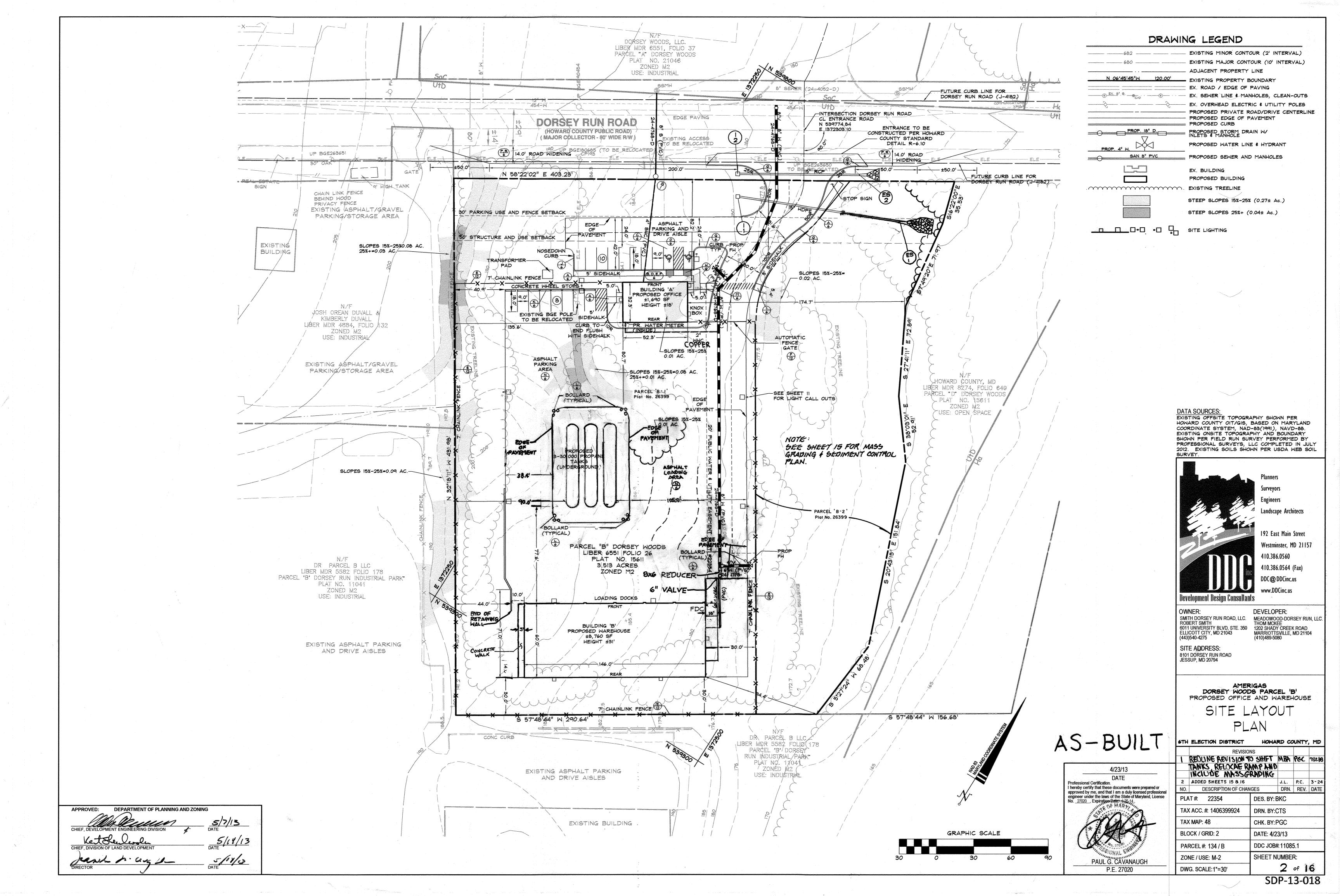
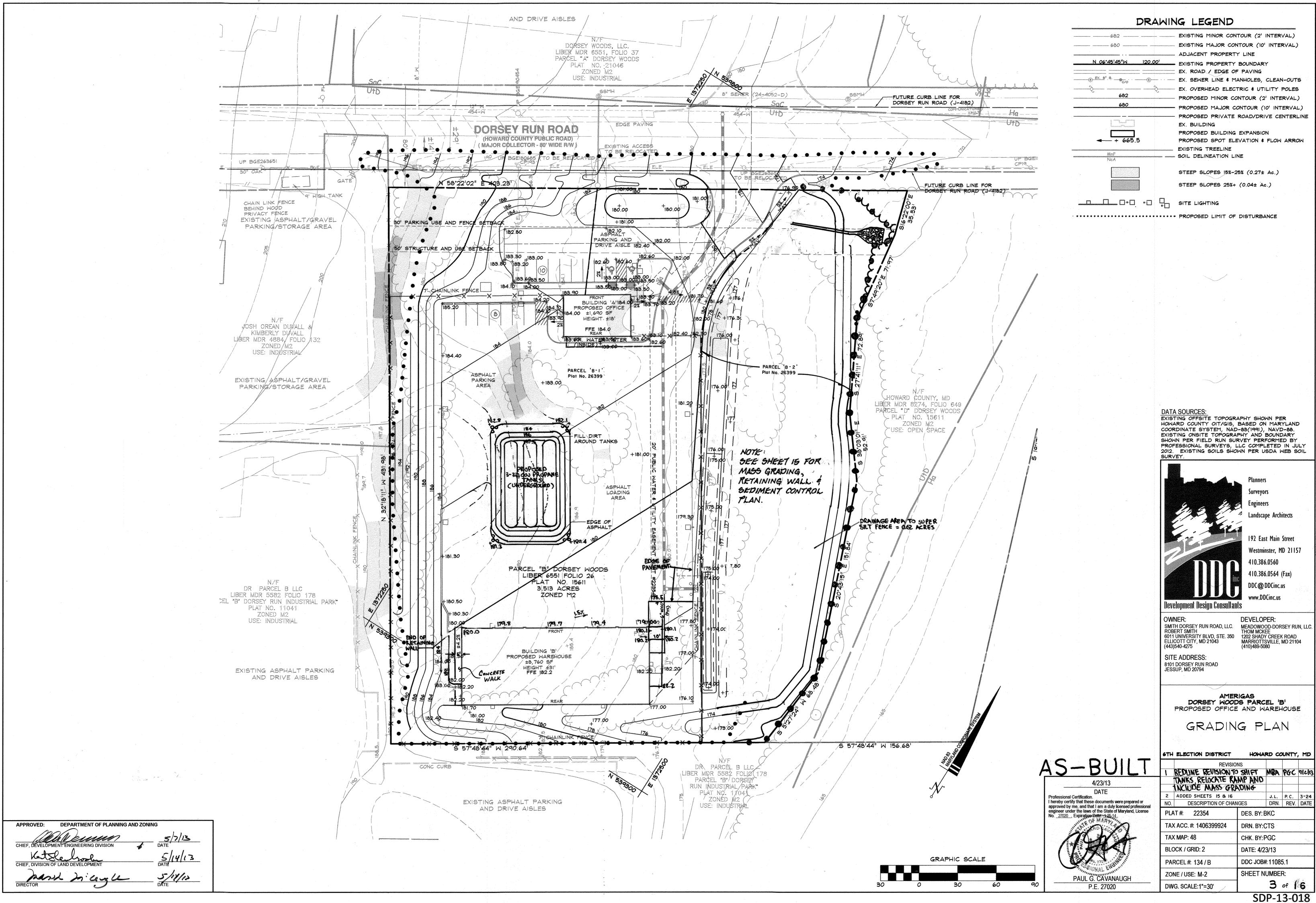
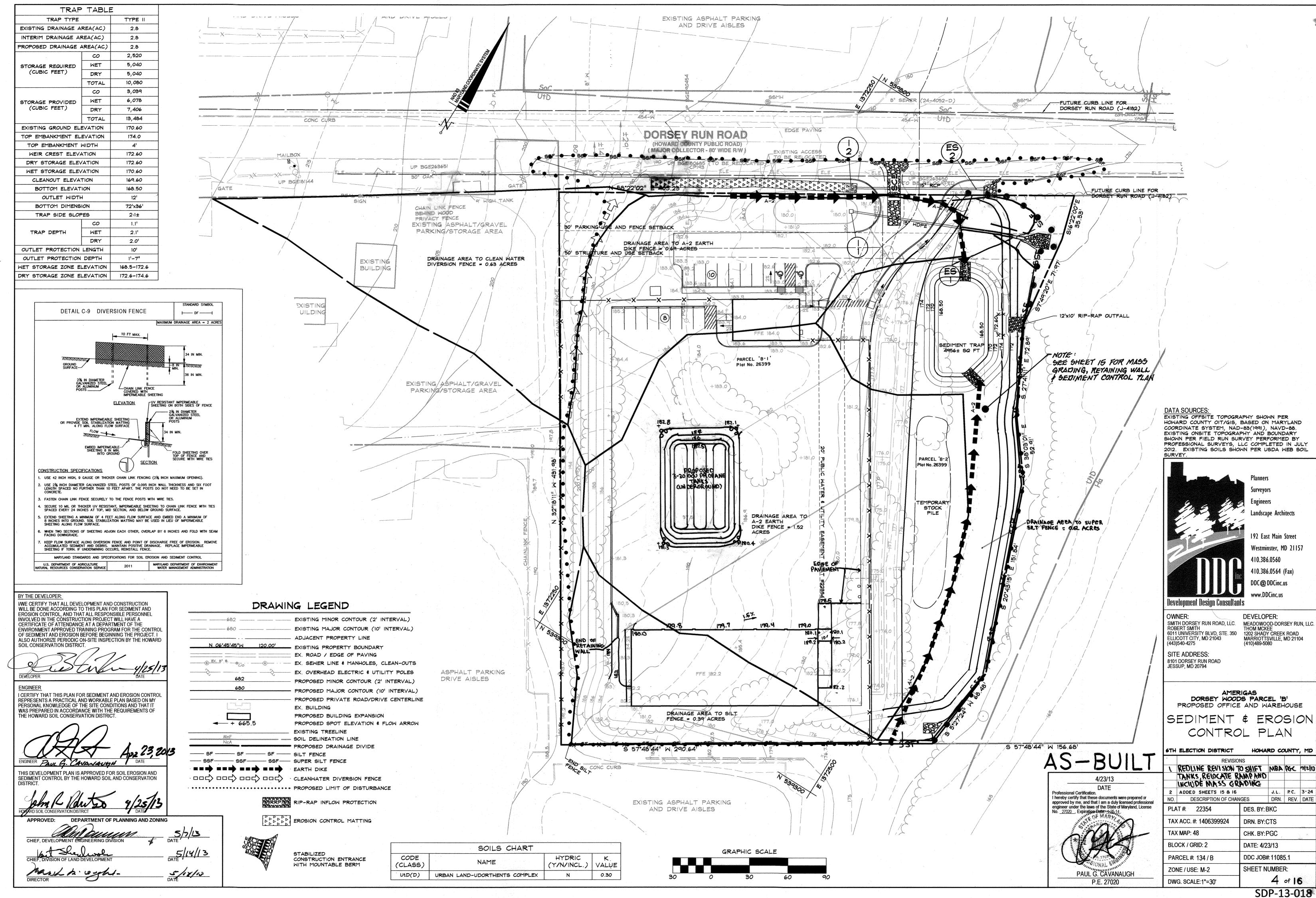
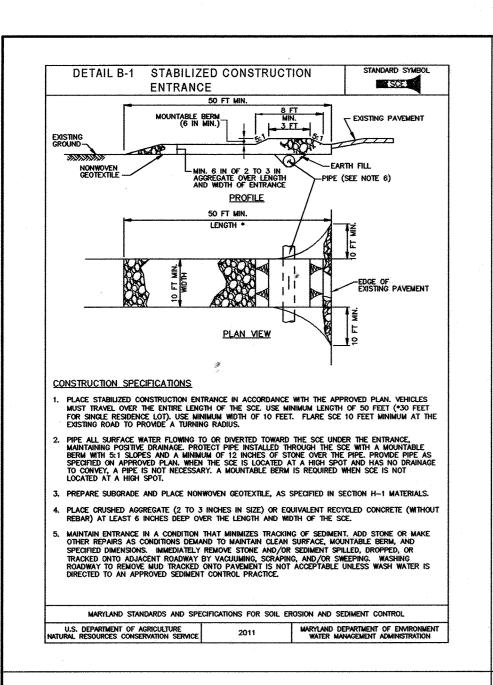
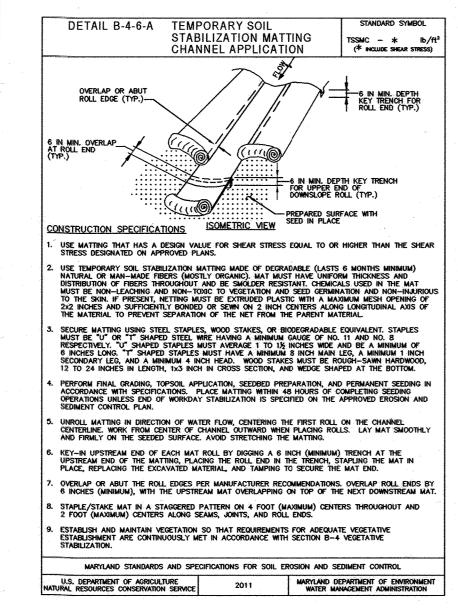
### SITE ANALYSIS DATA CHART BENCHMARK a. DEED REFERENCE: 06551/00026 PLAT REFERENCE: 15611 SITE DEVELOPMENT PLAN b. TOTAL PROJECT AREA: 3.513 ACRES (GROSS TRACT AREA) BENCHMARK #1 N. 540761.715 C. APPROXIMATE WETLANDS AREA INCLUDING BUFFER: N/A 1373837.338 d. APPROXIMATE AREA OF 100 YEAR FLOODPLAIN: N/A 43HA - 3/4" IRON ROD e. APPROXIMATE EXISTING FOREST AREA: 0.00± AC. 68.340 f. APPROXIMATE AREA OF STEEP SLOPES (25% OR GREATER): 0.04± AC. for AMERIGAS g. APPROXIMATE AREA OF STEEP SLOPES (15% TO 25%): 0.27± AC. BENCHMARK #2 N. 539314.908 . APPROXIMATE AREA OF ERODIBLE SOILS: N/A NET AREA OF TRACT: 3.473 ACRES 1371539.258 LIMIT OF DISTURBED AREA: 36/2± ACRES 48AA - 3/8" IRON ROD PRESENT ZONING: M-2 73.183 DORSEY WOODS PARCEL PROPOSED USE: COMMERCIAL/OFFICE, WAREHOUSE m. TOTAL FLOOR SPACE: ADC MAP COORDINATES MAP 5054 D7 OFFICE BUILDING: 1,690 S.F. WAREHOUSE BUILDING: 8,760 S.F. N 39°09'00", E 76°47'30" n. MAXIMUM NUMBER OF EMPLOYEES: 12 O. MINIMUM STRUCTURE AND USE SETBACKS TAX MAP 48, GRID 2, PARCEL 134, PLAT No. 22354 6TH ELECTION DISTRICT HOWARD COUNTY, MD 1. FROM EXTERNAL PUBLIC STREET RIGHT-OF-WAY EXCEPT FOR PARKING USES AND FENCES ADJOINING PARKING USES 2. FROM INTERNAL PUBLIC STREET RIGHT-OF-WAY EXCEPT FOR PARKING USES AND VICINITY MAP FENCES ADJOINING PARKING USES 3. FROM ANY RESIDENTIAL DISTRICT p. MAXIMUM HEIGHT LIMITATIONS: a STRUCTURE WITH MINIMUM SETBACK 2. STRUCTURE WITH AN ADDITIONAL DRAWING LIST 1 FOOT IN HEIGHT FOR EVERY 2 FEET NO "AS-BUILT INFORMATION I COVER SHEET OF SETBACK ABOVE MINIMUM NO"AS-BUILT INFORMATION 2 SITE LAYOUT PLAN PROPOSED BUILDING HEIGHT NO AS-BUILT INFORMATION 3 GRADING PLAN 1. OFFICE BUILDING (ONE STORY) TO BE RELOCATED No AS-BUILT INFORMATION 4 SEDIMENT & EROSION CONTROL PLAN 2. STORAGE BUILDING (ONE STORY) DORSEY RUN ROAD s. PARKING CALCULATIONS 16 AS-BUILT INFORMATION 5 SEDIMENT & EROSION CONTROL NOTES & DETAILS No AS- BUILT INFORMATION 6 SITE PLAN DETAILS a. GENERAL OFFICE 3.3 SPACES PER 1,000 SF No "AS-BUILT" INFORMATION 7 STORM DRAIN DRAINAGE AREA MAP $(1,690 \text{ SF}/ 1,000 \times 3.3 = 6 \text{ SPACES})$ b. WAREHOUSE AND DISTRIBUTION 0.5 SPACES PER 1,000 SF No AS-BUILT INFORMATION 8 STORM DRAIN PROFILES AND DETAILS $(8,760 \text{ SF } / 1,000 \times .5 = 5 \text{ SPACES})$ "AS-BUKT" 9 STORMWATER MANAGEMENT PLAN 2. PARKING PROVIDED: 18 SPACES INCLUDING 2 HC SPACES 10 STORMWATER MANAGEMENT PROFILES, NOTES & DETAILS EXISTING ASPHALT/GRAVEL t. BUILDING COVERAGE OF SITE: 10,450 S.F. AND 7% OF GROSS AREA. PARKING/STORAGE AREA No AS-BUILT INFORMATION LANDSCAPE PLAN u. APPLICABLE DPZ FILE REFERENCES: WP-02-084,F-02-119, ECP-13-006, BA-12-016C, 12 LANDSCAPE NOTES & DETAILS F-10-085, F-13-086, F-23-030 13 MAINTENANCE OF TRAFFIC PLAN GENERAL NOTES 14 DORSEY RUN ROAD FUTURE CONNECTION EXHIBIT 1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND 30. THE RI-I (STOP) SIGN ASSEMBLY FOR THIS DEVELOPMENT SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS 15 MASS GRADING & SEDIMENT CONTROL PLAN MUST BE INSTALLED BEFORE THE BASE PAVING IS IF APPLICABLE. COMPLETED. THE TRAFFIC CONTROL DEVICE LOCATION SHOWN RETAINING WALL DETAIL SHEET 2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (5) WORKING DAYS PRIOR TO THE START OF WORK. (410-313-2430) PRIOR TO THE INSTALLATION OF ANY OF THE KIMBERLY DIAVALL LIBER MDR 4884/FOLIO /32 3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 TRAFFIC CONTROL DEVICES. THE ANCHOR SHALL NOT EXTEND HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE. MORE THAN TWO QUICK PUNCH HOLES ABOVE GROUND LEVEL. 4. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP THE LATEST EDITION OF THE MANUAL OF UNIFORM CONTROL DEVICES (MUTCD). ALL OF EACH POST 31. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF PARCEL B-2 POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY EXISTING/ASPHALT/GRAVEL 5. ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED. ALL CURB DESIGN MANUAL, VOLUME III(1993) AND AS MODIFIED BY Plot No. 26399 Plot No. 26399 "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL RADII ARE 5' UNLESS OTHERWISE NOTED. 6. BOUNDARY AND TOPOGRAPHIC SURVEY ARE BASED ON A FIELD RUN DEVELOPMENTS (JUNE 1993)." A MINIMUM SPACING OF 20' SURVEY COMPLETED BY PROFESSIONAL SURVEYS, LLC. IN JULY 2012 AND SHALL BE MAINTAINED BETWEEN ANY STREETLIGHT AND ANY EXISTING OFFSITE TOPOGRAPHY SHOWN PER HAS BEEN SUPPLEMENTED WITH HOWARD COUNTY GIS. TREE. STREET LIGHTS WILL BE INSTALLED AS PART OF HOWARD COUNTY OIT/GIS, BASED ON MARYLAND 7. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CAPITAL IMPROVEMENT PROJECT J-4182. CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. COORDINATE SYSTEM, NAD-83(1991), NAVD-88. 32. A WAIVER FROM DESIGN MANUAL, VOLUME III, SECTION 2.6.D, EXISTING ONSITE TOPOGRAPHY AND BOUNDARY HOWARD COUNTY MONUMENT NO. 43HA AND 48AA WERE USED FOR THIS PROJECT. WHICH REQUIRES A MINIMUM SPACING BETWEEN THE 8. WATER SERVICE IS PUBLIC. SHOWN PER FIELD RUN SURVEY PERFORMED BY COMMERCIAL DRIVEWAYS AND A MAJOR COLLECTOR ROADWAY PROFESSIONAL SURVEYS, LLC COMPLETED IN JULY 9. SEWER SERVICE IS PUBLIC. WAS DENIED ON OCTOBER 15, 2012. THE DENIAL NOTED THAT 10. THIS PROPERTY IS WITHIN THE METROPOLITAN DISTRICT THE PROPOSED ENTRANCE LOCATION WAS REQUIRED TO ALIGN 2012. EXISTING SOILS SHOWN PER USDA WEB SOIL II. ALL EXISTING WATER AND SEWER PER CONTRACTS 454-W AND 24-4052-D. WITH THE EXISTING ENTRANCE FOR 8100 DORSEY RUN ROAD. SURVEY. 12. STORMWATER MANAGEMENT IS ADDRESSED BY AN M-6 MICRO-BIORETENTION 33. PROJECT HAS BEEN COORDINATED WITH CAPITAL AN F-6 BIORETENTION FACILITY, AND AN M-8 BIO-SWALE. IMPROVEMENT PROJECT J-4182. STRUCTURES ARE PRIVATELY OWNED AND THEREFORE MAINTENANCE IS THE 34. UTILITY POLES BGE263650 AND BGE180685 WILL BE RESPONSIBILITY OF THE OWNER 13. THERE IS NO FLOODPLAIN ON THIS SITE. 14. THE ARE NO WETLANDS ON THIS SITE. 15. THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY LENHART TRAFFIC CONSULTING, DATED NOVEMBER 15, 2012, AND WAS APPROVED ON 1/10/13. 16. SITE DISTANCE ANALYSIS WAS PRÉPARED BY DDC, INC AS PART OF THIS SITE DEVELOPMENT PLAN AND APPROVED ON 1/10/13. 17. GEOTECHNICAL STUDY WAS PREPARED BY HILLIS-CARNES AND IS DATED SEPTEMBER 24, 2012. 18. FOREST CONSERVATION REQUIREMENTS, PER SECTION 16.1202(B) OF THE HOWARD COUNTY CODE WERE SATISFIED AS PART OF F-02-119 AND THE RECORDATION OF 192 East Main Street 19. THE SUBJECT PROPERTY IS ZONED M-2 IN ACCORDANCE WITH THE 2/2/04 COMPREHENSIVE ZONING PLAN AND THE COMP LITE ZONING REGULATIONS EFFECTIVE Westminster, MD 21157 20. THERE ARE NO KNOWN CEMETERIES, HISTORIC STRUCTURES OR SCENIC ROADS ON 410.386.0560 OR ADJACENT TO THIS PROPERTY EXISTING ASPHALT PARKING 21. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW AND DRIVE AISLES 410.386.0564 (Fax) STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S) OR THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREAS AND 100 YEAR DDC@DDCinc.us FLOODPLAIN. 22. THIS PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED. 23. SEDIMENT AND EROSION CONTROL MEASURES ARE PROVIDED IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND 5 57°48'44" W 156.68" SEDIMENT CONTROL. 24. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION **DEVELOPER:** 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL SMITH DORSEY RUN ROAD, LLC. MEADOWOOD-DORSEY RUN, LLC 25. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART ROBERT SMITH THOM MCKEE 6011 UNIVERSITY BLVD, STE. 350 1202 SHADY CREEK ROAD OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$10,830.00 FOR 30 SHADE MARRIOTTSVILLE, MD 21104 TREES, 7 EVERGREEN TREES AND 26 SHRUBS. ELLICOTT CITY, MD 21043 EXISTING ASPHALT PARKING 26 FINANCIAL SURETY FOR THE REQUIRED WATERMAIN, FIRE HYDRANT, SEWER AND ALL SERVICES HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN SITE ADDRESS: 27. OUTDOOR LIGHTING SHALL BE IN COMPLIANCE WITH THE OUTDOOR LIGHTING 8101 DORSEY RUN ROAD REQUIREMENTS STANDARDS SPECIFIED IN THE HOWARD COUNTY ZONING JESSUP, MD 20794 REGULATIONS. EXISTING BUILDING 28. DUMPSTERS WILL NOT BE REQUIRED BY THE USER. OUTDOOR STORAGE YARD AND ACCESSORY BUILDINGS DO NOT GENERATE TRASH. THE OFFICE BUILDING TRASH WILL BE SERVED BY PRIVATE CURBSIDE TRASH PICK-UP. ADDRESS CHART 29. BA-12-016C WAS GRANTED ON OCTOBER 11TH, 2012 FOR THE BULK UNDERGROUND STORAGE OF FUEL OIL IN AN M-2 (MANUFACTURING: HEAVY) ZONING DISTRICT. THE 8101 DORSEY RUN ROAD DORSEY WOODS PARCEL 'B' PETITIONER PROPOSES TO OPERATE A BOTTLED PROPANE FACILITY. THE SITE WILL WAREHOUSE 8103 DORSEY RUN ROAD PROPOSED OFFICE AND WAREHOUSE BE DEVELOPED WITH A 1,700 SQUARE FOOT OFFICE AND A 9,600 SQUARE FOOT WAREHOUSE WITH LOADING DOCKS. A PAVED LOADING AREA BEHIND THE OFFICE COVER SHEET PERMIT INFORMATION CHART BUILDING WILL INCLUDE THREE, 30,000 GALLON UNDERGROUND TANKS WITH DRAWING LEGEND SURROUNDING BOLLARDS. THE ENTIRE STORAGE/LOADING YARD WILL BE ENCLOSED BY A SEVEN FOOT HIGH BARBED WIRE FENCE. LANDSCAPING AND PARKING WILL BE PARCEL B/134 AMERIGAS - DORSEY WOODS N/A PROVIDED IN ACCORDANCE WITH COUNTY STANDARDS. THE DECISION AND ORDER \_\_\_\_\_\_682 \_\_\_\_ EXISTING MINOR CONTOUR (2' INTERVAL) PLAT # OR L/F | BLOCK# ZONING TAX MAP NO. CENSUS TRACT ELECT. DISTRICT WAS GRANTED WITH THE FOLLOWING CONDITIONS: 22354 | 15611 (F-02-119) 2 M-2 6TH 48 6069.1 EXISTING MAJOR CONTOUR (10' INTERVAL) 1) THE CONDITIONAL USE WILL APPLY ONLY TO THE USES AND STRUCTURES AS 6TH ELECTION DISTRICT HOWARD COUNTY, MD WATER CODE SEWER CODE DESCRIBED IN THE PETITION AND CONDITIONAL USE PLAN SUBMITTED AND NOT TO ADJACENT PROPERTY LINE ANY OTHER ACTIVITIES, USES, STRUCTURES, OR ADDITIONS ON THE PROPERTY. 24-4768-D 24-4768-D REVISIONS 2) IF THE STORAGE AREA IS CLOSED OR NOT OPERATED FOR A CONTINUOUS PERIOD EXISTING PROPERTY BOUNDARY REDLINE REVISION TO SHIFT TANKS, MBA PGC 7/21 OF TWELVE MONTHS, THE STORAGE FACILITIES SHALL BE DISMANTLED AND REMOVED FROM THE SITE. EX. ROAD / EDGE OF PAVING RELOCATE RAMP AND INCLUDE BUILDING B-WAREHOUSE (NORTH) BUILDING B-WAREHOUSE (WEST) 4/23/13 -----® EX. BEWER LINE & MANHOLES, CLEAN-OUTS MASS GRADING DATE ADDED SHEETS 15 \$ 16 J.L. P.C. 32 EX. OVERHEAD ELECTRIC & UTILITY POLES Professional Certification. PROPOSED PRIVATE ROAD/DRIVE CENTERLINE hereby certify that these documents were prepared or DESCRIPTION OF CHANGES DRN. | REV. | DATI approved by me, and that I am a duly licensed profession EX. BUILDING engineer under the laws of the State of Maryland, License PLAT# 22354 DES. BY: BKC PROPOSED BUILDING DEPARTMENT OF PLANNING AND ZONING TAX ACC. # 1406399924 DRN. BY: CTS BUILDING A-OFFICE (EAST) BUILDING A-OFFICE (NORTH) TAX MAP: 48 CHK. BY: PGC BUILDING ELEVATION BLOCK / GRID: 2 DATE: 4/23/13 GRAPHIC SCALE SCALE: 1"=30" DDC JOB#: 11085.1 PARCEL#: 134/B SHEET NUMBER: ZONE / USE: M-2 PAUL G. CAVANAUGH DWG. SCALE: 1"=50" SDP-13-018

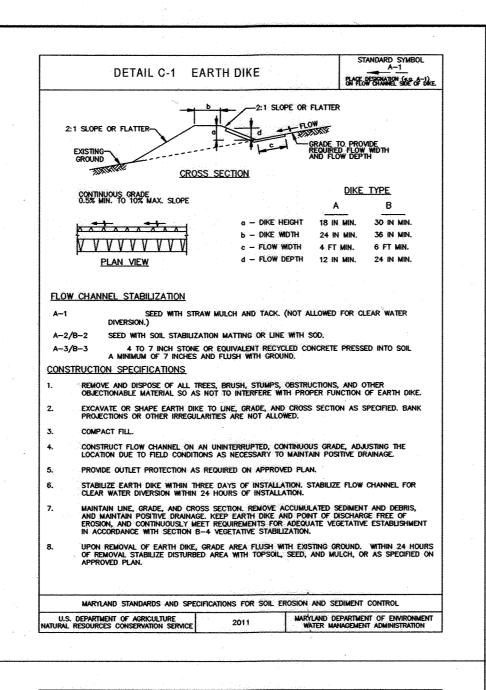


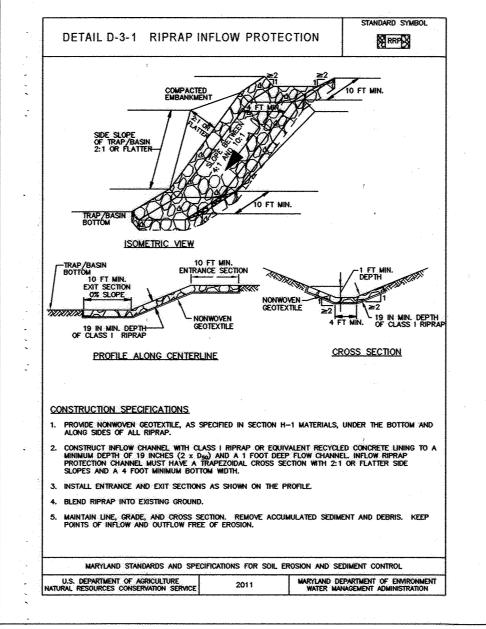


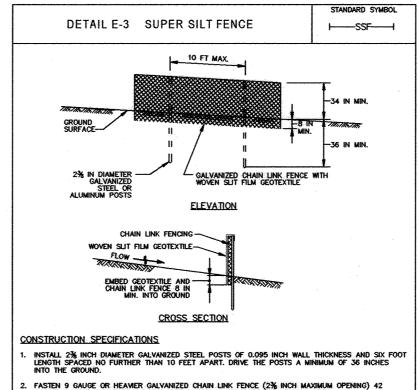








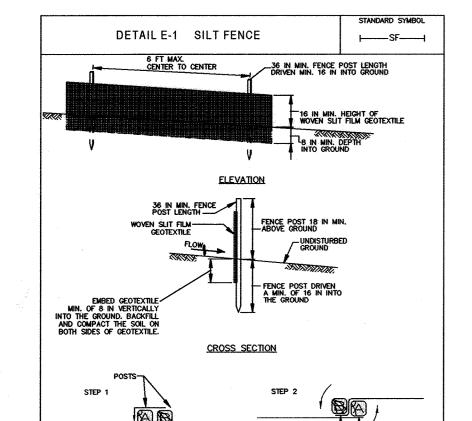




- . Fasten 9 gauge or heavier galvanized chain link fence (2% inch maximum opening) 42 inches in height securely to the fence posts with wire ties or hug rings.
- 5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTÁL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
- PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT
URAL RESOURCES CONSERVATION SERVICE 2011



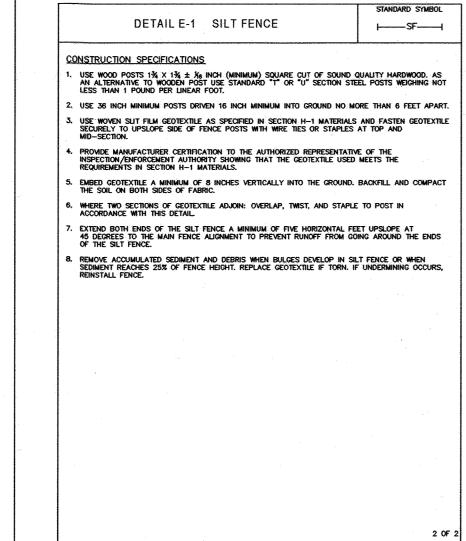
JOINING TWO ADJACENT SILT

FENCE SECTIONS (TOP VIEW)

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE 2011 MARYLAND DEPARTMENT OF ENVIRONME WATER MANAGEMENT ADMINISTRATION

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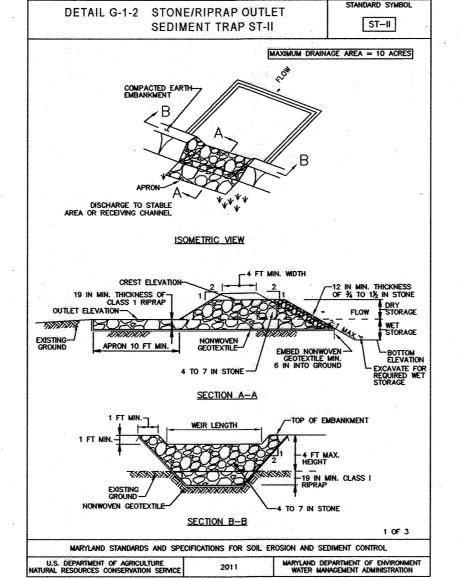


MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

2011

MARYLAND DEPARTMENT OF ENVIRONMEN
WATER MANAGEMENT ADMINISTRATION



					L.,
CO	INSTRUCTION SPECIFIC	ATIONS			
1.	CONSTRUCT TRAP IN SUCI	I A MANNER TH	AT EROSION AND W	ATER POLLUTION	N ARE AVOIDED.
2.	CLEAR, GRUB, AND STRIP AND TRAP BOTTOM.	ANY VEGETATIO	N AND ROOT MAT F	ROM THE AREA	UNDER THE EMBANK
3.	USE FILL MATERIAL FREE MATERIAL, OR OTHER OBJ	OF ROOTS, WOO ECTIONABLE MAT	DY VEGETATION, OV TERIAL FOR THE EM	ERSIZED STONES BANKMENT.	S, ROCKS, ORGANIC
4.	CONSTRUCT TOP OF EMBA BY TRAVERSING WITH EQUI				PACT THE EMBANKME
5.	MAKE ALL CUT AND FILL	SLOPES 2:1 OR	FLATTER.		
6.	PLACE NONWOVEN GEOTEX SIDES OF OUTLET AND AP AT LEAST 1 FOOT WITH TI LEAST 6 INCHES INTO EXIS	TILE, AS SPECIF RON PRIOR TO I IE SECTION NEA STING GROUND /	TED IN SECTION H- PLACEMENT OF RIPP RER TO THE TRAP AT ENTRANCE OF O	1 MATERIALS, O RAP. OVERLAP S PLACED ON TOP UTLET CHANNEL	VER THE BOTTOM AND ECTIONS OF GEOTEXTI P. EMBED GEOTEXTILE
7.,	USE CLEAN 4 TO 7 INCH USE OF RECYCLED CONCRE			USE CLASS I RI	PRAP FOR THE APRON
8.	PLACE 1 FOOT OF CLEAN UPSTREAM FACE OF THE		STONE OR EQUIVAL	ENT RECYCLED	CONCRETE ON THE
9.	CONSTRUCT AND MAINTAIN THAT EROSION AT OR BEL				D IN SUCH A MANNER
10.	STABILIZE THE EMBANKMEN CONCENTRATED INFLOW AS			D AND MULCH.	STABILIZE POINTS OF
11.	REMOVE SEDIMENT AND RE TO CLEANOUT ELEVATION APPROVED AREA AND IN S OUTFLOW AS WELL AS INT	(50% OF WET S SUCH A MANNER ERIOR OF THE T MENTS TO CONT	TORAGE DEPTH). DE R THAT IT WILL NOT TRAP FREE FROM EF TINUOUSLY MEET RE	POSIT REMOVED ERODE. KEEP I ROSION, AND RE QUIREMENTS FO TIVE STABILIZATI	SEDIMENT IN AN POINTS OF INFLOW AN MOVE ACCUMULATED R ADEQUATE VEGETATION. REMOVE ANY TRE
	ESTABLISHMENT IN ACCORD BRUSH, OR OTHER WOODY MAINTAIN LINE, GRADE, AN	VEGETATION GR	ROWING ON EMBANK	MENT OR NEAR	PRINCIPAL SPILLWAI.
12.	ESTABLISHMENT IN ACCORD BRUSH, OR OTHER WOODY	VEGETATION GR ID CROSS SECTI	ROWING ON EMBANK ON.		
	ESTABLISHMENT IN ACCOR BRUSH, OR OTHER WOODY MAINTAIN LINE, GRADE, AN WHEN DEWATERING TRAP,	VEGETATION GR ID CROSS SECTI PASS REMOVED	ROWING ON EMBANK ON. WATER THROUGH A	n approved si	
	ESTABLISHMENT IN ACCOR BRUSH, OR OTHER WOODY MAINTAIN LINE, GRADE, AN WHEN DEWATERING TRAP, PRACTICE.	VEGETATION GR ID CROSS SECTI PASS REMOVED	ROWING ON EMBANK ON. WATER THROUGH A	n approved si	
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	ESTABLISHMENT IN ACCOR BRUSH, OR OTHER WOODY MAINTAIN LINE, GRADE, AN WHEN DEWATERING TRAP, PRACTICE.	VEGETATION GR ID CROSS SECTI PASS REMOVED	ROWING ON EMBANK ON. WATER THROUGH A	n approved si	EDIMENT CONTROL
	ESTABLISHMENT IN ACCORD BRUSH, OR OTHER WOODY MAINTAIN LINE, GRADE, AN WHEN DEWATERING TRAP, PRACTICE.  UPON REMOVAL, GRADE AI	WEGETATION OF ID CROSS SECTI PASS REMOVED  ND STABILIZE TH	COMING ON EMBANK ON. WATER THROUGH A HE ARÉA OCCUPIED	in approved Si By Trap	EDIMENT CONTROL
13.	ESTABLISHMENT IN ACCOR BRUSH, OR OTHER WOODY MAINTAIN LINE, GRADE, AN WHEN DEWATERING TRAP, PRACTICE.	VEGETATION OF ID CROSS SECTI PASS REMOVED  ND STABILIZE THE	COMING ON EMBANK ON. WATER THROUGH A HE ARÉA OCCUPIED	n approved si by trap.	EDIMENT CONTROL

DETAIL G-1-2 STONE/RIPRAP OUTLET

DETAIL G-1-2	STONE/RIP			STANDARD ST-
	SEDIMENT	IKAP SI-	-11	131-
STONE /RIDRA	AP OUTLET SEDIM	IFNT TRAP	ST-II TRAP	NÓ
DRAINAGE AREA - INITIAL		1 10/4	J. 11, 111/11	ACRES
DRAINAGE AREA - INTERI		<del>                                     </del>		ACRES
DRAINAGE AREA - FINAL	<del>~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~</del>	+		ACRES
TOTAL STORAGE REQUIRED		_		CF
TOTAL STORAGE PROVIDED	<del></del>	<del></del>		CF
WET STORAGE REQUIRED	<del></del>			CF CF
WET STORAGE PROVIDED				CF
DRY STORAGE REQUIRED		1		CF
DRY STORAGE PROVIDED	<del></del>	1		OF .
EXISTING GROUND ELEVATION	ON AT OUTLET			FT
TRAP BOTTOM ELEVATION				FT
TRAP BOTTOM DIMENSIONS	S			FT × FT
WEIR LENGTH				FT
WEIR CREST (DRY STORAG	E) ELEVATION			FT
CLEANOUT ELEVATION				FT
TOP OF EMBANKMENT ELE	VATION			FT
SIDE SLOPE	-			H: V RATIO
EMBANKMENT TOP WIDTH				FT
OUTLET PROTECTION - LE	ENGTH			FT
OUTLET PROTECTION - DE	EPTH			IN
maryland standare	ds and specificatio	INS FOR SOIL	erosion and	SEDIMENT CONTRO

Howard County Soil Conservation District Standard Sediment Control Notes

- 1. A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction (313-1855).
- 2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions
- 3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
- 4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol 1, Chapter 7 of the HOWARD COUNTY DESIGN MANUAL. Sediment and Erosion Control.
- 5. All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding, sod, temporary seeding and Mulching, all in section B-4. Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- 6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- 7. Site analysis

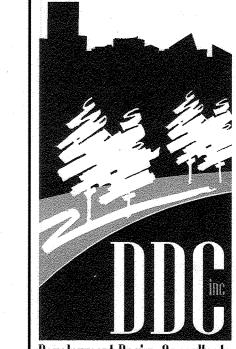
Total area of site: 3.513± Acres Area disturbed: 3.32 Acres Area to be roofed or paved: 1.68± Acres Area to be vegetatively stabilized: 1.58± Acres Total cut: 1248 CY (749 CY SWM) Total fill: 1248 CY (749 CY SWM) Offsite waste/borrow area location: N/A

Silt Fence: 240 LF Super Silt Fence: 470 LF Earthdikes: 735 LF Erosion Control Matting: 160 LF

All quantities shown on plans are for reviewing agency only. Contractor shall verify quantities for bidding

- 8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control must be provided, if deemed necessary by the Howard County Sediment
- 10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of the installation of perimeter erosion and sediment controls but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspecting agency is made.
- 11. Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized by the end of each work day, whichever is shorter.

DATA SOURCES: EXISTING OFFSITE TOPOGRAPHY SHOWN PER HOWARD COUNTY OIT/GIS, BASED ON MARYLAND COORDINATE SYSTEM, NAD-83(1991), NAVD-88. EXISTING ONSITE TOPOGRAPHY AND BOUNDARY SHOWN PER FIELD RUN SURVEY PERFORMED BY PROFESSIONAL SURVEYS, LLC COMPLETED IN JULY 2012. EXISTING SOILS SHOWN PER USDA WEB SOIL SURVEY.



192 East Main Street

410.386.0560 410.386.0564 (Fax) DDC @ DDCinc.us

DEVELOPER:

THOM MCKEE

Westminster, MD 2115

MEADOWOOD-DORSEY RUN, LLO

MARRIOTTSVILLE, MD 21104

SMITH DORSEY RUN ROAD, LLC. ROBERT SMITH 6011 UNIVERSITY BLVD, STE. 350 1202 SHADY CREEK ROAD

ELLICOTT CITY, MD 21043

8101 DORSEY RUN ROAD JESSUP, MD 20794

> DORSEY WOODS PARCEL 'B' PROPOSED OFFICE AND WAREHOUSE

AS-BUILT

4/23/13 Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed profession engineer under the laws of the State of Maryland, License No. 27020 ,Expiration∗I PAUL G. CAVANAUGH

6TH ELECTION DISTRICT REVISIONS ADDED SHEETS 15 & 16 J.L. P.C. 3-24 DRN. REV. DATE DESCRIPTION OF CHANGES PLAT# 22354 DES. BY: BKC TAX ACC. # 1406399924 DRN. BY:CTS

TAX MAP: 48 CHK. BY: PGC BLOCK / GRID: 2 DATE: 4/23/13 PARCEL# 134 / B DDC JOB#: 11085.1 SHEET NUMBER: ZONE / USE: M-2 5 of 16 DWG. SCALE:1"=30'

# Sequence of Construction

- 1. Obtain a Grading Permit. (1 day)
- Notify "Miss Utility" at least 48 hours before beginning any work at 1-800-257-7777. Notify Howard County Department of Inspections, Licenses and Permits, Sediment Control Division at 410-313-1855 at least 24 hours before starting any work.
- 3. Contractor shall install driveway culvert from 1-2 to ES-2 and adjust roadside swale. Immediately stabilize swale with erosion control matting and permanently seed. Install stabilized construction entrance. (3 days)
- 4. Install perimeter silt fence, super silt fence, and clean water diversion fence (SFD) (2 days)
- 5. With perimeter sediment control devices installed and with permission from the Sediment Control Inspector, clear site and begin work on sediment trap and then
- 6. Dust control will be provided for all disturbed areas. Refer to "2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control", pg H.22, for acceptable methods and specifications for dust control (ongoing) (18 to 24 weeks).
- With all disturbed areas stabilized, and with permission from the sediment control inspector, remove sediment control devices. (1 week)
- 8. Notify Howard County Office of Inspections and Permits for a final inspection of the completed site. (2 days)

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

BY THE DEVELOPER 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 NVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

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

HOWARD SOIL CONSERVATION DISTRICT

# PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed

Seedbed Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened. Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:

1. Preferred -- Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil. At time of seeding, apply 400 lbs/acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq.

2. Acceptable -- Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 1000 lbs/acre 10-10-10 fertilizer (23 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil.

Seeding -- For the periods March 1 -- April 30, and August 1 -- October 15, seed with 60 lbs/acre (1.4 lbs/1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 -- July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs/acre (.05 lbs/100() sq. ft.) of weeping lovegrass. During the period of October 16 -- February 28, protect site by:

Option 1 -- Two tons per acre of well anchored straw mulch and seed as soon as possible in the spring.

Option 2 -- Use sod. Option 3 --- Seer: with 60 lbs/acre Kentucky 30 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching -- Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slope 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq. ft.) for anchoring

Maintenance -- Inspect all seeding areas and make needed repairs, replacements and reseedings

# TEMPORARY SEEDING NOTES

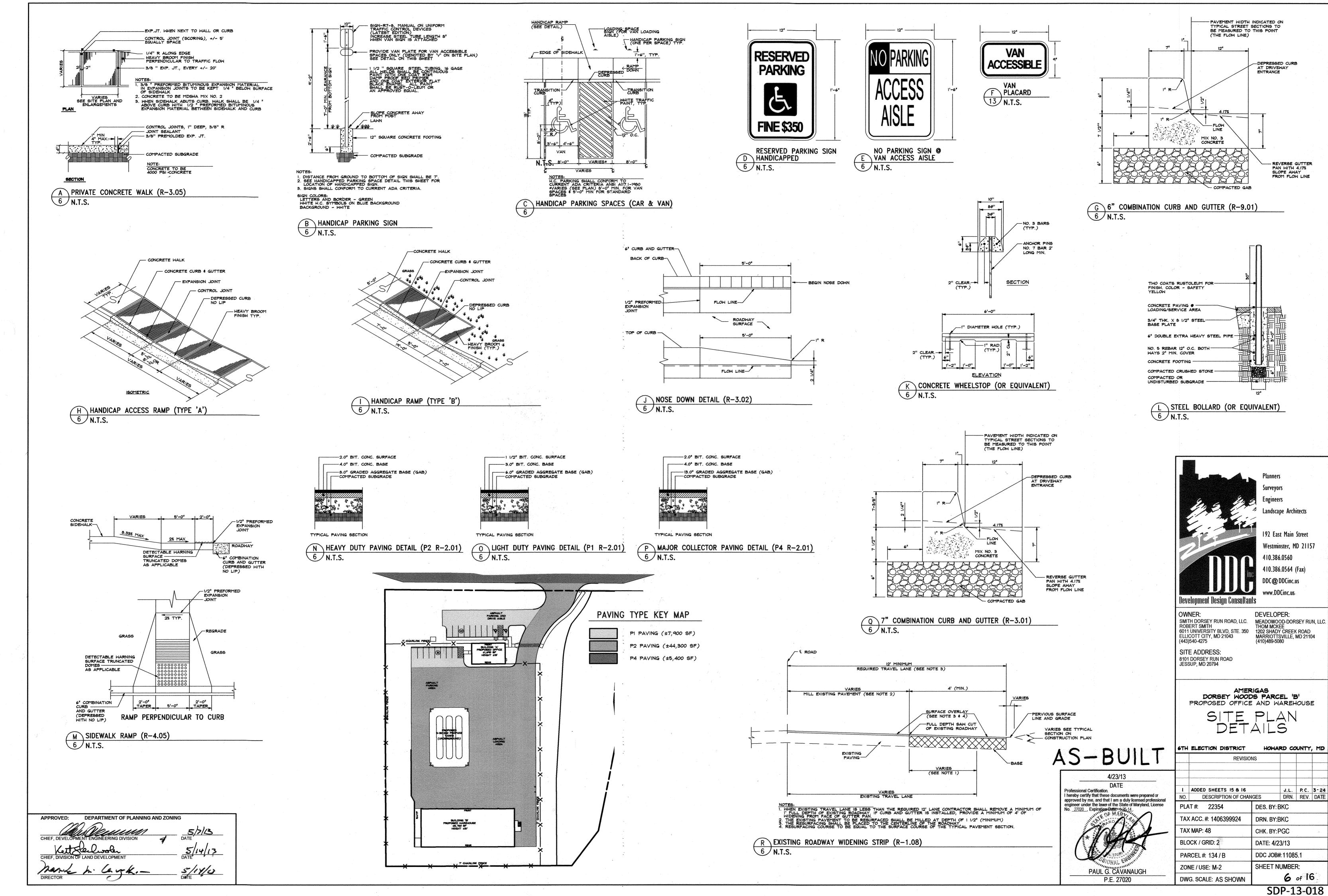
Apply to graded or cleared areas likely to be re-disturbed where a short-term vegetative cover is needed

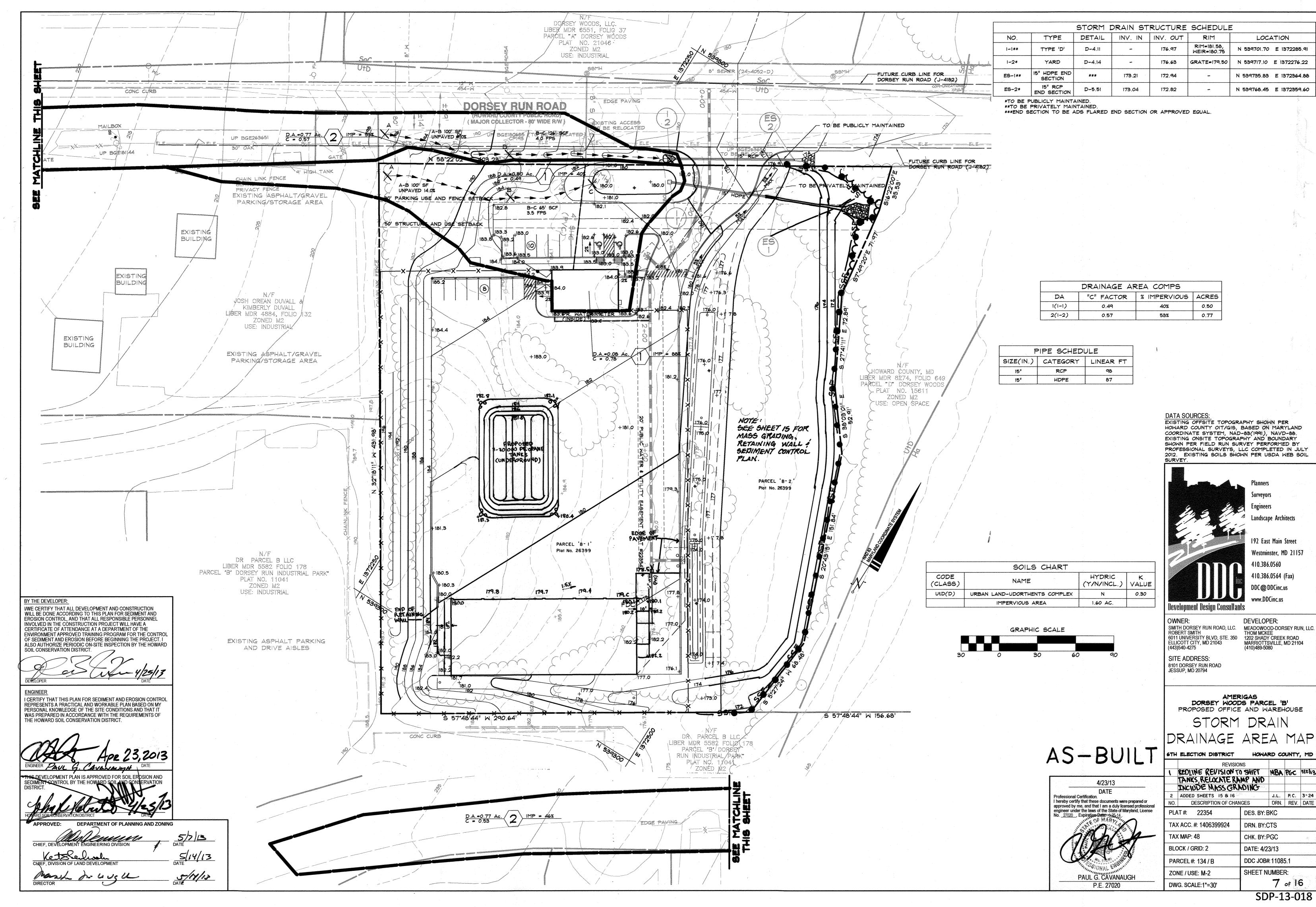
Seedbed preparation: -- Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened Soil Amendments: -- Apply 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.).

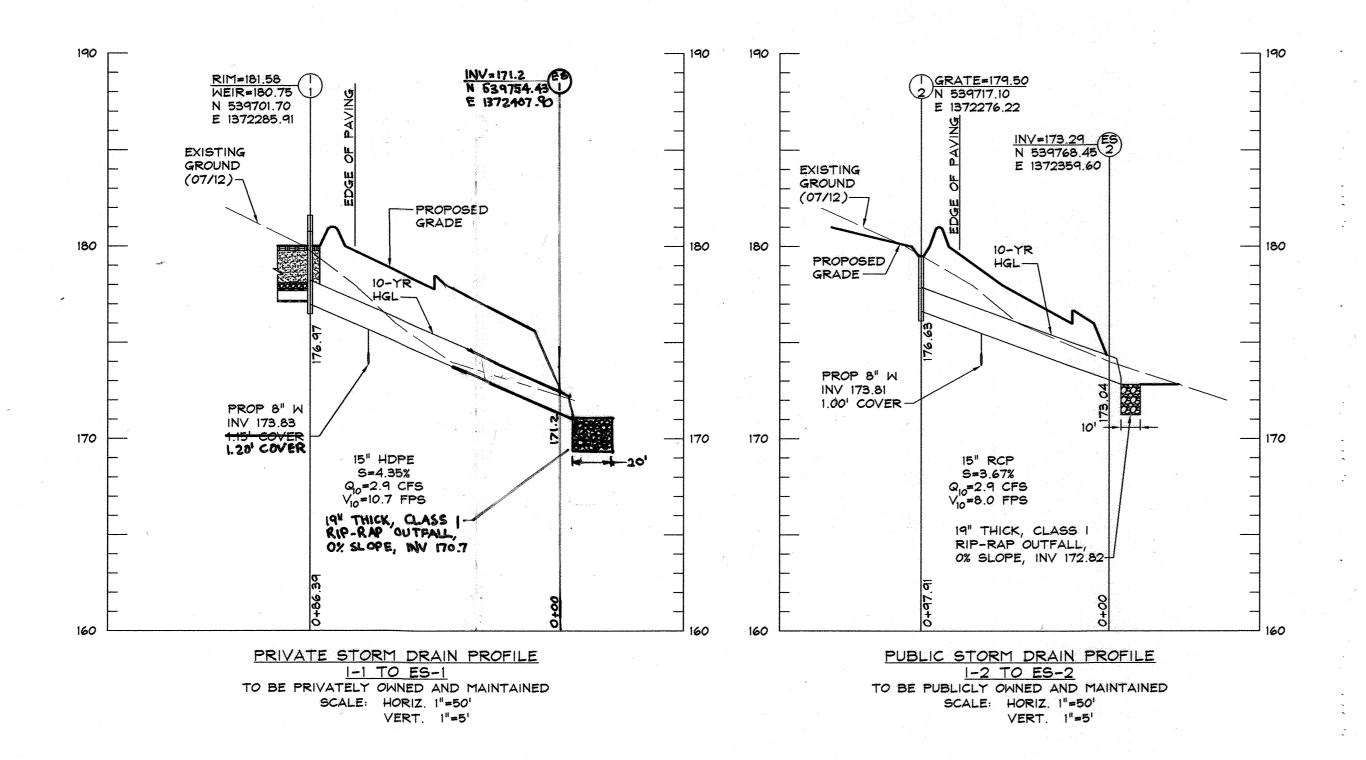
Seeding: -- For periods March 1 -- April 30 and from August 15 -- October 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs/1000 sq. ft.). For the period May 1 -- August 14, seed with 3 lbs/acre of weeping lovegrass (.07 lbs/1000 sq. ft.). For the period November 16 --February 28, protect site by applying 2 tons/acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

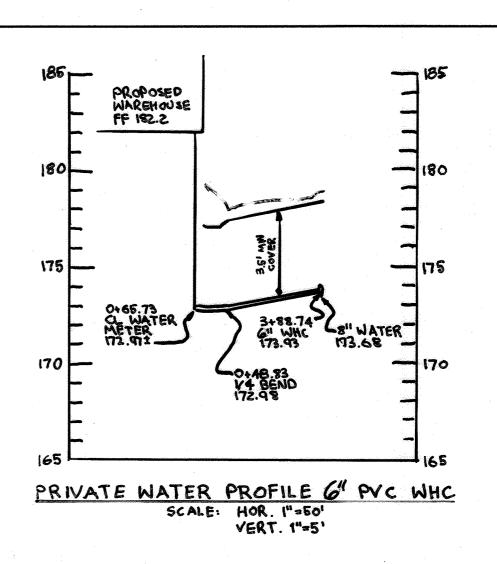
Mulching: -- Apply 1-1/2 to 2 tons/acre (70 to 90 lbs/1000 sq. ft.) of unrotted weed-free, small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slope 8 ft. or higher, use 348 gal. per acre (8 gal/1000 sq. ft.) for anchoring.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for additional rates and methods







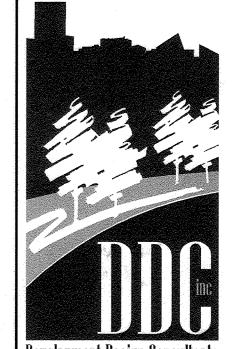


TOP = 182.00 N 539680.35 E 1372221.27 PROPOSED GROUND OVER SEWER-PROPOSED - EXISTING GROUND PROPOSED GROUND PROPOSED OFFICE OFFICE FF 184.00 OVER SEWER FF 184.00 JULY 2012 - EXISTING GROUND OVER WHO JULY 2012 4" PVC SHC @ 5.00% PRIVATE SEWER PROFILE 4" PVC SHC PRIVATE WATER PROFILE 2"Copper WHC SCALE: HOR. 1"=50" SCALE: HOR. 1"=50" VERT. 1"=5" VERT. 1"=5"

DATA SOURCES: EXISTING OFFSITE TOPOGRAPHY SHOWN PER HOWARD COUNTY OIT/GIS, BASED ON MARYLAND COORDINATE SYSTEM, NAD-83(1991), NAVD-88. EXISTING ONSITE TOPOGRAPHY AND BOUNDARY SHOWN PER FIELD RUN SURVEY PERFORMED BY PROFESSIONAL SURVEYS, LLC COMPLETED IN JULY 2012. EXISTING SOILS SHOWN PER USDA WEB SOIL

ALL PIPES IN FILL ARE TO BE CONSTRUCTED PER AASHTO T-180

SPECIFICATIONS.



Westminster, MD 21157 410.386.0560 DDC@DDCinc.us

OWNER:
SMITH DORSEY RUN ROAD, LLC.
ROBERT SMITH
6011 UNIVERSITY BLVD, STE. 350
ELLICOTT CITY, MD 21043
(443)540-4275

DEVELUPEK:
MEADOWOOD-DORSEY RUN, LLC.
THOM MCKEE
1202 SHADY CREEK ROAD
MARRIOTTSVILLE, MD 21104
(410)489-5080

SITE ADDRESS: 8101 DORSEY RUN ROAD JESSUP, MD 20794

AMERIGAS
DORSEY WOODS PARCEL 'B'
PROPOSED OFFICE AND WAREHOUSE

6TH ELECTION DISTRICT HOWARD COUNTY, MD

REVISIONS

REDLINE REVISION TO SHIFT MAN REC 9/2/1
TANKS, RELOCATE RAMPAND THCLUDE MASS GRADING ADDED SHEETS 15 8 16 J.L. P.C. 3-24

DESCRIPTION OF CHANGES DRN. REV. DATE PLAT#. 22354 DES. BY: CTS/LJC TAX ACC. #. 1406399924 DRN. BY:CTS/LJC TAX MAP: 48 CHK. BY: PGC DATE: 4/23/13

BLOCK / GRID: 2 DDC JOB#: 11085.1 PARCEL# 134/B SHEET NUMBER: ZONE / USE: M-2 DWG. SCALE: AS SHOWN

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 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND

BY THE DEVELOPER:

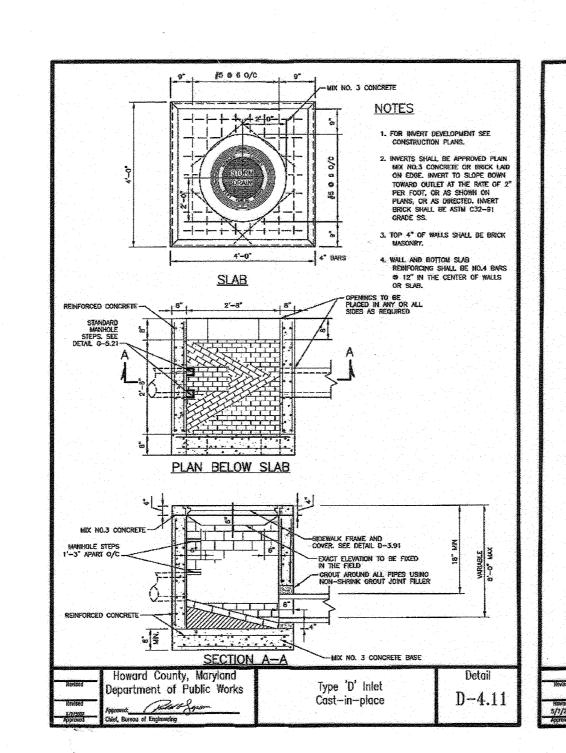
SOIL CONSERVATION DISTRICT.

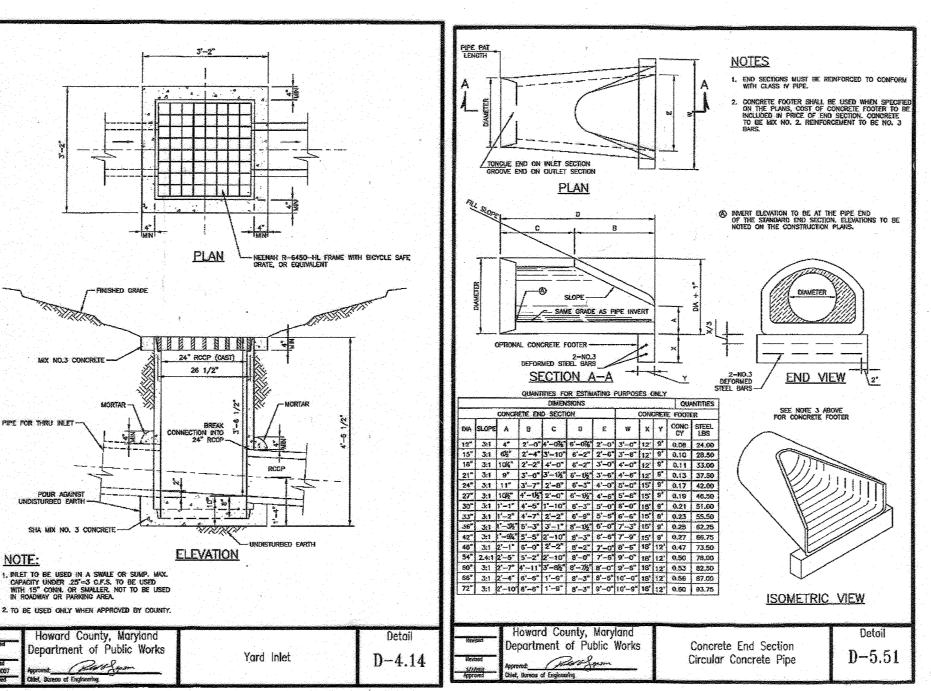
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND

EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL

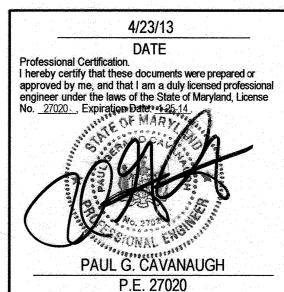
ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD

INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE





# AS-BUILT



T	T ( DIADETENTIAL )	N ( MICEO DIODETTICAL O		
·	F-6 BIORETENTION 1	M-6 MICRO-BIORETENTION 2	M-8 BIO-SWALE	
FACILITY OWNERSHIP/MAINT.	PRIVATE	PRIVATE	PRIVATE	
OWNER NAME	AMERIGAS	AMERIGAS	AMERIGAS	
DRAINAGE AREA TO FACILITY(Ac)	2.00	0.55	0.39	
ESDV REQUIRED (cu-ft)	4,692	848	<del>-</del>	
ESDV PROVIDED(cu-ft)	6,243	1,379	-	
Pe REQUIRED (in)	1.8	1.6	1.8	
Pe PROVIDED (in)	1.8	1.6	1.8	
1-YR STORM, EXISTING AT DP(cfs)	1.6	5.0	1.2	
1-YR STORM, PR OUTFLOW(cfs)	1.6	1.2	1.6	
1-YR WATER SURFACE ELEV(ft)	175.87	180.03		
10-YR STORM, PR OUTFLOW(cfs)	1.8	2.9	4.0	
10-YR WATER SURFACE ELEV(ft)	<i>»</i> 177.24	180.08	-	
100-YR STORM, PR OUTFLOW(cfs)	2.0	4.3	5.9	
100-YR WATER SURFACE ELEV(ft)	178.13	180.11	-	

TABLE B.4.	.1 Materials Specification	s for Micro-Bioreter	ntion, Rain Gardens, \$ Landscape Infiltration
Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil (2' to 4' deep)	loamy sand (60-65%) \$ compost (35-40%) or sandy loam (30%), coarse sand (30%) \$ compost (40%)	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		aged 6 months, minimum; no pine or wood chips
Pea grave! 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		n/a	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 pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with 1/4" galvanized hardware cloth.
Poured in place concrete (if required)	MSHA Mix No. 3; ftc=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 350.R/89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); 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 carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

### CONSTRUCTION SPECIFICATIONS FOR MICRO-BIORETENTION, RAIN GARDENS, LANDSCAPE INFILTRATION & INFILTRATION BERMS

The allowable materials to be used in these practices are detailed in Table B.4.1. 2. Filtering Media or Planting Soil

The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the micro-bioretention practice that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05.

# The planting soil shall be tested and shall meet the following criteria:

-Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification) -Organic Content - Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mixture of loamy sand (60%-65%) and compost (35% -40%) or sandy loam (30%), coarse sand (30%), and compost (40%).

-Clay Content - Media shall have a clay content of less than 5%. -pH Range - Should be between 5.5 - 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.

There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the topsoil was

# BY THE DEVELOPER:

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.

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THE HOWARD SOIL CONSERVATION DISTRICT.

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION A NITROL BY THE HOWARD SOIL AND CON SEDIMEN

HOWARD SOIL CONSERVATION DISTRICT

DEPARTMENT OF PLANNING AND ZONING

5/11/13

It is very important to minimize compaction of both the base of bioretention practices and the required backfill. When possible, use excavation hoes to remove original soil. If practices are excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design failure.

Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as a chisel plow, ripper, or subsoiler. These tilling operations are to refracture the soil profile through the 12 inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from

Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the optional sand layer. Pump any ponded water before preparing (rototilling) base.

When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade.

When backfilling the bioretention facility, place soil in lifts 12" to 18". Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grade bioretention materials with light equipment such as a compact loader or a dozer/loader with marsh tracks.

Recommended plant material for micro-bioretention practices can be found in Appendix A, Section

# 3. Plant Installation

Compost is a better organic material source, is less likely to float, and should be placed in the invert and other low areas. Mulch should be placed in surrounding to a uniform thickness of 2" to 3". Shredded or chipped hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

Rootstock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted so 1/8th of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting process. Set and maintain the plant straight during the entire planting process. Thoroughly water ground bed cover

Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.

Grasses and legime seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications.

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers defeats, or at a minimum, impedes this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rototill urea fertilizer at a rate of 2 pounds per 1000 square feet.

### 4. Underdrains Underdrains should meet the following criteria:

galyanized hardware cloth

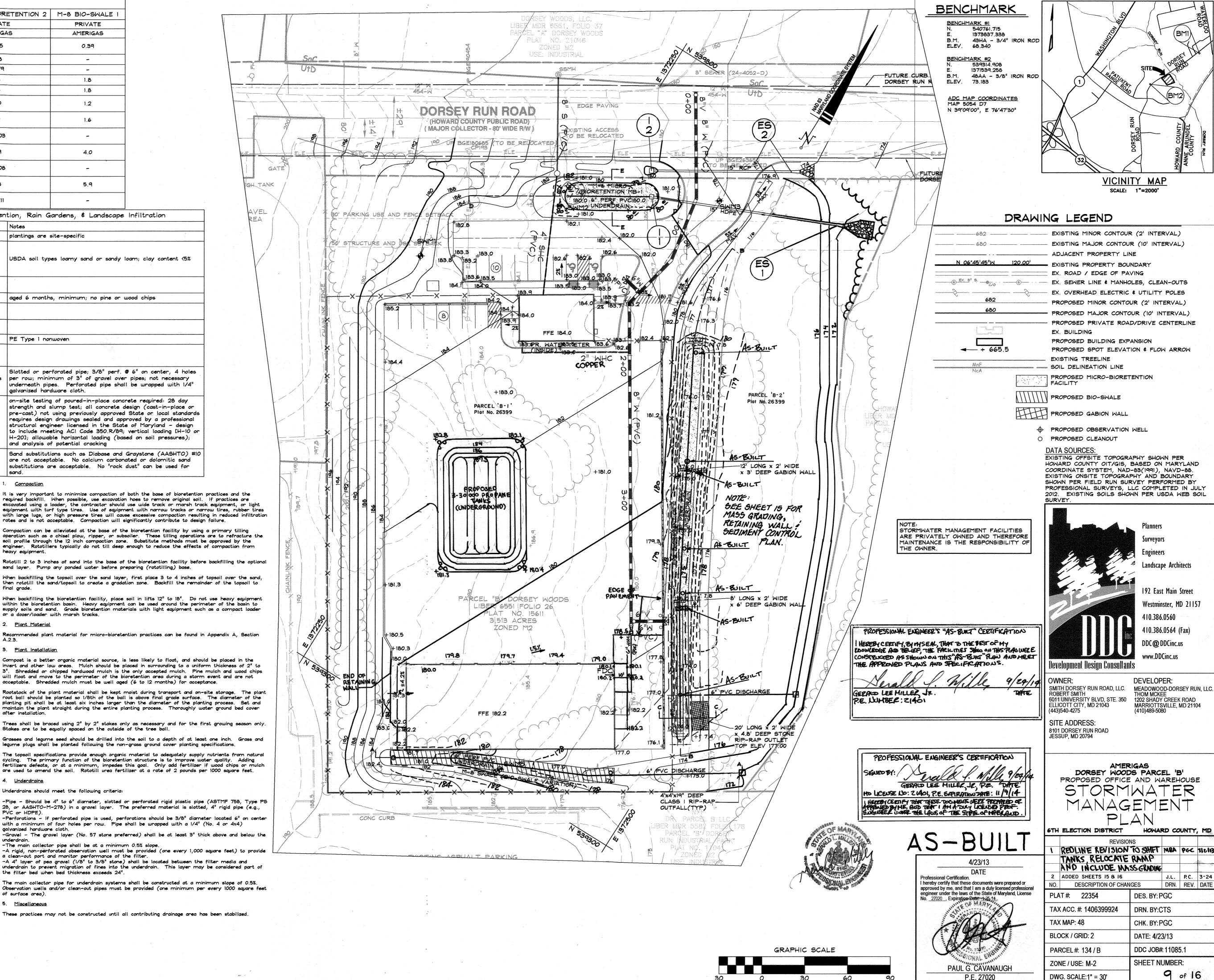
-Pipe - Should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTMF 758, Type PS 28, or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., -Perforations - If perforated pipe is used, perforations should be 3/8" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with a 1/4" (No. 4 or 4x4)

-The main collector pipe shall be at a minimum 0.5% slope. -A rigid, non-perforated observation well must be provided (one every 1,000 square feet) to provide a clean-out port and monitor performance of the filter.

-A 4" layer of pea gravel (1/8" to 3/8" stone) shall be located between the filter media and underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed when bed thickness exceeds 24".

The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation wells and/or clean-out pipes must be provided (one minimum per every 1000 square feet of surface area).

5. <u>Miscellaneous</u> These practices may not be constructed until all contributing drainage area has been stabilized.



9 of 16 SDP-13-018

J.L. P.C. 3-24

DRN. REV. DATE

DES. BY: PGC

DRN. BY:CTS

CHK. BY: PGC

DATE: 4/23/13

DDC JOB#: 11085.1

SHEET NUMBER

192 East Main Street

410.386.0560

DDC@DDCinc.us

www.DDCinc.us

MEADOWOOD-DORSEY RUN, LLC.

MARRIOTTSVILLE, MD 21104 (410)489-5080

**DEVELOPER:** 

THOM MCKEE

AMERIGAS

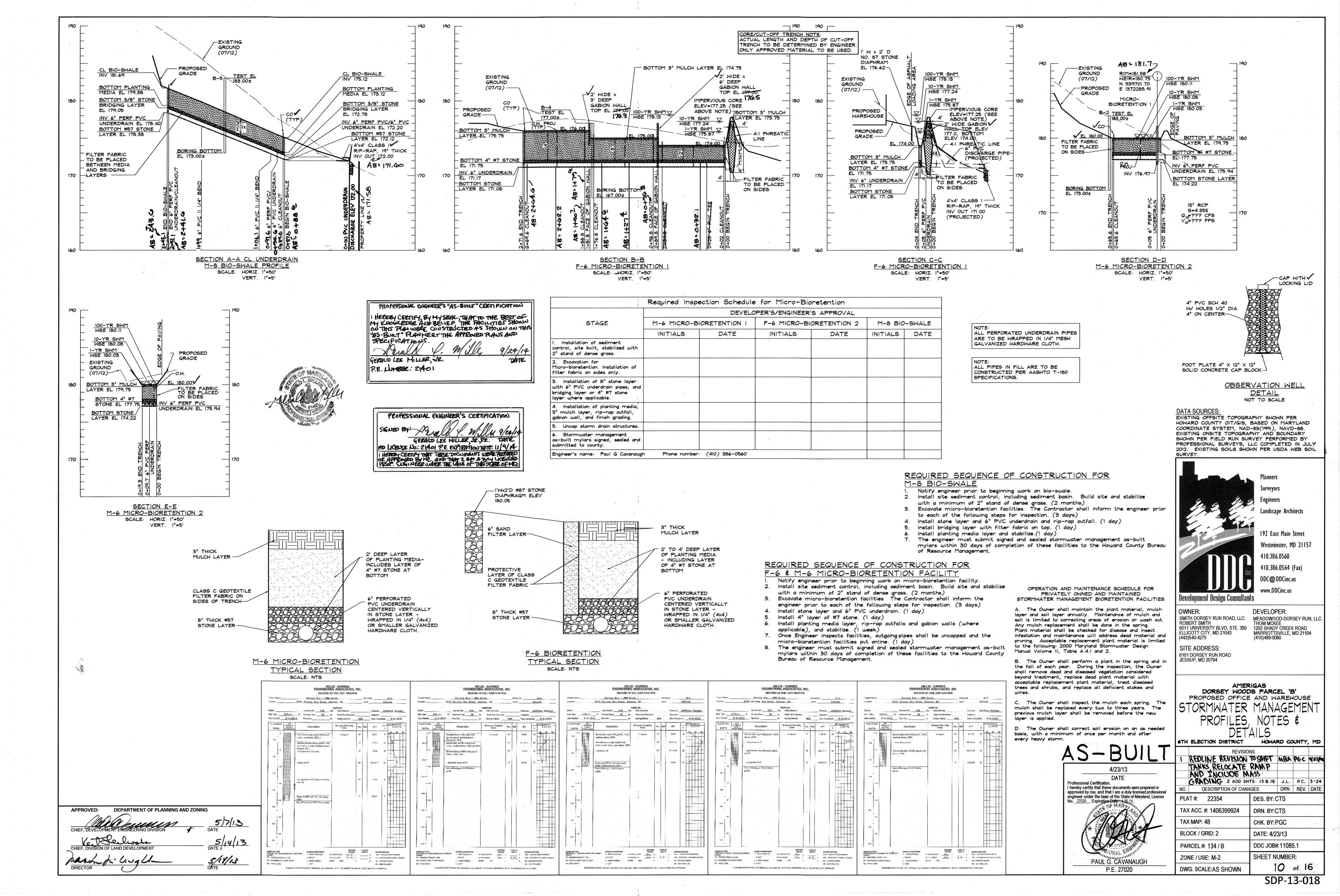
DORSEY WOODS PARCEL 'B'

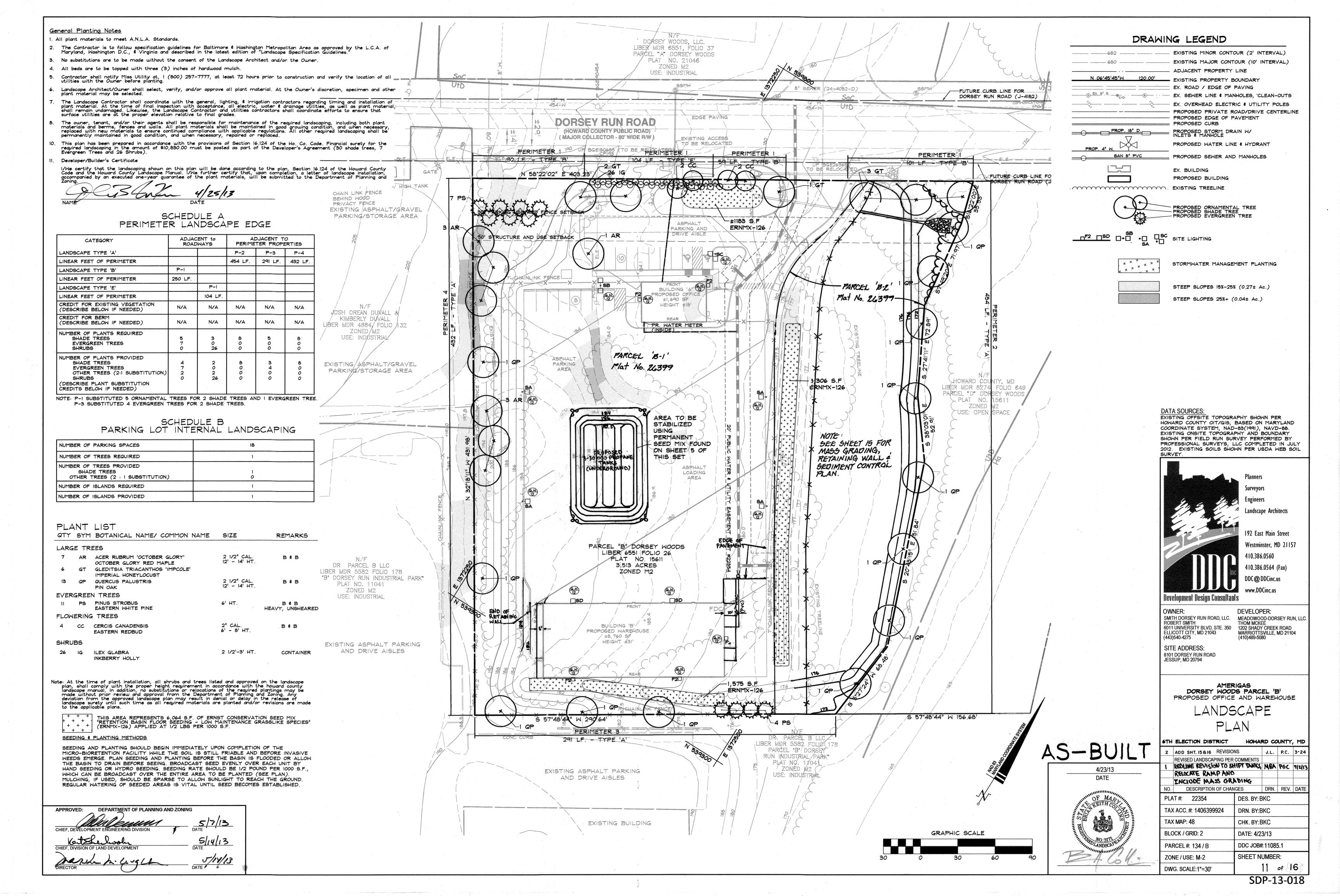
REVISIONS

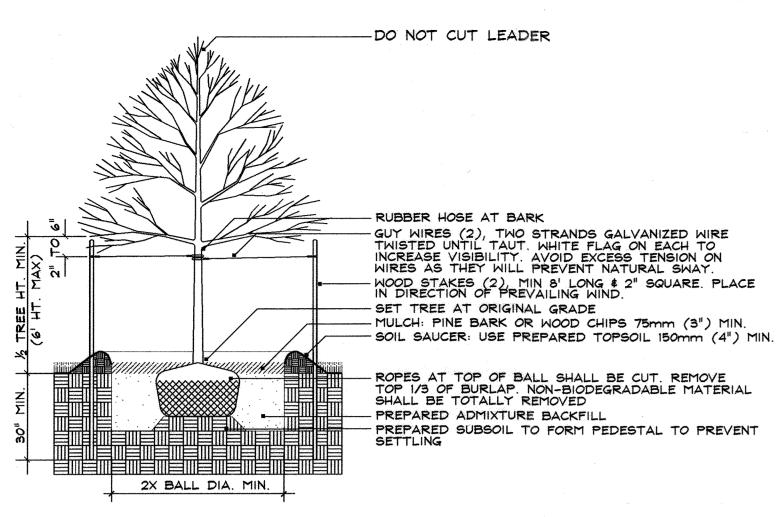
P.E. 27020

Westminster, MD 21157

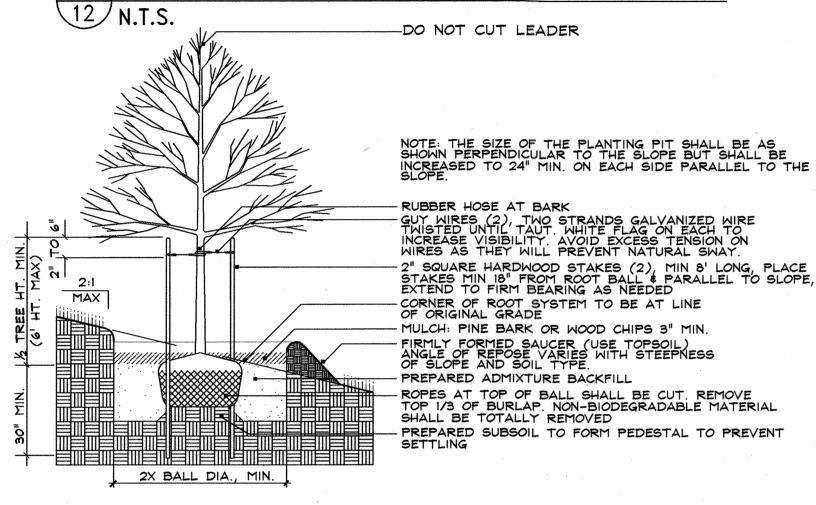
VICINITY MAP



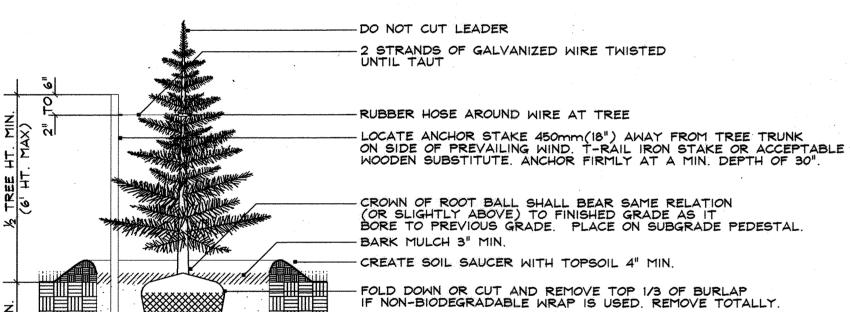




A DECIDUOUS TREE PLANTING (LESS THAN 3" CAL.



# B DECIDUOUS TREE PLANTING ON SLOPE (LESS THAN 3" CAL.) 12 N.T.S.

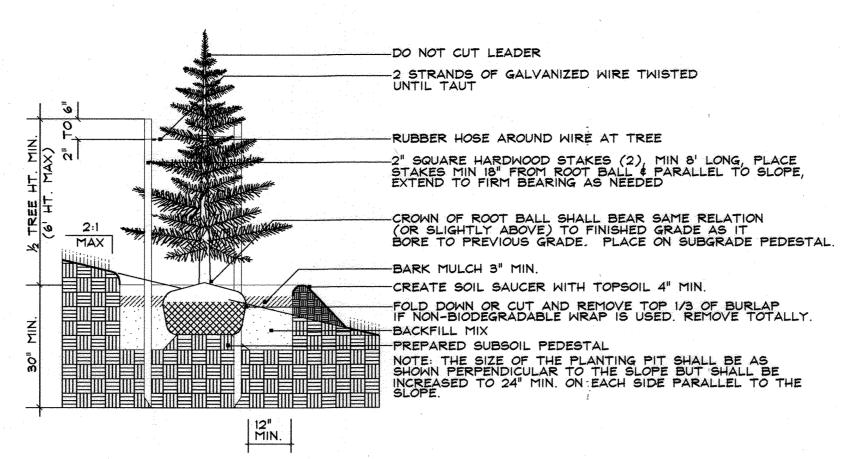


- BACKFILL MIX

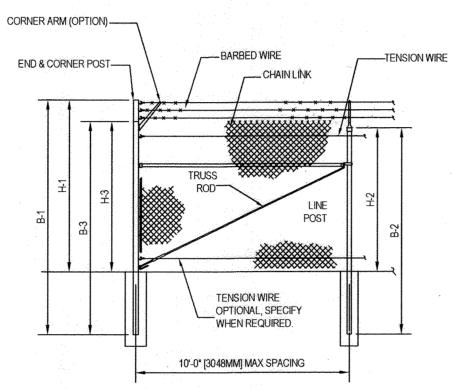
- PREPARED SUBSOIL PEDESTAL

C EVERGREEN TREE PLANTING 12 N.T.S.

DEPARTMENT OF PLANNING AND ZONING



EVERGREEN TREE PLANTING ON SLOPE



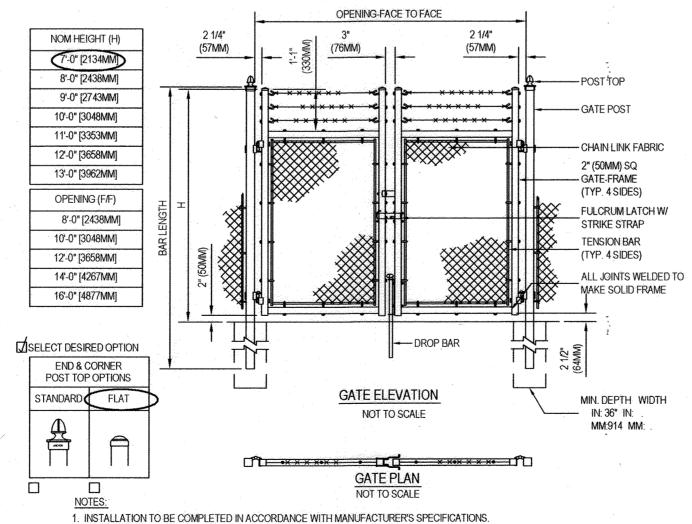
FENCE HEIGHT	UPRIGHT EI	ND & CORNER POSTS	- 11	NE POSTS	CORNER POSTS WITH CORNER ARM		
NOM HT INCLUDING BARBED WIRE		H-1 HEIGHT ABOVE GRADE	B-2 BAR LENGTH	H-2 HEIGHT ABOVE GRADE	B-3 BAR LENGTH	H-3 HEIGHT ABOVE GRADE	
7'-0" [2134MM]	10'-0" [3048MM]	7'-0 5/8" [2150MM]	8'-8" [2642MM]	5'-8 7/8" [1749MM]	9'-0" [2743MM]	6'-0 5/8" [1845MM]	
8'-0" [2438MM]	11'-0" [3353MM]	8'-0 5/8" [2454MM]	9'-8" [2946MM]	6'-8 7/8" [2054MM]	10'-0" [3048MM]	7'-0 5/8" [2150MM]	
9'-0" [2743MM]	12'-0" [3658MM]	9'-0 5/8" [2759MM]	10'-8" [3251MM]	7'-8 7/8" [2359MM]	11'-0" [3353MM]	8'-0 5/8" [2454MM]	
10'-0" [3048MM]	13'-0" [3962MM]	10'-0 5/8" [3064MM]	11'-8" [3556MM]	8'-8 7/8" [2664MM]	12'-0" [3658MM]	9'-0 5/8" [2759MM]	
11'-0" [3353MM]	14'-0" [4267MM]	11'-0 5/8" [3369MM]	12'-8" [3861MM]	9'-8 7/8" [2969MM]	13'-0" [3962MM]	10'-0 5/8" [3064MM]	
12'-0" [3658MM]	15'-0" [4572MM]	12'-0 5/8" [3674MM]	13'-8" [4166MM]	10'-8 7/8" [3273MM]	14'-0" [4267MM]	11'-0 5/8" [3369MM]	

I. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

3. SPECIFICATIONS SHOWN CAN BE CHANGED BY THE MANUFACTURER ONLY.

4. THIS DWG CORRESPONDS WITH DWGS 1-1020, 1-1040, 1-1120 & 1-1140. 5. CONTRACTORS NOTE: PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 014-004d

E CHAIN LINK FENCE SECTION ELEVATION (OR EQUIVALENT 12 / WITHOUT TOP RAIL AND WITH BARBED WIRE

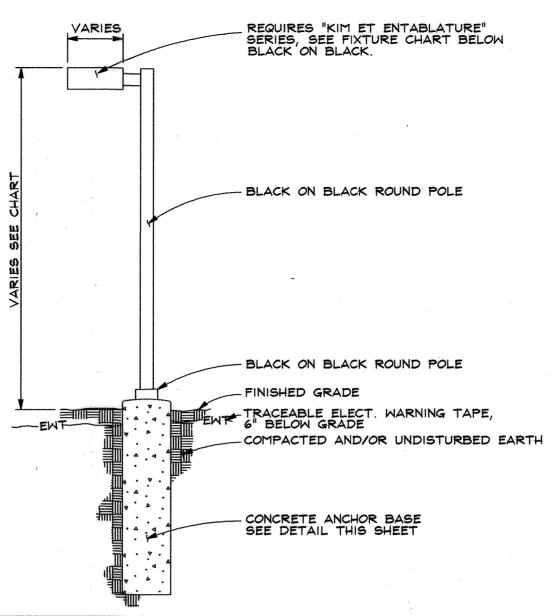


3. METRIC DIMENSIONS ARE NOMINAL EQUIVALENTS TO U.S. DIMENSIONS. 4 SPECIFICATIONS SHOWN CAN BE CHANGED BY THE MANUFACTURER ONLY 5 FOOTING WIDTH TO BE (4)X POST WIDTH

REFERENCE NUMBER 014-010

6. GATES MAY BE MANUALLY OR ELECTRICALLY OPERATED. HARDWARE WILL VARY FOR ELECTRICALLY OPERATED GATES. 7. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info

TYPICAL DOUBLE SWING GATE / SQUARE (OR ROUND) END POSTS



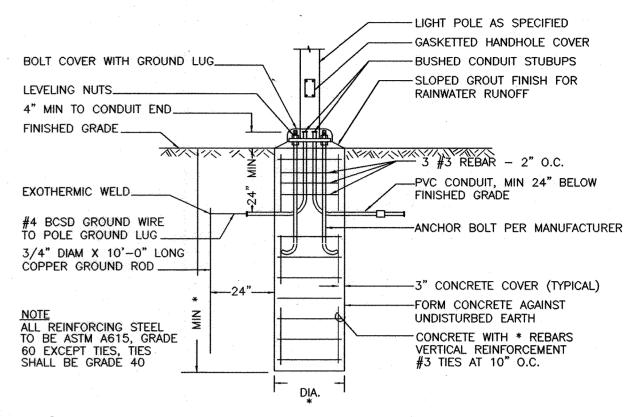
TYPE/QUANTITY	FIXTURE	MOUNTING HEIGHT
SA/4	400W-PMH SINGLE HEAD WITH CONVEX GLASS LENS AND HOUSE SIDE SHIELD	POLE MOUNTED AT 30 FT
SB/1	250W-PMH TWO HEADS @180° WITH FLAT GLASS LENS	POLE MOUNTED AT 25 FT
SC/1	250W-PMH TWO HEADS @ 90° WITH FLAT GLASS LENS	POLE MOUNTED AT 25 FT
SD/2	250W-PMH ENTABLATURE	BLDG MOUNTED AT 18 FT
F2/5	70W-MH ENTABLATURE	BLDG MOUNTED AT 16 FT

G SHARP CUTOFF AREA LIGHT (OR EQUIVALENT) 12 N.T.S.

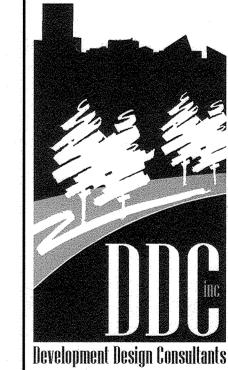
### Supplemental Landscape Notes \$ Specifications

- The Contractor shall review architectural/engineering plans to become thoroughly familiar with the grading
- 2. The Contractor shall insure that his work does not interrupt established or projected drainage patterns
- All equipment and tools shall be placed so as not to interfere or hinder the pedestrian and/or vehicular traffic flow. No vehicles, equipment, tools, etc. shall be placed on or within any indicated tree protection zone. No staging, storing or stockpiling of supplies or material within indicated tree protection zones.
- The contractor is responsible for verifying the location of all existing utilities. If utility lines are encountered in the excavation of tree pits, other locations for trees shall be made by the contractor without additional compensation. No changes of location shall be made without the approval of the Landscape Architect.
- Every possible safeguard shall be taken to protect building surfaces, equipment, and furnishings. The Contractor shall be responsible for any damage or injury to persons or property which may occur as a result of negligence in the execution of the work.
- In the event of a variation between quantities shown on the plant list and the plans, the plans shall govern. The Contractor is responsible for verifying all plant quantities prior to the commencement of work. Sod quantity takeoffs are the responsibility of the Contractor. All discrepancies shall be reported to the Landscape Architect for clarification prior to bidding. The Contractor shall furnish plant material in sizes specified in the plant list.
- Transport and handle plants so that foliage, roots, or root balls are protected from breakage, sun, and winds. Root stock of the plant material shall be kept moist during transport from the source to the job site and until planted. Tops or roots of plants allowed to dry out or which have been damaged and/or disturbed root balls will be rejected.
- The Contractor shall stake all material located on the site for review and/or adjustment by the Landscape Architect or the Owner prior to planting. All locations are to be approved by the Landscape Architect or Owner's Representative before excavation.
- 10. The Contractor is responsible for testing project soils. The Contractor is to provide a certified soils report to the owner. The contractor shall verify that the soils on site are acceptable for the proper growth of the proposed plant material. Should the Contractor find poor soil conditions, the contractor shall be required to provide soil amendments as necessary. These amendments shall include, but not be limited to, fertilizers, lime and topsoil. Proper planting soils must be verified prior to planting materials.
- All plant material (nursery stock) to conform to American Nursery \$ Landscape Association's (A.N.L.A.) latest edition of "American Standard for Nursery Stock" (ANSI Z60.1), particularly with regard to size, growth, size of ball, and density of branch structure.
- 12. All plants shall be identified in accordance with "Hortus Third, by the Staff of the L. H. Bailey Hortorium, Cornell University, 1976.
- . Plants shall have normal, well developed branches and vigorous, fibrous root systems. They shall be healthy and free from disease, decay, sun scald, abrasions, insect pests or infestations and other damage.
- 14. No substitutions shall be made without written consent of the Owner and/or Landscape Architect
- 15. The Landscape Architect or Owner shall have the right, at any stage of the operations, to reject any and all work and materials which, in his or her opinion, does not meet the requirements of these plans and specifications. All rejected material shall be removed from the site by the Contractor.
- 16. All plant material should be backfilled with soil (amended as necessary) in layers to two-thirds of the depth of the planting pit. Soil should then be tamped and watered thoroughly at low pressure before being backfilled to proper grade. The planting pit should be flooded again, once backfilling is completed, so that backfill is thoroughly saturated and settled.
- 17. If the soil is wet or compacted, all containerized and balled nursery stock should be planted such that the top one-third of the ball is above the existing grade.
- 18. The top two-thirds of wire baskets on root balls should be removed.
- 19. All tree and shrub planting beds are to be topped with three inches of hardwood mulch. No mulch shall be placed against trunks and/or stems. All groundcovers and seedlings should be mulched to a depth of one to two inches.
- 20. All soils disturbed during installation of plant material shall be treated by incorporating composted organic material within the top four to six (4-6) inches.
- 21. All planting beds adjacent to lawn, sod, or seeded areas shall be spade edged to a depth of three inches.
- 22. The Contractor shall dispose of stumps and major roots of all plants to be removed. Any depressions caused by removal operations shall be refilled with fertile, friable, soil placed and compacted so as to reestablish proper grade for new planting and/or lawn areas.
   23. The Contractor shall insure adequate vertical drainage in all plant beds and planters.
- 24. Upon completion of all landscaping, an acceptance of the work shall be held. The Contractor shall notify the Landscape Architect or the Owner for scheduling of the inspection at least seven (7) days prior to the anticipated inspection date.
- 25. Maintenance shall begin after each plant has been installed and shall continue 90 days after initial acceptance by the Landscape Architect or the Owner's Representative. Maintenance shall include mowing of turf, watering, pruning, weeding, fertilizing, mulching, replacement of sick or dead plants, and other care necessary for the proper growth of the plant material. The Contractor shall be responsible for the use of all equipment, labor and material necessary to perform maintenance operations and any injury to plant material caused by such equipment, labor and material shall be corrected and repaired by the Contractor at no additional expense to the owner.
- 26. All trees shall be guaranteed for twelve (12) months from the date of acceptance. All shrubs and ground covers shall be guaranteed for twelve (12) months from the date of acceptance.
- 27. All disturbed areas on the site not planted with shrubs or ground cover shall be fine graded and seeded or sodded as noted on landscape plan.
- 28. All sod shall be obtained from areas having growing conditions familiar to areas to be covered. Areas to be sodded shall be raked of stones and debris. Debris and stones over one inch (1") shall be removed from the site. All damaged sod will be rejected. All sod must be placed with staggered joints, tightly butted, with no inequalities in grade. Place all sod rows at right angle to slope (where applicable).

POLE LENGTH	FOOTING DEPTH BELOW GRADE	FOOTING DIAMETER	REBAR REINFORCEMENT
8'-0" TO 15'-0"	3'-6"	1'-6"	6 #6
15'-1" TO 20'-0"	4'-0"	2'-0"	8 #6
21'-1" TO 25'-0"	5'-0"	2'-0"	8 #6
25'-1" TO 30'-0"	5'-6"	2'-6"	10 #8
30'-1" TO 40'-0"	6'-6"	3'-0"	12 #8



H SITE LIGHTING FLUSH MOUNT FOUNDATION (OR EQUIVALENT)



92 East Main Street Westminster, MD 21157 410.386.0560

410.386.0564 (Fax) DDC@DDCinc.us

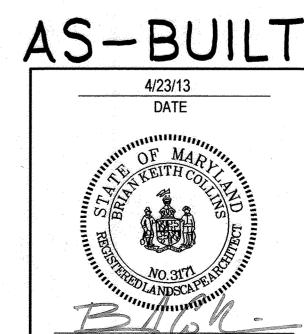
**DEVELOPER:** SMITH DORSEY RUN ROAD, LLC. MEADOWOOD-DORSEY RUN, LLC THOM MCKEE 6011 UNIVERSITY BLVD, STE. 350
ELLICOTT CITY, MD 21043

1202 SHADY CREEK ROAD
MARRIOTTSVILLE, MD 21104

SITE ADDRESS: 8101 DORSEY RUN ROAD JESSUP, MD 20794

ROBERT SMITH

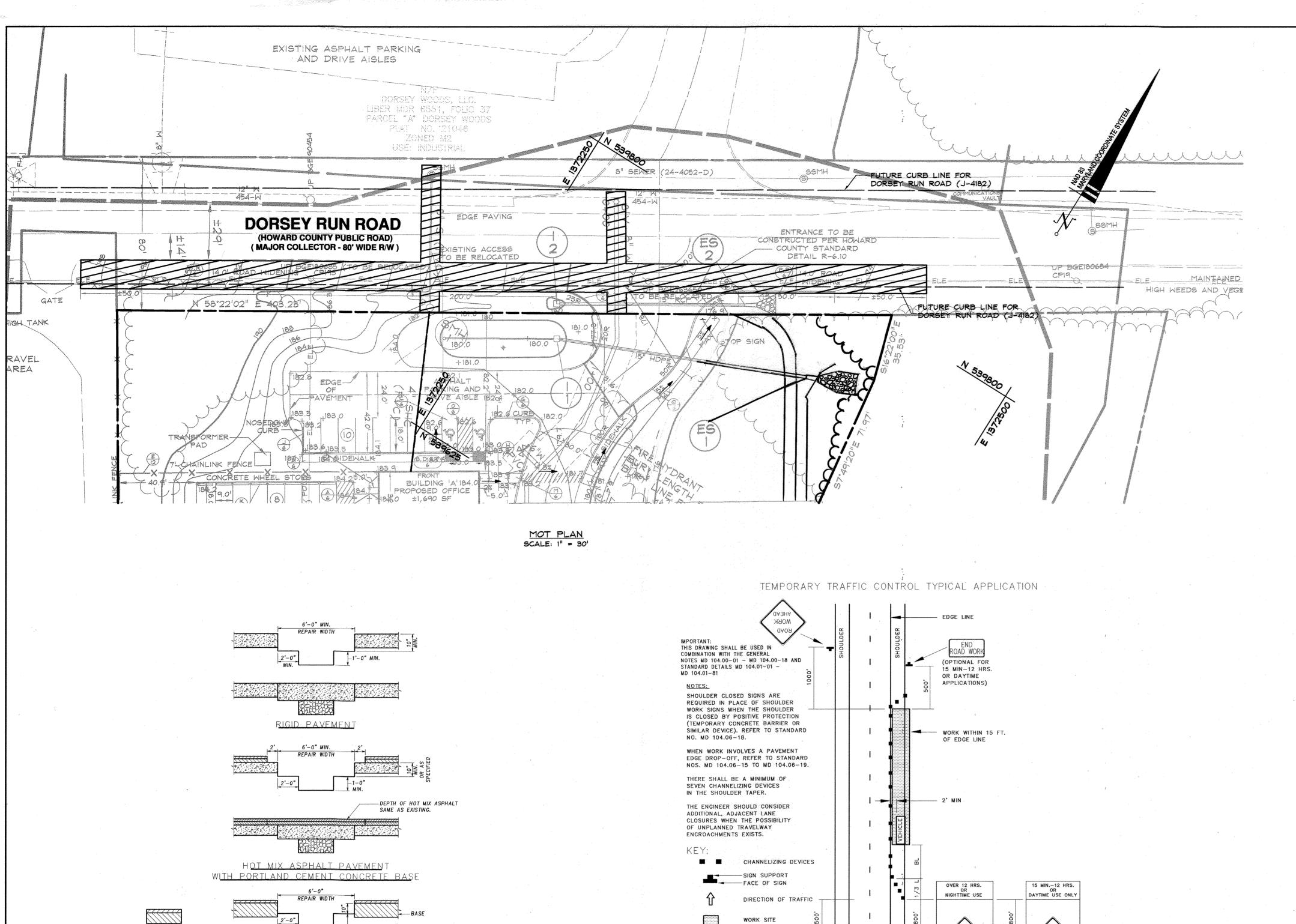
AMERIGAS DORSEY WOODS PARCEL 'B' PROPOSED OFFICE AND WAREHOUSE LANDSCAPE

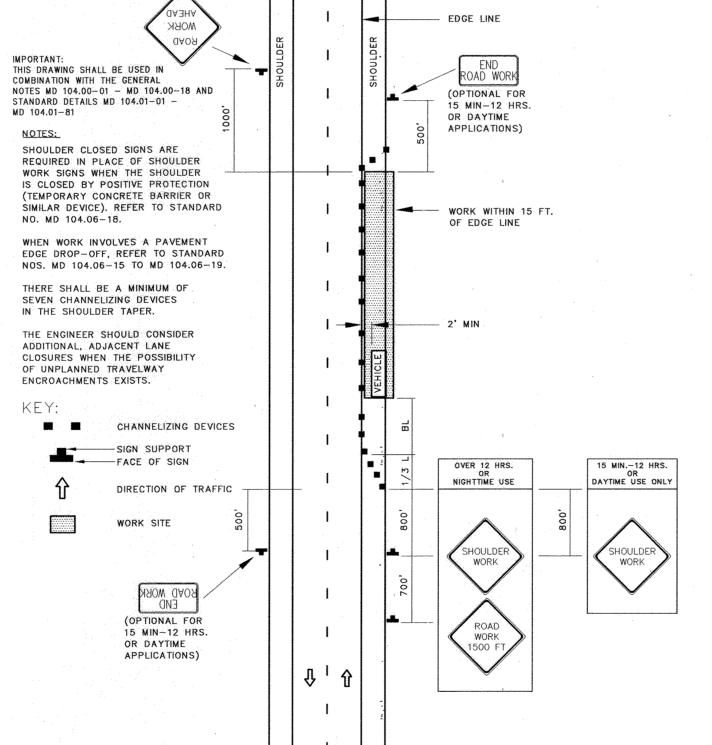


6TH ELECTION DISTRICT HOWARD COUNTY, ME **REVISIONS** ADDED SHEETS 15 & 16 NO. DESCRIPTION OF CHANGES DRN. REV. DATE PLAT#: 22354 DES. BY: BKC TAX ACC. #: 1406399924 DRN. BY:BKC TAX MAP: 48 CHK. BY: BKC

BLOCK / GRID: 2 DATE: 4/23/13 PARCEL# 134/B DDC JOB#: 11085.1 SHEET NUMBER ZONE / USE: M-2 12 of 16 DWG. SCALE: AS SHOWN

SDP-13-018





SHOULDER WORK/2-LANE, 2-WAY EQL/LESS THAN 40 MPH STANDARD NO. MD 104.02-02 NOT TO SCALE

SEQUENCE OF CONSTRUCTION - WATER CONNECTION, SEWER CONNECTION \$ COMMERCIAL ENTRANCE

- INSTALL WORK ZONE WARNING SIGNS AS DIRECTED BY TRAFFIC CONTROL MANAGER.
- INSTALL TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH MD 104.02-02 \$ MD 104.02-10 (ON THIS SHEET). PERFORM
- WESTBOUND LANE WORK AND CLOSURE FIRST. INSTALL PROPOSED WATER CONNECTION AND PROPOSED SEWER
- CONNECTION FROM EXISTING SEWER MANHOLE TO CENTER OF DORSEY RUN ROAD.
- WITH WESTBOUND LANE WORK COMPLETE, SHIFT CLOSURE AND FLAGGING OPERATION TO EASTBOUND LANE TO COMPLETE
- INSTALL COMMERCIAL ENTRANCE AND EXTEND WATER AND SEWER CONNECTIONS ONTO SITE.
- MILL FOR EDGE OF ROAD REPAIR PER MDSHA STD DETAIL MD 578.01 (ON THIS SHEET).

REMOVE SIGNS AND TRAFFIC CONTROL DEVICES. NOTE: ROADSIDE EXCAVATION SHALL ADHERE TO SHA

STANDARDS FOR PAVEMENT EDGE DROP-OFFS.

FLAGGING OPERATION/2-LANE, 2-WAY

EQL/LESS THAN 40 MPH

STANDARD NO. MD 104.02-10

NOT TO SCALE



DATA SOURCES EXISTING OFFSITE TOPOGRAPHY SHOWN PER HOWARD COUNTY OIT/GIS, BASED ON MARYLAND COORDINATE SYSTEM, NAD-83(1991), NAVD-88. EXISTING ONSITE TOPOGRAPHY AND BOUNDARY SHOWN PER FIELD RUN SURVEY PERFORMED BY PROFESSIONAL SURVEYS, LLC COMPLETED IN JULY 2012. EXISTING SOILS SHOWN PER USDA WEB SOIL (OPTIONAL FOR 15 MIN-12 HRS. OR DAYTIME APPLICATIONS) OVER 12 HRS. OR NIGHTTIME USE 15 MIN.-12 HRS. OR DAYTIME USE ONLY 410.386.0560

Development Design Consultants

SMITH DORSEY RUN ROAD, LLC. ROBERT SMITH 6011 UNIVERSITY BLVD, STE. 350
ELLICOTT CITY, MD 21043

1202 SHADY CREEK ROAD
MARRIOTTSVILLE, MD 21104 ELLICOTT CITY, MD 21043 (443)540-4275

SITE ADDRESS: 8101 DORSEY RUN ROAD JESSUP, MD 20794

AMERIGAS DORSEY WOODS PARCEL 'B'

6TH ELECTION DISTRICT HOWARD COUNTY, MD

192 East Main Street

DDC @ DDCinc.us

MEADOWOOD-DORSEY RUN, LLC.

DEVELOPER:

THOM MCKEE

(410)489-5080

Westminster, MD 21157

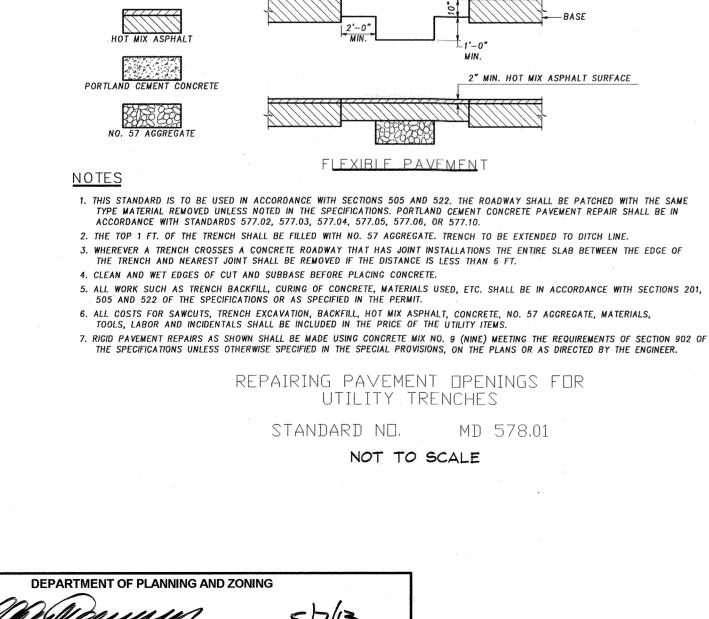
PROPOSED OFFICE AND WAREHOUSE MAINTENANCE OF TRAFFIC PLAN

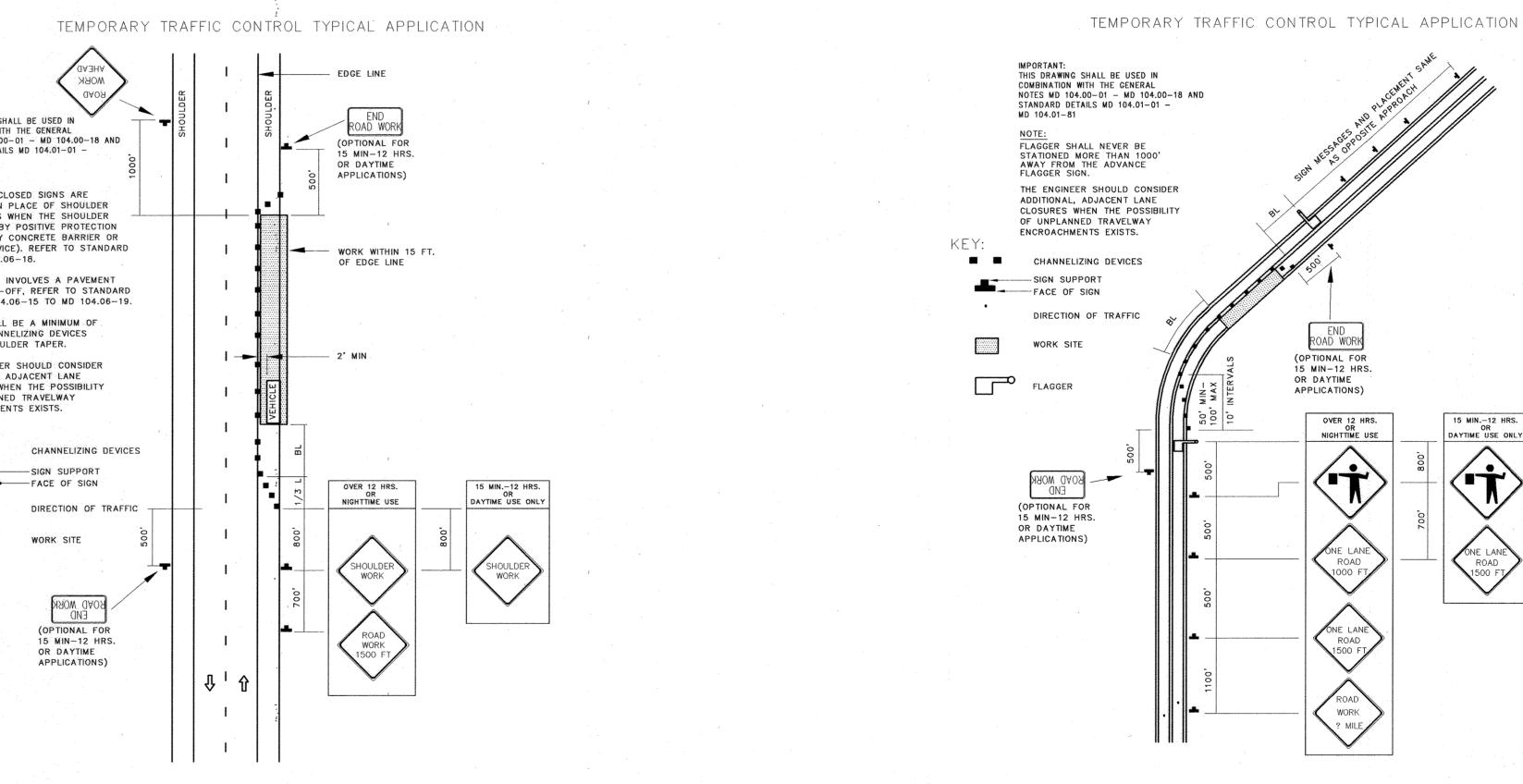
AS-BUIL 4/23/13 Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License PAUL G. CAVANAUGH

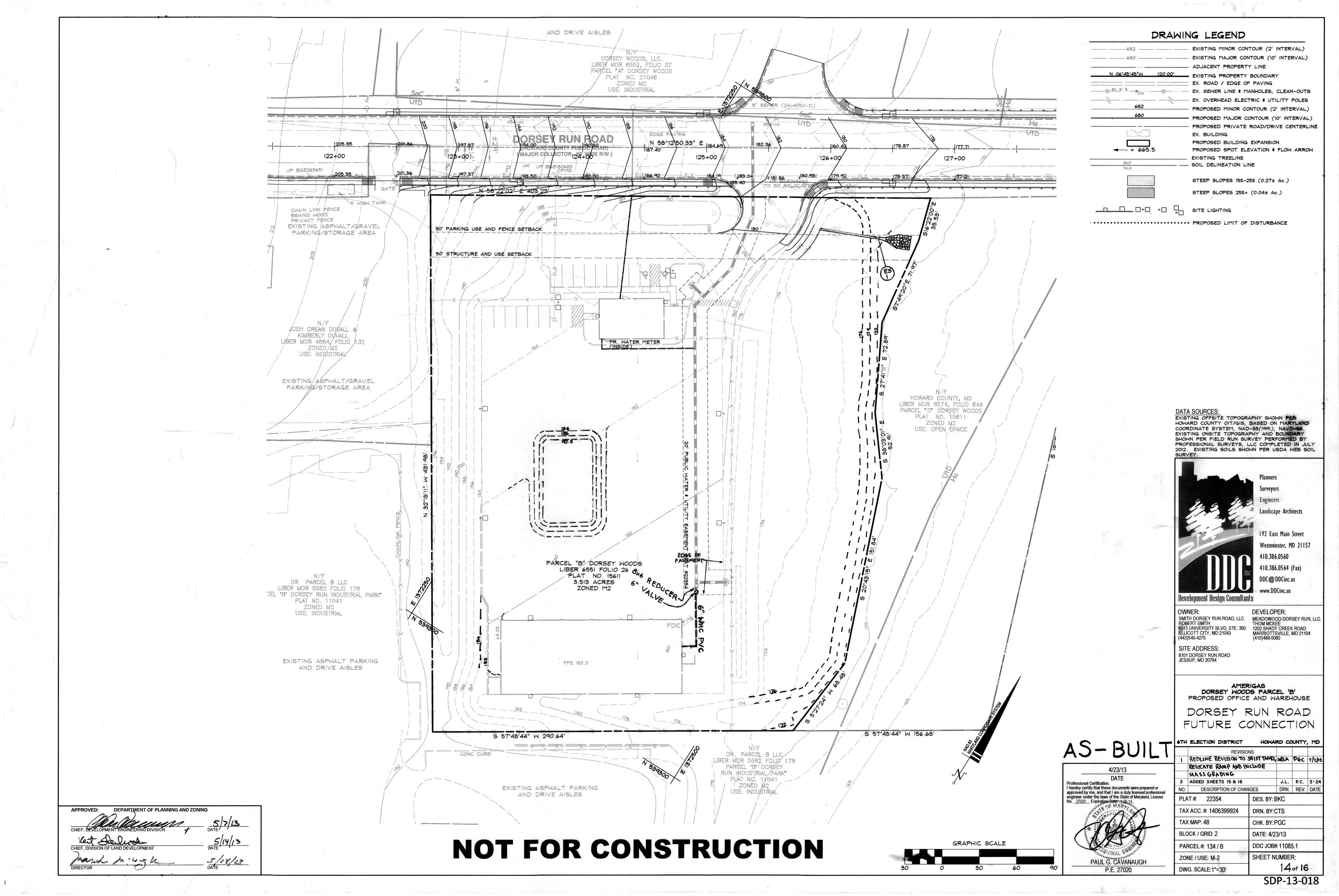
REVISIONS REDLINE REVISION TO SHIFT MBA PGC 71243 TANKS, RELOCATE RAMP MID INCLUDE MASS GRADING ADDED SHEETS 15 8 16 DESCRIPTION OF CHANGES PLAT#. 22354 TAX ACC. #. 1406399924 TAX MAP: 48 BLOCK / GRID: 2

J.L. P.C. 3-24 DRN. REV. DATE DES. BY: PGC DRN. BY: CTS CHK. BY: PGC DATE: 4/23/13 DDC JOB#: 11085.1 PARCEL#: 134/B SHEET NUMBER: ZONE / USE: M-2 13 of 16 DWG. SCALE: AS SHOWN

SDP-13-018







Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.

Apply fertilizer and lime as prescribed on the plans. . Incorporate time and fertilizer into the top 3 to 5 inches of soil by disking or other suitable Permanent Stabilization

A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:

Soil pH between 6.0 and 7.0. ii. Soluble salits less than 500 parts per million (ppm). iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.

Soil contains 1.5 percent minimum organic matter by weight. Soil contains sufficient pore space to permit adequate root penetration. Application of amendments or topsoil is required if on-site soils do not meet the above conditions Graded areas must be maintained in a true and even grade as specified on the approved plan, then carified or otherwise loosened to a depth of 3 to 5 inches.

d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test. e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving

the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas. B. Topaciing

1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these a. ropeon surveyed from an existing site may be used provided in media line situation as set form in specifications. Typically, the depth of topsoil to be adivised for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS. 3. Topsoiling is limited to areas having 2:1 or flatter slopes where:

a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth. b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish

c. The original soil to be vegetated contains material toxic to plant growth

d. The soil is so acidic that treatment with limestone is not feasible. . Areas having slopes steeper than 2:1 require special consideration and design.

i. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria: à Tapsoil must be à loàm, sàndy loàm, clày loàm, silt loàm, sàndy clày loàm, or loàmy sànd. Other soils mày be used it recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by

b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison by, thistle, or others as specified. . Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topso

volume of cinders, stones, slag, coarse tragments, gravel, sticks, roofs, trash, or other materials larger than

5. Topsoil Application a. Erosion and sediment control practices must be maintained when applying topsoil.

b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tiliage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.

c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation C. Soil Amendments (Fertilizer and Lime Specifications)

1. Soil jests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private r commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical 2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate

equipment. Manure may be substituted for ferfilizer with prior approval from the appropriate approval authority Ferfilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer. 3. Lime materials must be around limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 90 to 100 percent will pass through a #20 mesh sieve.

4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by 5. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of

to 8 tans/acre (200-400 pounds per 1,000 square feet) prior to the placement of topso

# STANDARDS AND SPECIFICATIONS FOR SPECING AND MULCHING

The application of seed and mulch to establish vegetative cover.

To protect disturbed soils from erosion during and at the end of construction

Conditions Where Practice Applies To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Seeding
1. Specifications
a. All seed must meet the requirement of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table to verify type of seed and seeding rate.

b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.

c. Inoculants: The inoculant for treating legulare seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package.

Use four times the recommended rate when hydroseeding. Note: It is very important to keets inoculant as cook as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weedcontrol until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

Dry Seeding: This includes use of conventional drop or broadcast spreaders. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.

Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in

ach direction. Roll the seeded area with weighted roller to provide good seed to soil b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seebbed must be firm after planting.

Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in

. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer). the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P 0 (phosphorus), 200 pounds per acre; K 0 (potassium), 200 pounds per acre.

Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one me. Do not use burnt or hydrated lime when hydroseeding. Mix seed and fertilizer on site and seed immediately and without interruption. When hydroseeding do not incorporate seed into the soil.

Mulch Materials (in order of preference)
a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color.
Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into

iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain a uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.

WCPM material must not contain elements or compounds at concentration levels that will by applications.

v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of

Apply mulch to all seeded areas immediately after seeding.

When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the Wood cellulose fiber used as mulch must be applied to a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

Anchoring
a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 linches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on

sloping land, this practice should follow the contour. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry. weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of

50 pounds of wood cellulose fiber per 100 gellons of water.

Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rotes as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind

catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4-15 feet wide and 300 to 3,000 feet long.

FISHER. COLLINS & CARTER. INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS NIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE

ELLICOTT CITY, MARYLAND 21042

(410) 461 - 2855

TEMPORARY SEEDING NOTES (8-4-4)

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

duration of time, permanent stabilization practices are required.

To use fast growing vegetation that provides cover on disturbed soils. Conditions Where Practice Applies Exposed soils where ground cover is needed for a period of 6 months or less. For longer

1. Select one or more of the species or seed mixtures listed in Table 8.1 for the appropriate Plant Hardiness Zone (from Figure 8.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table 8.1 plus fertilizer and lime rates must be put on the plan.

2. For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding. 3. When stabilization is required outside of a seeding season, apply seed and mulch or straw

	ne (from Figure B. (from Table B.1):	PROCESS OF SECURITY	Fertilizer Rate (10-20-20)	Lime Rate	
Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	-	
BARLEY	96	3/1 - 5/15, 8/15 - 10/15	ı"	436 lb/ac	2 tons/ēc
OAT5	72.	3/1 - 5/15, 8/15 - 10/15	1"	(10 lb/ 1000 sf)	(90 lb/. 1000 sf)
RYE	112	3/1 - 5/15, 8/15 - 10/15	1"	TOTAL AND THE STATE OF THE STAT	

mulch alone as prescribed in Section B-4-3.A.1.b and maintain until the next seeding

### PERMINENT SEEDING NOTES (8-4-5) A. Seed Histories

General Use

a. Select one or more of the species or mixtures listed in Table 8.3 for the appropriate Plant Hardiness Zone (from Figure 8.3) and based on the site condition or purpose found on Table 8.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be

b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.

c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency. d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 1/2 pounds per 1000 square feet (150) pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary

a. Areas where furfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.

i. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management, irrigation required in the dreas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

ii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun dreas where rapid Ryegrass Cultivars/Certified Kentucky. Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the

iii. Tall Fescue/Kenfucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended. iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Moture includes; Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent, Seeding Rate: 1 1/2 to 3

Select turfordss varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77. "Turfgrass Cultivar Recommendations for Maryland" Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture. Turt and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line

... Ideal Times of Seeding for Turf Grass Mixtures Western MD: March 15 to June 1. August 1 to October 1 (Hardiness Zones: 5b, 6a) Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 6b) Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)

d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rike the areas to prepare a proper seedbed. Remove stones and debris over 1 1/2 inches in diameter. The resulting seedbed must be in such condition that future moving of grasses will pose no

e. If soil moisture is deficient, supply new seedings with adequate water for plant growth ( 1/2 to 1 inch e. it som moralite is deficient, supply new seconds with decipied water for plant growin (172 to 1 in every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse

				Permanent	Seeding	Summar
7nna	Herom	Finera	2.31	. 6h	~,	

	lardiness Zone (from Figure 8.3): 6b seed Mixture (from Table 8.3): 5						Fertilizer Rate (10-20-20)		
No.	Species	Application Rate (lb/ac)		Seeding Dates	Seeding Depths	N	P205	K <sub>2</sub> 0	gengenadagenge
8	TALL FESCUE	100	Mar. Aug.	1-May 15 1-Oct. 15	1/4-1/2 in.	45 lbs. per acre (1.0 lb/ 1000 sf)		90 lb/ac (2 lb/ 1000 st)	2 tens/ac (90 lb/ 1000 sf)

STANDARD STABILIZATION NOTE FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR 1.) 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 b.) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

### HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

1. A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1855 after the future LOD and protected areas are marked clearly in the field. A minimum of 48 hour notice to CID must be given at the following stages: a. Prior to the start

b. Upon completion of the installation of perimeter erosion and sediment controls, but any other earth before proceeding with disturbance or grading, c. Prior to the start of another phase of construction or opening of another grading unit, d. Prior to the removal or modification of sediment control practices.

Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made. Other related state and federal permits shall be referenced, to ensure coordination and to avoid conflicts with this plan. 2. All vegetative and structural practices are to be installed according to the provisions of this plan and are

to be in conformance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND 3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization is required within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and seven (7) calendar days as to all other disturbed areas on the project site except for those areas under active grading.

4. All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for topsoil (Sec. B-4-2), permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-3), Temporary stabilization with mulch alone can only be applied between the fall and spring seeding dates if the ground is frozen. Incremental stabilization (Sec. 8-4-1) specifications shall be enforced in areas with >15' of cut and/or fill. Stockpiles (Sec. 8-4-8) in excess of 20 ft. must be benched with stable outlet. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. 8-4-6).

5. All sediment control structures are to remain in place, and are to be maintained in operative condition until permission for their removal has been obtained from the CID. 6. Site Analysis:

Total Area of Site 1:0388 Acres - (PARCEL 'B-2') \_\_\_\_\_\_\_ Acres Area Disturbed: Area to be roofed or paved: 0.00 Acres Area to be vegetatively stabilized: 0.69 Acres Total Cut: \_\_\_\_\_\_\_Cu. Yds. \_\_\_\_\_\_\_ Cu. Yds. waste/borrow area location: ON-SITE

7. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired be inspected by the contractor weekly; and the next day after each rain event. A written report by the contractor, made available upon request, is part of every inspection and should include:

Inspection type (routine, pre-storm event, during rain event) Weather information (current conditions as well as time and amount of last recorded precipitation)

Weather information (current conditions as well as time and amount of last recorded preceding the property of projects status (e.g., percent complete) and/or current activities. Evidence of sediment discharges
Identification of plan deficiencies
Identification of missing or improperty installed sediment controls.
Compliance status regarding the sequence of construction and stabilization requirements. Photographs.
Monitoring/sampling
Maintenance and/or corrective action performed.

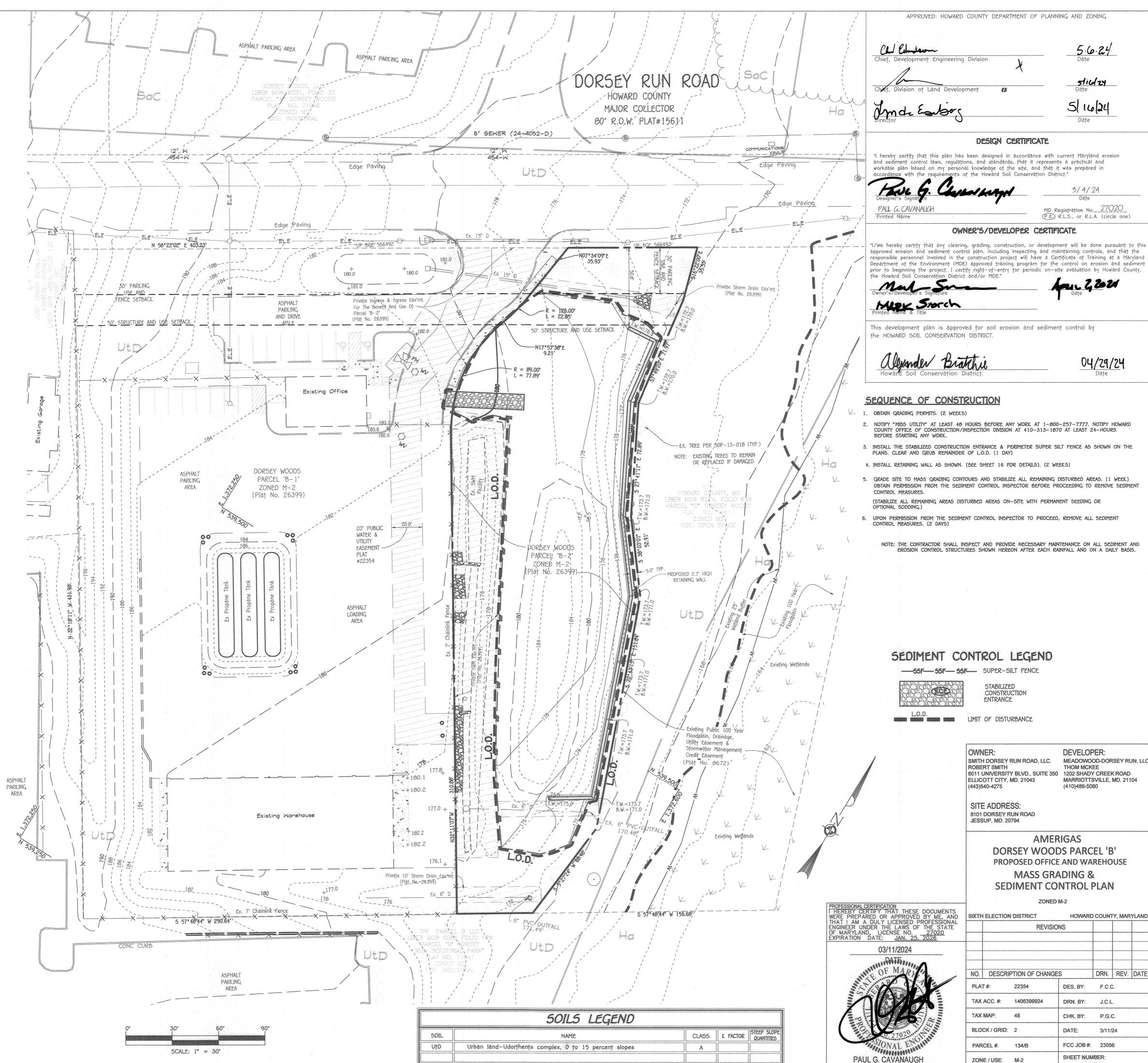
 Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDE). 9. Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be back-filled and stabilized by the end of each workday, whichever is shorter 10. Any major changes or revisions to the plan or sequence of construction must be reviewed and approved by the HSCD prior to proceeding with construction. Minor revisions may allowed by the CID per the list of HSCD-approved field changes. 11. Disturbance shall not occur outside the LO.O. A project is to be sequenced so that grading activities begin

on one grading unit (maximum acreage of 20 ac. per grading unit) at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD. Unless otherwise specified and approved by the HSCD, no more than 30 acres cumulatively may be disturbed at a given time. 12. Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a

sediment basin or other approved washout structure. 13. Topsoil shall be stockpiled and preserved on-site for redistribution onto final oracle. 14. All Silt Fence and Super Silt Fence shall be placed on-the-contour, and be imbricated at 25' minimum intervals, with lower ends curled uphill by 2" in elevation. 15. Stream channels must not be disturbed during the following restricted time periods

· Use I and IP March 1 - June 15 Use III and IIIP October 1 - April 30
Use IV March 1 - May 31

16. A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT



SDP-13-018

DES. BY: F.C.C.

DRN, BY: J.C.L.

CHK. BY: P.G.C.

DATE: 3/11/24

FCC JOB#: 23056

SHEET NUMBER:

DEVELOPER:

THOM MCKEE

(410)489-5080

6011 UNIVERSITY BLVD. SUITE 350 1202 SHADY CREEK ROAD

**AMERIGAS** 

PROPOSED OFFICE AND WAREHOUSE

MASS GRADING &

SEDIMENT CONTROL PLAN

ZONED M-2

REVISIONS

DORSEY WOODS PARCEL 'B'

MEADOWOOD-DORSEY RUN, LLC.

HOWARD COUNTY, MARYLAND

DRN. REV. DATE

15 of 16

MARRIOTTSVILLE, MD. 21104

5.6.24

MD Registration No. 27020

(P.E.) R.L.S., or R.L.A. (circle one)

April 4 2024

DESIGN CERTIFICATE

OWNER'S/DEVELOPER CERTIFICATE

CONSTRUCTION

SMITH DORSEY RUN ROAD, LLC.

ELLICOTT CITY, MD. 21043

8101 DORSEY RUN ROAD

SIXTH ELECTION DISTRICT

NO. DESCRIPTION OF CHANGES

TAX ACC. #: 1406399924

TAX MAP:

PROFESSIONAL ENGINEER NO. 27020

BLOCK / GRID: 2

PARCEL#: 134/B

ZONE / USE: M-2

DWG. SCALE: 1" = 30"

22354

ENTRANCE

OWNER:

ROBERT SMITH

(443)540-4275

SITE ADDRESS

JESSUP, MD. 20794

3+00

3+50

2+50

160

0+00

FISHER, COLLINS & CARTER, INC ENGINEERING CONSULTANTS & LAND SURVEYORS

FLLICOTT CITY, MARYLAND 21042

(410) 461 - 2855

JUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE

0+50

1+00

1+50

2+00

GENERAL STRUCTURAL NOTES THE RETAINING WALL SHALL BE DESIGNED AND CONSTRUCTED IN FULL COMPLIANCE WITH ALL APPLICABLE SECTIONS OF 2018 INTERNATIONAL BUILDING CODE

THE RETAINING WALL IS DESIGNED BASED ON THE FOLLOWING PARAMETERS: UNIT WEIGHT: 120 PCF ACTIVE EQUIVALENT FLUID PRESSURE: 45 PSF (IBC TABLE 1610.1) ALLOWABLE SOIL PRESSURE: 1500 PSF (IBC TABLE 1806.2) FACTOR OF SAFETY AGAINST OVERTURNING: 2.0 FACTOR OF SAFETY AGAINST SLIDING: 1.5
FRICTIONAL RESISTANCE COEFFICIENT: 0.35

THE GUARD RAIL DESIGN LOADS: CONCENTRATED LOAD = 200 LBS AT THE TOP OF GUARD RAIL ANYWHERE UNIFORM LOAD = 50 PSF ON HORIZONTAL RAILS AND PICKETS

WIND IMPORTANCE FACTOR 1w = 1.0

DETAILS DESIGNATED AS "TYPICAL" SHALL BE UNDERSTOOD TO APPLY AT ALI OCCURRENCES OF THE CONDITION INDICATED IN THE DETAIL TITLE, WHETHER THE DETAIL IS 1. EXPLICITLY CALLED ON THE PLAN OR NOT

6. SCALES NOTED ON THE DRAWINGS ARE FOR GENERAL INFORMATION ONLY. NO DIMENSIONAL INFORMATION SHALL BE OBTAINED BY DIRECT SCALING OF THE DRAWINGS. THE CONTRACTOR SHALL ESTABLISH THE METHODS, PROCEDURES AND SEQUENCES OF CONSTRUCTION SUBJECT TO COMPLIANCE WITH ALL PROJECT REQUIREMENTS. ALL NECESSARY PRECAUTIONS SHALL BE TAKEN TO MAINTAIN AND INSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.

REFER TO CIVIL AND OTHER DIVISIONS OF THE CONTRACT DOCUMENTS FOR ADDITIONAL PROJECT REQUIREMENTS, WHICH DEFINE THE SCOPE, NATURE AND EXTENT OF STRUCTURAL

THE CONTRACTOR SHALL SATISFY HIMSELF AS TO THE LOCATION OF ANY UTILITIES IN THE IMMEDIATE VICINITY OF CONSTRUCTION SO AS TO PREVENT DAMAGE TO THEM. SHOULD ANY DAMAGE TO SUCH UTILITIES OCCUR, THE CONTRACTOR SHALL REPAIR SUCH DAMAGE AT HIS OWN EXPENSE AND TO THE SATISFACTION OF THE OWNER. O. PRIOR TO PLACING FOOTINGS AND BACK FILLING, REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL AND CIVIL DRAWINGS FOR ADDITIONAL UNDERGROUND OR EMBEDDED WORK AND

OTHER PROJECT REQUIREMENTS.

KEYSTONE CONCRETE RETAINING WALL

A. WORK SHALL CONSIST OF DESIGNING, FURNISHING AND CONSTRUCTION OF A KEYSTONE HARDSCAPE STANDARD III UNIT RETAINING WALL SYSTEM IN ACCORDANCE WITH THESE SPECIFICATIONS AND IN REASONABLE CLOSE CONFORMITY WITH THE LINES, GRADES, DESIGN AND DIMENSIONS SHOWN ON THE PLANS. NO ALTERNATE WALL SYSTEMS WILL BE WORK INCLUDES PREPARING FOUNDATION SOIL, FURNISHING AND INSTALLING LEVELING PAD.

UNIT FACING SYSTEM, UNIT DRAINAGE FILL AND REINFORCED BACKFILL TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS. WORK INCLUDES FURNISHING AND INSTALLING GEOGRID SOIL REINFORCEMENT OF THE TYPE, B. SHEAR AND REINFORCEMENT PIN CONNECTORS SHALL BE CAPABLE OF HOLDING THE ZE, LOCATION AND LENGTHS DESIGNATED ON THE CONSTRUCTION DRAWINGS. 1.02 RELATED SECTIONS SECTION 31 00 00 -EARTHWORK

1.03 REFERENCE DOCUMENTS AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) AASHTO M 252 CORRUGATED POLYETHYLENE DRAINAGE PIPE AASHTO M 288 GEOTEXTILE SPECIFICATION FOR HIGHWAY APPLICATIONS

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
ASTM C140 SAMPLING AND TESTING CONCRETE MASONRY UNITS
ASTM C1372 SPECIFICATION FOR DRY-CAST SEGMENTAL RETAINING WALL UNITS ASTM D442 PARTICLE SIZE ANALYSIS OF SOILS ASTM D698LABORATORY COMPACTION CHARACTERISTICS OF SOIL -STANDARD EFFORT ASTM D1556 STANDARD TEST METHOD FOR DENSITY AND UNIT WEIGHT OF SOIL IN PLACE BY THE SAND CONE METHOD 6. ASTM D1557 LABORATORY COMPACTION CHARACTERISTICS OF SOIL -MODIFIED EFFORT ASTM D2487 STANDARD CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES (UNIFIED

SOIL CLASSIFICATION SYSTEM)

8. ASTM D2922 STANDARD TEST METHODS FOR DENSITY OF SOIL AND SOIL-AGGREGATE IN PLACE BY NUCLEAR METHODS (SHALLOW DEPTH) 9. ASTM D3034 STANDARD SPECIFICATION FOR TYPE PSM POLY (VINYL CHLORIDE) (PVC) SEWER PIPE AND FITTINGS 10. ASTM D4318 LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS
11. ASTM D4475 HORIZONTAL SHEAR STRENGTH OF PULTRUDED REINFORCED PLASTIC RODS 12. ASTM D4476 FLEXURAL PROPERTIES OF FIBER REINFORCED PULTRUDED PLASTIC RODS
13. ASTM D4595 STANDARD TEST METHOD FOR TENSILE PROPERTIES OF GEOTEXTILES BY

14. ASTM D4873 STANDARD GUIDE FOR IDENTIFICATION, STORAGE AND HANDLING OF **GEOSYNTHETICS** 15. ASTM D5262 STANDARD TEST METHOD FOR EVALUATING THE UNCONFINED TENSION CREEP BEHAVIOR OF GEOSYNTHETICS
ASTM D5321 STANDARD TEST METHOD FOR DETERMINING THE COEFFICIENT OF SOIL
AND GEOSYNTHETIC OR GEOSYNTHETIC AND GEOSYNTHETIC FRICTION BY THE DIRECT SHEAR 17. ASTM D5818 STANDARD PRACTICE FOR OBTAINING SAMPLES OF GEOSYNTHETICS FROM A TEST SECTION FOR ASSESSMENT OF INSTALLATION DAMAGE

18. ASTM D6637 STANDARD TEST METHOD FOR DETERMINING TENSILE PROPERTIES OF
GEOGRIDS BY THE SINGLE OR MULTI-RIB METHOD 19. ASTM D6638 STANDARD TEST METHOD FOR DETERMINING CONNECTION STRENGTH BETWEEN GEOSYNTHETIC REINFORCEMENT AND SEGMENTAL CONCRETE UNITS

20. ASTM D6706 STANDARD TEST METHOD FOR MEASURING GEOSYNTHETIC PULLOUT RESISTANCE IN SOIL

21. ASTM D6916 STANDARD TEST METHOD FOR DETERMINING THE SHEAR STRENGTH BETWEEN SEGMENTAL CONCRETE UNITS C. NATIONAL CONCRETE MASONRY ASSOCIATION (NCMA)

NCMA SRWU-1 TEST METHOD FOR DETERMINING CONNECTION STRENGTH OF SRW NCMA SRWU-2 TEST METHOD FOR DETERMINING SHEAR STRENGTH OF SRW

MODULAR UNIT -A DRY-STACKED CONCRETE RETAINING WALL UNIT MACHINE MADE FROM 1 STRUCTURAL GEOGRID -A POLYMERIC MATERIAL FORMED BY A REGULAR NETWORK OF CONNECTED TENSILE ELEMENTS WITH APERTURES OF SUFFICIENT SIZE TO ALLOW INTERLOCKING WITH SURROUNDING SOIL, ROCK OR EARTH AND FUNCTION PRIMARILY AS UNIT DRAINAGE FILL -DRAINAGE AGGREGATE THAT IS PLACED WITHIN AND IMMEDIATELY BEHIND THE KEYSTONE CONCRETE UNITS.

REINFORCED BACKFILL -COMPACTED SOIL THAT IS PLACED WITHIN THE REINFORCED SOIL VOLUME AS OUTLINED ON THE PLANS.

RETAINED SOIL -THE SOIL MASS BEHIND THE REINFORCED BACKFILL.

FOUNDATION SOIL -THE SOIL MASS BELOW THE LEVELING PAD AND REINFORCED BACKFILL LEVELING PAD -CRUSHED STONE, SAND AND GRAVEL OR UNREINFORCED CONCRETE MATERIAL PLACED TO PROVIDE A LEVEL SURFACE FOR PLACEMENT OF THE KEYSTONE CONCRETE UNITS.
GEOSYNTHETIC REINFORCEMENT -POLYMERIC MATERIAL DESIGNED SPECIFICALLY FOR SOIL .05 SUBMITTALS AND CERTIFICATION

CONTRACTOR SHALL SUBMIT A MANUFACTURER'S CERTIFICATION, PRIOR TO THE START OF WORK, THAT THE RETAINING WALL SYSTEM COMPONENTS MEET THE REQUIREMENTS OF THIS SPECIFICATION AND THE STRUCTURE DESIGN.

B. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE RETAINING WALL SYSTEM. THE SHOP RAWINGS SHALL INCLUDE THE LENGTH, HEIGHT, PANELS WIDTH, A TYPICAL SECTION, ALL PROPOSED MATERIALS TO USED WITH MATERIALS SPECIFICATIONS. THE SHOP DRAWINGS SHALL BE APPROVED BY THE ENGINEER OF THE RECORD BEFORE PROCEEDING WITH THE WORK. CONTRACTOR TO REFER CIVIL DRAWINGS TO OBTAIN WALL LOCATION, LENGTH,

1.06 QUALITY ASSURANCE

CONTRACTOR SHALL SUBMIT A LIST OF FIVE (5) PREVIOUSLY CONSTRUCTED PROJECTS OF SIMILAR SIZE AND MAGNITUDE BY THE WALL INSTALLER WHERE THE STANDARD OR COMPAC RETAINING WALL SYSTEM HAS BEEN CONSTRUCTED SUCCESSFULLY. CONTACT NAMES AND PHONE NUMBERS SHALL BE LISTED FOR EACH PROJECT OWNER SHALL/MAY PROVIDE QUALITY ASSURANCE INSPECTION AND TESTING DURING EARTHWORK AND WALL CONSTRUCTION OPERATIONS, CONTRACTOR SHALL PROVIDE ALL QUALITY CONTROL TESTING AND INSPECTION NOT PROVIDED BY THE OWNER. OWNER'S QUALITY ASSURANCE PROGRAM DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR QUALITY CONTROL AND WALL PERFORMANCE.

1.07 DELIVERY HANDLING AND STORAGE A. CONTRACTOR SHALL CHECK ALL MATERIALS UPON DELIVERY TO ASSURE THAT THE PROPER TYPE, GRADE, COLOR, AND CERTIFICATION HAVE BEEN RECEIVED.
 B. CONTRACTOR SHALL PROTECT ALL MATERIALS FROM DAMAGE DUE TO JOBSITE CONDITIONS AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. DAMAGED MATERIALS SHALL NOT BE INCORPORATED INTO THE WORK

2.01 KEYSTONE CONCRETE RETAINING WALL UNITS KEYSTONE RETAINING WALL UNITS SHALL CONFORM TO THE FOLLOWING ARCHITECTURAL REQUIREMENTS FACE COLOR - CONCRETE GRAY, UNLESS OTHERWISE SPECIFIED. THE OWNER MAY SPECIFY STANDARD MANUFACTURERS'COLOR. STANDARD MANUFACTURERS COLOR.

FACE FINISH - HARD SPLIT IN ANGULAR TRI-PLANE OR STRAIGHT FACE CONFIGURATION.

OTHER FACE FINISHES WILL NOT BE ALLOWED WITHOUT WRITTEN APPROVAL OF OWNER. BOND CONFIGURATION - RUNNING WITH BONDS NOMINALLY LOCATED AT MIDPOINT IN VERTICALLY ADJACENT UNITS.

EXPOSED SURFACES OF UNITS SHALL BE FREE OF CHIPS, CRACKS OR OTHER

IMPERFECTIONS WHEN VIEWED FROM A DISTANCE OF 20 FEET (6 M) UNDER DIFFUSED KEYSTONE CONCRETE UNITS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C1372 -STANDARD SPECIFICATIONS FOR SEGMENTAL RETAINING WALL UNITS.
KEYSTONE CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING STRUCTURAL AND
GEOMETRIC REQUIREMENTS MEASURED IN ACCORDANCE WITH ASTM C140 SAMPLING AND ESTING CONCRETE MASONRY UNITS: COMPRESSIVE STRENGTH: 3000 PSI (21 MPA).

ABSORPTION: 8 % FOR STANDARD WEIGHT AGGREGATES.

DIMENSIONAL TOLERANCES: ± 1/8" (3 MM) FROM NOMINAL UNIT DIMENSIONS NOT 4. UNIT SIZE: 8" (203 MM) (H) X 18" (457 MM) (W) X 18 TO 21.5" (457 TO 546 MM)(D) KEYSTONE CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING CONTRACTIBILITY 1. VERTICAL SETBACK: 1/8 INCH (3 MM) ± PER COURSE (NEAR VERTICAL) OR 1 1/8 INCH (28 MM) + PER COURSE, PER THE DESIGN. ALIGNMENT AND GRID ATTACHMENT MECHANISM - FIBERGLASS PINS, TWO PER UNIT. MAXIMUM HORIZONTAL GAP BETWEEN ERECTED UNITS SHALL BE 1/2 INCH (13 MM).

2.02 SHEAR AND REINFORCEMENT PIN CONNECTORS SHEAR AND REINFORCEMENT PIN CONNECTORS SHALL BE 1/2-INCH (12 MM) DIAMETER THERMOSET ISOPTHALIC POLYESTER RESIN PULTRUDED FIBERGLASS RÉINFORCEMENT RODS O PROVIDE CONNECTION BETWEEN VERTICALLY AND HORIZONTALLY ADJACENT UNITS AND GEOSYNTHETIC REINFORCEMENT, WITH THE FOLLOWING REQUIREMENTS FLEXURAL STRENGTH IN ACCORDANCE WITH ASTM D4476: 128,000 PSI (882 MPA) SHORT BEAM SHEAR IN ACCORDANCE WITH ASTM D4475: 6,400 PSI (44 MPA) MINIMUM.

GEOGRID IN THE PROPER DESIGN POSITION DURING GRID PRE-TENSIONING AND 2.03 BASE LEVELING PAD MATERIAL MATERIAL SHALL CONSIST OF A COMPACTED CRUSHED STONE BASE, SAND AND GRAVEL OR UNREINFORCED CONCRETE, AS SHOWN ON THE CONSTRUCTION DRAWINGS. 2.04 UNIT DRAINAGE FILE

UNIT DRAINAGE FILL SHALL CONSIST OF CLEAN 1 INCH (25 MM) MINUS CRUSHED STONE PERCENT PASSING SIEVE SIZE 1 INCH (25 MM) 3/4-INCH (19MM) 75 -100

NO. 4 (4.75 MM) NO. 50 (300 UM) DRAINAGE FILL SHALL BE PLACED WITHIN THE CORES OF, BETWEEN, AND BEHIND THE UNITS AS INDICATED ON THE DESIGN DRAWINGS. NOT LESS THAN 1.2 CUBIC FOOT (0.033 M3). OF DRAINAGE FILL SHALL BE USED FOR EACH SQUARE FOOT (0.093 M2) OF WALL .05 REINFORCED BACKFILL

REINFORCED BACKFILL SHALL BE FREE OF DEBRIS AND MEET THE FOLLOWING GRADATION ESTED IN ACCORDANCE WITH ASTM D-422: PERCENT PASSING 1 1/2 INCH (38 MM) 100

3/4-INCH (19 MM) 75 -100 NO. 40 (425 UM) 0 -60 NO. 200 (75 UM) 0 -35

PLASTICITY INDEX (PI) < 15 AND HOURD LIMIT < 40 PER ASTM 04318 THE MAXIMUM AGGREGATE SIZE SHALL BE LIMITED TO 3/4 INCH (19 MM) UNLESS INSTALLATION DAMAGE TESTS HAVE BEEN PERFORMED TO EVALUATE POTENTIAL STRENGTH REDUCTIONS TO THE GEOGRID DESIGN DUE TO INCREASED INSTALLATION DAMAGE DURING CONSTRUCTION. MATERIAL CAN BE SITE-EXCAVATED SOILS WHERE THE ABOVE REQUIREMENTS CAN BE MET. A. GEOGRID SHALL BE INSTALLED WITH THE HIGHEST STRENGTH DIRECTION PERPENDICULAR TO SOILS NOT MEETING THE ABOVE CRITERIA, INCLUDING HIGHLY PLASTIC CLAYS AND ORGANIC SOILS, SHALL NOT BE USED IN THE BACKFILL OR REINFORCED BACKFILL SOIL MASS. CONTRACTOR SHALL SUBMIT REINFORCED FILL SAMPLE AND LABORATORY TEST RESULTS TO B. THE ARCHITECT/ENGINEER FOR APPROVAL, PRIOR TO THE USE OF ANY PROPOSED REINFORCED BACKFILL MATERIAL. 2.06 GEOGRID SOIL REINFORCEMENT

GEOSYNTHETIC REINFORCEMENT SHALL CONSIST OF GEOGRIDS MANUFACTURED FOR SOIL REINFORCEMENT APPLICATIONS AND SHALL BE MANUFACTURED FROM HIGH TENACITY POLYESTER YARN OR HIGH DENSITY POLYETHYLENE. POLYESTER GEOGRID SHALL BE MADE FROM HIGH TENACITY POLYESTER FILAMENT YARN WITH A MOLECULAR WEIGHT EXCEEDED 25,000 G/M AND WITH A CARBOXYL END GROUP VALUE LESS THAN 30. POLYESTER EOGRID SHALL BE COATED WITH AN IMPREGNATED PVC COATING THAT RESISTS PEELING. TA -LONG TERM ALLOWABLE TENSILE DESIGN LOAD. TA OF THE GEOGRID MATERIAL SHALL BE DETERMINED AS FOLLOWS: TA = TULT/(RFCR \* RFD \* RFID \* FS). TA SHALL BE EVALUATED BASED ON A 75 YEAR DESIGN LIFE TULT -SHORT TERM ULTIMATE TENSILE STRENGTH. TULT SHALL BE DETERMINED IN

ACCORDANCE WITH ASTM D4595 OR ASTM D6637, TULT IS BASED ON THE MINIMUM AVERAGE ROLL VALUES (MARV).

2. RFCR -REDUCTION FACTOR FOR LONG TERM TENSION CREEP. RFCR SHALL BE DETERMINED. FROM 10,000 HOUR CREEP TESTING PERFORMED IN ACCORDANCE WITH ASTM D5262. RFCR = 1.45 MINIMUM.

Development Engineering Division

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

WALL UNITS SHALL BE CLEANED OF SOIL AND ANY OTHER MATERIAL.

A. VERTICAL ALIGNMENT: ± 1.5 INCHES (40 MM) OVER ANY 10 FOOT (3 M) DISTANCE.

B. WALL BATTER: WITHIN 2 DEGREES OF DESIGN BATTER. OVERALL WALL BATTER SHALL BE ?

A. QUALITY ASSURANCE -THE OWNER SHALL/MAY ENGAGE INSPECTION AND TESTING SERVICES, INCLUDING INDEPENDENT LABORATORIES, TO PROVIDE QUALITY ASSURANCE AND TESTING SERVICES DURING CONSTRUCTION. THIS DOES NOT RELIEVE THE CONTRACTOR FROM

B. QUALITY ASSURANCE SHOULD INCLUDE FOUNDATION SOIL INSPECTION AND TESTING AND

5.624

5/16/24

5/16/24

3. RFD -REDUCTION FACTOR FOR DURABILITY, RFD SHALL BE DETERMINED FROM POLYMER 3.06 CAP INSTALLATION ECIFIC DURABILITY TESTING COVERING THE RANGE OF EXPECTED SOIL ENVIRONMENT A. PRIOR TO PLACEMENT OF THE CAP UNITS, THE UPPER SURFACE OF THE TOP COURSE OF 4 REID -REDUICTION FACTOR FOR INSTALLATION DAMAGE REID SHALL BE DETERMINED FROM PRODUCT SPECIFIC CONSTRUCTION DAMAGE TESTING PERFORMED IN ACCORDANCE WITH ASTM D5818. TEST RESULTS SHALL BE PROVIDED FOR EACH PRODUCT TO BE USED WITH B. CAP UNITS SHALL BE ADEQUATELY GLUED TO THE UNDERLYING WALL UNITS WITH AN ALL—WEATHER EXTERIOR CONSTRUCTION ADHESIVE.

PROJECT SPECIFIC OR MORE SEVERE SOIL TYPES. RFID = 1.05 MINIMUM.

5. FS -OVERALL DESIGN FACTOR OF SAFETY. FS HALL BE 1.5 UNLESS NOTED FOR THE MAXIMUM ALLOWABLE WORKING STRESS CALCULATION.
THE MAXIMUM DESIGN TENSILE LOAD OF THE GEOGRID SHALL NOT EXCEED THE LABORATORY TESTED ULTIMATE STRENGTH OF THE GEOGRID/FACING UNIT CONNECTION DIVIDED BY A FACTOR OF SAFETY OF 1.5. THE CONNECTION STRENGTH TESTING AND COMPUTATION PROCEDURES SHALL BE IN ACCORDANCE WITH ASTM D6638 CONNECTION STRENGTH BETWEEN GEOSYNTHETIC REINFORCEMENT AND SEGMENTAL CONCRETE UNITS OR

-COEFFICIENT OF SOIL INTERACTION. CI VALUES SHALL BE DETERMINED PER ASTM C. HORIZONTAL ALIGNMENT: ± 1.5 INCHES (40 MM) OVER ANY 10 FOOT (3 M) DISTANCE. D6706 AT A MAXIMUM 0.75 INCH (19 MM) DISPLACEMENT.
THE GEOGRID MANUFACTURER SHALL HAVE A MANUFACTURING QUALITY CONTROL PROGRAM D. CORNERS AND CURVES: ± 1 FOOT (300 MM) TO THEORETICAL LOCATION. THAT INCLUDES OF TESTING BY AN INDEPENDENT LABORATORY. THE OF TESTING SHALL INCLUDE TENSILE STRENGTH TESTING, MELT FLOW INDEX TESTING FOR HDPE GEOGRIDS AND MOLECULAR WEIGHT TESTING FOR POLYESTER GEOGRIDS.

E. MAXIMUM HORIZONTAL GAP BETWEEN ERECTED UNITS SHALL BE ? 1/2 INCH (13 MM). 3.08 FIELD QUALITY CONTROL

2.07 DRAINAGE PIPE

A. IF REQUIRED, DRAINAGE PIPE SHALL BE PERFORATED OR SLOTTED PVC PIPE MANUFACTURED IN ACCORDANCE WITH ASTM D3034 OR CORRUGATED HDPE PIPE MANUFACTURED IN ACCORDANCE WITH AASHTO M252.

2.08 GEOTEXTILE FILTER FABRIC A. WHEN REQUIRED, GEOTEXTILE FILTER FABRIC SHALL BE A NEEDLE-PUNCHED NONWOVEN FABRIC THAT MEETS THE REQUIREMENTS OF AASHTO M288. 3.01 EXCAVATION

CONTRACTOR SHALL EXCAVATE TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS. THE OWNER OR CONTRACTORS OA/OC REPRESENTATIVE SHALL INSPECT THE EXCAVATION AND TEST THE FOUNDATION SOILS AND APPROVE PRIOR TO PLACEMENT OF THE LEVELING PAD MATERIAL OR FILL SOILS. ANY OVER-EXCAVATION REQUIRED TO REMOVE UNSUITABLE SOILS SHALL BE OVERSIZED FROM THE FRONT OF THE LEVELING PAD AND BACK OF THE GEOGRID REINFORCEMENT OVER-EXCAVATION AND REPLACEMENT OF UNSUITABLE SOILS AND REPLACEMENT WITH APPROVED COMPACTED FILL WILL BE COMPENSATED AS AGREED UPON WITH THE OWNER.

A. LEVELING PAD MATERIAL SHALL BE PLACED TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS TO A MINIMUM THICKNESS OF 6 INCHES (150 MM) AND EXTEND LATERALLY A MINIMUM OF 6 INCHES IN FRONT AND BEHIND THE KEYSTONE WALL UNIT. B. SOIL LEVELING PAD MATERIALS SHALL BE COMPACTED TO A MINIMUM OF 95% OF STANDARD PROCTOR DENSITY PER ASTM D697 OR 92% MODIFIED PROCTOR DENSITY PER

C. LEVELING PAD SHALL BE PREPARED TO INSURE FULL CONTACT WITH THE BASE SURFACE OF THE CONCRETE UNITS. 3.03 KEYSTONE UNIT INSTALLATION

FIRST COURSE OF UNITS SHALL BE PLACED ON THE LEVELING PAD AT THE APPROPRIATE LINE AND GRADE. ALIGNMENT AND LEVEL SHALL BE CHECKED IN ALL DIRECTIONS AND INSURE THAT ALL UNITS ARE IN FULL CONTACT WITH THE BASE AND PROPERLY SEATED B. PLACE THE FRONT OF UNITS SIDE-BY-SIDE, DO NOT LEAVE GAPS BETWEEN ADJACENT UNITS, LAYOUT OF CORNERS AND CURVES SHALL BE IN ACCORDANCE WITH

C. INSTALL SHEAR/CONNECTING PINS PER MANUFACTURER'S RECOMMENDATIONS. D. PLACE AND COMPACT DRAINAGE FILL WITHIN AND BEHIND WALL UNITS. PLACE AND

MANUFACTURER'S RECOMMENDATIONS

COMPACT REINFORCED BACKFILL SOIL BEHIND DRAINAGE FILL. MAXIMUM STACKED VERTICAL HEIGHT OF WALL UNITS, PRIOR TO DRAINAGE FILL AND BACKFILL PLACEMENT AND COMPACTION, SHALL NOT EXCEED TWO COURSES.

THE WALL ALIGNMENT GEOGRID REINFORCEMENT SHALL BE PLACED AT THE STRENGTHS, LENGTHS AND ELEVATIONS SHOWN ON THE CONSTRUCTION DRAWINGS, OR AS DIRECTED BY THE ENGINEER. THE GEOGRID SHALL BE LAID HORIZONTALLY ON COMPACTED BACKFILL AND ATTACHED TO THE KEYSTONE WALL UNIT PINS AND WITHIN 1 INCH OF THE FACE OF THE UNITS. PLACE

THE NEXT COURSE OF KEYSTONE UNITS OVER THE GEOGRID. THE GEOGRID SHALL BE PULLED TAUT AND ANCHORED PRIOR TO BACKFILL PLACEMENT ON THE GEOGRID. D. GEOGRID REINFORCEMENTS SHALL BE CONTINUOUS THROUGHOUT THEIR EMBEDMENT LENGTHS AND PLACED SIDE—BY—SIDE TO PROVIDE 100% COVERAGE AT EACH LEVEL. SPLICED CONNECTIONS BETWEEN SHORTER PIECES OF GEOGRID OR GAPS GREATER THAN 2 INCHES BETWEEN ADJACENT PIECES OF GEOGRID ARE NOT PERMITTED.

3.05 REINFORCED BACKFILL PLACEMENT THAT MINIMIZES THE DEVELOPMENT OF SLACK IN THE GEOGRID AND INSTALLATION DAMAGE

REINFORCED BACKFILL SHALL BE PLACED AND COMPACTED IN LIFTS NOT TO EXCEED 6 INCHES (150 MM) WHERE HAND OPERATED COMPACTION EQUIPMENT IS USED, OR 8 -10 NCHES (200 TO 250 MM) WHERE HEAVY COMPACTION EQUIPMENT IS USED. LIF THICKNESS SHALL BE DECREASED TO ACHIEVE THE REQUIRED DENSITY, AS NEEDED.

C. REINFORCED BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 95% OF STANDARD PROCTOR DENSITY PER ASTM D697 OR 92% MODIFIED PROCTOR DENSITY PER ASTM D1557. THE MOISTURE CONTENT OF THE REINFORCED BACKFILL MATERIAL DURING COMPACTION SHALL BE UNIFORMLY DISTRIBUTED THROUGHOUT EACH LAYER AND SHALL BE DRY OF OPTIMUM BY 0 TO 3 PERCENTAGE POINTS OF MOISTURE.

D. ONLY HAND OPERATED COMPACTION EQUIPMENT SHALL BE ALLOWED WITHIN 3 FEET (1 M) FROM THE BACK OF THE KEYSTONE CONCRETE UNITS

E. TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY UPON THE GEOGRID REINFORCEMENT. A MINIMUM FILL THICKNESS OF 6 INCHES (150 MM) IS REQUIRED PRIOR TO OPERATION OF TRACKED VEHICLES OVER THE GEOGRID. TRACKED VEHICLE TURNING SHOULD BE KEPT TO A MINIMUM TO PREVENT TRACKS FROM DISPLACING THE FILL AND DAMAGING OR DISPLACING THE KEYSTONE UNITS OR GEOGRID.

F. RUBBER TIRED EQUIPMENT MAY PASS OVER GEOGRID REINFORCEMENT AT SLOW SPEEDS, LESS THAN 10 MPH. SUDDEN BRAKING AND TURNING SHALL BE AVOIDED. G. AT THE END OF EACH DAY'S OPERATION, THE CONTRACTOR SHALL SLOPE THE LAST LIFT OF REINFORCED BACKFILL AWAY FROM THE WALL UNITS TO DIRECT RUNOFF AWAY FROM THE WALL FACE. THE CONTRACTOR SHALL NOT ALLOW SURFACE RUNOFF FROM ADJACENT AREAS TO ENTER THE WALL CONSTRUCTION SITE.

3.07 AS-BUILT CONSTRUCTION TOLERANCES

VERIFICATION OF THE GEOTECHNICAL DESIGN PARAMETERS AND VERIFICATION THAT THE CONTRACTORS QUALITY CONTROL TESTING IS ADEQUATE AS A MINIMUM. QUALITY ASSURANCE SHALL ALSO INCLUDE OBSERVATION OF THE CONSTRUCTION FOR GENERAL COMPLIANCE WITH THE DESIGN DRAWINGS AND PROJECT SPECIFICATIONS. QUALITY ASSURANCE IS USUALLY BEST PERFORMED BY THE SITE GEOTECHNICAL ENGINEER.

SECURING THE NECESSARY CONSTRUCTION QUALITY CONTROL TESTING.

QUALITY CONTROL - THE CONTRACTOR SHALL ENGAGE INDEPENDENT INSPECTION AND TESTING SERVICES TO PERFORM THE MINIMUM QUALITY CONTROL TESTING DESCRIBED IN THE RETAINING WALL DESIGN PLANS AND SPECIFICATIONS. ONLY QUALIFIED AND EXPERIENCED TECHNICIANS AND ENGINEERS SHALL PERFORM QUALITY CONTROL TESTING

QUALITY CONTROL TESTING SHALL INCLUDE SOIL AND BACKFILL TESTING TO VERIFY SOIL TYPES AND STRENGTHS, COMPACTION AND MOISTURE CONDITIONS AND VERIFICATION THAT THE RETAINING WALL IS BEING CONSTRUCTED IN ACCORDANCE WITH THE DESIGN PLANS

TOP ROLL CAP-TOP ROLL SLEEVE -ROLL END & BOND-TOP RAIL = 18" TO 1 8"0 (O TERMINAL POST-LINE POST-10'-0" MAX TENSION BOND-(C)

> 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. 27020
> EXPIRATION DATE: JAN. 25, 2026 03/11/2024

PROPOSED OFFICE AND WAREHOUSE RETAINING WALL DETAIL SHEET

SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND REVISIONS NO. DESCRIPTION OF CHANGES DRN. REV. DATE PLAT #: DES. BY: F.C.C. TAX ACC. #: 1406399924 DRN. BY: J.C.L. TAX MAP: CHK BY: P.G.C BLOCK / GRID: 2 DATE: 3/11/24 FCC JOB#: 23056 PARCEL#: 134/B SHEET NUMBER: ZONE / USE: M-2 16 of 16 DWG. SCALE: 1" = 30'

**AMERIGAS** 

DORSEY WOODS PARCEL 'B'

ZONED M-2

SDP-13-018

**DEVELOPER:** 

THOM MCKEE

(410)489-5080

MEADOWOOD-DORSEY RUN, LLC.

1202 SHADY CREEK ROAD

MARRIOTTSVILLE, MD. 21104

SMITH DORSEY RUN ROAD, LLC.

6011 UNIVERSITY BLVD., SUITE 3

ELLICOTT CITY, MD. 21043

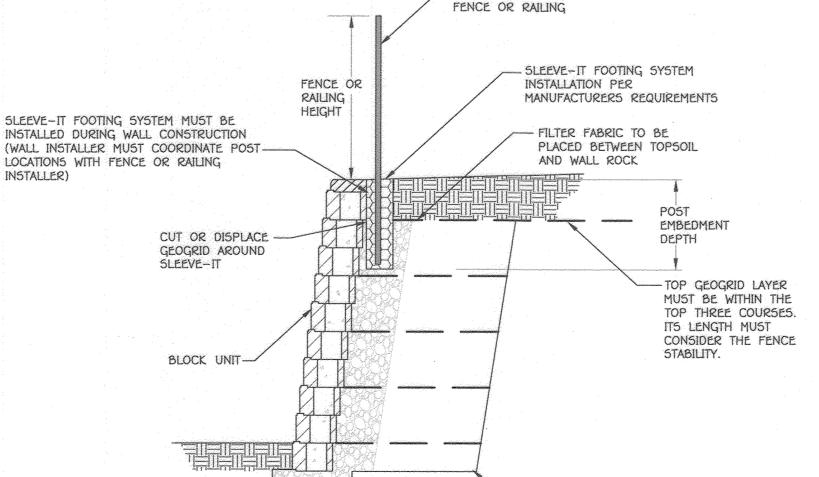
8101 DORSEY RUN ROAD

SITE ADDRESS:

JESSUP, MD. 20794

ROBERT SMITH

(443)540-4275



-NON-WIND LOADED

-4" HEEL DRAIN

- 4" TOE DRAIN

Typical 48" Fence Section

PAUL G. CAVANAUGH

PROFESSIONAL ENGINEER NO. 27020