

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY STANDARDS AND SPECIFICATIONS. ALL WORK AND MATERIALS SHALL COMPLY WITH M.S.D.P.A. STANDARDS.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS:
MISS UTILITY: 1-800-257-7777
BUREAU OF UTILITIES: 1-800-743-0033
AT&T: 1-800-252-1133
B.G.M.E. (CONSTRUCTION SERVICES): 410-313-4900
B.G.M.E. (EMERGENCY): 410-685-0123
STATE HIGHWAY ADMINISTRATION: 410-353-5533
COASTAL PIPELINE CO.: 410-795-1390
- SITE ANALYSIS:**
TOTAL PROJECT DEVELOPMENT AREA: 5.18 AC.
EXISTING BUILDING COVERAGE: 26,929 SF (0.62 AC. OR 2.02% OF GROSS AREA)
PROPOSED BUILDING COVERAGE: 26,929 SF (0.62 AC. OR 2.02% OF GROSS AREA)
TOTAL BUILDING COVERAGE: 53,858 SF (1.24 AC. OR 4.04% OF GROSS AREA)
BUILDING AREA: 23,143 SF (THREE STORY BUILDING)
LOWER LEVEL: 23,143 SF
MAIN LEVEL: 20,442 SF
UPPER LEVEL: 2,663 SF
PAVED PARKING LOT AREA ON SITE: 203,143 SF (4.66 AC. OR 16.61% OF GROSS AREA)
AREA OF LANDSCAPE: 24,000 SF (0.56 AC. OR 2.00% OF GROSS AREA)
LIMIT OF DISTURBED AREA: 5.18 AC.
CITY: 12.000 BY FILE #4873.0
- PROJECT BACKGROUND:**
LOCATION: TAX MAP 17, BLOCK 23 & TAX MAP 24, BLOCK 5; PARCEL 1168
ZONING: R-SI
SUBDIVISION: ELLICOTT CITY
SECTION: 1168
SITE AREA: 28,08 AC.
REF. REFERENCES: L.1127, F.230, L.1127/F.0227, ECP-12-011
6. 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 START OF WORK.
7. ANY DAMAGE TO PUBLIC RIGHT EXISTING UTILITIES WILL BE COMPLETED AT THE CONTRACTOR'S EXPENSE.
8. EXISTING UTILITIES LOCATED FROM ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND AND SEWER EXTENSION PLANS AND AVAILABLE RECORD DRAWINGS OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTOR'S INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED BY TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
9. **TRAFFIC CONTROL DEVICES:**
A. THE 18" (TOP) SIGNS AND THE STREET NAME SIGN (SNS) ASSEMBLIES FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
B. THE TRAFFIC CONTROL DEVICES LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-3123-5752) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.
C. ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUMUTCD).
D. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT OF WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED IN TO A 2-1/2" GALVANIZED STEEL, PERFORATED SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
10. ESTIMATES OF EARTHWORK QUANTITIES ARE PROVIDED SOLELY FOR THE PURPOSE OF CALCULATING FEES.
11. SOIL COMPACTION SPECIFICATIONS, REQUIREMENTS, METHODS AND MATERIALS ARE TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER, GEOTECHNICAL ENGINEER TO CONFIRM ACCEPTABILITY OF PROPOSED PAVING SECTION, BASED ON SOIL TEST PRIOR TO CONSTRUCTION.
12. THE COORDINATES SHOWN HEREON ARE BASED UPON HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLANE SYSTEM. HOWARD COUNTY MONUMENTS 248A AND 248A WERE USED FOR THIS PROJECT.
13. THE PROPERTY LINES SHOWN HEREON IS BASED ON A BOUNDARY SURVEY PERFORMED BY ROBERT H. VOGEL ENGINEERING DATE: MAY 9, 2011.
14. THE EXISTING TOPOGRAPHY SHOWN HEREON IS FROM A FIELD RUN TOPOGRAPHIC SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC.; PERFORMED ON MARCH 02, 2011 AND AUGUST 25, 2011.
15. WETLANDS AND STREAMS SHOWN ON SITE ARE BASED ON A FIELD INVESTIGATION, PERFORMED ON 08/13/2011, BY ECO-SCIENCE PROFESSIONALS, INC. WETLAND REPORT DATED 09/13/2011.
16. THERE ARE NO 100 YEAR FLOODPLAIN LOCATED ON SITE.
17. GEOTECHNICAL REPORT AND INFILTRATION STUDY PREPARED BY EGS-MIDATLANTIC, LLC; DATED 01/04/12.
18. THE GEOTECHNICAL ENGINEER TO CONFIRM PAVING SECTION PRIOR TO CONSTRUCTION. ALL PAVING TO BE MINIMUM P-2 PAVING, UNLESS OTHERWISE NOTED.
19. ALL CURB AND GUTTER TO BE HOWARD COUNTY STANDARD DETAIL 3.01 UNLESS OTHERWISE NOTED.
20. WHERE DRAINAGE FLOWS AWAY FROM CURB, CONTRACTOR TO REVERSE THE GUTTER PAN.
21. ALL ELEVATIONS ARE TO FLOWLINE/BOTTOM OF CURB UNLESS OTHERWISE NOTED.
22. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
23. CONTRACTOR RESPONSIBLE FOR CONSTRUCTING ALL HANDICAP RAMPS AND HANDICAP ACCESS IN ACCORDANCE WITH CURRENT ADA REQUIREMENTS.
24. PUBLIC WATER AVAILABLE THROUGH CONTRACT NO. 11-W-14-1399-D, 14-4743-D
25. PUBLIC SEWER AVAILABLE THROUGH CONTRACT NO. 02-S-14-1399-D, 14-4743-D
26. PAVEMENT TYPE PREPARED BY THE TRAFFIC GROUP DATED 02/29/12; APPROVED 04/11/2012.
27. THE SUBJECT PROPERTY IS ZONED R-SI PER THE 02/02/2004 COMPREHENSIVE ZONING PLAN AND THE COMP LITE ZONING REGULATION AMENDMENTS DATED 07/28/06.
28. A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
29. ALL REINFORCED CONCRETE FOR STORM DRAIN STRUCTURES SHALL HAVE A MINIMUM OF 28 DAYS STRENGTH OF 3500 P.S.I.
30. ALL STORMWATER PIPE BEDDING IS TO BE CLASS "C", AS REQUIRED BY MD-180.
31. ALL BUILDINGS TO HAVE ROOF LEADERS WHICH EMPTY INTO STORM DRAIN SYSTEM.
32. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE, AND THE LANDSCAPE MANUAL.
33. ANY EXISTING STREET TREES DAMAGED OR DESTROYED DURING CONSTRUCTION WILL BE REPLACED BY THE CONTRACTOR.
34. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$16,800.00 FOR THE REQUIRED 39 SHADE TREES, 13 EVERGREEN TREES AND 108 SHRUBS.
35. FOREST STAND DELINEATION PLAN HAS BEEN PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. DATED 11/21/2011.
36. THE FOREST CONSERVATION OBLIGATIONS WILL BE FULFILLED BY THE RETENTION OF 6.06 ACRES OF FOREST, WITHIN 4 FOREST CONSERVATION WETLANDS AND STREAMS. THE CONTRACTOR'S SURETY FOR RETENTION NO LONGER APPLIES, THEREFORE, THERE ARE NO FINANCIAL SURETIES REQUIRED FOR THIS PROJECT.
37. THERE ARE NO SPECIMEN OR CHAMPION TREES WITHIN THE LOT.
38. THIS PROJECT IS SUBJECT TO COMPLIANCE WITH THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. DEVELOPMENT OR CONSTRUCTION ON THIS PROPERTY MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION OR BUILDING/GRADING PERMIT APPLICATIONS.
39. EXISTING ST. JOHNS LANE IS CLASSIFIED AS A MINOR COLLECTOR.
40. THERE ARE NO BURIAL GROUNDS, CEMETERIES, OR HISTORIC STRUCTURES LOCATED ON THIS PROPERTY.
41. THE PROPOSED BUILDING ADDITION AND THE EXISTING BUILDING WILL BE BROUGHT TO CODE AND THE ENTIRE BUILDING WILL HAVE A NFPA 13 SPRINKLER SYSTEM. THIS WILL BE PROVIDED WITH THE ARCHITECTURAL DRAWINGS AT THE BUILDING PERMIT STAGE.
42. A KNOX BOX IS REQUIRED TO BE PLACED ON THE FRONT OF THE BUILDING. IT SHALL BE PLACED TO THE RIGHT OF THE MAIN ENTRANCE AT A RANGE OF 4'-5" IN HEIGHT AND NO MORE THAN 6' LATERALLY FROM THE DOOR. ITS LOCATION IS SHOWN ON THESE PLANS. THE BOX SHALL BE ELECTRONICALLY SUPERVISED TO NOTIFY THE OWNER THAT IT IS BEING ACCESSSED (INTEGRATED WITH THE FIRE ALARM SYSTEM).
43. LANDSCAPING NOT PERMITTED WITHIN 7'-1/2' OF EACH SIDE OF THE FIRE DEPARTMENT CONNECTION. PROVIDE A CLEAR UNOBSTRUCTED ACCESS PATH TO THE FIRE DEPARTMENT CONNECTION. NFPA-1.13.1.4
44. FIRE LANES SHOULD BE PROVIDED IN THIS SITE TO ALLOW EMERGENCY VEHICLE ACCESS. EITHER FIRE LANE SIGNAGE SHOULD BE INSTALLED, OR THE PAVING SHOULD BE PAINTED IN RED AND CIRCLED TO IDENTIFY THE ROAD AS A FIRE LANE. FIRE LANES SHALL BE DESIGNATED IN THE DEVELOPMENT ONCE COMPLETED.
45. ALL LANDSCAPING WITHIN 7'-1/2' OF EACH SIDE OF THE FIRE DEPARTMENT CONNECTION SHOULD BE REMOVED. A CLEAR UNOBSTRUCTED ACCESS PATH SHOULD BE PROVIDED TO THE FIRE DEPARTMENT CONNECTION. NFPA-1.13.1.1.
46. SIGNAGE SHALL BE PROVIDED ON THE BUILDING IDENTIFYING THE BUILDING ADDRESS, AND EACH SUITE SEPARATED BY LETTER.
47. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHING THE REQUIRED WETLANDS, STREAM(S) OR THEIR BUFFERS, FOREST CONSERVATION AREAS AND 100 YEAR FLOODPLAIN.
48. ALL EXTERIOR LIGHTING TO COMPLY WITH THE REQUIREMENTS FOUND IN ZONING SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS (DETAILS ON SHEET 5).
49. TRASH COLLECTION AND RECYCLING COLLECTION TO BE PRIVATE.
50. STORMWATER MANAGEMENT FOR THE EXISTING DEVELOPMENT IS PROVIDED BY A SWM POND, UNDER SDP-85-143. STORMWATER MANAGEMENT FOR THE PROPOSED DEVELOPMENT IS BEING PROVIDED BY A SYSTEM OF MICRO-BIORETENTION FACILITIES AND POROUS PAVING. THE RESULTS OF THE ENVIRONMENTAL SITE DESIGN WILL REFLECT "WOODS IN GOOD CONDITION", THE SWM FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED.
51. THE PROPOSED DISTURBANCE TO THE STREAM BUFFER IS CONSIDERED A NECESSARY DISTURBANCE IN ACCORDANCE WITH SECTION 116.116(c). CURRENTLY THIS AREA CONTAINS PAVED DRIVEWAY AND PARKING AS APPROVED BY THE PREVIOUS SITE DEVELOPMENT PLAN (SDP-85-143). THIS SITE DEVELOPMENT PLAN PROPOSES THE REMOVAL OF THE EXISTING PAVING AND THE CONSTRUCTION OF A MICRO-BIORETENTION FACILITY AND A SIDEWALK CONNECTION TO THE EXISTING PEDESTRIAN BRIDGE OVER THE STREAM. DISTURBANCE TO THE BUFFER IS REQUIRED TO REMOVE THE PAVING. THE PAVING IS BEING REPLACED WITH A MICRO-BIORETENTION FACILITY WHICH WILL TREAT DEVELOPED RUNOFF AND PROVIDE WATER QUALITY. THIS PROPOSED DISTURBANCE (REMOVAL OF PAVING) RESULTS IN A SIGNIFICANT IMPROVEMENT IN REGARDS TO THE ENVIRONMENT. THE SIDEWALK CONNECTION AND THE MICRO-BIORETENTION FACILITY ARE DESIGNED TO MINIMIZE DISTURBANCE TO THE STREAM BUFFER. SEDIMENT CONTROL WILL BE PROVIDED FOR ALL CONSTRUCTION ACTIVITY.
52. REMOVAL OF TRAFFIC ISLAND WITHIN ST. JOHNS LANE (SEE REVISION #6) SHALL BE REMOVED AND PATCHED IN ACCORDANCE WITH HOWARD COUNTY DETAIL, C-11.01.

BETHEL KOREAN PRESBYTERIAN CHURCH RELIGIOUS CENTER

L.01127/F.0227 SITE DEVELOPMENT PLAN

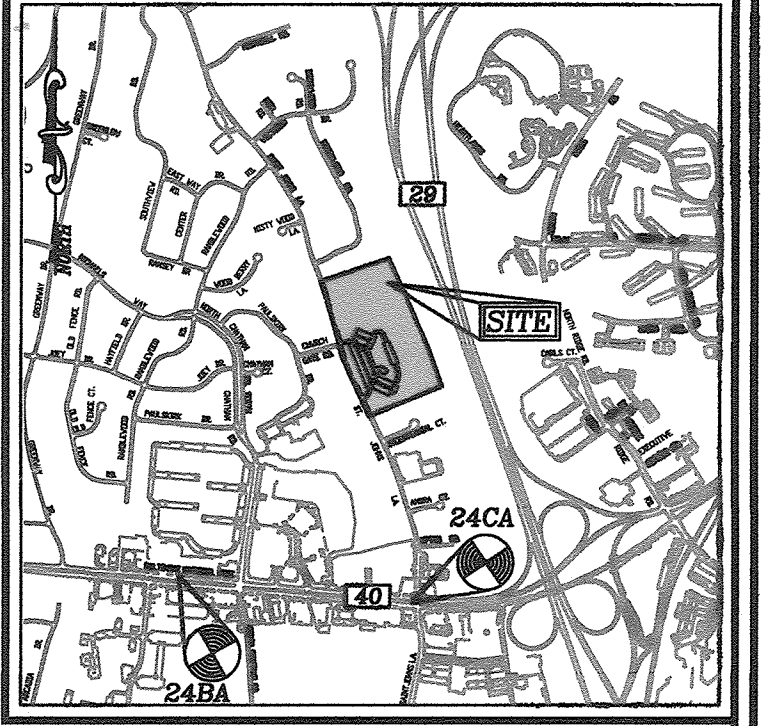
LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- DIRECTION OF FLOW
- EXISTING TREES TO REMAIN
- LIGHT POLES
- SOIL TYPE
- CONCRETE

BENCHMARKS

HOWARD COUNTY BENCHMARK 248A
N 586,783.242 E 1,359,211.656 ELEV.: 385.660'

HOWARD COUNTY BENCHMARK 24CA
N 586,506.177 E 1,361,634.289 ELEV.: 398.314'



ADDRESS CHART

LOT/PARCEL #	STREET ADDRESS
1168	3165 SAINT JOHNS LANE

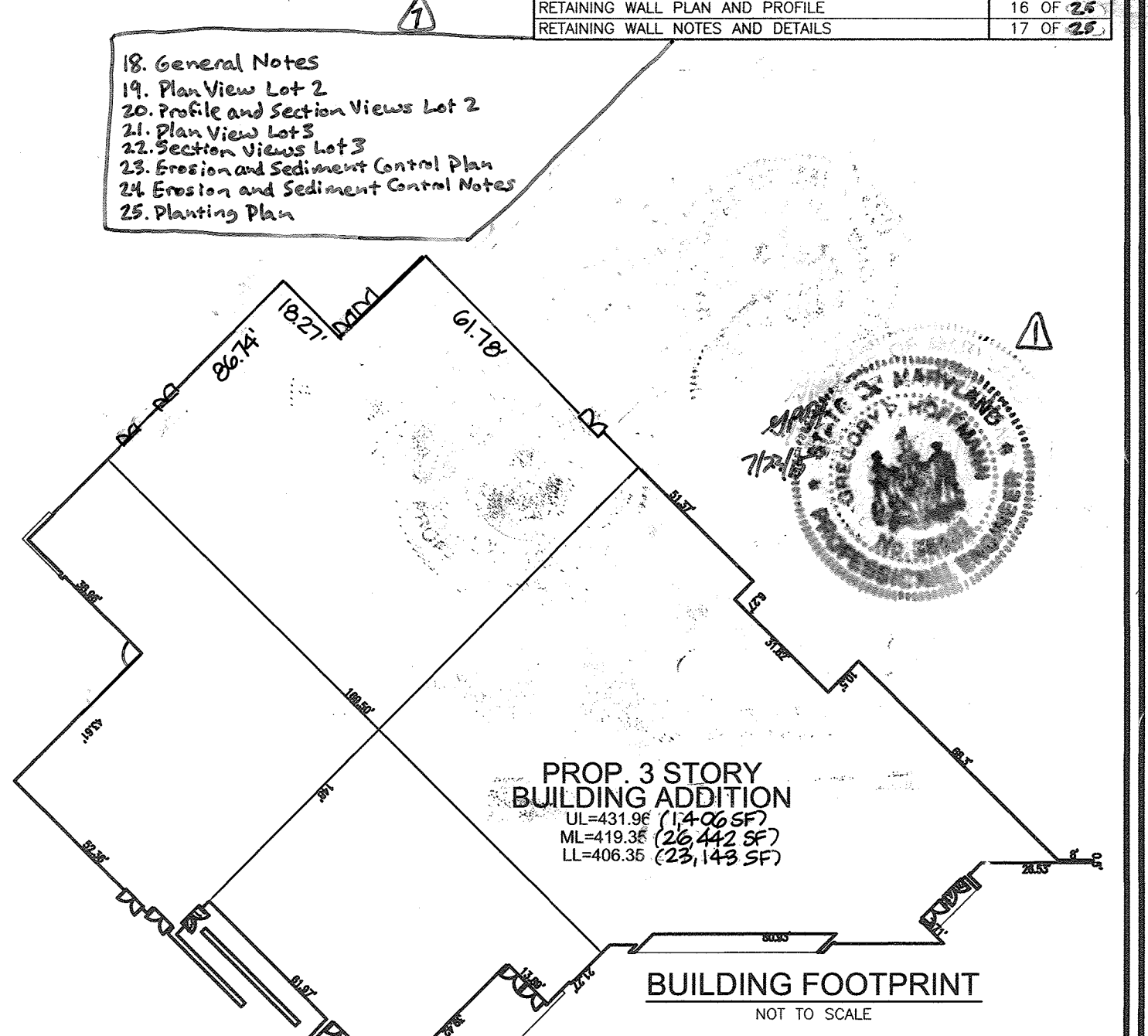
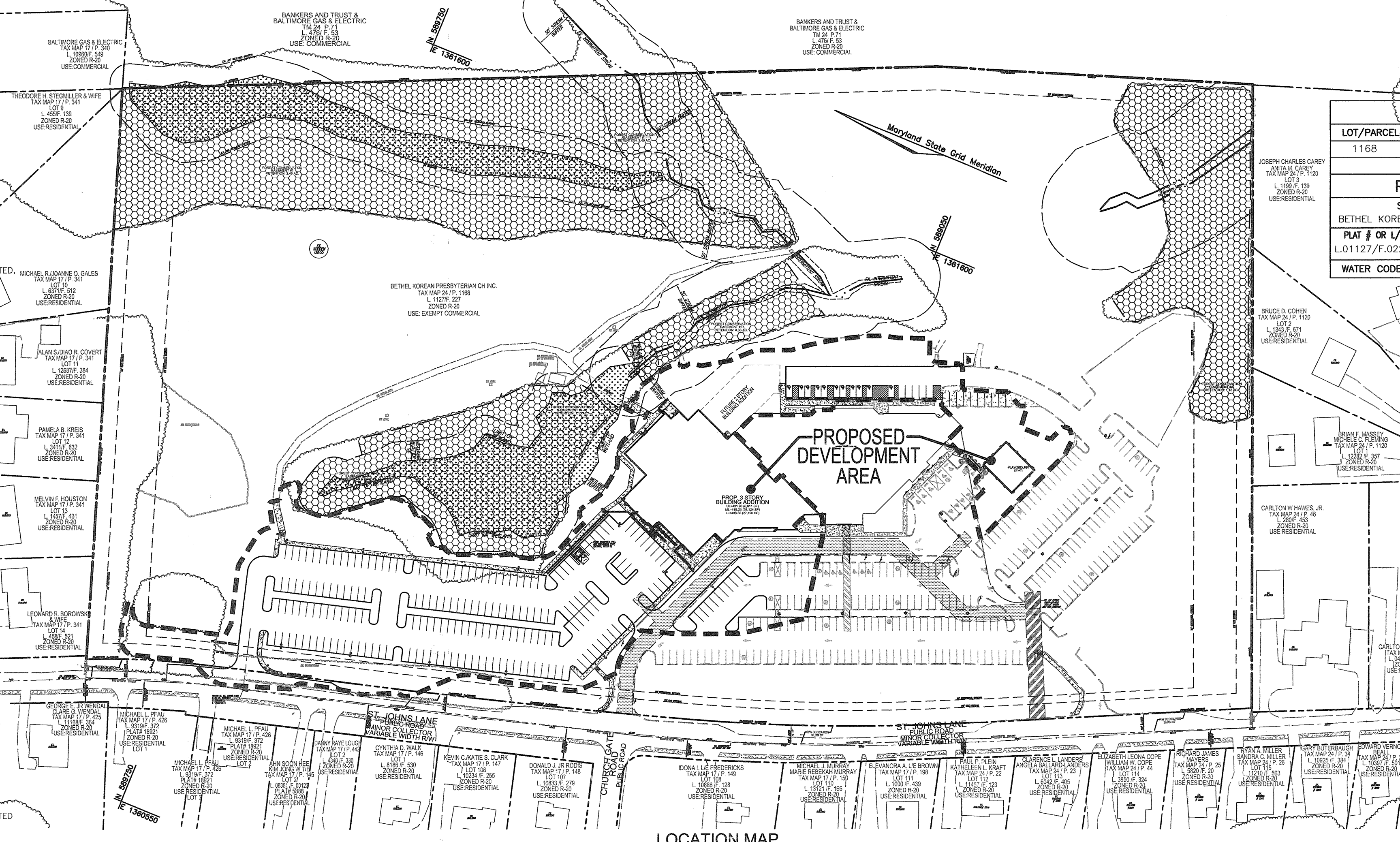
PERMIT INFORMATION CHART

PLAT # OR L/F	BLOCK NO.	ZONE	TAX MAP	ELECT. DIST.	CENSUS TR.
L.01127/F.0227	5 & 23	R-SI	17 & 24	2ND	8022.00

WATER CODE: E01 SEWER CODE: 1403600

SHEET INDEX

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OWNER
BETHEL KOREAN PRESBYTERIAN CHURCH, INC.
3165 SAINT JOHNS LANE
ELLICOTT CITY, MARYLAND 21042
C/O TED JEE
PHONE: 410-461-1235

NO.	REVISION	DATE
6	REVISED TO ELIMINATE TRAFFIC ISLAND WITHIN ST. JOHNS LANE	5-1-19
5	REVISE TO RELOCATE FIRE DEPARTMENT CONNECTION	4/5/19
4	REVISE PLAN TO RELOCATE MICROBIORETENTION	2/20/18
3	REVISE PLAN TO GRADE BACK OF SITE WITH EXCESS ON-SITE FILL DIRT	07/11/17
2	REVISION TO BUILDING AND SIDEWALK; REMOVE FUTURE BUILDING	3/2/20
1	ADDED BIORETENTIONS, SHEETS 18-25	3/2/20

SITE DEVELOPMENT PLAN

COVER SHEET

BETHEL KOREAN PRESBYTERIAN CHURCH
RELIGIOUS CENTER
L.01127/F.0227

TAX MAP 17 GRID 23
TAX MAP 24 GRID 5
2ND ELECTION DISTRICT

ZONING R-SI
PARCEL 1168
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLICOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER AND LICENSED LAND SURVEYOR IN THE STATE OF MARYLAND. MY LICENSE NUMBER IS 16193 AND MY EXPIRATION DATE IS 09-27-2014.

DESIGN BY: RHY/DZ
DRAWN BY: DZ/KG/JR
CHECKED BY: RHY
DATE: DEC. 2012
SCALE: AS SHOWN
W.O. NO.: 04-100

1 SHEET OF 25

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

1/24/13
DATE

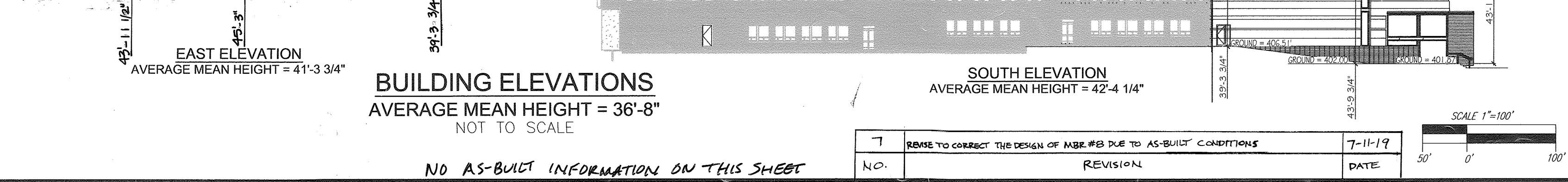
2/09/13
DATE

2/6/13
DATE

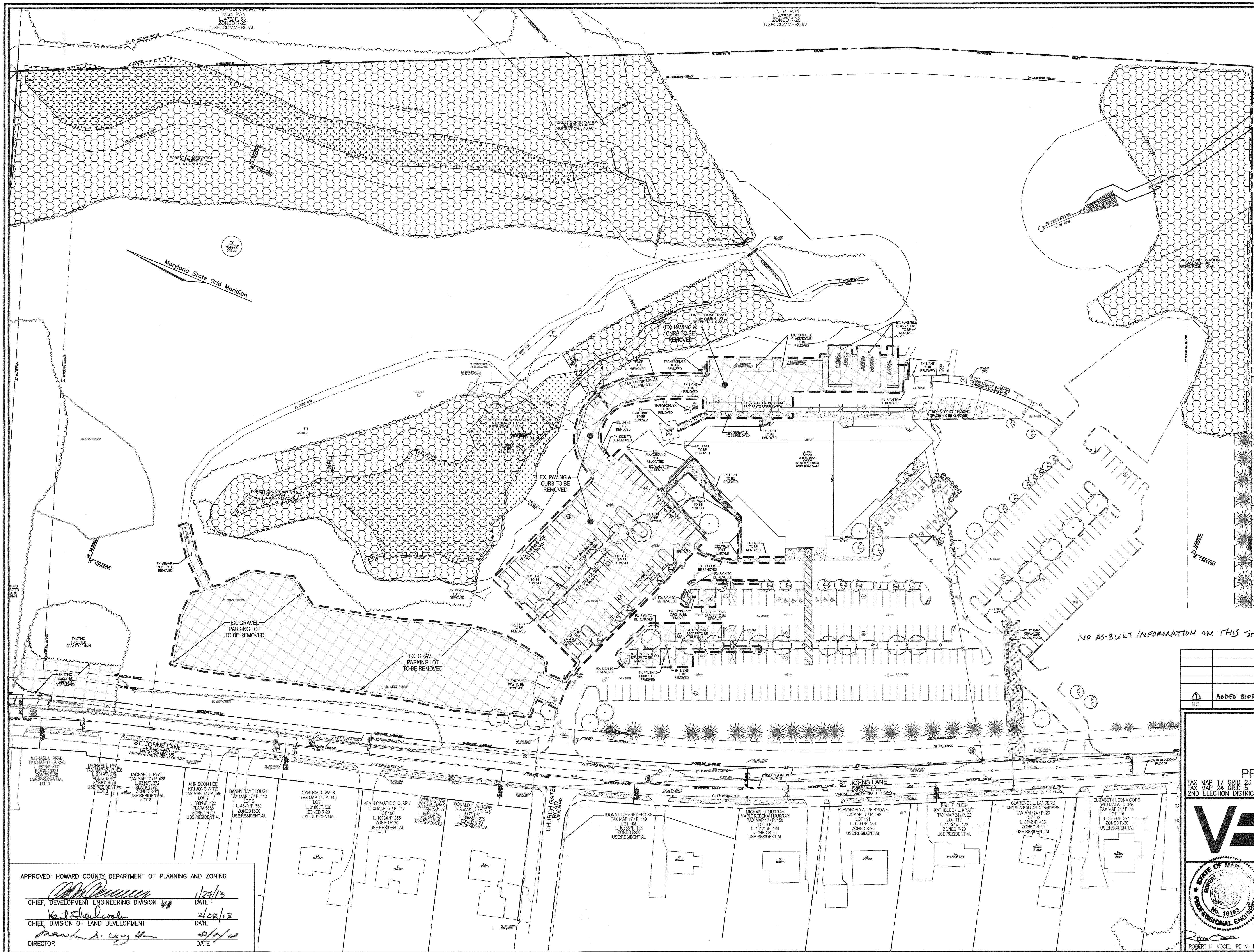
1/24/13
DATE

PARKING TABULATION

EXISTING	REQUIRED
EXISTING SANCTUARY 1200' PER 60 SEAT/2LF = 615 SEATS	205 SPACES
615 SEATS @ 1 SPACE/3 SEATS	
EXISTING CHAPEL 1,140 SF @ 10 SPACES/1000 SF	12 SPACES
NEW CHAPEL 400 SEATS @ 1 SPACE/3 SEATS	160 SPACES
TOTAL SPACES REQUIRED:	377 SPACES
EXISTING SPACES TO REMAIN	242 SPACES
PROPOSED SPACES (TO MEET REQUIREMENT)	135 SPACES
PROPOSED SPACES (ABOVE REQUIREMENT)	96 SPACES
TOTAL SPACES PROVIDED:	473 SPACES



NO.	REVISION	DATE
7	REVISE TO CORRECT THE DESIGN OF ABR.#6B DUE TO AS-BUILT CONDITIONS	7-11-19



- LEGEND:**
- EXISTING CURB AND GUTTER
 - EXISTING UTILITY POLE
 - EXISTING LIGHT POLE
 - EXISTING MAILBOX
 - EXISTING SIGN
 - EXISTING SANITARY MANHOLE
 - EXISTING SANITARY LINE
 - EXISTING CLEANOUT
 - EXISTING FIRE HYDRANT
 - EXISTING WATER LINE
 - EXISTING SIDEWALK
 - EXISTING WETLAND
 - EXISTING TREES (FIELD LOCATED)
 - EXISTING TREE LINE (FIELD LOCATED)
 - EXISTING VEGETATION (APPROXIMATE LOCATION)
 - EXISTING FENCE
 - PROPERTY LINE
 - RIGHT-OF-WAY LINE
 - AREA TO BE DEMOLISHED

PROFESSIONAL ENGINEER
 STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 NO. 16193
 P.E. # 16193
 1/2/20
 DATE
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

SCALE 1"=50'
 25' 0' 50'

OWNER
 BETHEL KOREAN PRESBYTERIAN CHURCH, INC.
 3165 SAINT JOHN'S LANE
 ELLICOTT CITY, MARYLAND 21042
 PHONE: 410-461-1235

NO AS-BUILT INFORMATION ON THIS SHEET

NO.	REVISION	DATE
1	ADDED BIORETENTIONS, SHEETS 18-22	3/2/2015

**SITE DEVELOPMENT PLAN
 DEMOLITION PLAN**

BETHEL KOREAN PRESBYTERIAN CHURCH
 RELIGIOUS CENTER
 LOT 117/F.0227
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET ELLICOTT CITY, MD 21043
 TEL: 410.461.7666 FAX: 410.461.8961

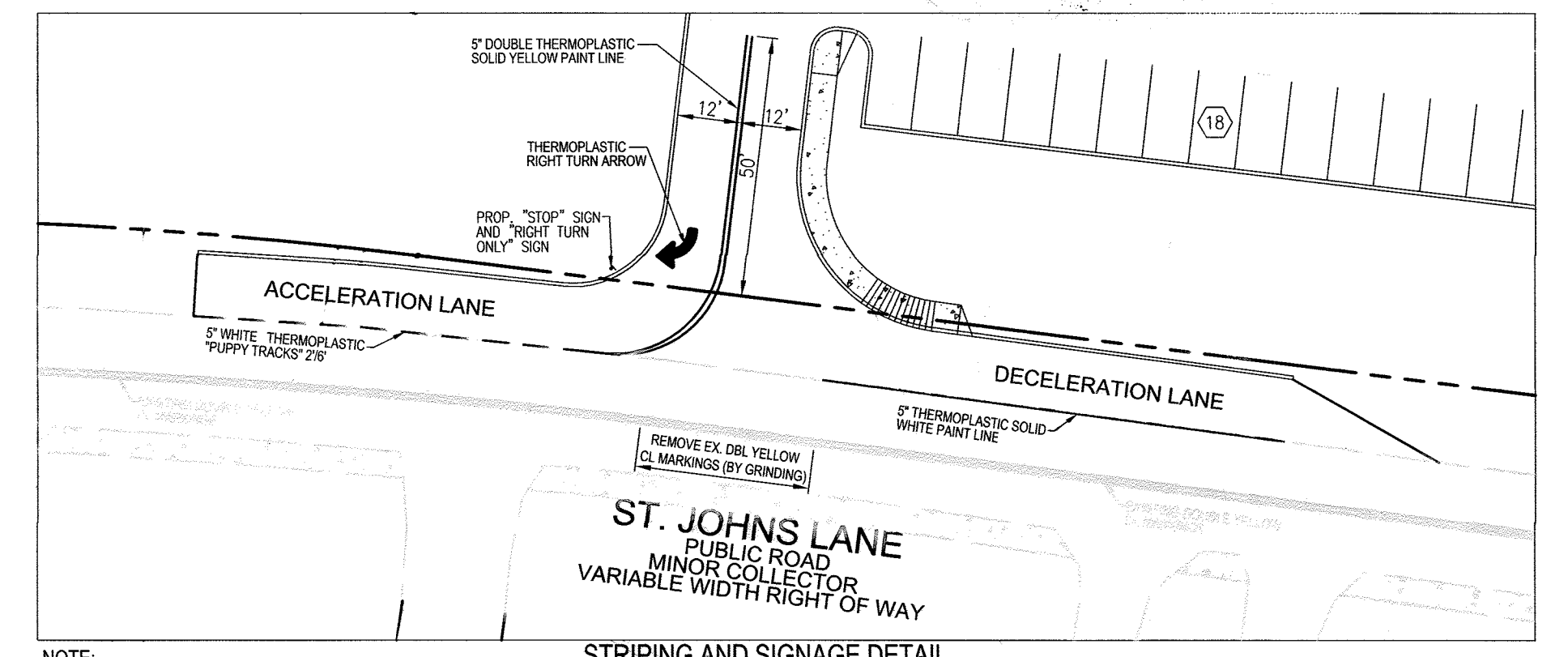
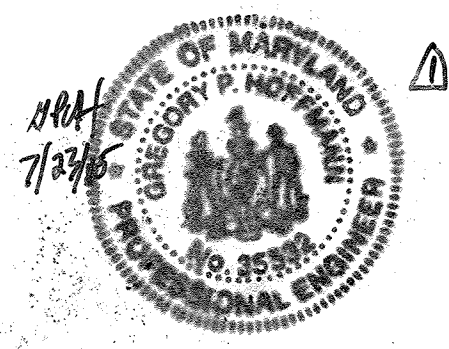
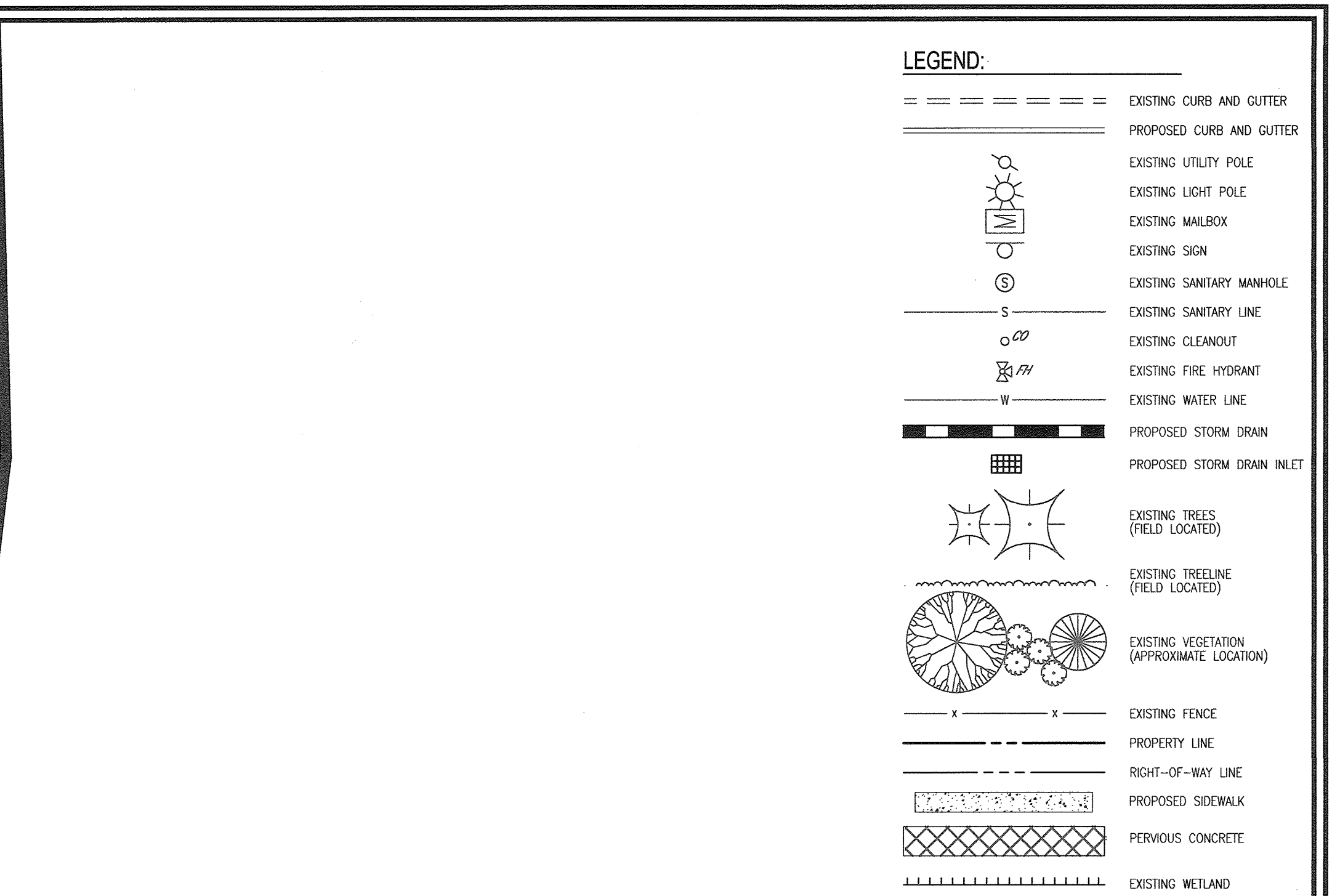
DESIGN BY:	DATE:
RHV/DZ	1/24/13
DZ/KS/JR	2/08/13
RHV	5/9/12
JAN. 2013	
AS SHOWN	
04-100	

PROFESSIONAL CERTIFICATE
 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. 16193, EXPIRATION DATE: 08-27-2014.

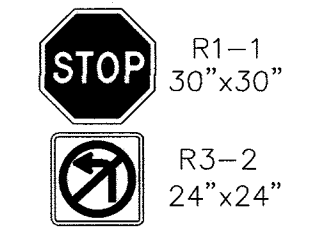
2 SHEET OF 25

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

DATE: 1/24/13
 DATE: 2/08/13
 DATE: 5/9/12



NOTE: HOWARD COUNTY TRAFFIC DIVISION SHALL LAYOUT MARKINGS IN THE FIELD. SCALE: 1"=30'



OWNER
BETHEL KOREAN PRESBYTERIAN CHURCH, INC.
3165 SAINT JOHNS LANE
ELICOTT CITY, MARYLAND 21042
PHONE: 410-461-1235

NO.	REVISION	DATE
6	REVISE TO ELIMINATE TRAFFIC ISLAND WITHIN ST. JOHNS LANE	5-1-19
	ADDED BIOTENTIONS, SHEETS 18-25	3/2/2015

SITE DEVELOPMENT PLAN
LAYOUT SHEET
BETHEL KOREAN PRESBYTERIAN CHURCH
RELIGIOUS CENTER
LOT 1127 / F. 0227
HOWARD COUNTY, MARYLAND
ZONING R-SI
PARCEL 1168

ROBERT H. VOGEL, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELICOTT CITY, MD 21043
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DESIGN BY: RHW/DZ
DRAWN BY: DZ/KG/JR
CHECKED BY: RHW
DATE: JAN. 2013
SCALE: AS SHOWN
W.O. NO.: 04-100

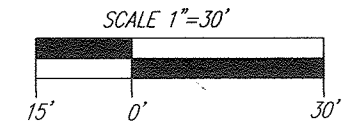
3 SHEET OF 25

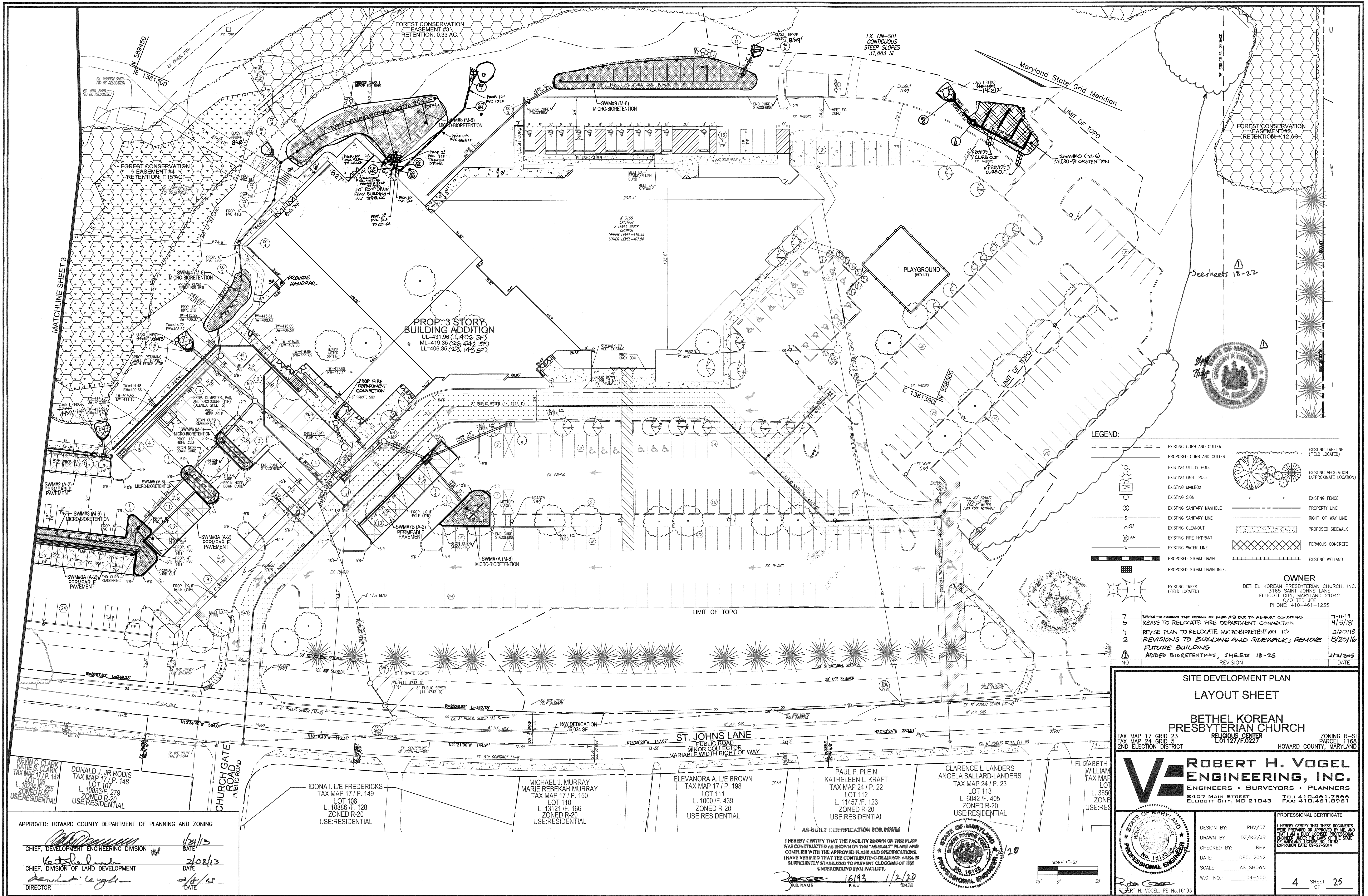
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION
CHIEF, DIVISION OF LAND DEVELOPMENT
DIRECTOR

1/24/13
2/03/13
2/14/13

AS-BUILT CERTIFICATION FOR PSWM
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWRM FACILITY.

P.E. NAME: [Signature] P.E. # 16193 DATE: 1/2/20





LEGEND:

	EXISTING CURB AND GUTTER		EXISTING TREE LINE (FIELD LOCATED)
	PROPOSED CURB AND GUTTER		EXISTING VEGETATION (APPROXIMATE LOCATION)
	EXISTING UTILITY POLE		EXISTING MAILBOX
	EXISTING LIGHT POLE		EXISTING SIGN
	EXISTING MAILBOX		EXISTING SANITARY MANHOLE
	EXISTING SIGN		PROPERTY LINE
	EXISTING SANITARY MANHOLE		RIGHT-OF-WAY LINE
	EXISTING SANITARY LINE		EXISTING CLEANOUT
	EXISTING CLEANOUT		PROPOSED SIDEWALK
	EXISTING FIRE HYDRANT		PERMEABLE CONCRETE
	EXISTING WATER LINE		PROPOSED STORM DRAIN
	PROPOSED STORM DRAIN		EXISTING WETLAND
	PROPOSED STORM DRAIN INLET		

OWNER
 BETHEL KOREAN PRESBYTERIAN CHURCH, INC.
 3165 SAINT JOHNS LANE
 ELLICOTT CITY, MARYLAND 21042
 C/O TED JEE
 PHONE: 410-461-1235

7	REVISE TO CORRECT THE DESIGN OF NAME SIGNS DUE TO AS-BUILT CONDITIONS	7/11/19
6	REVISE TO RELOCATE FIRE DEPARTMENT CONNECTION	4/15/18
5	REVISE PLAN TO RELOCATE MICRO-BIORETENTION	2/20/18
2	REVISIONS TO BUILDING AND SIDEWALK; REMOVE FUTURE BUILDING	5/20/16
	ADDED BIORETENTIONS, SHEETS 18-22	3/2/2015
NO.	REVISION	DATE

**SITE DEVELOPMENT PLAN
 LAYOUT SHEET**

**BETHEL KOREAN
 PRESBYTERIAN CHURCH**

TAX MAP 17 GRID 23
 TAX MAP 24 GRID 5
 2ND ELECTION DISTRICT

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

DESIGN BY: RHV/DZ		PROFESSIONAL CERTIFICATE I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18193, EXPIRATION DATE: 08-27-2019.
DRAWN BY: DZ/KG/JR		
CHECKED BY: RHV		
DATE: DEC. 2012		
SCALE: AS SHOWN		
W.O. NO.: 04-100	4 SHEET OF 25	

AS-BUILT CERTIFICATION FOR PSWM
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOSING OF THE UNDERGROUND SWM FACILITY.
 P.E. NAME: [Signature] 16193 P.E.# DATE: 1/2/20

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

DATE: 1/24/15
 DATE: 2/28/13
 DATE: 2/4/15

KEVIN C. CLARK
 KATIE S. CLARK
 TAX MAP 17 / P. 147
 LOT 106
 L. 10234 / F. 255
 ZONED R-20
 USE: RESIDENTIAL

DONALD J. JR RODIS
 TAX MAP 17 / P. 148
 LOT 107
 L. 10833 / F. 279
 ZONED R-20
 USE: RESIDENTIAL

IDONA L. I/E FREDERICKS
 TAX MAP 17 / P. 149
 LOT 108
 L. 10886 / F. 128
 ZONED R-20
 USE: RESIDENTIAL

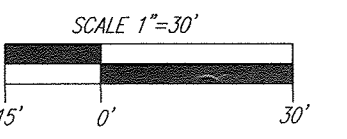
MICHAEL J. MURRAY
 MARIE REBEKAH MURRAY
 TAX MAP 17 / P. 150
 LOT 110
 L. 13121 / F. 166
 ZONED R-20
 USE: RESIDENTIAL

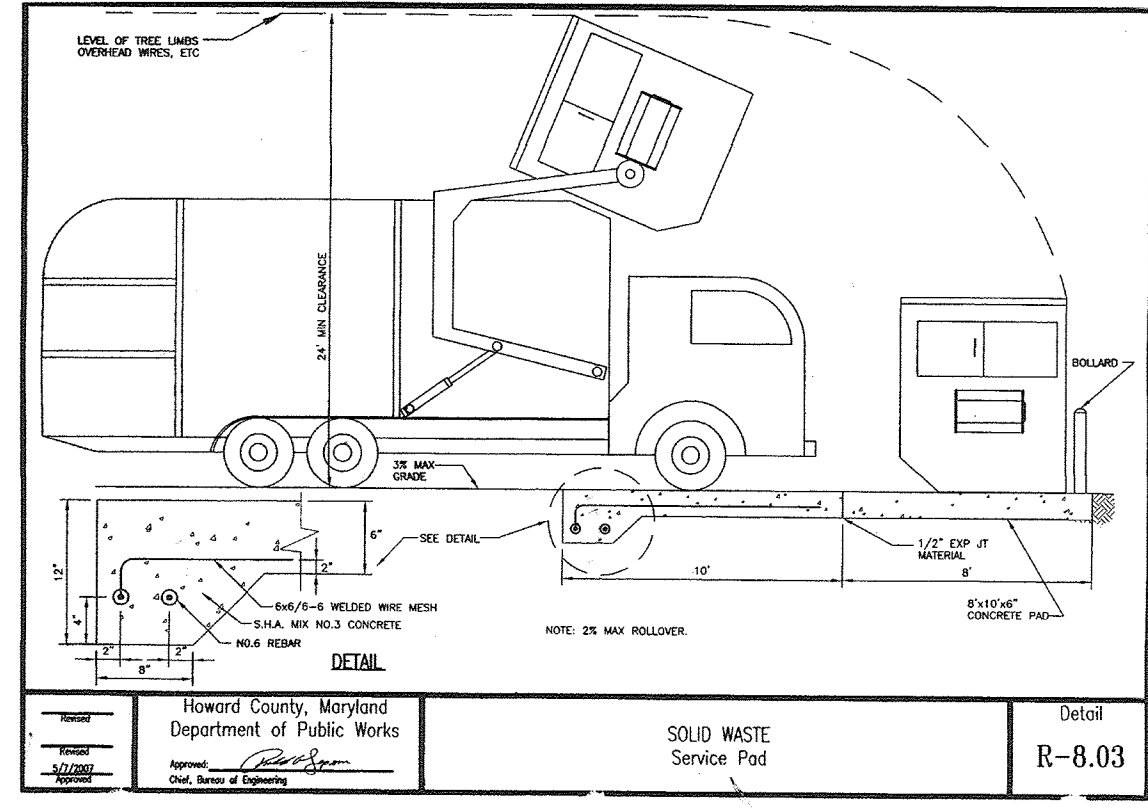
ELEANORA A. I/E BROWN
 TAX MAP 17 / P. 198
 LOT 111
 L. 1000 / F. 439
 ZONED R-20
 USE: RESIDENTIAL

PAUL P. PLEIN
 KATHELEEN L. KRAFT
 TAX MAP 24 / P. 22
 LOT 112
 L. 11457 / F. 123
 ZONED R-20
 USE: RESIDENTIAL

CLARENCE L. LANDERS
 ANGELA BALLARD-LANDERS
 TAX MAP 24 / P. 23
 LOT 113
 L. 6042 / F. 405
 ZONED R-20
 USE: RESIDENTIAL

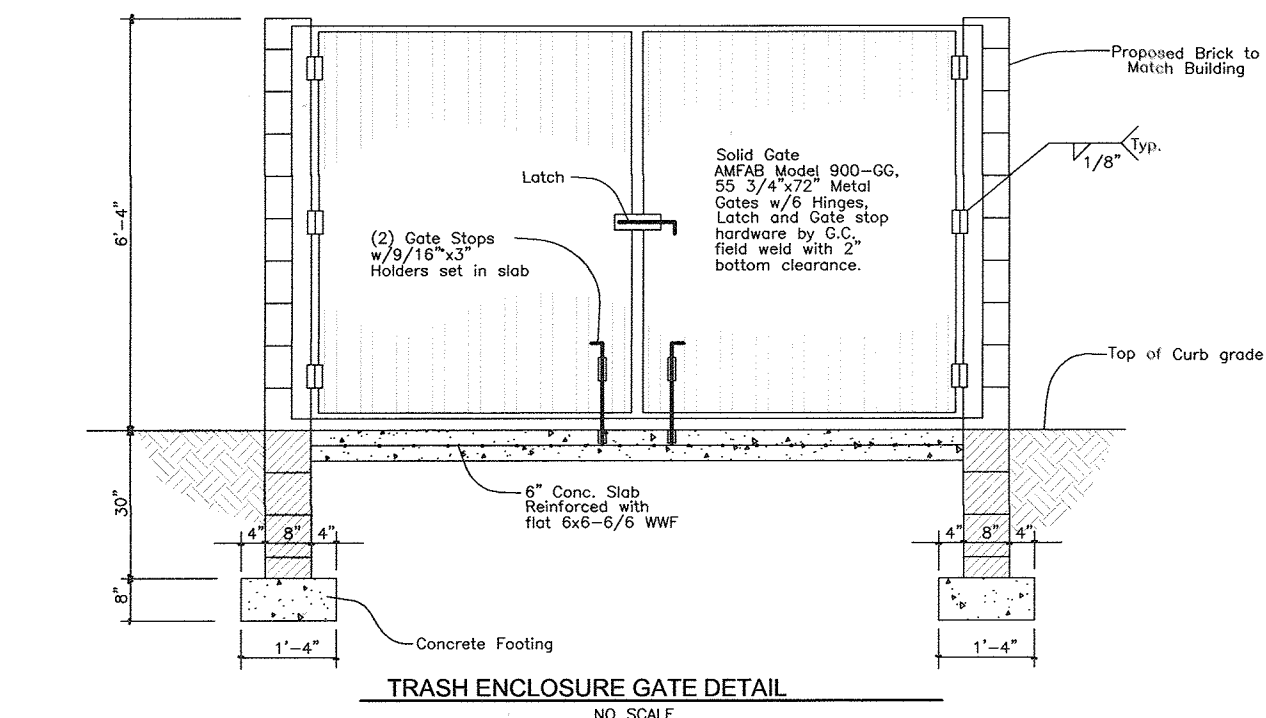
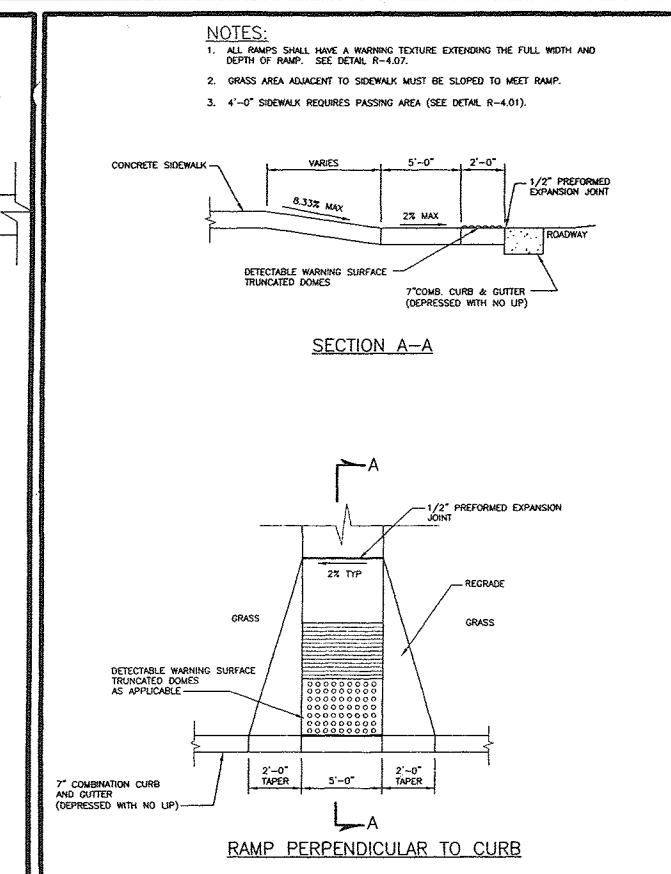
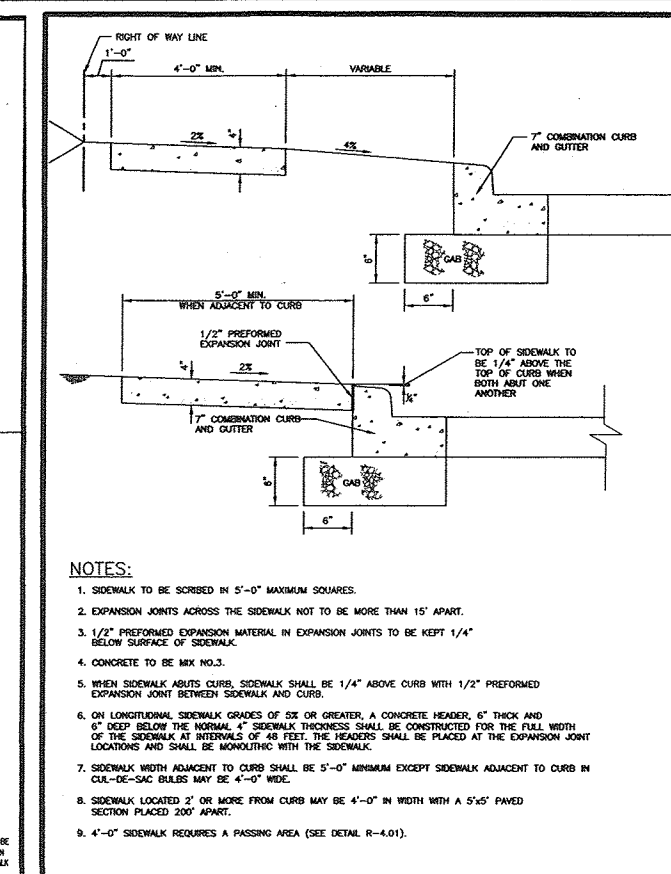
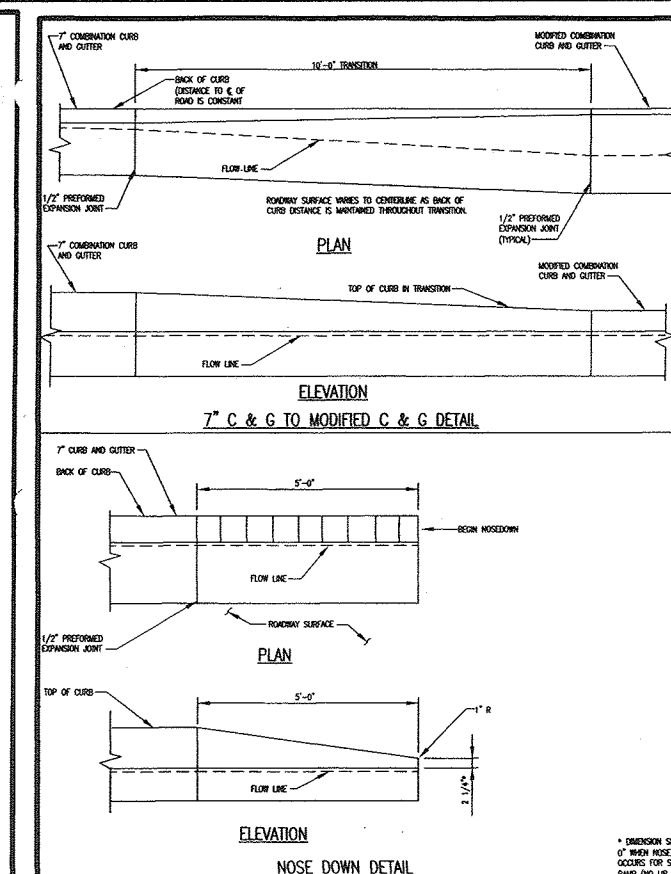
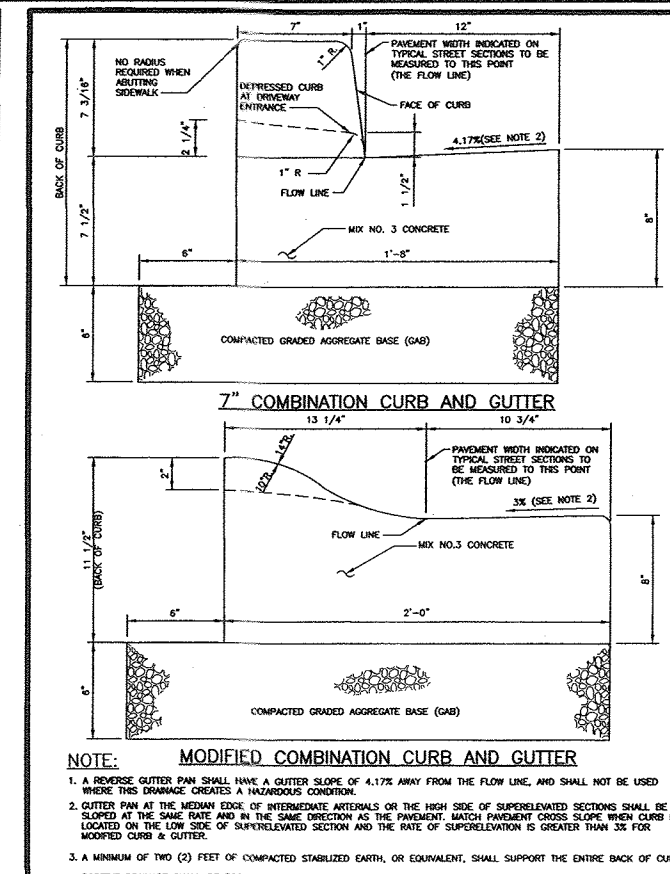
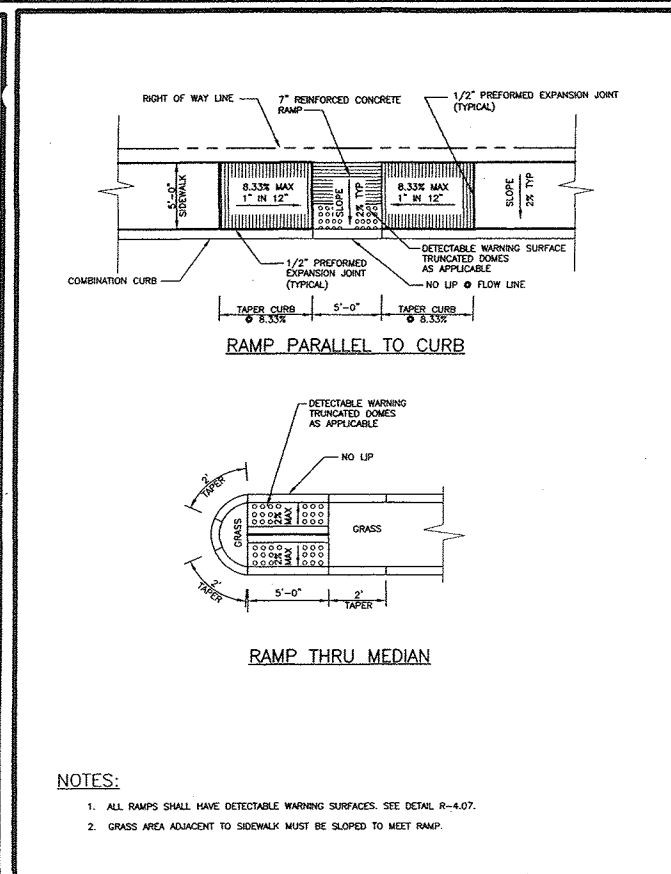
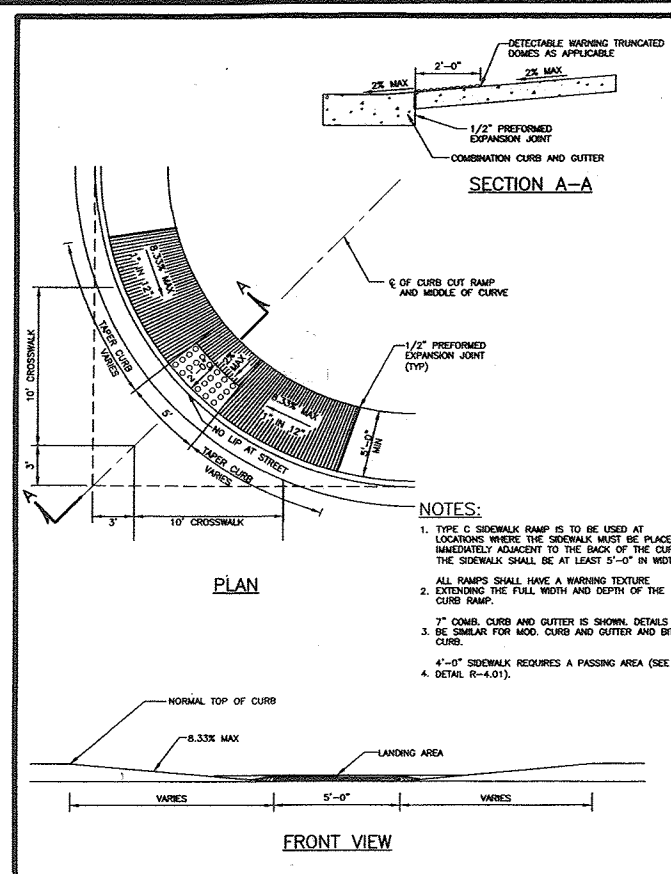
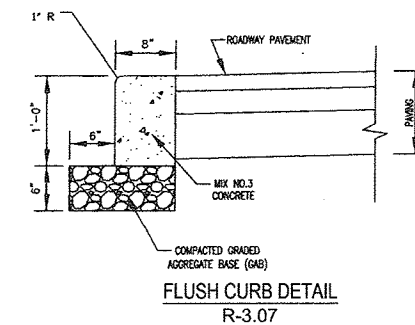
ELIZABETH WILLIAM
 TAX MAP
 LOT
 L. 3850
 ZONE
 USE: RES



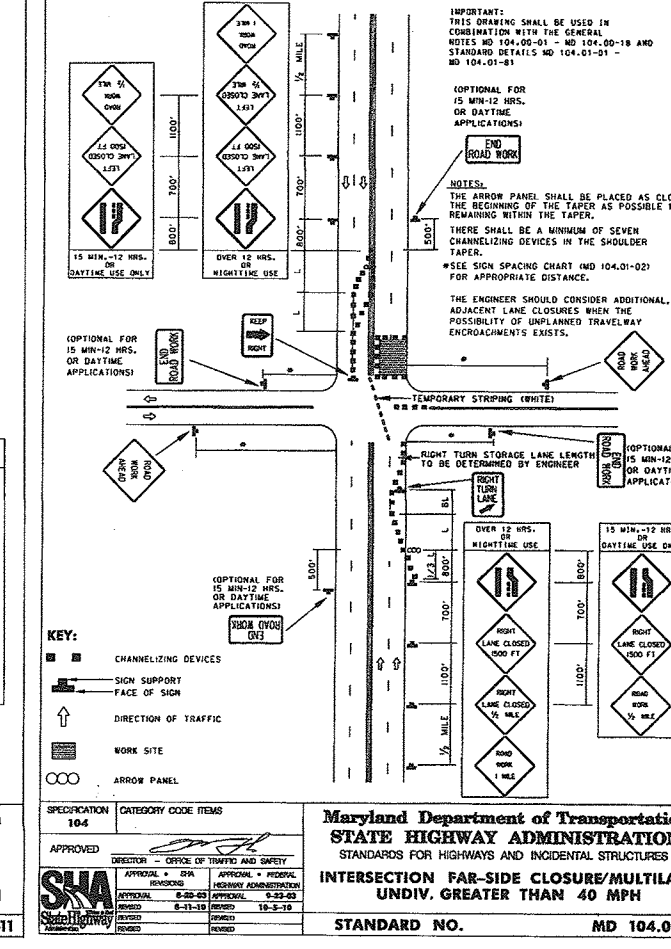
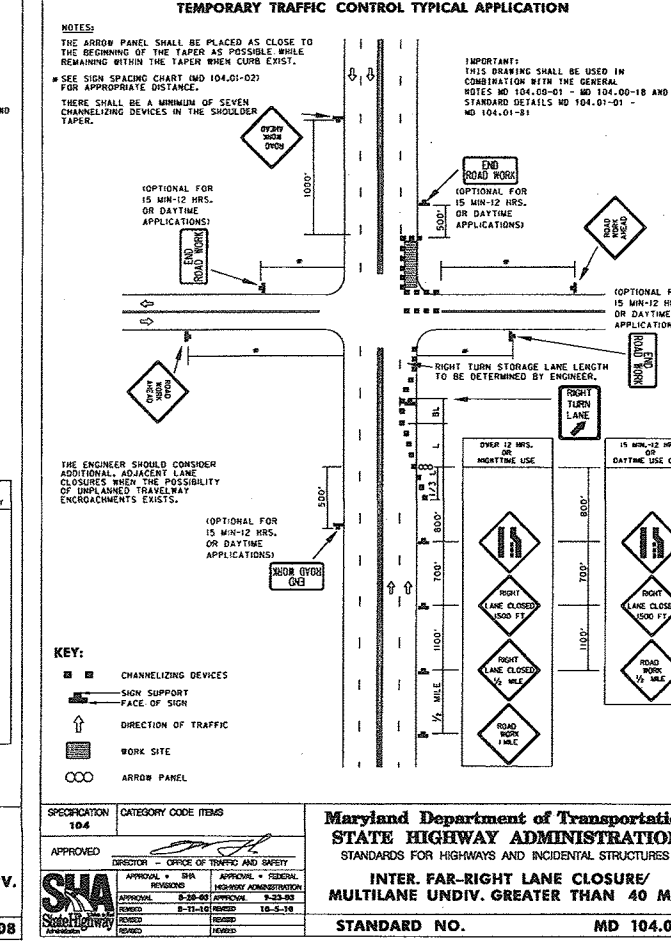
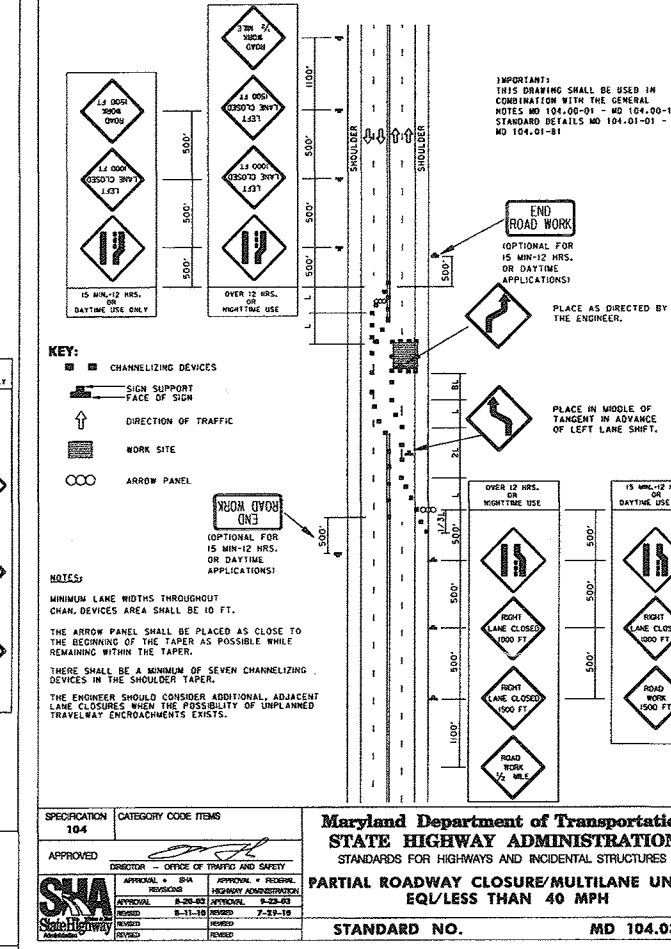
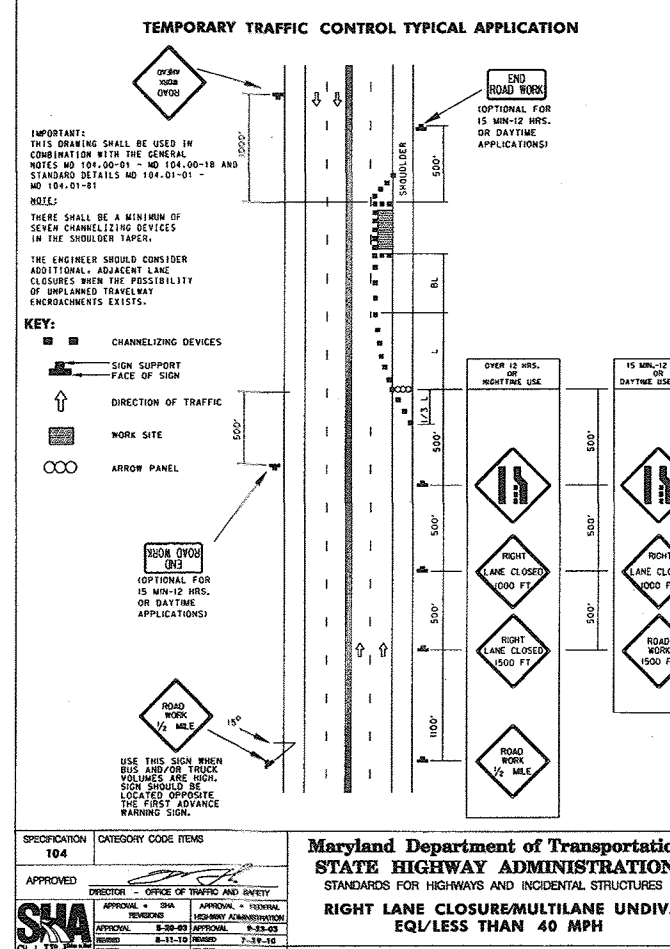
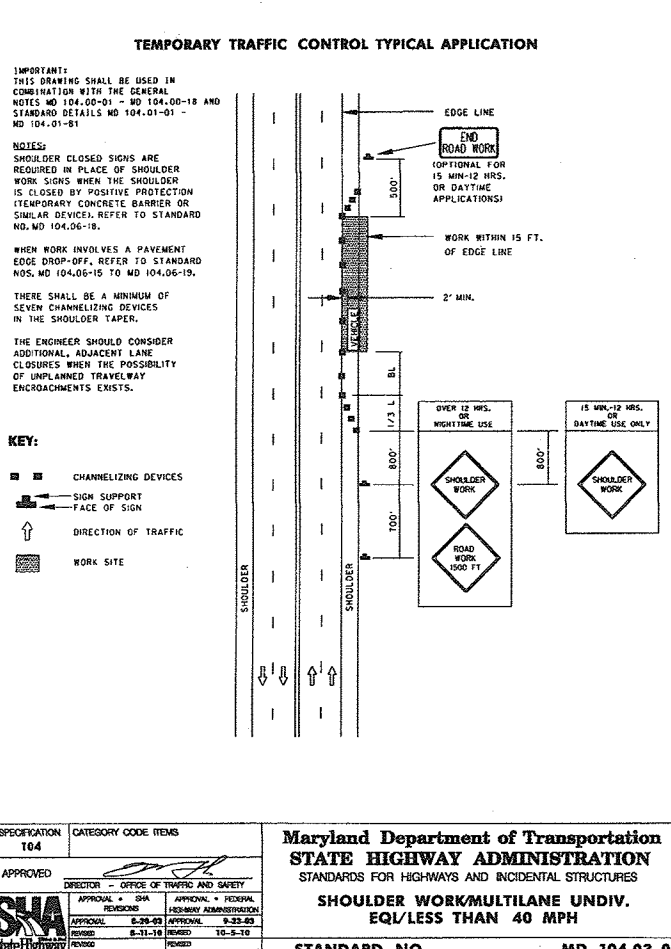
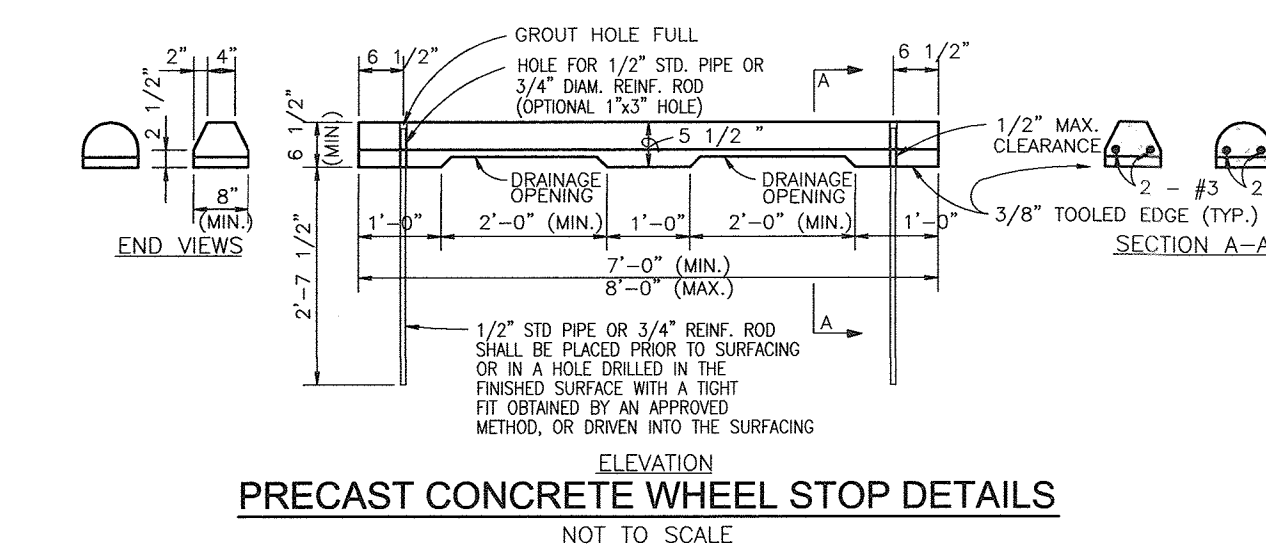


CONCRETE PAVING SECTIONS (AS PER GEOTECHNICAL REPORT RECOMMENDATIONS PREPARED BY EGS, LLC, DATED JANUARY 5, 2011)	
DUMPSTER PAD	POROUS PAVING
MIN. 6" AIR-ENTRAINED PORTLAND CEMENT CONCRETE (MIN. 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI)	MIN. 6" AIR-ENTRAINED PORTLAND CEMENT CONCRETE (MIN. 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI)
MIN. 4" COMPACTED EDGE-GRADED AGGREGATE SUBBASE (CR-6 OR GR6)	MIN. 24" STONE SUBBASE

NOTE: PAVING SECTIONS ARE TO BE VERIFIED AND APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION.

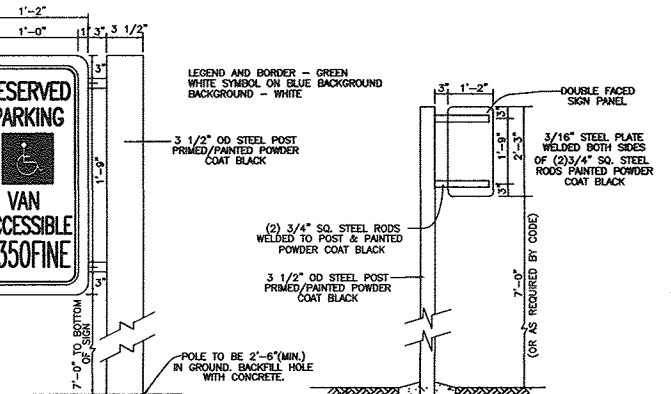
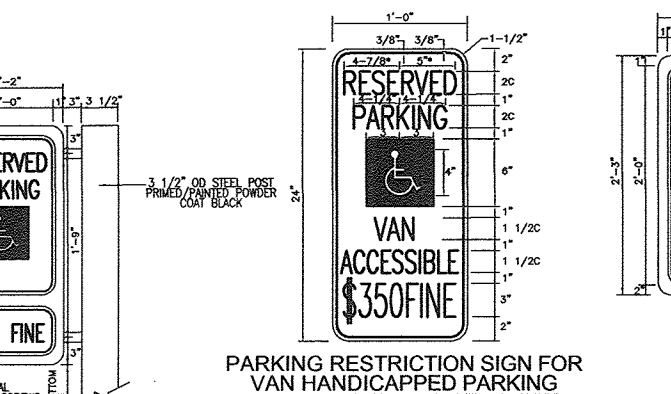
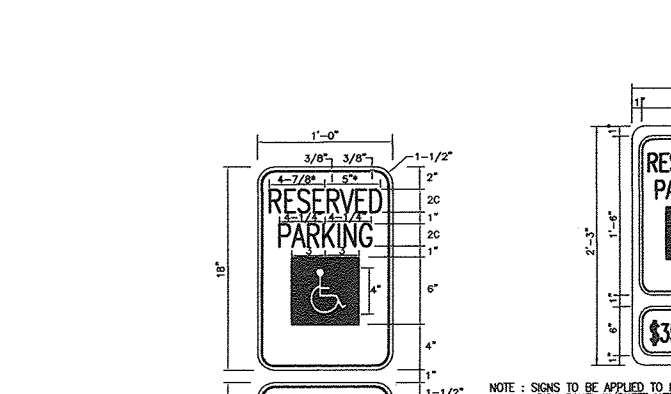


SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)		MIN. HMA WITH GAS		MIN. HMA WITH CONCRETE GAS	
		3 TO 4.5	4 TO 4.7	2.7	3 TO 4.5	3 TO 4.7	2.7
P-1	PARKING SPOTS RESIDENTIAL AND NON-RESIDENTIAL PARKING SPOTS WITH NO MORE THAN 2 HEAVY TRUCKS PER DAY	1.5	1.5	1.5	1.5	1.5	1.5
P-2	PARKING DRIVE ALLEYS RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 2 HEAVY TRUCKS PER DAY	1.5	1.5	1.5	1.5	1.5	1.5
P-3	LOCAL ACCESS LOCAL ACCESS PLACE ACCESS STREET LOCAL ACCESS PLACE ACCESS STREET LOCAL ACCESS PLACE ACCESS STREET	1.5	1.5	1.5	1.5	1.5	1.5
P-4	MINOR COLLECTORS MINOR COLLECTORS MINOR COLLECTORS	1.5	1.5	1.5	1.5	1.5	1.5



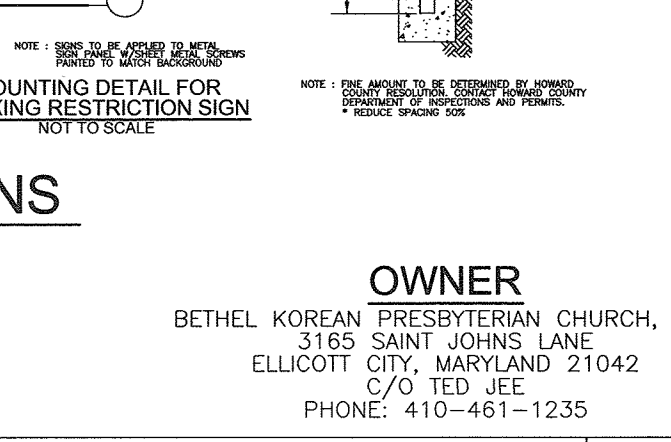
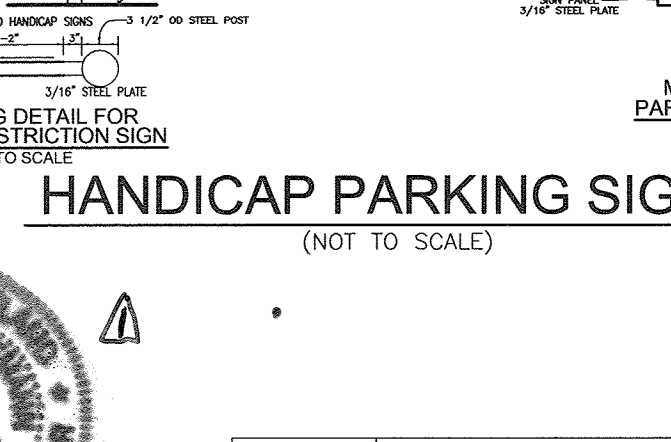
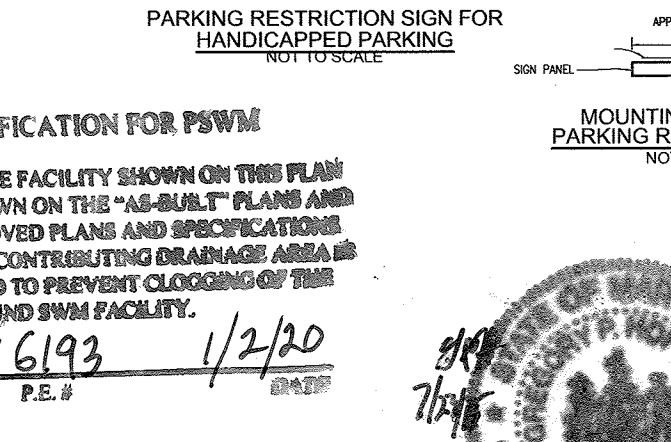
SECTION	ROAD AND STREET CLASSIFICATION	PAVING SECTIONS	DETAIL
P-1 to P-4		P-1 to P-4	R-2.01

GEOTECHNICAL ENGINEER TO CONFIRM ALL PAVING SECTIONS PRIOR TO CONSTRUCTION

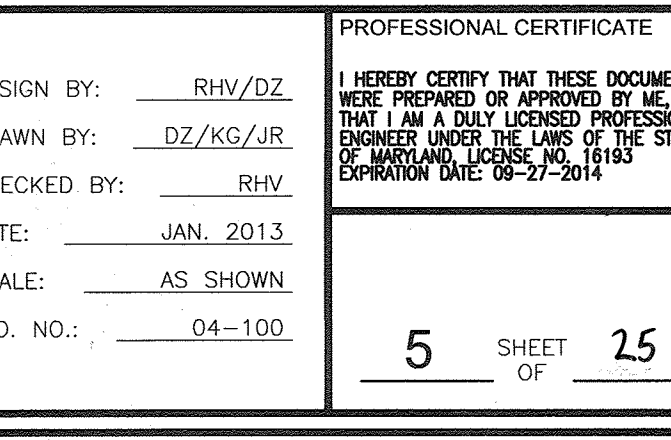
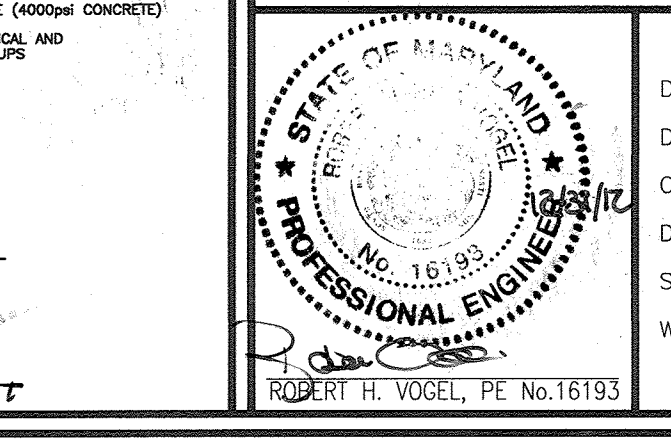
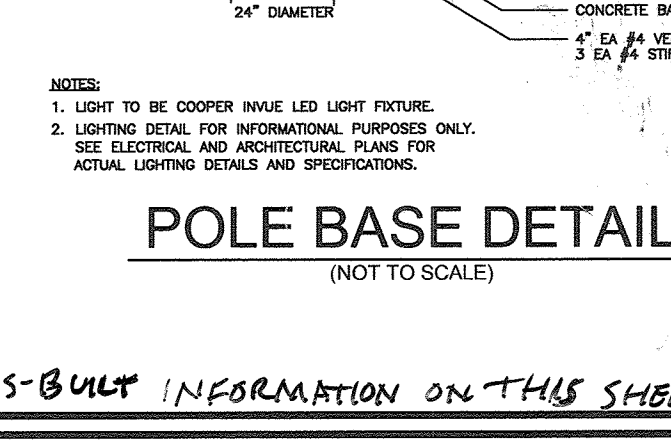
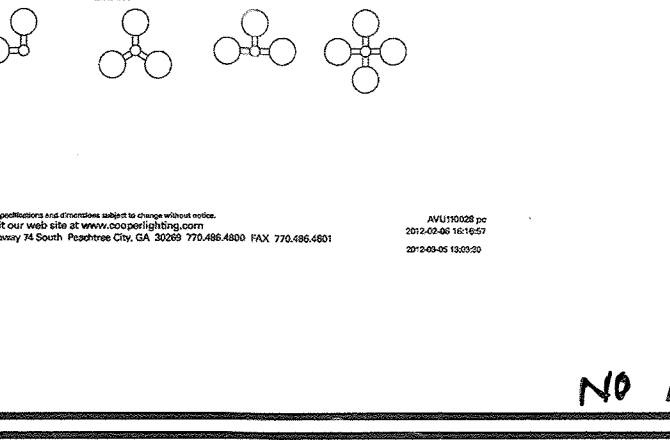
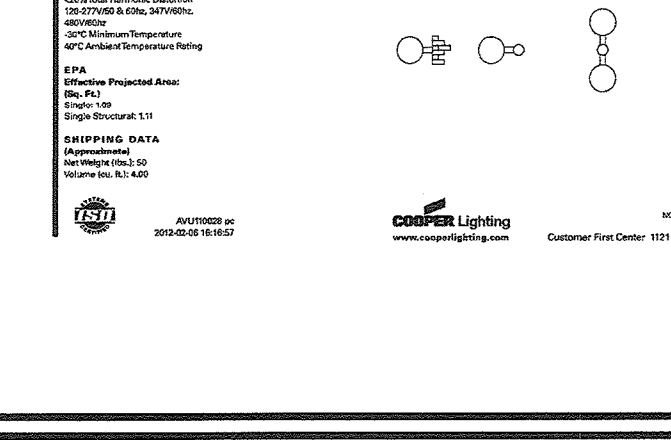


AS-BUILT CERTIFICATION FOR P6W11
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOSING OF THIS UNDERGROUND BWA FACILITY.

DATE: 1/2/20
P.E. # 16193



NO.	DESCRIPTION	QUANTITY	UNIT	AMOUNT
1	CONCRETE PAD	1	SQ. YD.	1.00
2	CONCRETE PAD	1	SQ. YD.	1.00
3	CONCRETE PAD	1	SQ. YD.	1.00
4	CONCRETE PAD	1	SQ. YD.	1.00
5	CONCRETE PAD	1	SQ. YD.	1.00
6	CONCRETE PAD	1	SQ. YD.	1.00
7	CONCRETE PAD	1	SQ. YD.	1.00
8	CONCRETE PAD	1	SQ. YD.	1.00
9	CONCRETE PAD	1	SQ. YD.	1.00
10	CONCRETE PAD	1	SQ. YD.	1.00
11	CONCRETE PAD	1	SQ. YD.	1.00
12	CONCRETE PAD	1	SQ. YD.	1.00
13	CONCRETE PAD	1	SQ. YD.	1.00
14	CONCRETE PAD	1	SQ. YD.	1.00
15	CONCRETE PAD	1	SQ. YD.	1.00
16	CONCRETE PAD	1	SQ. YD.	1.00
17	CONCRETE PAD	1	SQ. YD.	1.00
18	CONCRETE PAD	1	SQ. YD.	1.00
19	CONCRETE PAD	1	SQ. YD.	1.00
20	CONCRETE PAD	1	SQ. YD.	1.00
21	CONCRETE PAD	1	SQ. YD.	1.00
22	CONCRETE PAD	1	SQ. YD.	1.00
23	CONCRETE PAD	1	SQ. YD.	1.00
24	CONCRETE PAD	1	SQ. YD.	1.00
25	CONCRETE PAD	1	SQ. YD.	1.00
26	CONCRETE PAD	1	SQ. YD.	1.00
27	CONCRETE PAD	1	SQ. YD.	1.00
28	CONCRETE PAD	1	SQ. YD.	1.00
29	CONCRETE PAD	1	SQ. YD.	1.00
30	CONCRETE PAD	1	SQ. YD.	1.00
31	CONCRETE PAD	1	SQ. YD.	1.00
32	CONCRETE PAD	1	SQ. YD.	1.00
33	CONCRETE PAD	1	SQ. YD.	1.00
34	CONCRETE PAD	1	SQ. YD.	1.00
35	CONCRETE PAD	1	SQ. YD.	1.00
36	CONCRETE PAD	1	SQ. YD.	1.00
37	CONCRETE PAD	1	SQ. YD.	1.00
38	CONCRETE PAD	1	SQ. YD.	1.00
39	CONCRETE PAD	1	SQ. YD.	1.00
40	CONCRETE PAD	1	SQ. YD.	1.00
41	CONCRETE PAD	1	SQ. YD.	1.00
42	CONCRETE PAD	1	SQ. YD.	1.00
43	CONCRETE PAD	1	SQ. YD.	1.00
44	CONCRETE PAD	1	SQ. YD.	1.00
45	CONCRETE PAD	1	SQ. YD.	1.00
46	CONCRETE PAD	1	SQ. YD.	1.00
47	CONCRETE PAD	1	SQ. YD.	1.00
48	CONCRETE PAD	1	SQ. YD.	1.00
49	CONCRETE PAD	1	SQ. YD.	1.00
50	CONCRETE PAD	1	SQ. YD.	1.00



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 1/2/13
DATE: 2/08/13
DATE: 2/8/13

BETHEL KOREAN PRESBYTERIAN CHURCH
RELIGIOUS CENTER
L01127/F.0227
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLCOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8966

SITE DEVELOPMENT PLAN
SITE DETAILS

TAX MAP 17 GRID 23
TAX MAP 24 GRID 5
2ND ELECTION DISTRICT

ZONING R-SI
PARCEL 1168
DATE: 3/2/2015

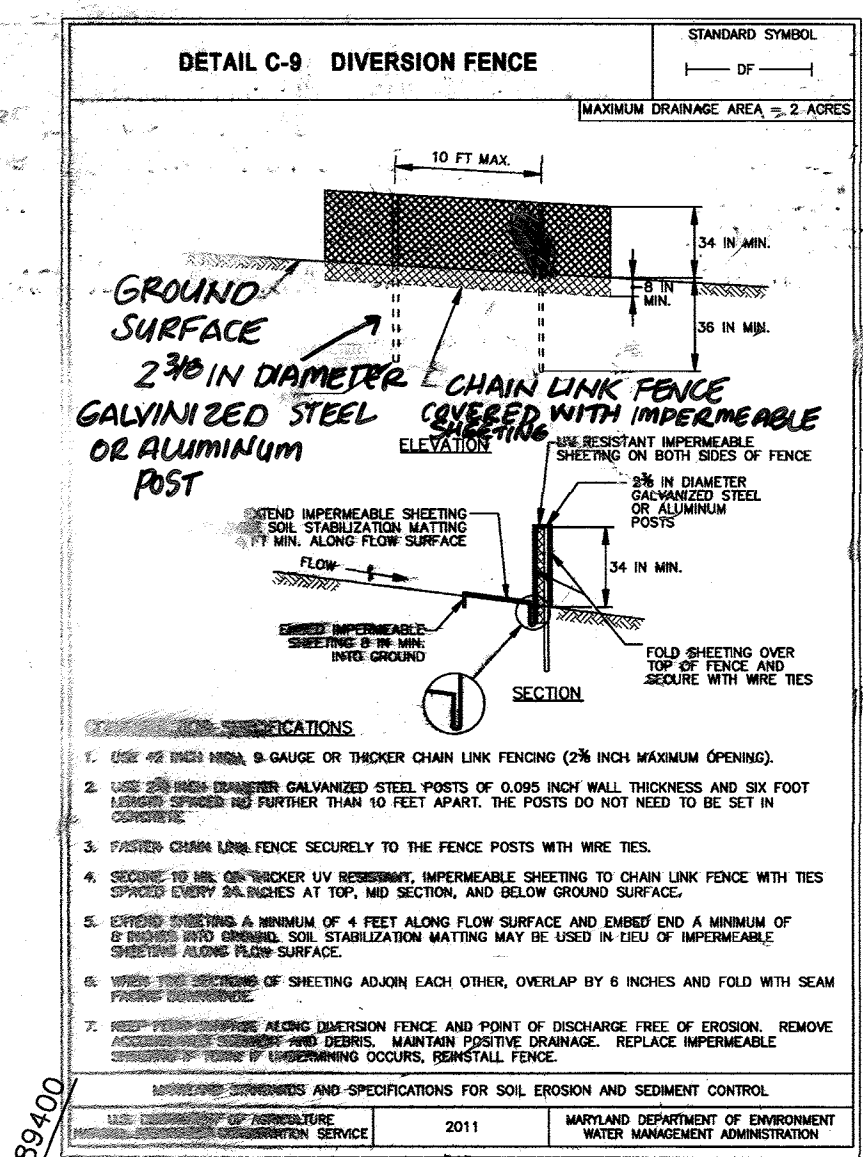
ADDED BIODIVERSITY, 5 SHEETS 18-26
REVISION
DATE

DESIGN BY: RHW/DZ
DRAWN BY: DZ/KJR
CHECKED BY: RHW
DATE: JAN. 2013
SCALE: AS SHOWN
W.O. NO.: 04-100

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR UNDER THE CLOSE PERSONAL SUPERVISION OF ME, A LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 08-27-2014.

5 SHEET OF 25

AS-BUILT DECEMBER 2019



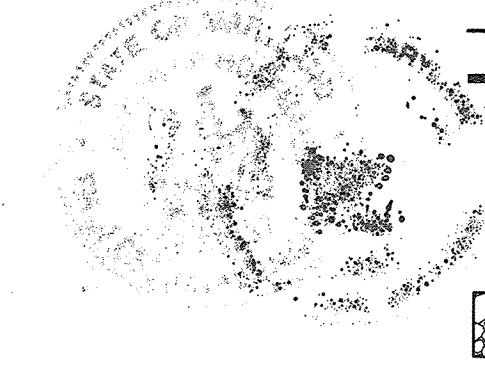
SITE ANALYSIS FOR FILL GRADING:
 TOTAL AREA OF SITE: 20.06 ACRES
 AREA TO BE GRADED OR IMPROVED: 6.94 ACRES
 AREA TO BE VEGETATIVELY STABILIZED: 0.00 ACRES
 TOTAL FILL: 1.61 ACRES
 TOTAL CUT: 5,000 CU. YDS.
 OFFSITE WASTEWATER TREATMENT AREA LOCATION: ON-SITE

- FILL GRADING SEQUENCE OF CONSTRUCTION**
1. DEVELOPER/CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION MEETING WITH THE SEDIMENT CONTROL INSPECTOR PRIOR TO ANY FILL AND DISTURBANCE (1 DAY)
 2. STAKEOUT LIMITS OF DISTURBANCE (2 DAYS)
 3. CURBS AND GRUBS AS REQUIRED FOR THE INSTALLATION OF PERIMETER DIVERSION FENCE (2 DAYS)
 4. INSTALL PERIMETER DIVERSION FENCE, SUPER-SILT FENCE, AND TRENCH PIPE DRAIN (1 DAY)
 5. VERIFY APPROVAL OF SEDIMENT CONTROL INSPECTOR, CLEAR AND GRASS AREA WITHIN LOD (1 WEEK)
 6. BEGIN GRADING OPERATIONS (2 WEEKS)
 7. VERIFY INSPECTOR'S APPROVAL, FINE GRADE AND STABILIZE ALL AREAS OF PARCEL INCLUDING ANY EXPOSED EARTH AREAS
 8. COMPLETE THE LOD, REMOVE ALL TRASH, JUNK AND DEBRIS FROM THE SURFACE OF DISTURBANCE (3 WEEKS)
 9. PERFORM SEDIMENT CONTROL AFTER RECEIVING APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR
 10. PERFORM ANY REMAINING CONTROLS AND STABILIZE ALL REMAINING DISTURBED AREAS WITH PERMANENT SEEDING, NUTRIENT AND STRAW AND MULCH (1 WEEK)

- NOTE:**
1. A DOUBLE ROW OF SILT FENCE FROM HW-7 AROUND TO HW-5 MAY BE REQUIRED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
 2. THE SPOIL FROM THE TRENCHING FOR THE UTILITY LINES IS TO BE PLACED ON THE UPHILL SIDE OF THE TRENCH.

LEGEND:

---	EXISTING CONTOUR
---	PROPOSED CONTOUR
+	PROPOSED SPOT ELEVATION
+	EXISTING SPOT ELEVATION
---	EXISTING CURB AND GUTTER
---	PROPOSED CURB AND GUTTER
○	EXISTING UTILITY POLE
○	EXISTING UTILITY POLE
○	EXISTING MAILBOX
○	EXISTING SIGN
○	EXISTING SANITARY MANHOLE
○	EXISTING SANITARY LINE
○	EXISTING CLEANOUT
○	EXISTING FIRE HYDRANT
○	EXISTING WATER LINE
---	PROPOSED STORM DRAIN
---	PROPOSED STORM DRAIN INLET
○	EXISTING TREES (FIELD LOCATED)
○	EXISTING TREELINE (FIELD LOCATED)
○	EXISTING VEGETATION (APPROXIMATE LOCATION)
○	EXISTING STREET TREES (F-04-...)
---	EXISTING FENCE
---	PROPERTY LINE
---	RIGHT-OF-WAY LINE
M1B2	SOILS BOUNDARY
M1D3	SOILS BOUNDARY
---	PROPOSED SIDEWALK
---	MODERATE SLOPES (15% - 24.99%)
---	STEEP SLOPE (>25%)
---	PERVIOUS CONCRETE
---	EXISTING WETLAND
---	SILT FENCE
---	SUPER SILT FENCE
---	LIMIT OF DISTURBANCE
---	CIP
---	AT GRADE INLET PROTECTION
---	STABILIZED CONSTRUCTION ENTRANCE

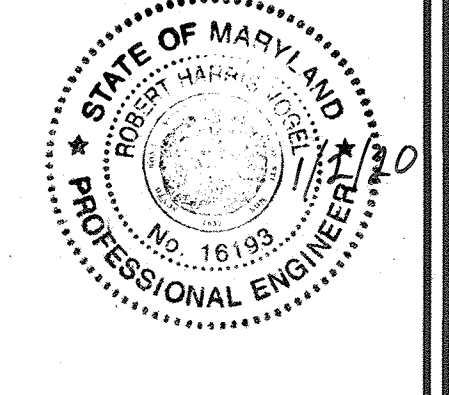


OWNER
 BETHEL KOREAN PRESBYTERIAN CHURCH, INC.
 3165 SAINT JOHN'S LANE
 ELLICOTT CITY, MARYLAND 21042
 PHONE: 410-461-1235

NO.	REVISION	DATE
6	REVISE TO ELIMINATE TRAFFIC ISLAND WITHIN ST. JOHN'S LANE	5-1-19
3	REVISE PLAN TO GRADE BACK OF SITE WITH EXCESS ON-SITE FILL DIRT	07/21/17
1	ADDED BIOTENTATIONS, SHEETS 18-25	3/2/2015

AS-BUILT CERTIFICATION FOR PSWM
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

P.E. NAME: *16193* DATE: *1/2/20*



SITE DEVELOPMENT PLAN
GRADING, SEDIMENT AND EROSION CONTROL PLAN
BETHEL KOREAN PRESBYTERIAN CHURCH
 RELIGIOUS CENTER
 LOT 127/F.0227
 ZONING R-SI
 PARCEL 1168
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 08-27-2019.

DESIGN BY:	RHV/DZ
DRAWN BY:	DZ/KG/JR
CHECKED BY:	RHV
DATE:	JAN. 2013
SCALE:	AS SHOWN
W.D. NO.:	04-100

6 SHEET OF 25

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: *2/8/13*

CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: *2/8/13*

DIRECTOR

BY THE DEVELOPER:

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

SIGNATURE OF DEVELOPER: *12/31/12* DATE

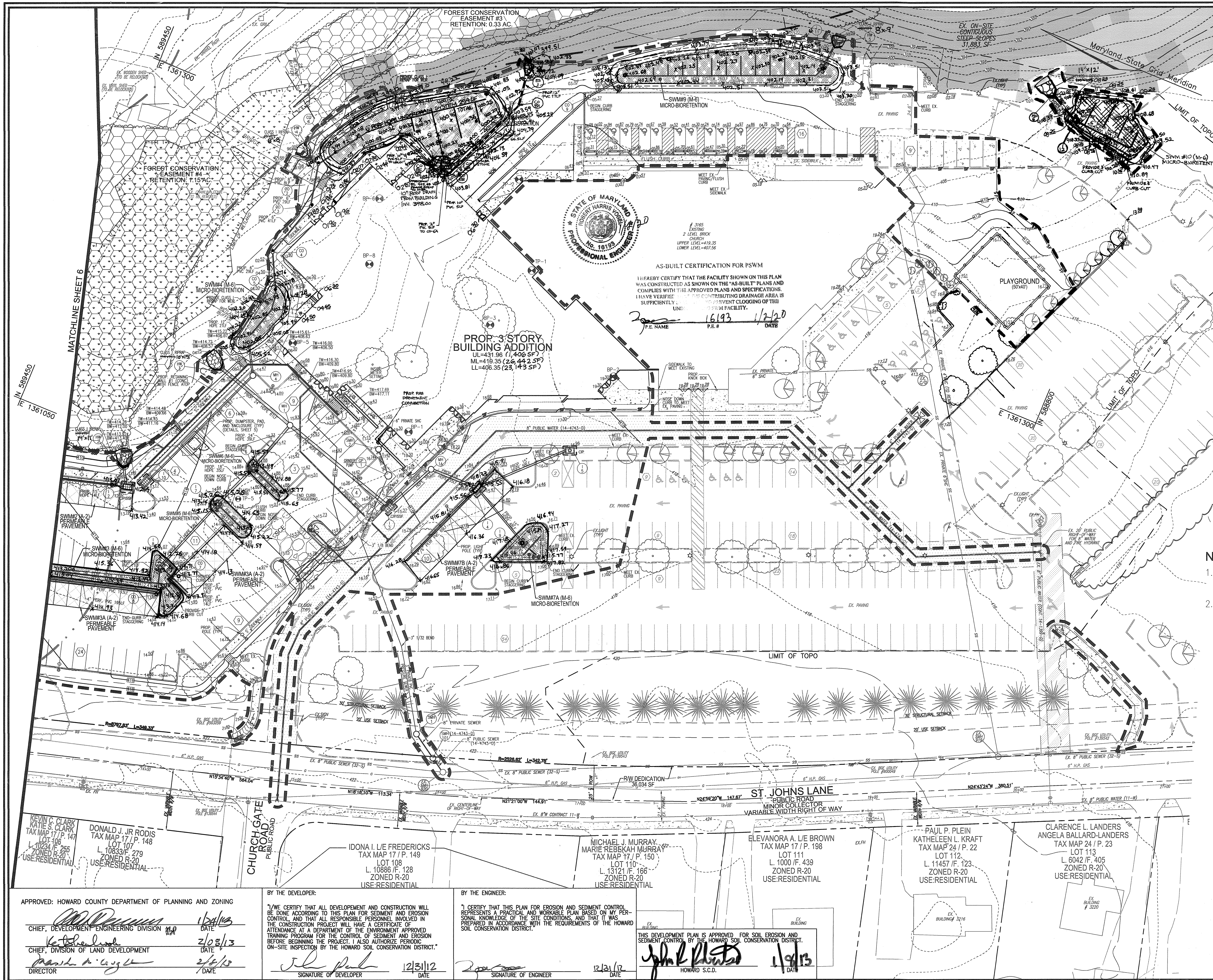
BY THE ENGINEER:

"I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF ENGINEER: *12/31/12* DATE

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

1/8/13 HOWARD S.C.D. DATE



LEGEND:

- EXISTING CONTOUR
- - - - PROPOSED CONTOUR
- + 40.258 PROPOSED SPOT ELEVATION
- EXISTING SPOT ELEVATION
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- EXISTING TREES (FIELD LOCATED)
- EXISTING TREELINE (FIELD LOCATED)
- EXISTING VEGETATION (APPROXIMATE LOCATION)
- EXISTING STREET TREES (F-04-...)
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- M1B2 M1D3 SOILS BOUNDARY
- PROPOSED SIDEWALK
- MODERATE SLOPES (15% - 24.99%)
- STEEP SLOPE (>25%)
- PERVIOUS CONCRETE
- EXISTING WETLAND
- SILT FENCE
- SUPER SILT FENCE
- LOD LIMIT OF DISTURBANCE
- CIP CURB INLET PROTECTION
- AGIP AT GRADE INLET PROTECTION
- STABILIZED CONSTRUCTION ENTRANCE

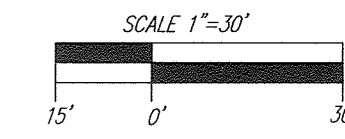
AS-BUILT CERTIFICATION FOR PSWM

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY PROTECTED TO PREVENT CLOGGING OF THE LINE.

P.E. NAME: 16193 P.E.#: 16193 DATE: 1/2/20

PROP. 3 STORY BUILDING ADDITION
 UL=431.96 (7,406 SF)
 ML=418.35 (26,442 SF)
 LL=406.35 (23,143 SF)

- NOTE:**
- DOUBLE ROW OF SILT FENCE FROM HW-733 ROUND TO HW-5 MAY BE REQUIRED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
 - THE SPOIL FROM THE TRENCHING FOR THE UTILITY LINES IS TO BE PLACED ON THE UPHILL SIDE OF THE TRENCH.



OWNER
 BETHEL KOREAN PRESBYTERIAN CHURCH, INC.
 3165 SAINT JOHN'S LANE
 ELLICOTT CITY, MARYLAND 21042
 C/O TED JEE
 PHONE: 410-461-1235

7	REVISE TO CORRECT THE DESIGN OF MBE #8 DUE TO AS-BUILT CONDITIONS	1/11/19
5	REVISE TO RELOCATE FIRE DEPARTMENT CONNECTION	4/15/18
4	REVISE PLAN TO RELOCATE MICROBIORETENTION 10	2/20/18
2	REVISIONS TO BUILDING AND SIDEWALK: REMOVE FUTURE BUILDING	5/20/16
	ADDED BIORETENTIONS, SHEETS 19-25	3/2/2015
NO.	REVISION	DATE

**SITE DEVELOPMENT PLAN
 GRADING, SEDIMENT AND EROSION
 CONTROL PLAN**

**BETHEL KOREAN
 PRESBYTERIAN CHURCH**

RELIGIOUS CENTER
 LOT 112/F. 0227

TAX MAP 17 GRID 23
 TAX MAP 24 GRID 5
 2ND ELECTION DISTRICT

ZONING R-SI
 PARCEL 1168
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE

DESIGN BY: RHV/DZ
 DRAWN BY: DZ/KG/JR
 CHECKED BY: RHV
 DATE: DEC. 2012
 SCALE: AS SHOWN
 W.O. NO.: 04-100

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. 16193 EXPIRATION DATE: 08-27-2014

7 SHEET OF 25

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 1/2/13

CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 2/6/13

DIRECTOR
 DATE: 2/6/13

BY THE DEVELOPER:

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

SIGNATURE OF DEVELOPER: [Signature]
 DATE: 12/31/12

BY THE ENGINEER:

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF ENGINEER: [Signature]
 DATE: 12/31/12

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

[Signature]
 HOWARD S.C.D.
 DATE: 1/2/13

KEVIN C. CLARK
 KATIE S. CLARK
 TAX MAP 17 / P. 147
 LOT 106
 L. 10724 / F. 255
 ZONED R-20
 USE: RESIDENTIAL

DONALD J. JR RODS
 TAX MAP 17 / P. 148
 LOT 107
 L. 10833 / F. 279
 ZONED R-20
 USE: RESIDENTIAL

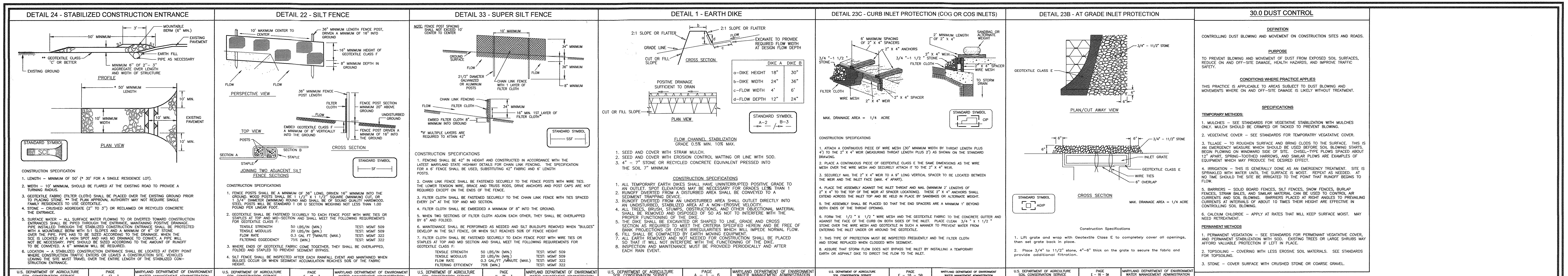
IDONA I. LE FREDERICKS
 TAX MAP 17 / P. 149
 LOT 108
 L. 10886 / F. 128
 ZONED R-20
 USE: RESIDENTIAL

MICHAEL J. MURRAY
 MARIE REBEKAH MURRAY
 TAX MAP 17 / P. 150
 LOT 110
 L. 13121 / F. 166
 ZONED R-20
 USE: RESIDENTIAL

ELEANORA A. LE BROWN
 TAX MAP 17 / P. 198
 LOT 111
 L. 1000 / F. 439
 ZONED R-20
 USE: RESIDENTIAL

PAUL P. PLEIN
 KATHELEEN L. KRAFT
 TAX MAP 24 / P. 22
 LOT 112
 L. 11457 / F. 123
 ZONED R-20
 USE: RESIDENTIAL

CLARENCE L. LANDERS
 ANGELA BALLARD-LANDERS
 TAX MAP 24 / P. 23
 LOT 113
 L. 6042 / F. 405
 ZONED R-20
 USE: RESIDENTIAL



U.S. DEPARTMENT OF AGRICULTURE PAGE 1-17-3 MARYLAND DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES WATER MANAGEMENT ADMINISTRATION U.S. DEPARTMENT OF AGRICULTURE PAGE 1-18-3 MARYLAND DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES WATER MANAGEMENT ADMINISTRATION U.S. DEPARTMENT OF AGRICULTURE PAGE 1-19-3 MARYLAND DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES WATER MANAGEMENT ADMINISTRATION U.S. DEPARTMENT OF AGRICULTURE PAGE 1-20-3 MARYLAND DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES WATER MANAGEMENT ADMINISTRATION U.S. DEPARTMENT OF AGRICULTURE PAGE 1-21-3 MARYLAND DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES WATER MANAGEMENT ADMINISTRATION U.S. DEPARTMENT OF AGRICULTURE PAGE 1-22-3 MARYLAND DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES WATER MANAGEMENT ADMINISTRATION U.S. DEPARTMENT OF AGRICULTURE PAGE 1-23-3 MARYLAND DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES WATER MANAGEMENT ADMINISTRATION U.S. DEPARTMENT OF AGRICULTURE PAGE 1-24-3 MARYLAND DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES WATER MANAGEMENT ADMINISTRATION U.S. DEPARTMENT OF AGRICULTURE PAGE 1-25-3 MARYLAND DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES WATER MANAGEMENT ADMINISTRATION

21.0 STANDARDS AND SPECIFICATIONS FOR TOPSOIL

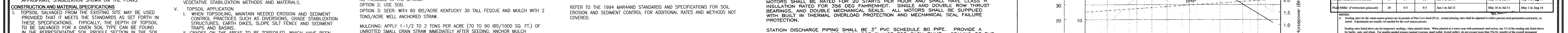
DEFINITION: PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE: TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. THE TESTED SOIL DEMONSTRATES A pH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PRESCRIBED TO RAISE THE pH TO 6.5 OR THEREAFTER.

CONDITIONS WHERE PRACTICE APPLIES: THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES.

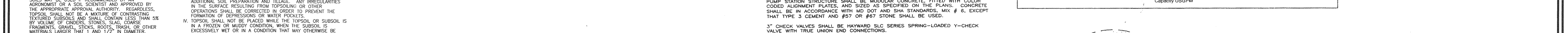
PERMANENT SEEDING NOTES: APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS DESIRED.

TEMPORARY SEEDING NOTES: APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE RE-DISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS DESIRED.



GENERAL DESCRIPTION: THE CONTRACTOR SHALL PROVIDE A DUPLEX CONCRETE SUBMERSIBLE PUMP STATION AND CONTROL PANEL. THE STATION SHALL BE CONSTRUCTED AS SHOWN ON THE 'AS-BUILT' PLANS AND SHALL BE SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND UNDERGROUND.

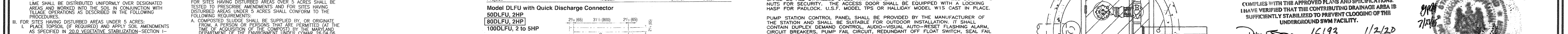
STATION DISCHARGE PIPING: SHALL BE 3" PVC SCHEDULE 80 PIPE. PROVIDE A SEALED QUICK DISCONNECT DISCHARGE FLANGE FOR EACH PUMP. SEALING OF THE PUMP UNIT DISCHARGE CONNECTOR SHALL BE ACCOMPLISHED WITH A SINGLE LINEAR DOWNWARD MOTION OF THE PUMP WITH THE ENTIRE WEIGHT OF THE PUMPING UNIT GASKET AND WEDGED PER ACRES (8 GAL/1000 SQ. FT.) FOR ANCHORING.



STARTUP: TEST EACH UNIT TO DEMONSTRATE CORRECT SEQUENCE OF OPERATION. CONTROL SETTINGS, FREE FROM VIBRATION, NOISE, AND OVERHEATING. DEMONSTRATE PROVISIONS FOR PUMP REMOVAL AND SERVICING.

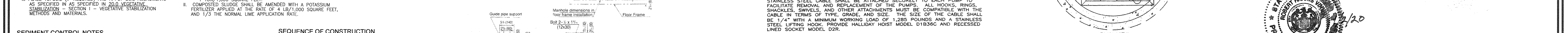
MANUALS: SUPPLY TWO COPIES OF THE OPERATION AND MAINTENANCE MANUALS TO THE OWNER AND ONE COPY OF THE SAME TO THE ENGINEER.

NOTE: DIMENSIONS AS SHOWN ON THE DRAWINGS ARE APPROXIMATE AND ARE TO CLARIFY BETWEEN THE CONTRACTOR DURING THE SUBMITTAL PROCESS BEFORE RELEASE TO THE MANUFACTURER FOR PRODUCTION.



AS-BUILT CERTIFICATION FOR PSWM: I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE 'AS-BUILT' PLANS AND I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND UNDERGROUND.

OWNER: BETHEL KOREAN PRESBYTERIAN CHURCH, INC. 3165 SAINT JOHNS LANE ELLICOTT CITY, MARYLAND 21042 C/O TED JED PHONE: 410-461-1235



REVISIONS TO BUILDING AND SIDEWALK; REMOVE FUTURE BUILDING ADDED BIODEGRADABLE SHEETS 18-25

2 REVISIONS TO BUILDING AND SIDEWALK; REMOVE FUTURE BUILDING ADDED BIODEGRADABLE SHEETS 18-25

SITE DEVELOPMENT PLAN SEDIMENT CONTROL NOTES AND DETAILS

BETHEL KOREAN PRESBYTERIAN CHURCH

RELIGIOUS CENTER

TAX MAP 17 GRID 23

MAP 24 GRID 23

2ND ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERS, INC.

ENGINEERS • SURVEYORS • PLANNERS

8407 MAIN STREET ELLICOTT CITY, MD 21043

TEL: 410.461.7666

FAX: 410.461.8961

DESIGN BY: RHW/DZ

DRAWN BY: DZ/KG/RV

CHECKED BY: RHW

DATE: DEC. 2012

SCALE: AS SHOWN

W.O. NO.: 04-1000

8 SHEET OF 25

PROFESSIONAL CERTIFICATE: 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. EXPIRES 08-27-2014

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DATE: 12/13/12

DATE: 12/08/12

DATE: 12/13/12

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

BY THE ENGINEER: I/WE CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL WAS PREPARED AND CHECKED BY ME OR ANOTHER PERSONNEL WHOSE PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

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

DATE: 12/13/12

DATE: 12/13/12

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DATE: 12/13/12

DATE: 12/08/12

DATE: 12/13/12

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

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

DATE: 12/13/12

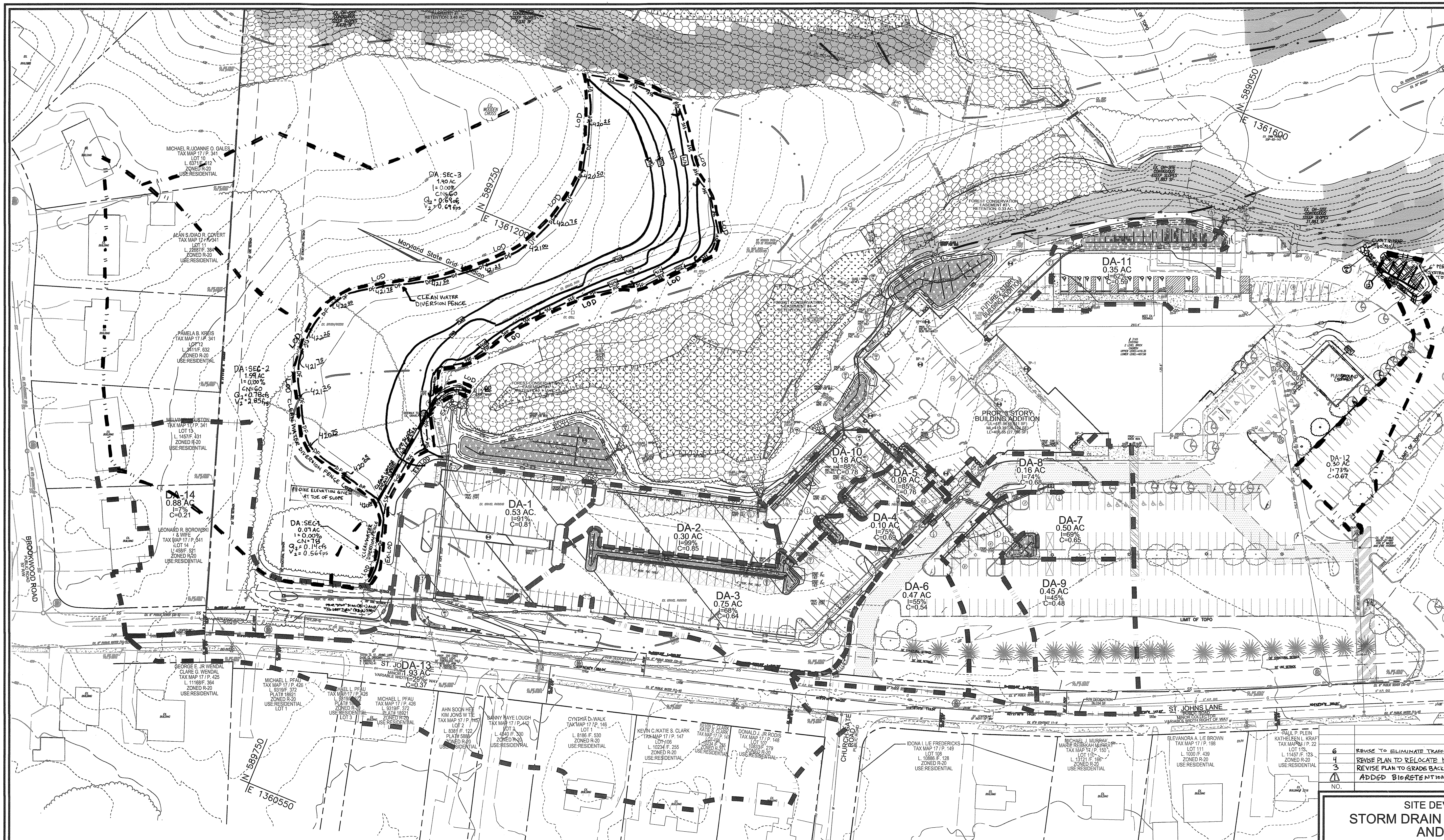
DATE: 12/13/12

AS-BUILT INFORMATION ON THIS SHEET

NO AS-BUILT INFORMATION ON THIS SHEET

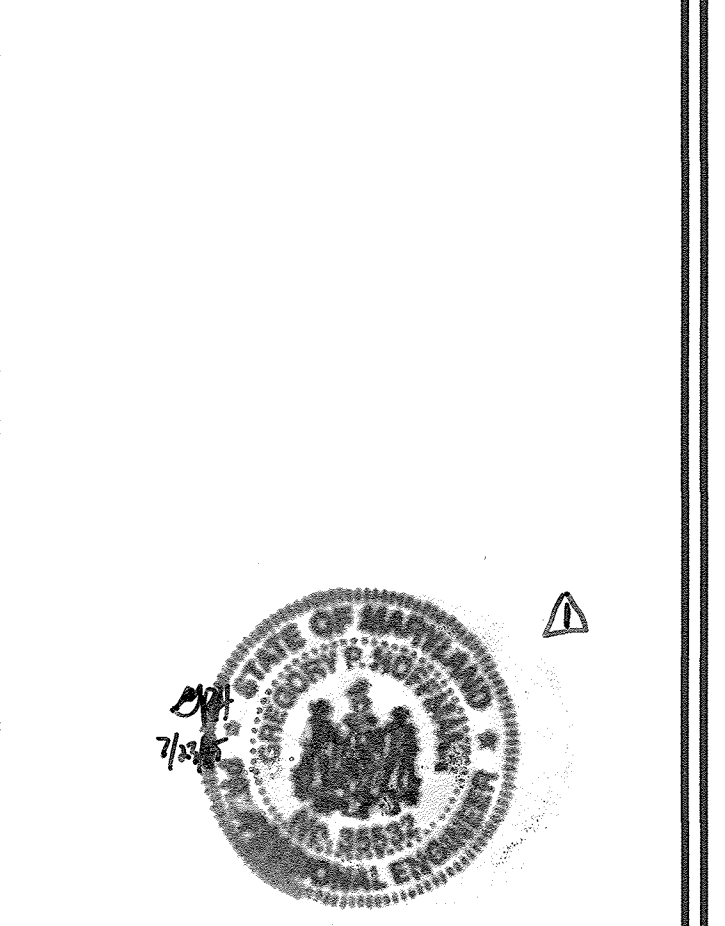
AS-BUILT DECEMBER 2019

SDP-12-037



LEGEND:

---	EXISTING CONTOUR
- - - -	PROPOSED CONTOUR
+	PROPOSED SPOT ELEVATION
+	EXISTING SPOT ELEVATION
---	EXISTING CURB AND GUTTER
---	PROPOSED CURB AND GUTTER
⊙	EXISTING UTILITY POLE
⊙	EXISTING LIGHT POLE
⊙	EXISTING MAILBOX
⊙	EXISTING SIGN
⊙	EXISTING SANITARY MANHOLE
S	EXISTING SANITARY LINE
o	EXISTING CLEANOUT
⊕	EXISTING FIRE HYDRANT
W	EXISTING WATER LINE
---	PROPOSED STORM DRAIN
---	PROPOSED STORM DRAIN INLET
⊙	EXISTING TREES (FIELD LOCATED)
⊙	EXISTING TREELINE (FIELD LOCATED)
⊙	EXISTING VEGETATION (APPROXIMATE LOCATION)
---	EXISTING FENCE
---	PROPERTY LINE
---	RIGHT-OF-WAY LINE
MIB2	SOILS BOUNDARY
MDS	PROPOSED SIDEWALK
SF	SILT FENCE
SSF	SUPER SILT FENCE
---	DRAINAGE AREA



OWNER
 BETHEL KOREAN PRESBYTERIAN CHURCH, INC.
 3165 SAINT JOHN'S LANE
 ELLICOTT CITY, MARYLAND 21042
 PHONE: 410-461-1235

NO.	REVISION	DATE
6	REVISE TO ELIMINATE TRAFFIC ISLAND WITHIN ST. JOHN'S LANE	5-1-19
4	REVISE PLAN TO RELOCATE MICROBIORETENTION	2/20/18
3	REVISE PLAN TO GRADE BACK OF SITE WITH EXCESS ON-SITE FILL DIRT	7/27/17
1	ADDED BIORETENTIONS, SHEETS 18-25	3/2/2015

PLAN VIEW
 SCALE: 1"=50'

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	SOIL	HYDRIC INCLUSIONS	HIGHLY ERODIBLE SOIL
BsA	BRAE SILT LOAM, 0 TO 3 PERCENT SLOPES	D	YES	NO	YES, WHOLE MAP	NO
OhB	GLEYS-UDEAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES	B	NO	NO	NO	NO
MuC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B	NO	NO	NO	NO
MoD	MANOR LOAM, 15 TO 25 PERCENT SLOPES	B	NO	NO	NO	NO

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 1/24/13
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 2/02/13
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 2/4/13
 DIRECTOR

BY THE DEVELOPER:

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

SIGNATURE OF DEVELOPER _____ DATE _____

BY THE ENGINEER:

"I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS, AND THAT I WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF ENGINEER _____ DATE _____

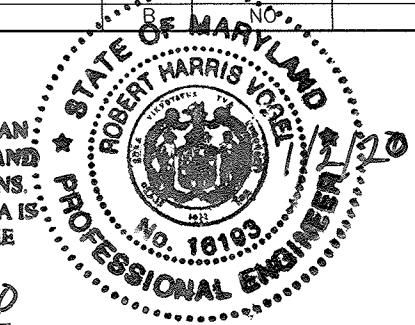
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD S.C.D. _____ DATE _____

NOTE: BASED ON HOWARD SOIL SURVEY AS-BUILT CERTIFICATION FOR PSWM

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

[Signature] 1/6/19 1/2/20
 P.E. NAME P.E.# DATE



SCALE: 1"=50'

NO AS-BUILT INFORMATION ON THIS SHEET

SITE DEVELOPMENT PLAN
STORM DRAIN DRAINAGE AREA MAP
AND SOILS MAP

BETHEL KOREAN PRESBYTERIAN CHURCH
 RELIGIOUS CENTER
 LOT 1127/F.0227
 HOWARD COUNTY, MARYLAND

TAX MAP 17 GRID 23
 TAX MAP 24 GRID 5
 2ND ELECTION DISTRICT

ZONING R-SI
 PARCEL 1168

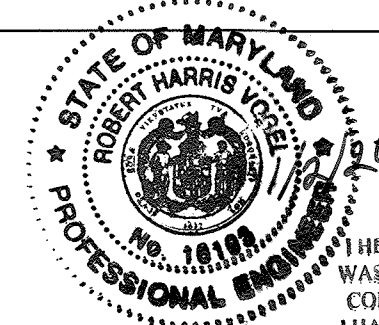
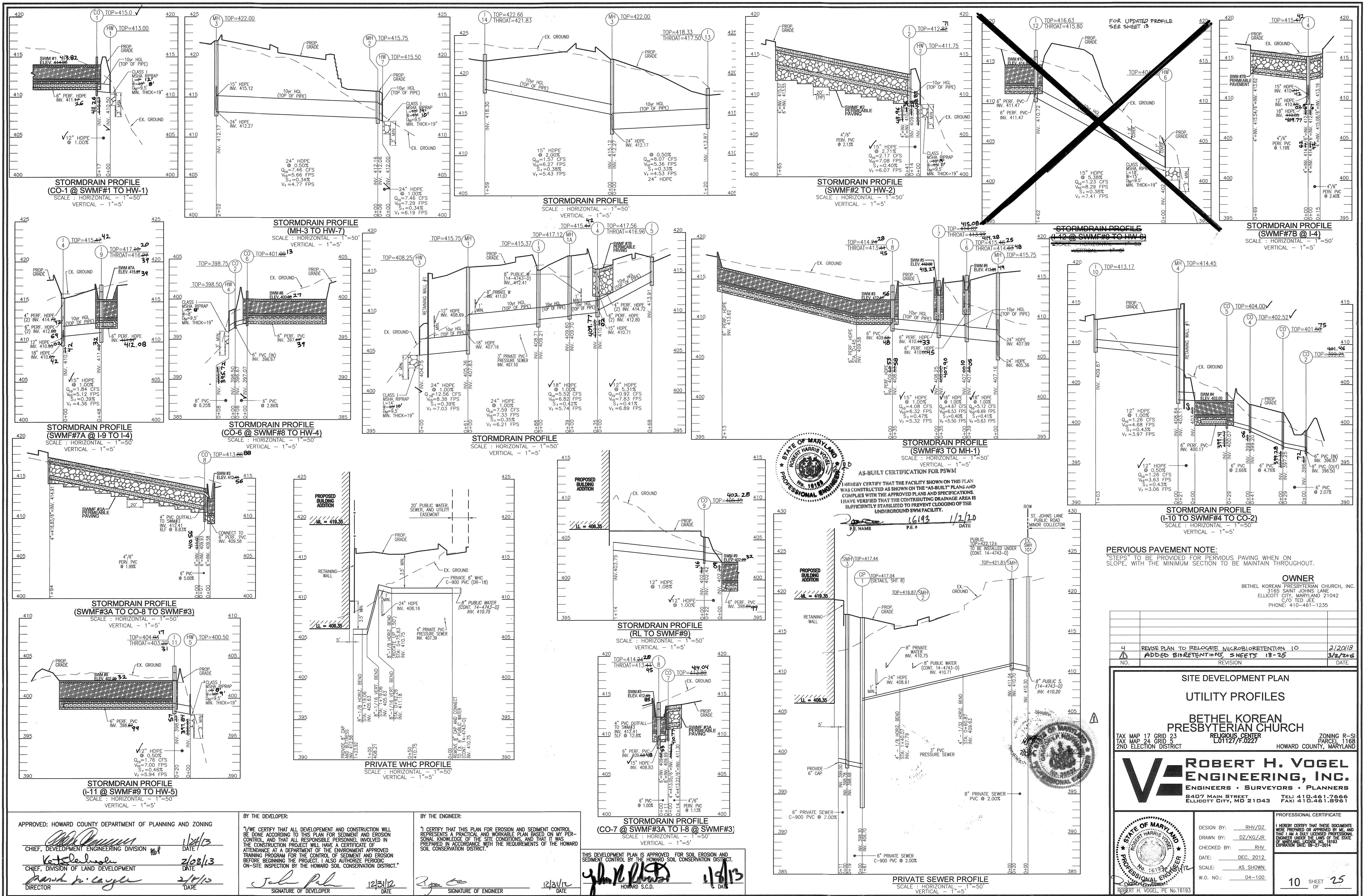
ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET ELLICOTT CITY, MD 21043
 TEL: 410.461.7666 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE

DESIGN BY: RHW/DZ
 DRAWN BY: DZ/KG/JR
 CHECKED BY: RHW
 DATE: JAN. 2013
 SCALE: AS SHOWN
 W.O. NO.: 04-100

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. 16193, EXPIRATION DATE: 08-27-2014.

9 SHEET OF 25



AS-BUILT CERTIFICATION FOR PFSWM
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SANITARY FACILITY.

P.E. NAME: 16193 DATE: 12/20

PERVIOUS PAVEMENT NOTE:
 "STEPS" TO BE PROVIDED FOR PERVIOUS PAVING WHEN ON SLOPE, WITH THE MINIMUM SECTION TO BE MAINTAIN THROUGHOUT.

OWNER
 BETHEL KOREAN PRESBYTERIAN CHURCH, INC.
 3165 SAINT JOHNS LANE
 ELLICOTT CITY, MARYLAND 21042
 PHONE: 410-461-1235

4	REVISE PLAN TO RELOCATE MICROBIORETENTION IO	2/2018
1	ADDED BIORETENTIONS SHEETS 18-25	3/2/2015
NO.	REVISION	DATE

SITE DEVELOPMENT PLAN
 UTILITY PROFILES
 BETHEL KOREAN PRESBYTERIAN CHURCH
 RELIGIOUS CENTER
 L01127/F.0227
 ZONING R-S1
 PARCEL 1168
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE
 DESIGN BY: RHW/DZ
 DRAWN BY: DZ/KG/JR
 CHECKED BY: RHW
 DATE: DEC. 2012
 SCALE: AS SHOWN
 W.O. NO.: 04-100
 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. 16193 EXPIRATION DATE: 08-27-2014

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 1/24/13
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 2/28/13
 DIRECTOR
 DATE: 2/10/13

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

BY THE ENGINEER:
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 HOWARD S.C.D.
 DATE: 1/24/13

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

1. MATERIAL SPECIFICATIONS
THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.4.1.

2. FILTERING MEDIA OR PLANTING SOIL
THE SOIL SHALL BE A UNIFORM MIX. FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH...

3. COMPACTION
IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EQUIPMENT HOES TO REMOVE ORIGINAL SOIL.

4. PLANT MATERIAL
RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.

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 SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3".

6. UNDERDRAINS
UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:
PIPE - SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM F758, TYPE PS 28, OR AASHTO M-278) IN A GRAVEL LAYER.

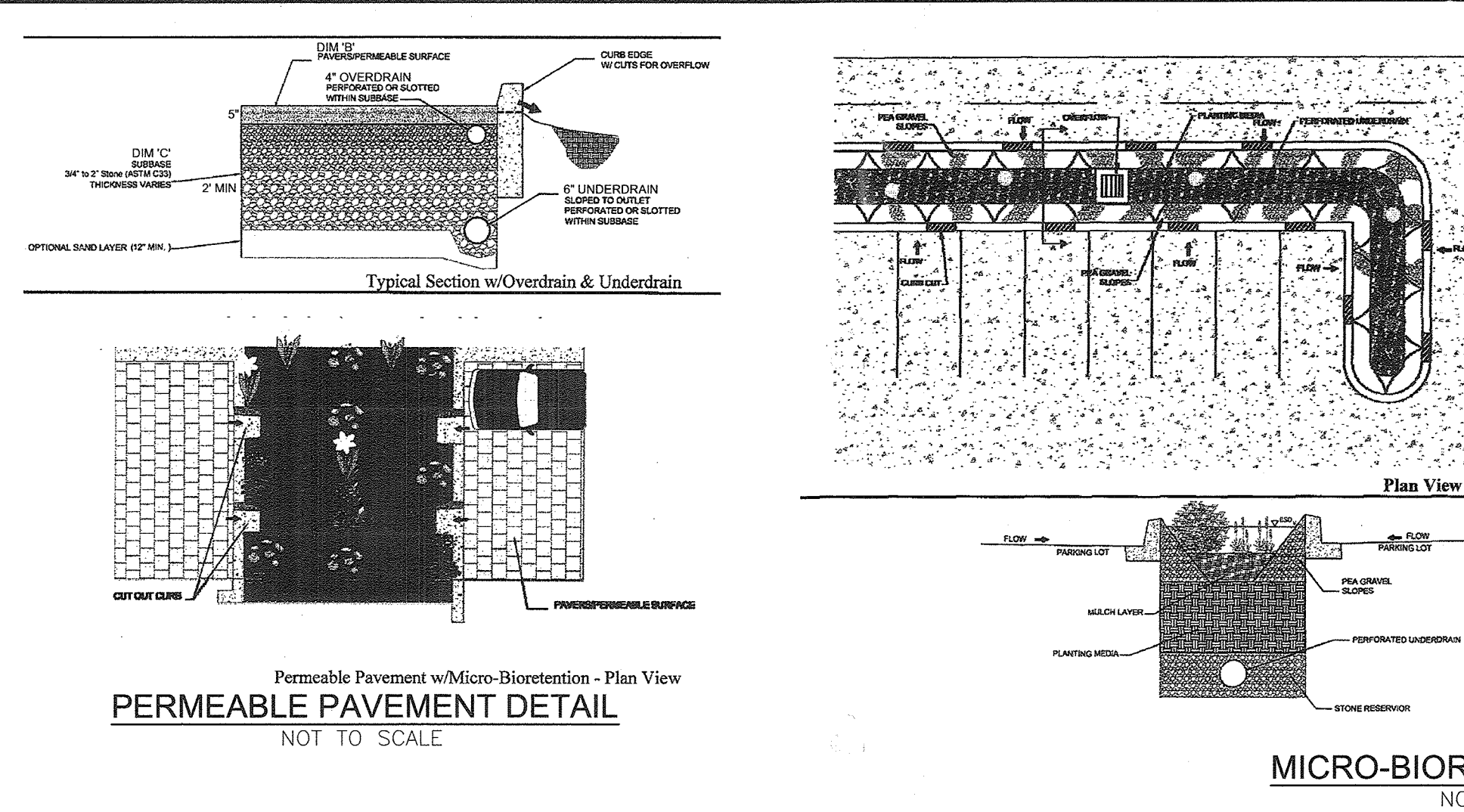
7. MISCELLANEOUS
THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

B.4.B SPECIFICATIONS FOR PERMEABLE PAVEMENTS & REINFORCED TURF

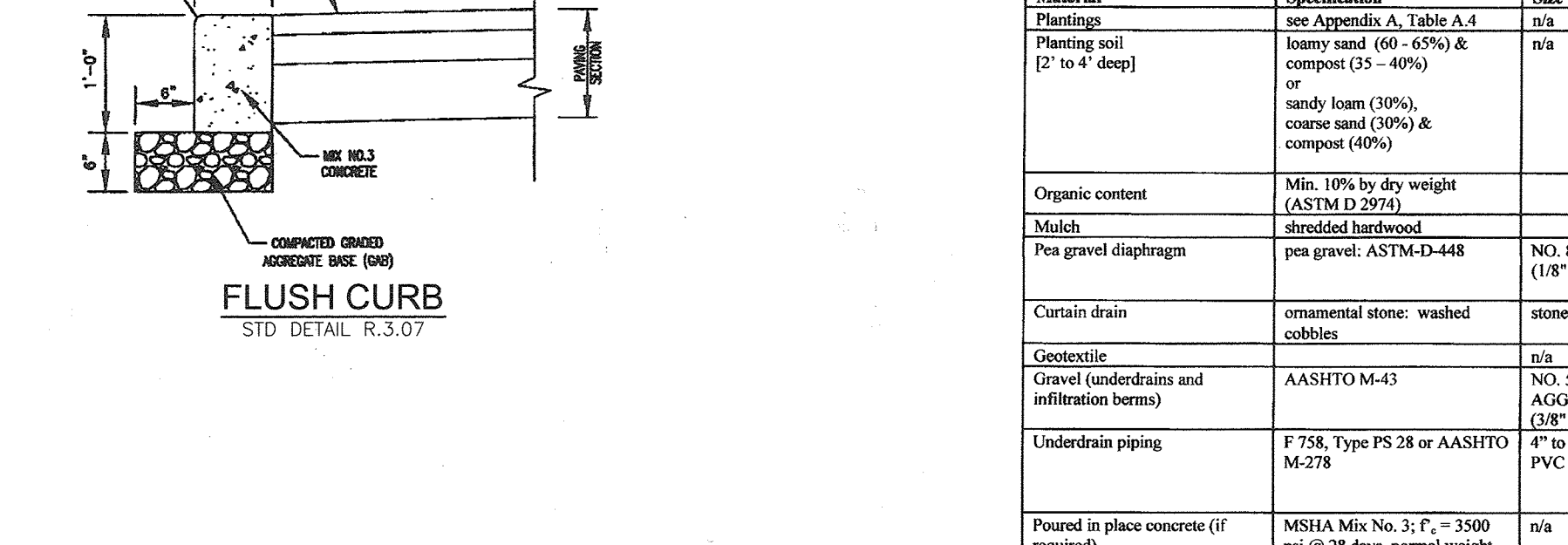
1. PERVIOUS CONCRETE SPECIFICATIONS
DESIGN THICKNESS - PERVIOUS CONCRETE APPLICATIONS SHALL BE DESIGNED SO THAT THE THICKNESS OF THE CONCRETE SLAB SHALL SUPPORT THE TRAFFIC AND VEHICLE TYPES THAT WILL BE CARRIED.

2. PERMEABLE INTERLOCKING CONCRETE PAVEMENTS (PICP)
PAVER BLOCKS - BLOCKS SHOULD BE EITHER 3/4 IN. OR 4 IN. THICK AND MEET ASTM C 936 OR CSA A231.2 REQUIREMENTS.

3. REINFORCED TURF
REINFORCED GRASS PAVEMENT (RGP) - WHETHER USED WITH GRASS OR GRAVEL, THE RGP THICKNESS SHALL BE AT LEAST 1"-3/4" THICK WITH A LOAD CAPACITY CAPABLE OF SUPPORTING THE TRAFFIC AND VEHICLE TYPES THAT WILL BE CARRIED.



PERMEABLE PAVEMENT DETAIL
MICRO-BIORETENTION DETAILS
NOT TO SCALE



PIPE SCHEDULE

Table with 3 columns: SIZE, TYPE, LENGTH. Lists various pipe types and their lengths.

STORM DRAIN STRUCTURE SCHEDULE

Table with columns: NO., TYPE, LOCATION, TOP ELEV., THROAT ELEV., INV. IN, INV. OUT, COMMENTS. Lists storm drain structures with their specific details.

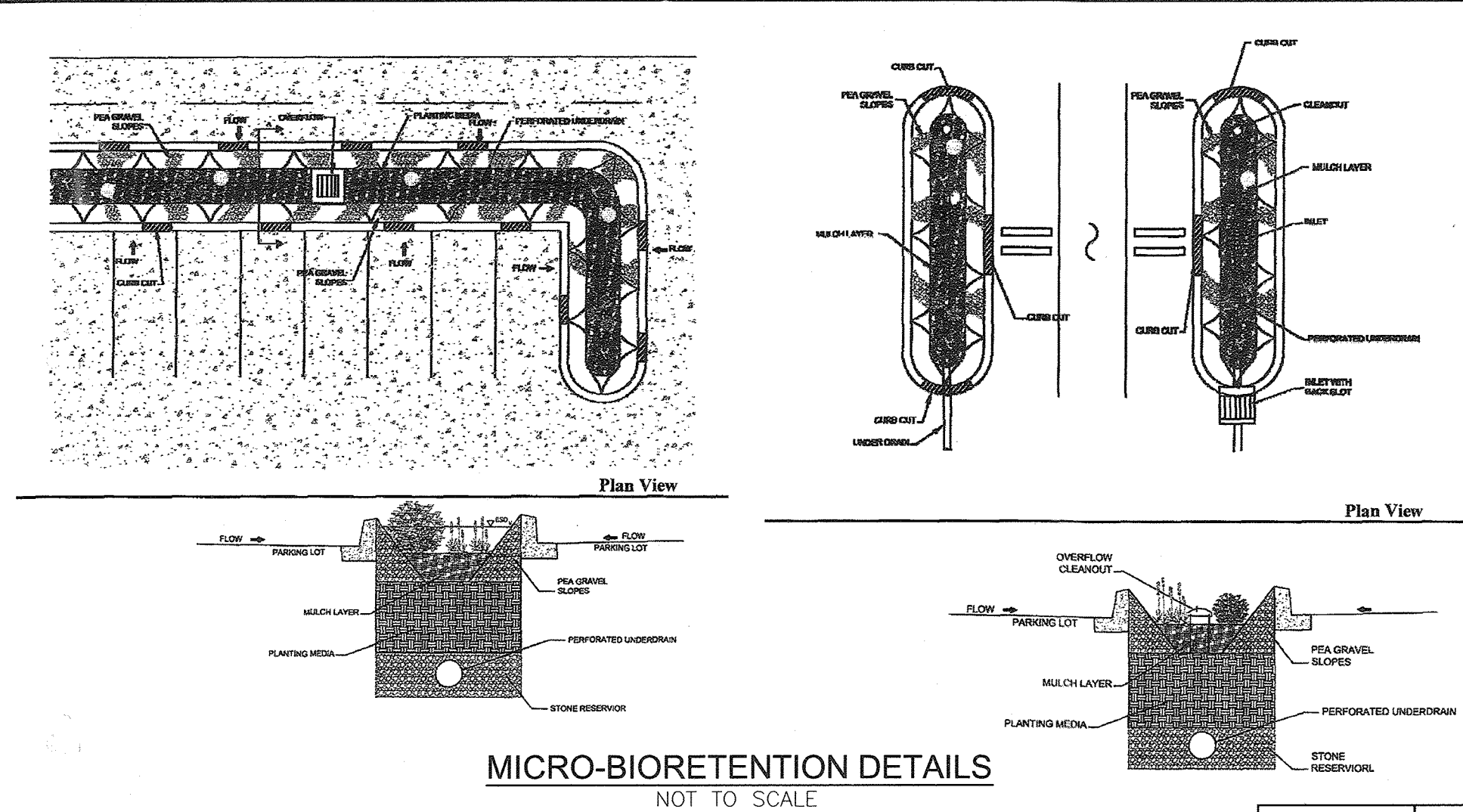
OPERATION AND MAINTENANCE SCHEDULE FOR
LANSCAPE INFILTRATION (M-3), MICRO-BIORETENTION (M-6),
RAIN GARDENS (M-7), BIORETENTION SWALE (M-8),
AND ENHANCED FILTERS (M-9)

- 1. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY...
2. THE OWNER SHALL PERFORM A PLAN IN THE SPRING AND IN THE FALL OF EACH YEAR...
3. THE OWNER SHALL INSPECT THE MULCH EACH SPRING...
4. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS...

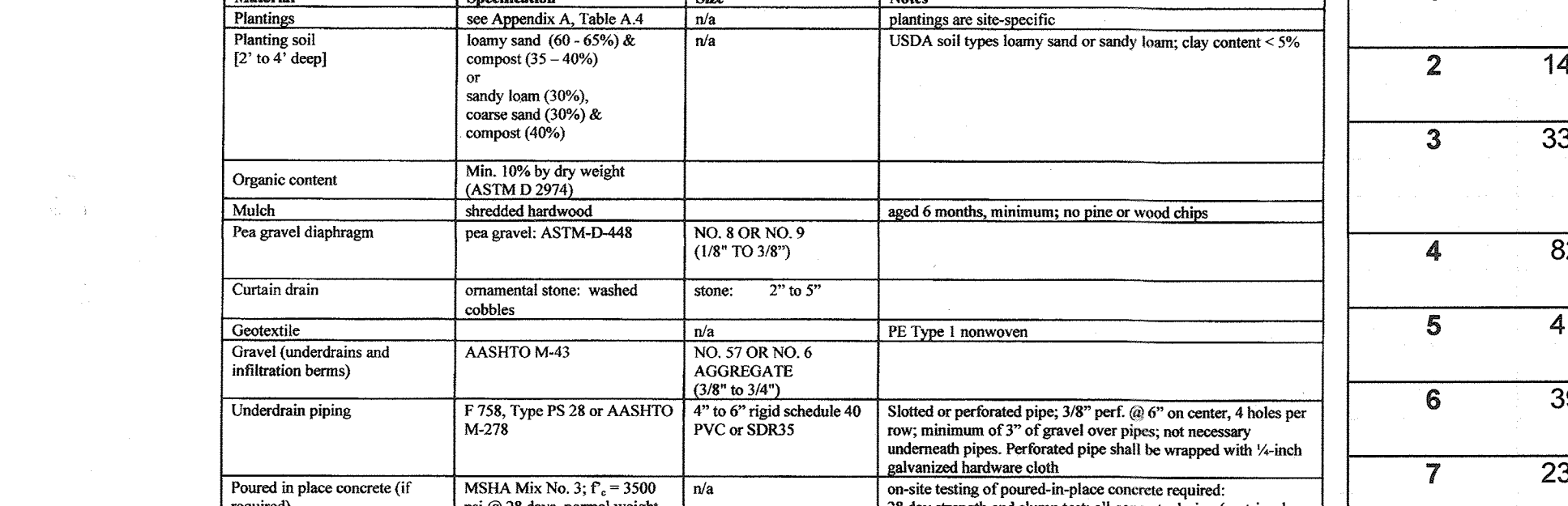
PRIVATE SEWER STRUCTURE SCHEDULE

Table with columns: STR.#, TYPE, LOCATION, TOP ELEV., THROAT ELEV., INV. IN, INV. OUT, COMMENTS. Lists private sewer structures.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
BY THE DEVELOPER:
BY THE ENGINEER:



MICRO-BIORETENTION (TYPICAL)
NOT TO SCALE



STORMWATER MANAGEMENT ESD FACILITY DATA CHART

Table with columns: SWMF NO., SWMF SIZE (AREA OR DIM), DIM 'B' PONDING/CONC., DIM 'C' PLANTING/STONE, DIM 'D' UNDERDRAIN SIZE, REV. ADDITIONAL STONE STORAGE, TYPE OF ESD FACILITY. Lists stormwater management facilities.

STORM DRAIN STRUCTURE SCHEDULE

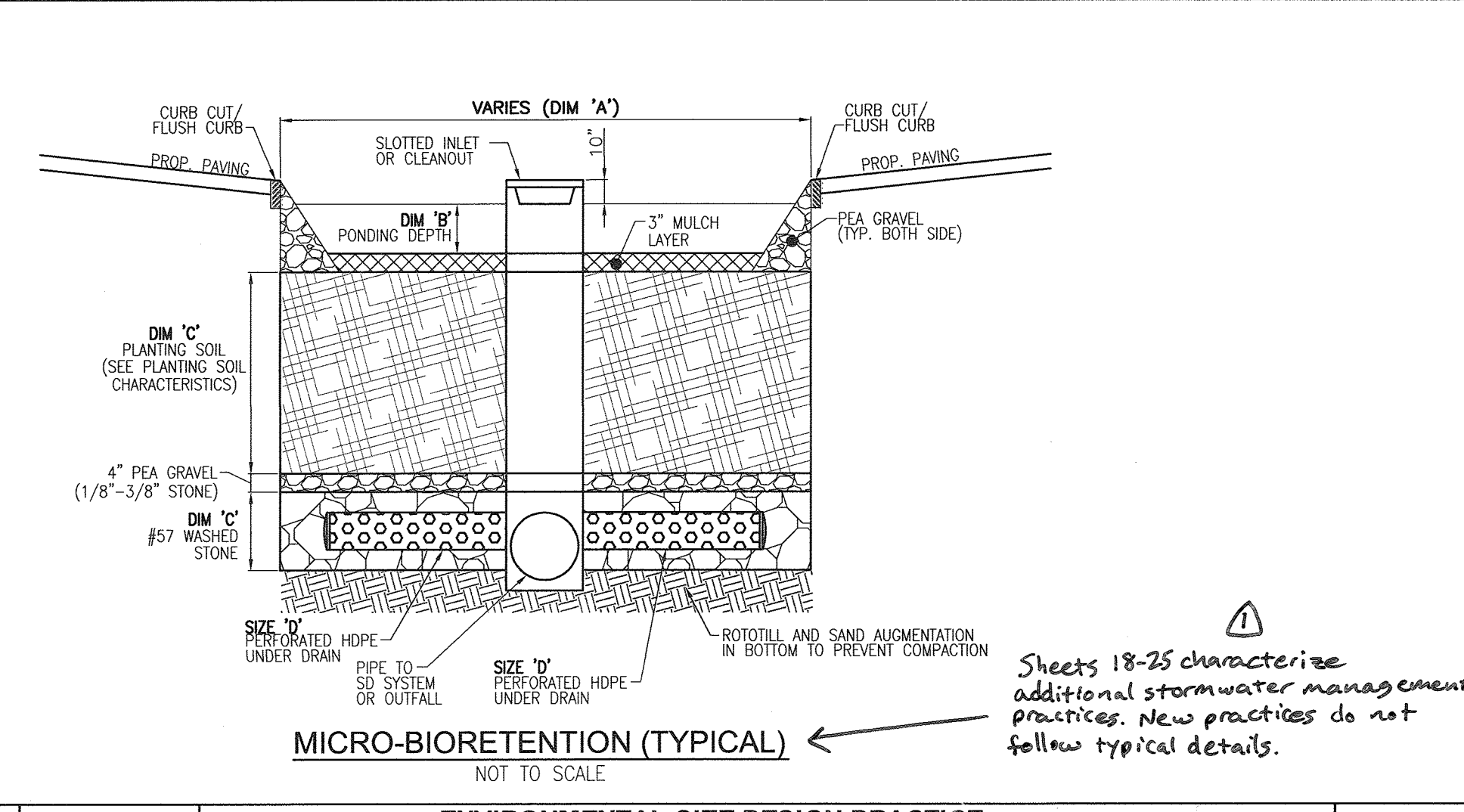
Table with columns: STR.#, TYPE, LOCATION, TOP ELEV., THROAT ELEV., INV. IN, INV. OUT, COMMENTS. Lists storm drain structures.

PRIVATE SEWER STRUCTURE SCHEDULE

Table with columns: STR.#, TYPE, LOCATION, TOP ELEV., THROAT ELEV., INV. IN, INV. OUT, COMMENTS. Lists private sewer structures.

AS-BUILT CERTIFICATION FOR PSWM
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE 'AS-BUILT' PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
BY THE DEVELOPER:
BY THE ENGINEER:



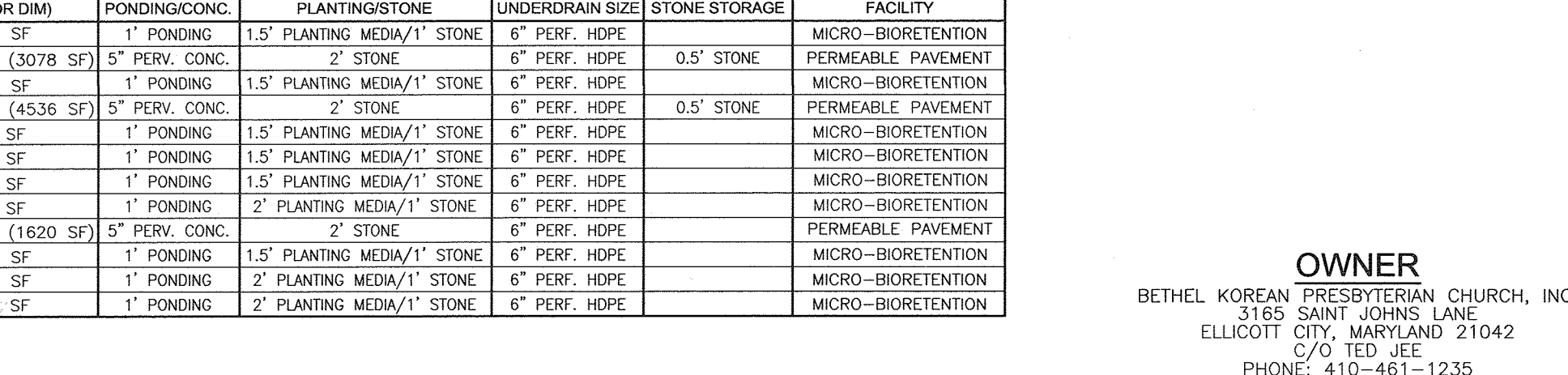
MICRO-BIORETENTION (TYPICAL)
NOT TO SCALE

Table with columns: DRAINAGE AREA #, AREA TREATED, FACILITY NUMBER, PERMEABLE PAVEMENT, ADD UNDER PAVE, LANDSCAPE INFILTRATION, PERVIOUS SIDEWALK, BIO SWALE, GRAVEL TRENCH, MICRO BIO RETENTION, X, ESDv VOLUME. Lists drainage areas and their ESDv volumes.

TOTAL ESDv PROVIDED 189'13"

OWNER
BETHEL KOREAN PRESBYTERIAN CHURCH, INC.
3165 SAINT JOHNS LANE,
ELLCOTT CITY, MARYLAND 21042
PHONE: 410-461-1235

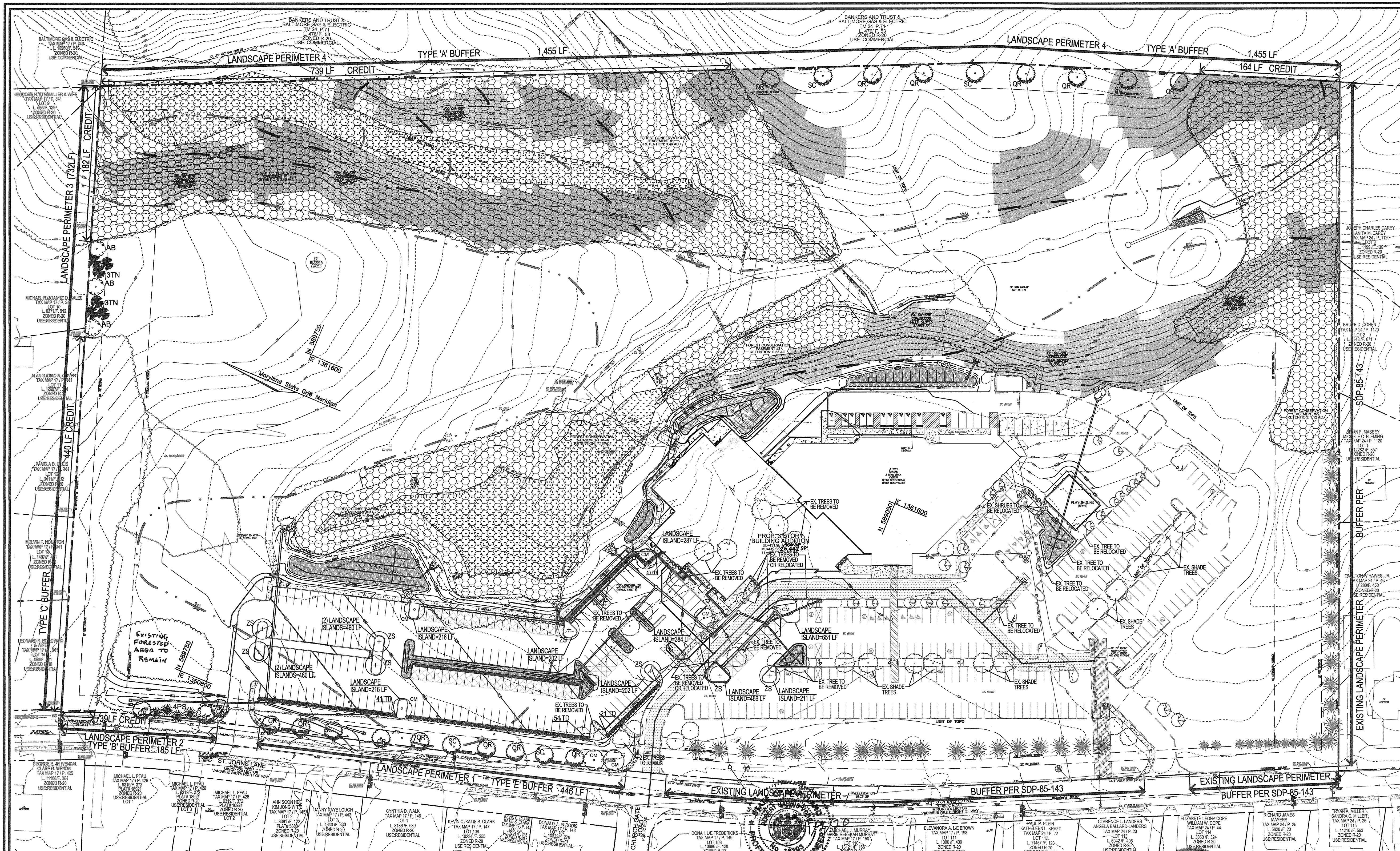
7 REVISE TO CORRECT THE DESIGN OF NBR #8 DUE TO AS-BUILT CONDITIONS 7-11-19
4 REVISE PLAN TO RELOCATE MICROBIORETENTION 10 2/20/19
ADDED BIORETENTIONS SHEETS 18-25 3/28/2015



ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET, ELLICOTT CITY, MD 21043
TEL: 410.461.7666 FAX: 410.461.8961

DESIGN BY: RHW/DZ
DRAWN BY: DK/GJR
CHECKED BY: RHW
DATE: DEC. 2012
SCALE: AS SHOWN
W.O. NO.: 04-100

11 SHEET OF 25
AS-BUILT DECEMBER 2019
SDP-12-037



LEGEND:

- - - - - EXISTING CONTOUR
- - - - - PROPOSED CONTOUR
- o (with elevation) PROPOSED SPOT ELEVATION
- o (with elevation) EXISTING SPOT ELEVATION
- EXISTING CURB AND GUTTER
- EXISTING CURB AND GUTTER
- o EXISTING UTILITY POLE
- o EXISTING LIGHT POLE
- o EXISTING MAILBOX
- o EXISTING SIGN
- o EXISTING SANITARY MANHOLE
- o EXISTING SANITARY LINE
- o EXISTING CLEANOUT
- o EXISTING FIRE HYDRANT
- o EXISTING WATER LINE
- o EXISTING FENCE
- o PROPERTY LINE
- o RIGHT-OF-WAY LINE
- o SOILS BOUNDARY
- o PROPOSED STORM DRAIN
- o PROPOSED STORM DRAIN INLET
- o PROPOSED SIDEWALK
- o PROPOSED LIGHT POLE
- o PROPOSED SHADE TREES
- o PROPOSED EVERGREEN TREES
- o PROPOSED SHRUBS
- o EXISTING LANDSCAPING PER SDP-85-143
- o LANDSCAPE PERIMETER
- o MODERATE SLOPES (1:5 - 2:5)
- o STEEP SLOPE (>2:5)
- o PERVIOUS CONCRETE
- o EXISTING WETLAND

GENERAL NOTES:

- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. THE REQUIRED PARKING AND PERIMETER LANDSCAPING WILL BE BONDED FOR THIS SUBMISSION.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$18,890.00 FOR THE REQUIRED 39 SHADE TREES, 13 EVERGREEN TREES AND 108 SHRUBS.
- SHOULD ANY TREE DESIGNATED FOR PRESERVATION FOR WHICH LANDSCAPING CREDIT IS GIVEN DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL.
- 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.
- AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES.

LANDSCAPE SCHEDULE NOTE:

- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAS SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HRD PLANTING SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
- CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

OWNER
 BETHEL KOREAN PRESBYTERIAN CHURCH, INC.
 3165 SAINT JOHN'S LANE
 ELLICOTT CITY, MARYLAND 21042
 C/O TED JEE
 PHONE: 410-461-1235

SCHEDULE 'A' PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO PERIMETER AND ROADS	ADJACENT TO DUMPSITE	TOTAL			
PERMETER/FRONTAGE DESIGNATION	1	2	3	4	5	6
LINEAR FEET OF ROADWAY FRONTAGE/PERMETER	433	185	732	1,455		35
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	No	YES, 39'	YES, 622'	YES, 903'	No	No
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	No	No	No	No	No	No
NUMBER OF PLANTS REQUIRED	1:40	1:50	1:40	1:40	1:60	27
SHRUBS	1:4	1:4	1:4	1:4	1:10	13
NUMBER OF PLANTS PROVIDED	10**	3	3	9	0*	25
EVERGREEN TREES	-	4	4	8	0*	10
EX SHADE TREES	-	-	-	-	-	-
OTHER TREES (2:1 SUBSTITUTION)	2**	-	-	-	-	2
SHRUBS (10:1 SUBSTITUTION)	116	-	-	-	-	40*
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED	** SUBSTITUTE ONE SHADE FOR 10 SHRUBS, AND THREE EVERGREEN TREES FOR 30 SHRUBS. ** PROVIDED 2 SMALL ORNAMENTAL TREES IN PLACE OF 1 SHADE TREE IN PERIMETER 1.					

LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	CAT
QR	15	QUERCUS RUBRA NORFOLKIAN RED OAK	2 1/2"-3" CAL.	B & B
SC	7	PRUNUS SERRATA SARGENT CHERRY	2 1/2"-3" CAL.	B & B
ZS	9	ZELCOVA SERRATA VILLAGE GREEN VILLAGE GREEN JAPANESE ZELCOVA	2 1/2"-3" CAL.	B & B
AB	3	ACER PALMATUM BLOODGOOD BLOODGOOD JAPANESE RED MAPLE	4"-6" HT. (MAX. HEIGHT=25')	B & B
CM	6	CUSCUTROBIA TUSCARORA TUSCARORA CRAPE MYRTLE	4"-6" HT. (MAX. HEIGHT=25')	B & B
PS	4	PINUS STROBUS EASTERN WHITE PINE	4"-6" HT. (MAX. HEIGHT=25')	B & B
TN	6	THUJA OCCIDENTALIS 'NIGRA' NIGRA ARBOVITAE	4"-5" HT. (MAX. HEIGHT=20')	B & B
TD	156	TAXUS MEDIA 'DENSIFORMIS' DENSIFORMIS YEW	2 1/2"-3" HT.	B & B

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING

CATEGORY	QUANTITY
NUMBER OF EXISTING PARKING SPACES TO REMAIN	242
NUMBER OF TREES REQUIRED	12
NUMBER OF EXISTING TREES	11
SHADE TREES	3
OTHER TREES (2:1 SUBSTITUTION)	7
NUMBER OF PROPOSED PARKING SPACES	231
NUMBER OF TREES REQUIRED	12
NUMBER OF TREES PROVIDED	13
SHADE TREES	3
OTHER TREES (2:1 SUBSTITUTION)	9

AS-BUILT CERTIFICATION FOR PSWM

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

DATE: 12/12/19
 P.E. NAME: [Signature]
 P.E. NO: 16193

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DATE: 12/11/19

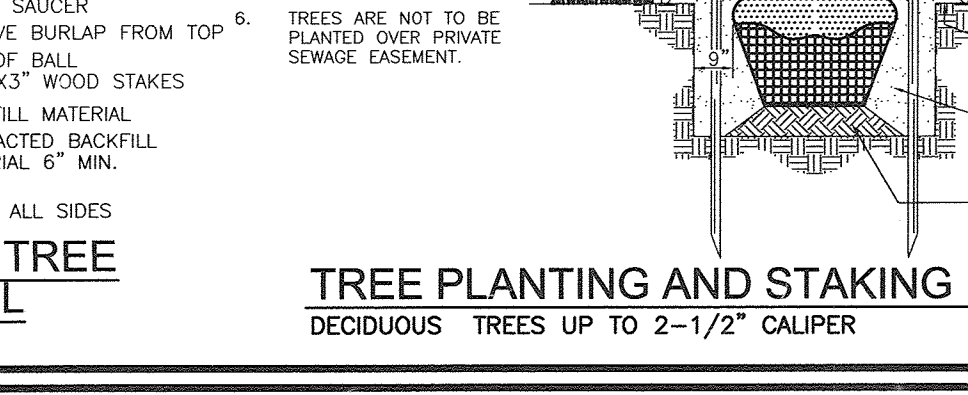
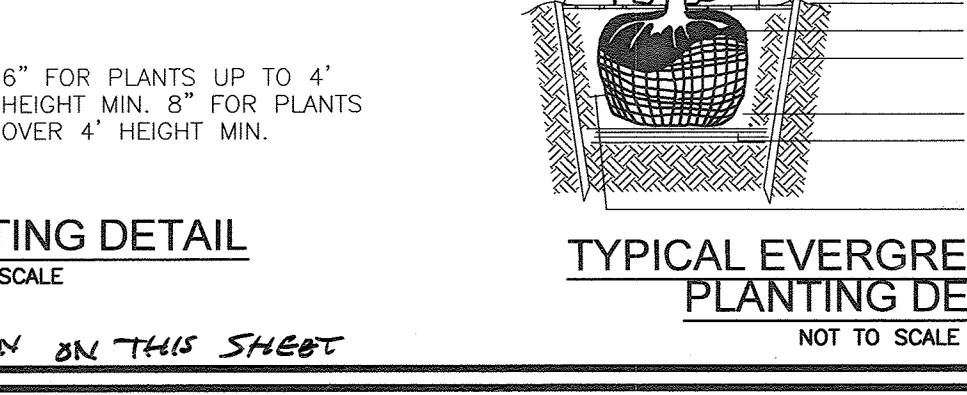
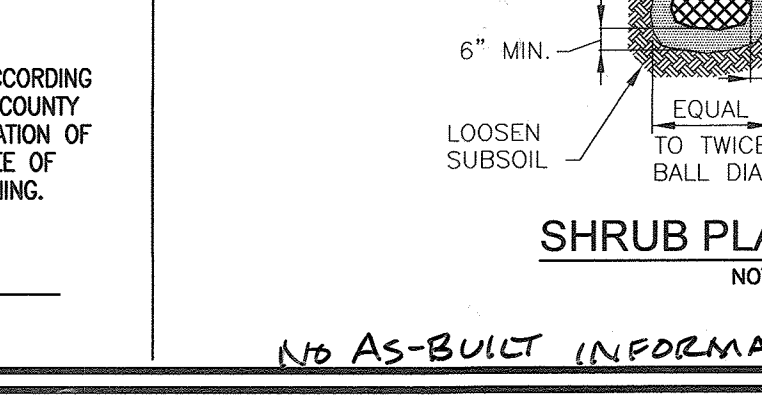
DATE: 2/08/13

DATE: 2/14/12

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 (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

DATE: 12/31/12



SITE DEVELOPMENT PLAN

LANDSCAPE PLAN, NOTES AND DETAILS

BETHEL KOREAN PRESBYTERIAN CHURCH

TAX MAP 17 GRID 23
 TAX MAP 24 GRID 5
 2ND ELECTION DISTRICT

RELIGIOUS CENTER
 LOT 127/F.0227

ZONING R-SI
 PARCEL 1168
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.

ENGINEERS • SURVEYORS • PLANNERS

8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

DESIGN BY: RHV/DZ
 DRAWN BY: DZ/KG/JR
 CHECKED BY: RHV
 DATE: JAN. 2013
 SCALE: AS SHOWN
 W.O. NO.: 04-100

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE 09-27-2019

12 SHEET OF 25

SCHEDULE D : STORMWATER

LINEAR FEET OF PERIMETER	MANAGEMENT AREA LANDSCAPING:			
	MBR #1	MBR #3	MBR #4	MBR #5
CREDIT FOR EXISTING VEGETATION (NO, YES AND LINEAR FEET)	NO	NO	NO	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	YES, 100%*	YES, 100%*	YES, 100%*	YES, 100%*
NUMBER OF TREES REQUIRED (8 BUFFER)	8 SHADE TREES 10 EVERGREEN TREES	8 SHADE TREES 12 SHADE TREES 15 EVERGREEN TREES	8 SHADE TREES 3 SHADE TREES 3 EVERGREEN TREES	8 SHADE TREES 2 SHADE TREES 2 EVERGREEN TREES
NUMBER OF TREES PROVIDED		SEE BIORETENTION PLANT LIST*		

*SURETY FOR BIORETENTION PROVIDED IN THE DEED COST ESTIMATE

SCHEDULE D : STORMWATER

LINEAR FEET OF PERIMETER	MANAGEMENT AREA LANDSCAPING:				
	MBR #6	MBR #7	MBR #8	MBR #9	MBR #10
CREDIT FOR EXISTING VEGETATION (NO, YES AND LINEAR FEET)	NO	NO	NO	NO	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	YES, 100%*	YES, 100%*	YES, 100%*	YES, 100%*	YES, 100%*
NUMBER OF TREES REQUIRED (8 BUFFER)	8 SHADE TREES 2 EVERGREEN TREES	8 SHADE TREES 3 EVERGREEN TREES	8 SHADE TREES 5 SHADE TREES 6 EVERGREEN TREES	8 SHADE TREES 7 SHADE TREES 8 EVERGREEN TREES	8 SHADE TREES 4 EVERGREEN TREES
NUMBER OF TREES PROVIDED			SEE BIORETENTION PLANT LIST*		

*SURETY FOR BIORETENTION PROVIDED IN THE DEED COST ESTIMATE

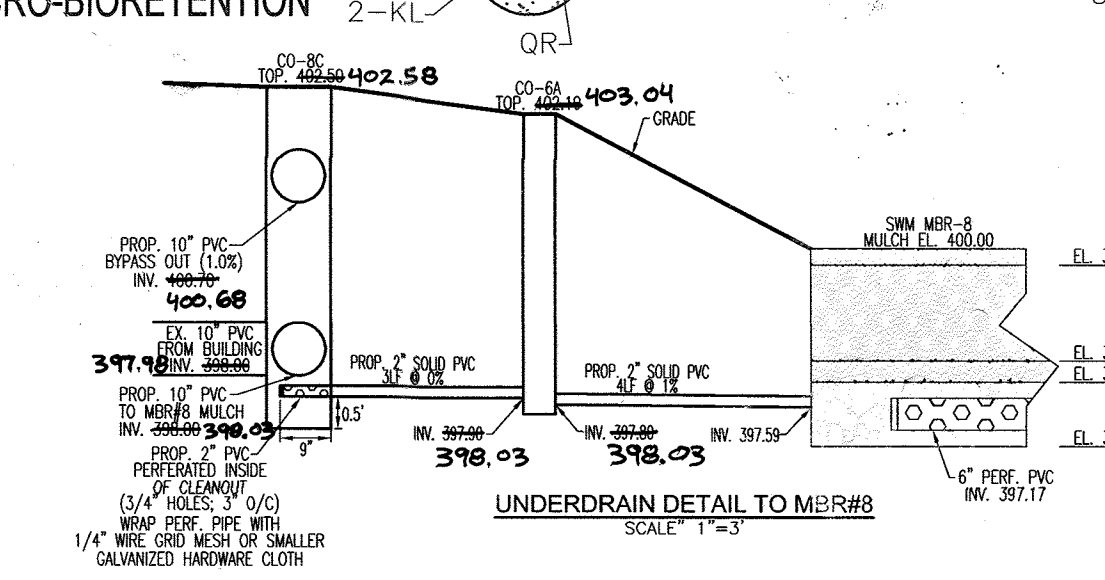
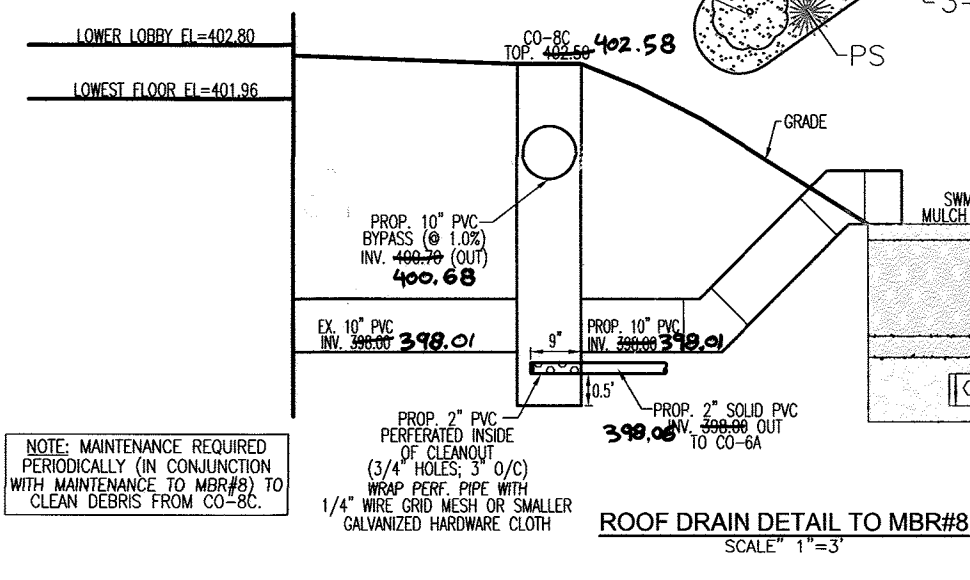
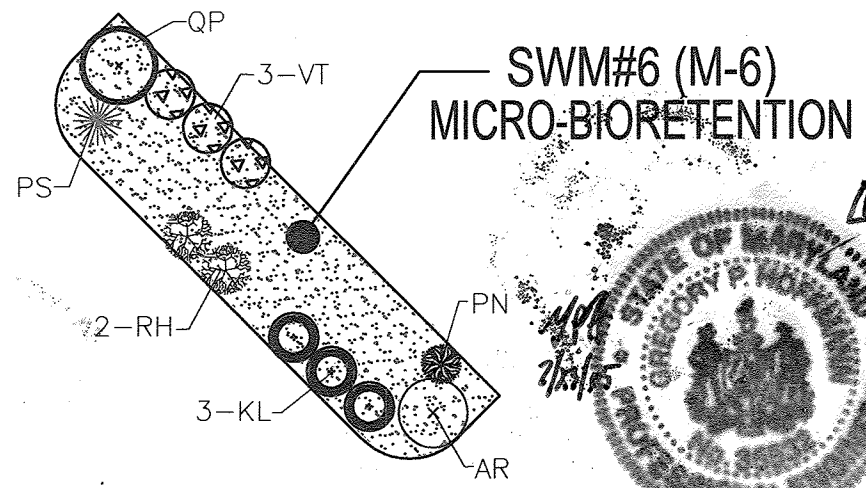
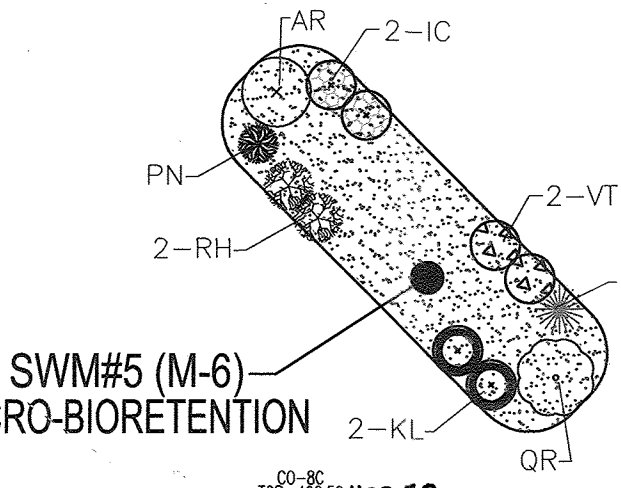
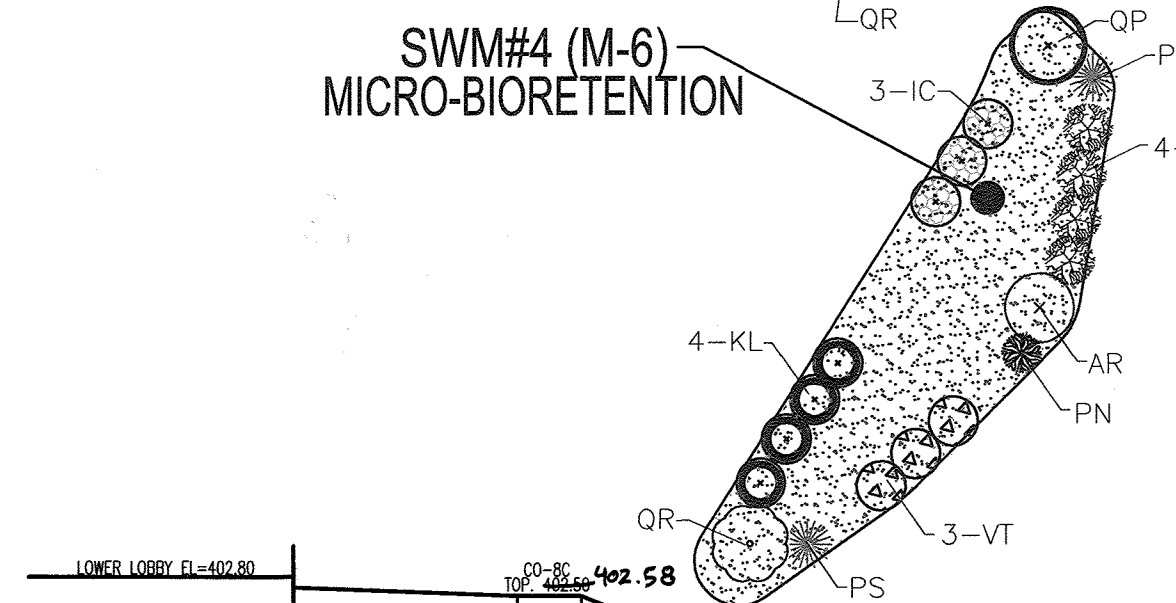
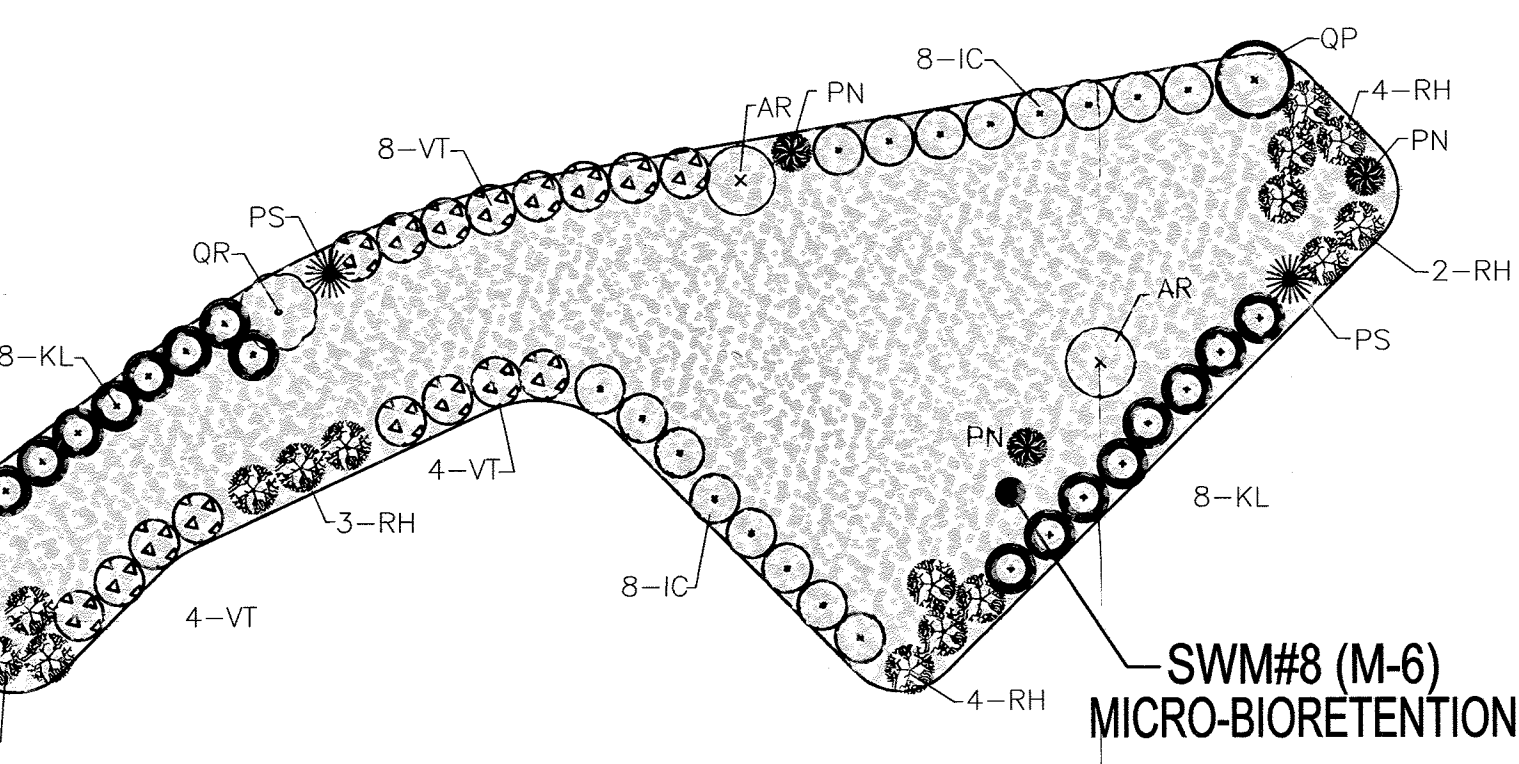
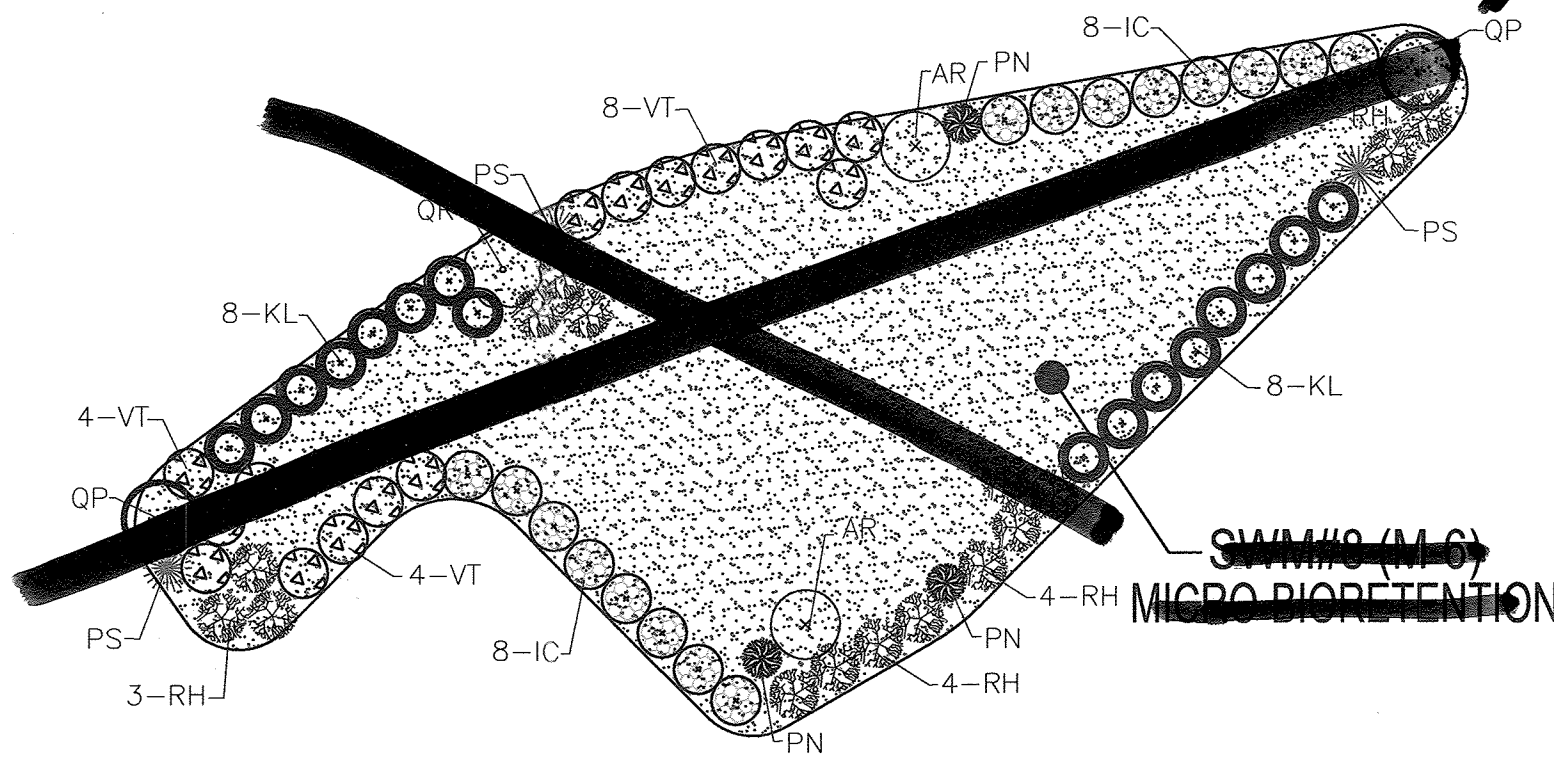
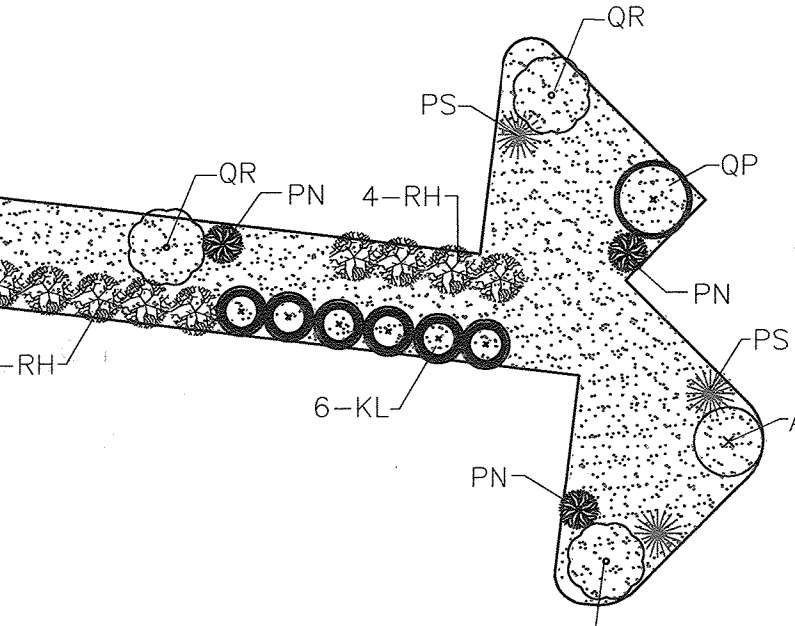
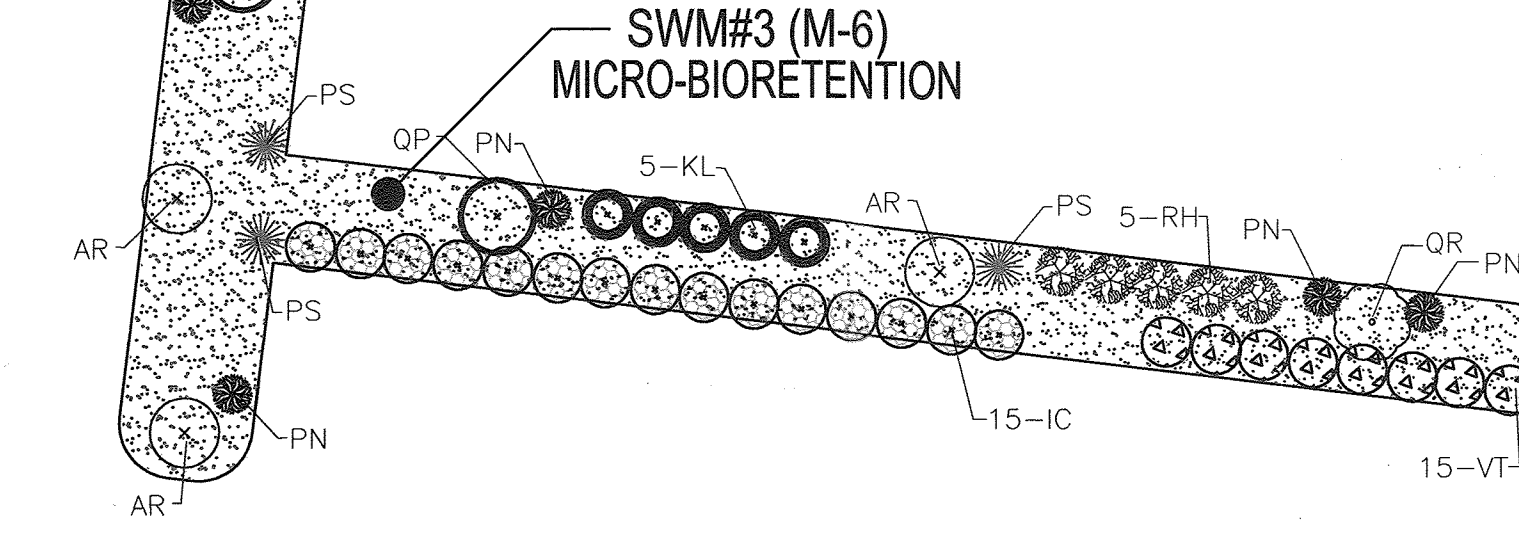
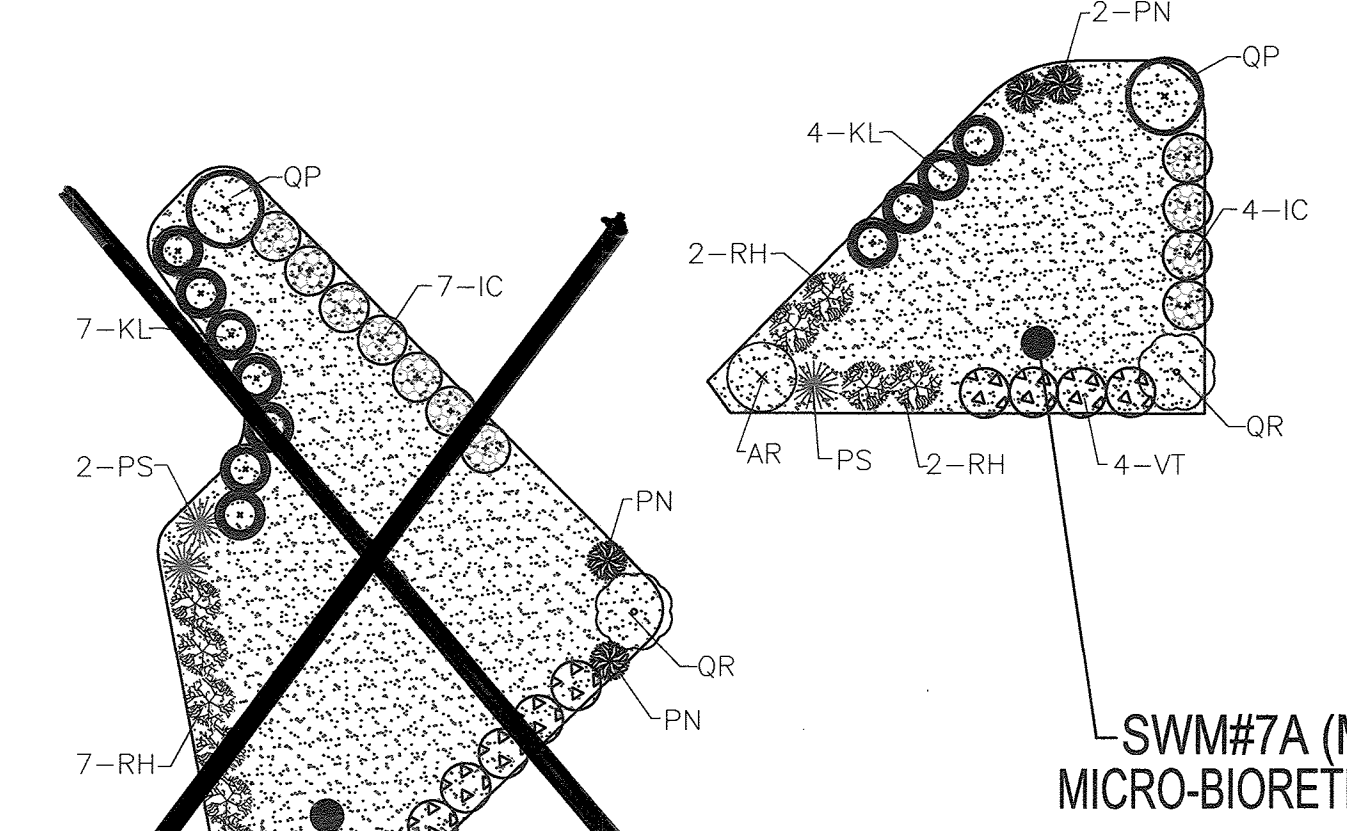
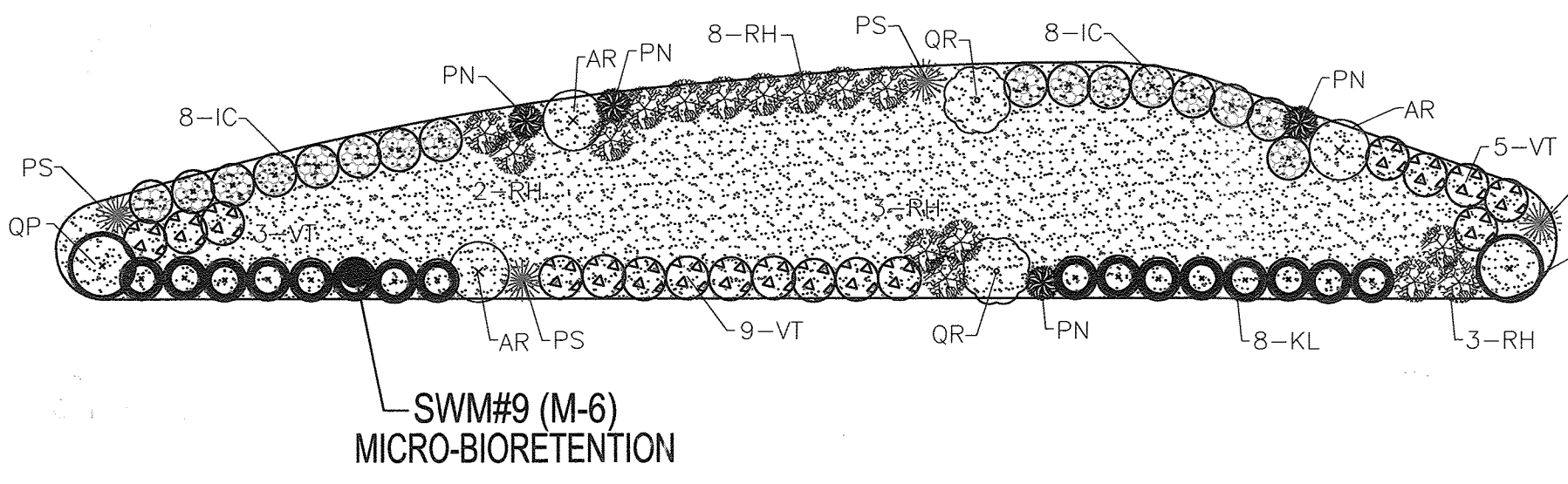
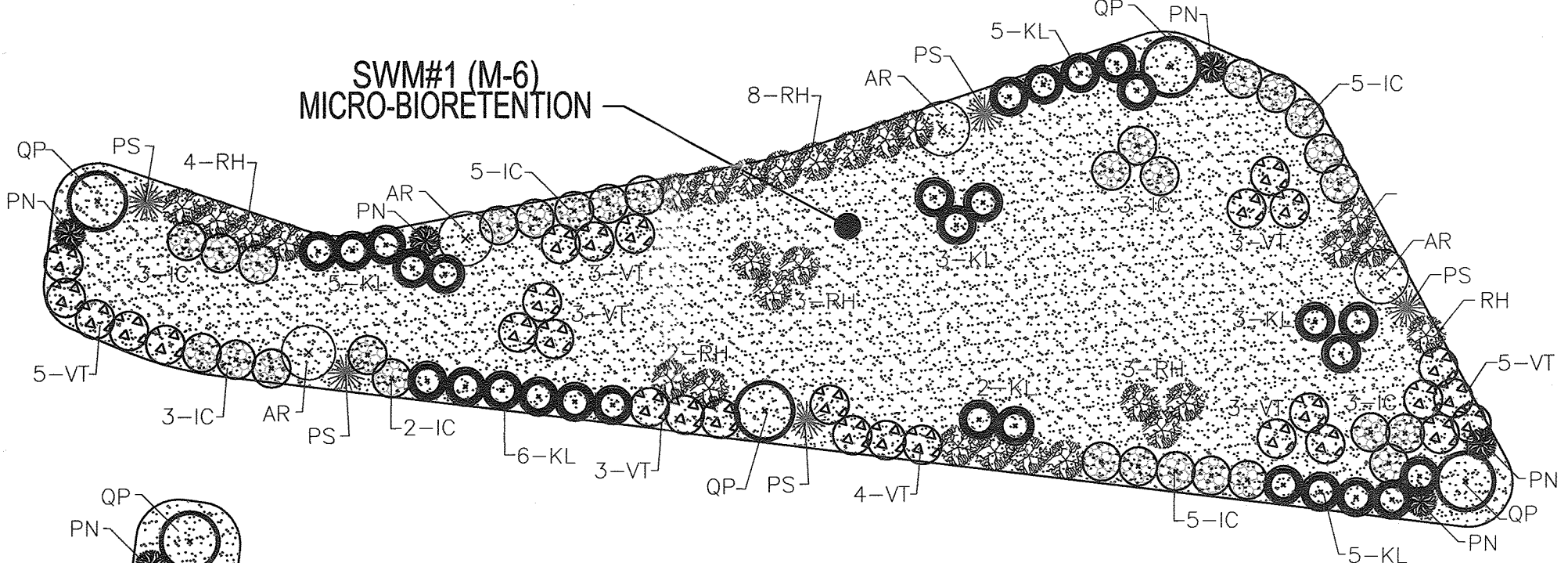
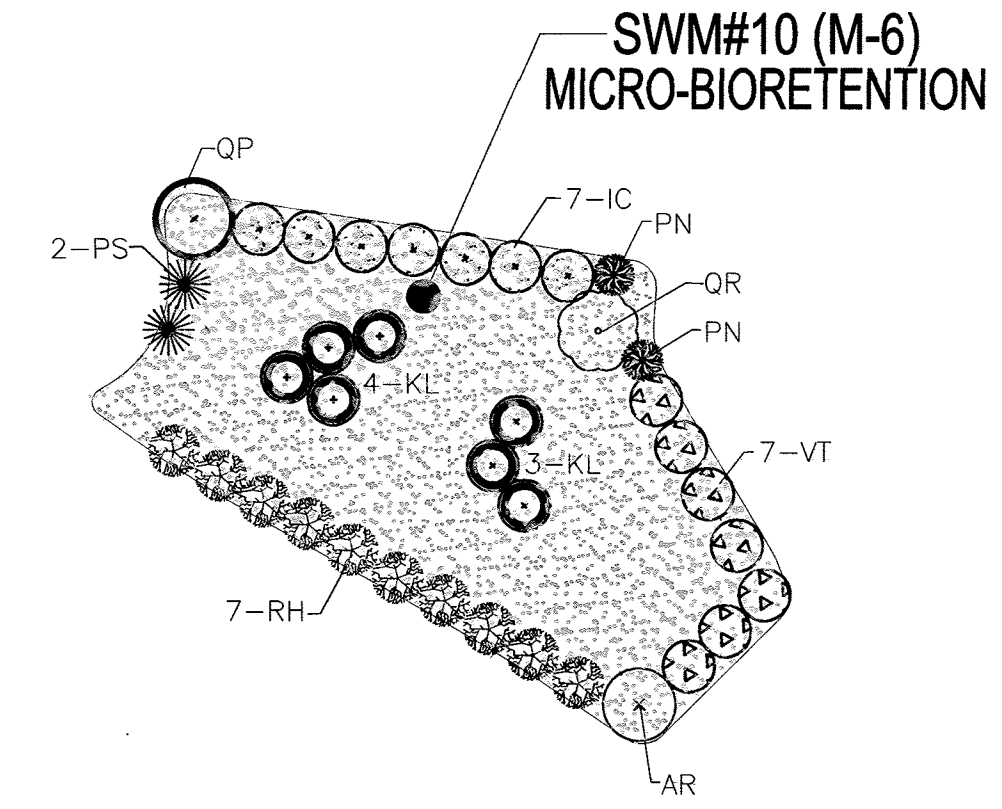
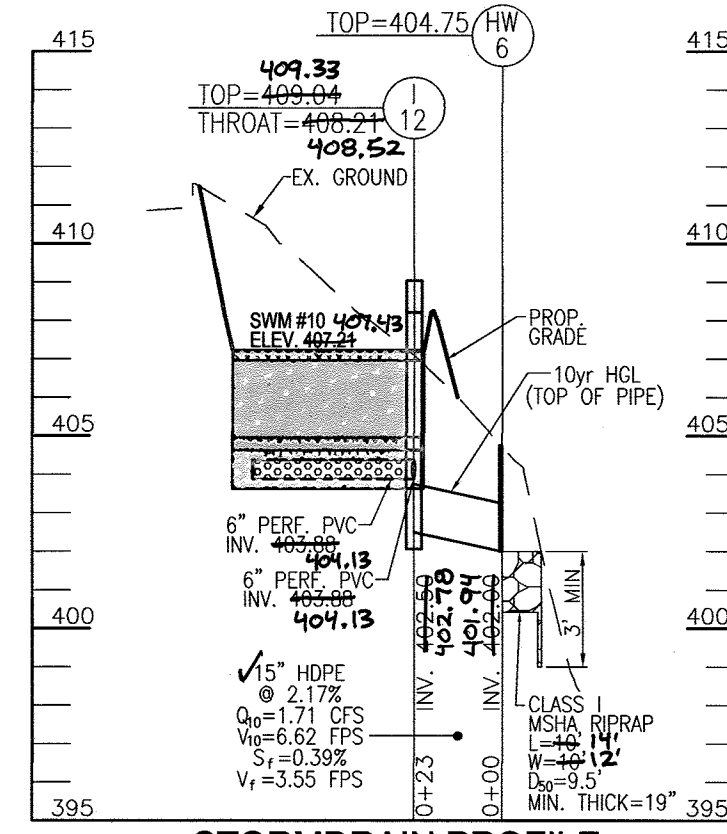
BIORETENTION PLANTING REQUIREMENTS

MBR	AREA	STEMS REQUIRED	STEMS PROVIDED
1	4880 SF	114	114
3	2666 SF	61	61
4	608 SF	14	14
5	353 SF	8	8
6	277 SF	7	7
7	704 SF	16	16
8	2802 SF	64	64
9	2850 SF	65	65
10	1203 SF	28	28

BIORETENTION AREAS ARE TO BE PLANTED BASED ON A MINIMUM DENSITY OF 1000 STEM PER PLANTED ACRE (2229 STEMS PER SQUARE FOOT).

BIORETENTION PLANTING SCHEDULE

KEY	SYM	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
⊗	QP	15	QUERCUS PHELLOS WILLOW OAK	1 1/2"-2" CAL	B & B
⊗	AR	15	ACER RUBRUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE	2.5" CAL	B & B
⊗	QR	15	QUERCUS RUBRA RED OAK	2.5" CAL	B & B
☼	PS	27	PINUS STROBUS EASTERN WHITE PINE	1.5"-2" CAL	B & B
⊗	PN	26	PINUS NIGRA AUSTRIAN PINE	8' HT.	B & B
⊗	IC	95	ILEX GLABRA COMPACTA DWARF INKBERRY	3 GALLON	CONT
⊗	VT	94	VIBURNUM TRILOBUM AMERICAN HICHLUSH CRANBERRY	5 GALLON	CONT
⊗	KL	95	KALMA LATIFOLIA MOUNTAIN LAUREL	5 GALLON	CONT
⊗	RH	94	RHOODENDRON HY. 'GLACIER' OR 'WHITE ROSEBUD' GLACIER OR WHITE ROSEBUD HYBRID AZALEA	3 GALLON	CONT



See sheet 25 for additional bioretention planting plan.

AS-BUILT CERTIFICATION FOR PWSM

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND ACCORDS WITH THE APPROVED PLANS AND SPECIFICATIONS. THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT LOGGING OF THE UNDERGROUND SWM FACILITY.

P.E. # 16193 DATE 1/2/20

OWNER
BETHEL KOREAN PRESBYTERIAN CHURCH, INC.
3165 SAINT JOHN'S LANE
ELLICOTT CITY, MARYLAND 21042
C/O TED JEE
PHONE: 410-461-1235

NO.	REVISION	DATE
7	REVISE TO CORRECT THE DESIGN OF MBR #8 DUE TO AS-BUILT CONDITIONS	7-11-19
4	REVISE PLAN TO RELOCATE MICRO-BIORETENTION 10	2/20/18
2	REVISIONS TO BUILDING AND SIDEWALKS; REMOVE FUTURE BUILDING	5/20/16
1	ADDED BIORETENTION SHEETS 18-25	8/2/2015

SITE DEVELOPMENT PLAN
BIORETENTION PLANTING PLAN

BETHEL KOREAN PRESBYTERIAN CHURCH
RELIGIOUS CENTER
LOT 127/F-0227

TAX MAP 17 GRID 23
TAX MAP 24 GRID 5
2ND ELECTION DISTRICT

ZONING R-SI
PARCEL 1168
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLICOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

DESIGN BY: RHV/DZ
DRAWN BY: DZ/KG/JR
CHECKED BY: RHV
DATE: JAN. 2013
SCALE: AS SHOWN
W.O. NO.: 04-100

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. 16193, EXPIRATION DATE 08-27-2019.

13 SHEET OF 25

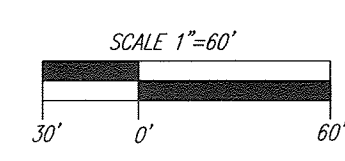
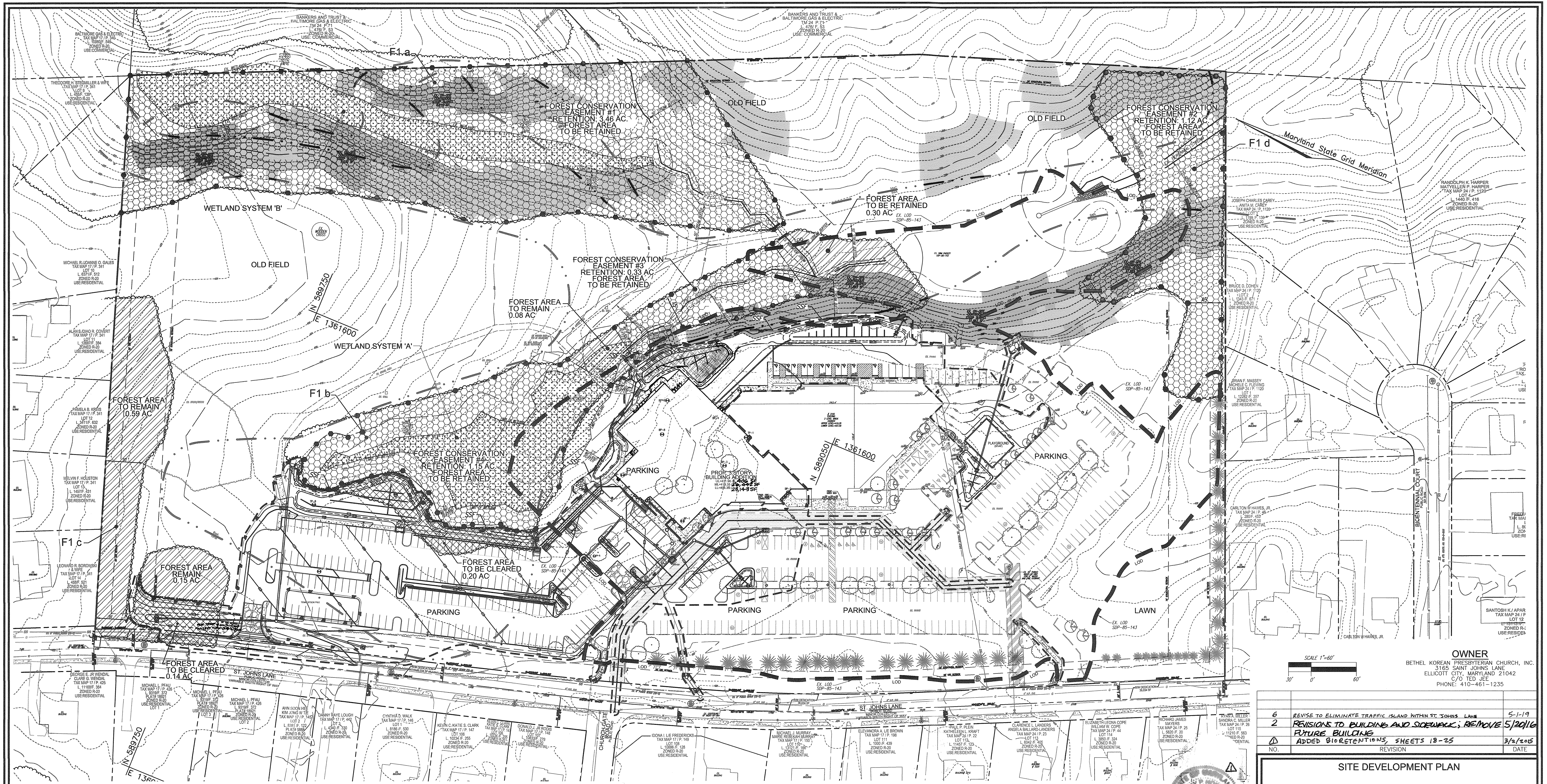
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DATE 1/2/13
DATE 2/20/13
DATE 2/6/12

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 (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

DATE 12/31/12



OWNER
 BETHEL KOREAN PRESBYTERIAN CHURCH, INC.
 3165 SAINT JOHN'S LANE
 ELLICOTT CITY, MARYLAND 21042
 C/O TED JEE
 PHONE: 410-461-1235

NO.	REVISION	DATE
6	REVISE TO ELIMINATE TRAFFIC ISLAND WITHIN ST. JOHN'S LANE	5-1-19
2	REVISIONS TO BUILDING AND SIDEWALK; REMOVE FUTURE BUILDING ADDED BIORETENTIONS, SHEETS 18-25	5/20/16
1	ADDED BIORETENTIONS, SHEETS 18-25	3/2/2015

LEGEND:

	EXISTING CONTOUR		EXISTING WATER LINE		MODERATE SLOPES (1:5% - 2:5%)		SILT FENCE
	PROPOSED CONTOUR		EXISTING FENCE		STEEP SLOPE (2:5%)		SUPER SILT FENCE
	PROPOSED SPOT ELEVATION		PROPERTY LINE		EXISTING WETLAND		CURB INLET PROTECTION
	EXISTING CURB AND GUTTER		RIGHT-OF-WAY LINE		PROPOSED AREA OF LIMIT OF DISTURBANCE		AT GRADE INLET PROTECTION
	PROPOSED CURB AND GUTTER		SOILS BOUNDARY		EXISTING LANDSCAPING PER SDP-85-143		STABILIZED CONSTRUCTION ENTRANCE
	EXISTING UTILITY POLE		FOREST CONSERVATION AREA SIGN		EXISTING AREA OF LIMIT OF DISTURBANCE		EXISTING FOREST AREA TO BE RETAINED WITHIN A FOREST CONSERVATION EASEMENT
	EXISTING LIGHT POLE		PROPOSED SIDEWALK		EXISTING FOREST AREA TO BE CLEARED		EXISTING FOREST AREA TO REMAIN, NOT WITHIN AN EASEMENT
	EXISTING MAILBOX		EXISTING TREELINE (FIELD LOCATED)				
	EXISTING SIGN		PROPOSED TREELINE				
	EXISTING SANITARY MANHOLE						
	EXISTING SANITARY LINE						
	EXISTING CLEANOUT						
	EXISTING FIRE HYDRANT						

NOTE:
 FOR SUPER SILT FENCE DETAIL, SEE SHEET 8.

FOREST CONSERVATION NARRATIVE:
 THIS PLAN PROPOSES CLEARING OF FOREST (F1b) FOR THE CONSTRUCTION OF NEW PARKING FOR THE PROPOSED CHURCH BUILDING ADDITION. THIS PLAN PROPOSES RETENTION OF FOREST WITHIN FOREST CONSERVATION EASEMENT. THE FOREST RETENTION ARE IN PRIORITY AREAS FOR PROTECTION OF THE SITE'S STREAM BUFFERS, WETLANDS AND WETLAND BUFFERS, STEEP SLOPES, FORESTY AREAS OF AT LEAST 19,000 SF, AND PROPERTY LINE PLANTINGS.

AS-BUILT CERTIFICATION FOR PSWH

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

DATE: 12/2/20
 P.E. NAME: [Signature]
 P.E. #

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 12/2/13

CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 2/20/13

DIRECTOR
 DATE: 2/16/13

SITE DEVELOPMENT PLAN
FOREST CONSERVATION PLAN
BETHEL KOREAN PRESBYTERIAN CHURCH
 RELIGIOUS CENTER
 LOT 12/17/F.0227
 ZONING R-SI
 PARCEL 1168
 HOWARD COUNTY, MARYLAND

Eco-Science Professionals, Inc.
 Consulting Ecologists
 P.O. Box 5906 Glen Arun, Maryland 21057 Telephone (410) 832-2488 Fax (410) 832-2488

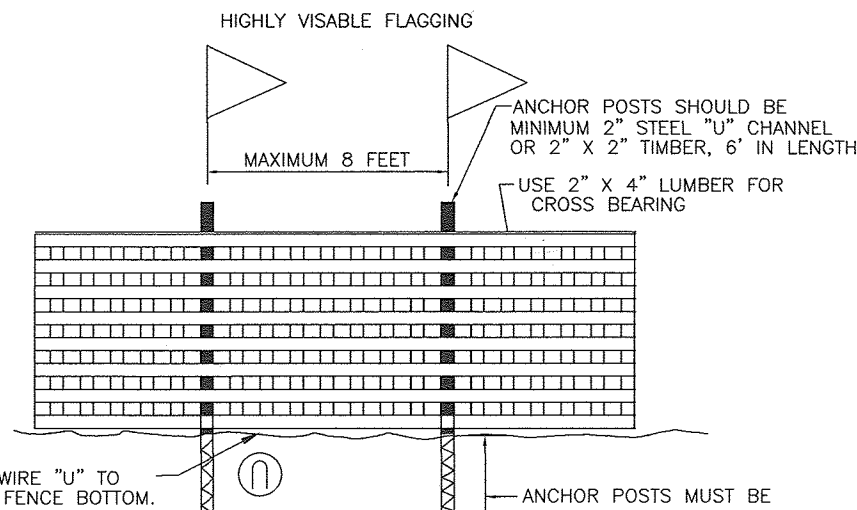
DESIGN BY: JC	14 SHEET OF 25
DRAWN BY: DZ/KG/JR	
CHECKED BY: JC	
DATE: JAN. 2013	
SCALE: 1"=60'	
W.O. NO.: 04-100	

NO AS-BUILT INFORMATION ON THIS SHEET

FOREST CONSERVATION NOTES

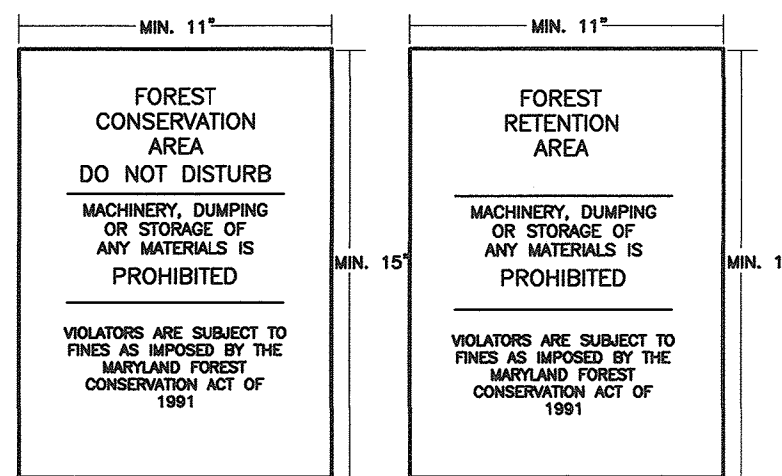
PRE-CONSTRUCTION ACTIVITIES

- PRIOR TO THE START OF ANY CONSTRUCTION DEFINE THE LIMITS OF DISTURBANCE AND THE SOIL PROTECTION ZONE (CRITICAL ROOT AREA) FOR THE FOREST RETENTION AREAS. (SEE APPENDIX 12 OF THE HOWARD COUNTY FOREST CONSERVATION MANUAL).
- PRIOR TO THE START OF ANY CONSTRUCTION (INCLUDING CLEARING) ADJACENT TO THE SOIL PROTECTION ZONE, INSTALL BLAZE ORANGE FENCE.
- INSTALL ALL FOREST CONSERVATION AREA SIGNS AS SHOWN ON THIS SDP.
- ALL SEDIMENT CONTROL DEVICES SHALL BE IN PLACE PRIOR TO CONSTRUCTION TO PREVENT SEDIMENT FROM ENTERING THE FOREST CONSERVATION AREAS. SUPER SILT FENCE SHALL BE INSTALLED ON THE UPHILL SIDE OF ALL FOREST RETENTION AREAS, AND ALSO IF THE LOD IS WITH 50 FEET OR LESS OF RETENTION AREA.
- ALL FENCING, BLAZE-ORANGE OR "SUPER" SILT, SHALL BE CLEANED AND MAINTAINED IN GOOD CONDITION AND PROMPTLY REPAIRED OR RESTORED AS SITUATION WARRANTS ON A REGULAR BASIS THROUGH THE CONSTRUCTION PERIOD.
- A QUALIFIED TREE CARE EXPERT SHALL DETERMINE IF ROOT PRUNING IS REQUIRED ALONG THE LIMIT OF DISTURBANCE. ROOT PRUNING TREES AS REQUIRED. WATER ANY ROOT-PRUNED TREES IMMEDIATELY AFTER ROOT-PRUNING AND MONITOR FOR SIGNS OF STRESS DURING CONSTRUCTION.



- FOREST PROTECTION DEVICE ONLY.
- RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
- BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
- ROOT DAMAGE SHOULD BE AVOIDED.

**BLAZE ORANGE PLASTIC MESH
TYPICAL TREE PROTECTION FENCE DETAIL**



NOTE:

- BOTTOM OF SIGNS TO BE HIGHER THAN TOP OF TREE PROTECTION FENCE.
- SIGNS TO BE PLACED AT A MAXIMUM SPACING OF 50-100 FEET. CONDITIONS ON-SITE AFFECTING VISIBILITY MAY WARRANT PLACING SIGNS CLOSER OR FARTHER APART.
- ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.
- SIGN LOCATION SYMBOL.

**SIGNAGE DETAIL
NOT TO SCALE**

Forest Conservation Worksheet 2.2

Net Tract Area		A =	28.08			
A. Total Tract Area		B =	0.00			
B. Deductions		C =	28.08			
C. Net Tract Area						
Land Use Category						
Input the number "1" under the appropriate land use zoning, and limit to only one entry						
	ARA	MDR	IDA	HDR	MPD	CIA
	0	0	1	0	0	0
D. Afforestation Threshold (Net Tract Area x 15%)		D =	4.21			
E. Conservation Threshold (Net Tract Area x 20%)		E =	5.62			
Existing Forest Cover						
F. Existing Forest Cover within the Net Tract Area		F =	7.60			
G. Area of Forest Above Conservation Threshold		G =	1.98			
Break Even Point						
H. Break Even Point		H =	6.01			
I. Forest Clearing Permitted Without Mitigation		I =	1.59			
Proposed Forest Clearing						
J. Total Area of Forest to be Cleared		J =	1.54*			
K. Total Area of Forest to be Retained		K =	6.06			
Planting Requirements						
L. Reforestation for Clearing Above the Conservation Threshold		L =	0.00			
M. Reforestation for Clearing Below the Conservation Threshold		M =	0.00			
N. Credit for Retention above the Conservation Threshold		N =	0.00			
P. Total Reforestation Required		P =	0.00			
Q. Total Afforestation Required		Q =	0.00			
R. Total Planting Requirement		R =	0.00			

THE FOREST CONSERVATION OBLIGATIONS WILL BE FULFILLED BY THE RETENTION OF 6.06 ACRES OF FOREST, WITHIN 4 FOREST CONSERVATION EASEMENTS.
PER MEMORANDUM JULY 20, 2011 FROM THE DIRECTOR'S OFFICE. SURETY FOR RETENTION NO LONGER APPLIES, THEREFORE, THERE ARE NO FINANCIAL SURETIES REQUIRED FOR THIS PROJECT.

* THE TOTAL ALLOWABLE CLEARING FOR THIS PARCEL IS 1.54 ACRES, WITH 6.06 ACRES OF FOREST TO BE RETAINED WITHIN THE FOREST CONSERVATION EASEMENTS. THE ACTUAL AMOUNT OF FOREST BEING CLEARED BY THIS SDP IS 0.34 ACRES, NETTING 1.20 ACRES OF ADDITIONAL FOREST CLEARING ALLOWED ON SITE FOR FUTURE DEVELOPMENT OF THIS PARCEL.

FOREST STAND DATA					
KEY	COMMUNITY TYPE	ACREAGE (NTA)	DOMINANT VEGETATION	GENERAL CONDITION	PRIORITY ACREAGE
F1a	SUCCESIONAL	7.6 TOTAL	LIRIODENDRON TULIPIFERA	GOOD	5.5
F1b		3.4	ROBINIA PSEUDO-ACACIA		BUFFERS/SLOPES
F1c		2.1	SASSAFRAS ALBIDUM PRUNUS		
F1d		0.9	SEROTINA, ACER RUBRUM,		
		1.2	ACER SACCHARINUM		

SEE ACCOMPANYING REPORT FOR COMPLETE STAND DESCRIPTION
* LESS THAN 0.5 ACRES OF FOREST EXTENDS ON TO ADJACENT OFFSITE PROPERTY WITHIN 100 FEET OF THE PROPERTY.

WETLAND DATA			
WETLAND SYSTEM	COWARDIN CLASSIFICATION	DOMINANT VEGETATION	ACREAGE
A	PFO1A/ R3/4UB1	ACER RUBRUM, ACER NEGUNDO, ACER SACCHARINUM, SALIX NIGRA, IMPATIENS CAPENSIS, ONOCLEA SENSIBILIS, BOEHMERIA CYLINDRICA	0.7 ±
B	PFO1A/ R3/4UB1	ACER RUBRUM, ACER NEGUNDO, ACER SACCHARINUM, SALIX NIGRA, IMPATIENS CAPENSIS, ONOCLEA SENSIBILIS, BOEHMERIA CYLINDRICA	0.6 ±

FOREST CONSERVATION / FSD NOTES:

- NO RARE, THREATENED OR ENDANGERED SPECIES OR THEIR APPROPRIATE HABITAT WERE OBSERVED ON THE PROPERTY.
- SURROUNDING LAND USE IS PRIMARILY RESIDENTIAL. AN OVER-HEAD UTILITY LINE IS PRESENT ALONG THE EASTERN PROPERTY LIMITS.
- NO SPECIMEN TREES WERE OBSERVED ON THE SUBJECT PROPERTY.
- NO KNOWN HISTORIC ELEMENTS ARE PRESENT ON THE SITE.

SOIL PROTECTION ZONE NOTE:

REQUIREMENTS FOR THE SOIL PROTECTION ZONE

UNLESS SPECIFICALLY APPROVED BY THE FOREST CONSERVATION PLAN, NO CONSTRUCTION ACTIVITY SHALL BE PERMITTED WITHIN THE SOIL PROTECTION ZONE. THIS INCLUDES:

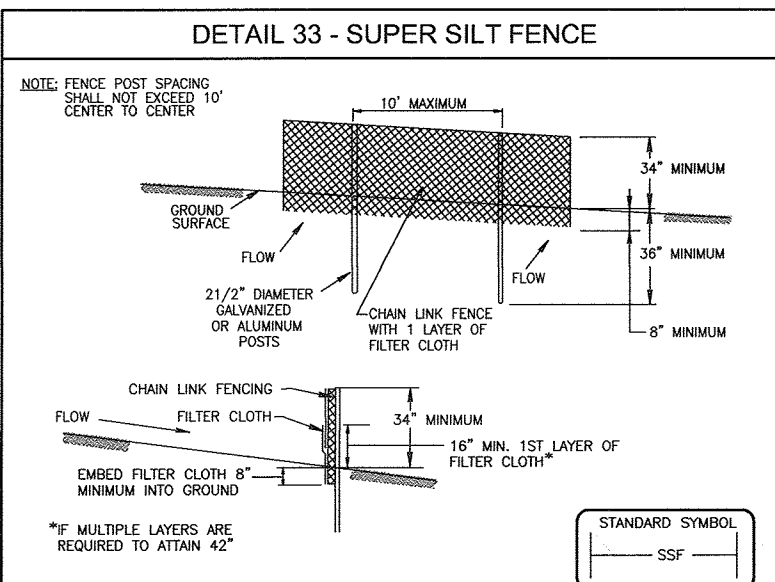
- GRADING CUT OR FILL.
- REMOVAL OF EXISTING GROUND PLANT VEGETATION OF ORGANIC LEAF LAYERS.
- ROADS OR PARKING.
- WALKS, PATIOS OR DECKS.
- FOUNDATIONS, WALLS, OR BUILDING FOOTPRINTS.
- UNDERGROUND UTILITIES.
- TEMPORARY STORMWATER OR SEDIMENT CONTROL STRUCTURE.
- STORAGE OR STOCK PILING OF CONSTRUCTION SUPPLIES AND EQUIPMENT, INCLUDING MACHINERY, CONSTRUCTION TRAILERS, FILL, TOPSOIL, TRASH, ETC.
- DISPOSAL OF CONSTRUCTION WASTE, INCLUDING CONCRETE TRUCK WASH OFF, PAINTS, SOLVENTS, CONTAMINATED RUNOFF, OILS, FUELS, OR ANY OTHER SUBSTANCES WHICH ARE HARMFUL TO PLANTS OR ANIMALS.

THE FOLLOWING ACTIVITIES ARE PERMITTED WITHIN THE SOIL PROTECTION ZONE:

- REMOVAL OF TREE LIMBS WHICH ARE OUTSIDE OF THE SOIL PROTECTION ZONE AND INTERFERE WITH CONSTRUCTION.
- REMOVAL OF DEAD OR DYING TREES WITHIN THE SOIL PROTECTION ZONE.
- FOREST THINNING OR TREE REMOVAL WHICH IS CONSISTENT WITH RECOGNIZED FORESTRY PRACTICES.
- REMOVAL OF TREES ON THE EDGES OF TREE GROUPS OR FOREST STANDS WHOSE TRUNKS ARE WITHIN THE SOIL PROTECTION ZONE OF OTHER TREES BUT WHICH DO NOT HAVE SUFFICIENT SOIL PROTECTION ZONES OF THEIR OWN TO ALLOW THEM TO SURVIVE. NOTE THAT TREES WHICH HAVE REMAINING SOIL PROTECTION ZONE OF LESS THAN 50 PERCENT OF THE LIMIT REQUIRED BY THESE SPECIFICATIONS MUST BE REMOVED.
- REMOVAL OF VINES OR OTHER HERBACEOUS PLANTS WHICH THREATEN THE ECOLOGICAL BALANCE OF THE REMAINING PLANTS IN THE SOIL PROTECTION ZONE.
- BELOW GROUND UTILITIES THAT CAN BE PLACED BY THE USE OF A TUNNELING MACHINE.
- FENCES WHICH DO NOT REQUIRE CONTINUOUS FOOTINGS OR WHICH HAVE POSTS NO CLOSER THAN 6'-0" O.C. AND WHICH CAN BE MANUALLY INSTALLED.
- WALKS AND PATHS THAT MEET THE FOLLOWING REQUIREMENTS:
 - THEY ARE CONSTRUCTED OF MATERIALS THAT CAN BE INSTALLED USING EQUIPMENT WITH A MAXIMUM WEIGHT OF 1/2 TON.
 - THEY ARE NO WIDER THAN 6'-0".
 - THEY ARE PLACED NO CLOSER THAN 6" FROM THE BASE OF THE TRUNK OF ANY TREE OVER 12" D.B.H.
 - ARE CONSTRUCTED WITHOUT FILLING GREATER THAN 6".
- REMOVAL OF ANY EXISTING WALKS, WALLS, ROADS, OR OTHER STRUCTURES AS REQUIRED. THESE ITEMS SHOULD BE REMOVED WITHOUT THE USE OF HEAVY EQUIPMENT.

THE FOLLOWING MANAGEMENT PRACTICES MUST OCCUR IN THE SOIL PROTECTION ZONE:

- BARE SOIL PRIOR TO CONSTRUCTION, CORE AERATE, HAND SCARIFY WITH A STEEL RAKE TO A DEPTH OF 1" MAX. TOP DRESS WITH 1"-2" SHREDDED BARK MULCH.
- MOW LAWN PRIOR TO CONSTRUCTION. CORE AERATE, KEEP GRASS MOVED DURING CONSTRUCTION.
- UNMOWN GRASS LEAVE UNDISTURBED DURING CONSTRUCTION. AFTER CONSTRUCTION, MOW GRASS AND CORE AERATE.
- LANDSCAPE SHRUBS AND/OR GROUND COVERS: LEAVE UNDISTURBED DURING CONSTRUCTION. HAND SCARIFY AND MULCH ANY AREA WITH BARE SOIL. LEAVE ANY PAVED AREAS, WALKS, DRIVES, ECT. IN PLACE WITHIN THE DRILLING LIMIT. OTHER CONSTRUCTION IS NEARLY COMPLETED. FILL VOIDS FROM REMOVED OBJECTS WITH LIGHT TOP SOIL.
- NATURAL OCCURRING GROUND PLANT GROWTH: LEAVE UNDISTURBED EXCEPT FOR INVASIVE VINES OR SMALL TREES WHICH COULD AFFECT GROWTH HABITS OF SPECIMEN TREES.



CONSTRUCTION SPECIFICATIONS

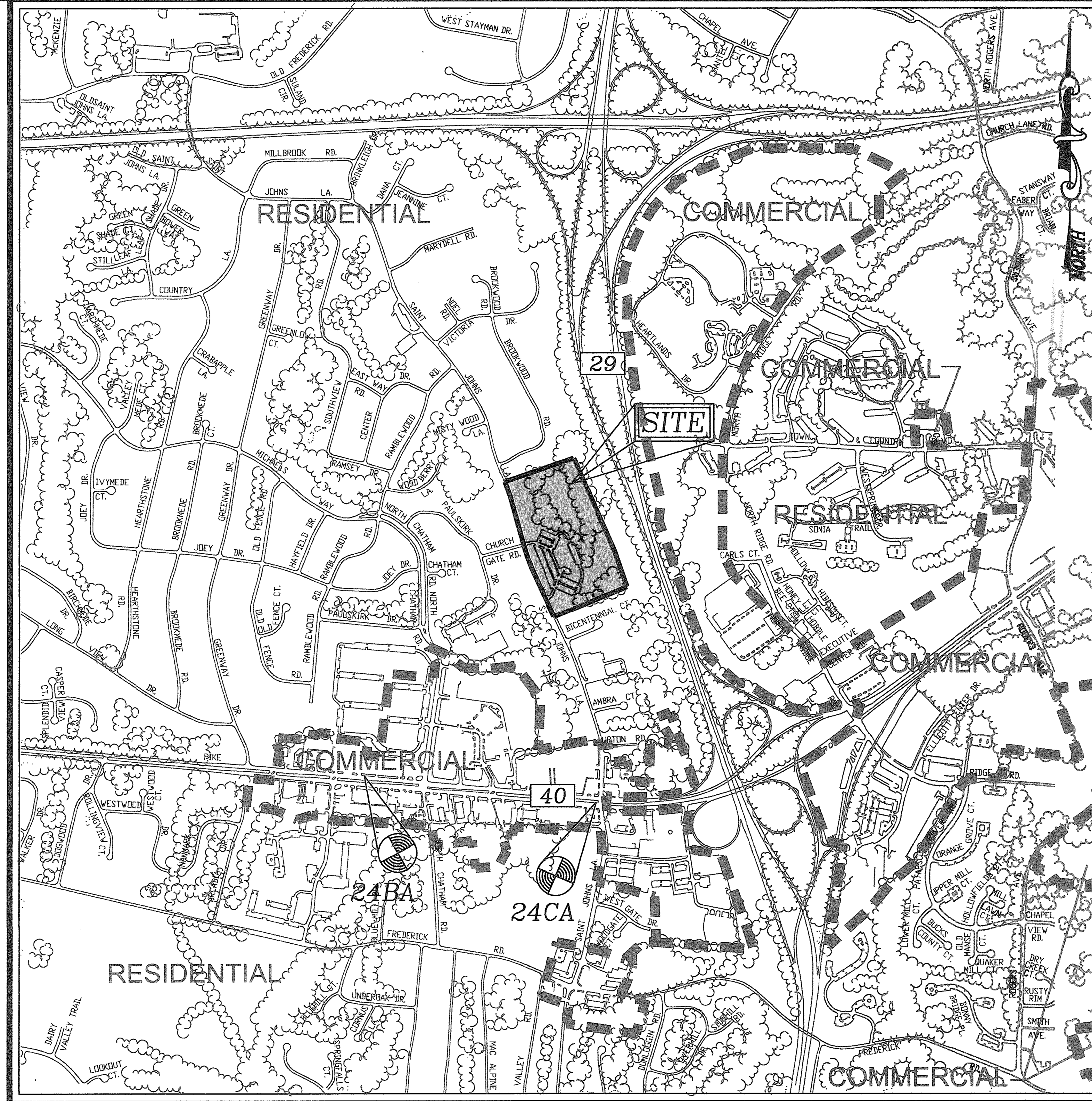
- FENCING SHALL BE 42" IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY DETAILS FOR CHAIN LINK FENCING. THE SPECIFICATION FOR A 6' FENCE SHALL BE USED, SUBSTITUTING 42" FABRIC AND 4' LENGTH POSTS.
- CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES. LOWER TENSION WIRE, BRACE AND TRUSS RODS, DRINK ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE ENDS OF THE FENCE.
- FILTER CLOTH SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT THE TOP AND MID SECTION.
- FILTER CLOTH SHALL BE EMBEDDED A MINIMUM OF 8" INTO THE GROUND.
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SILT BUILDUPS REMOVED WHEN "BUDGET" DEVELOP IN THE SILT FENCE, OR WHEN SILT REACHES TOP OF FENCE HEIGHT.
- FILTER CLOTH SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTECH CLASS 7:

TENSILE STRENGTH	50 LBS/IN (MIN.)	TEST: WEST 509
TENSILE MODULUS	20 LBS/IN (MIN.)	TEST: WEST 509
FLOW RATE	0.3 GAL/7777777777 (MAX.)	TEST: WEST 322
FILTRATION EFFICIENCY	75% (MIN.)	TEST: WEST 322

U.S. DEPARTMENT OF AGRICULTURE PAGE 8-26-2 MARYLAND DEPARTMENT OF ENVIRONMENT & NATURAL RESOURCES WATER MANAGEMENT ADMINISTRATION

NOTE:

- SUPER SILT FENCE SHALL USED ALONG THE PERIMETER OF FOREST CONSERVATION EASEMENT #3 AND #4.



BENCHMARKS

HOWARD COUNTY BENCHMARK 24BA	N 586,783.242	E 1,359,211.656	ELEV.: 385.660'
HOWARD COUNTY BENCHMARK 24CA	N 586,506.177	E 1,361,634.289	ELEV.: 398.314'

VICINITY MAP
SCALE: 1"=1000'
ADC MAP COORDINATES: 4815/H5

SITE DATA
LOCATION: TAX MAP 24, GRID 5 AND TAX MAP 17, GRID 23
2ND ELECTION DISTRICT
DEED/PLAT REFERENCES: L1127, F. 230, L1127/F.227
PRESENT ZONING: R-5
SUBDIVISION: ELLICOTT CITY
SECTION/AREA: 1-N/4
SITE ADDRESS: 3165 SAINT JOHN'S LANE, ELLICOTT CITY, MD. 21042
USE OF STRUCTURE: RELIGIOUS CENTER
TOTAL BUILDING COVERAGE:
EXISTING BUILDING: 26,929 SF (0.82 AC OR 3.44% OF GROSS AREA)
PROPOSED BUILDING: 31,486 SF (0.72 AC. OR 3.99% OF GROSS AREA)
WETLANDS ON SITE: 1.31 AC.
WETLAND BUFFERS ON SITE: 1.40 AC.
STREAM BUFFERS ON SITE: 3.04 AC.
AREA OF ON-SITE 100 YEAR FLOODPLAIN: 0.00 AC.
AREA OF EXISTING FOREST ON SITE: 7.60 AC.
AREA OF STEEP SLOPES: 0.86 AC.
ERODIBLE SOILS AND FLOODPLAIN AREA: 0.00 AC.
DPZ REFERENCES: SDP-85-143, B.A. CASE #84-34E
SITE AREA : 28.08 AC.
LIMIT OF DISTURBED AREA: 5.18 AC

SUPPLEMENTAL INFORMATION

GROSS SITE AREA	28.08 ACRES
AREA OF STEEP SLOPES	1.21 ACRES
AREA OF FLOODPLAIN	0.00 ACRES
NET AREA OF SITE	28.08 ACRES
ZONED	R-5I
EXISTING USE	RELIGIOUS CENTER
PROPOSED USE	RELIGIOUS CENTER

OWNER

BETHEL KOREAN PRESBYTERIAN CHURCH, INC.
3165 SAINT JOHN'S LANE
ELLICOTT CITY, MARYLAND 21042
PHONE: 410-461-1235

NO.	REVISION	DATE
	ADDED BILRETENTION, SHEETS 13-25	5/2/2015

**SITE DEVELOPMENT PLAN
FOREST CONSERVATION
NOTES AND DETAILS**

**BETHEL KOREAN
PRESBYTERIAN CHURCH**

RELIGIOUS CENTER
L01127/F.0227

TAX MAP 17 GRID 23
TAX MAP 24 GRID 5
2ND ELECTION DISTRICT

ZONING R-5I
PARCEL 1168
HOWARD COUNTY, MARYLAND

**Eco-Science
Consultants, Inc.**
Professional Ecologists

P.O. Box 5906 Glen Aron, Maryland 21057 Telephone (410) 832-2489 Fax (410) 832-4688

DESIGN BY:	RHW/DZ
DRAWN BY:	DZ/KG/JR
CHECKED BY:	
DATE:	JAN. 2013
SCALE:	AS SHOWN
W.O. NO.:	04-100
15	SHEET 25

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT-ENGINEERING DIVISION DATE 1/24/13

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 2/08/13

DIRECTOR DATE 2/6/13

AS-BUILT CERTIFICATION FOR PSWM

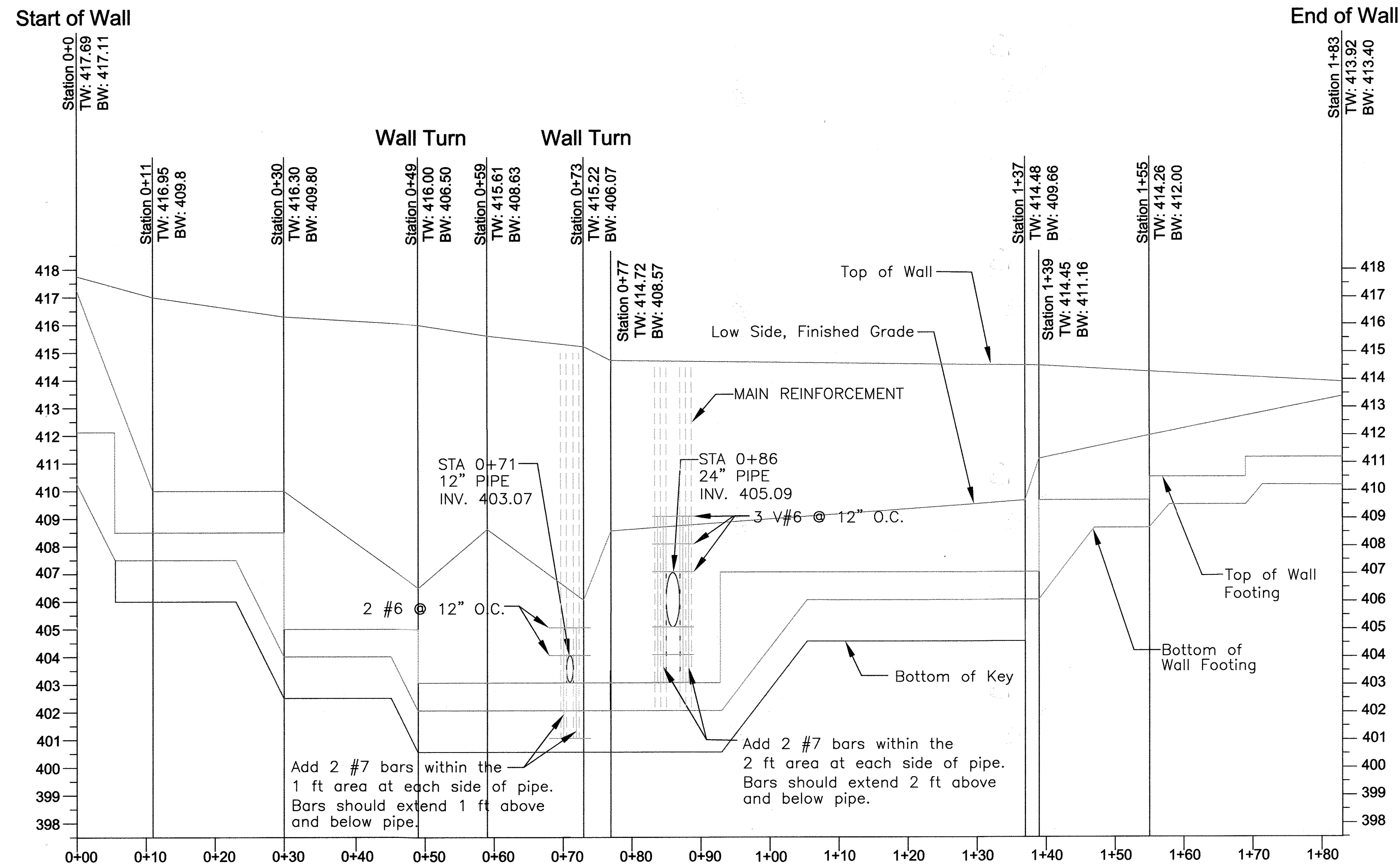
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND CONFORMS TO THE APPROVED PLANS AND SPECIFICATIONS. I HEREBY CERTIFY THAT THE CONSTRUCTED DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND PSWM FACILITY.

DATE: 1/2/2013 P.E. # 16193

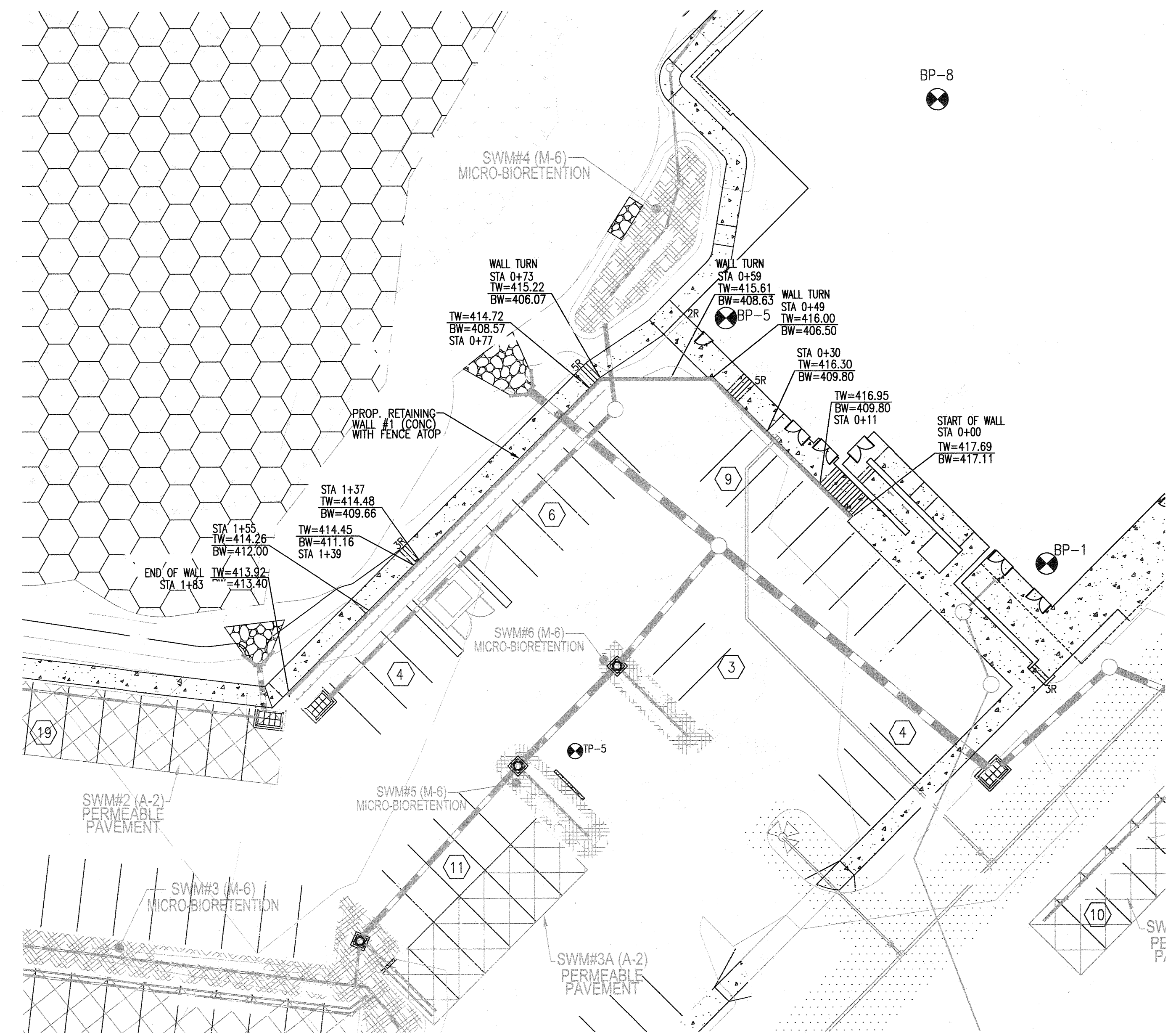
APPROVED: [Signature] DATE: 1/2/13

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

NO AS-BUILT INFORMATION ON THIS SHEET



Wall Profile



Plan View (based on Site Plan by Vogel Engineering)
Scale: 1"=20'

OWNER
BETHEL KOREAN PRESBYTERIAN CHURCH, INC.
3155 SAINT JOHN'S LANE
ELLCOTT CITY, MARYLAND 21042
C/O: TED JEE
PHONE: 410-461-1235

NO.	ADDED BIORETENTION SHEETS 18-25	3/2/2016
	REVISION	DATE

SITE DEVELOPMENT PLAN
BETHEL KOREAN PRESBYTERIAN CHURCH
RELIGIOUS CENTER
L.01127/F.0227
TAX MAP 17 GRID 23
TAX MAP 24 GRID 6
2ND ELECTION DISTRICT
ZONING R-SI
PARCEL 1168
HOWARD COUNTY, MARYLAND

ECS LLC
MID-ATLANTIC
1340 CHARWOOD ROAD
SUITE A
HANOVER, MARYLAND 21078
PHONE: (410) 855-4300
FAX: (410) 855-4324

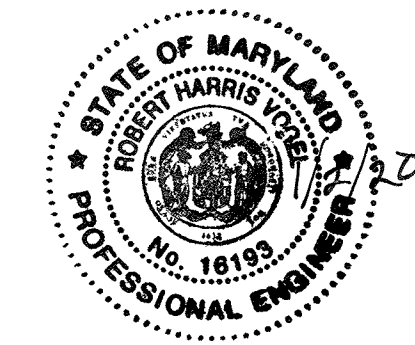
DESIGN BY: DMA
DRAWN BY: DMA
CHECKED BY: HMA
DATE: JAN 2013
SCALE: AS SHOWN
W.D. NO.:
PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A STATE LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. MY LICENSE NO. IS 16193 AND MY EXPIRATION DATE IS 12-31-2013.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

 CHIEF, DEVELOPMENT ENGINEERING DIVISION 1/24/13

 CHIEF, DIVISION OF LAND DEVELOPMENT 2/08/13

 DIRECTOR 1/4/13



AS-BUILT CERTIFICATION FOR PSWM
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.
 P.E. NAME: Robert Harris P.E.# 16193 DATE: 1/2/20
 FOR AS-BUILT FOR WALL



NO AS-BUILT INFORMATION ON THIS SHEET

Retaining Wall Specifications and Guidelines

Part 1: General

- 1.01 Description
 A. Retaining walls must be constructed under the supervision of a Maryland Registered Professional Engineer.
 B. Work includes preparation of foundation soils, furnishing all materials, and installing all materials to the lines and grades shown on the construction drawings.

1.02 Codes and Standards

- A. International Building Code - 2009, International Code Council, Inc.
 B. ACI Manual of Concrete Practice - Parts 1 Through 5 - 2001
 C. Manual of Standard Practice - Concrete Steel Reinforcing Institute
 D. American Society For Testing and Materials

1.03 Damage, Storage, and Handling

- A. The Contractor shall check the materials upon delivery to assure that the proper materials have been received.
 B. The Contractor shall properly handle and store the materials to prevent damage to the materials. Damaged materials shall not be incorporated into the wall.

1.04 Quality Assurance

- A. The Owner shall engage a qualified testing agency to provide observation and testing services as described below.
 B. Concrete Placement
 1. The agency shall inspect the formwork and reinforcing steel placement for compliance with the contract documents. Reinforcing steel should be inspected for correct size, quantity, and spacing.
 2. Fresh concrete shall be sampled in accordance with ASTM C 172, and tested for slump, air entrainment, and temperature.
 3. Test cylinders shall be molded in accordance with ASTM C 31. Four test cylinders shall be molded for each day's pour, or for every 50 cubic yards of concrete placed, whichever is greater.
 C. Fill Placement
 1. All soil fills shall be tested in accordance with ASTM D 2922.
 2. A minimum of one compaction test per lift should be made per 2,500 square feet of fill lift area, but not fewer than two tests per lift should be made.
 3. The elevations and locations of the field density tests should be clearly identified at the time of fill placement and compaction.

Part 2: Materials

2.01 Concrete

- A. Concrete shall conform to Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414
 B. Concrete shall have a minimum 28-day compressive strength of 4,500 psi.
 C. Concrete shall have a maximum slump of 5 inches and shall be air entrained to 6% (+/- 1%) by volume.
 D. Concrete shall have a minimum density of 145 pcf and a maximum water-to-cement ratio of 0.50

2.02 Steel Reinforcement

- A. Steel reinforcing shall conform to ASTM A-615, Grade 60.
 B. Submit shop drawings at least 15 business days before date reviewed submittals will be needed. Shop drawings shall bear the contractor's stamp of approval which shall constitute that he has verified all field measurements, construction criteria, materials, and similar data, and has checked each drawing for completeness, coordination, and compliance with contract documents.

2.03 Soil Backfill

- A. Material should consist of soil classified as SM, SC, or more granular, in accordance with ASTM D 2487.
 B. Material should have no particles larger than 2.5 inches and shall contain at least 30 percent, by weight, retained on the U.S. No. 200 sieve.
 C. Materials should have a Liquid Limit less than 40, and a Plasticity Index less than 12.
 D. Material should have a minimum friction angle of 30 degrees and a minimum dry unit weight of 118 pcf.
 E. The Contractor should submit samples of the proposed backfill soils to the Geotechnical Engineer of Record for approval prior to their use.

2.04 Drainage Board

- A. Drainage board used behind the walls shall consist of Miradrain 9900.

Part 3: Construction

3.01 General

- A. All existing underground utilities shall be properly marked, and relocated if necessary, prior to construction.
 B. All proposed underground utilities or structures in the general wall area shall be completely installed prior to the construction of the wall.
 C. Protect all existing and/or new structures from damage by construction equipment. Immediately repair any damage that may occur.

3.02 Foundation

- A. The wall foundation shall be excavated to the grades and lines as shown on the construction drawings. Contractor should take care not to disturb foundation soils beyond the lines and grades shown.
 B. The foundation shall bear at the minimum embedment depths indicated, as measured from the final grade at the front of the wall.
 C. The foundation subgrade soils shall be tested by a qualified representative of the Geotechnical Engineer to verify the availability of the design bearing pressure of 3,000 psf.
 D. If unsuitable soils are encountered at design foundation levels, the unsuitable soils shall be removed and the over-excavated areas shall be replaced with compacted structural fill.

3.03 Steel Reinforcement

- A. All steel reinforcing shall have a minimum clear cover of 3 inches unless otherwise noted on the contract documents.
 B. Where applicable, splices for reinforcing steel shall be made by contact tension lap splices.
 C. Welding and field-bending of reinforcing steel is not permitted.
 D. Furnish all accessories, chairs, space bars, supports, etc. necessary to secure reinforcing.

3.04 Cast-in-Place Concrete

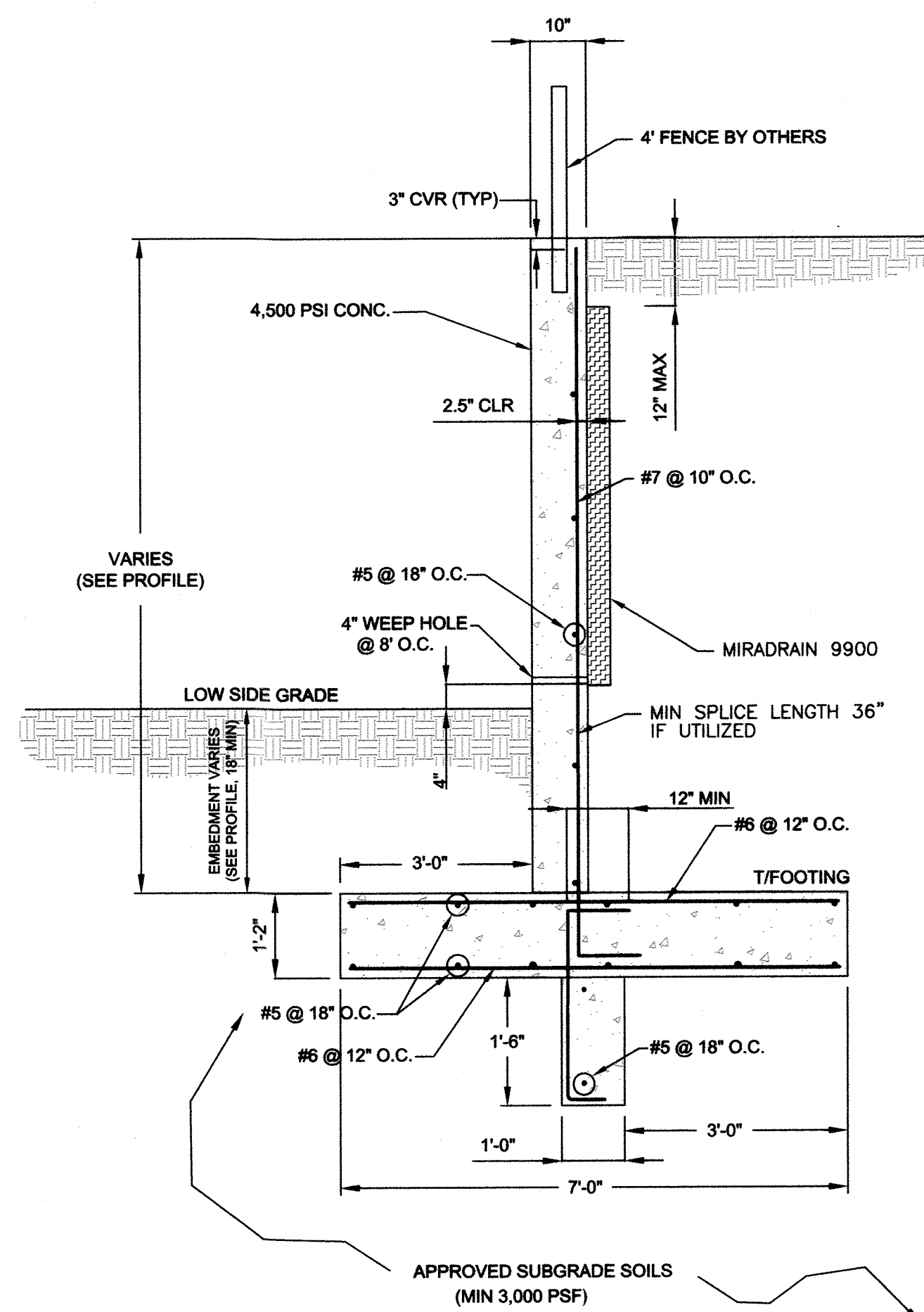
- A. Footing Concrete
 1. The vertical faces of the footing and key excavation may be used as forms for placement of foundation concrete.
 2. Foundation concrete, or protective mud mats, should be placed the same day that the foundation subgrade is approved.
 3. Provide concrete protection against freezing during placement and for 5 days thereafter.
- B. Wall Concrete
 1. Furnish and erect concrete forms to the lines and grades shown on the construction drawings.
 2. Locate construction joints as to not impair the strength of the structure, but not more than 60 feet in any direction. Provide continuous bentonite strip waterstrip at all construction joints.
 3. Make stops in concrete pours using vertical bulkheads.
 4. All reinforcing shall be continuous through joints and bulkheads.
 5. Chamfer exposed concrete corners 3/4" by 3/4" minimum.
 6. Provide 4" diameter weep holes every 8 feet along the bottom of the wall and at wall ends. The weep holes should be formed in place prior to concrete placement by using PCV pipe. Weep hole locations must not interfere with steel reinforcing, and shall be no greater than 4 inches above final grade at the front of the wall.
 7. Where a fence is required, it is recommended that the fence posts be installed during wall concrete placement. The fence posts shall have a minimum of 24 inches of embedment into the wall, and be located along the centerline of the wall. Alternatively, provide 4 inch diameter by 24 inch deep post holes at the designated fence post locations along the centerline of the wall. The post holes should be formed in place prior to concrete placement by using PVC pipe.

3.05 Backfilling

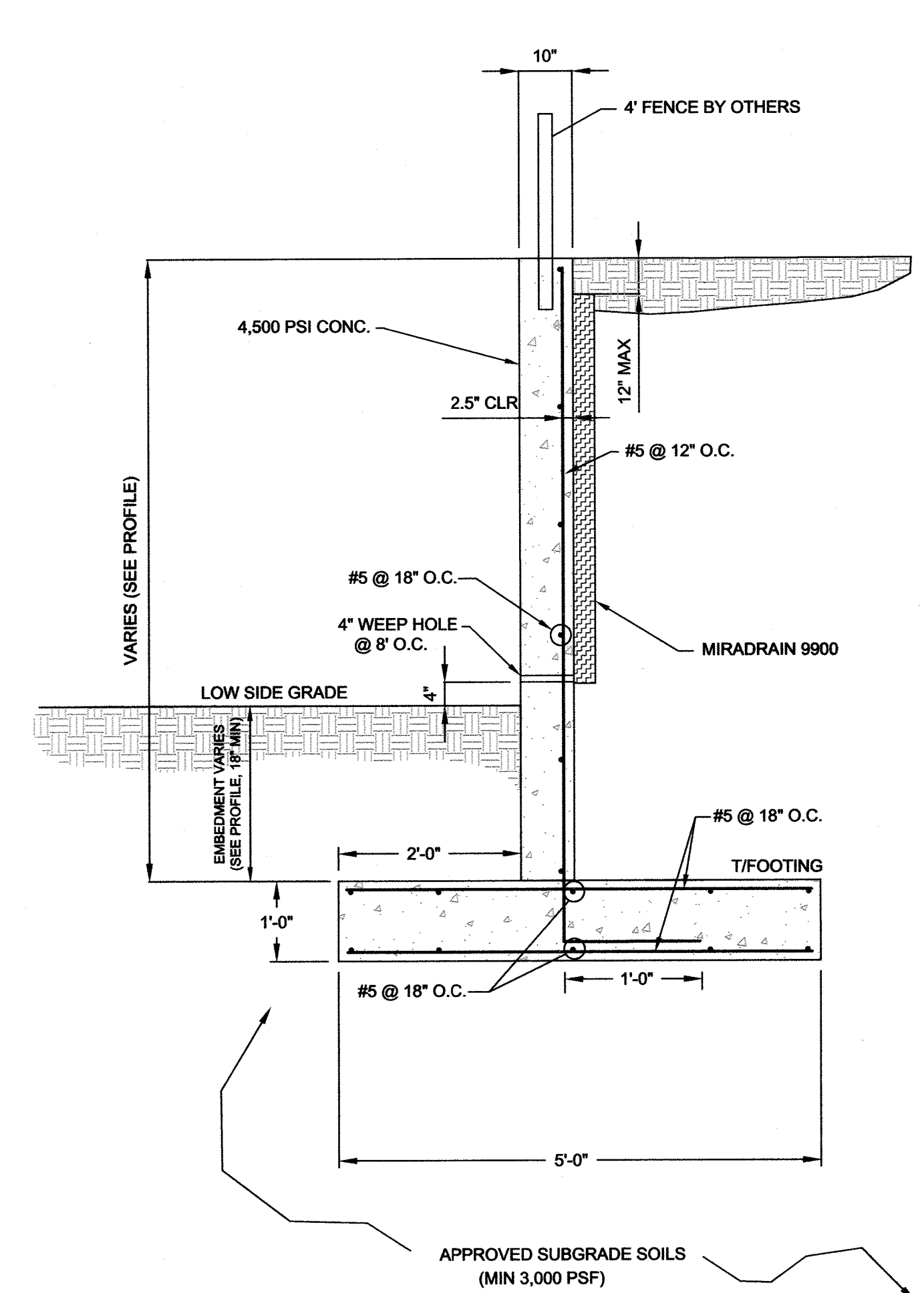
- A. All soil backfill shall conform to the material requirements of section 2.03.
 B. Backfill shall be moisture conditioned to within 2 percentage points of the optimum moisture content, as determined in accordance with ASTM D-698.
 C. Backfill shall be placed in loose lifts, not exceeding 8 inches in thickness, and then compacted to at least 95 percent of the maximum dry density, as determined in accordance with ASTM D-698.
 D. Backfilling shall not occur against the wall until the wall concrete has attained at least 75 percent of the 28-day design strength, and no earlier than 3 days after placement.
 E. Where feasible, maintain equal grades on each side of the wall during backfilling to prevent overturning and lateral movements. When the grade differential at the wall exceeds 12 inches, only hand-operated compaction equipment shall be allowed.
 F. Drainage boards shall be placed against the wall, extending from the weep hole up within 12 inches of final grade at the top of the wall.

3.06 Finish

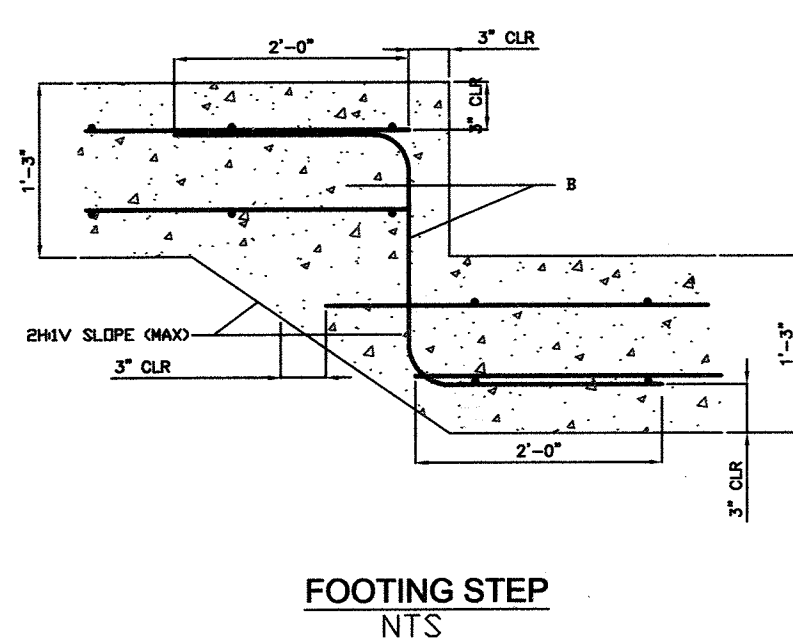
- A. Final grades at the wall shall be established by the Contractor in accordance with the most recent site grading plans.
 B. Final grades shall be stabilized and seeded per the approved civil plans unless noted otherwise on the site grading plans.
 C. Install fence at the top of the wall in accordance with project documents. If fence posts are installed subsequent to wall construction, the fence posts shall be grouted into the PVC post holes using 3,000 psi non-shrink grout.
 D. See Architectural or Landscape plans and specifications for additional fence details.



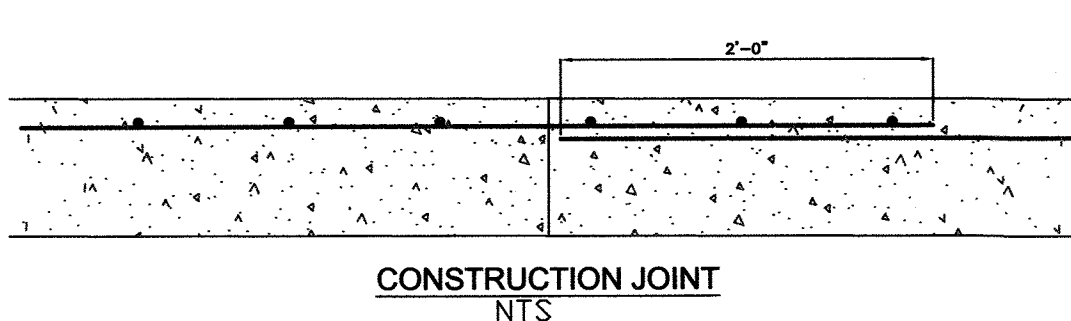
**TYPICAL SECTION
(STA 0+06 TO STA 1+37)
NTS**



**TYPICAL SECTION
(START OF WALL TO STA 0+06;
STA 1+37 TO END OF WALL)
NTS**



**FOOTING STEP
NTS**



**CONSTRUCTION JOINT
NTS**

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 1/24/13
 CHIEF ENGINEERING DIVISION

[Signature] 2/08/13
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 2/0/13
 DIRECTOR

AS-BUILT CERTIFICATION FOR PSWM

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

[Signature] 1/6/13 1/2/20
 C.E. NAME P.E.# DATE

NOT AS-BUILT FOR BELL



OWNER
 BETHEL KOREAN PRESBYTERIAN CHURCH, INC.
 3165 SAINT JOHNS LANE
 ELLICOTT CITY, MARYLAND 21042
 PHONE: 410-461-1235

NO.	REVISION	DATE
1	ADDED BIORETENTIONS, SHEETS 18-25	3/2/2015

SITE DEVELOPMENT PLAN

BETHEL KOREAN PRESBYTERIAN CHURCH

TAX MAP 17 GRID 23 RELIGIOUS CENTER ZONING R-SI
 TAX MAP 24 GRID 5 LOT1127/F.0227 PARCEL 1168
 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

EGS LLC
 MID-ATLANTIC

1340 CHARWOOD ROAD
 SUITE A
 HANOVER, MARYLAND 21076
 PHONE: (410) 859-4300
 FAX: (410) 859-4324

DESIGN BY:	DMA	PROFESSIONAL CERTIFICATE
DRAWN BY:	DMA	HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A QUALIFIED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE EXPIRATION DATE: 12-31-2013
CHECKED BY:	HMA	
DATE:	JAN 2013	
SCALE:	AS SHOWN	
W.O. NO.:		

NO AS-BUILT INFORMATION ON THIS SHEET

AS-BUILT DECEMBER 2019

General Notes

- All construction shall be in accordance with the Maryland State Highway Administration Standards and Specifications unless otherwise noted.
- The existing utilities and obstructions shown are from the best available records and shall be verified by the contractor to their satisfaction prior to construction. Necessary precautions shall be taken by the contractor to protect existing services and mains. Any damage to them shall be repaired immediately at the contractor's expense.
- It shall be distinctly understood that failure to mention specifically any work which would naturally be required to complete the project shall not relieve the contractor of their responsibility to complete such work.
- The contractor shall call "Miss Utility" (1-800-257-7777) a minimum of 48 hours in advance of any excavation, boring, pile driving, and/or digging for the location of utility lines.
- Base contours are from completed survey.
- The construction of this project will not result in the development of any new impervious surfaces. This project is a stormwater retrofit that treats a previously developed area and improves the water quality through construction of a bioretention area.
- Any sediment control measures disturbed by construction must be repaired the same day.

Construction Sequence

- Notify Soil Conservation District 24 hours prior to the start of construction (410-479-1202, ext. 3). Obtain approval before proceeding further.
- Have all utilities marked at the site.
- Mark the limits of the bioretention and underdrain with orange spray paint, stakes, or flags.
- Install stabilized construction entrances, temporary stockpile areas, and associated erosion and sediment control devices as shown in construction drawings and outlined in the construction specifications
- Stabilized construction entrances shall be provided at exits from all temporary construction access points onto main paved areas.
- Install orange construction/safety fence at the limits of disturbance (LOD) and silt fence around stockpiles as shown on the construction plans.
- Dirt tracked onto existing pavement must be cleaned up by the end of the work day or before the next rain event (whichever is sooner).

Lot #2 (adjacent to west parking lot)

- Excavate to proposed grade, storing soil at designated area.
- Excavate bioretention areas to depth shown on plans, and scarify the existing soil surface, taking care not to compact the in-situ soil. It is best to disturb as little of the native soil at the berm/cell transition as necessary.
- Dig channel from the east end of the bioretention area to the existing inlet box to depth shown on plans.
- Grade as shown on plans except for berm area between bioretention cells. The berm should be finished after placement of the underdrain and overflows.
- Install underdrain gravel (#57 stone) in the bottom of the bioretention areas at a 0% slope.
- Install the underdrain pipe including double-wrapped hardware cloth, connections, cleanouts, observation wells, and caps. Parge around the connections with the inlet basin to create a water tight connection.
- Backfill over the connecting underdrain pipe (non-perforated) at the berm and grade as shown on plans.
- Add additional #57 gravel to cover underdrain pipe.
- Install clean, washed #8 or #89 choker stone over the underdrain gravel.
- Install bioretention soil mix in the bioretention basins, leaving space for the riprap outlet protection at the southeast end of the overflow pipes, at the upstream end of the lower bioretention cell. Per 2009 revision of the Maryland Stormwater Management Design Manual, settlement will occur naturally, but may be expedited by spraying or sprinkling water on soil between lift addition (12" max). Overfilling slightly is recommended to account for settlement. Do not use heavy equipment within the bioretention area. Rake soils as needed to level out.
- Install overflow pipes, connections, and inlets between bioretention cells.
- Install geotextile and riprap apron at the western end of the practice, and geotextile and riprap outlet protection at overflows (as shown on plans).
- Grade top of berm to elevations shown on plans, taking care not to damage the pipes.
- Install shredded hardwood mulch above the bioretention media layer.
- Seed and stabilize as directed in the planting plan (see sheet 10).

Lot #3 (replacing back of east parking lot)

- Remove asphalt pavement as/where shown on the construction plans.
- Excavate bioretention area to a depth shown on plans and scarify the existing soil surface.
- Dig channel from the east end of the bioretention area to the existing slope where outlet is indicated.
- Grade as shown on plans.
- Install underdrain gravel (#57 stone) in the bottom of the bioretention area to the depths indicated in the section views.
- Dig outlet depression and install geotextile mat and Class I riprap as shown on plans.
- Install the underdrain and overflow pipes, including hardware cloth wrap, connections, cleanouts, and caps.
- Backfill over the overflow drain pipe and grade as shown on plans.
- Add additional #57 gravel over underdrain pipes to grade shown on plans.
- Install clean, washed #8 or #89 choker stone over the underdrain gravel.
- Install bioretention soil mix in the bioretention area as shown. Overfilling slightly is recommended to account for settlement. Do not use heavy equipment within the bioretention area. Rake soils as needed to level out.
- Install shredded hardwood mulch above the bioretention media layer.
- Seed and stabilize as directed in the planting plan (see sheet 10).

After both

- After completion of all work, remove construction entrances and temporary stockpile areas.
- Permanently stabilize any disturbed areas outside of the bioretention surface area. Water the seeded areas.
- When site is completely stabilized, notify the sediment control inspector and obtain approval to remove sediment and erosion control. Remove silt fence, inlet protection, and orange safety fence.

SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

A. Soil Preparation

1. Temporary Stabilization

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

2. Permanent Stabilization

- A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
 - Soil pH between 6.0 and 7.0.
 - Soluble salts less than 500 parts per million (ppm).
 - Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if 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 ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

B. 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:
 - Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2 inches in diameter.
 - Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
 - Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

6. Topsoil Application

- Erosion and sediment control practices must be maintained when applying topsoil.
- Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
- Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

C. Soil Amendments (Fertilizer and Lime Specifications)

- Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
- Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. 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 98 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.

Hardness Zone: 6b	No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths (inches)	Fertilizer Rate (10-20-20)	Lime Rate
	1	Barley	95	3-1 to 5-15;	1	435 lb/ac (10 lb/1000 sf)	2 tons/acre (90 lb/1000 sf)
	2	Oats	72	8-1 to 11-15	1		
	3	Rye	112		1		

Note: Use of this information does not preclude meeting all of the requirements of the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control

Seed Mixture (Hardness Zone: 6b): 11 (Table B3 in Maryland Guidebook)	No.	Species	Application Rate (lb/ac)	Seeding Depths (inches)	N	P2O5	K2O	Lime Rate
	1	Creeping Red Fescue	30	3/4 to 1/2				
	2	Chewings Fescue	30	3/4 to 3/4	45 lb/ac (1 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 ton/acre (90 lb/1000 sf)
	3	Kentucky Bluegrass	20	3/4 to 3/4				
	4	Optional - Rough Bluegrass	15	3/4 to 3/4				

SEEDING AND MULCHING

A. Seeding

1. 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 thaws.
- Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
- Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

2. Application

- Dry Seeding: This includes use of conventional drop or broadcast spreaders.
 - Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
 - Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil B.16
- Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
 - Cultipacker seeders are required to bury the seed in such a fashion as to 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; P2O5 (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.

B. Mulching

1. Mulch Materials (in order of preference)

- Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
- Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
 - WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
 - WCFM, including dye, must contain no germination or growth inhibiting factors.
 - WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a 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.

2. Application

- Apply mulch to all seeded areas immediately after seeding.
- When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
 - Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 - Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.
 - Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

Bioretention Material Specifications

Gravel for Underdrain - Underdrain gravel shall be 1 - 1 1/2 inch in diameter (Double washed, AASHTO #57 stone). River-run, washed gravel is preferred. Placement of the gravel over the underdrain must be done with care. Avoid dropping the gravel from high levels from a backhoe or front-end loader bucket. Spill directly over underdrain and spread manually.

Choker Stone - Clean, washed #8 or #89 stone. Depth of choker stone must be 3 inches.

Perforated 4 inch PVC Underdrain - Rigid Schedule 40 PVC 4-inch diameter pipe either drilled or bought in a commonly available perforated style (e.g. 3/8 or 1/2 inch perforations, 6 inch center to center, along four longitudinal rows). Perforated pipe shall be double-wrapped in 1/2" mesh hardware cloth.

Solid 4 inch PVC Cleanouts - Rigid Schedule 40 PVC 4-inch diameter

PVC Pipe Fittings, Connections, and Cleanout - Pipe sections shall be coupled using suitable connection rings and flanges. Cleanouts shall be attached to underdrain with 45 degree connection and capped with screw top.

Filter Media - Soil mixture shall be 80-85% sand; 1% leaf compost or organic matter; and 14% - 19% topsoil (loam). The soil shall be uniform mix, free of stones, stumps, roots, weeds, or other similar objects larger than two inches. The planting soil shall be free of Bermuda Grass, Quackgrass, Johnson Grass, Mugwort, Nutedge, Poison Ivy, Canadian Thistle, Tearthumb, or other noxious weeds as specified under COMAR 15.08.01.05. The soil should also be free of allelopathic species (such as *Juglans spp.*, *Plantanus occidentalis*, etc). Provide clean sand, free of deleterious materials. Sand shall meet AASHTO M-6 or ASTM C-33 with grain size of 0.02- 0.04 inch. The filter media should be tested for phosphorous content and the P-index of the media should not exceed 30 (22.5 mg P per kg soil). Depth of filter media must be 18 inches.

The filter media for the bioretention area shall have a minimum of one test. Each test shall consist of both the standard soil test for pH, phosphorus, and potassium, and additional tests of organic matter, and soluble salts. A textual 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. Since different labs calibrate their testing equipment differently, all testing results shall come from the same testing facility. Should the pH fall out of the acceptable range, it may be modified (higher) with lime or (lower) with iron sulfate plus sulfur.

Mulch - Acceptable mulch shall be shredded hardwood only. It shall consist of bark from hardwood trees which have been milled and screened to a maximum of 4 inches particle size and provide a uniform texture free from sawdust, toxic substances, and foreign materials including plant material. Mulch must be aged 6 months, minimum. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Mulch must be 3 inches in depth.

Riprap - Class 1 riprap, size 6 to 9 inches.

Geotextile for use with Riprap	Test Method	Requirements
Physical Property	ASTM D4751	Equal to or greater than No. 30 sieve
Apparent opening size	ASTM D751	Minimum 80 lb.
Puncture Strength	VT-52	Minimum 30 in-lbs/in
Tensile strength @ 20% (max) elongation		
Water Flow Rate	ASTM D 4491	4 gpm per sq. ft.

Seams shall be equal in strength to the basic material. Additional fabric material or noncorrosive steel wire may be incorporated into fabric to increase overall strength.

EXISTING UTILITIES

THE TYPE AND LOCATIONS OF EXISTING UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION AND GUIDANCE ONLY. NO GUARANTEE IS MADE AS TO THE ACCURACY OF SAID LOCATIONS. CONTACT "MISS UTILITY" AT 1-800-257-7777 A MINIMUM OF 48 HOURS PRIOR TO START OF WORK

PROFESSIONAL CERTIFICATION

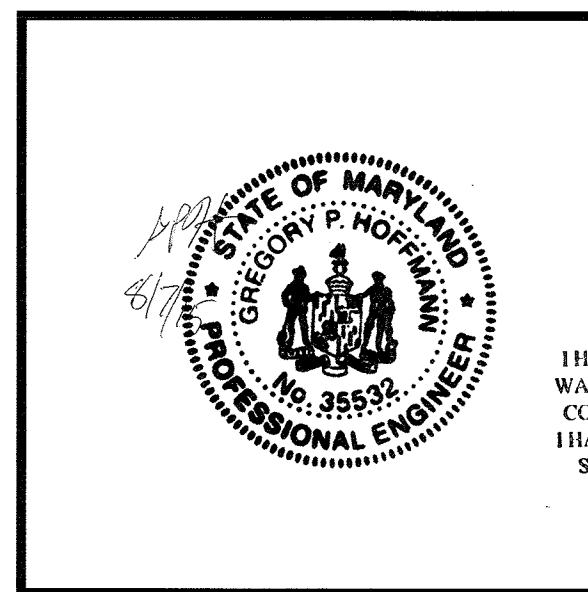
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE NO. 35532

EXPIRATION DATE 3/13/2016

NAME Gregory Hoffmann DATE 8/1/15

*NO AS-BUILT INFORMATION ONE THIS SHEET



ENGINEER'S SEAL



AS-BUILT CERTIFICATION FOR PSWM

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

DATE 16/13 P.E. # 11/2/20

DATE: March 2, 2014	SCALE:
DESIGN BY: N/A	REVISION NUMBER:
DRAWN BY: ADD	REVISION TYPE: ADD
CHECKED BY: JGB	REVISION DATE: W-14-016
PROJECT ID: W-14-016	PROJECT DATE: W-14-016
CHECKED BY: JGB	REVISION TYPE: W-14-016
SHEET NUMBER: 18 OF 25	

SURVEY COMPLETED BY: Carl F. Kreutter, L.S., C.F. Kreutter & Associates, Inc. 1613 Fullerton Rd. Edgewater, MD 21037 (Phone) 301-974-9065

PREPARED FOR: Mr. Ken Yarnoff, Mr. Dept. of Natural Resources, 3290 Main Street, Suite 200, Ellicott City, MD 21043, 410-461-6323

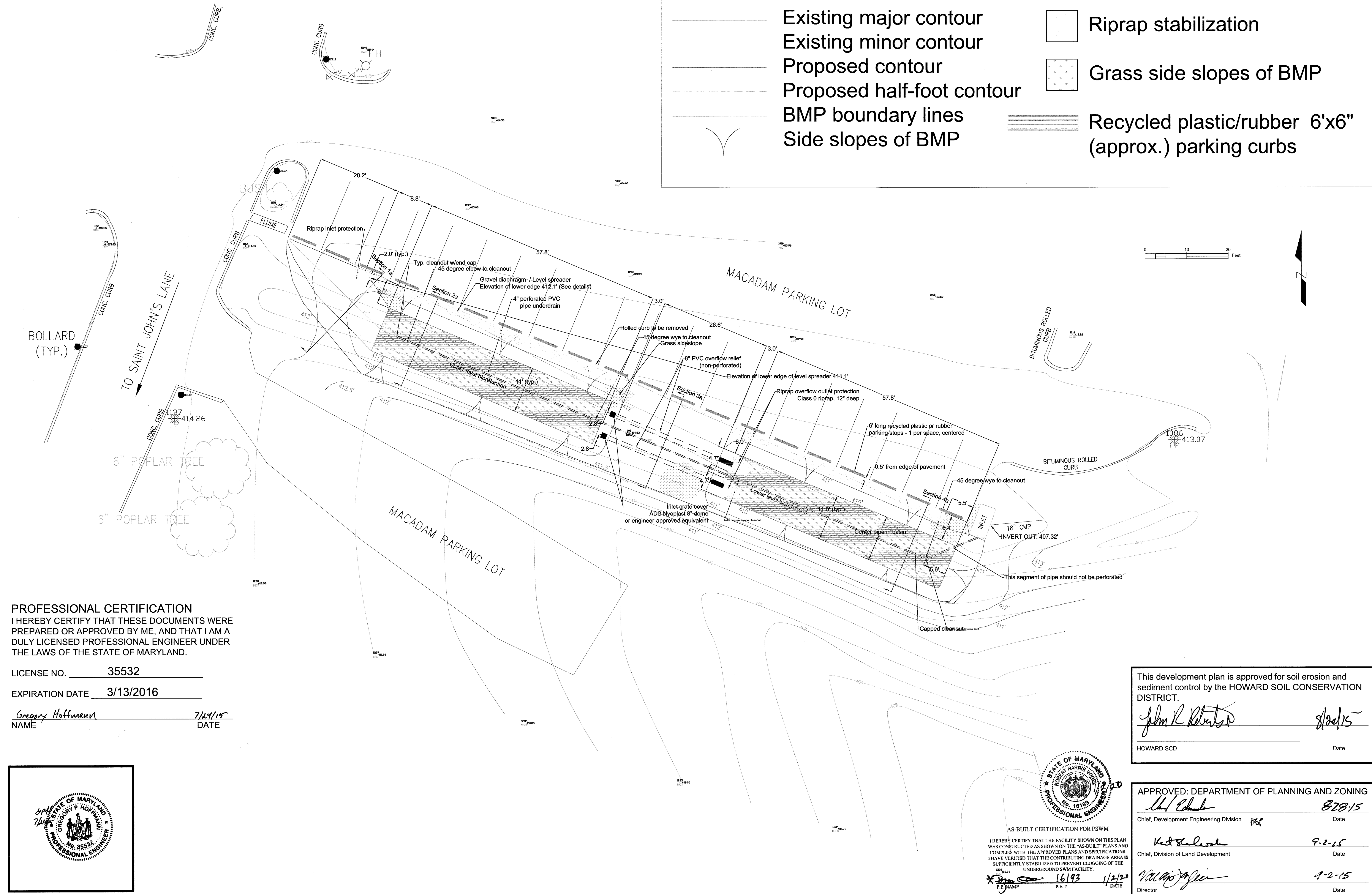
PREPARED BY: The Center for Watershed Protection, 3290 Main Street, Suite 200, Ellicott City, MD 21043, 410-461-6323

CENTER FOR WATERSHED PROTECTION

General Notes
Bethel Korean Church
Ellicott City, Maryland

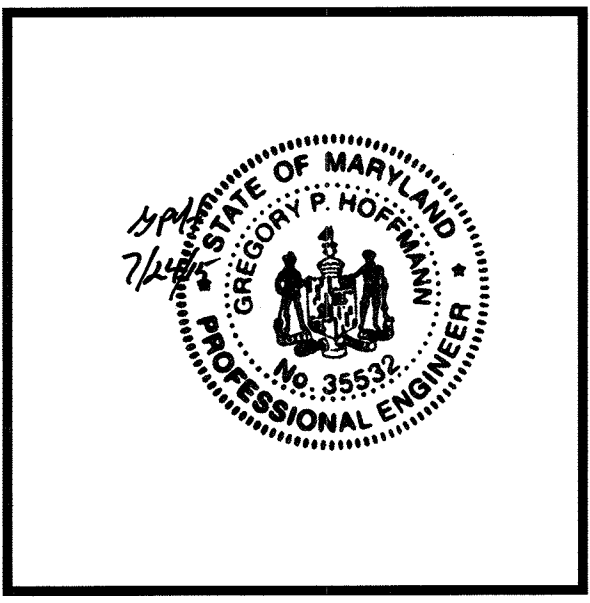
Legend

- Existing major contour
- Existing minor contour
- Proposed contour
- Proposed half-foot contour
- BMP boundary lines
- Side slopes of BMP
- Mulch top layer of BMP
- Riprap stabilization
- Grass side slopes of BMP
- Recycled plastic/rubber 6'x6" (approx.) parking curbs

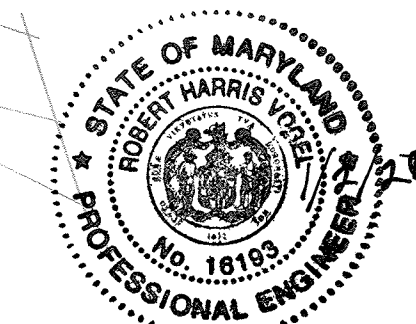


PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE NO. 35532
 EXPIRATION DATE 3/13/2016
 NAME Gregory Hoffmann DATE 7/24/15



ENGINEER'S SEAL



AS-BUILT CERTIFICATION FOR PSWM
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.
 P.E. NAME [Signature] P.E. # 16193 DATE 1/2/20

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
[Signature] 8/28/15
 HOWARD SCD Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 8/28/15
 Chief, Development Engineering Division
[Signature] 9-2-15
 Chief, Division of Land Development
[Signature] 9-2-15
 Director

*NO AS-BUILT INFORMATION ON THIS SHEET

AS-BUILT DECEMBER 2019

DATE: March 2, 2014 SCALE: 1 inch = 10 feet
 REVISION NUMBER: DESIGN BY: ADD
 REVISION TYPE: DRAWN BY: ADD
 REVISION DATE: CHECKED BY: JGB
 REVISION NUMBER: PROJECT ID: W-14-016
 REVISION DATE: Edgewater, MD 21037
 REVISION TYPE: SHEET NUMBER 19 OF 25

PREPARED FOR: Mr. Ken Yehman, MD Dep. of Natural Resources, Tawes State Office Building, 580 Taylor Ave., D-3 Annapolis, MD 21401

PREPARED BY: The Center for Watershed Protection, 3290 Main Street, Suite 290, Ellicott City, MD 21043, 410-461-8323

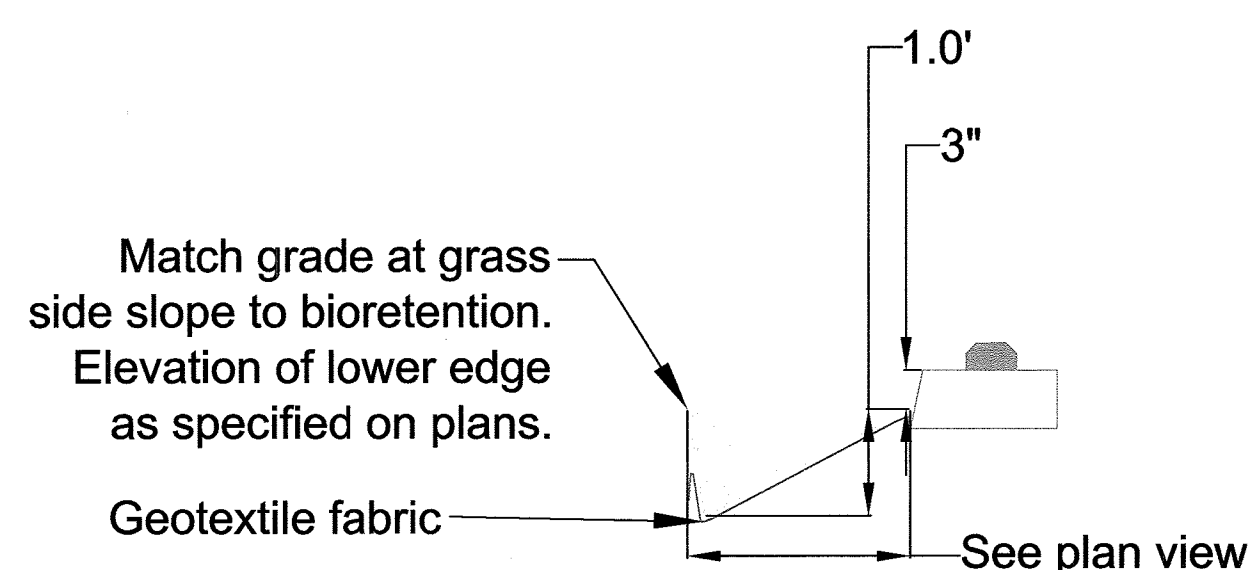
CENTER FOR WATERSHED PROTECTION

Plan View Lot 2
 Bethel Korean Church
 Ellicott City, Maryland

SDP-12-037

Diaphragm Detail

*NTS



Legend

- Existing profile elevation
- Proposed profile elevation
- Geotextile fabric
- Ponding water line

- Mulch top layer of BMP
- Bioretention soil media
- Choker Stone (pea gravel)
- Riprap or gravel (as labeled)
- Native soil

DATE:	March 2, 2014	SCALE:		VARIABLE - see notes
REVISION NUMBER:		DESIGN BY:		ADD
REVISION TYPE:		DRAWN BY:		ADD
REVISION DATE:		CHECKED BY:		JOB
REVISION NUMBER:		PROJECT ID:		W-14-016
REVISION DATE:		REVISION TYPE:		
				SHEET NUMBER
				20 of 25

SURVEY COMPLETED BY:
 Carl F. Kreutter, L.S.
 C.F. Kreutter & Associates, Inc.
 1613 Fullerton Rd.
 Edgewater, MD 21037
 (Phone) 301-974-9065

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division
 Date: 8-28-15

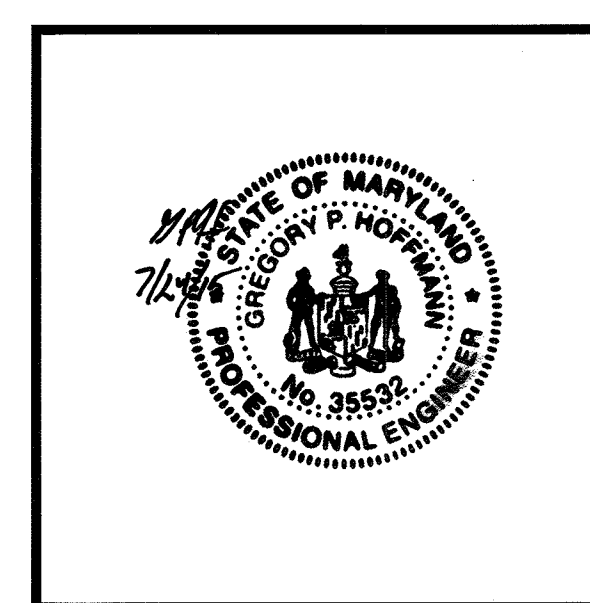
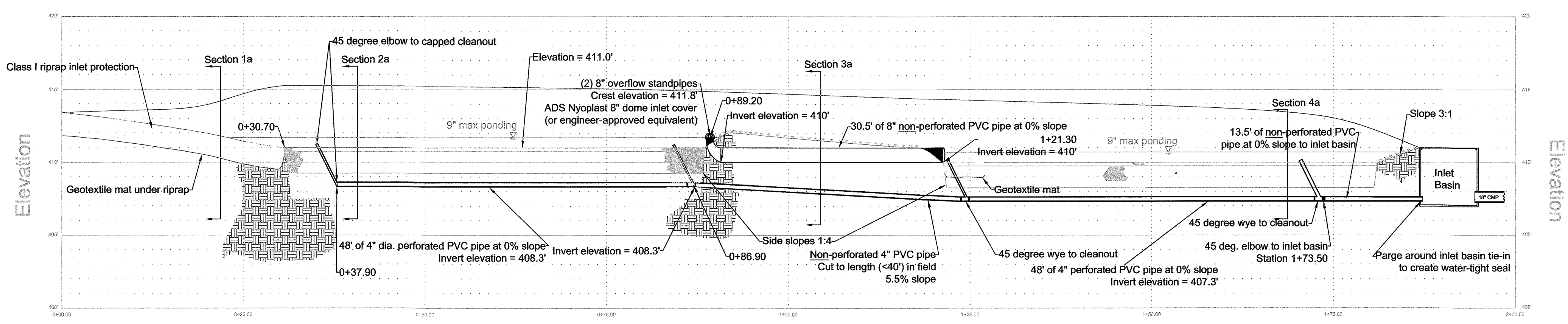
Chief, Division of Land Development
 Date: 9-2-15

Director
 Date: 9-2-15

PREPARED FOR:
 The Center for Watershed Protection
 3290 Main Street, Suite 290
 Ellicott City, MD 21043
 410-461-8323

PROFILES AND SECTIONS LOT 2
 Bethel Korean Church
 Ellicott City, Maryland

Profile of Lot 2 Bioretention

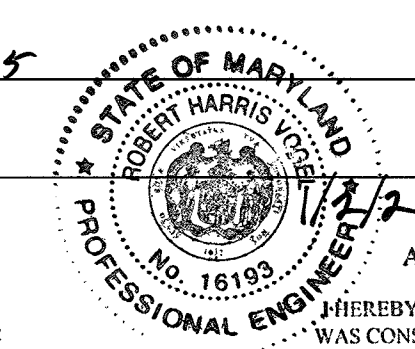


ENGINEER'S SEAL

PROFESSIONAL CERTIFICATION
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LICENSE NO. 35532 EXPIRATION DATE 3/13/2016

NAME Gregory Hoffmann DATE 7/24/15



AS-BUILT CERTIFICATION FOR PSWM

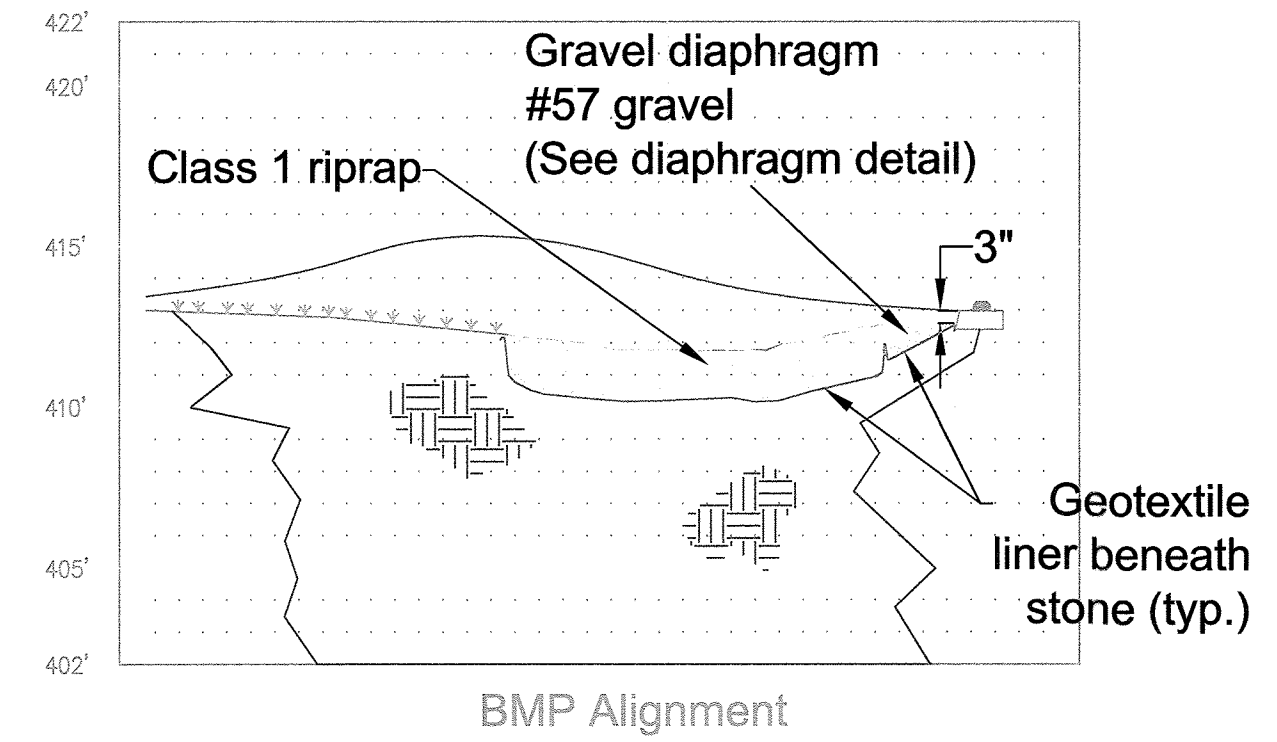
WHEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

P.E. NAME P.E.# DATE
 16193 1/2/20

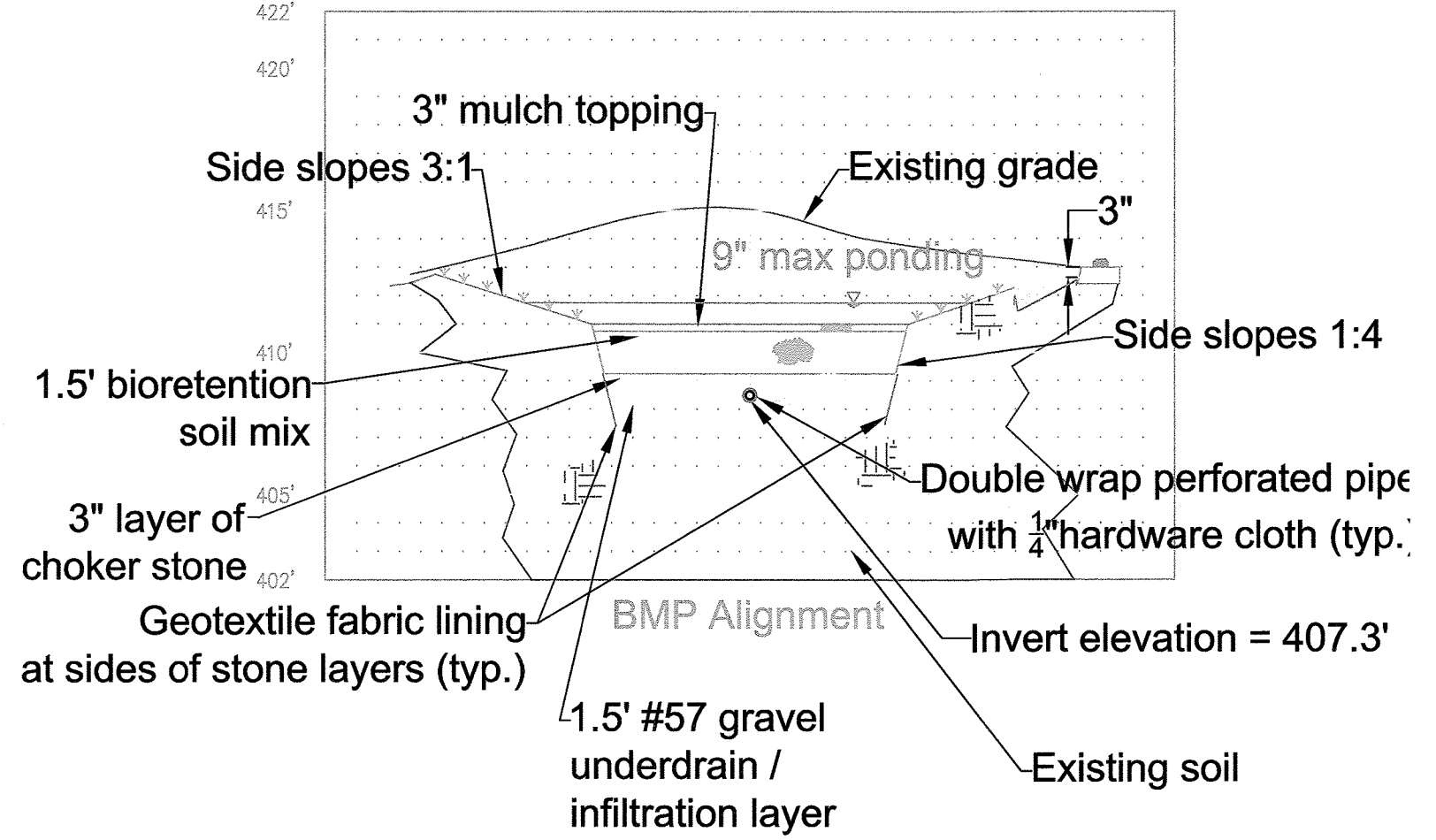
1" = 10' (horizontal)
 1" = 5' (vertical)

1" = 6'

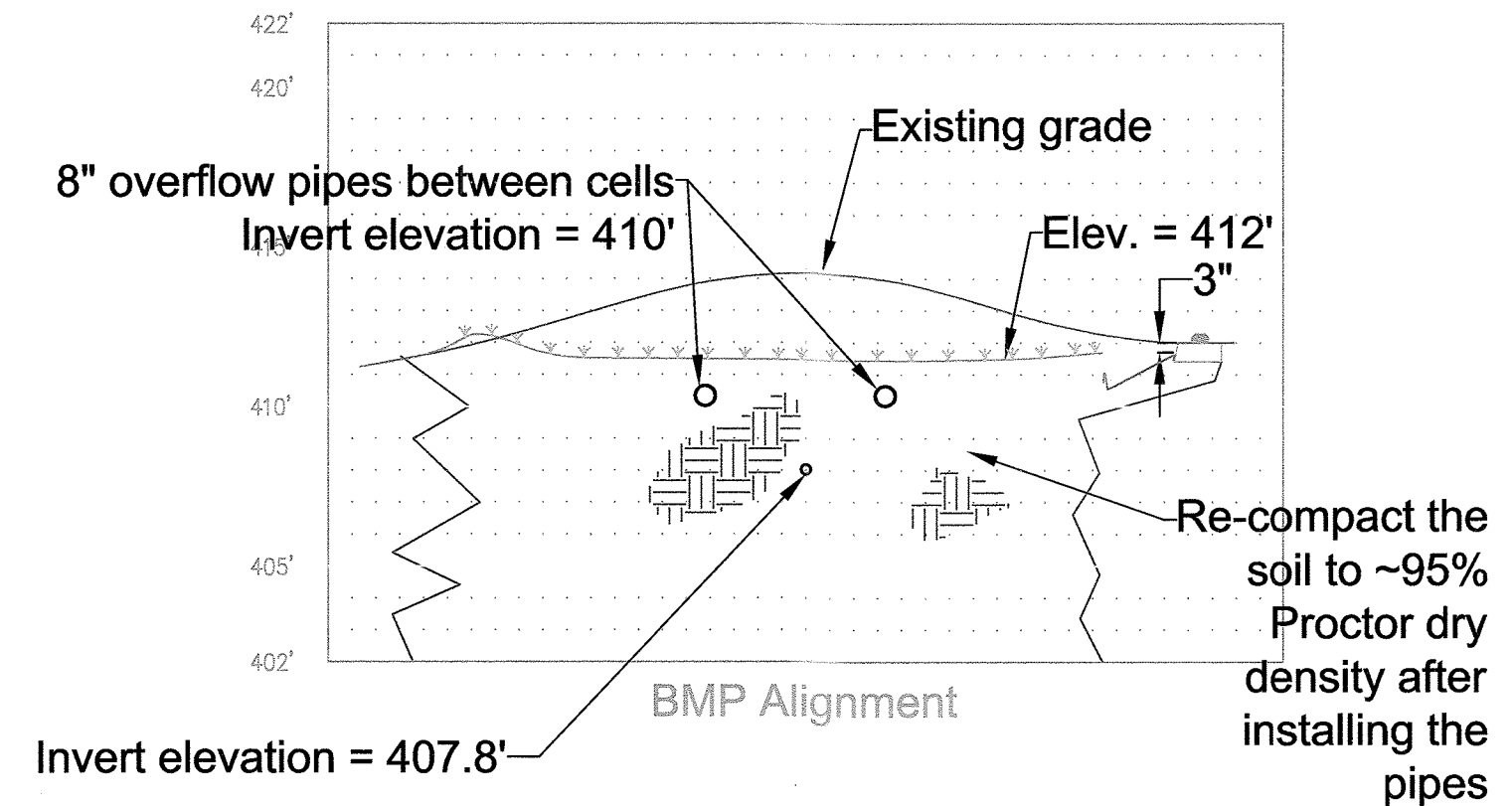
Section 1a



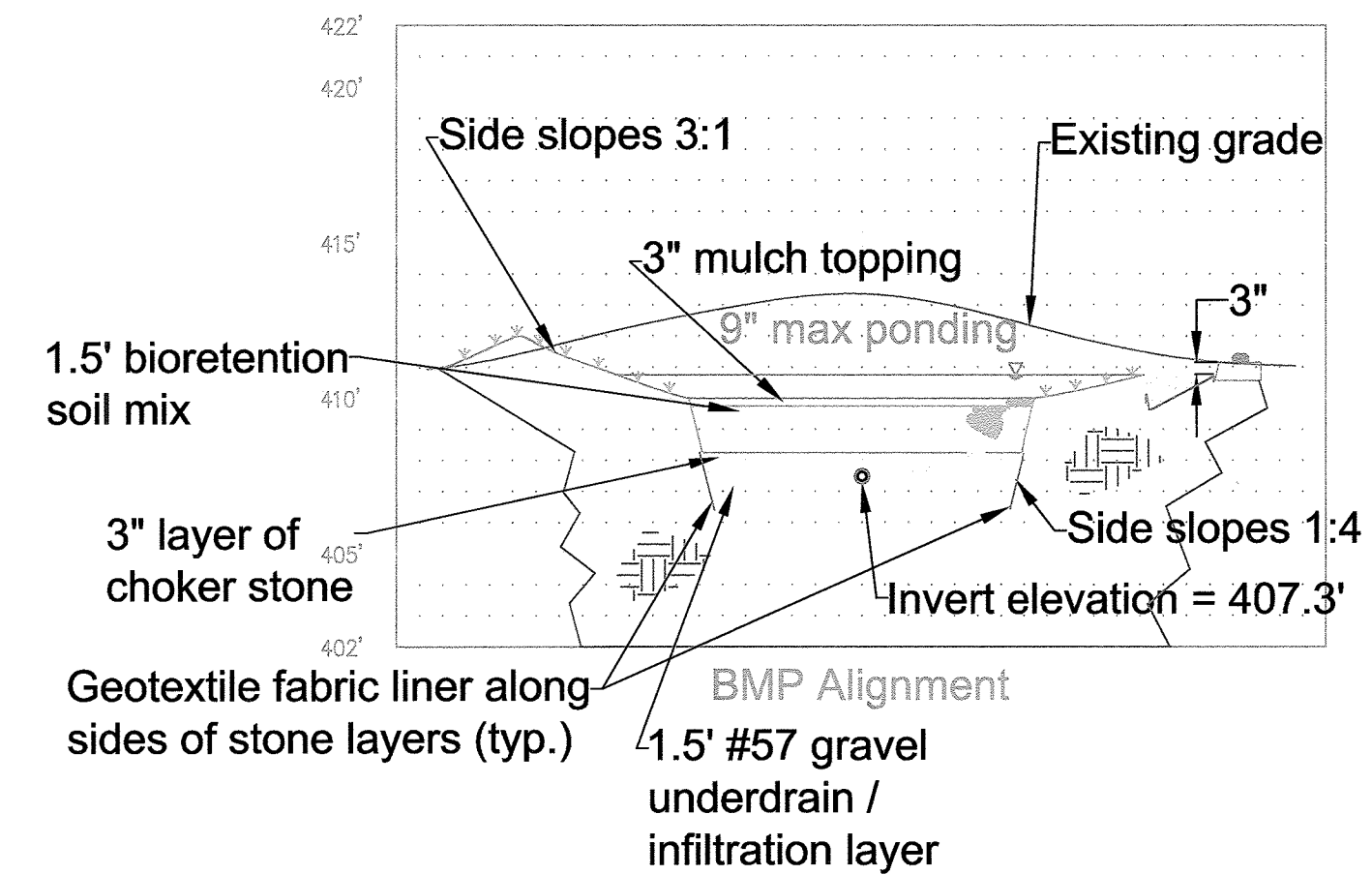
Section 2a



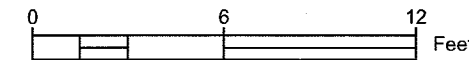
Section 3a



Section 4a



* NO AS-BUILT INFORMATION ON THIS SHEET
 AS-BUILT DECEMBER 2019

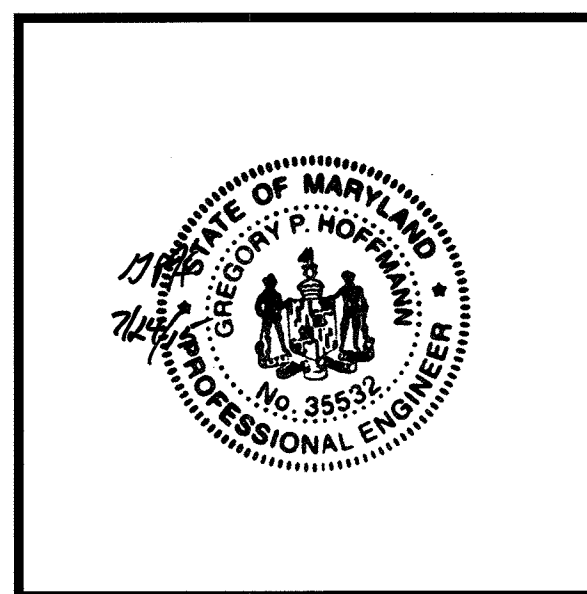


PROFESSIONAL CERTIFICATION
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LICENSE NO. 35532

EXPIRATION DATE 3/13/2016

NAME Gregory Hoffmann DATE 7/24/15



ENGINEER'S SEAL

Legend

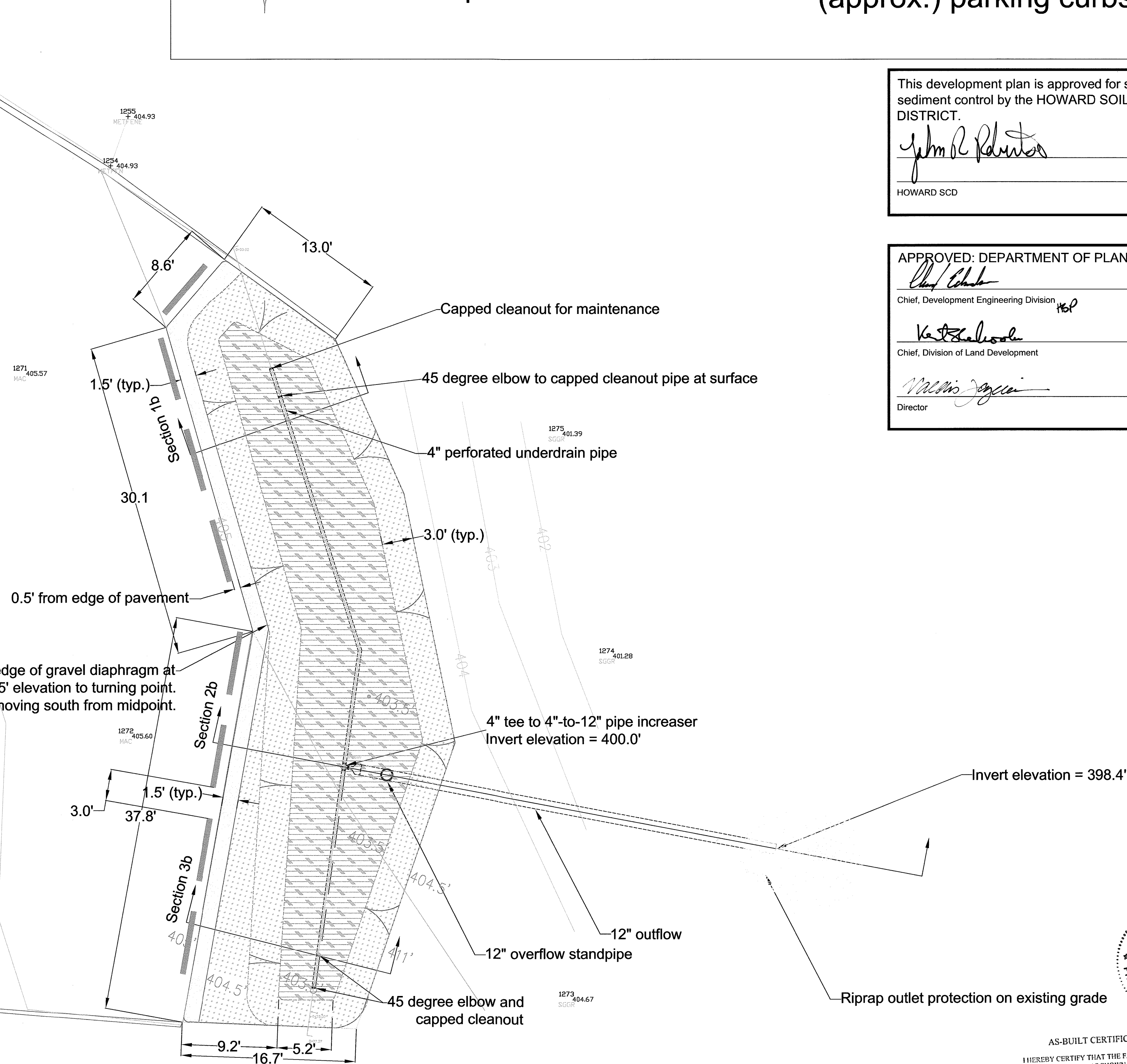
- Existing major contour
- Existing minor contour
- Proposed contour
- Proposed half-foot contour
- BMP boundary lines
- Side slopes of BMP

- Mulch top layer of BMP
- Riprap stabilization
- Grass side slopes of BMP
- Recycled plastic 6'x6" (approx.) parking curbs

MACADAM PARKING LOT

BASKET BALL NET

Lower edge of gravel diaphragm at 404.5' elevation to turning point. Match grade moving south from midpoint.



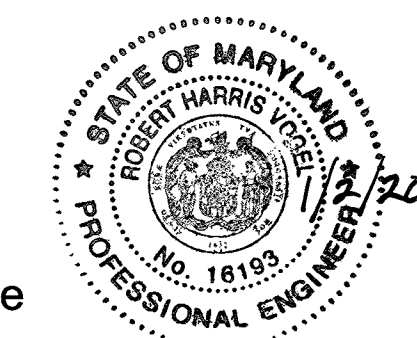
This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

John R. Redner *8/28/15*
 HOWARD SCD Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division *8/28/15*
 Chief, Division of Land Development Date

Director *9-2-15*
 Director Date



AS-BUILT CERTIFICATION FOR PSWM
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

Robert Harris *16193* *1/2/20*
 P.E. # DATE

*NO AS-BUILT INFORMATION ON THIS SHEET AS-BUILT DECEMBER 2019

DATE: March 2, 2014 SCALE: 1" = 6' (net)

REVISION NUMBER: ADD REVISION TYPE: DESIGN BY: C.F. Kreutter & Associates, Inc. DRAWN BY: C.F. Kreutter & Associates, Inc. CHECKED BY: PROJECT ID: W-14-016 SHEET NUMBER: 21 OF 25

PREPARED FOR: Mr. Ken Yalman, MD Dept. of Natural Resources, Tawes State Office Building, 580 Taylor Ave., D-3, Annapolis, MD 21401

PREPARED BY: The Center for Watershed Protection, 3200 Main Street, Suite 200, Ellicott City, MD 21043, 410-461-8323

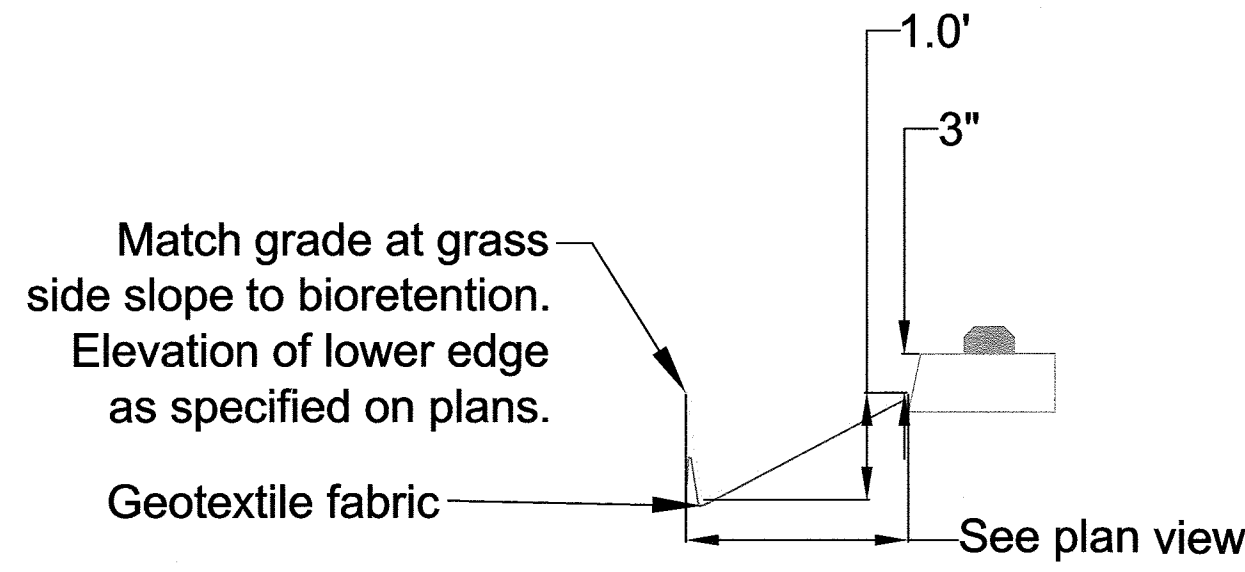
CENTER FOR WATERSHED PROTECTION

Plan View Lot 3
 Bethel Korean Church
 Ellicott City, Maryland

SDP-12-037

Diaphragm Detail

*NTS



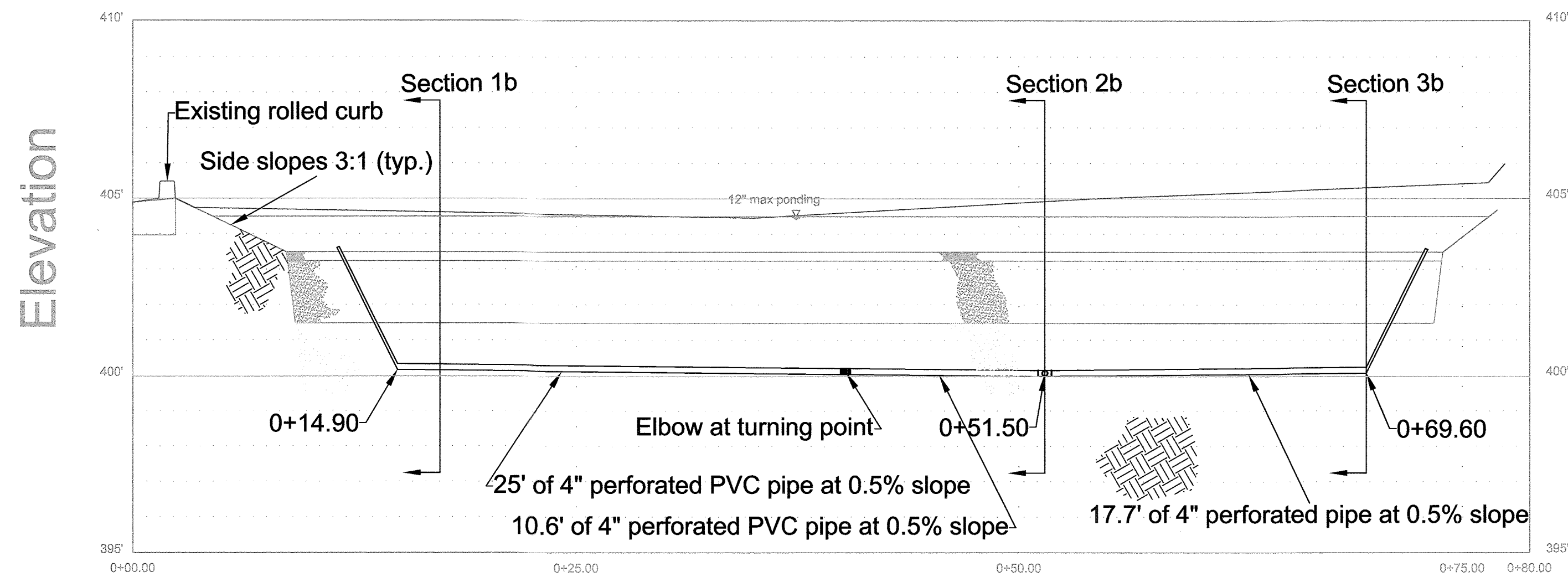
Legend

- Existing profile elevation
- Proposed profile elevation
- Geotextile fabric
- Native soil
- Mulch top layer of BMP
- Bioretention soil media
- Choker Stone (pea gravel)
- Riprap or gravel (as labeled)

DATE:	March 2, 2014	SCALE:	1" = 6' (vert)
REVISION NUMBER:	ADD	DESIGN BY:	ADD
REVISION TYPE:	ADD	DRAWN BY:	ADD
REVISION DATE:	ADD	CHECKED BY:	ADD
REVISION NUMBER:	ADD	PROJECT ID:	W-14-016
REVISION DATE:	ADD	PROJECT NUMBER:	22
REVISION TYPE:	ADD	PROJECT NAME:	25

SURVEY COMPLETED BY:
 Carl F. Kreutter, L.S.
 C.F. Kreutter & Associates, Inc.
 1613 Fullerton Rd.
 Edgewater, MD 21037
 (Phone) 301-974-9065

Profile of Lot 3 Bioretention



Station along centerline alignment

Scale:
 1" = 6' horizontal
 1" = 3' vertical



This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
 [Signature] 8/20/15
 HOWARD SCD Date



ENGINEER'S SEAL

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 8-28-15
 Chief, Development Engineering Division
 [Signature] 9-2-15
 Chief, Division of Land Development
 [Signature] 9-2-15
 Director

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. 35532 EXPIRATION DATE 3/13/2016

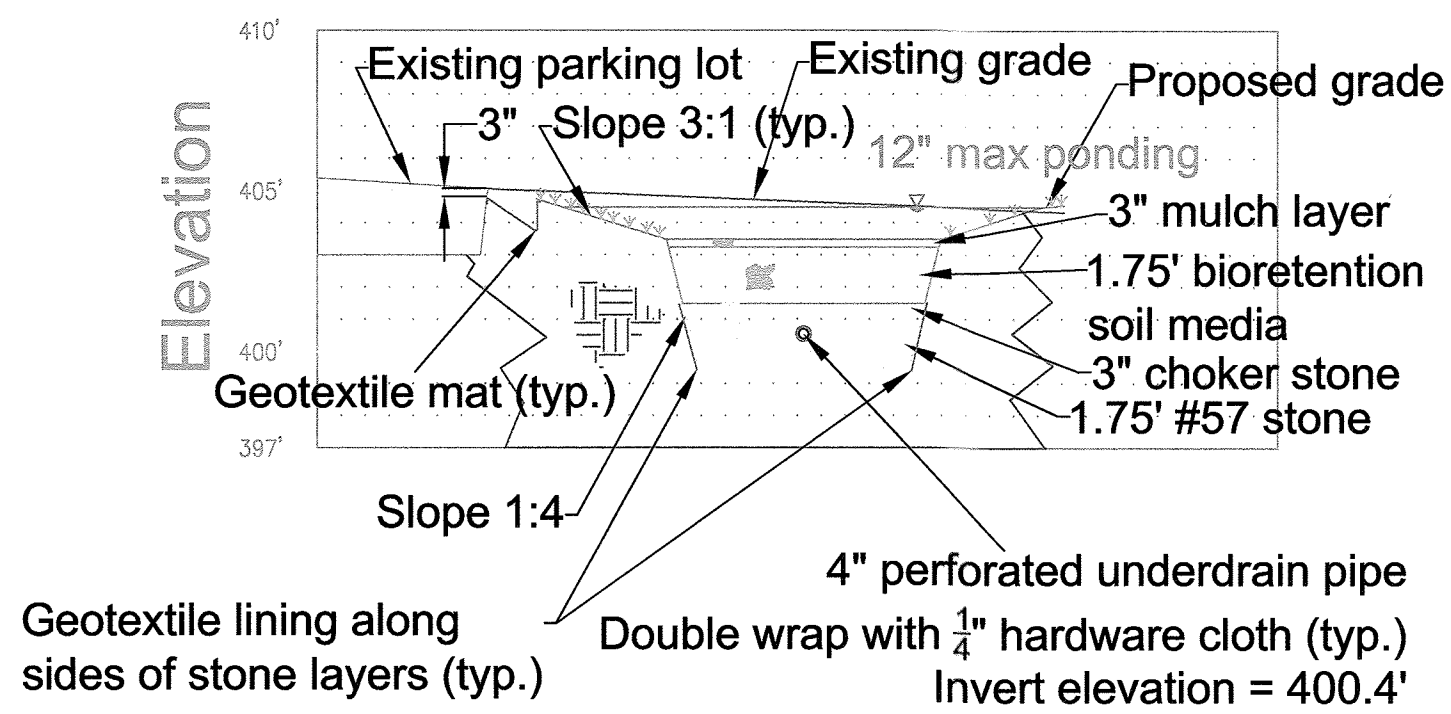
[Signature] 7/24/15
 NAME DATE

PREPARED FOR:
 Mr. Ken Yerman
 MD Dep. of Natural Resources
 Talbot State Office Building
 580 Taylor Ave., D-3
 Annapolis, MD 21401

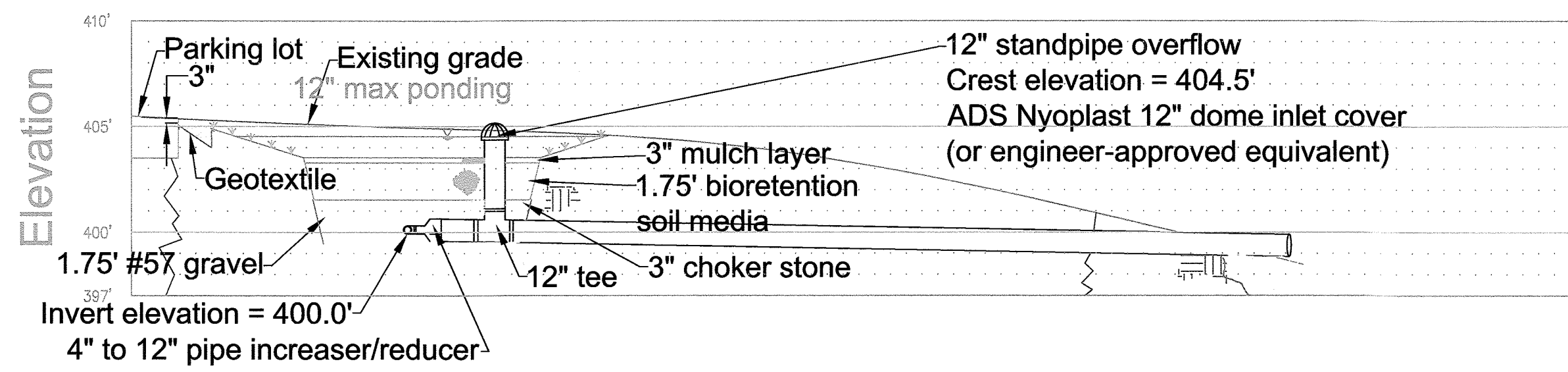
PREPARED BY:
 The Center for Watershed Protection
 3200 Main Street, Suite 200
 Ellicott City, MD 21043
 410-461-8323

CENTER FOR WATERSHED PROTECTION

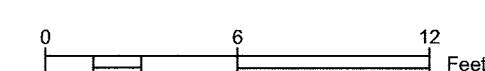
Section 1b



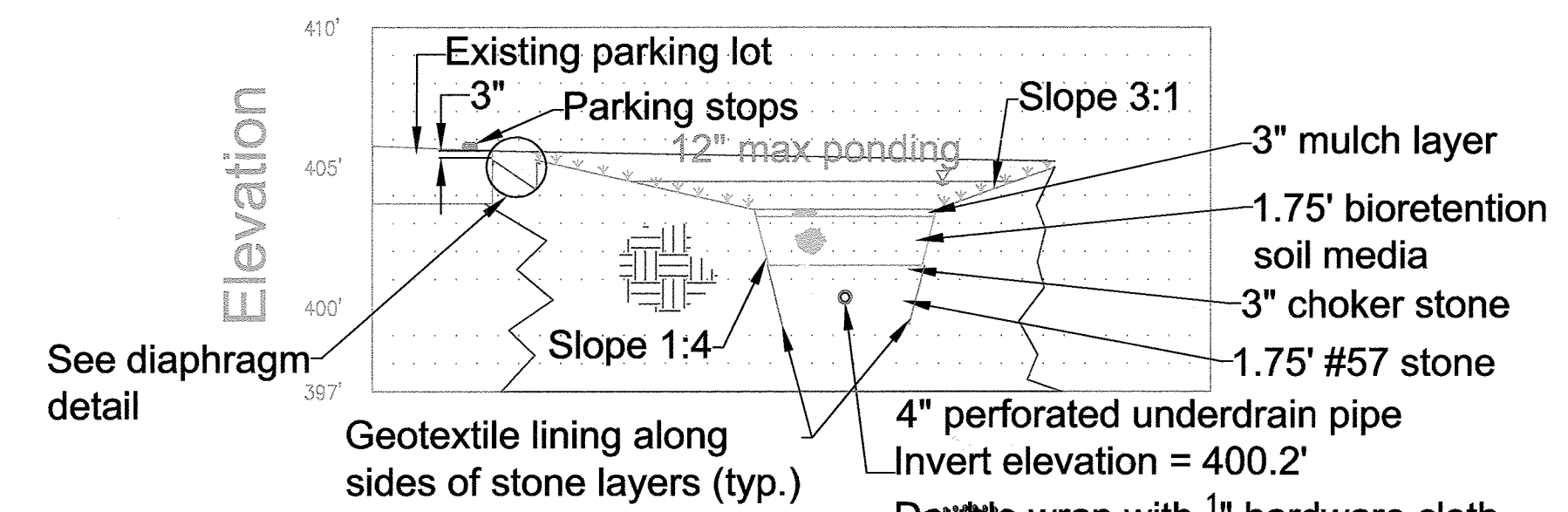
Section 2b



Scale:
 1" = 6'

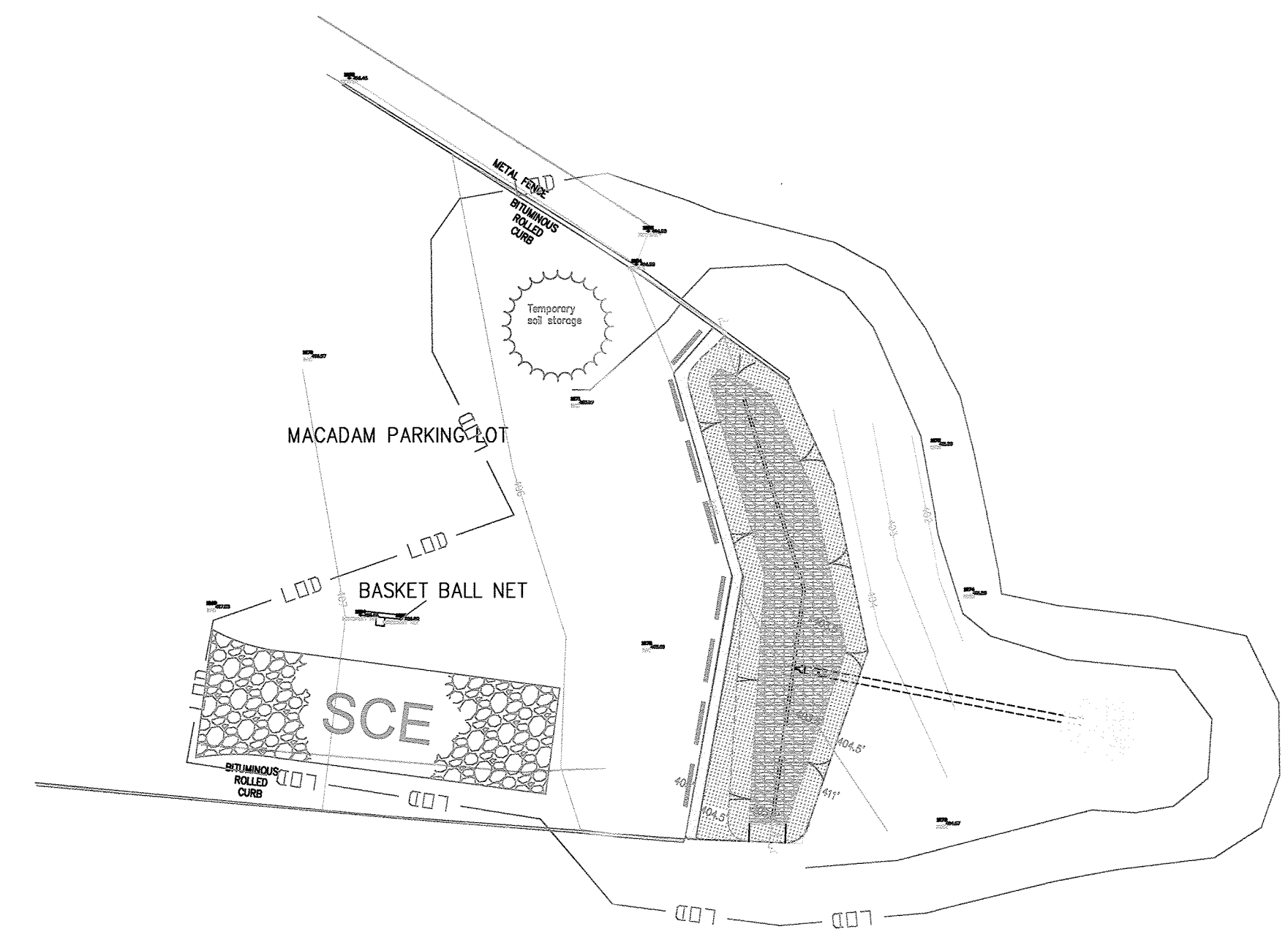
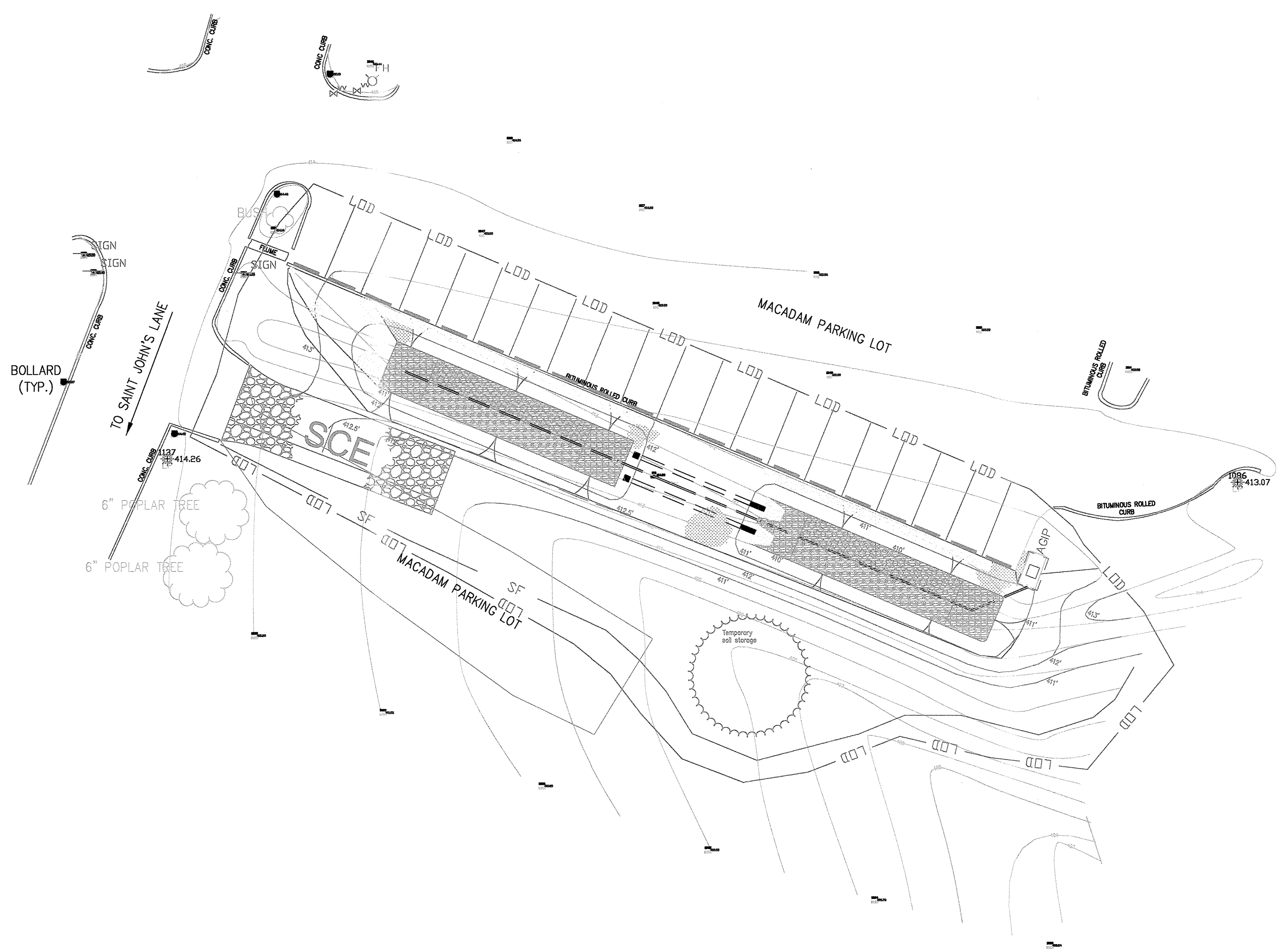


Section 3b



AS-BUILT CERTIFICATION FOR PSWM
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.
 [Signature] 16193 1/2/20
 P.E. NAME P.E.# DATE

Sections Lot 3
 Bethel Korean Church
 Ellicott City, Maryland



Legend

- Existing major contour
- Existing minor contour
- Proposed contour
- Proposed half-foot contour
- Temporary soil stockpile
- Limit of disturbance
- Silt fence
- Stabilized construction entrance

Address:
3165 St. Johns Lane
Ellicott City, MD 21042

Tax map: 24
Parcel: 1168

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

John A. Kreuter 8/20/15
HOWARD SCD Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Cheryl Clark 8-28-15
Chief, Development Engineering Division 16P Date

Kate DeWolfe 9-2-15
Chief, Division of Land Development Date

Valerie Jayne 9-2-15
Director Date

PROFESSIONAL CERTIFICATION
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LICENSE NO. 35532
EXPIRATION DATE 3/13/2016

Gregory Hoffmann 7/24/15
NAME DATE

ENGINEER'S SEAL

AS-BUILT CERTIFICATION FOR PSWM

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

Gregory Hoffmann 16193 1/2/20
P.E. NAME P.E.# DATE

PREPARED FOR: Mr. Ken Yerman, MD Dep. of Natural Resources, 580 Taylor Ave., D-3, Annapolis, MD 21401
 PREPARED BY: The Center for Watershed Protection, 3290 Main Street, Suite 290, Ellicott City, MD 21043, 410-461-8323
 SURVEY COMPLETED BY: Carl E. Kreuter, L.S., C.F. Kreuter & Associates, Inc., 1613 Fullerton Rd., Edgewater, MD 21037, (Phone) 301-974-9065
 DATE: March 2, 2014
 SCALE: 1" = 20 feet
 REVISION NUMBER: ADD
 REVISION TYPE: ADD
 DRAWN BY: JCB
 CHECKED BY: JCB
 PROJECT ID: W-14-010
 SHEET NUMBER: 23 OF 25

CENTER FOR WATERSHED PROTECTION
 Erosion and Sediment Control
 Bethel Korean Church
 Ellicott City, Maryland

Erosion and Sediment Control Notes

- All erosion and sediment control measures shall be installed and maintained in continuous compliance with the latest version of the Maryland Standards and Specifications for Soil and Erosion Sediment Control.
- All utilities, such as storm drain, public water, sanitary sewer, electric power, telephone, and cable and gas lines, which are not in paved areas and are not undergoing active grading, shall be temporarily or permanently stabilized within 3 days of initial disturbance.
- The owner/developer or their designate is responsible for conducting routine inspections and required maintenance. The site and controls should be inspected weekly and the next day after each rain event. Any accumulated sediment shall be removed and disposed of in a suitable area and shall be temporarily or permanently stabilized.

**Any project that has a state issued N.O.I permit must document each inspection and maintain an inspection log. (Please see the N.O.I for details.)

Lot 2 details	
Drainage Area, DA	30,492 s.f. (0.57 ac.)
Imperviousness, I	94% (0.54 ac.)
Runoff Coefficient, Rv = 0.009(I)+0.05	0.90
Design Storm, P	1 in.
Water Quality Volume, WQv = P*Rv*DA	1,868 c.f.
Avg. Depth of Filter Bed, df	18 in.
Hydraulic conductivity, k	0.5 ft/day
Drawdown Time, tf	2.0 day
Maximum Ponding Depth, hmax	9 in.
Average Ponding depth, hf	9 in.
Required SA for Bioretention (subtracting forebay) = WQv*[df/(k*(df+hf)*tf)]	1,236 s.f.
Area of Ponded Water @ 9 inches	1,160 s.f.
Actual SA for Bioretention	1292 s.f.
Total Area Disturbed for Construction	9,290 s.f.
Average Site Slope	10%
Maximum Site Slope	28%

Stormwater calculations were derived using the bioretention design guidelines specified in the MDE 2009 Stormwater Manual.

Disturbed Area Quantity:

The total area to be disturbed as shown on these plans has been determined to be approximately 9,290 sq. ft. and the total amount of excavation and fill as shown on the plans has been computed to be approximately 11 cubic yards of fill and 503 cubic yards of excavation. These quantities are approximate and should not be used by the contractor for bidding purposes.

Standard Stabilization Note

Following initial soil disturbance or re-disturbance, permanent or temporary stabilization must be completed within:

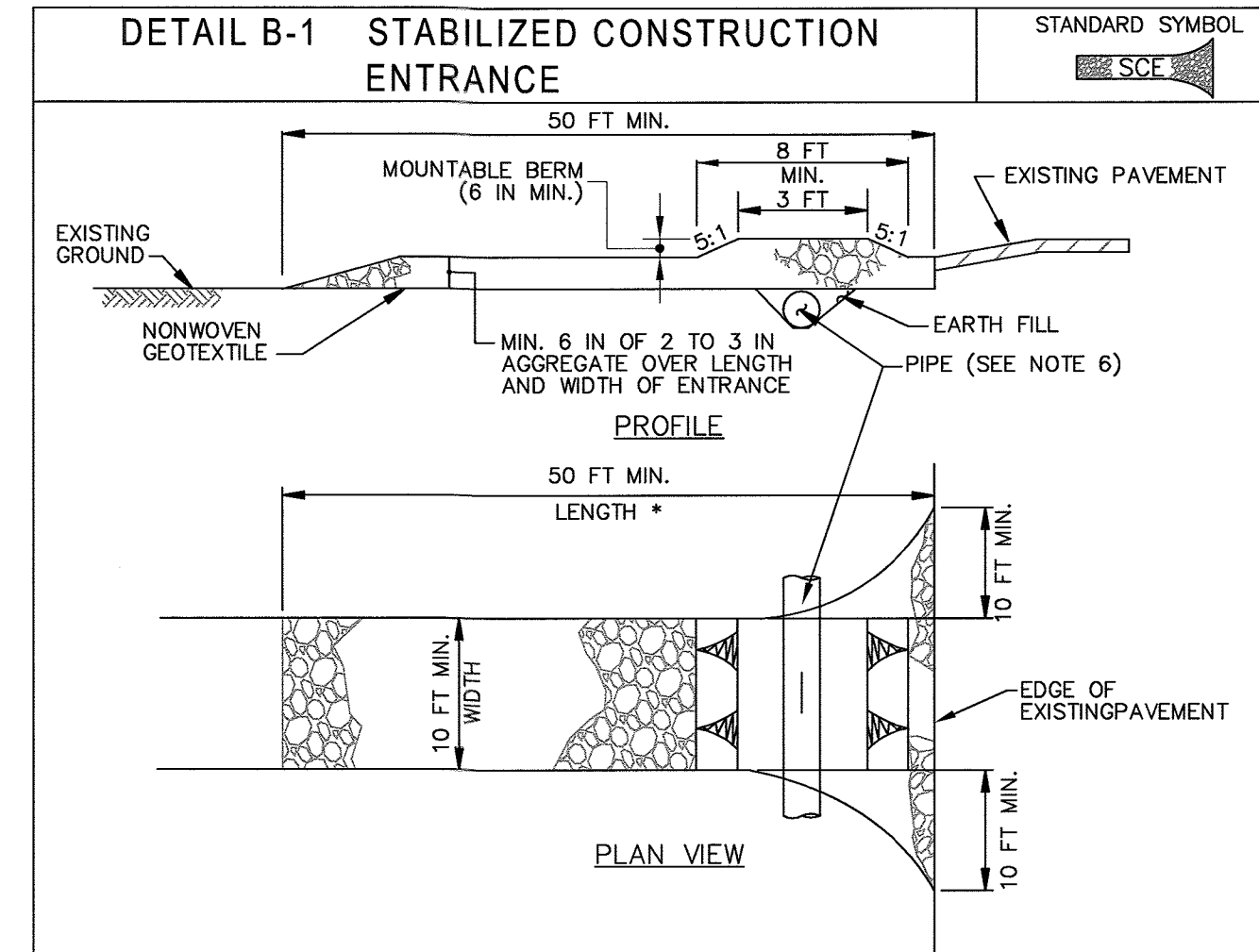
- Three (3) calendar days as to the surface of all perimeter dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and
- Seven (7) calendar days as to all other disturbed or graded areas on project site not under active grading.

Lot 3 details	
Drainage Area, DA	17,424 s.f. (0.40 ac.)
Imperviousness, I	100% (0.40 ac.)
Runoff Coefficient, Rv = 0.009(I)+0.05	0.95
Design Storm, P	1 in.
Water Quality Volume, WQv = P*Rv*DA	1,379 c.f.
Avg. Depth of Filter Bed, df	21 in.
Hydraulic conductivity, k	0.5 ft/day
Drawdown Time, tf	2.0 day
Maximum Ponding Depth, hmax	12 in.
Average Ponding depth, hf	12 in.
Required SA for Bioretention (subtracting forebay) = WQv*[df/(k*(df+hf)*tf)]	878 s.f.
Area of Ponded Water @ 6 inches	1,144 s.f.
Actual SA for Bioretention	594 s.f.
Total Area Disturbed for Construction	3,750 s.f.
Average Site Slope	5%
Maximum Site Slope	20%

Stormwater calculations were derived using the bioretention design guidelines specified in the MDE 2009 Stormwater Manual.

Disturbed Area Quantity:

The total area to be disturbed as shown on these plans has been determined to be approximately 3,750 sq. ft. and the total amount of excavation and fill as shown on the plans has been computed to be approximately 1 cubic yard of fill and 154 cubic yards of excavation. These quantities are approximate and should not be used by the contractor for bidding purposes.



CONSTRUCTION SPECIFICATIONS

- PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
- PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
- PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
- MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

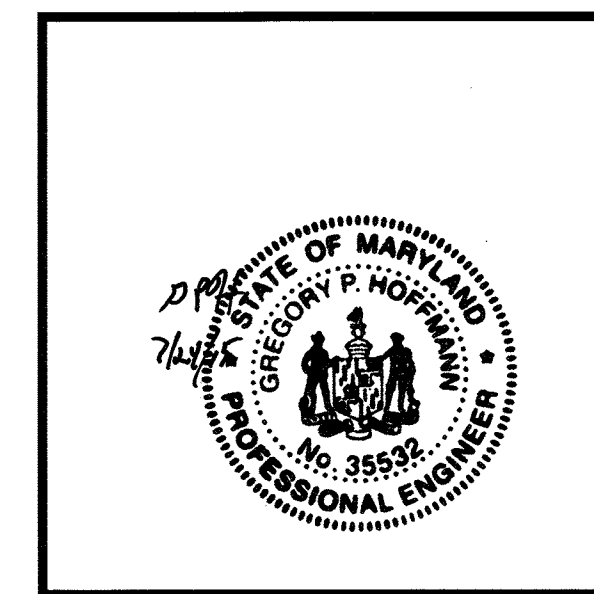
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

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. 35532

EXPIRATION DATE 3/13/2016

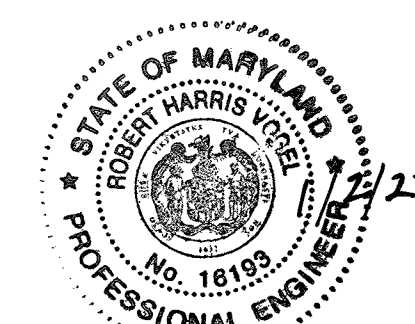
NAME Gregory Hoffmann DATE 7/24/15



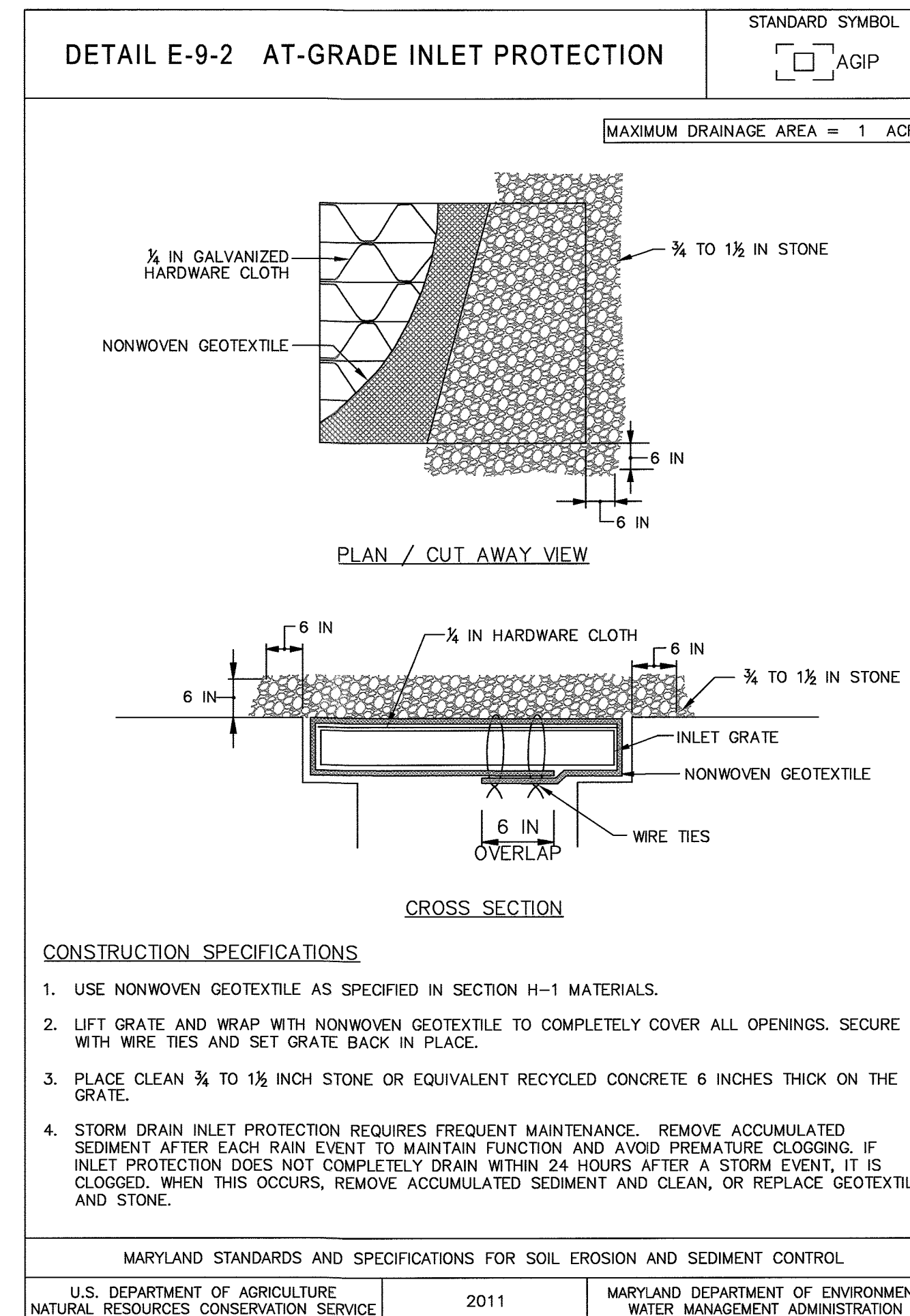
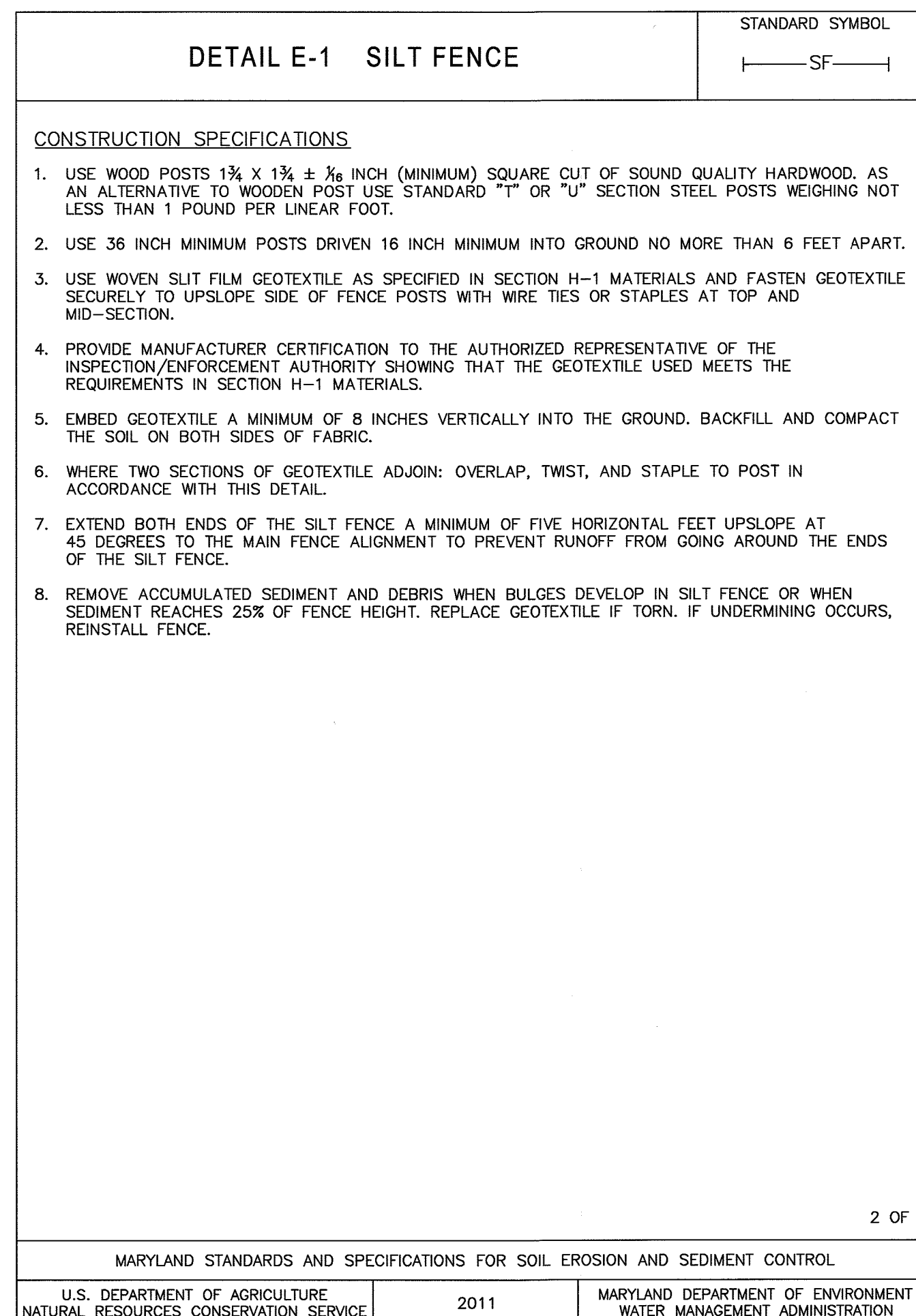
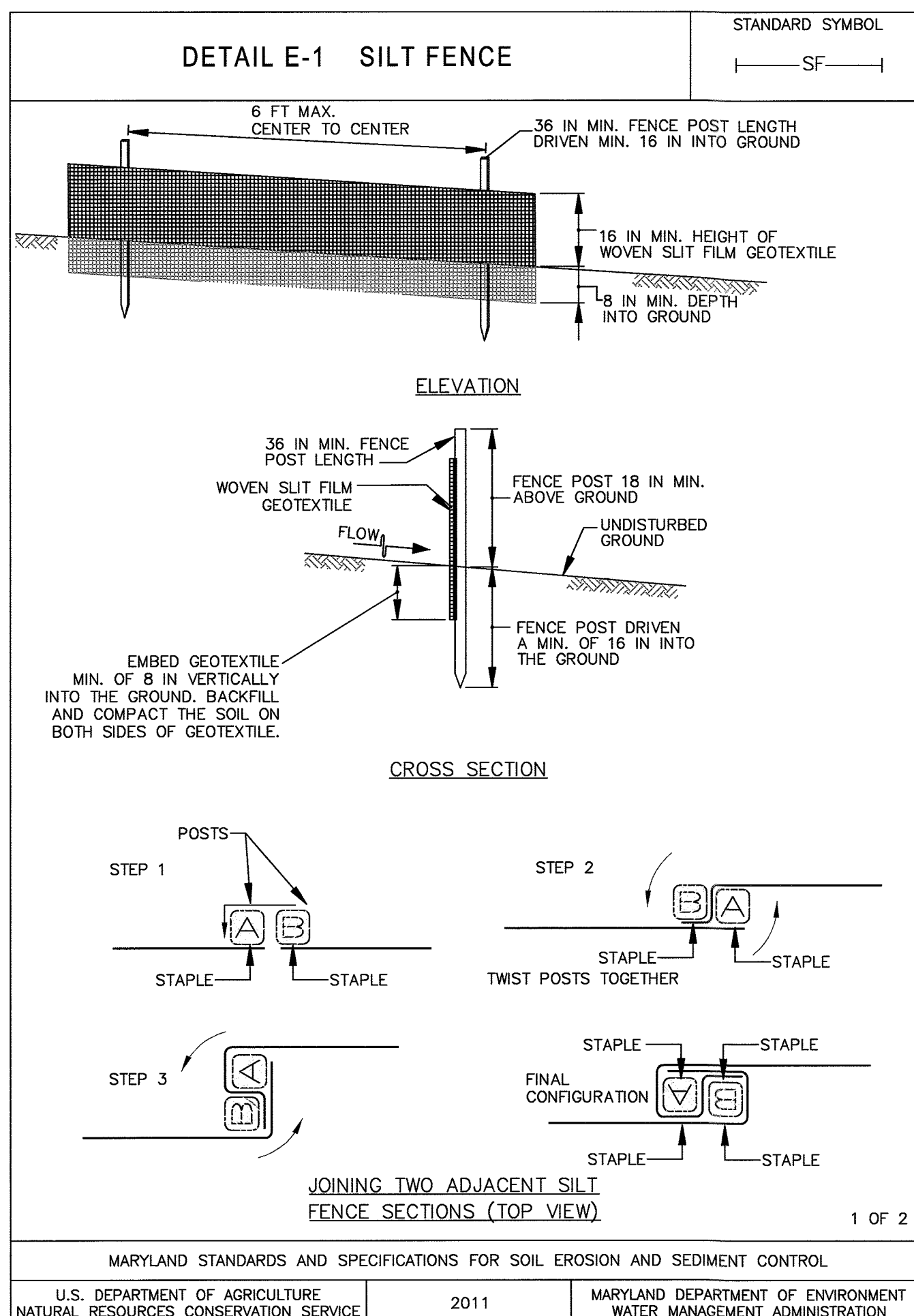
ENGINEER'S SEAL

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
HOWARD SCD Date 8/20/15

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Development Engineering Division Date 8/28/15
Chief, Division of Land Development Date 9-2-15
Director Date 9-2-15

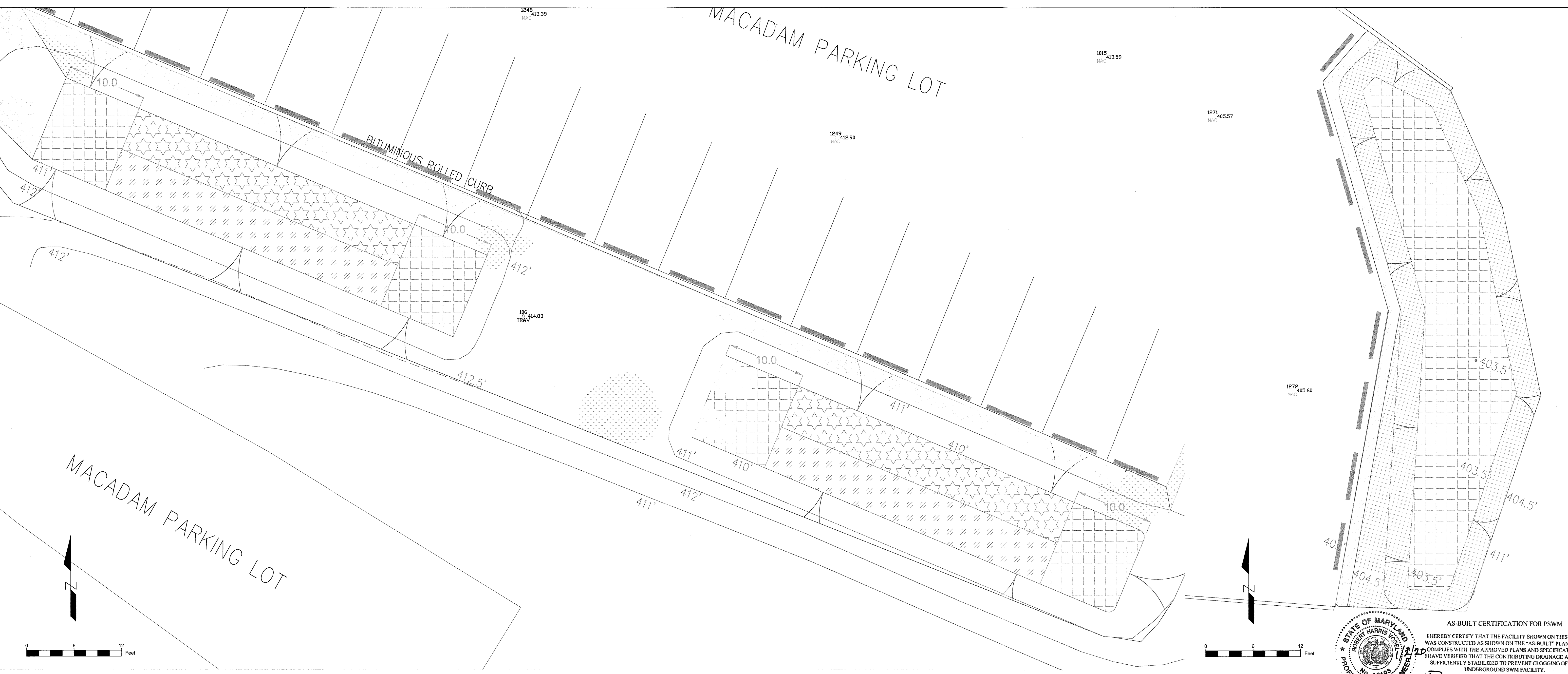


AS-BUILT CERTIFICATION FOR PSWM
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.
NAME P.J. DATE 1/2/20 P.E.# 16193



DATE: March 2, 2014 SCALE: N/A
 REVISION NUMBER: ADD
 DESIGN BY: ADD
 DRAWN BY: ADD
 CHECKED BY: ADD
 PROJECT ID: W-14-016
 SHEET NUMBER 24 of 25
 SURVEY COMPLETED BY: Carl F. Kreutter & Associates, Inc.
 1613 Fullerton Rd.
 Edgewater, MD 21037
 (Phone) 301-974-9065
 PREPARED FOR: Mr. Ken Yalman, MD Dept. of Natural Resources, 580 Taylor Ave., D-3, Annapolis, MD 21401
 PREPARED BY: The Center for Watershed Protection, 3290 Main Street, Suite 290, Ellicott City, MD 21043, 410-461-8323
CENTER FOR WATERSHED PROTECTION
 Profiles and Sections Lot 2
 Bethel Korean Church
 Ellicott City, Maryland
 SDP-12-037

* NO AS-BUILT INFORMATION ON THIS SHEET
 AS-BUILT DECEMBER 2019

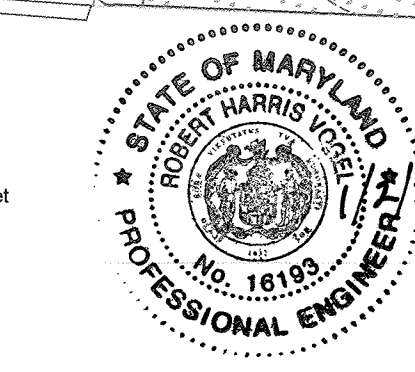


DATE:	March 2, 2014
REVISION NUMBER:	
REVISION TYPE:	
REVISION DATE:	
REVISION NUMBER:	
REVISION TYPE:	
REVISION DATE:	
PROJECT ID:	W-14-016
SHEET NUMBER:	25 OF 25

SURVEY COMPLETED BY:
 Carl F. Kreutter, L.S.
 C.F. Kreutter & Associates, Inc.
 1613 Fullerton Rd.
 Edgewater, MD 21037
 (Phone) 301-974-9665

PREPARED FOR:
 Mr. Ken Yetman
 MD Dep. of Natural Resources
 8900 State Office Building
 8900 Greenway Dr.
 Annapolis, MD 21401

PREPARED BY:
 The Center for Watershed Protection
 3290 Main Street, Suite 290
 Ellicott City, MD 21043
 410-461-8323



AS-BUILT CERTIFICATION FOR PSWM
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.
 *NO AS-BUILT INFORMATION ON THIS SHEET
 P.E. NAME: *Gregory P. Hoffmann* P.E. # 16193 DATE 1/2/20

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. 35532
 EXPIRATION DATE 3/13/2016
 NAME Gregory Hoffmann DATE 7/24/15



ENGINEER'S SEAL

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
 HOWARD SCB _____ Date _____

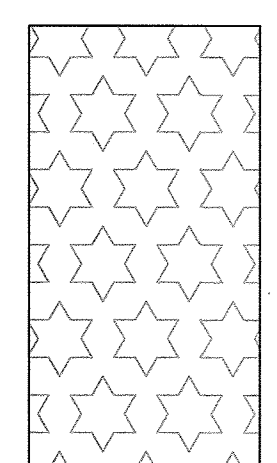
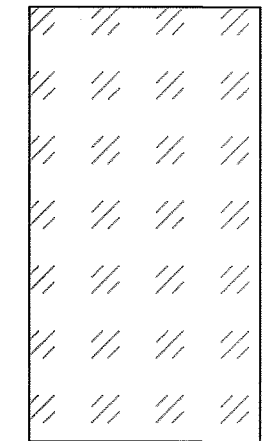
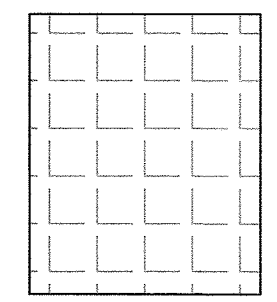
APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division 8-28-15
 Chief, Division of Land Development 9-2-15
 Director 9-2-15

Plant base surfaces of bioretentions with plant mixes as specified in the table to the right, "Bethel Korean Church bioretention plants". If planting plugs, plant at 12" on center spacing, and plant in groups of up to 12 of the same species, randomly placing within specified area. If planting container stock, follow nursery or landscape supplier guidelines on spacing for plant varieties.

For areas 'B' and 'C', select at least four (4) out of the (6) specified plant varieties, and adjust percentages accordingly, using approximately equal quantities of each variety.

If the specified plants are not available, Engineer-approved alternatives selected from the MDE Stormwater Management Manual Appendix A may be substituted.

All plant materials shall be healthy plants free from physical defects, plant diseases, and insect pests. Root stock of the plant material shall be kept moist during transport and on-site storage. Species and sizes shall be as indicated in the plans. Plants shall be spaced equally throughout each pool area, with each plant planted so that the soil level of the plant matches the ultimate elevation of the surrounding soil. No fertilizer is to be used during planting. The planting area shall be thoroughly watered following installation of plants.



Bethel Korean Church bioretention plants			
Area	Botanical Name	Common Name	Percentage
A	Juncus effusus	Common rush	10-20
	Carex radiata	Eastern star sedge	10-20
	Panicum virgatum	Switch Grass	30-40
	Andropogon gerardii	Big Bluestem	30-40
B	Juncus tenuis	Poverty Rush	10-20
	Deschampsia cespitosa	Tufted hairgrass	10-20
	Elymus virginicus	Virginia wildrye	10-20
	Lobelia cardinalis	Cardinal flower	10-20
	Aster lateriflorus	Calico aster	10-20
	Carex amaphibola	Eastern narrowleaf sedge	10-20
C	Rudbeckia laciniata	Cut-leaf coneflower (aka Black-eyed Susan)	10-20
	Carex platyphylla	Broadleaf Sedge	10-20
	Physostegia intermedia	Slender dragon-head	10-20
	Lilium canadense	Canada lily	10-20
	Asclepias tuberosa	Butterfly milkweed	10-20
	Phlox maculata	Meadow phlox	10-20

CENTER FOR WATERSHED PROTECTION
 Planting Plan
 Bethel Korean Church
 Ellicott City, Maryland
 SDP-12-037