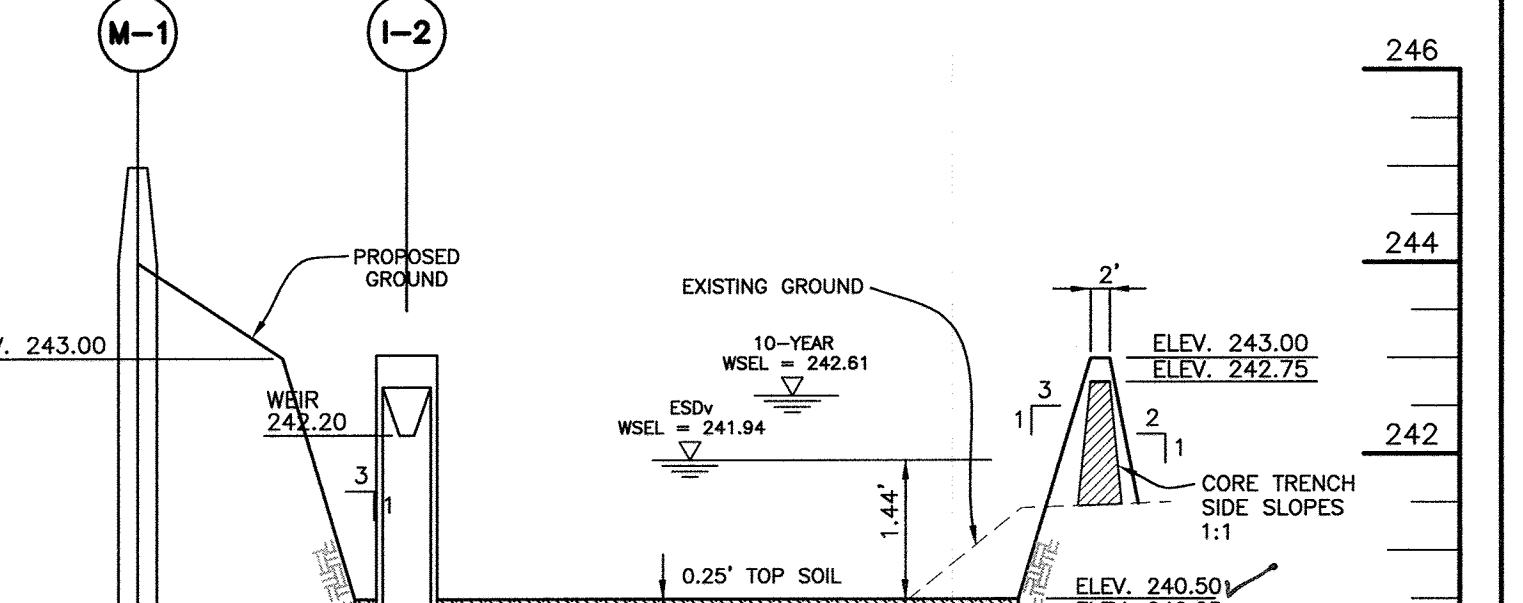


OUTLET PROTECTION DETAIL
NOT TO SCALE

STRUCTURE	V10 fps	d10 (ft)	d50	LENGTH(L)	WIDTH(W)	THICK.(T)	SHA CLASS
E-1	9.64	0.57	9.5"	12'	13.5'	19"	I
LOW END OF LINCOLN DR. CURB	3.26	0.45	9.5"	10'	3.5'	19"	I

SEE DETAILS FOR RIP RAP CHANNEL AT LOW END OF CURB

STRUCTURE	V2 fps	d2 (ft)
E-1	9.64	0.57
LOW END OF LINCOLN DR. CURB	2.83	0.33



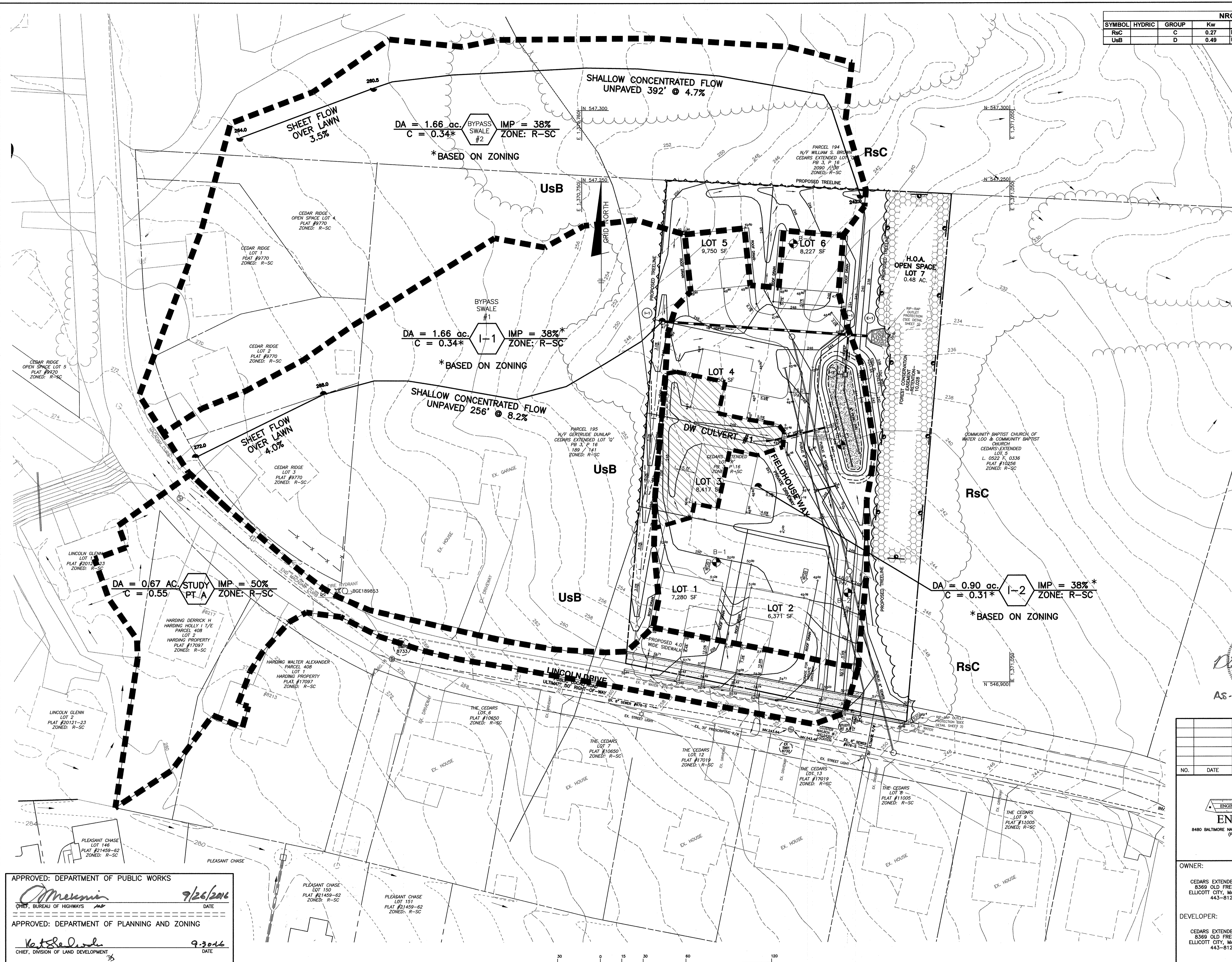
BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE A SUITE 315 ELLICOTT CITY, MARYLAND 21043
(P) 410-465-8100 (F) 410-465-8104
WWW.BM-ENGINERING.COM

THE CEDARS EXTENDED
LOTS 1 - 6 AND OPEN SPACE LOT 7
(A RESUBDIVISION OF LOT 'R' OF THE CEDARS EXTENDED PB 3 P 16)

STORM DRAIN AND STORMWATER MANAGEMENT PROFILES AND DETAILS

DATE: AUGUST 29, 2016 BEI PROJECT NO. 2717
SCALE: AS SHOWN SHEET 3 OF 8

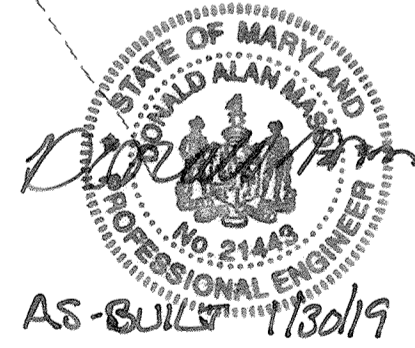
NRCS SOILS CHART - HoCo Soils Map No. 25			
SYMBOL	HYDRIC	GROUP	MAP UNIT NAME
R _s C		C	RUSSETT FINE SANDY LOAM, 5 TO 10 PERCENT SLOPES
U _s B		D	URBAN LAND-SASSAFRAS- BELTSVILLE COMPLEX 0 TO 5 PERCENT SLOPE



LEGEND

- EXISTING CONTOURS
- EXISTING TREELINE
- PROPOSED TREELINE
- PROJECT BOUNDARY
- FOREST CONSERVATION EASEMENT (RETENTION)
- STORMWATER MANAGEMENT SURFACE SAND FILTER
- DRAINAGE DIVIDE
- DRAINAGE AREA D/W CULVERT #1
- SOILS DELINEATION
- SOILS TYPE

"NO AS-BUILT INFORMATION IS PROVIDED ON THIS SHEET"



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. 21443 Expiration Date: 12-21-20

NO.	DATE	REVISION

BENCHMARK ENGINEERS & LAND SURVEYORS PLANNERS
ENGINEERING, INC.
 8480 BALTIMORE NATIONAL PIKE SUITE 315 • ELLICOTT CITY, MARYLAND 21043
 (P) 410-465-6105 (F) 410-465-6844
 WWW.BEI-CIVILENGINEERING.COM

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 45579 Expiration Date: 06-08-2018

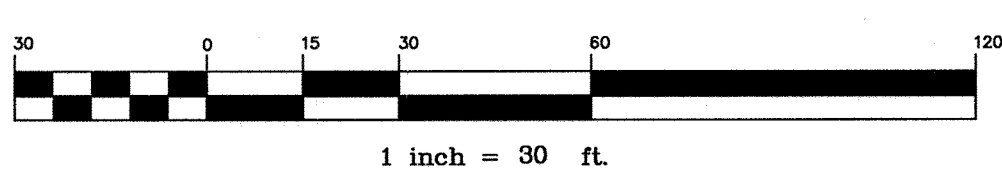
9/6/16

<p>OWNER: CEDARS EXTENDED LOT 'R' LLC 8369 OLD FREDERICK ROAD ELLICOTT CITY, MARYLAND 21043 443-812-4806</p>	<p>THE CEDARS EXTENDED LOTS 1 - 6 AND OPEN SPACE LOT 7 (A RESUBDIVISION OF LOT 'R' OF THE CEDARS EXTENDED PB 3 P 16)</p>
<p>DEVELOPER: CEDARS EXTENDED LOT 'R' LLC 8369 OLD FREDERICK ROAD ELLICOTT CITY, MARYLAND 21043 443-812-4806</p>	<p>TAX MAP: 43 - GRID: 8 - PARCEL: 451 ZONED: R-SC ELECTION DISTRICT NO. 6 - HOWARD COUNTY, MARYLAND</p>
<p>STORM DRAIN DRAINAGE AREA MAP</p>	
<p>DATE: AUGUST 29, 2016 BEI PROJECT NO. 2717</p>	<p>SCALE: AS SHOWN SHEET 4 OF 8</p>

APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 9/26/2016
 CHIEF, BUREAU OF HIGHWAYS

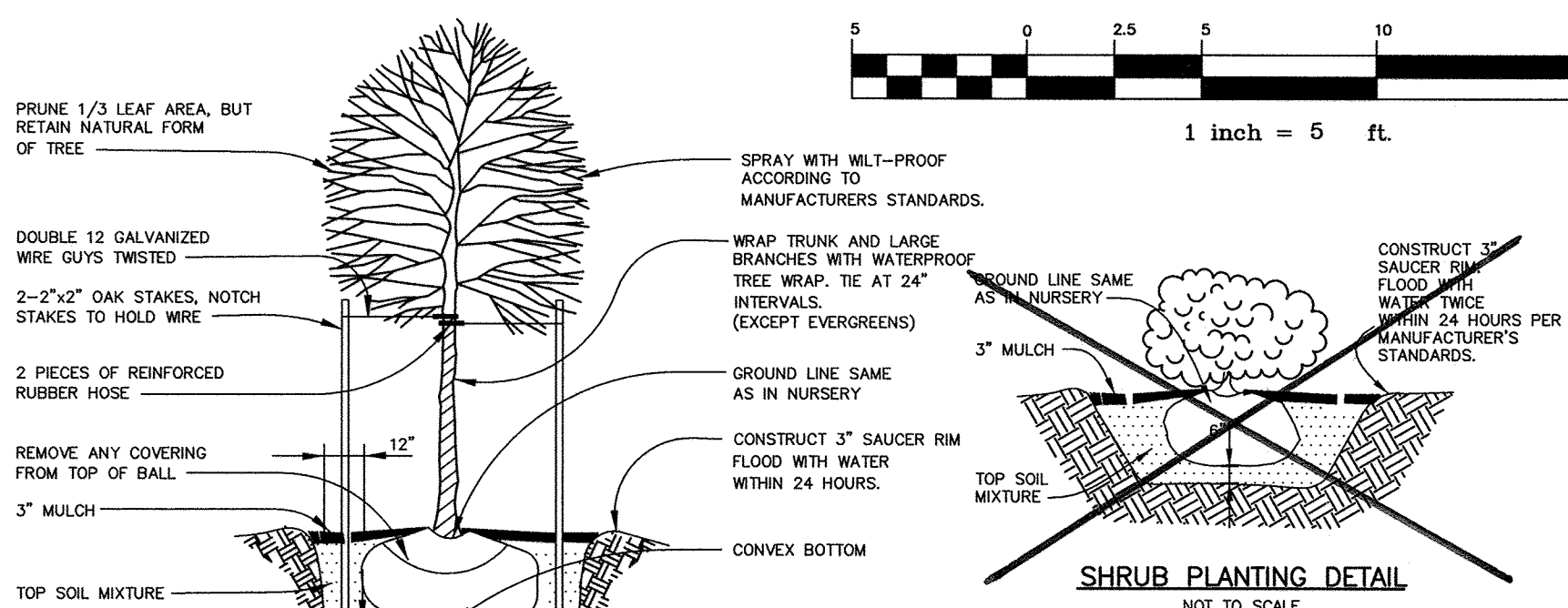
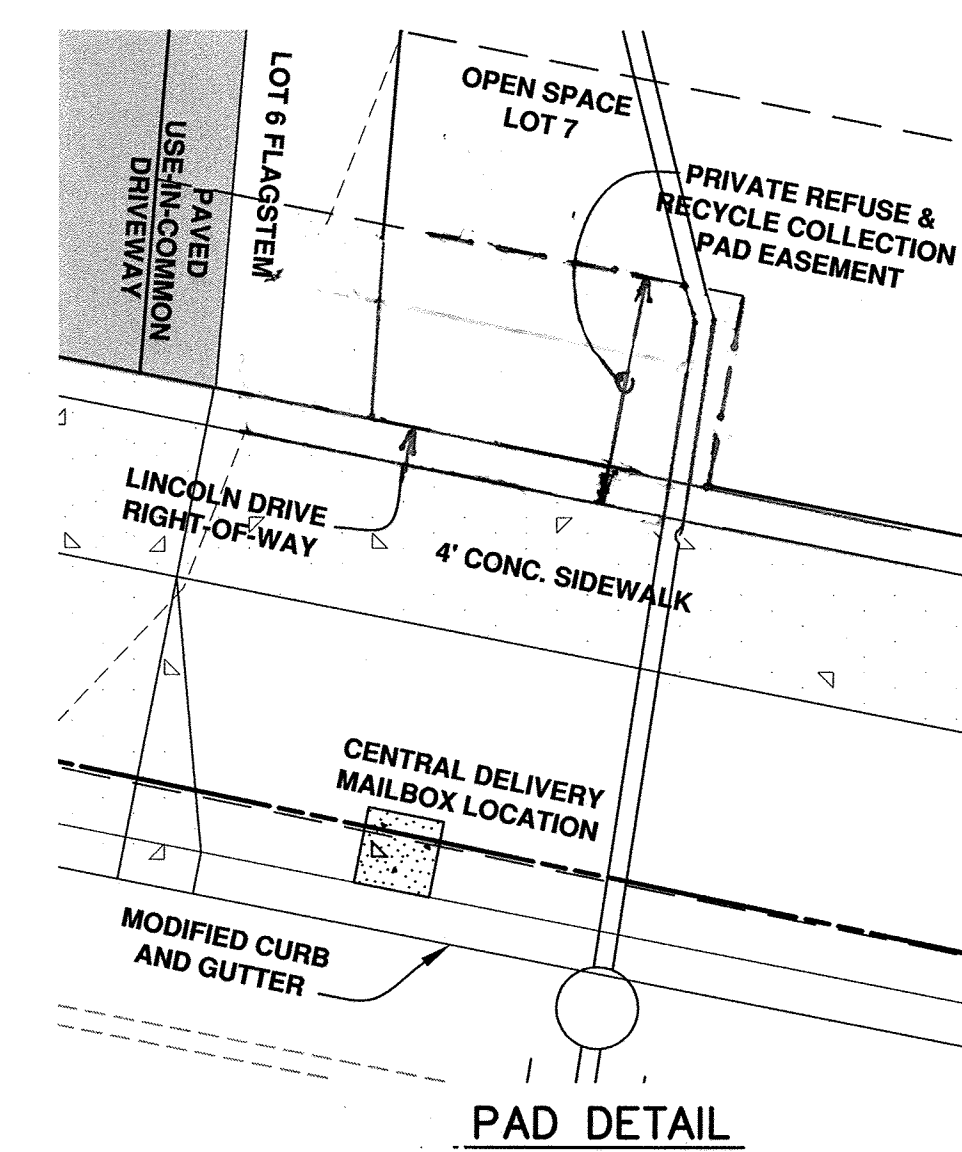
APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 9-30-16
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 9-29-16
 CHIEF, DEVELOPMENT ENGINEERING DIVISION



LEGEND

- EXISTING CONTOURS
- EXISTING TREELINE
- PROPOSED TREELINE
- PROJECT BOUNDARY
- DRIVEWAYS
- FOREST CONSERVATION EASEMENT (RETENTION)
- STORMWATER MANAGEMENT SURFACE SAND FILTER
- PROPOSED STORM DRAIN PIPE
- PERIMETER DESIGNATION
- FOREST CONSERVATION CARSONITE MARKER LOCATION



Forest Stand Data					
Key	Community Type	Acreage (gross)	Dominant Vegetation	General Condition	Priority Acreage
FS-1	Successional	1.6	Acer rubrum, Liquidambar styraciflua, Fraxinus pennsylvanica, Prunus serotina, Nyssa sylvatica, Pinus virginiana	Fair	0

Specimen Tree Chart					
Specimen Tree	Species	Size (dbh)	CRZ	Condition	Notes
1	Slippery Elm	32"	48'	good	to be removed (WP-16-072)

- FSD NOTES:**
- NO RARE, THREATENED, OR ENDANGERED SPECIES OR THEIR HABITAT WERE OBSERVED ON THE PROPERTY.
 - SURROUNDING LAND USE IS PRIMARILY HIGH DENSITY RESIDENTIAL DEVELOPMENT.
 - APPROXIMATELY 0.1 ACRE OF FOREST IS PRESENT WITHIN 100 FEET OF THE SUBJECT PROPERTY.
 - NO WETLAND, STREAMS OR BUFFERS ARE PRESENT ON THE PROPERTY. THE SITE LIES WITHIN THE LITTLE PATUXENT RIVER WATERSHED (02-13-11).
 - NO HISTORIC ELEMENTS OR CEMETERIES ARE KNOWN TO OCCUR ON THE PROPERTY.
 - THE SITE DOES NOT INCLUDE ANY REGULATED 100 YEAR FLOODPLAIN RESOURCES.

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

M/D ENV. Qualified Professional
USA/CAE Wetland Designer
Certification # 1702 CPD# D06104423

John F. Canales 9/30/16

DEVELOPER'S/BUILDER'S 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 SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION OF 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.

John M. Canales 9/6/16
DEVELOPER Dan M. Canales, Member, Cedars Extended Lot R, LLC

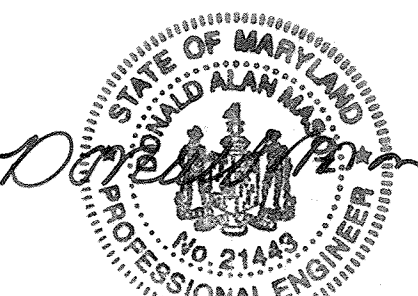
APPROVED: DEPARTMENT OF PUBLIC WORKS
John M. Canales 9/26/2016
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
John M. Canales 9-30-16
CHIEF, DIVISION OF LAND DEVELOPMENT

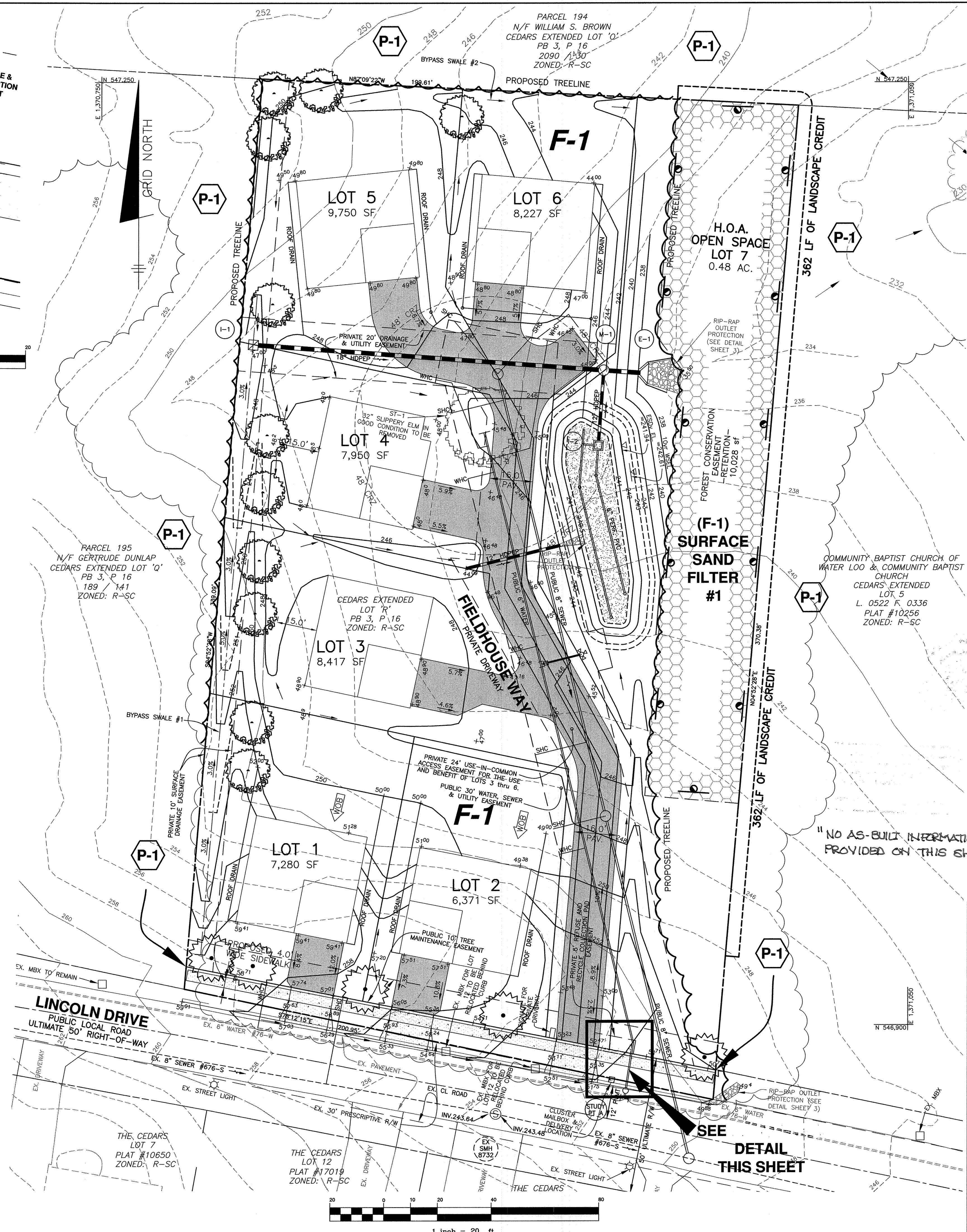
APPROVED: DEPARTMENT OF PUBLIC WORKS
John M. Canales 9/29/16
CHIEF, DEVELOPMENT ENGINEERING DIVISION

FOR BEARINGS AND DISTANCES OF FOREST CONSERVATION BOUNDARIES SEE RECORD PLAT

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. 21043 Expiration Date: 12.21.20



AS-BUILT 1/30/19



SCHEDULE A PERIMETER LANDSCAPE EDGE			
CATEGORY	ADJACENT TO PERIM. PROPERTY (1)	ADJACENT TO TRASH PAD	TOTALS
LANDSCAPE TYPE	A - LIGHT 1:60 shade	B - MODERATE 1:50 shade 1:40 evergreen	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	890 LF	28 LF 10-10+4+	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES, 362 LF*	NO	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	
NUMBER OF PLANTS REQUIRED	528 LF	8 LF	
SHADE TREES	9	1	9
EVERGREEN TREES	0	1	0
OTHER TREES (2:1 SUBSTITUTE)	0	0	0
SHRUBS	0	0	0
NUMBER OF PLANTS PROVIDED	9	0	11
SHADE TREES	0	0	0
EVERGREEN TREES (2:1 SUBSTITUTE)	0	0	0
SHRUBS (10:1 SUBSTITUTE)	0	20**	0

* CREDIT BASED ON 305' OF PROPOSED ON-SITE FOREST CONSERVATION RETENTION EASEMENT AND 57' ON SAVED TREELINE 20' IN WIDTH OR GREATER.
** SHRUBS HAVE BEEN SUBSTITUTED AT A 10:1 RATIO

PERIMETER LANDSCAPE PLANTING LIST				
SYMBOL	QUANTITY	NAME	REMARKS	DESCRIPTION
	11*	TILIA CORDATA GREENSPIRE (Greenspire Littleleaf Linden)	2.5" - 3" cal.	SHADE TREES ALONG PERIMETER EDGES TO BE PROVIDED BY THE BUILDER.
	20	JUNIPERUS CHINENSIS (Pfitzinger Compact) Compact Pfitzer Juniper	2" - 2.5" hgt.	NEEDLE EVERGREEN SHRUB PLANTED AROUND REFUSE PAD TO BE PROVIDED BY THE BUILDER.

* 2 OF THESE TREES HAVE BEEN PROVIDED AS A CONDITION OF THE APPROVAL OF WP-16-072 FOR THE REMOVAL SPECIMEN TREE.

STREET TREE SCHEDULE			
LINEAR FEET OF RIGHT-OF-WAY	LINEAR FEET OF CREDIT	LINEAR FEET OF REQUIRED PLANTING	TOTAL
200'	0	200'	
TREES REQUIRED		5	5

STREET TREE PLANTING LIST				
SYMBOL	QUANTITY	NAME	REMARKS	DESCRIPTION
	5	ACER RUBRUM 'RED SUNSET' (Red Sunset Red Maple)	2.5" - 3" cal.	TO BE PLANTED ALONG LINCOLN DRIVE (PROVIDED BY THE DEVELOPER)

- LANDSCAPE NOTES:**
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL.
 - AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWIT LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATIONS.
 - 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.
 - FINANCIAL SURETY IN THE AMOUNT OF \$3,900.00 FOR THE REQUIRED PERIMETER LANDSCAPING AND TWO ADDITIONAL SHADE TREES AS A CONDITION OF WP-16-072 APPROVAL (\$3,300.00 FOR 11 SHADE TREES AND \$600.00 FOR 20 SHRUBS) SHALL BE POSTED BY THE DEVELOPER AS PART OF THE DPW DEVELOPER'S AGREEMENT. SURETY FOR THE SHRUBS IS NO LONGER NECESSARY, THE SHRUBS HAVE BEEN REMOVED FROM THE PLAN.

NO.	DATE	REVISION
1	12.14.18	REMOVE REFUSE PAD AND ASSOCIATED LANDSCAPE.

BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS ENGINEERING, INC.
8490 BALTIMORE NATIONAL PIKE & SUITE 315 & ELLICOTT CITY, MARYLAND 21043
(910) 465-4108 (910) 465-6644
WWW.BE-CVLENGINEERING.COM

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 45571 Registration Date: 06-08-2018

John M. Canales 9/6/16

THE CEDARS EXTENDED
LOTS 1 - 6 AND OPEN SPACE LOT 7
(A RESUBDIVISION OF LOT 'R' OF THE CEDARS EXTENDED PB 3 P 16)

TAX MAP: 43 - GRID: 8 - PARCEL: 451
ELECTION DISTRICT NO. 6 - HOWARD COUNTY, MARYLAND

PERIMETER LANDSCAPE AND STREET TREE PLAN AND FOREST CONSERVATION PLAN

DATE: AUGUST 29, 2016 BEI PROJECT NO. 2717
SCALE: AS SHOWN SHEET 5 OF 8

BORING LOG		GEOLAB, INC.				
Report No.	3/11/2016	Client	Benchmark Engineering			
Project	The Cedars Extended	Project No.	116-025			
Boring No.	B-1 (1 of 1)	Start	3/2/2016			
Type of Boring	Hand-auger	Completed	3/2/2016			
Director	L. Kaler	Location	See Boring Location Plan			
Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	Sample Blows	Sample Depth (Feet)	Moisture Content	REMARKS
248	0.0	Forest litter and root matter with organic soil				Perch water encountered at a depth of 0.5 feet.
247.2	0.8	Tan to red and off-white silty CLAY, moist (CL, USDA: Silty Clay)				
			3.0			
			3.5			30.9
238	10.0	End of Boring				

BORING LOG		GEOLAB, INC.				
Report No.	3/11/2016	Client	Benchmark Engineering			
Project	The Cedars Extended	Project No.	116-025			
Boring No.	B-3 (1 of 1)	Start	3/2/2016			
Type of Boring	Hand-auger	Completed	3/2/2016			
Director	L. Kaler	Location	See Boring Location Plan			
Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	Sample Blows	Sample Depth (Feet)	Moisture Content	REMARKS
243	0.0	Forest litter and root matter with organic soil				Perch water encountered at a depth of 2.0 feet.
240.5	0.5	Tan to red and off-white silty CLAY, moist to saturated (CL, USDA: Silty Clay)				
234.5	4.5	Tan fine sandy silty CLAY some gravel, moist (CL, USDA: Clay Loam)				
			6.5			
			7			24.5
			7.5			11.1
			8			
230	10.0	End of Boring				

APPROVED: DEPARTMENT OF PUBLIC WORKS

[Signature] 9/26/2016
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 9-30-16
CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 9-29-16
CHIEF, DEVELOPMENT ENGINEERING DIVISION

BORING LOG		GEOLAB, INC.				
Report No.	3/11/2016	Client	Benchmark Engineering			
Project	The Cedars Extended	Project No.	116-025			
Boring No.	B-2 (1 of 1)	Start	3/2/2016			
Type of Boring	Hand-auger	Completed	3/2/2016			
Director	L. Kaler	Location	See Boring Location Plan			
Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	Sample Blows	Sample Depth (Feet)	Moisture Content	REMARKS
248	0.0	Forest litter and root matter with organic soil				Perch water encountered at a depth of 0.5 feet.
241.5	0.5	Tan to red and off-white silty CLAY, moist (CL, USDA: Silty Clay)				
			1.0			23.5
			1.5			
			3.5			26.9
			4			
241.5	6.5	Red and off-white silty CLAY with some gravel, saturated (CL, USDA: Silty Loam)				
241	7.0	End of Boring				

BORING LOG		GEOLAB, INC.				
Report No.	3/11/2016	Client	Benchmark Engineering			
Project	The Cedars Extended	Project No.	116-025			
Boring No.	B-4 (1 of 1)	Start	3/2/2016			
Type of Boring	Hand-auger	Completed	3/2/2016			
Director	L. Kaler	Location	See Boring Location Plan			
Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	Sample Blows	Sample Depth (Feet)	Moisture Content	REMARKS
244	0.0	Forest litter and root matter with organic soil				Boring dry during drilling and at completion.
243.5	0.5	Tan to red and off-white silty CLAY, moist (CL, USDA: Silty Clay)				
			2.5			25.0
			3			
			6.5			17.9
			7			
234	10.0	End of Boring				

APPROVED: DEPARTMENT OF PUBLIC WORKS

[Signature] 9/26/2016
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 9-30-16
CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 9-29-16
CHIEF, DEVELOPMENT ENGINEERING DIVISION

CONSTRUCTION PERIOD PROTECTION PROGRAM

A. Forest Protection Techniques

1. Soil Protection Area (Critical Root Zone)

The soil protection area, or critical root zone, of a tree is that portion of the soil column where most of its roots may be found. The majority of roots responsible for water and nutrient uptake are located just below the soil surface. Temporary fencing shall be placed around the critical root zone of the forest in areas where the forest limits occur within 25 feet of the limit of disturbance.

2. Fencing and Signage

Existing forest limits occurring within 25 feet of the limits of disturbance shall be protected using temporary protective fencing. Permanent signage shall be placed around the afforestation area prior to plant installation, as shown on the plan.

B. Pre-Construction Meeting

Upon staking of limits of disturbance, a pre-construction meeting will be held between the developer, contractor and appropriate County inspector. The purpose of the meeting will be to verify that all sediment control is in order, and to notify the contractor of possible penalties for non-compliance with the FCP.

C. Storage Facilities/Equipment Cleaning

All equipment storage, parking, sanitary facilities, material stockpiling, etc. associated with construction of the project will be restricted to those areas outside of the proposed Forest Conservation Easement. Cleaning of equipment will be limited to areas within the LOD of the proposed homesites. Wastewater resulting from equipment cleaning will be controlled to prevent runoff into environmentally sensitive areas.

D. Sequence of Construction

The following timetable represents the proposed timetable for development. The items outlined in the Forest Conservation Plan will be enacted within two (2) years of subdivision approval.

Below find a proposed sequence of construction.

1. Install all signage and sediment control devices.
2. Hold pre-construction meeting between developer, contractor and County inspector.
3. Build access roads, install well and septic systems, and construct houses. Stabilize all disturbed areas accordingly.
4. Begin multiflora rose removal. Install permanent protective signage for Easements and initiate plantings in accordance with Forest Conservation Plan. Plantings will be completed within two (2) years of subdivision approval.
5. Remove sediment control.
6. Hold post-construction meeting with County inspectors to assure compliance with FCP. Submit Certification of Installation.
7. Monitor and maintain plantings for 2 years.

E. Construction Monitoring

Eco-Science Professionals, or another qualified professional designated by the developer, will monitor construction of the project to ensure that all activities are in compliance with the Forest Conservation Plan.

F. Post-Construction Meeting

Upon completion of construction, Eco-Science Professionals, or another qualified professional designated by the developer, will notify the County that construction has been completed and arrange for a post-construction meeting to review the project site. The meeting will allow the County inspector to verify that afforestation plantings have been installed.

POST-CONSTRUCTION MANAGEMENT PLAN

Howard County requires a two year post-construction management plan be prepared as part of the forest conservation plan. The plan goes into effect upon acceptance of the construction certification of completion by the County, Eco-Science Professionals, or another qualified professional designated by the developer, will be responsible for implementation of the post-construction management plan.

The following items will be incorporated into the plan:

A. Fencing and Signage

Permanent signage indicating the limits of the retention/afforestation area shall be maintained.

B. General Site Inspections/Maintenance of Plantings

Site inspections will be performed a minimum of three times during the growing season. The purpose of the inspections will be to assess the health of the afforestation plantings. Appropriate measures will be taken to rectify any problems which may arise.

In addition, maintenance of the afforestation plantings will involve the following steps:

1. Watering - All plant material shall be watered twice a month during the 1st growing season, more or less frequently depending on weather conditions. During the second growing season, once a month during May-September, if needed.
2. Removal of invasive exotics and noxious weeds. Old field successional species will be retained.
3. Identification of serious plant pests and diseases, treatment with appropriate agent.
4. Pruning of dead branches.
5. After 12 and 24 months, replacement of plants, if required, in accordance with the Guarantee Requirements shown on the FCP.

C. Education

The developer will provide appropriate materials to property owners informing them of the location and purpose of the afforestation area. Materials may include site plans and information explaining the intent of the forest conservation law.

D. Final Inspection

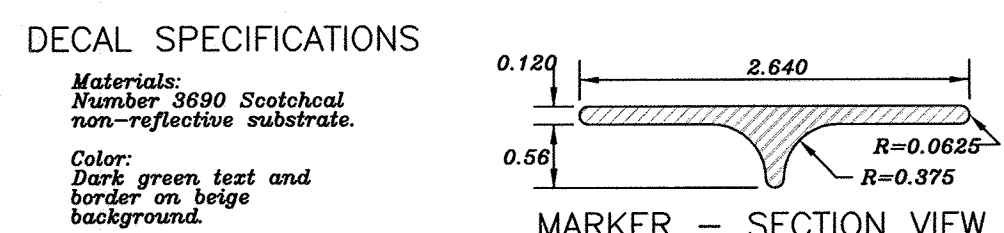
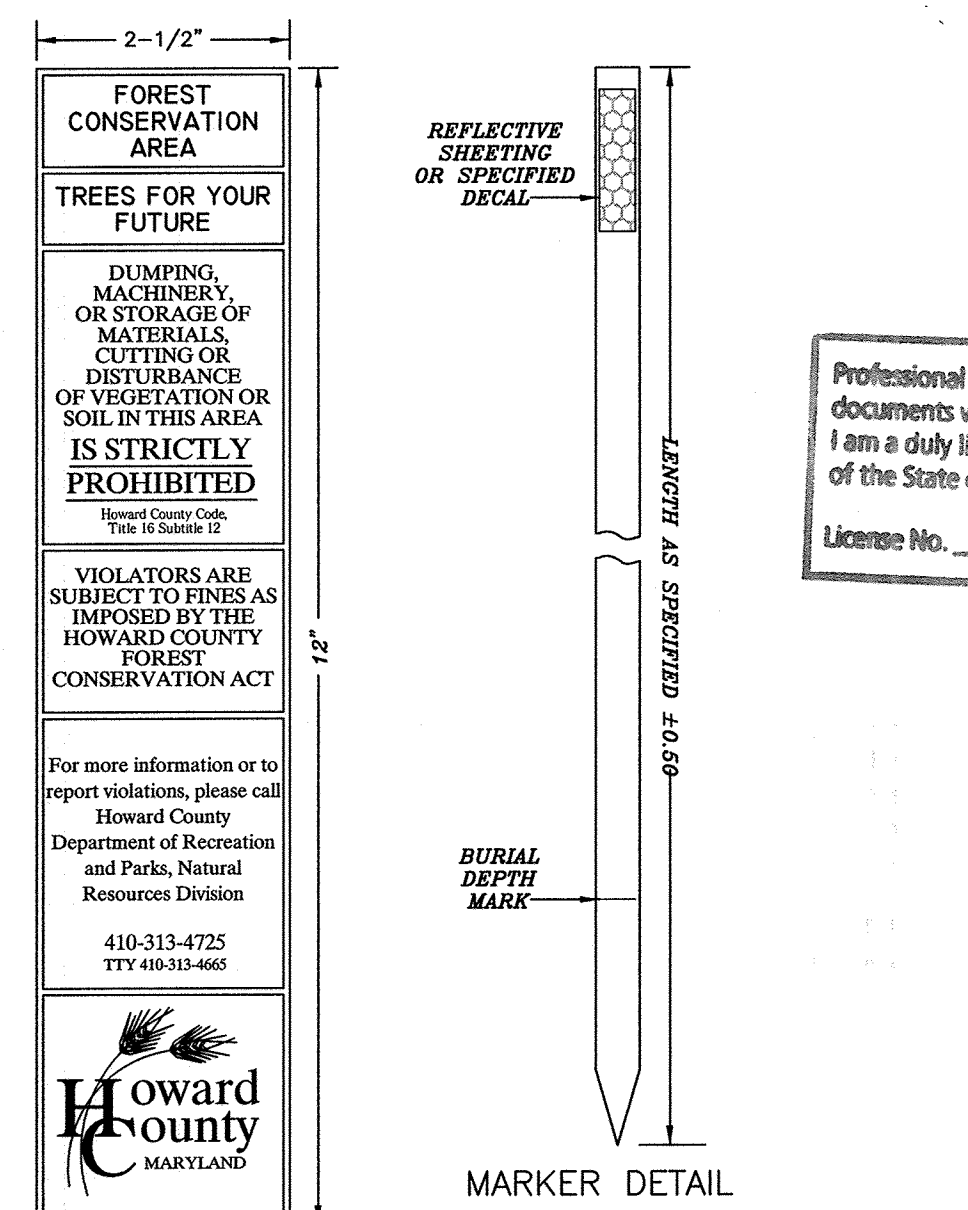
At the end of the two year post-construction management period, Eco-Science Professionals, or another qualified professional, will submit to the administrator of the Howard County Forest Conservation Program certification that all retention/afforestation requirements have been met. Upon acceptance of this certification, the County will release the developer from all future obligations and release the developer's bond.

FOREST CONSERVATION WORKSHEET		5-Aug-02	
NET TRACT AREA:			
A. Total tract area ...			1.60
B. Land dedication acres (parks, county facility, etc.) ...			0.00
C. Land dedication for roads or utilities (not being constructed by this plan) ...			0.00
D. Area to remain in commercial agricultural production/use ...			0.00
E. Other deductions (specify) ... FLOODPLAIN			0.00
F. Net Tract Area			1.60
LAND USE CATEGORY: (from <i>Trees Technical Manual</i>)			
Input the number "1" under the appropriate land use, limit to only one entry.			
	ARA	MDR	IDA
	0	0	0
			HDR
			1
			MPD
			0
			CIA
			0
G. Afforestation Threshold ...		15%	x F = 0.24
H. Conservation Threshold ...		20%	x F = 0.32
EXISTING FOREST COVER:			
I. Existing forest cover			1.60
J. Area of forest above afforestation threshold			1.36
K. Area of forest above conservation threshold			1.28
BREAK EVEN POINT:			
L. Forest retention above threshold with no mitigation			0.58
M. Clearing permitted without mitigation			1.02
PROPOSED FOREST CLEARING:			
N. Total area of forest to be cleared			1.37
O. Total area of forest to be retained			0.23
PLANTING REQUIREMENTS:			
P. Reforestation for clearing above conservation threshold			0.32
Q. Reforestation for clearing below conservation threshold			0.18
R. Credit for retention above conservation threshold			0.00
S. Total reforestation required			0.50
T. Total afforestation required			0.00
U. Credit for landscaping (may not exceed 20% of "S")			0.00
V. Total reforestation and afforestation required			0.50

FOREST CONSERVATION NOTES:

1. ANY FOREST CONSERVATION EASEMENT (FCE) AREA SHOWN HEREON IS SUBJECT TO PROTECTIVE COVENANTS WHICH MAY BE FOUND IN THE LAND RECORDS OF HOWARD COUNTY WHICH RESTRICT THE DISTURBANCE AND USE OF THESE AREAS.
2. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT; HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
3. LIMITS OF DISTURBANCE SHALL BE RESTRICTED TO AREAS OUTSIDE THE LIMIT OF TEMPORARY FENCING OR THE FCE BOUNDARY, WHICHEVER IS GREATER.
4. PERMANENT SIGNAGE SHALL BE PLACED 50'-100' APART ALONG THE BOUNDARIES OF ALL FOREST CONSERVATION EASEMENTS. THIS SIGNAGE SHALL STAY IN PERPETUITY.
5. THIS SUBDIVISION COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION VIA THE ON-SITE RETENTION OF 0.23 ACRES OF FOREST WITHIN A FOREST CONSERVATION EASEMENT AND THE OFF-SITE RETENTION OF 0.50 ACRES WITHIN THE FOREST MITIGATION BANK ESTABLISHED UNDER PHELPS PROPERTY, SDP-14-026FC RECORDED AS PLAT #22843.

"NO AS-BUILT INFORMATION IS PROVIDED ON THIS SHEET"



Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

MD DNR Qualified Professional
USACE Wetland Designer
Certification # W00730100100402

Jake P. Cantor 8/30/16

P.O. Box 5006 Glen Arm, MD 21057 (410) 592-6752

NO.	DATE	REVISION

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. 45377, Expiration Date: 06-08-2018.

BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS
8480 BALTIMORE NATIONAL PIKE SUITE 315-A ELLICOTT CITY, MARYLAND 21043
(P) 410-465-8105 (F) 410-465-8644
WWW.BEI-CVLENGINEERING.COM

OWNER: CEDARS EXTENDED LOT 'R' LLC
8369 OLD FREDERICK ROAD
ELLCOTT CITY, MARYLAND 21043
443-812-4806

DEVELOPER: CEDARS EXTENDED LOT 'R' LLC
8369 OLD FREDERICK ROAD
ELLCOTT CITY, MARYLAND 21043
443-812-4806

THE CEDARS EXTENDED
LOTS 1 - 6 AND OPEN SPACE LOT 7
(A RESUBDIVISION OF LOT 'R' OF THE CEDARS EXTENDED PB 3 P 16)

TAX MAP: 43 - GRID: 8 - PARCEL: 451
ZONED: R-SC
ELECTION DISTRICT NO. 6 - HOWARD COUNTY, MARYLAND

SOIL BORING LOGS AND FOREST CONSERVATION NOTES AND DETAILS

DATE: AUGUST 29, 2016 BEI PROJECT NO. 2717
SCALE: AS SHOWN SHEET 6 OF 8

Table B.1: Temporary Seeding for Site Stabilization

Plant Species	Seeding Rate 1/		Recommended Seeding Dates by Plant Hardiness Zone 3/
	lb/ac	lb/1000ft ²	
Cool-Season Grasses			
Annual Ryegrass (<i>Lolium perenne</i> ssp. Multiflorum)	40	1.0	Mar 1 to May 15; Aug 1 to Oct 31
Barley (<i>Hordeum vulgare</i>)	96	2.2	Mar 1 to May 15; Aug 1 to Oct 31
Oats (<i>Avena sativa</i>)	72	1.7	Mar 1 to May 15; Aug 1 to Oct 31
Wheat (<i>Triticum aestivum</i>)	120	2.8	Mar 1 to May 15; Aug 1 to Oct 31
Cereal Rye (<i>Secale cereale</i>)	112	2.8	Mar 1 to May 15; Aug 1 to Nov 15
Warm-Season Grasses			
Foxtail Millet (<i>Serotaria italica</i>)	30	0.7	May 16 to Jul 31
Pearl Millet (<i>Pennisetum glaucum</i>)	20	0.5	May 16 to Jul 31

Notes:
 1/ Seeding rates for the warm season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as tested. Adjustments are usually not needed for the cool-season grasses.
 Seeding rates listed above are for temporary seedings, when planted alone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate listed above for barley, oats, and wheat. For smaller-seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than 5% (by weight) of the overall permanent seeding mix. Cereal rye generally should not be used as a nurse crop, unless planting will occur very late fall beyond the seeding dates for other temporary seedings. Cereal rye has allelopathic properties that inhibit the germination and growth of other plants. If it must be used as a nurse crop, seed at 1/3 of the rate listed above.
 Oats are the recommended nurse crop for warm-season grasses.
 2/ For sandy soils, plant seeds at twice the depth listed above.
 3/ The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.

Permanent Seeding Summary

No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	Fertilizer Rate (10-20-20)			Lime Rate
					N	P2O5	K2O	
9	Fescue, Tall	60	Mar 1 to May 15 Aug 1 to Oct 15	1/4 - 1/2 in	45 pounds per acre (1.0 lb/100 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
	Bluegrass, Kentucky	40	Mar 1 to May 15 Aug 1 to Oct 15	1/4 - 1/2 in				

SEQUENCE OF CONSTRUCTION

NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF WORK

- (day 1) Obtain grading permit.
- (day 2) Hold on-site pre-construction meeting.
- (day 3-10) Clear and Grub as necessary to install stabilized construction entrance and perimeter controls (clean water diversion dike, super silt fences, etc.). Install the storm drain system E-1 to I-1 and outlet protection prior to installation of the clean water diversion DIKE.
- (day 11-18) Upon approval from the Howard County Sediment Control Inspector, proceed to clear, grub and grade within the perimeter.
- (day 19-36) Bring use-in-common drive up to subgrade and at same time install the water and sewer mains and house connections. Also install the driveway culvert at this time.
- (day 37-44) Install curb and gutter along Lincoln Drive.
- (day 45-50) Install the driveway aprons and sidewalk.
- (day 51-55) Upon completion of the mass grading of the lots, stabilize in accordance with the permanent seeded notes.
- (day 56-63) Construct the Surface Sand Filter and storm drain from I-2 to M-1. Once completed place filter cloth over surface area and inside side slopes and wrap with silt fence.
- (day 64-66) Pave the use-in-common driveway.
- (day 67-75) Upon approval from the Howard County Sediment Control Inspector, remove all sediment control devices and stabilize any remaining disturbed areas in accordance with the permanent seeded notes.

NOTE:

FOLLOWING INITIAL SOIL DISTURBANCE OR ANY RE-DISTURBANCES, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
 A. 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, SWALES AND ALL SLOPES GREATER THAN 3:1.
 B. 7 CALENDAR DAYS FOR ALL OTHER DISTURBED AREAS.
 DURING GRADING AND AFTER EACH RAINFALL, CONTRACTOR WILL INSPECT AND PROVIDE NECESSARY MAINTENANCE TO THE SEDIMENT CONTROL MEASURES OF THIS PLAN.

ENGINEER'S CERTIFICATE

I 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.

John M. Carnoy 9/6/16
 ENGINEER - John M. Carnoy #45577 DATE

DEVELOPER'S CERTIFICATE

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

John M. Carnoy 9/6/16
 DEVELOPER - John M. Carnoy Member Cedars Extended Lot R LLC DATE

John K. Blanton 9/15/16
 HOWARD SOIL CONSERVATION DISTRICT DATE

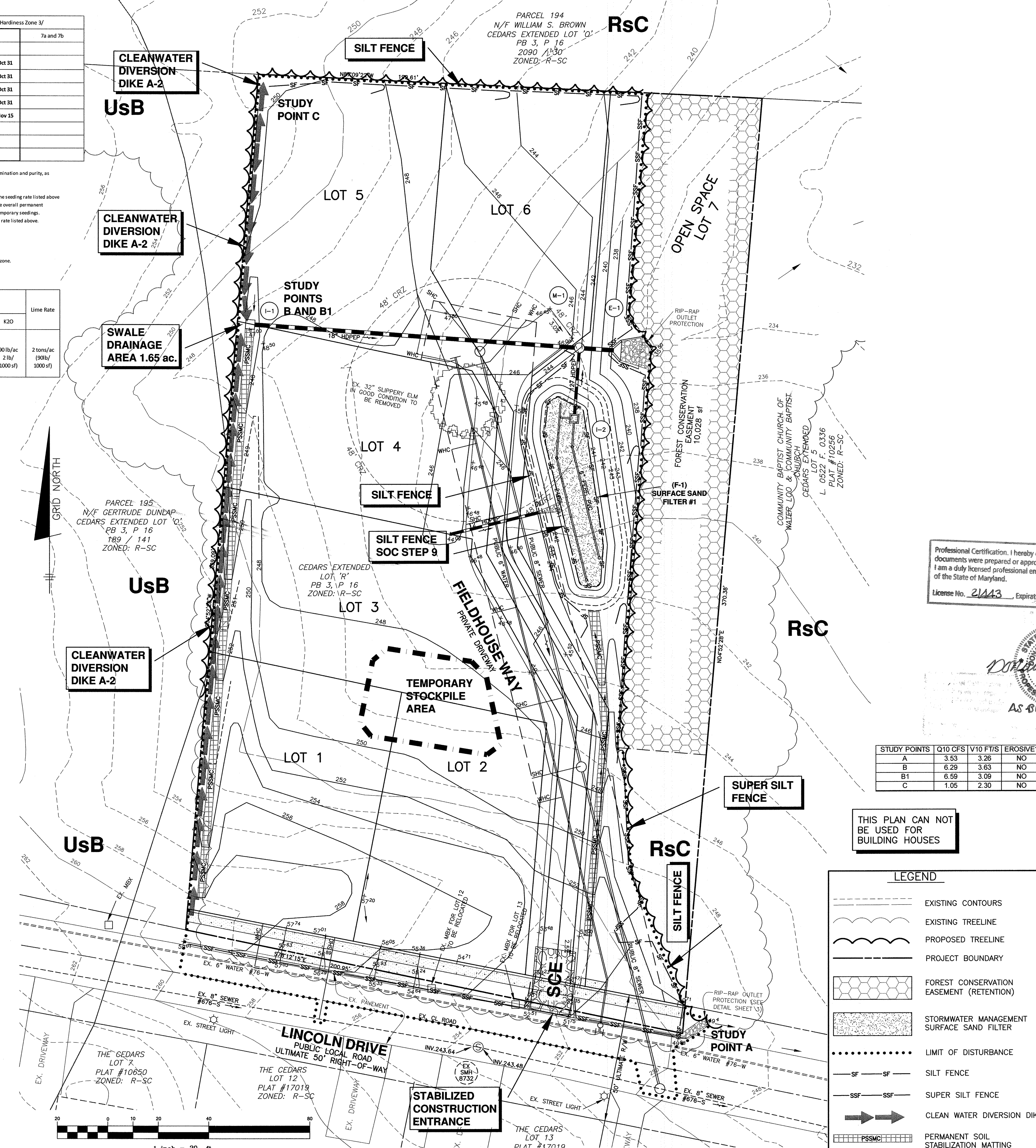
APPROVED: DEPARTMENT OF PUBLIC WORKS

Melanie 9/26/2016
 CHIEF, BUREAU OF HIGHWAYS DATE

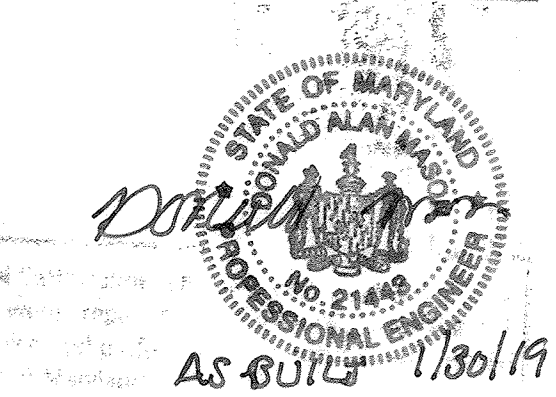
APPROVED: DEPARTMENT OF PLANNING AND ZONING

Kate 9-30-16
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Chad 9-29-16
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



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. 21443 Expiration Date: 12-21-20



STUDY POINTS	Q10 CFS	V10 FT/S	EROSIVE?
A	3.53	3.26	NO
B	6.29	3.63	NO
B1	6.59	3.09	NO
C	1.05	2.30	NO

THIS PLAN CAN NOT BE USED FOR BUILDING HOUSES

LEGEND

	EXISTING CONTOURS
	EXISTING TREELINE
	PROPOSED TREELINE
	PROJECT BOUNDARY
	FOREST CONSERVATION EASEMENT (RETENTION)
	STORMWATER MANAGEMENT SURFACE SAND FILTER
	LIMIT OF DISTURBANCE
	SILT FENCE
	SUPER SILT FENCE
	CLEAN WATER DIVERSION DIKE
	PERMANENT SOIL STABILIZATION MATTING

DETAIL C-1 EARTH DIKE

STANDARD SYMBOL: A-1

FLOW CHANNEL STABILIZATION

A-1 SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.)
 A-2/B-2 SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.
 A-3/B-3 4 TO 7 HIGH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.

CONSTRUCTION SPECIFICATIONS

- REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.
- EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
- COMPACT FILL.
- CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
- PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
- STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.
- MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
- UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

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

"NO AS BUILT INFORMATION IS" PROVIDED ON THIS SHEET

BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS
 ENGINEERING, INC.
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 (A RESUBDIVISION OF LOT 'R' OF THE CEDARS EXTENDED PB 3 P 16)

TAX MAP: 43 - GRID: 8 - PARCEL: 451
 ZONED: R-SC
 ELECTION DISTRICT NO. 6 - HOWARD COUNTY, MARYLAND

SEDIMENT AND EROSION CONTROL PLAN

DATE: AUGUST 29, 2016 BEI PROJECT NO. 2717
 SCALE: AS SHOWN SHEET 7 OF 8
 DESIGN: JMC/DBT DRAFT: DBT

