

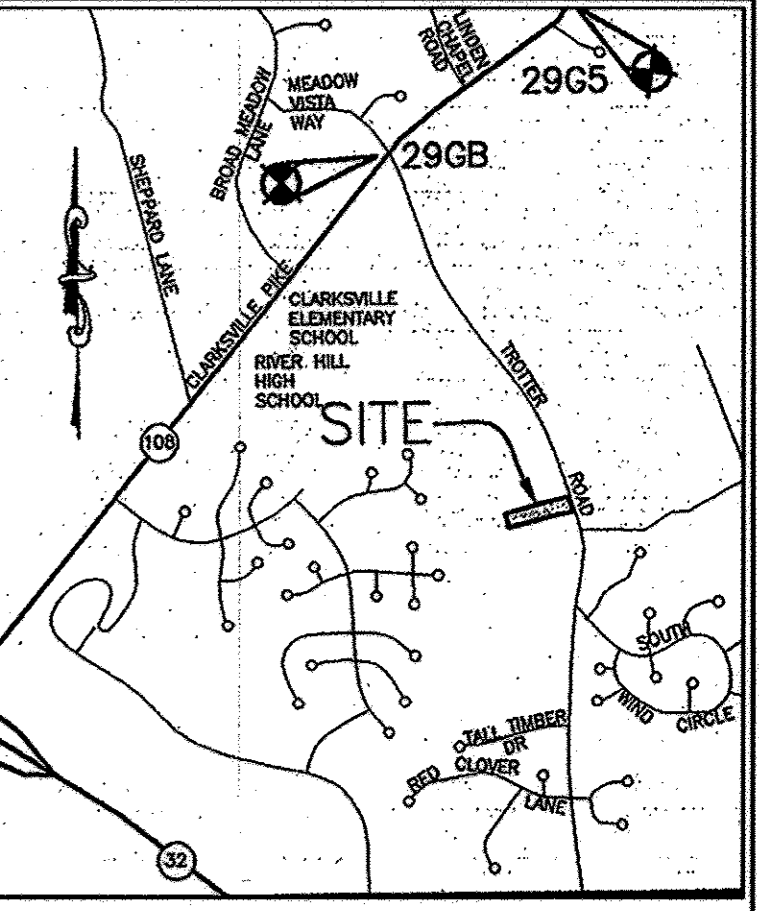
GENERAL NOTES

- 1. THE SUBJECT PROPERTY IS ZONED R-20 PER THE 2-2-04 COMPREHENSIVE ZONING PLAN AND THE COMP LITE ZONING REGULATION AMENDMENTS EFFECTIVE 7-28-2006.
2. THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE ZONING REGULATIONS EFFECTIVE APRIL 13, 2004.
3. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY, PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
4. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST FIVE(5) WORKING DAYS PRIOR TO THE START OF WORK.
5. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" @ 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
6. THE BOUNDARY SURVEY FOR THIS PROJECT WAS PREPARED BY PHRA DATED JANUARY, 2007.
7. THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEYS WITH TWO FOOT CONTOUR INTERVALS PREPARED BY PHRA DATED JANUARY 2007 & SUPPLEMENTED WITH HO.CO. GIS TOPOGRAPHICAL INFORMATION.
8. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. #29GB AND #29G5 WERE USED FOR THIS PROJECT.
9. EXISTING UTILITIES SHOWN HAVE BEEN TAKEN FROM CONTRACT DRAWINGS #34-4170-D AND FIELD SURVEYED LOCATIONS. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO ANY CONSTRUCTION ACTIVITY AND SHALL ADJUST ALL UTILITIES AND RM ELEVATIONS AS NEEDED TO MATCH THIS PLAN.
10. THIS PROPERTY IS WITHIN THE METROPOLITAN DISTRICT, WATER AND SEWER SERVICE SHALL BE PUBLIC, CONNECTING TO EXISTING CONTRACT #34-4170-D, UNDER CONTRACT NO.34-4728-D; DRAINAGE AREA IS WITHIN THE PATUXENT RIVER WATERSHED.
11. THIS SUBDIVISION IS SUBJECT TO SECTION 18.122.B OF THE HOWARD COUNTY CODE, PUBLIC WATER AND PUBLIC SEWER SERVICE ALLOCATIONS WILL BE GRANTED AT THE TIME OF ISSUANCE OF THE BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
12. BASED ON AVAILABLE COUNTY MAPS AND RECORDS, THERE ARE NO HISTORIC STRUCTURES, SITES OR KNOWN CEMETERIES LOCATED ON THE SUBJECT PROPERTY.
13. THERE ARE EXISTING STRUCTURES LOCATED ON THIS SITE TO BE REMOVED. THE HOUSE, GARAGE AND BARN ON PARCEL 165 WERE BUILT CIRCA 1958. THE 2 SHEDS ON PARCEL 8 WERE BUILT CIRCA 1958.
14. A NOISE STUDY IS NOT REQUIRED FOR THIS DEVELOPMENT.
15. MAA APPROVAL IS NOT REQUIRED FOR THIS DEVELOPMENT.
16. THE APPO TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY MARS GROUP, INC. DATED JULY, 2011 AND APPROVED UNDER SP-12-002.
17. THE GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY GEOTECHNICAL LABORATORIES, INC., DATED APRIL, 2007 SUPPLEMENTED IN JANUARY, 2012 AND APPROVED UNDER SP-12-002.
18. THERE ARE 100 YEAR-FLOODPLAIN, STREAMS, STEEP SLOPES AND FORESTED AREAS LOCATED ON-SITE. THE FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY PHRA DATED JANUARY, 2011 AND WAS APPROVED UNDER SP-12-002.
19. THERE ARE NO WETLANDS LOCATED ON-SITE AS OUTLINED IN A WETLAND DELINEATION PREPARED BY PHRA DATED 2007.
20. NO GRADING, REMOVAL OF VEGETATIVE COVER AND TREES ARE NOT PERMITTED IN WETLANDS, STREAMS, WETLAND BUFFERS, STREAM BUFFERS, FLOODPLAIN, STEEP SLOPES, OR FOREST CONSERVATION EASEMENT AREAS. DISTURBANCE TO THE EXISTING INTERMITTENT STREAM AND ASSOCIATED BUFFER IS PROHIBITED NEAR THE BEGINNING OF THE PUBLIC ACCESS PLAGE. THIS IS A NECESSARY DISTURBANCE FOR ROAD AND UTILITY CONSTRUCTION. IMPACTS WILL BE MINIMIZED AND WILL INCLUDE ONLY THE AREA NECESSARY REQUIRED FOR THESE IMPROVEMENTS.
21. FOREST STAND DELINEATION PLAN WAS PREPARED BY PHRA, DATED JUNE, 2011 AND APPROVED UNDER SP-12-002.
22. FOREST CONSERVATION OBLIGATIONS IN ACCORDANCE WITH THE FOREST CONSERVATION MANUAL SHALL BE FULFILLED BY: ON-SITE RESTORATION OF 0.96 ACRES, ON-SITE RETENTION OF 0.78 ACRES (DOES NOT INCLUDE FLOODPLAIN) AND OFF-SITE RE-FORESTATION OF 0.47 ACRES ON THE TALLEY PROPERTY, TAX MAP # 2, PARCEL 2 (F-07-003FC/KINDLER OVERLOOK, LOT #20094). RED-LINE REVISIONS TO THE ROAD CONSTRUCTION DRAWINGS FOR F-07-003/KINDLER OVERLOOK HAVE BEEN PROCESSED SHOWING THE 0.47 ACRES OF OFF-SITE EASEMENT, SURETY FOR RE-FORESTATION IN THE AMOUNT OF \$40,000.00 SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT FOR THIS SUBDIVISION, F-13-004.
23. 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 MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
24. ALL LANDSCAPING REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL AND SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL.
25. PERMETER LANDSCAPING, TRUNK AND SCREENING AND SP-12-011 PLANTINGS SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE LANDSCAPE MANUAL. FINANCIAL SURETY IN THE AMOUNT OF \$11,250.00 FOR 33 SHADE TREES, 5 EVERGREENS, AND 20 SHRUBS SHALL BE POSTED WITH THE DEVELOPER AGREEMENT FOR THIS FINAL PLAN, F-13-004.
26. WRITTEN APPROVAL FROM BG&E FOR THE PROPOSED LANDSCAPING ALONG TROTTER ROAD WAS OBTAINED BY CORRESPONDENCE DATED SEPTEMBER 17, 2012 AND APPROVED UNDER THESE PLANS.
27. FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND ROAD RIGHT-OF-WAY AND NOT ONTO THE PIPESTEM LOT DRIVEWAY.
28. DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
A) WIDTH - 12' (16' SERVING MORE THAN ONE RESIDENCE).
B) SURFACE - 6" OF COMPACT CRUSHER RUN BASE WITH TAR AND CHIP COATING.
C) GEOMETRY - MAX. 15% GRADE, MAX. 10% GRADE CHANGE & MIN. 45' TURNING RADIUS.
D) STRUCTURES(CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (1025 LOAD).
E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOODPLAIN WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY.
F) STRUCTURE CLEARANCES - MINIMUM 12 FEET.
G) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
29. A USE-IN-COMMON MAINTENANCE AGREEMENT FOR LOTS 6 TO 8 SHALL BE RECORDED SIMULTANEOUSLY WITH THE PLAT FOR THIS SUBDIVISION IN THE LAND RECORDS OF HOWARD COUNTY, MD.
30. UNLESS OTHERWISE NOTED AS PRIVATE, ALL EASEMENTS ARE PUBLIC.
31. BRL INDICATES BUILDING RESTRICTION LINE.
32. STORMWATER MANAGEMENT SHALL BE PROVIDED FOR THIS PROJECT BASED ON GUIDELINES ESTABLISHED BY THE MDC STORMWATER MANAGEMENT ACT OF 2009. SWM FOR THIS PROJECT SHALL BE PROVIDED BY ESD TO THE MEP UTILITIES. (M-1) DISSECTION OF ROOFTOP RUN-OFF; (M-5) DRY WELLS; (M-6) MICRO-BIORETENTION; AND (M-8) GRASS SWALES, AS SHOWN ON THESE APPROVED ROAD CONSTRUCTION PLANS F-13-004.
33. THE STORMWATER MANAGEMENT FACILITIES SHALL BE PRIVATELY OWNED AND MAINTAINED; SAVING AND EXCEPTING THE GRASS SWALES ALONG THE ROADWAY WHICH SHALL BE JOINTLY OWNED AND MAINTAINED.
34. THE TRAFFIC CONTROL DEVICES SHOWN ON THESE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-5752) PRIOR TO INSTALLATION.
35. ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD)". ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.
36. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED WITHIN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED (QUICK PUNCH), SQUARE TUBE (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.
37. THE R-1 SIGN AND THE STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
38. A PRIVATE RANGE OF ADDRESS SIGN ASSEMBLY SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPER/OWNER'S EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATES.
39. ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE BUILDER'S EXPENSE.
40. ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
41. STREET LIGHT PLACEMENT AND TYPE OF FIXTURES AND POLES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (2006), SECTION 5.5.A. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREETLIGHT AND ANY TREE.
42. ALL AREAS OF CONTROLLED FILL TO BE AT 95% COMPACTION PER AASHTO-T180 STANDARDS.
43. THE ARTICLES OF INCORPORATION FOR THE HOMEOWNERS' ASSOCIATION WERE RECORDED ON 8/15/2008 AS ACCOUNT NO.D12875013 AMONG THE RECORDS OF THE MARYLAND STATE DEPARTMENT OF ASSESSMENTS AND TAXATION.
44. ALL ASPECTS OF THIS PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
45. WAIVER PETITION WP-12-011 WAS APPROVED BY LETTER DATED AUGUST 10, 2011 TO WAIVE SECTION 16.1205(A)(7) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS TO ALLOW FOR THE REMOVAL OF SPECIMEN TREES HAVING A DIAMETER OF 3" OR GREATER, SUBJECT TO THE FOLLOWING CONDITIONS: 1) APPROVAL IS GIVEN FOR REMOVAL OF SIXTEEN SPECIMEN TREES AS SHOWN ON THE WAIVER PETITION EXHIBIT AND IDENTIFIED AS SPECIMEN TREES NOS. 1 TO 7; 2) TWO LANDSCAPE TREES PER EVERY SPECIMEN TREE REMOVED SHALL BE PROVIDED HAVING A MINIMUM DIAMETER OF 3-1/2" (FOR A TOTAL OF 34 SHADE TREES). THE REPLACEMENT TREES ARE TO BE IN ADDITION TO THE REQUIRED PERMETER LANDSCAPE TREES.
46. A DESIGN MANUAL WAIVER WAS APPROVED PER LETTER DATED DECEMBER 13, 2011, TO WAIVE STD. R.1.01 OF THE HOWARD COUNTY DESIGN MANUAL VOL.IV TO ALLOW FOR THE USE OF A MODIFIED OPEN SECTION ROADWAY FOR A PUBLIC ACCESS PLAGE WITHIN THE METROPOLITAN DISTRICT.
47. THE 10'x10' CONCRETE BUS PAD AND SHELTER WILL BE OWNED AND MAINTAINED BY THE H.O.A.

SHEET INDEX table with columns NO., DESCRIPTION, and list of sheets 1-12 including title sheet, construction/grading plan, sediment & erosion control plan, roadway plan, and proposed swm-esd drainage area map.

TROTTER POINT
LOTS 1-14 AND OPEN SPACE LOTS 15-18
PARCELS 8, 9, & 165 / ZONE: R-20
5th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
FINALS/ROAD CONSTRUCTION PLANS F-13-004

BENCHMARKS NAD '83 table with columns STATION, NAD 83, E, N, and ELEV. listing stations 29GB and 29G5.

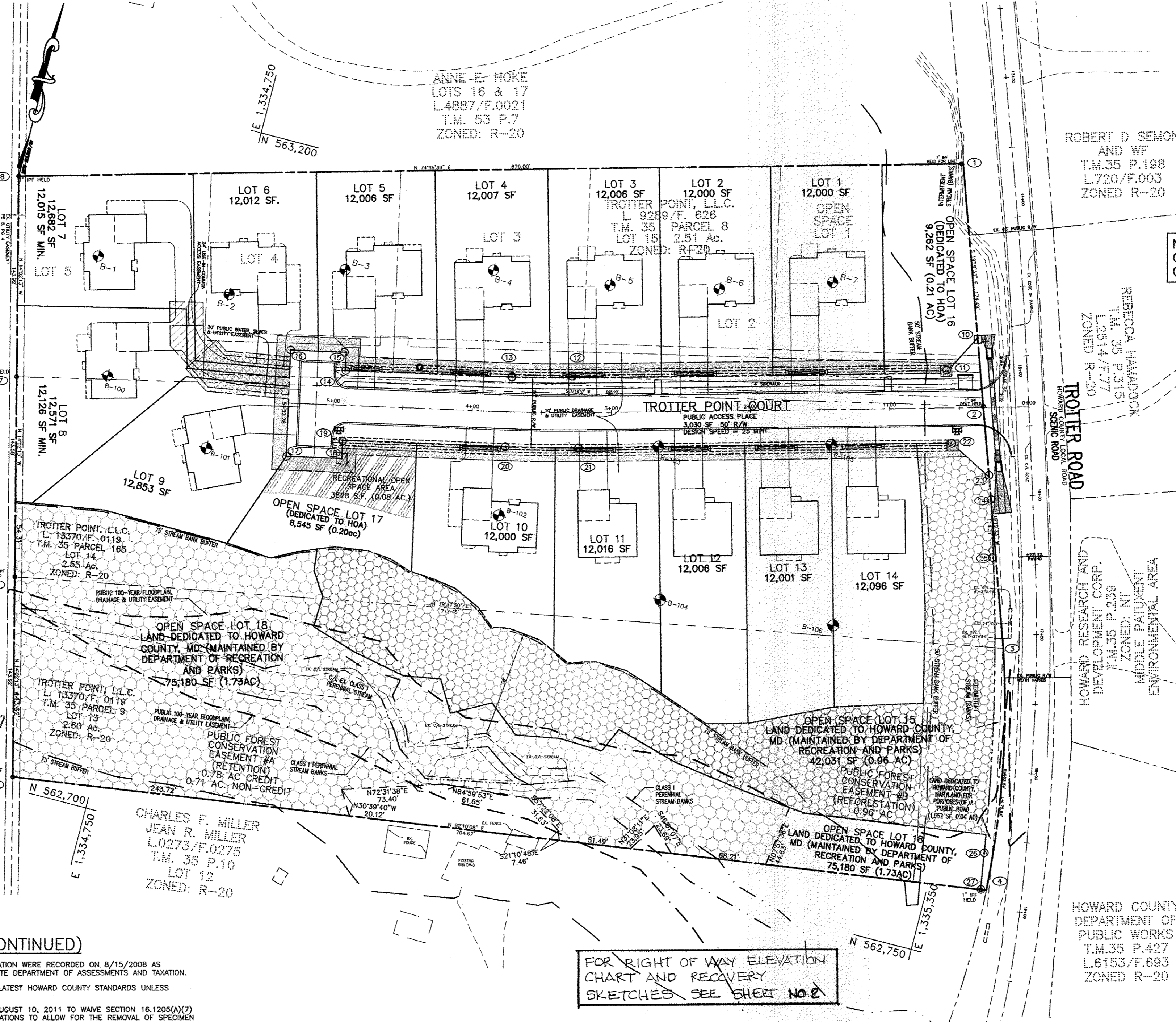
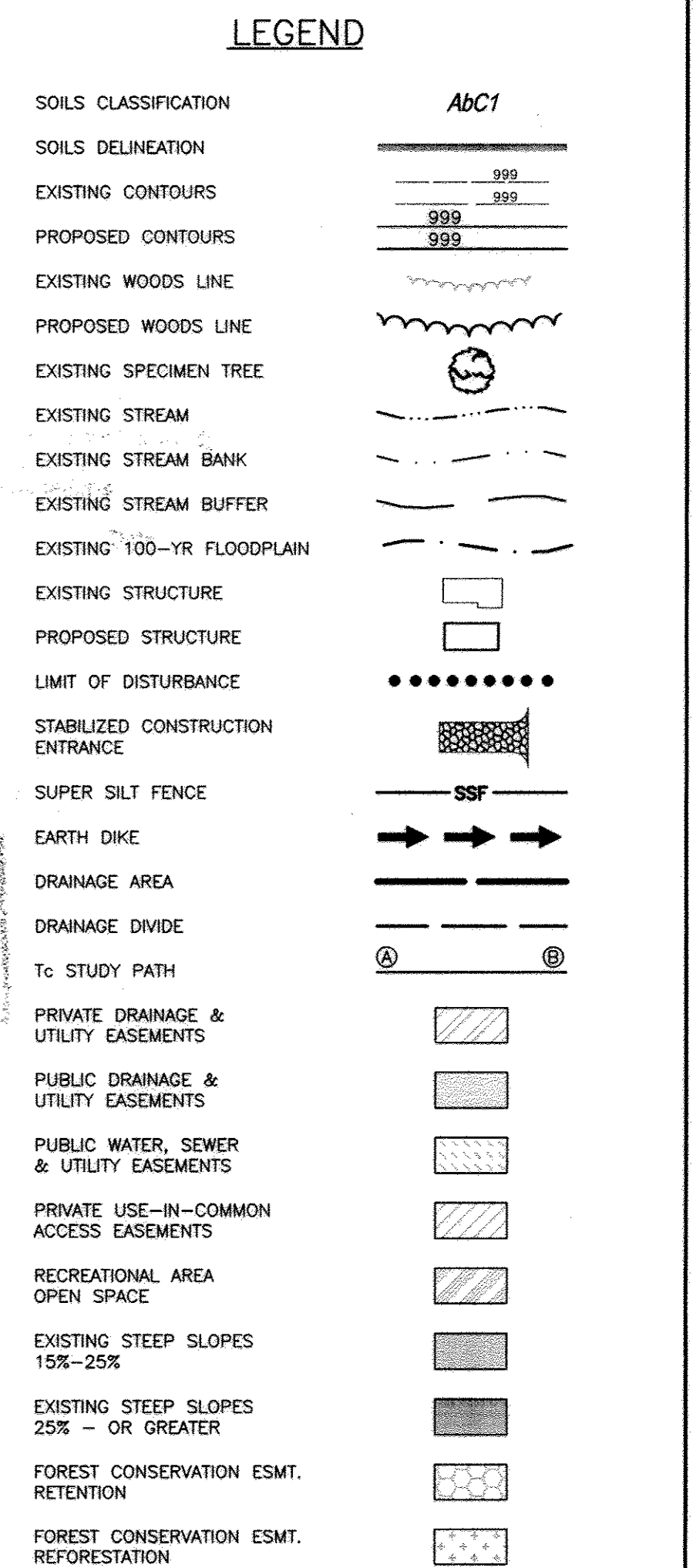


STORMWATER MANAGEMENT PRACTICE CHART table with columns LOT NO., STREET ADDRESS, DISSECTION OF ROOFTOP RUN-OFF (M-1), DRY WELLS (M-5), and MICRO-BIORETENTION (M-6).

- AS-BUILT NOTES:
1) HORIZONTAL DATUM FOR THIS AS-BUILT IS BASED ON THE MARYLAND STATE REFERENCE SYSTEM NAD 83/ ADJ 07 AS PROJECTED FROM HO.CO. GEODETIC CONTROL STATIONS 29GB AND 29G5. VERTICAL DATUM FOR THIS AS-BUILT IS NORTH AMERICAN VERTICAL DATUM NAVD 88 AS PROJECTED FROM THE ABOVE MENTIONED HOWARD COUNTY GEODETIC CONTROL STATIONS.
2) THE INSTRUMENTS USED IN PERFORMING THE AS-BUILT WERE A 5" TOTAL STATION AND 6"EM AND 8"K GPS.
3) THIS AS-BUILT WAS PERFORMED BY BENCHMARK ENGINEERING, INC.

NOTE: CONTRACTORS TO EXERCISE EXTREME CAUTION WHEN WORKING IN AREA OF EXIST. OVERHEAD LINES ALONG TROTTER ROAD

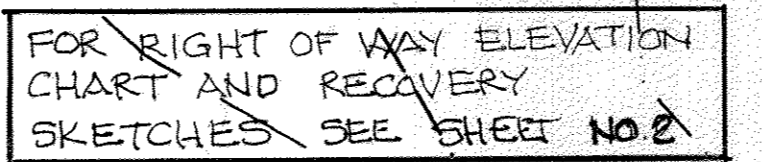
BOUNDARY COORDINATE TABLE (NAD '83) table with columns NO., NORTHING, and EASTING, listing 27 points around the site boundary.



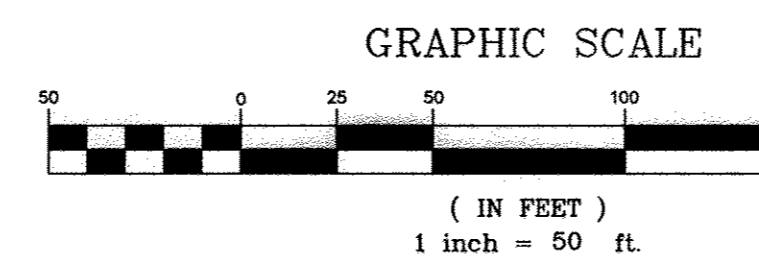
SITE ANALYSIS DATA/TABULATION table with sections for GENERAL SITE DATA, AREA TABULATION, DEED REFERENCES, PROPOSED USE OF SITE, and DEED REFERENCES. Includes a PROFESSIONAL CERTIFICATION block for Donald Mason, P.E., dated 3-7-17.

AS-BUILT CERTIFICATION block for Donald Mason, P.E., dated 3-7-17, certifying that the documents were prepared or approved by him and that he is a duly licensed professional engineer under the laws of the State of Maryland.

GENERAL NOTES (CONTINUED) text block containing notes 43-47 regarding incorporation of HOA records, compliance with standards, waiver petitions, design manual waivers, and bus pad ownership.



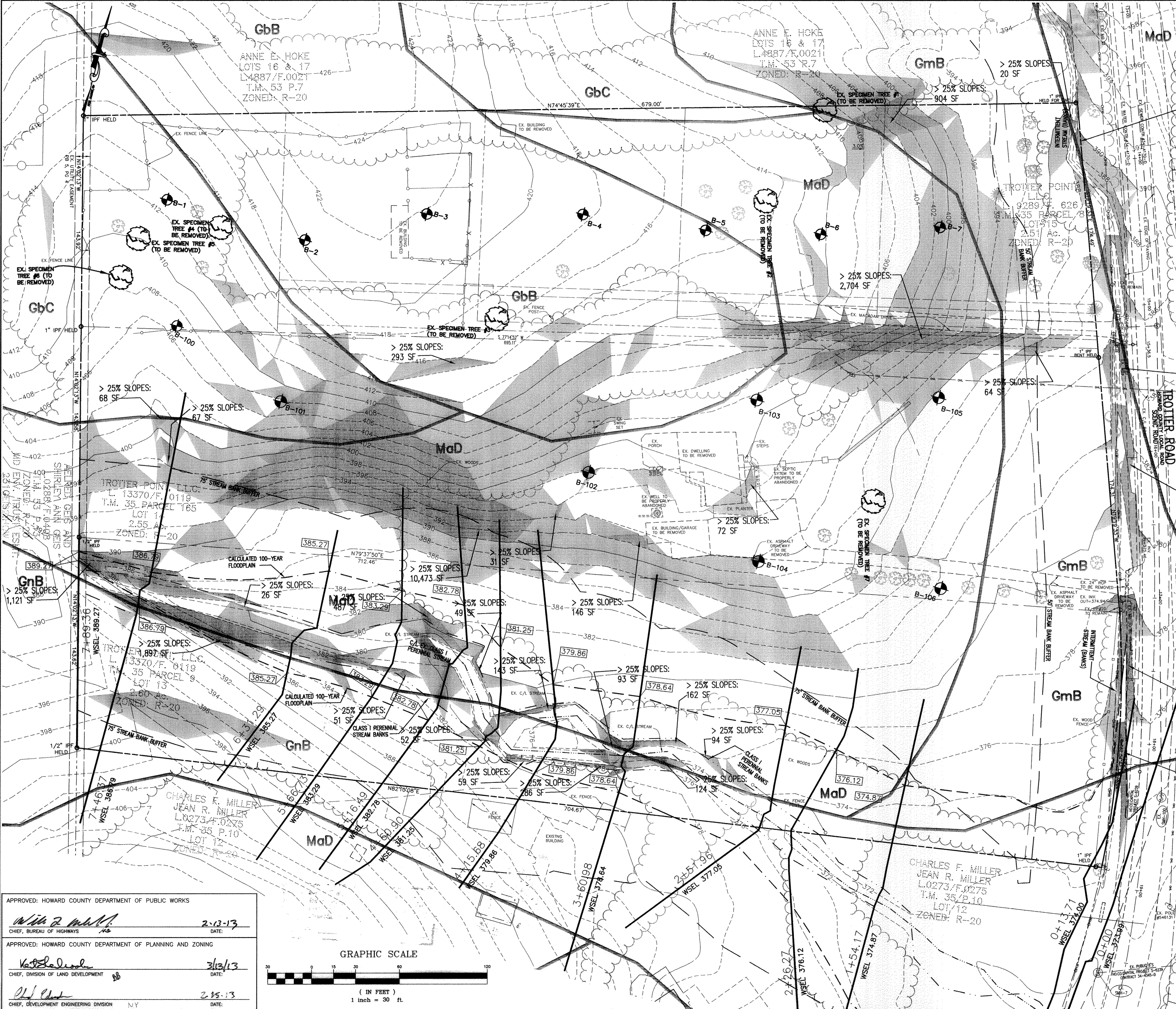
MINIMUM LOT SIZE CHART table with columns LOT NO., GROSS AREA, PIPESTEM AREA, and MIN. LOT SIZE.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS and HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING, with signatures and dates for Chief, Bureau of Highways and Chief, Development Engineering Division.

BENCHMARK ENGINEERING, INC. logo and contact information, including address, phone, and website. Also includes a PROFESSIONAL CERTIFICATION block for the engineer.

NOTE: CONTRACTORS TO EXERCISE EXTREME CAUTION WHEN WORKING IN AREA OF EXIST. OVERHEAD LINES ALONG TROTTER ROAD



SOILS LEGEND

MAP SYMBOL	SOIL TYPE	MAPPING UNIT
GbC	B	GLADSTONE LOAM - 3 TO 8 PERCENT SLOPES
GbB	B	GLADSTONE LOAM - 8 TO 15 PERCENT SLOPES
GmB	C	GLENNVILLE Silt LOAM - 3 TO 8 PERCENT SLOPES
GmC	C	GLENNVILLE Silt LOAM - 0 TO 8 PERCENT SLOPES
MaD	B	MANOR LOAM - 15 TO 25 PERCENT SLOPES

USDA WEBSITE

RIGHT OF WAY ELEVATION CHART NAD 83

R/W PT NO	DESCRIPTION	ELEVATION
1	R&C PVI	391.55
10	CONC. MON	383.66
11	REBAR & CAP	384.02
12	REBAR & CAP	405.53
13	REBAR & CAP	407.14
14	REBAR & CAP	412.06
15	REBAR & CAP	413.48
16	REBAR & CAP	414.05
17	REBAR & CAP	413.42
18	CONC. MON	413.23
19	REBAR & CAP	412.00
20	REBAR & CAP	407.27
21	M&S NAIL	406.02
22	REBAR & CAP	384.10
23	REBAR & CAP	381.58
24	REBAR & CAP	381.23
25	REBAR & CAP	380.15
26	REBAR & CAP	373.82
27	IRON PIPE END	373.43

AS-BUILT CERTIFICATION
I hereby certify, by my seal, that to the best of my knowledge and belief the facilities shown on this "AS-BUILT" Plan meet the Approved Plans and Specifications
Donald Mason, P.E.
Date: 3-7-17

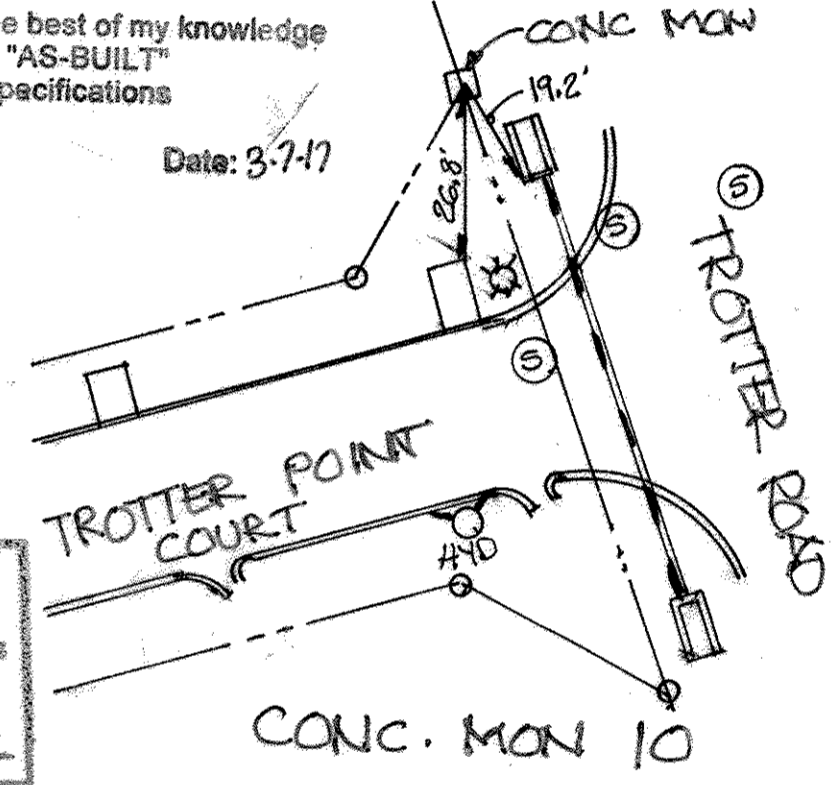


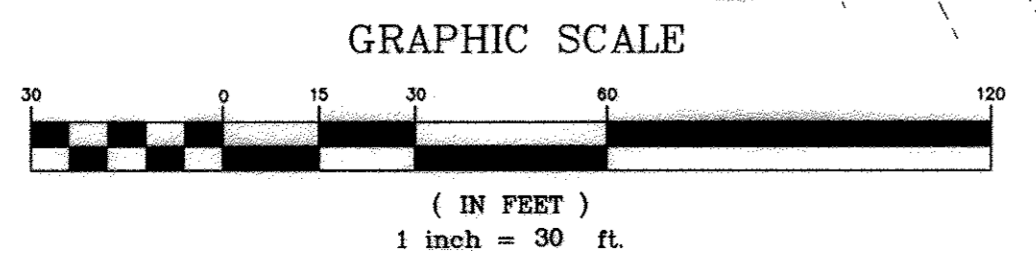
Table 1 - 100 YEAR FLOODPLAIN SUMMARY

Stream	Reach	Station	100-Yr WSEL	Q ₁₀₀ (cfs)
A	1	7+89.35	389.27	836.30
A	1	7+46.37	386.79	836.30
A	1	6+31.29	385.27	836.30
A	1	5+66.73	383.29	836.30
A	1	5+16.49	382.78	836.30
A	1	4+60.90	381.25	836.30
A	1	4+15.68	379.86	836.30
A	1	3+60.98	378.64	836.30
A	1	2+51.96	377.05	836.30
A	1	2+26.27	376.12	836.30
A	1	1+54.17	374.87	836.30
A	1	0+13.71	374.00	836.30
A	1	0+00	373.99	836.30

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 With 2 initials
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 2-13-13

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 K. S. ...
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 3/13/13

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 J. ...
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 2-25-13



NO. DATE REVISION

BENCHMARK ENGINEERS, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS
 8480 BALTIMORE NATIONAL PIKE • SUITE 418 • ELLICOTT CITY, MARYLAND 21043
 (P) 410-465-6105 (F) 410-465-6644
 60 THOMAS JOHNSON DRIVE • FREDERICK, MARYLAND 21702
 (P) 301-371-3505 (F) 301-371-3506
 WWW.BEI-CIVILENGINEERING.COM

PROFESSIONAL CERTIFICATION:
 I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 28559; Expiration Date: 7-22-2013

STATE OF MARYLAND PROFESSIONAL ENGINEER

OWNER/DEVELOPER: TROTTER POINT, L.L.C.
 9695 NORFOLK AVENUE
 LAUREL, MD 20723
 PHONE: 410-792-2565

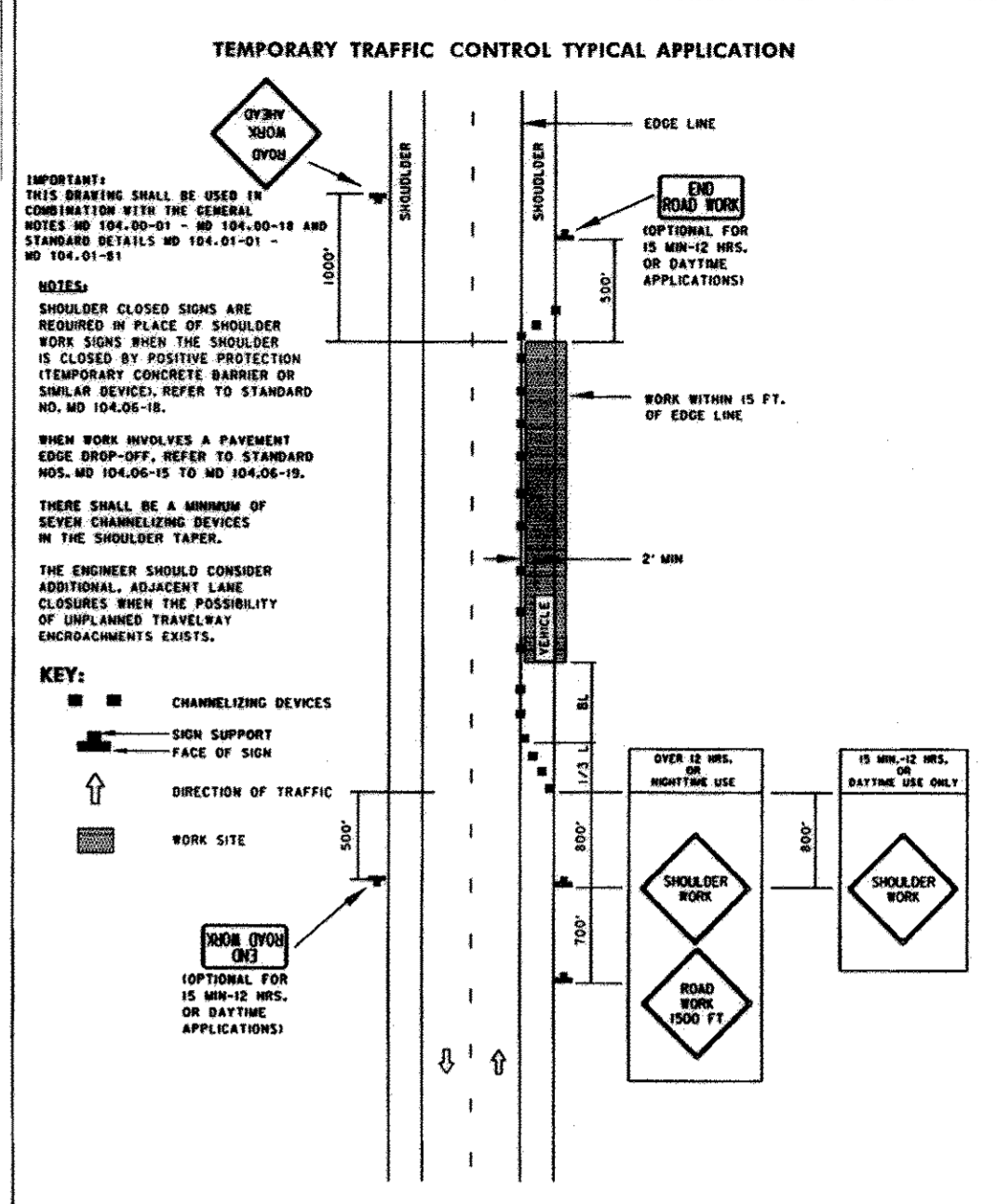
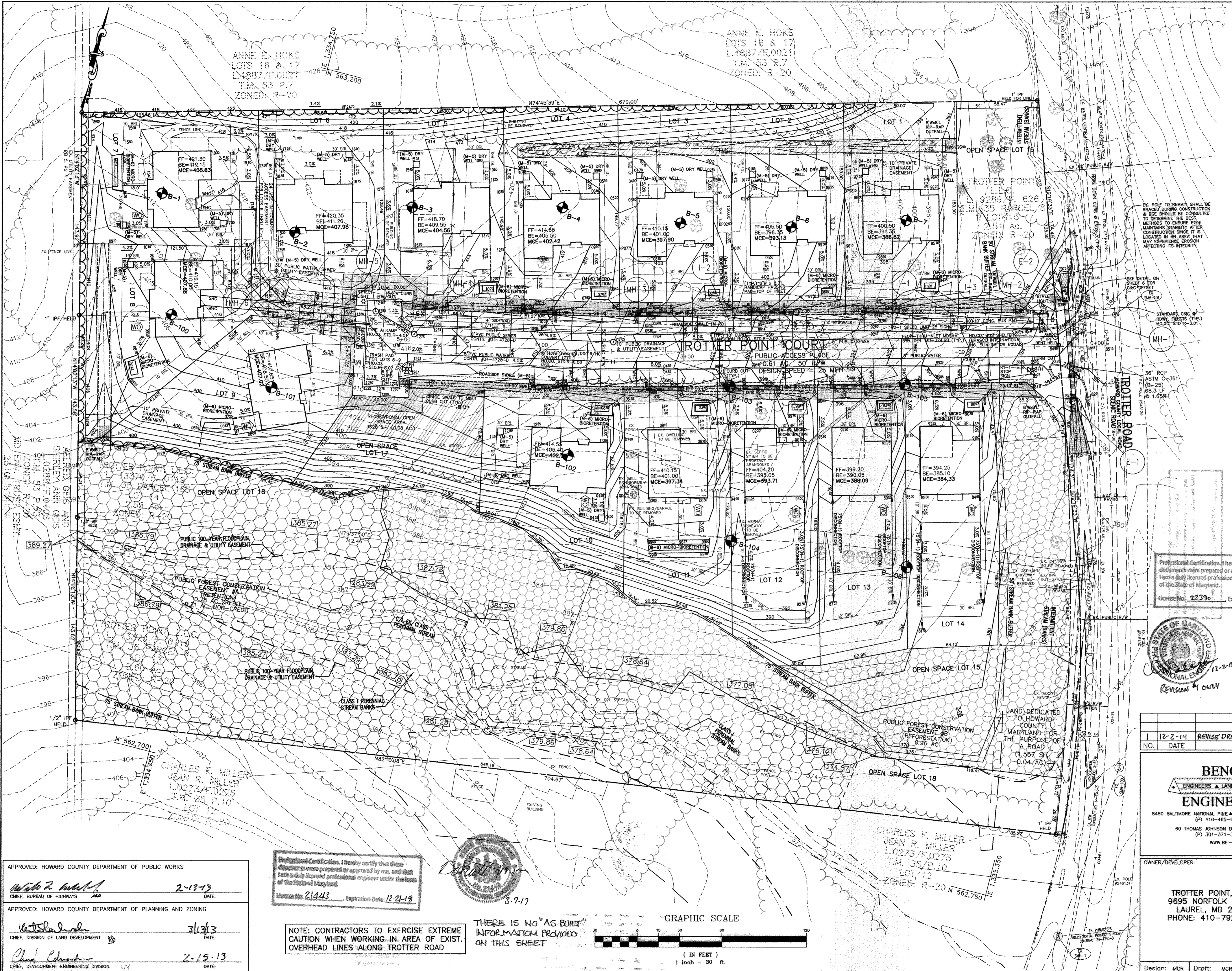
PROJECT: TROTTER POINT LOTS 1-14 AND OPEN SPACE LOTS 15-18
 A RESUBDIVISION OF FOREST HILLS, LOTS 13-15; PB 5/PG 4 & A RESUBDIVISION OF TROTTER POINT G.S. LOT 1 AND LOTS 2-5 PLATS #20852-20853E-08-162

LOCATION: TAX MAP 35 - GRID 2 PARCELS 8, 9 & 165 5th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

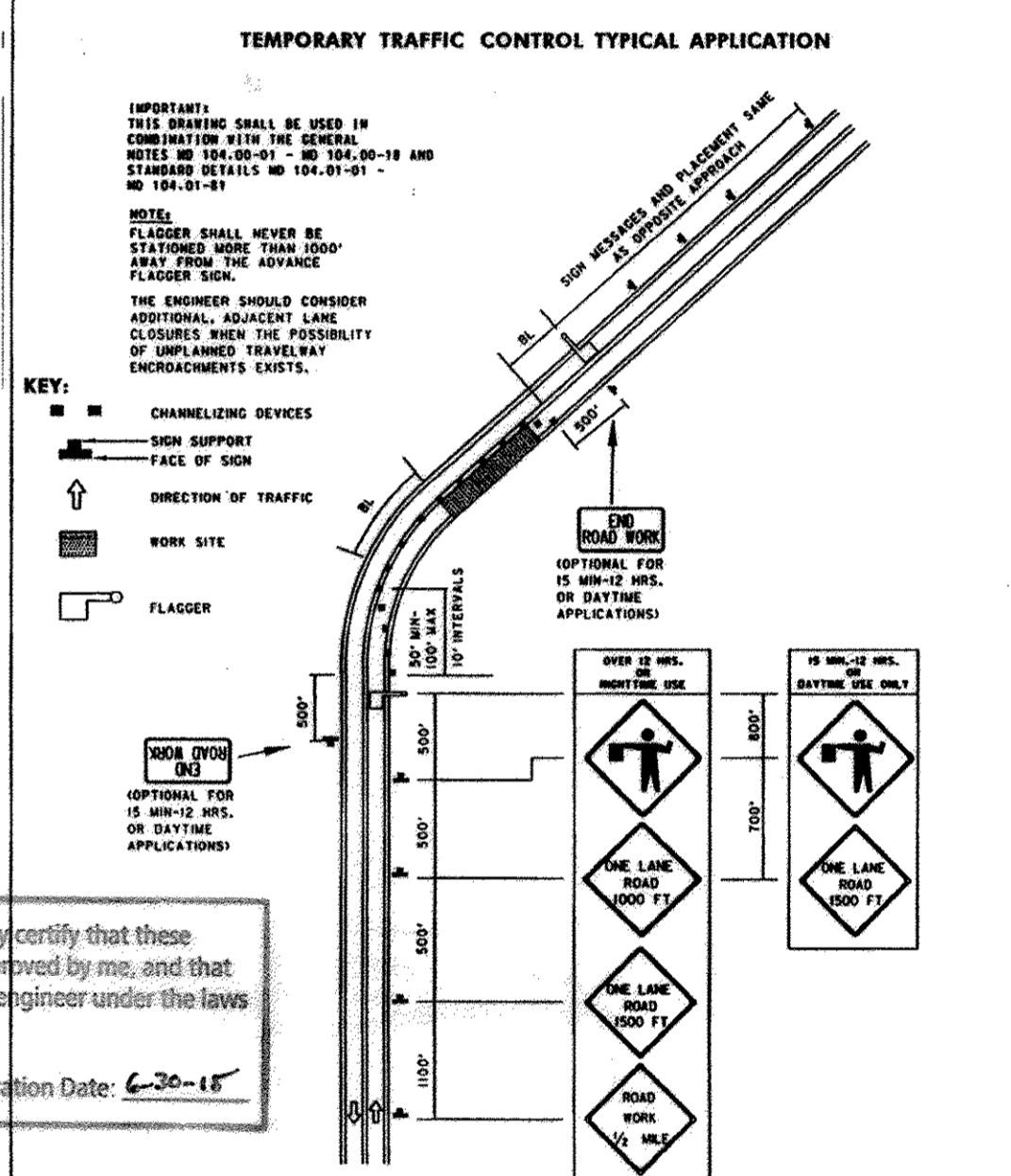
TITLE: FINALS/ROAD CONSTRUCTION PLANS EXISTING CONDITIONS PLAN AND SOILS MAP

DATE: JULY 2012 PROJECT NO. 2283
 FEBRUARY, 2013

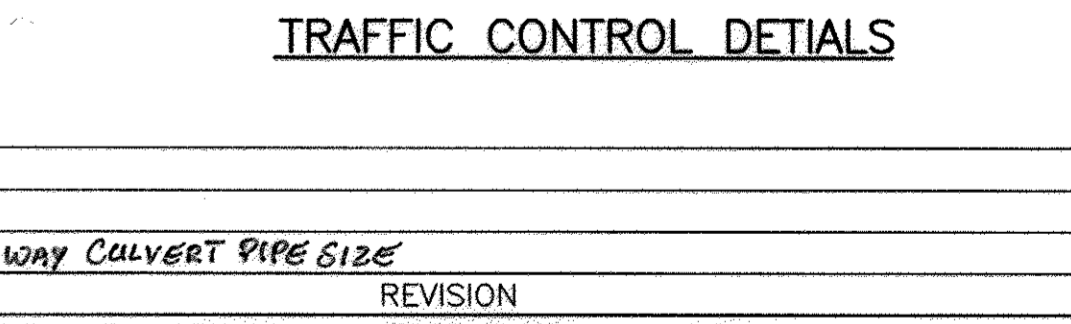
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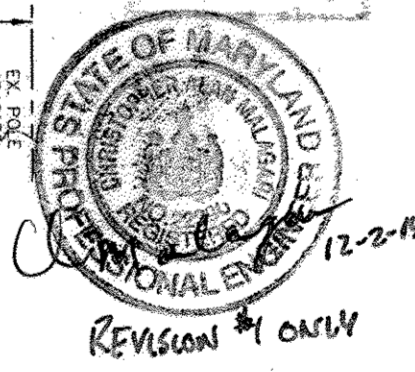
Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION
 STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
SHOULDER WORK/2-LANE, 2-WAY
 EQUALS LESS THAN 40 MPH
 STANDARD NO. MD 104.02-02



Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION
 STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
FLAGGING OPERATIONS/LANE, 2-WAY
 EQUALS LESS THAN 40 MPH
 STANDARD NO. MD 104.02-10



Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No: 2239c Expiration Date: 6-20-15



NO.	DATE	REVISION
1	12-2-14	REVISE DRIVEWAY CULVERT PIPE SIZE

BENCHMARK ENGINEERING, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS
 8480 BALTIMORE NATIONAL PIKE & SUITE 418 • ELLICOTT CITY, MARYLAND 21043
 (P) 410-465-6105 (F) 410-465-6644
 60 THOMAS JOHNSON DRIVE • FREDERICK, MARYLAND 21702
 (P) 301-371-3505 (F) 301-371-3506
 WWW.BEI-CIVILENGINEERING.COM

PROFESSIONAL CERTIFICATION:
 I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 28559; Expiration Date: 7-22-2013

OWNER/DEVELOPER: TROTTER POINT, L.L.C.
 9695 NORFOLK AVENUE, LAUREL, MD 20723
 PHONE: 410-792-2565

PROJECT: TROTTER POINT
 LOTS 1-14 AND OPEN SPACE LOTS 15-18
 A RESUBDIVISION OF FOREST HILLS, LOTS 13-16; P.B.5/PG.4 & A RESUBDIVISION OF TROTTER POINT O.S. LOT 1 AND LOTS 2-5 PLATS #20852-20853-(08-162)

TITLE: FINALS/ROAD CONSTRUCTION PLANS
 CONSTRUCTION/GRADING PLAN
 NOTES AND DETAILS

DATE: JULY, 2012 PROJECT NO. 2283
 FEBRUARY, 2013

SCALE: AS SHOWN DRAWING 3 OF 12

Design: MCR Draft: MCR Check: BFC

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 [Signature] 2-13-13
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 3/13/13
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: [Signature] 2-15-13
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No: 21423 Expiration Date: 12-21-19



NOTE: CONTRACTORS TO EXERCISE EXTREME CAUTION WHEN WORKING IN AREA OF EXIST. OVERHEAD LINES ALONG TROTTER ROAD

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET

GRAPHIC SCALE
 (IN FEET)
 1 inch = 30 ft.



BY THE OWNER/DEVELOPER:
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.
 S.O.P. 1/31/13
 OWNER/DEVELOPER DATE

BY THE ENGINEER:
 I/WE 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.
 B.F. 1/31/2013
 ENGINEER - BRIAN F. CLEARY, P.E. 28559 DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 J.R.P. 3/7/13
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 W.M. 2-13-13
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 K.S. 3/13/13
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

C.P. 2-15-13
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

- SEQUENCE OF CONSTRUCTION**
 NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF CONSTRUCTION ACTIVITY
- DAY 1 OBTAIN GRADING PERMIT. A LETTER OF AUTHORIZATION FROM MDE MUST BE OBTAINED PRIOR TO DISTURBANCE OF THE STREAM FOR THE ROADWAY CULVERT AND UTILITY CROSSING. STREAM CLOSURE SHALL BE BETWEEN MARCH 1ST AND JUNE 15
 - DAY 2-5 INSTALL CONSTRUCTION ENTRANCE; CLEAR & GRUB FOR PERIMETER SEDIMENT CONTROL DEVICES
 - DAY 6-10 INSTALL PERIMETER CLEANWATER DIVERSION DEVICES AND PERMANENTLY STABILIZE
 - DAY 11-15 INSTALL REMAINING PERIMETER SEDIMENT CONTROL DEVICES; BEGIN INSTALLATION OF CULVERT ALONG TROTTER ROAD IN ACCORDANCE WITH THE MDE WATERWAY CONSTRUCTION GUIDELINES. THIS WORK SHALL BE APPROVED BY THE INSPECTOR PRIOR TO PROCEEDING WITH FURTHER DISTURBANCE/GRADING. DURING CONSTRUCTION, FOR DAILY PUMP-AROUND REMOVAL, STABILIZE STREAM BANKS & BOTTOM WITH RIP-RAP PER MDC GUIDELINES
 - DAY 16-30 BEGIN SEDIMENT TRAP AND UPON COMPLETION INSTALL TEMPORARY SWALE STABILIZING REMAINING DISTURBED AREAS IN ACCORDANCE WITH THE TEMPORARY SEEDBED NOTES.
 - DAY 31-32 TEST PIT AREA OF EXISTING UTILITY CONNECTIONS TO DETERMINE EXACT LOCATIONS AND ELEVATIONS; RAZE EXISTING STRUCTURES.
 - DAY 32-40 BEGIN INSTALLATION OF PROPOSED UTILITIES CONNECTIONS AT EXISTING MAINS WITHIN TROTTER ROAD. THIS PROCESS TO INCLUDE DAILY CONTROL MEASURES AS REQUIRED.
 - DAY 41-60 UPON APPROVAL OF HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, CONSTRUCT & GRADE SITE ENTRANCE AND FINALIZE SDC. INSTALL OPEN SECTION ROADWAY SWALES, CURB & GRISS REMAINDER OF SITE AND BEGIN MASS GRADING. CONTRACTORS TO IMPLEMENT THE PRACTICE OF DUST CONTROL DURING CONSTRUCTION ACTIVITIES.
 - DAY 61-85 STABILIZE SITE IN ACCORDANCE WITH TEMPORARY SEEDBED NOTES.
 - DAY 66-80 UPON APPROVAL OF HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, BEGIN UTILITY AND STORM DRAIN INSTALLATION
 - DAY 81-85 BRING ROADWAY TO SUBGRADE AND INSTALL BASE COURSE PAVING.
 - DAY (VARIES) CONSTRUCT PROPOSED DWELLINGS (UTILIZE APPLICABLE SINGLE LOT SEC PRACTICES) INCLUDING THE DRIVEWAY CULVERTS AS APPLICABLE
 - DAY 86-90 FINAL GRADE REMAINDER OF SITE AND FULLY STABILIZE IN ACCORDANCE WITH PERMANENT SEEDING NOTES.
 - DAY 91-100 INSTALL FINAL PAVING AND COMPLETE ESD CONSTRUCTION
 - DAY 101-110 INSTALL REQUIRED LANDSCAPING AS SPECIFIED ON THESE PLANS.
 - DAY 111-115 UPON APPROVAL OF HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT BASIN (THIS ACTIVITY TO OCCUR WITHIN A 5-DAY NO PRECIPITATION FORECAST FROM THE NWS)
 - DAY 116-120 UPON APPROVAL OF HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE REMAINING SEDIMENT CONTROL DEVICES AND PERMANENTLY STABILIZE ANY REMAINING DISTURBED AREAS.

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 222376 Expiration Date: 6-30-14
 R. B. 12-24



NOTE: CONTRACTORS TO EXERCISE EXTREME CAUTION WHEN WORKING IN AREA OF EXIST. OVERHEAD LINES ALONG TROTTER ROAD

NO.	DATE	REVISION
1	12-2-14	REVISE DRIVEWAY CULVERT PIPE SIZE

BENCHMARK ENGINEERING, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS
 8480 BALTIMORE NATIONAL PIKE SUITE 418 • ELICOTT CITY, MARYLAND 21043
 (P) 410-465-8105 (F) 410-465-8644
 60 THOMAS JOHNSON DRIVE • FREDERICK, MARYLAND 21702
 (P) 301-371-3505 (F) 301-371-3506
 WWW.BEI-CIVILENGINEERING.COM

PROFESSIONAL CERTIFICATION:
 I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 28559; Expiration Date: 7-22-2013

STATE OF MARYLAND PROFESSIONAL ENGINEER

OWNER/DEVELOPER: TROTTER POINT, L.L.C. 9695 NORFOLK AVENUE LAUREL, MD 20723 PHONE: 410-792-2565

PROJECT: TROTTER POINT LOTS 1-14 AND OPEN SPACE LOTS 15-18 A RESUBDIVISION OF FOREST HILLS, LOTS 13-15; PB-5/PG-4 & A RESUBDIVISION OF TROTTER POINT 0.5, LOT 1 AND LOTS 2-5 PLATS #20852-20853(F-08-162)

LOCATION: TAX MAP 35 - GRID 2 PARCELS 8, 9 & 15 5th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE: FINALS/ROAD CONSTRUCTION PLANS SEDIMENT & EROSION CONTROL PLAN, NOTES AND DETAILS

DATE: JULY, 2012 PROJECT NO. 2283
 FEBRUARY, 2013

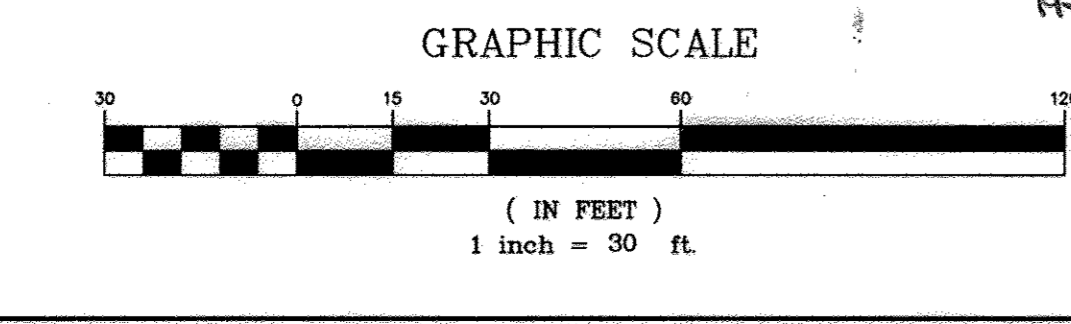
SCALE: AS SHOWN DRAWING 4 OF 12

Design: MCR Draft: MCR Check: BFC

SOILS LEGEND

MAP SYMBOL	SOIL TYPE	MAPPING UNIT
GbC	B	GLADSTONE LOAM - 3 TO 8 PERCENT SLOPES
GbB	B	GLADSTONE LOAM - 8 TO 15 PERCENT SLOPES
GbH	C	GLENNVILLE SILT LOAM - 3 TO 8 PERCENT SLOPES
GmB	C	GLENNVILLE/BAILE SILT LOAMS - 0 TO 8 PERCENT SLOPES
MaD	B	MANOR LOAM - 15 TO 25 PERCENT SLOPES

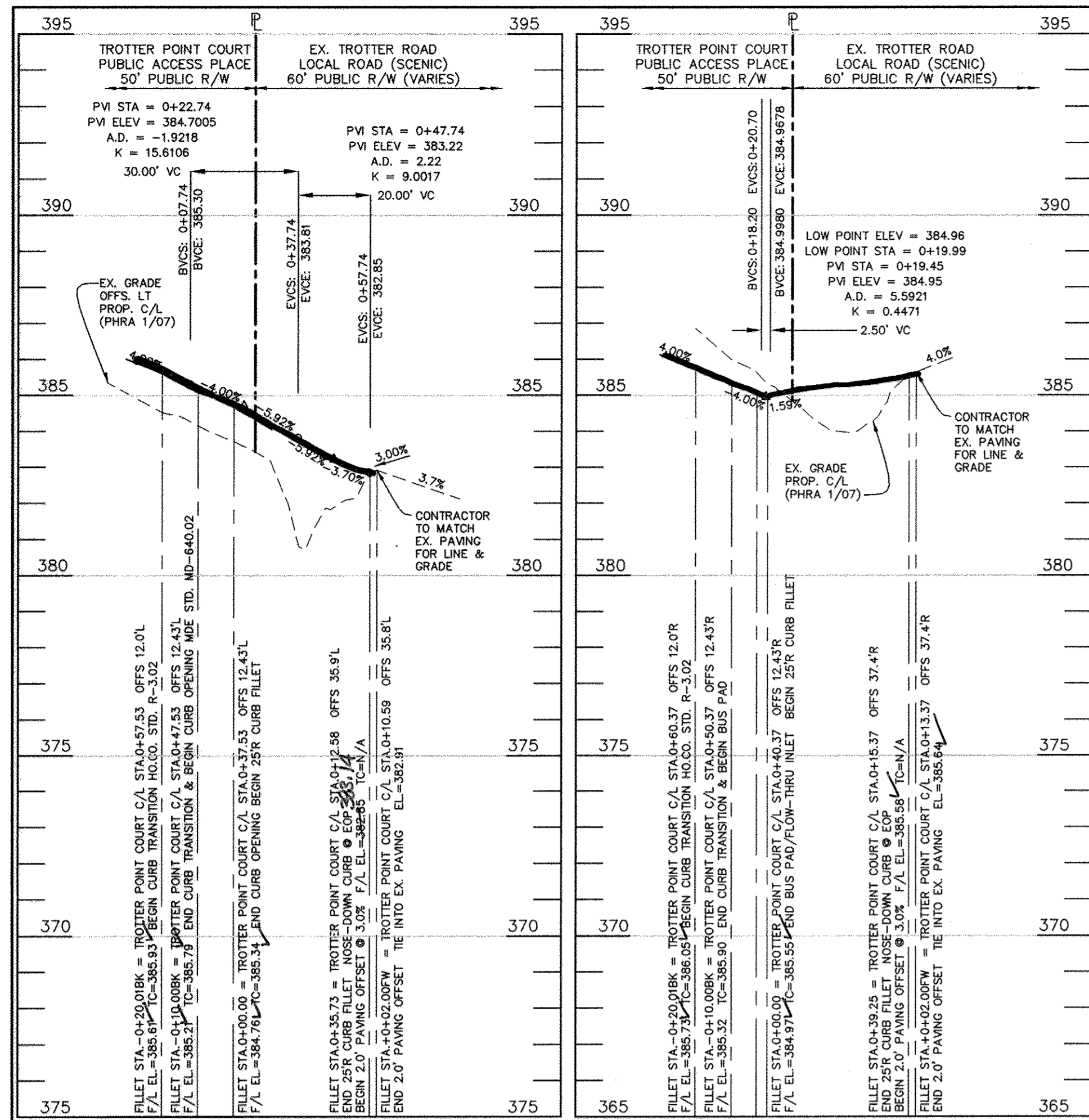
USDA WEBSITE



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 21403 Expiration Date: 12-21-16

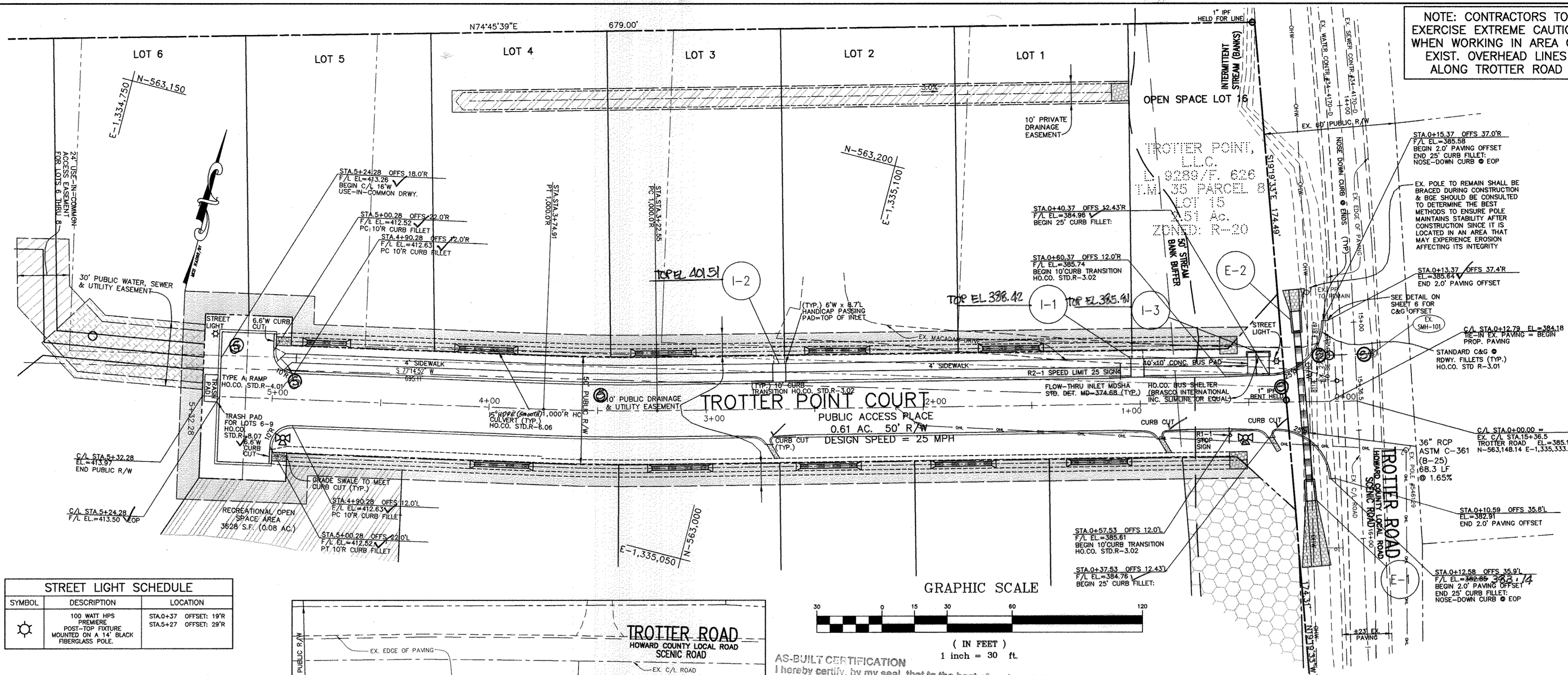
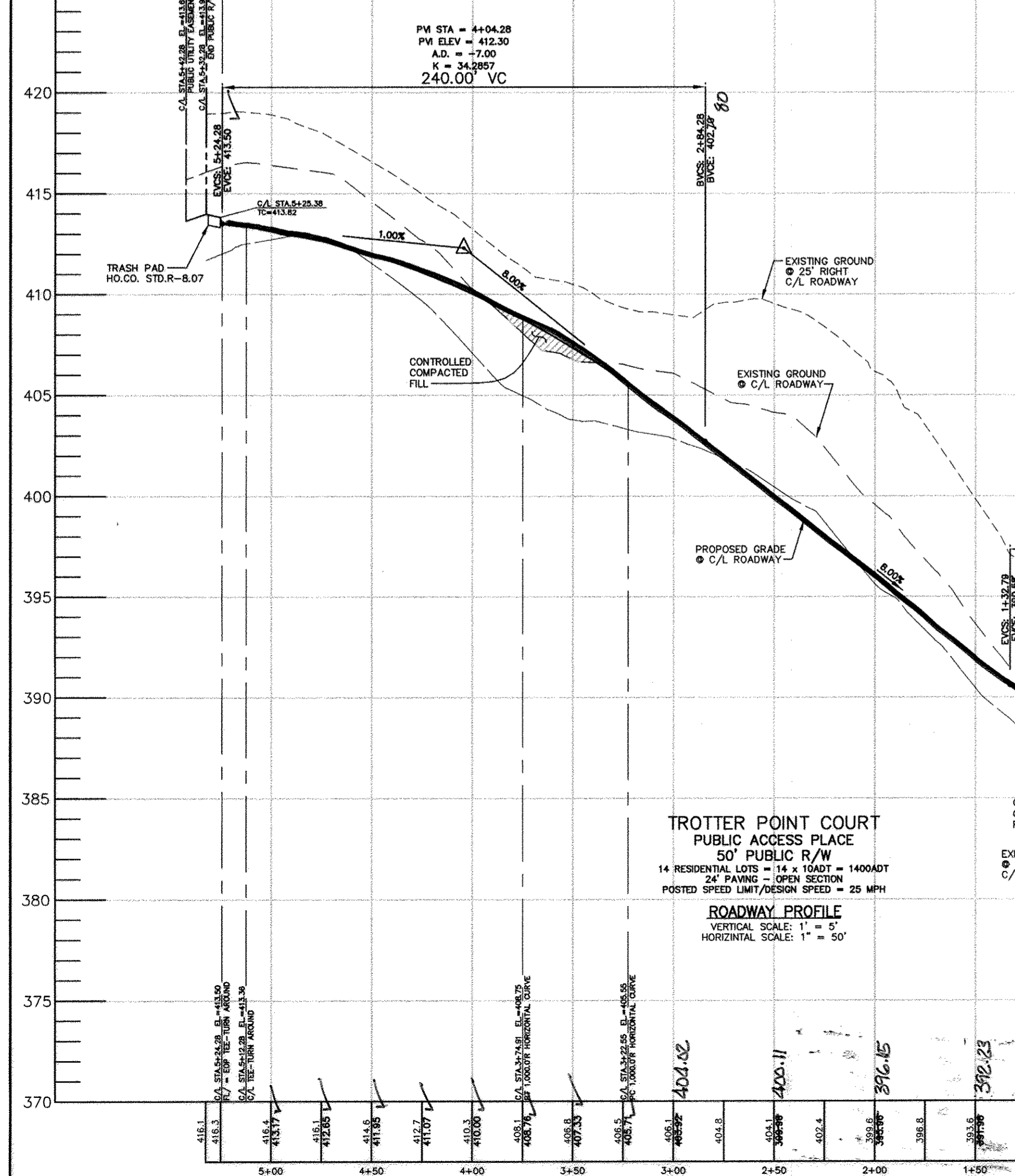
STONE OUTLET SEDIMENT TRAP ST-II
 EX. DRAINAGE AREA=3.50c.
 PROP. DRAINAGE AREA=3.50c.
 TOTAL STORAGE REQUIRED=12600c.f.
 TOTAL STORAGE PROVIDED=12600c.f.
 WET STORAGE REQUIRED=6300c.f.
 WET STORAGE PROVIDED=6300c.f.
 DRY STORAGE REQUIRED=6300c.f.
 DRY STORAGE PROVIDED=6300c.f.
 WET STORAGE ELEVATION=374.00
 DRY STORAGE ELEVATION=375.35
 WEIR CREST ELEVATION=375.35
 WEIR CREST LENGTH = 14.0'
 TOP EMBNK. ELEVATION=376.35
 BOTTOM ELEVATION=372.40
 BOTTOM DIMENSIONS=±80.9'±43.4'

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET



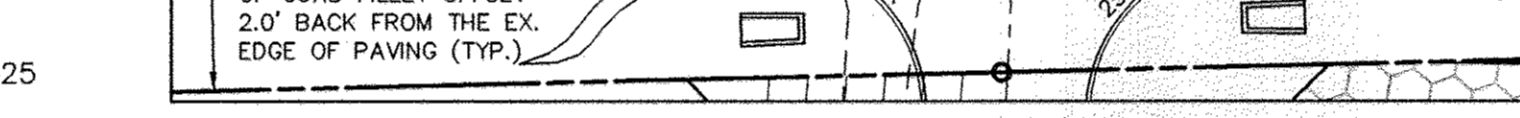
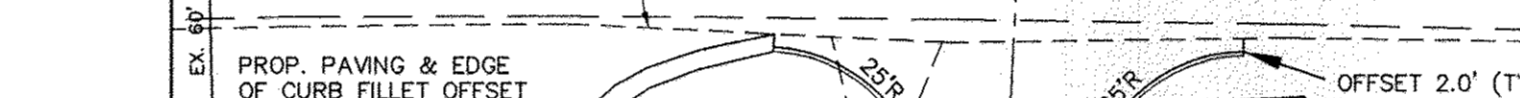
CURB RETURN @ SOUTH ENTRANCE
VERTICAL SCALE: 1" = 3'
HORIZONTAL SCALE: 1" = 30'

CURB RETURN @ NORTH ENTRANCE
VERTICAL SCALE: 1" = 3'
HORIZONTAL SCALE: 1" = 30'



STREET LIGHT SCHEDULE

SYMBOL	DESCRIPTION	LOCATION
(Symbol)	100 WATT HPS PREMISE POST-TOP FIXTURE MOUNTED ON A 14" BLACK FIBERGLASS POLE	STAD+37 OFFSET: 19" STAD+27 OFFSET: 29"



PAVING SPECIFICATIONS (HO.CO. STD R-2.01)

SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)	3 to <5 to <7	5 to <9 to <17	9 to <15 to <27
P-2	PARKING DRIVE ASPLS. RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY. LOCAL ROADS. ACCESS PLAGE ACCESS STREET. RESIDENTIAL.	HMA SUPERPAVE FINAL SURFACE 9.5 MM PG 64-22 LEVEL 1 (LOW ESA)	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM PG 64-22 LEVEL 1 (LOW ESA)	1.0	1.0	1.0
		HMA SUPERPAVE BASE 9.0 MM PG 64-22 LEVEL 1 (LOW ESA)	2.0	2.0	2.0
		GRADED AGGREGATE BASE (GAB)	8.0	4.0	4.0

CENTERLINE CURVE DATA License No. 22390 Expiration Date: 6-30-15

CURVE	STATION	RADIUS	ARC	DELTA	TANGENT	CHORD
C1	PC=3+22.05 PT=3+74.91	1000.00'	52.36'	3°00'00"	26.19'	N76°15'39"E - 52.35'

CENTERLINE CONTROL DATA - BEARINGS

DESCRIPTION	STATIONS	BEARING	DISTANCE
POB - P/L	0+00.00 - 0+32.66	S74°45'39"W	32.66'
P/L - PC	0+32.66 - 3+22.05	S74°45'39"W	289.89'
PT - END	3+74.91 - 5+32.28	S77°45'39"W	238.22'

CENTERLINE CONTROL DATA - COORDINATES

DESCRIPTION	STATION	NORTH	EAST
POB-EX. C/L TROTTER RD	0+00.00 = 15+65.5	563,148.14	1,335,333.65
INT @ P/L	0+32.66	563,139.5525	1,335,302.1357
PC 1000.0' HC	3+22.05	563,063.3550	1,335,022.4385
PT 1000.0' HC	3+74.91	563,056.8051	1,334,997.0899
END = END PUBLIC R/W	5+32.28	563,015.4402	1,334,808.0158

AS-BUILT CERTIFICATION
I hereby certify, by my seal, that to the best of my knowledge and belief the facilities shown on this "AS-BUILT" Plan meet the Approved Plans and Specifications.
Donald Mason, P.E.

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 21143 Expiration Date: 12-31-16

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 22390 Expiration Date: 6-30-15

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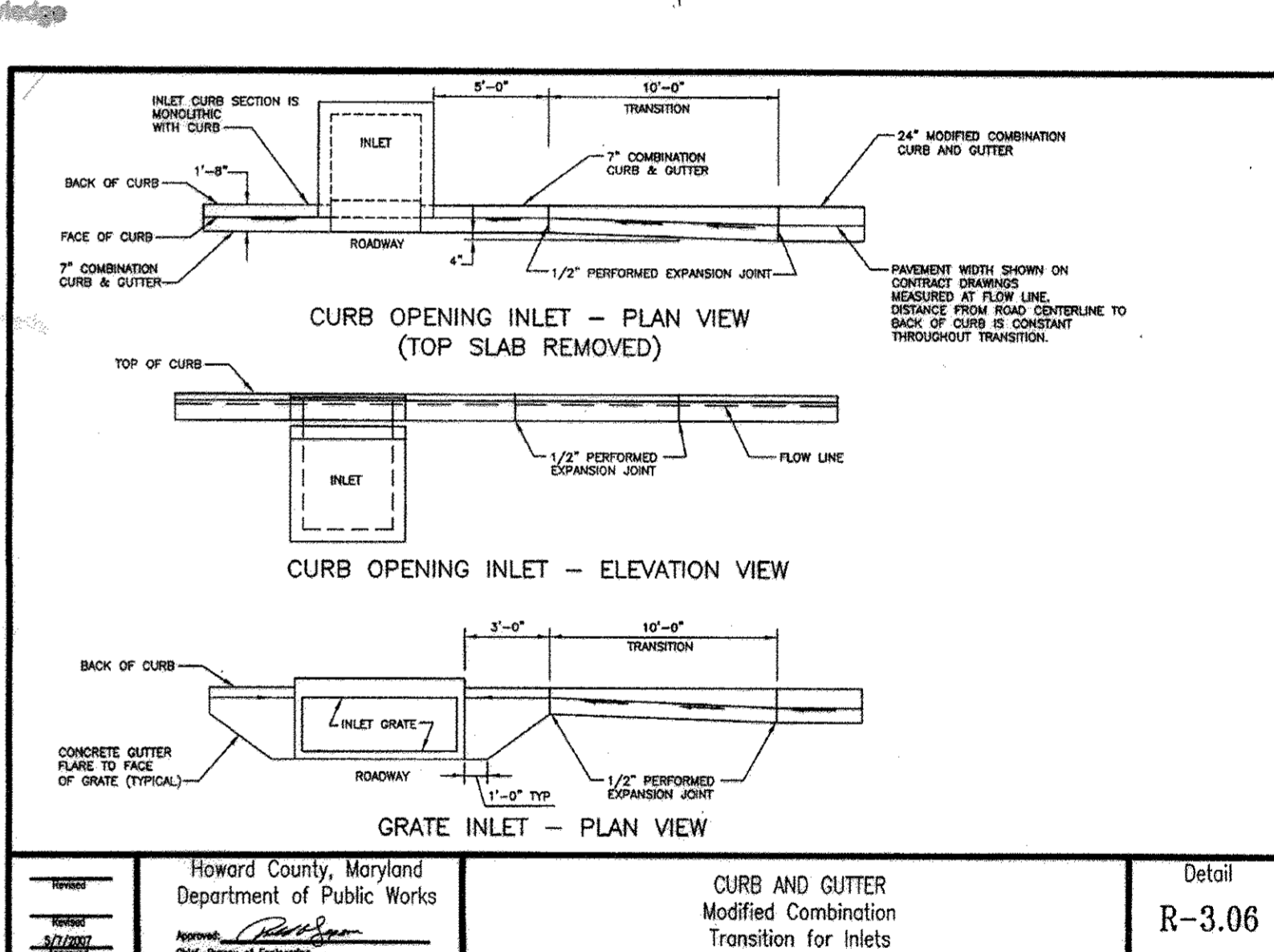
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NO.	DATE	REVISION
1	12-2-14	REVISE DRIVEWAY CULVERT PIPE SIZE

NO.	DATE	REVISION
1	12-2-14	REVISE DRIVEWAY CULVERT PIPE SIZE

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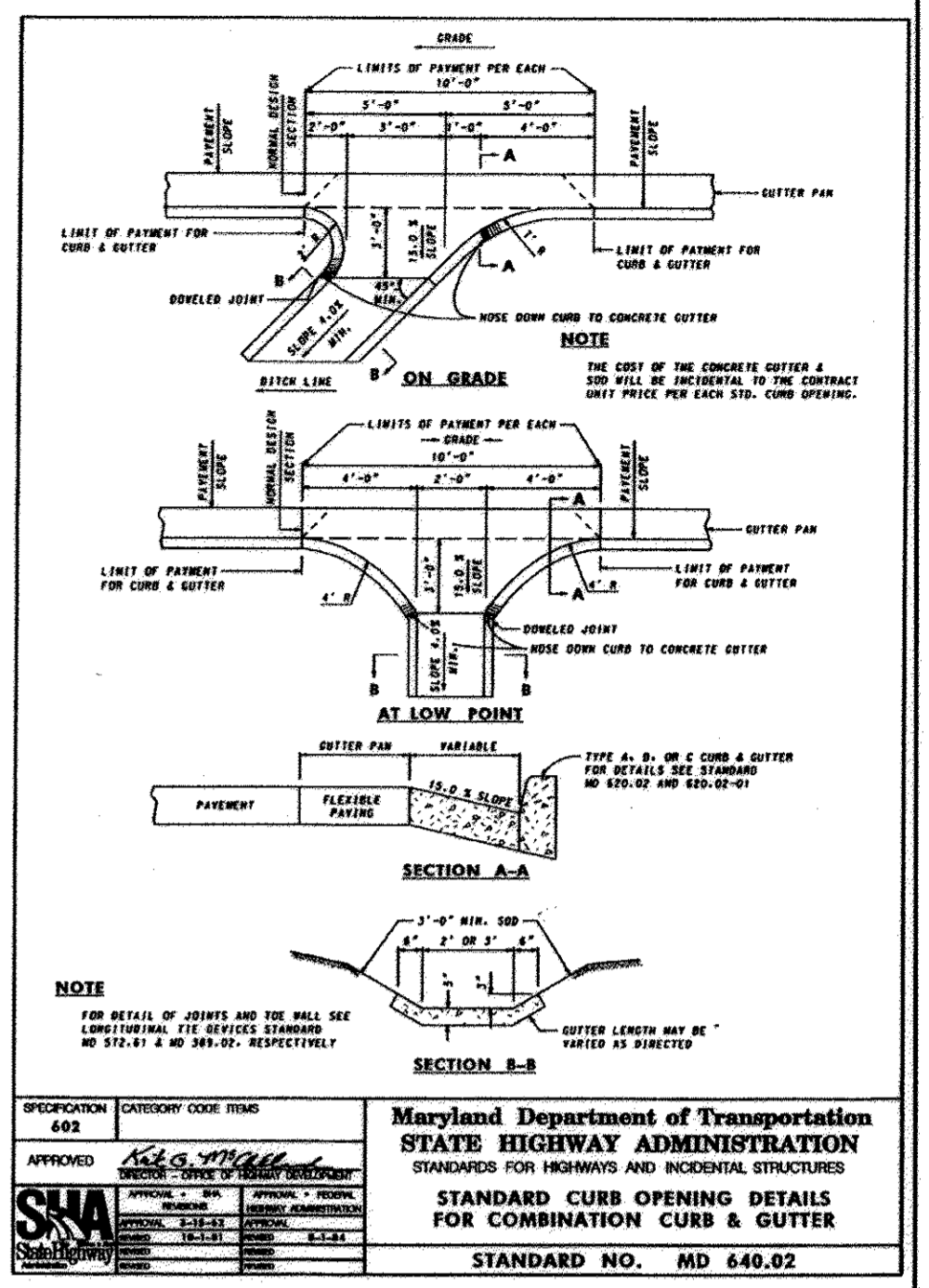
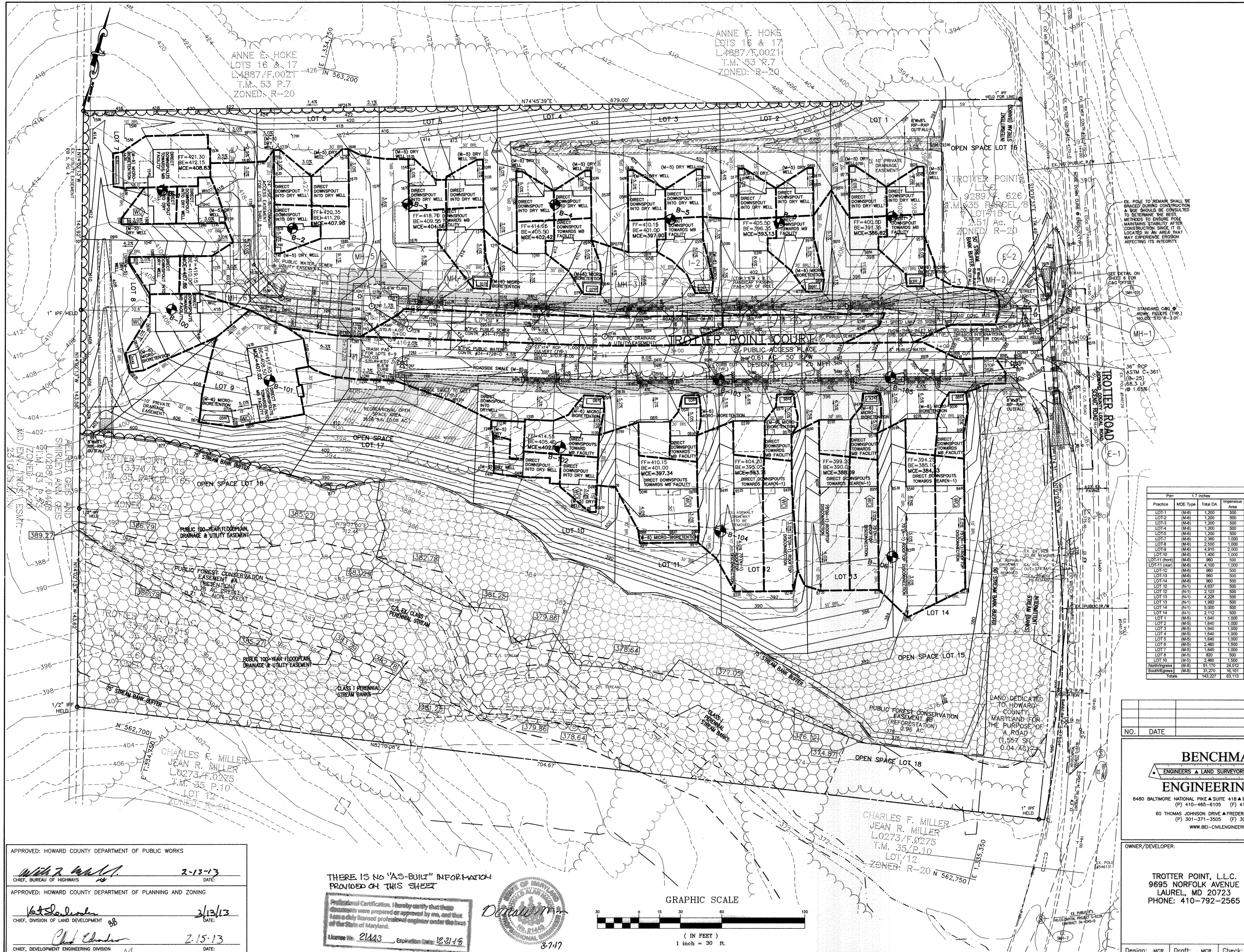
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NO.	DATE	REVISION
1	12-2-14	REVISE DRIVEWAY CULVERT PIPE SIZE

NOTE: CONTRACTORS TO EXERCISE EXTREME CAUTION WHEN WORKING IN AREA OF EXIST. OVERHEAD LINES ALONG TROTTER ROAD



STORMWATER MANAGEMENT PRACTICE CHART

LOT NO.	STREET ADDRESS	DISCONNECTION OF ROOFTOP RUN-OFF (N-1)	DRY WELLS (M-5)	MICRO-BIOTENTION (M-6)
1	TROTTER POINT COURT	-	2	1
2	TROTTER POINT COURT	-	2	1
3	TROTTER POINT COURT	-	2	1
4	TROTTER POINT COURT	-	2	1
5	TROTTER POINT COURT	-	2	1
6	TROTTER POINT COURT	-	3	-
7	TROTTER POINT COURT	-	2	1
8	TROTTER POINT COURT	-	1	1
9	TROTTER POINT COURT	-	-	1
10	TROTTER POINT COURT	-	3	1
11	TROTTER POINT COURT	-	-	2
12	TROTTER POINT COURT	1	-	1
13	TROTTER POINT COURT	2	-	1
14	TROTTER POINT COURT	2	-	1

ESD Micro-Scale Practices Summary Table

Practice	MCE Type	Total DA	Impervious Area	Go	ESD in Flow	Provided	2% MIN	Death	Required	Provided	Rev
LOT-1	(M-6)	1,300	500	0.72	32	PASS	2.0	72	76		
LOT-2	(M-6)	1,300	500	0.72	32	PASS	2.0	72	76		
LOT-3	(M-6)	1,300	500	0.72	32	PASS	2.0	72	76		
LOT-4	(M-6)	1,300	500	0.72	32	PASS	2.0	72	76		
LOT-5	(M-6)	1,300	500	0.72	32	PASS	2.0	72	76		
LOT-6	(M-6)	2,360	1,000	0.73	69	PASS	2.0	144	154		
LOT-7	(M-6)	2,360	1,000	0.73	69	PASS	2.0	144	154		
LOT-8	(M-6)	2,360	1,000	0.73	69	PASS	2.0	144	154		
LOT-9	(M-6)	4,915	2,000	0.71	176	PASS	3.0	290	293		
LOT-10	(M-6)	1,400	1,000	1.18	40	PASS	2.5	137	105		
LOT-11 (near)	(M-6)	960	500	0.88	33	PASS	2.0	71	76		
LOT-12	(M-6)	960	500	0.88	32	PASS	2.0	71	76		
LOT-13	(M-6)	960	500	0.88	32	PASS	2.0	71	76		
LOT-14	(M-6)	960	500	0.88	32	PASS	2.0	71	76		
LOT-15	(N-1)	4,637	500	0.25	N/A	N/A	N/A	97	97	1781	
LOT-16	(N-1)	2,128	500	0.45	N/A	N/A	N/A	79	79		
LOT-17	(N-1)	4,228	500	0.27	N/A	N/A	N/A	94	94		
LOT-18	(N-1)	1,392	500	0.47	N/A	N/A	N/A	78	78		
LOT-19	(N-1)	5,000	500	0.24	N/A	N/A	N/A	99	99		
LOT-20	(N-1)	2,112	600	0.45	N/A	N/A	N/A	79	79		
LOT 1	(M-5)	1,640	1,000	1.02	37	PASS	5.0	48	75		
LOT 2	(M-5)	1,640	1,000	1.02	37	PASS	5.0	48	75		
LOT 3	(M-5)	1,640	1,000	1.02	37	PASS	5.0	48	75		
LOT 4	(M-5)	1,640	1,000	1.02	37	PASS	5.0	48	75		
LOT 5	(M-5)	1,640	1,000	1.02	37	PASS	5.0	48	75		
LOT 6	(M-5)	2,360	1,500	1.02	68	PASS	5.0	72	112		
LOT 7	(M-5)	1,640	1,000	1.02	37	PASS	5.0	48	75		
LOT 8	(M-5)	820	500	1.02	19	PASS	5.0	24	37		
LOT 9	(M-5)	2,360	1,500	1.02	59	PASS	5.0	72	108		
North/Egress	(M-8)	51,170	24,012	0.89	1711	PASS	1.0	3424	2987		2567
South/Egress	(M-8)	31,270	16,101	0.78	1738	PASS	1.0	2274	2638		2638
Total		143,227	63,113	0.76	0	4,579	6.185	6,049	1,781	5,174	

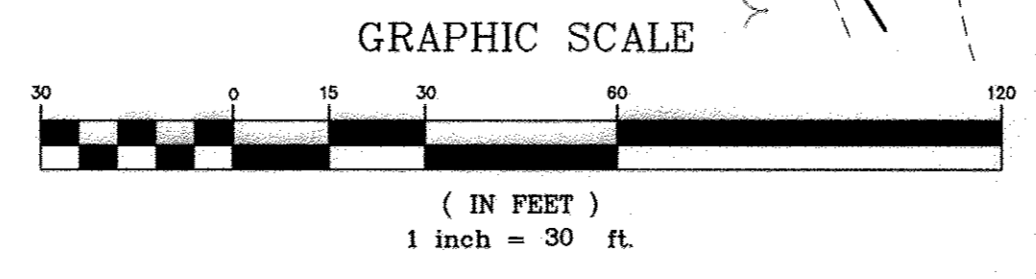
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 With 2 initials
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 2-13-13

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 K. S. Anderson
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 2/13/13

CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 2-15-13

THERE IS NO 'AS-BUILT' INFORMATION PROVIDED ON THIS SHEET

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No: 21443, Expiration Date: 12.21.15



NO.	DATE	REVISION

BENCHMARK ENGINEERING, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS
 8480 BALTIMORE NATIONAL PIKE & SUITE 418 A ELLICOTT CITY, MARYLAND 21043
 (P) 410-465-6105 (F) 410-465-6644
 60 THOMAS JOHNSON DRIVE & FREDERICK, MARYLAND 21702
 (P) 301-371-3505 (F) 301-371-3506
 WWW.BEI-CIVILENGINEERING.COM

PROFESSIONAL CERTIFICATION:
 I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 28559; Expiration Date: 7-22-2013

OWNER/DEVELOPER:
 TROTTER POINT, L.L.C.
 9695 NORFOLK AVENUE
 LAUREL, MD 20723
 PHONE: 410-792-2565

PROJECT:
 TROTTER POINT
 LOTS 1-14 AND OPEN SPACE LOTS 15-18
 A RESUBDIVISION OF FOREST HILLS, LOTS 13-15; PB.5/PG.4 & A RESUBDIVISION OF TROTTER POINT 0.5, LOT 1 AND LOTS 2-9 PLATS #20852-20853(7-08-162)

LOCATION:
 TAX MAP 35 - GRID 2
 PARCELS 8, 9 & 105
 5th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE:
 FINALS/ROAD CONSTRUCTION PLANS
 PROPOSED SWM-ESD
 DRAINAGE AREA MAP

DATE: JULY, 2012 PROJECT NO. 2283
 FEBRUARY, 2013

Design: MCR Draft: MCR Check: BFC SCALE: AS SHOWN DRAWING 7 OF 12

MATERIAL	SPECIFICATION	SIZE	NOTES:
Flowing soil	see Appendix A, Table A.4	n/a	plantings are site-specific
Leaky sand (10 - 65%) & compost (35 - 40%)	n/a	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Leaky sand (60% - 80%) & compost (20%)	n/a	n/a	USDA soil types sandy loam or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight	n/a	
Mulch	shredded hardwood	4" x 6" or 6" x 6"	aged 6 months, minimum no pine or wood chips
Pre gravel diaphragm	see ASTM-D-448	NO. 8 OR NO. 9 (1/4" TO 3/4")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile	n/a	PE Type 1 nonwoven	
Gravel (underdrains and infiltration basins)	AAASHTO M-43	NO. 37 OR NO. 6 AGGREGATE (3/8" TO 3/4")	
Underdrain piping	M-75B, Type P8 or AAASHTO M-77	4" to 6" rigid schedule 40 PVC or HDPE	Shaded or perforated pipe; 3/8" perf. @ 6" holes, a hole per every minimum of 7" of gravel over pipe; not necessary underdrain pipes. Perforated pipe shall be wrapped with 1/4-inch polyethylene fabric.
Precast in-place concrete (if required)	MSHA Mix No. 3; $f_c = 3500$ psi @ 28 days, normal weight concrete, resistance 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 precast) not using previously approved forms or load standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland; design to include meeting ACI Code 350.8.9.9; vertical loading (3-10 to 12-20) allowed horizontal loading (3-10 to 20) based on soil pressure; and analysis of potential cracking.
Sand	AAASHTO M-6 or ASTM-C-33	0.075 to 0.04"	Sand substitutions such as Diabase and Oxyanite (AAASHTO M-6) are not acceptable. No calcium chlorinated or deliquescent sand substitutions are acceptable. No "rock dust" can be used for sand.

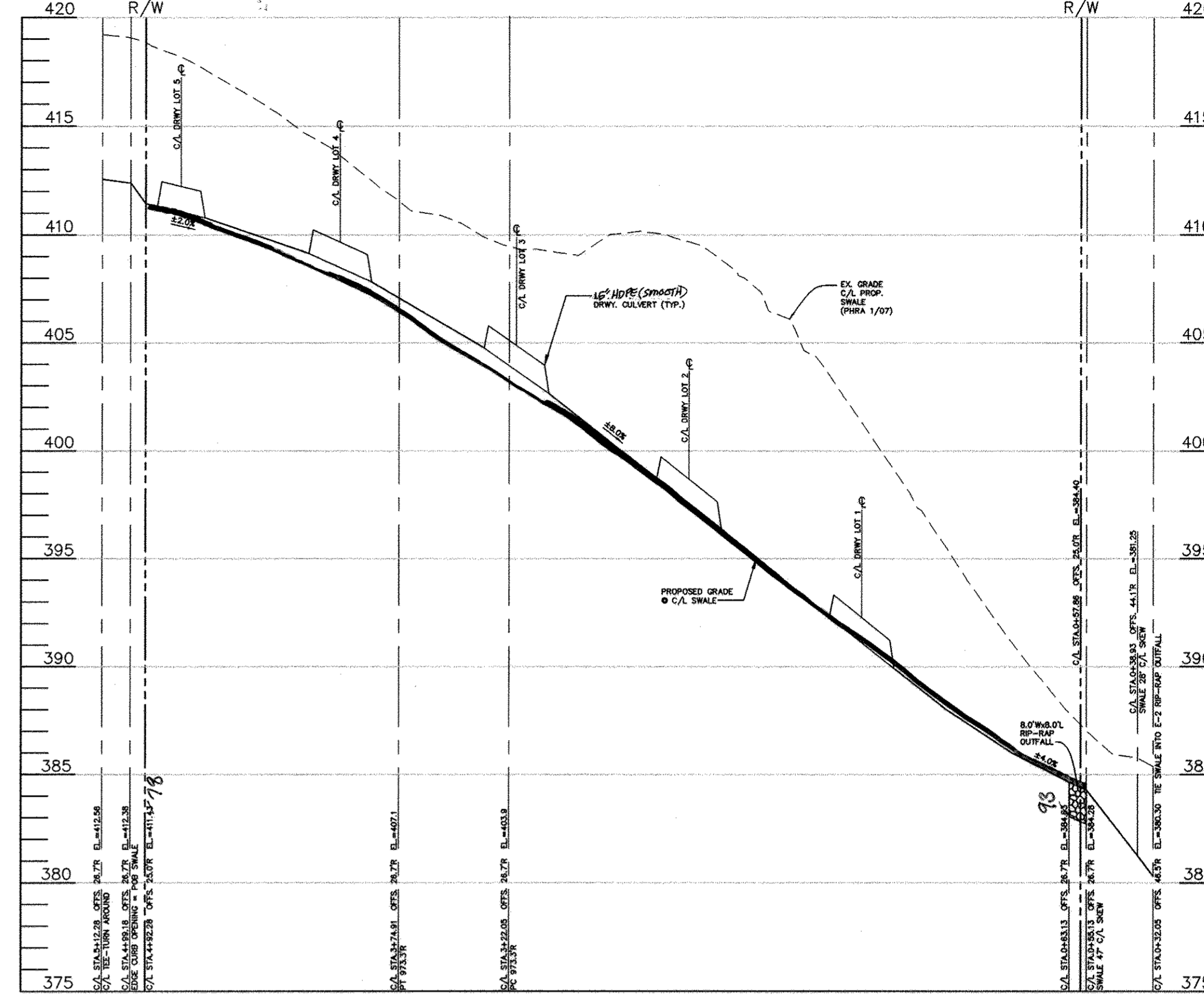
OPERATION & MAINTENANCE SCHEDULE FOR (M-6) MICRO-BIORETENTION

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

MICRO-BIORETENTION (M-6) CONSTRUCTION SPECIFICATIONS

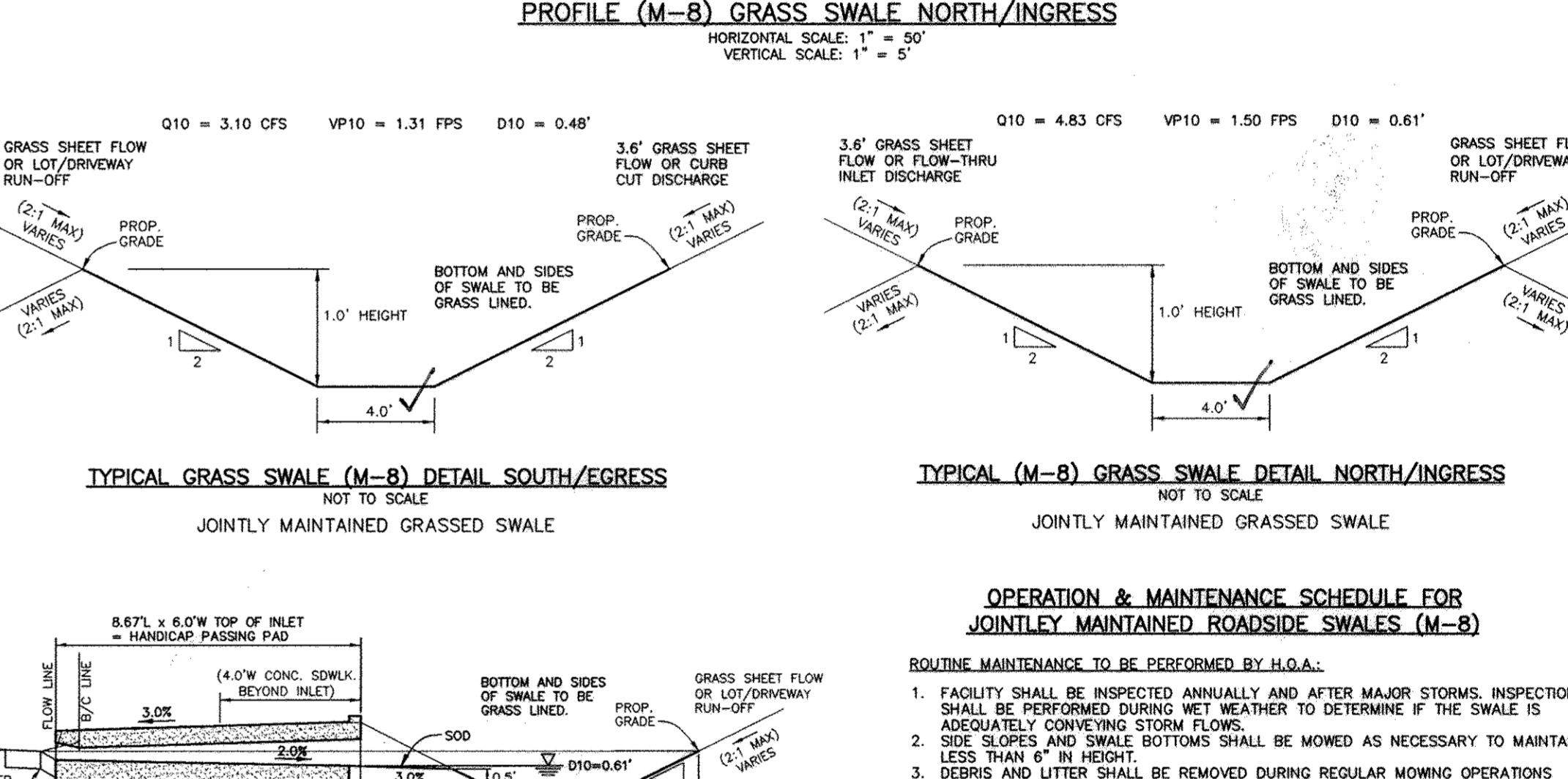
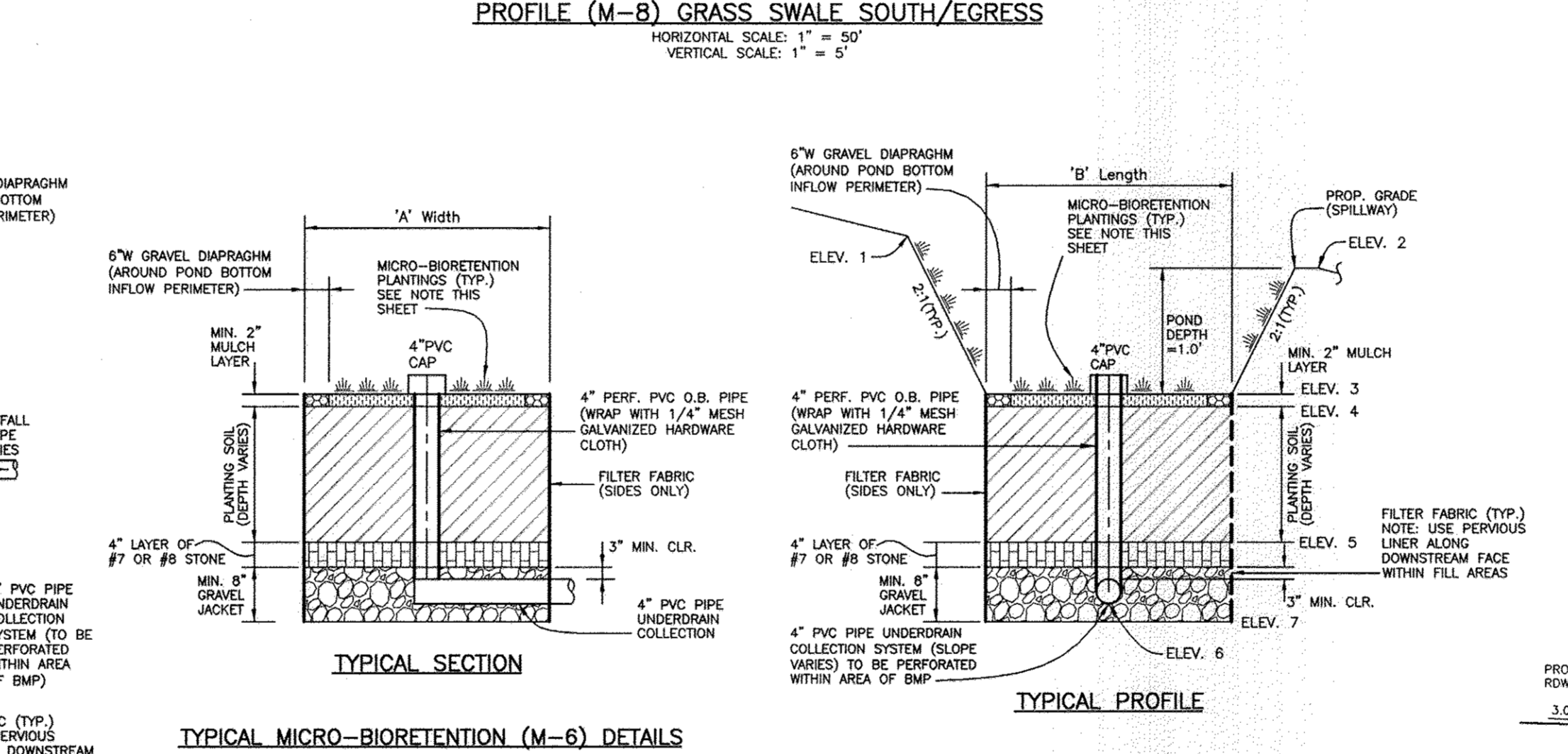
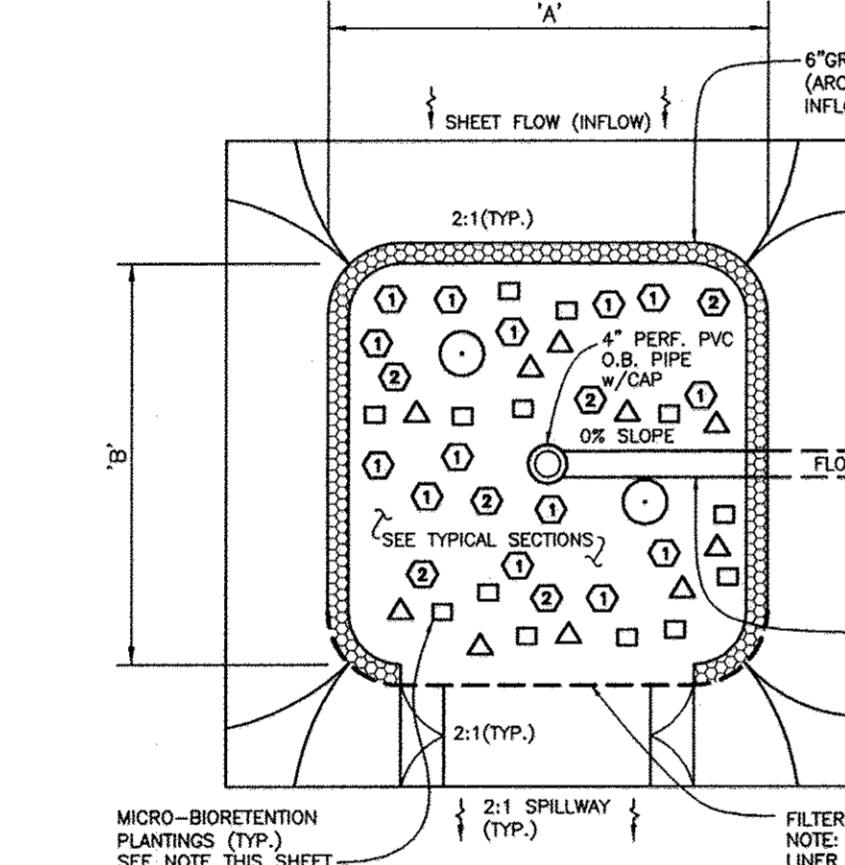
- THE SUBGRADE FOR ALL BIORETENTION COMPONENTS SHALL BE PREPARED TO THE REQUIRED LIMBS AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL. EMBANKMENTS SHALL BE PREPARED BY STRIPPING TOPSOIL AND ANY OTHER UNSUITABLE MATERIALS FROM THE AREAS, AND BE COMPACTED TO A MINIMUM OF 90% OF MAXIMUM DRY DENSITY REFERENCED TO AASHTO T-99 (STANDARD PROCTOR).
- THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRANULOMETER LIMITS WHEN INSTALLED RESPECTIVELY IN THE RIP-RAP OR FILTER.
- GEOTEXTILE CLASS C78 OR BETTER SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE REPAIRED BY PLACING ANOTHER PIECE OF GEOTEXTILE FABRIC OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE FABRIC. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC SHALL BE A MINIMUM OF ONE FOOT.
- STONE FOR THE RIP-RAP OR LEVEL SPREADERS MAY BE PLACED BY EQUIPMENT. THEY SHALL BE CONSTRUCTED TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. THE STONE FOR THE RIP-RAP OR LEVEL SPREADERS SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL INSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. STONE SHALL BE PLACED IN A MANNER TO PREVENT DAMAGE TO THE PERMANENT FABRIC. HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS.
- THE STONE LINER SHALL BE PLACED SO THAT IT BLENDS IN WITH THE EXISTING GROUND. IF THE STONE IS PLACED TOO HIGH THEN THE FLOW WILL BE FLOORED OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.

LOT #	(M-6)	LOT #	(M-6)	LOT #	(M-6)
LOT-1	(M-6)	LOT-2	(M-6)	LOT-3	(M-6)
Micro-Bioretentation	Micro-Bioretentation	Micro-Bioretentation	Micro-Bioretentation	Micro-Bioretentation	Micro-Bioretentation
Elevation 1	394.35	Elevation 1	399.00	Elevation 1	404.00
Elevation 2	393.85	Elevation 2	397.50	Elevation 2	403.50
Elevation 3	393.02	Elevation 3	396.67	Elevation 3	402.67
Elevation 4	392.85	Elevation 4	396.50	Elevation 4	402.50
Elevation 5	392.84	Elevation 5	394.49	Elevation 5	402.49
Elevation 6	389.93	Elevation 6	393.58	Elevation 6	399.58
Elevation 7	389.85	Elevation 7	393.50	Elevation 7	399.50
Dimensions	Dimensions	Dimensions	Dimensions	Dimensions	Dimensions
A width	8.00	A width	9.00	A width	9.00
B length	12.00	B length	12.00	B length	12.00



* ON LOT STORMWATER MANAGEMENT FACILITIES ARE TO BE AS-BUILT AS PART OF THE INDIVIDUAL GRADE CERTIFICATIONS FOR EACH LOT.

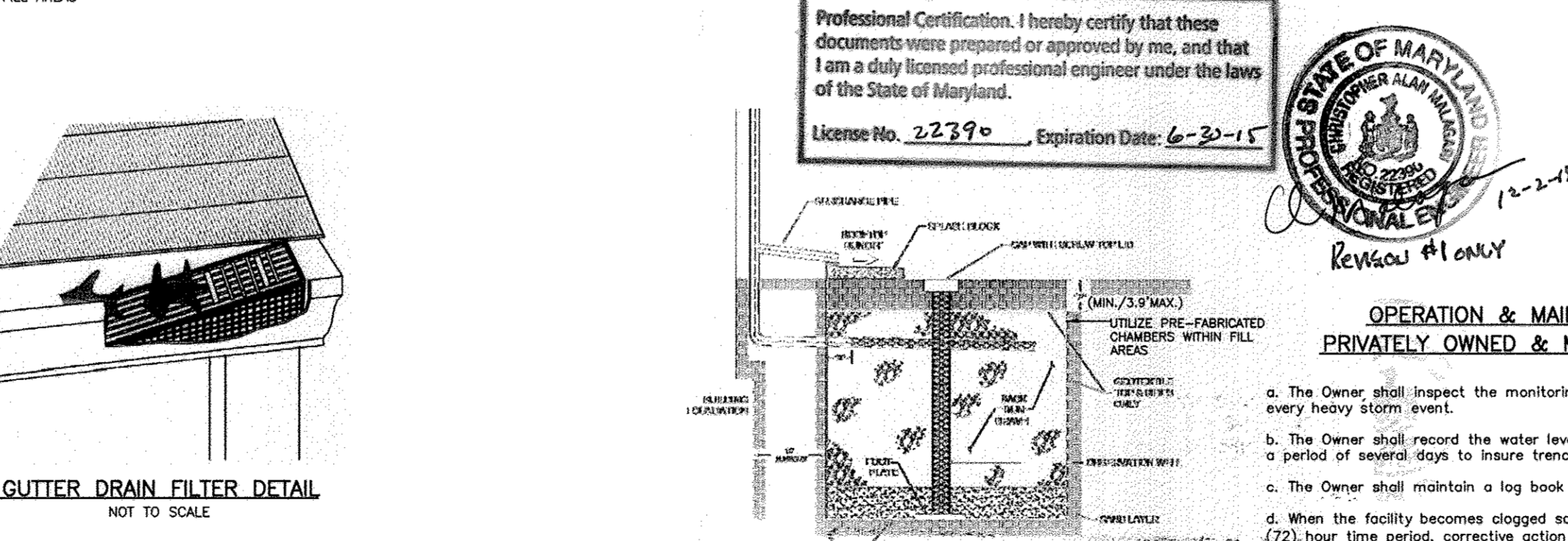
PLANTING TABLE	LANDSCAPE DATA
<p>1. PLANTINGS WITHIN THE PONDING AREA OF THE LS INFILTRATION ARE TO BE OF A MEDIUM TO HIGH WATER TOLERANCE</p> <p>SUGGESTED SPECIES: CREEPING BUNGEWEEED (AJUDA REPTANS) JUSTIA REPTANS (Creeping Bungeeweed) RUS VERRICOLOR (Rus) HERMEROCALLIS SP (Daisy) ACER RUBRUM (Red Sunset Red Maple)</p>	<p>HYDROLOGIC ZONE 3 - REGULARLY INUNDATED SHORELINE FRINGE (HIGH MARSH)</p> <p>HYDROLOGIC CONDITION - 0" TO 1"-2" DEEP HARDNESS - TEMPERATE ZONE 6b (-5' TO 0')</p> <p>SEE SHEET FOR SEQUENCE OF CONSTRUCTION</p> <p>NOTE: REFER TO MDE 2000 MD STORMWATER DESIGN MANUAL VOLUMES 1 & 2 FOR LANDSCAPE CONTRACTOR RESPONSIBILITIES, PRACTICES AND MAINTENANCE DUTIES</p>



LOT #	(M-6)	LOT #	(M-6)	LOT #	(M-6)
LOT-4	(M-6)	LOT-5	(M-6)	LOT-6	(M-6)
Micro-Bioretentation	Micro-Bioretentation	Micro-Bioretentation	Micro-Bioretentation	Micro-Bioretentation	Micro-Bioretentation
VINCA MINOR (Common Periwinkle)	3	VINCA MINOR (Common Periwinkle)	3	VINCA MINOR (Common Periwinkle)	7
AJUDA REPTANS (Creeping Bungeeweed)	3	AJUDA REPTANS (Creeping Bungeeweed)	3	AJUDA REPTANS (Creeping Bungeeweed)	3
RUS VERRICOLOR (Rus)	1	RUS VERRICOLOR (Rus)	1	RUS VERRICOLOR (Rus)	6
HERMEROCALLIS SP (Daisy)	1	HERMEROCALLIS SP (Daisy)	1	HERMEROCALLIS SP (Daisy)	2
ACER RUBRUM (Red Sunset Red Maple)	1	ACER RUBRUM (Red Sunset Red Maple)	1	ACER RUBRUM (Red Sunset Red Maple)	1

AS-BUILT CERTIFICATION
 I hereby certify, by my seal, that the best of my knowledge and belief the facilities shown on this "AS-BUILT" Plan meet the Approved Plans and Specifications

Donald Mason, P.E.
 Date: 3-7-17



OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED & MAINTAINED DRY WELLS (M-5)

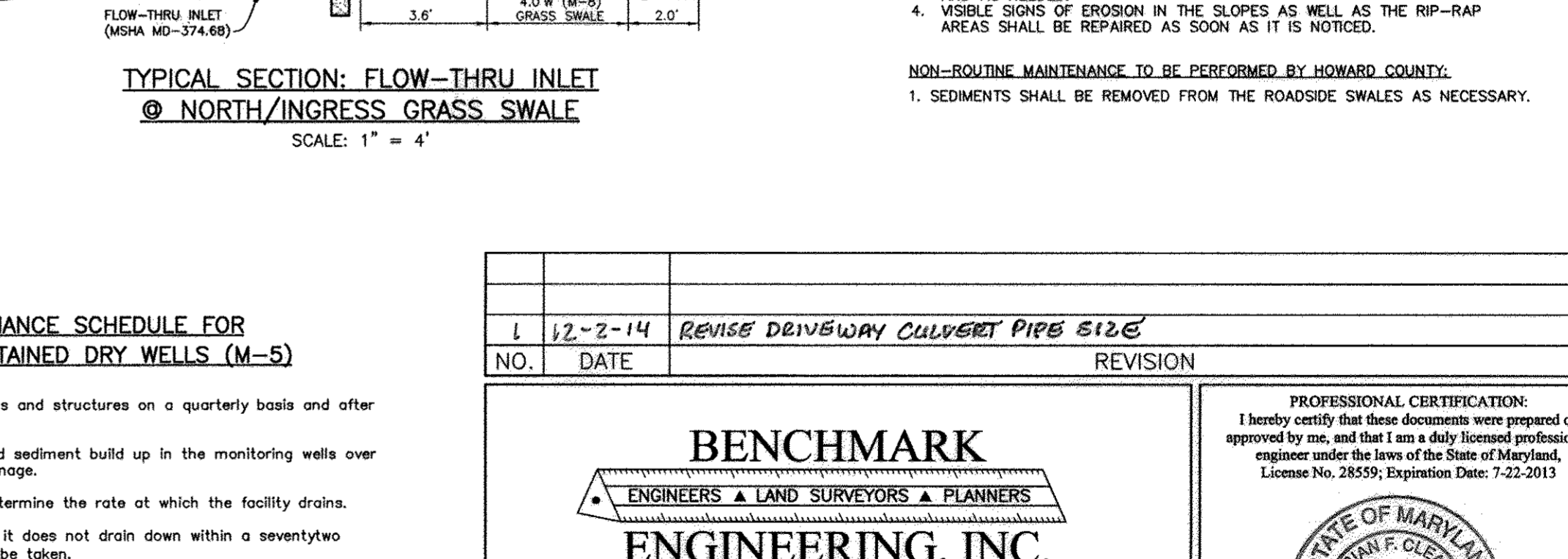
- The Owner shall inspect the monitoring wells and structures on a quarterly basis and after every heavy storm event.
- The Owner shall record the water levels and sediment build up in the monitoring wells over a period of several days to insure trends drainings.
- The Owner shall maintain a log book to determine the rate at which the facility drains.
- When the facility becomes clogged so that it does not drain down within a seventy-two (72) hour time period, corrective action shall be taken.
- The maintenance log book shall be available to Howard County for inspection to insure compliance with operation and maintenance criteria.
- Once the performance characteristics of the infiltration facility have been verified, the monitoring schedule can be reduced to an annual basis unless the performance data indicates that a more frequent schedule is required.

OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DISCONNECTION OF ROOFTOP RUNOFF (M-1)

a. Maintenance of areas receiving disconnected runoff is generally no different than that required for other lawn or landscape areas. The owner shall ensure the areas receiving runoff are protected from future composition or development of impervious area. In commercial areas, foot traffic should be discouraged as well.

MATERIAL	SPECIFICATION	SIZE	NOTES:
PLANTINGS (if required)	SEE APPENDIX A, TABLE A.4	N/A	PLANTINGS ARE SITE SPECIFIC
PLANTING SOIL (2.5' TO 4.0' DEEP)	SAND: 35-50% SILT, 30-35% CLAY, 10-25% ORGANIC	N/A	USDA SOIL TYPES: LOAMY SAND, SANDY LOAM OR LOAM
MULCH	SHREDED HARDWOOD	N/A	2" TO 3" DEPTH, AGED 6 MONTHS, MINIMUM FOR USE AS NECESSARY BENEATH UNDERDRAINS ONLY
UNDERDRAIN GRAVEL	AAASHTO M-43	0.375" TO 0.750"	NOTE: USE PERVIOUS LNER ALONG DOWNSTREAM FACE WITHIN FILL AREAS
UNDERDRAIN PIPING	M-75B, TYPE P8 OR AAASHTO M-77	4" TO 6" RIGID	3/8" PERF. @ 6" O.C. 4 HOLES PER ROW MINIMUM OF 3" OF GRAVEL OVER PIPES; NOT NECESSARY UNDERDRAIN PIPES
POURED-IN-PLACE CONC. (if required)	MSHA MIX NO. 3; $f_c = 3500$ psi @ 28 days, normal weight, air-entrained, conforming to meet ASTM 615-60	N/A	ON-SITE TESTING OF POWDER-IN-PLACE CONC. REQUIRED; 28 DAY STRENGTH TEST AND SLUMP TEST; ALL CONC. DESIGN (CAST IN-PLACE OR PRE-CAST) NOT USING PREVIOUSLY APPROVED FORMS OR LOAD STANDARDS REQUIRES DESIGN DRAWINGS SEALED AND APPROVED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND. DESIGN TO INCLUDE MEETING ACI CODE 350.8.9.9; VERTICAL LOADING (8-10 or 10-20) ALLOWABLE HORIZONTAL LOADING (BASED ON SOIL PRESSURES); AND ANALYSIS OF POTENTIAL CRACKING. NO REINFORCEMENT LABELED TO BE PLACED INTO SIDE SLOPES
CHECK DAM (TREASURED WOOD)	AWPA STANDARD CC	6" X 6" OR 8" X 8"	AT LEAST 2' INTO SIDE SLOPES

LOT #	(M-5)	LOT #	(M-5)	LOT #	(M-5)
LOT-1	(M-5)	LOT-2	(M-5)	LOT-3	(M-5)
Dry Well	Dry Well	Dry Well	Dry Well	Dry Well	Dry Well
Drywell Length (L)	4.33	Drywell Length (L)	4.33	Drywell Length (L)	4.33
Drywell Width (W)	4.33	Drywell Width (W)	4.33	Drywell Width (W)	4.33
Drywell Depth (D)	5.00	Drywell Depth (D)	5.00	Drywell Depth (D)	5.00
Number on Lot	2	Number on Lot	2	Number on Lot	2

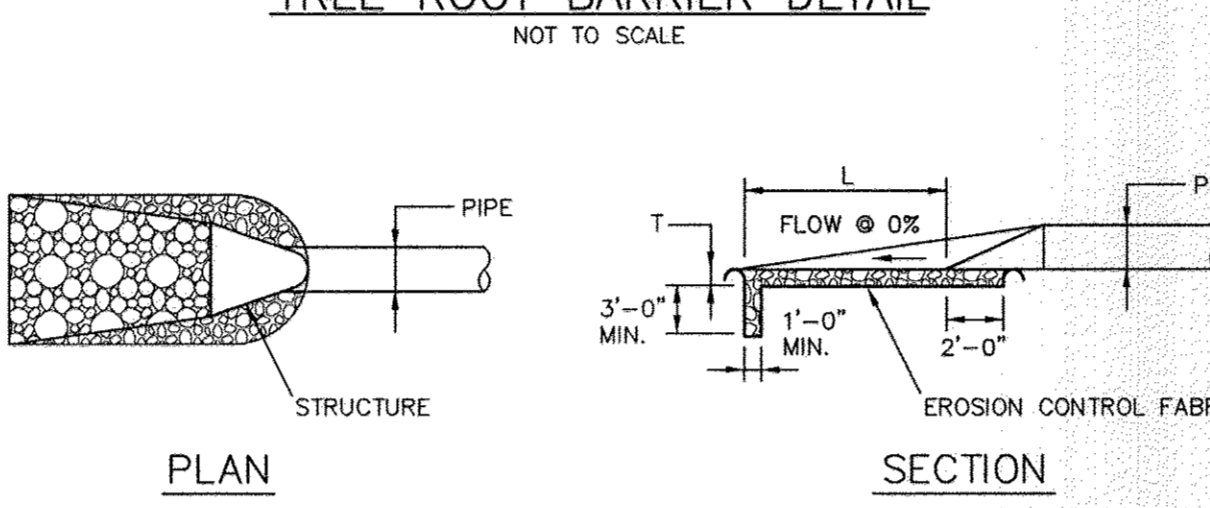
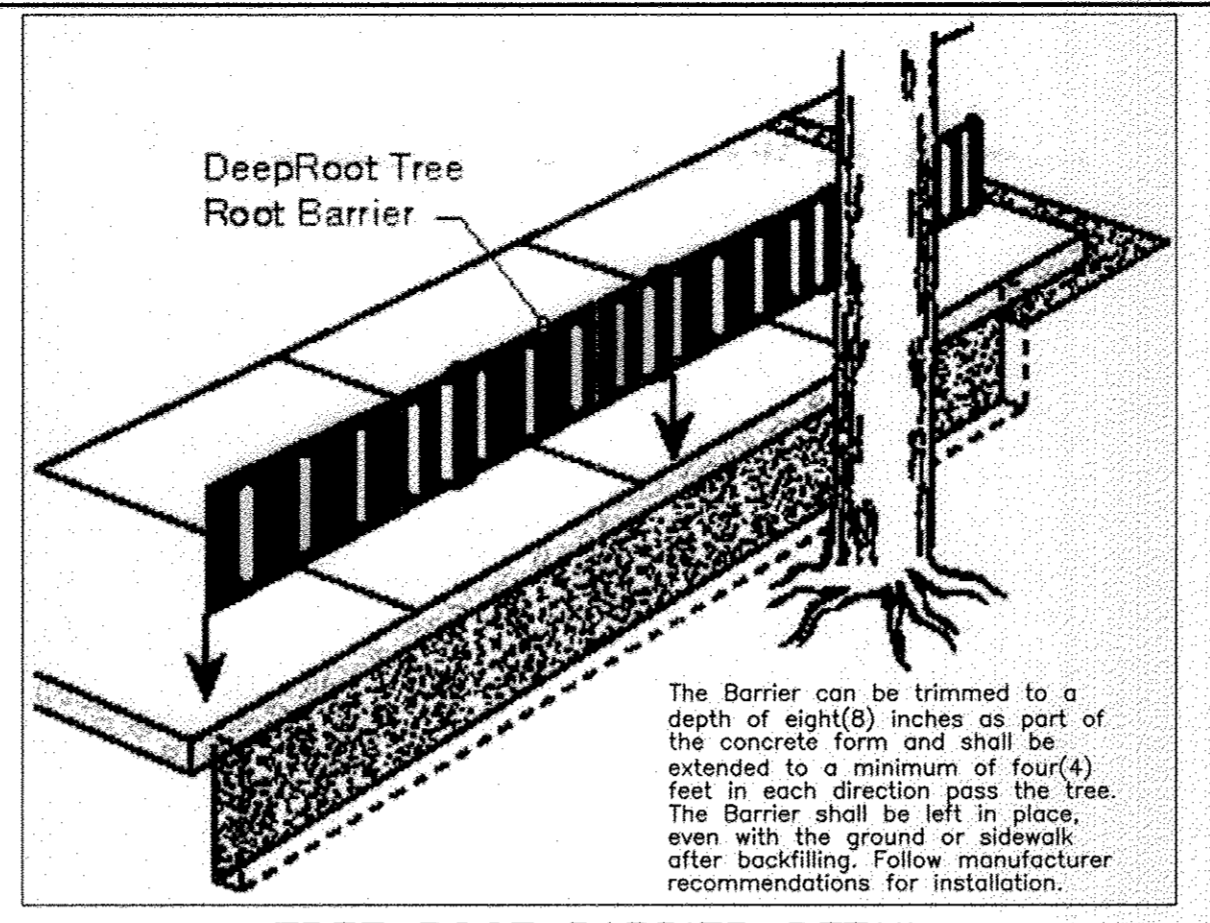


BENCHMARK ENGINEERING, INC.
 8480 BALTIMORE NATIONAL PIKE & SUITE 418 & ELLIOTT CITY, MARYLAND 21043
 (P) 410-485-8105 (F) 410-485-6644
 60 THOMAS JOHNSON DRIVE & FREDERICK, MARYLAND 21702
 (P) 301-371-3505 (F) 301-371-3506
 WWW.BEI-CIVILENGINEERING.COM

TROTTER POINT
 LOTS 1-14 AND OPEN SPACE LOTS 15-18
 A RESUBDIVISION OF FOREST HILLS, LOTS 13-15; PB.5/PB.4 & A RESUBDIVISION OF TROTTER POINT O.S. LOT 1 AND LOTS 2-5 PLATS #20852-20853/(P-08-162)

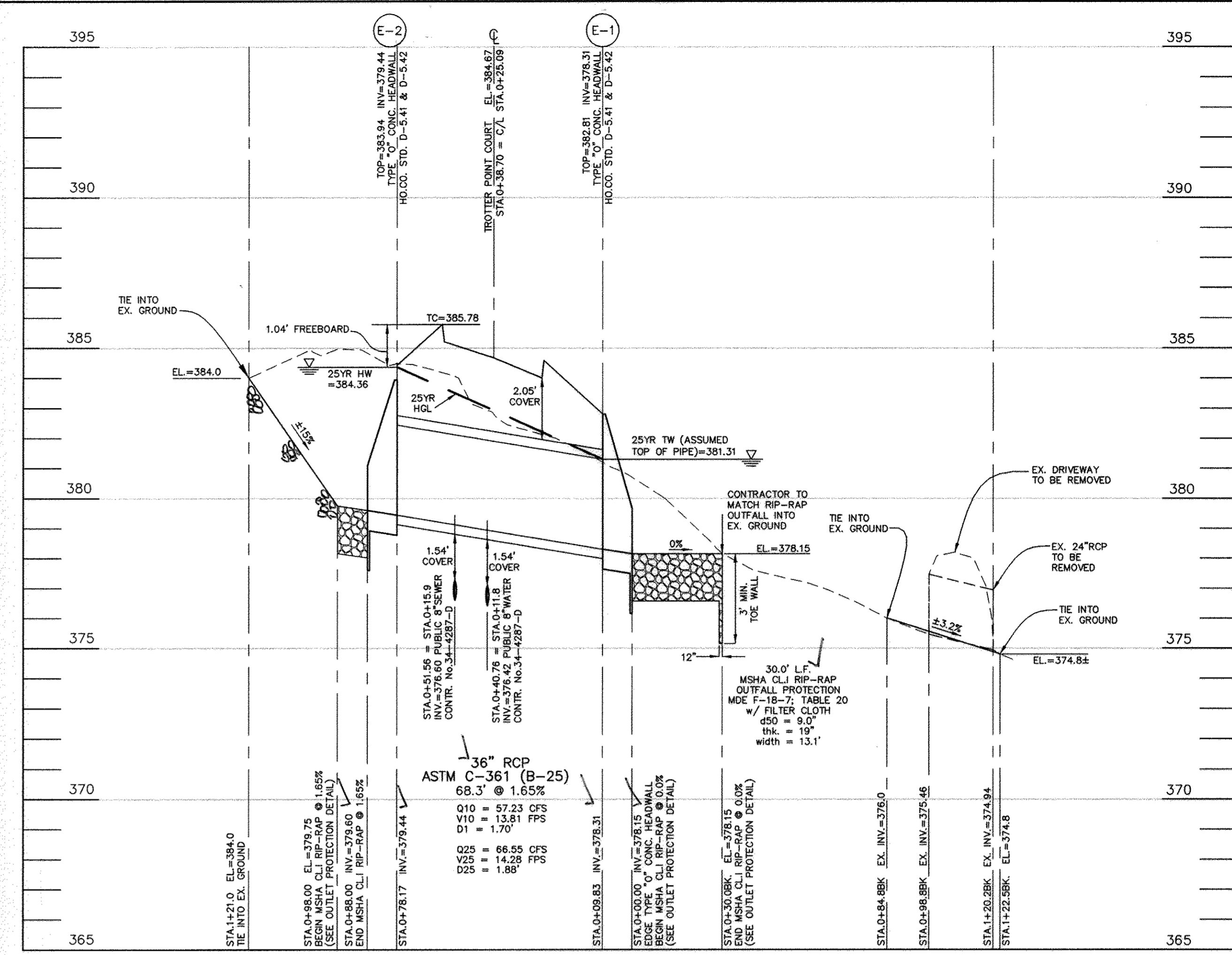
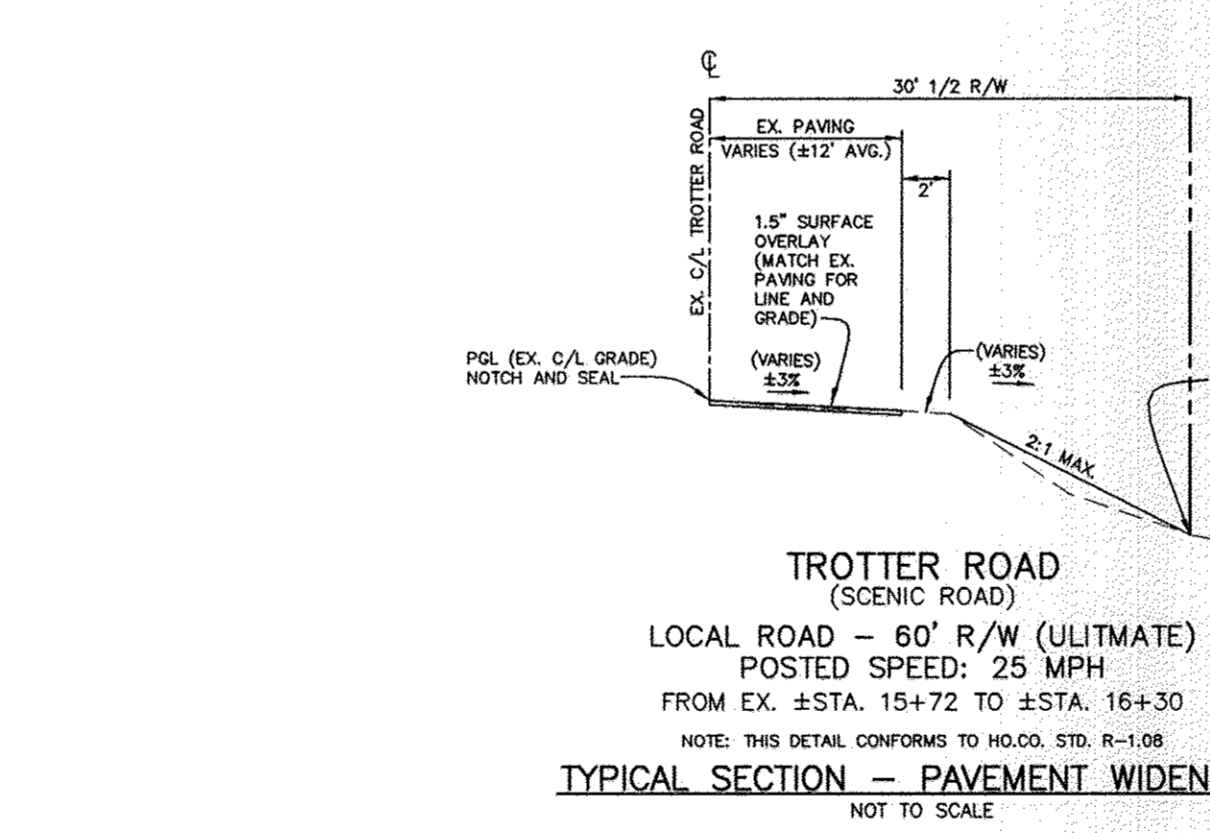
DATE: FEBRUARY, 2013 PROJECT NO. 2283
 SCALE: AS SHOWN DRAWING 8 OF 12

BORING LOG	BORING LOG	BORING LOG	BORING LOG	BORING LOG	BORING LOG	BORING LOG	BORING LOG	BORING LOG	BORING LOG	BORING LOG	BORING LOG	BORING LOG	BORING LOG	BORING LOG	BORING LOG	BORING LOG	BORING LOG	BORING LOG
geolab TRITON POND, LLC TRITON POND, TROTTER POINT, HOWARD COUNTY, MD Date: 4/17/2007 Boring Log Location: STA 411.000 - 412.000 Boring Log Description: Boring Log Location Plan Remarks: Free Stone Drilling	geolab TRITON POND, LLC TRITON POND, TROTTER POINT, HOWARD COUNTY, MD Date: 4/17/2007 Boring Log Location: STA 412.000 - 413.000 Boring Log Description: Boring Log Location Plan Remarks: Free Stone Drilling	geolab TRITON POND, LLC TRITON POND, TROTTER POINT, HOWARD COUNTY, MD Date: 4/17/2007 Boring Log Location: STA 413.000 - 414.000 Boring Log Description: Boring Log Location Plan Remarks: Free Stone Drilling	geolab TRITON POND, LLC TRITON POND, TROTTER POINT, HOWARD COUNTY, MD Date: 4/17/2007 Boring Log Location: STA 414.000 - 415.000 Boring Log Description: Boring Log Location Plan Remarks: Free Stone Drilling	geolab TRITON POND, LLC TRITON POND, TROTTER POINT, HOWARD COUNTY, MD Date: 4/17/2007 Boring Log Location: STA 415.000 - 416.000 Boring Log Description: Boring Log Location Plan Remarks: Free Stone Drilling	geolab TRITON POND, LLC TRITON POND, TROTTER POINT, HOWARD COUNTY, MD Date: 4/17/2007 Boring Log Location: STA 416.000 - 417.000 Boring Log Description: Boring Log Location Plan Remarks: Free Stone Drilling	geolab TRITON POND, LLC TRITON POND, TROTTER POINT, HOWARD COUNTY, MD Date: 4/17/2007 Boring Log Location: STA 417.000 - 418.000 Boring Log Description: Boring Log Location Plan Remarks: Free Stone Drilling	geolab TRITON POND, LLC TRITON POND, TROTTER POINT, HOWARD COUNTY, MD Date: 4/17/2007 Boring Log Location: STA 418.000 - 419.000 Boring Log Description: Boring Log Location Plan Remarks: Free Stone Drilling	geolab TRITON POND, LLC TRITON POND, TROTTER POINT, HOWARD COUNTY, MD Date: 4/17/2007 Boring Log Location: STA 419.000 - 420.000 Boring Log Description: Boring Log Location Plan Remarks: Free Stone Drilling	geolab TRITON POND, LLC TRITON POND, TROTTER POINT, HOWARD COUNTY, MD Date: 4/17/2007 Boring Log Location: STA 420.000 - 421.000 Boring Log Description: Boring Log Location Plan Remarks: Free Stone Drilling	geolab TRITON POND, LLC TRITON POND, TROTTER POINT, HOWARD COUNTY, MD Date: 4/17/2007 Boring Log Location: STA 421.000 - 422.000 Boring Log Description: Boring Log Location Plan Remarks: Free Stone Drilling	geolab TRITON POND, LLC TRITON POND, TROTTER POINT, HOWARD COUNTY, MD Date: 4/17/2007 Boring Log Location: STA 422.000 - 423.000 Boring Log Description: Boring Log Location Plan Remarks: Free Stone Drilling	geolab TRITON POND, LLC TRITON POND, TROTTER POINT, HOWARD COUNTY, MD Date: 4/17/2007 Boring Log Location: STA 423.000 - 424.000 Boring Log Description: Boring Log Location Plan Remarks: Free Stone Drilling	geolab TRITON POND, LLC TRITON POND, TROTTER POINT, HOWARD COUNTY, MD Date: 4/17/2007 Boring Log Location: STA 424.000 - 425.000 Boring Log Description: Boring Log Location Plan Remarks: Free Stone Drilling	geolab TRITON POND, LLC TRITON POND, TROTTER POINT, HOWARD COUNTY, MD Date: 4/17/2007 Boring Log Location: STA 425.000 - 426.000 Boring Log Description: Boring Log Location Plan Remarks: Free Stone Drilling	geolab TRITON POND, LLC TRITON POND, TROTTER POINT, HOWARD COUNTY, MD Date: 4/17/2007 Boring Log Location: STA 426.000 - 427.000 Boring Log Description: Boring Log Location Plan Remarks: Free Stone Drilling	geolab TRITON POND, LLC TRITON POND, TROTTER POINT, HOWARD COUNTY, MD Date: 4/17/2007 Boring Log Location: STA 427.000 - 428.000 Boring Log Description: Boring Log Location Plan Remarks: Free Stone Drilling	geolab TRITON POND, LLC TRITON POND, TROTTER POINT, HOWARD COUNTY, MD Date: 4/17/2007 Boring Log Location: STA 428.000 - 429.000 Boring Log Description: Boring Log Location Plan Remarks: Free Stone Drilling	geolab TRITON POND, LLC TRITON POND, TROTTER POINT, HOWARD COUNTY, MD Date: 4/17/2007 Boring Log Location: STA 429.000 - 430.000 Boring Log Description: Boring Log Location Plan Remarks: Free Stone Drilling



STRUCTURE	d50	LENGTH(L)	WIDTH(W)	THICK(T)	SHA CLASS
E-1	9.5"	10.0' @ 0%	13.1'	19"	I
E-2	9.5"	10.0' @ 1.65%	10.0'	19"	I

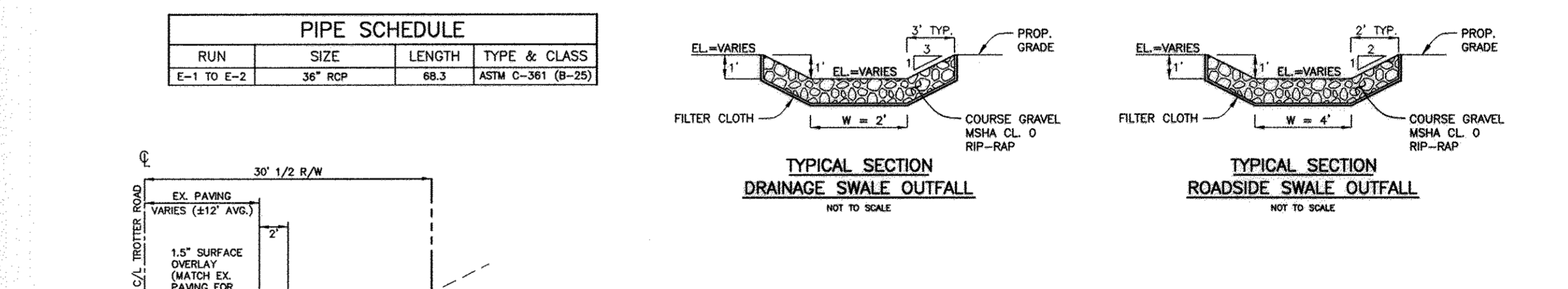
- CONSTRUCTION SPECIFICATIONS
1. THE SUBGRADE FOR THE FILTER, RIP-RAP, OR GABION SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
 2. THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRADING LISTS WHEN INSTALLED.
 3. GEOTEXTILE CLASS C20 OR BETTER SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE REPAIRED BY REPLACING THE GEOTEXTILE FABRIC OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE FABRIC. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC SHALL BE A MINIMUM OF ONE FOOT.
 4. STONE FOR THE RIP-RAP OR GABION SHALL BE PLACED BY EQUIPMENT. THEY SHALL BE CONSTRUCTED TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. THE STONE FOR THE RIP-RAP OR GABION SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. RIP-RAP SHALL BE PLACED IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE FABRIC. HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS.
 5. THE STONE SHALL BE PLACED SO THAT IT BLENDS IN WITH THE EXISTING GROUND. IF THE STONE IS PLACED TOO HIGH THEN THE FLOW WILL BE FORCED OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.



ROADWAY CULVERT PROFILE
VERTICAL SCALE: 1" = 3'
HORIZONTAL SCALE: 1" = 30'

NO.	TYPE	LOCATION	STRUCTURE SCHEDULE			HO. CO. STD.	REMARKS	FRONT TO BACK INSIDE DIMENSION
			INVERT IN	INVERT OUT	TOP ELEV.			
I-1	PRECAST "FLOW THRU"	C/A STA+401.13 OFFS:12.43R	387.44	387.27	388.97	MSHA MD-374.68	-	8.67'
I-2	PRECAST "FLOW THRU"	C/A STA+466.13 OFFS:12.43R	400.36	400.22	401.28	MSHA MD-374.68	-	8.67'
I-3	PRECAST "FLOW THRU"	C/A STA+443.37 OFFS:12.43R	384.60	384.58	385.95	MSHA MD-374.68	-	11.17'
E-1	"O" HEADWALL	C/A STA+22.51 OFFS:36.11L	378.31	378.15	382.81	D-5.41 & D-5.42	-	9.83'
E-2	"O" HEADWALL	C/A STA+27.38 OFFS:32.05R	379.60	379.44	383.94	D-5.41 & D-5.42	-	9.83'

NOTES:
1. STRUCTURE LOCATION FOR INLETS IS AT THE TOP AND CENTER OF SHADE.
2. STRUCTURE LOCATION FOR DISSECTIONS IS AT THE CONNECTION OF PIPE AND END SECTION.
3. STRUCTURE LOCATION FOR HOLES IS AT THE CENTER OF THE STRUCTURE.
4. PRECAST STRUCTURES MEETING HS-20 LOADING MAY BE USED.



AS-BUILT CERTIFICATION
I hereby certify, by my seal, that to the best of my knowledge and belief the facilities shown on this "AS-BUILT" Plan meet the Approved Plans and Specifications.

Donald Mason, P.E.
Date: 3-7-17
TROTTER ROAD (SCENIC ROAD)
LOCAL ROAD - 60' R/W (ULTIMATE)
POSTED SPEED: 25 MPH
FROM EX. ±STA. 15+00 TO ±STA. 15+72
NOTE: THIS DETAIL CONFORMS TO HO.CD. STD. R-1-08
TYPICAL SECTION - PAVEMENT WIDENING

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Wish Z. M... 2-13-13
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
K... 3/13/13
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
C... 2-15-13
CHIEF, DEVELOPMENT ENGINEERING DIVISION

BENCHMARK ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE SUITE 418 & ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
60 THOMAS JOHNSON DRIVE & FREDERICK, MARYLAND 21702
(P) 301-371-3505 (F) 301-371-3506
WWW.BE-CIVILENGINEERING.COM

PROFESSIONAL CERTIFICATION:
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 28559-01-000007-7-22-2013

OWNER/DEVELOPER:
TROTTER POINT, L.L.C.
9695 NORFOLK AVENUE
LAUREL, MD 20723
PHONE: 410-792-2565

PROJECT:
TROTTER POINT
LOTS 1-14 AND OPEN SPACE LOTS 15-18
A RESUBDIVISION OF FOREST HILLS, LOTS 1-15, PLS. P/0.4 & A RESUBDIVISION OF TROTTER POINT O.S. LOT 1 AND LOTS 2-5 PLATS #20852-20853-(08-162)

TITLE:
FINALS/ROAD CONSTRUCTION PLANS
PROPOSED SITE PLAN
NOTES AND DETAILS

DATE:
JULY 2012
FEBRUARY 2013

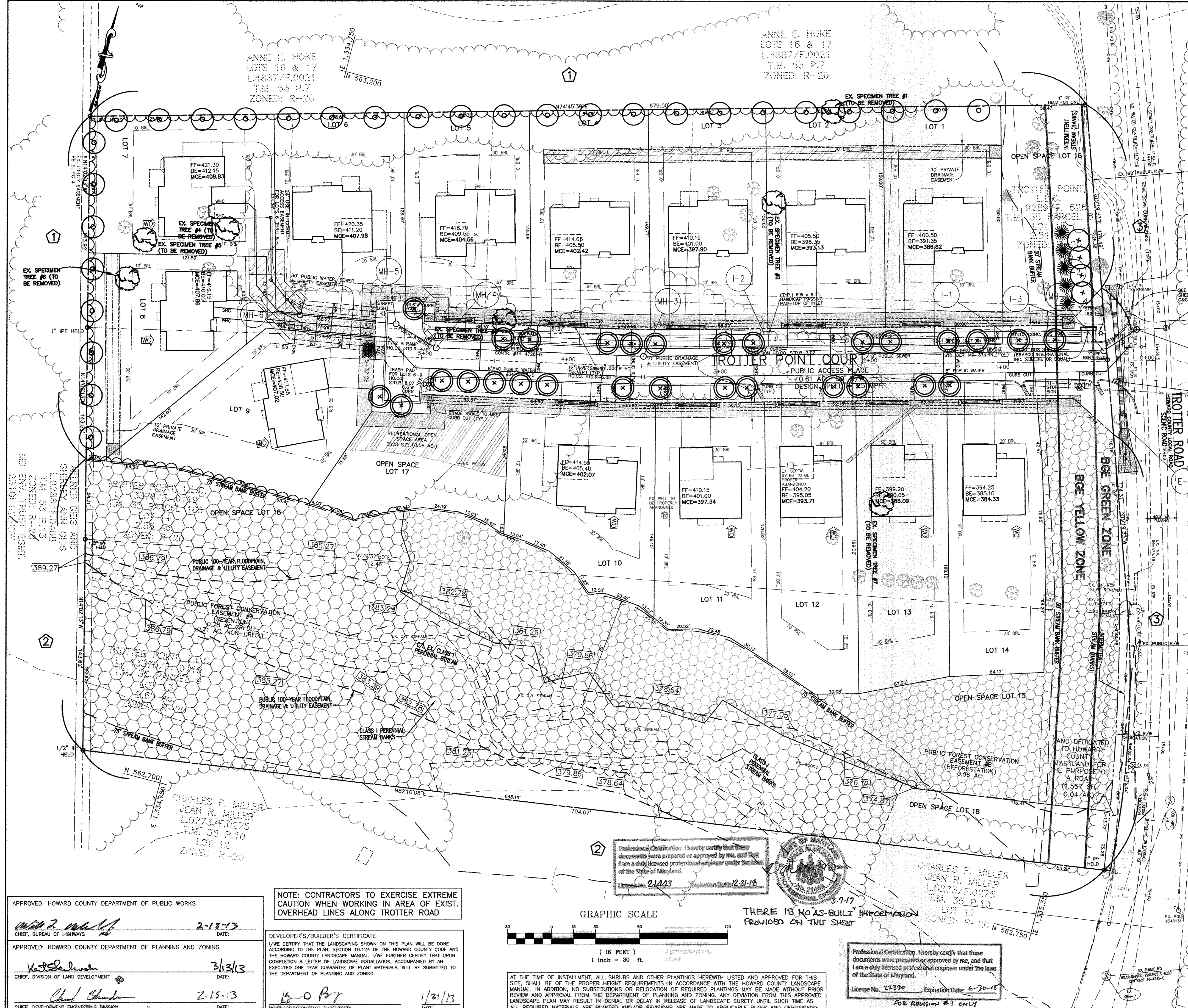
PROJECT NO.: 2283

SCALE: AS SHOWN
DRAWING: 9 OF 12

Design: MGR Draft: MCR Check: BFC

ANNE E. HOKE
LOTS 16 & 17
L4887/F.0021
T.M. 53 P.7
ZONED: R-20

ANNE E. HOKE
LOTS 16 & 17
L4887/F.0021
T.M. 53 P.7
ZONED: R-20



DUMPSTER/LOADING/SERVICE AREA LANDSCAPING

CATEGORY	ADJACENT TO ROADWAY	ADJACENT TO RESIDENTIAL	ADJACENT TO NON-RESIDENTIAL
LANDSCAPE / BUFFER TYPE	12.0'	NO	NO
LOCATION OF DUMPSTER/LOADING/SERVICE AREA:	TRASH PAD	NO	NO
CREDIT FOR WALL OR FENCE:	NO OR YES (w/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO
NUMBER OF PLANTS REQUIRED:	SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTE) SHRUBS	1 2 1 1	1 2 1 1
NUMBER OF PLANTS PROVIDED:	SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTE) SHRUBS (1:1 SUBSTITUTE) (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	1 1 0 0	1 2 1 1

SCHEDULE A PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAY	ADJACENT TO PERIMETER PROPERTIES	NO	NO	NO
PERIMETER NO. / LANDSCAPE TYPE	11.2'	902.6'	422.4'	NO	NO
CREDIT FOR EXISTING VEGETATION:	NO OR YES (w/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	YES*	YES**	NO
CREDIT FOR WALL, FENCE OR BERM:	NO OR YES (w/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO
LINEAR FEET OF REQUIRED PERIMETER LANDSCAPING	912.2	0.0	198.7	NO	NO
NUMBER OF PLANTS PROVIDED:	SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTE) SHRUBS (1:1 SUBSTITUTE) (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	15 0 0 0	4 5 5 5	NO	NO

* - SHRUBS ARE UTILIZED AS A SUBSTITUTION DUE TO THE PROXIMITY OF PROPOSED DRIVEWAYS
 ** - PERIMETER 2 REQUIREMENTS WILL BE SATISFIED BY REFORESTATION PLANTINGS, EXISTING VEGETATION AND NEW PLANTINGS WITHIN PERIMETER ALONG TROTTER ROAD. ALL PLANTINGS IN THIS PERIMETER TO BE IN CONFORMANCE W/BOE PLANT ZONE RESTRICTIONS
 *** - 14 SHADE TREES REQUIRED PER WP-12-011

PERIMETER 2 REQUIREMENTS WILL BE SATISFIED BY REFORESTATION PLANTINGS, EXISTING VEGETATION AND NEW PLANTINGS WITHIN PERIMETER ALONG TROTTER ROAD. ALL PLANTINGS IN THIS PERIMETER TO BE IN CONFORMANCE W/BOE PLANT ZONE RESTRICTIONS
 *** - 14 SHADE TREES REQUIRED PER WP-12-011

PERIMETER PLANTING LIST

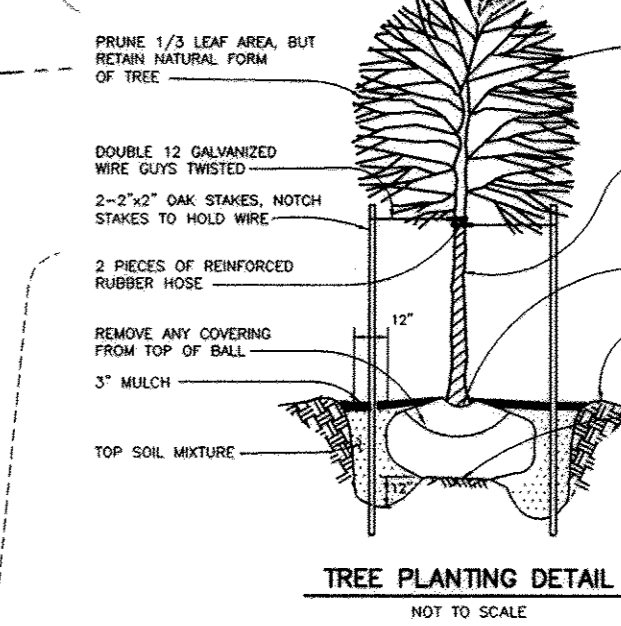
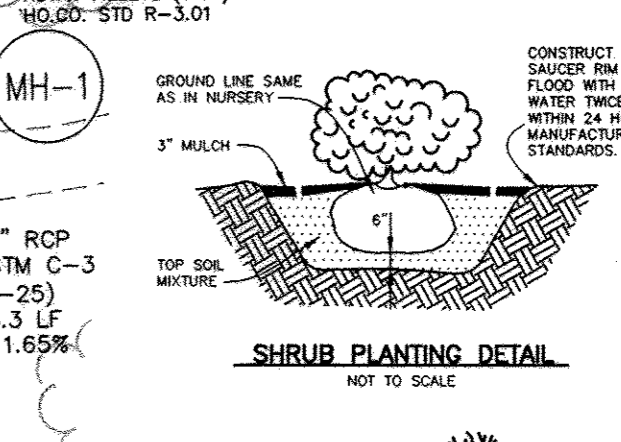
SYMBOL	QUANTITY	NAME	REMARKS
○	20	PRUNUS SARGENTI 'SARGENT CHERRY'	2 1/2" MIN. CAL. B & S FULL HEAD
×	4**	GLEDITSIA TRICANTHOSUS NERISMS 'IMPERIAL THORNLESS HONEYLOCUST'	2 1/2" MIN. CAL. B & S FULL HEAD
●	5**	CUPRESSOCOCCINEA LEYLAND 'LEYLAND CYPRESS'	5' - 6' HT. UNSHEARED

INTERNAL PLANTING LIST

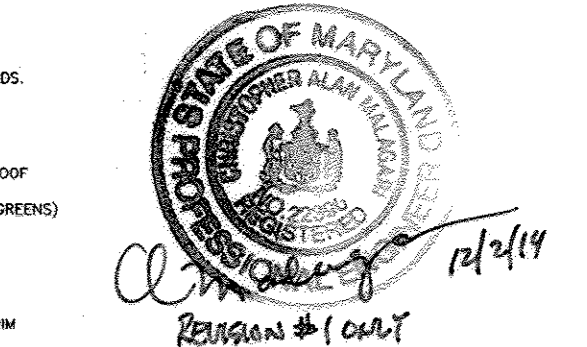
SYMBOL	QUANTITY	NAME	REMARKS
⊗	20	EVONYMUS KALTSCHOWICUS 'SIBBOLD EVONYMUS'	2.5'-3.0' MIN. HT.

STREET TREE PLANTING LIST

SYMBOL	QUANTITY	NAME	REMARKS
⊕	20	PLATANUS X ACERIFOLIA 'BLOODGOOD LONDON PLANE'	2 1/2" MIN. CAL. B & S FULL HEAD



- ### LANDSCAPING NOTES
- THE PROPOSED LANDSCAPING SHALL BE PROVIDED BY THE PLANTINGS AS SHOWN ON THESE PLANS.
 - THE DEVELOPER SHALL BE RESPONSIBLE FOR ALL INTERNAL PLANTINGS; THE PRESERVATION OF THE EXISTING PERIMETER VEGETATION; AND FOR THE PERIMETER PLANTINGS AS SHOWN ON THESE PLANS. BONDING FOR THESE PLANTINGS IS THE OBLIGATION OF THE DEVELOPER AS PART OF THE DEVELOPER AGREEMENT FOR THIS PROJECT.
 - TREES MUST BE A MINIMUM OF TWO(2) FEET FROM THE BACK OF CURB & SIDEWALK (PER DMW APPROVED 12/13/11) AND MUST BE A MINIMUM OF FIVE(5) FEET FROM ANY STORM DRAIN.
 - A MINIMUM DISTANCE OF TWENTY(20) FEET MUST BE MAINTAINED BETWEEN ANY TREES LOCATED ALONG THE CURB LINE AND FROM STREET LIGHTS.
 - TREES MUST BE PLANTED A MINIMUM OF FIVE(5) FEET FROM AN OPEN SPACE ACCESS STRIP AND TEN(10) FEET FROM A DRIVEWAY.
 - THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SEC.-16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL.
 - STREET TREES SHALL BE PLANTED A MINIMUM OF TWO(2) FEET BEHIND BACK OF CURB WHEN THERE ARE NO SIDEWALKS PER DMW APPROVED 12/13/11.
 - ALL LANDSCAPING PLANT TYPES SHOWN ON THESE PLANS ARE RECOMMENDATIONS AND MAY BE SUBSTITUTED WITH APPROVED EQUIVALENTS FROM THE HOWARD COUNTY LANDSCAPE MANUAL.
 - NO TREES SHALL BE PLACED WITHIN 10' BEHIND A RETAINING WALL OR WITHIN A RELATED MAINTENANCE EASEMENT, WHICHEVER IS GREATER.
 - PERIMETER LANDSCAPING, TRASH PAD SCREENING, AND WP-12-011 PLANTINGS SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE LANDSCAPE MANUAL. FINANCIAL SURETY IN THE AMOUNT OF \$11,200.00 FOR 33 SHADE TREES, 5 EVERGREENS, AND 20 SHRUBS SHALL BE POSTED WITH THE DEVELOPER AGREEMENT FOR THIS FINAL PLAN, F-13-004.
 - WRITTEN APPROVAL FROM BOE FOR THE PROPOSED LANDSCAPING ALONG TROTTER ROAD WAS OBTAINED BY CORRESPONDENCE DATED SEPTEMBER 17, 2012 AND APPROVED UNDER THESE PLANS.

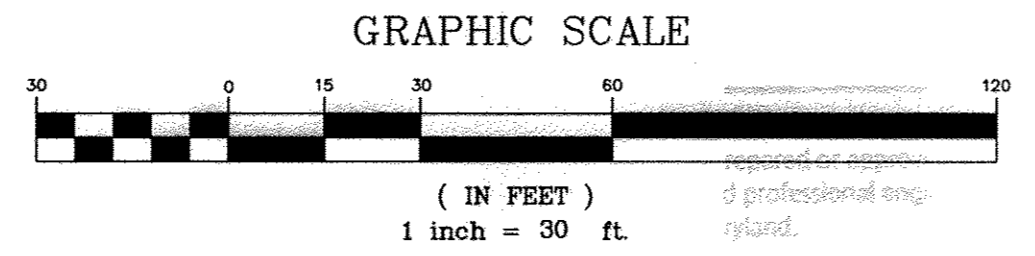


STREET TREE REQUIREMENTS

ROADWAY NAME:	TP. CT.
TROTTER POINT COURT	1157.2
STREET TREES REQUIRED	20
NUMBER OF PLANTS PROVIDED:	29
SHADE TREES	20
EVERGREEN TREES	5
OTHER TREES (2:1 SUBSTITUTE)	4
SHRUBS (1:1 SUBSTITUTE)	4
(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	NO

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 DATE: 2-13-13
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 DATE: 3/13/13
 DATE: 2-15-13

NOTE: CONTRACTORS TO EXERCISE EXTREME CAUTION WHEN WORKING IN AREA OF EXIST. OVERHEAD LINES ALONG TROTTER ROAD
 DEVELOPER'S/BUILDER'S CERTIFICATE
 I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.
 DATE: 1/31/13



THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

Professional Certification, I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 22390 Expiration Date: 6-30-16
 FOR REVISION #1 ONLY

1	12-2-14	REVISE DRIVEWAY CURB AND PIPES
NO.	DATE	REVISION

BENCHMARK ENGINEERING, INC.
 ENGINEERS & LAND SURVEYORS & PLANNERS
 6480 BALTIMORE NATIONAL PIKE & SUITE 418 & ELLICOTT CITY, MARYLAND 21043
 (P) 410-465-6105 (F) 410-465-6844
 60 THOMAS JOHNSON DRIVE & FREDERICK, MARYLAND 21702
 (P) 301-371-3505 (F) 301-371-3506
 WWW.BEI-CIVILENGINEERING.COM

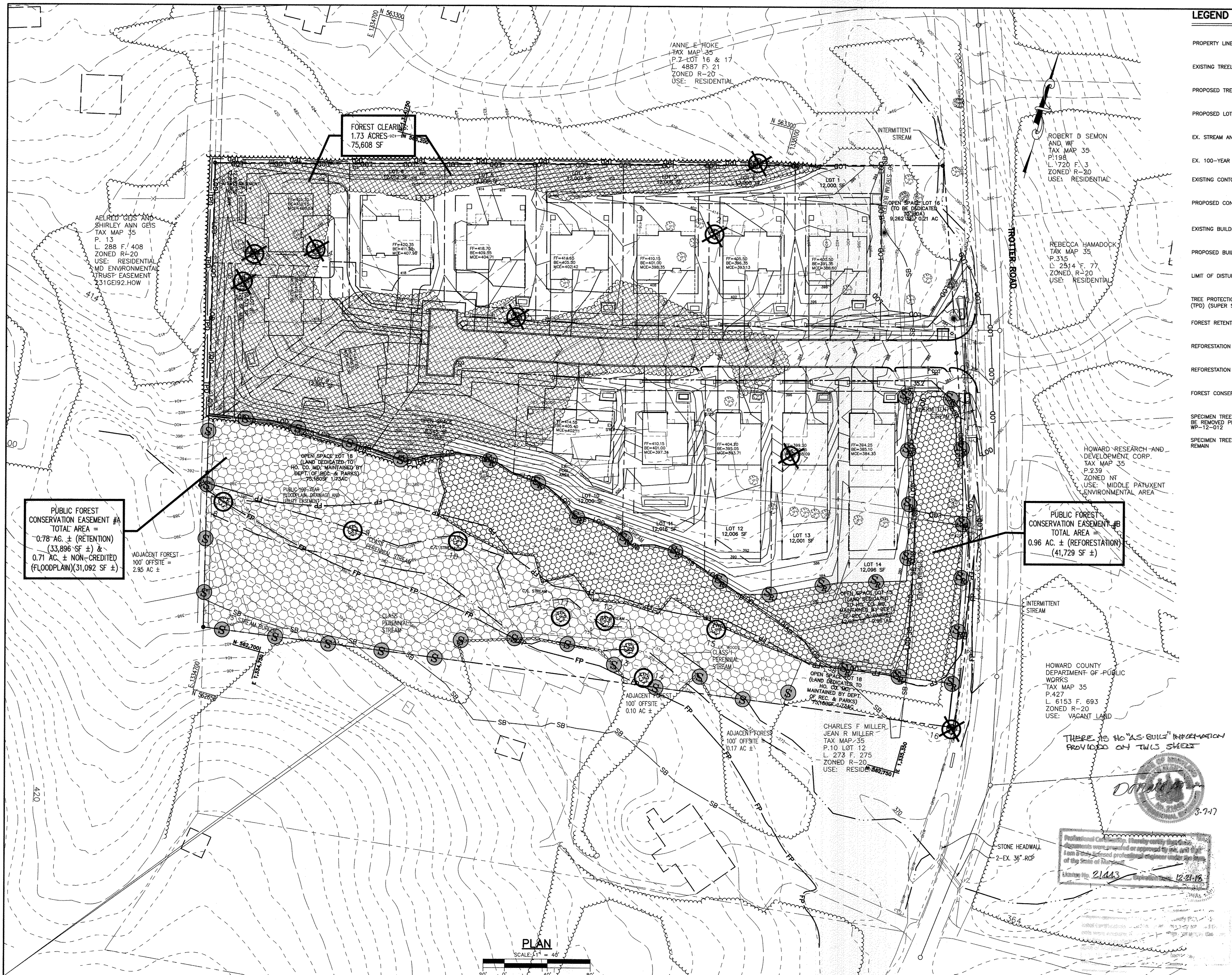
OWNER/DEVELOPER: TROTTER POINT, L.L.C.
 9695 NORFOLK AVENUE
 LAUREL, MD 20723
 PHONE: 410-792-2565

PROJECT: TROTTER POINT
 LOTS 1-14 AND OPEN SPACE LOTS 15-18
 A REVISION OF FOREST HILLS, LOTS 13-15, PLS-5/P.4 & A REVISION OF TROTTER POINT O.S. LOT 1 AND LOTS 2-5 PLATS #20852-20853(F-08-162)

TITLE: FINALS/ROAD CONSTRUCTION PLANS
 LANDSCAPING PLAN,
 NOTES AND DETAILS

DATE: JULY 2012 PROJECT NO. 2283
 FEBRUARY, 2013

SCALE: AS SHOWN DRAWING 10 OF 12



LEGEND

PROPERTY LINE		FOREST CLEARING	
EXISTING TREELINE		AREA OF FOREST NOT CLEARED OR PROTECTED (COUNTED AS CLEARED ON WORKSHEET) AND AREA OF EXISTING VEGETATION (NON-FOREST) NOT CLEARED OR PROTECTED	
PROPOSED TREELINE			
PROPOSED LOT LINE			
EX. STREAM AND BUFFER			
EX. 100-YEAR FLOODPLAIN			
EXISTING CONTOURS			
PROPOSED CONTOURS			
EXISTING BUILDING			
PROPOSED BUILDING			
LIMIT OF DISTURBANCE			
TREE PROTECTION DEVICE (TPD) (SUPER SILT FENCE)			
FOREST RETENTION SIGNAGE			
REFORESTATION SIGNAGE			
REFORESTATION AREA			
FOREST CONSERVATION AREA			
SPECIMEN TREES TO BE REMOVED PER WP-12-012			
SPECIMEN TREES TO REMAIN			

APPROVED: DEPARTMENT OF PUBLIC WORKS		2-13-13	DATE
CHIEF, BUREAU OF HIGHWAYS			
APPROVED: DEPARTMENT OF PLANNING AND ZONING		3/13/13	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT			
		2-15-13	DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION			
DATE NO.			REVISION
OWNER	TROTTER POINT LLC 11807 WOLLINGFORD CT CLARKSVILLE, MD 21029 T: 410.792.2565		
DEVELOPER	TROTTER POINT LLC ATTN: BRIAN BOY 9695 NORFOLK AVENUE LAUREL, MD 20723 T: 410.792.2565		
PROJECT	TROTTER POINT, LOTS 1 TO 14 AND O.S. LOTS 15 TO 18 A RESUBDIVISION OF FOREST HILLS, LOTS 13 TO 15; PB 5/PAGE 4 & A RESUBDIVISION OF TROTTER POINT, O.S. LOT 1 AND LOTS 2 TO 5, PLAT #s 20852 & 20853 (F-08-162)		
AREA	TAX MAP 35 GRID 2 PARCELS 8, 9, & 165 ZONED R-20 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND		
TITLE	FINAL FOREST CONSERVATION PLAN		
	Patton Harris Rust & Associates Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045, Suite 200 T 410.997.8900 F 410.997.9282		
SEAL		DESIGNED BY : PHRA	
		DRAWN BY: ALC	
		PROJECT NO. 12888-1-2 L300FCP01.DWG	
		DATE : FEBRUARY 1, 2013	
		SCALE : 1"=40'	
BY:		1-30-13	DRAWING NO. 11 OF 12
	PETER J. STONE #3068		

GENERAL NOTES:

- THE SITE IS LOCATED AT ALONG TROTTER ROAD IN CLARKSVILLE, MD 21029 (TAX MAP 47, PARCELS 8, 9, & 165). THE SITE CONSISTS THREE (3) PARCELS THAT TOTAL 7.65 ACRES.
- TOPOGRAPHIC AND BOUNDARY INFORMATION IS FROM A FIELD SURVEY PREPARED BY PATTON HARRIS RUST & ASSOCIATES DATED JANUARY 2007.
- THE SITE IS ZONED R-20 (RESIDENTIAL). CURRENTLY, THE SITE CONTAINS ONE RESIDENCE ON PARCELS 9 & 165. PARCEL 8 CONTAINS THE REMAINS OF A DEMOLISHED HOUSE AND TWO REMAINING SHEDS.
- NO RARE, THREATENED, OR ENDANGERED PLANTS OR ANIMALS OR CRITICAL HABITATS WERE OBSERVED IN THE FIELD.
- NO TREES, SHRUBS, OR PLANTS IDENTIFIED AS RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.
- THERE ARE NO KNOWN CEMETERIES OR BURIAL PLOTS LOCATED ON THE SITE, ACCORDING TO THE HOWARD COUNTY CEMETERIES INVENTORY.
- THERE ARE EXISTING BUILDINGS ON THE SITE AS SHOWN. ALL EXISTING BUILDINGS ARE TO BE REMOVED. STRUCTURES ARE PROPOSED AS SHOWN.
- THIS SITE IS LOCATED IN THE MIDDLE PATUXENT RIVER WATERSHED (#2131106).
- THERE ARE STREAMS AND FLOODPLAINS LOCATED ON THIS SITE. NO WETLANDS EXIST ON THIS PROPERTY.
- THIS SITE CONTAINS ONE HYDRIC SOIL, GLENVILLE-BAILE SILT LOAM (GnB). THE SOILS ON SITE ARE GLADSTONE LOAM (3-8% SLOPES)-GdB, GLADSTONE LOAM (8-15% SLOPES)-Gbc, GLENVILLE SILT LOAM (3-8% SLOPES)-GmB, GLENVILLE-BAILE SILT LOAM (0-8% SLOPES)-GnB, AND MANOR LOAM (15-25% SLOPES)-MdD ACCORDING TO THE USDA NATURAL RESOURCES CONSERVATION SERVICE WEB SOIL SURVEY.
- THE FSD, DATED JUNE 29, 2011, HAS BEEN PREPARED BY PATTON HARRIS RUST & ASSOCIATES IN CONJUNCTION WITH THESE PLANS. FIELD WORK FOR THIS INVENTORY WAS CONDUCTED ON JULY 20, 2006, FEBRUARY 23, 2007 & JUNE 29, 2011 BY JONATHAN NORMAN, PLANNER OF PATTON HARRIS RUST AND ASSOCIATES UNDER THE SUPERVISION OF PETER J. STONE, RLA OF PATTON HARRIS RUST AND ASSOCIATES.
- THERE ARE TWO EXISTING FOREST STANDS LOCATED ON SITE, AS SHOWN ON THE PLAN. FOREST STAND 1 IS A MEDIUM PRIORITY FOREST STAND DUE TO MINIMAL PROTECTED ENVIRONMENTAL SYSTEMS AND FOREST STAND 2 IS A HIGH PRIORITY FOREST STAND DUE TO THE PRESENCE OF PROTECTED ENVIRONMENTAL SYSTEMS, SUCH AS STREAMS AND FLOODPLAIN.
- THERE ARE 16 SPECIMEN TREES LOCATED ON SITE, AS SHOWN ON THE PLAN.
- THE HOWARD COUNTY FOREST CONSERVATION MANUAL SUPERCEDES ANY DISCREPANCIES BETWEEN THE MANUAL AND THESE PLANS.
- THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION.
- FOREST CONSERVATION OBLIGATIONS IN ACCORDANCE WITH THE FOREST CONSERVATION MANUAL SHALL BE FULFILLED BY ON-SITE REFORESTATION OF 0.96 ACRES, ON-SITE RETENTION OF 0.78 ACRES (DOES NOT INCLUDE FLOODPLAIN) AND OFF-SITE REFORESTATION OF 0.47 ACRES ON THE TALLEY PROPERTY, TAX MAP 8, PARCEL 2 (F-07-003FC1/KINDLER OVERLOOK, PLAT #20094). RED-LINE REVISIONS TO THE ROAD CONSTRUCTION DRAWINGS FOR F-07-003/KINDLER OVERLOOK HAVE BEEN PROCESSED TO SHOW THE 0.47 ACRES OF OFF-SITE EASEMENT. SURETY FOR 0.47 ACRES OF REFORESTATION IN THE AMOUNT OF \$200,000. SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT FOR THIS SUBDIVISION, F-13-004.

Howard County Forest Conservation Worksheet

Project Name: TROTTER POINT
County File #: F-13-004
Date: July 11, 2012

Net Tract Area
A. Total Tract Area = 7.66 Acres
B. Other Deductions: 100 year floodplain = 0.90 Acres
C. Net Tract Area = (A-B-C) = 6.76 Acres

Land Use Category: RESIDENTIAL SUBURBAN

D. Afforestation Threshold (Net Tract Area X 15%) = 1.01
E. Conservation Threshold (Net Tract Area X 20%) = 1.35

Existing Forest Cover
F. Existing Forest Cover within the Net Tract Area = 2.51
G. Area of Forest Above Conservation Threshold = 1.16
If the Existing Forest Cover (F) is greater than Conservation Threshold (G), then G = Existing Forest Cover (F) - Conservation Threshold (E). Otherwise G = 0

Break Even Point
H. Break Even (Amount of forest that must be retained so that no mitigation is required) = 1.58
(1) If the area of forest above the Conservation Threshold (G) is greater than zero, then H = (0.2 X the area of forest above Conservation Threshold (G)) + the Conservation Threshold (E)
(2) If the area of forest above the Conservation Threshold (G) is equal to zero, then H = Existing Forest Cover (F)

I. Forest Clearing Permitted Without Mitigation = 0.93
I = Existing Forest Cover (F) - Break Even Point (H)

Proposed Forest Clearing
J. Total Area of Forest to be Cleared = 1.73
K. Total Area of Forest to be Retained = 0.78
K = Existing Forest Cover (F) - forest to be cleared (J)

Planting Requirements
If the Total Area of Forest to be Cleared (K) is at or above the Break Even Point (H), no planting is required and no further calculations are necessary (L=0, M=0, N=0, P=0).
If not, calculate the planting requirement below.
L. Reforestation for Clearing Above the Conservation Threshold
(1) If the total area of forest to be retained (K) is greater than the Conservation Threshold (E), then L = the area of forest to be cleared (J) X 0.25; or
(2) If the forest to be retained (K) is less than or equal to the Conservation Threshold (E), then L = area of forest above Conservation Threshold (G) X 0.25
M. Reforestation for Clearing Below the Conservation Threshold
(1) If Existing Forest Cover (F) is greater than Conservation Threshold (E) and the forest to be retained (K) is less than or equal to the Conservation Threshold (E), then M = 2.0 X (the Conservation Threshold (E) - the forest to be retained (K))
(2) If Existing Forest (F) is less than or equal to the Conservation Threshold (E), then M = 2.0 X Forest to be cleared (J)
N. Credit for Retention Above the Conservation Threshold
If the area of forest to be retained (K) is greater than the Conservation Threshold (E), then N = K - E
P. Total Reforestation Required P = L + M - N
Q. Total Afforestation Required = 0.00
(1) If Existing Forest Cover (F) is less than the Afforestation Threshold (D) then Q = the Afforestation Threshold (D) - the Existing Forest Cover (F)
R. Total Planting Requirement R = P + Q = 1.43

PUBLIC FOREST CONSERVATION EASEMENT #	AREA RETENTION (IN ACRES)	AREA REFORESTATION (IN ACRES)	AREA OFF-SITE REFORESTATION (IN ACRES)
A	0.78 AC ±	0	
B	0	0.96 AC ±	
TOTAL	0.78 AC ±	0.96 AC ±	0.47 AC ±

STREAM BUFFER CONSERVATION CHART	
ACREAGE OF STREAM BUFFER CONSERVED	2.46 AC ±
WIDTH OF STREAM BUFFER CONSERVED	50'-150'
LENGTH OF STREAM BUFFER CONSERVED	1,188'±

PLANT COMMUNITY SUMMARY			
SYMBOL	COMMUNITY	AREA	PRIORITY RETENTION
F1	FOREST	1.99 Ac.±	MEDIUM
F2	FOREST	1.30 Ac.±	HIGH

FOREST CLEARING JUSTIFICATION:

IN ORDER TO DEVELOP THE SITE AS SHOWN WITH REQUIRED DRIVEWAYS, AND HOUSES, 1.73 ACRES OF FOREST MUST BE CLEARED.

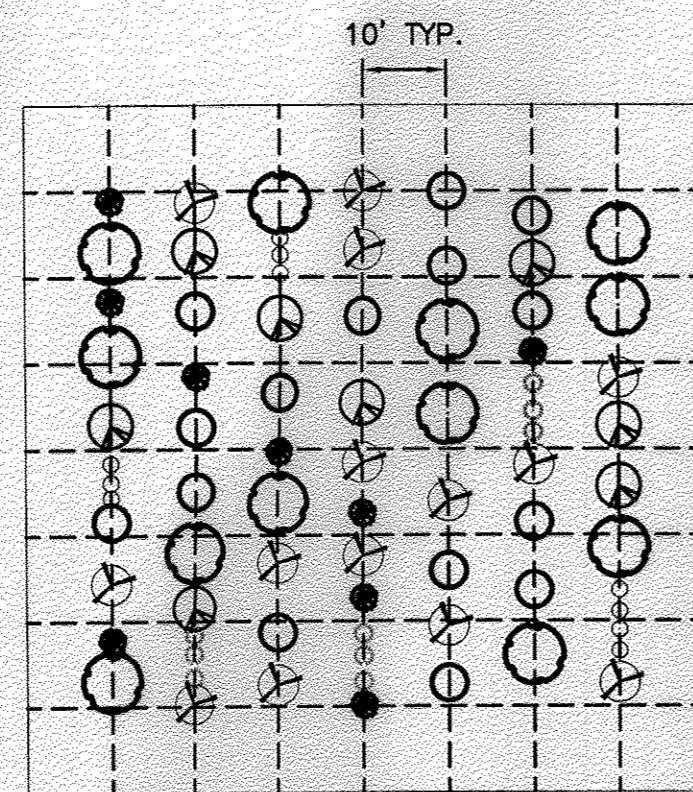
SPECIMEN TREE CHART

KEY	SPECIES	SIZE	CONDITION	REMAIN/REMOVE
1	BLACK LOCUST (<i>Robinia pseudoacacia</i>)	48"	FAIR	REMOVE
2	SILVER MAPLE (<i>Acer saccharinum</i>)	32"	GOOD	REMOVE
3	TULIP POPLAR (<i>Liriodendron tulipifera</i>)	30"	GOOD	REMOVE
4	TULIP POPLAR (<i>Liriodendron tulipifera</i>)	44"	GOOD	REMOVE
5	SLIPPERY ELM (<i>Ulmus rubra</i>)	40"	GOOD	REMOVE
6	SILVER MAPLE (<i>Acer saccharinum</i>) (MULTI-STEM)	51"	GOOD	REMOVE
7	WEeping WILLOW (<i>Salix babylonica</i>)	49"	POOR	REMOVE
8	BLACK WALNUT (<i>Juglans nigra</i>)	33"	GOOD	REMAIN
9	TULIP POPLAR (<i>Liriodendron tulipifera</i>)	65"	GOOD	REMAIN
10	TULIP POPLAR (<i>Liriodendron tulipifera</i>)	33"	GOOD	REMAIN
11	RED MAPLE (<i>Acer rubrum</i>)	36"	GOOD	REMAIN
12	SHAGBARK HICKORY (<i>Carya ovata</i>)	34"	GOOD	REMAIN
13	SILVER MAPLE (<i>Acer saccharinum</i>)	35"	GOOD	REMAIN
14	TULIP POPLAR (<i>Liriodendron tulipifera</i>)	36"	GOOD	REMAIN
15	TULIP POPLAR (<i>Liriodendron tulipifera</i>)	62"	GOOD	REMAIN
16	WHITE OAK (<i>Quercus alba</i>)	45"	FAIR	REMOVE

SOILS CHART

MAP SYMBOL	NAME	STRUCTURAL LIMITATIONS	EROSION HAZARD	HYDRIC (Yes/No)	SLOPE (%)	k FACTOR
GbB	Gladstone loam	Dwellings w/ Basements	Not limited	No	3-8	-
GbC	Gladstone loam	Some what limited: slope	Moderate	No	8-15	-
GmB	Glenville silt loam	Very limited: Depth to saturated zone	Moderate	No	3-8	0.22
GnB	Glenville-Baile silt loam	Very limited: Depth to saturated zone	Moderate	Yes	0-8	0.22
MdD	Manor loam	Very limited: flooding, Depth to saturated zone	Moderate	No	15-25	0.43

SOURCE: USDA NATURAL RESOURCES CONSERVATION SERVICE WEB SOIL SURVEY



- KEY**
- TREES: TREE SPECIES 'A', TREE SPECIES 'B', TREE SPECIES 'C', TREE SPECIES 'D', TREE SPECIES 'E'
 - SHRUBS: SHRUB SPECIES 'A', SHRUB SPECIES 'B'
- NOTES**
- RANDOMLY LOCATE GROUPS OF PLANT SPECIES, TAKING CARE NOT TO PLANT IN SUCCESSION MORE THAN 4 OF THE SAME SPECIES.
 - THIS DETAIL PROVIDES A HYPOTHETICAL GRAPHIC DEPICTION OF A PROPOSED LAYOUT FOR FIVE DIFFERENT TREE SPECIES (A-E) AND TWO DIFFERENT SHRUB SPECIES (A-B). IT IS NOT MEANT TO BE FOLLOWED EXACTLY. THE PURPOSE IS TO ACHIEVE THE APPEARANCE OF RANDOM SPACING. SHRUB PLANTINGS SHOULD BE GROUPED IN GROUPS OF 3 OR MORE.
 - SEE PLANT LIST FOR ACTUAL NUMBER OF PLANT SPECIES. SEE PLANT LIST FOR ON-CENTER SPACING REQUIREMENTS.
 - PLANTS SHALL NOT BE PLANTED IN A GRID PATTERN IN BOTH DIRECTIONS. IN ONE DIRECTION, 10' ROWS SHALL BE Laid OUT. CONTRACTOR TO PROVIDE A LAYOUT PLAN PRIOR TO PLANTING.
 - CONTRACTOR SHALL LEAVE 12" AT THE EDGE OF EACH PLANTING AREA FOR MAINTENANCE AND CIRCULATION.
 - CONTRACTOR SHALL ADJUST SPECIES IN FIELD BASED ON MICROCLIMATE CONDITIONS.

SEMI RANDOM PLANTING LAYOUT DETAIL
NOT TO SCALE

SEQUENCE OF OPERATIONS

PRE-CONSTRUCTION SITE PREPARATION

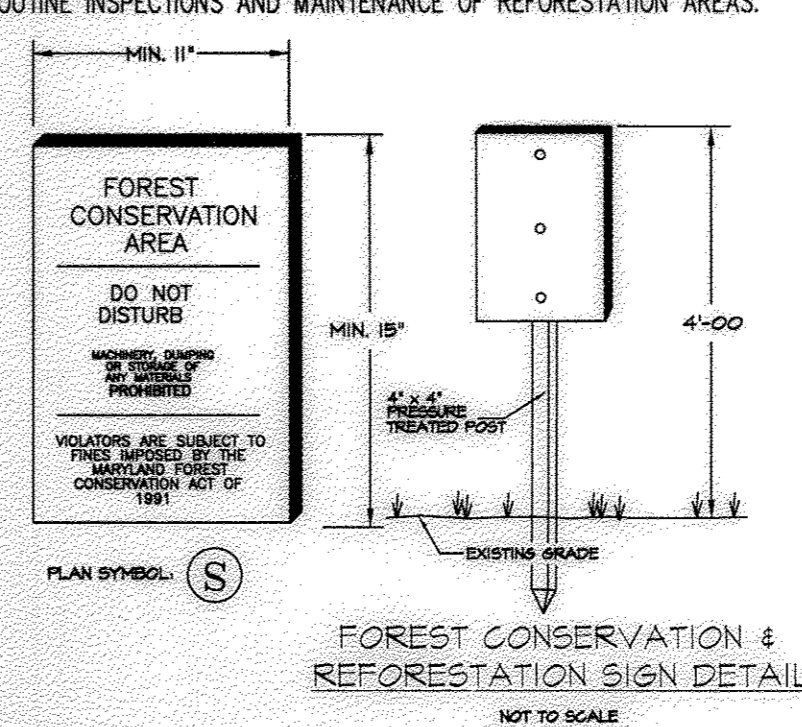
- FIELD STAKE LIMITS OF DISTURBANCE (L.O.D.) AT 25' INTERVALS.
- REVIEW L.O.D. IN FIELD AND ADJUST IF PRACTICAL.
- INSTALL TREE PROTECTION FENCE AT THE L.O.D. AND IMPLEMENT TREE PROTECTION METHODS AS SHOWN.
- CLEAR AND GRUB AS NECESSARY TO FACILITATE ROOT PRUNING TO A DEPTH OF 2-3 FEET WITHIN THE LIMITS OF THE PROPOSED FOREST RETENTION AREA AND AROUND SPECIMEN TREES TO BE SAVED. CLEAR REMAINING TREES IN A WAY THAT "SAVE TREES" ARE NOT DISTURBED. GRIND STUMPS 12" IN DIAMETER AND LARGER THAT ARE WITHIN 25' OF THE L.O.D.
- PRUNE AND FERTILIZE DESIRABLE "EDGE TREES" AS PER CONSULTING ARBORIST'S RECOMMENDATIONS AND DETAILS PROVIDED ON THIS SHEET.
- THERE SHALL BE NO STAGING, STORAGE, OR STOCKPILING OF MATERIALS OUTSIDE OF THE L.O.D.
- REMOVE OR TREAT WITH AN ACCEPTABLE METHOD, NOXIOUS PLANT MATERIAL SUCH AS MULTIFLORA ROSE, TEARthumb, AND JOHNSON GRASS BEFORE INSTALLING REFORESTATION PLANTS.
- INSTALL TREE PROTECTION SIGNAGE.

FOREST CONSERVATION SEQUENCE OF OPERATIONS

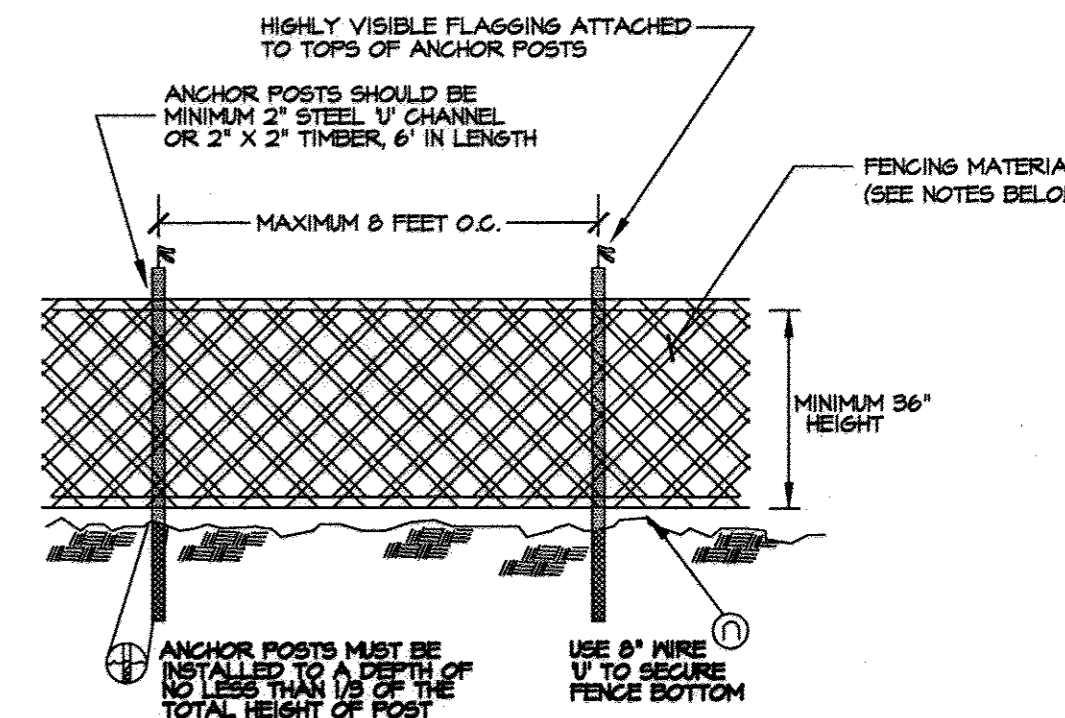
- PRIOR TO BEGINNING ANY GRADING OPERATIONS ON THIS SITE OR ON A RESPECTIVE LOT, THERE MAY BE A PRE-CONSTRUCTION MEETING HELD AT THE SITE WHICH IS TO INCLUDE THE CONTRACTOR AND REPRESENTATIVES FROM PATTON HARRIS RUST & ASSOCIATES, INC. (PHR+A). THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING (DPZ) AND THE OWNER WILL BE NOTIFIED BY THE CONTRACTOR AS TO THE TIME AND PLACE OF THE FIELD MEETING, SHOULD THEY WISH TO SEND A REPRESENTATIVE. THE PURPOSE OF THIS MEETING WILL BE TO REVIEW THE APPROVED FCP AND TO FIELD VERIFY THE CORRECT LIMITS OF DISTURBANCE (LOD).
- THE LIMITS OF DISTURBANCE (LOD) PERTINENT TO THE PRESERVATION OF WOODED AREAS SHALL BE STAKED IN THE FIELD WITH FINAL ADJUSTMENTS BEING MADE AS NECESSARY TO INSURE ADEQUATE PROTECTION OF THE CRITICAL ROOT ZONE OF TREES DESIGNATED FOR RETENTION. STAKES TO BE USED SHALL BE THOSE SPECIFIED FOR THE "TREE PROTECTION DEVICE" TO WHICH APPROVED PROTECTIVE MATERIAL WILL BE ATTACHED. ALTERNATE MEANS OF DEFINING THE LOD MAY BE USED IF APPROVED BY THE DPZ.
- ALL FOREST RETENTION AREAS SHALL BE PROTECTED BY HIGHLY VISIBLE, WELL ANCHORED TEMPORARY PROTECTION DEVICES (SEE DETAIL), WHICH SHALL BE SECURELY IN PLACE PRIOR TO ANY CLEARING OR GRADING OPERATIONS.
- THE AREA BELOW THE DRIPLINE OF EXISTING TREES TO REMAIN/BE SAVED SHOULD REMAIN UNDISTURBED FROM CUTTING AND FILLING DURING THE DEVELOPMENT PROCESS. NO IMPERVIOUS MATERIAL SHOULD BE PLACED UNDER THE DRIPLINE OF TREES TO REMAIN. TREE PROTECTION FENCE IS REQUIRED TO BE INSTALLED AROUND THE TREES AT THE LIMIT OF DISTURBANCE. TREE PROTECTION FENCE IS ALSO REQUIRED AROUND EACH SPECIMEN TREE TO REMAIN. SEE PLAN FOR TREE PROTECTION FENCE LOCATIONS.
- GRADING OPERATIONS OR OTHER CONSTRUCTION OPERATIONS WHICH COULD DISLODGE OR OTHERWISE DAMAGE THE PROTECTIVE DEVICES SHALL BE AVOIDED ALONG THE EDGES OF THE LOD LINES IF POSSIBLE. ANY PROTECTIVE DEVICES WHICH ARE DAMAGED DURING SITE CONSTRUCTION OPERATIONS SHALL BE PROPERLY REPAIRED IMMEDIATELY BY THE CONTRACTOR.
- AFTER SITE GRADING, UTILITY ACCESS ROAD, AND DRIVEWAY CONSTRUCTION HAVE BEEN COMPLETED, ALL TREES ADJACENT TO THE LOD LINE SHALL BE INSPECTED FOR INDICATIONS OF CROWN DIE-BACK (SUMMER INDICATOR), DAMAGE WITHIN RESPECTIVE CRITICAL ROOT ZONES OR ANY DEAD WOOD OR OTHER CONDITIONS WHICH MIGHT BE HAZARDOUS TO PEDESTRIANS, BUILDINGS, UTILITY LINES, VEHICULAR ACCESS WAYS OR PARKED VEHICLES.
- SHOULD THERE BE EVIDENCE OF ANY DAMAGE TO TREE TRUNKS, BRANCHES OR THE CRITICAL ROOT ZONE OF TREES WITHIN THE PROTECTED AREAS, OR TO ISOLATED SPECIMEN TREES TO BE PRESERVED, THE DAMAGE SHALL BE EXAMINED WITHIN A PERIOD OF TWO (2) DAYS FROM THE DATE OF OBSERVANCE BY A LICENSED TREE CARE PROFESSIONAL. EXPOSED ROOTS SHOULD BE COVERED IMMEDIATELY TO A DEPTH OF 6 - 8 INCHES WITH SOIL, PREFERABLY MIXED WITH 50% PEAT MOSS OR LEAF MOLD.
- REMOVE DAMAGED, DEAD OR DYING TREES OR LIMBS ONLY IF THE TREES OR LIMBS POSE AN IMMEDIATE SAFETY HAZARD TO BUILDINGS, UTILITY LINES, VEHICLES, OR ACCESS AND EGRESS DRIVES OR PEDESTRIAN AREAS. TREES DESIGNATED FOR PRUNING OR REMOVAL SHALL BE PRUNED OR REMOVED USING EQUIPMENT AND METHODS WHICH WILL NOT DAMAGE OR DESTROY ADJACENT LARGE TREES OR UNDERSTORY TREES OR SHRUBS DESIGNATED FOR RETENTION.
- ALL TEMPORARY FOREST PROTECTION DEVICES WILL BE CAREFULLY REMOVED AFTER ALL GENERAL CONSTRUCTION, NECESSARY TREE SURGERY, REMOVAL OF DEBRIS, ETC. REGRADING AND RESEEDING OF SEDIMENT AND EROSION CONTROL DISTURBANCE HAVE BEEN COMPLETED AND ACCEPTANCE AND APPROVAL OF THE WORK AND SITE CONDITIONS HAVE BEEN GIVEN BY THE DPZ.
- ALL SPECIMEN TREES AND TREES TO REMAIN SHALL BE MONITORED AND WATERED AS NEEDED DURING CONSTRUCTION TO MAINTAIN TREE HEALTH.

FOREST CONSERVATION PROGRAM

- I. OBJECTIVE:**
IT IS THE OBJECTIVE OF THE FOREST CONSERVATION PLAN OF THE TROTTER POINT PROPERTY TO RETAIN ENVIRONMENTAL INTEGRITY BY PRESERVING EXISTING WOODED AREAS & REFORESTING AREAS ON SITE. REFORESTED AREAS WILL BE PLANTED WITH MATURE TREES (1"-2" CALIPER).
- II. PRESERVATION:**
FOREST PRESERVATION AREAS SHALL BE PERMANENTLY PROTECTED BY FOREST CONSERVATION EASEMENTS.
- III. GENERAL CONSTRUCTION NOTE:**
THERE WILL BE NO STAGING OR STORING OF EQUIPMENT OUTSIDE THE LIMIT OF DISTURBANCE.
- IV. POST CONSTRUCTION MANAGEMENT PRACTICE:**
A TWO-YEAR POSTED CONSTRUCTION AND MANAGEMENT PROGRAM TO ENSURE FOREST HEALTH IS REQUIRED AND INCLUDES THE FOLLOWING:
- MAINTENANCE OF SIGNS, FENCES, AND TREE PROTECTION DEVICES TO PREVENT UNWARRANTED INTRUSION AND DAMAGE.
 - CAREFUL REMOVAL OF ALL TEMPORARY STRUCTURES AFTER CONSTRUCTION.
 - ROUTINE INSPECTIONS OF FOREST CONSERVATION EASEMENTS.
 - ROUTINE INSPECTIONS AND MAINTENANCE OF REFORESTATION AREAS.



- NOTES**
- SIGNAGE SHALL BE LOCATED ON FOREST CONSERVATION / REFORESTATION / AFFORESTATION BOUNDARY BORDER.
 - SEE PLAN FOR SPACING.



- NOTES**
- BLACK GRASS MESH OR SUPER SILT FENCE FOR TREE PROTECTION DEVICE ONLY.
 - BOUNDARIES OF PROTECTION AREA WILL BE ESTABLISHED PRIOR TO GRADING AND SEDIMENT CONTROL.
 - AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVERE LARGE ROOTS WHEN INSTALLING POSTS.
 - FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION FENCING
NOT TO SCALE

REFORESTATION PLANTING LISTS - PUBLIC FOREST CONSERVATION EASEMENT #B

QUANTITIES	SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS
24	LIRIODENDRON TULIPIFERA / TULIP TREE			
23	LIQUIDAMBAR STRYACIFLUA / SWEET GUM			
23	QUERCUS PALUSTRIS / PIN OAK	1" CAL.*	B & B	FULL CROWN 15' ± SPACING; SEE RANDOM PLANTING DETAIL
23	FAGUS GRANDIFOLIA / AMERICAN BEECH			
23	NYSSA SYLVATICA / BLACK GUM			
19	AMELANCHIER CANADENSIS / SERVICEBERRY			
19	CHONANTHUS VIRGINICUS / WHITE FRINGETREE			
19	ILEX OPACA / AMERICAN HOLLY	3-4' HT.		
19	LINPERIS VIRGINIANA / EASTERN RED CEDAR	3-4' HT.		
TOTAL AREA: 0.96 ACRES				
TREES REQUIRED: 192				
TREES PROVIDED: 192				

*NOTE: CALCULATIONS FOR 1" CAL. PLANTS IS BASED ON 200 PLANTS PER ACRE.

APPROVED: DEPARTMENT OF PUBLIC WORKS

W. R. ... 2-13-13
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

V. ... 3/13/13
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

C. ... 2-15-13
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE NO. REVISION

OWNER: TROTTER POINT LLC
11807 WOLLINGFORD CT
CLARKSVILLE, MD 21029
T: 410.792.2565

DEVELOPER: TROTTER POINT LLC
ATTN: BRIAN BOY
9695 NORFOLK AVENUE
LAUREL, MD 20723
T: 410.792.2565

PROJECT: TROTTER POINT, LOTS 1 TO 14 AND O.S. LOTS 15 TO 18
A RESUBDIVISION OF FOREST HILLS, LOTS 13 TO 15; PB 5/PAGE 4 & A RESUBDIVISION OF TROTTER POINT, O.S. LOT 1 AND LOTS 2 TO 5, PLAT #s 20852 & 20853 (F-08-162)

AREA: TAX MAP 35 GRID 2 PARCELS 8, 9, & 165 ZONED R-20
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

FINAL FOREST CONSERVATION NOTES AND TABULATIONS

Patton Harris Rust & Associates
Engineers, Surveyors, Planners, Landscape Architects.
8818 Center Park Drive
Columbia, MD 21045, Suite 200
T 410.997.8900
F 410.997.9282

DESIGNED BY: ALC
DRAWN BY: ALC
PROJECT NO: 12888-1-2
L300FCPO2.DWG
DATE: FEBRUARY 1, 2013
SCALE: AS SHOWN
DRAWING NO. 12 OF 12



F-13-004 AS-BUILT