

GENERAL NOTES

- 1. All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications if applicable.
2. Location of existing topography, including treelines, streams, structures, etc. are derived from aerial survey provided by Air Survey Corporation dated 1999, supplemented with field run information performed by Daft McCune Walker, Inc. dated 2010.
3. Water and sewer extensions for this project will be public, Contract #24-4696-D
4. Existing utilities shown are taken from record drawings obtained from Howard County, water and sewer Contract #24-4120 and #528-5.
5. Boundary shown hereon is a result of a field run monumented boundary survey performed on or about June 25, 1999 by Daft McCune Walker, Inc.
6. A wetland report was prepared by Daft McCune Walker, Inc. and approved in April 2001.
7. APFO Traffic Analysis approved under 5-99-12.
8. A Noise Study was approved in July 1999, under 5-99-12.
9. There are no known cemeteries or grave sites located within Parcel A.
10. Stormwater Management Quality and Quantity is provided by two (2) P-3 Wet Extended Detention Facilities (wetponds). Exchange to be provided at the time of development. The facilities are to be privately owned and maintained by the property owner.
11. This proposal is subject to the Fifth Edition of the Subdivision and Land Development Regulation and compliance with County Council Bill 50-2001, which amends portions of the zoning regulations.
12. The phase of the Emerson Project complies with Section 16.1200 of the Howard County Code for Forest Conservation by retaining 1.377 acres of existing forest and providing 1.377 acres of reforestation. When evaluated cumulatively with previous phases of the project, 2.754 acres of forest have been cleared, 2.754 acres have been retained, and 2.754 acres have been reforested. The cumulative reforestation obligation is 2.754 acres.
13. The subject property is zoned MXD-3 per the February 2, 2004 Comprehensive Zoning Plan, the July 28, 2006 Comprehensive Zoning Regulation Amendments and per Case ZB-979M approved on September 3, 1998.
14. Phasing for this project is in accordance with the decision and order for Zoning Case ZB-979M and decision order for PB-339 and PB-359 (comprehensive sketch plan, 5-99-12).
15. On September 3, 1998, the Zoning Board granted approval of ZB-979M for the Preliminary Development Plan and development criteria to establish the PEC-MXD-3 zoning district for this project.
16. The minimum building setback restrictions from property and public road right-of-way lines are to be in accordance with the development criteria approved with 5-99-12 and the decision and order for PB-339 and PB-359.
17. The stream delineation for this project was prepared by Daft McCune Walker, Inc. dated June 2006.
18. No grading, removal of vegetative cover or trees, paving and/or new structures shall be permitted within the wetlands, streams or their required buffers, forest conservation easements and/or 100 year floodplain.
19. The development and construction on this property must comply with setback and buffer regulations in the submission of the Site Development Plan, Waiver Petition, or Building and Grading Permits.
20. There are no existing structures, including historic structures, located within the limits of this plan.
21. The Division of Land Development has determined that the two (2) proposed stream/floodplain crossings for the Eternal Rings Drive extension are considered necessary or essential stream/floodplain crossings for this subdivision because the ultimate road alignment was shown and approved under Comprehensive Sketch Plans, 5-99-12 and cases PB-339 and PB-359 and in accordance with Sections 16.115(c) and 16.116(c) of the Subdivision and Land Development Regulations.
22. The coordinates shown hereon are based upon the Howard County Geodetic Control, which is based upon the Maryland State Plane Coordinate System. Howard County monument numbers 47DA, 47E4 and 47G2.
23. The 100-Year Floodplain Study for this project was prepared by Daft McCune Walker, Inc. dated June 2003 and approved under F-04-053.
24. The geotechnical report for this project was prepared by the Balter Company, dated December 17, 2007.
25. The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work being done.
26. Any damage to the County or State right-of-way shall be corrected at the developer's expense.
27. Trench bedding for storm drainage structures shall be in accordance with Howard County Standard G2.01.
28. Department of Planning and Zoning reference file numbers: 5-99-12, PB-339, PB-359, ZB-979M, F-08-104, WF-08-24, F-08-008 and F-04-053.
29. All inlets shall be constructed in accordance with Howard County or MSHA Standards as specified on the structure schedule.
30. All materials and construction are to be in accordance with the latest edition of Howard County Design Manual, Volume 1.
31. All curb radii are five foot unless otherwise listed.
32. The 100 year floodplain has been delineated on this plan.
33. This property is located within the Metropolitan District.
34. There are 0.415 ac. of slopes greater than 25% located on site.
35. All plan dimensions are to face of curb unless otherwise noted.
36. This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard County Code and the Emerson Landscape Design Criteria. Financial surety for the required street tree landscaping in the amount of \$19,500.00 (52 shade trees @ \$375.00 on this plan must be posted as part of the Developer's Agreement. DED shall include the public street trees in their cost estimate for road construction. Financial surety for the required landscaping (stormwater management and perimeter landscaping) shall be posted as part of the developer's agreement in the amount of \$63,000.00 for 136 shade trees and 140 overgreen trees.
37. The Forest Conservation Easement has been established to fulfill the requirements of Section 16.1200 of the Howard County Code and the Forest Conservation Manual. 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.
38. Concrete structural components to be standard as designed and supplied by the precast manufacturer.
39. The 65dBa Noise line is within the building cartilage of the parcel and since no residential use is proposed, mitigation has not been provided, however, in case residential use is proposed in the future, mitigation shall be required.
40. All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications, if applicable.
41. The contractor shall notify the Department of Public Works Bureau of Engineering / Construction Inspection Division at (410) 313-1880 at least five (5) working days prior to the start of work.
42. Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any paving.
43. All compaction in fill areas shall achieve a minimum 95% density in accordance with AASHTO T-180.
44. Street lighting 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.
45. All sign posts used for traffic control signs installed in the County Right -of-Way shall be mounted on a 2" galvanized steel, perforated, square tube post (14 gauge) inserted into a 2 1/2" galvanized steel, perforated, square tube sleeve (12 gauge) - 3' long. A galvanized steel pole cap shall be mounted on top of each post.
46. No structures exist on the subject property.
47. A surety in the amount of \$80,804.00 is required for reforestation (3,70 acres @ \$50.50/af.). The total Forest Conservation surety amount provided with the Developer's Agreement is equal to \$80,804.00. (* Reflects deduction for landscape trees.)
48. The BOE setback is shown as a 45' wide area based on BOE's "Planting Zone Guide". The first 20 feet is shown as NON-credited no planting zone. The next 25 feet is shown as a NON- Credited Retention area with Credited Reforestation with trees that are less than 25 feet in height at maturity.
49. MDE/COE Permit No. 08-NI-3249/200863320

Revision No. 3 Purpose Statement
1. Remove future connection of Eternal Rings Drive
2. Remove storm facilities #1 & #2, associated manholes & details
3. Remove all work labeled as phase 1 stage 2 and phase 2 stage 2.

Revision No. 5 Purpose Statement
1. Roadway and public storm drain improvements associated with cul-de-sacs.
2. Right of way dedication for proposed cul-de-sacs.
3. Show revised Forest Conservation Easements.

SITE ANALYSIS DATA CHART

Table with 2 columns: Section and Description. Includes General Site Data, Area Tabulation, and Unitlot Tabulation.

Administrative Waiver for SWM

An administrative waiver for stormwater management was granted for this parcel by Howard County Department of Engineering Division on January 18, 2011. The request was approved subject to the bonding of SWM under F-11-036 prior to the signature of a duly licensed professional engineer under the laws of the State of Maryland.

REVISION NO. 1 PURPOSE STATEMENT:

- 1. THIS ROAD CONSTRUCTION PLAN WAS REVISED TO: INCORPORATE PHASE 1 & PHASE 2 STAGING (1 & 2) TO INITIALLY CONSTRUCT ETHERNAL RINGS DRIVE PUBLIC ROAD EXTENSIONS, PRIOR TO THE OVERALL ON SITE MASS GRADING AND BASIN CONSTRUCTION.
2. TO PROVIDE A BORROW AREA MASS GRADING PLAN ON EMERSON SECTION 3, AREA G FOR FILL MATERIAL FOR PUBLIC ROAD CONSTRUCTION.
3. TO PROVIDE AND CONSTRUCT TEMPORARY STORMWATER MANAGEMENT ESP'S FOR ETHERNAL RINGS DRIVE (NORTH) ROAD EXTENSION ON EMERSON SECTION 3, AREA G.
4. TO SHOW NEW OWNERSHIP OF BOTH EMERSON SECTION 3, AREAS G & 7.

The landscaping requirements on this plan are no longer applicable. Please see 50P-21-017 for the required landscaping.

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 31373, Expiration Date: 1-21-23.

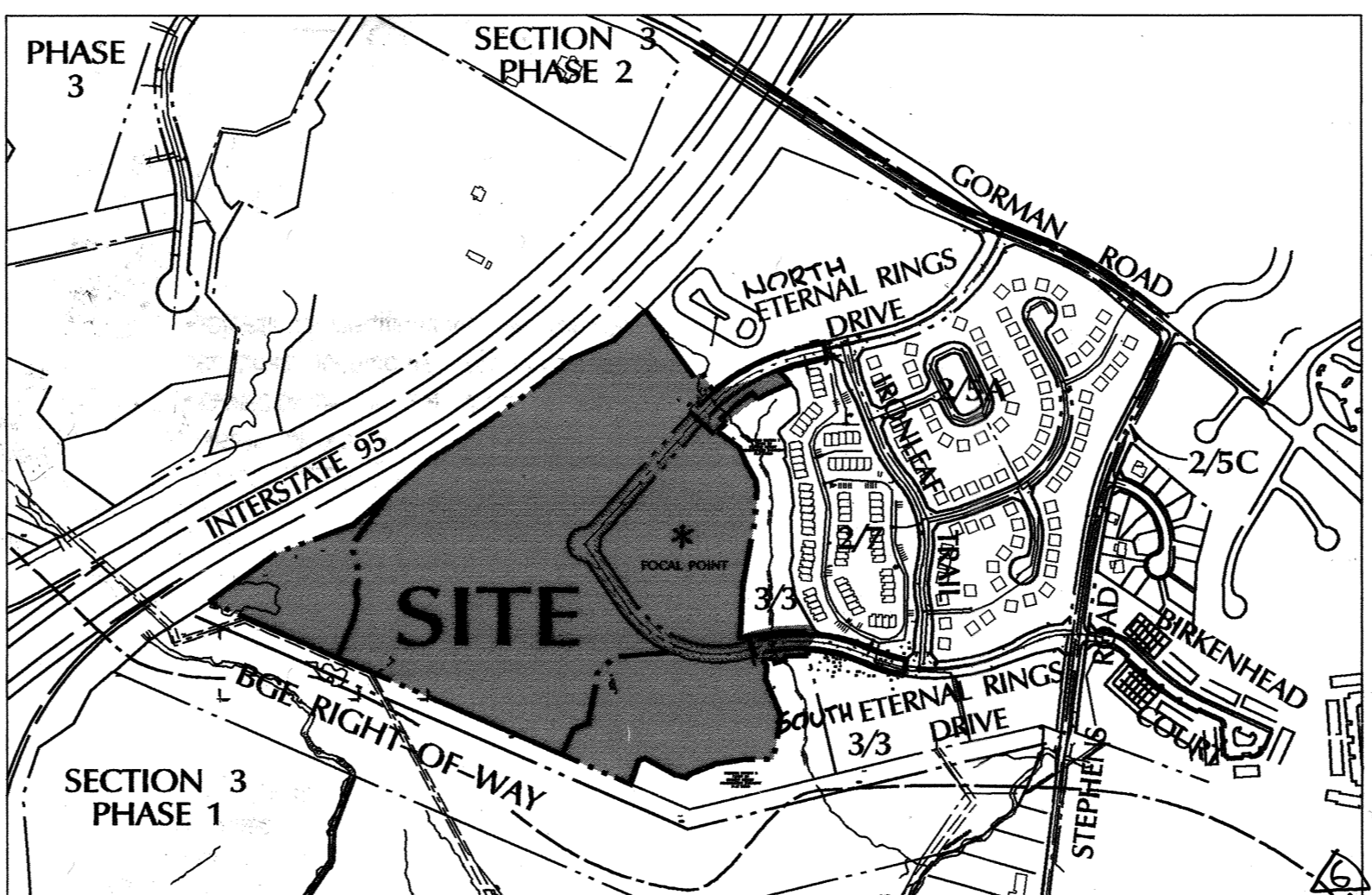
Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 18868, Expiration Date: 10-28-2018.

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 18868, Expiration Date: 10-28-2018.

AS-BUILT CERTIFICATION FOR PSWM Note: There is no "AS-Built" information provided on this sheet, IN REGARDS TO ROADS AND UTILITIES SWM BY OTHERS. ROBERT HURWITZ FEB 18 2008

ROAD CONSTRUCTION PLANS EMERSON SECTION 3 - AREA 7 - PARCEL A

Howard County, Maryland



DEVELOPMENT TRACKING CHART

Table with columns: Section and Phase, File Reference, Gross Area, SFD Density, Other Res. Density, Employment, Open Space, SFD Units, SFD Density, Other Res. Units, Other Res. Density. Includes a summary table at the bottom.

AS-BUILT CERTIFICATION FOR SWM Note: There is no "AS-Built" information provided on this sheet, IN REGARDS TO ROADS AND UTILITIES SWM BY OTHERS. ROBERT HURWITZ FEB 18 2008

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 10191, Expiration Date: 6-28-17.

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 26569, Expiration Date: 7-18-17.

AS-BUILT CERTIFICATION FOR SWM Note: There is no "AS-Built" information provided on this sheet, IN REGARDS TO ROADS AND UTILITIES SWM BY OTHERS. DAFT MCCUNE WALKER, INC. FEB 18 2008

AS-BUILT CERTIFICATION FOR SWM Note: There is no "AS-Built" information provided on this sheet, IN REGARDS TO ROADS AND UTILITIES SWM BY OTHERS. DAFT MCCUNE WALKER, INC. FEB 18 2008

ADDRESS CHART with columns: LOT/PARCEL #, STREET ADDRESS. Shows #837 PARCEL A and 9951 ETHERNAL RINGS DRIVE.

SHEET INDEX

Table with columns: SHEET, DESCRIPTION. Lists sheets 1 through 31, including cover sheet, road plans, grading, storm drain, and erosion control details.

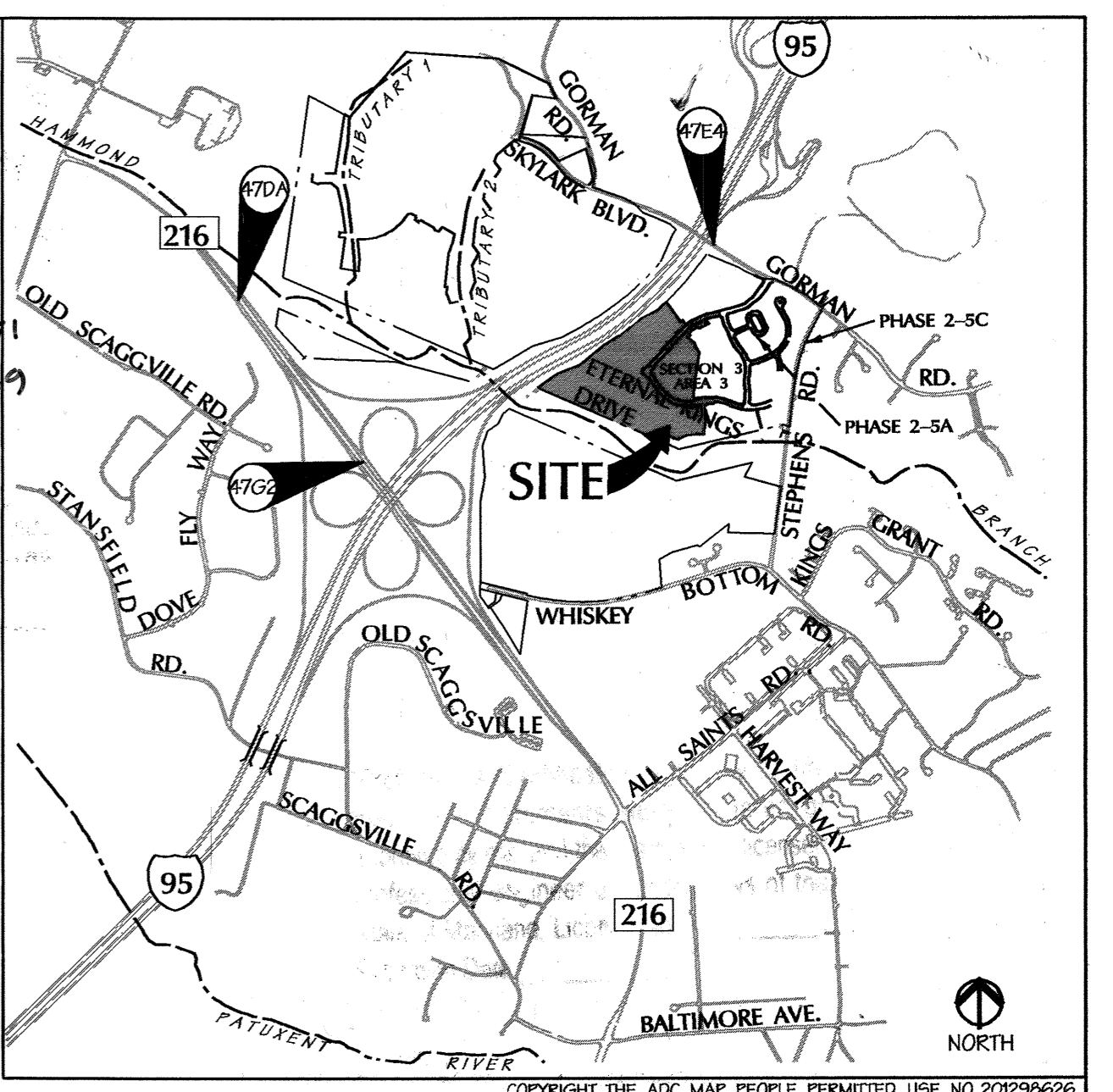
LEGEND

- Grading Plan
Erosion and Sediment Control Plan
Major Contour
Minor Contour
Storm Drain
Erosion and Sediment Control Details
Existing Wetland Limit
Proposed Lot Line
Proposed Easement
Proposed Curb & Gutter
Proposed Sidewalk
Prop. Storm Drain
Prop. Water
Prop. Sewer
Prop. Major Contours
Prop. Minor Contours
Soil Boring
Non Woody Vegetation Zone

FOR REVISION NO. 1 ONLY DATE 3/25/14

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 26569, Expiration Date: 7-18-15.

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 18868, Expiration Date: 10-28-16.



VICINITY MAP

SCALE: 1"=2000' HOWARD COUNTY ADC MAP COORDINATES: MAP 5063-E9

BENCHMARK

COORDINATES IN MARYLAND NAD83(91) (HORIZONTAL) FOR REVISIONS ONLY AND NGVD29 (VERTICAL) DATUMS. 47DA NORTHING: 163191.9104 EASTING: 412266.5759 ELEVATION: 315.5025 ft. 5 MILES EAST OF LEIGHAR ROAD, 19.6' SOUTH OF INLET ON RT. 216.

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 31373, Expiration Date: 1-21-23.

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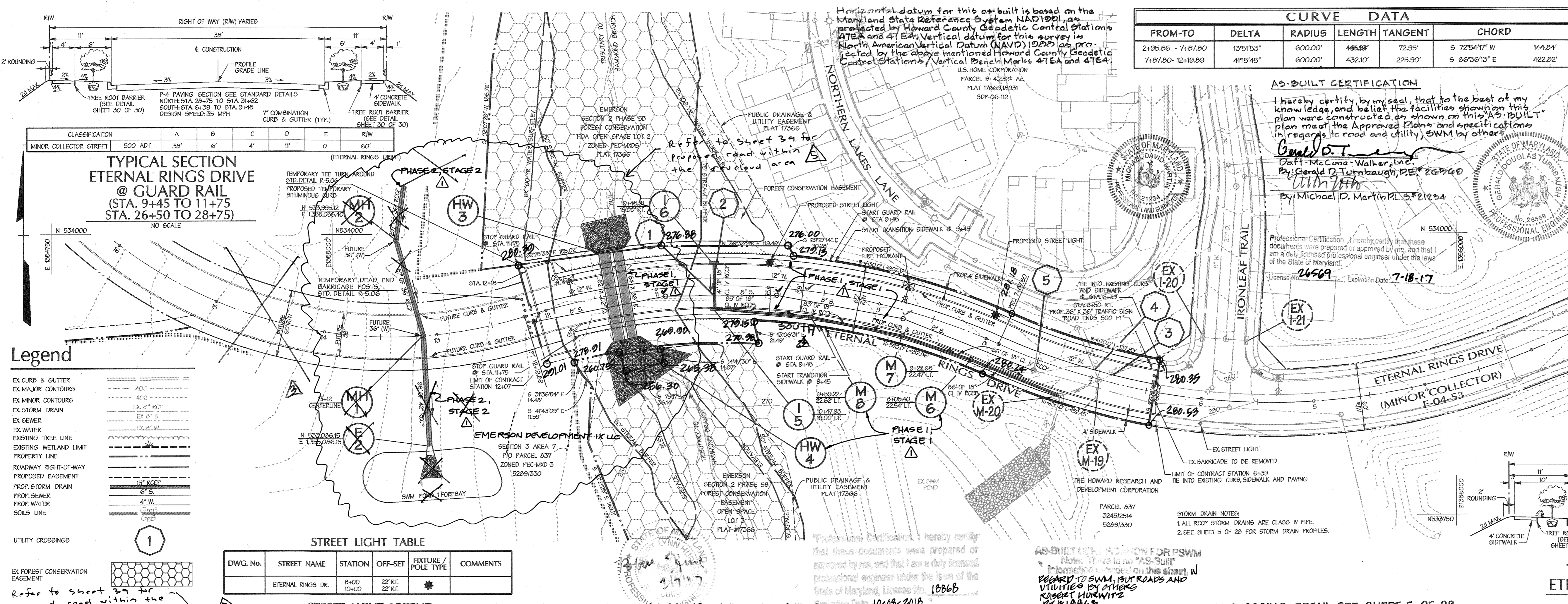
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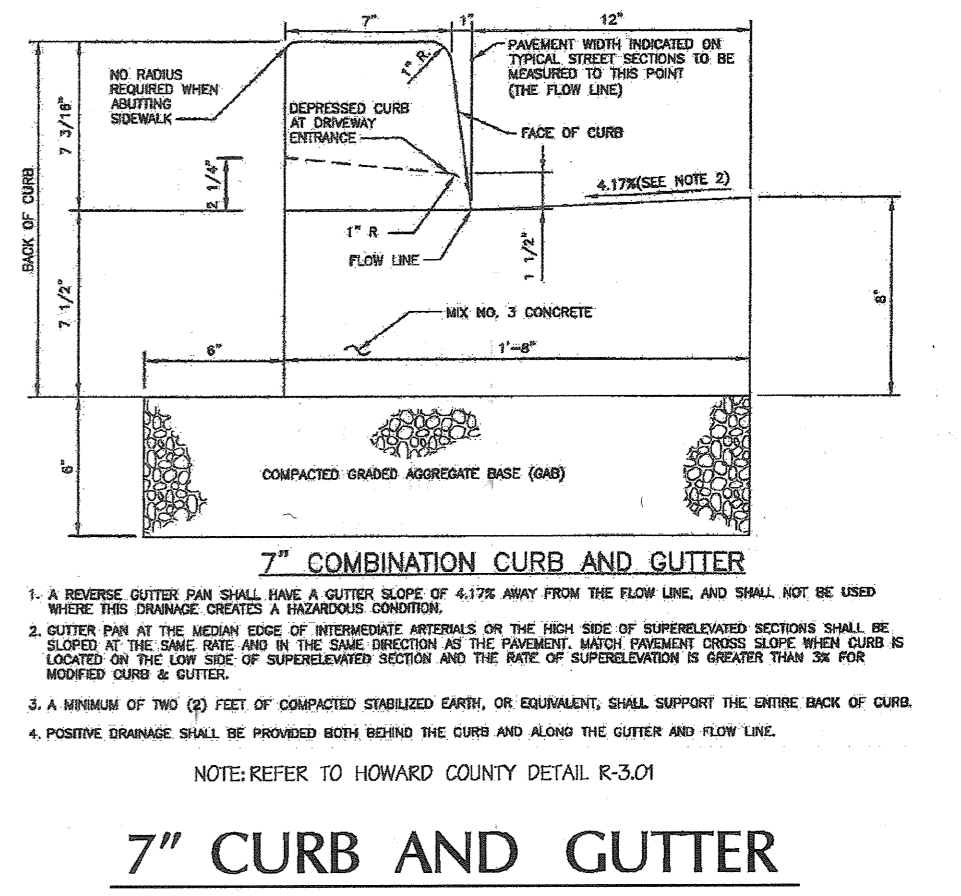


FROM-TO	DELTA	RADIUS	LENGTH	TANGENT	CHORD
2+95.26 - 7+87.80	13°51'53"	600.00'	488.98'	72.95'	S 72°54'47" W 144.84'
7+87.80 - 12+19.89	41°15'46"	600.00'	432.10'	225.90'	S 86°36'13" E 422.82'

AS-BUILT CERTIFICATION
 I hereby certify that to the best of my knowledge and belief the facilities shown on this plan were constructed as shown on this "AS-BUILT" plan in accordance with the approved plans and specifications in regard to road and utility SWM by others.

Conrad D. T...
 Datt McCune Walker, Inc.
 By: Gerald D. Turnbaugh, P.E. 26569
 By: Michael D. Martin, P.L.S. 21204

Professional Certification, I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 26569, Expiration Date: 7-18-17



- Legend**
- EX CURB & GUTTER
 - EX MAJOR CONTOURS
 - EX MINOR CONTOURS
 - EX STORM DRAIN
 - EX SEWER
 - EX WATER
 - EXISTING TREE LINE
 - EXISTING WESTLAND LIMIT
 - PROPERTY LINE
 - ROADWAY RIGHT-OF-WAY
 - PROPOSED EASEMENT
 - PROP. STORM DRAIN
 - PROP. SEWER
 - PROP. WATER
 - SOILS LINE
 - UTILITY CROSSINGS
 - EX FOREST CONSERVATION EASEMENT

STREET LIGHT TABLE

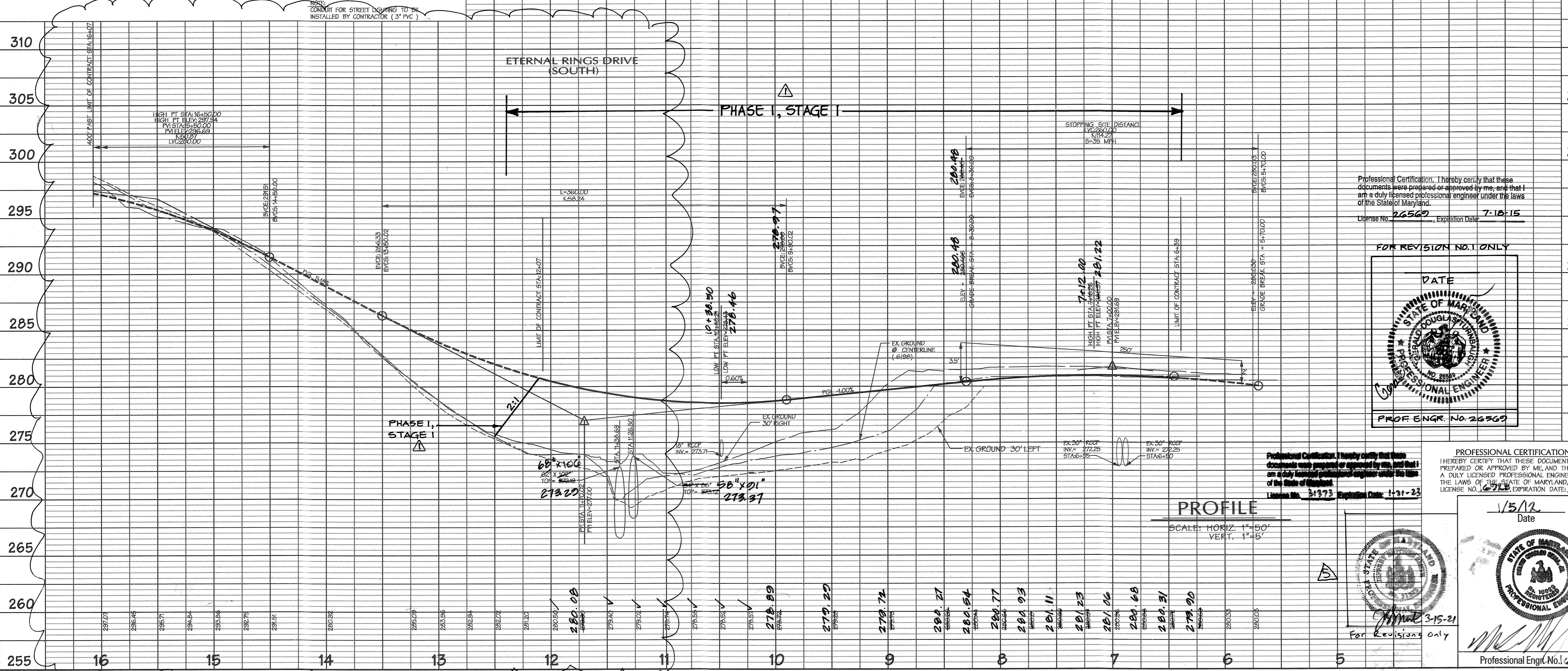
DWG. No.	STREET NAME	STATION	OFF-SET	FIXTURE / POLE TYPE	COMMENTS
	ETERNAL RINGS DR.	8+00 TO 10+00	22' RT. 22' LT.	*	

STREET LIGHT LEGEND

150 WATT HIGH PRESSURE SODIUM (HPS) VAPOR, PREMIER	CONDUIT FOR STREET LIGHTING TO BE INSTALLED BY CONTRACTOR (3" PVC)
[Symbol]	[Symbol]

NOTE: SEE SHEET 7 OF 28 FOR CULVERT PROFILES. (FOR SWM AS-BUILT ONLY)

NOTE: FOR UTILITY CROSSING DETAIL SEE SHEET 5 OF 28.



7" CURB AND GUTTER
 NO SCALE

"Professional Certification I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 10951, Expiration Date 8-28-17"

There is no "AS-BUILT" information provided on this sheet.
 STEPHEN JEROME, No. 35792, 11-10-2022

Professional Eng. No. 10951
 CENTURY ENGINEERING

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Mike R. ...
 CHIEF, BUREAU OF HIGHWAYS, 2-23-12 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Val ...
 CHIEF, DIVISION OF LAND DEVELOPMENT, 3/01/12 DATE

APPROVED: HOWARD COUNTY DEPT. OF ENGINEERING
...
 CHIEF, DEVELOPMENT ENGINEERING DIVISION, 2/28/12 DATE

6-17-16 RD. NAME REVISOR, PHASE 2, STAGES 2 REVISOR
 2-10-14 SHOW PHASING/STAGING LIMITS & OWNER
 Date No. Revision Description
 1/24/17 AS BUILT SUBMISSION
 03/12/21 Revised EMERSON Final Road Construction Plan

SECTION 3 - AREA 7 - PARCEL A
 "Future Employment Use"
 OWNER/DEVELOPER:
 EMERSON DEVELOPMENT IX LLC
 ONE TEXAS STATION COURT, SUITE 200
 TIMONIUM, MD 21093 (443) 687-8000

DMW
 Datt McCune Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 286-4353
 Fax 286-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

SECTION NAME	SECTION/AREA	SEC. 3 AREA 7	LOT/PARCEL #	P10 B37
DATE	DATE	DATE	DATE	DATE
11/17/11	11/17/11	11/17/11	11/17/11	11/17/11

Des By: TJC Scale: 1"=50' Proj. No.: 95054.W2
 Dm By: JSS Date: 11/17/11
 Chk By: JDF Approved 2 of 30

CURVE DATA					
FROM-TO	DELTA	RADIUS	LENGTH	TANGENT	CHORD
30+66.77 - 26+106.78	38°08'37"	750.00'	460.03'	237.51'	5 59°33'34" E 452.85'

Horizontal datum for this AS-BUILT survey is based on the Maryland State Reference System 1989, as projected by Howard County Geodetic Control Stations 47EA and 47EA. Vertical datum (NAVD) 1988 as projected by the above mentioned Howard County Geodetic Control Stations or Howard County Vertical Control Benchmarks 47EA and 47EA.

Legend

- EX CURB & GUTTER
- EX MAJOR CONTOURS
- EX MINOR CONTOURS
- EX STORM DRAIN
- EX SEWER
- EXISTING TREE LINE
- EXISTING WETLAND LIMIT
- PROPERTY LINE
- ROADWAY RIGHT-OF-WAY
- PROPOSED EASEMENT
- PROP. STORM DRAIN
- PROP. SEWER
- PROP. WATER
- UTILITY CROSSING
- EX FOREST CONSERVATION EASEMENT



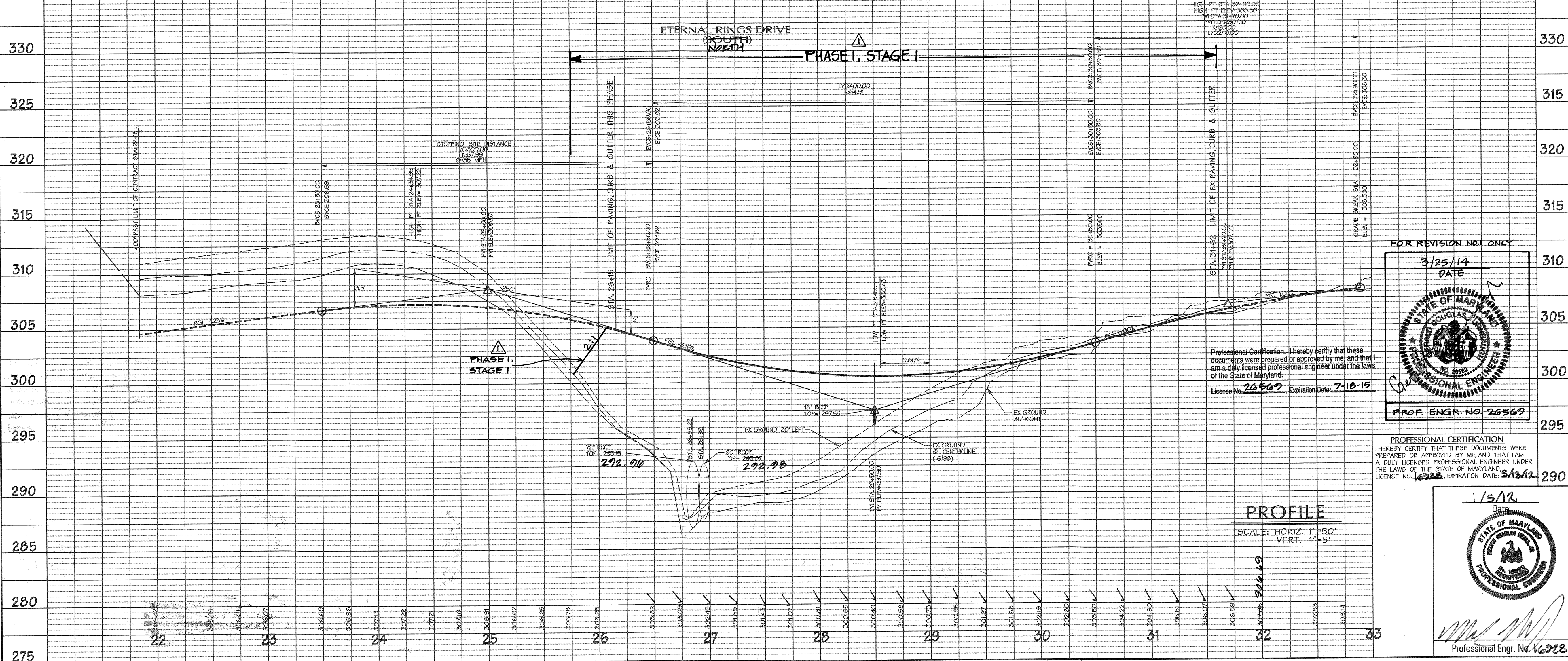
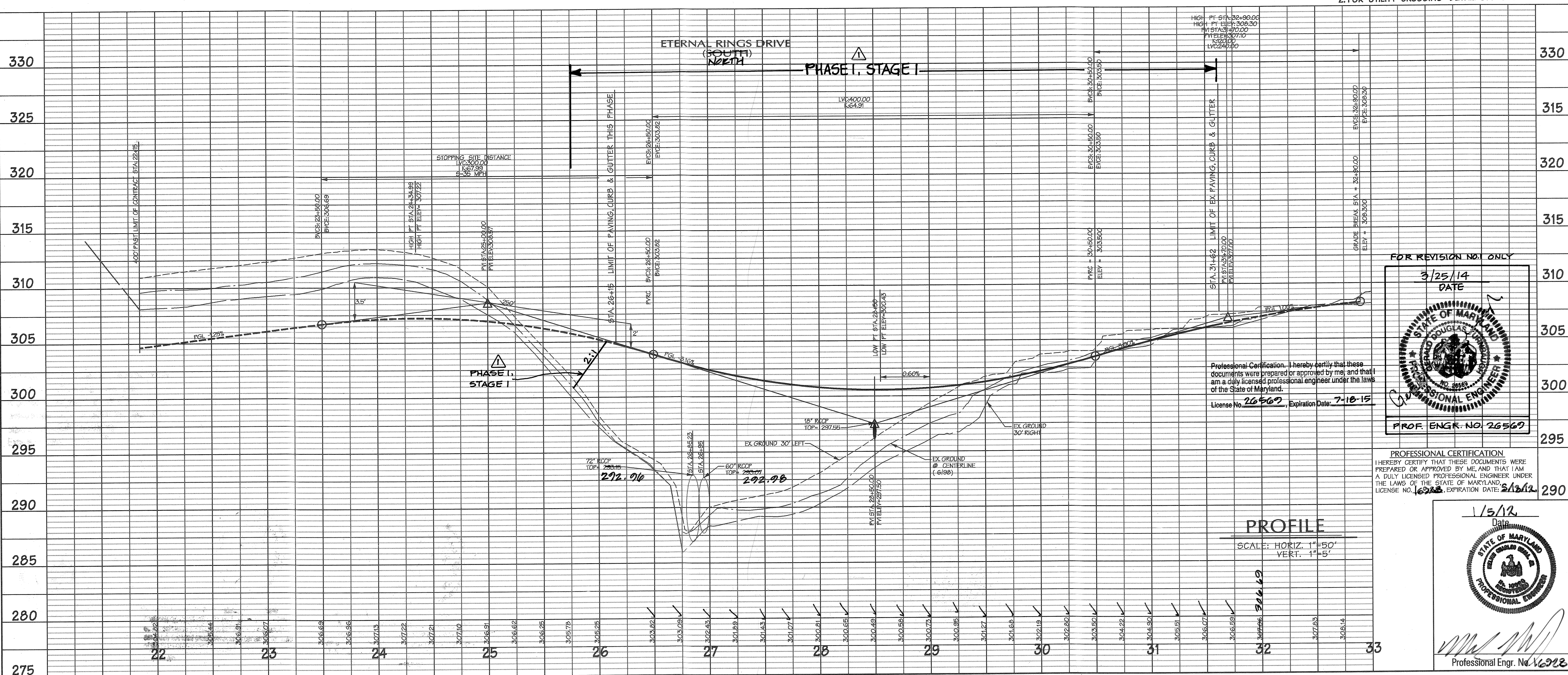
AS-BUILT CERTIFICATION
I hereby certify, by my seal, that to the best of my knowledge, and belief, the facilities shown on this plan were constructed as shown on this AS-BUILT plan meet the Approved Plans and specifications in regards to road and utility, SWM by others.

Draft: McCune-Walker, Inc.
Gerald D. Turnbaugh, P.E. #26569
Michael D. Martin, P.E. #21254

DWG. No.	STREET NAME	STATION	OFF-SET	FIXTURE / POLE TYPE	COMMENTS
	ETERNAL RINGS DR.	27+90	22' LT.	*	
	ETERNAL RINGS DR.	29+90	22' LT.	*	

STREET LIGHT LEGEND
* 150 WATT HIGH PRESSURE SODIUM (HPS) VAPOR, PREMIER
NOTE: CONDUIT FOR STREET LIGHTING TO BE INSTALLED BY CONTRACTOR (3" PVC)

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 26569, Expiration Date: 7-18-17



PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND
LICENSE NO. 18868 EXPIRATION DATE: 10-8-16

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
13,075 AC. ± PARCEL 637
3245/294
5289/330 PARCEL A

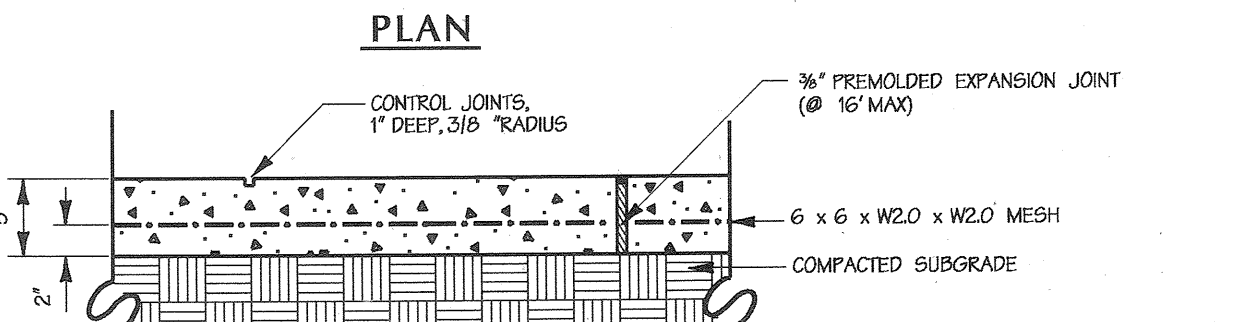
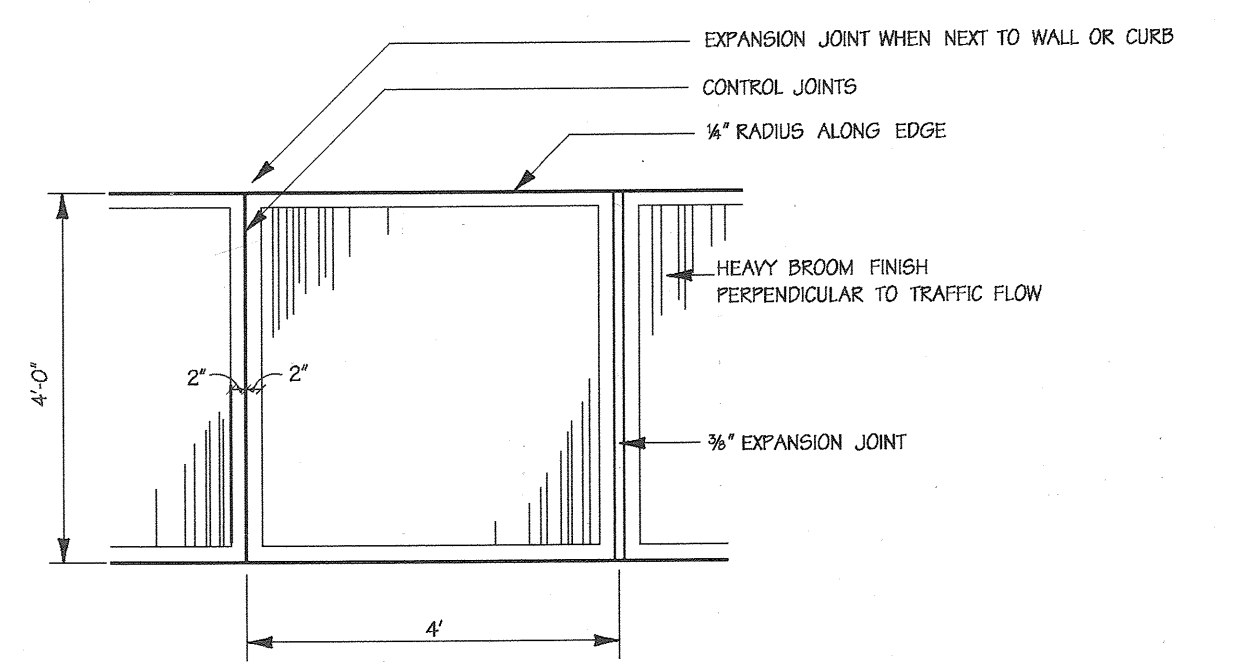
AS-BUILT CERTIFICATION FOR PSWM
I hereby certify that the information provided on this sheet is true and correct and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18868 (FOR SWM AS-BUILT ONLY)
10-08-2018
PROF. ENGR. NO. 18868

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18868
Expiration Date: 10-08-2018
PROF. ENGR. NO. 18868

FOR REVISION NO. 2 ONLY
5/11/12
DATE
Professional Engr. No. 18868
CENTURY ENGINEERS INC.

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18868
Expiration Date: 10-08-2018
PROF. ENGR. NO. 18868

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18868
Expiration Date: 10-08-2018
PROF. ENGR. NO. 18868



Concrete Walk
Scale: 3/8"=1'-0"
STORM DRAIN NOTES:
1. ALL RCP STORM DRAINS ARE CLASS IV PIPE.
2. SEE SHEET 5 OF 28 FOR STORM DRAIN PROFILES.
FOR REF. 4 3
6-18-16

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18868
Expiration Date: 10-08-2018
PROF. ENGR. NO. 18868
STEPHEN TERRACK, No. 35792, 11-10-2002
DATA SOURCES:
Existing topography shown hereon is a result of an aerial survey provided by Air Survey Corporation dated 1999 supplemented with field run information performed by Draft McCune Walker, Inc. dated 2010.
Property boundary shown hereon is a result of field run monumented boundary survey performed on or about June 25, 1999 by Draft McCune Walker, Inc.
Soils if shown provided by Soil Data Mart dated 2005 published by Natural Resources Conservation Service (NRCS)
Zoning information shown hereon provided by Howard County Department of Planning and Zoning, adopted by Howard County Council February 2, 2004.
Wetland and stream limits shown hereon were originally approved by Maryland Department of the Environment and the US Corps of Engineers in April 2001 and re-verified by these agencies in October 2008.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
W. R. M... 2-23-12
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
V. R. S... 3/01/12
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

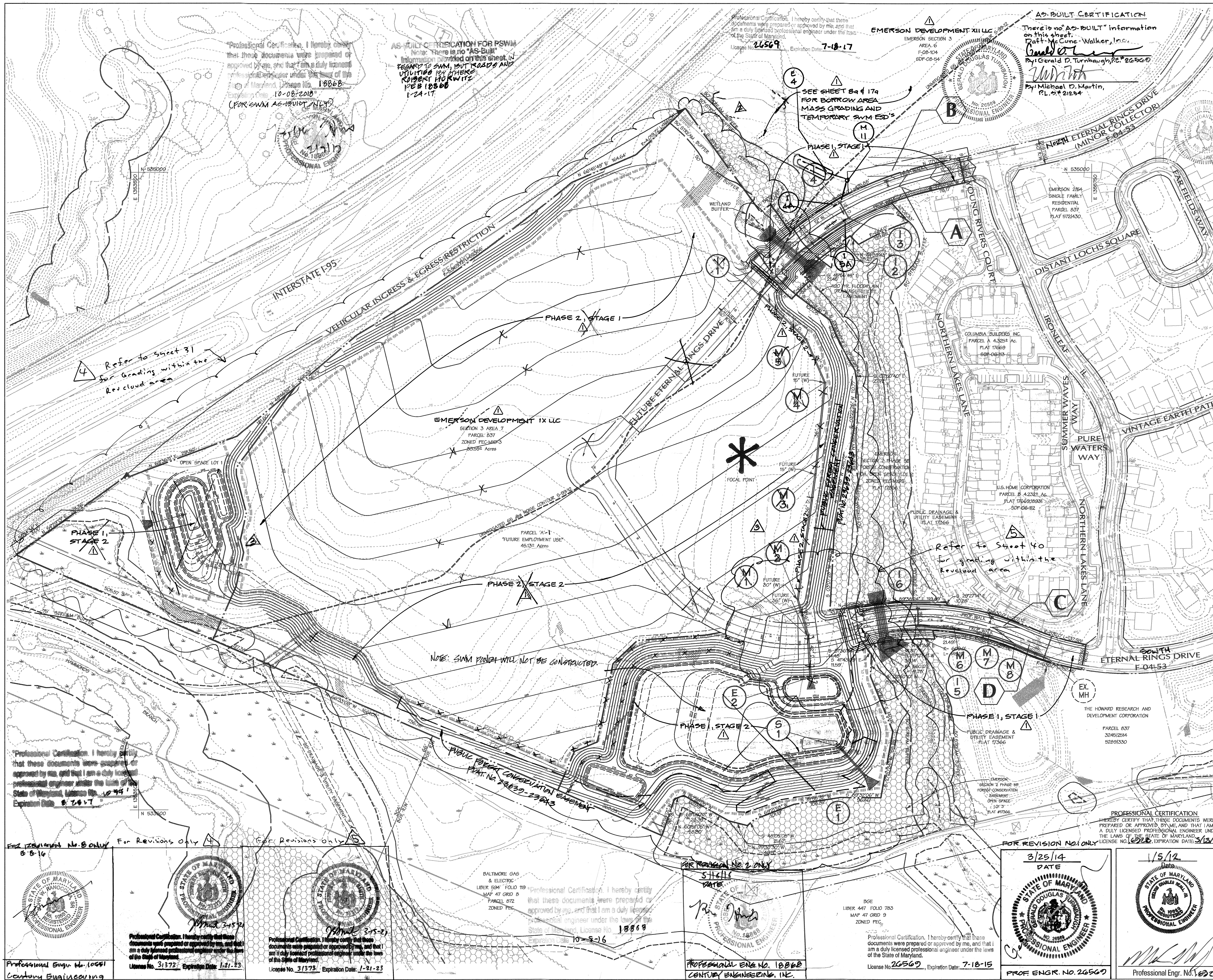
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
M. P... 3/20/12
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Date	No.	Revision Description
1-24-17		AS BUILT SUBMISSION
8-17-16		RD NAME REVISED, PHASE 2, STAGE 2 REMOVED
8-18-16		REVISED SP AND PHASING LIMITS
2-10-14		SHOW PHASING/STAGING LIMITS & NEW OWNER

EMERSON
SECTION 3 - AREA 7 - PARCEL A
"Future Employment Use"
OWNER/DEVELOPER:
EMERSON DEVELOPMENT IX LLC
ONE TEXAS STATION COURT, SUITE 200
TIMONUM, MD 21093 (443) 687-8000

DMW
Draft McCune-Walker, Inc.
300 East Pennsylvania Avenue
Potosi, Maryland 21206
(410) 296-3833
Fax 296-4705
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

SUBDIVISION NAME		SECTION/AREA	SEC.3 AREA 7	LOT/FACEL #
EMERSON				P10 837
PLAT OR LOT/BLK #	ZONE	TAX/USE MAP	DEED INSTR	OWNER TRACT
5289/330	15 MXD-3	47	6TH	6069.03
WATER CODE		SEWER CODE		
E-15		7920000		
TITLE				
ROAD CONSTRUCTION PLAN ETERNAL RINGS DRIVE NORTH ROAD PLAN AND PROFILE				
Des By	TJC	Scale	1"=50'	Proj. No. 95054.W
Drn By	JSS	Date	11/17/11	3 of 30
Chk By	JDF	Approved		



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18868, Expiration Date 10-08-2016 (FOR SWM AS-BUILT ONLY)

AS-BUILT CERTIFICATION FOR PSWM
 Note: There is no "AS-BUILT" information provided on this sheet in regard to SWM, BUT ROADS AND UTILITIES BY OTHERS
 ROBERT HURWITZ
 PE# 18868
 1-24-17

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 26569, Expiration Date 7-18-17

EMERSON DEVELOPMENT IX LLC
 AREA 7
 F04-53
 80P-08-54

AS-BUILT CERTIFICATION
 There is no "AS-BUILT" information on this sheet.
 Draft: McCune-Walker, Inc.
 By: Gerald D. Turnbaugh, PE # 26569
 By: Michael D. Martin, PL # 21234

A=0.39 Ac. C=0.83	A	PEC-MXD-3 85% IMP.
A=0.58 Ac. C=0.83	B	PEC-MXD-3 85% IMP.
A=0.25 Ac. C=0.83	C	PEC-MXD-3 85% IMP.
A=0.25 Ac. C=0.83	D	PEC-MXD-3 85% IMP.

Legend

EX. CURB & GUTTER	---
EX. MAJOR CONTOURS	---
EX. MINOR CONTOURS	---
EX. STORM DRAIN	---
EX. SEWER	---
EX. WATER	---
EXISTING TREE LINE	---
EXISTING WETLAND LIMIT	---
PROPERTY LINE	---
ROADWAY RIGHT-OF-WAY	---
EX. FOREST CONSERVATION EASEMENT	---
PROP. FOREST CONSERVATION EASEMENT	---
45' BGE SETBACK FOR CREDITED FOREST RETENTION AREAS	---
65' JBA NOISE LINE	---
STEEP SLOPES 25% OR GREATER	---

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 STEPHEN TERRILL, M.S. 35702, 11-10-2022

DATA SOURCES
 Existing topography shown hereon is a result of an aerial survey provided by Air Survey Corporation dated, 1996 supplemented with field run information performed by Draft: McCune Walker, Inc. dated, 2010.
 Property boundary shown hereon is a result of field run monumented boundary survey performed on or about June 25, 1999 by Draft: McCune Walker, Inc.
 Soils information shown hereon provided by Howard County Department of Planning and Zoning, adapted by Howard County Council February 2, 2004.
 Wetland and stream limits shown hereon were originally approved by Maryland Department of the Environment and the US Corps of Engineers in April 2001 and re-verified by these agencies in October 2009.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS		
<i>with 2 add'l</i>	2-23-12	
CHIEF, BUREAU OF HIGHWAYS	DATE	
HOWARD COUNTY DEPT. OF PLANNING & ZONING		
<i>[Signature]</i>	2/28/12	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE	
CHIEF, DIVISION OF LAND DEVELOPMENT		
<i>[Signature]</i>	3/6/12	
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE	
8-10-21	Revised Final Road Construction Plan	
8-12-21	Revised Grading and Erosion Control	
8-17-16	Phase 1, Stage 2 & Phase 2, Stage 1 Removed	
8-16-16	REVISED FOREST CONSERVATION & DEAS	
2-10-14	SHOW PHASING/STAGING LIMITS & NEW OWNER	
Date	No.	Revision Description
1-24-17	AS BUILT SUBMISSION	

SECTION 3 - AREA 7 - PARCEL A
 "Future Employment Use"

OWNER/DEVELOPER:
 EMERSON DEVELOPMENT IX LLC
 ONE TEXAS STATION COURT, SUITE 200
 TIMONIUM, MD. 21093 (443) 689-8000

DMW
 Draft: McCune-Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3833
 Fax 296-8706
 A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

SUBMISSION NAME	EMERSON	SECTION/AREA	SEC.3 AREA 7	PILOT #	PILOT 837
PLAT # OR LOT #	15	ZONE	MXD-3	FILED DISTRICT	6TH
WATER CODE		SEWER CODE		SUBS. TRACT	6069.03

TITLE			
FINAL PLAN GRADING & STORM DRAIN DRAINAGE AREA MAP (Revised Sheet)			
Des By	TJC	Scale	1"=100'
Drawn By	JSS	Date	11/17/11
Checked By	JDF	Approved	
Proj. No.	95054-W2	Sheet No.	4 of 30

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 10951, Expiration Date 8-28-17

FOR REVISION NO. 8 ONLY
 8-8-16
 PROFESSIONAL ENGR. NO. 10951
 CENTURY ENGINEERING, INC.

FOR REVISIONS ONLY
 3-15-12
 PROFESSIONAL ENGR. NO. 10951
 CENTURY ENGINEERING, INC.

FOR REVISIONS ONLY
 3-15-12
 PROFESSIONAL ENGR. NO. 10951
 CENTURY ENGINEERING, INC.

BALTIMORE GAS & ELECTRIC
 LIBER 504 FOLD 119
 MAP 47 GRID B
 PARCEL 872
 ZONED PEG

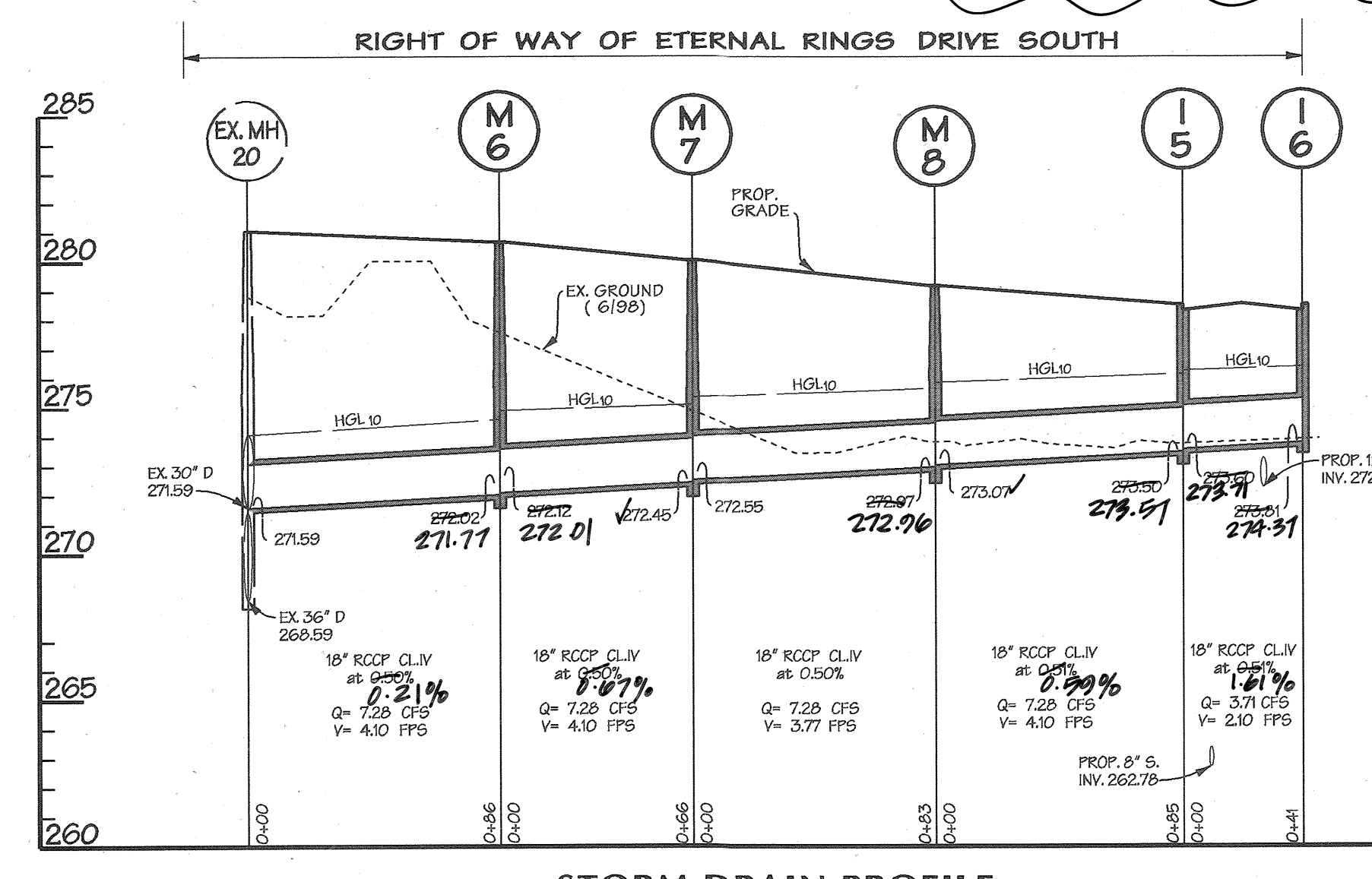
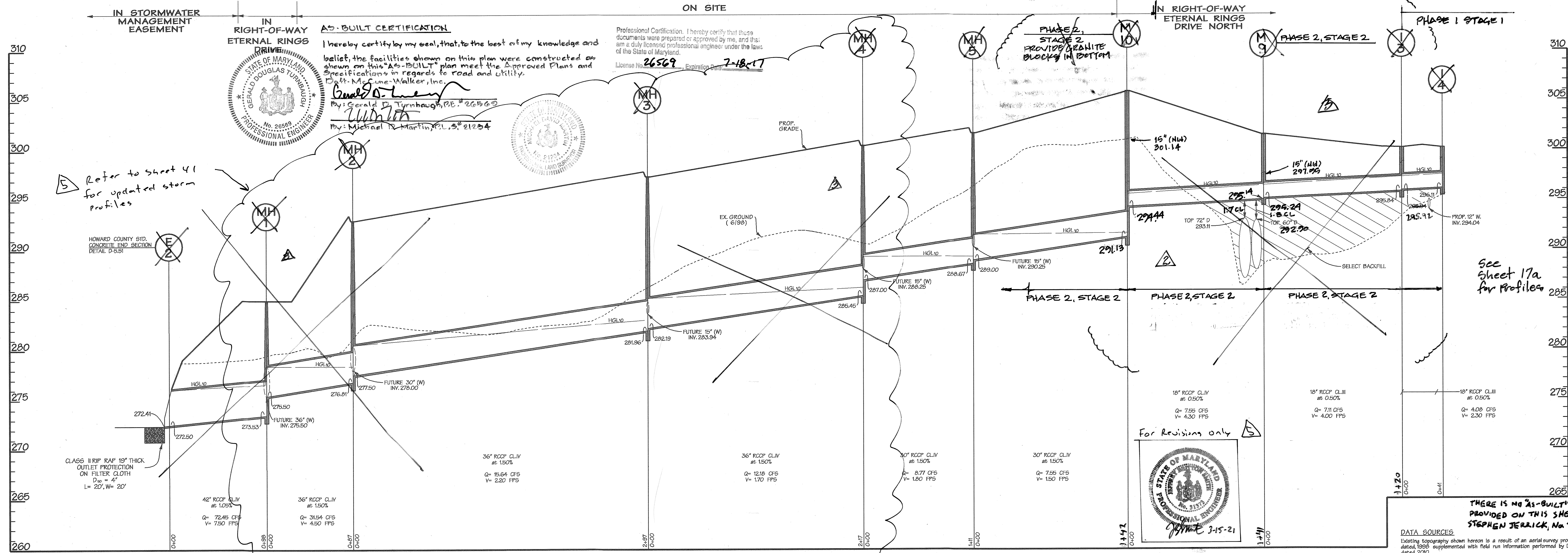
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18868, Expiration Date 10-8-16

FOR REVISION NO. 2 ONLY
 5-11-11
 PROFESSIONAL ENGR. NO. 18868
 CENTURY ENGINEERING, INC.

FOR REVISION NO. 2 ONLY
 5-11-11
 PROFESSIONAL ENGR. NO. 18868
 CENTURY ENGINEERING, INC.

FOR REVISION NO. 1 ONLY
 3/25/14
 DATE
 PROFESSIONAL ENGR. NO. 26569

FOR REVISION NO. 1 ONLY
 1/5/12
 DATE
 PROFESSIONAL ENGR. NO. 18868

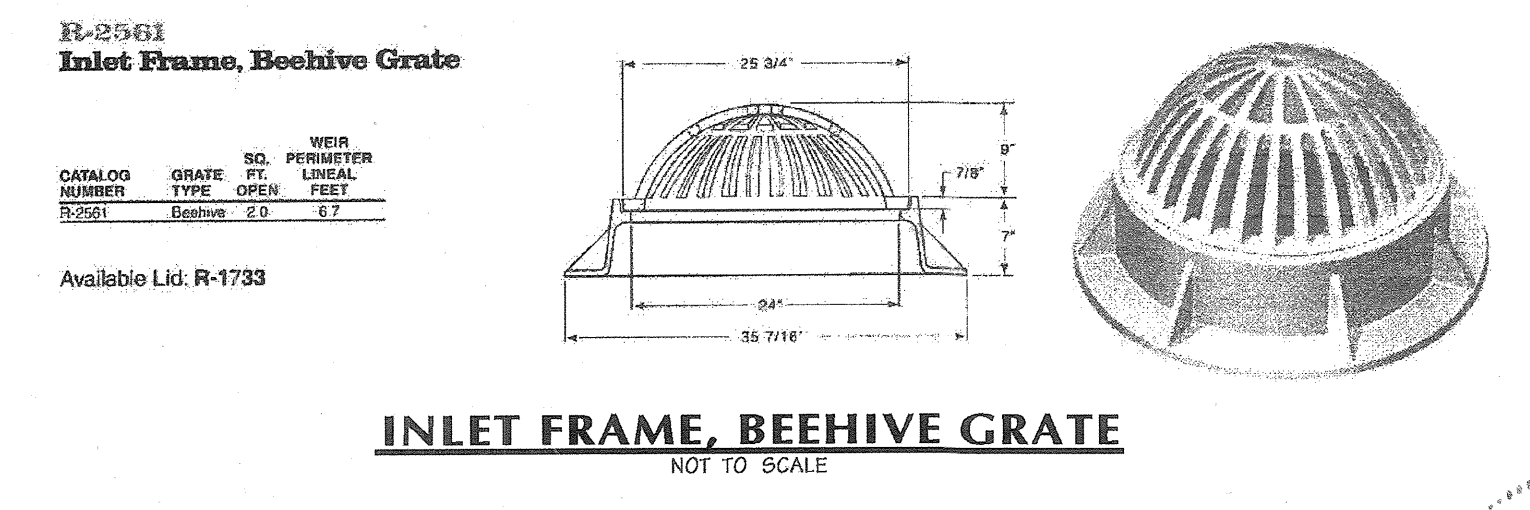


STRUCTURE SCHEDULE

NO.	TYPE	INV. IN	INV. OUT	TOP ELEV.	REMARKS	LOCATION
M-1	SHA 84" PRECAST MANHOLE	275.50	273.53	285.00	SEE NOTE	ETERNAL RINGS DRIVE STA. 13+12
M-2	SHA 72" PRECAST MANHOLE	277.50	276.81	293.00	SEE NOTE	N 533,995.12, E 1,355,056.40
M-3	SHA 60" PRECAST MANHOLE	282.19	281.96	297.40	SEE NOTE	N 534,289.35, E 1,355,098.10
M-4	SHA 60" PRECAST MANHOLE	287.00	285.45	300.50	SEE NOTE	N 534,504.15, E 1,355,120.50
M-5	SHA 60" PRECAST MANHOLE	289.60	288.67	301.70	SEE NOTE	N 534,607.36, E 1,355,076.16
M-6	SHA 60" PRECAST MANHOLE	272.50	272.55	280.60	.79	ETERNAL RINGS DRIVE STA. 9+59.22
M-7	SHA 60" PRECAST MANHOLE	272.45	272.55	280.65	.08	ETERNAL RINGS DRIVE STA. 25+70.42
M-8	SHA 60" PRECAST MANHOLE	273.07	272.97	279.19		ETERNAL RINGS DRIVE STA. 8+05.40
I-1	A-5 INLET		301.40	305.90		ETERNAL RINGS DRIVE STA. 25+70.42
I-2	A-5 INLET		297.85	302.33		ETERNAL RINGS DRIVE STA. 27+04.59
I-3	A-10 INLET	295.94		300.46		ETERNAL RINGS DRIVE STA. 28+50.00
I-4	A-10 INLET		296.11	300.46	.60	ETERNAL RINGS DRIVE STA. 28+50.00
I-5	A-10 INLET	283.33		273.50	.42	ETERNAL RINGS DRIVE STA. 10+47.93
I-6	A-10 INLET		274.37	278.45		ETERNAL RINGS DRIVE STA. 10+47.93

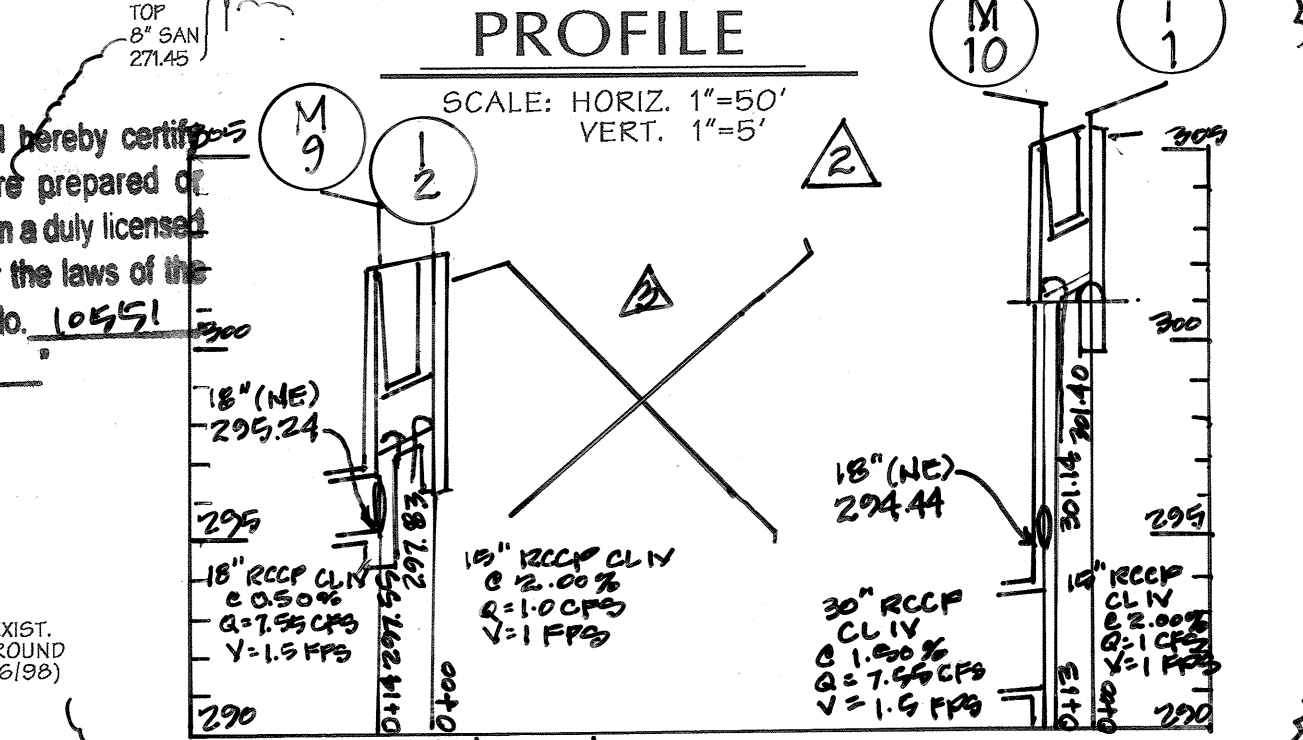
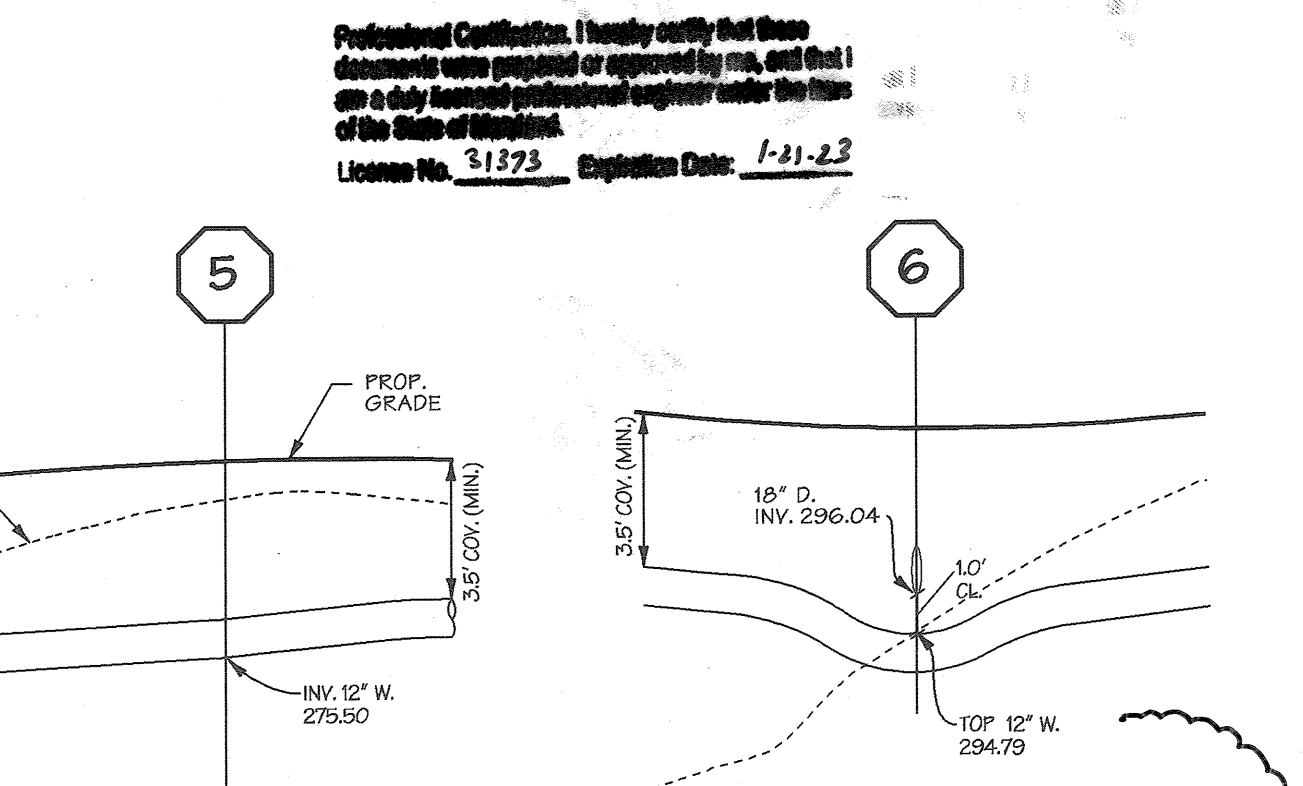
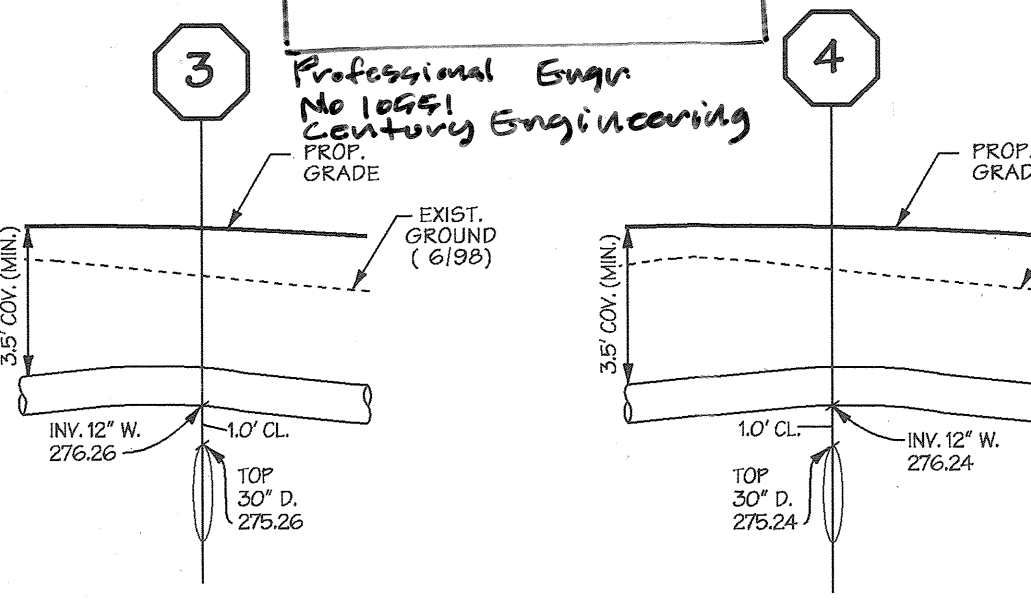
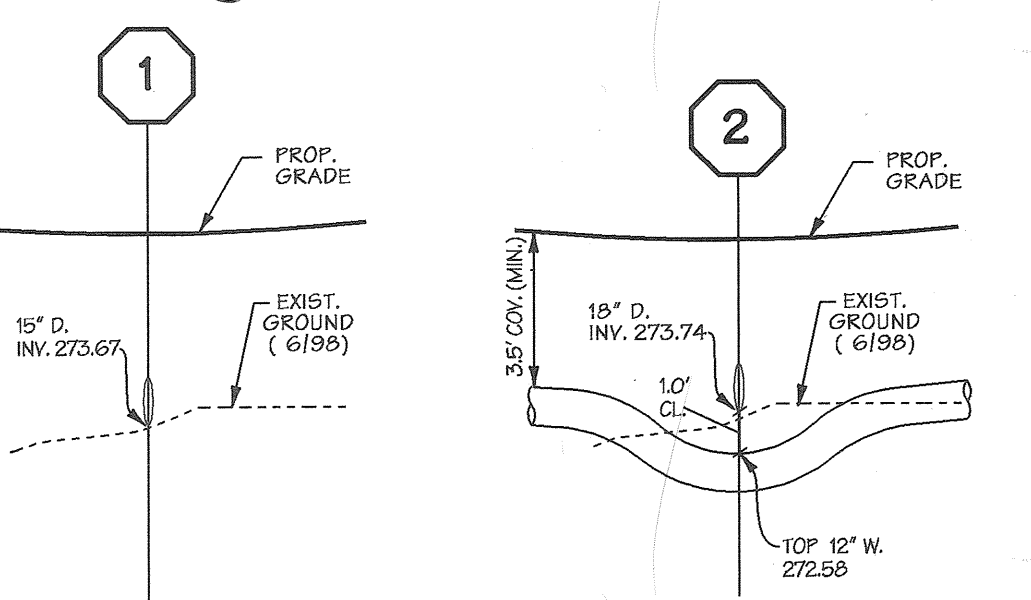
PIPE SCHEDULE

SIZE	TYPE	LENGTH
18"	RCCP, CL. IV 530	263 LF
36"	RCCP, CL. IV	253 LF
36"	RCCP, CL. IV	681 LF
42"	RCCP, CL. IV	98 LF
18"	RCCP, CL. IV	27 LF



AS-BUILT CERTIFICATION FOR PSMW
Note: There is no "AS-Built" information provided on this sheet w/ REGARD TO SWM, BUT ROADS AND UTILITIES BY OTHERS. ROBERT HURWITZ PE # 18868 1-24-17

PROFESSIONAL CERTIFICATION
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18868, Expiration Date 10-08-2016 (FOR SWM AS-BUILT ONLY)



PROFESSIONAL CERTIFICATION
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18868, Expiration Date 10-8-16

PROFESSIONAL CERTIFICATION
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18868, Expiration Date 10-8-16

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
STEPHEN JERRICK, No. 35792, 11-10-2012

DATA SOURCES
Existing topography shown hereon is a result of an aerial survey provided by Air Survey Corporation dated 1998 supplemented with field run information performed by Darr McCune Walker, Inc. dated 2/07.

Property boundary shown hereon is a result of field run monumented boundary survey performed on or about June 25, 1999 by Darr McCune Walker, Inc.

Soils if shown provided by Soil Data Maps dated 2005 published by Natural Resources Conservation Services (NRCS)

Zoning information shown hereon provided by Howard County Department of Planning and Zoning, adopted by Howard County Council February 2, 2004.

Wetland and stream limits shown hereon were originally approved by Maryland Department of the Environment and the US Corps of Engineers in April 2001 and re-verified by these agencies in October 2009.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

W. J. ... 2-23-12
CHIEF, BUREAU OF HIGHWAYS DATE

HOWARD COUNTY DEPT. OF PLANNING & ZONING

... 2/2/12
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

... 3/01/12
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

03-12-21 Revised Final Road Construction Plans

8-17-16 Profiles Revised

2-10-14 REVISED SD PROFILE BETWEEN I-9 TO I-1

1-24-17 SHOW NEW OWNER/DEVELOPER

Date No. Revision Description

1-24-17 AS BUILT SUBMISSION

EMERSON

SECTION 3 - AREA 7 - PARCEL A
"Future Employment Use"

OWNER/DEVELOPER:
EMERSON DEVELOPMENT IX LLC
ONE TEXAS STATION COURT, SUITE 200
TIMONIUM, MD 21093 (443) 682-8000

DMW
Darr McCune Walker, Inc.
200 East Pennsylvania Avenue
Touson, Maryland 21086
(410) 296-3333
Fax: 296-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

SUBMISSION NAME: EMERSON SECTION/AREA: SEC.3 AREA 7 LOT/PARCEL #: PART OF 837

DATE OF UPD OR # 52893303 15 DATE TAXING MAP 47 ILLUST ORIENT 6TH DENIAL TRACT 6069.03

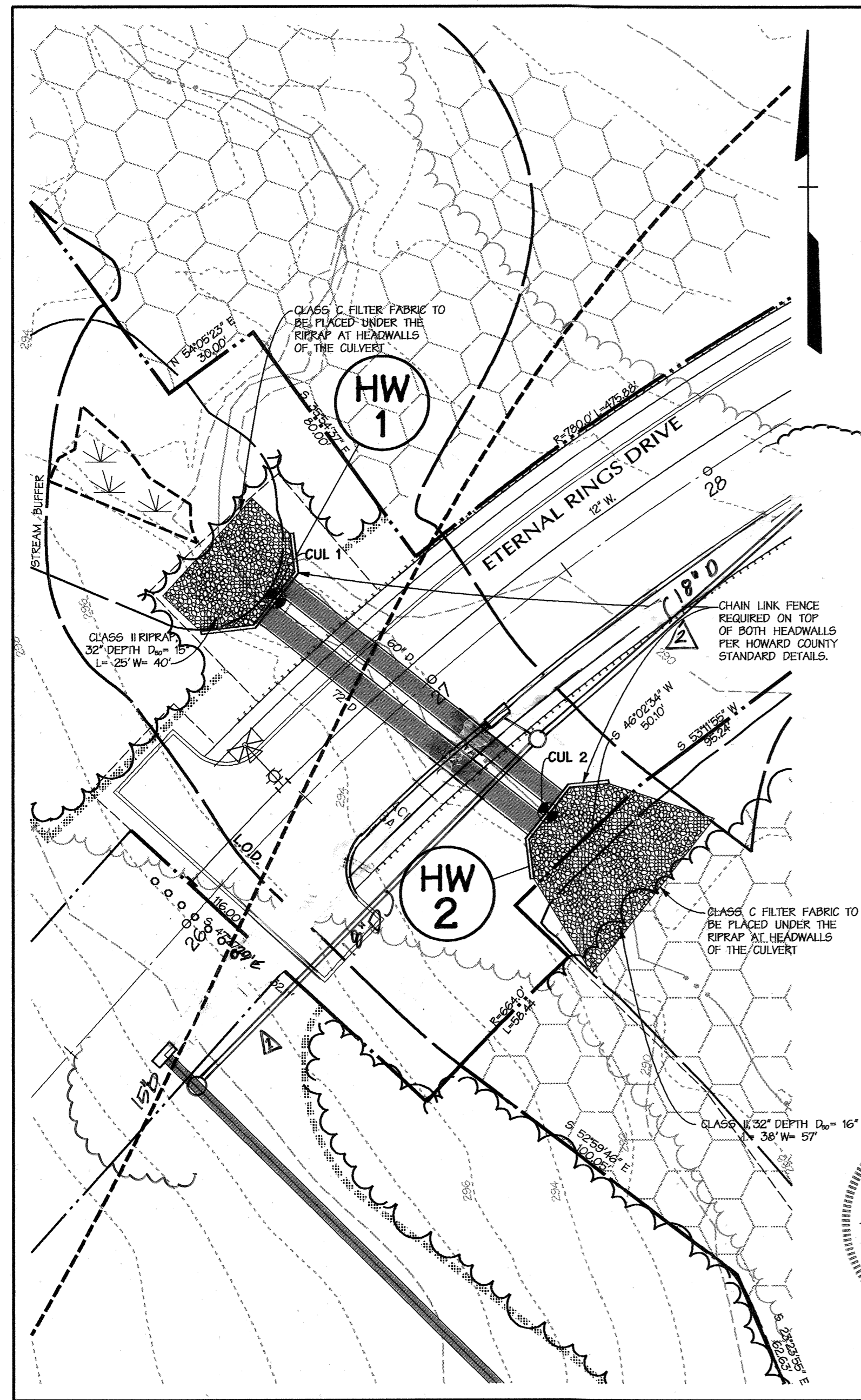
TOWER CODE E-15 SEWER CODE 7520000

FINAL PLAN STORM DRAIN PROFILES & DETAIL (Revised sheet)

Des By: TJC Scale: 1"=50' Proj. No: 95054.W2

Drn By: JSS Date: 10/19/11 5 of 30

Chk By: JDF Approved



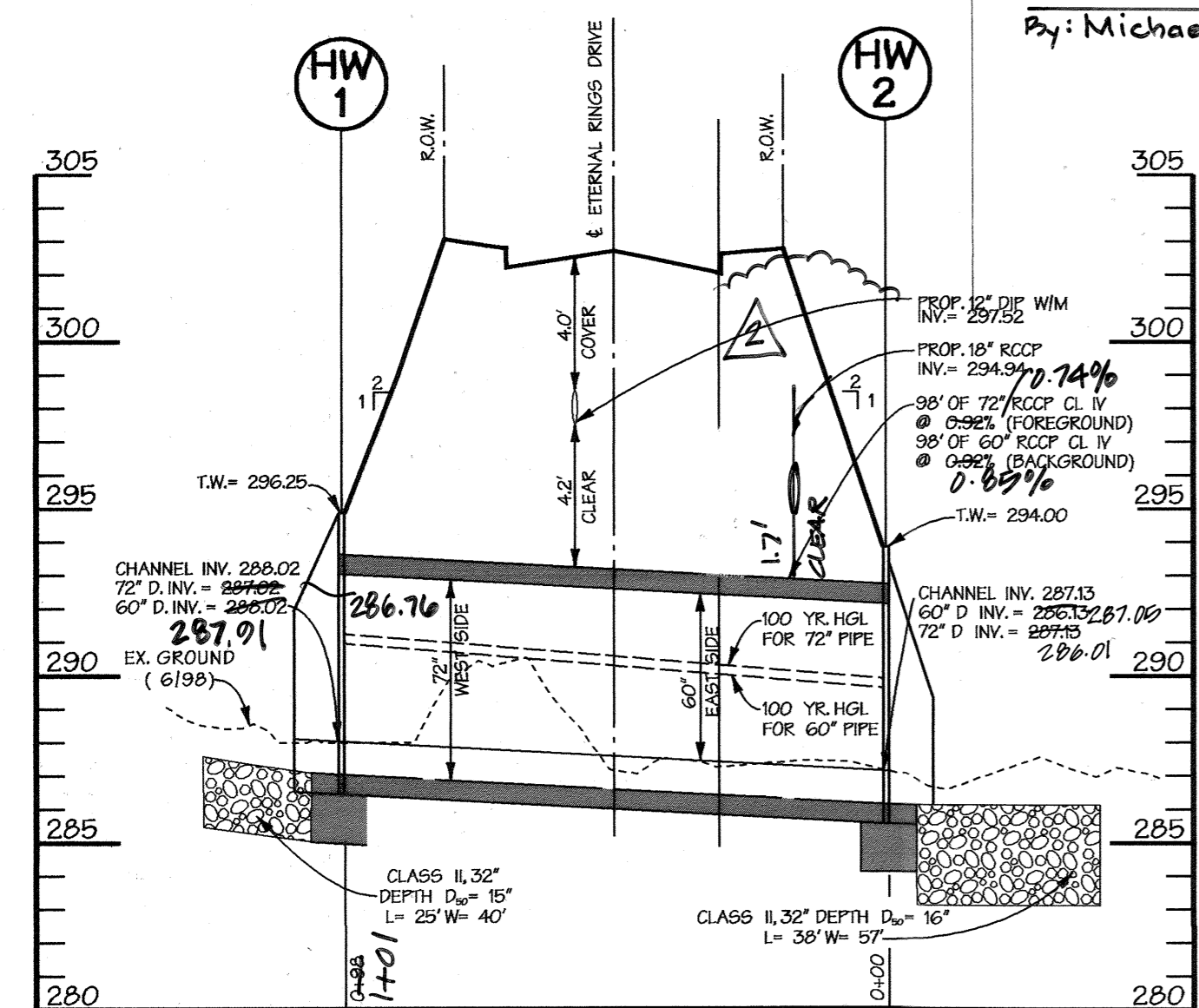
NORTH CULVERT
SCALE: 1"=30'

AS-BUILT CERTIFICATION

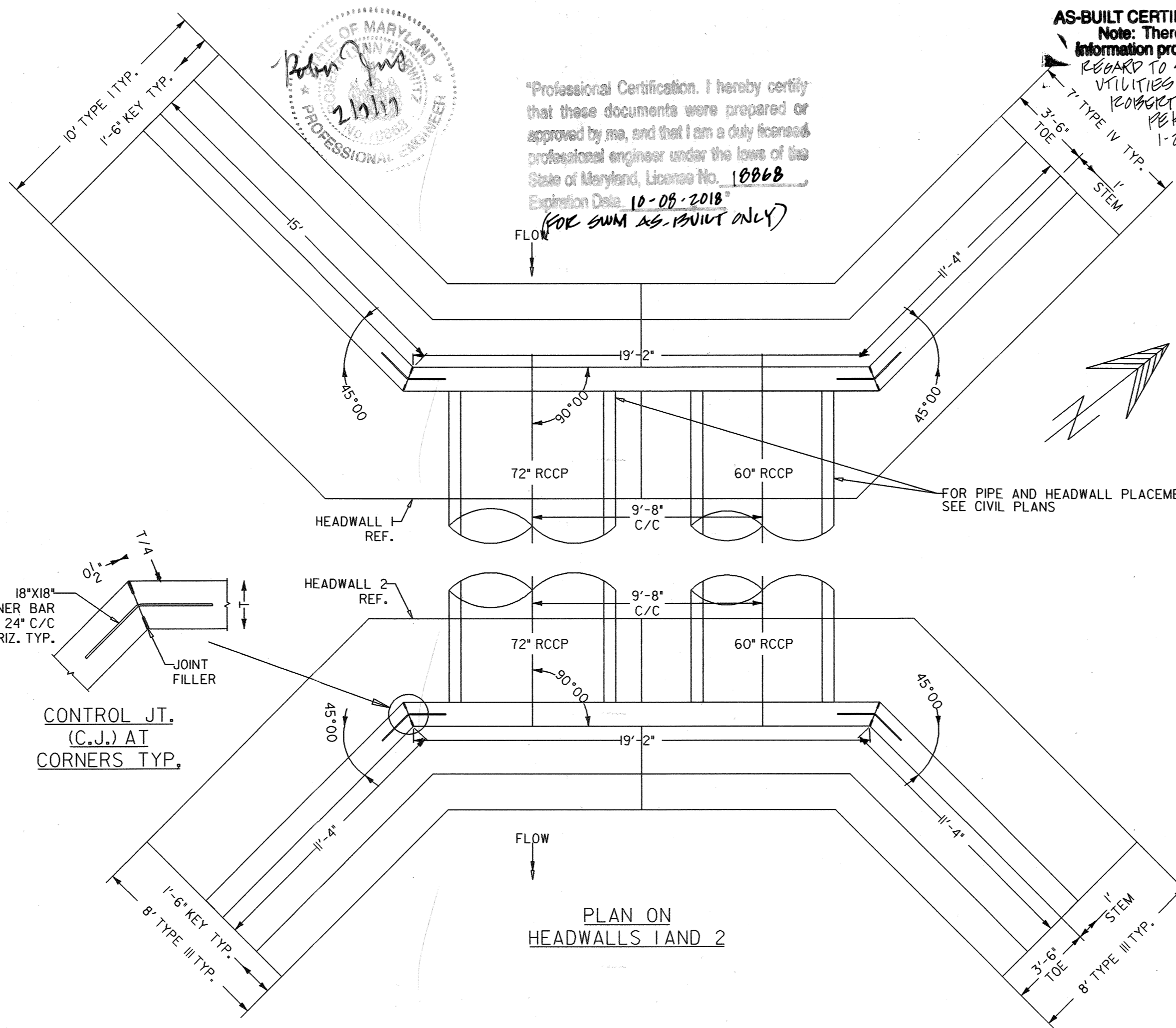
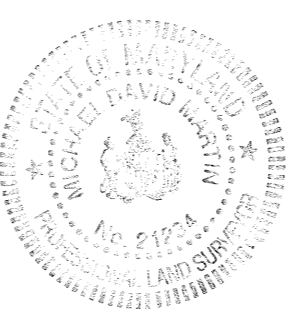
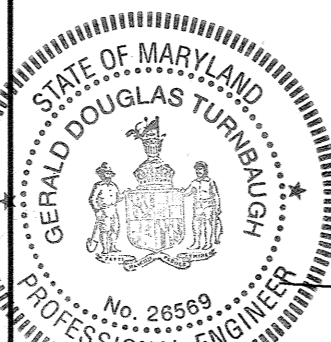
I hereby certify, by my seal, that to the best of my knowledge, and belief, the facilities shown on this plan were constructed as shown on this AS-BUILT plan meet the Approved Plans and specifications in regards to roads and utility. SWM by others.

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 26569, Expiration Date: 7-18-17

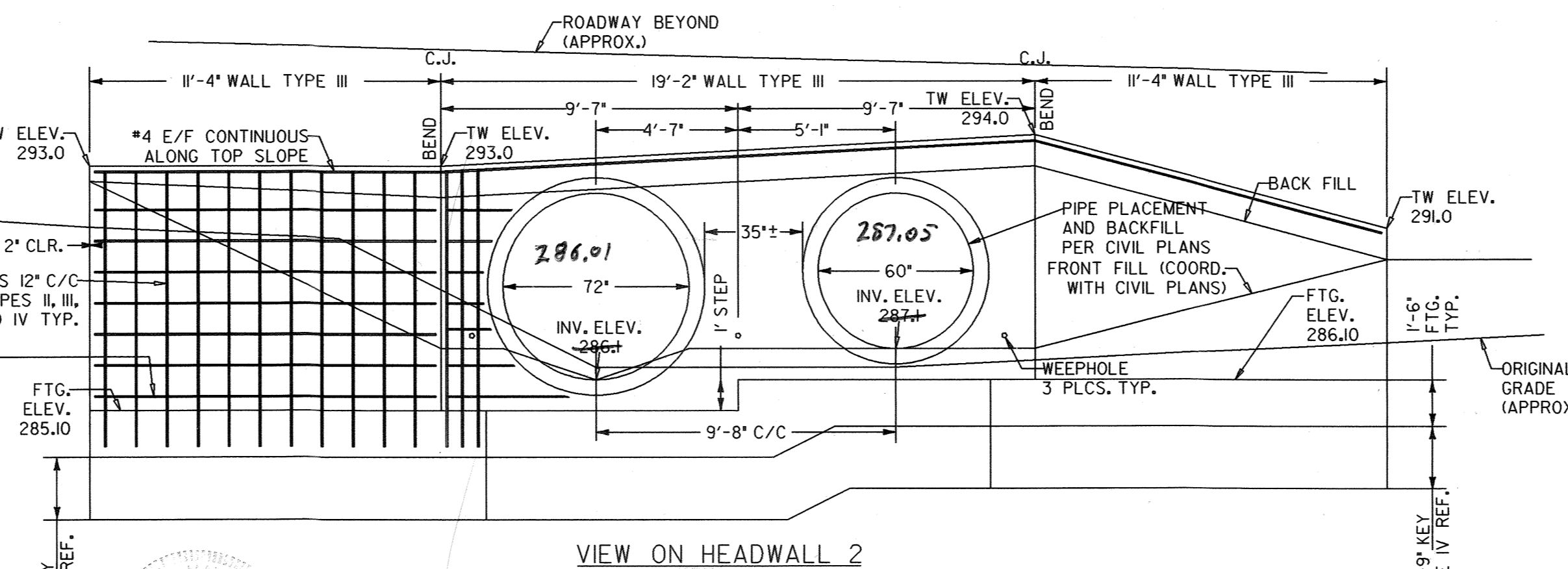
Daft McCune-Walker, Inc.
By: Gerald D. Turnpaugh, PE #26569
By: Michael D. Martin, PL #21234



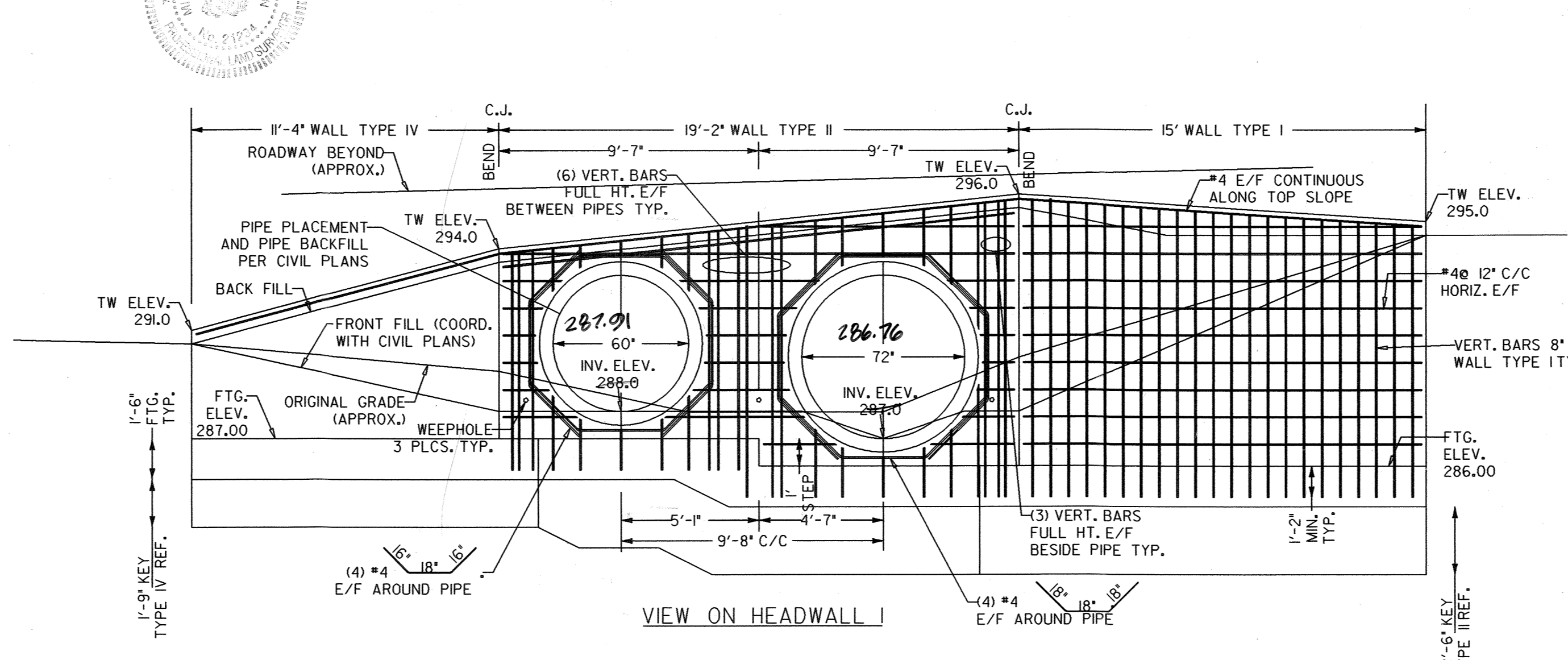
CULVERT 2 PROFILE
SCALE: 1"=30' HORIZ.
1"=5' VERT.



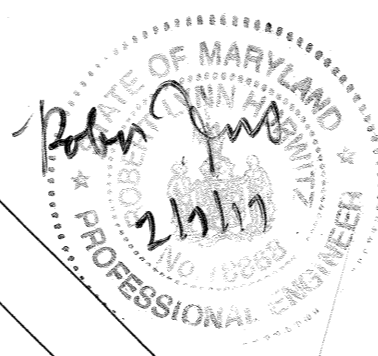
PLAN ON HEADWALLS I AND 2



VIEW ON HEADWALL 2

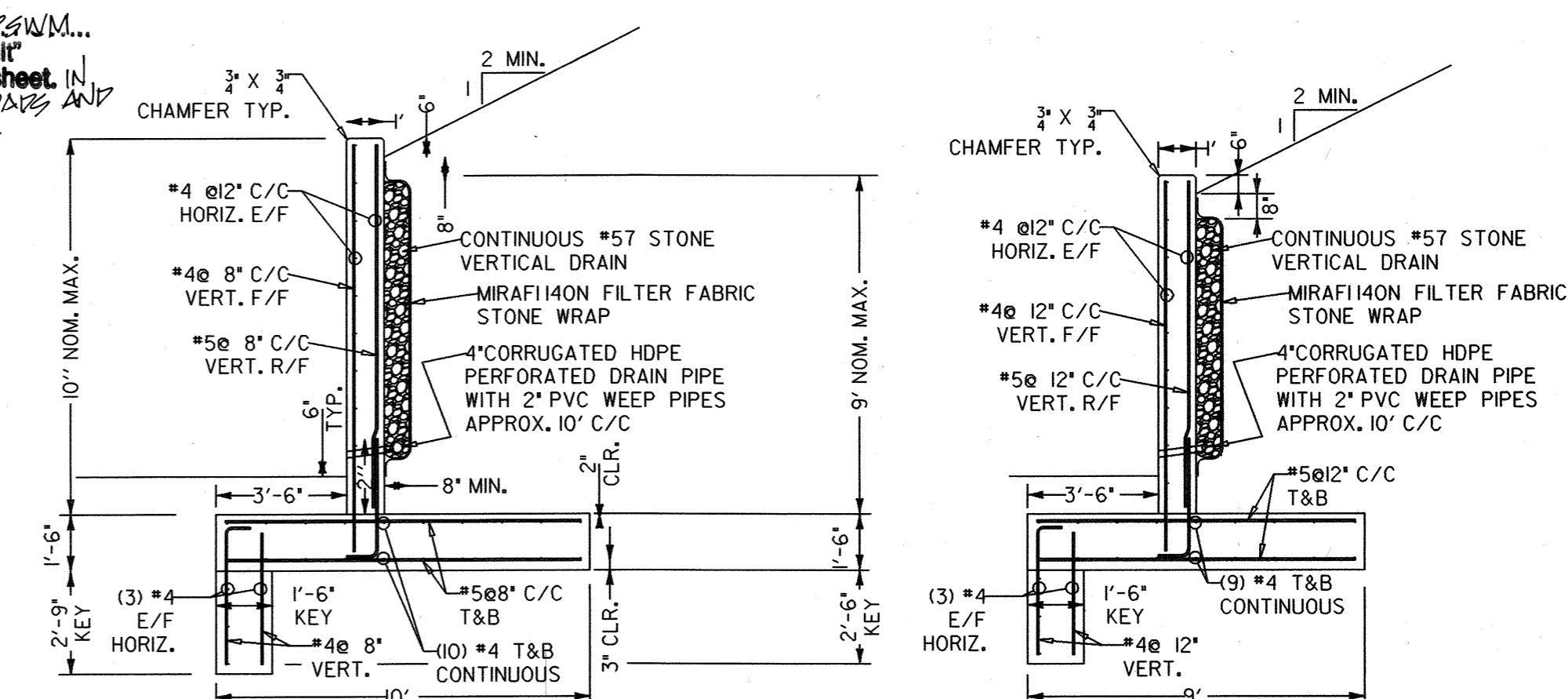


VIEW ON HEADWALL 1



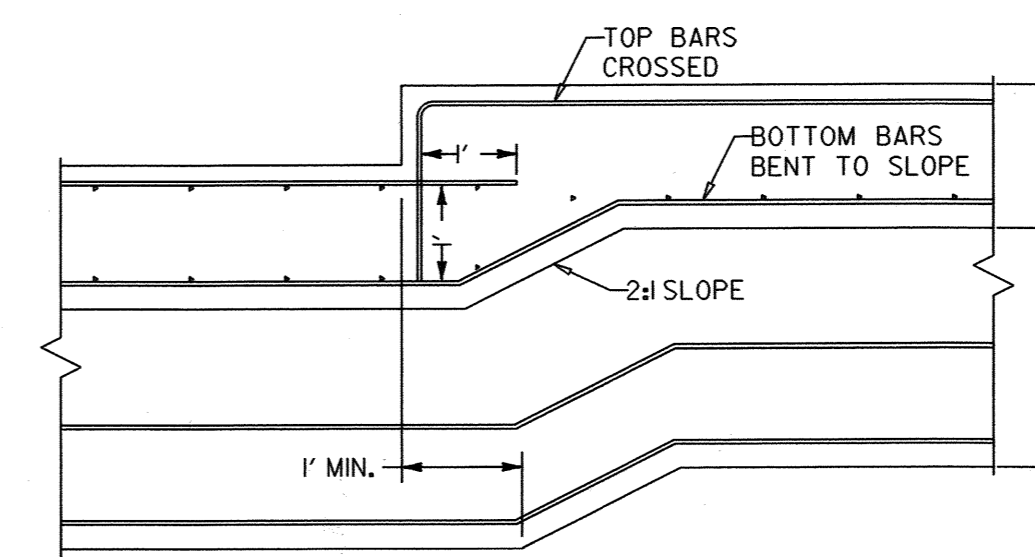
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18868, Expiration Date: 10-08-2018 (FOR SWM AS-BUILT ONLY)

AS-BUILT CERTIFICATION FOR R/W.M...
Note: There is NO AS-BUILT information provided on this sheet. REBAR TO SWM, BUT E-DRIVE AND UTILITIES BY OTHERS. ROBERT HUKWITZ PE # 18868 1-24-17



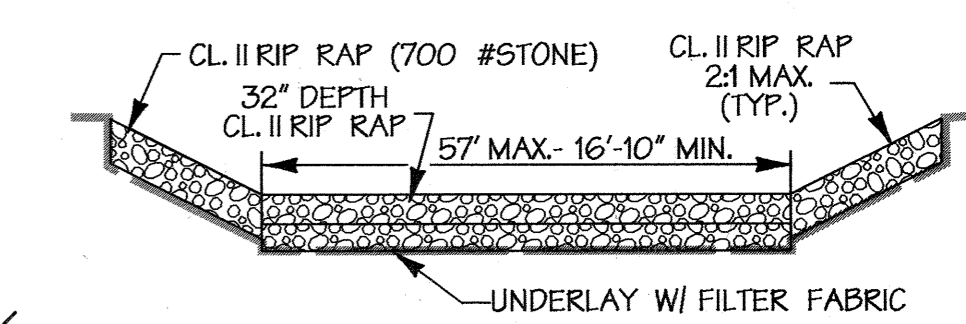
WALL TYPE I AND TYP. DRAIN

WALL TYPE II

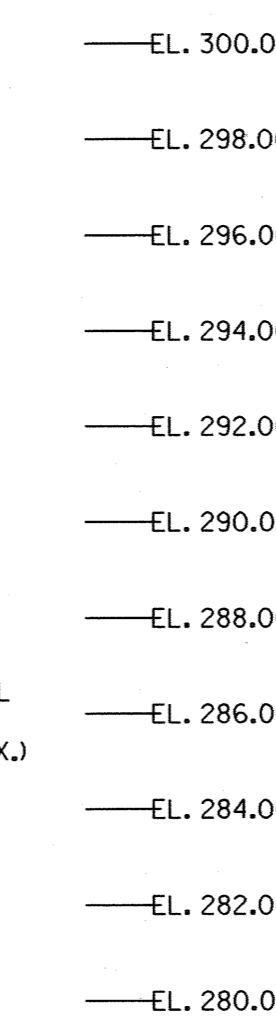


FOOTING (AND KEY) STEP FOR REINFORCEMENT NO. 2 ONLY (TYPICAL)

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO.: 18868 EXPIRATION DATE: 10-8-16



RIP RAP OUTFALL PROTECTION N.T.S.



DATE: 5/16/16
Professional Engineer Seal for Robert J. Hukwitz, No. 18868, State of Maryland.

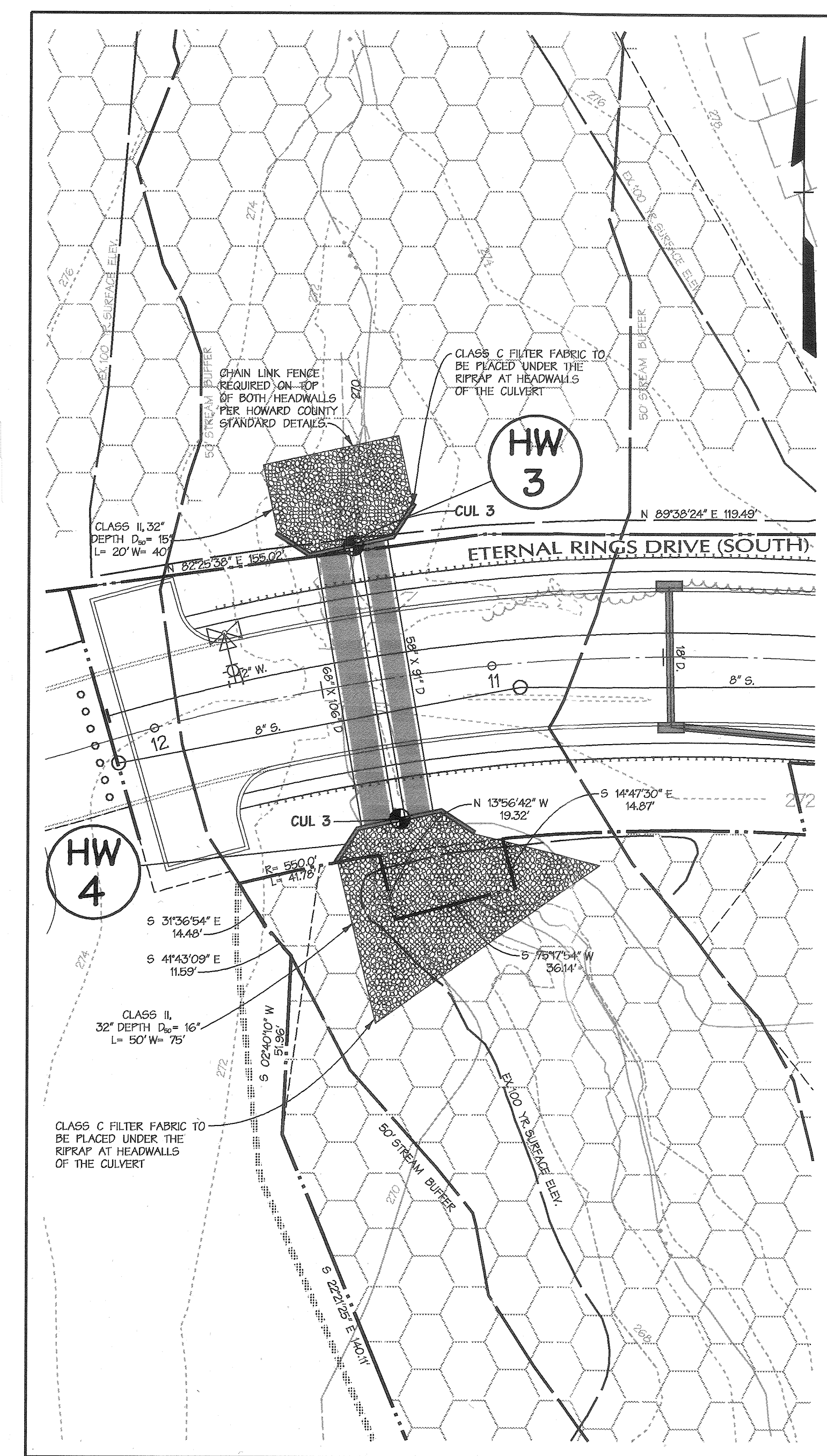
DATA SOURCES
Existing topography shown hereon is a result of an aerial survey provided by Air Survey Corporation dated 1998 supplemented with field run information performed by Daft McCune Walker, Inc. dated 2010.
Property boundary shown hereon is a result of field run monumented boundary survey performed on or about June 25, 1999 by Daft McCune Walker, Inc.
Soils if shown provided by Soil Data Mart dated 2005 published by Natural Resources Conservation Services (NRCS)
Zoning information shown hereon provided by Howard County Department of Planning and Zoning, adopted by Howard County Council February 2, 2004.
Wetland and stream limits shown hereon were originally approved by Maryland Departments of the Environment and the US Corps of Engineers in April 2004 and re-verified by these agencies in October 2009.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Walter R. ... 2-23-12
CHIEF, BUREAU OF HIGHWAYS DATE
HOWARD COUNTY DEPT. OF PLANNING & ZONING
Gerald D. Turnpaugh 2/20/12
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
Vicki ... 3/01/12
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Date	No.	Revision Description
1/24/17		AS BUILT SUBMISSION
5-16-16	1	REVISED SD IN PLAN VIEW & CROSSING
2-10-14	2	SHOW NEW OWNER/DEVELOPER

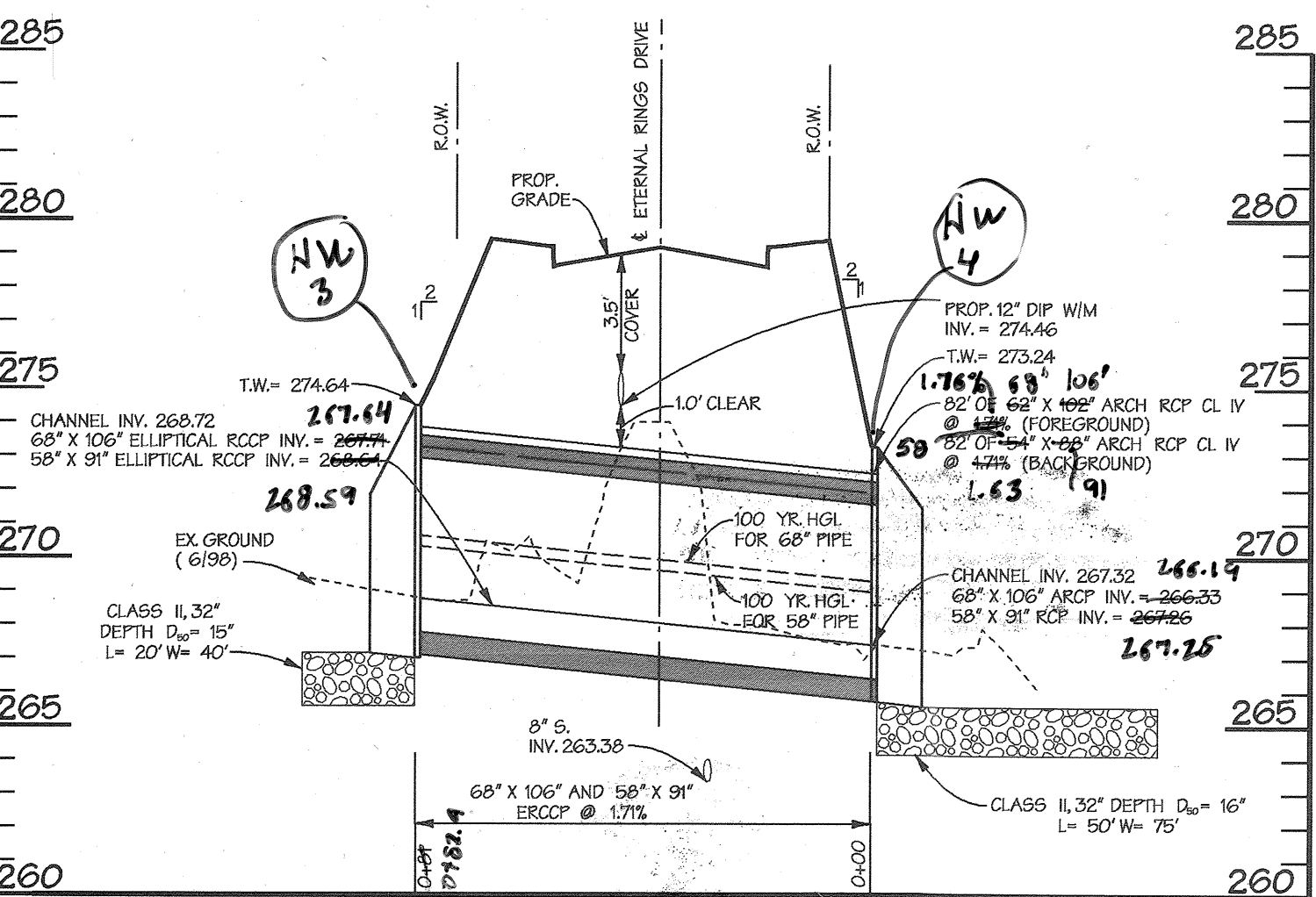
EMERSON
SECTION 3 - AREA 7 - PARCEL A
"Future Employment Use"
OWNER/DEVELOPER:
EMERSON DEVELOPMENT IX LLC
ONE TEXAS STATION COURT, SUITE 200
TIMONIUM, MD. 21093 (443) 687-8000

DMW Daft McCune-Walker, Inc. 200 East Pennsylvania Avenue Towson, Maryland 21286 410 286-3333 Fax 286-4705		A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals	
SUBMISSION NAME: EMERSON	SECTION/AREA: SEC.3 AREA 7	LOT/PARCEL #: 6069.03	PART OF: 837
RAT# OR LTR# (REQ): 52891330	ZONE: MXD-3	LOCAL DISTRICT: 6TH	DENSE TRACT: 6069.03
WATER CODE: E-15	SEWER CODE: 7520000		
TITLE: PHASE I, STAGE I FINAL PLAN NORTH CULVERT PLAN & PROFILE			
Des By: TJC	Scale: AS SHOWN	Proj. No.: 95054.W2	
Drn By: JSS	Date: 11/17/11		6 of 30
Chk By: JDF	Approved:		



SOUTH CULVERT

SCALE: 1"=30'

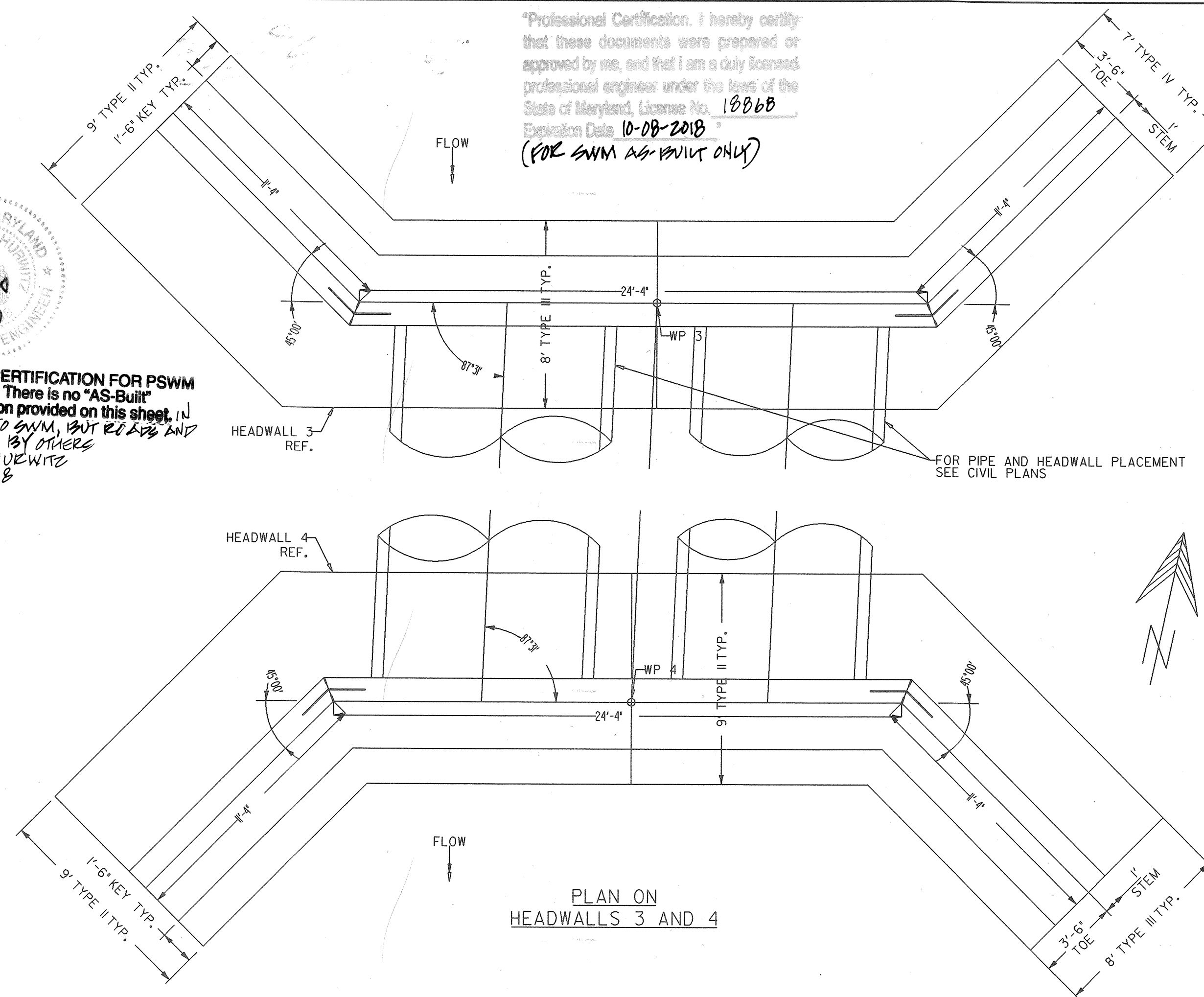


CULVERT 1 PROFILE

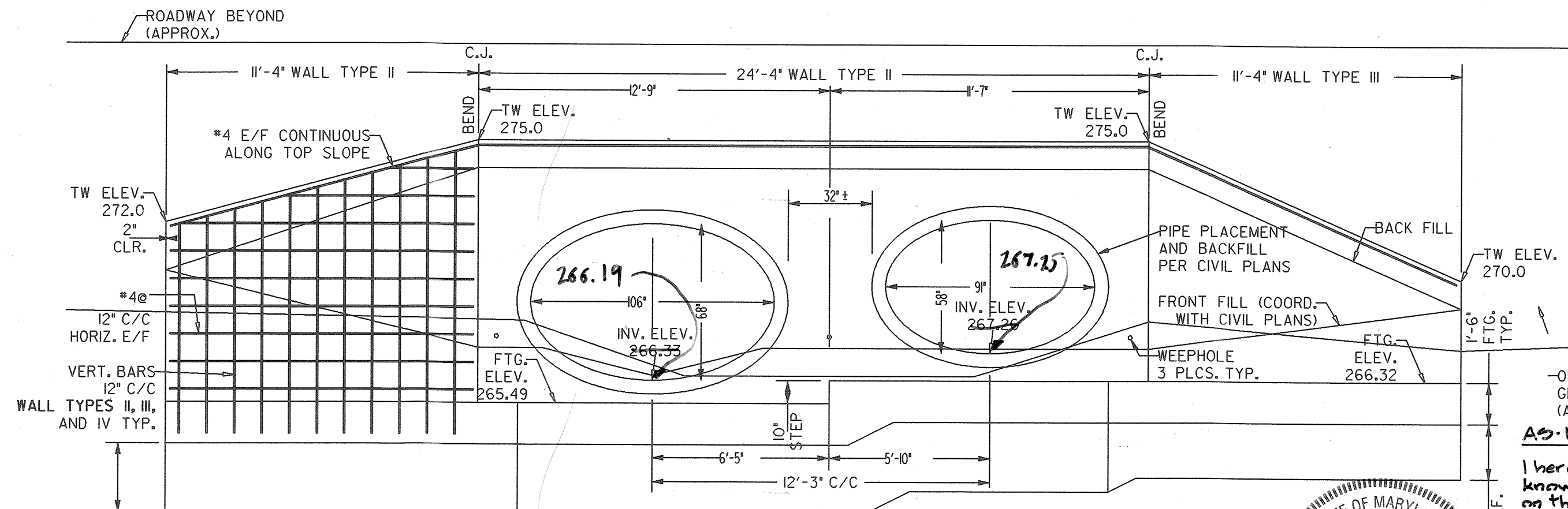
SCALE: HORIZ. 1"=30'
VERT. 1"=5'



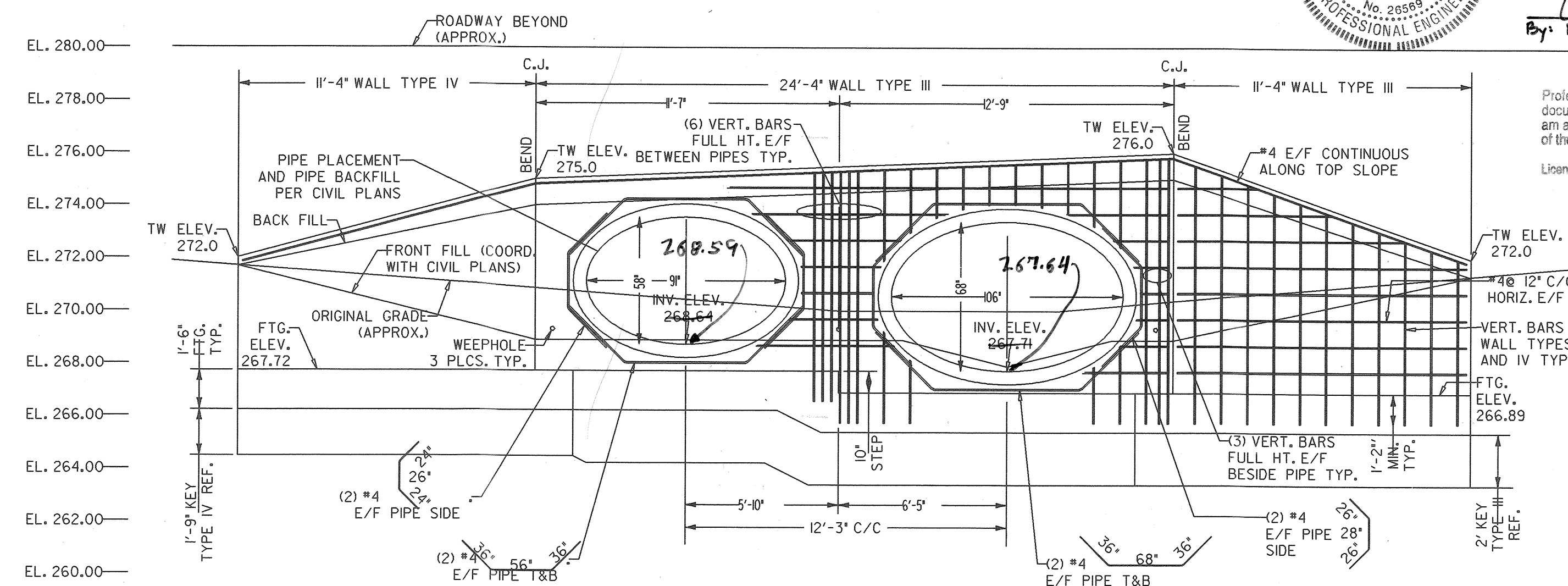
AS-BUILT CERTIFICATION FOR PSWM
Note: There is no "AS-Built" information provided on this sheet, it is required to SWM, BUT RELIES AND UTILITIES BY OTHERS. PROJECT HUEWIS PG # 18888 1-24-17



PLAN ON HEADWALLS 3 AND 4



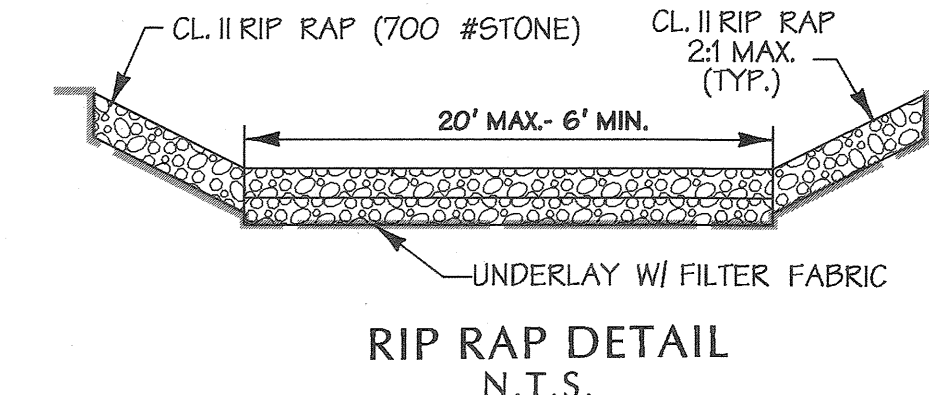
VIEW ON HEADWALL 4



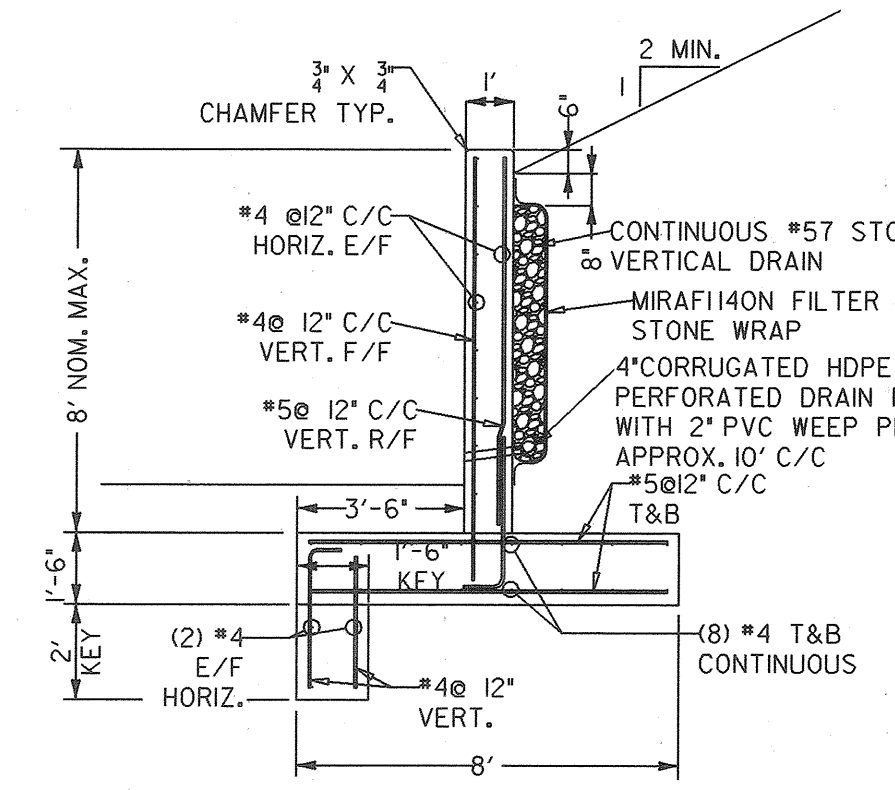
VIEW ON HEADWALL 3

GENERAL STRUCTURAL NOTES

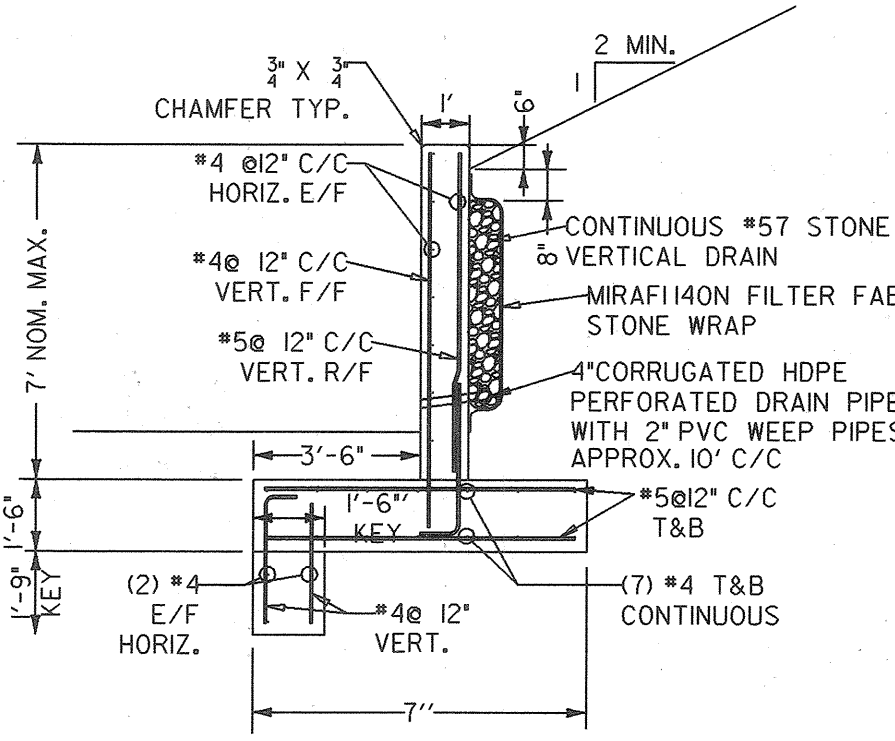
1. THE FOUNDATION DESIGN FOR THIS STRUCTURE HAS BEEN BASED ON AN ASSUMED 2500 PSF NET SOIL BEARING CAPACITY AT THE BOTTOM OF FOOTINGS ELEVATION. SUB-GRADE PREPARATION AND FOOTING CONSTRUCTION SHALL BE DONE IN A MANNER SO AS TO ASSURE AVAILABILITY OF THIS MINIMUM BEARING CAPACITY.
2. THE CONTRACTOR SHALL ENGAGE AN INDEPENDENT GEOTECHNICAL ENGINEER TO INSPECT ALL FOOTING EXCAVATIONS, AND FIELD VERIFY THE SOIL CAPACITY AT THE BEARING STRATA IMMEDIATELY PRIOR TO PLACING FOOTING CONCRETE. SHOULD THE CAPACITY BE FOUND TO BE LESS THAN THAT INDICATED, THE CONTRACTOR SHALL STOP WORK IN THE REGION IN QUESTION, AND SHALL IMMEDIATELY NOTIFY THE ENGINEER. COPIES OF THE FIELD INSPECTION REPORTS SHALL BE FORWARDED TO THE ENGINEER WITHIN 48 HOURS AFTER TESTING.
3. BOTTOM OF ALL FOOTINGS SHALL BE THE ELEVATION INDICATED, OR 12" BELOW VIRGIN SOIL (REFER TO CIVIL DRAWINGS), OR (FOR EXTERNAL FOOTINGS) 3'-0" BELOW FINISHED GRADE, WHICHEVER IS DEEPER. UNDER NO CIRCUMSTANCES SHALL FOOTINGS BE PLACED ON FILL. PROVIDE FOOTING STEPS AS REQUIRED (REFER TO TYPICAL STEPPED FOOTING DETAIL).
4. ALL CONCRETE INDICATED ON THIS DRAWING SHALL BE 3000 PSI PORTLAND CEMENT NORMAL WEIGHT CONCRETE MEETING THE REQUIREMENTS OF MDOT MIX #2.
5. CONCRETE COVER OVER REINFORCEMENT SHALL BE THE FOLLOWING MINIMUM CLEAR DISTANCE:
FOOTINGS 3"
WALLS & PIERS BELOW GRADE 2"
SLABS ON GRADE (TOP) 2"
SLABS ON GRADE (BOTTOM) 2"
WALLS NOT BACK FILLED 3/4"
6. DEFORMED STEEL REINFORCING BARS SHALL CONFORM TO ASTM A-615, GRADE 60. LAP ALL SPLICES 30 BAR DIAMETERS, MIN. (UNQ).
7. PROVIDE CHAIRS AND BOLSTERS AS REQUIRED TO SECURELY HOLD REINFORCING BARS AND WIRE MESH IN PLACE UNTIL CONCRETE HAS CURED.
8. MOIST CURE ALL FRESH CONCRETE FOR AT LEAST 7 DAYS AFTER PLACING.
9. UNLESS NOTED OTHERWISE, CHAMFER ALL EXPOSED EDGES 3/4".



RIP RAP DETAIL N.T.S.



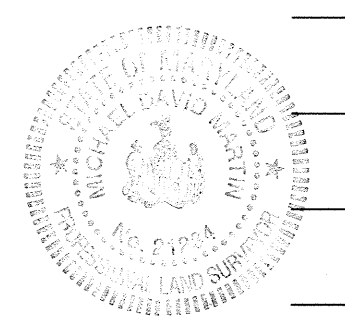
WALL TYPE III



WALL TYPE IV

DATA SOURCES
Existing topography shown hereon is a result of an aerial survey provided by Air Survey Corporation dated 1993 supplemented with field run information performed by Darr McGuire Walker, Inc. dated 2/20.
Property boundary shown hereon is a result of field run monumented boundary survey performed on or about June 25, 1999 by Darr McGuire Walker, Inc.
Soils if shown provided by Soil Data Mart dated 2005 published by Natural Resources Conservation Service (NRCS)
Zoning information shown hereon provided by Howard County Department of Planning and Zoning, adopted by Howard County Council February 2, 2004.
Wetland and stream limits shown hereon were originally approved by Maryland Department of the Environment, and the US Corps of Engineers in April 2001 and re-verified by these agencies in October 2003.

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
STEPHEN JERACK, No. 35792, 11-10-2002



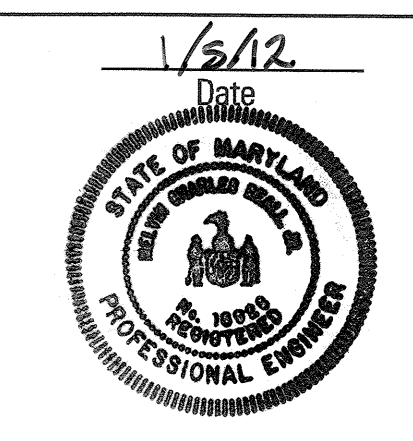
AS-BUILT CERTIFICATION
I hereby, by my seal, that to the best of my knowledge and belief the facilities shown on this plan were constructed as shown on this "AS-BUILT" plan meet the approved plans and specifications in regards to road and utility. SWM by others. Darr McGuire Walker, Inc.
By: Gerald D. Turnbaugh, P.E. # 26569
By: Michael D. Martin, P.L.S. # 21234

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 0028925 EXPIRATION DATE: 1/15/2012.

FOR REINFORCEMENT DESIGN ONLY

PROFESSIONAL CERTIFICATION
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 26569, Expiration Date: 7-18-17

PROFESSIONAL CERTIFICATION
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. 16928, EXPIRATION DATE: 5/13/12.

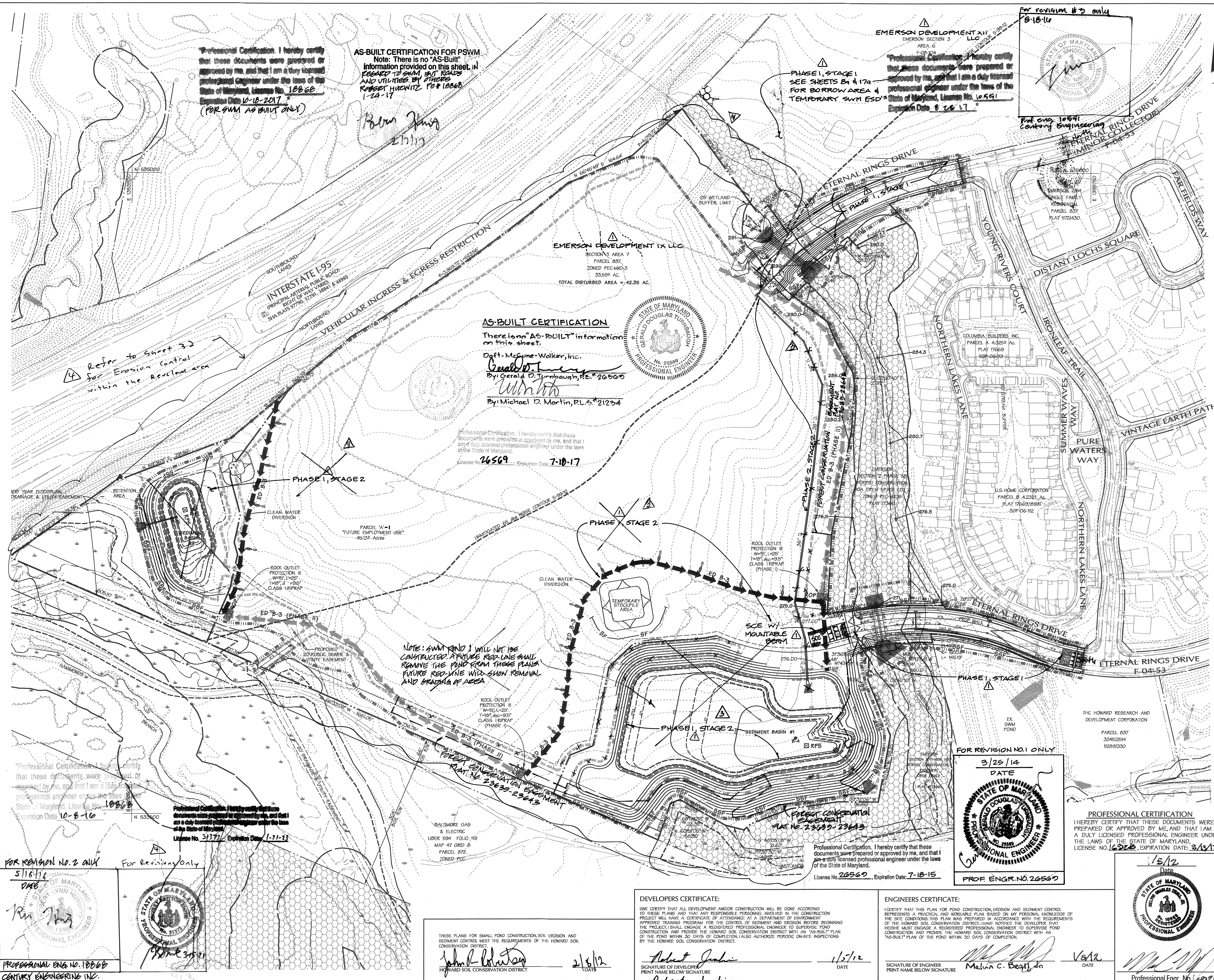


Professional Eng. No. 16928

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS	
<i>W. J. Miller</i>	2-23-12
CHIEF, BUREAU OF HIGHWAYS	DATE
HOWARD COUNTY DEPT. OF PLANNING & ZONING	
<i>Michael D. Martin</i>	2/20/12
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
<i>Kevin D. Lavelle</i>	3/01/12
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE

1-24-17	AS BUILT SUBMISSION
2-10-14	SHOW NEW OWNER/DEVELOPER
Date	Revision Description

EMERSON			
SECTION 3 - AREA 7 - PARCEL A			
"Future Employment Use"			
OWNER/DEVELOPER:			
EMERSON DEVELOPMENT IX LLC			
ONE TEXAS STATION COURT, SUITE 200			
TIMONIUM, MD 21093 (443) 687-8000			
DMW			
Darr McGuire Walker, Inc. A Team of Land Planners, Engineers, Surveyors & Environmental Professionals			
200 East Pennsylvania Avenue, Timonium, Maryland 21088 (410) 386-3333 Fax 296-4705			
DESIGNER NAME	EMERSON	SECTION/AREA	SEC.3 AREA 7
DATE OF LAST REV. BY	15	DATE/REV. MAP	47
WATER CODE	E-15	SEWER CODE	7520000
TITLE		PHASE I, STAGE I FINAL PLAN SOUTH CULVERT PLAN & PROFILE	
Des By	TJC	Scale	1"=30'
Drn By	JSS	Date	11/17/11
Chk By	JDF	Approved	
Proj. No.		95054.W2	
		7 of 30	

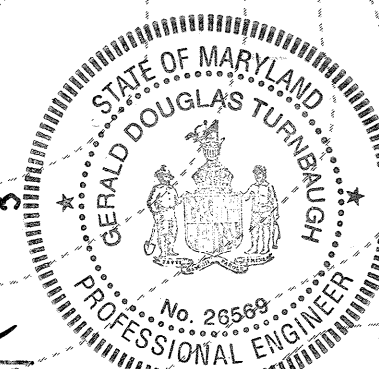


Professional Certification I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 18868, Expiration Date 10-18-2017 (FOR SWM AS-BUILT ONLY)

AS-BUILT CERTIFICATION FOR PSWM Note: There is no "AS-Built" information provided on this sheet, IN REGARD TO SWM, BUT ROADS AND UTILITIES BY OTHERS ROBERT HUCWITZ PE# 18868 1-24-17

EMERSON DEVELOPMENT XII LLC AREA 6 F-04-53 PARCEL A 4.325± AC. ZONED FEG-MXD-3 TOTAL DISTURBED AREA = 42.35 AC. Professional Certification I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 10951, Expiration Date 8-26-17.

For revision #3 only 8-18-16



AS-BUILT CERTIFICATION There is no "AS-BUILT" information on this sheet. Daft-McCune-Walker, Inc. By: Gerald D. Turmbaugh, P.E. #26560

Professional Certification, I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 26569, Expiration Date: 7-18-17

Refer to Sheet 32 for Erosion Control within the Revegetation area

Legend

EX CURB & GUTTER	---
EX MAJOR CONTOURS	---
EX MINOR CONTOURS	---
EX STORM DRAIN	---
EX SEWER	---
EX WATER	---
EXISTING TREE LINE	---
EXISTING WETLAND LIMIT	---
PROPERTY LINE	---
ROADWAY RIGHT-OF-WAY	---
PROPOSED LOT LINE	---
PROPOSED EASEMENT	---
PROPOSED CURB & GUTTER	---
PROPOSED SIDEWALK	---
PROP. STORM DRAIN	---
PROP. SEWER	---
PROP. WATER	---
PROP. MAJOR CONTOURS	---
PROP. MINOR CONTOURS	---
SILT FENCE	---
LIMIT OF DISTURBANCE	---
STABILIZED CONSTRUCTION ENTRANCE	---
MOUNTABLE BERM	---
PROPOSED TREE LINE	---
FLOODPLAIN	---
STREAM BUFFER	---
REMOVABLE PUMPING STATION	---
STONE CHECK DAM	---
EX FOREST CONSERVATION EASEMENT	---
PROP. FOREST CONSERVATION EASEMENT	---
45' RPS SETBACK FOR CREDITED FOREST RETENTION AREAS	---
EARTH DIKE - PHASE I (CLEAN WATER DIVERSION)	---
EARTH DIKE - PHASE II UNMOUNTABLE 66' dia NOISE CONTOUR 9-99-12	---
WETLANDS	---
FLOODPLAIN ELEVATION	---

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET. STEPHEN JERACK, No. 95742, 11-10-2022

NOTE
Earth dikes labeled for Phase II shall not be constructed until Phase I work is complete and all disturbed areas are stabilized.

DATA SOURCES
Existing topography shown hereon is a result of an aerial survey performed by Air Survey Corporation dated 1995, supplemented with field run information performed by Daft-McCune-Walker, Inc. dated 2010.

Property boundary shown hereon is a result of field run monumented boundary survey performed on or about June 25, 1999 by Daft-McCune-Walker, Inc.

Soils shown provided by Soil Data Mart dated 2005 published by Natural Resources Conservation Service (NRCS)

Zoning information shown hereon provided by Howard County Department of Planning and Zoning, adopted by Howard County Council February 2, 2004.

Wetland and stream limits shown hereon were originally approved by Maryland Department of the Environment and the US Corps of Engineers in April 2001 and re-verified by these agencies in October 2009.

LIMIT OF DISTURBANCE: 1,854,511.82 SF ± 142.57 AC ±

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS	
<i>W. J. Wall</i>	2-23-12
CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING	
<i>W. J. Wall</i>	2/28/12
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
<i>V. Stalder</i>	3/6/12
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
8-17-16	Phase 1, Stage 2 & Phase 2, Stage 2 revised
8-17-16	Basins #1 and #2 revised
5-16-16	Revised Forest Conservation Areas
2-10-14	Show Staging Limits & New Owner/Dev.
Date	No. Revision Description
1-24-17	AS-BUILT SUBMISSION

SECTION 3 - AREA 7 - PARCEL A
"Future Employment Use"
Revised Grading and Erosion Control

OWNER/DEVELOPER:
EMERSON DEVELOPMENT IX LLC
ONE TEXAS STATION COURT, SUITE 200
TIMONIUM, MD 21053 (443) 680-8000

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

SUBDIVISION NAME	EMERSON	SECTION/AREA	SEC.3 AREA 7	LOT/PARCEL #	PART OF 637
PLAT OR LOT/BLK #	22891330	ZONE	MXD-3	BLK/LOT MAP	6069.03
WATER CODE	E-15	SEWER CODE	61H	CHDS TRACT	
				7520000	

TITLE	FINAL PLAN (Revised) GRADING AND SEDIMENT CONTROL PLAN PHASE 1, STAGE 2		
Des By	TJC	Scale 1"=100'	Proj. No. 95054.W2
Drn By	JSS	Date 11/17/11	
Chk By	JDF	Approved	8 of 30

Professional Certification I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 18868, Expiration Date 10-8-16

FOR REVISION NO. 2 ONLY

5/16/12 DATE

Robert Jenkins

PROFESSIONAL ENGR. NO. 18868
CENTURY ENGINEERING INC.

Professional Certification, I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 31371, Expiration Date: 1-21-23

FOR REVISION ONLY

Robert Jenkins

PROFESSIONAL ENGR. NO. 31371

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

John L. Blanton

HOWARD SOIL CONSERVATION DISTRICT

2/5/12 DATE

DEVELOPERS CERTIFICATE:

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

Robert Jenkins

SIGNATURE OF DEVELOPER
PRINT NAME BELOW SIGNATURE

1/5/12 DATE

ENGINEERS CERTIFICATE:

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

Malvin C. Beatty, Jr.

SIGNATURE OF ENGINEER
PRINT NAME BELOW SIGNATURE

1/5/12 DATE

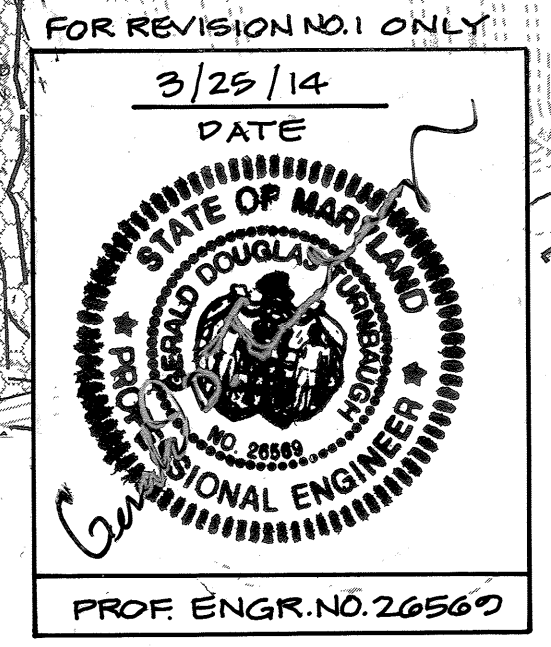
Professional Certification, I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 26560, Expiration Date: 7-18-15

FOR REVISION NO. 1 ONLY

3/29/14 DATE

Malvin C. Beatty, Jr.

PROF. ENGR. NO. 26560

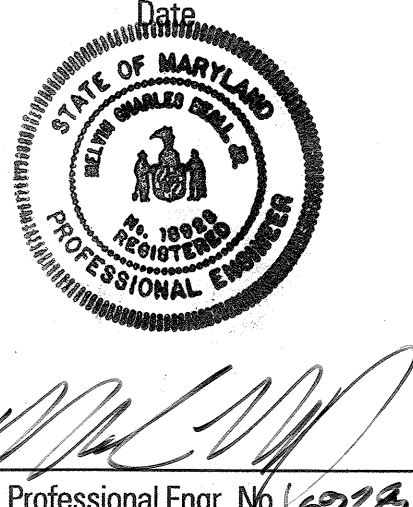


Professional Certification I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 16202, Expiration Date: 3/31/12

1/5/12 DATE

Malvin C. Beatty, Jr.

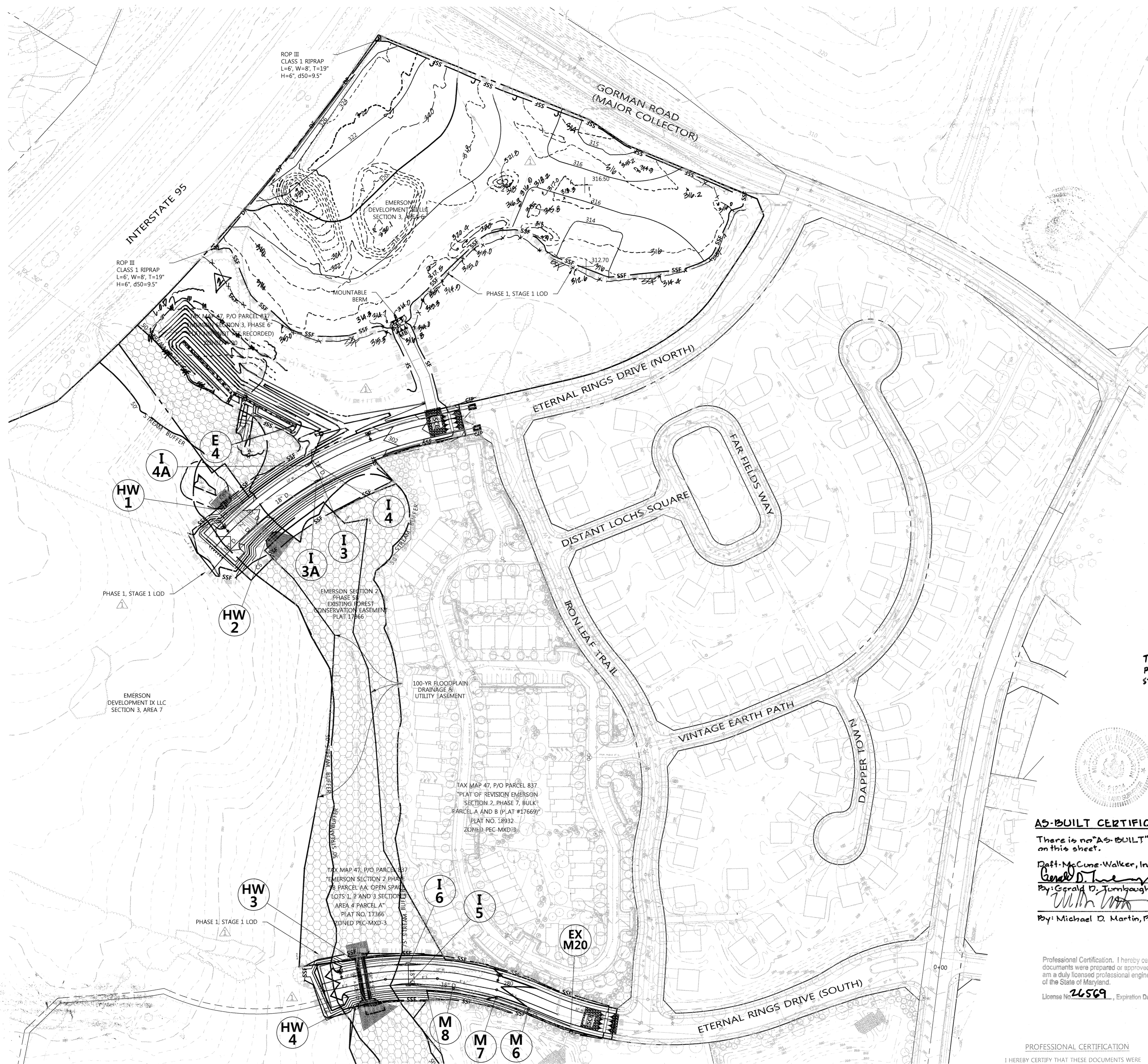
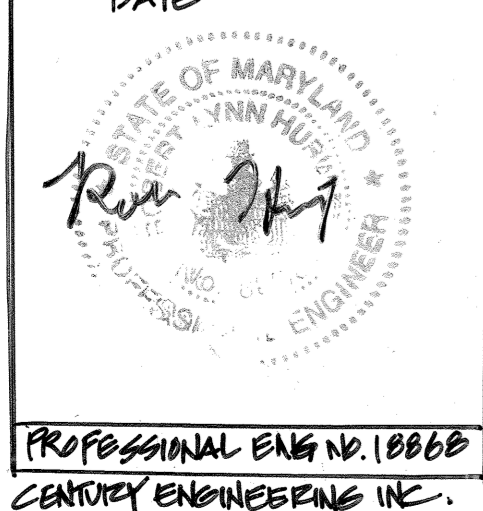
PROFESSIONAL ENGR. NO. 16202



A:\95054\95054-81\ENGR\CAD FILES\SHEET FILES\95054-81_SECI.DWG Mon, Mar 24, 2014

*Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18868 Expiration Date 10-8-16

FOR REVISION NO. 2 ONLY
5/16/16
DATE



SCALE: 1"=100'

FINAL PLAN

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL, MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
John R. Robertson
HOWARD SOIL CONSERVATION DISTRICT
3/27/14

DEVELOPERS CERTIFICATE:

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

James F. Knott, Jr.
3/27/14

ENGINEERS CERTIFICATE:

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

Gerald D. Turnbaugh
3/25/14

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 26569, EXPIRATION DATE 7-18-15

AS-BUILT CERTIFICATION

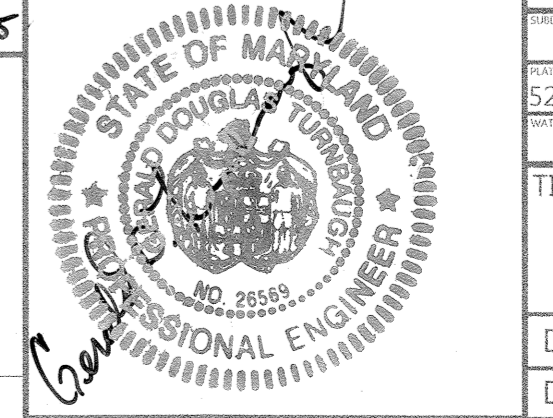
There is no "AS-BUILT" information on this sheet.

Daft McCune Walker, Inc.
By: Gerald D. Turnbaugh, P.E. #26569
By: Michael D. Martin, P.L.S. #21234

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 26569, Expiration Date 7-18-15

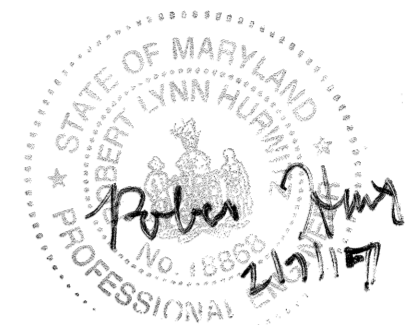
FOR REVISION NO. 1 ONLY

3-25-14
Date



Professional Engr. No.

AS-BUILT CERTIFICATION FOR PSWM
Note: There is no "AS-Built" information provided on this sheet. IN REGARD TO OWM, BUT ROADS AND UTILITIES BY OTHERS
ROBERT HUEWITZ
PE # 18868
1-24-17



*Professional Certification I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18868 Expiration Date 10-8-2018 (FOR SWM AS-BUILT ONLY)

LEGEND

- SSF SUPER SILT FENCE
- CDM CHECK DAM
- DF DIVERSION FENCE
- SF SILT FENCE
- SSSF SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- TSSMC TEMPORARY SOIL STABILIZATION MATTING CHANNEL APPLICATION
- CIP CURB INLET PROTECTION
- MOUNTABLE BERM
- ROCK OUTLET PROTECTION III

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
W. J. M... 4-10-14
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
K... 4-16-14
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
D... 4-1-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Revision table with columns: Date, No., Revision Description. Includes entries for 2/10/14 and 1-24-17.

SECTION 3 - AREA 7 - PARCEL A
"FUTURE EMPLOYMENT USE"
OWNER/DEVELOPER:
EMERSON DEVELOPMENT IX LLC
ONE TEXAS STATION CT. SUITE 200
TIMONIUM, MD 21093
(443) 689-8000

DMW
DAFT MCCUNE WALKER INC
200 EAST PENNSYLVANIA TOWSON, MD 21286
P. 410 296 3333 F. 410 296 4705 WWW.DMW.COM
A TEAM OF LAND PLANNERS, LANDSCAPE ARCHITECTS, ENGINEERS, SURVEYORS & ENVIRONMENTAL PROFESSIONALS

Project information table with columns: SHEET NO., AREA, DISTRICT, SECTION, PART OF, SHEET NO., SHEET NO., SHEET NO.

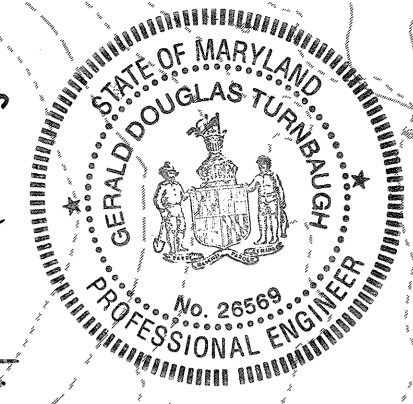
Title block table with columns: TITLE, Des. By, Dn. By, Chk. By, Scale, Date, Date, Date, Proj. No., Sheet No.

AS-BUILT CERTIFICATION

There is no "AS-BUILT" information on this sheet.

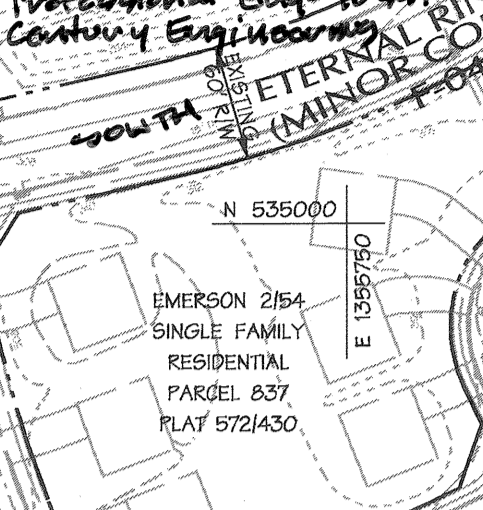
Draft-McCune-Walker, Inc.
Gerald D. Turnbaugh, RE, #26567
By: Michael D. Martin, P.L.S., #21234

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 26569, Expiration Date: 7-18-17



For Revision #3 only
B-1814

EMERSON DEVELOPMENT XII
EMERSON SECTION 3 LLC
AREA 6
FLOOR-304
SEP-08-04



Professional Eng. No. 10860
Century Engineering Inc.

PHASE 1, STAGE 1
SEE SHEETS Ba & 17a
FOR BORROW AREA &
TEMPORARY SWM ESD'S

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 10860
Expiration Date: 8-26-17

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 10860
Expiration Date: 10-09-2018
FOR SWM AS-BUILT ONLY

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 35192, 11-10-2022

NOTE: THE CONTRACTOR SHALL ONLY USE THE SOUTH EXTENSION OF ETHERNAL RINGS DRIVE FOR CONSTRUCTION TRAFFIC.

LIMIT OF DISTURBANCE: 1,054,511.82 SF ± 142.57 AC ±

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
W. J. Wall
CHIEF, BUREAU OF HIGHWAYS
2-23-12 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
[Signature]
CHIEF, DEVELOPMENT ENGINEERING DIVISION
2/28/12 DATE

APPROVED: [Signature]
CHIEF, DIVISION OF LAND DEVELOPMENT
3/21/12 DATE

1/24/17 AS BUILT SUBMISSION
8-17-16 Phase 1, Stage 1 & Phase 2, Stage 2 Revised
2-10-16 Revised Forest Conservation Areas
2-10-16 SHOW PHASING/STAGING & NEW OWNER/DEV.

Date No. Revision Description
05-12-21 Revised Grading and Erosion Control
EMERSON
SECTION 3 - AREA 7 - PARCEL A
"Future Employment Use"

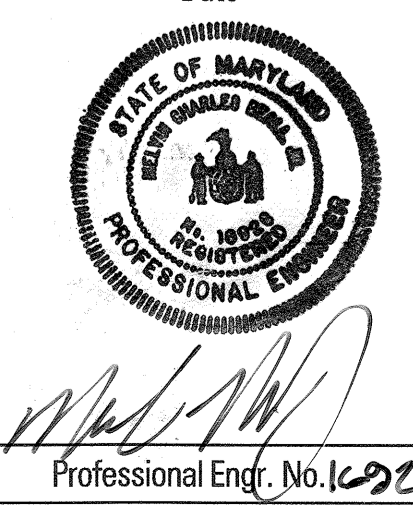
OWNER/DEVELOPER:
EMERSON DEVELOPMENT IX LLC
ONE TEXAS STATION COURT, SUITE 200
TIMONIUM, MD 21093 (410) 689-8000

DMW
Draft-McCune-Walker, Inc.
300 East Pennsylvania Avenue
Towson, Maryland 21286
Phone: (410) 296-3333
Fax: 296-4705

SECTION/AREA	SEC.3 AREA 7	LOT/PARCEL #	PART OF B37
EMERSON	MMX-3	47	6069.03

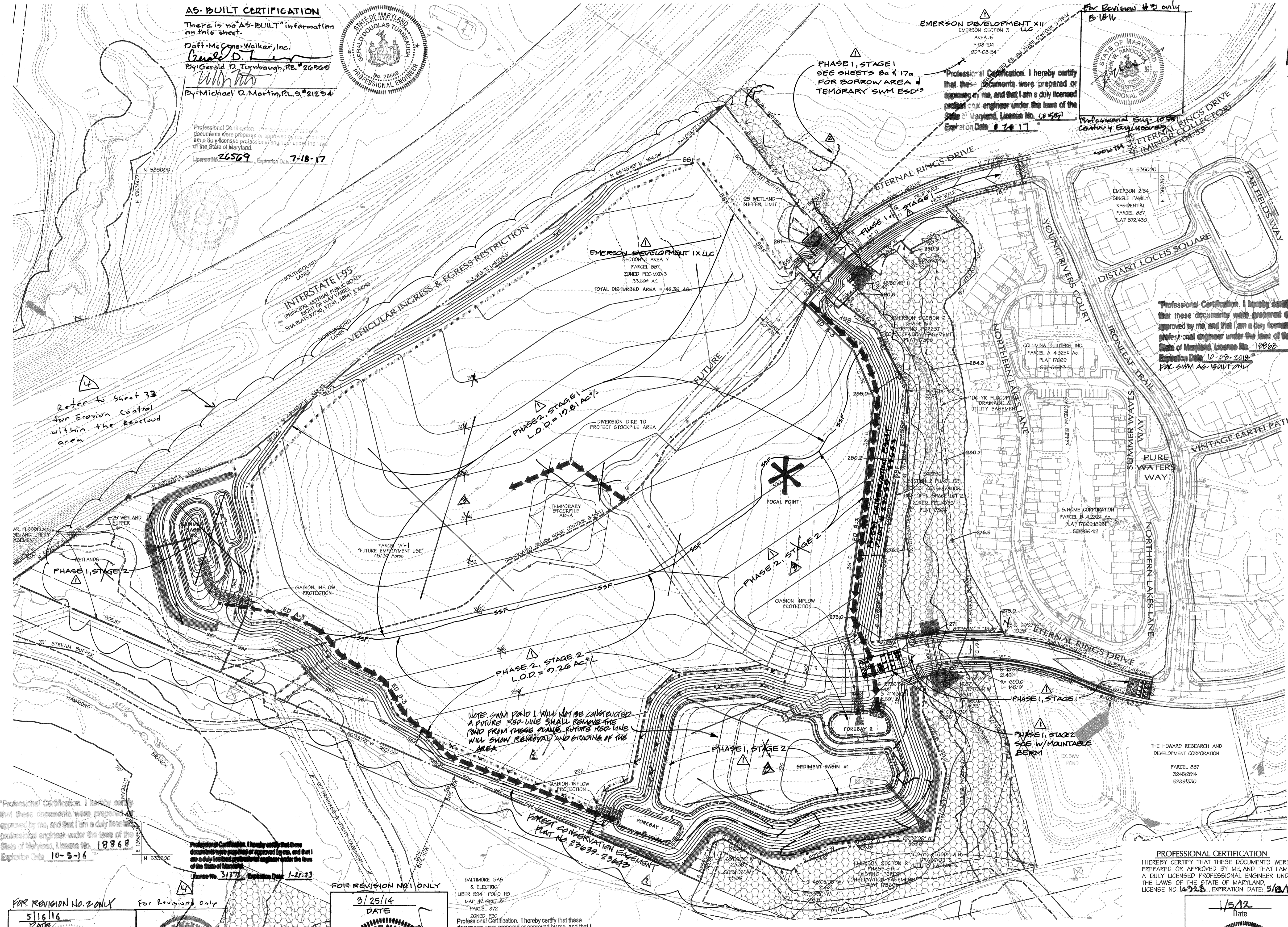
TITLE: **FINAL PLAN (Revised Sheet) GRADING AND SEDIMENT CONTROL PLAN PHASE 2, STAGES 1 & 2**

Des. By	TJC	Scale	1"=100'	Proj. No.	95054.W2
Dim. By	JSS	Date	11/17/11		9 of 30
Chk. By	JDF	Approved			



Professional Eng. No. 10860
Date: 1/5/12

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND,
LICENSE NO. 10860, EXPIRATION DATE: 5/6/12



Refer to Sheet 33 for Erosion Control within the Resealment Area

NOTE: SWM POND 1 WILL NOT BE CONSTRUCTED. A FUTURE RED LINE SHALL REMOVE THE POND FROM THESE PLANS. FUTURE RED LINE WILL SHOW REMOVAL AND BRACING OF THE AREA

FOR REVISION NO. 1 ONLY
DATE: 3/25/14

BALTIMORE GAS & ELECTRIC
LIBER 894 FOLD 119
MAP 57.690 D
PARCEL 072

PROFESSIONAL CERTIFICATION. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 26569, Expiration Date: 7-18-15

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

John R. Jenkins
HOWARD SOIL CONSERVATION DISTRICT
DATE: 2/4/12

DEVELOPERS CERTIFICATE:

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

Robert Jenkins
SIGNATURE OF DEVELOPER
DATE: 1/5/12

ENGINEERS CERTIFICATE:

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

Malin C. Baugh, Jr.
SIGNATURE OF ENGINEER
DATE: 1/5/12

FOR REVISION NO. 2 ONLY
DATE: 5/16/16
Professional Eng. No. 10860
Century Engineering Inc.

FOR REVISION ONLY
DATE: 3/25/14
Professional Eng. No. 26569
Professional Engineer

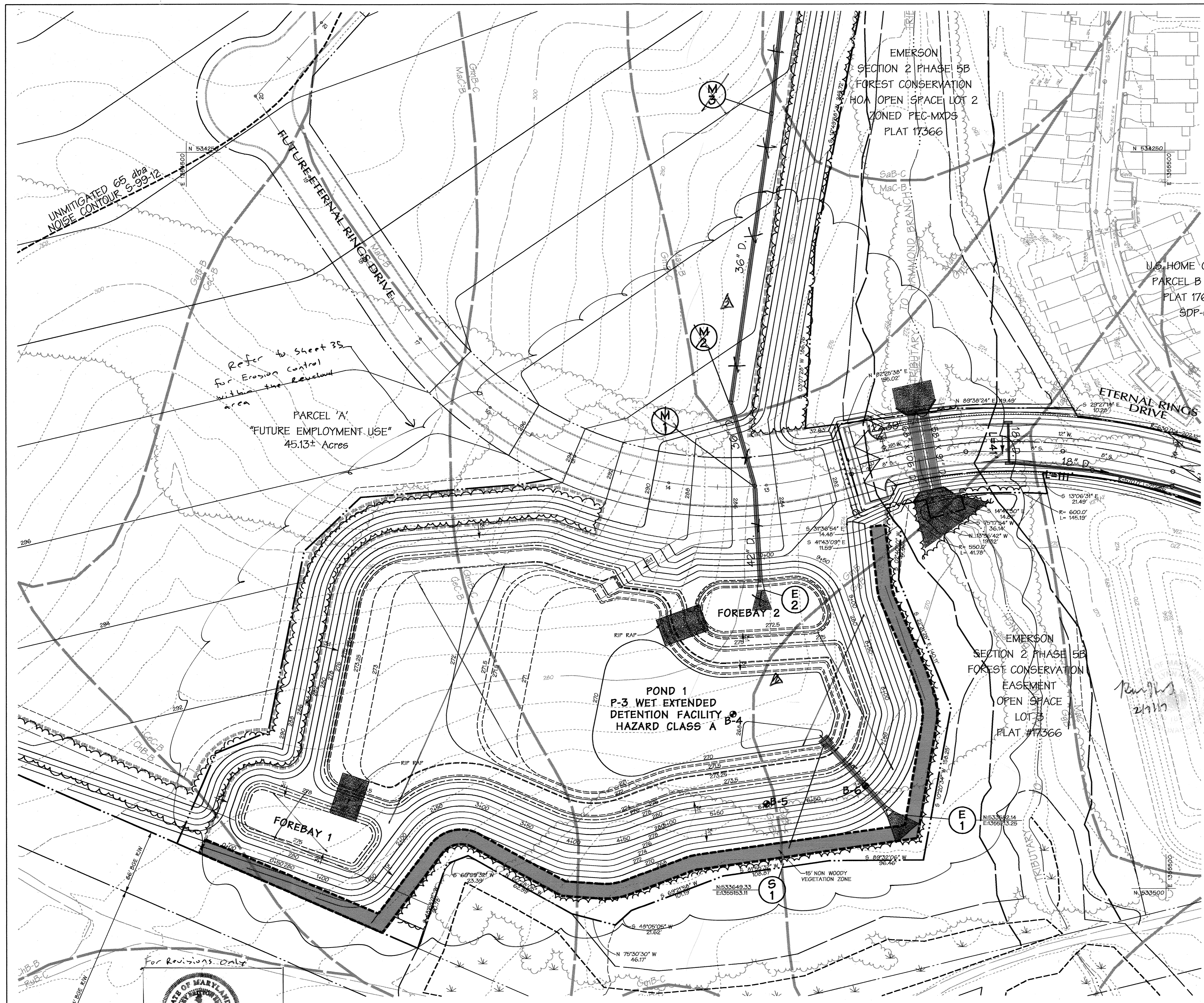
FOR REVISION NO. 1 ONLY
DATE: 3/25/14
Professional Engineer

Legend

- EX CURB & GUTTER
- EX MAJOR CONTOURS
- EX MINOR CONTOURS
- EX STORM DRAIN
- EX SEWER
- EXISTING TREE LINE
- EXISTING WETLAND LIMIT
- PROPERTY LINE
- ROADWAY RIGHT-OF-WAY
- PROPOSED LOT LINE
- PROPOSED EASEMENT
- PROPOSED CURB & GUTTER
- PROPOSED SIDEWALK
- PROP. STORM DRAIN
- PROP. WATER
- PROP. MAJOR CONTOURS
- PROP. MINOR CONTOURS
- SILT FENCE
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- STABILIZED CONSTRUCTION ENTRANCE
- MOUNTABLE BERM
- PROPOSED TREE LINE
- FLOODPLAIN
- STREAM BUFFER
- REMOVABLE PUMPING STATION
- STONE CHECK DAM
- EX FOREST CONSERVATION EASEMENT
- PROP. FOREST CONSERVATION EASEMENT
- 45' BCE SETBACK FOR CREDITED FOREST RETENTION AREAS
- EARTH DIKE

FLOODPLAIN ELEVATION
Note: There is no "AS-Built" information provided on this sheet. It is based on FEMA Flood Insurance Rate Maps (FIRM) and other data. The floodplain elevation is 200.7.

DATA SOURCES
Existing topography shown hereon is a result of an aerial survey provided by Air Survey Corporation dated 1995, supplemented with field run information performed by Draft-McCune-Walker, Inc. dated 2010.
Property boundary shown hereon is a result of field run monumented boundary survey performed on or about June 25, 1999 by Draft-McCune-Walker, Inc.
Soils shown provided by Soil Data Mart dated 2005 published by Natural Resources Conservation Service (NRCS).
Zoning information shown hereon provided by Howard County Department of Planning and Zoning, adopted by Howard County Council February 2, 2004.
Wetland and stream limits shown hereon were originally approved by Maryland Department of the Environment and the US Corps of Engineers in April 2001 and re-verified by these agencies in October 2005.



Legend

- EX. CURB & GUTTER
- EX. MAJOR CONTOURS
- EX. MINOR CONTOURS
- EX. STORM DRAIN
- EX. SEWER
- EX. WATER
- EXISTING TREE LINE
- EXISTING WETLAND LIMIT
- PROPERTY LINE
- ROADWAY RIGHT-OF-WAY
- PROPOSED LOT LINE
- PROPOSED EASEMENT
- PROPOSED CURB & GUTTER
- PROPOSED SIDEWALK
- PROP. STORM DRAIN
- PROP. SEWER
- PROP. WATER
- PROP. MAJOR CONTOURS
- PROP. MINOR CONTOURS
- SOIL BORING
- NON WOODY VEGETATION ZONE

BASIN TABLE

BASIN NUMBER	1	
EXISTING DRAINAGE AREA: ACRES	31.28	
PROPOSED DRAINAGE AREA: ACRES	31.28	
STORAGE REQUIRED: CUBIC FEET	CLEAN OUT	28,152
	WET	28,152
	DRY	56,304
	TOTAL	112,608
STORAGE PROVIDED: CUBIC FEET	CLEAN OUT	28,152
	WET	51,117
	DRY	220,544
	TOTAL	299,823
EXISTING GROUND ELEVATION	272.0	
TOP EMBANKMENT ELEVATION	280.0	
EMERGENCY SPILLWAY CREST ELEVATION	N/A	
RISER CREST ELEVATION	274.50	
WET STORAGE ELEVATION	272.00	
CLEANOUT ELEVATION	270.95	
BOTTOM ELEVATION	268.00	
Q INTO BASIN (C.F.S.) 10 YR	152.80	
Q OUT BARREL (C.F.S.) 10 YR	28.60	
Q OUT EMERGENCY SPILLWAY	N/A	
BASIN DEPTH	WET	2.00'
	DRY	2.50'
	TOTAL	4.50'
DESIGN HIGHWATER	100 YR	274.84'
FREEBOARD PROVIDED	100 YR	5.16'
BARREL DIAMETER	48"	
RISER DIAMETER	8' X 8'	
EMERGENCY SPILLWAY WIDTH	N/A	
WET STORAGE ZONE	268.00-272.00	
DRY STORAGE ZONE	272.00-274.50	
BOTTOM DIMENSIONS (AVERAGE)	170' X 90'	

For Revision # 2 only
8-18-16

Prof. Engineer # 10991
Century Engineering

"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 10991, Expiration Date 8-28-17."

"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18868, Expiration Date 10-08-2015 (FOR SWM AS-BUILT ONLY)"

AS-BUILT CERTIFICATION FOR PSWM
Note: There is no "AS-Built" information provided on this sheet. IN REGARD TO OWN, BUT RAISE AND UTILITIES BY OTHERS, ROBERT HUKWITZ PE # 18868 1-24-17

OPERATION, MAINTENANCE AND INSPECTION
INSPECTION OF THE PONDS SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENT CONTAINED WITHIN USDA SC-575 STANDARDS AND SPECIFICATIONS FOR PONDS (MD-375) THE POND OWNER(S) AND ANY HERES SUCCESSORS OR AGENTS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID, GEEPAGE, SLIDING OR SLUMPING.

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 10991, EXPIRATION DATE: 8/28/17

DATA SOURCES
Existing topography shown hereon is a result of an aerial survey provided by Air Guyre Corporation dated 1998, supplemented with field run information performed by Darl McCune Walker, Inc. dated 2010.
Property boundary shown hereon is a result of field run monumented boundary survey performed on or about June 23, 2009 by Darl McCune Walker, Inc.
Soils shown provided by Soil Data Mart dated 2005 published by Natural Resources Conservation Services (NRCS)
Zoning information shown hereon provided by Howard County Department of Planning and Zoning, adopted by Howard County Council February 2, 2004.
Wetland and stream limits shown hereon were originally approved by Maryland Department of the Environment and the US Corps of Engineers in April 2001 and re-verified by those agencies in October 2009.

LIMIT OF DISTURBANCE: 1,854,511.82 SF. ± 142.57 AC. ±

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

Walter Z. ... 2-23-12
CHIEF, BUREAU OF HIGHWAYS DATE

HOWARD COUNTY DEPT. OF PLANNING & ZONING

... 2/28/12
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

... 3/01/12
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

3-12-21 (A) Revised Grading and Erosion Control

1-24-17 AS BUILT SUBMISSION

8-17-16 Basin 1 Removed

2-10-14 UPDATE OWNER/DEVELOPER INFO.

Date	No.	Revision Description

EMERSON
SECTION 3 - AREA 7 - PARCEL A
"Future Employment Use"

OWNER/DEVELOPER:
EMERSON DEVELOPMENT IX LLC
ONE TEXAS STATION COURT, SUITE 200
TIMONIUM, MD 21093 (443) 689-8000

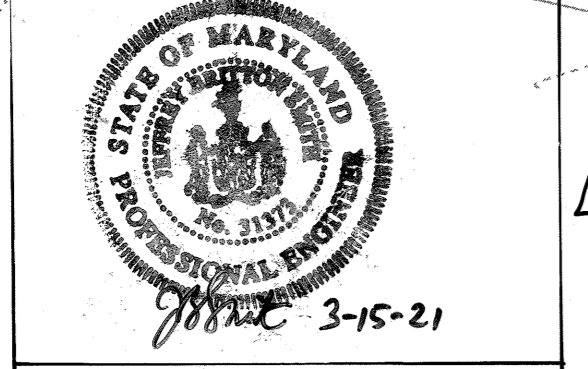
DMW
Darl McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
Fax 296-4706

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

SECTION NAME	EMERSON	SECTION/AREA	SEC.3 AREA 7	LOT/PANEL #	47	PART OF 837
PLAT OR LTR OR #	32891330	ZONE	MXD-3	TAX/USE MAP	6TH	6069.03
WATER CODE	E-15	SEWER CODE	7520000			

TITLE: **FINAL PLAN GRADING AND SEDIMENT CONTROL PLAN FACILITY NO.1 (Revised Sheet)**

Des By	TJC	Scale	1"=50'	Proj. No.	95054.W2
Drn By	JSS	Date	11/17/11	10 of 30	
Chk By	JDF	Approved			



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 31373 Expiration Date: 1-21-23

PLAN
1"=50'

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

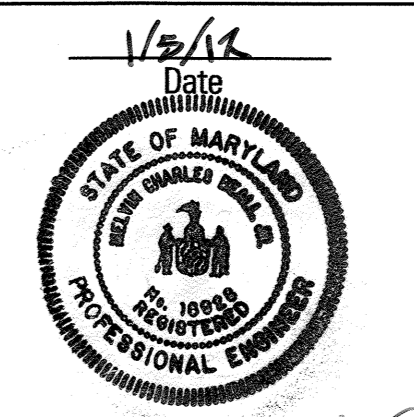
John R. Edenton 2/18/12
HOWARD COUNTY CONSERVATION DISTRICT DATE

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

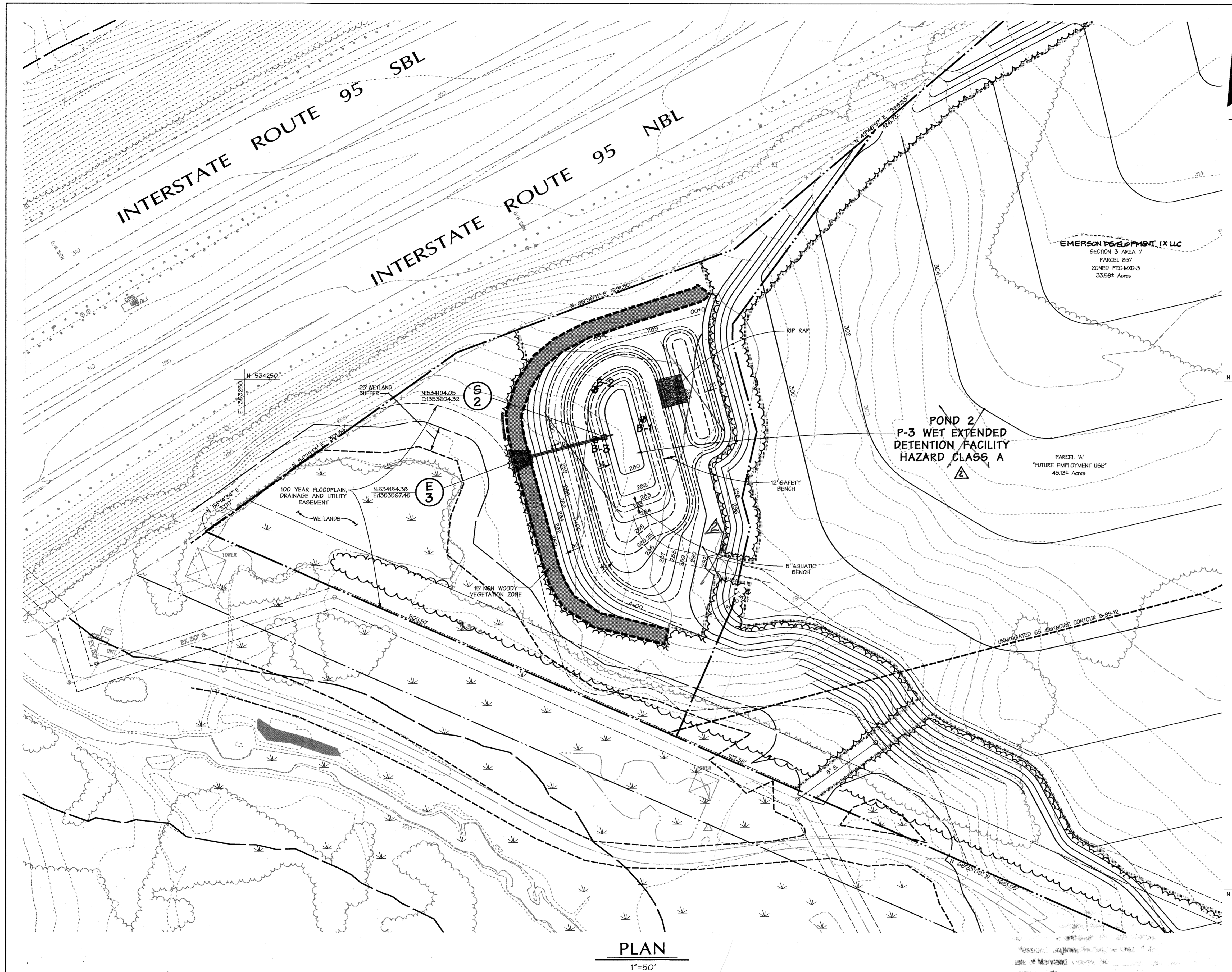
Robert Jenkins 1/5/12
SIGNATURE OF DEVELOPER PRINT NAME BELOW SIGNATURE DATE

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

Malvin C. Booth 1/5/12
SIGNATURE OF ENGINEER PRINT NAME BELOW SIGNATURE DATE



Professional Engr. No. 10991

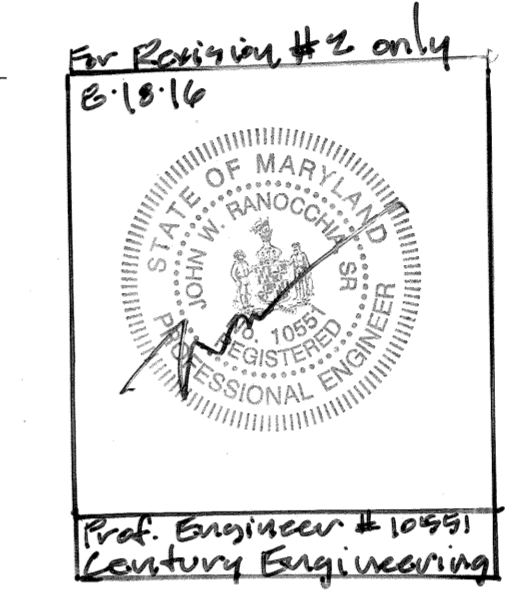


Legend

- EX CURB & GUTTER
- EX MAJOR CONTOURS
- EX MINOR CONTOURS
- EX STORM DRAIN
- EX SEWER
- EX WATER
- EXISTING TREE LINE
- EXISTING WETLAND LIMIT
- PROPERTY LINE
- ROADWAY RIGHT-OF-WAY
- PROPOSED LOT LINE
- PROPOSED EASEMENT
- PROPOSED CURB & GUTTER
- PROPOSED SIDEWALK
- PROP. STORM DRAIN
- PROP. SEWER
- PROP. WATER
- PROP. MAJOR CONTOURS
- PROP. MINOR CONTOURS
- SOIL BORING
- NON WOODY VEGETATION ZONE
- 45' BCE SETBACK FOR CREDITED FOREST RETENTION AREAS

BASIN 2 TABLE

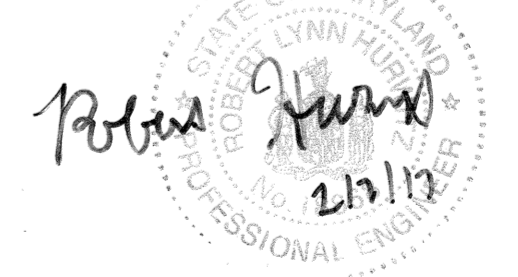
BASIN NUMBER	2	
EXISTING DRAINAGE AREA: ACRES	5.52	
PROPOSED DRAINAGE AREA: ACRES	6.75	
STORAGE REQUIRED: CUBIC FEET	CLEAN OUT	6,075
	WET	12,150
	DRY	12,150
TOTAL		24,300
STORAGE PROVIDED: CUBIC FEET	CLEAN OUT	4,400
	WET	13,721
	DRY	22,216
TOTAL		35,937
EXISTING GROUND ELEVATION	286.00	
TOP EMBANKMENT ELEVATION	289.00	
EMERGENCY SPILLWAY CREST ELEVATION	N/A	
RISER CREST ELEVATION	286.25	
WET STORAGE ELEVATION	284.25	
CLEANOUT ELEVATION	283.00	
BOTTOM ELEVATION	280.00	
Q INTO BASIN (C.F.S.) 10 YR	32.3	
Q OUT BARREL (C.F.S.) 10 YR	25.5	
Q OUT EMERGENCY SPILLWAY	N/A	
BASIN DEPTH	WET	2.25'
	DRY	1.25'
	TOTAL	4.0'
DESIGN HIGHWATER	286.61'	
FREEBOARD PROVIDED	2.39'	
BARREL DIAMETER	27'	
RISER DIAMETER	4' X 4'	
EMERGENCY SPILLWAY WIDTH	N/A	
WET STORAGE ZONE	280.00-284.25	
DRY STORAGE ZONE	284.25-286.00	
BOTTOM DIMENSIONS	105' X 36'	



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 10991, Expiration Date 8-28-17.

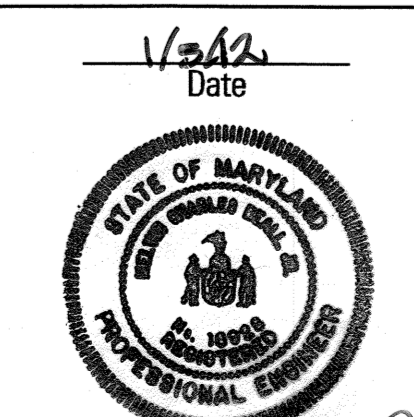
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18868, Expiration Date 10-08-2019. (FOR SWM AS-BUILT ONLY)

AS-BUILT CERTIFICATION FOR PSWM
 Note: There is no "AS-Built" information provided on this sheet. IN REGARD TO SWM, BUT ROADS AND UTILITIES BY OTHERS. ROBERT JENKINS PE # 18868 1-24-17



OPERATION, MAINTENANCE AND INSPECTION
 INSPECTION OF THE PONDS SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENT CONTAINED WITHIN USDA'S "STANDARDS AND SPECIFICATIONS FOR PONDS" (40-300) (THE POND DIMENSIONS) AND ANY OTHERS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION AND MAINTENANCE. THEREFOR, THE POND OWNERS SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATORS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 10991, EXPIRATION DATE: 8/28/17.



THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 STEPHEN JERRICK AB 35792, 11-10-2022

DATA SOURCES
 Existing topography shown hereon is a result of an aerial survey provided by Air Survey Corporation dated 1996 supplemented with field run information performed by Daft-McCune-Walker, Inc. dated 2/20/02.
 Property boundary shown hereon is a result of field run monumented boundary survey performed on or about June 25, 2009 by Daft-McCune-Walker, Inc.
 Soils if shown provided by Soil Data Mart dated 2005 published by Natural Resources Conservation Service (NRCS).
 Zoning information shown hereon provided by Howard County Department of Planning and Zoning, adapted by Howard County Council February 2, 2004.
 Wetland and stream limits shown hereon were originally approved by Maryland Department of the Environment and the US Corps of Engineers in April 2001 and re-verified by these agencies in October 2005.

LIMIT OF DISTURBANCE: 1,836,880.08 SF ± | 42.17 AC ±

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS		
<i>Walter M...</i>	2-23-12	
CHIEF, BUREAU OF HIGHWAYS	DATE	
HOWARD COUNTY DEPT. OF PLANNING & ZONING		
<i>Robert Jenkins</i>	2/28/12	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE	
<i>Kevin Shadlock</i>	3/1/12	
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE	
1/24/17	AS BUILT SUBMISSION	
2-11-16	Basin #2 Reopened	
2-10-14	UPDATE OWNER/DEVELOPER INFO.	
Date	No.	Revision Description

EMERSON
 SECTION 3 - AREA 7 - PARCEL A
 "Future Employment Use"
 OWNER/DEVELOPER:
 EMERSON DEVELOPMENT IX LLC
 ONE TEXAS STATION COURT, SUITE 200
 TIMONIUM, MD 21093 (443) 689-8000

DMW			
Daft-McCune-Walker, Inc. A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals			
200 East Pennsylvania Avenue, Towson, Maryland 21286 (410) 296-3333 Fax 296-4705			
SUBDIVISION NAME	EMERSON	SECTION/AREA	SEC.3 AREA 7
PLAT # OR LIT. OR D #	5229(3)30	ZONE	MXD-3
TAX/ZONE MAP	15	BLK/LOT	47
WATER CODE	E-15	SEWER CODE	7520000
DATE	11/17/11	DATE	11/17/11
DESIGNER	JSS	DATE	11/17/11
CHECKED BY	JDF	DATE	11/17/11

FINAL PLAN GRADING AND SEDIMENT CONTROL PLAN FACILITY NO. 2

Des By	TJC	Scale	1"=50'	Proj. No.	95054.W2
Drn By	JSS	Date	11/17/11	11 of 30	
Chk By	JDF	Approved			

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

John R. Johnston 2/6/12
 HOWARD SOIL CONSERVATION DISTRICT

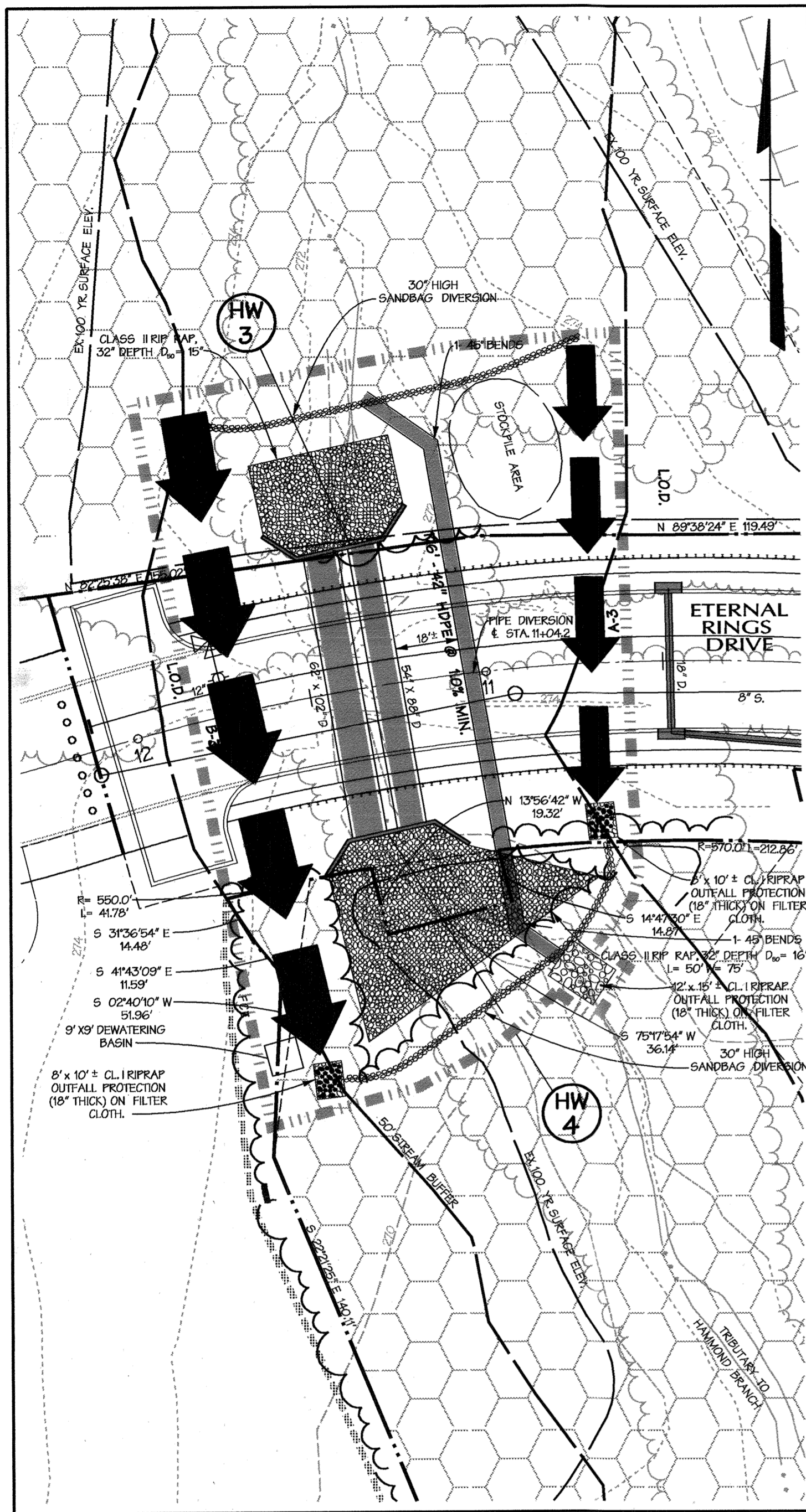
Robert Jenkins 1/5/12
 SIGNATURE OF DEVELOPER
 PRINT NAME BELOW SIGNATURE
 Robert Jenkins

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

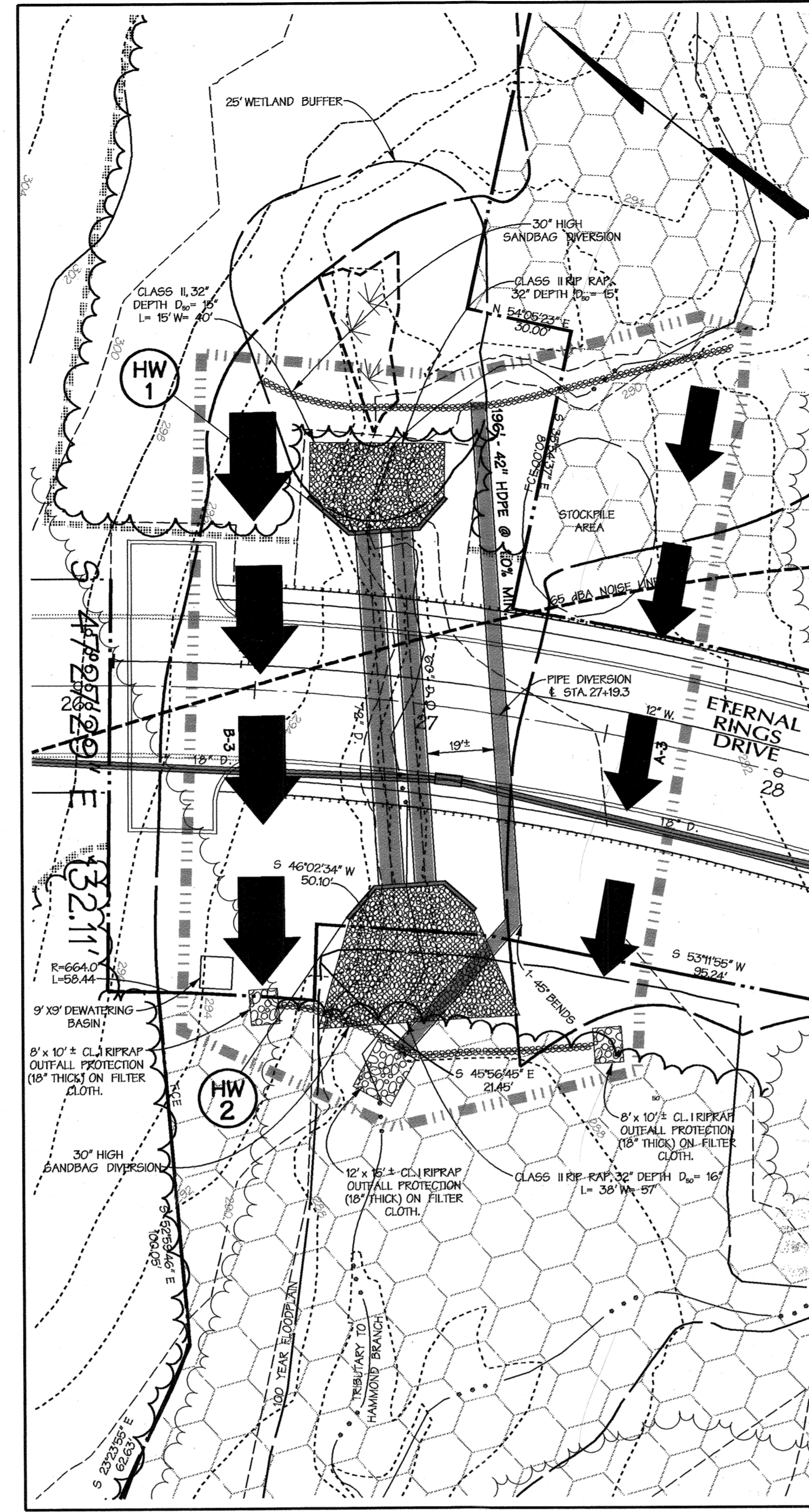
Robert Jenkins 1/5/12
 SIGNATURE OF ENGINEER
 PRINT NAME BELOW SIGNATURE
 Robert Jenkins

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 10991, EXPIRATION DATE: 8/28/17.

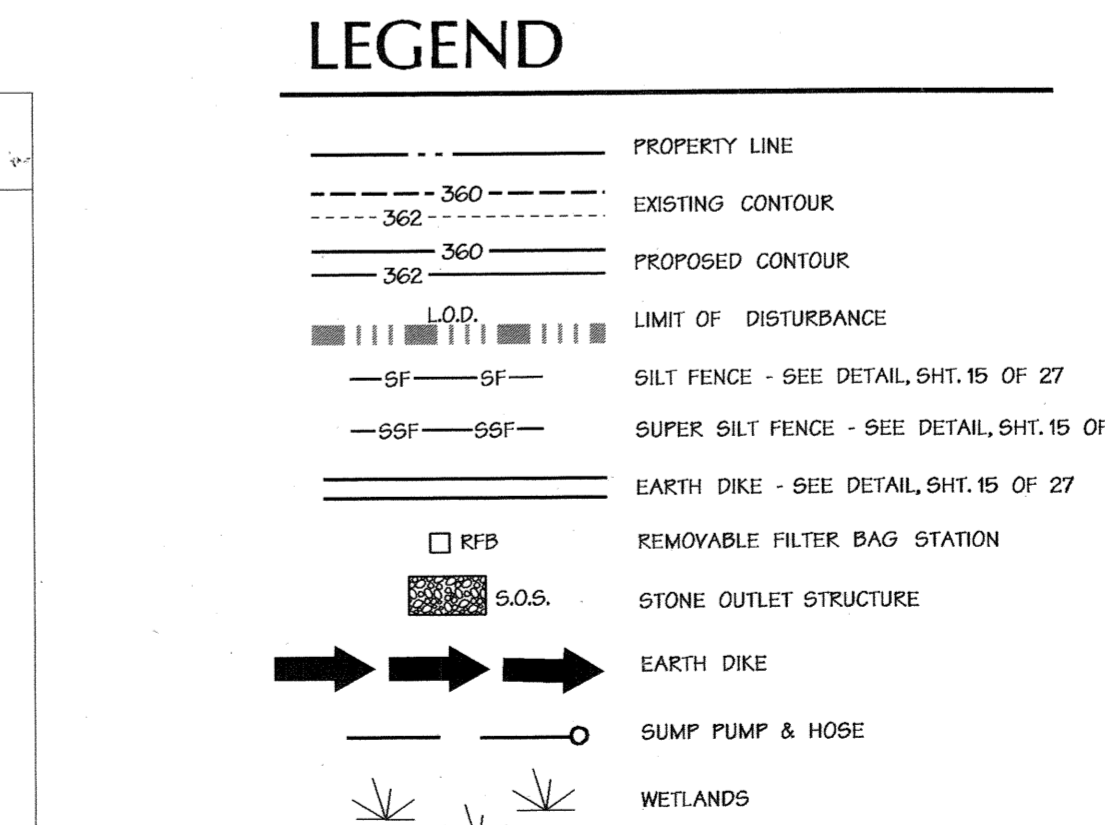
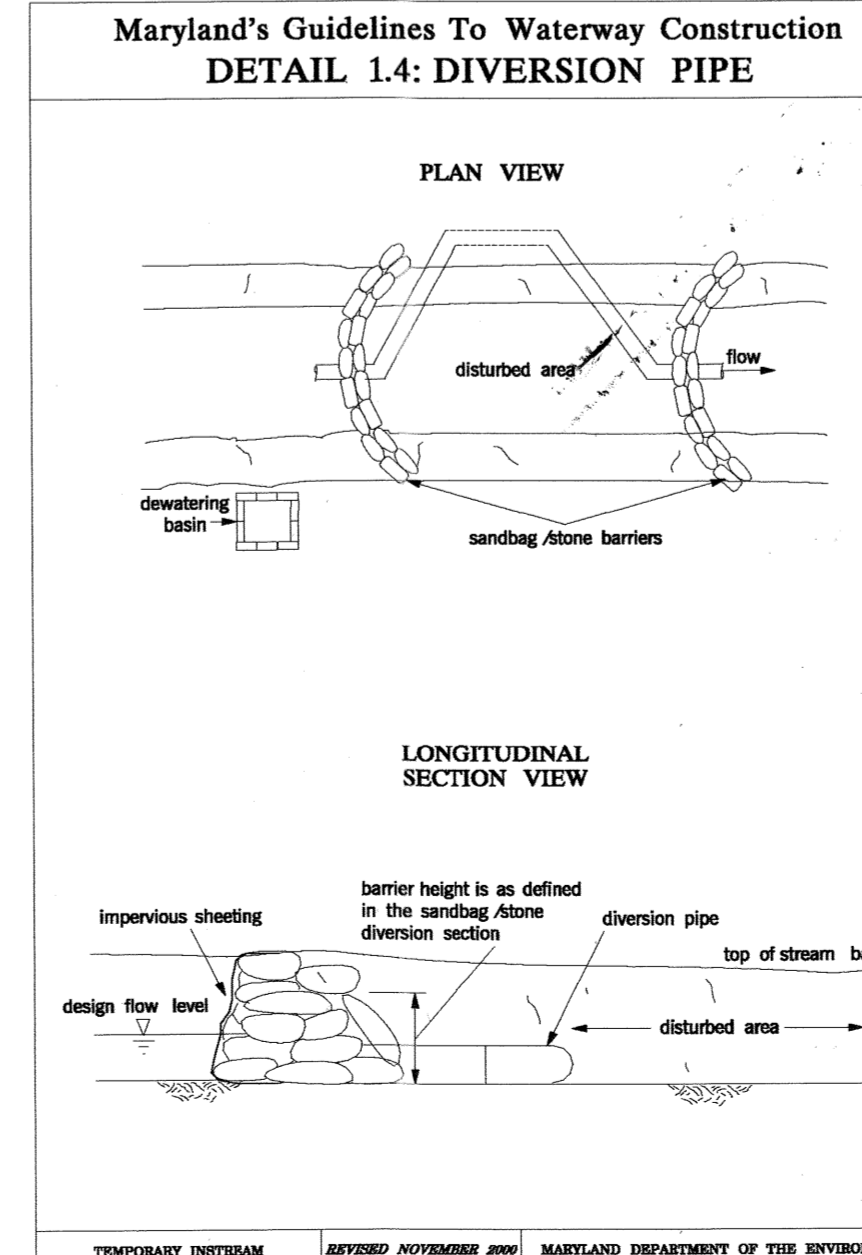
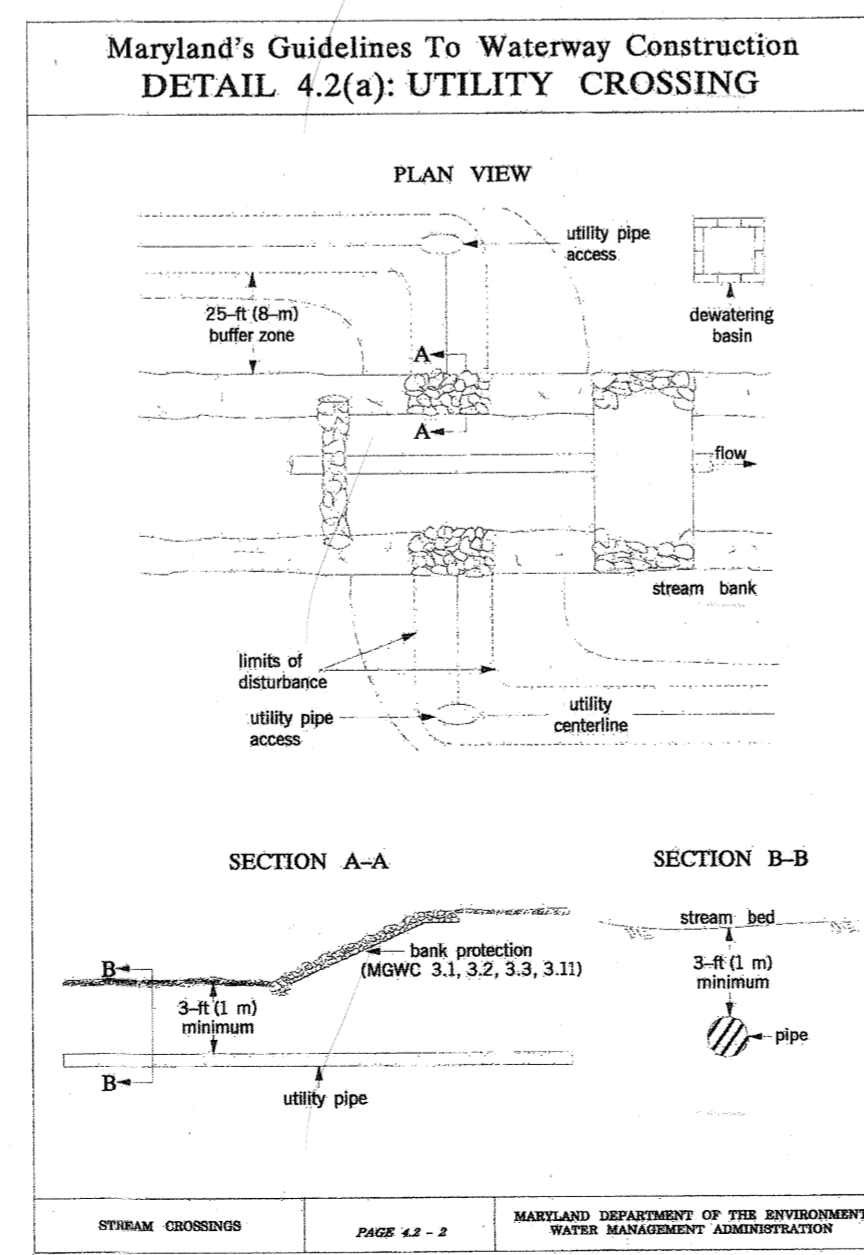
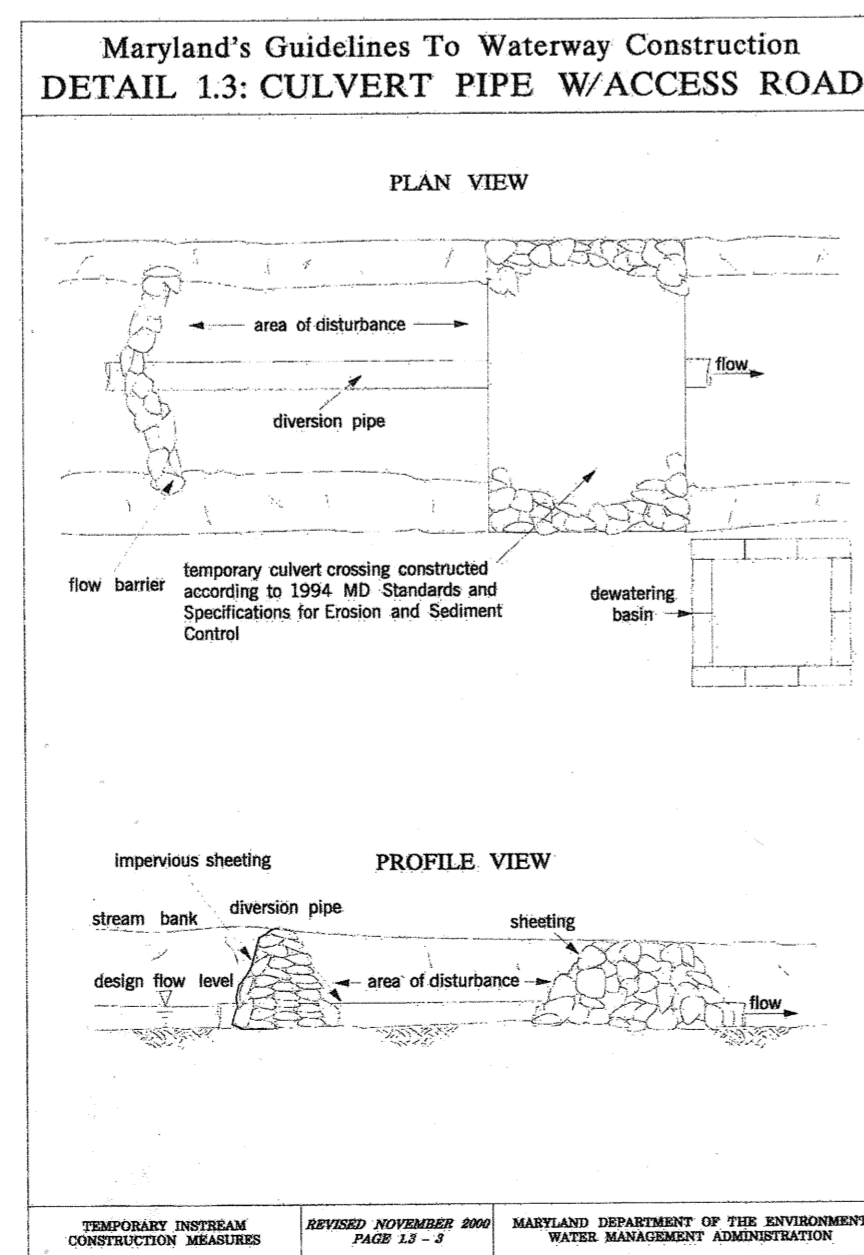
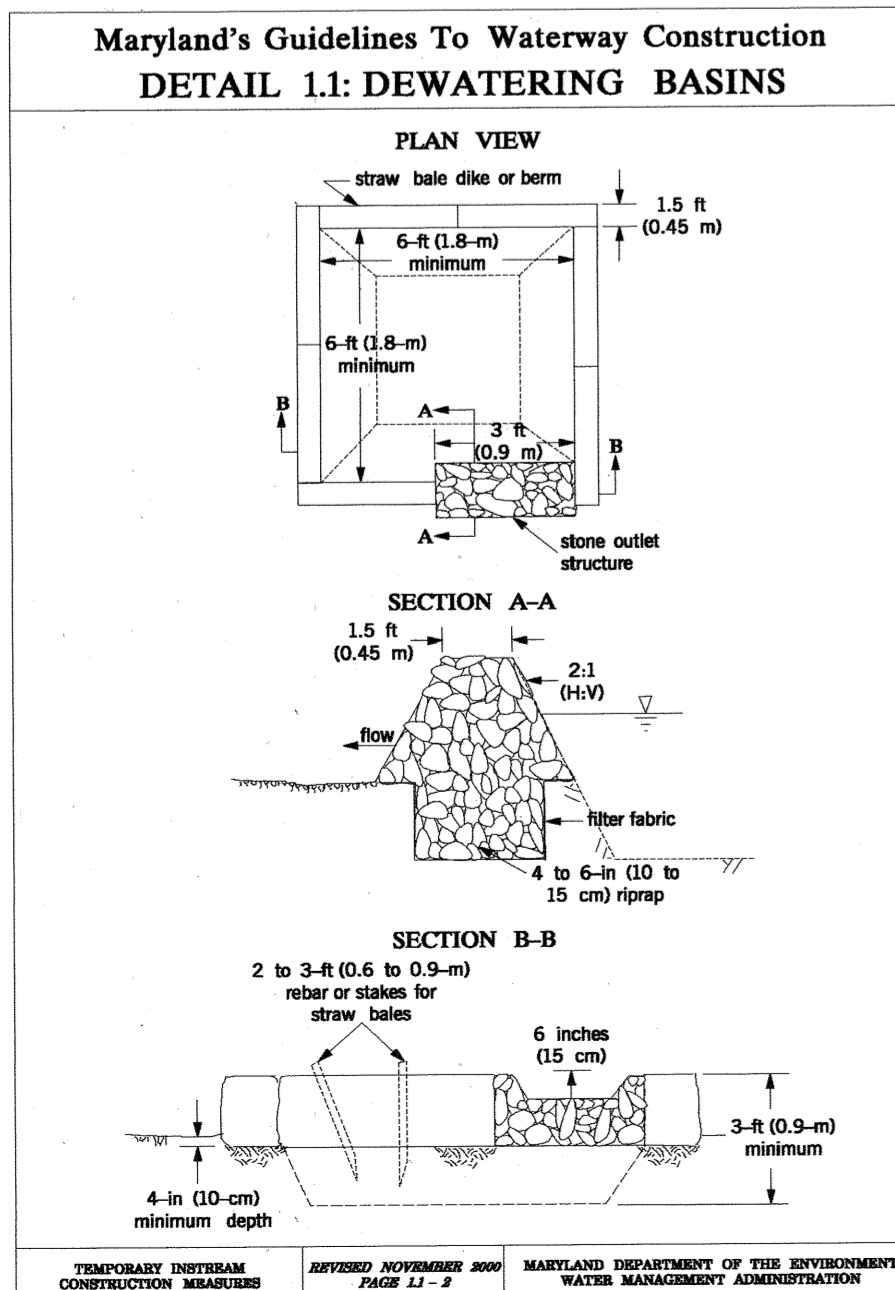
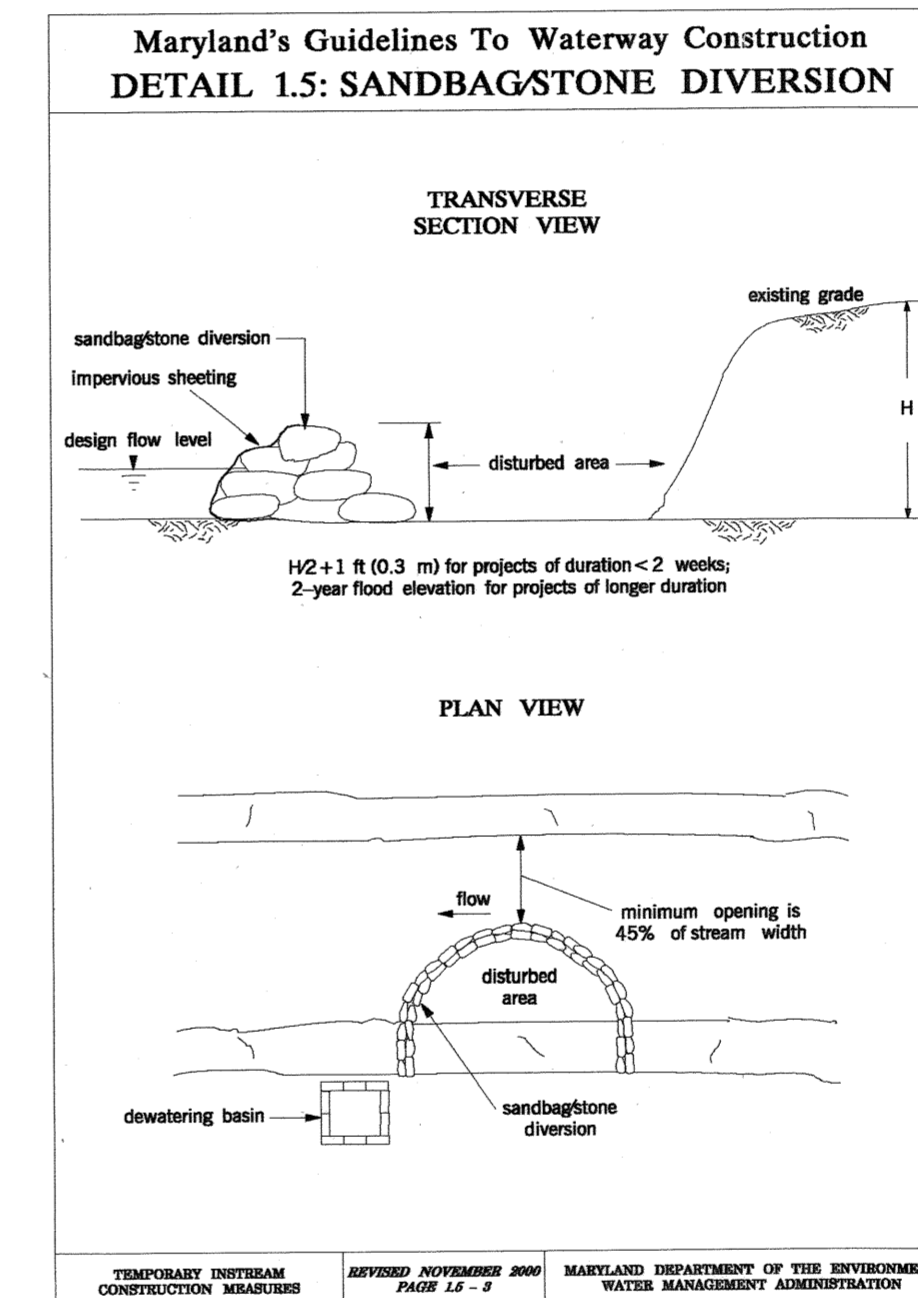
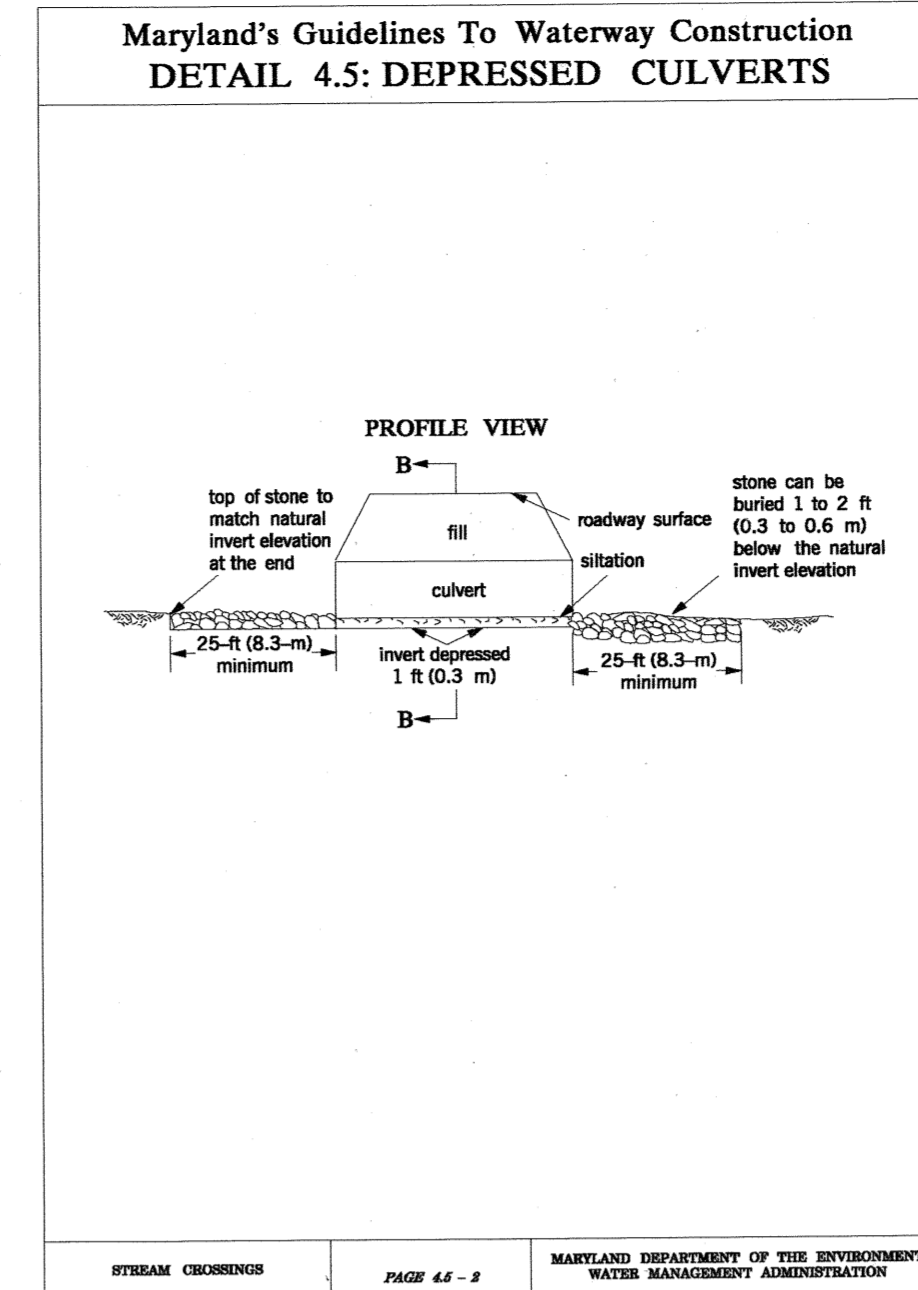
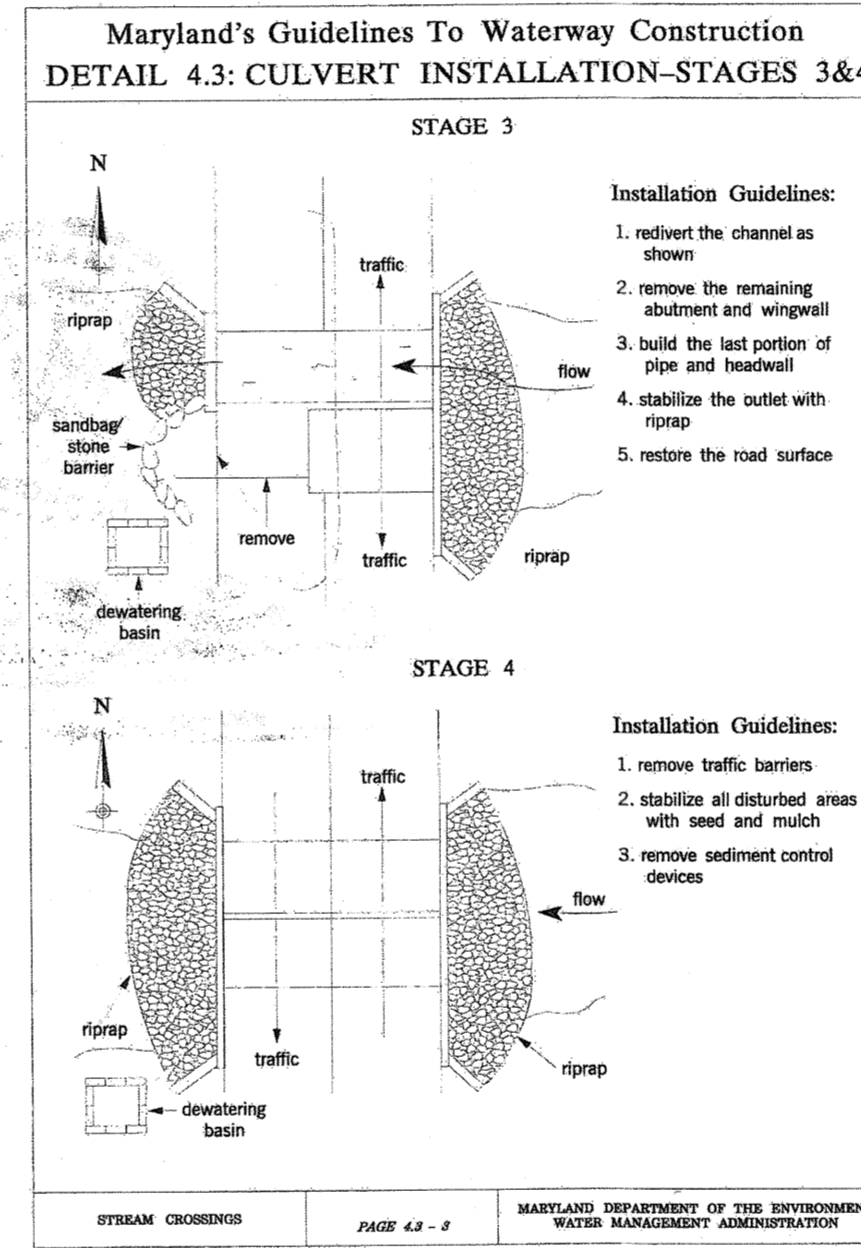
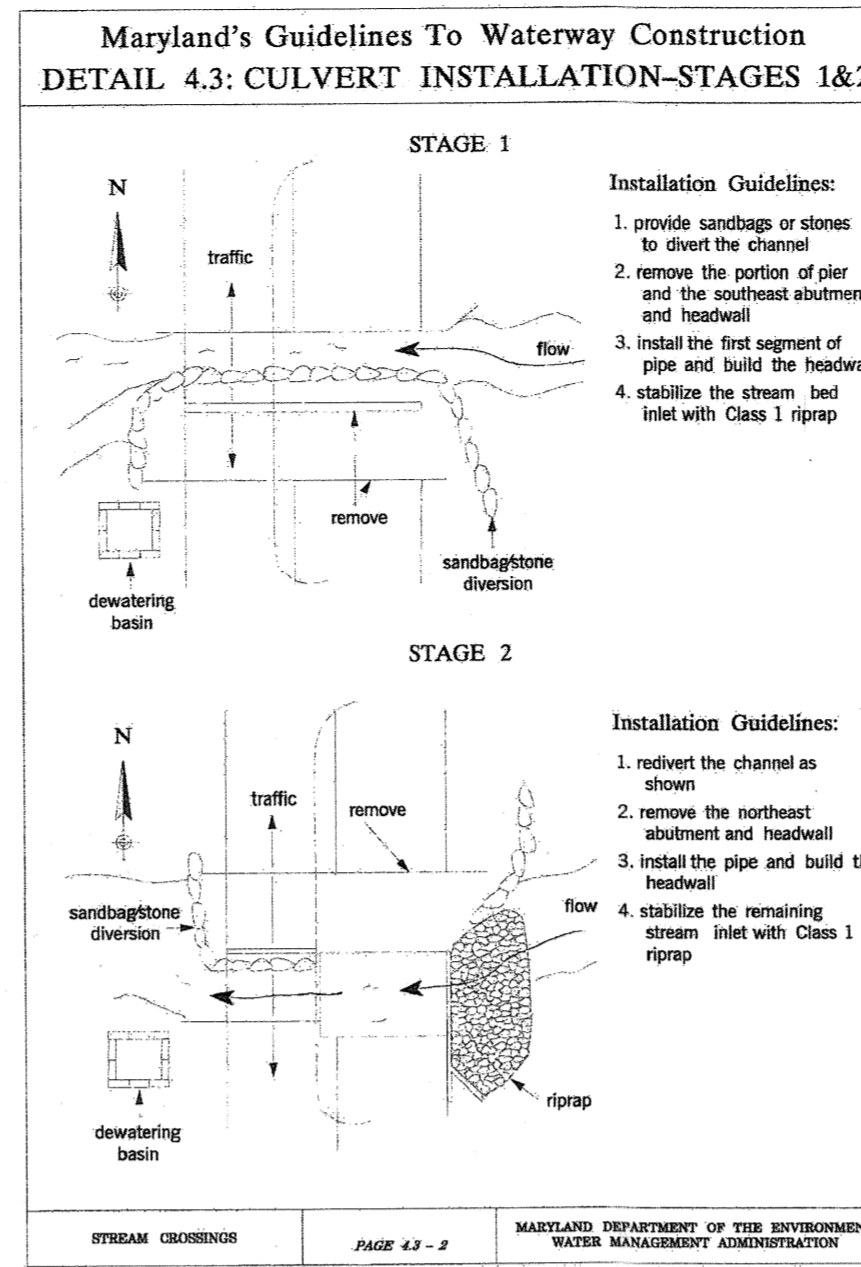
Robert Jenkins 1/5/12
 SIGNATURE OF ENGINEER
 PRINT NAME BELOW SIGNATURE
 Robert Jenkins



SOUTH CULVERT
1"=30'



NORTH CULVERT
1"=30'



THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
STEPHEN JERRICK No. 35792,
11-10-2012

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 16028, EXPIRATION DATE: 5-12-12.



DEVELOPERS CERTIFICATION:
I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT BEFORE BEGINNING THE PROJECT. ALSO AUTHORIZES PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
Robert Jenkins 1/5/12

ENGINEER'S CERTIFICATION:
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Melvin C. Bealy Jr. 1/3/12

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
John R. Robertson 2/8/12

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 10868. Expiration Date: 10-08-2016.
AS-BUILT CERTIFICATION FOR PSWM: There is no "AS-BUILT" information provided for this project. IN REGARD TO SWM, BUT RAPS UTILITIES BY OTHERS. EXPECT HUEWITZ FE#18068 1-24-17

DATA SOURCES:
Existing topography shown hereon is a result of an aerial survey provided by Air Survey Corporation dated 1998, supplemented with field run information performed by Darr McCune Walker, Inc. (4864, 2005).
Property boundary shown hereon is a result of field run monumented boundary survey performed on or about June 25, 1993 by Darr McCune Walker, Inc.
Soils as shown provided by Soil Data Map dated 2005 published by Natural Resources Conservation Services (NRCS).
Zoning information shown hereon provided by Howard County Department of Planning and Zoning, adopted by Howard County Council February 2, 2004.
Wetland and stream limits shown hereon were originally approved by Maryland Department of the Environment and the US Corps of Engineers in April 2001 and re-verified by these agencies in October 2003.

LIMIT OF DISTURBANCE: 1,054,511.02 SF ± 142.57 AC ±
APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
W. R. M. 2-23-12
CHIEF, BUREAU OF HIGHWAYS
HOWARD COUNTY DEPT. OF PLANNING & ZONING
M. J. R. 2/20/12
CHIEF, DEVELOPMENT ENGINEERING DIVISION
K. S. L. 3/01/12
CHIEF, DIVISION OF LAND DEVELOPMENT

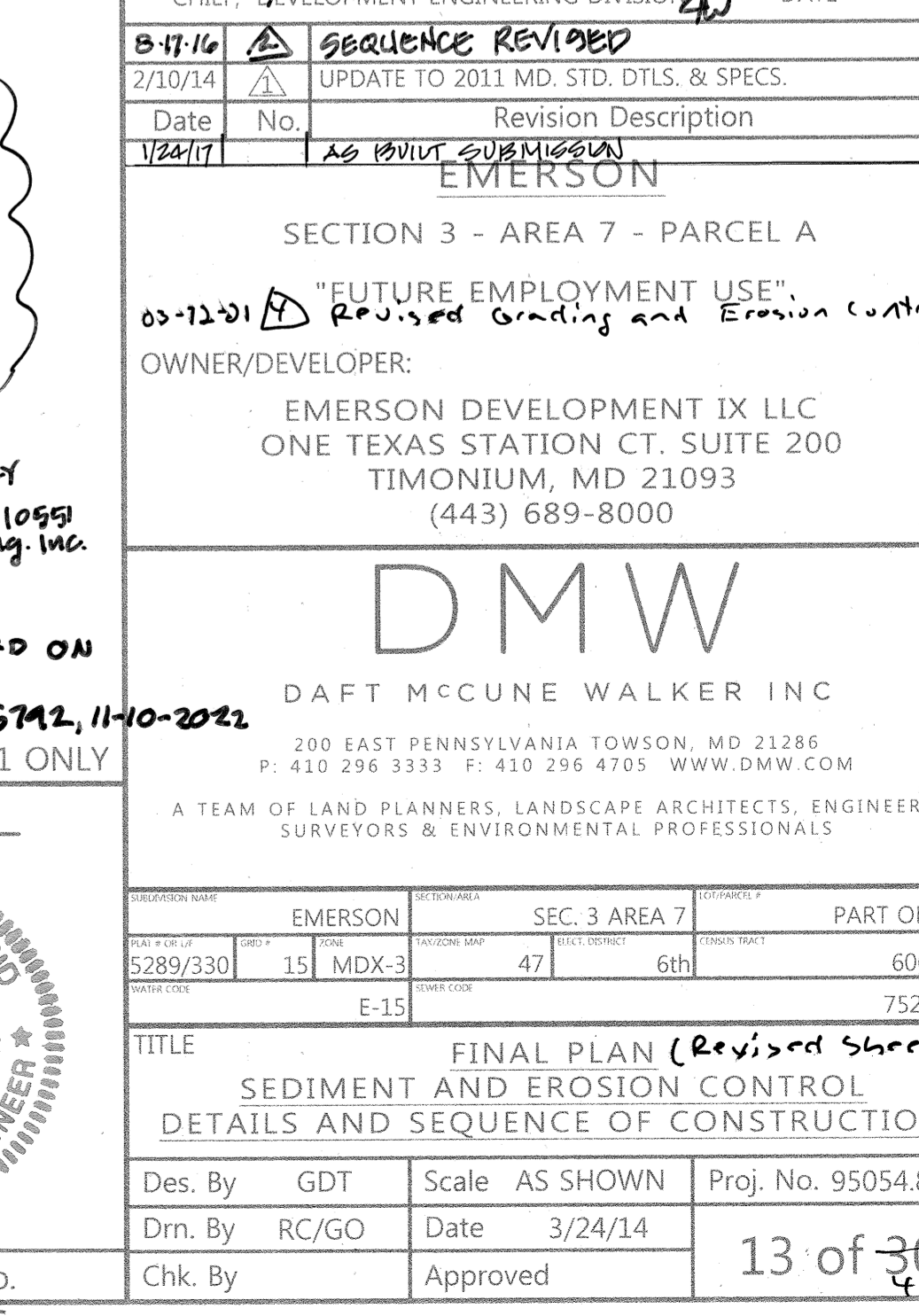
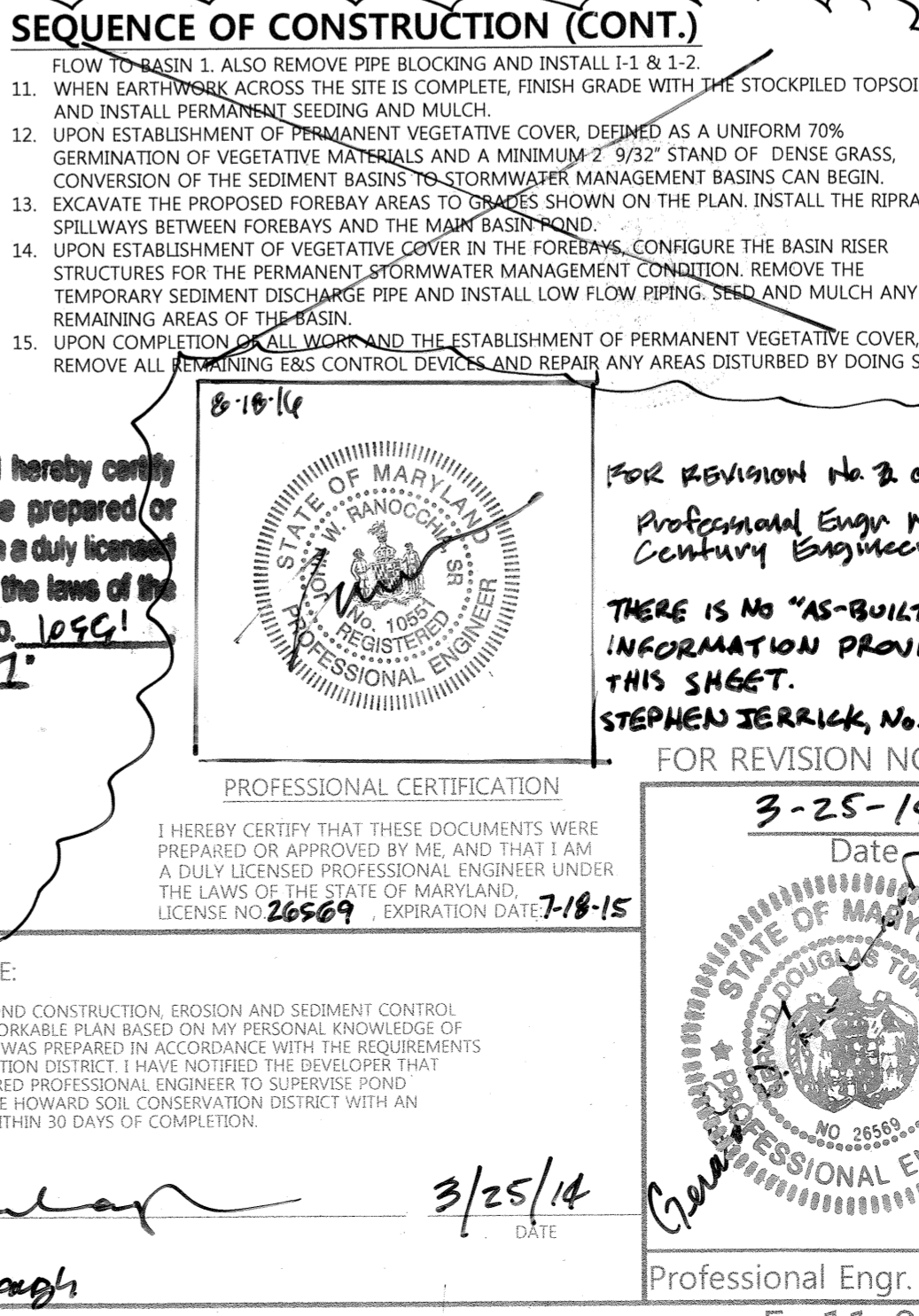
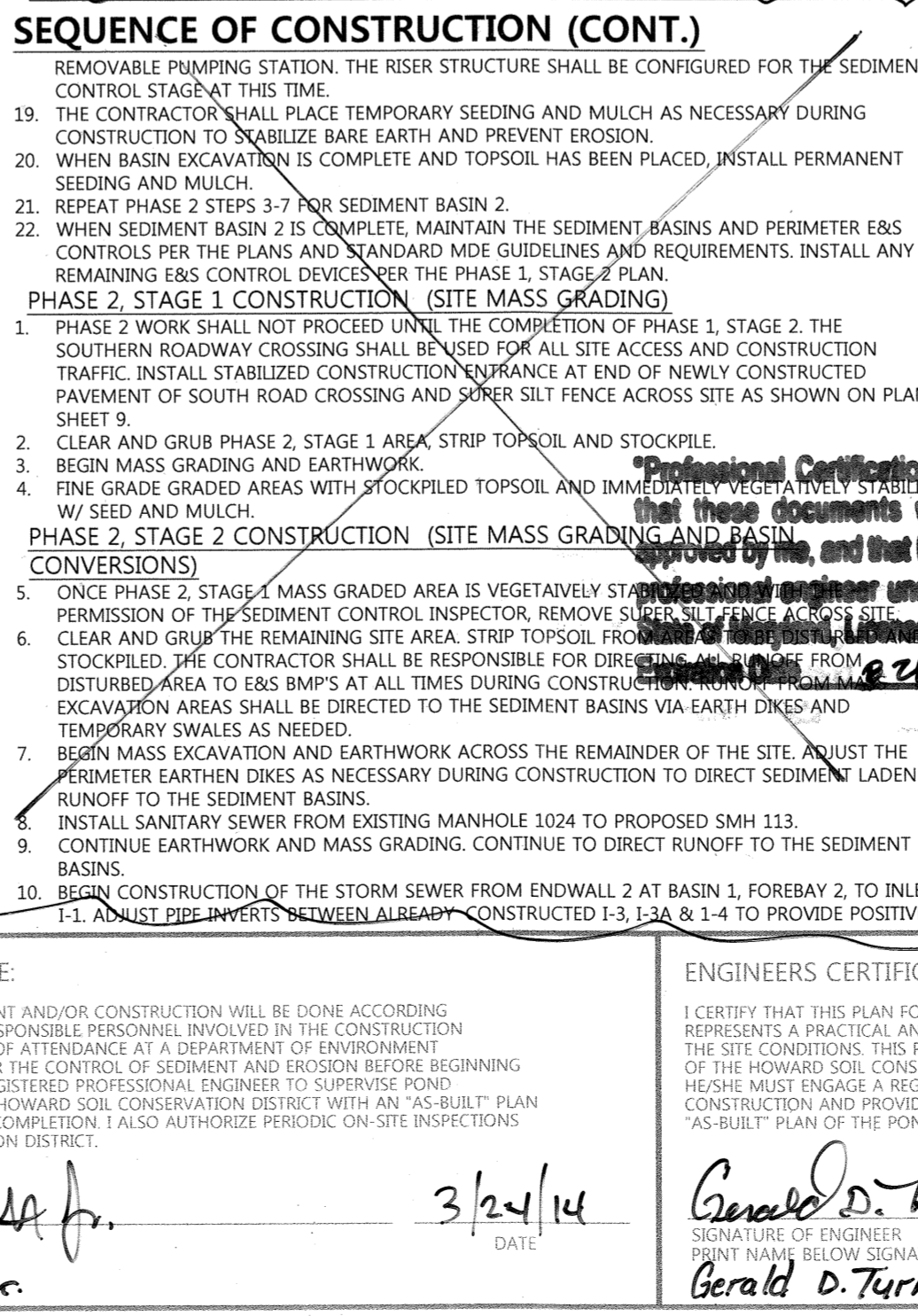
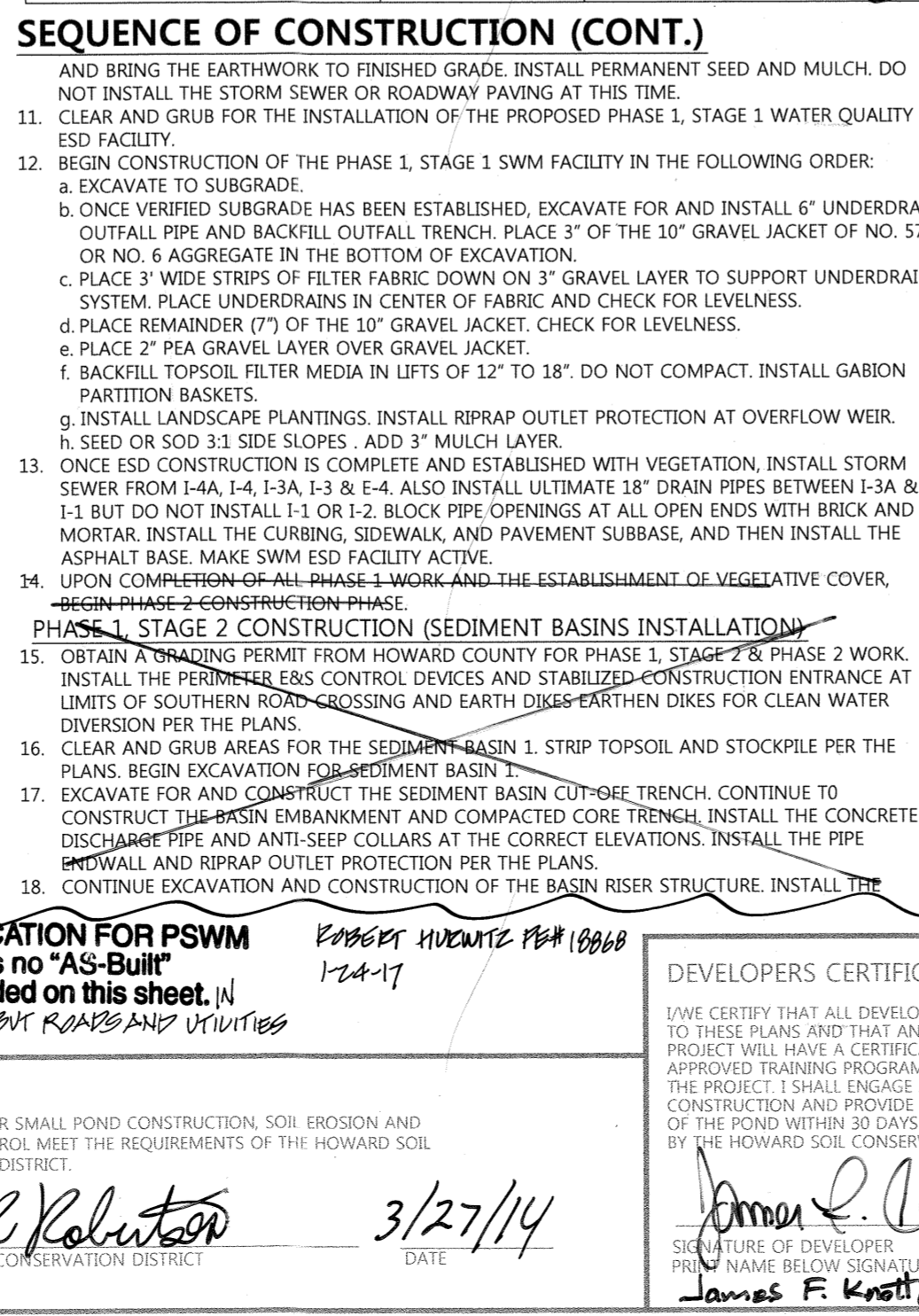
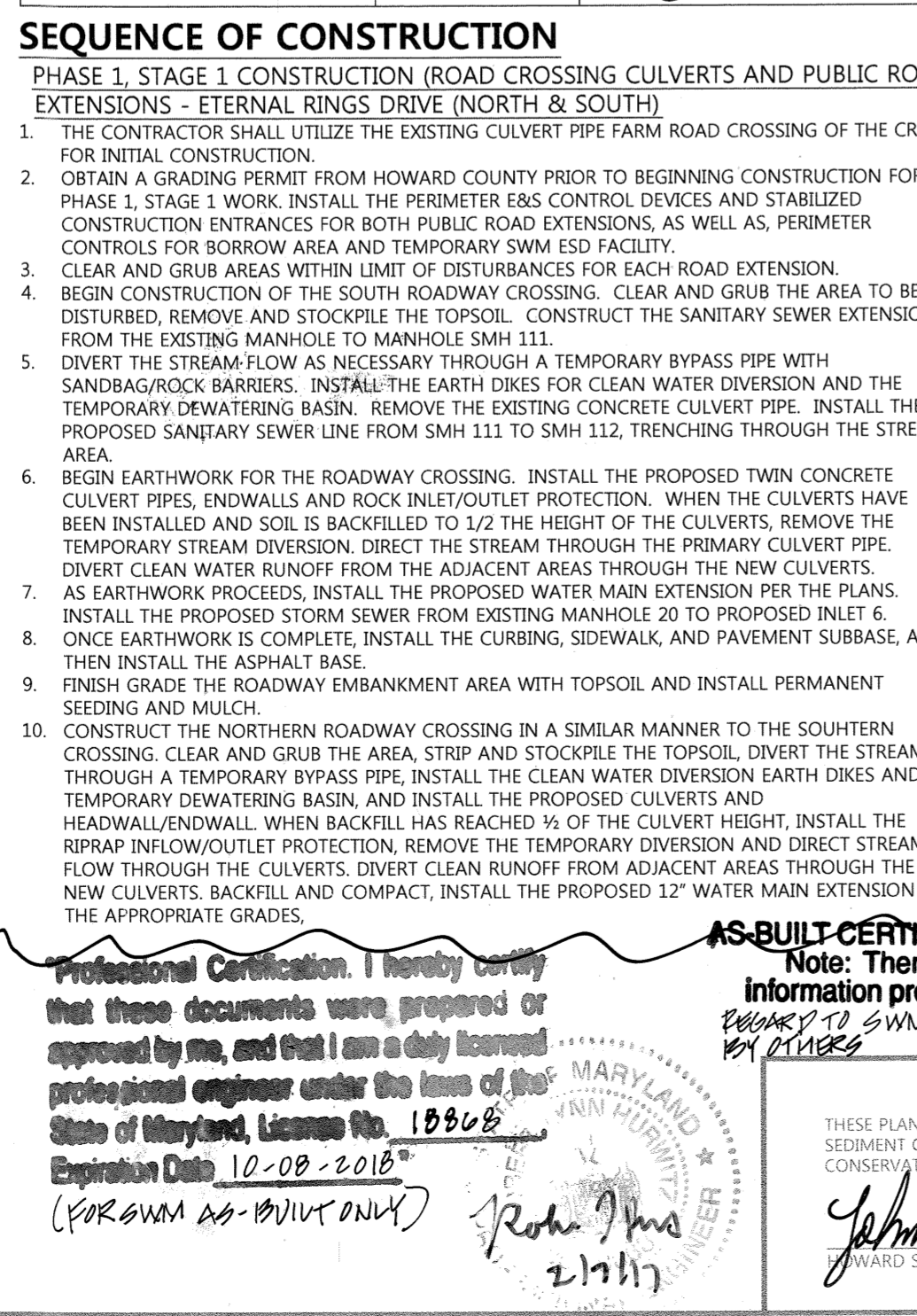
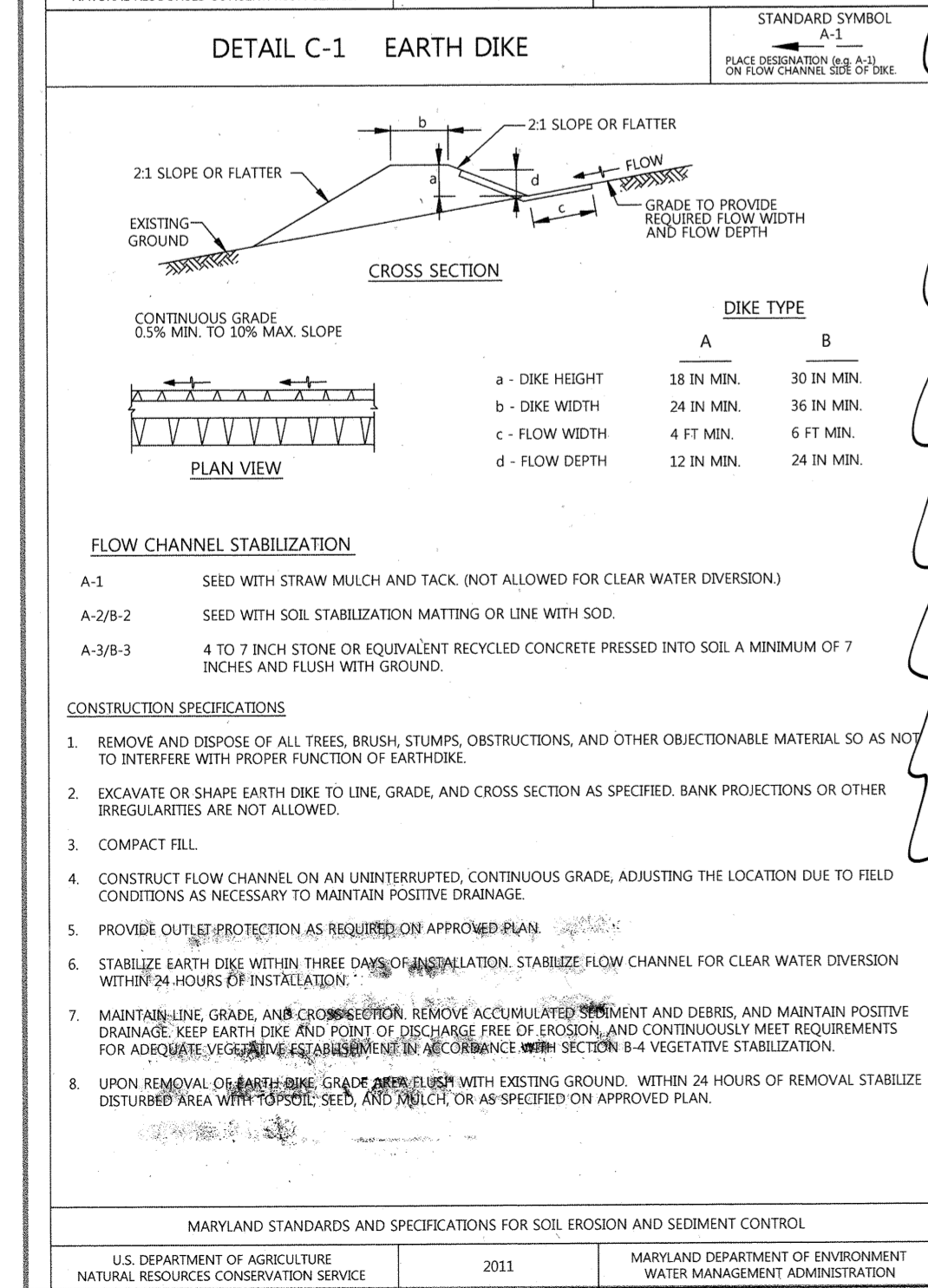
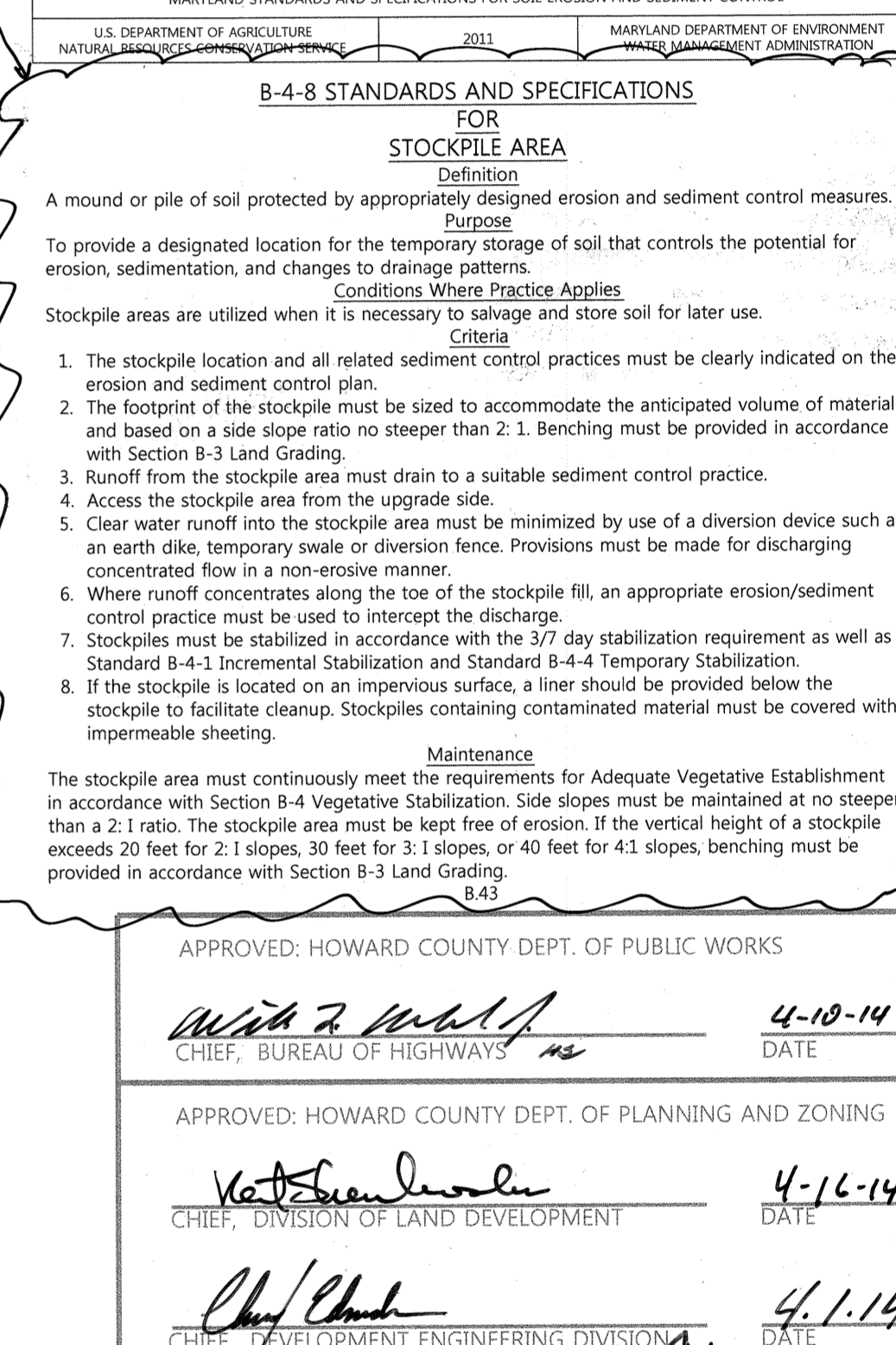
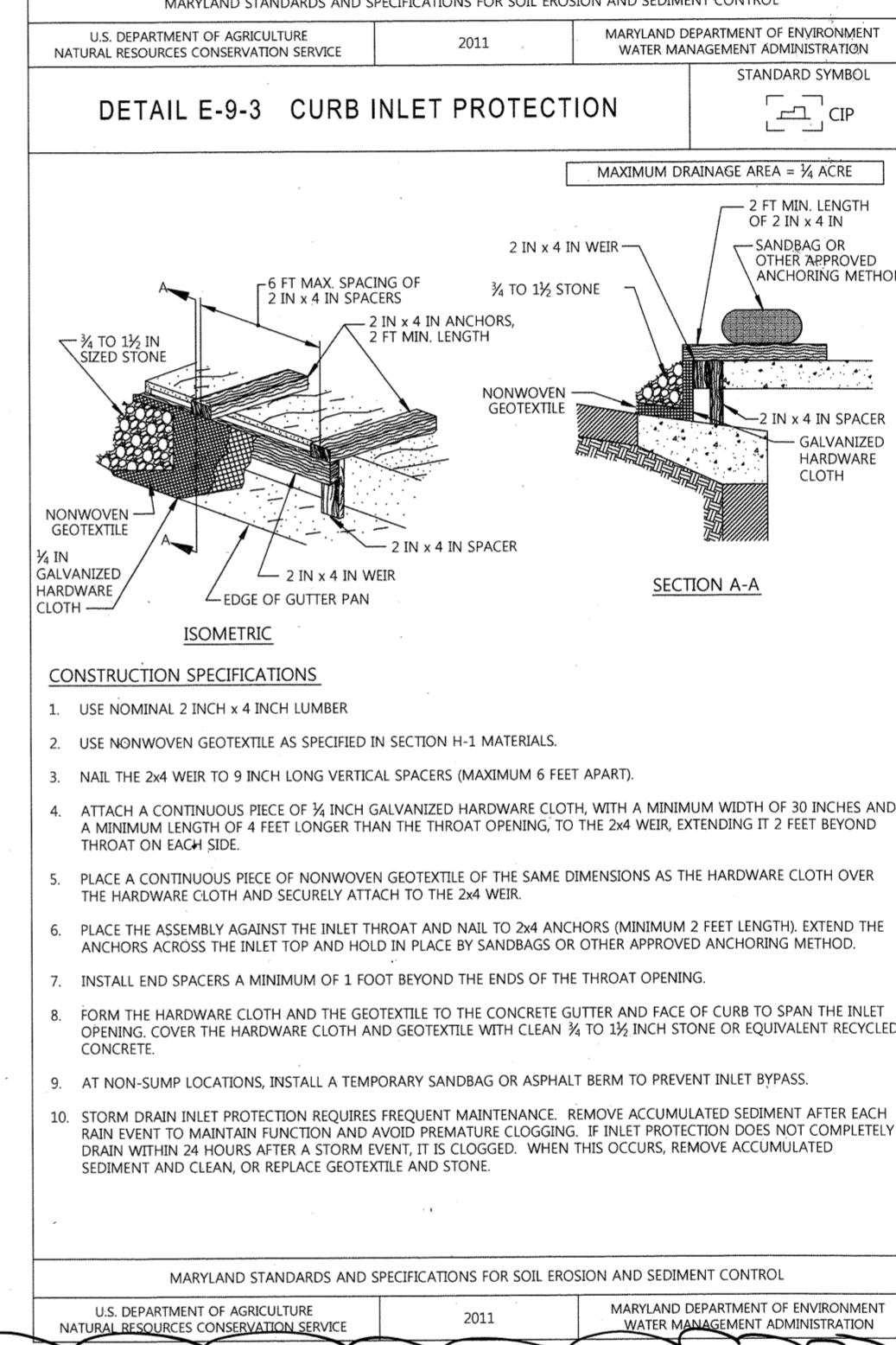
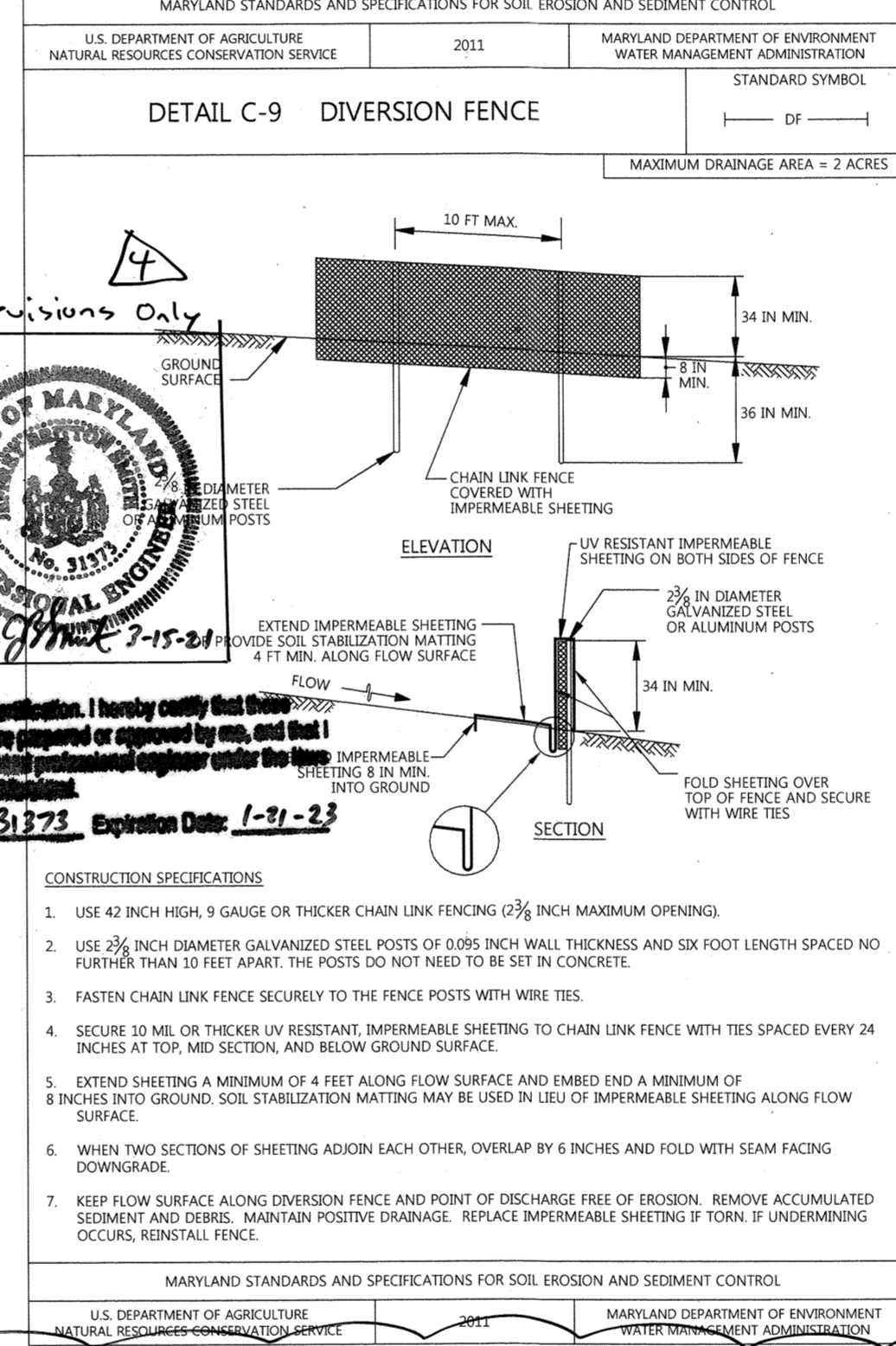
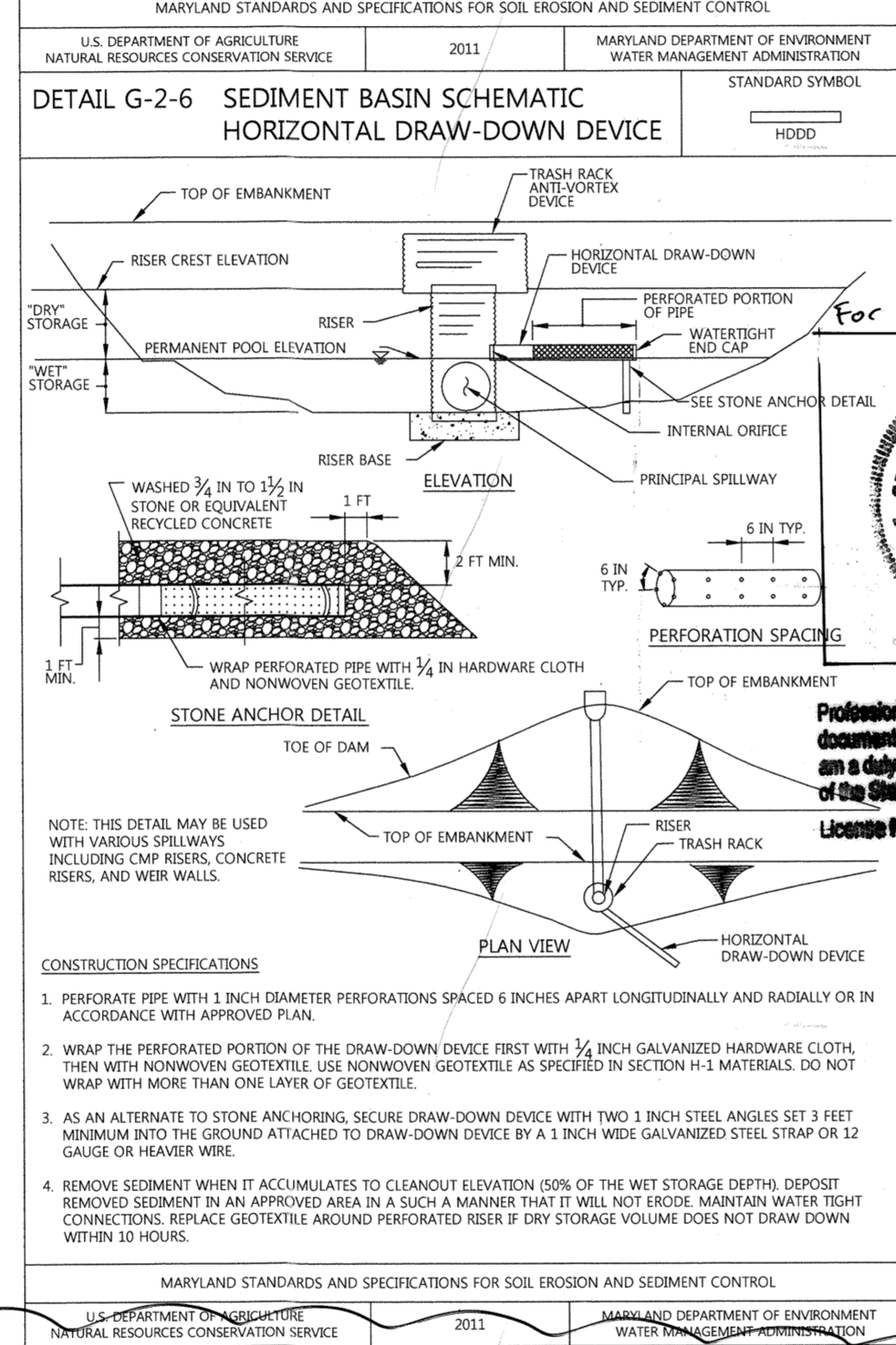
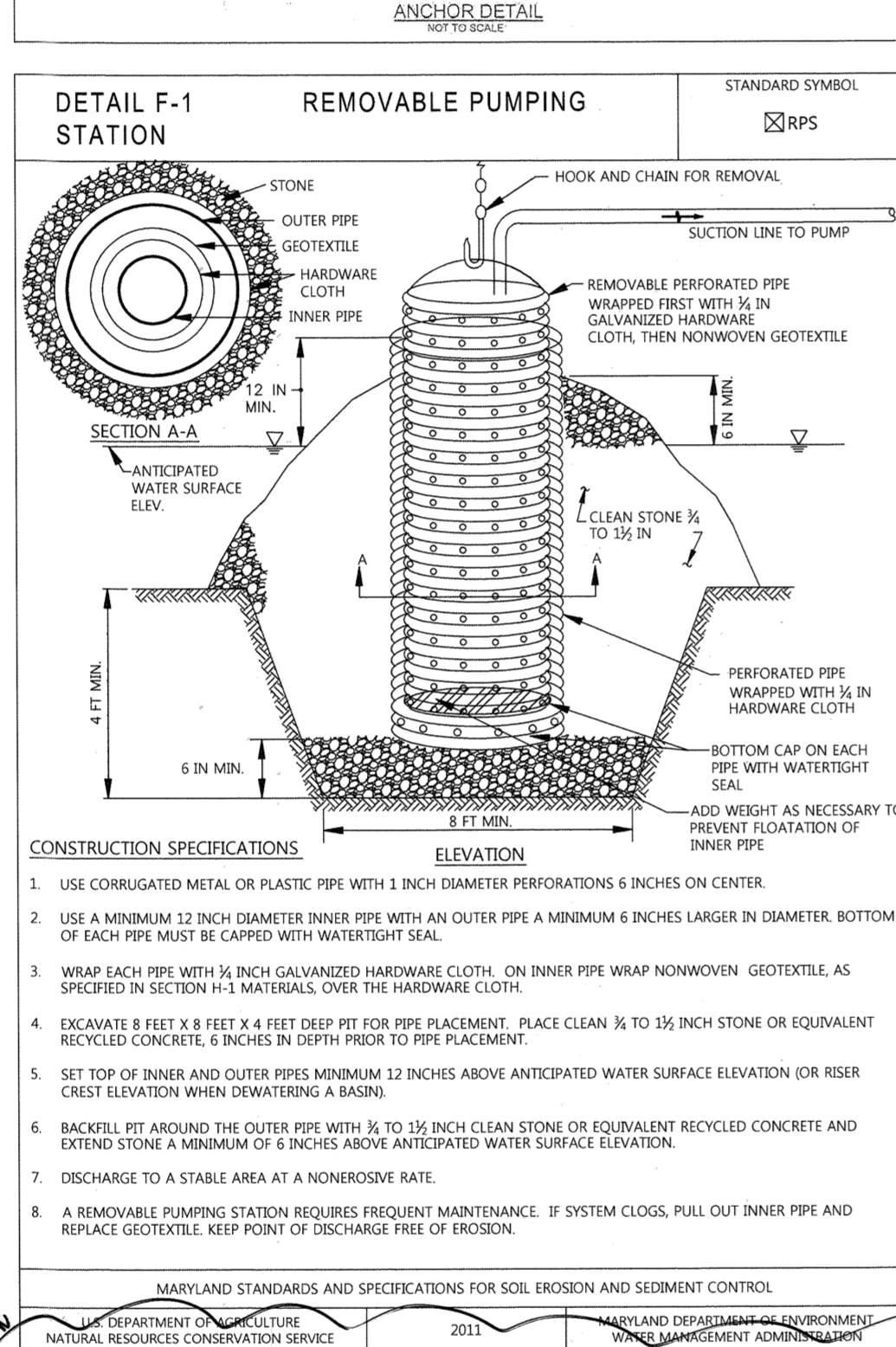
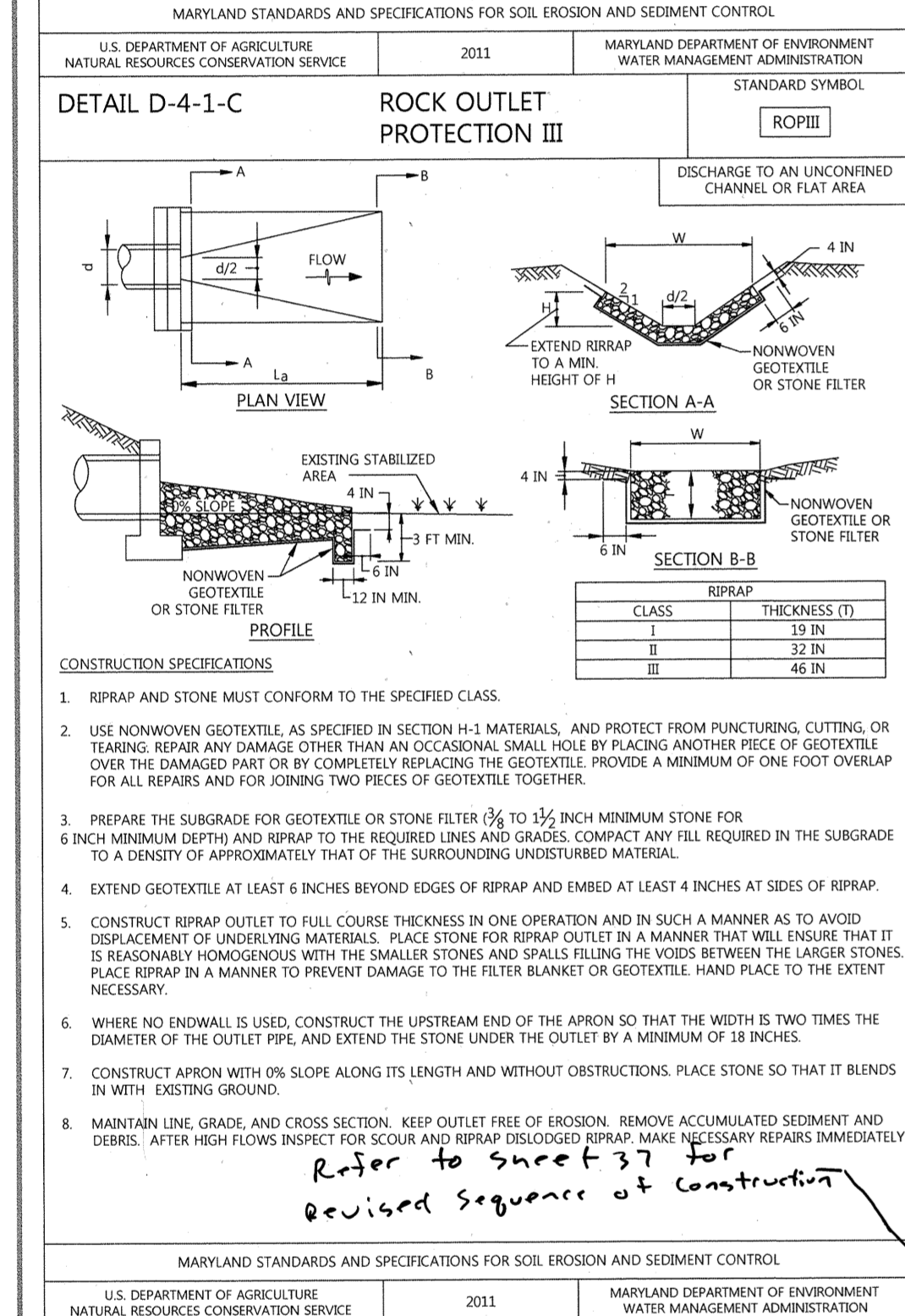
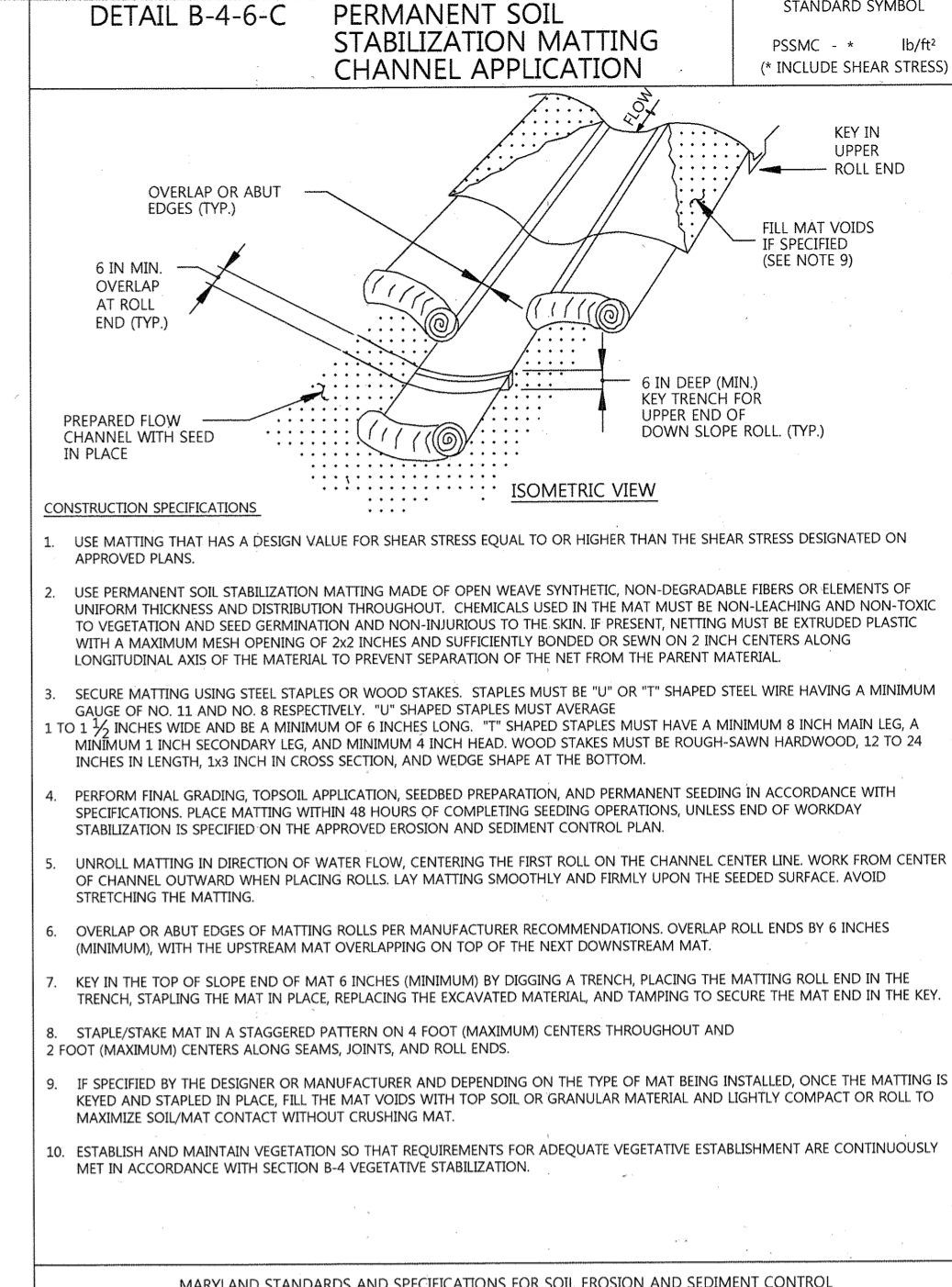
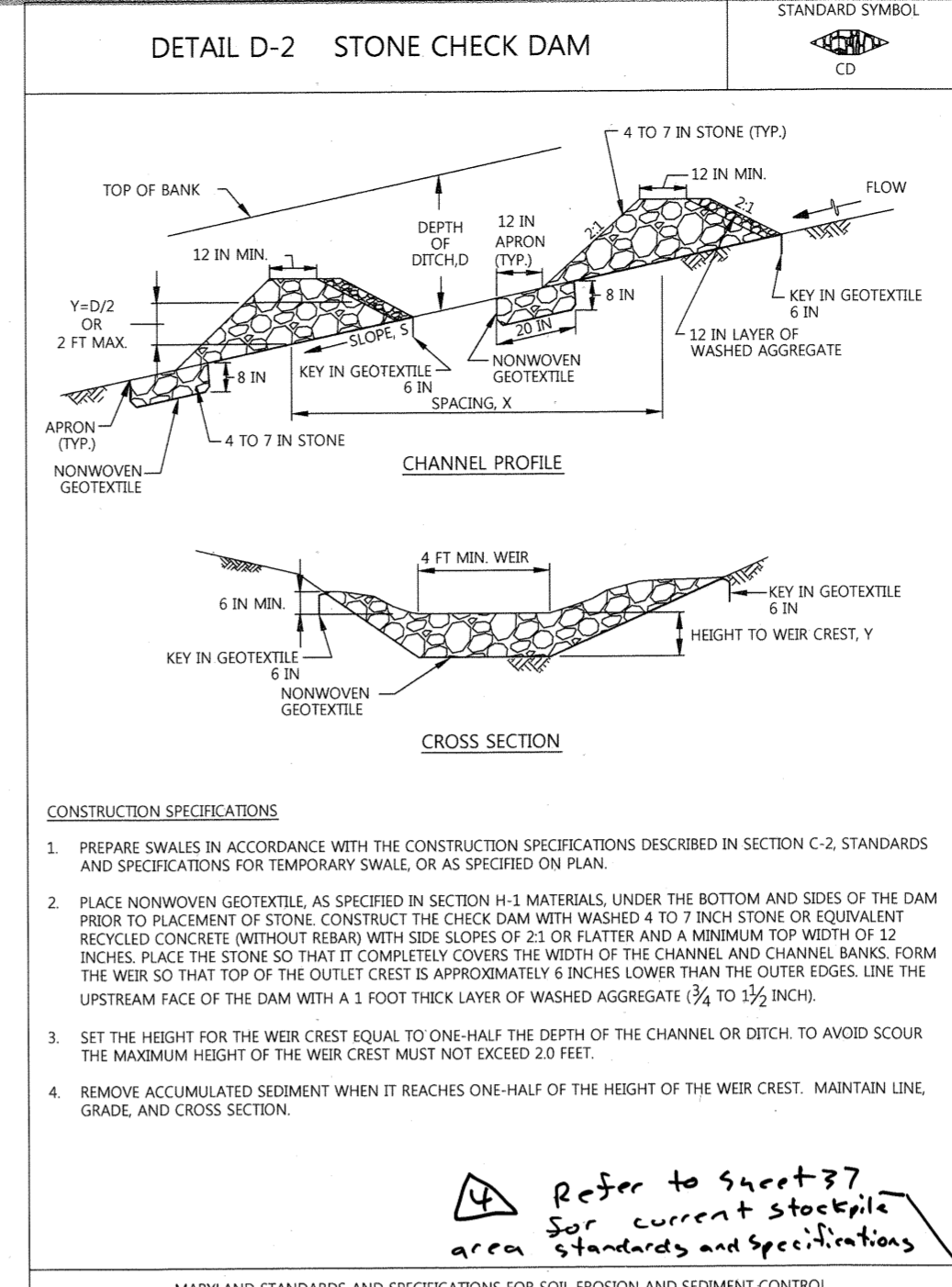
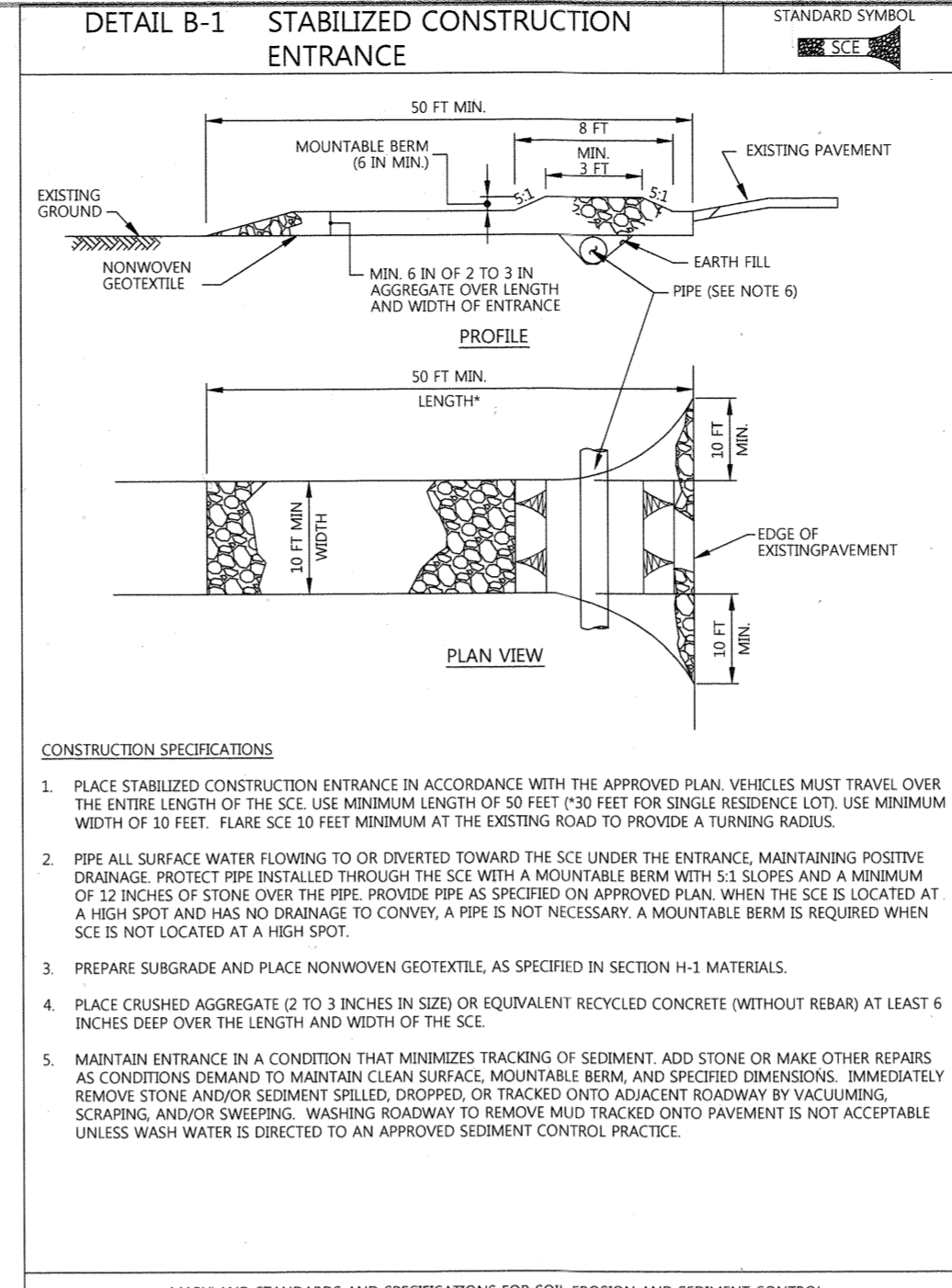
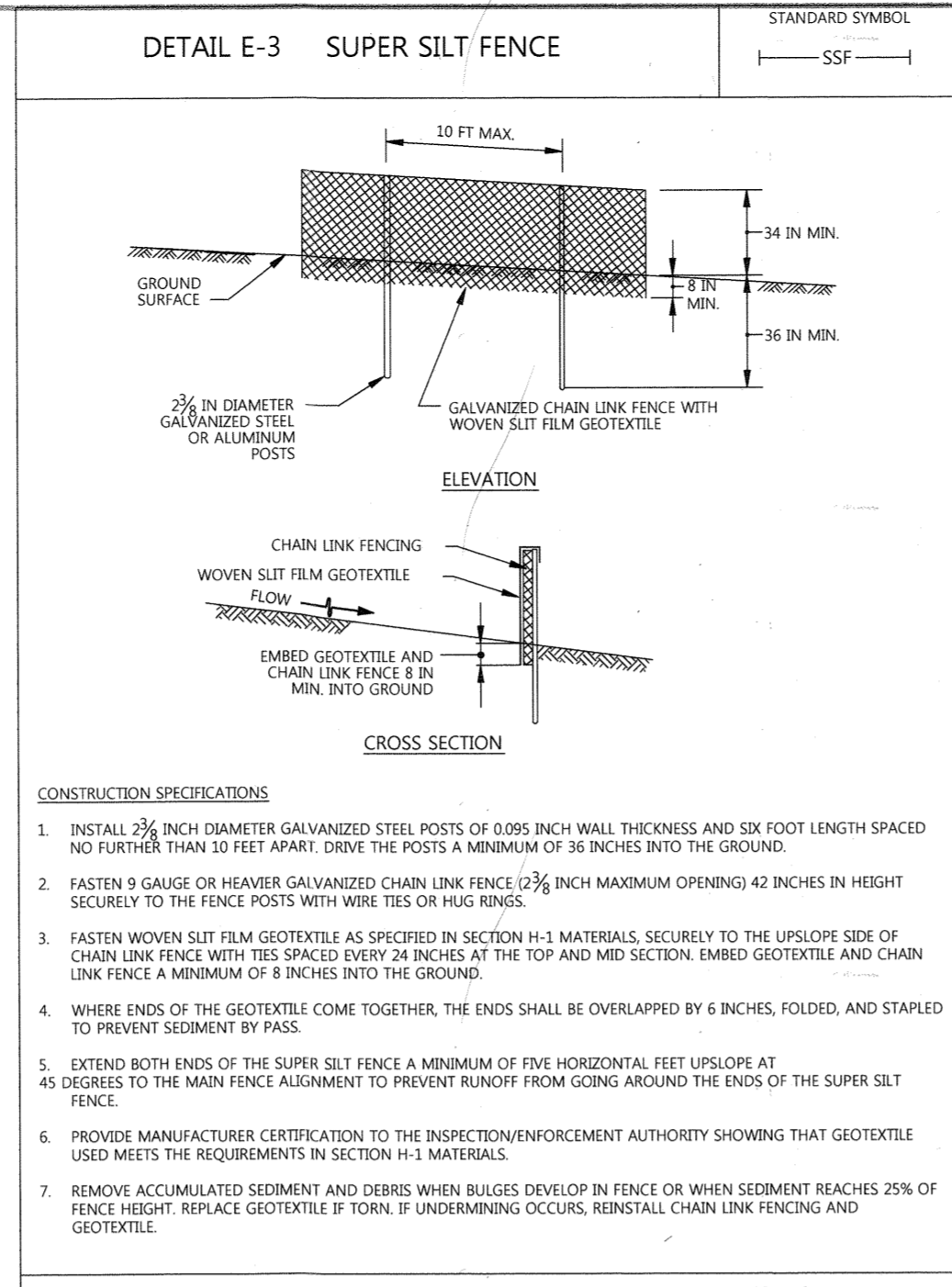
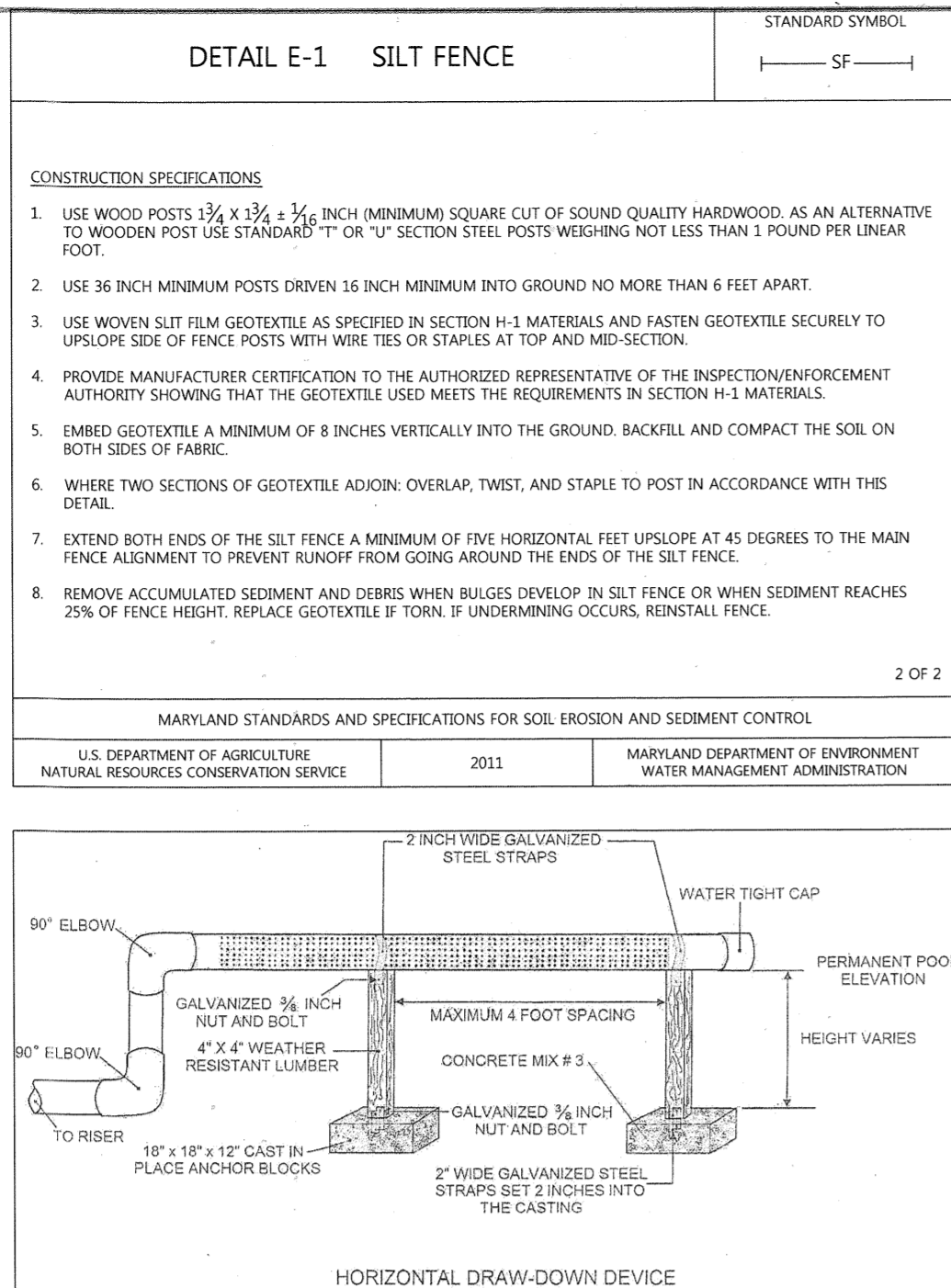
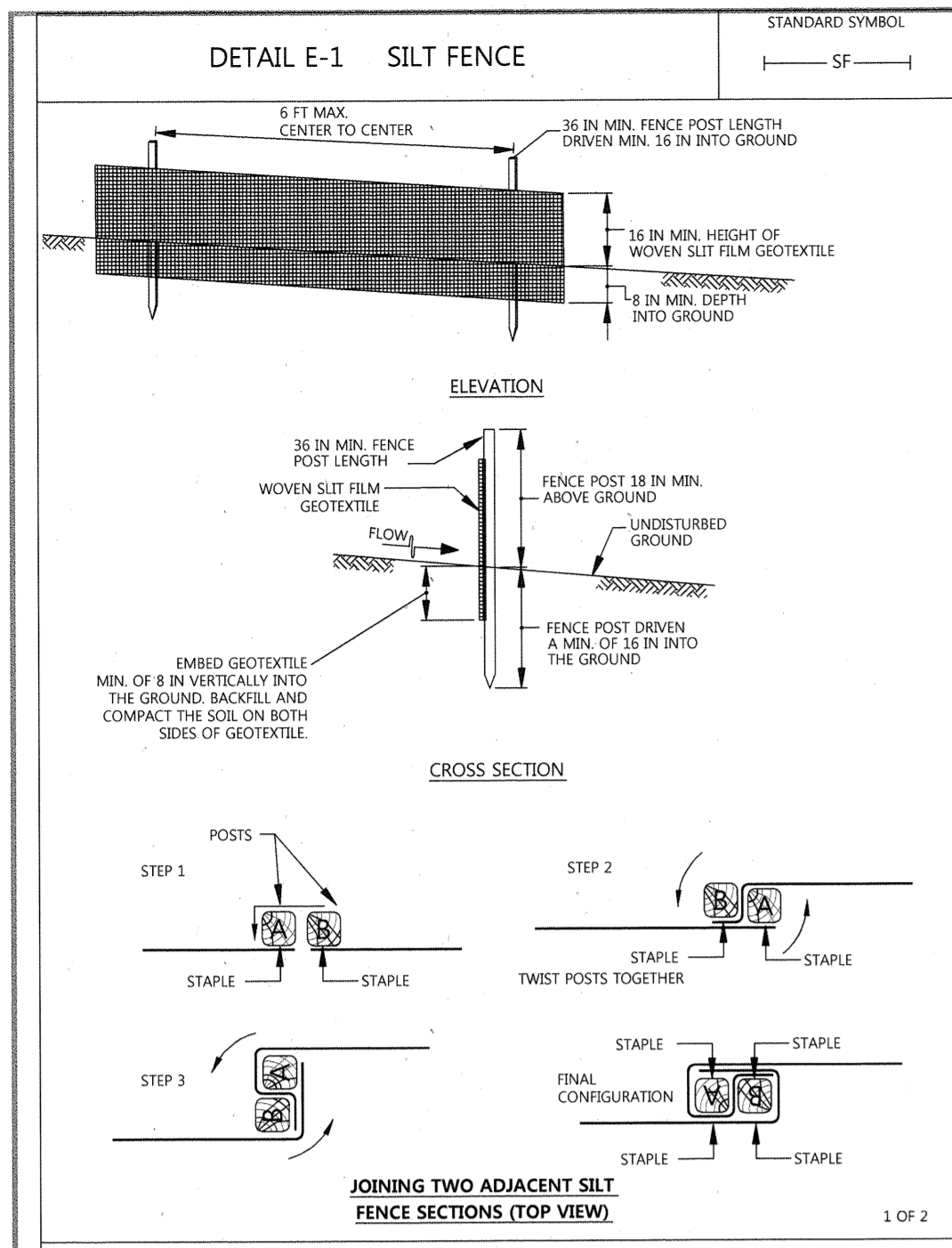
1/24/17 AS BUILT SUBMISSION
2-10-14 UPDATE OWNER/DEVELOPER INFO

EMERSON
SECTION 3 - AREA 7 - PARCEL A
"Future Employment Use"
OWNER/DEVELOPER:
EMERSON DEVELOPMENT IX LLC
ONE TEXAS STATION COURT, SUITE 200
TIMONIUM, MD 21093 (443) 687-8000

SUBDIVISION NAME		SECTION/AREA		SHEET/NO. OF SHEETS	
EMERSON		SEC.3 AREA 7		47 / 67	
DATE		DATE		DATE	
2-10-14		11-17-11		6-09-03	

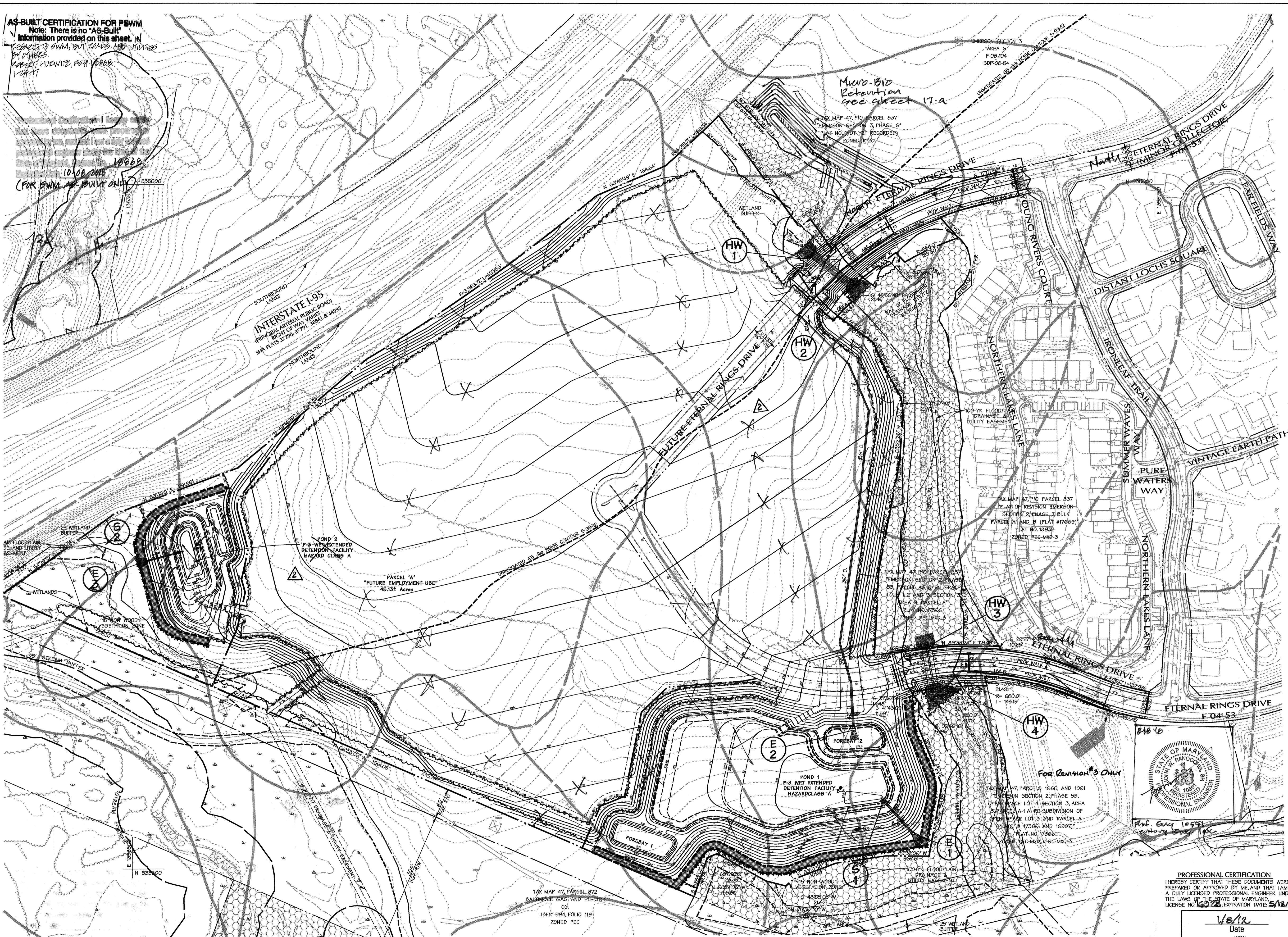
TITLE
GRADING AND SEDIMENT CONTROL PLAN
CULVERT BLOW-UPS

Des By	TJC	Scale	1"=30'	Proj. No.	95054.W2
Drn By	JSS	Date	11/17/11	12 of 30	
Chk By	JDF	Approved			



AS-BUILT CERTIFICATION FOR PSWM
 Note: There is no AS-Built information provided on this sheet, in regard to SWM, BUT CONSTRUCTION BY OTHERS. EMMETT HULEWITZ, P.E. 10/24/11

10/08/2018
 (FOR SWM AS-BUILT ONLY)



- NOTES**
1. TREES, SHRUBS AND OTHER WOODY VEGETATION NOT ALLOWED WITHIN TWENTY-FIVE (25) FEET OF THE ROSE STRUCTURE AND NOT ALLOWED WITHIN FIFTEEN (15) FEET OF ANY PORTION OF THE EMBANKMENT.
 2. SWM FACILITY SHALL BE PRIVATELY OWNED BY THE PROPERTY OWNER. THE OWNER SHALL PERFORM MAINTENANCE/REMOVAL MAINTENANCE.
 3. ACTUAL LENGTH AND DEPTH OF CUT-OFF TRENCH SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER IN THE FIELD. FILL MATERIAL FOR THE CUT-OFF TRENCH / CLAY CORE SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION CL-6, CL-7 OR SC. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGN AND CONSTRUCTION ARE SUPERVISED BY A GEOTECHNICAL ENGINEER.
 4. SEE SHEET 20 & 30 FOR RIPPAP OUTLET DETAILS.
 5. FOR BORING LOGS SEE SHEET 24.

Legend

EX CURB & GUTTER	---
EX MAJOR CONTOURS	400
EX MINOR CONTOURS	400
EX STORM DRAIN	EX. ST. 15"
EX SEWER	EX. ST. 18"
EX WATER	---
EXISTING TREE LINE	---
EXISTING WETLAND LIMIT	---
PROPERTY LINE	---
ROADWAY RIGHT-OF-WAY	---
PROPOSED LOT LINE	---
PROPOSED EASEMENT	---
PROPOSED CURB & GUTTER	---
PROPOSED SIDEWALK	---
PROP. STORM DRAIN	18" 800"
PROP. SEWER	---
PROP. WATER	---
PROP. MAJOR CONTOURS	4" W.
PROP. MINOR CONTOURS	---
SOIL BORING	B-4
NON WOODY VEGETATION ZONE	---
40' BGE SETBACK FOR CREDITED FOREST AREAS	---
65' BGE NOISE LINE	---
EX FOREST CONSERVATION EASEMENT	---

OPERATION, MAINTENANCE AND INSPECTION
 INSPECTION OF THE PONDS SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENT CONTAINED WITHIN USGS SC-5 STANDARDS AND SPECIFICATIONS FOR PONDS (MD-575) THE POND OWNERS(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION AND MAINTENANCE THEREOF. THE POND OWNERS(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATORS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SETBACK, SLIDING OR SLUMPING.

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

DATA SOURCES: STEPHEN DEARICK, Md. 4/12/12, 11-10-2012

Existing topography shown hereon is a result of an aerial survey provided by Air Survey Corporation dated, 1988 supplemented with field run information performed by Darr McCune Walker, Inc. dated, 2010.

Property boundary shown hereon is a result of field run monumented boundary survey performed on or about June 25, 1989 by Darr McCune Walker, Inc.
 Soils if shown provided by SoilData Mart dated 2005 published by Natural Resources Conservation Service (NRCS)
 Zoning information shown hereon provided by Howard County Department of Planning and Zoning, adopted by Howard County Council February 2, 2004.
 Wetland and stream limits shown hereon were originally approved by Maryland Department of the Environment and the US Corps of Engineers in April 2001 and re-verified by those agencies in October 2009.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

W. J. ... 2-23-12
 CHIEF, BUREAU OF HIGHWAYS DATE

HOWARD COUNTY DEPT. OF PLANNING & ZONING

... 2/28/12
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

... 3/1/12
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

11/24/17	AS BUILT SUBMISSION
8-17-14	Revise Study 16C Add EGD
1-10-14	UPDATE OWNER/DEVELOPER INFO.
Date	No. Revision Description

EMERSON
 SECTION 3 - AREA 7 - PARCEL A
 "Future Employment Use"

OWNER/DEVELOPER:
 EMERSON DEVELOPMENT IX LLC
 ONE TEXAS STATION COURT, SUITE 200
 TIMONIUM, MD 21093 (443) 689-8000

DMW
 Darr McCune-Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3333
 Fax 296-4706

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

SHOWROOM NAME	EMERSON	SECTION/AREA	SEC.3 AREA 7	LOT/PARCEL #	
PLAT# OR LOT# OR #	22891330	ZONE	MXD-3	RELICT DISTRICT	CHISEL TRAIL
TAX/ZONE MAP	47	6TH			6069.03
WATER CODE	E-15	SEWER CODE	7520000		

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16228 EXPIRATION DATE 5/31/12

Date 1/5/12

Malvin C. Beall, Jr.
 PROFESSIONAL ENGINEER

***Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 16228, Expiration Date 5/31/12.**

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

Robert Jenkins
 SIGNATURE OF DEVELOPER
 PRINT NAME BELOW SIGNATURE
 Robert Jenkins
 DATE 1/3/12

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

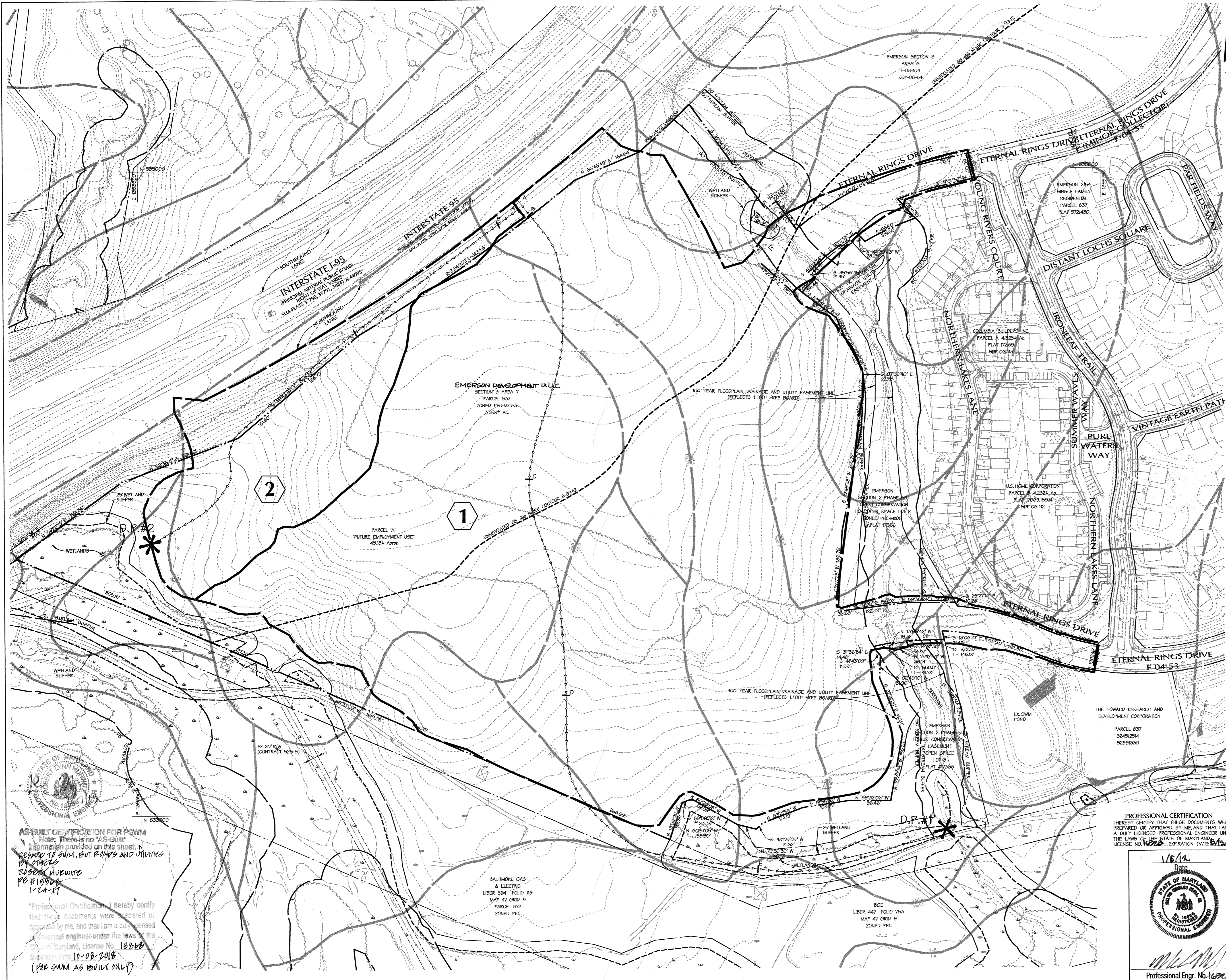
Malvin C. Beall, Jr.
 SIGNATURE OF ENGINEER
 PRINT NAME BELOW SIGNATURE
 Malvin C. Beall, Jr.
 DATE 1/5/12

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

HOWARD SOIL CONSERVATION DISTRICT

FINAL PLAN
OVERALL STORMWATER MANAGEMENT PLAN

Des By	TJC	Scale	1"=100'	Proj. No.	95054.W2
Drn By	JSS	Date	11/17/11	15 of 30	
Chk By	JDF	Approved			



DA=37.85 Ac.
0.0591 SQ.MI. **1** RCN=61
Tc=0.23 HRS.

DA=5.52 Ac.
0.0086 SQ.MI. **2** RCN=65
Tc=0.22 HRS.

Legend

EX CURB & GUTTER	---
EX MAJOR CONTOURS	---
EX MINOR CONTOURS	---
EX STORM DRAIN	---
EX SEWER	---
EX WATER	---
EXISTING TREE LINE	---
EXISTING WETLAND LIMIT	---
PROPERTY LINE	---
ROADWAY RIGHT-OF-WAY	---
EXISTING DRAINAGE AREA	---
EXISTING Tc PATH	---
SOILS LIMITS	---
65 dba NOISE LINE	---

OPERATION, MAINTENANCE AND INSPECTION
INSPECTION OF THE PONDS SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENT CONTAINED WITHIN USGA'S STANDARDS AND SPECIFICATIONS FOR PONDS (MS-376). THE POND OWNER(S) AND ANY THIRD PARTIES OR AGENTS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY ABNORMAL OBSERVATIONS THAT MAY BE INDICATIONS OF PROGRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLUMPING OR SLUMPING.

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

DATA SOURCES: STEPHEN TERRICK, No. 95712, 11-10-2012
Existing topography shown hereon is a result of an aerial survey provided by Air Survey Corporation dated 1999, supplemented with total run information performed by Darr McGuire Walker, Inc. dated 2010.

Property boundary shown hereon is a result of field run monumented boundary survey performed on or about June 25, 1999 by Darr McGuire Walker, Inc.

Soils if shown provided by Soil Data Mart dated 2005 published by Natural Resources Conservation Service (NRCS)

Zoning information shown hereon provided by Howard County Department of Planning and Zoning, adopted by Howard County Council February 2, 2004.

Wetland and stream limits shown hereon were originally approved by Maryland Department of the Environment and the US Corps of Engineers in April 2001 and re-verified by these agencies in October 2009.

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

John R. Robertson 2/8/12
HOWARD SOIL CONSERVATION DISTRICT BATE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Will Z. Hall 2-23-12
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
John J. Williams 2/28/12
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kevin L. Schuch 3/6/12
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

1-24-11	AS BUILT SUBMISSION	
1-10-14	UPDATE OWNER/DEVELOPER INFO	
Date	No.	Revision Description

EMERSON
SECTION 3 - AREA 7 - PARCEL A
"Future Employment Use"

OWNER/DEVELOPER:
EMERSON DEVELOPMENT IX LLC
ONE TEXAS STATION COURT, SUITE 200
TIMONIUM, MD 21093 (443) 687-8000

DMW
Darr McGuire Walker, Inc.
300 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 286-3333
Fax: 286-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

SUBMISSION NAME	EMERSON	SECTION/AREA	SEC.3 AREA 7	LOT/PARCEL #	PART OF B37
PLAT OR LOT AND #	306	TAX/ZONE MAP	11E7-0007	ENCL# TRACT	6069.03
WATER CODE	E-15	SWER CODE	7520000		

TITLE: **FINAL PLAN EXISTING CONDITIONS DRAINAGE AREA MAP**

Des By	TJC	Scale	1"=100'	Proj. No.	95054.W2
Dwn By	JSS	Date	10/19/11		16 of 30
Chk By	JDF	Approved			

Professional Engr. No. 16928

AS-BUILT CERTIFICATION FOR PSWM
Note: There is no "AS-Built" information provided on this sheet. It is required to show, but not show, and utilities by others. ROBERT MUEWITZ PE #18800 1-24-11

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18800, Expiration Date 10-08-2018 (PRE GUM AS BUILT ONLY)

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16928, EXPIRATION DATE 6/15/18

1/6/12 Date

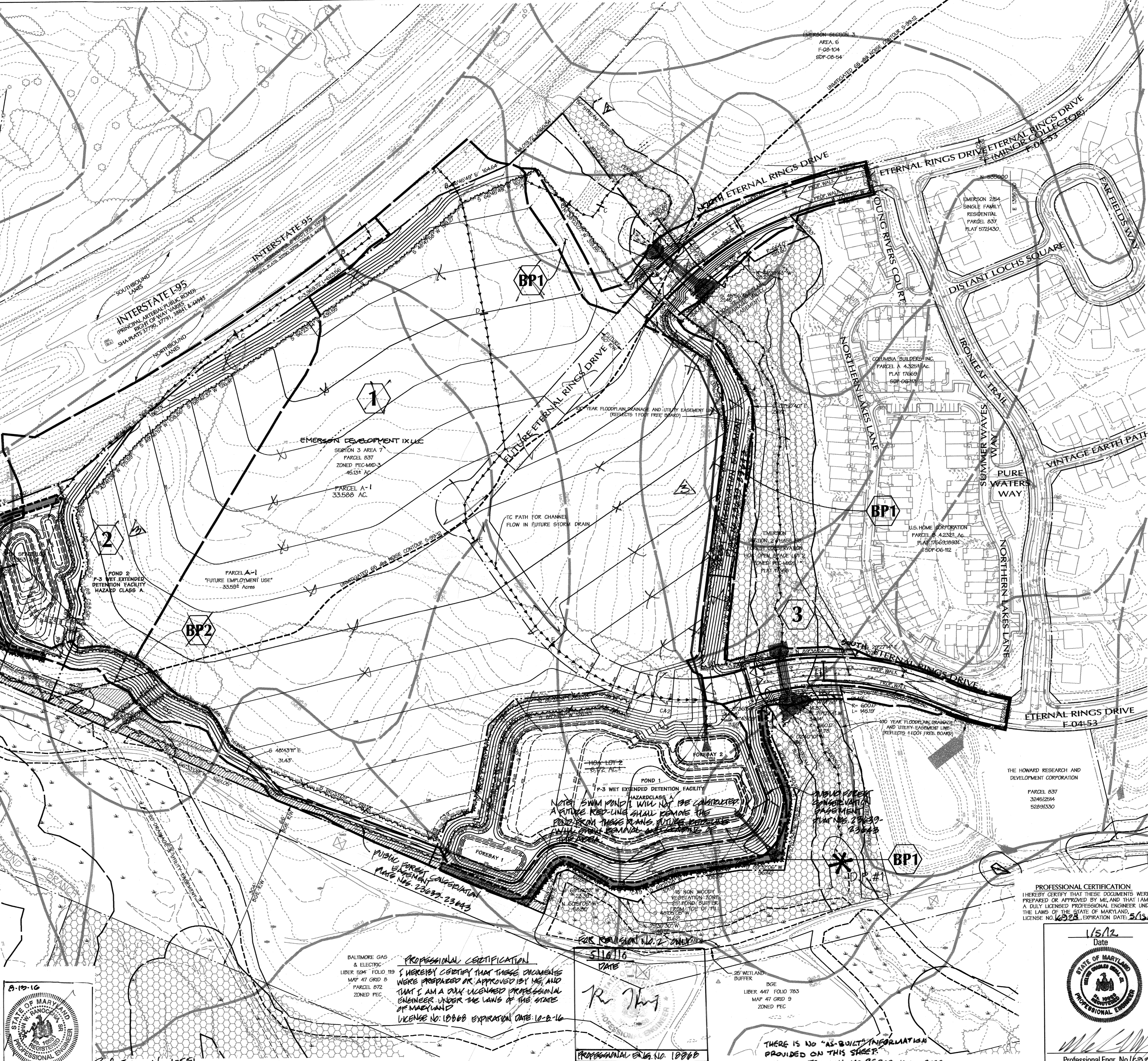
AS-BUILT CERTIFICATION FOR PSMW
 Note: There is no "AS-Built" information provided on this sheet. Information provided on this sheet is based on data from the owner and utilities. BY OTHERS SUBJECT: HURWITZ #10868 1-24-17

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 10868, Expiration Date 10-08-2018.

FOR SWM AS-BUILT ONLY

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 10591, Expiration Date 8-25-17.

OPERATION, MAINTENANCE AND INSPECTION
 INSPECTION OF THE PONDS SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USWA SEC. 5 STANDARDS AND SPECIFICATIONS FOR PONDS (NO. 278) (THE POND OWNERS) AND ANY HEIRS, SUCCESSORS OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION AND MAINTENANCE THEREOF. THE POND OWNERS SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATORS OF DISTRESS, SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLUDGING OR SLUMPING.



DA=31.28 Ac. 0.0489 SQ.MI.	1	RCN=91 Tc=0.24 HR5.
DA=6.75 Ac. 0.0105 SQ.MI.	2	RCN=85 Tc=0.25 HR5.
DA=0.92 Ac. 0.0014 SQ.MI.	3	RCN=98 Tc=0.10 HR5.
DA=3.86 Ac. 0.0060 SQ.MI.	BP1	RCN=74 Tc=0.30 HR5.
DA=0.56 Ac. 0.0009 SQ.MI.	BP2	RCN=74 Tc=0.10 HR5.

Legend

EX CURB & GUTTER	400
EX MAJOR CONTOURS	402
EX MINOR CONTOURS	EX 2' S.F.
EX STORM DRAIN	EX 8" S.
EX SEWER	EX 8" S.
EX WATER	EX 8" W.
EXISTING TREE LINE	400
EXISTING WETLAND LIMIT	402
PROPERTY LINE	---
ROADWAY RIGHT-OF-WAY	---
PROPOSED LOT LINE	---
PROPOSED EASEMENT	---
PROPOSED CURB & GUTTER	---
PROPOSED SIDEWALK	---
PROP. STORM DRAIN	16" RCP
PROP. SEWER	6" S.
PROP. WATER	4" W.
PROP. MAJOR CONTOURS	400
PROP. MINOR CONTOURS	402
PROPOSED DRAINAGE AREA	---
PROPOSED 16' PATH	---
SOIL IDENTIFIER & HSG	S&C
65 dba NOISE LINE	S&C
EX FOREST CONSERVATION EASEMENT	---

DATA SOURCES
 Existing topography shown hereon is a result of an aerial survey provided by Air Survey Corporation dated 1999, supplemented with field run information provided by Darr McCune Walker, Inc. dated 2010.
 Property boundary shown hereon is a result of field run monumented boundary survey performed on or about June 25, 1999 by Darr McCune Walker, Inc.
 Soils shown provided by Soil Data Maps dated 2005 published by Natural Resources Conservation Service (NRCS)
 Zoning information shown hereon provided by Howard County Department of Planning and Zoning, adapted by Howard County Council February 2, 2004.
 Wetland and stream limits shown hereon were originally approved by Maryland Department of the Environment and the US Corps of Engineers in April 2001 and re-verified by these agencies in October 2009.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS	2/8/12	
APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING	2/28/12	
APPROVED: DIVISION OF LAND DEVELOPMENT	3/1/12	
1-24-17 AS BUILT SUBMISSION		
8-17-16 Remove Pond 1 & P-3 Pond & Future Conn.		
2-16-16 REVISED FOREST CONSERVATION AREAS		
2-10-14 UPDATE OWNER/DEVELOPER INFO		
Date	No.	Revision Description

EMERSON
 SECTION 3 - AREA 7 - PARCEL A
 "Future Employment Use"
 OWNER/DEVELOPER:
 EMERSON DEVELOPMENT IX LLC
 ONE TEXAS STATION COURT, SUITE 200
 TIMONIUM, MD 21073 (410) 687-8000

DMW
 Darr McCune Walker, Inc.
 300 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 286-3333
 Fax 286-4705

PROFESSIONAL ENGINEER
 State of Maryland Seal

SECTION NAME	EMERSON	SECTION/AREA	SEC 3 AREA 7	LOT/PARCEL #	PART OF 837
FRONT OR TO THE RIGHT	15'	ZONE	MKD-5	PLAT SHEET	6069.03
WATER CODE	E-15	SWIM CODE	7520000		

TITLE: FINAL PLAN PROPOSED CONDITIONS DRAINAGE AREA MAP

Des By	TJC	Scale	1"=100'	Proj. No.	95054.W
Drn By	J65	Date	11/17/11	17 of 30	
Chk By	JDF	Approved			

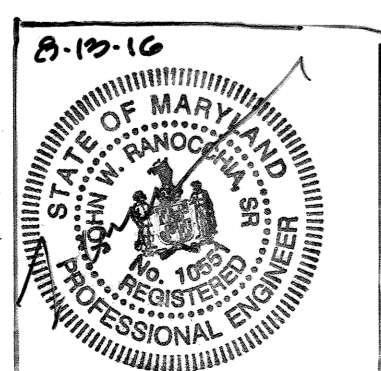
PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 10868 EXPIRATION DATE 10-08-18

PROFESSIONAL ENGR. NO. 10868
 CENTURY ENGINEERING, INC.

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 STEPHEN TERRICK, NO. 35742, 11-10-2012

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 10591 EXPIRATION DATE 8-25-17

1/5/12
 Date
 PROFESSIONAL ENGINEER



Prof. Engr. No. 10591
 Century Engineering, Inc.

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

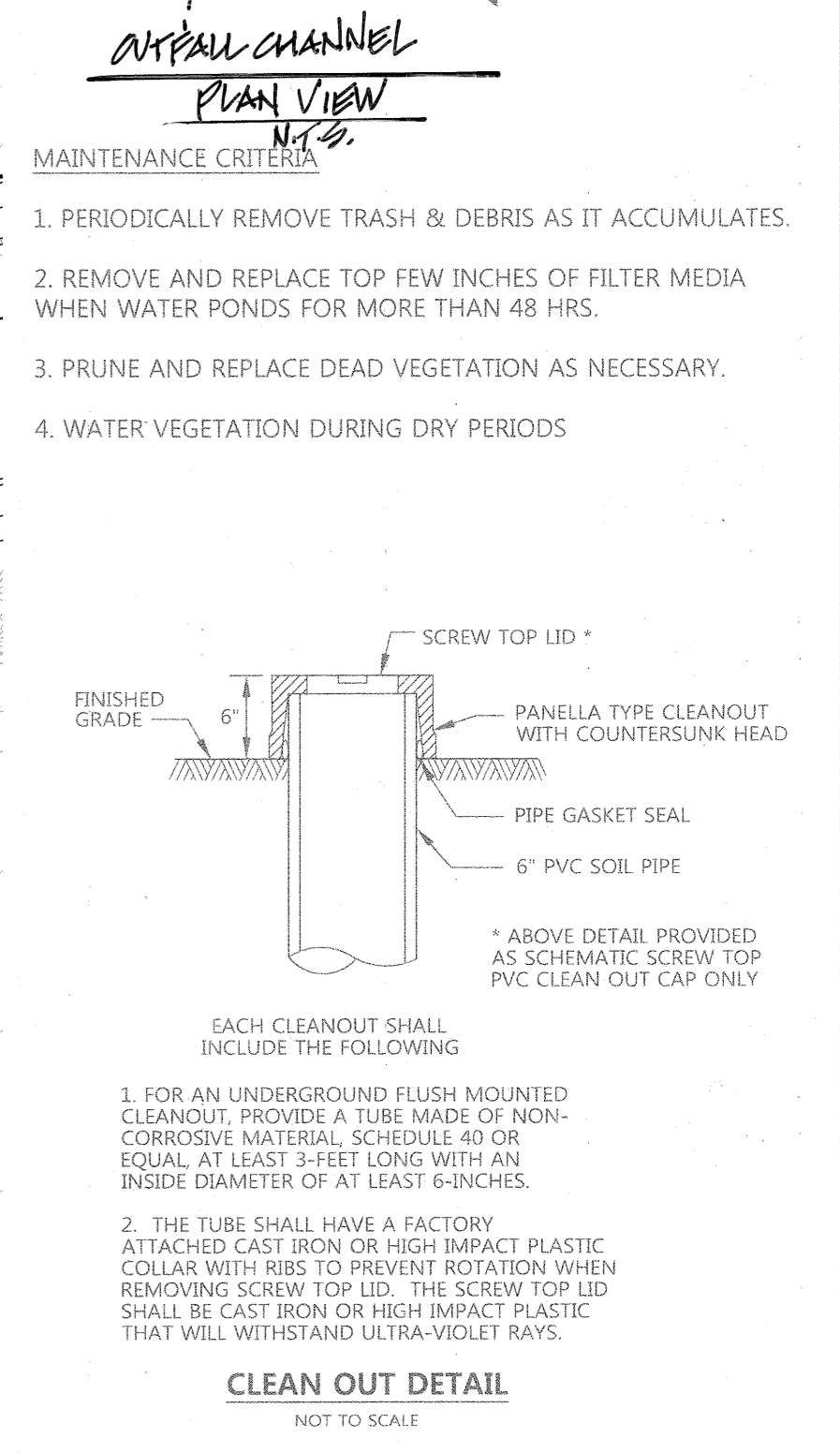
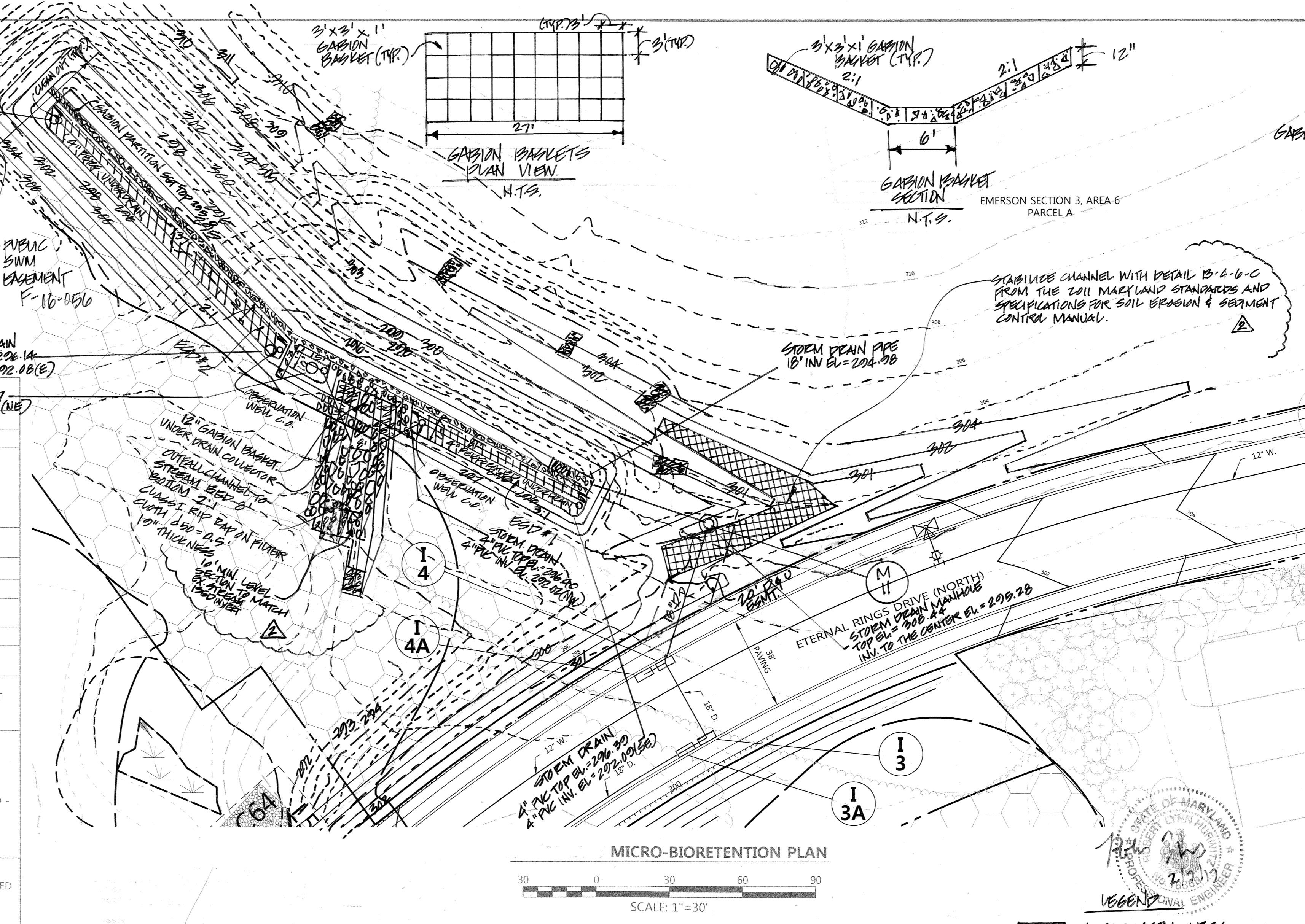
- THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INFECTION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.
 - THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT. REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL. TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
 - THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
 - THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.
- e. Howard County shall only be responsible for gabiion baskets. All other maintenance is the responsibility of H.C.A.

MICRO-BIORETENTION SEQUENCE OF CONSTRUCTION

- BEGIN CONSTRUCTION OF THE PHASE 1, STAGE 1 SWM FACILITY IN THE FOLLOWING ORDER:
- EXCAVATE SUBGRADE.
 - ONCE VERIFIED SUB-GRADES HAVE BEEN ESTABLISHED, EXCAVATE FOR AND INSTALL 6" UNDERDRAIN OUTFALL PIPE AND BACKFILL OUTFALL TRENCH WITH 3" OF THE 10" GRAVEL JACKET OF NO. 57 OR NO. 6 AGGREGATE IN THE BOTTOM OF EXCAVATION.
 - PLACE 3" WIDE STRIPS OF FILTER FABRIC DOWN ON 3" GRAVEL LAYER TO SUPPORT 4" UNDERDRAIN SYSTEM. PLACE UNDERDRAINS IN CENTER OF FABRIC & CHECK FOR LEVELNESS.
 - PLACE REMAINDER (7") OF THE 10" GRAVEL JACKET. CHECK FOR LEVELNESS.
 - PLACE 2" PEA GRAVEL LAYER OVER GRAVEL JACKET.
 - BACKFILL TOPSOIL FILTER MEDIA IN LIFTS OF 12" TO 18". DO NOT COMPACT. INSTALL GABIION PARTITION BASKETS.
 - INSTALL LANDSCAPE PLANTINGS. INSTALL RIPRAP OUTLET PROTECTION AT OVERFLOW WEIR.
 - SEED OR SOD 3:1 SIDE SLOPES. ADD 3" MULCH LAYER.

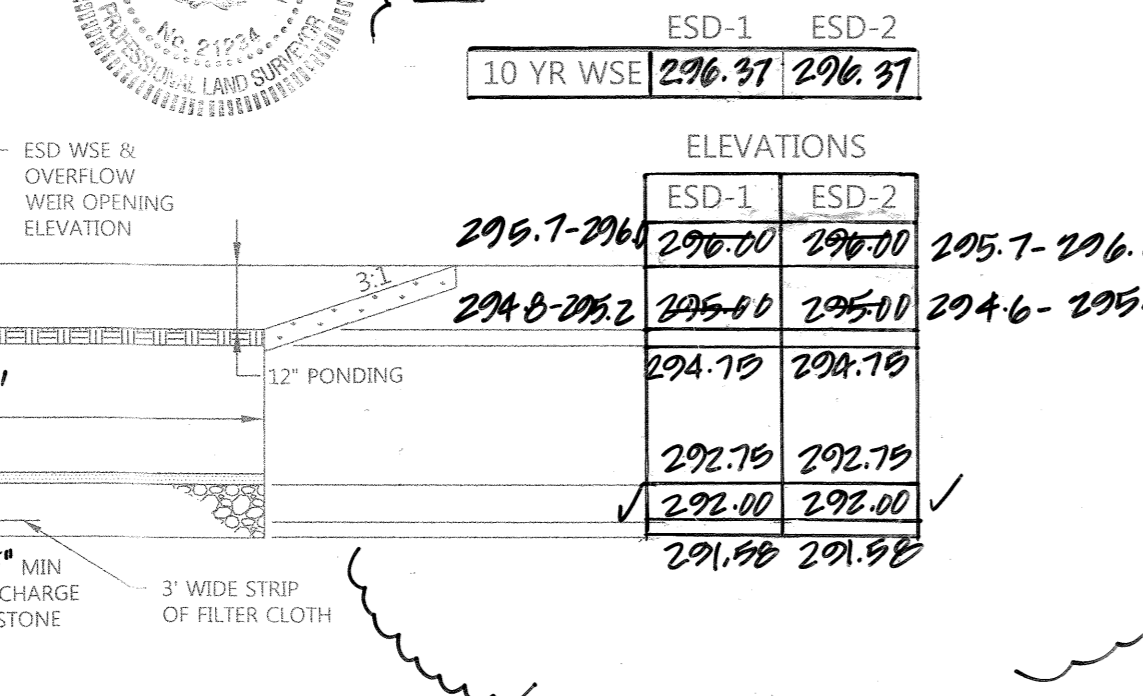
TABLE B.4.1 MATERIALS SPECIFICATIONS FOR MICRO-BIORETENTION, RAIN GARDENS & LANDSCAPE INFILTRATION

MATERIAL	SPECIFICATION	SIZE	NOTES
PLANTINGS	SEE APPENDIX A, TABLE A.4	N/A	PLANTINGS ARE SITE-SPECIFIC
PLANTING SOIL (2" TO 4" DEEP)	LOAMY SAND (60 - 65%) & COMPOST (35 - 40%) OR SANDY LOAM (30%), COARSE SAND (30%) & COMPOST (40%)	N/A	
ORGANIC CONTENT	MIN. 10% BY DRY WEIGHT (ASTM D 2974)		
MULCH	SHREDDED HARDWOOD		AGED 6 MONTHS, MINIMUM; NO PINE OR WOOD CHIPS
PEA GRAVEL DIAPHRAGM	PEA GRAVEL: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
CURTAIN DRAIN	ORNAMENTAL STONE: WASHED COBBLES	STONE: 2" TO 5"	
GEOTEXTILE		N/A	PE TYPE 1 NONWOVEN
GRAVEL (UNDERDRAINS AND INFILTRATION BERMS)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" TO 3/4")	
UNDERDRAIN PIPING	F 758, TYPE PS 28 OR AASHTO M-278	4" TO 6" RIGID SCHEDULE 40 PVC OR SDR35	SLOTTED OR PERFORATED PIPE: 3/8" PERF. @ 6" ON CENTER. 4 HOLES PER ROW. MINIMUM OF 3" OF GRAVEL OVER PIPES. NOT NECESSARY UNDERNEATH PIPES. PERFORATED PIPE SHALL BE WRAPPED WITH 1/4-INCH GALVANIZED HARDWARE CLOTH
POURED IN PLACE CONCRETE (IF REQUIRED)	MSHA MIX NO. 3; Fc = 3500 PSI @ 28 DAYS. NORMAL WEIGHT, AIR-ENTRAINED; REINFORCING TO MEET ASTM-615-60	N/A	ON-SITE TESTING OF POURED-IN-PLACE CONCRETE REQUIRED: 28 DAY STRENGTH AND SLUMP TEST; ALL CONCRETE DESIGN (CAST-IN-PLACE OR PRE-CAST) NOT USING PREVIOUSLY APPROVED STATE OR LOCAL STANDARDS REQUIRES DESIGN DRAWINGS SEALED AND APPROVED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND. DESIGN TO INCLUDE MEETING ACI CODE 350R/89; VERTICAL LOADING (H-10 OR H-20); ALLOWABLE HORIZONTAL LOADING (BASED ON SOIL PRESSURES); AND ANALYSIS OF POTENTIAL CRACKING
SAND	AASHTO-M-6 OR ASTM-C-33	0.02" TO 0.04"	SAND SUBSTITUTIONS SUCH AS DIABASE AND GRAYSTONE (AASHTO) #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR DOLOMITIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO "ROCK DUST" CAN BE USED FOR SAND.

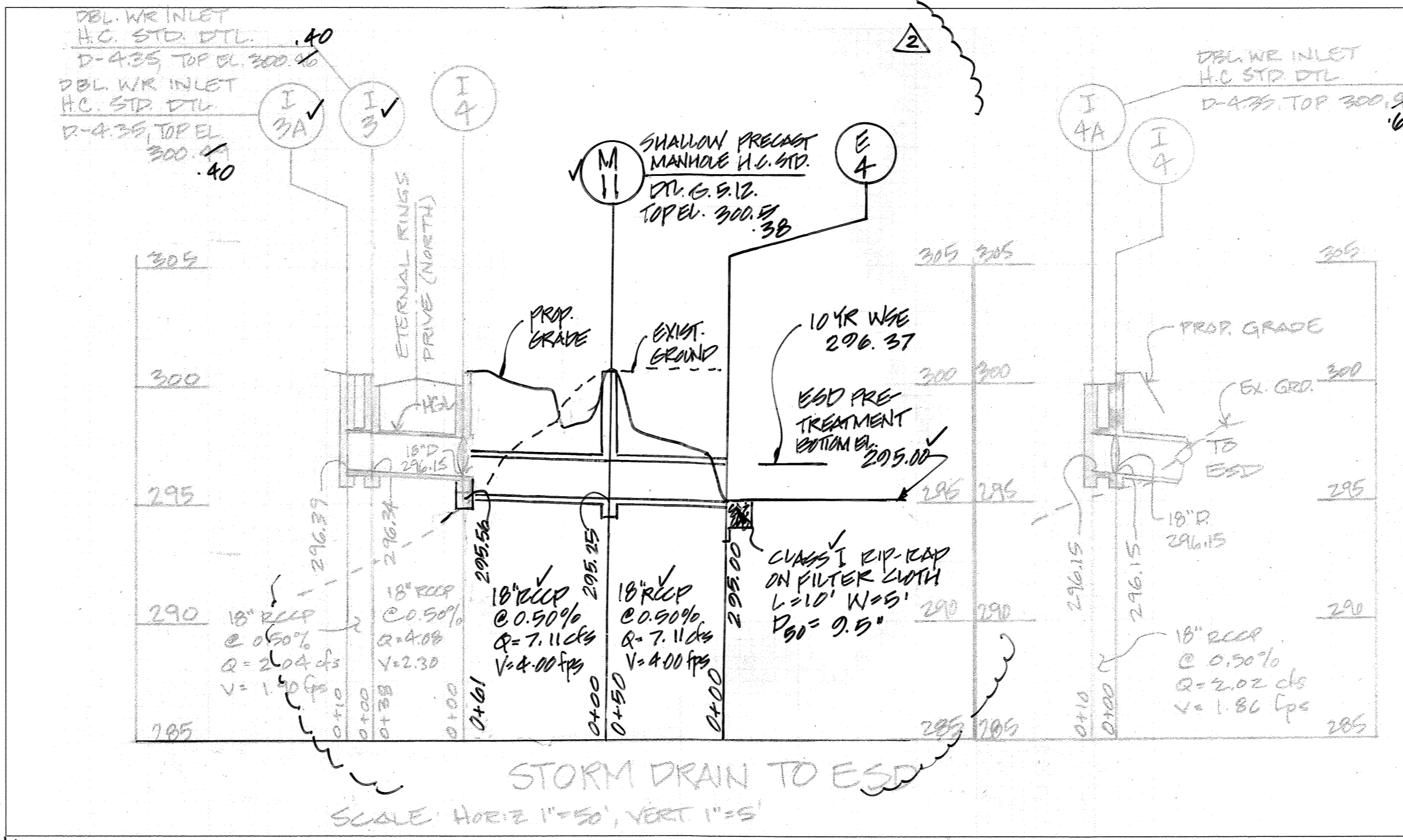
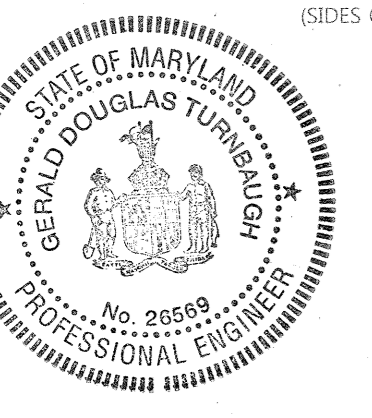


AS-BUILT CERTIFICATION

There is no "AS-BUILT" information on this sheet.
 Daft-McCune-Walker, Inc.
 By: Gerald P. Turnbaugh, P.E. 26569
 By: Michael D. Martin, P.L.S. 21234

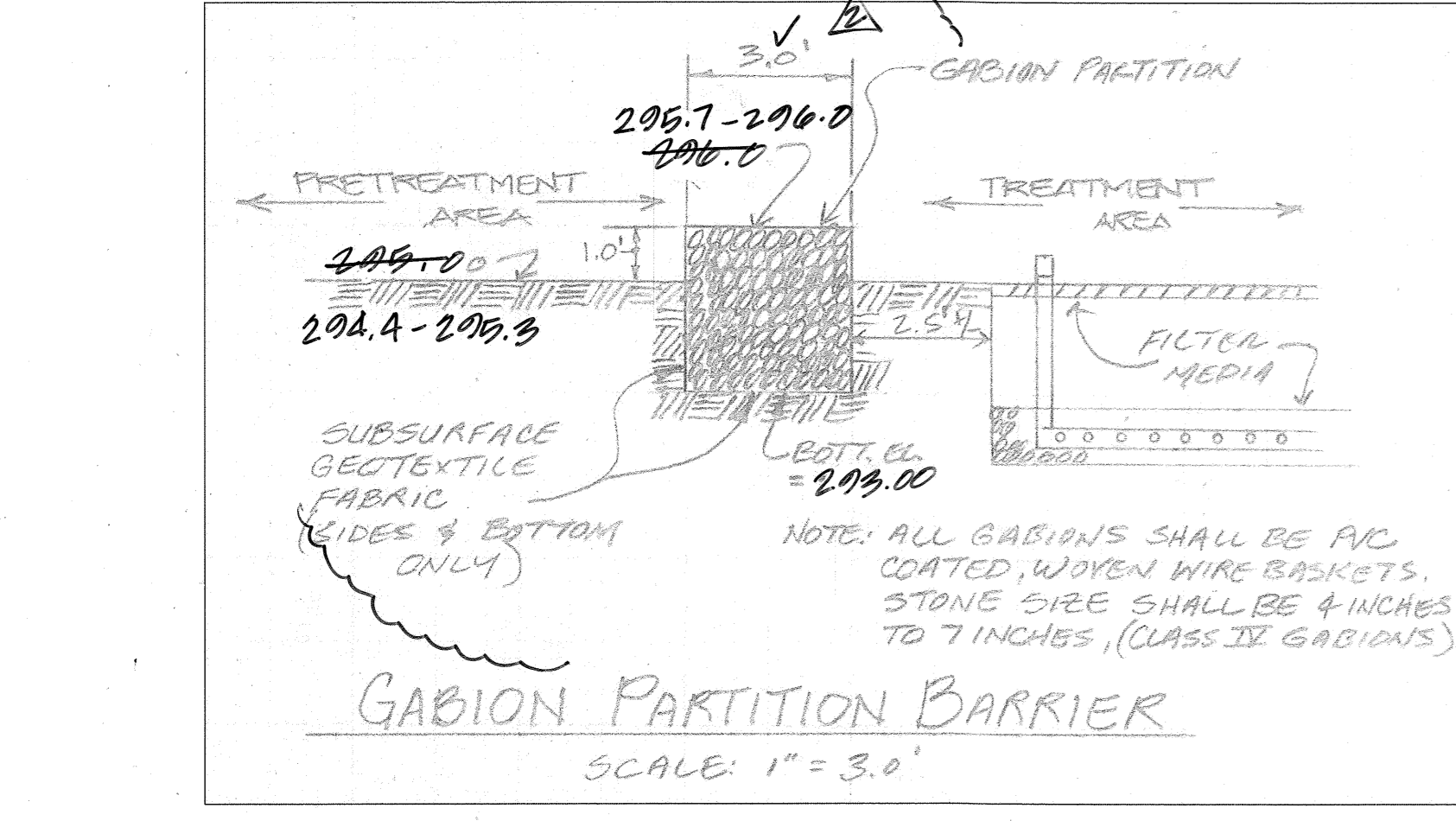


Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 26569, Expiration Date: 7-18-17



AS-BUILT CERTIFICATION FOR ESD
 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 # 18868
 EXPIRATION DATE: 10-09-2018
 (FOR SWM AS-BUILT ONLY)

AS-BUILT CERTIFICATION FOR ESD
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS IN REGARDS TO SWM, BUT ROADS AND UTILITIES BY OTHERS, I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CAUSING OF THE UNDERGROUND SWM FACILITY.
 ROBERT HUEWITZ
 PE # 18068
 1-24-17



FOR REVISION NO. 2 ONLY
 5/11/15
 DMB
 PROFESSIONAL ENG. NO. 18868
 CENTURY ENGINEERS INC. LICENSE NO. 18868 EXPIRATION DATE: 10-9-16

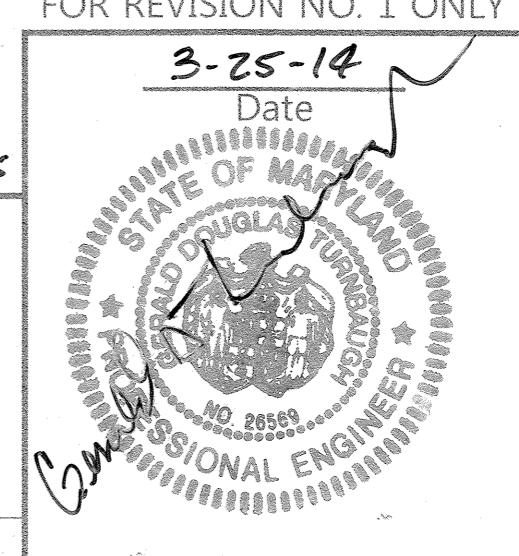
PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
 STEPHEN BERKAC, No. 45742, 11-10-2022

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 26569, EXPIRATION DATE: 7-18-15

DEVELOPERS CERTIFICATE:
 I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.
 Signature of Developer: James F. Knott, Jr.
 DATE: 3/27/14

ENGINEERS CERTIFICATE:
 I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.
 Signature of Engineer: Gerald P. Turnbaugh
 DATE: 3-25-14

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 26569, EXPIRATION DATE: 7-18-15



SWM AS-BUILT			
APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS			
Walter R. Lewis		4-10-14	DATE
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING			
Vest Sledziewski		4-16-14	DATE
Paul Shuck		4-1-14	DATE
5/16/16	REVISION SWM ESD AND SD TO ESD	TEMPORARY SWM ESD (NEW SHEET)	
2/10/14	DATE	No.	Revision Description
EMERSON			
SECTION 3 - AREA 7 - PARCEL A			
"FUTURE EMPLOYMENT USE"			
OWNER/DEVELOPER:			
EMERSON DEVELOPMENT IX LLC ONE TEXAS STATION CT. SUITE 200 TIMONIUM, MD 21093 (443) 689-8000			
DMW			
DAFT MCCUNE WALKER INC			
200 EAST PENNSYLVANIA TOWSON, MD 21286 P: 410 296 3323 F: 410 296 4705 WWW.DMW.COM			
A TEAM OF LAND PLANNERS, LANDSCAPE ARCHITECTS, ENGINEERS, SURVEYORS & ENVIRONMENTAL PROFESSIONALS			
EMERSON	SEC. 3 AREA 7	PART OF 837	
5289/330	15 MDX-3	47	6069.03
E-15	DATE	7520000	
PHASE 1, STAGE 1			
STORMWATER MANAGEMENT			
ESD & SPECIFICATIONS			
Des. By	GDT	Scale	AS SHOWN
Drn. By	RC/GO	Date	3/24/14
Chk. By	Approved	Proj. No.	95054.81
		17a of 30	

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

1. MATERIAL SPECIFICATIONS

THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.4.1. SHOWN ON SHEET 17b-01.

2. FILTERING MEDIA OR PLANTING SOIL

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

THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:

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

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

PRETREATMENT AREA SEED MIX SHALL BE:

PERMANENT SEED MIX 6, FROM TABLE B.2

- TALL FESCUE: LOLIUM ARUNDINACEUM
- PERENNIAL RYEGRASS: LOLIUM PERENNE
- LEGUME: LOTUS CORNICULATUS

- SEEDING RATE AS SPECIFIED
- MARYLAND DEPARTMENT OF THE ENVIRONMENT
- STANDARDS & SPECIFICATIONS FOR SOIL EROSION & SEDIMENT CONTROL
- B-4-5 FOR PERMANENT STABILIZATION

3. COMPACTION

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

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

ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTOTILLING) BASE.

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

4. PLANT MATERIAL

USE THIS SHEET FOR REQUIRED PLANTINGS.

5. PLANT INSTALLATION

COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE.

ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/8TH OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION. TREES SHALL BE BRACED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL.

GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS. THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFEATS, OR AT A MINIMUM, IMPEDS THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.

6. UNDERDRAINS

UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:

- PIPE - SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM F 758, TYPE PS 28, OR AASHTO-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G. PVC OR HDPE).
- PERFORATIONS - IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/4" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4X4) GALVANIZED HARDWARE CLOTH.
- GRAVEL - THE GRAVEL LAYER (NO. 57 STONE PREFERRED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.
- THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.
- A RIGID, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER.
- A 4" LAYER OF PEA GRAVEL (3/8" TO 1/2" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES INTO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".

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

7. MISCELLANEOUS

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

Microbioretention Plant Schedule

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
TREES - ORNAMENTAL					
QP	5	Quercus phellos	Willow Oak	2"-2.5" cal. 14' ht.	B&B, Full
SHRUBS					
DECIDUOUS					
IV	80	Itea virginica	Virginia Sweetspire	18-24" ht	Full, 30" o.c.
RA	67	Rhus aromatica 'Gro-low'	Fragrant Sumac	18-24" ht	Full, 30" o.c.
GROUNDCOVERS/PERENNIALS/GRASSES					
IB	273	Iris versicolor	Blue Flag Iris	1 gal. container	24" o.c.
IF	294	Iris fulva 'Lois Yellow'	Copper Iris	1 gal. container	24" o.c.

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NUMBER: 18868. EXPIRATION DATE: 10-08-2018.

AS-BUILT CERTIFICATION FOR SWM
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS IN REGARD TO SWM, BUT ROADS AND UTILITIES BY OTHERS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY. ROBERT HURWITZ, PE # 18868. 1-24-17

DEVELOPERS CERTIFICATE:

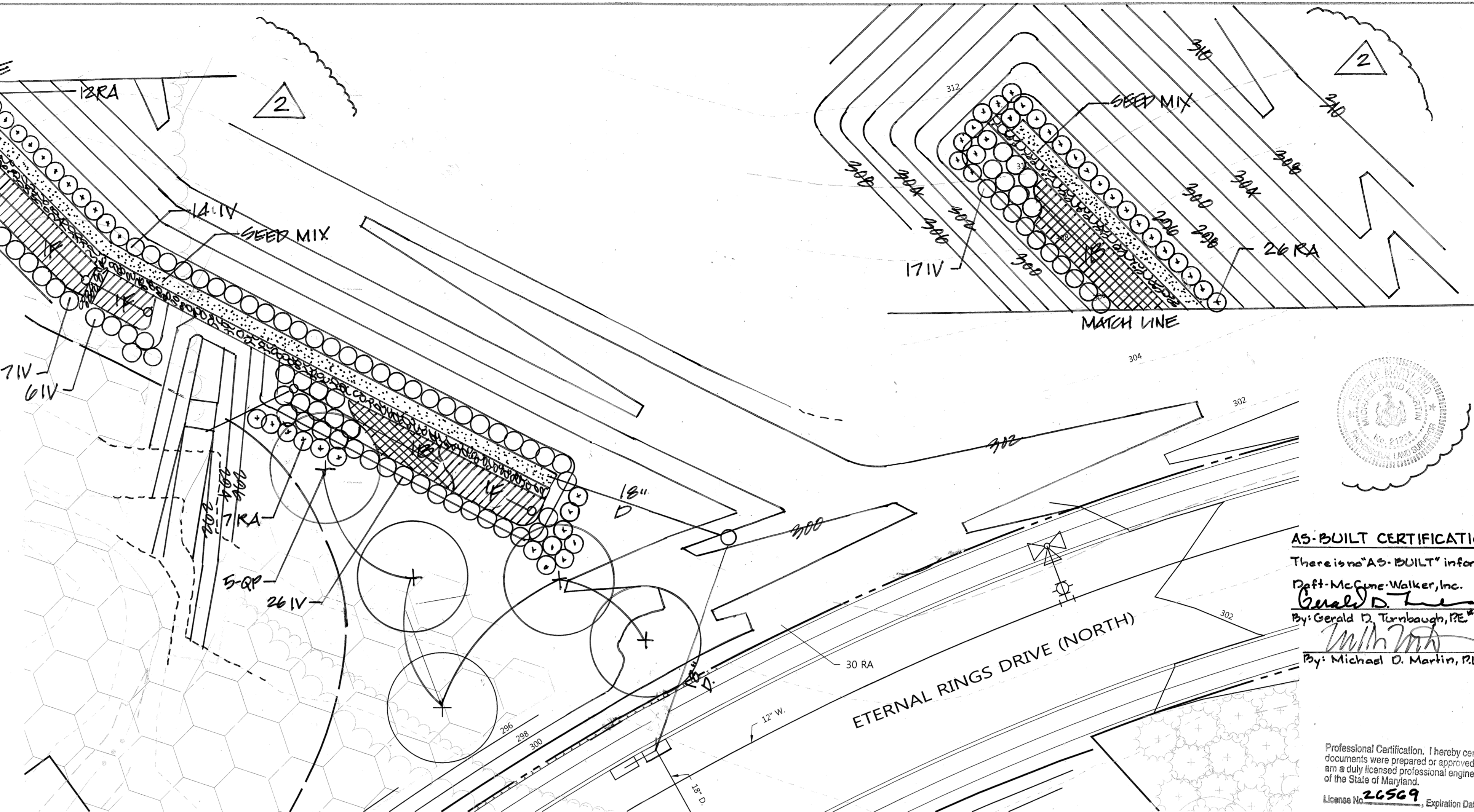
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE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

Signature of Developer: James F. Knott, Jr. Date: 3/27/14

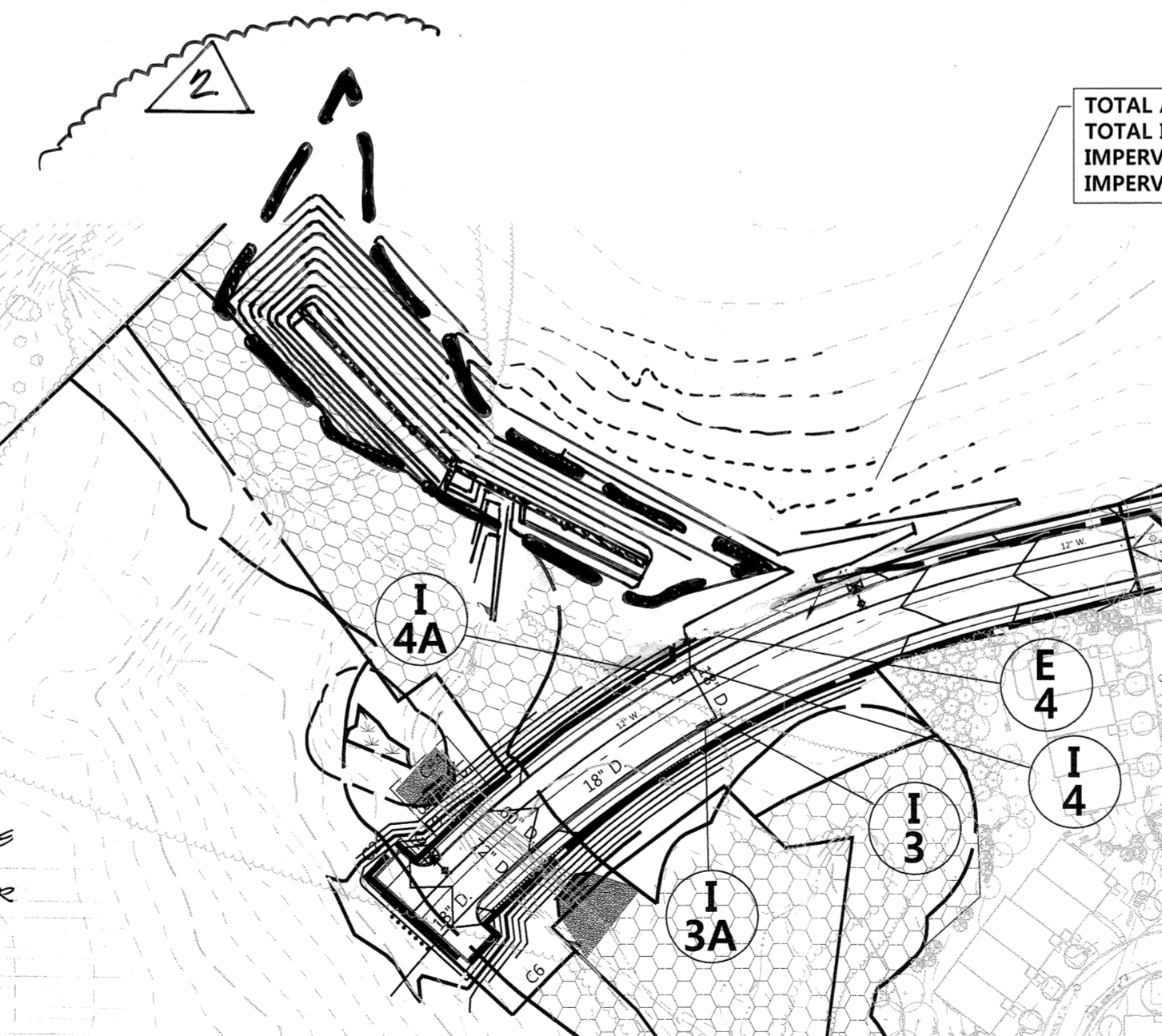
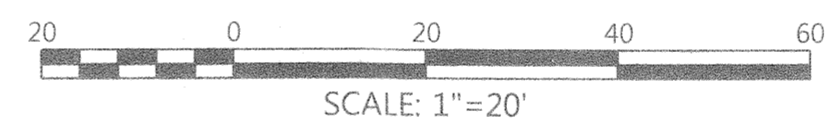
ENGINEERS CERTIFICATE:

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

Signature of Engineer: Gerald D. Turnbaugh Date: 3/25/14



MICRO-BIORETENTION PLANTING PLAN



TOTAL AREA TO TEMPORARY SWM = 54,663 SF
TOTAL IMPERVIOUS = 24,382 S.F.
IMPERVIOUS AREA TO TREAT ESD 1 = 12,200 S.F.
IMPERVIOUS AREA TO TREAT ESD 2 = 12,200 S.F.

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE NO. 18868 EXPIRATION DATE: 10-08-16

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET. STEPHEN JERRICK, No. 35782, 11-10-2012

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 26569. EXPIRATION DATE: 7-18-15

FOR REVISION NO. 2 ONLY

5/16/16 DATE
Signature: Robert Hurwitz

FOR REVISION NO. 1 ONLY

3-25-14 DATE
Signature: Gerald D. Turnbaugh

AS-BUILT CERTIFICATION

There is no "AS-BUILT" information on this sheet.

Daft-McCune-Walker, Inc.
By: Gerald D. Turnbaugh, PE # 26569
By: Michael O. Martin, P.L.S. # 21204

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 26569, Expiration Date: 7-18-17

1/24/17 AS-BUILT SUBMISSION

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Chief, Bureau of Highways: [Signature] DATE: 4-10-14

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Chief, Division of Land Development: [Signature] DATE: 4-16-14

Chief, Development Engineering Division: [Signature] DATE: 4-1-14

2/10/14 REVISION ESD (NEW SHEET)

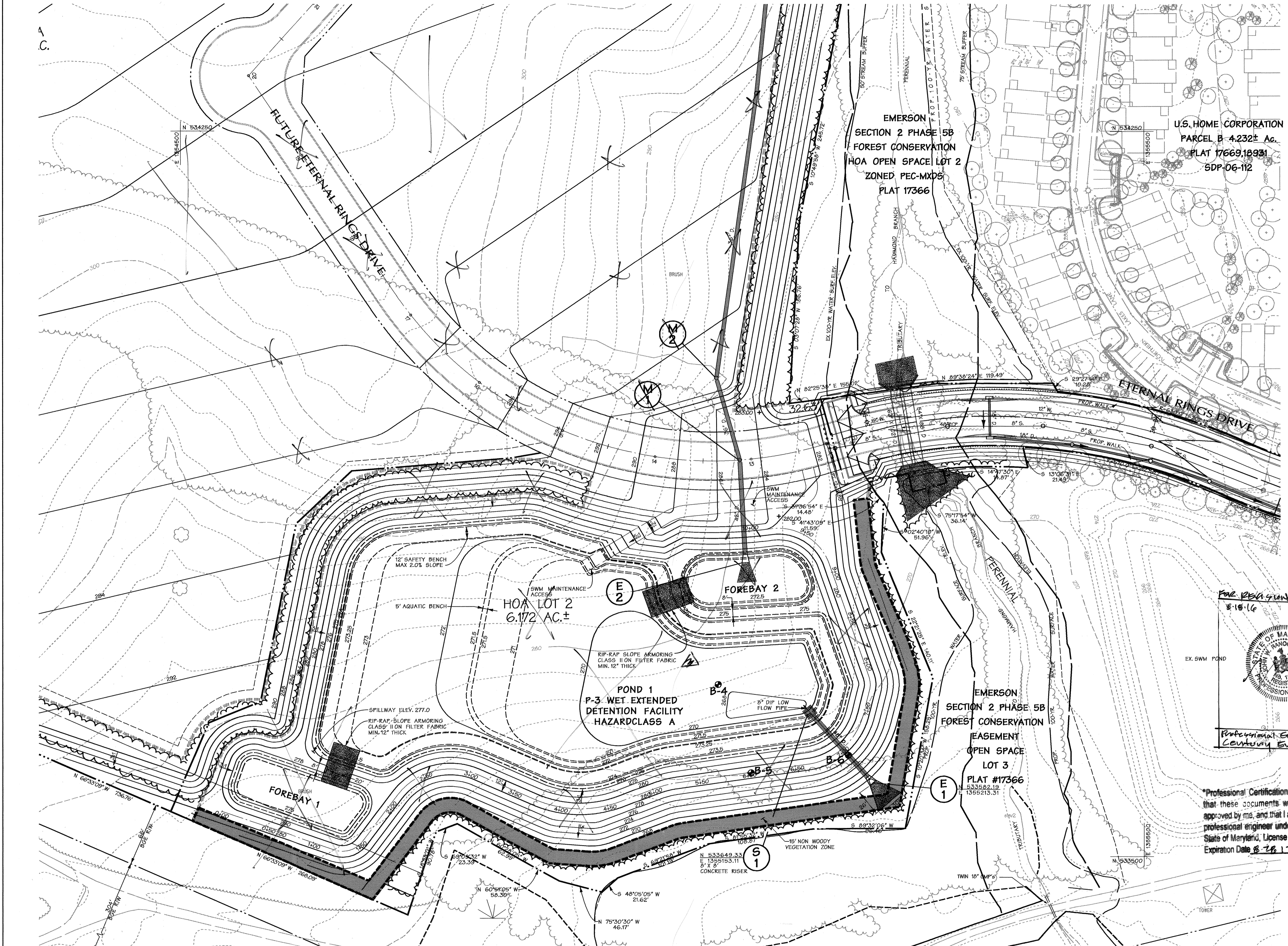
EMERSON
SECTION 3 - AREA 7 - PARCEL A
"FUTURE EMPLOYMENT USE"
OWNER/DEVELOPER:
EMERSON DEVELOPMENT IX LLC
ONE TEXAS STATION CT. SUITE 200
TIMONIUM, MD 21093
(443) 689-8000

DMW
DAFT MCCUNE WALKER INC
200 EAST PENNSYLVANIA TOWSON, MD 21286
P. 410 296 3333 F. 410 296 4705 WWW.DMW.COM
A TEAM OF LAND PLANNERS, LANDSCAPE ARCHITECTS, ENGINEERS, SURVEYORS & ENVIRONMENTAL PROFESSIONALS

EMERSON SEC. 3 AREA 7 PART OF 837
5289/330 15 MDX-3 47 6th 6069.03
E-15 7520000

TITLE PHASE 1, STAGE 1 SWM ESD PLANTING PLAN, SPECIFICATIONS & D.A. MAP

Des. By: GDT Scale: AS SHOWN Proj. No. 95054.81
Drn. By: RC/GO Date: 3/24/14
Chk. By: Approved 17b of 30



SWM MANAGEMENT FACILITY NO. 1
POND DESIGN FLOW SUMMARY PROPOSED CONDITIONS

STRUCTURE TYPE	EXTENDED DETENTION (P-3)
WATER QUALITY TYPE	WET POOL
STRUCTURE CLASSIFICATION	7'
WATERSHED AREA TO FACILITY (SWM)	0.0469 SQ. MI.
LEVEL OF MANAGEMENT REQUIRED	1-YR
LEVEL OF MANAGEMENT PROVIDED	1-YR
TOP WIDTH PROVIDED	12'
MINIMUM HEIGHT OF FILL	14"
FREEBORD REQUIRED	2.0'
FREEBORD PROVIDED	4.1'
WATER QUALITY VOL. WQY REQUIRED (Ac-ft)	1.80
WATER QUALITY VOL. WQY PROVIDED (Ac-ft)	2.37
RECHARGE REQUIRED (% AREA METHOD, Rev) (Ac)	N/A
RECHARGE PROVIDED (Ac)**	N/A
CHANNEL PROTECTION VOL. CPY REQUIRED (Ac-ft)	2.82
CHANNEL PROTECTION VOL. CPY PROVIDED (Ac-ft)	3.23
EXISTING 1-YR STORM Q AT DESIGN POINT (cfs)	3.60
PROPOSED 1-YR STORM Q AT DESIGN POINT (cfs)	3.60
EXISTING 10-YR STORM Q AT DESIGN POINT (cfs)	65.40
PROPOSED 10-YR STORM Q AT DESIGN POINT (cfs)	33.10
EXISTING 100-YR STORM Q AT DESIGN POINT (cfs)	136.10
PROPOSED 100-YR STORM Q AT DESIGN POINT (cfs)	107.50
WQY WATER SURFACE ELEV. - NORMAL POOL	272.20
CPY WATER SURFACE ELEV.	273.75
10 YR WATER SURFACE ELEV.	274.87
100 YR WATER SURFACE ELEV.	276.54
RISER CREST ELEV.	274.50
100 YR CLOGGED WATER SURFACE ELEV.	276.29
POND VOLUME BELOW 100 YR CLOGGED WSE (Ac-ft)**	11.32
FOREBAY VOLUME PROVIDED (Ac-ft)	0.45
FOREBAY VOLUME REQUIRED (Ac-ft)	0.55

* WQY IS PROVIDED IN THE WET POND PORTION OF THE FACILITY.
 ** CPY IS PROVIDED IN THE FACILITY (AS MANAGEMENT OF THE 1-YEAR STORM) ABOVE THE WQY STORAGE VOLUME, THE 10-YEAR AND 100-YR STORMS ARE MANAGED BY THE FACILITY.
 *** RECHARGE TO BE PROVIDED AT TIME OF FUTURE DEVELOPMENT
 **** ABOVE WET POOL ELEVATION
 SEE SHEETS 19-20 FOR POND 1 DETAILS

Legend

EX CURB & GUTTER	---
EX MAJOR CONTOURS	--- 400 ---
EX MINOR CONTOURS	--- 402 ---
EX STORM DRAIN	EX 21" R/C
EX SEWER	EX 8" S
EX WATER	EX 8" W
EXISTING TREE LINE	---
EXISTING WETLAND LIMIT	---
PROPERTY LINE	---
ROADWAY RIGHT-OF-WAY	---
PROPOSED LOT LINE	---
PROPOSED EASEMENT	---
PROPOSED CURB & GUTTER	---
PROPOSED SIDEWALK	---
PROP. STORM DRAIN	18" R/C
PROP. SEWER	8" S
PROP. WATER	4" W
PROP. MAJOR CONTOURS	400
PROP. MINOR CONTOURS	402
SOIL BORING	⊙ B-4
NON WOODY VEGETATION ZONE	---

DATA SOURCES
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 Zoning information shown hereon provided by Howard County Department of Planning and Zoning, adapted by Howard County Council February 2, 2004.
 Wetland and stream limits shown hereon were originally approved by Maryland Department of the Environment and the US Corps of Engineers in April 2001 and re-verified by these agencies in October 2008.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

Walter J. ... 2-23-12
 CHIEF, BUREAU OF HIGHWAYS DATE

HOWARD COUNTY DEPT. OF PLANNING & ZONING

Robert ... 2/28/12
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Robert ... 3/1/12
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Professional Eng. # 10951
 Century Engineering

1-24-11	AS BUILT SUBMISSION	
8-17-10	ROAD NO. 1 REMOVED	
2-10-10	UPDATE OWNER/DEVELOPER INFO.	
Date	No.	Revision Description

EMERSON
 SECTION 3 - AREA 7 - PARCEL A
 "Future Employment Use"

OWNER/DEVELOPER:
 EMERSON DEVELOPMENT IX LLC
 ONE TEXAS STATION COURT, SUITE 200
 TIMONIUM, MD 21093 (443) 687-8000

DMW
 Data McCune-Walker, Inc.
 300 East Pennsylvania Avenue
 Poolesville, Maryland 21086
 (410) 296-3333
 Fax 296-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

SECTION NAME	EMERSON	SECTION/AREA	SEC 3 AREA 7	LOT/PARCEL #	PART OF B37
RAT # ON LOT	47	ZONE	MXD-3	BLK/DEPT	61H
WATER CODE	E-15	SEWER CODE	7520000	OWNER TRACT	6069.03

TITLE	FINAL PLAN STORMWATER MANAGEMENT PLAN FACILITY NO. 1		
Des By	TJC	Scale	1"=50'
Drn By	JSS	Date	11/17/11
Chk By	JDF	Approved	
Proj. No.	95054.W2		
		18 of 30	

AS-BUILT CERTIFICATION FOR PSWM
 Note: There is no "AS-Built" information provided on this sheet. IN REGARD TO SWM, BUT POLES AND UTILITIES BY OTHERS SUBJECT HAVE WITH REF #10868 1-24-17 OPERATION, MAINTENANCE AND INSPECTION

Professional Certification, I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18868, Expiration Date 10-18-2018 (FOR SWM AS BUILT ONLY)



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

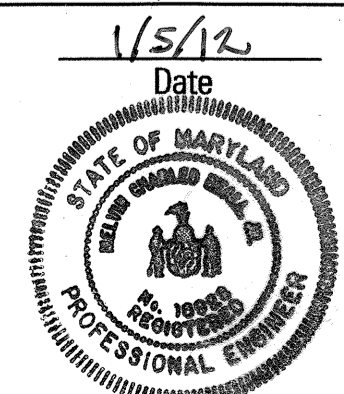
John L. ... 2/18/12
 HOWARD SOIL CONSERVATION DISTRICT DATE

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

Robert Jenkins 1/5/12
 SIGNATURE OF DEVELOPER PRINT NAME BELOW SIGNATURE DATE

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

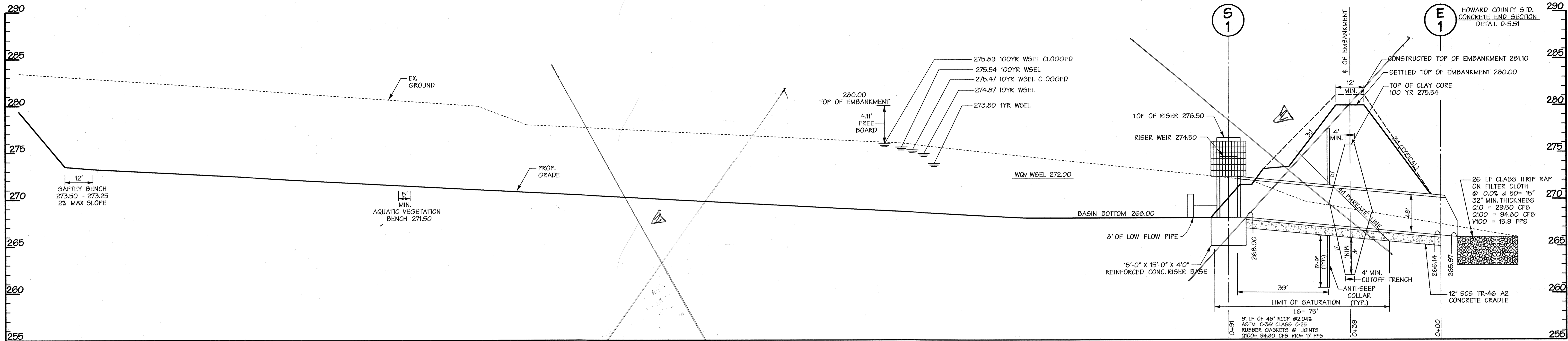
Melvin C. ... 1/5/12
 SIGNATURE OF ENGINEER PRINT NAME BELOW SIGNATURE DATE



Professional Eng. No. 10951

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 10951, EXPIRATION DATE: 5/13/12

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 STEPHEN JERRICK, No. 75102, 11-10-2013



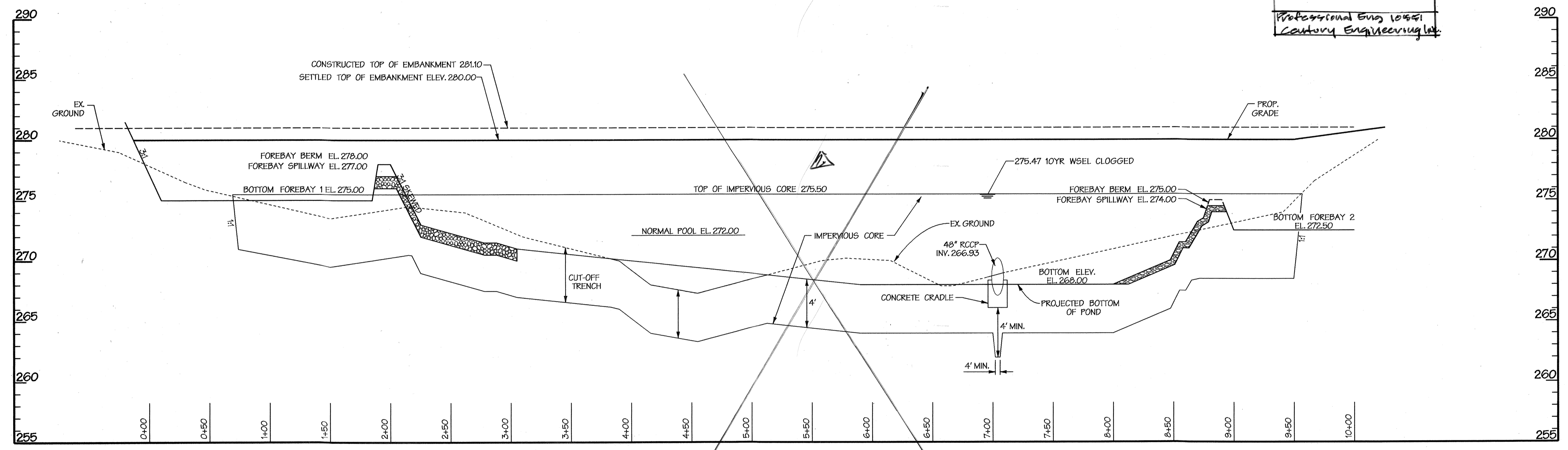
PROFILE THROUGH RISER AND PRINCIPLE SPILLWAY
 SCALE: HORIZ. 1" = 20'
 VERT. 1" = 5'

FOR REVISION #2 ONLY
 8-16-16

 Professional Eng 10/5/17
 Century Engineering Ltd.

*Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 10551, Expiration Date 8-28-17.

DATA SOURCES
 Existing topography shown herein is a result of an aerial survey provided by Air Survey Corporation dated 1995 supplemented with field run information performed by Darl McCune Walker, Inc. dated 2010.
 Property boundary shown herein is a result of field run monumented boundary survey performed on or about June 25, 1999 by Darl McCune Walker, Inc.
 Soils if shown provided by Soil Data Mart dated 2005 published by Natural Resources Conservation Service (NRCS)
 Zoning information shown herein provided by Howard County Department of Planning and Zoning, adopted by Howard County Council February 2, 2004.
 Wetland and stream limits shown herein were originally approved by Maryland Department of the Environment and the US Corps of Engineers in April 2001 and re-verified by these agencies in October 2009.



PROFILE ALONG CENTERLINE OF EMBANKMENT
 SCALE: HORIZ. 1" = 50'
 VERT. 1" = 5'

AS-BUILT CERTIFICATION FOR PSWM
 Note: There is no "AS-Built" information provided on this sheet in connection to SWM, BUT ROADS AND UTILITIES BY OTHERS. ROBERT HURWITZ PE# 18868 1-24-17

*Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18868, Expiration Date 10-08-2018 (FOR SWM AS-BUILT ONLY)

Robert Hurwitz
 2/7/17

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

 John R. Robertson
 HOWARD SOIL CONSERVATION DISTRICT
 DATE 2/8/12

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

Robert Leaking
 DATE 1/5/12

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

Stephen Terrick, No. 39141, 11-10-2012
 DATE 1/5/12

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 6228, EXPIRATION DATE: 5/13/12.

Darl McCune Walker
 DATE 1/5/12

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 STEPHEN TERRICK, No. 39141, 11-10-2012

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

 CHIEF, BUREAU OF HIGHWAYS
 DATE 2-23-12

HOWARD COUNTY DEPT. OF PLANNING & ZONING

 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE 2/28/12

CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE 3/16/12

Date	No.	Revision Description
1/24/17		AS-BUILT SUBMISSION
8-17-16		Facility Not Properly removed
2-10-14		UPDATE OWNER/DEVELOPER INFO.

EMERSON
 SECTION 3 - AREA 7 - PARCEL A
 "Future Employment Use"
 OWNER/DEVELOPER:
 EMERSON DEVELOPMENT IX LLC
 ONE TEXAS STATION COURT, SUITE 200
 TIMONIUM, MD 21093 (443) 689-8000

DMW
 Darl McCune Walker, Inc.
 300 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3333
 Fax: 296-4705
 A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

SECTION NAME	SECTION/AREA	LOT/PARCEL #	PART OF 837
EMERSON	SEC.3 AREA 7		

PLAT OR LOT #	ZONE	TAX/ZONE MAP	DIST. DISTRICT	DISTRICT TRACT
5289/330	15	MXD-3	47	6TH

WATER CODE	SEWER CODE	7520000
E-15		

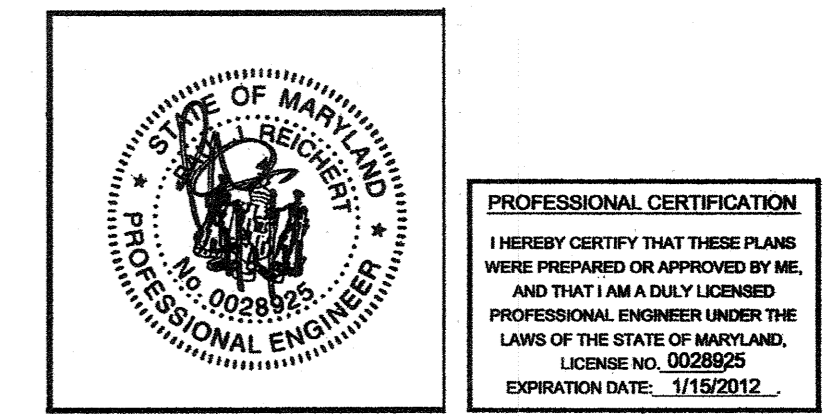
TITLE
 FINAL PLAN
 STORMWATER MANAGEMENT
 PROFILES FOR SWM FACILITY NO.1

Des By	TJC	Scale	As Noted	Proj. No.	95054.W
Drn By	JSS	Date	11/17/11		
Chk By	JDF	Approved			

19 of 30

AS-BUILT CERTIFICATION FOR PSWM
 Note: There is no "AS-BUILT" information provided on this sheet in regard to SWM, BUT RIPS AND UTILITIES BY OTHERS. ROBERT JENKINS, PE # 10066, 1-24-17

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 10066, Expiration Date 10-08-2018 (FOR SWM AS-BUILT ONLY)



PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE PLANS 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. 10066, EXPIRATION DATE: 1/15/2012.

FOR REINFORCEMENT DESIGN ONLY

FOR REINFORCEMENT #2 ONLY
 B.18.16

Professional Engr. 10551
 Century Engineering

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 10551, Expiration Date 02-28-17.

DATA SOURCES

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 Wetland and stream limits shown hereon were originally approved by Maryland Departments of the Environment and the US Corps of Engineers in April 2001 and re-verified by these agencies in October 2009.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

Walter M. M... 2-23-12
 CHIEF, BUREAU OF HIGHWAYS DATE

Robert Jenkins 2/28/12
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Robert Jenkins 3/01/12
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION DESCRIPTION
8/1/10	1	FACILITY NOT PERMITS REMOVED
2-10-14	2	UPDATE OWNER/DEVELOPER INFO
1/24/17	3	AS BUILT SUBMISSION

EMERSON
 SECTION 3 - AREA 7 - PARCEL A
 "Future Employment Use"

OWNER/DEVELOPER:
 EMERSON DEVELOPMENT 1X LLC
 ONE TEXAS STATION COURT, SUITE 200
 TIMONIUM, MD 21093 (443) 680-8000

DMW
 Daft McCune Walker, Inc.
 300 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3333
 Fax: 296-4706

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

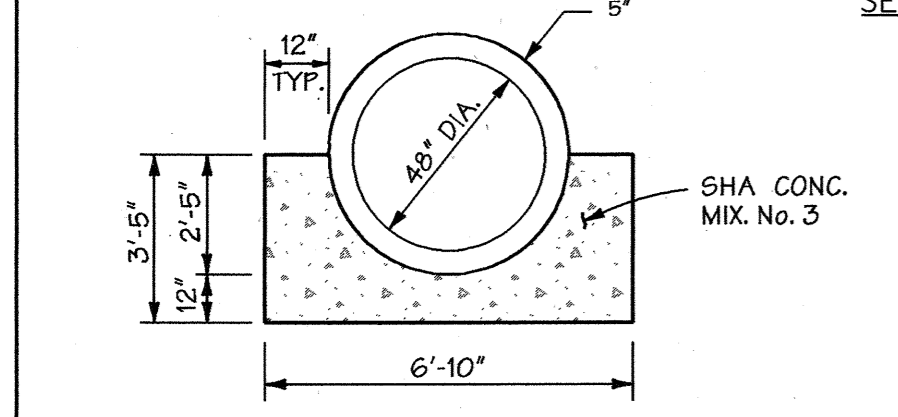
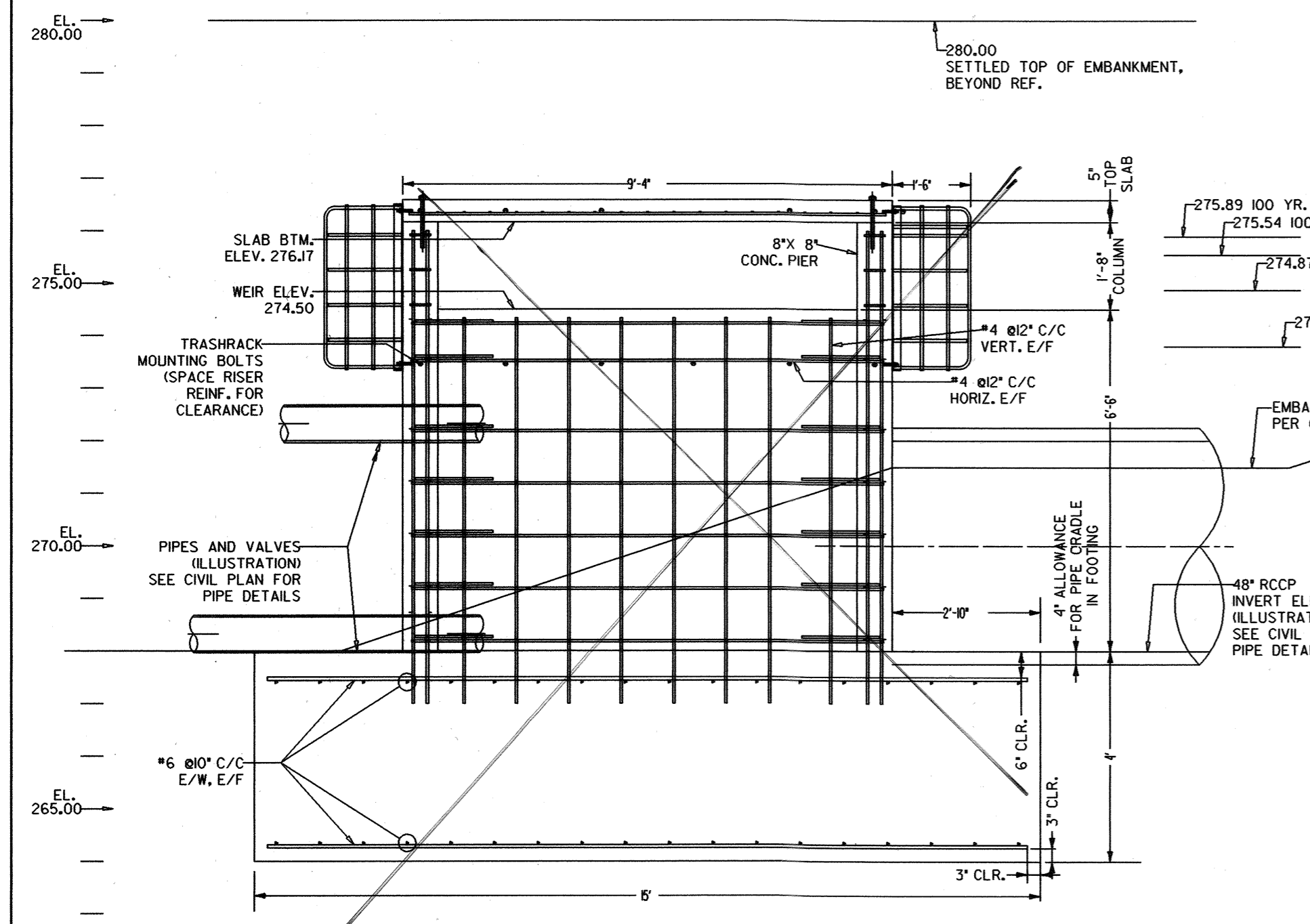
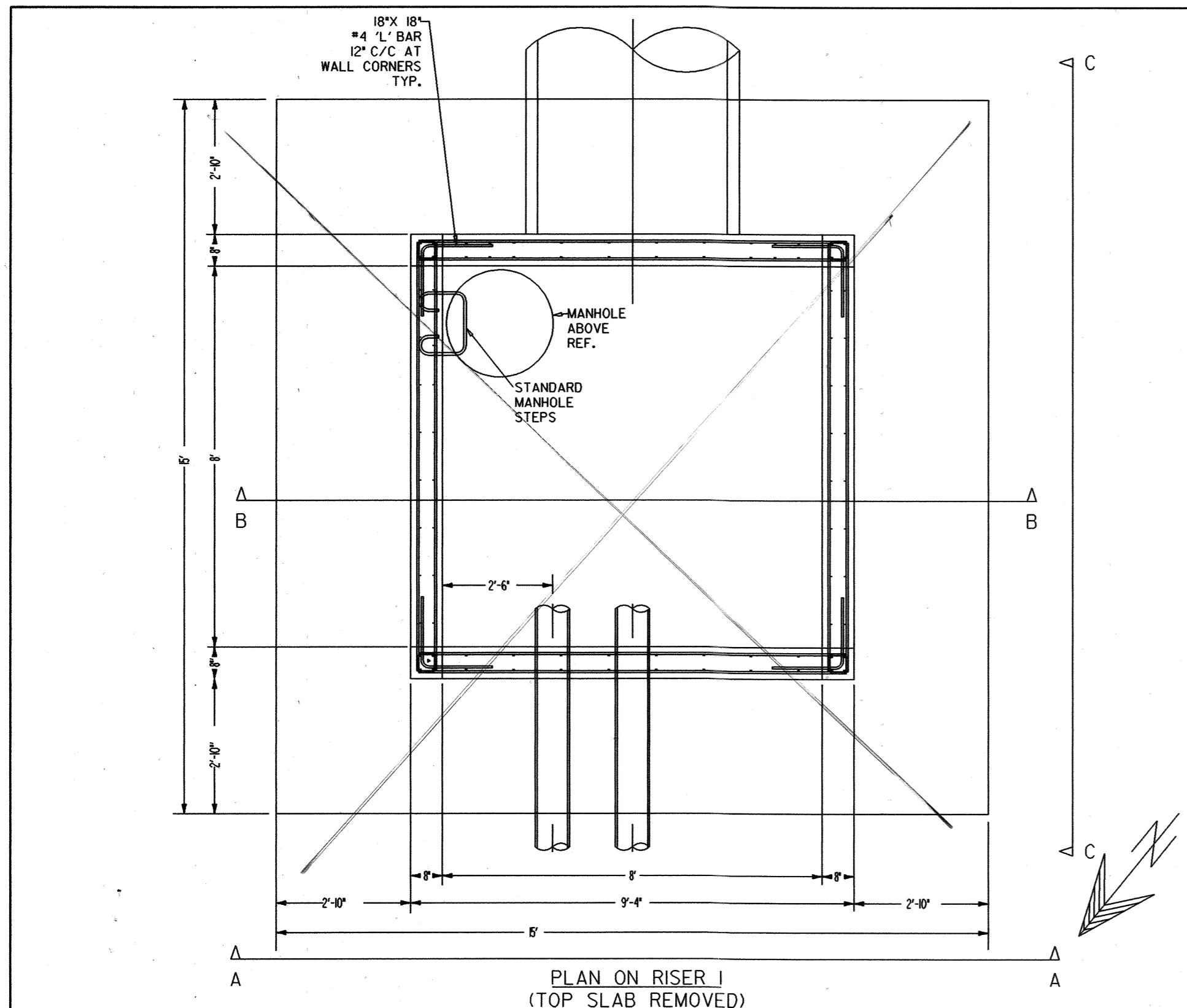
SECTION	AREA	DATE	NO.
EMERSON	SEC.3 AREA 7	1/5/17	7

TITLE
 FINAL PLAN
 STORMWATER MANAGEMENT
 DETAILS FOR SWM FACILITY NO. 1

Des By	Scale	Proj. No.
TJC	AS NOTED	95054.W2
Dwn By	Date	
JSS	10/19/11	
Chk By	Approved	

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 10551, EXPIRATION DATE: 2/28/17.

Stephen Zerkow 1/5/17
 PROFESSIONAL ENGR. NO. 10551



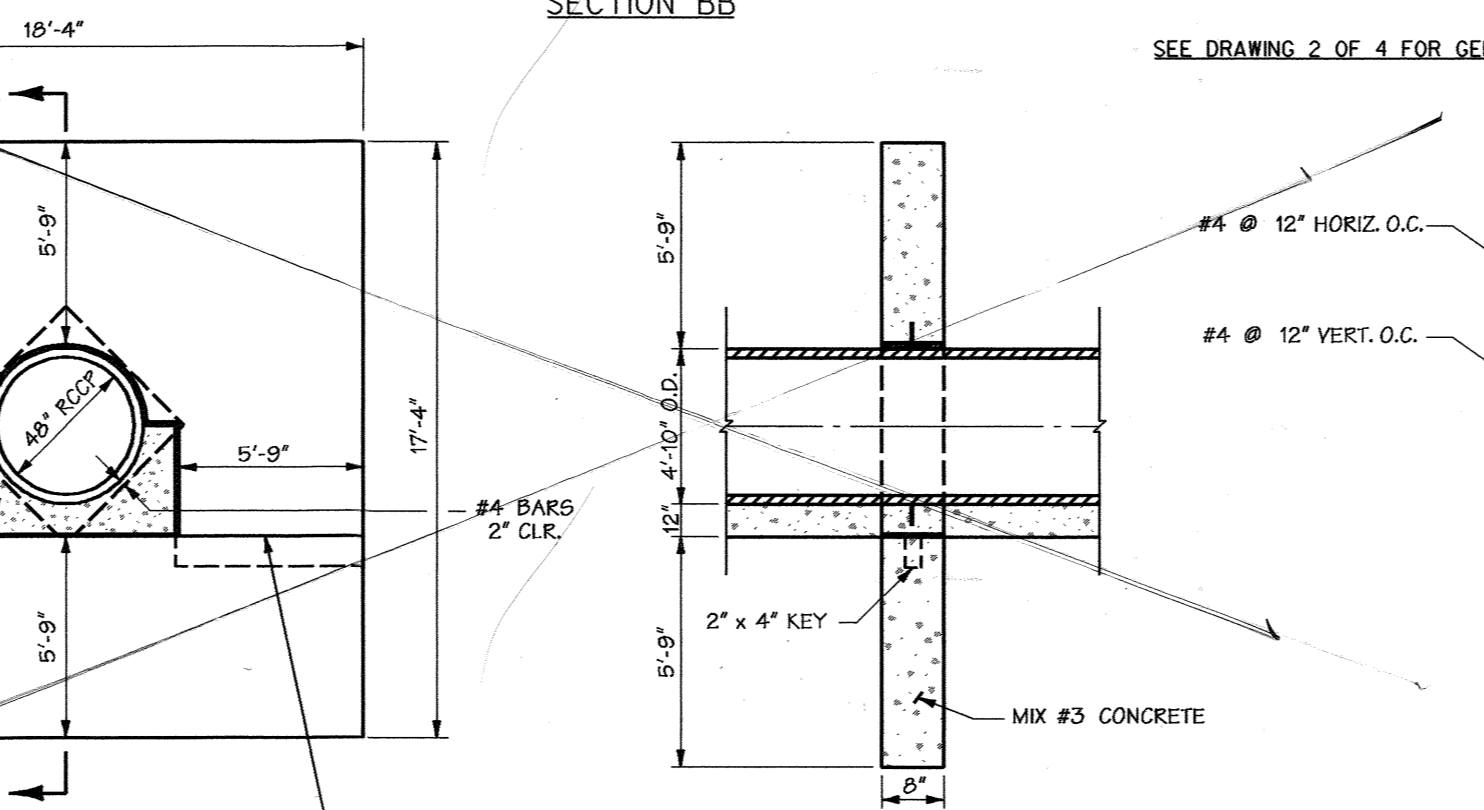
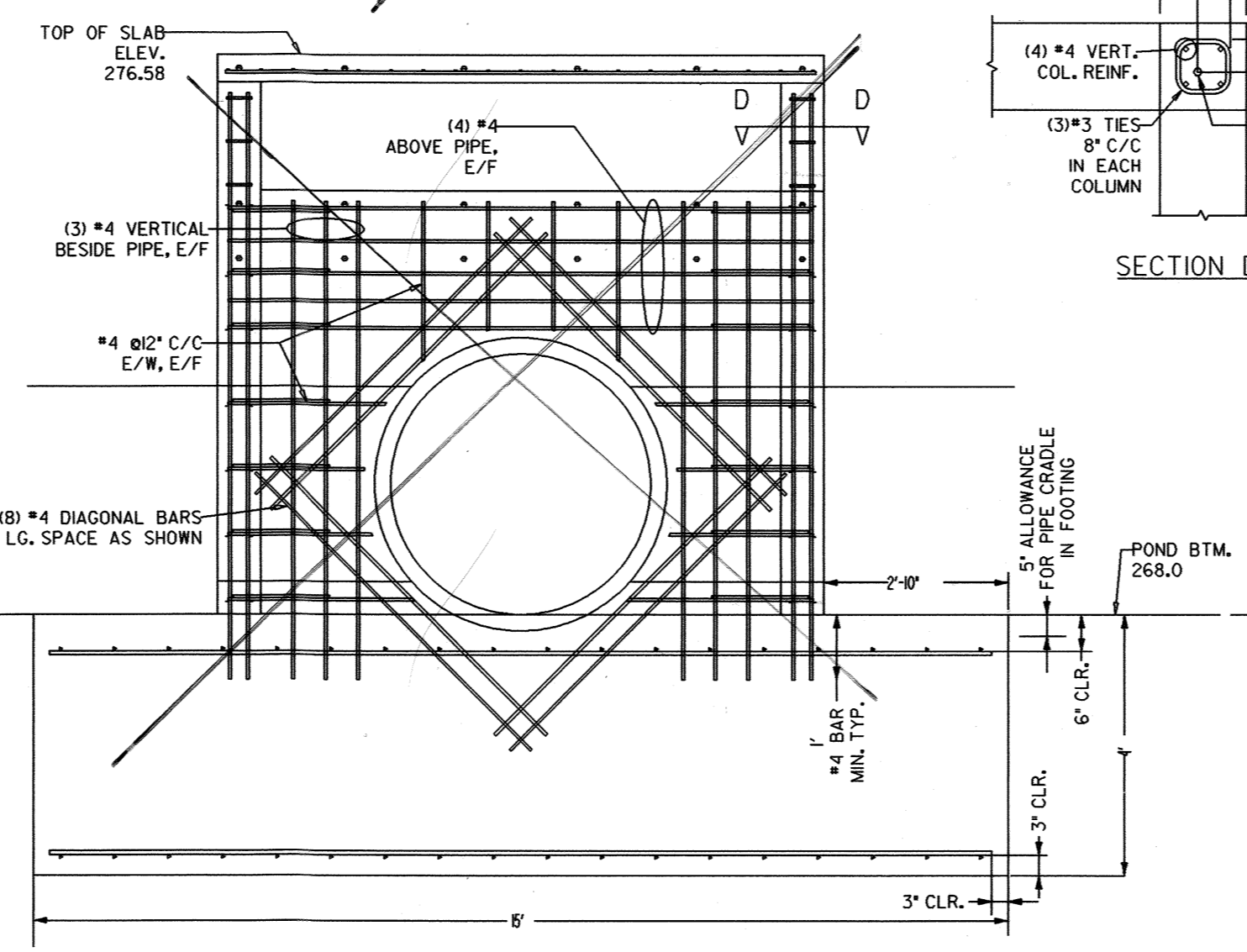
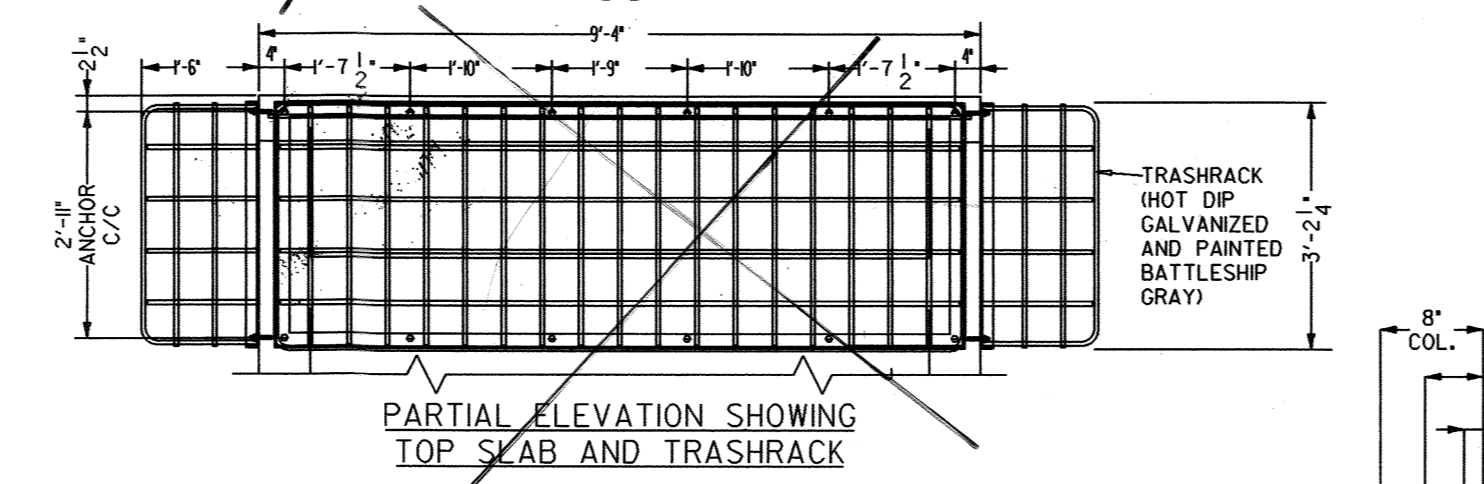
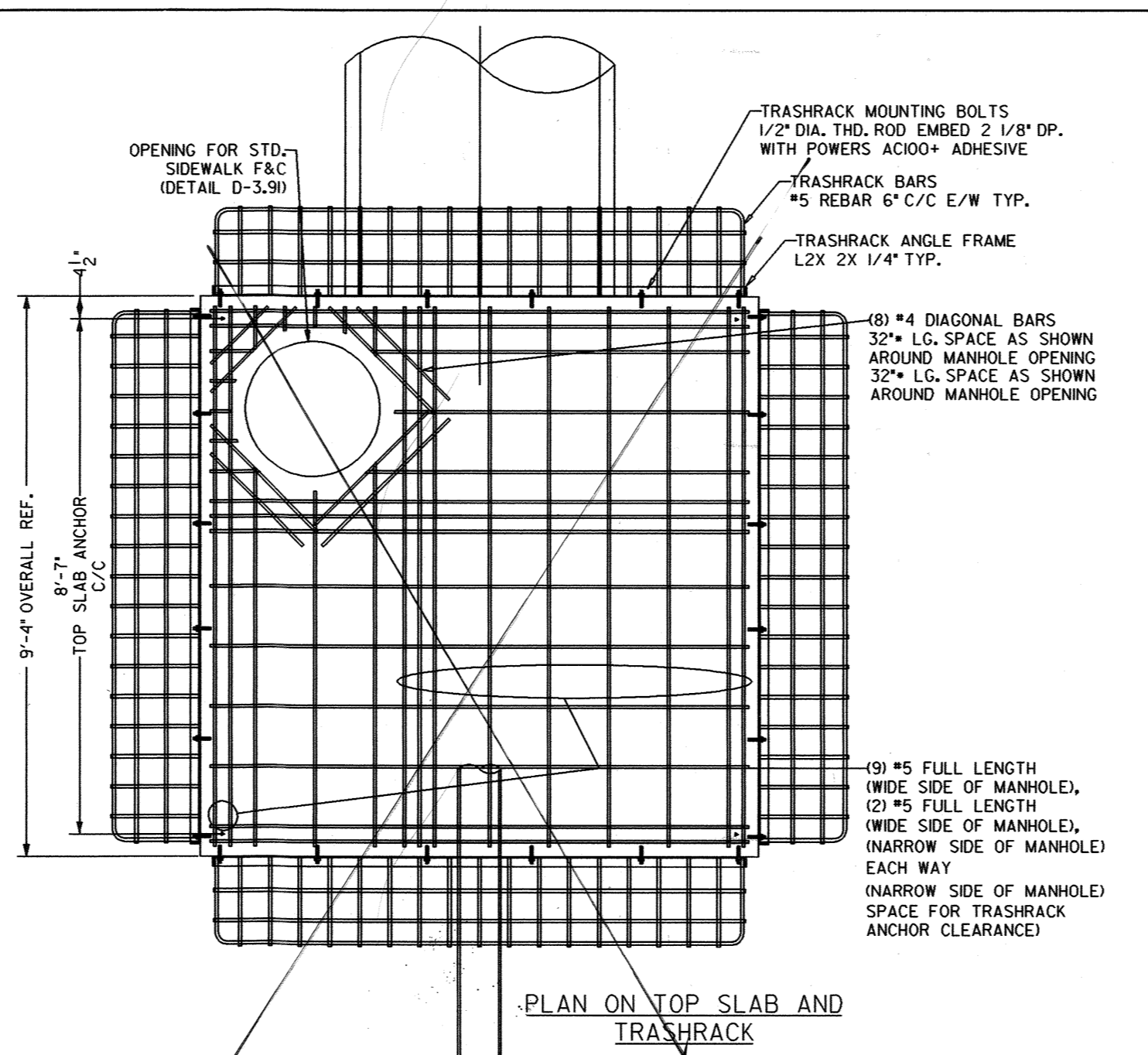
CONCRETE CRADLE
 NOT TO SCALE

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER PONDS (P-1 THROUGH P-5)

- Facility shall be inspected annually and after major storms. Inspections shall be performed during wet weather to determine if the pond is functioning properly.
- Top and side slopes of the embankment shall be mowed a minimum of two (2) times per year, once in June and once in September. Other side slopes and maintenance access shall be mowed as needed.
- Debris and litter shall be removed during regular operations and as needed.
- Visible signs of erosion in the pond as well as the rip rap or gabion outlet area shall be repaired as soon as it is noticed.

Non-Routine Maintenance:

- Structural components of the pond such as the dam, the riser, and the pipes shall be repaired upon detection of any damage. The components shall be inspected during routine maintenance operations.
- Sediment shall be removed from the pond, and forebay, no later than when the capacity of the pond, or forebay, is half full of sediment, or when deemed necessary for aesthetic reasons, upon approval from the Department of Public Works.

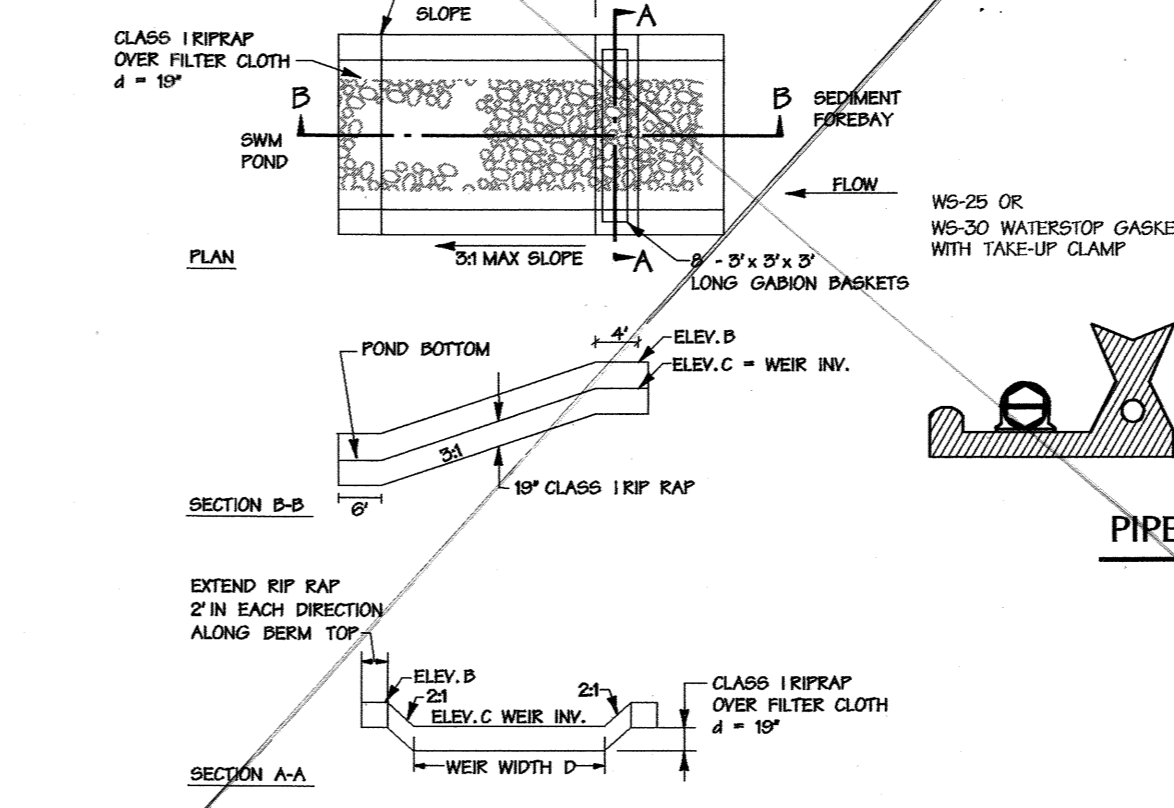


DEVELOPERS CERTIFICATE:
 I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL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

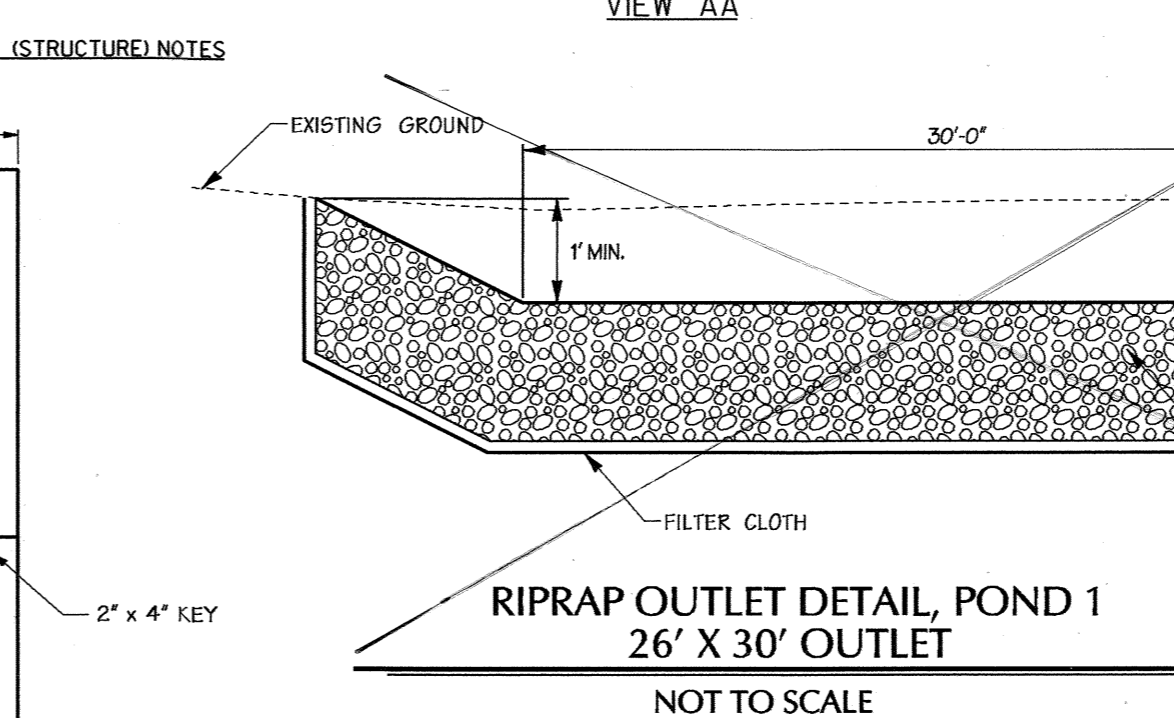
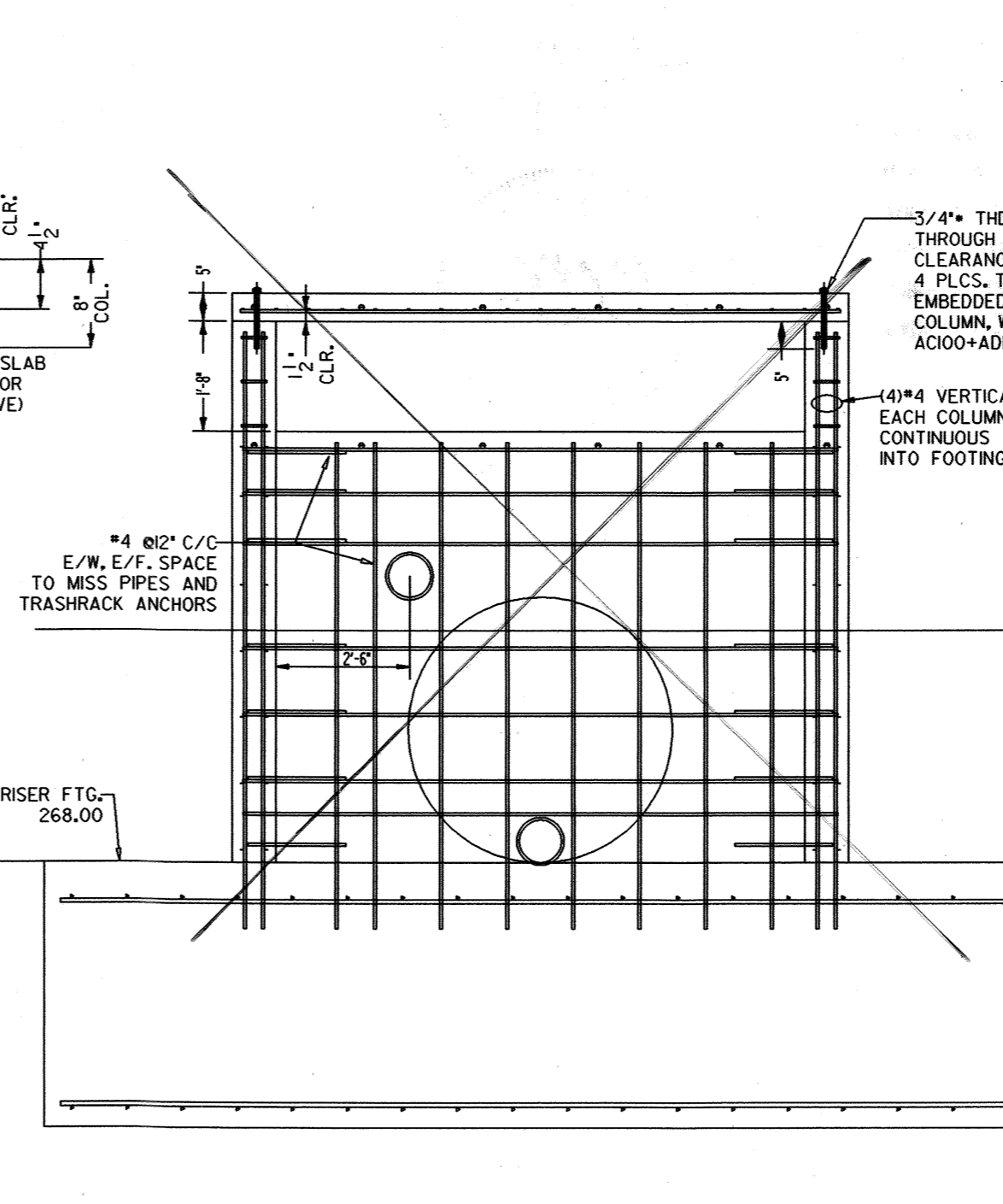
John R. Roberts 2/8/12
 SIGNATURE OF DEVELOPER DATE
 JOHN R. ROBERTS
 HOWARD SOIL CONSERVATION DISTRICT

Robert Jenkins 1/5/17
 SIGNATURE OF ENGINEER DATE
 ROBERT JENKINS

VARIABLE	FOREBAY 1	FOREBAY 2
B	275.00	278.00
C	274.50	271.00
D	20'	20'



SWM FOREBAY EMBANKMENT ARMORING DETAIL
 NOT TO SCALE



RIPRAP OUTLET DETAIL, POND 1
 26' X 30' OUTLET
 NOT TO SCALE

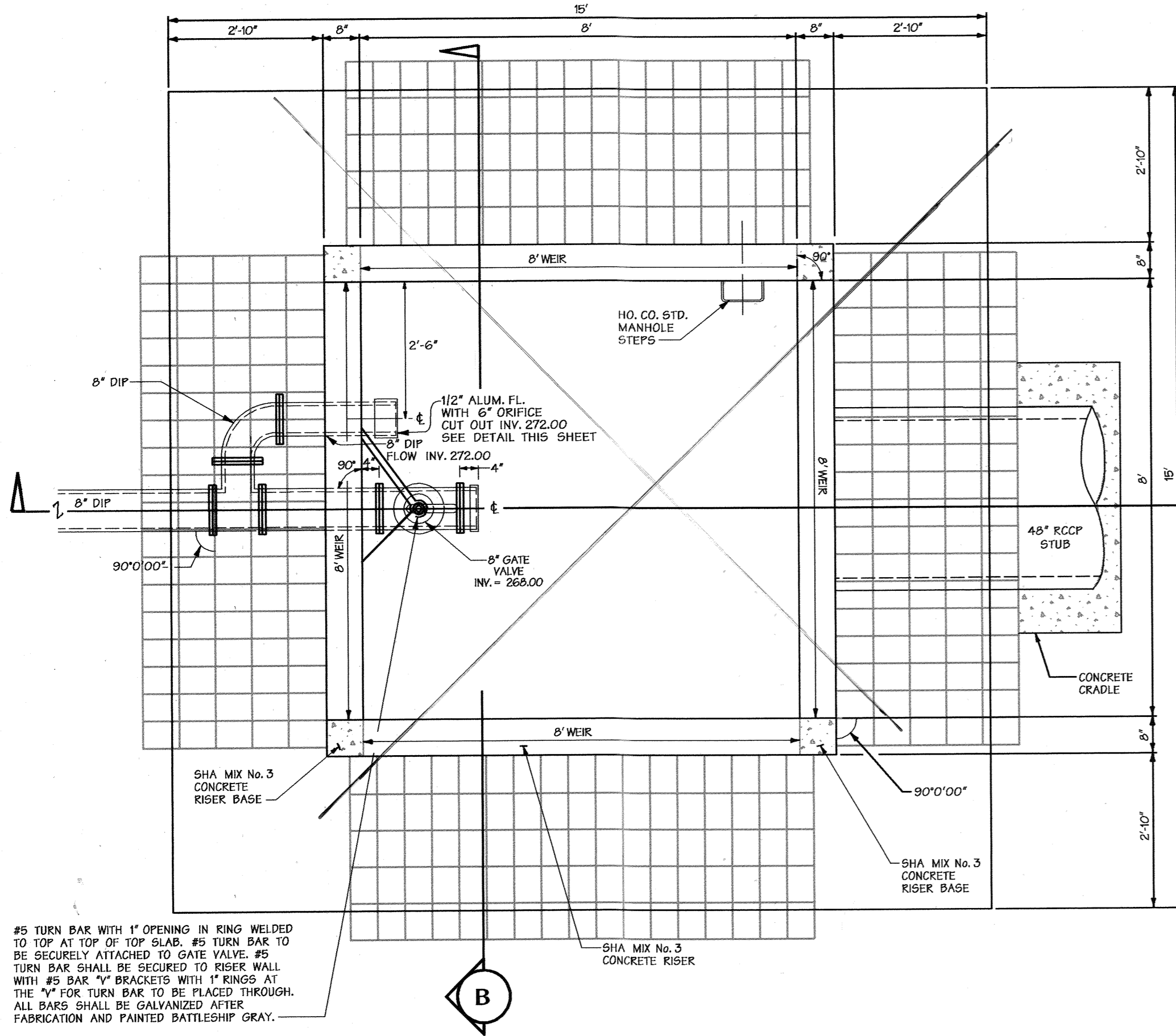
ENGINEERS CERTIFICATE:
 I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE. CONDITIONS THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.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

Stephen Zerkow 1/5/17
 SIGNATURE OF ENGINEER DATE
 STEPHEN ZERKOW, No. 10551, 11-10-2012

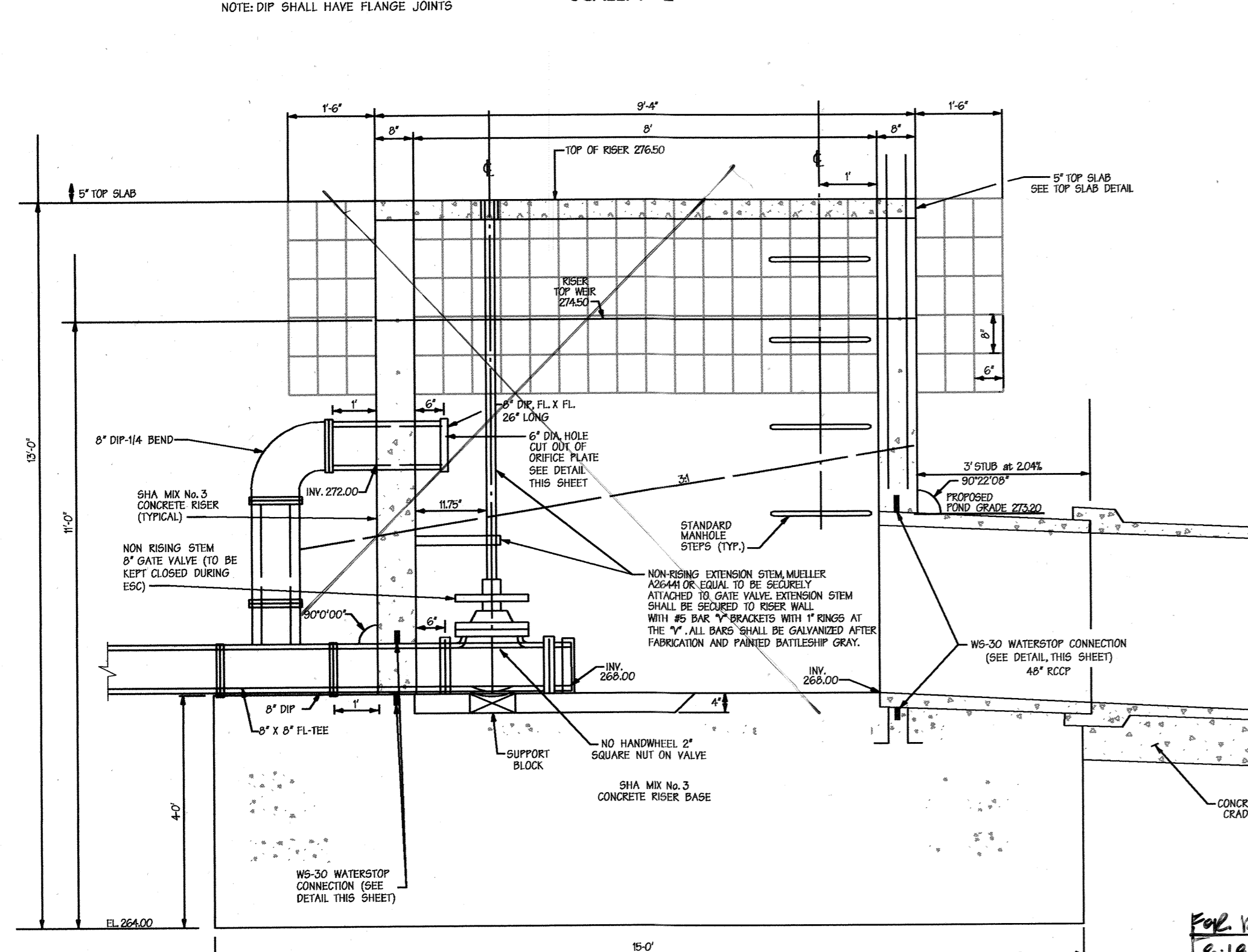
THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 STEPHEN ZERKOW, No. 10551, 11-10-2012

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 10551, EXPIRATION DATE: 2/28/17.

Stephen Zerkow 1/5/17
 PROFESSIONAL ENGR. NO. 10551



RISER PLAN (TOP SLAB REMOVED)
SCALE: 1"=2'



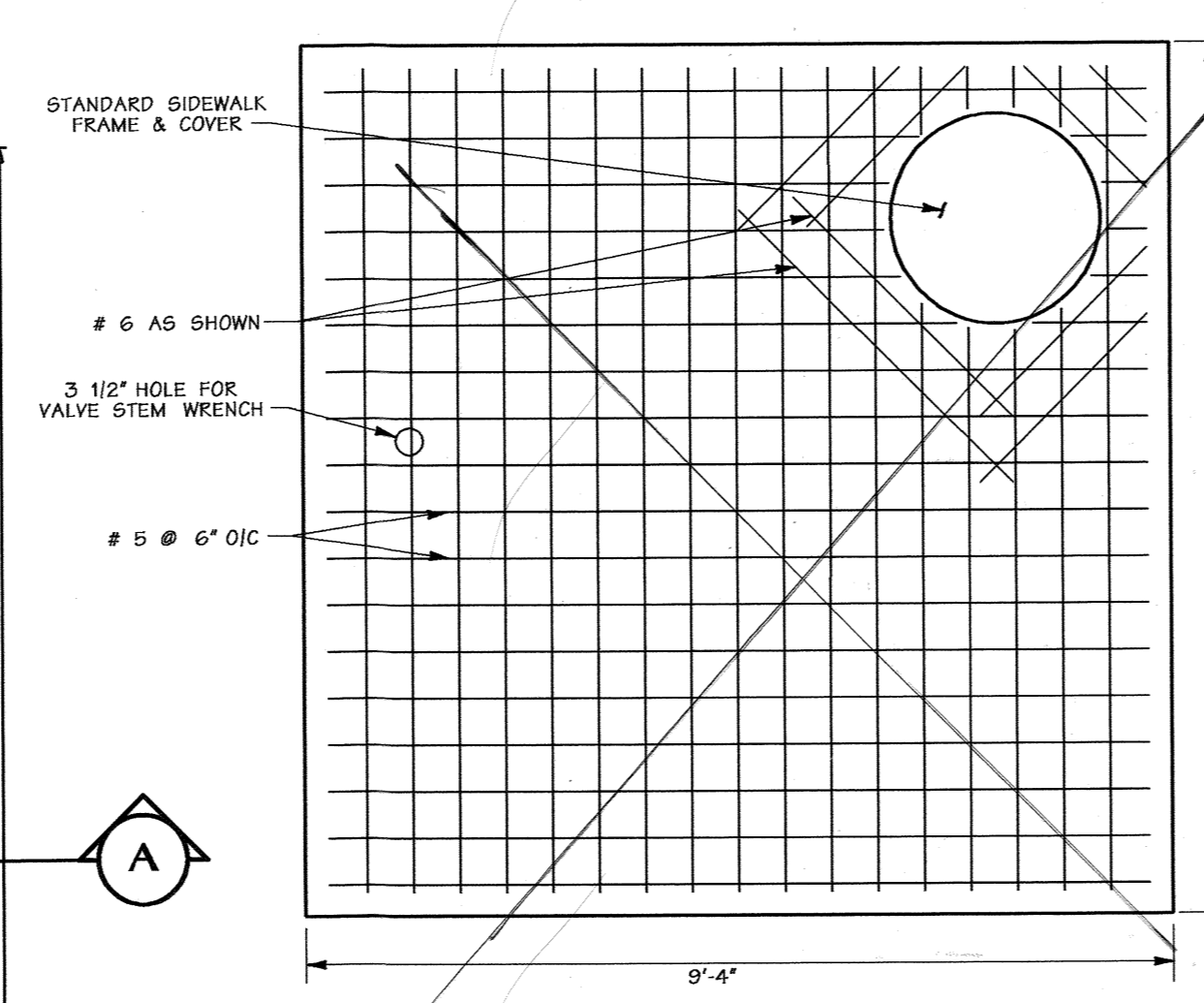
SECTION A
SCALE: 1"=2'

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER PONDS (P-1 THROUGH P-5)

- Facility shall be inspected annually and after major storms. Inspections shall be performed during wet weather to determine if the pond is functioning properly.
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Non-Routine Maintenance:

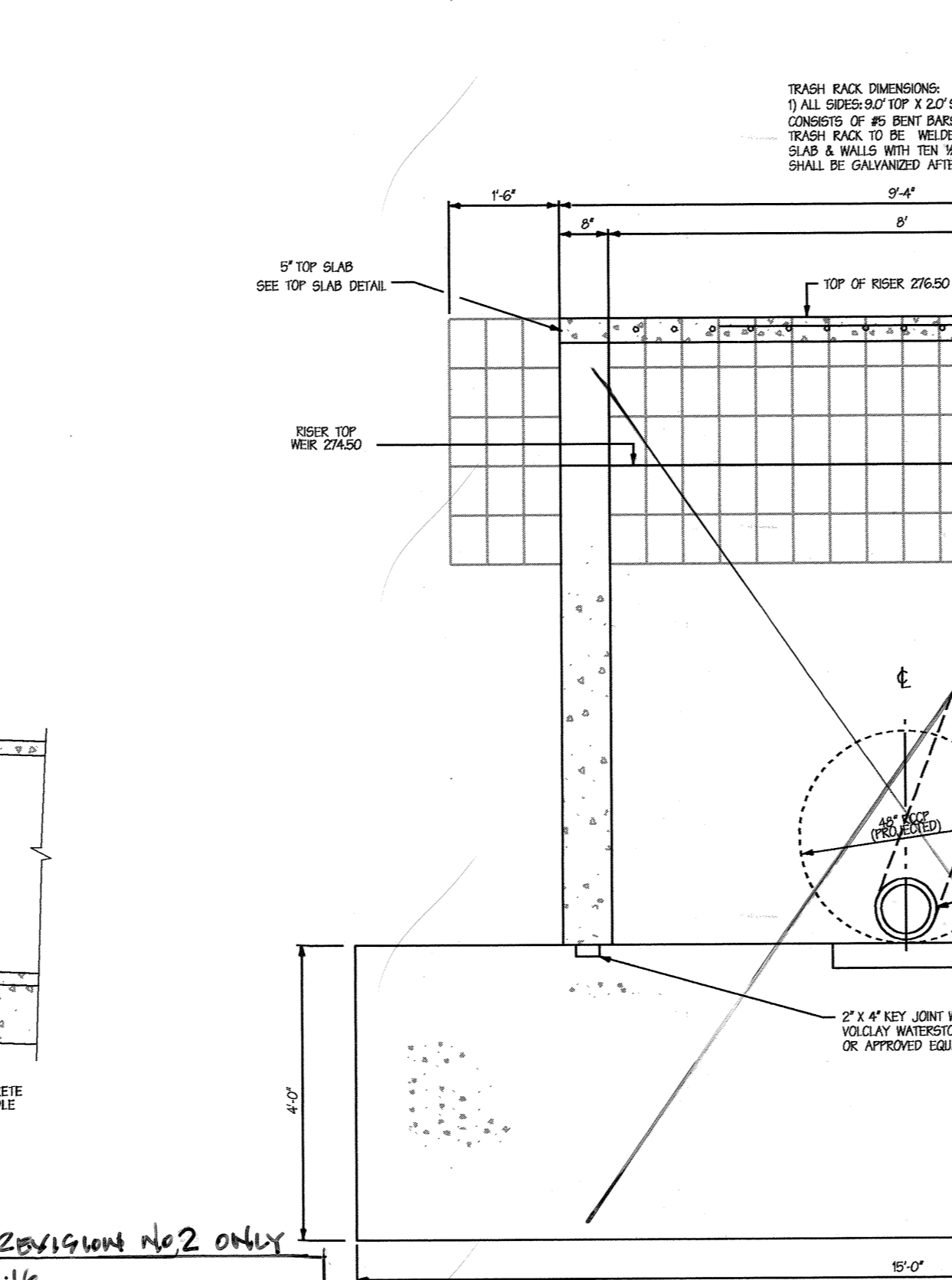
- Structural components of the pond such as the dam, the riser, and the pipes shall be repaired upon detection of any damage. The components shall be inspected during routine maintenance operations.
- Sediment shall be removed from the pond, and for any, no later than when the capacity of the pond, or for any, is half full of sediment, or, when deemed necessary for aesthetic reasons, upon approval from the Department of Public Works.



TOP SLAB
SCALE: 1"=2'
CAST IN PLACE

NOTES:

- BOLT TOP SLAB TO RISER WITH (4) 1/2" x 6" L.G. HEX. HEAD GALVANIZED BOLTS.
- THE SIDE OF THE SLAB CLOSEST TO THE FRAME AND COVER WILL LINE UP WITH THE SIDE OF THE RISER WITH STANDARD MANHOLE STEPS.

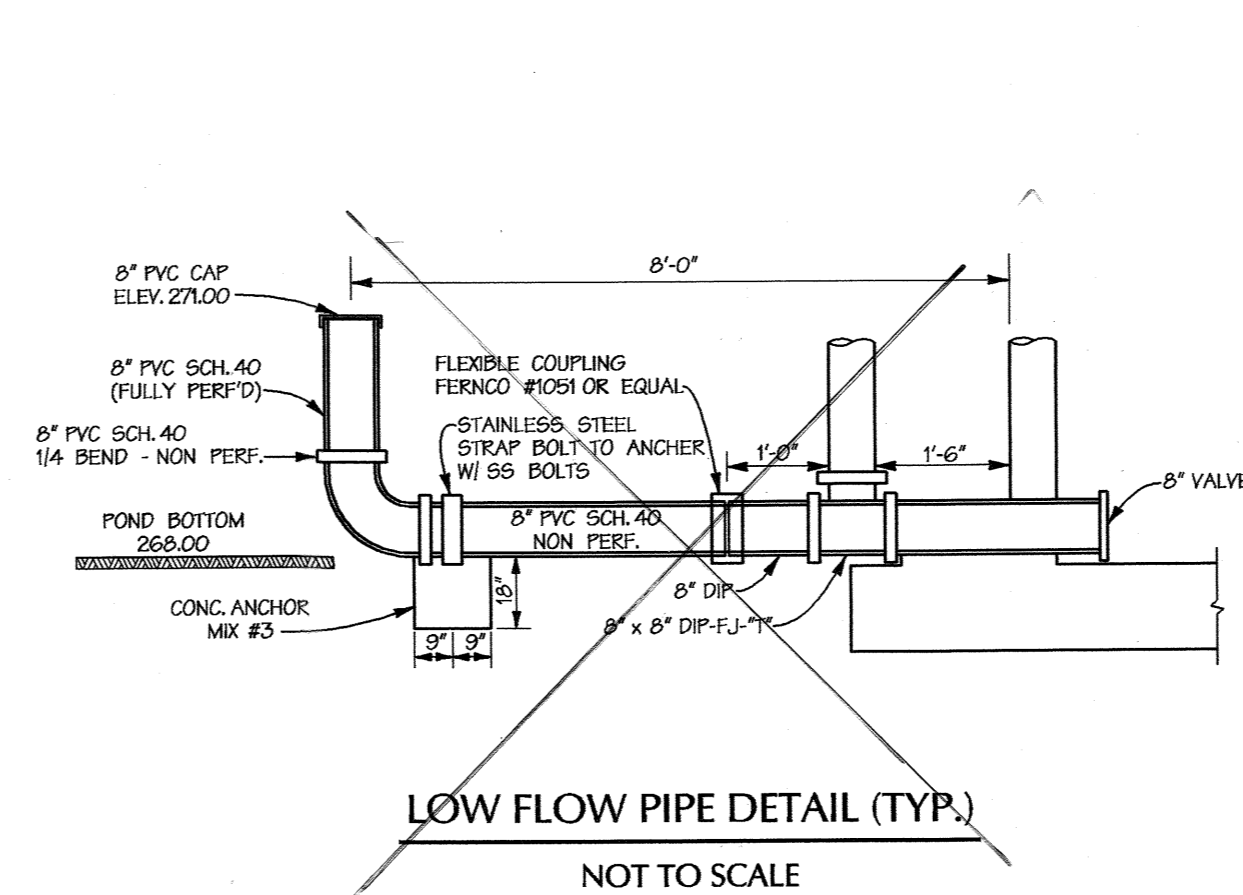


SECTION B
SCALE: 1"=2'
CAST IN PLACE

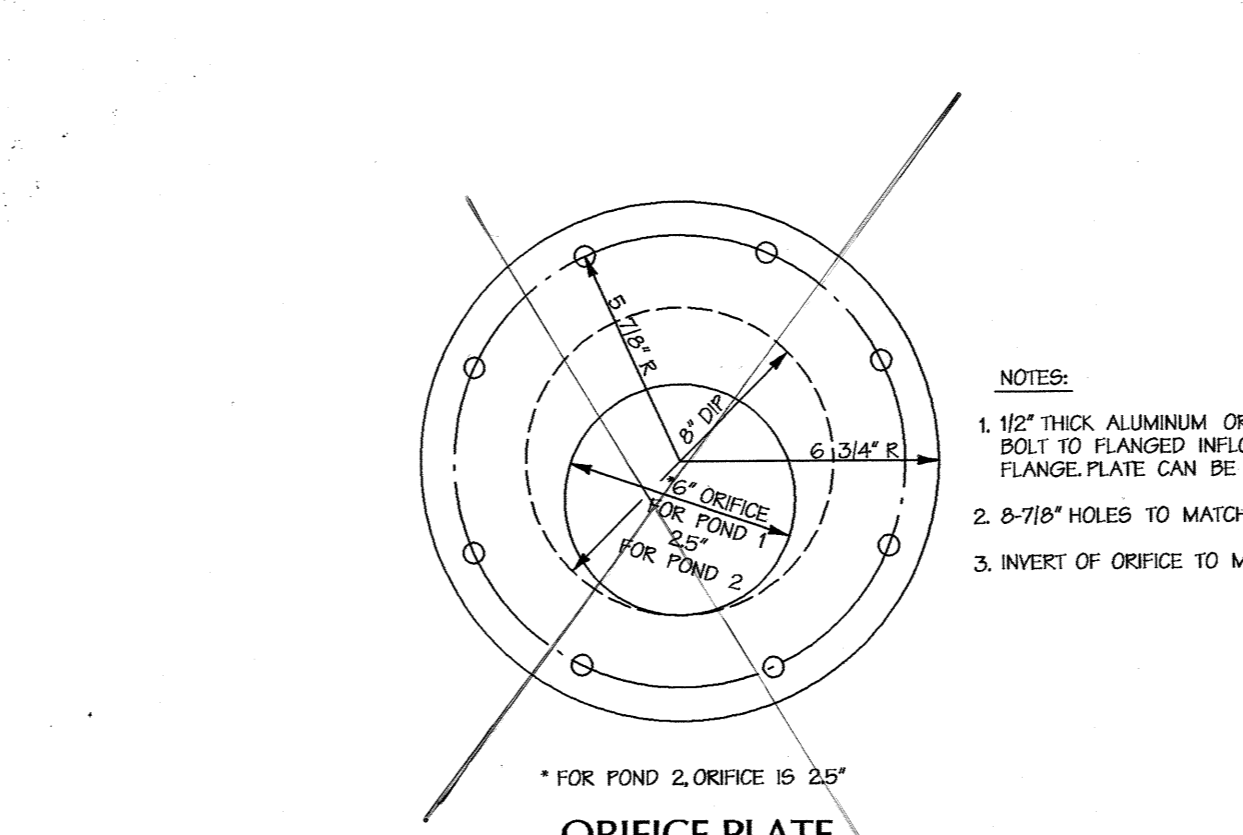
FOR REVISION NO. 2 ONLY
B-10-16

Professional Engr. 10951
Century Engineering

Professional Engr. 10951
Century Engineering



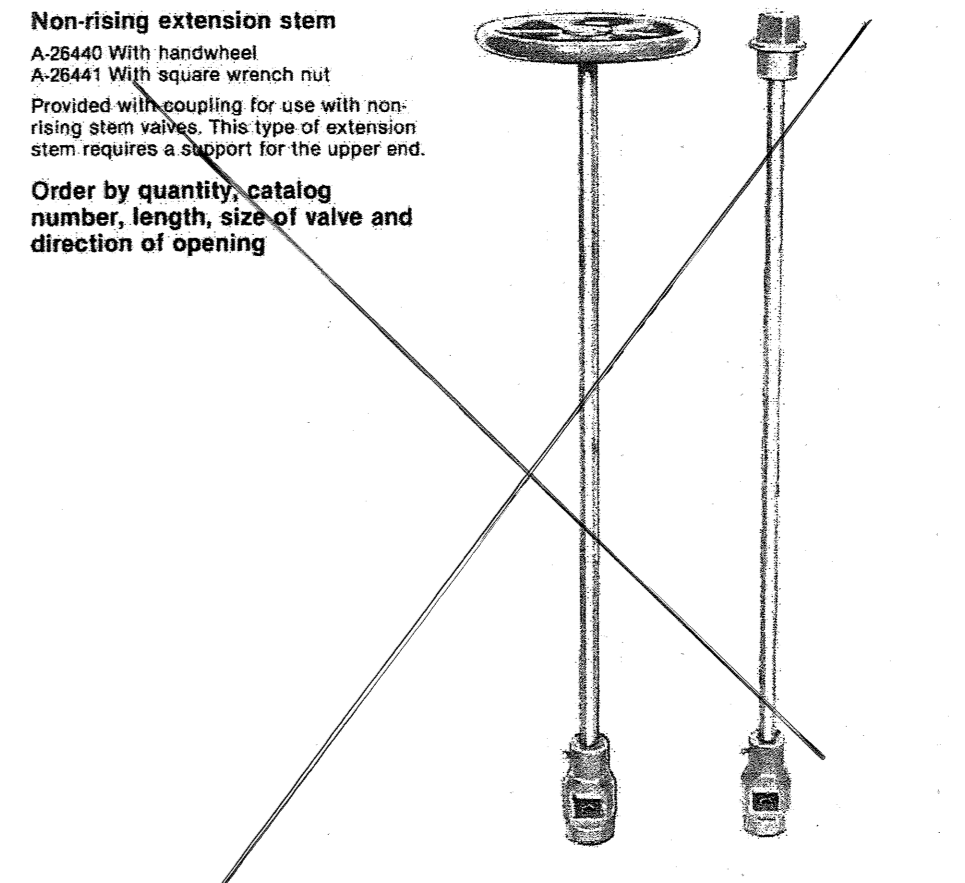
LOW FLOW PIPE DETAIL (TYP.)
NOT TO SCALE



ORIFICE PLATE
NOT TO SCALE

NOTES:

- 1/2" THICK ALUMINUM ORIFICE PLATE BOLT TO FLANGED INFLOW PIPE WITH 8" FLANGE. PLATE CAN BE SQUARE OR ROUND.
- 8-7/8" HOLES TO MATCH 8" DIP BOLT CIRCLE.
- INVERT OF ORIFICE TO MATCH INVERT OF 8" DIP.



MUELLER CO. DECATUR, ILL.
See ordering instructions with each item

AS-BUILT CERTIFICATION FOR PSWM
Note: There is no "AS-Built" information provided on this sheet. It is required to SWM, BUT EDGE AND UTILITIES BY OTHERS.
ROBERT JENKINS PE# 18866
1-24-17

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18866, Expiration Date 10-08-2018.
(FOR SWM AS BUILT ONLY)

DATA SOURCES

Existing topography shown hereon is a result of an aerial survey provided by Air Survey Corporation dated 1996 supplemented with field run information performed by Daft McCune Walker, Inc. dated 2010.

Property boundary shown hereon is a result of field run monumented boundary survey performed on or about June 25, 1999 by Daft McCune Walker, Inc.

Soils shown provided by Soil Data Mart dated 2005 published by Natural Resources Conservation Service (NRCS).

Zoning information shown hereon provided by Howard County Department of Planning and Zoning, adopted by Howard County Council February 2, 2004.

Wetland and stream limits shown hereon were originally approved by Maryland Department of the Environment and the US Corps of Engineers in April 2001 and re-verified by these agencies in October 2009.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

Walter M. Smith 2-23-12
CHIEF, BUREAU OF HIGHWAYS DATE

HOWARD COUNTY DEPT. OF PLANNING & ZONING

Robert Jenkins 2/28/12
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kevin S. Schuchman 3/6/12
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Date	No.	Revision Description
1/24/17	AS BUILT SUBMISSION	
2-10-14	1	FACILITY NOT DETAILS REMOVED
2-10-14	2	UPDATE OWNER/DEVELOPER INFO

EMERSON
SECTION 3 - AREA 7 - PARCEL A
"Future Employment Use"

OWNER/DEVELOPER:
EMERSON DEVELOPMENT IX LLC
ONE TEXAS STATION COURT, SUITE 200
TIMONIUM, MD 21093 (443) 689-8000

DMW
Daft McCune Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 286-3533
Fax 286-4708

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

SUBSECTION NAME	SECTION/AREA	SEC.3 AREA 7	SUB/PANEL #	PART OF 837
EMERSON	SEC.3 AREA 7			
PLAT OR LOT	47	TAX/ZONE MAP	6TH	GEN. TRACT
WATER CODE	15	MXD-3		6069.03
SILVER CODE				

TITLE
FINAL PLAN
STORMWATER MANAGEMENT
DETAILS FOR SWM FACILITY NO. 1

Des By	TJC	Scale	AS NOTED	Proj. No.	95054.W2
Drn By	JSS	Date	11/17/11		
Chk By		Approved			

21 of 30

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 10951, Expiration Date 8-25-17.

DEVELOPERS CERTIFICATE:

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

Robert Jenkins 1/5/12
SIGNATURE OF DEVELOPER
PRINT NAME BELOW SIGNATURE
Robert Jenkins

ENGINEERS CERTIFICATE:

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

Robert Jenkins 1/5/12
SIGNATURE OF ENGINEER
PRINT NAME BELOW SIGNATURE
Robert Jenkins

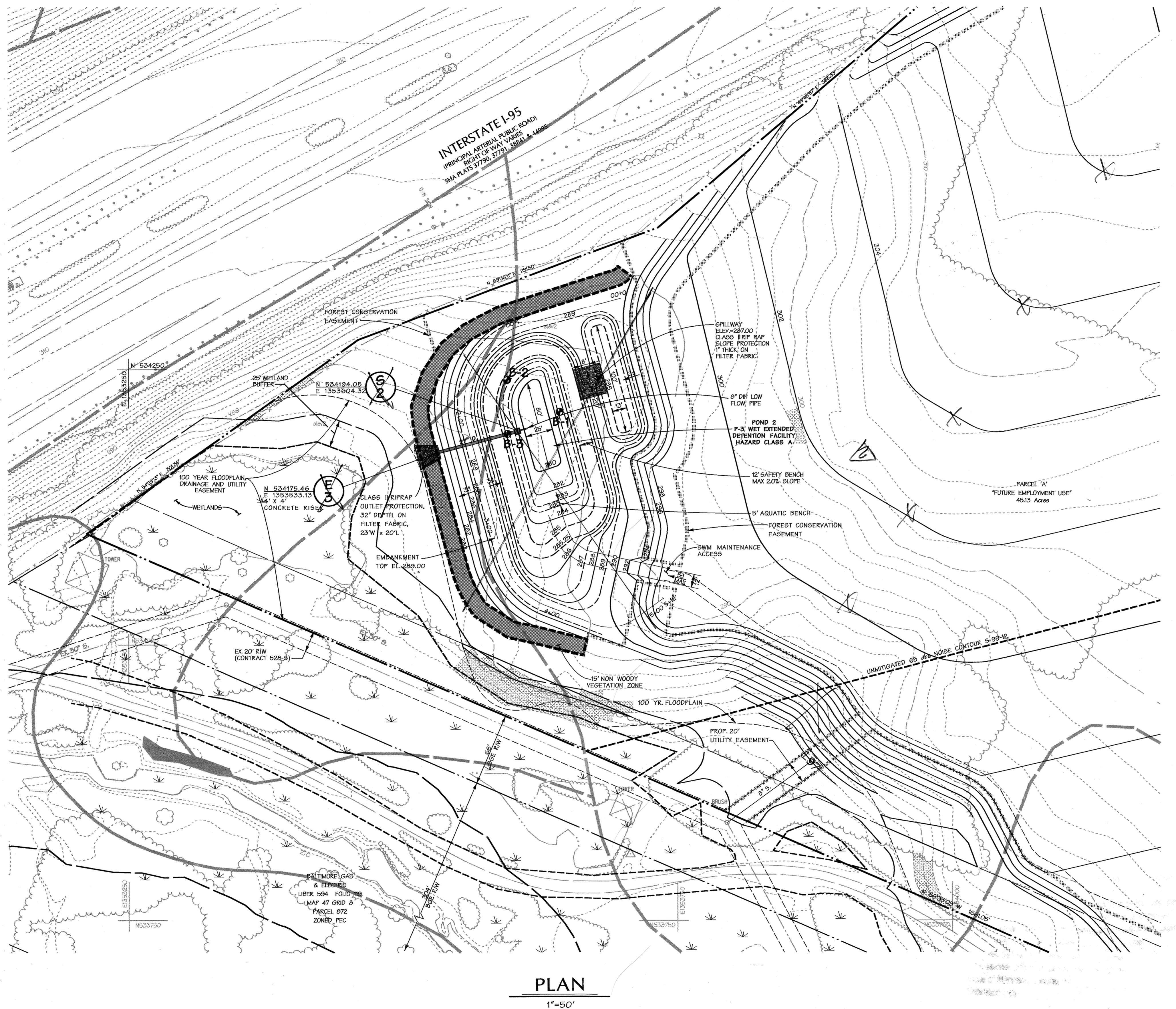
PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 10951, EXPIRATION DATE 1/5/12.

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
STEPHEN JERRICK, No. 3674, 11-10-2012

Stephen Jerrick 1/5/12
SIGNATURE OF ENGINEER
PRINT NAME BELOW SIGNATURE
Stephen Jerrick

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18866, EXPIRATION DATE 10-08-2018.

Robert Jenkins 1/5/12
SIGNATURE OF ENGINEER
PRINT NAME BELOW SIGNATURE
Robert Jenkins



SWM MANAGEMENT FACILITY NO. 2
POND DESIGN FLOW SUMMARY PROPOSED CONDITIONS

STRUCTURE TYPE	WET POOL
WATER QUALITY TYPE	WET POOL
STRUCTURE CLASSIFICATION	0.0075 SQ. MI.
WATERSHED AREA TO FACILITY (SWM)	
LEVEL OF MANAGEMENT REQUIRED	1-YR
LEVEL OF MANAGEMENT PROVIDED	1-YR
TOP WIDTH PROVIDED	12'
MAXIMUM HEIGHT OF FILL	12'
FREEBOARD REQUIRED	2.0'
FREEBOARD PROVIDED	2.0'
WATER QUALITY VOL. WQV REQUIRED (Ac-F)	0.275
WATER QUALITY VOL. WQV PROVIDED (Ac-F)	0.40
RECHARGE REQUIRED (% AREA METHOD, Rm) (Ac)	N/A
RECHARGE PROVIDED (Ac)	N/A
CHANNEL PROTECTION VOL. CPW REQUIRED (Ac-F)	0.467
CHANNEL PROTECTION VOL. CPW PROVIDED (Ac-F)	0.558
EXISTING 1-YR STORM Q AT DESIGN POINT (cfs)	170
PROPOSED 1-YR STORM Q AT DESIGN POINT (cfs)	0.70
EXISTING 10-YR STORM Q AT DESIGN POINT (cfs)	1190
PROPOSED 10-YR STORM Q AT DESIGN POINT (cfs)	1670
EXISTING 100-YR STORM Q AT DESIGN POINT (cfs)	2320
PROPOSED 100-YR STORM Q AT DESIGN POINT (cfs)	3580
WQV WATER SURFACE ELEV. - NORMAL POOL	284.00
CPW WATER SURFACE ELEV.	286.00
10-YR WATER SURFACE ELEV.	286.60
100-YR WATER SURFACE ELEV.	287.00
RISER CREST ELEV.	286.25
100-YR CLOGGED WATER SURFACE ELEV.	287.05
POND VOLUME BELOW 100-YR CLOGGED WSE (Ac-F)	1.92
FOREBAY VOLUME REQUIRED (Ac-F)	0.058
FOREBAY VOLUME PROVIDED (Ac-F)	0.052

EMERSON DEVELOPMENT IX LLC
SECTION 3 AREA 7
PARCEL 837
ZONED PEC-MXD-3

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18266, Expiration Date 10-09-2018 (FOR SWM AS-BUILT ONLY)

AS-BUILT CERTIFICATION FOR PSWIM
Note: There is no "AS-Built" information provided on this sheet. IN ORDER TO SWM, BUT ROADS AND UTILITIES BY OTHERS. ROBERT HUENWITZ, PE# 18266 1-24-17

DATA SOURCES
Existing topography shown hereon is a result of an aerial survey provided by Air Survey Corporation dated 1998 supplemented with field run information performed by Daft, McCune Walker, Inc. dated 2010.

Property boundary shown hereon is a result of field run monumented boundary survey performed on or about June 25, 1999 by Daft, McCune Walker, Inc.

Soils if shown provided by Soil Data Mart dated 2005 published by Natural Resources Conservation Services (NRCS)

Zoning information shown hereon provided by Howard County Department of Planning and Zoning, adopted by Howard County Council February 2, 2004.

Wetland and stream limits shown hereon were originally approved by Maryland Department of the Environment and the US Corps of Engineers in April 2001 and re-verified by those agencies in October 2009.

Legend

EX. CURB & GUTTER	---
EX. MAJOR CONTOURS	---
EX. MINOR CONTOURS	---
EX. STORM DRAIN	---
EX. SEWER	---
EX. WATER	---
EXISTING TREE LINE	---
EXISTING WETLAND LIMIT	---
PROPERTY LINE	---
ROADWAY RIGHT-OF-WAY	---
PROPOSED LOT LINE	---
PROPOSED EASEMENT	---
PROPOSED CURB & GUTTER	---
PROPOSED SIDEWALK	---
PROP. STORM DRAIN	---
PROP. SEWER	---
PROP. WATER	---
PROP. MAJOR CONTOURS	---
PROP. MINOR CONTOURS	---
SOIL BORING	---
NON WOODY VEGETATION ZONE	---
45' BGE SETBACK FOR CREDITED FOREST AREAS	---
UNMITIGATED 65 dba NOISE CONTOUR 5-99-12	---

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

Walter R. Gosh... 2-23-12
CHIEF, BUREAU OF HIGHWAYS DATE

HOWARD COUNTY DEPT. OF PLANNING & ZONING

Robert Huenwitz 2/20/12
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Robert Huenwitz 3/1/12
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

1/24/17	AS BUILT SUBMISSION	
6/13/16	FACILITY NO. 2 REMOVED	
2-10-14	UPDATE OWNER/DEVELOPER INFO.	
Date	No.	Revision Description

EMERSON
SECTION 3 - AREA 7 - PARCEL A
"Future Employment Use"

OWNER/DEVELOPER:
EMERSON DEVELOPMENT IX LLC
ONE TEXAS STATION COURT, SUITE 200
TIMONIUM, MD. 21093 (410) 689-8000

DMW
Daft, McCune-Walker, Inc.
300 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 18266, EXPIRATION DATE: 10-09-2018

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

Robert Huenwitz 2/6/12
HOWARD SOIL CONSERVATION DISTRICT

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

Robert Huenwitz 1/5/12
SIGNATURE OF DEVELOPER
PRINT NAME BELOW SIGNATURE
Robert Huenwitz

Robert Huenwitz 1/5/12
SIGNATURE OF ENGINEER
PRINT NAME BELOW SIGNATURE
Professional Engr. No. 18266

TITLE
STORMWATER MANAGEMENT PLAN
FACILITY NO. 2

Des By	TJC	Scale	1"=50'	Proj. No.	95054.W2
Drn By	JSS	Date	11/17/11		
Chk By	JDF	Approved			

22 of 30

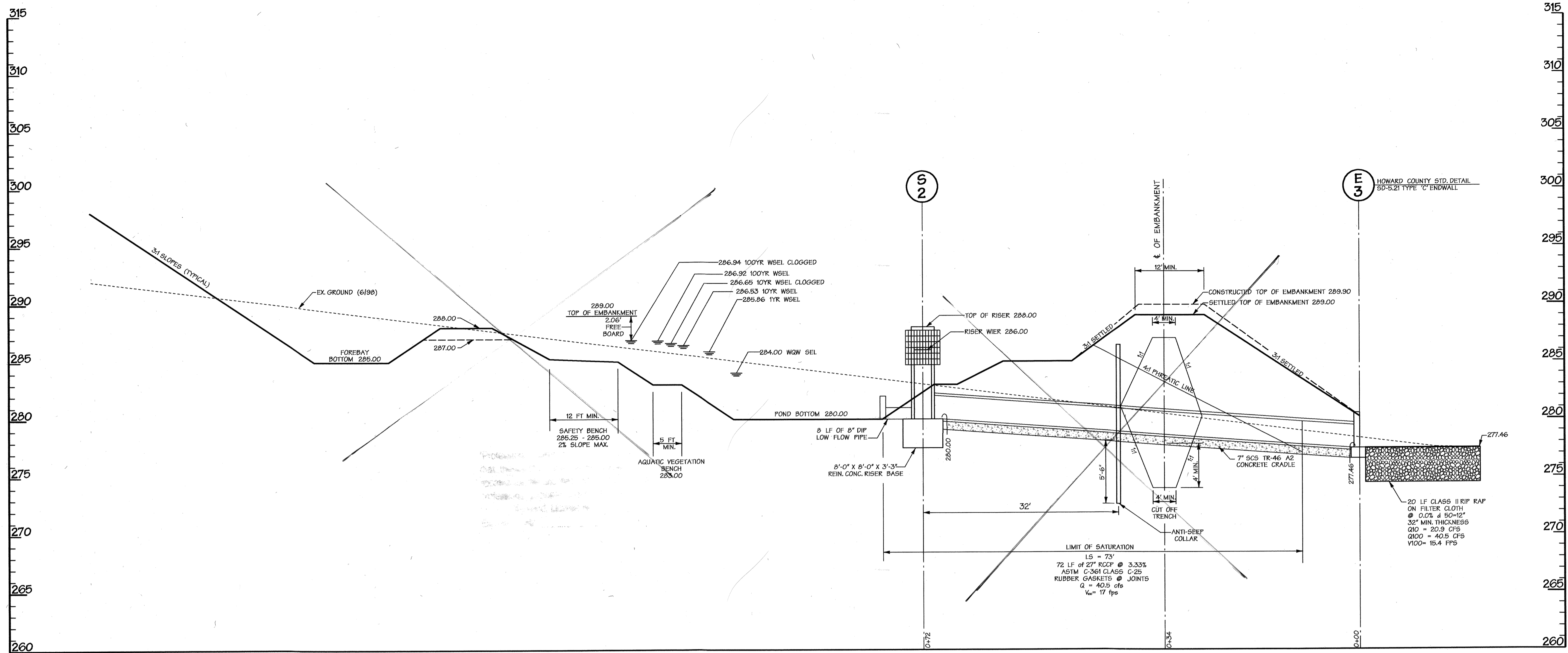
FOR REVISION # 2 ONLY
6-18-16

STATE OF MARYLAND
REGISTERED PROFESSIONAL ENGINEER
No. 10551
REGISTRATION EXPIRES 8-26-17

Professional Eng. # 10551
CENTURY ENGINEERING

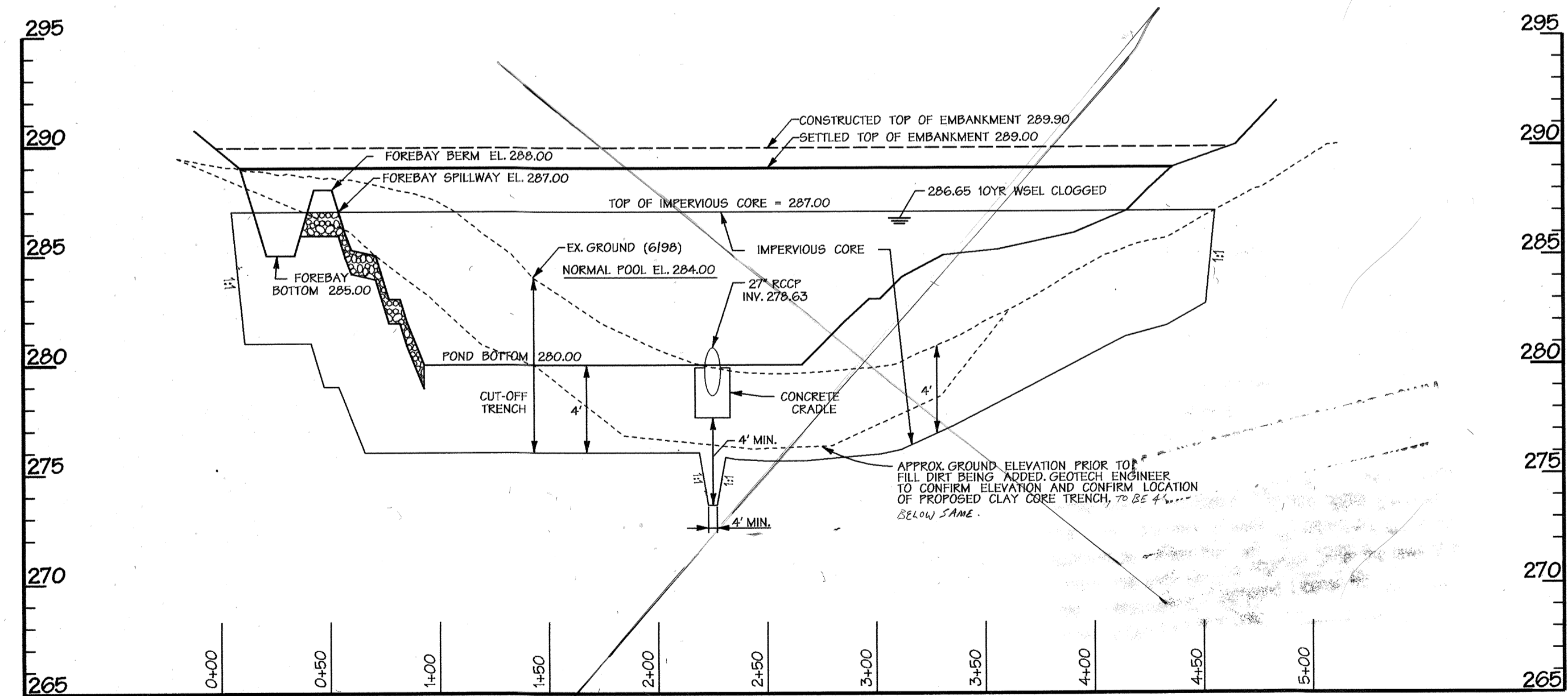
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 10551, Expiration Date 8-26-17.

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



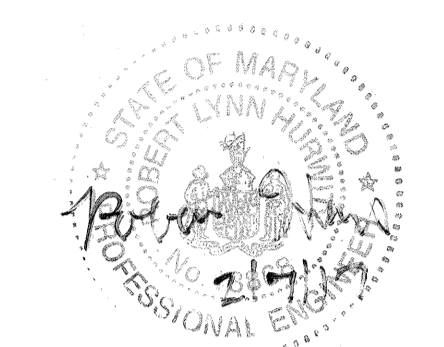
PROFILE THROUGH RISER AND PRINCIPLE SPILLWAY SWM FACILITY NO. 2

SCALE: HORIZ. 1" = 10'
VERT. 1" = 5'



PROFILE ALONG CENTERLINE OF EMBANKMENT

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



AS-BUILT CERTIFICATION FOR PSWM
Note: There is no "AS-Built" information provided on this sheet. IN REGARD TO SWM, BUT ROAD ACTIVITIES BY OTHERS
ROBERT HURWITZ PE # 18868
1-24-17

"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18868. Expiration Date 10-08-2018 (FOR SWM AS-BUILT ONLY)"

DATA SOURCES
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Wetland and stream limits shown herein were originally approved by Maryland Department of the Environment and the US Corps of Engineers in April 2001 and re-verified by these agencies in October 2003.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS	
<i>William R. ...</i>	2-23-12
CHIEF, BUREAU OF HIGHWAYS	DATE
HOWARD COUNTY DEPT. OF PLANNING & ZONING	
<i>...</i>	2/28/12
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
<i>Kate ...</i>	3/01/12
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
1-24-17	AS BUILT SUBMISSION
2-10-14	FACILITY No. 2 PROFILES REMOVED
2-10-14	UPDATE OWNER/DEVELOPER INFO.
Date	No.
	Revision Description

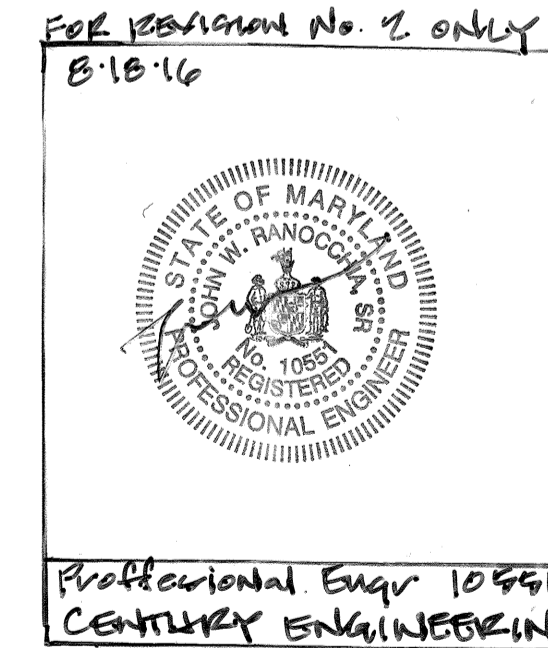
EMERSON
SECTION 3 - AREA 7 - PARCEL A
"Future Employment Use"
OWNER/DEVELOPER:
EMERSON DEVELOPMENT IX LLC
ONE TEXAS STATION COURT, SUITE 200
TIMON ULM, MD 21093 (410) 600-8000

DMW
Daft McCune Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax: 296-4705
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

PROJECT NAME	EMERSON	SECTION/AREA	SEC.3 AREA 7	LOT/PARCEL #	PART OF 837
PLAT OR LOT OR SUBD #	E2229(133)	ZONE	MKD-3	ELECT DISTRICT	6TH
OWNER CODE	E-15	SEWER CODE	7520000	GENE TRACT	6069.03

TITLE
FINAL PLAN
STORMWATER MANAGEMENT
PROFILES SWM FACILITY NO.2

Des By	TJC	Scale	As Noted	Proj. No.	95054-W
Dwn By	JSS	Date	11/17/11	23 of 30	
Chk By		Approved			



"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 10991. Expiration Date 5-15-17"

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 10991, EXPIRATION DATE: 5/15/17

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
STEPHEN TERRICK No. 95192, 11-10-2012

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

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

Robert Hurwitz 2/6/12
HOWARD SOIL CONSERVATION DISTRICT

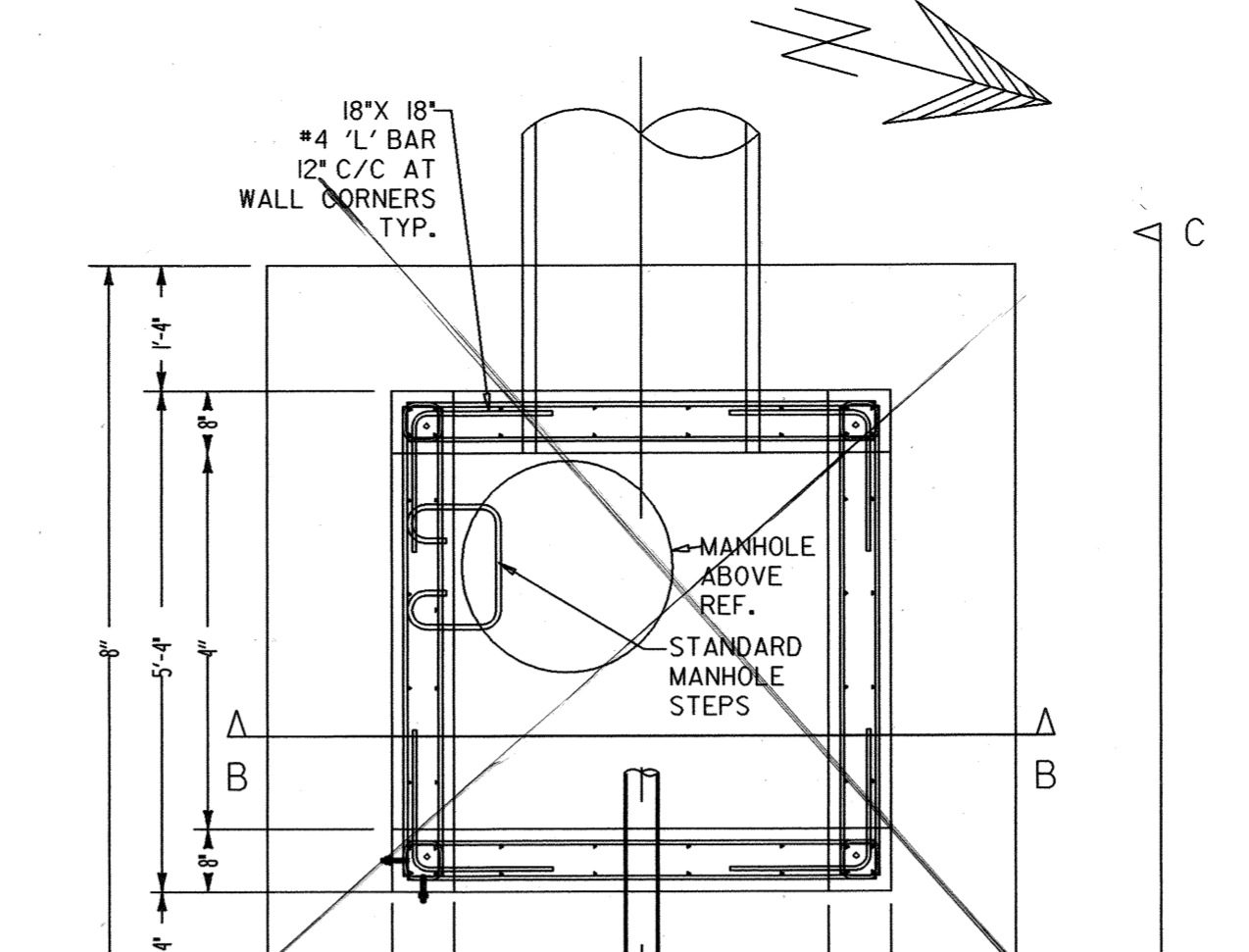
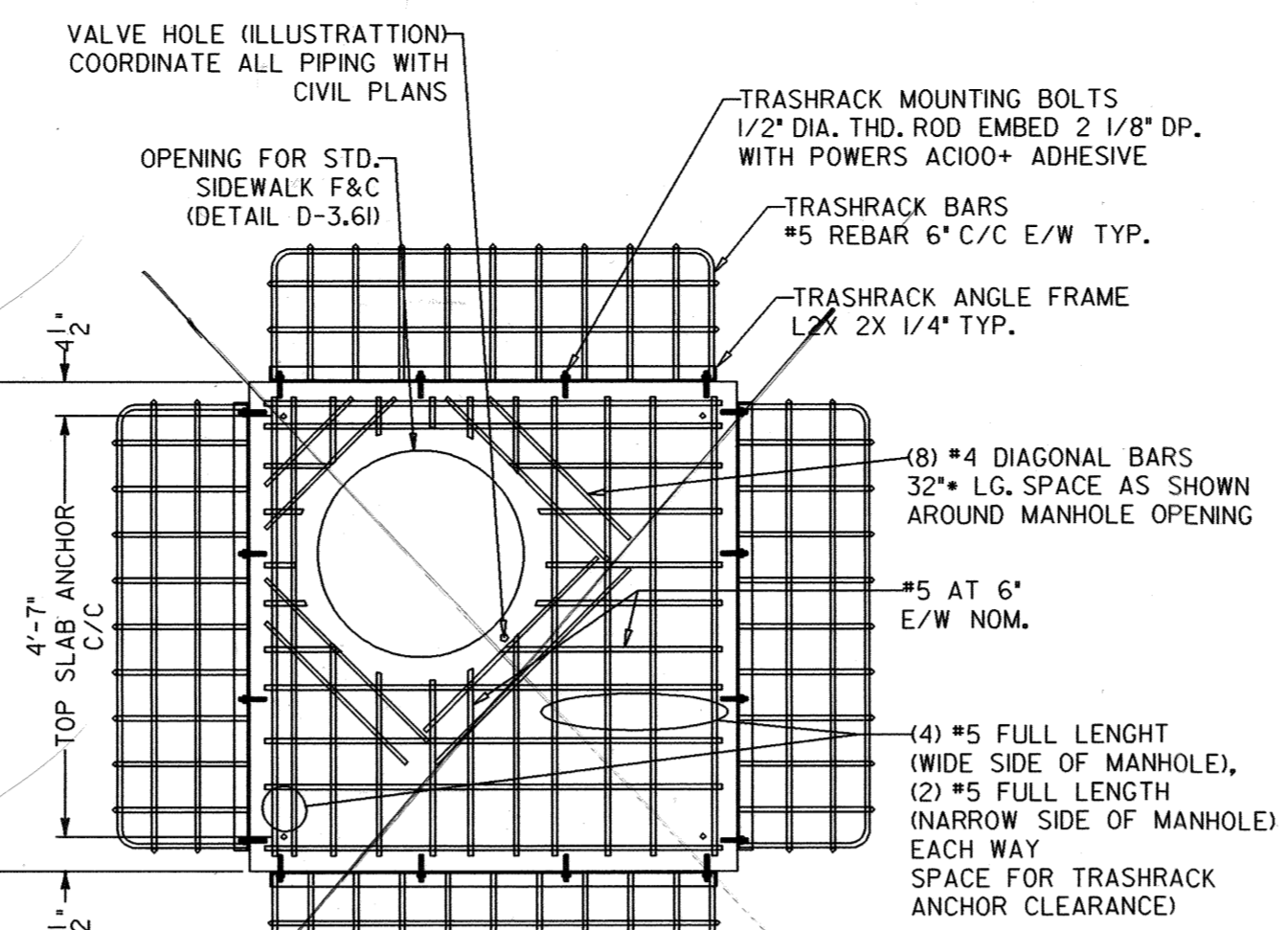
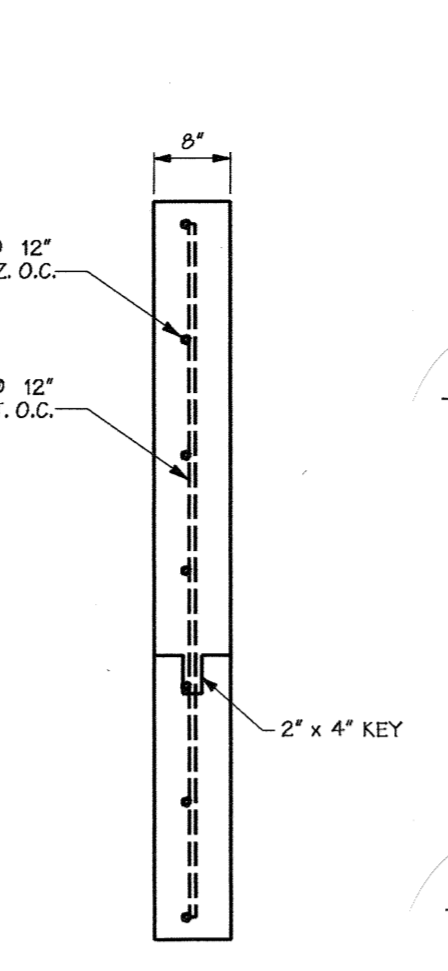
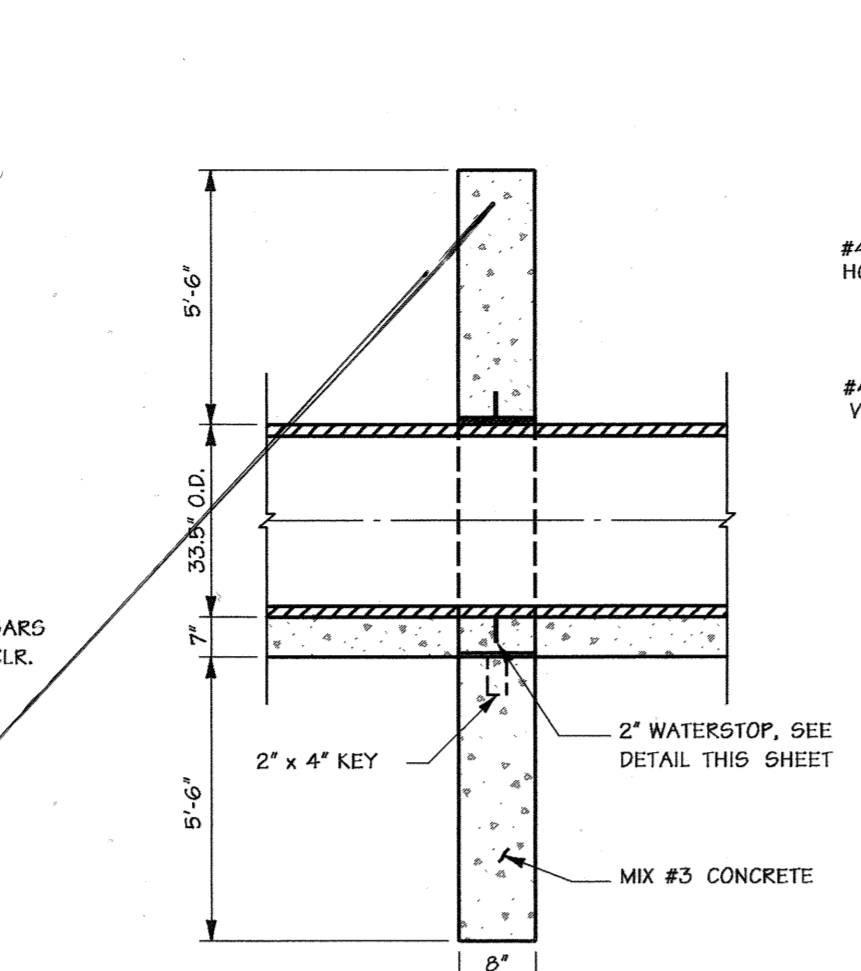
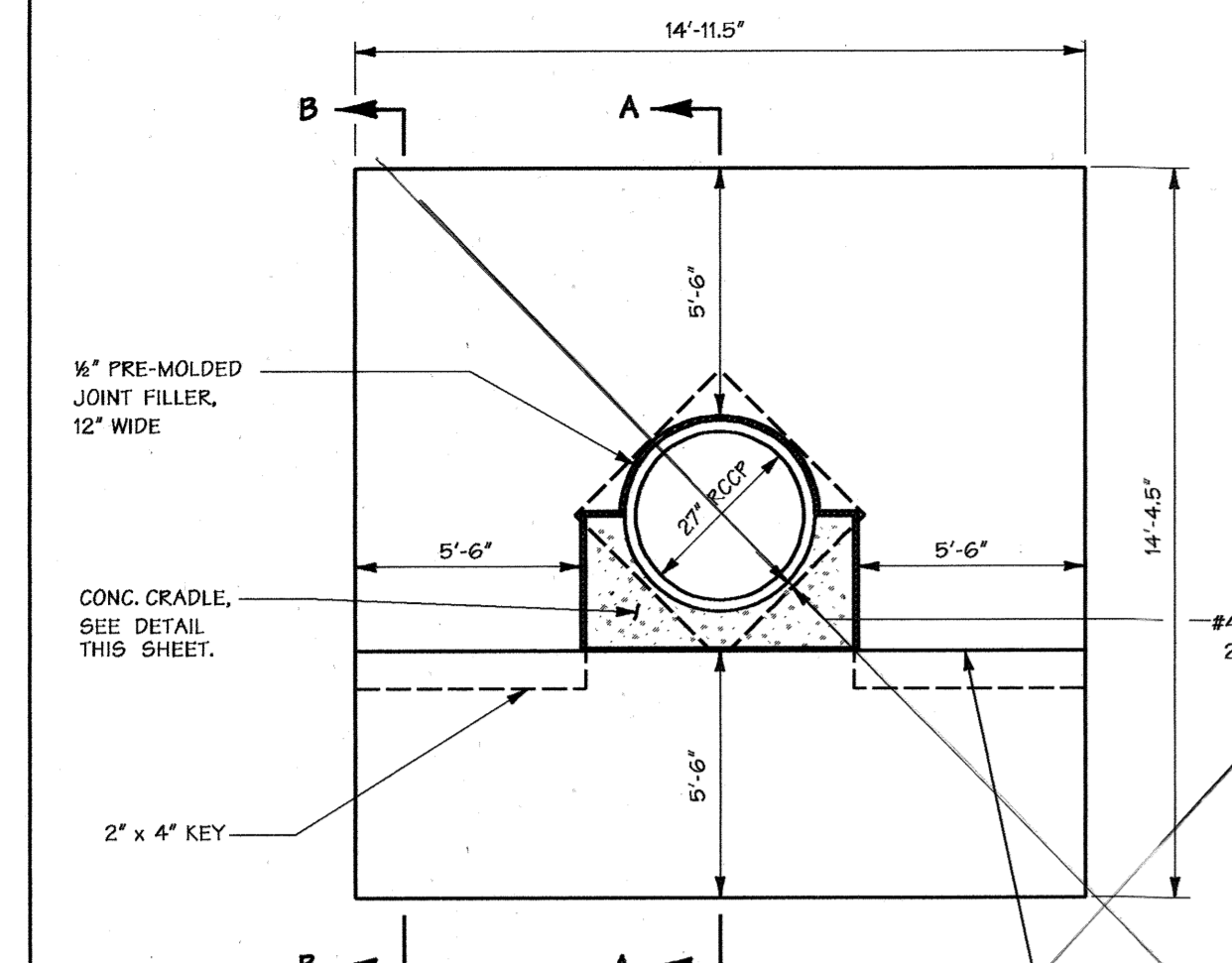
Stephen Terrick 1/5/12
SIGNATURE OF DEVELOPER
PRINT NAME BELOW SIGNATURE
Robert Terrick

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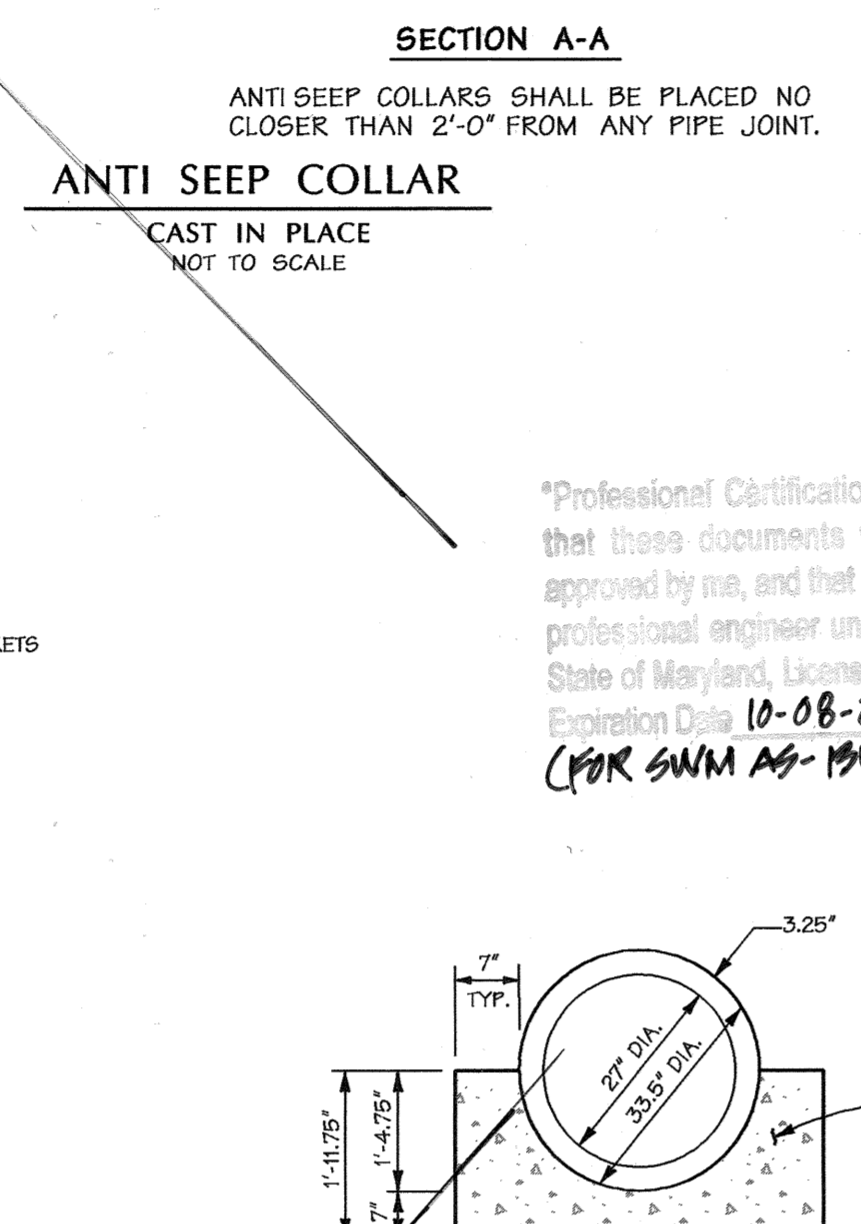
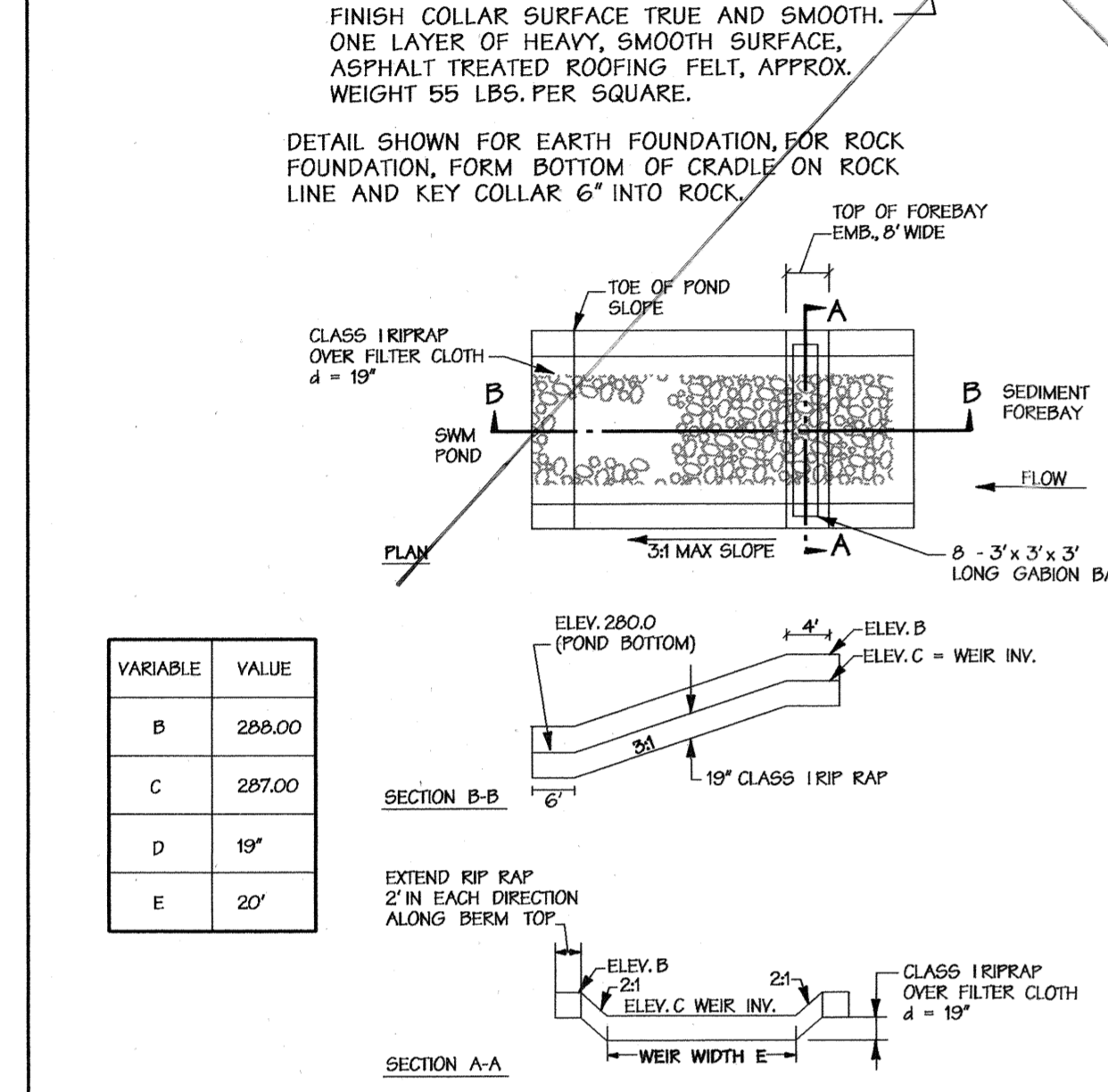
Melvin C. ... 1/5/12
SIGNATURE OF ENGINEER
PRINT NAME BELOW SIGNATURE
Melvin C. ...



Professional Engr. No. 10991



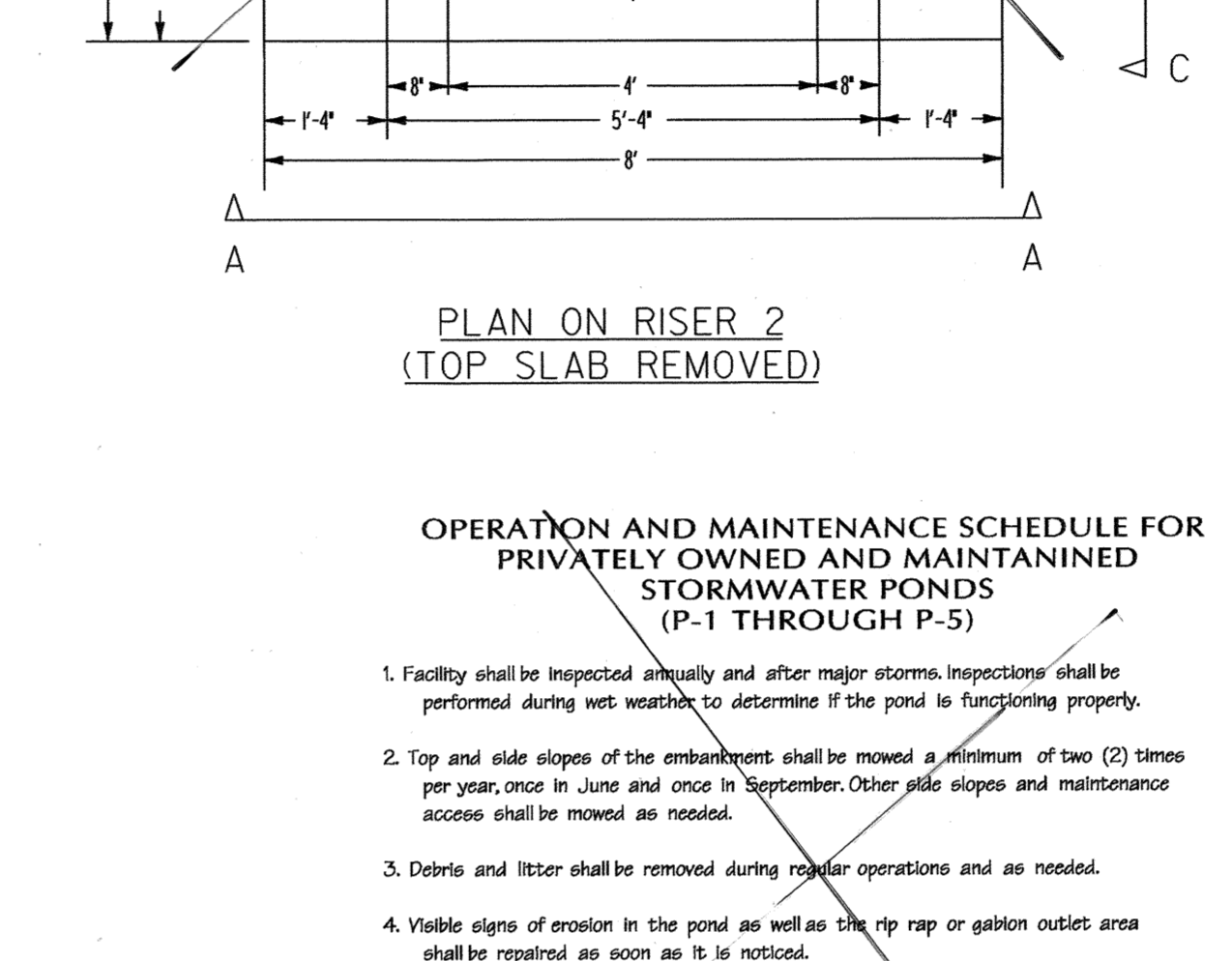
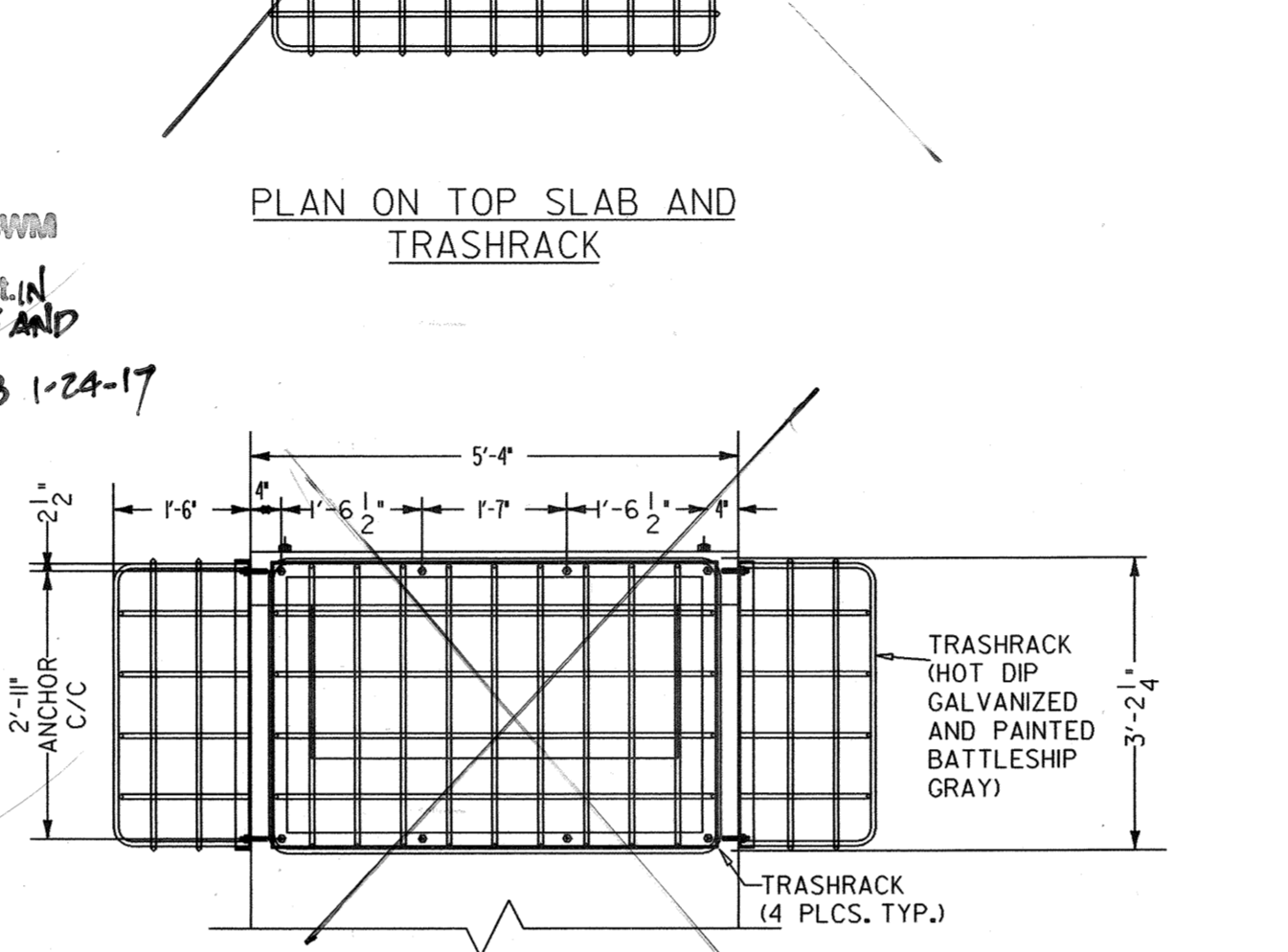
- RISE AND HEADWALL NOTES:**
- CONSTRUCTION TO COMPLY WITH CURRENT IBC AND LOCAL CODES AND ALL PROJECT REQUIREMENTS. WORK SHALL BE COMPLETED IN A MANNER CONSISTENT WITH GOOD CONSTRUCTION PRACTICE.
 - GEOMETRY SHOWN IS BASED ON INFORMATION PROVIDED BY OTHERS. VERIFY CRITICAL DIMENSIONS. RESOLVE ANY DISCREPANCY BEFORE PROCEEDING WITH THE WORK. COORDINATE PIPING AND SITWORK WITH CIVIL PLANS.
 - MINIMUM DESIGN LOADS PER IRC/IBC: DEAD, (COMPONENT WEIGHT) LIVE, 100 PSF. SURCHARGE (YARDS AND TERRACES) GROUND SNOW LOAD 25 PSF.
 - WIND DESIGN CRITERIA ARE AS FOLLOWS: BASIC WIND SPEED = 90 MPH IMPORTANCE FACTOR = 0.9 WIND EXPOSURE = C
 - SEISMIC DESIGN CRITERIA ARE AS FOLLOWS: SEISMIC IMPORTANCE FACTOR, I_e = 0.9 SEISMIC USE GROUP = CATEGORY I MAPPED SPECTRAL RESPONSE ACCELERATIONS S_s = 0.16, S₁ = 0.05 SITE CLASS = D SPECTRAL RESPONSE COEFFICIENTS SDS = 0.27, SDI = 0.08 SEISMIC DESIGN CATEGORY = CATEGORY B BASIC SEISMIC FORCE RESISTING SYSTEM = ORDINARY REINFORCED CONCRETE SHEAR WALL. SEISMIC RESPONSE COEFFICIENT, C_s = 0.04 RESPONSE MODIFICATION FACTOR, R = 4 DESIGN BASE SHEAR = 0.04 X W = 0.04W LBS. ANALYSIS = EQUIVALENT LATERAL FORCE.
 - MATERIALS: SOILS: FOUNDATIONS ARE TO BE FT MIN. INTO SUITABLE NATURAL SOILS, OR ENGINEERED CONTROLLED FILL. STRUCTURES ARE DESIGNED FOR BEARING PRESSURE: RISERS: 1500 PSF. MIN. HEADWALLS: 2000 PSF. MIN. TO BE VERIFIED AT TIME OF CONSTRUCTION BACKFILL: PHI 32 DEG. WT 125, COMPACTED TO MIN. 95% OF MAXIMUM DRY DENSITY. CONCRETE: TOP SLAB AND VERTICAL WALLS: F_c 4000 PSL. MIN. AIR ENTRAINED. FOOTINGS AND BASE SLABS: F_c 3000 PSL. MIN. NO CHLORIDES IN CONCRETE. CHAMFER EXPOSED EDGES 3/4" X 3/4" TYP. REIN. STEEL: ASTM A615 GR 60 SPLICE 35 BAR DIAMETERS MIN. ANCHOR ADHESIVE: POWERS FASTENERS AC108+ INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.



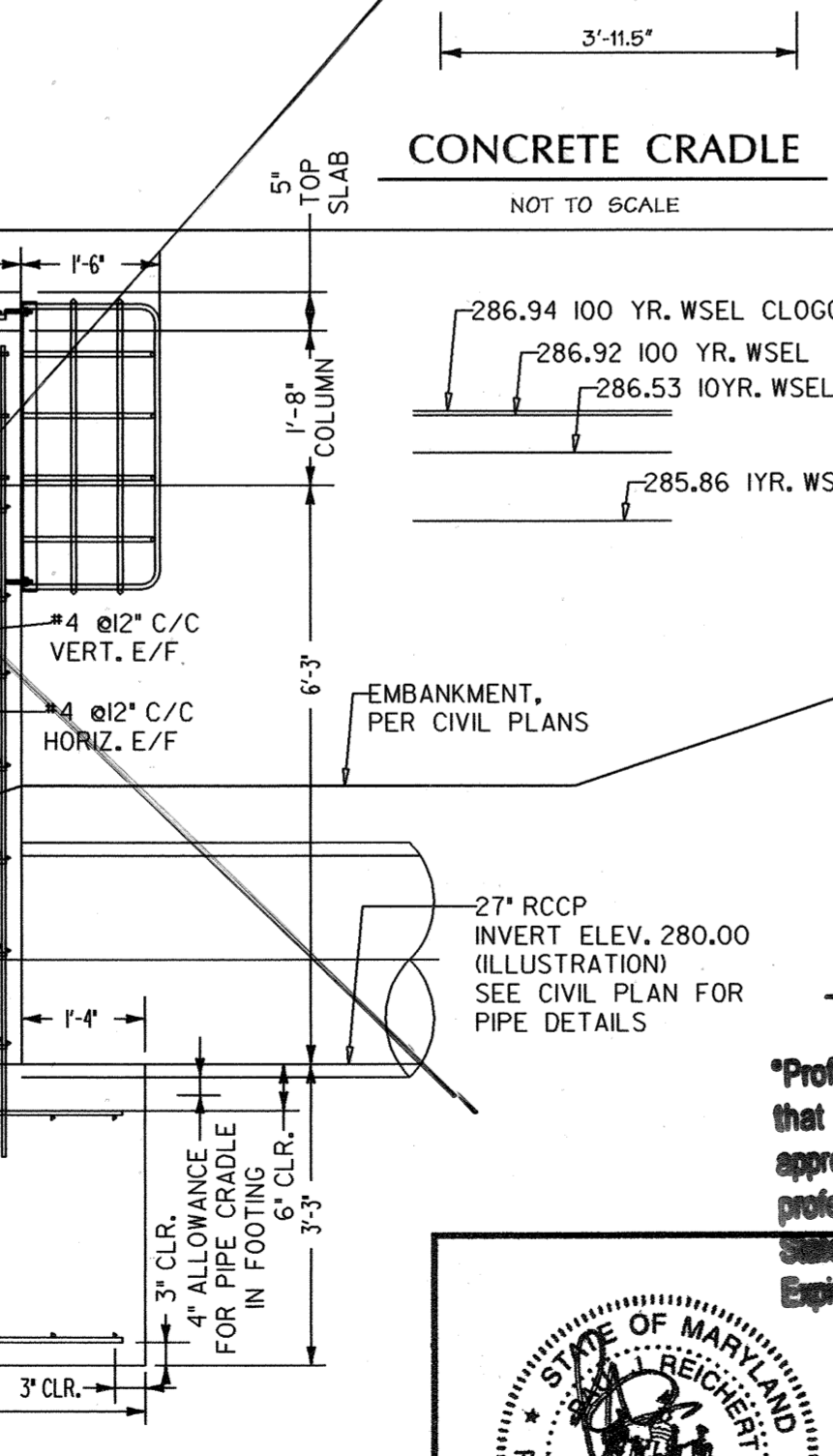
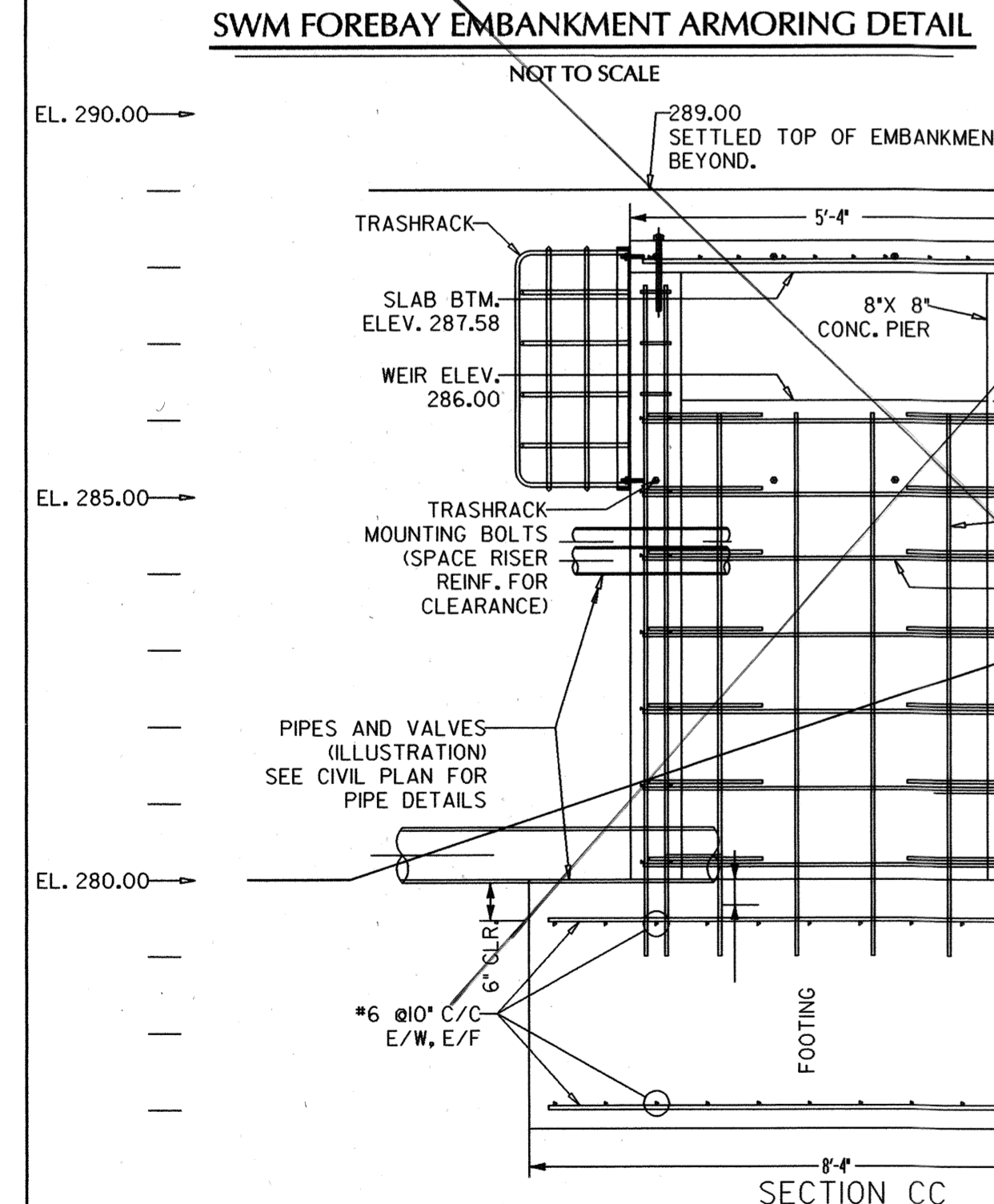
AS-BUILT CERTIFICATION FOR PSWM
 Note: There is no "AS-Built" information provided on this sheet. REGARD TO SWM, BUT KOPS AND UTILITIES BY OTHERS ROBERT HURWITZ PER 18868 1-24-17

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18868 Expiration Date 10-08-2018 (FOR SWM AS-BUILT ONLY)

Robert Hurwitz
 2/17/17

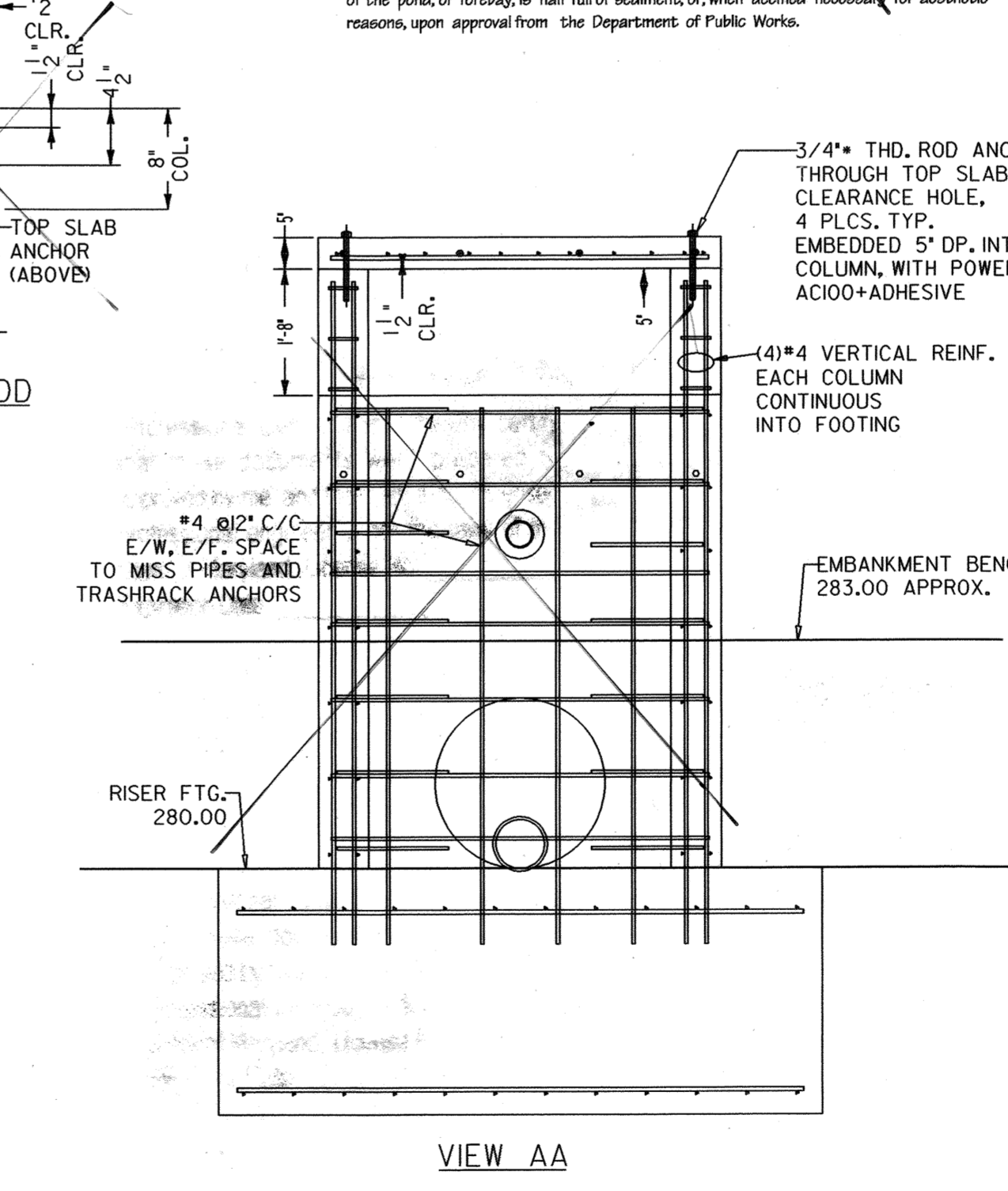
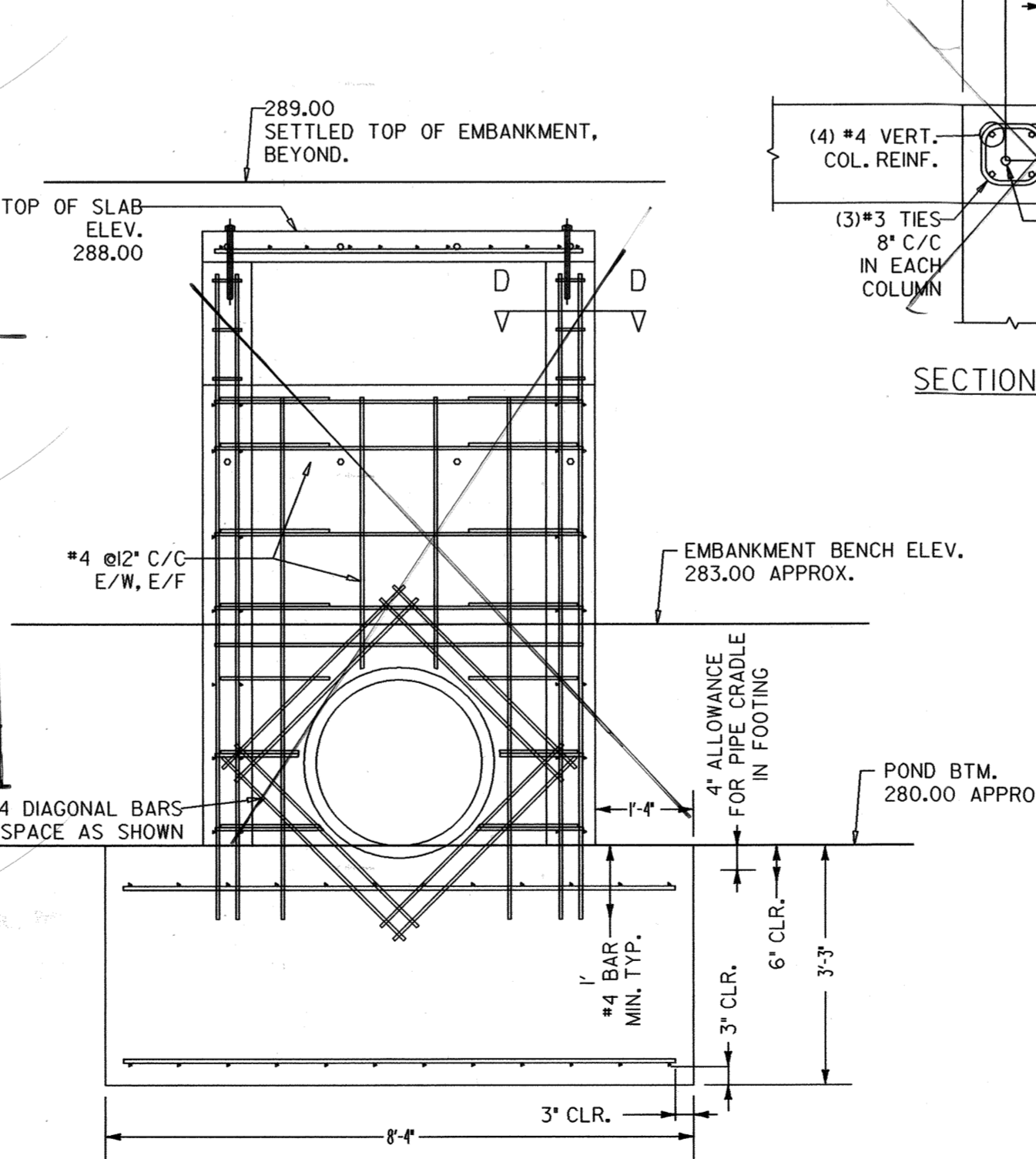


7. LAP SPICES 40 BAR DIAMETERS TYP. U.N.O.
8. BEST PRACTICES CONCRETE CONSTRUCTION TO INCLUDE:
 • CENTRALIZERS FOR BAR PLACEMENT IN STEM,
 • VIBRATION FOR CONCRETE CONSOLIDATION
 • CORRECT MOISTURE AND TEMPERATURE FOR CURING.
- DATA SOURCES**
 Existing topography shown hereon is a result of an aerial survey provided by Air Survey Corporation dated 1998 supplemented with field run information performed by Daft McCune Walker, Inc. dated 2/20/12.
- Property boundary shown hereon is a result of field run monumental boundary survey performed on or about June 25, 1999 by Daft McCune Walker, Inc.
- Soils shown hereon provided by Soil Data Mart dated 2005 published by Natural Resources Conservation Service (NRCS)
- Zoning information shown hereon provided by Howard County Department of Planning and Zoning, adopted by Howard County Council February 2, 2004.
- Wetland and stream limits shown hereon were originally approved by Maryland Department of the Environment and the US Corps of Engineers in April 2001 and re-verified by these agencies in October 2002.



Professional Eng. No. 18991 Century Engineering

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18991 Expiration Date 3-28-17



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

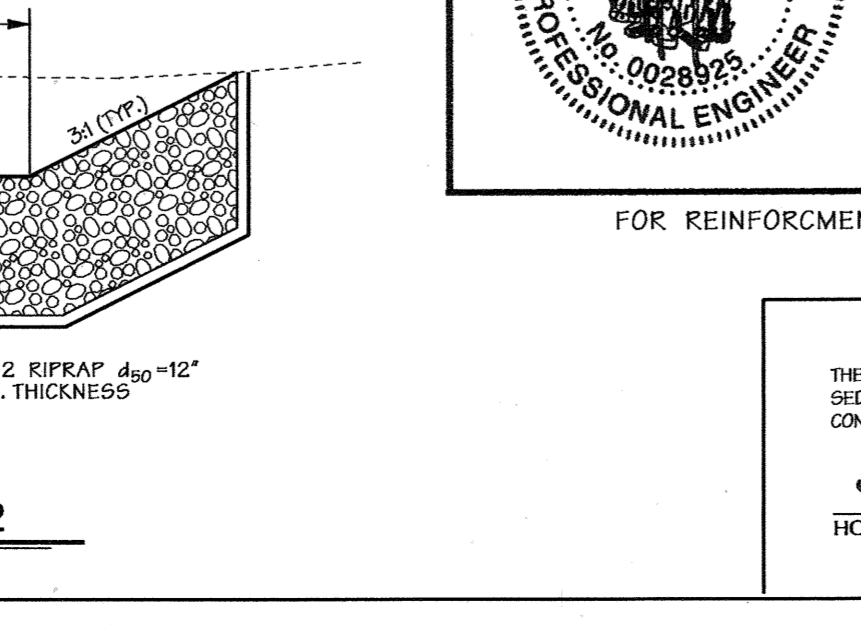
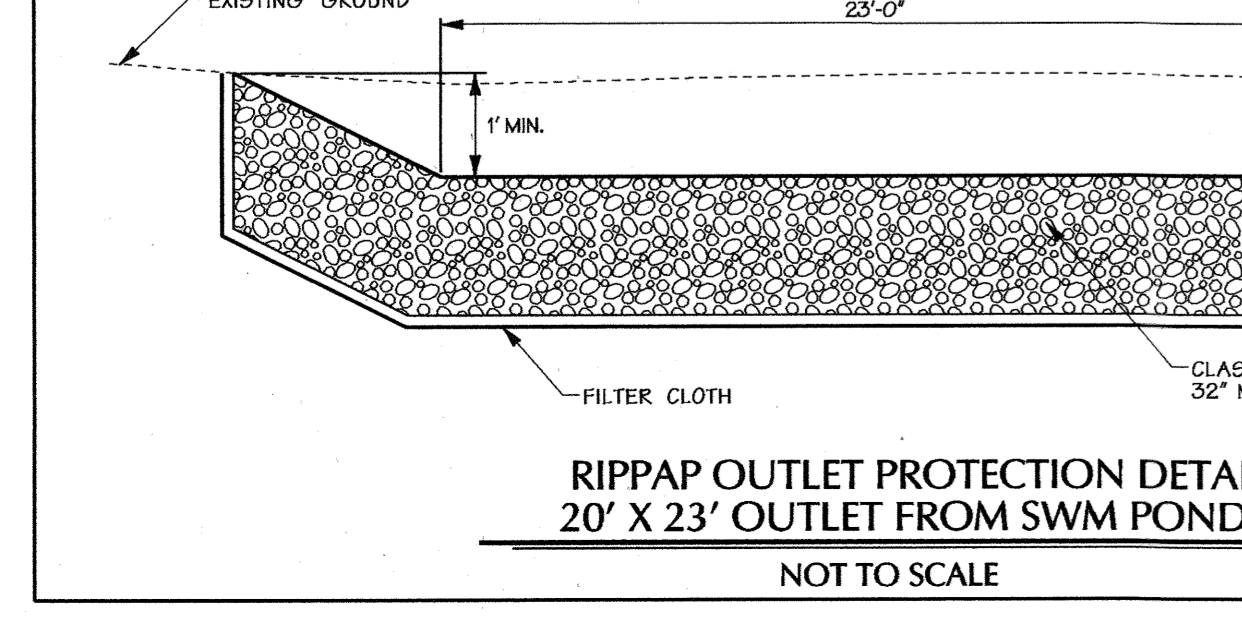
Walter J. Smith 2-23-12
 CHIEF, BUREAU OF HIGHWAYS DATE

HOWARD COUNTY DEPT. OF PLANNING & ZONING

Robert Hurwitz 2/29/12
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Robert Hurwitz 3/10/12
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Date	No.	Revision Description
1-14-12		AS BUILT SUBMISSION
8-17-16		Finality No 2 Details REMANDED
2-10-14		UPDATE OWNER/DEVELOPER INFO.



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

Robert Jenkins 1/5/12
 SIGNATURE OF DEVELOPER
 PRINT NAME BELOW SIGNATURE

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

Malvin C. Badger 1/5/12
 SIGNATURE OF ENGINEER
 PRINT NAME BELOW SIGNATURE

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 00286 EXPIRATION DATE: 2/12/18

Malvin C. Badger 1/5/12
 SIGNATURE OF ENGINEER
 PRINT NAME BELOW SIGNATURE

Professional Eng. No. 00286

EMERSON
 SECTION 3 - AREA 7 - PARCEL A
 "Future Employment Use"

OWNER/DEVELOPER:
 EMERSON DEVELOPMENT IX LLC
 ONE TEXAS COURT, SUITE 200
 TIMONIUM, MD 21093 (443) 687-6000

DMW
 Daft McCune Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 286-3333
 Fax 286-4706

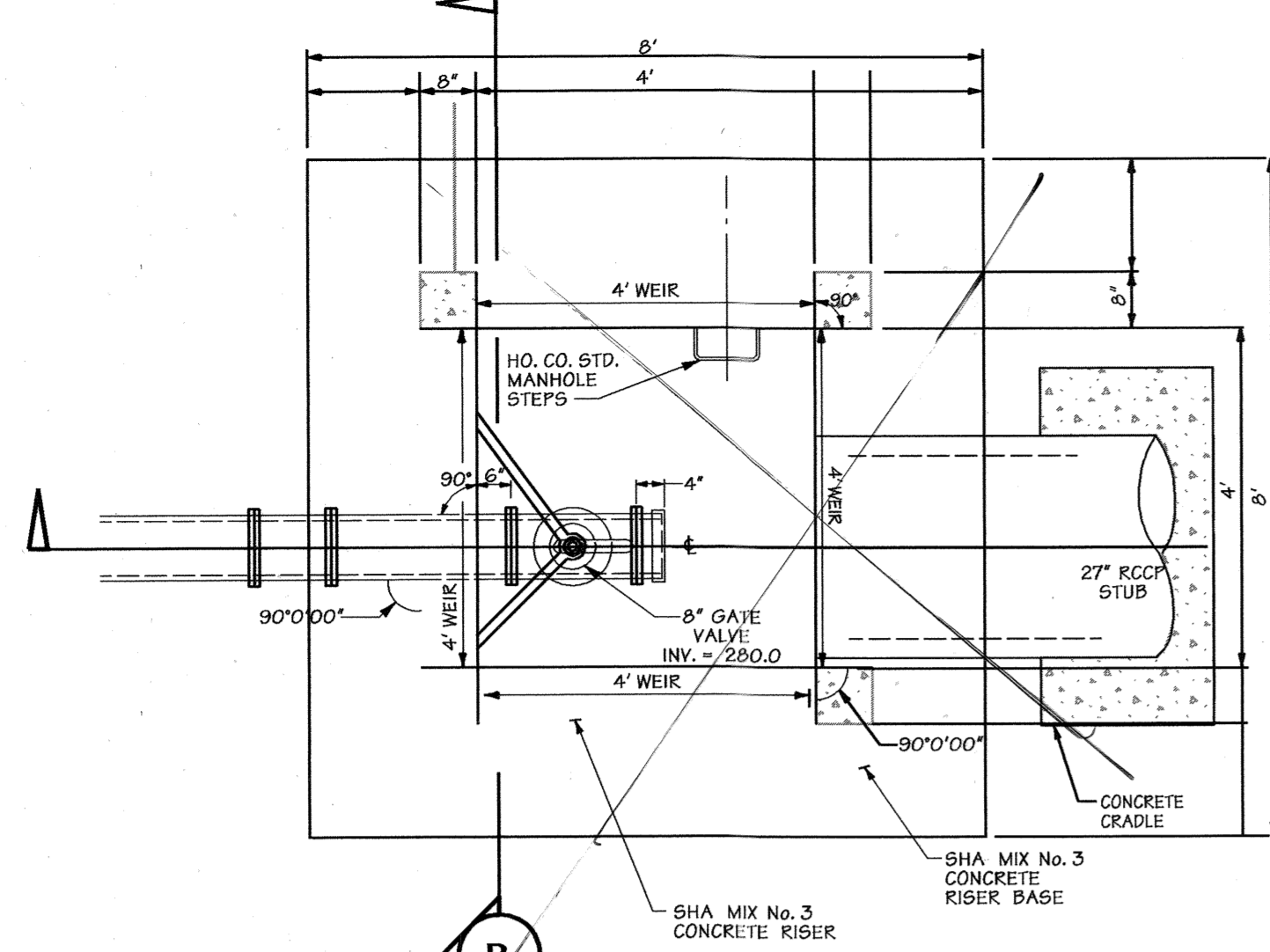
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

SHOWROOM NAME	EMERSON	SECTION/AREA	SEC.3 AREA 7	LOT/PARCEL #	PART OF 837
PLAN OR L.P. NO.	15	ZONE	MD-3	ELECT. DISTRICT	6069.03
DATE	2/28/13	DATE	4/7	SEWER TRACT	6069.03
WATER CODE	E-15	SEWER CODE	7520000		

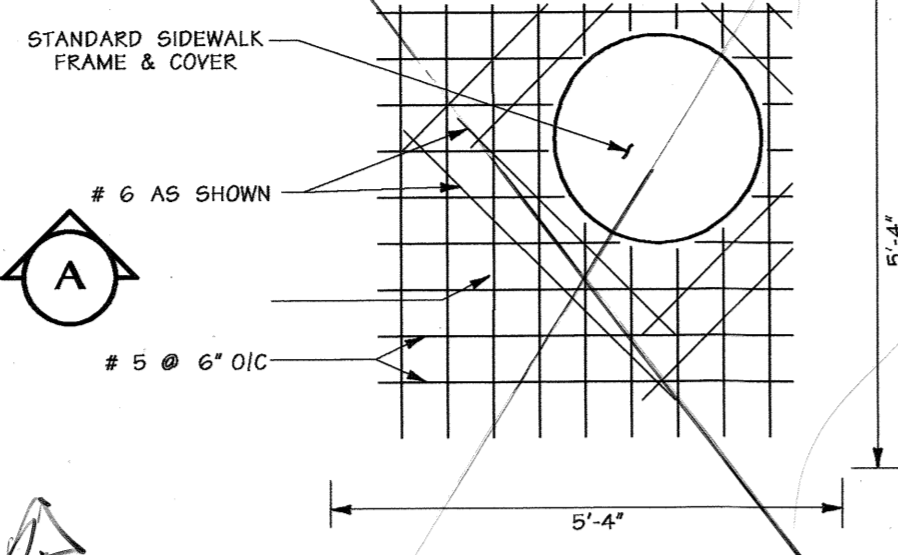
TITLE: **FINAL PLAN STORMWATER MANAGEMENT PLAN DETAILS FOR SWM FACILITY NO. 2**

Des By	TJC	Scale	AS NOTED	Proj. No.	95054.W2
Drn By	JSS	Date	10/19/11		24 of 30
Chk By	JDF	Approved			41

Professional Eng. No. 00286

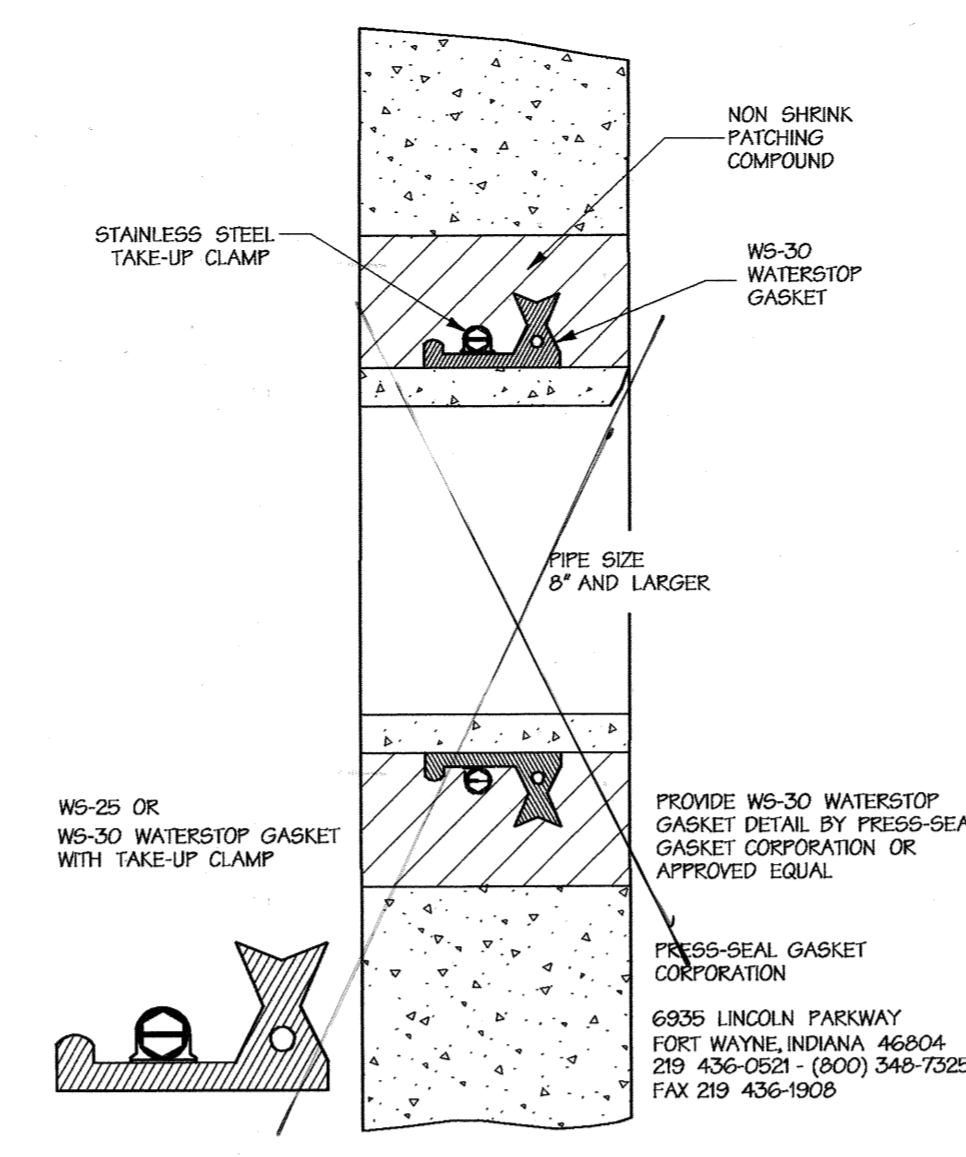


RISER PLAN (TOP SLAB REMOVED)

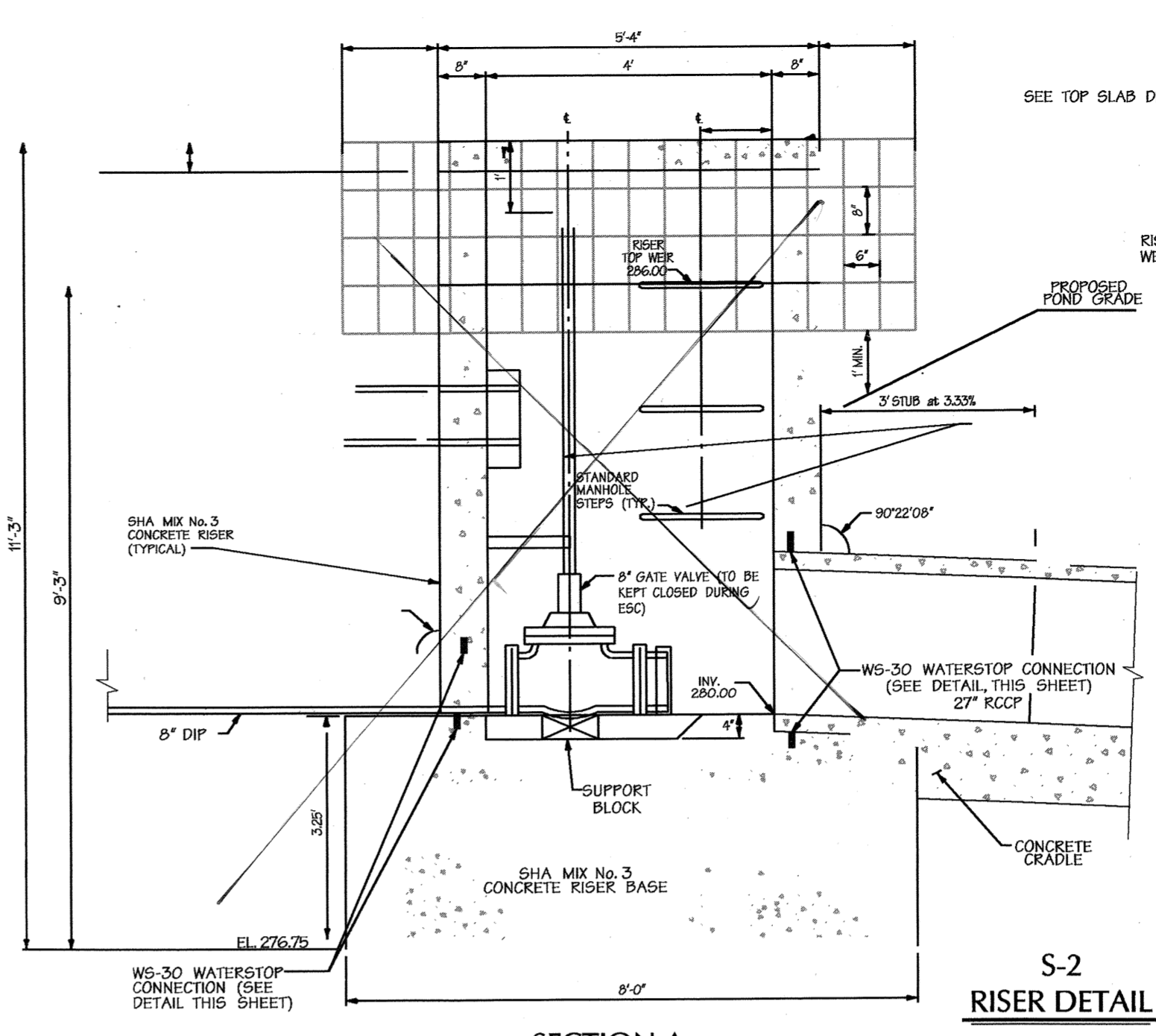


- NOTES:
- BOLT TOP SLAB TO RISER WITH (4) 1/2" x 6" LG. HEX. HEAD GALVANIZED BOLTS.
 - THE SIDE OF THE SLAB CLOSEST TO THE FRAME AND COVER WILL LINE UP WITH THE SIDE OF THE RISER WITH STANDARD MANHOLE STEPS.

TOP SLAB
SCALE: N.T.S.
CAST IN PLACE

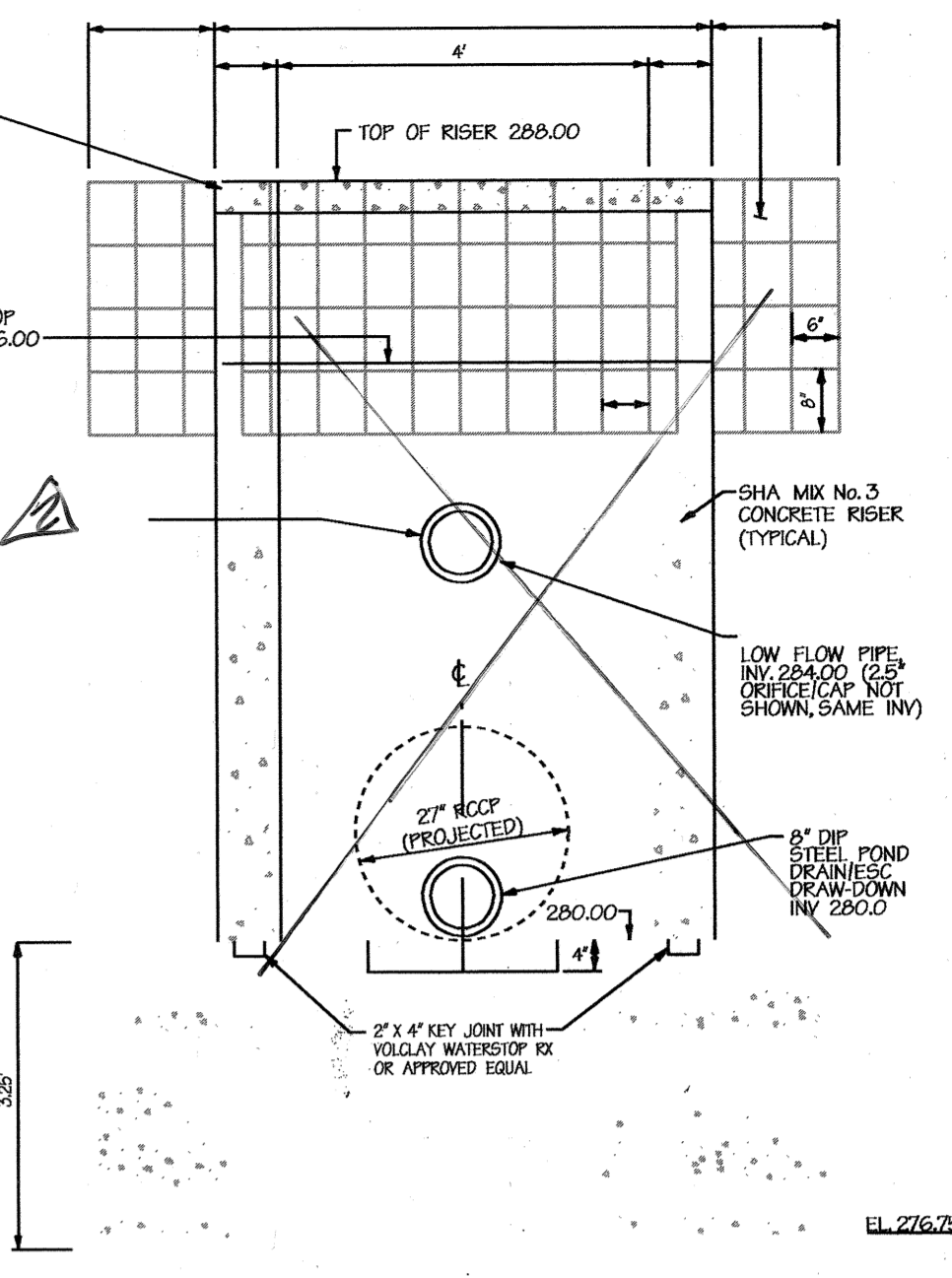


WS-30 PIPE WATER STOP DETAIL
NOT TO SCALE



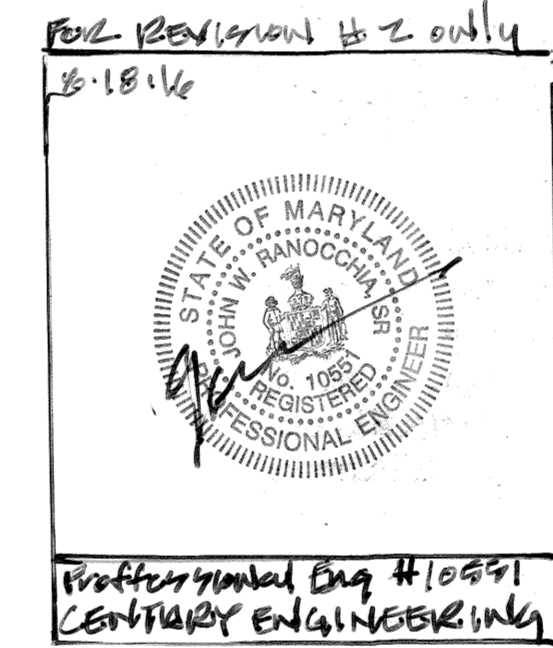
SECTION A

S-2
RISER DETAIL
CAST IN PLACE



SECTION B

TRASH RACK DIMENSIONS:
1) ALL SIDES 5/8" TOP X 2 1/2" SIDES X 1 1/2" BOTTOM
CONSISTS OF 45 BENT BARS @ 6" O.C. TO BE MOUNTED ON RISER AS SHOWN.
TRASH RACK TO BE WELDED TO 2" X 2" L-BRACKETS, THEN FASTENED TO TOP
SLAB & WALLS WITH TEN 1/2" X 6" L.S. HEX HEAD GALVANIZED BOLTS. TRASH RACK
SHALL BE GALVANIZED AFTER FABRICATION AND PAINTED BATTLESHIP GRAY.

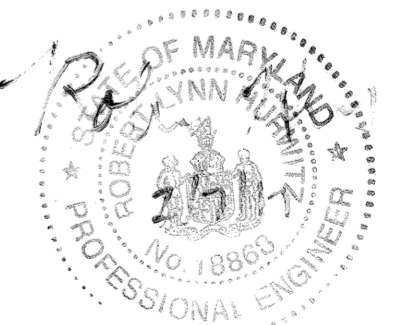


"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 10951, Expiration Date 8-24-17."

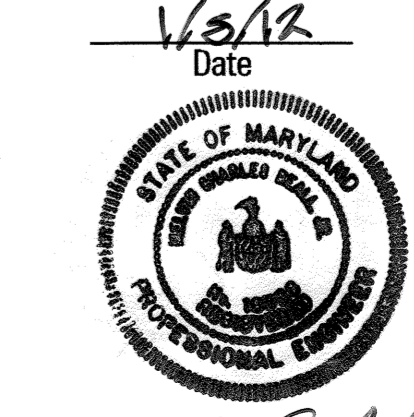
AS-BUILT CERTIFICATION FOR PSWM
Note: There is no "AS-Built" information provided on this sheet, in regard to SWM, BUT RAISES AND UTILITIES BY OTHERS. ROBERT HUBERTZ PE #18868 1-22-17

"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18868, Expiration Date 10-08-2018 (FOR SWM AS BUILT ONLY)"

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
STEPHEN JERRICK No. 35794, 11-10-2012



PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18868, EXPIRATION DATE: 5/13/12



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

Signature: Mahin C. Beal, Jr. Date: 1/5/12

DEVELOPERS CERTIFICATE:
I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEVELOPER TRAINING PROGRAM APPROVED BY THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HEREIN, I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AGREE TO PROVIDE THE INSTRUCTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: Robert Jenkins Date: 1/5/12

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

Signature: Stephen Jerrick Date: 2/6/12

DATA SOURCES:
Existing topography shown hereon is a result of an aerial survey provided by Air Survey Corporation dated, 1995 supplemented with field run information performed by Daft McCune Walker, Inc. dated, 2/2/0.

Property boundary shown hereon is a result of field run monumented boundary survey performed on or about June 25, 1999 by Daft McCune Walker, Inc.

Solls if shown provided by Soil Data Mart dated 2005 published by Natural Resources Conservation Service (NRCS)

Zoning information shown hereon provided by Howard County Department of Planning and Zoning, adopted by Howard County Council February 2, 2004.

Wetland and stream limits shown hereon were originally approved by Maryland Department of the Environment and the US Corps of Engineers in April 2001 and re-verified by these agencies in October 2009.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Signature: [Signature] Date: 2-23-12
CHIEF, BUREAU OF HIGHWAYS

HOWARD COUNTY DEPT. OF PLANNING & ZONING
Signature: [Signature] Date: 2/28/12
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Signature: [Signature] Date: 3/1/12
CHIEF, DIVISION OF LAND DEVELOPMENT

Date	No.	Revision Description
1/24/17		AS BUILT SUBMISSION
8/1/16		Facility No 2 DETAILS REMOVED.
2-10-14		UPDATE OWNER/DEVELOPER INFO

EMERSON
SECTION 3 - AREA 7 - PARCEL A
"Future Employment Use"

OWNER/DEVELOPER:
EMERSON DEVELOPMENT IX LLC
ONE TEXAS STATION COURT, SUITE 200
TIMONIUM, MD. 21093 (AAS) 680-8000

DMW
Daft McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 396-3333
Fax 396-4706

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

SECTION NAME	SECTION/AREA	SEC. 3 AREA 7	LOT/PARCEL #
EMERSON			PART OF 837
RAT# 0117	080 #	ZONE	TAX/ZONE MAP
02091330	15	47	61H
VEHICLE CODE	E-15	SURVEY CODE	7520000

TITLE
FINAL PLAN
STORMWATER MANAGEMENT PLAN
DETAILS FOR SWM FACILITY NO. 2

Des By	TJC	Scale	AS NOTED	Proj. No.	95054.W2
Drn By	JSS	Date	10/19/11	25 of 30	
Chk By	JDF	Approved			

**STORMWATER MANAGEMENT POND
GENERAL CONSTRUCTION SPECIFICATIONS**

1. GENERAL

All stormwater management facilities shall be constructed in accordance with Baltimore County's "Standard Specifications and Details for Construction", (1985) and the N.R.C.S. Maryland "Standards and Specifications for Ponds", (MD-378, 2000).

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

2. 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. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

3. 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. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer.

Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

PLACEMENT - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 6 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

COMPACTION - Control the movement of the hauling equipment over the fill so that the entire surface of each lift is compacted to 95% of AASHTO Specification T-99 (or equivalent ASTM Specifications). Fill material must contain enough moisture to yield the required degree of compaction with the equipment used.

When required by the reviewing agency the minimum required density shall not be less than 95% of the maximum dry density with a moisture content within +/- 2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

CUT OFF TRENCH - The cut off trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

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

4. STRUCTURE BACKFILL

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed 4 inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material used to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than 4 feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

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

5. REMOVAL AND REPLACEMENT OF DEFECTIVE FILL

Fill placed at densities lower than specified minimum density or at moisture contents outside the specified acceptable range of moisture content or otherwise not conforming to the requirements of the specifications shall be reworked to meet the requirements or removed and replaced by acceptable fill. The bottoms of such excavations shall be finished flat or gently curving and at the sides of such excavations the adjacent sound fill shall be trimmed to a slope not steeper than 3 feet horizontally to 1 foot vertically extending from the bottom of the excavation to the fill surface.

6. PIPE CONDUITS

All pipes shall be circular in cross section. All perforated pipes shall have a minimum of 3.31 square inches of opening per square foot of pipe surface (ex. 30 3/8-inch holes per square foot). Perforations are to be uniformly spaced around the full periphery of the pipe. Any holes blocked or partially blocked by bituminous coating shall be opened prior to installation.

REINFORCED CONCRETE PIPE - All of the following criteria shall apply for reinforced concrete pipe:

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.
2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/ cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural purposes, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.
3. Laying Pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.
4. Backfilling shall conform to "Structure Backfill".
5. Connections - All connections (to anti-seep collars, riser, etc.) shall be watertight.
6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

PLASTIC PIPE - All of the following criteria shall apply for plastic pipe:

1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated high density polyethylene (HDPE) pipe, couplings and fittings shall conform to following: 4" - 10" inch pipe shall meet the requirements of AASHTO M252 Type 5, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type 5.
2. Joints and connections to anti-seep collars shall be completely watertight.
3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
4. Backfilling shall conform to "Structure Backfill".
5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

7. CONCRETE

Concrete must meet minimum requirements set forth in Maryland State Highway Administration Standard Specifications for Construction and Materials, Section 302 (Portland Cement Concrete Mixtures), Mix Number 3. Reinforcing steel must be ASTM A615, Grade 60. Steel angles and anchor bars must be ASTM A36.

8. ROCK RIP-RAP

Rock rip-rap shall meet the requirements of the Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 321.09, Class SE Non-woven. Geotextile shall be placed under all rip-rap and shall meet the requirements of the Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 321.09, Class SE Non-woven.

The rip-rap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the rip-rap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks.

9. CARE OF WATER DURING CONSTRUCTION

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

10. STABILIZATION

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

11. EROSION AND SEDIMENT CONTROL

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

All disturbed areas shall be controlled by an erosion and sediment control plan which has been approved by the Baltimore County Soil Conservation District (B.C.S.C.D.).

12. SEEDING

- Seeding, fertilizing and mulching shall be as follows:
- Seed Mix: 50% Kenblue Kentucky Bluegrass, 40% Pennlawn Creeping Red Fescue, 10% Streaker Redtop. Applied at a rate of 150 pounds per acre.
 - Rebel II Tall Fescue (125 pounds per acre)
 - Pennlawn Perennial Ryegrass (15 pounds per acre)
 - Kenblue Kentucky Bluegrass (10 pounds per acre)
 - Pennlawn Creeping Red Fescue (70 pounds per acre)
 - Aurora Hard Fescue (50 pounds per acre)
 - Common White Clover (6 pounds per acre)
 - Winter Rye (45 pounds per acre)
- Lime: 2 tons per acre Dolomitic Limestone.
- Fertilizer: 600 pounds per acre 10-10-10 fertilizer before seeding. 400 pounds per acre 30-0-0 Ureaform Fertilizer at time of seeding.
- Mulch: Straw at 4,000 pounds per acre.
- Anchoring: Mulching tool or wood cellulose fiber binder at a net dry binder rate of 750 pounds per acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water or at rates recommended by the manufacturer.

13. FILTER CLOTH

All filter cloth shall conform to the 1994 Maryland Standards and Specifications for soil erosion and sediment control, or the latest edition.

14. GABIONS

All gabions shall be PVC coated woven wire baskets. Stone size shall be 4 inches to 7 inches, (Class IV gabions)

15. FENCE

- Split rail fencing: Fencing shall be constructed in accordance with the details on these plans. The split rail fence shall be constructed of locust post and spruce rails, round side out, with post spaced 10 feet on center. The wire fabric shall be 4" x 2", 14 gauge, black vinyl coated welded wire mesh attached to the outside of the fence with stainless steel electrical staples 12 inches on center, each rail, and shall extend 6 inches below finished grade.
- Chain link fencing: Construct fencing in accordance with the State Highway Administration Standard details G30.01 and G30.02. Use specifications for a 6-foot fence, substituting 42" fabric and 6'-6" line posts. Construct the gate in accordance with SHA Standard Detail G32.01 with 42" fabric. The fabric used for the fence and gate must conform to AASHTO Designation M181-74.

16. CONSTRUCTION INSPECTION BY DESIGNATED ENGINEERS

The construction of the pond and embankment, and certification that the pond and embankment have been built in accordance with the plans shall be under the supervision of a Registered Professional Engineer. The engineer shall be notified sufficiently in advance of construction in order that arrangements can be made for (1) Inspection of pipe trench and bedding, (2) Inspection of riser and anti-seep collars and, (3) Supervision of embankment construction and compaction testing. The engineer shall direct the handling of water during construction, minor changes not affecting the integrity of the dam in order to compensate for unusual soil conditions, and the removal and replacement of defective fill.

AS-BUILT CERTIFICATION FOR SWM
 Note: There is no "AS-BUILT" information provided on this sheet. It is required to SWM, BUT RIPS AND UTILITIES MAY VARY. ROBERT JENKINS, PE # 18868, 1-24-17

"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 18868, Expiration Date 10-08-2018 (FOR SWM AS-BUILT ONLY)"

BORING LOG										BORING B-2									
CLIENT					PROJECT					CLIENT					PROJECT				
The Robert B. Baker Company Geotechnical and Environmental Engineers 10100 Rte. 108, Suite 100 P.O. Box 108, Baltimore, MD 21286-1080 Tel: 410-381-1080					Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7					The Robert B. Baker Company Geotechnical and Environmental Engineers 10100 Rte. 108, Suite 100 P.O. Box 108, Baltimore, MD 21286-1080 Tel: 410-381-1080					Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7				
DATE REPORTED: 11/19/11					COMPLETED: 11/19/11					DATE REPORTED: 11/19/11					COMPLETED: 11/19/11				
DRAWN BY: J. J. Smith					CHECKED BY: J. J. Smith					DRAWN BY: J. J. Smith					CHECKED BY: J. J. Smith				
APPROVED BY: J. J. Smith					APPROVED BY: J. J. Smith					APPROVED BY: J. J. Smith					APPROVED BY: J. J. Smith				
LOCATION: J-18 (Bottom of Pond #2 = EL. 292 (2) Top of Embankment = EL. 290										LOCATION: J-18 (Bottom of Pond #2 = EL. 292 (2) Top of Embankment = EL. 290									

BORING LOG										BORING B-1									
CLIENT					PROJECT					CLIENT					PROJECT				
The Robert B. Baker Company Geotechnical and Environmental Engineers 10100 Rte. 108, Suite 100 P.O. Box 108, Baltimore, MD 21286-1080 Tel: 410-381-1080					Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7					The Robert B. Baker Company Geotechnical and Environmental Engineers 10100 Rte. 108, Suite 100 P.O. Box 108, Baltimore, MD 21286-1080 Tel: 410-381-1080					Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7				
DATE REPORTED: 11/19/11					COMPLETED: 11/19/11					DATE REPORTED: 11/19/11					COMPLETED: 11/19/11				
DRAWN BY: J. J. Smith					CHECKED BY: J. J. Smith					DRAWN BY: J. J. Smith					CHECKED BY: J. J. Smith				
APPROVED BY: J. J. Smith					APPROVED BY: J. J. Smith					APPROVED BY: J. J. Smith					APPROVED BY: J. J. Smith				
LOCATION: J-18 (Bottom of Pond #1 = EL. 272 (2) Top of Embankment = EL. 280										LOCATION: J-18 (Bottom of Pond #1 = EL. 272 (2) Top of Embankment = EL. 280									

BORING LOG										BORING B-3									
CLIENT					PROJECT					CLIENT					PROJECT				
The Robert B. Baker Company Geotechnical and Environmental Engineers 10100 Rte. 108, Suite 100 P.O. Box 108, Baltimore, MD 21286-1080 Tel: 410-381-1080					Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7					The Robert B. Baker Company Geotechnical and Environmental Engineers 10100 Rte. 108, Suite 100 P.O. Box 108, Baltimore, MD 21286-1080 Tel: 410-381-1080					Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7				
DATE REPORTED: 11/19/11					COMPLETED: 11/19/11					DATE REPORTED: 11/19/11					COMPLETED: 11/19/11				
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APPROVED BY: J. J. Smith					APPROVED BY: J. J. Smith					APPROVED BY: J. J. Smith					APPROVED BY: J. J. Smith				
LOCATION: J-18 (Bottom of Pond #2 = EL. 292 (2) Top of Embankment = EL. 290										LOCATION: J-18 (Bottom of Pond #2 = EL. 292 (2) Top of Embankment = EL. 290									

BORING LOG										BORING B-4									
CLIENT					PROJECT					CLIENT					PROJECT				
The Robert B. Baker Company Geotechnical and Environmental Engineers 10100 Rte. 108, Suite 100 P.O. Box 108, Baltimore, MD 21286-1080 Tel: 410-381-1080					Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7					The Robert B. Baker Company Geotechnical and Environmental Engineers 10100 Rte. 108, Suite 100 P.O. Box 108, Baltimore, MD 21286-1080 Tel: 410-381-1080					Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7 Emerson Station 3, Area 7				
DATE REPORTED: 11/19/11					COMPLETED: 11/19/11					DATE REPORTED: 11/19/11					COMPLETED: 11/19/11				
DRAWN BY: J. J. Smith					CHECKED BY: J. J. Smith					DRAWN BY: J. J. Smith					CHECKED BY: J. J. Smith				
APPROVED BY: J. J. Smith					APPROVED BY: J. J. Smith					APPROVED BY: J. J. Smith					APPROVED BY: J. J. Smith				
LOCATION: J-18 (Bottom of Pond #2 = EL. 292 (2) Top of Embankment = EL. 290										LOCATION: J-18 (Bottom of Pond #2 = EL. 292 (2) Top of Embankment = EL. 290									

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

Robert Jenkins
 HOWARD SOIL CONSERVATION DISTRICT
 DATE: 11/19/11

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

Robert Jenkins
 SIGNATURE OF DEVELOPER
 PRINT NAME BELOW SIGNATURE
 DATE: 11/19/11

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

Robert Jenkins
 SIGNATURE OF ENGINEER
 PRINT NAME BELOW SIGNATURE
 DATE: 11/19/11

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18868, EXPIRATION DATE 10/08/2018.

Robert Jenkins
 PROFESSIONAL ENGINEER

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Robert Jenkins 2-23-12
 CHIEF, BUREAU OF HIGHWAYS

HOWARD COUNTY DEPT. OF PLANNING & ZONING
Robert Jenkins 2/28/12
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

Robert Jenkins 3/16/12
 CHIEF, DIVISION OF LAND DEVELOPMENT

1-24-17 AS BUILT SUBMISSION
 2-10-14 UPDATE OWNER/DEVELOPER INFO.
 Date No. Revision Description

EMERSON
 SECTION 3 - AREA 7 - PARCEL A
 "Future Employment Use"

OWNER/DEVELOPER:
 EMERSON DEVELOPMENT IX LLC
 ONE TEXAS STATION COURT, SUITE 200
 TIMONIUM, MD 21093 (410) 689-8000

DMW
 Daft McCune Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

SUBMISSION NAME: EMERSON SECTION 3 AREA 7 LOT/FACEL # PART OF 837
 DATE: 11/19/11 SHEET NO. 26 OF 30
 TAX/PAID MAP: MND-3 DATE: 6/11/11 ORDER: 1942 6069.03
 TRAILER CODE: E-15 SHER CODE: 7520000

TITLE: FINAL PLAN STORMWATER MANAGEMENT BORING LOGS

Des By: TJC Scale: As Noted Proj. No.: 95054.W
 Dwn By: JSS Date: 10/19/11 26 of 30
 Ck By: JDF Approved

General Notes:

THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.13A OF THE HOWARD COUNTY CODE, THE LANDSCAPE MANUAL AND THE APPROVED EMERSON LANDSCAPE DESIGN CRITERIA.

Legend

- EX CURB & GUTTER
- EX MAJOR CONTOURS
- EX MINOR CONTOURS
- EX STORM DRAIN
- EX SEWER
- EX WATER
- EXISTING TREE LINE
- EXISTING WETLAND LIMIT
- PROPERTY LINE
- ROADWAY RIGHT-OF-WAY
- PROPOSED LOT LINE
- PROPOSED EASEMENT
- PROPOSED CURB & GUTTER
- PROPOSED SIDEWALK
- PROP. STORM DRAIN
- PROP. SEWER
- PROP. WATER
- PROP. MAJOR CONTOURS
- PROP. MINOR CONTOURS
- PROP. TREE LINE
- PROPOSED SHADE TREE
- FOREST CON EASEMENT
- REFORESTATION AREA
- RETENTION AREA
- NON WOODY VEGETATION ZONE
- 45' BGE RESTRICTED AREA

DEVELOPERS CERTIFICATE:

I HEREBY CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN SECTION 16.13A OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL AND THE EMERSON LANDSCAPE DESIGN CRITERIA. I FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Robert Jenkins 1/5/12
 SIGNATURE OF DEVELOPER DATE
 PRINT NAME BELOW SIGNATURE
 Robert Jenkins

DATA SOURCES:

Existing topography shown hereon is a result of an aerial survey provided by Air Survey Corporation dated 1998 supplemented with field run information performed by Darf McCune Walker, Inc. dated 2000.

Property boundary shown hereon is a result of field run monumented boundary survey performed on or about June 25, 1999 by Darf McCune Walker, Inc.

Soils if shown provided by Soil Data Maps dated 2005 published by National Resources Conservation Service (NRCS).

Zoning information shown hereon provided by Howard County Department of Planning and Zoning, adapted by Howard County Council February 2, 2004.

Wetland and stream limits shown hereon were originally approved by Maryland Department of the Environment and the US Corps of Engineers in April 2001 and re-verified by those agencies in October 2005.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

Walter J. ... 2-23-12
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

Robert Jenkins 2/28/12
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

V. J. ... 3/6/12
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

3-17-11	AS BUILT BUFFERS PER R.F. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	
2-10-14	UPDATE OWNER/DEVELOPER INFO.	
Date	No.	Revision Description
1-24-17		AS BUILT SUBMISSION

EMERSON

SECTION 3 - AREA 7 - PARCEL A
 "Future Employment Use"

OWNER/DEVELOPER:

EMERSON DEVELOPMENT IX LLC
 ONE TEXAS STATION COURT, SUITE 200
 TIMONIUM, MD 21083 (410) 689-8000

DMW

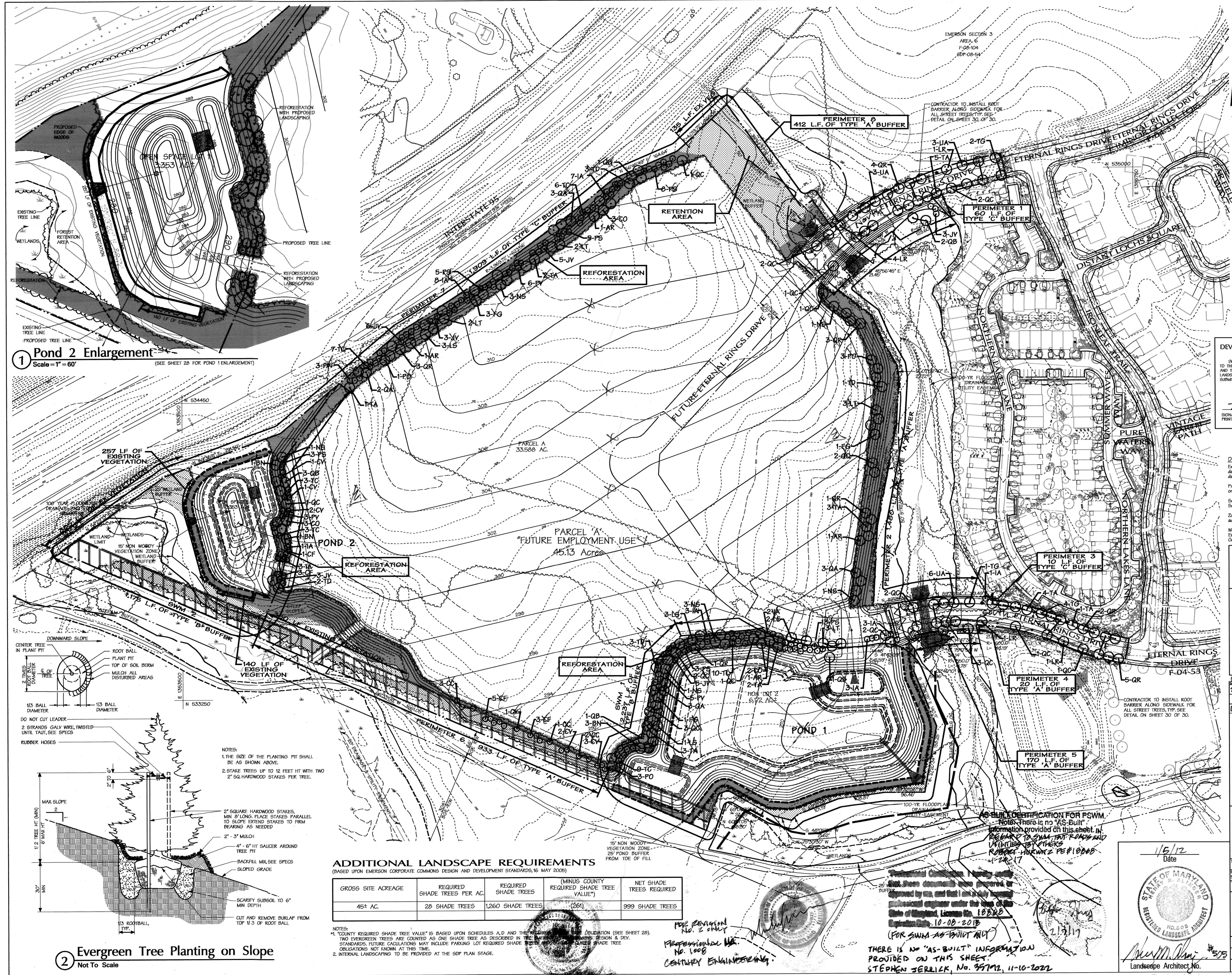
Darf McCune Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 396-3333
 Fax 396-4700

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

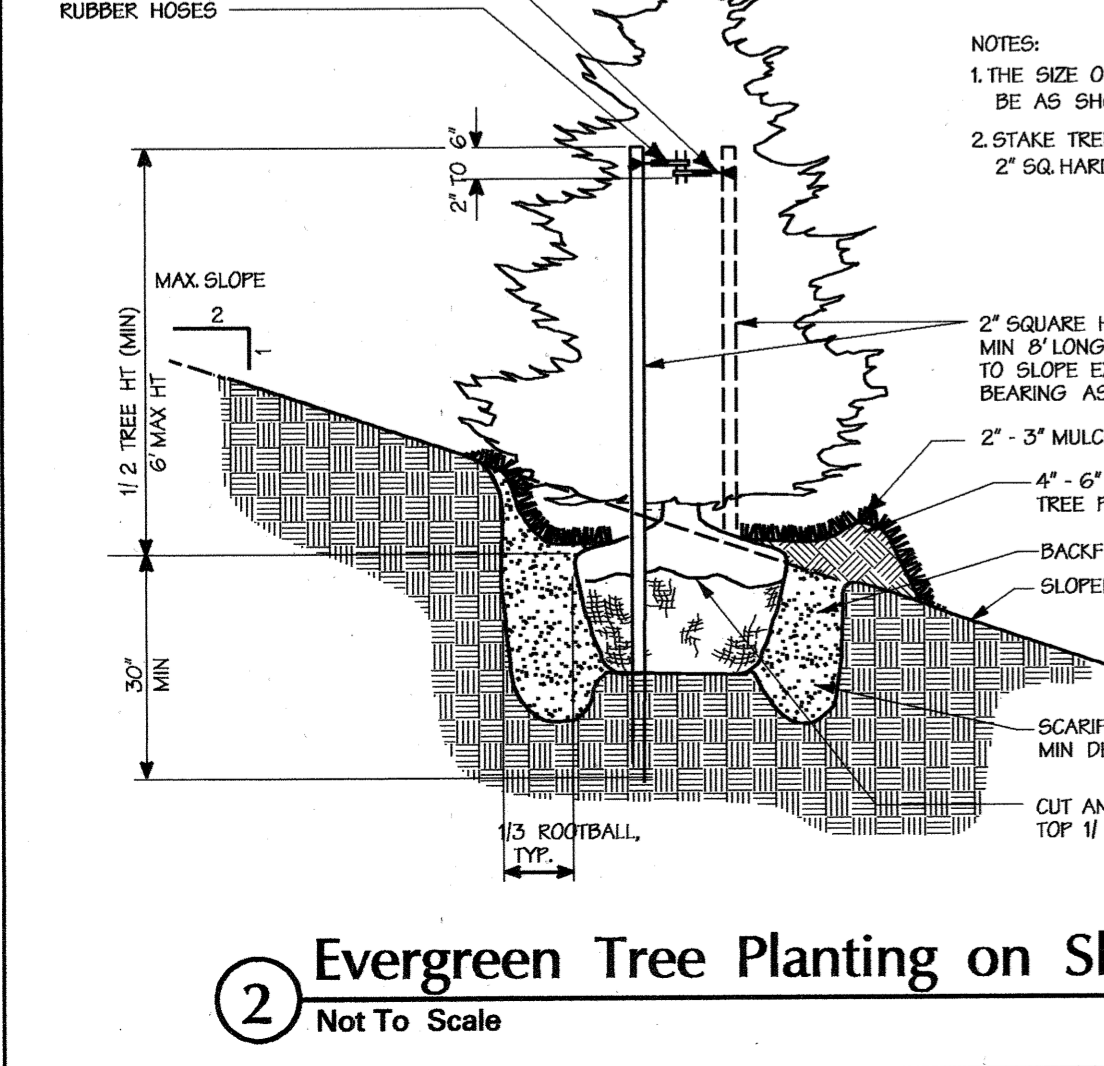
SECTION NAME	EMERSON	SECTION/AREA	SEC.3 AREA 7	LOT/PARCEL #	PART OF 837
RAT#	28 171 081 #	ZONE	IND-3	BLDG. HGT. #	6069.03
REVISION CODE	E-15	SWR# CODE	7920000		

TITLE: **FINAL PLAN LANDSCAPE & STREET TREE PLAN**

Des By	LET	Scale	1"=100'	Proj. No.	95054-W
Drn By	LET/JSS	Date	11/17/11		27 of 30
Chk By	Approved				



1 Pond 2 Enlargement
 Scale = 1" = 60'



ADDITIONAL LANDSCAPE REQUIREMENTS
 (BASED UPON EMERSON CORPORATE COMMONS DESIGN AND DEVELOPMENT STANDARDS, 16 MAY 2005)

GROSS SITE ACREAGE	REQUIRED SHADE TREES PER AC.	REQUIRED SHADE TREES	(MINUS COUNTY REQUIRED SHADE TREE VALUE*)	NET SHADE TREES REQUIRED
45± AC.	28 SHADE TREES	1260 SHADE TREES	(261)	999 SHADE TREES

NOTES:
 *1. COUNTY REQUIRED SHADE TREE VALUE IS BASED UPON SCHEDULES A.D AND THE REQUIREMENTS OF THE HOWARD COUNTY LANDSCAPE MANUAL.
 2. TWO EVERGREEN TREES ARE COUNTED AS ONE SHADE TREE AS DESCRIBED IN THE HOWARD COUNTY LANDSCAPE MANUAL, SECTION 4.1.1. STANDARDS, FUTURE CALCULATIONS MAY INCLUDE PARKING LOT REQUIRED SHADE TREES PER THE HOWARD COUNTY LANDSCAPE MANUAL, SECTION 4.1.1. OBLIGATIONS NOT KNOWN AT THIS TIME.
 3. INTERNAL LANDSCAPING TO BE PROVIDED AT THE SDP PLAN STAGE.

Professional Seal
 No. 1008
 CENTURY ENGINEERING

AS-BUILT CERTIFICATION FOR PSWM.
 Note: There is no "AS-Built" information provided on this sheet. IN REGARD TO SWMA FOR ROADWAY AND UTILITIES STAKES, ROBERT JENKINS PER 10/20/11

Professional Seal
 No. 35712, 11-10-2012
 PROVIDED IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 STEPHEN JERLIK, No. 35712, 11-10-2012

1/5/12
 Date

Professional Seal
 No. 505
 Landscape Architect No.

Landscape Notes

- Contractor shall notify Miss Utility 72 hours prior to construction.
- If utility lines are encountered in excavation of trees, other locations for trees shall be made by the contractor without additional compensation. No changes of location shall be made without approval of the landscape architect.
- Every possible safeguard shall be taken to protect building surfaces, equipment, and furnishing. The contractor shall be responsible for any damage or injury to person or property which may occur as a result of his negligence in the execution of the work.
- All equipment and tools shall be placed so as not to interfere or hinder the pedestrian and vehicular traffic flow. See Seasonal Plant List for planting times of bulbs and seasonal plants.
- The contractor shall review architectural/engineering plans to become thoroughly familiar with grading and surface utilities.
- The contractor is advised of the existence of underground utilities on the site. Their exact location shall be verified in the field with the owner or general contractor prior to the commencement of any digging operations. In the event they are uncovered, the contractor shall be held responsible for all damage to utilities and such damage shall not result in any additional expenses to the owner.
- The contractor shall dispose of stumps and major roots of all plants to be removed. Any depressions caused by removal operations shall be refilled with fertile, friable soil placed and compacted so as to reestablish proper grade for new planting and/or lawn areas.
- Landscape Contractor shall coordinate plant bud filling operations and plant material installation with General Contractor and Utilities Contractor. At the time of final inspection with acceptance, all electric, water, drainage, and fountain utilities, as well as all plant materials, shall remain undamaged. Likewise, Landscape Contractor and Utilities Contractor shall coordinate efforts to ensure that surface utilities are at the proper elevation relative to final grades.
- The contractor shall coordinate with lighting and irrigation contractors regarding timing of installation of plant material.
- The contractor shall insure that his work does not interrupt established or projected drainage patterns.
- The contractor is responsible for testing project soils. The contractor is to provide a certified soils report to the owner. The contractor shall verify that the soils on site are acceptable for the proper growth of the proposed plant material. Should the contractor find poor soil conditions, the contractor shall be required to provide soil amendments as necessary. These amendments shall include, but not be limited to, fertilizers, lime, and topsoil. Proper planting soils must be verified prior to planting of materials.
- Landscape Contractor to follow landscape specification guidelines for Baltimore Washington Metro area approved by LCAMM.
- Plants shall conform to current "American Standards for Nursery Stock" by American Association of Nurserymen (AAN), particularly with regard to size, growth rate of ball, and density of branch structure. Plant material shall be tagged at the source by the landscape architect unless this requirement is specifically waived.
- The contractor shall stake all material located on the site for review and/or adjustment by the landscape architect prior to planting. All locations are to be approved by the landscape architect before excavation.
- All plants (B&B or container) shall be properly identified by weather-proof labels securely attached thereto before delivery to project site. Labels shall identify plants by name, species, and size. Labels shall not be removed until the final inspection by the landscape architect or agent in charge.
- Any material and/or work may be rejected by the landscape architect if it does not meet the requirements of the specifications. All rejected materials shall be removed from the site by the contractor.
- No substitutions shall be made without written consent of the owner or landscape architect.
- The landscape architect or owner shall have the right, at any stage of the operations, to reject any and all work and material which, in his opinion, does not meet the requirements of these plans and specifications.
- During planting operations, excess waste materials shall be promptly and frequently removed from the site.
- In the event of variation between quantities shown on the plant list and the plans, the plans shall control. The contractor is responsible for verifying all plant quantities prior to the commencement of work. Soil quantity take-offs are the responsibility of the contractor. All discrepancies shall be reported to the landscape architect for clarification prior to bidding. The contractor shall furnish plant material in sizes as specified in plant list.
- Maintain positive drainage out of planting beds at a minimum 2% slope. All grades, dimensions, and existing conditions shall be verified by the contractor on site before construction begins. Any discrepancies shall be brought to the attention of the landscape architect or owner.
- All planting beds adjacent to lawn, sod, or seeded areas shall be spade edged.
- All proposed trees to be installed either entirely in or entirely out of planting beds. Planting bed lines are not to be obstructed. All shrubs and ground cover areas shall be planted in continuous prepared bed and top dressed with 3-inch shredded hardwood mulch. Mulch shall have been shredded within the last six months.
- The contractor shall be wholly responsible for stability and conditions of all trees and shrubs and shall be legally liable for any damage caused by instability of any plant materials.
- Maintenance shall begin after each plant has been installed and shall continue until 90 days after final acceptance by the architect or owner representative. Maintenance includes mowing of turf, watering, pruning, weeding, fertilizing, mulching, replacement of sick or dead plants, and any other care necessary for the proper growth of the plant material. The contractor must be able to provide continued maintenance if requested by the owner.
- Upon completion of all landscaping, an acceptance of the work shall be held. The contractor shall notify the landscape architect or owner for scheduling the inspection at least seven (7) days prior to the anticipated inspection date.
- All trees shall be guaranteed for 12 months from the date of acceptance. All shrubs and ground covers shall be guaranteed for 12 months from the date of acceptance.
- All disturbed areas on the site not planted with shrubs or ground cover shall be fine graded and seeded or sodded as noted on landscape plan.
- All sod shall be obtained from areas having growing conditions familiar to areas to be covered. Areas to be sodded shall be raked of stones and debris. Debris and stones over 1 inch in diameter shall be removed from the site. All damaged sod will be rejected. All sod must be placed with staggered joints, tightly butted, with no inequalities in grade. Place all sod in rows at right angles to slopes (where applicable).
- All planting procedures shall conform to Daft McCune Walker Inc. specifications.
- PLANTING MIX:**
 - Finishing mix shall be prepared at approved on-site staging area using approved on-site existing soil. Mix minimum quantities of 20 cubic yards or sufficient mix for entire job if less than 20 cubic yards is required.
 - Thoroughly mixed in the following proportions for tree and shrub planting mix:
 - existing soil
 - sharp sand
 - wood residuals
 - lime superphosphate
 - dolomite limestone (eliminate for acid loving plants)
 - For bed planting, shrubs and groundcover spaces 24 inches or closer, incorporate the following ingredients per 20 sf and incorporate into top 8 inches of existing soils by rototilling or similar method of incorporation:
 - sharp sand
 - organic material
 - lime superphosphate
 - dolomite limestone (eliminate for acid loving plants)
- The owner, tenant, and/or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and forms, fences and walls. All plant materials shall be maintained in good growing condition, and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.
- At the time of plant installation, all shrubs and trees listed and approved on the Landscape Plan shall comply with the proper height requirement in accordance with the Howard County Landscape Manual. In addition, no substitutions or relocations of the required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviation from the approved Landscape Plan may result in denial or delay in the release of landscape surety until such time as all required materials are planted and/or revisions are made to the applicable plans.

PLANT LIST: STREET TREES*

QTY.	SYM.	SCIENTIFIC NAME	COMMON NAME	SIZE	CONDITION	REMARKS
7	LR	LIQUIDAMBAR STYRACIFLUA 'ROTUNDILOBA'	SEEDLESS SWEETGUM	2 1/2" - 3" CAL.	B & B	FULL CROWN
8	QC	QUERCUS COCCINEA	SCARLET OAK	2 1/2" - 3" CAL.	B & B	FULL CROWN
11	QR	QUERCUS RUBRA	RED OAK	2 1/2" - 3" CAL.	B & B	FULL CROWN
10	TA	TILIA AMERICANA 'REDMOND'	REDMOND AMERICAN LINDEN	2 1/2" - 3" CAL.	B & B	FULL CROWN
7	TG	TILIA CORDATA 'GREENSPIRE'	GREENSPIRE LITTLELEAF LINDEN	2 1/2" - 3" CAL.	B & B	FULL CROWN
12	UA	ULMUS AMERICANA 'VALLEY FORGE'	VALLEY FORGE AMERICAN ELM	2 1/2" - 3" CAL.	B & B	FULL CROWN

* CONTRACTOR TO INSTALL ROOT BARRIER ALONG ALL STREET TREES SEE DETAIL ON SHEET 30 OF 30.

PLANT LIST: OTHER LANDSCAPE

QTY.	SYM.	SCIENTIFIC NAME	COMMON NAME	SIZE	CONDITION	REMARKS
4	AR	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	2 1/2" - 3" CAL.	B & B	FULL CROWN
5	BN	BETULA ALGIDA	RIVER BIRCH	10" HT.	B & B	FULL CROWN, MULTI STEM
6	CC	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	1 1/2" - 2" CAL.	B & B	FULL CROWN
12	CF	CORNUS FLORIDA 'CHEROKEE BRAVE'	CHEROKEE BRAVE DOGWOOD	8" HT.	B & B	FULL CROWN
8	CO	CELTIS OCCIDENTALIS	HACKBERRY	2 1/2" - 3" CAL.	B & B	FULL CROWN
10	CV	CORYLANTHUS VIRGINICUS	FRINGETREE	1 1/2" - 2" CAL.	B & B	FULL CROWN
1	FG	FAGUS GRANDIFOLIA	AMERICAN BEECH	2 1/2" - 3" CAL.	B & B	FULL CROWN, SINGLE STEM
1	IA	ILEX OPACA	AMERICAN HOLLY	5'-6" HT.	B & B	FULL CROWN, SINGLE STEM
1	JV	JUNIPERUS VIRGINIANA	SWEET GUM	2 1/2" - 3" CAL.	B & B	FULL CROWN
9	LS	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	2 1/2" - 3" CAL.	B & B	FULL CROWN
10	LT	LIRIODENDRON TULIPIFERA	YELLOW POPLAR	2 1/2" - 3" CAL.	B & B	FULL CROWN
10	NS	NYSSA SYLVATICA	BLACK GUM	2 1/2" - 3" CAL.	B & B	FULL CROWN, SINGLE LEADER
7	PD	PLATANUS OCCIDENTALIS	SWAMP WHITE OAK	2 1/2" - 3" CAL.	B & B	FULL CROWN, SINGLE LEADER
7	PS	PINUS STROBUS	EASTERN WHITE PINE	6'-8" HT.	B & B	FULL CROWN
17	PV	PINUS VIRGINIANA	VIRGINIA PINE	2 1/2" - 3" CAL.	B & B	FULL CROWN
1	QA	QUERCUS ALBA	WHITE OAK	2 1/2" - 3" CAL.	B & B	FULL CROWN
2	QB	QUERCUS PRINCEPIS	SWAMP WHITE OAK	2 1/2" - 3" CAL.	B & B	FULL CROWN
17	QC	QUERCUS COCCINEA	SCARLET OAK	2 1/2" - 3" CAL.	B & B	FULL CROWN
8	QR	QUERCUS RUBRA	RED OAK	2 1/2" - 3" CAL.	B & B	FULL CROWN
1	TA	TILIA AMERICANA 'REDMOND'	REDMOND AMERICAN LINDEN	2 1/2" - 3" CAL.	B & B	FULL CROWN
38	TC	TAXODIUM DISTICHUM	CANADIAN HEMLOCK	5'-6" HT.	B & B	FULL CROWN, SINGLE STEM
9	TD	TAXODIUM DISTICHUM	BALD CYPRESS	6'-8" HT.	B & B	FULL CROWN

SCHEDULE A PERIMETER LANDSCAPE EDGE

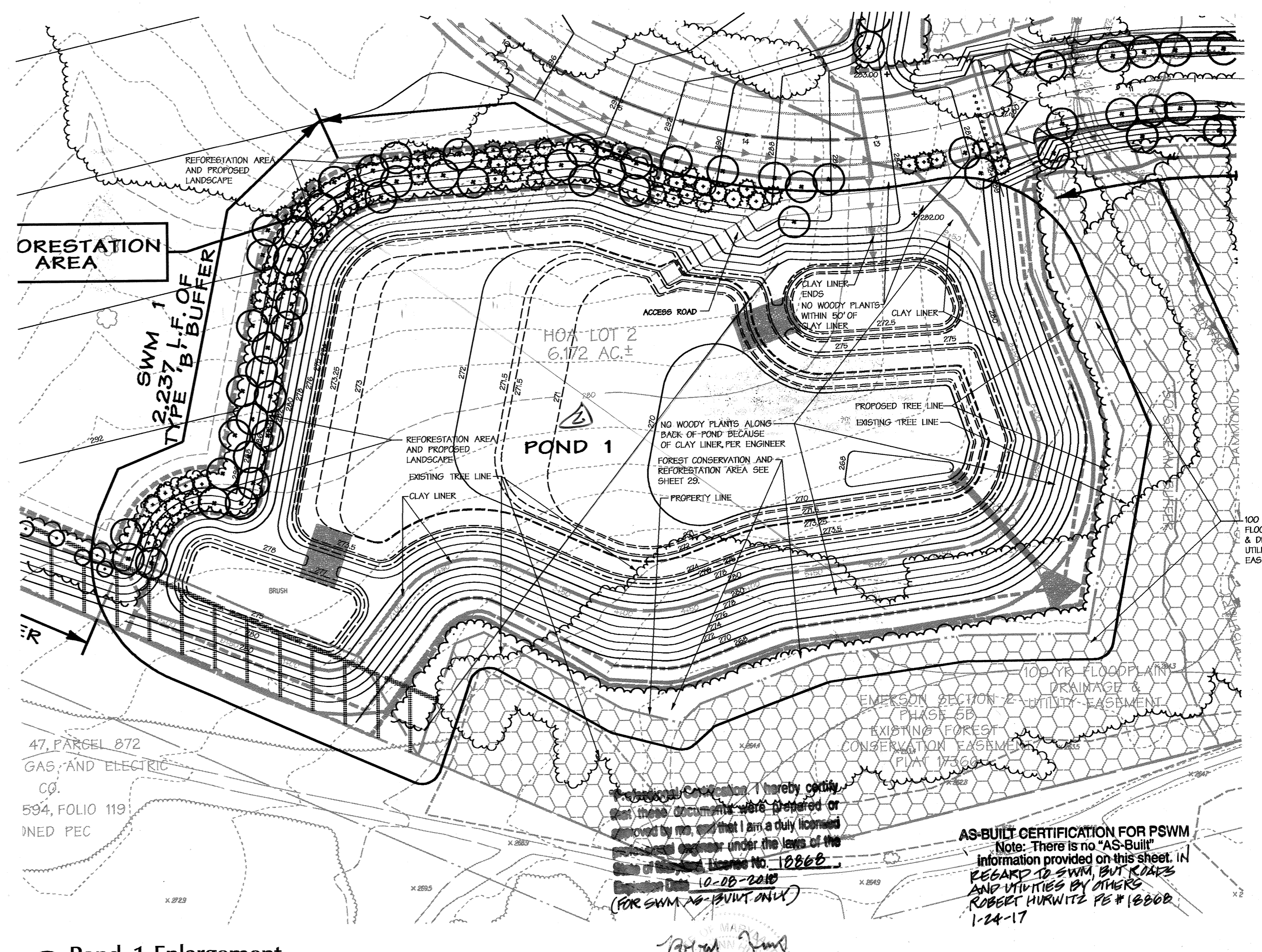
CATEGORY	ADJACENT TO ROADWAYS		ADJACENT TO PERIMETER PROP.					
	P 7	P 1	P 2	P 3	P 4	P 5	P 6	P 8
LANDSCAPE TYPE "A"			YES		YES	YES	YES	
LINEAR FEET OF PERIMETER			1480 LF.		20 LF.	170 LF.	833 LF.	412 LF.
LANDSCAPE TYPE "B"								
LINEAR FEET OF PERIMETER								
LANDSCAPE TYPE "C"				YES				
LINEAR FEET OF PERIMETER	1809 LF.	60 LF.		10 LF.				
CREDIT FOR EXISTING VEGETATION (DESCRIBE BELOW IF NEEDED)	520 LF.	N/A	N/A	N/A	N/A	N/A	360 LF.	412 LF.
CREDIT FOR BERM (DESCRIBE BELOW IF NEEDED)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NUMBER OF PLANTS PROVIDED								
SHADE TREES	35	2	25	0	0	0	10	0
EVERGREEN TREES	69	0	0	0	0	0	0	0
SHRUBS	0	0	0	0	0	0	0	0
NUMBER OF PLANTS PROVIDED								
SHADE TREES	35	2	25	0	0	0	3	0
EVERGREEN TREES	69	0	0	0	0	0	0	0
OTHER TREES (2:1 SUBSTITUTION)	0	0	0	0	0	0	20	0
(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)								

NOTES:
1. SURETY AMOUNT FOR THE REQUIRED 35 SHADE TREES, 75 EVERGREEN TREES IS \$33,450.

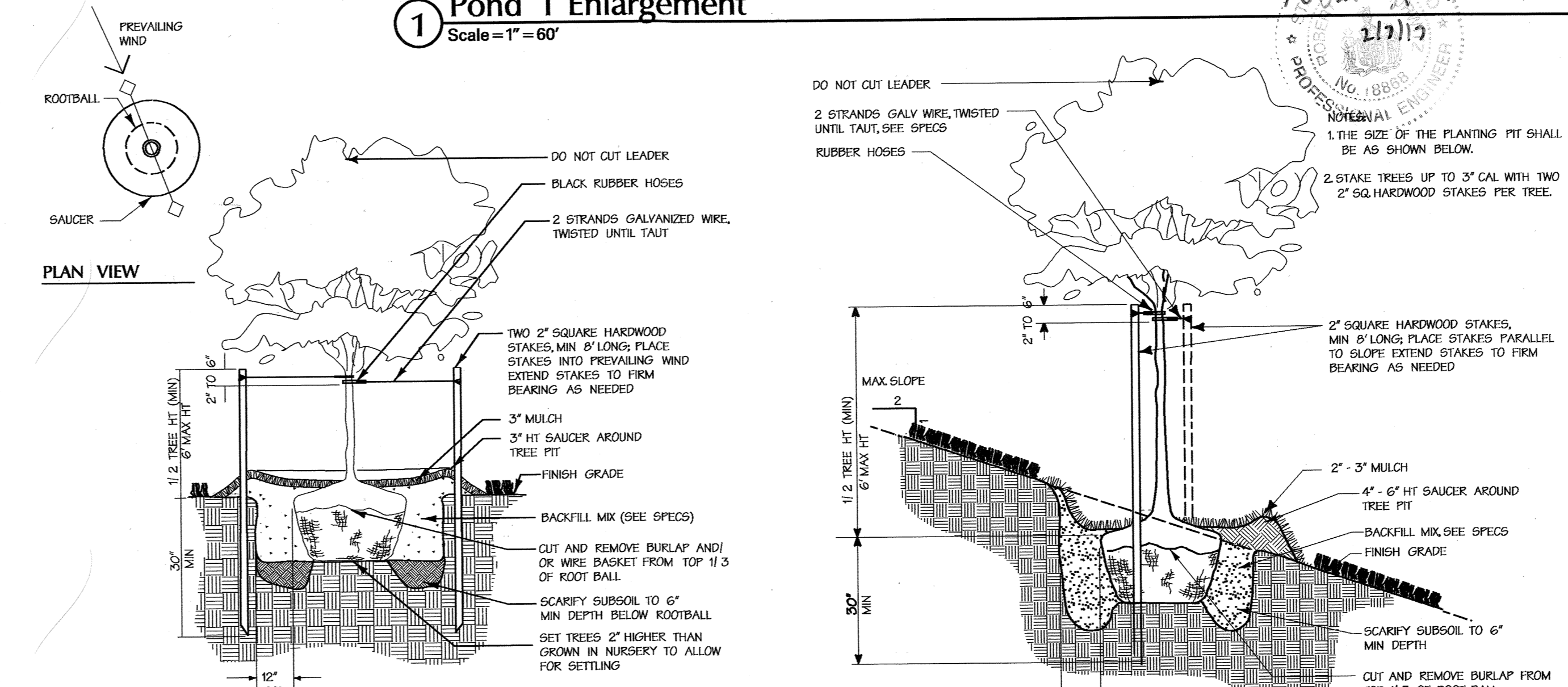
SCHEDULE D: STORMWATER MANAGEMENT AREA LANDSCAPING

POND #	1	2
LINEAR FT. OF PERIMETER (TYPE "B")	2,237 LF.	1,175 LF.
NUMBER OF TREES REQUIRED		
SHADE TREES @ 1/50 L.F.	45	24
EVERGREEN TREES @ 1/40 L.F.	56	29
CREDIT FOR EXISTING VEGETATION	N/A	397 LF.
CREDIT FOR FOREST CONSERVATION	N/A	N/A
TOTAL		
NUMBER OF TREES REQUIRED		
SHADE TREES	45	16
EVERGREEN TREES	56	19
OTHER TREES		61
NUMBER OF TREES PROVIDED		
SHADE TREES	45	12
EVERGREEN TREES	56	19
OTHER TREES (2:1)	0	8
TOTAL		75

NOTES:
1. SURETY AMOUNT FOR THE REQUIRED 61 SHADE TREES, 75 EVERGREEN TREES IS \$29,550.00.



1 Pond 1 Enlargement
Scale = 1" = 60'



2 Less Than 3" Cal. Tree Planting
Not To Scale

3 Tree Planting on Slope
Not To Scale

STREET TREE SCHEDULE

ROAD NAME	LENGTH OF ROAD (BOTH SIDES)	CREDIT FOR EXISTING VEGETATION	# OF TREES REQUIRED (1 PER 40 L.F.)	# OF TREES PROVIDED
ETERNAL RINGS ROAD	2,068	N/A	51.7	55

NOTES:
1. STREET TREES FOR REMAINING PORTIONS OF ETERNAL RINGS DRIVE WILL BE PROVIDED AT TIME OF DEVELOPMENT @ 1/40 L.F. STREET TREE LOCATIONS SHALL COMPLY WITH SECTION IX OF THE DEVELOPMENT CRITERIA.
2. SURETY AMOUNT FOR 52 REQUIRED STREET TREES IS \$19,900.00. DED SHALL INCLUDE THE PUBLIC STREET TREES IN THEIR COST ESTIMATE FOR ROAD CONSTRUCTION.

Professional Seal # 1009
CENTIMETER ENGINEERING, INC.
THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
STEPHEN JERRICK, No. 39792, 11-10-2022

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
W. R. Wall
CHIEF, BUREAU OF HIGHWAYS
DATE: 2-23-17

HOWARD COUNTY DEPT. OF PLANNING & ZONING
Chief Development Engineering Division
Date: 2/28/17
Chief, Division of Land Development
Date: 3/1/17

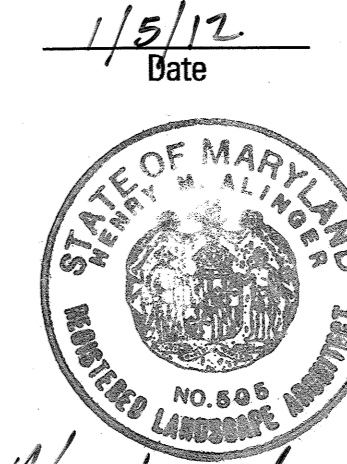
EMERSON
SECTION 3 - AREA 7 - PARCEL A
"Future Employment Use"
OWNER/DEVELOPER:
EMERSON DEVELOPMENT IX LLC
ONE TEXAS STATION COURT, SUITE 200
TIMONIUM, MD 21093 (410) 680-8000

DMW
Duff McCune Walker, Inc.
300 East Pennsylvania Avenue
Towson, Maryland 21286
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

SECTION NAME	EMERSON	SECTION/AREA	SEC.3 AREA 7	SUB/PARCEL #	PART OF 837
PLAT OR LOT OR REF. #	22933(S) 15	ZONING MAP #	MKD-3	SECTION	6TH
DATE	1-24-17	REVISION DESCRIPTION		SECTION TRACT	6069.03
DATE	1-24-17	REVISION DESCRIPTION	AS-BUILT SUBMISSION		

FINAL PLAN
LANDSCAPE SCHEDULES

Des By	LET	Scale	NO SCALE	Proj. No.	95054-W
Drn By	LET/JSS	Date	10/19/11	28 of 30	
Chk By		Approved			



LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING ROAD EDGE
- EXISTING SHRUB LINE
- EXISTING WOODS EDGE
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- SOILS LINE
- 6' STREAM BUFFER
- LIMIT OF DISTURBANCE
- 25' STATE WETLAND BUFFER
- WETLAND LIMIT
- PROPOSED CONTOURS
- 100-YEAR FLOODPLAIN DRAINAGE & UTILITY EASEMENT-11.665 AC. (INCLUDES 10.722 AC. BGE SETBACK)
- STREAM CENTER LINE
- PROPOSED WOODS EDGE
- REFORESTATION AREA PLANTING ZONE 'B' - 13,937 AC.
- RETENTION AREA - 11,347 AC.
- 45' BGE SETBACK - 11,700 AC. (INCLUDES 10.722 AC. 100-YR FLOODPLAIN)
- 25' REFORESTATION AREA PLANTING ZONE 'A' - 10,695 AC. WITHIN BGE SETBACK (SHORT MATURE HEIGHT)
- FOREST TO BE CLEARED - 112,608 AC.
- NON-CREDITED AREA - 100-YR FLOODPLAIN & BGE SETBACK - 11,665 AC.
- FOREST CONSERVATION EASEMENT (FCE)
- PERMANENT FOREST PROTECTIVE SIGNAGE
- TRANSMISSION TOWERS
- TEMPORARY FOREST PROTECTIVE SIGNAGE
- EXISTING OFF-SITE FOREST CONSERVATION AREAS
- STEEP SLOPES 25% AND GREATER (10:1 AS)
- TEMPORARY FOREST PROTECTIVE SIGNAGE

NOTE: REFORESTATION AREAS TO BE PLANTED UNDER FUTURE DEVELOPMENT OF PARCEL 'A' PROCEEDS

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 31373 Expiration Date: 1-21-23



DATA SOURCES
Existing topography shown hereon is a result of an aerial survey provided by Air Survey Corporation dated 1936 supplemented with field run information performed by Dale McCune Walker, Inc. dated 2010.
Property boundary shown hereon is a result of field run monumented boundary survey performed on or about June 23, 1999 by Dale McCune Walker, Inc.
Soils as shown provided by Soil Data Mart dated 2005 published by Natural Resources Conservation Service (NRCS)
Zoning information shown hereon provided by Howard County Department of Planning and Zoning, adapted by Howard County Council February 2, 2004.
Wetland and stream limits shown hereon were originally approved by Maryland Department of the Environment and the US Corps of Engineers in April 2001 and re-verified by those agencies in October 2003.

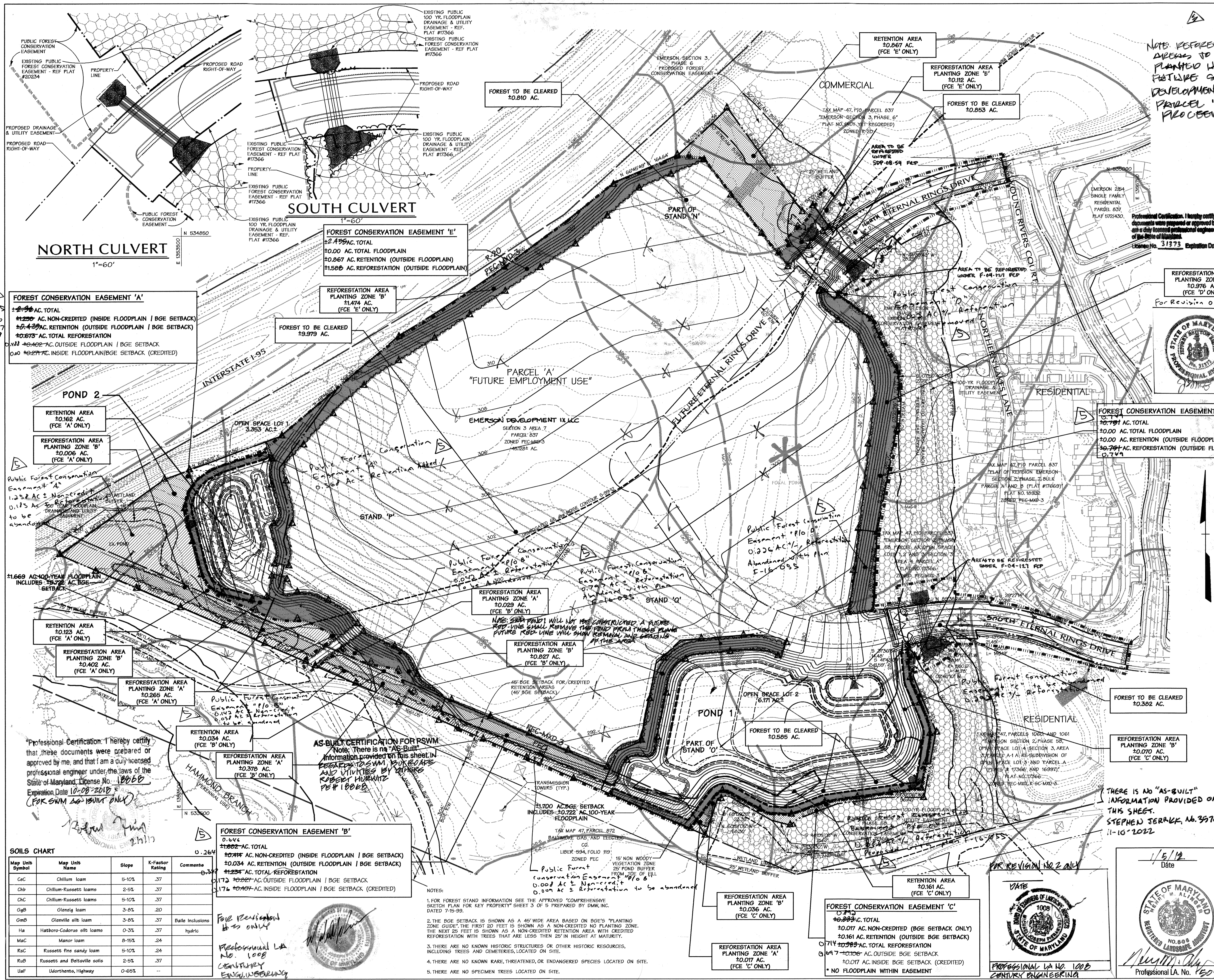
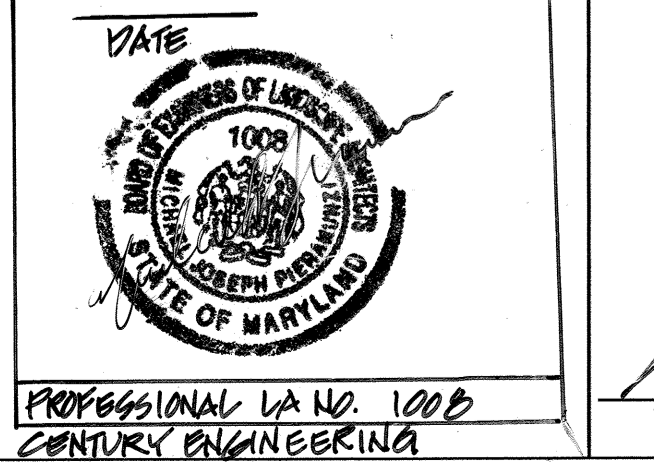
APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS		3-23-17
Walter Smith	CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING		2/28/11
Michael J. ...	CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
APPROVED: DIVISION OF LAND DEVELOPMENT		3/1/12
...	CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
03-12-21	Revised Final Road Construction Plan	
06-17-16	REMOVED POND 2 AND NOTES TO DELAY REFORESTATION	
06-16-16	REMOVED FOREST CONSERVATION AREAS	
2-10-14	UPDATE OWNER/DEVELOPER INFO.	
Date	No.	Revision Description
1-24-17	AS-BUILT SUBMISSION	

EMERSON
SECTION 3 - AREA 7 - PARCEL A
"Future Employment Use"
OWNER/DEVELOPER:
EMERSON DEVELOPMENT IX LLC
ONE TEXAS STATION COURT, SUITE 200
TIMONIUM, MD. 21093 (410) 680-8000

DMW Dale McCune Walker, Inc. 200 East Pennsylvania Avenue Timonium, Maryland 21093 (410) 296-3333 Fax 296-4708		A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals	
SUBMISSION NAME	EMERSON	SECTION/AREA	SEC 3 AREA 7
DATE	11/17/11	DISTRICT	6TH
PROJECT NO.	95054.02	DATE	11/17/11
DATE	11/17/11	DATE	11/17/11

TITLE		FINAL PLAN FOREST CONSERVATION PLAN & SOILS MAP (Revised Sheet)	
Prep By	CRH	Scale	1"=100'
Drawn By	CRH	Date	11/17/11
Checked By	Approved	Proj. No.	95054.02
		29 of 30	

1/5/12
Date
Professional L.A. No. 1005
CENTURY ENGINEERING



FOREST CONSERVATION EASEMENT 'A'
1.483 AC. TOTAL
1.250 AC. NON-CREDITED (INSIDE FLOODPLAIN / BGE SETBACK)
0.233 AC. RETENTION (OUTSIDE FLOODPLAIN / BGE SETBACK)
0.000 AC. TOTAL REFORESTATION
0.000 AC. OUTSIDE FLOODPLAIN / BGE SETBACK
0.000 AC. INSIDE FLOODPLAIN / BGE SETBACK (CREDITED)

FOREST CONSERVATION EASEMENT 'E'
2.495 AC. TOTAL
2.000 AC. TOTAL FLOODPLAIN
0.067 AC. RETENTION (OUTSIDE FLOODPLAIN)
1.508 AC. REFORESTATION (OUTSIDE FLOODPLAIN)

REFORESTATION AREA PLANTING ZONE 'B'
11.474 AC. (FCE 'E' ONLY)

FOREST TO BE CLEARED
19,979 AC.

RETENTION AREA
10.162 AC. (FCE 'A' ONLY)

REFORESTATION AREA PLANTING ZONE 'B'
10.006 AC. (FCE 'A' ONLY)

RETENTION AREA
10.123 AC. (FCE 'A' ONLY)

REFORESTATION AREA PLANTING ZONE 'B'
10.402 AC. (FCE 'A' ONLY)

REFORESTATION AREA PLANTING ZONE 'A'
10.265 AC. (FCE 'A' ONLY)

RETENTION AREA
10.034 AC. (FCE 'B' ONLY)

REFORESTATION AREA PLANTING ZONE 'A'
10.378 AC. (FCE 'B' ONLY)

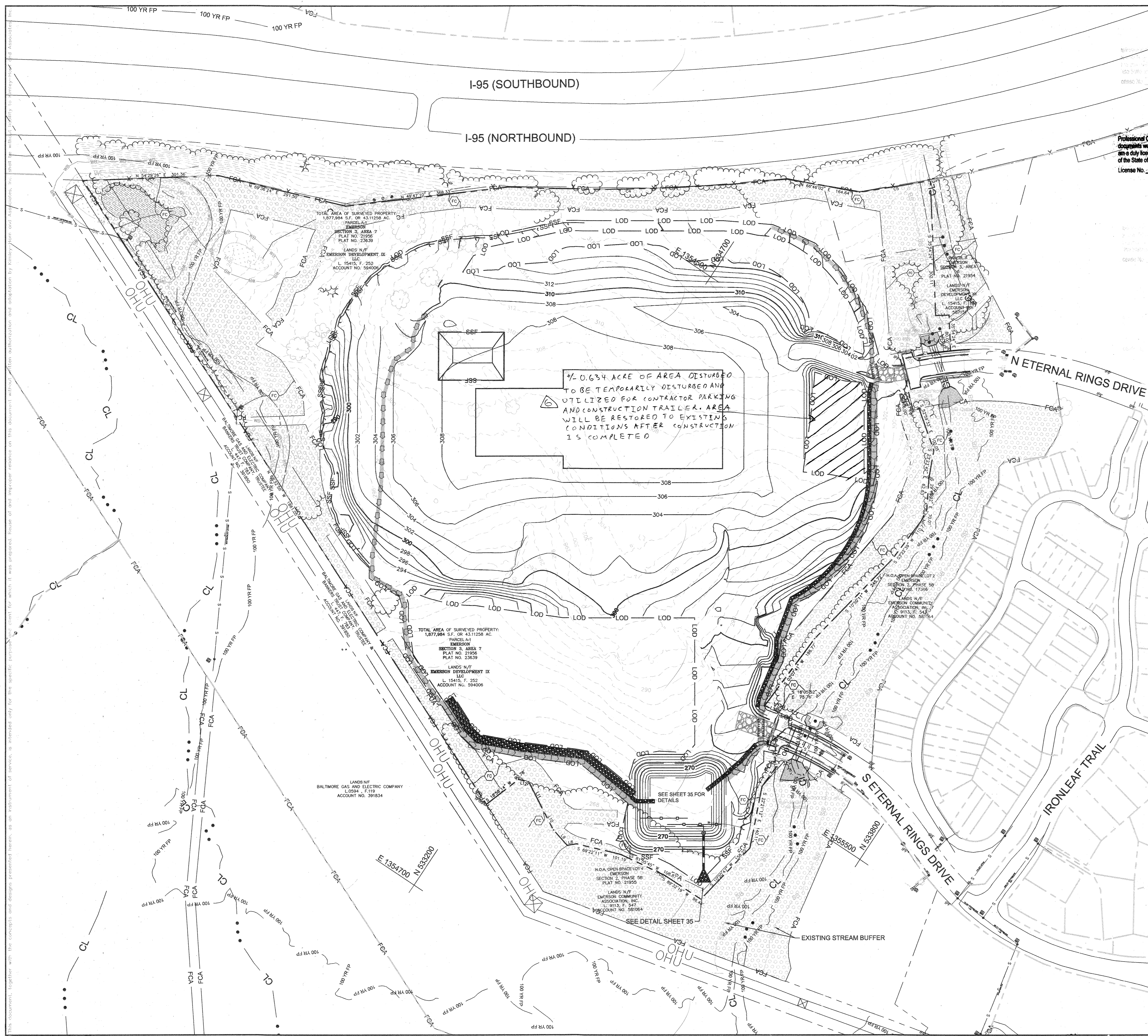
FOREST CONSERVATION EASEMENT 'B'
0.644 AC. TOTAL
0.211 AC. NON-CREDITED (INSIDE FLOODPLAIN / BGE SETBACK)
0.034 AC. RETENTION (OUTSIDE FLOODPLAIN / BGE SETBACK)
0.233 AC. TOTAL REFORESTATION
0.173 AC. OUTSIDE FLOODPLAIN / BGE SETBACK
0.176 AC. INSIDE FLOODPLAIN / BGE SETBACK (CREDITED)

SOILS CHART

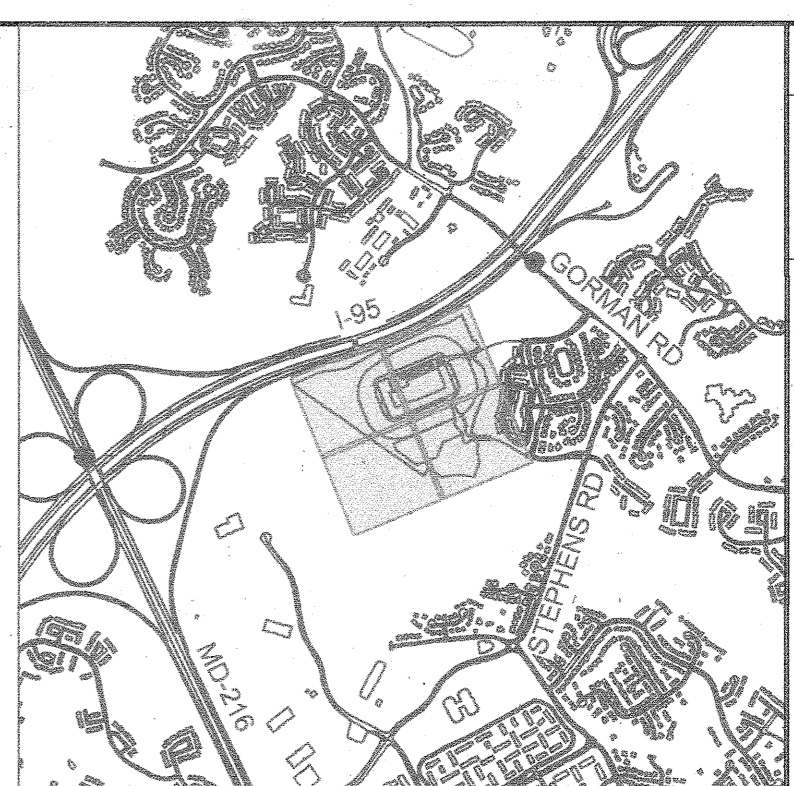
Map Unit Symbol	Map Unit Name	Slope	K-Factor Rating	Comments
CcC	Chillum loam	5-10%	.37	
Chb	Chillum-Russells loams	2-5%	.37	
ChC	Chillum-Russells loams	5-10%	.37	
GpB	Glenielg loam	3-8%	.20	
Gmb	Glenielg silt loam	3-8%	.37	Baile Inclusions
HdA	Hatboro-Codorus silt loams	0-3%	.37	hydric
MaC	Manor loam	8-15%	.24	
R5C	Russells fine sandy loam	5-10%	.24	
RuB	Russells and Beltsville soils	2-5%	.37	
Uaf	Udorthents, Highway	0-65%	--	

AS-BUILT CERTIFICATION FOR PSWM
Note: There is no "AS-Built" information provided on this sheet. INFORMATION PROVIDED BY THE OWNER/DEVELOPER AND UTILITIES BY THE PSWM CONTRACTOR. PSWM CONTRACTOR: ROBERT MURKOWITZ PE #18066

- NOTES:
- FOR FOREST STAND INFORMATION SEE THE APPROVED "COMPREHENSIVE SKETCH PLAN FOR KEY PROPERTY" SHEET 3 OF 5 PREPARED BY DMW, INC. DATED 7-19-09.
 - THE BGE SETBACK IS SHOWN AS A 45' WIDE AREA BASED ON BGE'S "PLANTING ZONE GUIDE". THE FIRST 20 FEET IS SHOWN AS A NON-CREDITED NO PLANTING ZONE. THE NEXT 25 FEET IS SHOWN AS A NON-CREDITED RETENTION AREA WITH CREDITED REFORESTATION WITH TREES THAT ARE LESS THAN 25' IN HEIGHT AT MATURITY.
 - THERE ARE NO KNOWN HISTORIC STRUCTURES OR OTHER HISTORIC RESOURCES, INCLUDING TREES AND CEMETERIES, LOCATED ON SITE.
 - THERE ARE NO KNOWN RARE, THREATENED, OR ENDANGERED SPECIES LOCATED ON SITE.
 - THERE ARE NO SPECIMEN TREES LOCATED ON SITE.



Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 31373, Expiration Date: 1-21-23



LEGEND

- PROPERTY LINE
- EXISTING FOREST CONSERVATION AREA
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING FOREST CONSERVATION AREA

NOTE:
FOREST CONSERVATION AREAS AS SHOWN PER RECORD PLAT NO. 21956-21960

LIMIT OF DISTURBANCE=24.29 AC

Owners/Developer Certification:
 "I/We hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right-of-entry for periodic on-site evaluation by Howard County, the Howard Soil Conservation District and/or MDE."
 Owner's/Developer's Signature: *Stephen Gordon* Date: 3-16-21
 Printed Name & Title: Stephen Gordon

Professional Certification:
 "I hereby certify 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. 31373, Expiration Date: 1-21-23
 (Title block, certification, seal, and signature shall appear close to each other)

Howard SCD Signature Block:
 This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.
Stephen Serrice 3/24/21
 Howard Soil Conservation District Date

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 STEPHEN SERRICE, No. 39792, 11-10-2012

CALL 48 HOURS BEFORE YOU DIG
 IT'S THE LAW! DIAL 811
 Know what's below. Call before you dig.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division: *[Signature]* 3-31-21 DATE
 Chief, Division of Land Development: *[Signature]* 4/21/21 DATE

ADDRESS CHART

LOT/PARCEL #	STREET ADDRESS
PARCEL 1078, LOT A-1	9501 ETERNAL RINGS DRIVE, LAUREL, MD 20723

PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO. PARCEL 1078, LOT A-1
PLAT # OR L/F #23639	GRID #08 ZONING PEC-MXD-3	TAX MAP NO. 47 ELECT DISTRICT 6 CENSUS TRACT
WATER CODE	SEWER CODE	

REVISIONS

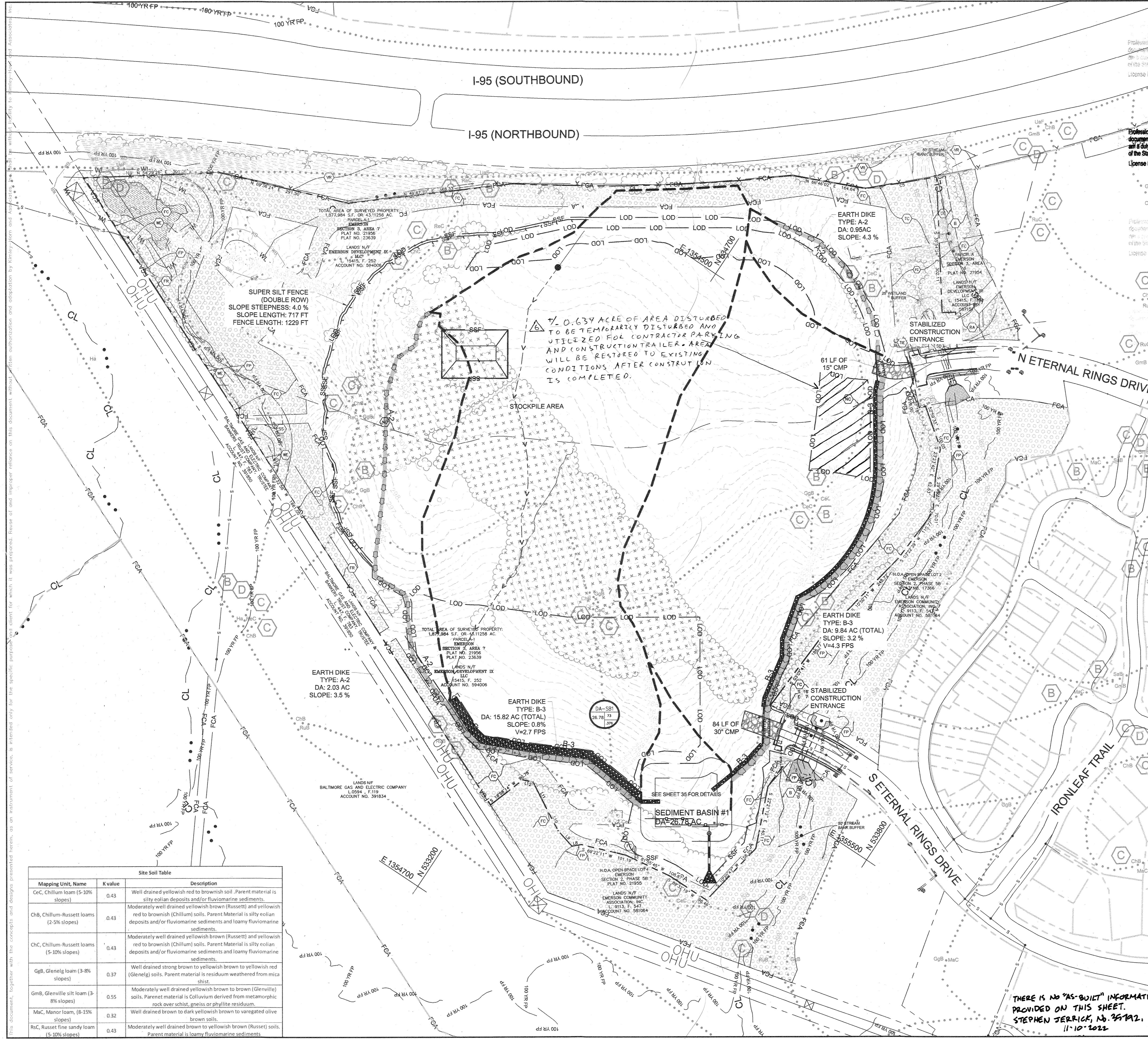
NO.	REVISIONS	DATE	BY

Kimley»Horn
 © 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 1801 PORTER ST., SUITE 401, BALTIMORE, MD 21230
 PHONE: 443-743-3670
 WWW.KIMLEY-HORN.COM

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
 License No. 31373, Expiration Date: 02/03/2023
 Designer: CAH
 Drawn By: CAH
 Checked By: KTB

EMERSON PROJECT
 GRADING PLAN (ADDITIONAL SHEET)
 SHEET NUMBER 31

F-11-036



Professional Engineer
 License No. 31373 Expiration Date: 1-27-23

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

Professional Seal: 5-26-21

VICINITY MAP
 SCALE: 1" = 2000'

EXISTING & INITIAL SESC

CL	PROPERTY LINE
100 YR FP	STREAM CENTER LINE
SB	100 YEAR FLOODPLAIN DELINEATION
	STREAM BUFFER
	TREELINE
	ADJACENT PROPERTY LINE
	SOIL DIVIDE (SEE SOIL TABLE SHEET 32)
	HYDROLOGIC SOIL GROUP
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	EXISTING VERIZON LINE
	EXISTING OVERHEAD ELECTRIC
	EXISTING WATER LINE
	EXISTING CABLE
	EXISTING FENCE
	EXISTING SEWER LINE
	WETLAND BUFFER
	WETLAND
	FOREST CONSERVATION AREA
	EXISTING TELECOMMUNICATION STRUCTURE
	EXISTING SEWER MANHOLE
	EXISTING UTILITY POLE
	EXISTING GUY WIRE
	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
	EXISTING SIGN
	EXISTING TREE
	EXISTING GAS VALVE
	SLOPES GREATER THAN 15%
	HIGHLY ERODIBLE SOILS
	SUPER SILT FENCE
	EARTH DIKE
	EXISTING VEGETATION
	DRAINAGE AREA DIVIDE

Howard SCD Signature Block:
 This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.
Alexander Bratini 3/24/21
 Howard Soil Conservation District Date

GRAPHIC SCALE IN FEET
 0 50 100 200

CALL 48 HOURS BEFORE YOU DIG
 IT'S THE LAW! DIAL 811 Know what's below. Call before you dig.

Site Soil Table

Mapping Unit, Name	K value	Description
CcC, Chillum loam (5-10% slopes)	0.43	Well drained yellowish red to brownish soil. Parent material is silty eolian deposits and/or fluviomarine sediments.
ChB, Chillum-Russett loams (2-5% slopes)	0.43	Moderately well drained yellowish brown (Russett) and yellowish red to brownish (Chillum) soils. Parent Material is silty eolian deposits and/or fluviomarine sediments and loamy fluviomarine sediments.
ChC, Chillum-Russett loams (5-10% slopes)	0.43	Moderately well drained yellowish brown (Russett) and yellowish red to brownish (Chillum) soils. Parent Material is silty eolian deposits and/or fluviomarine sediments and loamy fluviomarine sediments.
GgB, Glenelg loam (3-8% slopes)	0.37	Well drained strong brown to yellowish brown to yellowish red (Glenelg) soils. Parent material is residuum weathered from mica schist.
GmB, Glenville silt loam (3-8% slopes)	0.55	Moderately well drained yellowish brown to brown (Glenville) soils. Parent material is Colluvium derived from metamorphic rock over schist, gneiss or phyllite residuum.
MaC, Manor loam (8-15% slopes)	0.32	Well drained brown to dark yellowish brown to variegated olive brown soils.
RcC, Russett fine sandy loam (5-10% slopes)	0.43	Moderately well drained brown to yellowish brown (Russett) soils. Parent material is loamy fluviomarine sediments.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 3-31-21
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
[Signature] 4/16/21
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

ADDRESS CHART

LOT/PARCEL #	STREET ADDRESS
PARCEL 1078, LOT A-1	9501 ETERNAL RINGS DRIVE, LAUREL, MD 20723

PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO. PARCEL 1078, LOT A-1
PLAT # OR L/F #23639	GRID # 08	ZONING PEC-MXD-3
TAX MAP NO. 47	ELECT DISTRICT 6	CENSUS TRACT
WATER CODE	SEWER CODE	

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 STEPHEN JERRICK, No. 35192, 11-10-2022

REVISIONS

No.	REVISIONS	DATE

Kimley»Horn
 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 1801 PORTER ST., SUITE 401, BALTIMORE, MD 21230
 PHONE: 443-743-3670
 WWW.KIMLEY-HORN.COM

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
 License No. 31373 Expiration Date: 02/28/23

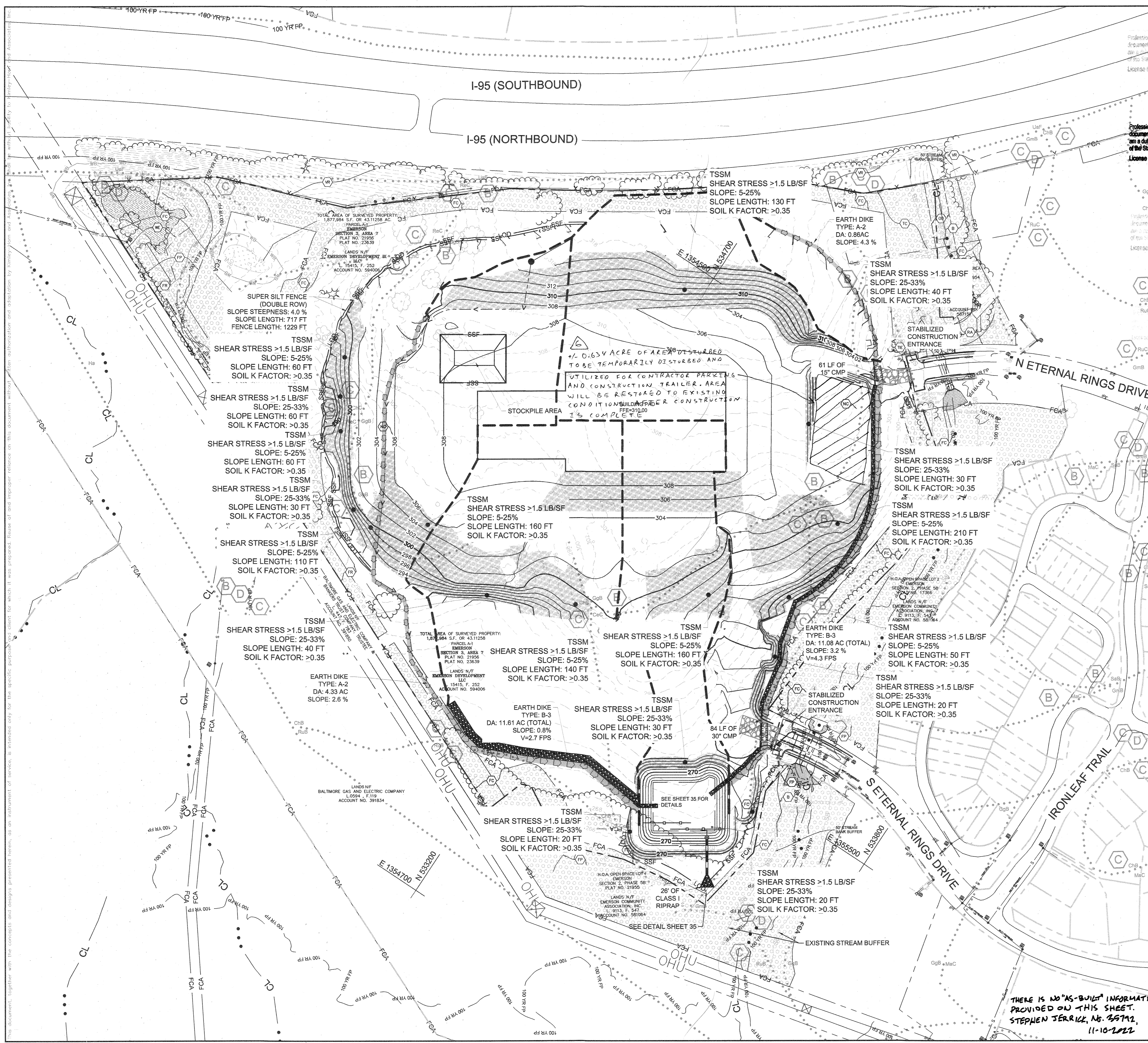
KHA PROJECT: 110718001
 DATE: 02/04/2021
 SCALE: AS SHOWN
 DESIGNED BY: CAH
 DRAWN BY: CAH
 CHECKED BY: KBB

EMERSON PROJECT
 MARYLAND

INITIAL EROSION AND SEDIMENT CONTROL PLAN (ADDITIONAL SHEET)

SHEET NUMBER: 32

F-11-036



Professional Seal: **John S. 5-26-21**

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 31373, Expiration Date: 1-21-23

VICINITY MAP
SCALE: 1" = 2000'

INTERIM SESC LEGEND

CL	PROPERTY LINE
CL	STREAM CENTER LINE
100 YR FP	100 YEAR FLOODPLAIN
SB	DELINITION
SB	STREAM BUFFER
TL	TREELINE
APL	ADJACENT PROPERTY LINE
SS	SOIL DIVIDE (SEE SOIL TABLE SHEET 32)
HSG	HYDROLOGIC SOIL GROUP
EL	EXISTING MAJOR CONTOUR
EM	EXISTING MINOR CONTOUR
ELH	EXISTING VERIZON LINE
ELV	EXISTING OVERHEAD ELECTRIC
ELW	EXISTING WATER LINE
ELC	EXISTING CABLE
ELF	EXISTING FENCE
ELS	EXISTING SEWER LINE
WBL	WETLAND BUFFER
W	WETLAND
FCA	FOREST CONSERVATION AREA
ELT	EXISTING TELECOMMUNICATION STRUCTURE
ELM	EXISTING SEWER MANHOLE
ELP	EXISTING UTILITY POLE
ELG	EXISTING GUY WIRE
ELV	EXISTING WATER VALVE
ELF	EXISTING FIRE HYDRANT
ELT	EXISTING SIGN
ELT	EXISTING TREE
ELV	EXISTING GAS VALVE
S	SLOPES GREATER THAN 15%
HES	HIGHLY ERODIBLE SOILS
SF	SUPER SILT FENCE
ED	EARTH DIKE
EV	EXISTING VEGETATION
DAD	DRAINAGE AREA DIVIDE
SM	SOIL STABILIZATION MATTING

Howard SCD Signature Block:

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Randall Bratton 3/24/21
Howard Soil Conservation District Date

CALL 48 HOURS BEFORE YOU DIG **811**
IT'S THE LAW! Dial 811 Know what's below. Call before you dig.

GRAPHIC SCALE IN FEET: 0 50 100 200

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 3/31/21
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 3/24/21
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

ADDRESS CHART

LOT/PARCEL #	STREET ADDRESS
PARCEL 1078, LOT A-1	9501 ETERNAL RINGS DRIVE, LAUREL, MD 20723

PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO. PARCEL 1078, LOT A-1
PLAT # OR L/F #23639	GRID #08 ZONING PEC-MXD-3 TAX MAP NO. 47 ELECT DISTRICT 6 CENSUS TRACT	
WATER CODE	SEWER CODE	

Kimley Horn
2020 KIMLEY-HORN AND ASSOCIATES, INC.
1801 FORSTER ST., SUITE 401, BALTIMORE, MD 21220
PHONE: 443-743-3470
WWW.KIMLEY-HORN.COM

Professional Seal: **John S. 3-16-21**

Professional Certification: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 91377, EXPIRATION DATE: 01/01/2023

INTERIM EROSION AND SEDIMENT CONTROL PLAN (ADDITIONAL SHEET)

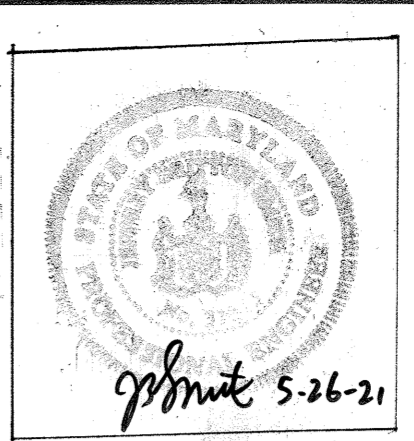
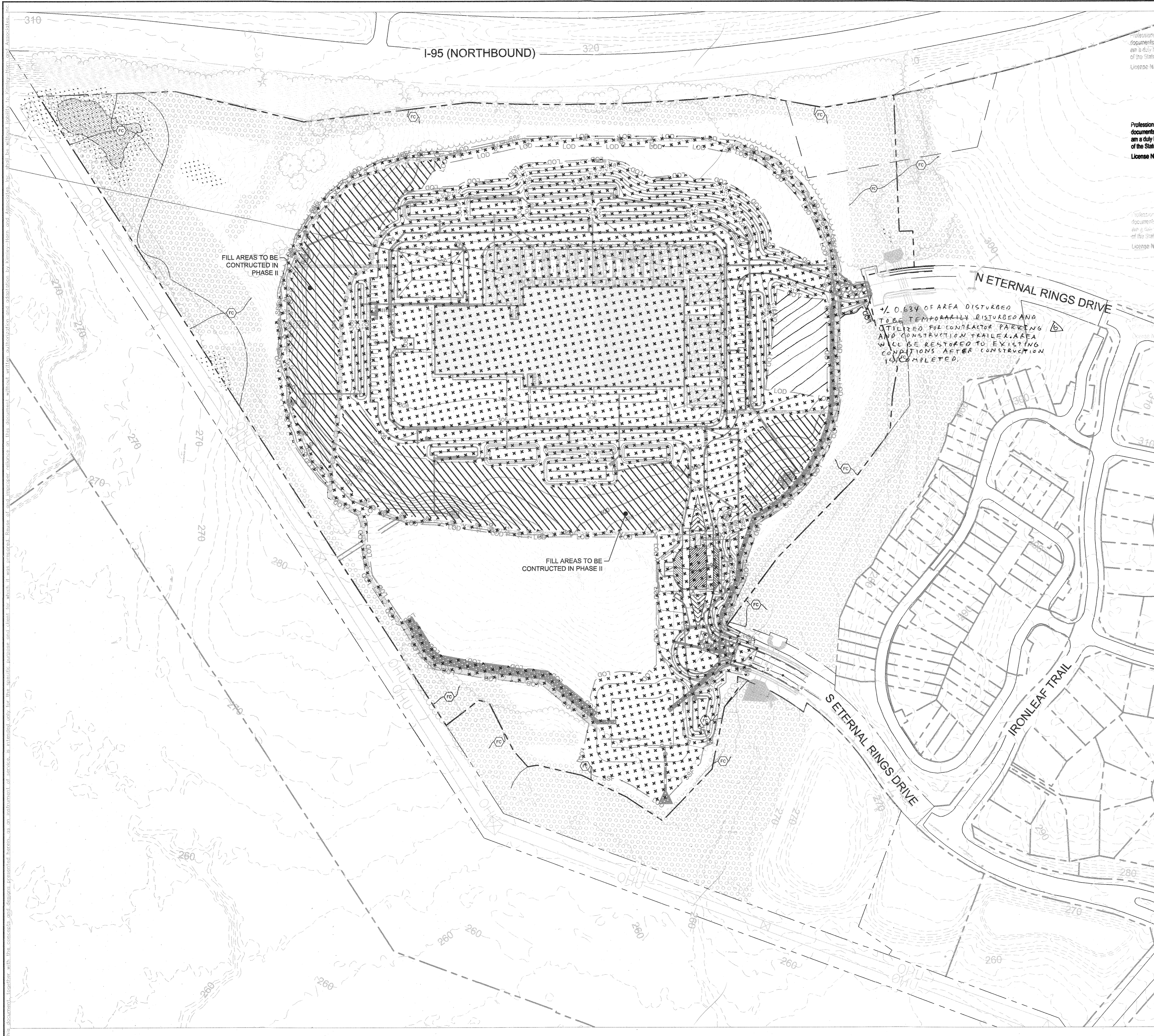
EMERSON PROJECT

MARYLAND COUNTY

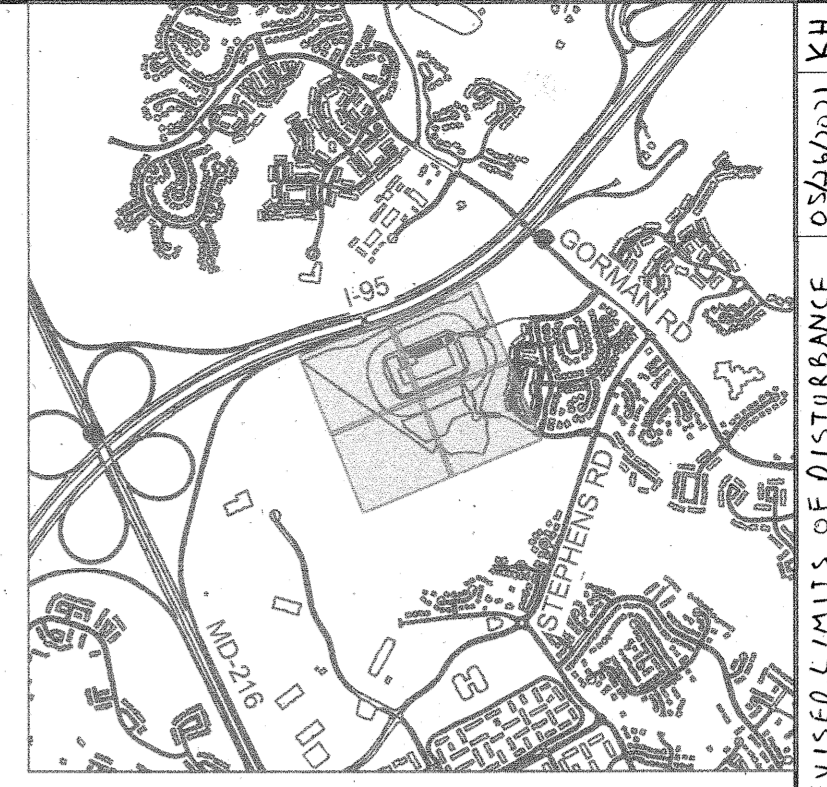
SHEET NUMBER **33**

REVISIONS: DATE BY

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET. STEPHEN JERRICK, No. 35792, 11-10-2022



Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 31373, Expiration Date: 1-21-23

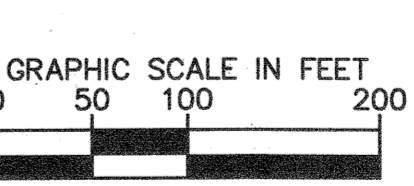


EXISTING & INITIAL SESC LEGEND

- CL --- PROPERTY LINE
- 100 YR FP --- STREAM CENTER LINE
- SB --- 100 YEAR FLOODPLAIN DELINEATION
- STREAM BUFFER
- TREELINE
- ADJACENT PROPERTY LINE
- SOIL DIVIDE
- HYDROLOGIC SOIL GROUP
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING VERIZON LINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING WATER LINE
- EXISTING CABLE
- EXISTING FENCE
- EXISTING SEWER LINE
- WETLAND BUFFER
- WETLAND
- FOREST CONSERVATION AREA
- EXISTING TELECOMMUNICATION STRUCTURE
- EXISTING SEWER MANHOLE
- EXISTING UTILITY POLE
- EXISTING GUY WIRE
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING SIGN
- EXISTING TREE
- EXISTING GAS VALVE
- SLOPES GREATER THAN 15%
- HIGHLY ERODIBLE SOILS
- SUPER SILT FENCE
- EARTH DIKE
- EXISTING VEGETATION
- DRAINAGE AREA DIVIDE
- PHASE I (19.62 AC)
- PHASE II (4.67 AC)

NOTE TO CONTRACTOR: NO MORE THAN 20 ACRES CAN BE "OPEN" AT ANY ONE TIME DURING CONSTRUCTION.

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 STEPHEN JERRICK, No. 36792, 11-6-2022



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APPROVED: _____ DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION *[Signature]* 3-31-21 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT *[Signature]* 4/21/21 DATE

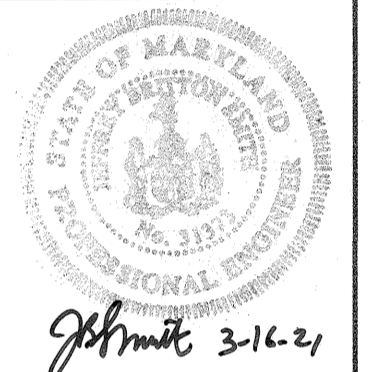
ADDRESS CHART	
LOT/PARCEL #	STREET ADDRESS
PARCEL 1078, LOT A-1	9501 ETERNAL RINGS DRIVE, LAUREL, MD 20723

PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO. PARCEL 1078, LOT A-1			
PLAT # OR L/F #23639	GRID # 08	ZONING PEC-MXD-3	TAX MAP NO. 47	ELECT DISTRICT 6	CENSUS TRACT
WATER CODE		SEWER CODE			

NO.	REVISIONS	DATE	BY
1	REVISED LIMITS OF DISTURBANCE	03/24/2021	KH

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PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 31373, EXPIRATION DATE: 03/11/23

PHASING PLAN (ADDITIONAL SHEET)

KHA PROJECT	110718001	DATE	02/04/2021	SCALE	AS SHOWN	DESIGNED BY	C/C	DRAWN BY	C/C	CHECKED BY	KTB
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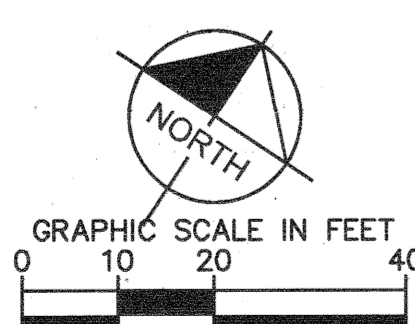
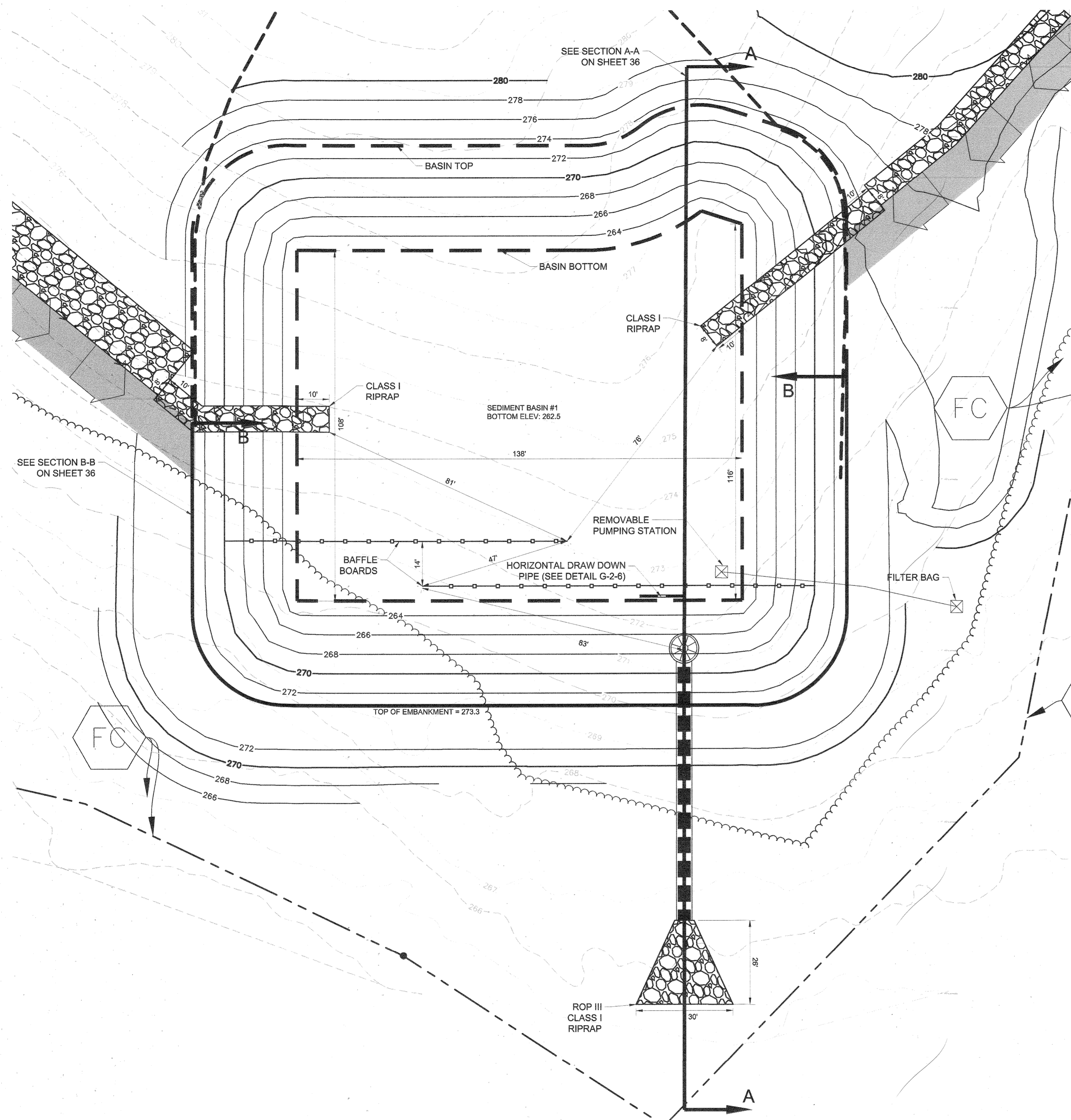
EMERSON PROJECT

MARYLAND

HOWARD COUNTY

SHEET NUMBER **34**

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Anti-Flotation Computations -Basin 1 Riser

Riser	Height (ft)	Radius (ft)	Thickness (ft)	How Many?	Volume (cf)	Specific Weight (lb/cf)	Weight (lbs)
Cylindrical Structure	4.69	2.50	0.01	1	0.39	436	170
Concrete Base (square)	1.50	8.00	n/a	1	96.00	150	14400
					Total Concrete	96.00	14570
Riser Openings	Diameter (ft)	Thickness (ft)	How Many?	Volume (cf)	Specific Weight (lb/cf)	Weight (lbs)	
Draw down opening	0.50	0.01	1	0.00	436	0	
Circ. Barrel Opening	4.00	0.01	1	0.07	436	-29	
					Total Voids in Riser	0.07	-29
					Volume cf	Specific Weight lb/cf	Weight lbs
Buoyant Force = Water Displaced by Riser					92.09	62.4	5746
					Weight of Water	Factor of Safety	2.53

*Volume of water displaced is equal to the volume of the entire riser structure

Table G.26: Temporary Sediment Basin Design Data Sheet
(Refer to instructions on page G.27 through G.29)

Computed By: CDW Date: 1/13/2021 Checked By: NL Date: _____
Project Name: Rockfish Emerson Basin #: 1
Location: Howard County

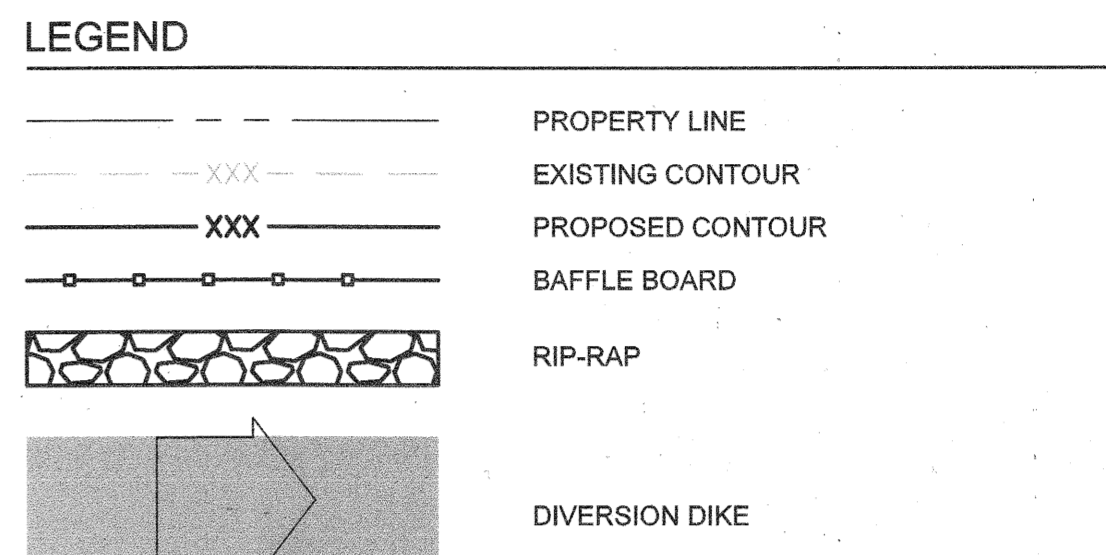
Design Volumes and Elevations	Existing Conditions	Interim Conditions	Proposed Conditions
1. Total area draining to basin =	26.78 acres (ac)	26.9 acres (ac)	26.9 acres (ac)
2. Required Total storage volume = 3600 ft ³ /ac *	26.9 ac = 96,840 ft ³		
3. Required Wet storage volume = 1800 ft ³ /ac *	26.9 ac = 48,420 ft ³		
4. Required Dry storage volume = 1800 ft ³ /ac *	26.9 ac = 48,420 ft ³		
5. Basin bottom Elevation =	263 ft		
6. Riser or Weir Crest (total storage) Elevation =	269.7 ft		
7. Provided total storage volume =	152165 ft ³		
8. Wet storage (Permanent pool/draw-down) elevation =	265.5 ft		
9. Provided wet storage volume =	52558 ft ³		
10. Provided dry storage volume =	99606 ft ³		
11. Basin cleanout elevation (located at 1/2 wet storage depth) =	264.25 ft		
12. Distance from riser crest elevation to cleanout elevation =	5.45 ft		

13. $Q_{10} = 85.46$ cfs (peak inflow from 10-yr, 24-hr storm event; see attached Hydrflow computations)
14. Minimum basin surface area $\geq 0.0035 \times Q_{10} = 0.30$ required ≤ 0.45 ac provided
15. Design Q_{10} for barrel = 85.46 cfs (min. 10% of Q_{10})
16. Barrel head, H = 4.73 ft; Barrel length, L = 84 ft
17. Barrel dia. = 48 in (min. 10 inch); $Q_{10} = 125$ (Q from Table G.7 or G.8)
0.97 (length correction factor) = 121.25 cfs
- Note: Q_{10} must equal or exceed Design Q_{10}
18. Riser dia. = 60 in; Riser Height = 4.69 ft; Riser head (h) = 1.57 ft
19. Trash Rack dia = 90 in; Trash Rack Height = 37 in.

Elevation FT	Area SF	Average Area SF	Storage Interval FT	Interval Volume CF	Cumul. Volume CF	Cumul. Volume AC-FT
262.5	15183	15565	0.5	7783	0	0.000
263	15947	16737	1	16737	7783	0.179
264	17527	18347	1	18347	24520	0.563
265	19167	19384	0.5	9692	42867	0.984
265.5	19600	20232	0.5	10116	52558	1.207
266	20863	21740	1	21740	62674	1.439
267	22616	23521	1	23521	84414	1.938
268	24425	25358	1	25358	107934	2.478
269	26291	26961	0.7	18873	133292	3.060
269.7	27631	28912	0.3	8674	152165	3.493
270	28213	29203	1	29203	160838	3.692
271	30193	31211	1	31211	190041	4.363
272	32228	33274	1	33274	221252	5.079
273	34320	34640	0.3	10392	254526	5.843
273.3	34959				264918	6.082

- Anti-Seep Collar Design (If Required) - Filter Diaphragm**
(See Figures G.5 and G.6)
26. y = 6.26 ft; z = 3 ft; pipe slope = 0.7 %; LS = 37.2 ft
27. Use 2 collars, 10'-0" x 10'-0" square; projection = 2.79 ft
- Draw-Down Device**
(See Tables G.10 and Details G-2-6 and G-2-7)
28. $Q_{10} = 1.35$ cfs
29. Calculated $A_0 = 0.1669$ ft²
30. Calculated $d_0 = 0.461$ ft 6 in
31. Maximum diameter from Table G.10 = 6 in
32. Design d_0 = smaller of line 30 or line 31 = 6 in
33. Draw-down device pipe diameter = 8 in
34. Minimum A_t = total area of perforations = $4'A_0 = 0.6677$ ft²
35. Perforation diameter = 1 in
36. Minimum number of perforations = 122
37. Number of longitudinal rows = 4
38. Perforated pipe length = 16 ft
39. Actual $A_t = (0.0055 \text{ ft}^2) \times (\text{line } 37 / 0.5 \text{ ft}) \times (\text{line } 38) = 0.704$ ft² (must be \geq line 34)

- Baffle Board Design (Basin 1)**
(See Detail G-2-4)
40. A = surface area at wet storage elevation = 19600 ft²
41. Effective width, $W_e = (A/2)^{0.5} = 98.99$ ft
42. Flow length from inflow point to outlet = 94 ft
43. If line 42 is less than $W_e \times 2$, provide baffle boards to lengthen flow path. Need Baffles
44. Effective flow length, $L_e = L_1 + L_2 + L_3 = 206$ ft (must be $\geq W_e \times 2 = 198$ ft)
- NOTE: SEDIMENT BASIN IS TEMPORARY AND MUST BE REMOVED WITHIN 3 YEARS.



Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

License No. 31373 Expiration Date: 1-21-23

Professional Engineer Seal: *John M. Smith* 3-16-21

Professional Engineer Seal: *John M. Smith* 5-26-21

KHA PROJECT: 110718001
DATE: 02/04/2021
SCALE: AS SHOWN
DESIGNED BY: CAH
DRAWN BY: CAH
CHECKED BY: KEB

Howard SCD Signature Block:

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Alexander Brattini 3/24/21
Howard Soil Conservation District Date

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APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 3-31-21
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 4/1/21
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

ADDRESS CHART

LOT/PARCEL #	STREET ADDRESS
PARCEL 1078, LOT A-1	9501 ETERNAL RINGS DRIVE, LAUREL, MD 20723

PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO. PARCEL 1078, LOT A-1
PLAT # OR L/F #23639	GRID #08 ZONING PEC-MXD-3	TAX MAP NO. 47 ELECT DISTRICT 8 CENSUS TRACT
WATER CODE		SEWER CODE

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SEDIMENT BASIN DETAIL (ADDITIONAL SHEET)

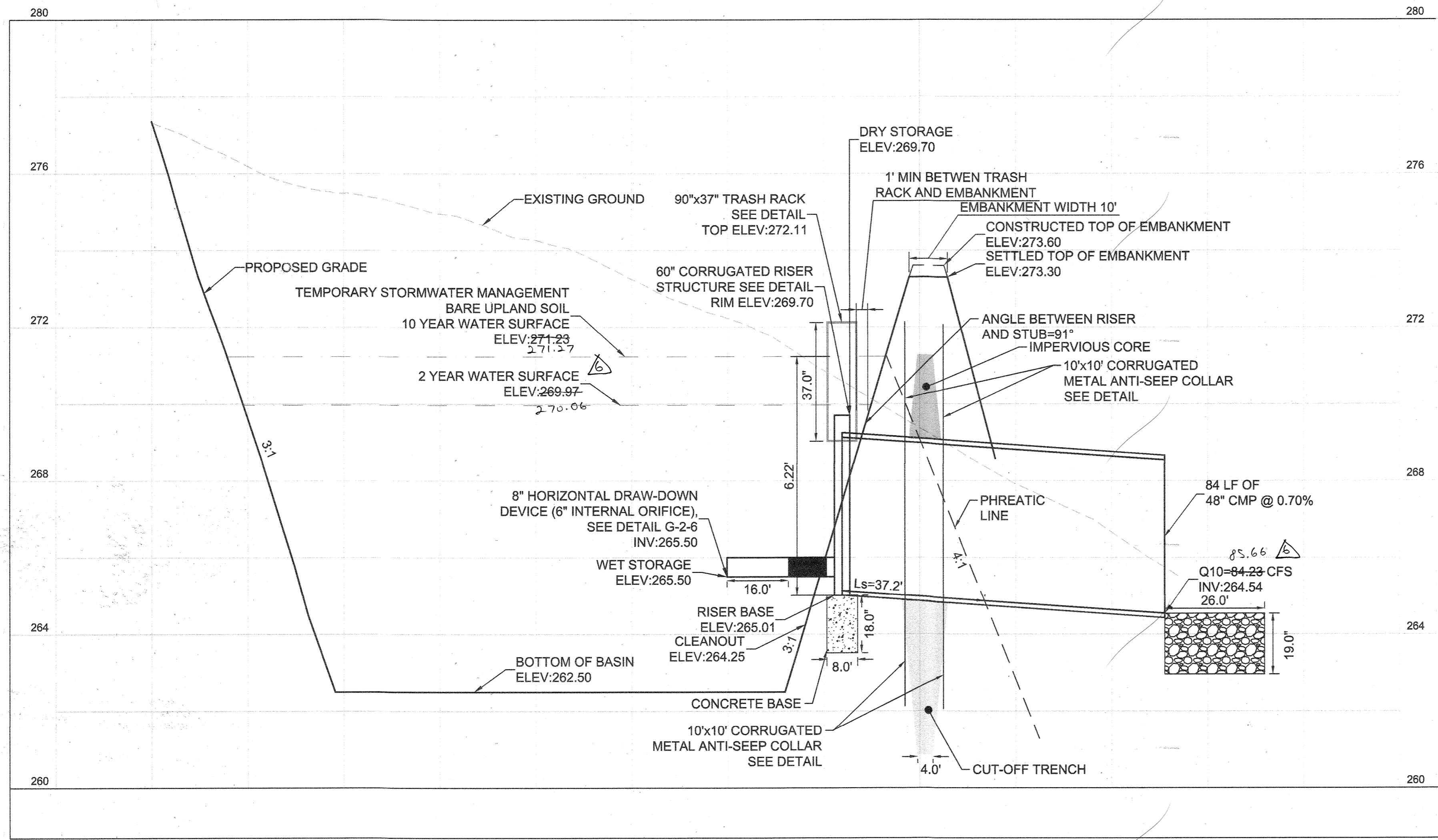
EMERSON PROJECT MARYLAND

SHEET NUMBER 35

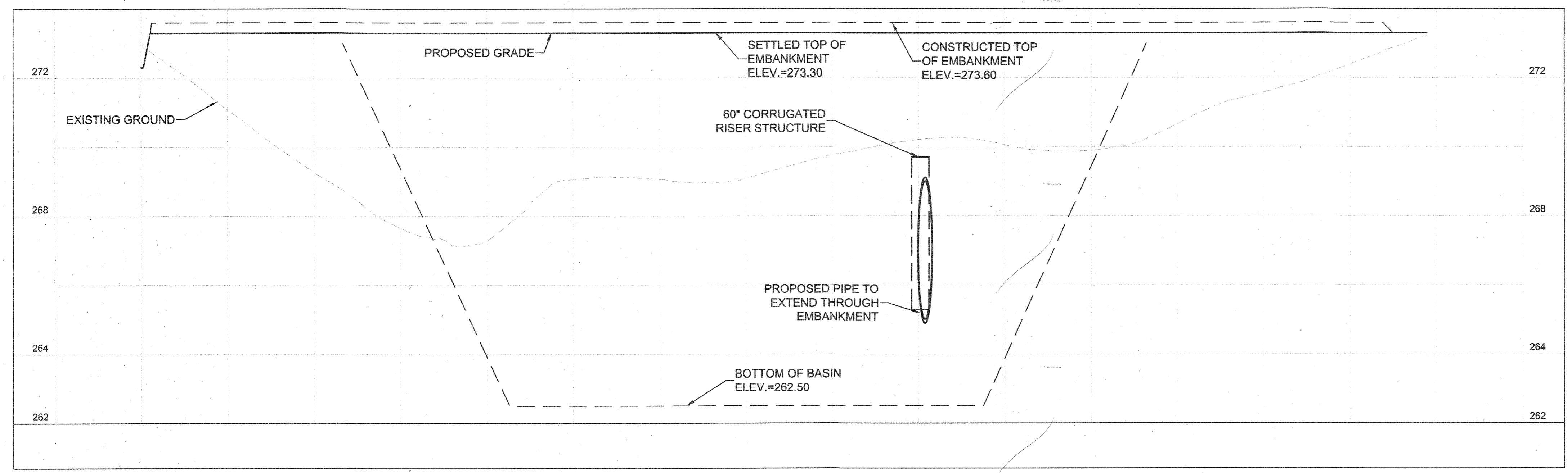
REVISIONS: _____ DATE BY: _____

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
STEPHEN SERRILLI, No. 35792, 11-6-2022

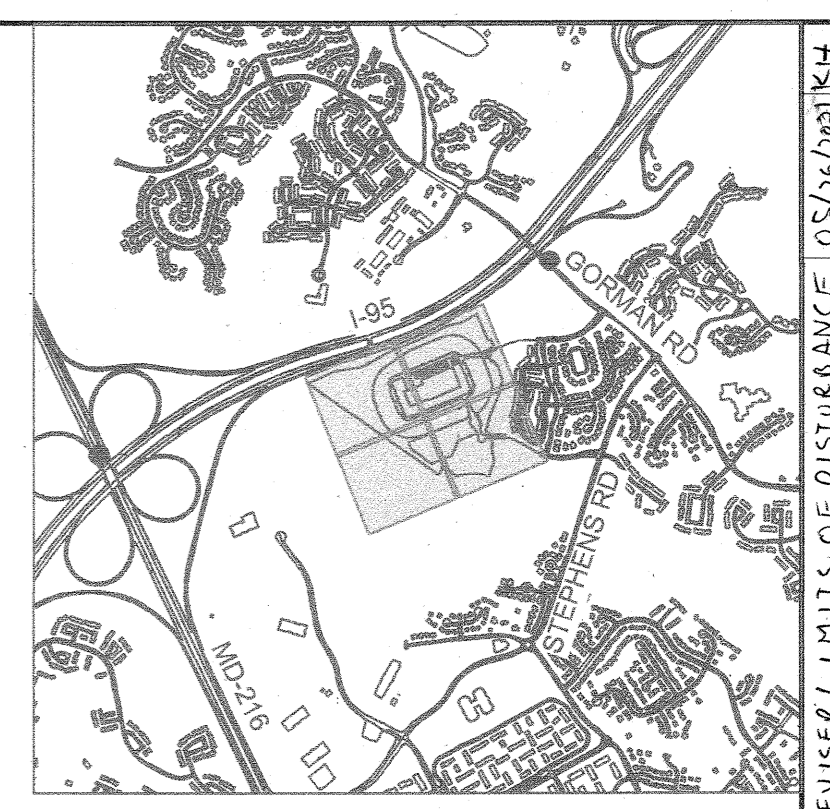
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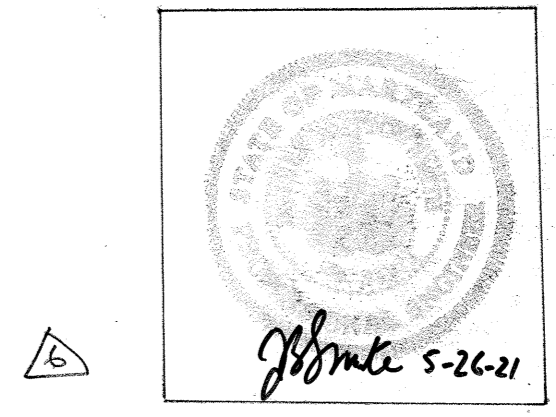
SEDIMENT BASIN CROSS-SECTION A-A
SCALE: 1" = 20' H
1" = 2' V



POND EMBANKMENT CROSS-SECTION B-B
SCALE: 1" = 20' H
1" = 2' V

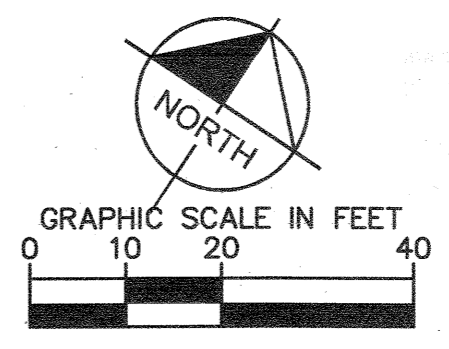


LEGEND
 --- PROPERTY LINE
 - - - - - EXISTING CONTOUR
 - - - - - PROPOSED CONTOUR



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 31373 Expiration Date: 1-21-23

Howard SCD Signature Block:
 This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.
 Alexander Bostani 3/24/21
 Howard Soil Conservation District Date



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APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 3.31.21
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
 [Signature] 4/14/21
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

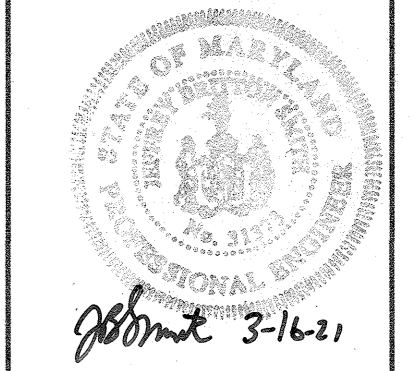
ADDRESS CHART					
LOT/PARCEL #	STREET ADDRESS				
PARCEL 1078, LOT A-1	9501 ETERNAL RINGS DRIVE, LAUREL, MD 20723				
PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA		LOT/PARCEL NO. PARCEL 1078, LOT A-1		
PLAT # OR L/F #23639	GRID # 08	ZONING PEC-MXD-3	TAX MAP NO. 47	ELECT DISTRICT 6	CENSUS TRACT
WATER CODE		SEWER CODE			

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 STEPHEN SERRUK, No. 35792, 11-10-2022

NOTE: SEDIMENT BASIN IS TEMPORARY AND MUST BE REMOVED WITHIN 3 YEARS.

NO.	REVISIONS	DATE	BY

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Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 31373 Expiration Date: 1-21-23

KHA PROJECT	DATE	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY
110718001	02/04/2021	AS SHOWN	CAH	CAH	KEB

SEDIMENT BASIN PROFILES (ADDITIONAL SHEET)

EMERSON PROJECT
 MARYLAND
 HOWARD COUNTY
 SHEET NUMBER 36

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DETAIL D-3-1 RIPRAP INFLOW PROTECTION

STANDARD SYMBOL: RRP

CONSTRUCTION SPECIFICATIONS

- PROVIDE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, UNDER THE BOTTOM AND ALONG SIDES OF ALL RIPRAP.
- CONSTRUCT INFLOW CHANNEL WITH CLASS 1 RIPRAP OR EQUIVALENT RECYCLED CONCRETE LINING TO A MINIMUM DEPTH OF 19 INCHES (2 x D₅₀) AND A 1 FOOT DEEP FLOW CHANNEL. INFLOW RIPRAP PROTECTION CHANNEL MUST HAVE A TRAPEZOIDAL CROSS SECTION WITH 2:1 OR FLATTER SIDE SLOPES AND A 4 FOOT MINIMUM BOTTOM WIDTH.
- INSTALL ENTRANCE AND EXIT SECTIONS AS SHOWN ON THE PROFILE.
- BLEND RIPRAP INTO EXISTING GROUND.
- MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. KEEP POINTS OF INFLOW AND OUTFLOW FREE OF EROSION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
 U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
 D.10

DETAIL G-2-1 TYPICAL ANTI-SEEP COLLARS

STANDARD SYMBOL

CONSTRUCTION SPECIFICATIONS

- PLATES TO BE PRECUT, CLAMPED TOGETHER, PRE-DRILLED, AND LABELED TO FACILITATE WATER TIGHT FIELD ASSEMBLY.
- USE BUTYL SEALANT BETWEEN PLATE AND FLANGE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
 U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
 G.42

DETAIL G-2-2 CORRUGATED RISER BASE

STANDARD SYMBOL

CONSTRUCTION SPECIFICATIONS

- BOTTOM OF CONCRETE BASE TO BE PLACED ON UNDISTURBED, NATURAL GROUND.
- NO STONE IS ALLOWED UNDER BASE. IF NECESSARY, TO ACHIEVE STABILITY INCREASE DEPTH OF CONCRETE BASE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
 U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
 G.43

DETAIL G-2-3 CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE

STANDARD SYMBOL: TR

RISER DIAM. (IN)	TRASH RACK CYLINDER THICKNESS (GAUGE)	h (IN)	MINIMUM SIZE SUPPORT BAR	MINIMUM TOP	
				THICKNESS (GAUGE)	STIFFENER
12	18	16	#6 REBAR	16	N/A
15	21	16	#6 REBAR	16	N/A
18	27	16	#6 REBAR	16	N/A
21	30	16	#6 REBAR	16	N/A
24	36	16	#6 REBAR	14	N/A
27	42	16	#6 REBAR	14	N/A
36	54	14	#8 REBAR	12	N/A
42	60	14	#8 REBAR	12	N/A
48	72	12	1 1/2 IN PIPE OR 1 1/2 x 1 1/2 x 1/2 ANGLE	10	N/A
54	78	12	1 1/2 IN PIPE OR 1 1/2 x 1 1/2 x 1/2 ANGLE	10	N/A
60	90	12	1 1/2 IN PIPE OR 1 1/2 x 1 1/2 x 1/2 ANGLE	8	N/A
66	96	10	2 IN PIPE OR 2 x 2 x 3/8 ANGLE	8	2 x 2 x 3/8 ANGLE
72	102	10	2 IN PIPE OR 2 x 2 x 3/8 ANGLE	8	2 1/2 x 2 1/2 x 1/4 ANGLE
78	114	10	2 1/2 IN PIPE OR 2 x 2 x 3/8 ANGLE	8	2 1/2 x 2 1/2 x 1/4 ANGLE
84	120	10	2 1/2 IN PIPE OR 2 1/2 x 2 1/2 x 1/4 ANGLE	8	2 1/2 x 2 1/2 x 3/8 ANGLE

NOTE: THE ABOVE TRASH RACK AND ANTI-VORTEX DEVICE INFORMATION IS FOR CORRUGATED METAL PIPE ONLY. CONCRETE RISERS MUST MEET THE REQUIREMENTS OF MD 378.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
 U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
 G.45

DETAIL G-2-3 CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE

STANDARD SYMBOL: TR

CONSTRUCTION SPECIFICATIONS

- WELD SUPPORT BARS TO THE TOP OF THE RISER OR ATTACH BY STRAPS TO THE TOP OF RISER.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
 U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
 G.44

DETAIL G-2-4 BAFFLE BOARDS

STANDARD SYMBOL: BB

CONSTRUCTION SPECIFICATIONS

- SET ELEVATION AT 1/2 OF THE DRY STORAGE (WET STORAGE ELEVATION + DRY STORAGE ELEVATION / 2) OR 6 IN BELOW WEIR CREST (OUTLET) WHICHEVER IS LOWER.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
 U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
 G.44

DETAIL G-2-6 SEDIMENT BASIN SCHEMATIC HORIZONTAL DRAW-DOWN DEVICE

STANDARD SYMBOL: HDDD

CONSTRUCTION SPECIFICATIONS

- PERFORATE PIPE WITH 1 INCH DIAMETER PERFORATIONS SPACED 6 INCHES APART LONGITUDINALLY AND RADIIALLY OR IN ACCORDANCE WITH APPROVED PLAN.
- WRAP THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE FIRST WITH 1/2 INCH GALVANIZED HARDWARE CLOTH, THEN WITH NONWOVEN GEOTEXTILE. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS. DO NOT WRAP WITH MORE THAN ONE LAYER OF GEOTEXTILE.
- AS AN ALTERNATE TO STONE ANCHORING, SECURE DRAW-DOWN DEVICE WITH TWO 1 INCH STEEL ANGLES SET 3 FEET MINIMUM INTO THE GROUND ATTACHED TO DRAW-DOWN DEVICE BY A 1 INCH WIDE GALVANIZED STEEL STRAP OR 12 GAUGE OR HEAVIER WIRE.
- REMOVE SEDIMENT WHEN IT ACCUMULATES TO CLEANOUT ELEVATION (50% OF THE WET STORAGE DEPTH). DEPOSIT REMOVED SEDIMENT IN AN APPROVED AREA IN A SUCH A MANNER THAT IT WILL NOT ERODE. MAINTAIN WATER TIGHT CONNECTIONS. REPLACE GEOTEXTILE AROUND PERFORATED RISER IF DRY STORAGE VOLUME DOES NOT DRAW DOWN WITHIN 10 HOURS.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
 U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
 G.44

SEQUENCE OF CONSTRUCTION

- INITIAL STAGE**
- NOTIFY CID INSPECTOR 7 DAYS BEFORE CONSTRUCTION TO REQUEST CID PRE-CONSTRUCTION MEETING. NO CONSTRUCTION CAN BEGIN UNTIL THE RISER/BARREL ASSEMBLY ETC ARE ON SITE AND READY FOR INSTALLATION. (1 DAY)
 - STAKE OUT LIMITS OF DISTURBANCE (LOD). (1 DAY)
 - AFTER PRE-CONSTRUCTION MEETING, UPON SEDIMENT CONTROL INSPECTOR'S WRITTEN APPROVAL, CLEAR AND GRUB AS NECESSARY WITHIN THE LIMITS OF DISTURBANCE TO INSTALL THE PERIMETER CONTROLS. (3 DAYS)
 - INSTALL PERIMETER CONTROLS (STABILIZED CONSTRUCTION ENTRANCE, SUPER SILT FENCE); ONLY CLEAR AND GRUB AREAS NEEDED TO INSTALL PERIMETER CONTROLS. (3 DAYS)
 - INSTALL PROPOSED SEDIMENT BASIN, ASSOCIATED RIP RAP INFLOW PROTECTION, SUMP PIT, AND RISER STRUCTURE. ONLY CLEAR AND GRUB AREAS NECESSARY FOR INSTALLATION OF SEDIMENT BASIN. MAINTAIN EXISTING DITCHES FOR CONVEYANCE TO BASIN. (1 WEEK)
 - INSTALL EARTH DIKE TO CONVEY FLOW TO BASIN. (2 DAYS)
 - INSTALLATION OF DIVERSIONS TO THE BASIN, AS WELL AS OUTLET STRUCTURES, MUST BE COMPLETELY INSTALLED BEFORE DISTURBING AREAS DRAINING TO THIS FACILITY. (2 DAYS)
 - UPON INSTALLATION OF THE SEDIMENT BASIN, ESTABLISH PROPOSED STOCKPILE AREAS AND, AS NECESSARY, CLEAR/GRUB REMAINING SITE AREAS. (1 DAY)
 - FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
 - THREE (3) CALENDAR DAYS FOR ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND
 - SEVEN (7) DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS IN THE PROJECT SITE.
 - CONTINUE TO INTERIM STAGE.
- INTERIM STAGE**
- REPAIR, CLEAN OUT, AND/OR MAINTAIN PERIMETER SEDIMENT CONTROL PRACTICES AND SEDIMENT BASIN. (ONGOING)
 - BEGIN ROUGH/MASS GRADING. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AT ALL TIMES, MAINTAINING DRAINAGE DIVIDES SHOWN ON PLANS. (2 WEEKS)
 - CONTRACTOR TO ADJUST EARTH DIKES AS NECESSARY IN ORDER TO ROUGH GRADE THE PERIMETER OF THE SITE.
 - CONTRACTOR TO ADJUST SCE'S AS NECESSARY IN ORDER TO ROUGH GRADE THE ENTRANCE LOCATIONS.
 - CONTRACTOR TO ONLY HAVE 20 ACRES "OPEN" AT ANY ONE TIME. CONTRACTOR SHALL ROUGH GRADE PHASE I AREAS OF THE SITE AND TIE DOWN TO PHASE II AREAS AT A 3:1 SLOPE. ONCE PHASE I AREAS ARE TEMPORARILY OR PERMANENTLY STABILIZED, CONTRACTOR SHALL ROUGH GRADE THE PHASE II AREAS. REFER TO PHASING PLAN ON SHEET 34 FOR PHASING AREAS.
 - PERMANENTLY STABILIZE ALL AREAS ONCE ROUGH GRADING IS COMPLETE. (2 WEEKS)
 - WITH CID INSPECTOR APPROVAL, REMOVE PERIMETER CONTROLS. (1 WEEK)
 - SUBMIT NOTICE OF TERMINATION. (1 WEEK)
- NOTE: ONLY 20 ACRES CAN BE "OPEN" AT ANY TIME DURING CONSTRUCTION

CALL 48 HOURS BEFORE YOU DIG

IT'S THE LAW! Dial 811

Know what's below. Call before you dig.

APPROVED: _____ DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION 3-31-21 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT 4/21/21 DATE

ADDRESS CHART

LOT/PARCEL #	STREET ADDRESS
PARCEL 1078, LOT A-1	9501 ETERNAL RINGS DRIVE, LAUREL, MD 20723

PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO. PARCEL 1078, LOT A-1
PLAT # OR L/F #23639	GRID #08 ZONING PEC-MXD-3	TAX MAP NO. 47 ELECT DISTRICT 6 CENSUS TRACT
WATER CODE	SEWER CODE	

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 STEPHEN JERELICK, No. 35792, 11-10-2022

DATE _____ BY _____

REVISIONS _____

No. _____

Kimley-Horn

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 1801 PORTER ST., SUITE 401, BALTIMORE, MD 21230
 PHONE: 443-743-3470
 WWW.KIMLEY-HORN.COM

STATE OF MARYLAND
 PROFESSIONAL ENGINEER

Johnnie 3-16-21

PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 31973
 EXPIRATION DATE 09/02/23

KHA PROJECT 110718001
 DATE 02/04/2021
 SCALE AS SHOWN
 DESIGNED BY CAH
 DRAWN BY CAT
 CHECKED BY KEB

EROSION AND SEDIMENT CONTROL NOTES & DETAILS (ADDITIONAL SHEET)

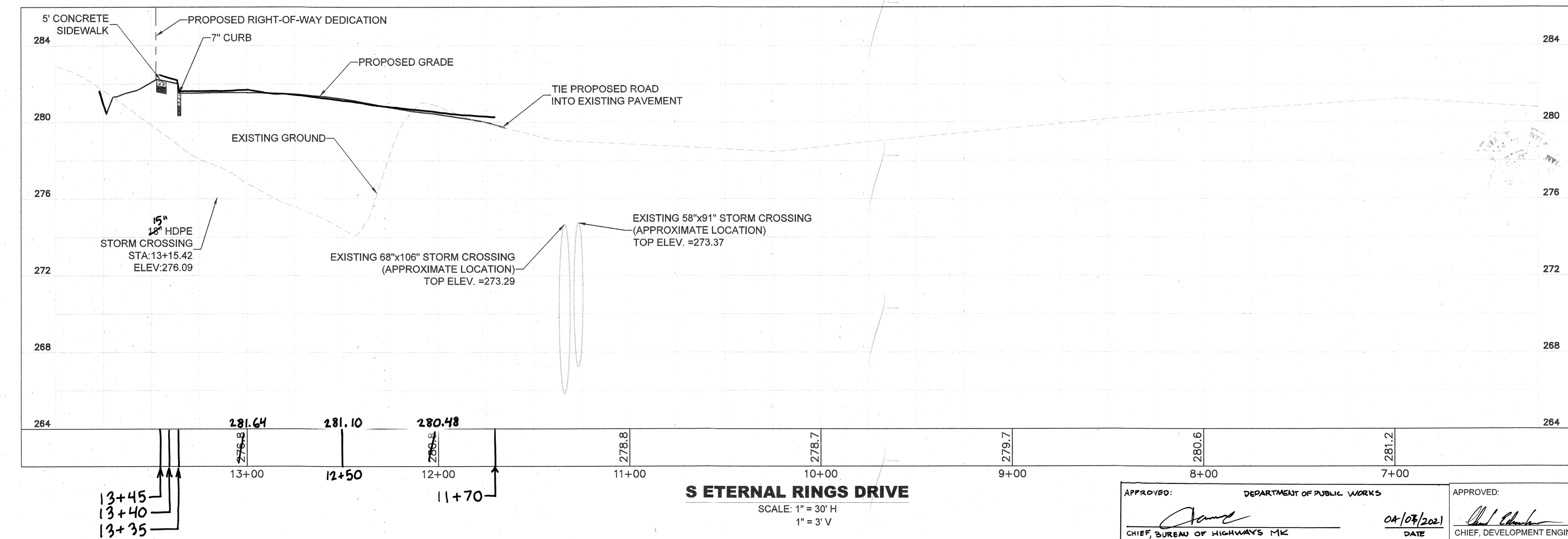
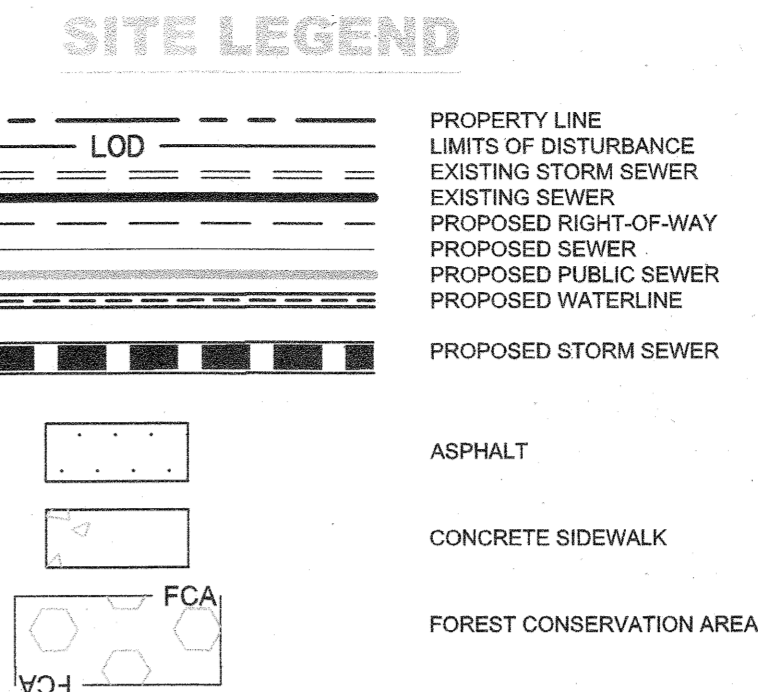
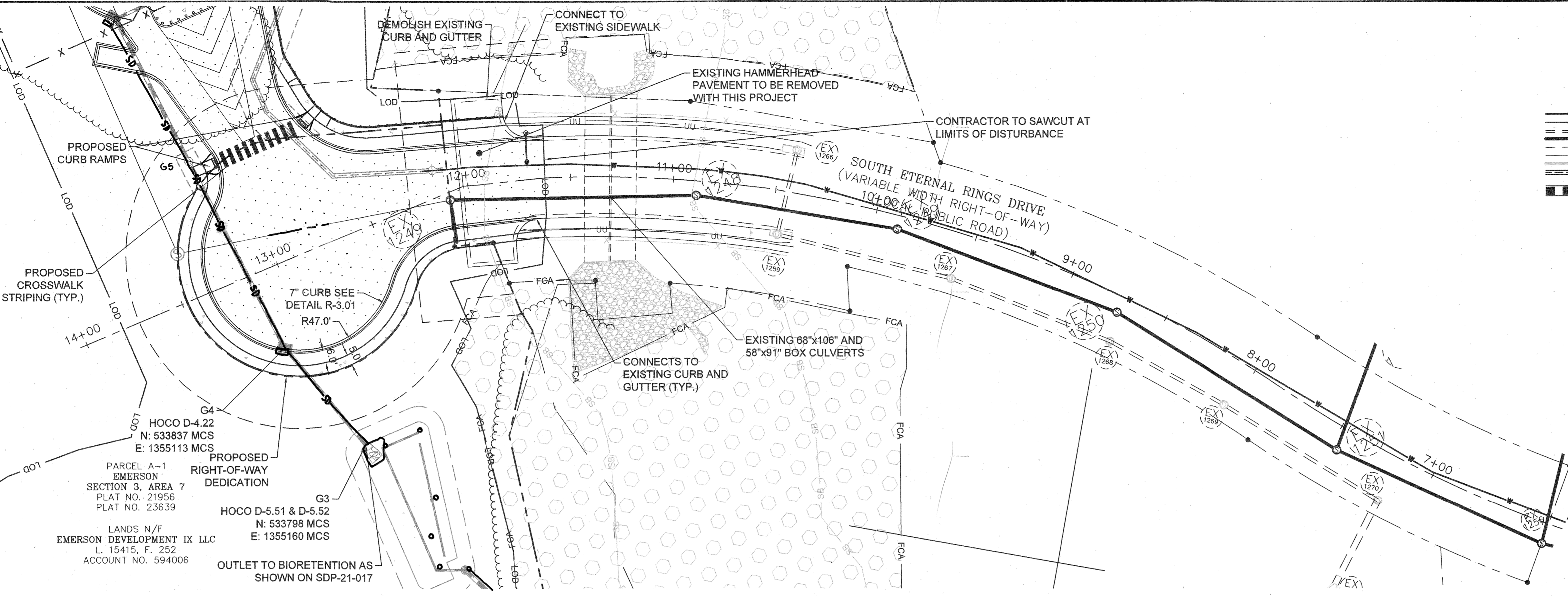
EMERSON PROJECT

MARYLAND COUNTY

SHEET NUMBER 37

F-11-030

This document, together with the concepts and designs presented herein, is an instrument of service, and its preparation and submission to the client is for the specific purpose and client for which it was prepared. Release of and reliance on this document without authorization and without liability to Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDER GROUND SWM FACILITY. STEPHEN JERRICK No. 35712, 11-10-2022

HORIZONTAL DATUM FOR THIS AS-BUILT SURVEY IS BASED ON THE MARYLAND STATE REFERENCE SYSTEM AND 83/011. AS PROTECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS 41EH, 41EG, 41HB, 41HF.
 VERTICAL DATUM FOR THIS AS-BUILT SURVEY IS NORTH BENCH AS PROTECTED BY THE ABOVE MENTIONED HOWARD COUNTY GEODETIC CONTROL STATIONS OR HOWARD COUNTY VERTICAL CONTROL BENCH MARKS 41EH, 41EG, 41HB, 41HF.
 THIS AS-BUILT SURVEY WAS PERFORMED BY KITE TECHNOLOGIES, INC. IN AUGUST 2022.
 THE INSTRUMENTS USED IN PERFORMING THIS AS-BUILT SURVEY:
 LEICA TS-16 TOTAL STATION

CALL 48 HOURS BEFORE YOU DIG

IT'S THE LAW! DIAL 811

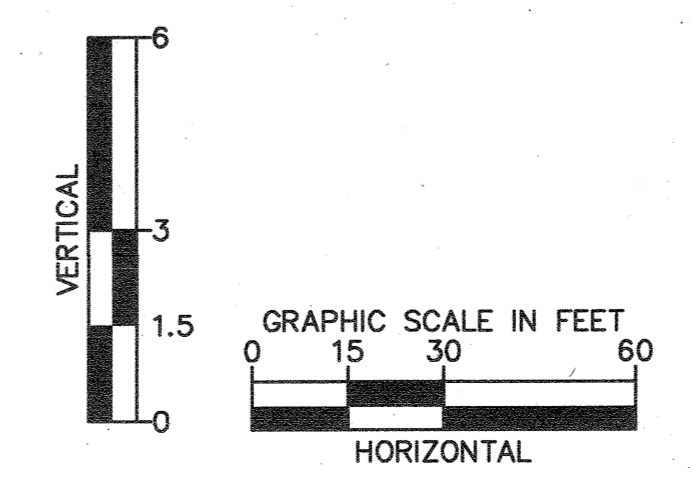
Know what's below. Call before you dig.

S ETERNAL RINGS DRIVE
 SCALE: 1" = 30' H
 1" = 3' V

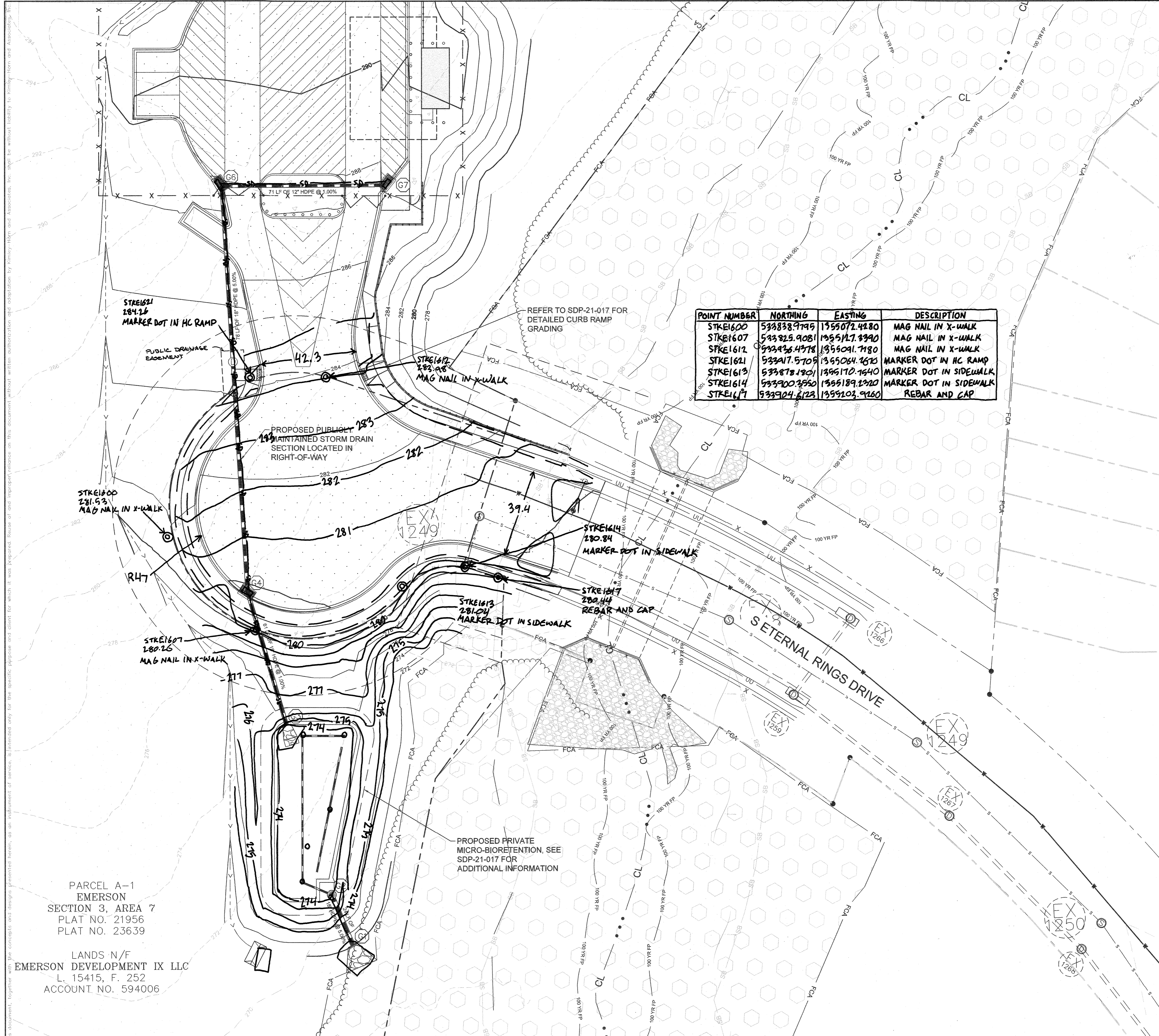
APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature]
 CHIEF, BUREAU OF HIGHWAYS MK
 DATE: 04/07/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature]
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 3-31-21
[Signature]
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 4/21/21

ADDRESS CHART					
LOT/PARCEL #	STREET ADDRESS				
PARCEL 1078, LOT A-1	9501 ETERNAL RINGS DRIVE, LAUREL, MD 20723				
PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO. PARCEL 1078, LOT A-1			
PLAT # OR L/F #23639	GRID # 08	ZONING PEC-MXD-3	TAX MAP NO. 47	ELECT DISTRICT 8	CENSUS TRACT
WATER CODE	SEWER CODE				



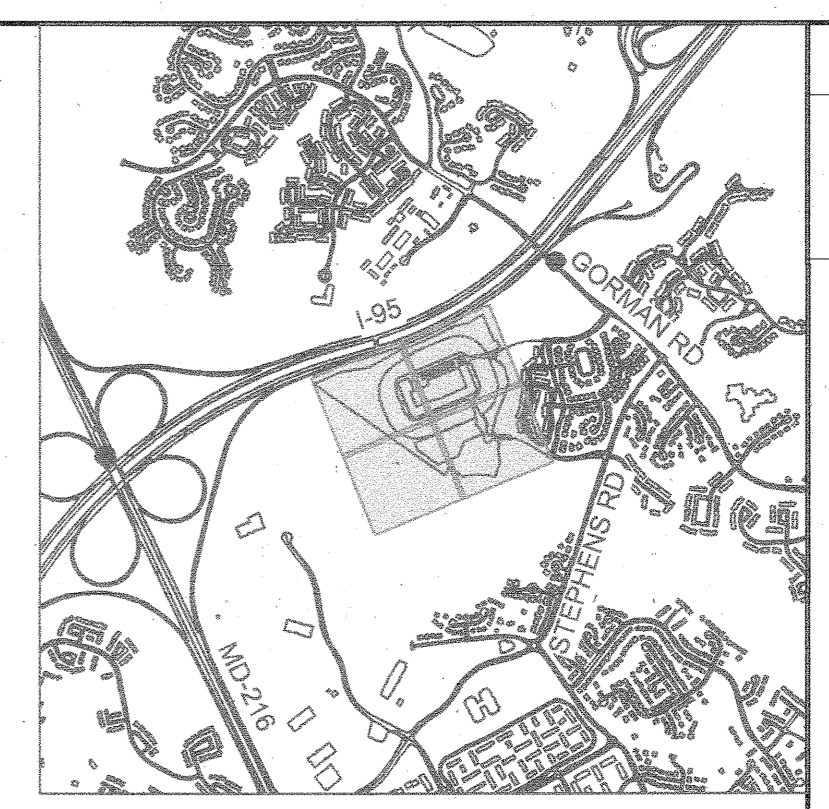
 © 2020 KIMLEY-HORN AND ASSOCIATES, INC. 1801 PORTER ST. SUITE 401, BALTIMORE, MD 21230 PHONE: 443-743-3470 WWW.KIMLEY-HORN.COM			PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 31373 EXPIRATION DATE: 09/20/2023	RHA PROJECT: 110718001 DATE: 03/08/2021 SCALE: AS SHOWN DESIGNED BY: CDW DRAWN BY: KTB CHECKED BY: KTB	ROADWAY PLAN (ADDITIONAL SHEET)	EMERSON PROJECT REVISED FINAL ROAD CONSTRUCTION PLAN	MARYLAND HOWARD COUNTY	SHEET NUMBER 39	REVISIONS No. DATE BY
		Jerrick 3-16-21	PROFESSIONAL ENGINEER	PROFESSIONAL ENGINEER	ROADWAY PLAN (ADDITIONAL SHEET)	EMERSON PROJECT REVISED FINAL ROAD CONSTRUCTION PLAN	MARYLAND HOWARD COUNTY	SHEET NUMBER 39	REVISIONS No. DATE BY



PARCEL A-1
EMERSON
SECTION 3, AREA 7
PLAT NO. 21956
PLAT NO. 23639

LANDS N/F
EMERSON DEVELOPMENT IX LLC
L. 15415, F. 252
ACCOUNT NO. 594006

POINT NUMBER	NORTHING	EASTING	DESCRIPTION
STKE1600	533838.9799	1355072.4280	MAG NAIL IN X-WALK
STKE1607	533825.9081	1355117.3390	MAG NAIL IN X-WALK
STKE1612	533926.4378	1355091.7180	MAG NAIL IN X-WALK
STKE1621	533217.5709	1355064.1813	MARKER DOT IN HC RAMP
STKE1613	533878.1301	1355170.1640	MARKER DOT IN SIDEWALK
STKE1614	533900.3350	1355189.1320	MARKER DOT IN SIDEWALK
STKE1617	533904.6123	1355203.9160	REBAR AND CAP



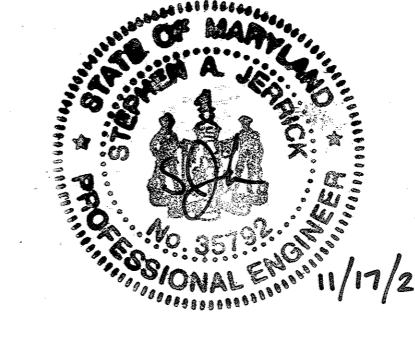
LEGEND

- PROPERTY LINE
- EXISTING FOREST CONSERVATION AREA
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING FOREST CONSERVATION AREA

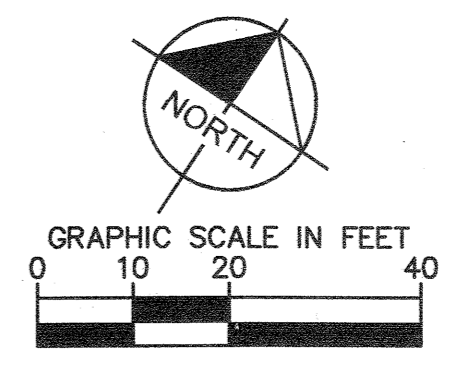
NOTE:
FOREST CONSERVATION AREAS AS SHOWN
PER RECORD PLAT NO. 21956-21960

LIMIT OF DISTURBANCE=24.29 AC

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.
STEPHEN TERRICK, No. 35702, 11-10-2022



APPROVED: DEPARTMENT OF PUBLIC WORKS
Carol
CHIEF, BUREAU OF HIGHWAYS
04/07/2021
DATE



CALL 48 HOURS BEFORE YOU DIG
811
IT'S THE LAW!
DIAL 811
Know what's below. Call before you dig.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature]
CHIEF, DEVELOPMENT ENGINEERING DIVISION
3.31.21
DATE

[Signature]
CHIEF, DIVISION OF LAND DEVELOPMENT
4/21/21
DATE

ADDRESS CHART

LOT/PARCEL #	STREET ADDRESS
PARCEL 1078, LOT A-1	9501 ETERNAL RINGS DRIVE, LAUREL, MD 20723

PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO. PARCEL 1078, LOT A-1
PLAT # OR L/F #23639	GRID #08 ZONING PEC-MXD-3	TAX MAP NO. 47 ELECT DISTRICT 6 CENSUS TRACT
WATER CODE	SEWER CODE	

Kimley Horn
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1801 FORSTER ST., SUITE 401, BALTIMORE, MD 21230
PHONE: 443-743-3470
WWW.KIMLEY-HORN.COM

EMERSON PROJECT
REVISED FINAL ROAD
CONSTRUCTION PLAN

GRADING PLAN (ADDITIONAL SHEET)

STATE OF MARYLAND PROFESSIONAL ENGINEER
STEPHEN TERRICK
No. 35702
11/17/22

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature]
CHIEF, DEVELOPMENT ENGINEERING DIVISION
3.31.21
DATE

[Signature]
CHIEF, DIVISION OF LAND DEVELOPMENT
4/21/21
DATE

ADDRESS CHART

LOT/PARCEL #	STREET ADDRESS
PARCEL 1078, LOT A-1	9501 ETERNAL RINGS DRIVE, LAUREL, MD 20723

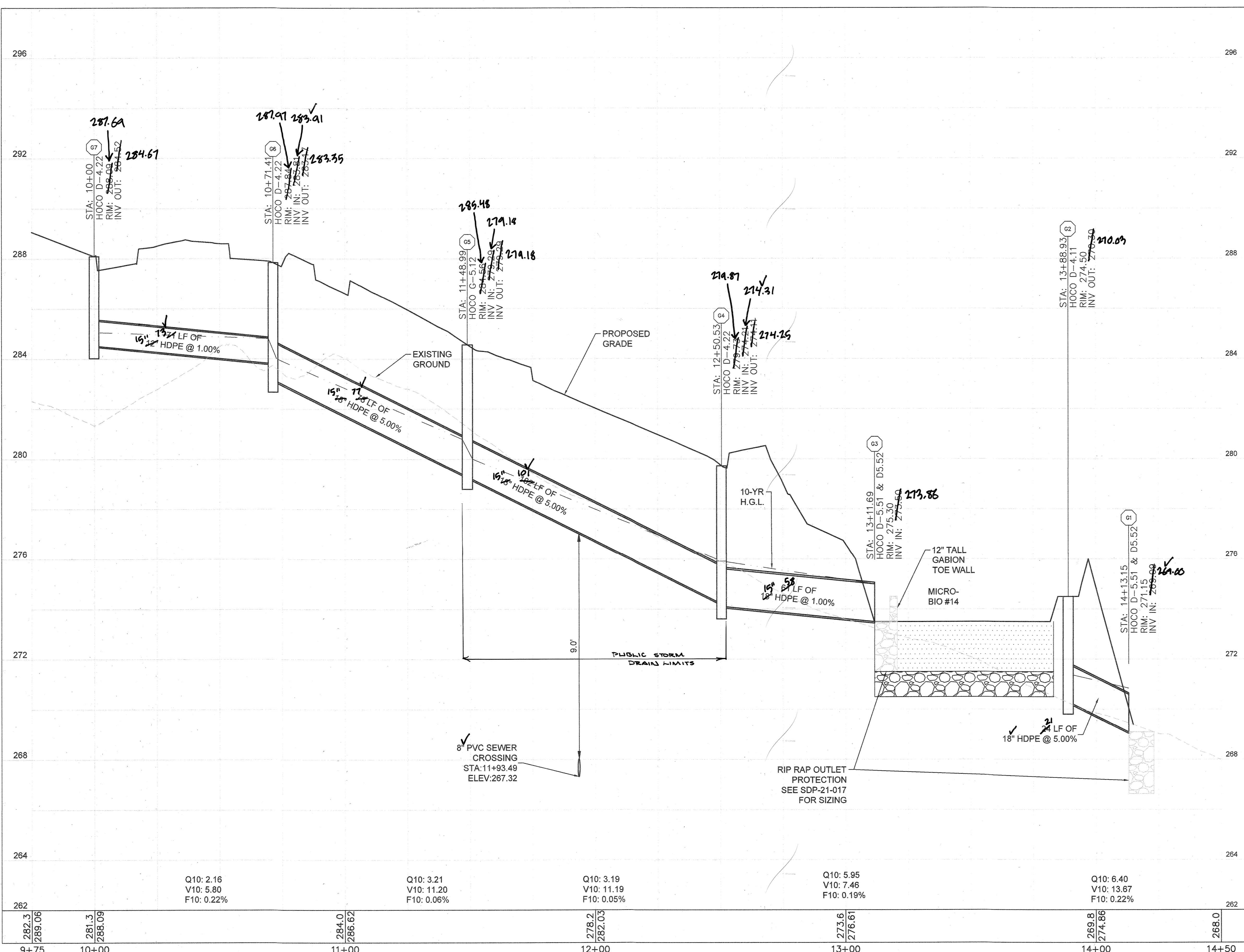
PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO. PARCEL 1078, LOT A-1
PLAT # OR L/F #23639	GRID #08 ZONING PEC-MXD-3	TAX MAP NO. 47 ELECT DISTRICT 6 CENSUS TRACT
WATER CODE	SEWER CODE	

REVISIONS: No. _____ DATE _____

SHEET NUMBER **40**

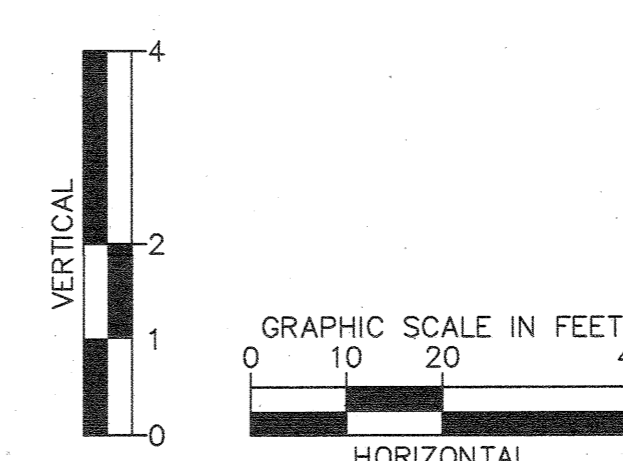
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Q10: 2.16 V10: 5.80 F10: 0.22%	Q10: 3.21 V10: 11.20 F10: 0.06%	Q10: 3.19 V10: 11.19 F10: 0.05%	Q10: 5.95 V10: 7.46 F10: 0.19%	Q10: 6.40 V10: 13.67 F10: 0.22%
--------------------------------------	---------------------------------------	---------------------------------------	--------------------------------------	---------------------------------------

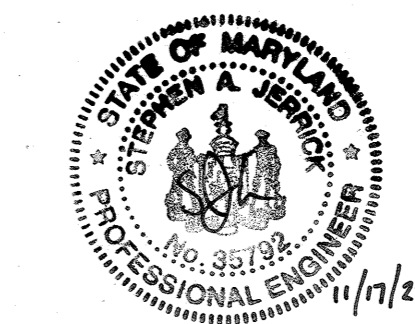
G1 TO G6 (1)
SCALE: 1" = 50' H
1" = 5' V

ALL STORM SEWER PIPES AND STRUCTURES PROPOSED WITH THIS PROJECT TO BE PRIVATELY MAINTAINED, EXCEPT AS NOTED ABOVE

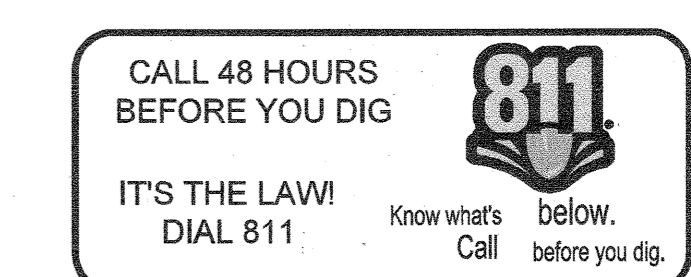


STRUCTURE NAME	DETAILS	PIPES IN:	PIPES OUT:
G4	HOCO D=4.22 RIM: 284.09 INV IN: 284.31 INV OUT: 284.26	FROM 66, 18" HDPE	TO G3, 18" HDPE
G6	HOCO D=6.12 RIM: 284.96 INV IN: 284.99 INV OUT: 284.18	FROM 66, 18" HDPE	TO G4, 18" HDPE

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.
STEPHEN JERLUK, No. 35792, 11-10-2012



APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature]
CHIEF, BUREAU OF HIGHWAYS
DATE: 09/07/2021



APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature]
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 5/31/21
[Signature]
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 4/21/21

ADDRESS CHART					
LOT/PARCEL #	STREET ADDRESS				
PARCEL 1078, LOT A-1	9501 ETERNAL RINGS DRIVE, LAUREL, MD 20723				
PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO. PARCEL 1078, LOT A-1			
PLAT # OR L/F #23639	GRID #08	ZONING REC-MXD-3	TAX MAP NO. 47	ELECT DISTRICT 6	CENSUS TRACT
WATER CODE		SEWER CODE			

DATE: _____ BY: _____

REVISIONS: No. _____

Kimley-Horn

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1801 FORSTER ST., SUITE 401, BALTIMORE, MD 21230
PHONE: 443-743-3470
WWW.KIMLEY-HORN.COM

STATE OF MARYLAND
STEPHEN JERLUK
PROFESSIONAL ENGINEER
11/1/22

STATE OF MARYLAND
JERLUK 3-16-21
PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 35792
EXPIRATION DATE 11/10/2022

KHA PROJECT	110718001	DATE	03/08/2021	SCALE	AS SHOWN	DESIGNED BY	CDW	DRAWN BY	CDW	CHECKED BY	KTR
-------------	-----------	------	------------	-------	----------	-------------	-----	----------	-----	------------	-----

STORM SEWER PROFILES (ADDITIONAL SHEET)

**EMERSON PROJECT
REVISED FINAL ROAD
CONSTRUCTION PLAN**

MARYLAND
HOWARD COUNTY

SHEET NUMBER
41

F-11-036