

FINAL ROAD CONSTRUCTION PLAN CYPRESS SPRINGS - PHASE 1 LOTS 1 - 13, OPEN SPACE LOTS 14-17, AND NON-BUILDABLE BULK PARCELS A-D

SITE DATA

LOCATION: TAX MAP 38, BLOCK 3, PARCELS 42, 44, 45, AND 46
1ST ELECTION DISTRICT
EXISTING ZONING: P-ED
GROSS AREA OF PROJECT: 33.10 AC
AREA OF 100-YEAR FLOODPLAIN DRAINAGE & UTILITY EASEMENT: 0.73 AC
AREA OF STEEP SLOPES OUTSIDE THE FLOODPLAIN: 10.85 AC
NET AREA OF PROJECT: 21.52 AC
AREA OF PROPOSED BUILDABLE LOTS: 10.33 AC
AREA OF OPEN SPACE PROVIDED: 33.10 AC = 16,555 SF
AREA OF OPEN SPACE PROVIDED: 60% = 19,835 AC
AREA OF RECREATIONAL OPEN SPACE REQUIRED: 300 SF X 43 LOTS = 12,900 SF
AREA OF RECREATIONAL OPEN SPACE PROVIDED: 13,298 SF (ACTIVE)
AREA OF PROPOSED RIGHT-OF-WAY: 2.20 AC
NUMBER OF LOTS/PARCELS ALLOWED (2 PER NET ACRE): 43 BUILDABLE LOTS, 4 NON-BUILDABLE BULK PARCELS
NUMBER OF LOTS/PARCELS PROPOSED: 13 BUILDABLE LOTS, 4 OPEN SPACE LOTS, 4 NON-BUILDABLE BULK PARCELS
TOTAL DISTURBED AREA: 18.03 AC
TOTAL CUT: 68,500 CY TOTAL FILL: 68,500 CY
DPZ REFERENCES: SP-05-06, PB CASE 374, WP-05-38, SDP-09-061, L 3861/F 658, L 8232/F 574, L 8344/F 670, L 4518/F 458

GENERAL NOTES

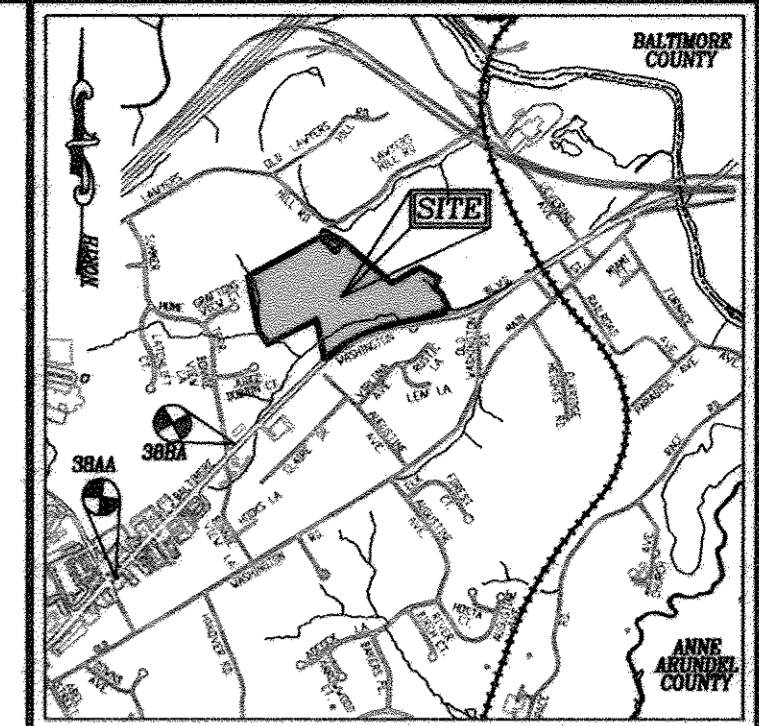
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS:
 - MISS UTILITY: 1-800-257-7777
 - BELL ATLANTIC TELEPHONE CO: 725-9976
 - HOWARD COUNTY BUREAU OF UTILITIES: 313-2366
 - VERIZON CABLE LOCATION DIVISION: 303-3253
 - B.C. CO. CONTRACTOR SERVICES: 850-4620
 - B.C. SE. CO. UNDERGROUND DAMAGE CONTROL: 787-4620
 - STATE HIGHWAY ADMINISTRATION: 531-5533
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO START OF WORK.
- ANY DAMAGE TO PUBLIC RIGHT-OF-WAYS, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- EXISTING UTILITIES LOCATED FROM ROAD CONSTRUCTION PLANS AND AVAILABLE RECORD DRAWINGS, APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTOR'S INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE THAT LOCAL EXISTING UTILITIES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 - A) WIDTH - 12 FEET (16 FEET IF SERVING MORE THAN ONE RESIDENCE)
 - B) SURFACE - 8 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2" MIN. TURNING RADIUS)
 - C) GEOMETRY - MAXIMUM 1% GRADE, MAXIMUM 10% GRADE CHANGE, AND MINIMUM 45 FOOT TURNING RADIUS
 - D) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING)
 - E) DRAINAGE ELEMENT - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD EVENTS WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE
 - F) STRUCTURE CLEARANCES - MINIMUM 12 FEET
 - G) MAINTENANCE SURFICENT TO INSURE ALL WEATHER USE
- ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- DENSITY TABULATION:
 - GROSS AREA OF PROJECT: 33.10 AC
 - AREA OF 100-YEAR FLOODPLAIN DRAINAGE & UTILITY EASEMENT: 0.73 AC (WITHIN STEEP SLOPES)
 - NET AREA OF PROJECT: 21.52 AC
 - DWELLING UNITS PER NET ACRE ALLOWED: 2 X 21.52 AC = 43 UNITS
 - DWELLING UNITS PROPOSED: 13 (PHASE I) + 4 (EXISTING UNITS (SEE MILESTONE CHART))
- THE SUBJECT PROPERTY IS ZONED R-ED PER THE 02/02/2004 COMPREHENSIVE ZONING PLAN, AND THE COMPREHENSIVE LITE ZONING AMENDMENTS 07/28/2006.
- THE PROJECT BOUNDARY IS BASED ON A BOUNDARY SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED APRIL 2004.
- THE TOPOGRAPHY SHOWN HEREON IS BASED ON AN AERIAL TOPOGRAPHIC SURVEY PREPARED BY POTOMAC AERIAL SURVEYS, DATED JANUARY 2004.
- WATER AND SEWER FOR THIS PROJECT WILL BE PROVIDED BY A MICROPOOL POND (P-1) (SWM POND 1) AND A POCKET POND (P-5) (SWM POND 2), TO PROVIDE THE REQUIRED WOV AND CPV, AND A BIOTENTION FACILITY (B-6) TO PROVIDE WOV AND REV. SWMF 1 AND 2 ARE TO BE PRIVATELY OWNED BY THE H.O.A., AND JOINTLY MAINTAINED BY THE H.O.A. AND HOWARD COUNTY. BIOTENTION FACILITY 3 IS TO BE PRIVATELY OWNED AND MAINTAINED BY THE H.O.A.
- FOR STORMWATER MANAGEMENT PURPOSES, OPEN SPACE IMPROVEMENTS ARE PERMITTED ON RECREATIONAL OPEN SPACE ONLY.
- THIS SITE IS NOT LOCATED IN A HISTORIC DISTRICT.
- NO GRADING, REMOVAL OF VEGETATION COVER, OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS, OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS, EXCEPT WHERE ESSENTIAL DISTURBANCE IS GRANTED. ESSENTIAL DISTURBANCE OCCURS AT THE OUTFALL OF STORMWATER MANAGEMENT FACILITY NUMBER TWO, AND THE CULVERT REMOVAL ALONG THE NORTHEAST BOUNDARY.
- FUTURE LOTS 53-56 WILL UTILIZE A USE-ADJACENT HOWARD COUNTY STANDARD DETAIL R-6-603 WILL BE UTILIZED FOR THE ENTRANCE AT THE INTERSECTION OF THE PUBLIC ROAD.
- LAWYERS HILL ROAD IS A SCENIC ROAD, AREAS ADJACENT TO AND PARALLEL TO LAWYERS HILL ROAD WILL REMAIN UNDEVELOPED AND MOSTLY MAINTAIN THE EXISTING CHARACTERISTICS OF THE SCENIC ROAD.
- TREE PROTECTION FENCING WILL BE PROVIDED AT THE LIMITS OF DISTURBANCE WHERE GRADING IS PROPOSED ADJACENT TO ENVIRONMENTAL AREAS.
- OPEN SPACE LOTS 14-16 TO BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION.
- OPEN SPACE LOT 17 SHALL BE DEDICATED TO THE HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS.
- A PRIVATE RANGE OF ADDRESS SIGN ASSEMBLY SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNERS EXPENSE FOR ALL PIPESTEM LOTS. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND ZONING.
- AN "OBVIOUSLY NOT CRITICAL" FLOODPLAIN STUDY WAS PERFORMED BY ROBERT H. VOGEL ENGINEERING, INC., DATED JANUARY 2005.
- A FOREST STAND DELINEATION PLAN WAS PREPARED BY JOHN CANOLES, ECO-SCIENCE PROFESSIONALS, DATED SEPTEMBER 2004.
- FOREST CONSERVATION REQUIREMENTS ARE PER SECTION 16.1202 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL. FOREST CONSERVATION OBLIGATIONS HAVE BEEN FULFILLED BY THE ON-SITE RETENTION OF 3.00 ACRES, LOCATED IN OPEN SPACE LOTS 16 AND 17. FINANCIAL SURETY FOR THIS REQUIRED FOREST CONSERVATION HAS BEEN POSTED UNDER SDP-09-061.
- THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1202 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT; HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
- A TRAFFIC STUDY IS NOT REQUIRED FOR THIS SITE.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$19,200.00 FOR THE REQUIRED 51 SHADE TREES AND 26 EVERGREEN TREES.
- THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
- TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL/CEMETERY LOCATIONS ON SITE.
- PUBLIC STREET TREES ARE PROVIDED FOR THIS PROJECT IN ACCORDANCE WITH SECTION 16.1249(1) OF THE SUBDIVISION REGULATIONS AND THE LANDSCAPE MANUAL. FINANCIAL SURETY IN THE AMOUNT OF \$34,875.00 HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT FOR THE REQUIRED 93 STREET TREES.
- A NOISE STUDY WAS PERFORMED BY ROBERT H. VOGEL ENGINEERING, INC., DATED SEPTEMBER 2004.
- THE 65 DBA NOISE CONTOUR LINE DRAWN ON THIS SUBDIVISION PLAN IS ADVISORY AS REQUIRED BY THE HOWARD COUNTY DESIGN MANUAL, CHAPTER 5, REVISED FEBRUARY, 1992 AND CANNOT BE CONSIDERED TO EXACTLY LOCATE THE 65 DBA NOISE EXPOSURE. THE 65 DBA NOISE LINE WAS ESTABLISHED BY HOWARD COUNTY TO ALERT DEVELOPERS, BUILDERS, AND FUTURE RESIDENTS THAT AREAS BEYOND THIS THRESHOLD MAY EXCEED GENERALLY ACCEPTED NOISE LEVELS ESTABLISHED BY THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT.
- FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL, AND ROAD MAINTENANCE ARE PROVIDED TO THE JURISDICTION OF THE FLAG OR PIPESTEM, AND ROAD RIGHT-OF-WAY LINE AND NOT ONTO THE PIPE STEM LOT DRIVEWAY.
- THE EXISTING WELLS WILL BE SEALED BY A LICENSED WELL DRILLER, AND STATE WELL ABANDONMENT FORMS SUBMITTED PRIOR TO RECORD PLAT SUBMITTAL.
- THE EXISTING SEPTIC TANKS WILL BE PUMPED AND PROPERLY ABANDONED. DRY WELLS WILL BE LOCATED AND PROPERLY ABANDONED. PROPER DOCUMENTATION WILL BE PROVIDED TO THE HEALTH DEPARTMENT PRIOR TO RECORD PLAT SUBMITTAL.
- INGRESS AND EGRESS IS RESTRICTED ALONG WASHINGTON BOULEVARD (U.S. ROUTE 1).
- STREAMS AND WETLANDS SHOWN HEREON WERE DELINEATED BY JOHN CANOLES, ECO-SCIENCE PROFESSIONALS, INC., DATED SEPTEMBER 2004. A WETLAND BUFFER HAS BEEN ESTABLISHED PER SECTION 16.1610(1) OF THE SUBDIVISION REGULATIONS.
- THE EXISTING STRUCTURE THAT WAS LOCATED ON NON-BUILDABLE BULK PARCEL C, WAS LISTED ON THE HISTORIC SITES INVENTORY AS HO-449. THE OLD GRACE CHURCH RECTORY, AND WAS TO BE RETAINED. HOWEVER, THE STRUCTURE WAS RECENTLY DESTROYED BY FIRE. ALL OTHER EXISTING STRUCTURES ON SITE ARE TO BE REMOVED PRIOR TO CONSTRUCTION.
- THIS SUBDIVISION COMPLIES WITH THE AMENDED 5TH EDITION OF THE SUBDIVISION AND ZONING REGULATIONS (CB-45-2003) AND THE ZONING REGULATIONS, AS AMENDED BY COUNCIL BILL 75-2003.
- ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL PERFORATED SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL PERFORATED SQUARE TUBE SLEEVE (3" LONG, A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST).
- 65% COMPACTION IS REQUIRED IN ALL FILL AREAS, AND SHALL BE IN ACCORDANCE WITH ASHTO T-180 STANDARDS.
- NON-BUILDABLE PARCEL B (CLAREMONT OVERLOOK) WILL BE CONVEYED TO THE OWNER OF TAX MAP 38, PARCEL 42 CONCURRENT WITH THE PLAT RECORDATION (CLAREMONT OVERLOOK) FOR THE PURPOSES OF A PUBLIC ROAD.
- THIS PROJECT IS SUBJECT TO PLANNING BOARD CASE NO. 374, WHICH WAS APPROVED ON MAY 11, 2006.
- LAND DEDICATED TO THE STATE OF MARYLAND FOR PURPOSES OF A PUBLIC ROAD (0.54 ACRES).
- THE NOISE WALL LOCATED ON NON-BUILDABLE BULK PARCEL C, TO BE PRIVATELY OWNED, SEE SHEET 7 FOR DETAIL.
- PHASE I CONTAINS THIRTEEN LOTS, NINE ALLOCATIONS PER PHASE I, PLUS FOUR ADDITIONAL HOUSING UNITS FOR THE FOUR EXISTING PARCELS.
- NON-BUILDABLE BULK PARCELS A-D WILL BE RE-SUBDIVIDED INTO BUILDABLE LOTS AND WHICH SHALL BE INCLUDED AS PART OF THE NEXT TWO PHASES (PHASE II AND III).
- THIS PLAN HAS BEEN REVIEWED AND APPROVED BY THE MARYLAND AVIATION ADMINISTRATION.
- A COMMUNITY MEETING WAS CONDUCTED ON JUNE 28, 2004 AT THE ELKRODGE LIBRARY FOR THE PURPOSE OF PROVIDING ADJACENT PROPERTY OWNERS WITH INFORMATION OF THE PROPOSED DEVELOPMENT.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURES AND POLES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (2006), SECTION 5.5.A. A MINIMUM OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- THE MARYLAND STATE HIGHWAY ADMINISTRATION REQUIRES THAT THE EXISTING DRIVEWAY CONNECTION FROM THE OLD GRACE CHURCH RECTORY, TO WASHINGTON BOULEVARD, BE REMOVED FROM THE SHA RIGHT-OF-WAY. REMOVE ALL ASPHALT AND PROVIDE SEED AND MULCH WITHIN THE DISTURBED AREA.
- AN MDE WETLAND PERMIT IS REQUIRED FOR THE DISTURBANCE SHOWN ON THIS PLAN.
- MDE TRACKING #201060035. NO IN-STREAM CONSTRUCTION MAY OCCUR FROM 03/01 TO 06/15.
- THIS PLAN IS SUBJECT TO A DESIGN MANUAL WAIVER TO VOLUME IV, DETAIL R-1.02, TO ALLOW A 40' RIGHT-OF-WAY INSTEAD OF THE REQUIRED 50' RIGHT-OF-WAY, AND TO ALLOW 20' OF PAVEMENT INSTEAD OF 24' PAVEMENT. WAIVER APPROVAL DATED JANUARY 4, 2010 IS SUBJECT TO PROVIDING 24' PAVING AND 5' EASEMENT ON BOTH SIDES OF THE RIGHT-OF-WAY TO ACCOMMODATE REQUIRED SIDEWALKS, UTILITIES AND STREET TREES.

COORDINATE TABLE

NO.	NORTHING	EASTING
1	564650.602	1392098.446
2	564760.135	1391895.566
3	564610.281	1391293.164
4	564590.760	1391372.557
5	563838.216	1391816.884
6	563440.833	1391900.095
7	563814.360	1392700.082
8	563891.597	1393120.116
9	563927.816	1393152.821
10	563941.561	1393143.637
11	563955.454	1393188.934
12	563982.670	1393177.304
13	564111.623	1393271.951
14	564172.927	1393047.874
15	563810.092	1393041.755
16	563376.074	1392700.082
17	564727.587	1391870.794
18	564694.867	1391844.498
19	564546.931	1392010.281
20	564621.405	1392014.890
21	564220.214	1392598.008
22	563773.025	1391682.874
23	563720.041	1392710.361
24	564287.284	1391095.435
25	563773.025	1392710.361
26	564379.434	1392896.138
27	564271.943	1393086.744

LEGEND

- RIGHT-OF-WAY
- BOUNDARY LINE
- ADJACENT BOUNDARY LINE
- EXISTING CENTERLINE STREAM
- EXISTING STREAM BANK BUFFER
- EXISTING WETLANDS BUFFER
- EXISTING WETLANDS
- EXISTING BIOTENTION FACILITY (SDP-09-061)
- EX. FOREST CONSERVATION EASEMENT (RETENTION) (SDP-09-061)
- EX. VARIABLE WIDTH PUBLIC WATER AND UTILITY EASEMENT TO BE ABANDONED
- EX. PUBLIC CEMETERY SEWER EASEMENT (PLAT #1174)
- PROP. 15' PRIVATE WALL MAINTENANCE AND ACCESS EASEMENT
- PROP. PUBLIC STORMWATER MANAGEMENT EASEMENT
- PROP. PUBLIC UTILITY AND UTILITY EASEMENT
- PROP. PUBLIC SEWER AND UTILITY EASEMENT
- PROP. PRIVATE UTILITY AND UTILITY EASEMENT
- PROP. HIGH-CREATED RECREATIONAL OPEN SPACE
- PROP. PRIVATE UTILITY AND UTILITY EASEMENT
- EX. PUBLIC 100YR FLOODPLAIN



VICINITY MAP
SCALE: 1"=2000'
ADC MAP COORDINATE: PAGE 4937 E6+F6

BENCHMARKS

NO.	NORTHING	EASTING	ELEVATION
38AA	561158.819	1389,726.332	220.05'
38BA	562,553.315	1,390,967.862	166.18'

38AA - CONCRETE MONUMENT LOCATED NORTH OF THE INTERSECTION OF MONGOMERY RD. AND U.S. ROUTE 1, 3.2' FROM THE NORTH BOUND LANE OF U.S. ROUTE 1.
38BA - CONCRETE MONUMENT LOCATED 0.3 MILES NORTH OF THE INTERSECTION OF MONGOMERY RD. AND U.S. ROUTE 1, 9.5' FROM THE SOUTH BOUND LANE OF U.S. ROUTE 1.

SHEET INDEX

DESCRIPTION	SHEET NO.
COVER SHEET	1
ROAD CONSTRUCTION AND METHOD OF TRANSPORTATION PLAN	2
ROAD CONSTRUCTION PLAN	3
GRADING, SEDIMENT, AND EROSION CONTROL PLAN	4
GRADING, SEDIMENT, AND EROSION CONTROL NOTES AND DETAILS	5
GRADING, SEDIMENT, AND EROSION CONTROL NOTES AND DETAILS	6
STORMDRAIN DRAINAGE AREA MAP	7
STORMDRAIN PROFILES	8
STORMWATER MANAGEMENT NOTES, DETAILS, AND BORING PROFILES	9
STORMWATER MANAGEMENT NOTES AND DETAILS	10
STORMWATER MANAGEMENT NOTES AND DETAILS	11
STORMWATER MANAGEMENT NOTES AND DETAILS	12
LANDSCAPE AND FOREST CONSERVATION PLAN	13
LANDSCAPE AND FOREST CONSERVATION PLAN	14
LANDSCAPE AND FOREST CONSERVATION PLAN NOTES AND DETAILS	15
ASCO/MAA NOTES AND DETAILS	16

MILESTONE CHART

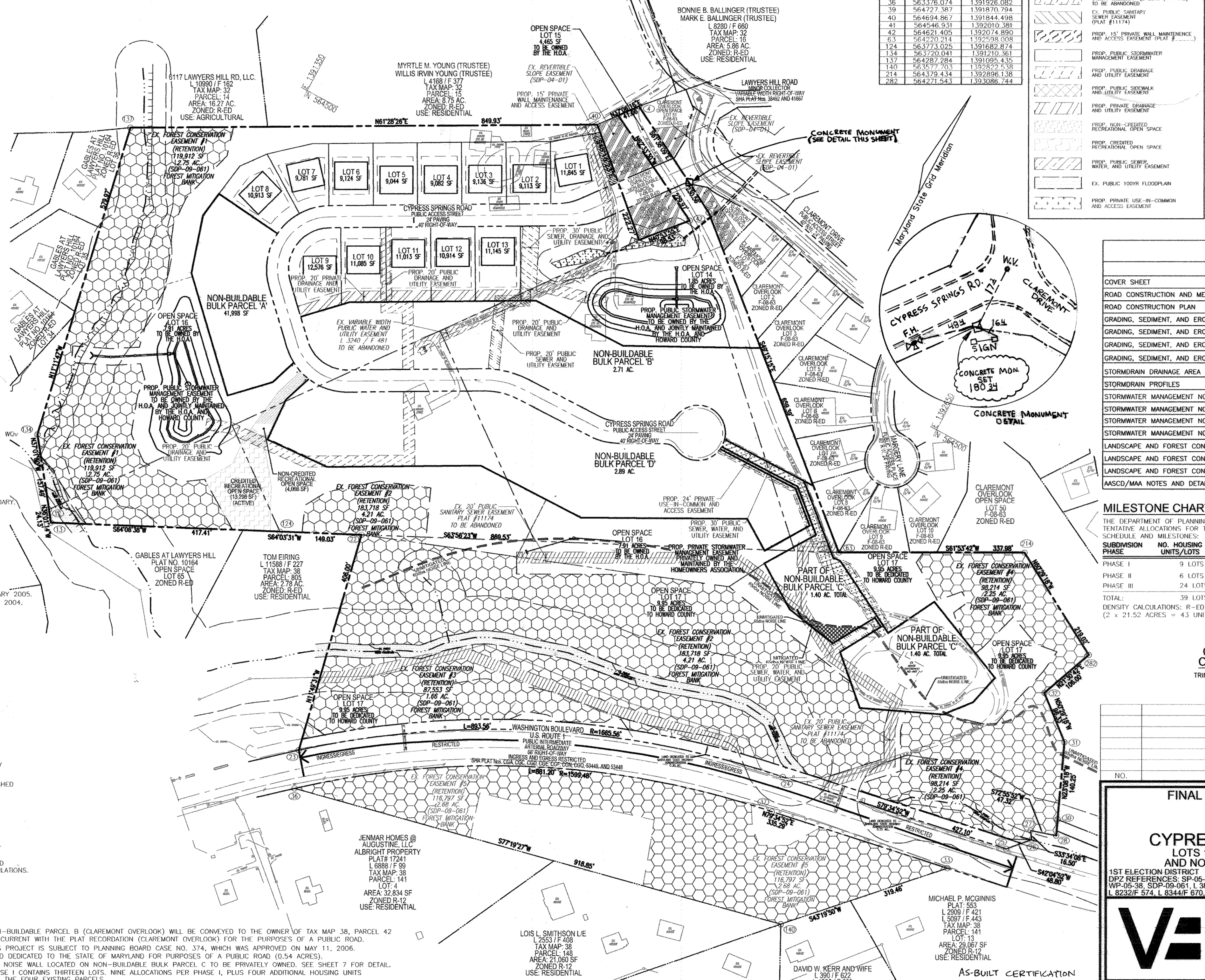
THE DEPARTMENT OF PLANNING AND ZONING'S SP-05-06 LETTER DATED 07/10/09 GRANTED TENTATIVE ALLOCATIONS FOR THIS SUBDIVISION IN ACCORDANCE WITH THE FOLLOWING ALLOCATION SCHEDULE AND MILESTONES:

SUBDIVISION PHASE	NO. HOUSING UNITS/LOTS	ALLOCATION YEAR
PHASE I	9 LOTS	2012
PHASE II	6 LOTS	2013
PHASE III	24 LOTS	2014
TOTAL:	39 LOTS	

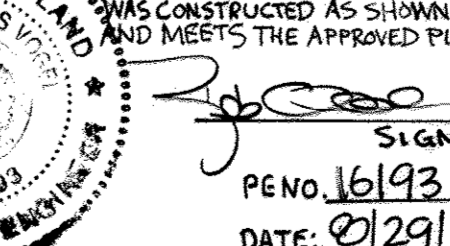
DENSITY CALCULATIONS: R-ED ZONING, 2 DWELLING UNITS PER ACRE (2 X 21.52 ACRES = 43 UNITS/LOTS)

OWNER / DEVELOPER / CONTRACT PURCHASER

TRINITY HOMES AT CYPRESS SPRINGS, LLC.
3675 PARK AVENUE, SUITE 100
ELLCOTT CITY, MARYLAND 21043
(410) 480-0023



LOCATION MAP



FINAL ROAD CONSTRUCTION PLAN

COVER SHEET

CYPRESS SPRINGS - PHASE 1

LOTS 1 - 13, OPEN SPACE LOTS 14-17, AND NON-BUILDABLE BULK PARCELS A-D

1ST ELECTION DISTRICT MAP 38, BLOCK 3
DPZ REFERENCES: SP-05-06, PB CASE 374, PARCELS 42, 44, 45 AND 46
WP-05-38, SDP-09-061, L 3861/F 658, HOWARD COUNTY, MARYLAND
L 8232/F 574, L 8344/F 670, L 4518/F 458

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

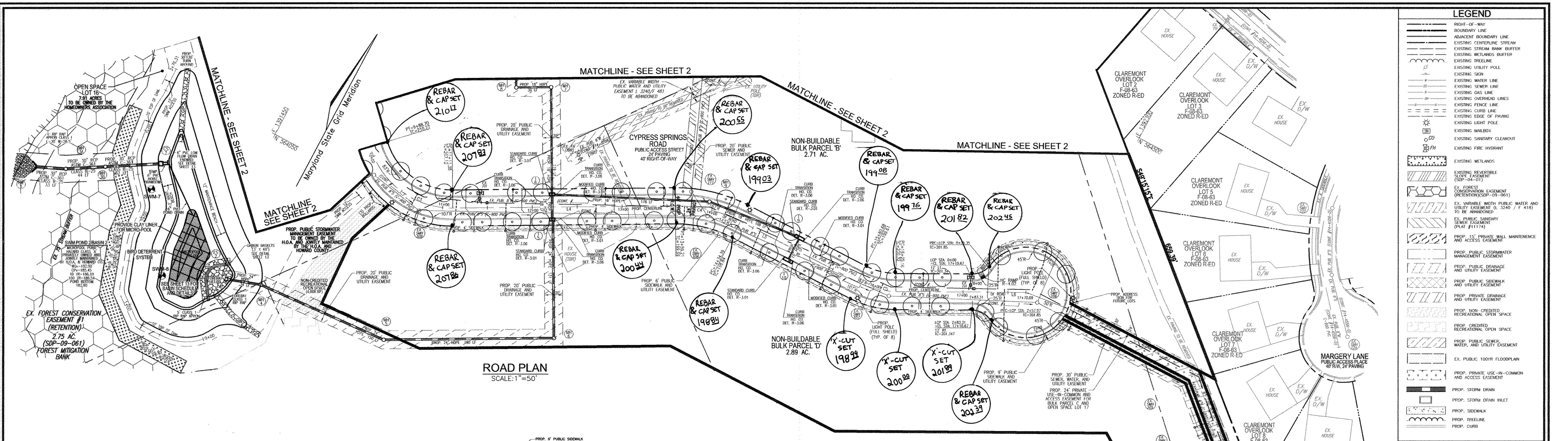
PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193
EXPIRATION DATE: 08-27-2010

DESIGNED BY: RHM/JCO
DRAWN BY: JMR
CHECKED BY: RHM
DATE: APRIL 2010
SCALE: AS SHOWN
W.O. NO.: 04-30

1 SHEET OF 17

APPROVED: DEPARTMENT OF PUBLIC WORKS
with R. Ball... 5-17-10
CHIEF, BUREAU OF HIGHWAYS
APPROVED: DEPARTMENT OF PLANNING AND ZONING
K. DeL... 6/1/10
CHIEF, DIVISION OF LAND DEVELOPMENT
APPROVED: DEPARTMENT OF PLANNING AND ZONING
M. ... 5/27/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION

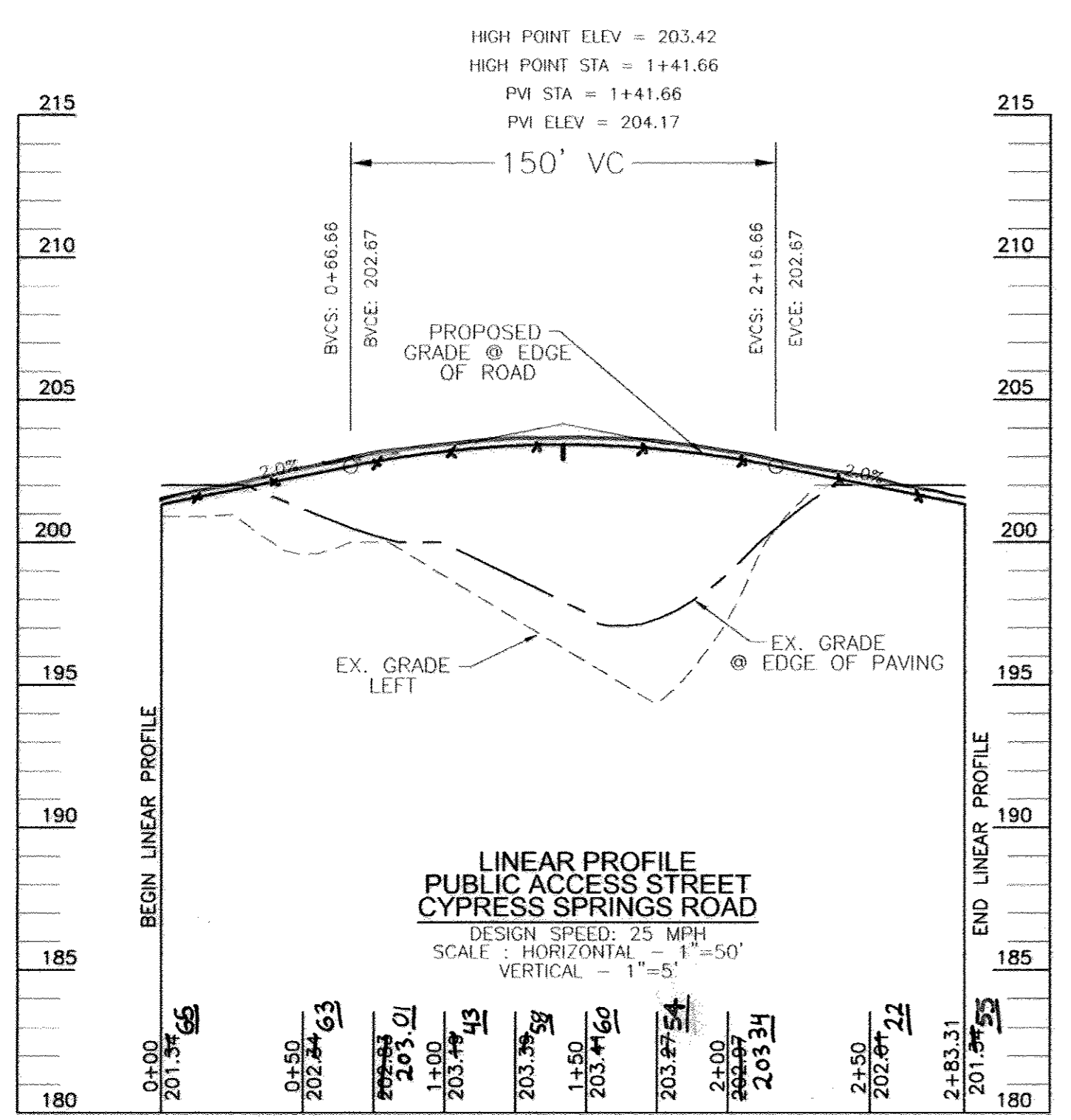
AS-BUILT 8/29/17 F-10-028



LEGEND

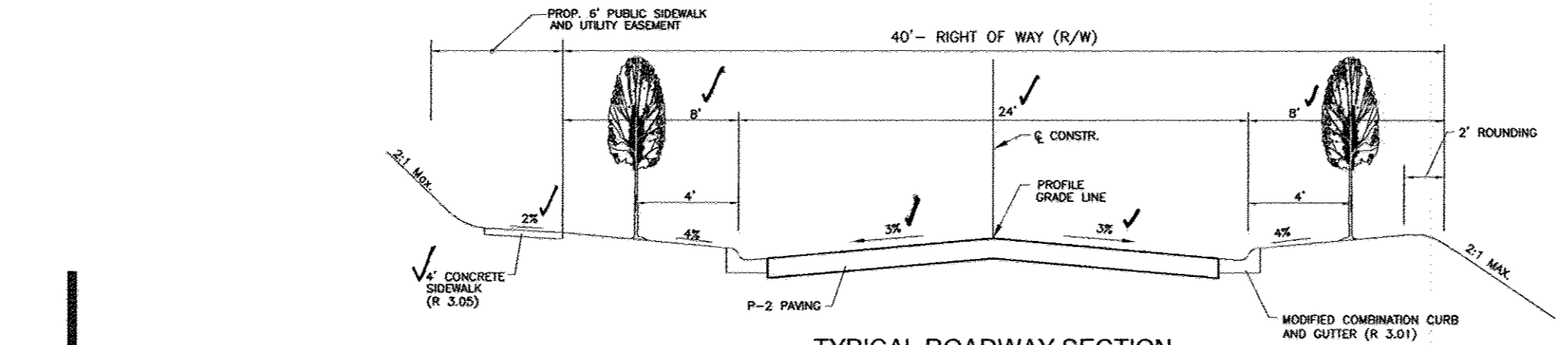
- RIGHT-OF-WAY
- BOUNDARY LINE
- ADJACENT BOUNDARY LINE
- EXISTING CENTERLINE STREAM
- EXISTING STREAM BANK BUFFER
- EXISTING WETLANDS BUFFER
- EXISTING TRAILING
- EXISTING UTILITY POLE
- EXISTING SIGN
- EXISTING WATER LINE
- EXISTING SEWER LINE
- EXISTING GAS LINE
- EXISTING OVERHEAD LINES
- EXISTING CURB LINE
- EXISTING EDGE OF PAVING
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SANITARY CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WETLANDS
- EXISTING REVERSIBLE SCALE EASEMENT (SDP-09-01)
- EX. FOREST CONSERVATION EASEMENT (RETENTION) (SDP-09-061)
- EX. VARIABLE WIDTH PUBLIC WATER AND UTILITY EASEMENT (L. 3240/F. 481) TO BE ABANDONED
- EX. PUBLIC SANITARY SEWER EASEMENT (PLAN #11174)
- PROP. 1" PRIVATE WALL MAINTENANCE AND ACCESS EASEMENT
- PROP. PUBLIC STORMWATER MANAGEMENT EASEMENT
- PROP. PUBLIC DRAINAGE AND UTILITY EASEMENT
- PROP. PUBLIC SIDEWALK AND UTILITY EASEMENT
- PROP. PRIVATE DRAINAGE AND UTILITY EASEMENT
- PROP. NON-CREDITED RECREATIONAL OPEN SPACE
- PROP. CREDITED RECREATIONAL OPEN SPACE
- PROP. PUBLIC SEWER, WATER, AND UTILITY EASEMENT
- EX. PUBLIC 100' FLOODPLAIN
- PROP. PRIVATE USE-IN-COMMON AND ACCESS EASEMENT
- PROP. STORM DRAIN
- PROP. STORM DRAIN BULLET
- PROP. SIDEWALK
- PROP. TREE LINE
- PROP. CURB

ROAD PLAN
SCALE: 1"=50'

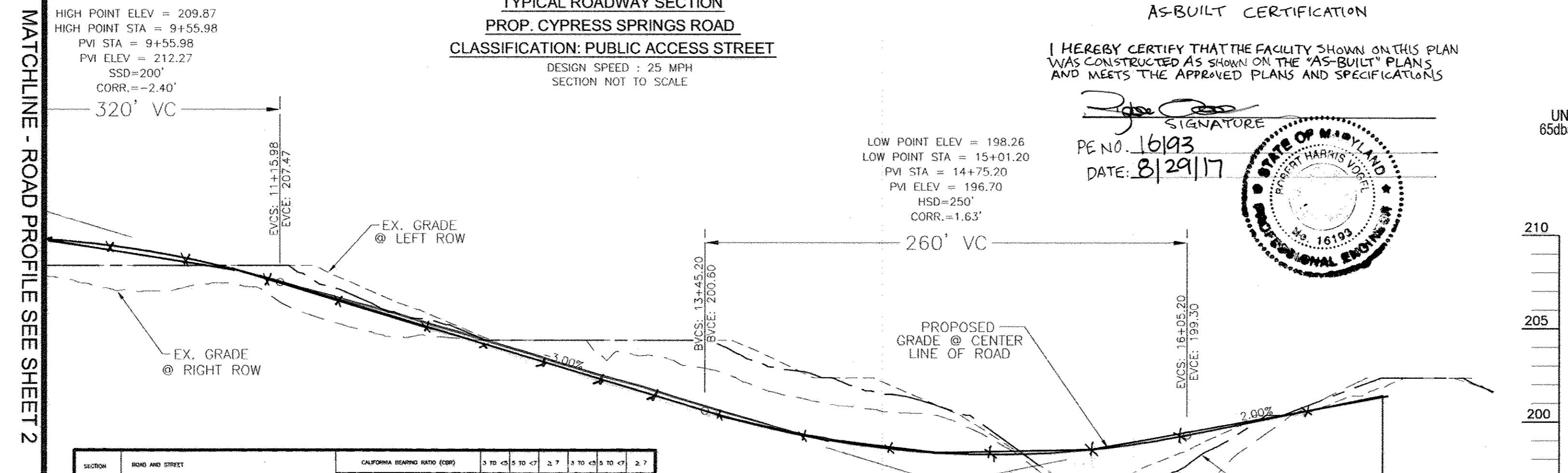


LINEAR PROFILE
PUBLIC ACCESS STREET
CYPRESS SPRINGS ROAD
DESIGN SPEED: 25 MPH
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

STATION	ELEVATION
0+00	201.56
0+50	202.87
1+00	203.42
1+50	203.42
2+00	202.87
2+50	201.56



TYPICAL ROADWAY SECTION
PROP. CYPRESS SPRINGS ROAD
CLASSIFICATION: PUBLIC ACCESS STREET
DESIGN SPEED: 25 MPH
SECTION NOT TO SCALE

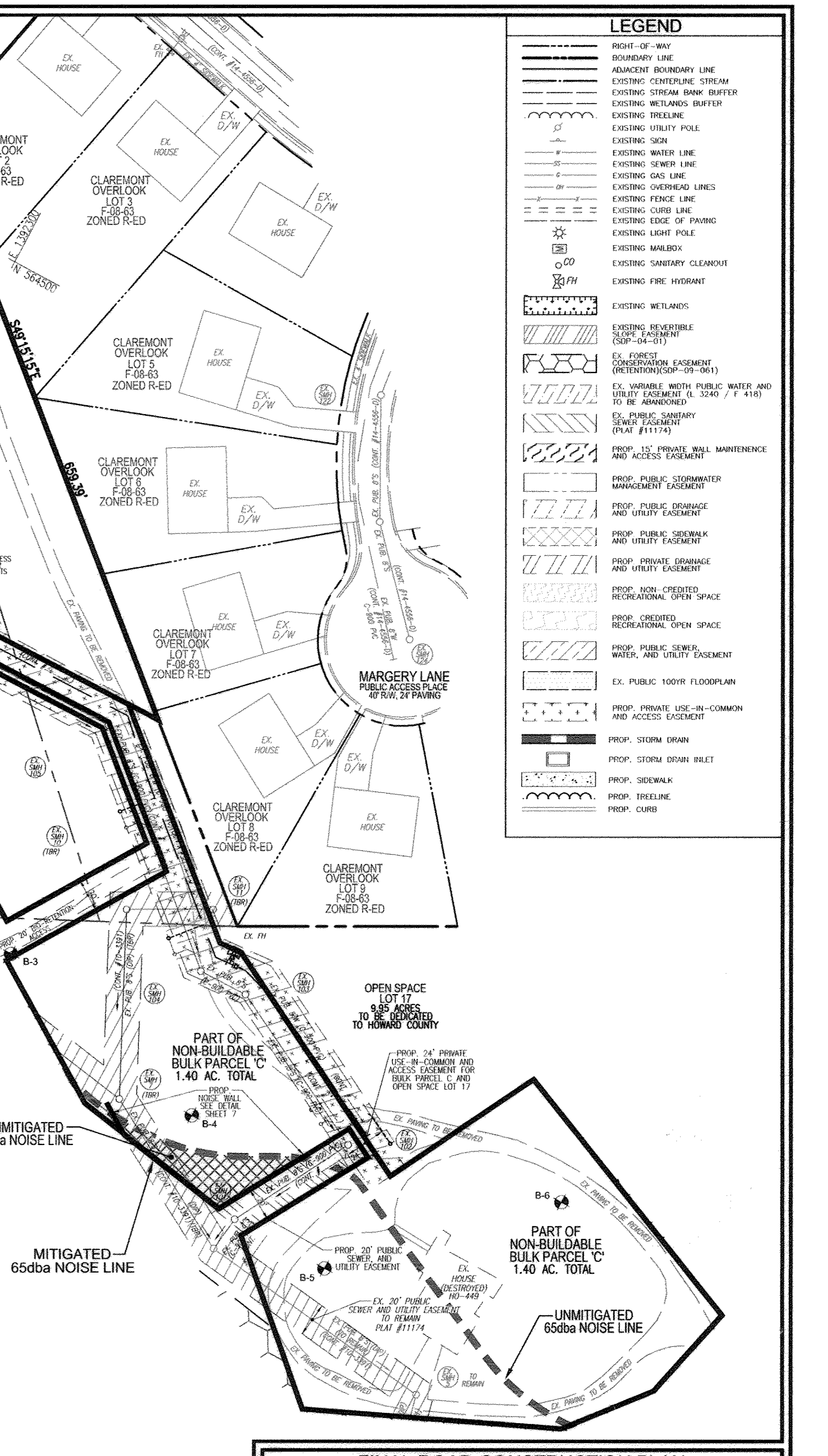


ROAD PROFILE
PUBLIC ACCESS STREET
CYPRESS SPRINGS ROAD
DESIGN SPEED: 25 MPH
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

SECTION	PAVING SECTIONS	CLASSIFICATION	DESIGN SPEED
P-1	P-1 to P-2	Public Access Street	25 MPH
P-2	P-2 to P-3	Public Access Street	25 MPH
P-3	P-3 to P-4	Public Access Street	25 MPH
P-4	P-4 to P-5	Public Access Street	25 MPH

AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

SIGNATURE: [Signature]
PE NO. 16193
DATE: 8/29/17
STATE OF MARYLAND PROFESSIONAL ENGINEER



FINAL ROAD CONSTRUCTION PLAN
ROAD CONSTRUCTION PLAN
CYPRESS SPRINGS - PHASE 1
LOTS 1 - 13, OPEN SPACE LOTS 14-17,
AND NON-BUILDABLE BULK PARCELS A-D

1ST ELECTION DISTRICT: SP CASE 374, PARCELS 42, 44, 45 AND 46
WP-05-38, SDP-09-061, L 386/F 658
L 8232/F 574, L 8344/F 570, L 4518/F 458

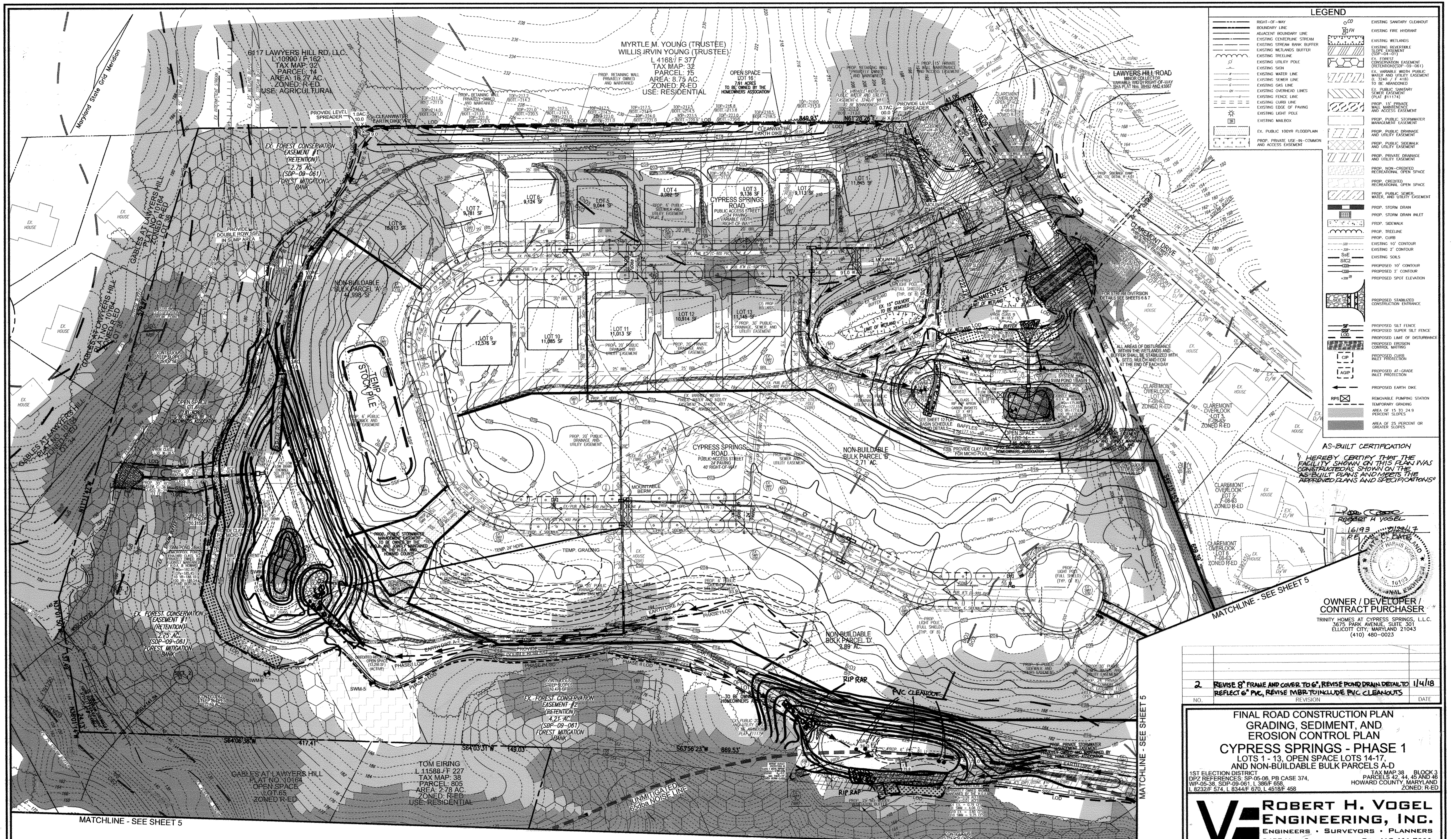
ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET, ELICOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8951

DESIGN BY: RHW/JCO
DRAWN BY: JMR
CHECKED BY: RHW
DATE: APRIL 2010
SCALE: AS SHOWN
W.O. NO.: 04-30

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2010

OWNER / DEVELOPER / CONTRACT PURCHASER
TRINITY HOMES AT CYPRESS SPRINGS, L.L.C.
3675 PARK AVENUE, SUITE 301
ELICOTT CITY, MARYLAND 21043
(410) 480-0023

3 SHEET OF 17



LEGEND

[Symbol]	RIGHT-OF-WAY	[Symbol]	EXISTING SANITARY CLEAROUT
[Symbol]	BOUNDARY LINE	[Symbol]	EXISTING FIRE HYDRANT
[Symbol]	ADJACENT BOUNDARY LINE	[Symbol]	EXISTING WETLANDS
[Symbol]	EXISTING CENTERLINE STREAM	[Symbol]	EXISTING DEVERBEE
[Symbol]	EXISTING STREAM BANK BUFFER	[Symbol]	EXISTING WETLANDS BUFFER (SDP-04-01)
[Symbol]	EXISTING WETLANDS BUFFER	[Symbol]	EXISTING FOREST CONSERVATION EASEMENT (SDP-09-061)
[Symbol]	EXISTING ERECTION	[Symbol]	EX. VARIABLE WIDTH PUBLIC WATER AND UTILITY EASEMENT (SDP-07-01)
[Symbol]	EXISTING UTILITY POLE	[Symbol]	EXISTING 15' CONCRETE SEWER EASEMENT (SDP-09-061)
[Symbol]	EXISTING SIGN	[Symbol]	PROP. 15' PRIVATE WATER AND UTILITY EASEMENT
[Symbol]	EXISTING WATER LINE	[Symbol]	PROP. PUBLIC STORMWATER MANAGEMENT EASEMENT AND UTILITY EASEMENT
[Symbol]	EXISTING SEWER LINE	[Symbol]	PROP. PUBLIC SEWERWATER AND UTILITY EASEMENT
[Symbol]	EXISTING GAS LINE	[Symbol]	PROP. PRIVATE DRAINAGE AND UTILITY EASEMENT
[Symbol]	EXISTING OVERHEAD LINES	[Symbol]	PROP. NON-CREATED RECREATIONAL OPEN SPACE
[Symbol]	EXISTING FENCE LINE	[Symbol]	PROP. CREDITED RECREATIONAL OPEN SPACE
[Symbol]	EXISTING CURB LINE	[Symbol]	PROP. PUBLIC SEWER WATER AND UTILITY EASEMENT
[Symbol]	EXISTING EDGE OF PAVING	[Symbol]	PROP. STORM DRAIN
[Symbol]	EXISTING LIGHT POLE	[Symbol]	PROP. STORM DRAIN INLET
[Symbol]	EXISTING MAILBOX	[Symbol]	PROP. SIDEWALK
[Symbol]	EX. PUBLIC 100YR FLOODPLAIN AND ACCESS EASEMENT	[Symbol]	PROP. TREE LINE
[Symbol]		[Symbol]	PROP. CURB
[Symbol]		[Symbol]	EXISTING 10' CONTOUR
[Symbol]		[Symbol]	EXISTING 2' CONTOUR
[Symbol]		[Symbol]	EXISTING SOILS
[Symbol]		[Symbol]	PROPOSED 10' CONTOUR
[Symbol]		[Symbol]	PROPOSED 2' CONTOUR
[Symbol]		[Symbol]	PROPOSED SPOT ELEVATION
[Symbol]		[Symbol]	PROPOSED STABILIZED CONSTRUCTION ENTRANCE
[Symbol]		[Symbol]	PROPOSED SILE FENCE
[Symbol]		[Symbol]	PROPOSED SUPER SILE FENCE
[Symbol]		[Symbol]	PROPOSED LIMIT OF DISTURBANCE
[Symbol]		[Symbol]	PROPOSED EROSION CONTROL MATING
[Symbol]		[Symbol]	PROPOSED CURB RILEY PROTECTION
[Symbol]		[Symbol]	PROPOSED AT-GRADE INLET PROTECTION
[Symbol]		[Symbol]	PROPOSED EARTH DIKE
[Symbol]		[Symbol]	REMOVABLE PAVING STATION
[Symbol]		[Symbol]	TEMPORARY GRADING
[Symbol]		[Symbol]	AREA OF 15 TO 24.9 PERCENT SLOPES
[Symbol]		[Symbol]	AREA OF 25 PERCENT OR GREATER SLOPES

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

Robert H. Vogel
 16193
 PE #1011410
 PROFESSIONAL ENGINEER

OWNER / DEVELOPER / CONTRACT PURCHASER
 TRINITY HOMES AT CYPRESS SPRINGS, L.L.C.
 3675 PARK AVENUE, SUITE 301
 ELLICOTT CITY, MARYLAND 21043
 (410) 480-0023

NO.	REVISION	DATE
2	REVISE 8" FRAME AND COVER TO 6", REVISE POND DRAIN DETAIL TO REFLECT 6" PVC, REVISE MBR TO INCLUDE PVC CLEANOUTS	1/4/18

**FINAL ROAD CONSTRUCTION PLAN
 GRADING, SEDIMENT, AND
 EROSION CONTROL PLAN
 CYPRESS SPRINGS - PHASE 1
 LOTS 1 - 13, OPEN SPACE LOTS 14-17,
 AND NON-BUILDABLE BULK PARCELS A-D**

1ST ELECTION DISTRICT DPZ REFERENCES: SP-05-06, PB CASE 374, WP-05-38, SDP-08-061, L 386F 688, L 8232F 574, L 8344F 670, L 4518F 458
 TAX MAP 38 BLOCK 3 PARCELS 42, 44, 45 AND 46 HOWARD COUNTY, MARYLAND
 ZONED: R-ED

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

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2010

DESIGN BY: RHV/JCO
 DRAWN BY: JMR
 CHECKED BY: RHV
 DATE: APRIL 2010
 SCALE: AS SHOWN
 W.O. NO.: 04-30

4 SHEET OF 17

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways
 DATE: 5-17-10

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 DATE: 6/11/10

Chief, Development Engineering Division
 DATE: 5/21/10

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

Michael Pfau
 MICHAEL L. PFAU
 DATE: 4-30-10

BY THE ENGINEER:
 I HEREBY CERTIFY THAT THIS PLAN FOR SMALL POND CONSTRUCTION, SEDIMENT AND EROSION 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
 ROBERT H. VOGEL
 DATE: 4/27/10

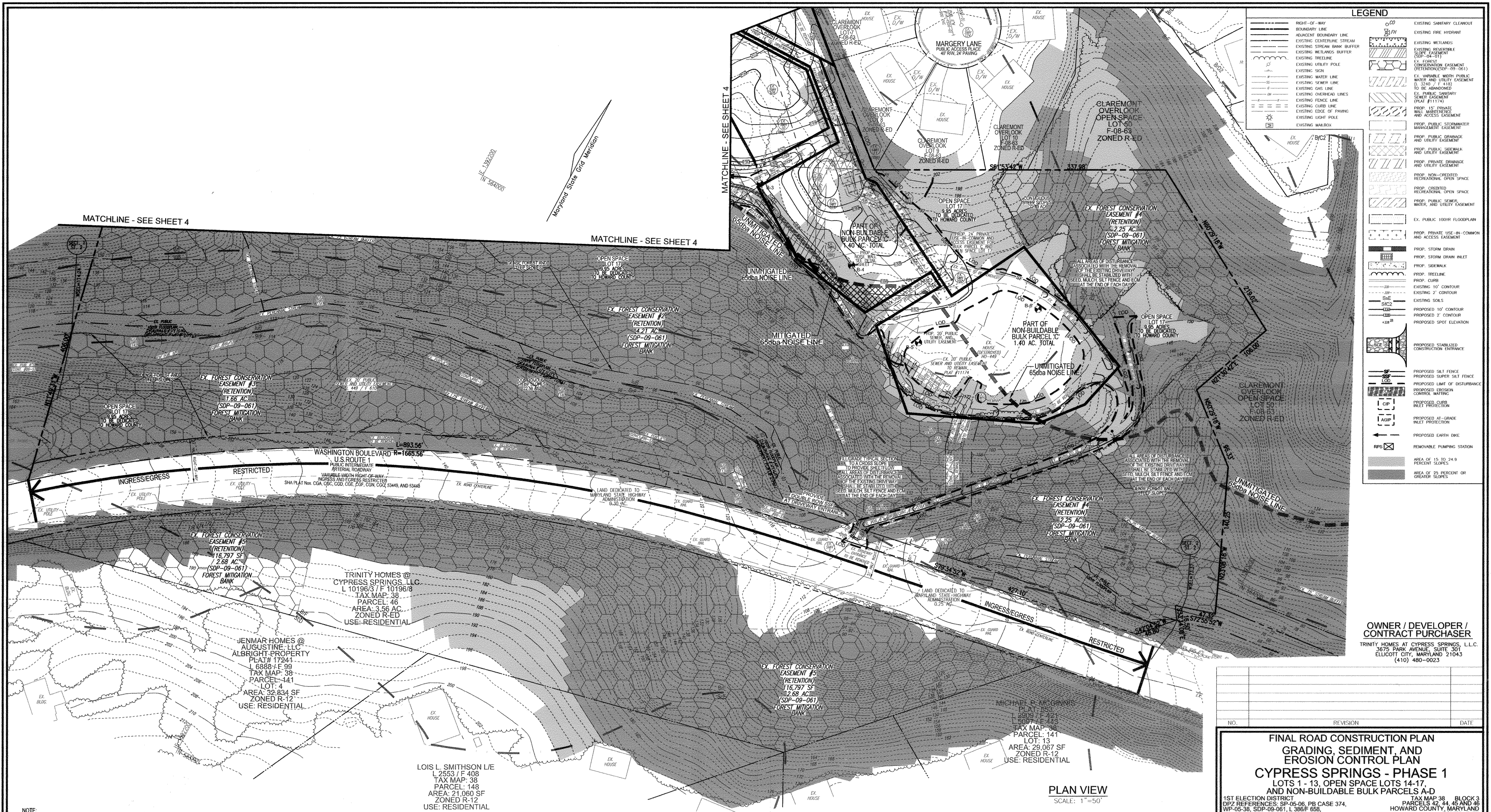
NOTE: SEDIMENT BASINS AND TRAPS ARE PROPOSED FOR SEDIMENT AND EROSION CONTROL DURING CONSTRUCTION.
 SEDIMENT TRAPS AND BASINS MUST BE DRAINED COMPLETELY THROUGH A FILTERING DEVICE TO A CLEAN WATER OUTFALL WITHIN 24 HOURS FOLLOWING ANY RAINFALL EVENT.

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

Howard S.C.D.
 DATE: 5/1/10

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	SOIL GROUP
Bc2	BRANDYWINE LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	C
Bc3	BRANDYWINE LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED	C
Bd2	BRANDYWINE LOAM, 15 TO 25 PERCENT SLOPES, MODERATELY ERODED	C
Bd3	BRANDYWINE LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED	C
Bd7	BRANDYWINE LOAM, 25 TO 60 PERCENT SLOPES, NORTH & SOUTH ASPECTS	C
Cd3	CHILLUM-FAIRFAX LOAMS, 5 TO 15 PERCENT SLOPES, SEVERELY ERODED	B
uB	BUKA LOAM, LOCAL ALLUVIUM, 1 TO 5 PERCENT SLOPES	C
ScE	SANDY AND CLAYEY LAND, MODERATELY STEEP	B



LEGEND

[Symbol]	RIGHT-OF-WAY	[Symbol]	EXISTING SANITARY CLEANSUIT
[Symbol]	BOUNDARY LINE	[Symbol]	EXISTING FIRE HYDRANT
[Symbol]	ADJACENT BOUNDARY LINE	[Symbol]	EXISTING WETLANDS
[Symbol]	EXISTING CENTERLINE STREAM	[Symbol]	EXISTING RESERVABLE SLOPE EASEMENT
[Symbol]	EXISTING STREAM BANK BUFFER	[Symbol]	EX. FOREST CONSERVATION EASEMENT (RETENTION) (SDP-09-061)
[Symbol]	EXISTING WETLANDS BUFFER	[Symbol]	EX. WETLANDS WITH PUBLIC WATER AND UTILITY EASEMENT TO BE ABANDONED
[Symbol]	EXISTING TREELINE	[Symbol]	EX. PUBLIC SANITARY SEWER EASEMENT (PLAT #11174)
[Symbol]	EXISTING UTILITY POLE	[Symbol]	PROP. EX. PRIVATE WALL MAINTENANCE AND ACCESS EASEMENT
[Symbol]	EXISTING SIGN	[Symbol]	PROP. PUBLIC STORMWATER MANAGEMENT EASEMENT
[Symbol]	EXISTING WATER LINE	[Symbol]	PROP. PUBLIC DRAINAGE AND UTILITY EASEMENT
[Symbol]	EXISTING SEWER LINE	[Symbol]	PROP. PUBLIC SIDEWALK AND UTILITY EASEMENT
[Symbol]	EXISTING GAS LINE	[Symbol]	PROP. PRIVATE DRAINAGE AND UTILITY EASEMENT
[Symbol]	EXISTING OVERHEAD LINES	[Symbol]	PROP. NON-CREDITED RECREATIONAL OPEN SPACE
[Symbol]	EXISTING FENCE LINE	[Symbol]	PROP. CREDITED RECREATIONAL OPEN SPACE
[Symbol]	EXISTING CURB LINE	[Symbol]	PROP. PUBLIC SEWER, WATER, AND UTILITY EASEMENT
[Symbol]	EXISTING EDGE OF PAVING	[Symbol]	EX. PUBLIC 100% FLOORPLAN
[Symbol]	EXISTING LIGHT POLE	[Symbol]	PROP. PRIVATE USE-IN-COMMON AND ACCESS EASEMENT
[Symbol]	EXISTING MANHOLE	[Symbol]	PROP. STORM DRAIN
[Symbol]		[Symbol]	PROP. STORM DRAIN INLET
[Symbol]		[Symbol]	PROP. SIDEWALK
[Symbol]		[Symbol]	PROP. TREELINE
[Symbol]		[Symbol]	PROP. CURB
[Symbol]		[Symbol]	EXISTING 10' CONTOUR
[Symbol]		[Symbol]	EXISTING 2' CONTOUR
[Symbol]		[Symbol]	EXISTING 5% SLOPE
[Symbol]		[Symbol]	PROPOSED 10' CONTOUR
[Symbol]		[Symbol]	PROPOSED 2' CONTOUR
[Symbol]		[Symbol]	PROPOSED SPOT ELEVATION
[Symbol]		[Symbol]	PROPOSED STABILIZED CONSTRUCTION ENTRANCE
[Symbol]		[Symbol]	PROPOSED SALT FENCE
[Symbol]		[Symbol]	PROPOSED SUPER SALT FENCE
[Symbol]		[Symbol]	PROPOSED LIMIT OF DISTURBANCE CONTROL MATTING
[Symbol]		[Symbol]	PROPOSED EROSION CONTROL MATTING
[Symbol]		[Symbol]	PROPOSED CURB
[Symbol]		[Symbol]	PROPOSED AT-GRADE INLET PROTECTION
[Symbol]		[Symbol]	PROPOSED EARTH DIKE
[Symbol]		[Symbol]	REMOVABLE PUMPING STATION
[Symbol]		[Symbol]	AREA OF 15 TO 24.9 PERCENT SLOPES
[Symbol]		[Symbol]	AREA OF 25 PERCENT OR GREATER SLOPES

OWNER / DEVELOPER / CONTRACT PURCHASER
 TRINITY HOMES AT CYPRESS SPRINGS, L.L.C.
 3675 PARK AVENUE, SUITE 301
 ELLICOTT CITY, MARYLAND 21043
 (410) 480-0023

NOTE:
 SEDIMENT BASINS AND TRAPS ARE PROPOSED FOR SEDIMENT AND EROSION CONTROL DURING CONSTRUCTION.
 SEDIMENT TRAPS AND BASINS MUST BE DRAINED COMPLETELY THROUGH A FILTERING DEVICE TO A CLEAN WATER OUTFALL WITHIN 24 HOURS FOLLOWING ANY RAINFALL EVENT.

APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] DATE 5-17-10
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] DATE 6/11/10
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] DATE 5/27/10
 CHIEF, DEVELOPMENT ENGINEERING DIVISION J.P.

BY THE DEVELOPER:
 "I/WE CERTIFY THAT ALL DEVELOPEMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."
 [Signature] DATE 9-30-10
 MICHAEL L. PFAU

BY THE ENGINEER:
 "I HEREBY CERTIFY THAT THIS PLAN FOR SMALL POND CONSTRUCTION, SEDIMENT AND EROSION CONTROL, REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."
 [Signature] DATE 8/29/10
 ROBERT H. VOGEL

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

PAUL D. NEIMILLER
 KRISTY L. KRONMEYER/JT
 ELK RIDGE HEIGHTS
 L 11732 / F 76
 TAX MAP: 38
 PARCEL: 492
 LOT: 14A
 AREA: 22,477 SF
 ZONED R-12
 USE: RESIDENTIAL

DAVID W. KERR AND WIFE
 L 390 / F 622
 L 1896 / F 669
 TAX MAP: 38
 PARCEL: 492
 LOT: 14B
 AREA: 13,834 SF
 ZONED R-12
 USE: RESIDENTIAL

HOWARD S.C.D. DATE 8/29/10

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	SOIL GROUP
BcC2	BRANDYWINE LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	C
BcC3	BRANDYWINE LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED	C
BdD2	BRANDYWINE LOAM, 15 TO 25 PERCENT SLOPES, MODERATELY ERODED	C
BdD3	BRANDYWINE LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED	C
BfF	BRANDYWINE LOAM, 25 TO 60 PERCENT SLOPES, NORTH & SOUTH ASPECTS	C
CnD3	CHILLUM-FARFAX LOAMS, 5 TO 15 PERCENT SLOPES, SEVERELY ERODED	B
tuB	LUKA LOAM, LOCAL ALLUVIUM, 1 TO 5 PERCENT SLOPES	C
Scl	SANDY AND CLAYEY LAND, MODERATELY STEEP	B

**FINAL ROAD CONSTRUCTION PLAN
 GRADING, SEDIMENT, AND
 EROSION CONTROL PLAN
 CYPRESS SPRINGS - PHASE 1
 LOTS 1 - 13, OPEN SPACE LOTS 14-17,
 AND NON-BUILDABLE BULK PARCELS A-D**

1ST ELECTION DISTRICT TAX MAP 38 BLOCK 3
 DPZ REFERENCES: SP-05-06, PB CASE 374, PARCELS 42, 44, 45 AND 46
 WP-05-36, SDP-09-061, L 386/F 668, HOWARD COUNTY, MARYLAND
 L 6232/F 674, L 8344/F 670, L 4518/F 458

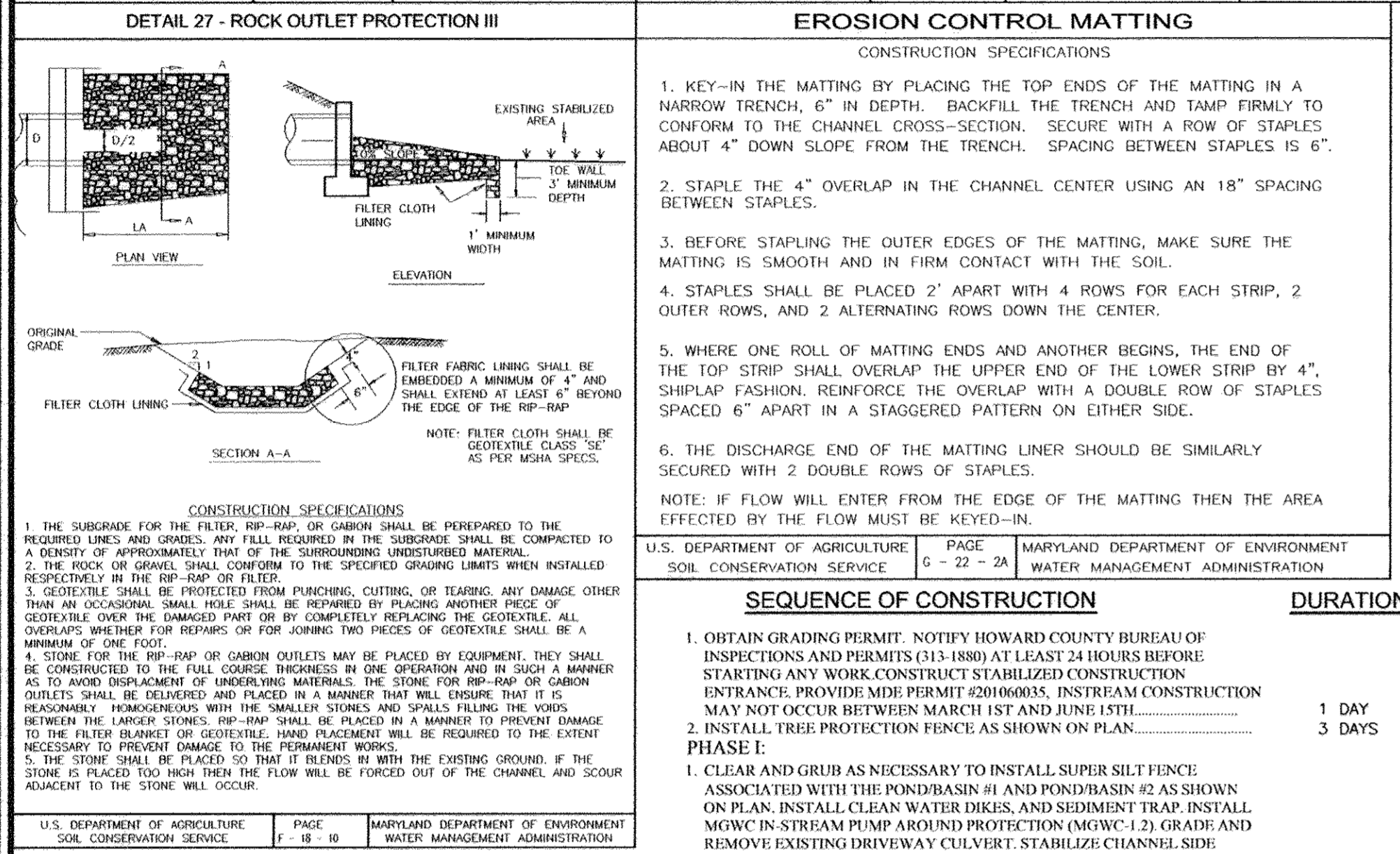
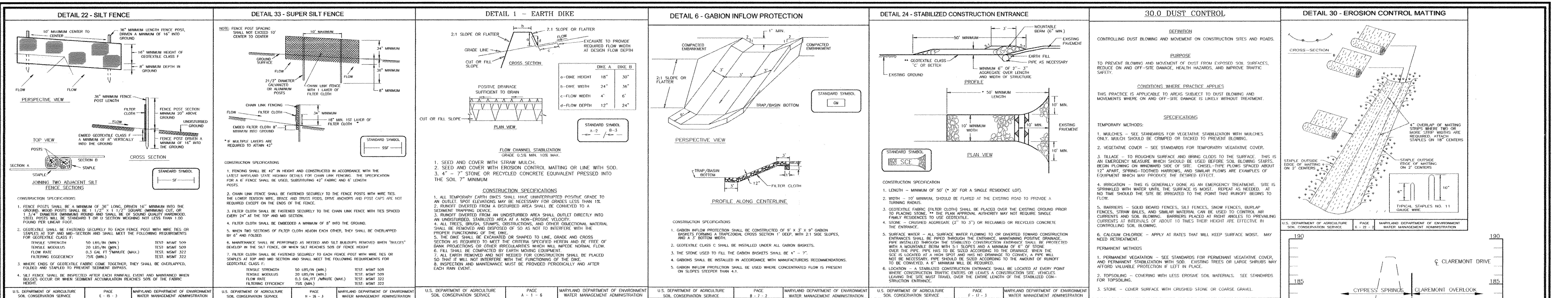
**ROBERT H. VOGEL
 ENGINEERS • SURVEYORS • PLANNERS**
 8407 MAIN STREET TEL: 410.461.7666
 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

DESIGN BY: RHM/JCO
 DRAWN BY: JMR
 CHECKED BY: RHY
 DATE: APRIL 2010
 SCALE: AS SHOWN
 W.O. NO.: 04-30

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193
 EXPIRATION DATE: 09-27-2010

5 SHEET OF 17

AS-BUILT 8/29/17 F-10-028



CONSTRUCTION SPECIFICATIONS

1. THE SUBGRADE FOR THE FILTER, RIP-RAP, OR GABION SHALL BE PREPARED TO THE REQUIRED GRADE AND GRADATIONS. THE FILTER SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL. THE RIP-RAP SHALL BE COMPACTED TO THE SPECIFIED GRADE LIMITS WITH REINFORCED RESPECTIVELY IN THE RIP-RAP OR FILTER.
2. GEOTEXTILE SHALL BE PROTECTED FROM PUNCTURE, CUTTING, OR TEARING. ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE REPAIRED BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART COMPLETELY REPLACING THE DAMAGED AREA. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE SHALL BE AT LEAST 6" (150 mm).
3. A STONE FOR THE RIP-RAP OR GABION OUTLETS MAY BE PLACED BY EQUIPMENT. THEY SHALL BE PLACED AS TO AVOID IMPEDING UNIFORM FLOW. THE STONE FOR RIP-RAP OR GABION OUTLETS SHALL BE REINFORCED BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART COMPLETELY REPLACING THE DAMAGED AREA. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE SHALL BE AT LEAST 6" (150 mm).
4. THE STONE SHALL BE PLACED SO THAT IT BLENDS WITH THE EXISTING GROUND. IF THE STONE IS PLACED TOO HIGH THEN THE FLOW WILL BE FORCED OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.

NOTES

1. ALL EARTH DIKES ARE TO BE PLACED IN WORKING ORDER AT THE END OF EACH WORKING DAY.
2. IMBRICATE SF/SFF IN 25' SEGMENTS AS REQUIRED UPHILL BY 2" IN ELEVATION.
3. IMBRICATE SF/SFF IN 25' SEGMENTS AS REQUIRED DOWN IN STREAM CONSTRUCTION MAY OCCUR FROM 3/1 TO 6/15.
4. PROVIDE IMMEDIATE STABILIZATION OF ALL LIMIT OF DISTURBANCE WITHIN BUFFER AREA WITH EROSION CONTROL MATTING.

NOTES

DURING GRADING AND AFTER EACH RAINFALL, THE CONTRACTOR SHALL INSPECT AND PROVIDE THE NECESSARY MAINTENANCE ON THE SEDIMENT AND EROSION CONTROL MEASURES SHOWN HEREON.

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLIED WITH:

- 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, SWALES, DITCH PERIMETER SLOPES SLOPES AND ALL SLOPES GREATER THAN 3:1.
- 14 CALENDAR DAYS FOR ALL OTHER DISTURBED AREAS.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

DATE: 8/29/17

STATE OF MARYLAND
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

CONSTRUCTION SPECIFICATIONS

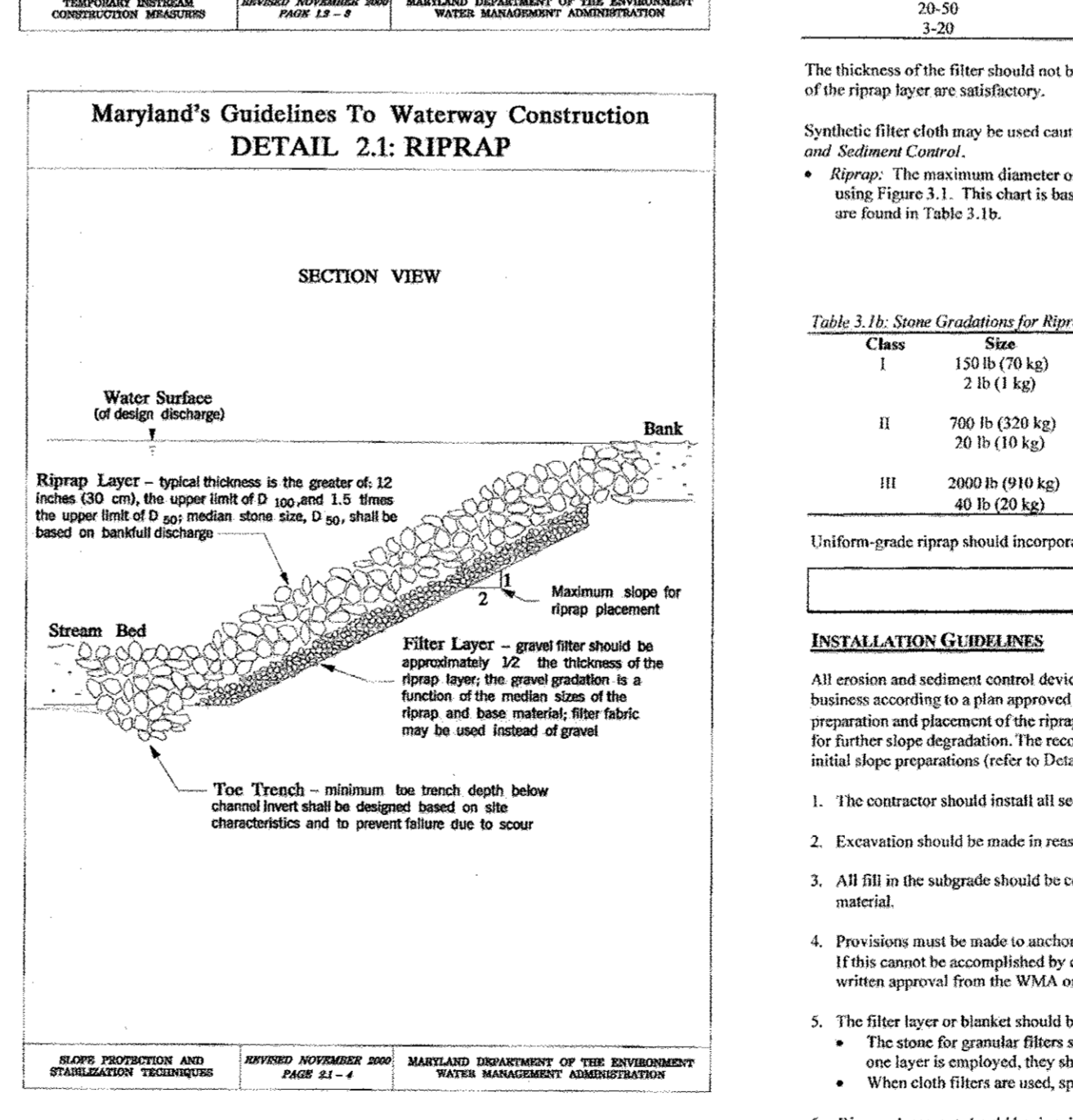
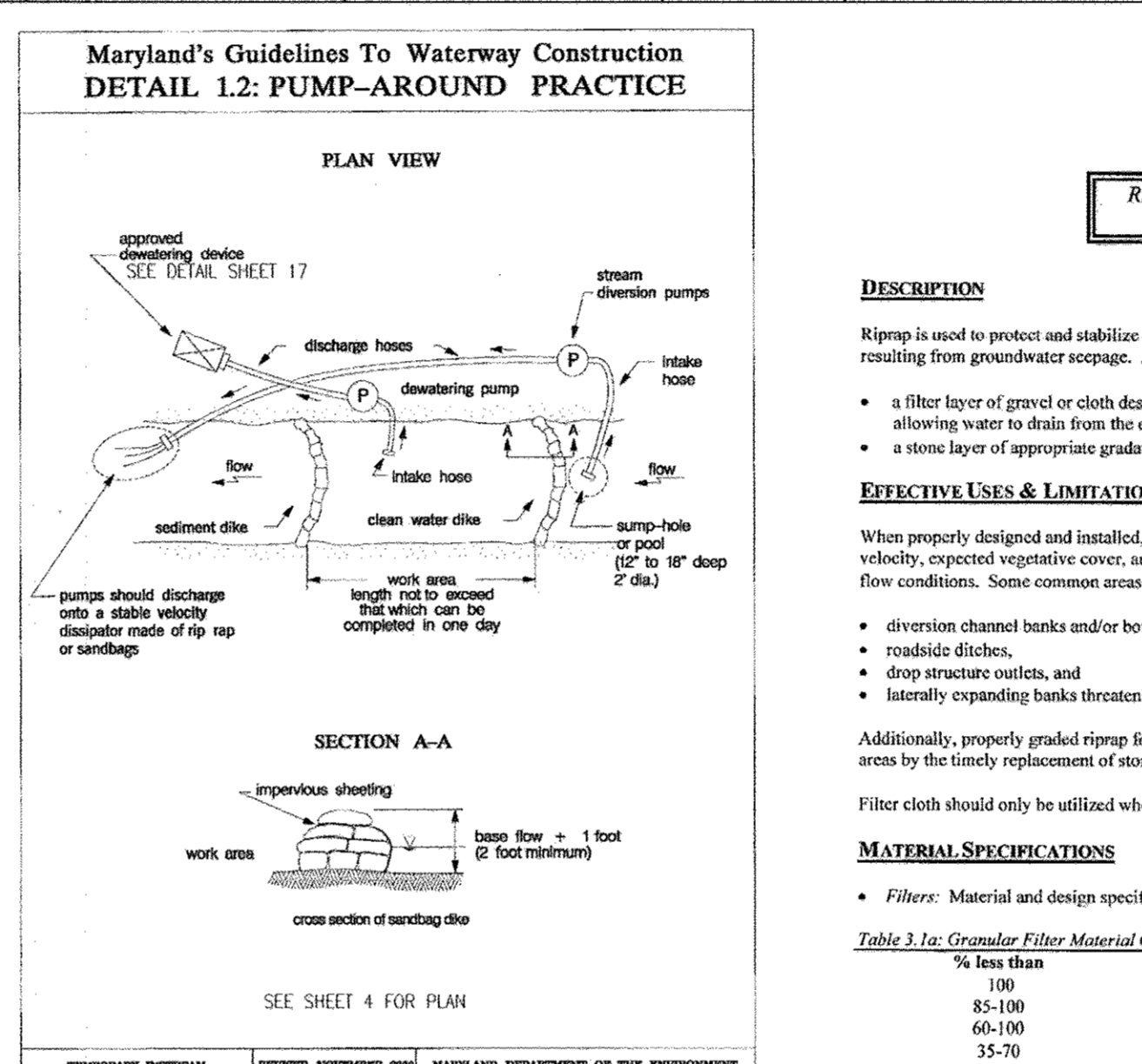
1. KEY-IN THE MATTING BY PLACING THE TOP ENDS OF THE MATTING IN A NARROW TRENCH, 6" IN DEPTH. BACKFILL THE TRENCH AND TAMP FIRMLY TO CONFORM TO THE CHANNEL CROSS-SECTION. SECURE WITH A ROW OF STAPLES ABOUT 4" DOWN SLOPE FROM THE TRENCH. SPACING BETWEEN STAPLES IS 6".
2. STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES.
3. BEFORE STAPLING THE OUTER EDGES OF THE MATTING, MAKE SURE THE MATTING IS SMOOTH AND IN FIRM CONTACT WITH THE SOIL.
4. STAPLES SHALL BE PLACED 2' APART WITH 4 ROWS FOR EACH STRIP, 2 OUTER ROWS, AND 2 ALTERNATING ROWS DOWN THE CENTER.
5. WHERE ONE ROLL OF MATTING ENDS AND ANOTHER BEGINS, THE END OF THE TOP STRIP SHALL OVERLAP THE UPPER END OF THE LOWER STRIP BY 4", SHIPLAP FASHION. REINFORCE THE OVERLAP WITH A DOUBLE ROW OF STAPLES SPACED 6" APART IN A STAGGERED PATTERN ON EITHER SIDE.
6. THE DISCHARGE END OF THE MATTING LINER SHOULD BE SIMILARLY SECURED WITH 2 DOUBLE ROWS OF STAPLES.

NOTE: IF FLOW WILL ENTER FROM THE EDGE OF THE MATTING THEN THE AREA EFFECTED BY THE FLOW MUST BE KEY-IN.

U.S. DEPARTMENT OF AGRICULTURE PAGE 1-1-6 MARYLAND DEPARTMENT OF ENVIRONMENT SOIL CONSERVATION SERVICE WATER MANAGEMENT ADMINISTRATION

SEQUENCE OF CONSTRUCTION

SEQUENCE OF CONSTRUCTION	DURATION
1. OBTAIN GRADING PERMIT. NOTIFY HOWARD COUNTY BUREAU OF INSPECTIONS AND PERMITS (311-1880) AT LEAST 24 HOURS BEFORE STARTING ANY WORK. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCES PER PERMIT 2201000000. INSTREAM CONSTRUCTION MAY NOT OCCUR BETWEEN MARCH 1ST AND JUNE 15TH.	1 DAY
2. INSTALL TREE PROTECTION FENCE AS SHOWN ON PLAN.	3 DAYS
PHASE I	
1. CLEAR AND GRUB AS NECESSARY TO INSTALL SUPER SILT FENCE ASSOCIATED WITH THE POND/BASIN #1 AND POND/BASIN #2 AS SHOWN ON PLAN. INSTALL CLEAN WATER DIKES, AND SEDIMENT TRAP. INSTALL MGWC IN STREAM PUMP AROUND PROTECTION (MGWC-1.2). GRADE AND REPAIR EXISTING DRIVEWAY CULVERT. STABILIZE CHANNEL SIDE SLOPES PER MGWC-2.1. WITH APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR, REMOVE INSTREAM PUMP AROUND PROTECTION.	3 WEEKS
2. WITH PERMISSION FROM SEDIMENT CONTROL INSPECTOR CONSTRUCT POND/BASIN #1 AND POND/BASIN #2 (ALL MATERIAL FOR POND/BASIN CONSTRUCTION MUST BE ON-SITE, AND PERMISSION FROM THE INSPECTOR GRANTED, BEFORE PROCEEDING). UPON COMPLETION, AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, CONSTRUCT ASSOCIATED EARTH DIKES, AND INSTREAM PROTECTION, TO DIRECT DRAINAGE TOWARDS BASINS. INSTALL REMAINING SUPER SILT FENCE.	3 WEEKS
3. INSTALL STORM DRAIN RUN FROM IS-1 TO I-4. UPON COMPLETION CONSTRUCT ASSOCIATED EARTH DIKES AND DIRECT DRAINAGE TOWARDS INLETS TO BASIN #1.	4 WEEKS
4. WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, CLEAR, GRUB AND GRADE THE REMAINDER OF SITE. GRADE TO TEMPORARY CONTROLS TO PROVIDE POSITIVE DRAINAGE FOR EARTHDIKE EAST OF BASIN #2.	8 WEEKS
5. BEGIN CONSTRUCTION OF WATER AND SEWER SYSTEM. CONSTRUCT STORM DRAIN SYSTEM 1 TO I-5 AND I-5 TO I-4 AND PROVIDE TEMPORARY 24" HDPE PIPE FROM M-4 TO I-5.	6 WEEKS
6. GRADE ROADS TO SUB-BASE AND APPLY DUST CONTROL SPECIFICATIONS.	3 WEEKS
7. WITH ROAD GRADED TO SUB-BASE, BEGIN CURB AND GUTTER CONSTRUCTION, PAVING ROAD AND INSTALL SIDEWALKS.	4 WEEKS
PHASE II	
1. WITH ROAD PAVED AND SIDEWALKS INSTALLED OBTAIN SEDIMENT CONTROL INSPECTORS APPROVAL TO CONSTRUCT REMAINING STORM DRAIN FROM M-4 TO I-5 AND REMOVE 24" TEMPORARY PIPE.	3 WEEKS
2. WITH SEDIMENT CONTROL INSPECTORS APPROVAL GRADE PHASE I AREA OF TEMPORARY GRADES TO FINAL GRADES REMOVING EARTH DIKE WHEN TOP OF DIKE ELEVATION IS REACHED. MAINTAIN DOUBLE ROW OF SUPER SILT FENCE BELOW TEMPORARY.	1 WEEK
3. INSTALL PERIMETER LANDSCAPING AND STREET TREES.	1 WEEK
4. WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, AND FINAL ROAD PAVING COMPLETE, STABILIZE ANY REMAINING DISTURBED AREAS, AND FLUSH STORM DRAIN SYSTEM.	1 WEEK
5. WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, CONVERT SEDIMENT BASINS TO FINAL STORMWATER MANAGEMENT FACILITIES AND REMOVE SEDIMENT CONTROL MEASURES.	3 WEEKS
6. REMOVE ALL NEW AND OLD RINK, DIRT, DEBRIS, AND OTHER MAN-MADE OBJECTS FROM THE ENTIRE FOREST CONSERVATION EASEMENT, FLOODPLAIN, WETLANDS, STREAMS AND THEIR BUFFERS.	3 WEEKS
7. PROVIDE COPY OF THE AS-BUILT APPROVAL LETTER FROM THE HOWARD SCD, TO THE COUNTY INSPECTOR.	1 WEEK



DESCRIPTION

Riprap is used to protect and stabilize embankment soils from the erosive forces of flowing water and piping forces resulting from groundwater seepage. A well-engineered riprap system should consist of the following:

- a filter layer of gravel or cloth designed to prevent soil movement into or through the riprap layer while allowing water to drain from the embankment, and
- a stone layer of appropriate gradation and thickness to resist the shearing forces of channelized water.

EFFECTIVE USES & LIMITATIONS

When properly designed and installed, riprap is an effective method where soil conditions, water turbulence and velocity, expected vegetative cover, and groundwater conditions are such that the soil may erode under the design flow conditions. Some common areas of riprap applicability are:

- diversion channel banks and/or bottoms;
- roadside ditches;
- drop structure outlets; and
- laterally expanding banks threatening infrastructure or personal property.

Additionally, properly graded riprap forms a flexible, self-healing cover which can be easily repaired in localized areas by the timely replacement of stone. Uniform gradation riprap can also be used with a geotextile filter cloth.

Filter cloth should only be utilized when the bank material is noncohesive such as sand or gravel.

MATERIAL SPECIFICATIONS

• **Filters:** Material and design specifications for granular filters are found in Table 3.1a.

• **Table 3.1b. Granular Filter Material Gradation Specifications**

The thickness of the filter should not be less than 6 inches (15 cm). Generally, filters that are one-half the thickness of the riprap layer are satisfactory.

Synthetic filter cloth may be used cautiously based on the 1994 MD Standards and Specifications for Soil Erosion and Sediment Control.

• **Riprap:** The maximum diameter or weight of stone for riprap should be based upon the design flow velocity using Figure 3.1. This chart is based on a maximum slope of 2:1H:1V. The stone gradations for Classes I - III are found in Table 3.1b.

MGWC 2.1: RIPRAP

Uniform-grad riprap should incorporate angular rock to promote interlocking.

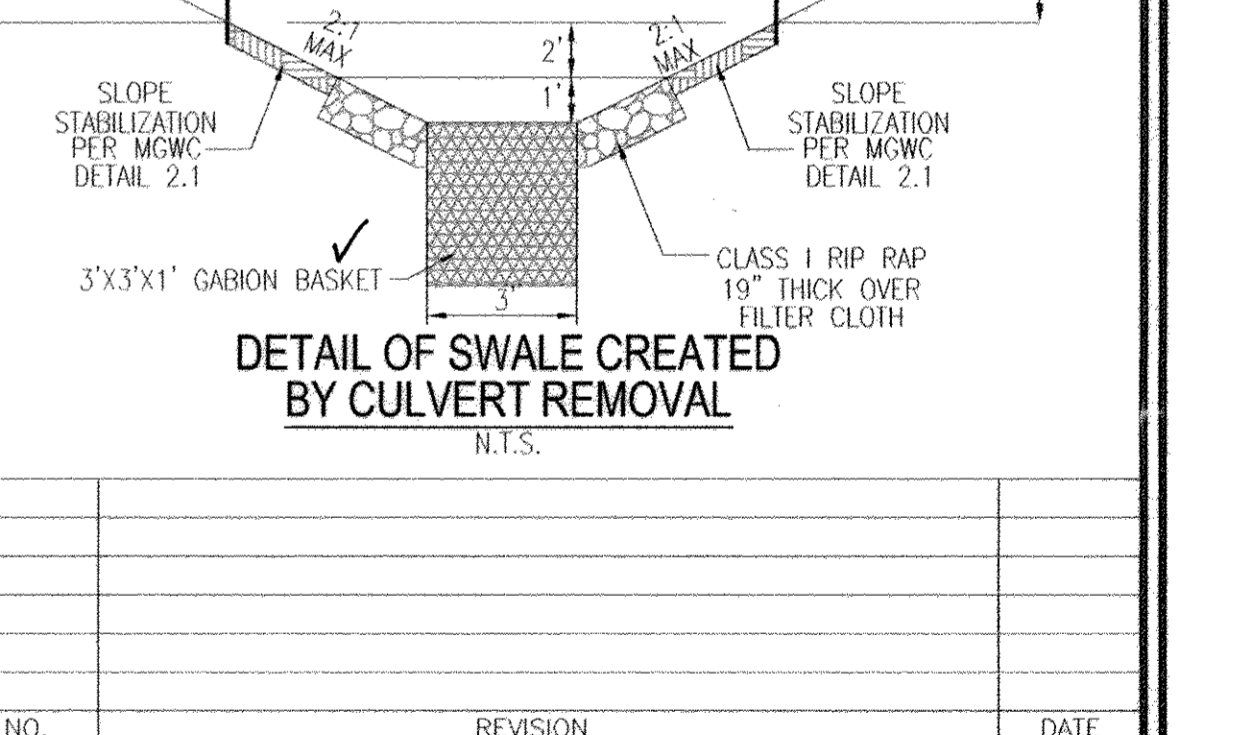
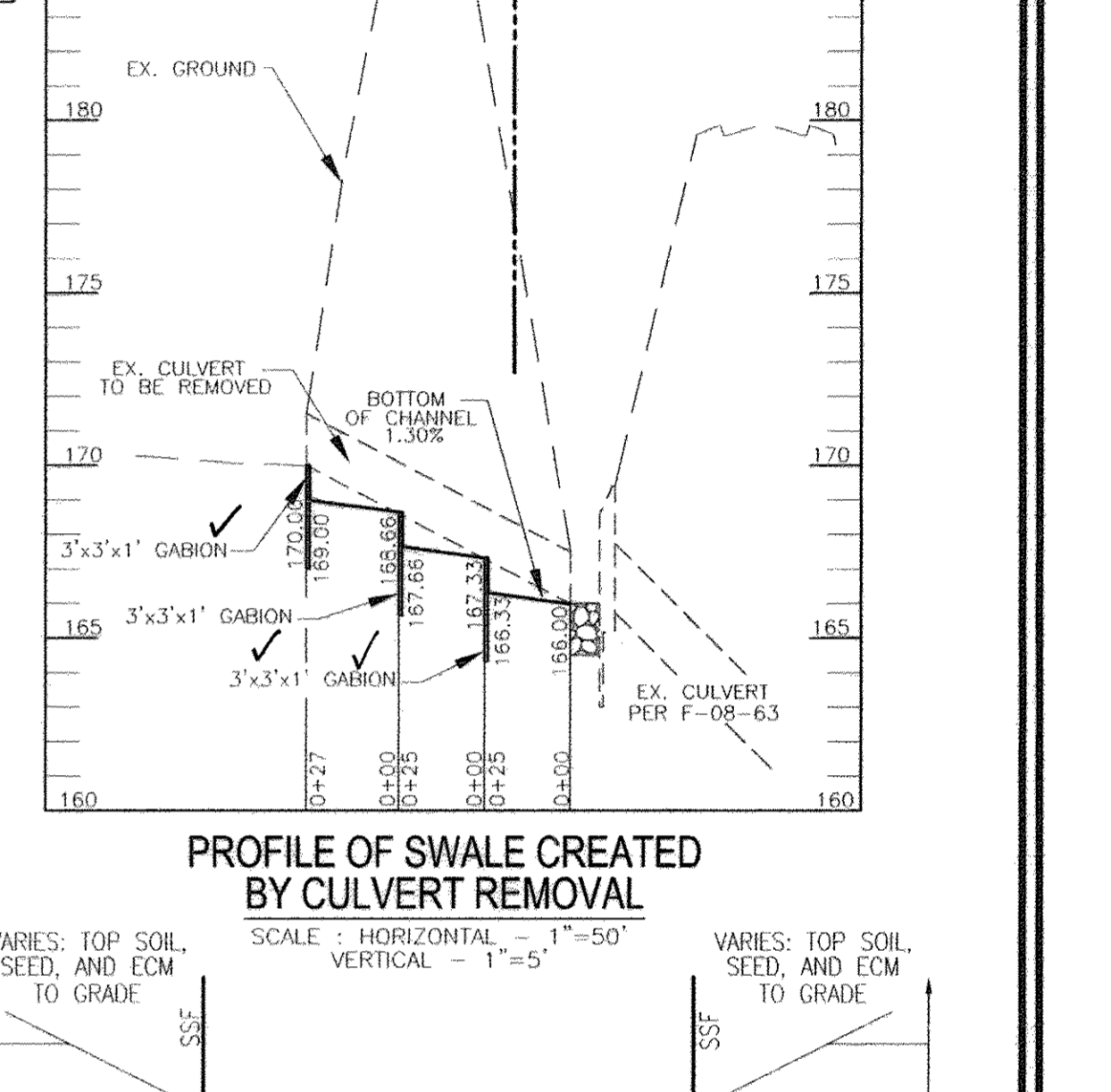
Approximate Cost (\$1999): \$78 per linear ft.

INSTALLATION GUIDELINES

All erosion and sediment control devices, including dewatering basins, should be implemented as the first order of business according to a plan approved by the WMA or local authority. Once a slope stabilization project is initiated, preparation and placement of the riprap should immediately follow the initial disturbance to minimize the chances for further slope degradation. The recommended construction procedure for riprap is as follows beginning with initial slope preparations (refer to Detail 2.1):

1. The contractor should install all sediment and erosion control devices as the first order of business.
2. Excavation should be made in reasonably close conformity with the existing stream slope and bed.
3. All fill in the subgrade should be compacted to a density approximating that of the surrounding undisturbed material.
4. Provisions must be made to anchor the riprap to the stream bed so as to provide protection against undermining. If this cannot be accomplished by creating a toe trench, an alternative method of protection must receive prior written approval from the WMA or local authority.
5. The filter layer or blanket should be placed immediately after slope preparation.
 - The stone for granular filters should be spread in a uniform layer to the specified depth. Where more than one layer is employed, they should be spread such that there is minimal mixing.
 - When cloth filters are used, special care should be taken not to damage the fabric during riprap placement.
6. Riprap placement should begin with the toe. The larger stones, as specified by the design gradation, should be placed in the toe and along the perimeter of the toe trench. The riprap should be placed with suitable equipment in such a manner as to produce a reasonably graded mass of stones with zero drop height. The placing of stones that cause extensive segregation is not allowed. Where appropriate, a low flow channel shall be constructed through the riprap.
7. Any excavation walls existing along the edges of the completed slope and channel protection should be backfilled and compacted.
8. All disturbed areas should be permanently stabilized in accordance with an approved sediment and erosion control plan.

NOTE: The use of rock vanes (MGWC 3.3: Rock Vanes) should be considered to redirect high-velocity flows at the toe.



FINAL ROAD CONSTRUCTION PLAN
GRADING, SEDIMENT, AND EROSION CONTROL NOTES AND DETAILS
CYPRESS SPRINGS - PHASE 1
 LOTS 1 - 13, OPEN SPACE LOTS 14-17, AND NON-BUILDABLE BULK PARCELS A-D

1ST ELECTION DISTRICT
 DPZ REFERENCES: SP-05-06, PE CASE 374, WP-05-38, SDP-09-061, L 386F 659, L 6232F 574, L 6344F 670, L 4518F 458

PARCELS 42, 44, 45 AND 46
 HOWARD COUNTY, MARYLAND
 ZONED: RED

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS - SURVEYORS - PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410-461-7666
 FAX: 410-461-8961

DESIGN BY: RHW/JCO
 DRAWN BY: JMR
 CHECKED BY: RHW
 DATE: APRIL 2010
 SCALE: AS SHOWN
 W.O. NO.: 04-30

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193
 EXPIRATION DATE: 09-27-2010

6 SHEET OF 17

APPROVED: DEPARTMENT OF PUBLIC WORKS
 DATE: 5-17-10

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 DATE: 6/16/10

APPROVED: DEPARTMENT OF ENVIRONMENT AND WATER MANAGEMENT
 DATE: 5/21/10

BY THE DEVELOPER:
 MICHAEL L. PFAU
 DATE: 4-20-10

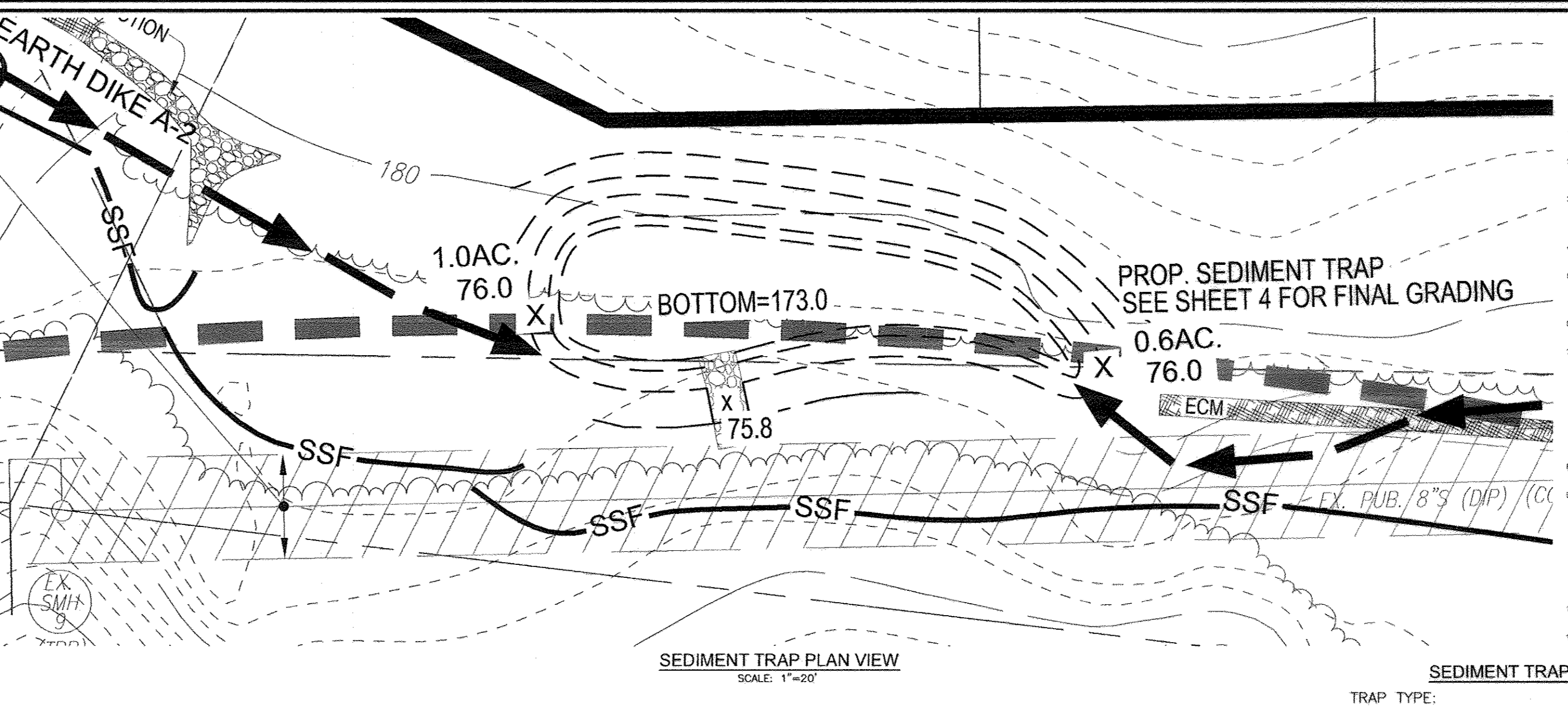
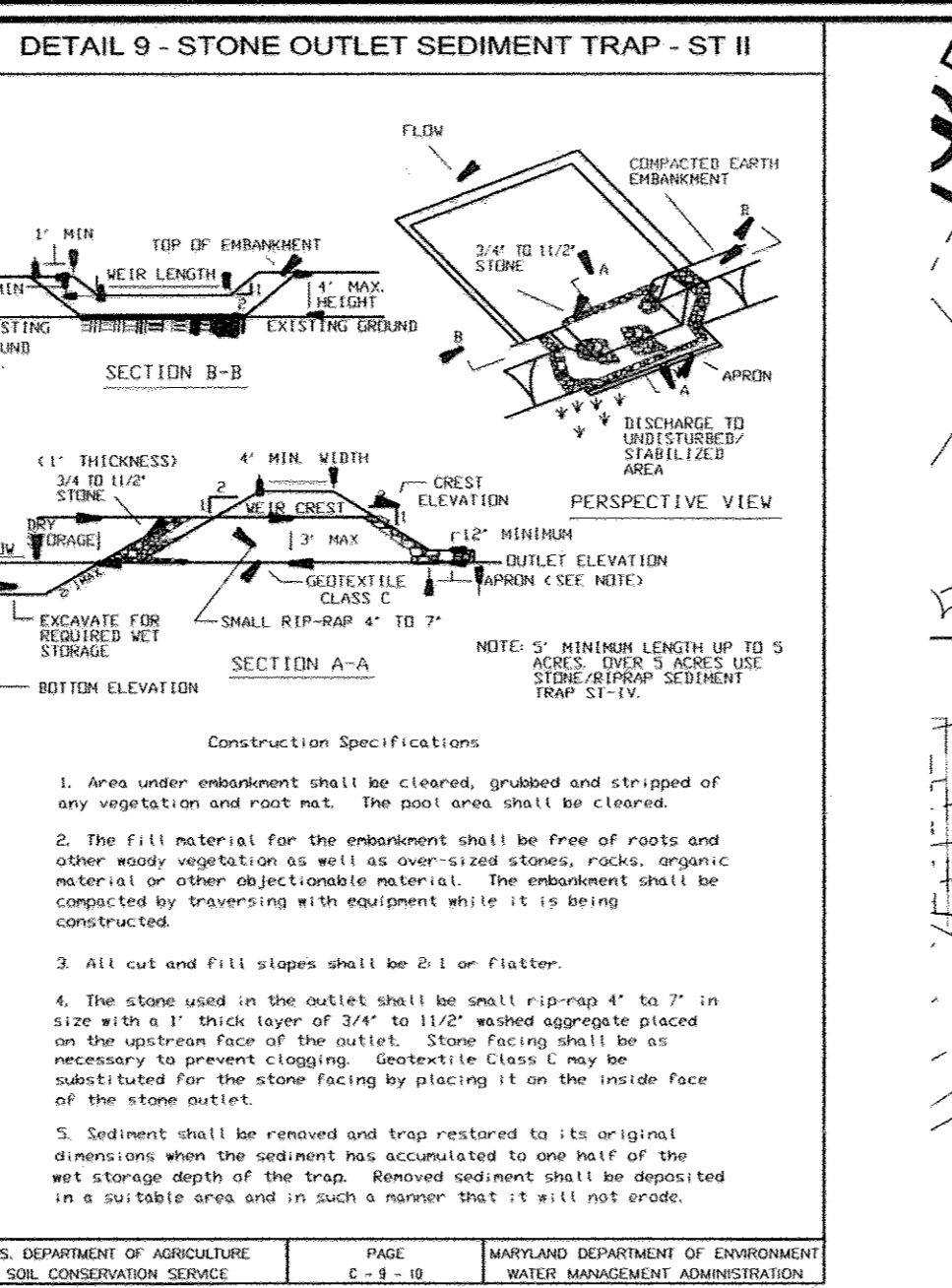
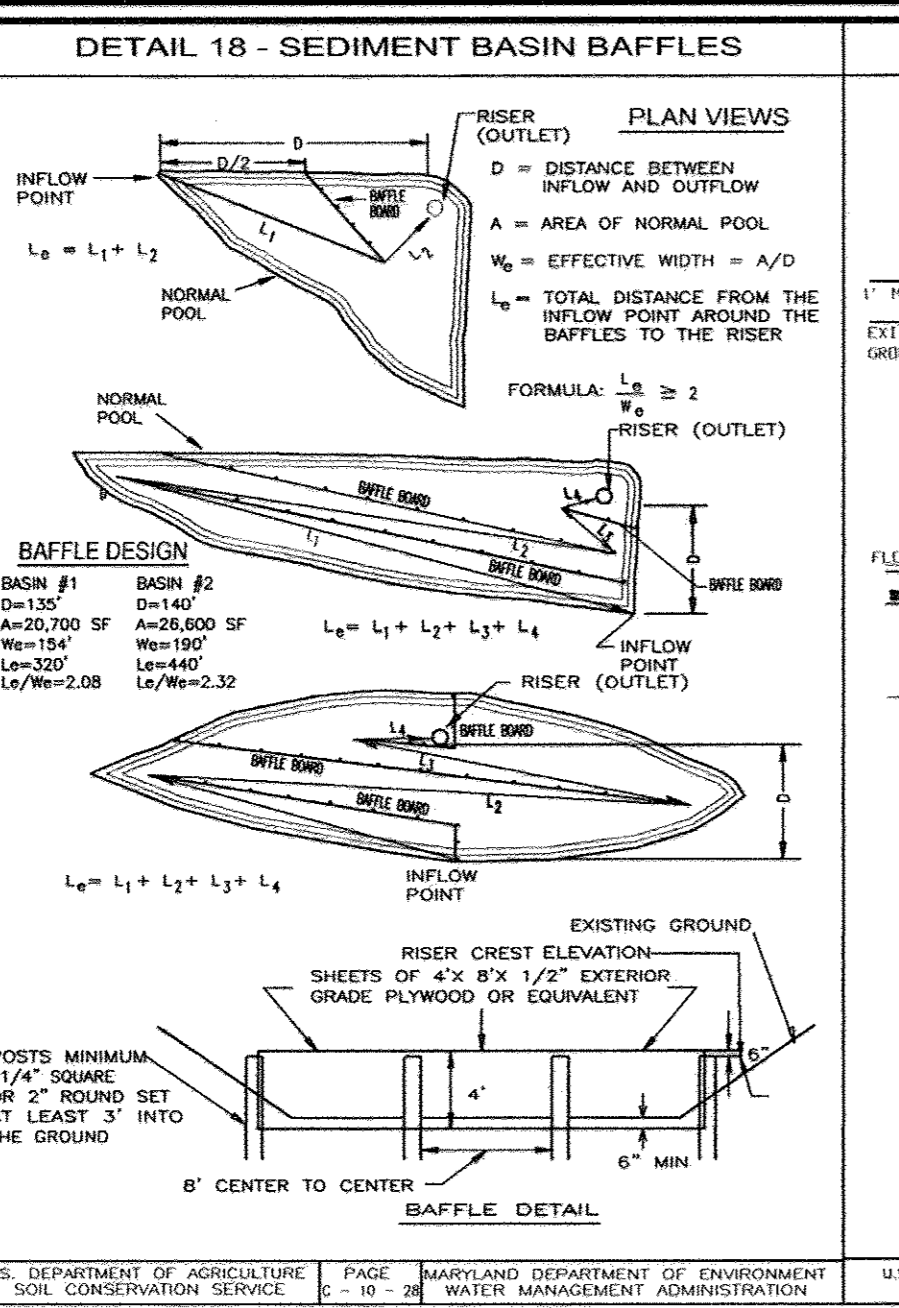
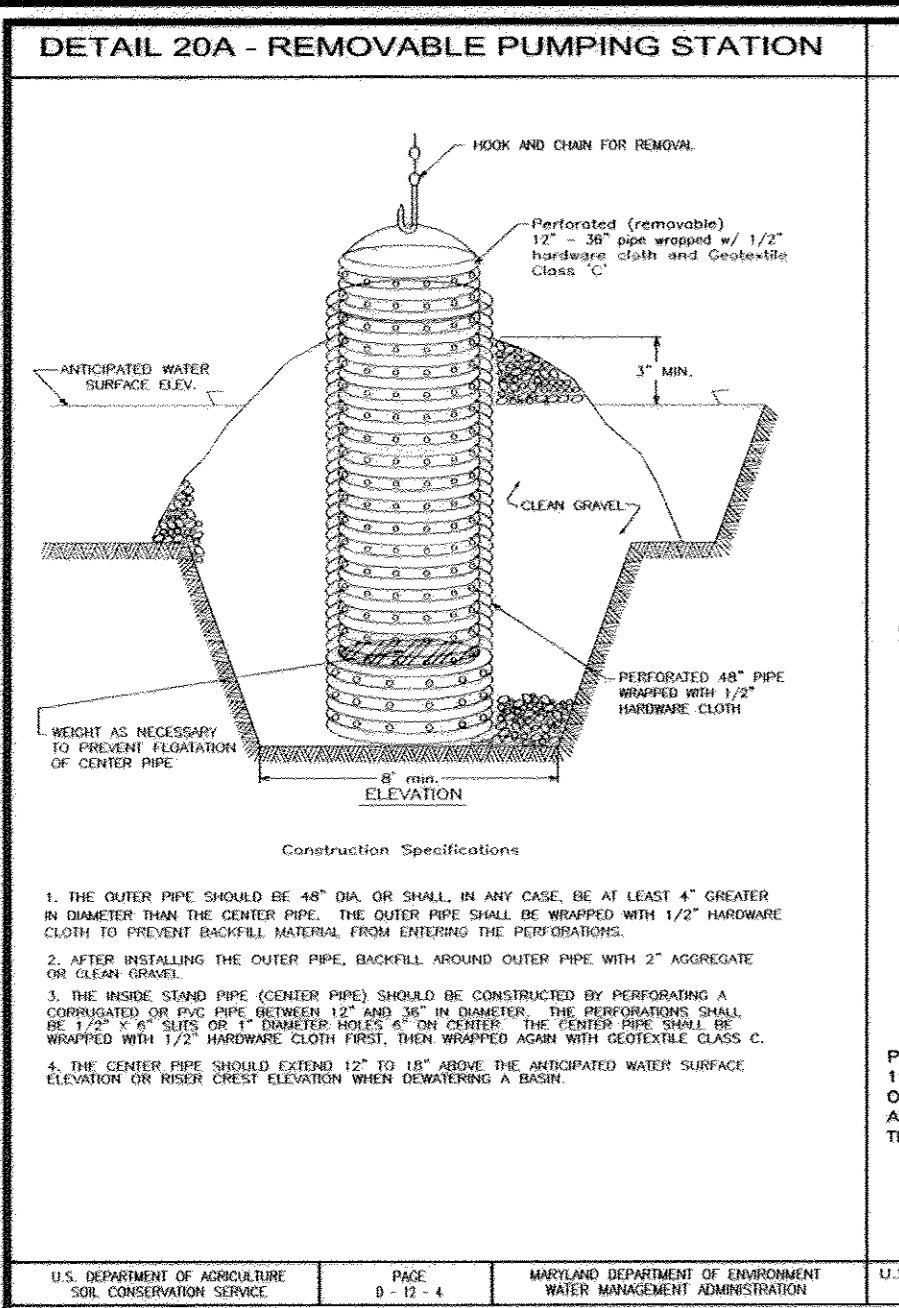
BY THE ENGINEER:
 ROBERT H. VOGEL
 DATE: 5/4/10

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 CONTROL BEGINS THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

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

OWNER / DEVELOPER / CONTRACT PURCHASER
 TRINITY HOMES AT CYPRESS SPRINGS, L.L.C.
 3675 PARK AVENUE, SUITE 301
 ELLICOTT CITY, MARYLAND 21043
 (410) 480-0023

AS-BUILT 8/29/17 F-10-028



BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS

- NO EXCESS FILL, CONSTRUCTION MATERIAL OR DEBRIS SHALL BE STOCK-PILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
- PLACE REMEDIATION IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
- DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL. IF IT CONTAINS TOXIC METALS, PRODUCTS, LIQUIDS, GASES, OILS, OR OTHER HAZARDOUS SUBSTANCES, IT SHOULD BE REMOVED AND STORED AT A LICENSED HAZARDOUS WASTE TREATMENT AND STORAGE FACILITY.
- PLACE HEAVY EQUIPMENT ON MATS OR SUBTLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
- REMOVE AND MAINTAIN ANY NECESSARY STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR PERMANENT MODIFICATION OF THE 100-YEAR FLOODPLAIN IN AREAS THAT ARE NOT OF THE ORIGINAL AUTHORIZED STRUCTURE OR FILL.
- RESTORE ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
- ALL STABILIZATION OF THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES:
ANNUAL HYDROPHYSIS (DIURNAL MULTIFLORUM), MILLET (SETARIA ITALICA), BARLEY HORDEGRASS (HORDEUM VULGARE) AND/OR MAIZE (ZEA MAYS) OR ANNUAL GRASSES. THESE SPECIES SHALL FOLLOW FOR THE ESTABLISHMENT OF THE SITE. WHILE ALSO ALLOWING FOR THE VOLUNTARY ESTABLISHMENT OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE MARYLAND WETLANDS AND WATERWAYS DIVISION. RESTORATION OF THE 100-YEAR FLOODPLAIN SHALL NOT BE LIMITED BY WETLAND OR BUFFER AREAS. THE AREA SHOULD BE LEFT UNDISTURBED TO REDUCE BROWNS AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.
- AFTER RESTORATION HAS BEEN COMPLETED, MAKE POST CONSTRUCTION GRADERS AND ELEVATIONS THE SAME AS THE ORIGINAL GRADERS AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
- TO PROTECT AQUATIC SPECIES, BENTHOSIS WORK IS PROHIBITED AS DETERMINED BY THE MARYLAND WETLANDS AND WATERWAYS DIVISION.
- USE OF WATERWAYS, WATERWAYS WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH APRIL 30, INCLUDING DURING ANY YEAR.
- USE OF WATERWAYS, WATERWAYS WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH APRIL 30, INCLUDING DURING ANY YEAR.
- STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
- GRADES SHALL BE CONSTRUCTED AND ANY RIMPAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE IMPACT OF THE ACTIVITY IS TO IMPROVE WATERWAY.

SEDIMENT TRAP DATA

TRAP TYPE:	TYPE II
PROP. DRAINAGE AREA:	1.87 AC.
WET STORAGE REQUIRED:	3366 CF
WET STORAGE PROVIDED:	3366 CF
DRY STORAGE REQUIRED:	3366 CF
DRY STORAGE PROVIDED:	3366 CF
TOTAL STORAGE REQUIRED:	6732 CF
TOTAL STORAGE PROVIDED:	6732 CF
BOTTOM ELEV.:	173.0
TOP EMBANKMENT ELEV.:	176.8
WEIR ELEVATION:	175.80' WIDE
WET STORAGE ELEVATION:	173.0-174.5
DRY STORAGE ELEVATION:	174.5-175.8

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

PURPOSE
TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETABLE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITIONS WHERE PRACTICE APPLIES
I. THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

II. FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.

CONSTRUCTION AND MATERIAL SPECIFICATIONS
I. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.
II. TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
A. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILTY LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR A SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 AND 1/2" IN DIAMETER.
B. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
III. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.
IV. FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:
I. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.

21.0 STANDARDS AND SPECIFICATIONS FOR TOPSOIL

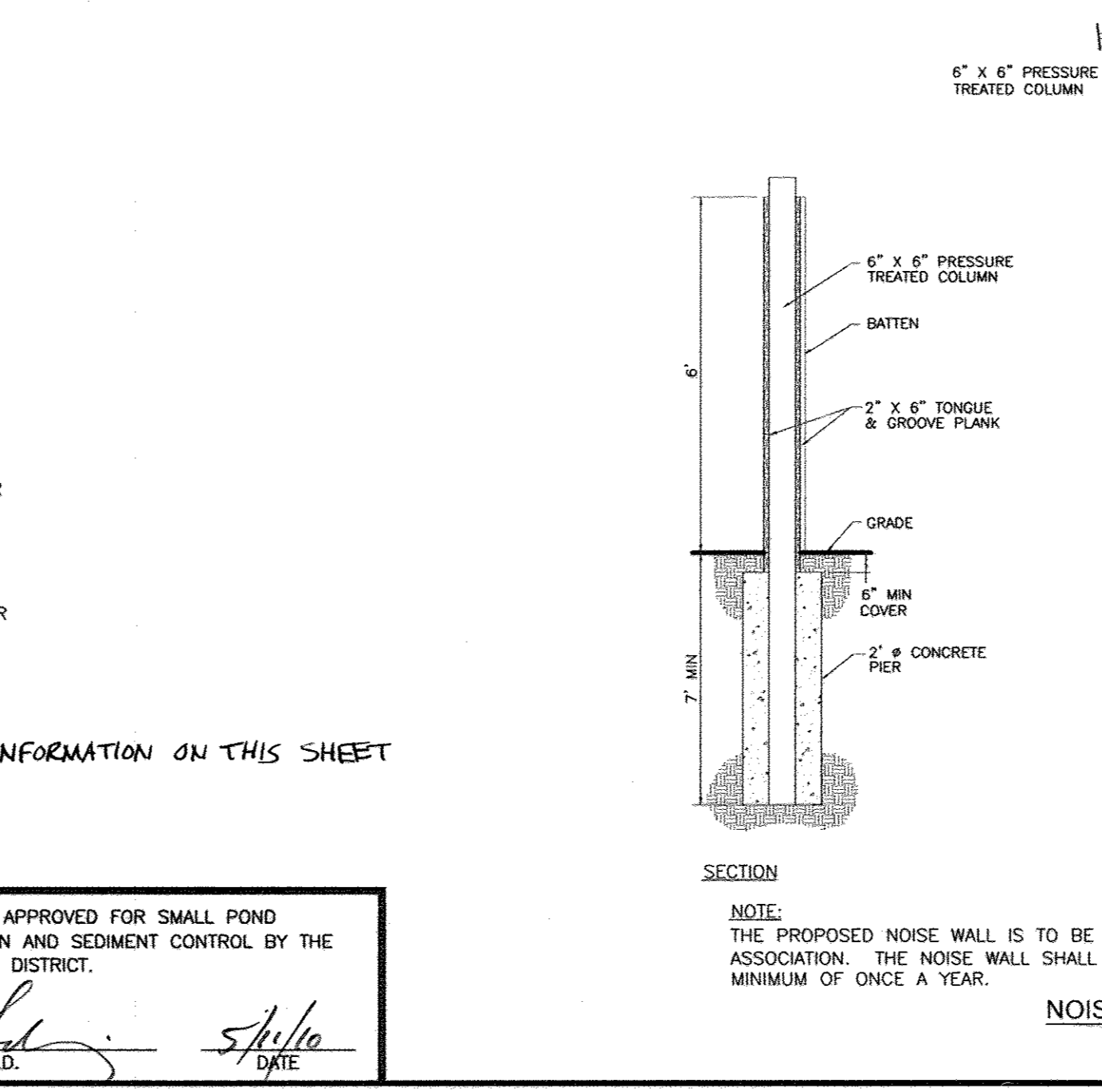
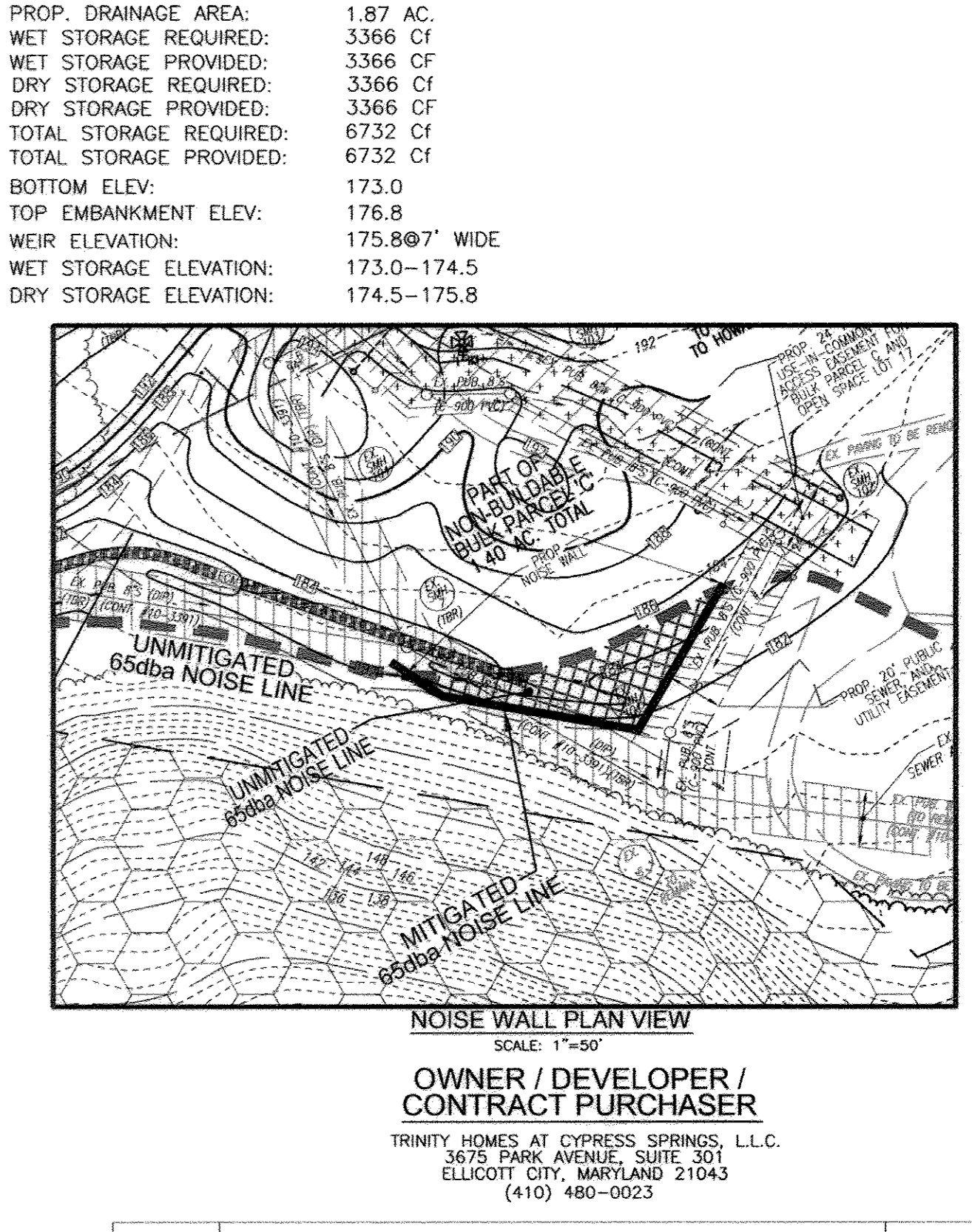
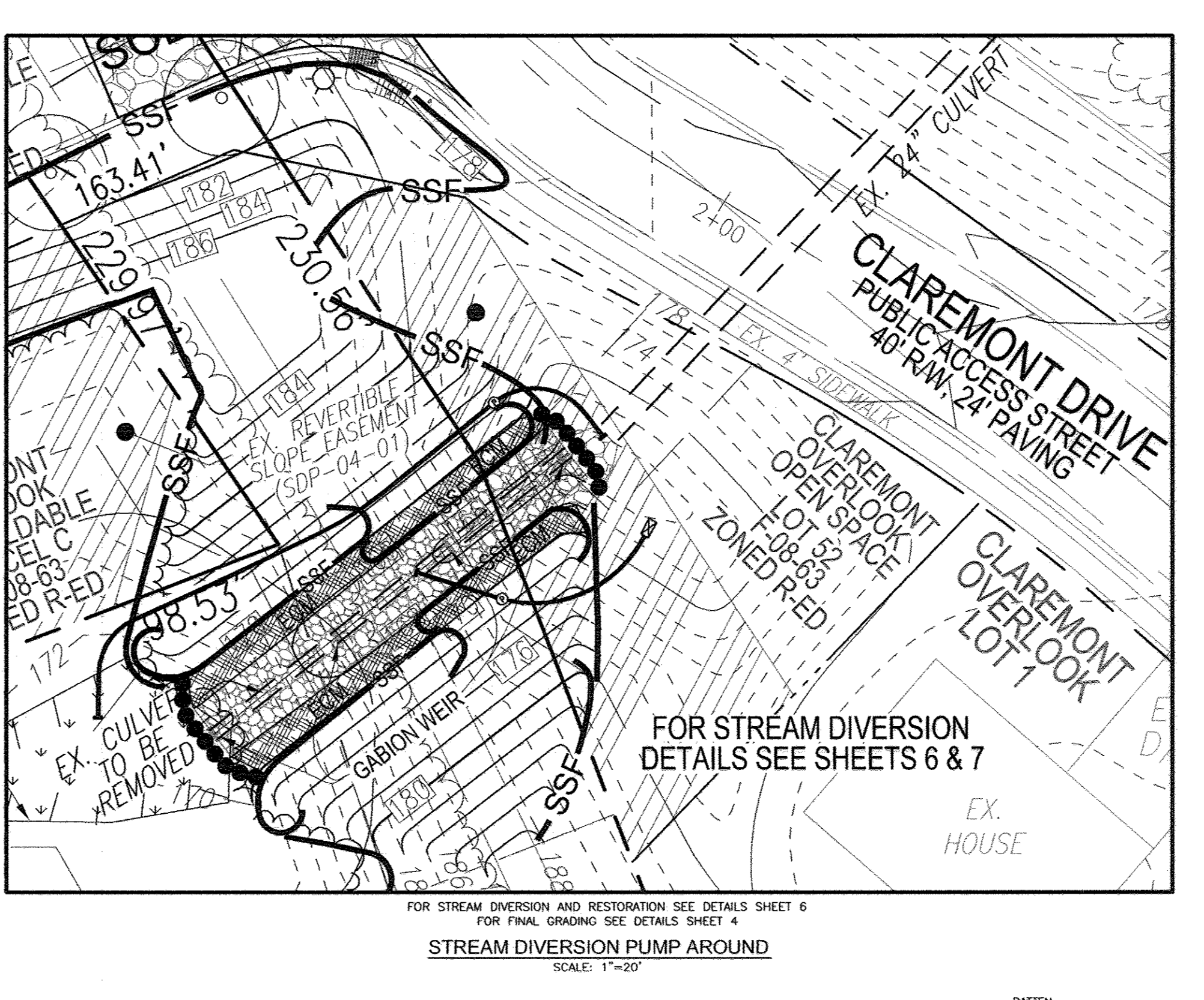
III. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:
I. ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING:
A. PH FOR TOPSOIL SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A PH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PRESCRIBED TO RAISE THE PH TO 6.5 OR HIGHER.
B. ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT.
C. TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED.
D. NO 500 OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
NOTE: TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
II. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.

V. TOPSOIL APPLICATION
I. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.
II. GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBERT 4" - 8" HIGHER IN ELEVATION.
III. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" - 8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SOILING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
IV. TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION. WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDING PREPARATION.

TEMPORARY SEEDING NOTES
SEEDING PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.
SOIL AMENDMENTS: APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.)
SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2 1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS./1000 SQ.FT.) FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (0.7 LBS./1000 SQ.FT.). FOR THE PERIOD NOVEMBER 1 THRU FEBRUARY 29, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.
MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ. FT.) OF UNROTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.
REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT

PERMANENT SEEDING NOTES
APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.
SEEDING PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.
SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:
1) PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./100 SQ.FT.) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT THE TIME OF SEEDING, APPLY 400 LBS. PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS./1000 SQ.FT.).
2) ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ.FT.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.
SEEDING: FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS. PER ACRE (1.4 LBS./1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (.05 LBS./1000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 29, PROTECT SITE BY OPTION (1) 2 TONS PER ACRE WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OPTION (2) USE SOD, OPTION (3) SEED WITH 60 LBS./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.
MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ. FT.) OF UNROTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.
MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

SEDIMENT CONTROL NOTES
1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPT. OF INSPECTION, LICENSE AND PERMITS SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
2. 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.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: (A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3:1; (B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. 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.
5. 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, PERMANENT SEEDING, SOD, TEMPORARY SEEDING, AND MULCHING (SEC. C). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6. 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.
7. SITE ANALYSIS:
TOTAL AREA: 33.10 AC.
AREA DISTURBED: 18.03 AC.
AREA TO BE ROOFTED OR PAVED: 2.90 AC.
AREA TO BE VEGETATIVELY STABILIZED: 16.20 AC.
TOTAL CUT: 68,500 CY.
TOTAL FILL: 68,500 CY.
OFFSITE WASTE/BORROW AREA LOCATION:
8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROL. OTHER EARTH DISTURBANCE OR GRADING, OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11. 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.



FINAL ROAD CONSTRUCTION PLAN
GRADING, SEDIMENT, AND EROSION CONTROL NOTES AND DETAILS
CYPRESS SPRINGS - PHASE 1
LOTS 1 - 13, OPEN SPACE LOTS 14-17, AND NON-BUILDABLE BULK PARCELS A-D

1ST ELECTION DISTRICT MAP 38 BLOCK 3
DPZ REFERENCES: SP-05-06, PB CASE 374, PARCELS 42, 44, 45 AND 46
WP-05-38, SDP-09-061, 1, 386/F 658, HOWARD COUNTY, MARYLAND
E 6232/F 374, L 8344/F 670, L 4518/F 458, ZONED R-FD

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET TEL: 410.461.7666
ELICOTT CITY, MD 21043 FAX: 410.461.9591

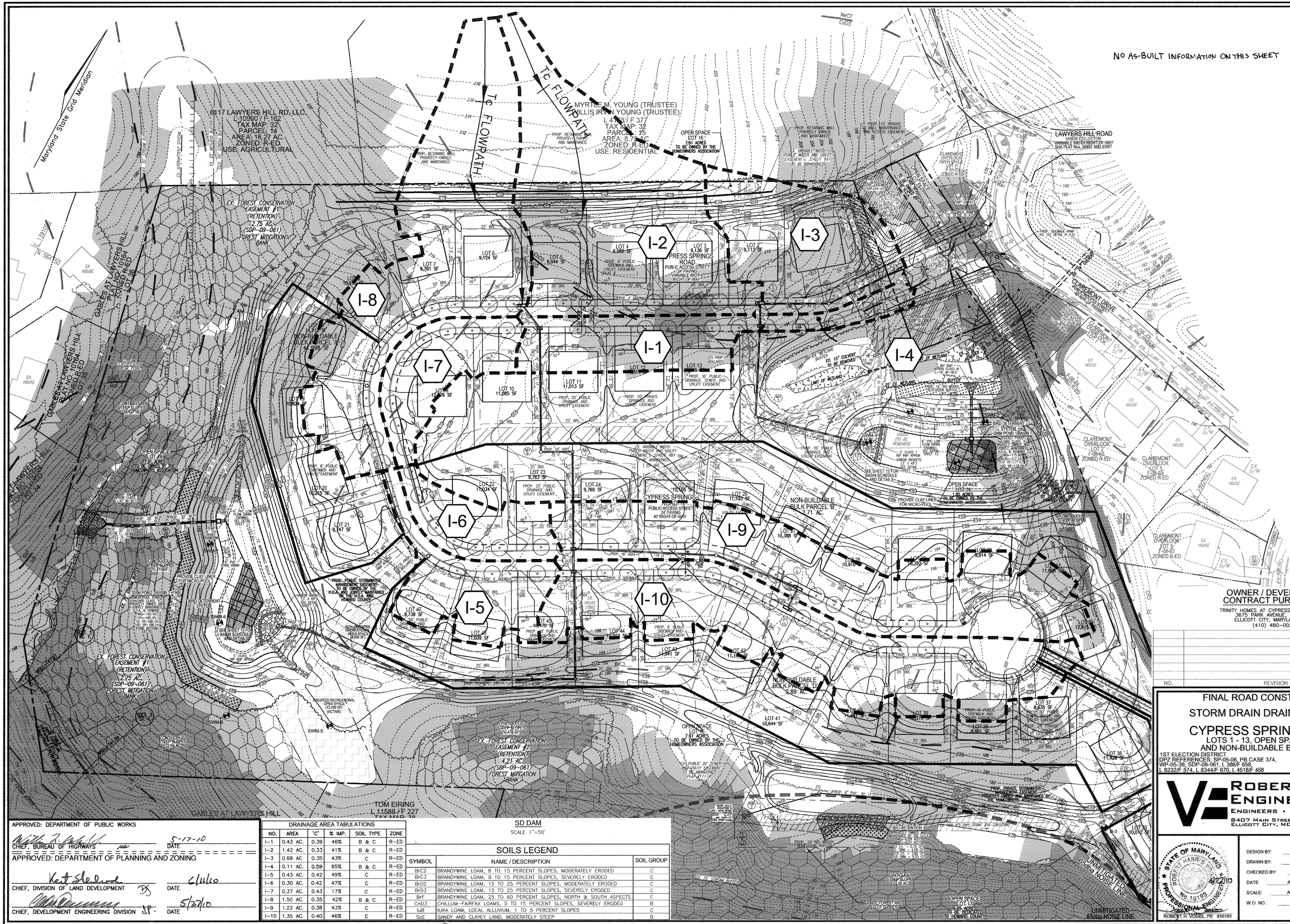
DESIGN BY: RHM/JCO
DRAWN BY: JMR
CHECKED BY: RHM
DATE: APRIL 2010
SCALE: AS SHOWN
W.O. NO.: 04-30

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: 08-27-2010

7 SHEET OF 17

AS-BUILT 8/29/17 F-10-028

APPROVED: DEPARTMENT OF PUBLIC WORKS <i>William R. Williams</i> CHIEF, BUREAU OF HIGHWAYS DATE: 5-17-10	BY THE DEVELOPER: <i>Michael J. Pfa</i> DATE: 4-29-10	BY THE ENGINEER: <i>Robert H. Vogel</i> DATE: 4/27/10
APPROVED: DEPARTMENT OF PLANNING AND ZONING <i>Jeff Schuler</i> CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 6/10/10	CHIEF, DEVELOPMENT ENGINEERING DIVISION <i>John J. ...</i> DATE: 5/20/10	NO AS-BUILT INFORMATION ON THIS SHEET
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.		I HEREBY CERTIFY THAT THIS PLAN FOR SMALL POND CONSTRUCTION, SEDIMENT AND EROSION CONTROL, REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
THIS DEVELOPMENT PLAN IS APPROVED FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.		



NO AS-BUILT INFORMATION ON THIS SHEET

LEGEND	
[Symbol]	RIGHT-OF-WAY
[Symbol]	BOUNDARY LINE
[Symbol]	ADJACENT BOUNDARY LINE
[Symbol]	EXISTING CENTERLINE STREAM
[Symbol]	EXISTING STREAM BANK BUFFER
[Symbol]	EXISTING WETLANDS BUFFER
[Symbol]	EXISTING TREELINE
[Symbol]	EXISTING UTILITY POLE
[Symbol]	EXISTING SIGN
[Symbol]	EXISTING WATER LINE
[Symbol]	EXISTING SEWER LINE
[Symbol]	EXISTING GAS LINE
[Symbol]	EXISTING OVERHEAD LINES
[Symbol]	EXISTING FENCE LINE
[Symbol]	EXISTING CURB LINE
[Symbol]	EXISTING EDGE OF PAVING
[Symbol]	EXISTING LIGHT POLE
[Symbol]	EXISTING MANHOLE
[Symbol]	EXISTING SANITARY CLEANOUT
[Symbol]	EXISTING FIRE HYDRANT
[Symbol]	EXISTING WETLANDS
[Symbol]	EXISTING REVERSIBLE SLOPE EASEMENT (SDP-04-01)
[Symbol]	EX. FOREST CONSERVATION EASEMENT (RETENTION) (SDP-09-061)
[Symbol]	EX. VARIABLE WIDTH PUBLIC UTILITY EASEMENT (L 1240 / F 418) TO BE ANNOUNCED
[Symbol]	EX. PUBLIC SANITARY SEWER EASEMENT (PLAT #11174)
[Symbol]	PROP. 15' PRIVATE AND ACCESS EASEMENT
[Symbol]	PROP. PUBLIC STORMWATER MANAGEMENT EASEMENT
[Symbol]	PROP. PUBLIC STORMWATER AND UTILITY EASEMENT
[Symbol]	PROP. PUBLIC STORMWATER AND UTILITY EASEMENT
[Symbol]	PROP. PRIVATE STORMWATER AND UTILITY EASEMENT
[Symbol]	PROP. NON-CREATED RECREATIONAL OPEN SPACE
[Symbol]	PROP. CREDITED RECREATIONAL OPEN SPACE
[Symbol]	PROP. PUBLIC SEWER WATER AND UTILITY EASEMENT
[Symbol]	EX. PUBLIC 100YR FLOODPLAIN
[Symbol]	PROP. PRIVATE USE-IN-COMMON AND ACCESS EASEMENT
[Symbol]	PROP. STORM DRAIN
[Symbol]	PROP. STORM DRAIN INLET
[Symbol]	PROP. SIDEWALK
[Symbol]	PROP. TREELINE
[Symbol]	PROP. CURB
[Symbol]	EXISTING 10' CONTOUR
[Symbol]	EXISTING 2' CONTOUR
[Symbol]	PROPOSED 10' CONTOUR
[Symbol]	PROPOSED 2' CONTOUR
[Symbol]	PROPOSED SPOT ELEVATION
[Symbol]	AREA OF 15 TO 24.9 PERCENT SLOPES
[Symbol]	AREA OF 25 PERCENT OR GREATER SLOPES
[Symbol]	PROP. DRAINAGE AREA

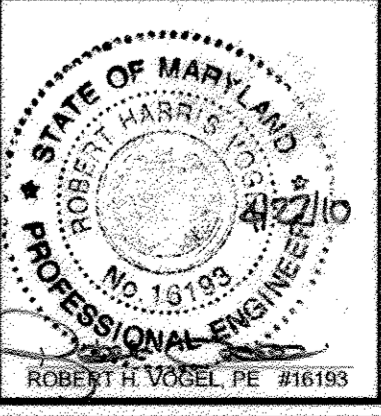
OWNER / DEVELOPER / CONTRACT PURCHASER
 TRINITY HOMES AT CYPRESS SPRINGS, L.L.C.
 3675 PARK AVENUE, SUITE 301
 ELLICOTT CITY, MARYLAND 21043
 (410) 480-0023

NO.	REVISION	DATE

FINAL ROAD CONSTRUCTION PLAN
STORM DRAIN DRAINAGE AREA MAP
CYPRESS SPRINGS - PHASE 1
LOTS 1 - 13, OPEN SPACE LOTS 14-17
AND NON-BUILDABLE BULK PARCELS A-D

1ST ELECTION DISTRICT TAX MAP 38 BLOCK 3
 DPZ REFERENCES: SP-05-06, PB CASE 374, PARCELS 42, 44, 45 AND 46
 WF-05-38, SDP-08-061, L 3864F 659, HOWARD COUNTY, MARYLAND
 L 8232F 374, L 8344F 670, L 4518F 458 ZONED: R-ED

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET TEL: 410.461.7666
 ELLICOTT CITY, MD 21043 FAX: 410.461.8951



DESIGN BY: RHV/UCO
 DRAWN BY: JMR
 CHECKED BY: RHV
 DATE: APRIL 2010
 SCALE: AS SHOWN
 W.O. NO.: 04-30

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: 09-27-2010

8 SHEET OF 17

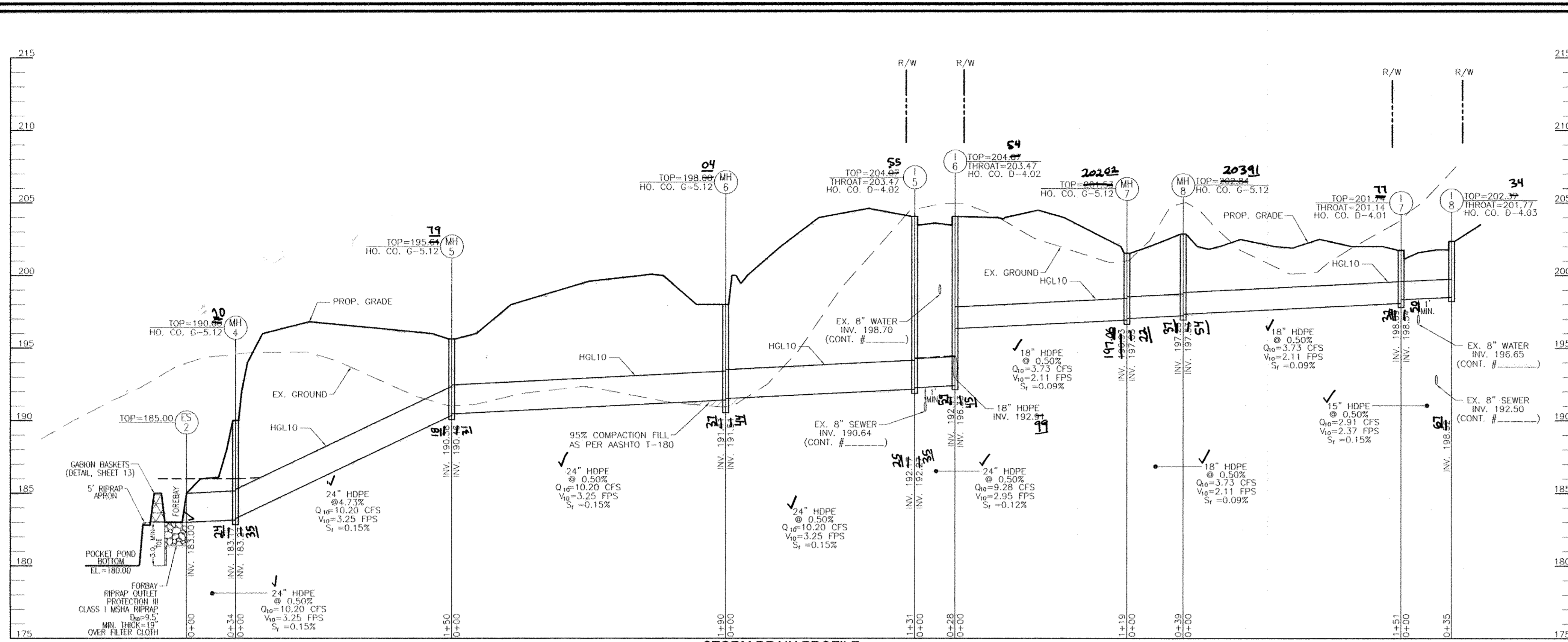
APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] DATE: 5-17-10
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] DATE: 5/27/10
 CHIEF, DIVISION OF LAND DEVELOPMENT

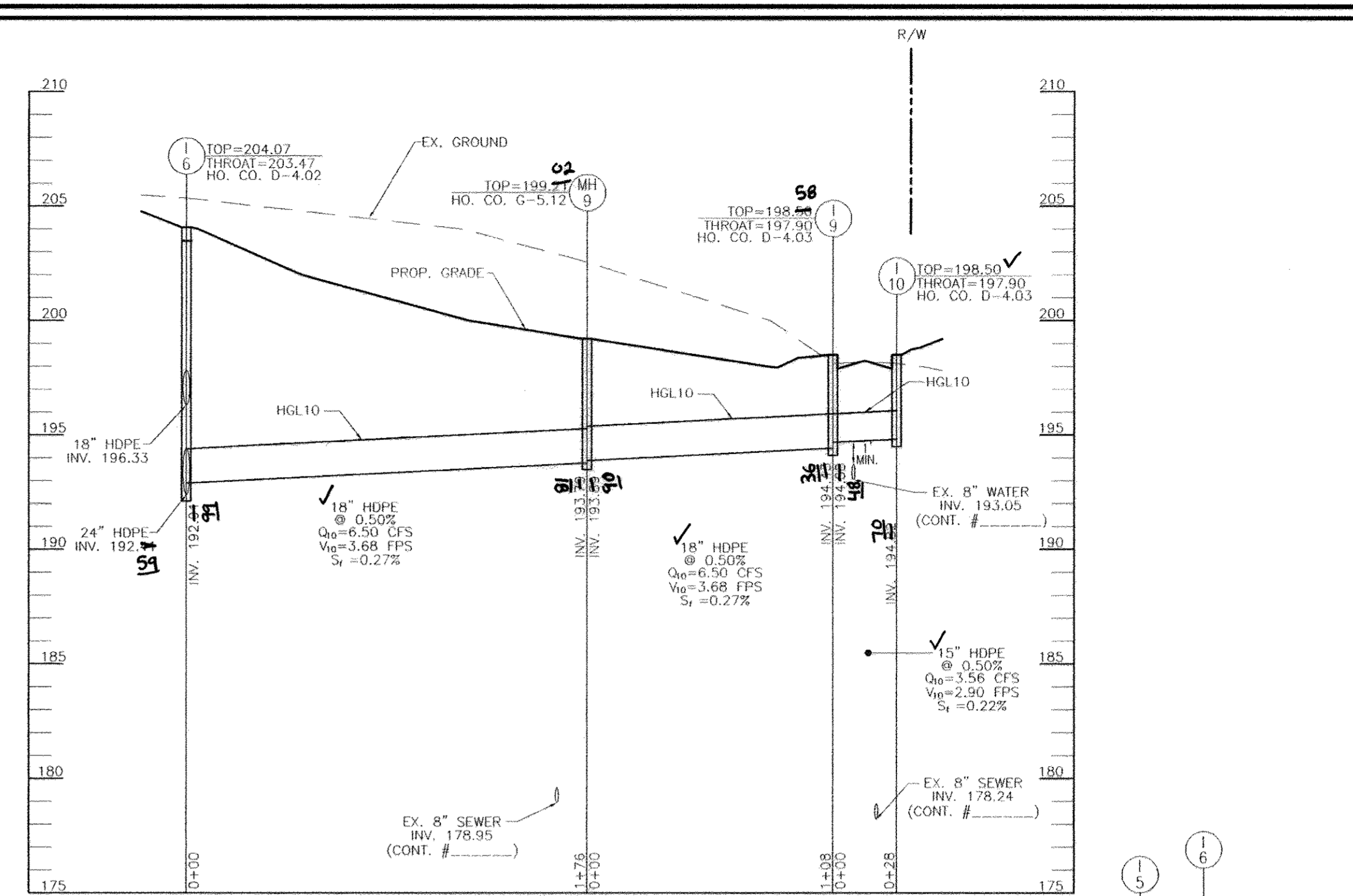
CHIEF, DEVELOPMENT ENGINEERING DIVISION [Signature] DATE: 5/27/10

DRAINAGE AREA TABULATIONS					
NO.	AREA	'C'	% IMP.	SOIL TYPE	ZONE
I-1	0.43 AC.	0.39	46%	B & C	R-ED
I-2	1.42 AC.	0.33	41%	B & C	R-ED
I-3	0.68 AC.	0.35	43%	C	R-ED
I-4	0.11 AC.	0.59	65%	B & C	R-ED
I-5	0.43 AC.	0.42	49%	C	R-ED
I-6	0.30 AC.	0.42	47%	C	R-ED
I-7	0.37 AC.	0.43	17%	C	R-ED
I-8	1.50 AC.	0.35	42%	B & C	R-ED
I-9	1.22 AC.	0.38	43%	C	R-ED
I-10	1.35 AC.	0.40	46%	C	R-ED

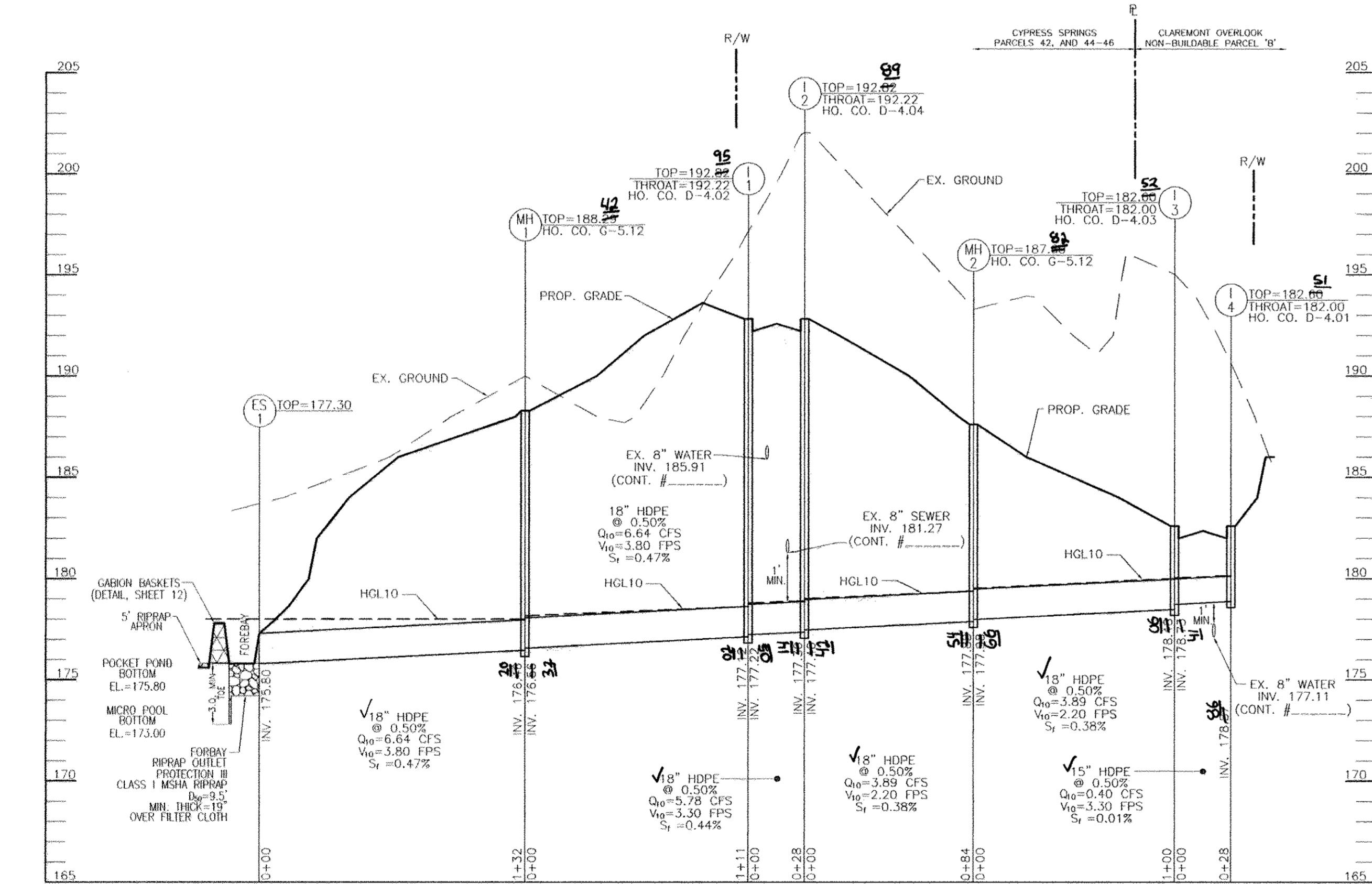
SOILS LEGEND		
SYMBOL	NAME / DESCRIPTION	SOIL GROUP
BcC2	BRANDYWINE LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	C
BcC3	BRANDYWINE LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED	C
BdD2	BRANDYWINE LOAM, 15 TO 25 PERCENT SLOPES, MODERATELY ERODED	C
BdD3	BRANDYWINE LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED	C
BfF	BRANDYWINE LOAM, 25 TO 60 PERCENT SLOPES, NORTH & SOUTH ASPECTS	C
CdC3	CHILLUM-FAIRFAX LOAMS, 5 TO 15 PERCENT SLOPES, SEVERELY ERODED	B
IuB	IUKA LOAM, LOCAL ALLUVIUM, 1 TO 5 PERCENT SLOPES	C
ScE	SANDY AND CLAYEY LAND, MODERATELY STEEP	B



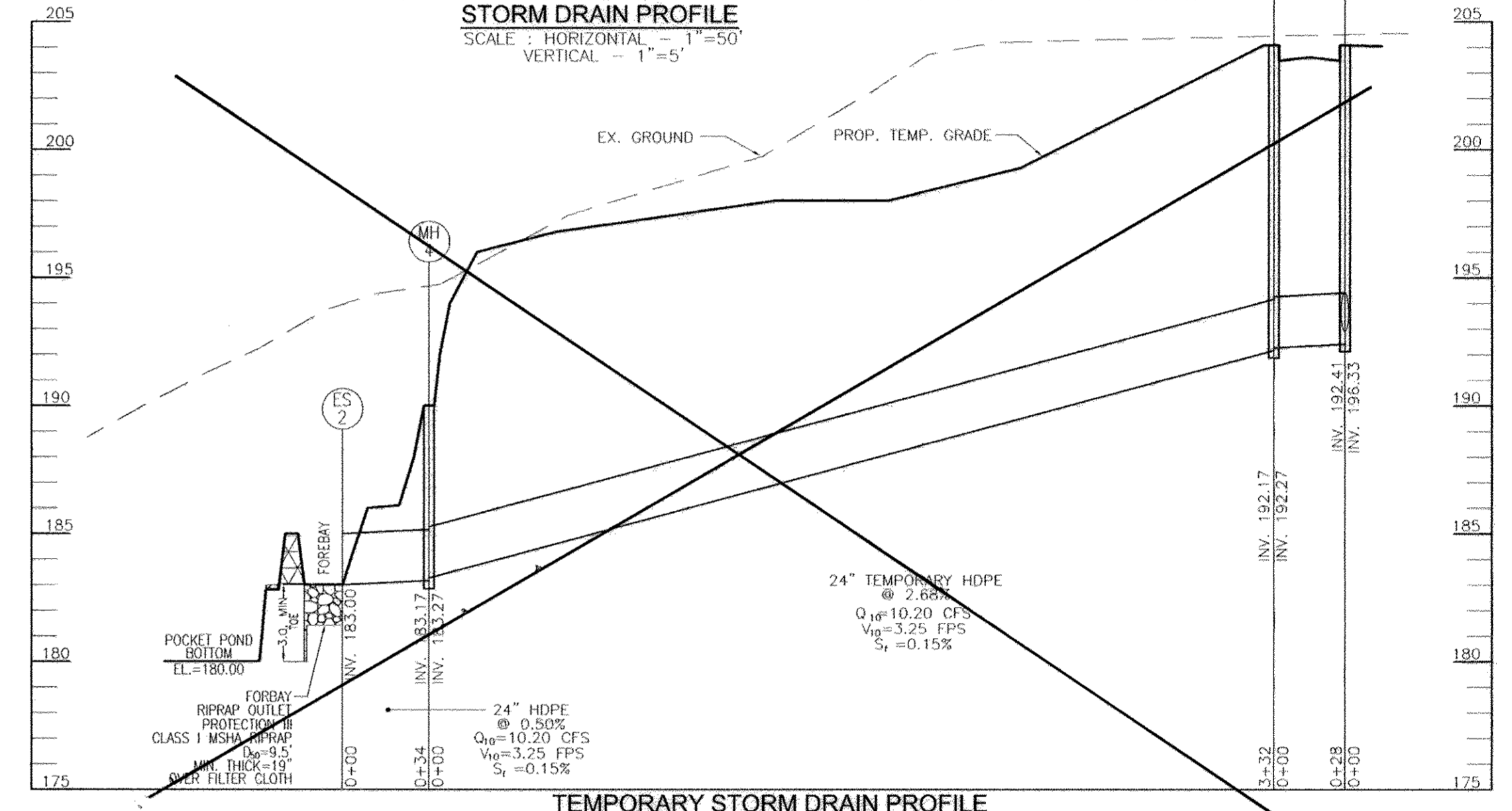
STORM DRAIN PROFILE
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



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



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



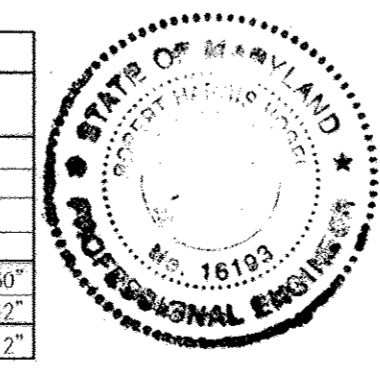
TEMPORARY STORM DRAIN PROFILE
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

PIPE SCHEDULE		
PIPE SIZE	TYPE	TOTAL LENGTH
6"	PVC	263 LF
15"	HDPE	89 LF
18"	HDPE	1,025 LF
24"	HDPE	551 LF
30"	RCP	191 LF

STORM DRAIN MANHOLE SCHEDULE						
NO.	TYPE	LOCATION	TOP ELEV.	INV. IN	INV. OUT	COMMENTS
MH-1	STANDARD 4' MANHOLE PRECAST	N 564384.35 E 1391874.44	188.22	176.43	176.43	HO. CO. DETAIL G-5.12
MH-2	STANDARD 4' MANHOLE PRECAST	N 564548.23 E 1391888.55	187.48	177.54	177.54	HO. CO. DETAIL G-5.12
MH-3A	STANDARD 4' MANHOLE PRECAST	N 563906.51 E 1391262.32	174.00	165.50	163.42	HO. CO. DETAIL G-5.12
MH-3B	STANDARD 4' MANHOLE PRECAST	N 563929.27 E 1391299.98	184.62	175.00	172.70	HO. CO. DETAIL G-5.12
MH-4	STANDARD 4' MANHOLE PRECAST	N 563895.79 E 1391514.57	190.22	183.35	183.35	HO. CO. DETAIL G-5.12
MH-5	STANDARD 4' MANHOLE PRECAST	N 563906.80 E 1391664.02	185.00	190.40	190.40	HO. CO. DETAIL G-5.12
MH-6	STANDARD 4' MANHOLE PRECAST	N 563992.58 E 1391830.29	182.22	191.24	191.24	HO. CO. DETAIL G-5.12
MH-7	STANDARD 4' MANHOLE PRECAST	N 564240.73 E 1391898.38	202.22	197.40	197.40	HO. CO. DETAIL G-5.12
MH-8	STANDARD 4' MANHOLE PRECAST	N 564222.14 E 1391662.40	202.22	197.40	197.40	HO. CO. DETAIL G-5.12
MH-9	STANDARD 4' MANHOLE PRECAST	N 564212.31 E 1391911.71	199.22	193.20	193.20	HO. CO. DETAIL G-5.12

INLET SCHEDULE							
NO.	TYPE	LOCATION	TOP ELEV.	INV. IN	INV. OUT	TROAT ELEV.	COMMENTS
I-1	TYPE 'A'-5' INLET	CL CYPRESS SPRINGS ROAD STA 34+27.71 12' LT	192.22	177.50	177.44	182.22	HO. CO. DETAIL D-4.02 - CAST IN PLACE
I-2	TYPE 'A'-10' INLET	CL CYPRESS SPRINGS ROAD STA 34+27.71 12' RT	192.22	177.44	177.44	192.22	HO. CO. DETAIL D-4.04 - CAST IN PLACE
I-3	TYPE 'A'-10' INLET	CL CYPRESS SPRINGS ROAD STA 14+30.21 12' RT	182.22	178.25	178.44	182.00	HO. CO. DETAIL D-4.03
I-4	TYPE 'A'-5' INLET	CL CYPRESS SPRINGS ROAD STA 14+30.21 12' LT	182.22	178.25	178.25	182.00	HO. CO. DETAIL D-4.01
I-5	TYPE 'A'-5' INLET	CL CYPRESS SPRINGS ROAD STA 12+22.02 12' RT	204.22	192.22	192.22	203.47	HO. CO. DETAIL D-4.02 - CAST IN PLACE
I-6	TYPE 'A'-5' INLET	CL CYPRESS SPRINGS ROAD STA 12+22.02 12' LT	204.22	192.22	192.22	203.47	HO. CO. DETAIL D-4.02 - CAST IN PLACE
I-7	TYPE 'A'-5' INLET	CL CYPRESS SPRINGS ROAD STA 5+98.21 12' LT	201.44	198.25	198.40	201.14	HO. CO. DETAIL D-4.01
I-8	TYPE 'A'-10' INLET	CL CYPRESS SPRINGS ROAD STA 6+19.04 12' RT	202.22	198.40	198.40	201.77	HO. CO. DETAIL D-4.03
I-9	TYPE 'A'-10' INLET	CL CYPRESS SPRINGS ROAD STA 14+86.16 12' LT	198.22	194.36	194.36	198.00	HO. CO. DETAIL D-4.03
I-10	TYPE 'A'-10' INLET	CL CYPRESS SPRINGS ROAD STA 14+86.16 12' RT	198.22	194.36	194.36	198.00	HO. CO. DETAIL D-4.03

STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	TOP ELEV.	INV. IN	INV. OUT	COMMENTS
CS-1	CONTROL STRUCTURE	N 564485.15 E 1392120.98	SEE DETAIL SHEET 12			SEE DETAIL SHEET 12
CS-2	CONTROL STRUCTURE	N 563981.37 E 1391352.94	SEE DETAIL SHEET 13			SEE DETAIL SHEET 13
ES-1	18" END SECTION	N 564416.90 E 1392002.16	172.22	175.80	HDPE PIPE	
ES-2	24" END SECTION	N 563884.64 E 1391482.25	185.00	183.00	HDPE PIPE	
ES-3	30" END SECTION	N 564530.78 E 1392098.12	175.00	172.50	HO. CO. DETAIL D-5.51 - 30"	
HW-1	TYPE 'A' HEADWALL-42"	N 563893.09 E 1391232.17	163.23	158.23	HO. CO. DETAIL D-5.11 - 42"	
HW-2	TYPE 'C' HEADWALL-12"	N 563893.53 E 1392096.71	171.44	169.44	HO. CO. DETAIL D-5.21 - 12"	



I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

DATE: 8/29/17

APPROVED: DEPARTMENT OF PUBLIC WORKS
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 DATE: 5-17-10
 DATE: 6/1/10
 DATE: 5/2/10

OWNER / DEVELOPER / CONTRACT PURCHASER
 TRINITY HOMES AT CYPRESS SPRINGS, L.L.C.
 3675 PARK AVENUE, SUITE 301
 ELLICOTT CITY, MARYLAND 21043
 (410) 480-0023

NO.	REVISION	DATE

FINAL ROAD CONSTRUCTION PLAN
STORM DRAIN PROFILES
CYPRESS SPRINGS - PHASE 1
 LOTS 1 - 13, OPEN SPACE LOTS 14-17,
 AND NON-BUILDABLE BULK PARCELS A-D

1ST ELECTION DISTRICT
 DPZ REFERENCES: SP-05-06, PB CASE 374, PARCELS 42, 44, 45 AND 46
 WP-05-38, SDP-09-061, L 386/F 688, HOWARD COUNTY, MARYLAND
 L 8232/F 574, L 8344/F 670, L 4518/F 458, ZONED: R-ED

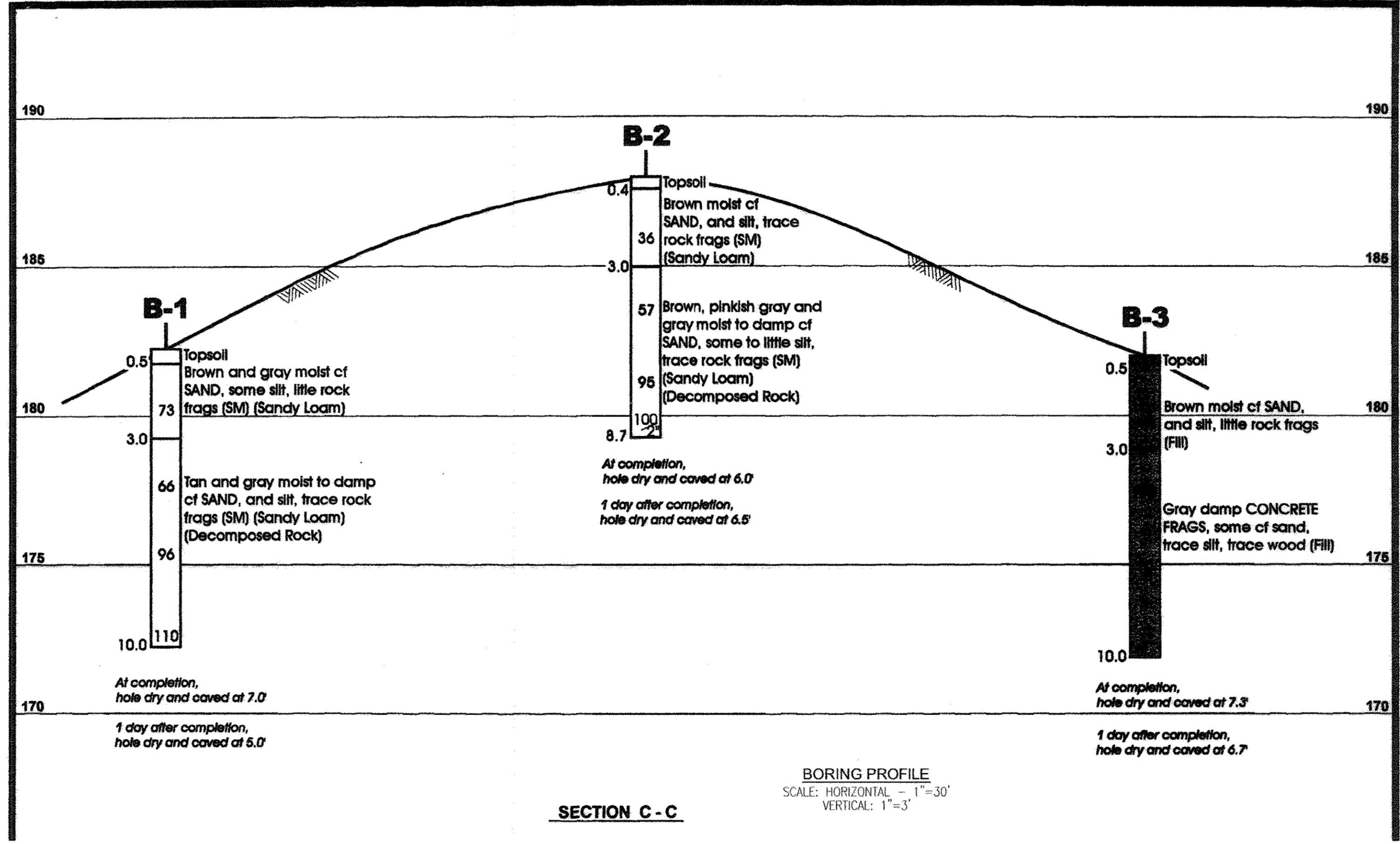
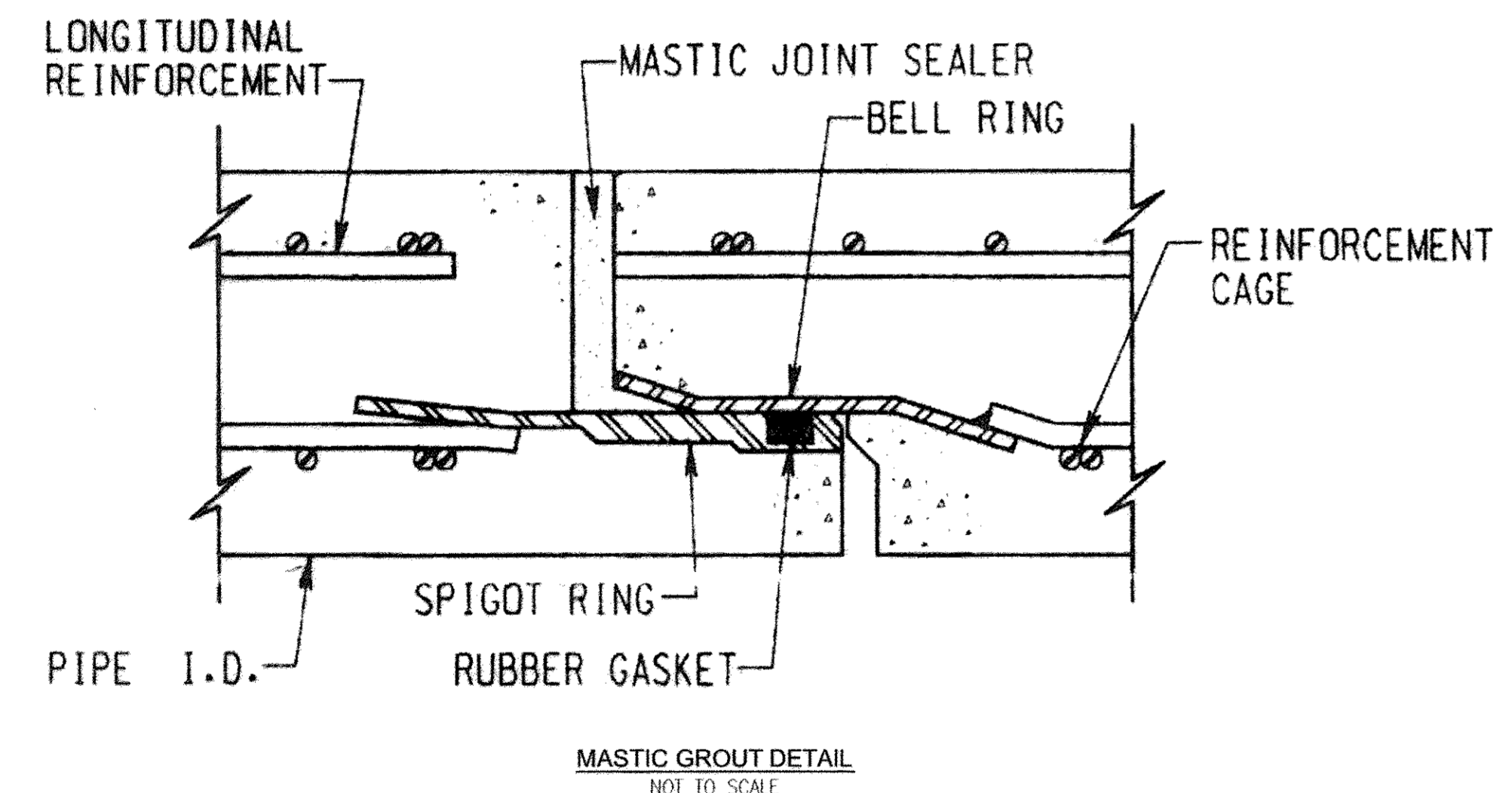
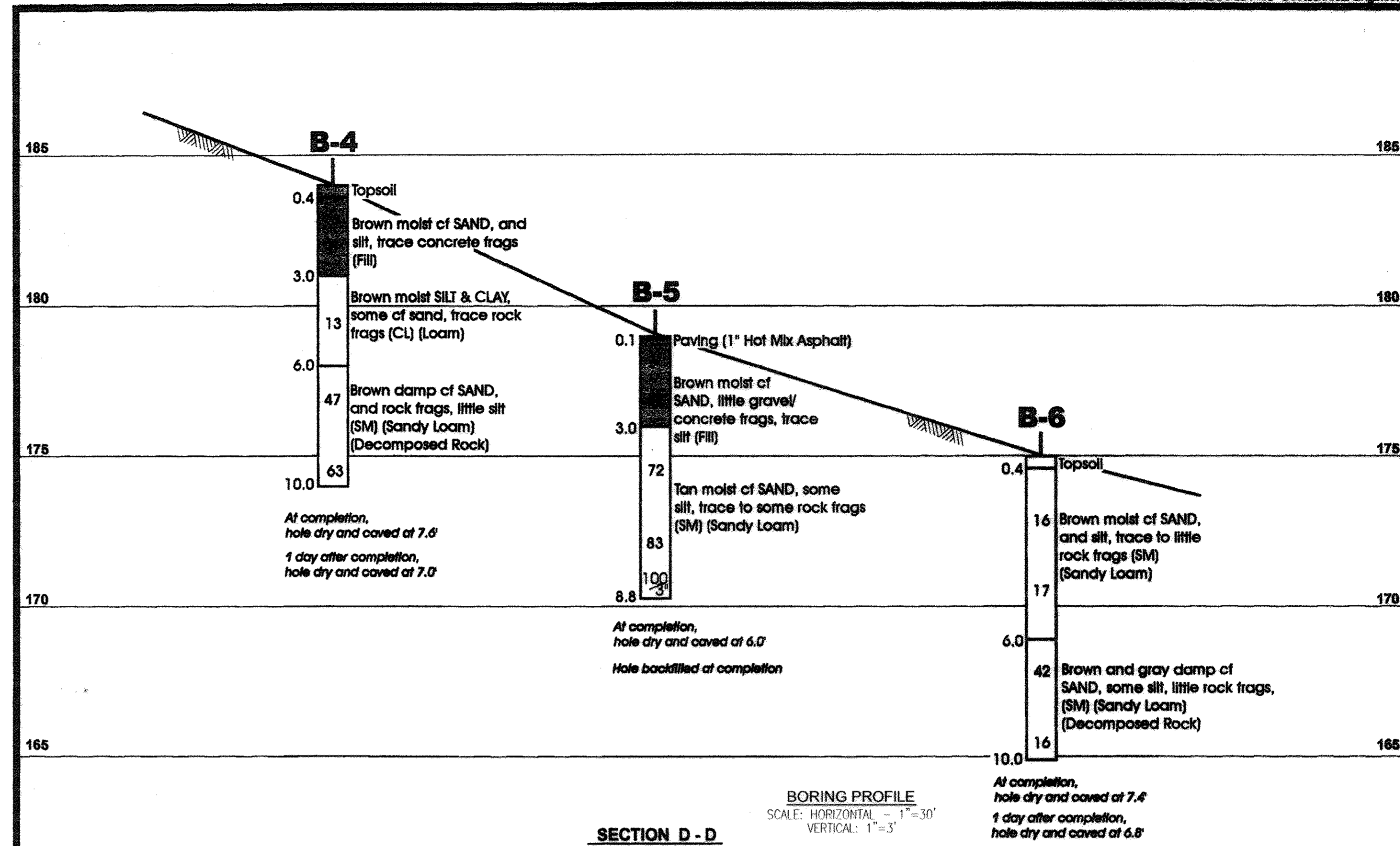
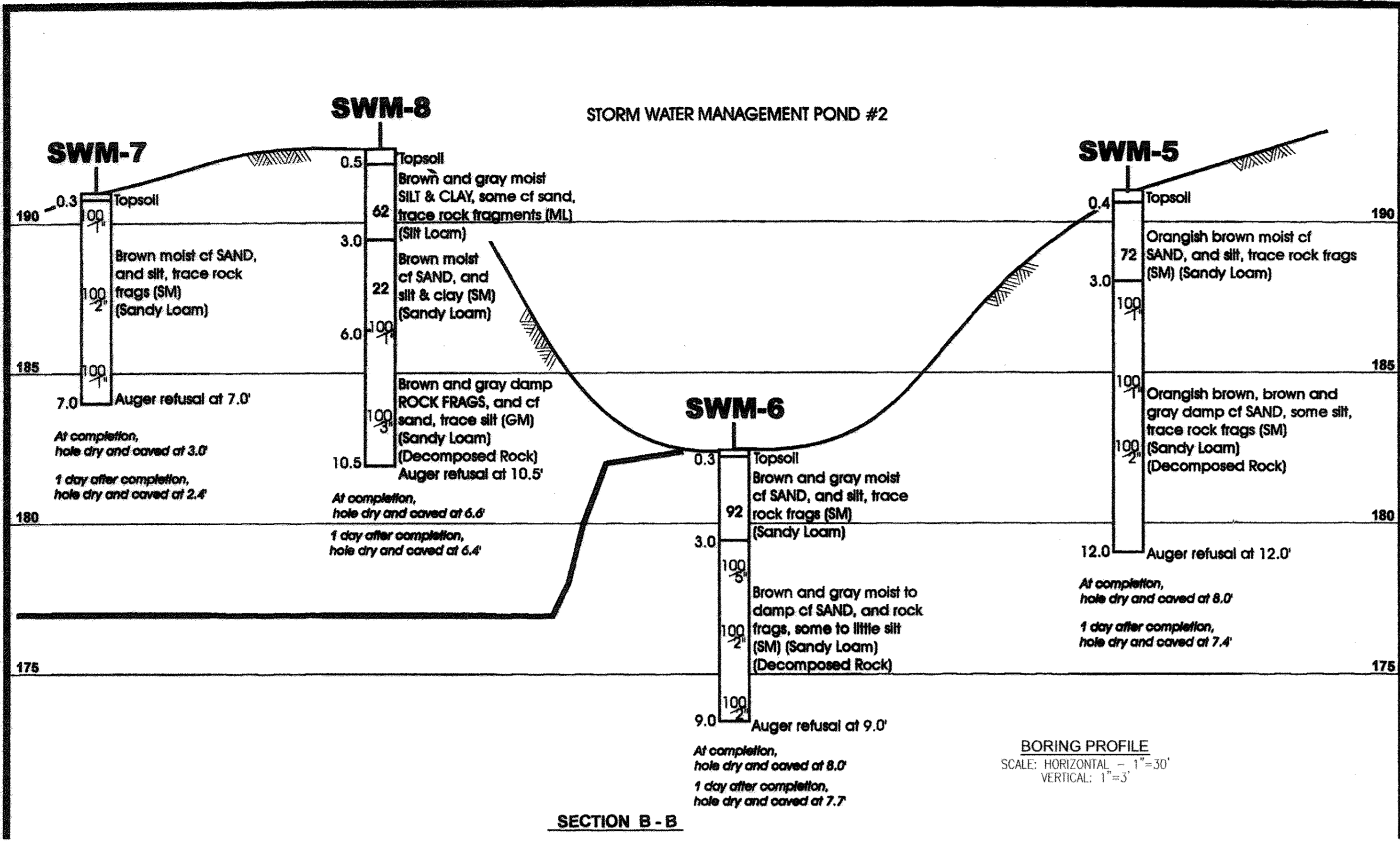
ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410-461-7666 FAX: 410-461-8961

DESIGN BY: RHW/JCO
 DRAWN BY: JMR
 CHECKED BY: RHW
 DATE: APRIL 2010
 SCALE: AS SHOWN
 W.O. NO.: 04-30

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193
 EXPIRATION DATE: 09-27-2010

9 SHEET OF 17

AS-BUILT 8/29/17 F-10-028



OWNER / DEVELOPER / CONTRACT PURCHASER
TRINITY HOMES AT CYPRESS SPRINGS, L.L.C.
3675 PARK AVENUE, SUITE 301
ELLCOTT CITY, MARYLAND 21043
(410) 480-0023

NO.	REVISION	DATE

FINAL ROAD CONSTRUCTION PLAN
STORMWATER MANAGEMENT
NOTES, DETAILS, AND BORING PROFILES
CYPRESS SPRINGS - PHASE 1
LOTS 1 - 13, OPEN SPACE LOTS 14-17,
AND NON-BUILDABLE BULK PARCELS A-D

1ST ELECTION DISTRICT TAX MAP 38 BLOCK 3
DPZ REFERENCES: SP-05-06, PB CASE 374. PARCELS 42, 44, 45 AND 46
WP-05-38, SDP-09-061, L 386/F 639. HOWARD COUNTY, MARYLAND
L 8252/F 574, L 8344/F 570, L 4518/F 458

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET TEL: 410-461-7666
ELLCOTT CITY, MD 21043 FAX: 410-461-8961

APPROVED: DEPARTMENT OF PUBLIC WORKS
William J. McCall DATE: 5-17-10
CHIEF, BUREAU OF HIGHWAYS
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Kentley Deane DATE: 6/1/10
CHIEF, DIVISION OF LAND DEVELOPMENT
Michael Pfauf DATE: 5/27/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION

BY THE DEVELOPER:
"I/WE CERTIFY THAT ALL DEVELOPEMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."
Michael Pfauf DATE: 4-30-10
MICHAEL J. PFAUF

BY THE ENGINEER:
"I HEREBY CERTIFY THAT THIS PLAN FOR SMALL POND CONSTRUCTION, SEDIMENT AND EROSION CONTROL, REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."
THIS DEVELOPMENT PLAN IS APPROVED FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Robert H. Vogel DATE: 4/27/10
ROBERT H. VOGEL

NOTE: DEBRIS IS TO BE KEPT OUT OF STORMWATER MANAGEMENT FACILITIES DURING AND AFTER CONSTRUCTION.
Howard S.C.D. DATE: 5/1/10
HOWARD S.C.D.

NO AS-BUILT INFORMATION ON THIS SHEET

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193
EXPIRATION DATE: 09-27-2010

DESIGN BY: RHW/JCO
DRAWN BY: JMR
CHECKED BY: RHW
DATE: APRIL 2010
SCALE: AS SHOWN
W.O. NO.: 04-30

10 SHEET OF 17

MARYLAND 378 STORMWATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS CONSTRUCTION SPECIFICATIONS

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

Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative.

Earth Fill

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6" frozen or other objectionable materials.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each fill shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepfoot, rubber tired or vibratory roller.

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within +/- 2% of the optimum.

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans.

Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet.

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 four inches in thickness and compacted by hand tampers or other manually directed compaction equipment.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified.

Backfill (flowable fill) shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

Pipe Conduits

All pipes shall be circular in cross section.

Corrugated Metal Pipe

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of ASHTO Specification M-196 or M-211 with watertight coupling bands or flanges.

Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of ASHTO Specification M-274 with watertight coupling bands or flanges.

OPERATION AND MAINTENANCE SCHEDULE FOR STORMWATER MANAGEMENT EXTENDED DETENTION FACILITY

STORMWATER MANAGEMENT FACILITY, JOINTLY MAINTAINED ROUTINE MAINTENANCE, BY H.O.A.

- 1. FACILITY WILL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF IT IS FUNCTIONING PROPERLY.

- 1. 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.

- 1. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE WITH A SPRING PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.

- 1. SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE RESERVOIR STORAGE, INTERFERES WITH THE FUNCTION OF THE RISER, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

- 1. FACILITY WILL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF IT IS FUNCTIONING PROPERLY.

- 1. 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.

POND BOTTOM SOIL CONDITIONS

If broken rock fragments are encountered at finished pond bottom, under cut a minimum of 12" below basin grade and to a horizontal distance of at least 18" beyond each edge of the broken rock and backfill with fine-grained ML or CL soils compacted to a firm condition.

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 USA, SC5 "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378).

- 1. Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of ASHTO Specification M-196 or M-211 with watertight coupling bands or flanges.

- 2. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal.

- 3. Connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal.

- 4. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

- 5. Backfilling shall conform to "Structure Backfill."

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

- 1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-391.

- 2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches.

- 3. Laying Pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material.

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

- 1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241.

- 2. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

- 3. Laying Pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material.

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

- 1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-391.

- 2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches.

- 3. Laying Pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material.

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

- 1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-391.

- 2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches.

- 3. Laying Pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material.

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

- 1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-391.

- 2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches.

- 3. Laying Pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material.

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

- 1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-391.

- 2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches.

- 3. Laying Pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material.

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

DEWATERING STRATEGY

Dewatering refers to the act of removing and discharging water from excavated areas on construction sites or from retained traps and basins on construction sites.

These standards apply to removal and discharge of water from any excavated area or sediment trap or basin at any construction site.

Designers shall specify the preferred procedure for dewatering on plans. In particular, designers should specify procedures for dewatering sediment traps and basins prior to dewatering of the rest of the site.

- A. Designers shall specify on plans, and in sequences of construction included on plans, practices for dewatering of excavated areas. Plan reviewers shall check to see that procedures for dewatering are included on plans.

- 1. Pumping of water to a nearby existing basin or trap in which the entire volume of water from the area to be dewatered can be contained without discharge to receiving waters.

- 1. Removable pumping station. 2. Use of a Sump Pit. 3. Use of a floating suction hose to pump the clearer water from the top of the pond.

- 1. Removable pumping station. 2. Use of a Sump Pit. 3. Use of a floating suction hose to pump the clearer water from the top of the pond.

MATERIALS SPECIFICATIONS FOR BIO-RETENTION

MATERIAL	SPECIFICATION	SIZE	NOTES
PLANTING SOIL (2" TO 4" DEEP)	30-50% TOPSOIL, 20-30% LEAF COMPOSITE, 50% COARSE SAND	N/A	PLANTINGS ARE SITE-SPECIFIC
MULCH	SHREDDED HARDWOOD	N/A	AGED 6 MONTHS, MINIMUM
PEA GRAVEL DIAPHRAGM AND CURTAIN DRAIN	PEA GRAVEL ASTM-D-448	PEA GRAVEL NO. 6 STONE 2" TO 5"	
GEOTEXTILE	CLASS 2" APERTURE OPENING SIZE (ASTM-D-4751), GRAB TENSILE STRENGTH (ASTM-D-4832), PUNCTURE RESISTANCE (ASTM-D-4833)	N/A	FOR USE AS NECESSARY BENEATH UNDERDRAINS ONLY
UNDERDRAIN GRVEL	ASTM M-43	0.375" TO 0.75"	
UNDERDRAIN PIPING	1/2" DIA. TYPE PC OR HDPE	1/4" TO 1/2" BOND SCHEDULE	3/8" PER FOR 6" O.C. 4 HOLES PER ROW. MIN. OF 3" OF GRAVEL OVER PIPES; NOT NECESSARY UNDERNEATH PIPES
POURED IN PLACE CONCRETE (IF REQUIRED)	MSHA MIX NO. 3, f.c.=2500	PSI @ 28 DAYS, NOMINAL WEIGHT, AIR-ENHANCED, NONREINFORCING TO MEET ASTM-615-60	ON-SITE TESTING OF Poured-IN-Place CONCRETE REQUIRED: 28 DAY STRENGTH AND SLUMP TEST. ALL CONCRETE DESIGN (CAST-IN-PLACE OR PRE-CAST) MUST BE PREVIOUSLY APPROVED. USE OF LOCAL STANDARDS REQUIRES DESIGN DRAWINGS SEALED AND APPROVED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND. DESIGN TO INCLUDE MINIMUM 400# SCHED. 40 REINFORCING (8" X 10 OR 8" X 20), ALLOWABLE HORIZONTAL LOADING (BASED ON SOLE PRESSURES) AND ANALYSIS OF POTENTIAL CRACKING.
SAND (1" DEEP)	ASTM-D-86 OR ASTM-C-33	0.075" TO 0.14"	SAND SUBSTITUTIONS SUCH AS DUNESAND AND GOVERNESS #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATE OR DOLICANIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO "POCK DUST" CAN BE USED FOR SAND

APPENDIX B.3. CONSTRUCTION SPECIFICATIONS FOR SAND FILTERS, BIORETENTION AND OPEN CHANNELS

SPECIFICATIONS FOR BIORETENTION

1. MATERIAL SPECIFICATIONS THE ALLOWABLE MATERIALS TO BE USED IN BIORETENTION AREA ARE DETAILED IN TABLE B.3.2.

THE PLANTING SOIL SHALL BE A UNIFORM MIX OF FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE BIORETENTION AREA THAT MAY BE HARMFUL TO PLANT GROWTH OR PRODUCE AN OBSTACLE TO THE INFILTRATION OF WATER OR MAINTAIN THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05.

ALL BIORETENTION AREAS SHALL HAVE A MINIMUM OF ONE TEST, EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, PHOSPHORUS AND POTASSIUM AND AN ADDITIONAL TEST OF ORGANIC MATTER AND SOLUBLE SALTS.

IF IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF THE BIORETENTION AREA AND THE REQUIRED BACKFILL, WHEN POSSIBLE, USE EQUIPMENT WITH LIGHT EQUIPMENT WITH FLOTTING TIRE TRUCKS OR EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES. RUBBER TIRE TRUCKS WITH LARGE TIRES WILL CAUSE EXCESSIVE COMPACTION AND SHOULD BE AVOIDED.

WHEN BACKFILLING THE TOPSOIL UNDER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN RETIOTALL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE.

WHEN BACKFILLING THE BIORETENTION AREA, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN RETIOTALL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE.

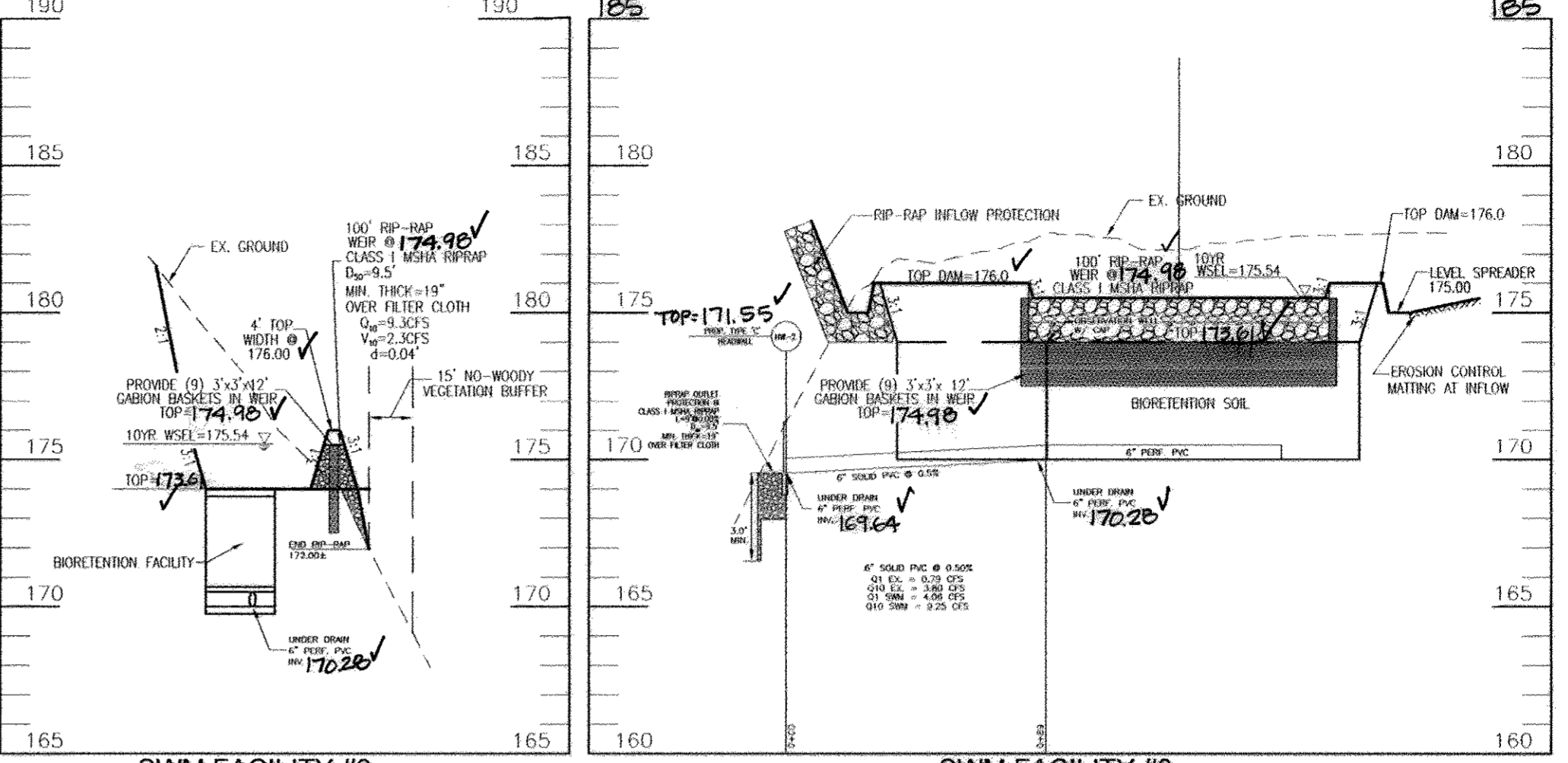
GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.

THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM ANNUAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURES IS TO IMPROVE WATER QUALITY. ADDING NUTRIENT ENRICHED ORGANICS, SUCH AS COMPOST, SHOULD NOT BE USED TO ENRICH THE BIORETENTION BASIN.

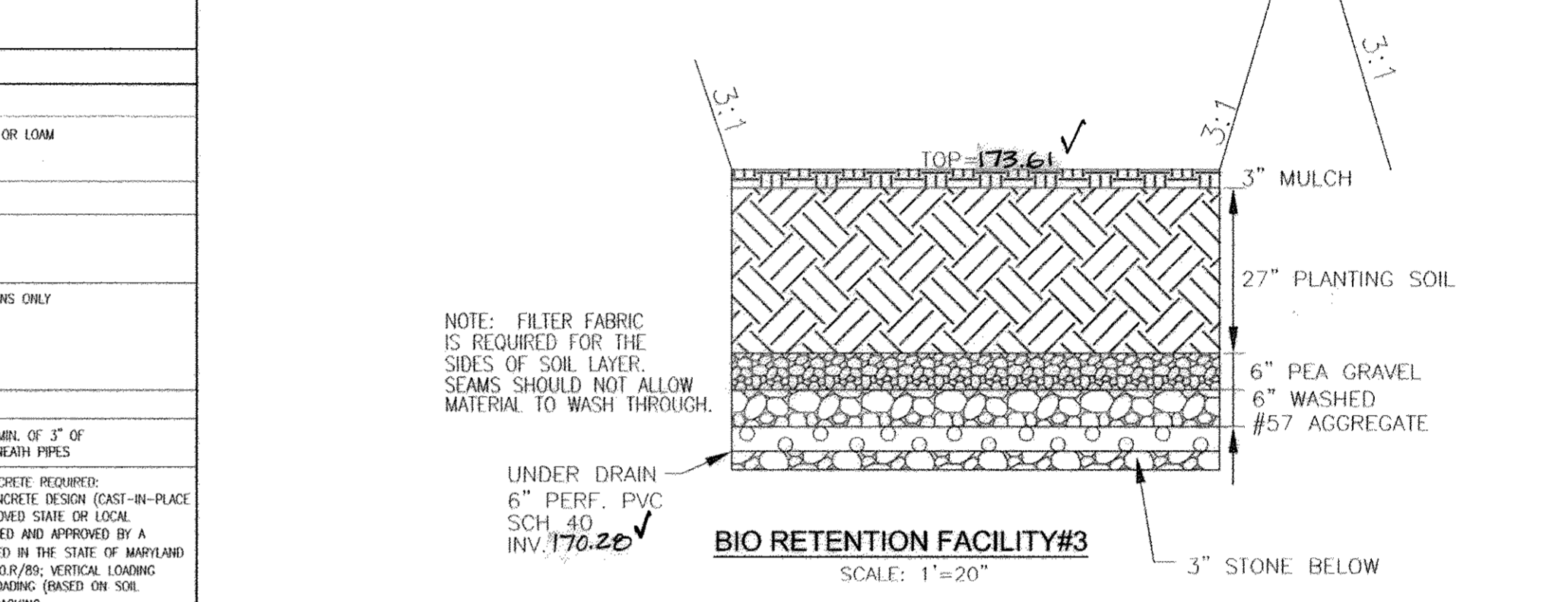
THE BIORETENTION FACILITY MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS

- 1. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE WITH A SPRING PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.



SCALE: HORIZONTAL - 1"=50' VERTICAL - 1"=5'



SCALE: 1"=20"

STORMWATER MANAGEMENT REQUIREMENTS - AREA 3

AREA	REQUIREMENT	VOLUME REQUIREMENT WITHOUT CREDITS	CREDITS	VOLUME REQUIREMENT WITH CREDITS	NOTES
1	WATER QUALITY VOLUME	0.09 AC. FT.			
2	RECHARGE VOLUME (REV.)	0.01 AC. FT. / 0.11 AC. FT.	0.46 AC. TO BIORETENTION	0.00 AC. FT. / 0.00 AC. FT.	REV. FOR ENTIRE SITE=0.77 AC. REV. PROVIDED ENTIRE SITE=0.80 AC.
3	CHANNEL PROTECTION VOLUME (CPV)				1 YR RUNOFF LESS THAN 2 CFS
4	OVERHEAD FLOOD PROTECTION (OFV)				
5	EXTREME FLOOD VOLUME (EFV)				

OWNER / DEVELOPER / CONTRACT PURCHASER TRINITY HOMES AT CYPRESS SPRINGS, L.L.C.

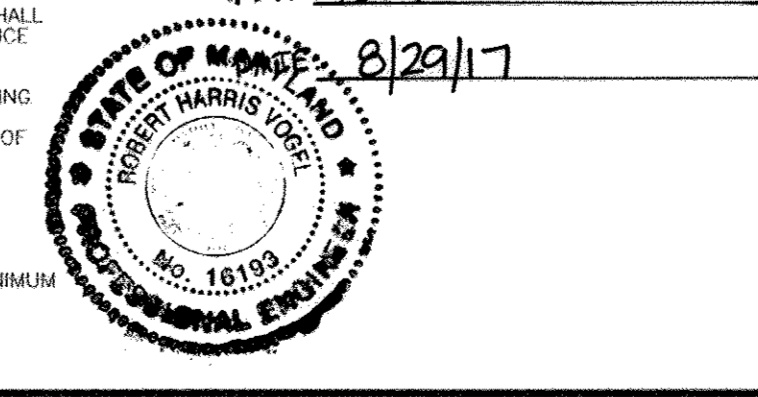
REVISION TABLE

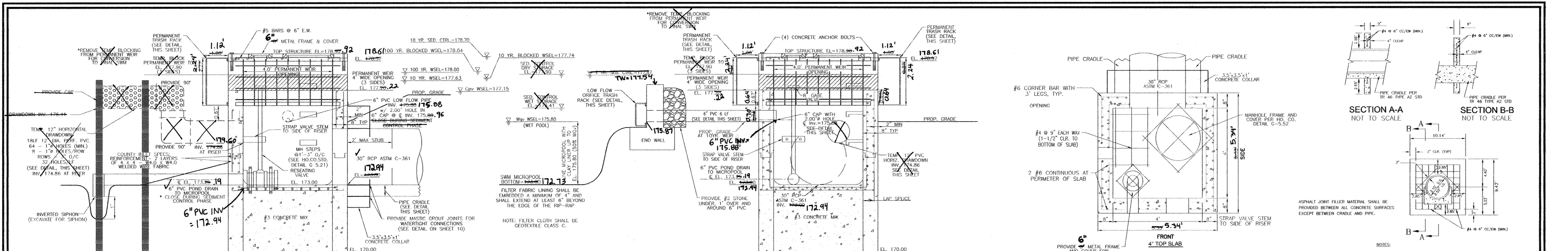
NO.	REVISION	DATE
1	SHOW AS-BUILT ELEVATIONS FOR SWM FACILITY #3 AND STORM DRAIN FROM MH 3A TO HW 1	5/26/17

FINAL ROAD CONSTRUCTION PLAN STORMWATER MANAGEMENT NOTES AND DETAILS CYPRESS SPRINGS - PHASE 1

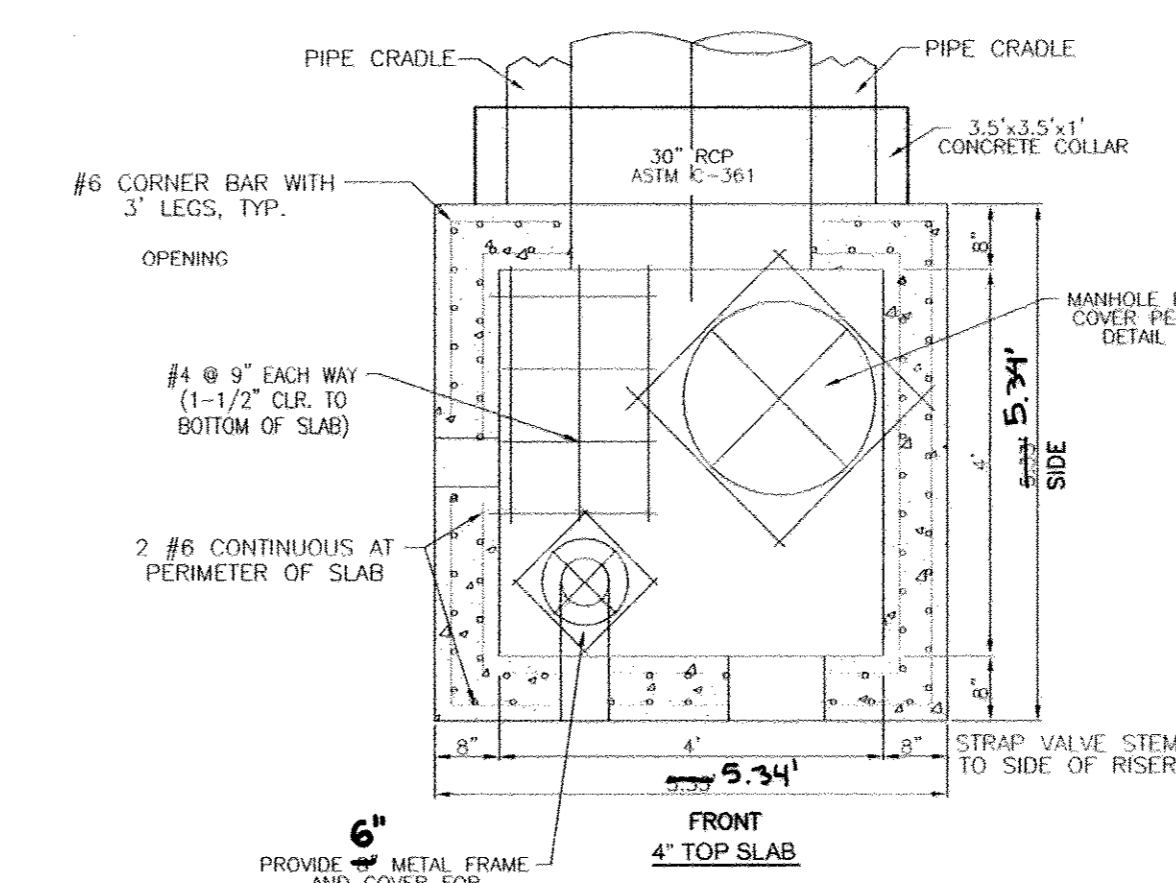
ROBERT H. VOGEL ENGINEERING, INC. ENGINEERS • SURVEYORS • PLANNERS

PROFESSIONAL CERTIFICATE I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16183



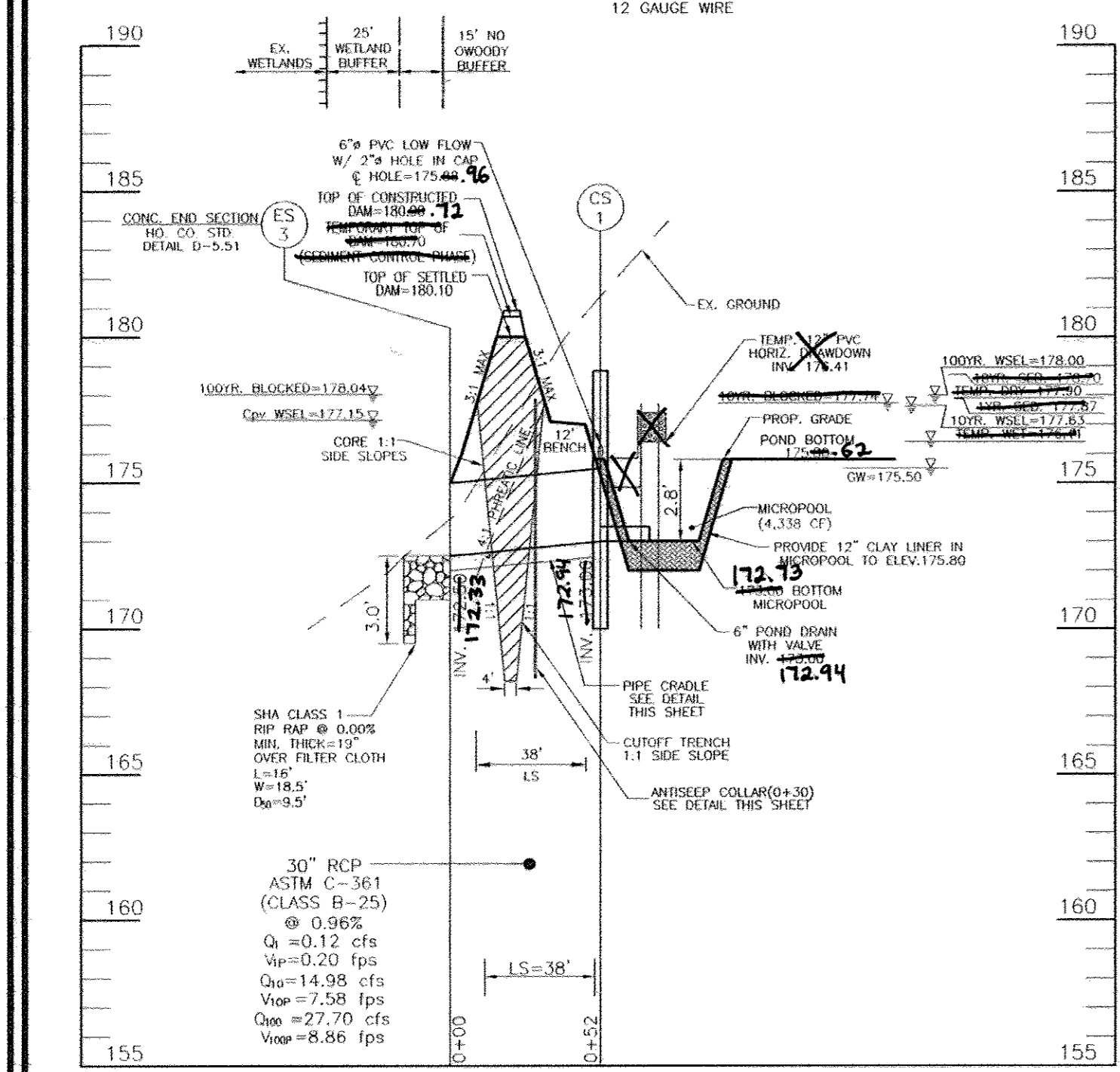


PRECAST STRUCTURE (CS-1) SWMF #1
SCALE: 1/2"=1'

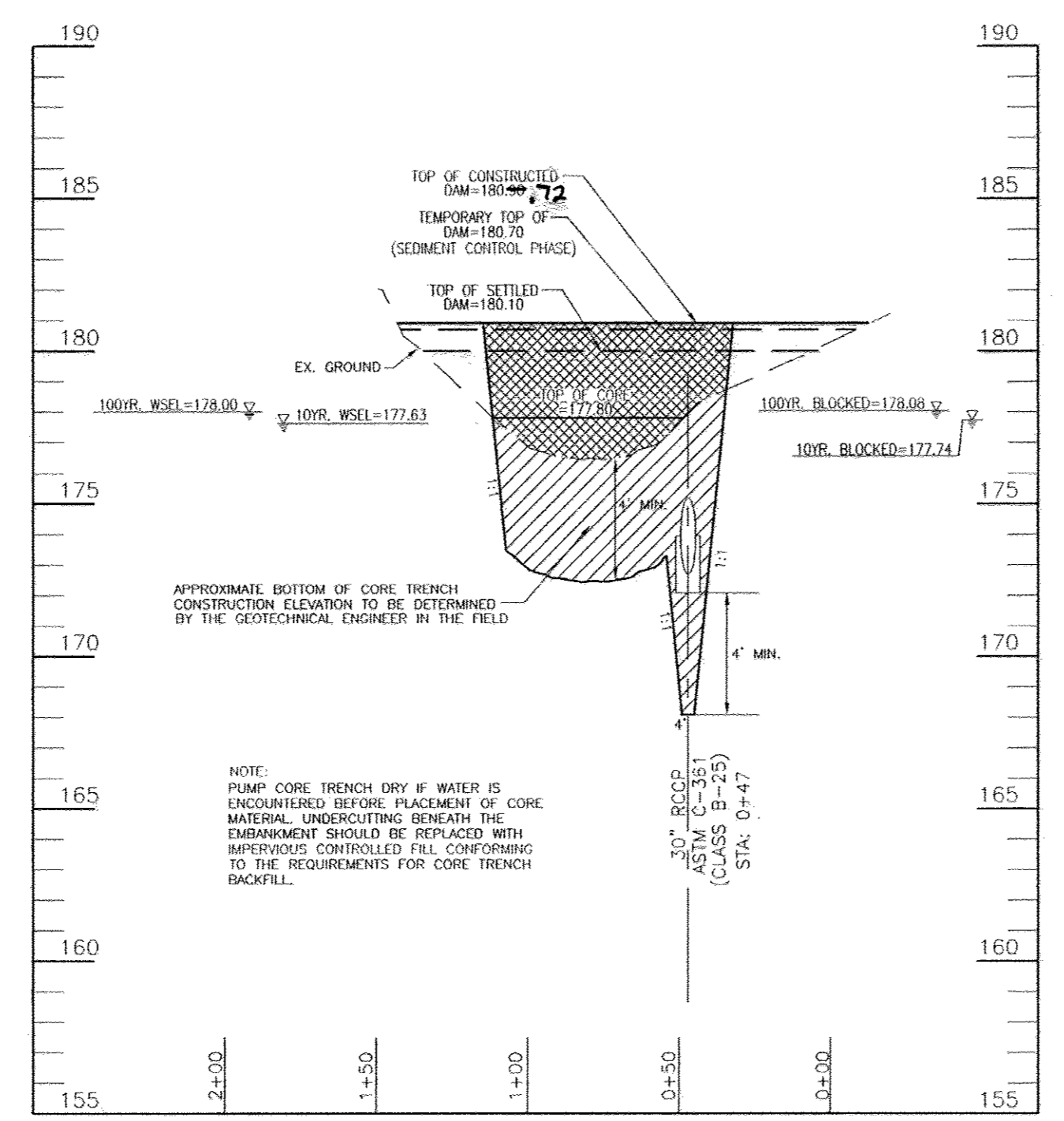


CONCRETE ANTI-SEEP COLLAR DETAIL (SWMF #1)
NOT TO SCALE

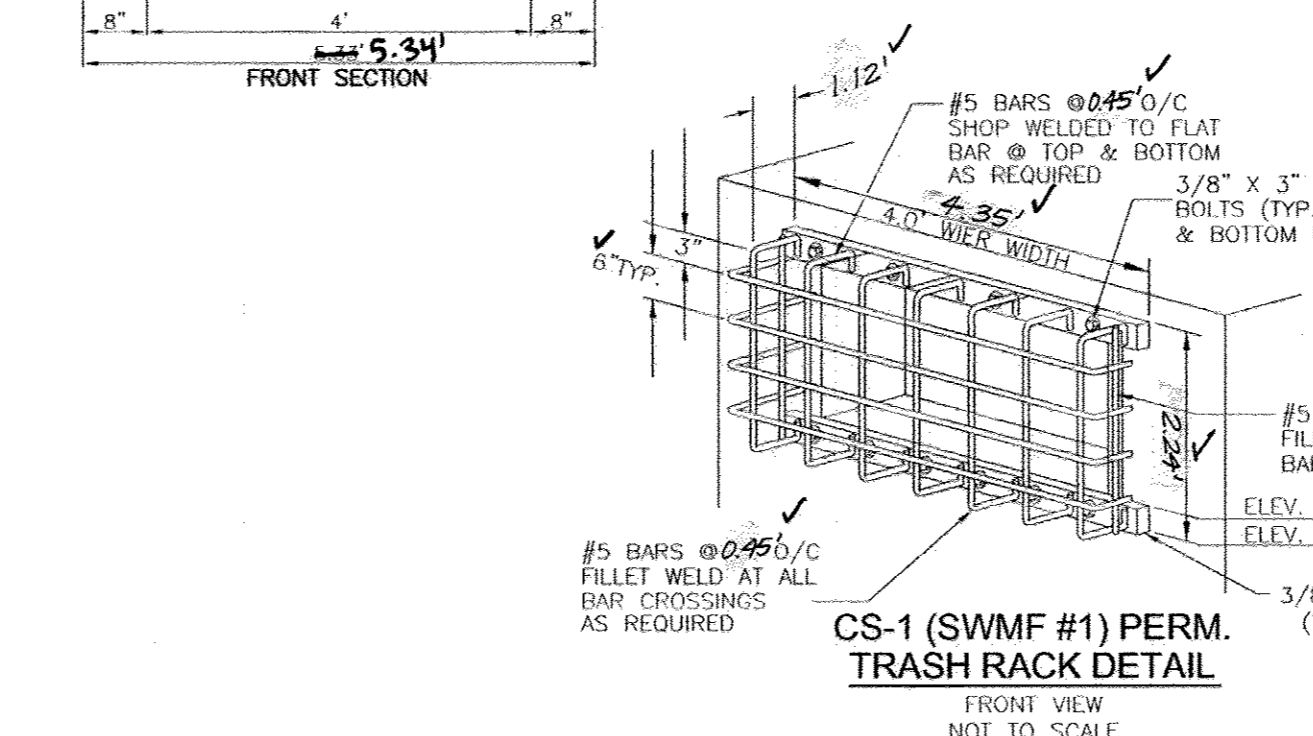
NOTES:
1. ANTI-SEEP COLLARS SHOULD BE PLACED WITHIN THE SATURATION ZONE.
2. ALL ANTI-SEEP COLLARS AND THEIR CONNECTIONS TO THE CONDUIT SHALL BE WATER-TIGHT AND MADE OF COMPATIBLE MATERIALS WITH THE CONDUIT.
3. COLLAR DIMENSIONS SHALL EXCEED A MIN. OF 2" IN ALL DIRECTIONS AROUND THE PIPE.
4. ANTI-SEEP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



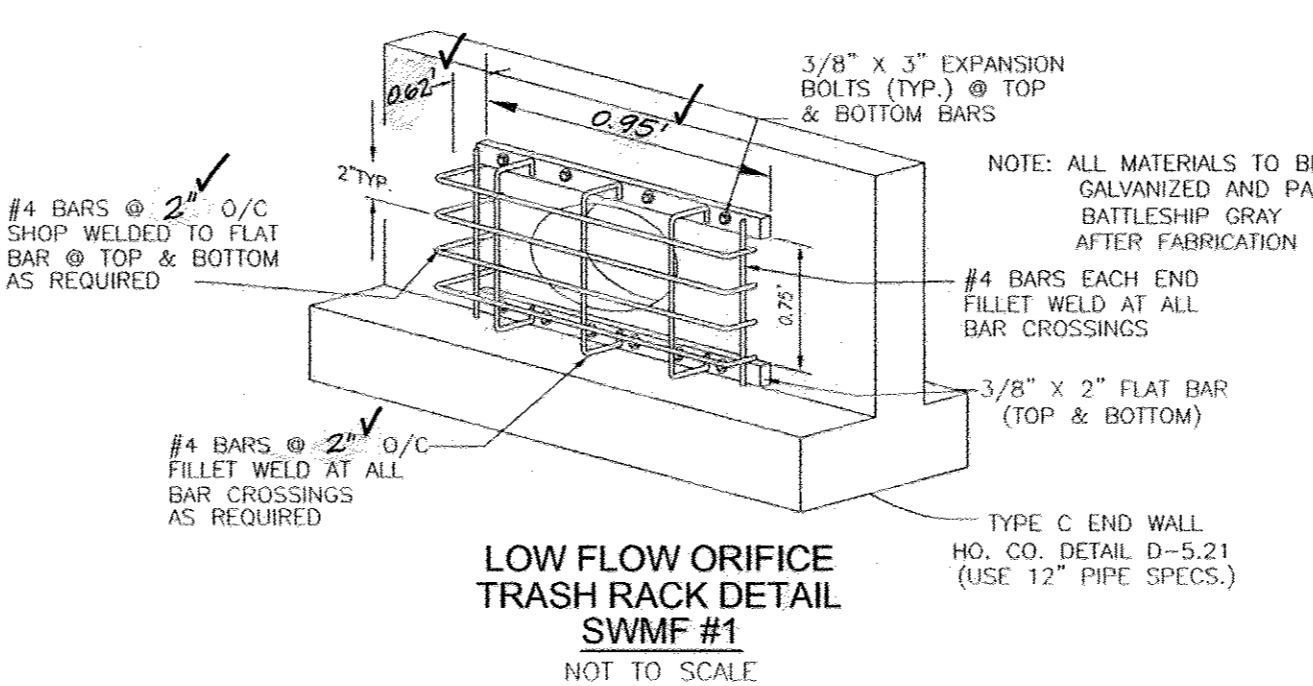
SWM FACILITY #1 SECTION THROUGH PRINCIPAL SPILLWAY
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



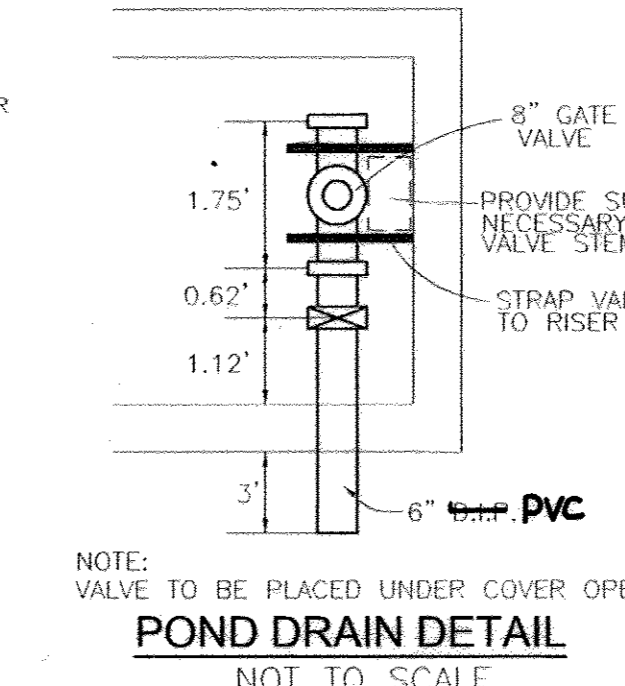
SWM FACILITY #1 PROFILE ALONG CENTER OF EMBANKMENT
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



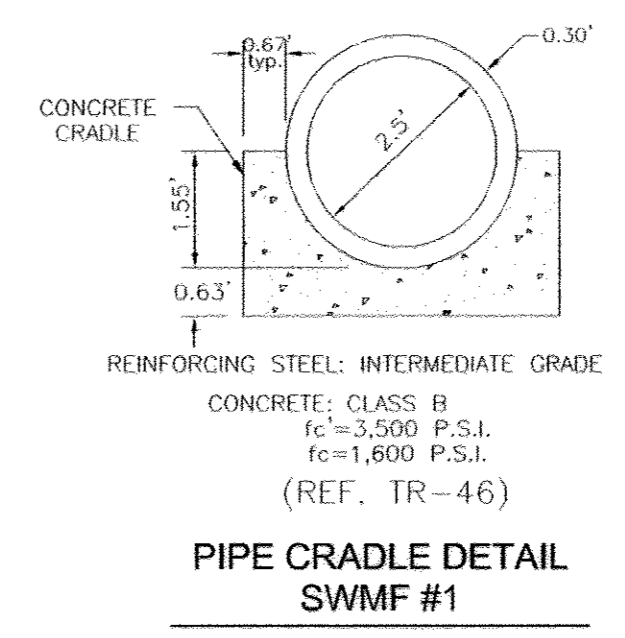
CS-1 (SWMF #1) PERM. TRASH RACK DETAIL
FRONT VIEW NOT TO SCALE



LOW FLOW ORIFICE TRASH RACK DETAIL SWMF #1
NOT TO SCALE



POND PLACEMENT DETAIL
NOT TO SCALE



PIPE CRADLE DETAIL SWMF #1
NOT TO SCALE

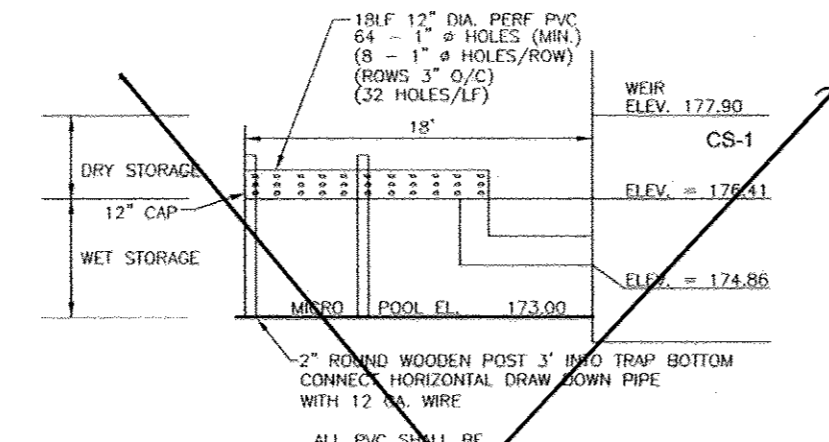
BASIN NO. 1

TRAP TYPE:	EX. DRAINAGE AREA:	6.86 AC.
PROP. STORAGE REQUIRED:	PROP. STORAGE REQUIRED:	12,548 CF
WET STORAGE PROVIDED:	WET STORAGE PROVIDED:	12,348 CF
DRY STORAGE PROVIDED:	DRY STORAGE PROVIDED:	18,295 CF
TOTAL STORAGE PROVIDED:	TOTAL STORAGE PROVIDED:	24,643 CF
BOTTOM ELEVATION:	BOTTOM ELEVATION:	173.00
WEIR ELEVATION:	WEIR ELEVATION:	177.90
WET STORAGE ELEVATION:	WET STORAGE ELEVATION:	173.00 - 176.41
DRY STORAGE ELEVATION:	DRY STORAGE ELEVATION:	176.41 - 177.90
TOTAL STORAGE DEPTH:	TOTAL STORAGE DEPTH:	5.70
TOP OF EMBANKMENT:	TOP OF EMBANKMENT:	180.70 (TEMPORARY)
CLEANOUT ELEVATION:	CLEANOUT ELEVATION:	172.89
SIDE SLOPES:	SIDE SLOPES:	3:1
EMERGENCY SPILLWAY:	EMERGENCY SPILLWAY:	N/A
* EXCLUDING CLEAN WATER DIVERSIONS		
Q1 EX. =	3.80 CFS	
Q10 EX. =	48.80 CFS	
Q1 SED. =	3.71 CFS - 1YR WSEL 177.87	
Q10 SED. =	31.45 CFS - 10YR WSEL 178.70	
Q1 DEVELOPED =	0.12 CFS	
1 YR WSEL =	177.15	
10 YR WSEL =	177.63	

STORMWATER MANAGEMENT REQUIREMENTS - POND 1

AREA	REQUIREMENT	VOLUME REQUIREMENT WITHOUT CREDITS	CREDITS	VOLUME REQUIREMENT WITH CREDITS	NOTES
1	WATER QUALITY VOLUME (WQV)	0.19 AC. FT.	---	0.19 AC. FT.	50% IN MICROPOOL
2	RECHARGE VOLUME (REV)	0.03 AC. FT. 0.42 AC. FT.	---	0 AC. FT.	GRASS SWALE FOR REV ONLY
3	CHANNEL PROTECTION VOLUME (CPV)	0.32 AC. FT.	---	0.32 AC. FT.	EXTENDED DETENTION
4	OVERHEAD FLOOD PROTECTION (O _{HP})	---	---	---	---
5	EXTREME FLOOD VOLUME (O _{EF})	---	---	---	---

SWM PROVIDED BY A POCKET POND (P-5)

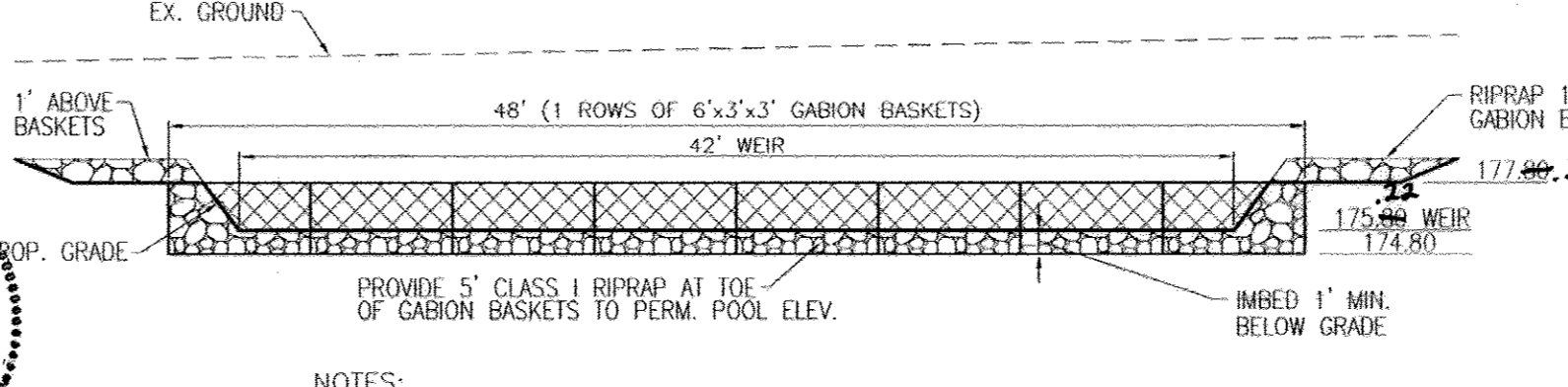


TEMP. SEDIMENT BASIN HORIZONTAL DRAW-DOWN DEVICE (SWMF #1)
NOT TO SCALE

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

PE NO. 16193
DATE: 8/29/17



GABION BASKET WEIR DETAIL (SWMF #1)
SCALE: 1"=8'

APPROVED: DEPARTMENT OF PUBLIC WORKS
DATE: 5-17-10

APPROVED: DEPARTMENT OF PLANNING AND ZONING
DATE: 6/11/10

CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 5/27/10

BY THE DEVELOPER:
MICHAEL J. PFALZ
DATE: 4-30-10

BY THE ENGINEER:
ROBERT H. VOGEL
DATE: 4/11/10

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

DATE: 5/1/10

NO.	REVISION	DATE
2	REVISE 8" FRAME AND COVER TO 6", INCLUDE POND DRAIN DETAILS	1/4/18
1	REFLECT 6" PVC, REVISE MBR TO INCLUDE PVC CLE ANCHORS SHOWN AS-BUILT ELEVATIONS FOR SWM FACILITY # B AND STORM DRAIN FROM MH 3A TO HW	5/26/17

FINAL ROAD CONSTRUCTION PLAN
STORMWATER MANAGEMENT NOTES AND DETAILS
CYPRESS SPRINGS - PHASE 1
LOTS 1 - 13, OPEN SPACE LOTS 14-17 AND NON-BUILDABLE BULK PARCELS A-D

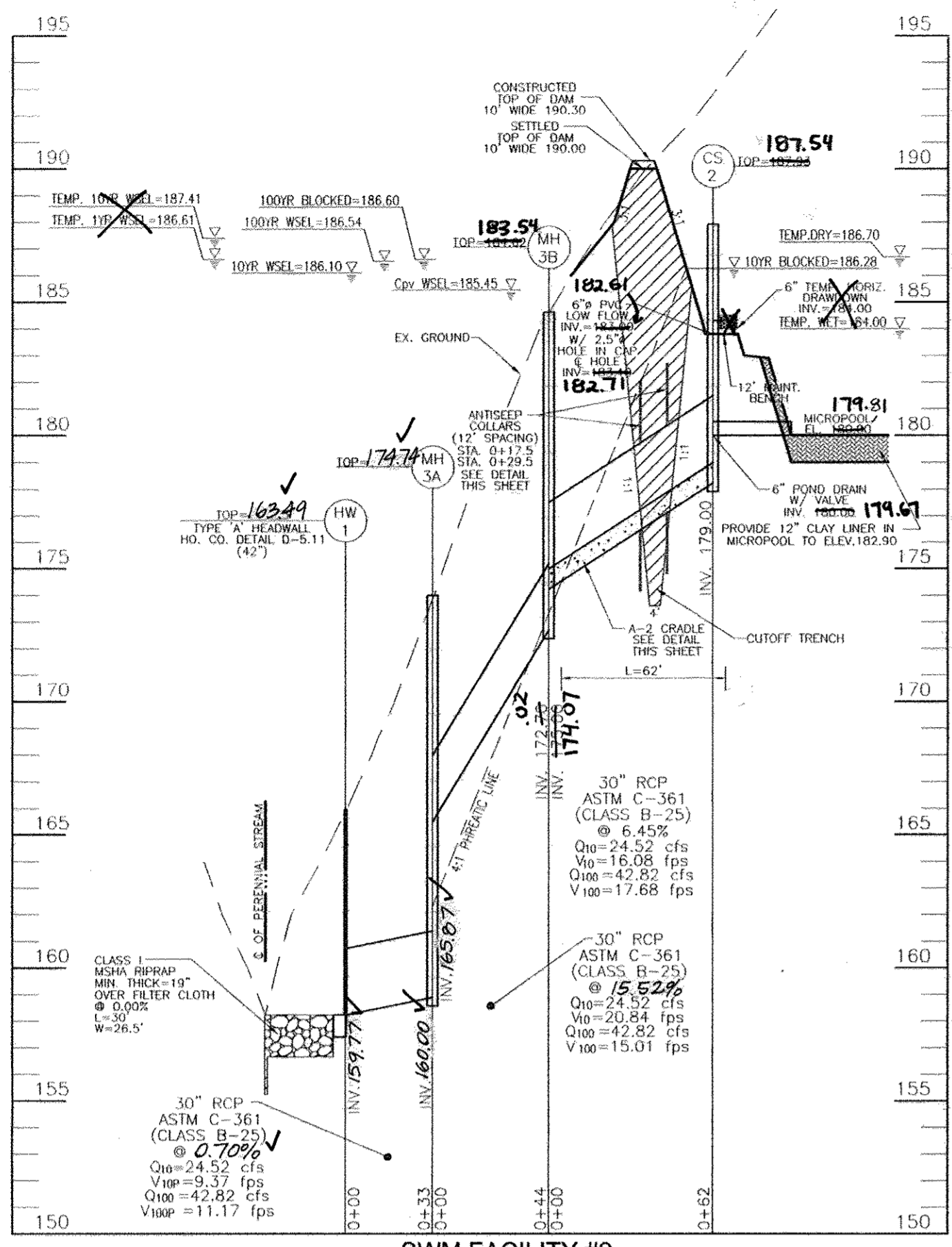
1ST ELECTION DISTRICT TAX MAP 38 BLOCK 3
DPZ REFERENCES: SP-05-06, PB CASE 374, PARCELS 42, 44, 45 AND 46
WP-05-36, SDD-09-081, L 380(F) 659, HOWARD COUNTY, MARYLAND
8232(F) 374, L 834(F) 670, L 4518(F) 458

ROBERT H. VOGEL
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELICOTT CITY, MD 21043 TEL: 410.481.7666
FAX: 410.481.8961

DESIGN BY: RHW/JCO
DRAWN BY: JMR
CHECKED BY: RHW
DATE: APRIL 2010
SCALE: AS SHOWN
W.O. NO.: 04-30

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: 06-27-2010

12 SHEET OF 17

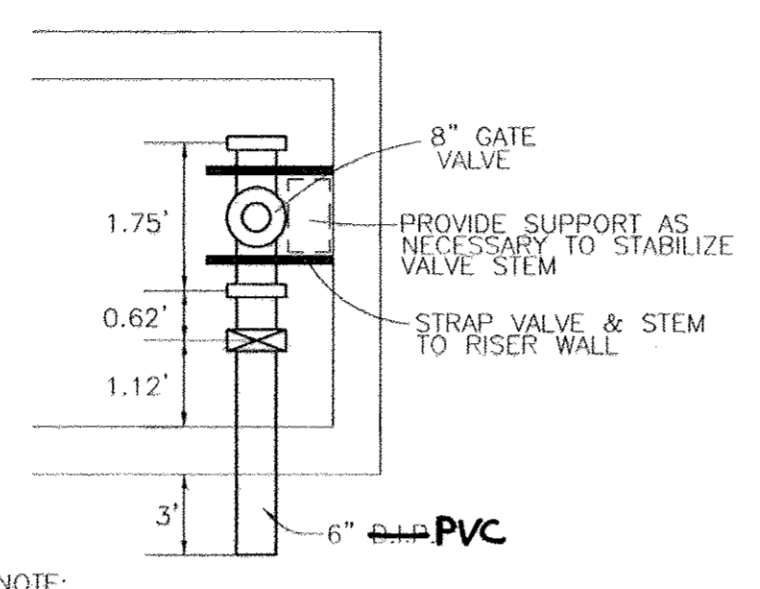


SECTION THROUGH SWM FACILITY #2
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

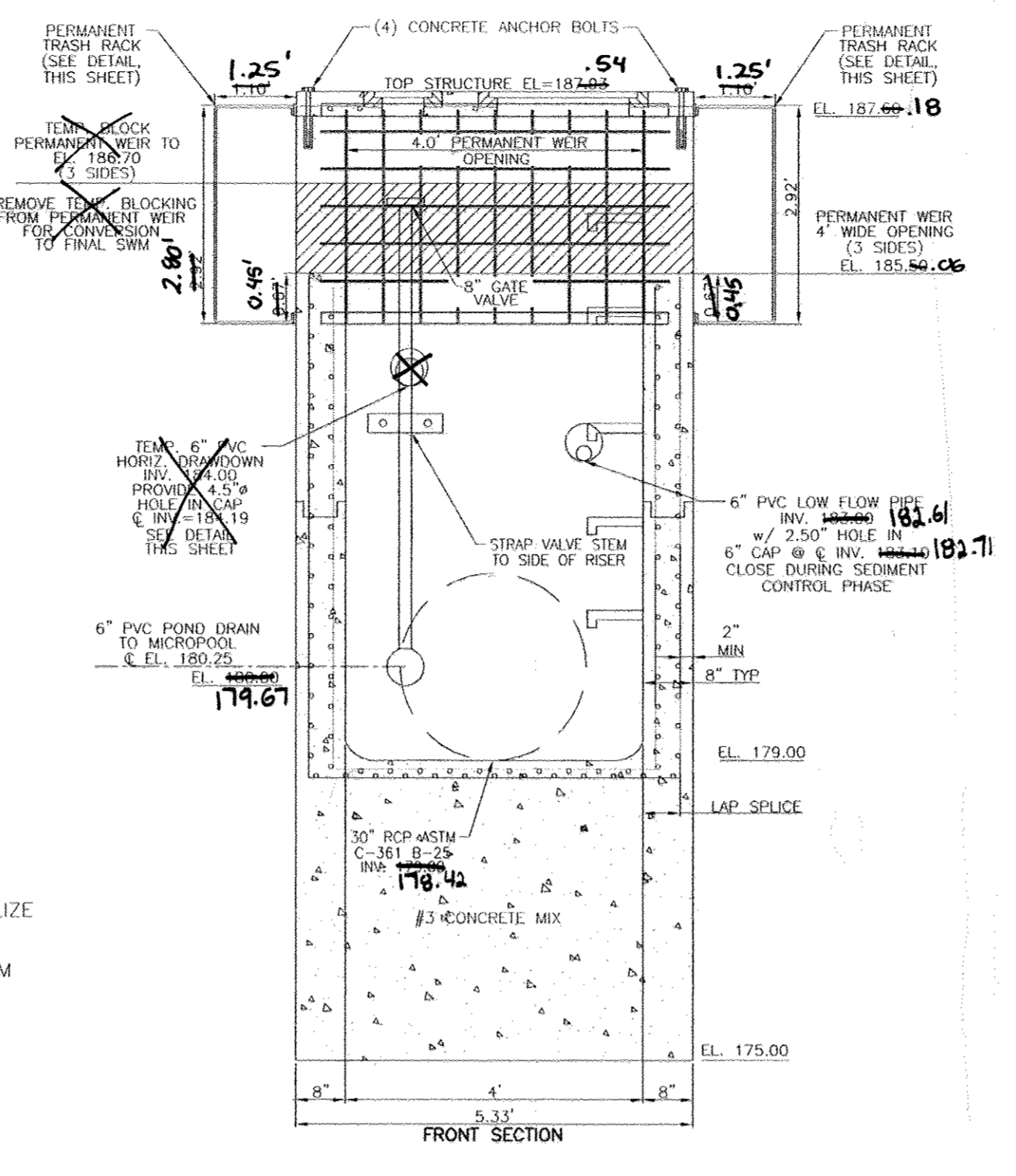
BASIN NO. 2

TRAP TYPE:
EX. DRAINAGE AREA:
PROP. DRAINAGE AREA:
WET STORAGE REQUIRED:
WET STORAGE PROVIDED:
DRY STORAGE REQUIRED:
DRY STORAGE PROVIDED:
TOTAL STORAGE REQUIRED:
TOTAL STORAGE PROVIDED:
BOTTOM ELEVATION:
WEIR ELEVATION:
WEIR STORAGE ELEVATION:
TOTAL STORAGE DEPTH:
TOP OF EMBANKMENT:
CLEANOUT ELEVATION:
SIDE SLOPES:
EMERGENCY SPILLWAY:
* EXCLUDING CLEAN WATER DIVERSION

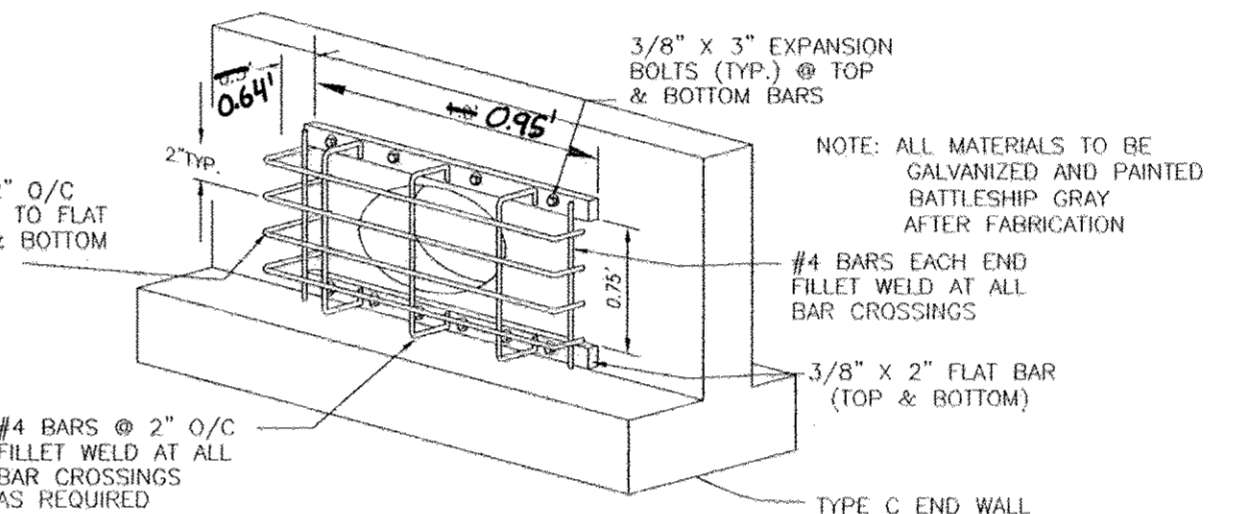
1.20 AC.
2.54 AC.
27,180 CF
27,180 CF
56,628 CF
56,628 CF
83,808 CF
83,808 CF
180.00
186.70
180.00-184.00
6.70
190.00 (TEMPORARY)
183.21
3:1
N/A



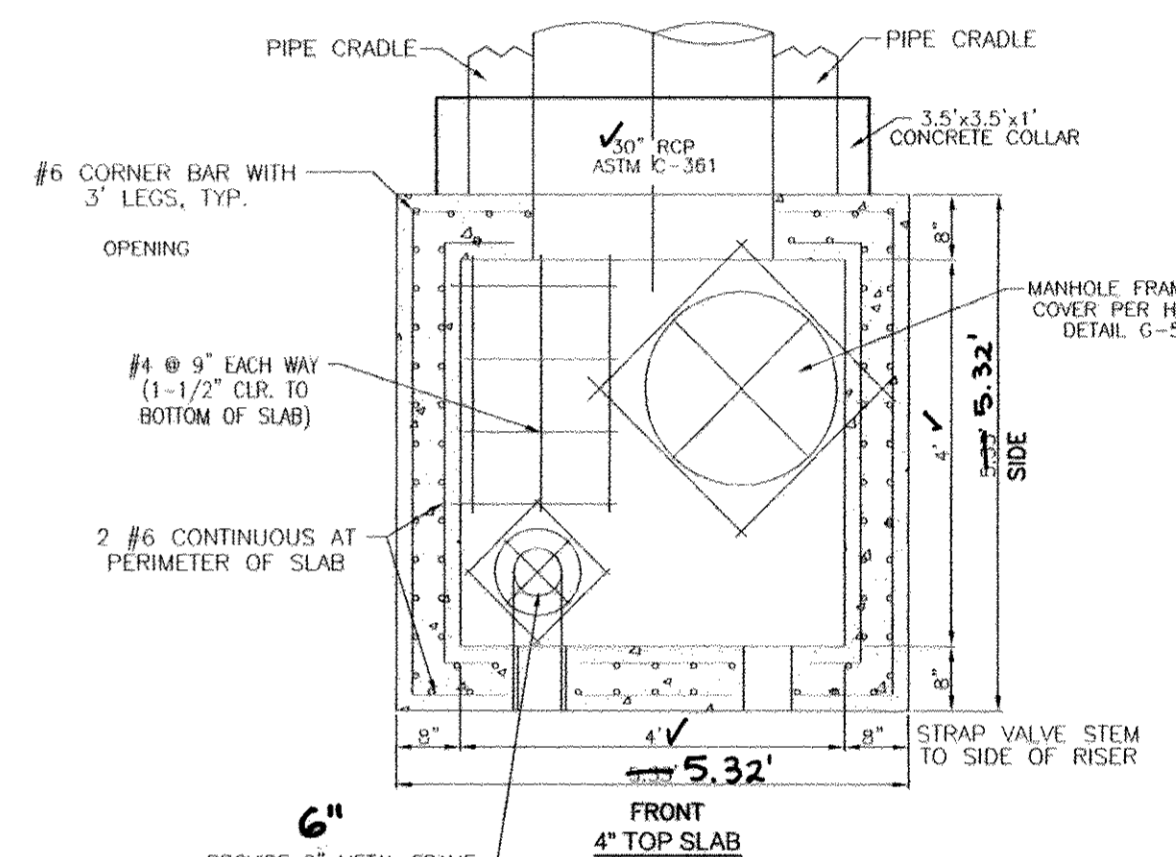
POND DRAIN DETAIL
NOT TO SCALE



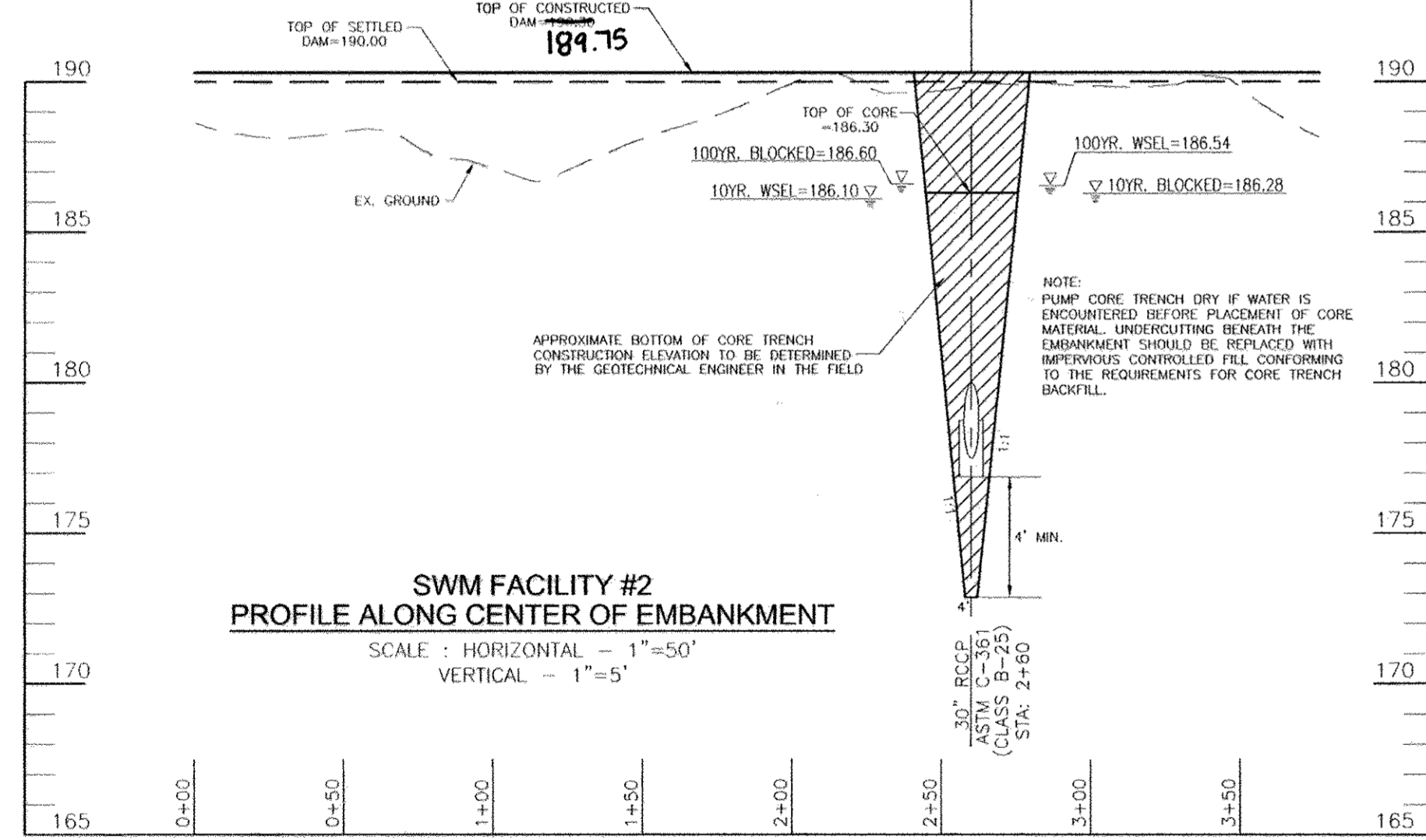
PRECAST STRUCTURE (CS-2) SWMF #2
SCALE: 1/2"=1'



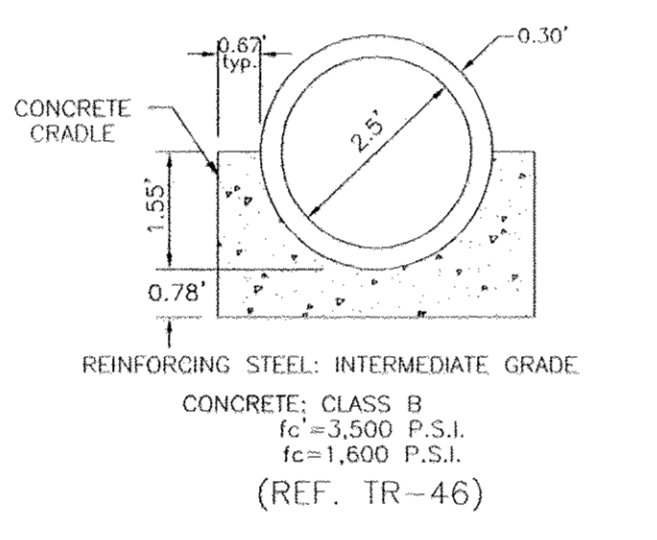
LOW FLOW ORIFICE TRASH RACK DETAIL SWMF #2
NOT TO SCALE



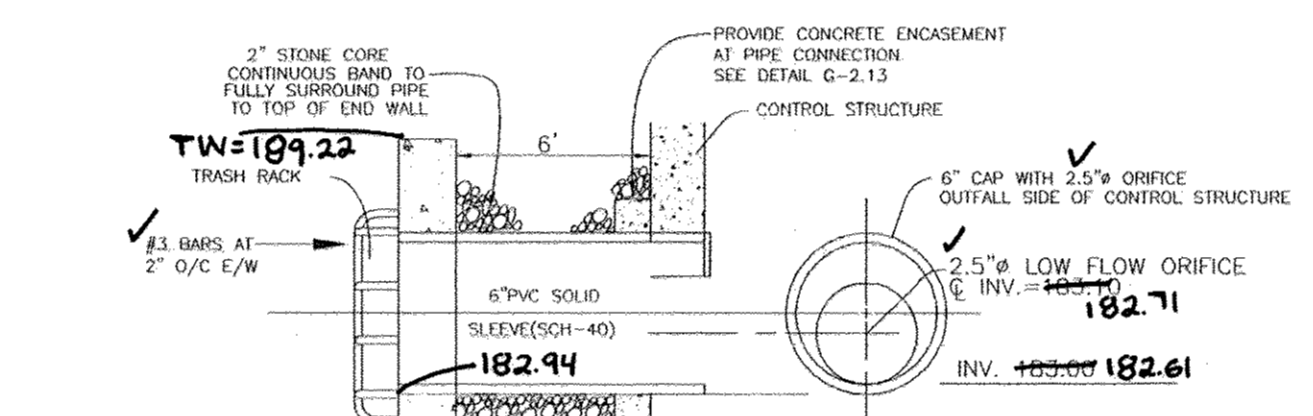
FRONT 4" TOP SLAB



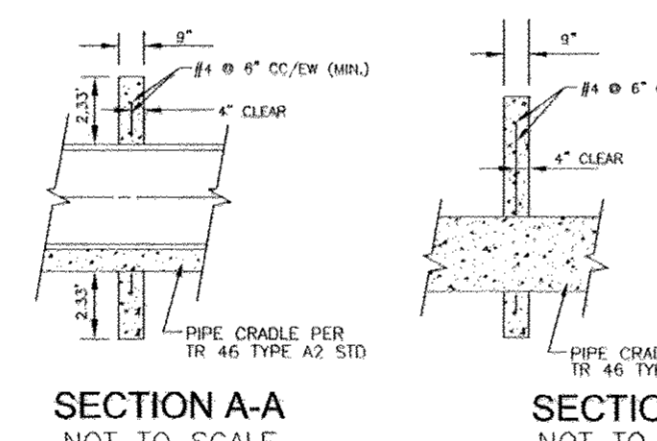
SWM FACILITY #2 PROFILE ALONG CENTER OF EMBANKMENT
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



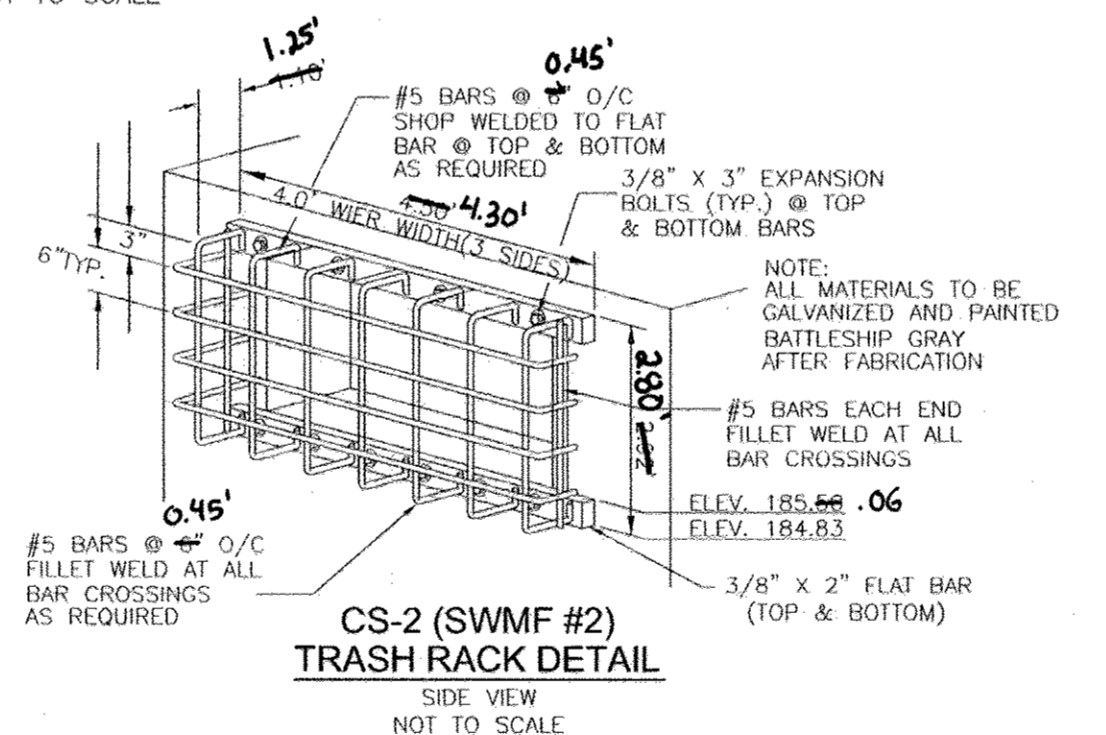
PIPE CRADLE DETAIL SWMF #2
NOT TO SCALE



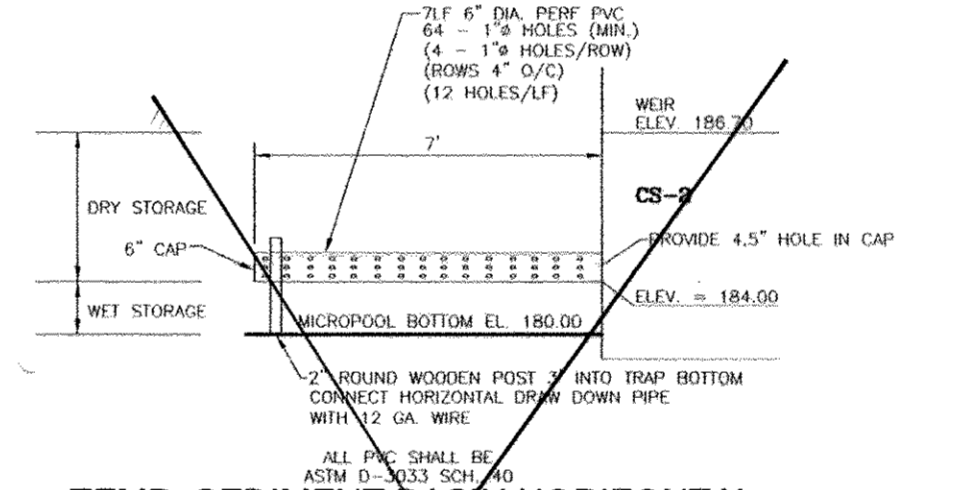
PERMANENT LOW FLOW ORIFICE DETAIL CS-2 (SWMF #2)
NOT TO SCALE



SECTION A-A
SECTION B-B
NOT TO SCALE



CS-2 (SWMF #2) TRASH RACK DETAIL
NOT TO SCALE



TEMP. SEDIMENT BASIN HORIZONTAL DRAW-DOWN DEVICE (SWMF #2)
NOT TO SCALE

STORMWATER MANAGEMENT REQUIREMENTS - POND 2					
AREA	REQUIREMENT	VOLUME REQUIREMENT WITHOUT CREDITS	CREDITS	VOLUME REQUIREMENT WITH CREDITS	NOTES
8.25 AC.					
1	WATER QUALITY VOLUME (WQv)	0.24 AC. FT.	N/A	0.24 AC. FT.	50% IN MICROPOOL
2	RECHARGE VOLUME (REV)	0.034 AC. FT.	0.38 AC. TO GRASS SWALE	0	GRASS SWALE FOR REV ONLY
3	CHANNEL PROTECTION VOLUME (CPv)	0.48 AC. FT.		0.48 AC. FT.	
4	OVERHEAD FLOOD PROTECTION (OvP)				
5	EXTREME FLOOD VOLUME (OvP)				

SWM PROVIDED BY A MICROPOOL POND(P-1)

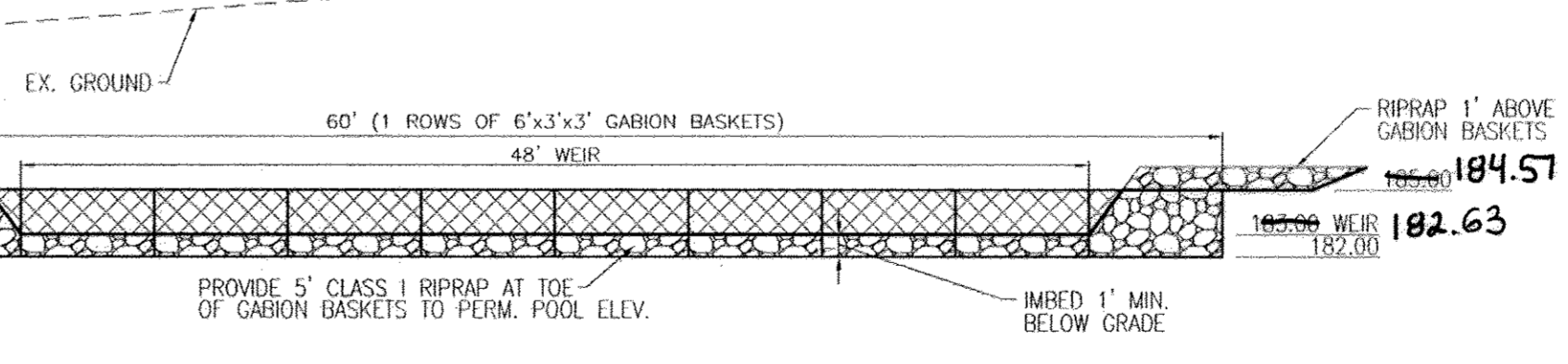
APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT
CHIEF, DEVELOPMENT ENGINEERING DIVISION

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

BY THE ENGINEER:
I HEREBY CERTIFY THAT THIS PLAN FOR SMALL POND CONSTRUCTION, SEDIMENT AND EROSION 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.

AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS

PERNO. 16193
DATE: 8/29/17



GABION BASKET WEIR DETAIL (SWMF #2)
SCALE: 1"=8'

- NOTES:
- ALL WIRE USED IN GABION CONSTRUCTION SHALL BE GALVANIZED AND PLASTIC COATED.
 - FILTER CLOTH SHALL BE PLACED WHEREVER GABIONS COME INTO CONTACT WITH SOIL.
 - STONE FILL SHALL CONSIST OF HARD, DURABLE, CLEAN STONE 4"-8" IN DIAMETER.
 - CONSTRUCTION MATERIALS AND METHODS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
 - RIP-RAP TO BE PLACED BELOW GABION WEIR TO BOTTOM OF FOREBAY, AND TO PERM. POOL ELEVATION.

OWNER / DEVELOPER / CONTRACT PURCHASER
TRINITY HOMES AT CYPRESS SPRINGS, L.L.C.
3875 PARK AVENUE, SUITE 301
ELLICOTT CITY, MARYLAND 21043
(410) 480-0023

NO.	REVISION	DATE
2	REVISE 6" FRAMES AND COVER TO 6", REVISE POND DRAIN DETAIL TO REFLECT 6" PVC, REVISE HBR TO INCLUDE PVC CLEANOUTS	11/4/18
1	SHOW AS-BUILT ELEVATIONS FOR SWM FACILITY #3 AND STORM DRAIN FROM MH 3A TO HAO1	5/26/17

FINAL ROAD CONSTRUCTION PLAN
STORMWATER MANAGEMENT
NOTES AND DETAILS
CYPRESS SPRINGS - PHASE 1
LOTS 1 - 13, OPEN SPACE LOTS 14-17
AND NON-BUILDABLE BULK PARCELS A-D

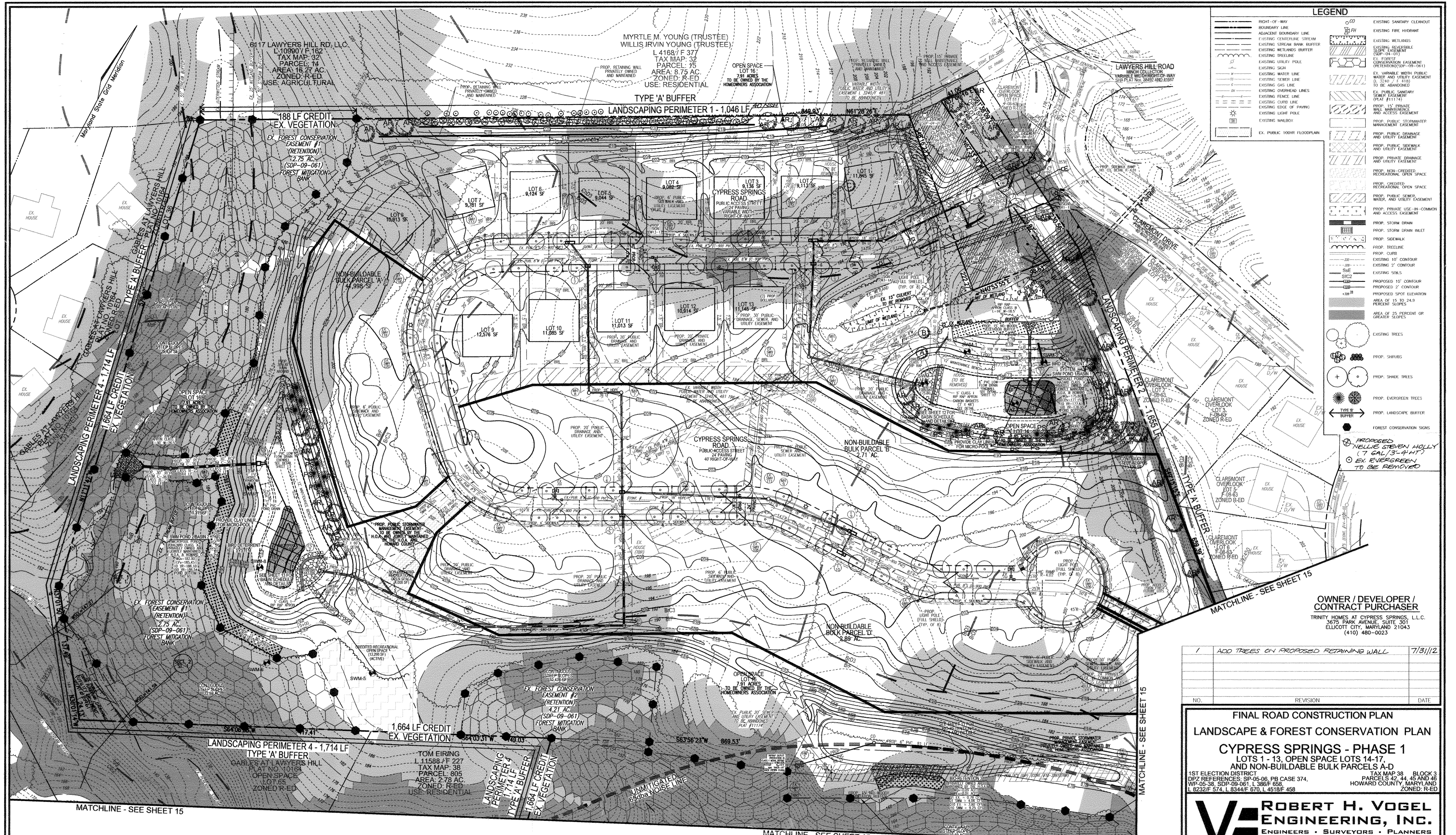
1ST ELECTION DISTRICT
DPZ REFERENCES: SP-05-06, PB CASE 374, WP-05-38, SDP-09-061, L 3866F 658, L 8232F 574, L 8344F 670, L 4518F 458
TOWN MAP 38 BLOCK 3
PARCELS 42, 44, 45 AND 46
HOWARD COUNTY, MARYLAND
ZONED: R-ED

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: RHM/JCO
DRAWN BY: JMR
CHECKED BY: RHM
DATE: APRIL 2010
SCALE: AS SHOWN
W.O. NO.: 04-30

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193
EXPIRATION DATE: 09-27-2010

13 SHEET OF 17



LEGEND

- RIGHT-OF-WAY
- BOUNDARY LINE
- ADJACENT BOUNDARY LINE
- EXISTING CENTERLINE STREAM
- EXISTING STREAM BANK BUFFER
- EXISTING WETLANDS BUFFER
- EXISTING TREELINE
- EXISTING UTILITY POLE
- EXISTING SIGN
- EXISTING WATER LINE
- EXISTING SEWER LINE
- EXISTING GAS LINE
- EXISTING OVERHEAD LINES
- EXISTING FENCE LINE
- EXISTING CURB LINE
- EXISTING EDGE OF PAVING
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SANITARY CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WETLANDS
- EXISTING REVERSIBLE EASEMENT (SDP-09-01)
- EXISTING WETLANDS BUFFER (SDP-09-01)
- EXISTING VARIABLE WIDTH PUBLIC WATER AND UTILITY EASEMENT (PLAT #11174)
- EXISTING PUBLIC SANITARY SEWER EASEMENT (PLAT #11174)
- EXISTING PRIVATE WALL, MARKERS, AND ACCESS EASEMENT
- PROP. PUBLIC STORMWATER MANAGEMENT EASEMENT
- PROP. PUBLIC DRAINAGE AND UTILITY EASEMENT
- PROP. PUBLIC SEWER AND UTILITY EASEMENT
- PROP. PRIVATE DRAINAGE AND UTILITY EASEMENT
- PROP. NON-CREDITED RECREATIONAL OPEN SPACE
- PROP. CREDITED RECREATIONAL OPEN SPACE
- PROP. PUBLIC SEWER, WATER, AND UTILITY EASEMENT
- PROP. PRIVATE USE-IN-COMMON AND ACCESS EASEMENT
- PROP. STORM DRAIN
- PROP. STORM DRAIN INLET
- PROP. SIDEWALK
- PROP. TREELINE
- PROP. CURB
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING 50% SLOPE
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- PROPOSED SPOT ELEVATION AREA OF 15 TO 24.0 PERCENT SLOPES
- AREA OF 25 PERCENT OR GREATER SLOPES
- EXISTING TREES
- PROP. SHRUBS
- PROP. SHADE TREES
- PROP. EVERGREEN TREES
- PROP. LANDSCAPE BUFFER
- FOREST CONSERVATION SIGNS
- PROPOSED NELLIE STEVEN HOLLY (7 GAL/3'-4"HT)
- EX. EVERGREEN TO BE REMOVED

OWNER / DEVELOPER / CONTRACT PURCHASER
 TRINITY HOMES AT CYPRESS SPRINGS, L.L.C.
 3675 PARK AVENUE, SUITE 301
 ELLICOTT CITY, MARYLAND 21043
 (410) 480-0023

NO.	REVISION	DATE
1	ADD TREES ON PROPOSED RETAINING WALL	7/31/12

FINAL ROAD CONSTRUCTION PLAN
LANDSCAPE & FOREST CONSERVATION PLAN
CYPRESS SPRINGS - PHASE 1
LOTS 1 - 13, OPEN SPACE LOTS 14-17
AND NON-BUILDABLE BULK PARCELS A-D

1ST ELECTION DISTRICT: SP-05-06, PB CASE 374, PARCELS 42, 44, 45 AND 46
 WP-05-38, SDP-09-061, L 386/F 658, HOWARD COUNTY, MARYLAND
 L 8232/F 574, L 8344/F 670, L 4518/F 458, ZONED: R-ED

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

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193
 EXPIRATION DATE: 09-27-2010

DESIGN BY: RHM/JCO
 DRAWN BY: JMR
 CHECKED BY: RHY
 DATE: APRIL 2010
 SCALE: AS SHOWN
 W.O. NO.: 04-30

14 SHEET OF 17

APPROVED: DEPARTMENT OF PUBLIC WORKS
 DATE: 5-17-10
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 DATE: 6/1/10
 DATE: 5/27/10

DEVELOPER'S/BUILDER'S CERTIFICATE
 I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 18.124 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.

Michael P. [Signature]
 TRINITY HOMES AT CYPRESS SPRINGS, LLC
 DATE: 4-30-10

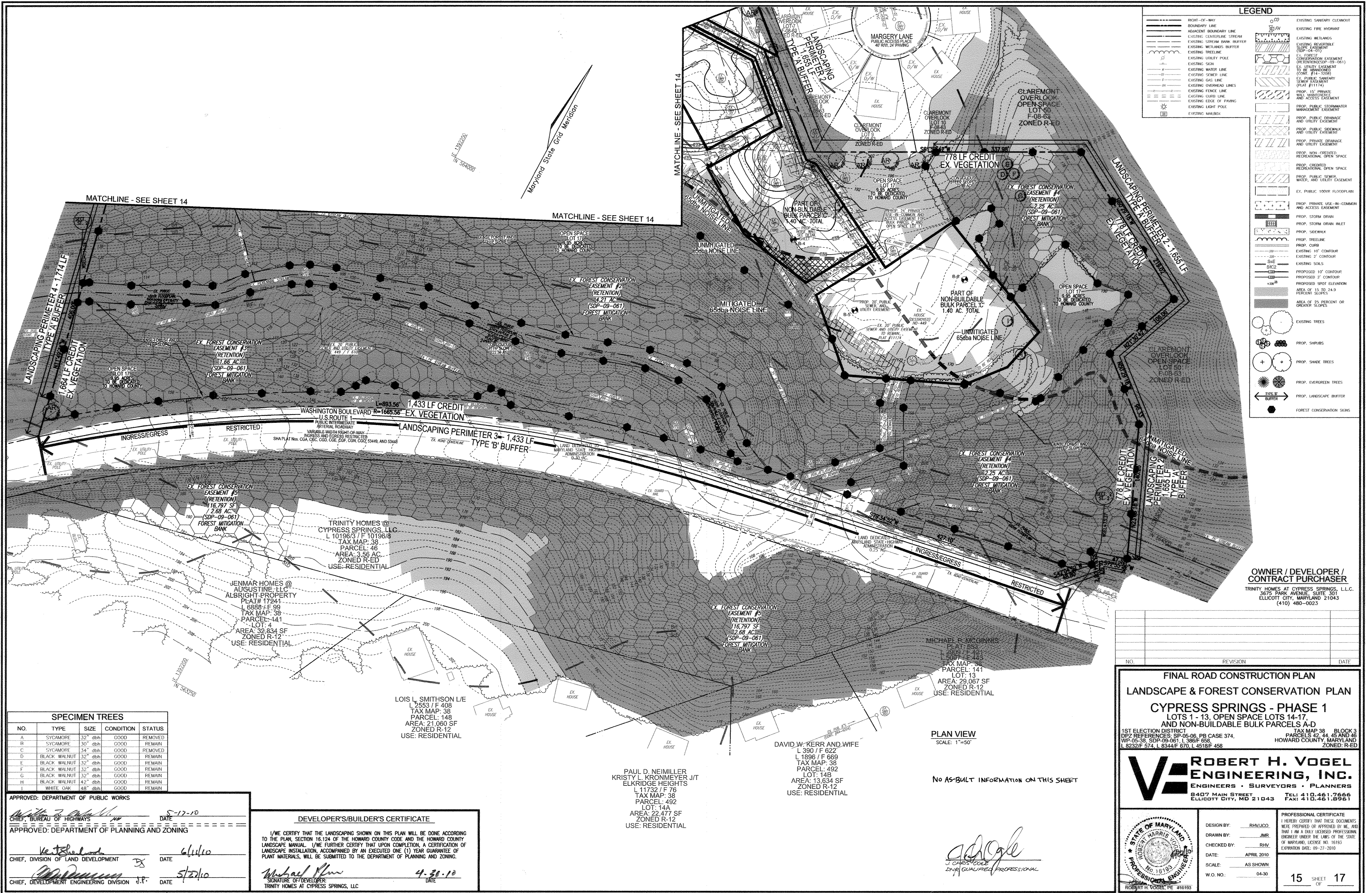
PLAN VIEW
 SCALE: 1"=50'

NO AS-BUILT INFORMATION ON THIS SHEET

SPECIMEN TREES

NO.	TYPE	SIZE	CONDITION	STATUS
A	SYCAMORE	32" dbh	GOOD	REMOVED
B	SYCAMORE	30" dbh	GOOD	REMAIN
C	SYCAMORE	34" dbh	GOOD	REMOVED
D	BLACK WALNUT	32" dbh	GOOD	REMAIN
E	BLACK WALNUT	32" dbh	GOOD	REMAIN
F	BLACK WALNUT	32" dbh	GOOD	REMAIN
G	BLACK WALNUT	32" dbh	GOOD	REMAIN
H	BLACK WALNUT	42" dbh	GOOD	REMAIN
I	WHITE OAK	48" dbh	GOOD	REMAIN

AS-BUILT 8/29/17 F-10-028



LEGEND

[Symbol]	RIGHT-OF-WAY	[Symbol]	EXISTING SANITARY CLEAROUT
[Symbol]	BOUNDARY LINE	[Symbol]	EXISTING FIRE HYDRANT
[Symbol]	ADJACENT BOUNDARY LINE	[Symbol]	EXISTING WETLANDS
[Symbol]	EXISTING CENTERLINE STREAM	[Symbol]	EXISTING DESTRUCTIBLE SORE EASEMENT
[Symbol]	EXISTING STREAM BANK BUFFER	[Symbol]	EX. FOREST CONSERVATION EASEMENT (RETENTION) (SDP-09-061)
[Symbol]	EXISTING WETLANDS BUFFER	[Symbol]	EX. UTILITY EASEMENT TO BE ABANDONED (COMP. #4-3000)
[Symbol]	EXISTING TREELINE	[Symbol]	EX. PUBLIC SANITARY SWAMP EASEMENT (PLAT #11174)
[Symbol]	EXISTING UTILITY POLE	[Symbol]	PROP. 15' PRIVATE WALL, MASTHEADS AND ACCESS EASEMENT
[Symbol]	EXISTING SIGN	[Symbol]	PROP. PUBLIC STORMWATER MANAGEMENT EASEMENT
[Symbol]	EXISTING WATER LINE	[Symbol]	PROP. PUBLIC DRAINAGE AND UTILITY EASEMENT
[Symbol]	EXISTING POWER LINE	[Symbol]	PROP. PUBLIC SIDEWALK AND UTILITY EASEMENT
[Symbol]	EXISTING GAS LINE	[Symbol]	PROP. PRIVATE DRAINAGE AND UTILITY EASEMENT
[Symbol]	EXISTING OVERHEAD LINES	[Symbol]	PROP. OPEN-ENDED RECREATIONAL OPEN SPACE
[Symbol]	EXISTING FENCE LINE	[Symbol]	PROP. CREDITED RECREATIONAL OPEN SPACE
[Symbol]	EXISTING CURB LINE	[Symbol]	PROP. PUBLIC SEWER, WATER, AND UTILITY EASEMENT
[Symbol]	EXISTING EDGE OF PAVING	[Symbol]	EX. PUBLIC 100% FLOODPLAIN
[Symbol]	EXISTING LIGHT POLE	[Symbol]	PROP. PRIVATE USE-IN-COMMON AND ACCESS EASEMENT
[Symbol]	EXISTING HARBOR	[Symbol]	PROP. STORM DRAIN
[Symbol]		[Symbol]	PROP. STORM DRAIN INLET
[Symbol]		[Symbol]	PROP. SIDEWALK
[Symbol]		[Symbol]	PROP. CURB
[Symbol]		[Symbol]	EXISTING 10' CONTOUR
[Symbol]		[Symbol]	EXISTING 2' CONTOUR
[Symbol]		[Symbol]	EXISTING SOILS
[Symbol]		[Symbol]	PROPOSED 10' CONTOUR
[Symbol]		[Symbol]	PROPOSED 2' CONTOUR
[Symbol]		[Symbol]	PROPOSED SPOT ELEVATION
[Symbol]		[Symbol]	AREA OF 25 PERCENT OR GREATER SLOPES
[Symbol]		[Symbol]	EXISTING TREES
[Symbol]		[Symbol]	PROP. SHRUBS
[Symbol]		[Symbol]	PROP. SHADE TREES
[Symbol]		[Symbol]	PROP. EVERGREEN TREES
[Symbol]		[Symbol]	PROP. LANDSCAPE BUFFER
[Symbol]		[Symbol]	PROP. FOREST CONSERVATION SIGNS

SPECIMEN TREES

NO.	TYPE	SIZE	CONDITION	STATUS
A	SYCAMORE	32" dbh	GOOD	REMOVED
B	SYCAMORE	30" dbh	GOOD	REMAIN
C	SYCAMORE	34" dbh	GOOD	REMOVED
D	BLACK WALNUT	32" dbh	GOOD	REMAIN
E	BLACK WALNUT	32" dbh	GOOD	REMAIN
F	BLACK WALNUT	32" dbh	GOOD	REMAIN
G	BLACK WALNUT	32" dbh	GOOD	REMAIN
H	BLACK WALNUT	42" dbh	GOOD	REMAIN
I	WHITE OAK	48" dbh	GOOD	REMAIN

APPROVED: DEPARTMENT OF PUBLIC WORKS
 DATE: 5-12-10
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 DATE: 6/1/10
 CHIEF, DIVISION OF LAND DEVELOPMENT

DATE: 5/21/10
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

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 of Developer: Michael New
 DATE: 4-30-10
 TRINITY HOMES AT CYPRESS SPRINGS, LLC

PAUL D. NEIMILLER
 KRISTY L. KRONMEYER J/T
 ELKRIDGE HEIGHTS
 L 11732 / F 76
 TAX MAP: 38
 PARCEL: 492
 LOT: 14A
 AREA: 22,477 SF
 ZONED R-12
 USE: RESIDENTIAL

DAVID W. KERR AND WIFE
 L 390 / F 622
 L 1896 / F 669
 TAX MAP: 38
 PARCEL: 492
 LOT: 14B
 AREA: 13,634 SF
 ZONED R-12
 USE: RESIDENTIAL

PLAN VIEW
 SCALE: 1"=50'

No AS-BUILT INFORMATION ON THIS SHEET

OWNER / DEVELOPER / CONTRACT PURCHASER
 TRINITY HOMES AT CYPRESS SPRINGS, LLC
 3675 PARK AVENUE, SUITE 301
 ELLICOTT CITY, MARYLAND 21043
 (410) 480-0023

FINAL ROAD CONSTRUCTION PLAN
LANDSCAPE & FOREST CONSERVATION PLAN
CYPRESS SPRINGS - PHASE 1
LOTS 1 - 13, OPEN SPACE LOTS 14-17,
AND NON-BUILDABLE BULK PARCELS A-D

1ST ELECTION DISTRICT: T12-38, BLOCK 3
 DPZ REFERENCE: SP-05-06, PB CASE 374, PARCELS 42, 44, 45 AND 46
 WP-05-38, SDP-09-061, L 386/F 658, HOWARD COUNTY, MARYLAND ZONED: R-ED
 L 8232/F 574, L 8344/F 670, L 4518/F 458

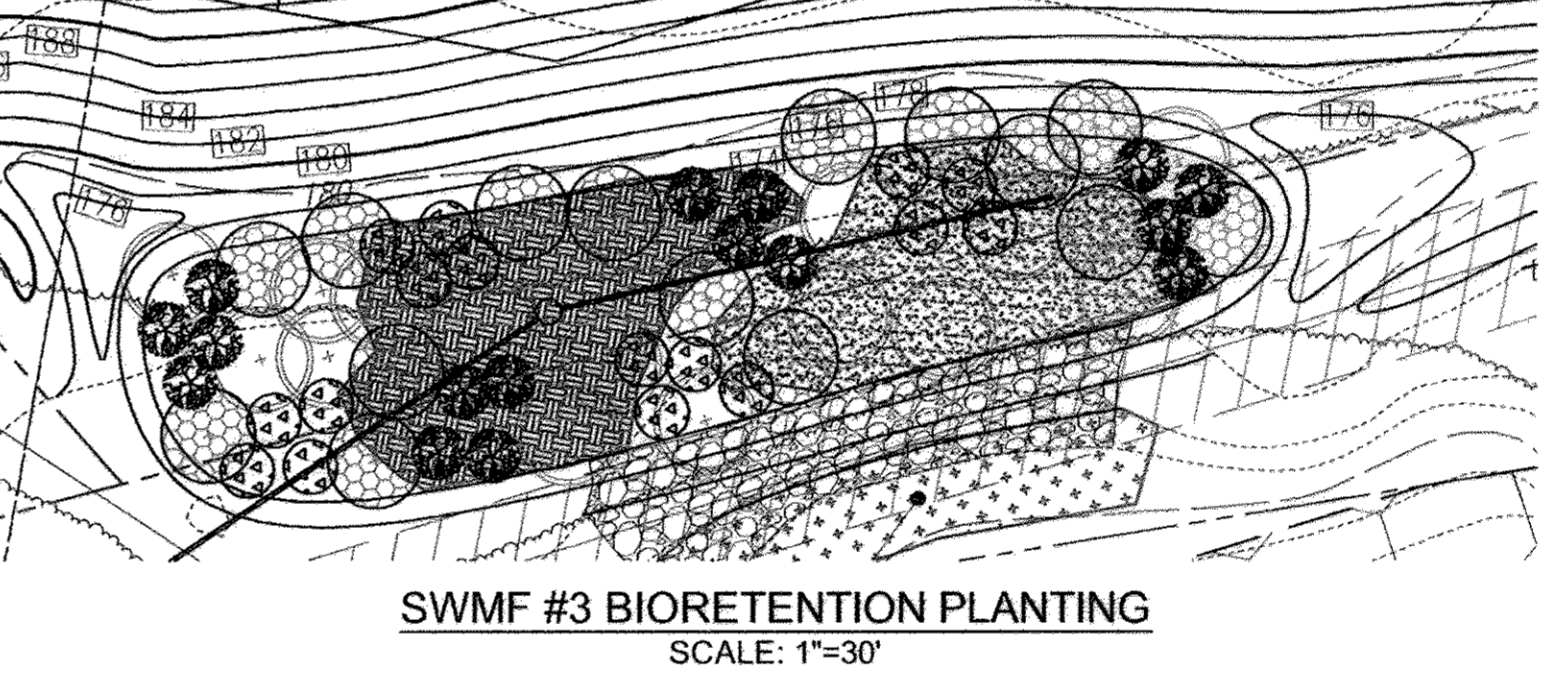
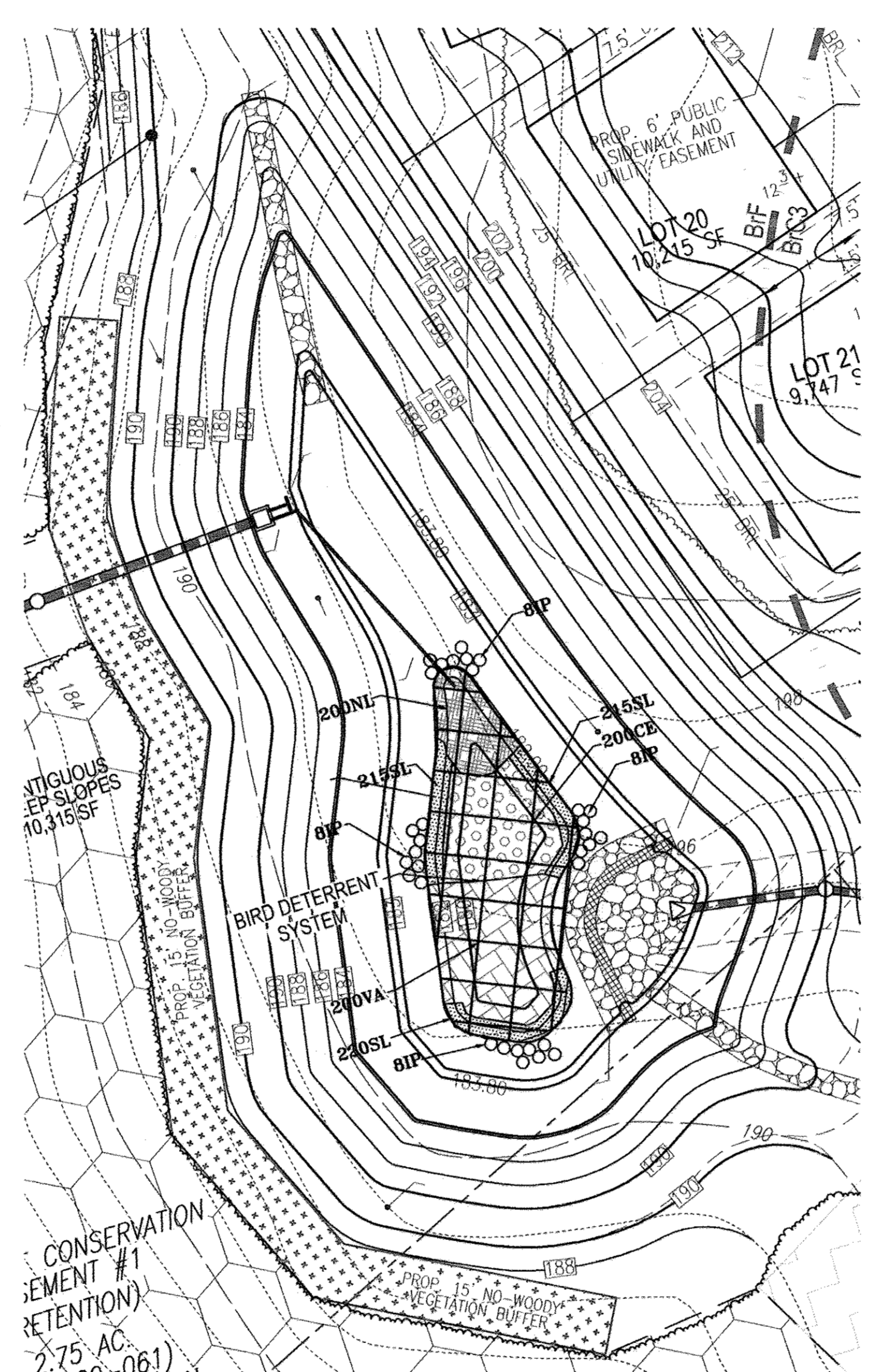
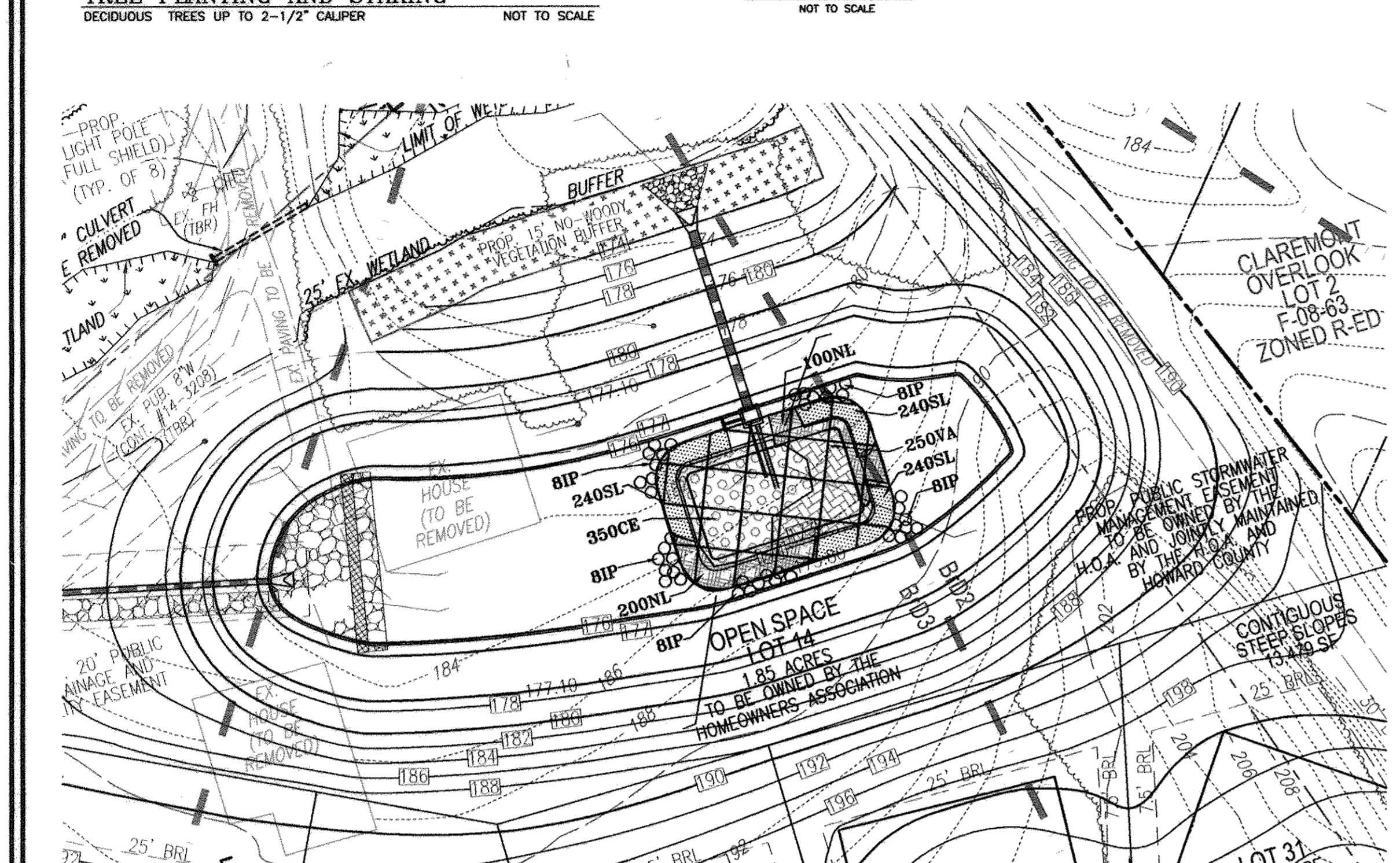
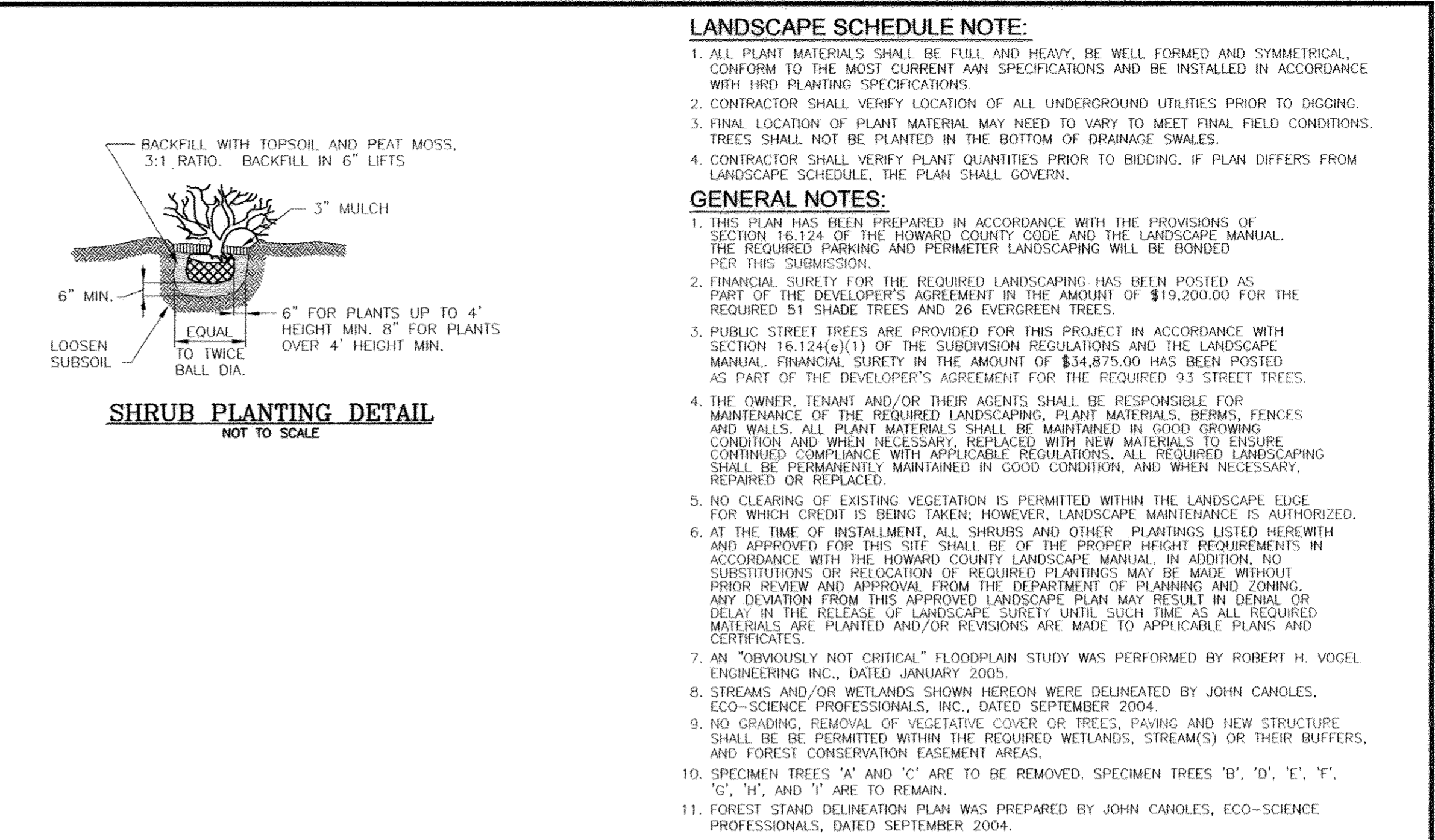
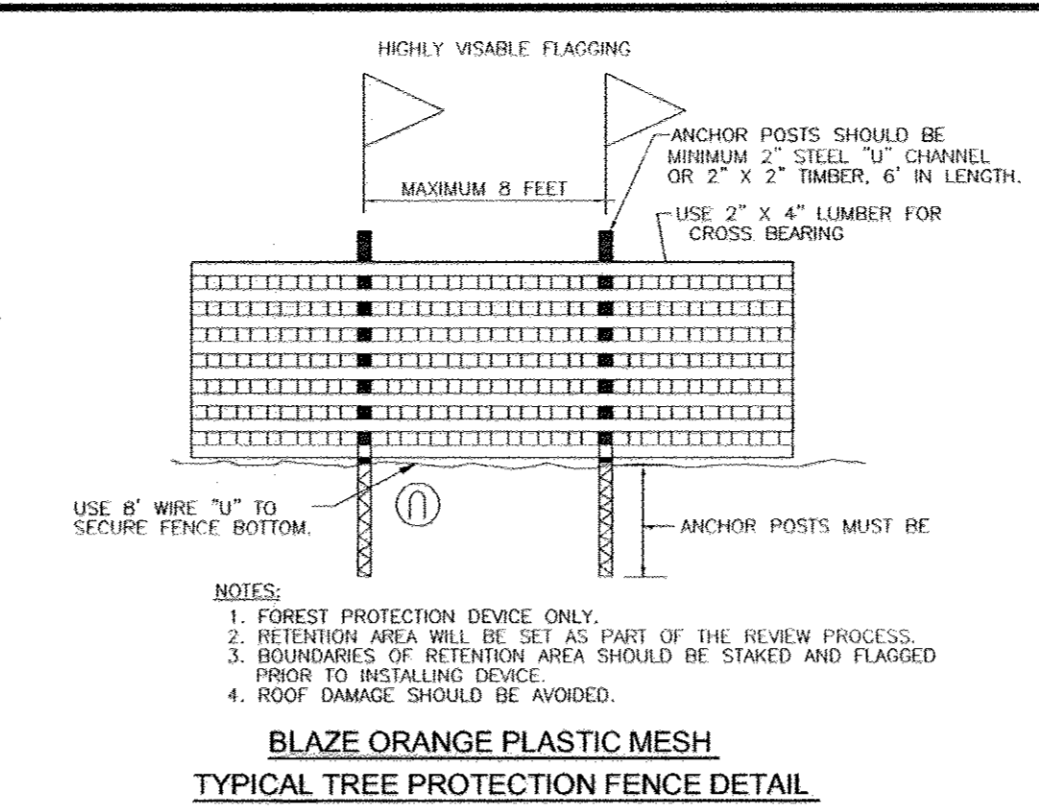
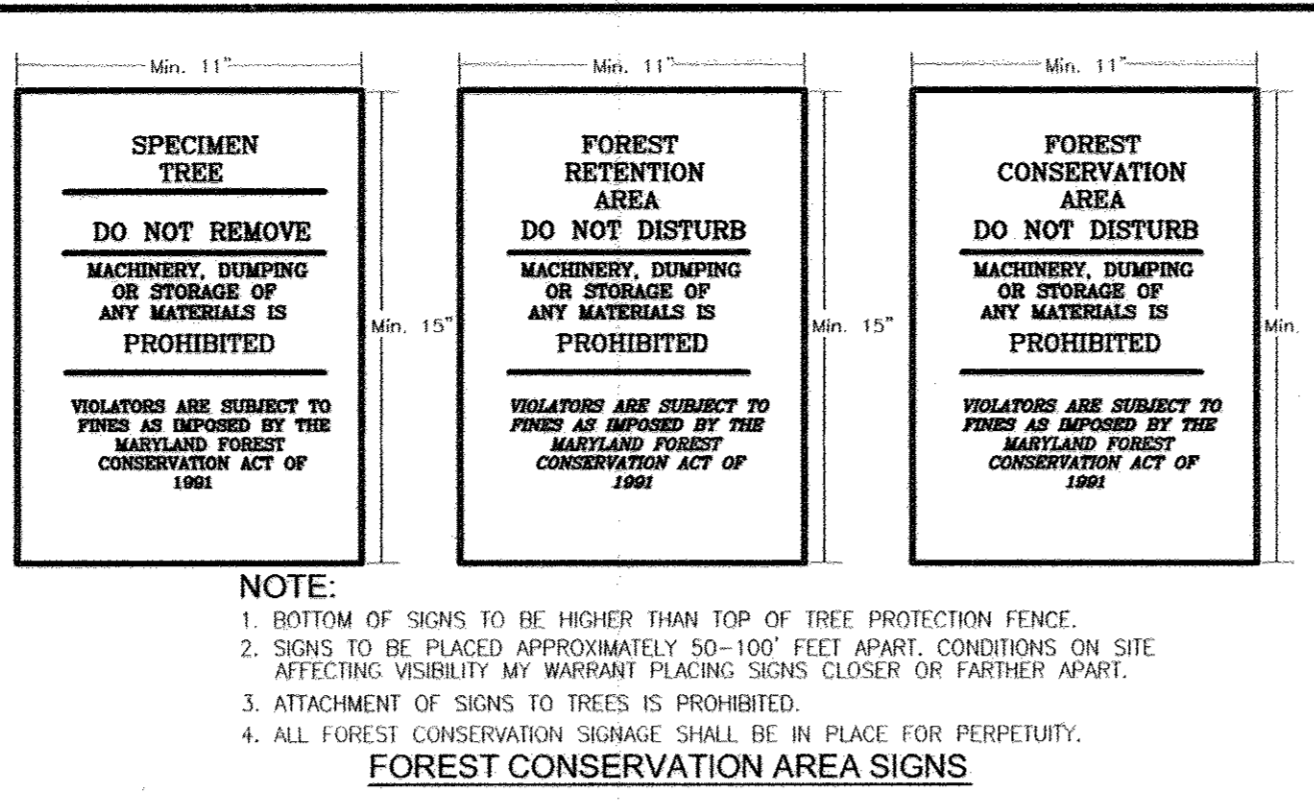
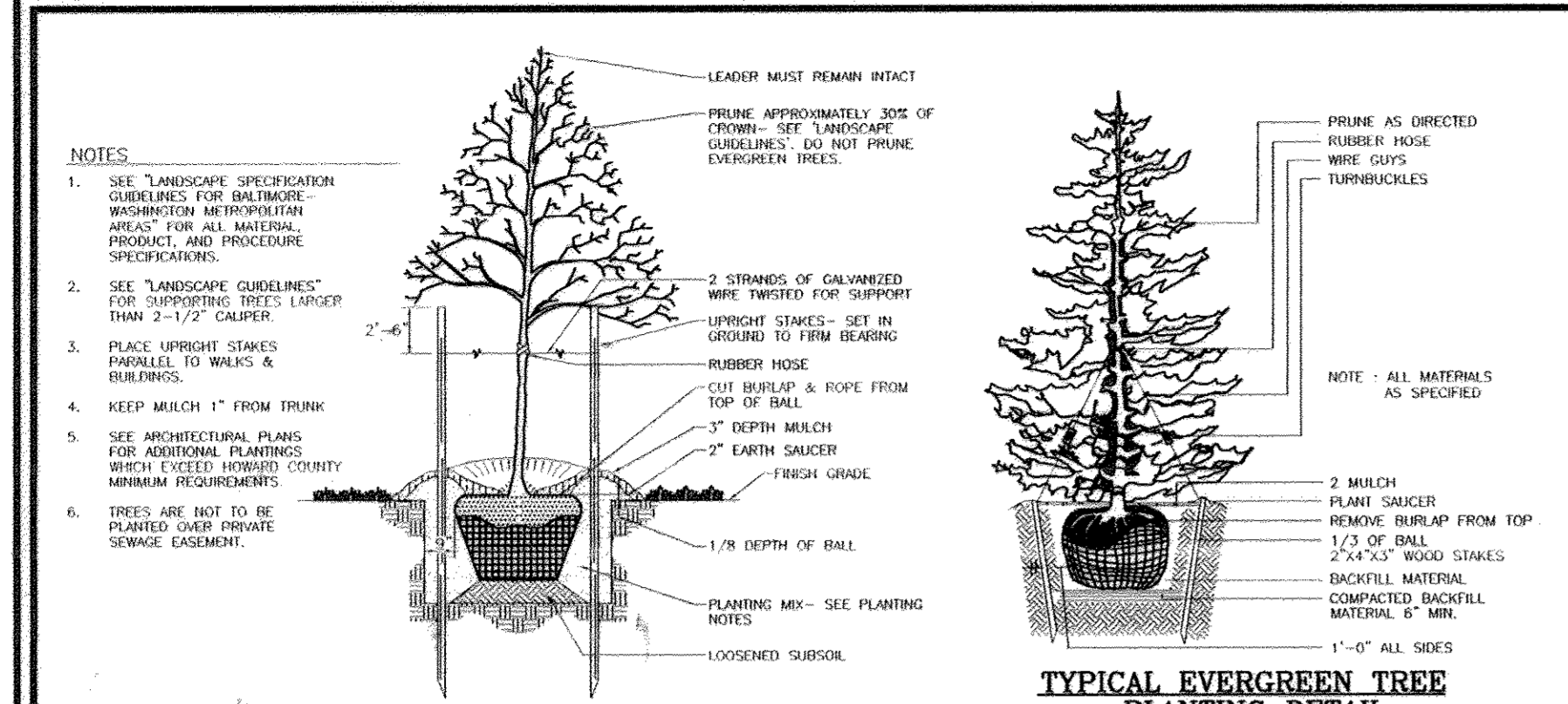
ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

DESIGN BY: RHW/JCO
 DRAWN BY: JMR
 CHECKED BY: RHW
 DATE: APRIL 2010
 SCALE: AS SHOWN
 W.O. NO.: 04-30

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16183
 EXPIRATION DATE: 09-27-2010

15 SHEET OF 17

AS-BUILT 8/29/17 F-10-028



BIORETENTION PLANTING SCHEDULE

KEY	AREA 1	BOTANICAL NAME / COMMON NAME	SIZE	REMARKS
(Symbol)	15	ACER RUBRUM 'SUMMERSET' (SEEDLESS)	1" - 1 1/2" CAL	B & B
(Symbol)	15	JUNIPER VIRGINIANA EASTERN RED CEDAR	5' - 6' HT.	B & B
(Symbol)	16	CLETHRA ALNIFOLIA SWEET PEPPERBUSH	3 GALLON	CONT
(Symbol)	16	LINDERA BENZONIA SPICE BUSH	3 GALLON	CONT
(Symbol)	125	ANDROPOGON VIRGINICUS BROOM SEDGE	2" POT	CONT
(Symbol)	125	PANICUM VIRGATUM SWITCH GRASS	2" POT	1" O.C.

*SURETY FOR BIORETENTION PROVIDED IN THE DEED COST ESTIMATE

SCHEDULE D: STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF PERIMETER	768 LF (SWMF 1)	886 LF (SWMF 2)	792 LF (SWMF 3)
CREDIT FOR EXISTING VEGETATION (NO. YES AND LINEAR FEET)	YES 126 LF OF EX. WOODS TO REMAIN	YES 363 LF OF EX. WOODS TO REMAIN	-
CREDIT FOR OTHER LANDSCAPING (NO. YES AND %)	NO	NO	N/A
NUMBER OF TREES REQUIRED (SHADE TREES, EVERGREEN TREES)	(8) BUFFER - (642 LF) 13 SHADE TREES 16 EVERGREEN TREES	(8) BUFFER - (383 LF) 8 SHADE TREES 10 EVERGREEN TREES	-
NUMBER OF TREES PROVIDED (SHADE TREES, EVERGREEN TREES, OTHER TREES (2:1 SUBSTITUTION))	13 SHADE TREES 16 EVERGREEN TREES	8 SHADE TREES 10 EVERGREEN TREES	-

NOTE: SWMF #3 IS A BIORETENTION FACILITY WHICH IS PLANTED NO PERIMETER PLANTINGS REQUIRED.

APPROVED: DEPARTMENT OF PUBLIC WORKS
DATE: 5-17-10

APPROVED: DEPARTMENT OF PLANNING AND ZONING
DATE: 5/20/10

APPROVED: DEVELOPER'S/BUILDER'S CERTIFICATE
DATE: 4-20-10

TRINITY HOMES AT CYPRESS SPRINGS, LLC

SWMF 1 - POCKET POND HAZARD CLASS 'A' HERBACEOUS LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	REMARKS
IP	40	OHIOLEA SENSIBILIS SENSITIVE FERN	PLUG 1.5' OC	
ML	300	CANWALARIA MAJALIS LILY-OF-THE-VALLEY	PLUG 1.5' OC	
SL	720	PANICUM VIRGATUM SWITCH-GRASS	PLUG 4' OC	
VE	250	ILICUM PERIOME PERENNIAL EYEBRASS	PLUG 2' OC	
CE	350	CYPERUS ESQUULENTUS YELLOW RICE SEDGE	PLUG 2' OC	

*SURETY FOR INTERNAL PLANTING PROVIDED IN THE DEED COST ESTIMATE

SWMF 2 - MICROPOND POND HAZARD CLASS 'A' HERBACEOUS LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	REMARKS
IP	32	OHIOLEA SENSIBILIS SENSITIVE FERN	PLUG 1.5' OC	
ML	200	CANWALARIA MAJALIS LILY-OF-THE-VALLEY	PLUG 1.5' OC	
SL	650	PANICUM VIRGATUM SWITCH-GRASS	PLUG 4' OC	
VE	200	ILICUM PERIOME PERENNIAL EYEBRASS	PLUG 2' OC	
CE	200	CYPERUS ESQUULENTUS YELLOW RICE SEDGE	PLUG 2' OC	

*SURETY FOR INTERNAL PLANTING PROVIDED IN THE DEED COST ESTIMATE

STREET TREE CALCULATIONS

STREET NAME	LINEAR FEET (NO. REQUIRED)	NO. PROVIDED
CYPRESS SPRINGS ROAD	3,712/40	93

LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	CAT.
AR	51	ACER RUBRUM OCTOBER GLORY RED MAPLE	2 1/2" - 3" CAL.	B & B
QP	93	CLEONTHIA IRACANTHOS VAR. THORNLESS MONEY JOCKEY	2 1/2" - 3" CAL.	B & B
PS	26	PANICUM VIRGATUM SWITCH GRASS	6" - 8" HT.	B & B
NSH	40	NELLIE STEVEN HOLLY GALSAHHT		B & B

SCHEDULE A PERIMETER LANDSCAPE EASEMENT

CATEGORY	ADJACENT TO ROADWAYS AND PERIMETER PROPERTIES				TOTAL
	A	2	3	4	
PERIMETER FRONTAGE DESIGNATION	1	2	3	4	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	1,046	1,655	1,433	1,714	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	YES 188	YES 778	YES 1,433	YES 1,664	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	
NUMBER OF PLANTS REQUIRED	858	877	0	50	
SHADE TREES	1,600	140	1,500	1,500	30
EVERGREEN TREES	-	-	-	-	-
OTHER TREES (2:1 SUBSTITUTION)	-	-	-	-	-
NUMBER OF PLANTS PROVIDED	14	15	0	1	30

CONSTRUCTION PERIOD PROTECTION AND MANAGEMENT NOTES FOR FOREST CONSERVATION

PRE-CONSTRUCTION PHASE

- 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 PRUNING 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 PHASE

- 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 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.

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.
- 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.
- 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 CONSERVATION WORKSHEET

NET TRACT AREA	33.10 AC
A. TOTAL TRACT AREA	33.10 AC
B. DEDUCTIONS	0.23 AC
C. NET TRACT AREA	32.87 AC

LAND USE CATEGORY (FROM TABLE 3.2.1, PAGE 40 MANUAL)

INPUT THE NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY.

AREA	MUR	IDA	HDR	MPD	CIA
0	0	0	0	1	0

D. AFFOREST THRESHOLD 15% X D = 4.98 AC
E. CONSERVATION THRESHOLD 20% X D = 6.47 AC

EXISTING FOREST COVER:
F. EXISTING FOREST COVER (EXCLUDING FLOODPLAIN) = 19.10 AC
G. AREA OF FOREST ABOVE CONSERVATION THRESHOLD = 12.63 AC

BREAK EVEN POINT = 9.00 AC
H. BREAK EVEN POINT = 10.10 AC
I. CLEARING PERMITTED WITHOUT MITIGATION = 9.00 AC

PROPOSED FOREST CLEARING:
J. TOTAL AREA OF FOREST TO BE CLEARED = 10.10 AC
K. TOTAL AREA OF FOREST TO BE RETAINED = 9.00 AC

PLANTING REQUIREMENTS:
L. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD = 0.00 AC
M. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD = 0.00 AC
N. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD = 0.00 AC
O. TOTAL REFORESTATION REQUIRED = 0.00 AC
P. TOTAL AFFORESTATION REQUIRED = 0.00 AC
Q. TOTAL REFORESTATION AND AFFORESTATION REQUIRED = 0.00 AC

FOREST CONSERVATION REQUIREMENTS ARE PER SECTION 16.1202 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL. FOREST CONSERVATION OBLIGATIONS HAVE BEEN FULFILLED BY THE ON-SITE RETENTION OF 9.00 ACRES. LOCATED IN OPEN SPACE LOTS 15 AND 17. FINANCIAL SURETY FOR THIS REQUIRED FOREST CONSERVATION HAS BEEN POSTED UNDER SDP 09-061.

FOREST CONSERVATION EASEMENT CHART

EASEMENT	AREA	TYPE
1	2.78AC	RETENTION
2	4.22AC	RETENTION
3	1.66AC	RETENTION
4	2.28AC	RETENTION
TOTAL PROVIDED	10.88AC	RETENTION
TOTAL REQUIRED	9.00AC	RETENTION

OWNER / DEVELOPER / CONTRACT PURCHASER
 TRINITY HOMES AT CYPRESS SPRINGS, L.L.C.
 3675 PARK AVENUE, SUITE 301
 ELLICOTT CITY, MARYLAND 21043
 (410) 480-0023

J. CHRIS OGLE
 DNR QUALIFIED PROFESSIONAL

NO.	REVISION	DATE
1	ADD TREES ON PROPOSED RETAINING WALL	7/31/12

FINAL ROAD CONSTRUCTION PLAN LANDSCAPE & FOREST CONSERVATION NOTES AND DETAILS

CYPRESS SPRINGS - PHASE 1
 LOTS 1 - 13, OPEN SPACE LOTS 14-17 AND NON-BUILDABLE BULK PARCELS A-D

1ST ELECTION DISTRICT: DPZ REFERENCES: SP-05-06, PB CASE 374, WP-05-38, SDP-09-061, 1386R-058, 8232F-374, L 8344E-670, L 4518F-458

TAX MAP 38 BLOCK 3 PARCELS 42, 44, 45 AND 46 HOWARD COUNTY ZONED: R-ED

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

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 (EXPIRATION DATE: 09-27-2010)

DESIGNED BY: RHW/JCO
 DRAWN BY: JMR
 CHECKED BY: RHW
 DATE: APRIL 2010
 SCALE: AS SHOWN
 W.O. NO.: 04-30

16 SHEET OF 17

AASCD/MAA VEGETATIVE ESTABLISHMENT DETAILS AND SPECIFICATIONS FOR THE PROJECT WITHIN 4 MILES OF BWI AIRPORT

SEEDING

ITEM 903 SEEDING

DESCRIPTION

903-1.1 GENERAL. This item provides specifications for seeding of areas as designated on plans or as directed by the MAA Engineer. The species, mixtures, and methods of application provided in this item have been designed to reduce the attractiveness of airport grounds to wildlife. Only MAA-approved species, mixtures, and rates of application provided in this item may be used to establish vegetation. All activities associated with seeding including soil preparation, seed application, fertilization, and maintenance shall conform to these approved standards.

MATERIALS

903-2.1 SEED. All seed shall comply with the Maryland Seed Law (Agricultural Article of the Annotated Code of Maryland). Only MAA-approved species, mixtures, and rates of application provided in this item may be used to establish vegetation. Seed will be sampled and tested by an inspector from the Turf and Seed Section, Maryland Department of Agriculture (MDA), Annapolis, Maryland. All laws and turf seed and mixture shall be free from the following state-listed restricted noxious weeds:

- corn cockle (*Agrostemma githago*), bogbean (*Agrostis spp.*), rye (*Agrostis spp.*), wild onion (*Allium canadense*), wild garlic (*Allium vineale*), meadowweet (*Calceolaria spp.*), dodder (*Cuscuta spp.*), Horned lark (*Centurus decoloratus*), orchardgrass (*Alopecurus pratensis*), tall fescue (*Festuca arundinacea*), annual meadow grass (*Festuca pratensis*), velvetgrass (*Holcus lanatus*), annual bluegrass (*Poa annua*), rough bluegrass (*Poa trivialis*), timothy (*Phleum pratense*), and Johnson grass (*Sorghum holololus*).

Restricted noxious-weed seed may not exceed 0.5 percent by weight of any seed mixture. In addition, all seeds sold in Maryland shall be free from the following listed prohibited species of the same year:

Rate of Application (Lbs./Acre)	Species
192	85% Certified Turf-Type Tall Fescue
28	10% Certified Kentucky Bluegrass
14	5% Perennial Ryegrass

Supplemental Seed

Rate of Application (Lbs./Acre)	Species
25	Annual Ryegrass

903-2.1.1 MIXTURES AND APPLICATION RATES. Only seed mixtures and application rates described in this item may be used unless otherwise approved by the MAA Engineer. Seed mixtures shall meet criteria detailed in Paragraph 903-2.1.2. Seed mixtures have been formulated to maintain the attractiveness of areas to wildlife of common landscape accuracy. The appropriate seed mixture for application will be designated based on environmental conditions and may vary from site to site. All planting rates listed are in pounds of Pure Live Seed (PLS) per acre.

Seed mixtures, application scenarios, and rates for permanent cool-season grasses are as follows:

- a. Seed Mixture No. 1 - relatively flat areas (grade less than 4:1) subject to normal conditions and regular mowing (Application rate = 234 lbs PLS/acre);
- b. Seed Mixture No. 2 - sloped areas (grade greater than 4:1) not subject to regular mowing (Application rate = 115 lbs PLS/acre);
- c. Seed Mixture No. 3 - wetlands and their associated buffer zones (Application rate = 131 lbs PLS/acre).

Seed Mixture No. 1: Relatively flat areas regularly mowed and exposed to normal conditions (Application rate = 234 lbs PLS/acre)

Seed Mixture No. 2: Sloped areas not subject to regular mowing (Application rate = 115 lbs PLS/acre)

Seed Mixture No. 3: Wetlands areas and their associated buffer zones (Application rate = 131 lbs PLS/acre)

MAA SEED MIXTURES	APPROVED PLANT SPECIES		
	Purity Not Less Than (%)	Minimum % Germination	Pure Live Seed (%)
Certified Turf-Type Tall Fescue (Purity guarantee)	98	90	1.13
Certified Kentucky Bluegrass (Purity guarantee)	90	80	1.39
Perennial Ryegrass (Purity guarantee)	98	90	1.13
Annual Ryegrass (Purity guarantee)	98	90	1.13
Perennial Ryegrass (Purity guarantee)	93	85	1.24
Annual Ryegrass (Purity guarantee)	90	80	1.39
Perennial Ryegrass (Purity guarantee)	90	80	1.39
Perennial Ryegrass (Purity guarantee)	62	54	1.71

903-2.1.2 PURITY. All seed shall be free of all state-designated noxious weeds listed in Paragraph 2.1.1 and conform to MAA specifications. To ensure compliance, MAA requires sampling and testing of seed by the MAA Engineer. The Contractor shall provide duplicate signed copies of a statement by the Turf and Seed Section certifying that each lot of seed has been laboratory tested within six months of date of delivery. This statement shall include the following information:

- name and address of laboratory,
- date of test,
- lot number,
- the results of tests as to name, percentages of purity and of germination, percentages of weed content for the seed fractions,
- and, in the case of a mixture, the proportions of each kind of seed.

Seed Mixture No. 2: Sloped areas not subject to regular mowing (Application rate = 115 lbs PLS/acre)

Seed	Rate of Application (Lbs PLS/acre)
75% Hard Fescue	85
20% Chewings Fescue	23
5% Kentucky Bluegrass	7

Supplemental Seed

Seed	Rate of Application (Lbs of PLS/acre)
3	3

Seed Mixture No. 3: Wetlands areas and their associated buffer zones (Application rate = 131 lbs PLS/acre)

Seed	Rate of Application (Lbs of PLS/acre)
60% Ford Meadow Grass	83
30% Chewings Fescue	14
10% Perennial Ryegrass	14

Supplemental Seed

Seed	Rate of Application (Lbs of PLS/acre)
3	3

903-2.1.4 SEEDING SEASONS. Application of seed and seed mixtures shall occur within a specified seeding season unless otherwise approved by the MAA Engineer. No seed or seed mixtures shall be applied on frozen ground or when the temperature is at or below 35 degrees Fahrenheit (7.2 degrees Centigrade). Under these conditions, a layer of mulch should be applied in accordance with Item 903. Mulching to stabilize the site, and permanent seeding should occur in the subsequent seeding season. Seed application may occur during the seeding season data listed below. Seeding performed after October 20 should be a temporary cover of annual ryegrass and followed by overseeding of the appropriate seed mixture during the spring seeding season.

SEEDING SEASONS

Temporary Cool Season Grasses	Month 1 to April 30 and August 1 to October 31, inclusive
Temporary Cover of Annual Ryegrass	Month 1 to April 30 and August 1 to November 30, inclusive
Temporary Cover of Warm Season Grasses (Elymus sp.)	May 1 to July 31, inclusive. Rate of application should be 15.0 lbs PLS per acre.

Seeding seasons are based on typical years and can be subject to variation, which may be modified by the MAA Engineer based on annual trends.

If the time required to complete any of the operations necessary under this item, within the specified planting season or any authorized extensions thereof, exceeds beyond the Contract period, then such time will be charged against the Contract time, and liquidated damages will be collected with respect to that portion of work.

903-2.3 LIMB. Limb shall consist of ground limestone and contain at least 85 percent total carbonates. Limb shall be ground to a fineness so that at least 90 percent will pass through a No. 20 mesh sieve and 50 percent will pass through a No. 100 mesh sieve. Dolomitic limb or a high magnesium lime shall contain at least 10 percent magnesium oxide. Limb shall be applied by approved methods detailed in Section 903-3.3 of this item. The rate of application will be based on results of soil tests.

903-2.4 FERTILIZER. Fertilizer shall be standard commercial fertilizer (supplied separately or in mixture) and meet the requirements of applicable state and federal laws (CFR-241) as well as standards of the Association of Official Agricultural Chemists. Nitrogen-Phosphorus-Potassium (N-P-K) concentrations shall be determined from analysis of soil samples. Approved fertilizer rates are 21 pounds of 16-16-16 per 1,000 square feet. Methods of fertilizer application shall conform to standards described in Section 903-3.3 of this item. Fertilizer shall be furnished in standard containers that are clearly labeled with name, weight, and guaranteed analysis of the contents (percentage of total nitrogen, available phosphoric acid, and water-soluble potash). Mixed fertilizers shall not contain any hydrated lime or caustic compounds. Fertilizers failing to meet the specified analysis may be approved by the MAA Engineer, providing sufficient materials are applied to conform with the specified mixtures per unit of measure without additional cost to MAA.

The fertilizers may be applied in the following forms:

- A dry, free-flowing fertilizer suitable for application by a common fertilizer spreader;
- A finely ground fertilizer soluble in water, suitable for application by power sprayer, or

CONSTRUCTION METHODS AND EQUIPMENT

903-3.1 GENERAL. This section provides approved methods for the application of and includes standards for seed preparation, methods of application, and equipment to be used during the process. Lines and fertilizer shall be applied to seed areas before the seed is spread. The mixture of seed will be determined for sites based on environmental conditions as described in Paragraph 903-2.1.3.

903-3.2 ADVANCE PREPARATION. Areas designated for seeding shall be properly prepared in advance of seed application. The area shall be filled and graded prior to application of line and fertilizer. The rate of application will be based on results of soil tests performed by the University of Maryland Soil Testing Laboratory. By law, persons applying fertilizer to State-owned land shall follow the recommendations of the University of Maryland as set forth in the "Plant Nutrient Recommendations Based on Soil Tests for Turf Maintenance" and the "Plant Nutrient Recommendations Based on Soil Tests for Production" (see Appendix D). Application of the fertilizer shall be a mixture that is consistent with the recommendations of the University of Maryland Cooperative Extension.

903-3.3 METHODS OF APPLICATION. Line, fertilizer, and seed mixtures shall be applied by either the dry or wet application methods that have been approved by MAA and are detailed below.

903-3.3.1 DRY APPLICATION METHOD

- Lining. If soil test results indicate that lime is needed, the following procedures will be used: following advance preparation of the seedbed, lime shall be applied prior to the application of any fertilizer or seed and only on methods that have been prepared as described in paragraph 903-3.2. The lime shall be uniformly spread and worked into the top 2 inches of soil, after which the seedbed shall be properly graded again.
- Fertilizing. Following advance preparation (and liming if necessary), fertilizer shall be spread uniformly at the specified rate to provide less than the minimum quantity stated in Paragraphs 903-2.1.
- Seeding. Seed mixtures shall be sown immediately after fertilization of the seedbed. The fertilizer and seed shall be lightly raked to a depth of 1 inch for newly graded and disturbed areas.
- Rolling. After the seed has been properly covered, the seedbed shall be immediately compacted using a walk-behind or approved roller.

903-3.3.2 WET APPLICATION METHOD/HYDROSEEDING

- General. The Contractor may elect to apply seed and fertilizer as per Paragraphs c and d of this section in the form of a slurry mixture by spraying over the previously prepared seedbed using methods and equipment approved by MAA. The rates of application shall be as specified in Paragraphs 903-2.1 through 903-2.3.
- Spraying Equipment. The spraying equipment shall have a container or water tank equipped with a liquid level gauge capable of reading increments of 50 gallons or less and the water supply shall be regulated to the nozzle. The nozzle pipe shall be mounted so as to be visible to the operator at all times. The container or tank shall also be equipped with a mechanical power-driven regulator capable of keeping all the solids in the mixture in complete suspension at all times until used.
- Spraying. Line shall be sprayed upon previously prepared seedbeds on which the lime, if required, shall have been worked in already. The mixture shall be applied using a high-pressure spray which shall always be directed upward into the air so that the mixture will fall to the ground in a uniform spray. Nozzle or spray shall never be directed toward the ground in such a manner that might produce erosion or runoff. Particular care shall be exercised to ensure that the application is made uniformly, at the prescribed rate, and to avoid agitated mixtures and overlapped areas. Predetermined quantities of the mixture shall be used in accordance with specifications to cover specified sections of known areas. To check the rate and uniformity of application, the applicator will observe the degree of wetting of the ground or distribute test sheets of paper or grass over the area at intervals and observe the quantity of material deposited thereon.

All water used shall be obtained from fresh water sources and shall be free from igneous chemicals and other toxic substances harmful to plant life. Brackish water shall not be used at any time. The Contractor shall identify all sources of MAA. The rates of application shall be as specified in Paragraphs 903-2.1 through 903-2.3.

All mixtures shall be constantly agitated from the time they are mixed until they are finally applied to the seedbed. All such mixtures shall be used within 30 minutes from the time they were mixed to they shall be wasted and disposed of at a location acceptable to the Engineer.

TEMPORARY SEEDING

Line: 100 pounds of dolomitic limestone per 1,000 square feet.

Fertilizer: 15 pounds of 10-10-10 per 1,000 square feet.

Seed: Per ITEM 903

Mulch: Mulch shall be applied as per ITEM 905.

FILL

No fill may be placed on frozen ground. All fill to be placed in approximately horizontal layers, each layer having a loose thickness of not more than 8 inches. All fill in roadways and parking areas is to be classified Type 2 as per Anne Arundel County Code - Article 21, Section 2-308, and compacted to 90% density, comparison to be determined by ASTM D-1557-66T (Modified Proctor). Any fill within the building area is to be compacted to a minimum of 90% density as determined by methods previously mentioned. Fills for pond embankments shall be compacted as per MD-378 Construction Specifications. All other fills shall be compacted sufficiently so as to be stable and prevent erosion and slippage.

MULCHING

Mulch shall be applied to all seeded areas immediately after seeding. During the time periods when seeding is not permitted, mulch shall be applied immediately after seeding.

Mulch shall be applied as per ITEM 905.

CONSTRUCTION METHODS AND EQUIPMENT

903-3.3.3.1 and 903-3.3.2 approved by MAA. The seeding mixture shall be applied within 48 hours after application of line and fertilizer. To firm the seeded areas, contracting shall occur immediately after seeding.

903-3.3.3.3 WET APPLICATION METHOD/HYDROSEEDING

All water used shall be obtained from fresh water sources and shall be free from igneous chemicals and other toxic substances harmful to plant life. Brackish water shall not be used at any time. The Contractor shall identify all sources of MAA. The rates of application shall be as specified in Paragraphs 903-2.1 through 903-2.3.

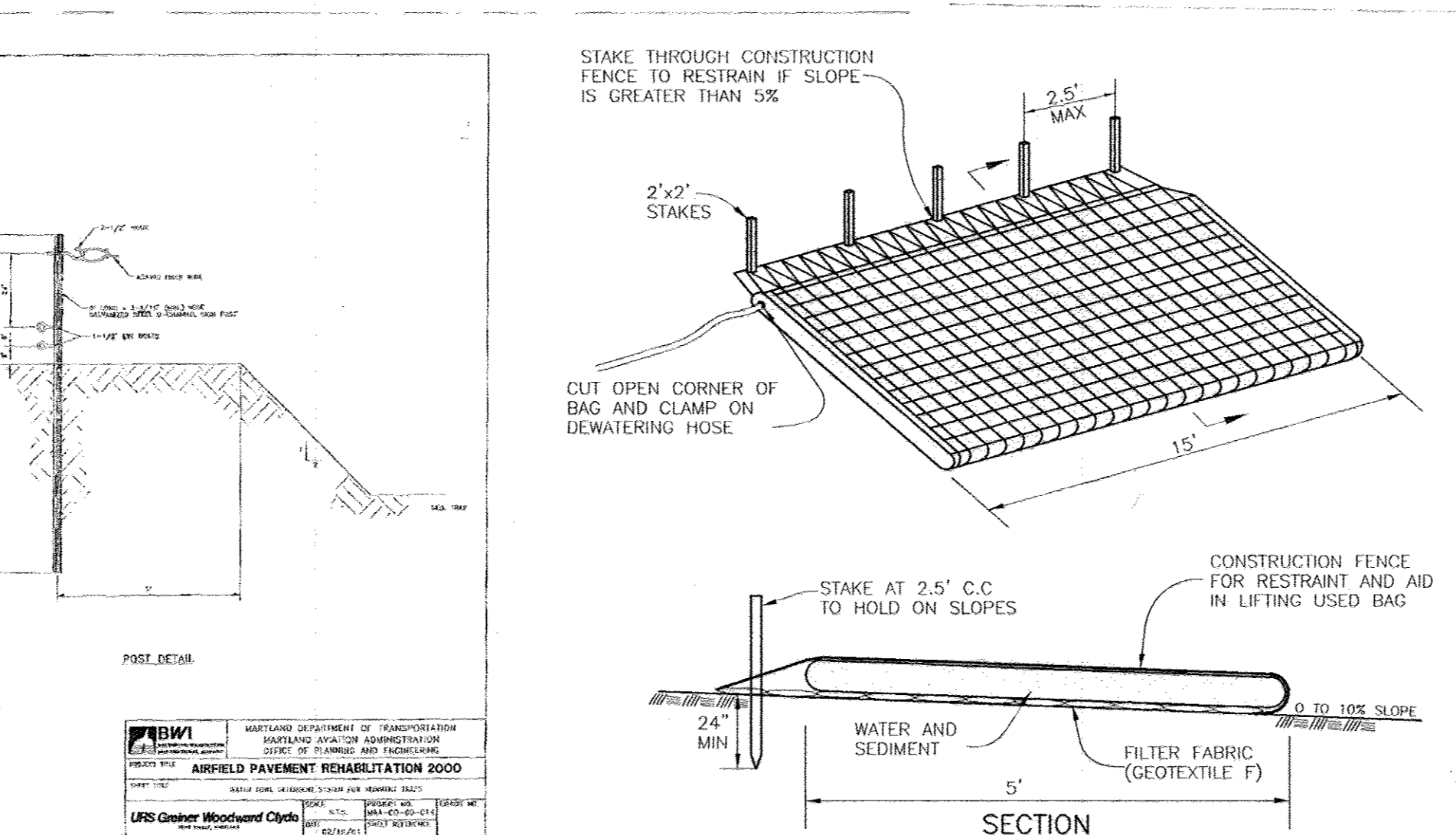
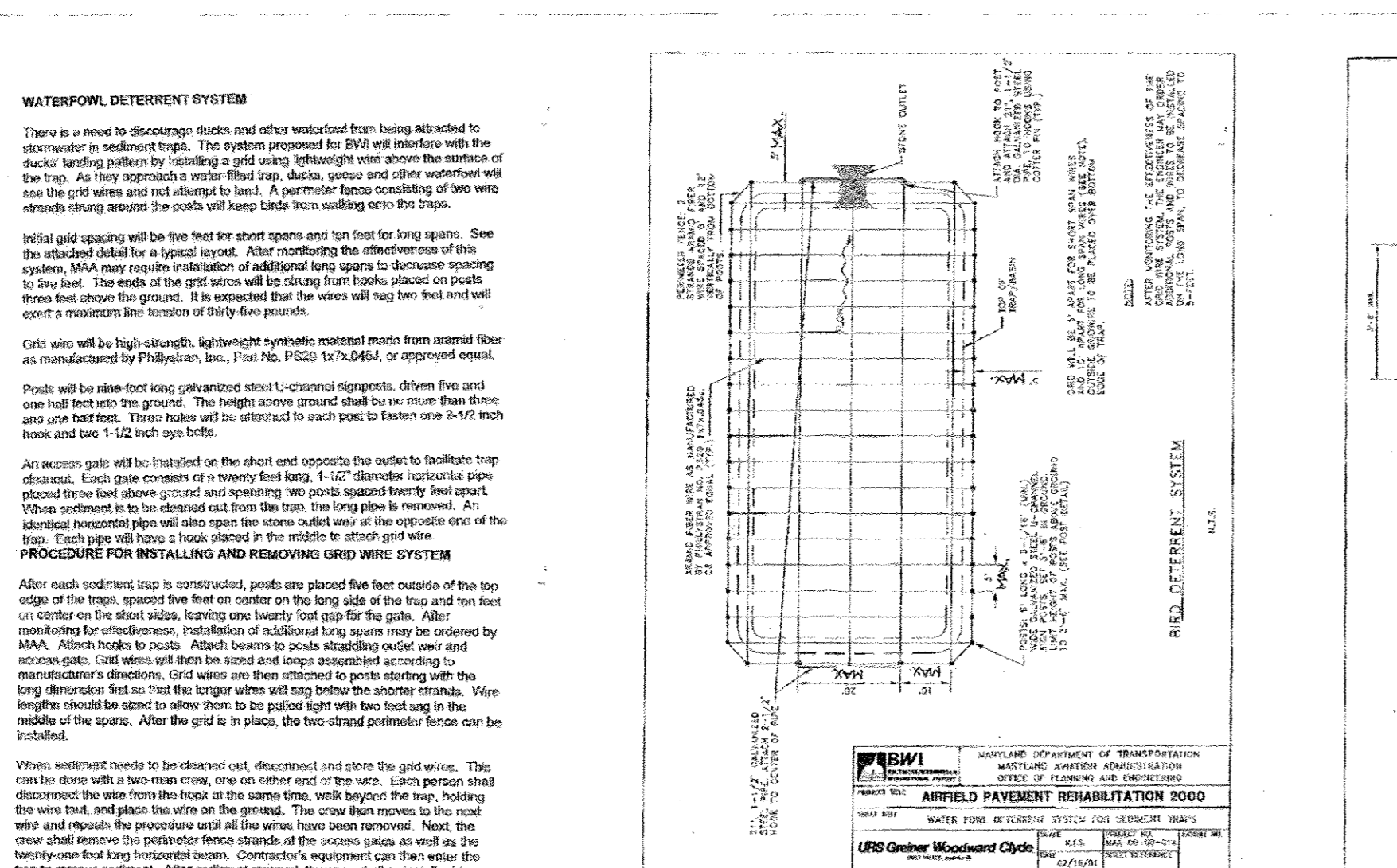
All mixtures shall be constantly agitated from the time they are mixed until they are finally applied to the seedbed. All such mixtures shall be used within 30 minutes from the time they were mixed to they shall be wasted and disposed of at a location acceptable to the Engineer.

MINING OPERATIONS

Sediment control plans for mining operations must include the following seeding dates and mixtures:

For seeding dates of February 1 through April 30 and August 15 through October 31, use seed mixture of tall fescue at the rate of 2 pounds per 1,000 square feet and red top at the rate of 1.5 pounds per 1,000 square feet.

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



BIRD DETERRENT SYSTEM TO BE USED FOR THE MICRO-POOL FOR FACILITIES 1 & 2. SEE SHEET 4 FOR LOCATION.

APPROVED: DEPARTMENT OF PUBLIC WORKS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

BY THE DEVELOPER:

Michael Pfaff
MICHAE L PFAFF
DATE: 4.30.10

BY THE ENGINEER:

Robert H. Vogel
ROBERT H. VOGEL
DATE: 4/27/10

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

HOWARD S.C.D.

DATE: 5/10/10

AASCD/MAA NOTES

THE PROPOSED PROJECT IS LOCATED IN HOWARD COUNTY, MARYLAND ON TAX MAP 38, BLOCK 3, PARCEL 42.44, 45 AND 46. THE PROPOSED PROJECT IS LOCATED NEAR THE BALTIMORE WASHINGTON INTERNATIONAL THURGOOD MARSHALL AIRPORT (BWI), APPROXIMATELY 14,000 FEET NORTH OF RUNWAY 15R-33L.

- SEDIMENT BASINS AND TRAPS ARE PROPOSED FOR SEDIMENT AND EROSION CONTROL DURING CONSTRUCTION.
- SEDIMENT TRAPS AND BASINS MUST BE DRAINED COMPLETELY THROUGH A FILTERING DEVICE TO A CLEAN WATER OUTFALL WITHIN 24 HOURS FOLLOWING ANY RAINFALL EVENT.
- LANDSCAPING & STORM WATER POND LANDSCAPING ON SITE: ANY DEVIATION TO PLANT SPECIES AND VEGETATION USED ON THESE PLANS NEED APPROVAL FROM AASCD/MAA. THE PLANT SPECIES USED ON THIS SITE ARE TO AVOID ITS POTENTIAL TO ATTRACT WILDLIFE THAT COULD POSE STRIKE HAZARD TO AIRCRAFT.
- BWI AIRPORT NOISE ZONE: THE SITE FOR THIS PROJECT IS LOCATED OUTSIDE THE BOUNDARIES OF THE AIRPORT NOISE ZONE.
- THE ALLOWABLE HEIGHT FOR ANY PERMANENT OR TEMPORARY STRUCTURES TALLER THAN 277 FEET ABOVE MEAN SEA LEVEL NEED OBSTRUCTION ANALYSIS REVIEW AND PERMIT FOR THE AIRPORT ZONE.
- THE STORM WATER MANAGEMENT FACILITIES WITHIN 10,000 FEET OF ACTIVE RUNWAYS OR WITHIN 5 MILES OF AN APPROACH SURFACE MUST DRAIN WITHIN 24 HOURS FOLLOWING THE 1 OR 2 YEAR STORM EVENTS AND WITHIN 48 HOURS FOLLOWING THE 10 OR 100 YEAR STORM

NO AS-BUILT INFORMATION ON THIS SHEET

FINAL ROAD CONSTRUCTION PLAN

AASCD/MAA NOTES & DETAILS

CYPRESS SPRINGS - PHASE 1

LOTS 1 - 13, OPEN SPACE LOTS 14-17, AND NON-BUILDABLE BULK PARCELS A-D

1ST ELECTION DISTRICT: DPZ REFELECTIONS: SP-05-06, PB CASE 374, WP-05-38, SDP-09-051, L 388/F-658, R 8232/F 574, L 8344/F 570, L 4518/F 458

ROBERT H. VOGEL ENGINEERING, INC.

ENGINEERS - SURVEYORS - PLANNERS

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

DESIGN BY: RHW/JCO
DRAWN BY: JMR
CHECKED BY: RHW
DATE: APRIL 2010
SCALE: AS SHOWN
W.O. NO: 04-30

PROFESSIONAL CERTIFICATE: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A MARYLAND LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16103, EXPIRATION DATE: 09-27-2010

17 SHEET OF 17

AS-BUILT 8/29/17 F-10-028