

SITE DEVELOPMENT PLAN

THE MEADOWS CORPORATE PARK

PHASE 2

Howard County, Maryland

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH ONE FOOT CONTOUR INTERVALS PREPARED BY DUVAL & ASSOCIATES, P.A., DATED NOVEMBER 2012.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. J109 AND U25 WERE USED FOR THIS PROJECT.
- WATER IS PUBLIC. SEE CONTRACT NO. 14-4281-D & 14-4822-D.
- SEWER IS PUBLIC. SEE CONTRACT NO. 14-4281-D & 14-4822-D.
- THIS PROJECT UTILIZES ENVIRONMENTAL SITE DESIGN FOR ALL STORM WATER MANAGEMENT PRACTICES INCLUDING PERMEABLE PAVING, MICROBIOTENTATION AND GRAVEL WETLANDS. ALL SWM DEVICES WILL BE PRIVATELY OWNED AND MAINTAINED.
- EXISTING UTILITIES ARE BASED ON FIELD RUN SURVEY AND AVAILABLE RECORDS.
- THERE IS NO FLOODPLAIN ON THIS SITE.
- THERE ARE WETLANDS ON SITE. THE WETLANDS STUDY WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. DATED 12/03/04 AND REVISED ON 3/19/2013.
- THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY THE TRAFFIC GROUP, DATED MAY 2013, AND WAS APPROVED ON JANUARY 15, 2014. MITIGATION WAS REQUIRED AT MD 1 AND MD 103 AND A FEE WAS PAID BASED ON THE PROJECTED IMPROVEMENTS AND CREDITED TO CAPITAL PROJECT NUMBER J-4420 ACCOUNT NUMBER:
 WBS: J0076.0.3100 GL: 490900
 FUND: 4910000000 BUSINESS AREA: 3100
 COST CENTER: 3100000000 FUNC AREA: PWP00000000000000
- A WAIVER OF SUBSECTION 16.1206(a)(7) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS IS REQUIRED TO REMOVE THE THREE SPECIMEN TREES LOCATED ON PARCEL A-7. WP-14-012 APPROVED ON 8/19/13.
 A WAIVER OF SUBSECTION 16.144(B) OF THE REQUIREMENT TO SUBMIT A SKETCH PLAN OR PRELIMINARY EQUIVALENT SKETCH PLAN FOR THE PROPOSED NON-RESIDENTIAL SUBDIVISION. WP-13-156 APPROVED ON 5/29/13.
- THE GEOTECHNICAL STUDY FOR THIS PROJECT WAS PREPARED BY REULING ASSOCIATES, INC DATED MAY 2013.
- CONTRACTOR SHALL MEET ALL EXISTING IMPROVEMENTS SMOOTHLY FOR LINE, GRADE AND FINISH.
- IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NORMALLY BE REQUIRED TO COMPLETE THIS PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO PERFORM SUCH WORK. THE COST OF SUCH WORK SHALL BE INCLUDED IN THE BASE BID.
- THE LOCATIONS OF EXISTING UTILITIES SHOWN HEREON ARE APPROXIMATE ONLY AND ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. THE CONTRACTOR SHALL CONFIRM TO HIS OWN SATISFACTION THE LOCATION OF ALL UTILITIES PRIOR TO ANY EXCAVATION OR PLACEMENT OF MATERIALS. IF ANY CONFLICT IS FOUND BETWEEN UNDERGROUND UTILITIES AND THE PROPOSED LOCATION OF ANY CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE ENGINEER AND OWNER OF THE UTILITY IMMEDIATELY. ANY DAMAGE OR DISRUPTION OF SERVICE SHALL BE AT THE EXPENSE OF THE CONTRACTOR. RELOCATION OF ANY EXISTING UTILITIES, IF NECESSARY, SHALL BE AT THE EXPENSE OF THE OWNER. THE CONTRACTOR SHALL COORDINATE RELOCATION OF THESE FACILITIES, IF NECESSARY.
- CONTRACTOR SHALL PROTECT ALL EXISTING IMPROVEMENTS NOT SCHEDULED FOR REMOVAL OR DEMOLITION. COST OF REPAIR TO EXISTING IMPROVEMENTS SHALL BE INCLUDED IN THE BASE BID. ALL EXISTING SITE FEATURES NOT BEING RETAINED SHALL BE REMOVED AND DISPOSED OF AT AN APPROVED LOCATION. ANY DAMAGE TO OFFSITE ROADS, RIGHTS OF WAY, OR ADJACENT PROPERTY SHALL BE REPAIRED IMMEDIATELY AT THE EXPENSE OF THE CONTRACTOR.
- THE CONTRACTOR SHALL CLEAR THE PROJECT SITE OF ALL TREES, PAVING, STRUCTURES, ETC. WITHIN THE CONSTRUCTION AREA UNLESS OTHERWISE NOTED ON THE PLAN.
- ONLY SUITABLE MATERIAL SHALL BE USED AS FILL AND ALL FILL SHALL BE PLACED AND COMPACTED AS SPECIFIED IN THE SOILS REPORT PREPARED FOR THIS SITE OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
- THIS SITE IS ZONED POR PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN.
- NO GRADING, REMOVAL OF VEGETATIVE COVER AND TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN 25 FEET OF A WETLANDS OR FOREST CONSERVATION EASEMENT
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$67,770.00 FOR 110 SHADE TREES, 33 UNDERSTORY TREES, 71 EVERGREEN TREES AND 639 SHRUBS.
- THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY PROVIDING 0.7 ACRES OF ON-SITE RETENTION AND 0.8 ACRES OF ON-SITE REFORESTATION WITHIN THE PROPOSED FCE EASEMENT AND PURCHASING 1.9 ACRES OF A CREDIT IN THE MAPLEWOOD FARM FOREST MITIGATION BANK (SDP-13-040) TO BE DESIGNED, CONSTRUCTED AND MONITORED BY ECOTONE, INC.
- THERE ARE NO CEMETERIES OR BURIAL GROUNDS LOCATED ON THIS SITE.
- THIS SITE COMPLIES WITH THE HOWARD COUNTY GREEN BUILDINGS LAW UNDER TITLE 3, SUBTITLE 10 OF THE HOWARD COUNTY CODE AND SECTION 3.1006(a) OF THE CODE. REGISTRATION WITH THE GREEN BUILDING COUNCIL AND PAYMENT OF THE LEED REGISTRATION FEE WAS PAID MADE IN 2008. THE LEED NEW CONSTRUCTION CHECKLIST WAS PREPARED, SIGNED AND DATED BY THE PROJECT LEED ACCREDITED PROFESSIONAL WAS RECEIVED BY DPZ ON SEPTEMBER 10, 2013. THE PROPOSED BUILDING NO. 4 IS TENTATIVELY CERTIFIED BY LEED WITH A GOLD RATING."
- A KNOX BOX (FIRE DEPARTMENT ACCESS BOX) IS REQUIRED TO BE PLACED ON THE FRONT OF BUILDING NO. 4. IT SHALL BE PLACED TO THE RIGHT OF THE MAIN ENTRANCE AT A RANGE OF 4-6 FT IN HEIGHT AND NO MORE THAN 6 FT LATERALLY FROM THE DOOR. THE BOX SHALL BE ELECTRONICALLY SUPERVISED TO NOTIFY THE OWNER THAT IT IS BEING ACCESSED (INTEGRATED WITH THE FIRE ALARM SYSTEM), MFA-1 10.12.1
- PER SECTION 115.0.B.38 OF THE 2013 ZONING REGULATIONS, IF THE DEVELOPMENT IS MORE THAN 25 ACRES CONTAINING > 100,000 SF OF OFFICE, RETAIL USE SHALL CONSTITUTE NO MORE THAN 10% OF THE FLOOR AREA OF THE TOTAL DEVELOPMENT. THIS SITE IS 33.05 ACRES WITH 218,965 SF OF OFFICE SPACE, THEREFORE 21,895 SF OF RETAIL IS CURRENTLY ALLOWED WITH 11,200 SF PROPOSED WITHIN BLDG. NO. 5.

SITE DATA

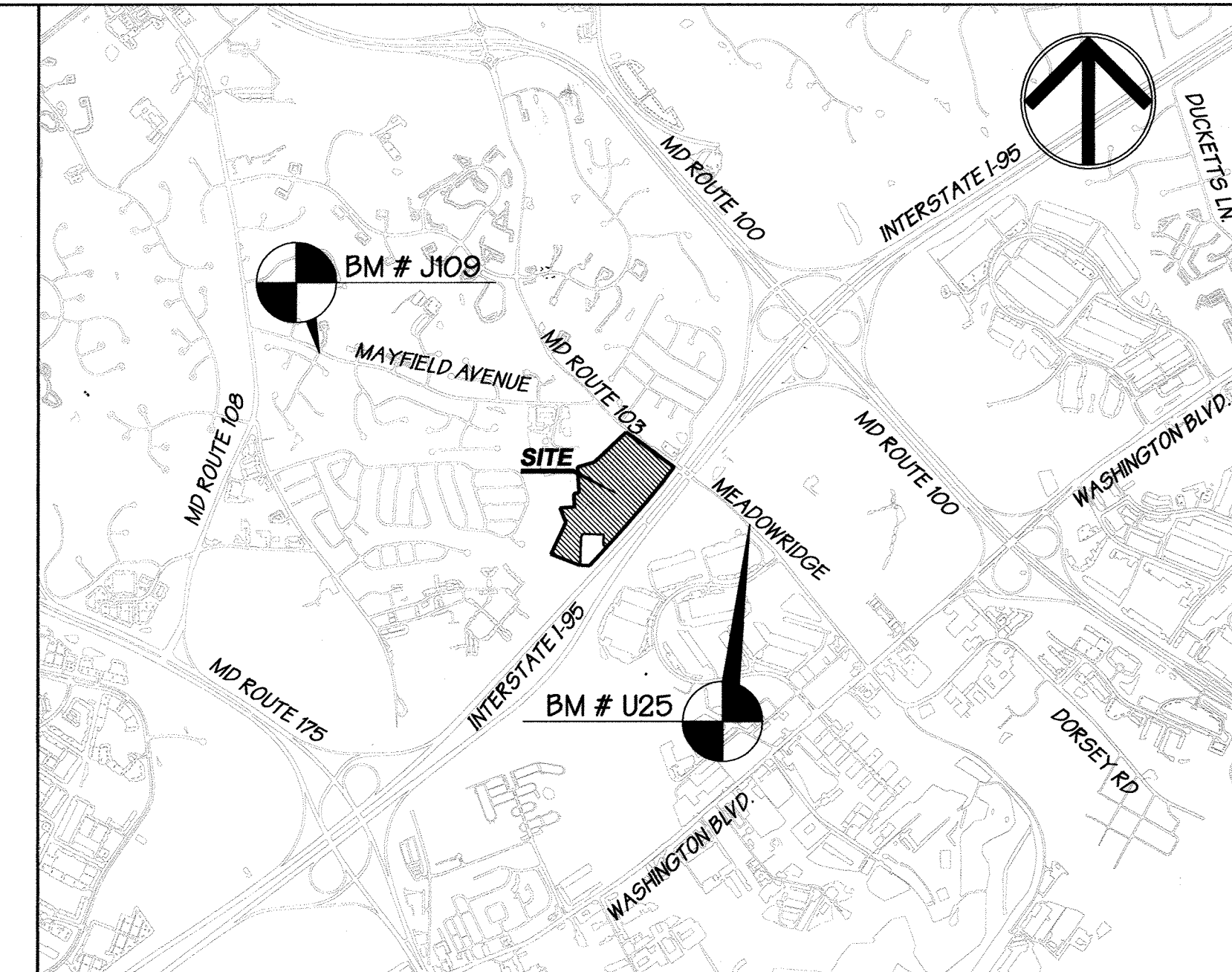
TOTAL AREA OF SITE	1,439,642 Sq. Ft. or 33.05 Ac. +/-
LIMIT OF DISTURBED AREA	456,800 Sq. Ft. or 10.49 Ac. +/-
PRESENT ZONING DESIGNATION	POR
DEED REFERENCE	111482/00388 (p454), 11098/00001 (p500), 13989/00303 (p524), 12931/00328 (p536), 11482/00388 (p750), 09009/00161 (PA2, A3, A4)
PLAT REFERENCE	
APPLICABLE DPZ FILE REFERENCES	F-05-103, WP-05-86, SDP-05-072, F-06-114, WP-10-144, ECP-13-063, WP-13-156, WP-14-012, F-14-035
EXISTING USE	GENERAL OFFICE
PROPOSED USE	GENERAL OFFICE & RETAIL
TOTAL BUILDING FLOOR AREA	230,155 Sq.Ft.
Existing (2-STORY) Bldg No. 2	70,734 Sq. Ft. per SDP-05072
Existing (2-STORY) Bldg No. 3	70,734 Sq. Ft. per SDP-05072
Proposed (2-STORY) Bldg No. 4	80,046 Sq. Ft. (Including basement emergency exit corridor/utility room/boiler room)
Proposed (1-STORY) Bldg No. 5	11,200 Sq. Ft.
FLOOR AREA RATIO	0.16
PARKING SPACES REQUIRED:	787 SPACES
	OFFICE: 221,514' 3.3/1000 = 731
	RETAIL: 11,200' 5.0/1000 = 56
PARKING SPACES PROVIDED:	1081 SPACES
	1037 STANDARD SPACES
	19 COMPACT SPACES
	25 HANDICAP SPACES

AREA OF WETLANDS (BUFFERS):	1.21 Ac. (0.00 Ac. within LOD)
AREA OF FLOODPLAINS (BUFFERS):	0.00 Ac.
AREA OF FOREST:	8.3 Ac. (4.6 Ac. within LOD)
AREA OF STEEP SLOPES >16% within LOD:	1.82 Ac.
AREA OF STEEP SLOPES >25% within LOD:	0.52 Ac. (There are no contiguous areas > 20,000 s.f.)
AREA OF ERODIBLE SOILS:	1.67 Ac. of SrC/SrD (0.00 Ac. within LOD)
IMPERVIOUS AREA within LOD:	5.56 Ac.
GREEN AREA within LOD:	4.93 Ac.

- Phase 1 Site Area (SDP 05-072): 1,058,910 s.f. or 24.31 acres (Parcels A1 - A4).
 Phase 2 Additional Site Area: 500,932 s.f. or 11.50 acres (Parcels 454,500,524,536,750)
 Total Site Area of The Meadows Corporate Park: 1,559,842 s.f. or 35.81 acres (Parcels A1, A5-A9)
 Parcel A1: 120,200 s.f. or 2.76 ac - NOT PART OF PHASE 2 APPLICATION - DIFFERENT OWNER
- Phase 2 Site Area: 1,439,642 s.f. or 33.05 acres (Parcels A5-A9)

LEGEND

Existing Contour	--- 65.3 --- 65.0 ---	Drainage Divide	-----
Property Line	-----	Super Silt Fence	SSF
Proposed Contour	----- 630	Silt Fence	SF
Existing Storm Drain	-----	Silt Fence on Pavement	SFOP
Proposed Storm Drain	-----	Temporary Dike/Swale	←←←←←
Existing Sanitary	-----	Earth Dike	←←←←←
Existing Water	-----	Temporary Asphalt Berm	TAB
Existing Curb	-----	Inlet Protection	IP
Proposed Conc. Curb	-----	Stabilized Construction Entrance	SCOE
Existing Electric	-----	Gabion Inflow Protection	GP
Existing Telephone	-----	Rip-rap Inflow Protection	RRP
Existing Gas	-----		
Existing Spot Elevation	1604		
Proposed Spot Elevation	652.2+		
Limit of Disturbance		
Proposed ImperVIOUS Area	-----		
Proposed Permeable Pave	-----		
Ex. Slopes 15% - 25%	-----		
Ex. Slopes >25%	-----		
Conservation Easement Area	-----		
Tree Line	-----		



ADC MAP: 34E4

Vicinity Map
SCALE: 1" = 2,000'

BENCHMARKS

BM # J 109 ELEVATION 348.04
 NAD 83
 THE DISK IS SET IN A CONCRETE MONUMENT PROJECTING TEN CENTIMETERS AND THE DISK IS STAMPED J 109 1995 USC AND GS N 557,526.35 E 1,370,661.99

BM # U 25 ELEVATION 215.39
 NAD 83
 THE DISK IS SET IN A ROUND CONCRETE POST PROJECTING SIX INCHES AND THE DISK IS STAMPED U 25 1987 N 554,701.88 E 1,377,647.82

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SHEET NO. 5 - SITE DEVELOPMENT PLAN
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SHEET NO. 7 - GRADING PLAN
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SHEET NO. 22 - SOIL BORING LOGS
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SHEET NO. 31 - FOREST STAND DELINEATION
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SHEET NO. 33 - FOREST CONSERVATION PLAN
SHEET NO. 34 - FOREST CONSERVATION PLAN
SHEET NO. 35 - FOREST CONSERVATION NOTES

PARCEL NO.	STREET ADDRESS
Par A-5; Bldg. No. 2	6518 MEADOW RIDGE ROAD MD RTE. 103
Par A-6; Bldg. No. 3	6514 MEADOW RIDGE ROAD MD RTE. 103
Par A-7; Bldg. No. 4	6510 MEADOW RIDGE ROAD MD RTE. 103
Par A-9; Bldg. No. 5	6508 MEADOW RIDGE ROAD MD RTE. 103

SUBDIVISION NAME	SECTION NAME	PARCEL #
The Meadows Corporate Park		A5, A6, A7, A8, A9

PLATS	GRID	ZONE	MAP	ELECT. DIST.	CENSUS TRACT
22862	22	POR	37	1	6011.02

WATER CODE	SEWER CODE
B-02	4020000

APPROVED: Howard County Department of Planning and Zoning

Chad Edmond 5-12-14
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Ke-J. S. ... 6-18-14
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Mark ... 6/18/14
 DIRECTOR DATE

PROFESSIONAL CERTIFICATION:
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 29179, EXPIRATION DATE: 06-16-2015.

4-23-14

MATIS WARFIELD
 Consulting Engineers

10540 York Road, Suite M
 Hunt Valley, Maryland 21030
 PHONE 410.683.7004 FAX 410.683.1798
 www.matiswarfield.com

Owner/Developer:
Merritt-MR, LLC
 2066 Lord Baltimore Drive
 Baltimore, Maryland 21244
 ph: 410-298-2600
 fx: 410-298-9644

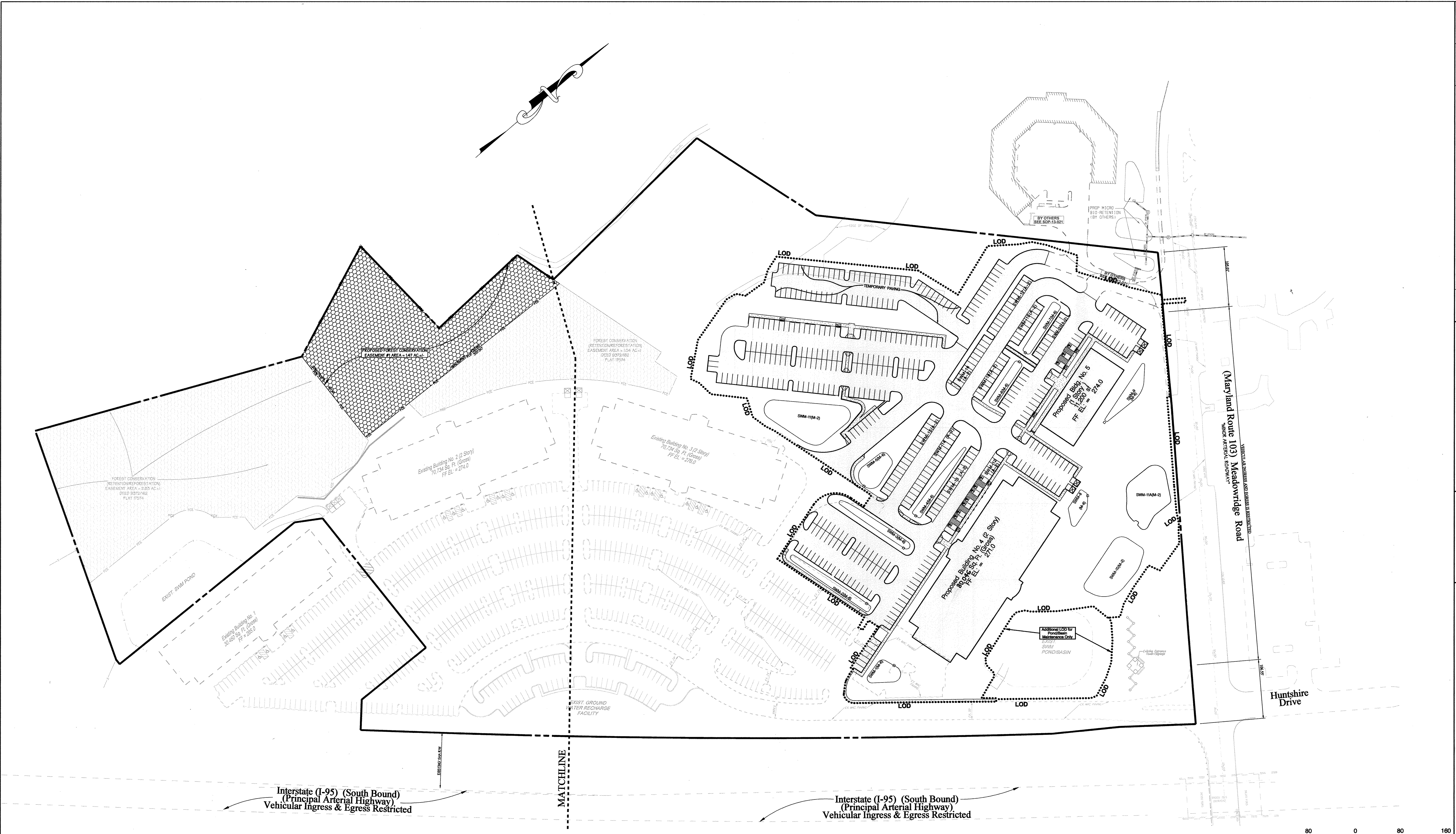
NO.	DESCRIPTION	BY	DATE
1	Add temporary parking and submerged gravel wetland SWM-11A.	MWI	1/28/15
2	Update Bldg 4 Square footage and Parking required	MWI	7/26/18

COVER SHEET, GENERAL NOTES & LOCATION MAP
The Meadows Corporate Park
Phase 2
 6510 - 6518 MEADOW RIDGE ROAD MD RTE. 103
 GREEN BUILDING

TAX MAP: 37;
 PARCELS: A5-A9
 ELECTION DISTRICT: 1
 ZONE: POR

GENERAL OFFICE
 SCALE: As Shown
 DATE: April 23, 2014
 SHEET: 1 of 35

SDP-13-070

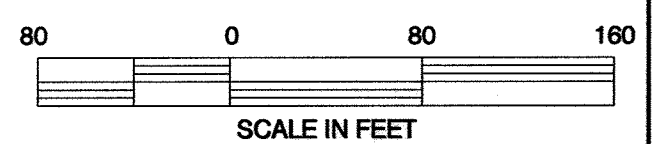


NO.	DESCRIPTION	BY	DATE
1	Add temporary parking and submerged gravel wetland SWM-11A.	MMI	1/28/2016
2	Update's Bldg 4 square footage for a basement boiler room.	MW	7/24/16

Owner/Developer:
Merritt-MR, LLC
 2068 Lord Baltimore Drive
 Baltimore, Maryland 21244
 ph: 410-298-2600
 fx: 410-298-9644



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 Consulting Engineers
 10540 York Road, Suite M
 Hunt Valley, Maryland 21030
 PHONE 410.683.7004 FAX 410.683.1798
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APPROVED: Howard County Department of Planning and Zoning

[Signature] 4-8-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION BY DATE

[Signature] 4-13-15
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 4/13/15
 DIRECTOR DATE

REVISED SITE DEVELOPMENT PLAN
OVERALL PROPERTY INDEX
The Meadows Corporate Park
Phase 2
 6510 - 6518 MEADOW RIDGE ROAD MD RTE. 103
 GREEN BUILDING

TAX MAP: 37;
 PARCELS: A5-A9
 ELECTION DISTRICT: 1
 ZONE: POR

GENERAL OFFICE
 SCALE: 1" = 80'
 DATE: April 23, 2014
 SHEET: 2 of 35

The purpose for Revision #2 to SDP-13-070 is to update the Building 4 square footage for a basement boiler room.

The purpose for Revision #1 to SDP-13-070 is to revise to add SWM-11A to serve the shared improvement of SDP-13-021 and SDP-13-070.

SDP-13-070



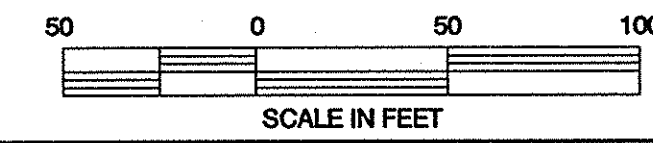
SEE MATCHLINE THIS SHEET

SEE MATCHLINE THIS SHEET

MATCHLINE 'A-A' (SEE SHEET 4)

LEGEND

- Existing Contour
- Property Line
- Proposed Contour
- Existing Storm Drain
- Proposed Storm Drain
- Existing Sanitary
- Existing Water
- Existing Curb
- Proposed Conc. Curb
- Existing Electric
- Existing Telephone
- Existing Gas
- Existing Spot Elevation
- Proposed Spot Elevation
- Tree Line
- 5' Wide Painted Crosswalk
- Pipe Railing
- Limit of Disturbance
- Proposed Impervious Area
- Proposed Permeable Pave
- Conservation Easement Area
- Ex. Slopes 15% - 25%
- Ex. Slopes >25%



APPROVED: Howard County Department of Planning and Zoning

<i>[Signature]</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	8-12-14 DATE
<i>[Signature]</i> CHIEF, DIVISION OF LAND DEVELOPMENT	6-18-14 DATE
<i>[Signature]</i> DIRECTOR	<i>[Signature]</i> DATE

EXISTING CONDITIONS PLAN
The Meadows Corporate Park
Phase 2
6510 - 6518 MEADOW RIDGE ROAD MD RTE. 103
GREEN BUILDING

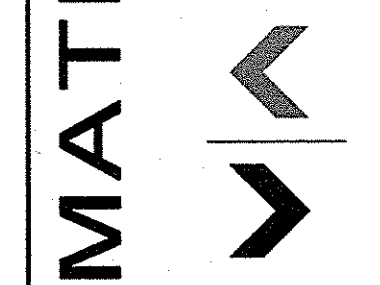
TAX MAP: 37;
PARCELS: A5-A9
ELECTION DISTRICT: 1
ZONE: POR
GENERAL OFFICE
SCALE: 1" = 50'
DATE: April 23, 2014
SHEET: 3 of 35

SDP-13-070

Owner/Developer:
Merritt-MR, LLC
2066 Lord Baltimore Drive
Baltimore, Maryland 21244
Ph: 410-286-2600
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Interstate (I-95) (South Bound)
(Principal Arterial Highway)
Vehicular Ingress & Egress Restricted

SEE MATCHLINE THIS SHEET

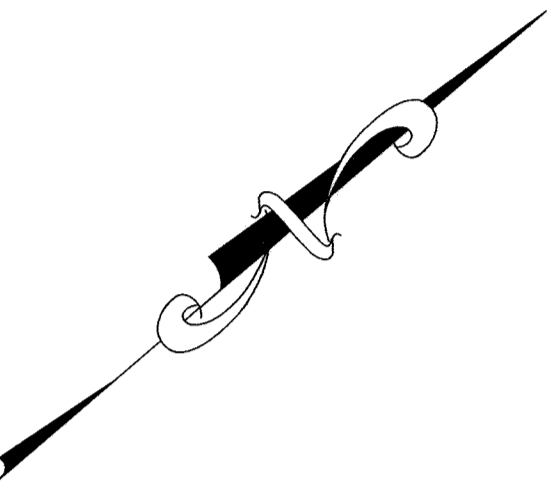
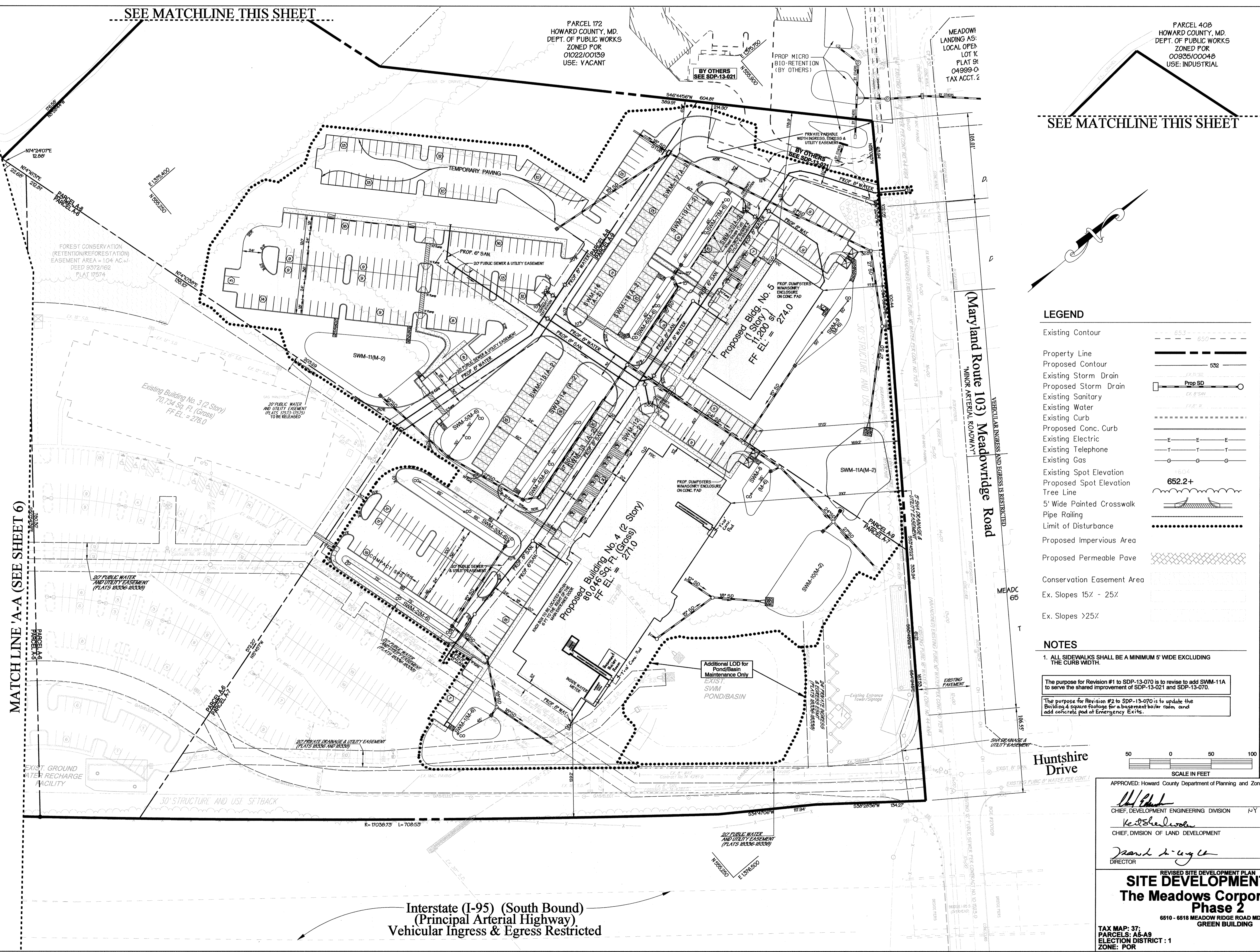
SEE MATCHLINE THIS SHEET

PARCEL 172
HOWARD COUNTY, MD.
DEPT. OF PUBLIC WORKS
ZONED FOR
O1022/O0139
USE: VACANT

MEADOW
LANDING A5:
LOCAL OPEN
LOT 1C
PLAT 9:
O4989-0
TAX ACCT. 2

PARCEL 408
HOWARD COUNTY, MD.
DEPT. OF PUBLIC WORKS
ZONED FOR
O0935/O0048
USE: INDUSTRIAL

MATCH LINE 'A-A' (SEE SHEET 6)

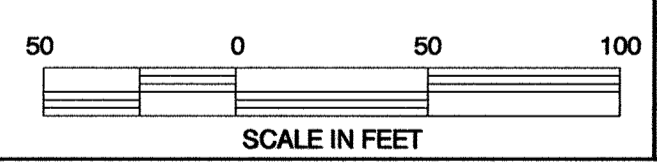


LEGEND

- Existing Contour
- Property Line
- Proposed Contour
- Existing Storm Drain
- Proposed Storm Drain
- Existing Sanitary
- Existing Water
- Existing Curb
- Proposed Conc. Curb
- Existing Electric
- Existing Telephone
- Existing Gas
- Existing Spot Elevation
- Proposed Spot Elevation
- Tree Line
- 5' Wide Painted Crosswalk
- Pipe Railing
- Limit of Disturbance
- Proposed Impervious Area
- Proposed Permeable Pave
- Conservation Easement Area
- Ex. Slopes 15% - 25%
- Ex. Slopes >25%

NOTES

1. ALL SIDEWALKS SHALL BE A MINIMUM 5' WIDE EXCLUDING THE CURB WIDTH.
- The purpose for Revision #1 to SDP-13-070 is to revise to add SWM-11A to serve the shared improvement of SDP-13-021 and SDP-13-070.
- The purpose for Revision #2 to SDP-13-070 is to update the Building 4 square footage for a basement boiler room, and add concrete pad at Emergency Exit.



APPROVED: Howard County Department of Planning and Zoning

[Signature] 4/8/15
CHIEF, DEVELOPMENT ENGINEERING DIVISION NY DATE

[Signature] 4-13-15
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 4/14/15
DIRECTOR DATE

REVISED SITE DEVELOPMENT PLAN
SITE DEVELOPMENT PLAN
The Meadows Corporate Park
Phase 2
6510 - 6518 MEADOW RIDGE ROAD MD RTE. 103
GREEN BUILDING

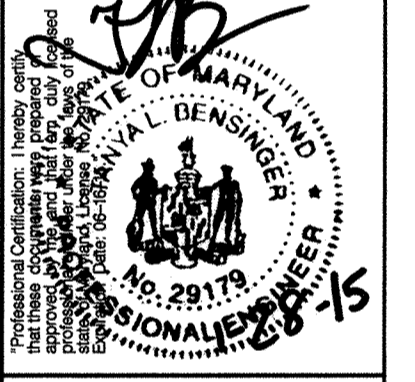
TAX MAP: 37;
PARCELS: A5-A9
ELECTION DISTRICT: 1
ZONE: POR

GENERAL OFFICE
SCALE: 1" = 50'
DATE: April 23, 2014
SHEET: 5 of 35

SDP-13-070

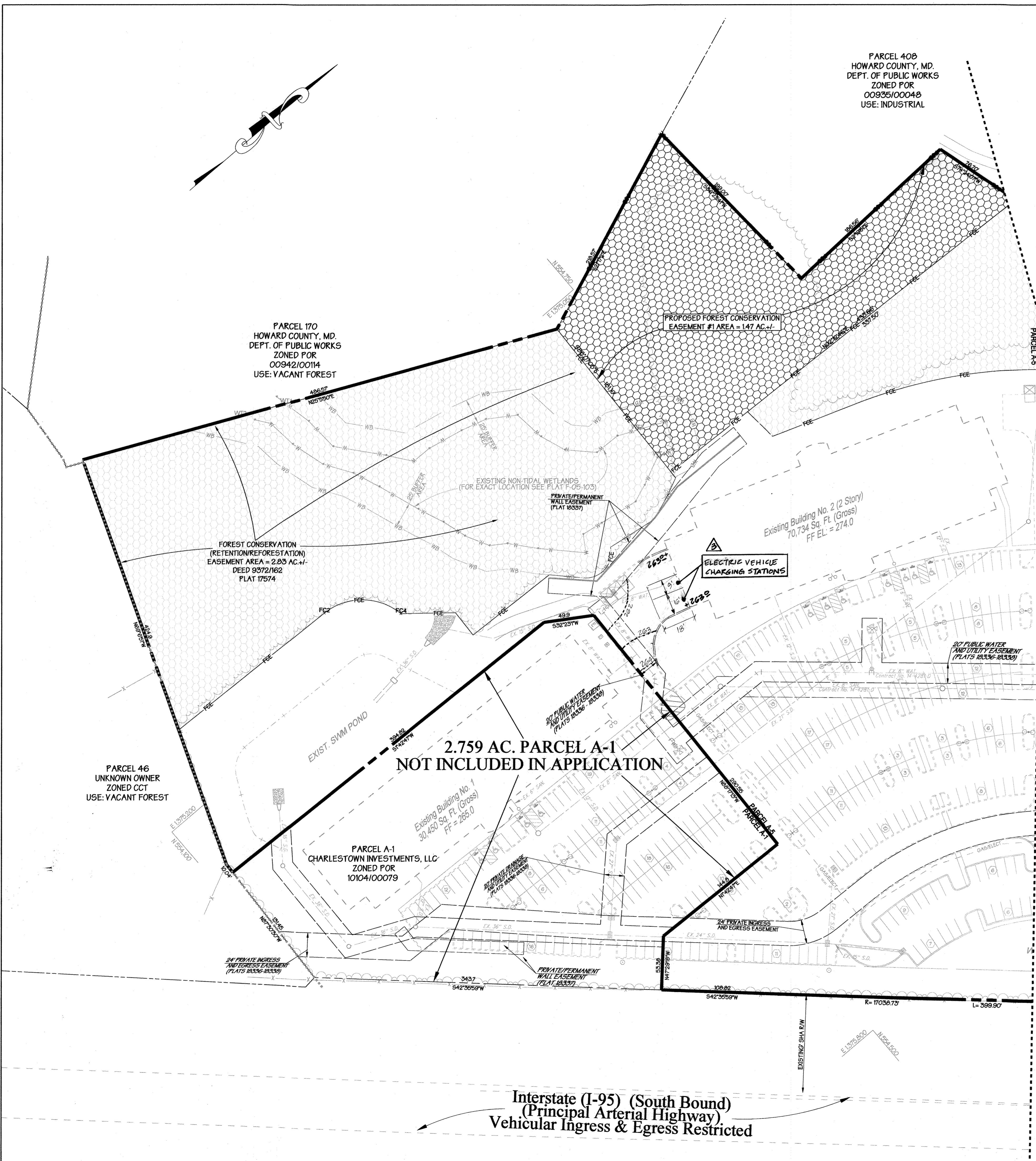
NO.	DESCRIPTION	BY	DATE
1	Add temporary parking and submerged gravel wetland SWM-11A.	MM	1/28/2015
2	Update Building 4 square footage for basement boiler room.	MM	7/16/15

Owner/Developer:
Merritt-MR, LLC
2086 Lord Baltimore Drive
Baltimore, Maryland 21244
ph: 410-298-2600
fx: 410-298-9644



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Consulting Engineers
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Hunt Valley, Maryland 21030
PHONE 410.683.7004 FAX 410.683.1798
www.matiswarfield.com

Interstate (I-95) (South Bound)
(Principal Arterial Highway)
Vehicular Ingress & Egress Restricted



PARCEL 40B
HOWARD COUNTY, MD.
DEPT. OF PUBLIC WORKS
ZONED FOR
00935/00048
USE: INDUSTRIAL

PARCEL 170
HOWARD COUNTY, MD.
DEPT. OF PUBLIC WORKS
ZONED FOR
00942/00114
USE: VACANT FOREST

PROPOSED FOREST CONSERVATION
EASEMENT #1 AREA = 1.47 AC +/-

FOREST CONSERVATION
(RETENTION/REFORESTATION)
EASEMENT AREA = 2.83 AC +/-
DEED 9372/162
PLAT 17574

Existing Building No. 2 (2 Story)
70,734 Sq. Ft. (Gross)
FF EL. = 274.0

ELECTRIC VEHICLE
CHARGING STATIONS

2.759 AC. PARCEL A-1
NOT INCLUDED IN APPLICATION

Existing Building No. 1
30,450 Sq. Ft. (Gross)
FF = 265.0

PARCEL A-1
CHARLESTOWN INVESTMENTS, LLC
ZONED FOR
10104/00079

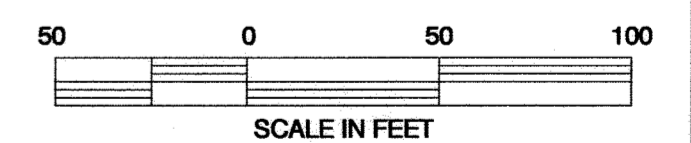
PARCEL 46
UNKNOWN OWNER
ZONED CCT
USE: VACANT FOREST

MATCH LINE 'A-A' (SEE SHEET 5)

Interstate (I-95) (South Bound)
(Principal Arterial Highway)
Vehicular Ingress & Egress Restricted

LEGEND

- Existing Contour --- 65.3 --- 65.0 ---
- Property Line ----- 532 -----
- Proposed Contour ----- 532 -----
- Existing Storm Drain --- EX. S.D. ---
- Proposed Storm Drain --- Prop SD ---
- Existing Sanitary --- EX. S.S. ---
- Existing Water --- EX. W. ---
- Existing Curb ----- EX. C. -----
- Proposed Conc. Curb ----- EX. C. -----
- Existing Electric --- E --- E --- E ---
- Existing Telephone --- T --- T --- T ---
- Existing Gas --- G --- G --- G ---
- Existing Spot Elevation +60.4
- Proposed Spot Elevation 652.2+
- Tree Line ~ ~ ~ ~ ~
- 5' Wide Painted Crosswalk || || || || ||
- Pipe Railing - - - - -
- Limit of Disturbance
- Proposed Impervious Area [Stippled Box]
- Proposed Permeable Pave [Cross-hatched Box]
- Conservation Easement Area [Dotted Box]
- Ex. Slopes 15% - 25% [Diagonal Lines Box]
- Ex. Slopes >25% [Steeper Diagonal Lines Box]



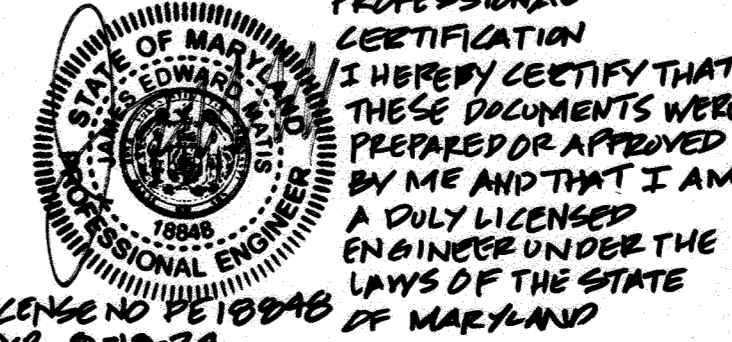
Owner/Developer:
Merritt-MR, LLC
2066 Lord Baltimore Drive
Baltimore, Maryland 21244
ph: 410-298-2600
fx: 410-298-9644



MATIS WARFIELD
Consulting Engineers
10540 York Road, Suite M
Hunt Valley, Maryland 21030
PHONE 410.683.7004 FAX 410.683.1798
www.matiswarfield.com

SIGNED AND SEALED AS TO
RED-LINE REVISION 3 (3-20-25)

PURPOSE FOR REDLINE REVISION 3
ADD ELECTRIC VEHICLE CHARGING
STATIONS AT WEST SIDE OF
BUILDING NO. 2
3-20-23
BY: MATISWARFIELD, INC.



APPROVED: Howard County Department of Planning and Zoning

[Signature] 5-12-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 6-18-14
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

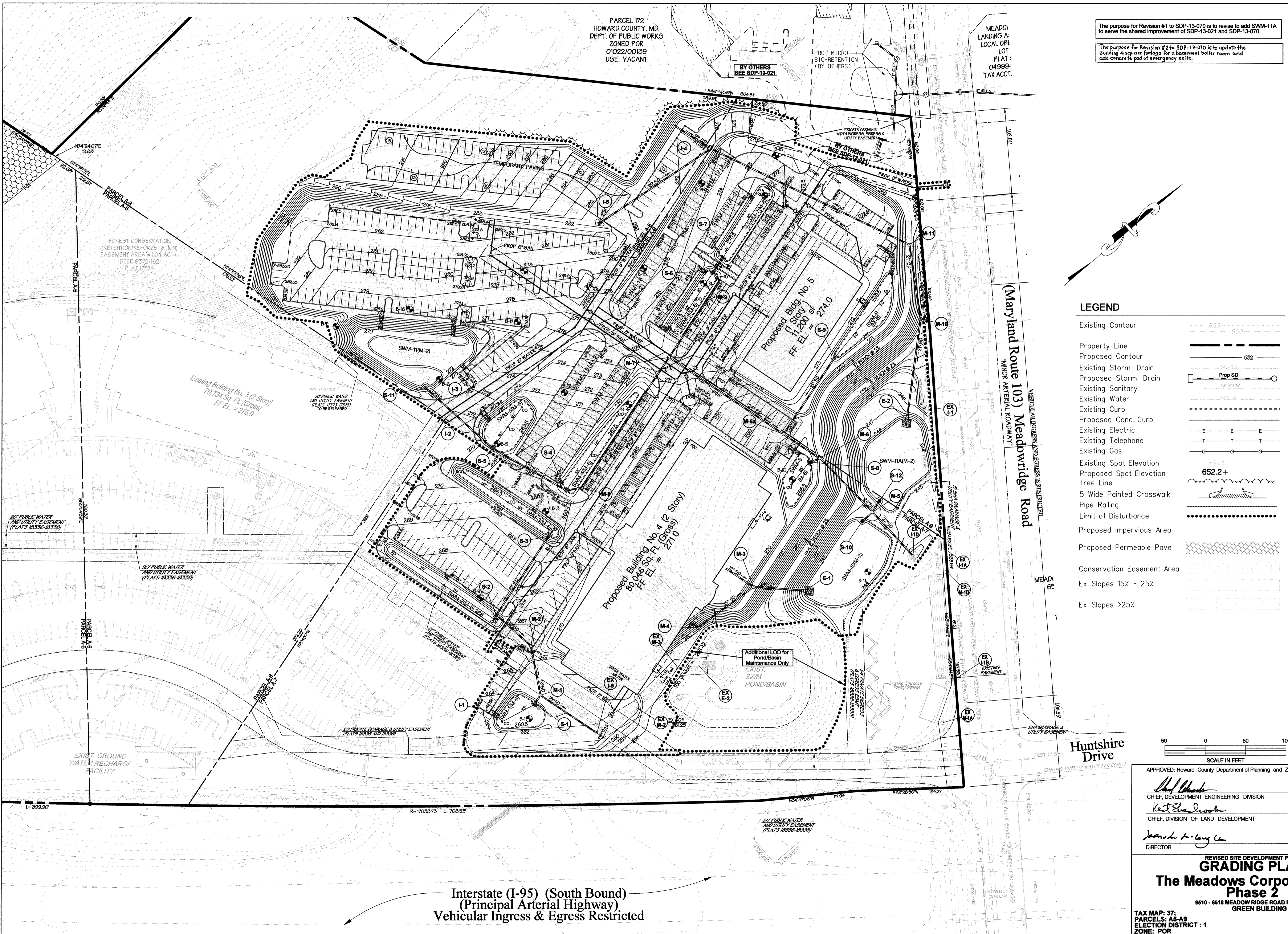
[Signature] 6/18/14
DIRECTOR DATE

SITE DEVELOPMENT PLAN
The Meadows Corporate Park
Phase 2
6510 - 6518 MEADOW RIDGE ROAD MD RTE. 103
GREEN BUILDING

TAX MAP: 37-
PARCELS: A5-A9
ELECTION DISTRICT: 1
ZONE: POR

GENERAL OFFICE
SCALE: 1" = 50'
DATE: April 23, 2014
SHEET: 6 of 35

SDP-13-070



The purpose for Revision #1 to SDP-13-070 is to revise to add SWM-11A to serve the shared improvement of SDP-13-021 and SDP-13-070.

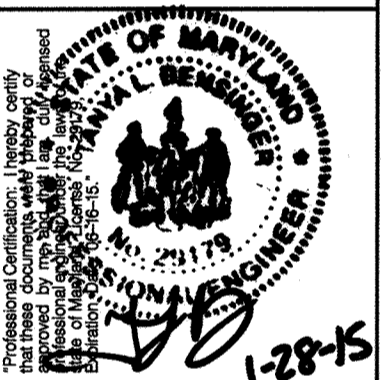
The purpose for Revision #2 to SDP-13-070 is to update the Building 4 square footage for a basement boiler room and add concrete pad of emergency exits.

NO.	DESCRIPTION	BY	DATE
1	Add temporary parking and submerged gravel wetland SWM-11A.	MW	1/28/2016
2	Update Building 4 Square Footage for a basement boiler room.	MW	7/26/18

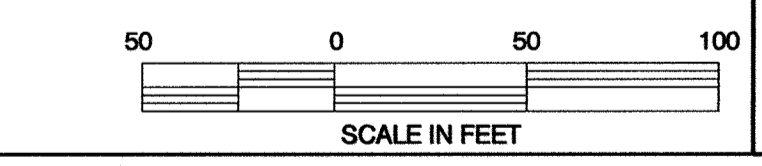
LEGEND

Existing Contour	---
Property Line	---
Proposed Contour	---
Existing Storm Drain	---
Proposed Storm Drain	---
Existing Sanitary	---
Existing Water	---
Existing Curb	---
Proposed Conc. Curb	---
Existing Electric	---
Existing Telephone	---
Existing Gas	---
Existing Spot Elevation	---
Proposed Spot Elevation	---
Tree Line	---
5' Wide Painted Crosswalk	---
Pipe Railing	---
Limit of Disturbance	---
Proposed Impervious Area	---
Proposed Permeable Pave	---
Conservation Easement Area	---
Ex. Slopes 15% - 25%	---
Ex. Slopes >25%	---

Owner/Developer:
Merritt-MR, LLC
 2066 Lord Baltimore Drive
 Baltimore, Maryland 21244
 ph. 410-298-2600
 fx. 410-298-9644



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 10540 York Road, Suite M
 Hunt Valley, Maryland 21030
 PHONE 410.683.7004 FAX 410.683.1798
 www.matiswarfield.com



APPROVED: Howard County Department of Planning and Zoning

Shel Shuck
 CHIEF, DEVELOPMENT ENGINEERING DIVISION JY 4-8-15
 DATE

Karl She... ..
 CHIEF, DIVISION OF LAND DEVELOPMENT 4-13-15
 DATE

Janice A. Long Co
 DIRECTOR 4/12/15
 DATE

REVISED SITE DEVELOPMENT PLAN
GRADING PLAN
The Meadows Corporate Park
Phase 2
 6610 - 6618 MEADOW RIDGE ROAD MD RTE. 103
 GREEN BUILDING

TAX MAP: 37;
 PARCELS: A5-A9
 ELECTION DISTRICT: 1
 ZONE: POR

GENERAL OFFICE
 SCALE: 1" = 50'
 DATE: April 23, 2014
 SHEET: 7 of 35

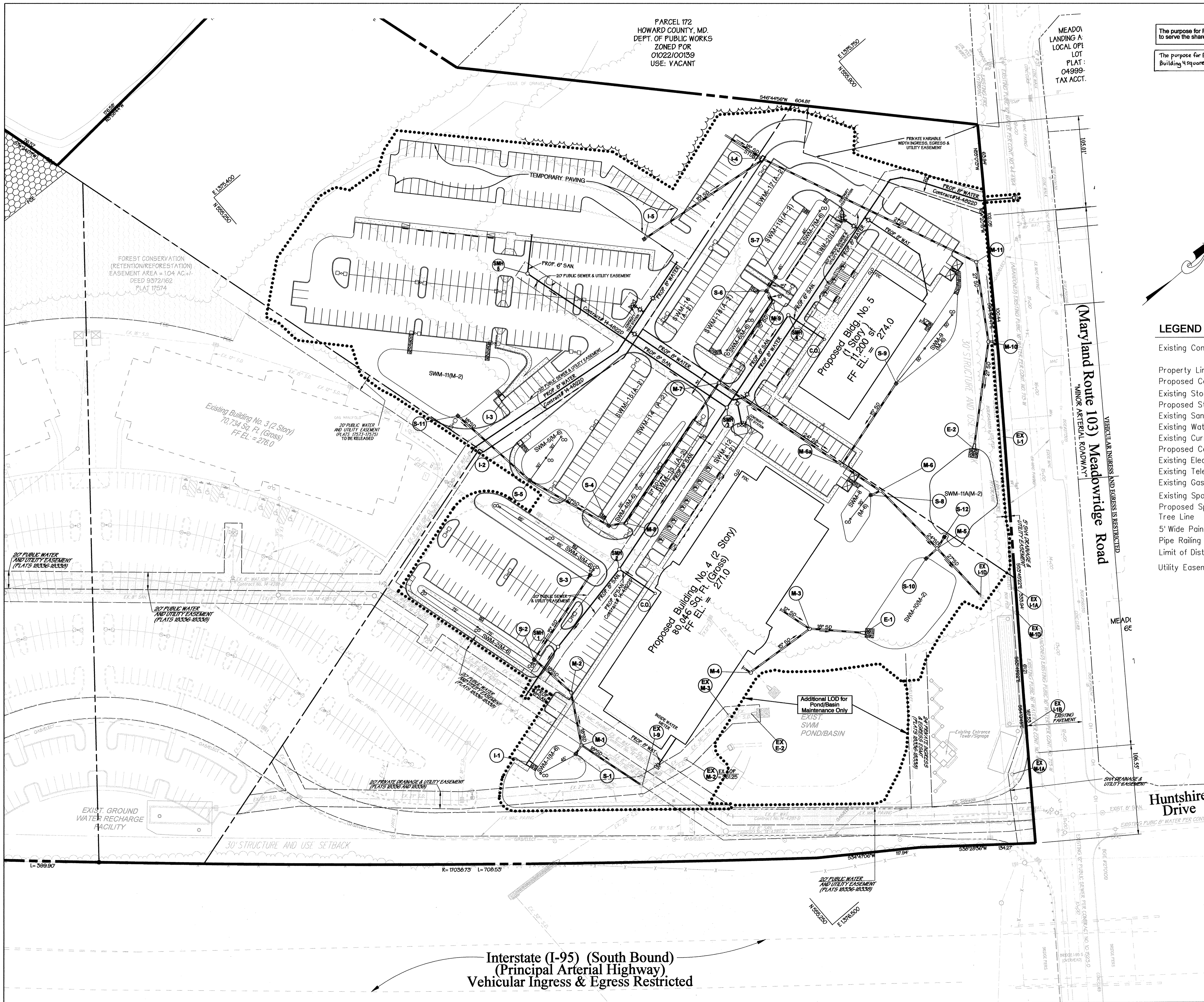
SDP-13-070

PARCEL 172
HOWARD COUNTY, MD.
DEPT. OF PUBLIC WORKS
ZONED FOR
O1022/00139
USE: VACANT

MEADOWS
LANDING A
LOCAL OPT
LOT
PLAT:
04999-
TAX ACCT.

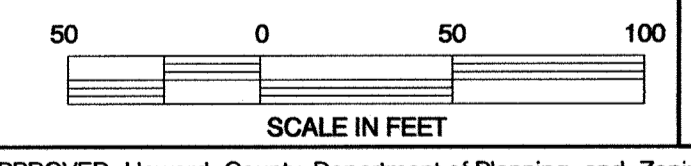
The purpose for Revision #1 to SDP-13-070 is to revise to add SWM-11A to serve the shared improvement of SDP-13-021 and SDP-13-070.

The purpose for Revision #2 to SDP-13-070 is to update the Building 4 square footage for a basement boiler room.



LEGEND

- Existing Contour: --- 653 --- 650 ---
- Property Line: ————
- Proposed Contour: - - - - - 552 - - - - -
- Existing Storm Drain: ————
- Proposed Storm Drain: ————
- Existing Sanitary: ————
- Existing Water: ————
- Existing Curb: ————
- Proposed Conc. Curb: ————
- Existing Electric: ————
- Existing Telephone: ————
- Existing Gas: ————
- Existing Spot Elevation: +604
- Proposed Spot Elevation: 652.2+
- Tree Line: ————
- 5' Wide Pointed Crosswalk: ————
- Pipe Railing: ————
- Limit of Disturbance: ————
- Utility Easements: ————



NO.	DESCRIPTION	BY	DATE
1	Add temporary parking and submarged gravel wetland SWM-11A.	MMI	1/28/2015
2	Update Building 4 Square Footage for a basement boiler room.	MMI	7/24/15

Owner/Developer:
Merritt-MR, LLC
2066 Lord Baltimore Drive
Baltimore, Maryland 21244
ph: 410-298-2600
fx: 410-298-9644



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Hunt Valley, Maryland 21030
PHONE 410.883.7004 FAX 410.683.1798
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APPROVED: Howard County Department of Planning and Zoning

[Signature] 4.8.15
CHIEF, DEVELOPMENT ENGINEERING DIVISION JJY DATE

[Signature] 4.13.15
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

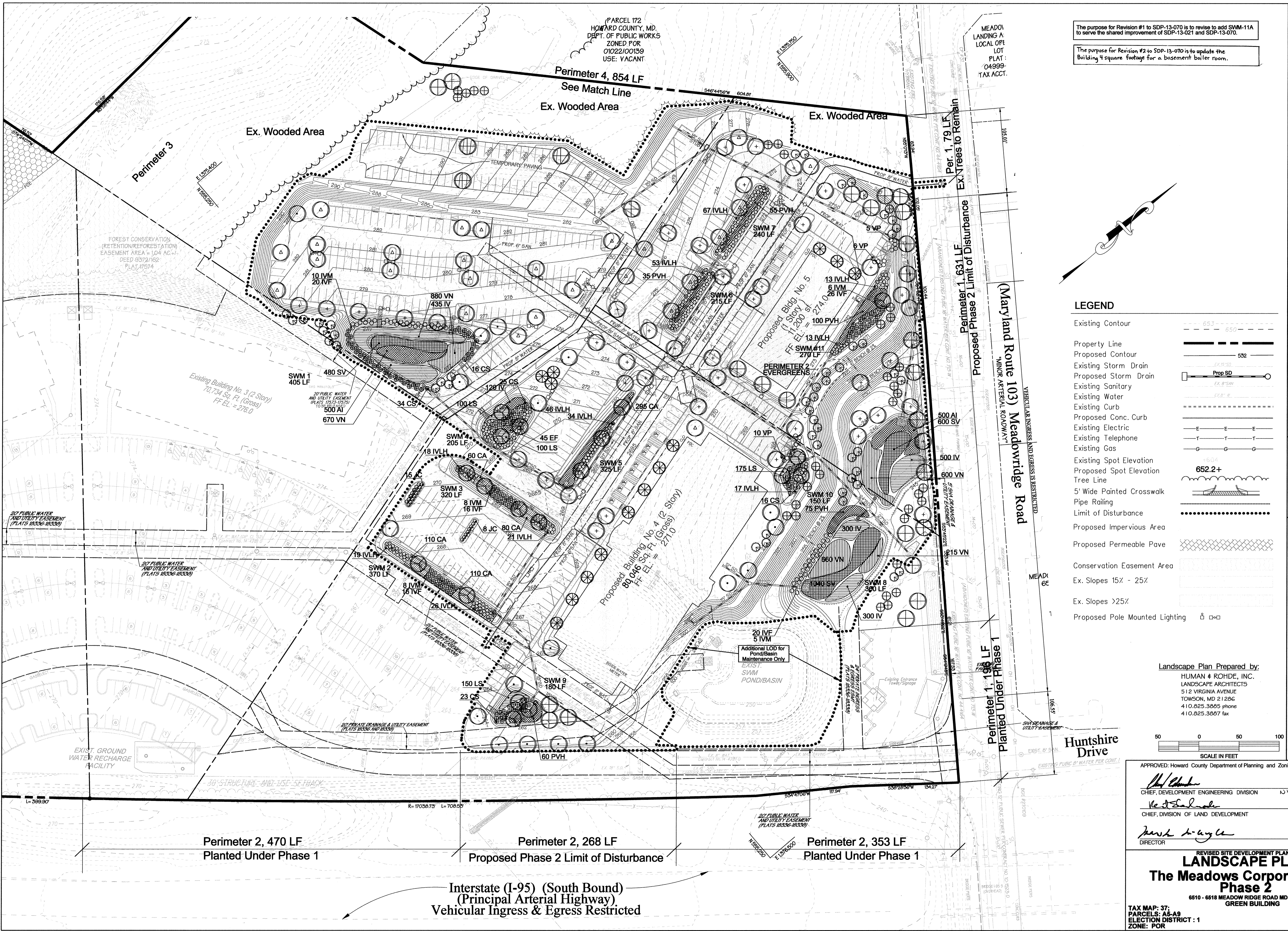
[Signature] 4/23/15
DIRECTOR DATE

REVISED SITE DEVELOPMENT PLAN
UTILITY PLAN
The Meadows Corporate Park
Phase 2
8610 - 8618 MEADOW RIDGE ROAD MD RTE. 103
GREEN BUILDING

TAX MAP: 37;
PARCELS: A5-A9
ELECTION DISTRICT: 1
ZONE: POR

GENERAL OFFICE
DATE: April 23, 2015
SHEET: 8 of 35

Interstate (I-95) (South Bound)
(Principal Arterial Highway)
Vehicular Ingress & Egress Restricted



PARCEL 172
 HOWARD COUNTY, MD.
 DEPT. OF PUBLIC WORKS
 ZONED FOR
 O1022/00139
 USE: VACANT

MEADOW
 LANDING A
 LOCAL OPT
 LOT
 PLAT:
 04999-
 TAX ACCT.

The purpose for Revision #1 to SDP-13-070 is to revise to add SWM-11A to serve the shared improvement of SDP-13-021 and SDP-13-070.

The purpose for Revision #2 to SDP-13-070 is to update the Building 4 square footage for a basement boiler room.

LEGEND

Existing Contour	---
Property Line	---
Proposed Contour	---
Existing Storm Drain	---
Proposed Storm Drain	---
Existing Sanitary	---
Existing Water	---
Existing Curb	---
Proposed Conc. Curb	---
Existing Electric	---
Existing Telephone	---
Existing Gas	---
Existing Spot Elevation	652.2+
Proposed Spot Elevation	652.2+
Tree Line	---
5' Wide Painted Crosswalk	---
Pipe Railing	---
Limit of Disturbance	---
Proposed Impervious Area	---
Proposed Permeable Pave	---
Conservation Easement Area	---
Ex. Slopes 15% - 25%	---
Ex. Slopes >25%	---
Proposed Pole Mounted Lighting	---

Landscape Plan Prepared by:
HUMAN & ROHDE, INC.
 LANDSCAPE ARCHITECTS
 512 VIRGINIA AVENUE
 TOWSON, MD 21286
 410.825.3885 phone
 410.825.3887 fax

APPROVED: Howard County Department of Planning and Zoning

<i>[Signature]</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	NJY	4/9/15 DATE
<i>[Signature]</i> CHIEF, DIVISION OF LAND DEVELOPMENT		4-13-15 DATE
<i>[Signature]</i> DIRECTOR		4/13/15 DATE

REVISED SITE DEVELOPMENT PLAN
LANDSCAPE PLAN
The Meadows Corporate Park
Phase 2
 6810 - 6818 MEADOW RIDGE ROAD MD RTE. 103
 GREEN BUILDING

TAX MAP: 37;
 PARCELS: A5-A9
 ELECTION DISTRICT: 1
 ZONE: POR

GENERAL OFFICE
 SCALE: 1" = 50'
 DATE: April 23, 2014
 SHEET: 9 of 35

Owner/Developer:
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MATIS WARFIELD
 Consulting Engineers
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 Hunt Valley, Maryland 21030
 PHONE 410.683.7004 FAX 410.683.1798
 www.matiswarfield.com

NO. DESCRIPTION

1	Add temporary parking and submerged gravel wetland SWM-11A.	DATE	7/26/16
2	Update Building 4 Square Footage for a basement boiler room.	BY	MW1

Landscape Notes

A. STANDARDS:
 1. ALL PLANT MATERIAL, CONSTRUCTION METHODS AND MATERIAL PLACEMENT SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF "AMERICAN STANDARD FOR NURSERY STOCK," AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC., THE "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS."

2. ALL TREES SHALL BE DELIVERED TO THE SITE BALLED AND BURLAPPED. ALL SHRUBS SHALL BE BALLED AND BURLAPPED OR IN CONTAINERS. ALL GRASSES & PERENNIALS SHALL BE IN CONTAINERS.
B. MAINTENANCE:
 1. AFTER THE PLANTING HAS BEEN APPROVED BY THE LANDSCAPE ARCHITECT AND THE OWNER, THE MAINTENANCE OF WATERING AND WEEDING OF SUCH PLANTS AND PLANTED AREAS SHALL BE PROVIDED BY THE OWNER. SINCE THE PLANTS ARE TO BE GUARANTEED BY THE CONTRACTOR, THE CONTRACTOR SHALL PERIODICALLY CHECK THE MAINTENANCE CONDUCTED BY THE OWNER. IF THE CONTRACTOR IS NOT SATISFIED WITH THE MAINTENANCE OF THE PLANTS, A WRITTEN REPORT, IN TRIPlicate, STATING APPROPRIATE CHANGES SHALL BE GIVEN IMMEDIATELY TO THE LANDSCAPE ARCHITECT. TWO COPIES WILL BE FORWARDED TO THE OWNER. BEGIN MAINTENANCE IMMEDIATELY AFTER PLANTING.

2. MAINTAIN TREES UNTIL FINAL ACCEPTANCE, BUT IN NO CASE, LESS THAN 90 DAYS AFTER FINAL ACCEPTANCE OF PLANTING. MAINTAIN ALL PLANTS BY PRUNING, CULTIVATING AND WEEDING AS REQUIRED FOR HEALTHY GROWTH. RESTORE PLANTING SAUCERS, TIGHTEN AND REPAIR STAKE AND GUY SUPPORTS AND RESET TREES TO PROPER GRADES OR VERTICAL POSITION AS REQUIRED. RESTORE OR REPLACE DAMAGED WRAPPINGS. SPRAY AS REQUIRED TO KEEP ALL PLANTS FREE OF INSECTS AND DISEASE.

C. WATERING
 1. IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHALL BE PERFORMED DAILY OR AS OFTEN AS NECESSARY DURING THE FIRST WEEK AND IN SUFFICIENT QUANTITIES TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATERING SHALL NOT BE DONE DURING THE HEAT OF THE DAY. CONTRACTOR SHALL PROVIDE A SEPARATE LUMP SUM IN THE OWNER'S LANDSCAPE BID FOR WATERING TO ALL NEW PLANTINGS DURING ONE GROWING SEASON.

D. EXCAVATION:
 1. DEPTH AND WIDTH OF EXCAVATION FOR PLANTING OF ALL PLANTS SHALL BE TO TWICE THE DEPTH AND WIDTH OF ROOT BALL OR CONTAINER OF PLANT TO BE INSTALLED, EXCEPT AS NOTED ON DETAILS.

E. TOPSOIL, PLANTING MIX, FERTILIZER, MULCH AND SOIL AMENDMENTS:

1. ALL TOPSOIL SHALL BE WELL GRADED LOAM OF GOOD UNIFORM QUALITY AND SHALL BE A NATURAL, FRAGILE SOIL FREE OF OBJECTS LARGER THAN ONE INCH IN ANY DIMENSION, AND FREE OF TOXIC SUBSTANCES, WEEDS AND ANY MATERIAL OR SUBSTANCES THAT MAY BE HARMFUL TO PLANT GROWTH. TOPSOIL SHALL CONTAIN AT LEAST ORGANIC MATTER. IF SUFFICIENT TOPSOIL IS NOT AVAILABLE ON THE SITE TO MEET THE DEPTH AS SPECIFIED HEREIN, THE CONTRACTOR SHALL FURNISH ADDITIONAL TOPSOIL. PRIOR TO TOPSOIL DELIVERY, THE CONTRACTOR SHALL OBTAIN THE LANDSCAPE ARCHITECT'S APPROVAL OF THE SOURCE FROM WHICH TOPSOIL IS TO BE FURNISHED.

2. FOR PLANTING MIX, MIX THOROUGHLY 2/3 APPROVED TOPSOIL (SEE "TOPSOIL") AND 1/3 APPROVED ORGANIC MATTER.
 3. FERTILIZER TABLETS OR SPIKES TO BE PLACED AT EACH TREE AND SHRUB AT A RATE OF 1 PER 2" OF TRUNK CALIPER OR GALLON OF ROOTBALL. TABLETS OR SPIKES SHALL NOT BE IN CONTACT WITH THE ROOTBALL.

4. MULCH MATERIAL SHALL BE OF UNIFORM SIZE, FINE SHREDDED TANBARK HARDWOOD MULCH OR APPROVED EQUAL. MULCH SHALL BE A REDDISH DARK BROWN COLOR AND SHALL BE

LAI D TO A UNIFORM MINIMUM DEPTH OF 2 INCHES. MULCH AREAS AROUND TREES AT THE RATE OF 1" OF DIAMETER PER OF TRUNK CALIPER.

5. HYDROGEL ABSORBENT MATERIAL SHALL BE ADDED TO THE PLANTING HOLE FOR EACH TREE AND SHRUB AT THE RATE OF 4 QUINCES PER 2-1/2" CALIPER OR GALLON OF ROOTBALL OF HYDROGEL MATERIAL SHALL BE VITERRA "GELSCAPE," "TERRASORB," OR APPROVED EQUAL.

F. SUBSTITUTIONS:
 1. IF A PLANT IS FOUND NOT TO BE SUITABLE OR AVAILABLE, THE LANDSCAPE CONTRACTOR IS TO NOTIFY THE LANDSCAPE ARCHITECT BEFORE BIDDING. THE OWNER OR LANDSCAPE ARCHITECT WILL THEN SELECT A REASONABLE ALTERNATE OR INFORM ALL LANDSCAPE CONTRACTORS OF THE AVAILABILITY OF THE ORIGINAL PLANT.
G. PRUNING, CLEANUP, PROTECTION OF EXISTING MATERIALS AND RESTORATION
 1. THE CONTRACTOR SHALL PRUNE PLANT MATERIAL WITHIN TWO (2) DAYS OF INSTALLATION IN ACCORDANCE WITH THE DETAILS AND AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
 2. DURING COURSE OF PLANTING, EXCESS AND WASTE MATERIALS SHALL BE CONTINUOUSLY AND PROMPTLY REMOVED, LAWN AREAS KEPT CLEAR, AND ALL REASONABLE PRECAUTIONS TAKEN TO AVOID DAMAGE TO ANY EXISTING LAWN, PAVING, ETC. NOT SCHEDULED FOR REMOVAL. WHEN PLANTING IN AN AREA HAS BEEN COMPLETED, THE AREA SHALL BE CLEANED UP THOROUGHLY. DEBRIS, RUBBISH, SUBSOIL AND WASTE MATERIALS SHALL BE CLEANED UP AND REMOVED FROM THE PROPERTY. EXISTING GRASS AREAS WHICH HAVE BEEN INJURED BY THE WORK SHALL BE REGRADED AND SOODED TO MATCH THE EXISTING LAWN; THE ENTIRE AREA SHALL BE HEAT AND CLEAN TO THE SATISFACTION OF THE LANDSCAPE ARCHITECT.

3. CONTRACTOR SHALL, AT ALL TIMES, PROTECT ALL PLANTS AND LAWN FROM DAMAGE. THE MOVING OF HEAVY EQUIPMENT OR MATERIAL OVER THE LAWN AREAS SHALL BE DONE ON PLANKS OR PONTOONS.

4. THE CONTRACTOR SHALL RESTORE TO THEIR ORIGINAL CONDITION ALL PAVEMENTS, SOODED OR PLANTED AREAS, STRUCTURES OR SUBSTRUCTURES, NOT SCHEDULED FOR REMOVAL, WHICH ARE DISTURBED BY THE CONTRACTOR DURING PLANTING OPERATIONS. SUCH RESTORATION SHALL BE IN A MANNER SATISFACTORY TO THE LANDSCAPE ARCHITECT AND AT NO ADDITIONAL COST TO THE OWNER.

H. FINAL INSPECTION AND GUARANTEE:

1. AFTER PLANTING IS COMPLETED (INCLUDING MULCHING AND CLEAN-UP) THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT IN WRITING TO REQUEST FINAL INSPECTION OF THE TOTAL PLANTING. THE LANDSCAPE ARCHITECT SHALL MAKE A FINAL INSPECTION VISIT AS SOON AS POSSIBLE. LANDSCAPE ARCHITECT SHALL NOTIFY THE LANDSCAPE CONTRACTOR, IN WRITING, WHEN ALL WORK IS SATISFACTORILY COMPLETE. IF WORK IS NOT SATISFACTORILY COMPLETE, THE LANDSCAPE ARCHITECT WILL NOTIFY THE LANDSCAPE CONTRACTOR, IN WRITING, AS TO THE DEFICIENCIES IN THE WORK AND THE NECESSARY CORRECTIVE MEASURES. THE LANDSCAPE CONTRACTOR WILL BE GIVEN A REASONABLE AMOUNT OF TIME TO CORRECT THE DEFICIENCIES, AND ANOTHER FINAL INSPECTION WILL BE SCHEDULED BY THE LANDSCAPE ARCHITECT.

2. ALL PLANT MATERIAL AND LAWN AREAS SHALL BE GUARANTEED TO BE IN A VIGOROUS GROWING CONDITION ONE YEAR FROM THE DATE OF FINAL INSPECTION AND ACCEPTANCE. AT THE TERMINATION OF THIS PERIOD, THE CONTRACTOR SHALL HAVE COMPLETED THE PRECEDING MAINTENANCE SCHEDULE. ANY PLANTS INFECTED WITH DISEASE OR INSECTS WILL BE REMOVED OR TREATED. ALL DEAD OR UNACCEPTABLE PLANTS WILL BE REPLACED BY THE SAME PLANTS AND SIZES DESIGNATED ON THE PLANT LIST. THESE PLANTS SHALL BE PLANTED, MULCHED AND GUY AS SPECIFIED HEREIN AND WITHOUT EXTRA COMPENSATION TO THE CONTRACTOR. AT THE COMPLETION OF ALL SUCH WORK AND WITH THE APPROVAL OF THE LANDSCAPE ARCHITECT, THE CONTRACT WILL BE CONSIDERED COMPLETE.

PLANT LIST

KEY	QUANTITY	BOTANICAL NAME COMMON NAME	SIZE	CONDITION	REMARKS
⊕	28	ACER RUBRUM 'RED SUNSET' 'RED SUNSET' RED MAPLE	2 1/2-3" CAL.	B + B	
⊕	44	QUERCUS PHELLOS 'HIGHTOWER' 'HIGHTOWER' WILLOW OAK	2 1/2-3" CAL.	B + B	
⊕	18	TILIA CORDATA 'GREEN SPIRE' 'LITTLE LEAF' LINDEN	2 1/2-3" CAL.	B + B	
⊕	26	ZELKOVA SERRATA 'GREEN VASE' 'GREEN VASE' ZELKOVA	2 1/2-3" CAL.	B + B	
⊕	14	LAGERSTROEMIA INDICA 'TUSCARORA' 'TUSCARORA' CRAPEMYRTLE	8-10' HT.	B + B	
⊕	19	MAGNOLIA VIRGINIANA SWEETBAY MAGNOLIA	8-10' HT.	B + B	
⊕	33	FINLUS STROBUS EASTERN WHITE PINE	6-8' HT.	B + B	SPACE 10-12' O.C. STAGGER
⊕	49	THUJA X 'GIGANTEOIDES' GREEN GIANT ARBORVITAE	6-8' HT.	B + B	SPACE 10-12' O.C. STAGGER
CS	114	CORNUS SERICEA 'FLAVIRAMEA' YELLOW TWIG DOGWOOD	24-30" HT.	#5 CONT.	SPACE 5' O.C.
IVLH	331	ITEA VIRGINICA 'LITTLE HENRY' 'LITTLE HENRY' SWEETSPICE	18-24" SPD	#3 CONT.	SPACE 4' O.C.
JC	38	JUNIPERUS CHINENSIS 'OLD GOLD' 'OLD GOLD' JUNIPER	18-24" SPD	#3 CONT.	SPACE 4' O.C.
VP	21	VIBURNUM PRAGENSE PRAGUE VIBURNUM	30-36" HT.	B + B	SPACE 5' O.C.
IVM	37	ILEX VERTICILLATA 'JIM DANDY' 'JIM DANDY' WINTERBERRY HOLLY	24-30" HT.	#5 CONT.	SPACE 5' O.C.
IVF	98	ILEX VERTICILLATA 'RED SPRITE' 'RED SPRITE' WINTERBERRY HOLLY	24-30" HT.	#5 CONT.	SPACE 5' O.C.
CA	655	CALAMAGROSTIS ACUTIFLORA 'KARL FOERSTER' 'KARL FOERSTER' FEATHER REED GRASS	#1	CONTAINER	SPACE 24" O.C. STAGGER
PVH	325	PANICUM VIRGATUM 'HEAVY METAL' 'HEAVY METAL' SWITCH GRASS	#1	CONTAINER	SPACE 36" O.C. STAGGER
AI	1000	ASCLEPIAS INCARNATA SWAMP MILKWEED	1 QT.	CONTAINER	SPACE 18" O.C. STAGGER
EF	45	EUPATORIUM FISTULOSUM JOE-PYE WEED	1 QT.	CONTAINER	SPACE 30" O.C. STAGGER
IV	1655	IRIS VERSICOLOR BLUE FLAG IRIS	1 QT.	CONTAINER	SPACE 18" O.C. STAGGER
LS	525	LOBELIA SIPHILITICA GREAT BLUE LOBELIA	1 QT.	CONTAINER	SPACE 18" O.C. STAGGER
SV	2120	SCIRPUS VALIDUS SOFT STEM BULLRUSH	1 QT.	CONTAINER	SPACE 18" O.C. STAGGER
VN	3025	VERNONIA NOVEDORACENSIS NEW YORK IRONWEED	1 QT.	CONTAINER	SPACE 18" O.C. STAGGER

PLANTING NOTES:

- This Plan is for planting purposes only.
- This Plan has been prepared in accordance with the provisions of section 16.124 of the Howard County Code and the Landscape Manual.
- All plant material shall be nursery grown and shall conform to American Association of Nurserymen latest standards. Plant installation must conform to the minimum standards cited in the latest edition of the "LANDSCAPE SPECIFICATION GUIDELINES" by the Landscape Contractor's Association.
- Contractor is to notify Miss Utility a minimum of 72 hours prior to digging. Telephone 1-800-257-7777
- The Landscape Architect is to be notified 48 hours before planting begins. The location of all plant material is to be approved in field by the Landscape Architect.
- No tree or shrub planting pits are to be left open or unattended.
- Shrubs are to be grouped into mulched beds. Beds are to be edged and the grass is to be killed or removed prior to mulching.

NOTE:

THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.

LANDSCAPE SURETY NOTE:

FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF:
 (110) SHADE TREES @ \$300 EACH = \$33,000.00
 (33) UNDERSTORY TREES @ \$150 = \$4,950.00
 (71) EVERGREEN TREES @ \$150 = \$10,650.00
 (639) SHRUBS @ \$30 = \$19,170.00
TOTAL = \$67,770.00

**SCHEDULE A
PERIMETER LANDSCAPE EDGE**

Category	Adjacent to Roadways	Adjacent to Roadways	Adjacent to Perimeter Properties	
			1	2
Perimeter Number	1	2	3	4
Landscape Type	C	B	Internal lots buffering not required	C
Linear Feet of Roadway Frontage/Perimeter	829 LF.	1091 LF.		854 LF.
Credit for Existing Vegetation (Yes, No, Linear Feet) (Describe below if needed)	YES 275 LF	Yes 823 LF		YES 655 LF
Credit for Wall, Fence or Berm (Yes, No, Linear Feet) (Describe below if needed)	NO	NO		NO
Number of Plants Required				
Shade Trees	14	5		5
Evergreen Trees	28	7		10
Shrubs				
Number of Plants Provided				
Shade Trees	14	5		5
Evergreen Trees	28	* 7		10
Other Trees (2:1 substitution)				
Shrubs (10:1 substitution)				
(Describe plant substitution credits below if needed)	* PERIMETER 2 EVERGREENS USED ELSEWHERE ON SITE			

**SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING**

Number of Parking Spaces	470
Number of Trees Required	24
Number of Trees Provided	
Shade Trees	24
Other Trees (2:1 substitution)	
Internal Islands Required	24
Internal Islands Provided (Min. 200 Sft.) 26996 SF: 200 =	135

**SCHEDULE D
STORMWATER MANAGEMENT AREA LANDSCAPING**

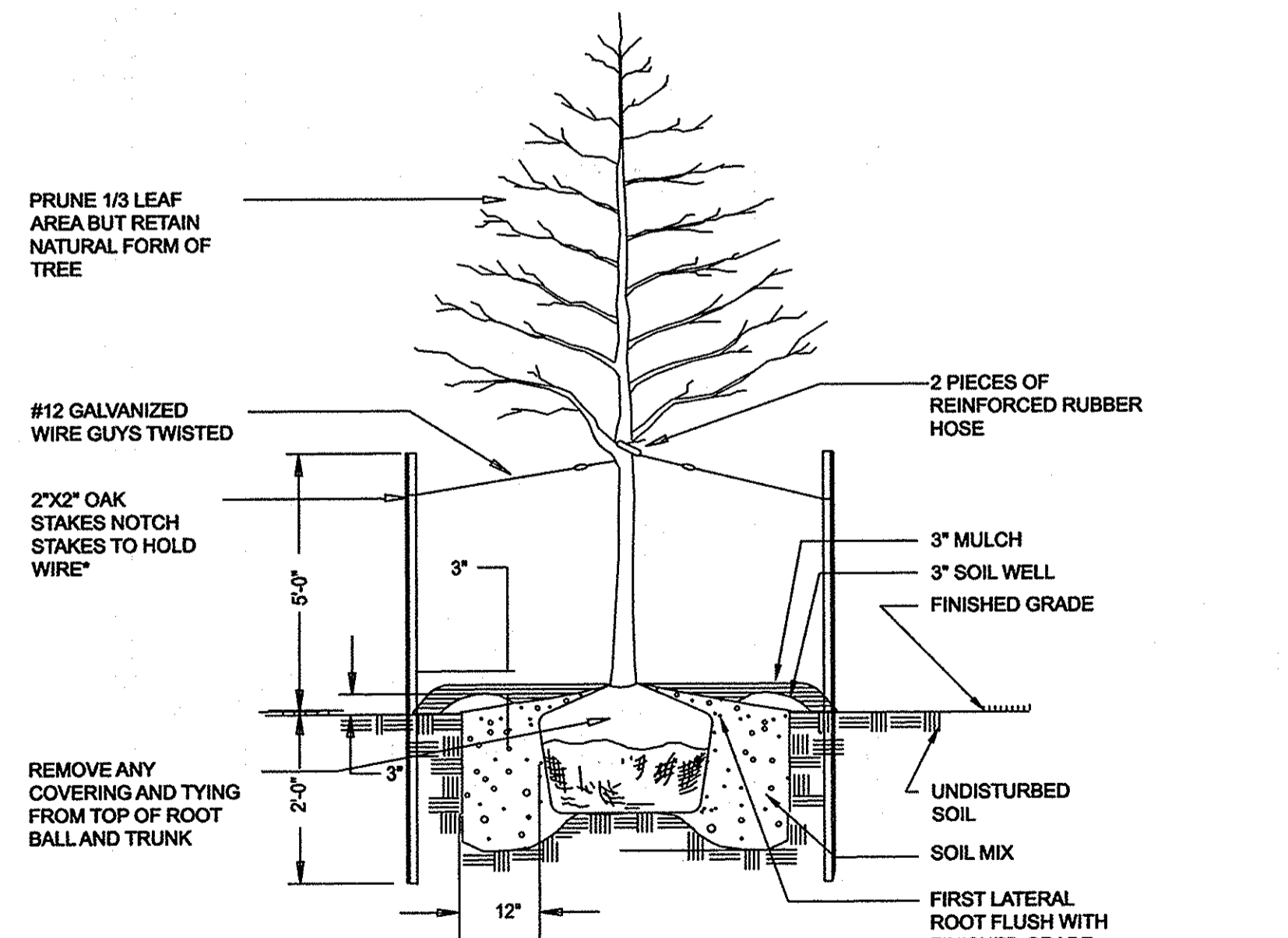
Linear Feet of Perimeter	2680 LF *
Number of Trees Required	
Shade Trees	54
Evergreen Trees	67
Credit for Existing Vegetation (No, Yes and %)	NO
Credit for Other Landscaping (No, Yes and %)	
Number of Trees Provided	
Shade Trees	54
Evergreen Trees	37
Other Trees (2:1 substitution)	
14 5m. Deciduous trees = 7 Shade trees 19 5m. Deciduous trees + 295 shrubs substituted for 39 evergreens	
* PER THE LANDSCAPE MANUAL IF A TYPE C BUFFER IS REQ'D A TYPE B BUFFER IS NOT NECESSARY. SWM FACILITIES B AND IIA ARE OMITTED FROM THE CALCULATION. BUFFER MATERIAL REQUIRED FOR TYPE C HAVE BEEN LOCATED TO SUFFICIENTLY SCREEN THE SWM FACILITIES. THE QUANTITIES PREVIOUSLY APPROVED HAVE NOT BEEN CHANGED.	

INTERNAL STREET TREES

Road A
 Partial sidewalks
 Steep slopes, residential on opposite side of the street
 829 LF of ROW (79 LF Ex. Woods & 196 LF Planted under Phase 1) = 554 LF = 14 Canopy Trees
 14 Trees Provided
 Ex. Utilities within 3' of sidewalk

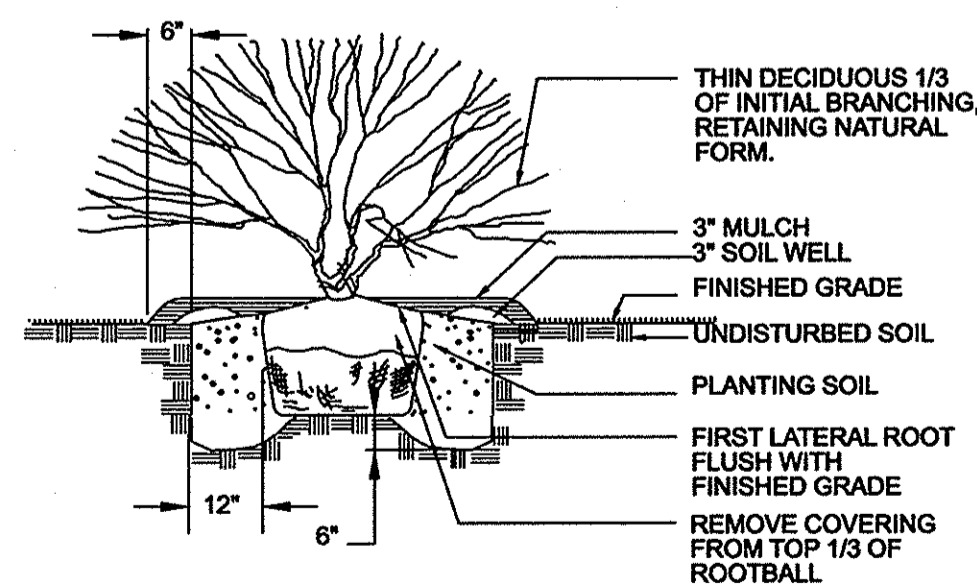
Landscape Plan Prepared by:

HUMAN & ROHDE, INC.
 LANDSCAPE ARCHITECTS
 512 VIRGINIA AVENUE
 TOWSON, MD 21286
 410.825.3885 phone
 410.825.3887 fax



PLANTING DETAIL FOR TREES* - 1 - 4" CALIPER

SCALE: NONE

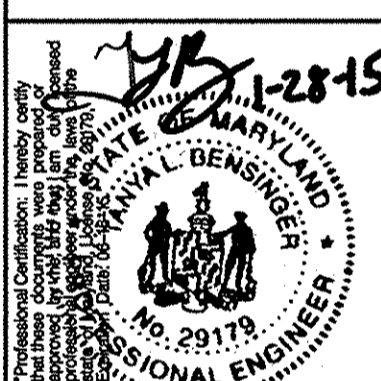


PLANTING DETAIL FOR EVERGREEN AND DECIDUOUS SHRUBS

NOT TO SCALE

NO.	DESCRIPTION	BY	DATE
1	Add temporary parking and submerged gravel wetland SWM-11A.	MM	11/8/2014

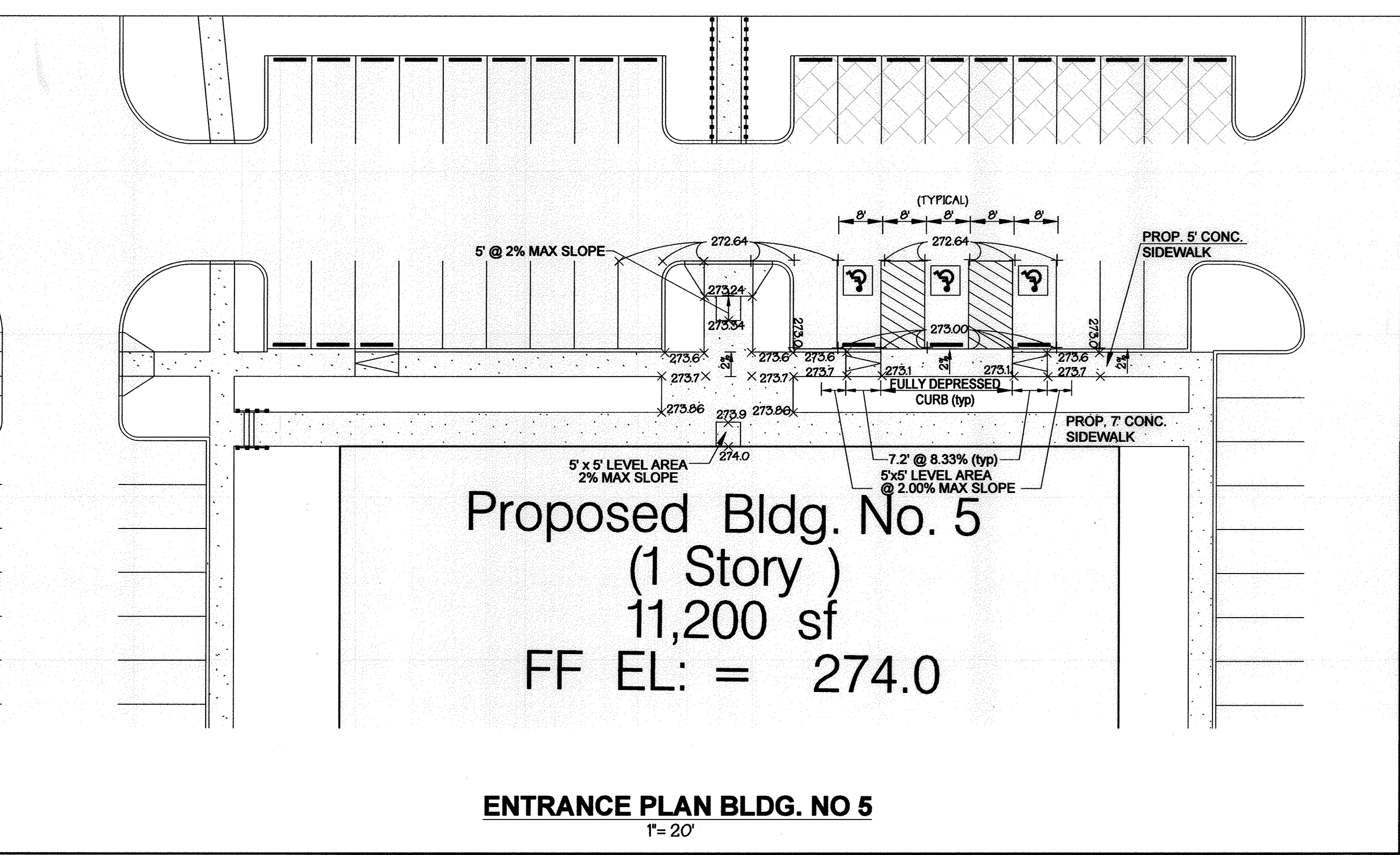
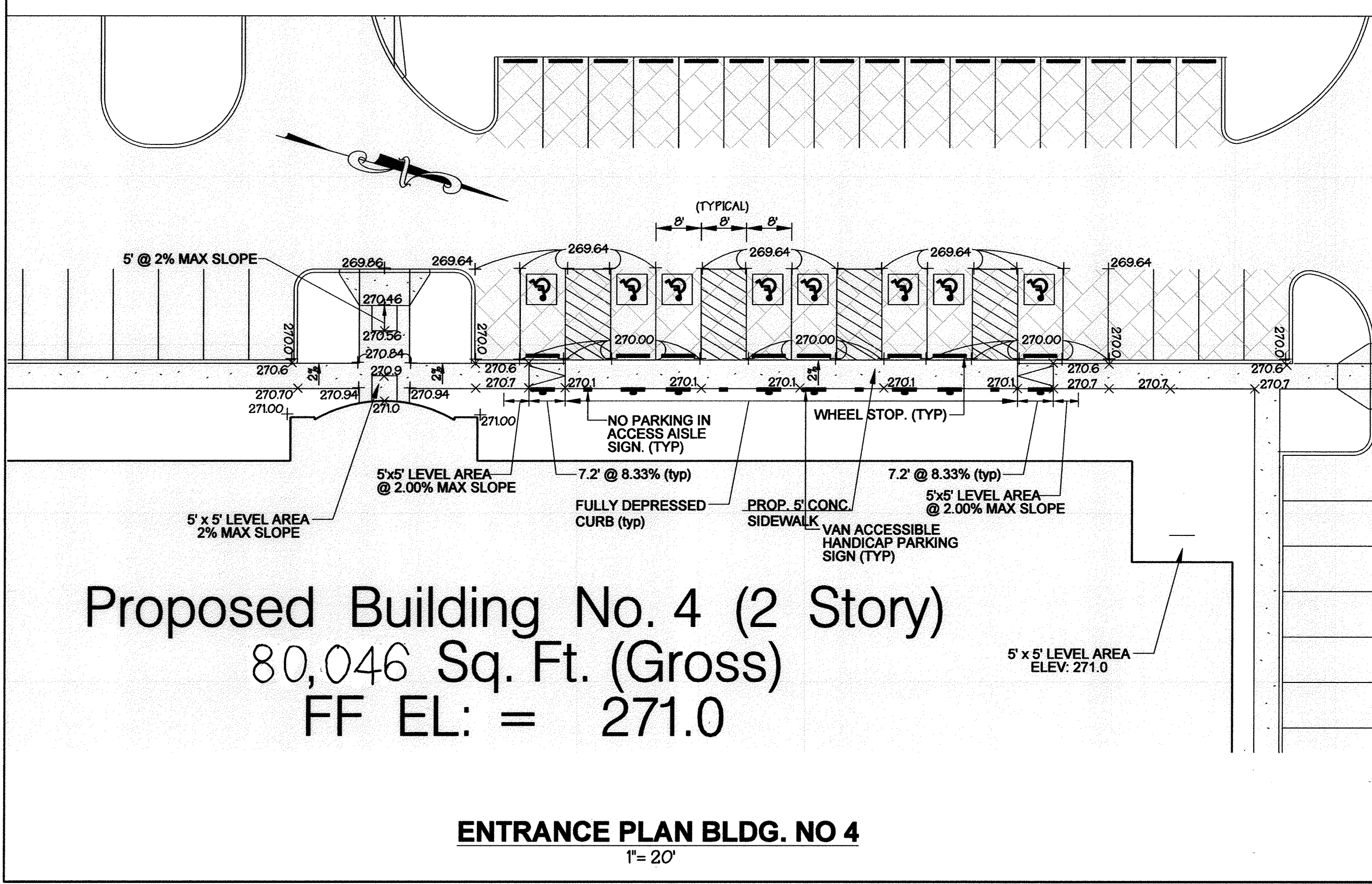
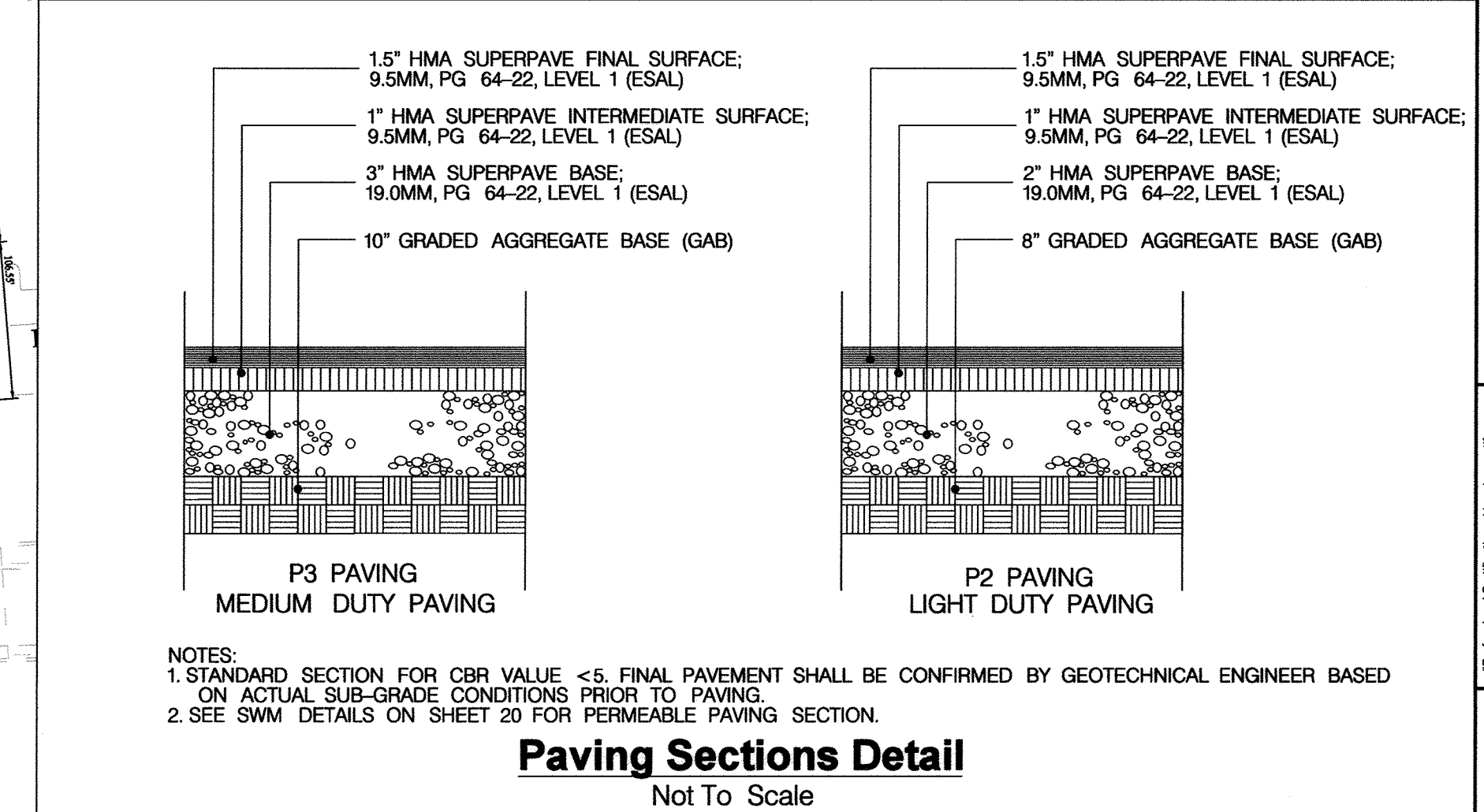
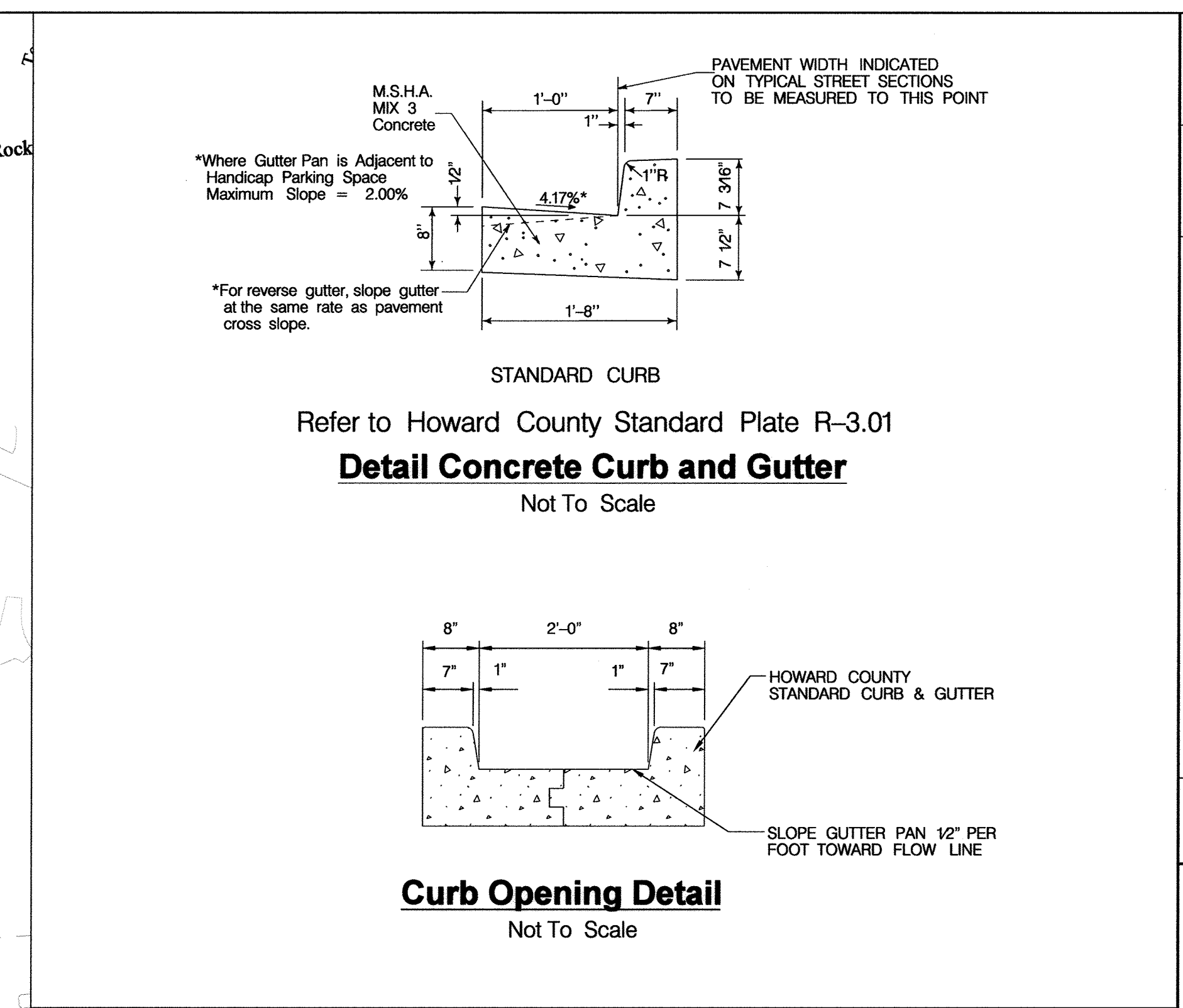
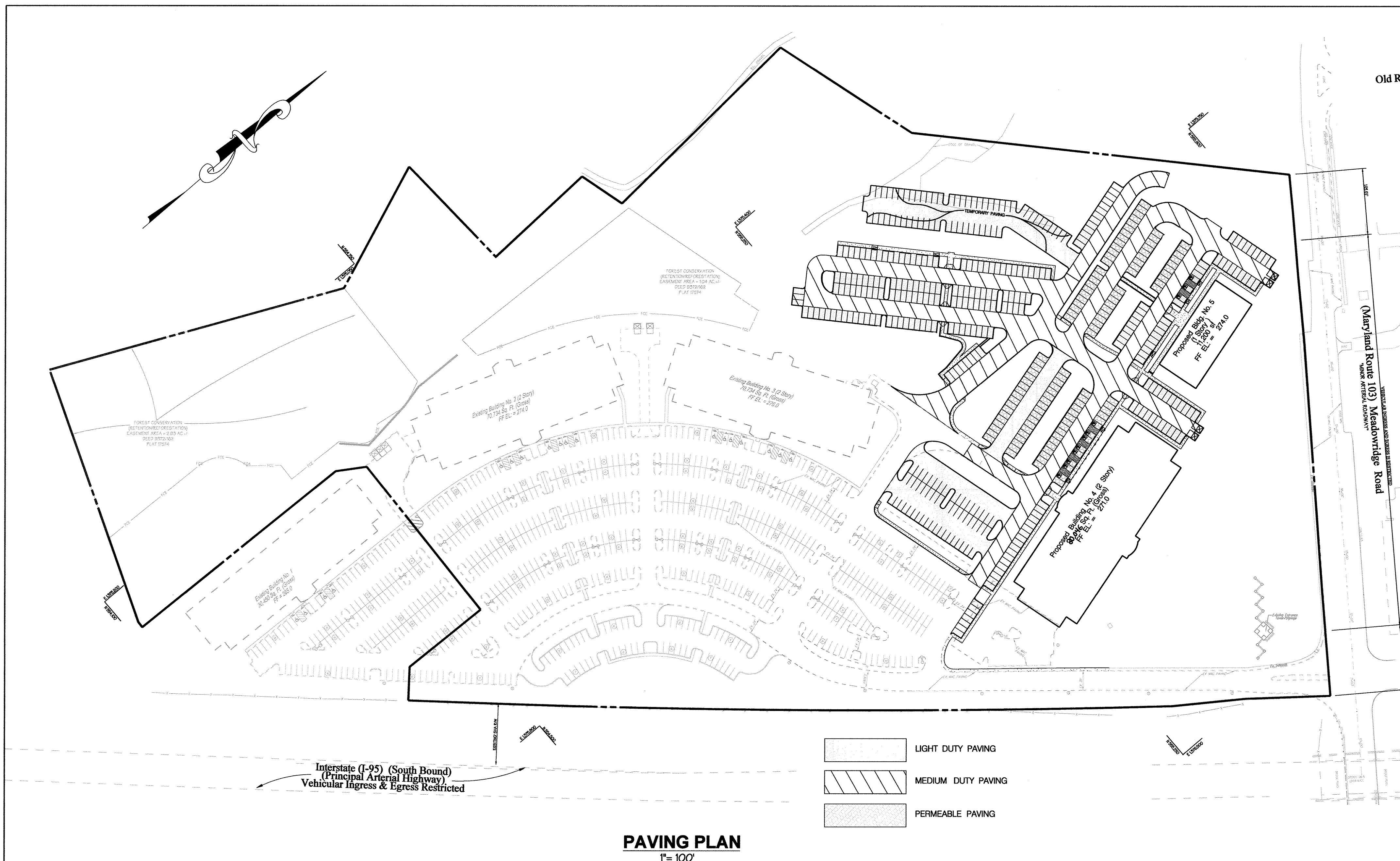
Owner/Developer:
Merritt-MR, LLC
 2066 Lord Baltimore Drive
 Baltimore, Maryland 21244
 ph: 410-298-2800
 fx: 410-298-9844



MATIS WARFIELD
 Consulting Engineers
 10540 York Road, Suite M
 Hunt Valley, Maryland 21030
 PHONE 410.683.7004 FAX 410.683.1798
 www.matiswarfield.com

APPROVED: Howard County Department of Planning and Zoning
 [Signature] 4/8/15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 4/3/15
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 4/15/15
 DIRECTOR

REVISED SITE DEVELOPMENT PLAN
LANDSCAPE DETAILS
The Meadows Corporate Park
Phase 2
 6810 - 6818 MEADOW RIDGE ROAD MD RTE. 103
 GREEN BUILDING
 TAX MAP: 37;
 PARCELS: A6-A9
 ELECTION DISTRICT: 1
 ZONE: POR
 GENERAL OFFICE
 SCALE: NA
 DATE: April 23, 2014
 SHEET: 10 of 35



APPROVED: Howard County Department of Planning and Zoning

John Chiles 4-8-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kevin Chiles 4-13-15
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Frank McKinley 4/16/15
DIRECTOR DATE

REVISD SITE DEVELOPMENT PLAN
SITE PLAN DETAILS
The Meadows Corporate Park
Phase 2
6510 - 6518 MEADOW RIDGE ROAD MD RTE. 103
GREEN BUILDING

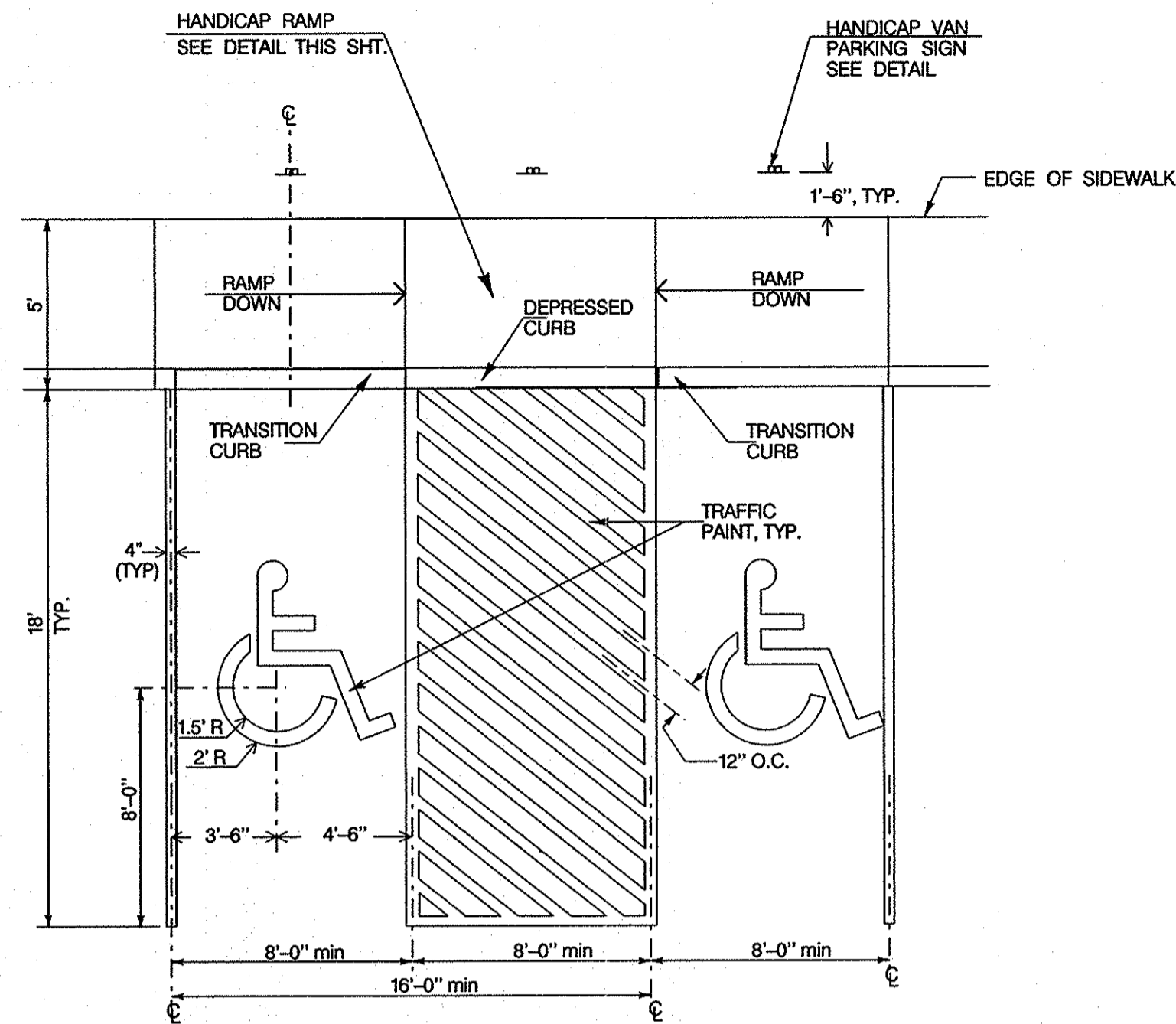
TAX MAP: 37;
PARCELS: A5-A9
ELECTION DISTRICT: 1
ZONE: POR

SCALE: 1" = 50'
DATE: April 23, 2014
SHEET: 11 of 35

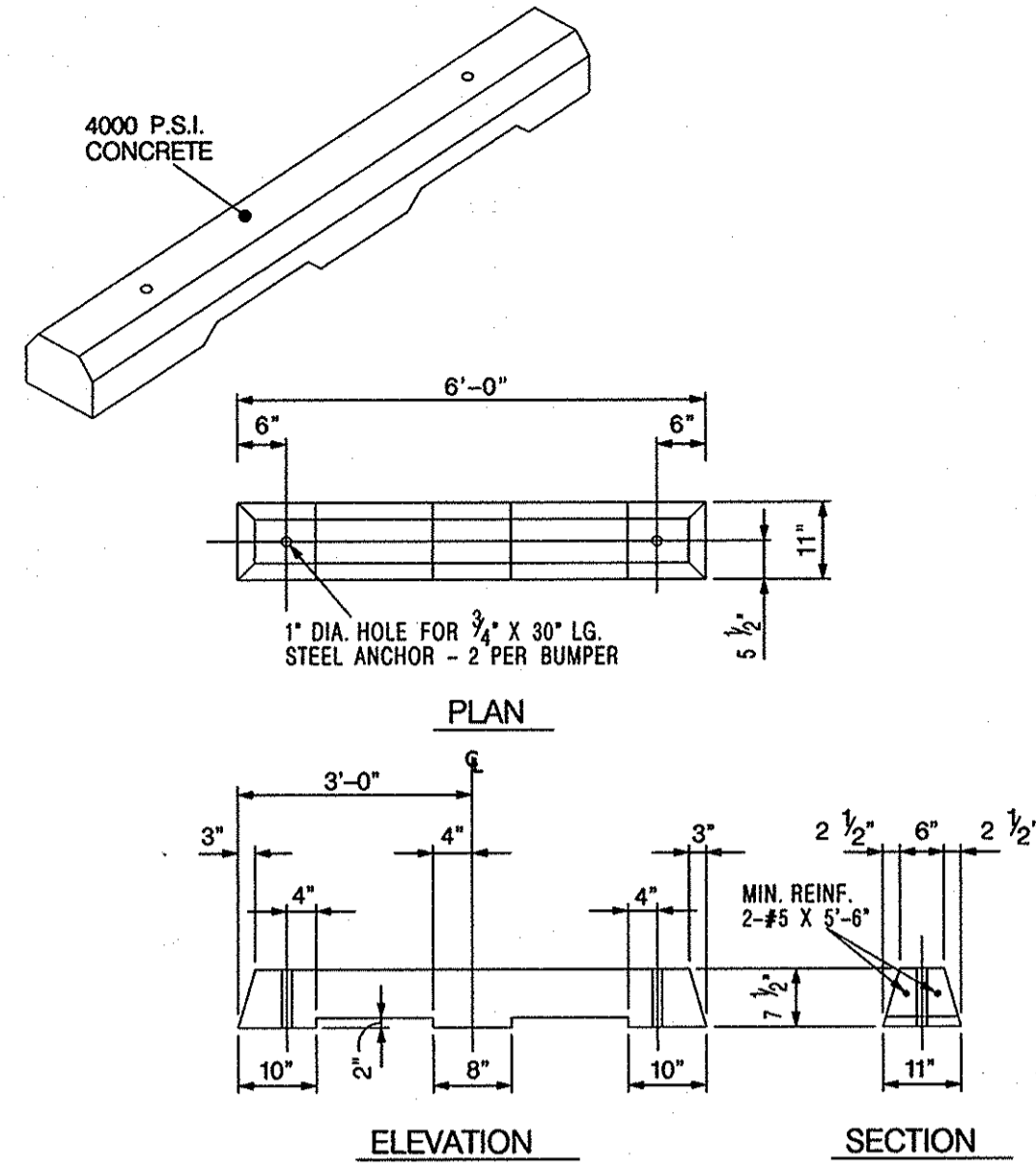
Owner/Developer:
Merritt-MR, LLC
2066 Lord Baltimore Drive
Baltimore, Maryland 21244
ph: 410-298-2600
fx: 410-298-9644

MATIS WARFIELD
Consulting Engineers
10540 York Road, Suite M
Hunt Valley, Maryland 21030
PHONE 410.683.7004 FAX 410.683.1798
www.matiswarfield.com

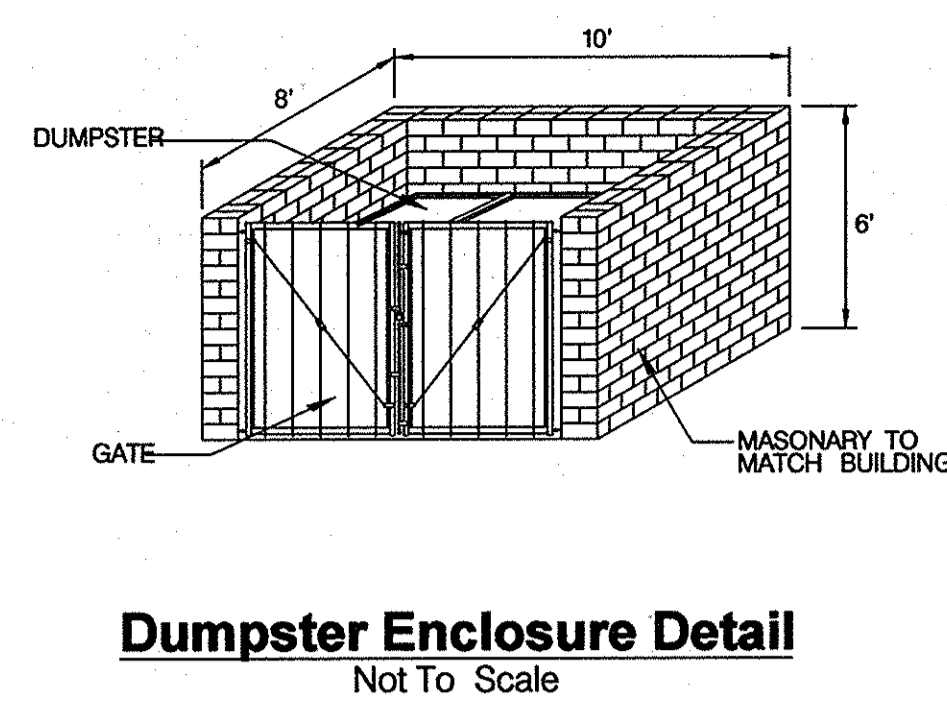
DATE: 1/28/2015
BY: MM
DESCRIPTION: Add temporary parking and submerged gravel wetland SWM-11A.
NO. 1
2
UPDATE: Building 4 Square Footage for a basement boiler room.



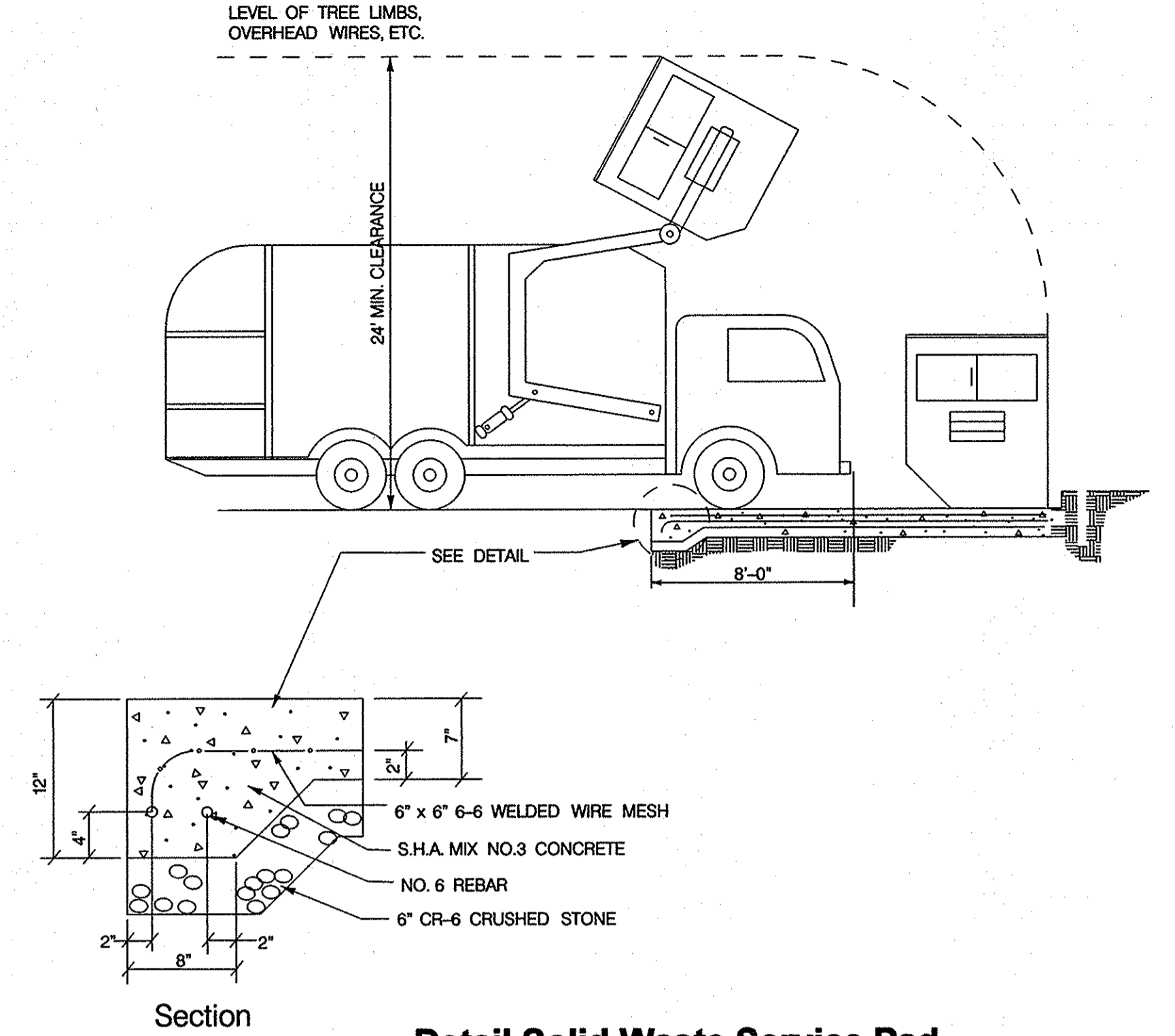
Detail Van Accessible Handicap Parking Spaces
Not To Scale



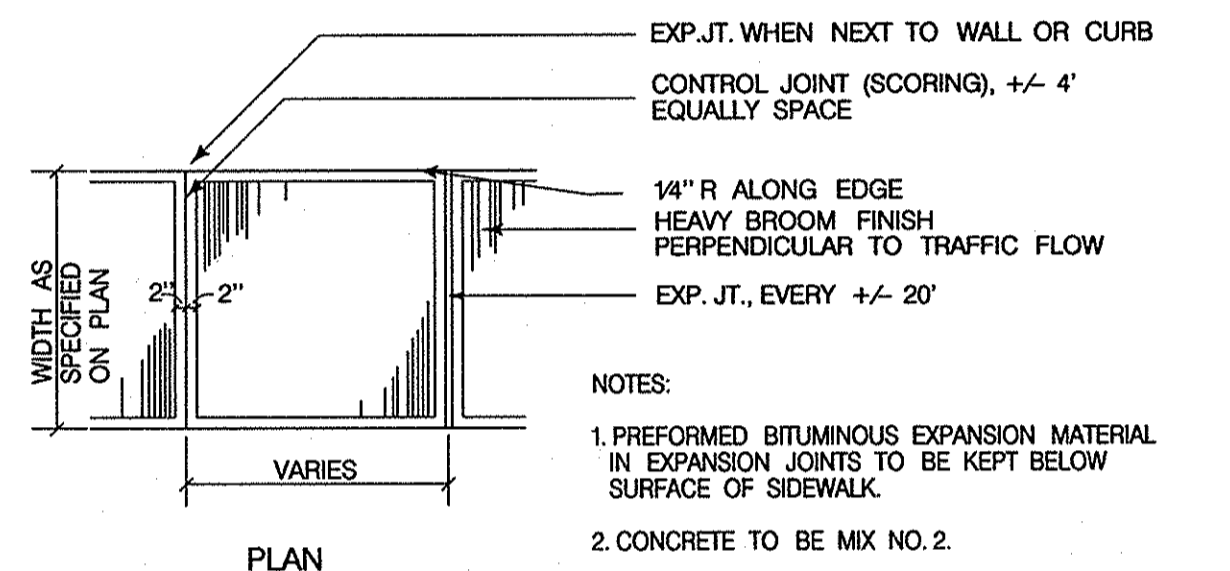
Concrete Wheel Stop Detail
Not To Scale



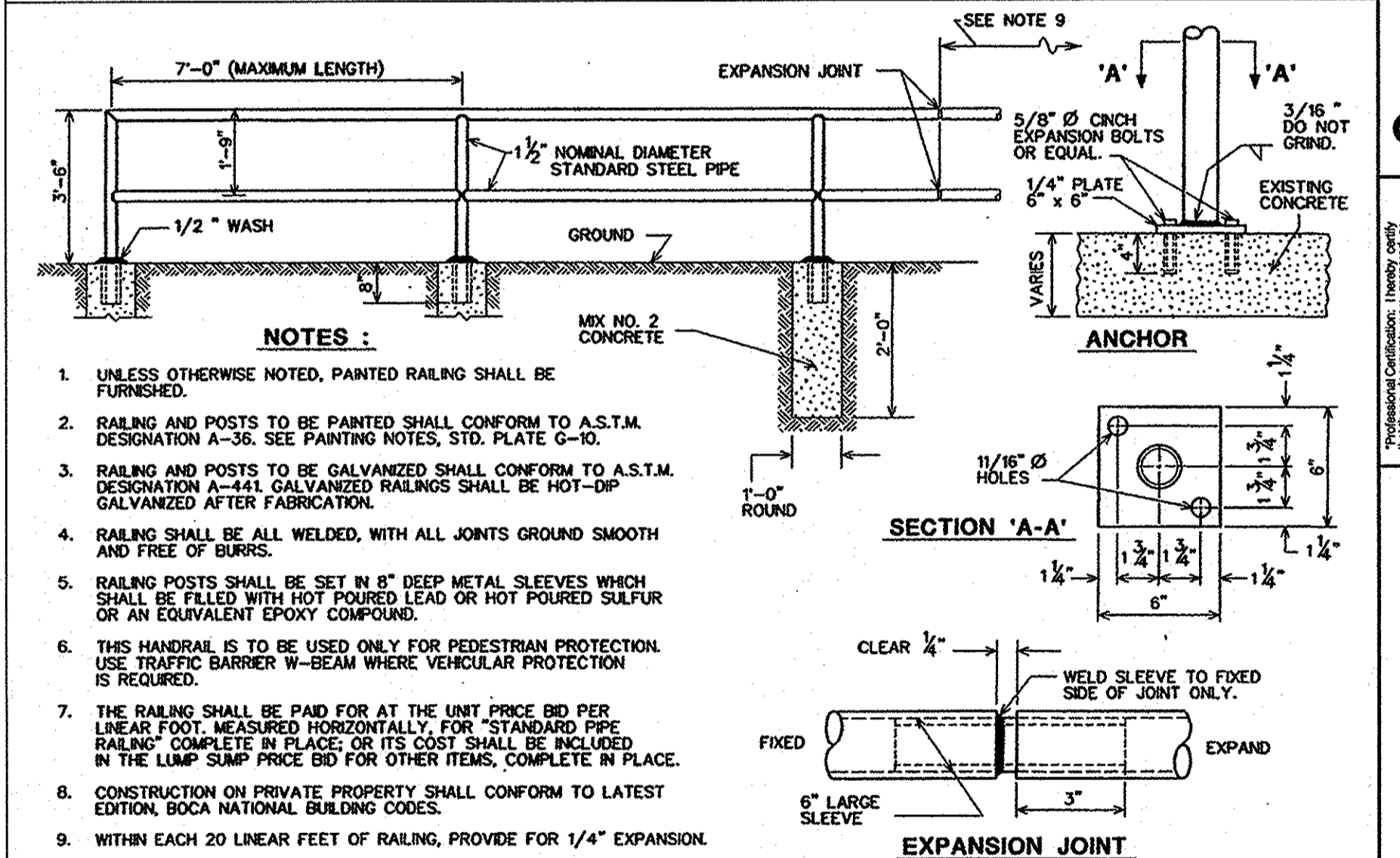
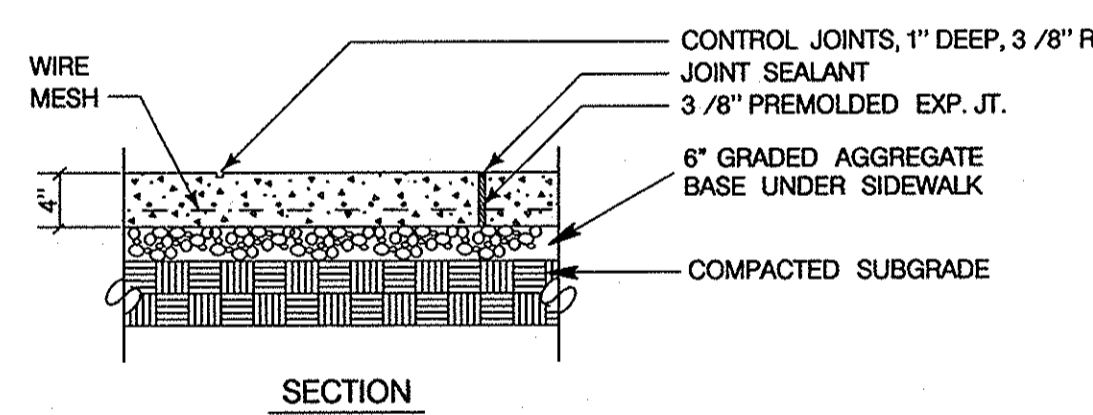
Dumpster Enclosure Detail
Not To Scale



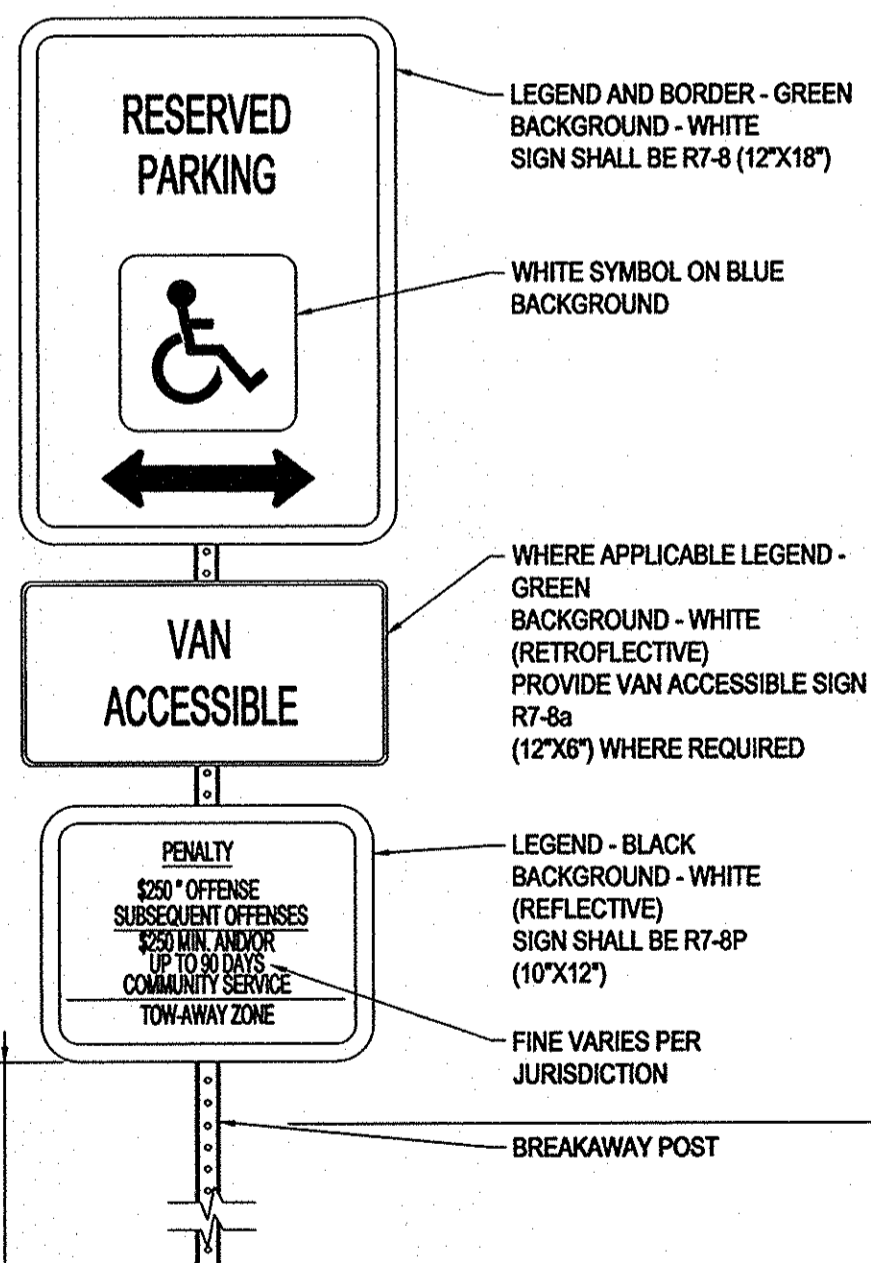
Detail Solid Waste Service Pad
Not To Scale



- NOTES:
1. PREFORMED BITUMINOUS EXPANSION MATERIAL IN EXPANSION JOINTS TO BE KEPT BELOW SURFACE OF SIDEWALK.
 2. CONCRETE TO BE MIX NO. 2.
 3. WHEN SIDEWALK ABUTS CURB TO ALLOW CONTROL JOINT TO DRAIN WALK SHALL BE 1/4" HIGHER THAN ADJOINING CURB WITH PREFORMED BITUMINOUS EXPANSION MATERIAL BETWEEN SIDEWALK AND CURB.
 4. MAXIMUM CROSS SLOPE = 2.00%



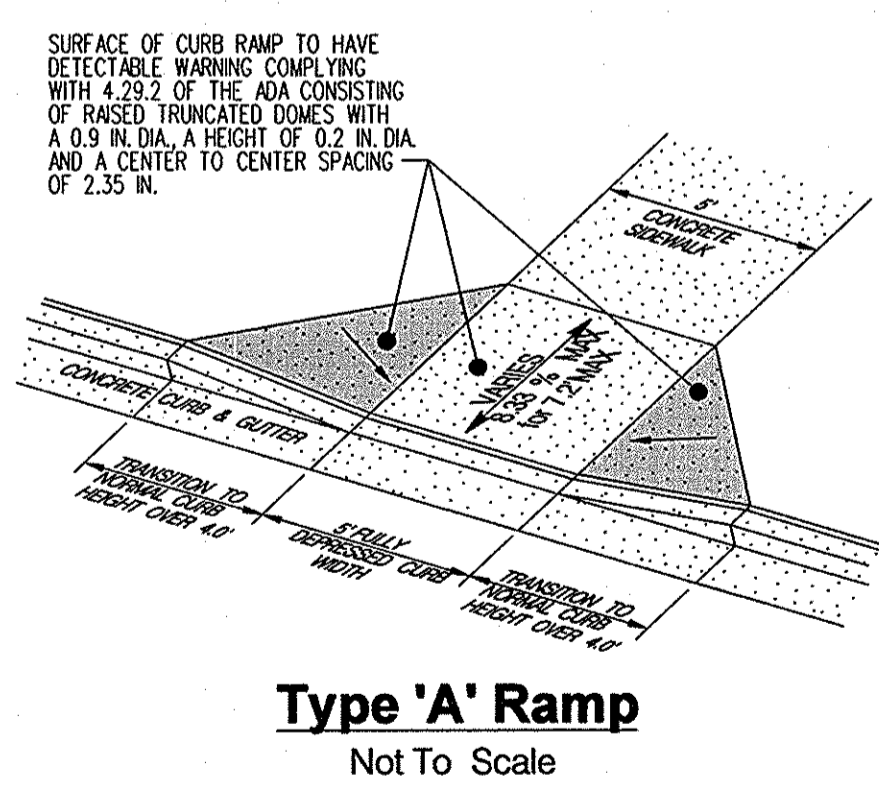
Detail Pipe Railing
Not To Scale



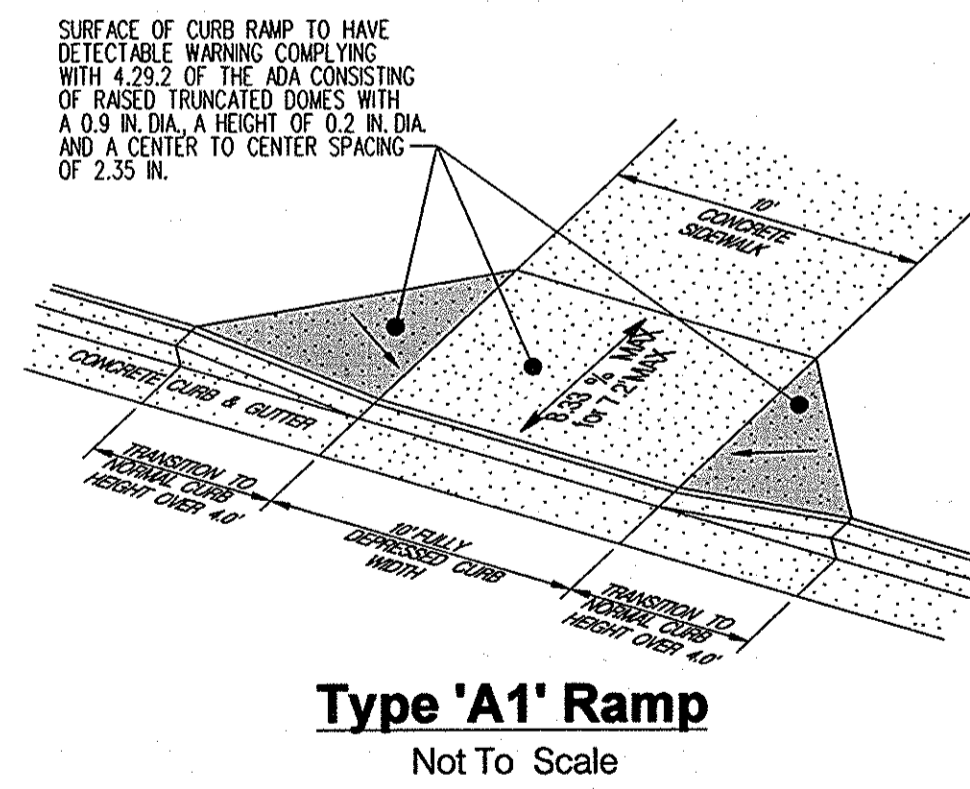
Handicap Parking Sign Detail
Not To Scale



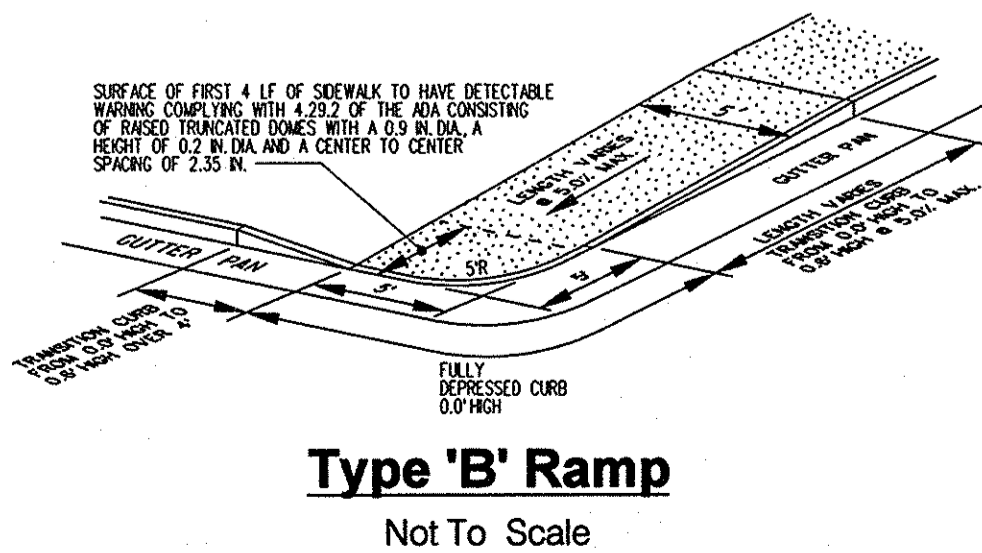
NOTES:
FOR VAN ACCESSIBLE SPACES ONLY.
DISTANCE FROM GROUND TO BOTTOM OF SIGN SHALL BE 7'.



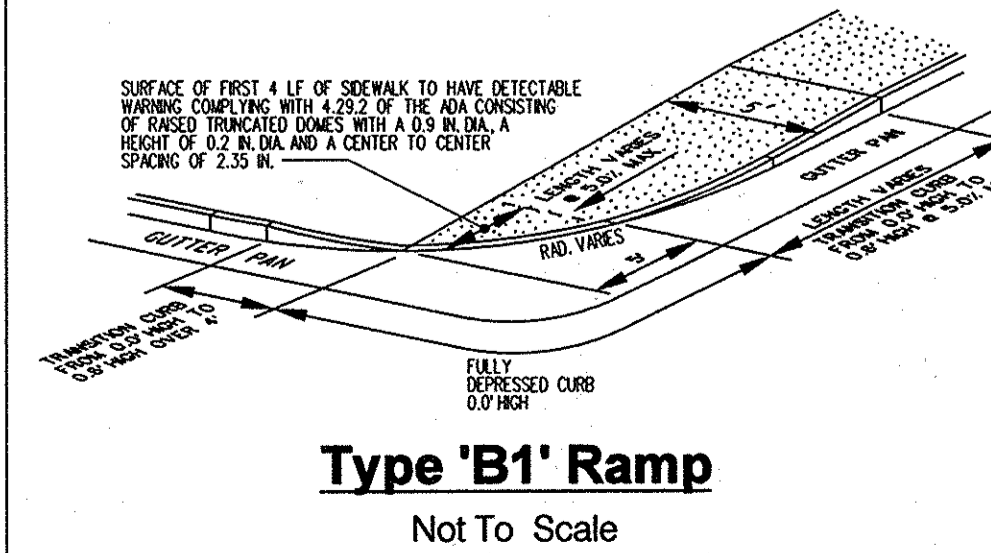
Type 'A' Ramp
Not To Scale



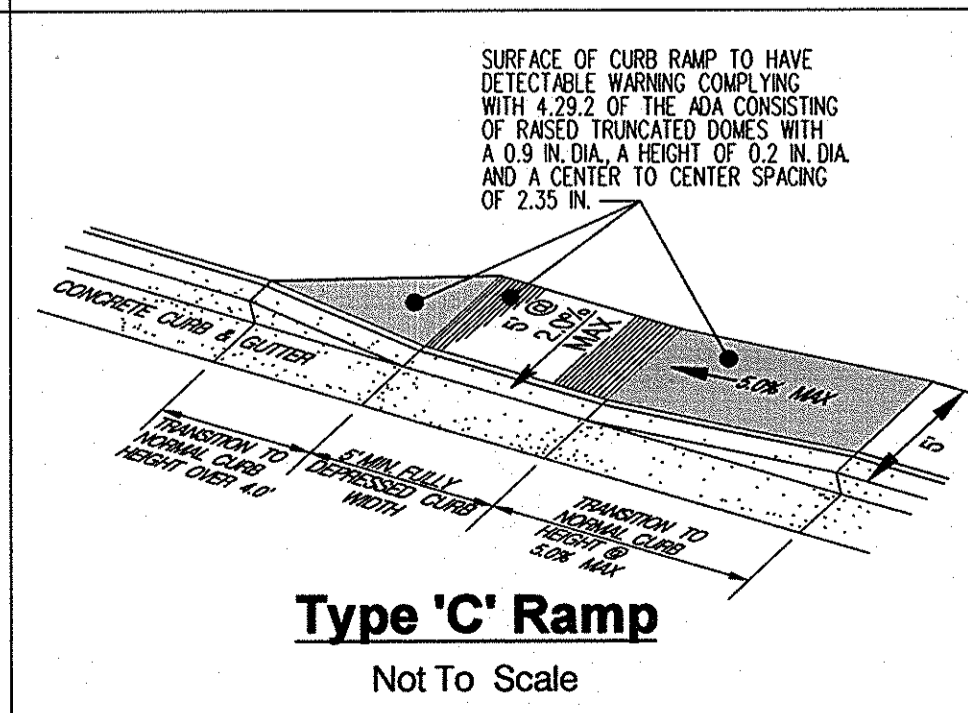
Type 'A1' Ramp
Not To Scale



Type 'B' Ramp
Not To Scale



Type 'B1' Ramp
Not To Scale



Type 'C' Ramp
Not To Scale

APPROVED: Howard County Department of Planning and Zoning

Chad Clark 5.12.14
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
Walt Salvo 6.18.14
CHIEF, DIVISION OF LAND DEVELOPMENT DATE
Mark P. Leung 6/18/14
DIRECTOR DATE

SITE PLAN DETAILS
The Meadows Corporate Park
Phase 2

8610 - 6518 MEADOW RIDGE ROAD MD RTE. 103
GREEN BUILDING

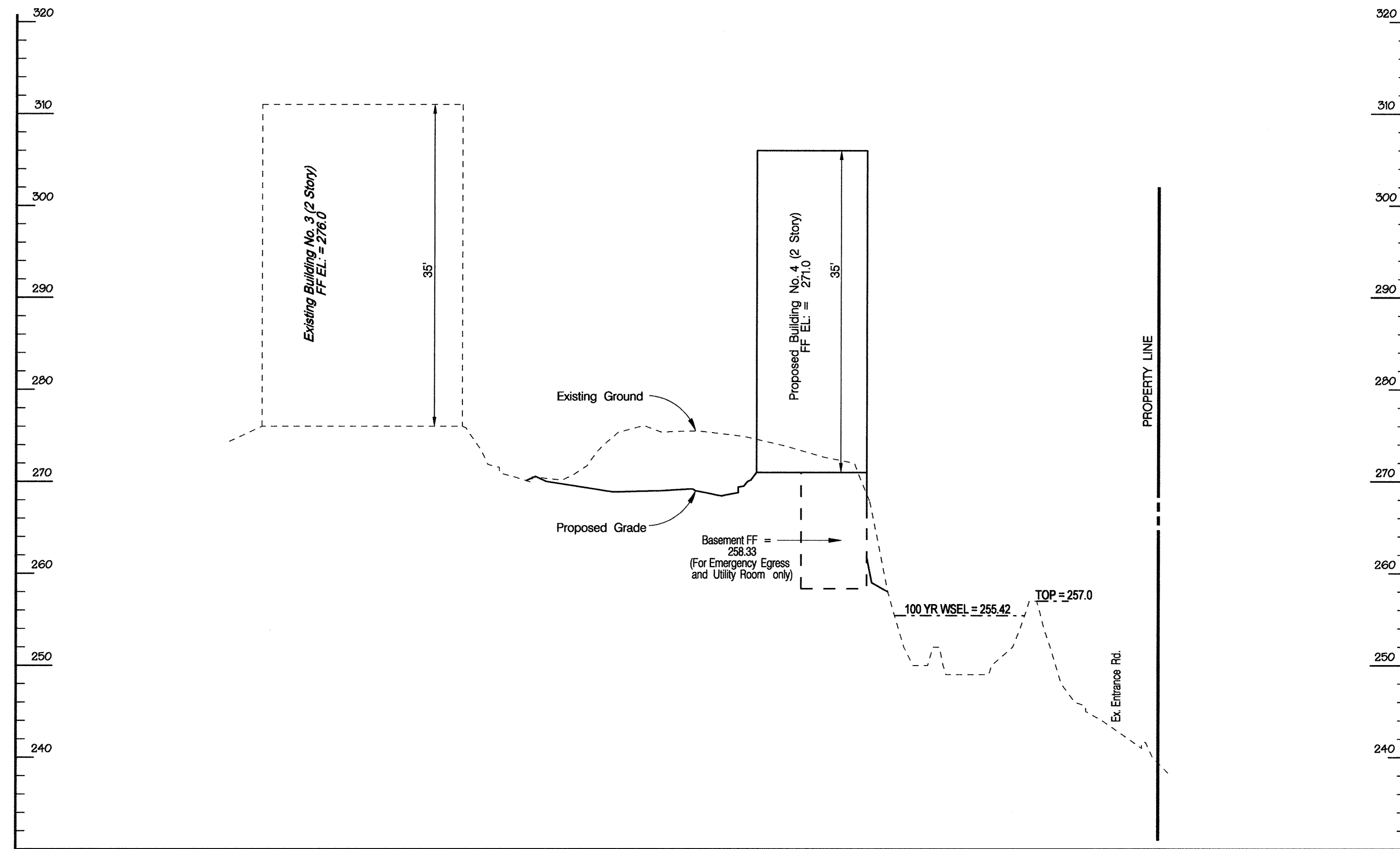
TAX MAP: 37; PARCELS: A5-A9 ELECTION DISTRICT: 1 ZONE: POR SDP-13-070
GENERAL OFFICE SCALE: 1/8" = 1'-0" DATE: April 23, 2014 SHEET: 12 of 35

Owner/Developer:

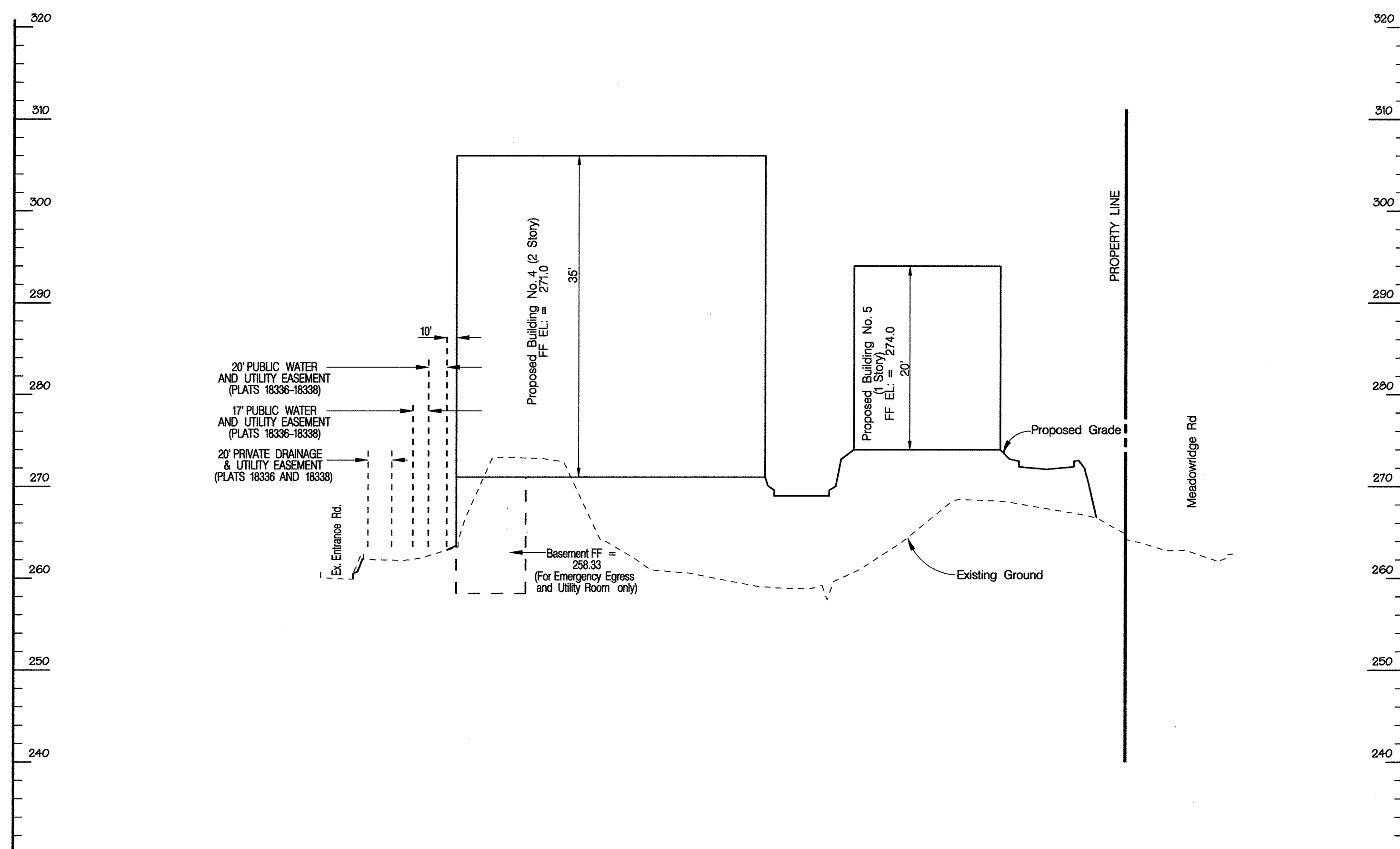
Merritt-MR, LLC
2066 Lord Baltimore Drive
Baltimore, Maryland 21244
ph: 410-286-2600
fx: 410-286-9644



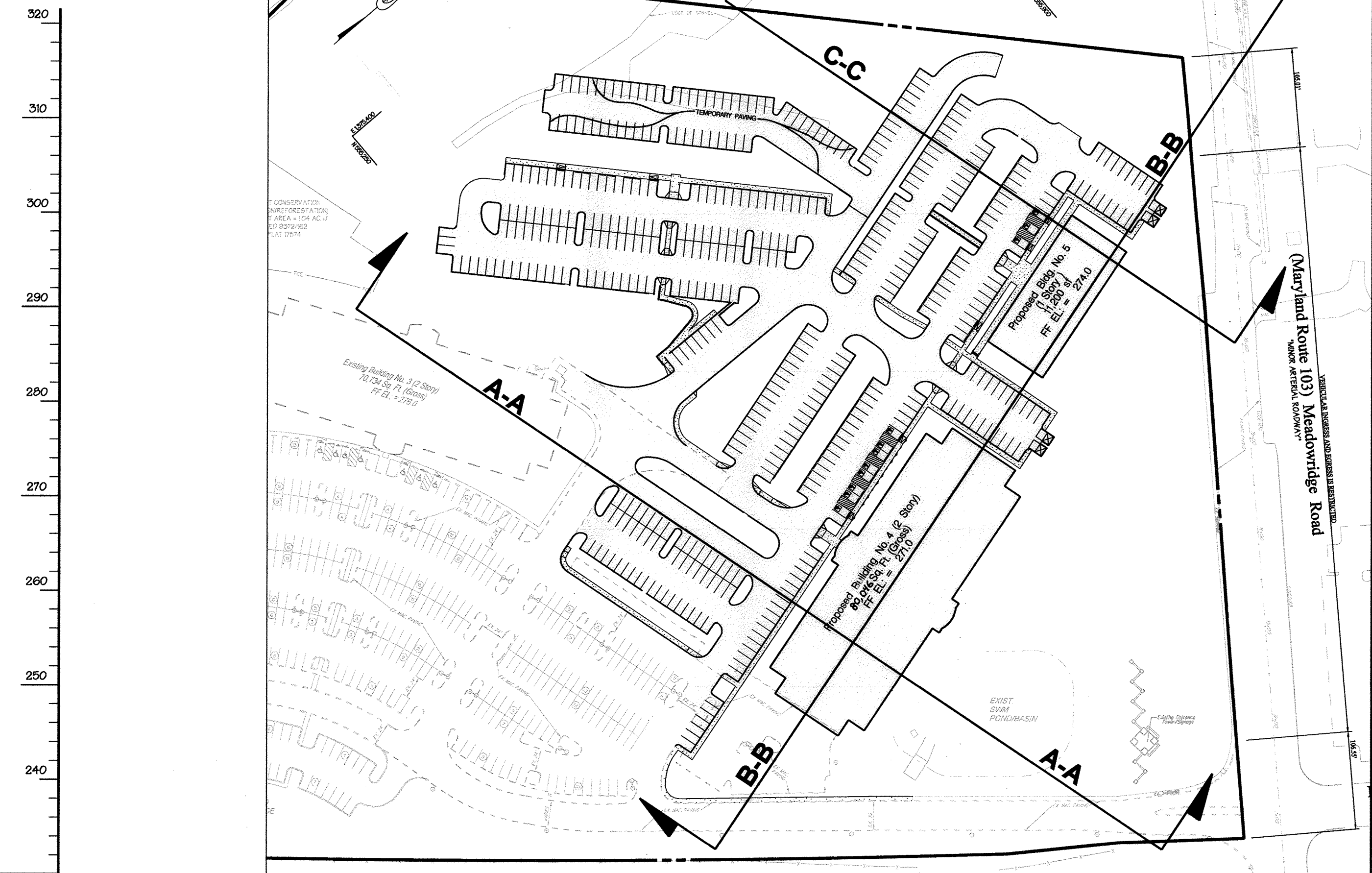
MATIS WARFIELD
Consulting Engineers
10540 York Road, Suite M
Hunt Valley, Maryland 21030
PHONE 410.683.7004 FAX 410.683.1798
www.matiswarfield.com



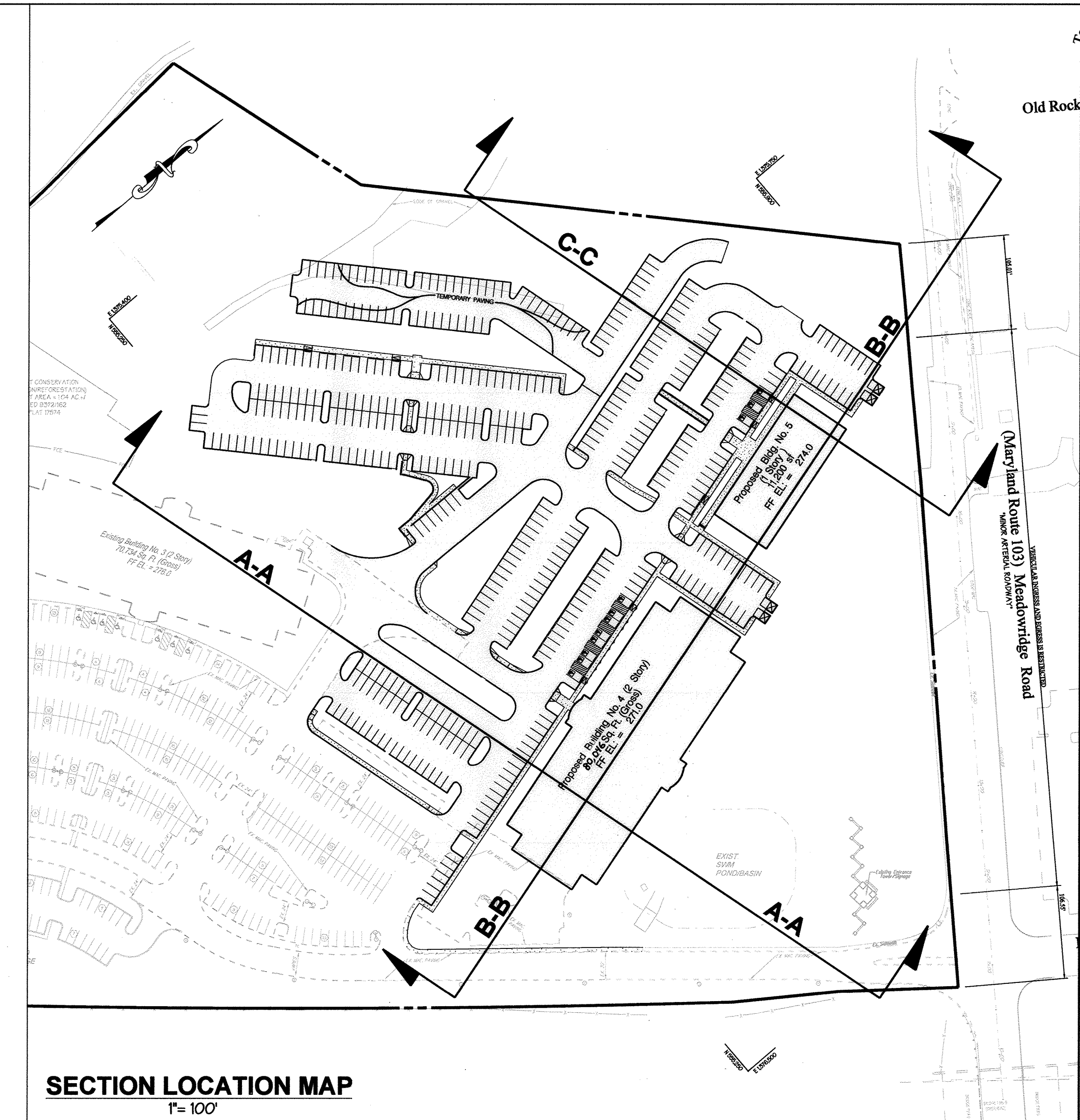
SECTION A-A
SCALE: HORZ. 1" = 100'
VERT. 1" = 10'



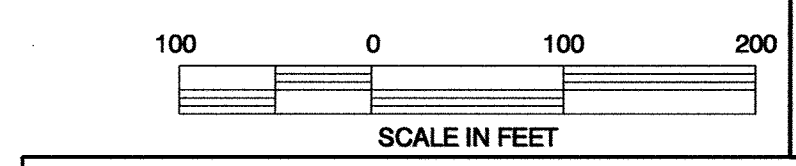
SECTION B-B
SCALE: HORZ. 1" = 100'
VERT. 1" = 10'



SECTION C-C
SCALE: HORZ. 1" = 100'
VERT. 1" = 10'



SECTION LOCATION MAP
1" = 100'



APPROVED: Howard County Department of Planning and Zoning

Chad Edelman 4.8.15
CHIEF, DEVELOPMENT ENGINEERING DIVISION NY DATE

Kevin S. ... 4.13.15
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

David P. ... 4/14/15
DIRECTOR DATE

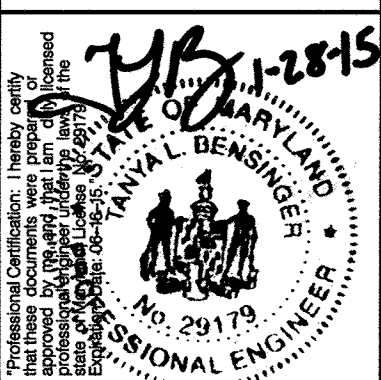
REVISED SITE DEVELOPMENT PLAN
BUILDING SECTIONS
The Meadows Corporate Park
Phase 2
6510 - 6518 MEADOW RIDGE ROAD MD RTE. 103
GREEN BUILDING

TAX MAP: 37;
PARCELS: A5-A9
ELECTION DISTRICT: 1
ZONE: POR

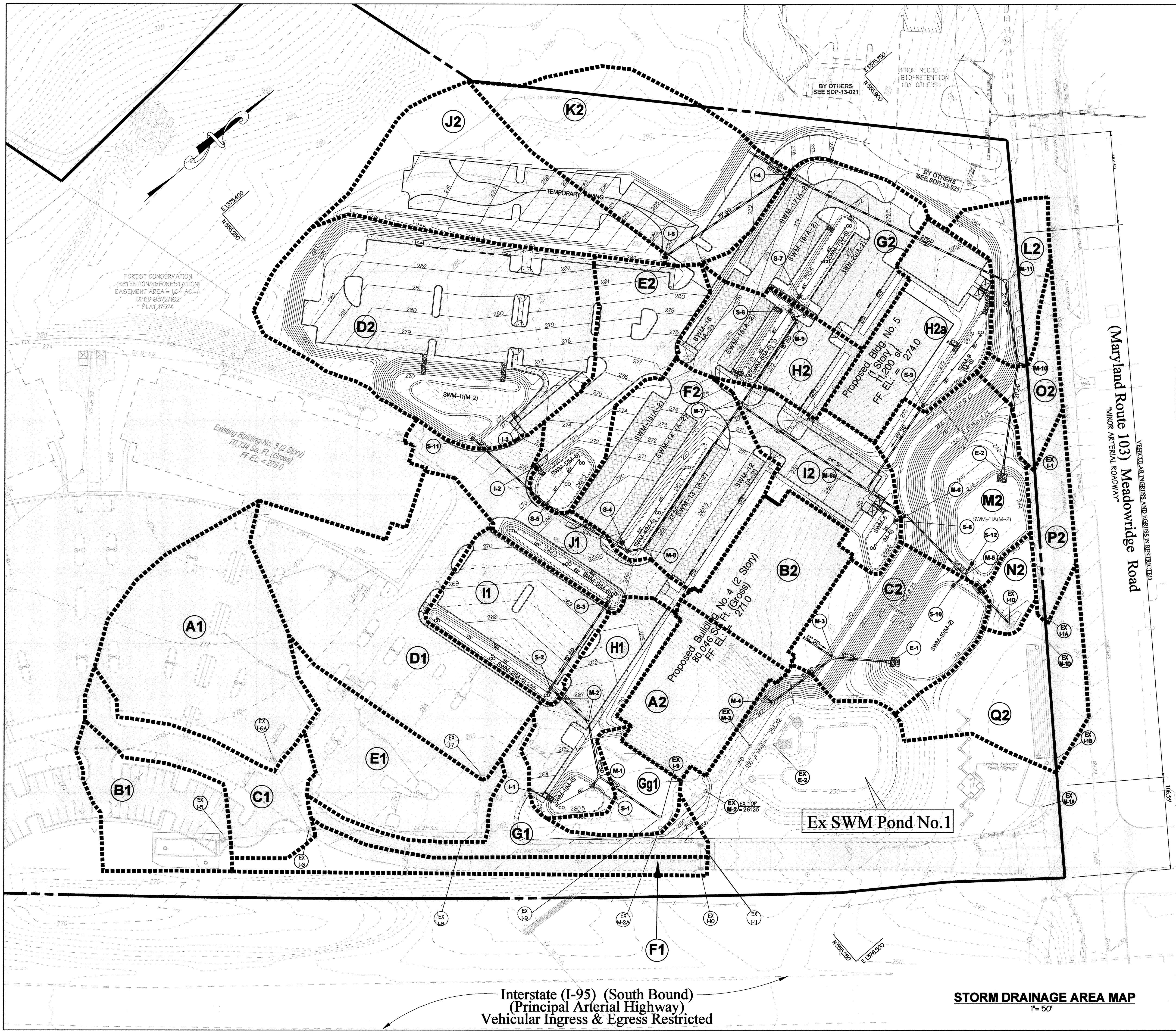
GENERAL OFFICE
SCALE: 1" = 100'
DATE: April 23, 2014
SHEET: 13 of 35

NO.	DESCRIPTION	BY	DATE
1	Add temporary parking and submerged gravel wetland SWM-11A.	MWI	1/28/2015
2	Update Building 4 Square Footage for a basement boiler room.	MWI	7/26/18

Owner/Developer:
Merritt-MR, LLC
2086 Lord Baltimore Drive
Baltimore, Maryland 21244
ph: 410-298-2600
fx: 410-298-9644



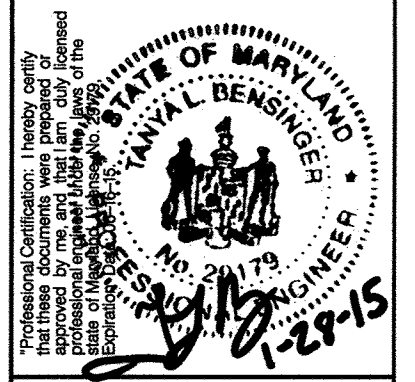
MATIS WARFIELD
Consulting Engineers
10540 York Road, Suite M
Hunt Valley, Maryland 21030
PHONE 410.683.7004 FAX 410.683.1798
www.matiswarfield.com



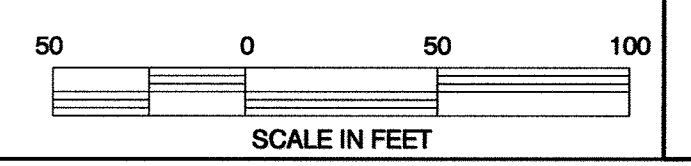
DRAINAGE AREAS		
D.A.	ACRES	COMP "C"
A1	0.97	0.90
B1	0.42	0.85
C1	0.34	0.85
D1	1.21	0.82
E1	0.59	0.90
F1	0.33	0.86
G1	0.36	0.72
Gg1	0.19	0.30
H1	0.47	0.69
I1	0.50	0.79
J1	0.47	0.74
A2	0.46	0.95
B2	0.46	0.95
C2	0.62	0.30
D2	1.62	0.65
E2	0.55	0.70
F2	0.81	0.52
G2	0.66	0.60
H2	0.42	0.64
H2a	0.56	0.75
I2	0.44	0.67
J2	0.81	0.52
K2	0.96	0.83
L2	0.29	0.66
M2	0.63	0.30
N2	0.10	0.30
O2	0.19	0.74
P2	0.19	0.95
Q2	0.56	0.53

NO.	DESCRIPTION	BY	DATE
1	Add temporary parking and submerged gravel wetland SWM-11A.	MW1	1/28/2015
2	Update Building 1 Square Footage for a basement boiler room.	MW1	7/26/15

Owner/Developer:
Merritt-MR, LLC
 2066 Lord Baltimore Drive
 Baltimore, Maryland 21244
 ph: 410-298-2600
 fx: 410-298-9644



MATIS WARFIELD
 Consulting Engineers
 10540 York Road, Suite M
 Hunt Valley, Maryland 21030
 PHONE 410.683.7004 FAX 410.683.1798
 www.matiswarfield.com



APPROVED: Howard County Department of Planning and Zoning

Phil Schuler 4-8-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Keith Skelton 4-13-15
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Debra K. Long 4/2/15
 DIRECTOR DATE

REVISED SITE DEVELOPMENT PLAN
STORM DRAINAGE MAP
The Meadows Corporate Park
Phase 2
 6510 - 6518 MEADOW RIDGE ROAD MD RTE. 103
 GREEN BUILDING

TAX MAP: 37;
 PARCELS: A5-A9
 ELECTION DISTRICT: 1
 ZONE: POR

GENERAL OFFICE
 SCALE: 1" = 50'
 DATE: April 23, 2014
 SHEET: 14 of 35

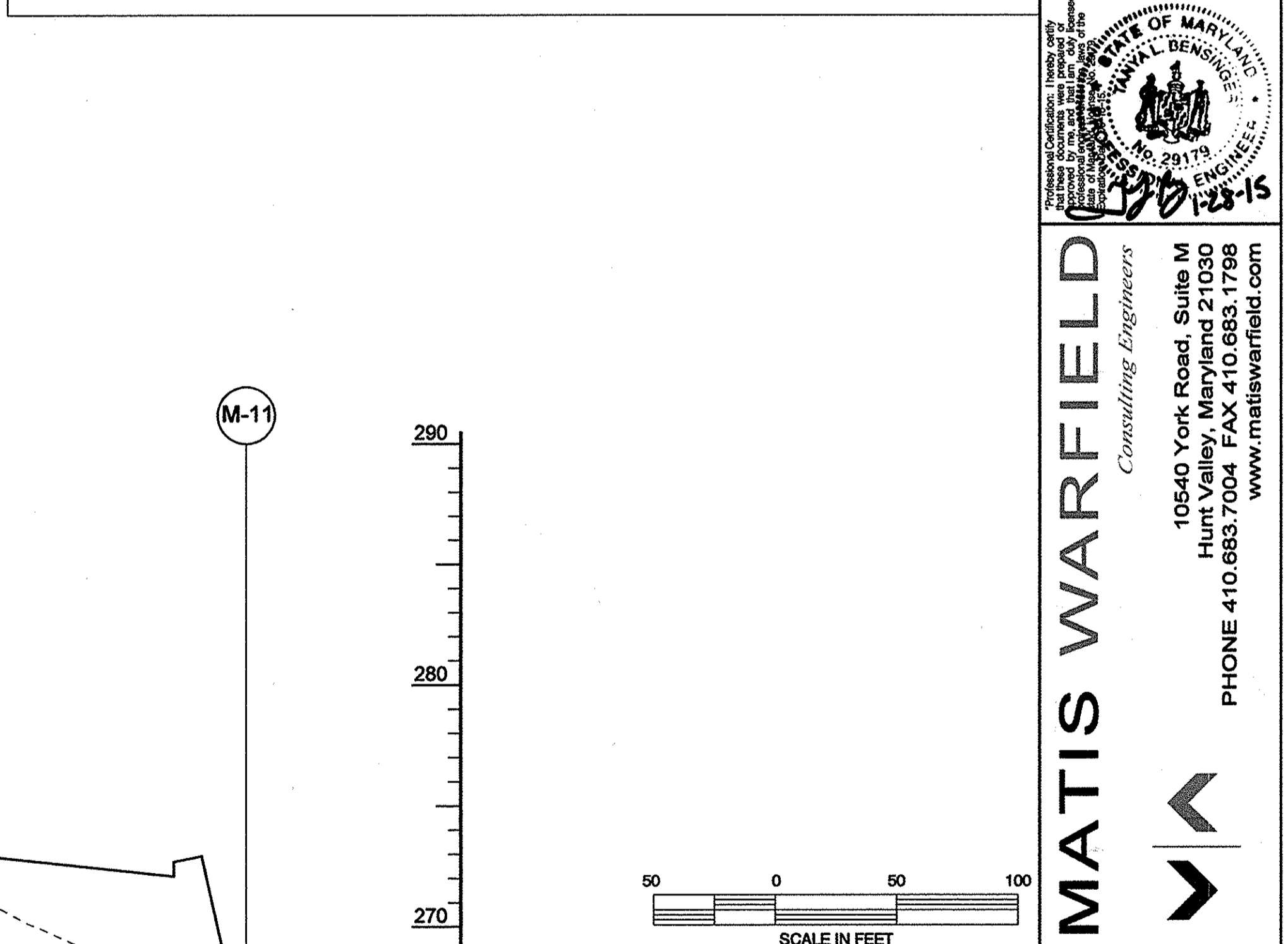
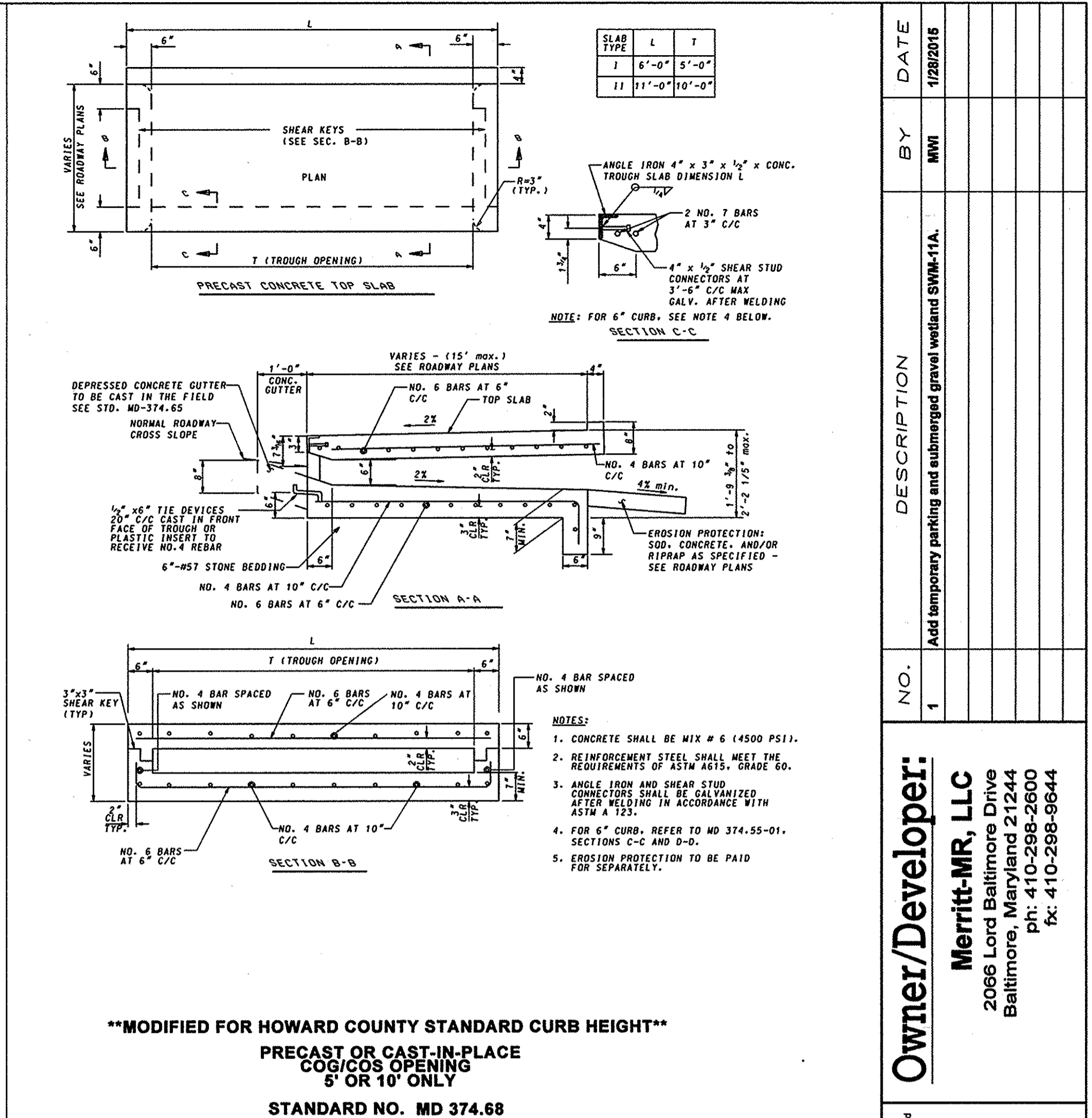
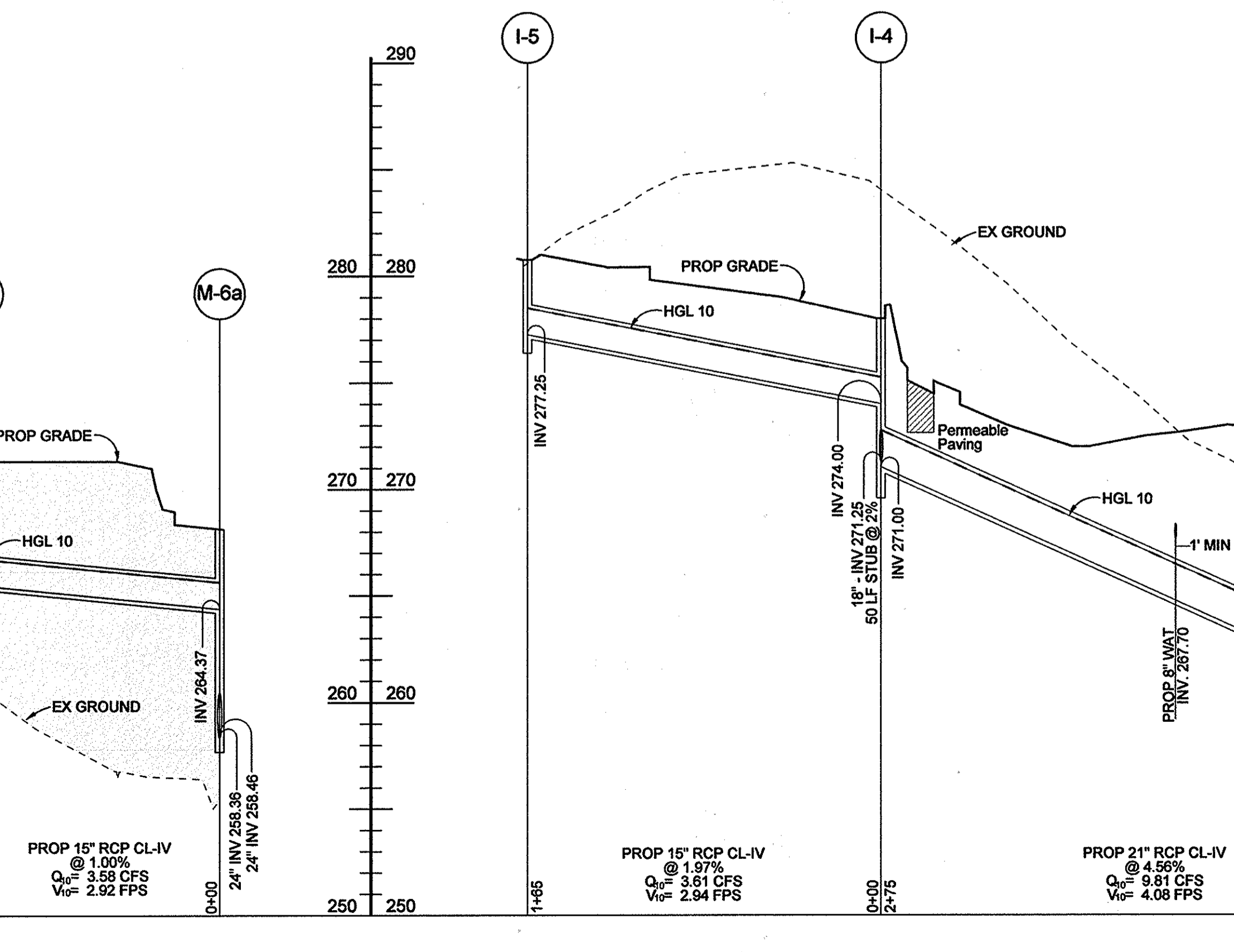
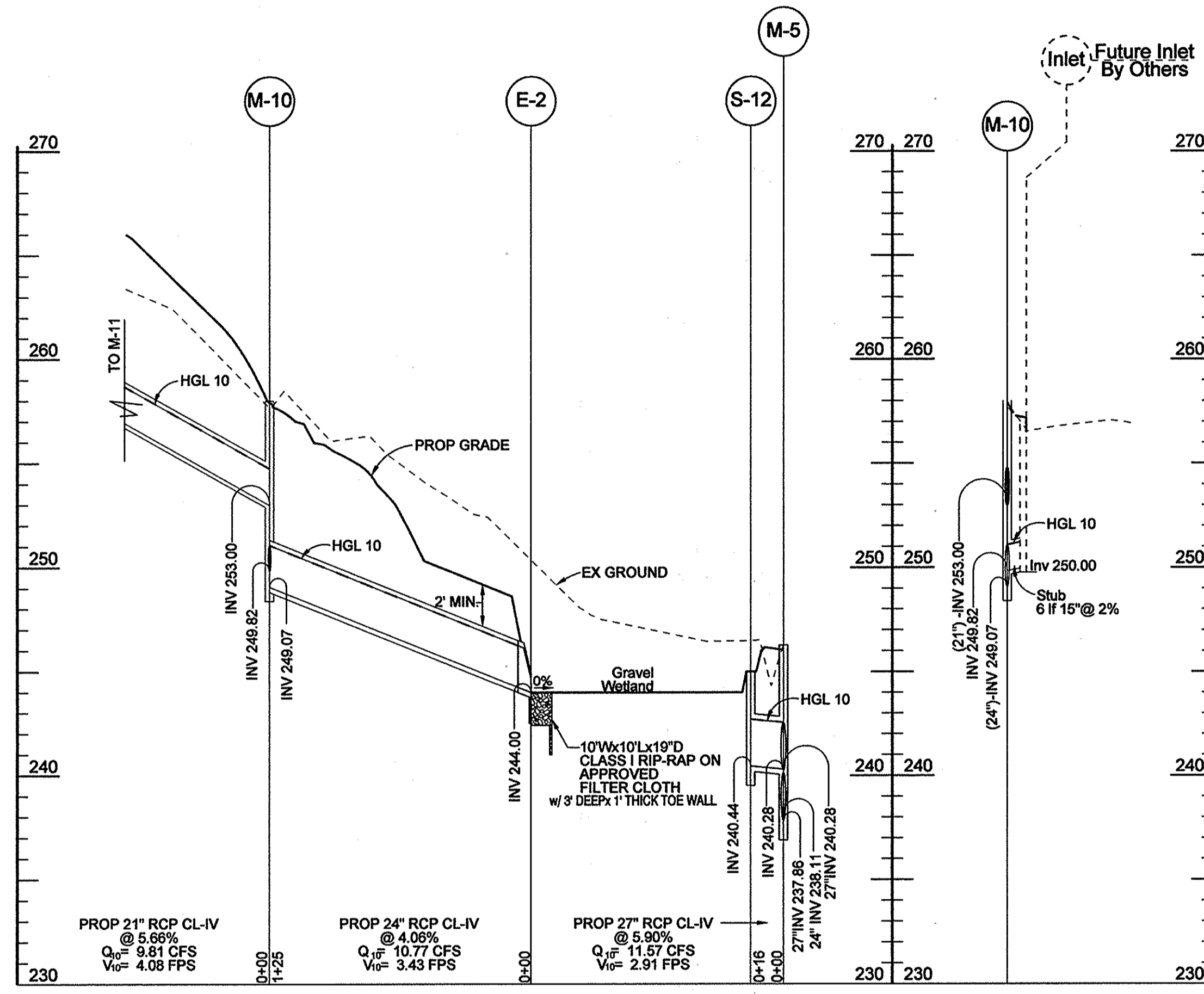
SDP-13-070

Interstate (I-95) (South Bound)
 (Principal Arterial Highway)
 Vehicular Ingress & Egress Restricted

STORM DRAINAGE AREA MAP
 1"=50'

LOCATION FROM TO	AREA	ACRES		COEFF. C	CA		Σ CA	TIME CONC. (MIN.)			INTEN. I		Q = CIA (CFS)	PIPE SIZE	SLOPE	VEL.	LGTH.	Pipe Time (Min)	REMARKS		
		Sub.	Total		25 YR	10 YR		Inlet	Drain	Total	25 YR	10 YR									
ex-15	BI	0.42	0.42	0.85	0.36							5.00	8.50	3.03	15	0.22%	2.47	96	0.65		
ex-16	BI											5.00	8.50	3.03	15	0.22%	2.47	96	0.65		
ex-1-6A	A1	0.97	0.97	0.90	0.87							5.00	8.50	7.42	18	0.50%	4.20	87	0.35		
ex-1-6	A1											5.00	8.50	7.42	18	0.50%	4.20	87	0.35		
ex-1-6	CI	0.34	0.34	0.85	0.29							5.00	8.50	2.46							
ex-1-6	A1-C1		1.73					1.52	5.00	0.65	5.65	8.00	12.15	21	0.59%	5.05	188	0.62			
ex-1-7	DI	1.21		0.82	0.99							5.00	8.50	8.39							
ex-1-7	DI		1.21		0.99							5.00	8.50	8.39	18	0.64%	4.75	67.6	0.24		
ex-1-8	EI	0.59		0.90	0.53							5.00	8.50	4.51							
ex-1-8	ex-1-9	A1-EI		3.53				3.04	5.65	0.62	6.27	8.00	24.30	27	0.61%	6.11	208	0.57			
ex-1-10	F1	0.33		0.86	0.28							5.00	8.50	2.41							
ex-1-10	F1		0.33		0.28							5.00	8.50	2.41	18	0.09%	1.37	30	0.37		
ex-1-11	GI	0.36		0.72	0.26							5.00	8.50	2.19							
ex-1-11	ex-M-2a	F1-GI		0.69				0.54	5.00	0.37	5.37	8.50	4.60	21	0.08%	1.91	48	0.42			
ex-M-2a	ex-1-9	F1-GI		0.69				0.54	5.37	0.42	5.78	8.00	4.33	21	0.07%	1.80	11.5	0.11			
S-3	J1	0.47		0.74	0.35							5.00	8.50	2.97							
S-2	J1		0.47		0.35							5.00	8.50	2.97	15	0.21%	2.42	117	0.81		
S-2	I1	0.50		0.79	0.40							5.00	8.50	3.37							
S-2	M-2	I1-J1		0.97				0.75	5.00	0.81	5.81	8.00	5.97	18	0.32%	3.38	57	0.28			
M-2	M-1	I1-J1		0.97				0.75	5.81	0.28	6.09	8.00	5.97	18	0.32%	3.38	62	0.31			
S-1	H1	0.47		0.69	0.32							5.00	8.50	2.75							
M-1	M-1	H1		0.47	0.32			0.32				5.00	8.50	2.75	15	0.18%	2.24	18	0.13		
ex-1-9	HI-J1		1.44		1.07	6.09	0.31	6.39				8.00	8.55	18	0.66%	4.84	84	0.29			
ex-1-9	GI	0.19		0.30	0.06							5.00	8.50	0.48							
ex-1-9	ex-M-2	A1-J1		5.85		4.70	6.39	0.29	6.68			7.60	35.75	36	0.29%	5.06	59.5	0.20			
ex-M-2	ex-M-3	A1-J1		5.85		4.70	6.68	0.20	6.88			7.60	35.75	36	0.29%	5.06	70.7	0.23			
ex-M-3	ex-E-2	A1-J1		5.85		4.70	6.88	0.23	7.11			7.60	35.75	36	0.29%	5.06	26.3	0.09			

LOCATION FROM TO	AREA	ACRES		COEFF. C	CA		Σ CA	TIME CONC. (MIN.)			INTEN. I		Q = CIA (CFS)	PIPE SIZE	SLOPE	VEL.	LGTH.	Pipe Time (Min)	REMARKS		
		Sub.	Total		25 YR	10 YR		Inlet	Drain	Total	25 YR	10 YR									
RD	A2	0.46	0.46	0.95	0.44							5.00	8.50	3.71							
M-4	A2		0.46		0.44							5.00	8.50	3.71	12	1.09%	4.73	17	0.06		
M-4	M-3	A2		0.46	0.44							5.00	8.50	3.71	15	0.33%	3.03	84	0.46		
RD	B2	0.46	0.46	0.95	0.44							5.00	8.50	3.71							
RD	M-3	B2		0.46	0.44							5.00	8.50	3.71	12	1.09%	4.73	46	0.16		
M-3	E-1-S-1	A2-B2		0.92		0.87	5.00	0.46	5.46			8.50	7.43	18	0.50%	4.20	64	0.25			
S-11	D2	1.62		0.65	1.06							5.00	8.50	8.99							
S-11	S-5	D2		1.62	1.06							5.00	8.50	8.99	18	0.73%	5.09	112	0.37		
S-5	E2	0.55		0.70	0.39							5.00	8.50	3.28							
S-5	S-4	D2-E2		2.17	1.44	5.00	0.37	5.37				8.50	12.27	21	0.60%	5.10	105	0.34			
S-4	F2	0.81		0.52	0.43							5.00	8.50	3.61							
S-4	M-8	D2-F2		2.98	1.87	5.37	0.34	5.71				8.00	14.95	21	0.89%	6.22	20	0.05			
M-8	M-7	D2-F2		2.98	1.87	5.71	0.05	5.76				8.00	14.95	21	0.89%	6.22	193	0.52			
S-7	G2	0.66		0.60	0.39							5.00	8.50	3.34							
S-7	S-6	G2		0.66	0.39							5.00	8.50	3.34	15	0.27%	2.72	19	0.12		
S-6	H2	0.42		0.64	0.27							5.00	8.50	2.29							
S-6	M-9	G2-H2		1.08	0.66	5.00	0.12	5.12				8.50	5.63	15	0.76%	4.59	15	0.05			
M-9	M-7	G2-H2		1.08	0.66	5.12	0.05	5.17				8.50	5.63	15	0.76%	4.59	112	0.41			
M-7	M-6a	D2-H2		4.06	2.53	5.76	0.52	6.28				8.00	20.25	24	0.80%	6.45	171	0.44			
S-9	H2a	0.56		0.75	0.42							5.00	8.50	3.38							
M-6a	H2a		0.56		0.42							5.00	8.50	3.38	15	0.31%	2.92	113	0.65		
M-6a	M-6	D2-H2		4.62	2.95	6.28	0.44	6.72				7.60	22.44	24	0.98%	7.14	53	0.12			
S-8	I2	0.44		0.67	0.29							5.00	8.50	2.30							
S-8	M-6	I2		0.44	0.29							5.00	8.50	2.30	15	0.15%	2.04	13	0.11		
M-6	M-5	D2-I2		5.06	3.25	6.72	0.12	6.85				7.60	24.68	24	1.19%	7.86	93	0.20			
I-5	J2	0.81		0.52	0.43							5.00	8.50	3.61							
I-4	J2	0.81		0.81	0.43							5.00	8.50	3.61	15	0.31%	2.94	165	0.93		
I-4	M-11	J2-K2		1.77	1.23	5.00	0.93	5.93				8.00	9.81	21	0.38%	4.08	275	1.12			
M-11	M-10	J2-K2		1.77	1.23	5.93	1.12	7.06				7.60	9.81	21	0.38%	4.08	93	0.38			
STUB	STUB	I2		0.29	0.19							5.00	8.50	1.62							
STUB	M-10	I2		0.29	0.19							5.00	8.50	1.62	15	0.06%	1.32	9	0.11		
M-10	E2	J2-I2		2.06	1.42	7.06	0.38	7.44				7.60	10.77	24	0.23%	3.43	125	0.61			
S-12	M-5	J2-M2		0.63	0.30							5.00	8.50	1.61							
S-12	M-5	J2-M2		2.69	1.61	7.44	0.61	8.04				7.20	11.57	27	0.14%	2.91	16	0.09			
S-10	C2	0.62		0.30	0.19							5.00	8.50	1.58							
S-10	M-5	A2-C2		1.54	1.06							5.00	8.50	9.01	27	0.08%	2.27	17	0.13		
M-5	ex-1-1D	A2-M2		9.29	5.91	8.04	0.20	8.24				7.20	42.58	27	1.89%	10.71	75	0.12			
ex-1-1D	ex-1-1D	N2		0.10	0.03							5.00	8.50	0.26							
ex-1-1D	ex-M-11D	A2-N2		9.39	5.94	8.24	0.12	8.36				7.20	42.79	27	1.91%	10.76	49.5	0.08			
ex-1-1	O2	0.19		0.74	0.14							5.00	8.50	1.20							
ex-1-1A	O2		0.19		0.14							5.00	8.50	1.20	18	0.01%	0.68	174.9	4.28		
ex-1-1A	P2	0.19		0.95	0.18							5.00	8.50	1.53							
ex-1-1A	ex-M-11D	O2-P2		0.38	0.32	5.00	4.28	9.28				6.90	2.22	18	0.04%	1.26	28.2	0.37			
ex-M-11D	ex-1-1B	A2-P2		9.77	6.27	8.36	0.08	8.44				7.20	45.11	27	2.12%	11.35	132.5	0.19			
ex-1-1B	O2	0.56		0.53	0.30							5.00	8.50	2.53							
ex-1-1B	ex-M-1A	A2-O2		10.33	6.56	8.44	0.19	8.63				6.90	45.29	27	2.14%	11.39	56.3	0.08			



APPROVED: Howard County Department of Planning and Zoning

CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* DATE: 4-8-15

CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* DATE: 4-13-15

DIRECTOR: *[Signature]* DATE: 4/14/15

REVISED SITE DEVELOPMENT PLAN

STORM DRAINAGE DETAILS

The Meadows Corporate Park Phase 2

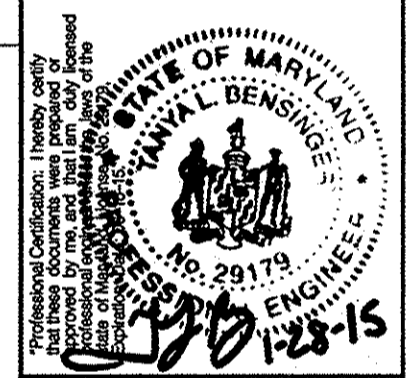
6510 - 6518 MEADOW RIDGE ROAD RD RTE. 103 GREEN BUILDING

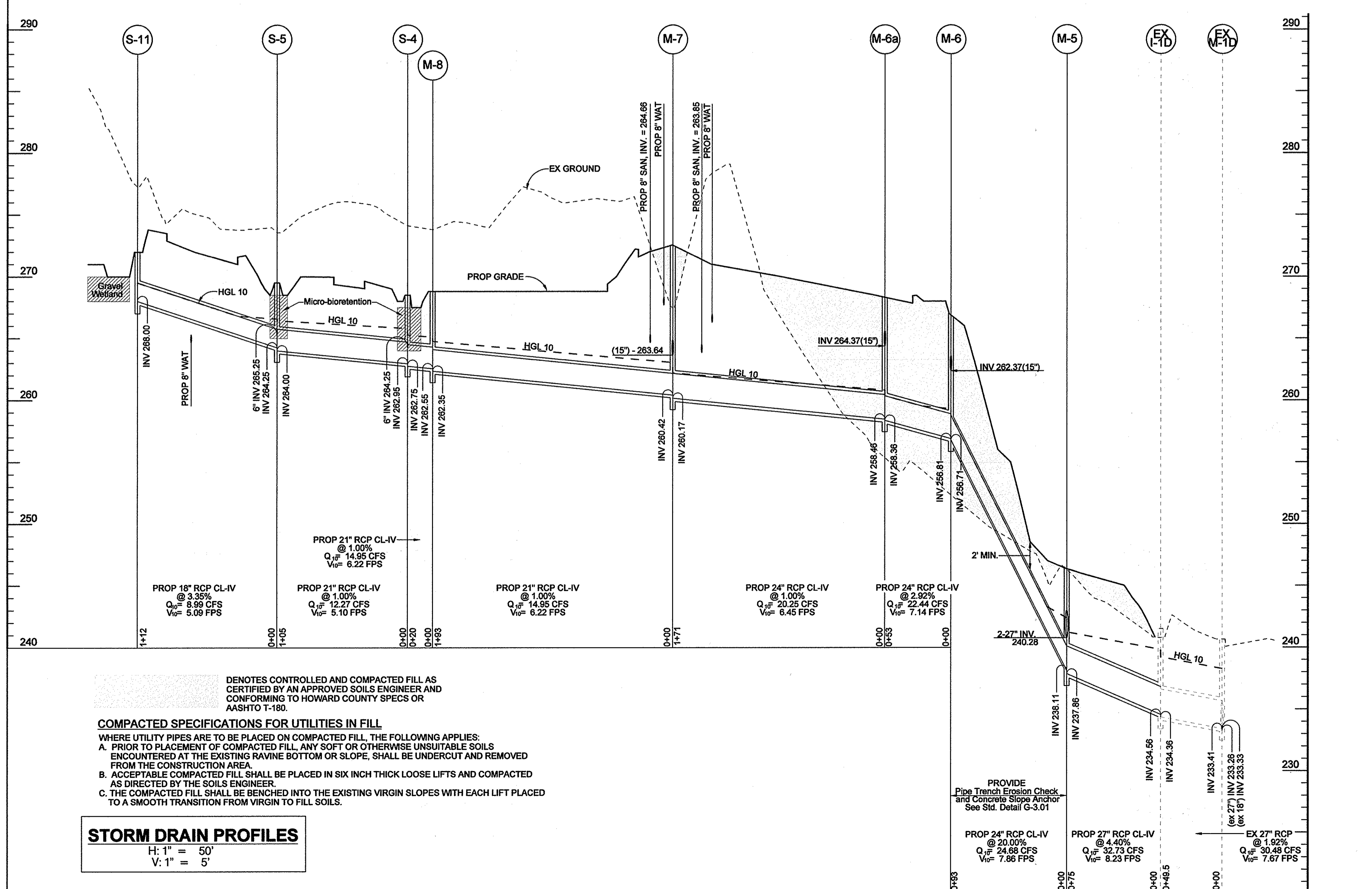
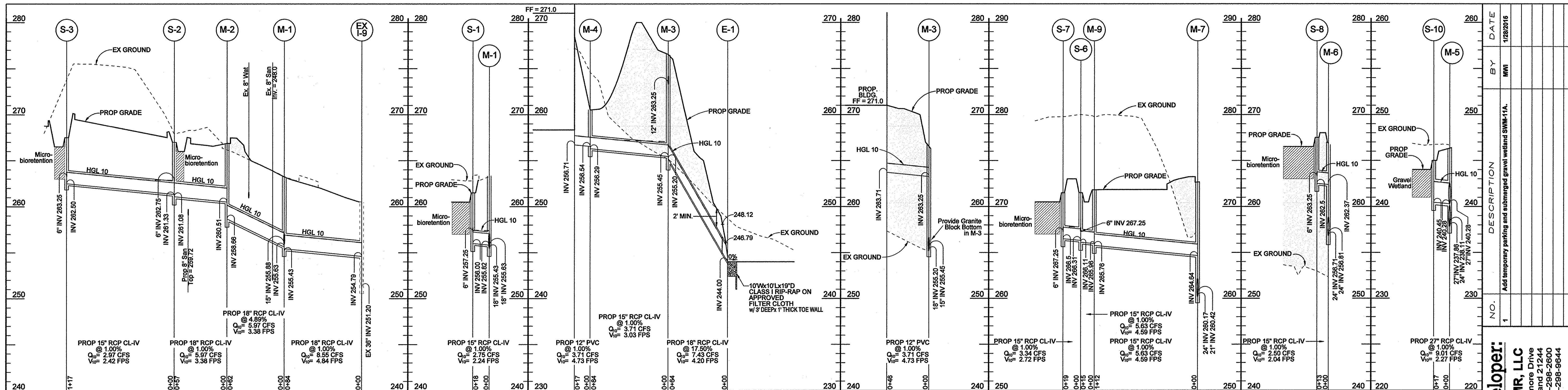
TAX MAP: 37; PARCELS: A6-A9; ELECTION DISTRICT: 1; ZONE: POR

GENERAL OFFICE SCALE: 1" = 50' DATE: April 23, 2014 SHEET: 15 of 35

SDP-13-070

Owner/Developer:
Merritt-MR, LLC
 2066 Lord Baltimore Drive
 Baltimore, Maryland 21244
 PH: 410-288-2600
 FX: 410-288-9644





STRUCTURE SCHEDULE

NO.	TYPE	INV. IN	INV. OUT	TOP ELEV.	LOCATION		DETAIL
					NORTHING	EASTING	
S-1	'S' INLET	257.25	256.00	261.50*	555,152.78	1,376,158.01	HOCO D-4.22
S-2	'S' INLET	262.75	261.50	267.00*	555,186.72	1,376,044.14	HOCO D-4.22
S-3	'S' INLET	263.25	262.50	267.50*	555,298.89	1,376,012.34	HOCO D-4.22
S-4	'S' INLET	264.25	263.50	268.50*	555,351.83	1,375,983.36	HOCO D-4.22
S-5	'S' INLET	265.25	264.00	269.50*	555,316.52	1,375,884.42	HOCO D-4.22
S-6	'S' INLET	267.25	266.11	271.50*	555,665.14	1,375,896.55	HOCO D-4.22
S-7	'S' INLET	267.25	266.50	271.50*	555,683.52	1,375,891.21	HOCO D-4.22
S-8	'S' INLET	263.25	262.50	267.50*	555,604.29	1,376,153.09	HOCO D-4.22
S-9	'S' INLET	266.25	265.50	270.50*	555,710.04	1,376,074.58	HOCO D-4.22
S-10	'S' INLET	—	240.45	245.00*	555,605.49	1,376,250.24	HOCO D-4.22
S-11	'S' INLET	—	268.00	272.00*	555,301.44	1,375,773.92	HOCO D-4.22
I-1	'S' COS	—	—	263.84**	555,103.90	1,376,128.96	MD 374.68
I-2	'S' COS	—	—	272.90**	555,335.91	1,375,841.59	MD 374.68
I-3	'S' COS	—	—	273.68**	555,353.84	1,375,793.87	MD 374.68
M-1	STD. MH	255.82	255.63	255.43	555,164.33	1,376,154.75	HOCO G-5.12
M-2	STD. MH	260.51	258.66	266.90	555,194.60	1,376,100.73	HOCO G-5.12
M-3	STD. MH	263.25	255.45	266.60	555,450.97	1,376,224.34	HOCO G-5.12
M-4	STD. MH	256.54	256.29	261.00	555,366.76	1,376,218.46	HOCO G-5.12
M-5	STD. MH	240.28	237.86	246.10	555,622.81	1,376,249.70	HOCO G-5.12
M-6	STD. MH	256.71	256.71	266.85	555,616.06	1,376,156.58	HOCO G-5.12
M-6a	STD. MH	264.37	258.36	268.15	555,601.26	1,376,105.12	HOCO G-5.12
M-7	STD. MH	262.55	260.42	260.17	555,554.99	1,375,941.07	HOCO G-5.12
M-8	STD. MH	262.35	262.35	268.80	555,369.08	1,375,993.79	HOCO G-5.12
M-9	STD. MH	265.96	265.76	271.80	555,662.63	1,375,911.10	HOCO G-5.12
E-1	END SECT	—	244.00	—	555,496.84	1,376,269.54	HOCO D-5.51
S-12	'S' INLET	—	240.44	245.00*	555,637.71	1,376,245.01	HOCO D-4.22
E-2	END SECT	—	244.00	—	555,750.74	1,376,155.93	HOCO D-5.51
M-10	STD. MH	253.00	249.82	249.07	555,821.95	1,376,107.38	HOCO G-5.12
M-11	STD. MH	266.50	258.46	258.26	555,870.81	1,376,028.48	HOCO G-5.12
I-4	STD. MH	274.00	271.25	278.00	555,760.27	1,375,777.03	HOCO D-4.31
I-5	STD. MH	—	277.25	280.75	555,596.60	1,375,759.33	HOCO D-4.14

* Denotes Grate Elevation
 ** Denotes Top of Curb at Centerline of Inlet
 *** Denotes Granite Block Bottom

PIPE SCHEDULE

SIZE (IN.)	CLASSIFICATION	TYPE	TOTAL LENGTH (FT.)
12	SCH 40	PVC	63
15	IV	RCP	665
18	IV	RCP	429
21	IV	RCP	686
24	IV	RCP	442
27	IV	RCP	108

DENOTES CONTROLLED AND COMPACTED FILL AS CERTIFIED BY AN APPROVED SOILS ENGINEER AND CONFORMING TO HOWARD COUNTY SPECS OR AASHTO T-180.

COMPACTED SPECIFICATIONS FOR UTILITIES IN FILL
 WHERE UTILITY PIPES ARE TO BE PLACED ON COMPACTED FILL, THE FOLLOWING APPLIES:
 A. PRIOR TO PLACEMENT OF COMPACTED FILL, ANY SOFT OR OTHERWISE UNSUITABLE SOILS ENCOUNTERED AT THE EXISTING RAVINE BOTTOM OR SLOPE, SHALL BE UNDERCUT AND REMOVED FROM THE CONSTRUCTION AREA.
 B. ACCEPTABLE COMPACTED FILL SHALL BE PLACED IN SIX INCH THICK LOOSE LIFTS AND COMPACTED AS DIRECTED BY THE SOILS ENGINEER.
 C. THE COMPACTED FILL SHALL BE BENCHED INTO THE EXISTING VIRGIN SLOPES WITH EACH LIFT PLACED TO A SMOOTH TRANSITION FROM VIRGIN TO FILL SOILS.

STORM DRAIN PROFILES
 H: 1" = 50'
 V: 1" = 5'

Owner/Developer:
Merritt-MR, LLC
 2066 Lord Baltimore Drive
 Baltimore, Maryland 21244
 PH: 410-298-2600
 FX: 410-298-9644

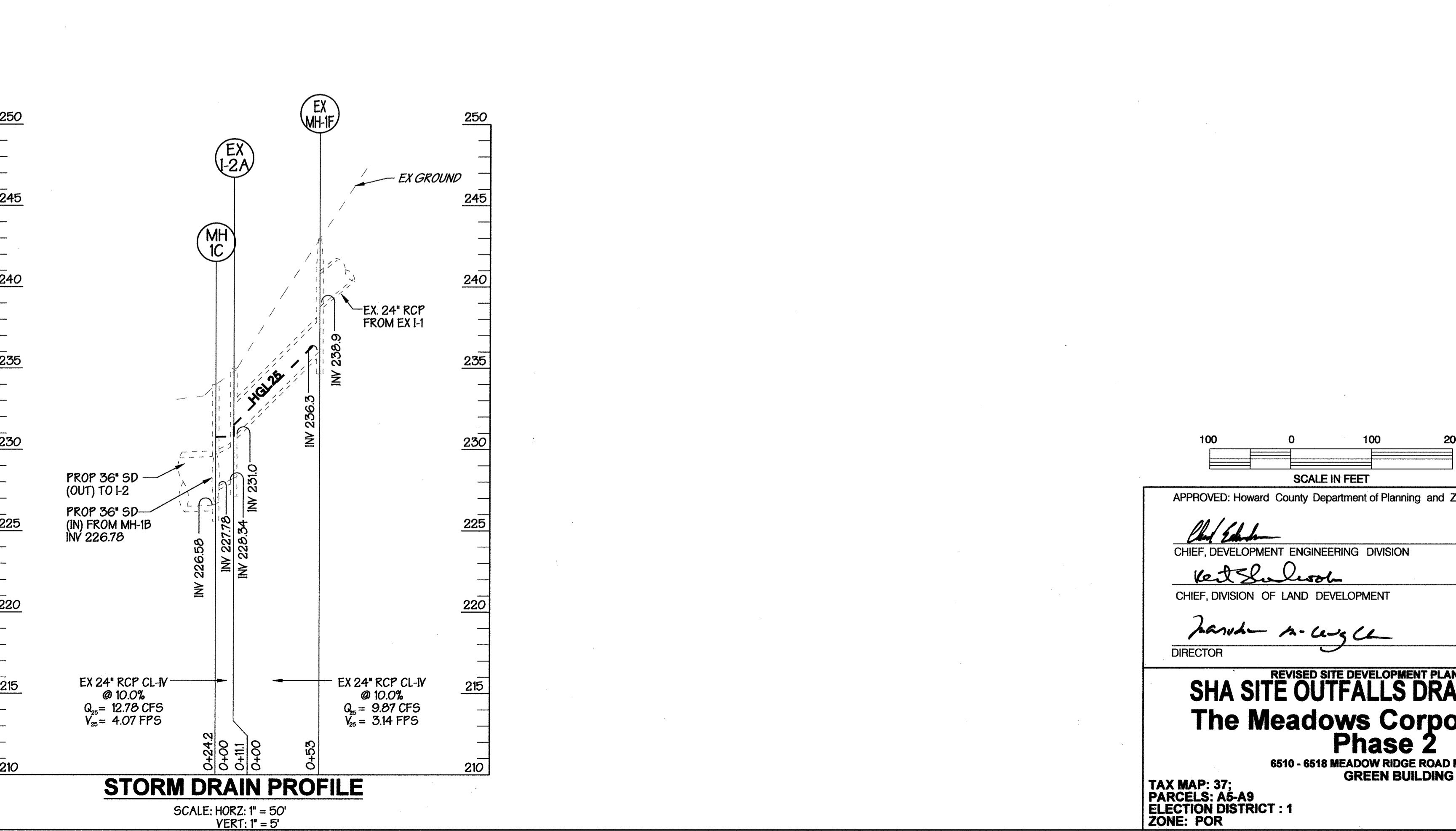
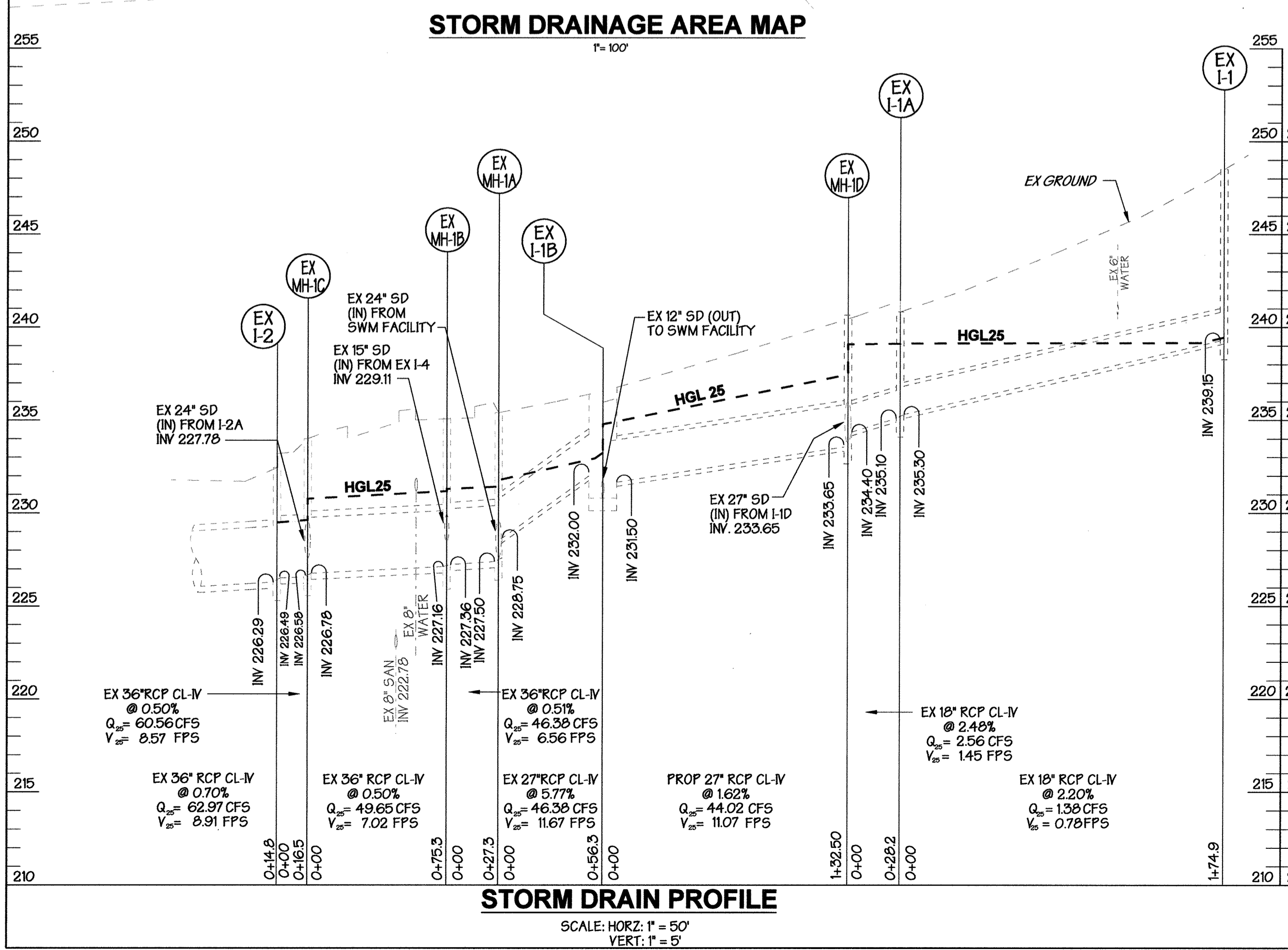
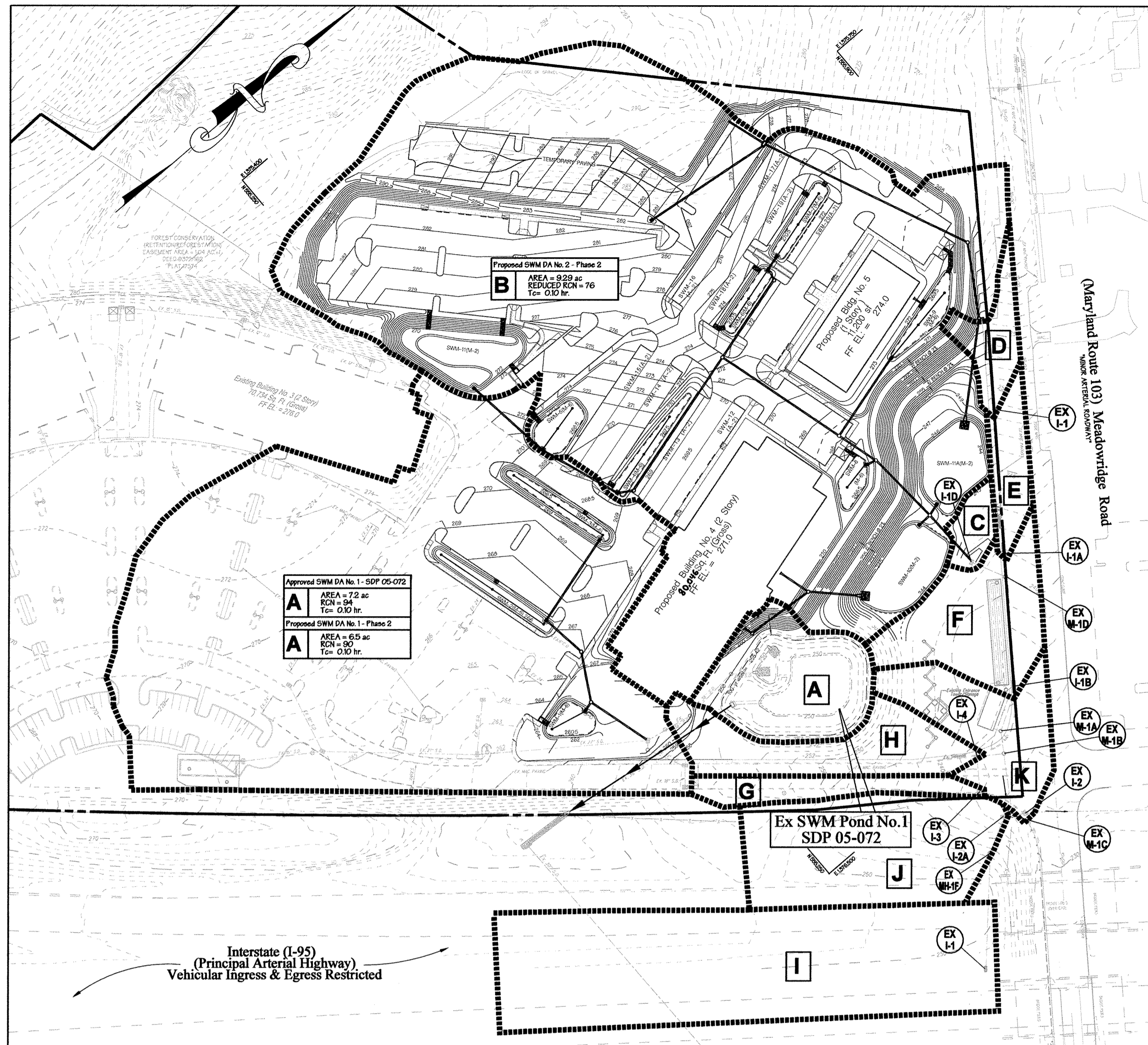


MATIS WARFIELD
 Consulting Engineers
 10540 York Road, Suite M
 Hunt Valley, Maryland 21030
 PHONE 410.683.7004 FAX 410.683.1798
 www.matiswarfield.com

APPROVED: Howard County Department of Planning and Zoning
 Chief, Development Engineering Division
 Chief, Division of Land Development
 Director

REVISED SITE DEVELOPMENT PLAN
STORM DRAINAGE PROFILES
The Meadows Corporate Park
Phase 2
 6510 - 6518 MEADOW RIDGE ROAD RD. RTE. 103
 GREEN BUILDING
 TAX MAP: 37;
 PARCELS: A6-A9
 ELECTION DISTRICT: 1
 ZONE: POR
 GENERAL OFFICE
 SCALE: 1" = 50'
 DATE: April 23, 2014
 SHEET: 16 of 35

SDP-13-070



LOCATION	FROM	TO	AREA	ACRES		COEFF C	CA 25 YR	Σ CA	TIME CONC. (MIN.)			INTEN. I 25YR	Q = CIA (CFS)	PIPE SIZE	SLOPE	n = 0.013	PIPE VEL.	LGTH.	Pipe Time (Min)	REMARKS
				Sub.	Total				Inlet	Drain	Total									
M-5	ex-I-D	B		9.29		0.30	0.03	5.18			8.24	8.40	43.55	27	1.98%	10.95	75	0.11	From TR-55	
ex-I-D	ex-I-D	C	0.10			0.30	0.03				5.00	9.76	0.29							
ex-I-D	ex-M-1D	B-C		9.39				5.21	8.24	0.11	8.36	8.40	43.80	27	2.00%	11.02	49.5	0.07		
ex-I-1	ex-I-1	D	0.19			0.74	0.14				5.00	9.76	1.38							
ex-I-1	ex-I-1A	D	0.19			0.95	0.18	0.14			5.00	9.76	1.38	18	0.02%	0.78	174.9	3.73		
ex-I-1A	ex-M-1D	D-E		0.38				0.32	5.00	3.73	8.73	7.95	2.56	18	0.06%	1.45	28.2	0.32		
ex-M-1D	ex-I-1B	B-E		9.77				5.54	8.73	0.07	8.80	7.95	44.02	27	2.02%	11.07	132.5	0.20		
ex-I-1B	ex-I-1B	F	0.56			0.53	0.30				5.00	9.76	2.91							
ex-I-1B	ex-M-1A	B-F		10.33				5.83	8.80	0.20	9.00	7.95	46.38	27	2.24%	11.67	56.3	0.08		
ex-M-1A	ex-M-1B	B-F		10.33				5.83	9.00	0.08	9.08	7.95	46.38	36	0.48%	6.56	27.3	0.07		
ex-I-3	ex-I-3	G	0.22			0.68	0.15				5.00	9.76	1.47							
ex-I-4	ex-I-4	G	0.22			0.52	0.26	0.15			5.00	9.76	1.47	15	0.05%	1.20	44	0.61		
ex-I-4	ex-M-1B	G-H		0.72				0.41	5.00	0.61	5.61	9.31	3.83	15	0.35%	3.12	33.2	0.18		
ex-M-1B	ex-M-1C	B-H		11.05				6.25	9.08	0.07	9.15	7.95	49.65	36	0.55%	7.02	75.3	0.18		
ex-I-1	ex-I-1	I	1.92			0.53	1.01				5.00	9.76	9.87							
ex-I-1	ex-M-1F	I		1.92				1.01			5.00	9.76	9.87	24	0.19%	3.14	139	0.74		
ex-M-1F	ex-I-2A	I		1.92				1.01			5.00	9.76	9.87	24	0.19%	3.14	53	0.28		
ex-I-2A	ex-M-1C	I-J		0.90		0.40	0.36				5.00	9.76	3.52							
ex-I-2A	ex-M-1C	I-J		2.82				1.37	5.00	0.74	5.74	9.31	12.78	24	0.32%	4.07	11.1	0.05		
ex-M-1C	ex-I-2	B-J		13.87				7.62	9.15	0.18	9.33	7.95	60.56	36	0.82%	8.57	16.5	0.03		
ex-I-2	out	B-K		0.49		0.62	0.30				5.00	9.76	2.96							
ex-I-2	out	B-K		14.36				7.92	9.33	0.03	9.36	7.95	62.97	36	0.89%	8.91	400	0.75		

NO.	DESCRIPTION	DATE
1	Add temporary parking and submerged gravel wetland SWM-11A.	1/28/2016
2	Update Building 4 Square Footage for a basement boiler room.	7/26/16

Owner/Developer:
Merritt-MR, LLC
 2066 Lord Baltimore Drive
 Baltimore, Maryland 21244
 ph: 410-298-2600
 fx: 410-298-9644



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APPROVED: Howard County Department of Planning and Zoning

[Signature] 4-8-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 4-13-15
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

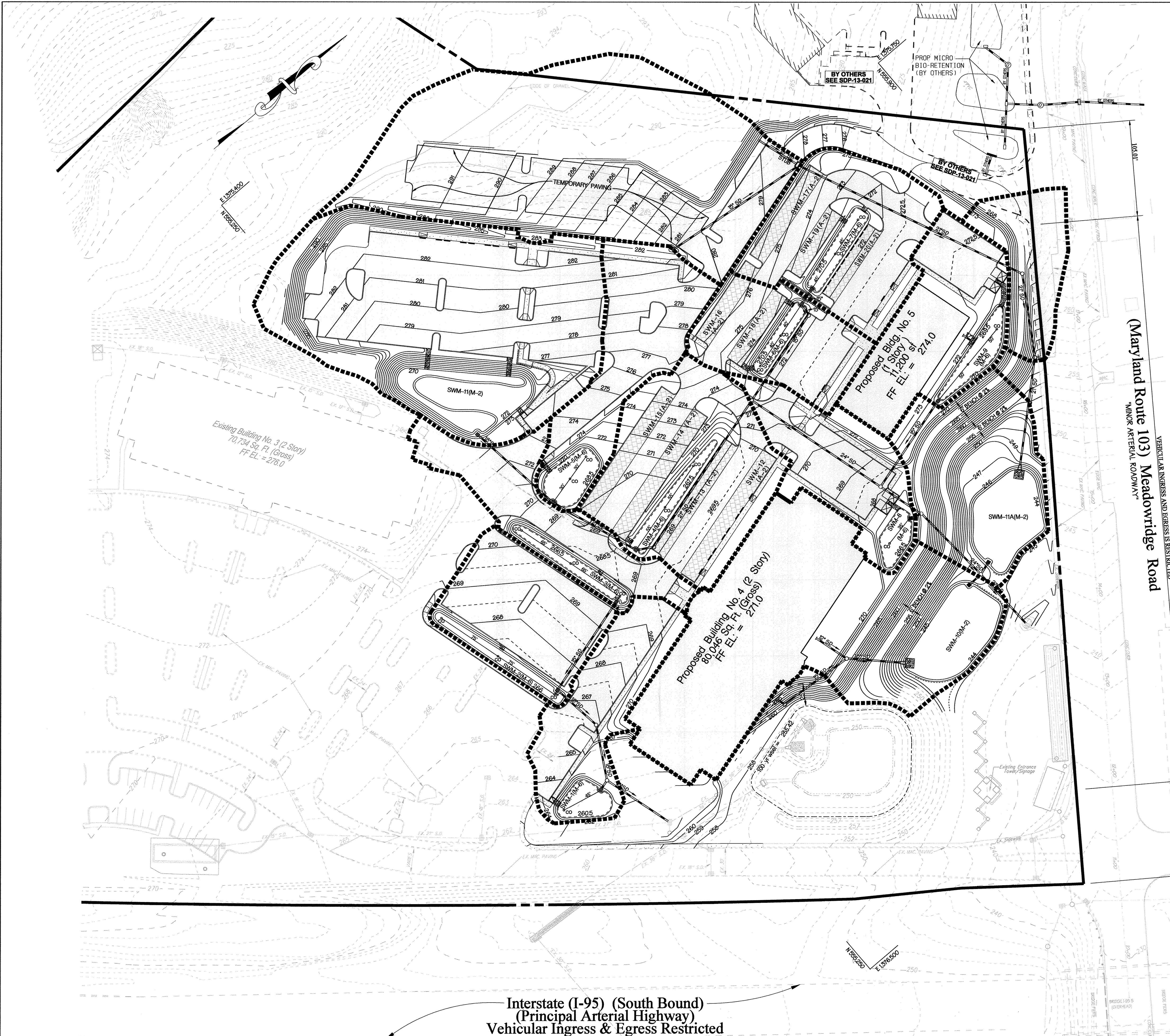
[Signature] 4/14/16
 DIRECTOR DATE

REVISED SITE DEVELOPMENT PLAN
SHA SITE OUTFALLS DRAINAGE MAP
The Meadows Corporate Park
Phase 2
 6810 - 6818 MEADOW RIDGE ROAD MD RTE. 103
 GREEN BUILDING

TAX MAP: 37;
 PARCELS: A6-A9
 ELECTION DISTRICT: 1
 ZONE: POR

GENERAL OFFICE
 SCALE: 1" = 50'
 DATE: April 23, 2014
 SHEET: 17 of 35

SDP-13-070



STORMWATER MANAGEMENT SUMMARY		
	REQ'D	PROVD
Impervious Area to be Treated (A _i)	5,56 AC.	5,73 AC.
Environmental Site Design Volume (ESDv)	40,112 C.F.	42,404 C.F.

ESDv SUMMARY					
ID	ESD PRACTICE	TREATMENT VOLUME	SURFACE AREA	DRAINAGE AREA	IMPERVIOUS AREA
SWM-1	MICRO-BIORETENTION 1	2011 C.F.	1550 S.F.	0.47 AC.	0.28 AC.
SWM-2	MICRO-BIORETENTION 2	2638 C.F.	2015 S.F.	0.50 AC.	0.38 AC.
SWM-3	MICRO-BIORETENTION 3	2261 C.F.	1750 S.F.	0.47 AC.	0.32 AC.
SWM-4	MICRO-BIORETENTION 4	2061 C.F.	1550 S.F.	0.55 AC.	0.28 AC.
SWM-5	MICRO-BIORETENTION 5	2419 C.F.	1825 S.F.	0.55 AC.	0.34 AC.
SWM-6	MICRO-BIORETENTION 6	1583 C.F.	1200 S.F.	0.35 AC.	0.22 AC.
SWM-7	MICRO-BIORETENTION 7	2140 C.F.	1605 S.F.	0.53 AC.	0.30 AC.
SWM-8	MICRO-BIORETENTION 8	1785 C.F.	1340 S.F.	0.44 AC.	0.25 AC.
SWM-9	MICRO-BIORETENTION 9	2758 C.F.	2100 S.F.	0.58 AC.	0.39 AC.
SWM-10	GRAVEL WETLANDS #1	6550 C.F.	6550 S.F.	1.53 AC.	0.91 AC.
SWM-11	GRAVEL WETLANDS #2	7000 C.F.	7000 S.F.	1.82 AC.	0.88 AC.
SWM-11A	GRAVEL WETLANDS #3	6000 C.F.	6000 S.F.	2.69 AC.	0.72 AC.
SWM-12	PERMEABLE PAVING		2916 S.F.		
SWM-13	PERMEABLE PAVING		2592 S.F.		
SWM-14	PERMEABLE PAVING		2916 S.F.		
SWM-15	PERMEABLE PAVING		2916 S.F.		
SWM-16	PERMEABLE PAVING	3188 C.F.	1782 S.F.	0.46 AC.	0.46 AC.
SWM-17	PERMEABLE PAVING		2106 S.F.		
SWM-18	PERMEABLE PAVING		1620 S.F.		
SWM-19	PERMEABLE PAVING		1458 S.F.		
SWM-20	PERMEABLE PAVING		1620 S.F.		
					5.73 AC.

- NOTE**
1. ALL BUILDING No. 4 ROOF LEADERS SHALL BE CONNECTED TO M-3 OR M-4 AND DRAIN INTO SWM-10.
 2. ALL BUILDING No. 5 ROOF LEADERS SHALL BE CONNECTED TO THE STORM DRAIN SYSTEM AND DRAIN INTO SWM-9.

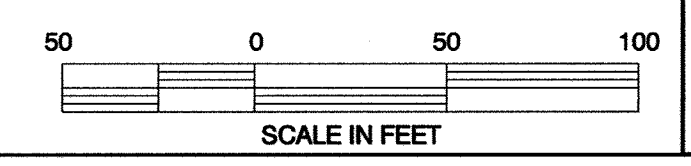
NO.	DESCRIPTION	BY	DATE
1	Add temporary parking and submerged gravel wetland SWM-11A.	MWI	1/28/2015
2	Update Building 4 Square Footage for a basement under room.	MWI	7/24/15

Owner/Developer:
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Huntshire Drive



APPROVED: Howard County Department of Planning and Zoning

Chad White 4.9.15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
Kevin Schuler 4-13-15
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
Paul A. Angelle 4/13/15
 DIRECTOR DATE

REVISED SITE DEVELOPMENT PLAN
ESD DRAINAGE AREA MAP
The Meadows Corporate Park
Phase 2

6610 - 6618 MEADOW RIDGE ROAD MD RTE. 103
 GREEN BUILDING

TAX MAP: 37;
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SDP-13-070

Interstate (I-95) (South Bound)
 (Principal Arterial Highway)
 Vehicular Ingress & Egress Restricted

(Maryland Route 103) Meadowridge Road
 VEHICULAR INGRESS AND EGRESS IS RESTRICTED
 MINOR ARTERIAL ROADWAY

MICRO-BIORETENTION CONSTRUCTION CRITERIA:

EROSION AND SEDIMENT CONTROL: Micro-bioretenion practices should not be constructed until the Contributing drainage area is stabilized.

SOIL COMPACTION: Excavation should be conducted in dry conditions with equipment located outside of the practice to minimize bottom and sidewall compaction. Only lightweight, low ground-contact equipment should be used within micro-bioretenion practices and the bottom scarified before installing underdrains and filtering media.

UNDERDRAIN INSTALLATION: Gravel for the underdrain system should be clean, washed, and free of fines. Underdrain pipes should be checked to ensure that both the material and perforations meet specifications. The upstream ends of the underdrain pipe should be capped prior to installation.

FILTER MEDIA INSTALLATION: Bioretention soils may be mixed on-site before placement. However, soils should not be placed under saturated conditions. The filter media should be placed and graded using excavators or backhoes operating adjacent to the practice and be placed in horizontal layers (12 inches per lift maximum). Proper compaction of the media will occur naturally. Spraying or sprinkling water on each lift until saturated may quicken setting times.

LANDSCAPE INSTALLATION: The optimum planting time is during the Fall. Spring planting is also acceptable but may require watering.

INSPECTION:
Regular inspections shall be made during the following stages of construction:
 * During excavation to subgrade and placement and backfill of underdrain systems.
 * During placement of filter media.
 * During construction of appurtenant conveyance.
 * Upon completion of final grading and establishment of permanent stabilization

B.4.C SPECIFICATIONS FOR MICRO-BIORETENTION, RAIN GARDENS, LANDSCAPE INFILTRATION & INFILTRATION BERMS

- MATERIAL SPECIFICATIONS**
The allowable materials to be used in these practices are detailed in Table B.4.1.
- 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-bioretenion practice that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05.

The planting soil shall be tested and shall meet the following criteria:
 * Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification)
 * Organic Content - Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mixture of loamy sand (60%-65%) and compost (35% to 40%) or sandy loam (30%), coarse sand (30%), and compost (40%).
 * Clay Content - Media shall have a clay content of less than 5%.
 * pH Range - Should be between 5.5 - 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.

There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the topsoil was excavated.
- COMPACTION**
It is very important to minimize compaction of both the base of bioretention practices and the required backfill. When possible, use excavation hoes to remove original soil. If practices are excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design failure.

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

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

When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade.
- PLANT MATERIAL**
Recommended plant material for micro-bioretenion practices can be found in Appendix A, Section A.2.3.
- 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 acceptable mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

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

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

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

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers, de-fats, 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.
- UNDERDRAINS**
Underdrains should meet the following criteria:
 * Pipe - Should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTM F 756, Type PS 28, or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., PVC or HDPE).
 * Perforations - If perforated pipe is used, perforations should be 3/8" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with 6" (No. 4 or 4x4) galvanized hardware cloth.
 * Gravel - The gravel layer (No. 57 stone preferred) shall be at least 3" thick above and below the underdrain.
 * The main collector pipe shall be at a minimum 0.5% slope.
 * A rigid, non-perforated observation well must be provided (one per every 1,000 square feet) to provide a clean-out port and monitor performance of the filter.
 * A 4" layer of 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 2".

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).
- MISCELLANEOUS**
These practices may not be constructed until all contributing drainage area has been stabilized

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

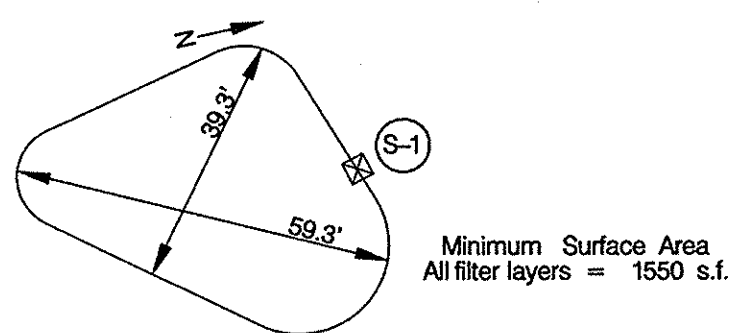
- The Owner shall maintain the plant material, mulch layer and soil layer annually. Maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning. Acceptable replacement plant material is limited to the following: 2000 Maryland Stormwater Design Manual Volume II, Table A.4.1 and 2.
- The Owner shall perform a plant in the spring and in the fall of each year. During the inspection, the Owner shall remove dead and diseased vegetation considered beyond treatment, replace dead plant material with acceptable replacement plant material, treat diseased trees and shrubs, and replace all deficient stakes and wires.
- The Owner shall inspect the mulch each spring. The mulch shall be replaced every two to three years. The previous mulch layer shall be removed before the new layer is applied.
- The Owner shall correct soil erosion on an as needed basis, with a minimum of once per month and after each heavy storm.

INSPECTION REQUIREMENTS FOR MICRO-BIORETENTION FACILITIES

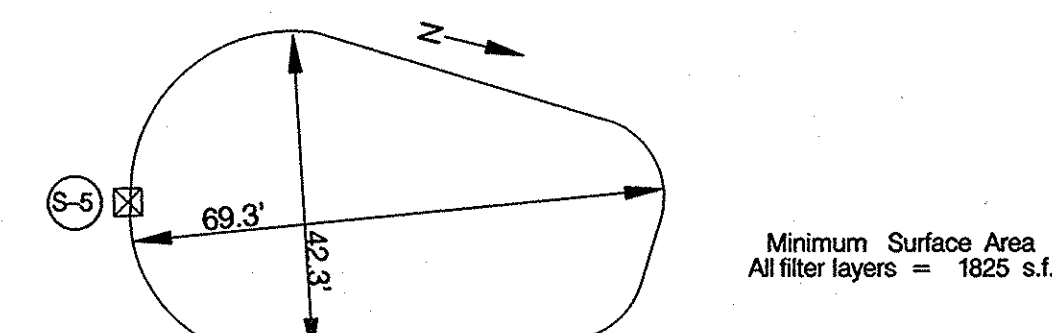
- Regular inspections shall be made during the following stages of construction:
- During excavation to subgrade and placement and backfill of underdrain systems,
 - during placement of filter media,
 - During construction of appurtenant conveyance.
 - Upon completion of final grading and establishment of permanent stabilization,

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

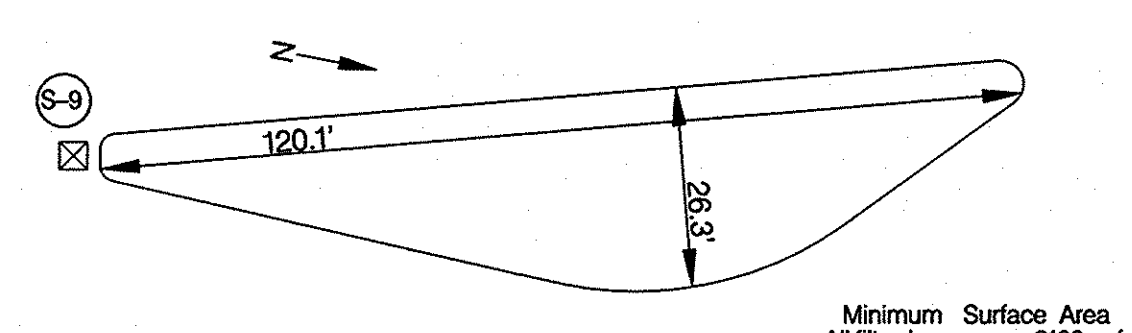
Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil [2' to 4' deep]	loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile	n/a	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 756, 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-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; f'c = 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.



SWM-1 Micro-Bioretenion Dimensions
NOT TO SCALE



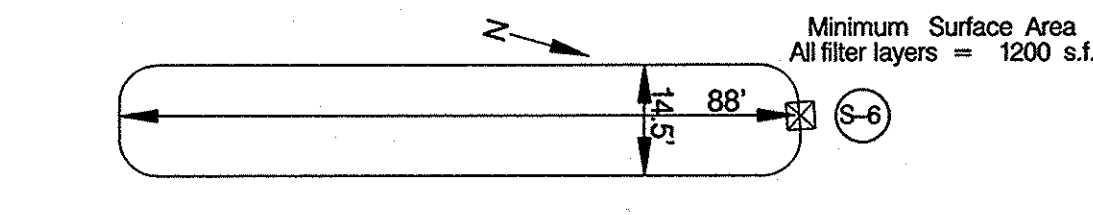
SWM-5 Micro-Bioretenion Dimensions
NOT TO SCALE



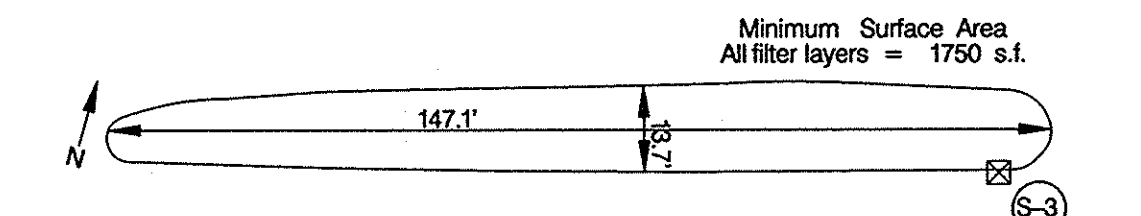
SWM-9 Micro-Bioretenion Dimensions
NOT TO SCALE



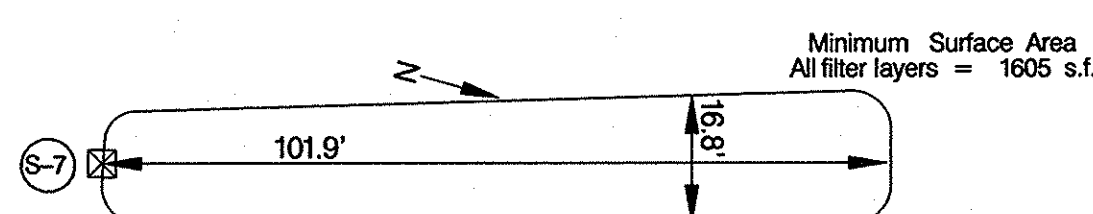
SWM-2 Micro-Bioretenion Dimensions
NOT TO SCALE



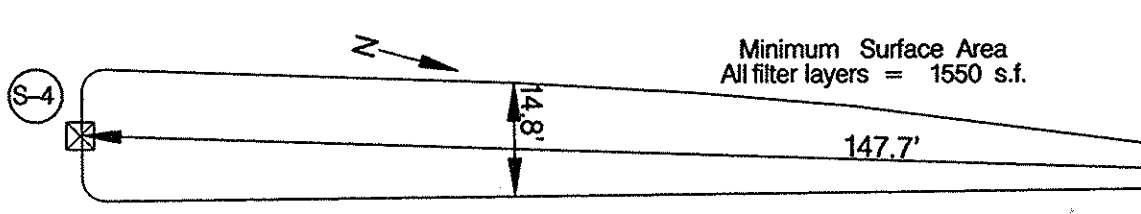
SWM-6 Micro-Bioretenion Dimensions
NOT TO SCALE



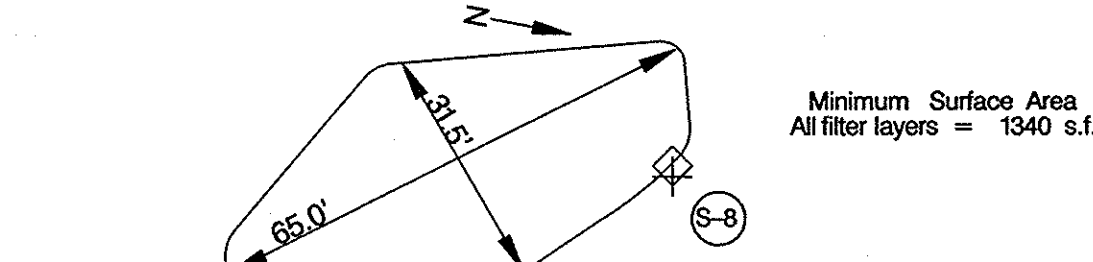
SWM-3 Micro-Bioretenion Dimensions
NOT TO SCALE



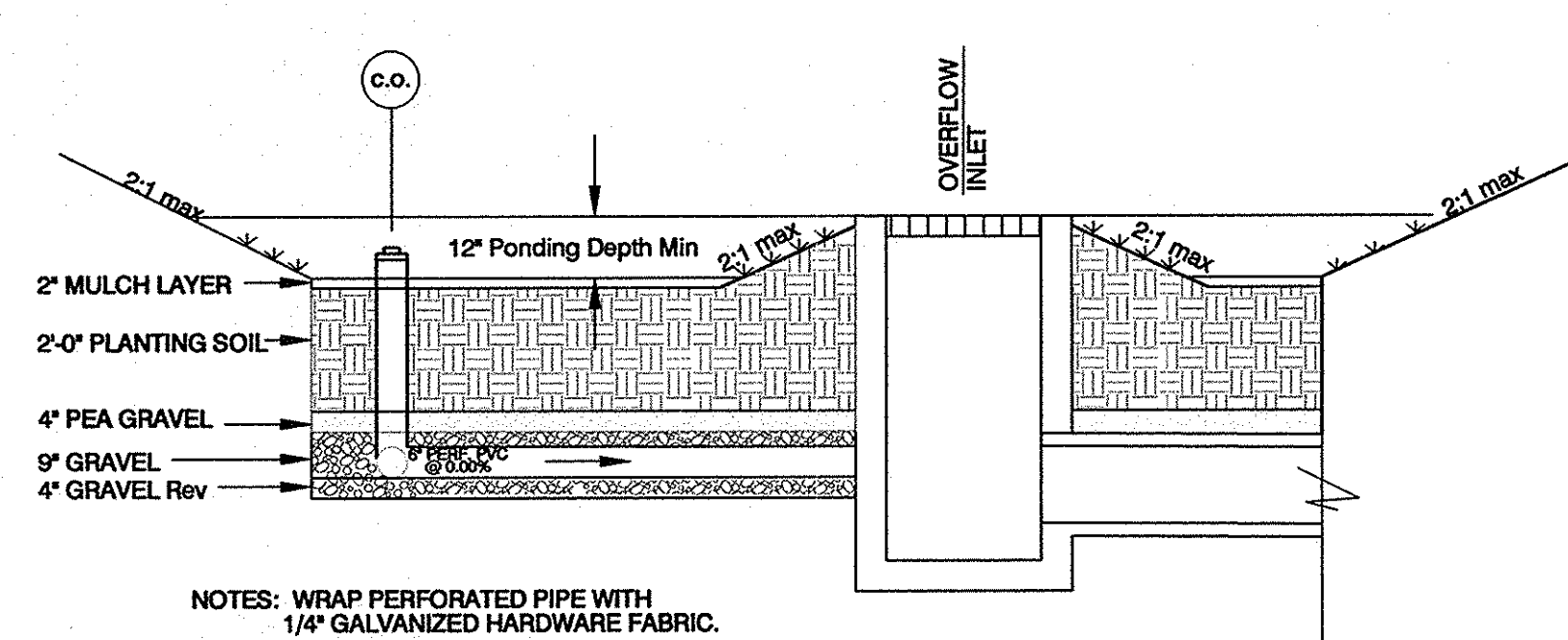
SWM-7 Micro-Bioretenion Dimensions
NOT TO SCALE



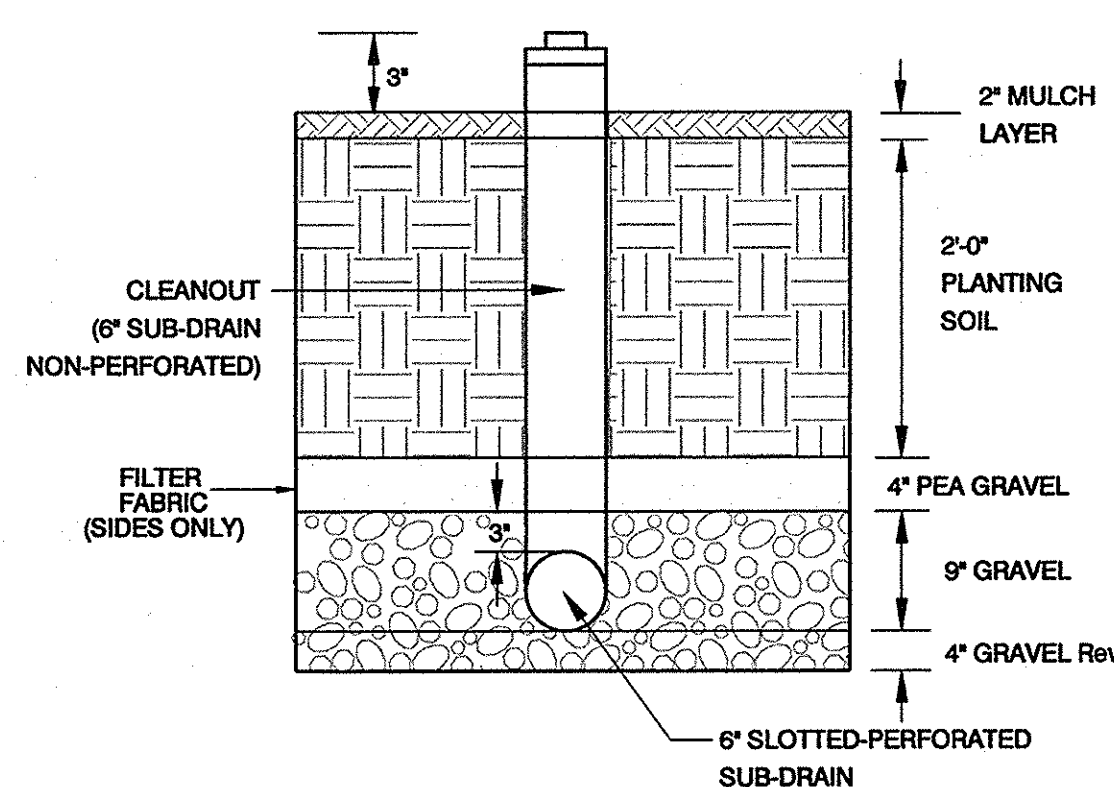
SWM-4 Micro-Bioretenion Dimensions
NOT TO SCALE



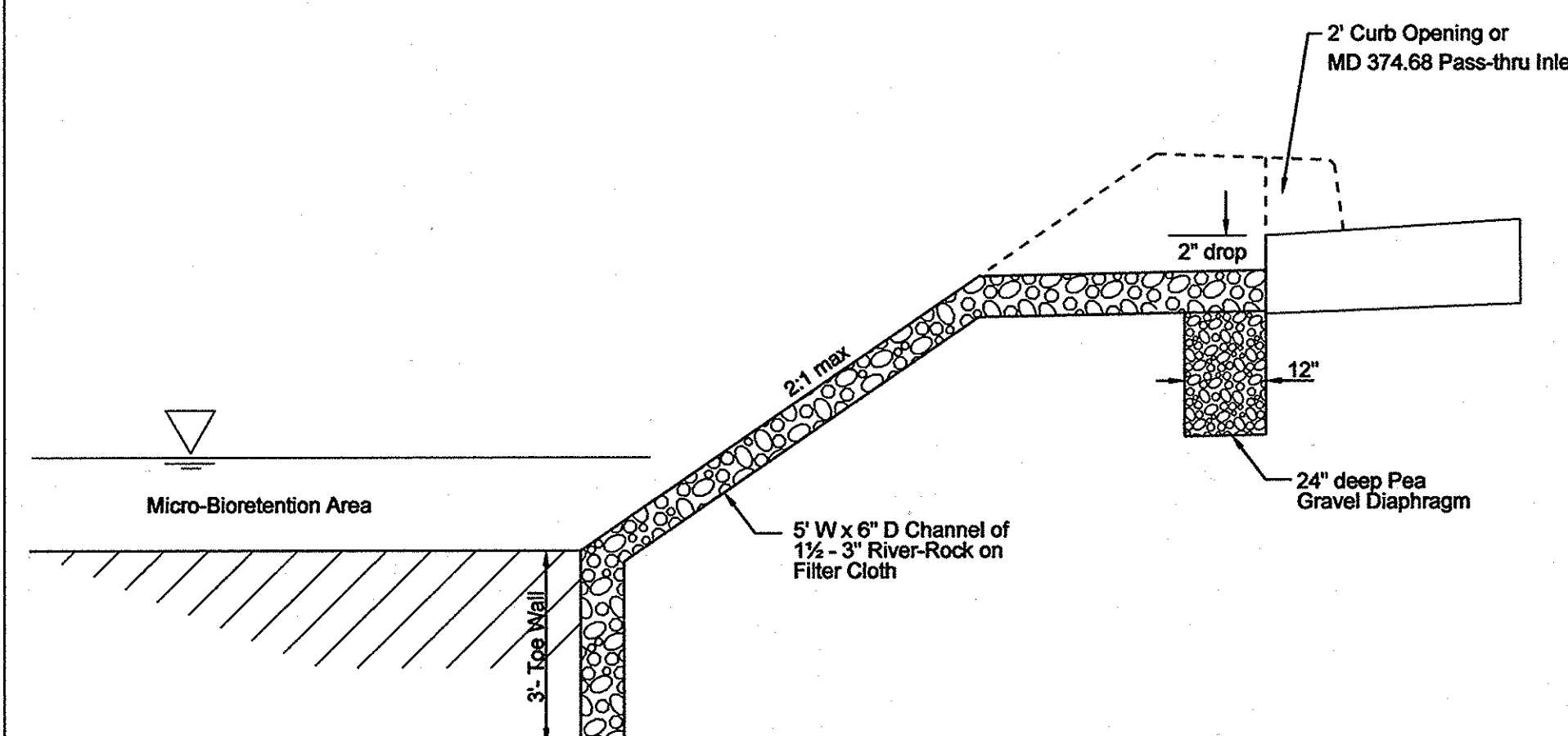
SWM-8 Micro-Bioretenion Dimensions
NOT TO SCALE



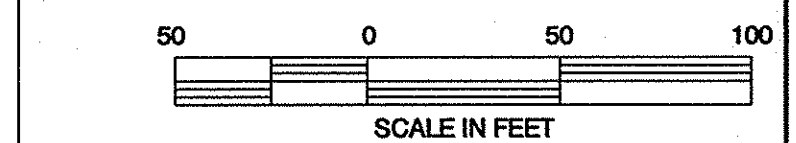
Micro-Bioretenion Area Profile
NOT TO SCALE



Micro-Bioretenion Typical Section
NOT TO SCALE



Typical Detail for Curb-Opening or Pass-thru Inlet Outfall
NOT TO SCALE



APPROVED: Howard County Department of Planning and Zoning

[Signature] 5.12.14
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 6.18.14
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

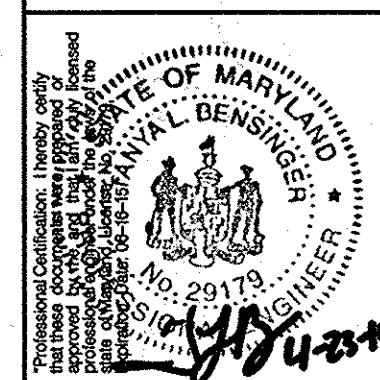
[Signature] 6/18/14
 DIRECTOR DATE

STORMWATER MANAGEMENT DETAILS
The Meadows Corporate Park
Phase 2
 6610 - 6618 MEADOW RIDGE ROAD MD RTE. 103
 GREEN BUILDING

TAX MAP: 37;
 PARCELS: A5-A9
 ELECTION DISTRICT: 1
 ZONE: POR

GENERAL OFFICE
 SCALE: 1" = 50'
 DATE: April 23, 2014
 SHEET: 19 of 35

Owner/Developer:
Merritt-MR, LLC
 2066 Lord Baltimore Drive
 Baltimore, Maryland 21244
 Ph: 410-286-2600
 Fx: 410-286-9644



MATIS WARFIELD
 Consulting Engineers
 10540 York Road, Suite M
 Hunt Valley, Maryland 21030
 PHONE 410.683.7004 FAX 410.683.1798
 www.matiswarfield.com

PROJECT: Meadowridge, Building No. 4
 Location: See Boring Location Plan
 DATE START: 4/25/2013 PROJECT No.: B-1
 FINISH: 4/25/2013 ELEV: 282.53 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA.: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / 6in	Type	REC	Notes
			0		1	1-1.2	DS	2"	2" topsoil
		Brown, moist, soft to medium stiff to stiff sandy silt, ML	2		3-3.4	DS	15"		
		Light brown and orange, moist, medium dense sand, some gravel, SM	5		3-7.7	DS	18"		
			10		4-5.7	DS	14"		
			15		4-8.8	DS	10"		
		End of boring	15		10-12-18	DS	14"		

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER

GROUND WATER
 WATER ON RODS:
 WATER AT COMPLETION: dry
 AT 24 HOURS: 62"
 CAVED: 86"

PROJECT: Meadowridge, Building No. 4
 Location: See Boring Location Plan
 DATE START: 4/25/2013 PROJECT No.: B-2
 FINISH: 4/25/2013 ELEV: 288.06 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA.: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / 6in	Type	REC	Notes
		Orange and tan, moist, stiff to very stiff clayey silt, ML-CL	1		20-15-30	DS	5"		No topsoil
			2		12-15-30	DS	12"		
			5		8-10-22	DS	12"		
			10		15-15-17	DS	14"		
		Orange and tan, moist, dense sand, trace silt, SM	10		5	12-15-19	DS	12"	
		End of boring	15		17-19-22	DS	14"		

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER

GROUND WATER
 WATER ON RODS:
 WATER AT COMPLETION: dry
 AT 24 HOURS: DRY TO CAVE IN
 CAVED: 78"

PROJECT: Meadowridge, Building No. 4
 Location: See Boring Location Plan
 DATE START: 4/25/2013 PROJECT No.: B-3
 FINISH: 4/25/2013 ELEV: 288.06 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA.: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / 6in	Type	REC	Notes
		Orange and tan, moist, stiff to very stiff clayey silt, ML-CL	1		8-6-7	DS	12"		No topsoil
			2		8-6-7	DS	12"		
			3		8-7-12	DS	14"		
			4		8-8-10	DS	13"		
		Tan and orange, moist, medium dense silty sand, SM	5		8-9-10	DS	18"		
		End of boring	15		7-15-17	DS	12"		

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER

GROUND WATER
 WATER ON RODS:
 WATER AT COMPLETION: Dry
 AT 24 HOURS: DRY TO CAVE IN
 CAVED: 73"

PROJECT: Meadowridge, Building No. 4
 Location: See Boring Location Plan
 DATE START: 4/25/2013 PROJECT No.: B-4
 FINISH: 4/25/2013 ELEV: 278.60 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA.: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / 6in	Type	REC	Notes
		Brown, moist, stiff silty clay, CL	1		3-3-10	DS	12"		4" topsoil
		Light brown, moist, dense to very dense silty sand, SM	2		13-17-19	DS	12"		
			3		22-25-19	DS	16"		
			4		9-9-10	DS	14"		
		Light brown, moist, very stiff sandy silt, ML	5		6-7-9	DS	18"		
		Light brown, moist, medium dense to very dense silty fine sand, SM	15		10-12-12	DS	14"		
		End of boring	20		22-28-29	DS	18"		

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER

GROUND WATER
 WATER ON RODS:
 WATER AT COMPLETION: Dry
 AT 24 HOURS: DRY TO CAVE IN
 CAVED: 121"

PROJECT: Meadowridge, Building No. 4
 Location: See Boring Location Plan
 DATE START: 4/25/2013 PROJECT No.: B-5
 FINISH: 4/25/2013 ELEV: 276.29 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA.: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / 6in	Type	REC	Notes
		Brown, moist, medium dense clayey sand, SC	1		2-4-4	DS	8"		4" topsoil
		Light brown and tan, moist, medium dense to very dense silty fine sand, SM	2		8-12-14	DS	18"		
			3		5-8-11	DS	18"		
			4		12-21-22	DS	13"		
			5		13-19-22	DS	18"		
			10		5	13-30-35	DS	15"	
		End of boring	15		13-22-22	DS	18"		

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER

GROUND WATER
 WATER ON RODS:
 WATER AT COMPLETION: Dry
 AT 24 HOURS: DRY TO CAVE IN
 CAVED: 115"

PROJECT: Meadowridge, Building No. 4
 Location: See Boring Location Plan
 DATE START: 4/25/2013 PROJECT No.: B-6
 FINISH: 4/25/2013 ELEV: 281.11 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA.: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / 6in	Type	REC	Notes
		Brown, moist, medium dense to very dense clayey sand, SC	1		3-4-7	DS	8"		6" topsoil
			2		6-13-13	DS	12"		
			3		15-22-30	DS	18"		
		Grey and tan, moist, very dense silty fine sand, SM	4		32-35-39	DS	14"		
			10		20-30-38	DS	18"		
		End of boring	15			DS	21"		

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER

GROUND WATER
 WATER ON RODS:
 WATER AT COMPLETION: Dry
 AT 24 HOURS: DRY TO CAVE IN
 CAVED: 97"

PROJECT: Meadowridge, Building No. 4
 Location: See Boring Location Plan
 DATE START: 4/25/2013 PROJECT No.: B-7
 FINISH: 4/25/2013 ELEV: 283.31 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA.: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / 6in	Type	REC	Notes
		Tan, moist, very loose to medium dense silty sand, SM	1		2-2-2	DS	12"		4" topsoil
			2		7-9-10	DS	14"		
			3		8-10-18	DS	12"		
		Tan, moist, very stiff sandy, clayey silt, ML-CL	4		16-18-19	DS	15"		
			5		13-13-13	DS	13"		
			10		11-15-15	DS	12"		
		End of boring	20		10-14-11	DS	18"		

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER

GROUND WATER
 WATER ON RODS:
 WATER AT COMPLETION: Dry
 AT 24 HOURS: DRY TO CAVE IN
 CAVED: 99"

PROJECT: Meadowridge, Building No. 4
 Location: See Boring Location Plan
 DATE START: 4/25/2013 PROJECT No.: B-8
 FINISH: 4/25/2013 ELEV: 281.24 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA.: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / 6in	Type	REC	Notes
		Dark brown, moist, medium stiff silt, ML	1		3-3-3	DS	12"		4" topsoil
			2		3-3-3	DS	12"		
			3		6-10-10	DS	18"		
		Brown to light brown, moist medium dense to very dense silty fine sand, SM	4		24-37-30	DS	14"		
			5		14-17-17	DS	18"		
			10		18-20-23	DS	14"		
		End of boring	20		7-17-20	DS	18"		

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER

GROUND WATER
 WATER ON RODS:
 WATER AT COMPLETION: Dry
 AT 24 HOURS: DRY TO CAVE IN
 CAVED: 61"

PROJECT: Meadowridge, Building No. 4
 Location: See Boring Location Plan
 DATE START: 4/25/2013 PROJECT No.: B-9
 FINISH: 4/25/2013 ELEV: 277.42 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA.: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / 6in	Type	REC	Notes
		Boulders (rip rap)	1			DS			
		Grey and tan, moist, very dense silty fine sand, SM	2		33-35-30	DS	13"		Auger refusal at 5 ft. (boulders)
		End of boring	5						

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER

GROUND WATER
 WATER ON RODS:
 WATER AT COMPLETION: Dry
 AT 24 HOURS: DRY TO CAVE IN
 CAVED: 71"

PROJECT: Meadowridge, Building No. 4
 Location: See Boring Location Plan
 DATE START: 4/25/2013 PROJECT No.: B-10
 FINISH: 4/25/2013 ELEV: 283.70 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA.: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / 6in	Type	REC	Notes
		Brown, moist, loose to dense silty sand, little gravel, SM	1		2-3-4	DS	6"		3" topsoil
			2		6-17-32	DS	18"		
			3		15-22-28	DS	18"		
		Light brown, moist, stiff to very stiff silty clay, CL	4		6-7-10	DS	14"		
			5		4-5-8	DS	14"		
		End of boring	15		8-8-13	DS	18"		

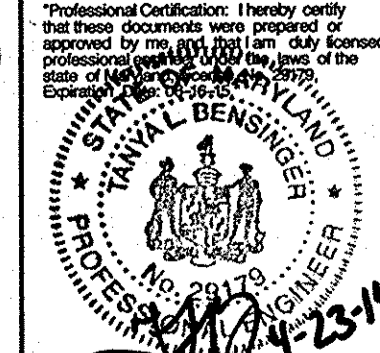
LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER

GROUND WATER
 WATER ON RODS:
 WATER AT COMPLETION: Dry
 AT 24 HOURS: DRY TO CAVE IN
 CAVED:

APPROVED: Howard County Department of Planning and Zoning

[Signature] 5.12.14
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
[Signature] 6.18.14
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
[Signature] 6/10/14
 DIRECTOR DATE

MATIS WARFIELD
 Consulting Engineers
 10540 York Road, Suite M
 Hunt Valley, Maryland 21030
 PHONE 410.683.7004 FAX 410.683.1798
 www.matiswarfield.com



Owner/Developer:
Merritt-MR, LLC
 2066 Lord Baltimore Drive
 Baltimore, Maryland 21244
 ph: 410-298-2600
 fx: 410-298-9644

NO.	DESCRIPTION	BY	DATE

SOIL BORING LOGS
The Meadows Corporate Park
Phase 2
 8510 - 6518 MEADOW RIDGE ROAD MD RTE. 103
 GREEN BUILDING
 TAX MAP: 37;
 PARCELS: A5-A9
 ELECTION DISTRICT: 1
 ZONE: POR
SDP-13-070

GENERAL OFFICE
 SCALE: 1" = 50'
 DATE: April 23, 2014
 SHEET: 21 of 35

PROJECT: Meadowridge, Building No. 4
 Location: See Boring Location Plan
 DATE START: 4/25/2013 PROJECT No.: B-11
 FINISH: 4/25/2013 ELEV: 246.97 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA.: HAMMER DROP: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / Gn	Type	REC	Notes
		Brown, wet, stiff clayey sil, ML-CL	0		1	5-6-6	DS	12"	
			2		2	6-8-10	DS	16"	
		Light brown, moist, very stiff sandy sil, ML	3		3	8-12-14	DS	14"	
		End of boring	10		4	12-15-15	DS	18"	

LEGEND GROUND WATER

DS DRIVEN SPOON WATER ON RODS:
 ST SHELBY WATER AT COMPLETION: Dry
 PS PISTON SAMPLE AT 24 HOURS: DRY TO CAVE IN
 RC ROCK CORE CAVED: 63"
 HSA HOLLOW STEM AUGER

PROJECT: Meadowridge, Building No. 4
 Location: See Boring Location Plan
 DATE START: 4/25/2013 PROJECT No.: B-12
 FINISH: 4/25/2013 ELEV: 275.38 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA.: HAMMER DROP: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / Gn	Type	REC	Notes
		Light brown and tan, moist, medium dense clayey sand, SC	0		1	10-15-15	DS	3"	No topsoil
			2		2	8-8-9	DS	18"	
			3		3	11-14-16	DS	10"	
			4		4	12-14-15	DS	13"	
		Tan, moist, dense silty fine sand, SM	5		5	15-19-18	DS	18"	
		End of boring	15		6	18-15-15	DS	12"	

LEGEND GROUND WATER

DS DRIVEN SPOON WATER ON RODS:
 ST SHELBY WATER AT COMPLETION: Dry
 PS PISTON SAMPLE AT 24 HOURS: DRY TO CAVE IN
 RC ROCK CORE CAVED: 76"
 HSA HOLLOW STEM AUGER

PROJECT: Meadowridge, Building No. 4
 Location: See Boring Location Plan
 DATE START: 4/25/2013 PROJECT No.: B-13
 FINISH: 4/25/2013 ELEV: 276.68 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA.: HAMMER DROP: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / Gn	Type	REC	Notes
		Orange and tan, moist, stiff to hard clayey sil, ML-CL	0		1	3-4-8	DS	12"	
			2		2	12-12-13	DS	12"	
			3		3	5-5-7	DS	13"	
		End of boring	10		4	10-12-20	DS	18"	

LEGEND GROUND WATER

DS DRIVEN SPOON WATER ON RODS:
 ST SHELBY WATER AT COMPLETION: Dry
 PS PISTON SAMPLE AT 24 HOURS: DRY TO CAVE IN
 RC ROCK CORE CAVED: 64"
 HSA HOLLOW STEM AUGER

PROJECT: Meadowridge, Building No. 4
 Location: See Boring Location Plan
 DATE START: 4/25/2013 PROJECT No.: B-14
 FINISH: 4/25/2013 ELEV: 283.82 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA.: HAMMER DROP: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / Gn	Type	REC	Notes
		Crushed Stone	0		1	50"	DS		
		Brown and gray, moist, hard to very stiff clayey sil, ML-CL	2		2	26-22-19	DS	12"	
			3		3	8-8-9	DS	18"	
			4		4	12-14-16	DS	13"	
		Tan, moist, very dense to medium dense silty sand, SM	5		5	12-20-32	DS	18"	
		End of boring	15		6	15-15-9	DS	9"	

LEGEND GROUND WATER

DS DRIVEN SPOON WATER ON RODS:
 ST SHELBY WATER AT COMPLETION: Dry
 PS PISTON SAMPLE AT 24 HOURS: DRY TO CAVE IN
 RC ROCK CORE CAVED: 65"
 HSA HOLLOW STEM AUGER

PROJECT: Meadowridge, Building No. 4
 Location: See Boring Location Plan
 DATE START: 4/25/2013 PROJECT No.: B-15
 FINISH: 4/25/2013 ELEV: 276.98 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA.: HAMMER DROP: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / Gn	Type	REC	Notes
		Brown, moist, soft silty clay, CL-ML	0		1	2-2-2	DS	6"	
		Light brown, moist, medium dense silty fine sand, SM	2		2	6-8-9	DS	18"	
		Gray and tan, moist, medium dense silty fine sand, SM	3		3	7-8-10	DS	16"	
		End of boring	10		4	10-13-13	DS	18"	

LEGEND GROUND WATER

DS DRIVEN SPOON WATER ON RODS:
 ST SHELBY WATER AT COMPLETION: Dry
 PS PISTON SAMPLE AT 24 HOURS: DRY TO CAVE IN
 RC ROCK CORE CAVED: 69"
 HSA HOLLOW STEM AUGER

PROJECT: Meadowridge, Building No. 4
 Location: See Boring Location Plan
 DATE START: 4/25/2013 PROJECT No.: B-16
 FINISH: 4/25/2013 ELEV: 283.91 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA.: HAMMER DROP: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / Gn	Type	REC	Notes
		Brown, moist, dense to very dense silty sand and gravel, SM	0		1	11-17-14	DS	3"	No topsoil
			2		2	6-17-34	DS	4"	
		Tan, moist, dense silty fine sand, SM	3		3	11-17-17	DS	12"	
			4		4	14-22-30	DS	14"	
		Tan, moist, hard, sandy clayey sil, ML-CL	5		5	10-19-30	DS	16"	
		End of boring	16		6	44-50-5	DS	9"	

LEGEND GROUND WATER

DS DRIVEN SPOON WATER ON RODS:
 ST SHELBY WATER AT COMPLETION: Dry
 PS PISTON SAMPLE AT 24 HOURS: DRY TO CAVE IN
 RC ROCK CORE CAVED: 310"
 HSA HOLLOW STEM AUGER

PROJECT: Meadowridge, Building No. 4
 Location: See Boring Location Plan
 DATE START: 4/25/2013 PROJECT No.: B-17
 FINISH: 4/25/2013 ELEV: 277.75 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA.: HAMMER DROP: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / Gn	Type	REC	Notes
		Brown and tan, moist, very stiff clayey sil, ML-CL	0		1	7-7-10	DS	12"	No topsoil
		Tan, moist, medium dense silty sand, trace gravel, SM	2		2	6-8-10	DS	15"	
			3		3	4-6-8	DS	10"	
		Gray, moist, dense clayey sand, SC	4		4	12-17-24	DS	12"	
		End of boring	10						

LEGEND GROUND WATER

DS DRIVEN SPOON WATER ON RODS:
 ST SHELBY WATER AT COMPLETION: Dry
 PS PISTON SAMPLE AT 24 HOURS: DRY TO CAVE IN
 RC ROCK CORE CAVED: 91"

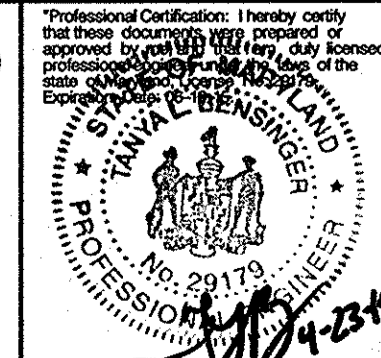
PROJECT: Meadowridge, Building No. 4
 Location: See Boring Location Plan
 DATE START: 4/25/2013 PROJECT No.: B-18
 FINISH: 4/25/2013 ELEV: 278.03 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA.: HAMMER DROP: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / Gn	Type	REC	Notes
		Tan, moist, medium dense silty sand, trace gravel, SM	0		1	4-7-10	DS	12"	No topsoil
			2		2	6-11-13	DS	12"	
			3		3	8-8-10	DS	15"	
		Tan, moist, very stiff to hard clayey sil, ML-CL	4		4	10-16-16	DS	18"	
		End of boring	10						

LEGEND GROUND WATER

DS DRIVEN SPOON WATER ON RODS:
 ST SHELBY WATER AT COMPLETION: Dry
 PS PISTON SAMPLE AT 24 HOURS: DRY TO CAVE IN
 RC ROCK CORE CAVED: 67"

MATIS WARFIELD
 Consulting Engineers
 10540 York Road, Suite M
 Hunt Valley, Maryland 21030
 PHONE 410.683.7004 FAX 410.683.1798
 www.matiswarfield.com



Owner/Developer:
Merritt-MR, LLC
 2066 Lord Baltimore Drive
 Baltimore, Maryland 21244
 ph: 410-298-2600
 fx: 410-298-9644

NO.	DESCRIPTION	BY	DATE

APPROVED: Howard County Department of Planning and Zoning

[Signature] 5/12/14
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 6-18-14
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 6/18/14
 DIRECTOR DATE

SOIL BORING LOGS
The Meadows Corporate Park
Phase 2
 6510 - 6518 MEADOW RIDGE ROAD MD RTE. 103
 GREEN BUILDING

TAX MAP: 37;
 PARCELS: A5-A9
 ELECTION DISTRICT: 1
 ZONE: POR

GENERAL OFFICE
 SCALE: 1" = 50'
 DATE: April 23, 2014
 SHEET: 22 of 35

SDP-13-070

ENGINEER CERTIFICATION:
I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

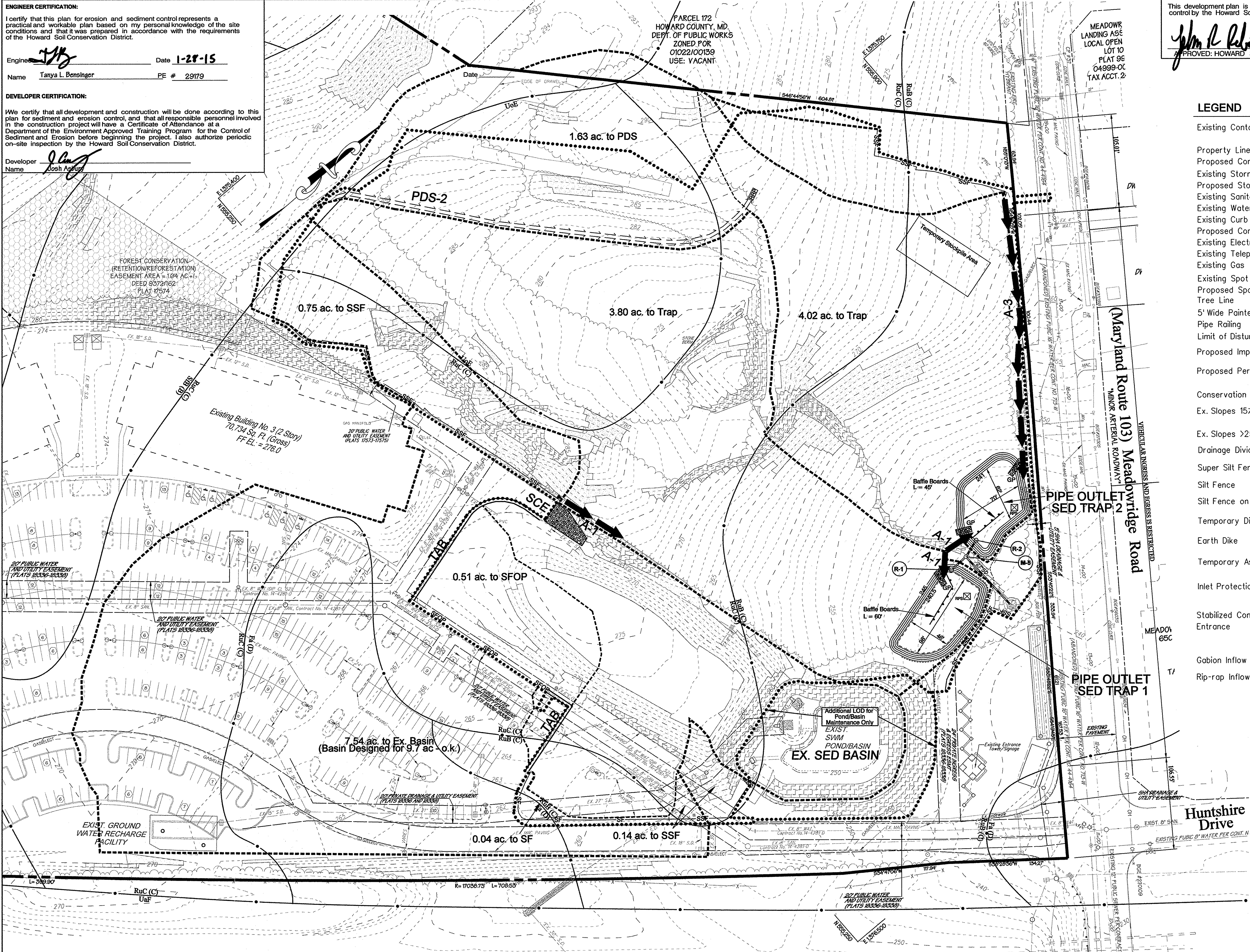
Engine: TLS Date: 1-28-15
Name: Tanya L. Pensinger PE # 29179

DEVELOPER CERTIFICATION:
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.

Developer Name: Josh Aguirre

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

John L. Roberts 2/10/15
APPROVED: HOWARD SOIL CONSERVATION DISTRICT

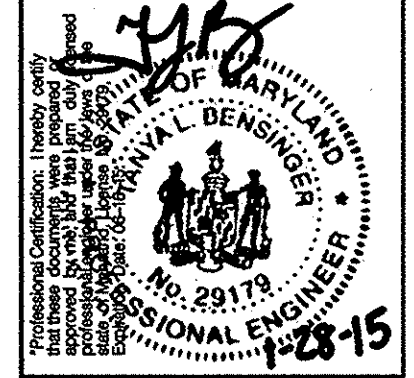


LEGEND

- Existing Contour: --- 65.3 --- 65.0 ---
- Property Line: ————
- Proposed Contour: --- 53.2 ---
- Existing Storm Drain: ————
- Proposed Storm Drain: ————
- Existing Sanitary: ————
- Existing Water: ————
- Existing Curb: ————
- Proposed Conc. Curb: ————
- Existing Electric: ————
- Existing Telephone: ————
- Existing Gas: ————
- Existing Spot Elevation: +6.04
- Proposed Spot Elevation: 652.2+
- Tree Line: ————
- 5' Wide Painted Crosswalk: ————
- Pipe Railing: ————
- Limit of Disturbance: ————
- Proposed Impervious Area: [Pattern]
- Proposed Permeable Pave: [Pattern]
- Conservation Easement Area: [Pattern]
- Ex. Slopes 15% - 25%: [Pattern]
- Ex. Slopes >25%: [Pattern]
- Drainage Divide: ————
- Super Silt Fence: ————
- Silt Fence: ————
- Silt Fence on Pavement: ————
- Temporary Dike/Swale: ————
- Earth Dike: ————
- Temporary Asphalt Berm: ————
- Inlet Protection: [Symbol]
- Stabilized Construction Entrance: [Symbol]
- Gabion Inflow Protection: [Symbol]
- Rip-rap Inflow Protection: [Symbol]

NO.	DESCRIPTION	DATE
1	Add temporary parking and submerged gravel wetland SWM-14A.	1/16/2014

Owner/Developer:
Merritt-MR, LLC
2066 Lord Baltimore Drive
Baltimore, Maryland 21244
PH: 410-288-2600
FX: 410-288-9644



MATIS WARFIELD
Consulting Engineers
10540 York Road, Suite M
Hunt Valley, Maryland 21030
PHONE 410.683.7004 FAX 410.683.1798
www.matiswarfield.com



APPROVED: Howard County Department of Planning and Zoning
[Signature] DATE: 4-9-15
CHIEF DEVELOPMENT ENGINEERING DIVISION
[Signature] DATE: 4-13-15
CHIEF, DIVISION OF LAND DEVELOPMENT
[Signature] DATE: 4/9/15
DIRECTOR

REVISED SITE DEVELOPMENT PLAN
Initial Sediment Control Plan
The Meadows Corporate Park
Phase 2
6510 - 6518 MEADOW RIDGE ROAD MD RTE. 103
GREEN BUILDING
TAX MAP: 37;
PARCELS: A6-A9
ELECTION DISTRICT: 1
ZONE: POR
GENERAL OFFICE
SCALE: 1" = 50'
DATE: April 23, 2014
SHEET: 23 of 35

Howard County SOILS MAP SHEET, SAVAGE NE QUADRANGLE, Sheet No. 19 of 29

Map unit symbol	Map unit name	Rating	Hydric	k rating
RuB	Russett and Beltsville soils, 2 to 5 percent slopes	C	no	0.28
RuC	Russett and Beltsville soils, 5 to 10 percent slopes	C	no	0.37
UoB	Udorthents, 0 to 45 percent slopes, Gravel Pits	B	no	0.28
SfB	Sassafras gravelly sandy loam, 2 to 5 percent slopes	B	no	0.24

Interstate (I-95) (South Bound)
(Principal Arterial Highway)
Vehicular Ingress & Egress Restricted

ENGINEER CERTIFICATION:

I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Engine: *TLP* Date: **1-28-15**
 Name: **Tanya L. Persinger** PE # **29179**

DEVELOPER CERTIFICATION:

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.

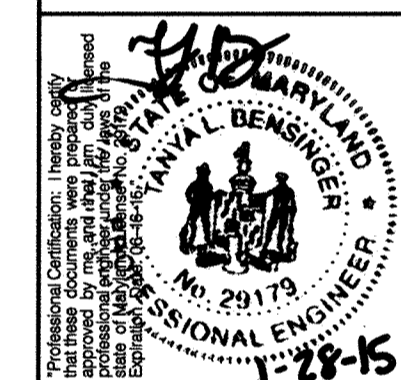
Developer Name: **Josh Agency**

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

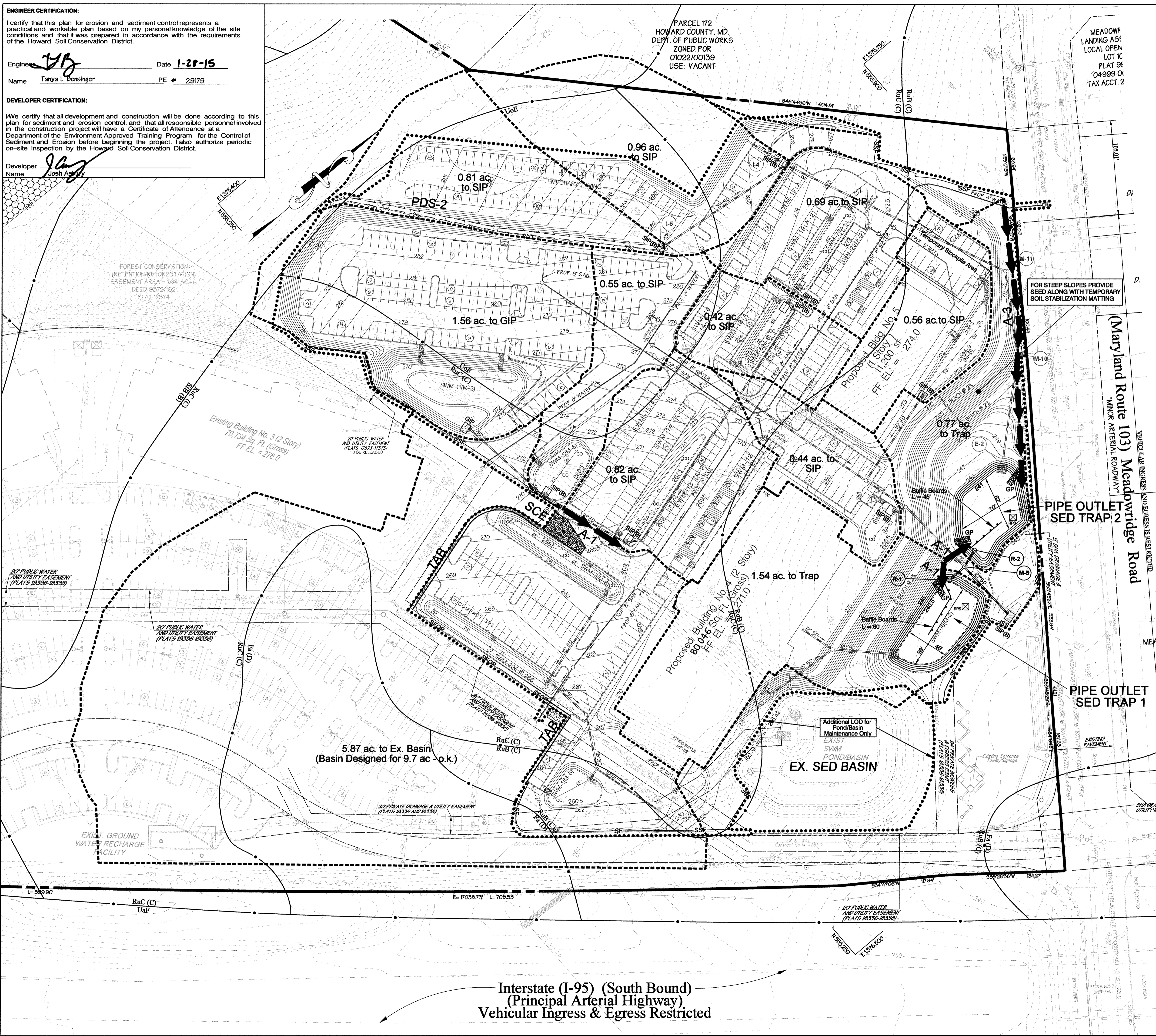
APPROVED: HOWARD SOIL CONSERVATION DISTRICT
John L. Hunter 2/10/15

NO.	DESCRIPTION	BY	DATE
1	Add temporary parking and submerged gravel wetland SWM-11A.	MWI	1/28/2015
2	Update Building 4 Square Footage for a basement boiler room.	MWI	7/26/15

Owner/Developer:
Merritt-MR, LLC
 2066 Lord Baltimore Drive
 Baltimore, Maryland 21244
 ph: 410-298-2600
 fx: 410-298-9644



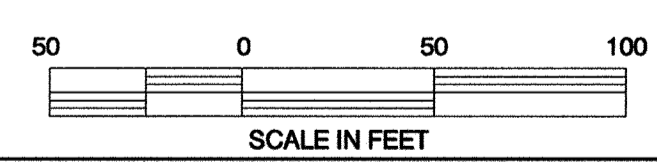
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TRAP #1 SEDIMENT TRAP ST-1
 EXISTING DRAINAGE AREA = 3.80 ACRES
 PROPOSED DRAINAGE AREA = 1.55 ACRES
 TOTAL STORAGE REQUIRED = 13,680 C.F.
 TOTAL STORAGE PROVIDED = 14,560 C.F.
 WET STORAGE REQUIRED = 6,840 C.F.
 WET STORAGE PROVIDED = 7,394 C.F.
 DRY STORAGE REQUIRED = 6,840 C.F.
 DRY STORAGE PROVIDED = 7,166 C.F.
 TRAP BOTTOM ELEVATION = 240.5
 BOTTOM DIMENSIONS = 98' x 46'
 RISER CREST (DRY STORAGE) ELEV. = 243.25
 WET STORAGE ELEV. = 242.00
 CLEANOUT ELEVATION = 241.25
 TOP OF EMBANKMENT = 245.5
 SIDE SLOPES = 2:1
 EMBANKMENT TOP WIDTH = 4.0 FT
 PRINCIPAL SPILLWAY MATERIAL = CMP
 RISER DIAMETER = 36"
 BARREL DIAMETER = 27"
 TRASH RACK DIAMETER = 54"
 TRASH RACK HEIGHT = 25"
 BAFFLE TOP ELEV. = 242.63

TRAP #2 SEDIMENT TRAP ST-1
 EXISTING DRAINAGE AREA = 4.02 ACRES
 PROPOSED DRAINAGE AREA = 0.77 ACRES
 TOTAL STORAGE REQUIRED = 14,472 C.F.
 TOTAL STORAGE PROVIDED = 15,536 C.F.
 WET STORAGE REQUIRED = 7,236 C.F.
 WET STORAGE PROVIDED = 7,680 C.F.
 DRY STORAGE REQUIRED = 7,236 C.F.
 DRY STORAGE PROVIDED = 7,876 C.F.
 TRAP BOTTOM ELEVATION = 241.0
 BOTTOM DIMENSIONS = 62' x 70'
 RISER CREST (DRY STORAGE) ELEV. = 244.00
 WET STORAGE ELEV. = 242.60
 CLEANOUT ELEVATION = 241.85
 TOP OF EMBANKMENT = 245.5
 SIDE SLOPES = 2:1
 EMBANKMENT TOP WIDTH = 4.0 FT
 PRINCIPAL SPILLWAY MATERIAL = CMP
 RISER DIAMETER = 36"
 BARREL DIAMETER = 27"
 TRASH RACK DIAMETER = 54"
 TRASH RACK HEIGHT = 25"
 BAFFLE TOP ELEV. = 243.05

NOTE
 1. THE STOCKPILE AREA MUST BE BENCHED IF IT EXCEEDS 15 FT IN HEIGHT.



APPROVED: Howard County Department of Planning and Zoning
John E. Johnson 4-8-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
Kurt Schuler 4-13-15
 CHIEF, DIVISION OF LAND DEVELOPMENT
James M. Long 4/13/15
 DIRECTOR

REVISED SITE DEVELOPMENT PLAN
Final Sediment Control Plan
The Meadows Corporate Park
Phase 2
 6510 - 6518 MEADOW RIDGE ROAD MD RTE. 103
 GREEN BUILDING
 TAX MAP: 37;
 PARCELS: A5-A9
 ELECTION DISTRICT: 1
 ZONE: POR
 GENERAL OFFICE
 SCALE: 1" = 50'
 DATE: April 23, 2014
 SHEET: 24 of 35

SDP-13-070

Interstate (I-95) (South Bound)
 (Principal Arterial Highway)
 Vehicular Ingress & Egress Restricted

SEQUENCE OF CONSTRUCTION

- PHASE I - INITIAL SEDIMENT CONTROLS**
1. OBTAIN GRADING PERMIT. (1 DAY)
 2. NOTIFY THE HOWARD COUNTY DEPARTMENT OF PERMITS AND LICENSES 48 HOURS PRIOR TO BEGINNING WORK. (2 DAYS)
 3. CLEAR FOR AND INSTALL STABILIZED CONSTRUCTION ENTRANCE, PERIMETER DIKE SWALE, EARTH DIKE, SUPER SILT FENCE, SILT FENCE, SILT FENCE ON PAVEMENT, TEMPORARY ASPHALT BERM, SEDIMENT TRAPS #1 & 2 AND STOCKPILE AREA. INSTALL PERMANENT PIPE FROM M-5 TO EX 1-D AS PART OF SEDIMENT TRAP INSTALLATION. (4 WEEKS)
 4. WITH HOWARD COUNTY SEDIMENT CONTROL INSPECTOR'S PERMISSION, PROCEED WITH PHASE-II. (1 DAY)
- PHASE II - FINAL SEDIMENT CONTROLS**
5. CLEAR & GRUB THE REMAINDER OF THE DISTURBED AREA INCLUDING ANY REMOVAL OF EXISTING IMPROVEMENTS. (4 WEEKS)
 6. BEGIN ROUGH GRADING OF SITE. EXCAVATE & BEGIN CONSTRUCTION OF BUILDING FOUNDATIONS. (4 WEEKS)
 7. BEGIN UTILITY CONSTRUCTION AND COMPLETE STORM DRAIN SYSTEM, INSTALL INLET PROTECTION AS STORM DRAIN INSTALLATION PROCEEDS. ANY SEDIMENT CONTROLS INTERRUPTED BY STORM DRAIN INSTALLATION SHALL BE REPAIRED IMMEDIATELY. (6 WEEKS) ONCE STORM DRAIN SYSTEM TO I-5 IS INSTALLED AND WITH THE PERMISSION OF SEDIMENT CONTROL INSPECTOR, THE PORTION OF PDS-2 OVER THE PROPOSED PAVEMENT MAY BE REMOVED.
 8. FINE GRADE AND INSTALL CURB AND GUTTER, AND BASE PAVING. (6 WEEKS)
 9. UPON STABILIZATION OF ALL CONTRIBUTING DRAINAGE AREAS, INSTALL PERMEABLE PAVEMENT SECTIONS. (2 WEEKS)
 10. WHEN RECEIVING AREA IS STABILIZED, REMOVE INLET PROTECTION AND FLUSH STORM DRAINAGE SYSTEM. (1 WEEK)
 11. INSTALL MICRO BIORETENTION FACILITIES AND GRAVEL WETLAND #2. (3 WEEKS)
 12. WITH HOWARD COUNTY SEDIMENT CONTROL INSPECTOR'S PERMISSION, REMOVE SEDIMENT TRAP#1 AND CONVERT TO GRAVEL WETLAND. ANY TRAP OR BASIN LOCATED OVER A SWM FACILITY SHALL BE MULCHED OUT TO ONE FOOT BELOW THE BOTTOM OF THE ORIGINAL DEVICE. SOIL BACKFILL SHALL BE DRY AND REPLACED IN 6"-12" LOOSE LIFTS. (1 WEEK)
 13. STABILIZE REMAINING AREAS AND BEGIN LANDSCAPING. (1 WEEK)
 14. WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ANY REMAINING SEDIMENT CONTROL MEASURES AND STABILIZE. (5 DAYS)

DAILY STABILIZATION NOTES

Areas within the limits of disturbance that are not draining to the sediment control measures require daily stabilization. Contractor shall only disturb that area which can be completed and stabilized at the end of each working day. Stabilization shall constitute the following:

1. FOR AREAS TO BE PAVED - STONE BASE
2. FOR AREAS TO BE VEGETATIVELY STABILIZED-
 - a) Permanent Seed & Erosion Control Matting, or Sod for all slopes, channel or swale areas
 - b) Permanent Seed and Mulch for all other areas.

Any areas which can not be stabilized by the end of each working day must have silt fence installed downslope of them.

UTILITY NOTES

- A. Contractor shall open only that section of trench which can be backfilled and stabilized each day. If trench must remain open for longer than one day, silt fence shall be placed below, (downslope) the trench.
- B. Place all excavated material on uphill side of trench.
- C. Any sediment control devices disturbed by construction are to be repaired immediately.

INLET PROTECTION NOTE

- The contractor is required to install inlet protection on all storm drain inlets with the exception of the following:
1. Any inlet outfalling directly into a sediment trapping device.
 2. Inlets on private or public paved roadways open to the public.
- All inlet protection will be installed as directed by the Inspector in accordance with the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control, Page E.23 (or as may be amended).
- The removal of any inlet protection devices will require approval from the Inspector.
- Storm Drains to be flushed prior to trapping device removal.

MAINTENANCE NOTE

CONTRACTOR SHALL INSPECT AND MAINTAIN ALL SEDIMENT CONTROL MEASURES AND DEVICES AFTER EVERY STORM EVENT. MAINTENANCE SHALL INCLUDE, BUT NOT BE LIMITED TO, REMOVAL OF ANY ACCUMULATED SEDIMENT. GEOTEXTILE FABRIC SHALL BE REPLACED AS NEEDED TO ENSURE PROPER FUNCTION.

"AFTER EACH STORM EVENT, ANY STORM DRAINS DISCHARGING TO THE SEDIMENT TRAP MUST BE FLUSHED AND THE TRAP MUST BE CLEANED OUT."

SILT FENCE, SUPER SILT FENCE & INLET PROTECTION MAINTENANCE NOTE

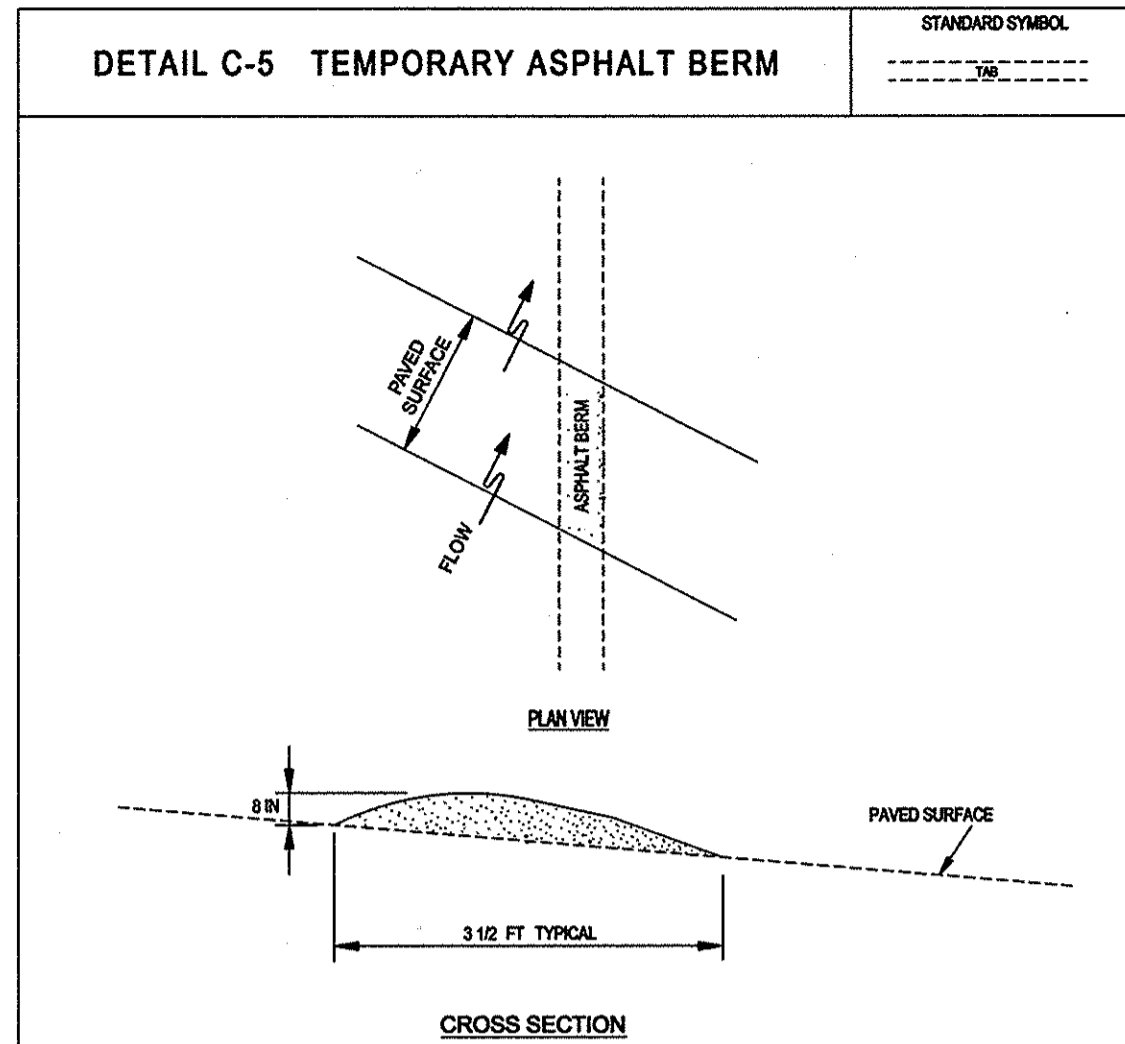
CONTRACTOR SHALL INSPECT THE SILT FENCE (SF) SUPER SILT FENCE (SSF) & INLET PROTECTION (IP) AFTER EACH DAY OR AFTER EACH STORM EVENT AND PERFORM MAINTENANCE. MAINTENANCE SHALL INCLUDE, BUT NOT BE LIMITED TO, REMOVAL OF ANY ACCUMULATED SEDIMENT ALONG AND ON EITHER SIDE OF THE FENCE LOCATION OR ON INLET PROTECTION WHICH WILL RESTRICT ITS FUNCTION. IN ADDITION, ANY PORTION OF SSF AND/OR INLET PROTECTION DAMAGED SHALL BE REPAIRED AND/OR REPLACED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS.

TEMPORARY STOCKPILE NOTE

- TEMPORARY STOCKPILES SHALL BE:
- 1.) LOCATED WITHIN THE LIMIT OF DISTURBANCE (LOD).
 - 2.) DRAIN TO A FUNCTIONING SEDIMENT CONTROL DEVICE.
 - 3.) POSITIONED TO NOT IMPEDE UPON, OR IMPAIR THE FUNCTION OF SAID DEVICE.
 - 4.) POSITIONED TO NOT ALTER DRAINAGE DIVIDES.

TRAP/BASIN FLOW DIVERSION NOTE

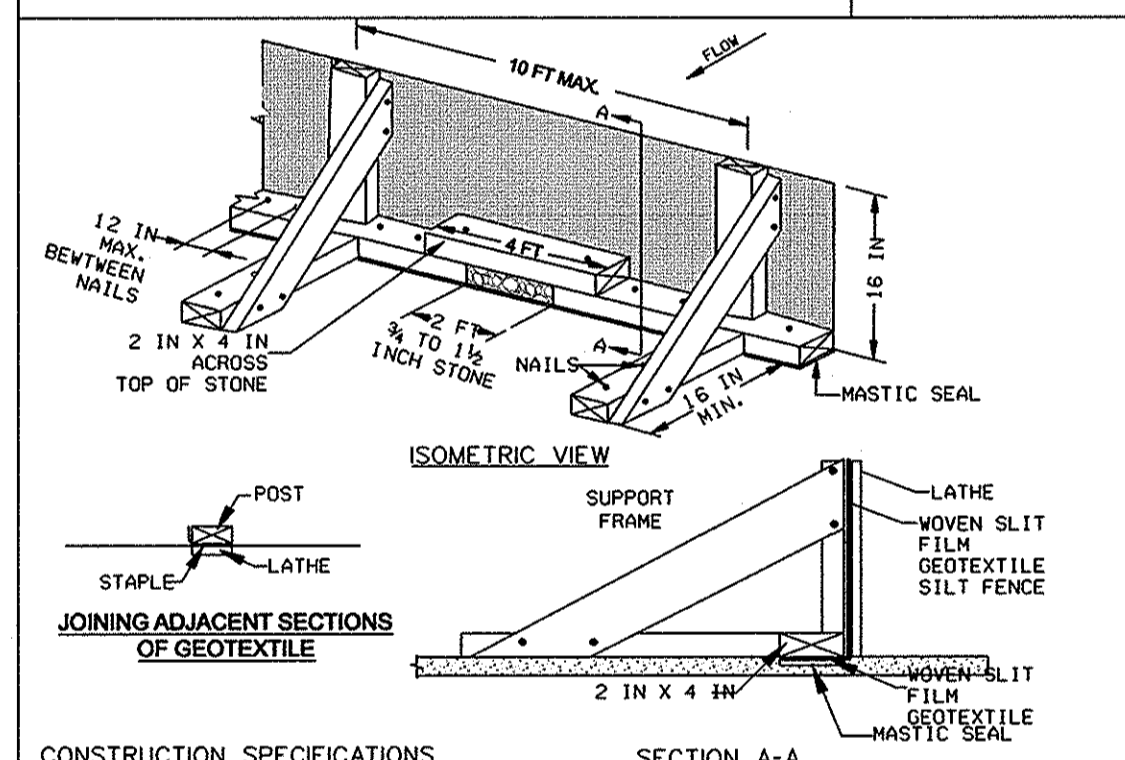
TO PREVENT SLOPE EROSION, WITHIN SEDIMENT TRAPPING DEVICES, ADEQUATELY SIZED AND STABILIZED FLOW DIVERSION MEASURES (I.E. EARTH DIKE, TEMPORARY SWALE, PERIMETER DIKE/SWALE, SUPER FENCE DIVERSION, ETC) SHALL BE INSTALLED AT THE UPSLOPE EXTENT OF TRAP, AND BASIN STORAGE AREAS TO DIVERT ALL FLOWS TO APPROPRIATE INFLOW PROTECTION DEVICES. THESE MEASURES WILL BE LOCATED BY THE CONTRACTOR AND THEREFORE NOT SHOWN ON THE PLAN VIEW.



- CONSTRUCTION SPECIFICATIONS**
1. CONSTRUCT BERM ON AN UNINTERRUPTED, CONTINUOUS GRADE.
 2. INSTALL BERM TO CONFORM TO CROSS SECTION DIMENSIONS OF A UNIFORM HEIGHT OF 8 INCHES MINIMUM AND APPROXIMATE WIDTH OF 3 1/2 FEET.
 3. PROVIDE OUTLET PROTECTION AS REQUIRED ON PLAN.
 4. COMPACT ASPHALT BERM.
 5. REPAIR DAMAGED ASPHALT, REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE.
 6. UPON REMOVAL OF ASPHALT BERM, RETURN TO ORIGINAL CONDITIONS OR AS SPECIFIED ON APPROVED PLAN.

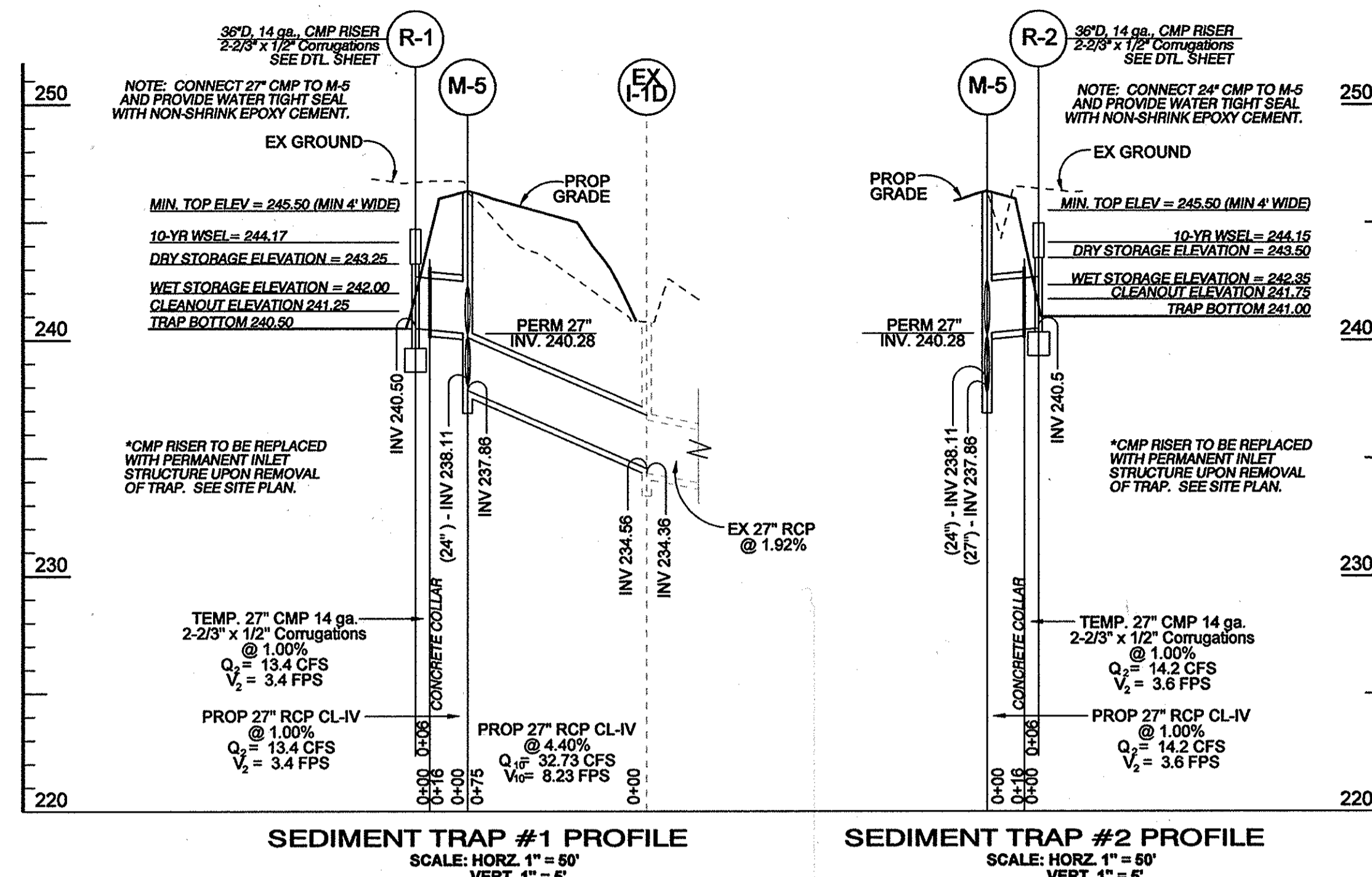
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT
NATURAL RESOURCES CONSERVATION SERVICE WATER MANAGEMENT ADMINISTRATION

DETAIL E-2 SILT FENCE ON PAVEMENT

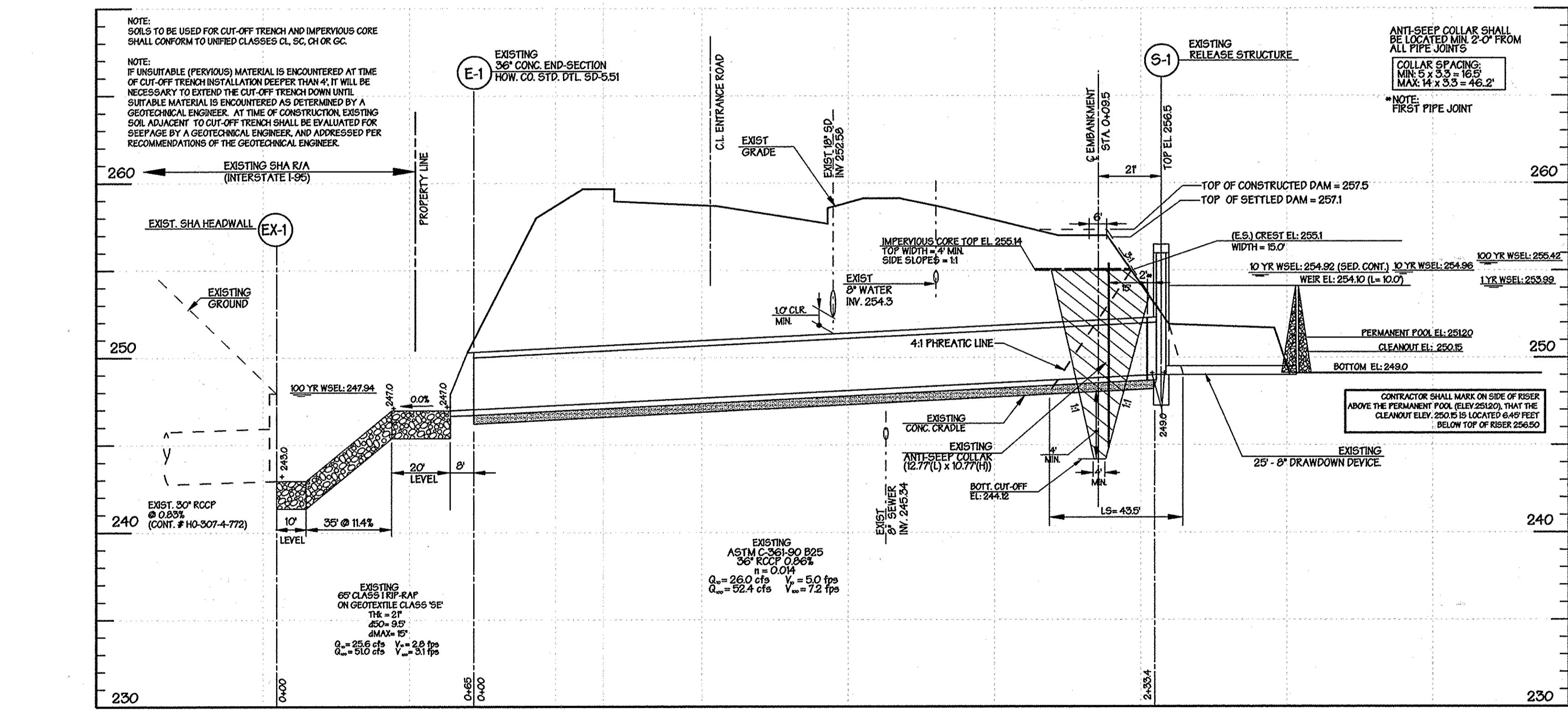


- CONSTRUCTION SPECIFICATIONS**
1. USE NOMINAL 2 INCH X 4 INCH LUMBER.
 2. USE WOVEN SLIT FILM GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
 3. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
 4. SPACE UPRIGHT SUPPORTS NO MORE THAN 10 FEET APART.
 5. PROVIDE A TWO FOOT OPENING BETWEEN EVERY SET OF SUPPORTS AND PLACE STONE IN THE OPENING OVER GEOTEXTILE.
 6. KEEP SILT FENCE TAUT AND SECURELY STAPLE TO THE UPSLOPE SIDE OF UPRIGHT SUPPORTS. EXTEND GEOTEXTILE UNDER 2x4.
 7. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN, OVERLAP, FOLD, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL. ATTACH LATHE.
 8. PROVIDE A MASTIC SEAL BETWEEN PAVEMENT, GEOTEXTILE, AND 2x4 TO PREVENT SEDIMENT-LADEN WATER FROM ESCAPING BENEATH SILT FENCE INSTALLATION.
 9. SECURE BOARDS TO PAVEMENT WITH 400 5 INCH MINIMUM LENGTH NAILS.
 10. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. MAINTAIN WATER TIGHT SEAL ALONG BOTTOM. REPLACE STONE IF DISPLACED.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
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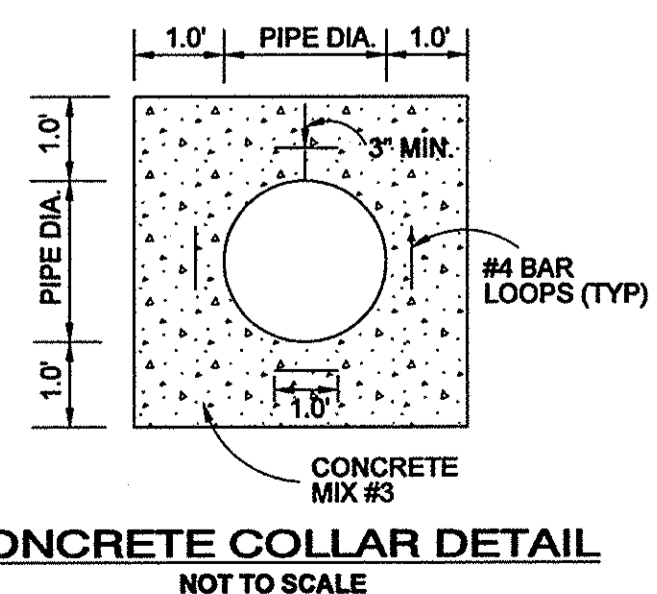
SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'



SCALE: HORIZ. 1" = 30'
VERT. 1" = 5'

HOWARD 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 thereto.
3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within:
 - a) 3 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1.
 - b) 7 days as to all other disturbed or graded areas on the project site.
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 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 done when recommended seeding dates do not allow for proper germination and establishment of grasses.
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 Howard County Sediment Control Inspector.
6. Site Analysis:
 - Total Area of Site: 33.05 Acres
 - Area Disturbed: 10.49 Acres
 - Area to be vegetatively stabilized: 4.93 Acres
 - Total Cut: 65,000 Cu. Yds.
 - Total Fill: 35,000 Cu. Yds.
 - Offsite waste/borrow are location
7. Any sediment control practice that is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
8. Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
9. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of 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 inspection agency is made.
10. 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 workday, whichever is shorter.
11. Any changes or revisions to the sequence of construction must be reviewed and approved by the plan approval authority prior to proceeding with construction.
12. 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 enforcement authority. Unless otherwise specified and approved by the approval authority, no more than 30 acres cumulatively may be disturbed at a given time.
13. The Environment Concept Plan, ECP-13-063, was approved on 7/18/13.



NOT TO SCALE

ENGINEER CERTIFICATION:
I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Engineer: *Tanya L. Bensinger* Date: 1-28-15
Name: Tanya L. Bensinger PE # 29179

DEVELOPER CERTIFICATION:
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.

Developer: *Josh Aghaj*
Name: Josh Aghaj

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

John R. Polutano 2/10/15
APPROVED: HOWARD SOIL CONSERVATION DISTRICT

APPROVED: Howard County Department of Planning and Zoning

John A. ... 4/8/15
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kevin ... 4/3/15
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

David ... 4/8/15
DIRECTOR DATE

MATIS WARFIELD
Consulting Engineers

10540 York Road, Suite M
Hunt Valley, Maryland 21030
PHONE 410.683.7004 FAX 410.683.1798
www.matiswarfield.com

Owner/Developer:
Merritt-MR, LLC
2066 Lord Baltimore Drive
Baltimore, Maryland 21244
ph: 410-298-2600
fx: 410-298-9644

NO.	DESCRIPTION	BY	DATE
1	Add temporary parking and submerged gravel wetland SWM-11A.	MWI	1/28/2015

REVISED SITE DEVELOPMENT PLAN
SEDIMENT CONTROL DETAILS
The Meadows Corporate Park
Phase 2
6510 - 6518 MEADOW RIDGE ROAD MD RTE. 103
GREEN BUILDING

TAX MAP: 37;
PARCELS: A6-A9
ELECTION DISTRICT: 1
ZONE: POR

GENERAL OFFICE
SCALE: 1" = 50'
DATE: April 23, 2014
SHEET: 26 of 35

B-3 STANDARDS AND SPECIFICATIONS
FOR
LAND GRADING

Definition
Reshaping the existing land surface to provide suitable topography for building facilities and other site improvements.

Purpose
To provide erosion control and vegetative establishment for extreme changes in grade.

Conditions Where Practice Applies
Earth disturbances or extreme grade modifications on steep or long slopes.

Design Criteria
The grading plan should be based on the incorporation of building designs and street layouts that fit and utilize existing topography and desirable natural surroundings to avoid extreme grade modifications. Information submitted must provide sufficient topographic surveys and soil investigations to determine limitations that must be imposed on the grading operation related to slope stability, adjacent properties, drainage patterns, measures for water removal, and vegetative treatment, etc.

Many jurisdictions have regulations and design procedures already established for land grading that must be followed. The plan must show existing and proposed contours for the area(s) to be graded including practices for erosion control, slope stabilization, and safe conveyance of runoff (e.g., waterways, lined channels, reverse benches, grade stabilization structures). The grading/construction plans are to include the phasing of these practices and consideration of the following:

- Provisions to safely convey surface runoff to storm drains, protected outlets or stable water courses to ensure that surface runoff will not damage slopes or other graded areas.
- Cut and fill slopes, stabilized with grasses, no steeper than 2:1. (Where the slope is to be moved, the slope should be no steeper than 3:1, but 4:1 is preferred because of safety factors related to mowing steep slopes.) Slopes steeper than 2:1 require special design and stabilization considerations to be shown on the plan.
- Benching per Detail B-3-1 whenever the vertical interval (height) of any 2:1 slope exceeds 20 feet; for 3:1 slopes, when it exceeds 30 feet; and for 4:1 slopes, when it exceeds 40 feet. Locate benches to divide the slope face as equally as possible and to convey the water to a stable outlet. Soils, seeps, rock outcrops, etc. are to be taken into consideration when designing benches.
 - Provide benches with a minimum width of six feet for ease of maintenance.
 - Design benches with a reverse slope of 6:1 or flatter to the toe of the upper slope and with a minimum of one foot in depth. Grade the longitudinal slope of the bench between 2 percent and 3 percent, unless accompanied by appropriate design and computations.

B.5

- The maximum allowable flow length within a bench is 800 feet unless accompanied by appropriate design and computations.
- Diversion of surface water from the face of all cut and fill slopes using earth dikes or swales. Convey surface water down slope using a designed structure, and:
 - Protect the face of all graded slopes from surface runoff until they are stabilized.
 - Do not subject the slope's face to any concentrated flow of surface water such as from natural drainage ways, graded swales, downspouts, etc.
 - Protect the face of the slope by special erosion control materials to include, but not be limited to, approved vegetative stabilization practices, riprap or other approved stabilization methods.
- Serrated slope as shown in Detail B-3-2. The steepest allowable slope for ripable rock is 1.5:1. For non rock surfaces, the slopes are to be 2:1 or flatter. These steps will weather and act to hold moisture, lime, fertilizer and seed thus producing a much quicker and longer lived vegetative cover and better slope stabilization.
- Subsurface drainage provisions. Provide subsurface drainage where necessary to intercept seepage that would otherwise adversely affect slope stability or create excessively wet site conditions.
- Proximity to adjacent property. Slopes must not be created close to property lines without adequate protection against sedimentation, erosion, slippage, settlement, subsidence, or other related damages.
- Quality of fill material. Fill material must be free of brush, rubbish, logs, stumps, building debris, and other objectionable material. Do not place frozen materials in the fill nor place the fill material on a frozen foundation.
- Stabilization. Stabilize all disturbed areas structurally or vegetatively in compliance with Section B-4 Standards and Specifications for Stabilization Practices.

Maintenance

The line, grade, and cross section of benching and serrated slopes must be maintained. Benches and serrated slopes must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization.

B.6

DETAIL B-3-1 BENCHING

CONSTRUCTION SPECIFICATIONS

- USE FILL MATERIAL FREE OF BRUSH, RUBBISH, ROCKS, LOGS, STUMPS, BUILDING DEBRIS, AND OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
- DO NOT INCORPORATE FROZEN, SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS INTO FILL SLOPES OR STRUCTURAL FILLS. DO NOT PLACE FILL ON A FROZEN FOUNDATION.
- PLACE ALL FILL IN LOOSE LIFTS NOT TO EXCEED 8 INCHES AND THEN COMPACT.
- COMPACT ALL FILLS AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, OR OTHER RELATED PROBLEMS. COMPACT FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES, CONDUITS, ETC., IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
- HANDLE SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION IN ACCORDANCE WITH SECTION H-2 SUBSURFACE DRAINS OR OTHER APPROVED METHODS.
- MAINTAIN LINE, GRADE, AND CROSS SECTION OF BENCHING STABLE IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION CRITERIA OR AS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN. INSTALLATION OF EROSION CONTROL MATING MAY BE NECESSARY IN BENCH/SWALE INVERTS. CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
- KEEP ALL BENCHES FREE OF SEDIMENT DURING ALL PHASES OF DEVELOPMENT.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
B.7

DETAIL B-3-2 SERRATED SLOPE

CONSTRUCTION SPECIFICATIONS

- DIVERT OVERLAND FLOW FROM THE TOP OF ALL SERRATED CUT SLOPES AND CARRY TO A SUITABLE OUTLET.
- MAKE SERRATIONS AS THE EXCAVATION PROGRESSES.
- CONSTRUCT EACH STEP OR SERRATION ON THE CONTIGUOUS RISE & RUN DIMENSIONS WILL VARY DEPENDING ON THE FINAL SLOPE RATIO. FOR RIPABLE ROCK SURFACES, MAKE TWO FOOT VERTICAL (RIS) AND THREE FOOT HORIZONTAL (RUN) SERRATIONS AT A SLOPE RATIO NO STEEPER THAN 1.5:1. FOR NON ROCK SURFACES, MAKE TWO FOOT VERTICAL (RIS) AND FOUR FOOT HORIZONTAL (RUNS) SERRATIONS AT A SLOPE RATIO NO STEEPER THAN 2:1.
- KEEP ALL BENCHES FREE OF SEDIMENT DURING ALL PHASES OF CONSTRUCTION.
- HANDLE SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION IN ACCORDANCE WITH SECTION H-2 SUBSURFACE DRAINS OR OTHER APPROVED METHODS.
- MAINTAIN LINE, GRADE, AND CROSS SECTION OF SERRATED SLOPES, TEMPORARILY OR PERMANENTLY STABILIZE ALL GRAZED, NON ROCK SURFACES IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENTS OR AS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN. CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
B.8

B-4 STANDARDS AND SPECIFICATIONS
FOR
VEGETATIVE STABILIZATION

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

Purpose
To promote the establishment of vegetation on exposed soil.

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

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

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

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

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

Adequate Vegetative Establishment

Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, and reseedings within the planting season.

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

B.9

B-4-1 STANDARDS AND SPECIFICATIONS
FOR
INCREMENTAL STABILIZATION

Definition
Establishment of vegetative cover on cut and fill slopes.

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

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

Criteria

A. Incremental Stabilization - Cut Slopes

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

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

B.10

B. Incremental Stabilization - Fill Slopes

- Construct and stabilize fill slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all slopes as the work progresses.
- Stabilize slopes immediately when the vertical height of a lift reaches 15 feet, or when the grading operation ceases as prescribed in the plan.
- At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
- Construction sequence example (Refer to Figure B.2):
 - Construct and stabilize all temporary swales or dikes that will be used to divert runoff around the fill. Construct silt fence on low side of fill unless other methods shown on the plans address this area.
 - At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
 - Place Phase 1 fill, prepare seedbed, and stabilize.
 - Place Phase 2 fill, prepare seedbed, and stabilize.
 - Place final phase fill, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

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

B.11

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

Definition
The process of preparing the soils to maintain adequate vegetative stabilization.

Purpose
To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies
Where vegetative stabilization is to be established.

Criteria

A. Soil Preparation

- Temporary Stabilization**
 - Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is 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 rippers running parallel to the contour of the slope.
 - Apply fertilizer and lime as prescribed on the plans.
 - Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
- Permanent Stabilization**
 - A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
 - Soil pH between 6.0 and 7.0.
 - Soluble salts less than 500 parts per million (ppm).
 - Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if leucogras will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
 - Soil contains 1.5 percent minimum organic matter by weight.
 - Soil contains sufficient pore space to permit adequate root penetration.
 - Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
 - Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.

B.12

B. Topsoiling

- Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
- Topsoil salvaged from an existing site may be used provided it meets the standards set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
- Topsoiling is limited to areas having 2:1 or flatter slopes where:
 - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
 - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish containing supplies of moisture and plant nutrients.
 - The original soil to be vegetated contains material toxic to plant growth.
 - The soil is so acidic that treatment with limestone is not feasible.
- Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
 - Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2 inches in diameter.
 - Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
 - Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
- Topsoil Application
 - Erosion and sediment control practices must be maintained when applying topsoil.
 - 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 tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
 - Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading.

B.13

C. Soil Amendments (Fertilizer and Lime Specifications)

- Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
- Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Measures may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
- Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydrosodding) which contains at least 90 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #200 mesh sieve.
- Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
- Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

B.14

ENGINEER CERTIFICATION:
I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Engineer: Tanya L. Benshiger Date: 4-23-14
Name: Tanya L. Benshiger PE # 29179

DEVELOPER CERTIFICATION:
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.

Developer: Josh Asbury
Name: Josh Asbury

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

John R. Robertson 5/6/14
APPROVED: HOWARD SOIL CONSERVATION DISTRICT

APPROVED: Howard County Department of Planning and Zoning

Shelley 5-12-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kevin 6-18-14
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Frank 6/10/14
DIRECTOR DATE

MATIS WARFIELD
Consulting Engineers

10540 York Road, Suite M
Hunt Valley, Maryland 21030
PHONE 410.683.7004 FAX 410.683.1798
www.matiswarfield.com

Owner/Developer:
Merritt-MR, LLC
2066 Lord Baltimore Drive
Baltimore, Maryland 21244
ph: 410-298-2600
fx: 410-298-9644

NO.	DESCRIPTION	BY	DATE

SEDIMENT CONTROL DETAILS
The Meadows Corporate Park
Phase 2
8610 - 6518 MEADOW RIDGE ROAD MD RTE. 103
GREEN BUILDING

TAX MAP: 37;
PARCELS: A6-A9
ELECTION DISTRICT: 1
ZONE: FOR

GENERAL OFFICE
SCALE: 1" = 50'
DATE: April 23, 2014
SHEET: 28 of 35

SDP-13-070

B-4.3 STANDARDS AND SPECIFICATIONS
FOR
SEEDING AND MULCHING
Definition
The application of seed and mulch to establish vegetative cover.
Purpose
To protect disturbed soils from erosion during and at the end of construction.
Conditions Where Practice Applies
To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.
Criteria

A. Seeding

- Specifications
 - All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to retesting by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B-4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
 - Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
 - Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
 - Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.
- Application
 - Dry Seeding: This includes use of conventional drop or broadcast spreaders.
 - Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
 - Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.

B.15

B. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.

- Cultipacker seeders are required to bury the seed in such a fashion as to result in a 1/4 inch of soil covering. Seedbed must be firm after planting.
- Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.

C. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).

- If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P₂O₅ (phosphorous), 200 pounds per acre; K₂O (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 time. 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.

B. Mulching

- Mulch Materials (in order of preference)
 - Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, 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 a uniform fibrous physical state.
 - WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
 - WCFM, including dye, must contain no germination or growth inhibiting factors.
 - WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a butter-like ground cover, on application, having moisture absorption and retention properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
 - WCFM material must not contain elements or compounds at concentration levels that will be phytotoxic.
 - WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.

B.16

2. Application

- Apply mulch to all seeded areas immediately after seeding.
- When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
- Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

3. Anchoring

- Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
 - A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.
 - Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 - Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petrozet, Terra Tac II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.
 - Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

B.17

B-4.4 STANDARDS AND SPECIFICATIONS
FOR
TEMPORARY STABILIZATION
Definition
To stabilize disturbed soils with vegetation for up to 6 months.
Purpose
To use fast growing vegetation that provides cover on disturbed soils.
Conditions Where Practice Applies
Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.
Criteria

- Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.
- For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
- When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4.3.A.1.b and maintain until the next seeding season.

Temporary Seeding Summary

Hardiness Zone (from Figure B.3): <u>6b</u>				Fertilizer Rate (10-20-20)	Lime Rate
No.	Species	Application Rate (lb/acre)	Seeding Dates		
	ANNUAL RYEGRASS	40	3/1-5/15 8/1-10/15	436 lb/acre (10 lb/1000 sf)	2 tons/acre (90 lb/1000 sf)
	BARLEY	96	3/1-5/15 8/1-10/15		
	FOXTAIL MILLET	30	5/16-7/31		
	PEARL MILLET	20	5/16-7/31		

B.18

B-4.5 STANDARDS AND SPECIFICATIONS
FOR
PERMANENT STABILIZATION
Definition
To stabilize disturbed soils with permanent vegetation.
Purpose
To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.
Conditions Where Practice Applies
Exposed soils where ground cover is needed for 6 months or more.
Criteria

A. Seed Mixtures

- General Use
 - Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
 - Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
 - For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.
 - For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 1/2 pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.
- Turfgrass Mixtures
 - Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.
 - Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
 - Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where

B.21

rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial 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 total mixture by weight.

- Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes: Certified Tall Fescue Cultivars 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.
- Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes: Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 1/2 to 3 pounds per 1000 square feet.

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

c. 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 Zone: 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 disk or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1 1/2 inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.

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

B.22

Permanent Seeding Summary

Hardiness Zone (from Figure B.3): <u>6b</u>				Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Application Rate (lb/acre)	Seeding Dates	N	P ₂ O ₅	K ₂ O	
1	SWITCH GRASS	10	5/16-6/15	1/4 - 1/2 in	45 pounds per acre (10 lb/1000 sf)	90 lb/acre (2 lb/1000 sf)	2 tons/acre (90 lb/1000 sf)
	CREeping RED FESCUE	15	3/1-5/15 8/1-10/15	1/4 - 1/2 in			
	WLD INDIGO	2		1/4 - 1/2 in			

B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).

B. General Specifications

- Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.
- Sod must be machine cut at a uniform soil thickness of 3/4 inch, plus or minus 1/8 inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable.
- Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
- Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
- Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by an agronomist or soil scientist prior to its installation.

2. Sod Installation

- During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.
- Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
- Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface.
- Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of laying, tamping and irrigating for any piece of sod within eight hours.

B.23

3. Sod Maintenance

- In the absence of adequate rainfall, water daily during the first week or so after and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water sod during the heat of the day to prevent wilting.
- After the first week, sod watering is required as necessary to maintain adequate moisture content.
- Do not mow until the sod is firmly rooted. No more than 1/2 of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.

B-4.4 STANDARDS AND SPECIFICATIONS
FOR
SOIL STABILIZATION MATTING
Definition
Material used to temporarily or permanently stabilize channels or steep slopes until groundcover is established.
Purpose
To protect the soils until vegetation is established.
Conditions Where Practice Applies
On newly seeded surfaces to prevent the applied seed from washing out, in channels and on steep slopes where the flow has erosive velocities or conveys clear water, on temporary swales, earth dikes, and perimeter dike swales as required by the respective design standard, and, on stream banks where moving water is likely to wash out new vegetative plantings.
Design Criteria

- The soil stabilization matting that is used must withstand the flow velocities and shear stresses determined for the area, based on the 2-year, 24-hour frequency storm for temporary applications and the 10-year, 24-hour frequency storm for permanent applications. Designate on the plan the type of soil stabilization matting using the standard symbol and include the calculated shear stress for the respective treatment area.
- Matting is required on permanent channels where the runoff velocity exceeds two and half feet per second (2.5 fps) or the shear stress exceeds two pounds per square foot (2 lb/ft²). On temporary channels discharging to a sediment trapping practice, provide matting where the runoff velocity exceeds four feet per second (4 fps).
- Temporary soil stabilization matting is made with degradable (lasts 6 months minimum), natural, or manmade fibers of uniform thickness and distribution of fibers throughout and is eroder resistant. The maximum permissible velocity for temporary matting is 6 feet per second.
- Permanent soil stabilization matting is an open weave, synthetic material consisting of non-degradable fibers or elements of uniform thickness and distribution of weave throughout. The maximum permissible velocity for permanent matting is 8.5 feet per second.
- Calculate channel velocity and shear stress using the following procedure:
Shear Stress (τ) is a measure of the force of moving water against the substrate and is calculated as:
 $\tau = \gamma \cdot R \cdot S_w$ where:
 τ = shear stress (lb/ft²)
 γ = weight density of water (62.4 lb/ft³)
 R = average water depth (hydraulic radius) (ft)
 S_w = water surface slope (ft/ft)

B.24

B-4.4 STANDARDS AND SPECIFICATIONS
FOR
SOIL STABILIZATION MATTING
Definition
Material used to temporarily or permanently stabilize channels or steep slopes until groundcover is established.
Purpose
To protect the soils until vegetation is established.
Conditions Where Practice Applies
On newly seeded surfaces to prevent the applied seed from washing out, in channels and on steep slopes where the flow has erosive velocities or conveys clear water, on temporary swales, earth dikes, and perimeter dike swales as required by the respective design standard, and, on stream banks where moving water is likely to wash out new vegetative plantings.
Design Criteria

- The soil stabilization matting that is used must withstand the flow velocities and shear stresses determined for the area, based on the 2-year, 24-hour frequency storm for temporary applications and the 10-year, 24-hour frequency storm for permanent applications. Designate on the plan the type of soil stabilization matting using the standard symbol and include the calculated shear stress for the respective treatment area.
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- Calculate channel velocity and shear stress using the following procedure:
Shear Stress (τ) is a measure of the force of moving water against the substrate and is calculated as:
 $\tau = \gamma \cdot R \cdot S_w$ where:
 τ = shear stress (lb/ft²)
 γ = weight density of water (62.4 lb/ft³)
 R = average water depth (hydraulic radius) (ft)
 S_w = water surface slope (ft/ft)

B.26

Velocity (v) measures the rate of flow through a defined area and is calculated as:

$$v = \frac{1.486R^{2/3}S}{n}$$

where:
v = velocity (ft/sec)
n = Manning's roughness coefficient
R = hydraulic radius (ft)
S = channel slope (ft/ft)

6. Use Table B.7 to assist in selecting the appropriate soil stabilization matting for slope applications based on the slope, the slope length, and the soil-erodibility K factor.

Table B.7: Soil Stabilization on Slopes

Slope	20:1 or Flatter (≤5%)		<20:1 to 4:1 (5-25%)		<4:1 to 3:1 (25-33%)		<3:1 to 2.5:1 (33-40%)		<2.5:1 to 2:1** (40-50%)		
	0-30	30-60	60-120	0-30	30-60	60-120	0-30	30-60	60-120	0-30	30-60
Straw Mulch/Wood Cellulose Fiber	For K ≤ 0.35***										
Temporary Matting with Design Shear Stress ≥ 1.2 lb/ft ²											
Temporary Matting with Design Shear Stress ≥ 2.0 lb/ft ²											
Temporary Matting with Design Shear Stress ≥ 2.2 lb/ft ²											
Temporary Matting with Design Shear Stress ≥ 2.5 lb/ft ²											

*** Effective range for all K values unless otherwise specified.

* Slope length includes contributing flow length.
** Slopes steeper than 2:1 must be engineered.
*** Soil having a K value less than or equal to 0.35 can be stabilized effectively with straw mulch or wood cellulose fiber when located on slopes steeper than 5%. Soil stabilization matting is required on all slopes steeper than 5% that have soil with a K factor greater than 0.35. K factor ratings are published in the NRCS Soil Survey <http://websoilseries.nrcs.usda.gov>. During construction or reclamation, the soil-erodibility K value should represent the upper 6 inches of the final fill material re-spread as the last lift. Only the effects of rock fragments within the soil profile are considered in the estimation of the K value. Do not adjust K values to account for rocks on the soil surface or increases in soil organic matter related to management activities.

Maintenance
Vegetation must be established and maintained so that the requirements for Adequate Vegetative Establishment are continuously met in accordance with Section B-4 Vegetative Stabilization.

B.27

ENGINEER CERTIFICATION:
I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Engineer: Tanya L. Bensinger Date: 4-23-14
Name: Tanya L. Bensinger PE #: 29179

MATIS WARFIELD
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PHONE 410.683.7004 FAX 410.683.1798
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Owner/Developer:
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Baltimore, Maryland 21244
ph: 410-298-2600
fx: 410-298-9644

NO. **DESCRIPTION** **BY** **DATE**

APPROVED: Howard County Department of Planning and Zoning

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 5-12-14
CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 6-18-14
DIRECTOR DATE: 6/18/14

SEDIMENT CONTROL DETAILS
The Meadows Corporate Park
Phase 2
6610 - 6618 MEADOW RIDGE ROAD MD RTE. 103
GREEN BUILDING

TAX MAP: 37;
PARCELS: A5-A9
ELECTION DISTRICT: 1
ZONE: FOR

GENERAL OFFICE
SCALE: 1" = 50'
DATE: April 23, 2014
SHEET: 29 of 35

SDP-13-070

DEVELOPER CERTIFICATION:
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.

Developer: Josh Ashbury
Name: Josh Ashbury

Professional Certification: I hereby certify that these documents were prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer in the State of Maryland.

APPROVED: HOWARD SOIL CONSERVATION DISTRICT

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

APPROVED: HOWARD SOIL CONSERVATION DISTRICT

SEDIMENT CONTROL DETAILS
The Meadows Corporate Park
Phase 2
6610 - 6618 MEADOW RIDGE ROAD MD RTE. 103
GREEN BUILDING

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SEDIMENT CONTROL DETAILS
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GREEN BUILDING

TAX MAP: 37;
PARCELS: A5-A9
ELECTION DISTRICT: 1
ZONE: FOR

GENERAL OFFICE
SCALE: 1" = 50'
DATE: April 23, 2014
SHEET: 29 of 35

SDP-13-070

DETAIL B-4-6-A TEMPORARY SOIL STABILIZATION MATTING CHANNEL APPLICATION

STANDARD SYMBOL
TSSMS - * B/FT²
(* INCLUDE SHEAR STRESS)

CONSTRUCTION SPECIFICATIONS:

- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
- USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOOTHER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-HARMFUL TO THE SOIL. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2.0 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXES OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
- SECURE MATTING USING STEEL STAPLES, WOOD STAPLES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1.5 INCHES WIDE AND BE A MINIMUM 8 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAPLES MUST BE ROUND-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1.5 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
- PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDING PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
- UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL. CENTERLINE WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MAT SMOOTHLY AND FIRMLY ON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
- KEY-IN UPSTREAM END OF EACH MAT ROLL BY DIGGING A 6 INCH (MINIMUM) TRENCH AT THE UPSTREAM END OF THE MATTING, PLACING THE ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END.
- OVERLAP OR ABUT THE ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
- STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
- ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

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

B.38

DETAIL B-4-6-B TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL
TSSMS - * B/FT²
(* INCLUDE SHEAR STRESS)

CONSTRUCTION SPECIFICATIONS:

- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
- USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOOTHER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-HARMFUL TO THE SOIL. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2.0 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXES OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
- SECURE MATTING USING STEEL STAPLES, WOOD STAPLES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1.5 INCHES WIDE AND BE A MINIMUM 8 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAPLES MUST BE ROUND-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1.5 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
- PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDING PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
- UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
- OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
- KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
- STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
- ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

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

B.39

DETAIL B-4-6-C PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION

STANDARD SYMBOL
PSSMS - * B/FT²
(* INCLUDE SHEAR STRESS)

CONSTRUCTION SPECIFICATIONS:

- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
- USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-HARMFUL TO THE SOIL. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2.0 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXES OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
- SECURE MATTING USING STEEL STAPLES OR WOOD STAPLES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1.5 INCHES WIDE AND BE A MINIMUM 8 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAPLES MUST BE ROUND-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1.5 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
- PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDING PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
- UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
- OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
- KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
- STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
- IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEPT AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
- ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

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

B.40

DETAIL B-4-6-D PERMANENT SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL
PSSMS - * B/FT²
(* INCLUDE SHEAR STRESS)

CONSTRUCTION SPECIFICATIONS:

- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
- USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-HARMFUL TO THE SOIL. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2.0 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXES OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
- SECURE MATTING USING STEEL STAPLES OR WOOD STAPLES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1.5 INCHES WIDE AND BE A MINIMUM 8 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAPLES MUST BE ROUND-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1.5 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
- PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDING PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
- UNROLL MATTING DOWN SLOPE. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
- OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
- KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
- STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
- IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEPT AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
- ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

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

B.41

B-4-8 STANDARDS AND SPECIFICATIONS

FOR STOCKPILE AREA

Definition
A mound or pile of soil protected by appropriately designed erosion and sediment control measures.

Purpose
To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.

Conditions Where Practice Applies
Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

Criteria

- The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
- The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Bunching must be provided in accordance with Section B-3-3 Land Grading.
- Runoff from the stockpile area must drain to a suitable sediment control practice.
- Access to the stockpile area from the upgrade side.
- Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
- Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
- Stockpiles must be stabilized in accordance with the 27 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
- If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

Maintenance
The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, bunching must be provided in accordance with Section B-3 Land Grading.

B.43

H.1 STANDARDS AND SPECIFICATIONS

FOR MATERIALS

Table H.1: Geotextile Fabrics

PROPERTY	TEST METHOD	WOVEN SPLIT FILM GEOTEXTILE				NONWOVEN GEOTEXTILE			
		MD	CD	MD	CD	MD	CD	MD	CD
Grab Tensile Strength	ASTM D-4632	200 lb	200 lb	370 lb	250 lb	200 lb	200 lb	200 lb	200 lb
Grab Tensile Elongation	ASTM D-4632	15%	10%	15%	15%	50%	50%	50%	50%
Trapezoidal Tear Strength	ASTM D-4533	75 lb	75 lb	100 lb	60 lb	50 lb	50 lb	80 lb	80 lb
Puncture Strength	ASTM D-6241	400 lb		300 lb		450 lb		450 lb	
Apparent Opening Size ¹	ASTM D-4751	U.S. Sieve 30 (0.59 mm)		U.S. Sieve 70 (0.21 mm)		U.S. Sieve 70 (0.21 mm)		U.S. Sieve 70 (0.21 mm)	
Permittivity	ASTM D-4491	0.05 sec ²		0.28 sec ²		1.1 sec ²		1.1 sec ²	
Ultraviolet Resistance Retained at 500 hours	ASTM D-4355	70% strength		70% strength		70% strength		70% strength	

¹ All numeric values except apparent opening size (AOS) represent minimum average roll values (MARV). MARV is calculated as the typical minus two standard deviations. MD is machine direction, CD is cross direction.

² Values for AOS represent the average maximum opening.

Geotextiles must be evaluated by the National Transportation Product Evaluation Program (NTPPEP) and conform to the values in Table H.1.

The geotextile must be inert to commonly encountered chemicals and hydrocarbons and must be rot and mildew resistant. The geotextile must be manufactured from fibers consisting of long chain synthetic polymers and composed of a minimum of 95 percent by weight of polyolefins or polyesters, and formed into a stable network so the filaments or yarns retain their dimensional stability relative to each other, including selvages.

When more than one section of geotextile is necessary, overlap the sections by at least one foot. The geotextile must be pulled taut over the applied surface. Equipment must not run over exposed fabric. When placing riprap on geotextile, do not exceed a one foot drop height.

H.1

Table H.2: Stone Size

TYPE	SIZE RANGE	d ₁₀	d ₅₀	AASHTO	MIDSIZE WEIGHT ²
NUMBER 5 ¹	3/8 to 1 1/2 inch	1/2 in	1 1/2 in	M-43	N/A
NUMBER 1	2 to 5 inch	2 1/2 in	3 in	M-43	N/A
RIPEAP ³ (CLASS 0)	4 to 7 inch	5 1/2 in	7 in	N/A	N/A
CLASS I	N/A	9 1/2 in	15 in	N/A	40 lb
CLASS II	N/A	16 in	24 in	N/A	200 lb
CLASS III	N/A	23 in	34 in	N/A	600 lb

¹ This classification is to be used on the upstream face of stone outlets and check dams.

² This classification is to be used for gabions.

³ Optimum gradation is 50 percent of the stone being above and 50 percent below the midsize.

Stone must be composed of a well graded mixture of stone sizes so that fifty (50) percent of the pieces by weight are larger than the size determined by using the charts. A well graded mixture, as used herein, is defined as a mixture composed primarily of larger stone sizes but with a sufficient mixture of other sizes to fill the smaller voids between the stones. The diameter of the largest stone in such a mixture must not exceed the respective d₅₀ selected from Table H.2. The d₅₀ refers to the median diameter of the stone. This is the size for which 50 percent, by weight, will be smaller and 50 percent will be larger.

Note: Recycled concrete equivalent may be substituted for all stone classifications for temporary control measures only. Concrete broken into the sizes meeting the appropriate classification, containing no steel reinforcement, and having a minimum density of 150 pounds per cubic foot may be used as an equivalent.

H.2

H.5 STANDARDS AND SPECIFICATIONS

FOR DUST CONTROL

Controlling the suspension of dust particles from construction activities.

Purpose
To prevent blowing and movement of dust from exposed soil surfaces to reduce on and off-site damage including health and traffic hazards.

Conditions Where Practice Applies
Areas subject to dust blowing and movement where on and off-site damage is likely without treatment.

Specifications

- Mulch:** See Section B-4-2 Soil Preparation, Topsoiling, and Soil Amendments, Section B-4-3 Seeding and Mulching, and Section B-4-4 Temporary Stabilization. Mulch must be anchored to prevent blowing.
- Vegetative Cover:** See Section B-4-4 Temporary Stabilization.
- Tillage:** Till to roughen surface and bring clods to the surface. Begin plowing on windward side of site. Chisel-type plows spaced about 12 inches apart, spring-toothed harrows, and similar plows are examples of equipment that may produce the desired effect.
- Irrigation:** Sprinkle site with water until the surface is moist. Repeat as needed. The site must not be irrigated to the point that runoff occurs.
- Barriers:** Solid board fences, all fences, snow fences, burlap fences, straw bales, and similar material can be used to control air currents and soil blowing.
- Chemical Treatment:** Use of chemical treatment requires approval by the appropriate plan review authority.

H.22

ENGINEER CERTIFICATION:
I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Eng. No. 2115 Date 4-23-14
Name Tanya L. Pensinger PE # 29179

DEVELOPER CERTIFICATION:
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.

Developer Name Josh Ashby
APPROVED: HOWARD SOIL CONSERVATION DISTRICT

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

John R. Phelan 5/6/14
APPROVED: HOWARD SOIL CONSERVATION DISTRICT

APPROVED: Howard County Department of Planning and Zoning

Phil Clark 5-17-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kevin J. ... 6-18-14
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

James L. ... 6/17/14
DIRECTOR DATE

MATIS WARFIELD
Consulting Engineers

10540 York Road, Suite M
Hunt Valley, Maryland 21030
PHONE 410.683.7004 FAX 410.683.1798
www.matiswarfield.com

Owner/Developer:
Merritt-MR, LLC
2066 Lord Baltimore Drive
Baltimore, Maryland 21244
ph: 410-298-2600
fx: 410-298-9644

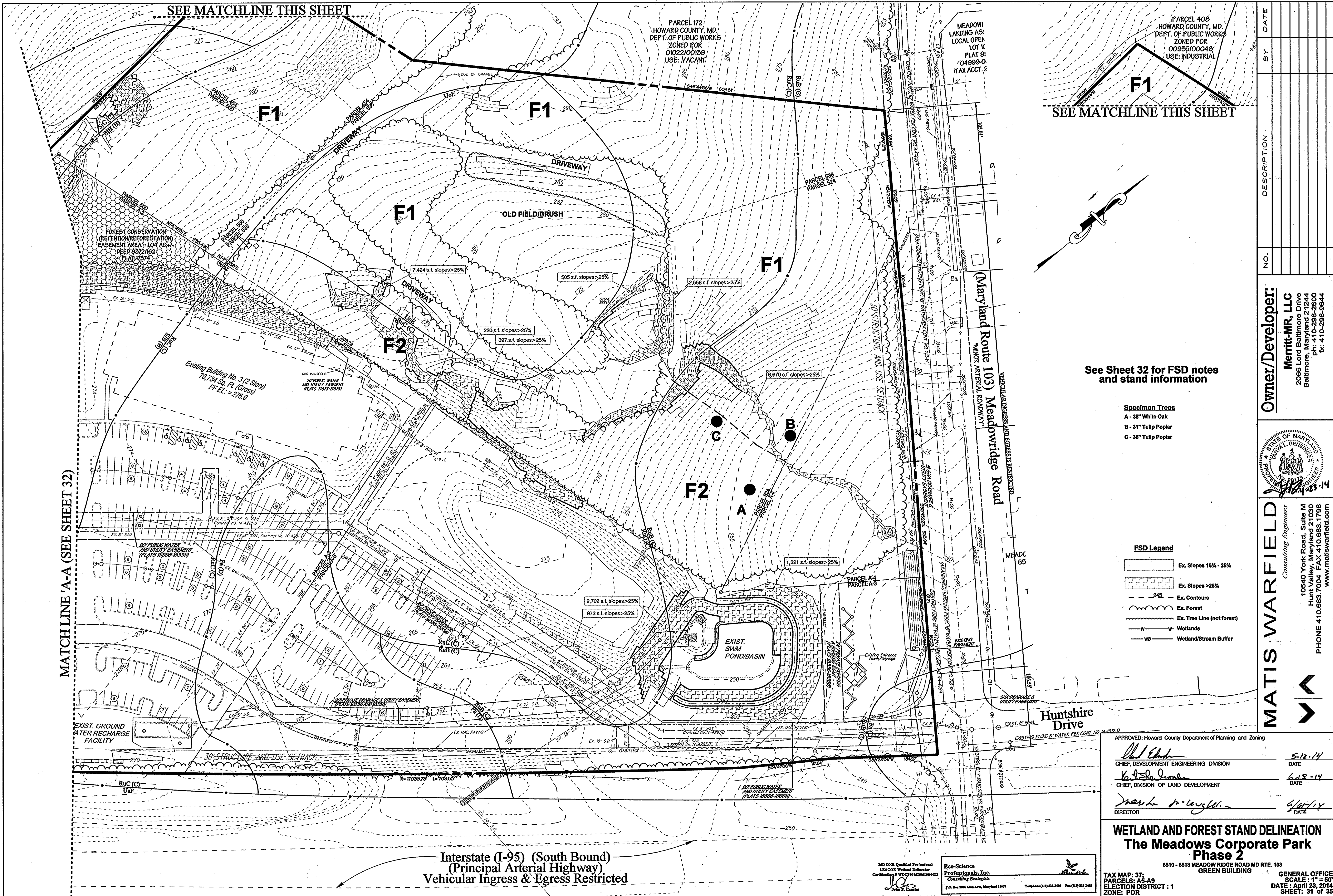
NO.	DESCRIPTION	BY	DATE

SEDIMENT CONTROL DETAILS
The Meadows Corporate Park Phase 2
8610 - 6618 MEADOW RIDGE ROAD MD RTE. 103
GREEN BUILDING

TAX MAP: 37;
PARCELS: A5-A9
ELECTION DISTRICT: 1
ZONING: B-10

GENERAL OFFICE
SCALE: 1" = 60'
DATE: April 23, 2014
SHEET: 30 of 35

SDP-13-070



MATCHLINE 'A-A' (SEE SHEET 32)

SEE MATCHLINE THIS SHEET

SEE MATCHLINE THIS SHEET

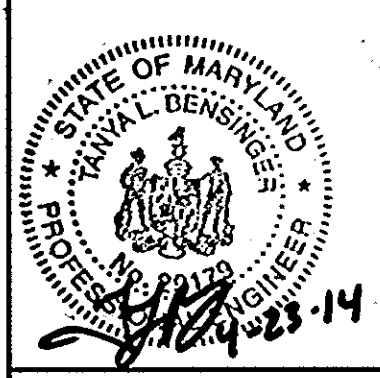
See Sheet 32 for FSD notes and stand information

Specimen Trees
 A - 38" White Oak
 B - 31" Tulip Poplar
 C - 38" Tulip Poplar

FSD Legend

- Ex. Slopes 16% - 25%
- Ex. Slopes >25%
- Ex. Contours
- Ex. Forest
- Ex. Tree Line (not forest)
- Wetlands
- Wetland/Stream Buffer

Owner/Developer:
Merritt-MR, LLC
 2066 Lord Baltimore Drive
 Baltimore, Maryland 21244
 ph: 410-298-2600
 fx: 410-298-9644



MATIS WARFIELD
 Consulting Engineers
 10540 York Road, Suite M
 Hunt Valley, Maryland 21030
 PHONE 410.683.7004 FAX 410.683.1798
 www.matiswarfield.com

APPROVED: Howard County Department of Planning and Zoning

John P. Cullen 5-12-14
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

K. L. ... 6-18-14
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Mark ... 6/18/14
 DIRECTOR DATE

WETLAND AND FOREST STAND DELINEATION
The Meadows Corporate Park
Phase 2
 6510 - 6518 MEADOW RIDGE ROAD MD RTE. 103
 GREEN BUILDING

TAX MAP: 37;
 PARCELS: A5-A9
 ELECTION DISTRICT: 1
 ZONE: FOR

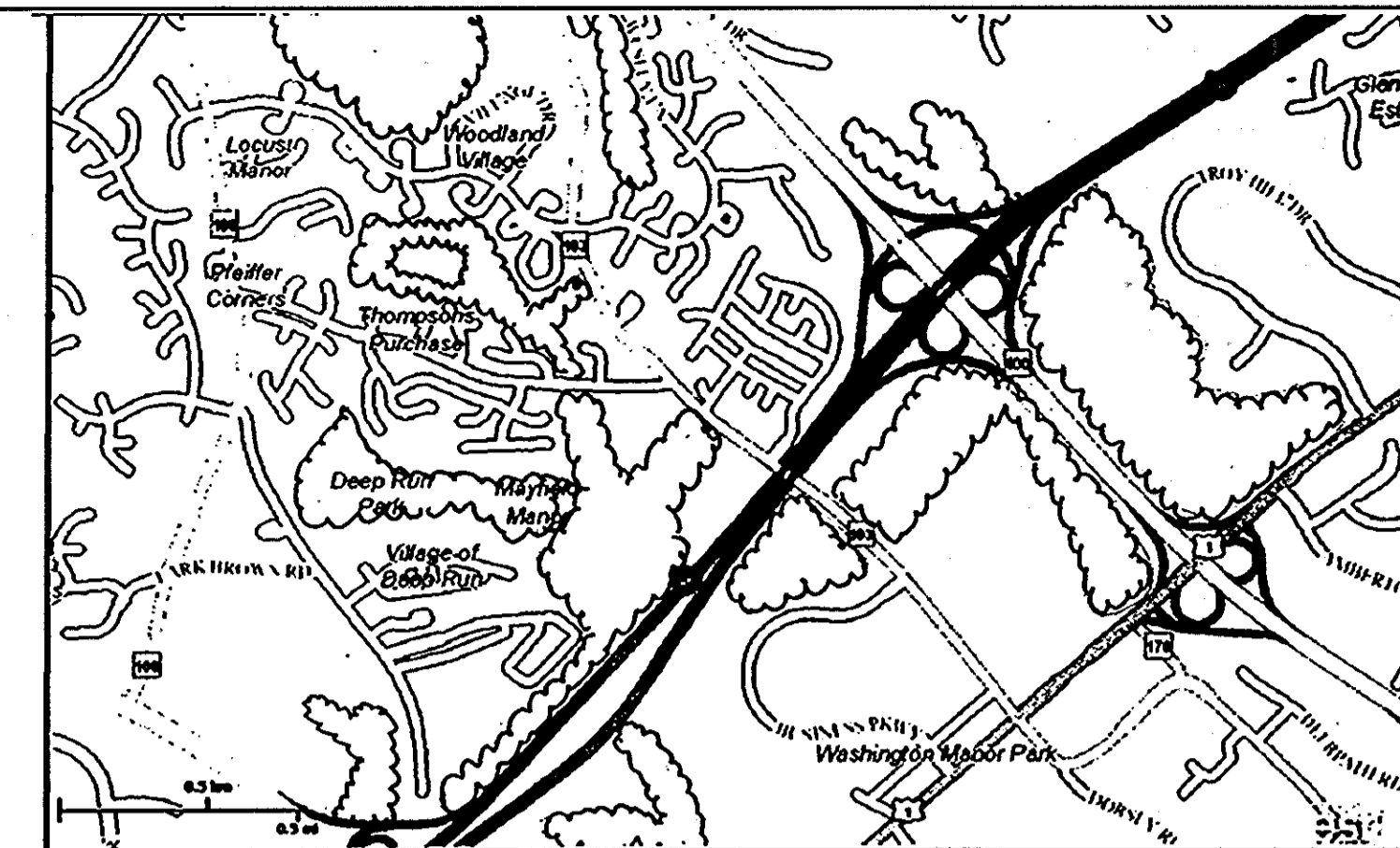
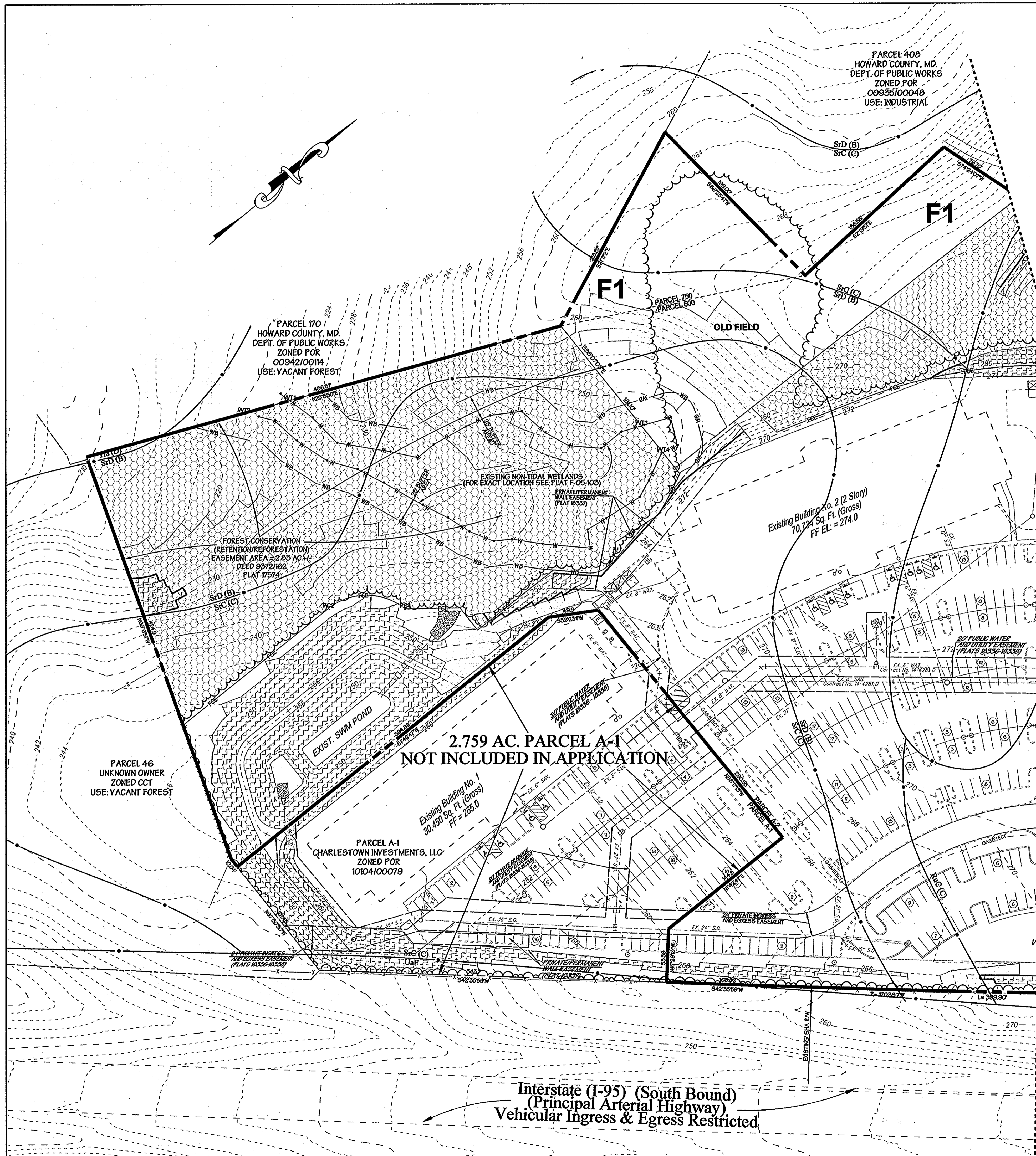
GENERAL OFFICE
 SCALE: 1" = 50'
 DATE: April 23, 2014
 SHEET: 31 of 35

Interstate (I-95) (South Bound)
 (Principal Arterial Highway)
 Vehicular Ingress & Egress Restricted

MD DNR Qualified Professional
 EIA/CIE Wetland Delineator
 Certification # WD02912001104442
 John P. Cullen

Eco-Science
 Professionals, Inc.
 Consulting Ecologists
 P.O. Box 2046 Chieftan, Maryland 21037 Telephone (410) 623-0400 Fax (410) 623-0400

SDP-13-070



1" = 1000'

Forest Stand Data

Key	Community Type	Acreage	Dominant Vegetation	General Condition	Priority Acreage
F1	Mixed Successional	6.2	Liriodendron tulipifera, Acer rubrum, Prunus serotina, Morus rubra, Robinia, pseudo-acacia	Fair	0.1 ± buffers
F2	Oak/Pine	2.1	Quercus alba, Quercus rubra, Quercus prinus, Pinus virginiana, Liriodendron tulipifera, Acer rubrum	Good	0

See accompanying report for complete stand descriptions

FSD NOTES:

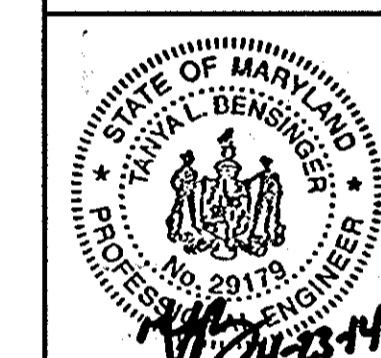
- The FSD has been prepared for the lands added to the existing Meadows Corporate Park property. The FCA obligations for Parcels A-1, A-2, A-3 and A-4 have already been addressed.
- No rare, threatened or endangered species were observed on the property.
- Surrounding land use is primarily high density residential and commercial.
- Approximately 4.4 acres of forest is present within 100 feet of the subject property.
- No floodplain is present on the site.

FSD Legend

- Ex. Slopes 16% - 25%
- Ex. Slopes >25%
- Ex. Contours
- Ex. Forest
- Ex. Tree Line (not forest)
- Wetlands
- Wetland/Stream Buffer

MATCH LINE 'A-A' (SEE SHEET 31)

Owner/Developer:
Merritt-MR, LLC
 2066 Lord Baltimore Drive
 Baltimore, Maryland 21244
 ph: 410-298-2600
 fx: 410-298-9644



MATIS WARFIELD
 Consulting Engineers
 10540 York Road, Suite M
 Hunt Valley, Maryland 21030
 PHONE 410.683.7004 FAX 410.683.1798
 www.matiswarfield.com

APPROVED: Howard County Department of Planning and Zoning
 [Signature] DATE: 5-12-14
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] DATE: 6-12-14
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] DATE: 6/14/14
 DIRECTOR

WETLAND AND FOREST STAND DELINEATION
The Meadows Corporate Park
Phase 2
 6510 - 6518 MEADOW RIDGE ROAD MD RTE. 103
 GREEN BUILDING
 TAX MAP: 37;
 PARCELS: A5-A9
 ELECTION DISTRICT: 1
 ZONE: FOR
 GENERAL OFFICE
 SCALE: 1" = 50'
 DATE: April 23, 2014
 SHEET: 32 of 33

Eco-Science Professionals, Inc.
 Consulting Ecologists
 P.O. Box 2868 Glen Arden, Maryland 21057 Telephone (410) 523-3400 Fax (410) 523-3406
 MD DNR Qualified Professional USACO2 Wetland Delineator Certification # W052703 (0461494423)
 John T. Chandler

SDP-13-070

SEE MATCHLINE THIS SHEET

SEE MATCHLINE THIS SHEET

PARCEL 172
HOWARD COUNTY, MD.
DEPT. OF PUBLIC WORKS
ZONED FOR
O1O22/OO139
USE: VACANT

MEADOW
LANDING AS:
LOCAL OPEN
LOT 1C
PLAT 9:
O4999-C
TAX ACCT. 2

PARCEL 408
HOWARD COUNTY, MD.
DEPT. OF PUBLIC WORKS
ZONED FOR
O0935/OO048
USE: INDUSTRIAL

BY OTHERS
SEE SDP-13-021

BY OTHERS
SEE SDP-13-021

FOREST CONSERVATION
(RETENTION/REFORESTATION)
EASEMENT AREA - 104 AC.±
DEED 9372/162
PLAT 17574

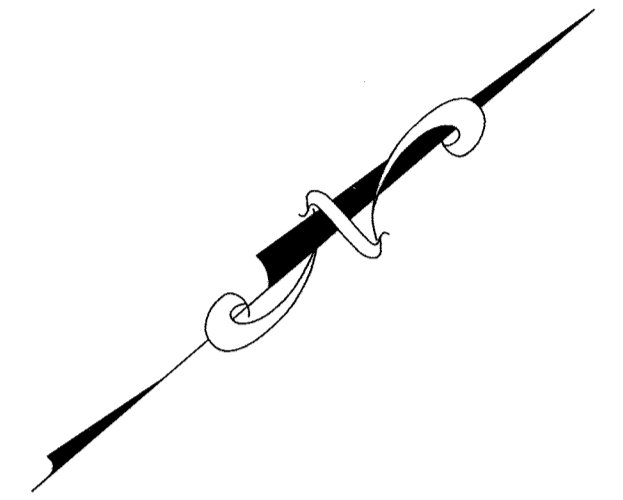
Existing Building No. 3 (2 Story)
70,734 Sq. Ft. (Gross)
FF EL. = 276.0

Proposed Building No. 4
80,045 Sq. Ft. (Gross)
FF EL. = 274.0

Proposed Bldg. No. 5
11,200 Sq. Ft.
FF EL. = 274.0

MATCHLINE 'A-A' (SEE SHEET 34)

Maryland Route 103 Meadowridge Road
MINOR ARTERIAL ROADWAY
VEHICULAR INGRESS AND EGRESS IS RESTRICTED

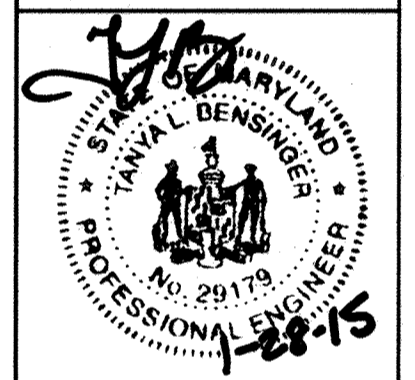


- FCP Legend**
- Ex. Contours
 - Pr. Contours
 - Ex. Forest
 - Ex. Tree Line (not forest)
 - Pr. Forest
 - Wetlands
 - Wetland/Stream Buffer
 - Temporary Protective Fencing
 - Permanent Protective Signage
 - High Visible Fence
 - Existing Forest Conservation Easement
 - Proposed Forest Conservation Easement
 - Reforestation Area

- Specimen Trees**
- A - 38" White Oak
 - B - 31" Tulip Poplar
 - C - 38" Tulip Poplar

NO.	DESCRIPTION	BY	DATE
1	Add temporary parking and submerged gravel wetland SWK-11A.	MW	10/20/15
2	Update Building 4 Square Footage for a basement boiler room.	MW	7/15/18

Owner/Developer:
Merritt-MR, LLC
 2066 Lord Baltimore Drive
 Baltimore, Maryland 21244
 ph: 410-298-2600
 fx: 410-298-9644



MATIS WARFIELD
 Consulting Engineers
 10540 York Road, Suite M
 Hunt Valley, Maryland 21030
 PHONE 410.683.7004 FAX 410.683.1798
 www.matiswarfield.com

APPROVED: Howard County Department of Planning and Zoning

John P. Casale 4/8/15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kate S. Geisler 4/13/15
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Frank A. Casale 4/8/15
 DIRECTOR DATE

REVISED SITE DEVELOPMENT PLAN
FOREST CONSERVATION PLAN
The Meadows Corporate Park
Phase 2
 6810 - 6818 MEADOW RIDGE ROAD MD RTE. 103
 GREEN BUILDING

TAX MAP: 37;
 PARCELS: A5-A9
 ELECTION DISTRICT: 1
 ZONE: POR

GENERAL OFFICE
 SCALE: 1" = 50'
 DATE: April 23, 2014
 SHEET: 33 of 35

Interstate (I-95) (South Bound)
(Principal Arterial Highway)
Vehicular Ingress & Egress Restricted

MD DNR Qualified Professional
 ISA/COP Wetland Delimitator
 Certification # WDCP23MD061904402
John P. Casale

Eco-Science Professionals, Inc.
 Consulting Ecologists
 P.O. Box 2886 Glen Arden, Maryland 21037
 Telephone (410) 823-2400 Fax (410) 823-2400

SDP-13-070

FCP NOTES

- Any Forest Conservation Easement (FCE) area shown hereon is subject to protective covenants which may be found in the Land Records of Howard County which restrict the disturbance and use of these areas.
- Forested areas occurring outside of the FCE shall not be considered part of the FCE and shall not be subject to protective land covenants. These areas have been considered cleared for the purpose of the FCA calculations.
- Limits of disturbance shall be restricted to areas outside the limit of temporary fencing or the FCE boundary, whichever is greater.
- There shall be no clearing, grading, construction or disturbance of vegetation in the Forest Conservation Easement, except as permitted by Howard County DPZ.
- No stockpiles, parking areas, equipment cleaning areas, etc. shall occur within areas designated as Forest Conservation Easements.
- Temporary fencing shall be used to protect forest resources during construction. Fencing shall be installed along limits of disturbance occurring within 50 feet of the proposed FCE limits. Permanent signage will be posted at 50-100 foot intervals along all FCE limits, as shown hereon.
- The Forest Conservation Act requirements for this project will be met through the retention of 0.7 acres of net tract area forest, 0.6 acres of onsite reforestation and purchasing 1.9 acres of credit in the Maplewood Farm Forest Mitigation Bank (SDP-13-040) to be design, constructed and monitored by Ecotone, Inc.

Specimen Tree Chart

Key	Species, Size	Comments
A	White Oak, 38"	to be removed
B	Tulip poplar, 31"	to be removed
C	Tulip poplar, 36"	to be removed

CONSTRUCTION PERIOD PROTECTION PROGRAM

A. Forest Protection Techniques

1. Soil Protection Area (Critical Root Zone)

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

2. Fencing and Signage

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

B. Pre-Construction Meeting

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

C. Storage Facilities/Equipment Cleaning

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

D. Sequence of Construction

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

Below Find a Proposed sequence of construction

- Install all signage and sediment control devices.
- Hold pre-construction meeting between developer, contractor and County Inspector
- Build access roads, install water and sewer, and construct houses. Stabilize all distributed areas accordingly.
- Remove sediment control
- Hold post-construction meeting with County inspectors to assure compliance with FCP. Submit Certification of Retention

E. Construction Monitoring

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

F. Post-Construction Meeting

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

POST- CONSTRUCTION MANAGEMENT PLAN

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

The following items will be incorporated into the plan for the subject property:

A. Fencing and Signage

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

B. General Site Inspections

Site inspections will be performed to insure that retention of the forest is met in accordance with this plan and that the forest edge remains healthy and stable.

C. Education

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

D. Final Inspection

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

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FOREST CONSERVATION EASEMENTS

Easements are a legal means of providing permanent protection of forests, farmland and open space. In accordance with the criteria outlined in the Howard County Forest Conservation Manual, a forest conservation easement will be recorded for the retention areas the subject property. Submission of the easements for recordation will occur prior to commencement of construction activities.

FOREST CONSERVATION WORKSHEET

Version 1.0
Project: Meadows Corporate Park
Date: May 15, 2013

NET TRACT AREA	Acres
A. Total Tract Area	35.8
B. Area within 100 Year Floodplain	0
C. Area of site having previously addressed FCA obligations	24.5
D. Net Tract Area	11.3
LAND USE CATEGORY: (from table 3.2.1, page 40, Manual ARA MDR IDA HDR MPD CIA)	
Afforestation Threshold (percentage)	0.15
F. Conservation Threshold (percentage)	0.15
EXISTING FOREST COVER:	
G. Existing forest cover (excluding floodplain)	8.3
H. Area of forest above afforestation threshold	6.6
I. Area of forest above conservation threshold	6.6
BREAK EVEN POINT:	
J. Forest retention above threshold with no mitigation	1.3
K. Clearing permitted without mitigation	5.3
PROPOSED FOREST CLEARING	
L. Total area of forest to be Cleared or Retained Outside FCE	7.6
M. Total area of forest to be Retained in FCE	0.7
PLANTING REQUIREMENTS	
N. Reforestation for clearing above Conservation Threshold	1.7
O. Reforestation for clearing below Conservation Threshold	2.0
P. Credit for retention above conservation threshold	0
R. Total reforestation required	2.7
S. Total afforestation required	0
T. Total reforestation and afforestation required	2.7

PLANTING SCHEDULE

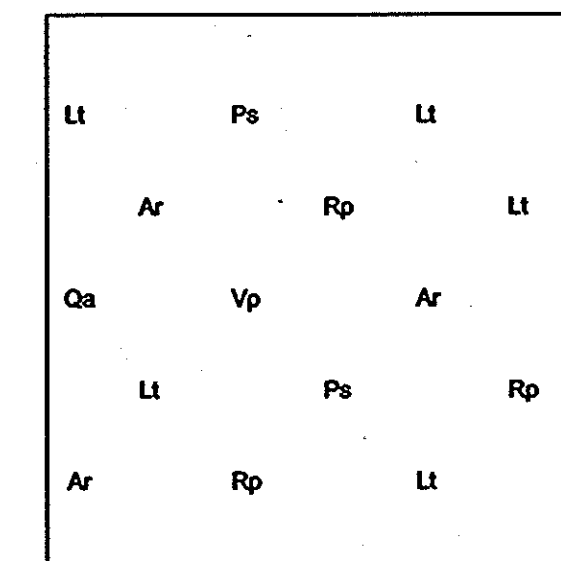
FCE #1 - Planting Area A - 0.8 acres
Planting units Required: 560
Planting units Provided: 560

Qty	Species	Size	Spacing	Total FCA units
35	Acer rubrum - Red maple	2-3" whip	11' o.c.	
35	Cornus florida - Flowering dogwood	2-3" whip	11' o.c.	
40	Liriodendron tulipifera - Tulip poplar	2-3" whip	11' o.c.	
50	Prunus serotina - Black cherry	2-3" whip	11' o.c.	
20	Quercus alba - White oak	2-3" whip	11' o.c.	
50	Robinia pseudo-acacia - Black locust	2-3" whip	11' o.c.	
50	Viburnum prunifolium - Blackhaw	2-3" whip	11' o.c.	
280	Total whip plantings x 2 units / tree = FCA unit credit			560
	Total Unit Credit			560

Planting Notes:

- Planting density based spacing requirements: whips with shelter @ 11' on center
- Planting may be made in a curvilinear fashion along contour. The planting should avoid a grid appearance but should be spaced to facilitate maintenance
- Multiflora rose/heavy brush removal/control may be required prior to installation of planting.
- All whips are required to be installed with tree shelters per Howard County FCA requirements.
- Planting units defined by the spacing requirements established in the FCA Manual. One plant unit is defined as 1 seedling or whip without shelter. The Manual states that 700 seedlings/whips without shelters are required per acre, or 350 whips w/shelters, or 200 1" caliper trees, or 100 2" caliper trees. By conversion it has been determined that a seedling or whip without shelter = 1 unit, whip with shelter = 2 units, 1" caliper tree = 3.5 units and 2" caliper tree = 7 units. The use of plant units simplifies the plant density calculations when mixing stock size.

Typical Planting Layout



This diagram shows a typical dispersal of species within planting area. The spacing shall be in accordance with the approved planting schedule. Where the size of the planting stock varies, the planting units shall installed at averaged spacing to provide approximately uniform coverage.

Owner/Developer:

Merritt-MR, LLC
2066 Lord Baltimore Drive
Baltimore, Maryland 21244
Ph: 410-256-2600
F: 410-256-9644



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Hunt Valley, Maryland 21030
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APPROVED: Howard County Department of Planning and Zoning

[Signature] 5/12/14
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 6/18/14
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 6/10/14
DIRECTOR DATE

FOREST CONSERVATION NOTES
The Meadows Corporate Park
Phase 2

6510 - 6518 MEADOW RIDGE ROAD MD RTE. 103
GREEN BUILDING

TAX MAP: 37;
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ELECTION DISTRICT: 1
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GENERAL OFFICE
SCALE: 1" = 60'
DATE: APRIL 23, 2014
SHEET: 35 OF 35

SDP-13-070

MD ENV. Qualified Professional
EPA/CES Wetland Designer
Certification # WD025120001194412

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