

GENERAL NOTES:

- ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS ALTERNATIVE COMPLIANCES HAVE BEEN APPROVED.
- DEED REFERENCE: L-4389 / F.156, L-4389 / F.150, L-4389/138.
- THE PROJECT BOUNDARY IS BASED ON A BOUNDARY SURVEY PERFORMED BY VOGEL & ASSOCIATES, INC. DATED FEBRUARY 1998.
- THE TOPOGRAPHY SHOWN HEREON IS BASED ON HOWARD COUNTY AERIAL PHOTOGRAMMETRIC MAP PERFORMED BY POTOMAC AERIAL SURVEY, DATED MARCH, 1998.
- COORDINATE DATUM IS BASED ON THE MARYLAND COORDINATE SYSTEM (NAD 83) AS PROJECTED BY THE FOLLOWING HO. CO. GEODETIC CONTROL STATIONS: 4382 & 4386.
- EXISTING WATER CONTRACT NO. 36-W. EXISTING SEWER CONTRACT 10-1300-15.
- STORMWATER MANAGEMENT FOR BLUE STREAM DRIVE, QUIDDITCH LANE, P/O PARCELS H AND PARCELS I THROUGH M IS PROVIDED BY PIPE FACILITIES IN CONJUNCTION WITH THIS PLAN (F-02-05) THE UNDERGROUND FACILITY LOCATED ON PARCELS J (SWMM) WILL PROVIDE THE SWM FOR P/O BLUE STREAM DRIVE, QUIDDITCH LANE PARCELS J AND P/O PARCELS H, I AND PARCELS K. SWMM HAS BEEN APPROVED BY HOWARD COUNTY AND WILL BE PROVIDED BY THE UNDERGROUND STORAGE FACILITY TO PROVIDE 24 AND 10% MANAGEMENT WATER QUALITY WILL BE PROVIDED BY STORAGE FACILITY LOCATED WITHIN THE UNDERGROUND DRAINAGE AREA. UNDESIRABLE SITE DESIGN PRACTICES WILL BE UTILIZED TO THE MAXIMUM EXTENT POSSIBLE FOR WQ. THE FOND LOCATED ON BLUE STREAM CORPORATE CENTER OPEN SPACE LOT G-1 (165M²) HAS BEEN APPROVED AS A WET POND WHICH PROVIDES 24 AND 10% DETENTION AND WATER QUALITY FOR P/O BLUE STREAM DRIVE, P/O PARCELS J AND K AND PARCELS L AND M. THE STORMWATER MANAGEMENT FOR PARCELS H WILL BE PROVIDED AT THE TIME OF SITE DEVELOPMENT PLAN AND WILL BE IN ACCORDANCE WITH THE MDE ENVIRONMENTAL SITE DESIGN CRITERIA AND CONFORM TO CURRENT REQUIREMENTS. ALL STORMWATER MANAGEMENT FACILITIES (SWM) AND STORMWATER MANAGEMENT (SWM) WILL BE TRAVELER OWNED AND MAINTAINED.
- WETLANDS AND STREAMS SHOWN ON SITE ARE BASED ON A FIELD INVESTIGATION PERFORMED BY CAMPBELL-NOLAN ASSOCIATES DATED MARCH, 2000.
- FLOODPLAIN SHOWN ON SITE IS BASED ON "HOWARD COUNTY DEEP RUN FLOODPLAIN STUDY", CAPITAL PROJECT NO. D-1084 DATED JANUARY, 1997.
- FOREST STAND DELINEATION PLAN PREPARED BY KOPECK AND ASSOCIATES DATED NOVEMBER, 1996.

- APFO TRAFFIC STUDY HAS BEEN PREPARED BY THE TRAFFIC GROUP DATED MAY 30, 2009, REVISED JUNE 5, 2008.
- THE UNMITIGATED NOISE STUDY WAS PREPARED BY ROBERT H. VOGEL ENGINEERING, INC. DATED JUNE 2006. THE MITIGATED NOISE STUDY IS BASED ON CONCEPTUAL BUILDING LOCATIONS AND ELEVATIONS. AN ADDITIONAL NOISE STUDY MAY BE REQUIRED AT THE SITE DEVELOPMENT PLAN STAGE.

- ALL LANDSCAPING REQUIREMENTS AS SET FORTH IN THE LANDSCAPE MANUAL SHALL BE COMPLIED WITH.
 - PUBLIC STREET TREES WILL BE PROVIDED.
 - INTERNAL LANDSCAPING TO BE PROVIDED AT THE SITE DEVELOPMENT PLAN STAGE.
 - SWM LANDSCAPING WILL BE PROVIDED FOR THE FOND ON OPEN SPACE LOT G-1. LANDSCAPING WILL BE PROVIDED WHEN TYPE AND LOCATION OF CONSTRUCTION IS KNOWN.
- PERIMETERS
- STREET LIGHTING IS PROVIDED FOR THE PROPOSED PUBLIC ROAD, PER HOWARD CO. DESIGN REQUIREMENTS AND ZONING SECTION 124.
- SEDIMENT AND EROSION CONTROL IS PROVIDED.
- PROPOSED ROUTE 1 IMPROVEMENTS DONE IN ACCORDANCE WITH SHA CONTRACT NO. 7612176.
- THIS PROPERTY IS WITHIN THE METROPOLITAN DISTRICT.
- TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL/CEMETERY LOCATIONS ON SITE.
- STORMWATER MANAGEMENT SOIL BORINGS FOR THIS SITE ARE BASED ON A GEOTECHNICAL ANALYSIS PROVIDED BY ENGINEERING CONSULTING SERVICES DATED APRIL, 2000.
- THIS PLAN IS SUBJECT TO WP-99-80 APPROVED 3-29-99 TO SECTION 16.116(c)(1) OF THE HOWARD COUNTY SUBDIVISION LAND DEVELOPMENT REGULATIONS TO ALLOW GRADING WITHIN NON TIDAL WETLANDS, BUFFERS AND STREAM BUFFERS PER MDE PERMIT NO. 98NT-0522.
- PREVIOUS HOWARD COUNTY REFERENCES: S-99-08, WP-99-80, F-00-128, S-06-018, WP-06-003, P-00-20, PLAT 14424, 14442, WP-04-110, F-01-011, F-06-004, WP-00-116, WP-03-06, F-10-055.
- PROPOSED BLUE STREAM DRIVE IS CLASSIFIED AS A MAJOR COLLECTOR; QUIDDITCH LANE IS CLASSIFIED AS AN ACCESS STREET.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- ANY DAMAGE TO PUBLIC RIGHT-OF-WAYS, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTORS EXPENSE.
- EXISTING UTILITIES LOCATED FROM SHA CONSTRUCTION PLANS, FIELD SURVEYS 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.
- ALL REINFORCED CONCRETE FOR STORM DRAIN STRUCTURES SHALL HAVE A MINIMUM OF 28 DAYS STRENGTH OF 3500 P.S.I.
- 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.
- ALL SWALES AND SLOPES SHALL BE PERMANENTLY SEEDED OR OTHERWISE STABILIZED.
- ESTIMATES OR EARTHWORK QUANTITIES ARE PROVIDED SOLELY FOR THE PURPOSE OF CALCULATING PERMIT FEES.
- ALL FILL AREAS (ROADWAYS, UNDER STRUCTURES, PARCELS, ETC.) TO BE COMPACTED TO A MINIMUM OF 95% COMPACTION, AS REQUIRED BY ARTICLE 10-2.
- ALL STORM DRAIN PIPE BEDDING SHALL BE CLASS 'C'.
- THE STORMWATER MANAGEMENT FACILITIES PROVIDED FOR THIS SITE ARE CLASS 'A' HAZARD FACILITY. IN THE EVENT OF FAILURE OF THE EMBANKMENT, DAMAGE WILL BE LIMITED TO FLOODPLAINS.
- ALL WORK WITHIN THE SHA RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE STATE HIGHWAY REQUIREMENTS.
- THIS PLAN IS SUBJECT TO WP-04-110 APPROVED MARCH 10, 2004 TO WAIVE SUBDIVISION SECTION 16.144(a) TO BE PERMITTED TO COMMIT THE DEVELOPMENT PLANS INSTEAD OF IN LIEU OF THE SEVEN REQUIRED PRELIMINARY PLANS FOR HOUSING UNIT ALLOCATION YEARS 2011 TO 2017 AS INDICATED IN THE DPZ (HOUSING UNIT ALLOCATION) LETTER DATED 01/01/06. AS OF MARCH 24, 2009, THE APPROVAL OF THIS WAIVER PETITION WAS RESCINDED.
- PROVIDE HANDICAP RAMPS AT ALL INTERSECTIONS.
- OPEN SPACE LOT G-1 CONTAINS THE 100% FLOODPLAIN, WETLANDS AND REQUIRED BUFFERS AND IS CONSIDERED NON-BUILDABLE.
- FOREST CONSERVATION OBLIGATIONS HAVE BEEN MET BY ON-SITE FOREST RETENTION IN THE AMOUNT OF _____ ACRES. AFFORESTATION IN HOWARD COUNTY APPROVED WILKINSON CONSERVATION BANK IN THE AMOUNT OF 5.29 ACRES AND FEE-IN-LIEU FOR THE REMAINING _____ ACRES. (F-02-05)

- WP-00-116; JULY 18, 2000 THE PLANNING DIRECTOR APPROVED REQUEST TO WAIVE SECTION 16.147(c)(17), TO NOT INDICATE THE REQUIRED LOCATIONS OF STREAMS AND WETLANDS AND THEIR BUFFERS ON THE FINAL PLAN F-00-128, SUBJECT TO COMPLIANCE WITH THE FOLLOWING CONDITIONS:
 - THE REQUIRED DELINEATION INFORMATION FOR WETLANDS, STREAMS AND THEIR BUFFERS MUST BE SHOWN ON ANY RESUBDIVISION PLATS FOR PARCELS A AND/OR B.
 - THE PUBLIC ROAD R/W WIDENING DEDICATION INFORMATION MUST BE LOCATED ON F-00-128 IN ACCORDANCE WITH PREVIOUS DPZ, DLD COMMENT 7.B OF 4/13/00.
- WP-03-06; JANUARY 23, 2003 THE PLANNING DIRECTOR APPROVED REQUEST TO WAIVE SECTION 16.120(c)(1) TO PERMIT THE REQUIRED MINIMUM OF 60 FEET OF FRONTAGE ON A PUBLIC ROAD THAT PROVIDES ACCESS TO THE PROPERTY TO BE REDUCED TO ZERO FEET FOR AN INDUSTRIAL PARCEL (NON-BUILDABLE PARCEL G) AND TO PERMIT ACCESS TO A PRIVATE ACCESS EASEMENT. APPROVAL SUBJECT TO THE FOLLOWING CONDITION:
 - THE 30 FOOT WIDE ACCESS EASEMENT FOR NON-BUILDABLE PARCEL G SHOWN ON THE WP EXHIBIT SHALL BE SHOWN ON THE F-02-35 PLAT AND PLANS.
- THE WATER AND SEWER FOR THIS PROJECT IS PROVIDED BY CONTRACT NO. 14-4089-00.
- WP-99-80; SECTION 16.116(c)(1) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS TO ALLOW GRADING WITHIN WETLANDS BUFFERS AND STREAM BUFFERS, SUBJECT TO THE FOLLOWING CONDITIONS: (APPROVED 03/29/99)
 - IDENTIFY THE 4 WETLAND AREAS ON THE SKETCH PLAN USING THE NUMERICAL DESIGNATIONS FROM THE MDE PERMIT.
 - ADD THE MDE NON-TIDAL WETLANDS #98NT-0322 TO THE SKETCH PLAN AND FUTURE SUBMISSIONS.
 - IF MITIGATION IS REQUIRED BY MDE, THE MITIGATION SHOULD OCCUR IN THE PROPOSED POND.
- WHEN THE UNDERGROUND STORMWATER MANAGEMENT FACILITY #1 IS BUILT FOR PARCEL J, THE SYSTEM WILL BE DESIGNED TO WITHSTAND H-20 LOADING.
- REVISE PLANS TO ADD NOTES REGARDING THE TRANSFER OF THE STORMWATER MANAGEMENT POND LANDSCAPING RESPONSIBILITY TO F-18-082.
- REVISE PLANS FOR SEDIMENT REGION CONTROL.

- REVISE PLANS TO ADD NOTES REGARDING THE TRANSFER OF THE STORMWATER MANAGEMENT POND LANDSCAPING RESPONSIBILITY TO F-18-082.
- REVISE PLANS FOR SEDIMENT REGION CONTROL.

| NO. | REVISION | DATE |
|--------|----------|------|
| 11-9-2 | | |
| 1-7-20 | | |

APPROVED: "HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING"

4/9/03
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE

4/11/02
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

4-4-03
 CHIEF, BUREAU OF HIGHWAYS
 DATE

9 ADD TWO SPEED HUMPS 01/21/11
 8 REVISE GRADING OF BLUE STREAM DRIVE EXTENSION TO AVOID CONFLICT WITH BGE DUCT/CONDUIT 02/04/15

BLUE STREAM

FORMERLY KNOWN AS
(OVERLOOK AT BLUE STREAM)

OPEN SPACE LOTS G-1 AND G-2 AND
BUILDABLE BULK PARCELS H-M

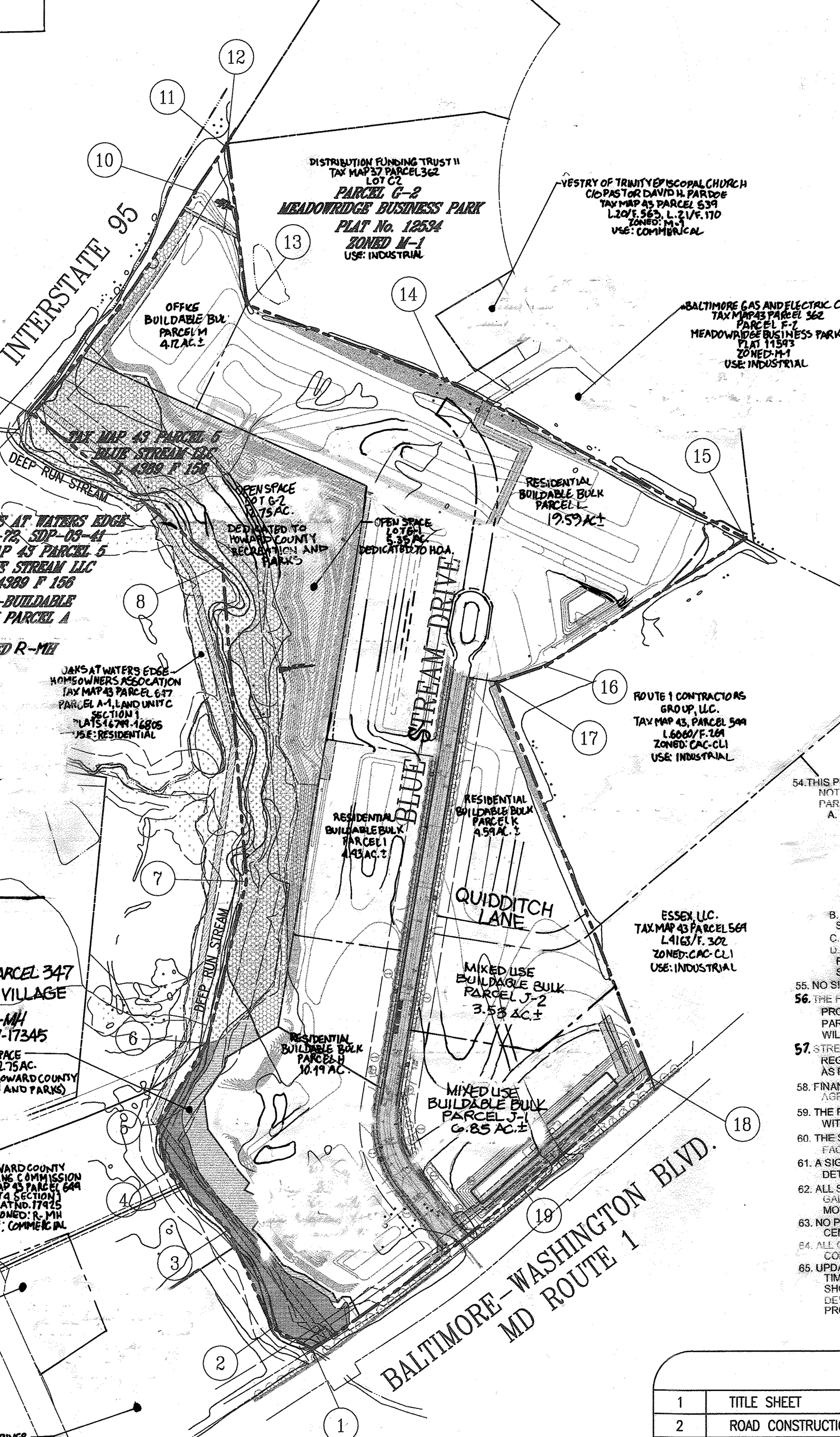
43. THESE ARE NO STEEP SLOPES WITH A CONTIGUOUS AREA GREATER THAN 20,000 SF LOCATED ON PARCELS H THROUGH M.
 44. TRASH COLLECTION AND RECYCLING TO BE PROVIDED.
 45. THE OPEN SPACE REQUIREMENT (20% OF NET ACRES = 1079 AC) WILL BE MET BY OPEN SPACE LOTS G-1 AND G-2 (TOTAL 18.16 AC). THE AMENITY AREA REQUIREMENT (60% OF OPEN SPACE = 647 AC) WILL BE PROVIDED BY THE INDIVIDUAL BUILDABLE PARCELS WITHIN THE BLUE STREAM SUBDIVISION WITH THEIR CORRESPONDING SITE DEVELOPMENT PLANS, WHICH COMBINED WILL SATISFY THE AMENITY AREA REQUIREMENT. THIS PLAN DOES NOT PROVIDE ANY AMENITY SPACE TOWARDS THE AMENITY AREA REQUIREMENT. AN AMENITY AREA TABULATION CHART SHALL BE PROVIDED ON THE SUBSEQUENT SITE DEVELOPMENT PLANS WITHIN THE BLUE STREAM SUBDIVISION.

THE CONSTRUCTION DETAILS FOR SWM FACILITY #2, LOCATED ON OPEN SPACE LOT G-1 HAVE BEEN PROVIDED WITH THIS FINAL PLAN, F-02-035. SURVEY FOR THE POND TO BE POSTED WITH FINAL ROAD CONSTRUCTION PLAN F-18-082. FINAL CONVERSION OF SWM FACILITY #2 WILL OCCUR UPON COMPLETION OF WORK ASSOCIATED WITH F-18-082 AND SDR-18-022 AND WITH APPROVAL OF THE SEDIMENT CONTROL INSPECTOR.

THE SAME LANDSCAPING FOR SWM POND #2, AS SHOWN ON THIS FINAL PLAN (F-02-035) SHALL BE PLANTED IN CONJUNCTION WITH FINAL PLAN F-18-082 (BLUE STREAM DRIVE EXTENSION).

30. THE FOREST CONSERVATION OBLIGATIONS INCURRED BY THIS PROJECT HAVE BEEN PREVIOUSLY MET UNDER F-02-35 BY: PREVIOUS ON-SITE FOREST RETENTION: 124 AC. PREVIOUS AFFORESTATION OBLIGATION: 12.84 AC. PREVIOUS (S) AFFORESTATION PROVIDED: 12.84 AC. OFF-SITE AFFORESTATION IN HOWARD COUNTY WILKINSON CONSERVATION BANK (C) IN LIEU (P) UNDER APPROVED F-02-35: 871.2 SF (4.95 AC). WITH A TOTAL OF 0.55 AC. THE TOTAL RETENTION IS REDUCED BY 0.15 AC. THE TOTAL AFFORESTATION IS REDUCED BY 0.58 AC. AND REAFFORESTATION OF 0.15 WAS PROVIDED. NETTING THE FOLLOWING:
 ON-SITE FOREST RETENTION PROVIDED: 1.09 AC.
 ON-SITE AFFORESTATION PROVIDED: 0.15 AC.
 WITH PLAT F-13-051 THE TOTAL RETENTION WAS REDUCED BY 0.03 AC. THE TOTAL REAFFORESTATION WAS INCREASED BY 0.1 AC. AND THE TOTAL AFFORESTATION WAS INCREASED BY 0.05 AC. NETTING THE FOLLOWING:
 ON-SITE FOREST RETENTION PROVIDED: 1.06 AC.
 ON-SITE AFFORESTATION PROVIDED: 0.91 AC.
 FINAL NETTING IN THE AMOUNT OF 0.15 AC. HAS BEEN PROVIDED WITH THE INSTALLATION OF MAINTENANCE AGREEMENT UNDER F-02-35. EXISTING FOREST CONSERVATION EASEMENT #1 HAS BEEN CANCELED UNDER F-02-35. WERE ABANDONED AND REFINANCED WITH FOREST CONSERVATION EASEMENTS B1, B2, C1, D1, D2 UNDER F-10-005, THEREFORE A FOREST CONSERVATION EASEMENT #1 HAS BEEN ESTABLISHED UNDER F-10-005. COUNTY FOREST CONSERVATION FUND UNDER F-10-005. WERE ESTABLISHED UNDER F-13-051.

| No. | Northing | Eastng |
|-----|-----------|------------|
| 1 | 549728.52 | 1375730.42 |
| 2 | 544529.48 | 1373733.20 |
| 3 | 544818.59 | 1373802.26 |
| 4 | 544990.33 | 1373421.26 |
| 5 | 545131.50 | 1373390.80 |
| 6 | 545369.14 | 1373540.94 |
| 7 | 545847.02 | 1373857.41 |
| 8 | 546779.89 | 1373587.79 |
| 9 | 547227.73 | 1373203.33 |
| 10 | 547882.96 | 1373508.26 |
| 11 | 548014.96 | 1373598.01 |
| 12 | 548023.12 | 1373802.84 |
| 13 | 547547.96 | 1373660.15 |
| 14 | 547324.50 | 1374248.45 |
| 15 | 546857.05 | 1375133.02 |
| 16 | 546482.62 | 1374544.50 |
| 17 | 546432.45 | 1374397.40 |
| 18 | 550493.44 | 1376741.17 |
| 19 | 550080.18 | 1376244.97 |



LOCATION MAP
SCALE: 1"=300'

| | |
|---|------------|
| LOCATION: TAX MAP 43 BLOCK 5 PARCELS 14, P/O 5, & 588 | |
| 1ST ELECTION DISTRICT | |
| EXISTING ZONING: CAC | |
| GROSS AREA OF PROPERTY: 75.07 AC. | |
| FLOODPLAIN AREA: 10.07 AC. | |
| AREA OF STEEP SLOPES: 1.80 AC. | |
| AREA OF PROPOSED PUBLIC RIGHT-OF-WAY: BLUE STREAM DRIVE | |
| AREA OF OPEN SPACE LOTS G-1 & G-2: 18.16 AC. | |
| AREA OF PARCELS H-M: 53.09 AC. | |
| NET AREA OF PROJECT: 69.72 AC. | |
| PARKING TABULATION: | |
| ON-STREET PARKING: 0 SPACES | 90 SPACES |
| BLUE STREAM DRIVE: 0 SPACES | 29 SPACES |
| QUIDDITCH LANE: 0 SPACES | 29 SPACES |
| TOTAL SPACES: 0 SPACES | 119 SPACES |

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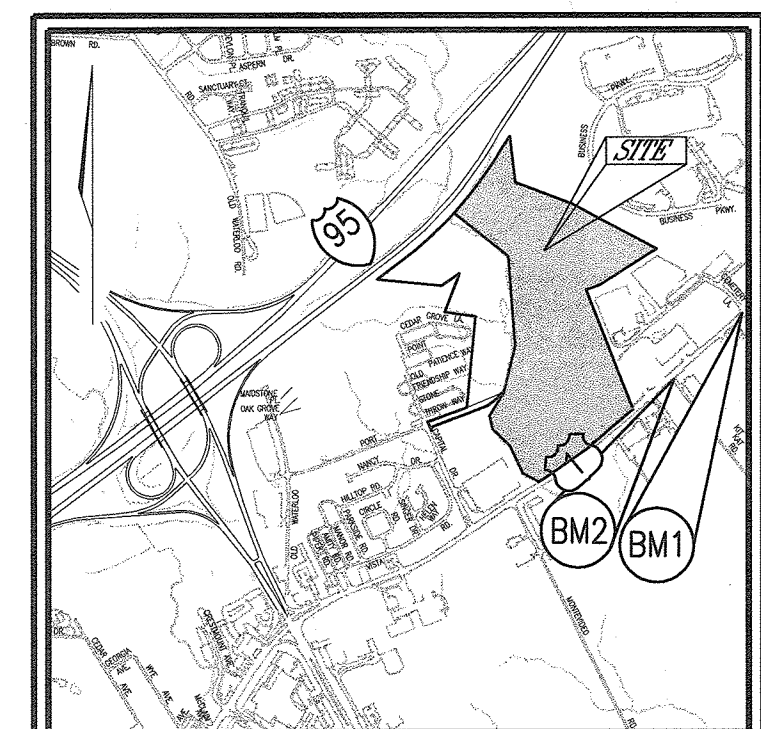
BENCHMARKS

| PHASE NUMBER | ALLOCATION YEAR | NO. OF ROUTE 1 CAC ALLOCATIONS | NO. OF MINU ALLOCATIONS | TOTAL NO. OF ALLOCATIONS | PRELIMINARY PLAN DUE DATE |
|-----------------|-----------------|--------------------------------|-------------------------|--------------------------|--|
| I (P-06-011) | 2010 | 125 | 22 | 147 | BY MAY 3, 2008 |
| II (P-06-004) | 2011 | 138 | 29 | 167 | BETWEEN JULY 1, 2008 AND APRIL 1, 2009 |
| III (P-10-009) | 2012 | 137 | 24 | 161 | BETWEEN JULY 1, 2009 AND APRIL 1, 2010 |
| IV (P-11-002) | 2013 | 150 | 27 | 177 | BETWEEN JULY 1, 2010 AND APRIL 1, 2011 |
| V (P-12-002) | 2014 | 150 | 27 | 177 | BETWEEN JULY 1, 2011 AND APRIL 1, 2012 |
| VI (P-13-002) | 2015 | 150 | 26 | 176 | BETWEEN JULY 1, 2012 AND APRIL 1, 2013 |
| VII (P-14-002) | 2016 | 150 | 26 | 176 | BETWEEN JULY 1, 2013 AND APRIL 1, 2014 |
| VIII (P-15-002) | 2017 | 145 | 28 | 171 | BETWEEN JULY 1, 2014 AND APRIL 1, 2015 |

48. ON AUGUST 2, 2007 AND JULY 7, 2008, THE DEPARTMENT OF PLANNING AND ZONING HAS TENTATIVELY PLANNING AREA IN ACCORDANCE WITH THE FOLLOWING ALLOCATION SCHEDULE AND MILESTONES:
 SUBDIVISION IN THE ROUTE 1 PLANNING AREA IN ACCORDANCE WITH THE FOLLOWING ALLOCATION SCHEDULE AND MILESTONES:
 PHASE NUMBER ALLOCATION YEAR NO. OF ROUTE 1 CAC ALLOCATIONS NO. OF MINU ALLOCATIONS TOTAL NO. OF ALLOCATIONS PRELIMINARY PLAN DUE DATE

LEGEND

- PUBLIC FOREST CONSERVATION EASEMENT B (AFFORESTATION)
- PUBLIC FOREST CONSERVATION EASEMENT A (RETENTION)
- PUBLIC FOREST CONSERVATION EASEMENT C (RETENTION)
- PUBLIC 100 YEAR FLOODPLAIN, DRAINAGE AND UTILITY EASEMENT
- EXISTING PUBLIC 100 YEAR FLOODPLAIN, DRAINAGE AND UTILITY EASEMENT
- EXISTING PUBLIC SEWER EASEMENT
- PUBLIC 10' TREE MAINTENANCE EASEMENT
- PRIVATE SWM & UTILITY EASEMENT



VICINITY MAP
SCALE: 1"=200'

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 COMPLIED WITH ALL APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONSTRUCTED DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

- Existing Contour
- Proposed Contour
- Spot Elevation
- Direction of Flow
- Tree Protection Fence
- Existing Trees to Remain
- Light Poles
- Stabilized Construction Entrance
- Silt Fence
- Super Silt Fence
- Earth Dike
- Limit of Disturbance
- Erosion Control Matting
- Baffle
- Rip-Rap Inflow Protection
- Gabion Inflow Protection
- Removable Pumping Station
- Proposed Drainage Divide
- Existing Drainage Divide
- Curb Inlet Protection
- Standard Inlet Protection
- At Grade Inlet Protection
- Sump Pit
- No Woody Vegetation Easement

| NO. | REVISION | DATE |
|-----|--|-----------|
| 1 | REVISE PLAN TO ADD TWO NEW SEDIMENT BASINS TO REPLACE EXISTING ONE | 6/20/12 |
| 2 | REVISE PLAN TO REMOVE INCORRECT DETAIL | 11/21/12 |
| 3 | REVISE MASS GRADING/REVISE WATER TO CATCH POND | 6/18/2011 |
| 1 | REVISE PLAN TO ACCOMMODATE ZONING CHANGE REVISIONS TO BLUE STREAM DRIVE AND THE ADDITION OF QUIDDITCH LANE | 12/08/10 |

TITLE SHEET
BLUE STREAM
 (FORMERLY KNOWN AS OVERLOOK AT BLUE STREAM)
 OPEN SPACE LOTS G-1 AND G-2 AND BUILDABLE BULK PARCELS H-M

TAX MAP 43, BLOCKS 4 AND 5
 1ST ELECTION DISTRICT

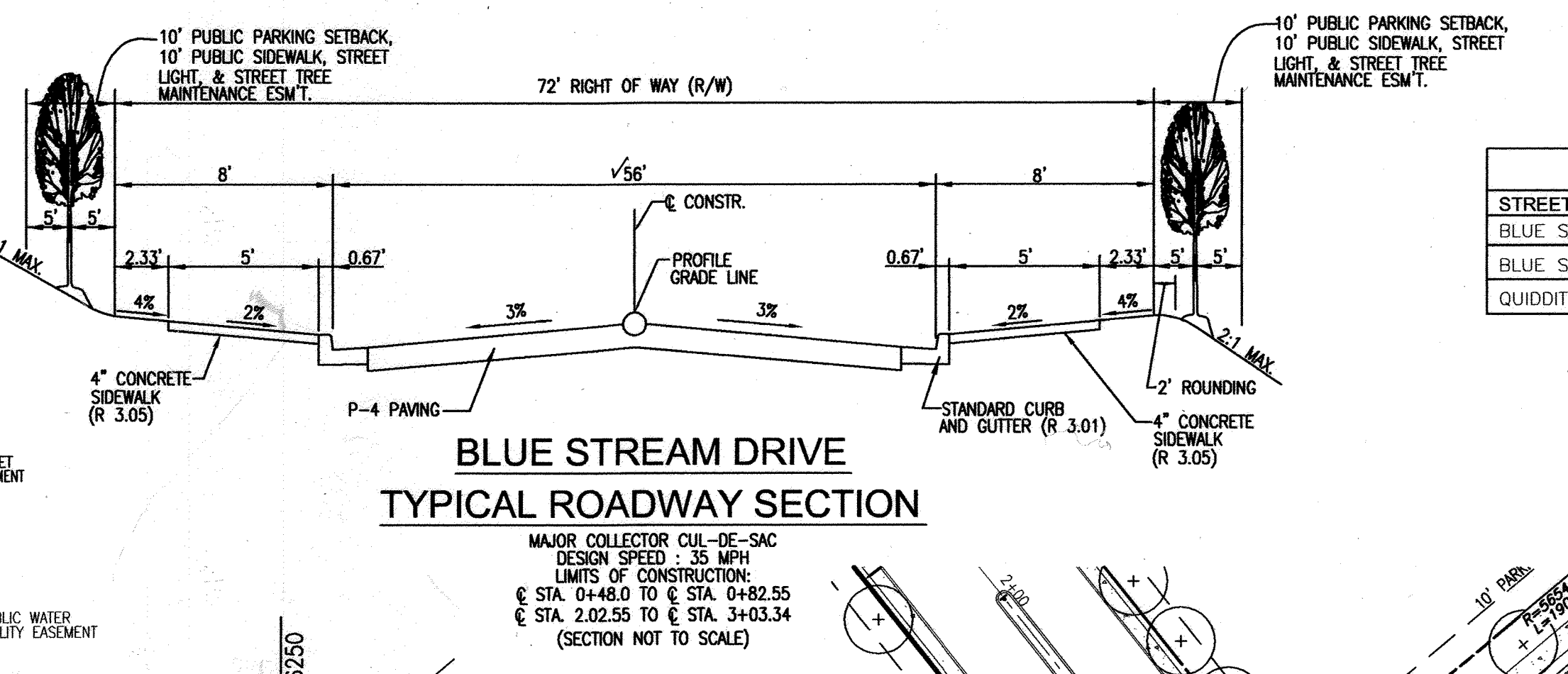
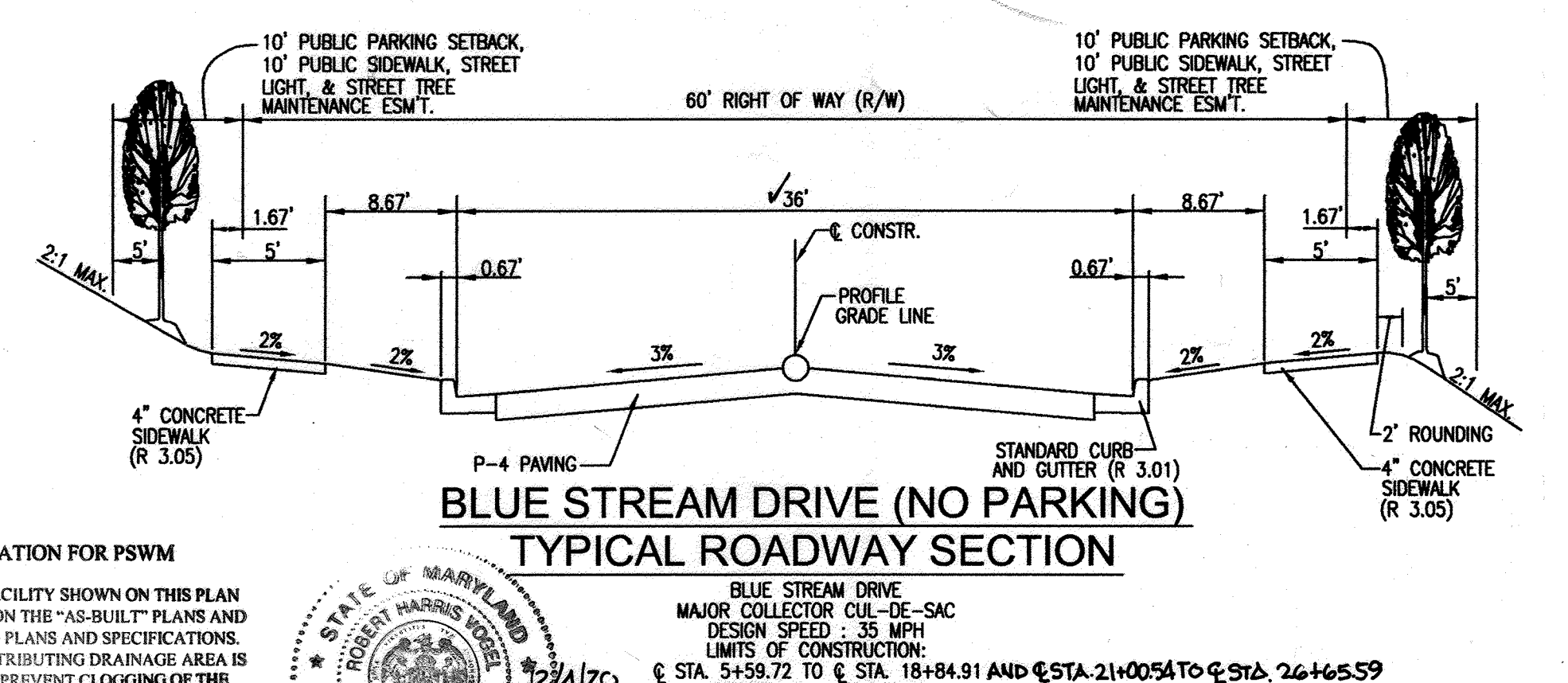
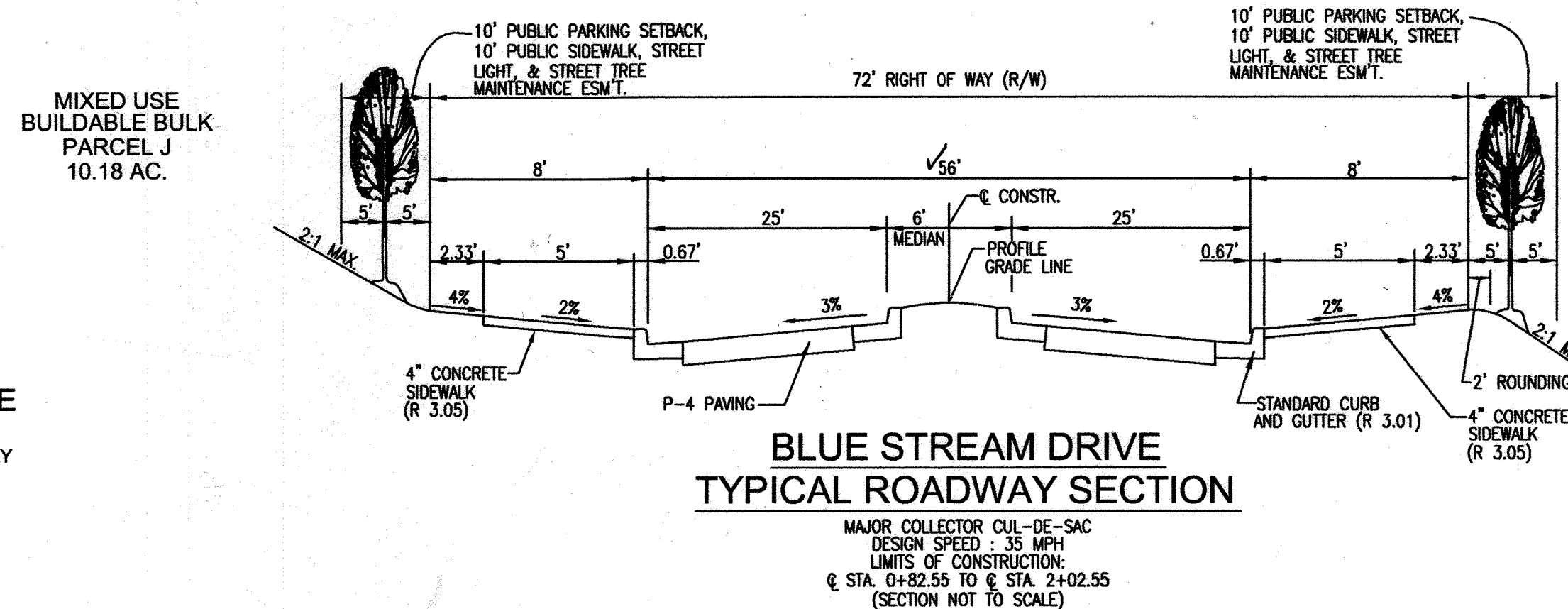
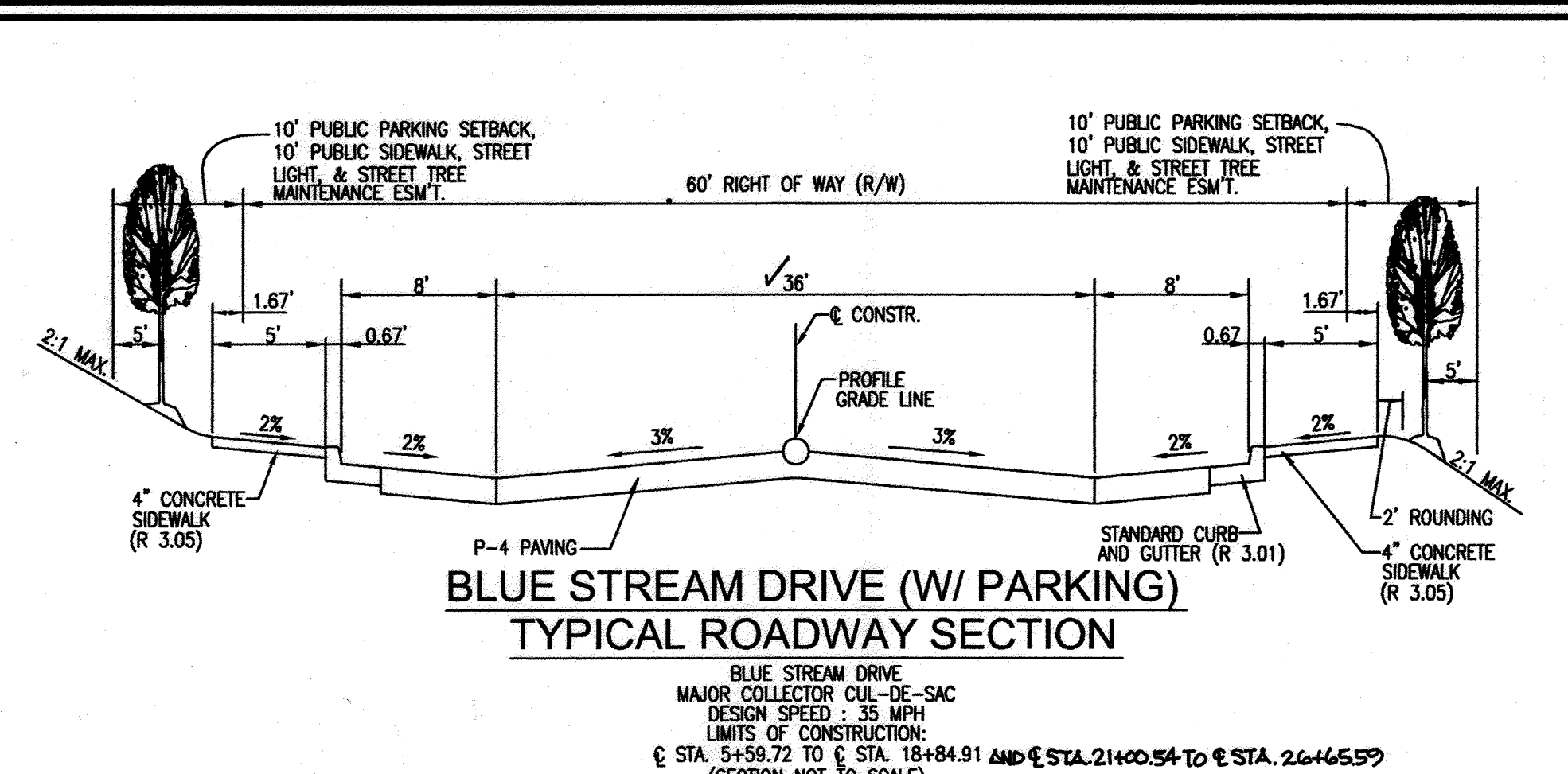
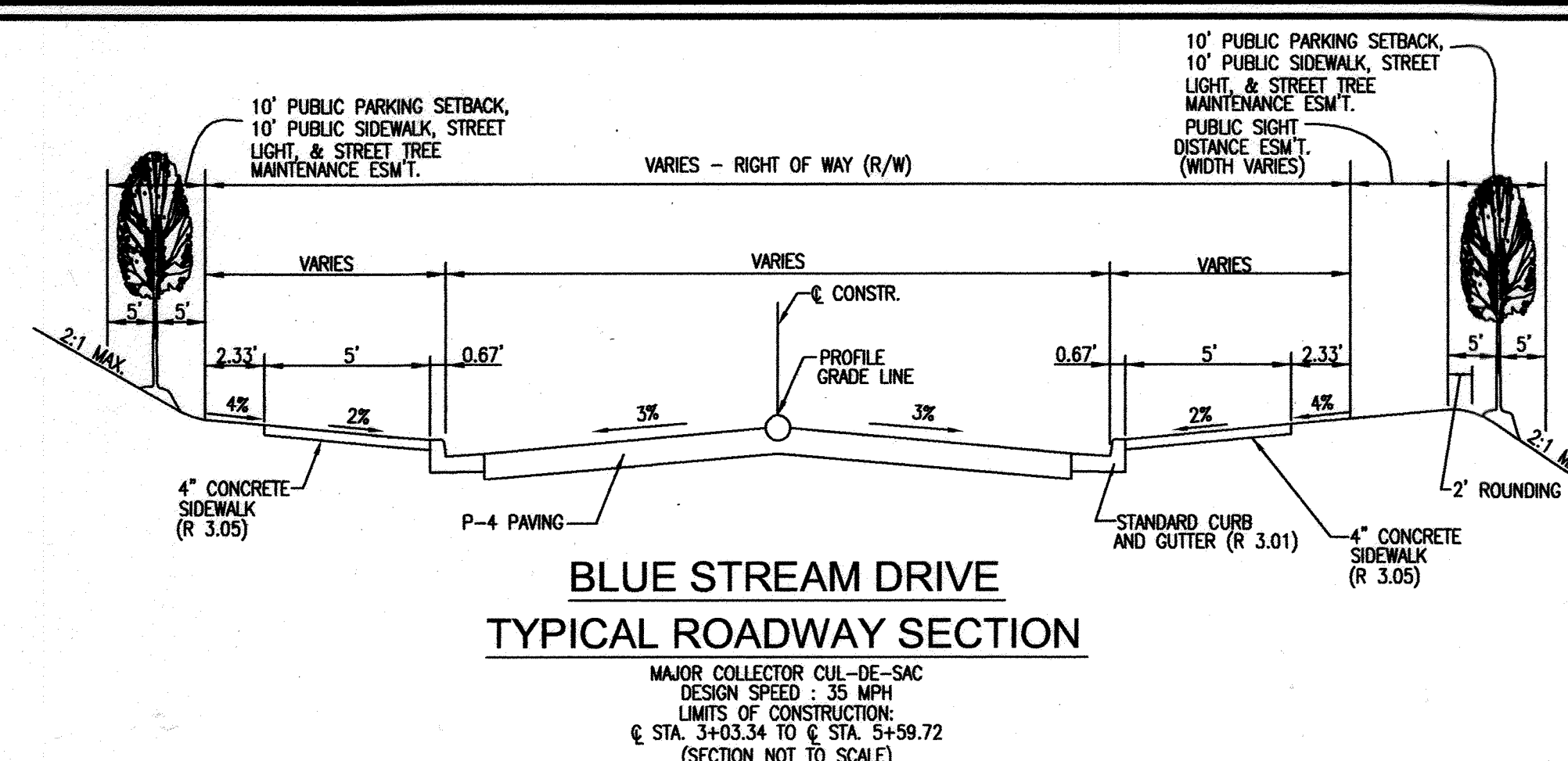
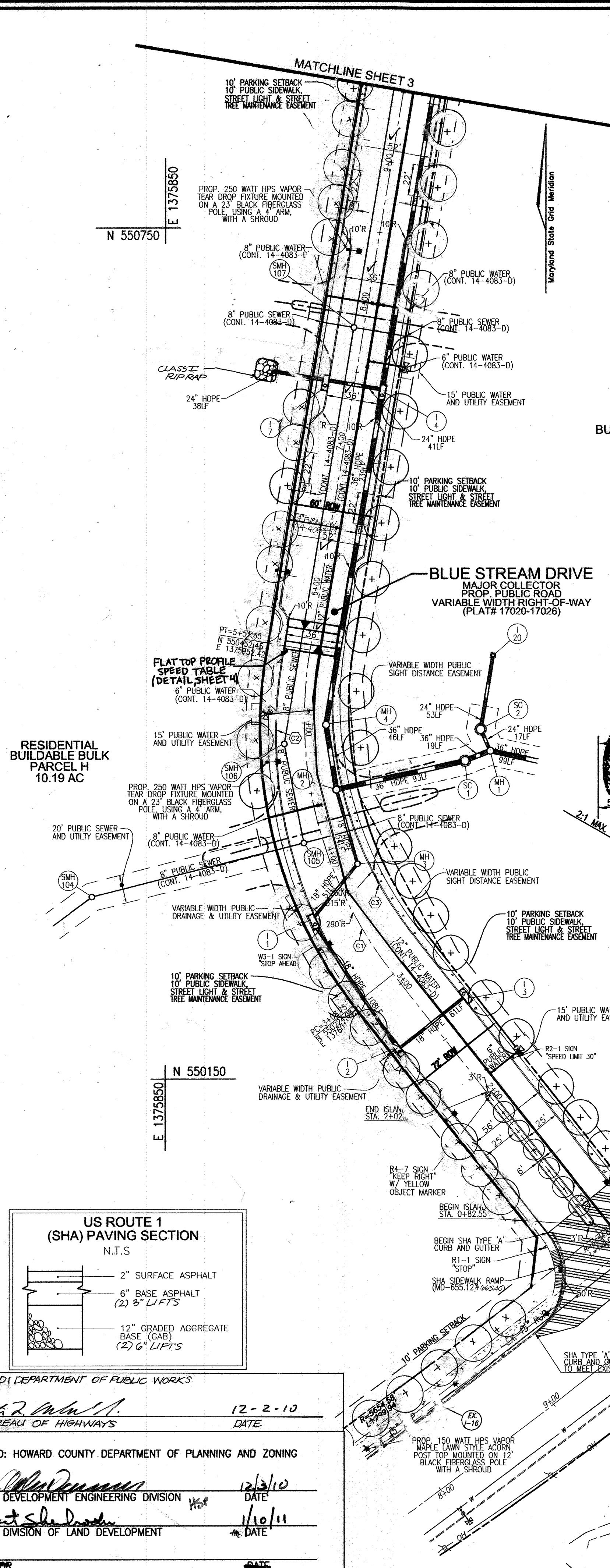
PARCEL P/O 5, 14 AND 558
 HOWARD COUNTY, MARYLAND

FREDERICK WARD ASSOCIATES, INC.
 ENGINEERS: 7125 Riverwood Drive Columbia, Maryland 21046-2354
 ARCHITECTS: Phone: 410-290-9550 Fax: 410-720-6226
 SURVEYORS: Bel Air, Maryland Columbia, Maryland Warren, Virginia

DESIGN BY: DLW
 DRAWN BY: JAJUD
 CHECKED BY: MMR
 DATE: MARCH, 2003
 SCALE: (AS SHOWN)
 W.O. NO.: 2019038

REF: S-99-08, WP-99-80, P-00-20, WP-00-116

1 SHEET OF 28



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.

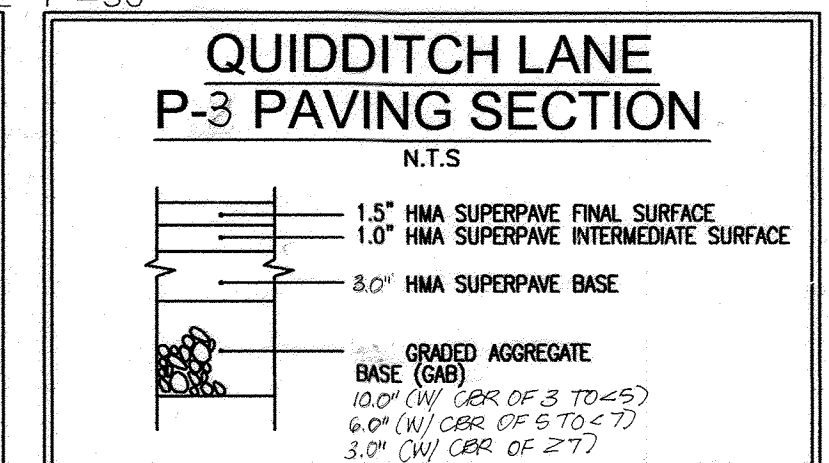
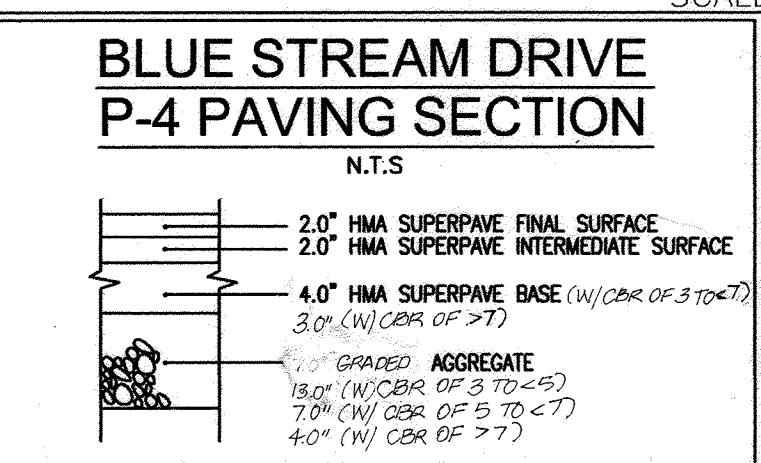
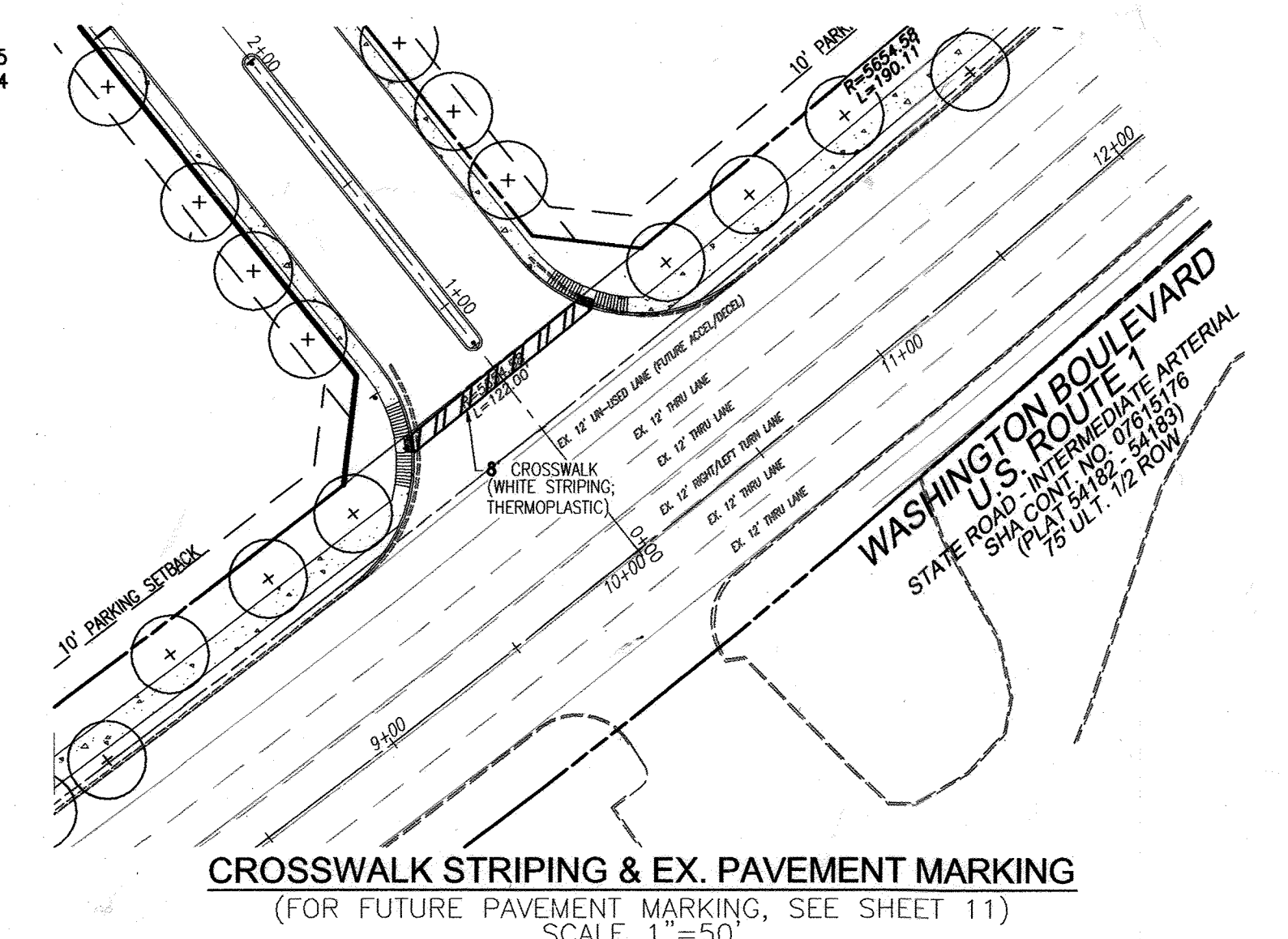
J.E. NAME: 1593 12/14/20
P.E.# DATE
STATE OF MARYLAND PROFESSIONAL ENGINEER

| ROAD CLASSIFICATION | | | |
|------------------------------|-----------------|--------------|-----------------------|
| STREET NAME | CLASSIFICATION | DESIGN SPEED | LIMITS |
| BLUE STREAM DRIVE | MAJOR COLLECTOR | 35 | STA. 0+00 TO 18+84.91 |
| BLUE STREAM DRIVE CUL-DE-SAC | MAJOR COLLECTOR | 35 | STA. 0+00 TO 4+71.81 |
| QUIDDITCH LANE | ACCESS STREET | 25 | STA. 0+00 TO 5+24.21 |

| STREET TREE CALCULATIONS | | | |
|-------------------------------|-------------|--------------|--------------|
| STREET NAME | LINEAR FEET | NO. REQUIRED | NO. PROVIDED |
| BLUE STREAM DRIVE | 4045/40 | 101 | 101 |
| QUIDDITCH LANE | 935/40 | 23 | 23 |
| WASHINGTON BLVD. (US. RTE. 1) | 1155/40 | 29 | 29 |

| CURVE TABLE | | | | | | |
|-------------|--------|--------|-------------|---------|-----------------|--------------|
| CURVE | RADIUS | LENGTH | DELTA ANGLE | TANGENT | CHORD DIRECTION | CHORD LENGTH |
| C1 | 290.00 | 242.90 | 47°59'26" | 129.09 | N14°28'39"W | 235.86 |
| C2 | 315.00 | 263.84 | 47°59'26" | 140.22 | N14°28'39"W | 256.20 |
| C3 | 260.00 | 217.77 | 47°59'26" | 115.73 | N14°28'39"W | 211.46 |
| C4 | 200.00 | 172.92 | 49°32'16" | 92.28 | N74°44'56"E | 167.58 |
| C5 | 180.00 | 98.24 | 31°16'10" | 50.37 | N83°52'59"E | 97.02 |
| C6 | 220.00 | 124.77 | 32°29'43" | 64.11 | N83°16'12"E | 123.11 |
| C7 | 188.00 | 15.45 | 4°42'35" | 7.73 | N62°06'26"E | 15.45 |
| C8 | 212.00 | 7.04 | 1°54'11" | 3.52 | N62°50'41"E | 7.04 |

| STREET LIGHT TABLE | | | |
|------------------------|-------|---------|--------------|
| STREET NAME | STA. | OFFSET | FIXTURE TYPE |
| BLUE STREAM DRIVE | 1+00 | 34.82 R | |
| BLUE STREAM DRIVE | 2+05 | 35.14 L | |
| BLUE STREAM DRIVE | 3+50 | 33.17 L | |
| BLUE STREAM DRIVE | 4+75 | 27.89 L | |
| BLUE STREAM DRIVE | 6+03 | 32.87 L | |
| BLUE STREAM DRIVE | 8+35 | 20.17 L | |
| BLUE STREAM DRIVE | 10+80 | 20.17 L | |
| BLUE STREAM DRIVE | 11+65 | 21.52 R | |
| BLUE STREAM DRIVE | 13+27 | 20.17 L | |
| BLUE STREAM DRIVE | 15+19 | 20.17 L | |
| BLUE STREAM DRIVE | 17+45 | 32.67 R | |
| BLUE STREAM DRIVE | 19+15 | 36.17 L | |
| BLUE STREAM DRIVE | 19+15 | 36.17 R | |
| BLUE STREAM DRIVE | 20+48 | 36.82 L | |
| BLUE STREAM DRIVE | 20+48 | 36.82 R | |
| QUIDDITCH LANE | 0+45 | 16.00 R | |
| QUIDDITCH LANE | 2+50 | 16.00 R | |
| QUIDDITCH LANE | 4+75 | 16.00 R | |
| US 1 (WASHINGTON BLVD) | 6+35 | 43.52 L | |
| US 1 (WASHINGTON BLVD) | 6+15 | 47.16 L | |
| US 1 (WASHINGTON BLVD) | 6+98 | 52.24 L | |
| US 1 (WASHINGTON BLVD) | 7+75 | 53.70 L | |
| US 1 (WASHINGTON BLVD) | 8+53 | 53.61 L | |
| US 1 (WASHINGTON BLVD) | 9+35 | 54.64 L | |
| US 1 (WASHINGTON BLVD) | 10+90 | 53.85 L | |
| US 1 (WASHINGTON BLVD) | 11+60 | 53.84 L | |
| US 1 (WASHINGTON BLVD) | 12+40 | 53.96 L | |
| US 1 (WASHINGTON BLVD) | 13+20 | 53.61 L | |
| US 1 (WASHINGTON BLVD) | 14+00 | 45.89 L | |
| US 1 (WASHINGTON BLVD) | 14+80 | 41.45 L | |
| US 1 (WASHINGTON BLVD) | 15+60 | 41.39 L | |
| US 1 (WASHINGTON BLVD) | 16+40 | 41.37 L | |
| US 1 (WASHINGTON BLVD) | 17+20 | 41.37 L | |



OWNER/DEVELOPER
BLUE STREAM, LLC.
P.O. BOX 416
ELLCOTT CITY, MD 21041
C/O ARNOLD SAGNER
410-465-2020

APPROVED: DEPARTMENT OF PUBLIC WORKS
Witherell, M. 12-2-10
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
12/3/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

1/10/11
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

| NO. | REVISION | DATE |
|-----|---|----------|
| 10 | REVISE PLAN TO ADD NOTES FOR TREE CALCULATIONS TO BLUE STREAM DRIVE | 05-01-19 |
| 9 | ADD TWO SPEED HUMPS | 10/12/17 |
| 8 | REVISED TO ADD EXTENSION TO BLUE STREAM DRIVE AND ADJUST PUBLIC STORM DRAIN ACCORDINGLY | 07/31/14 |
| 7 | REVISE WATER MAIN PIPE MATERIAL, GRADING, AND AMENITY AREA | 09/01/11 |
| 2 | REVISE ROAD PLANS, SWM, STORM DRAIN, ETC. | 10/14/10 |
| 1 | REVISION | DATE |

REVISED FINAL ROAD CONSTRUCTION PLAN
ROAD CONSTRUCTION PLAN
BLUE STREAM
FORMERLY KNOWN AS
(THE OVERLOOK AT BLUE STREAM)
OPEN SPACE LOTS C-1 & C-2 AND
BUILDABLE BULK PARCELS H-M

TAX MAP 43 GRID 4 & 5
1ST ELECTION DISTRICT

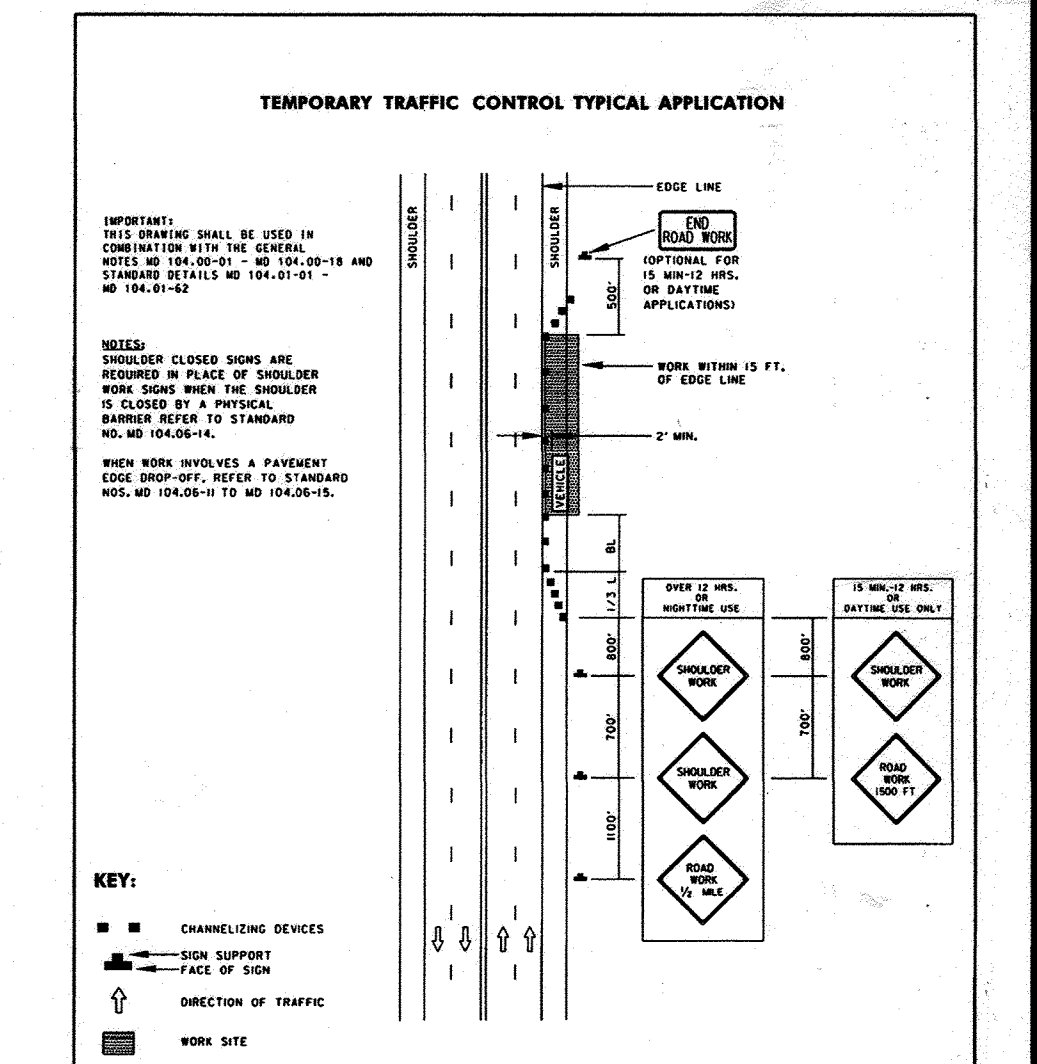
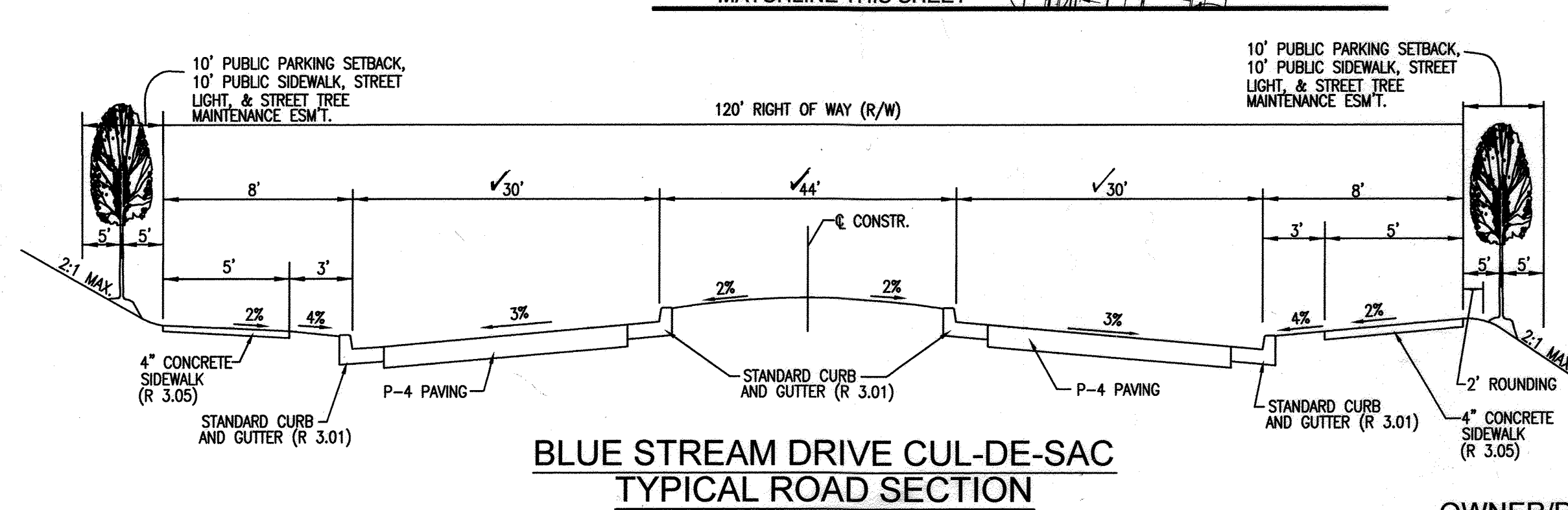
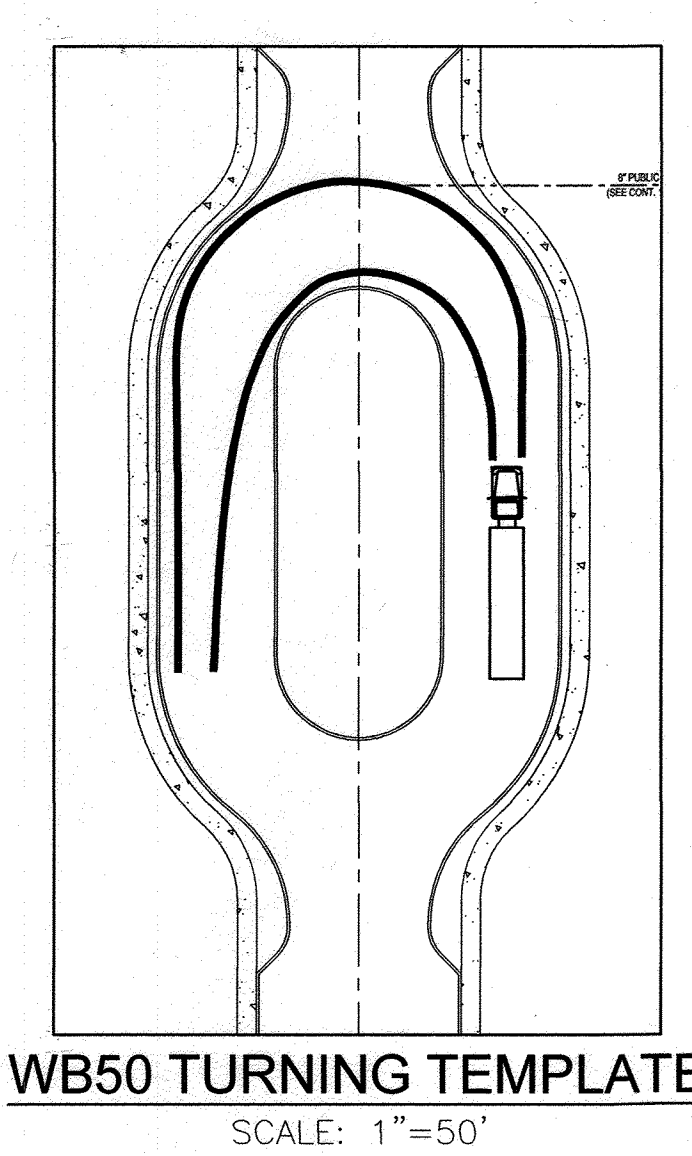
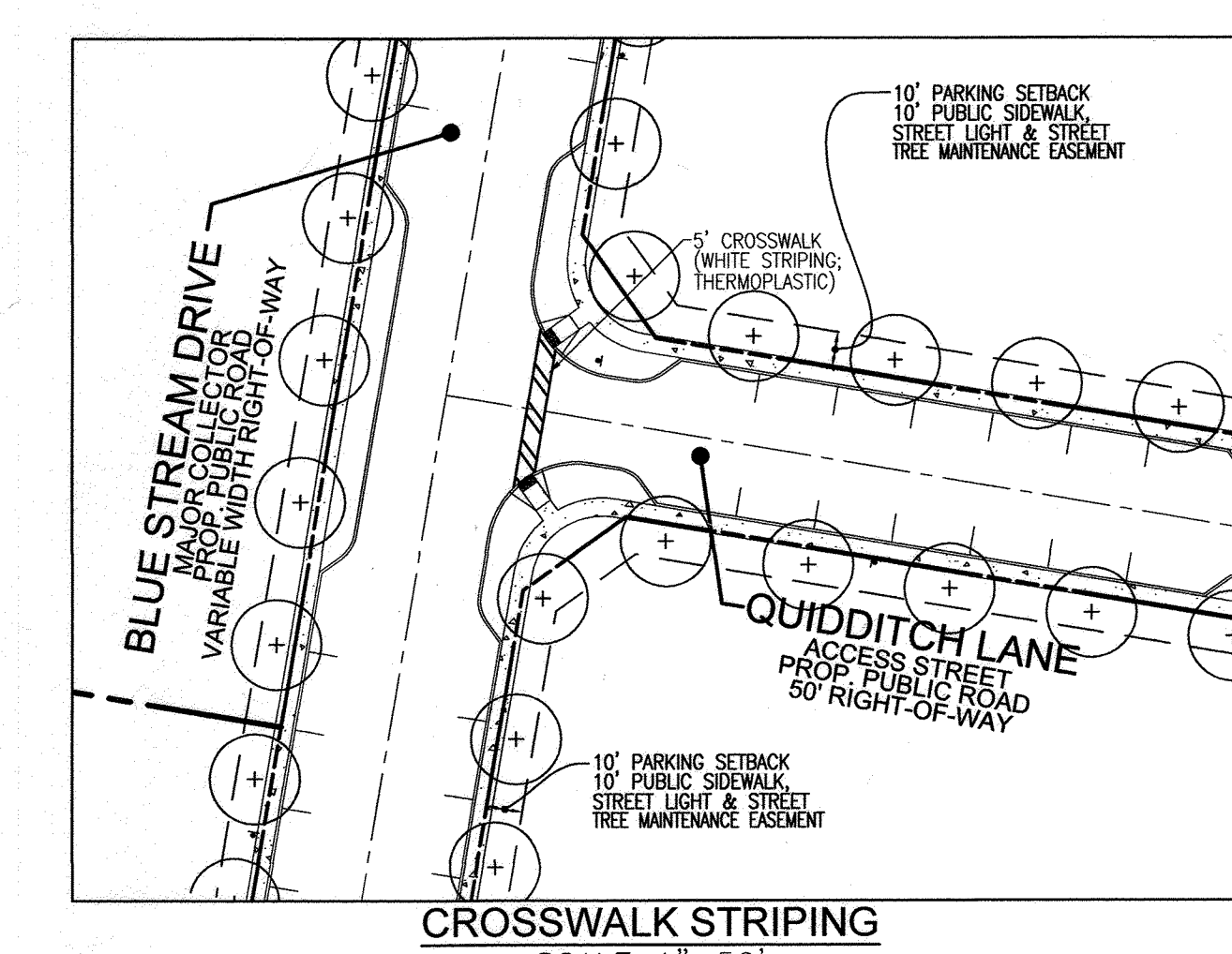
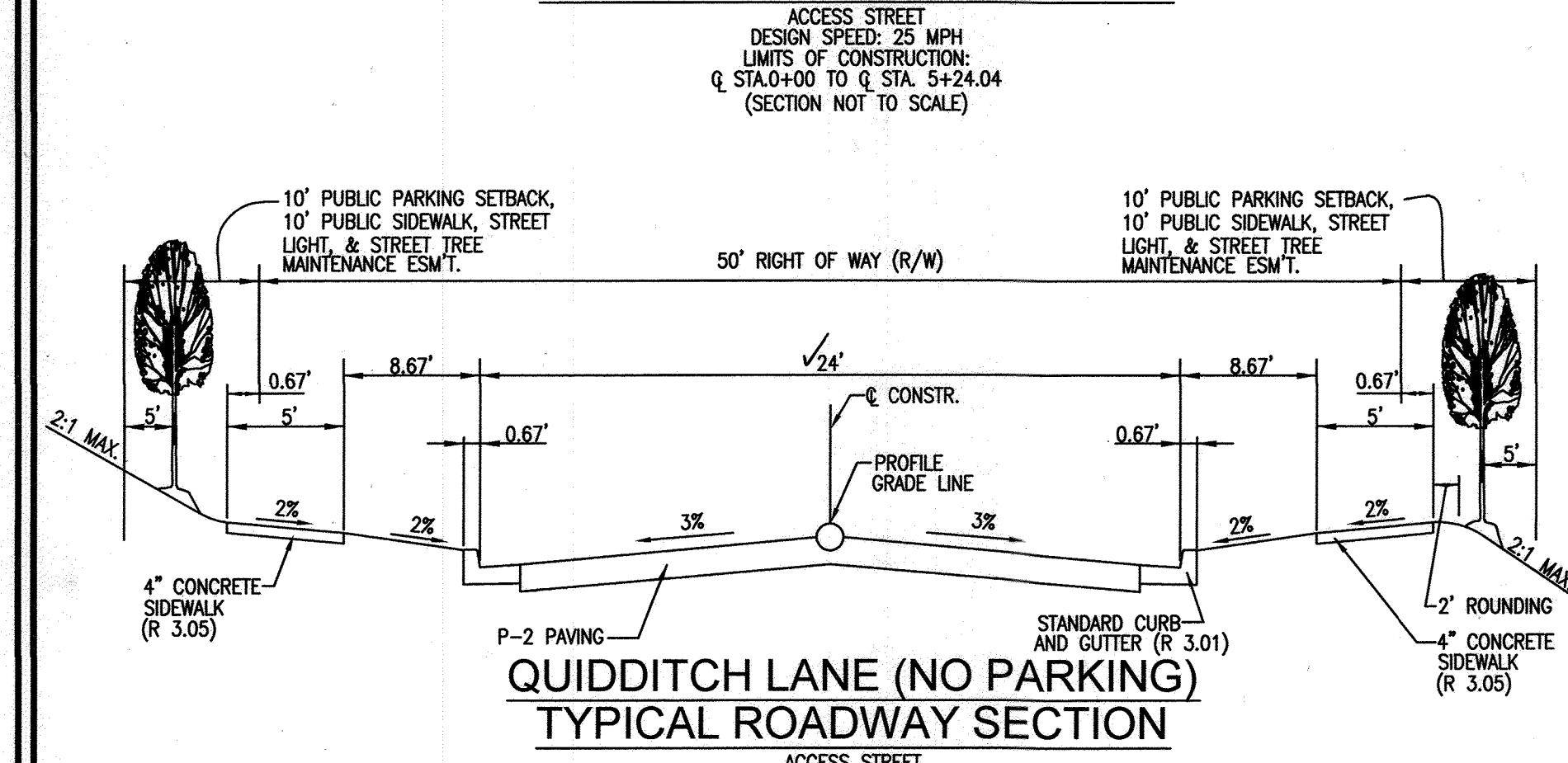
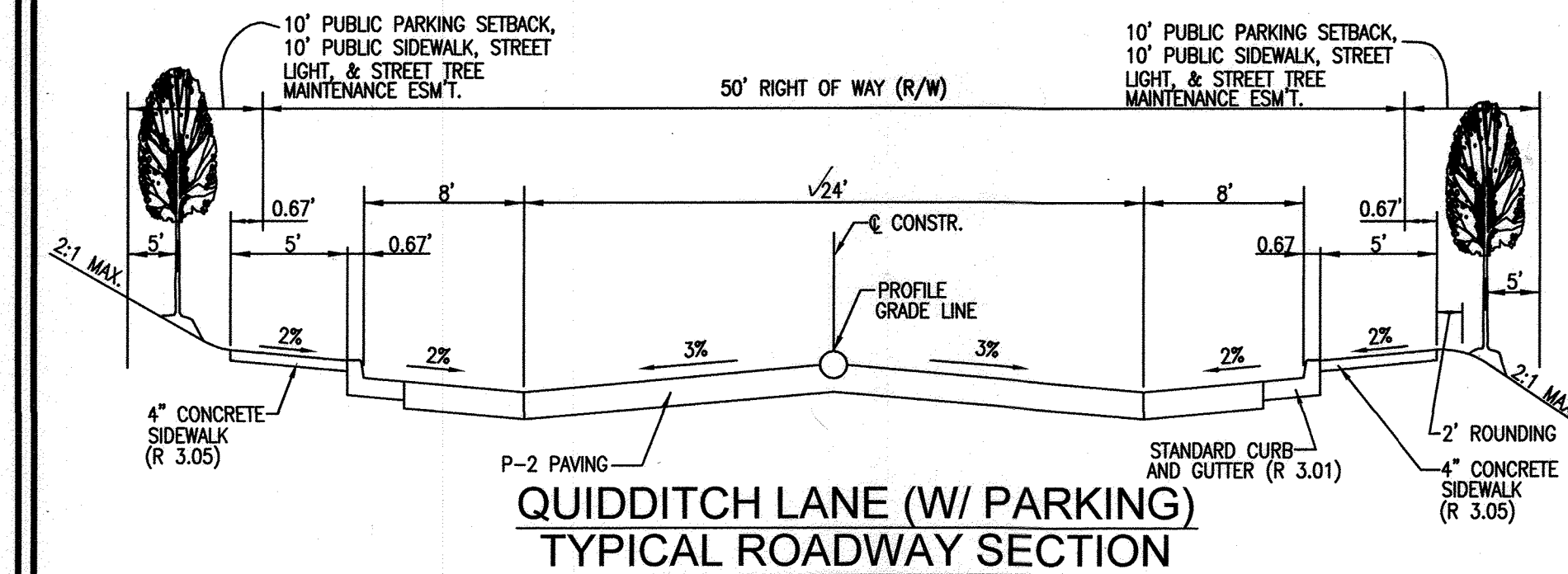
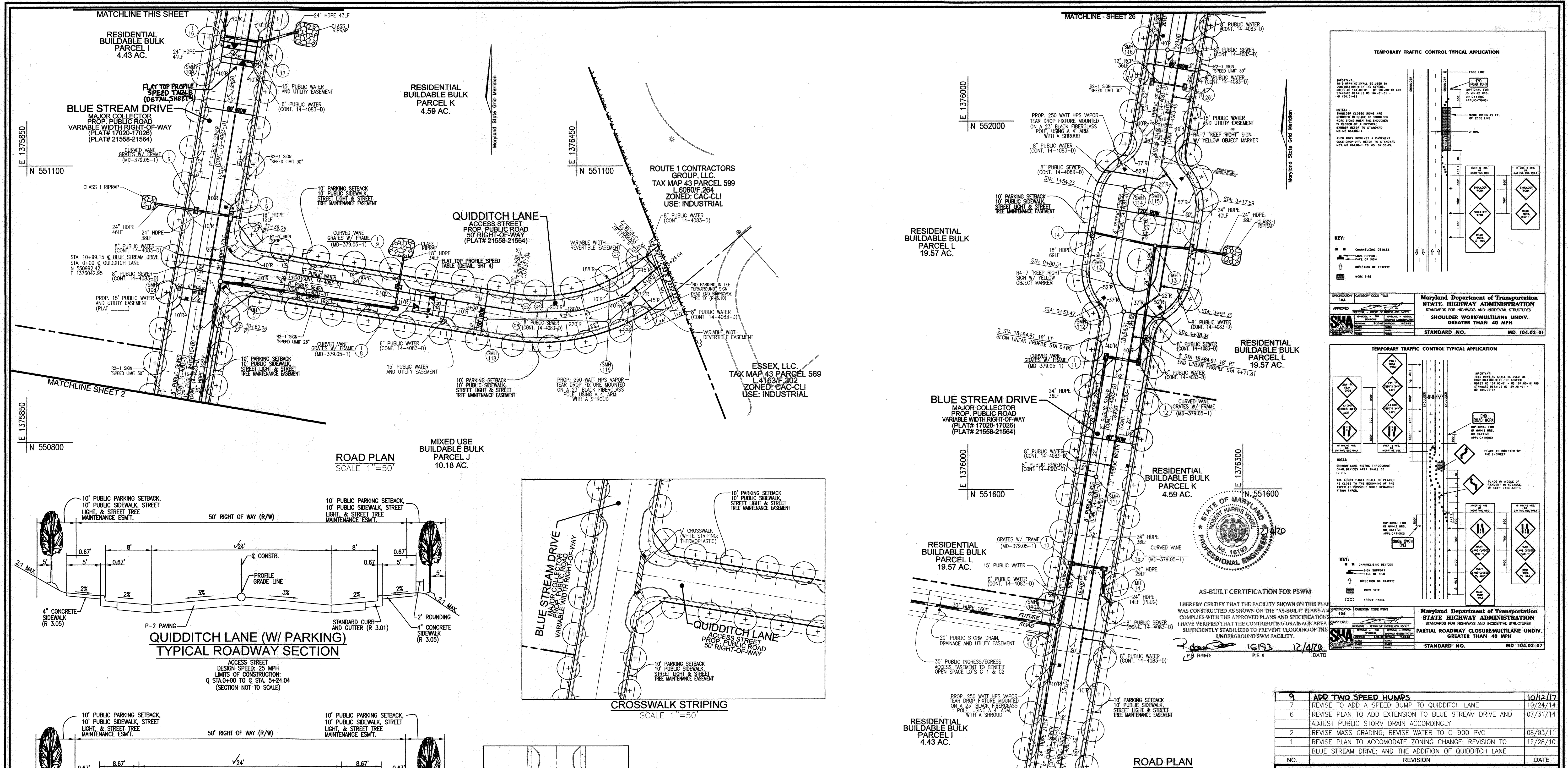
PARCEL P/O S, 14 & 553
HOWARD COUNTY, MARYLAND

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

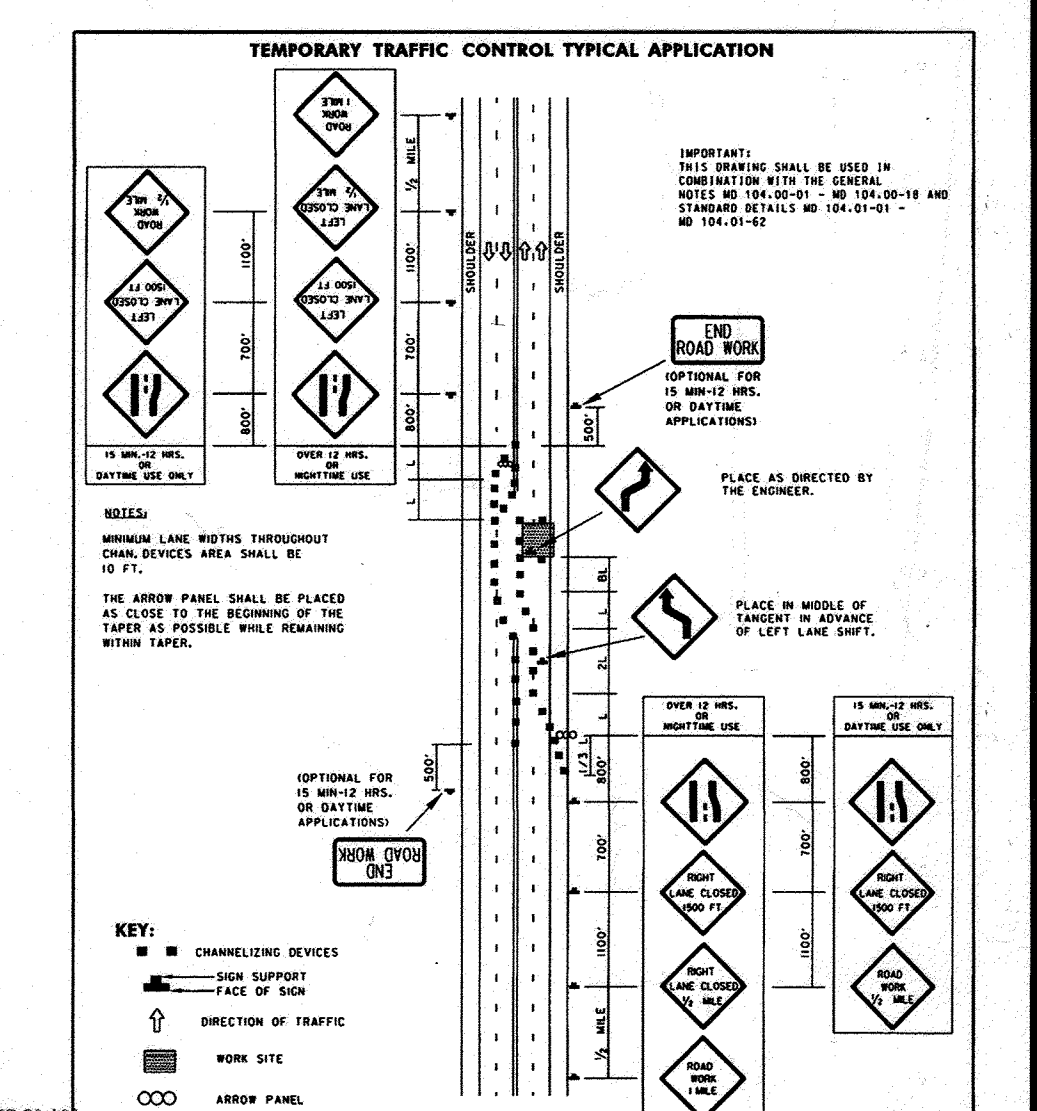
PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A duly licensed PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE 08-27-2012

DESIGN BY: RHV
DRAWN BY: RHV
CHECKED BY: DZ
DATE: SEPTEMBER 2010
SCALE: AS SHOWN
W.O. NO.: 06-26

2 SHEET OF 28



Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
SHOULDER WORK/MULTILANE UNDIV.
GREATER THAN 40 MPH
STANDARD NO. MD 104.03-01



Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
PARTIAL ROADWAY CLOSURE/MULTILANE UNDIV.
GREATER THAN 40 MPH
STANDARD NO. MD 104.03-07



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 THIS UNDERGROUND SWM FACILITY.
P.E. NAME: R. H. VOGEL, P.E. # 18193 DATE: 12/18/20

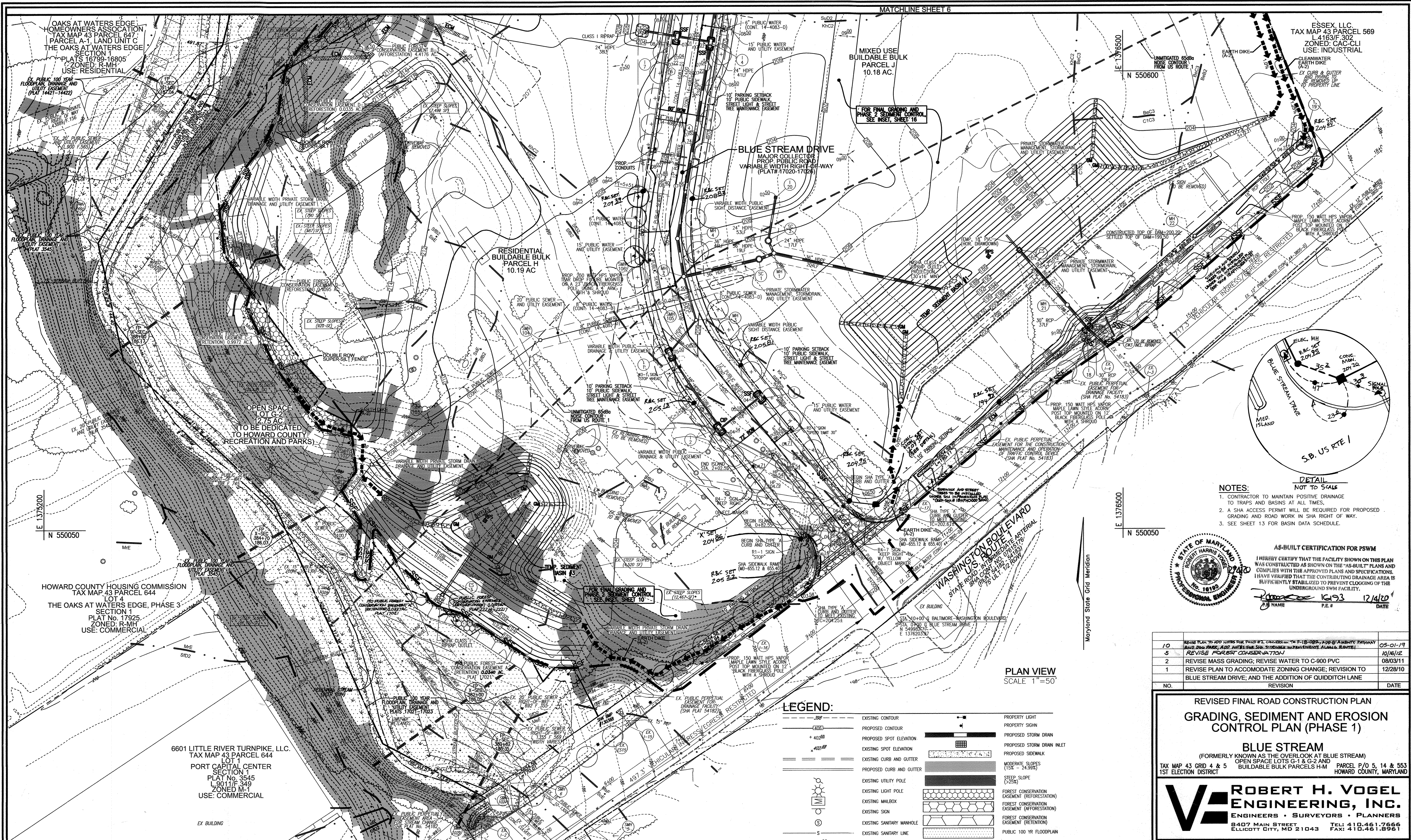
| NO. | REVISION | DATE |
|-----|---|----------|
| 9 | ADD TWO SPEED HUMPS | 10/12/17 |
| 7 | REVISE TO ADD A SPEED BUMP TO QUIDDITCH LANE | 10/24/14 |
| 6 | REVISE PLAN TO ADD EXTENSION TO BLUE STREAM DRIVE AND ADJUST PUBLIC STORM DRAIN ACCORDINGLY | 07/31/14 |
| 2 | REVISE MASS GRADING; REVERSE WATER TO C-900 PVC | 08/03/11 |
| 1 | REVISE PLAN TO ACCOMMODATE ZONING CHANGE; REVISION TO BLUE STREAM DRIVE; AND THE ADDITION OF QUIDDITCH LANE | 12/28/10 |

REVISED FINAL ROAD CONSTRUCTION PLAN
ROAD CONSTRUCTION PLAN
BLUE STREAM
(FORMERLY KNOWN AS THE OVERLOOK AT BLUE STREAM)
TAX MAP 43 GRID 4 & 5 BUILDABLE BULK PARCELS H-M PARCEL P/O 5, 14 & 553 HOWARD COUNTY, MARYLAND
ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET TEL: 410.461.7666
ELlicott CITY, MD 21043 FAX: 410.461.6961
PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. MY EXPIRATION DATE: 08-27-2018
DESIGN BY: RHV
DRAWN BY: DZE
CHECKED BY: RHV
DATE: MARCH 2015
SCALE: AS SHOWN
W.O. NO.: 06-26
3 OF 28

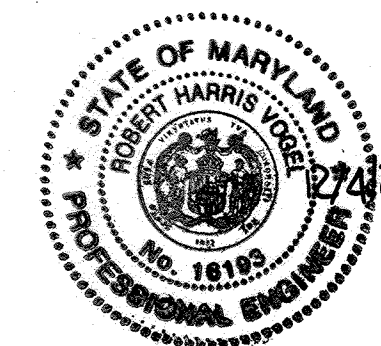
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
10-22-15
DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION
11-04-15
DATE
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
10/21/2015
DATE
CHIEF, BUREAU OF HIGHWAYS

OWNER/DEVELOPER
BLUE STREAM, LLC
P.O. BOX 416
ELlicott CITY, MD 21041
C/O ARNOLD SAGNER
410-465-2020



- NOTES:**
- CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE TO TRAPS AND BASINS AT ALL TIMES.
 - A SHA ACCESS PERMIT WILL BE REQUIRED FOR PROPOSED GRADING AND ROAD WORK IN SHA RIGHT OF WAY.
 - SEE SHEET 13 FOR BASIN DATA SCHEDULE.



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 H. Vogel, P.E. 12/18/20
 NAME: R.H.V. P.E.#: 18193 DATE: 12/18/20

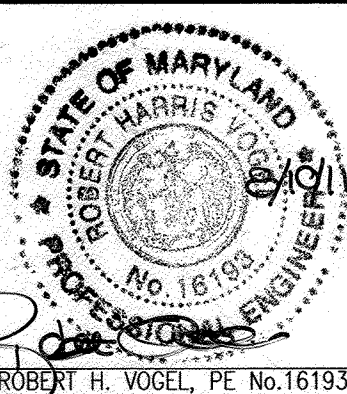
| NO. | REVISION | DATE |
|-----|---|----------|
| 10 | REVISE PLAN TO ADD NOTES FOR PHASE 2 CONSTRUCTION OF F-18-025-010 AT A MEMPHIS PARKWAY AND DICK PARK, ADD NOTES FOR SHA STORMWATER IMPROVEMENTS ALONG ROUTE 1 | 05-01-19 |
| 5 | REVISE FOREST CONSERVATION | 10/16/12 |
| 2 | REVISE MASS GRADING; REVISE WATER TO C-900 PVC | 08/03/11 |
| 1 | REVISE PLAN TO ACCOMMODATE ZONING CHANGE; REVISION TO BLUE STREAM DRIVE; AND THE ADDITION OF QUIDDITCH LANE | 12/28/10 |

**REVISED FINAL ROAD CONSTRUCTION PLAN
 GRADING, SEDIMENT AND EROSION CONTROL PLAN (PHASE 1)**

BLUE STREAM
 (FORMERLY KNOWN AS THE OVERLOOK AT BLUE STREAM)
 TAX MAP 43 GRID 4 & 5 OPEN SPACE LOTS G-1 & G-2 AND BUILDABLE BULK PARCELS H-M PARCEL P/O 5, 14 & 553 HOWARD COUNTY, MARYLAND

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

| DESIGN BY: | DATE: |
|-------------|-------------|
| RHV | AUGUST 2011 |
| CHECKED BY: | DATE: |
| RHV | AUGUST 2011 |
| SCALE: | W.O. NO.: |
| AS SHOWN | 06-26 |



OWNER/DEVELOPER
 BLUE STREAM, LLC.
 P.O. BOX 416
 ELLICOTT CITY, MD 21041
 C/O: ARNOLD SAGNER
 410-465-2020

5 SHEET OF 28

LEGEND:

| | | | |
|-----|---------------------------|-----|--|
| --- | EXISTING CONTOUR | --- | PROPOSED STORM DRAIN |
| --- | PROPOSED CONTOUR | --- | PROPOSED STORM DRAIN INLET |
| --- | PROPOSED SPOT ELEVATION | --- | PROPOSED SIDEWALK |
| --- | EXISTING SPOT ELEVATION | --- | MODERATE SLOPES (15% - 24.99%) |
| --- | EXISTING CURB AND GUTTER | --- | STEEP SLOPE (>25%) |
| --- | PROPOSED CURB AND GUTTER | --- | FOREST CONSERVATION EASEMENT (REFORESTATION) |
| --- | EXISTING UTILITY POLE | --- | FOREST CONSERVATION EASEMENT (AFFORESTATION) |
| --- | EXISTING LIGHT POLE | --- | FOREST CONSERVATION EASEMENT (RETENTION) |
| --- | EXISTING MAILBOX | --- | PUBLIC 100 YR FLOODPLAIN |
| --- | EXISTING SIGN | --- | SILT FENCE |
| --- | EXISTING SANITARY MANHOLE | --- | SUPER SILT FENCE |
| --- | EXISTING SANITARY LINE | --- | LIMIT OF DISTURBANCE |
| --- | EXISTING CLEANOUT | --- | URB OF INTRUSION PROTECTION |
| --- | EXISTING FIRE HYDRANT | --- | STABILIZED CONSTRUCTION ENTRANCE |
| --- | EXISTING WATER LINE | --- | PROPOSED STREET TREE |
| --- | EXISTING TREELINE | --- | |
| --- | EXISTING FENCE | --- | |
| --- | PROPERTY LINE | --- | |
| --- | RIGHT-OF-WAY LINE | --- | |
| --- | SOILS BOUNDARY | --- | |

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division: *[Signature]* 9/19/11
 Chief, Division of Land Development: *[Signature]* 9/09/11

BY THE DEVELOPER:

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

[Signature] 8/10/11
 SIGNATURE OF DEVELOPER DATE

BY THE ENGINEER:

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

[Signature] 9-7-2011
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[Signature] 8/23/11
 HOWARD S.C.D. DATE

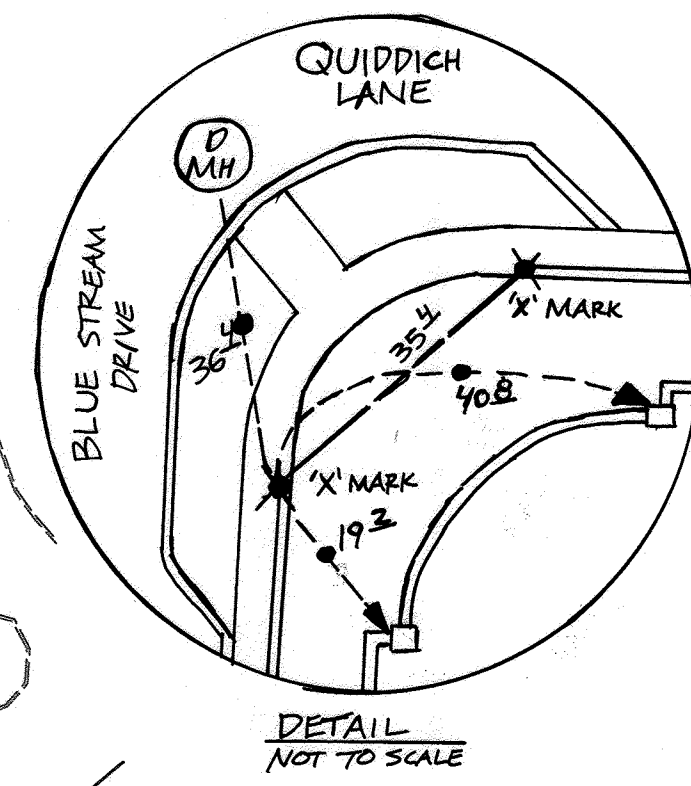
MATCHLINE SHEET 7

MATCHLINE SHEET 5

PLAN VIEW
SCALE 1"=50'

LEGEND:

- 389 --- EXISTING CONTOUR
- 402B --- PROPOSED CONTOUR
- + 402B --- PROPOSED SPOT ELEVATION
- 402B --- EXISTING SPOT ELEVATION
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- EXISTING TREELINE
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- MIB2 --- EXISTING SOILS BOUNDARY
- MID3 --- EXISTING SOILS BOUNDARY
- PROPOSED SIDEWALK
- MODERATE SLOPES (1% - 24.99%)
- STEEP SLOPE (>25%)
- FOREST CONSERVATION EASEMENT (REFORESTATION)
- FOREST CONSERVATION EASEMENT (AFFORESTATION)
- FOREST CONSERVATION EASEMENT (RETENTION)
- PUBLIC 100 YR FLOODPLAIN
- SF --- SILT FENCE
- SSF --- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- CIP --- CURB INLET PROTECTION
- PROPERTY LIGHT
- PROPERTY SIGN
- PROPOSED STREET TREE
- 15' NO WOODY BUFFER
- 6' AMBUNITY PATHWAY PER SDP-18-C-22



- NOTES:
- CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE TO TRAPS AND BASINS AT ALL TIMES.
 - SEE SHEET 13 FOR BASIN DATA SCHEDULE.

| NO. | REVISION | DATE |
|-----|---|----------|
| 10 | REVISE PLAN TO ADD NOTES FOR PROPOSED CONSTRUCTION TO PUBLIC SEWER AND WATER | 05-01-19 |
| 5 | REVISE FOREST CONSERVATION | 10/16/12 |
| 2 | REVISE MASS GRADING; REVISE WATER TO C-900 PVC | 08/03/11 |
| 1 | REVISE PLAN TO ACCOMMODATE ZONING CHANGE; REVISION TO BLUE STREAM DRIVE; AND THE ADDITION OF QUIDDITCH LANE | 12/28/10 |

REVISED FINAL ROAD CONSTRUCTION
GRADING, SEDIMENT AND EROSION
CONTROL PLAN (PHASE 1)

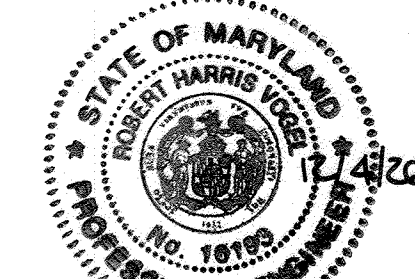
BLUE STREAM
(FORMERLY KNOWN AS THE OVERLOOK AT BLUE STREAM)
OPEN SPACE LOTS G-1 & G-2 AND BUILDABLE BULK PARCELS H-M
TAX MAP 43 CRD 4 & 5 PARCEL P/O 5, 14 & 553
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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

DESIGN BY: RHY
DRAWN BY: DZ
CHECKED BY: RHY
DATE: AUGUST 2011
SCALE: AS SHOWN
W.O. NO.: 06-26

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE 08-27-2012.

6 SHEET OF 28



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

DATE: 12/16/10
P.E. #

OWNER/DEVELOPER
BLUE STREAM, LLC.
P.O. BOX 416
ELLICOTT CITY, MD 21041
C/O: ARNOLD SAGNER
410-465-2020

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 9/9/11

CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 9/9/11

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

DATE: 8/25/11

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.

DATE: 8/10/11

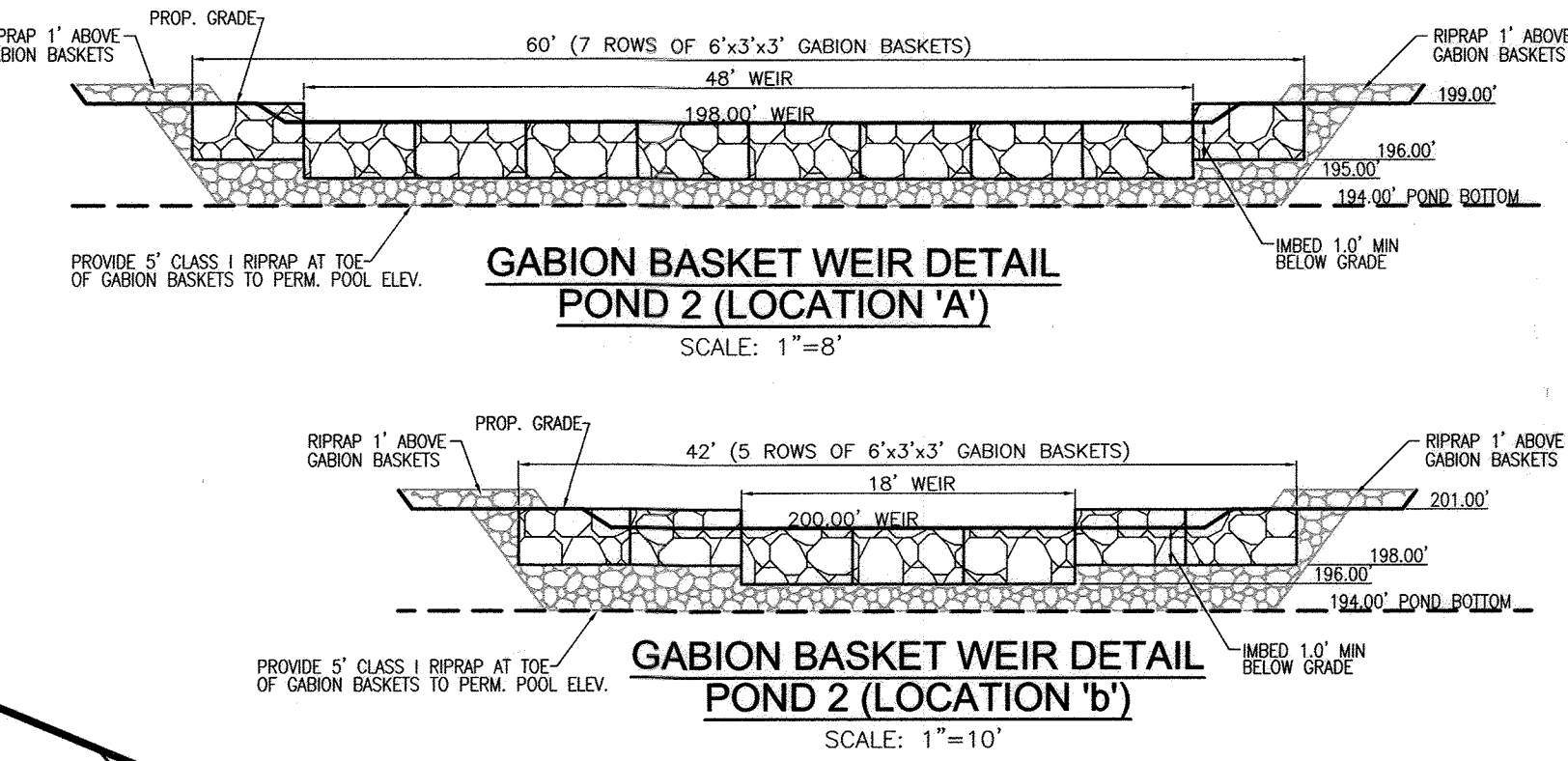
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS
DATE: 9-7-2011

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

DATE: 8/23/11

GABION BASKET NOTES:

1. ALL WIRE USED IN GABION CONSTRUCTION SHALL BE GALVANIZED AND PLASTIC COATED.
2. FILTER CLOTH SHALL BE PLACED WHEREVER GABIONS COME INTO CONTACT WITH SOIL.
3. STONE FILL SHALL CONSIST OF HARD, DURABLE, CLEAN STONE 4" - 6" IN DIAMETER.
4. CONSTRUCTION MATERIALS AND METHODS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
5. RIP-RAP TO BE PLACED BELOW GABION WEIR TO BOTTOM OF FOREBAY, AND TO BOTTOM OF POND ELEVATION.



LEGEND:

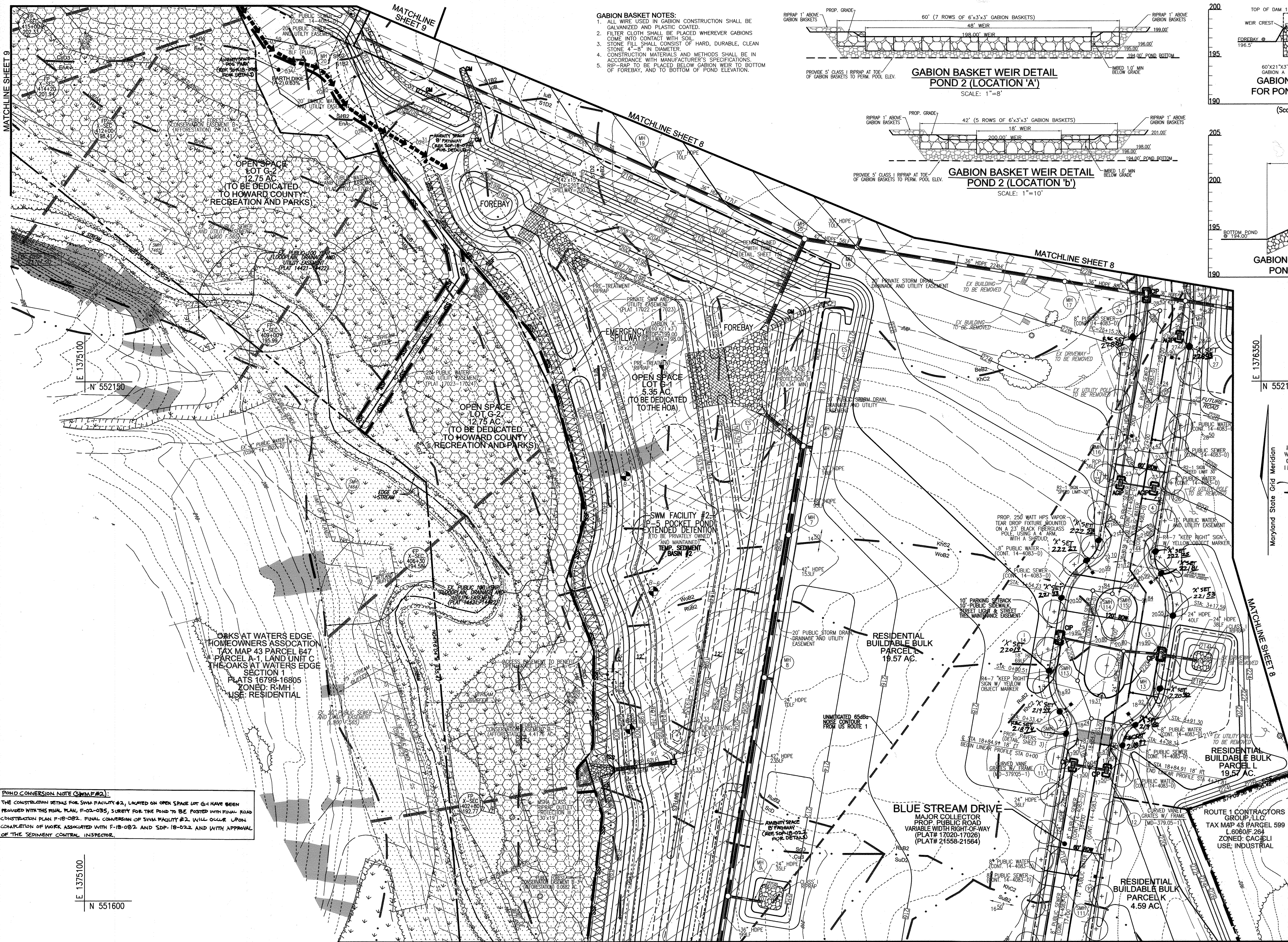
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- EXISTING UTILITY POLE
- PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- EXISTING TREELINE
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- SOILS BOUNDARY
- PROPOSED SIDEWALK
- MODERATE SLOPES (15% - 24.99%)
- STEEP SLOPE (>25%)
- FOREST CONSERVATION EASEMENT (AFFORESTATION)
- 15' NO WOODY BUFFER
- PUBLIC 100 YR FLOODPLAIN
- SILT FENCE
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- CURB INLET PROTECTION
- PROPERTY LIGHT
- PROPERTY SIGN
- PROPOSED STREET TREE

POND #2 SUMMARY

| | 2 YEAR | 10 YEAR | 100 YEAR |
|------------------|--------------|--------------|--------------|
| FLOW INTO POND | 107.9 c.f.s. | 182.8 c.f.s. | 264.5 c.f.s. |
| FLOW OUT OF POND | 15.9 c.f.s. | 58.3 c.f.s. | 133.0 c.f.s. |
| W.S. ELEVATION | 199.27 | 200.29 | 201.08 |
| STORAGE VOLUME | 3.71 AC FT | 7.60 AC FT | 12.51 AO FT |

MAINTENANCE REQUIREMENTS FOR WET POND

- REMOVAL OF SILT WHEN ACCUMULATION EXCEEDS SIX (6) INCHES IN FOREBAY.
- REMOVAL OF ACCUMULATED PAPER, TRASH AND DEBRIS AS NECESSARY.
- VEGETATION GROWING ON THE EMBANKMENT TOP AND FACES OF THE FOREBAY OR BASIN IS NOT ALLOWED TO EXCEED 18 INCHES IN HEIGHT AT ANY TIME.
- ANNUAL INSPECTION AND REPAIR OF THE STRUCTURE.
- CORRECTIVE MAINTENANCE IS REQUIRED ANY TIME A FOREBAY DOES NOT DRAIN WITHIN 60 HOURS (I.E., NO STANDING WATER IS ALLOWED UNLESS DESIGNED FOR).



POND CONVERSION NOTE (SWM #2):
THE CONSTRUCTION DETAILS FOR SWM FACILITY #2, LOCATED ON OPEN SPACE LOT G-1 HAVE BEEN REVISED WITH THIS FINAL PLAN, F-02-035, SUCH THAT THE POND TO BE FORMED WITHIN ROAD CONSTRUCTION PLAN F-18-082. FINAL CONSTRUCTION OF SWM FACILITY #2, WILL OCCUR UPON COMPLETION OF WORK ASSOCIATED WITH F-18-082, AND SDP-18-022, AND WITH APPROVAL OF THE SEDIMENT CONTROL INSPECTOR.

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 THIS UNDERGROUND SWM FACILITY.

DATE: 12/4/20
P.E. # 16193

| NO. | REVISION | DATE |
|-----|--|----------|
| 10 | REVISE PLAN TO ADD NOTES FOR POND #2. CONSTRUCTION OF F-18-082, APP # 819911. REMOVE AND ADD PILES, AND NOTES FOR SOIL SAMPLING IMPROVEMENTS. PLAN NUMBER 11 | 05-01-19 |
| 8 | REVISE GRADING OF BLUE STREAM DRIVE EXTENSION TO AVOID CONFLICT WITH BSE DUCT/CONDUIT | 02/04/15 |
| 6 | REVISE PLAN TO ADD EXTENSION TO BLUE STREAM DRIVE AND ADJUST PUBLIC STORM DRAIN ACCORDINGLY | 07/31/14 |
| 5 | REVISE FOREST CONSERVATION | 10/16/12 |
| 2 | REVISE MASS GRADING; REVERSE WATER TO C-900 PVC | 08/03/11 |
| 1 | REVISE PLAN TO ACCOMMODATE ZONING CHANGE; REVISION TO BLUE STREAM DRIVE; AND THE ADDITION OF QUIDDITCH LANE | 12/28/10 |

REVISED FINAL ROAD CONSTRUCTION PLAN
GRADING, SEDIMENT AND EROSION CONTROL PLAN (PHASE 1)
BLUE STREAM
(FORMERLY KNOWN AS THE OVERLOOK AT BLUE STREAM)
OPEN SPACE LOTS G-1 & G-2 AND BUILDABLE BULK PARCELS H-M
TAX MAP 43 PARCEL 5, 14 & 553
1ST 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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
DATE: 02-28-15
DATE: 11-24-15

BY THE DEVELOPER:
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
DATE: 9/15/2015

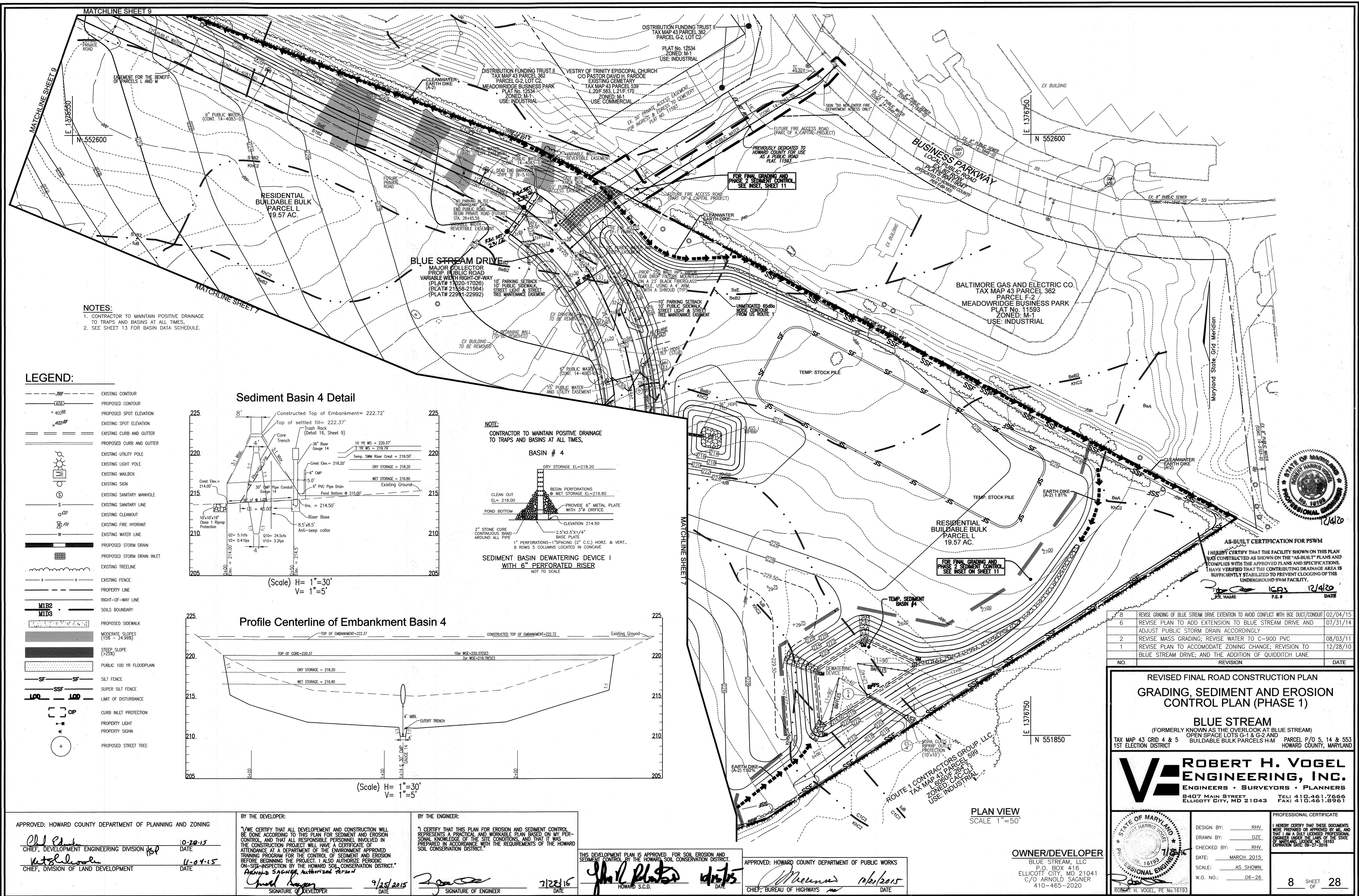
BY THE ENGINEER:
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
DATE: 10/21/15

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
DATE: 10/21/15

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
DATE: 10/21/15

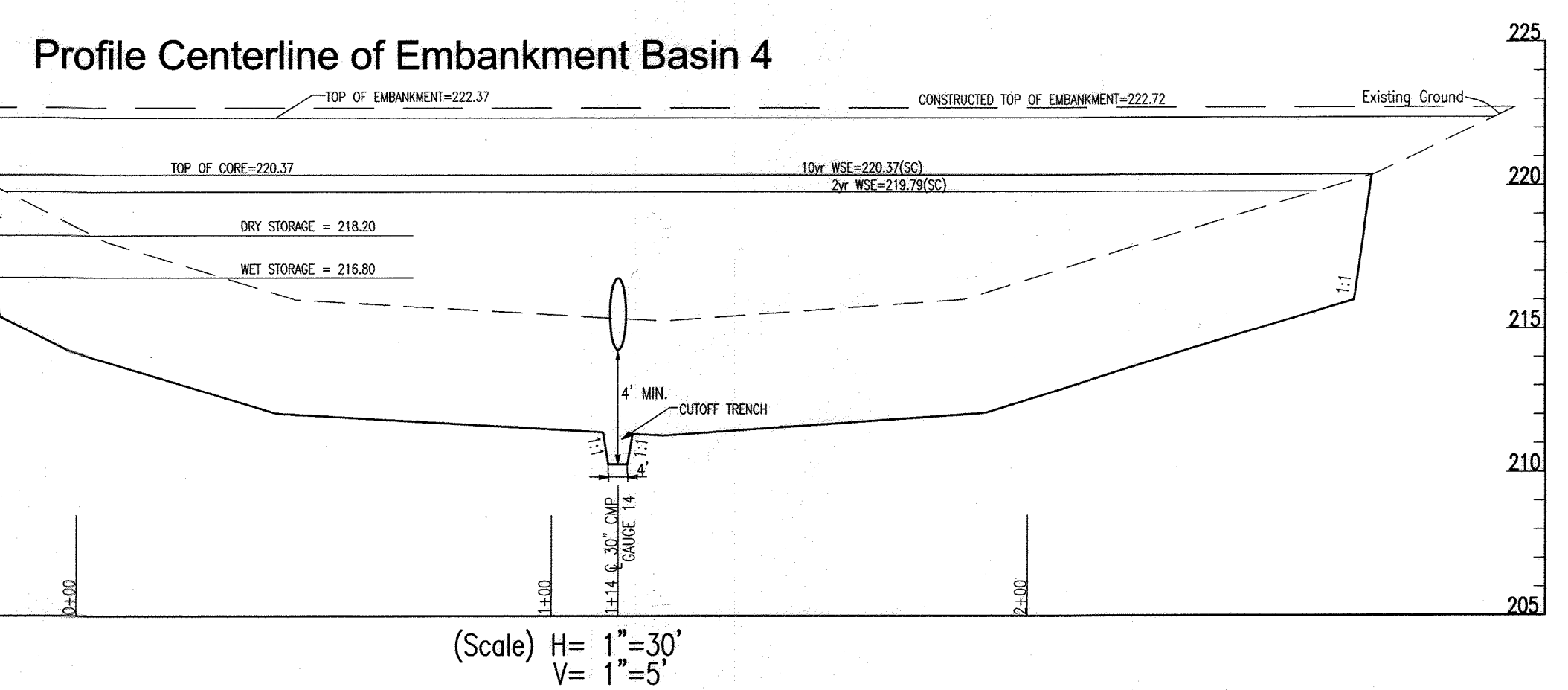
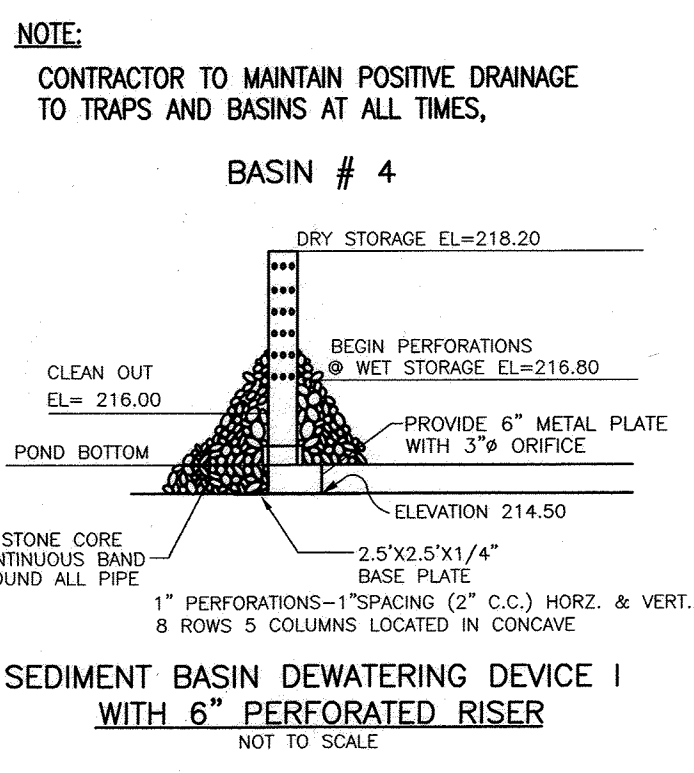
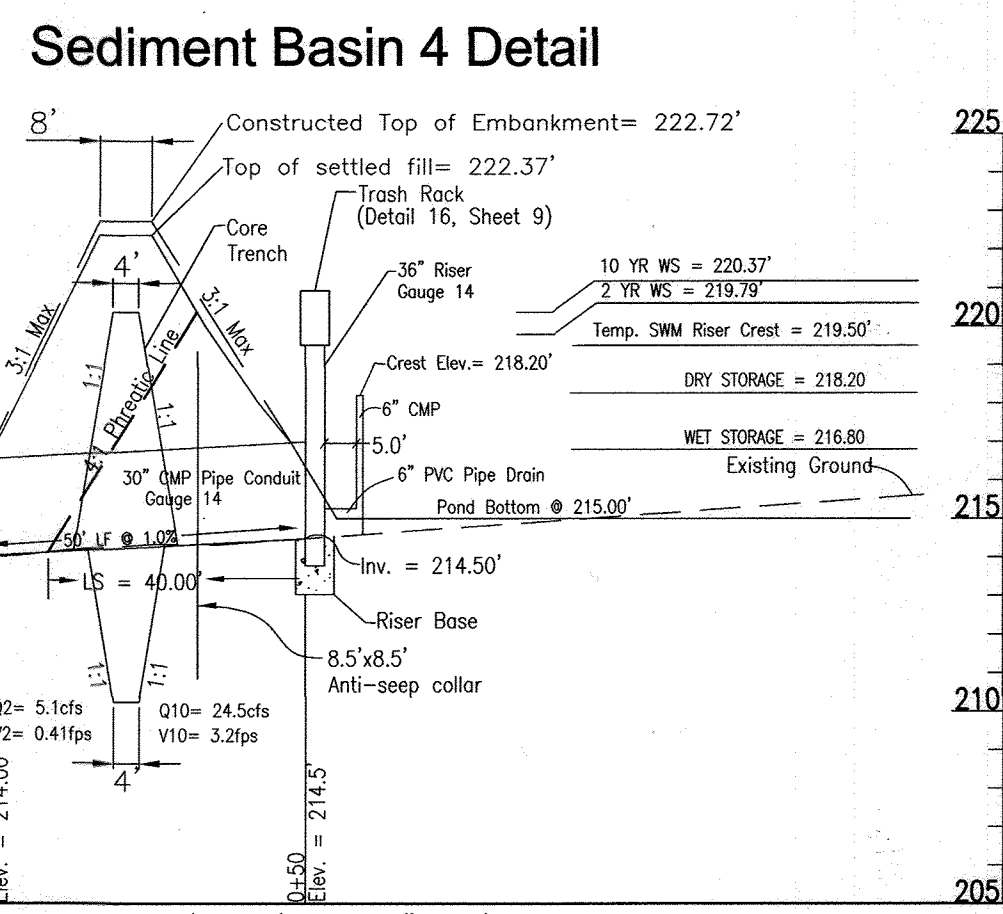
OWNER/DEVELOPER
BLUE STREAM, LLC
P.O. BOX 416
ELLICOTT CITY, MD 21041
C/O H. ARNOLD SAGNER
410-465-2020

PROFESSIONAL CERTIFICATE
DESIGN BY: RHV
DRAWN BY: DZE
CHECKED BY: RHV
DATE: MARCH 2015
SCALE: AS SHOWN
W.O. NO.: 06-26
7 SHEET OF 28



NOTES:
 1. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE TO TRAPS AND BASINS AT ALL TIMES.
 2. SEE SHEET 13 FOR BASIN DATA SCHEDULE.

- LEGEND:**
- EXISTING CONTOUR
 - - - PROPOSED CONTOUR
 - + 402.88 PROPOSED SPOT ELEVATION
 - + 402.88 EXISTING SPOT ELEVATION
 - ==== EXISTING CURB AND GUTTER
 - ==== PROPOSED CURB AND GUTTER
 - EXISTING UTILITY POLE
 - EXISTING LIGHT POLE
 - EXISTING MAILBOX
 - EXISTING SIGN
 - EXISTING SANITARY MANHOLE
 - EXISTING SANITARY LINE
 - EXISTING CLEANOUT
 - EXISTING FIRE HYDRANT
 - EXISTING WATER LINE
 - PROPOSED STORM DRAIN
 - EXISTING TREELINE
 - EXISTING FENCE
 - PROPERTY LINE
 - RIGHT-OF-WAY LINE
 - SOILS BOUNDARY
 - PROPOSED SIDEWALK
 - MODERATE SLOPES (15% = 24.99%)
 - STEEP SLOPE (>25%)
 - PUBLIC 100 YR FLOODPLAIN
 - SILT FENCE
 - SUPER SILT FENCE
 - LIMIT OF DISTURBANCE
 - CURB INLET PROTECTION
 - PROPERTY LIGHT
 - PROPERTY SIGN
 - PROPOSED STREET TREE



| NO. | REVISION | DATE |
|-----|---|----------|
| 8 | REVISE GRADING OF BLUE STREAM DRIVE EXTENSION TO AVOID CONFLICT WITH BGE DUCT/CONDUIT | 02/04/15 |
| 6 | REVISE PLAN TO ADD EXTENSION TO BLUE STREAM DRIVE AND ADJUST PUBLIC STORM DRAIN ACCORDINGLY | 07/31/14 |
| 2 | REVISE MASS GRADING; REVISE WATER TO C-900 PVC | 08/03/11 |
| 1 | REVISE PLAN TO ACCOMMODATE ZONING CHANGE; REVISION TO BLUE STREAM DRIVE; AND THE ADDITION OF QUIDDITCH LANE | 12/28/10 |

REVISED FINAL ROAD CONSTRUCTION PLAN
GRADING, SEDIMENT AND EROSION CONTROL PLAN (PHASE 1)
BLUE STREAM
 (FORMERLY KNOWN AS THE OVERLOOK AT BLUE STREAM)
 TAX MAP 43 GRID 4 & 5 BUILDABLE BULK PARCELS H-M PARCEL P/O 5, 14 & 553
 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666
 410-465-2020 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. MY LICENSE NO. IS 12183. EXPIRATION DATE: 09-27-2018.

DESIGN BY: RHV
 DRAWN BY: DZE
 CHECKED BY: RHV
 DATE: MARCH 2015
 SCALE: AS SHOWN
 W.O. NO.: 06-26

8 SHEET OF 28

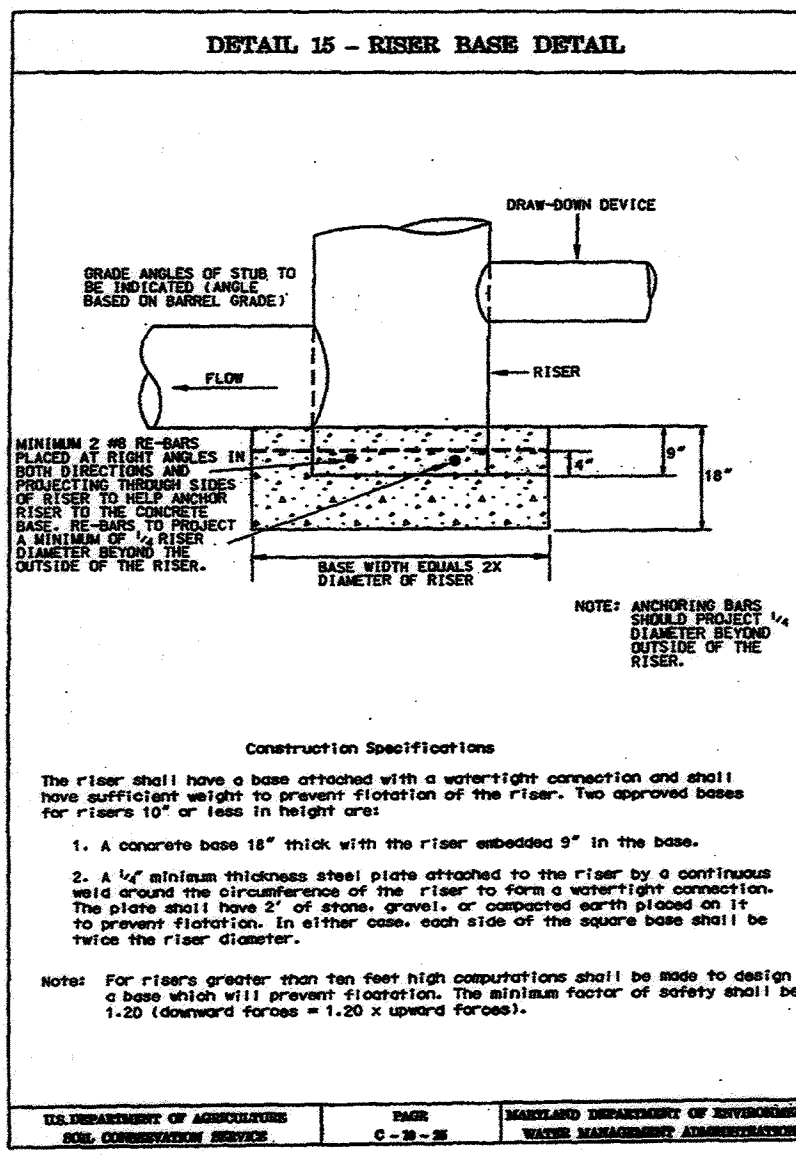
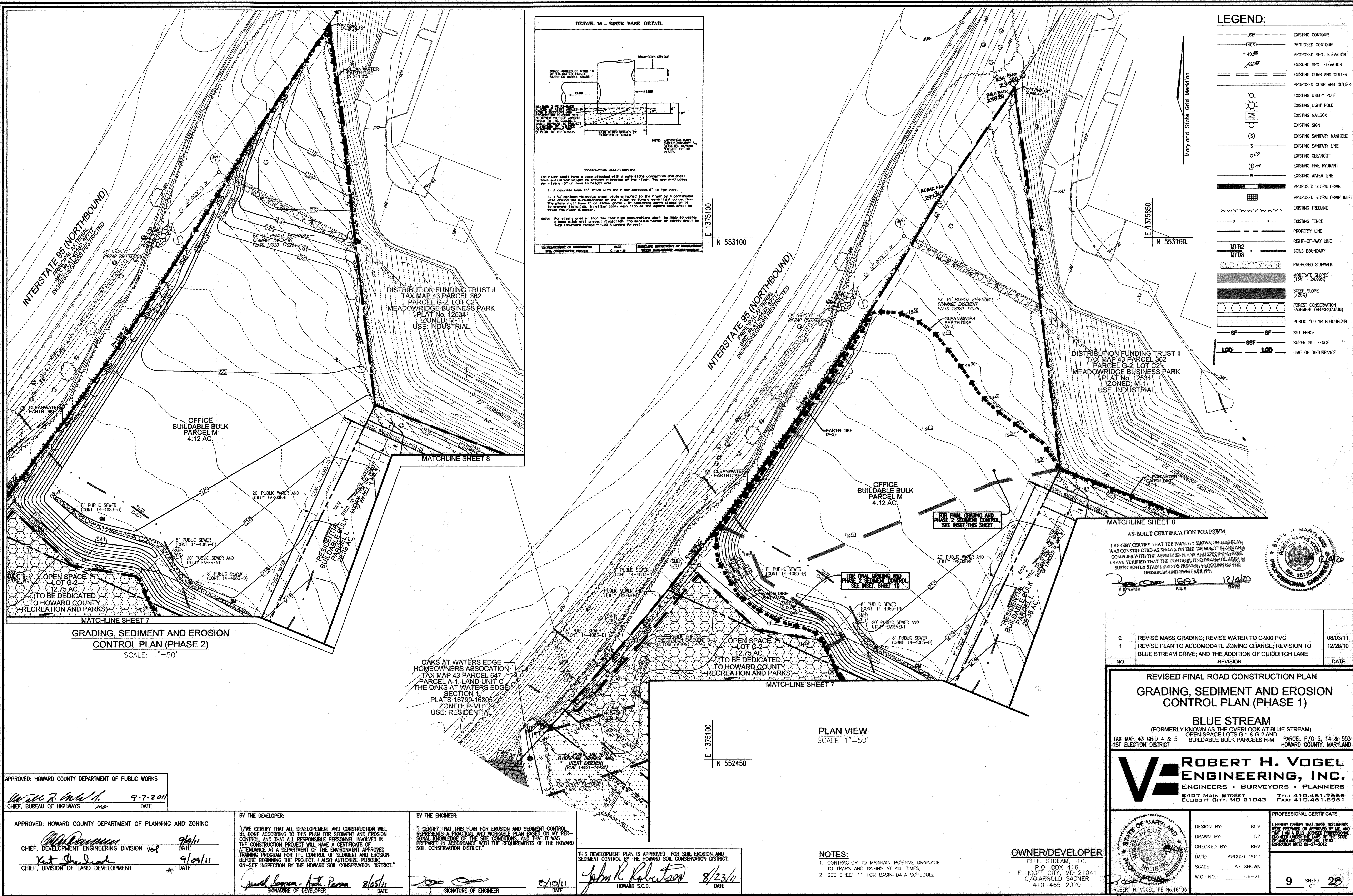
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
John P. ... 10-28-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
John P. ... 11-04-15
 CHIEF, DIVISION OF LAND DEVELOPMENT

BY THE DEVELOPER:
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
Arnold Sagner, Authorized Person
 Signature of Developer: *Arnold Sagner* 9/15/2015

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.
John P. ... 7/22/16
 Signature of Engineer: *John P. ...* DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
John P. ... 10/2/2015
 Signature of Engineer: *John P. ...* DATE
 APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Michael ... 10/2/2015
 CHIEF, BUREAU OF HIGHWAYS DATE

OWNER/DEVELOPER
 BLUE STREAM, LLC
 P.O. BOX 416
 ELLICOTT CITY, MD 21041
 C/O ARNOLD SAGNER
 410-465-2020



LEGEND:

- EXISTING CONTOUR
- - - - PROPOSED CONTOUR
- + 402.68 PROPOSED SPOT ELEVATION
- + 402.68 EXISTING SPOT ELEVATION
- ==== EXISTING CURB AND GUTTER
- ==== PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- EXISTING TREE LINE
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- MIB2 SOILS BOUNDARY
- MID9 SOILS BOUNDARY
- PROPOSED SIDEWALK
- MODERATE SLOPES (1% - 24.99%)
- STEEP SLOPE (>25%)
- FOREST CONSERVATION EASEMENT (AFFORESTATION)
- PUBLIC 100 YR FLOODPLAIN
- SF SILT FENCE
- SSF SUPER SILT FENCE
- 100 LIMIT OF DISTURBANCE

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 PSWM FACILITY.

1693 12/18/20
 P.E. # DATE



| NO. | REVISION | DATE |
|-----|---|----------|
| 2 | REVISE MASS GRADING; REVISE WATER TO C-900 PVC | 08/03/11 |
| 1 | REVISE PLAN TO ACCOMMODATE ZONING CHANGE; REVISION TO BLUE STREAM DRIVE; AND THE ADDITION OF QUIDDITCH LANE | 12/28/10 |

REVISED FINAL ROAD CONSTRUCTION PLAN
GRADING, SEDIMENT AND EROSION CONTROL PLAN (PHASE 1)
BLUE STREAM
 (FORMERLY KNOWN AS THE OVERLOOK AT BLUE STREAM)
 TAX MAP 43 GRID 4 & 5 OPEN SPACE LOTS G-1 & G-2 AND BUILDABLE BULK PARCELS H-M
 1ST ELECTION DISTRICT PARCEL P/O 5, 14 & 563 HOWARD COUNTY, MARYLAND

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

DESIGN BY: RHV
DRAWN BY: DZ
CHECKED BY: RHV
DATE: AUGUST 2011
SCALE: AS SHOWN
W.O. NO.: 06-26

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE 08-27-2012.

9 SHEET OF 28

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 9-7-2011
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 9/9/11
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 9/29/11
 CHIEF, DIVISION OF LAND DEVELOPMENT

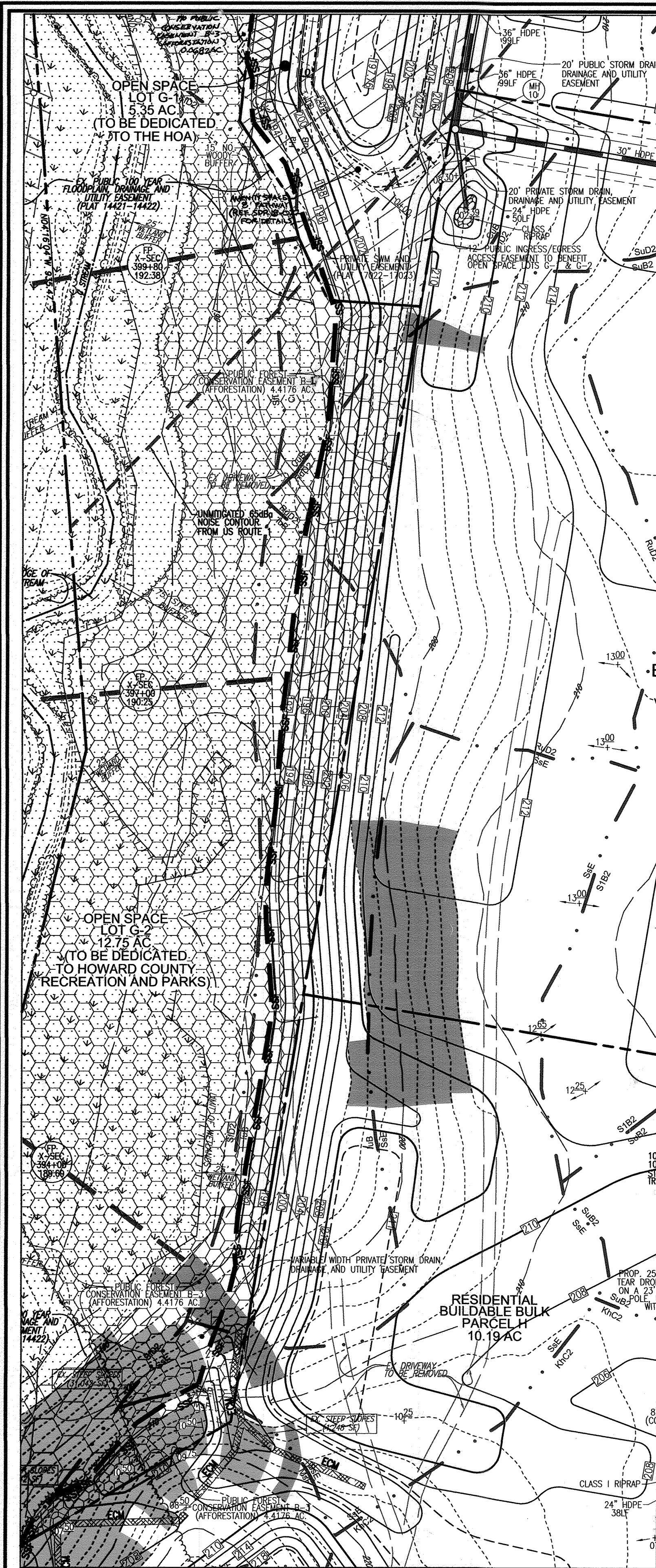
BY THE DEVELOPER:
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
 8/25/11
 SIGNATURE OF DEVELOPER DATE

BY THE ENGINEER:
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 8/23/11
 SIGNATURE OF ENGINEER DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 8/23/11
 HOWARD S.C.D. DATE

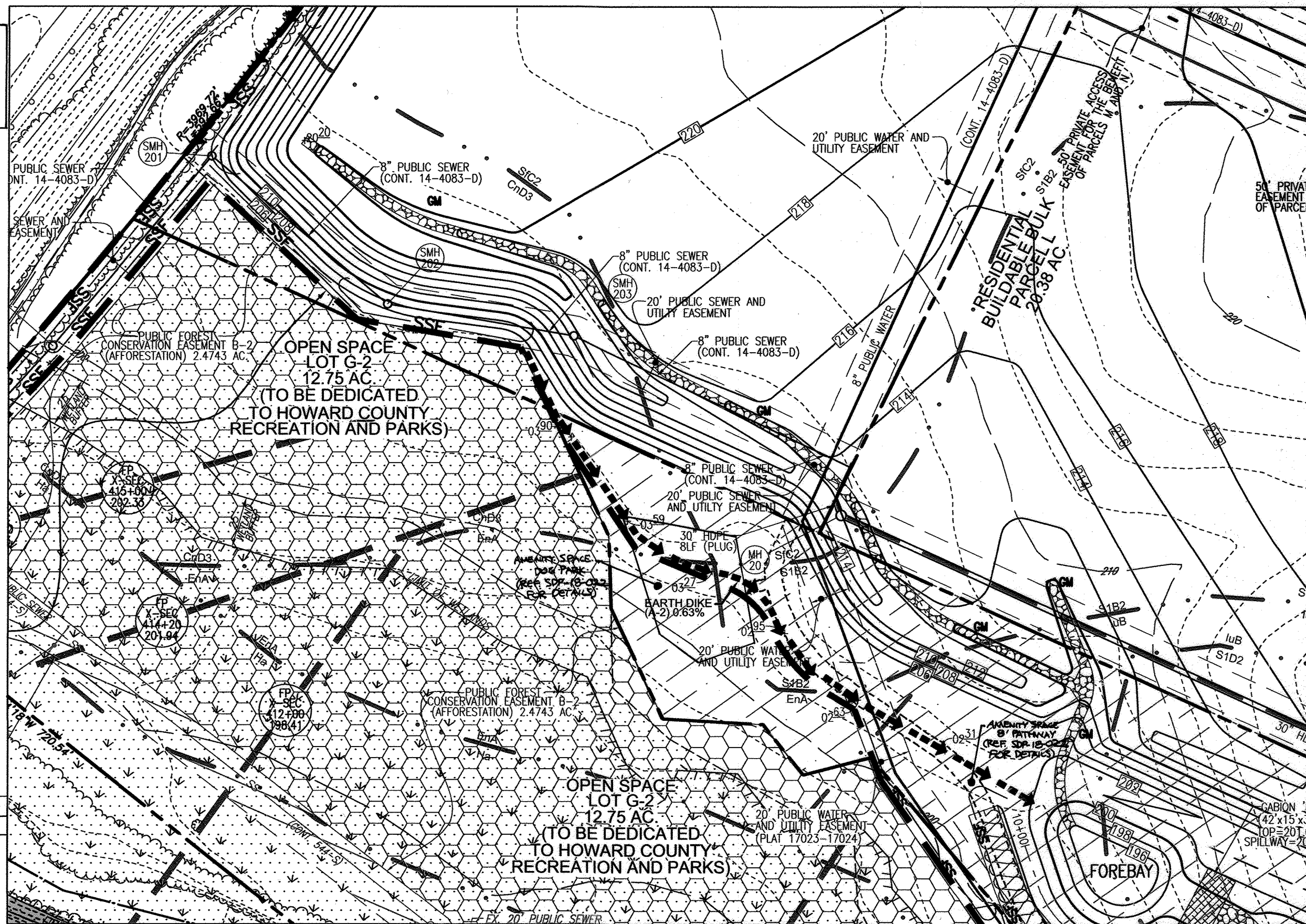
NOTES:
 1. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE TO TRAPS AND BASINS AT ALL TIMES.
 2. SEE SHEET 11 FOR BASIN DATA SCHEDULE

OWNER/DEVELOPER
 BLUE STREAM, LLC.
 P.O. BOX 416
 ELLICOTT CITY, MD 21041
 C/O ARNOLD SAGNER
 410-465-2020



BASIN 3 CONVERSION TO FINAL GRADING, SEDIMENT CONTROL PLAN (PHASE 2)
SCALE: 1"=50'

POND CONVERSION NOTE (SWM#2):
THE CONSTRUCTION DETAILS FOR SWM FACILITY #2, LOCATED ON OPEN SPACE LOT G-1 HAVE BEEN FRAMED WITH THIS FINAL PLAN, F-02-055. SURETY FOR THE POND TO BE POSTED WITH FINAL ROAD CONSTRUCTION PLAN F-18-082. FINAL CONVERSION OF SWM FACILITY #2 WILL OCCUR UPON COMPLETION OF WORK ASSOCIATED WITH F-18-082 AND SDR-18-022 AND WITH APPROVAL OF THE SEDIMENT CONTROL INSPECTOR.



FINAL GRADING AND SEDIMENT CONTROL PLAN (PHASE 2)
SCALE: 1"=50'

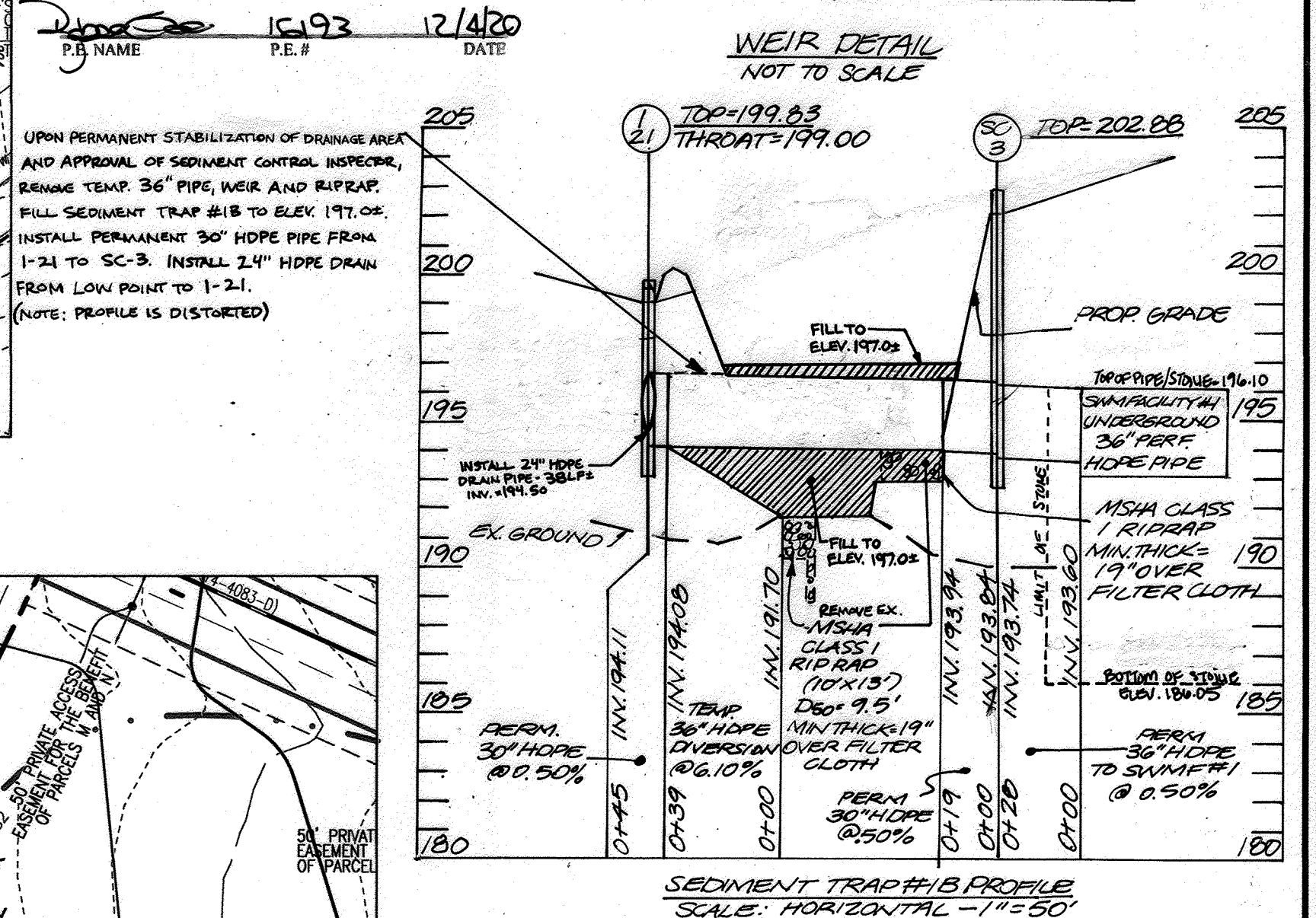
LEGEND:

| | | | |
|-----|---------------------------|-----|--|
| --- | EXISTING CONTOUR | --- | PROPERTY LIGHT |
| --- | PROPOSED CONTOUR | --- | PROPERTY SIGN |
| --- | EXISTING SPOT ELEVATION | --- | PROPOSED STORM DRAIN |
| --- | EXISTING CURB AND GUTTER | --- | PROPOSED STORM DRAIN INLET |
| --- | PROPOSED CURB AND GUTTER | --- | PROPOSED SIDEWALK |
| --- | PROPOSED UTILITY POLE | --- | MODERATE SLOPES (15% - 24.99%) |
| --- | EXISTING LIGHT POLE | --- | STEEP SLOPE (>25%) |
| --- | EXISTING MAILBOX | --- | FOREST CONSERVATION EASEMENT (REFORESTATION) |
| --- | EXISTING SIGN | --- | FOREST CONSERVATION EASEMENT (AFFORESTATION) |
| --- | EXISTING SANITARY MANHOLE | --- | FOREST CONSERVATION EASEMENT (RETENTION) |
| --- | EXISTING SANITARY LINE | --- | PUBLIC 100 YR FLOODPLAIN |
| --- | EXISTING CLEANOUT | --- | SILT FENCE |
| --- | EXISTING FIRE HYDRANT | --- | SUPER SILT FENCE |
| --- | EXISTING WATER LINE | --- | LIMIT OF DISTURBANCE |
| --- | EXISTING TREETRINE | --- | CURB INLET PROTECTION |
| --- | EXISTING FENCE | --- | STABILIZED CONSTRUCTION ENTRANCE |
| --- | PROPERTY LINE | --- | PROPOSED STREET TREE |
| --- | RIGHT-OF-WAY LINE | --- | 8" AMENITY PAVEMENT PER SDR-18-022 |
| --- | SOILS BOUNDARY | --- | |

AS-BUILT CERTIFICATION FOR PSWM

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

DATE: 12/4/20
P.E. # 15193



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Walter Hall 9-7-2011
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

| | | |
|----|---|----------|
| 10 | REVISE PLAN TO ADD NEW SIDEWALKS | 05-01-19 |
| 5 | REVISE FOREST CONSERVATION | 10/16/12 |
| 4 | REVISE PLAN TO ADD TWO NEW SEDIMENT BASINS TO REPLACE EXISTING ONE | 8/20/12 |
| 2 | REVISE MASS GRADING, REVISE WATER TO C-900 PVC | 08/03/11 |
| 1 | REVISE PLAN TO ACCOMMODATE ZONING CHANGE; REVISION TO BLUE STREAM DRIVE; AND THE ADDITION OF QUIDDITCH LANE | 12/28/10 |

REVISED FINAL ROAD CONSTRUCTION PLAN GRADING, SEDIMENT AND EROSION CONTROL PLAN (PHASE 2)

BLUE STREAM
(FORMERLY KNOWN AS THE OVERTHROW AT BLUE STREAM)
OPEN SPACE LOTS G-1 & G-2 AND BUILDABLE BULK PARCELS H-M PARCEL P/O 5, 14 & 553 1ST 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

DESIGN BY: RHV
DRAWN BY: DZ
CHECKED BY: RHV
DATE: AUGUST 2011
SCALE: AS SHOWN
W.D. NO.: 06-26

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. 15193. EXPIRATION DATE: 08-27-2012

10 SHEET OF 28

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Walter Hall 9/14/11
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kent Sheehy 9/29/11
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

BY THE DEVELOPER:

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

David Leeve, Ant. Larson 8/23/11
SIGNATURE OF DEVELOPER DATE

BY THE ENGINEER:

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

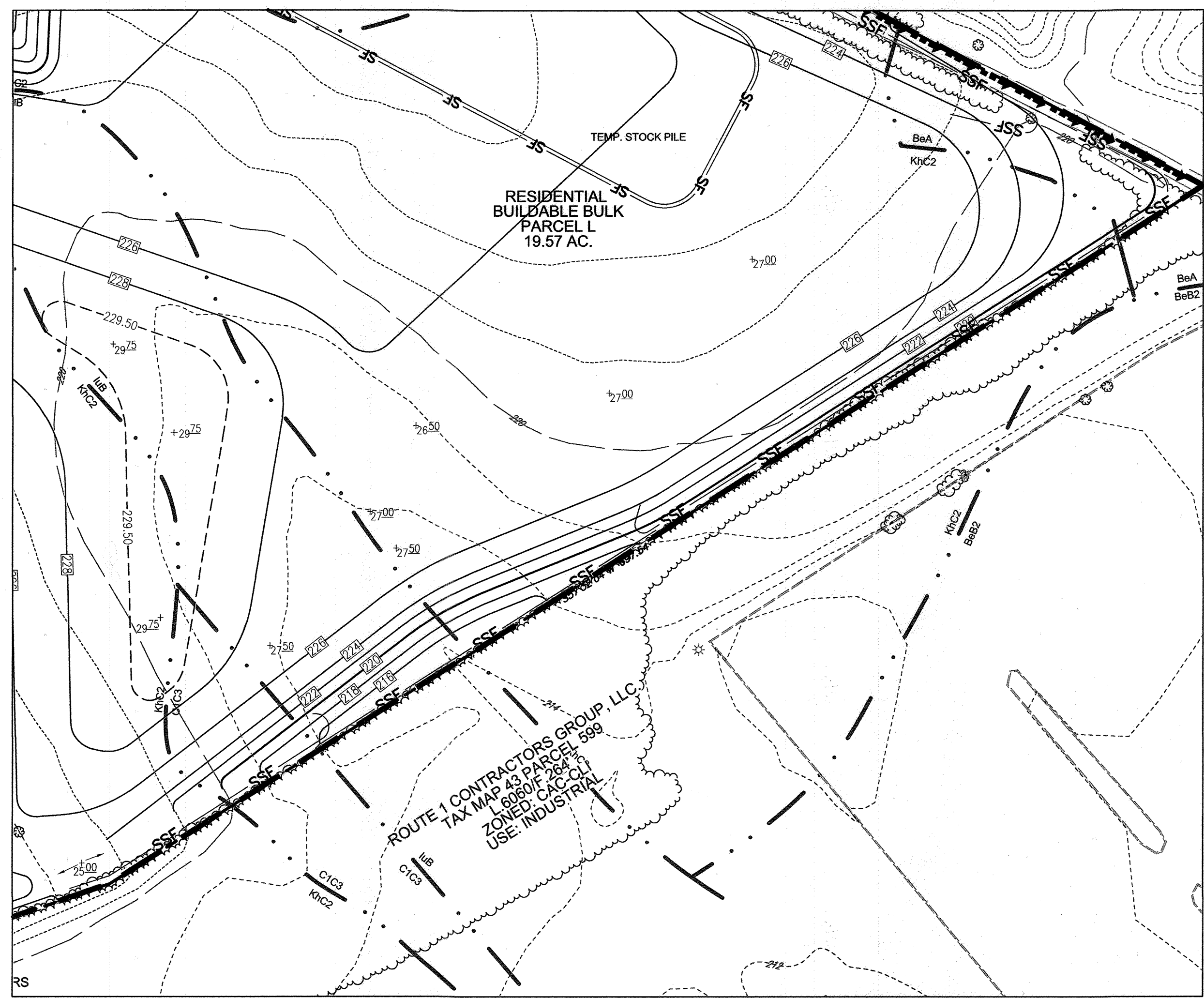
John R. Robertson 8/23/11
SIGNATURE OF ENGINEER DATE

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

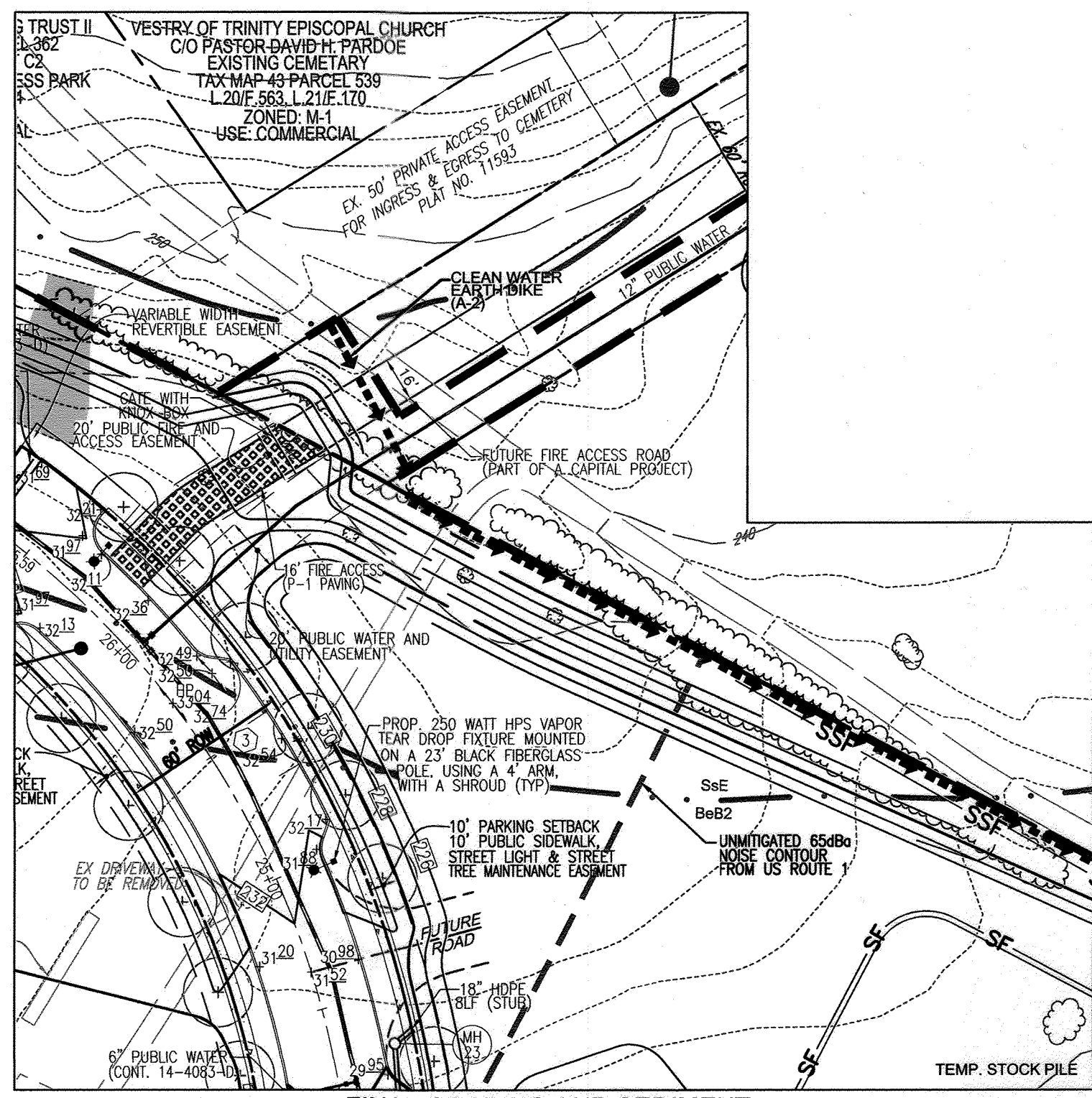
John R. Robertson 8/23/11
HOWARD S.C.D. DATE

NOTES:
1. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE TO TRAPS AND BASINS AT ALL TIMES.
2. SEE SHEET 13 FOR BASIN DATA SCHEDULE.

OWNER/DEVELOPER
BLUE STREAM, LLC.
P.O. BOX 416
ELLICOTT CITY, MD 21041
C/O ARNOLD SAGNER
410-465-2020



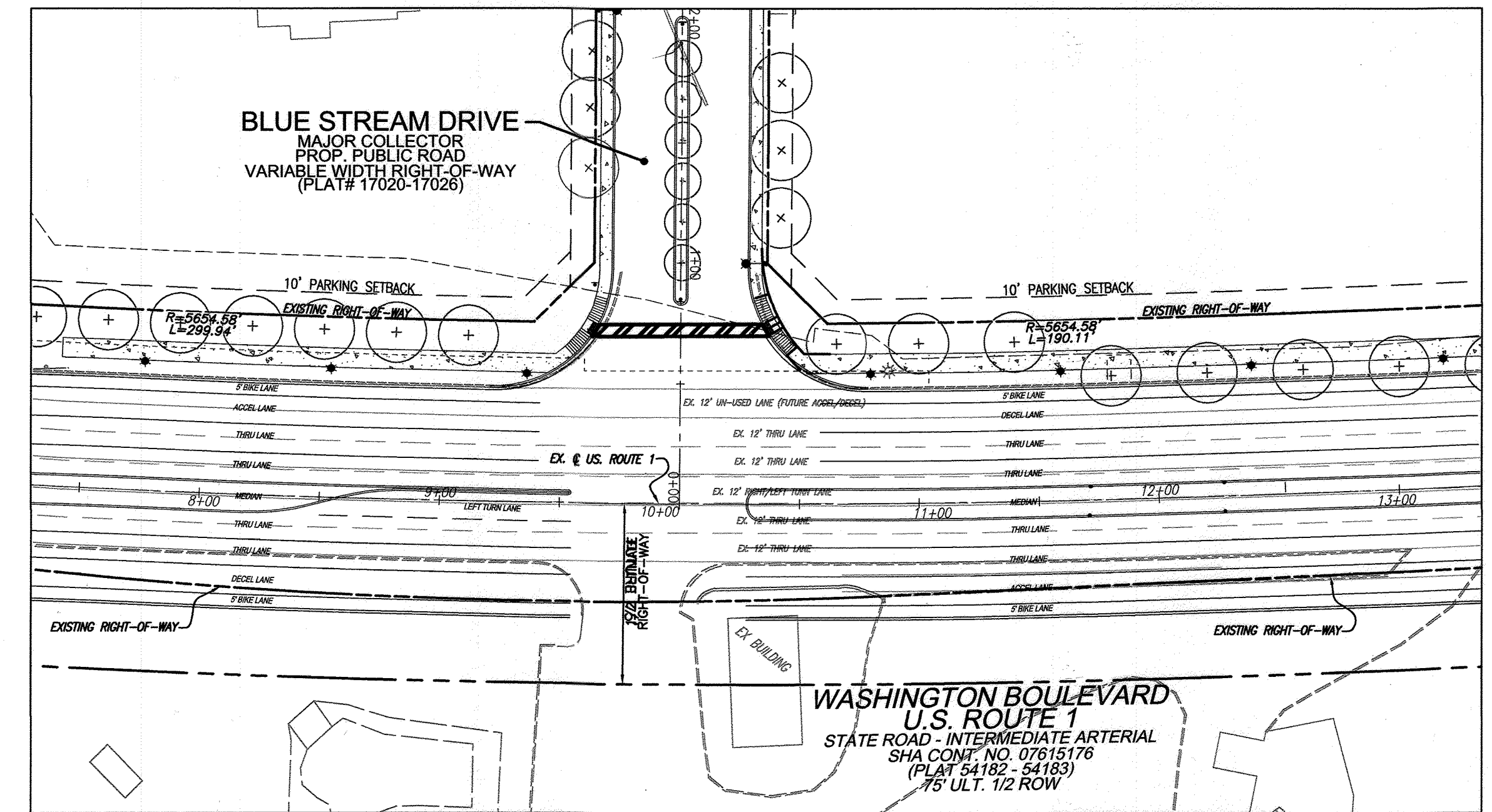
BASIN 4 CONVERSION TO FINAL GRADING, SEDIMENT CONTROL PLAN (PHASE 2)
SCALE: 1"=50'



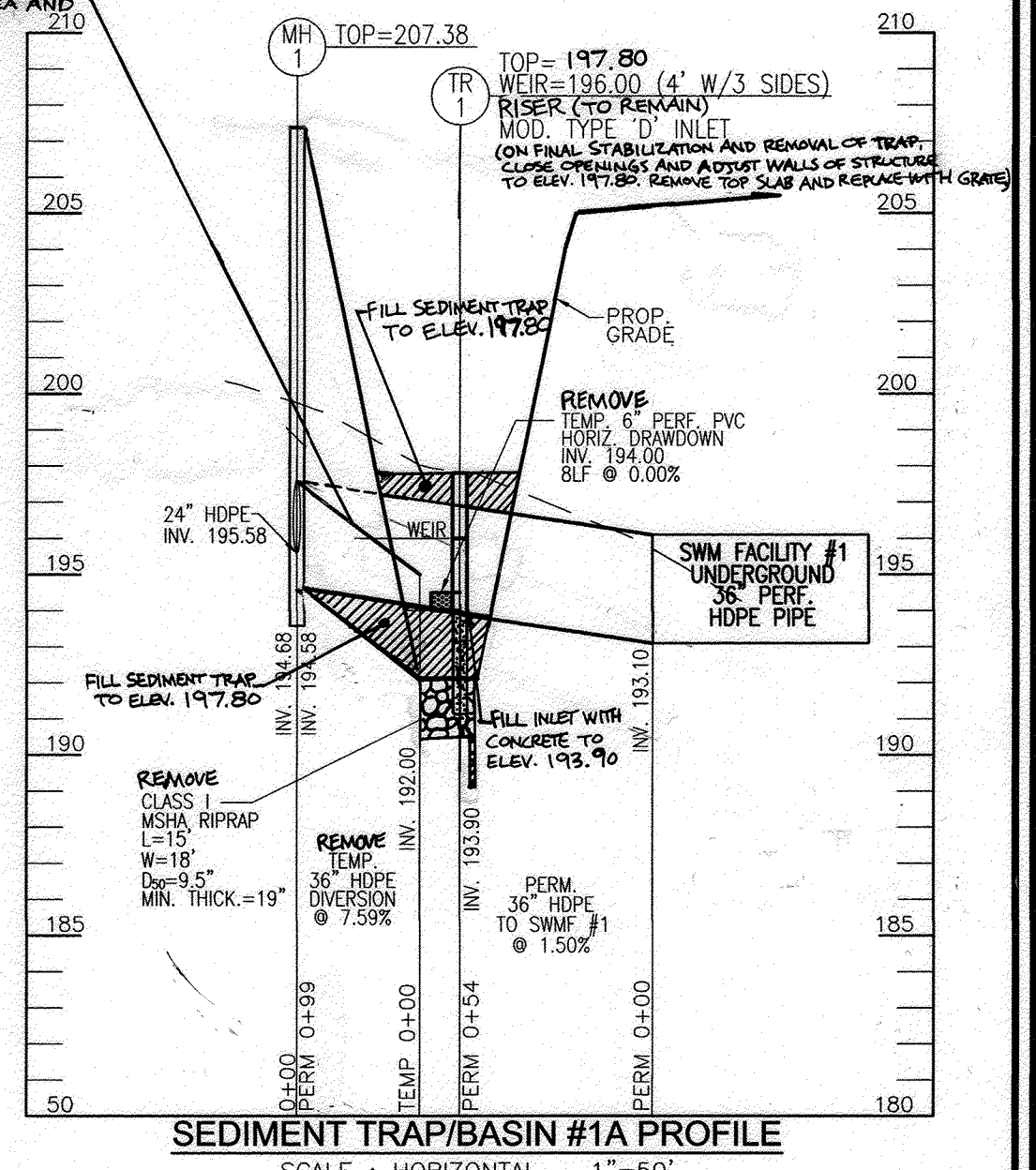
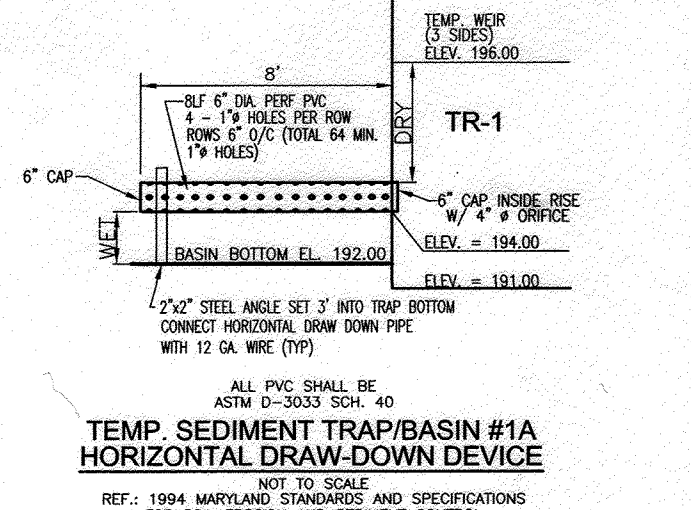
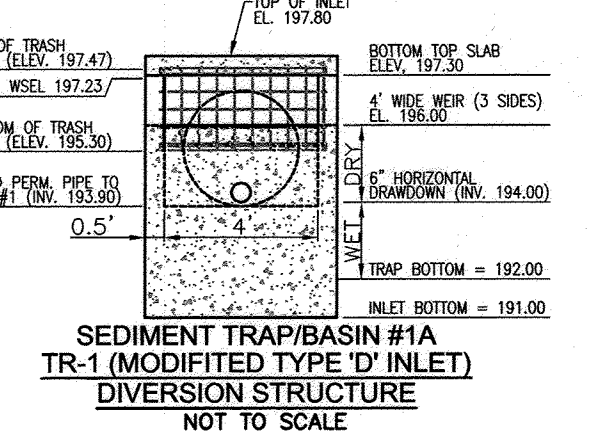
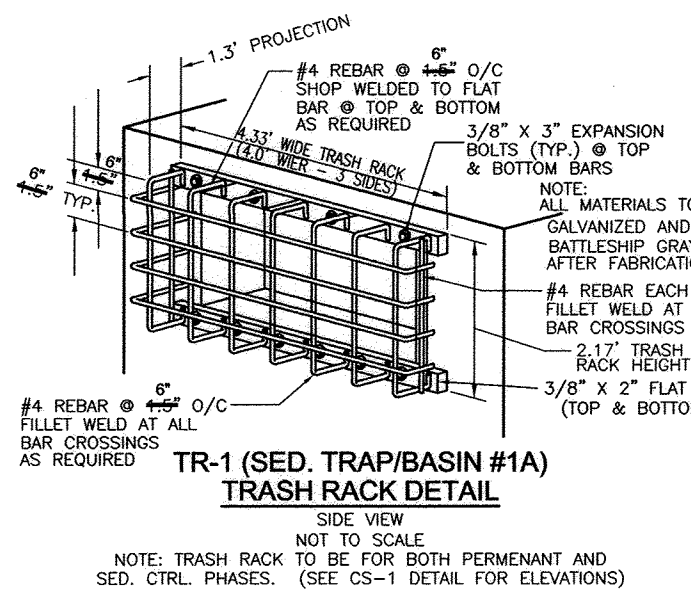
FINAL GRADING AND SEDIMENT CONTROL PLAN (PHASE 2)
SCALE: 1"=50'

LEGEND:

| | | | |
|--|---------------------------|--|--|
| | EXISTING CONTOUR | | PROPERTY LIGHT |
| | PROPOSED CONTOUR | | PROPERTY SIGN |
| | PROPOSED SPOT ELEVATION | | PROPOSED STORM DRAIN |
| | EXISTING SPOT ELEVATION | | PROPOSED STORM DRAIN INLET |
| | EXISTING CURB AND GUTTER | | PROPOSED SIDEWALK |
| | PROPOSED CURB AND GUTTER | | MODERATE SLOPES (15% - 24.99%) |
| | EXISTING UTILITY POLE | | STEEP SLOPE (>25%) |
| | EXISTING LIGHT POLE | | FOREST CONSERVATION EASEMENT (REFORESTATION) |
| | EXISTING MAILBOX | | FOREST CONSERVATION EASEMENT (AFFORESTATION) |
| | EXISTING SIGN | | FOREST CONSERVATION EASEMENT (RETENTION) |
| | EXISTING SANITARY MANHOLE | | PUBLIC 100 YR FLOODPLAIN |
| | EXISTING SANITARY LINE | | SILT FENCE |
| | EXISTING CLEANOUT | | SUPER SILT FENCE |
| | EXISTING FIRE HYDRANT | | LIMIT OF DISTURBANCE |
| | EXISTING WATER LINE | | CURB INLET PROTECTION |
| | EXISTING TREE LINE | | STABILIZED CONSTRUCTION ENTRANCE |
| | EXISTING FENCE | | PROPOSED STREET TREE |
| | PROPERTY LINE | | |
| | RIGHT-OF-WAY LINE | | |
| | SOILS BOUNDARY | | |



ULTIMATE US. ROUTE 1 PAVEMENT MARKING PLAN (BY OTHERS)
SCALE: 1"=50'



- CONSTRUCTION SPECIFICATIONS**
1. THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 4 TIMES THE AREA OF THE INTERNAL ORIFICE.
 2. THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS 1.
 3. PROVIDE SUPPORT OF DRAW-DOWN DEVICE TO PREVENT SHAKING AND FLUTTERING. AN ACCEPTABLE PREVENTATIVE MEASURE IS TO STAKE BOTH SIDES OF DRAW-DOWN DEVICE WITH 2" STEEL ANGLE, SET 2" MINIMUM INTO THE GROUND THEN JOINING THEM TO THE DEVICE BY WRAPPING WITH 12 GAUGE MINIMUM WIRE.

| NO. | REVISION | DATE |
|-----|---|----------|
| 11 | REVISE PLANS FOR SEDIMENT EROSION CONTROL | 1-7-20 |
| 6 | REVISE PLAN TO ADD EXTENSION TO BLUE STREAM DRIVE AND ADJUST PUBLIC STORM DRAIN ACCORDINGLY | 07/31/14 |
| 4 | REVISED PLAN TO ADD TEMP SEDIMENT BASINS TO REPLACE EXISTING ONE | 08/03/11 |
| 2 | REVISE MASS GRADINGS; REVISE WATER TO C-900 FVC | 08/03/11 |
| 1 | REVISE PLAN TO ACCOMMODATE ZONING CHANGE; REVISION TO BLUE STREAM DRIVE; AND THE ADDITION OF QUIDDITCH LANE | 12/28/10 |



AS-BUILT CERTIFICATION FOR PFSWM

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

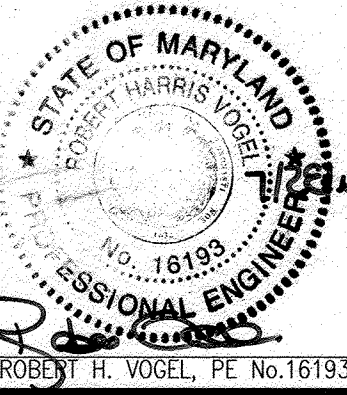
Robert H. Vogel 12/4/20
P.E. NAME R.E.# DATE

NO AS-BUILT INFORMATION ON THIS SHEET

OWNER/DEVELOPER
BLUE STREAM, LLC
P.O. BOX 416
ELLCOTT CITY, MD 21041
C/O ARNOLD SAGNER
410-465-2020

REVISED FINAL ROAD CONSTRUCTION PLAN
GRADING, SEDIMENT AND EROSION CONTROL PLAN (PHASE 2)
BLUE STREAM
(FORMERLY KNOWN AS THE OVERLOOK AT BLUE STREAM)
OPEN SPACE LOTS G-1 & G-2 AND BUILDABLE BULK PARCELS H-M
TAX MAP 43 GRID 4 & 5 PARCEL P/O 5, 14 & 553
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET TEL: 410.461.7666
ELLCOTT CITY, MD 21043 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. 18199 EXPIRATION DATE: 08-27-2018

DESIGN BY: RHV
DRAWN BY: DZE
CHECKED BY: RHV
DATE: MARCH 2015
SCALE: AS SHOWN
W.O. NO.: 06-26

11 SHEET OF 28

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Robert H. Vogel 10-28-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Robert H. Vogel 11-04-15
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

BY THE DEVELOPER:

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

Robert H. Vogel 9/15/2015
SIGNATURE OF DEVELOPER DATE

BY THE ENGINEER:

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

Robert H. Vogel 10/1/2015
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

John R. Blanton 12/21/15
SIGNATURE OF ENGINEER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

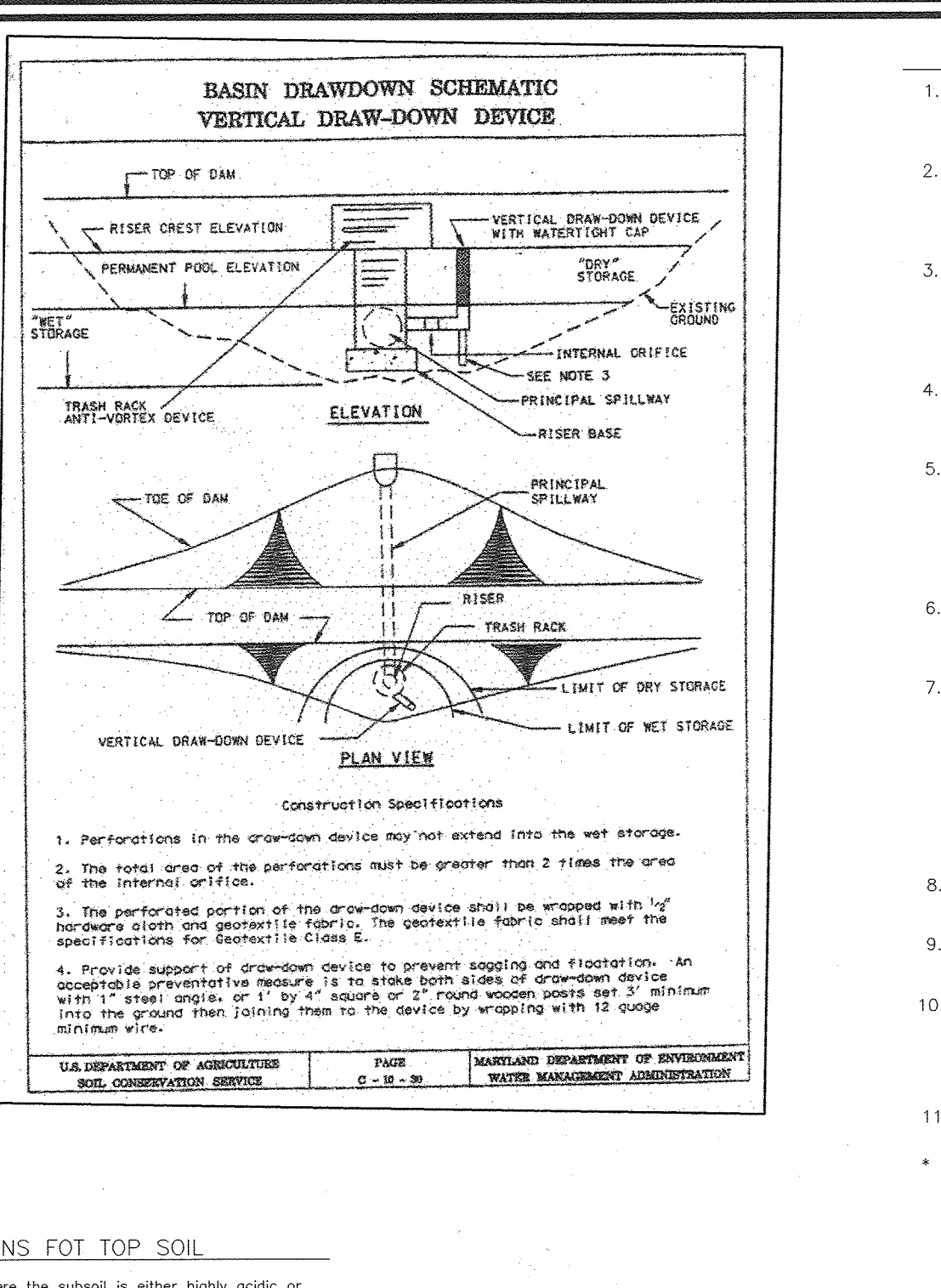
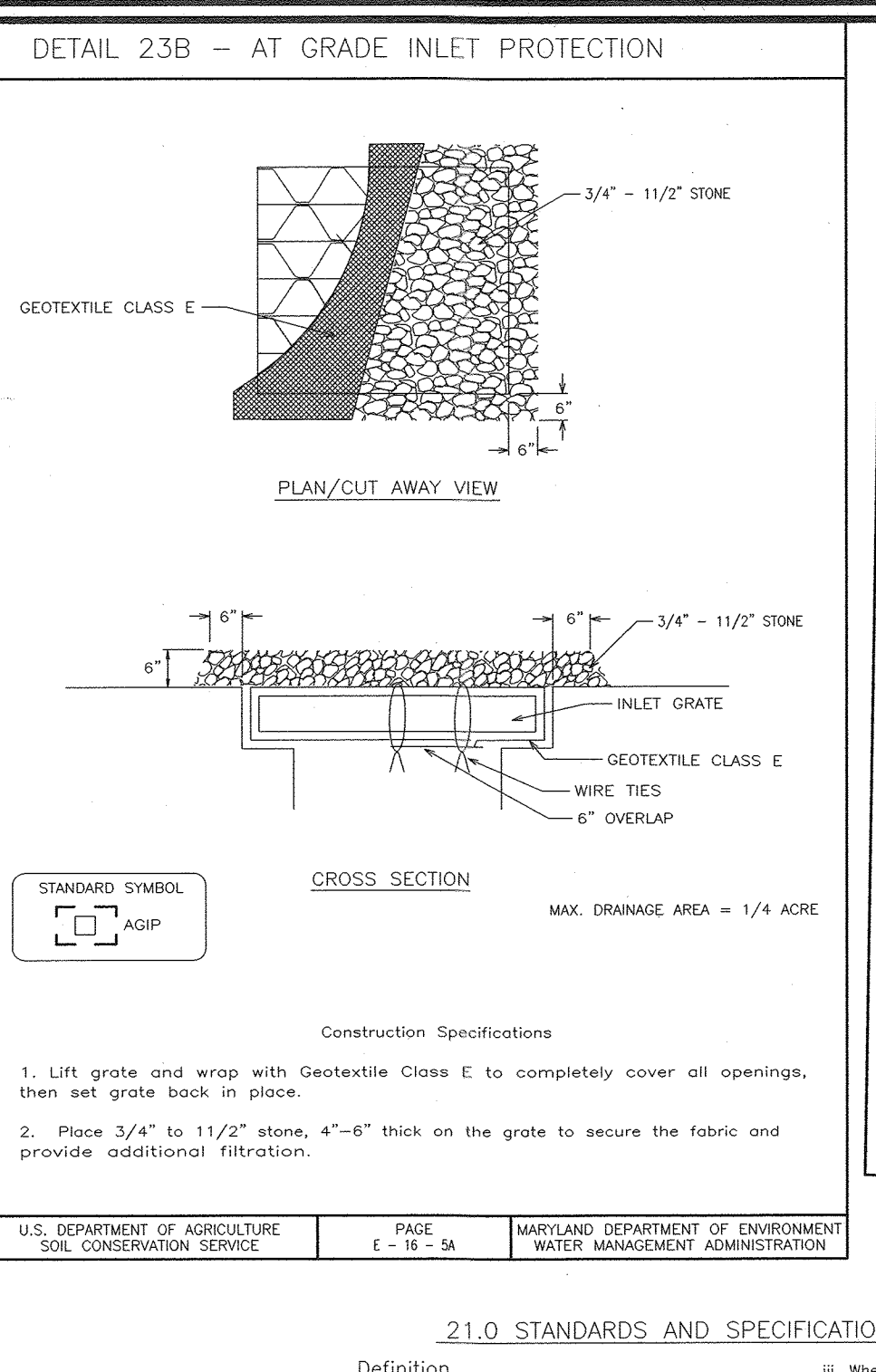
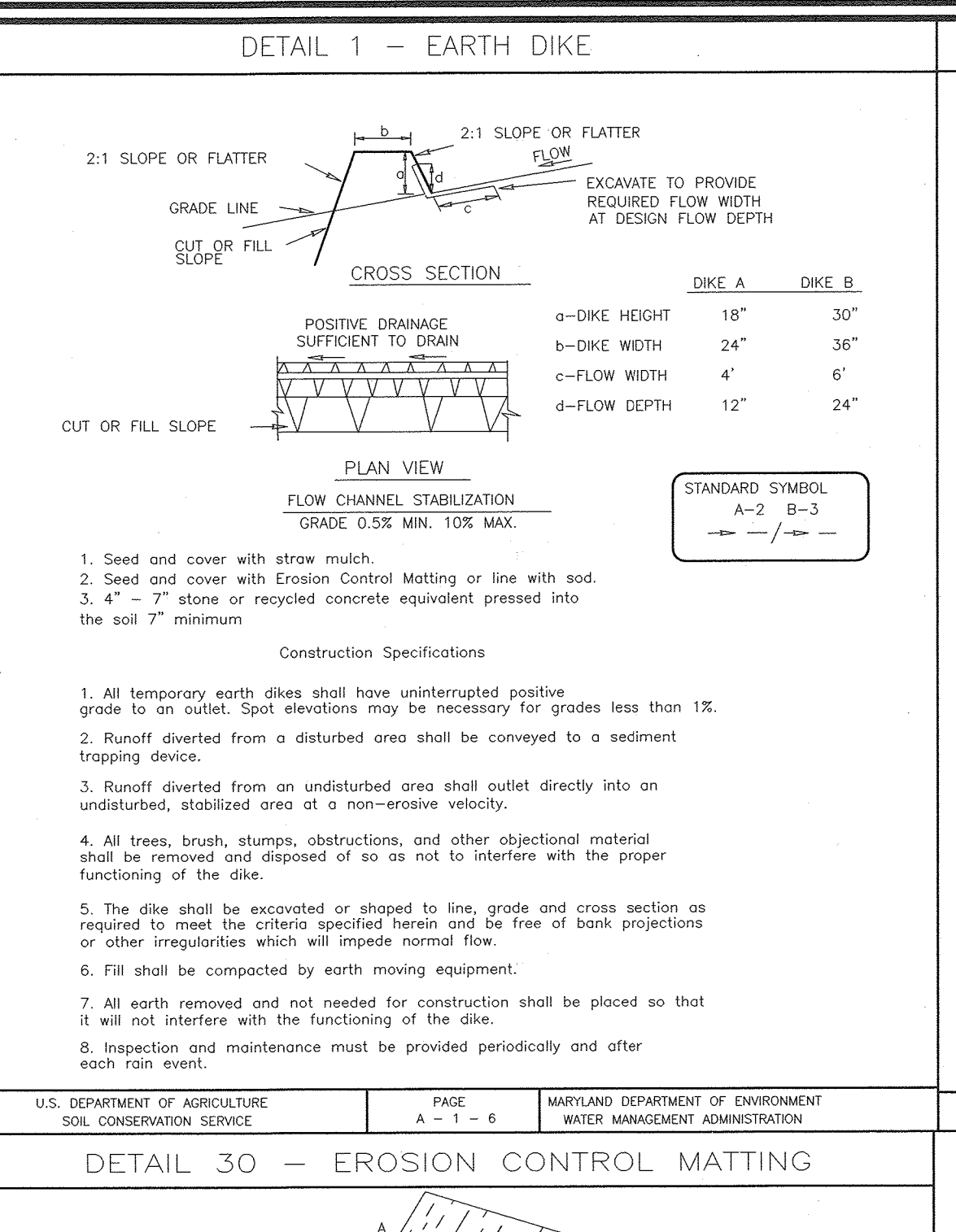
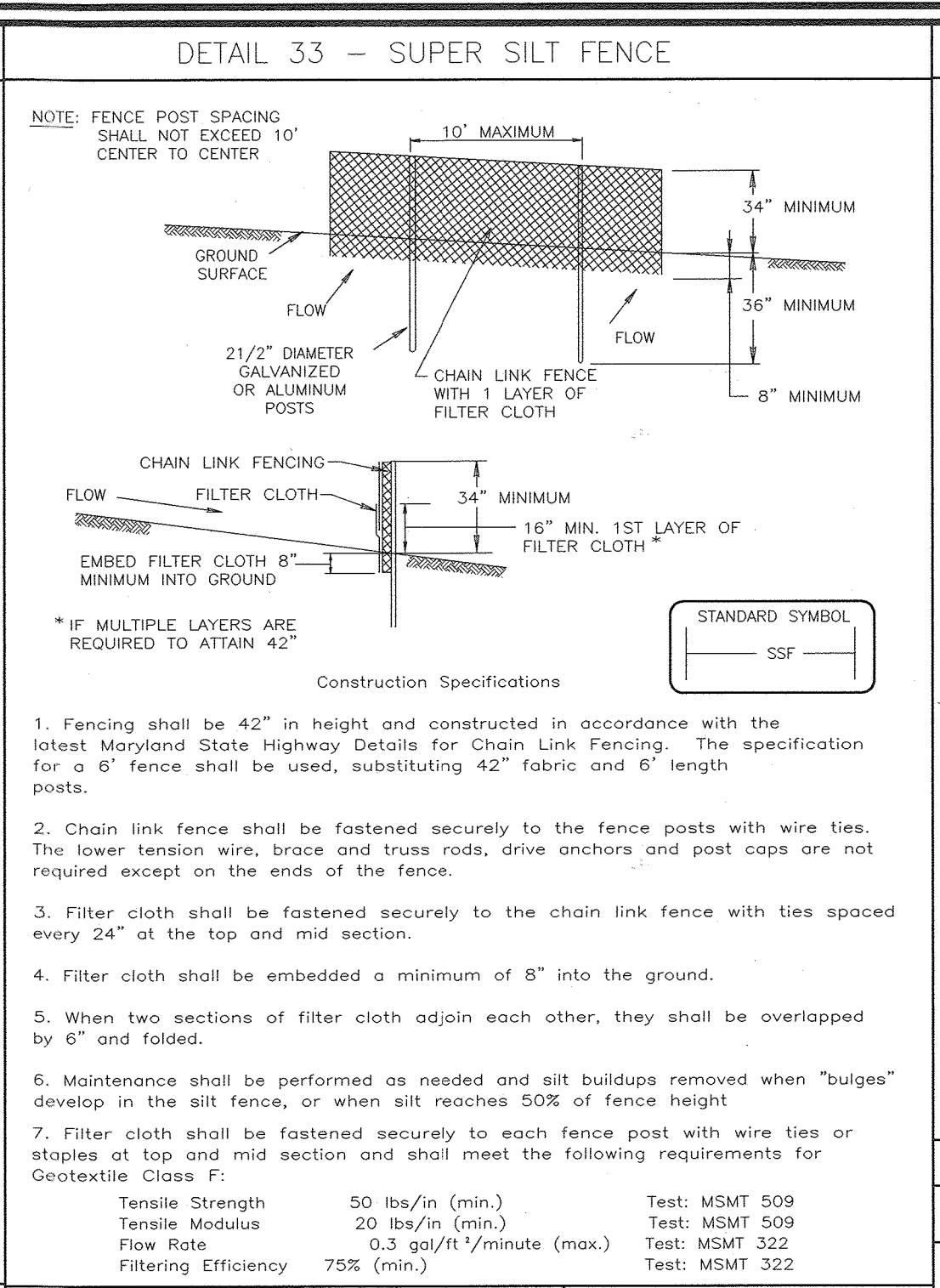
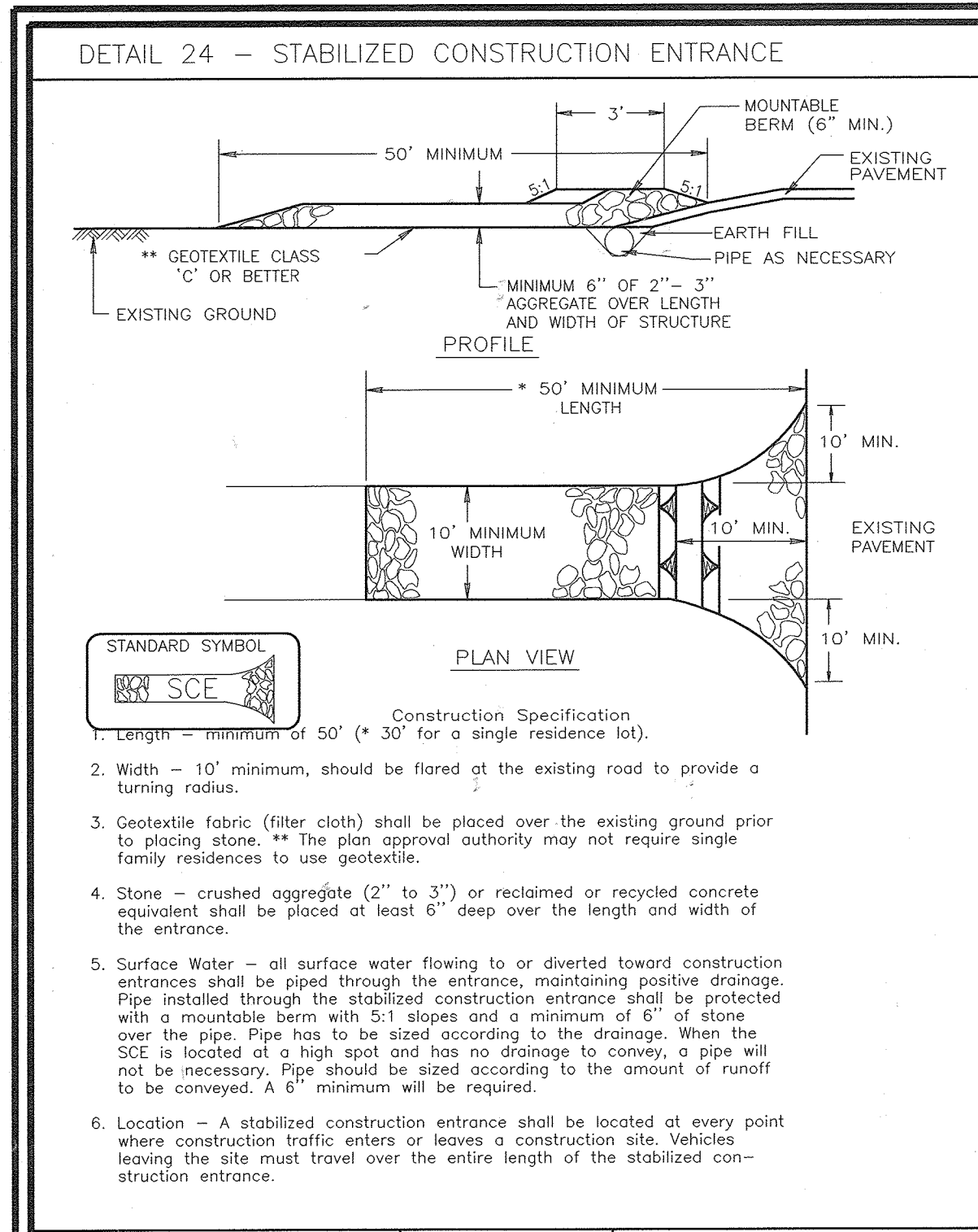
John R. Blanton 10/1/2015
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

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

John R. Blanton 12/21/15
HOWARD S.C.D. DATE

NOTES:

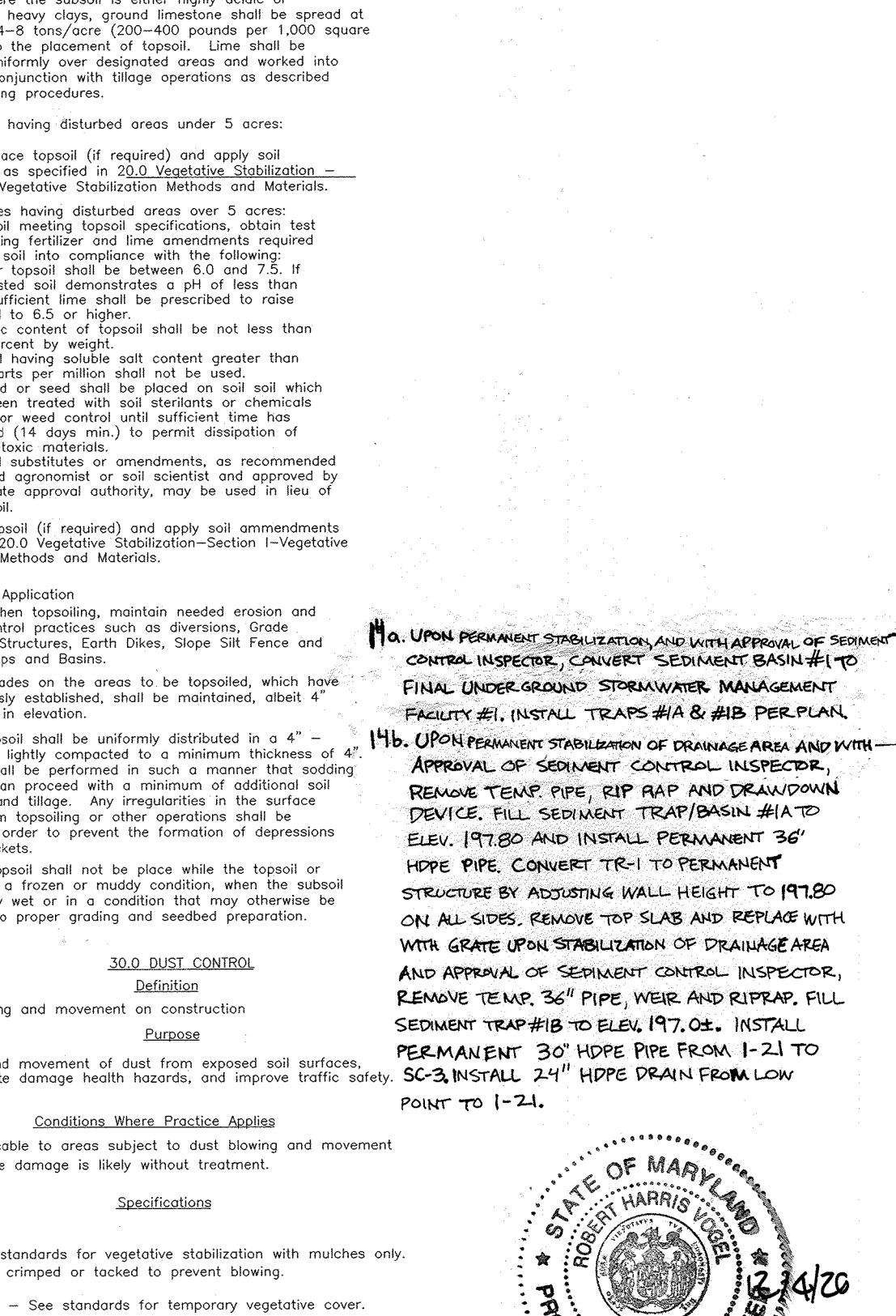
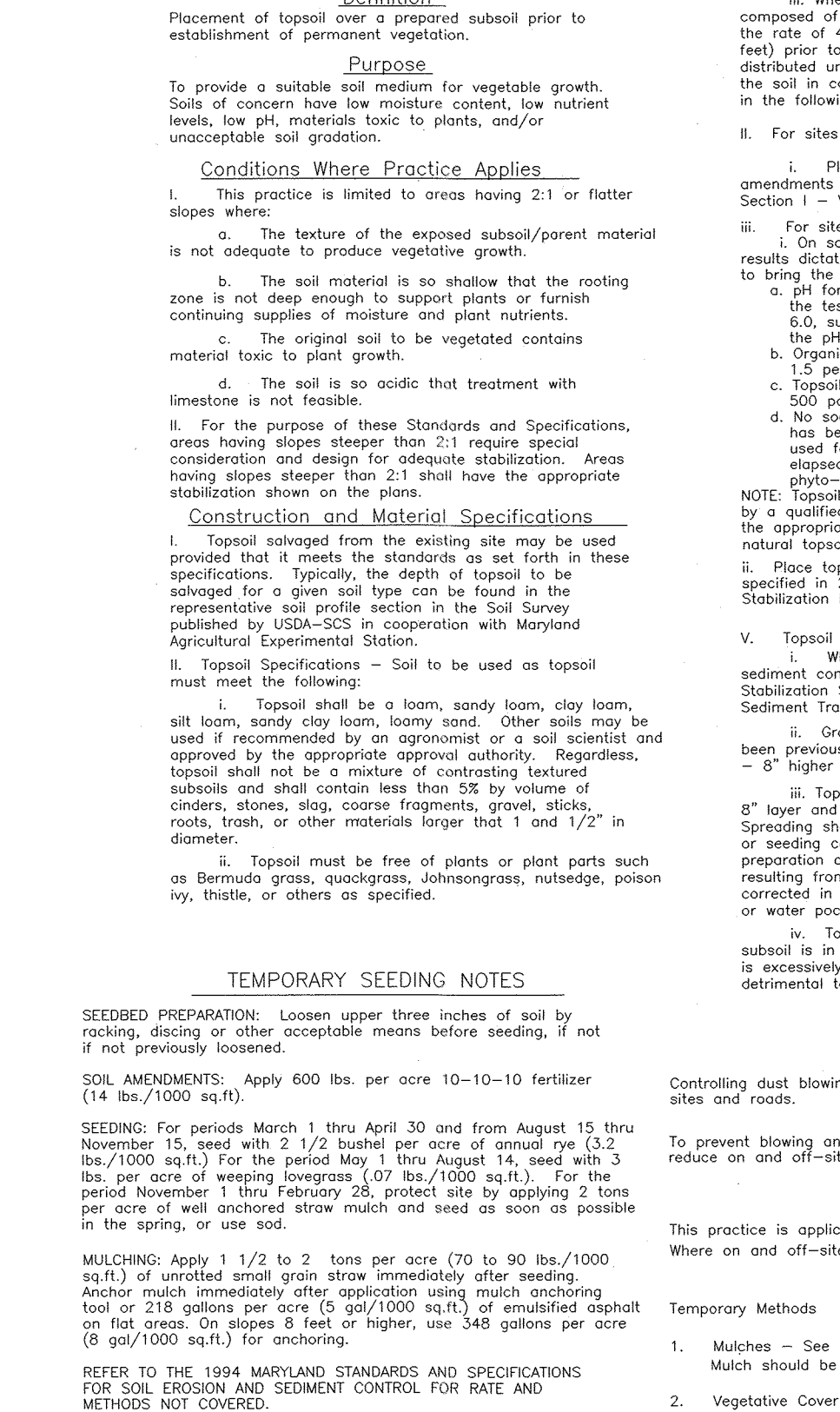
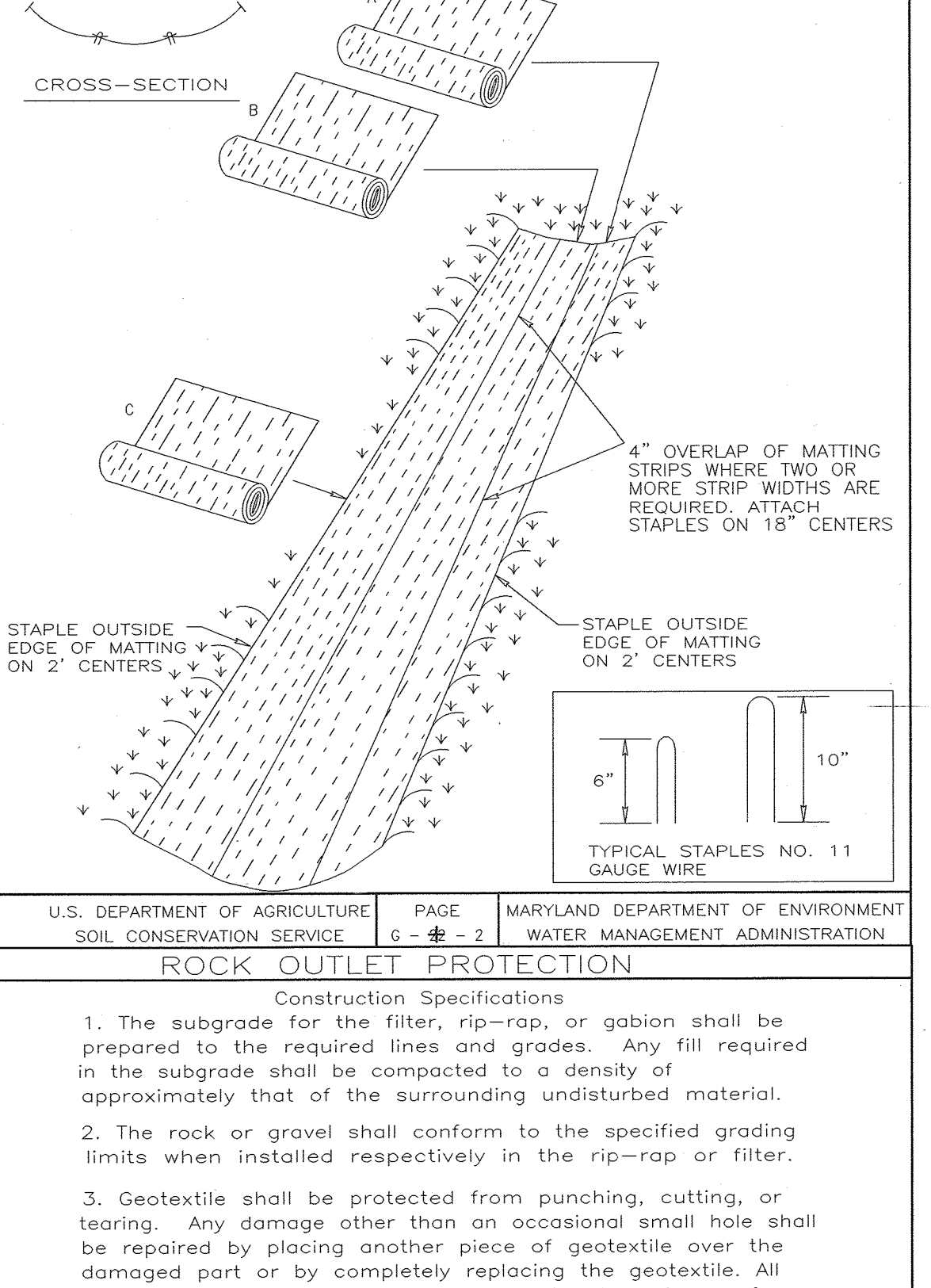
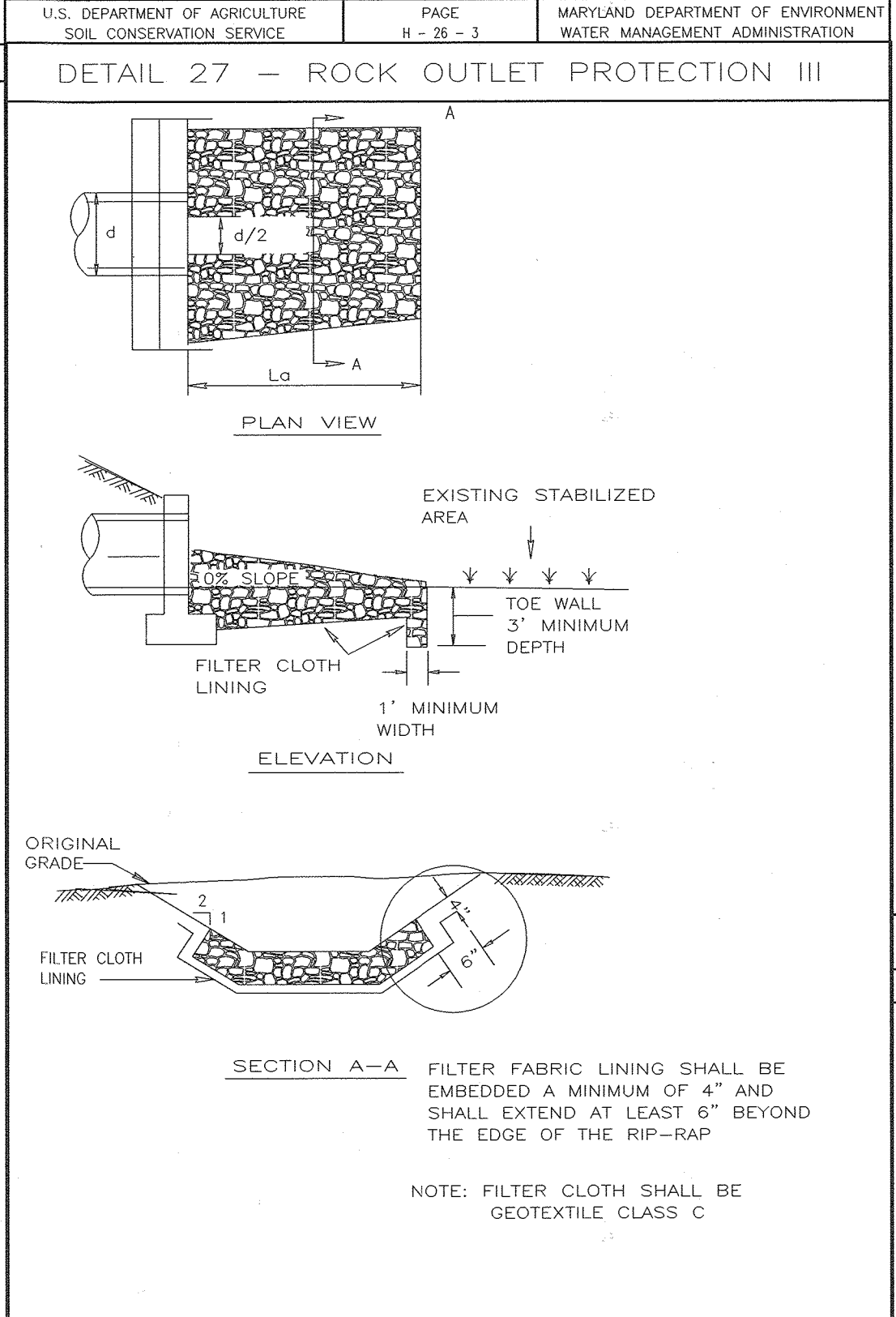
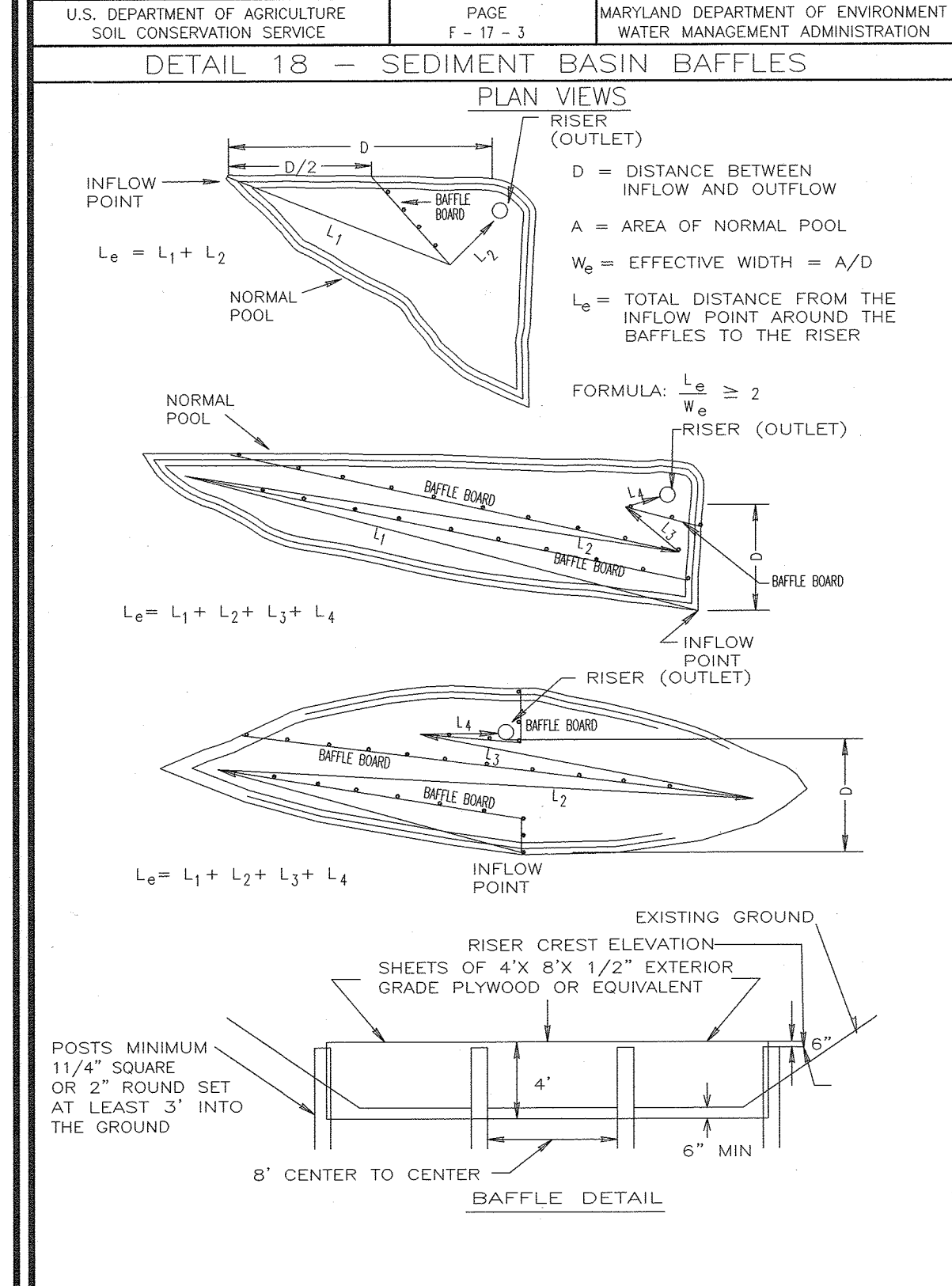
1. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE TO TRAPS AND BASINS AT ALL TIMES.
2. SEE SHEET 13 FOR BASIN DATA SCHEDULE.



SEDIMENT CONTROL NOTES

- A minimum of 48 hours notice must be given to the Howard County Department of Inspection, License and Permits Sediment Control Division prior to the start of any construction (313-1855).
- All vegetation and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.
- Following initial soil disturbance or redistribution, permanent or temporary sediment control structures, dikes, perimeter slopes, and all slopes greater than 3:1 (5:1 days as to all other disturbed or graded areas on the project site).
- All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 7, HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding, sod, temporary seeding, and mulching (Sec. 5). Temporary stabilization with mulch alone shall be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:

| | |
|------------------------------------|-------------|
| Total Area | 75.47 Acres |
| Area to be roofed or paved | 4.15 Acres |
| Area to be vegetatively stabilized | 61.30 Acres |
| Total Cut | 500,000 CY |
| Offsite waste/borrow area location | |
- On all sites with disturbed areas in excess of 2 acres, approval of the inspection authority shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this approval by the inspection authority is made.
- Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized within one working day, whichever is shorter.
- To be determined by contractor, with pre-approval of the Sediment Control Inspector with an approved and active grading permit.



SEQUENCE OF CONSTRUCTION

| NO. | DESCRIPTION | DURATION |
|-----|---|----------|
| 1 | Obtain grading permit. | 1 DAY |
| 2 | Notify Howard County Bureau of Inspection and Permits (313-1850) at least 24 hours before starting any work. | 1 DAY |
| 3 | Construct Stabilized Construction Entrance and install tree protection devices only. | 3 DAYS |
| 4 | Install silt and super silt fences. Clear and grub for sediment control devices only. | 1 WEEK |
| 5 | Construct sediment basins, earth dikes, and construction site stabilization devices. | 2 WEEKS |
| 6 | Contractor to first fill under dikes and grade area to establish positive flow to basins. As grading continues, the contractor is to maintain positive flow to the basins at all times. | 2 WEEKS |
| 7 | Stabilize all temporary swales, side ditches, or berms. See details and specifications for incremental stabilization. | 1 WEEK |
| 8 | With Inspector's approval, clear and grub remainder of site to LEO. | 1 WEEK |
| 9 | Begin mass grading and provide dust control. | 3 WEEKS |
| 10 | Grade road to sub-base. | 1 WEEK |
| 11 | Install storm drain structures on site is graded and outfall into basins. INSTALL PERMANENT DRAINAGE FROM POINT 1-21 TO POINT 1-22. | 2 WEEKS |
| 12 | Begin utilities construction. | 2 WEEKS |
| 13 | With road graded to sub-base and inlets are in place begin installation of curb and gutter. | 2 WEEKS |
| 14 | With curb and gutter in place pave road and install sidewalk. | 2 WEEKS |
| 15 | Install storm drain structures and provide dust control and contributing drainage areas stabilized, convert sediment basins to final storm drain structures. INSTALL PERMANENT DRAINAGE FROM POINT 1-21 TO POINT 1-22. | 2 WEEKS |
| 16 | As stormwater management structures are installed, begin final site stabilization. INSTALL PERMANENT DRAINAGE FROM POINT 1-21 TO POINT 1-22. | 2 WEEKS |
| 17 | During grading and provide the necessary maintenance on the sediment and erosion control measures shown hereon. | 2 WEEKS |
| 18 | Following initial soil disturbance or redistribution permanent or temporary stabilization shall be completed with a 30-day period for all perimeter sediment control structures, dikes, berms, ditch perimeter slopes, and all slopes greater than 3:1. | 2 WEEKS |
| 19 | 7/17/02 calendar days for all other disturbed areas. | 2 WEEKS |

NOTE: Sediment drains to provide for 2-year quantity management during their functions as basins in addition to providing sediment control.

SOC NOTE #18 CONTINUED:

THE CONVERSION OF SEDIMENT BASIN #2 TO SWAN POND #2 (POND) IS NOT DEPENDENT ON THE COMPLETION OR ACCEPTANCE OF SEDIMENT BASIN #1 OR UNDERGROUND SWAN#1. THE CONVERSION OF SEDIMENT BASIN #2 WILL OCCUR UPON COMPLETION OF WORK ASSOCIATED WITH F-18-022 AND SDP-18-022, AND WITH APPROVAL OF THE SEDIMENT CONTROL INSPECTOR. SURVEY FOR SWAN POND #2 (POND) IS ASSOCIATED WITH F-18-022.

AS-BUILT CERTIFICATION FOR PSWM

I, **GLENN G. GIBBS**, P.E., CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND RUNOFF RAINFALL TO FLOW.

DEVELOPER
BLUE STREAM LLC
C/O ARNOLD SAGNER
P.O. BOX 416
ELLICOTT CITY, MD 21041

OWNERS
BLUE STREAM LLC
C/O ARNOLD SAGNER
P.O. BOX 416
ELLICOTT CITY, MD 21041

ENGINEERS
FREDERICK WARD ASSOCIATES, INC.
7125 Riverwood Drive Columbia, Maryland 21046-2354
ARCHITECTS: Phone: 410-290-9550 Fax: 410-720-6226
SURVEYORS: Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: DLW
DRAWN BY: JAUZD
CHECKED BY: MMR
DATE: MARCH 2003
SCALE: (AS SHOWN)
W.O. NO.: 2019038

REF: S-98-08, WF-99-80, P-00-20, WF-00-116

AS-BUILT, DEC. 2018 F-02-35

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Andrew M. Daniels, 4-4-03, CHIEF, BUREAU OF HIGHWAYS

Jim Myers, 3/31/02, USA-NATURAL RESOURCES CONSERVATION SERVICE

Shelley St..., 3/31/03, HOWARD SOIL CONSERVATION DISTRICT

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER'S CERTIFICATE

I, **Blue Stream LLC**, HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH THESE PLANS, AND THAT ANY RESPONSIBLE PERSON 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

3/31/03

ENGINEER'S CERTIFICATE

I, **Robert H. Vogel**, HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL, REPRESENTS A PRACTICAL AND FEASIBLE DESIGN BASED ON MY PROFESSIONAL JUDGMENT OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

3/31/03

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division, 4/11/03

Robert H. Vogel, 3/31/03, REGISTERED PROFESSIONAL ENGINEER

AS-BUILT INFORMATION ON THIS SHEET

EXANDER HAMILTON, 4/11/03, REGISTERED PROFESSIONAL ENGINEER

INTERCOASTAL ASSOCIATES, LLC, 4/11/03, REGISTERED PROFESSIONAL ENGINEER

STATE OF MARYLAND

GLENN G. GIBBS, P.E., 12/4/02

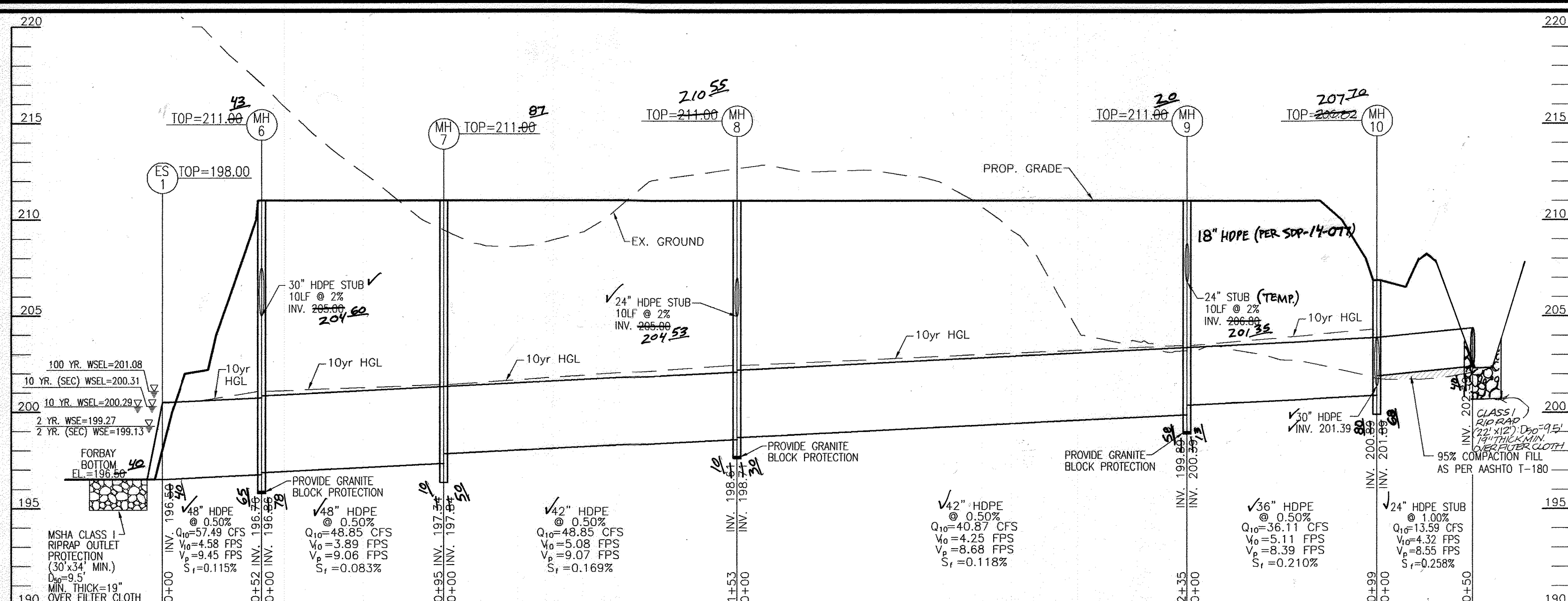
SEDIMENT AND EROSION CONTROL DETAILS

BLUE STREAM (FORMERLY KNOWN AS OVERTLOOK AT BLUE-STREAM)

FREDERICK WARD ASSOCIATES, INC.

DESIGN BY: DLW
DRAWN BY: JAUZD
CHECKED BY: MMR
DATE: MARCH 2003
SCALE: (AS SHOWN)
W.O. NO.: 2019038

12 SHEET OF **23**



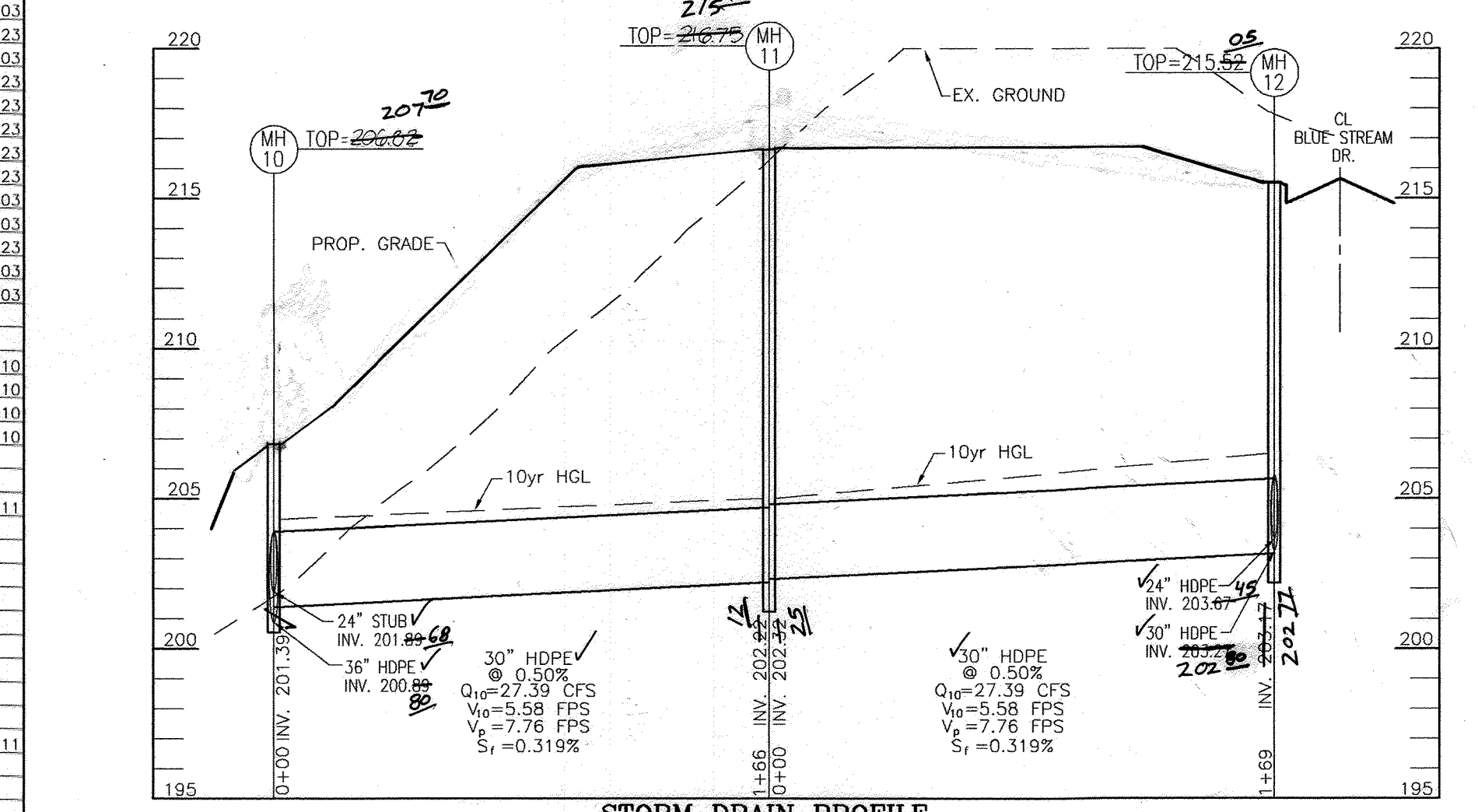
STORM DRAIN PROFILE
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

| NO. | TYPE | LOCATION | TOP EL. | IN/IN | INV. OUT | COMMENTS |
|-------|--------------------------------|------------------------|---------|--------|----------|-----------------------|
| I-1 | TYPE 'A-10' INLET | N 550260.8 E 1375955.2 | 206.10 | 199.54 | 199.44 | HO. CO. STD. D-4.03 |
| I-2 | TYPE 'A-10' INLET | N 550170.9 E 1376014.8 | 204.84 | 200.81 | 200.71 | HO. CO. STD. D-4.03 |
| I-3 | TYPE 'A-10' INLET | N 550208.8 E 1376062.4 | 204.94 | 201.42 | 201.42 | HO. CO. STD. D-4.03 |
| I-4 | TYPE 'A-10' INLET | N 550634.1 E 1376003.5 | 207.61 | 199.47 | 199.77 | HO. CO. STD. D-4.04 |
| I-5 | TYPE 'A-10' INLET | N 551045.3 E 1376072.5 | 211.94 | 202.91 | 202.91 | HO. CO. STD. D-4.03 |
| I-6 | DOUBLE TYPE 'S' INLET | N 551051.6 E 1376104.8 | 211.34 | 203.49 | 203.39 | HO. CO. STD. D-4.23 |
| I-7 | TYPE 'A-10' INLET | N 550640.8 E 1375963.2 | 207.61 | 199.87 | 199.77 | HO. CO. STD. D-4.03 |
| I-8 | DOUBLE TYPE 'S' INLET | N 550945.3 E 1376251.6 | 207.59 | 203.66 | 203.16 | HO. CO. STD. D-4.23 |
| I-9 | DOUBLE TYPE 'S' INLET | N 550968.9 E 1376255.5 | 207.59 | 203.94 | 203.84 | HO. CO. STD. D-4.23 |
| I-10 | DOUBLE TYPE 'S' INLET | N 551519.5 E 1376113.1 | 214.44 | 203.96 | 203.96 | HO. CO. STD. D-4.23 |
| I-11 | DOUBLE TYPE 'S' INLET | N 551744.0 E 1376150.7 | 217.50 | 208.16 | 208.06 | HO. CO. STD. D-4.23 |
| I-12 | DOUBLE TYPE 'S' INLET | N 551738.0 E 1376186.3 | 217.50 | 208.62 | 208.52 | HO. CO. STD. D-4.23 |
| I-13 | TYPE 'A-10' INLET | N 551860.7 E 1376243.7 | 220.50 | 210.50 | 210.40 | HO. CO. STD. D-4.03 |
| I-14 | TYPE 'A-10' INLET | N 551878.7 E 1376136.3 | 220.50 | 216.50 | 216.40 | HO. CO. STD. D-4.03 |
| I-15 | DOUBLE TYPE 'S' INLET | N 551513.5 E 1376148.5 | 214.44 | 207.51 | 207.41 | HO. CO. STD. D-4.23 |
| I-16 | TYPE 'A-10' INLET | N 551241.0 E 1376063.9 | 214.24 | 205.90 | 205.80 | HO. CO. STD. D-4.03 |
| I-17 | TYPE 'A-10' INLET | N 551234.3 E 1376104.2 | 214.24 | 206.41 | 206.31 | HO. CO. STD. D-4.03 |
| I-18 | DOUBLE OPENING TYPE 'K' INLET | N 550290.9 E 1376457.5 | 192.25 | 184.28 | 184.28 | MD-378.03 |
| I-19 | SINGLE OPENING TYPE 'K' INLET | N 550512.3 E 1376715.5 | 202.25 | 197.28 | 197.28 | MD-378.03 |
| I-20 | 'D' INLET | N 550449.1 E 1376081.8 | 202.50 | 196.04 | 196.04 | HO. CO. STD. D-4.10 |
| I-21 | 'D' INLET | N 550575.3 E 1376313.9 | 199.00 | 194.11 | 194.11 | HO. CO. STD. D-4.10 |
| I-22 | 'D' INLET | N 550446.7 E 1376461.7 | 199.50 | 195.50 | 195.50 | HO. CO. STD. D-4.10 |
| I-23 | 'D' INLET | N 550212.3 E 1376223.4 | 201.00 | 196.39 | 196.39 | HO. CO. STD. D-4.10 |
| MH-1 | 5'-0" STANDARD PRECAST MANHOLE | N 550361.8 E 1376079.8 | 207.38 | 194.88 | 194.88 | MD-384.03 |
| MH-2 | 5'-0" STANDARD PRECAST MANHOLE | N 550354.0 E 1375971.1 | 206.95 | 195.35 | 195.35 | MD-384.03 |
| MH-3 | 4'-0" STANDARD PRECAST MANHOLE | N 550301.7 E 1375986.1 | 206.09 | 198.93 | 198.83 | HO. CO. STD. G-5.11 |
| MH-4 | 5'-0" STANDARD PRECAST MANHOLE | N 550399.7 E 1375963.5 | 207.62 | 195.78 | 195.68 | MD-384.03 |
| MH-5 | 5'-0" STANDARD PRECAST MANHOLE | N 550974.4 E 1376061.3 | 210.48 | 202.19 | 201.69 | MD-384.03 |
| MH-6 | 6'-0" STANDARD PRECAST MANHOLE | N 552081.5 E 1375863.6 | 211.00 | 196.86 | 196.76 | MD-384.03 |
| MH-7 | 6'-0" STANDARD PRECAST MANHOLE | N 551987.5 E 1375848.0 | 211.00 | 197.34 | 197.34 | MD-384.03 |
| MH-8 | 6'-0" STANDARD PRECAST MANHOLE | N 551836.5 E 1375822.3 | 211.00 | 198.71 | 198.61 | MD-384.03 |
| MH-9 | 6'-0" STANDARD PRECAST MANHOLE | N 551604.9 E 1375783.7 | 211.00 | 199.89 | 199.89 | MD-384.03 |
| MH-10 | 5'-0" STANDARD PRECAST MANHOLE | N 551507.2 E 1375767.3 | 206.22 | 200.89 | 200.89 | MD-384.03 |
| MH-11 | 5'-0" STANDARD PRECAST MANHOLE | N 551479.8 E 1375930.6 | 210.75 | 202.32 | 202.22 | MD-384.03 |
| MH-12 | 5'-0" STANDARD PRECAST MANHOLE | N 551451.8 E 1376097.7 | 215.52 | 203.17 | 203.17 | MD-384.03 |
| MH-13 | 4'-0" STANDARD PRECAST MANHOLE | N 551864.2 E 1376204.1 | 221.54 | 215.81 | 215.81 | HO. CO. STD. G-5.11 |
| MH-14 | 5'-0" STANDARD PRECAST MANHOLE | N 551484.9 E 1376147.8 | 215.19 | 207.80 | 207.80 | MD-384.03 |
| MH-15 | 6'-0" STANDARD PRECAST MANHOLE | N 552301.0 E 1375865.0 | 220.20 | 196.99 | 196.99 | MD-384.03 |
| MH-16 | 5'-0" STANDARD PRECAST MANHOLE | N 552292.0 E 1375920.2 | 224.00 | 206.94 | 206.94 | MD-384.03 |
| MH-17 | 5'-0" STANDARD PRECAST MANHOLE | N 552256.0 E 1376141.2 | 227.50 | 209.78 | 209.68 | MD-384.03 |
| MH-18 | 5'-0" STANDARD PRECAST MANHOLE | N 552235.2 E 1376269.5 | 228.57 | 211.08 | 211.08 | MD-384.03 |
| MH-19 | 5'-0" STANDARD PRECAST MANHOLE | N 552374.4 E 1375703.9 | 227.75 | 200.38 | 199.76 | MD-384.03 |
| MH-20 | 5'-0" STANDARD PRECAST MANHOLE | N 552414.2 E 1375296.4 | 224.00 | 203.74 | 203.64 | MD-384.03 |
| MH-21 | 5'-0" STANDARD PRECAST MANHOLE | N 550318.9 E 1376433.3 | 200.32 | 184.65 | 184.55 | MD-384.03 |
| MH-22 | 4'-0" STANDARD PRECAST MANHOLE | N 550401.7 E 1376586.5 | 199.39 | 193.88 | 193.78 | MD-384.01 |
| ES-1 | 48" CONCRETE END SECTION | N 552114.8 E 1375823.8 | 210.50 | 196.50 | 196.50 | HO. CO. STD. D-5.51 |
| ES-2 | 48" CONCRETE END SECTION | N 552211.3 E 1376285.3 | 210.50 | 196.50 | 196.50 | HO. CO. STD. D-5.51 |
| HW-1 | 48" TYPE 'A' HEADWALL | N 551739.1 E 1375662.3 | 177.74 | 172.34 | 172.34 | HO. CO. STD. D-5.11 |
| CS-1 | CONTROL STRUCTURE | N 550385.2 E 1376375.5 | 177.74 | 172.34 | 172.34 | (SEE DETAIL SHEET 15) |
| CS-2 | CONTROL STRUCTURE | N 551742.2 E 1375276.2 | 177.74 | 172.34 | 172.34 | (SEE DETAIL SHEET 16) |
| SC-1 | STC 6000 | N 550374.7 E 1376062.0 | 207.40 | 194.88 | 194.78 | |
| SC-2 | STC 4800 | N 550396.8 E 1376073.1 | 207.80 | 195.77 | 195.67 | |
| SC-3 | STC 7200 | N 550523.7 E 1376326.2 | 202.88 | 193.84 | 193.74 | |
| SC-4 | STC 4800 | N 550432.3 E 1376419.1 | 200.50 | 194.60 | 194.50 | |
| SC-5 | STC 7200 | N 550262.1 E 1376227.1 | 202.45 | 194.89 | 194.79 | |

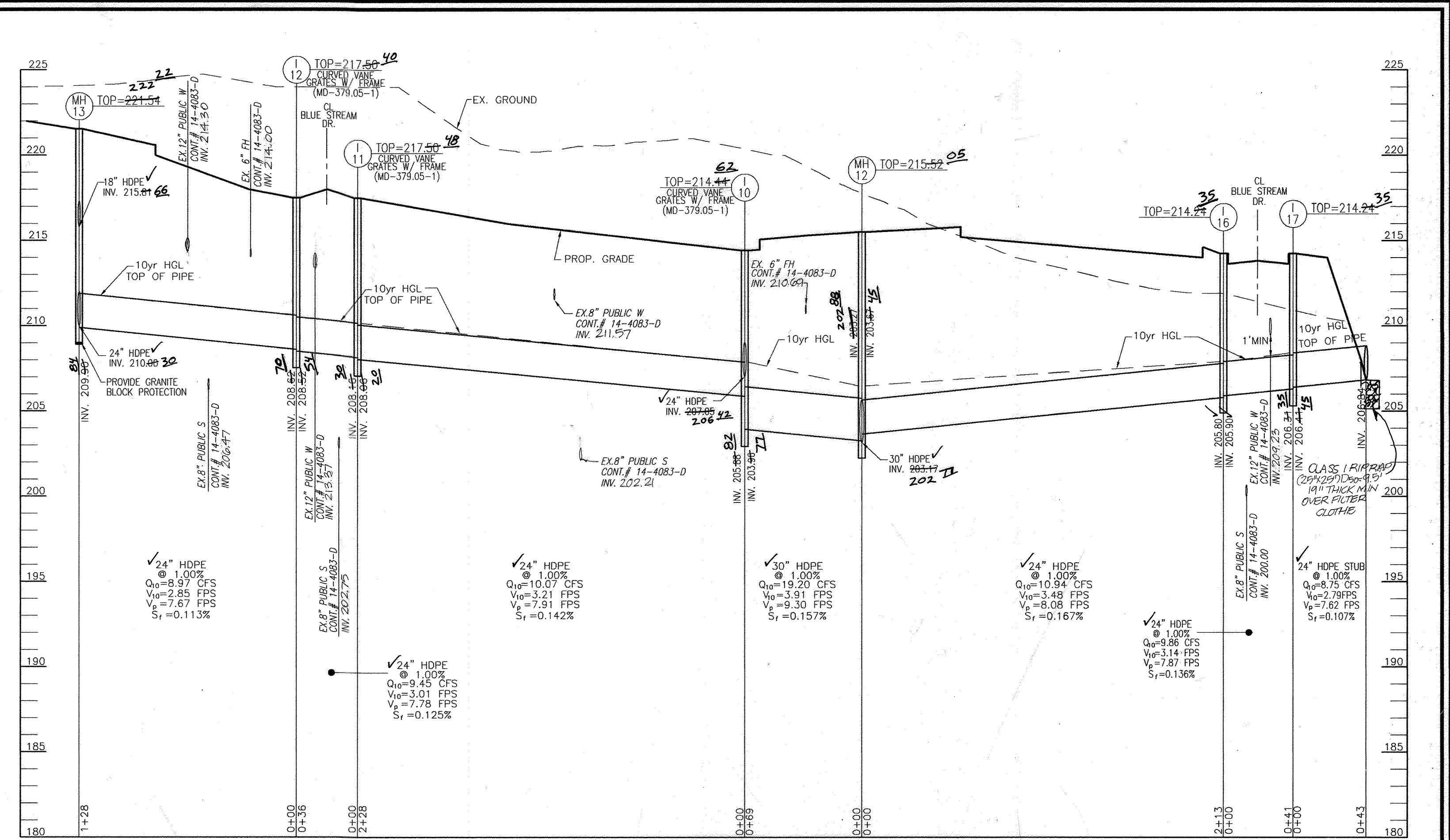
NOTE: 1. TOP ELEVATIONS ARE AT FLOWLINE FOR TYPE 'A-10' AND DOUBLE TYPE 'S' COMB. INLETS AT CENTER TOP OF GRATE FOR DOUBLE TYPE 'S' INLETS AND TOP OF MANHOLE COVER FOR PRECAST MANHOLES.
2. FOR TOP SUB SLOPES SEE GRADING PLAN.
3. DOUBLE TYPE 'S' INLETS TO HAVE CURVED VANE GRATES W/ FRAME (MD-378-05-01)
4. PROVIDE GRANITE BLOCK PROTECTION FOR MH-6, MH-8, MH-9, MH-13, AND MH-15.
* (3) THREE PIPES IN INVERTS = 222.90, 212.58 & 211.18.

| SIZE | TYPE | LENGTH |
|------|-------------------------|---------|
| 18" | HDPE | 700 |
| 24" | HDPE | 1508 LF |
| 30" | HDPE | 1206 LF |
| 36" | HDPE | 1254 LF |
| 42" | HDPE | 444 LF |
| 48" | HDPE | 245 LF |
| 12" | PERF. PVC | 50 LF |
| 18" | RCP, CLASS IV | 340 LF |
| 30" | RCP, CLASS IV | 152 LF |
| 30" | RCCP, ASTM C-361 (C-25) | 86 LF |
| 42" | RCCP, ASTM C-361 (B-25) | 62 LF |
| 36" | PERF. HDPE | 1170 LF |
| 12" | HDPE | 36 LF |
| 15" | HDPE | 36 LF |

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] DATE: 12/31/10
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] DATE: 1/10/11
 CHIEF, DIVISION OF LAND DEVELOPMENT

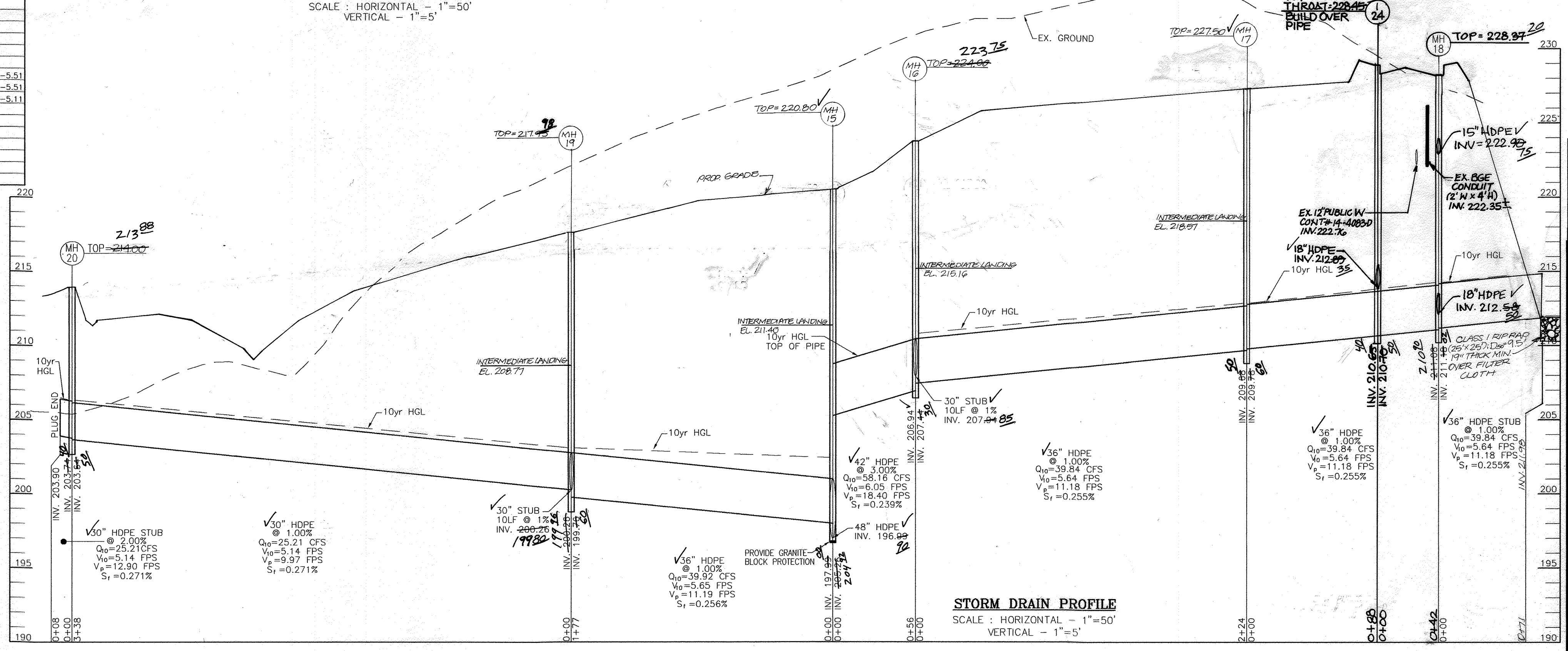


STORM DRAIN PROFILE
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



STORM DRAIN PROFILE
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

| NO. | TYPE | LOCATION | TOP EL. | IN/IN | INV. OUT | COMMENTS |
|-------|--------------------------------|------------------------|---------|--------|----------|---------------------|
| I-24 | TYPE 'A-10' INLET | N 552241.5 E 1376230.4 | 229.05 | 212.30 | 212.65 | HO. CO. STD. D-4.03 |
| I-25 | DOUBLE TYPE 'S' INLET | N 552042.6 E 1376200.8 | 223.17 | 214.15 | 213.50 | HO. CO. STD. D-4.23 |
| I-26 | DOUBLE TYPE 'S' INLET | N 552027.7 E 1376236.3 | 223.17 | 214.55 | 214.00 | HO. CO. STD. D-4.23 |
| I-27 | DOUBLE TYPE 'S' INLET | N 552197.6 E 1376263.2 | 223.38 | 213.30 | 212.30 | HO. CO. STD. D-4.23 |
| MH-23 | 4'-0" STANDARD PRECAST MANHOLE | N 552313.1 E 1376264.1 | 223.86 | 213.71 | 213.11 | HO. CO. STD. G-5.11 |



STORM DRAIN PROFILE
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



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] DATE: 12/4/20
 NAME: R.H.V. P.E.#: 16193

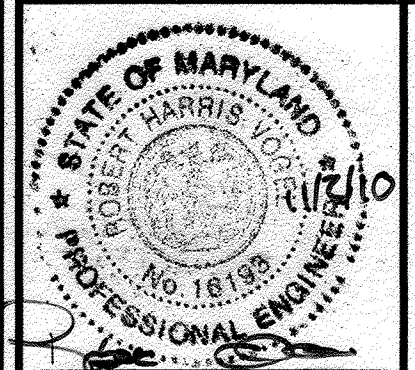
APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] DATE: 12-2-10
 CHIEF, BUREAU OF HIGHWAYS

OWNER/DEVELOPER
 BLUE STREAM, LLC.
 P.O. BOX 416
 ELLICOTT CITY, MD 21041
 C/O: ARNOLD SAGNER
 410-465-2020

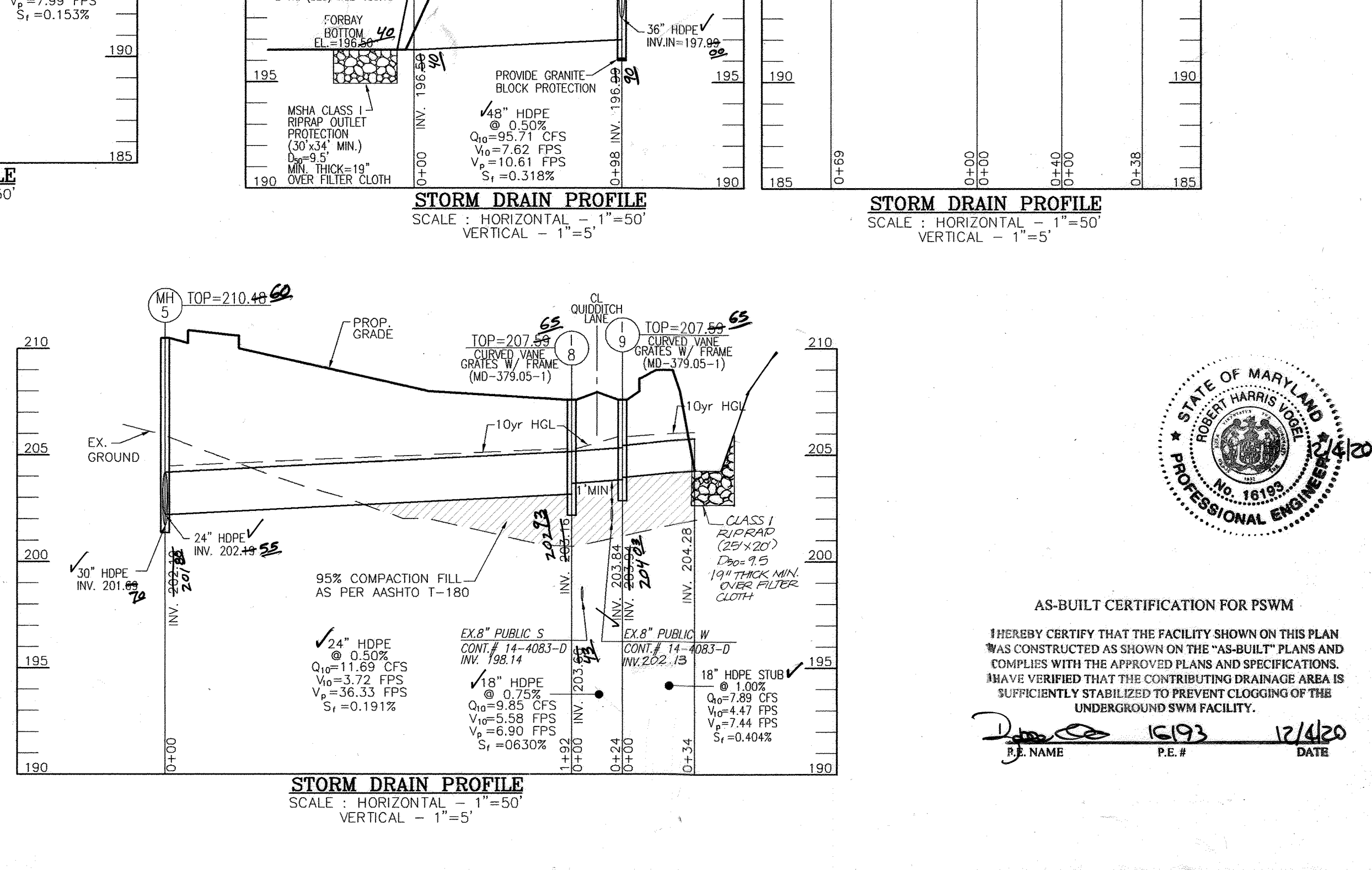
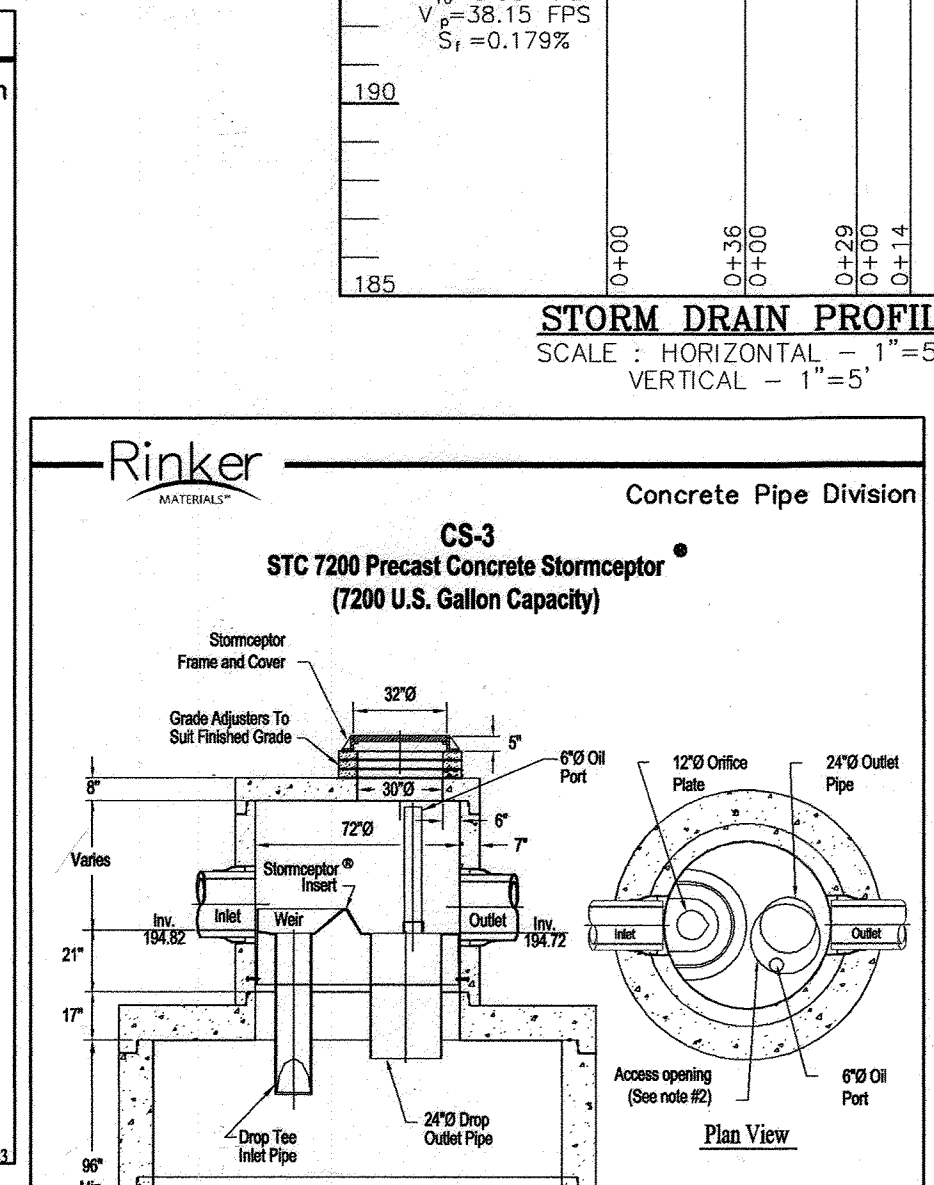
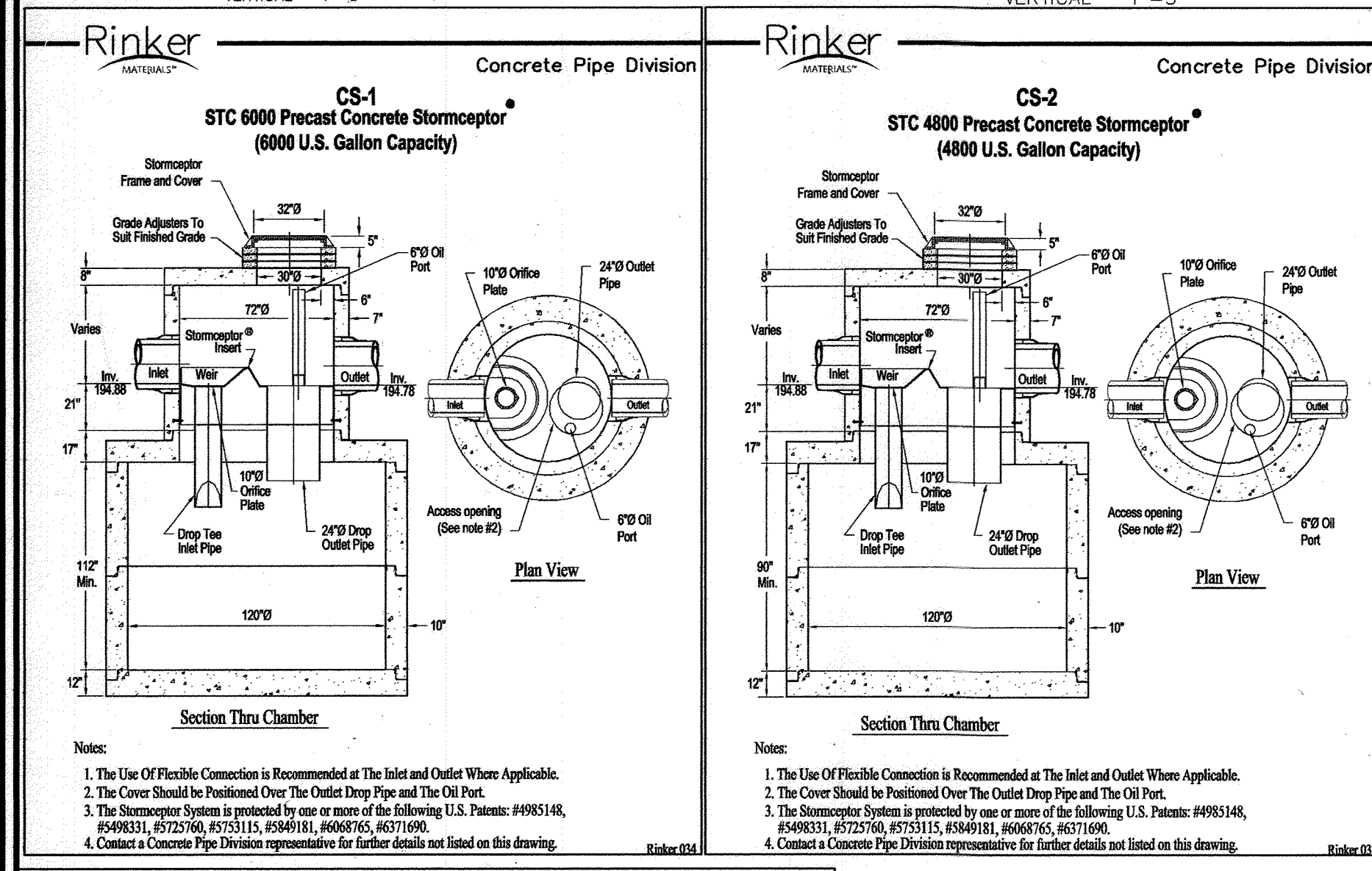
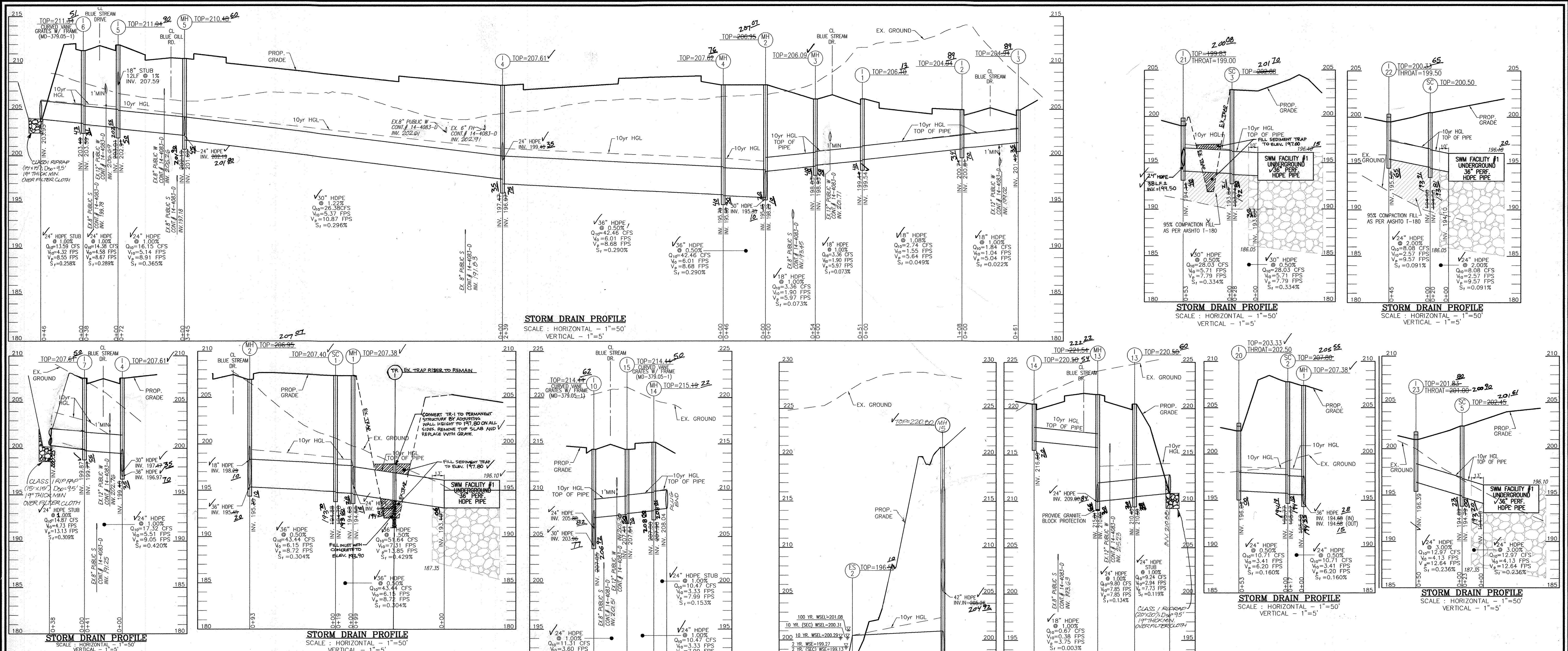
| NO. | REVISION | DATE |
|-----|--|----------|
| B | REVISE GRADING OF BLUE STREAM DRIVE EXTENSION TO AVOID CONFLICT WITH BGE DUCT/CONDUIT | 02/04/15 |
| G | REVISED PLAN TO ADD EXTENSION TO BLUE STREAM DRIVE AND ADJUST PUBLIC STORM DRAIN ACCORDINGLY | 07/31/14 |
| 2 | REVISE WATER MAIN PIPE MATERIAL GRADING AND AMENITY AREA | 6/30/11 |
| 1 | REVISE ROAD PLANS, SWM, STORM DRAIN, ETC. | 10/14/10 |

REVISED FINAL ROAD CONSTRUCTION PLAN
 STORM DRAIN PROFILES
 BLUE STREAM
 (THE OVERLOOK AT BLUE STREAM)
 OPEN SPACE LOTS G-1 & G-2 AND BUILDABLE BULK PARCELS H-M
 TAX MAP 43 GRID 4 & 5 1ST ELECTION DISTRICT
 PARCEL P/O 5, 14 & 553 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. MY LICENSE NO. IS 16193. EXPIRATION DATE: 09-27-2012.
 DESIGN BY: RHV
 DRAWN BY: DZ
 CHECKED BY: RHV
 DATE: SEPTEMBER 2010
 SCALE: AS SHOWN
 W.O. NO.: 06-26
 14 SHEET OF 28



OWNER/DEVELOPER
 BLUE STREAM, LLC.
 P.O. BOX 416
 ELLICOTT CITY, MD 21041
 C/O ARNOLD SAGNER
 410-465-2020

| NO. | REVISION | DATE |
|-----|---|----------|
| 11 | REVISE PLANS FOR SEDIMENT EROSION CONTROL | 1-7-20 |
| 2 | REVISE WATER MAIN PIPE MATERIALS, GRADING AND ADJUTENCY AREA (2011) | 10/14/11 |
| 1 | REVISE ROAD PLANS, SWM, STORM DRAIN, ETC. | 10/14/11 |

REVISED FINAL ROAD CONSTRUCTION PLAN
STORM DRAIN PROFILES AND SPECIFICATIONS
 BLUE STREAM
 (FORMERLY KNOWN AS OVERLOOK AT BLUE STREAM)
 OPEN SPACE LOTS G-1 & G-2 AND BUILDABLE BULK PARCELS H-M

TAX MAP 43 GRID 4 & 5
 1ST ELECTION DISTRICT

PARCEL P/O 5, 14 & 553
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
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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.

DESIGN BY: RHV
 DRAWN BY: DZ
 CHECKED BY: RHV
 DATE: SEPTEMBER 2010
 SCALE: AS SHOWN
 W.O. NO.: 06-26

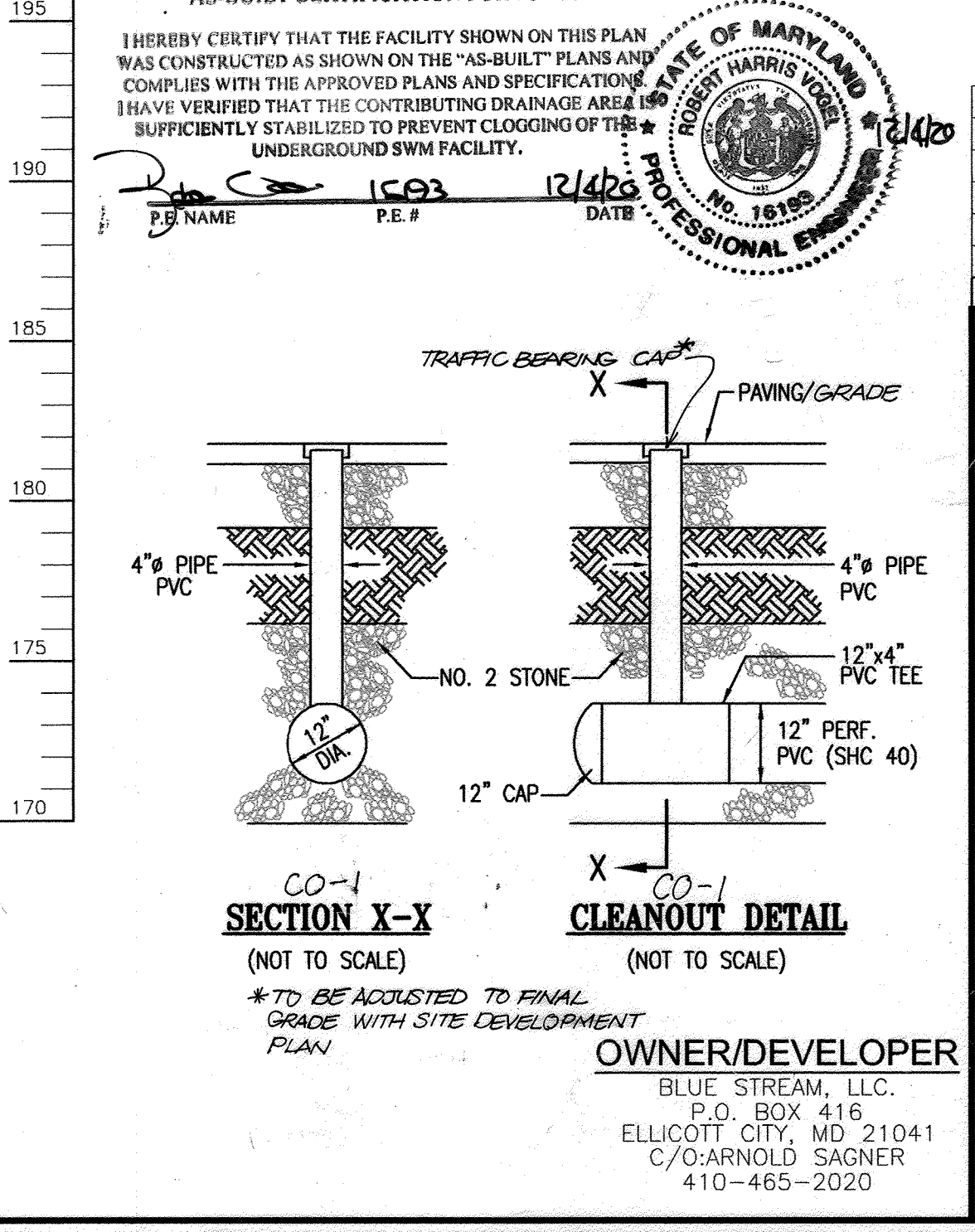
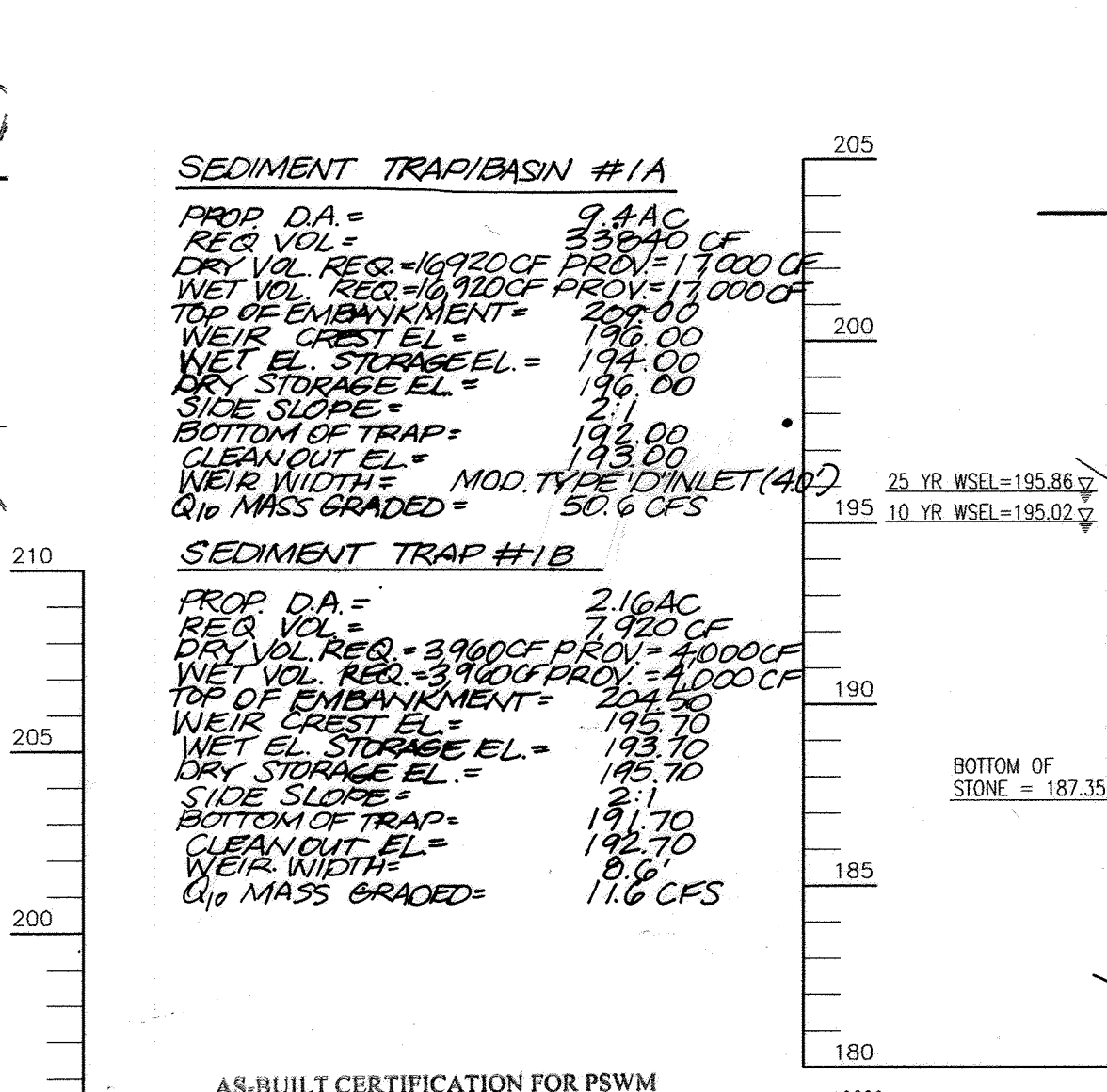
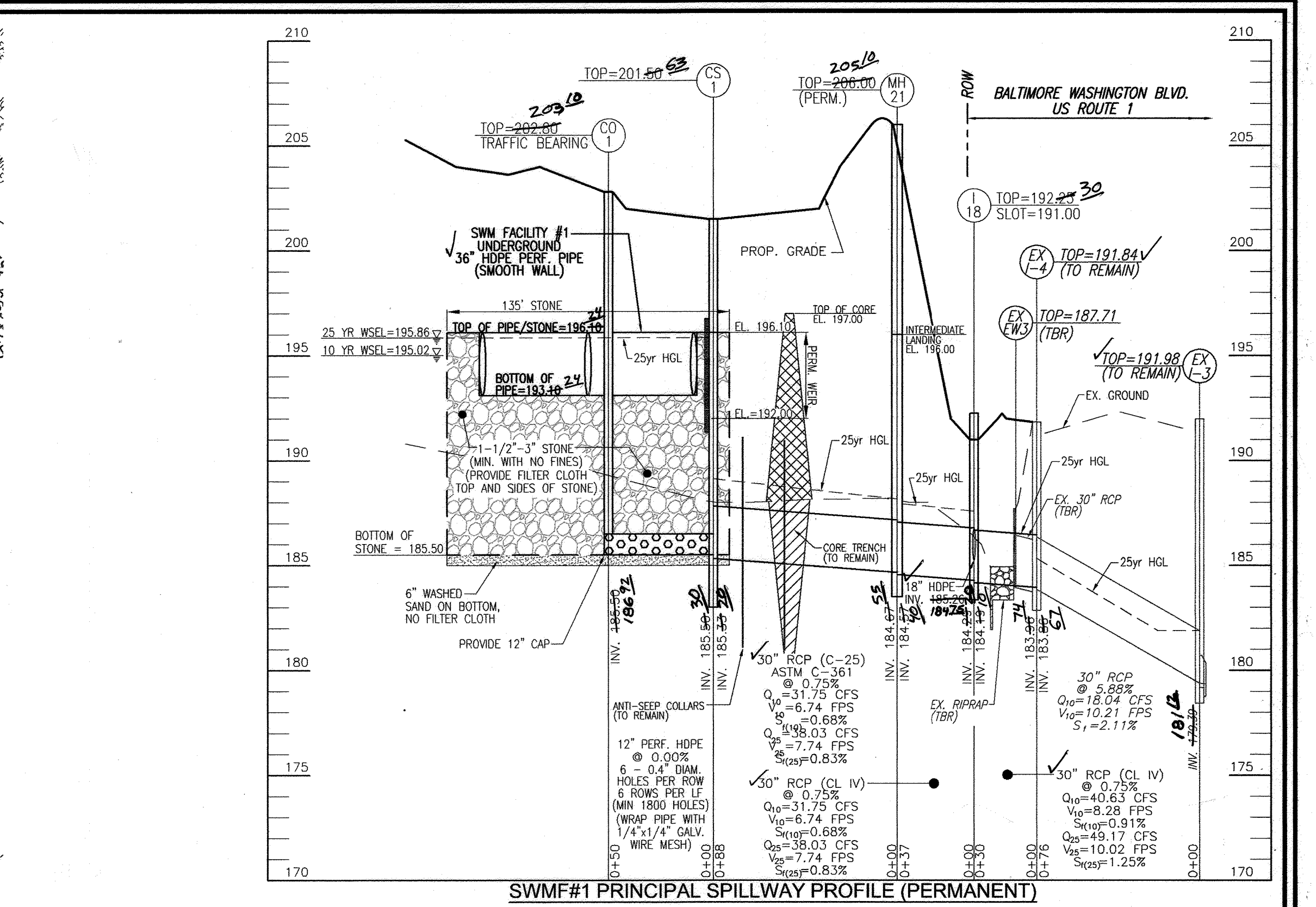
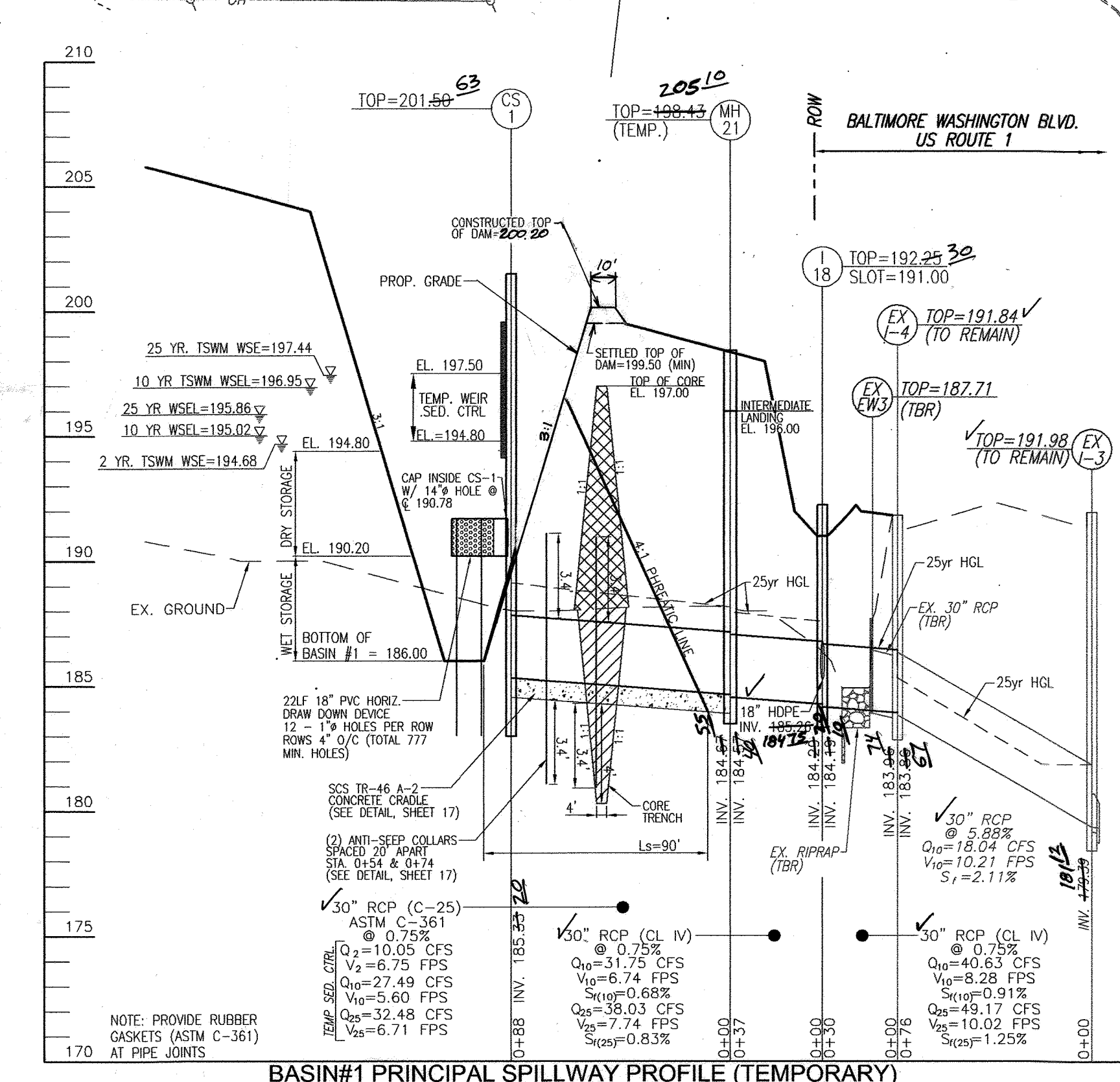
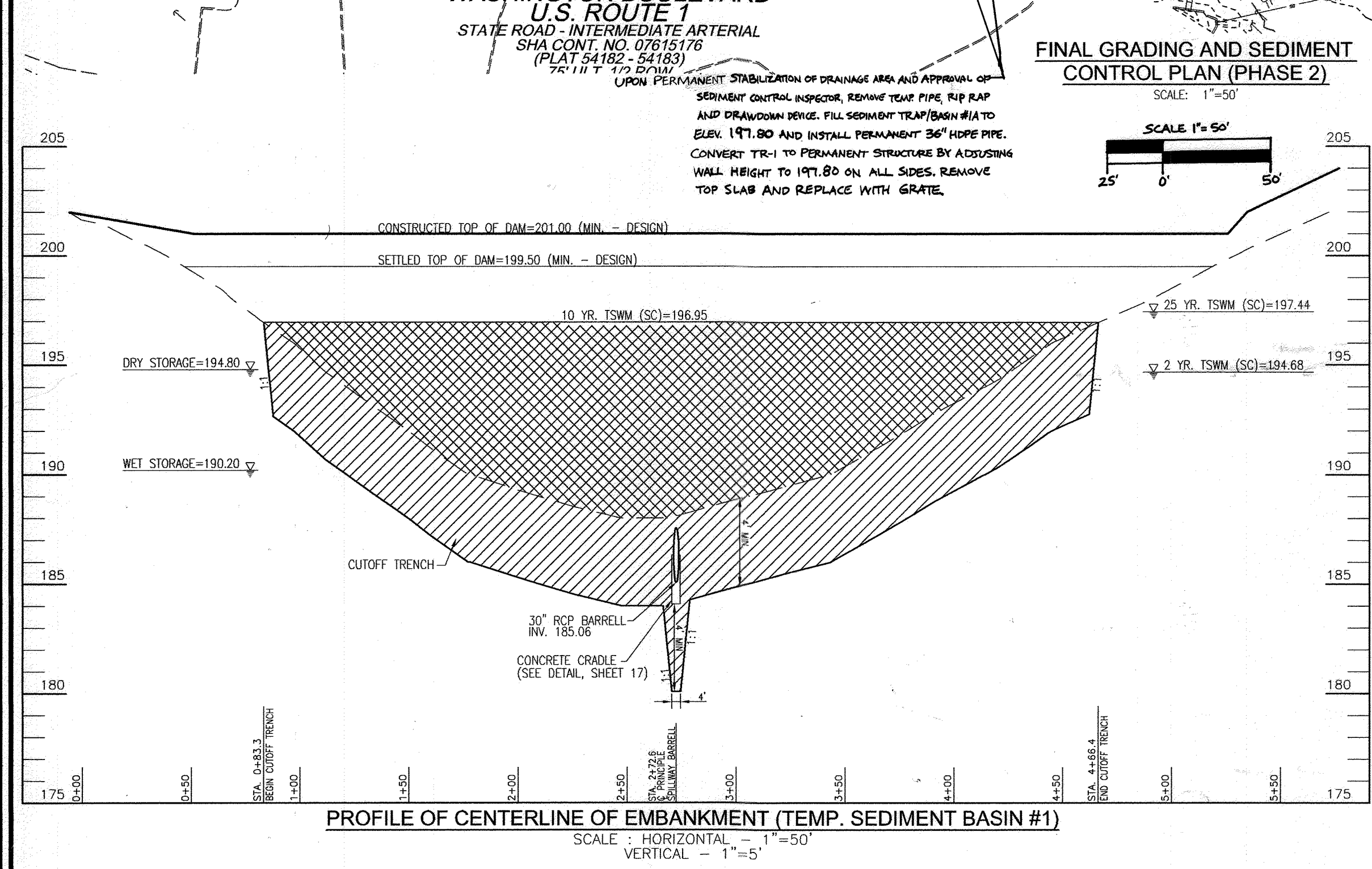
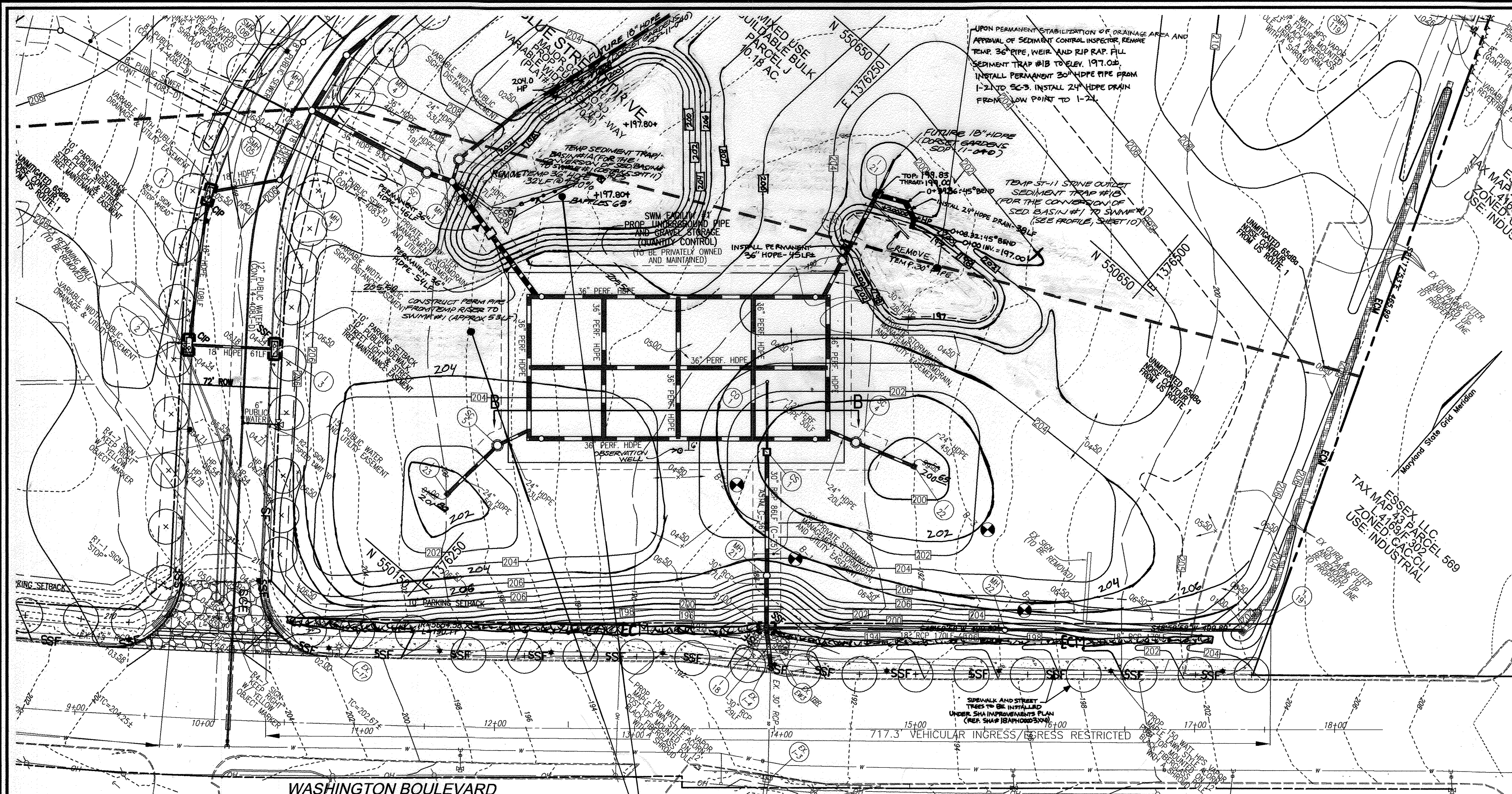
PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18193, EXPIRATION DATE: 09-27-2012

15 SHEET OF 28

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 DATE: 12/3/10
 DATE: 1/10/11

APPROVED: DEPARTMENT OF PUBLIC WORKS
 DATE: 12-2-10

AS-BUILT, DEC. 2018 (CP-1-02) 02-35



| NO. | REVISION | DATE |
|-----|--|----------|
| 11 | REVISE PLANS FOR SEDIMENT EROSION CONTROL | 1-7-20 |
| 10 | REVISE PLANS TO ADD NOTES FOR ROAD #2 CONVERSION TO PERMANENT AND ADD BULK PARCELS G-1 AND G-2 | 05-01-19 |
| 9 | REVISE PLANS TO ADD TWO SEDIMENT BASINS TO | 8/20/12 |
| 4 | REVISE ROAD PLANS, SWM, STORM DRAIN, ETC. | 10/14/10 |

REVISED FINAL ROAD CONSTRUCTION PLAN
GRADING, SEDIMENT AND EROSION PLAN (PHASE II);
SWM FACILITY #1 PROFILES AND DETAILS
BLUE STREAM
(FORMERLY KNOWN AS OVERLOOK AT BLUE STREAM)
OPEN SPACE LOTS G-1 & G-2 AND BUILDABLE BULK PARCELS H-H

TAX MAP 43 GRID 4 & 5
1ST ELECTION DISTRICT

PARCEL P/O 5, 14 & 553
HOWARD COUNTY, MARYLAND

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

DESIGN BY: RHV
DRAWN BY: DZ
CHECKED BY: RHV
DATE: SEPTEMBER 2010
SCALE: AS SHOWN
W.O. NO.: 06-26

16 SHEET OF 28

APPROVED: DEPARTMENT OF PUBLIC WORKS
12-2-10
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
12/3/10
DATE

11/10/11
DATE

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

10/19/2010
DATE

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

11/2/10
DATE

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

11/2/10
DATE

STORMWATER MANAGEMENT FACILITIES

1. SPECIFICATIONS AND DETAILS - STORMWATER MANAGEMENT FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. UNLESS OTHERWISE INDICATED.

2. INSPECTION BY DESIGNATED ENGINEER - THE CONSTRUCTION OF ALL STORMWATER MANAGEMENT FACILITIES SHALL BE UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER. THE ENGINEER MUST CERTIFY THAT THE FACILITIES HAVE BEEN BUILT IN ACCORDANCE WITH THE PLANS AND SUBMIT WRITTEN CERTIFICATION IMMEDIATELY UPON COMPLETION OF THE PROJECT.

3. TIMING - RUNOFF SHALL NOT BE DISCHARGED TO UNDERGROUND SWM FACILITIES UNTIL ALL DRAINAGE AREAS HAVE BEEN STABILIZED. DISCHARGE PIPES FROM THE CONTROL STRUCTURE TO THE STONE STORAGE BED SHALL BE FLAGGED UNTIL ALL AREAS ARE STABILIZED.

4. EROSION CONTROL FACILITIES - ALL DISTURBED AREAS SHALL BE CONTROLLED BY EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH PLAN APPROVED BY HCD.

5. CARE OF WATER DURING CONSTRUCTION - ALL WORK SHALL BE CARRIED OUT IN AREAS FREE FROM WATER. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL TEMPORARY DICES, BERMS, AND SEDIMENT STRUCTURES NECESSARY TO PROTECT EXISTING OR NEARBY UNDERGROUND SWM FACILITIES AND MAINTAIN ALL NECESSARY PUMPING AND OTHER EQUIPMENT REQUIRED FOR REMOVAL OF WATER FROM VARIOUS PARTS OF THE WORK. AFTER HAVING SERVED THEIR PURPOSE, ALL TEMPORARY FACILITIES AND EQUIPMENT SHALL BE REMOVED.

6. MATERIALS - CONCRETE SHALL BE MIX NO. 3 CONCRETE, ART. 20.07 REINFORCING STEEL SHALL BE ASTM A-615 GRADE 60. SLOPE SHALL BE FULLY CALIBRATED AND FULLY BROWNING. COORDINATED WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS FOR ASPHALT TO ASTM M-190. TYPE A SHALL CONFORM TO ALL REQUIREMENTS FOR PERFORATED PIPE AFTER THE APPLICATION OF THE BITUMINOUS COATING SHALL BE AT LEAST 70% CLEAR AREA BEFORE COATING PIPE SHALL BE SUPPLIED WITH WIRETIGHT CONNECTIONS.

7. BACKFILL - STONE SHALL BE MESH SIZE #2. BACKFILL MATERIAL - FILL SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, OVERSIZE STONES, FROZEN OR OTHER OBJECTIONAL MATERIALS, AND SHALL MEET THE REQUIREMENTS FOR SUBGRADE MATERIALS.

8. STABILIZATION - ALL BROWNING AREAS SHALL BE GROUDED TO PROTECT PROPER DRAINAGE AND LEFT IN A SMOOTH CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT SPILLWAY, SOIL, AND BROWNING AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIQUID FERTILIZING AND MULCHING AS REQUIRED IN ACCORDANCE WITH THE VEGETATIVE TREATMENT SPECIFICATIONS AS SHOWN ON THE ACCOMPANYING DRAWINGS.

9. INSTALLATION - PREPARE EXCAVATIONS TO DESIGN DIMENSIONS. EXCAVATED MATERIALS SHALL BE PLACED AWAY FROM THE EXCAVATED SITES TO ENHANCE WALL STABILITY. LARGE TREE ROOTS SHALL BE REMOVED FROM THE SITES TO PREVENT FUTURE DAMAGE TO THE FACILITIES. SUBSEQUENT INSTALLATION PROCEDURES, THE SIDE WALLS OF EXCAVATIONS WHICH HAVE BEEN SHARPENED AND SEALED BY EXCAVATING EQUIPMENT SHALL BE REINFORCED BEFORE FABRIC IS PLACED ON THE SLOPE. THE FILTER FABRIC SHALL BE PLACED ON THE SLOPE WITH PROPER TENSION. INSTALLATION FABRIC SHALL BE PLACED TO COMPLETELY LINE THE TRENCH AND TO CONFORM TO ALL REQUIREMENTS OF THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS. OTHER APPROVED METHODS, WHERE OVERLAPS BETWEEN TWO ROLLS ARE REQUIRED, THE UPSTREAM ROLL SHALL LAP A MINIMUM OF 2 FEET OVER THE DOWNSTREAM ROLL IN ORDER TO PROVIDE A SMOOTH EFFECT. OVERLAPS ON THE TOP OF THE ROLL OR BEHIND THE ROLL SHALL BE APPROVED BY HOWARD COUNTY.

10. FINISHING - STONE SHALL BE PLACED WITH CARE TO AVOID TEARING OF DISPLACING FILTER FABRIC. STONE FILL SHALL BE PLACED IN LOTS AND COMPACTED USING PLATE COMPACTORS OR OTHER APPROVED EQUIPMENT. MAXIMUM LOSS OF STONE SHALL BE 12 INCHES FROM THE TOP OF THE STONE STORAGE BED. STONE SHALL BE PLACED TO PREVENT WATER FROM ENTERING CONTAMINATION. CARE SHALL BE EXERCISED TO PREVENT WATER OR FILL SOILS FROM INTERFERING WITH THE STONE FILL. ALL CONTAMINATED STONE FILL SHALL BE REMOVED AND REPLACED WITH UNCONTAMINATED STONE.

11. BACKFILL - AFTER STONE FILL HAS BEEN PLACED, THE TOP OF THE STONE STORAGE BED SHALL BE COVERED WITH FILTER CLOTH. BACKFILL SHALL BE PLACED IN LOTS WITH PROPER TENSION. THICKNESS OF 6 INCHES AND THOROUGHLY COMPACTED USING HAND OPERATED VIBRATORY TAMPER OR OTHER APPROVED EQUIPMENT TO 90% OF ASTM D-1586 MAXIMUM DENSITY.

12. BACKFILL MATERIALS SHALL MEET THE SPECIFICATIONS FOR FANDED SUBGRADE. OBSERVATION WELL - AN OBSERVATION WELL SHALL BE CONSTRUCTED FOR EACH FACILITY WHERE INDICATED ON THE DRAWINGS. THE DEPTH OF THE WELL AT THE TIME OF INSTALLATION SHALL BE INDICATED ON THE DRAWINGS.

13. LAYING PIPE - BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. ALL JOINTS SHALL BE SEALED FOR THE ENTIRE LENGTH. THE BEDDING SHALL BE PLACED TO THE CLEAR OF THE INTERIOR OF THE PIPE. ONE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 7 FEET FROM THE INLET.

14. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

15. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC) SHALL BE AS SHOWN ON THE DRAWINGS.

STRUCTURE BACKFILL

BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED 4 INCHES IN THICKNESS AND BACKFILLED BY HAND TAMBERS OR OTHER MANUALLY OPERATED COMPACTORS. THE MATERIAL SHALL BE PLACED COMPLETELY ALIGNED UNDER AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRAWN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET MEASURED HORIZONTALLY TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A CONCRETE STRUCTURE OR PIPE UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE.

POLYVINYL CHLORIDE (PVC) PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR POLYVINYL CHLORIDE (PVC) PIPE.

1. MATERIALS - PVC PIPE SHALL BE 11200 OR PVC-11220 CONFORMING TO ASTM D-1785 (OR SIMILAR).

2. JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATER TIGHT.

3. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT SPONGY OR OTHER UNDESIRABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SATURABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC) SHALL BE AS SHOWN ON THE DRAWINGS.

SITE PREPARATION

AREAS DESIGNATED FOR BROWNING AREAS, EMBANKMENT, AND STRUCTURES WORKS SHALL BE CLEARED, GROUND AND STRIPPED TO TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANNS AND SWAMP BANNS SHALL BE SLOPED TO NO STEEPER THAN 1:1.

AREAS TO BE COVERED BY THE RESPONDER WILL BE SHARP BRUSH, LOGS, FENCES, RUBBISH, AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE FOR BROWNING MANAGEMENT PURPOSES, AND A MINIMUM OF A 50-FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

ALL CLEARED AND GROUND MATERIAL SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE DAM AND RESPONDER AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. WHEN IN A SATISFACTION LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

3.6.1.6. Voids Behind Fabric

VOIDS THAT MAY BE CREATED BETWEEN THE FABRIC AND EXCAVATION SIDES SHOULD BE AVOIDED. REMAINING BOLLERS OR OTHER OBSTACLES FROM THE TRENCH WALLS OR ANY SOURCE OF SUCH VOIDS SHALL BE REMOVED. THE FABRIC SHALL BE PLACED IN PLACE AND PRECAST WITH VOIDS AROUND THE PRINCIPAL SPILLWAY FILLED WITH CONCRETE OR SHOWN PROOF GROUT FOR WATER TIGHT CONNECTION. THE FABRIC SHALL BE PLACED IN PLACE AND PRECAST WITH VOIDS AROUND THE PRINCIPAL SPILLWAY FILLED WITH CONCRETE OR SHOWN PROOF GROUT FOR WATER TIGHT CONNECTION. THE FABRIC SHALL BE PLACED IN PLACE AND PRECAST WITH VOIDS AROUND THE PRINCIPAL SPILLWAY FILLED WITH CONCRETE OR SHOWN PROOF GROUT FOR WATER TIGHT CONNECTION.

4. EROSION CONTROL: STEEL RISERS SHALL BE SECURELY ATTACHED TO THE BARREL OR BARREL STUB BY WELDED JOINTS. THE RISERS SHALL BE PLACED ON A FIRM, SMOOTH FOUNDATION OF IMPERVIOUS SOIL AS THE EMBANKMENT IS CONSTRUCTED. BREACHING THE EMBANKMENT TO INSTALL THE BARREL IS UNACCEPTABLE. PERVIOUS MATERIALS SUCH AS SAND, GRAVEL, OR CRUSHED STONE SHALL NOT BE USED TO BACKFILL AROUND THE PIPE OR ANTI-SEEP COLLARS. THE FILL MATERIAL AROUND THE PIPE SPILLWAY SHALL BE PLACED IN FOUR-INCH LIFTS AND HAND COMPACTED UNDER AND AROUND THE PIPE TO AT LEAST THE SAME DENSITY AS THE ADJACENT EMBANKMENT. A DEPTH OF 15 TIMES THE PIPE DIAMETER (MIN) SHALL BE BACKFILLED OVER THE PRINCIPAL SPILLWAY AND HAND COMPACTED BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT.

5. EMERGENCY SPILLWAY: THE EMERGENCY SPILLWAY SHALL BE INSTALLED IN UNDISTURBED GROUND. THE ACHIEVEMENT OF PLANNED ELEVATIONS, GRODES, DESIGN WIDTH, ENTRANCE AND EXIT CHANNEL SLOPES ARE CRITICAL TO THE SUCCESSFUL OPERATION OF THE EMERGENCY SPILLWAY AND MUST BE CONSTRUCTED WITHIN A TOLERANCE OF 40.2 FEET.

6. VEGETATIVE TREATMENT: STABILIZE THE EMBANKMENT IN ACCORDANCE WITH THE APPROPRIATE VEGETATIVE STANDARD AND SPECIFICATIONS IMMEDIATELY FOLLOWING CONSTRUCTION. IN NO CASE SHALL THE TOP AND OUTSIDE FACE OF THE EMBANKMENT SHALL BE STABILIZED WITH SEED AND MULCH. THE REMAINDER OF THE INTERIOR SLOPES SHOULD BE STABILIZED (ONE TIME) WITH SEED AND MULCH UPON BASIN COMPLETION AND MAINTAINED THROUGHOUT THE LIFE OF THE BASIN.

7. SAFETY: LOCAL REQUIREMENTS CONCERNING FENCING AND SIGNS SHALL BE MET, WARNING THE PUBLIC OF HAZARDOUS CONDITIONS AND FLOODING.

8. MAINTENANCE: REPAIR ALL DAMAGE CAUSED BY SOIL EROSION AND CONSTRUCTION EQUIPMENT AT OR BEFORE THE END OF EACH WORKING DAY. SEDIMENT SHALL BE REMOVED FROM THE BASIN WHEN IT REACHES THE SPECIFIED TOP OF THE STRUCTURE IS SHOWN ON THE PLANS. THIS SEDIMENT SHALL BE PLACED IN SUCH A MANNER THAT IT WILL NOT ERODE FROM THE SITE. THE SEDIMENT SHALL NOT BE DEPOSITED DOWNSTREAM FROM THE EMBANKMENT, ADJACENT TO A STREAM OR FLOODPLAIN. DISPOSAL AREAS MUST BE STABILIZED.

9. FINAL DISPOSAL: WHEN TEMPORARY STRUCTURES HAVE SERVED THEIR INTENDED PURPOSE AND THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED, THE EMBANKMENT AND RESULTING SEDIMENT DEPOSITS ARE TO BE LEVELLED OFF OTHERWISE DISPOSED OF IN ACCORDANCE WITH THE APPROVED SEDIMENT CONTROL PLAN. THE PROPOSED USE OF A SEDIMENT BASIN SITE WILL OBTAIN DICTATE FINAL DISPOSAL OF THE BASIN AND ANY SEDIMENT ACCUMULATED THEREIN. IF THE SITE IS SCHEDULED FOR FUTURE CONSTRUCTION, THEN THE BASIN MATERIAL AND TRAPPED SEDIMENTS MUST BE REMOVED AND SAFELY DISPOSED OF AND THE BASIN SHALL BE BACKFILLED WITH A STRUCTURAL FILL WHEN THE BASIN AREA IS TO REMAIN OPEN SPACE. THE POND MAY BE PUMPED DRY (USING METHODS IN SECTION D - DRAINING), GRADED, AND BACKFILLED.

10. CONVERSION TO PERMANENT STORMWATER MANAGEMENT STRUCTURES: AFTER PERMANENT STABILIZATION OF ALL DISTURBED CONTRIBUTORY DRAINAGE AREAS, TEMPORARY SEDIMENT BASINS, IF INITIALLY BUILT AND CERTIFIED TO MEET PERMANENT STANDARDS, MAY BE CONVERTED TO PERMANENT STORMWATER MANAGEMENT STRUCTURES. TO CONVERT THE BASIN FROM TEMPORARY TO PERMANENT, THE FOLLOWING CONDITIONS MUST BE MODIFIED IN ACCORDANCE WITH APPROVED STORMWATER MANAGEMENT DESIGN PLANS. ADDITIONAL GRADING MAY ALSO BE NECESSARY TO PROVIDE THE REQUIRED STORAGE VOLUME IN THE BASIN. CONVERSION CAN ONLY TAKE PLACE AFTER ALL DISTURBED AREAS HAVE BEEN PROPERLY STABILIZED TO THE SATISFACTION OF THE INSPECTION AUTHORITY AND STORM DRAINS HAVE BEEN FLUSHED.

SEDIMENT BASIN CONSTRUCTION SPECIFICATIONS

1. SITE PREPARATION: PERMETER SEDIMENT CONTROL DEVICES MUST BE INSTALLED PRIOR TO CLEARING AND GRADING. AREAS WHERE THE EMBANKMENT IS TO BE PLACED SHALL BE CLEARED, GROUND, AND STRIPPED TO TOPSOIL. ALL TREES, VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANNS AND SWAMP BANNS SHALL BE SLOPED TO NO STEEPER THAN 1:1. COMPACTED REQUIREMENTS SHALL BE TO THE SAME AS FOR THE EMBANKMENT. THE TRENCH SHALL BE DEMOLISHED DURING THE BACKFILLING-COMPACTION OPERATIONS. FOR DEMOLITION, SEE SECTION D.

2. CUT-OFF TRENCH: A CUT-OFF TRENCH SHALL BE EXCAVATED ALONG THE CENTERLINE OF EARTH FILL EMBANKMENT. THE MINIMUM DEPTH SHALL BE FOUR FEET. THE CUT-OFF TRENCH SHALL EXTEND UP BOTH ABUTMENTS TO THE RISER CREST ELEVATION. THE MINIMUM BOTTOM WIDTH SHALL BE TWO FEET, BUT WIDE ENOUGH TO PERMIT OPERATION OF EXCAVATION AND COMPACTION EQUIPMENT. THE SIDE SLOPES SHALL BE 1:1. COMPACTED REQUIREMENTS SHALL BE TO THE SAME AS FOR THE EMBANKMENT. THE TRENCH SHALL BE DEMOLISHED DURING THE BACKFILLING-COMPACTION OPERATIONS. FOR DEMOLITION, SEE SECTION D.

3. IT SHALL BE CLEAN MINERAL SOIL FREE OF ROOTS, WOODY VEGETATION, OVERSIZED STONES, ROCKS, OR OTHER OBJECTIONABLE MATERIAL. RELATIVELY PERVIOUS MATERIALS SUCH AS SAND, OR GRAVEL (UNFED SOIL CLASSES OR, CP, SW & SP) OR ORGANIC MATERIALS (UNFED SOIL CLASSES OR C) SHALL NOT BE PLACED IN THE EMBANKMENT AREAS ON WHICH FILL IS TO BE PLACED. SCARPED PRIOR TO PLACEMENT OF FILL. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IT CAN BE FORMED BY HAND INTO A BALL WITHOUT CRUMBLING. IF WATER CAN BE SQUEEZED OUT OF THE BALL, IT IS TOO WET FOR PROPER COMPACTION. FILL MATERIAL SHALL BE PLACED IN SIX-INCH TO EIGHT-INCH THICK CONTINUOUS LAYS OVER THE ENTIRE LENGTH OF THE FILL. COMPACTION SHALL BE OBTAINED BY ROUTING AND HAULING THE CONSTRUCTION EQUIPMENT OVER THE FILL SO THAT THE ENTIRE SURFACE OF EACH LAYER OF THE FILL IS TRACED BY AT LEAST ONE WHEEL OR TREAD TRACK OF THE EQUIPMENT BY THE USE OF A COMPACTOR. THE EMBANKMENT SHALL BE CONSTRUCTED TO AN ELEVATION 10 PERCENT HIGHER THAN THE DESIGN HEIGHT TO ALLOW FOR SETTLEMENT.

4. EROSION CONTROL: STEEL RISERS SHALL BE SECURELY ATTACHED TO THE BARREL OR BARREL STUB BY WELDED JOINTS. THE RISERS SHALL BE PLACED ON A FIRM, SMOOTH FOUNDATION OF IMPERVIOUS SOIL AS THE EMBANKMENT IS CONSTRUCTED. BREACHING THE EMBANKMENT TO INSTALL THE BARREL IS UNACCEPTABLE. PERVIOUS MATERIALS SUCH AS SAND, GRAVEL, OR CRUSHED STONE SHALL NOT BE USED TO BACKFILL AROUND THE PIPE OR ANTI-SEEP COLLARS. THE FILL MATERIAL AROUND THE PIPE SPILLWAY SHALL BE PLACED IN FOUR-INCH LIFTS AND HAND COMPACTED UNDER AND AROUND THE PIPE TO AT LEAST THE SAME DENSITY AS THE ADJACENT EMBANKMENT. A DEPTH OF 15 TIMES THE PIPE DIAMETER (MIN) SHALL BE BACKFILLED OVER THE PRINCIPAL SPILLWAY AND HAND COMPACTED BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT.

5. EMERGENCY SPILLWAY: THE EMERGENCY SPILLWAY SHALL BE INSTALLED IN UNDISTURBED GROUND. THE ACHIEVEMENT OF PLANNED ELEVATIONS, GRODES, DESIGN WIDTH, ENTRANCE AND EXIT CHANNEL SLOPES ARE CRITICAL TO THE SUCCESSFUL OPERATION OF THE EMERGENCY SPILLWAY AND MUST BE CONSTRUCTED WITHIN A TOLERANCE OF 40.2 FEET.

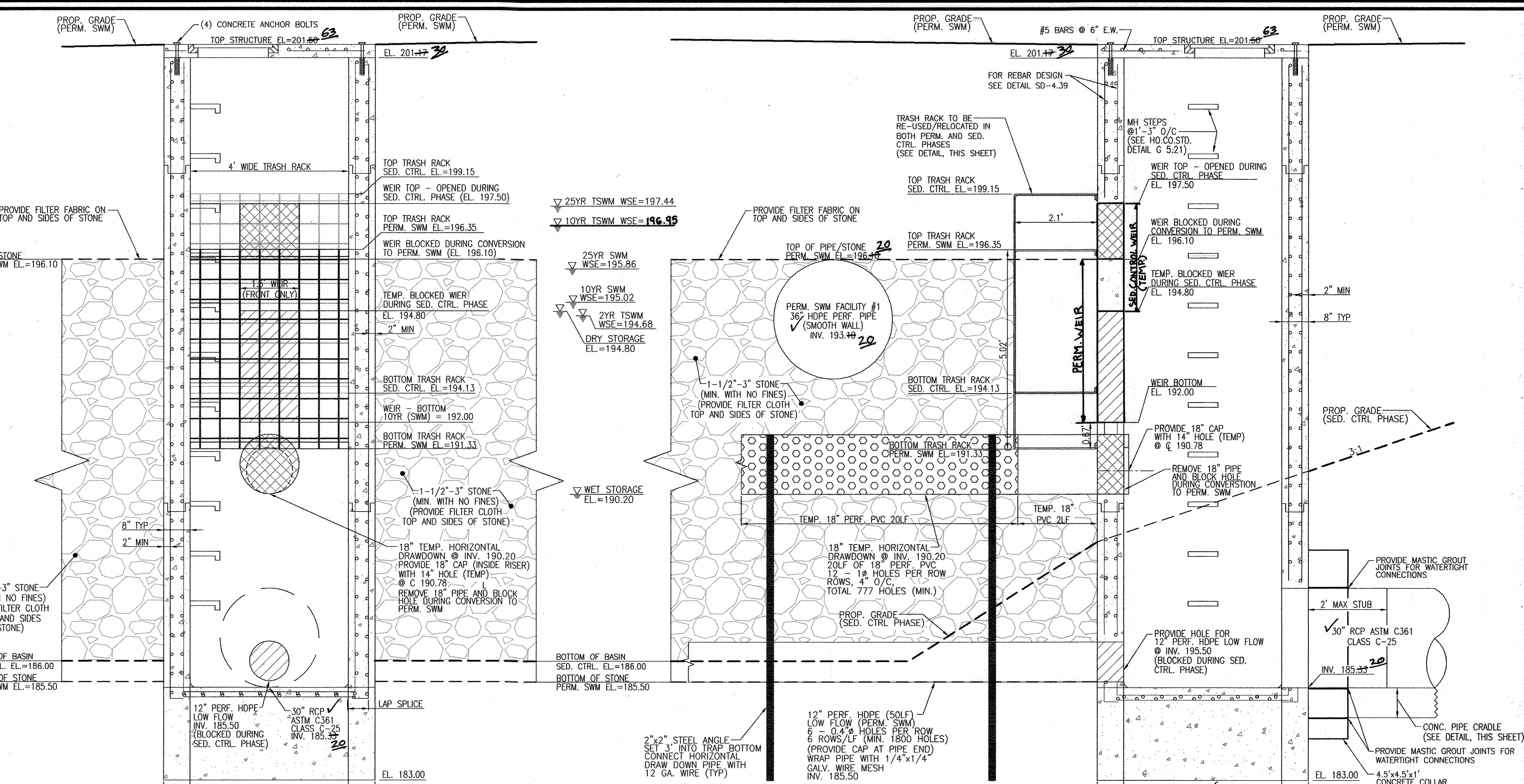
6. VEGETATIVE TREATMENT: STABILIZE THE EMBANKMENT IN ACCORDANCE WITH THE APPROPRIATE VEGETATIVE STANDARD AND SPECIFICATIONS IMMEDIATELY FOLLOWING CONSTRUCTION. IN NO CASE SHALL THE TOP AND OUTSIDE FACE OF THE EMBANKMENT SHALL BE STABILIZED WITH SEED AND MULCH. THE REMAINDER OF THE INTERIOR SLOPES SHOULD BE STABILIZED (ONE TIME) WITH SEED AND MULCH UPON BASIN COMPLETION AND MAINTAINED THROUGHOUT THE LIFE OF THE BASIN.

7. SAFETY: LOCAL REQUIREMENTS CONCERNING FENCING AND SIGNS SHALL BE MET, WARNING THE PUBLIC OF HAZARDOUS CONDITIONS AND FLOODING.

8. MAINTENANCE: REPAIR ALL DAMAGE CAUSED BY SOIL EROSION AND CONSTRUCTION EQUIPMENT AT OR BEFORE THE END OF EACH WORKING DAY. SEDIMENT SHALL BE REMOVED FROM THE BASIN WHEN IT REACHES THE SPECIFIED TOP OF THE STRUCTURE IS SHOWN ON THE PLANS. THIS SEDIMENT SHALL BE PLACED IN SUCH A MANNER THAT IT WILL NOT ERODE FROM THE SITE. THE SEDIMENT SHALL NOT BE DEPOSITED DOWNSTREAM FROM THE EMBANKMENT, ADJACENT TO A STREAM OR FLOODPLAIN. DISPOSAL AREAS MUST BE STABILIZED.

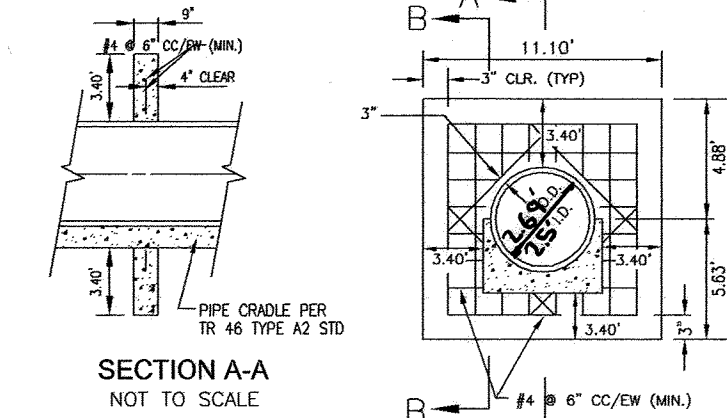
9. FINAL DISPOSAL: WHEN TEMPORARY STRUCTURES HAVE SERVED THEIR INTENDED PURPOSE AND THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED, THE EMBANKMENT AND RESULTING SEDIMENT DEPOSITS ARE TO BE LEVELLED OFF OTHERWISE DISPOSED OF IN ACCORDANCE WITH THE APPROVED SEDIMENT CONTROL PLAN. THE PROPOSED USE OF A SEDIMENT BASIN SITE WILL OBTAIN DICTATE FINAL DISPOSAL OF THE BASIN AND ANY SEDIMENT ACCUMULATED THEREIN. IF THE SITE IS SCHEDULED FOR FUTURE CONSTRUCTION, THEN THE BASIN MATERIAL AND TRAPPED SEDIMENTS MUST BE REMOVED AND SAFELY DISPOSED OF AND THE BASIN SHALL BE BACKFILLED WITH A STRUCTURAL FILL WHEN THE BASIN AREA IS TO REMAIN OPEN SPACE. THE POND MAY BE PUMPED DRY (USING METHODS IN SECTION D - DRAINING), GRADED, AND BACKFILLED.

10. CONVERSION TO PERMANENT STORMWATER MANAGEMENT STRUCTURES: AFTER PERMANENT STABILIZATION OF ALL DISTURBED CONTRIBUTORY DRAINAGE AREAS, TEMPORARY SEDIMENT BASINS, IF INITIALLY BUILT AND CERTIFIED TO MEET PERMANENT STANDARDS, MAY BE CONVERTED TO PERMANENT STORMWATER MANAGEMENT STRUCTURES. TO CONVERT THE BASIN FROM TEMPORARY TO PERMANENT, THE FOLLOWING CONDITIONS MUST BE MODIFIED IN ACCORDANCE WITH APPROVED STORMWATER MANAGEMENT DESIGN PLANS. ADDITIONAL GRADING MAY ALSO BE NECESSARY TO PROVIDE THE REQUIRED STORAGE VOLUME IN THE BASIN. CONVERSION CAN ONLY TAKE PLACE AFTER ALL DISTURBED AREAS HAVE BEEN PROPERLY STABILIZED TO THE SATISFACTION OF THE INSPECTION AUTHORITY AND STORM DRAINS HAVE BEEN FLUSHED.



PRECAST STRUCTURE (CS-1) DETAIL**
SCALE: 1/2"=1'

**DESIGN TO BE CONFIRMED BY A STRUCTURAL ENGINEER



PIPE CRADLE DETAIL BASIN #1
NOT TO SCALE

CONCRETE ANTI-SEEP COLLAR DETAIL (PROVIDE Z)
BASIN #1
NOT TO SCALE

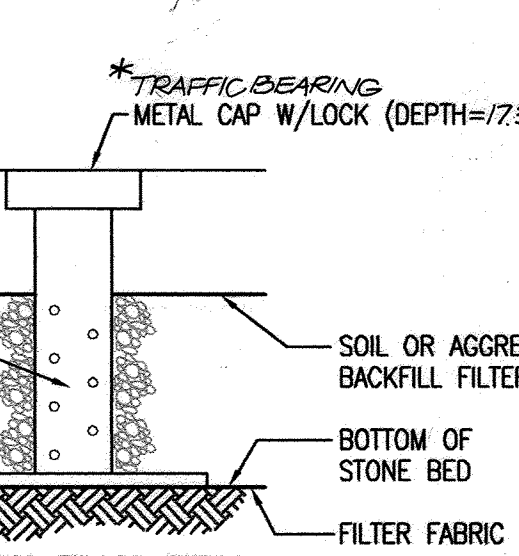
NOTES:
1. ANTI-SEEP COLLARS SHALL BE PLACED WITHIN THE SATURATION ZONE.
2. ALL ANTI-SEEP COLLARS AND THEIR CONNECTIONS TO THE CONDUIT SHALL BE INTERFERED AND MADE COMPATIBLE WITH THE CONDUIT.
3. COLLAR DIMENSIONS SHALL EXTEND A MIN. OF 2' IN ALL DIRECTIONS FROM THE CONDUIT.
4. ANTI-SEEP COLLAR SHALL BE PLACED A MIN. OF 2' FROM PIPE EXCEPT WHERE FLANGED JOINTS ARE USED.

STATE OF MARYLAND
REGISTERED PROFESSIONAL ENGINEER
No. 18193
Professional Seal

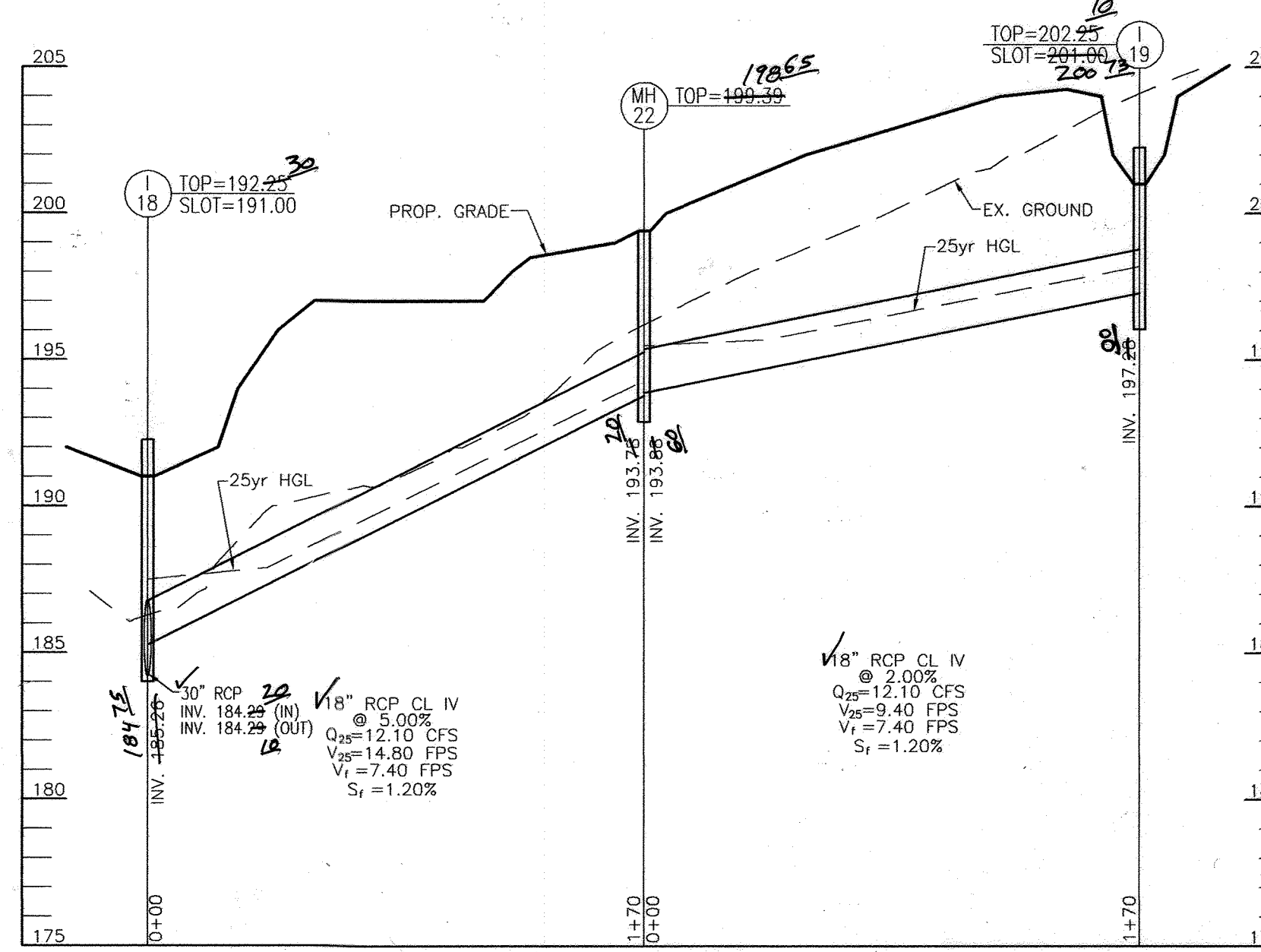
AS-BUILT CERTIFICATION FOR PSWM

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

DATE: 12/14/20
P.E. # 16193



OBSERVATION WELL
(NOT TO SCALE) ** TO BE ADJUSTED TO FINAL GRADE AT SITE DEVELOPMENT PLAN



STORM DRAIN PROFILE
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

OWNER/DEVELOPER
BLUE STREAM, LLC
P.O. BOX 416
ELLCOTT CITY, MD 21041
C/O ARNOLD SAGNER
410-465-2020

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED UNDERGROUND FACILITIES

A. THE UNDERGROUND STORMWATER MANAGEMENT FACILITY IS PRIVATELY OWNED AND IT SHALL BE THE RESPONSIBILITY OF THE OWNER TO PERIODICALLY INSPECT AND CLEAN THE FACILITY TO MAINTAIN ITS OPERATION AND FUNCTION.

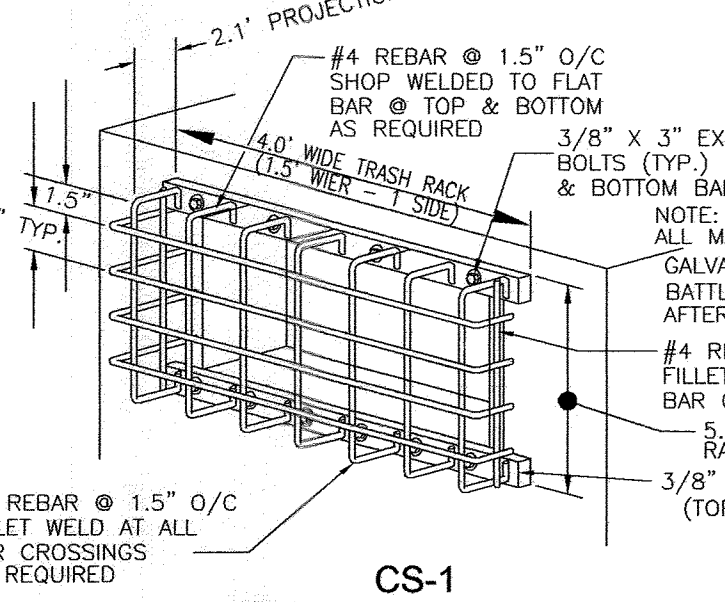
B. THE UNDERGROUND STORMWATER MANAGEMENT FACILITY SHALL BE PERIODICALLY INSPECTED AND CLEANED YEARLY AT A MINIMUM AND AFTER ESPECIALLY SEVERE STORM EVENTS.

C. WHEN SEDIMENT ACCUMULATION OF MORE THAN 2" IS OBSERVED OR ANY DEBRIS THAT MIGHT OBSTRUCT THE OUTFALL IS OBSERVED, THE FACILITY SHALL BE CLEANED.

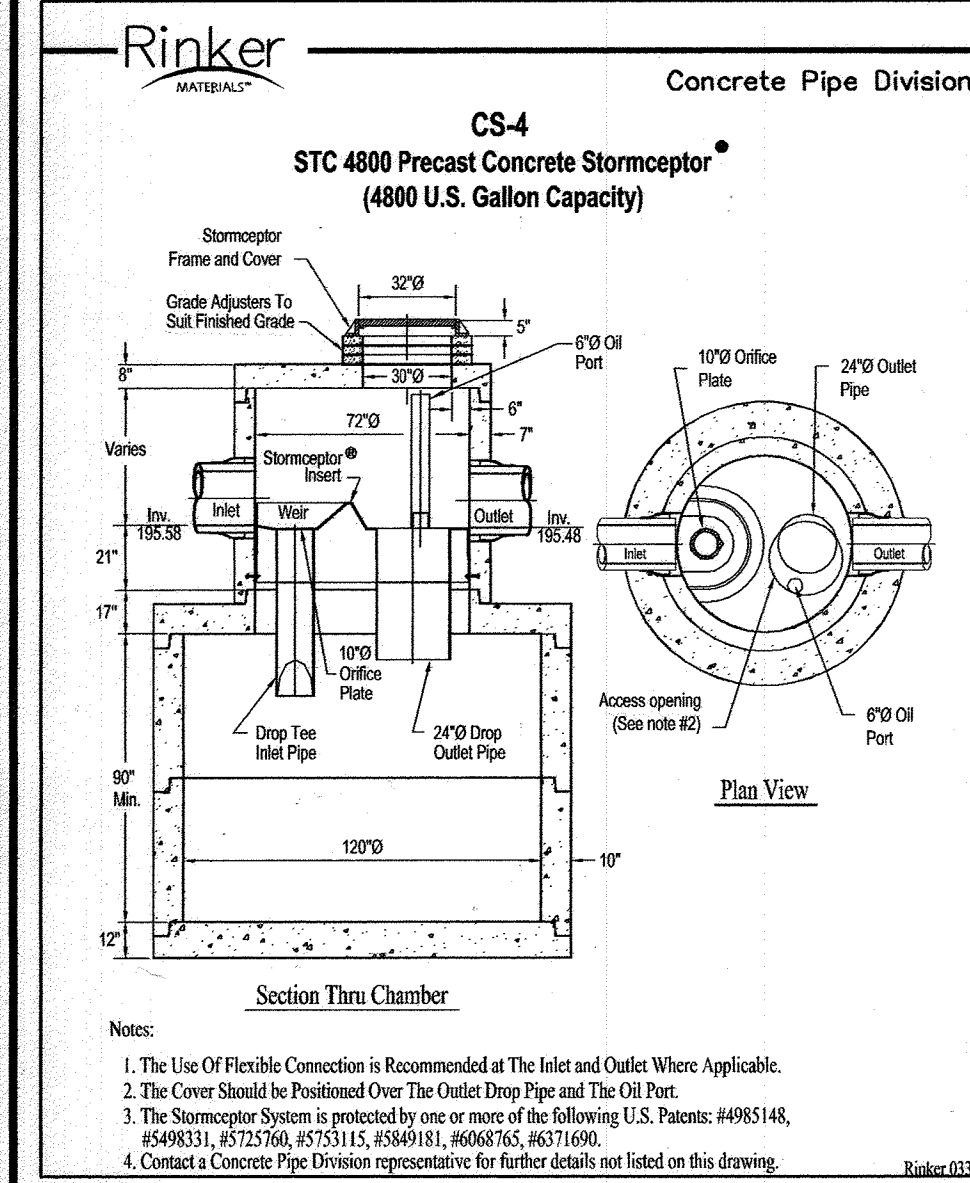
D. THE FACILITY SHOULD BE CLEANED IMMEDIATELY AFTER PETROLEUM SPILLS. THE OWNER SHALL CONTACT THE APPROPRIATE REGULATORY AGENCIES NOTIFYING THEM OF THE SPILL AND CLEANUP OPERATION.

E. THE SEDIMENT AND DEBRIS SHALL BE REMOVED FROM THE UNDERGROUND STORMWATER MANAGEMENT FACILITY BY VACUUM TRUCK OR OTHER MANUAL MEANS. THE OWNER SHOULD FOLLOW PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIAL AND LIQUID.

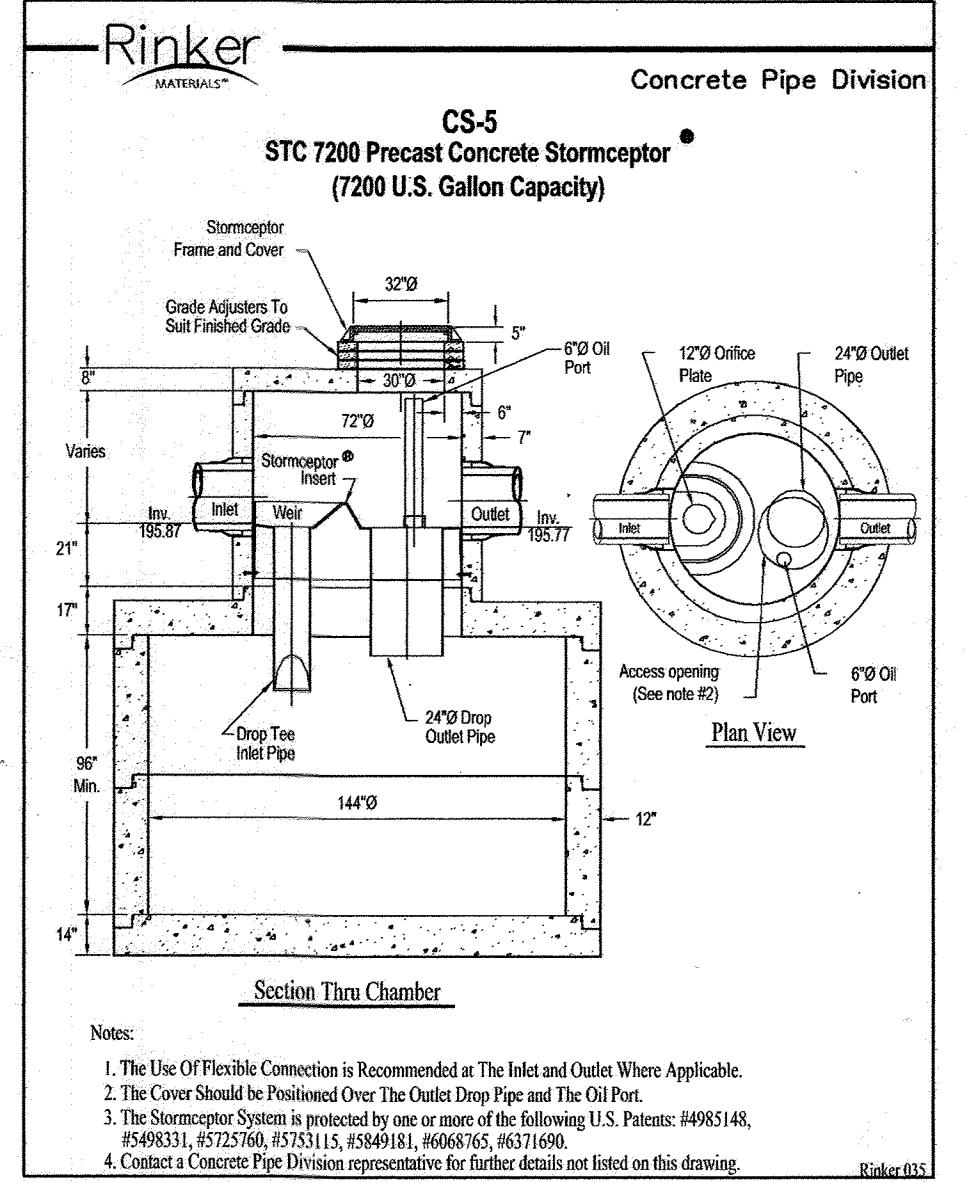
F. THE INLET AND OUTLET PIPES SHALL BE CHECKED FOR ANY OBSTRUCTIONS AT LEAST ONCE EVERY SIX (6) MONTHS. IF OBSTRUCTIONS ARE FOUND, THE OWNER SHALL HAVE THEM REMOVED AND PROPERLY DISPOSED OF.



CS-1 TRASH RACK DETAIL
NOT TO SCALE



CS-4
STC 4800 Precast Concrete Stormceptor
(4800 U.S. Gallon Capacity)



CS-5
STC 7200 Precast Concrete Stormceptor
(7200 U.S. Gallon Capacity)

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DATE: 12/3/10
DATE: 1/10/11

BY THE DEVELOPER:
DATE: 12/14/20
DATE: 1/10/11

BY THE ENGINEER:
DATE: 12/14/20
DATE: 1/10/11

| NO. | REVISION ROAD PLANS, SWM, STORM DRAIN, ETC. | DATE |
|-----|---|----------|
| 1 | REVISE ROAD PLANS, SWM, STORM DRAIN, ETC. | 10/14/10 |

REVISED FINAL ROAD CONSTRUCTION PLAN
SWM FACILITY #1 NOTES AND DETAILS
BLUE STREAM
(THE OVERLOOK AT BLUE STREAM)
FORMERLY KNOWN AS
OPEN SPACE LOTS G-1 & G-2 AND
BUILDABLE BULK PARCELS H-H

TAX MAP 43 GRID 4 & 5
1ST ELECTION DISTRICT

PARCEL P/O S, 14 & 553
HOWARD COUNTY, MARYLAND

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

DESIGN BY: RHV
DRAWN BY: DZ
CHECKED BY: RHV
DATE: SEPTEMBER 2010
SCALE: AS SHOWN
W.O. NO.: 06-26

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.
EXPIRATION DATE: 09-27-2014

B.2.A UNDERGROUND STONE TRENCH GENERAL NOTES AND SPECIFICATIONS

AN STONE TRENCH MAY NOT RECEIVE RUN-OFF UNTIL THE ENTIRE CONTRIBUTING DRAINAGE AREA TO THE STONE TRENCH HAS RECEIVED FINAL STABILIZATION.

- HEAVY EQUIPMENT AND TRAFFIC SHALL BE RESTRICTED FROM TRAVELLING OVER THE PROPOSED LOCATION OF THE STONE TRENCH TO MINIMIZE COMPACTION OF THE SOIL.
- EXCAVATE THE STONE TRENCH TO THE DESIGN DIMENSIONS. EXCAVATED MATERIALS SHALL BE PLACED AWAY FROM THE TRENCH SIDES TO ENHANCE TRENCH WALL STABILITY. LARGE TREE ROOTS MUST BE TRIMMED FLUSH WITH THE TRENCH SIDES IN ORDER TO PREVENT FABRIC PUNCTURING OR TEARING OF THE FILTER FABRIC DURING SUBSEQUENT INSTALLATION PROCEDURES. THE SIDE WALLS OF THE TRENCH SHALL BE ROUGHENED WHERE SHEARED AND SEALED BY HEAVY EQUIPMENT.
- A CLASS 'C' GEOTEXTILE OR BETTER (SEE SECTION 24.0, MATERIAL SPECIFICATIONS, 1994 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, MDE, 1994) SHALL INTERFACE BETWEEN THE TRENCH SIDE WALLS AND BETWEEN THE STONE RESERVOIR AND GRAVEL FILTER LAYERS. A PARTIAL LIST OF NON-WOVEN FILTER FABRIC THAT MEET THE CLASS 'C' CRITERIA FOLLOWS. ANY ALTERNATIVE FILTER FABRIC MUST BE APPROVED BY THE PLAN APPROVAL AUTHORITY.

| | |
|------------|-----------------|
| AMOCO 4552 | CARTHAGE FX-80S |
| GEOLON N70 | MIRAFI 180-N |
| WEBTEC N07 | |

THE WIDTH OF THE GEOTEXTILE MUST INCLUDE SUFFICIENT MATERIAL TO CONFORM TO TRENCH PERIMETER IRREGULARITIES AND FOR A 6-INCH MINIMUM TOP OVERLAP. THE FILTER FABRIC SHALL BE TUCKED UNDER THE SAND LAYER ON THE BOTTOM OF THE STONE TRENCH FOR A DISTANCE OF 6 TO 12 INCHES. STONES OR OTHER ANCHORING OBJECTS SHOULD BE PLACED ON THE FABRIC AT THE EDGE OF THE TRENCH TO KEEP THE TRENCH OPEN DURING WINDY PERIODS. WHEN OVERLAPS ARE REQUIRED BETWEEN ROLLS, THE UPHILL ROLL SHOULD LAP A MINIMUM OF 2 FEET OVER THE DOWNHILL ROLL IN ORDER TO PROVIDE A SHINGLED EFFECT.

- IF A 6 INCH SAND FILTER LAYER IS PLACED ON THE BOTTOM OF THE STONE TRENCH, THE SAND FOR THE STONE TRENCH SHALL BE WASHED AND MEET AASHTO-M-43, SIZE NO. 9 OR NO. 10. ANY ALTERNATIVE SAND GRADATION MUST BE APPROVED BY THE PLAN APPROVAL AUTHORITY.
- THE STONE AGGREGATE SHOULD BE PLACED IN A MAXIMUM LOOSE LIFT THICKNESS OF 12 INCHES. THE GRAVEL (ROUNDED "BANK RUN" GRAVEL IS PREFERRED) FOR THE STONE TRENCH SHALL BE WASHED AND MEET ONE OF THE FOLLOWING: AASHTO-M-43, SIZE NO. 2 OR NO. 3.
- FOLLOWING THE STONE AGGREGATE PLACEMENT, THE FILTER FABRIC SHALL BE FOLDED OVER THE STONE AGGREGATE TO FORM A 6 INCH MINIMUM LONGITUDINAL LAP. THE DESIRED FILL SOIL OR STONE AGGREGATE SHALL BE PLACED OVER THE LAP AT SUFFICIENT INTERVALS TO MAINTAIN THE LAP DURING SUBSEQUENT BACKFILLING.
- CARE SHALL BE EXERCISED TO PREVENT NATURAL OR FILL SOILS FROM INTERMIXING WITH THE STONE AGGREGATE. ALL CONTAMINATED STONE AGGREGATE SHALL BE REMOVED AND REPLACED WITH UNCONTAMINATED STONE AGGREGATE.
- VOIDS THAT MAY OCCUR BETWEEN THE FABRIC AND THE EXCAVATION SIDES SHALL BE AVOIDED. REMOVING BOULDERS OR OTHER OBSTACLES FROM THE TRENCH WALLS IS ONE SOURCE OF SUCH VOIDS. THEREFORE, NATURAL SOILS SHOULD BE PLACED IN THESE VOIDS AT THE MOST CONVENIENT TIME DURING CONSTRUCTION TO ENSURE FABRIC CONFORMITY TO THE EXCAVATION SIDES.
- VERTICALLY EXCAVATED WALLS MAY BE DIFFICULT TO MAINTAIN IN AREAS WHERE SOIL MOISTURE IS HIGH OR WHERE SOFT COHESIVE OR COHESIONLESS SOILS ARE DOMINANT. THESE CONDITIONS MAY REQUIRE LAYING BACK OF THE SIDE SLOPES TO MAINTAIN STABILITY.
- PVC DISTRIBUTION PIPES SHALL BE SCHEDULE 40 AND MEET ASTM-D-1785. ALL FITTINGS SHALL MEET ASTM-D-2729. PERFORATIONS SHALL BE 3/8 INCH IN DIAMETER. A PERFORATED PIPE SHALL BE PROVIDED ONLY WITHIN THE STONE TRENCH AND SHALL TERMINATE 1 FOOT SHORT OF THE STONE TRENCH WALL. THE END OF THE PVC PIPE SHALL BE CAPPED. NOTE: PVC PIPE WITH A WALL THICKNESS CLASSIFICATION OF SDR-35 MEETING ASTM-D-3034 IS AN ACCEPTABLE SUBSTITUTE FOR THE SCHEDULE 40 PIPE.
- THE OBSERVATION WELL IS TO CONSIST OF 6-INCH DIAMETER PERFORATED PVC SCHEDULE 40 PIPE (#278 OF F788 - TYPE PS 28) WITH A CAP SET 6-INCHES ABOVE GROUND LEVEL AND IS TO BE LOCATED NEAR THE LONGITUDINAL CENTER OF THE STONE TRENCH. THE PIPE SHALL HAVE A PLASTIC COLLAR WITH RIBS TO PREVENT ROTATION WHEN REMOVING THE CAP. THE SCREW TOP LID SHALL BE A CLEANOUT WITH A LOCKING MECHANISM OR SPECIAL BOLT TO DISCOURAGE VANDALISM. THE DEPTH TO THE INVERT SHALL BE MARKED ON THE LID. THE PIPE SHALL BE PLACED VERTICALLY WITHIN THE GRAVEL PORTION OF THE STONE TRENCH AND A CAP PROVIDED AT THE BOTTOM OF THE PIPE. THE BOTTOM OF THE CAP SHALL REST ON THE STONE TRENCH BOTTOM.
- CORRUGATED METAL DISTRIBUTION PIPES SHALL CONFORM TO AASHTO-M-36, AND SHALL BE ALUMINIZED IN ACCORDANCE WITH AASHTO-M-274. ALUMINIZED PIPE IN CONTACT WITH CONCRETE SHALL BE COATED WITH AN INERT COMPOUND CAPABLE OF PREVENTING THE DELETERIOUS EFFECT OF THE ALUMINUM ON THE CONCRETE. PERFORATED DISTRIBUTION PIPES SHALL CONFORM TO AASHTO-M-36, CLASS 2 AND SHALL BE PROVIDED ONLY WITHIN THE STONE TRENCH AND SHALL TERMINATE 1 FOOT SHORT OF THE STONE TRENCH WALL. AN ALUMINIZED METAL PLATE SHALL BE WELDED TO THE END OF THE PIPE.
- IF A DISTRIBUTION STRUCTURE WITH A WET WALL IS USED, A 4-INCH DRAIN PIPE SHALL BE PROVIDED AT OPPOSITE ENDS OF THE STONE TRENCH DISTRIBUTION STRUCTURE. TWO (2) CUBIC FEET OF POROUS BACKFILL MEETING AASHTO-M-43, SIZE NO. 57 SHALL BE PROVIDED AT EACH DRAIN.
- IF A DISTRIBUTION STRUCTURE IS USED, THE MANHOLE COVER SHALL BE BOLTED TO THE FRAME.

GENERAL NOTES

- ALL STRUCTURES DETAILED ON THIS SHEET SHALL BE CAPABLE OF SUPPORTING AASHTO HS-20 LOADING, AND SHALL BE CONSTRUCTED IN FULL ACCORDANCE WITH ACI 318, LATEST EDITION.
- CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH $f'_c = 3,500$ psi.
- ALL REINFORCING SHALL CONFORM TO ASTM A-615 GRADE 60.
- CONTRACTOR SHALL PRE-CAST STRUCTURE IN WHOLE OR IN PART, SUBJECT TO THE PRIOR APPROVAL OF PRE-CAST SHOP DRAWING SUBMITTED TO HOWARD COUNTY BUREAU OF ENGINEERING PRIOR TO MANUFACTURING.
- SILT AND DEBRIS SHALL NOT BE ALLOWED TO ENTER THE STRUCTURES UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED.
- ALL OPENINGS TO THE STRUCTURE SHALL BE PROTECTED WITH THE APPROPRIATE SEDIMENT CONTROL MEASURES DURING CONSTRUCTION.

MAINTENANCE OF THE UNDERGROUND STONE TRENCHES

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER STONE TRENCHES (I-1)

- THE MONITORING WELLS AND STRUCTURES SHALL BE INSPECTED ON A QUARTERLY BASIS AND AFTER EVERY LARGE STORM EVENT.
- WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS SHALL BE RECORDED OVER A PERIOD OF SEVERAL DAYS TO INSURE TRENCH DRAINAGE.
- A LOG BOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
- WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN THE 72 HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
- THE MAINTENANCE LOGBOOK 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.

INSPECTION

INSPECTION OF THE STONE TRENCH CONSTRUCTION SHALL TAKE PLACE, AT A MINIMUM, AT THE FOLLOWING STAGES:

- COMPLETION OF SUBGRADE EXCAVATION, COURSE FABRIC, AND GEOTEXTILE PLACEMENT.
- INSTALLATION OF DISTRIBUTION PIPE AND OBSERVATION WELL.
- INSTALLATION OF MANHOLES.
- INSTALLATION OF STONE.
- COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION.

STORMWATER MANAGEMENT AND WATER QUALITY MAINTENANCE NOTES (PRIVATE OWNERSHIP AND MAINTENANCE)

- INSPECT THE STORMCEPTOR ON A MONTHLY BASIS AND NOTE THE SEDIMENT AND OIL ACCUMULATIONS. MORE FREQUENT INSPECTIONS ARE APPROPRIATE WHERE OIL SPILLS OCCUR REGULARLY. STORMCEPTOR CANADA INC. CAN PROVIDE ADVICE ON SAMPLING EQUIPMENT.
- SEDIMENT SHOULD BE REMOVED ANNUALLY, OR WHENEVER THE ACCUMULATION REACHES 50% OF THE OPERATING DEPTH, FROM BASE TO DRAIN INVERT. IN AREAS OF NEW CONSTRUCTION, OR WHERE VEGETATION HAS NOT YET BEEN ESTABLISHED, MORE FREQUENT REMOVAL MAY BE NECESSARY.
- VACUUM TRUCKS ARE USED TO REMOVE THE SEDIMENT AND OIL FROM THE STORMCEPTOR TREATMENT CHAMBER. OIL LEVELS GREATER THAN 2.5 CM SHOULD BE REMOVED IMMEDIATELY BY A LICENSED WASTE MANAGEMENT FIRM, AND SIGNIFICANT SPILLS MUST BE REPORTED TO THE APPROPRIATE REGULATORY AGENCY.
- THE PIPES AND STRUCTURAL PARTS SHALL BE CLEANED AND REPAIRED AS NEEDED.
- ALL MAINTENANCE SHALL BE PERFORMED BY THE OWNER OR BY THE OWNER'S REPRESENTATIVE AT THE OWNER'S EXPENSE.
- MINIMIZE SURFACE EROSION FROM PEROUS SURFACES AT ALL TIMES. MAINTAIN GRASS, SOD, AND/OR MULCH COVERAGE UPON LANDSCAPING.
- REMOVE DEBRIS ON TOP OF INLET GRATES AFTER EVERY RAINFALL. REMOVE OILS, SILTS AND AGGREGATES, AND DEBRIS FROM ALL INLETS AND STRUCTURES.
- THE DISPOSAL OF THE LIQUID AND SOLID MATTER SHOULD BE AS FOLLOWS:
 - ALL LIQUID MATERIAL IN THE SEPARATOR INLET SHALL BE PUMPED INTO A SUITABLE TANK TRUCK AND DISPOSED OF AT AN APPROVED SANITARY DISTRICT DISCHARGE MANHOLE OR BE TAKEN TO AN APPROVED SEWAGE TREATMENT PLANT FOR DISCHARGE.
 - THE SOLID MATERIAL SHALL BE LANDFILLED IN AN APPROVED SANITARY LANDFILL.

OPERATION AND MAINTENANCE SCHEDULE STORMCEPTOR WATER QUALITY DEVICE

- THE STORMCEPTOR WATER QUALITY STRUCTURE SHALL BE PERIODICALLY INSPECTED AND CLEANED TO MAINTAIN OPERATION AND FUNCTION. THE OWNER SHALL INSPECT THE STORMCEPTOR UNIT YEARLY AT A MINIMUM, UTILIZING THE STORMCEPTOR INSPECTION/MONITORING FORM. INSPECTIONS SHALL BE DONE BY USING A CLEAR PLEXIGLAS TUBE ("SLUDGE JUDGE") TO EXTRACT A WATER COLUMN SAMPLE. WHEN THE SEDIMENTS DEPTHS EXCEED THE LEVEL SPECIFIED IN TABLE 6 OF THE STORMCEPTOR TECHNICAL MANUAL, THE UNIT MUST BE CLEANED.
- THE STORMCEPTOR WATER QUALITY STRUCTURE SHALL BE CHECKED AND CLEANED IMMEDIATELY AFTER PETROLEUM SPILLS. THE OWNER SHALL CONTACT THE APPROPRIATE REGULATORY AGENCIES.
- THE MAINTENANCE OF THE STORMCEPTOR UNIT SHALL BE DONE USING A VACUUM TRUCK WHICH WILL REMOVE THE WATER, SEDIMENT, DEBRIS, FLOATING HYDROCARBONS, AND OTHER MATERIALS IN THE UNIT. PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIALS AND LIQUID MUST BE FOLLOWED BY THE OWNER.
- THE INLET AND OUTLET PIPES SHALL BE CHECKED FOR ANY OBSTRUCTIONS AT LEAST ONCE EVERY SIX MONTHS. IF OBSTRUCTIONS ARE FOUND THE OWNER SHALL HAVE THEM REMOVED. STRUCTURAL PARTS OF THE STORMCEPTOR UNIT SHALL BE REPAIRED AS NEEDED.
- THE OWNER SHALL RETAIN AND MAKE THE STORMCEPTOR INSPECTION/MONITORING FORMS AVAILABLE TO THE HOWARD COUNTY OFFICIALS UPON THEIR REQUEST.

OPERATION AND MAINTENANCE SCHEDULE FOR STORMWATER MANAGEMENT RETENTION FACILITY NO. 2 (PRIVATELY OWNED AND MAINTAINED)

- STORMWATER MANAGEMENT FACILITY
- ROUTINE MAINTENANCE:
- FACILITY WILL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS.
 - INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF STRUCTURE IS FUNCTIONING PROPERLY.
 - TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR, ONCE IN MAY AND ONCE IN SEPTEMBER.
 - OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHOULD BE MOWED AS NEEDED.
 - DEBRIS AND LITTER NEXT TO THE OUTLET STRUCTURE SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
 - VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREAS SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
- NON-ROUTINE MAINTENANCE:
- STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON DETECTION OF ANY DAMAGE.
 - THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
 - SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE. INTERFERE WITH THE FUNCTION OF THE RISER WHEN 50% OF THE FOREBAY CAPACITY IS LOST. WHEN DEEMED NECESSARY FOR AESTHETIC REASONS NECESSARY BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

OPERATION, MAINTENANCE AND INSPECTION

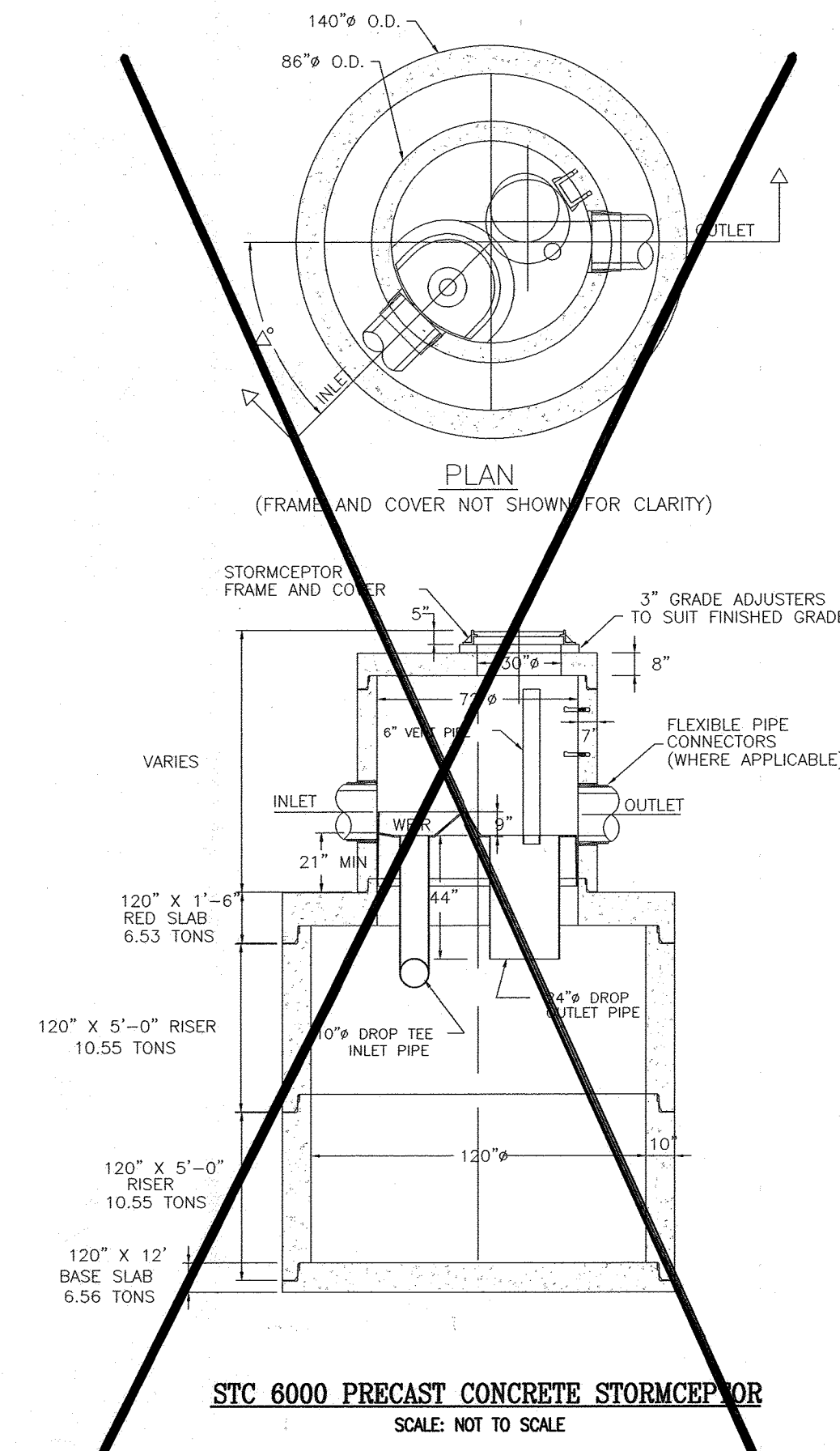
INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USGA NRCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (NO-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

Stormceptor Order Request Form

| | | | |
|--|------------------|---------------------------------|----------------------------|
| Contractor Information | | Office Use Only | |
| Name: | | Order#: | |
| Address: | | Date: | |
| City: | | Internal Sale: | |
| State: | | | |
| Zip Code: | | | |
| Contact: | | | |
| Phone: | | | |
| Fax: | | | |
| Owner Information | | | |
| Name: | BLUE STREAM, LLC | | |
| Phone: | | | |
| Fax: | | | |
| Stormceptor® Model: | Insert Size | Model | SC-1 |
| STA | STC-L | Elevation (ft) | 204.00 |
| 900 | 3600 | Inlet Pipe Invert (ft) | 191.52 |
| 1200 | 4800 | Outlet Pipe Invert (ft) | 191.42 |
| 1800 | 6000 | Pipe Type | CONCRETE (IN) - HDPE (OUT) |
| 2400 | 7200 | Pipe Inside Diameter (in) [ID] | 36 (OUT) |
| | | Pipe Outside Diameter (in) [OD] | |
| Project Name: BLUE STREAM CORPORATE CENTER | | | |
| Approximate time frame until required delivery (weeks): | | | |
| Delivery Address: Street | | | |
| City | | | |
| State | | | |
| Zip Code | | | |
| Designer Company: FREDERICK WARD ASSOCIATES | | | |
| Designer Contact: JIM RAZAVI Phone: (410) 720-6900 Fax: (410) 720-6206 | | | |
| Please fax this sheet back to Hydro Conduit/Virginia Precast at (804) 798-8426 Attn: Dave Brinser / Bryant Lowery (Phone: 1-800-999-2278) | | | |
| For credit information/applications contact Carole Broadus at (804) 798-8068 For Technical Assistance Please Call Stormceptor Corporation at (301) 762-8361 or toll free at 1-800-762-4703 | | | |

CONTRACTOR INSTALLATION INSTRUCTIONS: PRECAST CONCRETE STORMCEPTOR

- STAKE-OUT THE LOCATION OF THE STORMCEPTOR AND EXCAVATE HOLE. EXCAVATE ADEQUATE SPACE TO CONNECT INLET AND OUTLET TO UNIT. INSTALL A 12" DEEP (OR AS REQUIRED) LAYER OF COMPACTED (85% STANDARD PROCTOR DENSITY) OR LOCAL AND STATE REQUIREMENTS, AS DIRECTED BY THE INSPECTOR) AGGREGATE SUBGRADE AT BOTTOM OF EXCAVATION. INSTALL INLET OR OUTLET AS REQUIRED.
- CHECK ELEVATION OF UNIT BY MEASURING ITS SECTIONS FROM BASE OF THE STORAGE CHAMBER (BOTTOM OF UNIT'S SLAB) TO THE INVERT OF STORMCEPTOR BYPASS CHAMBER INLET ELEVATION (FERROUS INSERT). SUBTRACT THIS DISTANCE FROM DESIGN INVERT ELEVATION TO DETERMINE TOP OF SUBBASE ELEVATION. CHECK ELEVATION OF INSTALLED SUBBASE AND ADJUST AS NEEDED.
- SECURE INSPECTOR APPROVAL OF SUBBASE AND SUBBASE.
- INSTALL STORAGE CHAMBER. INSTALL SREW INSERTS INTO BASE OF STORAGE CHAMBER. ATTACH CABLES OR CHAINS TO ALL 3 LIFTING LUGS ON THE BASE SLAB. USING LARGE EQUIPMENT OR CRANE LIFT AND PLACE THE BASE SECTION OF THE STORAGE CHAMBER IN THE EXCAVATED HOLE ON THE SUBBASE. MAKE SURE THAT THE BASE IS LEVEL. SPECIFIC ALIGNMENT OF THIS PART IS NOT REQUIRED. INSTALL RUBBER GASKET ON BASE UNIT AND COAT WITH LUBRICATING GREASE (PROVIDED IN SHIPMENT, IF NOT PRELUBRICATED). INSTALL ADDITIONAL STORAGE CHAMBER SECTIONS, AS REQUIRED (PROCEDURE IS SAME AS STEP 3).
- INSTALL REDUCING SLAB. (STORMCEPTOR MODELS STC-2400, STC-3600, STC-4800, STC-6000 AND STC-7200) CHECK THAT SECTION IS SET FLUSH LEVEL AND IS AT THE PROPER ELEVATION. INSTALL RUBBER GASKET ON THE TRANSITION SLAB SPIGOT AND COAT WITH LUBRICATING GREASE (PROVIDED IN SHIPMENT).
- INSTALL BYPASS CHAMBER OF STORMCEPTOR WITH FACTORY INSTALLED STORMCEPTOR INSERT. LIFT BYPASS SECTION AND INSTALL WHILE CHECKING ALIGNMENT AND GRADE OF INLET AND OUTLET DRAINAGE PIPES. CHECK TO MAKE SURE THE BYPASS CHAMBER IS SET FLUSH LEVEL AND IS AT THE PROPER ELEVATION. THE BYPASS CHAMBER MUST BE ORIENTED SUCH THAT INLET PIPE DISCHARGES INTO THE U-SHAPED FERROUS WEIRS (NEEDS INSERT). INSTALL RUBBER GASKET ON TOP OF BYPASS SECTION AND COAT WITH LUBRICATING GREASE, IF NOT PRELUBRICATED.
- INSTALL STORMCEPTOR DRAIN PIPES ACCORDING TO STC PIPE INSTALLATION PROCEDURE.
- INSTALL RISER SECTION. LIFT RISER SECTION AND INSTALL WHILE CHECKING THAT SECTION IS SET FLUSH AND IS AT PROPER ELEVATION AND THAT UNIT IS LEVEL. SPECIFIC ALIGNMENT OF THIS PART IS NOT REQUIRED. IF STEPS ARE REQUIRED, ALIGN STEPS ABOVE INLET INSPECTION PORT. NOTE: FOR SHALLOW INSTALLATIONS THIS SECTION MAY NOT BE REQUIRED.
- INSTALL TOP CAP WITH OPENING FOR STORMCEPTOR COVER. IF OPENING IS OFFSET (NOT CENTERED) THE TOP CAP OPENING SHOULD BE ORIENTED ABOVE THE STORMCEPTOR INLET INSPECTION PORT (PLUS).
- BACKFILL STORMCEPTOR WITH APPROVED BACKFILL MATERIAL (NO ORGANIC OR TOPSOIL REQUIREMENTS, AS DIRECTED BY THE INSPECTOR). BACKFILL AND COMPACT IN 8 INCH LIFTS. BACKFILL SHOULD BE COMPACTED TO 95% OF STANDARD PROCTOR DENSITY, OR LOCAL AND STATE REQUIREMENTS, AS DIRECTED BY THE INSPECTOR.
- INSTALL AND SET GRADE ADJUSTING RINGS, AS NEEDED.
- INSTALL AND SET STORMCEPTOR FRAME AND COVER.
- INSTALL INLET AND OUTLET STORM DRAIN PIPES. CONNECT INLET AND OUTLET STORM DRAIN PIPES WITH FLEXIBLE BOOTS (WHEN PROVIDED) AND WITH NON-SHRINK GROUT WHEN NO FLEXIBLE BOOTS ARE PROVIDED. THE INVERT OF THE INLET AND OUTLET PIPE IS TO MATCH WITH THE INVERT OF THE STORMCEPTOR INSERT. FLEXIBLE BOOT INSTALLATION PROCEDURES: CENTER THE PIPE IN THE BOOT OPENING. LUBRICATE THE OUTSIDE OF THE PIPE AND/OR THE INSIDE OF THE BOOT IF THE PIPE OUTSIDE DIAMETER IS THE SAME AS THE INSIDE DIAMETER OF THE BOOT. POSITION THE PIPE CLAMP IN THE GROOVE OF THE BOOT WITH THE SCREW AT THE TOP. TIGHTEN THE PIPE CLAMP SCREW TO 80 INCH POUNDS. IF THE PIPE IS MUCH SMALLER THAN THE BOOT, LIFT THE BOOT THAT IT CONTACTS THE BOTTOM OF THE PIPE RESTRICTION. MOVE THE PIPE CLAMP TO ENSURE EVEN CONTRACTION OF THE RUBBER. MOVE THE PIPE HORIZONTALLY AND/OR VERTICALLY TO BRING IT TO GRADE.
- THE STORMCEPTOR SHOULD BE PUMPED OUT WHEN THE SEDIMENT CONTROL MEASURES ARE REMOVED (SITE PERMANENTLY STABILIZED).
- FINAL INSPECTION.



DIMENSIONS*

| MODEL | DIAM (in) | DROP PIPE DIAM (in) | HL (in) | TH (in) | L (in) |
|----------|-----------|---------------------|---------|---------|--------|
| STC 900 | 6 | 6 | 42 | 8 | 8 |
| STC 1200 | 6 | 6 | 60 | 8 | 8 |
| STC 1800 | 6 | 6 | 96 | 8 | 8 |
| STC 2400 | 8 | 8 | 60 | 8 | 0 |
| STC 3600 | 8 | 8 | 118 | 8 | 0 |
| STC 4800 | 8 | 8 | 106 | 12 | 0 |
| STC 6000 | 10 | 10 | 130 | 12 | 0 |
| STC 7200 | 12 | 12 | 114 | 14 | 0 |

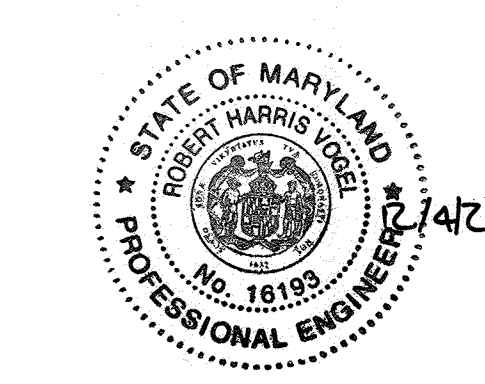
DIMENSIONS*

| PIPE DIAMETER D (in) | PIPE MATERIAL | HIN (in) | H (in) | L (in) |
|----------------------|---------------|----------|--------|--------|
| 10 | PVC | 22 | 36 | 9 |
| 10 | CONC / PE RIB | 22 | 36 | 7 |
| 12 | PVC / PE RIB | 22 | 36 | 9 |
| 12 | CONCRETE | 22 | 42 | 11 |
| 15 | PVC / PE RIB | 22 | 42 | 9.5 |
| 15 | CONCRETE | 22 | 48 | 11.5 |
| 18 | PVC / PE RIB | 22 | 48 | 10 |
| 18 | CONCRETE | 22 | 48 | 11 |
| 21 | PVC / PE RIB | 32 | 48 | 9.5 |
| 21 | CONCRETE | 32 | 54 | 11.5 |
| 24 | PVC | 32 | 48 | 9 |
| 24 | PE RIBBED | 32 | 54 | 10 |
| 24 | CONCRETE | 32 | 54 | 11 |
| 27 | PVC | 32 | 54 | 8.5 |
| 27 | CONCRETE | 44 | 60 | 11.5 |
| 30 | CONCRETE | 44 | 60 | 12 |
| 36 | CONCRETE | 44 | 60 | 12.5 |
| 36 | CONCRETE | 44 | 60 | 13 |

FLows AND CAPACITIES*

| MODEL | MAX TREATED FLOW RATE (gpm)** | SEDIMENT CAPACITY (U.S. gal.) | OIL CAPACITY (U.S. gal.) | TOTAL CAPACITY (U.S. gal.) |
|----------|-------------------------------|-------------------------------|--------------------------|----------------------------|
| STC 900 | 285 | 70 | 280 | 910 |
| STC 1200 | 285 | 110 | 280 | 1230 |
| STC 1800 | 285 | 165 | 280 | 1860 |
| STC 2400 | 475 | 210 | 560 | 2405 |
| STC 3600 | 575 | 390 | 660 | 3720 |
| STC 4800 | 800 | 515 | 675 | 5030 |
| STC 6000 | 800 | 675 | 675 | 5705 |
| STC 7200 | 1110 | 800 | 680 | 7590 |

* APPROXIMATE
** WITHOUT BY-PASSING



AS-BUILT CERTIFICATION FOR PWSM

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND CONFORMS 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 H. Vogel
12/18/20
P.E. #

ENGINEERS CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL, REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE SHOULD ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Robert H. Vogel
3/2/20
DATE

DEVELOPER'S CERTIFICATE

I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Arnold Sagner - managing member
3/2/20
DATE

STORMWATER MANAGEMENT
NOTES AND DETAILS
BLUE STREAM
(FORMERLY KNOWN AS OVERLOOK AT BLUE STREAM)
OPEN SPACE LOTS G-1 AND G-2 AND
BOULDBE BULK PARCELS H-1-M

TAX MAP 43, BLOCKS 4 AND 5
1ST ELECTION DISTRICT

DEVELOPER
BLUE STREAM, LLC
C/O ARNOLD SAGNER
P.O. BOX 416
ELLICOTT CITY, MD 21041

OWNER
BLUE STREAM, LLC
C/O ARNOLD SAGNER
P.O. BOX 416
ELLICOTT CITY, MD 21041

DESIGN BY: DLW
DRAWN BY: JAJDZ
CHECKED BY: MMR
DATE: MARCH, 2003
SCALE: (AS SHOWN)
W.O. NO.: 2019038

REF: S-99-08, WP-99-80, P.00-20, WP-00-116

FREDERICK WARD ASSOCIATES, INC.

ENGINEERS: 7125 Riverwood Drive Columbia, Maryland 21046-2354
ARCHITECTS: Phone: 410-290-9550 Fax: 410-720-6226
SURVEYORS: Bel Air, Maryland Columbia, Maryland Warrington, Virginia

DESIGN BY: DLW
DRAWN BY: JAJDZ
CHECKED BY: MMR
DATE: MARCH, 2003
SCALE: (AS SHOWN)
W.O. NO.: 2019038

REF: S-99-08, WP-99-80, P.00-20, WP-00-116

19 SHEET OF 28

AS-BUILT, DEC. 2018 F-02-35

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division DATE 4/1/20

Chief, Bureau of Highways DATE 4-4-03

Chief, Division of Land Development DATE 4/1/20

REFORESTATION AREA MONITORING NOTES

- MONTHLY VISITS DURING THE FIRST GROWING SEASON ARE TO ASSESS THE SUCCESS OF THE PLANTINGS AND TO DETERMINE IF SUPPLEMENTAL WATERING, PEST CONTROL OR OTHER ACTIONS ARE NECESSARY. EARLY SPRING VISITS WILL DOCUMENT WINTER KILL AND AUTUMN VISITS WILL DOCUMENT SUMMER KILL.
- THE MINIMUM SURVIVAL RATE SHALL BE 75% NUMBER OF TREES PLANTED PER ACRE AT THE END OF THE TWO YEAR MAINTENANCE PERIOD. WILD TREE SEEDLINGS FROM NATURAL REGENERATION ON THE PLANTING SITE MAY BE COUNTED UP TO 50% TOWARD THE TOTAL SURVIVAL NUMBER IF THE ARE HEALTHY NATIVE SPECIES AT LEAST 12 INCHES TALLX OF THE TOTAL.
- SURVIVAL WILL BE DETERMINED BY A STRATIFIED RANDOM SAMPLING OF THE PLANTINGS. THE SPECIES COMPOSITION OF THE SAMPLE POPULATION SHOULD BE PROPORTIONATE TO THE AMOUNT OF EACH SPECIES IN THE ENTIRE PLANTING TO BE SAMPLED.
- EFFECTIVE MONITORING WILL ASSESS PLANT SURVIVABILITY DURING THE FIRST GROWING SEASON AND MAKE RECOMMENDATIONS FOR REINFORCEMENT PLANTINGS IF REQUIRED AT THAT TIME.

NOTES:

- FOREST STAND DELINEATION PLAN PREPARED BY KOPECK AND ASSOCIATES DATED NOVEMBER, 1998. FOREST CONSERVATION PLAN PREPARED BY CAMPBELL NOLAN ASSOCIATES DATED MARCH, 2000. THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY THE CREATION OF FOREST CONSERVATION (RETENTION/REFORESTATION) EASEMENT, PURCHASE OF REFORESTATION CREDIT FROM THE WINKLER BANK, AND BY THE PAYMENT OF A FEE IN LIEU OF OFFSITE REFORESTATION. FOREST CONSERVATION IS APPROVED AND PROVIDED UNDER WITH F-02-35.
- A MINIMUM OF 20" SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.

FOREST RETENTION AREAS AND NOTES

- FORESTED STREAM AND WETLAND BUFFERS ARE RETAINED IN OPEN SPACE LOTS.
- NO RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED ON THIS SITE.
- FORESTED AREAS ADJACENT TO FLOODPLAINS AND STREAM BUFFERS ARE SUBSTANTIALLY RETAINED IN OPEN SPACE LOTS.
- THERE ARE NO ISOLATED FOREST STANDS ON THIS SITE.
- 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.
- FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1200 OF THE HOWARD COUNTY CODE, DPZ AND THE FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION WILL BE FULFILLED BY THE RETENTION OF EXISTING FOREST IN THE AMOUNT OF 16.15 ACRES.
- 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.

FOREST PROTECTION NOTES

- PRE-CONSTRUCTION ACTIVITIES**
- FOR RETENTION AREAS, INSTALL BLAZE ORANGE FENCE AND RETENTION SIGNS BEFORE CONSTRUCTION BEGINS.
 - FENCING SHALL BE MAINTAINED IN GOOD CONDITION AND PROMPTLY REPAIRED OR RESTORED AS THE SITUATION WARRANTS.
 - 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**
- NO DISTURBANCE OR DUMPING IS ALLOWED INSIDE THE TREE RETENTION AREA.
 - NO EQUIPMENT SHALL BE OPERATED INSIDE THE TREE RETENTION AREA INCLUDING TREE CANOPIES.
 - IN THE EVENT OF DROUGHT, THE PROTECTED TREES SHALL BE MONITORED FOR SIGNS OF STRESS AND WATERED AS NEEDED.
- POST-CONSTRUCTION ACTIVITIES**
- AT THE DIRECTION OF A QUALIFIED TREE CARE EXPERT, DAMAGES TO RETAINED TREES SHALL BE REPAIRED BY THE CONTRACTOR.
 - FENCE REMOVAL AND STABILIZATION SHALL BE AS PER THE SEDIMENT AND EROSION CONTROL PLAN.
 - DO NOT REMOVE SIGNS.

SEQUENCE OF CONSTRUCTION-FOREST CONSERVATION

- 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.
- STAKE OUT LIMITS OF DISTURBANCE AND TREE PROTECTION FENCING LOCATIONS.
- INSTALL TREE PROTECTION FENCING; FENCING TO BE INSPECTED BY THE PROJECT ENGINEER OR THE PROJECT ECOLOGIST AND HOWARD COUNTY PLANNING AND ZONING.
- PROCEED WITH TREE REMOVAL AND SITE IMPROVEMENTS AS PER APPROVED SEDIMENT CONTROL PLAN - TO BE INSPECTED BY HOWARD COUNTY PLANNING AND ZONING.
- TEMPORARY TREE PROTECTION DEVICES SHALL BE REMOVED AFTER ALL FINISHED GRADING AND UTILITY CONSTRUCTION HAS OCCURRED AND WITH APPROVAL FROM THE HOWARD COUNTY OFFICE OF PLANNING AND ZONING.

THE SHARP LANDSCAPING FOR SHAH POND # 2 AS SHOWN ON THIS FINAL PLAN (F-02-035) SHALL BE PLANTED IN CONJUNCTION WITH FINAL PLAN F-18-002 (BLUE STREAM DRIVE EXTENSION).

| PUBLIC ACCESS PLACE STREET TREE SCHEDULE | | | | |
|--|------|--|------------------|-------|
| KEY | QUAN | BOTANICAL NAME | SIZE | REM. |
| + PA | 150* | PLATANUS ACERIFOLIA LONDON PLANE TREE | 2 1/2" - 3" CAL. | B & B |
| - PY | 6 | PRUNUS Y YEDOENSIS 'AKEBONO' AKEBONO YOSHINO CHERRY | 12' HT. | B & B |

* SUBSTITUTE 3 LONDON PLANE TREES WITH 6 YOSHINO CHERRY TREES (LOCATED IN MEDIUM OF BLUE STREAM DRIVE ENTRANCE).

| STREET TREE CALCULATIONS | | | |
|-------------------------------|-------------|--------------|--------------|
| STREET NAME | LINEAR FEET | NO. REQUIRED | NO. PROVIDED |
| BLUE STREAM DRIVE | 4045/40 | 101 | 101 |
| QUIDDITCH LANE | 935/40 | 23 | 23 |
| WASHINGTON BLVD. (US. RTE. 1) | 1155/40 | 29 | 29 |
| BLUE STREAM DRIVE EXTENSION | 1086/40 | 28 | 28 |

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 9/9/11
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
[Signature] 9/9/11
 CHIEF, DIVISION OF LAND DEVELOPMENT

DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

[Signature] 8/6/11
 SIGNATURE OF DEVELOPER
 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[Signature] 9-7-2011
 CHIEF, BUREAU OF HIGHWAYS
 DATE

PLAN VIEW

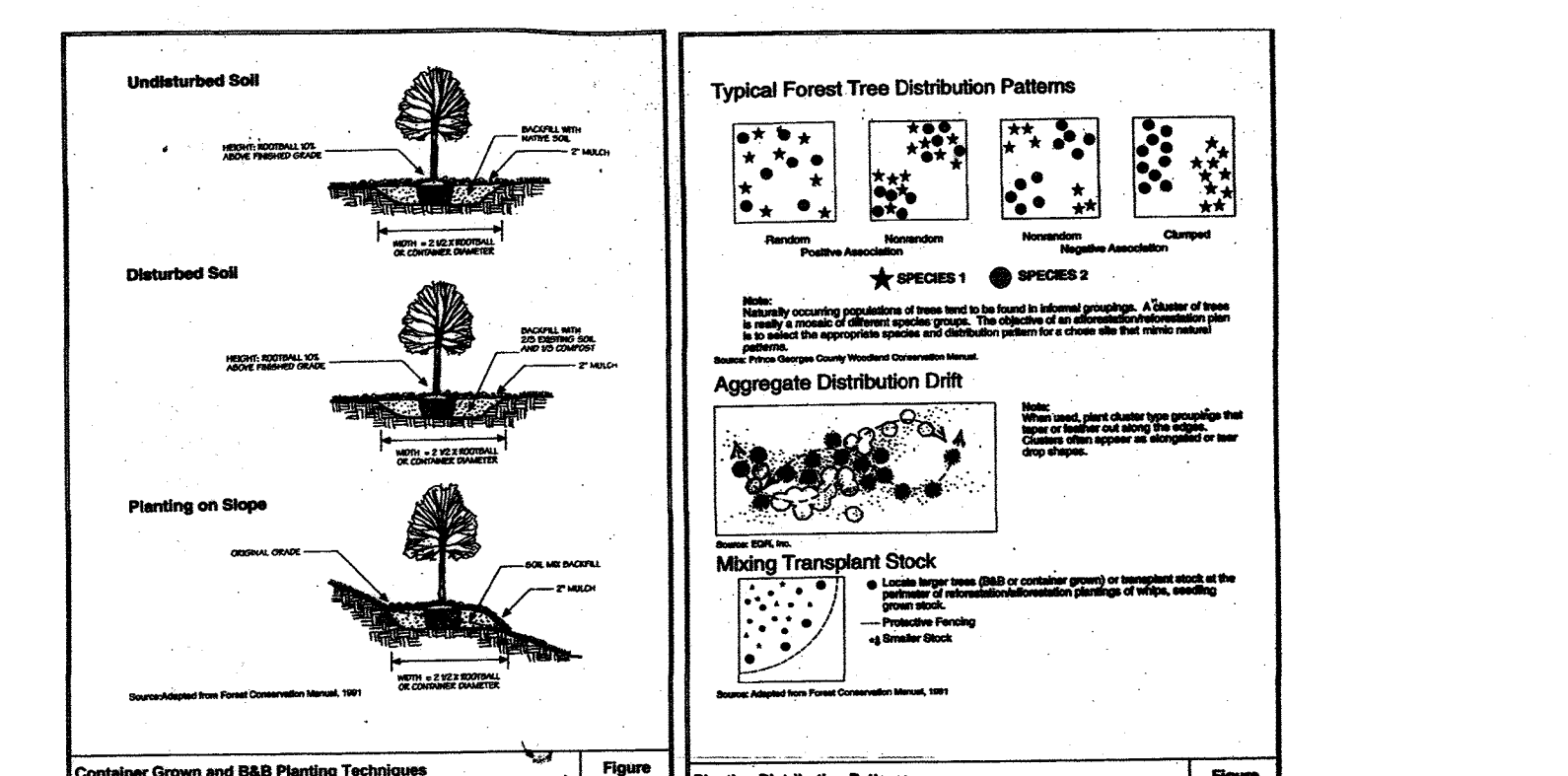
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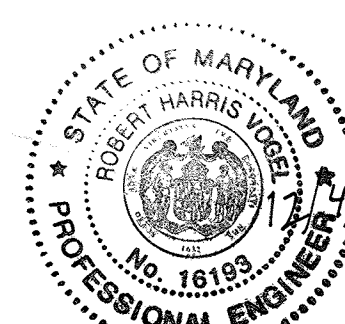
NOTE:
 A MINIMUM OF 20" SHALL BE MAINTAINED BETWEEN ANY STREET TREE AND ANY LIGHT.

LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- EXISTING SPOT ELEVATION
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- EXISTING TREELINE
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- SOILS BOUNDARY
- PROPOSED SIDEWALK
- PROPOSED LIGHT POLE
- EX. RIGHT-OF-WAY TO BE ABANDONED
- NEW RIGHT-OF-WAY
- LIMIT OF DISTURBANCE
- PROPOSED TREE
- PROPOSED EVERGREEN TREE
- MODERATE SLOPES (1:3 - 24:99)
- STEEP SLOPE (>25%)
- EX. 100 YEAR PUBLIC FLOODPLAIN, DRAINAGE AND UTILITY EASEMENT
- PUBLIC FOREST CONSERVATION EASEMENT (RETENTION)
- PUBLIC FOREST CONSERVATION EASEMENT (AFFORESTATION)
- PUBLIC FOREST CONSERVATION EASEMENT (REFORESTATION)
- EX. LIMIT OF WETLAND
- EX. PUBLIC FOREST CONSERVATION EASEMENT (AFFORESTATION)
- PROPOSED SHADE TREE
- PROPOSED EVERGREEN TREE



| Site Stocking | Species | Number Required per Acre | Approximate Species List | Survivability at the end of the second growing season |
|---------------|------------|--------------------------|--------------------------|---|
| Site Stocking | Shade Tree | 700 | 10 x 8 | 80% |
| Site Stocking | Shade Tree | 400 | 10 x 10 | 80% |
| Site Stocking | Shade Tree | 350 | 12 x 12 | 75% |
| Site Stocking | Shade Tree | 200 | 16 x 12 | 80% |
| Site Stocking | Shade Tree | 100 | 20 x 20 | 100% |



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 12/4/20
 R.H. VOGEL P.E.

GENERAL NOTES

- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT ANS SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH LOCAL PLANTING SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
- CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.
- THE PROPERTY OWNER WILL BE RESPONSIBLE FOR MAINTAINING STREET TREES WITHIN THE PUBLIC RIGHT-OF-WAY.

DEVELOPER'S AGREEMENT

STREET TREES ARE PROVIDED FOR THIS PROJECT IN ACCORDANCE WITH SECTION 16.124 (g)(1) OF THE SUBDIVISION REGULATIONS AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY IN THE AMOUNT OF \$45,900.00 TO BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT FOR THIS FINAL PLAN FOR THE REQUIRED 153 PUBLIC STREET TREES.
 FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING PROVIDED PER THE LANDSCAPE MANUAL TO BE POSTED WITH THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$12,750.00 FOR THE REQUIRED 26 SHADE TREES AND THE REQUIRED 33 EVERGREEN TREES.

NO AS-BUILT INFORMATION ON THIS SHEET

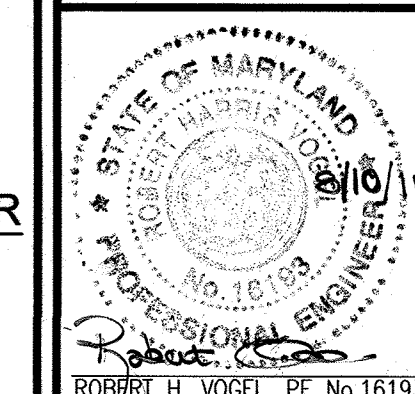
OWNER/DEVELOPER
 BLUE STREAM, LLC.
 P.O. BOX 416
 ELLICOTT CITY, MD 21041
 C/O: ARNOLD SAGNER
 410-465-2020

[Signature]
 DNR QUALIFIED FOREST PROFESSIONAL
 J.J. CHRIS OGLE

| NO. | REVISION | DATE |
|-----|---|----------|
| 12 | REVISE PLANS TO ADD NOTES REGARDING THE TRANSFER OF THE STORMWATER MANAGEMENT POND LANDSCAPING RESPONSIBILITY TO F-18-002 | 11-9-21 |
| 10 | REVISION TO ADD NOTES FOR POND #2, CONSTRUCTION TO P-10-037, ADD 8' WIDENING RAILWAY AND 800' RAMP, ADD NOTES FOR SHA SIDEWALK IMPROVEMENTS ALONG ROUTE 1 | 05-01-19 |
| 6 | REVISED PLANS TO ADD EXTENSION OF BLUE STREAM DRIVE AND JUST PUBLIC STORM DRAIN ACCORDINGLY | 07/31/14 |
| 5 | REVISE FOREST CONSERVATION | 10/16/12 |
| 2 | REVISE MASS GRADING; REVISE WATER TO C-900 PVC | 08/03/11 |
| 1 | REVISE PLAN TO ACCOMMODATE ZONING CHANGE; REVISION TO BLUE STREAM DRIVE; AND THE ADDITION OF QUIDDITCH LANE | 12/28/10 |

REVISED FINAL ROAD CONSTRUCTION PLAN
LANDSCAPE AND FOREST CONSERVATION PLAN
 BLUE STREAM
 (FORMERLY KNOWN AS THE OVERLOOK AT BLUE STREAM)
 TAX MAP 43 GRID 4 & 5
 1ST ELECTION DISTRICT
 PARCEL P/O 5, 14 & 553
 BUILDABLE BULK PARCELS H-M
 HOWARD COUNTY, MARYLAND

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



DESIGN BY: RHV
 DRAWN BY: DZ
 CHECKED BY: RHV
 DATE: AUGUST 2011
 SCALE: AS SHOWN
 W.O. NO.: 06-26

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.
 EXPIRATION DATE: 08-27-2012

20 SHEET OF 28

| SOILS LEGEND | | |
|--------------|---|------------|
| SYMBOL | NAME / DESCRIPTION | SOIL GROUP |
| EvC | EVESBORO LOAMY SAND, 5 TO 15 PERCENT SLOPES | A |
| EvB | EVESBORO LOAMY SAND, 1 TO 5 PERCENT SLOPES | A |
| CuB | COMUS SILT LOAM, LOCAL ALLUVIUM, 3 TO 8 PERCENT SLOPES | B |
| EnA | ELLSBORO LOAM, 0 TO 3 PERCENT SLOPES | B |
| MfC | MONTALTO AND RELAY VERY STONY SILT LOAMS, 25 TO 60 PERCENT SLOPES | B |
| Msf | MONTALTO AND RELAY VERY STONY SILT LOAMS, 25 TO 60 PERCENT SLOPES | B |
| SfD2 | SASSAFRAS GRAVELLY SANDY LOAM, 10 TO 15 PERCENT SLOPES, MODERATELY ERODED | B |
| SfC2 | SASSAFRAS GRAVELLY SANDY LOAM, 10 TO 15 PERCENT SLOPES, MODERATELY ERODED | B |
| ScE | SANDY AND CLAYEY LAND, MODERATELY STEEP | B |
| ScE | SASSAFRAS SOIL, 15 TO 40 PERCENT SLOPES | B |
| SfB2 | SASSAFRAS GRAVELLY SANDY LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED | B |
| SuB2 | SUNNYSIDE FINE SANDY LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED | B |
| SuD2 | SUNNYSIDE FINE SANDY LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED | B |
| S1B2 | SASSAFRAS LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED | B |
| S1C2 | SASSAFRAS LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED | B |
| S1D2 | SASSAFRAS LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED | B |
| ScD | SANDY AND CLAYEY LAND, MODERATELY SLOPING | B |
| Gp | GRAVEL PIT & QUARRIES | B |
| Nec2 | NESHAMINY SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED | B |
| RuB2 | RUNFORD LOAMY SAND, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED | B |
| RuD2 | RUNFORD LOAMY SAND, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED | B |
| Bec3 | BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODED | C |
| Bec2 | BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES, MODERATELY ERODED | C |
| Beb2 | BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES, MODERATELY ERODED | C |
| Bba2 | BELTSVILLE SILT LOAM, 0 TO 1 PERCENT SLOPES | C |
| C1D2 | CHILLUM GRAVELLY LOAM, 10 TO 15 PERCENT SLOPES, MODERATELY ERODED | C |
| C1C3 | CHILLUM GRAVELLY LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODED | C |
| Cnd3 | CHILLUM-FAIRFAX LOAMS, 5 TO 15 PERCENT SLOPES | C |
| CmC2 | CHILLUM SILT LOAM, 5 TO 10 PERCENT SLOPES, MODERATELY ERODED | C |
| LcC2 | LEGORE SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED | C |
| Lub | LUNA LOAM, 15 TO 30 PERCENT SLOPES, SEVERELY ERODED | C |
| KhC2 | KEYPORT SILT LOAM, 3 TO 10 PERCENT SLOPES, MODERATELY ERODED | C |
| WoB2 | WOODSTOWN SANDY LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED | C |
| WaB | WATCHUNG SILT LOAM, 3 TO 8 PERCENT SLOPES | D |
| Ho | HATBORO SILT LOAM | D |

FOREST CONSERVATION REQUIREMENTS

FOREST RETENTION: 1.24 ACRES
 AFFORESTATION REQUIRED: 12.80 ACRES
 AFFORESTATION SHOWN: 7.4869 ACRES

NOTE: THE ADDITIONAL 5.29 ACRES OF REFORESTATION WILL BE ACCOMPLISHED THROUGH PURCHASE OF REFORESTATION CREDIT FROM THE HOWARD COUNTY APPROVED, WINKLER FOREST CONSERVATION BANK 0.02 ACRE WILL BE PROVIDED BY FEE-IN-LIEU

AFFORESTATION REQUIREMENTS: 12.80 ACRES OR 557,568.0 SF
 REFORESTATION AFFORESTATION PROVIDED: 7.12 ACRES

1" Caliper trees or (200 Trees per acre)
 Hardwood Seedlings or (350 whips per acre)
 1" Caliper trees 705 @ 200 Trees per acre (352 AC)
 Seedlings - with tree shelters (260 @ 350 whips per acre (360 AC))

COST ESTIMATE: (For bonding purposes, only)

ON-SITE RETENTION PROVIDED 54,014 SF X 0.20 = \$ 10,802.80
 ON-SITE AFFORESTATION PROVIDED 326,129 SF X 0.50 = \$163,064.50
 FEE-IN-LIEU OF REFORESTATION 8713F X 0.50 = \$ 435.60

SURETY NOTE

FINANCIAL SURETY IN THE AMOUNT OF \$173,867.30 HAS BEEN POSTED WITH THE FC INSTALLATION AND MAINTENANCE AGREEMENT UNDER F-02-35.

REVISION #1 FOREST CONSERVATION FEE-IN-LIEU

RETENTION REDUCTION: 0.15 AC
 AFFORESTATION REDUCTION: 0.50 AC
 REFORESTATION PROVIDED: 0.15 AC
 TOTAL REDUCTION TO FOREST CONSERVATION: -0.50 AC

A FOREST CONSERVATION EASEMENT ABANDONMENT FEE OF \$31,581.00 HAS BEEN PAID TO THE HOWARD COUNTY FOREST CONSERVATION FUND PER F-10-055.

REVISION #1 NOTE:

EXISTING FOREST CONSERVATION EASEMENTS B AND C HAVE BEEN ABANDONED AND REPLACED WITH FOREST CONSERVATION EASEMENTS B-1, B-2, C-1, D-1 AND D-2 BY PLAT F-10-055.
 RETENTION HAS BEEN REDUCED BY 0.15 AC, AFFORESTATION HAS BEEN REDUCED BY 0.50 AC, AND REFORESTATION OF 0.15 AC IS BEING PROVIDED.
 NETTING THE FOLLOWING:
 ON-SITE FOREST RETENTION PROVIDED: 1.09 AC.
 ON-SITE AFFORESTATION PROVIDED: 6.91 AC.
 ON-SITE REFORESTATION PROVIDED: 0.15 AC.

REVISION #5 FOREST CONSERVATION:

RETENTION REDUCTION 0.08 AC
 AFFORESTATION PROVIDED 0.05 AC
 REFORESTATION PROVIDED 0.01 AC
 TOTAL INCREASE TO FOREST CONSERVATION 0.06 AC

REVISION #5 NOTE:

EXISTING FOREST CONSERVATION EASEMENTS A, C-1, AND D-2 HAS BEEN REDUCED. EASEMENTS A-1 AND B-3 HAVE BEEN PROVIDED.

NETTING THE FOLLOWING:

ON-SITE FOREST RETENTION PROVIDED: 1.06 AC.
 EASEMENT A (0.067 AC)
 EASEMENT C (0.972 AC)
 ON-SITE AFFORESTATION PROVIDED: 6.96 AC.
 EASEMENT B-1 (4.4176 AC)
 EASEMENT B-3 (0.088 AC)
 ON-SITE REFORESTATION PROVIDED: 0.16 AC.
 EASEMENT A-1 (0.019 AC)
 EASEMENT D-1 (0.335 AC)
 EASEMENT D-2 (0.1095 AC)

THERE ARE NO SURETIES OR FEES FOR FOREST CONSERVATION ASSOCIATED WITH THIS REVISION.

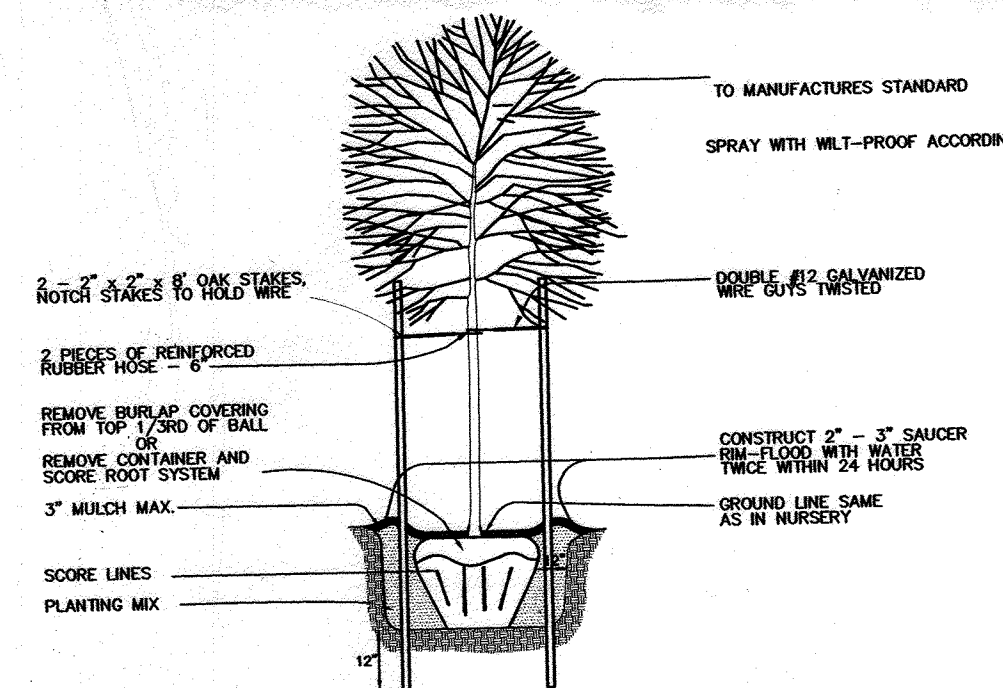
FOREST CONSERVATION WORKSHEET

| | |
|---|-------------|
| ACRES (1/10 acre) | 76.38 ACRES |
| NET TRACT AREA | 66.64 ACRES |
| AREA WITHIN 100 YEAR FLOODPLAIN | 9.74 ACRES |
| AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL (if applicable) | 0.00 ACRES |
| LAND USE CATEGORY (R-RL, R-RMD, R-S, C-1/0, I) M-1 | M-1 |

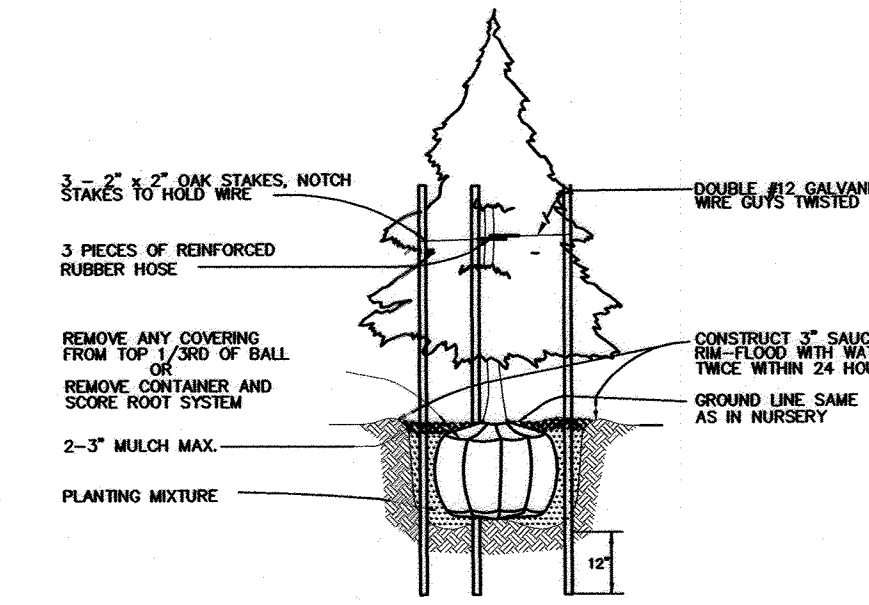
| I. INFORMATION FOR CALCULATIONS | |
|--------------------------------------|-------------|
| A. NET TRACT AREA | 66.64 ACRES |
| B. REFORESTATION THRESHOLD (15% X A) | 10.00 ACRES |
| C. AFFORESTATION MINIMUM (15% X A) | 10.00 ACRES |
| D. EXISTING FOREST ON NET TRACT AREA | 5.28 ACRES |
| E. FOREST AREAS TO BE CLEARED | 4.04 ACRES |
| F. FOREST AREAS TO BE RETAINED | 1.24 ACRES |

SELECT THE ALTERNATIVE THAT APPLIES:

| | |
|--|-------------|
| 1. NO CLEARING BELOW THE MINIMUM | |
| If existing forests are less than the afforestation minimum (if D is less than C) and no clearing is proposed, the following calculations apply: | |
| Total afforestation required | 0.00 ACRES |
| C - D | 0.00 ACRES |
| Afforestation must make total forest area equal minimum required | |
| 2. Clearing below the Minimum | |
| If existing forests are less than the afforestation minimum (if D is less than C) and clearing is proposed, the following calculations apply: | |
| Afforestation for unforested areas below minimum | 4.72 ACRES |
| C - D | 4.72 ACRES |
| Afforestation for Clearing below Minimum | 8.08 ACRES |
| E x 2 | 8.08 ACRES |
| Total Afforestation Required | 12.80 ACRES |
| (C - D) + (E x 2) | 12.80 ACRES |
| Afforestation requires the total forest to be equal to the minimum and it requires compensation for clearing | |

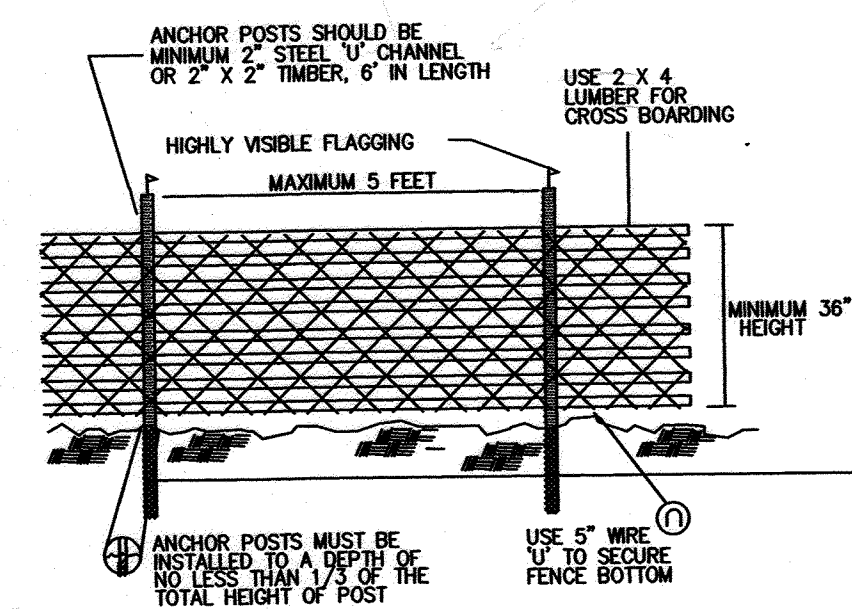


DECIDUOUS PLANTING DETAIL



EVERGREEN PLANTING DETAIL

BLAZE ORANGE PLASTIC MESH



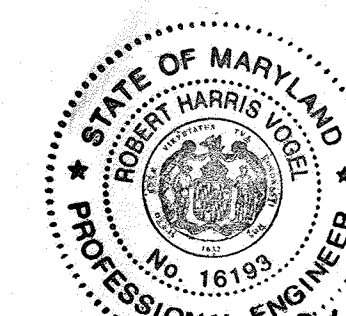
- NOTES:
- FOREST PROTECTION DEVICE ONLY.
 - RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
 - BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
 - ROOT DAMAGE SHOULD BE AVOIDED.
 - PROTECTIVE SIGNAGE MAY ALSO BE USED.
 - DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION FENCING

LEGEND

- EXISTING FOREST
- PROPOSED TREELINE
- FOREST RETENTION AREA
- AFFORESTATION AREA
- FOREST RETENTION SIGNAGE
- AFFORESTATION SIGNAGE
- FOREST CONSERVATION EASEMENT
- PROTECTIVE TREE FENCE
- NONTIDAL WETLANDS
- SLOPES 25% & GREATER
- SLOPES 15% TO 25%
- SOILS BOUNDARY
- 100 YEAR FLOODPLAIN
- EXISTING CONTOUR
- PROPOSED CONTOUR

NO AS-BUILT INFORMATION ON THIS SHEET



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.

12/14/03
 P.E. NAME: J. CHRIS OGLE
 P.E. # 121470
 DATE: 12/14/03

| NO. | REVISION | DATE |
|-----|--|----------|
| 3 | REVISE FOREST CONSERVATION | 10/16/02 |
| 2 | REVISE WATER MAIN PIPE MATERIAL, GRADE AND ADMIN. AREA (8/21/02) | |
| 1 | REVISE PLAN TO ACCOMMODATE ZONING CHANGE, REVISIONS TO BLUE STREAM DRAINAGE AND THE ADDITION OF QUIDDITCH LAKE | 12/28/10 |

FOREST CONSERVATION NOTES & DETAILS

(FORMERLY KNOWN AS OVERLOOK AT BLUE STREAM)
 OPEN SPACE LOTS G-1 AND G-2 AND BUILDABLE BULK PARCELS H-1

TAX MAP 43, BLOCKS 4 AND 5
 1ST ELECTION DISTRICT
 PARCEL P10 'S, 14 AND 58B
 HOWARD COUNTY, MARYLAND

DEVELOPER
 BLUE STREAM, LLC
 C/O ARNOLD SAGNER
 P.O. BOX 416
 ELLICOTT CITY, MD 21041

OWNER
 BLUE STREAM, LLC
 C/O ARNOLD SAGNER
 P.O. BOX 416
 ELLICOTT CITY, MD 21041

DESIGN BY: ERM
 DRAWN BY: ERM
 CHECKED BY: DRK
 DATE: MARCH 2003
 SCALE:
 W.O. NO.: 2019038

REF: S-99-08, WP-99-80, P-00-20, WP-00-116

22 SHEET OF 28

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

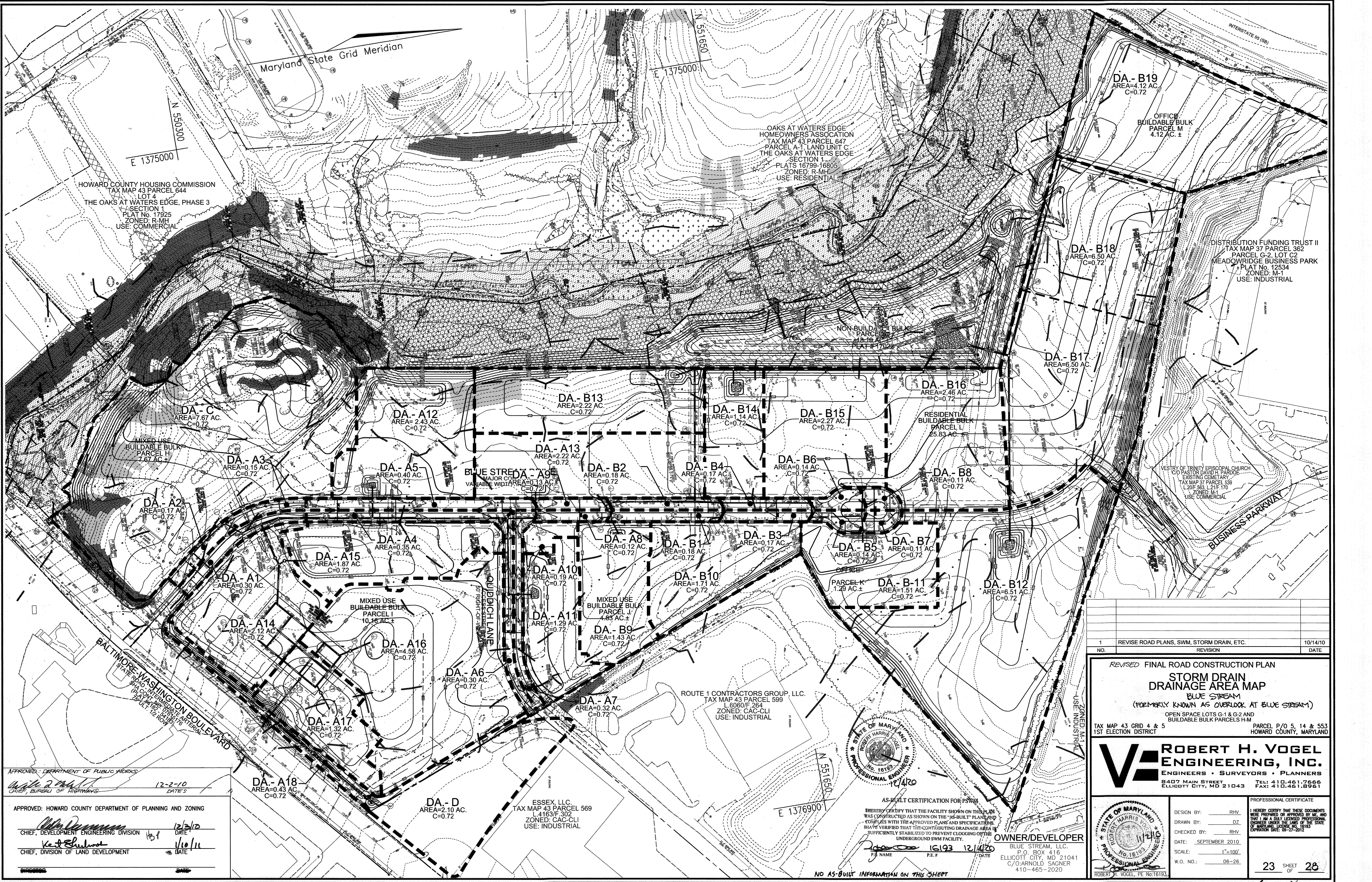
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, BUREAU OF HIGHWAYS
 DATE: 4-4-03

CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 4/11/03

ROBERT H. VOGEL
 ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.1960
 FAX: 410.461.8461

DNR QUALIFIED FOREST PROFESSIONAL
 J. CHRIS OGLE



APPROVED: DEPARTMENT OF PUBLIC WORKS
Mike R. Smith 12-2-10
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
John J. Shuman 12/3/10
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Ke J. Shuman 1/10/11
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE



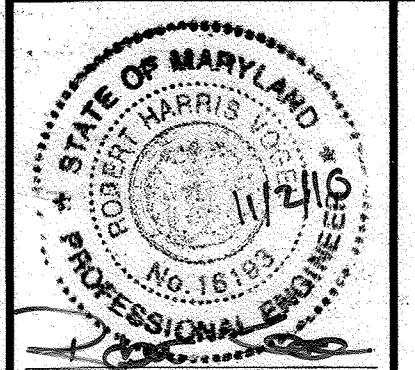
AS-BUILT CERTIFICATION FOR PSTM
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COINCIDES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND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

OWNER/DEVELOPER
 BLUE STREAM, LLC.
 P.O. BOX 416
 ELLICOTT CITY, MD 21141
 C/O: ARNOLD SAGNER
 410-465-2020

| | | |
|-----|---|----------|
| 1 | REVISE ROAD PLANS, SWM, STORM DRAIN, ETC. | 10/14/10 |
| NO. | REVISION | DATE |

REVISED FINAL ROAD CONSTRUCTION PLAN
STORM DRAIN DRAINAGE AREA MAP
 BLUE STREAM
 (FORMERLY KNOWN AS OVERLOOK AT BLUE STREAM)
 OPEN SPACE LOTS G-1 & G-2 AND BUILDABLE BULK PARCELS H-H
 TAX MAP 43 GRID 4 & 5 PARCEL P/O 5, 14 & 553
 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET ELLICOTT CITY, MD 21143
 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. 18193, EXPIRATION DATE: 09-27-2012

DESIGN BY: RHV
 DRAWN BY: DZ
 CHECKED BY: RHV
 DATE: SEPTEMBER 2010
 SCALE: 1"=100'
 W.D. NO.: 06-26



SEDIMENT BASIN #3
EX. DA. 2.81 AC
PROP. DA. 5.35 AC

SEDIMENT BASIN #2
EX. DA. 23.56 AC
PROP. DA. 29.25 AC

SEDIMENT BASIN #1
EX. DA. 22.00 AC
PROP. DA. 20.40 AC

SEDIMENT BASIN #4
EX. DA. 5.00 AC
PROP. DA. 1.29 AC

APPROVED: DEPARTMENT OF PUBLIC WORKS
W. P. Smith 12-2-10
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
W. P. Smith 12/3/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

K. S. Shalane 1/10/11
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

LEGEND:
- - - - - EXISTING DRAINAGE AREA
■ ■ ■ ■ ■ PROPOSED DRAINAGE AREA



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 APPLIED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

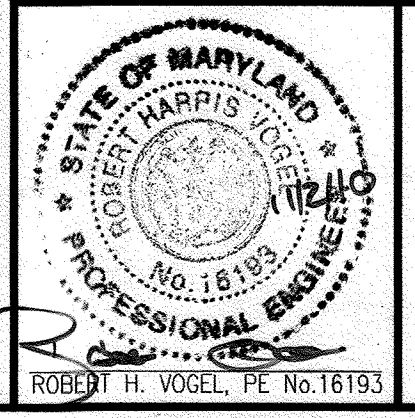
Robert H. Vogel 12/14/20
P.E. NAME P.E. # DATE

OWNER/DEVELOPER
BLUE STREAM, LLC.
P.O. BOX 416
ELLCOTT CITY, MD 21041
C/O ARNOLD SAGNER
410-465-2020

| | | |
|-----|---|----------|
| 1 | REVISE ROAD PLANS, SWM, STORM DRAIN, ETC. | 10/14/10 |
| NO. | REVISION | DATE |

REVISED FINAL ROAD CONSTRUCTION PLAN
SEDIMENT AND EROSION CONTROL DRAINAGE AREA MAP
BLUE STREAM
(FORMERLY KNOWN AS OVERLOOK AT BLUE STREAM)
OPEN SPACE LOTS G-1 & G-2 AND BUILDABLE BULK PARCELS H-M
TAX MAP 43 GRID 4 & 5 PARCEL P/O 5, 14 & 553
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
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8407 MAIN STREET TEL: 410.461.7666
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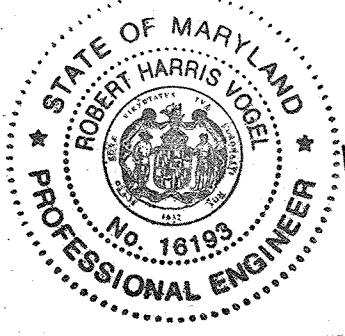
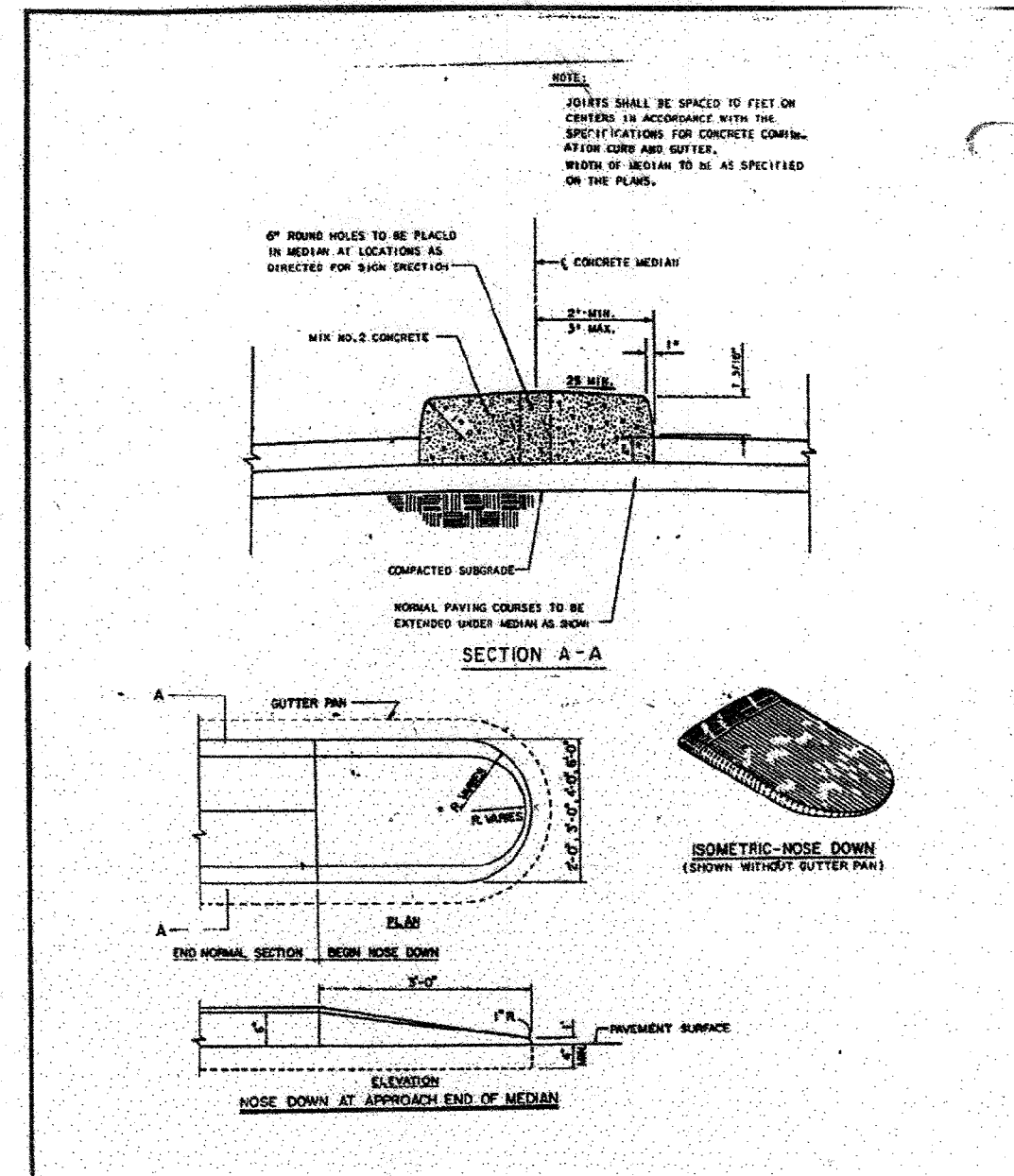
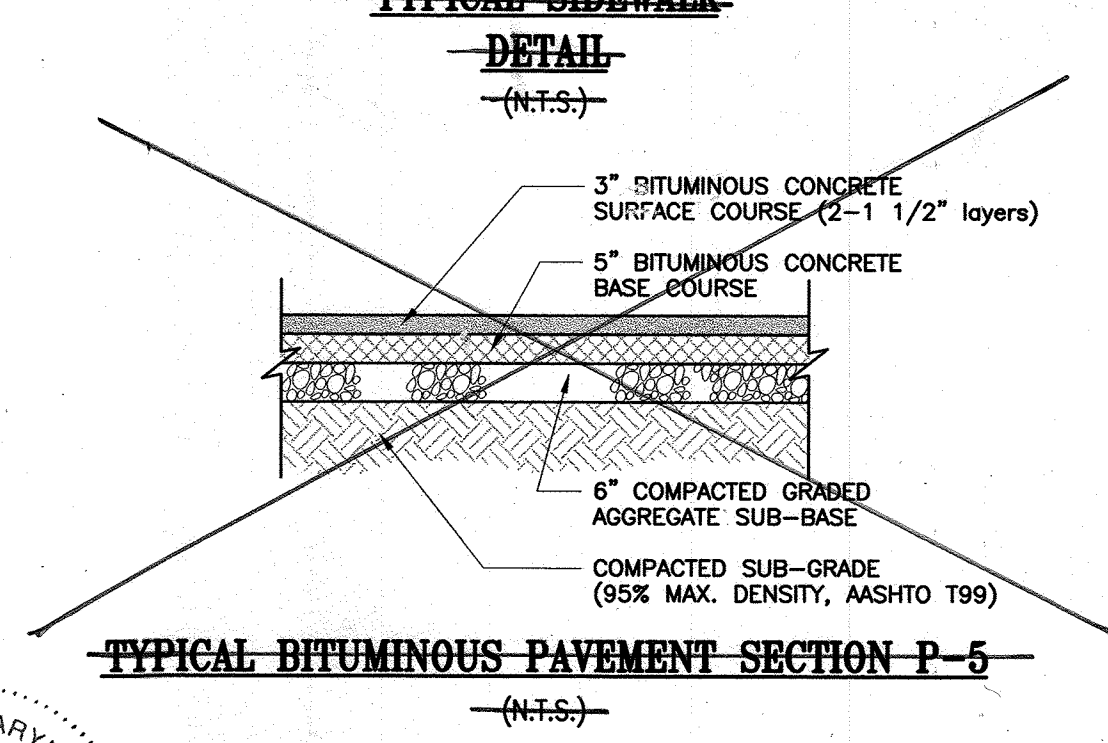
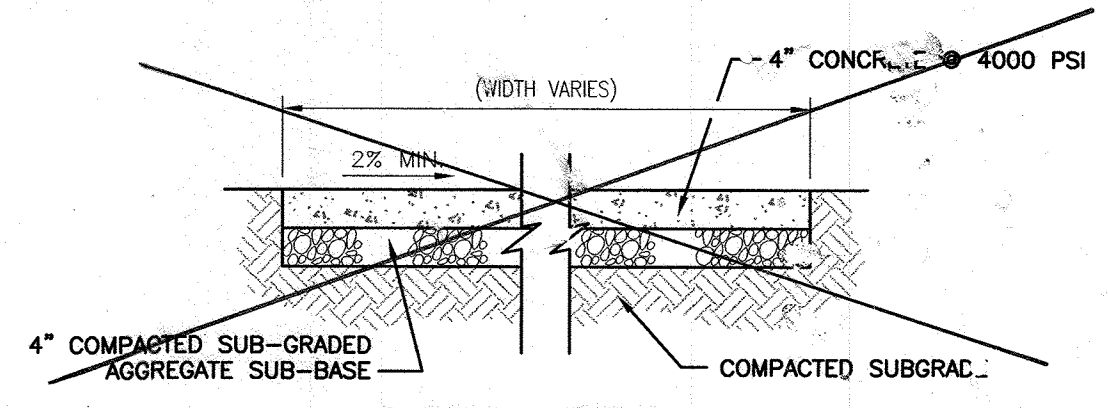
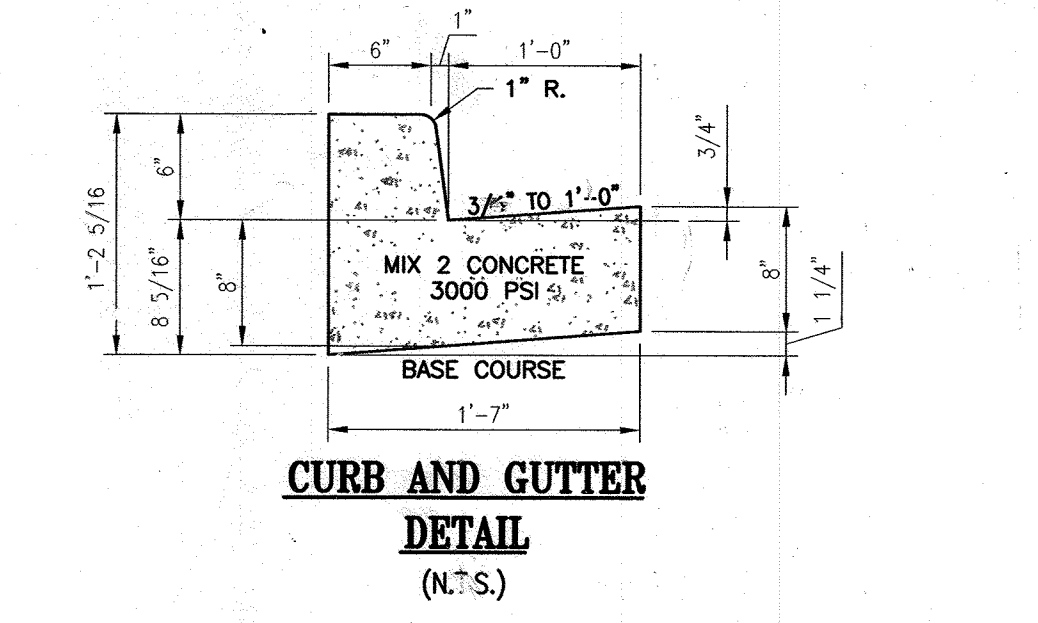
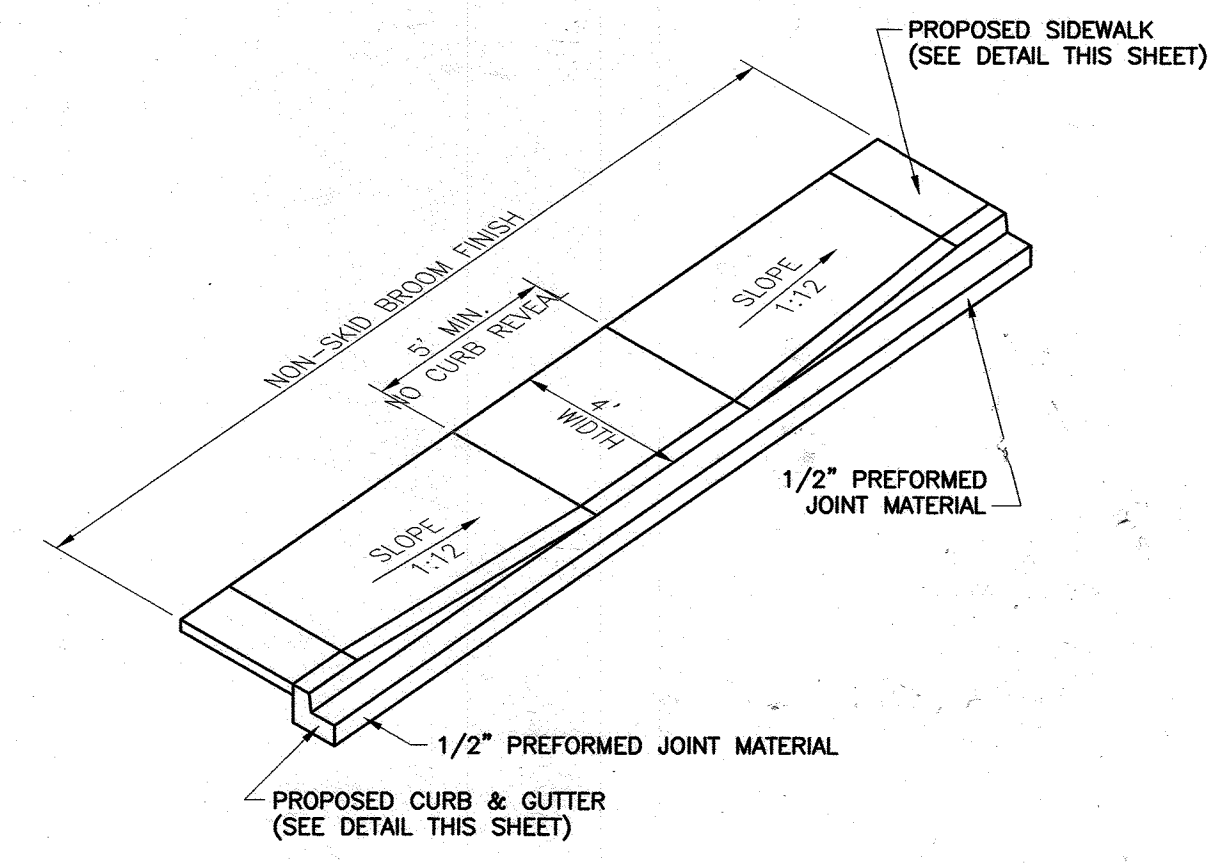
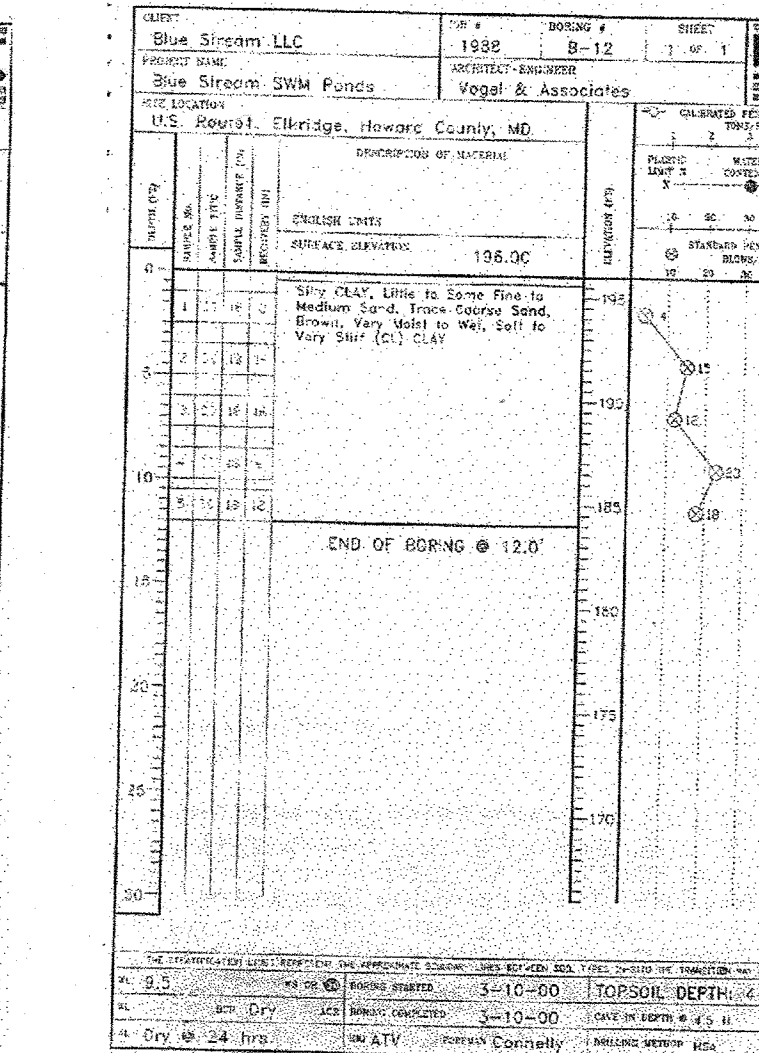
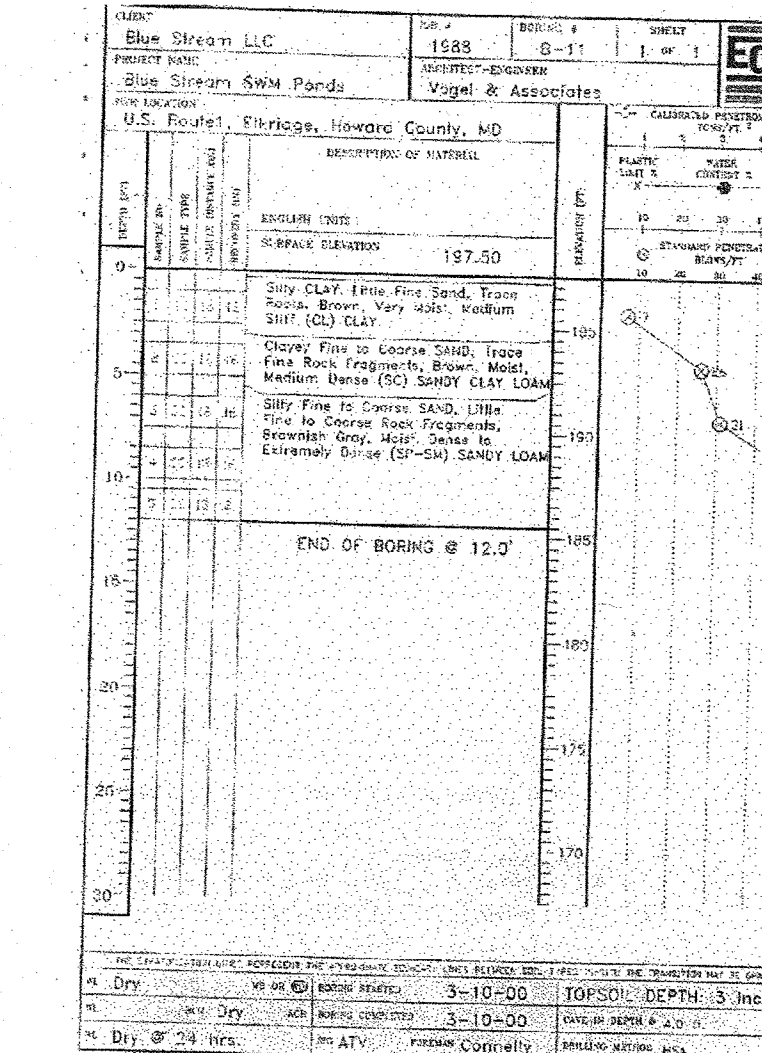
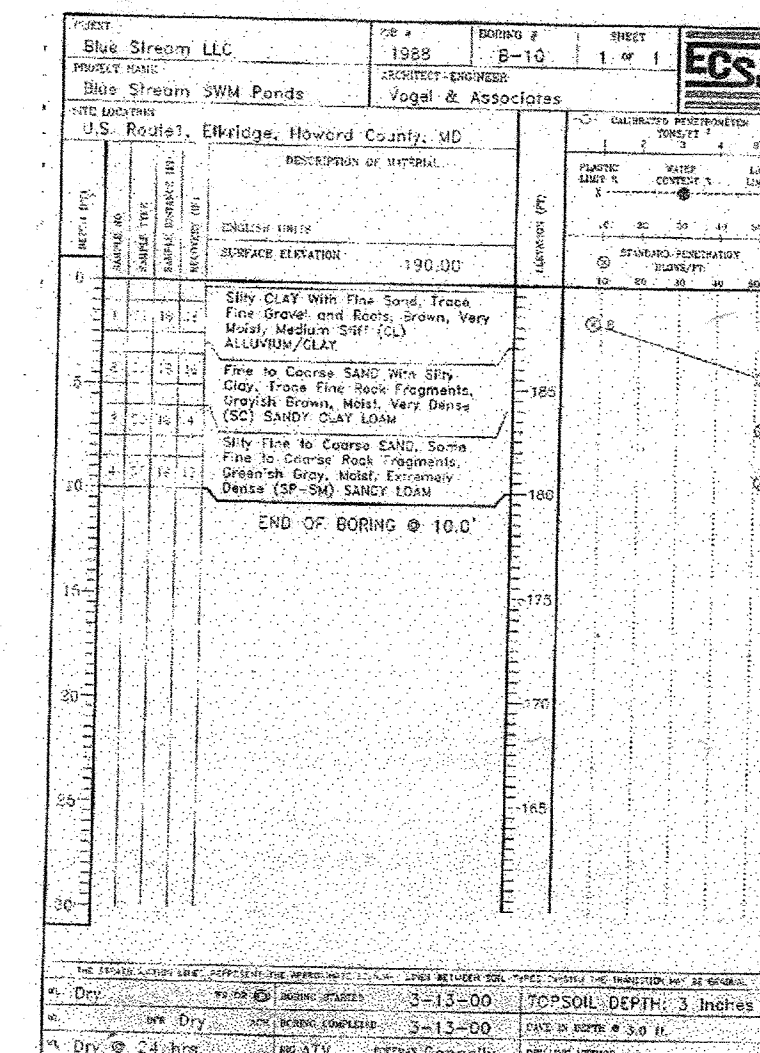
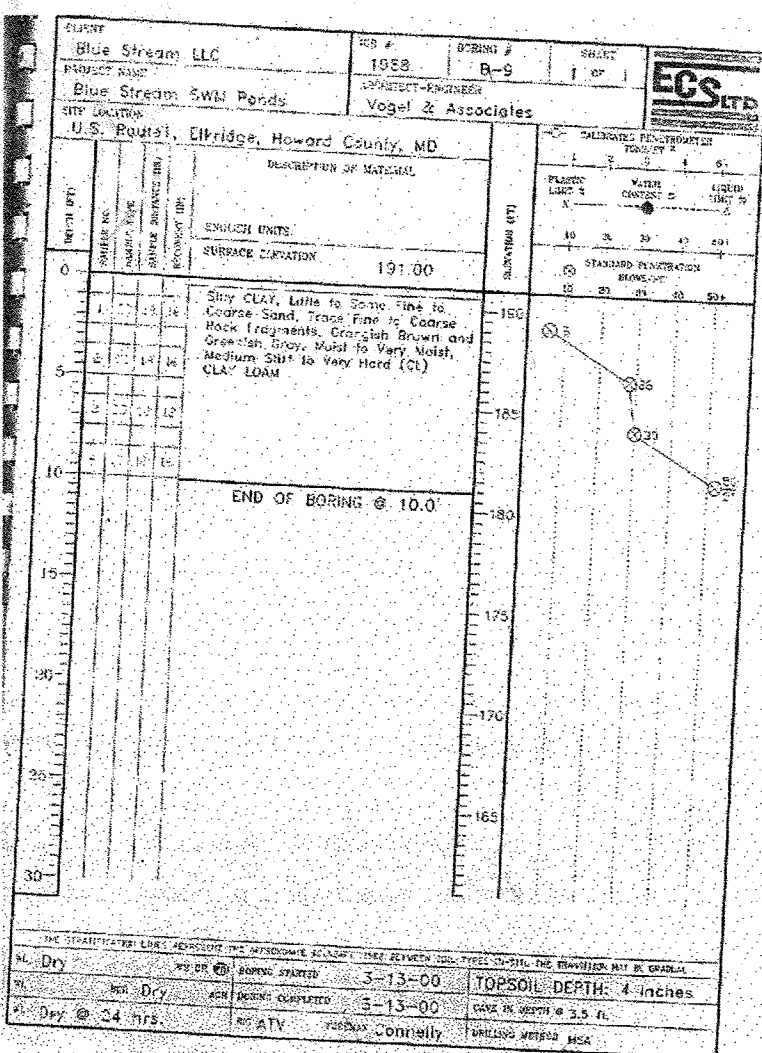
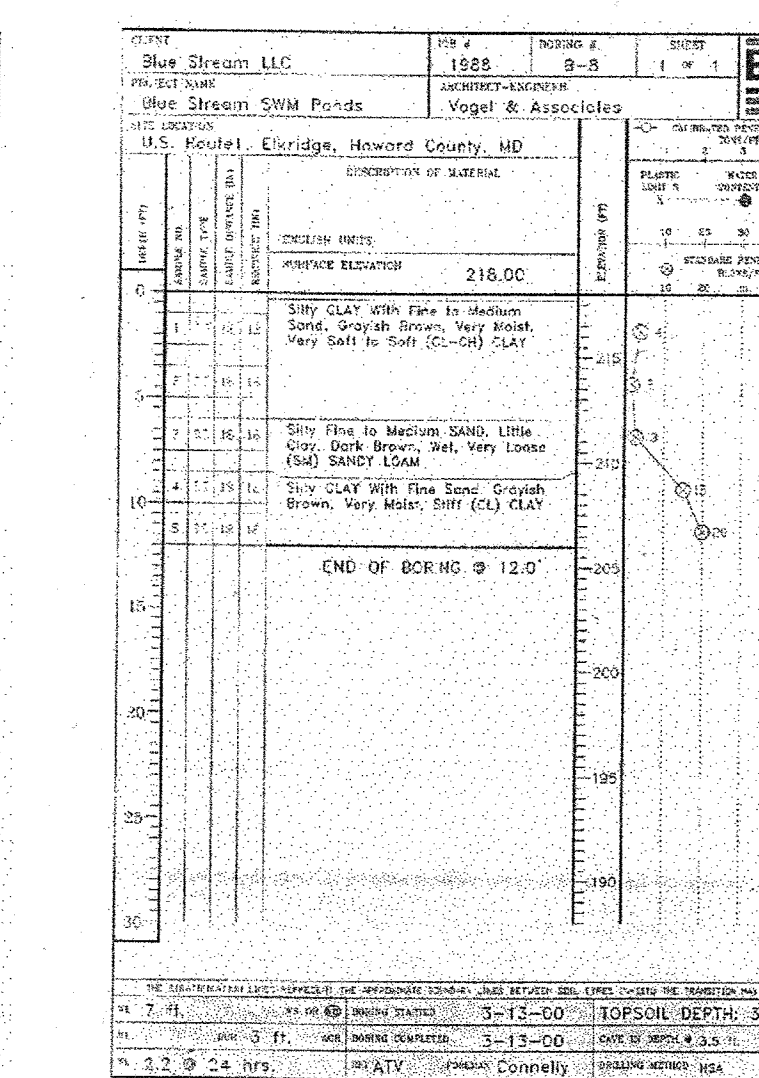
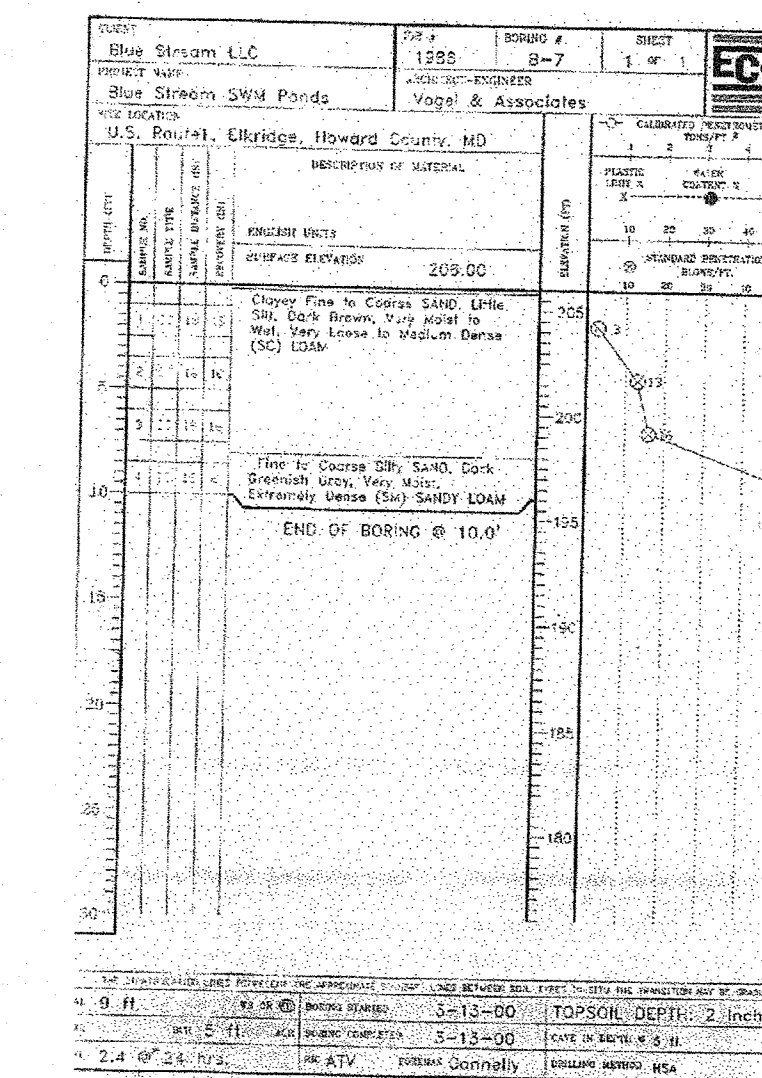
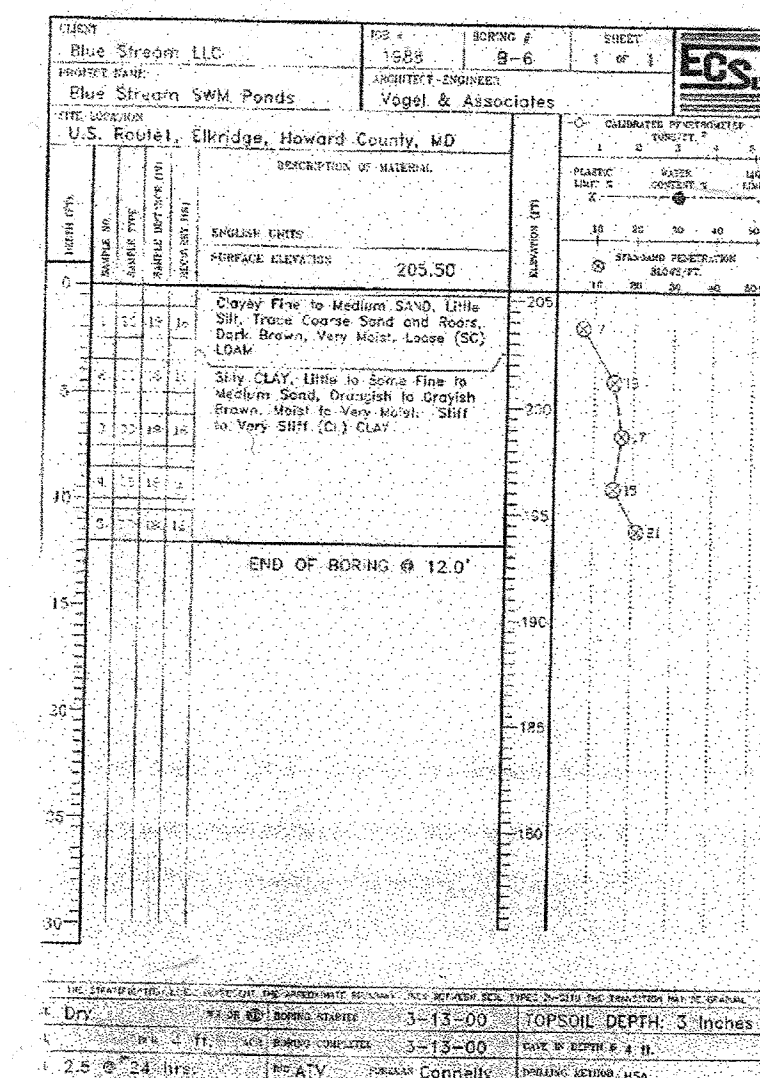
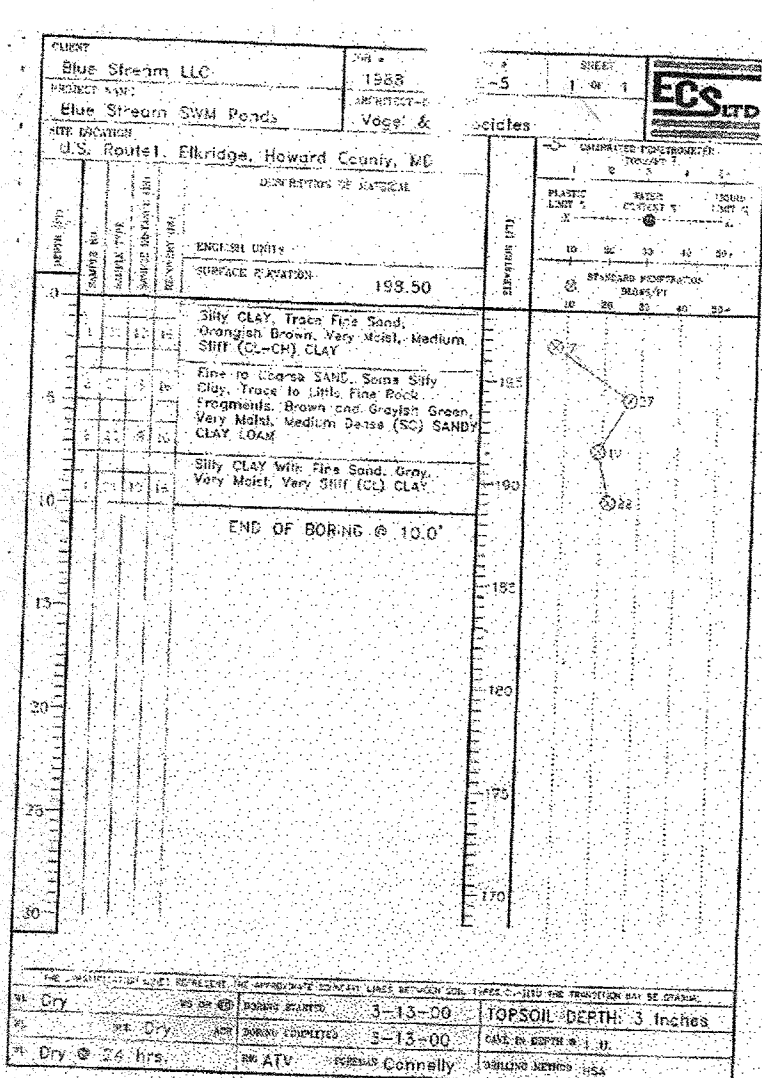
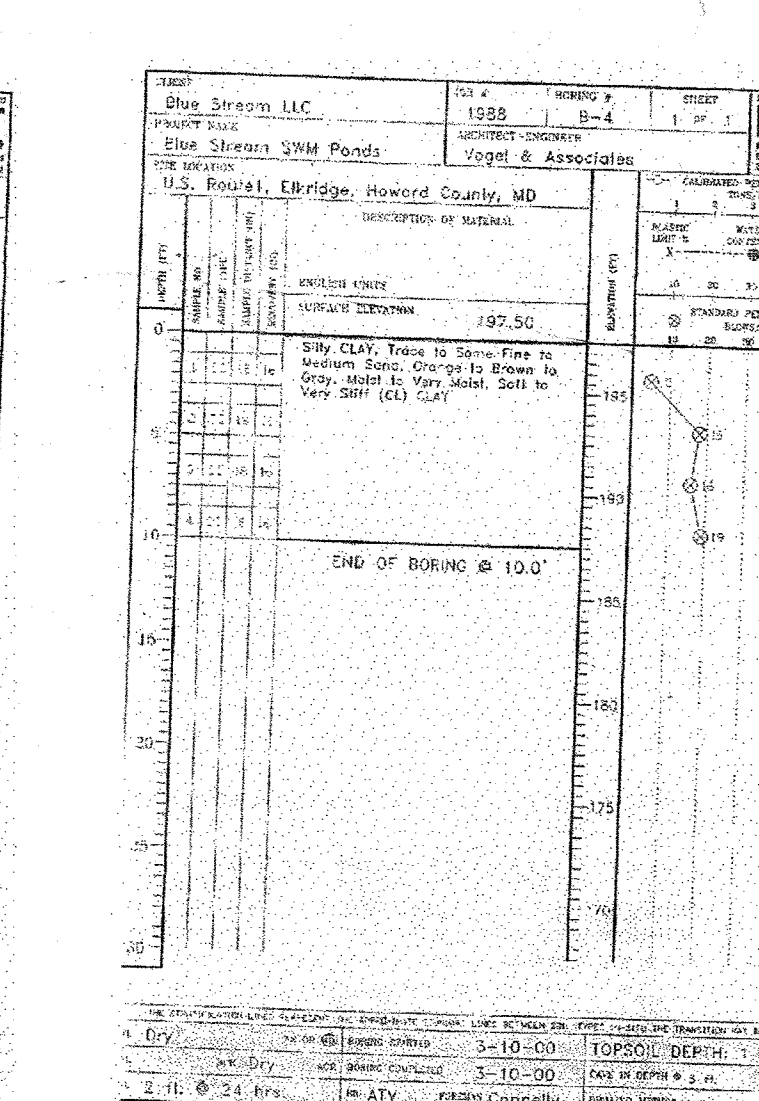
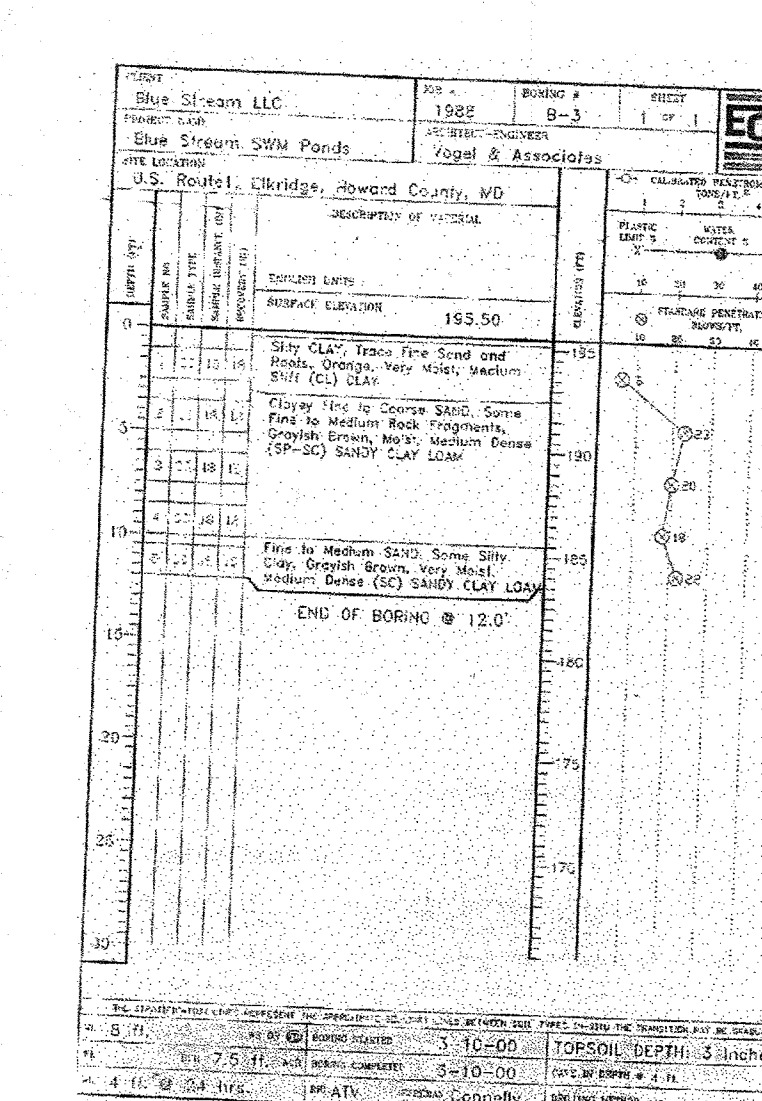
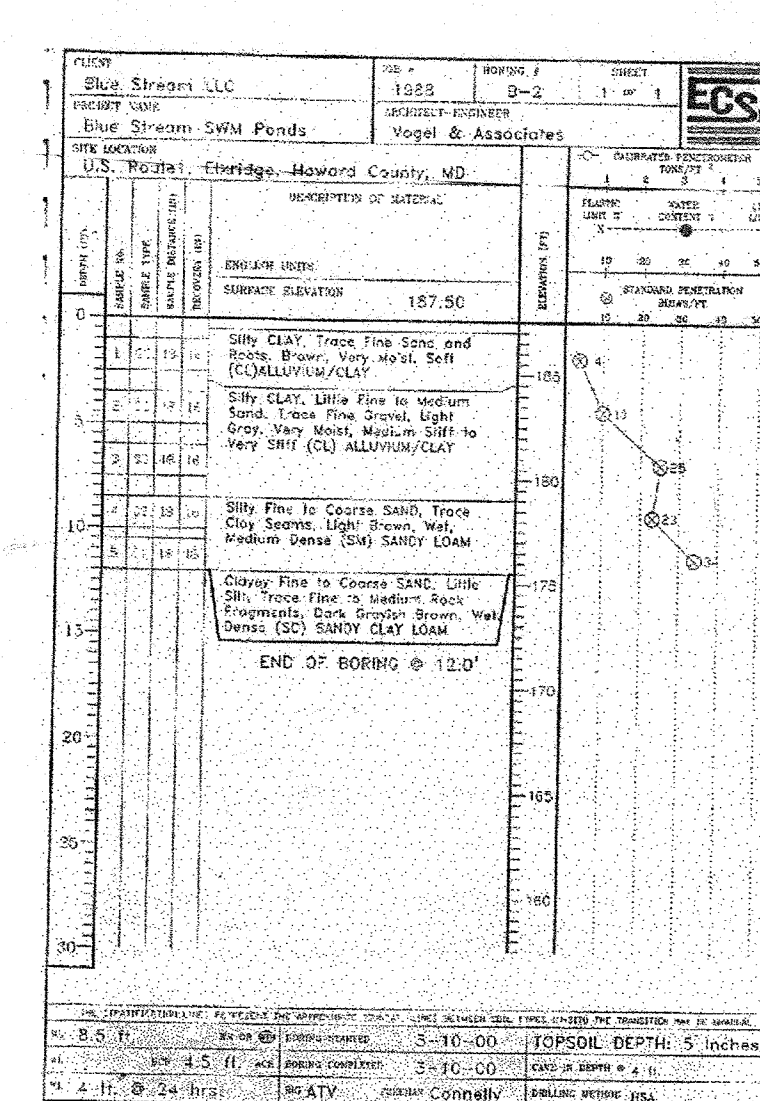
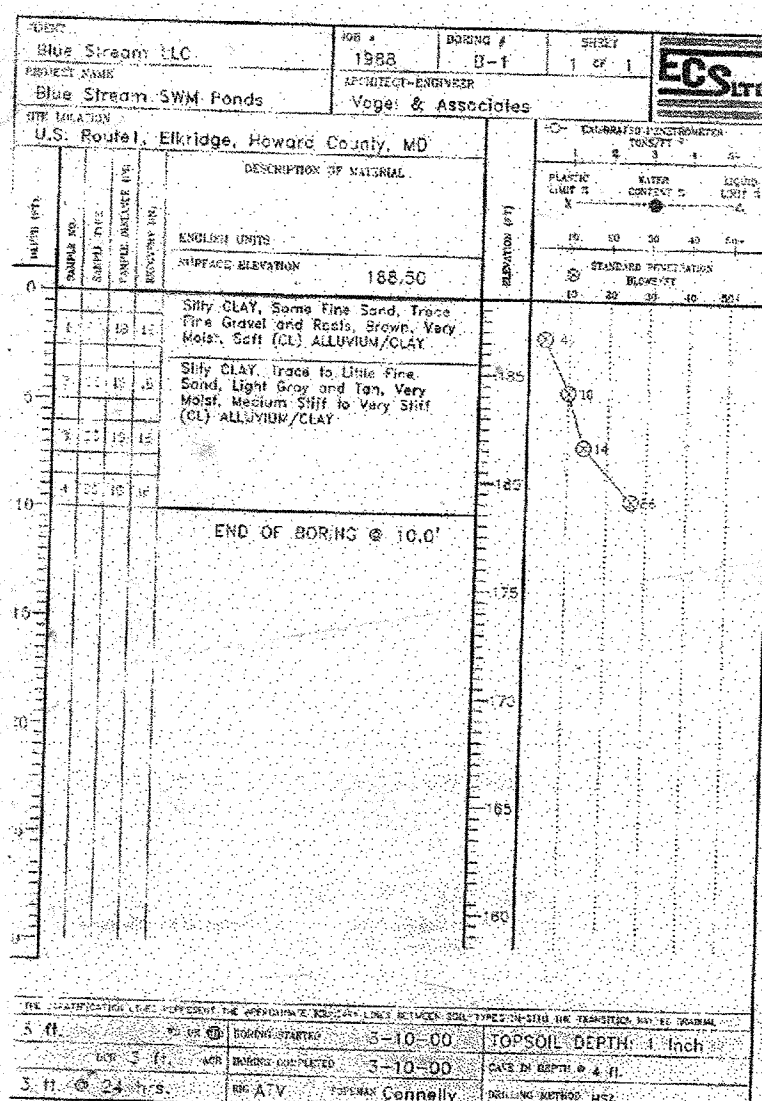


PROFESSIONAL CERTIFICATE
DESIGN BY: RHV
DRAWN BY: DZ
CHECKED BY: RHV
DATE: SEPTEMBER 2010
SCALE: 1"=100'
W.O. NO.: 06-26

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. 18193, EXPIRATION DATE: 09-27-2012.

24 SHEET OF 28

NO AS-BUILT INFORMATION ON THIS SHEET



AS-BUILT CERTIFICATION FOR PSWM

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

DATE: 12/14/20

ENGINEERS CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION AND EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

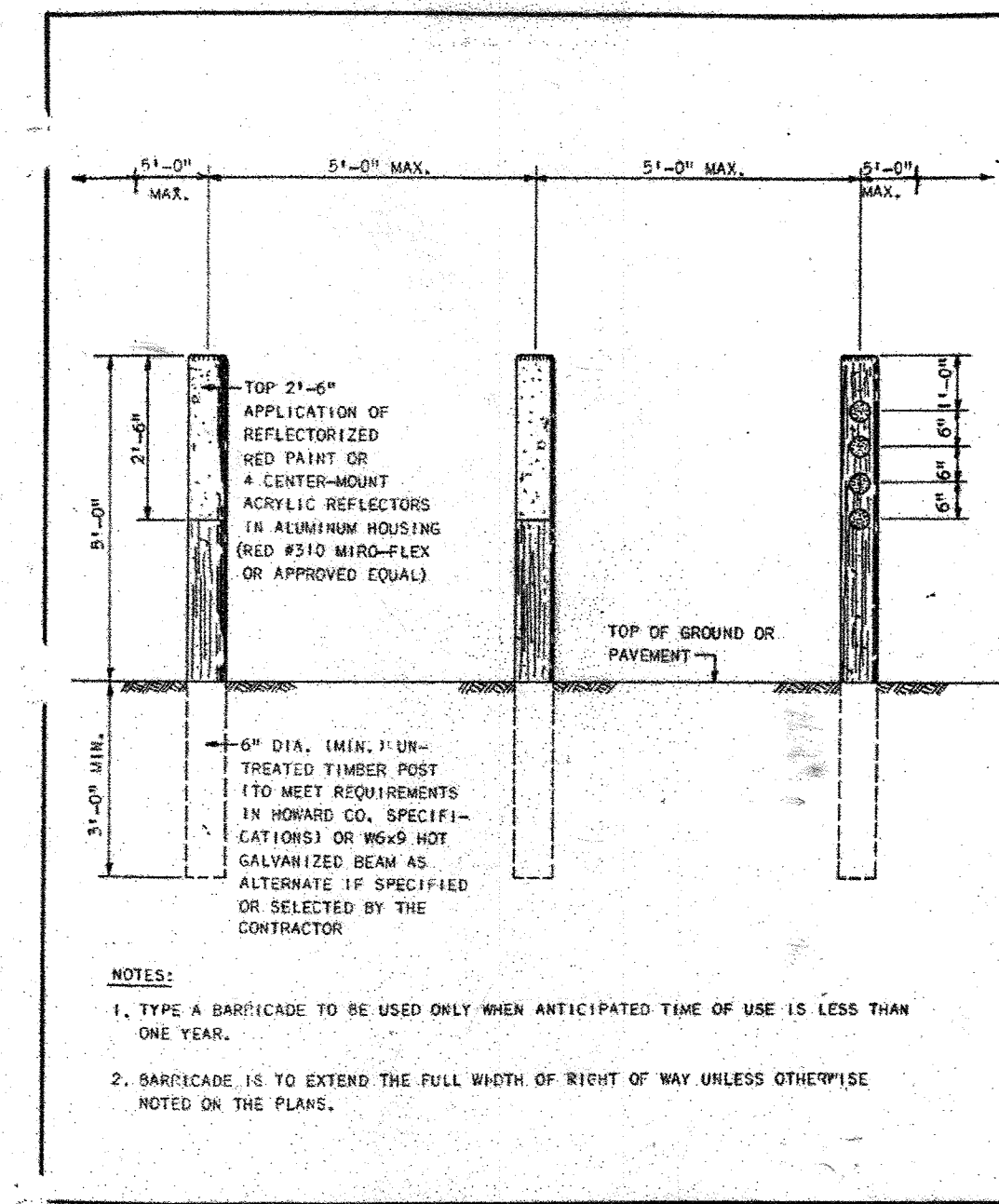
DATE: 12/14/20

DEVELOPER'S CERTIFICATE

I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

DATE: 1/12/12

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved: *[Signature]*
Chief - Bureau of Engineering



HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved: *[Signature]*
Chief - Bureau of Engineering

NO AS-BUILT INFORMATION ON THIS SHEET

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[Signature] 4-4-05
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 4/10/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 4/10/03
CHIEF, DIVISION OF LAND DEVELOPMENT

BORING LOGS AND MISCELLANEOUS DETAILS

BLUE STREAM
(FORMERLY KNOWN AS OVERLOOK AT BLUE STREAM)
OPEN SPACE LOTS G-1 AND G-2 AND
BUILDABLE BULK PARCELS

TAX MAP 43, BLOCKS 4 AND 5 PARCEL PID'S: 14 AND 558
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FREDERICK WARD ASSOCIATES, INC.
ENGINEERS | 7125 Riverwood Drive Columbia, Maryland 21046-2354
ARCHITECTS | Phone: 410-290-9550 Fax: 410-720-6226
SURVEYORS | Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

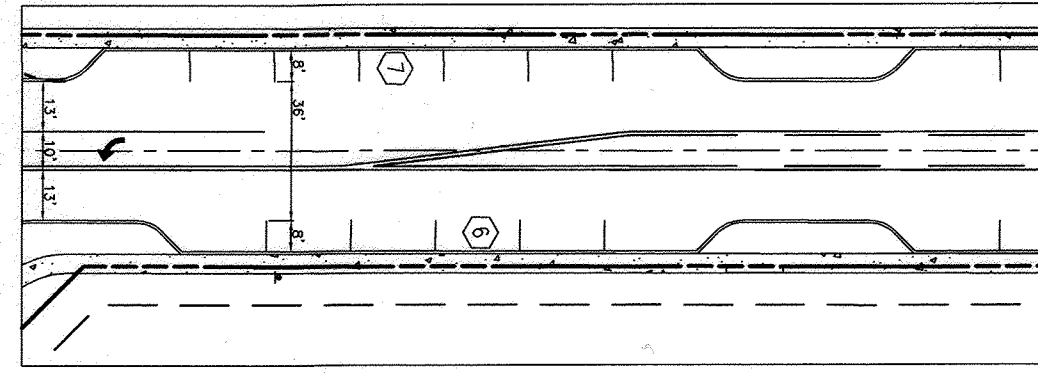
DESIGN BY: DLW
DRAWN BY: JAUDZ
CHECKED BY: MMR
DATE: MARCH, 2003
SCALE: (AS SHOWN)
W.O. NO.: 2019038

REF: S-89-08, WP-89-80, P-00-20, WP-00-116

25 SHEET OF 28

MATCHLINE - A - (THIS SHEET)

MATCHLINE - B - (SHEET 28)



TYPICAL STRIPPING DETAIL
SCALE: 1"=50'

Maryland State Grid Meridian

Maryland State Grid Meridian

RESIDENTIAL BUILDABLE BULK PARCEL I
4.43 AC.

RESIDENTIAL BUILDABLE BULK PARCEL K
4.59 AC.

BLUE STREAM DRIVE
MAJOR COLLECTOR
PROP. PUBLIC ROAD
VARIABLE WIDTH RIGHT-OF-WAY
(PLAT# 17020-17026)
(PLAT# 21558-21564)

BLUE STREAM DRIVE
MAJOR COLLECTOR
PROP. PUBLIC ROAD
VARIABLE WIDTH RIGHT-OF-WAY
(PLAT# 17020-17026)
(PLAT# 21558-21564)

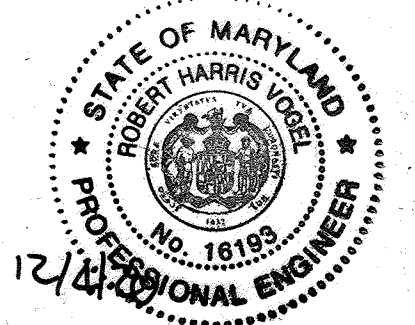
MIXED USE BUILDABLE BULK PARCEL J
10.18 AC.

QUIDDITCH LANE
ACCESS STREET
PROP. PUBLIC ROAD
50' RIGHT-OF-WAY
(PLAT# 21558-21564)

RESIDENTIAL BUILDABLE BULK PARCEL H
10.19 AC

MIXED USE BUILDABLE BULK PARCEL J
10.18 AC.

RESIDENTIAL BUILDABLE BULK PARCEL H
10.19 AC



AS-BUILT CERTIFICATION FOR PSWM
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.
P.E. NAME: Robert H. Vogel, P.E. # 16193, DATE: 12/14/18

- PAVEMENT MARKING LEGEND
- (A) 5" DOUBLE YELLOW
 - (B) 5" DOUBLE YELLOW FOR 2-WAY LEFT TURN LANE MARKINGS (SOLID/10'-30' SKIP)
 - (C) 5" WHITE
 - (D) 5" WHITE PUPPY TRACKS (2'/6" SPACE/2'...)
 - (E) LANE ARROWS

| NO. | REVISION | DATE |
|-----|--|----------|
| 8 | REVISE GRADING OF BLUE STREAM DRIVE EXTENSION TO AVOID CONFLICT WITH BGE DUCT/CONDUIT | 02/04/15 |
| 6 | REVISED TO ADD EXTENSION TO BLUE STREAM DRIVE AND TO ADJUST PUBLIC STORM DRAIN ACCORDINGLY | 07/31/14 |

REVISED FINAL ROAD CONSTRUCTION PLAN
PAVEMENT MARKING PLAN
BLUE STREAM
(FORMERLY KNOWN AS THE OVERLOOK AT BLUE STREAM)
TAX MAP 43 GRID 4 & 5 OPEN SPACE LOTS G-1 & G-2 AND 1ST ELECTION DISTRICT BULIDABLE BULK PARCELS H-M PARCEL P/O 5, 14 & 553 HOWARD COUNTY, MARYLAND

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

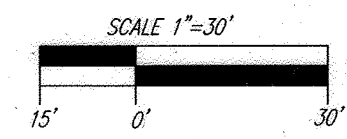
PROFESSIONAL CERTIFICATE
DESIGN BY: RHV
DRAWN BY: DZE
CHECKED BY: RHV
DATE: MARCH 2015
SCALE: 1"=30'
W.O. NO.: 06-26
27 OF 28

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
10/21/2015
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
10-28-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION
11-04-15
CHIEF, DIVISION OF LAND DEVELOPMENT

WASHINGTON BOULEVARD
U.S. ROUTE 1
STATE ROAD - INTERMEDIATE ARTERIAL
SHA CONT. NO. 07615176
(PLAT 54182, 54183)
75' ULT. 1/2 ROW

OWNER/DEVELOPER
BLUE STREAM, LLC
P.O. BOX 416
ELLICOTT CITY, MD 21041
C/O ARNOLD SAGNER
410-465-2020



NO AS-BUILT INFORMATION ON THIS SHEET

Maryland State Grid Meridian

Maryland State Grid Meridian

RESIDENTIAL BUILDABLE BULK PARCEL L 19.57 AC.

RESIDENTIAL BUILDABLE BULK PARCEL L 19.57 AC.

BLUE STREAM DRIVE MAJOR COLLECTOR PROP. PUBLIC ROAD VARIABLE WIDTH RIGHT-OF-WAY (PLAT# 17020-17026) (PLAT# 21558-21564)

BLUE STREAM DRIVE MAJOR COLLECTOR PROP. PUBLIC ROAD VARIABLE WIDTH RIGHT-OF-WAY (PLAT# 17020-17026) (PLAT# 21558-21564) (PLAT# 22991-22992)

RESIDENTIAL BUILDABLE BULK PARCEL K 4.59 AC.

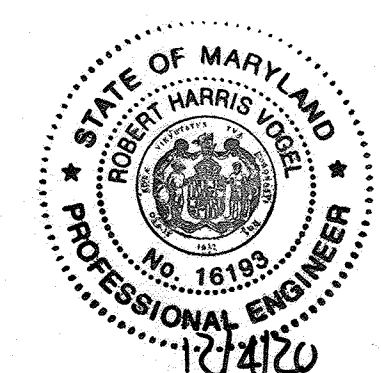
RESIDENTIAL BUILDABLE BULK PARCEL L 19.57 AC.

RESIDENTIAL BUILDABLE BULK PARCEL L 19.57 AC.

RESIDENTIAL BUILDABLE BULK PARCEL I 4.43 AC.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] 10/21/2015
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] 10-28-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION
[Signature] 11-4-15
CHIEF, DIVISION OF LAND DEVELOPMENT



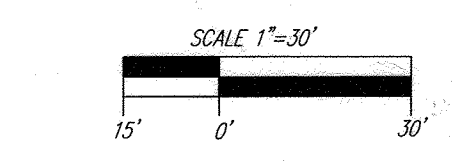
AS-BUILT CERTIFICATION FOR PSWM
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.
[Signature] 10/23/2015
P.E. # 15193 DATE

| NO. | REVISION | DATE |
|-----|--|----------|
| 8 | REVISE GRADING OF BLUE STREAM DRIVE EXTENSION TO AVOID CONFLICT WITH BGE DUCT/CONDUIT | 02/04/15 |
| 6 | REVISED TO ADD EXTENSION TO BLUE STREAM DRIVE AND TO ADJUST PUBLIC STORM DRAIN ACCORDINGLY | 07/31/14 |

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BUILDABLE BULK PARCELS H-M PARCEL P/O 5, 14 & 553 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET ELLICOTT CITY, MD 21043
TEL: 410.461.7666 FAX: 410.461.6961

PROFESSIONAL CERTIFICATE
DESIGN BY: RHV
DRAWN BY: DZE
CHECKED BY: RHV
DATE: MARCH 2015
SCALE: 1"=30'
W.O. NO.: 06-26
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. EXPIRATION DATE: 09-27-2018
28 SHEET OF 28



OWNER/DEVELOPER
BLUE STREAM, LLC
P.O. BOX 416
ELLCOTT CITY, MD 21041
C/O ARNOLD SAGNER
410-465-2020