

DATE

SHEET INDEX

GENERAL NOTES:

THE SUBJECT PROPERTY IS ZONED R-20 PER 10/06/13 COMPREHENSIVE ZONING PLAN 2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION

INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.

TOPOGRAPHY AND BOUNDARY INFORMATION IS BASED ON A SURVEY PERFORMED ON OR ABOUT JANUARY, 2009 AND

CONTRACT#354-W. PUBLIC SEWER WILL BE PROVIDED FOR THIS PROJECT BY CONTRACT#529-S. SWM FOR THIS PROJECT WILL BE PROVIDED BY AN EXISTING INFILTRATION CHAMBER PROPOSED UNDER SDP-92-27 AND TWO (M-6) MICRO-BIORETENTION FACILITIES PROPOSED UNDER THIS SITE PLAN. STORM WATER MANAGEMENT IS IN

ACCORDANCE WITH THE M.D.E. STORM WATER DESIGN MANUAL, VOLUMES I & II, REVISED 2009. ALL OF THE PROPOSED SWM DEVICES WILL BE PRIVATELY OWNED AND MAINTAINED BY THE PROPERTY OWNER. THERE ARE NO WETLANDS, AND/OR ITS BUFFERS ON THIS SITE BASED ON A REPORT BY EXPLORATION ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE. . THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FORES CONSERVATION MANUAL FOR THIS SUBDIVISION HAS BEEN FULFILLED BY PROVIDING 3.61 ACRES OF ON-SITE FOREST RETENTION (INCLUDING FLOODPLAIN AREA) WITHIN FOREST CONSERVATION EASEMENT #1. THERE IS NO SURETY

CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER FOREST FOREST RETENTION AREA IS IDENTIFIED AS FOREST CONSERVATION EASEMENT NOS. 2 AND 3 ON A PLAT RECORDED AS PLAT NOS. 2378CAND 23787AMONG THE LAND RECORDS OF HOWARD COUNTY, MARYLAND THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY

CODE AND THE LANDSCAPE MANUAL", FINANCIAL SURETY IS BASED ON REQUIRED 27 SHADE TREES, 25 EVERGREEN TREES AND 5 SHRUBS HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$12,000.00 THIS SURETY INCLUDES 10 ADDITIONAL TREES REQUIRED BY WP-16-033 AND F-16-052. THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY THE TRAFFIC GROUP, DATED JUNE 3, 2015

13. THE EXISTING CEMETERY AND GRAVE SITES HAVE NOT AND WILL NOT BE DISTURBED EXCEPT AS PERMITTED BY STATE LAW. NO GRADING OR CONSTRUCTION IS PERMITTED WITHIN 30 FEET OF THE CEMETERY BOUNDARY OR WITHIN 10 FEET OF INDIVIDUAL GRAVE SITES PER SECTION 16.118 (C) OF THE SUBDIVISION REGULATIONS. THE CEMETERY BOUNDARY AND ACCOMMODATION PLAN WAS APPROVED BY THE PLANNING BOARD ON JANUARY 10, 2002. THERE ARE NO NEW EXTERIOR LIGHT FIXTURES PROPOSED WITH THIS SOP.

THE LIMITS OF FLOODPLAIN, WETLANDS, STREAM(5), OR THEIR REQUIRED BUFFERS, OR FOREST CONSERVATION

ALL WATER AND SEWER CONNECTIONS REQUIRED FOR CHURCH ADDITION ARE INTERNAL TO THE BUILDING AND WILL BE DETAILED ON ARCHITECTURAL PLANS. THIS PLAN IS SUBJECT TO PREVIOUS DEPARTMENT OF PLANNING AND ZONING CASES

BA 90-66E&V GRANTED ON JUNE 4, 1991 WITH THE FOLLOWING CONDITIONS: 1. THE PETITIONER SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND COUNTY LAWS

2. THE PETITIONER SHALL COMPLY WITH TESTIMONY PRESENTED AND LIMIT THE HOURS OF OPERATION; THE FIRST SESSION SHALL BE FROM 9:00 A.M. TO NOON; AND THE SECOND SESSION SHALL BE FROM 12:30 P.M. TO 3:30 P.M. ON MONDAYS AND FRIDAYS.

3. THE PETITIONER SHALL SUBMIT A SITE DEVELOPMENT PLAN TO THE DEPARTMENT OF PLANNING AND ZONING ("DPZ") WITHIN NINETY (90) DAYS OF THE DATE OF THIS ORDER: THE CONFIGURATION OF THE PARKING AREA SHALL BE DETERMINED IN CONJUNCTION WITH THE DPZ AND DEPARTMENT OF PUBLIC WORKS DURING THE SITE DEVELOPMENT PLAN PROCESS. 4. THE EASTERN ACCESS ENTRANCE SHALL BE LIMITED TO ENTRY ONLY AND THE WESTERN ACCES LIMITED TO EXIT ONLY.

BA 10-034C&V GRANTED ON JUNE 6, 2011 WITH THE FOLLOWING CONDITIONS THE HEARING EXAMINER IS ELIMINATING THE INGRESS/EGRESS RESTRICTION CONDITION IMPOSED IN BOARD OF APPEALS CASE NO. 90-66E&V SUBJECT TO THE CONDITION THAT COUNTY STAFF DETERMINES AT THE SITE DEVELOPMENT PLAN STAGE THAT IT IS APPROPRIATE AND SAFE TO DO SO SHOULD COUNTY STAFF MAKE SUCH DETERMINATION, IT SHALL ESTABLISH THE APPROPRIATE INTERNAL CIRCULATION FOR THE USES.

2. THE PETITIONER SHALL IMMEDIATELY POST SIGNS AND MARKERS NOTING THE INGRESS/EGRESS RESTRICTIONS AND IT SHALL EDUCATE PARISHIONERS, PARENTS, GUARDIANS AND COMMUNITY RESIDENTS USING THE FACILITIES ABOUT THE RESTRICTIONS. THIS SIGNAGE AND MARKING ARE TO REMAIN IN PLACE UNTIL THE COUNTY APPROVES A SITE DEVELOPMENT PLAN ELIMINATING THE INGRESS/EGRESS RESTRICTION. THE PETITIONER SHALL CONTINUE TO USE THE INTERNAL CIRCULATION PATTERN APPROVED IN PRIOR DECISIONS AND ORDERS UNTIL THE COUNTY APPROVES A SITE DEVELOPMENT PLAN ELIMINATING THE INGRESS/EGRESS RESTRICTION. 3. THE PETITIONER IS TO INSTALL SIGNAGE ALONG THE CURRENT RELIGIOUS FACILITY PARKING SPACES

ALONG THE SOUTH PROPERTY LINE STATING THE PARKING IS NOT TO BE USED BY SCHOOL STAFF OR PERSONS DROPPING OFF/PICKING UP CHILDREN FROM SCHOOL

4. THE PETITIONER IS TO CEASE USING THE PARKING LOT AS A BIKE EXERCISE AREA FOR PRESCHOOLERS. 5. THE HOURS OF OPERATION APPROVED FOR THE RELIGIOUS FACILITY USE ARE AS FOLLOWS:

-SUNDAY WORSHIP SERVICE SHALL BE HELD FROM 9: A.M. TO 12:00 P.M. PARISHIONERS SHALL ARRIVE NO EARLIER THAN 7:30 A.M. AND LEAVE THE SITE NO LATER -STAFF FOR THE PRIVATE ACADEMIC SCHOOL SHALL ARRIVE NO EARLIER THAN 7:30 A.M. AND LEAVE THE SITE NO LATER THAN 4:00 P.M. THEY SHALL NOT PARK IN THE SPACES CLOSEST TO THE COMMON LOT LINE WITH THE KEMPS. PERSON DROPPING OFF CHILDREN SHALL ARRIVE NO EARLIER THAN 8:30 A.M.

-DURING EVENING COMMUNITY EVENTS. ALL PERSONS SHALL BE OFF SITE BY 10:00 P.M. ANY PARKING LOT LIGHTING SHALL BE TURNED OFF BY 10:15 P.M. HOURS OF OPERATION APPROVED FOR THE PRIVATE ACADEMIC SCHOOL USE ARE AS FOLLOWS -FIRST SESSION (MONDAY-FRIDAY): 9:00 A.M. TO 12:00 P.M.

-SECOND SESSION (MONDAY-FRIDAY): 12:30 P.M. TO 3:30 P.M. THE USES APPROVED FOR THE RELIGIOUS FACILITY ARE WORSHIP SERVICES, RELIGIOUS EDUCATION SUPPORT GROUPS, COMMITTEE MEETINGS, BIBLE STUDY, CHOIR REHEARSALS, BOY AND GIRL SCOUT TROOP ASSEMBLIES, YOGA CLASSES, NEIGHBORHOOD ASSOCIATION MEETINGS, FELLOWSHIP EVENTS FOR PERSONS AFFILIATED WITH THE CHURCH, YOUTH EVENTS REQUIRING A LARGE SPACE, BIBLE SCHOOL AND SUMMER CAMP SCHOOL

8. NO SCHOOL USE IS PERMITTED IN THE MULTIPURPOSE BUILDING. 9. THE MAXIMUM NUMBER OF STUDENTS PERMITTED TO BE ENROLLED AT ANY SCHOOL SESSION IS

275. WITH NO MORE THAN 92 STUDENTS ON SITE AT ANY TIME. 10. THE PETITIONER IS TO INSTALL THE LANDSCAPING PROPOSED ON THE SOUTH SIDE OF THE

PROPOSED MULTIPURPOSE BUILDING AND THE LANDSCAPING DENOTED AS "REPLACEMENT LANDSCAPING NO LATER THAN ONE YEAR FROM THE DATE OF THIS DECISION ORDER. . THE PETITIONER SHALL OBTAIN ALL BUILDING PERMITS BY DECEMBER 13, 2017, WITH SUBSTANTIAL

CONSTRUCTION IN ACCORDANCE WITH THE PERMITS BY DECEMBER 13, 2018. 12. THE PETITIONER SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND COUNTY LAWS AND

. VARIANCE FOR THE 50 FOOT SETBACK FROM A PUBLIC STREET RIGHT OF WAY TO 40 FEET FOR THE CHURCH AND PRIVATE ACADEMIC SCHOOL PEDESTRIAN CORRIDOR ADDITION

B. DEVELOPMENT PHASE II PROPOSES A TWO STORY 13,676 SQUARE FOOT (14,255 GROSS) MULTI

PURPOSE BUILDING IN AREA GENERALLY TO THE REAR OF THE EXISTING SCHOOL ADMINISTRATIVE BUILDING PHASE II IMPROVEMENTS WILL BE ADDRESSED ON FUTURE SDP. 19. A HISTORIC DISTRICT COMMISSION MEETING IS NOT REQUIRED AS DETERMINED BY THE RESOURCE CONSERVATION DIVISION ON FEBRUARY 13, 2015. 20. A HISTORIC STRUCTURE EXISTS ON PARCEL 'A'; HOWEVER A HISTORIC DISTRICT COMMISSION MEETING IS NOT REQUIRED AS DETERMINED BY THE RESOURCE CONSERVATION DIVISION ON FEBRUARY 13, 2015.

21. A PRE-SUBMISSION COMMUNITY MEETING WAS HELD AT 6:00 P.M. ON THURSDAY, NOVEMBER 19, 2009 AT THIS PROJECT'S LOCATION, EMMANUEL UNITED METHODIST CHURCH LOCATED 10755 SCAGGSVILLE ROAD, LAUREL, MARYLAND AND PREPARED BY FISHER. COLLINS AND CARTER. INC.

23. THIS PLAN IS SUBJECT TO WP-16-033 WHICH ON NOVEMBER 10, 2015 THE PLANNING REQUEST TO WAIVER SECTION 16.1205 (a)(7) AND 16.1205(a)(10) WHICH REQUIRES THE RETENTION OF SPECIMEN TREES (30" dbh or greater) that are not contained within other priority forest retention areas as OUTLINED IN SECTION 16.1205(a)(1-10). A WAIVER TO SECTION 16.110(C) WHICH PROHIBITS GRADING OR CONSTRUCTION SHALL BE PERMITTED WITHIN 30 FEET OF A CEMETERY BOUNDARY OR WITHIN 10 FEET OF INDIVIDUAL

APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:

1. WAIVER APPROVAL IS LIMITED TO THE REMOVAL OF (5) SPECIMEN TREES AS DEPICTED ON THE WAIVER EXHIBIT. ANY PROPOSAL TO REMOVE ADDITIONAL SPECIMEN TREES WILL REQUIRE A WAIVER REQUEST OR AN AMENDMENT TO THIS WAIVER REQUEST.

2. A MINIMUM OF 10 ADDITIONAL, NATIVE, 2-3" CALIPER TREES SHALL BE PROVIDED ON SITE AS PART OF THE MITIGATION FOR THE SPECIMEN TREE REMOVAL. THIS MITIGATION WILL BE ADDRESSED WITH THE PROJECT KNOWN AS "EMMANUEL UNITED METHODIST CHURCH" AND WILL BE IN ADDITION TO ANY REQUIRED LANDSCAPE OR FOREST CONSERVATION PLANTINGS. THE MITIGATION WILL BE SHOWN ON THE ASSOCIATED LANDSCAPE PLAN AND SURETY FOR THESE ADDITIONAL TREES WILL BE REQUIRED AS PART OF THE SITE DEVELOPMENT PLAN (SDP-15-067)

3. GRADING AND CONSTRUCTION SHALL BE THE LEAST NECESSARY AND SHALL BE NO CLOSER THAN 1' FEET FROM THE CEMETERY BOUNDARY. ANY PROPOSAL TO INCREASE THE IMPACT ON SITE WILL REQUIRE AN ADDITIONAL WAIVER PETITION TO SUBMITTED OR A RECONSIDERATION OF THIS WAIVER PETITION FILE. 24. WATER AND SEWER SERVICE TO THESE LOTS WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 10.122.B. OF

THE HOWARD COUNTY CODE 25. PUBLIC WATER AND SEWER ALLOCATION WILL BE GRANTED AT THE TIME OF ISSUANCE OF THE BUILDING PERMIT CAPACITY IS AVAILABLE AT THAT TIME.

6-9-16 5.12.16 PARCEL NOS. CENSUS TR. 6068.02 E-18 7550000

TITLE SHEET

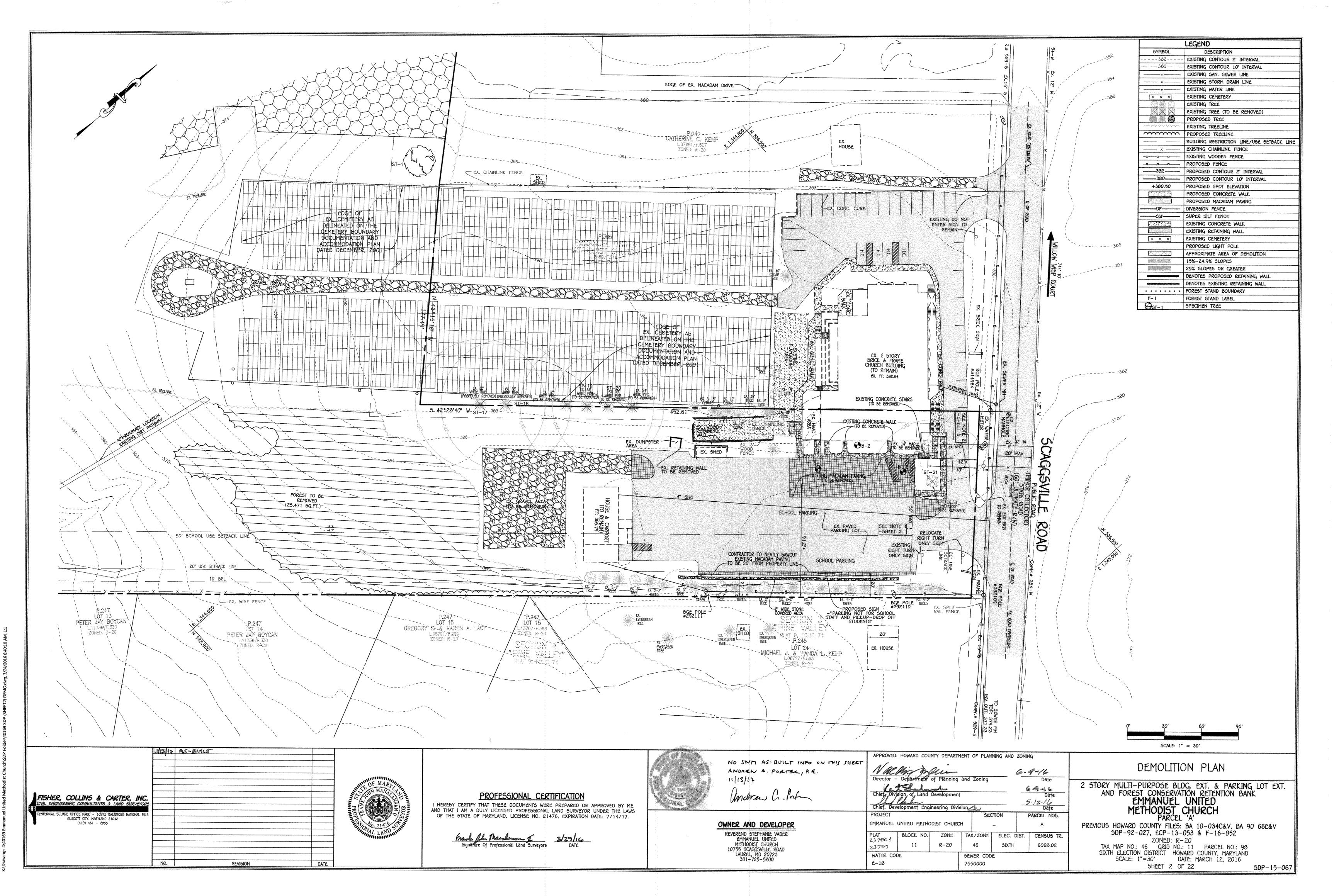
2 STORY MULTI-PURPOSE BLDG. EXT. & PARKING LOT EXT. AND FOREST CONSERVATION RETENTION BANK EMMANUEL UNITED METHODIST CHURCH

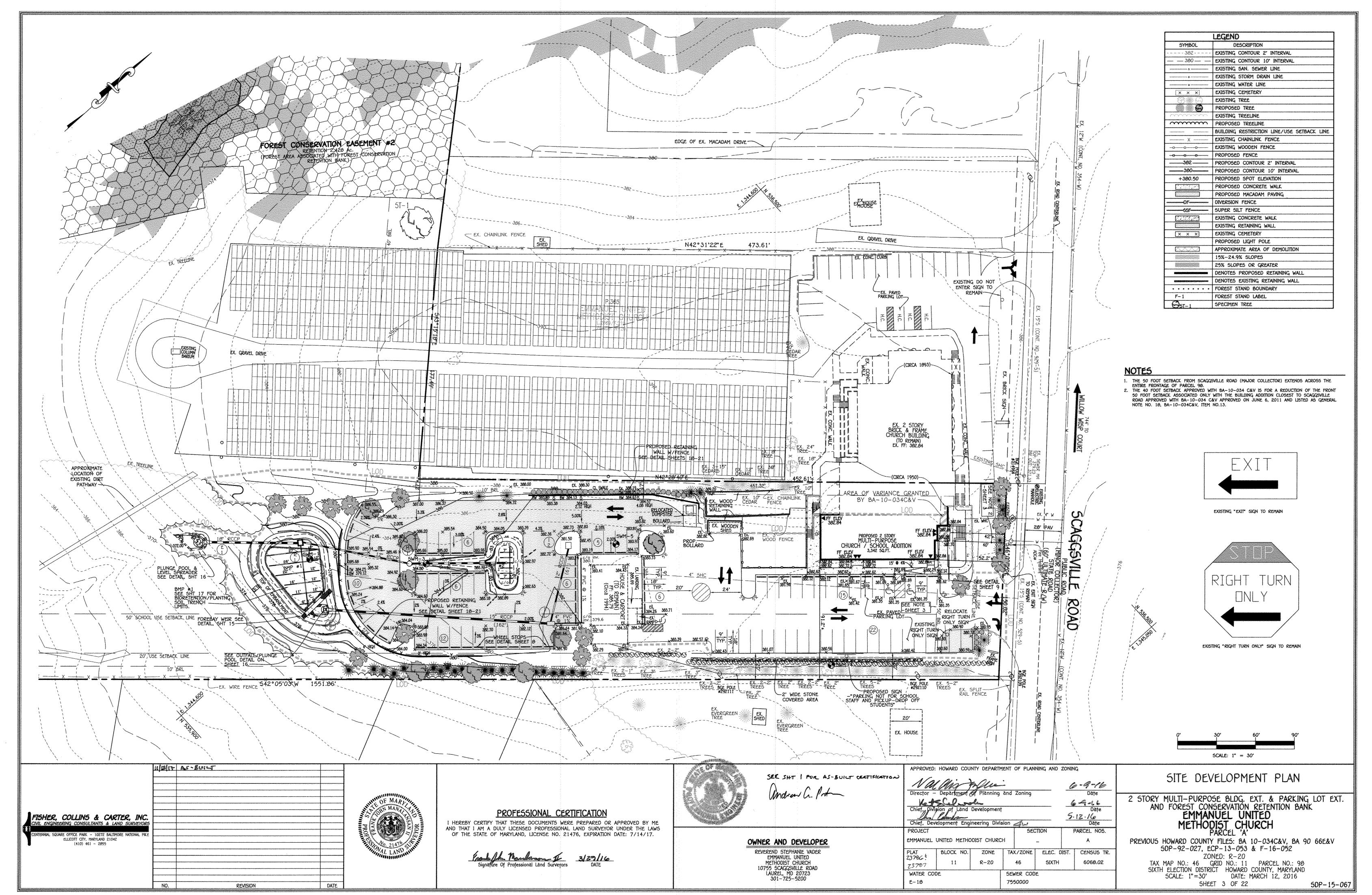
PREVIOUS HOWARD COUNTY FILES: BA 10-034C&V. BA 90 66E&V 5DP-92-027, ECP-13-053 & F-16-052

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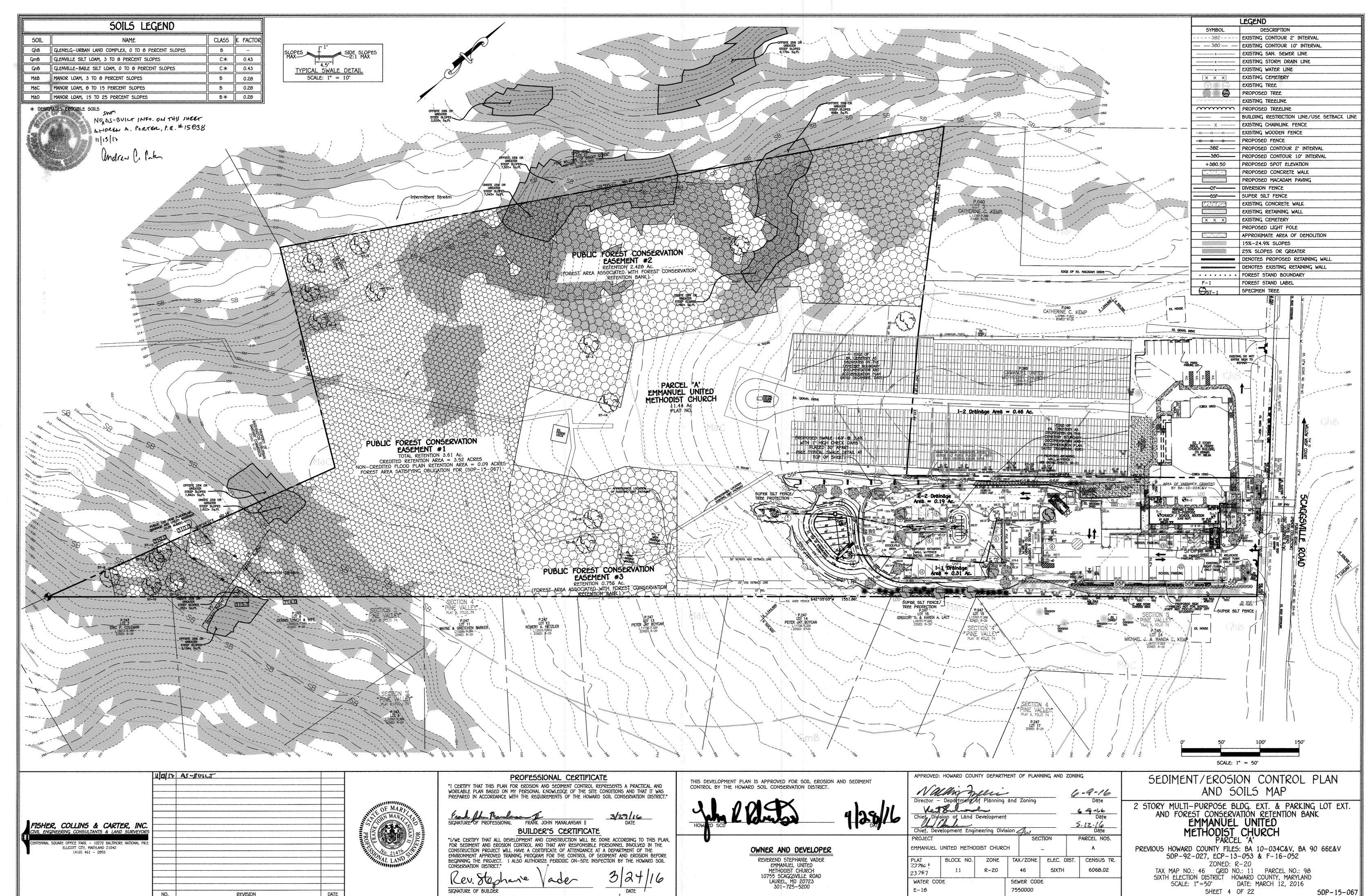
ZONED: R-20 TAX MAP NO.: 46 GRID NO.: 11 PARCEL NO.: 98 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: MARCH 12. 2016

5DP-15-067





K:\Drawings 4\40169 Emmanuel United Methodist Church\SDP Folder\40169 SDP (SHEET3) SITE.dwg, 3/24/2016



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PARALLEL TO THE CONTOUR OF THE SLOPE.

B. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS. C. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. PERMANENT STABILIZATION

A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:

1. SOIL PH BETWEEN 6.0 AND 7.0. . SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).

II. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT LOVEGRASS 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.

IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.

V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION. B. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.

C. 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.

D. APPLY SOIL AMENOMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST. E. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION, TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. 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: A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH. B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR

FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS. C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.

D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA: A. 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. B. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON MY, THISTLE, OR OTHERS AS SPECIFIED.

C. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL TOPSOIL APPLICATION A EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL

B. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOP SOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.

C. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

1. 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. 2. 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. 3. 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. 4. 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. 5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS. SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1.000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREAS

DEFINITION A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.

TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR erosion, sedimentation, and changes to drainage patterns.

CONDITIONS WHERE PRACTICE APPLIES STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.

1. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON

THE EROSION AND SEDIMENT CONTROL PLAN.

2. THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION 8—3 LAND GRADING. 3. RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.

4. ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.
5. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON- EROSIVE MANNER.

6. WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.

7. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL

AS STANDARD 8-4-1 INCREMENTAL STABILIZATION AND STANDARD 8-4-4 TEMPORARY STABILIZATION. 8. If the stockpile is located on an impervious surface, a liner should be provided below the STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING.

MAINTENANCE

HE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION 8-3 LAND GRADING.

PERMANENT SEEDING NOTES (B-4-5)

A. SEED MIXTURES

1. GENERAL USE A SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION, RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE

B. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD office quide, section 342 – Critical Area Planting.

C. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY, D. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY

2. TURFGRASS MIXTURES A. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.

B. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(5), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.

I. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

II. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPIO ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1,000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

III. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT. CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT, SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY

IV. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA, MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1 1/2 TO 3 POUNDS PER 1000 SOUARE FEET.

SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND" CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE

CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO

OCTOBER 1 (HARDINESS ZONES: 5B, 6A) CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B) SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B) D. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND

RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1 1/2 INCHES IN DIAMETER THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY. E. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

PERMANENT SEEDING SUMMARY

Ł	HARDINESS ZONE (FROM FIGURE B.3):					FERTILIZER RATE (10-20-20)			
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	N	P ₂ O ₅	K ₂ 0		
8	TALL FESCUE	100	MAR. 1-MAY 15 AUG. 15-OCT. 15	1/4-1/2 IN.	45 LB5. PER ACRE (1.0 LB/ 1000 SF)	90 LB/AC (2 LB/ 1000 SF)	90 LB/AC (2 LB/ 1000 5F)	2 TONS/AC (90 LB/ 1000 SF)	

B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

1. GENERAL SPECIFICATIONS

A. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB ukeman anu indpeliuk B. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS 1/4 INCH, AT THE TIME

OF CUTTING, MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE. C. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND

SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION. D. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OF WET) MAY ADVERSELY E, SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN

THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION. 2. SOD INSTALLATION A. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL

IMMEDIATELY PRIOR TO LAYING THE 500. B. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.

C. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN 500 ROOTS AND THE UNDERLYING SOIL SURFACE.

D. WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING, AND IRRIGATING FOR ANY PIECE OF 500 WITHIN EIGHT HOURS.

3. SOD MAINTENANCE A. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.

B. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT. C. DO NOT MOW UNTIL THE 500 IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS

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 THE PROJECT SITE NOT UNDER ACTIVE GRADING.

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING DEFINITION

THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER. PURPOSE

TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION. CONDITIONS WHERE PRACTICE APPLIES TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

SPECIFICATIONS

A. ALL SEED MUST MEET THE REQUIREMENT OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE 8.4 REGARDING THE QUALITY OF SEED, SEED TAGS must be available upon request to the inspector to verify type of seed and seeding rate. B. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE

THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS. C. 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. 5 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 keept inoculant as cook as possible until used. Temperatures above 75 to 80 degrees fahrenheit can weaken bacteria and make the inoculant less effective.

D. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEEDCONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS. APPLICATION A. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.

1. 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 WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT. B. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL 1. CULTIPACKING 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.

II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. C. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER). I. 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; P 0 (PHOSPHORUS), 200 POUNDS PER ACRE: K20

(POTASSIUM), 200 POUNDS PER ACRE. II. 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.

III. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION. IV. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL

B. MULCHING 1. MULCH MATERIALS (IN ORDER OF PREFERENCE)

A STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY, NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.

B. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO UNIFORM FIBROUS PHYSICAL STATE. I. WCFM 15 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. III. 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.

IV. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BY

V. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM

APPLICATION APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.

CELLULOSE FIBER PER 100 GALLONS OF WATER.

B. 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 50 THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE. C. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED TO A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD

ANCHORING PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARDS

I. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.

II. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

III. 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. IV. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER

RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4-15 FEET WIDE AND 300 TO 3,000 FEET LONG.

TEMPORARY SEEDING NOTES (B-4-4) DEFINITION

TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS. PURPOSE

TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS. CONDITIONS WHERE PRACTICE APPLIES

EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED. CRITERIA

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE 8.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED. THEN TABLE 8.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN. 2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.

3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY

	IE (FROM FIGURE B.3): (FROM TABLE B.1):	6b		FERTILIZER RATE (10-20-20)	lime rate
5PECIE5	APPLICATION RATE (LB/AC)	SEEDING Dates	SEEDING DEPTHS		
BARLEY	96	3/1 - 5/15,	131	436 LB/AC	2 TONS/AC
OAT5	72	0/15 - 10/15	1*	(10 LB/ 1000 5F)	(90 LB/ 1000 SF)
RYE	112		1"	The shall shall be said.	

HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION

PRIOR TO THE START OF ANY CONSTRUCTION (410-313-1855). 2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.

3) FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, b) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT

ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL erosion and sediment control for permanent seeding (sec. b–4–5), temporary SEEDING (SEC. 8-4-4) AND MULCHING (SEC. 8-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.

ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

6) SITE ANALYSIS: TOTAL AREA OF SITE 1.70 ACRES AREA DISTURBED AREA TO BE ROOFED OR PAVED 1.20 ACRES AREA TO BE VEGETATIVELY STABILIZED 0.49 ACRES TOTAL CUT 942 CU.YD5. 967 CU.YD5. TOTAL FILL

OFFSITE WASTE/BORROW AREA LOCATION 7) ANY SEDIMENT CONTROL PRACTICE THAT IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE

N/A

HOWARD COUNTY SEDIMENT CONTROL INSPECTOR. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES. APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING, OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

10) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.

11) ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION

12) A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 ACRE PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PROCEEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

DUST CONTROL

DEFINITION CONTROLLING DUST BLOWING AND MOVEMENT ON CONSTRUCTION SITES AND ROADS. <u>PURPOSE</u>

TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES. REDUCE ON AND OFF-SITE DAMAGE, HEALTH HAZARDS AND IMPROVE TRAFFIC SAFETY. CONDITIONS WHERE PRACTICE APPLIES

THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO DUST BLOWING AND MOVEMENT WHERE ON AND OFF-SITE DAMAGE IS LIKELY WITHOUT TREATMENT. **SPECIFICATIONS**

TEMPORARY METHODS 1. MULCHES - SEE STANDARDS FOR VEGETATIVE STABILIZATION WITH MULCHES ONLY. MULCH SHOULD BE CRIMPED OR TACKED TO PREVENT BLOWING. 2. VEGETATIVE COVER - SEE STANDARDS FOR TEMPORARY VEGETATIVE COVER 3. TILLAGE - TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEG PLOWING ON WINDWARD SIDE OF THE SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12" APART, 5PRING-TOOTHED HARROWS AND SIMILAR PLOWS ARE EXAMPLES OF

EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT. 4. IRRIGATION - THIS IS GENERALLY DONE AS AN EMERGENCY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS MOIST. REPEAT AS NEEDED. AT NO TIME SHOULD THE SITE BE IRRIGATED TO THE POINT THAT RUNOFF BEGINS TO FLOW 5. BARRIERS - SOLID BOARD FENCES SILT FENCES. SNOW FENCES, BURLAP FENCES, STRAW BALE DIKES AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 10 TIMES THEIR HEIGHT ARE EFFECTIVE IN

CONTROLLING SOIL BLOWING. 6. CALCIUM CHLORIDE - APPLY AT RATES THAT WILL KEEP SURFACE MOIST, MAY NEED RETREATMENT.

PERMANENT METHODS 1. PERMENENT VEGETATION - SEE STANDARDS FOR PERMANENT VEGETATIVE COVER AND PERMANENT STABILIZATION WITH SOD. EXISTING TREES OR LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.

2. TOPSOILING - COVERING WITH LESS EROSIVE SOIL MATERIALS. SEE STANDARDS FOR TOPSOILING. 3. STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

FENCE ON PAVING. (3 DAY)

SEQUENCE OF CONSTRUCTION 1. OBTAIN A GRADING PERMIT. (2 WEEKS)
2. NOTIFY "MISS UTILITY" AT LEAST 40 HOURS BEFORE BEGINNING ANY WORK AT 1-000-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION AT 410-313-1330 AT LEAST 24 HOURS BEFORE STARTING WORK. 3. REQUEST A PRE-CONSTRUCTION MEETING WITH THE APPROPRIATE ENFORCEMENT

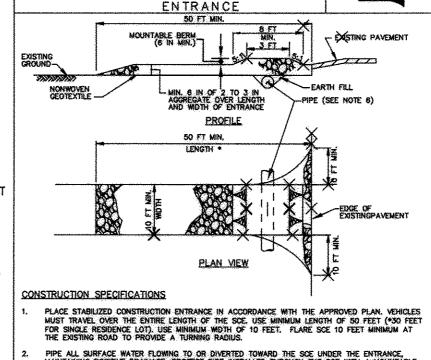
. INSTALL HIGH VISIBILITY FENCE 10'+ FROM EXISTING GRAVES. (1 DAY) 5. CLEAR AND GRUBBING AS NECESSARY FOR THE INSTALLATION OF PERIMETER CONTROLS. 6. INSTALL THE STABILIZED CONSTRUCTION ENTRANCE AND ALL SUPER SILT FENCE AND SILT

. COMPLETE CLEARING AND GRUBBING WITHIN INSTALLED PERIMETER CONTROLS. REMOVE EXISTING RETAINING WALL AS WELL AS SPECIFIED TREES, WALKS, PAVING AND STAIRS. NOTE THAT TREES ALONG THE TOP OF SLOPE THAT RUNS ALONG WITH CEMETERY ARE TO BE CUT THEN GROUND DOWN TO EXISTING GRADE. (2 WEEKS) 9. COMMENCE ROUGH GRADING FOR FUTURE PARKING AREA AND SWM FACILITIES AND PREPARE BUILDING PAD. (1 MONTH) 10. BEGIN CONSTRUCTION OF BUILDING ADDITION, RETAINING WALLS AND STORM DRAIN

SYSTEM AND STORMWATER MANAGEMENT UNDERDRAIN SYSTEM. (3 MONTH) INLETS $I\!-\!1$. $I\!-\!2$, and $R\!-\!2$ to receive inlet protection. Removal of inlet protection will occur after the site is stabilized and with the permission of the sediment 11. ONCE RETAINING WALLS ARE COMPLETED AND PARKING AREA IS TO GRADE, COMMENCE INSTALLATION OF CURB AND GUTTER AND BASE PAVING. (1 MONTHS)

12. PROVIDE FINISHED SURFACE COURSE, REQUIRED LANDSCAPING AND FINALIZE SWM FACILITIES. (2 WEEKS) 13. REMOVE ALL OLD AND NEW JUNK, TRASH, AND DEBRIS FROM FORESTS, STREAMS, AND STREAM BUFFER. (2 WEEKS) 14. OBTAIN APPROVAL OF APPROPRIATE ENFORCEMENT AUTHORITY PRIOR TO REMOVAL OF

SEDIMENT CONTROLS. (3 DAYS) 15. REMOVAL OF CONTROLS AND STABILIZATION OF AREAS THAT ARE DISTURBED BY REMOVAL OF SEDIMENT CONTROLS. (1 WEEK) 16. NOTE: THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE. AFTER EACH RAINFALL AND ON A DAILY BASIS. REMOVE SEDIMENT FROM THE POND/BASIN ON

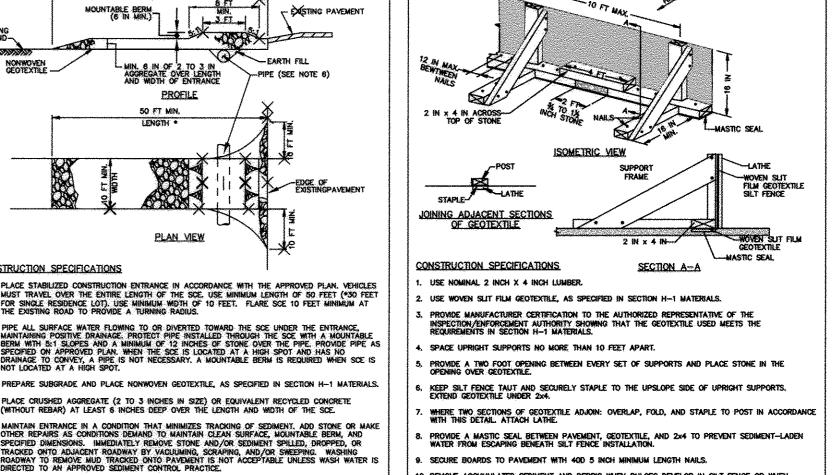


CONSTRUCTION

€S(e)≇

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 AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS 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 8 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL U.S. DEPARTMENT OF AGRICULTURE
TURAL RESOURCES CONSERVATION SERVICE
2011



SECURE BOARDS TO PAVEMENT WITH 400 5 INCH MINIMUM LENGTH NAILS

WITH HIGH VISIBILITY ORANGE

CHAIN LINK FENCING

MOVEN SLIT FILM GEOTEXTILE-

PLOW -

CONSTRUCTION SPECIFICATIONS

U.S. DEPARTMENT OF AGRICULTURE

2'± ORANGE STREAMERS

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

2011

DETAIL E-3 SUPER SILT FENCE STANDARD SYMBOL

ELEVATION

CROSS SECTION

WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.

EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.

PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

INLET PROTECTION

DETAIL E-9-2 AT-GRADE

MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

STANDARD SYMBOL

GALVANIZED CHAIN LINK FENCE WITH WOVEN SLIT FILM GEOTEXTILE

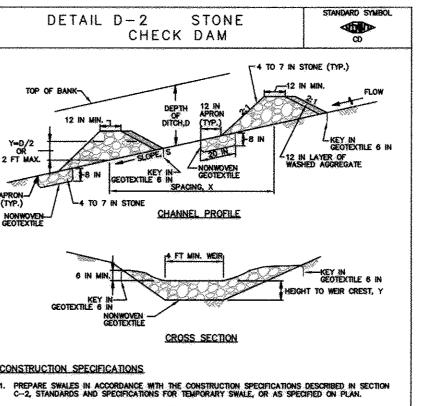
STREAMERS

DETAIL E-2 SILT FENCE ON

PAVEMENT

SFOP----I

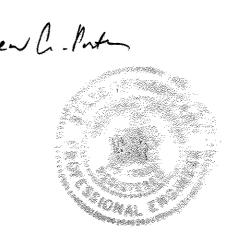
|-----SSF------|



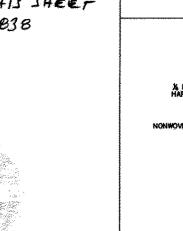
PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, UNDER THE BOTTOM AND SIDES OF THE DAM PRIOR TO PLACEMENT OF STONE, CONSTRUCT THE CHECK DAM WITH WASHED 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) WITH SIDE SLOPES OF 2:1 OR FLATTER AND A MINIMUM TOP WIDTH OF 12 INCHES, PLACE THE STONE SO, THAT IT COMPLETELY COVERS THE WIDTH OF THE CHANNEL AND CHANNEL BANKS, FORM THE WIFE SO THAT TOP OF THE OUTLET CREST IS APPROXIMATELY 8 INCHES LOWER THAN THE OUTER EDGES. LINE THE UPSTREAM FACE OF THE DAM WITH A 1 FOOT THICK LAYER OF WASHED AGGREGATE (% TO 1% INCH). SET THE HEIGHT FOR THE WER CREST EQUAL TO ONE-HALF THE DEPTH OF THE CHANNEL OR DITCH. TO AVOID SCOUR THE MAXIMUM HEIGHT OF THE WER CREST MUST NOT FYCHED 2.0 FFFT. NO. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE-HALF OF THE HEIGHT OF THE WEIR CREST. MAINTAIN LINE, GRADE, AND CROSS SECTION.

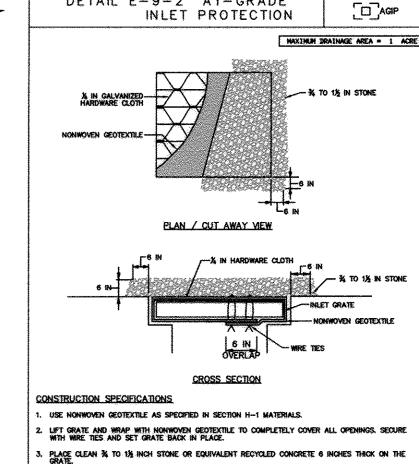
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL 2011

NO SWM AS-BUILT INFO ON THIS SHEET ANDREW A. PORTER, 1.E #15838



SCALE: 1" = 50'





STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF BLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

2011

1617 AS-BULT FISHER. COLLINS & CARTER. INC ELLICOTT CITY, MARYLAND 21042



DATE

PROFESSIONAL CERTIFICATE "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."

Frank John ManaLansan II 3/29/16

) TRObavie / ace

CONSERVATION DISTRICT."

BUILDER'S CERTIFICATE "I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN. FOR SEDIMENT AND EROSION CONTROL AND THAT ANY 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

3/24/16

CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

OWNER AND DEVELOPER REVEREND STEPHANIE VADER EMMANUEL UNITED METHODIST CHURCH 10755 SCAGGSVILLE ROAD LAUREL, MD 20723 301-725-5200

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT

ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON. APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING 6-9-16 Director - Department of Planning and Zoning 6-9-6 Chief. Development Engineering Division PROJECT PARCEL NOS. SECTION EMMANUEL UNITED METHODIST CHURCH BLOCK NO. ZONE TAX/ZONE | ELEC. DIST. CENSUS TR. 3786 SIXTH 6068.02 R-20 23797 WATER CODE SEWER CODE E-18 7550000

SEDIMENT/EROSION CONTROL NOTES & DETAILS

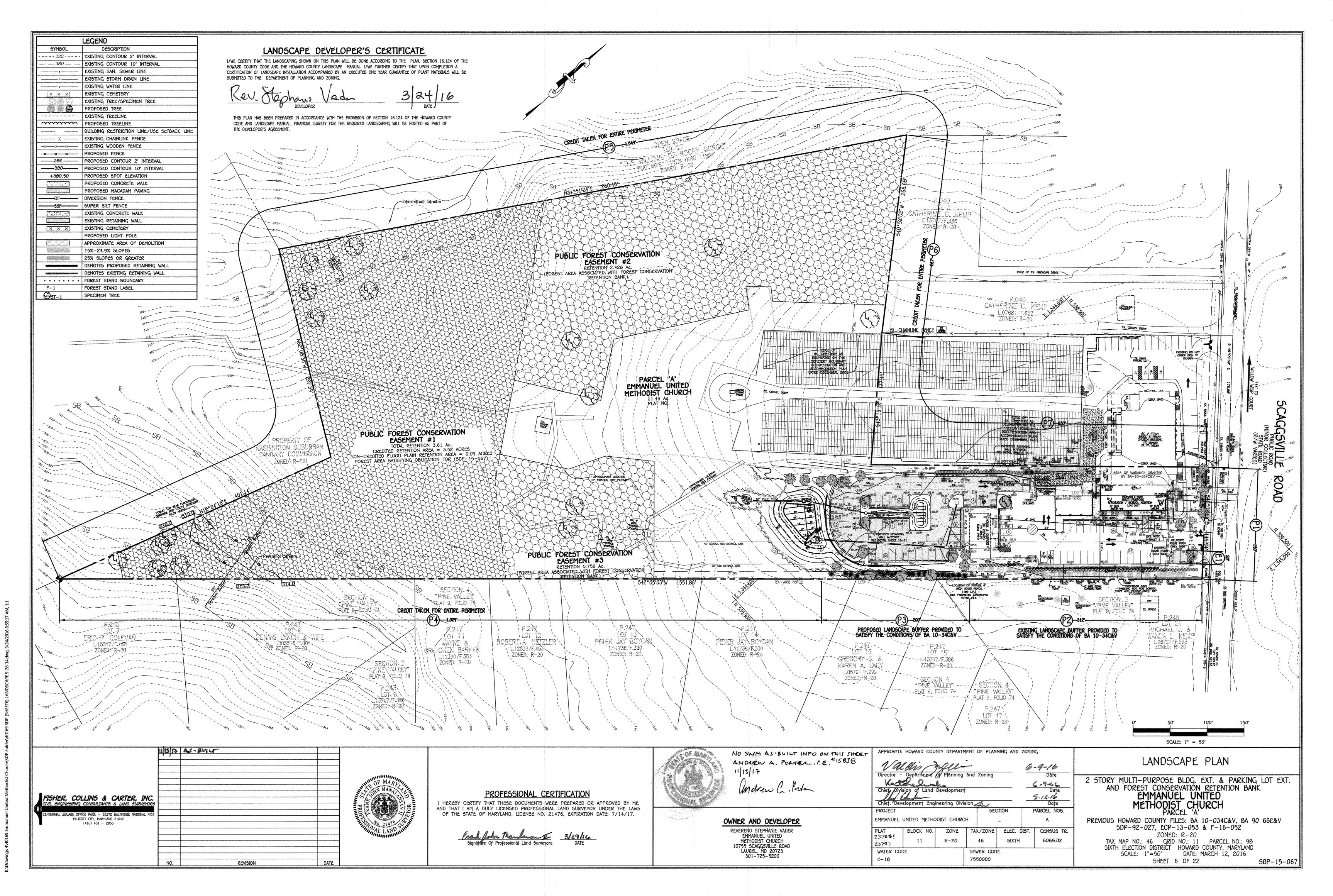
2 STORY MULTI-PURPOSE BLDG. EXT. & PARKING LOT EXT. AND FOREST CONSERVATION RETENTION BANK EMMANUEL UNITED METHODIST CHURCH

PREVIOUS HOWARD COUNTY FILES: BA 10-034C&V, BA 90 66E&V 50P-92-027, ECP-13-053 & F-16-052 ZONED: R-20 TAX MAP NO.: 46 GRID NO.: 11 PARCEL NO.: 98

SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: MARCH 12, 2016 5HEET 5 OF 22

5DP-15-067

MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



- PERIMETER LANDSCAPE NOTES:

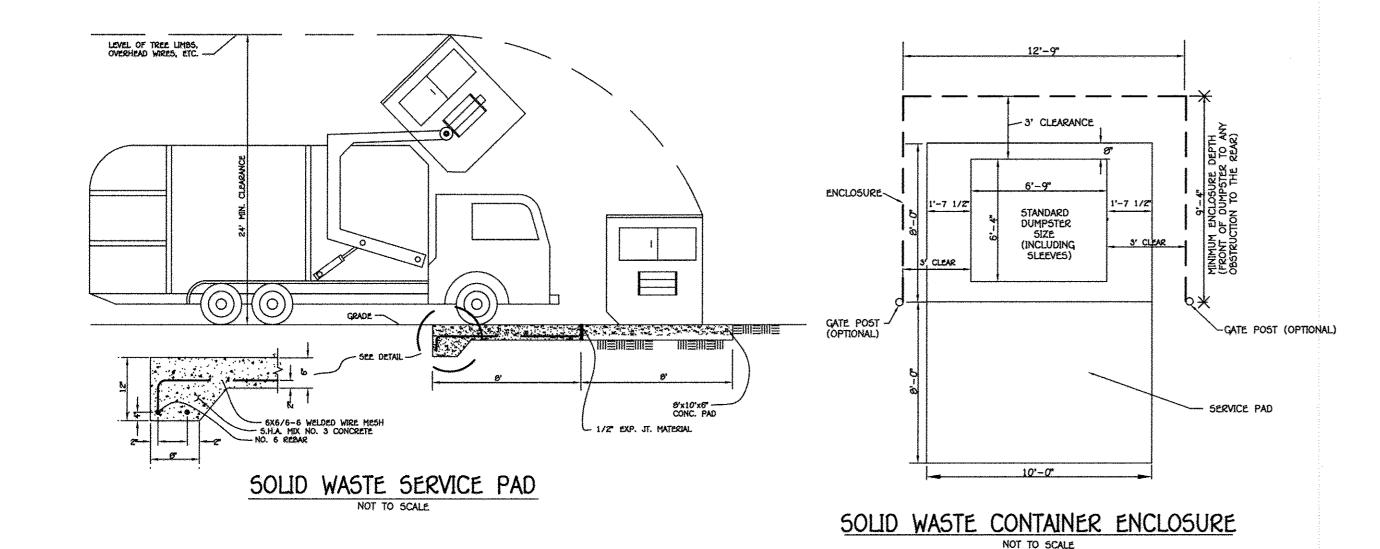
 1. CREDIT FOR LANDSCAPE PERIMETER P-2 IS BEING TAKEN FOR THE "REPLACEMENT LANDSCAPING FOR SDP-92-027" TO MEET THE REQUIREMENTS OF BOA 10-034C&V. THIS ENHANCED BUFFER WAS PROVIDED TO PARTLY FULFILL UNMET PLANTING OBLIGATIONS GENERATED BY SDP-92-027 WITH THE ADDITION OF SHRUBS TO PROVIDE ENHANCED BUFFERING DUE TO REDUCED SETBACKS APPROVED UNDER BOA 10-034C&V.

 2. ACCORDANCE WITH BOA 10-034C&V, PERIMETER "P-3" HAS BEEN SPECIFIED AS A 'D' BUFFER ALONG EXPECTED LOCATION OF FUTURE BUILDING TO PROVIDE ENHANCED BUFFERING WITH A SOLID FENCE REQUIRED FOR REDUCING THE LANDSCAPE BUFFER TO 10 WIDE.

 3. NO CREDIT REQUIRED FOR THE 10' BUFFER. A 185 L.F. FENCE WILL BE PROVIDED IN PHASE 2, IN ACCORDANCE WITH BOA 10-034C&V.
- ACCORDANCE WITH BOA 10-034C&V.

 4. AS A CONDITION OF APPROVAL WITH WP-16-033, TEN (10) ADDITIONAL TREES HAVE BEEN PROVIDED.

PARK	EDULE B LING LOT LANDSCAPING
NUMBER OF NEW PARKING SPACES	45
NUMBER OF TREES REQUIRED (1:10)	4.5
NUMBER OF TREES PROVIDED SHADE TREES OTHER TREES (2:1 SUBSTITUTE)	5



LANDSCAPE DEVELOPER'S CERTIFICATE

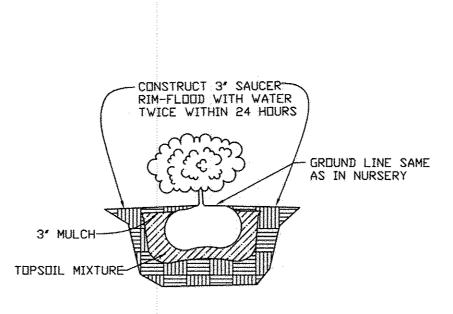
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL I/WE FURTHER CERTIFY THAT UPON COMPLETION A CERTIFICATION OF LANDSCAPE INSTALLATION ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Attohave

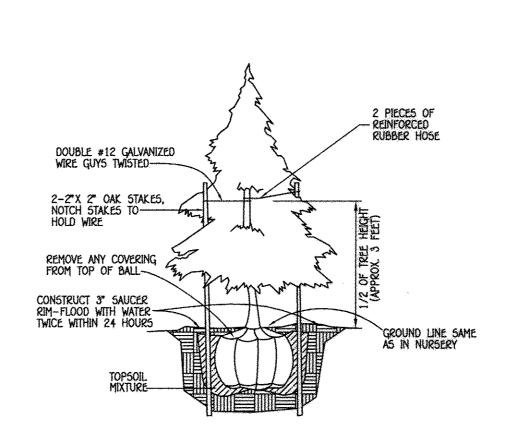
THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISION OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WILL BE POSTED AS PART OF THE DEVELOPOR'S AGREEMENT.

- 1. THE PERIMETER LANDSCAPE OBLIGATION IS REQUIRED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL, A LANDSCAPE SURETY IN THE AMOUNT OF \$12,000.00 BASED ON (27) SHADE TREES @ \$300/SHADE TREE, (25) EVERGREEN TREES @ \$150/EVERGREEN TREE, AND (5) SHRUBS @ \$30/SHRUB SHALL BE BONDED AS PART OF THE DPW DEVELOPERS AGREEMENT. THIS SURVEY INCLUDES 10 ADDITIONAL TREES REQUIRED BY WP-16-033 AND F-16-052.
- 2. 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 LANDSCAPING 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.
- 3. 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.

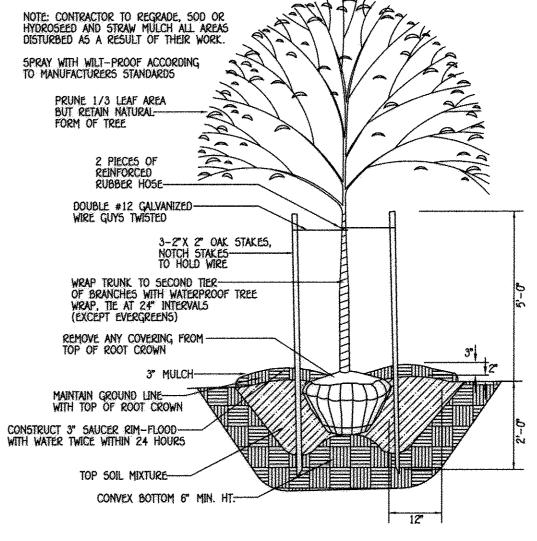
	LANI	DSCAPING PLANT LIST (SCHEDULE	A, B & C)
SYMBOL	QUANTITY	BOTANICAL AND COMMON NAME	SIZE	COMMENT5
	Ø	QUERCUS PALUSTRIS (PIN OAK)	2 - 2 1/2" CAL	
	13	ACER GRISEUM PAPERBARK MAPLE	1 1/2 - 2° CAL.	to be planted in bge "green zone"
*	21	THUJA PLICATA 'GREEN GIANT' GREEN GIANT ARBORVITAE	6'-Ø' HT.	
*	10	ilex attenuata 'fosterii' foster holly	5'-6' HT.	to be planted in bge "green zone" and within 20' cemetery
•	35	PRUNUS LAUROCERASUS 'OTTO LUTYKEN' OTTO LUTYKEN CHERRY LAUREL	1 - 1 1/2" CAL	







EVERGREEN PLANTING DETAIL NOT TO SCALE



TREE PLANTING DETAIL NOT TO SCALE

PLANTING SPECIFICATIONS

PLANTS, RELATED MATERIAL, AND OPERATIONS SHALL MEET THE DETAILED DESCRIPTION AS GIVEN ON THE PLANS AND AS DESCRIBED HEREIN.

ALL PLANT MATERIAL UNLESS OTHERWISE SPECIFIED, SHALL BE NURSERY GROWN, UNIFORMLY BRANCHED, HAVE A VIGOROUS ROOT SYSTEM, AND SHALL CONFORM TO THE SPECIES, SIZE, ROOT AND SHAPE SHOWN ON THE PLANT LIST AND THE AMERICAN ASSOCIATION OF NURSERYMEN (AAN) STANDARDS. PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, FREE FROM DEFECTS, DECAY, DISFIGURING ROOTS, SUN SCALD INJURIES, ABRASIONS OF THE BARK, PLANT DISEASE, INSECT PEST EGGS, BORERS AND ALL FORMS OF INSECT INFESTATIONS OR OBJECTIONABLE DISFIGUREMENTS. PLANT MATERIAL THAT IS WEAK OR WHICH HAS BEEN CUT BACK FROM LARGER GRADES TO MEET SPECIFIED REQUIREMENTS WILL BE REJECTED. TREES WITH FORKED LEADERS WILL NOT BE ACCEPTED. ALL PLANTS SHALL BE FRESHLY DUG; NO HEALED—IN PLANTS FROM COLD STORAGE WILL BE ACCEPTED. UNLESS OTHERWISE SPECIFIED, ALL GENERAL CONDITIONS, PLANTING OPERATIONS, DETAILS AND PLANTING SPECIFICATION SHALL CONFORM TO "LANDSCAPE SPECIFICATION GUIDELINES" FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS", (HEREINAFTER "LANDSCAPE GUIDELINES") APPROVED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF METROPOLITAN WASHINGTON AND THE POTOMAC CHAPTER OF THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECT, LATEST EDITION, INCLUDING ALL AGENDA.

CONTRACTOR SHALL BE REQUIRED TO GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR AFTER DATE OF ACCEPTANCE IN ACCORDANCE WITH THE APPROPRIATE SECTION OF THE LANDSCAPE GUIDELINES CONTRACTOR'S ATTENTION IS DIRECTED TO THE MAINTENANCE REQUIREMENTS FOUND WITHIN THE ONE YEAR SPECIFICATIONS INCLUDING WATERING AND REPLACEMENT OF SPECIFIED PLANT MATERIAL.

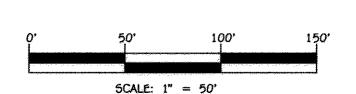
CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING UTILITY COMPANIES, UTILITY CONTRACTORS AND "MISS UTILITY" A MINIMUM OF 46 HOURS PRIOR TO BEGINNING ANY WORK.
CONTRACTOR MAY MAKE MINOR ADJUSTMENTS IN SPACING AND LOCATION OF PLANT MATERIAL TO AVOID CONFLICTS WITH UTILITIES. DAMAGE TO EXISTING STRUCTURE AND UTILITIES SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR. PROTECTION OF EXISTING VEGETATION TO REMAIN SHALL BE ACCOMPLISHED BY THE TEMPORARY INSTALLATION OF 4 FOOT HIGH SNOW FENCE OR BLAZE ORANGE SAFETY FENCE AT THE DRIP LINE.

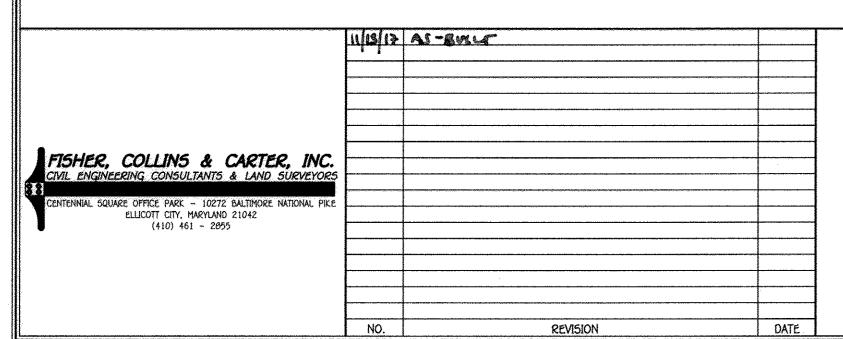
CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL MATERIAL IN THE PROPER PLANTING SEASON FOR EACH PLANT TYPE. ALL PLANTING IS TO BE COMPLETED WITHIN THE GROWING SEASON OF COMPLETION OF SITE CONSTRUCTION. BID SHALL BE BASE ON ACTUAL SITE CONDITIONS. NO EXTRA PAYMENT SHALL BE MADE FOR WORK ARISING FROM SITE CONDITIONS DIFFERING FROM THOSE INDICATED ON DRAWINGS AND SPECIFICATIONS PLANT QUANTITIES ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IF DISCREPANCIES EXIST BETWEEN QUANTITIES SHOWN ON PLAN AND THOSE SHOWN ON THE PLANT LIST, THE QUANTITIES ON THE PLAN TAKE PRECEDENCE

ALL SHRUBS SHALL BE PLANTED IN CONTINUOUS TRENCHES OR PREPARED PLANTING BEDS AND MULCHED WITH COMPOSTED HARDWOOD MULCH AS DETAILS AND SPECIFIED EXCEPT WHERE NOTED ON PLANS. POSITIVE DRAINAGE SHALL BE MAINTAINED IN PLANTING BEDS 2 PERCENT SLOPE).

PLANTING MIX SHALL BE AS FOLLOWS: DECIDUOUS PLANTS - TWO PARTS TOPSOIL, ONE PART WELL-ROTTED COW OR HORSE MANURE. ADD 3 LBS. OF STANDARD FERTILIZER PER CUBIC YARD OF PLANTING MIX. EVERGREEN PLANTS - TWO PARTS TOPSOIL, ONE PART HUMUS OR OTHER APPROVED ORGANIC MATERIAL. ADD 3 LBS. OF EVERGREEN (ACIDIC) FERTILIZER PER CUBIC YARD OF PLANTING MIX. TOPSOIL SHALL CONFORM TO THE LANDSCAPE GUIDELINES.

WEED CONTROL: INCORPORATE A PRE-EMERGENT HERBICIDE INTO THE PLANTING BED FOLLOWING RECOMMENDED RATES ON THE LABEL. CAUTION: BE SURE TO CAREFULLY CHECK THE CHEMICAL USED TO ASSURE ITS ADAPTABILITY TO THE SPECIFIC GROUND COVER TO BE TREATED. ALL AREAS WITHIN CONTRACT LIMITS DISTURBED DURING OR PRIOR TO CONSTRUCTION NOT DESIGNATED TO RECEIVE PLANTS AND MULCH SHALL BE FINE GRADED AND SEEDED. THIS PLAN IS INTENDED FOR LANDSCAPE USE ONLY. SEE OTHER PLAN SHEETS FOR MORE INFORMATION ON GRADING, SEDIMENT CONTROL, LAYOUT, ETC.







PROFESSIONAL CERTIFICATION

HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.



NO AS-BUILT INFO FOR SWM ON THIS SHEET ANDREW A. PORTER, P. E #15838

Undrew a. Pote

OWNER AND DEVELOPER

REVEREND STEPHANIE VADER EMMANUEL UNITED METHODIST CHURCH 10755 SCAGGSVILLE ROAD LAUREL, MD 20723 301-725-5200

	APPROVED:	HOWARD COU	NTY DEPARTM	ENT O	F PLAN	NING AND	ZONIN	Ģ	T	
F	Nalling Jelin 6-9-16									
	Director - Department of Planning and Zoning Date -									
	Vest Sulvale 6-9-16									
	Chief, Divis	sjon of Land	Development				***************************************	Date,		
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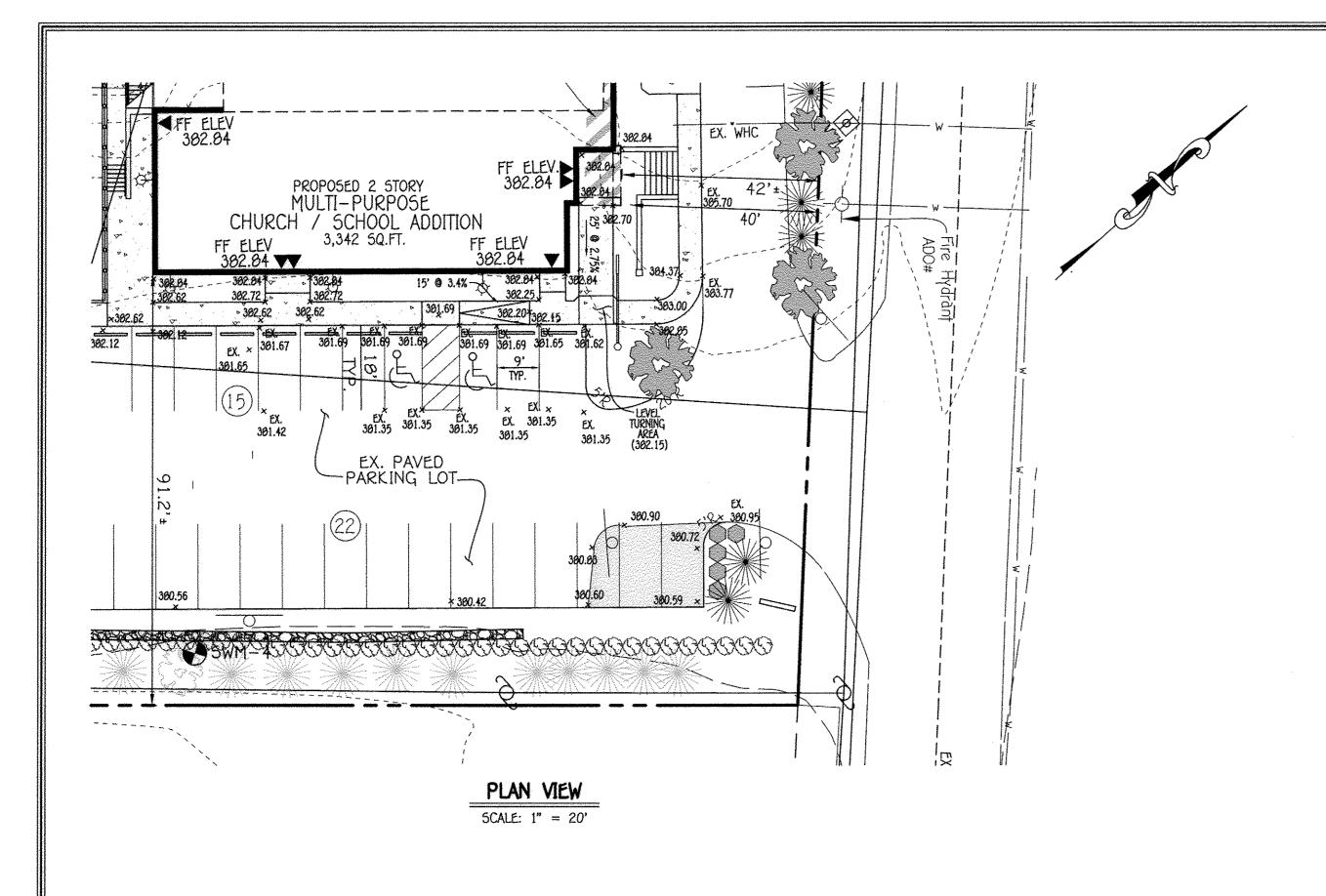
LANDSCAPE NOTES & DETAILS

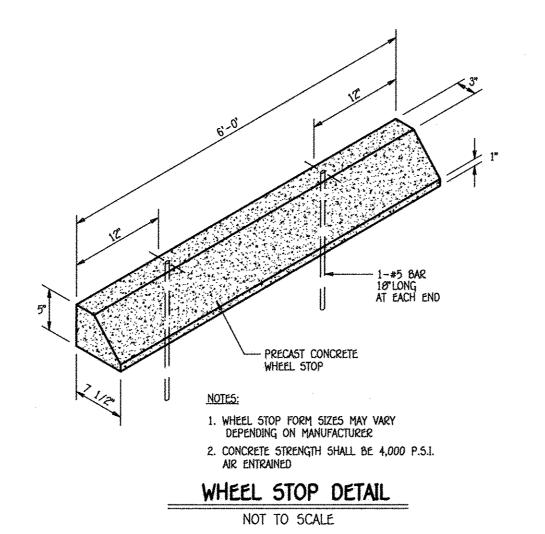
2 STORY MULTI-PURPOSE BLDG. EXT. & PARKING LOT EXT. AND FOREST CONSERVATION RETENTION BANK EMMANUEL UNITED METHODIST CHURCH

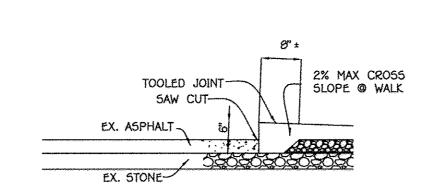
PREVIOUS HOWARD COUNTY FILES: BA 10-034C&V, BA 90 66E&V 50P-92-027, ECP-13-053 & F-16-052

ZONED: R-20 TAX MAP NO.: 46 GRID NO.: 11 PARCEL NO.: 98 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND DATE: MARCH 12, 2016 SCALE: 1"=50' 5HEET 7 OF 22

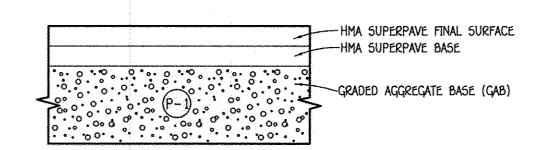
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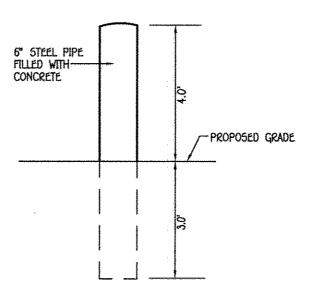


Proposed Turn-Down Sidewalk Detail NOT TO SCALE

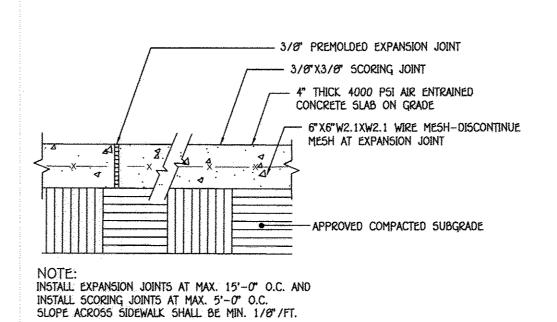


PAVING SECTION	ROAD AND STREET	CALIFORNIA BEARING RATIO (CBR)	3 TO >5	5 TO <7	≥7	3 TO >5	5 TO <7	≥7
NUMBER	CLASSIFICATION	PAVEMENT MATERIAL (INCHES)	MIN. HMA WITH GAB			HMA WITH CONSTANT GAB		
	PARKING BAYS: RESIDENTIAL AND NON-RESIDENTIAL PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 2 HEAVY TRUCKS PER DAY	HMA SUPERPAVE FINAL SURFACE 9.5 MM PG 64-22, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
P-1		HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 1 (ESAL)	2.0	2.0	2.0	3.5	3.0	2.5
		GRADED AGGREGATE BASE (GAB)	8.5	7.0	5.0	4.0	4.0	4.0

P-1 PAVING SECTION NOT TO SCALE



TYPICAL BOLLARD DETAIL NOT TO SCALE



CONCRETE WALK DETAIL HOWARD COUNTY DETAIL NOTED IS FOR REFERENCE ONLY

NOT TO SCALE



1. SIGNS SHALL MEET DESIGN STANDARDS OF THE FEDERAL HIGHWAY ADMINISTRATION AND CONFORM TO

THE STATE OF MARYLAND STANDARD HIGHWAY SIGN BOOKLET DETAIL R7-8. 2. ONE SIGN IS REQUIRED PER SPACE PLACED AS SHOWN ON SITE IMPROVEMENT PLAN.

3. SIGNS SHALL BE POLE MOUNTED WITH HOT DIPPED GALVANIZED COUNTY APPROVED PERFORATED CHANNEL POSTS W/TOP OF SIGNS 9'-1" ABOVE FINISHED GRADE OR AS INDICATED ON SITE DRAWINGS.

4. SIGN SHALL BE ATTACHED TO FLANGED SIDE OF POST. POST SHALL EXTEND INTO GROUND 2'-6" MIN. 5. COLORS: LEGEND AND BORDER-GREEN SYMBOL-WHITE ON BLUE BACKGROUND

BACKGROUND-WHITE 6. CONTRACTOR SHALL COORDINATE ARROW DIRECTION WITH LOCATION OF ADJACENT AISLE. 7. SPACES INDICATED ON SITE DEVELOPMENT PLANS AS "VAN ACCESSIBLE" SHALL BE SIGNED ACCORDINGLY.

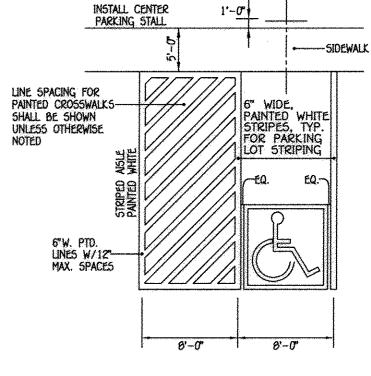
HANDICAP PARKING SIGN DETAIL

NOT TO SCALE

BLUE PAINT (SEE NOTE)— WHITE PAINT-

NOTE: 5YMBOL IS REQUIRED TO CONTRAST WITH BACKGROUND (WHITE ON BLUE: COLOR NO. 105090 IN FED. STANDARD 5952-DOUBLE COAT TYP.) HANDICAP SPACE STENCIL LAYOUT

NOT TO SCALE



ACCESSIBLE SPACE LAYOUT NOT TO SCALE

Ó,	50'	100,	150

	U 18 43	A-INS	
	* *		
EIGHEO COLLING & CAOTEO INC			
FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS			
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE			
ELLICOTT CITY, MARYLAND 21042 (410) 461 - 2055			
(110) 10. 2005			
	NO.	REVISION	DATE



PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

Signature Of Professional Land Surveyors DATE



NO SWA AS BUILT INFO ON THU SHEE ANOREW A. PORTER, 12 #15838 11/13/17

Andrew C. Potos

OWNER AND DEVELOPER REVEREND STEPHANIE VADER EMMANUEL UNITED METHODIST CHURCH 10755 SCAGGSVILLE ROAD LAUREL, MD 20723 301-725-5200

	APPROVED:	HOWARD COU	INTY DEPARTM	ENT C	F PLAN	NING AND	ZONIN	I G	Γ	
E T	Valling Jeni 6-9-16									
	Director -	Department	of Planning	and 2	Zoning		1,121,211,112	Date	1	
	Ket St. O. sela							6.9.6		
	Chief, Divis	sign of Land	Development					Date		
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46

7550000

SEWER CODE

R-20

23787 WATER CODE

E-18

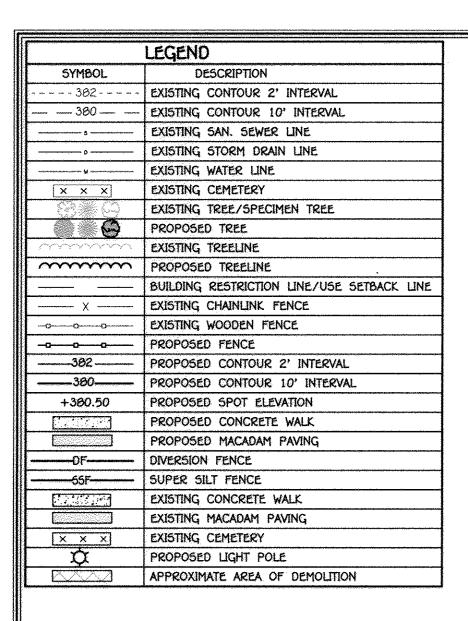
HANDICAP PARKING PLANS & DETAILS

2 STORY MULTI-PURPOSE BLDG. EXT. & PARKING LOT EXT.
AND FOREST CONSERVATION RETENTION BANK
EMMANUEL UNITED
METHODIST CHURCH
PARCEL 'A'

PREVIOUS HOWARD COUNTY FILES: BA 10-034C&V, BA 90 66E&V 50P-92-027, ECP-13-053 & F-16-052

ZONED: R-20 TAX MAP NO.: 46 GRID NO.: 11 PARCEL NO.: 98 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: MARCH 12, 2016 SHEET 8 OF 22

5DP-15-067



	DRAINAGE	AREA	DATA	
STRUCTURE NO.	AREA	,C,	ZONED	% IMP.
1-1	0.31 AC.	0.78	R-20	84%
I-2	0.46 AC.	0.00	R-20	21%

400		400
395		395
390		390
385	PROPOSED FENCE TO BE INSTALLED 4" BEHIND WALL PROPOSED GRADE	305
380	EXISTING GROUND A* PVC INV. IN 379.38	380
375	HGL- 88 82 82 82 82 84 84 85 86 87 87 87 87 87 87 87 87 87 87 87 87 87	375
370	VIOF = 1.49 f.p.s. VIOP = 3.12 f.p.s. VIOP = 3.12 f.p.s. VIOP = 4.3 f.p.s. VIOP = 4.3 f.p.s.	370

PROFIL	E STOR	MD	RAIN	_1
	HORZ.			
	VERT	. 1"	, =	5'

1. THE 50 FOOT SETBACK FROM SCAGGSVILLE ROAD (MAJOR COLLECTOR)

REDUCTION OF THE FRONT 50 FOOT SETBACK ASSOCIATED ONLY WITH THE BUILDING ADDITION CLOSEST TO SCAGGSVILLE ROAD APPROVED WITH

EXTENDS ACROSS THE ENTIRE FRONTAGE OF PARCEL 98. 2. THE 40 FOOT SETBACK APPROVED WITH BA-10-034 C&V IS FOR A

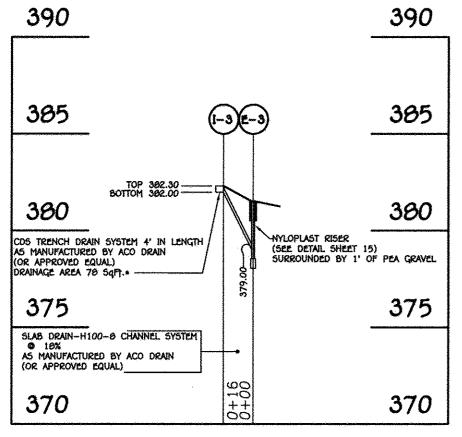
BA-10-034 C&V APPROVED ON JUNE 6, 2011.

NOTES

PIPE SCHEDULE						
SIZE	CLA55	LENGTH				
4"	PVC	71'				
12"	HDPE	72'				
12"	RCCP	143'				
15"	RCCP	172'				

NOTE: INCLUDES UNDERDRAIN SYSTEM SEE SHEET 12

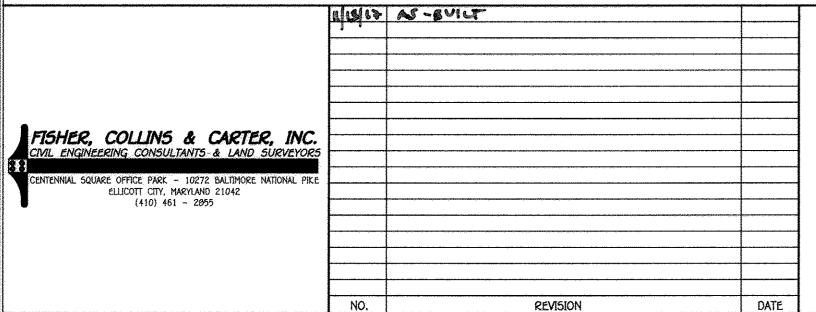
RCCP



TRENCH DRAIN AND OUTLET SCALE HORZ. 1" = 50' VERT. 1" = 5'

STRUCTURE NO.	TOP ELEVATION	INV IN	INV OUT	COORDINATES	TYPE	REMARK5
I-1	361.70	370.60 (I-2) 12" 379.30 4" PVC	377.00 (5-1) 15"	N 536150.33 E 1344730.35	'5' INLET	D-4.22
I-2	381.50 *		378.98 (I-1) 12"	N 536200.17 E 1344703.15	'D' INLET	D-4.10
I-3	302.30		302.00 (E-3)	N 536419.24 E 1344906.35	CDS TRENCH DRAIN SYSTEM	SEE PROFILE THIS SHEET
M-1	384.50√	375. 5 6 (R-2) 12"	375.46 (R-1) 12"	N 536100.00 E 1344631.40	MANHOLE	G-5.12 🗸
R-1	377.00√∗	372.90 (M-1) 12"	√372.36 (E-1) 18°	N 536056.44 E 1344563.19	MODIFIED 'K'INLET	SEE SHEET 14 FOR DETAIL
R-2	81·33 3 82.0 0 *	377.50 (8MP#2) 6"	377. 40 (M-1) 12"	N 536163.79 E 1344680.92	NYLOPLAST RISER	SEE SHEET 16 / FOR DETAIL
E-1	373.92	372.00 (R-1) 18°		N 536006.20 E 1344517.20	END SECTION	0-5.51 🗸
E-2	377. 67	3 76.0 0 (I-1) 15"		N 536030.29 E 1344615.07	END SECTION	0-5.51
E-3	301.50	379.00 (1-3)	301.50	N 536407.96 E 1344918.94	NYLOPLAST RISER	FOR DETAIL

	EDGE OF THE CHIEF		EX. FAMED EX. FAMED EX. FAMED EX. FAMED EX. FAMED	5 46.
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Mac		ENGL OF AS DELINEATED ON THE CONTROL AND ACCOMMODARY DATE OF A CONTROL AND ACCOMMODATION AND ACCOMMODATION AND ACCOMMODATION PUBLS OF ACCOMMODATION PUBLS OF ACCOMMODATION PUBLS OF ACCOMMODATION PUBLS OF ACCOMMODATION AND ACCOMMODATION AND ACCOMMODATION PUBLS OF ACCOMMODATION AND ACCOMMODATION ACCOMMODATION AND ACCOMMODATION ACCOMMODATION AND ACCOMMODATION ACCOMMOD	PECHOSED 1 STORAGE AREA ADDITION 31 Sept. FF-382.84 EX. 2 STORY BEICK &	COURT
EX. TREELINE	TO THE PIECE STATE PIECE	CONTROL OF THE STATE OF THE STA	EX. 2 STORY BRICK & FRAME CHURCH BURDING CY. FT: 382.64	CANADA CO. SENACE MATA
	10 NOCE 10 NOC	All the County of the County o	AREA OF VARIANCE GRANTED BY BA-10-034C&V BY BA-10-034C&V B-1 PROPERTY OF THE PROPERTY OF TH	SCAGG
	SCHOOL USE SETBACK NINE SAME SAME SAME SETABLES SETABLES SAME SAME SAME SAME SAME SAME SAME SA		A GENERAL STATE OF THE PARKING LODGE SHEET 3 & RELOCATE PARKING LODGE SHEET 3 & RELOCATE OF SIGHT TURN OF SHEET 3 & RELOCATE OF SH	PUBLIC ROAD NOR COLLECTOR SIZAIT ROAD (RC/W VARIES)
АПОМ 1551.86°	20' USE SETBACK LINE 10' SIDE STRUCTURE SETBACK EX. WIRE FENCE	The Res Res	SCHOOL PARKING TO THE THE PARK	ROAD SEE BULL WALLENGE OF SEE BOLL SEE
Mac	Mare-1	September 1	PROPOSED SIGN - PRETING NOT FOR SCHOOL STAFF AND PICCUP-DROP OFF STUDENTS OF OFF STUDENTS OFF STUDE	2. 800 Consus
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	R-20 GREGORY S. & KAREN A. LACY ZONE L05791/F.299 ZONED: R-20 SEC	77/F.386 D-R-20 VALEY SECTION 4	71.33	¥





PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.



SEE SHT I FOR AS-BUILT COETIFICATION

OWNER AND DEVELOPER REVEREND STEPHANIE VADER EMMANUEL UNITED METHODIST CHURCH 10755 SCAGGSVILLE ROAD LAUREL, MD 20723 301-725-5200

	APPROVED:	HOWARD COU	NTY DEPARTM	ENT	OF PLAN	NING AND	ZONIN	Ğ	
	Director - Department of Planning and Zoning 6-9-16 Date								
Vot Classe							64.16		
	Chief, Division of Land Development Date								
	Chief, Devi	elopment Engi	ineering Divis	ion	A,	····		Dațe Dațe	ľ
	PROJECT				5ECTION		PARCEL NOS.		
	EMMANUEL UNITED METHODIST CHURC				H		A		
	PLAT				TAX/ZONE ELEC. (DIST.	CENSUS TR.	1
	237 2 7	11	R-20	46 SIXT		SIXTH	6068.02		
WATER CODE					WER COD	Ē			

7550000

E-18

STORM DRAIN DRAINAGE AREA MAP AND STORM DRAIN PROFILES

SCALE: 1" = 50'

SOILS LEGEND

NAME

GHB GLENELG-URBAN LAND COMPLEX, O TO 8 PERCENT SLOPES 8

GMB GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES

MAB MANOR LOAM, 3 TO 8 PERCENT SLOPES

MAC MANOR LOAM, 8 TO 15 PERCENT SLOPES

Mad MANOR LOAM, 15 TO 25 PERCENT SLOPES

** MAY CONTAIN HYDRIC INCLUSIONS

* HYDRIC SOILS AND/OR CONTAINS HYDRIC INCLUSIONS

+ GENERALLY ONLY WITHIN 100-YEAR FLOODPLAIN AREAS

GnB GLENVILLE-BAILE SILT LOAMS, 0 TO 0 PERCENT SLOPES

CLASS.

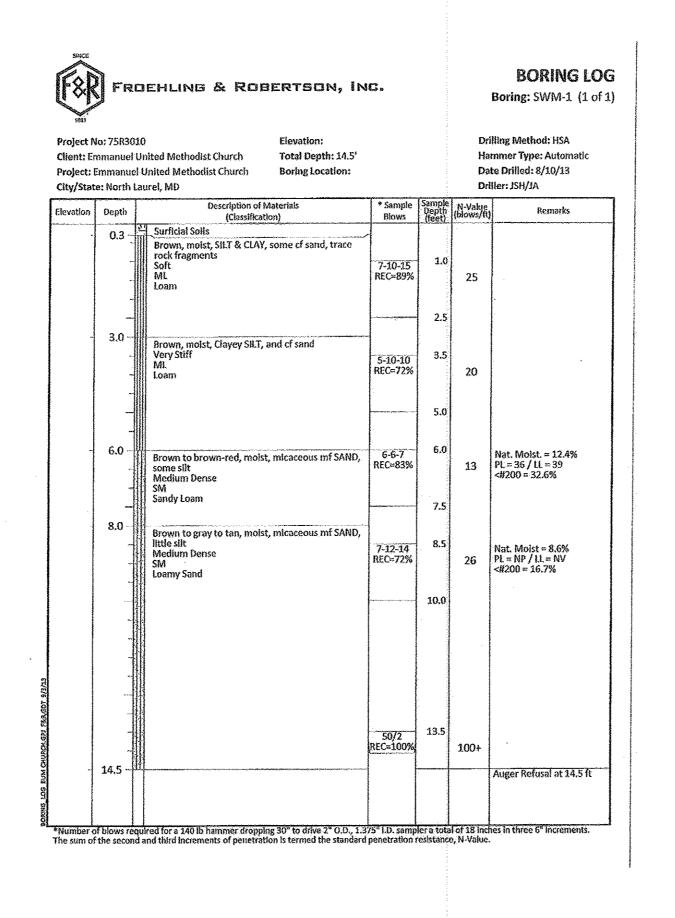
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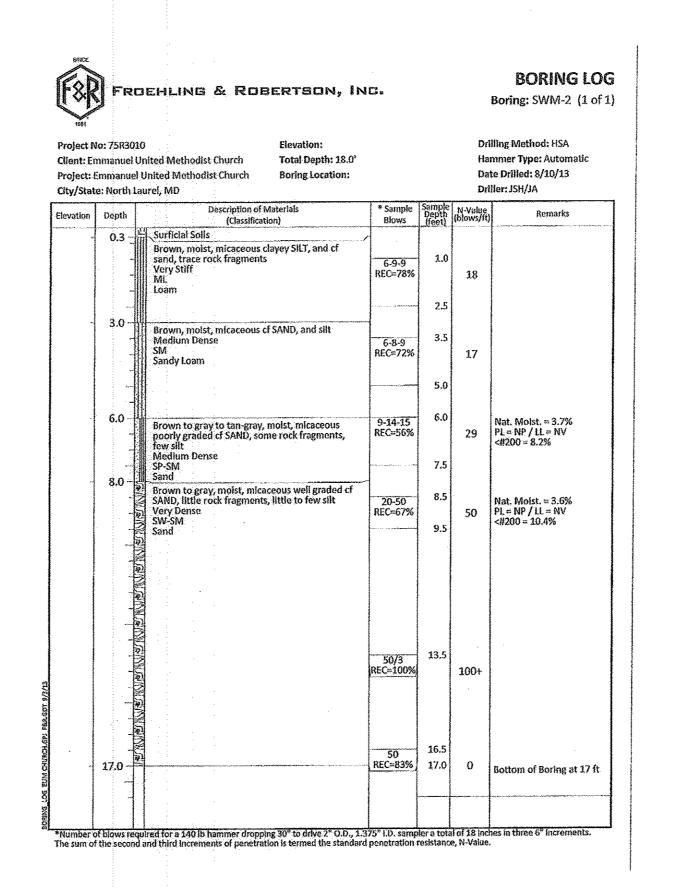
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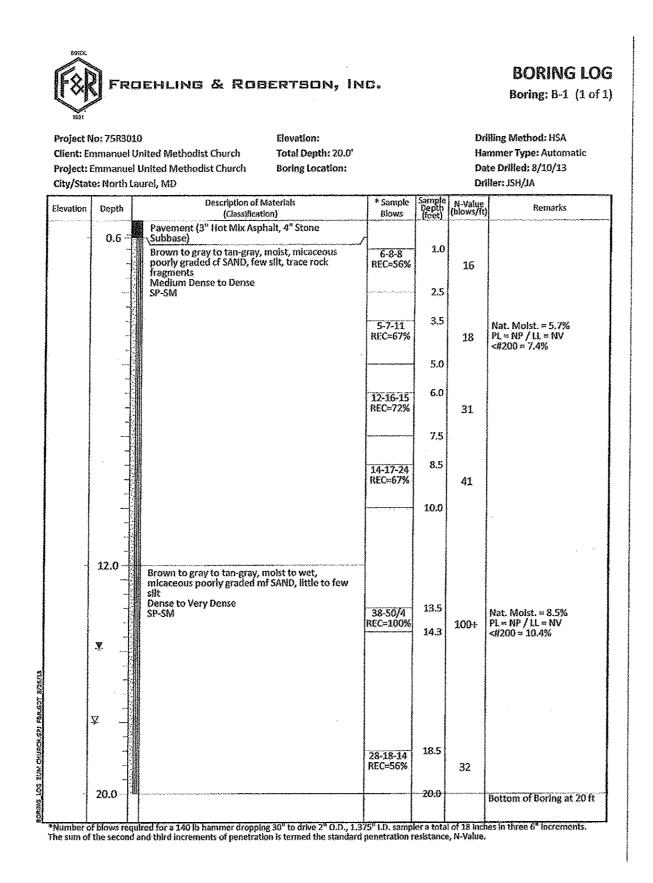
2 STORY MULTI-PURPOSE BLDG. EXT. & PARKING LOT EXT.
AND FOREST CONSERVATION RETENTION BANK EMMANUEL UNITED

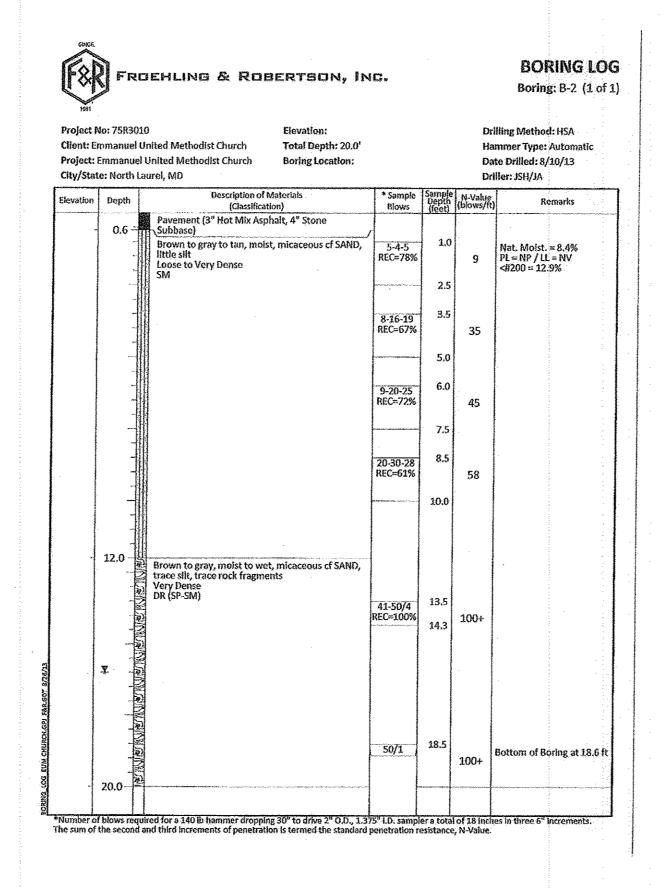
METHODIST CHURCH PREVIOUS HOWARD COUNTY FILES: BA 10-034C&V, BA 90 66E&V 5DP-92-027, ECP-13-053 & F-16-052

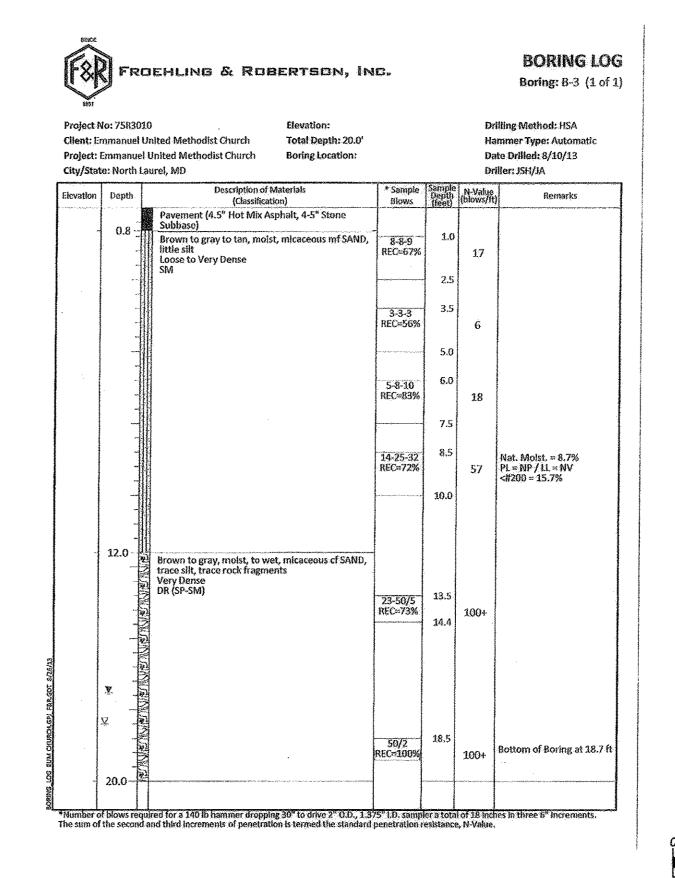
ZONED: R-20 TAX MAP NO.: 46 GRID NO.: 11 PARCEL NO.: 98
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1"=50" DATE: MARCH 12, 2016 5HEET 9 OF 22 5DP-15-067











	11/13/13	AS-BUILT
_		
FISHER, COLLINS & CARTER, INC.		
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS		
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE		en de la compania de
ELLICOTT CITY, MARYLAND 21042		
(410) 461 - 2055		

NO.

REVISION



DATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

Signature Of Professional Land Surveyors

OATE



NO SWM AS-BUILT INFO ON THIS SHEE ANDREW A. PORTER, 16 #15838 11/13/17

andra C. Patr

OWNER AND DEVELOPER

REVEREND STEPHANIE VADER
EMMANUEL UNITED
METHODIST CHURCH
10755 SCAGGSVILLE ROAD
LAUREL, MD 20723
301-725-5200

	HIS SHEET #15838	
<u> </u>		
	=	

WATER CODE

E-18

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING 6-9-16 Chief, Development Engineering Division PROJECT PARCEL NOS. **SECTION** EMMANUEL UNITED METHODIST CHURCH TAX/ZONE ELEC. DIST. CENSUS TR. BLOCK NO. ZONE 23786 E R-20 SIXTH 6068.02 11 23787

SEWER CODE

7550000

BORING LOGS

2 STORY MULTI-PURPOSE BLDG. EXT. & PARKING LOT EXT.
AND FOREST CONSERVATION RETENTION BANK
EMMANUEL UNITED
METHODIST CHURCH
PARCEL 'A'

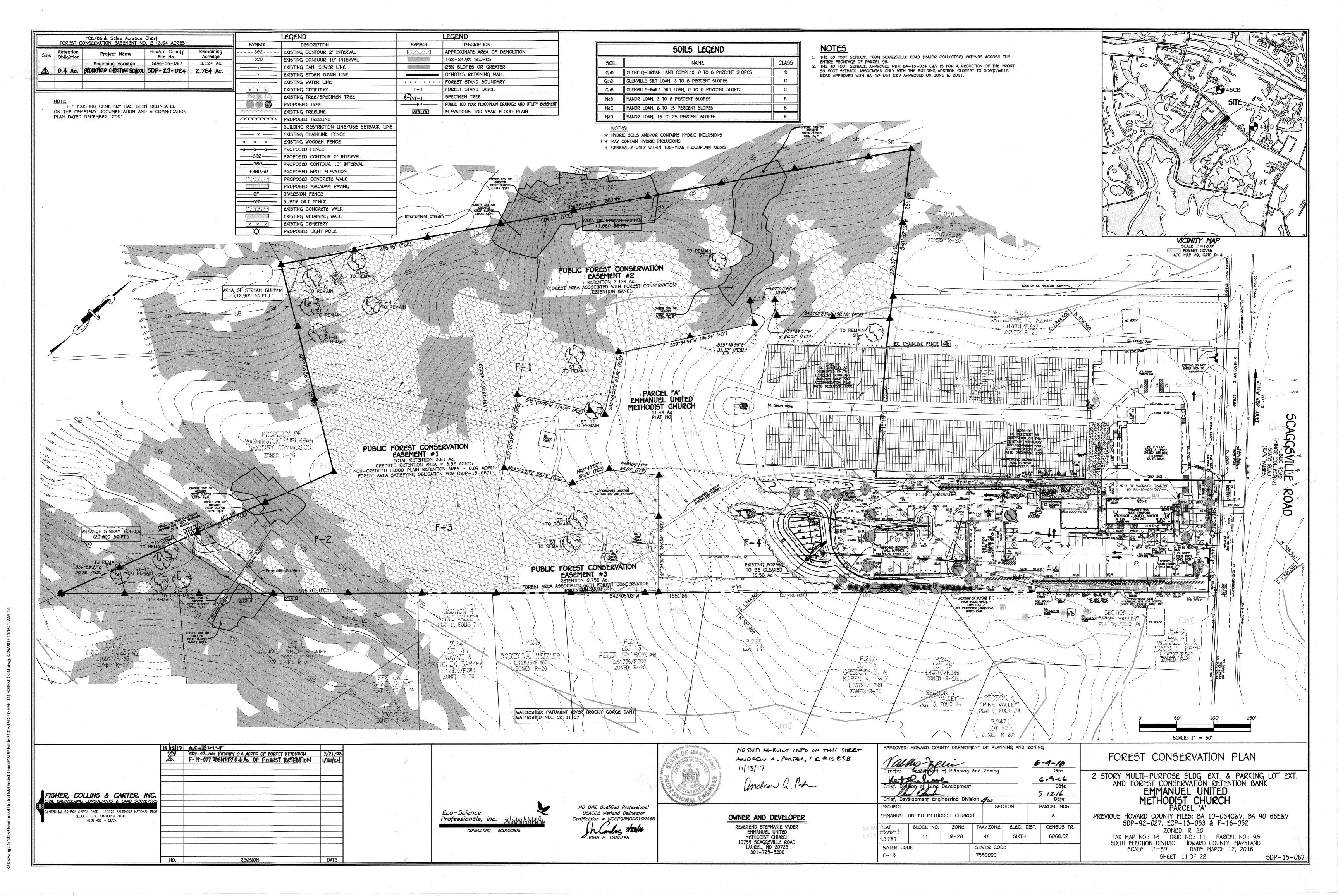
SCALE: 1" = 50'

PREVIOUS HOWARD COUNTY FILES: BA 10-034C&V, BA 90 66E&V 50P-92-027, ECP-13-053 & F-16-052

ZONED: R-20
TAX MAP NO.: 46 GRID NO.: 11 PARCEL NO.: 98
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: MARCH 12, 2016
SHEET 10 OF 22

50P-15-067

4\40169 Emmanuel United Methodist Church\SDP Folder\40169 SDP (SHEE



VEROIOTT 1.0	
NET TRACT AREA	ACRES
A. TOTAL TRACT AREA	11.44
B. DEDUCTIONS (AREA WITHIN 100 YEAR FLOODPLAIN)	0.09
C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION	0.00
D. NET TRACT AREA	11.35
LAND USE CATEGORY: HIGH DENSITY RESIDENTIAL	
E. AFFORESTATION THRESHOLD (NET TRACT AREA [C] × 15%)	1.70
F. CONSERVATION THRESHOLD (NET TRACT AREA (C) × 20%)	2.27
EXISTING FOREST COVER	
G. EXISTING FOREST COVER WITHIN THE NET TRACT AREA	8.52
H. AREA OF FOREST ABOVE AFFORESTATION TRESHOLD	6.82
I. AREA OF FOREST ABOVE CONSERVATION TRESHOLD	6.25
BREAKEVEN POINT	
J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION	1.25
BREAKEVEN POINT	3.52
K. CLEARING PERMITTED WITHOUT MITIGATION	5,46
PROPOSED FOREST CLEARING	
L. TOTAL AREA OF FOREST TO BE CLEARED OR RETAINED OUTSIDE FCE	1.82
M. TOTAL AREA OF FOREST TO BE RETAINED (SEE NOTE 1)	6.70
PLANTING REQUIREMENTS	
N. REFORESTATION FOR CLEARING ABOVE THE CONSERVATION TRESHOLD	0.00
P. REFORESTATION FOR CLEARING BELOW THE CONSERVATION TRESHOLD	0,00
Q. CREDIT FOR RETENTION ABOVE THE CONSERVATION TRESHOLD	0.00
R. TOTAL REFORESTATION REQUIRED	0.00
S. TOTAL AFFORESTATION REQUIRED	0.00
T. TOTAL PLANTING REQUIREMENT	0.00
1. NOTE 1:	

A TOTAL OF 6.79 ACRES OF FOREST ARE RETAINED ON SITE INCLUDING 0.09 ACRES FLOODPLAIN. THE FOREST RETENTION FOR EMMANUEL UNITED METHODIST CHURCH, 5DP-15-067 IS 3.61 ACRES (BREAK EVEN POINT OF 3.52 ACRES + FLOODPLAIN OF 0.09 ACRES) IS CONTAINED IN FCE #1. THE REMAINING 3.10 ARES RETENTION IS PLACED IN A FOREST CONSERVATION RETENTION BANK.

▲ ON-SITE SIGNAGE TO REMAIN IN PERPETUITY

FOREST CONSERVATION EASEMENT
UNAUTHORIZED DISTURBANCE OF VEGETATION IS PROHIBITED. VIOLATORS SUBJECT TO PENALTIES UNDER THE HOWARD COUNTY FOREST CONSERVATION ACT OF 1991.
TREES FOR YOUR FUTURE

11" MINIMUM

ENVIRONMENTAL RESOURCES ACRES FLOOD PLAIN 0.09 0.37 STEEP SLOPES (25% GREATER) ON-SITE STREAMS 0.04 STREAM BUFFERS 0.82 WETLANDS 0.00 WETLAND BUFFERS 0.00 0.00 CHAMPION TREES 0.00 TREES 75% THE SIZE OF CHAMPION TREES

SPECIMEN TREES								
NO.	OBH	COMMON NAME	SCIENTIFIC NAME	CONDITION	COMMENTS			
5T-1	48"	TULIP POPLAR	LIRIODENDRON TULIPIFERA	FAIR	TO REMAIN			
5T-2	40°	TULIP POPLAR (DOUBLE)	LIRIODENDRON TULIPIFERA	FAIR	TO REMAIN			
5T-3	30"	RED OAK	QUERCUS RUBRA	FAIR	TO REMAIN			
5T-4	35"	TULIP POPLAR	LIRIODENDRON TULIPIFERA	G000	TO REMAIN			
5T-5	31"	TULIP POPLAR	LIRIODENDRON TULIPIFERA	FAIR	to remain			
5T-6	34"	TULIP POPLAR	LIRIODENDRON TULIPIFERA	GOOD	TO REMAIN			
5T-7	47"	TULIP POPLAR (DOUBLE)	LIRIODENDRON TULIPIFERA	FAIR	to remain			
5T-8	40	TULIP POPLAR	LIRIODENDRON TULIPIFERA	FAIR	to remain			
57-9	31"	TULIP POPLAR	LIRIODENDRON TULIPIFERA	FAIR	to remain			
5T-10	36"	TULIP POPLAR	LIRIODENDRON TULIPIFERA	POOR	TO REMAIN			
5T-11	30"	TULIP POPLAR	LIRIODENDRON TULIPIFERA	GOOD	TO REMAIN			
5T-12	33"	TULIP POPLAR	LIRIODENDRON TULIPIFERA	FAIR	TO REMAIN			
5T-13	37"	TULIP POPLAR	LIRIODENDRON TULIPIFERA	FAIR	TO REMAIN			
5T-14	34"	TULIP POPLAR	LIRIODENDRON TULIPIFERA	FAIR	TO REMAIN			
5T-15	31"	TULIP POPLAR	LIRIODENDRON TULIPIFERA	GOOD	to remain			
ST-16	3 <i>0</i> "	TULIP POPLAR	LIRIODENDRON TULIPIFERA	GOOD	TO REMAIN			
5T-17	32"	white pine	PINUS STROBUS	FAIR	PREVIOUSLY REMOVED			
51-18	35"	WHITE PINE	PINUS STROBUS	FAIR	PREVIOUSLY REMOVED			
5T-19	36"	white pine	PINUS STROBUS	FAIR	TO BE REMOVED			
5T-20	30°	WHITE PINE	PINUS STROBUS	FAIR	TO BE REMOVED			
5T-21	33"	ORNAMENTAL CHERRY	PRUNUS SERRULATA	GOOD	TO BE REMOVED			

FSD NOTES

- SUBJECT PROPERTY ZONED R-20 PER 10/06/13 COMPREHENSIVE ZONING PLAN. TOTAL AREA OF PROPERTY = 11.44 ACRES±
- . THERE ARE NO STATE CHAMPION TREES OR WETLANDS ON THE PROJECT SITE 4. PER A MERLIN SEARCH ON OCTOBER 5, 2012, THERE ARE NO CRITICAL HABITATS OF
- RARE, THREATENED OR ENDANGERED SPECIES, OBSERVED ON SITE. ALSO, NO RARE, THREATENED AND ENDANGERED SPECIES WERE OBSERVED ON SITE 5. SEVERAL PROPERTIES NEAR AND INCLUDING THE EMMANUEL CHURCH, ARE FOUND WITHIN THE MARYLAND INVENTORY OF HISTORIC PROPERTIES, HOWEVER NONE WAS DEEMED ELIGIBLE FOR INCLUSION ON THE NATIONAL REGISTER, THEIR INCLUSION ON

THE INVENTORY BEING MERELY EVIDENCE THAT THE PROPERTY WAS EVALUATED FOR

FOREST PROTECTION GENERAL NOTES

- 1. ALL FOREST RETENTION AREAS SHALL BE TEMPORARILY PROTECTED BY WELL ANCHORED BLAZE ORANGE PLASTIC MESH FENCING, AS NECESSARY, AND SIGNAGE AS INDICATED ON THE PLANS. THE DEVICES SHALL BE INSTALLED ALONG THE FOREST RETENTION BOUNDARY PRIOR TO ANY LAND CLEARING, GRUBBING, OR GRADING ACTIVITIES
- 2. THE FOREST PROTECTION DEVICES SHALL BE INSTALLED SUCH THAT THE CRITICAL ROOT ZONES OF ALL TREES WITHIN THE RETENTION AREA NOT OTHERWISE PROTECTED WILL BE WITHIN FOREST PROTECTION DEVICES, UNLESS ROOT PRUNING IS PROPOSED.
- 3. ALL PROTECTION DEVICES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION, INCLUDING SILT FENCE BEING USED AS PROTECTIVE FENCING. ALL DEVICES SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION HAS CEASED IN THE IMMEDIATE VICINITY.
- 4. ATTACHMENT OF SIGNS, OR ANY OTHER OBJECTS TO TREES IS PROHIBITED. NO EQUIPMENT, MACHINERY, VEHICLES, MATERIALS OR EXCESSIVE PEDESTRIAN TRAFFIC SHALL BE ALLOWED WITHIN THESE PROTECTED AREAS.
- 5. INSTALLATION AND MAINTENANCE OF PROTECTIVE FENCING AND SIGNAGE SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL TAKE THE UTMOST CARE TO PROTECT TREE ROOT SYSTEMS DURING ALL CONSTRUCTION ACTIVITIES. TREE ROOT SYSTEMS SHALL BE PROTECTED FROM SMOTHERING, FLOODING, EXCESSIVE WETTING FROM DE-WATERING OPERATIONS, OFF-SITE RUN OFF, SPILLAGE AND DRAINING OF MATERIALS THAT MAY BE HARMFUL TO TREES.
- 6. THE GENERAL CONTRACTOR SHALL PREVENT PARKING OF CONSTRUCTION VEHICLES AND EQUIPMENT, AND THE STORING OF BUILDING SUPPLIES OR STOCKPILING OF EARTH
- 7. REMOVAL OF TOPSOIL OR ROOT MAT WITHIN THE TREE PRESERVATION AREA SHALL BE
- 8. THE GENERAL CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY TREES DAMAGED OR DESTROYED WITHIN THE FOREST CONSERVATION EASEMENTS
- ROOT PRUNING SHALL BE USED AT THE LIMIT OF DISTURBANCE OR LIMIT OF GRADING WITHIN AND ADJACENT TO ALL PRESERVATION AREAS, AS NECESSARY.

PRE-CONSTRUCTION MEETING

- 1. AFTER THE BOUNDARIES OF THE FOREST RETENTION AREAS HAVE BEEN FIELD LOCATED AND MARKED, AND AFTER THE FOREST PROTECTION DEVICES HAVE BEEN INSTALLED, BUT BEFORE ANY OTHER DISTURBANCE HAS TAKEN PLACE ON SITE, A PRE-CONSTRUCTION MEETING SHALL TAKE PLACE ON SITE. THE DEVELOPER, CONTRACTOR OR PROJECT MANAGER, AND HOWARD COUNTY INSPECTORS SHALL ATTEND. THE PURPOSE OF THIS MEETING WILL BE:
 - A TO IDENTIFY THE LOCATIONS OF THE FOREST RETENTION AREAS, SPECIMEN TREES WITHIN 50 FEET OF THE LIMIT OF DISTURBANCE, LIMITS OF CONSTRUCTION, EMPLOYEE PARKING AREAS AND EQUIPMENT STAGING AREAS;
 - B. INSPECT ALL FLAGGED BOUNDARIES AND PROTECTION DEVICES; C. MAKE ALL NECESSARY ADJUSTMENTS; D. ASSIGN RESPONSIBILITIES AS APPROPRIATE AND DISCUSS PENALTIES.

CONSTRUCTION MONITORING

- 1. THE SITE SHALL BE INSPECTED PERIODICALLY DURING THE CONSTRUCTION PHASE OF THE PROJECT. A QUALIFIED PROFESSIONAL SHALL BE RESPONSIBLE FOR IDENTIFYING DAMAGE TO PROTECTED FOREST AREAS OR INDIVIDUAL TREES WHICH MAY HAVE BEEN CAUSED BY CONSTRUCTION ACTIVITIES, SUCH AS SOIL COMPACTION, ROOT INJURY, TRUNK WOUNDS, LIMB
- INJURY, OR STRESS CAUSED BY FLOODING OR DROUGHT CONDITIONS. 2. ANY SUCH DAMAGE THAT MAY OCCUR SHALL BE REMEDIED IMMEDIATELY USING APPROPRIATE MEASURES. SEVERE PROBLEMS MAY REQUIRE CONSULTATION WITH A PROFESSIONAL ARBORIST.
- 3. THE CONSTRUCTION PROCEDURE SHALL NOT DAMAGE AREAS OUTSIDE OF THE LIMITS OF DISTURBANCE AS DESIGNATED ON THE PLANS. ANY DAMAGE SHALL BE RESTORED BY THE CONTRACTOR AT HIS EXPENSE AND TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

FOREST STAND DELINEATION NARRATIVE

THIS FOREST STAND DELINEATION WAS PREPARED IN ACCORDANCE WITH THE

HOWARD COUNTY FOREST CONSERVATION MANUAL. FI THIS FOREST STAND IS AN OLDER OAK-TULIP CANOPY INCLUDING RED AND WHITE OAKS, TULIP POPLAR, AND HICKORY, WITH A UNDERSTORY OF THESE SPECIES, RED MAPLE, BLACK CHERRY, AND SPICEBUSH, THE PERCENTAGE OF SPICEBUSH AND RED MAPLE INCREASES AT THE LOWER ELEVATIONS, AND CHRISTMAS FEM AND NEW YORK FERN START BEING PRESENT ABOUT HALFWAY DOWN THE SLOPE AND BECOME GREATER IN NUMBER TOWARD THE BOTTOM OF THE SLOPES. THE OAKS ARE SIMILARLY CONCENTRATED TOWARD THE HIGHER ELEVATIONS. THERE ARE Ø SPECIMEN TREES LOCATED IN THIS STAND. INVASIVE UNDERSTORY IS PRESENT ALONG THE OPEN EDGES OF THE STCND AND INCLUDE

BARBERRY, AND JAPANESE HONEYSUCKLE. F2 THIS FOREST STAND CONSISTS OF PREDOMINATELY TULIP POPLAR AND OAK ON THE SLOPE WITH NORTHERN EXPOSURE AND PREDOMINATELY VIRGINIA PINE ON THE SLOPE WITH SOUTHERN EXPOSURE. THE UNDERSTORY CONSISTS OF SAPLINGS AND SEEDLINGS OF THESE SPECIES, ALONG WITH RED MAPLE, BLACK GUM, AMERICAN HOLLY, OND SPICEBUSH. THERE ARE 5 SPECIMEN TREES LACATED IN THIS STAND. THERE ARE HEAVY CONCENTRATIONS OF INVASIVES ALONG THE SLOPE WITH SOUTHEM EXPOSURE, INCLUDING AREAS OF MICROSTEGLUM, BRAMBLES AND RASPBERRY. F3 THIS FOREST STAND 15 PREDOMINATELY TULIP POPLAR AND RED OAK WITH SOME AREAS

THAT ARE PREDOMINATELY VIRGINIA PINE. THERE IS AN AREA WHERE LARGE TREES HAVE FALLEN AND CREATED A CANOPY OPENING, ALLOWING INVASLVES TO FLOURISH. THE UNDERSTORY CONSISTS OF SOME AMERICAN HOLLY, BLACK CHERRY AND SPICEBUSH, ALONG WITH SOME FEM AT LOWER ELEVATIONS. THERE ARE 3 SPECIMEN TREES LOCATED IN

F4 THIS FOREST STAND SHOWS THE GREATEST DISTURBANCE, WITH CUT PINE BRANCHES DUMPED ALONG THE EDGE, OND A LOOSER, OPEN CANOPY WITH '10% INVASIVE GROUNDCOVER OF MLCROSTEGLUM AND VINCA. THE CANOPY 15 ALMOST EXCLUSIVELY TULIP POPLAR, WITH A FEW BLACK LACUSTS. THE UNDERSTORY CONSISTS OF THESE SPECIES PLUS RED MAPLE. THERE ARE NO SPECIMEN TREES LOCATED IN THIS STAND.

×	FOREST STAND ANALYSIS TABLE										
				SOIL INF	ORMATION		EXISTING	STANC	CHARAC	TERISTICS	FOREST AREA
ŒY	TYPE OF COMMUNITY	AREA Acres	50IL Type	TYPICAL FOREST COVER	WOODLAND SUITABILITY INDEX		VEGETATION (Type and approx. %)	SIZE AVG. DIAM	AGE	GENERAL CONDITIONS	IN SENSITIVE ENVIRONMENTS
1	Oāk-Tulip Hārdwoods	4.12	MaC	Mixed Upland Hardwoods Water—tolerant Hardwoods Oaks & other Hardwoods Oaks & other Hardwood	80-85 oaks 70-80 oaks 80 pines	Good Fàir	tulip poplar 40% red oak 20% white oak 15% hickory 10% red maple 5% other	12-20 18-24 18-24 20-22 8-12	30 120	Good	0.34 ac stream buffer; 1.76 ac steep slopes 15-25; 0.44 ac steep slopes 25%+
·2	Oāk—Tulip Hārdwoods	0.93	Mac	Water—tolerant Hardwoods Oaks & other Hardwoods Oaks & other Hardwood	70-60 oaks 60 pines	Fair	tulip poplär 40% Virginiä pine 20% red oäk 20% white pine 10% other 10%	16-20 16-16	60-72	Good	0.40 ac stream buffer; 0.69 ac steep slopes 15-25; 0.10 ac steep slopes 25%+
-3	Tulip-Pine Hardwoods	2.71	MaC	Oaks & other Hardwood	70-80 odks 80 pines		tulip poplar 50% red oak 20% Virginia pine 20% other 10%	16-18	36-72	Fair	0.12 ac steep slopes 15-25; 0.03 ac steep slopes 25%+
-4	Tulip-Pine Härdwoods	0.86	MaC	Oaks & other Hardwood	70-80 oaks 80 pines	Fair	tulip poplar 50% black lotus 20% other 10%		30-60	Poor	>0.01 dc steep slopes 25%+

FCP NOTES

- ANY FOREST CONSERVATION EASEMENT (FCE) AREA SHOWN HEREON IS SUBJECT TO PROTECTIVE COVENANTS WHICH MAY BE FOUND IN THE LAND RECORDS OF HOWARD COUNTY WHICH RESTRICT THE
- DISTURBANCE AND USE OF THESE AREAS. 2. FORESTED AREAS OCCURRING OUTSIDE OF THE FCE SHALL NOT BE CONSIDERED PART OF THE FCE AND SHALL NOT BE SUBJECT TO PROTECTIVE LAND COVENANTS.
- 3. LIMITS OF DISTURBANCE SHALL BE RESTRICTED TO AREAS OUTSIDE THE LIMIT OF TEMPORARY FENCING OR THE FCE BOUNDARY, WHICHEVER IS GREATER. 4. THERE SHALL BE NO CLEARING, GRADING,
- CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENT, EXCEPT AS PERMITTED BY HOWARD COUNTY DPZ.
- 5. NO STOCKPILES, PARKING AREAS, EQUIPMENT CLEANING AREAS, ETC. SHALL OCCUR WITHIN AREAS DESIGNATED AS FOREST CONSERVATION EASEMENTS. 6. TEMPORARY FENCING SHALL BE USED TO PROTECT
- FOREST RESOURCES DURING CONSTRUCTION. THE FENCING SHALL BE PLACED ALONG ALL FCE BOUNDARIES WHICH OCCUR WITHIN 15 FEET OF THE PROPOSED LIMITS OF DISTURBANCE.
- 7. PERMANENT SIGNAGE SHALL BE PLACED 50-100' APART ALONG THE BOUNDARIES OF ALL AREAS INCLUDED IN FOREST CONSERVATION EASEMENTS.
- BE MET THROUGH THE ON-SITE RETENTION OF 3.61 ACRES RETENTION IN FCE NO.1 EXCLUDING FLOODPLAIN AREA OF 0.09 ACRES CONTAINED IN FCE NO.1 AND A 3.18 ACRE CONSERVATION RETENTION BANK IS PROPOSED WITHIN EASEMENT FCE 2 AND 3.
- THE FOREST CONSERVATION REQUIREMENT PER SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION HAS BEEN FULFILLED BY PROVIDING 3.61 ACRES OF ON-SITE FOREST RETENTION WITHIN FOREST CONSERVATION EASEMENT #1. THERE IS NO SURETY REQUIRED FOR ON-SITE FOREST RETENTION. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENT OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED. THIS PROPERTY IS SUBJECT TO THE ESTABLISHMENT OF A FOREST RETENTION BANK OF 3.10 ACRES IN SIZE. THIS FOREST RETENTION AREA IS IDENTIFIED AS FOREST CONSERVATION EASEMENT NOS. 2 AND 3 ON A PLAT RECORDED AS PLAT NOS. 23786 AND 23787 AMONG THE LAND RECORDS OF HOWARD COUNTY, MARYLAND.
- 10. FOREST SIGNAGE SHALL BE PLACED IN PERPETUITY. 11. NO DEBRIS, DUMPING, ETC. EXISTS WITHIN THE FOREST CONSERVATION EASEMENT, OR IF IT DOES, THAT IT WILL BE CLEANED PRIOR TO THE RECORDATION OF THE

FOREST RETENTION MANAGEMENT NOTES

- 1. ANY PROPOSED FUTURE ACTIVITIES SHALL ADHERE TO THE CONDITIONS, SCHEDULES AND TERMS OF AN APPROVED SEDIMENT CONTROL AND EROSION PLAN. 2. AFTER THE BOUNDARIES OF THE RETENTION AREA HAVE BEEN STAKED AND FLAGGED AND BEFORE ANY DISTURBANCE HAS TAKEN PLACE ON-SITE, ANY FUTURE CONSTRUCTION ON-SITE WILL REQUIRE A PRE-CONSTRUCTION MEETING AT THE CONSTRUCTION SITE IN WHICH THE DEVELOPER, CONTRACTOR OR PROJECT MANAGER, AND APPROPRIATE COUNTY INSPECTORS SHALL ATTEND.
- 3. TREE PROTECTION FOR ALL RETAINED AREAS: A. ALL RETENTION AREAS WITHIN 50 FEET OF PROPOSED CONSTRUCTION ACTIVITIES SHALL BE PROTECTED BY HIGHLY VISIBLE, WELL ANCHORED TEMPORARY PROTECTION DEVICES (SILT FENCE OR BLAZE ORANGE PLASTIC MESH).
 - B. ALL PROTECTION DEVICES SHALL BE IN PLACE PRIOR TO ANY GRADING OR LAND CLEARING. C. ALL PROTECTION DEVICES SHALL BE PROPERLY MAINTAINED AND SHALL REMAIN IN PLACE UNTIL CONSTRUCTION HAS
 - D. ATTACHMENT OF SIGNS, FENCING OR OTHER OBJECTS TO TREES IS PROHIBITED.
- E. NO EQUIPMENT, MACHINERY, VEHICLES, MATERIALS OR EXCESSIVE PEDESTRIAN TRAFFIC SHALL BE ALLOWED WITHIN 4. IF THE CRITICAL ROOT ZONE IS AFFECTED BY ANY FUTURE CONSTRUCTION ACTIVITIES, SUCH AS GRADE CHANGE, DIGGING FOR FOUNDATIONS AND ROADS OR UTILITY INSTALLATIONS:
- A PRUNE ROOTS WITH A CLEAN CUT USING PROPER PRUNING EQUIPMENT. B. WATER AND FERTILIZE AS NEEDED. 5. DURING ANY FUTURE CONSTRUCTION ON THE SITE, MONITOR AND CORRECT CONDITION OF RETAINED TREES FOR SOIL
- COMPACTION, ROOT INJURY, FLOOD CONDITIONS, DROUGHT CONDITIONS, AND OTHER STRESS SIGNS.

 6. AFTER ANY FUTURE CONSTRUCTION IS COMPLETED, THE FOLLOWING PROCEDURES AND PROTECTION SHALL OCCUR: A. INSPECT EXISTING TREES AROUND THE PERIMETER OF DISTURBED LIMITS FOR EVIDENCE OF SOIL COMPACTION, ROOT INJURY, LIMB INJURY OR OTHER STRESS SIGNS AND CORRECT WITH PROPER MANAGEMENT TECHNIQUES SUCH AS ROOT OR LIMB PRUNING, SOIL AERATION, FERTILIZATION, CROWN REDUCTION, OR WATERING, INSPECTION AND EVALUATION SHALL
 - BE PERFORMED BY A LICENSED ARBORIST. B. INSPECT FOR DEAD OR DYING TREES OR LIMBS WHICH MAY POSE SAFETY HAZARD AND REMOVE
 - C. NO BURIAL OF DISCARDED MATERIALS WILL OCCUR ON-SITE WITHIN THE CONSERVATION AREAS. D. NO BURNING WITHIN 100 FEET OF WOODED AREAS.

E-18

E. ALL TEMPORARY FOREST PROTECTION STRUCTURES WILL BE REMOVED AFTER CONSTRUCTION. F. FOLLOWING COMPLETION OF CONSTRUCTION, PRIOR TO USE, THE COUNTY INSPECTOR SHALL INSPECT THE ENTIRE AREA.

SCALE: 1" = 50'

11 15 13 AC - BUILT FISHER, COLLINS & CARTER, INC ENGINEERING CONSULTANTS & LAND SURVEYOR ELLICOTT CITY, MARYLAND 21042 DATE

Eco-Science Professionals, Inc. CONSULTING ECOLOGISTS

MD DNR Qualified Professional USACOE Wetland Delineator Certification # WDCP93MD06100448 h lowles 3/23/16

JOHN P. CANOLES

NO SWM AS-BUILT INFO ON THU SHERT 4NOREW A. PORTER PR #15838

> OWNER AND DEVELOPER REVEREND STEPHANIE VADER EMMANUEL UNITED METHODIST CHURCH 10755 SCAGGSVILLE ROAD

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING Director - Department of Planning and Zoning 6-9-16 4,1000 Chief, Division of Land Development 5.12.16 Chief, Development Engineering Division 🥒 PROJECT SECTION PARCEL NOS. EMMANUEL UNITED METHODIST CHURCH ZONE TAX/ZONE | ELEC. DIST. | CENSUS TR. BLOCK NO. 23786 E 5IXTH 6068.02 R-20 23787 WATER CODE SEWER CODE

FOREST CONSERVATION PLAN

2 STORY MULTI-PURPOSE BLDG. EXT. & PARKING LOT EXT. AND FOREST CONSERVATION RETENTION BANK EMMANUEL UNITED METHODIST CHURCH

PREVIOUS HOWARD COUNTY FILES: BA 10-034C&V, BA 90 66E&V 50P-92-027, ECP-13-053 & F-16-052

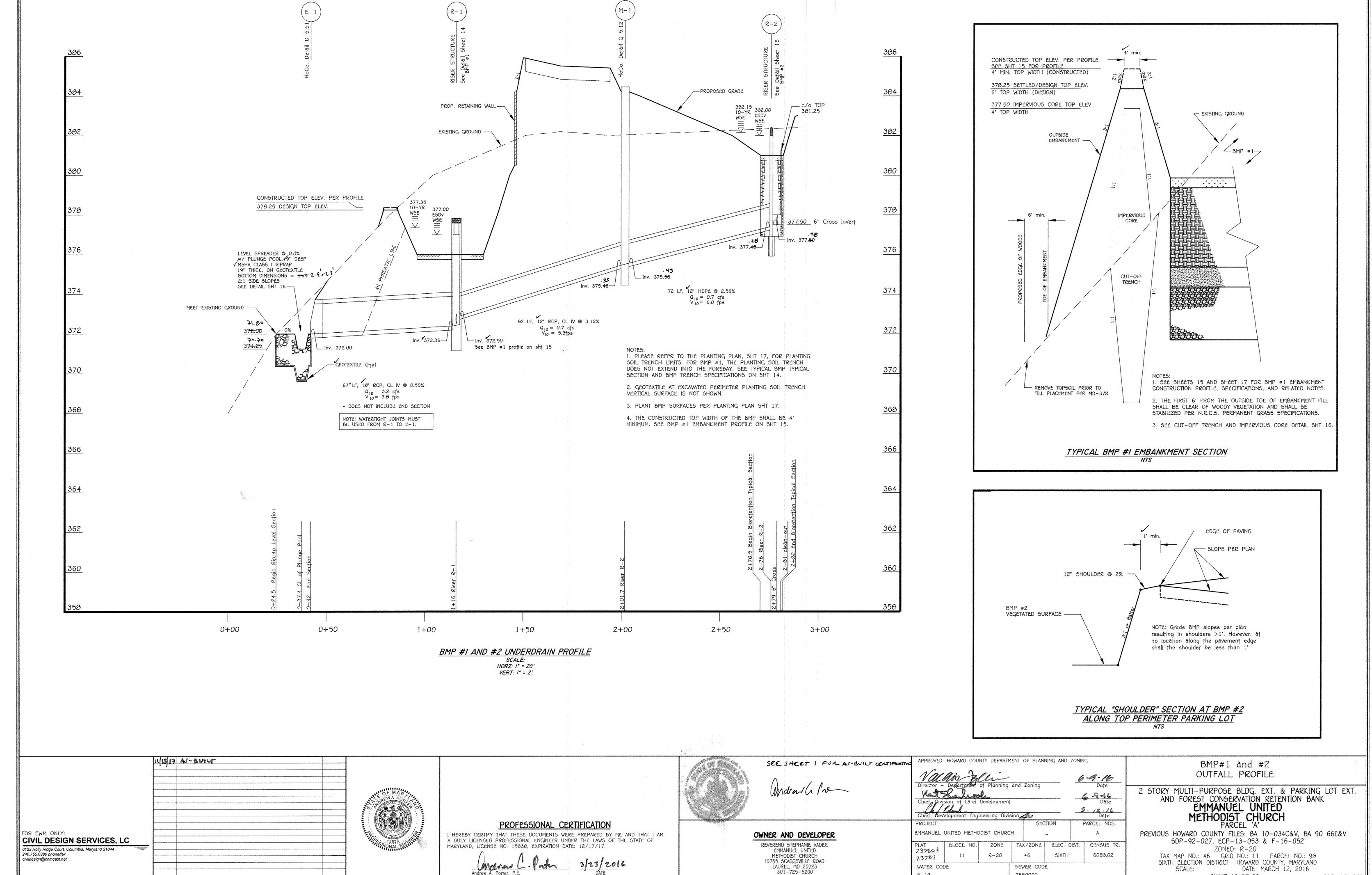
ZONED: R-20 TAX MAP NO.: 46 GRID NO.: 11 PARCEL NO.: 98 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: 1"=50' DATE: MARCH 12, 2016 5HEET 12 OF 22

5DP-15-067

LAUREL, MD 20723 301-725-5200

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5HEET 13 OF 22

5DP-15-067

E-18

REVISION

DATE

1 SEE MSHA STD DETAIL MD-378.11 FOR DETAILS NOT SHOWN ABOVE.

2. ALL STRUCTURAL REQUIREMENTS (INCLUDING WALLS) SHALL CONFORM TO THE D-INLET (DETAIL D-4.10) REQUIREMENTS DUE TO THE INCREASED INLET DEPTH.

3. USE DOUBLE OPENING WITH NO CONCRETE GUTTER APPROACHES.

4. PVC UNDERDRAIN MAY ENTER INLET AT AN ANGLE NEAR THE CENTER OF STRUCTURE AND BMP.

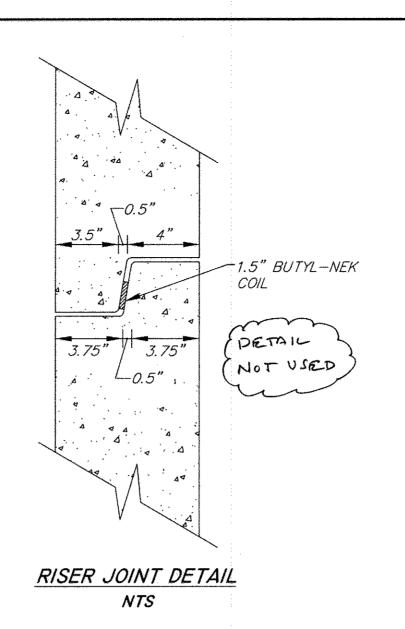
SEE SITE DEVELOPMENT PLAN (SDP) FOR UNDERDRAIN ENTRANCE LOCATION IN RISER WALL. 5. SLOPE RISER INVERT 1":1' TOWARD RCCP OUTFALL

6. PROVIDE STEPS PER HOCO STD. DETAIL G-5.21.

7. CHAMFER EXPOSED EDGES 如文.

BMP RISER STRUCTURE ELEVATION TABLE							
	R-1 (BMP#1)	NOTE5					
ELEV. G	√ 377.83	Top of Grate					
ELEV. H	√ 377.00	Ywo (2) 2' Weir Crests					
ELEV. I	√ 372.50	Inv. 6" Perfor. u/d					
ELEV. J	√ 372.36	10" RCCP Invert Out					
ELEV. K	√ 372.90	√12" RCCP Invert In					
HEIGHT L	5'-8"	Structure Height					

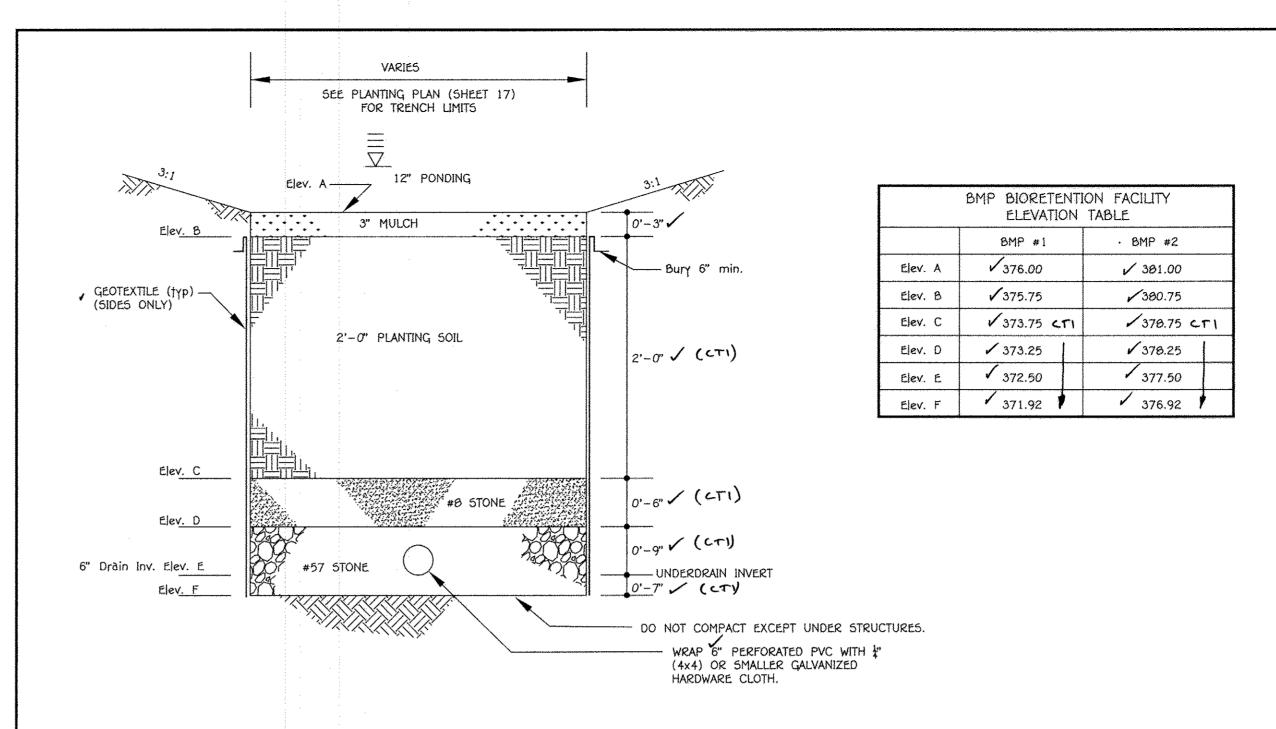
RISER STRUCTURE R-I MODIFIED K-INLET TYPICAL SECTION



1. Riser joints shall join evenly and be watertight. Parge joints after installation.

2. The referenced joint and joint sealant material is used by Frederick Precast, Inc. Similar joints

may be used with shop drawing approval by the engineer.



BMP BIORETENTION FACILITY NOTES AND SPECIFICATIONS

1. THE LIMITS OF THE TYPICAL SECTION (i.e., PLANTING SOIL, SAND, ETC.) IS THE ENTIRE LEVEL SURFACE OF THE BIORETENTION FACILITIES EXCLUDING THE FOREBAY AREAS AND THE RIPRAP GABION APRONS.

2. REFER TO THE 2000 MARYLAND SWM DESIGN MANUAL (AND/OR ONLINE A MDE'S WEB SITE) FOR BIORETENTION SPECIFICATIONS FOR INFORMATION NOT LISTED HEREIN.

3. THE BIORETENTION BMP MATERIALS ARE AS FOLLOWS:

- PLANTING SOIL: PER PLANTING SOIL SPECIFICATIONS OUTLINED IN MDE'S 2000 SWM MANUAL, APPENDIX B.4. DO NOT MECHANICALLY COMPACT PLANTING SOIL (EXCEPT WHERE INDICATED UNDER STRUCTURE R-2). THE PLANTING SOIL CAN BE "WATERED" TO FACILITATE SETTLING. SPECIFICALLY, THE PLANTING SOIL SHALL BE MEET THE FOLLOWING: LOAMY SAND @ 60-65% AND COMPOST 35-40%, OR, 30% SANDY LOAM, 30% COARSE SAND, & 40% COMPOST. SEE MDE APPENDICES A.2.3, B.4.7 and TABLE A.3 FOR ADDITIONAL INFORMATION. IN ADDITION, THE PLANTING SOIL SHALL BE DESIGNED/MIXED/DESIGNED SO THAT ITS COEFFICIENT OF PERMEABILITY (k) IS BETWEEN 1.0 ft/day to 2 ft/day.

- SEE PLANTING PLAN (SHT 17) FOR LIMITS OF PLANTING SOIL AND UNDERDRAIN/RECHARGE AGGREGATE. - PVC UNDERDRAIN PIPE: SCHEDULE 40, AND PERFORATED WITH 1/2" HOLES. WRAP UNDERDRAIN WITH GALVANIZED 1/4" HARDWARE CLOTH (WELDED WIRE MESH).

PROVIDE 4 - 1/2" # HOLES AROUND THE 6" # UNDERDRAIN PIPE SPACED @ 90° ALONG THE CIRCUMFERENCE. SPACE PERFORATIONS ALONG PIPE AT 6" ON

PERFORATIONS MUST TOTAL 1.5 sq. inch MIN. PER LF OF PIPE. ADJACENT SETS OF PERFORATIONS SHALL BE STAGGERED/OFFSET @ 45 DEGREES. SLOTTED PATTERNS MAY BE USED WITH ENGINEER'S WRITTEN AGREEMENT. UNDERDRAIN PIPE SHALL BE LEVEL (i.e., NO SLOPE, 0.0%).

- STONE AGGREGATE: MSHA SPECIFICATIONS AS SHOWN ON TYPICAL SECTION; AGGREGATE MUST BE CLEAN AND WASHED AND BE FREE OF FINES, DIRT & DEBRIS.

- GEOTEXTILE: PER MDE SWM MANUAL OR MIRAFI 140N. - MULCH: SHREDDED, WELL-AGED (6-12 MONTHS) HARDWOOD MULCH; NO WOOD CHIPS OR PINE MULCH.

4. THE CONTRACTOR SHALL UNDER NO CIRCUMSTANCES ALLOW SURFACE DRAINAGE INTO THE BIORETENTION BMPS UNTIL ALL UPSTREAM AREAS HAVE BEEN STABILIZED (i.e., PAVED, OR HAVE WELL-ESTABLISTED VEGETATION.

5. BOARDS SHALL NOT BE LEFT IN PLACE DURING THE CONSTRUCTION

6. GEOTEXTILE (FILTER FABRIC) SHALL BE PLACED AGAINST EXCAVATED VERTICAL SURFACES. SCARIFY EARTH PRIOR TO GEOTEXTILE INSTALLATION. INSTALL GEOTEXTILE PER MANUFACTURER'S SPECIFICATIONS/RECOMMENDATIONS; USE A 2 FT MINIMUM OVERLAP AND NOTCH ENDS WITH A 6" MINIMUM BURY OR EQUIVALENT ANCHORING METHOD.

7. THE CONTRACTOR SHALL OBTAIN INDEPENDENT CERTIFICATION THAT THE SOILS AND OTHER MATERIALS MEET THE SPECIFICATIONS.

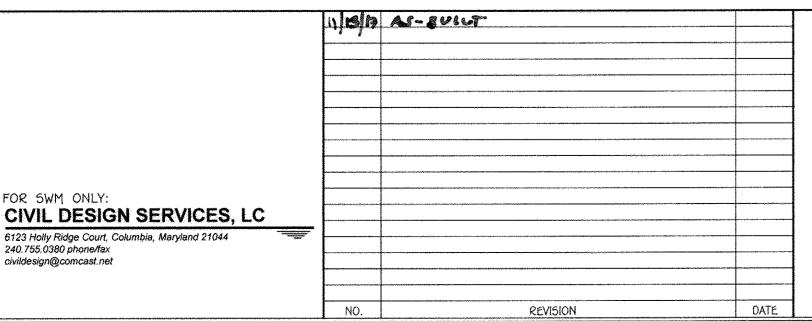
8. THE BIORETENTION FACILITIES SHALL BE VEGETATED IN ACCORDANCE WITH THE PLANTING SCHEDULE/SPECIFCATIONS AND PER MDE SPECIFICATIONS IN THE 2000 SWM DESIGN MANUAL. CONTACT THE ENGINEER IF ANY DISCREPANCIES.

9. USE PERFORATED PVC PIPE INSIDE THE BIORETENTION FACILITIES AND WRAP PERFORATED PIPE WITH 1/2" HARDWARE CLOTH TO PREVENT AGGREGATE FROM ENTERING

10. INSTALL CLEANOUTS/OBSERVATION WELLS (SOLID PVC PIPE) AS SHOWN. THE CLEANOUT/OBSERVATION WELL TOP SHALL EXTEND 3" ABOVE TOP OF MULCH.

11. THE LIMIT OF THE TYPICAL SECTION (i.e., PLANTING SOIL, AGGREGATE, ETC.) IS DETAIL ON THE PLANTING PLAN ON SHEET 17. BASICALLY, THE PLANTING TRENCH AREA (i.e., TYPICAL SECTION ABOVE) IS THE ENTIRE LEVEL SURFACE OF THE BIORETENTION FACILITY EXCLUDING THE FOREBAY/GABION WEIR AND THE AREA NEAR THE RISER AND OVER CONNECTING STORM

BMP BIORETENTION FACILITY TYPICAL SECTION

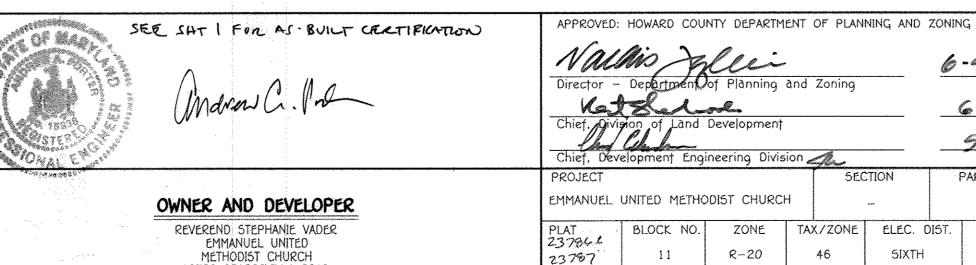




PROFESSIONAL CERTIFICATION

HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 15838, EXPIRATION DATE: 12/17/17.

3 25 2016



10755 SCAGGSVILLE ROAD

LAUREL, MD 20723 301-725-5200

Nathing Selection Director - Department of Planning and Zoning							6-9-4 Date		
Chief, Development Engineering Division							2		
PROJECT EMMANUEL	UNITED METHODIST CHURC			SECTION			PARCEL NOS.		
PLAT 23786 £ 23787	BLOCK NO.	ZONE R-20	TA	X/ZONE 46	ELEC. 0)IST.	CENSUS TR. 6060.02		
WATER COI E-10	DE .			WER COD 50000	E				

BMP #1 & #2 RISER DETAILS AND BMP TYPICAL SECTION

STORY MULTI-PURPOSE BLDG. EXT. & PARKING LOT EXT. AND FOREST CONSERVATION RETENTION BANK EMMANUEL UNITED METHODIST CHURCH

PREVIOUS HOWARD COUNTY FILES: BA 10-034C&V, BA 90 66E&V 50P-92-027, ECP-13-053 & F-16-052 ZONED: R-20 TAX MAP NO.: 46 GRID NO.: 11 PARCEL NO.: 98 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

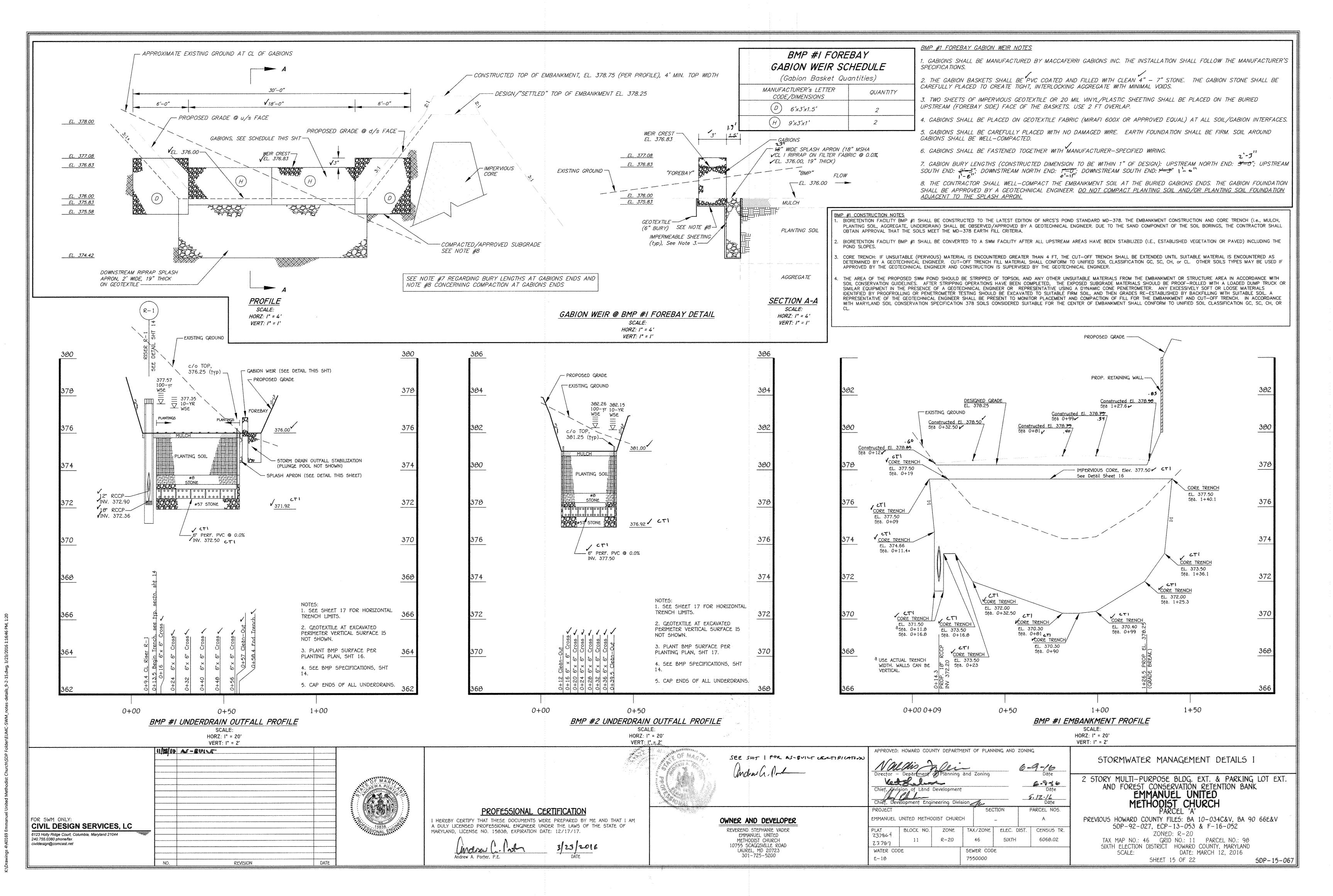
DATE: MARCH 12, 2016 SHEET 14 OF 22 5DP-15-067

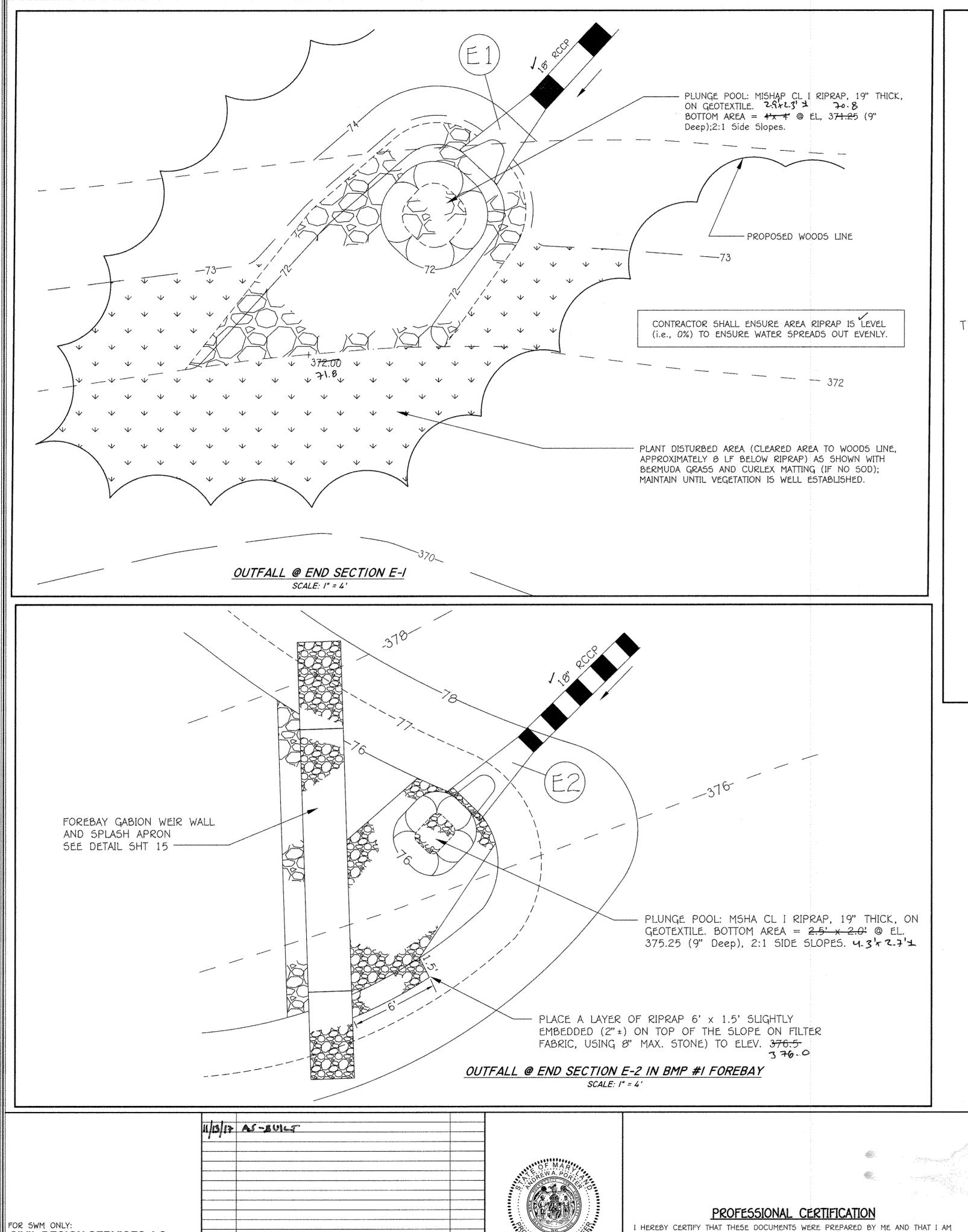
FOR SWM ONLY:

240.755.0380 phone/fax

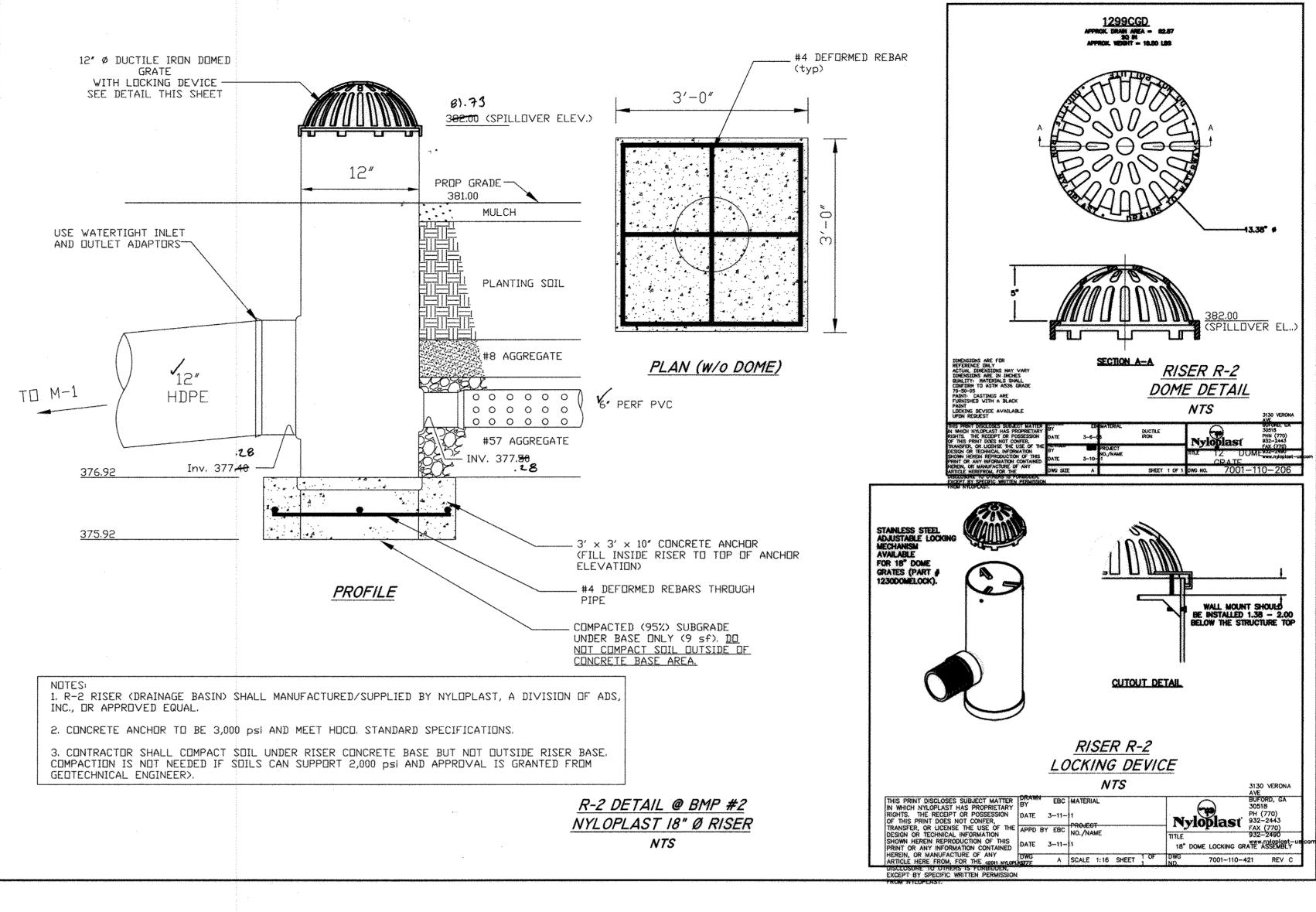
civildesign@comcast.net

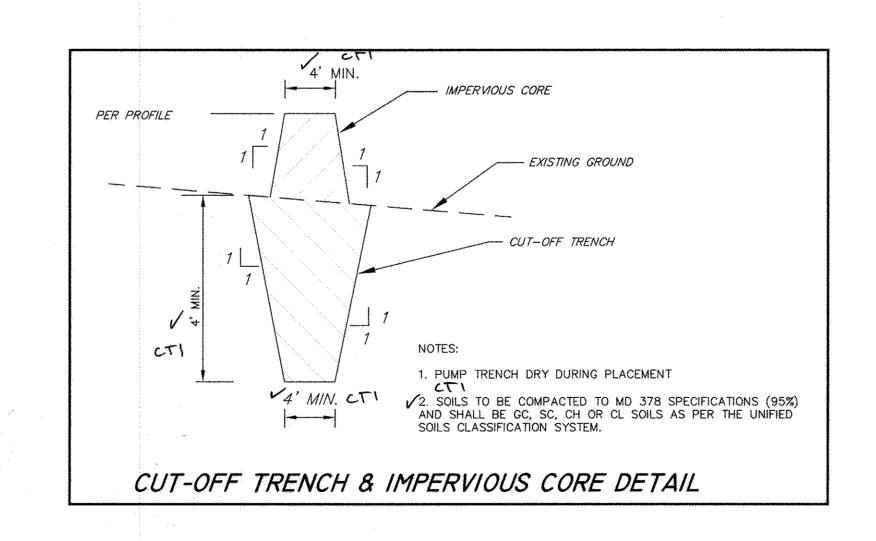
6123 Holly Ridge Court, Columbia, Maryland 210-

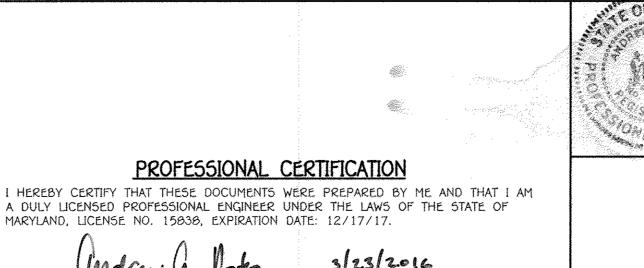




DATE







JEE SHT I FOR AJ-BUILT CENTIFICATION

OWNER AND DEVELOPER REVEREND STEPHANIE VADER EMMANUEL UNITED METHODIST CHURCH 10755 SCAGGSVILLE ROAD LAUREL, MD 20723 301-725-5200

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING Director - Department of Planning and Zoning 6-9-16 Ket Lelian 6.9.46 5.12.16 Chief, Bevelopment Engineering Division PARCEL NOS. PROJECT EMMANUEL UNITED METHODIST CHURCH TAX/ZONE ELEC. DIST. CENSUS TR. BLOCK NO. ZONE 237866 R-20 23797 WATER CODE SEWER CODE 7550000 E-18

STORMWATER MANAGEMENT DETAILS II

2 STORY MULTI-PURPOSE BLDG. EXT. & PARKING LOT EXT. AND FOREST CONSERVATION RETENTION BANK EMMANUEL UNITED METHODIST CHURCH PARCEL 'A'

PREVIOUS HOWARD COUNTY FILES: BA 10-034C&V, BA 90 66E&V 50P-92-027, ECP-13-053 & F-16-052

ZONED: R-20 TAX MAP NO.: 46 GRID NO.: 11 PARCEL NO.: 98 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND DATE: MARCH 12, 2016 SHEET 16 OF 22

50P-15-067

CIVIL DESIGN SERVICES, LC

6123 Holly Ridge Court, Columbia, Maryland 21044 240.755.0380 phone/fax civildesign@comcast.net

2. ALL CONSTRUCTION SHALL MEET THE LATEST EDITION OF THE HOWARD COUNTY STANDARDS AND SPECIFICATIONS, SMALL EARTHEN DAM SPECIFICATION MD-378, AND THE MARYLAND DEPARTMENT OF THE ENVIRONMENT'S CURRENT STORMWATER DESIGN MANUAL, OR AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL CONSULT THE ENGINEER SHOULD THERE BE ANY DISCREPANCIES. SEE BIORETENTION FACILITY SPECIFICATIONS ON SHEET 14.

3. THE UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL TEST PIT ALL KNOWN EXISTING UTILITIES TO VERIFY, SIZE, SHAPE, LOCATION, AND TYPE PRIOR TO PERFORMING CONSTRUCTION. ANY UTILITY DAMAGED DUE TO CONSTRUCTION MUST BE REPAIRED

4. SHOULD THE CONTRACTOR DISCOVER DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS, THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. IF THE CONTRACTOR MAKES FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE ENGINEER, THEN THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THOSE CHANGES.

5. CONTRACTOR SHALL NOTIFY MISS UTILITY 1-800-257-7777 AND THE HOWARD COUNTY DEPARTMENT OF INSPECTION LICENSES & PERMITS THREE (3) WORKING DAYS BEFORE BEGINNING CONSTRUCTION.

6. FISHER, COLLINS & CARTER, INC. IS NOT RESPONSIBLE FOR THE CONTRACTOR'S UTILIZATION OF MEN, MATERIALS, EQUIPMENT, OR SAFETY MEASURES IN THE PERFORMANCE OF ANY WORK FOR THIS PROJECT. THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR PERFORMING THE WORK CORRECTLY AND IN CONFORMANCE WITH CODE/SPECIFICATION REQUIREMENTS.

7. THE BMPs MAY BE GRADED, HOWEVER, THE PLANTING SOIL AND UNDERDRAINS IN THE BMPs SHALL NOT BE INSTALLED UNTIL ALL UPSTREAM AREAS HAVE BEEN STABILIZED (i.e., THICK GRASS COVER, OR PAVED).

8. THE STORMWATER MANAGEMENT BIORETENTION BMPs FOR THIS PROJECT WILL BE PRIVATELY OWNED AND MAINTAINED.

OPERATION AND MAINTENANCE SCHEDULE FOR BIORETENTION BMPs #1 & #2

THE BIORETENTION FACILITIES SHALL BE INSPECTED AT LEAST TWICE PER YEAR (ONCE EACH IN THE SPRING AND FALL) AND AFTER HEAVY STORMS. THE OWNER IS RESPONSIBLE FOR MAINTAINING A DETAILED LOG OF THE MAINTENANCE INSPECTION FINDINGS AND A HISTORY OF THE COMPLETED WORK. THE LOG SHALL BE MADE AVAILABLE TO HOWARD COUNTY OPZ AND/OR THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UPON REQUEST.

THE BIORETENTION FACILITY COMPONENTS TO BE INSPECTED AND MAINTAINED INCLUDE THE ITEMS AS FOLLOWS:

1. PLANT MATERIAL: PLANTS SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION. REMOVE AND REPLACE DEAD OR DYING VEGETATION CONSIDERED BEYOND TREATMENT (SEE NOTE BELOW). MAINTENANCE ALSO INCLUDES PRUNING, AND REPLACEMENT OF DEFICIENT STAKES AND WIRE.

2.MULCH LAYER: SHALL BE REPLACED ONCE EVERY SPRING DUE TO THE HEAVY METALS GENERATED FROM THE PARKING LOT. THE OWNER SHALL PROPERLY DISPOSE OF THE OLD MULCH SO AS NOT TO CAUSE STORMWATER CONTAMINATION ELSEWHERE. WASHED OUT AREAS SHALL BE REPAIRED AS NECESSARY.

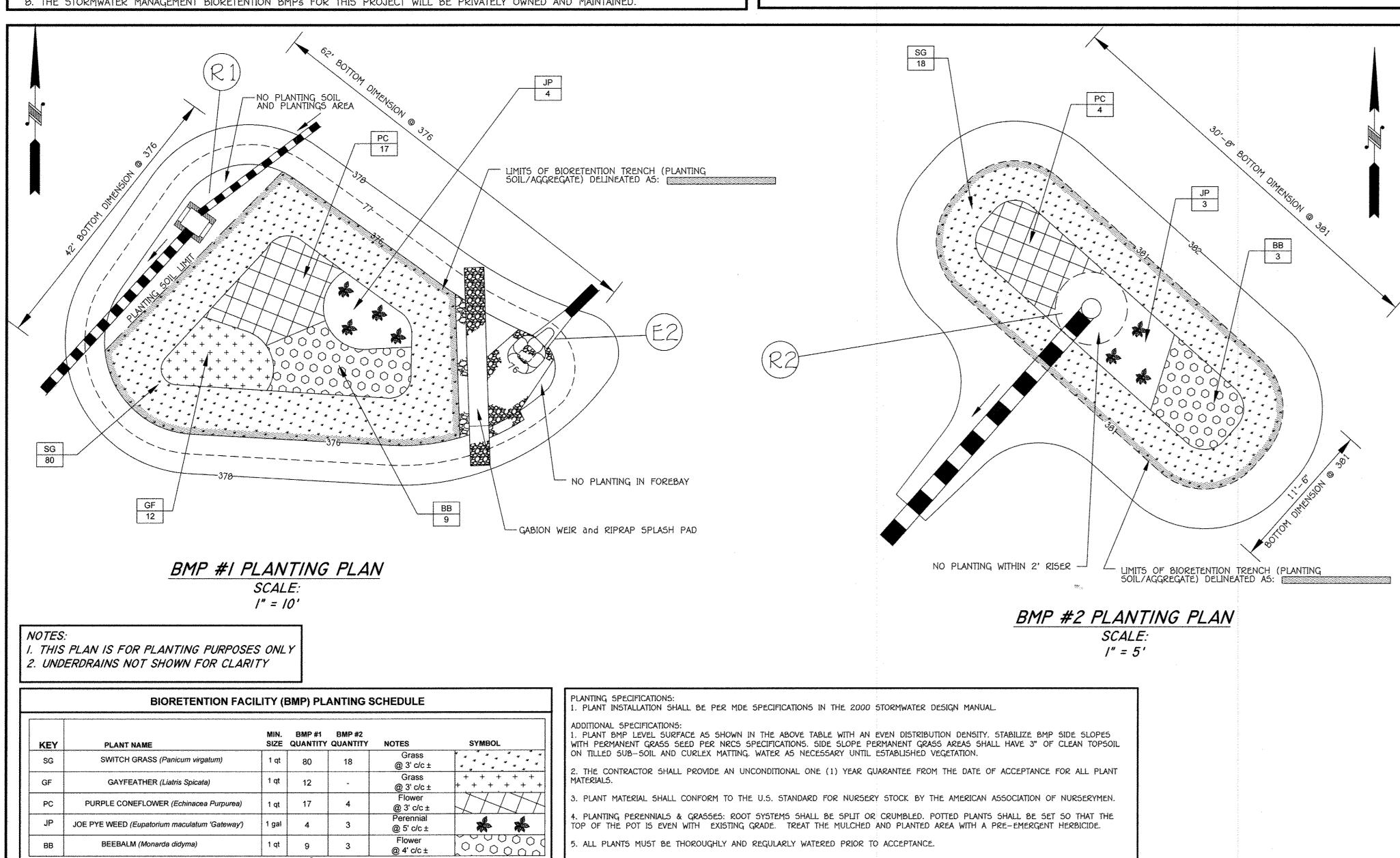
3.50IL LAYER: SHOULD STORMWATER POND FOR MORE THE 48 HOURS, THE TOP 6 INCHES (MINIMUM) OF THE 50IL LAYER SHALL BE REPLACED. THE OLD SOIL SHALL BE PROPERLY DISPOSED.

4.SPILLWAY OUTFALL, INTERIOR SLOPES: ERODED AREAS SHALL BE REPAIRED (FILLED IN AND SEEDED) AS NEEDED. BARE AREAS SHALL BE TREATED AND RE-SEEDED.

5. RISER: REPAIR CRACKS, DAMAGED CONCRETE, ETC. AS NECESSARY.

6. REMOVE AND PROPERLY DISPOSE ACCUMULATED SEDIMENT GREATER THAN ONE (1) INCH.

1. IF SPECIFIC PLANTS ARE NOT SURVIVING; THE PLANT TYPE SHOULD CHANGED TO BETTER SUITED SPECIES. 2.PLANT WATERING MAY BE NECESSARY DURING PROLONGED DRY PERIODS.



Pond MD-378: N.R.C.S. - JANUARY 2000 CONSTRUCTION SPECIFICATIONS FOR SMALL EARTHEN DAMS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment. Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a

25-foot radius around the inlet structure shall be cleared. All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his

representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated

Material — The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer. Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment. Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not be so wet that water can be The minimum required density shall not be less than 95% of maximum dry density with a moisture content within $\pm 2\%$ of the optimum. Each layer of fill

shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor). Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall

be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. Embankment Core —The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shalf driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi; 28 day un-confined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm—cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

All pipes shall be circular in cross section.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

1. Materials — Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361. 2. Bedding — Reinforced concrete pipe conduits shall be laid in a concrete bedding / cradle for their entire length. This bedding / cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its out—side diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.

3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser. 4. Backfilling shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Plastic Pipe - The following criteria shall apply for plastic pipe: 1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4" - 10" inch pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type S.

Joints and connections to anti-seep collars shall be completely watertight. . Bedding —The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support. 4. Backfilling shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings. Drainage Diaphragms — When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and

Materials, Section 414, Mix No. 3.

Rock Riprap
Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311.

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

All work on permanent structures shall be carried out in areas free from water. The Con-tractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, in-stall, operate, and maintain all necessary pumping and other equipment required for removal of water from various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained be—low the bottom of the excavation at such locations which may require draining the water sumps from which the water shall be pumped.

All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the ac-companying drawings.

<u>Erosion and Sediment Control</u>

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.

	11/12/13	AC-BUILT	
			
	agen mynt a meet en de production en transport en termen transport		
FOR SWM ONLY:			
CIVIL DESIGN SERVICES, LC			
6123 Holly Ridge Court, Columbia, Maryland 21044 240.755.0380 phone/fax			
civildesign@comcast.net			
	- 10	October	0.174
	NO.	REVISION	DATE

DESIGN TOTAL 122 28

ACTUAL PLANTED 95 21

@ 4' c/c ±

PROFESSIONAL CERTIFICATION

HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 15838, EXPIRATION DATE: 12/17/17.

. DO NOT PLANT VEGETATION WITHIN 2 ff OF THE RISER OR AS NOTED ON PLANTING PLAN.



SER SHT I FOR AJ-BUILT CERTIFICATION

OWNER AND DEVELOPER REVEREND STEPHANIE VADER EMMANUEL UNITED

METHODIST CHURCH

10755 SCAGGSVILLE ROAD

LAUREL, MD 20723 301-725-5200

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING 6.9-16 Department of Planning and Zoning 6-9-4 5.12.16 PARCEL NOS. PROJECT EMMANUEL UNITED METHODIST CHURCH TAX/ZONE ELEC. DIST. CENSUS TR. BLOCK NO. ZONE 23784 R-20 6068.02 SIXTH 11 23787 WATER CODE SEWER CODE 7550000

STORMWATER MANAGEMENT FACILITY NOTES & SPECIFICATIONS

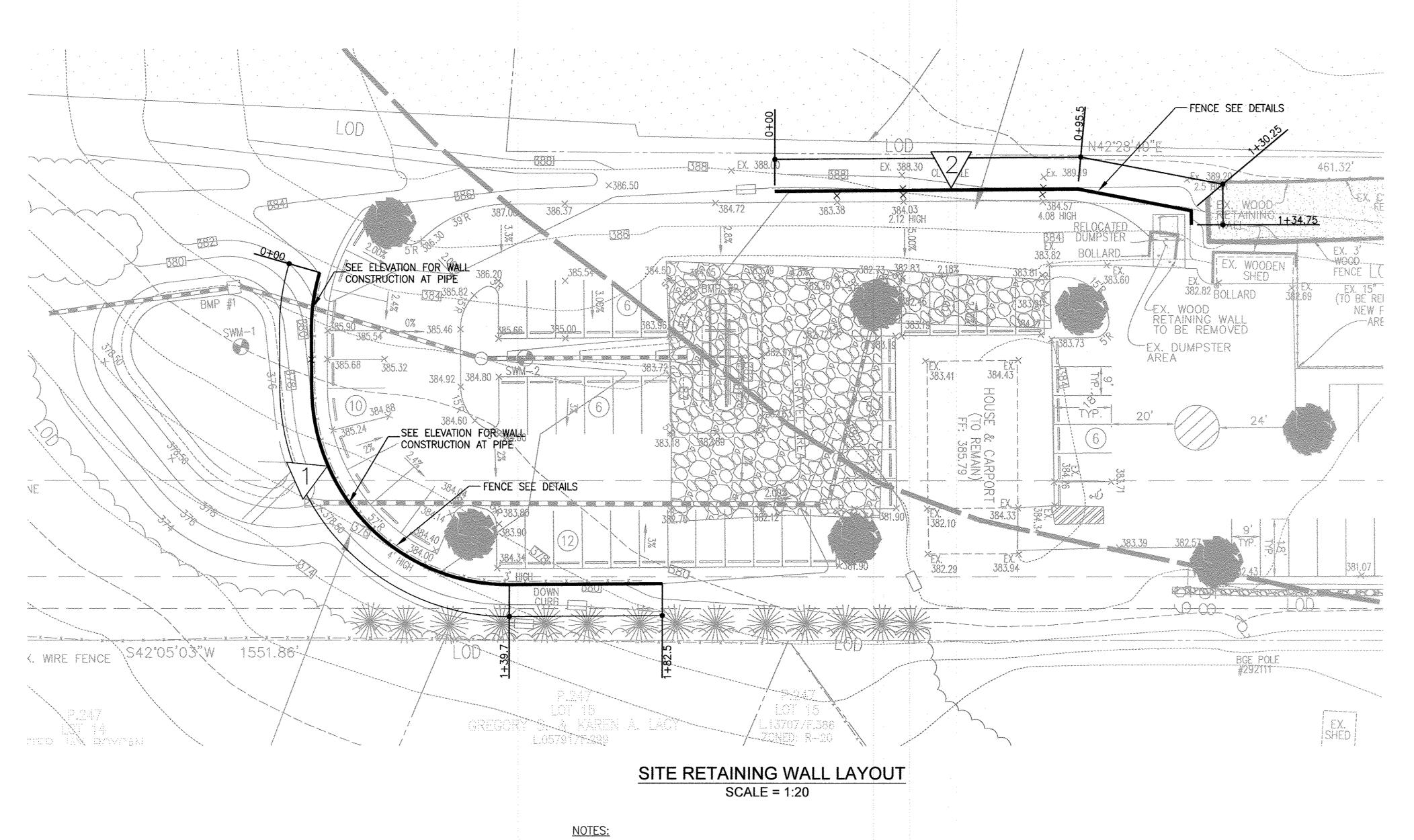
2 STORY MULTI-PURPOSE BLDG. EXT. & PARKING LOT EXT. AND FOREST CONSERVATION RETENTION BANK EMMANUEL UNITED METHODIST CHURCH

PREVIOUS HOWARD COUNTY FILES: BA 10-034C&V, BA 90 66E&V 5DP-92-027, ECP-13-053 & F-16-052 ZONED: R-20

TAX MAP NO.: 46 GRID NO.: 11 PARCEL NO.: 98 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND DATE: MARCH 12, 2016

SHEET 17 OF 22

5DP-15-067



- 1. FOR TOP AND BOTTOM OF KEYSTONE WALL ELEVATIONS SEE
- SEGMENTAL RETAINING WALL ELEVATIONS ON SHEET 19.

 2. NO TREE PLANTING WITHIN 10 FT BEHIND THE TOP OF WALLS.

	11 12 17	AS-EULET	-,,-
FISHER, COLLINS & CARTER, INC.			
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MARYLAND 21042			
(410) 461 - 2855			77777
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Tarantino Engineering Consultants, PC			
Tarantino Engineering Consultants, PC 7678 Midtown Rd. Fulton, MD 20759 410-921-7678 www.tarantinoec.com			

OF MAA TARAAA OS SO 2487 ONAL 200

DATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME
AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF
THE STATE OF MARYLAND, LICENSE NO. 24871, EXPIRATION DATE: 2/28/18.

NO SWIT AS-BUILT INFO ON THIS SHEET

ANDREW A. PORTER PR # 15838

11/13/17

Molran G. Mah

McCraw L. Pro-

OWNER AND DEVELOPER

REVEREND STEPHANIE VADER

EMMANUEL UNITED

METHODIST CHURCH

10755 SCAGGSVILLE ROAD

LAUREL, MD 20723

301-498-2093

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SEWER CODE

7550000

WATER CODE

E-18

SITE WALL LAYOUT

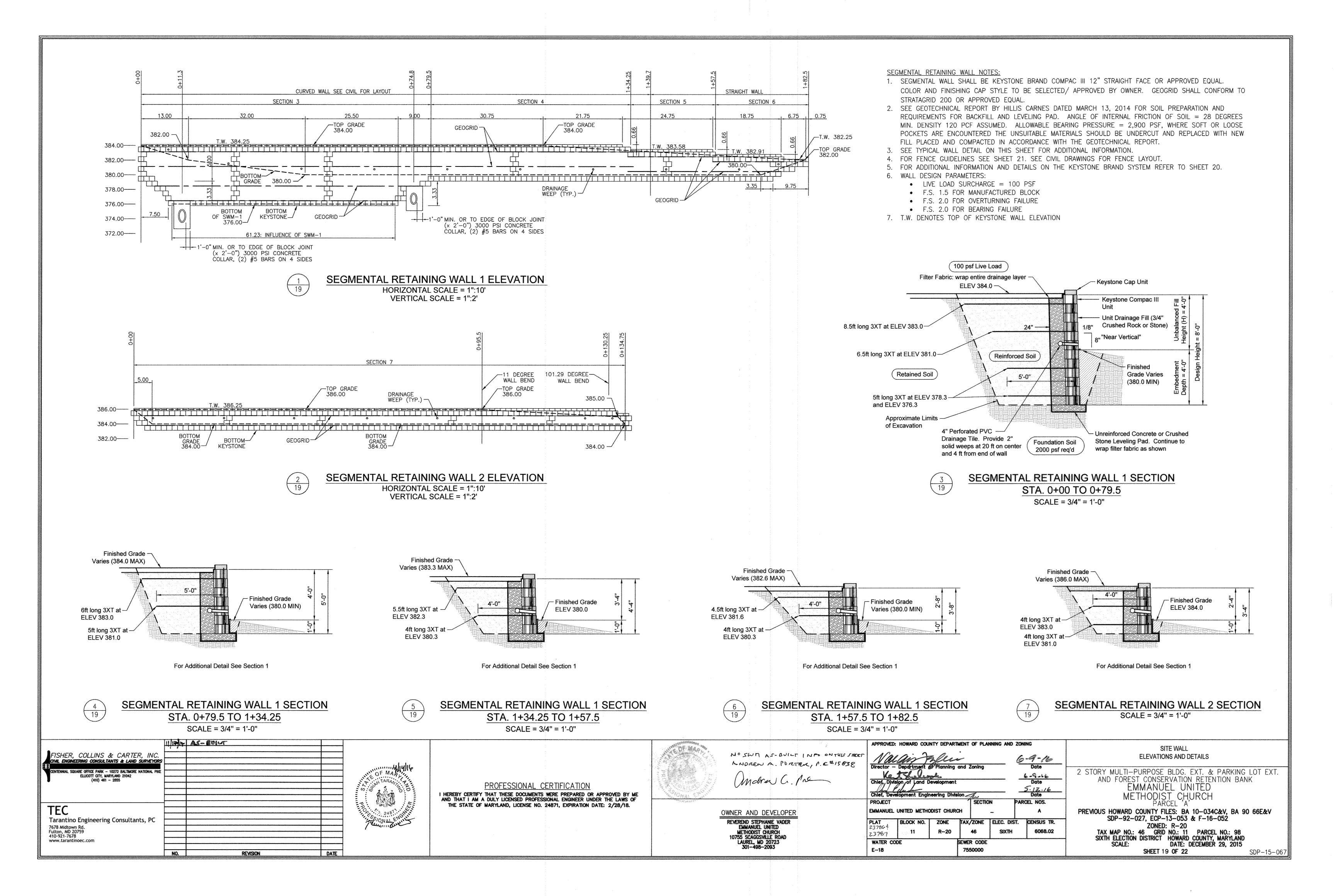
2 STORY MULTI-PURPOSE BLDG. EXT. & PARKING LOT EXT.
AND FOREST CONSERVATION RETENTION BANK
EMMANUEL UNITED
METHODIST CHURCH
PARCEL A

PREVIOUS HOWARD COUNTY FILES: BA 10-034C&V, BA 90 66E&V SDP-92-027, ECP-13-053 & F-16-052

ZONED: R-20

TAX MAP NO.: 46 GRID NO.: 11 PARCEL NO.: 98
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: DATE: DECEMBER 29, 2015

SHEET 18 OF 22 SDP-15-067



MECHANICALLY STABILIZED EARTH, MODULAR RETAINING WALL

PART 1: GENERAL

1.01 Description

- A. Work shall consist of furnishing and construction of a KEYSTONE Compac III Unit Retaining Wall System or equal in accordance with these specifications and in reasonably close conformity with the
- lines, grades, design, and dimensions shown on the plans. Work includes preparing foundation soil, furnishing and installing leveling pad, unit drainage fill and backfill to the lines and grades shown on the construction drawings.
- C. Work includes furnishing and installing geogrid soil reinforcement of the type, size, location, and lengths designated on the construction

1.04 Submittals/Certification

- A. Contractor shall submit a Manufacturer's certification, prior to start of work, that the retaining wall system components meet the requirements of this specification and the structure design.
- B. Contractor shall submit a test report documenting strength of specific modular concrete unit and geogrid reinforcement connection. The maximum design tensile load of the geogrid shall be equal to the laboratory tested ultimate strength of geogrid / facing unit connection at a maximum normal force limited by the "Hinge Height" of the structure divided by a safety factor of 1.5. The connection strength evaluation shall be performed in accordance with ASTM D6638 (NCMA SRWU-1).

1.05 Quality Assurance

- A. Contractor shall submit certification, prior to start of work, that the retaining wall system (modular concrete units and specific geogrid):
- 1) Has been successfully utilized on a minimum of five (5) similar projects, i.e., height, soil fill types, erection tolerances, etc.; and 2) Has been successfully installed on a minimum of 1 million
- (1,000,000) square feet of retaining walls. B. Contractor shall submit a list of five (5) previously constructed projects of similar size and magnitude by the wall installer where the specific retaining wall system has been constructed successfully.

Contact names and telephone numbers shall be listed for each

C. Owner shall/may provide soil testing and quality assurance inspection during earthwork and wall construction operations. Contractor shall provide any quality control testing or inspection not provided by the Owner. Owner's quality assurance program does not relieve the contractor of responsibility for quality control and wall performance.

1.06 Delivery, Storage and Handling

- A. Contractor shall check all materials upon delivery to assure that the proper type, grade, color, and certification have been received
- B. Contractor shall protect all materials from damage due to jobsite conditions and in accordance with manufacturer's recommendations. Damaged materials shall not be incorporated into the work.

PART 2: PRODUCTS

- A. Modular Unit: a concrete retaining wall element machine made from Portland cement, water, and aggregates
- B. Structural Geogrid: a structural element formed by a regular network of integrally connected tensile elements with apertures of sufficient size to allow interlocking with surrounding soil, rock, or earth and function primarily as reinforcement.
- C. Unit Drainage Fill: drainage aggregate, which is placed within and immediately behind the modular concrete units.
- Reinforced Backfill: compacted soil, which is placed within the reinforced soil volume as outlined on the plans.

2.02 Modular Concrete Retaining Wall Units

- A. Modular concrete units shall conform to the following architectural
- Owner may specify standard manufacturers' color. 2. Face finish - sculptured rock face in angular tri-planer

1. Face color - concrete gray, unless otherwise specified. The

- configuration. Other face finishes will not be allowed without written approval of Owner.
- 3. Bond configuration running with bonds nominally located at midpoint vertically adjacent units, in both straight and curved 4. Exposed surfaces of units shall be free of chips, cracks or other
- imperfections when viewed from a distance of 10 feet under Modular concrete materials shall conform to the requirements of
- ASTM C1372 Standard Specifications for Segmental Retaining Wall Units.
- Modular concrete units shall conform to the following structural and geometric requirements measured in accordance with ASTM C140 Sampling and Testing Concrete Masonry Units:
- 1. Compressive strength: 3000 psi (21 MPa);
- 2. Absorption: 8 % (6% in northern states) for standard weight
- 3. Dimensional tolerances: ± 1/8" (3 mm) from nominal unit dimensions not including rough split face, ±1/16" (1.5 mm) unit height - top and bottom planes;
- 4. Unit size: 8" (H) x 18" (W) x 12" (D) minimum;
- 5. Unit weight: 75-lbs/unit (35 kg/unit) minimum for standard weight aggregates.

D. Modular concrete units shall conform to the following performance 3.02 Base Leveling Pad

- Inter-unit shear strength in accordance with ASTM D6916 (NCMA SRWU-2): 600-plf (8 kN/m) minimum at 2-psi (13 kPa)
- normal pressure; 2. Geogrid/unit peak connection strength in accordance with ASTM D6638 (NCMA SRWU-1): 500-plf (7 kN/m) minimum at 2-psi (13 kPa) normal force.
- E. Modular concrete units shall conform to the following constructability requirements:
- Vertical setback = 1/8"± (3 mm) per course (near vertical);
- 2. Alignment and grid positioning mechanism fiberglass pins, two per unit minimum;
- 3. Maximum horizontal gap between erected units shall be 1/2 inch (13 mm).

2.03 Shear Connectors

- A. Shear connectors shall be 1/2-inch (12 mm) diameter thermoset isopthalic polyester resin_pultruded fiberglass reinforcement rods or equivalent to provide connection between vertically and horizontally adjacent units with the following requirements:
- 1. Flexural Strength in accordance with ASTM D4476: 128,000 psi (882 MPa) minimum;
- 2. Short Beam Shear in accordance with ASTM D4475: 6,400 psi (44 MPa) minimum.
- B. Shear connectors shall be capable of holding the geogrid in the proper design position during grid pre_tensioning and backfilling.

2.04 Base Leveling Pad Material

 A. Material shall consist of a compacted crushed stone base or non_reinforced concrete as shown on the construction drawings.

Unit Drainage Fill

A. Unit drainage fill shall consist of clean 1" (25 mm) minus crushed stone or crushed gravel meeting the following gradation tested in accordance with ASTM D-422:

Percent Passing
100
75-100
0 - 10
0 - 5

B. One cubic foot (0.028 m3), minimum, of drainage fill shall be used for each square foot (0.093 m2) of wall face. Drainage fill shall be placed within cores of, between, and behind units to meet this requirement.

2.06 Reinforced Backfill

A. Reinforced backfill shall be free of debris and meet the following gradation tested in accordance with ASTM D-422:

Sieve Size Percent Passing 2-inch (50 mm) 3/4-inch (19 mm) 100-75

No. 40 No. 200 0-35

proposed reinforced fill material.

- Plasticity Index (PI) <15 and Liquid Limit <40 per ASTM D-4318. The maximum aggregate size shall be limited to 3/4 inch (19 mm)
- unless field tests have been performed to evaluate potential strength reductions to the geogrid design due to damage during construction. Material can be site-excavated soils where the above requirements
- can be met. Unsuitable soils for backfill (high plastic clays or organic soils) shall not be used in the backfill or in the reinforced soil mass. D. Contractor shall submit reinforced fill sample and laboratory test results to the Architect/Engineer for approval prior to the use of any

2.07 Geogrid Soil Reinforcement

A. Geosynthetic reinforcement shall be Stratagrid 200 (Ultimate Tensile Strength of 3500 lbs/ft ASTM D6637) or approved equal and shall consist of geogrids manufactured specifically for soil reinforcement applications and manufactured from high tenacity polyester yarn or high-density polyethylene. Mujst be engineered to mechanically and chemically durable in bothe the harsh construction installation phase and aggresive soil environments (pH range from 2-10).

2.08 Drainage Pipe

A. The drainage pipe shall be perforated or slotted PVC pipe manufactured in accordance with ASTM D-3034 or corrugated HDPE pipe manufactured in accordance with AASHTO M252.

2.09 Geotextile Filter Fabric

A. Geotextile filter fabric shall be 4.0 oz/sy, polypropylene, needlepunched nonwoven fabric.

PART 3: EXECUTION

3.01 Excavation A. Contractor shall excavate to the lines and grades shown on the

- construction drawings. Owner's representative shall inspect the excavation and approve prior to placement of leveling material or fill soils. Proof roll foundation area as directed to determine if remedial work is required.
- B. Over_excavation and replacement of unsuitable foundation soils and replacement with approved compacted fill will be compensated as agreed upon with the Owner.

- A. Leveling pad material shall be placed to the lines and grades shown on the construction drawings, to a minimum thickness of 6 inches (150 mm) and extend laterally a minimum of 6" (150 mm) in front and behind the modular wall unit. Soil bearing capacity = 2000 psf.
- B. Soil leveling pad materials shall be compacted to a minimum of 95 % Standard Proctor density per ASTM D-698 or 92% Modified Proctor Density per ASTM D1557.
- C. Leveling pad shall be prepared to insure full contact to the base

surface of the concrete units.

3.03 Modular Unit Installation

- First course of units shall be placed on the leveling pad at the appropriate line and grade. Alignment and level shall be checked in all directions and insure that all units are in full contact with the base
- B. Place the front of units side-by-side. Do not leave gaps between adjacent units. Layout of corners and curves shall be in accordance
- Install shear/connecting devices per manufacturer's recommendations.

with manufacturer's recommendations.

- Place and compact drainage fill within and behind wall units. Place and compact backfill soil behind drainage fill. Follow wall erection and drainage fill closely with structure backfill.
- Maximum stacked vertical height of wall units, prior to unit drainage fill and backfill placement and compaction, shall not exceed two

3.04 Structural Geogrid Installation

- A. Geogrid shall be oriented with the highest strength axis perpendicular to the wall alignment
- B. Geogrid reinforcement shall be placed at the strengths, lengths, and elevations shown on the construction design drawings or as directed by the Engineer.
- C. The geogrid shall be laid horizontally on compacted backfill and attached to the modular wall units. Place the next course of modular concrete units over the geogrid. The geogrid shall be pulled taut, and anchored prior to backfill placement on the geogrid.
- D. Geogrid reinforcements shall be continuous throughout their embedment lengths and placed side-by-side to provide 100% coverage at each level. Spliced connections between shorter pieces of geogrid or gaps between adjacent pieces of geogrid are not permitted

3.05 Reinforced Backfill Placement

- A. Reinforced backfill shall be placed, spread, and compacted in such a manner that minimizes the development of slack in the geogrid and installation damage.
- B. Reinforced backfill shall be placed and compacted in lifts not to exceed 6 inches where hand compaction is used, or 8 inches where heavy compaction equipment is used. Lift thickness shall be decreased to achieve the required density as required.
- Reinforced backfill shall be compacted to a minimum of 95 % Standard Proctor density. The moisture content of the backfill material prior to and during compaction shall be uniformly distributed throughout each layer and shall be dry of optimum, + 0%, - 3%.
- D. Only lightweight hand-operated equipment shall be allowed within 3 feet (1 m) from the tail of the modular concrete unit.
- Tracked construction equipment shall not be operated directly upon the geogrid reinforcement. A minimum fill thickness of 6 inches (150 mm) is required prior to operation of tracked vehicles over the geogrid. Tracked vehicle turning should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.
- F. Rubber tired equipment may pass over geogrid reinforcement at sharp turning shall be avoided.
- G. At the end of each day's operation, the Contractor shall slope the last lift of reinforced backfill away from the wall units to direct runoff away from wall face. The Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

3.06 Cap Installation

- Cap units shall be glued to underlying units with an all-weather adhesive recommended by the manufacturer. 3.07 As-built Construction Tolerances
- A. Vertical alignment: ± 1.5" (40 mm) over any 10' (3 m) distance.
- B. Wall Batter: within 2 degrees of design batter.
- C. Horizontal alignment: ± 1.5" (40 mm) over any 10' (3 m) distance. Corners, bends & curves: ± 1 ft (300 mm) to theoretical location. D. Maximum horizontal gap between erected units shall be 1/2 inch (13

3.08 Field Quality Control

- A. Quality Assurance The Owner shall engage inspection and testing services, including independent laboratories, to provide quality assurance and testing services during construction. The retaining walls shall only be constructed under the observation of a Registered Professional Engineer and a (NICET, WACEL or equivalent) certified soils technician.
- certified soils technician. Testing documentation shall be provided to the Howard County Inspector prior to the start of construction. The required test procedure shall be the Dynamic Cone Penetrometer ASTM STP-399. C. The suitability of fill material shall be confirmed by the onsite soils

B. The required bearing pressure shall be verified in the field by a

- technician. Each eight (8) inch lift shall be compacted to a minimum of 95% Standard Procter Density and the testing report shall be made available to the Howard County Inspector upon completion of
- D. Quality assurance should include foundation soil inspection. Verification of geotechnical design parameters, and verification that the contractor's quality control testing is adequate as a minimum. Quality assurance shall also include observation of construction for general compliance with design drawings and project specifications.

CONCRETE

- 1.1 CODES:
- "Building Code Requirements for Reinforced Concrete, ACI 318", American Concrete Institute
- 2. "ACI Manual of Concrete Practice Parts 1 through 5" 3. "Manual of Standard Practice", Concrete Reinforcing Steel Institute

1.2 CONCRETE MIX PROPERITES

- A. Normal Weight
- B. 28-day strength = 3000 psi
- C. W/C max 0.50 D. Air Content (6% +/- 1.5)
- E. Portland Cement: ASTM C150, Type II.
- F. Cement Substitutes: ASTM C595, Type LS (Limit to 50% max of
- cementitious content by weight) G. Aggregates / Density: ASTM C33 / 145 pcf - Normal weight
- H. Air-Entrainment: ASTM C260

1.4 STEEL REINFORCEMENT:

Deformed Reinforcing Bars: ASTM A615 Grade 60

1.5 GENERAL REQUIREMENTS:

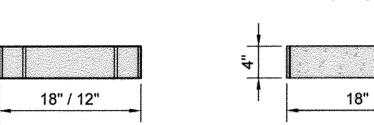
- A. Loads greater than the design live loads shall not be placed on the structure. a concrete structure may not support its design live load until it has reached its specified strength. contractor shall support adjacent structures, utilities, and excavations as required for completion of work.
- B. Provide one set of compressive test cylinders for each 100 cubic yards poured, but not less than one set for each day's pour and each class of concrete, along with slump tests shall be performed by a testing laboratory and reviewed by the architect.
- C. Chamfer all exposed edges ¾" 1.7 SPLICING AND PLACEMENT OF REINFORCEMENT
- A. Splice bars as shown on drawings but not less than 50 bar diameters
- for slabs and beam bottom bars. 1.10 CONSTRUCTION JOINTS:
- A. Construction and control joints in slab on grade shall be arranged to limit maximum length between joints to 30'-0" in any direction. Allow a minimum of 48 hours time between placement of adjacent sections.

1.11 INSPECTION AND TESTING:

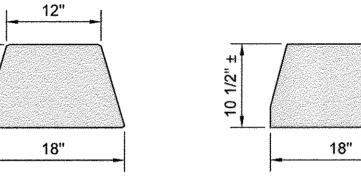
- A. The owner shall engage a testing agency to provide services as indicated below and submit reports.
- B. Cast-in-place concrete
- 1. The agency shall inspect the formwork and reinforcing steel placement for compliance with the contract documents and shop drawings. The agency shall monitor all structural concrete placement for conformance with applicable ACI requirements.
- 2. Sample fresh concrete in accordance with ASTM C172. Mold test cylinders in accordance with ASTM C31.
- The following number of test cylinders shall be cast for each day's pour or each 50 cubic yards, whichever results in more test cylinders. b. For all concrete:
- 2@7 day, 2@28 day Lab Cured - 2@7 day, 2@28 day
- c. The agency will make additional tests of in-place concrete at the contractor's expense when the test results indicate specified concrete strengths have not been attained, as directed by the

Geogrid is to be Placed on Level Backfill and Extended Over the Fiberglass Pins. Place Next Unit. Pull Grid Taught and Backfill. Stake as required.

Grid & Pin Connection



Cap Unit Elevation



Universal Cap Unit Option * Dimensions & Availability

Will Vary by Region

Cap Unit Plan



O*

18"

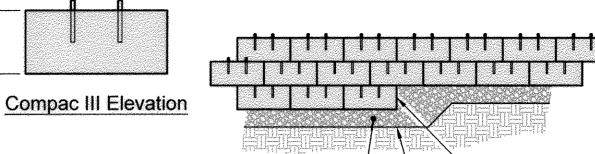
Compac III Plan

Compac III Unit

by Region

Cap Unit Elevation

* Dimensions May Vary



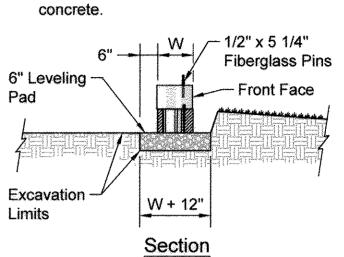
6" Leveling Pad -

 Excavation Limits Elevation

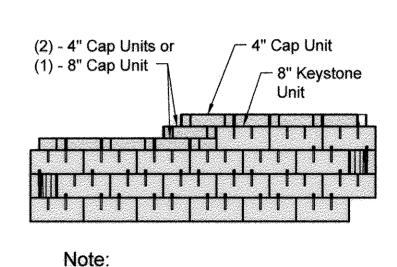
8" or 16"

Wall Step

1. The leveling pad is to be constructed of crushed stone or 2000 psi ± unreinforced



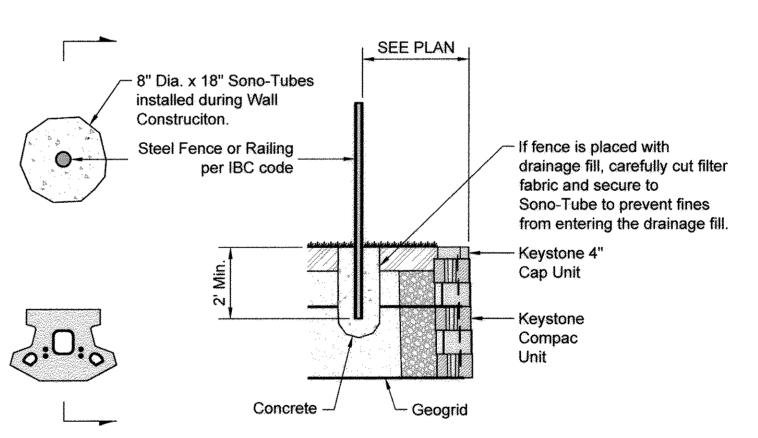
Leveling Pad Detail



Top of Wall Steps

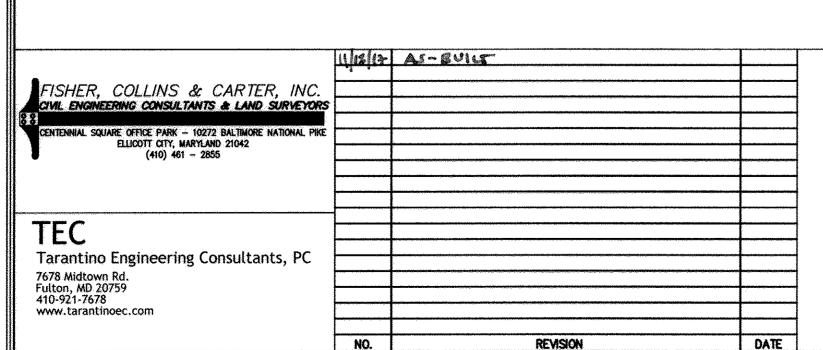
1. Secure all cap units with Keystone

Kapseal or equal.



Fence Plan Detail

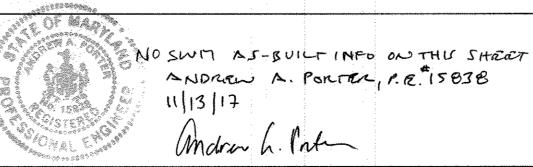
Fence Section Detail Compac Unit - Near Vertical Setback





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. 24871, EXPIRATION DATE: 2/28/18.



OWNER AND DEVELOPER REVEREND STEPHANIE VADER EMMANUEL UNITED METHODIST CHURCH 10755 SCAGGSVILLE ROAD

6-9-16 6-9-16 Chief Division of Land Development 5./7.// Date Chief, Development Engineering Division SECTION PARCEL NOS. PROJECT EMMANUEL UNITED METHODIST CHURCH CENSUS TR. TAX/ZONE | ELEC. DIST. BLOCK NO. ZONE 23786 R-20 6068.02 23787 WATER CODE SEWER CODE 7550000 E-18

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

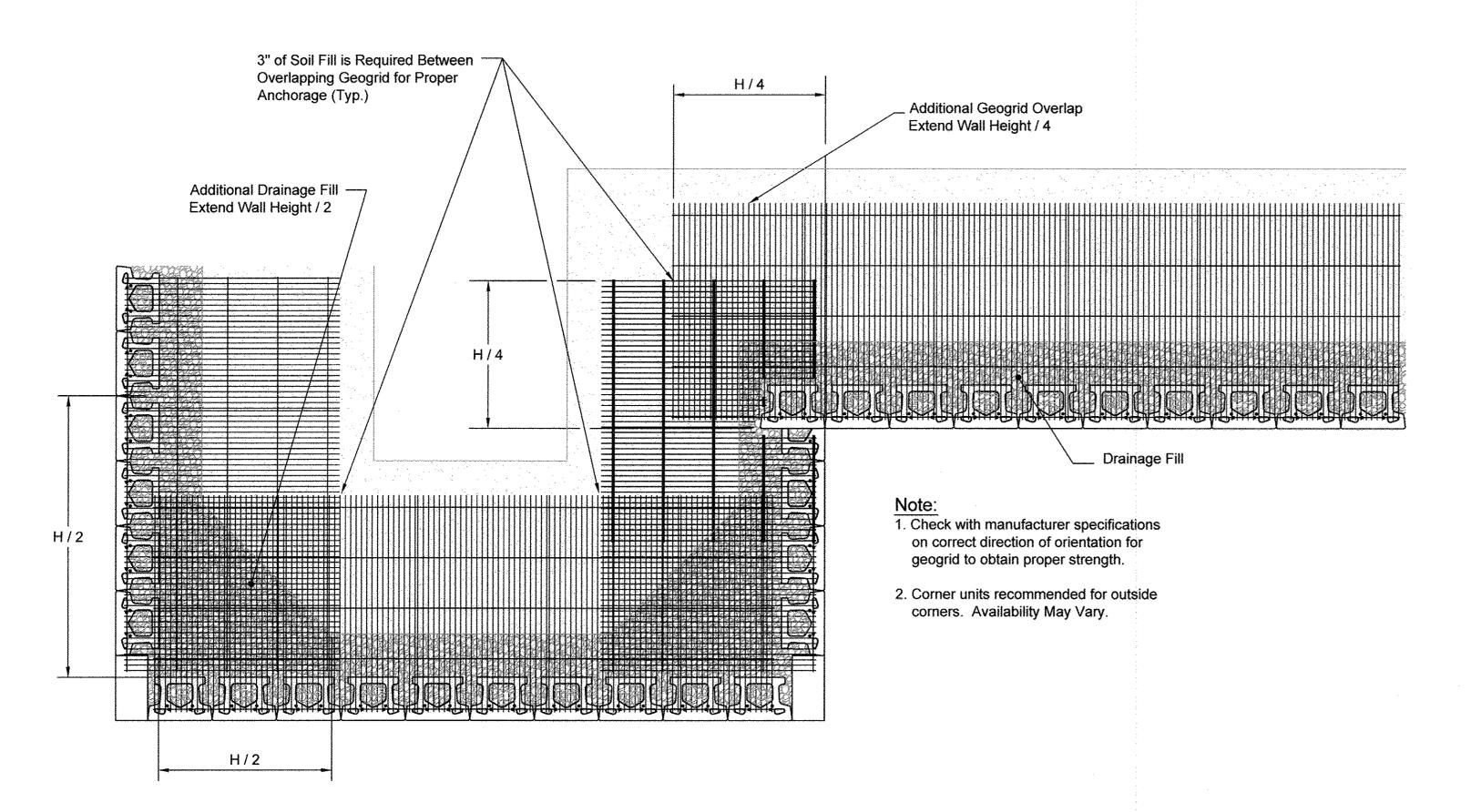
SITE WALL TYPICAL DETAILS AND GENERAL NOTES

2 STORY MULTI-PURPOSE BLDG. EXT. & PARKING LOT EXT. AND FOREST CONSERVATION RETENTION BANK EMMANUEL UNITED METHODIST CHURCH

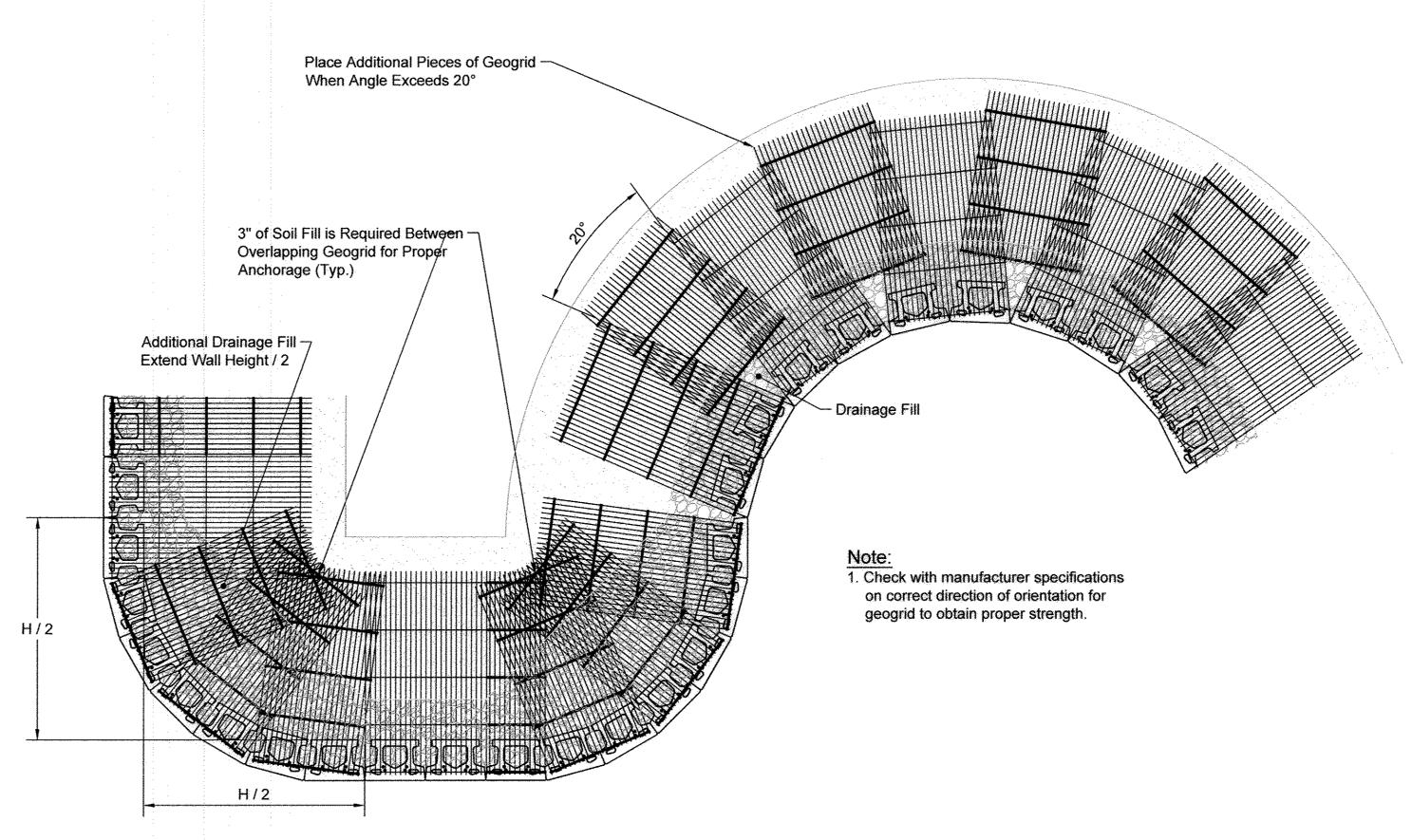
PREVIOUS HOWARD COUNTY FILES: BA 10-034C&V. BA 90 66E&V SDP-92-027, ECP-13-053 & F-16-052 ZONED: R-20 TAX MAP NO.: 46 GRID NO.: 11 PARCEL NO.: 98

SCALE:

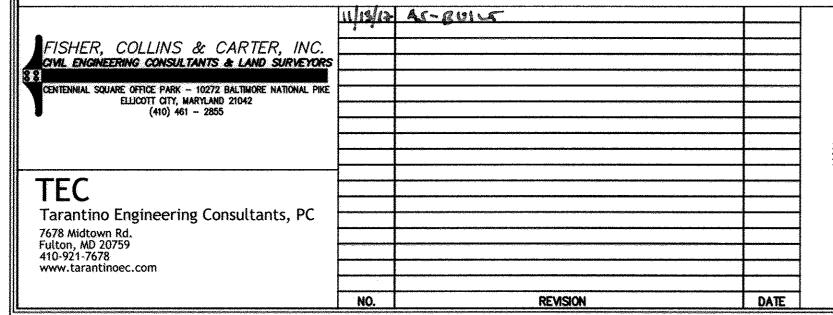
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND DATE: DECEMBER 29, 2015 SHEET 20 OF 22 SDP-15-067



Geogrid Installation at Corners

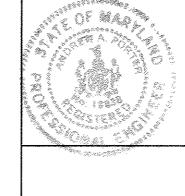


Geogrid Installation on Curves





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. 24871, EXPIRATION DATE: 2/28/18.



NO SWN AS-BUILT INFO ON THIS SHE ANDREW A. POLTER, PE #15838 11/13/17

OWNER AND DEVELOPER REVEREND STEPHANIE VADER EMMANUEL UNITED METHODIST CHURCH 10755 SCAGGSVILLE ROAD LAUREL, MD 20723 301-498-2093

	APPROVED:	HOWARD COU	NTY DEPART	MENT	OF PLAI	NNING AND	ZONII	NG	
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ı	Director -	Department of	Planning	and 2	Zoning		4117177	Date	
	Ved	5 Cil	J.				4	.9-66	
ĺ	Chief, Divis	ion of Land D	evelopment					Date	
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- 1	Chief, Deve	elopment Engin	eering Divis	lon	Mes.		كنسبيه	Date	
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SITE WALL TYPICAL DETAILS

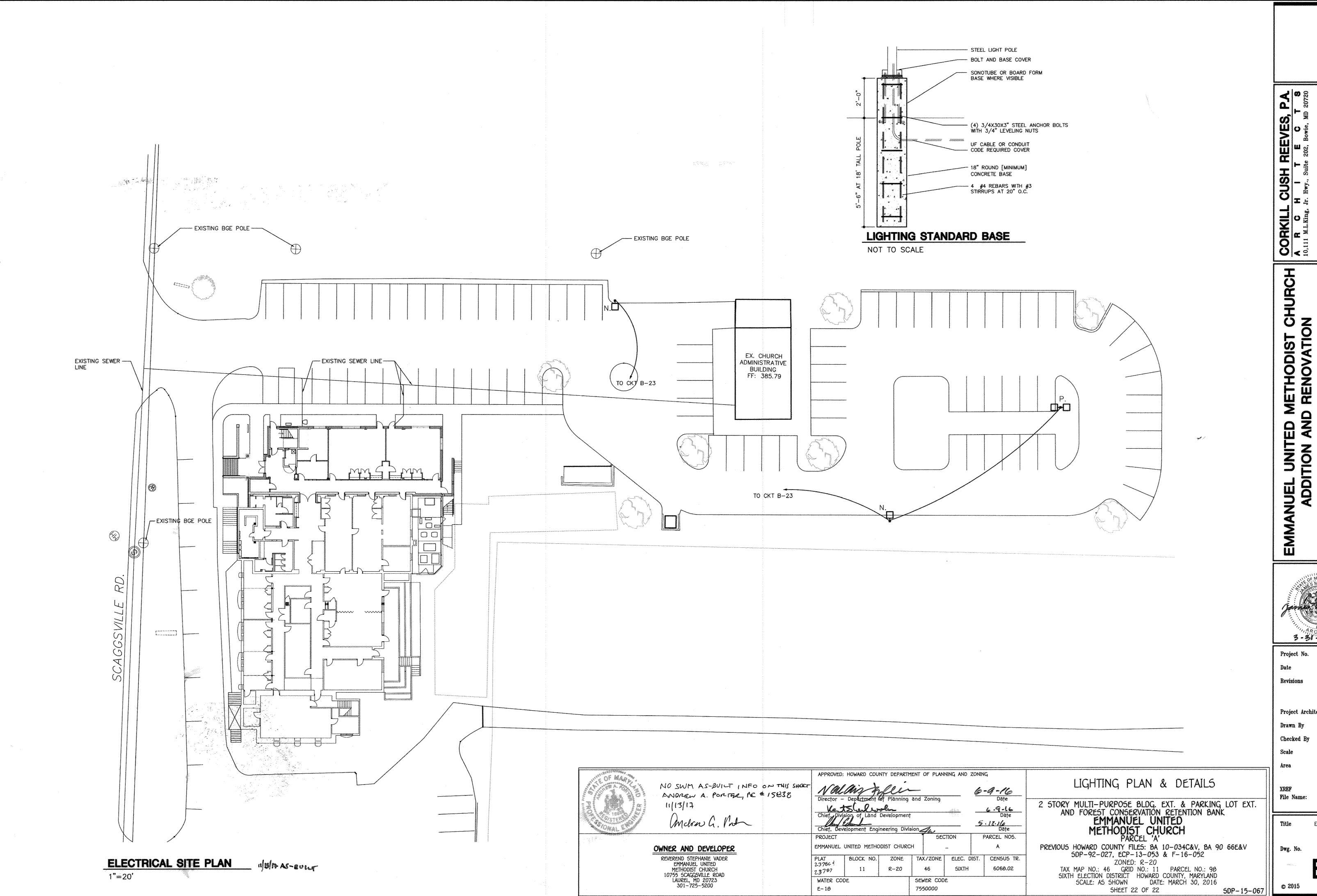
2 STORY MULTI-PURPOSE BLDG. EXT. & PARKING LOT EXT.
AND FOREST CONSERVATION RETENTION BANK
EMMANUEL UNITED
METHODIST CHURCH
PARCEL A

PREVIOUS HOWARD COUNTY FILES: BA 10-034C&V, BA 90 66E&V SDP-92-027, ECP-13-053 & F-16-052

ZONED: R-20

TAX MAP NO.: 46 GRID NO.: 11 PARCEL NO.: 98
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: DATE: DECEMBER 29, 2015

SHEET 21 OF 22 SDP-15-067



METHODIST CHURCH

ND RENOVATION

SGSVILLE ROAD

MD 20723

9/2/15

Project Architect 1'' = 20'

E-site.dwg

ELECTRICAL SITE PLAN

ES1