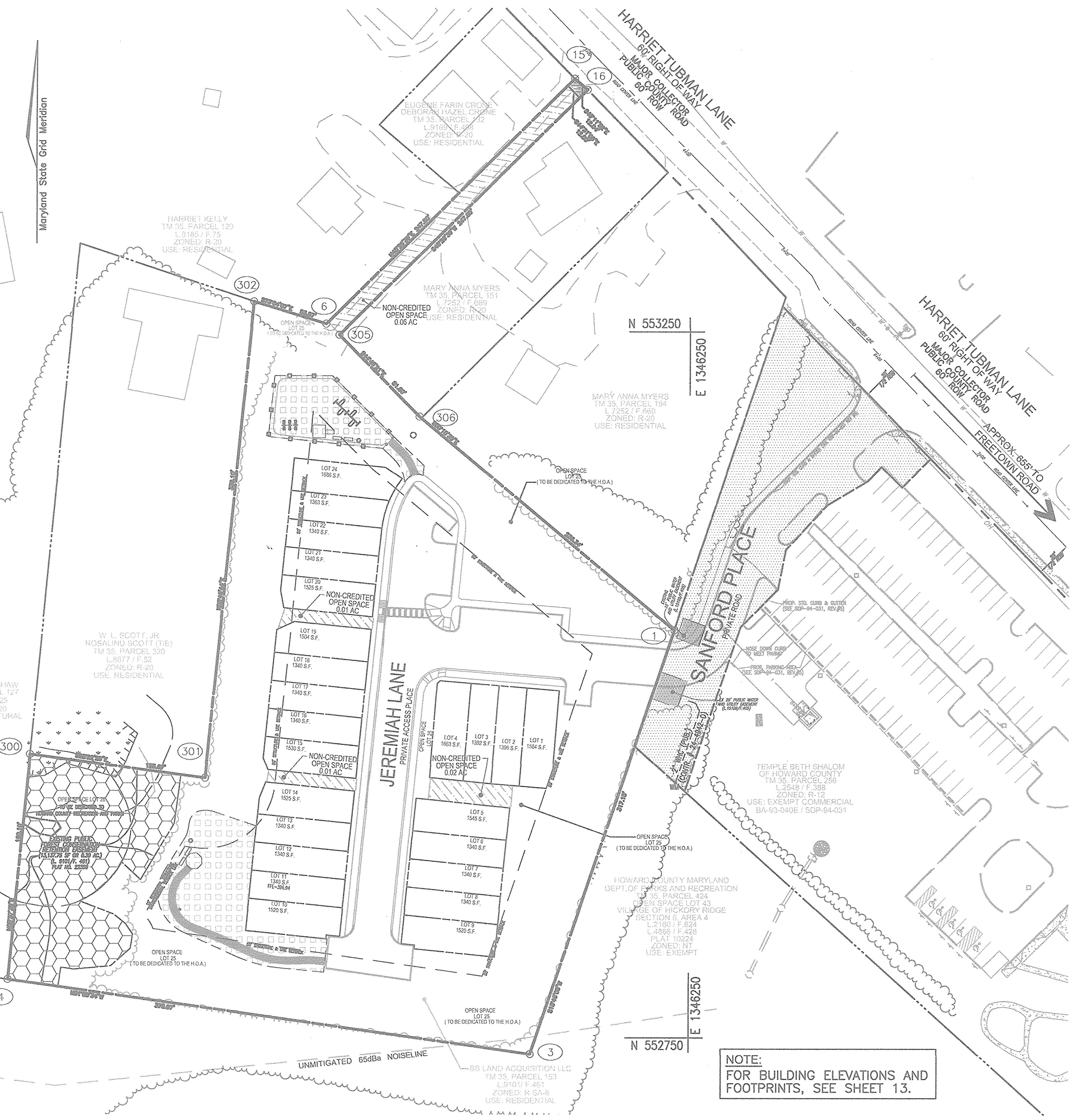
JOSEPH'S COURTYARD
SITE DEVELOPMENT PLAN
LOTS 1-24 AND OPEN SPACE LOTS 25 AND 26 - USE IN COMMON ACCESS (P.256)
SINGLE FAMILY ATTACHED AND RELIGIOUS FACILITY (BA-93-40E)

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY STANDARDS AND SPECIFICATIONS. ALL WORK AND MATERIALS SHALL COMPLY WITH O.S.H.A. STANDARDS.
2. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
3. THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS:
   - MISS UTILITY: 1-800-257-7777
   - VERIZON: 1-800-743-0033
   - BUREAU OF UTILITIES: 410-313-4900
   - AT&T: 1-800-252-1133
   - B.G.&E. (CONSTRUCTION SERVICES): 410-637-8713
   - B.G.&E. (EMERGENCY): 410-685-0123
   - STATE HIGHWAY ADMINISTRATION: 410-531-5533
   - COLONIAL PIPELINE CO.: 410-795-1390
4. EXISTING UTILITIES LOCATED FROM ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND AND SEWER EXTENSION PLANS AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTORS INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
5. THE EXISTING TOPOGRAPHY SHOWN HEREON IS TAKEN FROM AN FIELD RUN TOPOGRAPHIC SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC; DATED JULY, 2006.
6. COORDINATES AND ELEVATIONS ARE BASED ON MARYLAND COORDINATE SYSTEM – NAD83(1991) AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS 3513 AND 41CC.
7. THE PROPERTY LINES SHOWN HEREON IS BASED ON A FIELD-RUN BOUNDARY SURVEY PERFORMED BY ROBERT H. VOGEL ENGINEERING, INC. DATED JULY, 2006.
8. ALL ELEVATIONS ARE TO FLOWLINE/BOTTOM OF CURB UNLESS OTHERWISE NOTED.
9. THE GEOTECHNICAL ENGINEER TO CONFIRM PAVING SECTION PRIOR TO CONSTRUCTION. ALL PAVING TO BE PAVING MINIMUM HOWARD COUNTY STANDARD P-2 UNLESS OTHERWISE NOTED.
10. THE SUBJECT PROPERTY IS ZONED R-SA-8 IN ACCORDANCE WITH THE ZONING REGULATIONS EFFECTIVE ON OCT. 06, 2013, AND IS SUBJECT TO SUBDIVISION AND LAND DEVELOPMENT REGULATIONS EFFECTIVE OCT. 07, 2007 PER COUNCIL BILL 47-2007 & 48-2007. DEVELOPMENT OR CONSTRUCTION ON THIS PROPERTY MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION OR BUILDING/GRADING PERMIT APPLICATIONS.
11. WATER AND SEWER TO BE PUBLIC. PUBLIC WATER AVAILABLE THROUGH CONTRACT NO. 24-3265. PUBLIC SEWER AVAILABLE THROUGH CONTRACT NO. 30-3393.
12. THIS PROJECT IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
13. TO THE BEST OF THE OWNER'S KNOWLEDGE, THERE ARE NO BURIAL GROUNDS, CEMETERIES, OR HISTORIC STRUCTURES LOCATED ON THIS PROPERTY.
14. THERE IS NO 100 YEAR FLOODPLAIN OR STEEP SLOPES AREAS ON THIS SITE.
15. THE FOREST STAND DELINEATION AND LOCATION OF STREAMS, WETLANDS AND OTHER ENVIRONMENTAL FEATURES WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC., DATED SEPTEMBER 12, 2006, UPDATED DECEMBER 2008 AND FEBRUARY 2015.
16. THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST AFFORESTATION THROUGH THE ON-SITE RETENTION OF 0.30 ACRES (13,216.3SF) UNDER THE TERMS OF DEVELOPER AGREEMENT, SDP-08-083. THE REMAINING OBLIGATION OF 0.72 ACRES HAS BEEN SATISFIED THROUGH THE PAYMENT OF A FEE-IN-LIEU IN THE AMOUNT OF $23,522.40 (0.72 x 43560 x $0.75) TO THE HOWARD COUNTY FOREST CONSERVATION FUND. THE FOREST CONSERVATION OBLIGATION REQUIREMENTS WERE PREVIOUSLY APPROVED UNDER SDP-08-083 (BS LAND – MULTIPLEX UNITS). THE NET TRACT AREA OF 5.0 ACRES INCLUDED ALL OF THE DEVELOPMENT OF PARCEL 153 (3.34 ACRES) AS WELL AS 1.65 ACRES OF ASSOCIATED IMPROVEMENTS ON PARCEL 256 (TEMPLE OF BETH SHALOM, SDP-94-031). THE FOREST CONSERVATION CREDIT FOR THE 1.65 AC HAS BEEN TRANSFERRED TO THIS SDP (SDP-16-002) FOR THE INTEGRATED DEVELOPMENT OF SANFORD PLACE AND THE TEMPLE BETH SHALOM.
17. A NOISE STUDY WAS PREVIOUSLY PREPARED BY ROBERT H. VOGEL ENGINEERING AND APPROVED WITH SDP-08-083 DATED, SEPTEMBER 8, 2008.
18. THE 65dba NOISE CONTOUR LINE DRAWN ON THIS DEVELOPMENT PLAN IS ADVISORY AS REQUIRED BY THE HOWARD COUNTY DESIGN MANUAL, CHAPTER 5, REVISED FEBRUARY 1992, AND CANNOT BE CONSIDERED TO EXACTLY LOCATE THE 65 dba NOISE EXPOSURE. THE 65 dba NOISE LINE WAS ESTABLISHED BY HOWARD COUNTY TO ALERT DEVELOPERS, BUILDERS AND FUTURE RESIDENTS THAT AREAS BEYOND THIS THRESHOLD MAY EXCEED GENERALLY ACCEPTED NOISE LEVELS ESTABLISHED BY THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT.
19. HARRIET TUBMAN LANE IS A PUBLIC MAJOR COLLECTOR. ALL PROPOSED STREETS SHALL BE PRIVATE.
20. STORMWATER MANAGEMENT FOR THIS PROJECT IS BEING PROVIDED BY THE USE OF ENVIRONMENTAL SITE DESIGN UTILIZING NON-STRUCTURAL AND MICRO-SCALE PRACTICES, INCLUDING MICRO-BIORETENTION FACILITIES TO ACCOMMODATE THE TOTAL ESD VOLUME REQUIRED. SWM FACILITIES TO BE PRIVATELY OWNED AND MAINTAINED BY THE H.O.A.
21. TRASH AND RECYCLING COLLECTION TO BE PRIVATE.
22. THE PROPOSED UNITS WILL HAVE AN AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM.
23. NO SPECIMEN OR CHAMPION TREES WERE IDENTIFIED ON THE SITE.
24. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S) OR THEIR BUFFERS, FOREST CONSERVATION AREAS AND 100 YEAR FLOODPLAIN UNLESS ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED.
25. ENVIRONMENTAL STUDIES AND REPORTS FOR THIS SITE WERE PREPARED FOR ROBERT H. VOGEL ENGINEERING, INC. BY ECO-SCIENCE PROFESSIONALS, INC., DATED SEPTEMBER, 2014
26. THIS SITE DESIGN PROVIDES THE MINIMUM OF 2.5 PARKING SPACES FOR EACH DWELLING UNIT. SINGLE CAR GARAGES SHALL BE USED FOR PARKING PURPOSES ONLY AND SHALL NOT BE CONVERTED INTO LIVING SPACE OR STORAGE. THE HOUSES/GARAGES HAVE BEEN SITED ON THESE LOTS SO THAT A SECOND CAR, IF PARKED IN THE DRIVEWAY, WILL NOT OVERHANG INTO THE PAVED AREA OF THE ADJACENT SIDEWALK OR STREET. THIS DESIGN REQUIRES A MINIMUM OF 18 FEET AS MEASURED FROM THE GARAGE TO THE EDGE OF THE SIDEWALK. THE ADDITIONAL 0.5 PARKING SPACE PER UNIT IS PROVIDED ON-SITE WITHIN THE 3 PAVED PARKING AREAS.
27. REFUSE AND RECYCLING COLLECTION TO BE PRIVATE.
28. ANY DAMAGE TO PUBLIC RIGHT-OF-WAY, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
29. ALL REINFORCED CONCRETE FOR STORM DRAIN STRUCTURES SHALL HAVE A MINIMUM OF 28 DAYS STRENGTH OF 3,500 P.S.I.
30. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
31. ESTIMATES OF EARTHWORK QUANTITIES ARE PROVIDED SOLELY FOR THE PURPOSE OF CALCULATING FEES.
32. SOIL COMPACTION SPECIFICATIONS, REQUIREMENTS, METHODS AND MATERIALS ARE TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER. GEOTECHNICAL ENGINEER TO CONFIRM ACCEPTABILITY OF PROPOSED PAVING SECTION, BASED ON SOIL TEST PRIOR TO CONSTRUCTION.
33. ALL CURB AND GUTTER TO BE HOWARD COUNTY STANDARD DETAIL 3.01 UNLESS OTHERWISE NOTED.
34. CONTRACTOR RESPONSIBLE FOR CONSTRUCTING ALL HANDICAP RAMPS AND HANDICAP ACCESS IN ACCORDANCE WITH CURRENT ADA REQUIREMENTS.
35. WHERE DRAINAGE FLOWS AWAY FROM CURB, CONTRACTOR TO REVERSE THE GUTTER PAN.
36. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
37. ALL STORMDRAIN PIPE BEDDING IS TO BE CLASS 'C'.
38. ALL BUILDINGS TO HAVE ROOF LEADERS WHICH EMPTY ONTO SPLASH BLOCKS. DRAINAGE FROM SPLASH BLOCKS TO BE DIRECTED TOWARD THE SWALES AND/OR PARKING LOT AREAS, WHICH LEADS TO BIORETENTION FACILITIES.
39. GEOTECHNICAL REPORT PREPARED BY HILLIS-CARNES ENGINEERING ASSOCIATES, INC., DATED DECEMBER 05, 2007.
40. TRAFFIC STUDY PREPARED BY THE TRAFFIC GROUP DATED FEBRUARY 4, 2008.
41. THE EXISTING HOUSE AND ALL STRUCTURES WITHIN PARCEL 153 HAS BEEN REMOVED PRIOR TO SUBMISSION OF THE ASSOCIATED FINAL PLAT ORIGINALS, IN ACCORDANCE WITH HOWARD COUNTY REGULATIONS.
42. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. THE REQUIRED PARKING AND PERIMETER LANDSCAPING WILL BE BONDED PER THIS SUBMISSION. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DEVELOPERS AGREEMENT UNDER THIS SITE DEVELOPMENT PLAN IN THE AMOUNT OF $28,350.00 FOR THE REQUIRED 61 SHADE TREES AND 67 EVERGREENS. FINANCIAL SURETY FOR THE REQUIRED STREET TREE PLANTINGS HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $8,100.00 FOR THE REQUIRED 27 SHADE TREES.
43. ANY EXISTING STREET TREES DAMAGED OR DESTROYED DURING CONSTRUCTION WILL BE REPLACED BY THE CONTRACTOR.
44. THIS PROJECT IS SUBJECT TO COMPLIANCE WITH THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. DEVELOPMENT OR CONSTRUCTION ON THIS PROPERTY MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION OR BUILDING/GRADING PERMIT APPLICATIONS.
45. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) – 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
46. ALL EXTERIOR LIGHTING TO COMPLY WITH THE REQUIREMENTS FOUND IN ZONING SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS. (DETAILS ON SHEET 3 AND 6)
47. LIGHT TRESPASS ONTO A PROPERTY IN THE R-20 ZONING DISTRICT SHALL BE LIMITED TO 0.1 FOOT CANDLES ALONG THE PROJECT BOUNDARY AND COMPLY WITH ALL ZONING REGULATIONS. NO LIGHT SHALL BE EMITTED ABOVE A HORIZONTAL PLANE THROUGH THE LOWEST PART OF THE LAMP, AS CERTIFIED BY THE LIGHTING MANUFACTURER, OR AS PROVIDED ON A PHOTOMETRIC TEST PLAN FOR THIS SITE. LIGHT FIXTURES WITH THE FOLLOWING CHARACTERISTICS ARE PERMITTED WITHOUT CUTOFF SHIELDS:
   A. THE LAMP(S) HOUSED BY THE FIXTURE DO NOT EMIT A TOTAL OF MORE THAN 16,000 LUMENS FOR FREESTANDING STRUCTURES, AND 10,000 LUMENS FOR FIXTURES ATTACHED TO STRUCTURES, BASED ON THE MANUFACTURERS LUMEN RATING FOR THE INITIAL LIGHT OUTPUT OF THE LAMP(S).
   B. THE LAMP IS NO MORE THAN 14 FEET ABOVE GROUND LEVEL FOR FREESTANDING FIXTURES, OR 8 FEET ABOVE GROUND LEVEL FOR FIXTURES ATTACHED TO STRUCTURES.
   C. FOR FIXTURES WITH SHIELDS OR OTHER DESIGN FEATURES TO DIRECT THE LIGHT, THE LIGHT IS NOT DIRECTED TOWARDS ADJACENT PROPERTIES OR PUBLIC STREETS.
   D. THE SURFACE OF EITHER THE LAMP, OR THE FIXTURE ENCLOSING THE LAMP, IS FROSTED OR TRANSLUCENT RATHER THAN TRANSPARENT.
48. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993). A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
49. THE GAZEBO AND SEATING AREA SHALL BE AT-GRADE AND THE WALKING PATH SHALL COMPLY WITH FEDERAL, STATE, AND LOCAL ACCESSIBILITY REGULATIONS OR GUIDELINES.
50. THIS PROJECT IS SUBJECT TO A SHARED ACCESS AND MAINTENANCE AGREEMENT (L.16117/F.001); RECORDED 04/07/15; BY AND BETWEEN BS LAND ACQUISITION (PARCEL 153) AND TEMPLE BETH SHALOM OF HOWARD COUNTY (PARCEL; 256, SDP-94-031).
51. THIS PLAN IS SUBJECT TO A DESIGN MANUAL WAIVER TO THE FOLLOWING DESIGN MANUAL:
   A. DESIGN MANUAL VOLUME III, SECTION 2.5.B.9; APPROVED 04/18/13; TO ALLOW THE SIGHT DISTANCE MEASURMENT FROM A POINT ON THE CENTERLINE OF THE ACCESS POINT TO THE EDGE OF TRAVEL TO BE REDUCED TO 5'.
52. IN ACCORDANCE WITH SECTION 128.0 OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS, OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS. PORCHES OR DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACK.
53. SECTION 127.4.E.4. OF THE ZONING REGULATIONS REQUIRES MINIMUM DISTANCES BETWEEN RESIDENTIAL BUILDINGS (EVEN IF THE BUILDINGS INCLUDE OTHER USES). THOSE DISTANCES ARE AS FOLLOWS: SIDE TO SIDE –15 FEET; ALL OTHER FACADE RELATIONSHIPS– 30 FEET.
54. DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
   A. WIDTH – 12 FEET (16 FEET IF SERVING MORE THAN ONE RESIDENCE; MODIFIED TO 9' WIDTH FOR TOWNHOUSE UNITS.)
   B. SURFACE – 6 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING
   C. GEOMETRY – MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE, AND MINIMUM 45 FOOT TURNING RADIUS
   D. STRUCTURES (CULVERTS/BRIDGES) – MUST SUPPORT 25 GROSS TON LOADING (H25 LOADING)
   E. DRAINAGE ELEMENTS – CAPABLE OF SAFELY PASSING 100 YEAR FLOOD EVENTS WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE
   F. STRUCTURE CLEARANCES – MINIMUM 12 FEET
   G. MAINTENANCE – SUFFICIENT TO INSURE ALL WEATHER USE
55. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS 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 MANAGMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
56. THE EXISTING WELL AND ONSITE SEWAGE DISPOSAL SYSTEM SHALL BE PROPERLY ABANDONED WITH DOCUMENTATION SUBMITTED TO THE HEALTH DEPARTMENT PRIOR TO HEALTH SIGNATURE OF THE RECORD PLAT.
57. THIS PROJECT IS SUBJECT TO WP-16-068; APPROVED 12/30/2015; TO WAIVE SECTION 16.120(C)(4) TO ALLOW SINGLE FAMILY ATTACHED LOT TO BE LOCATED UP TO 600' FROM A PUBLIC ROAD RIGHT-OF WAY (HARRIET TUBMEN LANE), AND SECTIONS 16.102 AND 16.144 (b). APPROVAL SUBJECT TO THE FOLLOWING CONDITIONS:
   1. COMPLIANCE WITH ANY SUBDIVISION REVIEW COMMITTEE(SRC) COMMENTS BASED ON THE REVIEW AND APPROVAL OF THE ASSOCIATED FINAL SUBDIVISION PLAT (F-16-054), THE SITE DEVELOPMENT PLAN (SDP-16-002), AND THE RED-LINE REVISION WHICH IS REQUIRED TO SHOW THE ASSOCIATED AND REQUIRED IMPROVEMENTS FOR THIS DEVELOPMENT ON PARCEL 256, TEMPLE BETH SHALOM (SDP-94-031).
   2. A GENERAL NOTE SHALL BE ADDED TO SDP-16-002 THAT CLEARLY STATES THAT ALL INTERNAL ROADS (SANFORD PLACE AND JEREMIAH LANE) IN THIS DEVELOPMENT ARE PRIVATELY OWNED AND THEY ARE TO BE MAINTAINED BY THE SANFORD PLACE HOMEOWNER'S ASSOCIATION (HOA), WHICH WILL PROVIDE PRIVATE TRASH COLLECTION AND SNOW REMOVAL SERVICES.
58. THIS PROJECT IS SUBJECT TO AA-15-013; APPROVED 01/29/16; TO REDUCE THE REQUIRED 50' USE SETBACK TO 40' TO ACCOMODATE PARKING SPACES, TEE TURNAROUND AND DRIVEWAY TURNAROUND AREA. APPROVAL SUBJECT TO THE FOLLOWING CONDITIONS:
   A. THE PETITIONER SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND COUNTY LAWS AND REGULATIONS.
   B. THE GRANTED ADMINISTRATIVE ADJUSTMENT SHALL APPLY SOLELY TO THE INSTALLATION OF 2 PARKING SPACESAND A PRIVATE ROADWAY TURNAROUND ON THE PROPERTY AS DEPICTED ON THE ADMINISTRATIVE ADJUSTMENTPLAN SUBMITTED BY THE PETITIONER AND NOT TO ANY OTHER STRUCTURE, ADDITION, BUILDING OR USE.
   C. THIS DECISION AND ORDER SHALL BE MAINTAINED IN THE OWNER'S PROPERTY RECORDS AND SHALL BETRANSFERRED TO ANY SUCCEEDING OWNER OF THE PROPERTY.
59. THIS PLAN IS SUBJECT TO A DESIGN MANUAL WAIVER TO THE FOLLOWING DESIGN MANUAL:
   A. DESIGN MANUAL VOLUME III, SECTION 2.8; APPROVED 12/16/15; TO ALLOW THE USE OF A SINGLE CROSS SLOPE FOR JEREMIAH LANE
60. PRIVATE RANGE OF ADDRESS SIGNS SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNERS EXPENSE.
61. SIDEWALK CONSTRUCTION WITHIN AND ALONG THE FRONTAGE OF PARCEL 256 (AS SHOWN ON REDLINE REVISION #5 OF SDP-94-031, TEMPLE BETH SHALOM) SHALL BE BONDED AND UNDER THE TERMS OF A DPW DEVELOPER AGREEMENT. EXECUTION OF THE DPW DEVELOPER AGREEMENT IS REQUIRED PRIOR TO SIGNATURE APPROVAL OF SDP-16-002.
62. THE OPEN SPACE SHOWN HEREON IS HEREBY DEDICATED TO THE HOMEOWNERS ASSOCIATION FOR THE RESIDENTS OF THIS SUBDIVISION. PROTECTIVE COVENANTS GOVERNING THE MAINTENANCE OF COMMUNITY OWNED OPEN SPACE WILL BE RECORDED SIMULTANEOUSLY WITH THE RECORDATION OF THIS PLAT (F-16-054). THE ARTICLES OF INCORPORATION FOR THE HOMEOWNERS ASSOCIATION WERE FILED WITH THE STATE DEPARTMENT OF ASSESSMENTS AND TAXATION ON 03/21/16, RECEIPT NO. D17133273.
63. THE 65DBA NOISE CONTOUR LINE SHOWN ON THIS SITE DEVELOPMENT PLAN IS ADVISORY AS REQUIRED BY THE HOWARD COUNTY DESIGN MANUAL AND CANNOT BE CONSIDERED TO EXACTLY LOCATE THE 65DBA NOISE EXPOSURE. THE 65DBA NOISE LINE WAS ESTABLISHED BY HOWARD COUNTY TO ALERT DEVELOPERS, BUILDERS AND FUTURE RESIDENTS THAT AREAS BEYOND THIS THRESHOLD MAY EXCEED GENERALLY ACCEPTED NOISE LEVELS ESTABLISHED BY THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT.
64. THE MODERATE INCOME HOUSING UNIT AGREEMENT (MIHU) AND COVENANT FOR THE 3 REQUIRED DWELLING UNITS HAS BEEN RECORDED IN THE HOWARD COUNTY LAND RECORDS ON JUNE 23, 2016 SIMULANEIOUSLY WITH THE RECORDATION OF THE FINAL PLAT, F-16-054.



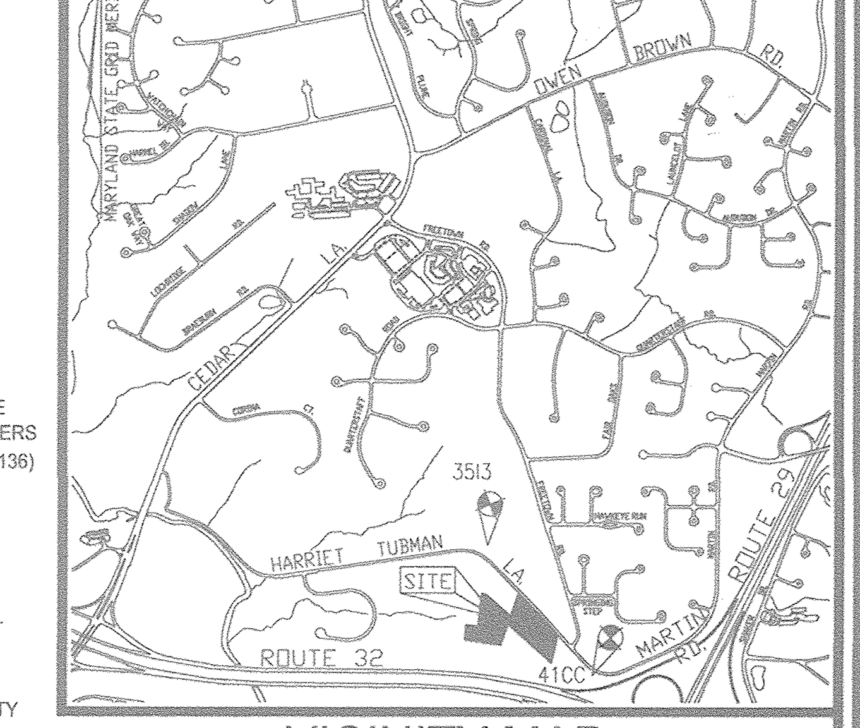
NOTE:
FOR BUILDING ELEVATIONS AND FOOTPRINTS, SEE SHEET 13.

LOCATION PLAN
SCALE: 1"=60'

SCALE 1"=60'
30' 0' 60'

LEGEND

- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING TREELINE (FIELD LOCATED)
- PROPOSED FENCE AROUNF TOT LOT
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING STREAM
- EXISTING STREAM BUFFER
- PROPOSED CURB AND GUTTER
- PROPOSED CURB TRANSITION
- PROPOSED TREELINE
- PROPOSED SIDEWALK
- EXISTING 10' PRIVATE DRAINAGE AND UTILITY EASEMENT (PLAT NO. 23834)
- RECREATION OPEN SPACE AMENITY AREA
- EXISTING VARIABLE WIDTH PUBLIC SEWER, WATER AND UTILITY EASEMENT (PLAT NO. 23834)
- EX. FOREST CONSERVATION "RETENTION" EASEMENT (L.9101/F.461) (PLAT NO. 22359)
- EXISTING WETLANDS
- EXISTING 24' PUBLIC WATER ACCESS & UTILITY EASEMENT (L.3321/F.548)
- EXISTING 20' PUBLIC SEWER AND UTIL EASEMENT (L.3544/F.44)
- EXISTING 12' RIGHT OF WAY, PRIVATE WATER & USE IN COMMON WITH OTHERS (L.9101/F.461) (L.8877/F.52) (L.11855/F.136)
- EXISTING 15' PRIVATE ACCESS EASMENT (L.8877/F.52) (L.9101/F.461)
- EXISTING USE-IN-COMMON ACCESS MAINTENANCE AND SIGN EASEMENT (L.16117/F.001)
- EXISTING 20' PUBLIC WATER & UTILITY EASEMENT TO BE ABANDONED (L.15109/F.510)
- EXISTING PUBLIC WATER AND UTILITY EASEMENT (L.15109/F.405)
- NON-CREDITED OPEN SPACE AREA



VICINITY MAP
SCALE: 1"=2000'
ADC MAP COORDINATE: 15-D11

BENCHMARKS

NO.	NORTHING	EASTING	ELEVATION
3513	553573.708	1346098.13	415.39
41CC	552494.272	1347062.44	400.00

3513 – (CONC. MONUMENT)
30.7' NORTH EAST OF BGE POLE #334579, ON THE NORTH SIDE OF HARRIET TUBMAN LANE.
41CC – (CONC. MONUMENT)
4.6" BACK FROM SOUTH EDGE OF MARTIN ROAD.

SITE DATA

LOCATION: CLARKSVILLE, MD.; TAX MAP 35, BLOCK 24, PARCEL 153 & P/O 256
5TH ELECTION DISTRICT
PRESENT ZONING: R-SA-8 (PARCEL 153) / R-12 (PARCEL 256)
PARCEL AREA: PARCEL 153=3.34 AC. / *PART OF PARCEL 256= 0.15 AC. TOTAL: 3.49 AC.
(*INCLUDES ONLY THE LOD WITHIN PARCEL 256 ACCESS EASEMENT)
DEED REFERENCES: L.9101/F.461 (P. 153), L.2548/F.388 (P. 256)
DPZ REFERENCES: BA-589-D, BA-93-040E, BA-663-D, BA-07-008C, ZRA-071, F-07-050 (VOIDED), WP-07-076, WP-09-027, WP-10-041, WP-11-066, WP-12-012, WP-12-136, WP-13-082, WP-13-135, WP-14-127, SDP-08-083, SDP-08-083FC, 24-45-68-D, SDP-94-031, ECP-15-037, WP-15-137, AA-15-013, F-16-054
USE OF STRUCTURES: (P. 153) SINGLE FAMILY ATTACHED RESIDENTIAL
(P. 256) RELIGIOUS FACILITY (BA-93-40E)

ALLOWABLE NUMBER OF UNITS: 3.34 AC. x 8 UNITS/NET AC. = 26 UNITS
OVERALL DEVELOPMENT PROPOSED UNITS: 24 UNITS
OVERALL DEVELOPMENT MIHU REQUIRED – SINGLE FAMILY ATTACHED: 24 UNITS x 10% = 2.4 UNITS
OVERALL DEVELOPMENT MIHU PROVIDED – SINGLE FAMILY ATTACHED: 3 UNITS

TOTAL BUILDING COVERAGE: 20,325 SF (0.47 AC. OR 14.07% OF GROSS AREA)
PAVED AREA ON SITE: 31,013 SF (0.71 AC. OR 22.16% OF GROSS AREA)
LANDSCAPE ISLANDS: (1 PER 20 SPACES) = 2 ISLANDS
AREA OF LANDSCAPE ISLANDS: 719 SF (0.02 AC. OR 0.49% OF GROSS AREA)
LIMIT OF DISTURBED AREA: 131,168 SF / 3.01 AC
WETLANDS ON SITE: 0.01 AC.
WETLAND BUFFERS ON SITE: 0.54 AC.
STREAMS AND THEIR BUFFERS ON SITE: 0.16 AC.
AREA OF ON-SITE 100 YEAR FLOODPLAIN: 0.00 AC.
AREA OF EXISTING FOREST ON SITE: 0.30 AC.
AREA OF STEEP SLOPES (15% OR GREATER): 0.00 AC
AREA OF ERODIBLE SOILS: 0.00 AC.
AREA MANAGED BY ESDV (THIS PLAN): 3.16 AC.
IMPERVIOUS AREA : 1.18 AC.
GREEN AREA: 1.83 AC.

TOTAL AREA OF OPEN SPACE REQUIRED: 3.34 AC. X 0.25 = 0.84 AC.
TOTAL AREA OF OPEN SPACE PROVIDED (PARCEL 153): 2.55 AC.

TOTAL AREA OF RECREATIONAL OPEN SPACE REQUIRED: 16,200 SF
24 UNITS x 400 SF/UNIT = 9,600 SF
22 UNITS (NON-USABLE REAR YARD) x 300 SF/UNIT = 6,600 SF ADDITIONAL REQUIRED
(UNITS 1 AND 3 HAVE USABLE REAR YARDS GREATER THAN 15')
TOTAL AREA OF RECREATIONAL OPEN SPACE PROVIDED: 17,088 SF
TOT LOT AREA= 3,577 SF
PLAY GROUND EQUIPMENT= 2,000 SF
2 BENCHES (2X200)= 400 SF
ASPHALT PATH (153 SF X 3)= 459 SF
GAZEBO AREA= 6,474 SF
GAZEBO= 2,000 SF
2 BENCHES (2X200)= 400 SF
MULCH PATH (889 SF X 2)= 1,778 SF

AS-BUILT CERTIFICATION FOR PSWM

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

Robert Vogel 16193 2/5/19
P.E. NAME P.E. # DATE

STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — PROFESSIONAL ENGINEER — 2/20/19

NO AS-BUILT INFORMATION ON THIS SHEET.

OWNER (PARCEL 256)
TEMPLE BETH SHALOM OF HOWARD COUNTY
8070 HARRIET TUBMAN LANE
COLUMBIA, MD. 21044

OWNER (PARCEL 153)
JOSEPH'S COURTYARD, LLC
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480-0023

OWNER/DEVELOPER (PARCEL 153)
TRINITY HOMES MARY LAND, LLC.
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480-0023

ADDRESS CHART

BUILDING NO.	STREET ADDRESS
1	8131 SANFORD PLACE
2	8133 SANFORD PLACE
3	8135 SANFORD PLACE
4	8137 SANFORD PLACE
5	8227 JEREMIAH LANE
6	8229 JEREMIAH LANE
7	8231 JEREMIAH LANE
8	8233 JEREMIAH LANE
9	8235 JEREMIAH LANE
10	8234 JEREMIAH LANE
11	8232 JEREMIAH LANE
12	8230 JEREMIAH LANE
13	8228 JEREMIAH LANE
14	8226 JEREMIAH LANE
15	8222 JEREMIAH LANE
16	8220 JEREMIAH LANE
17	8218 JEREMIAH LANE
18	8216 JEREMIAH LANE
19	8214 JEREMIAH LANE
20	8210 JEREMIAH LANE
21	8208 JEREMIAH LANE
22	8206 JEREMIAH LANE
23	8204 JEREMIAH LANE
24	8202 JEREMIAH LANE

SHEET INDEX

COORDINATE TABLE

POINT	NORTH	EAST
1	553038.6757	1346239.2545
3	552791.3935	1346137.2172
4	552791.1997	1345764.9718
6	553255.5368	1345990.9070
15	553429.1837	1346167.2673
16	553421.3164	1346176.3808
300	552950.5283	1345780.6678
301	552933.8505	1345905.2263
302	553271.2257	1345939.3704
305	553247.6695	1346000.0205
306	553189.7745	1346057.5246

PARKING TABULATION CHART

PARKING SPACES REQUIRED:	2.0 SPACES PER UNIT = 48 SPACES 0.5 SPACES/UNIT VISITOR PARKING = 12 SPACES	
TOTAL PARKING SPACES REQUIRED:		60 SPACES
SPACES PROVIDED WITHIN GARAGES:	1 x 24 UNITS	24 SPACES
SPACES PROVIDED IN DRIVEWAYS:	1 x 24 UNITS	24 SPACES
SPACES PROVIDED FOR VISITOR PARKING:		14 SPACES
TOTAL SPACES PROVIDED:		62 SPACES

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 11.29.16
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 12-05-16
DIRECTOR	DATE 12-5-16

PERMIT INFORMATION CHART

SUBDIVISION NAME			SECTION/AREA		PARCEL NUMBER	
SANFORD PLACE			N/A		153; P/O 256	
DEED REF.	BLOCK NO.	ZONE	TAX/ZONE	ELECT. DIST.	CENSUS TR. #	
L 09101/F 0461 L 02548/F 0388	24	R-SA-8 R-12	35	5TH	605602	
WATER CODE: E29			SEWER CODE: 5324500			

NO.	REVISION	DATE
1	REVISE PLAN TO ACCOMODATE BUILDER HOUSE MODEL	10/28/16

REVISED SITE DEVELOPMENT PLAN
COVER SHEET
JOSEPH'S COURTYARD
LOTS 1-24 AND OPEN SPACE LOTS 25 AND 26 - USE IN COMMON ACCESS (P.256)
SINGLE FAMILY ATTACHED AND RELIGIOUS FACILITY (BA-93-40E)
ZONED: PARCEL 153 (R-SA-8) / PARCEL 256 (R-12)
L.09101/F.0461/L. 02548/F. 0388
TAX MAP 35 BLOCK 24 — PARCEL 153: P/O 256
5TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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

STATE OF MARYLAND — ROBERT HARRIS VOGEL — NO. 16193 — REGISTERED PROFESSIONAL ENGINEER — 10/31/16
ROBERT H. VOGEL, PE No.16193

DESIGN BY:	RHV/GAH
DRAWN BY:	GAH/KG
CHECKED BY:	RHV
DATE:	MAY 2016
SCALE:	AS SHOWN
W.O. NO.:	05-84

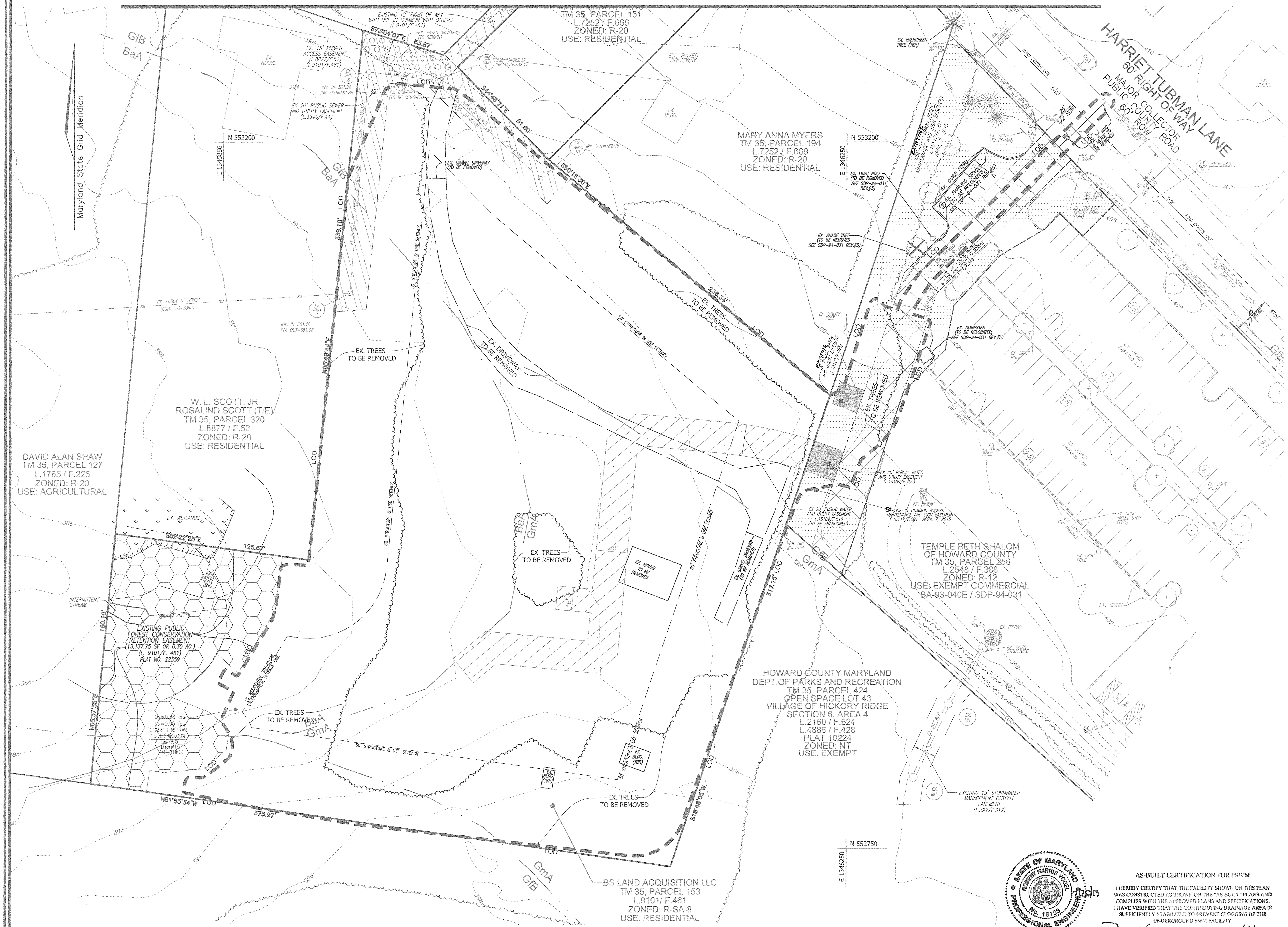
PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2016

SHEET 1 OF 14

AS-BUILT - NOV. 2018

SDP-16-002

MATCHLINE SHEET 4



DEMOLITION PLAN
SCALE: 1"=30'

LEGEND:

- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING TREES (FIELD LOCATED)
- EXISTING TREES (TO BE REMOVED)
- EXISTING TREELINE (FIELD LOCATED)
- EXISTING TREELINE (TO BE REMOVED)
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING STREAM
- EXISTING STREAM BUFFER
- EX. FOREST CONSERVATION "RETENTION" EASEMENT (L.9101/F.461) PLAT NO. 22359
- EXISTING WETLANDS
- EXISTING 24' PUBLIC WATER ACCESS & UTILITY EASEMENT (L.3321/F.548)
- EXISTING 20' PUBLIC SEWER AND UTIL EASEMENT (L.3544/F.44)
- EXISTING 12' RIGHT OF WAY PRIVATE WATER W/ USE IN COMMON WITH OTHERS (L.9101/F.461) (L8877/F.52) (L.11855/F.136)
- EXISTING 15' PRIVATE ACCESS EASMENT (L.8877/F.52) (L.9101/F.461)
- EXISTING USE-IN-COMMON ACCESS, MAINTENANCE AND SIGN EASEMENT (L.16117/F.001)
- EX. 20' PUBLIC WATER & UTILITY EASEMENT TO BE ABANDONED (L.15109/F.510)
- LOD — LIMIT OF DISTURBANCE

OWNER (PARCEL 256)
TEMPLE BETH SHALOM OF HOWARD COUNTY
8070 HARRIET TUBMAN LANE
COLUMBIA, MD. 21044

OWNER (PARCEL 153)
JOSEPH'S COURTYARD, LLC
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
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3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480-0023

NO.	REVISION	DATE

AS-BUILT CERTIFICATION FOR PSWM

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

Robert Vogel — P.E. NAME; 16193 — P.E. #; 2/5/19 — DATE

STATE OF MARYLAND · ROBERT HARRIS VOGEL · No. 16193 · PROFESSIONAL ENGINEER (seal) 2/20/19

NO AS-BUILT INFORMATION ON THIS SHEET.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Signature	Date
CHIEF, DEVELOPMENT ENGINEERING DIVISION HSP	6.1.16
CHIEF, DIVISION OF LAND DEVELOPMENT	6-28-16
DIRECTOR	7-6-16

SITE DEVELOPMENT PLAN
DEMOLITION PLAN
JOSEPH'S COURTYARD

LOTS 1-24 AND OPEN SPACE LOTS 25 AND 26 - USE IN COMMON ACCESS (P.256)
SINGLE FAMILY ATTACHED AND RELIGIOUS FACILITY (BA-93-40E)
ZONED: PARCEL 153 (R-SA-8) / PARCEL 256 (R-12)
L.09101/F.0461/L. 02548/F. 0388
TAX MAP 35 BLOCK 24 — 5TH ELECTION DISTRICT
PARCEL 153: P/O 256 — HOWARD COUNTY, MARYLAND

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

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2016

STATE OF MARYLAND · ROBERT HARRIS VOGEL · NO. 16193 · REGISTERED PROFESSIONAL ENGINEER (seal) 5.11.16
ROBERT H. VOGEL, PE No.16193

DESIGN BY:	RHV/GAH
DRAWN BY:	GAH/KG
CHECKED BY:	RHV
DATE:	MAY 2016
SCALE:	AS SHOWN
W.O. NO.:	05-84

SHEET 2 OF 14

AS-BUILT - NOV. 2018

SDP-16-002

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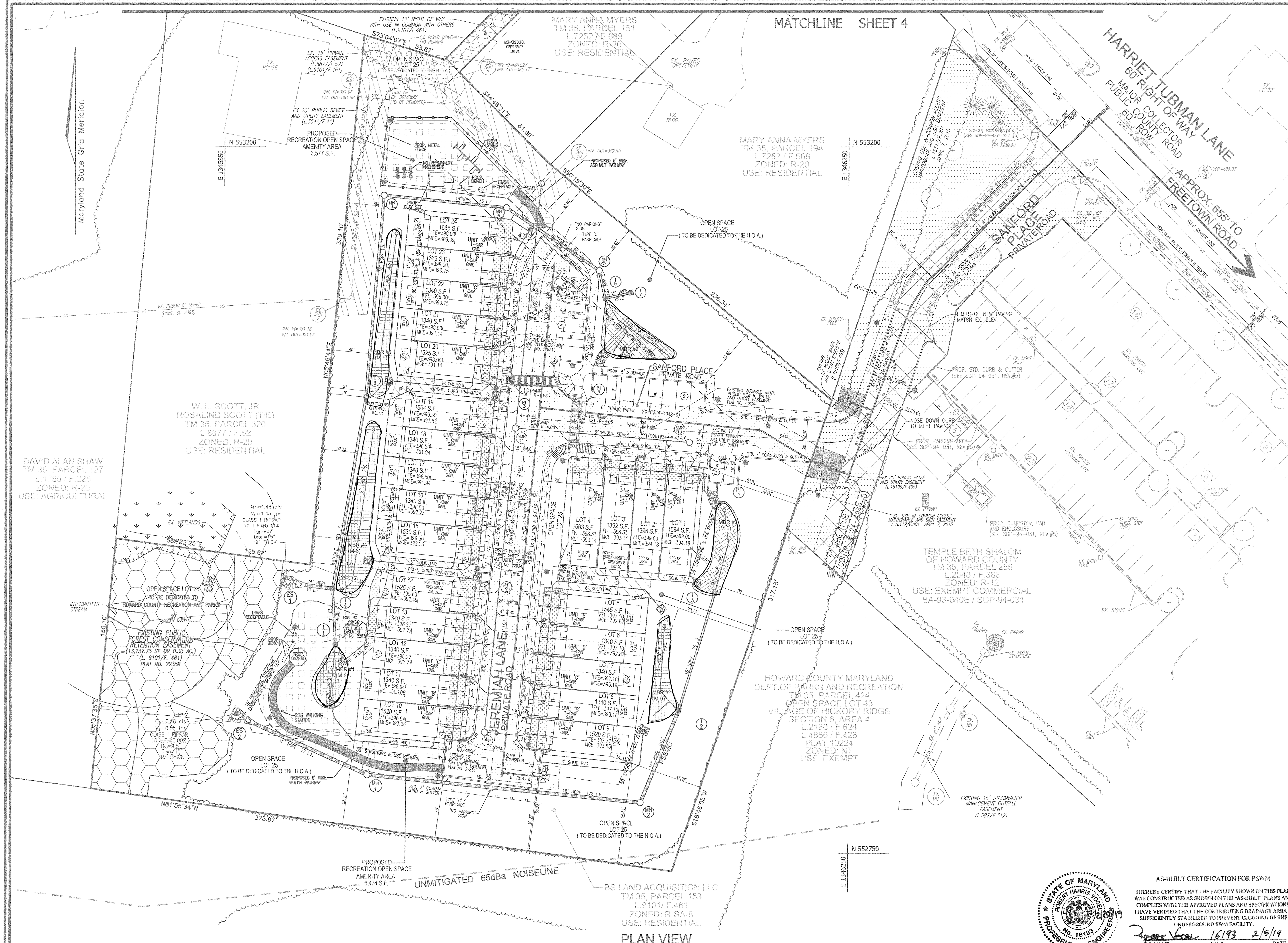

LEGEND:

- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING TREES (FIELD LOCATED)
- EXISTING TREELINE (FIELD LOCATED)
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING STREAM
- EXISTING STREAM BUFFER
- PROPOSED CURB AND GUTTER
- PROPOSED CURB TRANSITION
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- PROP. LIGHT POLE
- PROPOSED FENCE AROUND THE TOT LOT
- PROPOSED TREELINE
- PROPOSED SIDEWALK
- EX. FOREST CONSERVATION "RETENTION" EASEMENT (L.9101/F.461) (PLAT NO. 22359)
- EXISTING WETLANDS
- EXISTING 24' PUBLIC WATER ACCESS & UTILITY EASEMENT (L.3321/F.548)
- EXISTING 20' PUBLIC SEWER AND UTIL EASEMENT (L.3544/F.44)
- EXISTING 12' RIGHT OF WAY, PRIVATE WATER & USE IN COMMON WITH OTHERS (L.9101/F.461) (L.8877/F.52) (L.11855/F.136)
- EXISTING 15' PRIVATE ACCESS EASMENT (L.8877/F.52) (L.9101/F.461)
- EXISTING USE-IN-COMMON ACCESS MAINTENANCE AND SIGN EASEMENT (L.16117/F.001)
- RECREATION OPEN SPACE AMENITY AREA
- EXISTING PUBLIC WATER AND UTILITY EASEMENT (L.15109/F.405)
- MICRO-BIORETENTION FACILITIES
- EXISTING 10' PRIVATE DRAINAGE AND UTILITY EASEMENT (PLAT NO. 23834)
- EXISTING VARIABLE WIDTH PUBLIC SEWER, WATER AND UTILITY EASEMENT (PLAT NO. 23834)
- NON-CREDITED OPEN SPACE AREA

OWNER (PARCEL 256)
TEMPLE BETH SHALOM OF HOWARD COUNTY
8070 HARRIET TUBMAN LANE
COLUMBIA, MD. 21044

OWNER (PARCEL 153)
JOSEPH'S COURTYARD, LLC
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NO.	REVISION	DATE
1	REVISE PLAN TO ACCOMODATE BUILDER HOUSE MODEL	10/28/16

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Edmondson — 11.29.16
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

[signature] — 12.05.16
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[signature] — 12-5-16
DIRECTOR — DATE

STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — PROFESSIONAL ENGINEER — 2/20/19

AS-BUILT CERTIFICATION FOR PSWM

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Robert Vogel — 16193 — 2/5/19
P.E. NAME — P.E. # — DATE

REVISED SITE DEVELOPMENT PLAN
SITE LAYOUT PLAN
JOSEPH'S COURTYARD

LOTS 1-24 AND OPEN SPACE LOTS 25 AND 26 - USE IN COMMON ACCESS (P.256)
SINGLE FAMILY ATTACHED AND RELIGIOUS FACILITY (BA-93-40E)
ZONED: PARCEL 153 (R-SA-8) / PARCEL 256 (R-12)
L.09101/F.0461/L. 02548/F. 0388

TAX MAP 35 BLOCK 24 — PARCEL 153: P/O 256
5TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
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ELLICOTT CITY, MD 21043
TEL: 410.461.7666
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STATE OF MARYLAND — ROBERT HARRIS VOGEL — NO. 16193 — REGISTERED PROFESSIONAL ENGINEER — 10/31/16

ROBERT H. VOGEL, PE No.16193

DESIGN BY:	RHV/GAH
DRAWN BY:	GAH/KG
CHECKED BY:	RHV
DATE:	MAY 2016
SCALE:	AS SHOWN
W.O. NO.:	05-84

PROFESSIONAL CERTIFICATE

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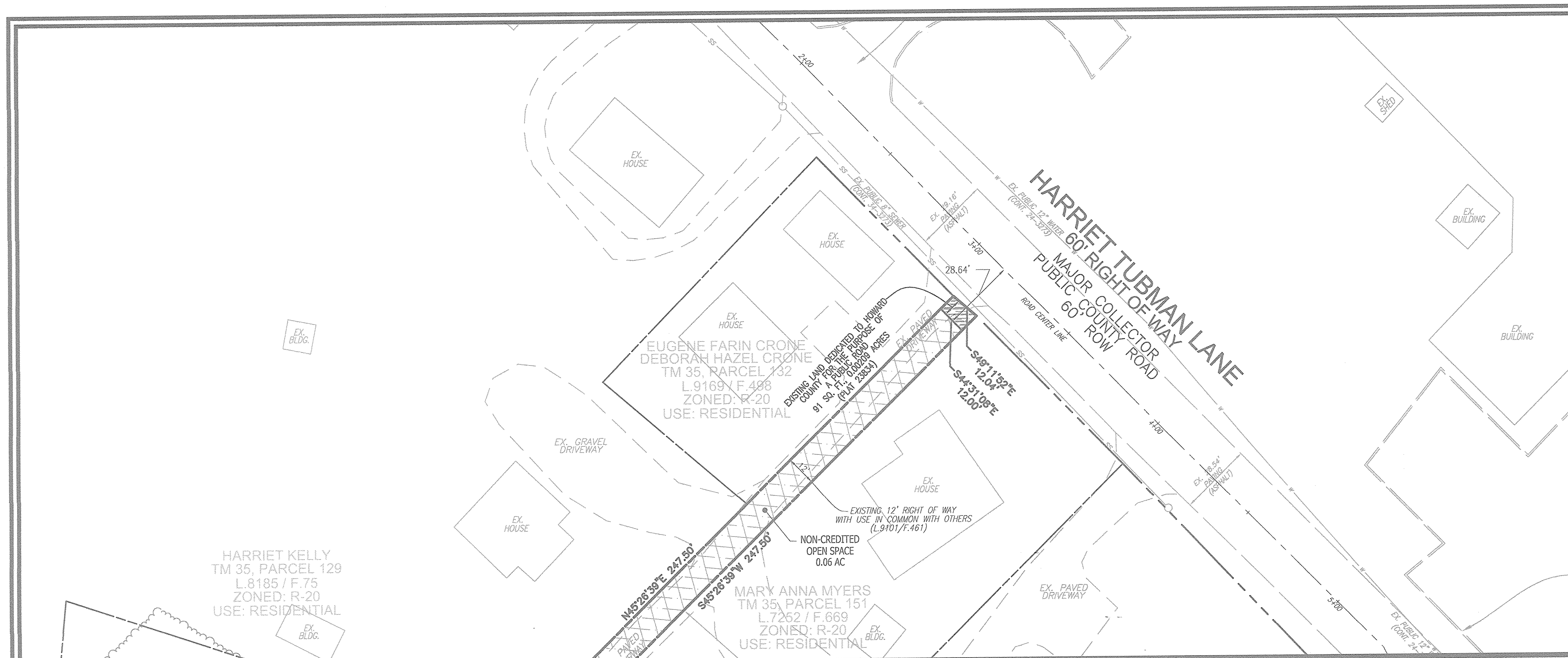
SDP-16-002

AS-BUILT - NOV. 2018

K:\Projects\05-84\engr\dwg\BS LAND\SDP\REDLINE_1\SDP03_REPLACEMENT LAYOUT.dwg, 10/28/2016 4:15:00 PM

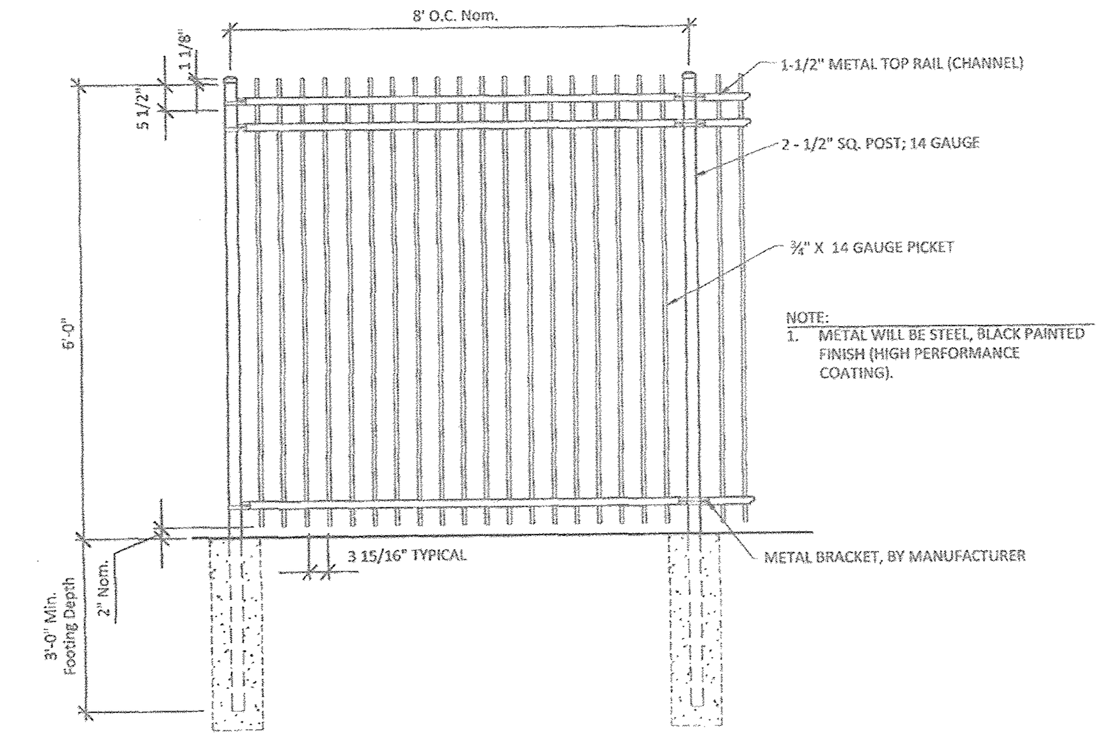


MATCHLINE SHEET 3

PLAN VIEW

SCALE: 1"=30'

SCALE 1"=30'
15' 0' 30'

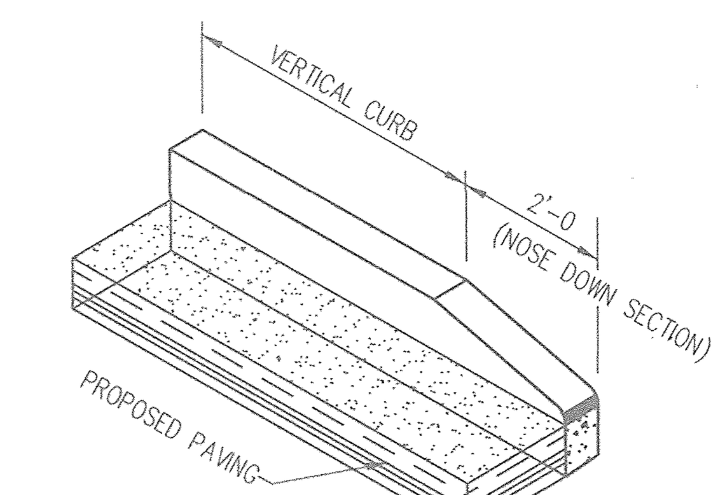


FENCE DETAIL AT TOT LOT

NOT TO SCALE

LEGEND:

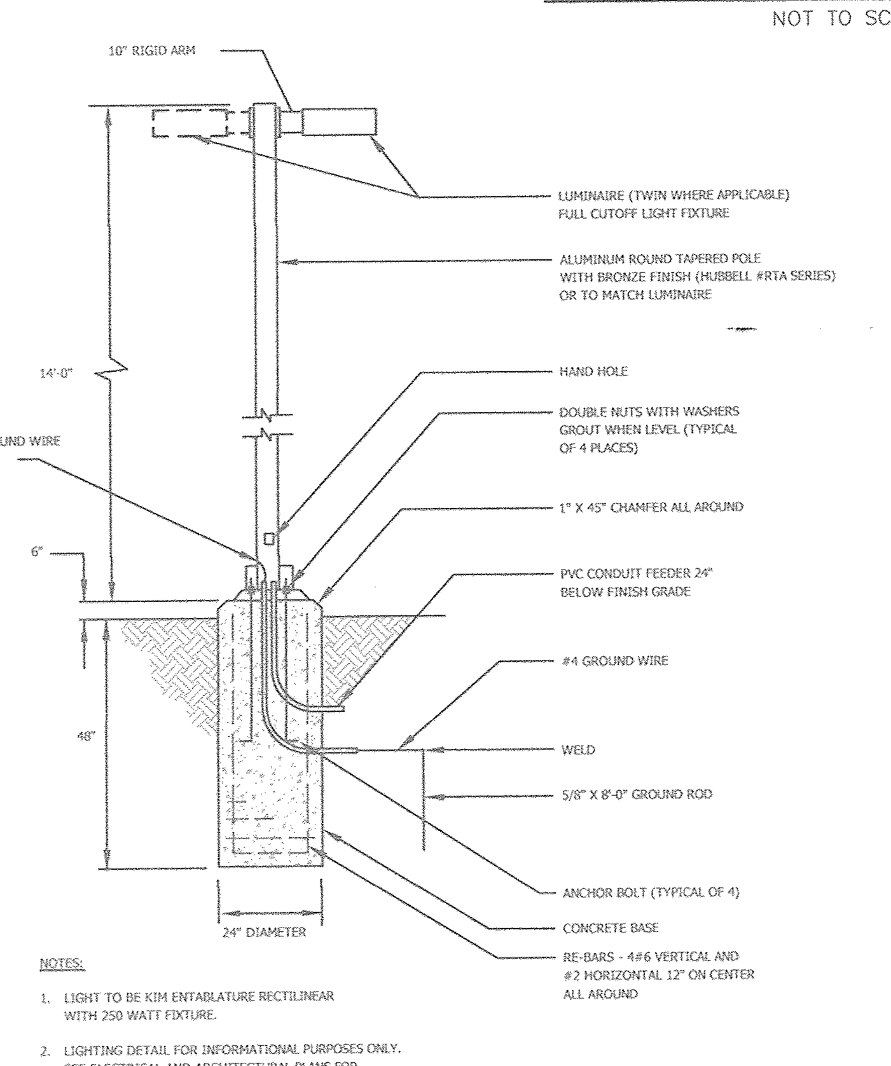
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING TREELINE (FIELD LOCATED)
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING 12' RIGHT OF WAY PRIVATE WATER W/ USE IN COMMON WITH OTHERS (L.9191/F.461) (L.8877/F.52) (L.11855/F.136)
- EXISTING LAND DEDICATED TO HOWARD COUNTY FOR THE PURPOSE OF A PUBLIC ROAD (PLAT NO. 23834)
- NON-CREDITED OPEN SPACE AREA



NOTE: REFER TO DETAIL 7 ON THIS SHEET FOR VERTICAL CURB DETAIL.

CONCRETE CURB - NOSE DOWN

NOT TO SCALE

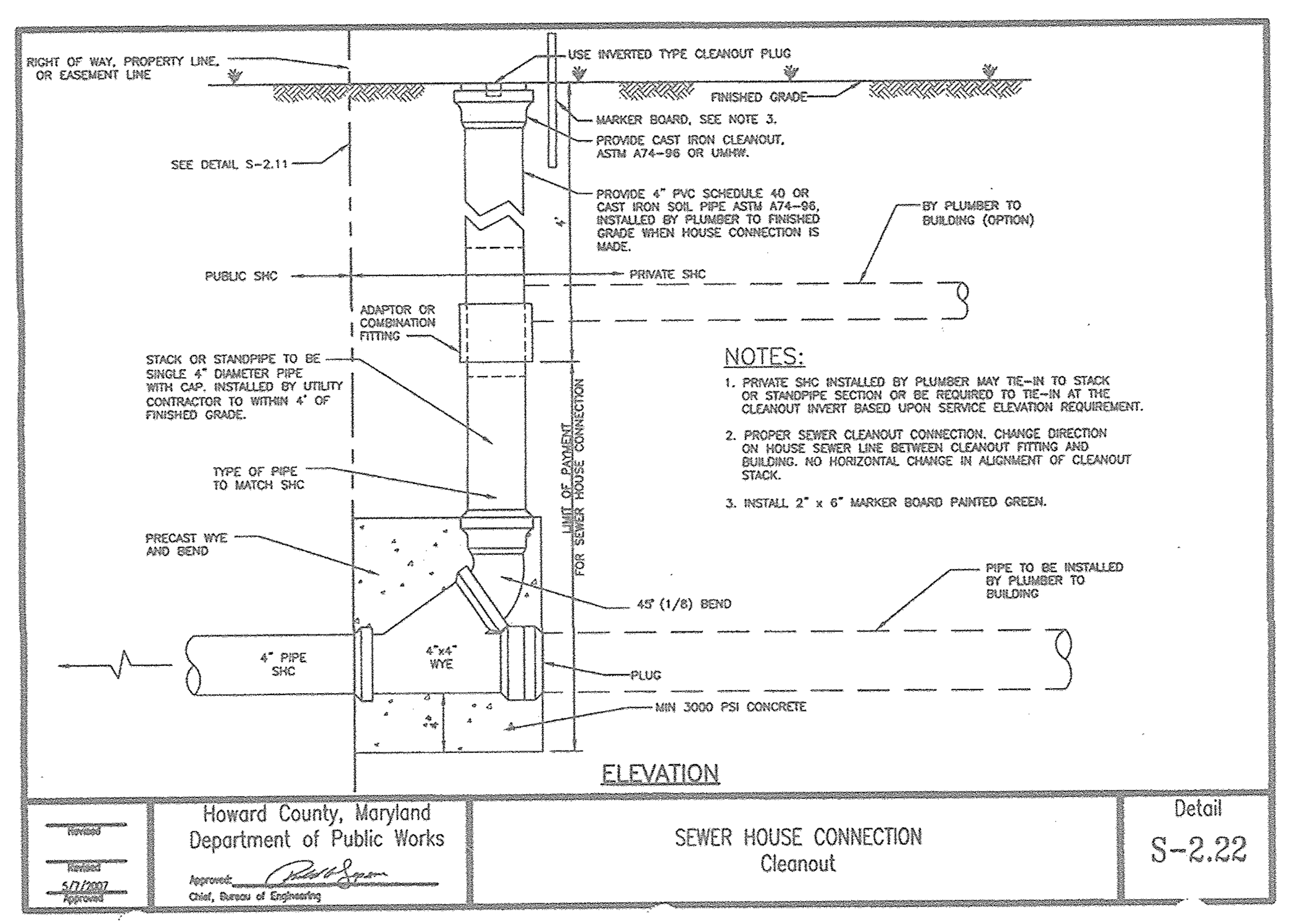


NOTES:

1. LIGHT TO BE KIM ENTABLATURE RECTILINEAR WITH 250 WATT FIXTURE.
2. LIGHTING DETAIL FOR INFORMATIONAL PURPOSES ONLY. SEE ELECTRICAL AND ARCHITECTURAL PLANS FOR ACTUAL LIGHTING DETAILS AND SPECIFICATIONS.

POLE BASE DETAIL

(NOT TO SCALE)



SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR) / PAVEMENT MATERIAL (INCHES)	MIN HMA WITH GAB 3 TO <5	MIN HMA WITH GAB 5 TO <7	MIN HMA WITH GAB ≥ 7	HMA WITH CONSTANT GAB 3 TO <5	HMA WITH CONSTANT GAB 5 TO <7	HMA WITH CONSTANT GAB ≥ 7
P-1	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
		HMA SUPERPAVE INTERMEDIATE SURFACE (NA)	NA	NA	NA	NA	NA	NA
		HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 1 (ESAL)		2.0	2.0	3.5	3.0	2.5
		GRADED AGGREGATE BASE (GAB)	8.5	7.0	5.0	4.0		
P-2	PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY; LOCAL ROADS: ACESS PLACE, ACCESS STREET; CUL-DE-SACS: RESIDENTIAL	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
		HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)	1.0	1.0	1.0	1.0	1.0	1.0
		HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 1 (ESAL)	2.0	2.0	2.0	3.5	2.0	2.0
		GRADED AGGREGATE BASE (GAB)	8.0	4.0	3.0	4.0	4.0	4.0
P-3	RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY; LOCAL ROADS: ACCESS STREET; CUL-DE-SACS: NON-RESIDENTIAL; MINOR COLLECTORS: RESIDENTIAL	HMA SUPERPAVE FINAL SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5		
		HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)	1.0	1.0		1.0	1.0	1.0
		HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 1 (ESAL)		3.0	3.0	4.5	3.0	2.0
		GRADED AGGREGATE BASE (GAB)	10.0	6.0	3.0	6.0	6.0	6.0
P-4	MINOR COLLECTORS: NON-RESIDENTIAL; MAJOR COLLECTORS	HMA SUPERPAVE FINAL SURFACE 12.5 MM, PG 64-22, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
		HMA SUPERPAVE INTERMEDIATE SURFACE 12.5 MM, PG 64-22, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
		HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 2 (LOW ESAL)	4.0		3.0	6.0	5.0	3.0
		GRADED AGGREGATE BASE (GAB)	13.0	7.0	4.0	6.0		6.0

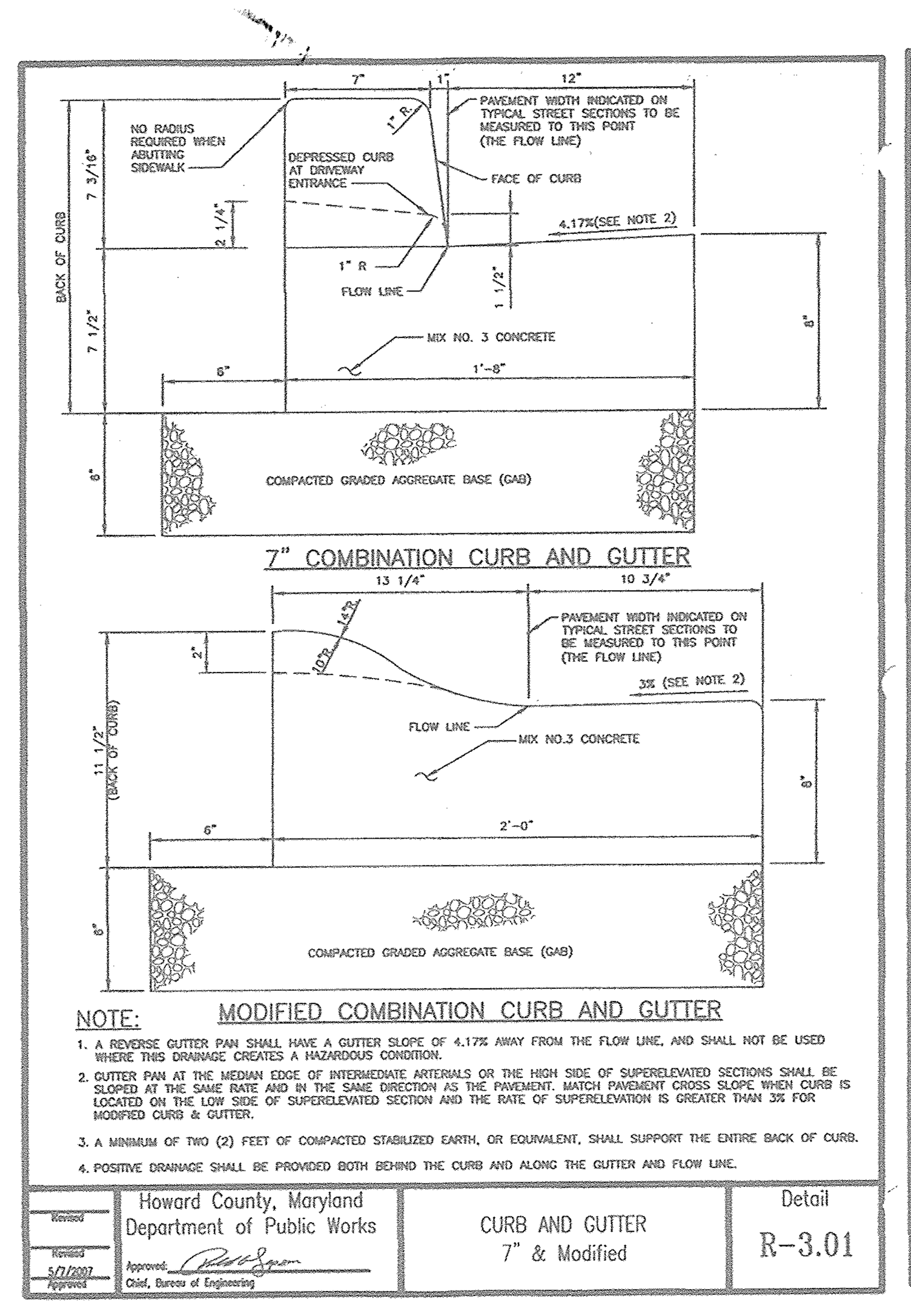
Notes:
1) HEAVY TRUCKS ARE DEFINED AS THOSE WITH SIX (6) WHEELS OR MORE INCLUDING GARBAGE TRUCKS.
2) HMA SUPERPAVE LAYERS SHALL BE PLACED IN APPROPRIATE COMPACTED LIFT THICKNESS: 19.0 MM BASE (2.0" MIN TO 4.0" MAX), 12.5 MM SURFACE (1.5" MIN TO 3.0" MAX), AND 9.5 MM SURFACE (1.0" MIN TO 2.0" MAX)
3) GRADED AGGREGATE BASE (GAB) TO BE PLACED AND COMPACTED IN 6" MAX COMPACTED THICKNESS LAYERS.
4) THE INTERMEDIATE SURFACE COURSE LAYER MUST BE PLACED WITHIN 2 WEEKS OF PLACEMENT OF BASE COURSE, AND IS REQUIRED PRIOR TO SUBSTANTIAL COMPLETION INSPECTION AND BOND REDUCTION.
5) IN LIEU OF PLACING THE INTERMEDIATE SURFACE COURSE LAYER FOR COMMERCIAL/INDUSTRIAL ENTRANCE APRONS WITHIN THE COUNTY RIGHT-OF-WAY WHERE AUXILIARY LANES ARE NOT REQUIRED, THE THICKNESS OF THE INTERMEDIATE PAVEMENT LAYER CAN BE ADDED TO THE REQUIRED THICKNESS OF THE BASE ASPHALT LAYER.
6) THE CONSTRUCTION DRAWINGS SHALL SHOW THE PAVING SECTION, ROAD CLASSIFICATION AND CBR VALUE FOR EACH ROADWAY

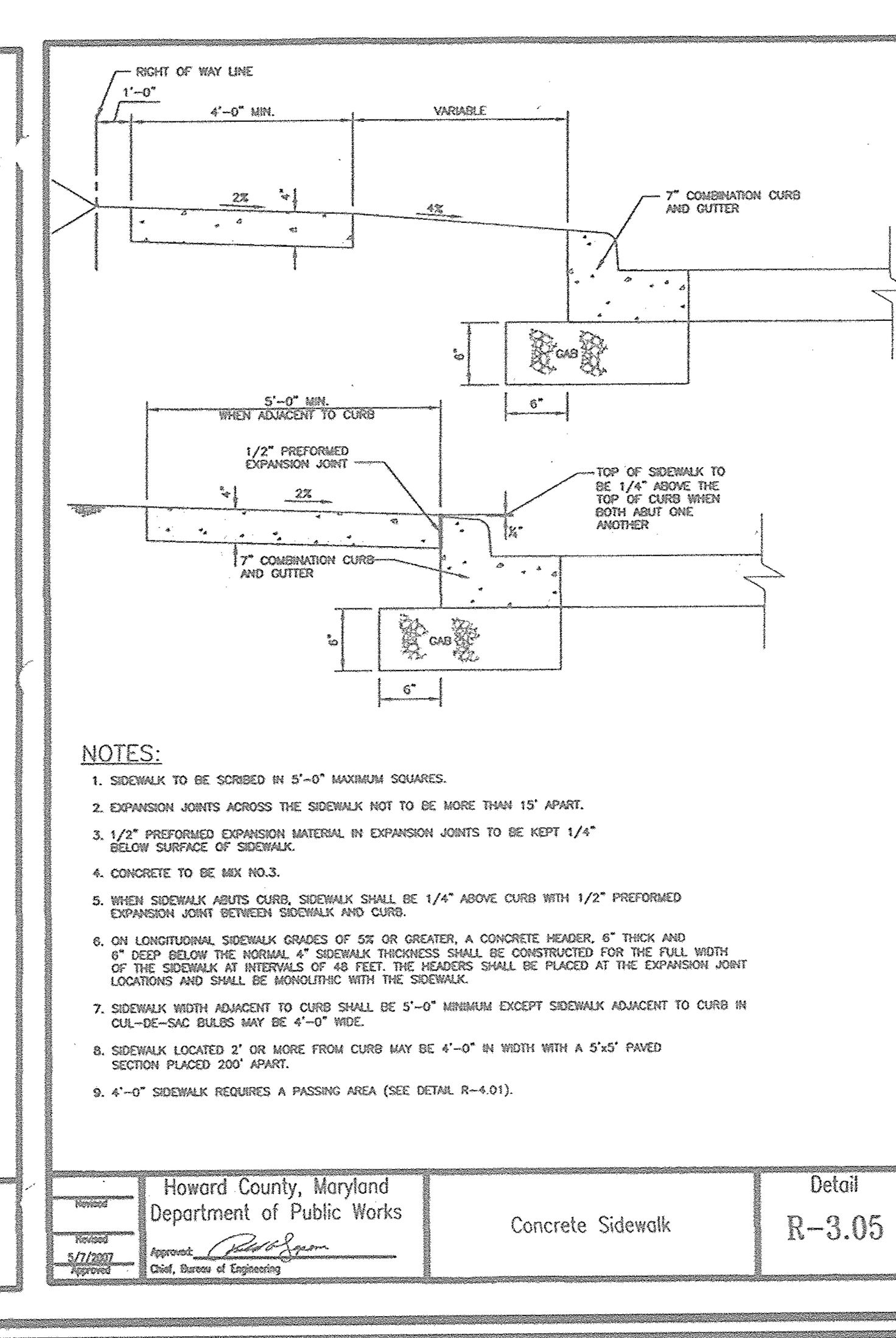
HMA SUPERPAVE FINAL SURFACE
HMA SUPERPAVE INTERMEDIATE SURFACE
HMA SUPERPAVE BASE
GRADED AGGREGATE BASE (GAB)

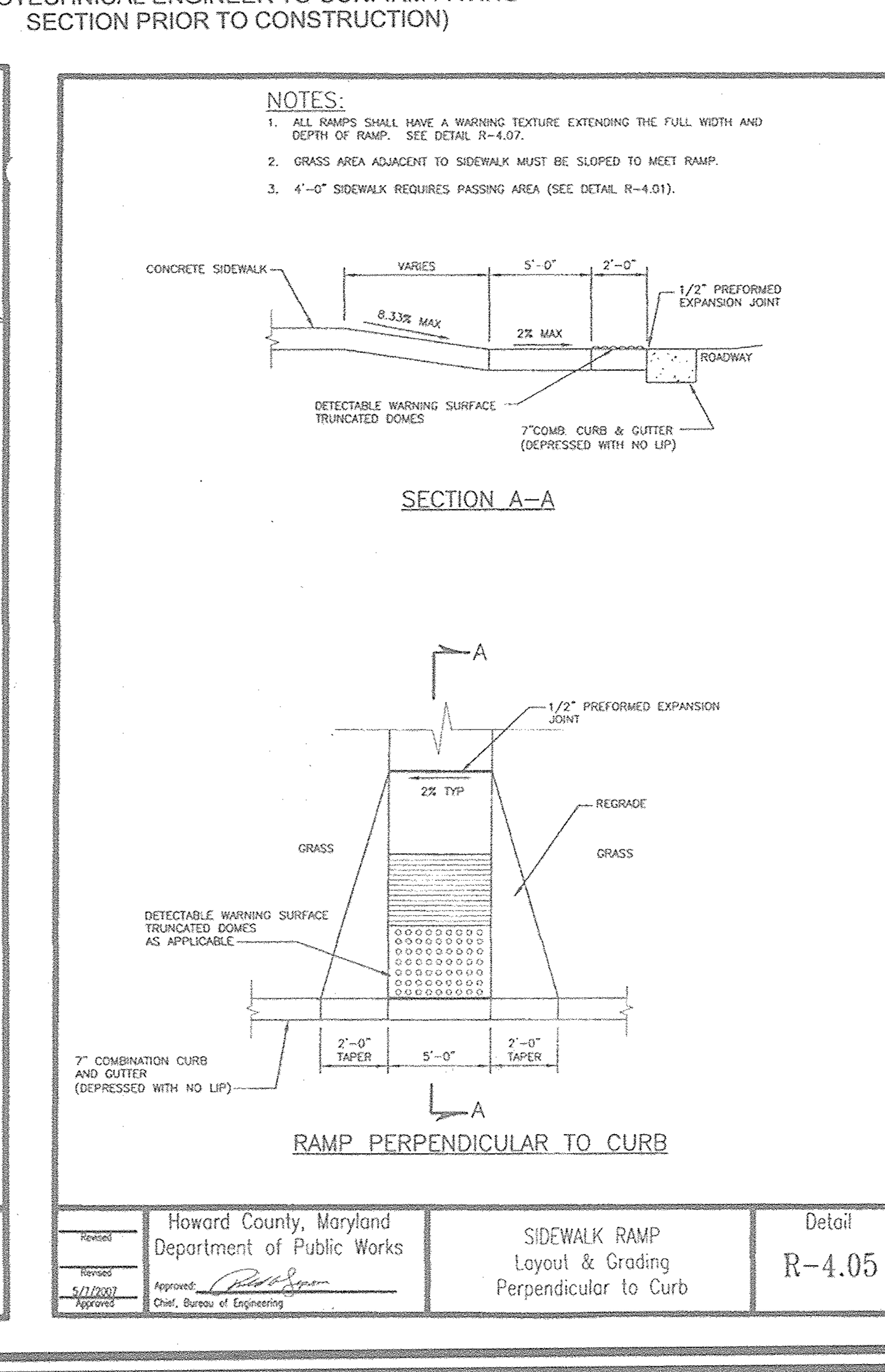
Howard County, Maryland Department of Public Works — PAVING SECTIONS P-1 to P-4 — Detail R-2.01

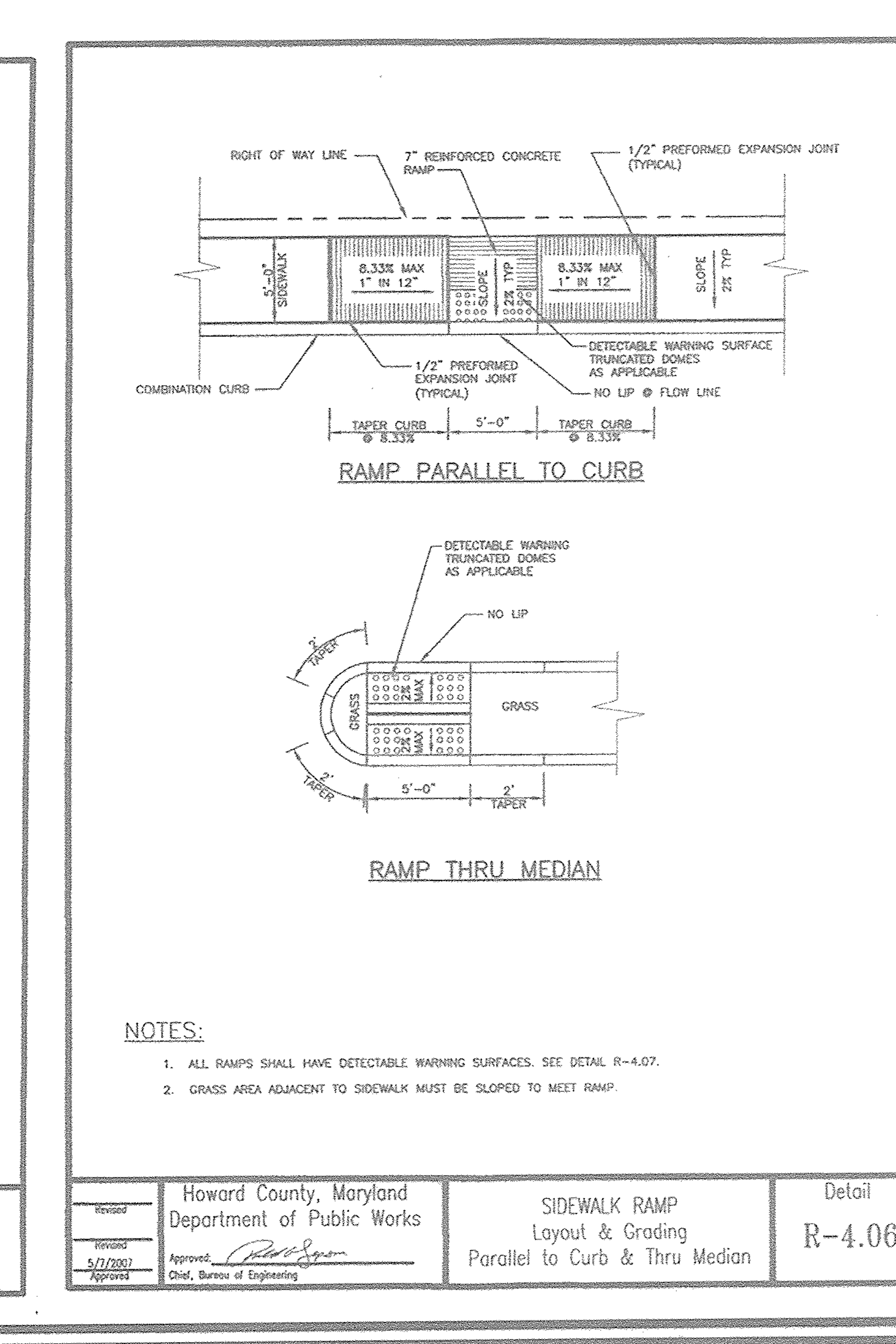
PAVING SECTION

(GEOTECHNICAL ENGINEER TO CONFIRM PAVING SECTION PRIOR TO CONSTRUCTION)









AS-BUILT CERTIFICATION FOR PSWM

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

P.E. NAME	P.E. #	DATE
Robert Vogel	16193	2/5/19

STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — PROFESSIONAL ENGINEER — 2/20/19

NO AS-BUILT INFORMATION ON THIS SHEET

OWNER (PARCEL 256)
TEMPLE BETH SHALOM OF HOWARD COUNTY
8070 HARRIET TUBMAN LANE
COLUMBIA, MD. 21044

OWNER (PARCEL 153)
JOSEPH'S COURTYARD, LLC
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480-0023

OWNER/DEVELOPER (PARCEL 153)
TRINITY HOMES MARY LAND, LLC.
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480-0023

NO.	REVISION	DATE
1	REVISE PLAN TO ACCOMODATE BUILDER HOUSE MODEL	10/28/16

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 11.29.16
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 12-05-16
DIRECTOR	DATE 12-5-16

REVISED SITE DEVELOPMENT PLAN
SITE LAYOUT PLAN
JOSEPH'S COURTYARD

LOTS 1-24 AND OPEN SPACE LOTS 25 AND 26 - USE IN COMMON ACCESS (P.256)
SINGLE FAMILY ATTACHED AND RELIGIOUS FACILITY (BA-93-40E)

TAX MAP 35 BLOCK 24
5TH ELECTION DISTRICT
ZONED: PARCEL 153 (R-SA-8) / PARCEL 256 (R-12)
L.09101/F.0461/L. 02548/F. 0388
PARCEL 153: P/O 256
HOWARD COUNTY, MARYLAND

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

STATE OF MARYLAND — ROBERT HARRIS VOGEL — NO.16193 REGISTERED PROFESSIONAL ENGINEER — 10/28/16

ROBERT H. VOGEL, PE No.16193

DESIGN BY:	RHV/GAH
DRAWN BY:	GAH/KG
CHECKED BY:	RHV
DATE:	MAY 2016
SCALE:	AS SHOWN
W.O. NO.:	05-84

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2016

SDP-16-002

AS-BUILT-NOV. 2018

MATCHLINE SHEET 7

DETAIL G-1-2 STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II

STANDARD SYMBOL: ST-II

STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II, TRAP NO. 1		
DRAINAGE AREA – INITIAL	2.60	ACRES
DRAINAGE AREA – INTERIM	2.60	ACRES
DRAINAGE AREA – FINAL	2.60	ACRES
TOTAL STORAGE REQUIRED	9,360	CF
TOTAL STORAGE PROVIDED	11,263	CF
WET STORAGE REQUIRED	4,680	CF
WET STORAGE PROVIDED	4,944	CF
DRY STORAGE REQUIRED	4,680	CF
DRY STORAGE PROVIDED	6,319	CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	389.00	FT
TRAP BOTTOM ELEVATION	386.00	FT
TRAP BOTTOM DIMENSIONS	43 x 20	FT x FT
WEIR LENGTH	15	FT
WEIR CREST (DRY STORAGE) ELEVATION	391.00	FT
CLEANOUT ELEVATION	387.50	FT
TOP OF EMBANKMENT ELEVATION	392.00	FT
SIDE SLOPE	3:1	H:V RATIO
EMBANKMENT TOP WIDTH	4	FT
OUTLET PROTECTION – LENGTH	10	FT
OUTLET PROTECTION – DEPTH	19	IN

LEGEND:

- EXISTING CONTOUR
- EXISTING SPOT ELEVATION
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING TREES (FIELD LOCATED)
- EXISTING TREELINE (FIELD LOCATED)
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- SOILS BOUNDARY
- EXISTING STREAM
- EXISTING STREAM BUFFER
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED CURB AND GUTTER
- PROPOSED CURB TRANSITION
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- PROP. LIGHT POLE
- PROPOSED TREELINE
- EXISTING VARIABLE WIDTH PUBLIC SEWER, WATER AND UTILITY EASEMENT (PLAT NO. 23834)
- EX. FOREST CONSERVATION "RETENTION" EASEMENT (L.9101/F.461) (PLAT NO. 22359)
- EXISTING WETLANDS
- EXISTING 24' PUBLIC WATER ACCESS & UTILITY EASEMENT (L.3321/F.548)
- EXISTING 20' PUBLIC SEWER AND UTIL EASEMENT (L.3544/F.44)
- EXISTING 12' RIGHT OF WAY, PRIVATE WATER & USE IN COMMON WITH OTHERS (L.9101/F.461) (L.8877/F.52) (L.11855/F.136)
- EXISTING 15' PRIVATE ACCESS EASMENT (L.8877/F.52) (L.9101/F.461)
- EXISTING USE-IN-COMMON ACCESS MAINTENANCE AND SIGN EASEMENT (L.16117/F.001)
- EXISTING 20' PUBLIC WATER & UTILITY EASEMENT TO BE ABANDONED (L.15108/F.510)
- EXISTING PUBLIC WATER AND UTILITY EASEMENT (L.15109/F.405)
- STABILIZED CONSTRUCTION ENTRANCE
- SF SILT FENCE
- SSF SUPER SILT FENCE
- SFOP SILT FENCE ON PAVEMENT
- LOD LIMIT OF DISTURBANCE
- EARTH DIKE
- BB BAFFLE BOARDS
- 92 TEMP TEMPORARY GRADING SPOTS

CONTRACTOR SHALL EXCAVATE ONLY FOR THE LENGTH OF WATER MAIN THAT CAN BE INSTALLED AND BACKFILLED EACH DAY. DISTURBED AREA SHALL BE STABILIZED OR COVERED WITH METAL PLATES AT THE END OF EACH WORK DAY.

SWALE #1 (TEMPORARY) TYPICAL CROSS SECTION (NOT TO SCALE)

Q_2=1.46 cfs Q_{10}=2.10 cfs
V_2=1.76 fps V_{10}=1.99 fps
d_2=2.19" d_{10}=2.70"
CHANNEL SLOPE=1.00%

SWALE #2 (TEMPORARY) TYPICAL CROSS SECTION (NOT TO SCALE)

Q_2=4.21 cfs Q_{10}=6.06 cfs
V_2=2.51 fps V_{10}=2.81 fps
d_2=4.02" d_{10}=4.93"
CHANNEL SLOPE=1.00%

SWALE #3 (TEMPORARY) TYPICAL CROSS SECTION (NOT TO SCALE)

$Q_{2\ TEMP}$=5.93 cfs $Q_{10\ TEMP}$=8.55 cfs
$V_{2\ TEMP}$=2.79 fps $V_{10\ TEMP}$=3.13 fps
$d_{2\ TEMP}$=4.87" $d_{10\ TEMP}$=5.96"
$Q_{2\ PROP}$=1.54 cfs $Q_{10\ PROP}$=2.22 cfs
$V_{2\ PROP}$=1.79 fps $V_{10\ PROP}$=2.03 fps
$d_{2\ PROP}$=2.26" $d_{10\ PROP}$=2.79"
CHANNEL SLOPE=1.00%

SWALE #4 (PERMANENT) TYPICAL CROSS SECTION (NOT TO SCALE)

$Q_{2\ TEMP}$=1.70 cfs $Q_{10\ TEMP}$=2.45 cfs
$V_{2\ TEMP}$=1.88 fps $V_{10\ TEMP}$=2.15 fps
$d_{2\ TEMP}$=1.69" $d_{10\ TEMP}$=2.10"
$Q_{2\ PROP}$=0.60 cfs $Q_{10\ PROP}$=0.86 cfs
$V_{2\ PROP}$=1.27 fps $V_{10\ PROP}$=1.46 fps
$d_{2\ PROP}$=0.91" $d_{10\ PROP}$=1.13"
CHANNEL SLOPE=1.50%

SWALE #5 (PERMANENT) TYPICAL CROSS SECTION (NOT TO SCALE)

$Q_{2\ PROP}$=1.25 cfs $Q_{10\ PROP}$=1.80 cfs
$V_{2\ PROP}$=2.32 fps $V_{10\ PROP}$=2.64 fps
$d_{2\ PROP}$=1.48" $d_{10\ PROP}$=1.83"
CHANNEL SLOPE=2.80%

NO AS-BUILT INFORMATION ON THIS SHEET

OWNER (PARCEL 256)
TEMPLE BETH SHALOM OF HOWARD COUNTY
8070 HARRIET TUBMAN LANE
COLUMBIA, MD. 21044

OWNER (PARCEL 153)
JOSEPH'S COURTYARD, LLC
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480–0023

OWNER/DEVELOPER (PARCEL 153)
TRINITY HOMES MARY LAND, LLC.
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480–0023

NO.	REVISION	DATE
1	REVISE PLAN TO ACCOMODATE BUILDER HOUSE MODEL	10/28/16

REVISED SITE DEVELOPMENT PLAN
GRADING, SEDIMENT AND EROSION CONTROL PLAN
STAGE 1
JOSEPH'S COURTYARD

LOTS 1-24 AND OPEN SPACE LOTS 25 AND 26 - USE IN COMMON ACCESS (P.256)
SINGLE FAMILY ATTACHED AND RELIGIOUS FACILITY (BA-93-40E)

ZONED: PARCEL 153 (R-SA-8) / PARCEL 256 (R-12)
TAX MAP 35 BLOCK 24 — L.09101/F.0461/L. 02548/F. 0388 — PARCEL 153: P/O 256
5TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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

STATE OF MARYLAND — ROBERT HARRIS VOGEL — NO. 16193 — REGISTERED PROFESSIONAL ENGINEER — 10/21/16
ROBERT H. VOGEL, PE. No.16193

DESIGN BY:	RHV/GAH
DRAWN BY:	GAH/KG
CHECKED BY:	RHV
DATE:	MAY 2016
SCALE:	AS SHOWN
W.O. NO.:	05–84

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2018

5 SHEET OF 14

SDP-16-002

AS-BUILT - NOV. 2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.29.16
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12-5-16
DIRECTOR — DATE 12-5-16

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

OWNER/DEVELOPER SIGNATURE — DATE 11/1/16
PRINTED NAME & TITLE: Michael Pfau, member

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

DESIGNER'S SIGNATURE — DATE 10/24/16
ROBERT H. VOGEL — PRINTED NAME
MD REGISTRATION NO. 16193 (P.E., R.L.S., OR R.L.A. (circle one))

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD S.C.D. — DATE 11/8/16

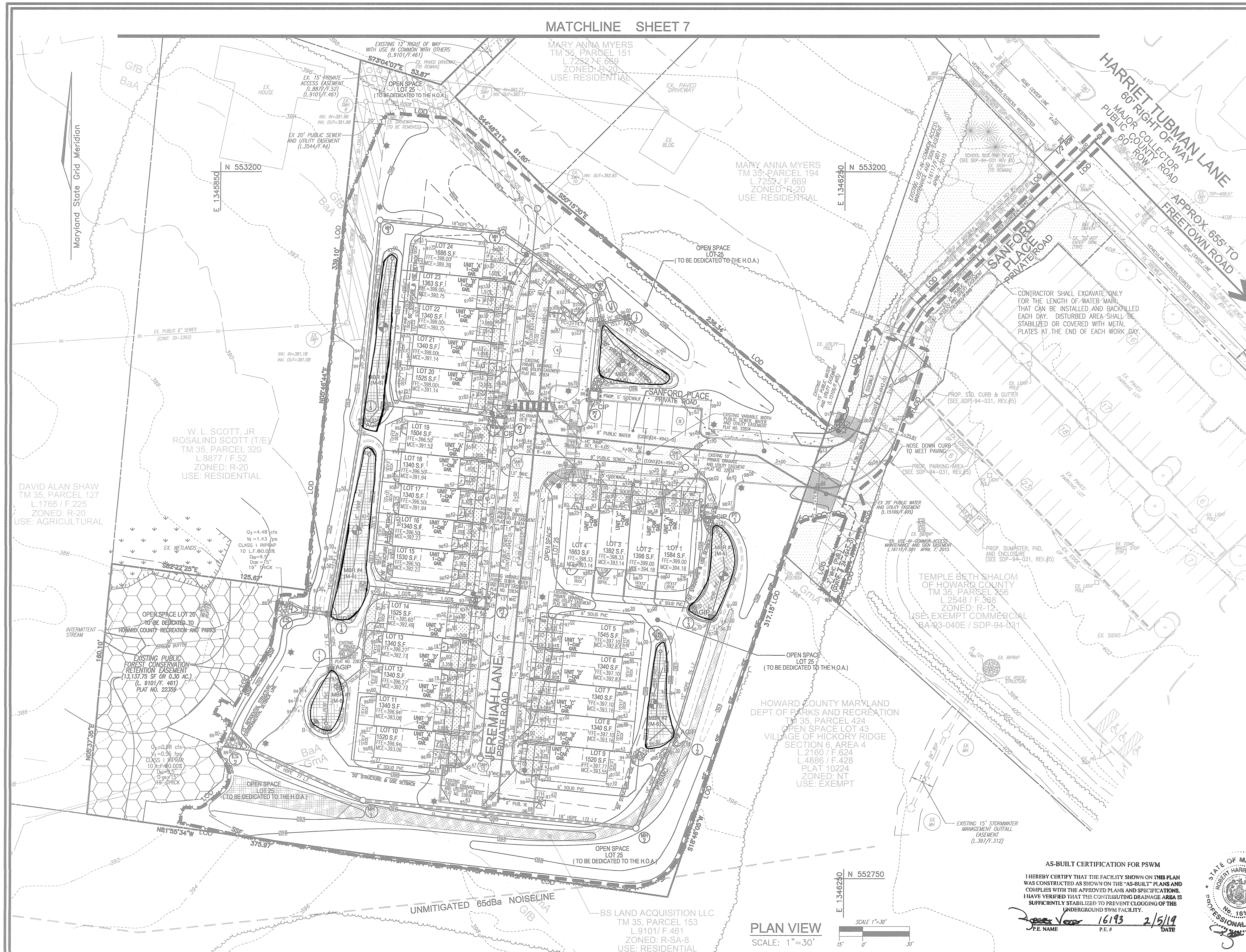
AS-BUILT CERTIFICATION FOR PSWM
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.
Robert Vogel 16193 2/6/19
P.E. NAME — P.E. # — DATE

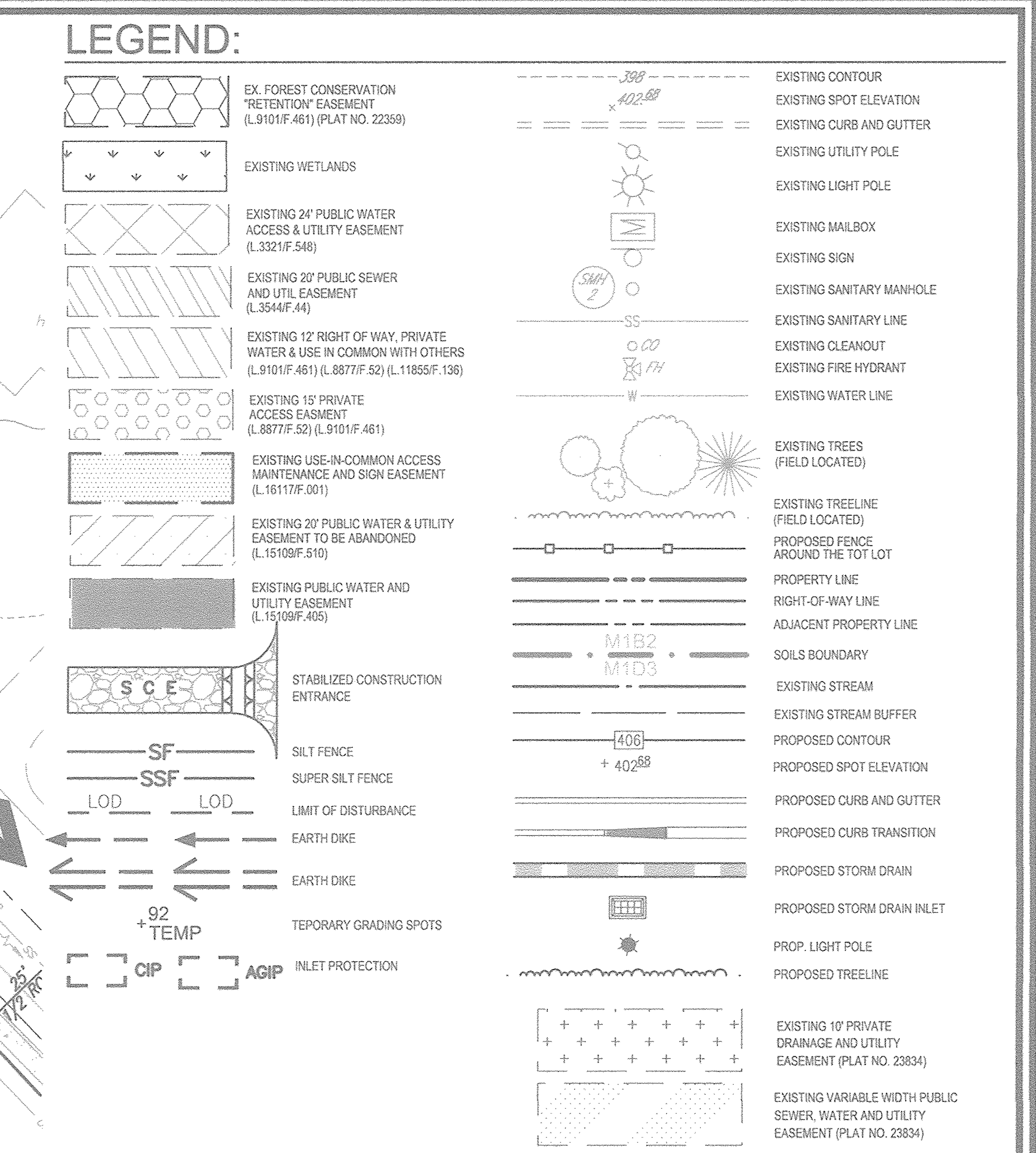
STATE OF MARYLAND — ROBERT HARRIS VOGEL — NO. 16193 — PROFESSIONAL ENGINEER — 2/20/19

PLAN VIEW
SCALE: 1"=30'
SCALE 1"=30'

K:\Projects\05-84\engr\dwg\SHLAND\SDP-REDLINE_1\SDP05_REPLACEMENT_SEDCON_PH1.dwg, 10/28/2016 4:22:16 PM

MATCHLINE SHEET 7





NOTE:
ALL BUILDINGS TO HAVE ROOF LEADERS WHICH ARE:
1. PIPED UNDERGROUND TO A MICRO–BIORETENTION AREA.
2. EMPTIED ONTO SPLASH BLOCKS. DRAINAGE FROM SPLASH BLOCKS TO BE DIRECTED TOWARD THE SWALES AND/OR PARKING LOT AREAS, WHICH DRAIN TO MICRO–BIORETENTION FACILITIES.

OWNER (PARCEL 256)
TEMPLE BETH SHALOM OF HOWARD COUNTY
8070 HARRIET TUBMAN LANE
COLUMBIA, MD. 21044

OWNER (PARCEL 153)
JOSEPH'S COURTYARD, LLC
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480–0023

OWNER/DEVELOPER (PARCEL 153)
TRINITY HOMES MARY LAND, LLC.
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480–0023

NO.	REVISION	DATE
1	REVISE PLAN TO ACCOMODATE BUILDER HOUSE MODEL	10/28/16

AS-BUILT CERTIFICATION FOR PSWM

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

[signature] 16193 2/5/19
P.E. NAME P.E. # DATE

STATE OF MARYLAND · ROBERT HARRIS VOGEL · No. 16193 · PROFESSIONAL ENGINEER 2/5/19

REVISED SITE DEVELOPMENT PLAN
GRADING, SEDIMENT AND EROSION CONTROL PLAN STAGE 2
JOSEPH'S COURTYARD

LOTS 1-24 AND OPEN SPACE LOTS 25 AND 26 - USE IN COMMON ACCESS (P.256)
SINGLE FAMILY ATTACHED AND RELIGIOUS FACILITY (BA-93-40E)
ZONED: PARCEL 153 (R-SA-8) / PARCEL 256 (R-12)
L.09101/F.0461/L. 02548/F. 0388
TAX MAP 35 BLOCK 24
5TH ELECTION DISTRICT
PARCEL 153: P/O 256
HOWARD COUNTY, MARYLAND

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

MAPPED SOILS TYPES - HOWARD COUNTY SOIL MAP #16							
SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	HYDRIC INCLUSIONS	K FACTOR	PRIME FARMLAND	<15% SLOPE W/ EROSION POTENTIAL
BaA	BAILE SILT LOAN, 0 TO 3 PERCENT SLOPES	D	YES	YES	0.37	NO	NO
GfB	GLADSTONE – URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES	A	NO	NO	0.28	NO	NO
GmA	GLENVILLE SILT LOAM, 0 TO 3 PERCENT SLOPES	C	NO	NO	0.43	NO	NO

TAKEN FROM: USDA, SCS–WEB SOIL SURVEY, HOWARD COUNTY

NOTE:
HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT

NOTE:
SEE SHEET 5 FOR SEDIMENT TRAP DATA

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[signature] 11.29.16
CHIEF, DEVELOPMENT ENGINEERING DIVISION HSP DATE

[signature] 12-5-16
CHIEF, DIVISION OF LAND DEVELOPMENT JMF DATE

[signature] 12-5-16
DIRECTOR DATE

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

[signature] 11/1/16
OWNER/DEVELOPER SIGNATURE DATE
MICHAEL PFAU
PRINTED NAME & TITLE

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

[signature] 10/31/16
DESIGNER'S SIGNATURE DATE
ROBERT H. VOGEL
PRINTED NAME
MD REGISTRATION NO. 16193
P.E., R.L.S., OR R.L.A. (circle one)

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
[signature] 11/18/16
HOWARD S.C.D.

STATE OF MARYLAND · ROBERT HARRIS VOGEL · NO. 16193 · REGISTERED · PROFESSIONAL ENGINEER 10/31/16

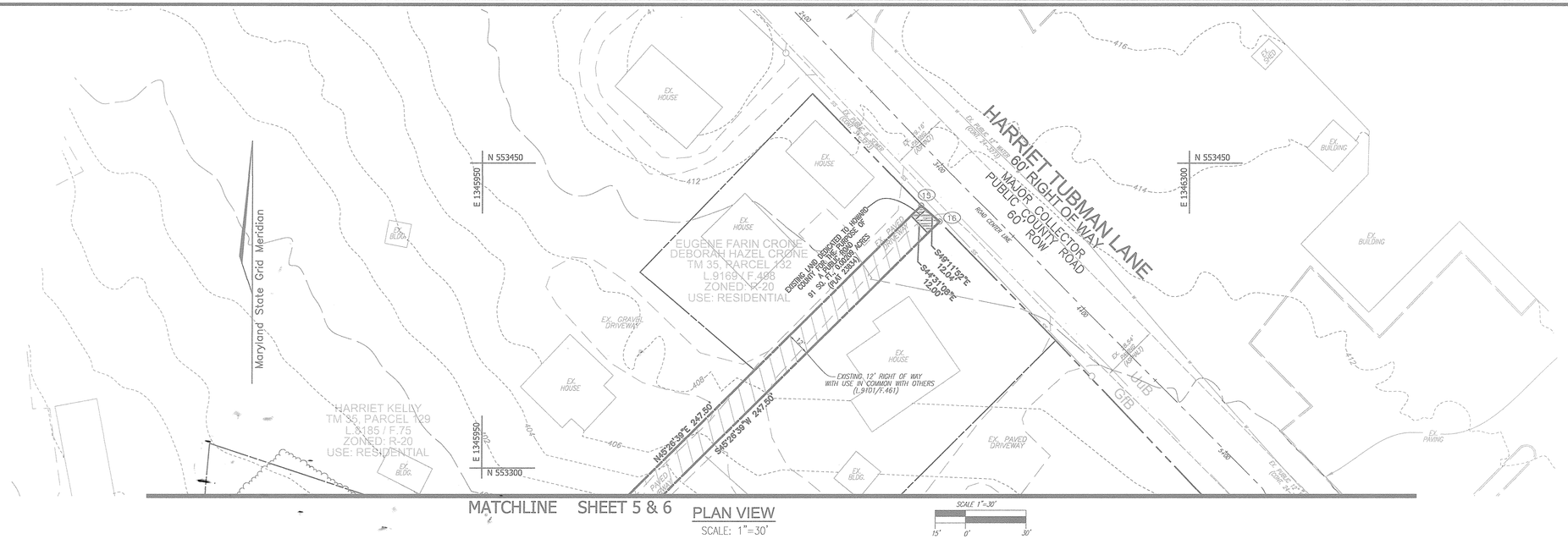
ROBERT H. VOGEL, PE No.16193

DESIGN BY:	RHV/GAH
DRAWN BY:	GAH/KG
CHECKED BY:	RHV
DATE:	MAY 2016
SCALE:	AS SHOWN
W.O. NO.:	05–84

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09–27–2016

SDP-16-002

AS-BUILT - NOV. 2018

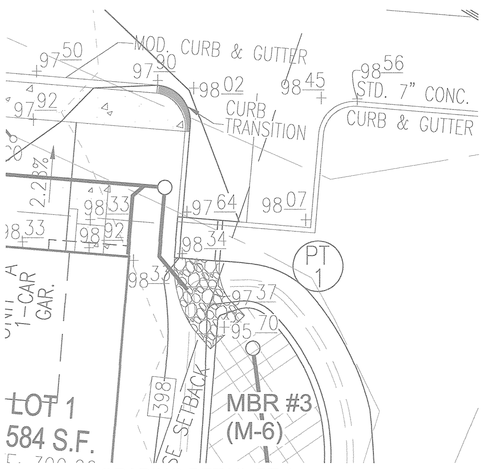


MATCHLINE SHEET 5 & 6

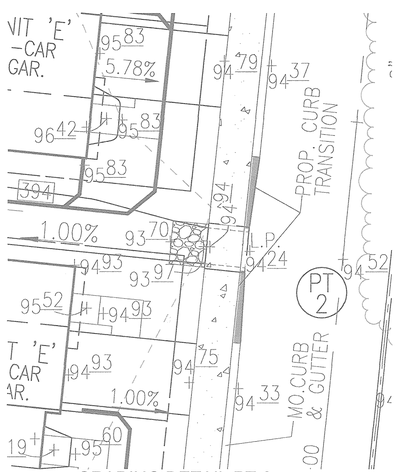
PLAN VIEW
SCALE: 1"=30'

LEGEND:

- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING TREES (FIELD LOCATED)
- EXISTING TREELINE (FIELD LOCATED)
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING STREAM
- EXISTING STREAM BUFFER
- EXISTING 12' RIGHT OF WAY PRIVATE WATER W/ USE IN COMMON WITH OTHERS (L.9101/F.461) (L.8877/F.52) (L.11855/F.136)
- EXISTING LAND DEDICATED TO HOWARD COUNTY FOR THE PURPOSE OF A PUBLIC ROAD (PLAT NO. 23834)
- NON-CREDITED OPEN SPACE AREA



GRADING DETAIL PT-1
SCALE: 1"=10'
SCALE 1"=10'
5' 0' 10'



GRADING DETAIL PT-2
SCALE: 1"=10'
SCALE 1"=10'
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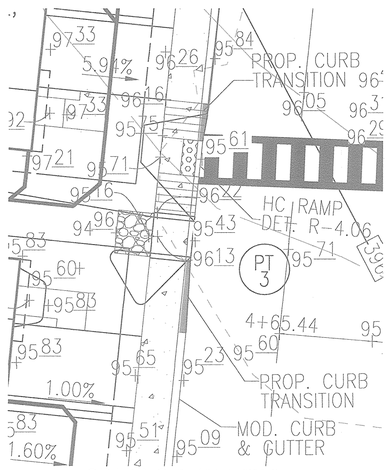
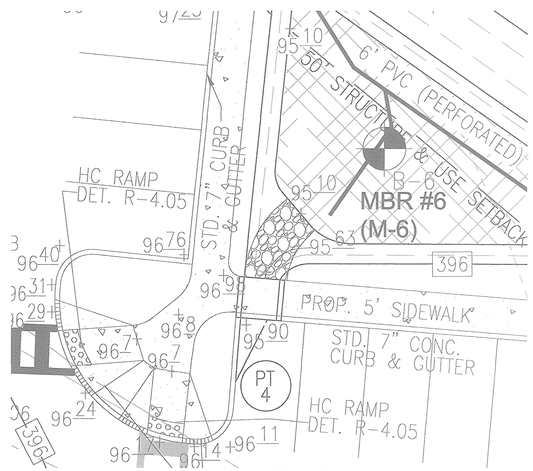
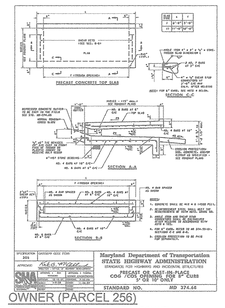
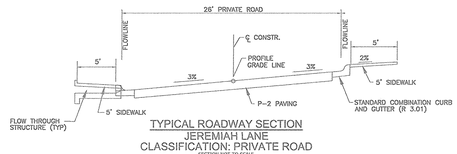


GRADING DETAIL PT-3
SCALE: 1"=10'
SCALE 1"=10'
5' 0' 10'

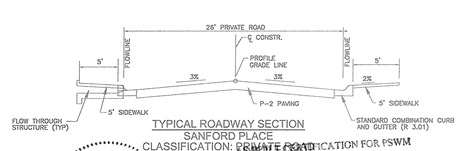


GRADING DETAIL PT-4
SCALE: 1"=10'
SCALE 1"=10'
5' 0' 10'





TYPICAL ROADWAY SECTION
JEREMIAH LANE
CLASSIFICATION: PRIVATE ROAD
SECTION NOT TO SCALE



TYPICAL ROADWAY SECTION
SANFORD PLACE
CLASSIFICATION: PRIVATE ROAD
SECTION NOT TO SCALE

* WHERE MODIFIED CURBING IS PROPOSED IT SHALL TRANSITION TO STANDARD COMBINATION CURB AND GUTTER (R 3.01) AT ALL INLETS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 11.29.16
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 12-05-16
DIRECTOR	DATE 12-5-16

STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — PROFESSIONAL ENGINEER — 2/5/19

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

ROBERT VOGEL 16193 2/5/19
P.E. NAME P.E. # DATE

NO AS-BUILT INFORMATION ON THIS SHEET

OWNER (PARCEL 256)
TEMPLE BETH SHALOM OF HOWARD COUNTY
8070 HARRIET TUBMAN LANE
COLUMBIA, MD. 21044

OWNER (PARCEL 153)
JOSEPH'S COURTYARD, LLC
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480-0023

OWNER/DEVELOPER (PARCEL 153)
TRINITY HOMES MARY LAND, LLC.
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480-0023

NO.	REVISION	DATE
1	REVISE PLAN TO ACCOMODATE BUILDER HOUSE MODEL	10/28/16

REVISED SITE DEVELOPMENT PLAN
GRADING PLAN
JOSEPH'S COURTYARD

LOTS 1-24 AND OPEN SPACE LOTS 25 AND 26 - USE IN COMMON ACCESS (P.256)
SINGLE FAMILY ATTACHED AND RELIGIOUS FACILITY (BA-93-40E)

TAX MAP 35 BLOCK 24 ZONED: PARCEL 153 (R-SA-8) / PARCEL 256 (R-12) PARCEL 153: P/O 256
5TH ELECTION DISTRICT L.09101/F.0461/L. 02546/F. 0388 HOWARD COUNTY, MARYLAND

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

STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — REGISTERED PROFESSIONAL ENGINEER — 2/5/19

ROBERT H. VOGEL, PE No.16193

DESIGN BY:	RHV/GAH
DRAWN BY:	GAH/KG
CHECKED BY:	RHV
DATE:	MAY 2016
SCALE:	AS SHOWN
W.O. NO.:	05-84

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2018

SHEET 7 OF 14

SDP-16-002

AS-BUILT - NOV. 2018

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

DEFINITION
THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

PURPOSE
TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES
WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

CRITERIA
A. SOIL PREPARATION
1. TEMPORARY STABILIZATION
A. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISCHARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
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.
2. 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:
I. SOIL PH BETWEEN 6.0 AND 7.0.
II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
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 AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
E. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING
1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCEM HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
2. 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.
3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FLIRNISH 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.
4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
5. 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 1½ 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 IVY, 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.
6. 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 TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
C. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
1. SOIL 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-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

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

PURPOSE
TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

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

CRITERIA
1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE 8.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE 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

HARDINESS ZONE (FROM FIGURE B.3): ZONE 6b
SEED MIXTURE (FROM TABLE B.1):

NO	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FELIZER RATE (10-20-20)	LIME RATE
1	COOL SEASON ANNUAL RYEGRASS OR EQUAL	40 LB / AC	MAR 1 TO MAY 15 AUG 1 TO OCT 15	0.5 IN.	436 LB/AC (10 LB PER 1000 SF)	2 TONS/AC (90 LB PER 1000 SF)
2	WARM SEASON FOXTAIL MILLET OR EQUAL	30 LB / AC	MAY 16 TO JUL 31	0.5 IN.		

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

DEFINITION
A MOUND OR PILE OF SOIL PROTECTION BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.
PURPOSE
TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.
CONDITIONS WHERE PRACTICE APPLIES
STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.
CRITERIA
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 B-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 B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-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
THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND 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.

CRITERIA
A. SEEDING
1. SPECIFICATIONS
A. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
B. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.
C. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
D. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
2. APPLICATION
A. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
I. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE 8.1, PERMANENT SEEDING TABLE 8.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
B. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
I. 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; P205 (PHOSPHOROUS), 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, LYE, 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 A UNIFORM FIBROUS PHYSICAL STATE.
I. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
II. 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 BE PHYTO-TOXIC.
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.
2. APPLICATION
A. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
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 SO 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 AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
3. ANCHORING
A. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:
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 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

Table B.1: Temporary Seeding for Site Stabilization

Plant Species	Seeding Rate [1/] lb/ac	Seeding Rate [1/] lb/1000 ft²	Seeding Depth [2/] (inches)	Recommended Seeding Dates by Plant Hardiness Zone [3/]: 5b and 6a	6b	7a and 7b
Cool-Season Grasses						
Annual Ryegrass (*Lolium perenne ssp. multiflorum*)	40	1.0	0.5	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Barley (*Hordeum vulgare*)	96	2.2	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Oats (*Avena sativa*)	72	1.7	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Wheat (*Triticum aestivum*)	120	2.8	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Cereal Rye (*Secale cereale*)	112	2.8	1.0	Mar 15 to May 31; Aug 1 to Oct 31	Mar 1 to May 15; Aug 1 to Nov 15	Feb 15 to Apr 30; Aug 15 to Dec 15
Warm-Season Grasses						
Foxtail Millet (*Setaria italica*)	30	0.7	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14
Pearl Millet (*Pennisetum glaucum*)	20	0.5	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14

FERTILIZER RATE (10-20-20)	LIME RATE
436 LB/AC (10 LB PER 1000 SF)	2 TONS/AC (90 LB PER 1000 SF)

NOTES:
1/ Seeding rates for the warm-season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as tested. Adjustments are usually not needed for the cool-season grasses.

Seeding rates listed above are for temporary seedings, when planted alone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate listed above for barley, oats, and wheat. For smaller-seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than 5% (by weight) of the overall permanent seeding mix. Cereal rye generally should not be used as a nurse crop, unless planting will occur in very late fall beyond the seeding dates for other temporary seedings. Cereal rye has allelopathic properties that inhibit the germination and growth of other plants. If it must be used as a nurse crop, seed at 1/3 of the rate listed above.

Oats are the recommended nurse crop for warm-season grasses.

2/ For sandy soils, plant seeds at twice the depth listed above.
3/ The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.

STANDARDS AND SPECIFICATIONS FOR DUST CONTROL

DEFINITION
CONTROLLING THE SUSPENSION OF DUST PARTICLES FROM CONSTRUCTION ACTIVITIES.
PURPOSE
TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES TO REDUCE ON AND OFF-SITE DAMAGE INCLUDING HEALTH AND TRAFFIC HAZARDS.
CONDITIONS WHERE PRACTICE APPLIES
SUBJECT TO DUST BLOWING AND MOVEMENT WHERE ON AND OFF-SITE DAMAGE IS LIKELY WITHOUT TREATMENT.
SPECIFICATIONS
1. MULCHES: SEE SECTION B-4-2 SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS, SECTION B-4-3 SEEDING AND MULCHING, AND SECTION B-4-4 TEMPORARY STABILIZATION. MULCH MUST BE ANCHORED TO PREVENT BLOWING.
2. VEGETATIVE COVER: SEE SECTION B-4-4 TEMPORARY STABILIZATION.
3. TILLAGE: TILL TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12 INCHES APART, SPRING-TOOTHED HARROWS, AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT THAT MAY PRODUCE THE DESIRED EFFECT.
4. IRRIGATION: SPRINKLE SITE WITH WATER UNTIL THE SURFACE IS MOIST. REPEAT AS NEEDED. THE SITE MUST NOT BE IRRIGATED TO THE POINT THAT RUNOFF OCCURS.
5. BARRIERS: SOLID BOARD FENCES, SILT FENCES, SNOW FENCES, BURLAP FENCES, STRAW BALES, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING.
6. CHEMICAL TREATMENT: USE OF CHEMICAL TREATMENT REQUIRES APPROVAL BY THE APPROPRIATE PLAN REVIEW AUTHORITY.

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

DEFINITION
TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.
PURPOSE
TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS.
CONDITIONS WHERE PRACTICE APPLIES
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.
CRITERIA
A. SEED MIXTURES
1. GENERAL USE
A. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE 8.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE 8.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE 8.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
B. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING.
C. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
D. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3-1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.
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(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
I. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE 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 35PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
II. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
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 BE BLENDED.
IV. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1½ TO 3 POUNDS PER 1000 SQUARE FEET.
NOTES:
SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND".
CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.
C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES
WESTEM 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 1½ 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

HARDINESS ZONE (FROM FIGURE B.3): ZONE 6b
SEED MIXTURE (FROM TABLE B.3): 9

NO	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FELIZER RATE (10-20-20) N	P_2O_5	K_2O	LIME RATE
1	COOL SEASON TALL FESCUE & KENTUCKY BLUEGRASS OR EQUAL	T.F. 60 LB / AC K.B. 40 LB / AC	MAR 1 TO MAY 15 AUG 15 TO OCT 15	1/4-1/2 IN.	45 LB/AC (1 LB PER 1000 SF)	90 LB/AC (2 LB PER 1000 SF)	90 LB/AC (2 LB PER 1000 SF)	2 TONS/AC (90 LB PER 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 FOREMAN AND INSPECTOR.
B. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS ¼ INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TOM 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 OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
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 SOD.
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 SOD 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 SOD 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 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 SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:
A. PRIOR TO THE START OF EARTH DISTURBANCE,
B. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING,
C. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT,
C. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.
OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.
4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15' OF CUT AND/OR FILL. STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6).
5. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE CID.
6. SITE ANALYSIS:

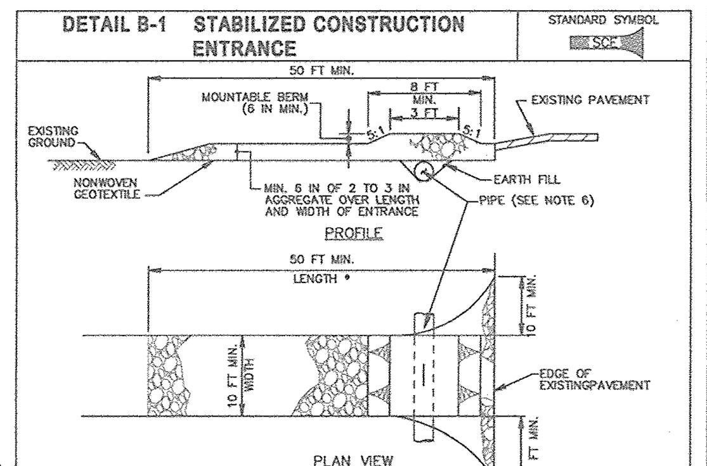
TOTAL SITE AREA	5.00 ACRES (BASED ON APPROVED CONDITIONAL USE PLAN)
AREA DISTURBED	3.16 ACRES
AREA TO BE ROOFED OR PAVED	1.60 ACRES
AREA TO BE VEGETATIVELY STABILIZED	1.56 ACRES
TOTAL CUT	1589 CY*
TOTAL FILL	7528 CY*
OFFSITE WASTE/BORROW LOCATION	TO BE DETERMINED **

7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY; AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE:
- INSPECTION DATE
- INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT)
- NAME AND TITLE OF INSPECTOR
- WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION)
- BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES
- EVIDENCE OF SEDIMENT DISCHARGES
- IDENTIFICATION OF PLAN DEFICIENCIES
- IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE
- IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS
- COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS
- PHOTOGRAPHS
- MONITORING/SAMPLING
- MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
- OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE).

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

* ESTIMATE ONLY. CONTRACTOR SHALL VERIFY QUANTITIES TO HIS OWN SATISFACTION.
** TO BE DETERMINED BY CONTRACTOR, WITH AN APPROVED ... OF THE SEDIMENT CONTROL INSPECTOR, WITH AN APPROVED AND ACTIVE GRADING PERMIT.

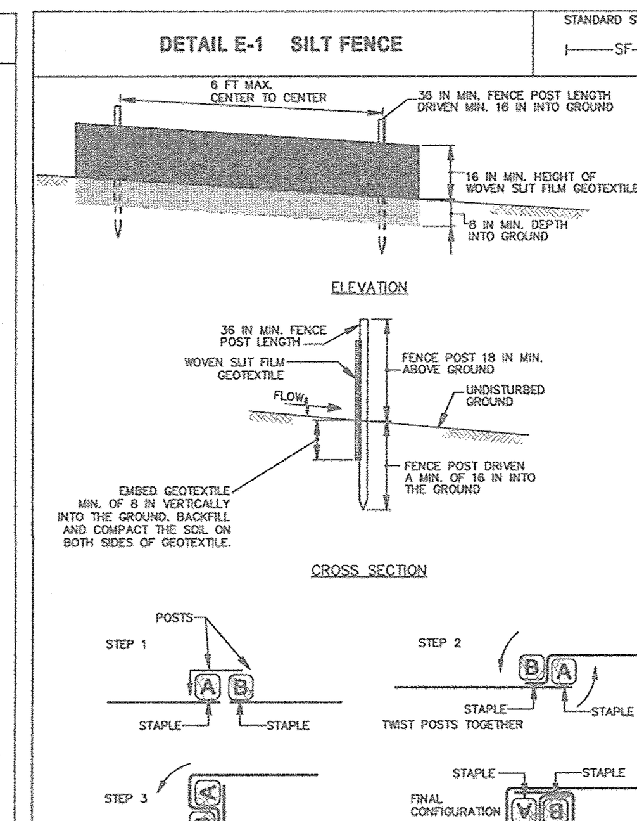
DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE
STANDARD SYMBOL SCE



CONSTRUCTION SPECIFICATIONS
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. 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.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

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

DETAIL E-1 SILT FENCE
STANDARD SYMBOL —SF—



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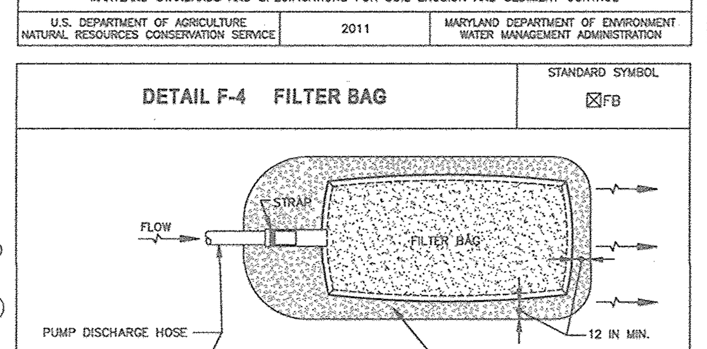
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL F-4 FILTER BAG
STANDARD SYMBOL FB



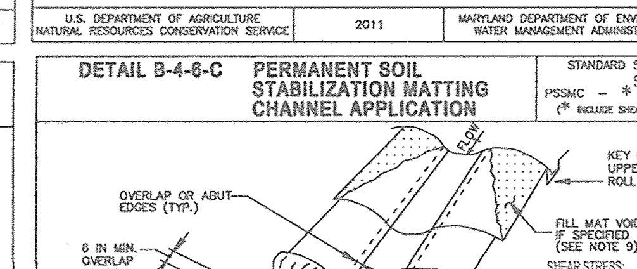
CONSTRUCTION SPECIFICATIONS
1. TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
2. PLACE FILTER BAG ON SUITABLE BASE (E.G., MULCH, LEAF/WOOD COMPOST, WOODCHIPS, SAND, OR STRAW BALES) LOCATED ON A LEVEL OR 5% MAXIMUM SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12 INCHES FROM EDGES OF BAG.
3. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
4. REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
5. USE NONWOVEN GEOTEXTILE WITH DOUBLE STITCHED SEAMS USING HIGH STRENGTH THREAD. SIZE SLEEVE TO ACCOMMODATE A MAXIMUM 4 INCH DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARV) FOR THE FOLLOWING:

GRAB TENSILE	250 LB	ASTM D-4632
PUNCTURE	150 LB	ASTM D-4833
FLOW RATE	70 GAL/MIN/FT²	ASTM D-4491
PERMITTIVITY (SEC⁻¹)	1.2 SEC⁻¹	ASTM D-4491
UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D-4355
APPARENT OPENING SIZE (AOS)	0.15-0.18 MM	ASTM D-4751
SEAM STRENGTH	90%	ASTM D-4632

6. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

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

DETAIL B-4-6-C PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION
STANDARD SYMBOL PSSMC - * SEE BELOW lb/ft² (* INCLUDE SHEAR STRESS)



CONSTRUCTION SPECIFICATIONS
1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
7. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
10. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

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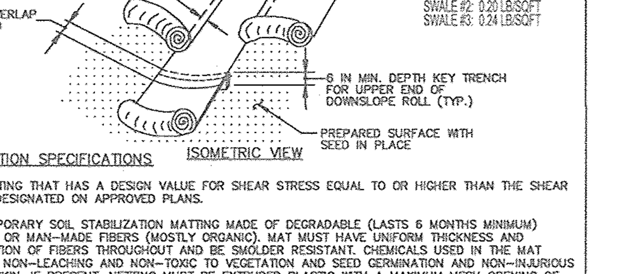
DETAIL B-4-6-A TEMPORARY SOIL STABILIZATION MATTING CHANNEL APPLICATION
STANDARD SYMBOL TSSMC - * SEE BELOW lb/ft² (* INCLUDE SHEAR STRESS)



CONSTRUCTION SPECIFICATIONS
1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTERLINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MAT SMOOTHLY AND FIRMLY ON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. KEY-IN UPSTREAM END OF EACH MAT ROLL BY DIGGING A 6 INCH (MINIMUM) TRENCH AT THE UPSTREAM END OF THE MATTING, PLACING THE ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END.
7. OVERLAP OR ABUT THE ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

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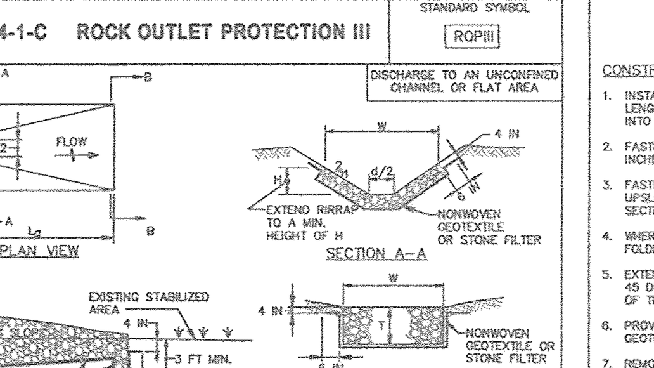
DETAIL E-1 SILT FENCE
STANDARD SYMBOL —SF—

CONSTRUCTION SPECIFICATIONS
1. USE WOOD POSTS 1¾ X 1¾ ± ⅛ INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE 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 SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

DETAIL D-4-1-C ROCK OUTLET PROTECTION III
STANDARD SYMBOL ROPIII



RIPRAP	
CLASS	THICKNESS (T)
I	19 IN
II	32 IN
III	46 IN

CONSTRUCTION SPECIFICATIONS
1. RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
2. USE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
3. PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (⅜ TO 1½ INCH MINIMUM STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF RIPRAP.
5. CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
6. WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.
7. CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.
8. MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND RIPRAP DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

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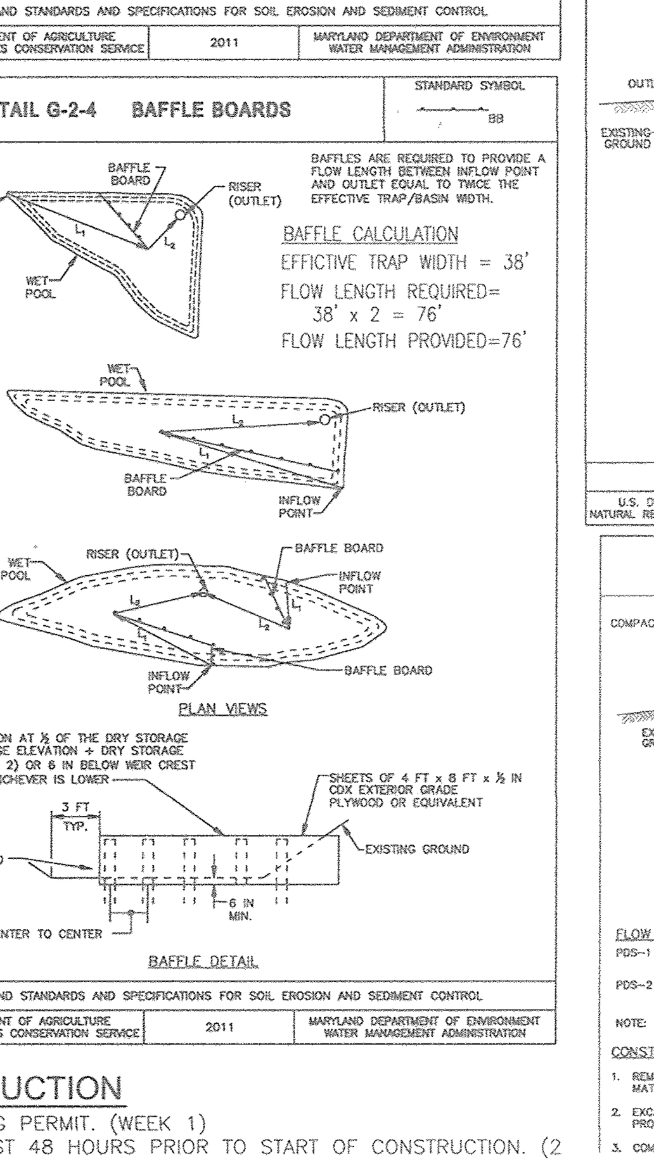
DETAIL G-2-4 BAFFLE BOARDS
STANDARD SYMBOL BB

BAFFLES ARE REQUIRED TO PROVIDE A FLOW LENGTH BETWEEN INFLOW POINT AND OUTLET EQUAL TO TWICE THE EFFECTIVE TRAP/BASIN WIDTH.

BAFFLE CALCULATION
EFFECTIVE TRAP WIDTH = 38'
FLOW LENGTH REQUIRED= 38' x 2 = 76'
FLOW LENGTH PROVIDED=76'



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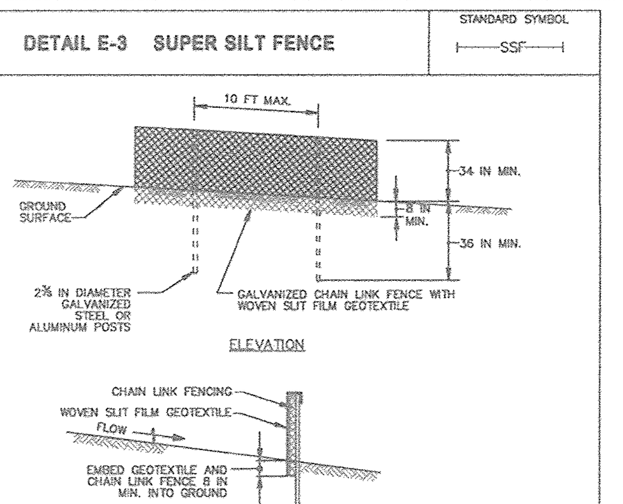
DETAIL E-3 SUPER SILT FENCE
STANDARD SYMBOL —SSF—



CONSTRUCTION SPECIFICATIONS
1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. 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.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

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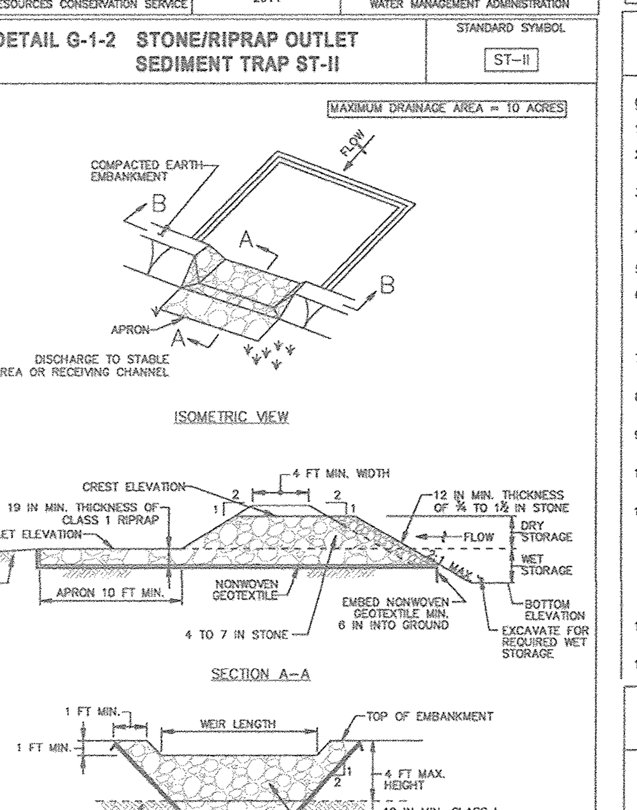
DETAIL G-1-2 STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II
STANDARD SYMBOL ST-II

MAXIMUM DRAINAGE AREA = 10 ACRES



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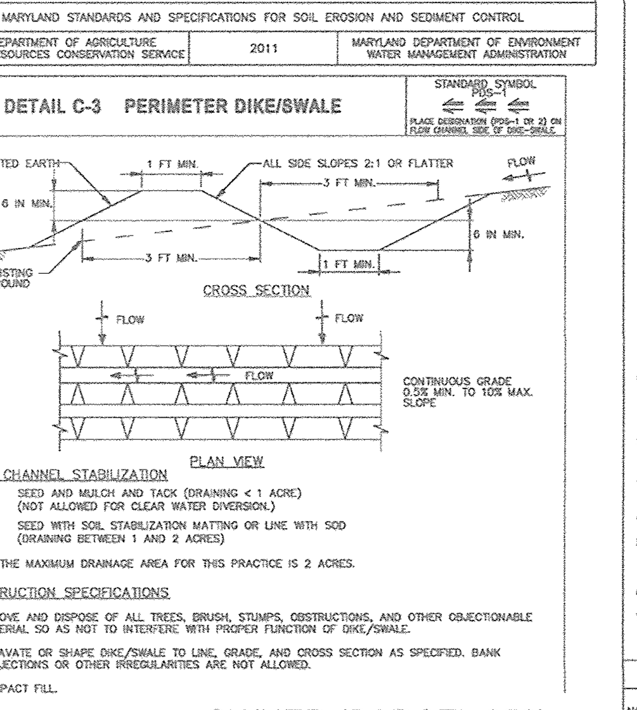
DETAIL C-3 PERIMETER DIKE/SWALE
STANDARD SYMBOL PDS-1 (PLACE DESIGNATION (PDS-1 OR 2) ON FLOW CHANNEL SIDE OF DIKE-SWALE)

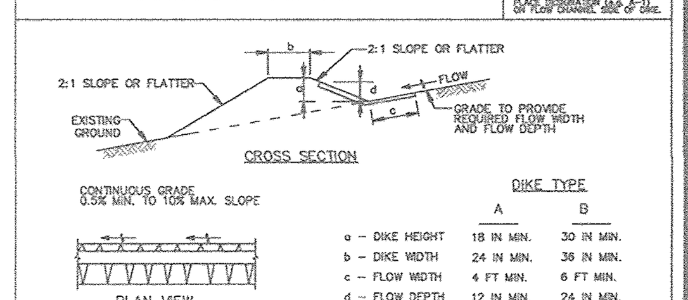


FLOW CHANNEL STABILIZATION
PDS-1 SEED AND MULCH AND TACK (DRAINING < 1 ACRE) (NOT ALLOWED FOR CLEAR WATER DIVERSION.)
PDS-2 SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD (DRAINING BETWEEN 1 AND 2 ACRES)

NOTE: THE MAXIMUM DRAINAGE AREA FOR THIS PRACTICE IS 2 ACRES.

CONSTRUCTION SPECIFICATIONS
1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF DIKE/SWALE.
2. EXCAVATE OR SHAPE DIKE/SWALE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
3. COMPACT FILL.

DETAIL C-1 EARTH DIKE
STANDARD SYMBOL A-1 (PLACE DESIGNATION (e.g. A-1) ON FLOW CHANNEL SIDE OF DIKE)



	DIKE TYPE A	DIKE TYPE B
a - DIKE HEIGHT	18 IN MIN.	30 IN MIN.
b - DIKE WIDTH	24 IN MIN.	36 IN MIN.
c - FLOW WIDTH	4 FT MIN.	6 FT MIN.
d - FLOW DEPTH	12 IN MIN.	24 IN MIN.

FLOW CHANNEL STABILIZATION
A-1 SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.)
A-2/B-2 SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.
A-3/B-3 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.

CONSTRUCTION SPECIFICATIONS
1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.
2. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
3. COMPACT FILL.
4. CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE. ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
5. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
6. STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.
7. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
8. UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

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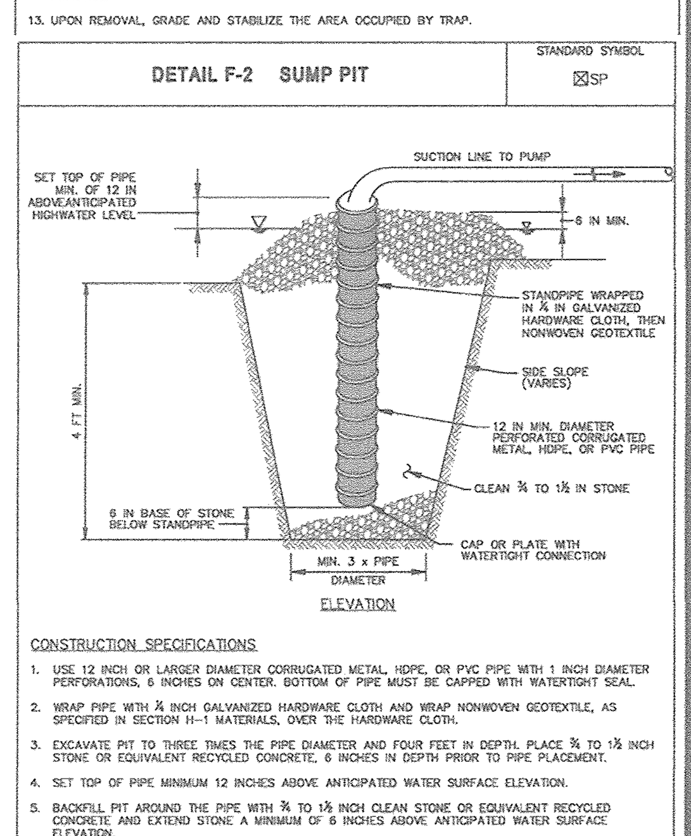
DETAIL G-1-2 STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II
STANDARD SYMBOL ST-II

CONSTRUCTION SPECIFICATIONS
1. CONSTRUCT TRAP IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE AVOIDED.
2. CLEAR, GRUB, AND STRIP ANY VEGETATION AND ROOT MAT FROM THE AREA UNDER THE EMBANKMENT AND TRAP BOTTOM.
3. USE FILL MATERIAL FREE OF ROOTS, WOODY VEGETATION, OVERSIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL FOR THE EMBANKMENT.
4. CONSTRUCT TOP OF EMBANKMENT 1 FOOT MINIMUM ABOVE WEIR CREST. COMPACT THE EMBANKMENT BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
5. MAKE ALL CUT AND FILL SLOPES 2:1 OR FLATTER.
6. PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE BOTTOM AND SIDES OF OUTLET AND APRON PRIOR TO PLACEMENT OF RIPRAP. OVERLAP SECTIONS OF GEOTEXTILE AT LEAST 1 FOOT WITH THE SECTION NEARER TO THE TRAP PLACED ON TOP. EMBED GEOTEXTILE AT LEAST 6 INCHES INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL.
7. USE CLEAN 4 TO 7 INCH RIPRAP TO CONSTRUCT THE WEIR. USE CLASS I RIPRAP FOR THE APRON. USE OF RECYCLED CONCRETE EQUIVALENT IS ACCEPTABLE.
8. PLACE 1 FOOT OF CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE ON THE UPSTREAM FACE OF THE WEIR.
9. CONSTRUCT AND MAINTAIN THE OUTLET ACCORDING TO APPROVED PLAN, AND IN SUCH A MANNER THAT EROSION AT OR BELOW THE OUTLET DOES NOT OCCUR.
10. STABILIZE THE EMBANKMENT AND INTERIOR SLOPES WITH SEED AND MULCH. STABILIZE POINTS OF CONCENTRATED INFLOW AS SHOWN ON APPROVED PLAN.
11. REMOVE SEDIMENT AND RESTORE TRAP TO ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO CLEANOUT ELEVATION (50% OF WET STORAGE DEPTH). DEPOSIT REMOVED SEDIMENT IN AN APPROVED AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. KEEP POINTS OF INFLOW AND OUTFLOW AS WELL AS INTERIOR OF THE TRAP FREE FROM EROSION, AND REMOVE ACCUMULATED DEBRIS. MAINTAIN EMBANKMENTS TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. REMOVE ANY TREES, BRUSH, OR OTHER WOODY VEGETATION GROWING ON EMBANKMENT OR NEAR PRINCIPAL SPILLWAY. MAINTAIN LINE, GRADE, AND CROSS SECTION.
12. WHEN DEWATERING TRAP, PASS REMOVED WATER THROUGH AN APPROVED SEDIMENT CONTROL PRACTICE.
13. UPON REMOVAL, GRADE AND STABILIZE THE AREA OCCUPIED BY TRAP.

DETAIL F-2 SUMP PIT
STANDARD SYMBOL SP



CONSTRUCTION SPECIFICATIONS
1. USE 12 INCH OR LARGER DIAMETER CORRUGATED METAL, HDPE, OR PVC PIPE WITH 1 INCH DIAMETER PERFORATIONS, 6 INCHES ON CENTER. BOTTOM OF PIPE MUST BE CAPPED WITH WATERTIGHT SEAL.
2. WRAP PIPE WITH ¼ INCH GALVANIZED HARDWARE CLOTH AND WRAP NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE HARDWARE CLOTH.
3. EXCAVATE PIT TO THREE TIMES THE PIPE DIAMETER AND FOUR FEET IN DEPTH. PLACE ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
4. SET TOP OF PIPE MINIMUM 12 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
5. BACKFILL PIT AROUND THE PIPE WITH ¾ TO 1½ INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
6. DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
7. A SUMP PIT REQUIRES FREQUENT MAINTENANCE. IF SYSTEM CLOGS, REMOVE PERFORATED PIPE AND REPLACE GEOTEXTILE AND STONE. KEEP POINT OF DISCHARGE FREE OF EROSION.

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SEQUENCE OF CONSTRUCTION

1. OBTAIN HOWARD COUNTY GRADING PERMIT. (WEEK 1)
2. NOTIFY HOWARD COUNTY AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION. (2 DAYS)
3. CONDUCT A PRE-CONSTRUCTION MEETING WITH THE SEDIMENT CONTROL INSPECTOR PRIOR TO ANY LAND DISTURBANCE. (1 WEEK)

STAGE 1 (SEE SHEE 5)
4. CONTRACTOR TO CONTRUCT WATER LINE FROM HARRIET TUBMAN LANE TO THE LOCATION OF THE STABLIZED CONSTRUCTION ENTRANCE AND STABILIZE IMMEDIATELY. WATER LINE CONSTRUCTION FROM HARRIET TUBMAN LANE TO SITE SHALL BE COMPLETED WITH MINIMAL DISTURBANCE WITH LINEAR TRENCHING AND SILT FENCE ON PAVEMENT IS TO BE PLACED BEFORE TRENCHING BEGINS. ALL DISTURBANCE TO BE STABILIZED AT THE END OF EACH WORKING DAY. (1 WEEK)
5. AFTER WATER LINE CONSTRUCTION IS COMPLETED AND STABILIZED, INSTALL STABILIZED CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM. (1 DAY)
6. WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB FOR INSTALLATION OF PERIMETER CONTROLS ONLY. (1 WEEK)
7. INSTALL CLEAN WATER DIVERSION DIKE/SWALES #1 & #2 AND THE REMAINING PERIMETER CONTROLS AS INDICATED ON SHEET 5 INCLUDING SILT FENCE AND SUPER SILT FENCE. (2 WEEKS)
8. INSTALL SEDIMENT TRAP #1 AS SHOWN ON SHEET 5. INSTALL EARTH DIKES #1 & #2 TO TRAP, INSTALL SUMP PIT, FILTER, BAG AND BAFFLES. COMPLETE GRADING AND C ONSTRUCTION OF SWALES #3 & #4 TO DIRECT FLOW TO TRAP, AND STABILIZE SWALES WITH EROSION CONTROL MATTING. (3 WEEKS)
9. WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB REMAINDER OF SITE. (3 WEEKS)
10. BEGIN SITE GRADING AS SHOWN ON SHEET 5. (2 WEEKS)
11. BEGIN INSTALLATION OF UTILITIES, INCLUDING WATER, SEWER, STORM DRAIN AND SWM PIPE SYSTEM AND TEMPORARY PIPES TO TRAP, AS SHOWN ON SHEET 5 AND CONSTRUCT SWALE # 5 UPON COMPLETION OF STORM DRAIN ES-1 THRU I-7. (6 WEEKS)
12. CONSTRUCT CURB, PAVING AND PARKING LOT TO BASE COURSE PAVING AS SHOWN ON SHEET 4. (3 WEEKS)
13. BEGIN CONSTRUCTION OF BUILDINGS. (48 WEEKS)
14. AFTER COMPLETION OF BUILDINGS AND ALL MAJOR SITE GRADING AND CONTRUCTION, AND WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, INSTALL INLET PROTECTION AS SHOWN ON SHEET 5 AND REMOVE SEDIMENT TRAP #1, DIKES # 1 & 2 DRAINING TO THE SEDIMENT TRAP AND TEMPORARY PIPES. (2 WEEKS)

STAGE 2 (SEE SHEET 6)
15. INSTALL STORM DRAIN PERMANENT OUTFALLS (TO BE DONE CONCURRENTLY WITH REMOVAL OF TRAP AND TEMPORARY PIPES IN STEP 14.) RELOCATE SUPER SILT FENCE AS SHOWN ON SHEET 6. (1 WEEK)
16. BEGIN INSTALLATION OF BIORETENTION FACILITIES AND COMPLETE CONSTRUCTION OF SWM PIPE SYSTEM, INCLUDING ROOF DRAIN LEADERS AND UNDERDRAINS. PROTECT BIORETENTION FACILITIES WITH SILT FENCE AND INLET PROTECTION. (4 WEEKS)
17. UPON COMPLETION OF BIORETENTION FACILITIES AND WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, REMOVE DIVERSION DIKE/SWALES #1 & #2 ALONG PERIMETER, GRADE REMAINING AREAS AND STABILIZE. (2 WEEKS)
18. INSTALL ALL SIDEWALKS. (1 WEEK)
19. FINE GRADE AND STABILIZE ALL AREAS OF PARCEL INCLUDING ANY EXPOSED EARTH AREAS OUTSIDE THE LOD. REMOVE ALL TRASH JUNK AND DEBRIS FROM ENTIRE PARCEL. (2 WEEKS)
20. INSTALL LANDSCAPING. (2 WEEKS)
21. REMOVE ALL SEDIMENT CONTROL MEASURES AFTER RECEIVING APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR. (4 WEEKS)

NOTES:
1. DURING GRADING AND AFTER EACH RAINFALL, CONTRACTOR WILL INSPECT AND PROVIDE NECESSARY MAINTENANCE TO THE SEDIMENT CONTROL MEASURES ON THIS PLAN.
2. FOLLOWING INITIAL SOIL DISTURBANCES OR REDISTURBANCE PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
A. 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL.
B. 7 CALENDAR DAYS FOR ALL OTHER DISTURBED AREAS.
3. NO CHANGES MAY BE MADE TO THE SEQUENCE OF CONSTRUCTION WITHOUT PRIOR HOWARD SCD APPROVAL.

OWNER (PARCEL 256)
TEMPLE BETH SHALOM OF HOWARD COUNTY
8070 HARRIET TUBMAN LANE
COLUMBIA, MD. 21044

OWNER (PARCEL 153)
JOSEPH'S COURTYARD, LLC
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480-0023

OWNER/DEVELOPER (PARCEL 153)
TRINITY HOMES MARY LAND, LLC.
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480-0023

SITE UTILITY NOTES:
1. PLACE EXCAVATED MATERIAL ON UPHILL SIDE OF TRENCH.
2. BACKFILL AND STABILIZE TRENCH AT THE END OF EACH DAY. WITHIN ROAD BED BACKFILL TOP FOOT OF TRENCH WITH GRAVEL.
3. MAINTAIN VEHICLE ACCESS ALONG DRIVEWAY AT ALL TIMES.
4. ALL UNDERGROUND SWM STRUCTURES MUST REMAIN SEPARATE OR BULKHEADED FROM ENTERING STORMDRAIN UNTIL ALL CONTRIBUTING AREAS ARE PERMANENTLY STABILIZED AND WRITTEN PERMISSION IS PROVIDED BY INSPECTOR TO ALLOW OPENING FOR FLOW. ANY WATER COLLECTED IN WORK AREA SHALL BE PUMPED THROUGH FILTERBAG.

AS-BUILT CERTIFICATION FOR PSWM
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.
Robert Vogel 16193 2/5/19
P.E. NAME P.E. # DATE

NO AS-BUILT INFORMATION ON THIS SHEET

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6.1.16
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6-28-16
DIRECTOR — DATE 7-6-16

BY THE DEVELOPER:
"I/WE CERTIFY THAT ALL DEVELOPEMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."
SIGNATURE OF DEVELOPER — DATE 05/4/16

BY THE ENGINEER:
"I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."
SIGNATURE OF ENGINEER — DATE 5/11/16

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD S.C.D. — DATE 5/24/16

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN
GRADING, SEDIMENT AND EROSION CONTROL NOTES AND DETAILS
JOSEPH'S COURTYARD
LOTS 1-24 AND OPEN SPACE LOTS 25 AND 26 - USE IN COMMON ACCESS (P.256)
SINGLE FAMILY ATTACHED AND RELIGIOUS FACILITY (BA-93-40E)
TAX MAP 35 BLOCK 24 — ZONED: PARCEL 153 (R-SA-8) / PARCEL 256 (R-12) — PARCEL 153: P/O 256
5TH ELECTION DISTRICT — L.09101/F.0461/L. 02548/F. 0388 — HOWARD COUNTY, MARYLAND

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

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2016

ROBERT H. VOGEL, PE No.16193

DESIGN BY:	RHV/GAH
DRAWN BY:	GAH/KG
CHECKED BY:	RHV
DATE:	MAY 2016
SCALE:	AS SHOWN
W.O. NO.:	05-84

SHEET 8 OF 14

SDP-16-002

AS-BUILT - NOV. 2018

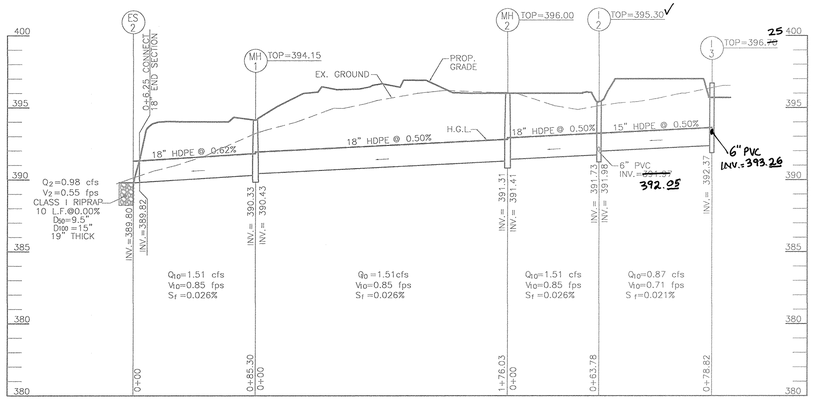
STORM DRAIN DRAINAGE AREA MAP

SCALE: 1"=50'

SCALE 1"=50'

STRUCTURE SCHEDLUE									
STR #	STRUCTURE	NORTHING	EASTING	TOP	INV. IN #1	INV. IN #2	INV. IN #3	INV. OUT	REMARKS/DETAIL #
ES-1	24" CONC. END SECTION	N 552,920.82	E 1,345,902.53	-	388.64	-	-	-	HO. CO. DET. D-5.41
ES-2	18" CONC. END SECTION	N 552,832.48	E 1,345,869.86	-	389.80	-	-	-	HO. CO. DET. D-5.41
I-1	YARD INLET	N 552,883.06	E 1,345,921.42	-	-	-	-	389.80	HO. CO. DET. D-4.14
I-2	YARD INLET	N 552,841.1	E 1,346,141.55	395.30	391.98	391.97	-	391.73	HO. CO. DET. D-4.14
I-3	YARD INLET	N 552,916.42	E 1,346,164.8	396.70	-	-	-	392.37	HO. CO. DET. D-4.14
I-4	YARD INLET	N 552,918.5	E 1,345,919.84	393.20	389.26	389.62	-	388.76	HO. CO. DET. D-4.14
I-5	YARD INLET	N 553,041.11	E 1,345,940.83	394.00	389.98	-	-	389.88	HO. CO. DET. D-4.14
I-6	YARD INLET	N 553,103.49	E 1,346,094.06	395.60	392.02	-	-	391.77	HO. CO. DET. D-4.14
I-7	YARD INLET	N 553,107.28	E 1,346110.48	395.00	-	-	-	392.50	HO. CO. DET. D-4.14
MH-1	STD. PRECAST MANHOLE	N 552,799.94	E 1,345,941.9	394.15	390.43	-	-	390.33	HO. CO. DET. G-5.12
MH-2	STD. PRECAST MANHOLE	N 552,782.22	E 1,346,117.03	396.00	391.41	-	-	391.31	HO. CO. DET. G-5.12
MH-3	STD. PRECAST MANHOLE	N 553,169.17	E 1,345,952.21	394.71	390.73	-	-	390.63	HO. CO. DET. G-5.12
MH-4	STD. PRECAST MANHOLE	N 553,161.23	E 1,346,030.74	397.20	391.22	-	-	391.12	HO. CO. DET. G-5.12
MH-5	STD. PRECAST MANHOLE	N 553,121.25	E 1,346,090.12	398.20	391.68	-	-	391.58	HO. CO. DET. G-5.12
PT-1	PASS-THRU INLET	N 552,986.53	E 1,346,163.33	398.30	-	-	-	-	DET. MD.374.68, 6.00' L x 5.67' W
PT-2	PASS-THRU INLET	N 552,925.41	E 1,346,020.63	394.84	-	-	-	-	DET. MD.374.68, 6.00' L x 5.67' W
PT-3	PASS-THRU INLET	N 553,040.42	E 1,346,032.27	396.03	-	-	-	-	DET. MD.374.68, 6.00' L x 5.67' W
PT-4	PASS-THRU INLET	N 553054.77	E 1,346,089.13	396.56	-	-	-	-	DET. MD.374.68, 6.00' L x 5.67' W

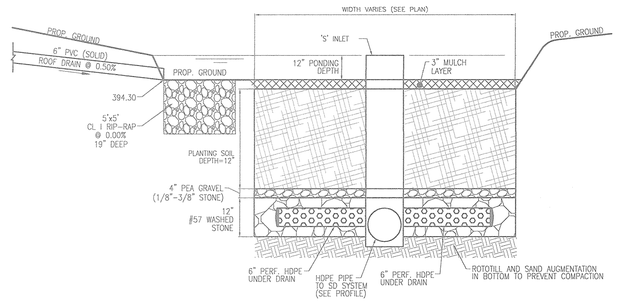
PIPE SCHEDLUE		
SIZE	TYPE	LENGTH
6"	SOLID PVC	1230
6"	PERFORATED PVC	448
15"	HDPE	95.67
18"	HDPE	746.8
24"	HDPE	23.72



STORM DRAIN PROFILES

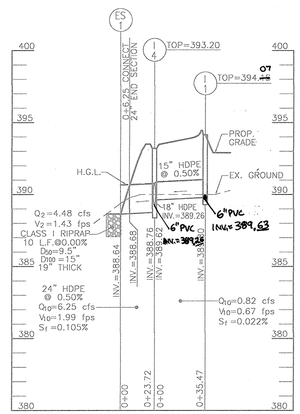
SCALE: 1"=50' HORIZ.
1"=5' VERT.

SCALE 1"=50'



ROOF DRAIN OUTFALL DETAIL
MICRO-BIORETENTION (SWM #2)

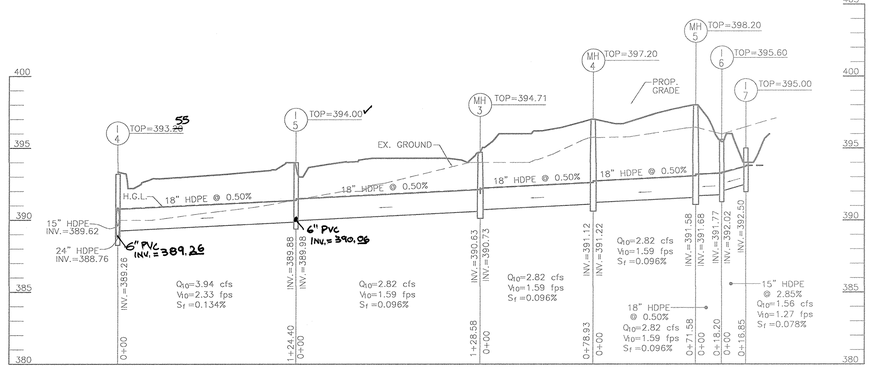
NOT TO SCALE



STORM DRAIN PROFILES

SCALE: 1"=50' HORIZ.
1"=5' VERT.

SCALE 1"=50'



STORM DRAIN PROFILES

SCALE: 1"=50' HORIZ.
1"=5' VERT.

SCALE 1"=50'

LEGEND:

- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING TREES (FIELD LOCATED)
- EXISTING TREELINE (FIELD LOCATED)
- PROPOSED FENCE AROUND THE TOT LOT
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING STREAM
- EXISTING STREAM BUFFER
- PROPOSED CURB AND GUTTER
- PROPOSED CURB TRANSITION
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- PROPOSED TREELINE
- PROPOSED SIDEWALK
- EX. FOREST CONSERVATION "RETENTION" EASEMENT (L.9101/F.461) (PLAT NO. 22359)
- EXISTING WETLANDS
- EXISTING 24' PUBLIC WATER ACCESS & UTILITY EASEMENT (L.3321/F.548)
- EXISTING 20' PUBLIC SEWER AND UTIL EASEMENT (L.3544/F.44)
- EXISTING 12' RIGHT OF WAY, PRIVATE WATER & USE IN COMMON WITH OTHERS (L.9101/F.461) (L.8877/F.52) (L.11855/F.136)
- EXISTING 15' PRIVATE ACCESS EASMENT (L.8877/F.52) (L.9101/F.461)
- EXISTING USE-IN-COMMON ACCESS MAINTENANCE AND SIGN EASEMENT (L.16117/F.001)
- RECREATION OPEN SPACE AMENITY AREA
- EXISTING 20' PUBLIC WATER & UTILITY EASEMENT TO BE ABANDONED (L.15109/F.510)
- EXISTING PUBLIC WATER AND UTILITY EASEMENT (L.15109/F.405)
- MICRO-BIORETENION FACILITIES
- EXISTING 10' PRIVATE DRAINAGE AND UTILITY EASEMENT (PLAT NO. 22834)
- DRAINAGE DIVIDE FOR STORM DRAIN
- 2 DRAINAGE AREA DESIGNATION
- EXISTING VARIABLE WIDTH PUBLIC SEWER, WATER AND UTILITY EASEMENT (PLAT NO. 22834)

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 11.29.16
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 12-05-16
DIRECTOR	DATE 12-5-16

AS-BUILT CERTIFICATION FOR PSWM

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

Robert Vogel 16193 — P.E. NAME
2/5/19 — P.E. # / DATE

STATE OF MARYLAND · ROBERT HARRIS VOGEL · No. 16193 · PROFESSIONAL ENGINEER

OWNER (PARCEL 256)
TEMPLE BETH SHALOM OF HOWARD COUNTY
8070 HARRIET TUBMAN LANE
COLUMBIA, MD. 21044

OWNER (PARCEL 153)
JOSEPH'S COURTYARD, LLC
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480-0023

OWNER/DEVELOPER (PARCEL 153)
TRINITY HOMES MARY LAND, LLC.
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480-0023

NO.	REVISION	DATE
1	REVISE PLAN TO ACCOMODATE BUILDER HOUSE MODEL	10/28/16

REVISED SITE DEVELOPMENT PLAN
STORMDRAIN DRAINAGE AREA MAP, PROFILES AND SCHEDULES
JOSEPH'S COURTYARD

LOTS 1-24 AND OPEN SPACE LOTS 25 AND 26 - USE IN COMMON ACCESS (P.256)
SINGLE FAMILY ATTACHED AND RELIGIOUS FACILITY (BA-93-40E)

TAX MAP 35 BLOCK 24 — ZONED: PARCEL 153 (R-SA-8) / PARCEL 256 (R-12) — PARCEL 153: P/O 256
5TH ELECTION DISTRICT — L.09101/F.0461/L. 02548/F. 0388 — HOWARD COUNTY, MARYLAND

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

STATE OF MARYLAND · ROBERT HARRIS VOGEL · 16193 · REGISTERED · PROFESSIONAL ENGINEER — 10/21/16
ROBERT H. VOGEL, PE No.16193

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2018

DESIGN BY:	RHV/GAH
DRAWN BY:	GAH/KG
CHECKED BY:	RHV
DATE:	MAY 2016
SCALE:	AS SHOWN
W.O. NO.:	05-84

SHEET 9 OF 14

SDP-16-002

AS-BUILT - NOV. 2018

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SWM DRAINAGE AREA MAP

SCALE: 1"=40'

LEGEND:

- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING TREES (FIELD LOCATED)
- EXISTING TREELINE (FIELD LOCATED)
- PROPOSED FENCE AROUND THE TOT LOT
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING STREAM
- EXISTING STREAM BUFFER
- PROPOSED CURB AND GUTTER
- PROPOSED CURB TRANSITION
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
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- EX. FOREST CONSERVATION "RETENTION" EASEMENT (L.9101/F.461) (PLAT NO. 22359)
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- EXISTING 12' RIGHT OF WAY, PRIVATE WATER & USE IN COMMON WITH OTHERS (L.9101/F.461) (L.8877/F.52) (L.11855/F.136)
- EXISTING 15' PRIVATE ACCESS EASMENT (L.8877/F.52) (L.9101/F.461)
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- RECREATION OPEN SPACE AMENITY AREA
- EXISTING 20' PUBLIC WATER & UTILITY EASEMENT TO BE ABANDONED (L.15109/F.510)
- EXISTING PUBLIC WATER AND UTILITY EASEMENT (L.15109/F.405)
- MICRO-BIORETENION FACILITIES
- EXISTING 10' PRIVATE DRAINAGE AND UTILITY EASEMENT (PLAT NO. 23834)
- DRAINAGE DIVIDE FOR SWM
- DRAINAGE AREA DESIGNATION
- EXISTING VARIABLE WIDTH PUBLIC SEWER, WATER AND UTILITY EASEMENT (PLAT NO. 23834)

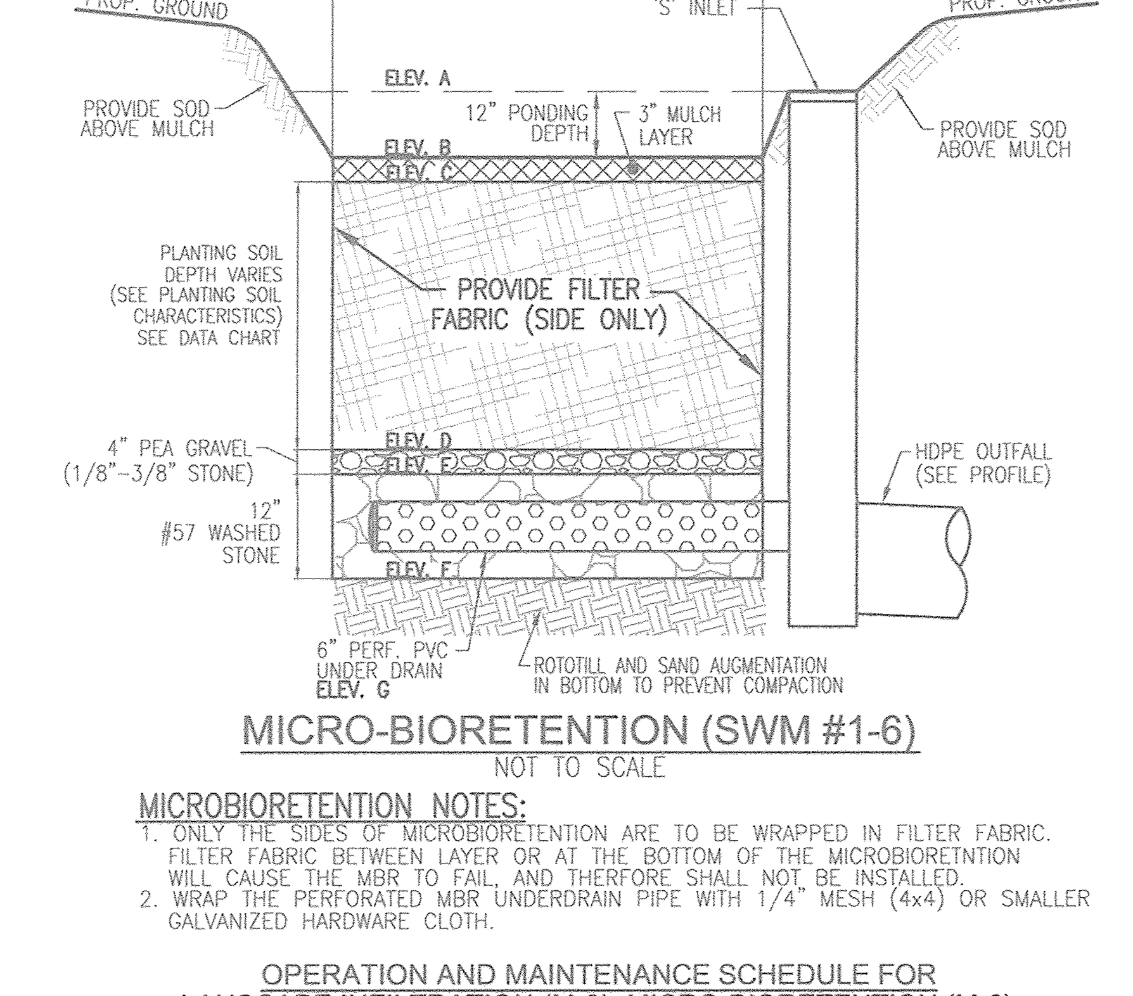
Appendix B.4. Construction Specifications for Environmental Site Design Practices

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

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil [2' to 4' deep]	loamy sand (60 - 65%) & compost (35 – 40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" to 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with ¼-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; f'_c = 3500 psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) *not using previously approved State or local standards* requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350.R/89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

MICRO-BIORETENTION DATA CHART

MBR Facility	Ponding Depth (ft)	Ponding Elevation ELEV. A	Top of Mulch ELEV. B	Bottom of Mulch ELEV. C	Depth of Plant Mix	Bottom of Plant Mix ELEV. D	Bottom of Pea Gravel ELEV. E	Depth of Stone (ft.)	Invert of Underdrain INV. ELEV. G	Bottom of Stone ELEV. F
#1	1.00	~~396.15~~ [394.07]	~~395.15~~ [392.95]	~~394.90~~ [392.70]	.50	393.40	393.07	1.00	~~392.32~~ [389.63]	~~392.07~~ [389.30]
#2	1.00	395.30 ✓	394.30 [10]	~~394.05~~ [393.85]	.00	393.05	392.72	1.00	~~391.97~~ [392.05]	391.72 ✓
#3	1.00	~~396.70~~ [395.25]	395.70 [15]	~~395.45~~ [394.90]	.50	393.95	393.62	2.00	393.07 [26]	391.62 [55]
#4	1.00	393.20 [55]	~~392.20~~ [391.90]	391.95 [65]	1.50	390.45	390.12	2.00	389.87 [26]	388.12 [00]
#5	1.00	394.00 ✓	~~393.50~~ [392.60]	392.75 [35]	1.50	391.25	390.92	1.00	390.17 [06]	389.92 [75]
#6	0.50	395.60 ✓	~~395.10~~ [394.50]	394.85 [25]	1.50	393.35	393.02	2.00	392.77 ✓	~~391.02~~ [390.90]



MICRO-BIORETENTION (SWM #1-6)

NOT TO SCALE

MICROBIORETENTION NOTES:

1. ONLY THE SIDES OF MICROBIORETENTION ARE TO BE WRAPPED IN FILTER FABRIC. FILTER FABRIC BETWEEN LAYER OR AT THE BOTTOM OF THE MICROBIORETNTION WILL CAUSE THE MBR TO FAIL, AND THERFORE SHALL NOT BE INSTALLED.
2. WRAP THE PERFORATED MBR UNDERDRAIN PIPE WITH 1/4" MESH (4x4) OR SMALLER GALVANIZED HARDWARE CLOTH.

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

1. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULTCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUME II, TABLE A.4.1 AND 2.

2. THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.

3. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.

4. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

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

1. MATERIAL SPECIFICATIONS

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

2. FILTERING MEDIA OR PLANTING SOIL

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

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

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

3. COMPACTION

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

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

ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTOTILLING) BASE. WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE. WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.

4. PLANT MATERIAL

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

5. PLANT INSTALLATION

COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE.
ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/8TH OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION. TREES SHALL BE BRACED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL. GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS. THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFEATS, OR AT A MINIMUM, IMPEDES THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.

6. UNDERDRAINS

UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:

* PIPE – SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTMF 758, TYPE PS 28, OR AASHTO-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G., PVC OF HDPE).
* PERFORATIONS – IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4x4) GALVANIZED HARDWARE CLOTH.
* GRAVEL – THE GRAVEL LAYER (NO. 57 STONE PREFERRED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.
* THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.
* A RIGID, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,0000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER.
* A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES IN TO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".

THIS MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).

7. MISCELLANEOUS

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

MAPPED SOILS TYPES - HOWARD COUNTY SOIL MAP #16

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	HYDRIC INCLUSIONS	K FACTOR	PRIME FARMLAND	<15% SLOPE W/ EROSION POTENTIAL
BaA	BAILE SILT LOAN, 0 TO 3 PERCENT SLOPES	D	YES	YES	0.37	NO	NO
GfB	GLADSTONE – URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES	A	NO	NO	0.28	NO	NO
GmA	GLENVILLE SILT LOAM, 0 TO 3 PERCENT SLOPES	C	NO	NO	0.43	NO	NO

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY

NOTE:
HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT

STATE OF MARYLAND ROBERT HARRIS VOGEL No. 16193 PROFESSIONAL ENGINEER 2/20/19

AS-BUILT CERTIFICATION FOR PSWM

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

Robert Vogel | 16193 | 2/5/19
P.E. NAME | P.E. # | DATE

TEST PIT DATA TABLE

BORING #	EXISTING GROUND ELEVATION	DEPTH TO WATER	ELEVATION AT WATER TABLE	MICRO-BIO RETENTION #	ELEVATION AT MBR BOTTOM
B-1	396.56	11'	385.56	3	391.62
B-2	395.03	10'	385.03	2	391.92
B-3	390.38	8'	382.38	1	392.07
B-4	390.62	7'	383.62	4	388.12
B-5	392.77	6.5'	386.27	5	389.92
B-6	395.80	9'	386.8	6	391.02

PROJECT BS LAND
DESIGNER RHV/GAH
DATE 06/25/15 REV. ROBERT H. VOGEL ENGINEERING, INC.

DRAINAGE AREA #	AREA TREATED	FACILITY NUMBER	PERMEABLE PAVEMENT	BIO RETENTION*	LANDSCAPE INFILTRATION	GREEN ROOF	BIO SWALE	GRAVEL TRENCH	X	X	ESDv VOLUME
			ENVIRONMENTAL SITE DESIGN PRACTICE VOLUMES PROVIDED								
1	6799	1	0	830	0	0	0	0	0	0	830
2	7897	2	0	939	0	0	0	0	0	0	939
3	11040	3	0	1414	0	0	0	0	0	0	1414
4	33336	4	0	2538	0	0	0	0	0	0	2538
5	17623	5	0	1294	0	0	0	0	0	0	1294
6	9689	6	0	928	0	0	0	0	0	0	928

ESDv REQUIRED 7802 CF — TOTAL ESDv PROVIDED 7943

* STORAGE, 75% OF ESD TREATED

PROJECT:	BS LAND	
TOTAL AREA:	3.16	AC
TARGET Pe:	1.72	IN
IMPERVIOUS:	38.38	PERCENT
SITE Rv:	0.40	
APPROX SITE ESDv:	7802	CF

DRAINAGE AREA	IMPERVIOUS AREA	GRASS AREA	TOTAL AREA	PERCENT IMPERVIOUS	RV	ESDv MIN	ESDv MAX	TARGET ESDv
1	4010	2789	6799	58.98	0.58	329	856	566
2	4010	3887	7897	50.78	0.51	334	868	574
3	6576	4464	11040	59.57	0.59	539	1402	927
4	21353	11983	33336	64.05	0.63	1740	4525	2993
5	9370	8253	17623	53.17	0.53	776	2018	1335
6	7510	2179	9689	77.51	0.75	604	1569	1038
TOTAL AREA			86384 SF / 1.98 AC					7434 CF

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION (signed)	DATE 11-29-16
CHIEF, DIVISION OF LAND DEVELOPMENT (signed)	DATE 12-05-16
DIRECTOR (signed)	DATE 12-5-16

OWNER (PARCEL 256)
TEMPLE BETH SHALOM OF HOWARD COUNTY
8070 HARRIET TUBMAN LANE
COLUMBIA, MD. 21044

OWNER (PARCEL 153)
JOSEPH'S COURTYARD, LLC
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480-0023

OWNER/DEVELOPER (PARCEL 153)
TRINITY HOMES MARY LAND, LLC.
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480-0023

NO.	REVISION	DATE
1	REVISE PLAN TO ACCOMODATE BUILDER HOUSE MODEL	10/28/16

REVISED SITE DEVELOPMENT PLAN
STORM WATER MANAGEMENT
DRAINAGE AREA MAP, NOTES AND DETAILS
JOSEPH'S COURTYARD

LOTS 1-24 AND OPEN SPACE LOTS 25 AND 26 - USE IN COMMON ACCESS (P.256)
SINGLE FAMILY ATTACHED AND RELIGIOUS FACILITY (BA-93-40E)
ZONED: PARCEL 153 (R-SA-8) / PARCEL 256 (R-12)
L.09101/F.0461/L. 02548/F. 0388
TAX MAP 35 BLOCK 24 — PARCEL 153: P/O 256
5TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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

STATE OF MARYLAND ROBERT HARRIS VOGEL NO.16193 REGISTERED PROFESSIONAL ENGINEER 10/21/16

ROBERT H. VOGEL, PE No.16193

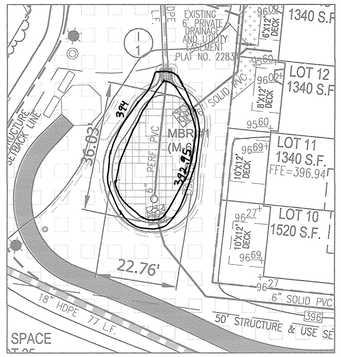
DESIGN BY:	RHV/GAH
DRAWN BY:	GAH/KG
CHECKED BY:	RHV
DATE:	MAY 2016
SCALE:	AS SHOWN
W.O. NO.:	05-84

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2016

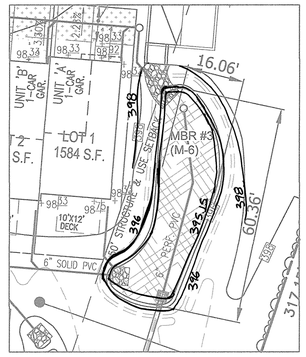
AS-BUILT - NOV. 2018

SDP-16-002

K:\Projects\05-84\engr\dwg\BS LAND\SDP\REDLINE_1\SDP10_REPLACEMENT_SWMDAM_DETAILS.dwg, 10/28/2016 4:29:42 PM



PLAN VIEW MBR #1
SCALE: 1"=20'



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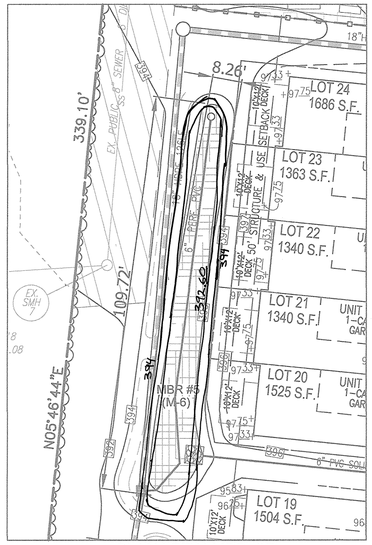

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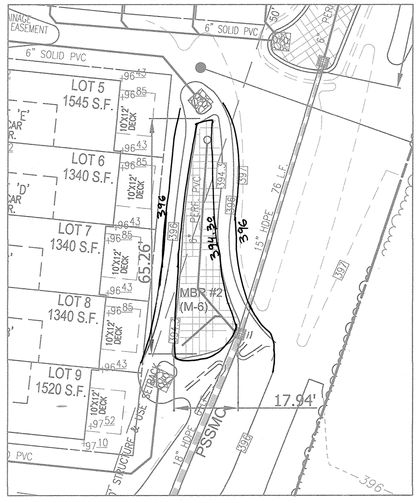

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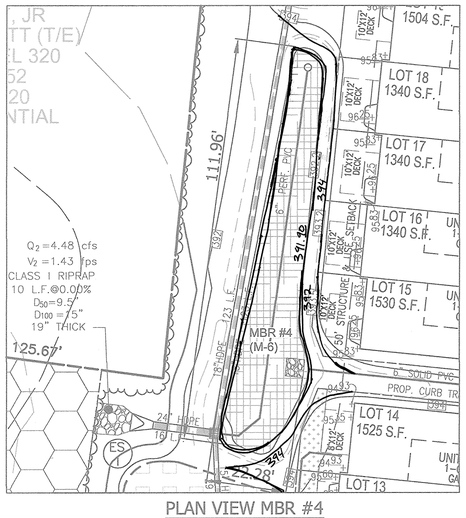

PLAN VIEW MBR #4
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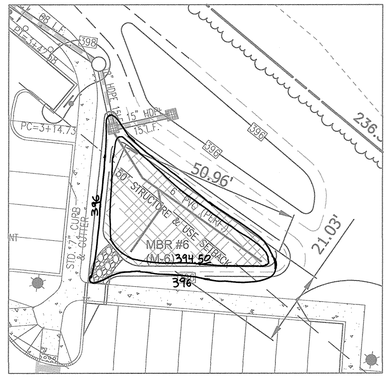

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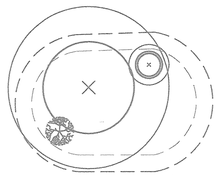

TYPICAL PLANTING DETAIL FOR MICRO BIO-RETENTION
NTS
50% COVERAGE AT FULL GROWTH REQUIRED

"MICRO-BIORETENTION" PLANTING SCHEDULE NOTES:

1. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HOWARD COUNTY PLANTING SPECIFICATIONS.
2. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
3. FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
4. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.
5. SEE SHEET 10 FOR TYPICAL PLANTING SPECIFICATIONS AND DETAILS.
6. MICROBIORETENTION AREAS ARE TO BE PLANTED BASED ON A MINIMUM DENSITY OF 1000 STEMS PER PLANTED ACRE (.0229 STEMS PER SQUARE FOOT). ABOVE PLANTING RATIOS ARE TO BE APPLIED TO THE AREAS PROVIDED IN THE ESDv SUMMARY.

SEE SHEET 10 FOR MICRO-BIORETENTION DETAIL AND CONSTRUCTION ELEVATIONS.

MICRO-BIORETENTION PLANTING SCHEDULE

	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
	20	LINDERA BENZOIN SPICEBUSH	5 GALLON	CONT
	40	ILEX GLABRA INKBERRY	3 GALLON	CONT
	40	VIBURNUM TRILOBUM AMERICAN HIGHBUSH CRANBERRY	3 GALLON	CONT

SF X 75% X .0229 STEMS PER SQUARE FOOT = PLANTS REQUIRED

MBR FACILITY	SURFACE AREA	REQUIRED PLANTINGS	PLANTINGS
MBR #1	673 SF	12	2 SPICEBUSH 5 INKBERRY 5 AMERICAN HIGHBUSH CRANBERRY
MBR #2	704 SF	12	2 SPICEBUSH 5 INKBERRY 5 AMERICAN HIGHBUSH CRANBERRY
MBR #3	866 SF	15	3 SPICEBUSH 6 INKBERRY 6 AMERICAN HIGHBUSH CRANBERRY
MBR #4	1554 SF	27	7 SPICEBUSH 10 INKBERRY 10 AMERICAN HIGHBUSH CRANBERRY
MBR #5	971 SF	17	3 SPICEBUSH 7 INKBERRY 7 AMERICAN HIGHBUSH CRANBERRY
MBR #6	959 SF	17	3 SPICEBUSH 7 INKBERRY 7 AMERICAN HIGHBUSH CRANBERRY

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.29.16

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12-5-16

DIRECTOR — DATE 12-5-16

LEGEND:

- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- SS — EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING TREELINE (FIELD LOCATED)
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- PROPOSED CURB AND GUTTER
- PROPOSED CURB TRANSITION
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- PROP. LIGHT POLE
- PROPOSED SIDEWALK
- EXISTING 20' PUBLIC SEWER AND UTIL EASEMENT (L.3544/F.44)
- EXISTING 10' PRIVATE DRAINAGE AND UTILITY EASEMENT (PLAT NO. 23834)
- RECREATION OPEN SPACE AMENITY AREA

STATE OF MARYLAND — ROBERT HARRIS VOGEL — NO. 16193 — REGISTERED PROFESSIONAL ENGINEER

AS-BUILT CERTIFICATION FOR PSWM

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

Robert Vogel — 16193 — 2/5/19
P.E. NAME — P.E.# — DATE

OWNER (PARCEL 256)
TEMPLE BETH SHALOM OF HOWARD COUNTY
8070 HARRIET TUBMAN LANE
COLUMBIA, MD. 21044

OWNER (PARCEL 153)
JOSEPH'S COURTYARD, LLC
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480-0023

OWNER/DEVELOPER (PARCEL 153)
TRINITY HOMES MARY LAND, LLC.
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480-0023

NO.	REVISION	DATE
1	REVISE PLAN TO ACCOMODATE BUILDER HOUSE MODEL	10/28/16

REVISED SITE DEVELOPMENT PLAN STORMWATER MANAGEMENT DETAILS AND MICRO-BIORETENTION PLANTING PLANS

JOSEPH'S COURTYARD

LOTS 1-24 AND OPEN SPACE LOTS 25 AND 26 - USE IN COMMON ACCESS (P.256)
SINGLE FAMILY ATTACHED AND RELIGIOUS FACILITY (BA-93-40E)
ZONED: PARCEL 153 (R-SA-8) / PARCEL 256 (R-12)
TAX MAP 35 BLOCK 24 — L.09101/F.0461/L. 02548/F. 0388 — PARCEL 153: P/O 256
5TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET, ELLICOTT CITY, MD 21043
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STATE OF MARYLAND — ROBERT HARRIS VOGEL — NO. 16193 — REGISTERED PROFESSIONAL ENGINEER — 10/28/16
ROBERT H. VOGEL, PE No.16193

DESIGN BY:	RHV/GAH
DRAWN BY:	GAH/KG
CHECKED BY:	RHV
DATE:	MAY 2016
SCALE:	AS SHOWN
W.O. NO.:	05-84

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2018

SHEET 11 OF 14

SDP-16-002

AS-BUILT - NOV. 2018

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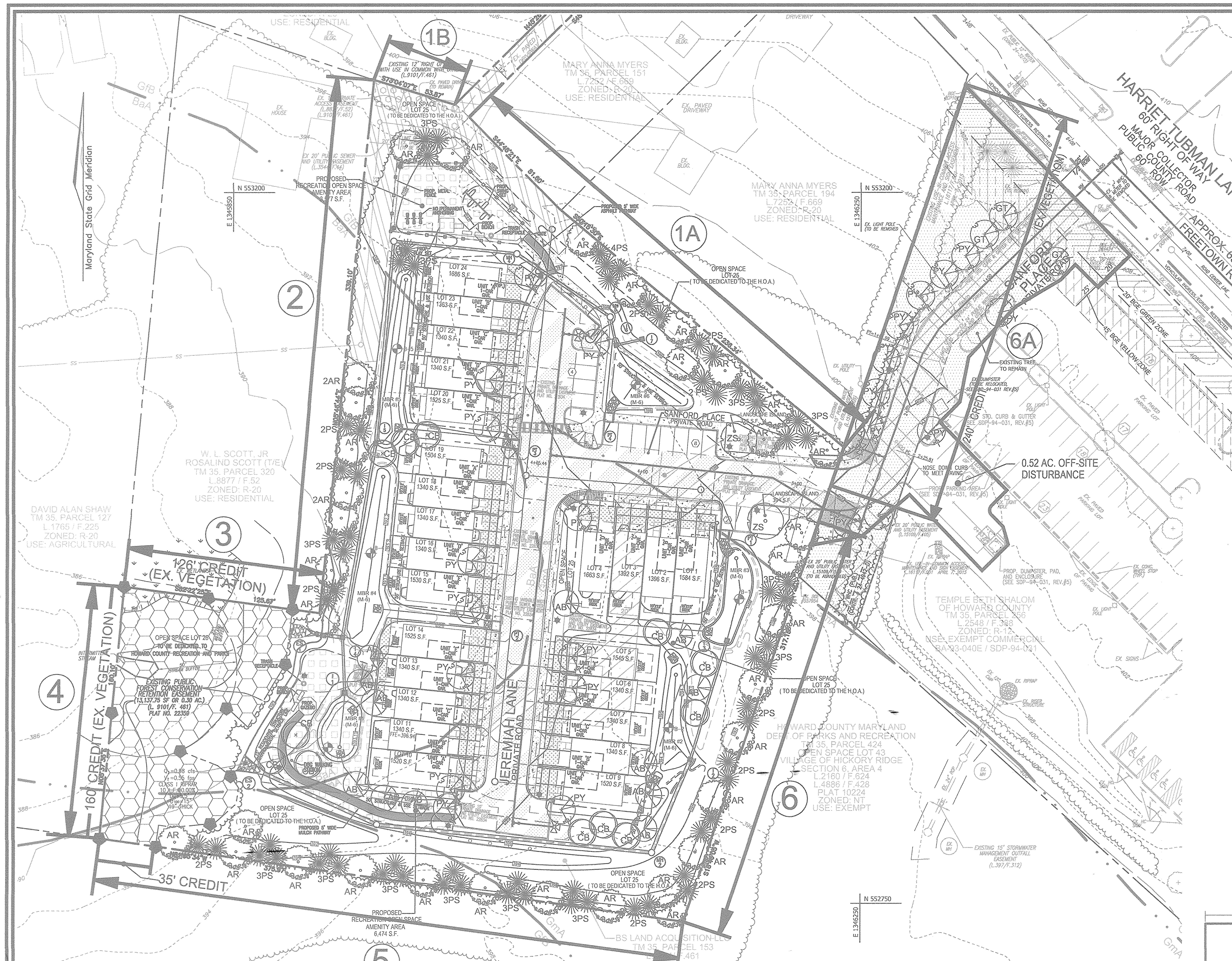

PLAN VIEW

SCALE: 1"=40'

AS-BUILT CERTIFICATION FOR PSWM

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

16193 2/5/19
P.E. NAME P.E. # DATE

STATE OF MARYLAND ROBERT HARRIS VOGEL No. 16193 PROFESSIONAL ENGINEER 2/20/19

NO AS-BUILT INFORMATION ON THIS SHEET

FOREST RETENTION AREAS AND NOTES

1. FORESTED STREAM AND WETLAND BUFFERS ARE RETAINED IN OPEN SPACE LOTS.
2. NO RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED ON THIS SITE.
3. FORESTED AREAS ADJACENT TO FLOODPLAINS AND STREAM BUFFERS ARE SUBSTANTIALLY RETAINED IN OPEN SPACE LOTS.
4. CHANGES IN GRADING AND RUNOFF WITHIN CONSTRUCTION/INSTALLATION AREAS WILL NOT ADVERSELY AFFECT THE SOILS WITHIN THE FOREST RETENTION AREA. SEDIMENT CONTROL MEASURES WILL REDIRECT CONCENTRATED FLOW RUNOFF TO STORMWATER MANAGEMENT FACILITIES, RETAIN SEDIMENT WITHIN THE CONSTRUCTION SITE, AND/OR REDIRECT CLEAN WATER AWAY FROM CONSTRUCTION AREAS.
5. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE. 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.

GENERAL NOTES:

1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. THE REQUIRED PARKING AND PERIMETER LANDSCAPING WILL BE BONDED PER THIS SUBMISSION.
2. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $28,350.00 FOR THE REQUIRED 61 SHADE TREES AND 67 EVERGREEN TREES. FINANCIAL SURETY FOR THE REQUIRED STREET TREE HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $8,100.00 FOR THE REQUIRED 27 SHADE TREES.
3. THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, PLANT MATERIALS, 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 REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
4. NO CLEARING OF EXISTING VEGETATION IS PERMITTED WITHIN THE LANDSCAPE EDGE FOR WHICH CREDIT IS BEING TAKEN; HOWEVER, LANDSCAPE MAINTENANCE IS AUTHORIZED.
5. AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS LISTED HEREWITH AND APPROVED FOR THIS SITE SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES.
6. THERE IS NO 100YR FLOODPLAIN ON SITE.
7. THERE ARE NO STEEP SLOPES ON SITE.
8. WETLANDS ARE LOCATED ON SITE IN ACCORDANCE WITH DELINEATION PREPARED BY ECO-SCIENCE PROFESSIONALS, INC., DATED SEPTEMBER 12, 2006.
9. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURE SHALL BE BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S) OR THEIR BUFFERS, AND FOREST CONSERVATION EASEMENT AREAS.

SEQUENCE OF CONTRUCTION-FOREST CONSERVATION

1. PRECONSTRUCTION MEETING /SITE WALK WITH CONTRACTORS AND OTHER RESPONSIBLE PARTIES TO DEFINE PROTECTION MEASURES TO BE UTILIZED AND TO POINT OUT PARTICULAR TREES TO BE SAVED.
2. STAKE OUT LIMITS OF DISTURBANCE AND TREE PROTECTION FENCING LOCATIONS.
3. INSTALL TREE PROTECTION FENCING: FENCING TO BE INSPECTED BY THE PROJECT ENGINEER OR THE PROJECT ECOLOGIST AND HOWARD COUNTY PLANNING AND ZONING.
4. PROCEED WITH TREE REMOVAL AND SITE IMPROVEMENTS AS PER APPROVED SEDIMENT CONTROL PLAN - TO BE INSPECTED BY HOWARD COUNTY PLANNING AND ZONING.
5. TEMPORARY TREE PROTECTION DEVICES SHALL BE REMOVED AFTER ALL FINISHED GRADING AND UTILITY CONSTRUCTION HAS OCCURED AND WITH APPROVAL FROM THE HOWARD COUNTY OFFICE OF PLANNING AND ZONING.

LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- EXISTING TREES (FIELD LOCATED)
- EXISTING TREELINE (FIELD LOCATED)
- PROPOSED FENCE AROUND THE TOT LOT
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- SOILS BOUNDARY
- PROPOSED SIDEWALK
- EX. FOREST CONSERVATION "RETENTION" EASEMENT (L.9101/F.461) (PLAT NO. 22359)
- EXISTING WETLANDS
- EXISTING 24' PUBLIC WATER ACCESS & UTILITY EASEMENT (L.3321/F.548)
- EXISTING 20' PUBLIC SEWER AND UTIL EASEMENT (L.3544/F.44)
- EXISTING 12' RIGHT OF WAY, PRIVATE WATER & USE IN COMMON WITH OTHERS (L.9101/F.461) (L.8877/F.52) (L.11855/F.136)
- EXISTING 15' PRIVATE ACCESS EASMENT (L.8877/F.52) (L.9101/F.461)
- EXISTING STREAM
- EXISTING STREAM BUFFER
- PROP. LIGHT POLE
- PROP. WALL MOUNTED ACORN SHAPE (P5775) 75W LIGHT (TYP.)
- PROPOSE TREELINE
- EXISTING USE-IN-COMMON ACCESS MAINTENANCE AND SIGN EASEMENT (L.16117/F.001)
- RECREATION OPEN SPACE AMENITY AREA
- EXISTING 20' PUBLIC WATER & UTILITY EASEMENT TO BE ABANDONED (L.15109/F.510)
- EXISTING PUBLIC WATER AND UTILITY EASEMENT (L.15109/F.405)
- BGE 40' GREEN ZONE
- BGE 25' YELLOW ZONE
- EXISTING 10' PRIVATE DRAINAGE AND UTILITY EASEMENT (PLAT NO. 23834)
- B-3 BORING LOCATION
- FOREST CONSERVATION SIGNS
- PY PROPOSED STREET TREE
- AR PROPOSED SHADE TREE (PERIMETER)
- CB, AB PROPOSED SHADE TREE (INTERNAL)
- ZS PROPOSED SHADE TREE (PARKING ISLAND)
- PS PROPOSED EVERGREEN TREE
- (2) LANDSCAPE PERIMETER
- EXISTING VARIABLE WIDTH PUBLIC SEWER, WATER AND UTILITY EASEMENT (PLAT NO. 23834)

SCHEDULE A
PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAYS AND PERIMETER PROPERTIES								TOTAL
PERIMETER/FRONTAGE DESIGNATION LANDSCAPE TYPE	1A C	1B C	2 C	3 C	4 C	5 C	6 C	6A C	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	317	54	339	126	160	376	270	240	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	No	No	No	* YES 126 LF	* YES 160 LF	YES 35 LF	No	**YES 240 LF	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	No	No	No	No	No	No	No	No	
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SHRUBS	1:40 8 1:20 16 -	1:40 2 1:20 3 -	1:40 9 1:20 17 -	1:40 0 1:20 0 -	1:40 0 1:20 0 -	341 1:40 9 1:20 17 -	1:40 7 1:20 14 -	1:40 0 1:20 0 -	35 67 -
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION) SHRUBS (10:1 SUBSTITUTION) DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	8 16 - -	2 3 - -	*** 7 12 - -	0 0 - -	0 0 - -	*** 11 22 - -	7 14 - -	0 0 - -	35 67 - -

* EXISTING VEGETATION TO REMAIN, FOREST CONSERVATION EASEMENT, MEETS LANDSCAPING REQUIREMENT
** EXISTING VEGETATION TO REMAIN, MEETS LANDSCAPING REQUIREMENT
*** 2 SHADE TREES AND 5 EVERGREEN TREES WERE MOVED FROM PERIMETER 2 TO PERIMETER 5.

SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING

Number of parking spaces	14
Number of trees required	2
Number of trees provided Shade Trees Other Trees (2:1 Substitution)	 2 0

SCHEDULE C
RESIDENTIAL DEVELOPMENT INTERNAL LANDSCAPING

Number of dwelling units	24
Number of trees required (1:DU SFA; 1:3 DU APTS)	24
Number of trees provided Shade Trees Other Trees (2:1 Substitution)	 24 -

OWNER (PARCEL 256)
TEMPLE BETH SHALOM OF HOWARD COUNTY
8070 HARRIET TUBMAN LANE
COLUMBIA, MD. 21044

OWNER (PARCEL 153)
JOSEPH'S COURTYARD, LLC
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480-0023

OWNER/DEVELOPER (PARCEL 153)
TRINITY HOMES MARY LAND, LLC.
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
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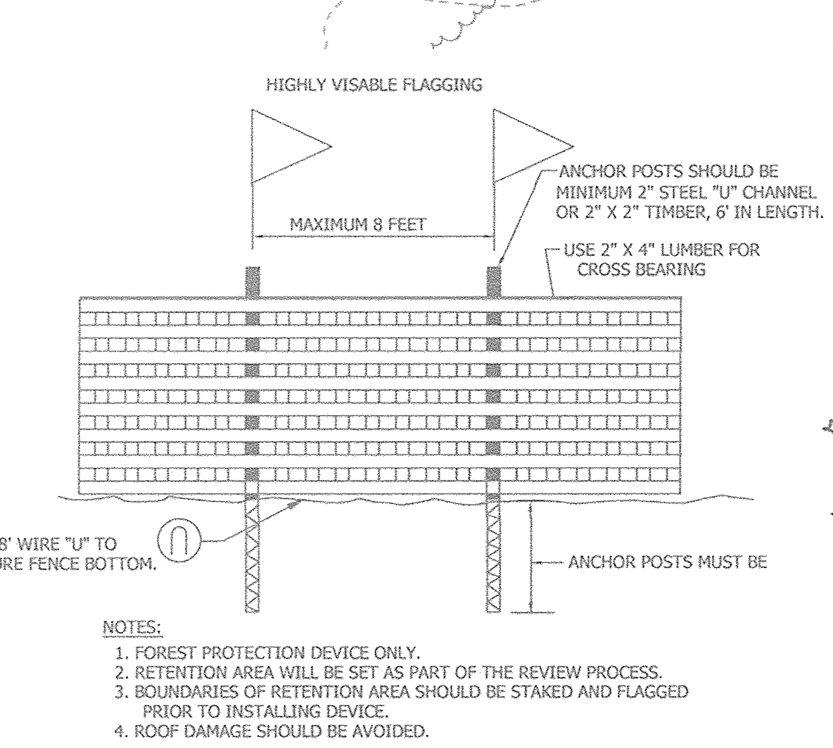
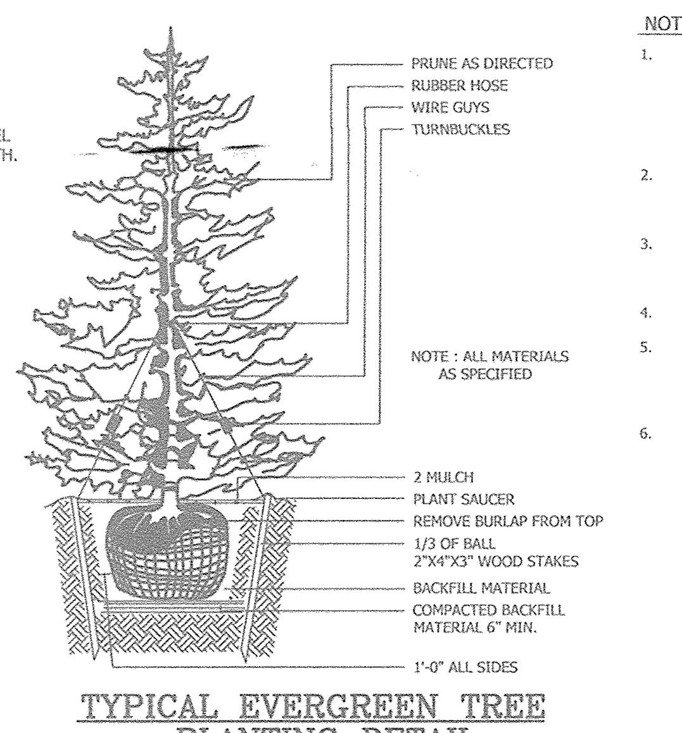


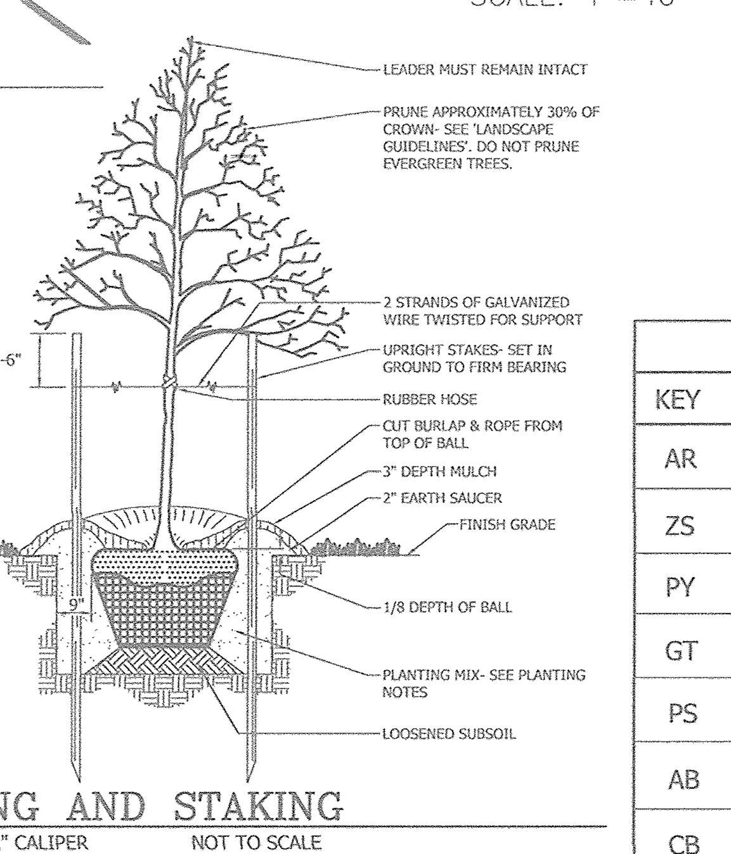
NOTES:
1. FOREST PROTECTION DEVICE ONLY.
2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
4. ROOF DAMAGE SHOULD BE AVOIDED.

BLAZE ORANGE PLASTIC MESH
TYPICAL TREE PROTECTION FENCE DETAIL



TYPICAL EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE

NOTES
1. SEE "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS" FOR ALL MATERIAL, PRODUCT, AND PROCEDURE SPECIFICATIONS.
2. SEE "LANDSCAPE GUIDELINES" FOR SUPPORTING TREES LARGER THAN 2-1/2" CALIPER.
3. PLACE UPRIGHT STAKES PARALLEL TO WALKS & BUILDINGS.
4. KEEP MULCH 1" FROM TRUNK
5. SEE ARCHITECTURAL PLANS FOR ADDITIONAL PLANTINGS WHICH EXCEED HOWARD COUNTY MINIMUM REQUIREMENTS.
6. TREES ARE NOT TO BE PLANTED OVER PRIVATE SEWAGE EASEMENT.



TREE PLANTING AND STAKING
DECIDUOUS TREES UP TO 2-1/2" CALIPER — NOT TO SCALE

STREET TREE SCHEDULE

ROAD FRONTAGE	1095 LF
TREES REQUIRED	28
TREES PROVIDED	*28

*27 NEW SHADE TREES AND 1 EXISTING SHADE TREE TO REMAIN

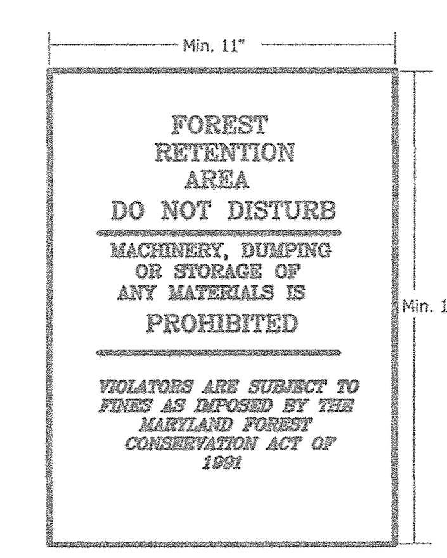
LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	CAT
AR	35	ACER RUBRUM OCTOBER GLORY RED MAPLE	2 1/2"-3" CAL.	B & B
ZS	2	ZELKOVA SERRATA 'VILLAGE GREEN'	2 1/2"-3" CAL.	B & B
PY	24	PRUNUS YEDOENSIS/ YOSHINO CHERRY	1 1/2"-2" CAL.	B & B
GT	3	GLEDITSIA TRIACANTHOS INERMIS 'IMPERIAL' IMPERIAL THORNLESS HONEY LOCUST	1 1/2"-2" CAL.	B & B
PS	67	PINUS STROBUS EASTERN WHITE PINE	6'-8' HT.	B & B
AB	12	ACER RUBRUM 'BOWHALL' BOWHALL RED MAPLE	2 1/2"-3" CAL.	B & B
CB	12	CARPINUS BETILUS 'FASTIGIATA' FASTIGIATE EUROPEAN HORNBEAM	1 1/2"-2" CAL.	B & B

*There is one existing Shade Tree to remain which will count towards total of 89 shade trees provided.

LANDSCAPE SCHEDULE NOTE:

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



NOTE:
1. BOTTOM OF SIGNS TO BE HIGHER THAN TOP OF TREE PROTECTION FENCE.
2. SIGNS TO BE PLACED APPROXIMATELY 50-100' FEET APART. CONDITIONS ON SITE AFFECTING VISIBILITY MY WARRANT PLACING SIGNS CLOSER OR FARTHER APART.
3. ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.
4. ALL FOREST CONSERVATION SIGNAGE SHALL BE IN PLACE FOR PERPETUITY.

FOREST CONSERVATION AREA SIGNS
(FOR A RETENTION EASEMENT)

CONSTRUCTION PERIOD PROTECTION AND MANAGEMENT NOTES FOR FOREST CONSERVATION

PRE-CONSTRUCTION PHASE
1. FOR RETENTION AREAS, INSTALL BLAZE ORANGE FENCE AND RETENTION SIGNS BEFORE CONSTRUCTION BEGINS.
2. FENCING SHALL BE MAINTAINED IN GOOD CONDITION AND PROMPTLY REPAIRED OR RESTORED AS THE SITUATION WARRANTS.
3. A QUALIFIED TREE CARE EXPERT SHALL DETERMINE IF ROOT PRUNING IS REQUIRED ALONG THE LIMIT OF DISTURBANCE. ROOT PRUNE TREES AS REQUIRED. WATER ANY ROOT-PRUNED TREES IMMEDIATELY AFTER ROOT-PRUNING AND MONITOR FOR SIGNS OF STRESS DURING CONSTRUCTION.

CONSTRUCTION PHASE
1. NO DISTURBANCE OR DUMPING IS ALLOWED INSIDE THE TREE RETENTION AREA.
2. NO EQUIPMENT SHALL BE OPERATED INSIDE THE TREE RETENTION AREA INCLUDING TREE CANOPIES.
3. IN THE EVENT OF DROUGHT, THE PROTECTED TREES SHALL BE MONITORED FOR SIGNS OF STRESS AND WATERED AS NEEDED.

POST-CONSTRUCTION PHASE
1. AT THE DIRECTION OF A QUALIFIED TREE CARE EXPERT, DAMAGES TO RETAINED TREES SHALL BE REPAIRED BY THE CONTRACTOR.
2. FENCE REMOVAL AND STABILIZATION SHALL BE AS PER THE SEDIMENT AND EROSION CONTROL PLAN.
3. DO NOT REMOVE SIGNS.

Forest Conservation Worksheet 2.2

Net Tract Area

A.	Total Tract Area	A =	5.00
B.	Deductions	B =	0.00
C.	Net Tract Area	C =	5.00

Land Use Category

Input the number "1" under the appropriate land use zoning, and limit to only one entry

ARA	MDR	IDA	HDR	MPD	CIA
0	0	0	1	0	0

D.	Afforestation Threshold (Net Tract Area x 15%)	D =	0.75
E.	Conservation Threshold (Net Tract Area x 20%)	E =	1.00
Existing Forest Cover			
F.	Existing Forest Cover within the Net Tract Area	F =	0.57
G.	Area of Forest Above Conservation Threshold	G =	0.00
Break Even Point			
H.	Break Even Point	H =	0.57
I.	Forest Clearing Permitted Without Mitigation	I =	0.00
Proposed Forest Clearing			
J.	Total Area of Forest to be Cleared	J =	0.27
K.	Total Area of Forest to be Retained	K =	0.30
Planting Requirements			
L.	Reforestation for Clearing Above the Conservation Threshold	L =	0.00
M.	Reforestation for Clearing Below the Conservation Threshold	M =	0.54
N.	Credit for Retention above the Conservation Threshold	N =	0.00
P.	Total Reforestation Required	P =	0.54
Q.	Total Afforestation Required	Q =	0.18
R.	Total Planting Requirement	R =	0.72

NOTES:

1. THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST AFFORESTATION THROUGH THE ON-SITE RETENTION OF 0.30 ACRES (13,216.3SF) UNDER THE TERMS OF DEVELOPER AGREEMENT, SDP-08-083. THE REMAINING OBLIGATION OF 0.72 ACRES HAS BEEN SATISFIED THROUGH THE PAYMENT OF A FEE-IN-LIEU IN THE AMOUNT OF $23,522.40 (0.72 x 43560 x $0.75) TO THE HOWARD COUNTY FOREST CONSERVATION FUND.
2. THE FOREST CONSERVATION OBLIGATION REQUIREMENTS WERE PREVIOUSLY APPROVED UNDER SDP-08-083 (BS LAND - MULTIPLEX UNITS). THE NET TRACT AREA OF 5.0 ACRES INCLUDED ALL OF THE DEVELOPMENT OF PARCEL 153 (3.34 ACRES) AS WELL AS 1.65 ACRES OF ASSOCIATED IMPROVEMENTS ON PARCEL 256 (TEMPLE OF BETH SHALOM, SDP-94-031). THE FOREST CONSERVATION CREDIT FOR THE 1.65 AC HAS BEEN TRANSFERRED TO THIS SDP (SDP-16-002) FOR THE INTEGRATED DEVELOPMENT OF SANFORD PLACE AND THE TEMPLE BETH SHALOM.

11/4/16
JOHN CANOLES
DNR QUALIFIED PROFESSIONAL

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.29.16
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12-5-16
DIRECTOR — DATE 12-5-16

DEVELOPER'S/BUILDER'S CERTIFICATE

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

DEVELOPER/BUILDER — DATE 11/1/16

NO.	REVISION	DATE
1	REVISE PLAN TO ACCOMODATE BUILDER HOUSE MODEL	10/28/16

REVISED SITE DEVELOPMENT PLAN
FOREST CONSERVATION AND LANDSCAPE PLAN
JOSEPH'S COURTYARD

LOTS 1-24 AND OPEN SPACE LOTS 25 AND 26 - USE IN COMMON ACCESS (P.256)
SINGLE FAMILY ATTACHED AND RELIGIOUS FACILITY (BA-93-40E)
ZONED: PARCEL 153 (R-SA-8) / PARCEL 256 (R-12)
L.09101/F.0461/L. 02548/F. 0388
TAX MAP 35 BLOCK 24 — PARCEL 153: P/O 256
5TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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

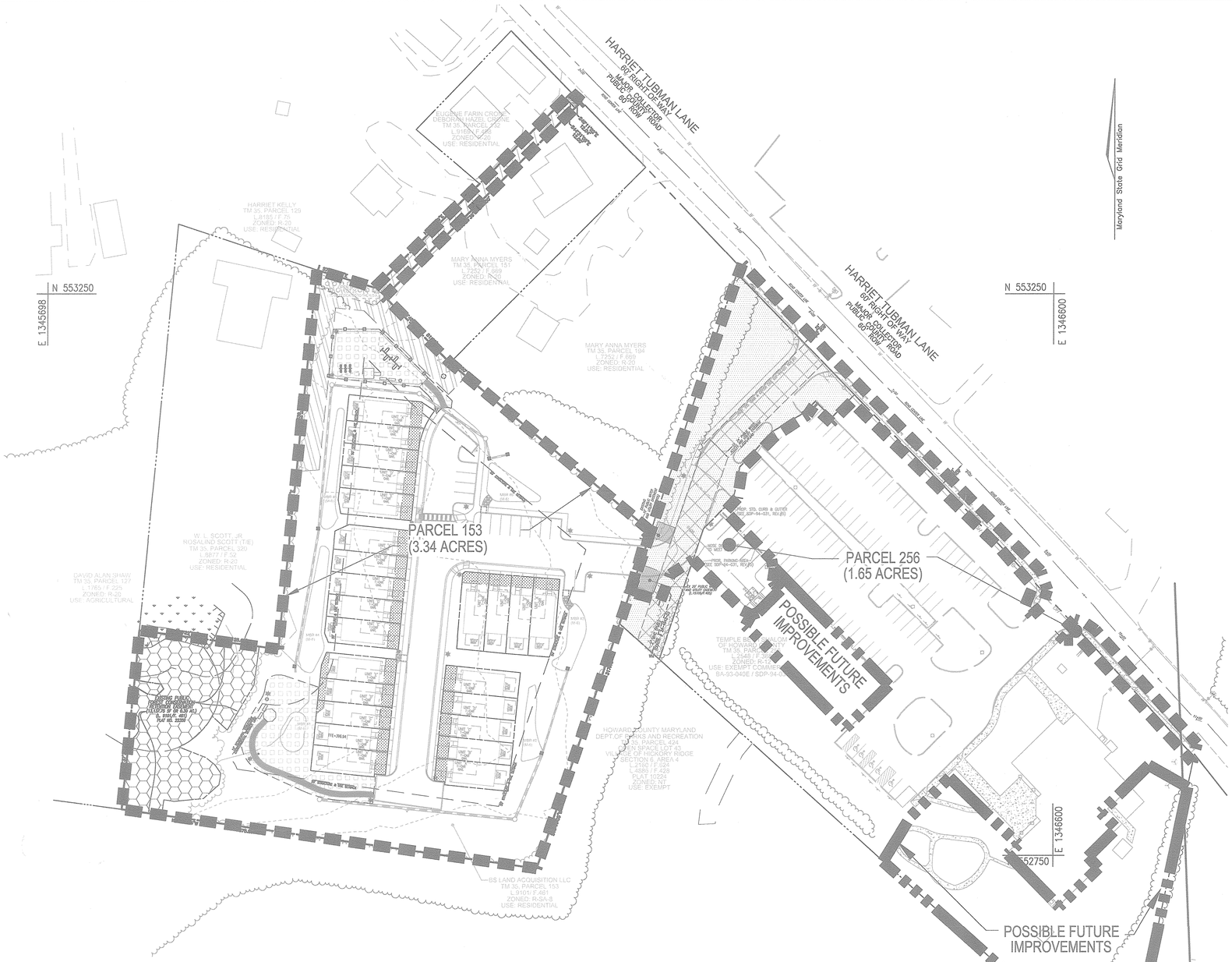
STATE OF MARYLAND ROBERT HARRIS VOGEL NO 16193 REGISTERED PROFESSIONAL ENGINEER 10/31/16
ROBERT H. VOGEL, PE No.16193

DESIGN BY:	RHV/GAH
DRAWN BY:	GAH/KG
CHECKED BY:	RHV
DATE:	MAY 2016
SCALE:	AS SHOWN
W.O. NO.:	05-84

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2016

AS-BUILT - NOV. 2018



FOREST CONSERVATION TRACT AREA

(REF: RL #5 SDP-94-031)
SCALE: 1"=50'

LEGEND

- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING TREELINE (FIELD LOCATED)
- PROPOSED FENCE AROUND TOT LOT
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING STREAM
- EXISTING STREAM BUFFER
- PROPOSED CURB AND GUTTER
- PROPOSED CURB TRANSITION
- PROPOSED TREELINE
- PROPOSED SIDEWALK
- EXISTING 10' PRIVATE DRAINAGE AND UTILITY EASEMENT (PLAT NO. 23834)
- RECREATION OPEN SPACE AMENITY AREA
- EXISTING VARIABLE WIDTH PUBLIC SEWER, WATER AND UTILITY EASEMENT (PLAT NO. 23834)
- EX. FOREST CONSERVATION "RETENTION" EASEMENT (L.9101/F.461) (PLAT NO. 22359)
- EXISTING WETLANDS
- EXISTING 24' PUBLIC WATER ACCESS & UTILITY EASEMENT (L.3321/F.548)
- EXISTING 20' PUBLIC SEWER AND UTIL EASEMENT (L.3544/F.44)
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- EXISTING 15' PRIVATE ACCESS EASMENT (L.8877/F.52) (L.9101/F.461)
- EXISTING USE-IN-COMMON ACCESS MAINTENANCE AND SIGN EASEMENT (L.16117/F.001)
- EXISTING 20' PUBLIC WATER & UTILITY EASEMENT TO BE ABANDONED (L.15109/F.510)
- EXISTING PUBLIC WATER AND UTILITY EASEMENT (L.1510/F.405)

NOTES

1. FURTHER DEVELOPMENT OF THE REMAINDER OF PARCEL 256 WILL BE SUBJECT TO THE REQUIREMENTS OF SECTION 16.1200 HOWARD COUNTY CODE AND THE FOREST CONSERVATION ACT.
2. THE FOREST CONSERVATION OBLIGATION FOR THIS INTEGRATED SITE DESIGN WITH A NET TRACT AREA TOTALING 5.0 AC. INCLUDES ALL OF PARCEL 153 (3.34 AC.) AND A PORTION OF PARCEL 256 (1.65 AC) WAS ADDRESSED UNDER SDP-08-083 AND HAS BEEN TRANSFERRED TO THIS SDP-16-002.

OWNER (PARCEL 256)
TEMPLE BETH SHALOM OF HOWARD COUNTY
8070 HARRIET TUBMAN LANE
COLUMBIA, MD. 21044

OWNER (PARCEL 153)
JOSEPH'S COURTYARD, LLC
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480-0023

OWNER/DEVELOPER (PARCEL 153)
TRINITY HOMES MARY LAND, LLC.
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480-0023

NO.	REVISION	DATE
1	REVISE PLAN TO ACCOMODATE BUILDER HOUSE MODEL	10/28/16

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	11-29-16 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	12-05-16 DATE
DIRECTOR	12-5-16 DATE

DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION AND THE LAND DEVELOPMENT REGULATIONS AND THE LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF NOTICE, ACCOMPAINED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

DEVELOPER/BUILDER — 11/1/16 DATE

STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — PROFESSIONAL ENGINEER — 2/5/19

AS-BUILT CERTIFICATION FOR PSWM

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

ROBERT VOGEL — 16193 — 2/5/19
P.E. NAME — P.E.# — DATE

JOHN CANOLES — 1/4/16
DNR QUALIFIED PROFESSIONAL

NO AS-BUILT INFORMATION ON THIS SHEET

REVISED SITE DEVELOPMENT PLAN
FOREST CONSERVATION TRACT AREA
JOSEPH'S COURTYARD

LOTS 1-24 AND OPEN SPACE LOTS 25 AND 26 - USE IN COMMON ACCESS (P.256)
SINGLE FAMILY ATTACHED AND RELIGIOUS FACILITY (BA-93-40E)

TAX MAP 35 BLOCK 24 — ZONED: PARCEL 153 (R-SA-8) / PARCEL 256 (R-12) — PARCEL 153: P/O 256
5TH ELECTION DISTRICT — L.09101/F.0461/L. 02548/F. 0388 — HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLICOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.9661

STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — REGISTERED PROFESSIONAL ENGINEER — 10/31/16
ROBERT H. VOGEL, PE No.16193

DESIGN BY:	RHV/GAH
DRAWN BY:	GAH/KG
CHECKED BY:	RHV
DATE:	MAY 2016
SCALE:	AS SHOWN
W.O. NO.:	05-84

PROFESSIONAL CERTIFICATE

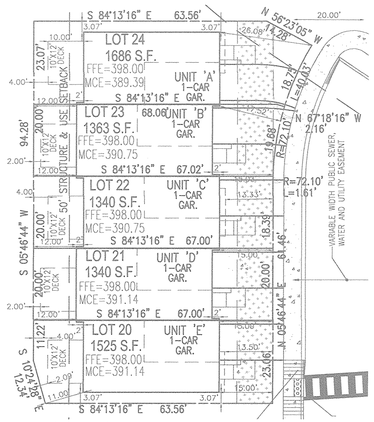
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2018

SHEET 13 OF 14

SDP-16-002

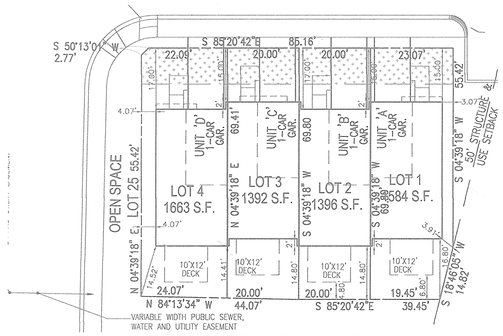
AS-BUILT-NOV. 2018

K:\Projects\05-84\engineering\84-LANDSDP\REDLINE_1\SDP15_REP-ASCERT_FC-DETAILS.dwg, 10/28/2016 4:53:13 PM



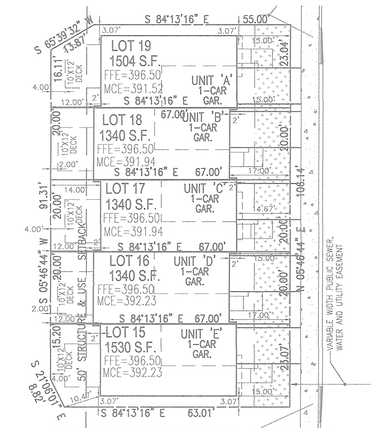
LOT INFORMATION PLAN: LOTS 20-24

SCALE: 1"=20'



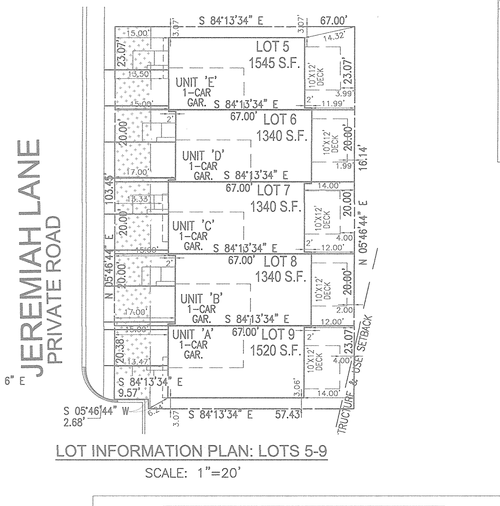
LOT INFORMATION PLAN: LOTS 1-4

SCALE: 1"=20'



LOT INFORMATION PLAN: LOTS 15-19

SCALE: 1"=20'

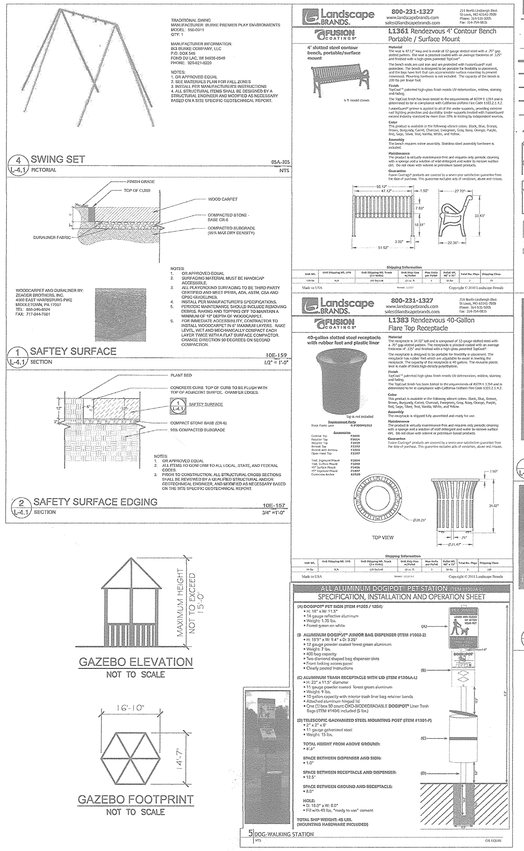


LOT INFORMATION PLAN: LOTS 5-9

SCALE: 1"=20'

LOT INFORMATION PLAN: LOTS 10-14

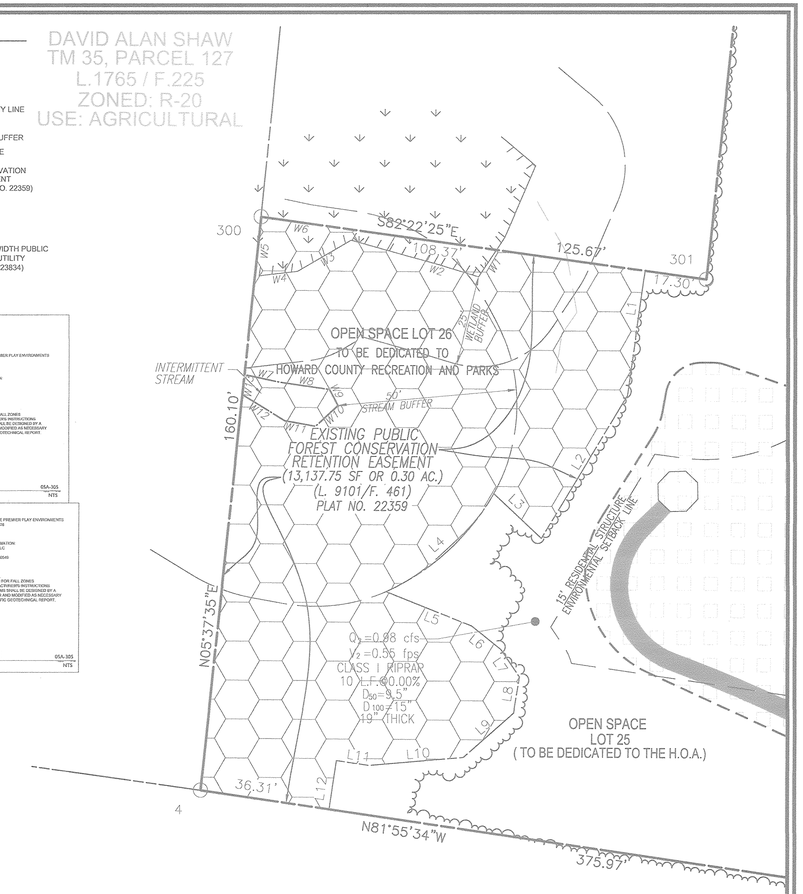
SCALE: 1"=20'



LEGEND:

- EXISTING TREELINE (FIELD LOCATED)
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING STREAM
- EXISTING STREAM BUFFER
- PROPOSED TREELINE
- EX. FOREST CONSERVATION "RETENTION" EASEMENT (L.9101/F.461) (PLAT NO. 22359)
- EXISTING WETLANDS
- EXISTING VARIABLE WIDTH PUBLIC SEWER, WATER AND UTILITY EASEMENT (PLAT NO. 23834)

DAVID ALAN SHAW
TM 35, PARCEL 127
L.1765 / F.225
ZONED: R-20
USE: AGRICULTURAL



EASEMENT INFORMATION PLAN: WETLANDS AND FOREST CONSERVATION

SCALE: 1"=20'

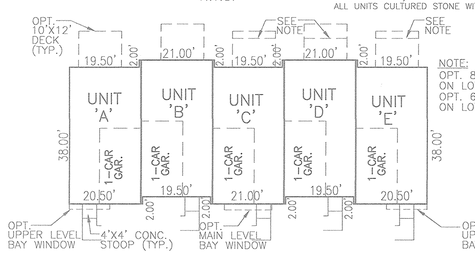
5 UNIT ELEVATION

N.T.S.

4 UNIT ELEVATION

N.T.S.

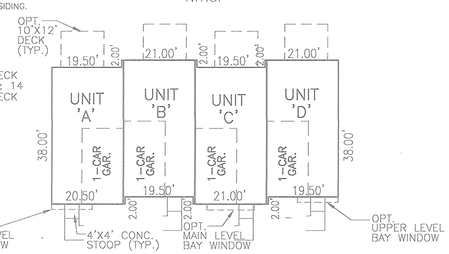
NOTE:
IN ACCORDANCE WITH SECTION 111.0 OF THE ZONING REGULATIONS, MAX. NO. UNITS/STRUCTURE = 8 MAX. BUILDING LENGTH = 120' ALL UNITS CULTURED STONE WITH VINYL SIDING.



5 UNIT PLAN

N.T.S.

NOTE:
OPT. 8'X12' DECK ON LOTS 12 & 14
OPT. 6'X12' DECK ON LOT 13.



4 UNIT PLAN

N.T.S.

NO AS-BUILT INFORMATION ON THIS SHEET

LOT COVERAGE MATRIX

LOT NO.	LOT AREA	BASIC BLDG AREA	% BLDG COVERAGE
1	1,584 S.F.	760 S.F.	47.98
2	1,396 S.F.	760 S.F.	54.44
3	1,392 S.F.	760 S.F.	54.60
4	1,663 S.F.	760 S.F.	45.70
5	1,545 S.F.	760 S.F.	49.19
6	1,340 S.F.	760 S.F.	56.72
7	1,340 S.F.	760 S.F.	56.72
8	1,340 S.F.	760 S.F.	56.72
9	1,520 S.F.	760 S.F.	50.00
10	1,520 S.F.	760 S.F.	50.00
11	1,340 S.F.	760 S.F.	56.72
12	1,340 S.F.	760 S.F.	56.72
13	1,340 S.F.	760 S.F.	56.72
14	1,525 S.F.	760 S.F.	49.84
15	1,530 S.F.	760 S.F.	49.67
16	1,340 S.F.	760 S.F.	56.72
17	1,340 S.F.	760 S.F.	56.72
18	1,340 S.F.	760 S.F.	56.72
19	1,504 S.F.	760 S.F.	50.53
20	1,525 S.F.	760 S.F.	49.84
21	1,340 S.F.	760 S.F.	56.72
22	1,340 S.F.	760 S.F.	56.72
23	1,363 S.F.	760 S.F.	55.76
24	1,686 S.F.	760 S.F.	45.08

FOREST CONSERVATION EASEMENT COURSE TABLE

LINE	RADIUS	LENGTH	BEARING	LENGTH
L1			S 07°37'35" W	35.00'
L2			S 30°49'41" W	46.36'
L3			N 47°20'35" W	18.24'
L4	65.11'	41.27'	S 47°34'28" W	40.58'
L5			S 68°40'20" E	25.83'
L6			S 51°44'36" E	10.48'
L7			S 34°48'52" E	9.21'
L8			S 08°56'51" W	10.20'
L9			S 48°25'31" W	18.63'
L10			S 84°49'59" W	26.42'
L11			N 81°55'34" W	9.25'
L12			S 08°04'26" W	13.70

WETLAND LINE TABLE

LINE	BEARING	DISTANCE
W-1	S33°23'01"W	8.95'
W-2	N74°27'04"W	37.07'
W-3	S59°35'33"W	17.16'
W-4	S82°02'21"W	12.14'
W-5	N05°37'34"E	16.80'
W-6	S82°22'25"E	66.42'
W-7	S78°14'15"E	9.30'
W-8	S82°07'36"E	14.08'
W-9	S28°28'51"E	5.04'
W-10	S46°53'45"W	8.49'
W-11	N80°08'47"W	8.77'
W-12	N58°59'18"W	13.37'
W-13	N08°31'27"E	5.73'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11.29.16

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12-05-16

DIRECTOR — DATE 12-5-16

AS-BUILT CERTIFICATION FOR PSWM

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

STATE OF MARYLAND — ROBERT HARRIS VOGEL — NO. 16193 — REGISTERED PROFESSIONAL ENGINEER

ROBERT VOGEL — 16193 — 2/5/19

PRINT NAME — P.E. # — DATE

OWNER (PARCEL 256)
TEMPLE BETH SHALOM OF HOWARD COUNTY
8070 HARRIET TUBMAN LANE
COLUMBIA, MD. 21044

OWNER (PARCEL 153)
JOSEPH'S COURTYARD, LLC
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480-0023

OWNER/DEVELOPER (PARCEL 153)
TRINITY HOMES MARY LAND, LLC.
3675 PARK AVENUE #301
ELLICOTT CITY, MD. 21043
C/O MICHAEL PFAU
(410) 480-0023

NO.	REVISION	DATE
1	REVISE PLAN TO ACCOMODATE BUILDER HOUSE MODEL	10/28/16

REVISED SITE DEVELOPMENT PLAN
SITE LAYOUT PLAN

JOSEPH'S COURTYARD

LOTS 1-24 AND OPEN SPACE LOTS 25 AND 26 - USE IN COMMON ACCESS (P.256)
SINGLE FAMILY ATTACHED AND RELIGIOUS FACILITY (BA-93-40E)
ZONED: PARCEL 153 (R-SA-8) / PARCEL 256 (R-12)
TAX MAP 35 BLOCK 24 — L.09101/F.0461/L. 02548/F. 0388 — PARCEL 153: P/O 256
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STATE OF MARYLAND — ROBERT HARRIS VOGEL — NO. 16193 — REGISTERED PROFESSIONAL ENGINEER — 12/21/16

ROBERT H. VOGEL, PE No.16193

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE 09-27-2018

DESIGN BY:	RHV/GAH
DRAWN BY:	GAH/KC
CHECKED BY:	RHV
DATE:	MAY 2016
SCALE:	AS SHOWN
W.O. NO.:	05-84

SHEET 14 OF 14

SDP-16-002

AS-BUILT - NOV. 2018

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