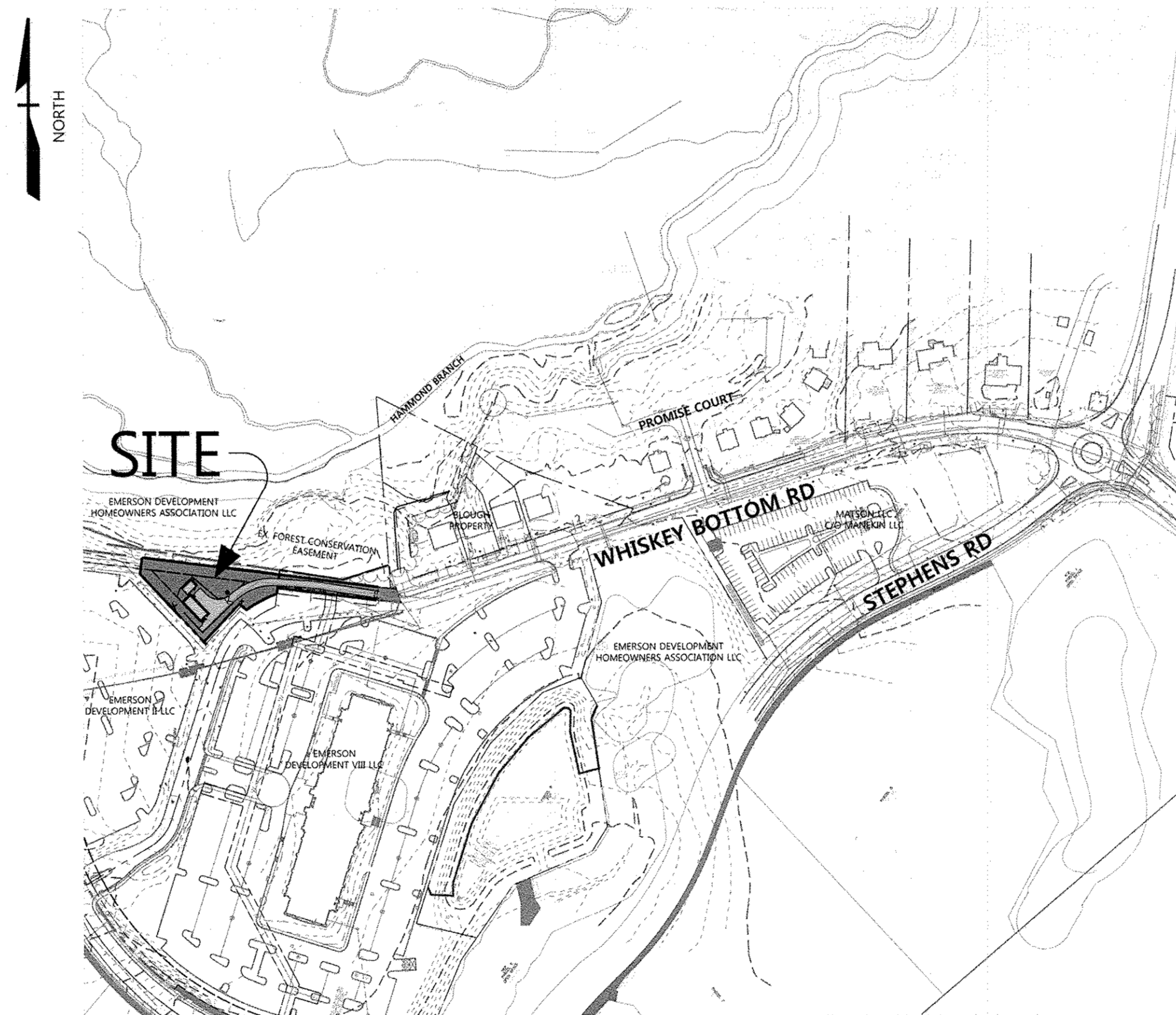


GENERAL NOTES

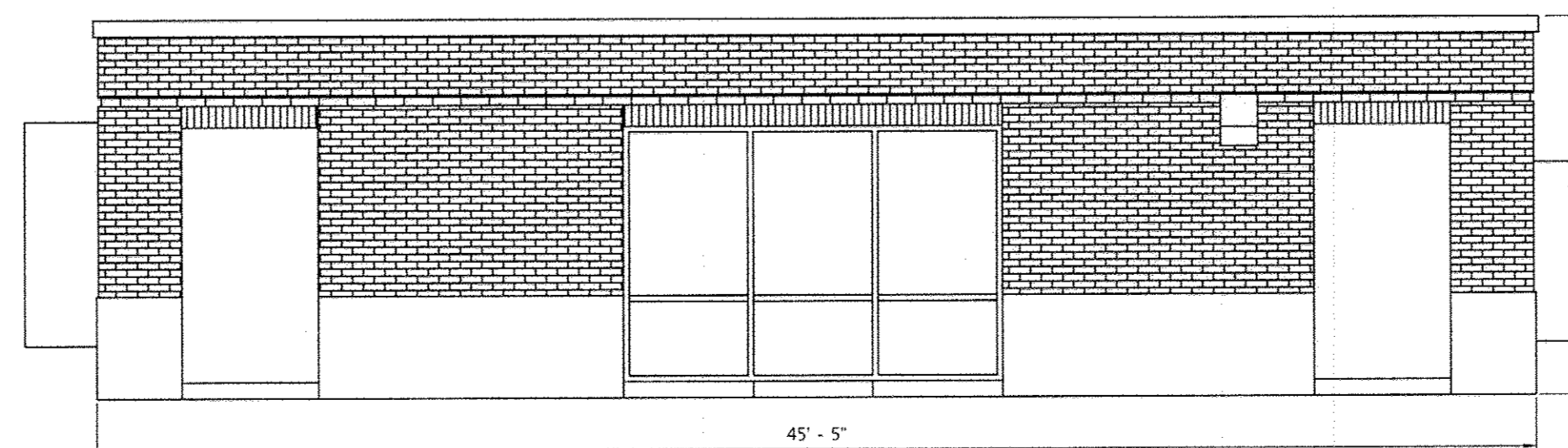
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MDSA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST 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 MARYLAND MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MDMUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UP ON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NO'S 47GM3 & 47EM3.
- STORMWATER MANAGEMENT SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME I, STORM DRAINAGE, AND REVISED MAY 3, 2010. THIS REVISION TO THE DESIGN MANUAL (CHAPTER 5 - STORM WATER MANAGEMENT) AMENDS HOWARD COUNTY'S STANDARD FOR DESIGN AND CONSTRUCTION OF STORMWATER MANAGEMENT FACILITIES IN ACCORDANCE WITH THE STATE'S STORMWATER MANAGEMENT ACT OF 2007.
- STORMWATER MANAGEMENT ESD TO THE (MEP) MAXIMUM EXTENT PRACTICAL SHALL CONSIST OF (M-7) RAIN GARDENS AND (M-8) GRASS CHANNELS. THESE FACILITIES WILL BE OWNED AND MAINTAINED BY HOWARD COUNTY DPW.
- THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF A 2.0 FOOT PROTECTIVE COVER OVER ALL UTILITIES DURING CONSTRUCTION.
- ALL OUTDOOR LIGHTING SHALL COMPLY WITH THE REQUIREMENTS OF ZONING SECTION 134. ALL EXTERIOR LIGHT FIXTURES SHALL BE ORIENTED TO DIRECT LIGHT INWARD AND DOWNWARD AND AWAY FROM ALL ADJOINING RESIDENTIAL PROPERTIES AND PUBLIC ROADS IN ACCORDANCE WITH SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS.
- ANY DAMAGE TO THE COUNTY OWNED RIGHT-OF-WAY SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- ALL MATERIALS AND CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING PROPERTY WHICH MAY OCCUR AS A RESULT OF NEGLIGENCE DURING THE EXECUTION OF WORK.
- WATER, SEWER AND ELECTRIC LINES ARE DESIGNED UNDER WATER & SEWER CONTRACT #44-4947.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE ADJACENT WETLANDS, STREAM(S) OR THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREA AND 100-YEAR FLOODPLAIN.
- EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- THERE ARE NO STREAMS, WETLANDS, 100-YEAR FLOODPLAINS OR ASSOCIATED BUFFERS IN EXISTENCE WITHIN THE SITE. IN ADDITION FOREST CONSERVATION ACT (FCA) COMPLIANCE WAS ADDRESSED WHEN THE PARENT TRACT WAS SUBDIVIDED, NO FURTHER FCA COMPLIANCE IS REQUIRED.
- FOREST CONSERVATION ACT COMPLIANCE FOR THIS PROPERTY WAS ADDRESSED THROUGH A COMBINATION OF RETENTION AND REFORESTATION AS PART OF DPZ# F-02-131.
- WAIVER PETITION WP-16-076 WAS APPROVED ON JANUARY 7, 2016 TO WAIVE SECTION 16.120(G)(1) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS TO ALLOW LESS THAN 60' MINIMUM FRONTAGE ONTO A PUBLIC ROAD FOR THE PROPOSED WHISKEY BOTTOM ROAD WATER PUMPING STATION.
- REFER TO THE TRAFFIC CONTROL PLANS FOR CAPITAL PROJECT NUMBER: W8320, CONTRACT NUMBER: 44-4947. THE DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2430) PRIOR TO THE INSTALLATION OF ANY TRAFFIC CONTROL DEVICES.
- ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL PERFORATED ("QUICK PUNCH"), SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- NO WORK TO OCCUR OUTSIDE THE LIMIT OF DISTURBANCE (LOD). THE CONTRACTOR SHALL CONTACT KNOTT REALTY GROUP @ (410) 935-2893 A MINIMUM OF ONE (1) WEEK PRIOR TO ANY WORK OCCURRING WITHIN 10 FEET OF THE EXISTING SECURITY FENCE.
- CONTRACTOR SHALL NOTIFY KNOTT REALTY GROUP @ (410) 935-2893 A MINIMUM OF ONE (1) WEEK IN ADVANCE OF ANY INTENDED CRANE USE OR LARGE DELIVERY (I.E. PUMPS STATION SUPERSTRUCTURE, CONCRETE DELIVERIES, ETC).

SITE DEVELOPMENT PLAN FOR WHISKEY BOTTOM ROAD WATER PUMPING STATION REPLACEMENT HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS CAPITAL PROJECT NO. W8320 PARCEL T SDP-16-036

HOWARD COUNTY MARYLAND



AREA VIEW
SCALE: 1"=200'

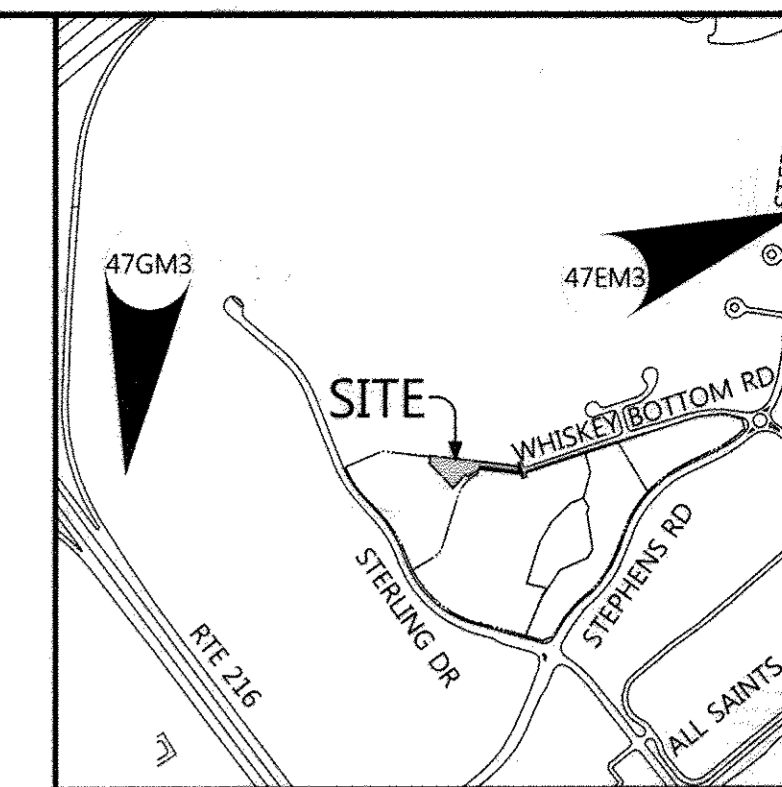


BUILDING EAST ELEVATION
SCALE: 1/8"=1'-0"

NOTE:

- PROPOSED BUILDING FLOOR AREA = 757 SQ.FT.
- BUILDING FACADE TO BE BRICK AND MORTAR

SHEET INDEX	
SHEET	DESCRIPTION
1	COVER SHEET
2	SITE & GRADING PLAN
3	SITE & GRADING OFF-SITE PLAN
4	SITE DETAILS
5	EROSION & SEDIMENT CONTROL PLAN, SITE DATA, SEQUENCE & GENERAL NOTES
6	EROSION & SEDIMENT CONTROL OFF-SITE PLAN
7	2011 EROSION & SEDIMENT CONTROL DETAILS
8	2011 EROSION AND SEDIMENT CONTROL SPECIFICATIONS
9	STORM WATER MANAGEMENT PLAN
10	STORMWATER MANAGEMENT DETAILS & SPECIFICATIONS
11	SCHEMATIC LANDSCAPE PLAN
12	SCHEMATIC LANDSCAPE PLAN



VICINITY MAP

SCALE: 1"=1000'
HOWARD COUNTY ADC MAP
NUMBER 40, GRID NO. B-6

**HOWARD COUNTY
GEODETIC COORDINATES**

BENCH MARK ID: 47GM3	BENCH MARK ID: 47EM3
NORTHING: 531620.07	NORTHING: 532973.07
EASTING: 1352684.71	EASTING: 1356218.71
ELEVATION: 91.734	ELEVATION: 84.447

SITE ANALYSIS DATA CHART

- GENERAL SITE DATA
 - PRESENT ZONING: PEC-MXD-3
 - APPLICABLE DPZ FILE REFERENCES: WP-16-076, F-
 - PROPOSED USE:
HOWARD CO. WATER PUMPING STATION
 - EXISTING USE: VACANT
 - PROPOSED WATER: PUBLIC
 - PROPOSED SEWER: PRIVATE
 - ANY OTHER RELEVANT INFORMATION: N/A
 - AREA OF STEEP SLOPES 15% AND GREATER: 0 AC.
 - AREA OF FLOODPLAIN AND ITS BUFFER: 0 AC.
 - AREA OF WETLANDS AND THEIR BUFFERS: 0 AC.
 - AREA OF FORESTS: 0 AC.
 - AREA OF ERODIBLE SOILS: 0 AC.±
- AREA TABULATION
 - TOTAL SITE AREA: 0.45 AC.±
 - TOTAL LIMIT OF DISTURBED AREA: 1.279 AC.±
 - ONSITE LIMIT OF DISTURBED AREA: 0.45 AC.±
 - OFFSITE LIMIT OF DISTURBED AREA: 0.829 AC.±
 - TOTAL IMPERVIOUS AREA: 0.16 AC.±
 - BUILDING COVERAGE OF SITE: 715 SQ FT
 - GREEN OPEN AREA: 0.29 AC.±
- PARKING
 - REQUIRED PARKING - 2 SPACES
 - PROVIDED PARKING - 2 SPACES

DATA SOURCES:

- EXISTING TOPOGRAPHIC INFORMATION SHOWN HEREON REFLECTS THE RESULT OF A TOPOGRAPHIC SURVEY PERFORMED BY DMW, INC. DATED NOVEMBER 2015. TOPOGRAPHIC SURVEY PERFORMED BY SHELLEY & WITTER INC. DATED OCTOBER 2015, AND HOWARD COUNTY DIGITAL GIS.

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

HOWARD COUNTY DEPT. OF PLANNING & ZONING
DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION 7-6-17
DATE
CHIEF, DIVISION OF LAND DEVELOPMENT 7-24-17
DATE
DIRECTOR 7-26-17
DATE

Date	No.	Revision Description

**Whiskey Bottom Road Water
Pumping Station Replacement
Capital Project No: W8320**

OWNER/DEVELOPER:
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045
(410) 313-4400



501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286
P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM

SUBDIVISION NAME	REVTIZ PROPERTY	SECTION/AREA	LOT/PARCEL #
PLAT CENTER	15788	N/A	
WATER CODE	C-02	7390000	

ADDRESS CHART

LOT NUMBER STREET ADDRESS

TITLE

COVER SHEET

Des. By GDT SCALE Proj. No. 13037

Drn. By SRB Date 3/16/17

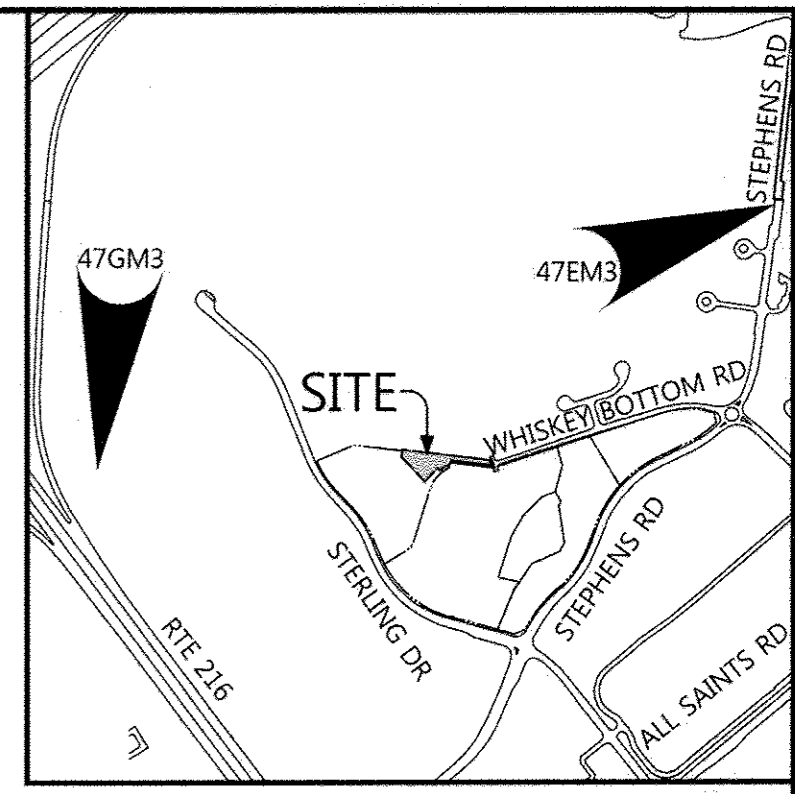
Chk. By ERS Approved

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. 26569, EXPIRATION DATE: 07-18-17.

4-10-17
Date
Professional Engr. No. 26569

FOR CONTINUATION (SEE SHT 3 OF 12)



VICINITY MAP
SCALE: 1"=1000'
HOWARD COUNTY ADC MAP
NUMBER 40, GRID NO. B-6

FOR CONTINUATION (SEE SHT 3 OF 12)

DATA SOURCES:
1. EXISTING TOPOGRAPHIC INFORMATION SHOWN HEREON REFLECTS THE RESULT OF A TOPOGRAPHIC SURVEY PERFORMED BY DMW INC. DATED NOVEMBER 2015, TOPOGRAPHIC SURVEY PERFORMED BY SHELLY & WITTER INC. DATED OCTOBER 2015, AND HOWARD COUNTY DIGITAL GIS.

THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
John B. Robinson, Inc. 4/26/17
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
W. C. ... 7-6-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION NY DATE
West ... 7-24-17
CHIEF, DIVISION OF LAND DEVELOPMENT DW DATE
Val ... 7-26-17
DIRECTOR DATE

Date	No.	Revision Description
		Whiskey Bottom Road Water Pumping Station Replacement Capital Project No: W8320

OWNER/DEVELOPER:
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045
(410) 313-4400



501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286
P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL #
REVITZ PROPERTY	N/A	PART OF PARCEL 'E'
PLAT OR L.P.	TAX ZONE/MAP	SUBJECT DISTRICT
15788	47	6
WATER CODE	SEWER CODE	CENSUS TRACT
C-02	7390000	606907

LOT NUMBER	STREET ADDRESS
TITLE	SITE & GRADING PLAN

Des. By	GDT	SCALE 1" = 20'	Proj. No. 13037
Drn. By	SRB	Date 3/16/17	2 of 12
Chk. By	ERS	Approved	

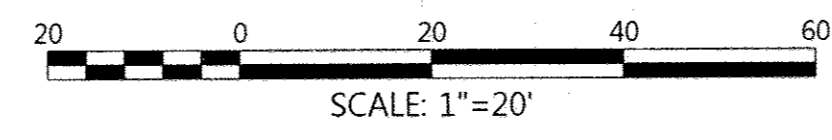
CONTRACT NUMBERS:
44-4947
EX. WATER & EX. SEWER:
24-4527-D
24-4024-D
142-W

4-10-17
Date
Carroll D. ...
Professional Engr. No. 26569

- NOTES:**
- DENSE SHRUBS EXIST ALONG PROPOSED ROAD ALIGNMENT. CONTRACTOR SHALL REMOVE AND GRADE AS NECESSARY.
 - CONTRACTOR SHALL TEST PIT ALL GAS CROSSING LOCATIONS AND SUPPLY INFORMATION TO ENGINEER AND HOWARD COUNTY DPW FOR REVIEW.

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. 26569, EXPIRATION DATE: 07-18-17.



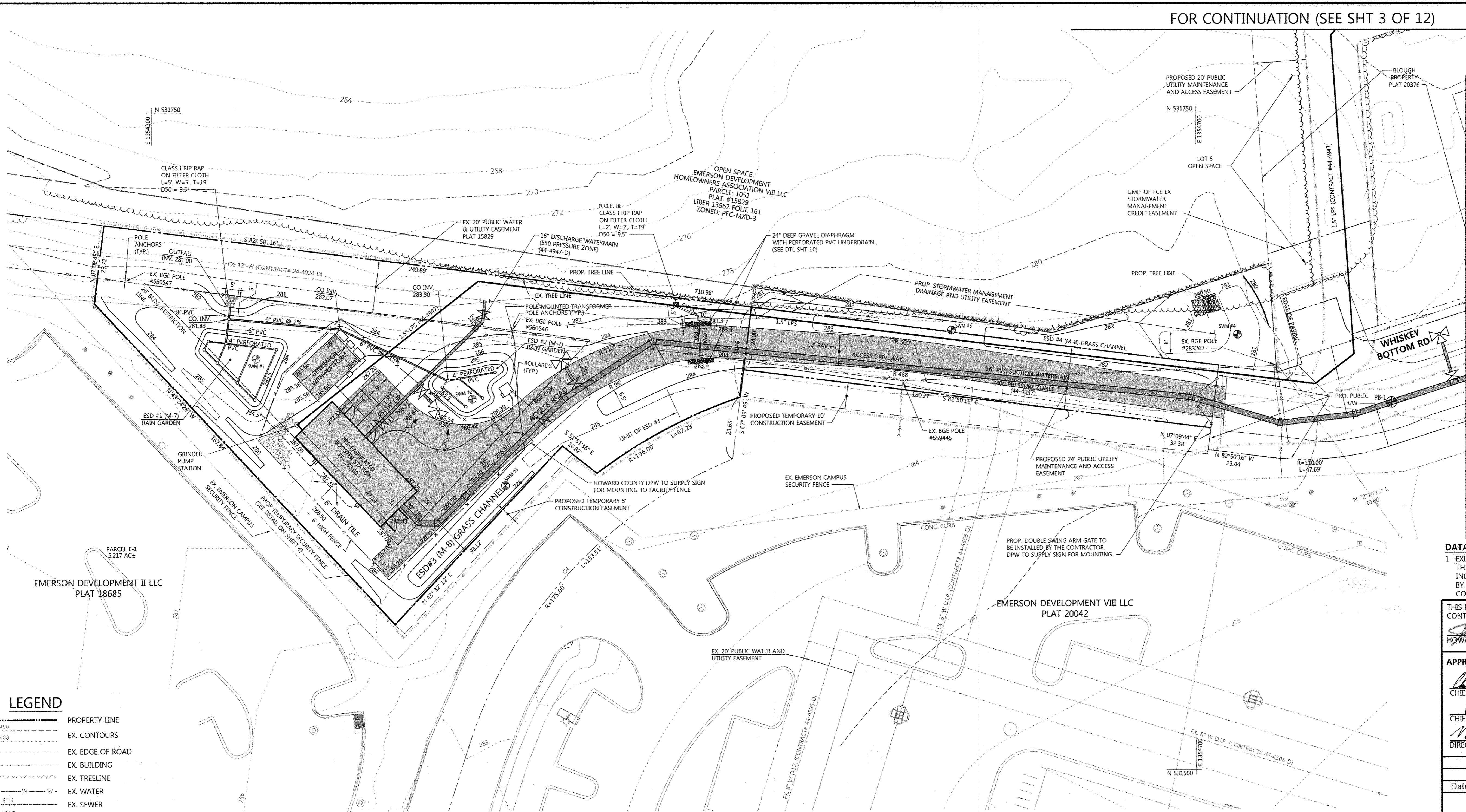
LEGEND

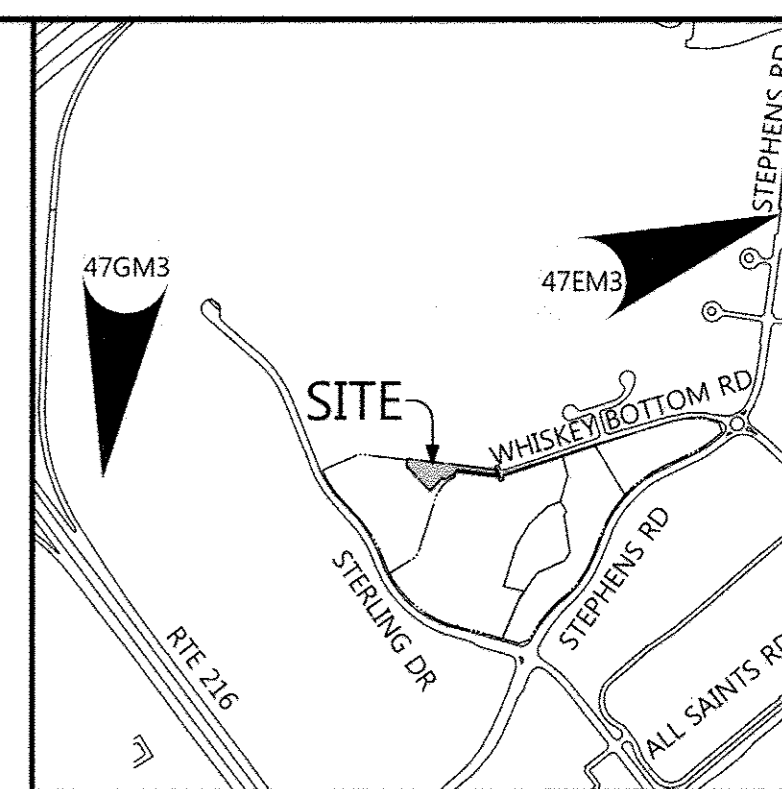
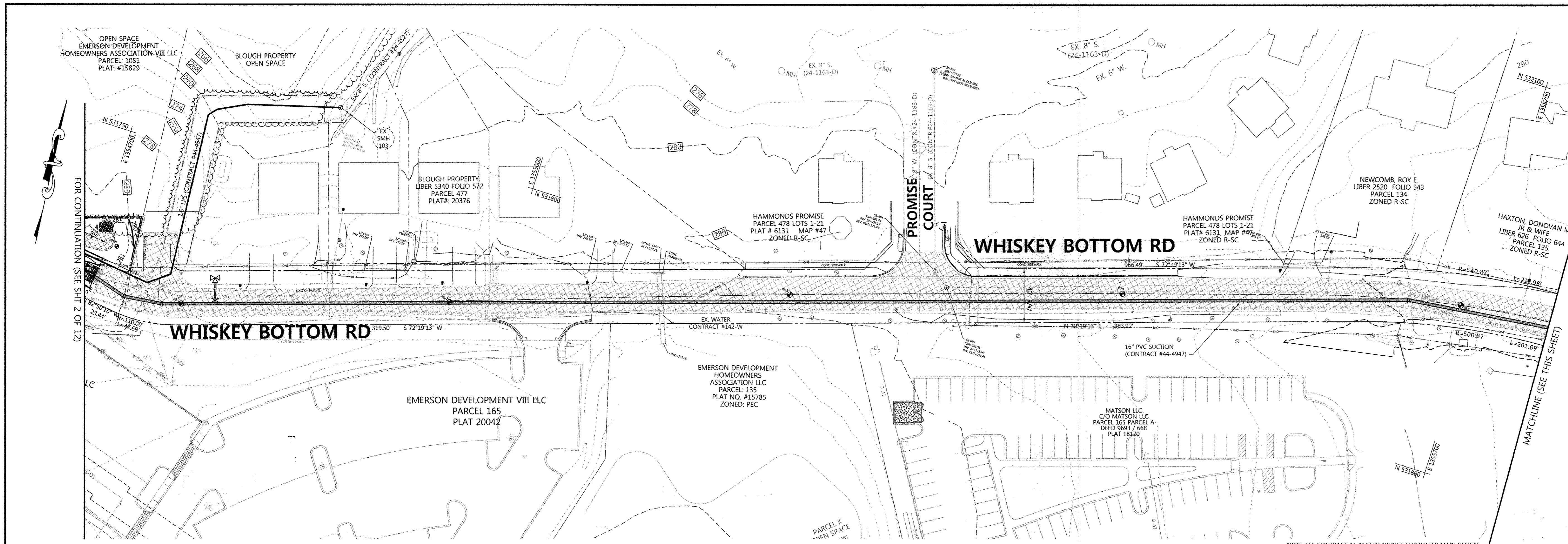
- PROPERTY LINE
- EX. CONTOURS
- EX. EDGE OF ROAD
- EX. BUILDING
- EX. TREELINE
- EX. WATER
- EX. SEWER
- EX. STORM DRAIN
- EX. OVERHEAD TELEPHONE
- EX. EASEMENT
- PROP. EASEMENT
- PROP. CONTOURS
-
-
- PROP. LOW PRESSURE SEWER
- PROP. STORM DRAIN
- PROP. UNDERGROUND ELECTRIC
- PROP. UNDERGROUND TELEPHONE
- PROP. BUILDING
- PROP. CURB
- PROP. TREELINE
- SILT FENCE
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- DRAINAGE AREA DIVIDE
- SOILS
- EROSION CONTROL MATTING
- PROP. OUTFALL PROTECTION LEVEL SPREADER
- STABILIZED CONSTRUCTION ENTRANCE
- SOIL BORING
- FIRE HYDRANT

EMERSON DEVELOPMENT II LLC
PLAT 18685

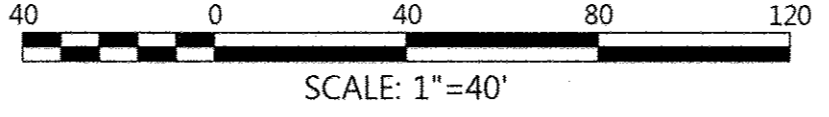
EMERSON DEVELOPMENT VIII LLC
PLAT 20042

OPEN SPACE
EMERSON DEVELOPMENT
ASSOCIATION VIII LLC
PARCEL: 1051
PLAT: #18829
LIBER 13567 FOLIE 161
ZONED: PEC-MXD-3





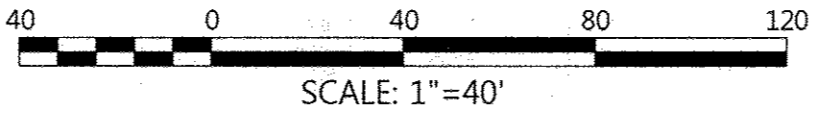
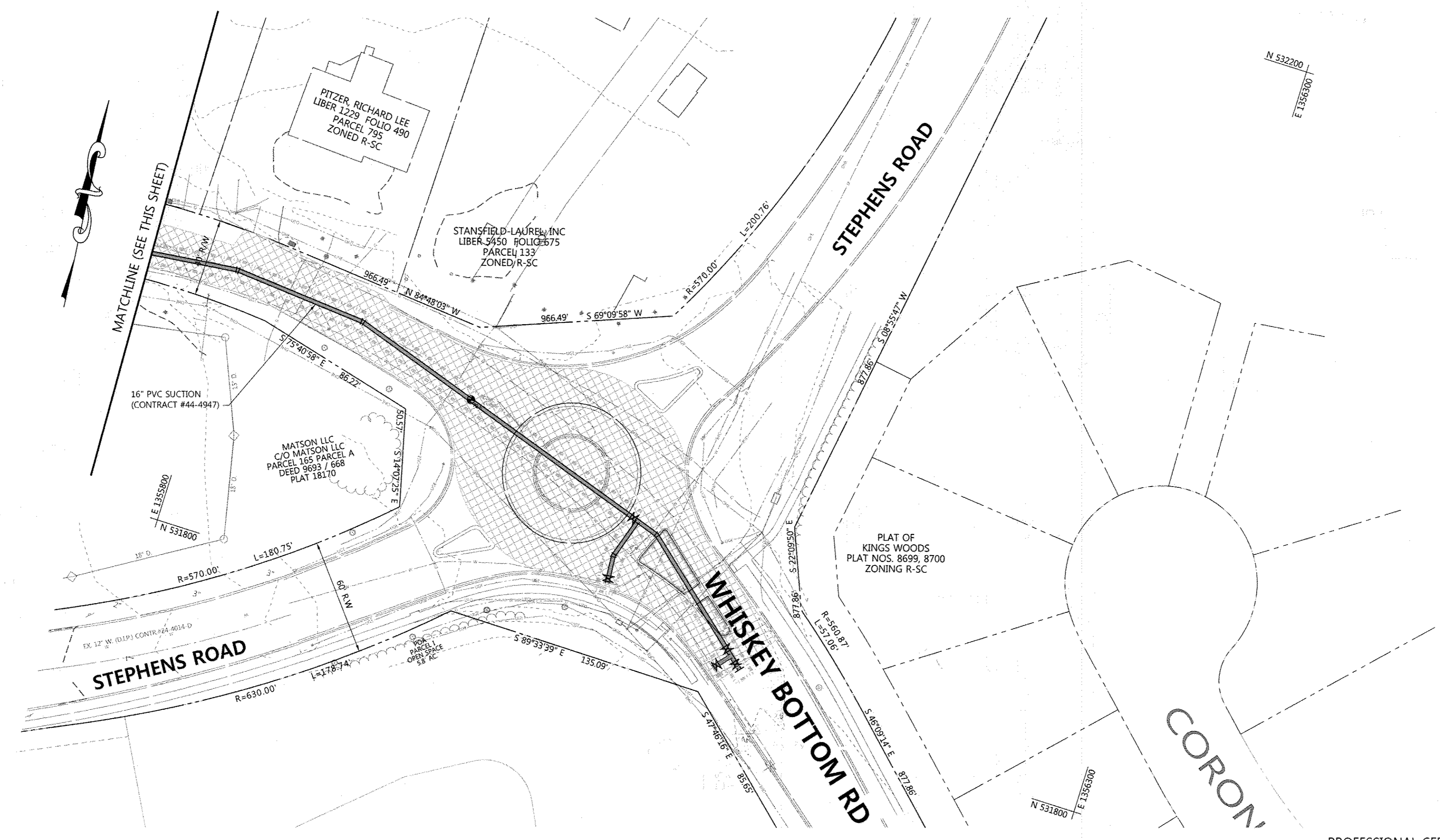
VICINITY MAP
SCALE: 1"=1000'
HOWARD COUNTY ADC MAP
NUMBER 40, GRID NO. B-6



NOTE: SEE CONTRACT 44-4947 DRAWINGS FOR WATER MAIN DESIGN.

LEGEND

- 690 — PROPERTY LINE
- - - 488 - - - EX. CONTOURS
- - - EX. EDGE OF ROAD
- - - EX. BUILDING
- - - EX. TREELINE
- - - W - - - EX. WATER
- - - EX. 4" S.
- - - EX. 12" D.
- - - EX. STORM DRAIN
- - - EX. OVERHEAD TELEPHONE
- - - EX. EASEMENT
- - - 490 - - - PROP. EASEMENT
- - - 488 - - - PROP. CONTOURS
- - - PROP. 16" DISCHARGE WATERMAIN
- - - PROP. 16" SUCTION WATERMAIN
- - - 1.5" LPS
- - - 12" SD.
- - - UGE
- - - UGT
- - - PROP. BUILDING
- - - PROP. CURB
- - - PROP. TREELINE
- - - SILT FENCE
- - - SUPER SILT FENCE
- - - LIMIT OF DISTURBANCE
- - - DRAINAGE AREA DIVIDE
- - - SOILS
- - - EROSION CONTROL MATTING
- - - PROP. OUTFALL PROTECTION LEVEL SPREADER
- - - STABILIZED CONSTRUCTION ENTRANCE
- RB-1 ● SWM #1
- SOIL BORING
- FIRE HYDRANT



MILL AND OVERLAY:

- 2" MILL/OVERLAY
 - HMA SUPERPAVE 9.5 mm
 - PG 64 - 22 LEVEL 1
- THE EXISTING PAVEMENT TO BE RESURFACED SHALL BE MILLED AT DEPTH OF 2" MILL/OVERLAY

DATA SOURCES:
1. EXISTING TOPOGRAPHIC INFORMATION SHOWN HEREON REFLECTS THE RESULT OF A TOPOGRAPHIC SURVEY PERFORMED BY DMW INC. DATED NOVEMBER 2015. TOPOGRAPHIC SURVEY PERFORMED BY SHELLY & WITTEP, INC. DATED OCTOBER 2015, AND HOWARD COUNTY DIGITAL GIS.

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

[Signature] /4/2017
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

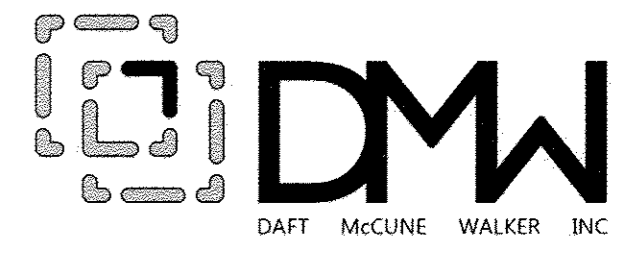
[Signature] 7-6-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION NY DATE

[Signature] 7-24-17
CHIEF, DIVISION OF LAND DEVELOPMENT JW DATE

[Signature] 7-26-17
DIRECTOR DATE

Date	No.	Revision Description
		Whiskey Bottom Road Water Pumping Station Replacement Capital Project No: W8320

OWNER/DEVELOPER:
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045
(410) 313-4400



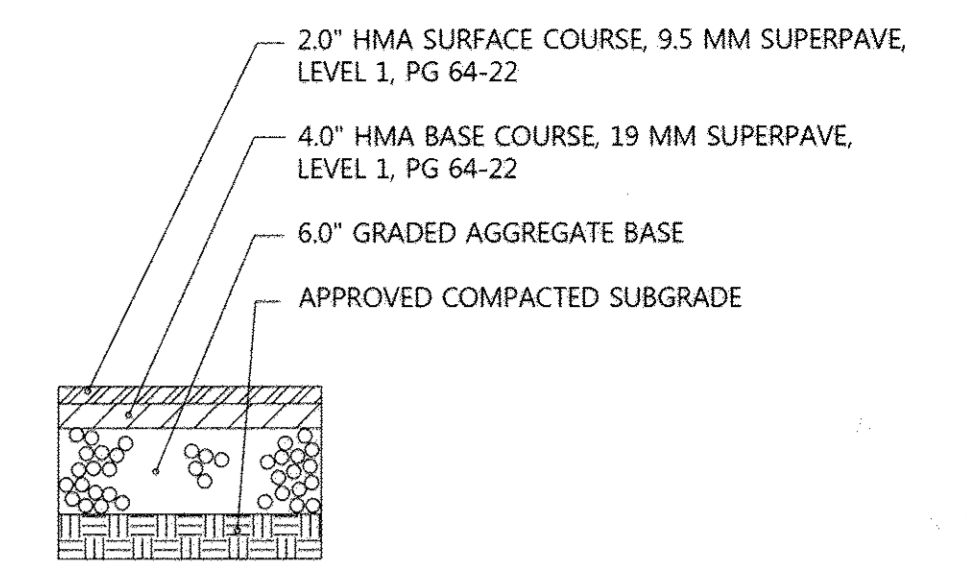
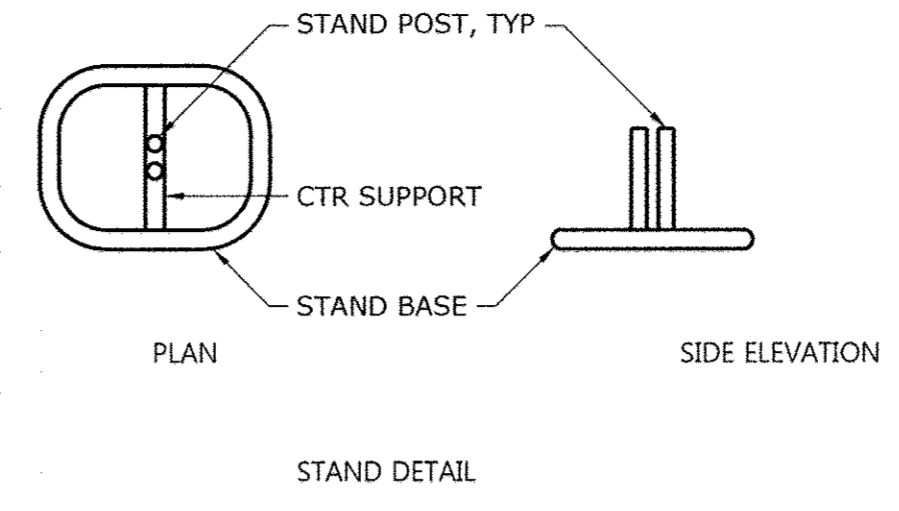
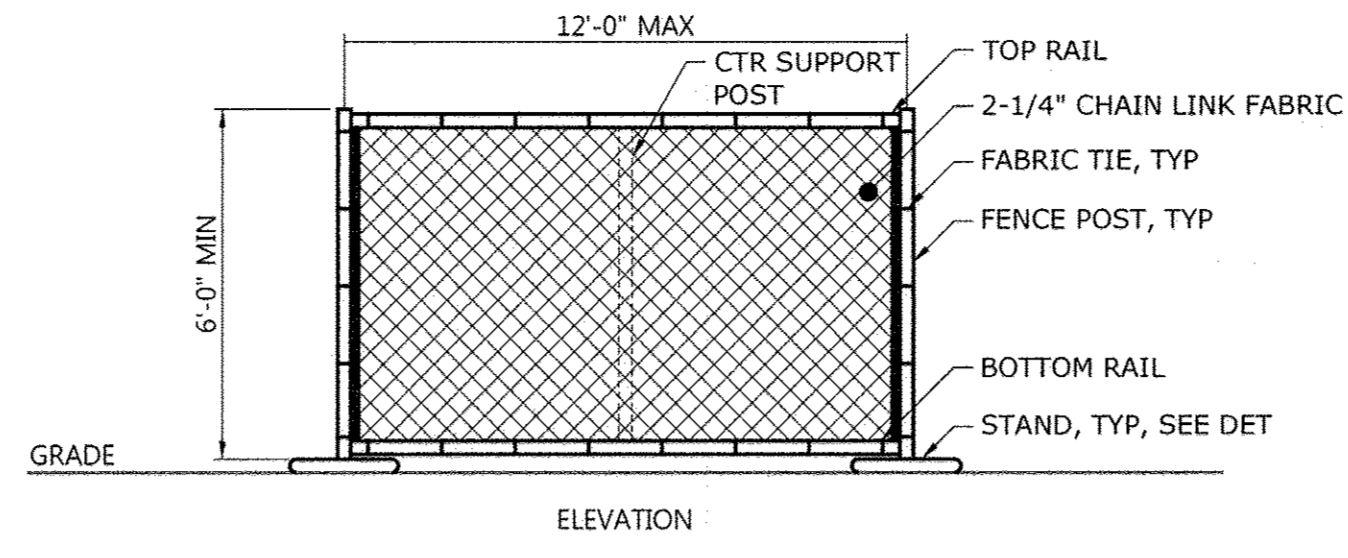
CONTRACT NUMBERS:
44-4947
EX. WATER & EX. SEWER:
24-4527-D
24-4024-D
142-W

4-10-17
Date
[Signature]
Professional Engr. No. 26569

PROFESSIONAL CERTIFICATION

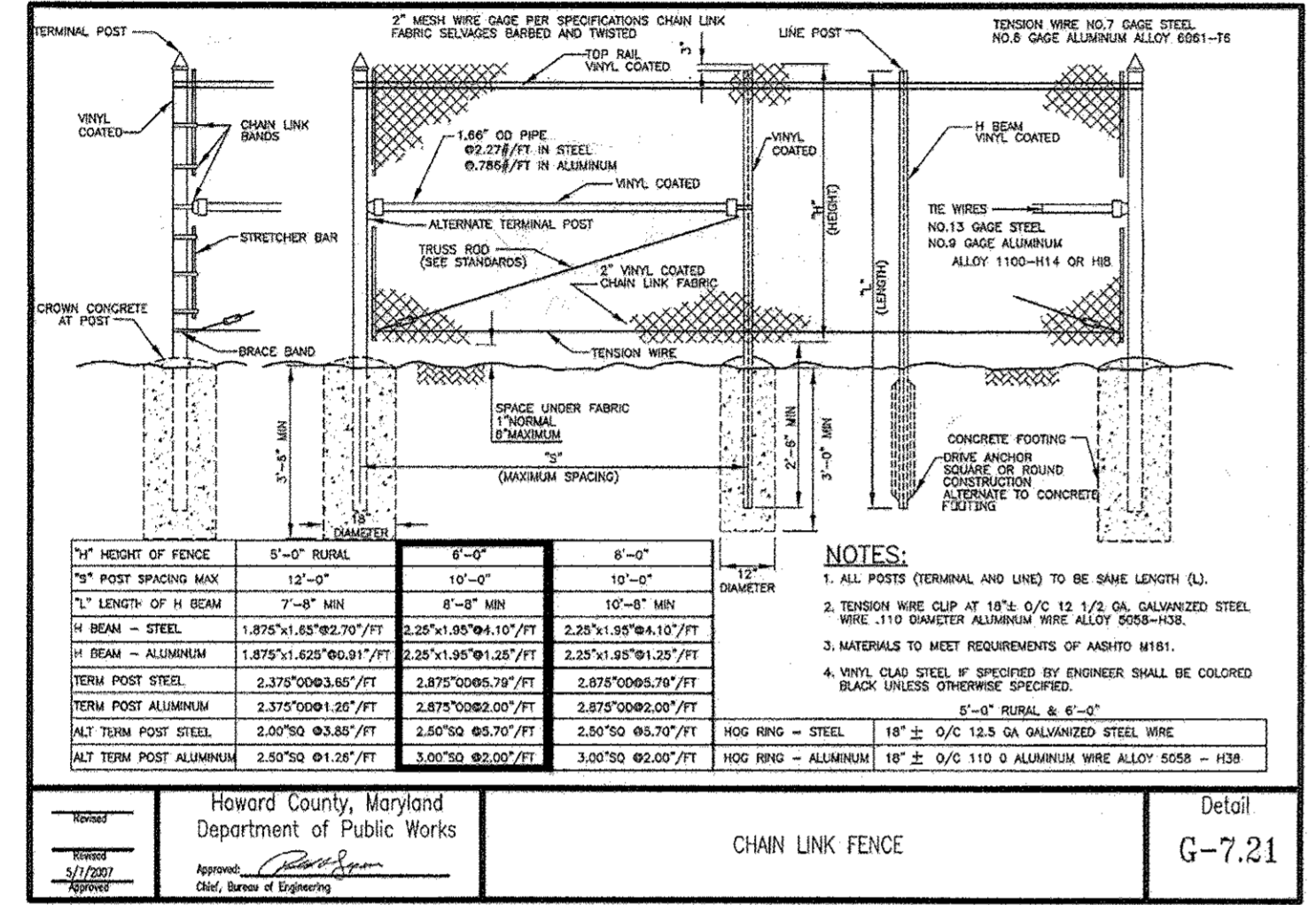
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 26569, EXPIRATION DATE: 07-18-17.

501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286 P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM					
SUBDIVISION NAME	REITZ PROPERTY				
SECTION/AREA	N/A				
LOT/PARCEL #	PART OF PARCEL 'E'				
PLAT NO. 15788	RECORD # 47				
TAX ZONE/MAP	6				
ELECT. DISTRICT	606907				
CENSUS TRACT					
WATER CODE	C-02				
SEWER CODE	7390000				
ADDRESS CHART					
LOT NUMBER	STREET ADDRESS				
TITLE					
SITE & GRADING OFF-SITE PLAN					
Des. By	GDT	SCALE	1"=40'	Proj. No.	13037
Drn. By	SRB	Date	3/16/17	3 of 12	
Chk. By	ERS	Approved			



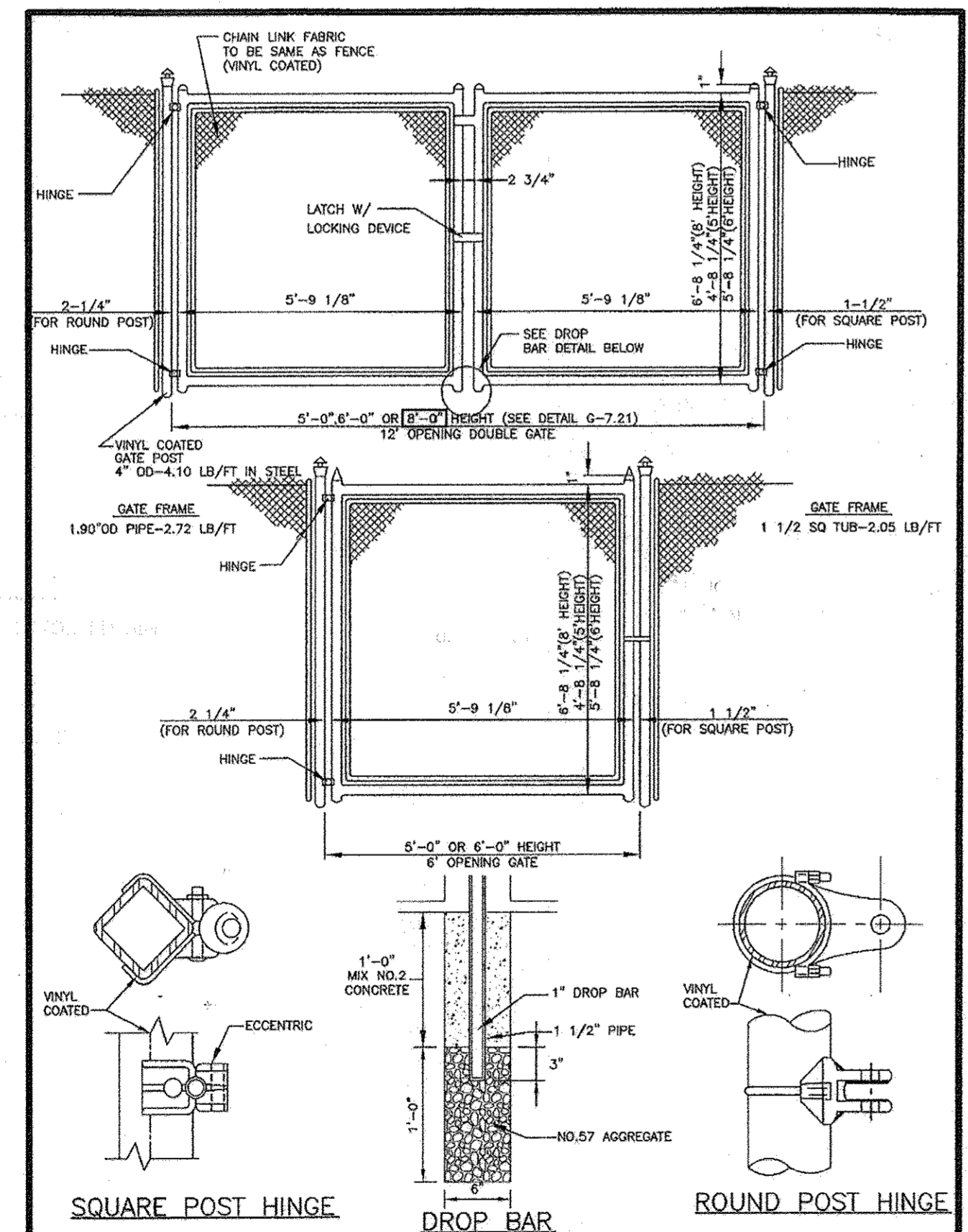
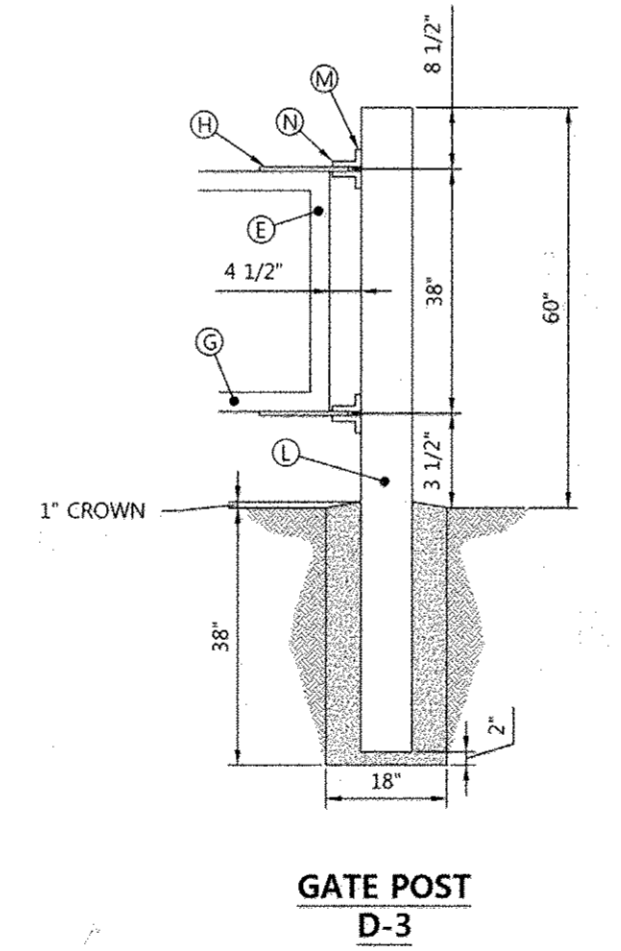
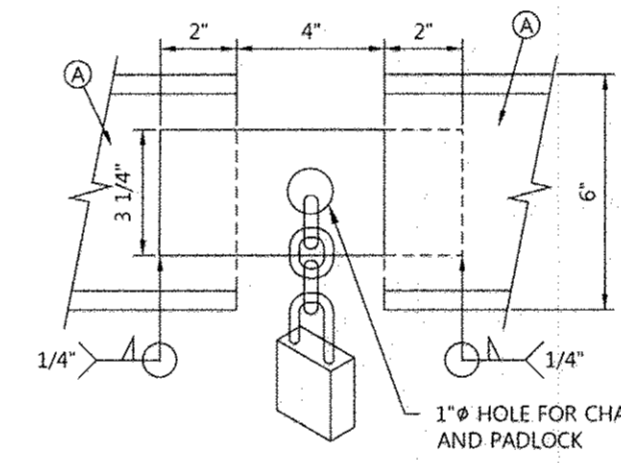
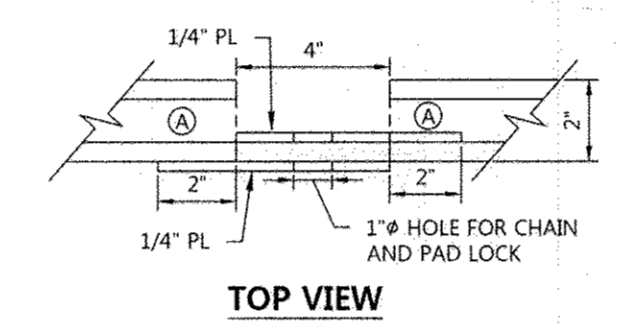
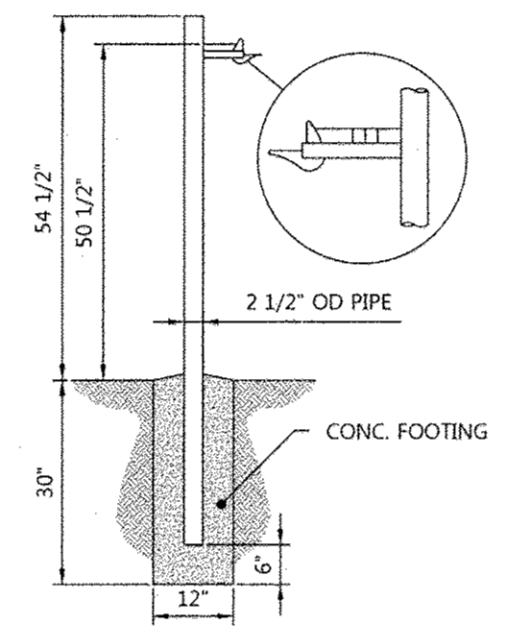
- NOTES:
- CONTRACTOR SHALL PROVIDE, AT A MINIMUM, TEMPORARY FENCE WITH DIMENSIONS AND APPURTENANCES AS SHOWN.
 - ALL OTHER DIMENSIONS, MATERIAL SIZES, MATERIAL TYPES, ACCESSORIES, ETC PER MANUFACTURER.
 - TEMPORARY FENCE SHALL REMAIN IN PLACE UNTIL CONCLUSION OF CONSTRUCTION.

TEMPORARY CHAIN LINK FENCE
N.T.S.



ITEM	DESCRIPTION	QUANTITY	UNIT
1	TERMINAL POST	1	EA
2	VINYL COATED CHAIN LINK FABRIC	1	SQ YD
3	1.68\"/>		

Howard County, Maryland
Department of Public Works
Detail
CHAIN LINK FENCE
G-7.21



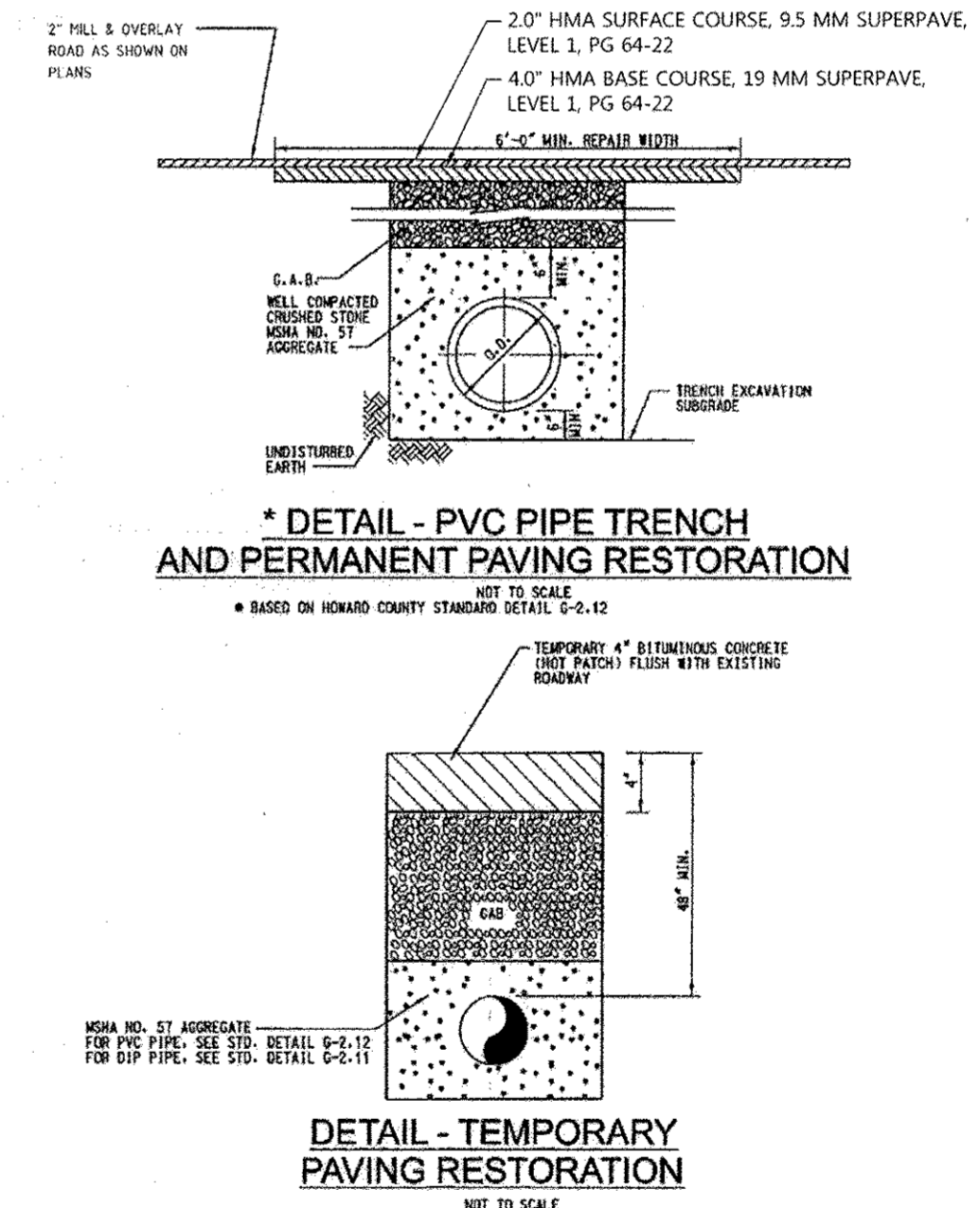
NO.	QTY	DESCRIPTION	TYPE
A	1	C 6\"/>	

Howard County, Maryland
Department of Public Works
Detail
CHAIN LINK FENCE
Gate
G-7.23

DOUBLE ARM SWING GATE MATERIALS SCHEDULE

NO.	QTY	DESCRIPTION	TYPE
A	1	C 6\"/>	
B	1	C 6\"/>	
D	1	C 6\"/>	
E	2	C 6\"/>	
G	1	C 6\"/>	
H	2	FLAT BAR 5/8\"/>	
I	1	FLAT BAR 5/8\"/>	
K	1	1/8\"/>	
L	2	W 8\"/>	
M	4	6\"/>	
N	2	1 1/4\"/>	

DOUBLE ARM SWING GATE DETAIL
N.T.S.



WHISKEY BOTTOM ROAD PAVING RESTORATION DETAIL
N.T.S.

CONTRACT NUMBERS:
44-4947
EX. WATER & EX. SEWER:
24-4527-D
24-4024-D
142-W

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. 26569, EXPIRATION DATE: 07-18-17

4-10-17
Date
Professional Engr. No. 26569

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

HOWARD SOIL CONSERVATION DISTRICT DATE 7-6-17

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 7-24-17

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 7-26-17

DIRECTOR DATE

Date	No.	Revision Description
		Whiskey Bottom Road Water Pumping Station Replacement Capital Project No: W8320

OWNER/DEVELOPER:
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045
(410) 313-4400

DW
DAFT MCCUNE WALKER INC

501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286
P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM

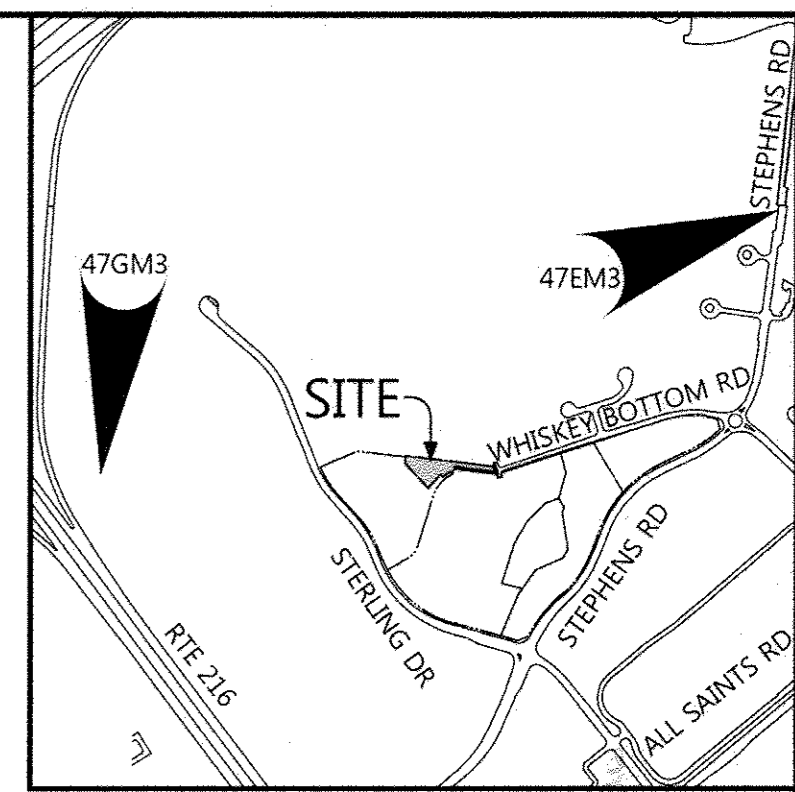
REVISION TRACKING	SECTION/AREA	LOT/PARCEL #
REVITZ PROPERTY	N/A	
PLAT OR LIT	TAX ZONE/MAP	ELECT. DISTRICT
15788	47	6
WATER CODE	SEWER CODE	CENSUS TRACT
C-02	7390000	606907

ADDRESS CHART

LOT NUMBER STREET ADDRESS

TITLE SITE DETAILS

Des. By	GDT	SCALE	AS SHOWN	Proj. No.	13037
Drn. By	SRB	Date	3/16/17		
Chk. By	ERS	Approved			4 of 12



VICINITY MAP
SCALE: 1"=1000'
HOWARD COUNTY ADC MAP
NUMBER 40, GRID NO. B-6

OWNERS/DEVELOPER CERTIFICATION:
"I HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY MY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."

Kin Siew 04/07/2017
OWNER'S/DEVELOPER'S SIGNATURE DATE
KIN SIEW
PRINTED NAME & TITLE

DESIGN CERTIFICATION:
"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

Gerardo Turdough 4-10-17
DESIGNER'S SIGNATURE DATE
Gerardo Turdough
PRINTED NAME
REGISTRATION NO. 26569
P.E., R.L.S., OR R.L.A. (CIRCLE ONE)

FOR CONTINUATION (SEE SHT 6 OF 12)

DATA SOURCES:

- 1. EXISTING TOPOGRAPHIC INFORMATION SHOWN HEREON REFLECTS THE RESULT OF A TOPOGRAPHIC SURVEY PERFORMED BY DMW INC. DATED NOVEMBER 2015. TOPOGRAPHIC SURVEY PERFORMED BY SHELLY & WITTER INC. DATED OCTOBER 2015, AND HOWARD COUNTY DIGITAL GIS.

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

Spencer Williams 4/10/17
HOWARD SOIL CONSERVATION DISTRICT DATE

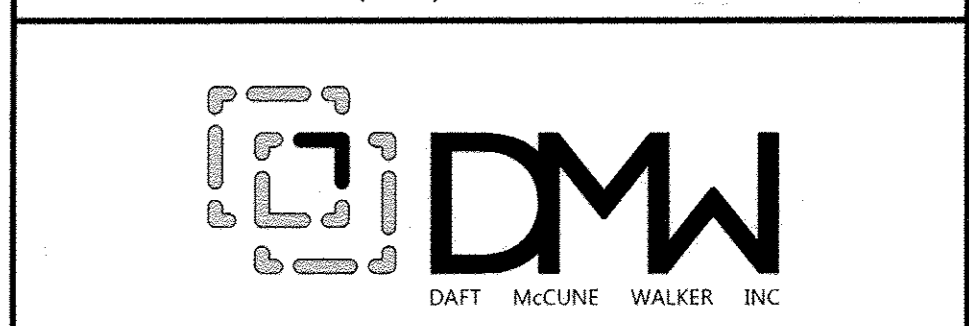
APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

W. White 7-6-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
West NY
CHIEF, DIVISION OF LAND DEVELOPMENT DATE
N. Collins JW 7-26-17
DIRECTOR DATE

Date	No.	Revision Description
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Whiskey Bottom Road Water Pumping Station Replacement
Capital Project No. W8320

OWNER/DEVELOPER:
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045
(410) 313-4400



CONTRACT NUMBERS:
44-4947
EX. WATER & EX. SEWER:
24-4527-D
24-4024-D
142-W

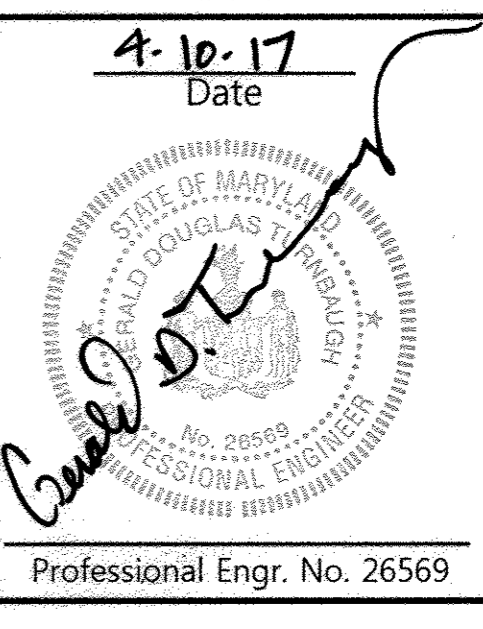
501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286
P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM

REVISION PROPERTY SECTION/AREA N/A LOT/PARCEL # PART OF PARCEL 'E'
15788 BLOCK #1 MAP 47 TAX ZONE/MAP 6 DISTRICT 6 CENSUS TRACT 606907
WATER CODE C-02 SEWER CODE 7390000

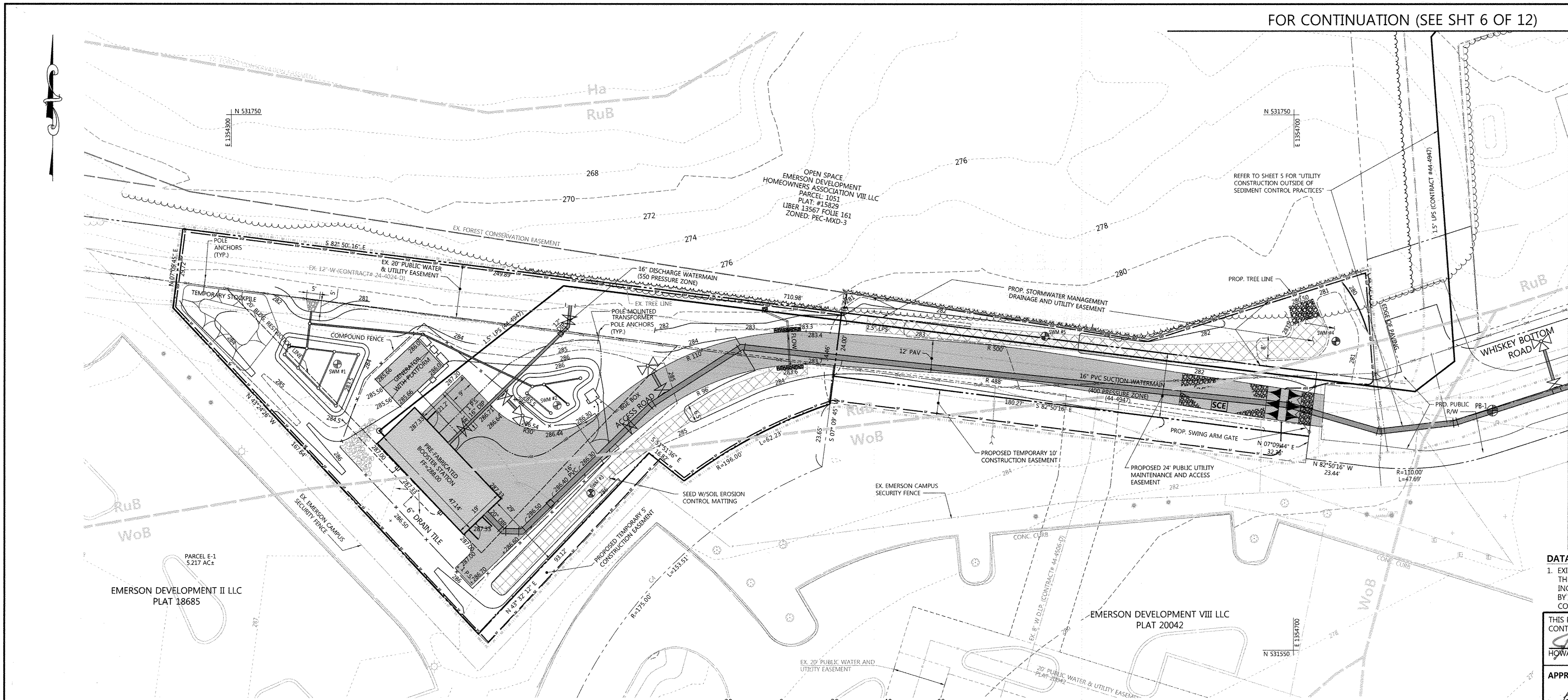
ADDRESS CHART
LOT NUMBER STREET ADDRESS

TITLE
EROSION & SEDIMENT CONTROL PLAN,
SITE DATA, SEQUENCE & GENERAL NOTES

Des. By GDT SCALE 1"=20' Proj. No. 13037
Drn. By SRB Date 3/16/17
Chk. By ERS Approved 5 of 12



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. 26569, EXPIRATION DATE: 07-18-17.
Professional Engr. No. 26569



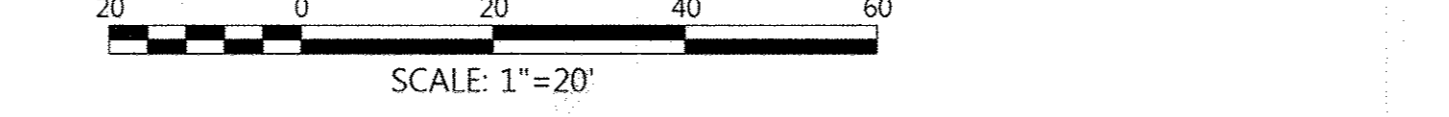
LEGEND

- PROPERTY LINE
- EX. CONTOURS
- EX. EDGE OF ROAD
- EX. BUILDING
- EX. TREELINE
- EX. WATER
- EX. SEWER
- EX. STORM DRAIN
- EX. OVERHEAD TELEPHONE
- EX. EASEMENT
- PROP. EASEMENT
- PROP. CONTOURS
- PROP. 16" DISCHARGE WATERMAIN
- PROP. 16" SUCTION WATERMAIN
- PROP. LOW PRESSURE SEWER
- PROP. STORM DRAIN
- PROP. UNDERGROUND ELECTRIC
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- PROP. TREELINE
- SILT FENCE
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- DRAINAGE AREA DIVIDE
- SOILS
- EROSION CONTROL MATTING
- PROP. OUTFALL PROTECTION LEVEL SPREADER
- STABILIZED CONSTRUCTION ENTRANCE
- SOIL BORING
- FIRE HYDRANT

HOWARD COUNTY SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

- 1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:
 - a. PRIOR TO THE START OF EARTH DISTURBANCE.
 - b. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
 - c. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT.
 - d. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.
- 2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.
- 3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.
- 4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-3), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15 FT. OF CUT AND/OR FILL STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6).
- 5. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE CID.
- 6. SITE ANALYSIS:

TOTAL AREA OF SITE	0.45 ACRES
AREA DISTURBED:	1.208 ACRES
ONSITE AREA TO BE ROOFED OR PAVED	0.16 ACRES
ONSITE AREA TO BE VEGETATIVELY STABILIZED	0.29 ACRES
OFFSITE UTILITY & ACCESS DRIVE LIMIT OF DISTURBANCE	0.758+ ACRES
TOTAL CUT	615 CU. YDS.
TOTAL FILL	343 CU. YDS.
OFFSITE WASTE/BORROW ARE LOCATION	EXCESS CUT / WASTE SHALL BE TAKEN TO A SITE WITH AN OPEN GRADING PERMIT.
- 7. ANY SEDIMENT CONTROL PRACTICE WHICH 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 CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY, AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE:
 - INSPECTION DATE
 - INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT)
 - NAME AND TITLE OF INSPECTOR
 - WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION)
 - BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES
 - EVIDENCE OF SEDIMENT DISCHARGES
 - IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE
 - IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS
 - COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS
 - PHOTOGRAPHS
 - MONITORING/SAMPLING
 - MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
 - OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (MPDES, MDE).

- 9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
- 10. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY BE ALLOWED BY THE CID PER THE LIST OF HSCD APPROVED FIELD CHANGES.
- 11. DISTURBANCE SHALL NOT OCCUR OUTSIDE THE LOD. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE CID, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
- 12. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.
- 13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.
- 14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IMBRICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UP HILL BY 2' IN ELEVATION.
- 15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):
 - USE I AND II MARCH 1 - JUNE 15
 - USE III AND IIII OCTOBER 1 - APRIL 30
 - USE IV MARCH 1 - MAY 31
- 16. A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

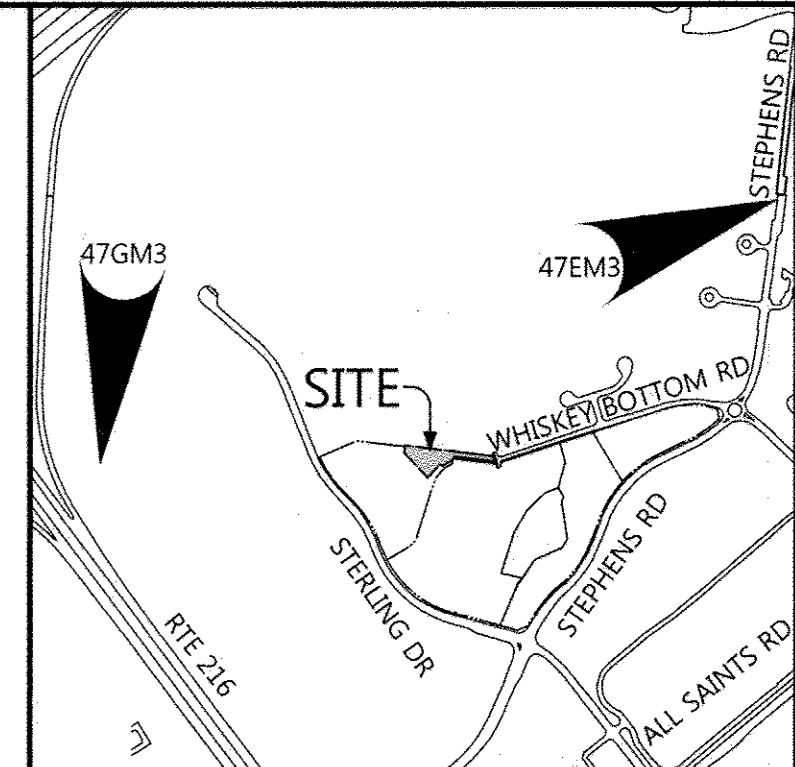
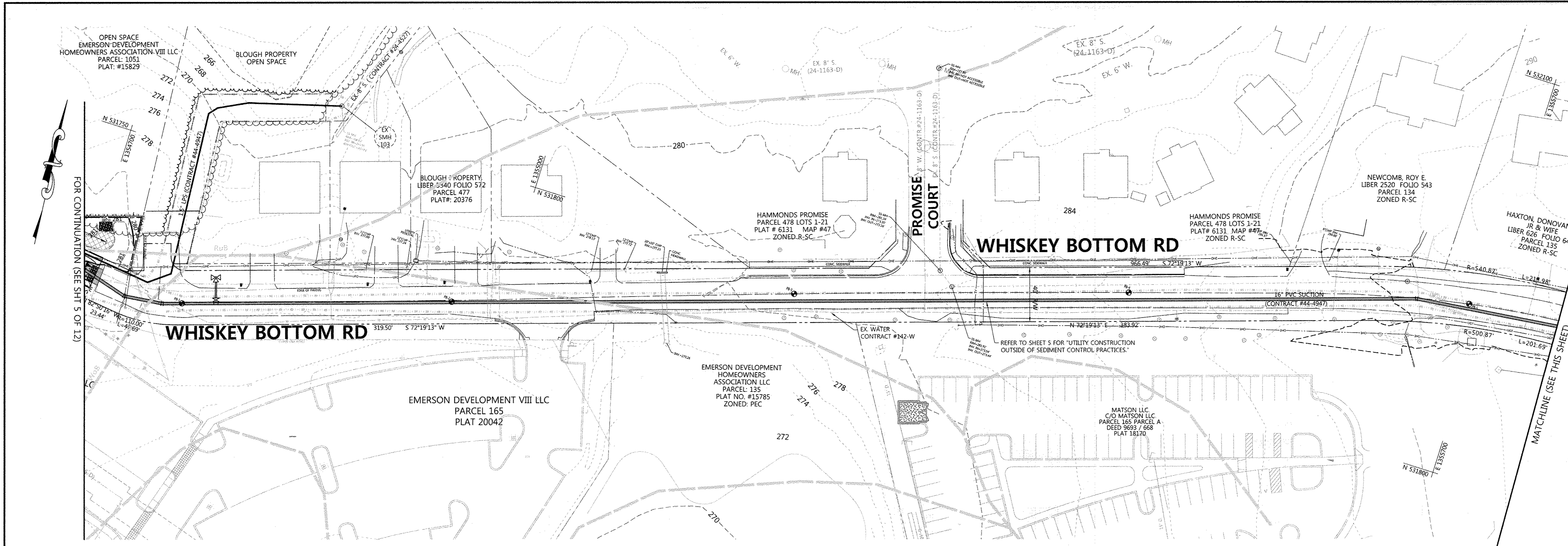
SEQUENCE OF CONSTRUCTION

- 1. OBTAIN A GRADING PERMIT FOR THE PROPOSED WORK. NOTIFY THE HOWARD COUNTY DEPARTMENT OF PERMITS AND LICENSES (DPLP) AT LEAST 48 HOURS PRIOR TO BEGINNING WORK. (2 DAYS)
- 2. INSTALL THE STABILIZED CONSTRUCTION ENTRANCE (SCE) AND PERIMETER CONTROLS; SUPER SILT FENCE (SSF) AND SILT FENCE (SF). (5 DAYS)
- 3. AN ONSITE STOCKPILE AREA, IF APPLICABLE, WILL BE LOCATED WITHIN THE LIMIT OF DISTURBANCE WITH THE COORDINATION AND DISCRETION OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR AND THE GENERAL CONTRACTOR. (1 DAY)
- 4. WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, BEGIN MASS GRADING OPERATIONS. PROVIDE POSITIVE DRAINAGE TO ALL SEDIMENT CONTROL DEVICES. (5 DAYS)
- 5. BRING SITE AND BUILDING PAD TO SUBGRADE. (5 DAYS)
- 6. INSTALL ONSITE UTILITIES. THE OFFSITE PROPOSED 1.5" LOW PRESSURE SEWER AND 16" SUCTION WATERMAIN - OPEN CUT OPERATIONS WITHIN WHISKEY BOTTOM ROAD CAN BEGIN ANYTIME AFTER SEQUENCE NUMBER 1. (30 TO 45 DAYS)
- 7. BEGIN CONSTRUCTION OF BUILDING AND ACCESS DRIVE PAVING. (150 DAYS)
- 8. FINE GRADE, INSTALL LANDSCAPING AND STABILIZE WITH VEGETATIVE STABILIZATION. (2 DAYS)
- 9. AFTER SITE IS STABILIZED WITH VEGETATION, INSTALL SWM-ESD MEASURES. (30 DAYS)
- 10. UPON STABILIZATION OF THE SITE AND WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE THOSE AREAS DISTURBED BY THIS PRACTICE. (2 DAYS)

UTILITY CONSTRUCTION OUTSIDE OF SEDIMENT CONTROL PRACTICES

- 1. EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON UPSTREAM SIDE OF TRENCH.
- 2. IMMEDIATELY FOLLOWING PIPE INSTALLATION THE TRENCH SHALL BE BACKFILLED, COMPACTED AND STABILIZED WITH STONE AT THE END OF EACH WORK DAY.
- 3. SILT FENCE SHALL BE PLACED IMMEDIATELY DOWNSTREAM OF ANY DISTURBED AREA INTENDED TO REMAIN DISTURBED LONGER THAN ONE (1) WORKING DAY. (SILT FENCE AS PER SCS STANDARD DRAWING - E-15-3)
- 4. THE CONTRACTOR SHALL DISTURB AND OPEN TRENCH THE MINIMUM PRACTICAL AREA REQUIRED TO ACCOMPLISH THE WORK DESIGNATED FOR EACH DAY.
- 5. ALL SEDIMENT AND EROSION CONTROL PRACTICES AND VEGETATIVE STABILIZATION SHALL BE IN ACCORDANCE WITH THE "STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS". ANY EROSION AND SEDIMENT CONTROL PRACTICES DAMAGED BY UTILITY CONSTRUCTION ARE TO BE REPAIRED IMMEDIATELY.

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. 26569, EXPIRATION DATE: 07-18-17.



VICINITY MAP
SCALE: 1"=1000'
HOWARD COUNTY ADC MAP
NUMBER 40, GRID NO. B-6

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Kin Siew 04/10/2017
OWNER'S/DEVELOPER'S SIGNATURE DATE

KIN SIEW
PRINTED NAME & TITLE

DESIGN CERTIFICATION:
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Gerald D. Turnbow 9-10-17
DESIGNER'S SIGNATURE DATE

Gerald D. Turnbow NO. REGISTRATION NO. _____
PRINTED NAME R.E. OR R.L.A. (CIRCLE ONE)

DATA SOURCES:
1. EXISTING TOPOGRAPHIC INFORMATION SHOWN HEREON REFLECTS THE RESULT OF A TOPOGRAPHIC SURVEY PERFORMED BY DMW INC. DATED NOVEMBER 2015. TOPOGRAPHIC SURVEY PERFORMED BY SHELLY & WITTER INC. DATED OCTOBER 2015, AND HOWARD COUNTY DIGITAL GIS.

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Gerald D. Turnbow 9/10/17
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

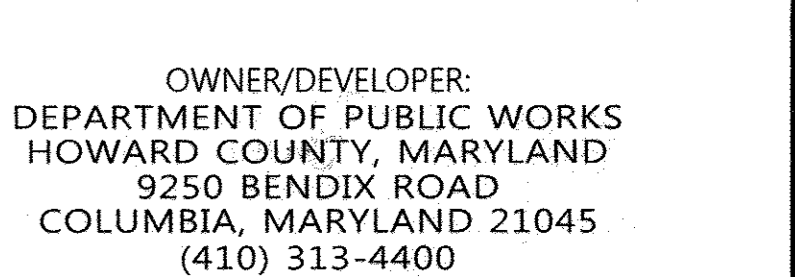
John A. ... 7-6-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Walt ... 7-24-17
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Walter ... 7-26-17
DIRECTOR DATE

Date	No.	Revision Description
		Whiskey Bottom Road Water Pumping Station Replacement Capital Project No: W8320

OWNER/DEVELOPER:
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045
(410) 313-4400



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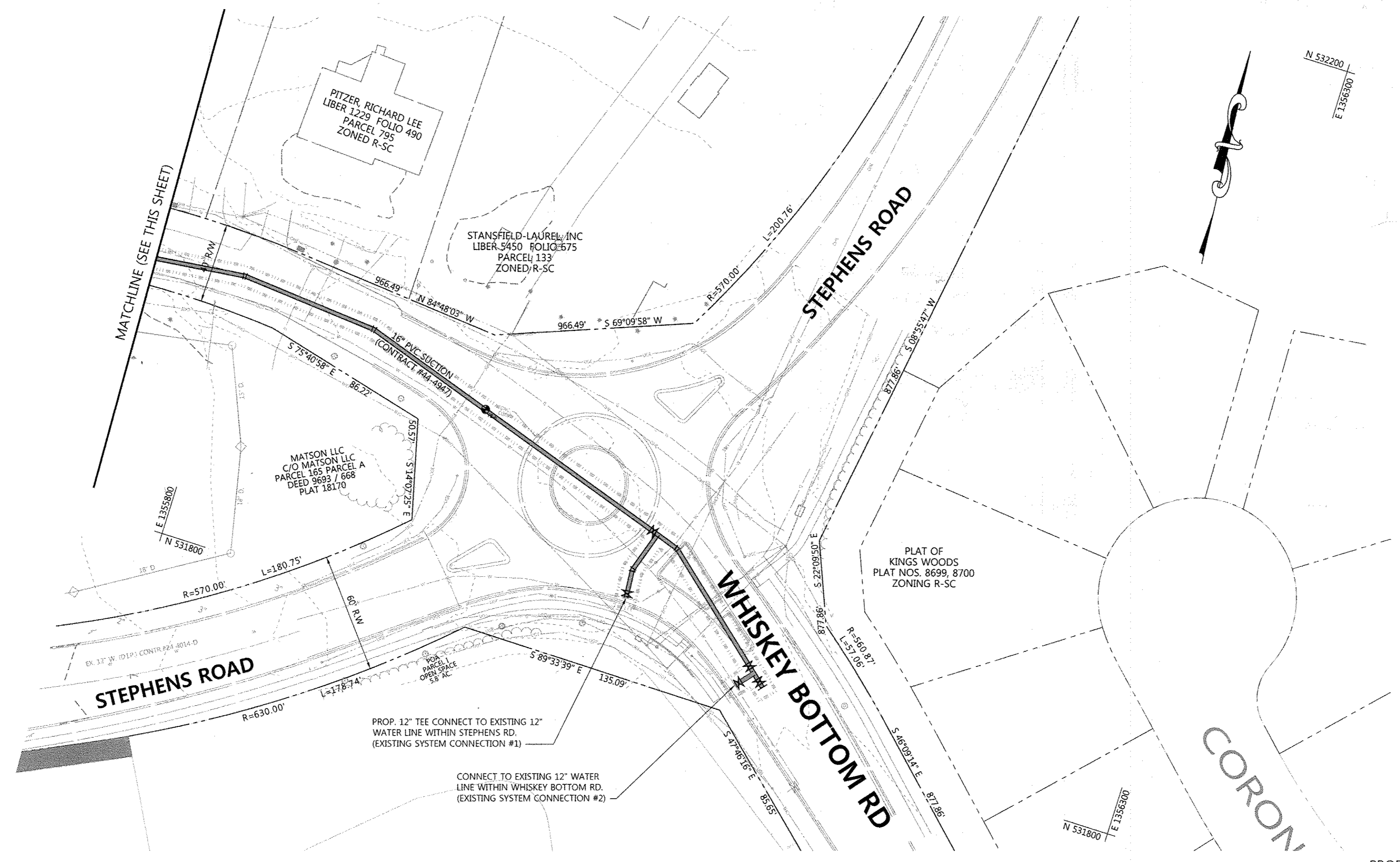
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LOT NUMBER STREET ADDRESS

TITLE
EROSION AND SEDIMENT CONTROL
OFF-SITE PLAN

Des. By GDT SCALE 1"=40' Proj. No. 13037
Dwn. By SRB Date 3/16/17
Chk. By ERS Approved 6 of 12

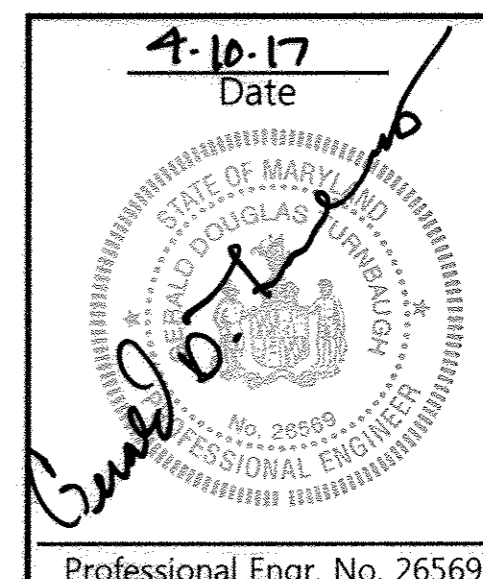
- LEGEND**
- 490 PROPERTY LINE
 - 488 EX. CONTOURS
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 - EX. BUILDING
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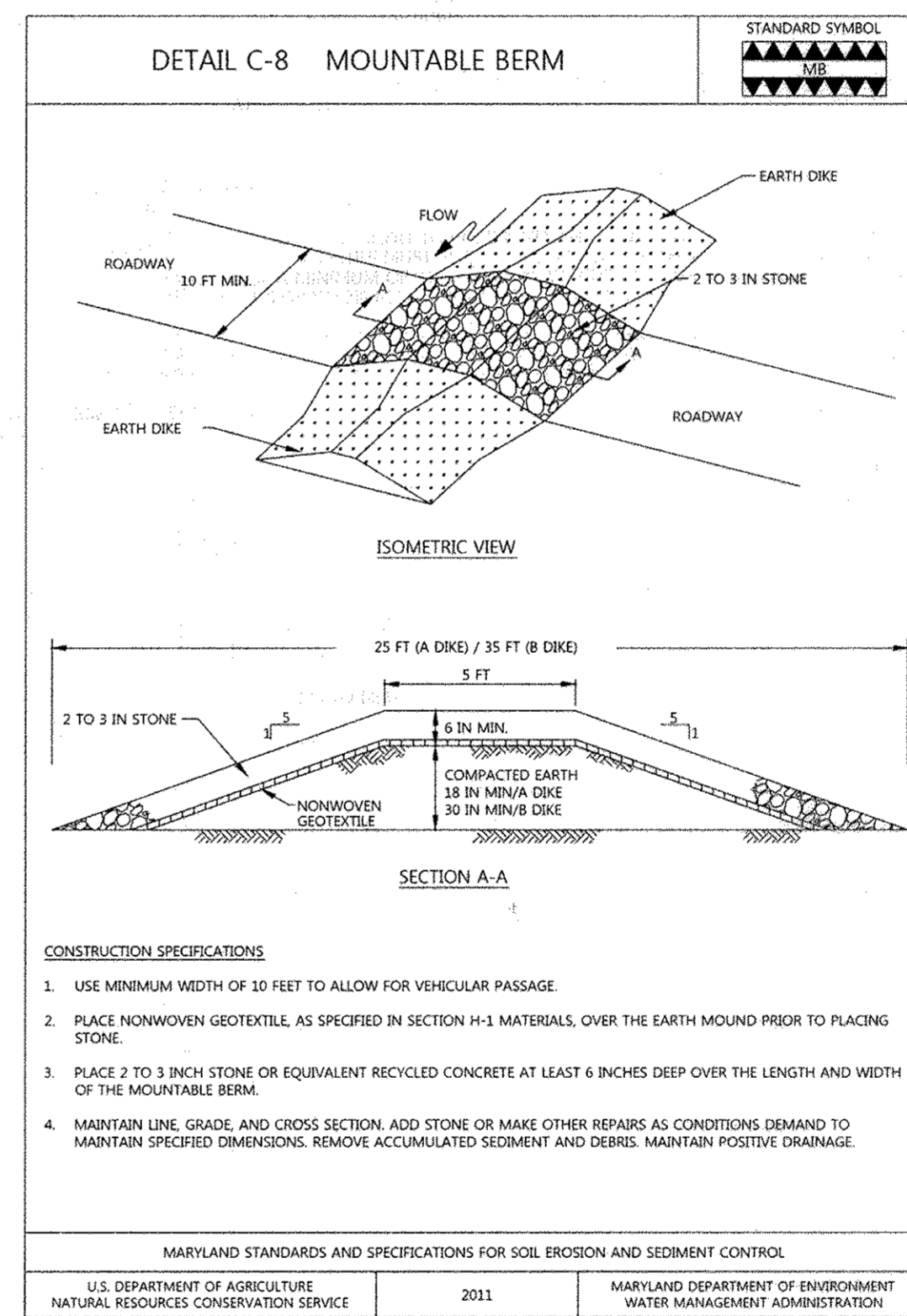
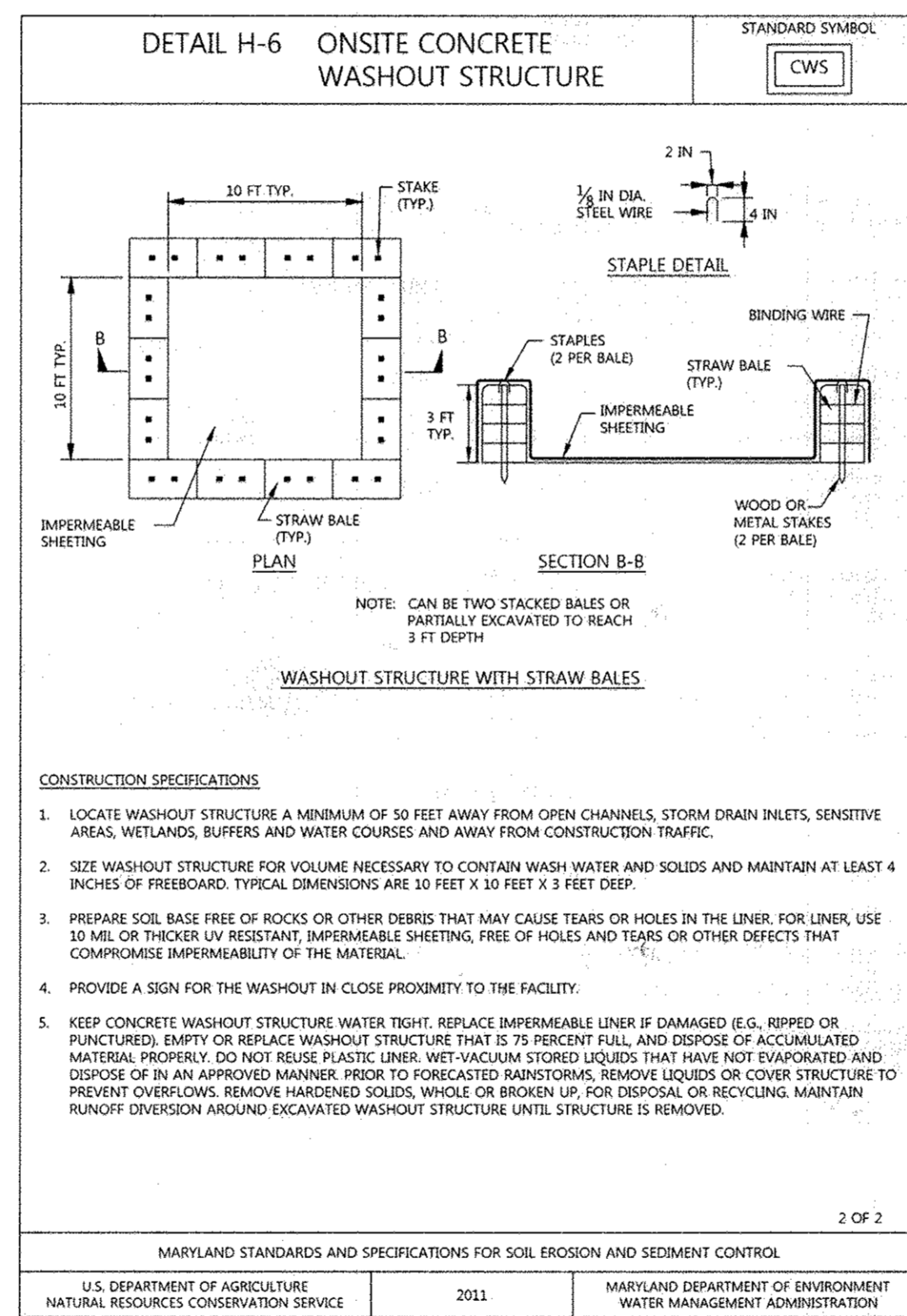
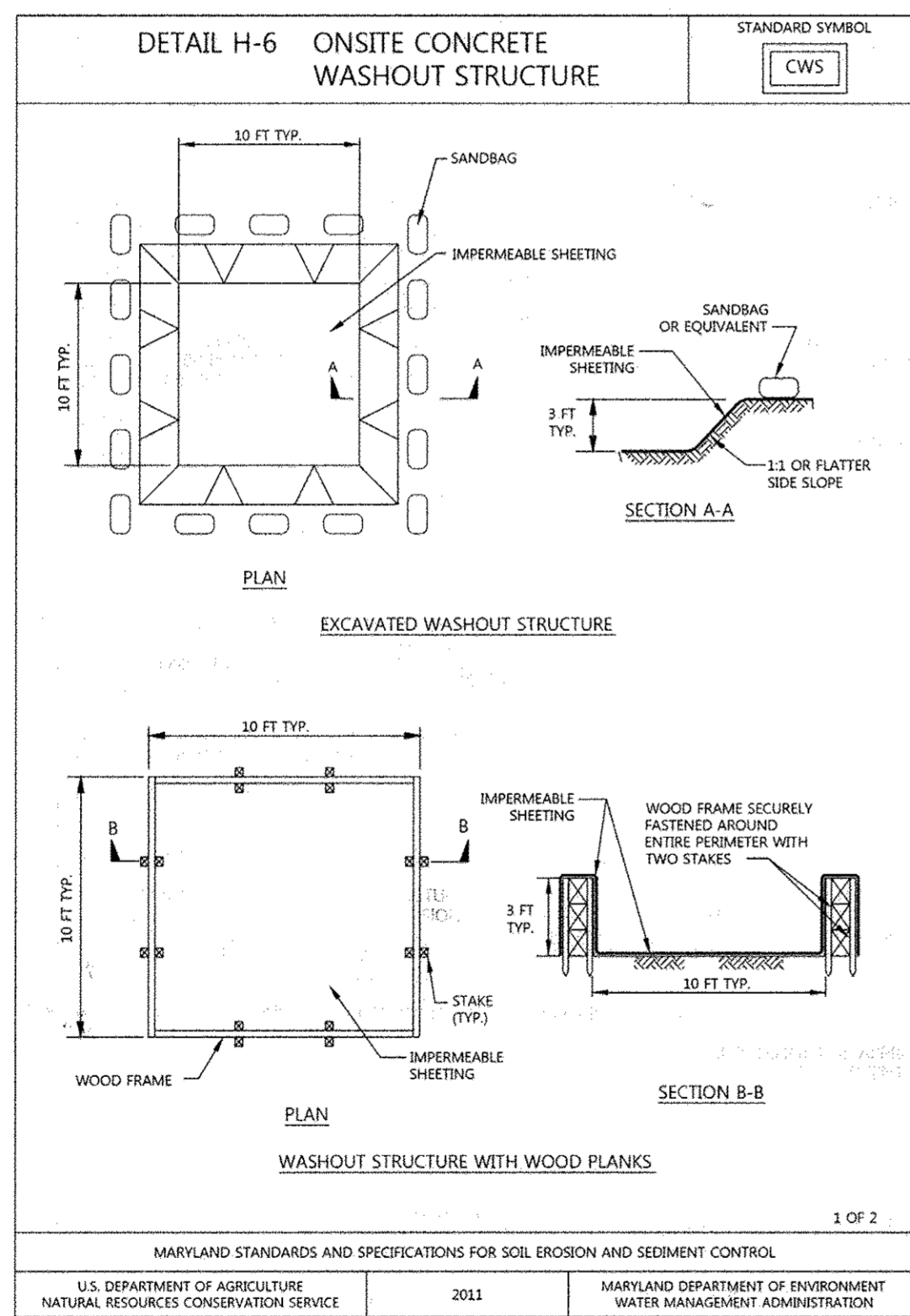
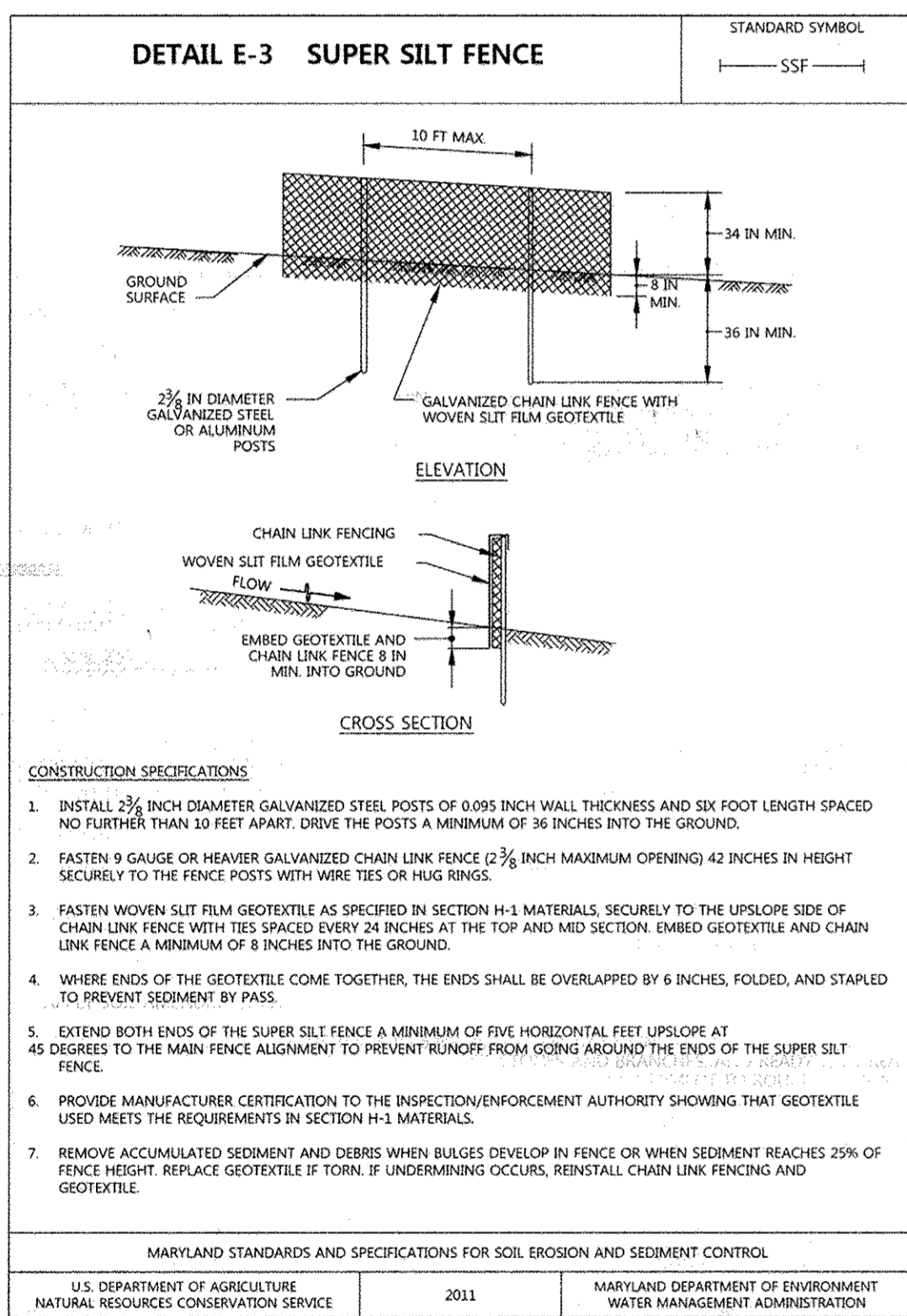
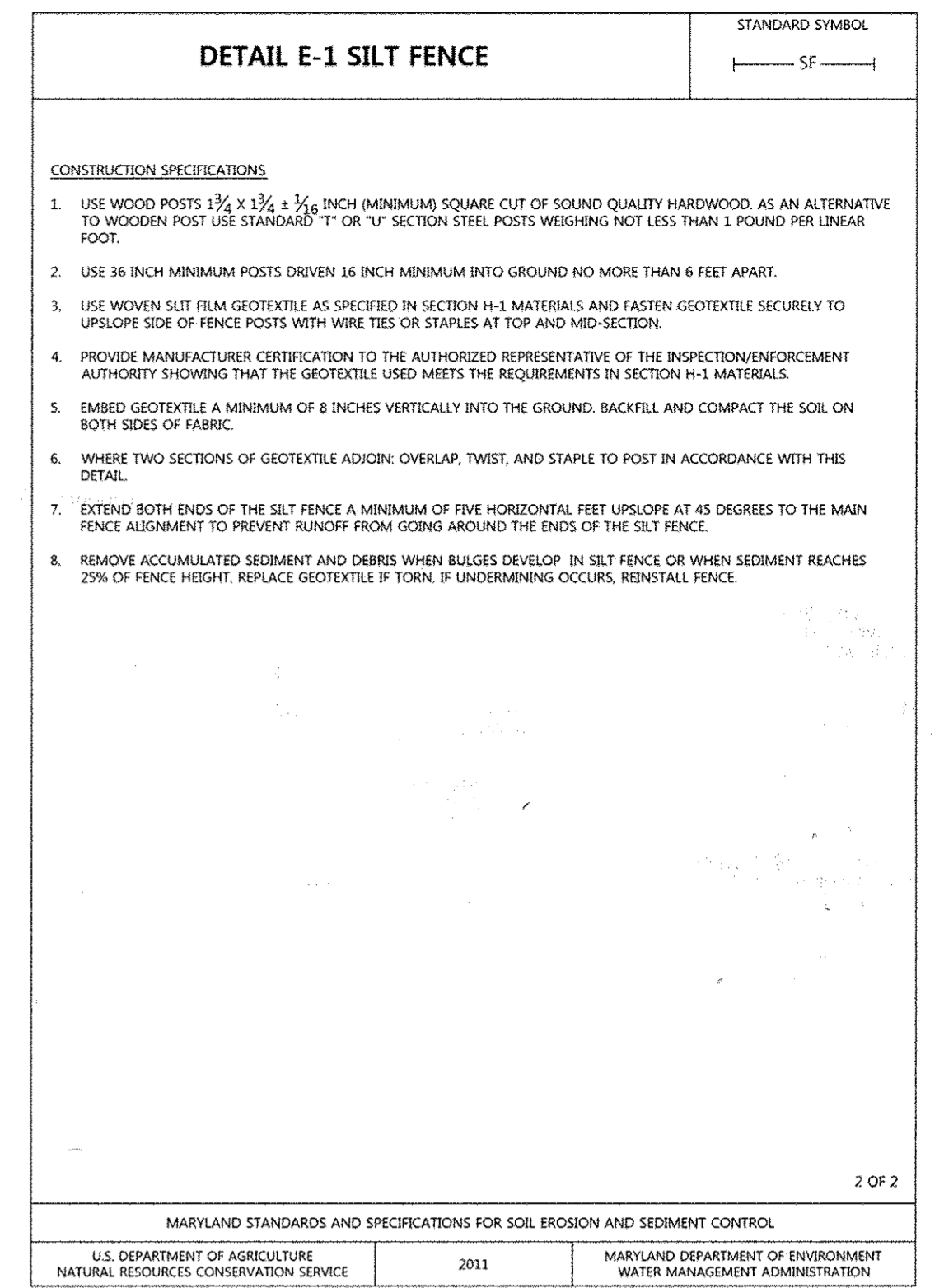
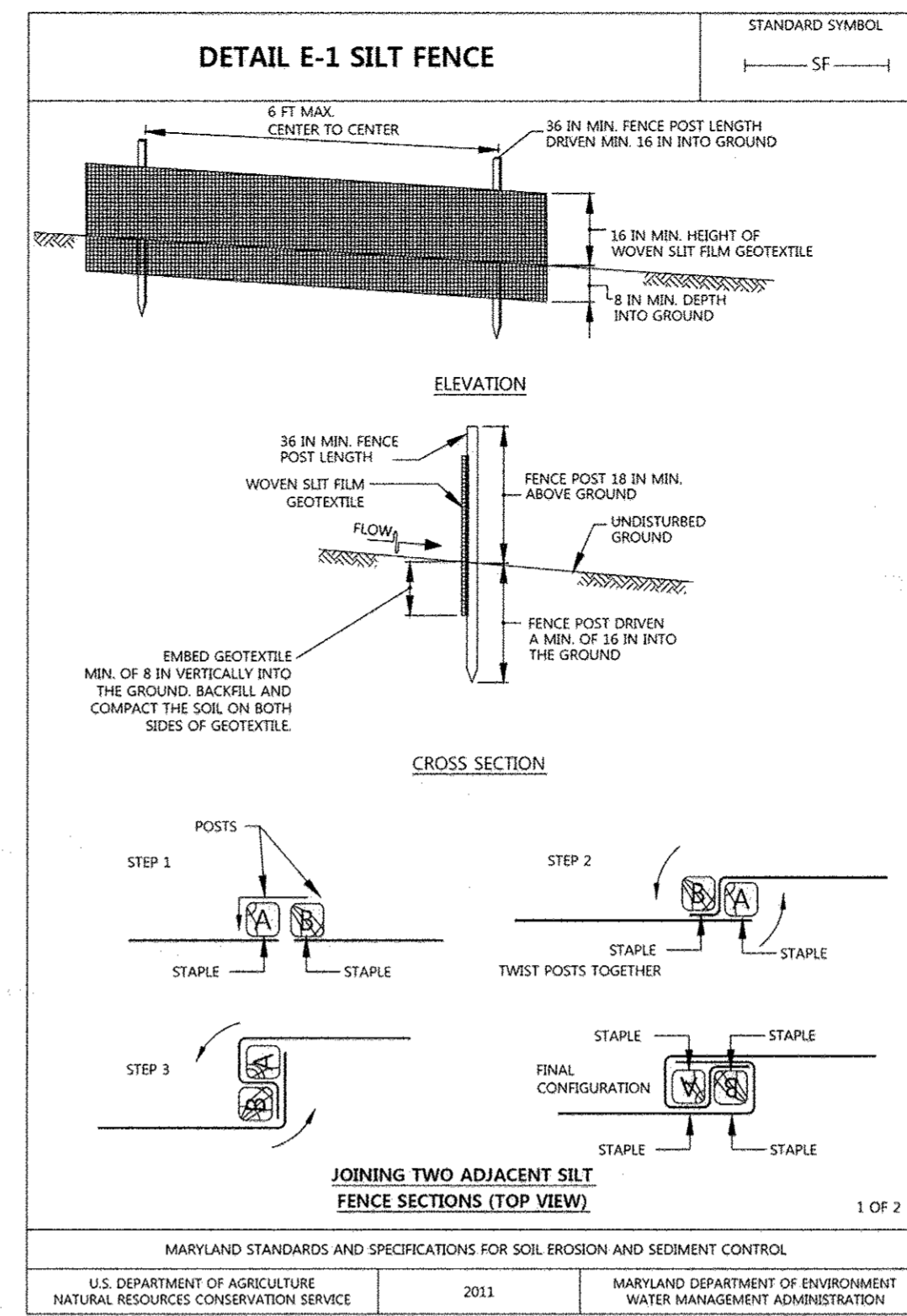
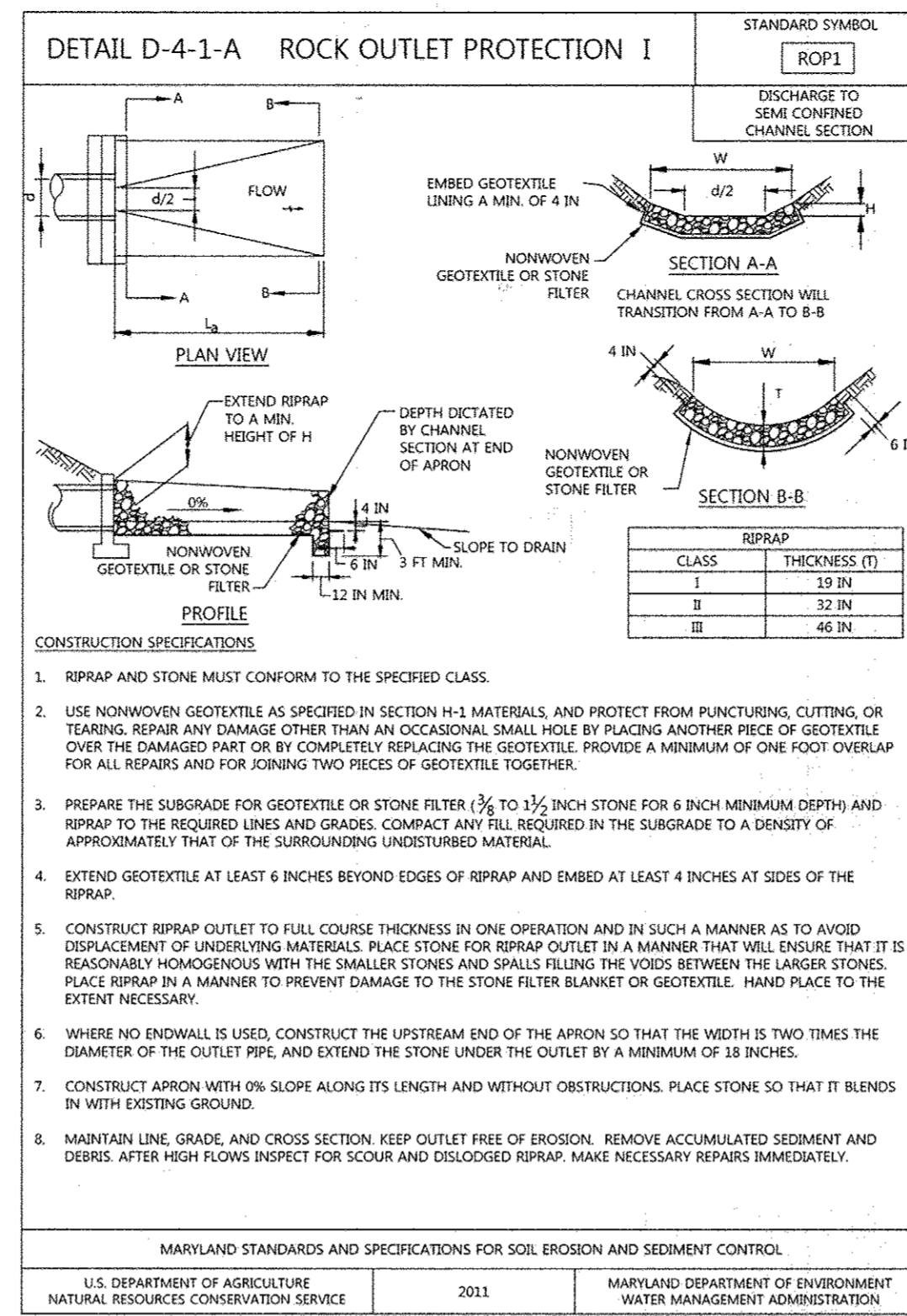
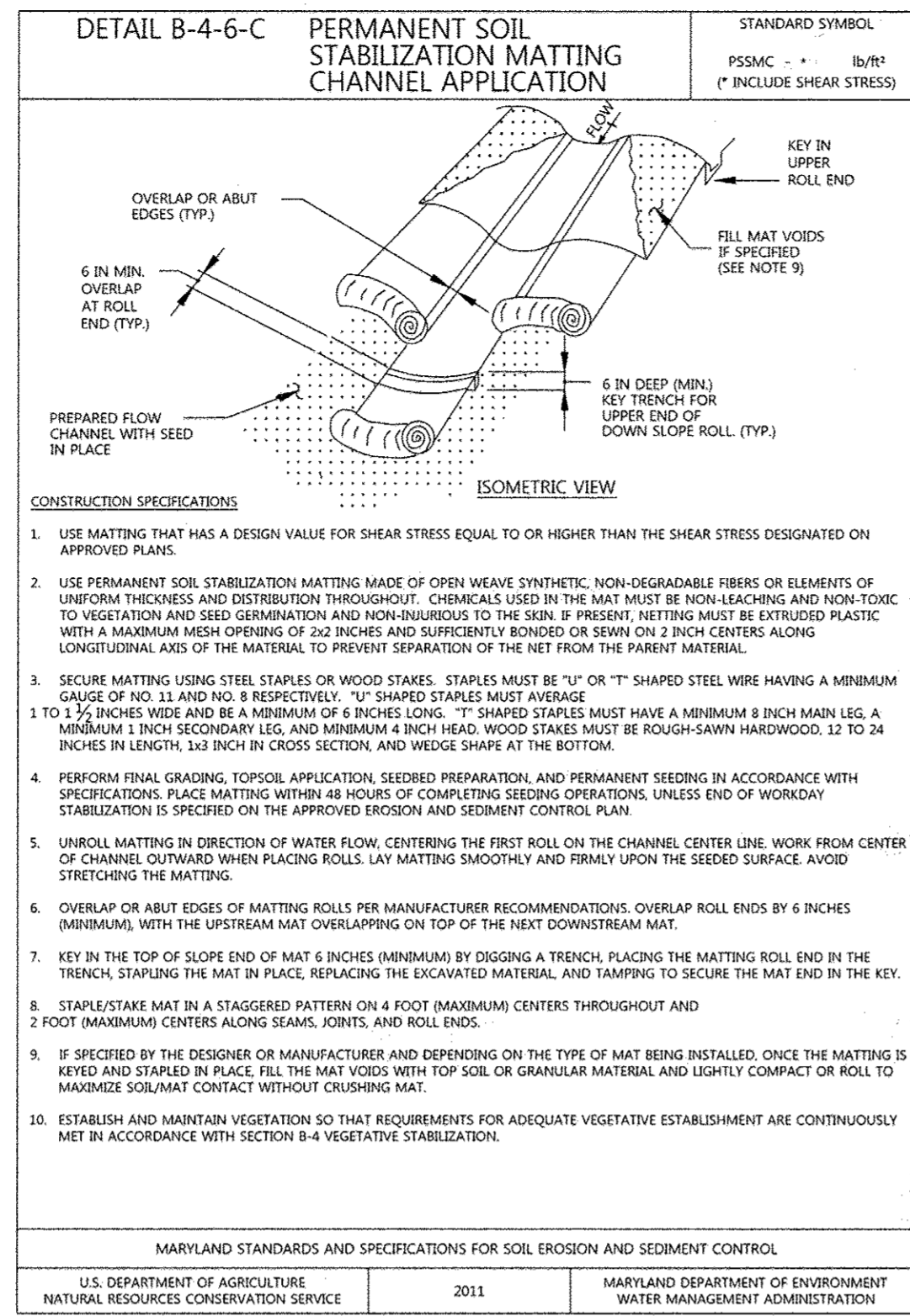
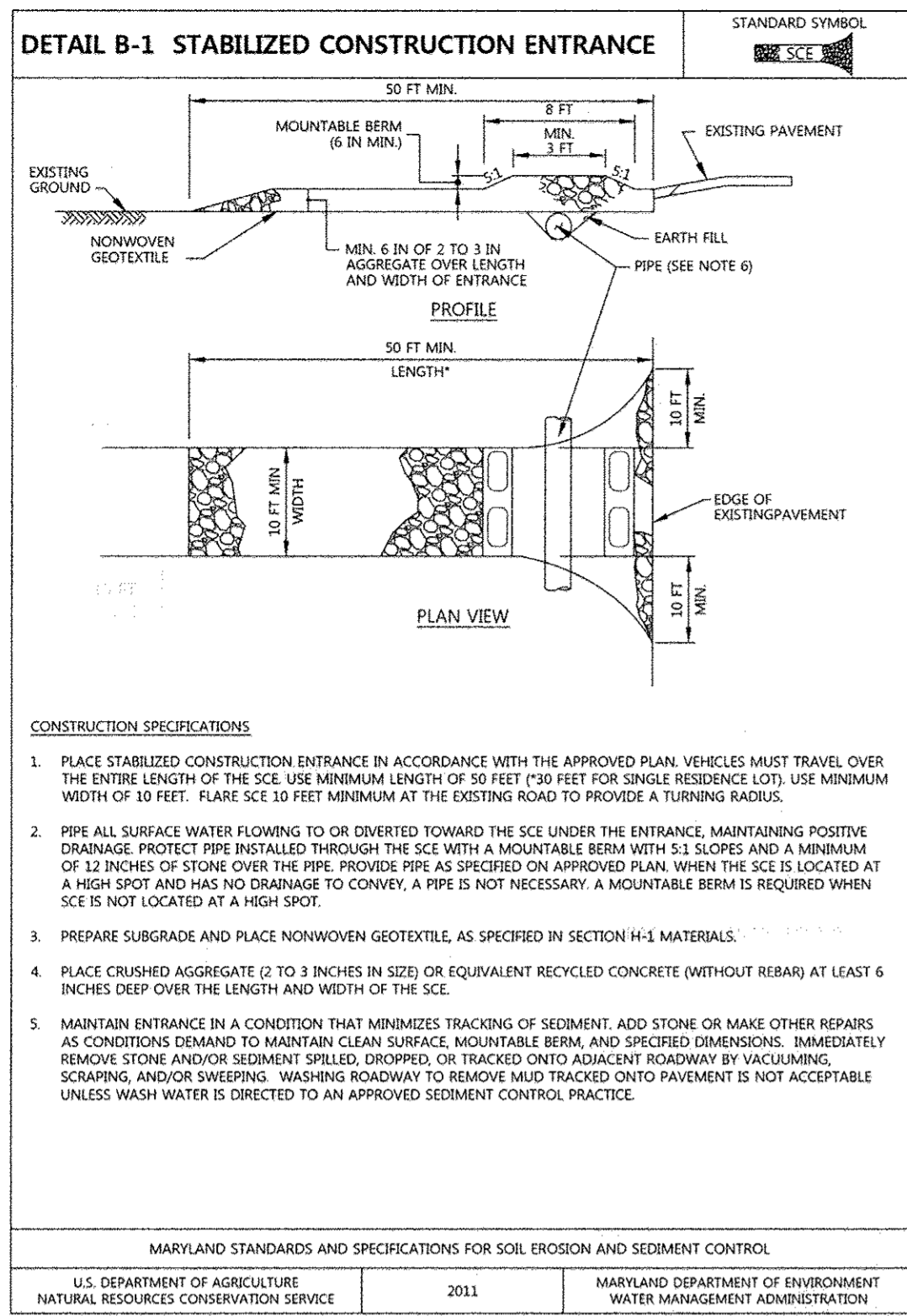
SCALE: 1"=40'

PROFESSIONAL CERTIFICATION

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Professional Engr. No. 26569



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

HOWARD SOIL CONSERVATION DISTRICT

DATE: 7-6-17

DATE: 7-24-17

DATE: 7-26-17

Date: No. Revision Description

Whiskey Bottom Road Water Pumping Station Replacement Capital Project No: W8320

OWNER/DEVELOPER:
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
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9-10-17
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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. 26569, EXPIRATION DATE: 07-18-17.

TITLE: 2011 EROSION & SEDIMENT CONTROL DETAILS

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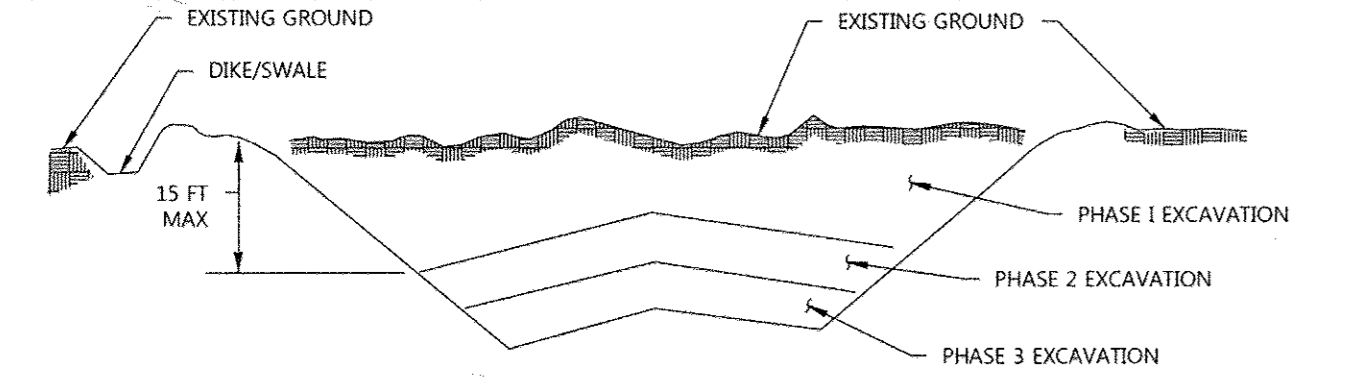
STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

(B-4-1) SECTION 1 - INCREMENTAL STABILIZATION

A. INCREMENTAL STABILIZATION - CUT SLOPES

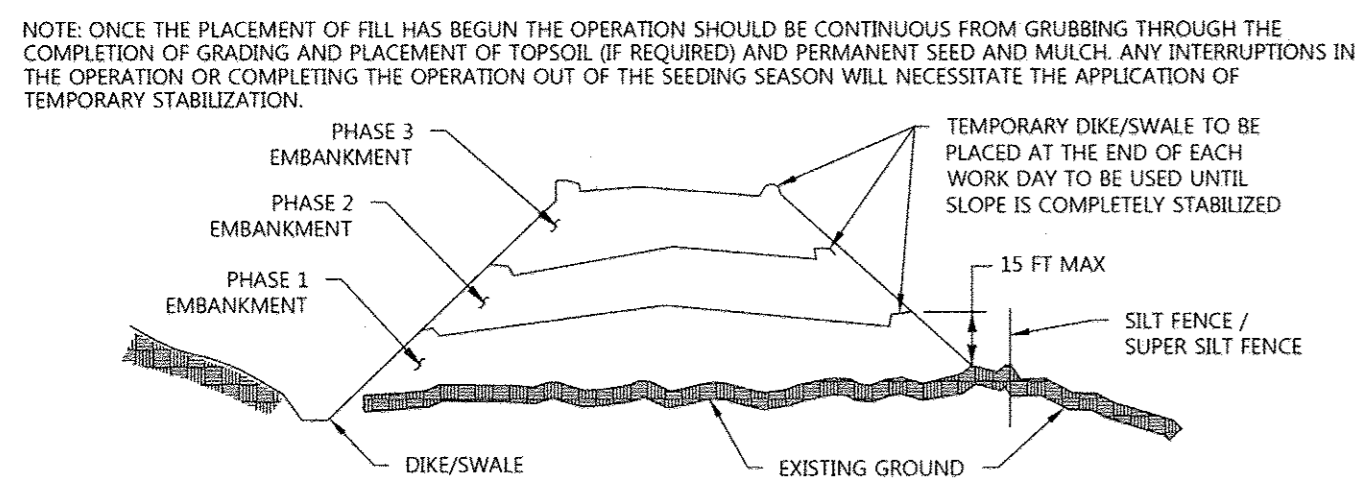
- EXCAVATE AND STABILIZE CUT SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT. PREPARE SEEDBED AND APPLY SEED AND MULCH ON ALL CUT SLOPES AS THE WORK PROGRESSES.
- CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE 1):
 - CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO CONVEY 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 SEED 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. 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 DESCRIBED IN THE PLANS.
- AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICES, AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER.
- CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE 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 PRACTICES, 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 SEED AREAS AS NECESSARY.



(B-4-2) SECTION 2 - SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

- 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, DISK PLOWS, OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
 - APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
 - INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
 - PERMANENT STABILIZATION**
 - A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBED AREA OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
 - SOIL PH BETWEEN 6.0 AND 7.0.
 - SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
 - SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE, AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
 - SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
 - SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
 - APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
 - GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
 - APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
 - MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE. REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND RAKE THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FIRM. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.
- TOPSOILING**
 - TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
 - TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
 - TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 - THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 - THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
 - AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
 - TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
 - APPLY MULCH TO ALL SEED AREAS IMMEDIATELY AFTER SEEDING.
 - WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEED 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.
 - 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 DRIVEN 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, PETROSET, TERRA TX, TERRA TACK AR OR OTHER

- 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 CINNERS, 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.
- 2. 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 SOODING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
 - TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
 - SOIL ADJNEMENTS (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. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
 - LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 96 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
 - LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
 - WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

(B-4-3) SECTION 3 - SEEDING AND MULCHING

- SEEDING**
 - SPECIFICATIONS**
 - ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE 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 THAWES.
 - 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.
 - 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 PHYTO-TOXIC 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 SEED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
 - DRILL OR MULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
 - CULTIPACKER SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
 - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
 - 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; P205 (PHOSPHORUS), 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.
- 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, DRYED, 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 FIBER 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 BLOTTER-LIKE GROUND COVER. ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
 - WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
 - 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.
- APPLICATION**
 - APPLY MULCH TO ALL SEED AREAS IMMEDIATELY AFTER SEEDING.
 - WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEED 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.
 - 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 DRIVEN 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, PETROSET, TERRA TX, 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.

iv. LIGHTWEIGHT PLASTIC NETTING MAY BE STARTED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

(B-4-4) SECTION 4 - TEMPORARY STABILIZATION

- 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.

Season	Species	Application ¹ Rate (Lb./Ac.)	Seeding ² Dates		Seeding ² Depths	Fertilizer Rate (10-20-20)	Lime Rate
			Start	End			
Cool	Annual Ryegrass	40	2/15-4/30	8/15-11/30	1/2"	436 Lbs./Ac. (10 Lbs./1000 Sq.Ft.)	2 Tons/Ac. (90 Lbs./1000 Sq.Ft.)
	Foxtail Millet	30	5/1-8/14		1/2"		

- SEEDING RATES FOR THE WARM-SEASON GRASSES ARE IN POUNDS OF PURE SEED (PLS). ACTUAL PLANTING RATES SHALL BE ADJUSTED TO REFLECT PERCENT SEED GERMINATION AND PURITY. AS TESTED. ADJUSTMENTS ARE USUALLY NOT NEEDED FOR THE COOL-SEASON GRASSES.
- SEEDING RATES LISTED ABOVE ARE FOR TEMPORARY SEEDINGS. WHEN PLANTED ALONE. WHEN PLANTED AS A NURSE CROP WITH PERMANENT MIXES USE 1/3 OF THE SEEDING RATE LISTED ABOVE FOR BARLEY, OATS, AND WHEAT. FOR SMALLER SEEDS (ANNUAL RYEGRASS, PEARL MILLET, FOXTAIL MILLET), DO NOT EXCEED MORE THAN 5% (BY WEIGHT) OF THE OVERALL PERMANENT SEEDING MIX. CEREAL RYE GENERALLY SHOULD NOT BE USED AS A NURSE CROP UNLESS PLANTING WILL OCCUR IN VERY LATE FALL BEYOND THE SEEDING DATES FOR OTHER TEMPORARY SEEDINGS. CEREAL RYE HAS ALLELOPATHIC PROPERTIES THAT INHIBIT THE GERMINATION AND GROWTH OF OTHER PLANTS. IF IT MUST BE USED AS A NURSE CROP, SEED AT 1/3 OF THE RATE LISTED ABOVE.
- OATS ARE THE RECOMMENDED NURSE CROP FOR WARM-SEASON GRASSES.
- FOR SANDY SOILS, PLANT SEEDS AT TWICE THE DEPTH LISTED ABOVE.
- THE PLANTING DATES LISTED ARE AVERAGES FOR EACH ZONE AND MAY REQUIRE ADJUSTMENT TO REFLECT LOCAL CONDITIONS, ESPECIALLY NEAR THE BOUNDARIES OF THE ZONE.

(B-4-5) SECTION 5 - PERMANENT STABILIZATION

- EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.
- SEED MIXTURES**
 - GENERAL USE**
 - SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURES, 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 34 - 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 (50 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 MIXTURES, 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: 15 TO 20 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE CERTIFIED KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
 - KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE CERTIFIED 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.

- NOTE: SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77. TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND: CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.
- IDEAL TIMES OF SEEDING FOR TURF GRASSES**

WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDNESS ZONES: 5B, 6A)
CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDNESS ZONES: 6B)
SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDNESS ZONES: 7A, 7B)
 - TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES. LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1 1/2 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH A CONDITION THAT FUTURE MOWING OF GRASSES WILL BE WITHOUT DIFFICULTY.
 - IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 5 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

Seed Mixture No. 9 (Hardness Zone 7A)	Application Rate (Lb./Ac.)	Seeding Dates		Seeding Depths	Fertilizer Rate (10-20-20)			Lime Rate
		Start	End		N	P ₂ O ₅	K ₂ O	
Tall Fescue	60				45	90	90	2 Tons/Ac. (90 Lb./1000 Sq.Ft.)
Kentucky Bluegrass	40	2/15 - 4/30	8/15 - 10/31	1/2" - 3/4"	1 (1 Lb./1000 Sq.Ft.)	2 (2 Lb./1000 Sq.Ft.)	2 (2 Lb./1000 Sq.Ft.)	2 Tons/Ac. (90 Lb./1000 Sq.Ft.)
Perennial Ryegrass	20							

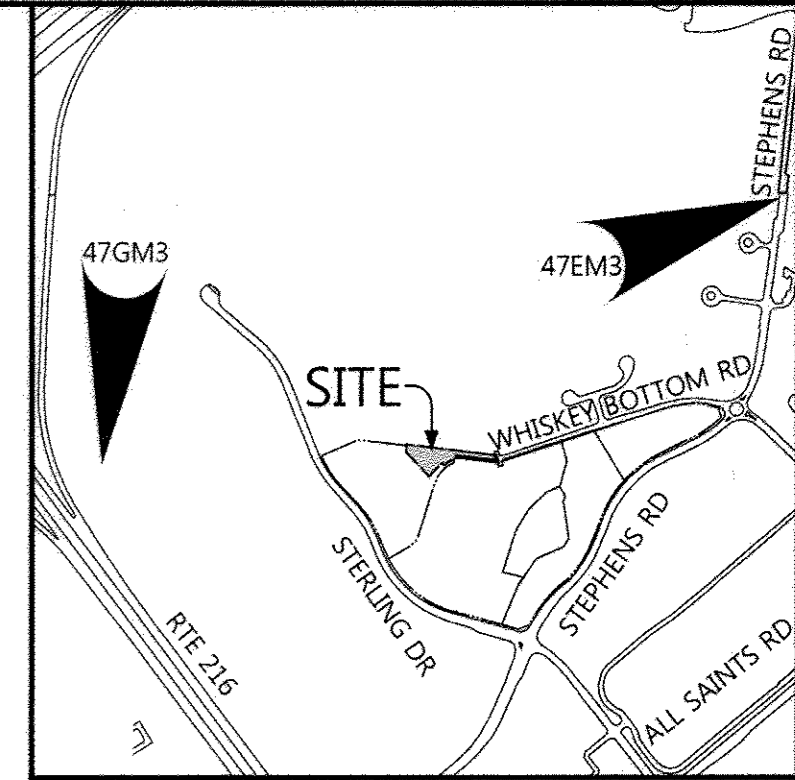
- BLEND 3 CULTIVARS OF ANY CULTIVAR LISTED ON PAGE B.32 OF THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
 - AT TIME OF FINE GRADING, FERTILIZER AND LIME RATES WILL BE BASED ON SOIL TEST RESULTS. (SEE SECTION 2.C). COPY OF RECOMMENDED RATES IS TO BE SUPPLIED TO THE SEDIMENT CONTROL INSPECTOR.
 - FOR SEEDING DATES 5/1-8/14 ADD 6 LB/AC OF EITHER FOXTAIL MILLET OR PEARL MILLET TO PERMANENT SEED MIXTURE #9 ABOVE.
- NOTE: ALL SEED MUST COMPLY WITH THE MARYLAND STATE SEED LAW. SEED MUST BE FREE OF PROHIBITED OR RESTRICTED NOXIOUS WEEDS. AS CURRENTLY LISTED BY THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION.

- SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).**
- 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 1/4 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.
- 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 STAGGERED JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPAGE 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.
- SOD MAINTENANCE**
 - IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN 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 1/3 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.

(H-1) STANDARDS AND SPECIFICATIONS FOR MATERIALS

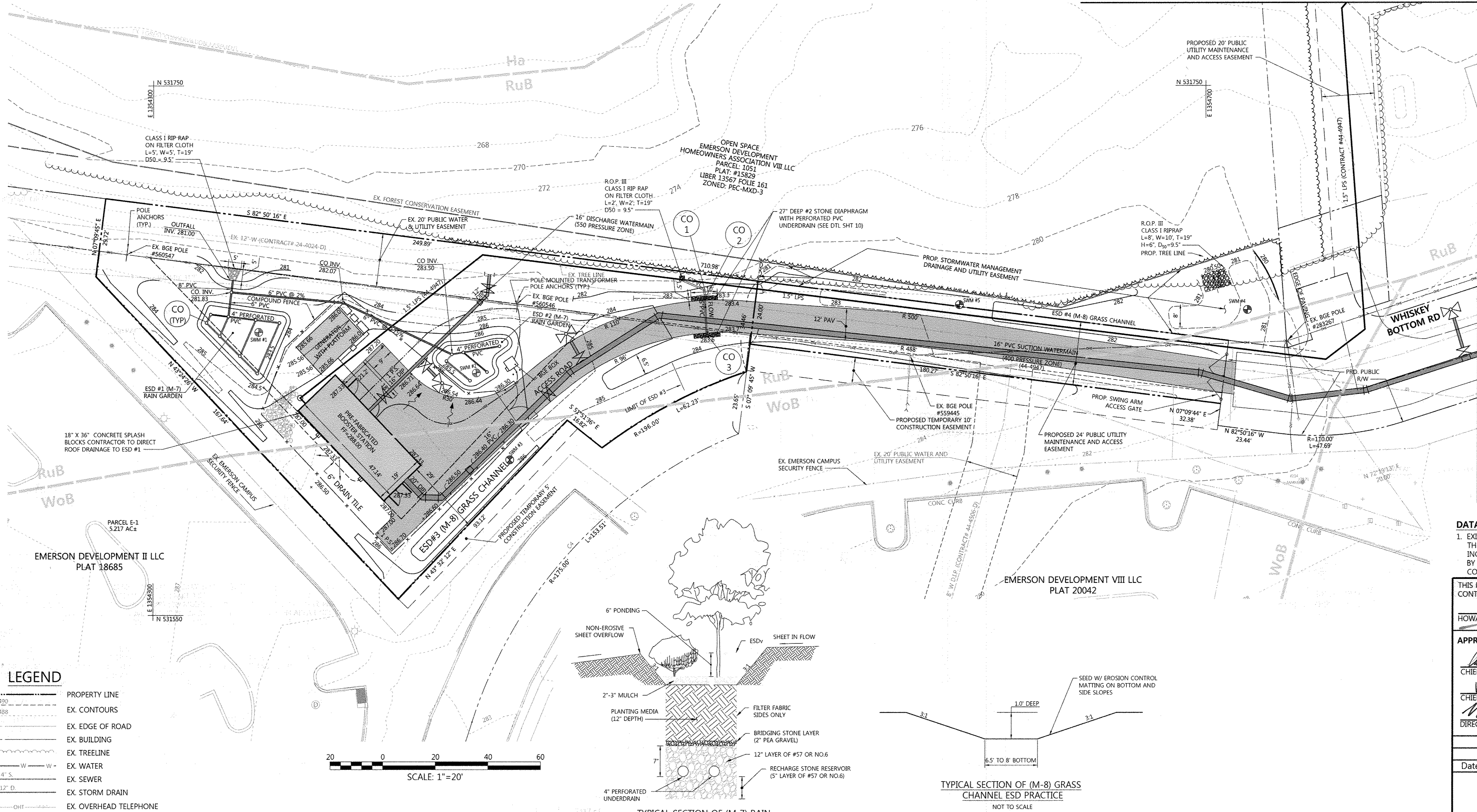
TABLE H.1: GEOTEXTILE FABRICS

PROPERTY	TEST METHOD	MINIMUM AVERAGE ROLL VALUE ¹					
		WOVEN SPLIT FILM GEOTEXTILE		WOVEN MONOFILAMENT GEOTEXTILE		NONWOVEN GEOTEXTILE	
		MD	CD	MD	CD	MD	CD
Grab Tensile Strength	ASTM D-4632	200 lb	200 lb	370 lb	250 lb	200 lb	200 lb
Grab Tensile Elongation	ASTM D-4632	15%	10%	15%	15%	50%	50%
Trapezoidal Tear Strength	ASTM D-4533	75 lb	75 lb	100 lb	60 lb	80 lb	80 lb
Puncture Strength	ASTM D-6241	450 lb		900 lb		450 lb	
Apparent Opening Size ²	ASTM D-						



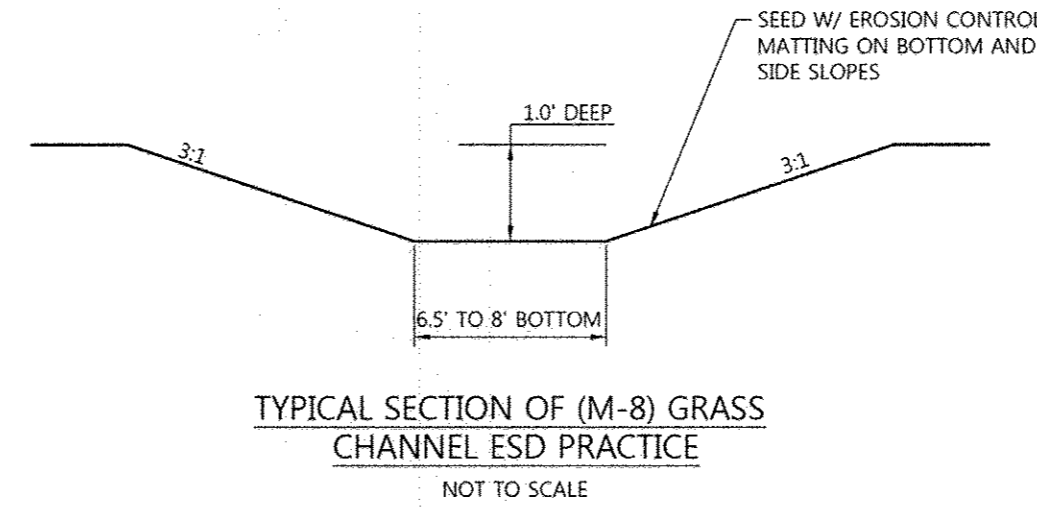
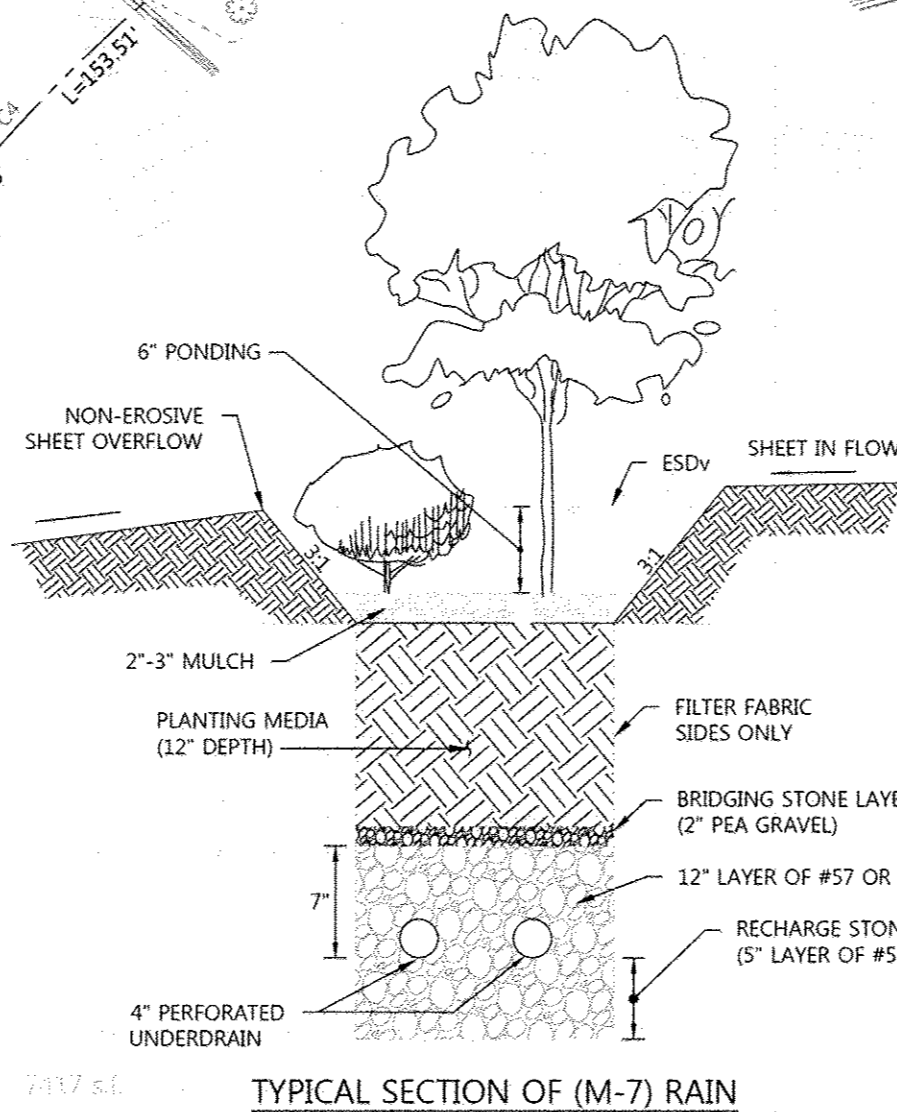
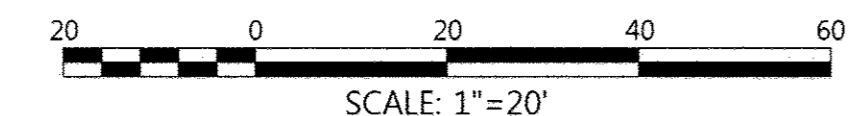
VICINITY MAP
SCALE: 1"=1000'
HOWARD COUNTY ADC MAP
NUMBER 40, GRID NO. B-6

FOR CONTINUATION (SEE SHT 3 OF 12)



LEGEND

---	PROPERTY LINE
---	EX. CONTOURS
---	EX. EDGE OF ROAD
---	EX. BUILDING
---	EX. TREELINE
---	EX. WATER
---	EX. SEWER
---	EX. STORM DRAIN
---	EX. OVERHEAD TELEPHONE
---	EX. EASEMENT
---	PROP. EASEMENT
---	PROP. CONTOURS
---	PROP. 16" DISCHARGE WATERMAIN
---	PROP. 16" SUCTION WATERMAIN
---	PROP. LOW PRESSURE SEWER
---	PROP. STORM DRAIN
---	PROP. UNDERGROUND ELECTRIC
---	PROP. UNDERGROUND TELEPHONE
---	PROP. BUILDING
---	PROP. CURB
---	PROP. TREELINE
---	SILT FENCE
---	SUPER SILT FENCE
---	LIMIT OF DISTURBANCE
---	DRAINAGE AREA DIVIDE
---	SOILS
---	EROSION CONTROL MATTING
---	PROP. OUTFALL PROTECTION
---	LEVEL SPREADER
---	STABILIZED CONSTRUCTION ENTRANCE
---	SOIL BORING
---	FIRE HYDRANT



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

Table B.4.1 Materials Specifications for Micro-Bioretenion, Rain Gardens & Landscape Infiltration

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil (2" to 4" deep) (1.0' 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)	n/a	aged 6 months, minimum; no pine or wood chips
Mulch	shredded hardwood	n/a	
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")	For recharge stone
Underdrain piping	F 758, Type PS 28 or AASHTO M-276	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 1/2-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 ACT Code 350.08.09, 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	Ø 60 to Ø 64"	Sand substitutions such as Database and Graystone (AASHTO) #10 are not acceptable. No calcium chlorinated or dolomite sand substitutions are acceptable. No "rock dust" can be used for sand.

OPERATION AND MAINTENANCE SCHEDULE FOR LANDSCAPE INFILTRATION (M-3) MICRO-BIORETENTION (M-6), RAIN GARDENS (M-7), BIORETENTION SWALE (M-8), ENHANCED FILTERS (M-9)

- 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 INSPECTION 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.

MAINTENANCE CRITERIA

- PERIODICALLY REMOVE TRASH & DEBRIS AS IT ACCUMULATES.
- REMOVE AND REPLACE TOP FEW INCHES OF FILTER MEDIA WHEN WATER PONDS FOR MORE THAN 48 HRS.
- PRUNE AND REPLACE DEAD VEGETATION AS NECESSARY.
- WATER VEGETATION DURING DRY PERIODS.

GRASS SWALE MAINTENANCE CRITERIA

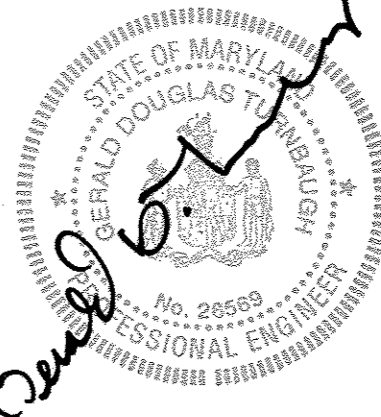
THE FOLLOWING ITEMS SHOULD BE ADDRESSED TO ENSURE PROPER MAINTENANCE AND LONG-TERM PERFORMANCE OF GRASS SWALES:

- REGULAR MOWING (AT LEAST BI-ANNUALLY) IS CRITICAL IN ORDER TO REDUCE COMPETITION FROM WEEDS AND IRRIGATION MAY BE NEEDED DURING DRY WEATHER TO ESTABLISH VEGETATION. SPARSELY VEGETATED AREAS NEED TO BE RE-SEEDED TO MAINTAIN DENSE COVERAGE.
- IF WATER DOES NOT DRAIN WITHIN 48 HOURS, THE BOTTOM SOIL SHOULD BE TILLED AND RE-VEGETATED.
- INSPECTIONS SHOULD BE PERFORMED ONCE A YEAR TO ASSESS SLOPE INTEGRITY, VEGETATIVE HEALTH, SOIL STABILITY, COMPACTION, EROSION, PONDING, AND SEDIMENTATION. PERIODIC REMOVAL OF SEDIMENT, LITTER, OR OBSTRUCTIONS SHOULD BE DONE AS NEEDED. ERODED SIDE SLOPES AND THE SWALE BOTTOM SHOULD BE REPAIRED AND STABILIZED WHERE NEEDED.

CONTRACT NUMBERS:

44-4947
EX. WATER & EX. SEWER:
24-4527-D
24-4024-D
142-W

9-10-17
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. 26569, EXPIRATION DATE: 07-18-17.

DATA SOURCES:
1. EXISTING TOPOGRAPHIC INFORMATION SHOWN HEREON REFLECTS THE RESULT OF A TOPOGRAPHIC SURVEY PERFORMED BY DMW INC. DATED NOVEMBER 2015. TOPOGRAPHIC SURVEY PERFORMED BY SHELLEY & WITTER INC. DATED OCTOBER 2015, AND HOWARD COUNTY DIGITAL GIS.

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

HOWARD COUNTY DEPT. OF PLANNING & ZONING	DATE
<i>[Signature]</i>	7-6-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
<i>[Signature]</i>	7-24-17
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>[Signature]</i>	7-26-17
DIRECTOR	DATE

Date	No.	Revision Description
		Whiskey Bottom Road Water Pumping Station Replacement Capital Project No: W8320

OWNER/DEVELOPER:
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045
(410) 313-4400



501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286
P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL #
REVITZ PROPERTY	N/A	PART OF PARCEL 'E'
PLAT NO. OF 15788	TAX ZONE/MAP 47	EJECT DISTRICT 6
WATER CODE C-02	SEWER CODE 7390000	CENSUS TRACT 606907

ADDRESS CHART
LOT NUMBER
STREET ADDRESS

TITLE
STORMWATER MANAGEMENT PLAN

Des. By	GDT	SCALE	Proj. No. 13037
Dm. By	SRB	Date 3/16/17	9 of 12
Chk. By	ERS	Approved	

B.4.C SPECIFICATIONS FOR RAIN GARDENS & LANDSCAPE INFILTRATION

1. MATERIAL SPECIFICATIONS

THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.4.1. SHOWN ON SHEET 9.

2. FILTERING MEDIA OR PLANTING SOIL

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

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

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

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

3. COMPACTION

IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL WHEN POSSIBLE. USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING A LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.

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

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

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

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

4. PLANT MATERIAL

SEE THIS SHEET FOR REQUIRED PLANTINGS.

5. PLANT INSTALLATION

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

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

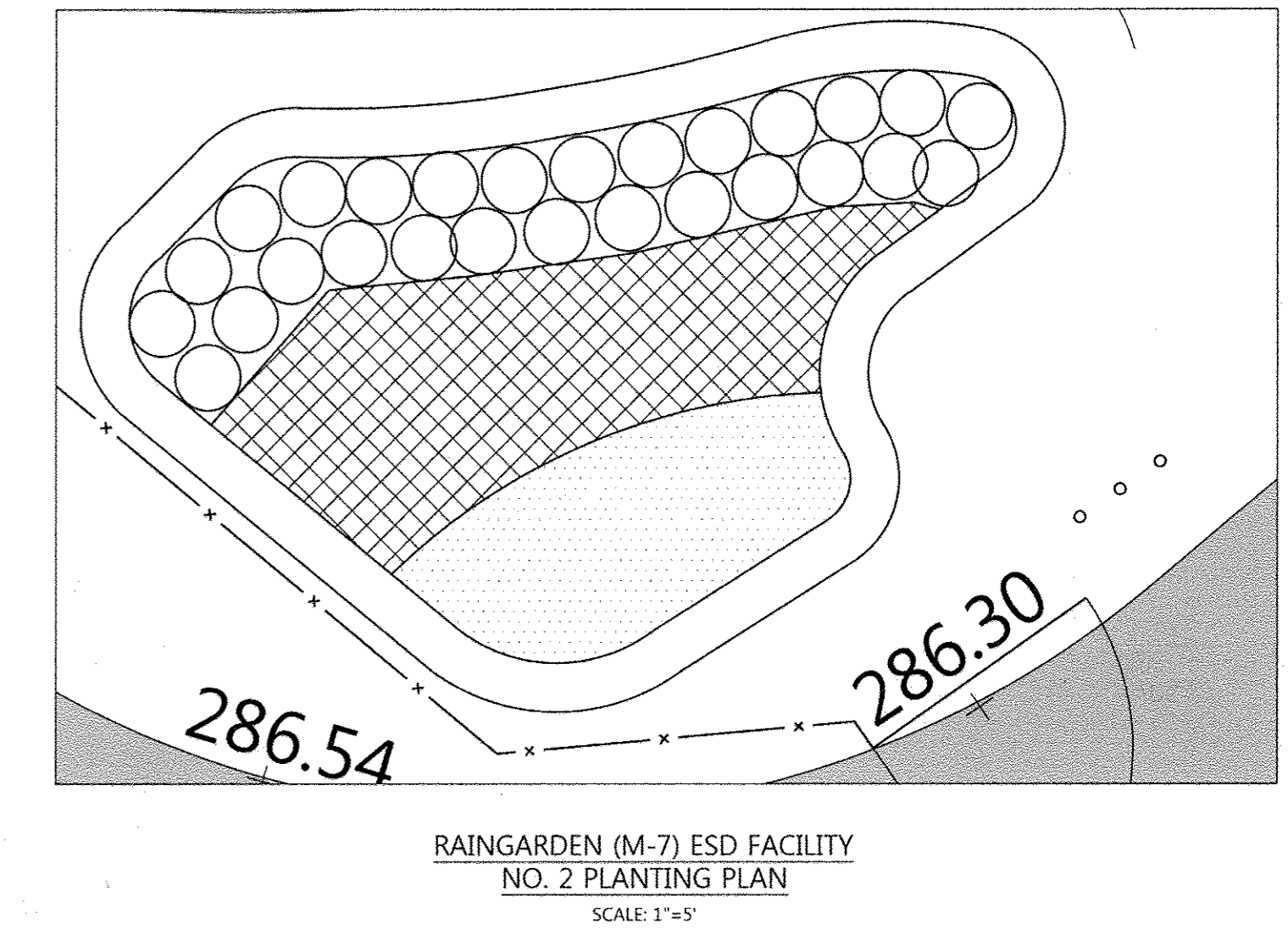
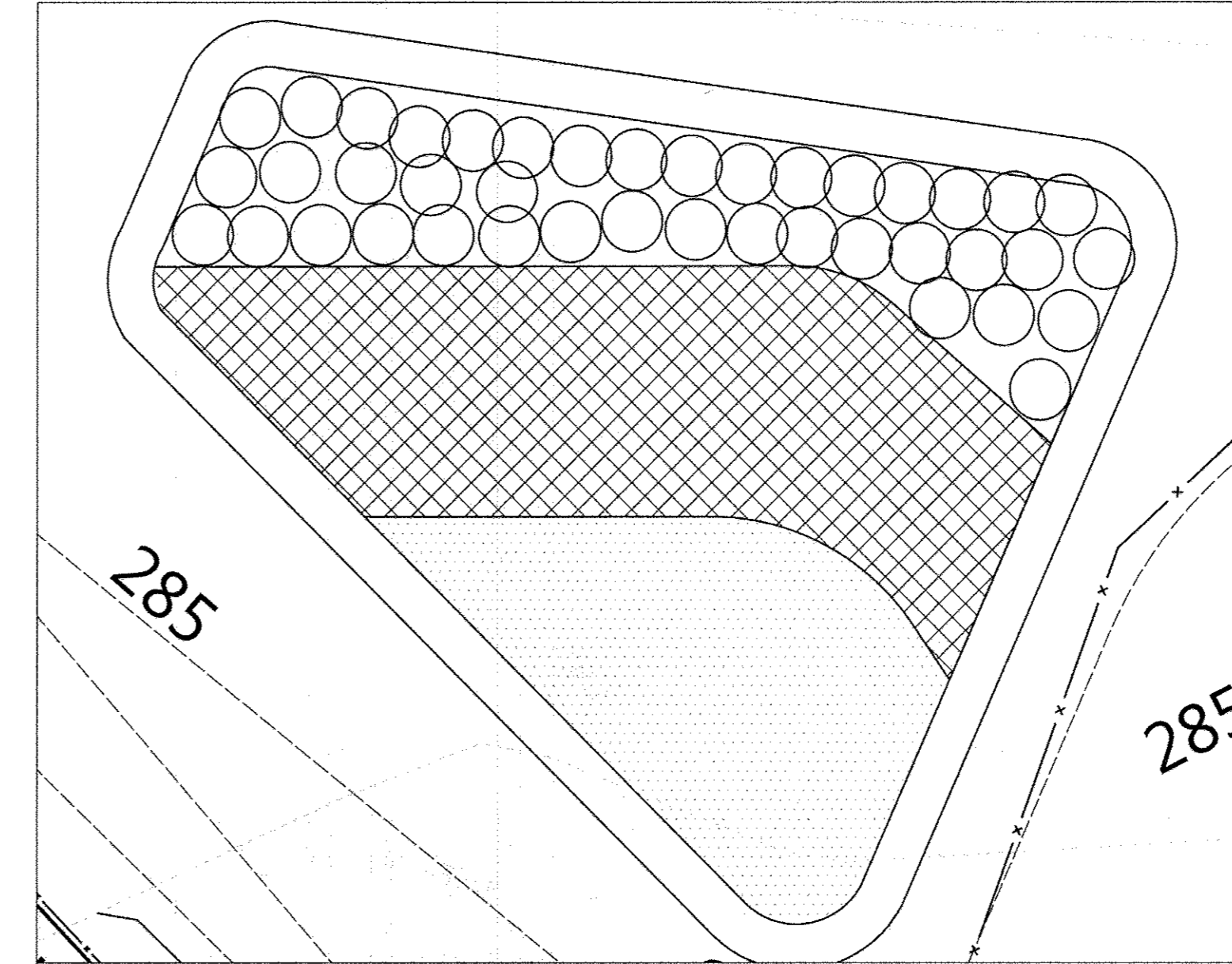
TREES SHALL BE BRACED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL.

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

THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFEATS, OR AT A MINIMUM, 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.

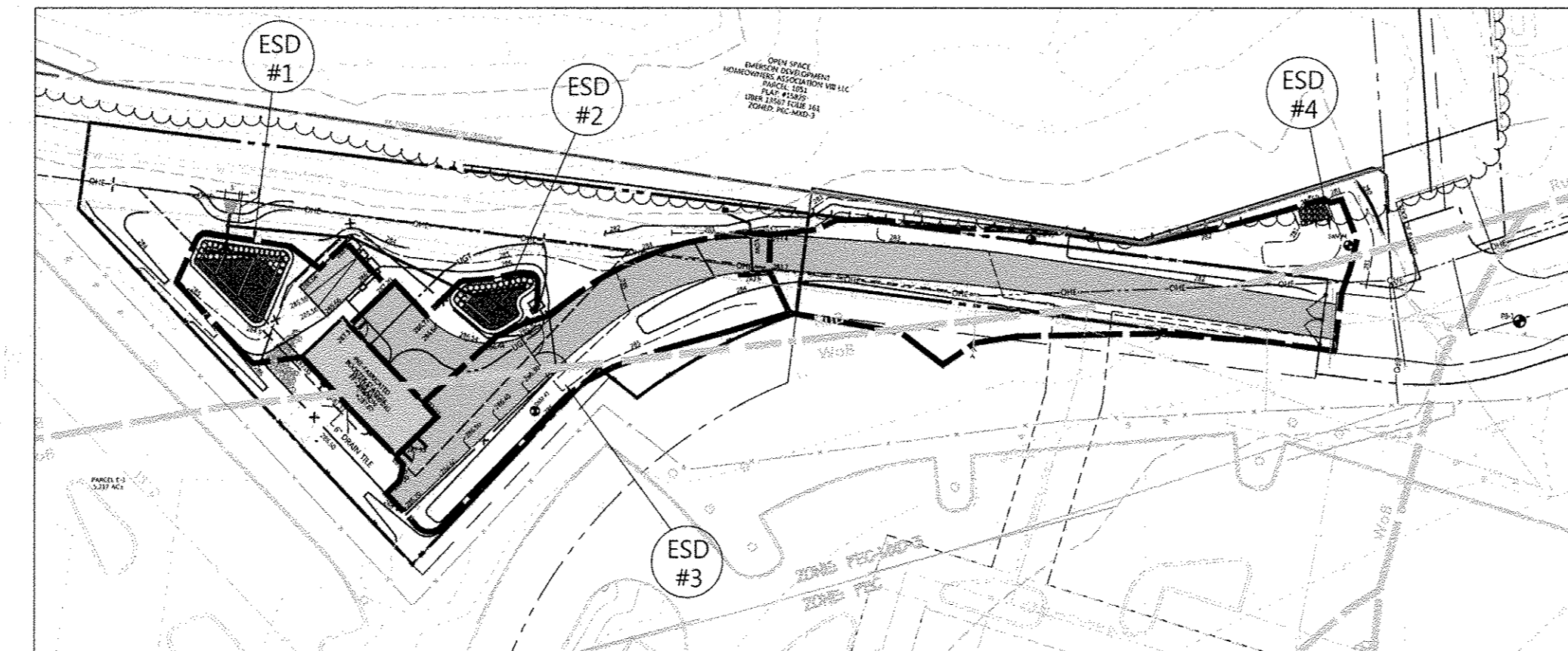
6. MISCELLANEOUS

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

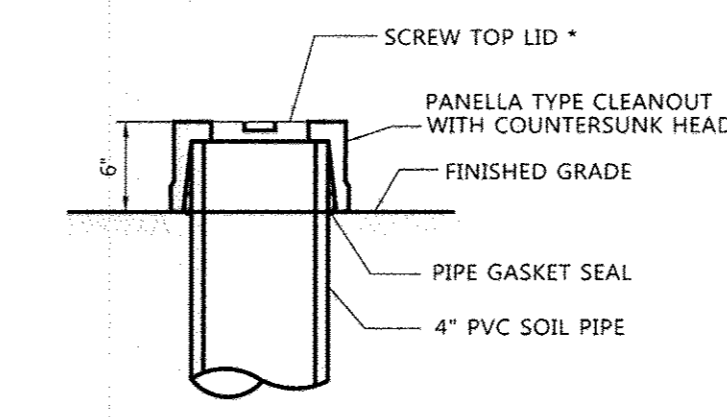
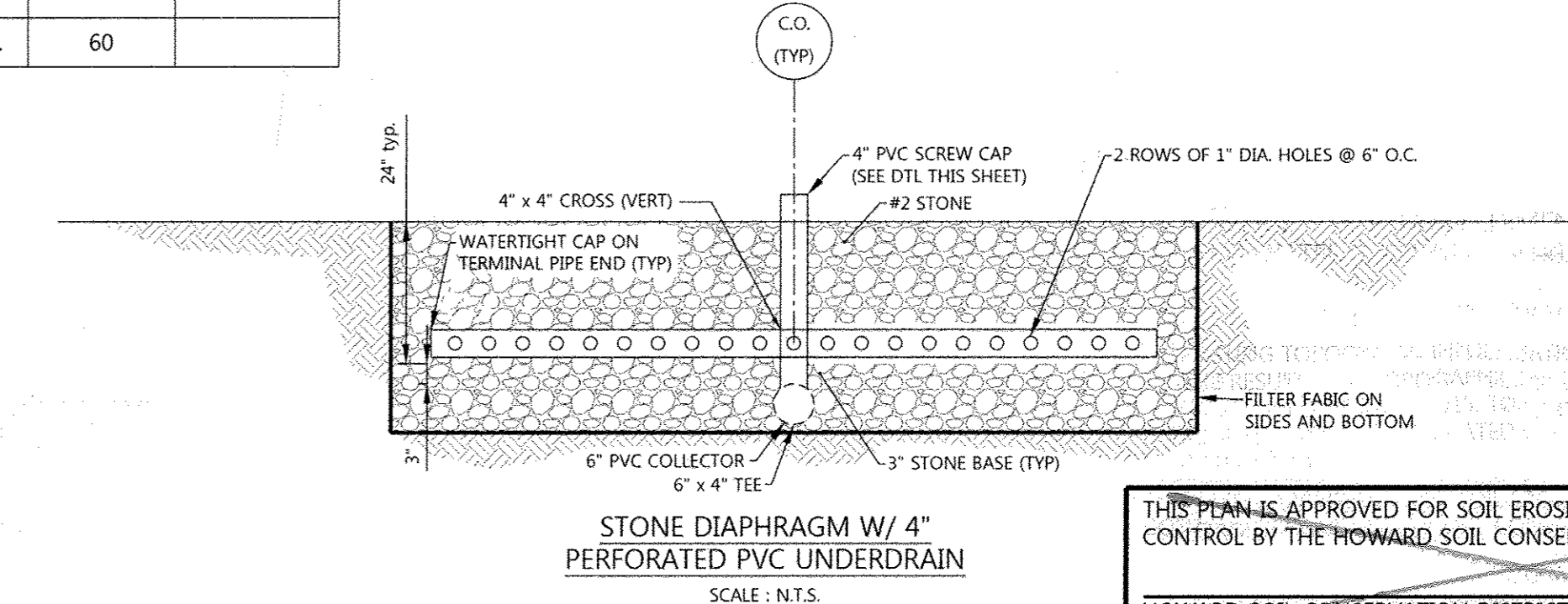


KEY	BOTANICAL NAME	COMMON NAME	SPEC./HABIT	SPACING	QUANTITY	STATUS
PV	PANICUM VIRGATUM	SWITH GRASS	1 GAL./CONT.	2.0' O.C.	41	
RFG	RUDBECKIA FULGIDA 'GOLDSTORM'	ORANGE CONEFLOWER	1 GAL./CONT.	1.5' O.C.	97	
EP	ECHINACEA PURPUREA	PURPLE CONEFLOWER	1 GAL./CONT.	1.5' O.C.	60	

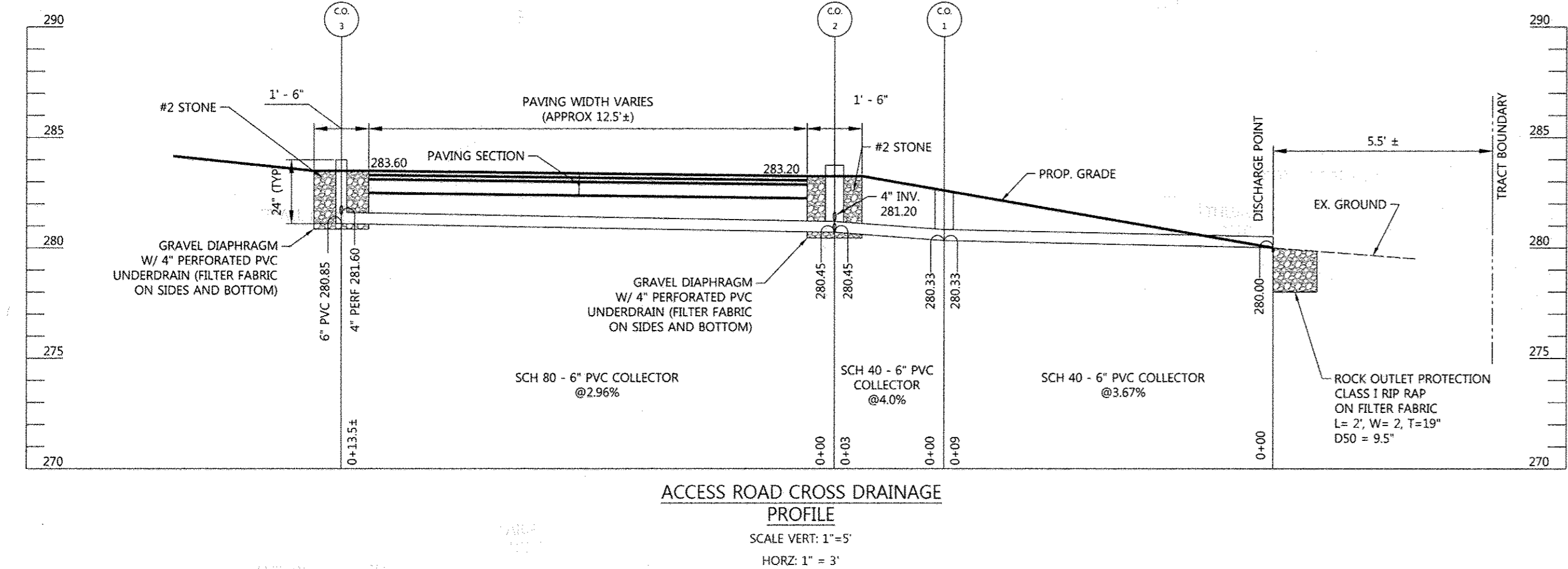
KEY	BOTANICAL NAME	COMMON NAME	SPEC./HABIT	SPACING	QUANTITY	STATUS
PV	PANICUM VIRGATUM	SWITH GRASS	1 GAL./CONT.	2.0' O.C.	27	
RFG	RUDBECKIA FULGIDA 'GOLDSTORM'	ORANGE CONEFLOWER	1 GAL./CONT.	1.5' O.C.	50	
EP	ECHINACEA PURPUREA	PURPLE CONEFLOWER	1 GAL./CONT.	1.5' O.C.	30	



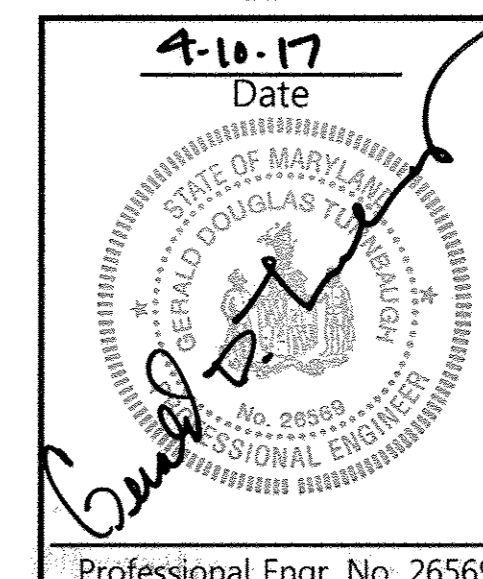
ESD #	TOTAL AREA	IMPERVIOUS AREA	VOLUME PROVIDED
(M-7) 1	2931 s.f.	1218 s.f.	185 c.f.
(M-7) 2	1473 s.f.	852 s.f.	140 c.f.
(M-8) 3	4667 s.f.	2456 s.f.	344 c.f.
(M-8) 4	7417 s.f.	2360 s.f.	399 c.f.
TOTAL ESDv REQUIRED			756 c.f.
TOTAL ESDv PROVIDED			1068 c.f.
TOTAL Rev REQUIRED			91.5 c.f.
TOTAL Rev PROVIDED			97.3 c.f.



- EACH CLEANOUT SHALL INCLUDE THE FOLLOWING
1. FOR AN UNDERGROUND FLUSH MOUNTED CLEANOUT, PROVIDE A TUBE MADE OF NON-CORROSIVE MATERIAL, SCHEDULE 40 OR EQUAL, AT LEAST 3-FEET LONG WITH AN INSIDE DIAMETER OF AT LEAST 6-INCHES.
 2. THE TUBE SHALL HAVE A FACTORY ATTACHED CAST IRON OR HIGH IMPACT PLASTIC COLLAR WITH RIBS TO PREVENT ROTATION WHEN REMOVING SCREW TOP LID. THE SCREW TOP LID SHALL BE CAST IRON OR HIGH IMPACT PLASTIC THAT WILL WITHSTAND ULTRA-VIOLET RAYS.



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. 26569, EXPIRATION DATE: 07-18-17.



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

HOWARD SOIL CONSERVATION DISTRICT DATE

Chief, Development Engineering Division DATE 7-6-17

Chief, Division of Land Development DATE 7-24-17

Director DATE 7-26-17

Whiskey Bottom Road Water Pumping Station Replacement
Capital Project No: W8320

OWNER/DEVELOPER:
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045
(410) 313-4400

CONTRACT NUMBERS:
44-4947
EX. WATER & EX. SEWER:
24-4527-D
24-4024-D
142-W

501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286
P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM

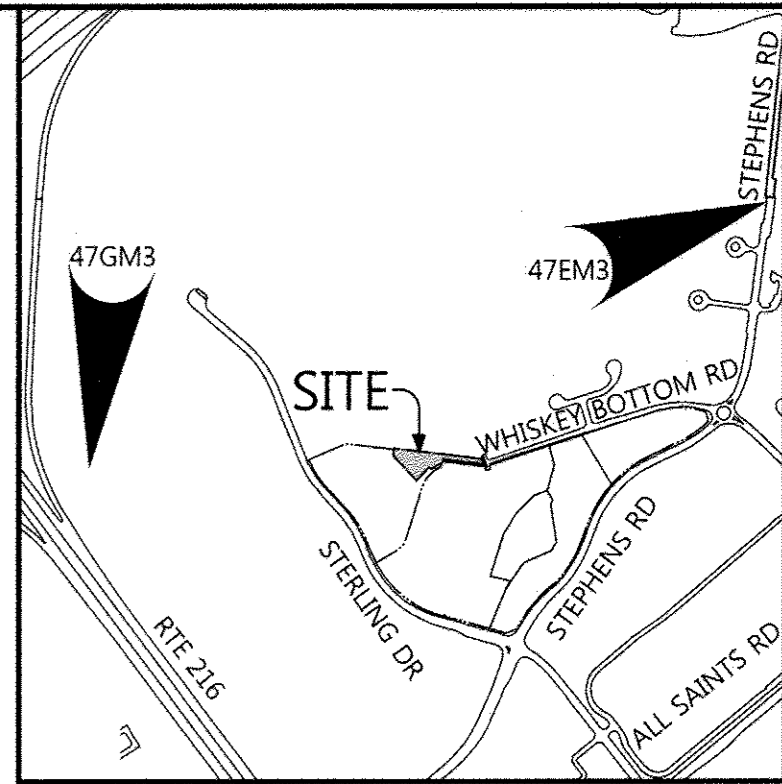
ADDRESS CHART

LOT NUMBER STREET ADDRESS

TITLE
STORMWATER MANAGEMENT
DETAILS & SPECIFICATIONS

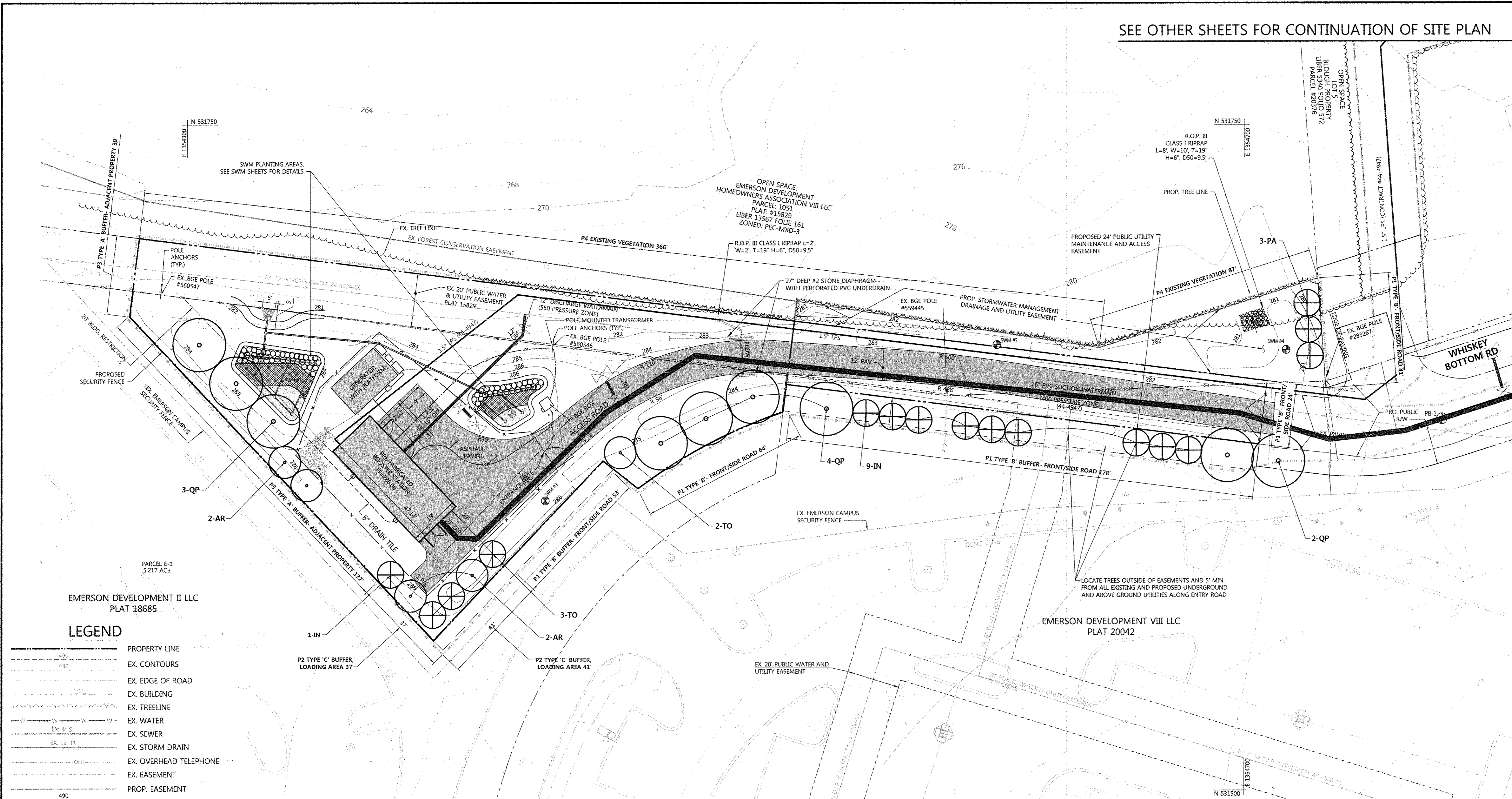
Des. By GDT SCALE Proj. No. 13037
Drn. By SRB Date 3/16/17
Chk. By ERS Approved 10 of 12

SEE OTHER SHEETS FOR CONTINUATION OF SITE PLAN



VICINITY MAP
SCALE: 1"=1000'
HOWARD COUNTY ADC MAP
NUMBER 40, GRID NO. 8-6

SEE OTHER SHEETS FOR CONTINUATION OF SITE PLAN



NOTE: LOD OUTSIDE SEDIMENT CONTROLS IS FOR WATER & SEWER UTILITY INSTALLATION.

DATA SOURCES:
1. EXISTING TOPOGRAPHIC INFORMATION SHOWN HEREON REFLECTS THE RESULT OF A TOPOGRAPHIC SURVEY PERFORMED BY DMW INC. DATED NOVEMBER 2015. TOPOGRAPHIC SURVEY PERFORMED BY SHELLEY & WITTER INC. DATED OCTOBER 2015, AND HOWARD COUNTY DIGITAL GIS.

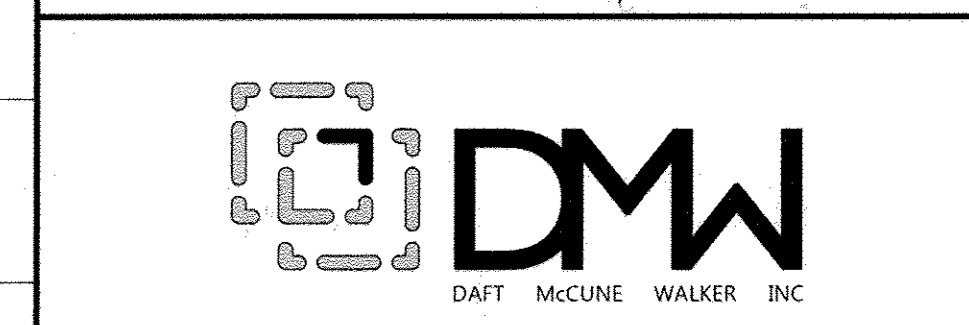
THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

HOWARD SOIL CONSERVATION DISTRICT DATE
APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION 7-6-17 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT 7-24-17 DATE
DIRECTOR 7-26-17 DATE

Date	No.	Revision Description

Whiskey Bottom Road Water Pumping Station Replacement
Capital Project No: W8320

OWNER/DEVELOPER:
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045
(410) 313-4400



501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286
P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM

REVISION NUMBER: N/A SECTION/AREA: N/A LOT/PARCEL #: PART OF PARCEL 'E'
PLAT # ON FILE: 15788 BLOCK # 47 TAX ZONE/MAP: 6 ELECT. DISTRICT: 608907
WATER CODE: C-02 SEWER CODE: 7390000

ADDRESS CHART
LOT NUMBER STREET ADDRESS

TITLE
SCHEMATIC LANDSCAPE PLAN

Des. By GDT SCALE 1"=20' Proj. No. 13037
Dm. By SRB Date 3/16/17
Chk. By ERS Approved 11 of 12

LEGEND

- 490 PROPERTY LINE
- 488 EX. CONTOURS
- EX. EDGE OF ROAD
- EX. BUILDING
- EX. TREELINE
- EX. WATER
- EX. SEWER
- EX. STORM DRAIN
- EX. OVERHEAD TELEPHONE
- EX. EASEMENT
- PROP. EASEMENT
- 490 PROP. CONTOURS
- 488 PROP. 16" DISCHARGE WATERMAIN
- PROP. 16" SUCTION WATERMAIN
- 1.5" LPS PROP. LOW PRESSURE SEWER
- 12" SD PROP. STORM DRAIN
- UGE PROP. UNDERGROUND ELECTRIC
- UGT PROP. UNDERGROUND TELEPHONE
- PROP. BUILDING
- PROP. CURB
- PROP. TREELINE
- SILT FENCE
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- DRAINAGE AREA DIVIDE
- SOILS
- EROSION CONTROL MATTING
- PROP. OUTFALL PROTECTION LEVEL SPREADER
- STABILIZED CONSTRUCTION ENTRANCE
- SOIL BORING
- FIRE HYDRANT
- PROPOSED SHADE TREE
- PROPOSED EVERGREEN TREE

LANDSCAPE PLAN

SCHEDULE A- PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT to ROADWAYS		ADJACENT to PERIMETER PROP.	
	P 1	P 2	P 3	P 4
PERIMETER LANDSCAPE TYPE "A"			YES	YES
LINEAR FEET OF PERIMETER			267 LF.	452 LF.
LANDSCAPE TYPE "B"	YES			
LINEAR FEET OF PERIMETER	360 LF.			
LANDSCAPE TYPE "C"		YES		
LINEAR FEET OF PERIMETER		78 LF.		
CREDIT FOR EXISTING VEGETATION (DESCRIBE BELOW IF NEEDED)	N/A	N/A	N/A	452 LF.
CREDIT FOR BERM (DESCRIBE BELOW IF NEEDED)	N/A	N/A	N/A	N/A
NUMBER OF PLANTS REQUIRED				
SHADE TREES	7.2	2	4.5	0
EVERGREEN TREES	9	4	0	0
SHRUBS	0	0	0	0
NUMBER OF PLANTS PROVIDED				
SHADE TREES	7	2	5	0
EVERGREEN TREES	12	4	0	0
OTHER TREES (2:1 SUBSTITUTION)	0	0	0	0

- A LARGE STAND OF EXISTING FOREST VEGETATION TO REMAIN IS LOCATED ALONG THE ENTIRE NORTHERN PROPERTY BOUNDARY (P4). THIS VEGETATION SHOULD BE CONSIDERED ADEQUATE TO FULFILL THE P4 TYPE 'A' REQUIREMENT.
- SCHEDULE B (PARKING) AND THE STREET TREE SCHEDULE WERE NOT INCLUDED FOR THIS PROJECT AS THERE IS NO PARKING OR PUBLIC ROADS ON SITE.

PLANT LIST

DICIDUOUS TREES					
KEY	BOTANICAL NAME	COMMON NAME	SPEC./HABIT	SPACING	QUANTITY
AR	ACER RUBRUM 'BOWHALL'	BOWHALL COLUMNAR RED MAPLE	2-2.5" CAL / B&B OR CONT.	AS SHOWN	4
QP	QUERCUS PHELLOS	WILLOW OAK	2-2.5" CAL / B&B	AS SHOWN	9

EVERGREEN TREES					
KEY	BOTANICAL NAME	COMMON NAME	SPEC./HABIT	SPACING	QUANTITY
TO	THUJA OCCIDENTALIS 'GREEN GIANT'	GREEN GIANT ARBORVITAE	6-7' HGT./ B&B OR CONT.	AS SHOWN	3
IN	ILEX X 'NELLIE STEVENS'	NELLIE STEVENS HOLLY	6-7' HGT./ B&B OR CONT.	AS SHOWN	10
PA	PICEA ABIES	NORWAY SPRUCE	6-7' HGT./ B&B OR CONT.	AS SHOWN	3

LANDSCAPING NOTES:

- VERIFY LOCATIONS OF ALL EXISTING AND PROPOSED UTILITIES, STRUCTURES, AND FENCING PRIOR TO PLANTING.
- FIELD-LOCATE TREES 5' MINIMUM FROM PROPOSED FENCING AND 5' MINIMUM FROM EXISTING AND PROPOSED ABOVE AND BELOW GROUND UTILITIES.
- PLANT SPECIES AND TYPE SHALL BE SELECTED/SUBSTITUTED PER COUNTY STANDARDS BASED ON SECURITY AND SAFETY REQUIREMENTS OF ADJACENT PROPERTIES AND COUNTY REVIEW COMMITTEES.
- THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING. 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 LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
- AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL.
- FINANCIAL LANDSCAPE SURETY FOR THIS PROPERTY, IN THE AMOUNT OF \$7,400 IS TO BE POSTED FOR 14 SHADE TREES (@\$300 each) AND 16 EVERGREEN TREES (@200 each). SURETY MUST BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT.
- EMERSON IS GOVERNED BY COVENANTS WHICH REQUIRE ADDITIONAL PLANT MATERIAL AND APPROVAL FROM THE HOWARD HUGHES ARCHITECTURAL REVIEW COMMITTEE. PLEASE REFER TO PLAN APPROVAL LETTER FROM HOWARD HUGHES.
- SEEDING IS REQUIRED FOR ALL OPEN AREAS. PROVIDE A MINIMUM OF 4 INCHES OF TOPSOIL WHERE SEEDING IS PLACED. USE TALL FESCUE STATE CERTIFIED GRASS SEED.

Landscape Plans
1 of 2
4.11.17
Date

EDWARD W. TOM
Landscape Architect

DMW LANDSCAPE SPECIFICATIONS & NOTES

SPECIFICATIONS

1. ALL PLANTING PROCEDURES SHALL CONFORM TO THE LANDSCAPE CONTRACTORS ASSOCIATION GUIDELINES FOR BALTIMORE/WASHINGTON METROPOLITAN AREA - LCAWM LATEST EDITION (EXCEPT THAT SECTION 16, REPLACEMENT CONDITIONS, ITEM F, PLANT LOSSES DUE TO ABNORMAL WEATHER DOES NOT APPLY) AND AS FURTHER AMENDED BY DMW LANDSCAPE SPECIFICATIONS & NOTES ITEMS 1 THRU 30 CONTAINED HEREIN.

PLANNING

2. THE LANDSCAPE CONTRACTOR SHALL REVIEW ARCHITECTURE AND ENGINEERING PLANS FOR EXISTING AND PROPOSED GRADING, UTILITIES BOTH ABOVE AND BELOW-GRADE, AND EXISTING VEGETATION TO REMAIN AND TO BE REMOVED.

3. THE LANDSCAPE CONTRACTOR SHALL PLAN HIS WORK TO INSURE HIS MOBILIZATION, STAGING AND INSTALLATION OPERATIONS WILL NOT INTERRUPT EXISTING OR PROPOSED VEHICULAR AND PEDESTRIAN MOVEMENTS.

UTILITIES

4. THE LANDSCAPE CONTRACTOR SHALL NOTIFY MISS UTILITY (800-257-7777) A MINIMUM OF THREE DAYS PRIOR TO ANY EXCAVATION, PLANTING OR CONSTRUCTION. THE CONTRACTOR IS ADVISED OF THE POSSIBILITY OF UNDERGROUND UTILITIES ON THE SITE. THEIR LOCATIONS SHALL BE VERIFIED IN FIELD WITH THE OWNER, GENERAL CONTRACTOR, AND MISS UTILITY PRIOR TO THE COMMENCEMENT OF DIGGING OPERATIONS. IN THE EVENT UTILITIES ARE DAMAGED BY THE LANDSCAPE CONTRACTOR, THE LANDSCAPE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR SUCH DAMAGE AND SUBSEQUENT REPAIR. DAMAGE TO UNDOCUMENTED UTILITIES, IF ANY, SHALL NOT BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.

5. IF UTILITY LINES ARE ENCOUNTERED DURING EXCAVATION FOR TREE PITS, SUITABLE ALTERNATE LOCATIONS WILL BE FOUND WITH NO ADDITIONAL COMPENSATION DUE. THE DMW LANDSCAPE ARCHITECT WILL RELOCATE AND/OR APPROVE THESE ALTERNATIVE LOCATIONS.

GRADING & DRAINAGE

6. THE CONTRACTOR SHALL INSURE THAT HIS WORK DOES NOT INTERRUPT ESTABLISHED OR PROPOSED DRAINAGE PATTERNS.

7. THE CONTRACTOR SHALL CLEAR AND GRUB AS SHOWN ON PLANS. CONTRACTOR SHALL DISPOSE OF STUMPS AND MAJOR ROOTS OF ALL PLANTS TO BE REMOVED. ANY DEPRESSIONS CAUSED BY REMOVAL OPERATIONS SHALL BE REFILLED WITH FERTILE, FRIABLE SOIL PLACED AND COMPACTED SO AS TO REESTABLISH PROPER GRADE FOR NEW PLANTING AND/OR LAWN AREAS.

8. THE LANDSCAPE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE OUT OF ALL PLANTING BEDS AT A MINIMUM OF 2% SLOPE. THE LANDSCAPE CONTRACTOR SHALL BRING TO THE ATTENTION OF THE OWNER AND DMW LANDSCAPE ARCHITECT ANY DISCREPANCIES IN LAYOUT AND GRADING PRIOR TO INITIATION OF WORK.

9. DEBRIS AND STONES OVER 1 INCH IN DIAMETER SHALL BE REMOVED FROM THE SITE.

SOILS / PLANT MIX

10. THE CONTRACTOR SHALL SEND SAMPLES OF THE EXISTING SOILS (FROM AREAS TO BE PLANTED - SEE ITEM 11 BELOW) TO LAB FOR ANALYSIS. THE CONTRACTOR SHALL PROVIDE THE SOILS REPORT TO THE OWNER, DMW AND AMEND THE EXISTING SOIL TO BE USED AT THE RECOMMENDED RATES AND AMENDMENTS SHALL INCLUDE, BUT NOT BE LIMITED TO ORGANIC FERTILIZERS, ROOT STIMULANTS, TOPSOIL, LIME, PEAT MOSS, IRON SULFATE, ALUMINUM SULFATE, SULPHUR AND ORGANIC MATTER.

11. FOR PLANT MATERIAL TO THRIVE, THE SOIL TESTING SHOULD ADDRESS MICRO- AND MACRO-NUTRIENT LEVELS, SOIL PH AND A USDA COIL TEXTURE CLASSIFICATION. FURTHER, UNDERLYING SOIL CONDITIONS IN AREAS THAT HAVE BEEN DISTURBED BY CONSTRUCTION MAY CONTAIN COMPRESSED AND POORLY DRAINED SOIL, AND THE MAY LACK ORGANIC MATERIAL OR MICRO-ORGANISMS NECESSARY FOR SUCCESSFUL PLANT GROWTH. IF THESE CONDITIONS APPEAR TO THE CONTRACTOR TO A LIMITATION TO PLANT GROWTH, THE CONTRACTOR IS ENCOURAGED TO MAKE RECOMMENDATIONS FOR A SOIL AMENDMENT PROGRAM SUBJECT TO THE APPROVAL OF THE OWNER AND THE LANDSCAPE ARCHITECT. SUCCESS OF THE LANDSCAPE PLANTING WILL DEPEND UPON A COMBINATION OF NATURAL RAINFALL AND SUPPLEMENTAL IRRIGATION. IT SHOULD BE NOTED THAT IRRIGATION SHOULD BE APPLIED CAUTIOUSLY, AS NEW PLANTINGS ARE PARTICULARLY VULNERABLE TO OVER-WATERING. WATER CONDITIONS SHOULD BE MONITORED SIX INCHES BELOW THE SURFACE, AND POCKET PLANTED MATERIAL SHOULD BE CAREFULLY INVESTIGATED FOR ACCUMULATION OF WATER IN THE PLANTING PITS. ANOTHER KEY INGREDIENT TO SUCCESSFUL PLANTING IS THE USE OF PLANT MATERIAL THAT HAS BEEN GROWN IN SIMILAR LIGHT AND WATER CONDITIONS TO THOSE PROPOSED. IN PARTICULAR, GROUNDCOVERS, ANNUALS, AND PERENNIALS (WHICH MAY HAVE BEEN GROWN UNDER PROTECTED SHADING OR COVER AND ARE THEN SUBJECTED TO FULL WEATHER CONDITIONS) MAY NEED CONDITIONING PRIOR TO INSTALLATION.

12. PLANT MIX SOILS SHALL BE A SANDY-LOAM, FRIABLE MIX, FREE FROM DEBRIS AND ROCKS. THEY SHALL BE WELL-DRAINING AND FERTILE, 50% EXISTING SOILS FROM THE SITE, 35% TOPSOIL, 10% SAND, 5% PEAT OR ORGANIC MATTER (COMPOSTED LEAF COMPOST). PLANT MIX SHALL BE PREPARED AT APPROVED ON-SITE STAGING AREA USING APPROVED ON-SITE EXISTING SOIL. THOROUGHLY MIXED IN THE FOLLOWING PROPORTIONS FOR TREE AND SHRUB PLANTING MIX:

- 0.5 CY EXISTING SOIL
 - 0.35 CY TOPSOIL
 - 0.10 CY SHARP SAND
 - 0.05 CY LEAF COMPOST
 - 4.5 LBS. TREBLE SUPERPHOSPHATE
 - 5 LBS DOLOMITE LIMESTONE (ELIMINATE FOR ACID LOVING PLANTS)
- FOR BED PLANTING, SHRUBS AND GROUNDCOVER SPACES 24 INCHES OR CLOSER, INCORPORATE THE FOLLOWING INGREDIENTS PER 20 SF AND INCORPORATE INTO TOP 8 INCHES OF EXISTING SOILS BY ROTOTILLING OR SIMILAR METHOD OF INCORPORATION.
- 0.2 CY SHARP SAND
 - 0.3 CY ORGANIC MATERIAL
 - 4.5 LBS. TREBLE SUPERPHOSPHATE
 - 5 LBS DOLOMITE LIMESTONE (ELIMINATE FOR ACID LOVING PLANTS)

13. ALL DISTURBED AREAS OF THE SITE NOT PLANTED WITH SHRUBS OR GROUND COVER SHALL BE FINE GRADED AND SODDED OR SEEDED ACCORDING TO PLANTING AND CONSTRUCTION SPECIFICATIONS AND NOTES.

PLANT MATERIAL

14. QUANTITIES: THE CONTRACTOR SHALL PROVIDE THE PLANTS IN QUANTITY SHOWN GRAPHICALLY ON THE PLAN OR AS LABELED IN THE QUANTITIES COLUMN ON THE PLANT LIST, WHICHEVER IS GREATER. THE CONTRACTOR SHALL REPORT DISCREPANCIES, IF ANY, TO DMW LANDSCAPE ARCHITECT FOR CLARIFICATION PRIOR TO BIDDING. SEED AND SOD AREA QUANTITY TAKE-OFFS ARE THE RESPONSIBILITY OF THE CONTRACTOR.

15. PLANT SIZES: THE CONTRACTOR SHALL FURNISH PLANT MATERIAL IN SIZES AS SPECIFIED IN PLANT LIST.

16. PLANT STANDARDS: PLANTS SHALL CONFORM TO CURRENT "AMERICAN STANDARDS FOR NURSERY STOCK" BY AMERICAN ASSOCIATION OF NURSERYMEN (AAN), PARTICULARLY WITH REGARD TO SIZE, GROWTH, SIZE OF BALL, AND DENSITY OF BRANCH STRUCTURE.

17. LABELS: ALL PLANTS (B&B OR CONTAINER) SHALL BE PROPERLY IDENTIFIED BY WEATHER-PROOF LABELS SECURELY ATTACHED BEFORE DELIVERY TO PROJECT SITE. LABELS SHALL IDENTIFY PLANTS BY NAME, SPECIES, AND SIZE. LABELS SHALL NOT BE REMOVED UNTIL THE FINAL INSPECTION BY DMW LANDSCAPE ARCHITECT.

18. SUBSTITUTIONS: NO SUBSTITUTIONS SHALL BE MADE WITHOUT WRITTEN CONSENT OF OWNER OF DMW LANDSCAPE ARCHITECT.

19. CONDITION: THE LANDSCAPE ARCHITECT OR OWNER SHALL HAVE THE RIGHT, AT ANY STAGE OF THE OPERATIONS, TO REJECT ANY MATERIAL WHICH, IN HIS OPINION, DOES NOT MEET THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS. ALL REJECTED MATERIALS SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR.

20. BULBS: INSTALLATION SHALL BE IN ACCORDANCE WITH SECTION 11 OF THE AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS.

INSTALLATION

21. THE CONTRACTOR SHALL COORDINATE WITH LIGHTING AND IRRIGATION INSTALLERS WITH REGARD TO TIMING OF INSTALLATION OF PLANT MATERIAL.

22. SEE SEASONAL PLANT LIST FOR PLANTING TIMES OF BULBS AND SEASONAL PLANTS.

23. PLANTS SHALL BE LOCATED AS SHOWN ON THE DRAWINGS OR AS MARKED BY DMW LANDSCAPE ARCHITECT IN THE FIELD. THE LANDSCAPE CONTRACTOR SHALL MARK MAIN PLANT LOCATIONS FOR THE REVIEW, APPROVAL AND/OR ADJUSTMENT BY DMW LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

24. AFTER INSTALLATION, THE CONTRACTOR SHALL STAKE ALL TREES AS INDICATED ON THE DOCUMENTS.

25. ALL SHRUBS AND GROUND COVER AREAS SHALL BE PLANTED IN CONTINUOUS PREPARED BED AND TOP DRESSED WITH 2.5-INCH SHREDDED HARDWOOD MULCH. MULCH SHALL HAVE BEEN SHREDDED WITHIN THE LAST SIX MONTHS.

26. ALL PLANTING BEDS ADJACENT TO LAWN, SOD, OR SEEDED AREAS SHALL BE SPADE EDGED.

27. ALL SOD SHALL BE OBTAINED FROM AREAS WITH GROWING CONDITIONS SIMILAR TO THOSE OF AREAS TO BE COVERED (IN MARYLAND MARYLAND CERTIFIED TALL FESCUE). AREAS TO BE SODDED SHALL BE RAKED OF STONES AND DEBRIS. ALL DAMAGED SOD WILL BE REJECTED. ALL SOD MUST BE PLACED WITH STAGGERED JOINTS, TIGHTLY BUTTED, WITH NO INEQUALITIES IN GRADE. WHERE APPLICABLE, PLACE ALL SOD IN ROWS AT RIGHT ANGLES TO SLOPES.

MAINTENANCE & INSPECTION

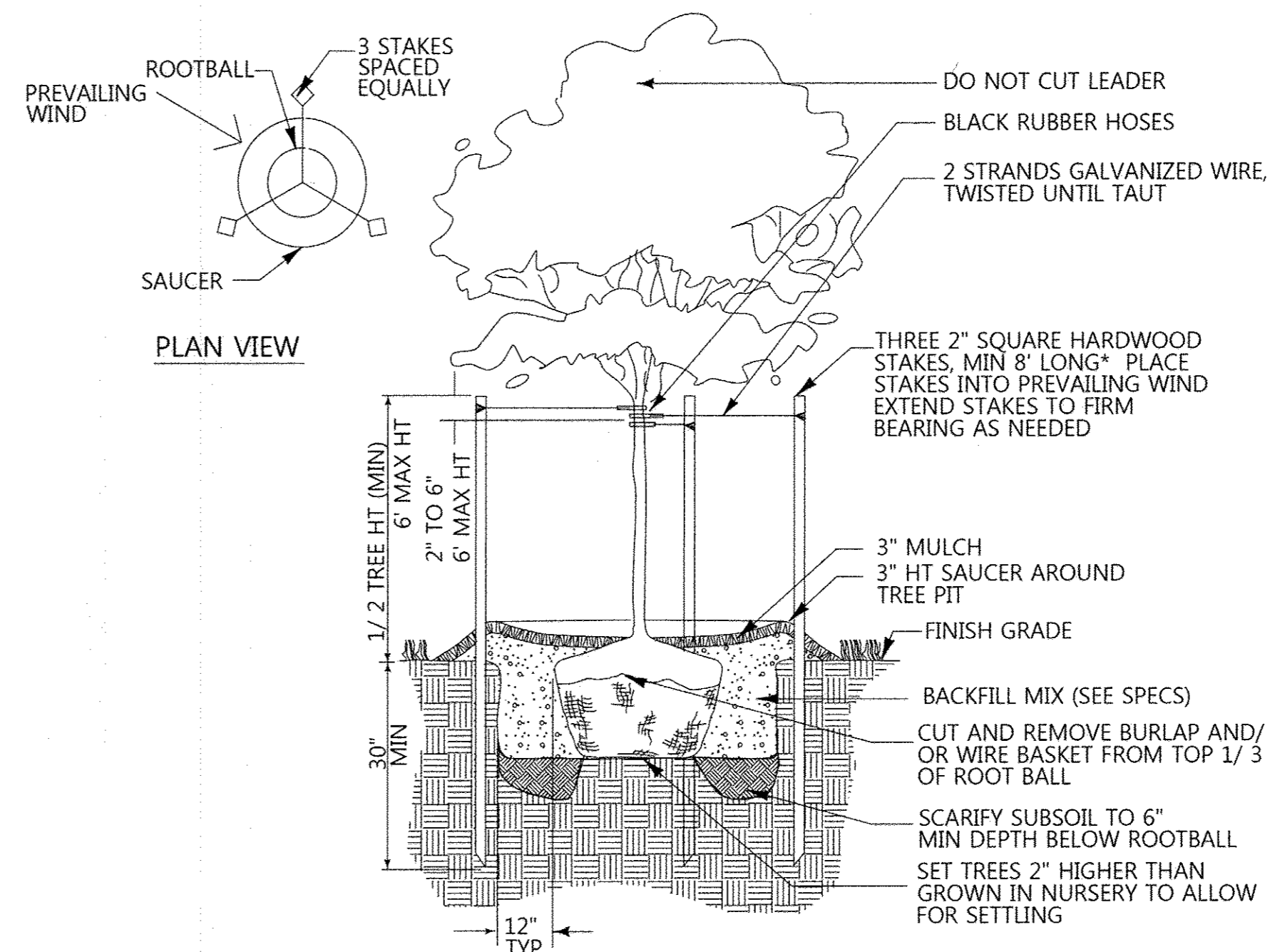
28. MAINTENANCE SHALL BEGIN AFTER EACH PLANT HAS BEEN INSTALLED AND SHALL CONTINUE UNTIL 90 DAYS AFTER INITIAL ACCEPTANCE. MAINTENANCE SHALL INCLUDE MOWING OF TURF, WATERING, PRUNING, WEEDING, FERTILIZING, MULCHING, REPLACEMENT OF SICK OR DEAD PLANTS, AND ANY OTHER CARE NECESSARY FOR THE PROPER GROWTH OF THE PLANT MATERIAL. THE CONTRACTOR MUST BE ABLE TO PROVIDE CONTINUED MAINTENANCE BEYOND THIS 90-DAY PERIOD IF REQUESTED BY THE OWNER.

29. UPON COMPLETION OF LANDSCAPING, AN ACCEPTANCE OF WORK INSPECTION SHALL BE HELD. CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT OR OWNER FOR SCHEDULING THE INSPECTION AT LEAST SEVEN (7) DAYS PRIOR TO THE ANTICIPATED INSPECTION DATE. IF ACCEPTABLE, THE ONE-YEAR WARRANTY PERIOD SHALL BEGIN.

30. THE LIFE AND ROBUST HEALTH OF ALL TREES, SHRUBS AND GROUNDCOVERS SHALL BE GUARANTEED FOR 12 MONTHS FROM THE DATE OF INITIAL ACCEPTANCE. SUBSEQUENT REPLACEMENT PLANTS, IF ANY ARE NEEDED, SHALL BE WARRANTED FOR AN ADDITIONAL 90 DAYS.

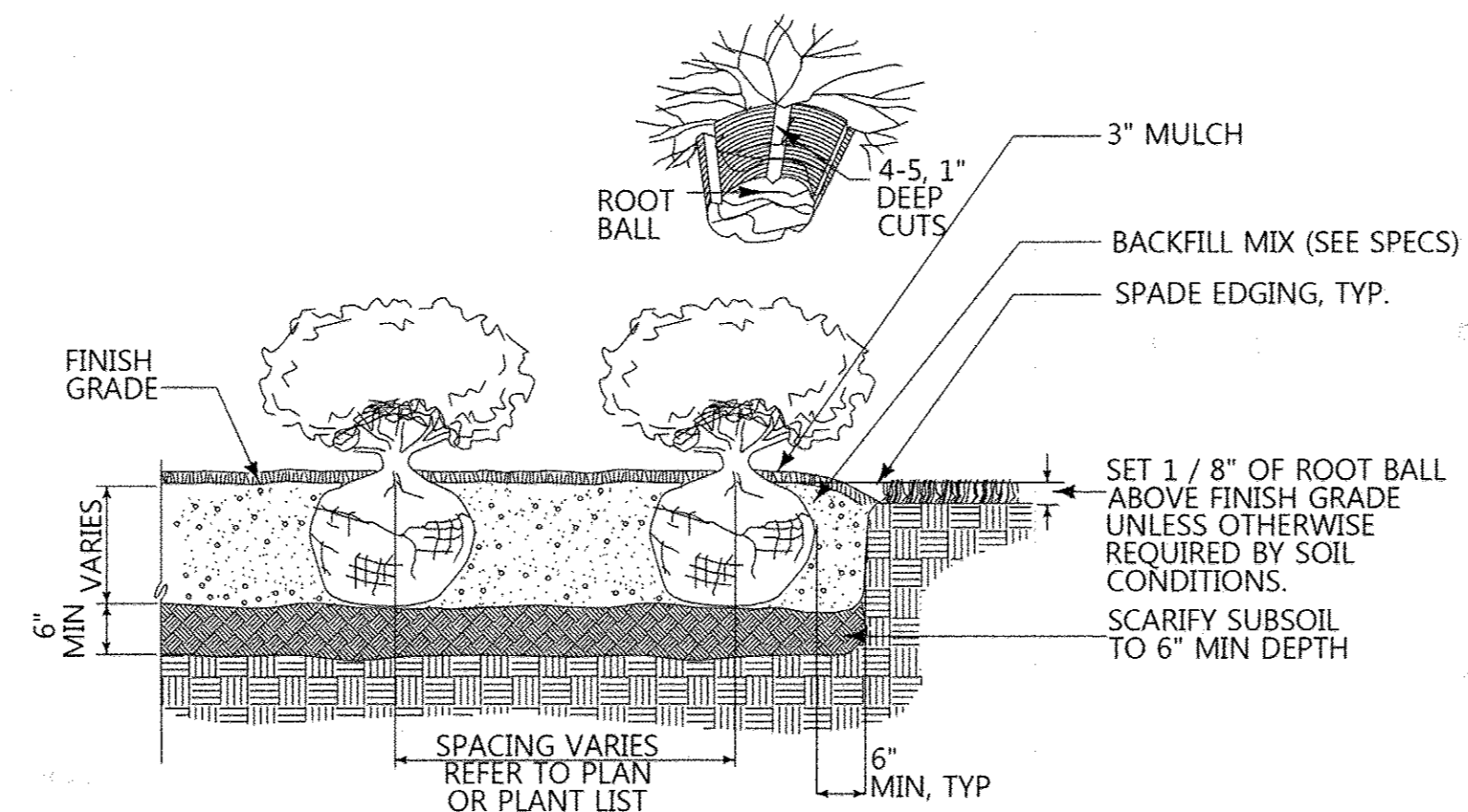
MINIMUM LANDSCAPE MAINTENANCE REQUIREMENTS

1. LAWN AREAS SHALL BE MOWED TO A HEIGHT OF 2 TO 3 INCHES AND NOT ALLOWED TO REACH A HEIGHT OF 4 INCHES BEFORE MOWING.
2. ALL CURBS AND WALKS SHALL BE EDGED AS NEEDED.
3. ALL LAWN AREAS ADJACENT TO BUILDING FACES OR STRUCTURE SHALL BE TRIMMED.
4. A SLOW RELEASE NITROGEN BALANCED FERTILIZER WITH A 2-3-1 RATIO SHALL BE APPLIED AT A RATE OF 2 POUNDS OF NITROGEN PER 1000 SQUARE FEET IN SEPTEMBER, OCTOBER, AND FEBRUARY.
5. LIME SHALL BE APPLIED AT THE RATE DETERMINED BY A SOILS REPORT.
6. IT IS RECOMMENDED THAT LAWN AREAS BE TREATED IN MID-MARCH TO EARLY APRIL WITH PRE-EMERGENT HERBICIDE (BETASAN) OR EQUAL APPLIED AT THE MANUFACTURER'S RECOMMENDED RATE.
7. A POST-EMERGENT HERBICIDE (TRIMEC) OR EQUAL IS RECOMMENDED TO BE SPRAYED ON LAWN AREAS IN THE LATE SPRING OR THE EARLY FALL. FOLLOW MANUFACTURER'S RATES AND RECOMMENDATIONS.
8. INSECTICIDES AND FUNGICIDES ARE RECOMMENDED FOR INSECT AND DISEASE CONTROL.
9. RESEED BARE AREAS OF LAWN AS NECESSARY. YEARLY AERATION IS RECOMMENDED.
10. ALL TRASH, LITTER, AND DEBRIS SHALL BE REMOVED FROM LAWN AREAS, PARKING LOTS, AND SHRUB BEDS AS NEEDED.
11. MULCH ALL SHRUB AND GROUNDCOVER BEDS YEARLY WITH THREE INCHES OF SHREDDED HARDWOOD BARK.
12. PERMIT SHRUBS AND TREES TO GROW AND ENLARGE TO THEIR DESIGN SIZE. CONSULT PROJECT LANDSCAPE ARCHITECT FOR DETAILS.
13. PRUNE TREES IN ACCORDANCE WITH LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS.



LESS THAN 3" CAL. TREE PLANTING

NTS

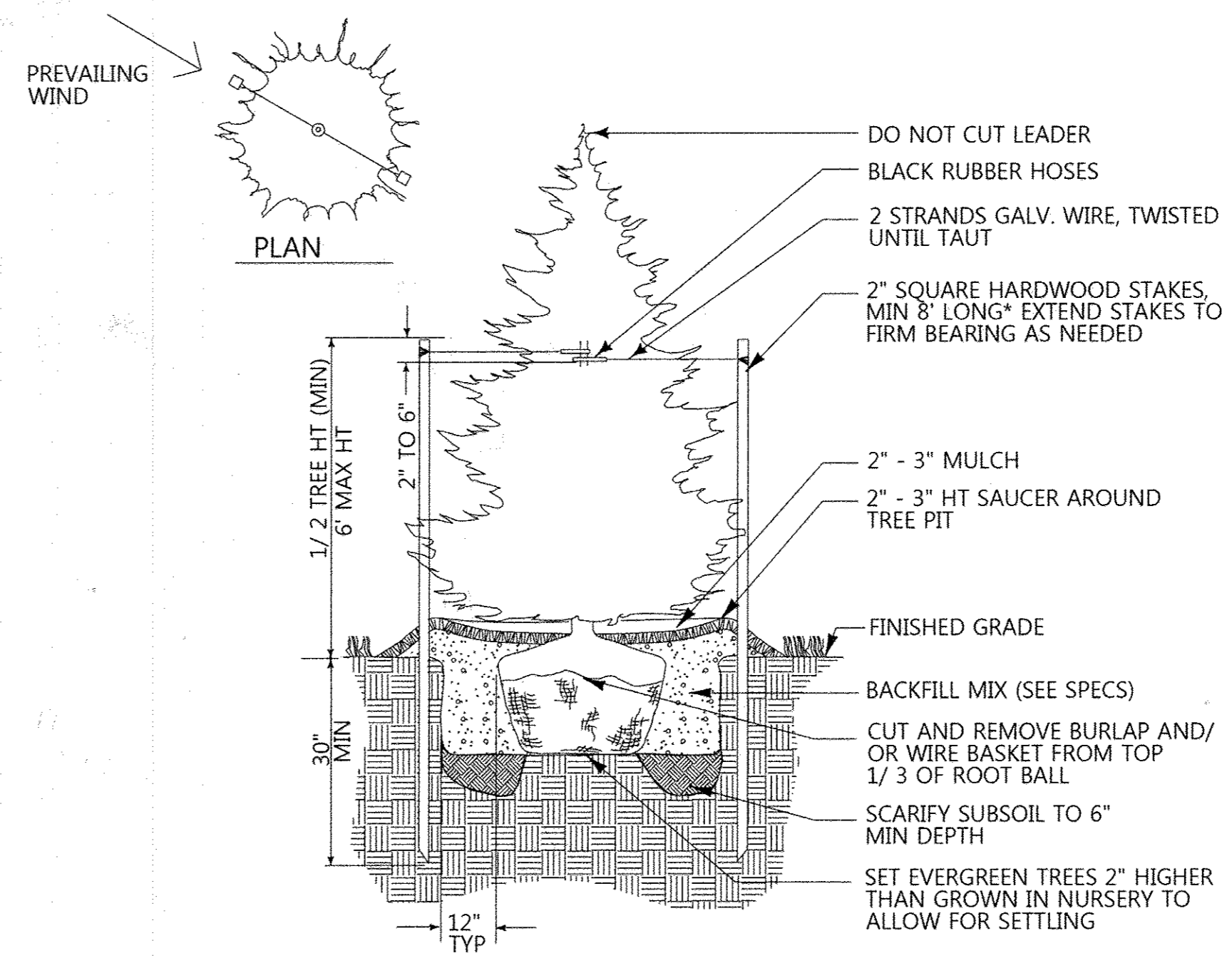


TYP. SHRUB PLANTING

NTS

NOTES:

1. FOR CONTAINER SHRUBS. COMPLETELY REMOVE ALL NON-BIODEGRADABLE CONTAINERS AND SCARIFY ROOTBALL BY USING A SHARP BLADE AND MAKING 4 TO 5 ONE INCH CUTS THE LENGTH OF THE ROOTBALL.
2. FOR B&B SHRUBS, CUT AND REMOVE BURLAP FROM TOP 1/3 OF ROOT BALL



TYP. EVERGREEN TREE PLANTING

NTS

DEVELOPER'S / BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL.

I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

NAME: *[Signature]* DATE: 7/26/17

"THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL."

PROVIDE THE FOLLOWING NOTE ON THE LANDSCAPE PLAN:

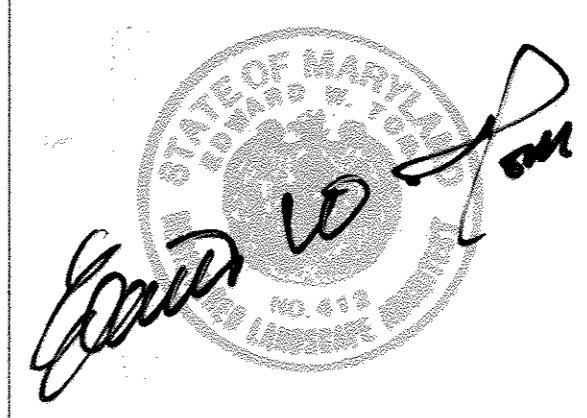
THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE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

Landscape Plans

2 of 2

4.11.17

Date



EDWARD W. TOM

Landscape Architect

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

HOWARD SOIL CONSERVATION DISTRICT DATE: 7-26-17

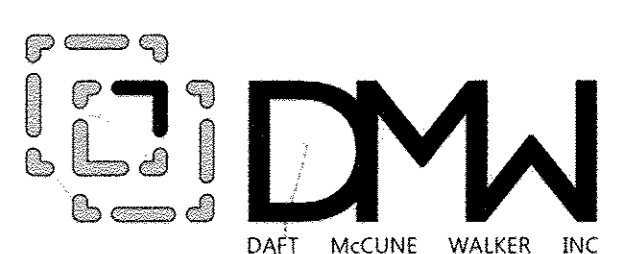
Chief, Development Engineering Division DATE: 7-24-17

Chief, Division of Land Development DATE: 7-26-17

Director DATE: 7-26-17

Date	No.	Revision Description
		Whiskey Bottom Road Water Pumping Station Replacement Capital Project No: W8320

OWNER/DEVELOPER:
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045
(410) 313-4400



501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286
P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM

SUBDIVISION NAME	SECTION/AREA	N/A	LOT/PARCEL #
REVITZ PROPERTY	TAX ZONE/MAP	47	6
PLAT OR LOT	BLOCK	15788	606907
WATER CODE	SEWER CODE	C-02	7390000

ADDRESS CHART

LOT NUMBER STREET ADDRESS

TITLE

SCHEMATIC LANDSCAPE PLAN

Des. By	GDT	SCALE 1"=20'	Proj. No.	13037
Drn. By	SRB	Date	3/16/17	12 of 12
Chk. By	ERS	Approved		