

STANDARD DRAWING LEGEND

FOR ENTIRE PLAN SET (NOT TO SCALE)

Table with 3 columns: EXISTING NOTE, TYPICAL NOTE TEXT, PROPOSED NOTE. Lists various symbols for property lines, easements, utilities, and terrain features.

STANDARD DRAWING LEGEND

FOR ENTIRE PLAN SET (NOT TO SCALE)

Table with 3 columns: EXISTING NOTE, TYPICAL NOTE TEXT, PROPOSED NOTE. Lists symbols for stream buffers, treelines, forest areas, and other site features.

TRAFFIC CONTROL SIGNS

Table with 5 columns: ROAD NAME, CENTERLINE STA., OFFSET, POSTED SIGN, SIGN CODE. Lists signs for Mill Creek Court.

SHEET INDEX

Table with 2 columns: SHEET TITLE, SHEET NUMBER. Lists various sheets including cover sheet, site plan, and construction details.

OVERALL AREA TABULATION CHART

Table with 2 columns: CATEGORY, QUANTITY. Summarizes total area for buildable lots, non-buildable areas, and other site metrics.

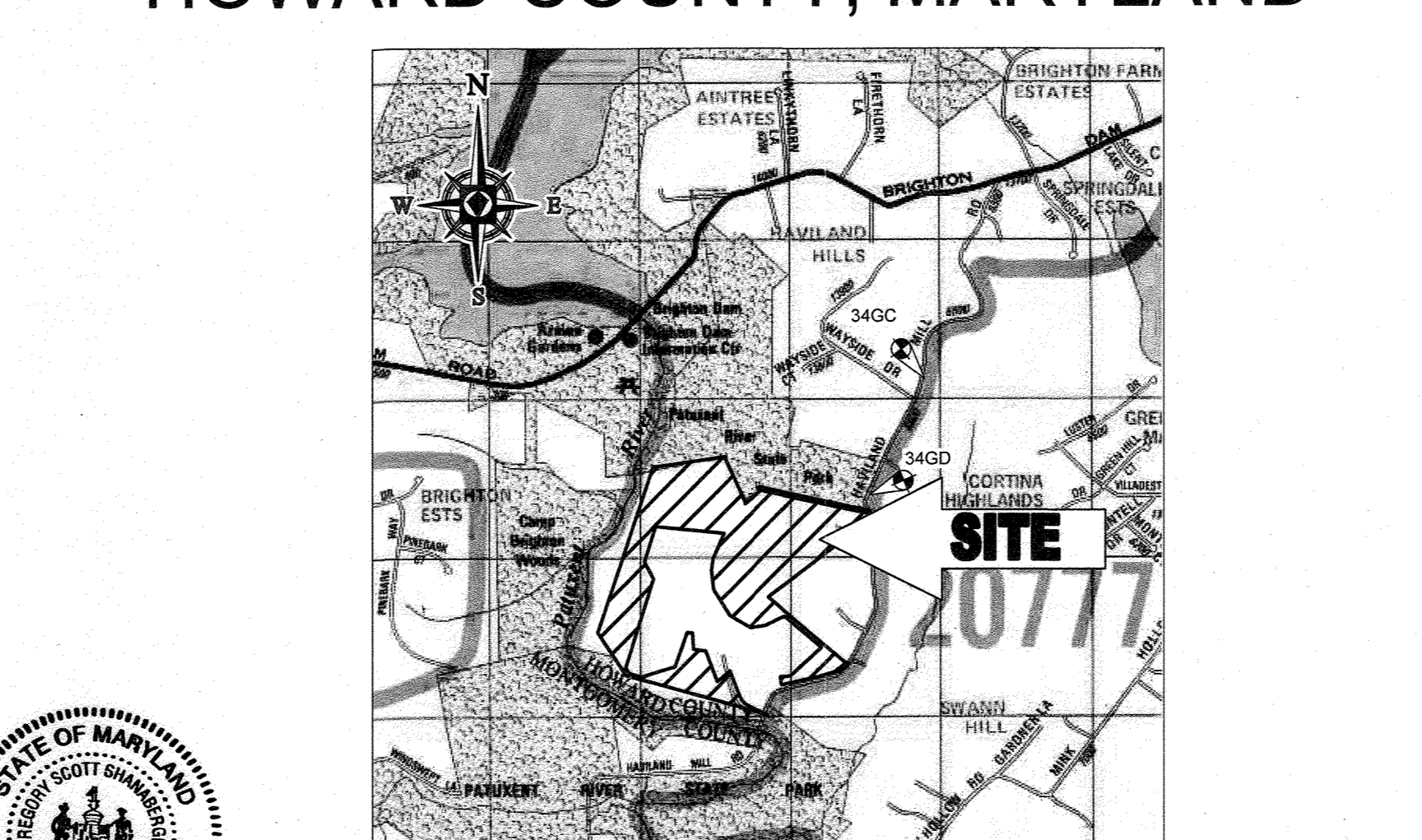
FINAL ROAD CONSTRUCTION PLAN

FOR CRAWFORD SUBDIVISION

LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

LOCATION OF SITE

5TH ELECTION DISTRICT TAX MAP 34, GRID 19, PARCEL 52 & TAX MAP 39, GRID 6, PARCEL 1 HOWARD COUNTY, MARYLAND



Professional Engineer seal for Scott Shanaberger, Professional L.S. # 10849, dated 4/2/2022.

SITE ANALYSIS DATA / TABULATION. Summary table of site characteristics including total project area, wetlands, and erosion concerns.

BOHLER ENGINEERING logo and contact information: 901 DULANEY VALLEY ROAD, SUITE 801, TOWSON, MARYLAND 21204.

GENERAL NOTES

- 1. SUBJECT PROPERTY ZONED RR-DEO PER THE 10/09/2013 COMPREHENSIVE ZONING REGULATIONS... 2. GROSS AREA OF TRACT 90.07 AC... 3. AREA OF FLOODPLAIN 15.84 AC... 4. NET AREA OF TRACT 75.49 AC... 5. AREA OF PROPOSED RAW DEDICATION 3.16 AC... 6. TOTAL NUMBER OF LOTS ALLOWED PER ZONING 1 UNIT PER 4.25 GROSS AREA (BASE DENSITY): 23... 7. WAIVER REQUEST WP-15-122 FOR THE FOLLOWING: WP-15-122 WAS APPROVED ON DECEMBER 2, 2015 FOR A WAIVER FROM SECTION 16.147 TO TRANSFER AND MERGE OF 69.69 ACRES OF THE OVERGROUND PROPERTY WITH THE CRAWFORD PROPERTY...

GENERAL NOTES (cont.)

- 36. CONT. TO THE PRESERVATION EASEMENT, NON-BUILDABLE PRESERVATION PARCEL B IS FOR THE PURPOSE OF OPEN SPACE AND WILL BE OWNED BY THE HOMEOWNERS ASSOCIATION AND HOWARD COUNTY GOVERNMENT... 37. IN ACCORDANCE WITH SECTION 105.0 F OF THE ZONING REGULATIONS, AT LEAST 10% OF THE DWELLINGS IN EACH RR DEVELOPMENT SHALL BE MODERATE INCOME HOUSING UNITS (MIHU)... 38. A GROUNDWATER APPROPRIATIONS PERMIT MUST BE APPROVED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT PRIOR TO THE HEALTH DEPARTMENT'S SIGNATURE OF THE RECORD PLAT... 39. A GEOTECHNICAL REPORT HAS BEEN PROVIDED FOR THIS PROJECT BY HILLIS-CARNE ENGINEERING INC... 40. THE PROPERTY DESIGNATED AS GROWTH TIER III PER PLAN HOWARD 2030 AND IN ACCORDANCE WITH SENATE BILL 236 PER SB-236 PRELIMINARY EQUIVALENT SKETCH PLAN SP-15-015 WAS APPROVED, PER PLANNING BOARD CASE NO. 47, ON JULY 21, 2016... 41. ALL SHOWN HOUSE SITES COMPLY WITH MINIMUM BUILDING RESTRICTION REGULATIONS... 42. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT... 43. EXISTING WELLS AND/OR SEWERAGE EASEMENTS WITHIN 200 FEET OF THE PROPERTY HAVE BEEN SHOWN FROM THE BEST AVAILABLE INFORMATION... 44. ALL WELLS SHALL BE DRILLED PRIOR TO FINAL RECORDATION. IT IS THE DEVELOPER'S RESPONSIBILITY TO SCHEDULE THE WELL DRILLING PRIOR TO FINAL PLAT SUBMISSION. IT WILL NOT BE CONSIDERED 'GOVERNMENT DELAY' IF THE WELL DRILLING HOLDS-UP THE HEALTH DEPARTMENT SIGNATURE OF THE RECORD PLAT... 45. THE TOPOGRAPHY SHOWN HEREON IS BASED ON HOWARD COUNTY GIS AND A BOUNDARY & TOPOGRAPHIC SURVEY PREPARED BY BOHLER ENGINEERING TITLED 'CRAWFORD PROPERTY, 6780 HAVILAND MILL ROAD, 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND, PROJECT NO. SD142038, DATED 10/22/14. LAST REVISED 10/01/14. TOPOGRAPHY SHOWN OUTSIDE 'LIMIT OF FIELD RUN SURVEY' IS TAKEN FROM HOWARD COUNTY GIS... 46. THE BOUNDARY LINES SHOWN HEREON ARE BASED ON HOWARD COUNTY GIS AND A BOUNDARY & TOPOGRAPHIC SURVEY PREPARED BY BOHLER ENGINEERING TITLED 'CRAWFORD PROPERTY, 6780 HAVILAND MILL ROAD, 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND, PROJECT NO. SD142038, DATED 10/22/14. LAST REVISED 10/01/14... 47. THIS AREA DESIGNATES A PRIVATE SEWAGE DISPOSAL AREA OF AT LEAST 10,000 SQ FT AS REQUIRED BY THE MARYLAND DEPARTMENT OF ENVIRONMENT FOR SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED. THIS SEWAGE DISPOSAL AREA SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE DISPOSAL RECORDATION OF A REVISED SEWAGE EASEMENT SHALL NOT BE NECESSARY... 48. ANY CHANGES TO A PRIVATE SEWAGE EASEMENT SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN... 49. ALL STRUCTURES WILL BE ABANDONED PRIOR TO FINAL RECORDATION OF THE FINAL PLAT AND BEFORE THE RELEASE OF ANY BUILDING PERMITS... 50. MDE HAS APPROVED A VARIANCE TO ALLOW THE WELL AREA ON LOT 20 TO BE DOWN GRADIENT OF THE SEWERAGE DISPOSAL AREAS ON LOTS 20 AND 21 AND THE WELL AREA ON LOT 21 TO BE DOWN GRADIENT OF THE SEWERAGE DISPOSAL AREA ON LOT 21 SUBJECT TO THE FOLLOWING: A. THE WELL ON LOTS 20 AND 21 MUST BE DRILLED USING STEEL CASING THAT EXTENDS TO AT LEAST 50 FEET DEPTH OR 10 FEET INTO COMPETENT BEDROCK, WHICH EVER IS DEEPER... B. THE SEWERAGE DISPOSAL SYSTEM ON LOTS 20 AND 21 WILL UTILIZE BEST AVAILABLE TECHNOLOGY FOR NITROGEN REDUCTION AND LOW LIQUOR BENCH DOSED DRAINFIELD... 51. DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS: WIDTH - 12' (8 SERVING MORE THAN ONE RESIDENCE) SURFACE - 4" OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1 1/2" MIN) GEOMETRY - MAX 15% GRADE, MAX 10% GRADE CHANGE AND MIN 45' TURNING RADIUS STRUCTURE (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING) DRAINAGE ELEMENTS - SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1' FLOOD DEPTH OVER DRIVEWAY SURFACE MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE... 52. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.120 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED... 53. RESERVATION OF PUBLIC UTILITY AND FOREST CONSERVATION EASEMENTS DEVELOPER RESERVES UNTO ITSELF, ITS SUCCESSORS AND ASSIGNS, ALL EASEMENTS SHOWN ON THIS PLAN FOR STORM DRAINAGE, OTHER PUBLIC UTILITIES AND FOREST CONSERVATION (DESIGNED AS 'FOREST CONSERVATION AREA') LOCATED IN, ON, OVER AND THROUGH LOTS/PARCELS. ANY CONVEYANCES OF THE AFORESAID LOTS/PARCELS SHALL BE SUBJECT TO THE EASEMENTS HEREBY RESERVED, WHETHER OR NOT EXPRESSLY STATED IN THE DEED(S) CONVEYING SAID LOTS/PARCELS. DEVELOPER SHALL EXECUTE AND DELIVER DEEDS FOR THE EASEMENTS HEREBY RESERVED TO HOWARD COUNTY, UPON COMPLETION OF THE PUBLIC UTILITIES AND THEIR ACCEPTANCE BY HOWARD COUNTY, AND IN THE CASE OF THE FOREST CONSERVATION EASEMENT(S), UPON COMPLETION OF THE DEVELOPER'S OBLIGATIONS UNDER THE FOREST CONSERVATION INSTALLATION AND MAINTENANCE AGREEMENT(S) ENTERED INTO BY THE DEVELOPER AND THE COUNTY, AND THE RELEASE OF DEVELOPER'S SURETY POSTED WITH SAID AGREEMENT. THE COUNTY SHALL ACCEPT THE EASEMENTS AND RECORD THE DEED(S) OF EASEMENT IN THE LAND RECORDS OF HOWARD COUNTY... 54. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATION IF APPLICABLE... 55. 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... 56. THE CONTRACTOR SHALL NOTIFY 'MISS UTILITY' AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE... 57. A FINANCIAL SURETY IN THE AMOUNT OF \$30,600 FOR 102 REQUIRED PUBLIC STREET TREES WILL BE ADDRESSED IN DEEDS COST ESTIMATE. SURETY WILL BE ADDRESSED IN THE ASSOCIATED DEVELOPER'S AGREEMENT.

BOHLER ENGINEERING logo and contact information: 901 DULANEY VALLEY ROAD, SUITE 801, TOWSON, MARYLAND 21204.

REVISIONS table with columns: REV, DATE, COMMENT, BY. Shows revision 2019-08 ADD SHEET 39 by GLM.

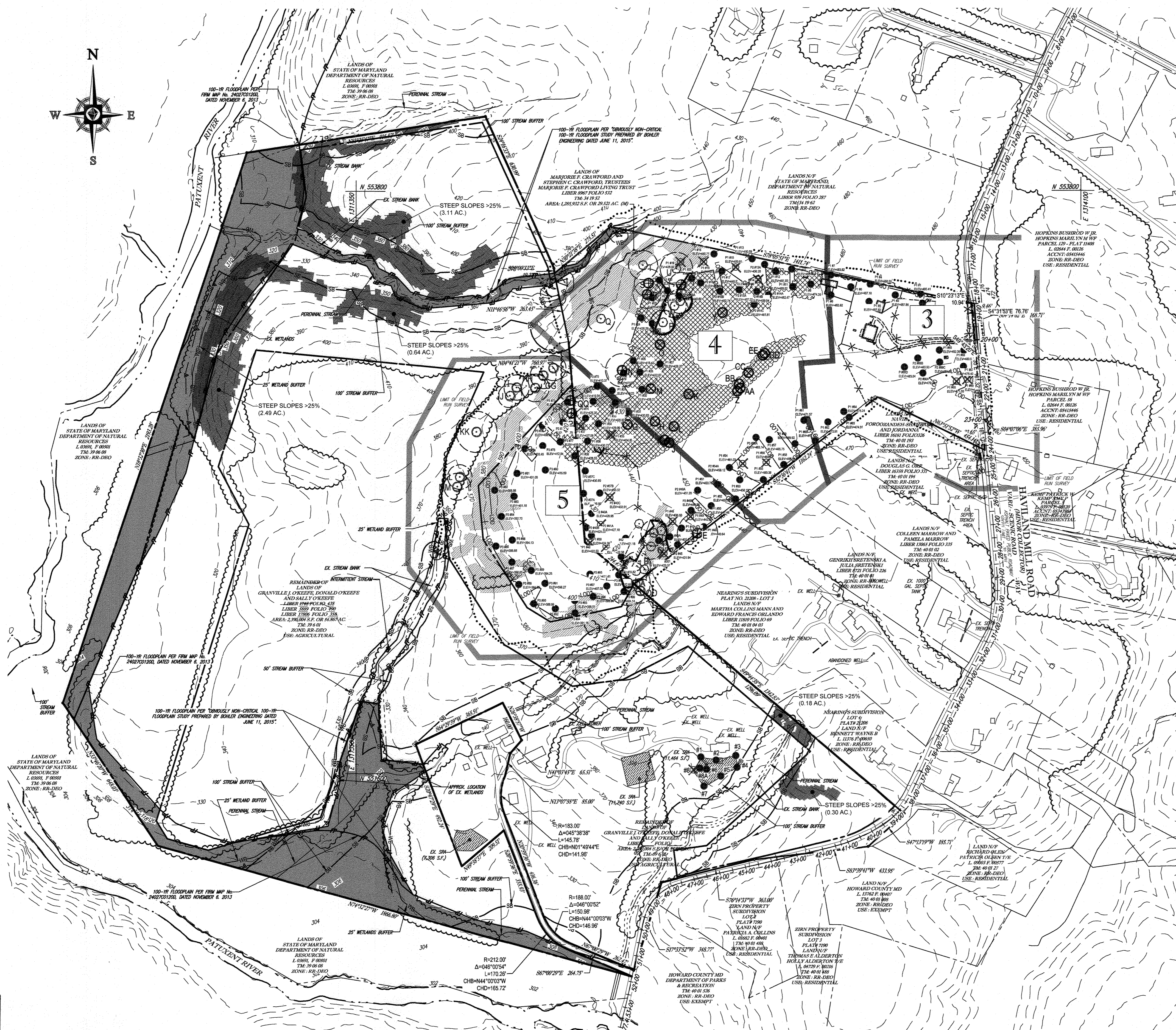
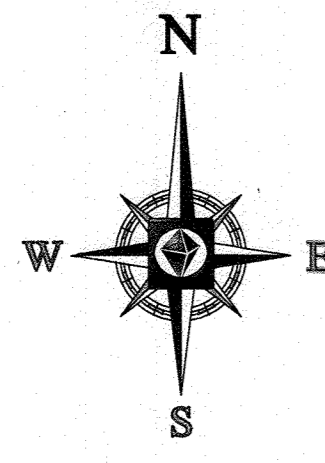
Professional Engineer seal for Brandon R. Rowe, Professional Engineer, License No. 40828, dated 7/30/19.

FINAL ROAD CONSTRUCTION PLAN FOR CRAWFORD SUBDIVISION. Location of site: 6780 HAVILAND MILL ROAD, TAX MAP 34, GRID 19 & PARCEL 52, TAX MAP 39, GRID 6 & PARCEL 1, 5TH ELECTION DISTRICT, HOWARD COUNTY, MD.

BOHLER ENGINEERING logo and contact information: 901 DULANEY VALLEY ROAD, SUITE 801, TOWSON, MARYLAND 21204.

B.R. ROWE logo and contact information: 5074 DORSEY HALL ROAD, SUITE 205, ELLICOTT CITY, MD 21042.

COVER SHEET 1 of 39. Includes sheet number and date information.



GENERAL DEMOLITION NOTES:

- THIS PLAN REFERENCES TO FOLLOWING:
THE TOPOGRAPHY SHOWN HEREON IS BASED ON HOWARD COUNTY GIS AND A BOUNDARY & TOPOGRAPHIC SURVEY PREPARED BY BOHLER ENGINEERING TITLED: CRAWFORD PROPERTY, 6780 HAVILAND MILL ROAD, 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND, PROJECT NO. SD142038, DATED: 10/22/14, LAST REVISED 10/30/14, TOPOGRAPHY SHOWN OUTSIDE "LIMIT OF FIELD RUN SURVEY" IS TAKEN FROM HOWARD COUNTY GIS.
- THE BOUNDARY LINES SHOWN HEREON ARE BASED ON HOWARD COUNTY GIS AND A BOUNDARY & TOPOGRAPHIC SURVEY PREPARED BY BOHLER ENGINEERING TITLED: CRAWFORD PROPERTY, 6780 HAVILAND MILL ROAD, 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND, PROJECT NO. SD142038, DATED: 10/22/14, LAST REVISED 10/30/14.
- CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, (29 U.S.C. 651 et seq.), AS AMENDED AND ANY MODIFICATIONS, AMENDMENTS OR REVISIONS TO SAME.
- BOHLER ENGINEERING HAS NO CONTRACTUAL, LEGAL, OR OTHER RESPONSIBILITY FOR JOB SITE SAFETY OR JOB SITE SUPERVISION, OR ANYTHING RELATED TO SAME.
- THE DEMOLITION PLAN IS INTENDED TO PROVIDE GENERAL INFORMATION, ONLY. REGARDING ITEMS TO BE DEMOLISHED AND/OR REMOVED, THE CONTRACTOR MUST ALSO REVIEW THE OTHER SITE PLAN DRAWINGS AND INCLUDE IN DEMOLITION ACTIVITIES ALL INCIDENTAL WORK NECESSARY FOR THE CONSTRUCTION OF THE NEW SITE IMPROVEMENTS.
- CONTRACTOR MUST RAISE ANY QUESTIONS CONCERNING THE ACCURACY OR INTENT OF THESE PLANS OR SPECIFICATIONS, CONCERNING REGARDING THE APPLICABLE SAFETY STANDARDS, OR THE SAFETY OF THE CONTRACTOR OR THIRD PARTIES IN PERFORMING THE WORK ON THIS PROJECT, WITH BOHLER ENGINEERING, IN WRITING, AND RESPONDED TO BY BOHLER, IN WRITING, PRIOR TO THE INITIATION OF ANY SITE ACTIVITY AND ANY DEMOLITION ACTIVITY. ALL DEMOLITION ACTIVITIES MUST BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS AND ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, RULES, REQUIREMENTS, STATUTES, ORDINANCES AND CODES.
- PRIOR TO STARTING ANY DEMOLITION, CONTRACTOR IS RESPONSIBLE FOR:
 - A OBTAINING ALL REQUIRED PERMITS AND MAINTAINING THE SAME ON SITE FOR REVIEW BY THE ENGINEER AND OTHER PUBLIC AGENCIES HAVING JURISDICTION THROUGHOUT THE DURATION OF THE PROJECT, SITE WORK AND DEMOLITION WORK.

LEGEND	
	LIMITS OF FOREST CLEARING
	STEEP SLOPES 15-25%
	STEEP SLOPES >25%
	100 YR. FLOODPLAIN
	SPECIMEN TREE (TO BE REMOVED)
	PERC HOLE (PASS)
	PERC HOLE (FAILED)
	SHEET REFERENCE

OWNERS:
 ESC MILL CREEK, INC.
 5074 DORSEY HALL DRIVE, SUITE 205
 ELLICOTT CITY, MD 21042
 TEL: (410) 720-3021
 ATTN: JASON VAN KIRK

DONALD O'KEEFE
 SALLY O'KEEFE
 6950 HAVILAND MILL ROAD
 CLARKSVILLE, MD 21029
 TEL: (410) 599-0941

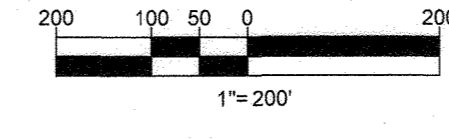
DEVELOPER:
 ESC MILL CREEK, INC.
 5074 DORSEY HALL ROAD, SUITE 205
 ELLICOTT CITY, MD 21042
 CONTACT: JASON VAN KIRK
 PHONE: (410) 720-3021

SUBDIVISION NAME: CRAWFORD
 SECTION/AREA: N/A
 DEED # 0598770532 & 0558910490

TAX MAP: 34 & 39 GRID: 19 & 6 ZONED: RR-DEO
 PARCEL: 52 & 1
 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

PROFESSIONAL CERTIFICATION
 I, BRANDON R. ROWE, 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. 48808 EXPIRATION DATE: 7/3/2019

PREVIOUS FILE No.:
 SP-15-015 WP-10-102
 ECP-15-051 WP-17-106
 WP-15-122



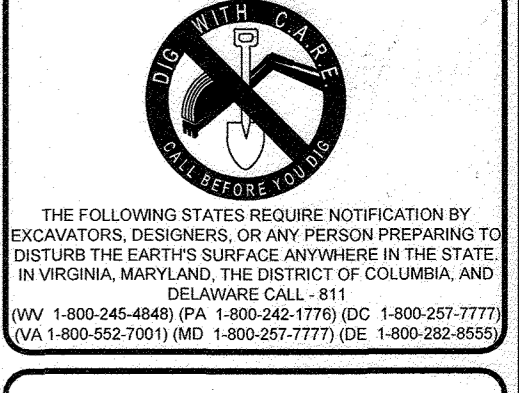
BOHLER ENGINEERING

CONSULTING OFFICE:
 WARREN, NJ

OFFICES:
 BOWEN, MD
 SOUTHBRIDGE, MA
 TOWSON, MD
 HANNOVER, MA
 CHARLOTTE, NC
 PHILADELPHIA, PA
 TAMPA, FL

CIVIL & CONSULTING ENGINEERS
 SURVEYORS
 PROJECT MANAGERS
 ENVIRONMENTAL CONSULTANTS
 LANDSCAPE ARCHITECTS

REVISIONS		
REV	DATE	COMMENT



PROJECT No.: MD142038
 DRAWN BY: BRR
 CHECKED BY: BRR
 DATE: 09/29/17
 SCALE: AS SHOWN
 CAD I.D.: SSS

FINAL ROAD CONSTRUCTION PLAN

FOR
CRAWFORD SUBDIVISION
 LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

LOCATION OF SITE
 6780 HAVILAND MILL ROAD
 TAX MAP 34, GRID 19 & PARCEL 52
 TAX MAP 39, GRID 6 & PARCEL 1
 5TH ELECTION DISTRICT
 HOWARD COUNTY, MD

BOHLER ENGINEERING

901 DULANEY VALLEY ROAD, SUITE 801
 TOWSON, MARYLAND 21204
 Phone: (410) 821-7900
 Fax: (410) 821-7987
 www.BohlerEngineering.com

B.R. ROWE

PROFESSIONAL ENGINEER
 LICENSE NO. 48808
 EXPIRES 7/3/2019

SHEET TITLE:
OVERALL EXISTING CONDITIONS AND DEMOLITION PLAN

SHEET NUMBER:
2 of 39

STATE OF MARYLAND
 BRIDGES & SCOTT BRIDGES

NOTES: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

Scott Shanaberger
 Professional L.S. # 10849 Exp. Date 4/2/2022
 AS-BUILT DATE: 6/25/2020
 Shanaberger & Lane

APPROVED DEPARTMENT OF PUBLIC WORKS
 DATE: 10/20/18

APPROVED DEPARTMENT OF PLANNING AND ZONING
 DATE: 1-19-19

DATE: 1-18-18



LANDS N/F
STATE OF MARYLAND
DEPARTMENT OF NATURAL RESOURCES
LIBER 839 FOLIO 287
TM: 34 19 62
ZONED-RR-DEO

MATCHLINE (SHEET 4)

MATCHLINE (SHEET 4)

HAVILAND MILL ROAD
(MINOR COLLECTOR) - SCENIC ROAD
VARIABLE WIDTH RIGHT-OF-WAY
ASPHALT PAVED ROAD
STREET LIGHTS - 30' HIGH

ABANDON ALL COMPONENTS OF THE EXISTING SEPTIC SYSTEM FOR THIS HOUSE PER LOCAL, STATE, AND FEDERAL REQUIREMENTS.

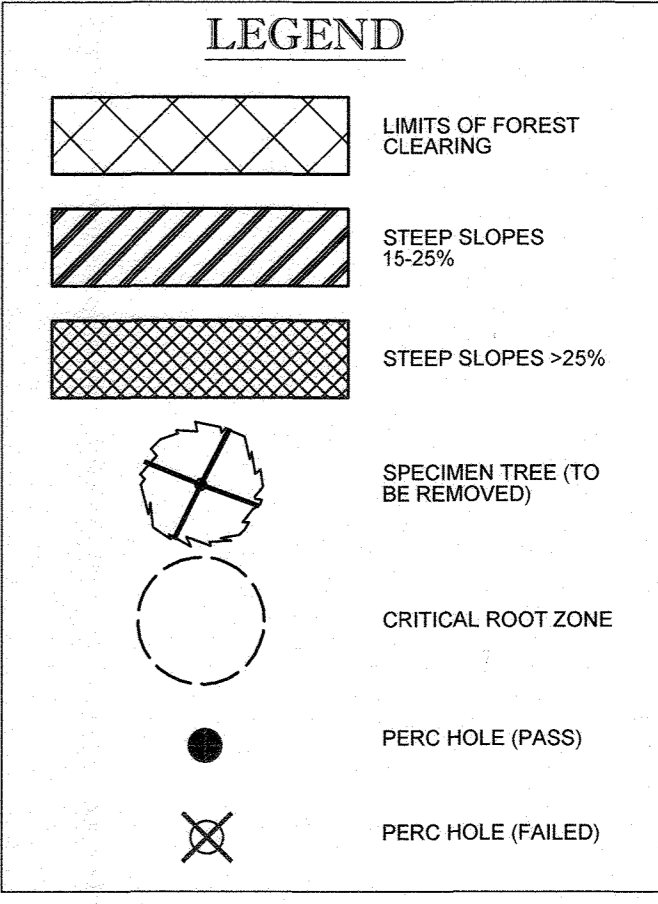
WELL TO BE ABANDONED (SEE NOTE ON SHEET 3)

LANDS N/F
GEORGE TSOOKLERIS & MOXIL LYON TSOOKLERIS
LIBER 5286 FOLIO 302
TM: 40 01 197
ZONE: RR-DEO
USE: RESIDENTIAL

LANDS N/F
JOHN W. SEITZ
SUBDIVISION
P.B. 7, P. 67
LIBER 4568 FOLIO 184
TM: 40 01 194
ZONE: RR-DEO
USE: RESIDENTIAL

LANDS N/F
GENRIKH SRETENSKI AND JULIA SRETENSKI
LIBER 3721 FOLIO 226
TM: 40 01 01
ZONE: RR-DEO
USE: RESIDENTIAL

NOTE:
1. THE EXISTING WELL MUST BE PROPERLY ABANDONED BY A LICENSED WELL DRILLER WITH AN ABANDONMENT REPORT SUBMITTED TO THE HEALTH DEPARTMENT. THE EXISTING SEWAGE SYSTEM MUST BE PUMPED OUT BY A LICENSED SEWAGE HAULER AND PROPERLY ABANDONED WITH DOCUMENTATION SUBMITTED TO THE HEALTH DEPARTMENT PRIOR TO HEALTH DEPARTMENT APPROVAL OF THE RECORD PLAT.



BOHLER ENGINEERING

CORPORATE OFFICE:
 101 WESTERN AVENUE
 SUITE 100
 BOWEN, MD 21028
 (410) 821-7900

SURVEYORS:
 BOYD, MD
 TOWSON, MD
 ALBANY, NY
 CHALFONT, PA
 HANNA, FL
 PHILADELPHIA, PA

PROJECT MANAGERS:
 ENVIRONMENTAL CONSULTANTS
 LANDSCAPE ARCHITECTS

CIVIL & CONSULTING ENGINEERS

REVISIONS		
REV	DATE	COMMENT

THE FOLLOWING STATE'S REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE IN VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA AND DELAWARE CALL - 811

(WV 1-800-245-4849) (PA 1-800-242-1778) (DC 1-800-257-7777) (VA 1-800-552-7001) (MD 1-800-257-7777) (DE 1-800-282-8859)

PROJECT No.: MD142038
 DRAWN BY: AVS
 CHECKED BY: BRR
 DATE: 12/01/17
 SCALE: 1" = 50'
 CAD I.D.: SSJ

FINAL ROAD CONSTRUCTION PLAN
 FOR
CRAWFORD SUBDIVISION
 LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

LOCATION OF SITE
 6780 HAVILAND MILL ROAD
 TAX MAP 34, GRID 19 & PARCEL 52
 TAX MAP 39, GRID 6 & PARCEL 1
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 HOWARD COUNTY, MD

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 Fax: (410) 821-7987
 www.BohlerEngineering.com

B.R. ROWE

PROFESSIONAL ENGINEER
 License No. 40868
 EXPIRES 12/31/2019

SHEET TITLE:
EXISTING CONDITIONS AND DEMOLITION PLAN

SHEET NUMBER:
3 of 39

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

Scott Shanaberger
 Professional L.S. # 10849 Exp. Date 4/2/2022
 AS-BUILT DATE: 6/25/2022
 Shanaberger & Lane

APPROVED- DEPARTMENT OF PUBLIC WORKS	DATE: 1/10/2018
CHIEF, BUREAU OF HIGHWAYS	
APPROVED- DEPARTMENT OF PLANNING AND ZONING	DATE: 1-19-18
CHIEF, DIVISION OF LAND DEVELOPMENT	
APPROVED- DEVELOPMENT ENGINEERING DIVISION	DATE: 1.18.18
CHIEF, DEVELOPMENT ENGINEERING DIVISION	

OWNERS:
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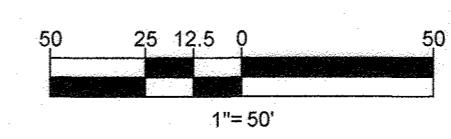
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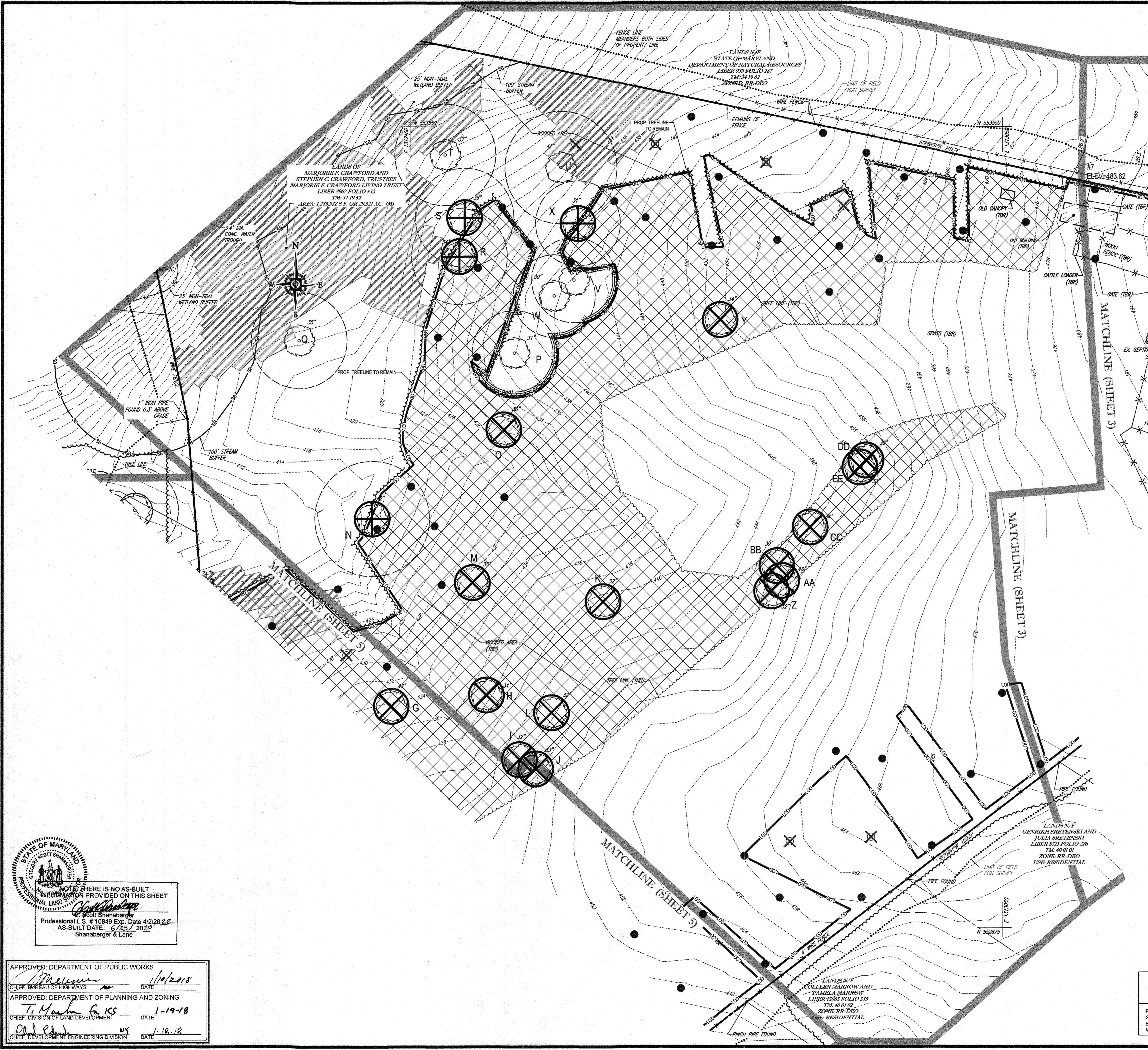
SUBDIVISION NAME: CRAWFORD SECTION/AREA: N/A
 DEED # 05967705532 & 05959100490

TAX MAP: 34 & 39 GRID: 19 & 6 PARCEL: 52 & 1 ZONED: RR-DEO
 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

PREVIOUS FILE No.:
 SP-15-016 WP-10-102
 ECP-15-051 WP-17-106
 WP-15-122

PROFESSIONAL CERTIFICATION
 I, BRANDON R. ROWE, 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. 40868, EXPIRATION DATE: 7/31/2019



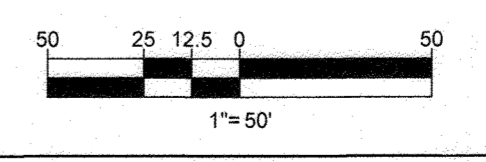


STATE OF MARYLAND
 PROFESSIONAL LAND SURVEYOR
 9001 Shanabarger
 Professional L.S. # 10849 Exp. Date 4/2/2022
 AS-BUILT DATE: 6/25/2022
 Shanabarger & Lane

APPROVED: DEPARTMENT OF PUBLIC WORKS
 DATE: 1/10/2018
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 DATE: 1-19-18
 DATE: 1-18-18

LEGEND

	LIMITS OF FOREST CLEARING
	STEEP SLOPES 15-25%
	STEEP SLOPES >25%
	SPECIMEN TREE (TO BE REMOVED)
	CRITICAL ROOT ZONE
	PERC HOLE (PASS)
	PERC HOLE (FAILED)



SUBDIVISION NAME: CRAWFORD
 SECTION/AREA: NA
 DEED # 0695700532 & 0588900450

PREVIOUS FILE No.:
 SP - 15 - 015 WP-10-102
 ECP - 15 - 051 WP-17-106
 WP-15-122

OWNERS:
 ESC MILL CREEK, INC.
 5074 DORSEY HALL DRIVE, SUITE 205
 ELLICOTT CITY, MD 21042
 TEL: (410) 720-3021
 ATTN: JASON VAN KIRK

DONALD O'KEEFE
 SALLY O'KEEFE
 6950 HAVILAND MILL ROAD
 CLARKSVILLE, MD 21029
 TEL: (410) 599-6941

DEVELOPER:
 ESC MILL CREEK, INC.
 5074 DORSEY HALL ROAD, SUITE 205
 ELLICOTT CITY, MD 21042
 CONTACT: JASON VAN KIRK
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TAX MAP: 34 & 39 GRID: 19 & 6 ZONED: RR-DEO
 PARCEL: 52 & 1
 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

PROFESSIONAL CERTIFICATION
 I, BRANDON R. ROWE, 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. 40808, EXPIRATION DATE: 7/3/2019

BOHLER ENGINEERING

CORPORATE OFFICE:
 WARREN, NJ

CIVIL & CONSULTING ENGINEERS
 SURVEYORS
 PROJECT MANAGERS
 ENVIRONMENTAL CONSULTANTS
 LANDSCAPE ARCHITECTS

OFFICES:
 BOWNE, MD
 SOUTHBRIDGE, MA
 BOSTON, MA
 BOSTON, MA
 CENTER VALLEY, PA
 TAMPA, FL

REVISIONS

REV	DATE	COMMENT	BY

THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE IN VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE CALL 811

1-800-245-4548 (PA) 1-800-245-1779 (DC) 1-800-257-7777 (VA) 1-800-552-7001 (MD) 1-800-257-7777 (DE) 1-800-282-8550

PROJECT No.: MD142038
 DRAWN BY: AVG
 CHECKED BY: BRR
 DATE: 12/01/17
 SCALE: 1"=50'
 CAD I.D.: SSA

FINAL ROAD CONSTRUCTION PLAN

FOR
CRAWFORD SUBDIVISION
 LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

LOCATION OF SITE
 6780 HAVILAND MILL ROAD
 TAX MAP 34, GRID 19 & PARCEL 52
 TAX MAP 39, GRID 6 & PARCEL 1
 5TH ELECTION DISTRICT
 HOWARD COUNTY, MD

BOHLER ENGINEERING

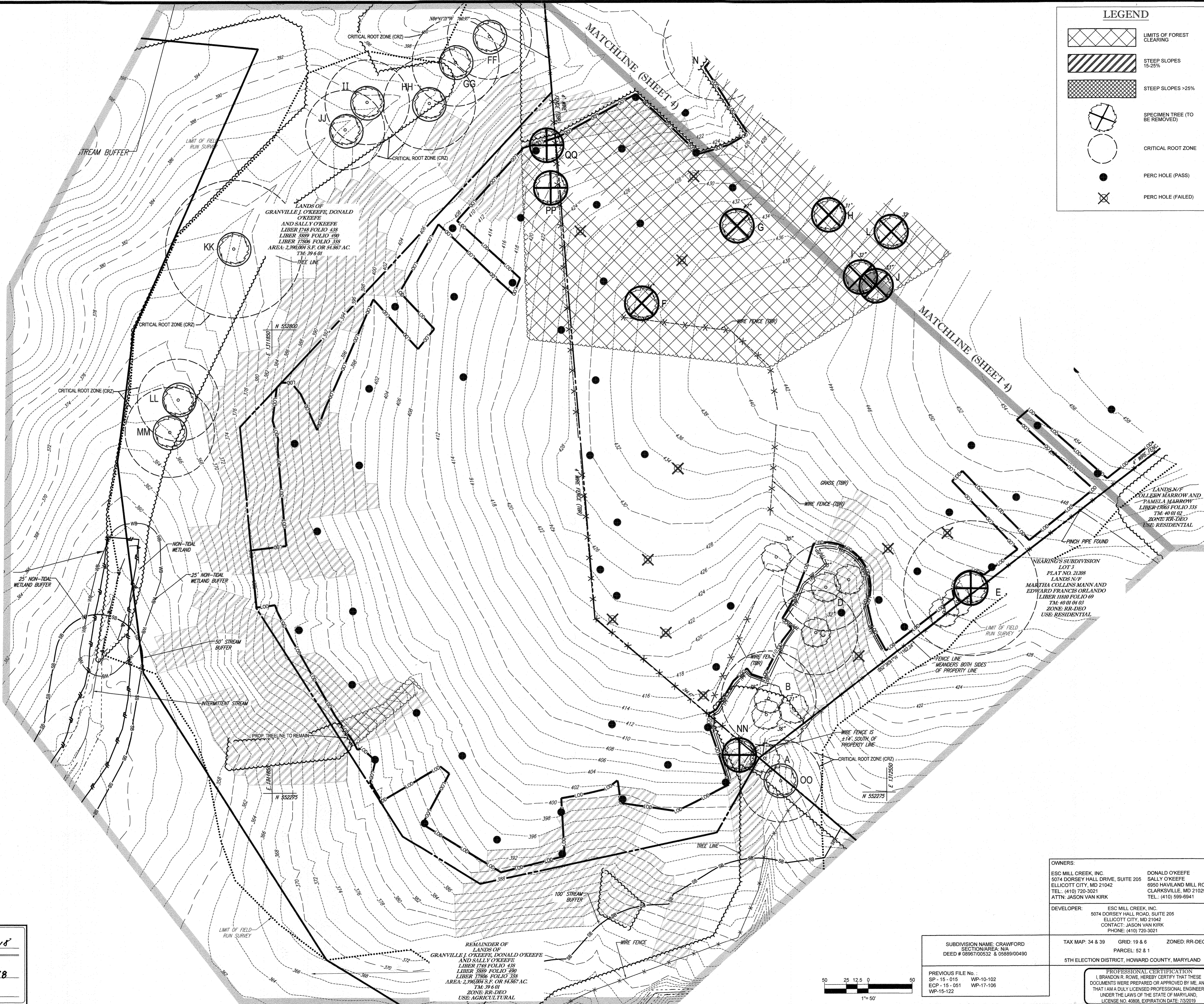
901 DULANEY VALLEY ROAD,
 SUITE 801
 TOWSON, MARYLAND 21204
 Phone: (410) 821-7900
 Fax: (410) 821-7987
 www.BohlerEngineering.com

B.R. ROWE

PROFESSIONAL ENGINEER
 No. 40808
 EXPIRATION DATE: 7/3/2019

SHEET TITLE:
EXISTING CONDITIONS AND DEMOLITION PLAN

SHEET NUMBER:
4 of 39



LEGEND

- LIMITS OF FOREST CLEARING
- STEEP SLOPES 15-25%
- STEEP SLOPES >25%
- SPECIMEN TREE (TO BE REMOVED)
- CRITICAL ROOT ZONE
- PERC HOLE (PASS)
- PERC HOLE (FAILED)

BOHLER ENGINEERING

CORPORATE OFFICE: PHILADELPHIA, PA
 SURVEYORS: PHILADELPHIA, PA
 PROJECT MANAGERS: PHILADELPHIA, PA
 ENVIRONMENTAL CONSULTANTS: PHILADELPHIA, PA
 LANDSCAPE ARCHITECTS: PHILADELPHIA, PA

OTHER OFFICES: BOWIE, MD; TOWSON, MD; ALBANY, NY; ALBANY, NY; CHARLOTTE, NC; CHARLOTTE, NC; PHILADELPHIA, PA; TAMPA, FL

REVISIONS

REV	DATE	COMMENT	BY

THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE IN VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE: CALL 811

(WV 1-800-245-4848) (PA 1-800-242-1776) (DC 1-800-257-7777) (VA 1-800-552-7001) (MD 1-800-261-7777) (DE 1-800-282-4555)

PROJECT No.: MD142038
 DRAWN BY: AVG
 CHECKED BY: BRR
 DATE: 12/01/17
 SCALE: 1"=50'
 CAD 1.D: SSS

FINAL ROAD CONSTRUCTION PLAN

FOR **CRAWFORD SUBDIVISION**
 LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

LOCATION OF SITE
 6780 HAVILAND MILL ROAD
 TAX MAP 34, GRID 19 & PARCEL 52
 TAX MAP 39, GRID 6 & PARCEL 1
 5TH ELECTION DISTRICT
 HOWARD COUNTY, MD

BOHLER ENGINEERING

901 DULANEY VALLEY ROAD, SUITE 801
 TOWSON, MARYLAND 21204
 Phone: (410) 821-7900
 Fax: (410) 821-7997
 www.BohlerEngineering.com

B. ROWE

PROFESSIONAL ENGINEER
 MARYLAND LICENSE NO. 40868

SHEET TITLE: **EXISTING CONDITIONS AND DEMOLITION PLAN**

SHEET NUMBER: **5 of 39**

STATE OF MARYLAND
 GEORGE SCOTT SHANBERGER
 PROFESSIONAL LAND SURVEYOR

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

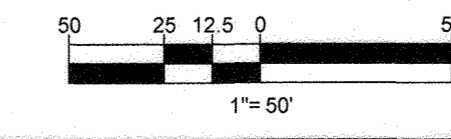
Professional L.S. # 10849 Exp. Date 4/2/20 22
 AS-BUILT DATE: 6/25 2022
 Shanberger & Lane

APPROVED, DEPARTMENT OF PUBLIC WORKS
 DATE: 1/10/2018

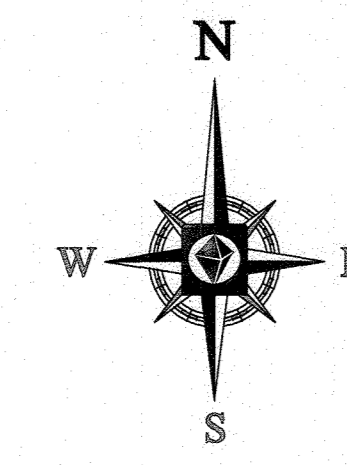
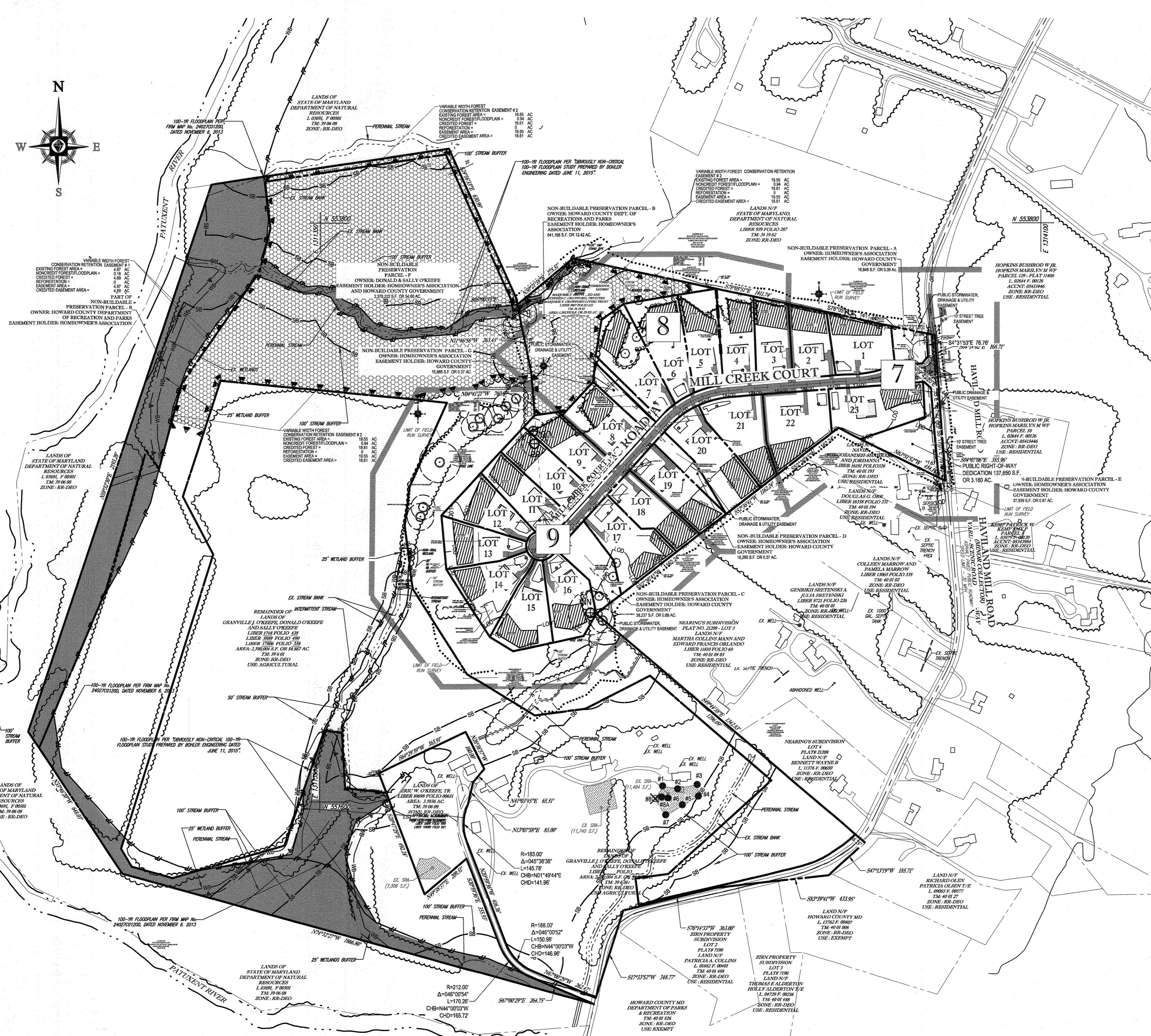
APPROVED, DEPARTMENT OF PLANNING AND ZONING
 DATE: 1-19-18

DATE: 1-18-18

OWNERS: ESC MILL CREEK, INC. 5074 DORSEY HALL DRIVE, SUITE 205 ELLCOTT CITY, MD 21042 TEL: (410) 720-3021 ATTN: JASON VAN KIRK	DONALD O'KEEFE SALLY O'KEEFE 6950 HAVILAND MILL ROAD CLARKSVILLE, MD 21029 TEL: (410) 599-6941
DEVELOPER: ESC MILL CREEK, INC. 5074 DORSEY HALL DRIVE, SUITE 205 ELLCOTT CITY, MD 21042 CONTACT: JASON VAN KIRK PHONE: (410) 720-3021	TAX MAP: 34 & 39 GRID: 19 & 6 PARCEL: 52 & 1 ZONED: RR-DEO 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SUBDIVISION NAME: CRAWFORD SECTION/AREA: N/A DEED # 03697/00532 & 05869/00490	PREVIOUS FILE NO.: SP-15-015 WP-10-102 ECP-15-051 WP-17-106 WP-15-122
REMAINDER OF LANDS OF GRANVILLE J. O'KEEFE, DONALD O'KEEFE AND SALLY O'KEEFE LIBER 1748 FOLIO 438 LIBER 5889 FOLIO 490 LIBER 17806 FOLIO 358 AREA: 2,390,000 S.F. OR 54.867 AC. T.M. 39 & 01 ZONE: RR-DEO USE: AGRICULTURAL	PROFESSIONAL CERTIFICATION I, BRANDON R. ROWE, 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. 40868, EXPIRATION DATE: 7/3/2019



1511411023P/000002/PLAN 0207/RAK ROAD PLAN/020222.DWG PRINTED BY: RAK/MD 12/21/17 @ 9:24 AM LAST SAID BY: 10/26/17



100-YR FLOODPLAIN PER FROM MAP NO. 2402701200, DATED NOVEMBER 6, 2013

100-YR FLOODPLAIN PER THOROUGHLY NON-CRITICAL 100-YR FLOODPLAIN STUDY PREPARED BY BOHLER ENGINEERING DATED JUNE 11, 2015

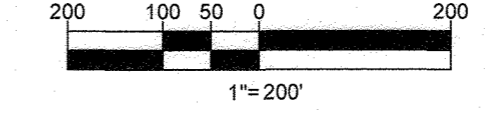
100-YR FLOODPLAIN PER FROM MAP NO. 2402701200, DATED NOVEMBER 6, 2013

100-YR FLOODPLAIN PER THOROUGHLY NON-CRITICAL 100-YR FLOODPLAIN STUDY PREPARED BY BOHLER ENGINEERING DATED JUNE 11, 2015

LEGEND

- PRIVATE SEWAGE DISPOSAL AREA (SEE GENERAL NOTE 47)
- EXISTING SEPTIC FIELD
- PROPOSED WELL BOX (APPROX. 1,500 S.F.)
- PERENNIAL STREAM
- STREAM BANK
- WETLANDS
- PROPOSED SFD
- 100 YR FLOODPLAIN
- 100' STREAM BUFFER
- 25' WETLANDS BUFFER
- FOREST CONSERVATION EASEMENT
- SHEET REFERENCE

ROADWAY INFORMATION CHART				
ROAD NAME	CLASSIFICATION	DESIGN SPEED	CL STATION LIMITS	PAVING SECTION
MILL CREEK COURT	PUBLIC ACCESS STREET	30 M.P.H.	STA 10+00.00 TO STA 27+53.11	P-2



PREVIOUS FILE NO.
 SP - 15 - 015 WP-10-102
 ECP - 15 - 051 WP-17-106
 WP-15-122

OWNERS:
 ESC MILL CREEK, INC.
 5074 DORSEY HALL DRIVE, SUITE 205
 ELLICOTT CITY, MD 21042
 TEL: (410) 230-3021
 ATTN: JASON VAN KIRK

DONALD O'KEEFE
 SALLY O'KEEFE
 6950 HAVILAND MILL ROAD
 CLARKSVILLE, MD 21029
 TEL: (410) 559-6941

DEVELOPER:
 ESC MILL CREEK, INC.
 5074 DORSEY HALL ROAD, SUITE 205
 ELLICOTT CITY, MD 21042
 CONTACT: JASON VAN KIRK
 PHONE: (410) 230-3021

TAX MAP: 34 & 39 GRID: 19 & 6 ZONED: RR-DEO
 PARCEL: 52 & 1
 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

BOHLER ENGINEERING

CORPORATE OFFICE:
 WARREN, NJ

CIVIL & CONSULTING ENGINEERS
 SURVEYORS

PROJECT MANAGERS
 ENVIRONMENTAL CONSULTANTS
 LANDSCAPE ARCHITECTS

OFFICES:
 BOULDER, CO
 ALBANY, NY
 CHANTON, PA
 CENTER VALLEY, PA
 FORT LAUDERDALE, FL
 PHILADELPHIA, PA

REVISIONS			
REV	DATE	COMMENT	BY

THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATES OF VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE: CALL 811 (WV 1-800-245-4848) (PA 1-800-242-1770) (DC 1-800-257-7777) (VA 1-800-953-7001) (MD 1-800-257-7777) (DE 1-800-382-8669)

PROJECT No: MD142020
 DRAWN BY: AVG
 CHECKED BY: BRR
 DATE: 09/29/17
 SCALE: 1" = 200'
 CAD I.D.: S54

FINAL ROAD CONSTRUCTION PLAN

FOR
CRAWFORD SUBDIVISION
 LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

LOCATION OF SITE
 6780 HAVILAND MILL ROAD
 TAX MAP 34, GRID 19 & PARCEL 52
 TAX MAP 39, GRID 6 & PARCEL 1
 5TH ELECTION DISTRICT
 HOWARD COUNTY, MD

BOHLER ENGINEERING

901 DULANEY VALLEY ROAD, SUITE 801
 TOWSON, MARYLAND 21284
 Phone: (410) 821-7900
 Fax: (410) 821-7957
 www.BohlerEngineering.com

B.R. ROWE

PROFESSIONAL ENGINEER

STATE OF MARYLAND
 PROFESSIONAL ENGINEERING BOARD
 LICENSE NO. 121817

SHEET TITLE:
OVERALL SITE PLAN

SHEET NUMBER:
6 of 39

STATE OF MARYLAND
 PROFESSIONAL LAND SURVEYORS

NO NOTE HERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

Scott Shanaberger
 Professional L.S. # 10849 Exp. Date 4/21/2022
 AS-BUILT DATE: 6/25/2022
 Shanaberger & Lane

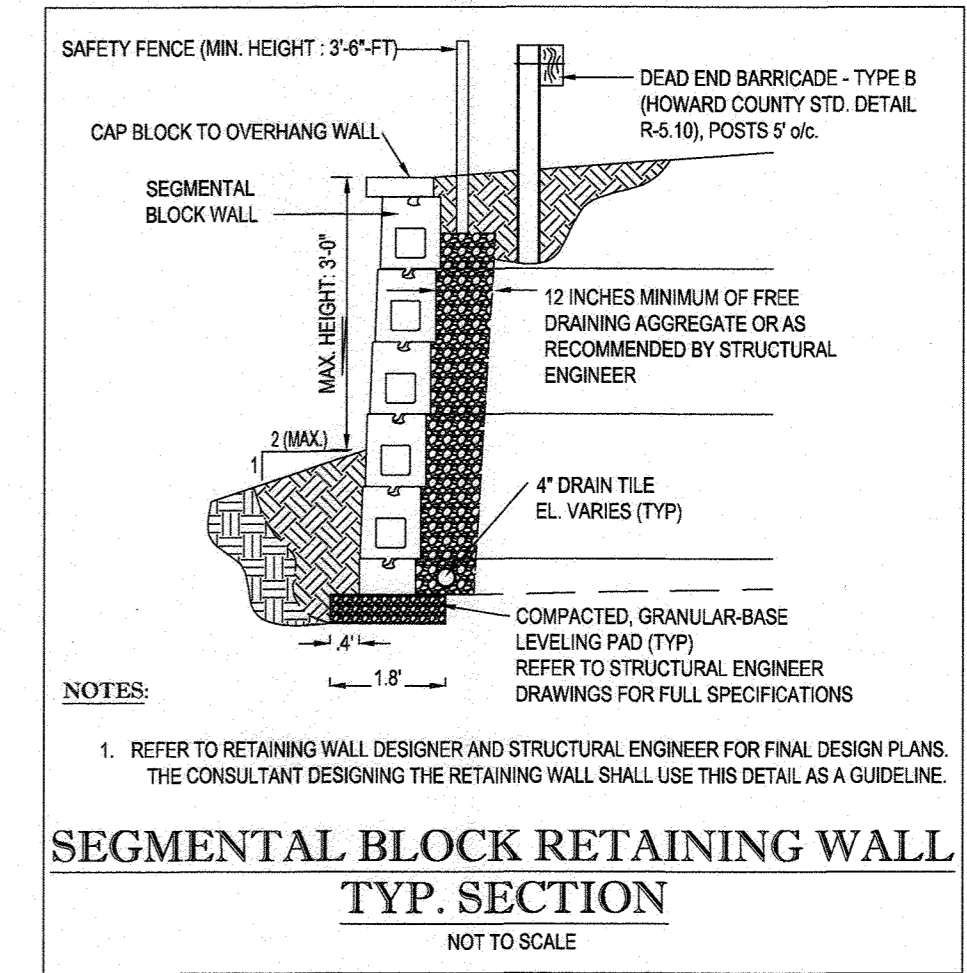
APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS DATE: 11/02/18

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 J. Matthew P. KS DATE: 1-19-18
 CHIEF, DIVISION OF LAND DEVELOPMENT

DATE: 1-18-18
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

10/19/2018 10:00:00 AM 100% PLOT/SECTION/SCALE PRINTED BY: JAMES 12:51:11 # 525 # 107 5403 BY: JAMES

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C - 3	375.00'	281.77'	S63°53'23"W	275.19'	043°03'04"	147.91'



BOHLER ENGINEERING

CORPORATE OFFICE:
SURVEYORS
PROJECT MANAGERS
ENVIRONMENTAL CONSULTANTS
LANDSCAPE ARCHITECTS

OFFICES:
BOWNE, MD
TOWSON, MD
ALBANY, NY
CHAMFON, PA
TAMPA, FL
PHILADELPHIA, PA

REVISIONS

REV	DATE	COMMENT	BY

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PROJECT No.: MD142038
DRAWN BY: AVG
CHECKED BY: BRR
DATE: 12/01/17
SCALE: AS SHOWN
CAD I.D.: SS

FINAL ROAD CONSTRUCTION PLAN
FOR
CRAWFORD SUBDIVISION
LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

LOCATION OF SITE
6780 HAVILAN MILL ROAD
TAX MAP 39, GRID 6 & PARCEL 1
5TH ELECTION DISTRICT
HOWARD COUNTY, MD

BOHLER ENGINEERING

901 DULANEY VALLEY ROAD, SUITE 801
TOWSON, MARYLAND 21204
Phone: (410) 821-7900
Fax: (410) 821-7987
www.BohlerEngineering.com

B.R. ROWE

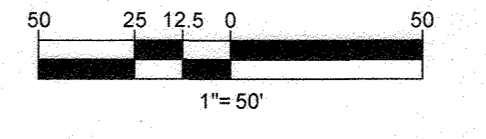
PROFESSIONAL ENGINEER
No. 40888
EXPIRES 12/31/2019

SHEET TITLE:
SITE PLAN

SHEET NUMBER:
8 of 39



AS-BUILT CERTIFICATION
HEREBY CERTIFY THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN MEETING THE CURRENT APPROVED PLANS AND SPECIFICATIONS OF THE PROJECT.
G. SCOTT SHANABARGER
SHANABARGER & LANS
PROFESSIONAL LAND SURVEYOR FROM LICENSE EXPIRATION DATE 12/31/2025
AS-BUILT SURVEY DATE 12/11/2022



SUBDIVISION NAME: CRAWFORD SECTION AREA: NA DEED # 0586770552 & 05889100490	TAX MAP: 34 & 39 GRID: 19 & 6 PARCEL: 52 & 1 ZONED: RR-DEO
PREVIOUS FILE No.: SP-15-015 WP-10-102 EP-15-051 WP-17-106 WP-15-122	5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

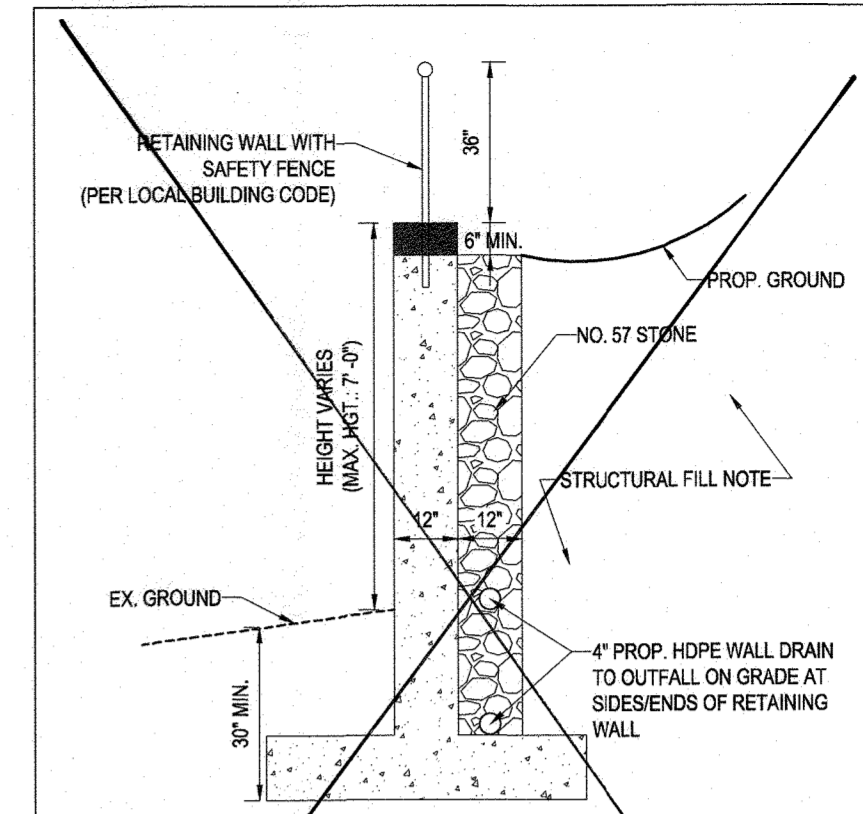
APPROVED DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS DATE: 1/10/2018

APPROVED DEPARTMENT OF PLANNING AND ZONING
T. Marchand for KS DATE: 1-19-19

CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 1-18-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION

11/14/2018 10:00 AM 11/14/2018 10:00 AM 11/14/2018 10:00 AM 11/14/2018 10:00 AM 11/14/2018 10:00 AM 11/14/2018 10:00 AM 11/14/2018 10:00 AM 11/14/2018 10:00 AM 11/14/2018 10:00 AM 11/14/2018 10:00 AM

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C-4	110.91'	87.83'	N65°03'07"E	85.56'	045°22'31"	46.37'



RETAINING WALL TYP. SECTION
NOT TO SCALE

NOTES:
1. RETAINING WALL MAY BE KEYSTONE WALL OR CAST IN PLACE WALL. FINAL DESIGN (INCLUDING MATERIAL SELECTION) TO BE PROVIDED FOR EACH RESPECTIVE LOT PRIOR TO BUILDING PERMIT ISSUANCE ON THAT RESPECTIVE LOT.
2. RETAINING WALL SHALL BE DESIGNED BY A STRUCTURAL ENGINEER AND SUBMITTED WITH SITE DEVELOPMENT PLANS.

BOHLER ENGINEERING

COURTNEY WITTE OFFICE:
WARRERSVILLE, IN

SUBSIDIARIES:
SOUTH BEND, IN
TOWSON, MD
ELICOTT CITY, MD
WARRINGTON, VA
CHARLESTON, SC
TAMPA, FL
PHILADELPHIA, PA

CIVIL & CONSULTING ENGINEERS
SURVEYORS
PROJECT MANAGERS
ENVIRONMENTAL CONSULTANTS
LANDSCAPE ARCHITECTS

REVISIONS			
REV	DATE	COMMENT	BY

BOHLER ENGINEERING

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PROJECT NO.:	MD142038
DRAWN BY:	AVG
CHECKED BY:	BRR
DATE:	09/29/17
SCALE:	AS SHOWN
CAD I.D.:	SSS

FINAL ROAD CONSTRUCTION PLAN

FOR
CRAWFORD SUBDIVISION
LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

LOCATION OF SITE
6780 HAVILAND MILL ROAD
TAX MAP 34, GRID 19 & PARCEL 52
TAX MAP 39, GRID 6 & PARCEL 1
5TH ELECTION DISTRICT
HOWARD COUNTY, MD

BOHLER ENGINEERING

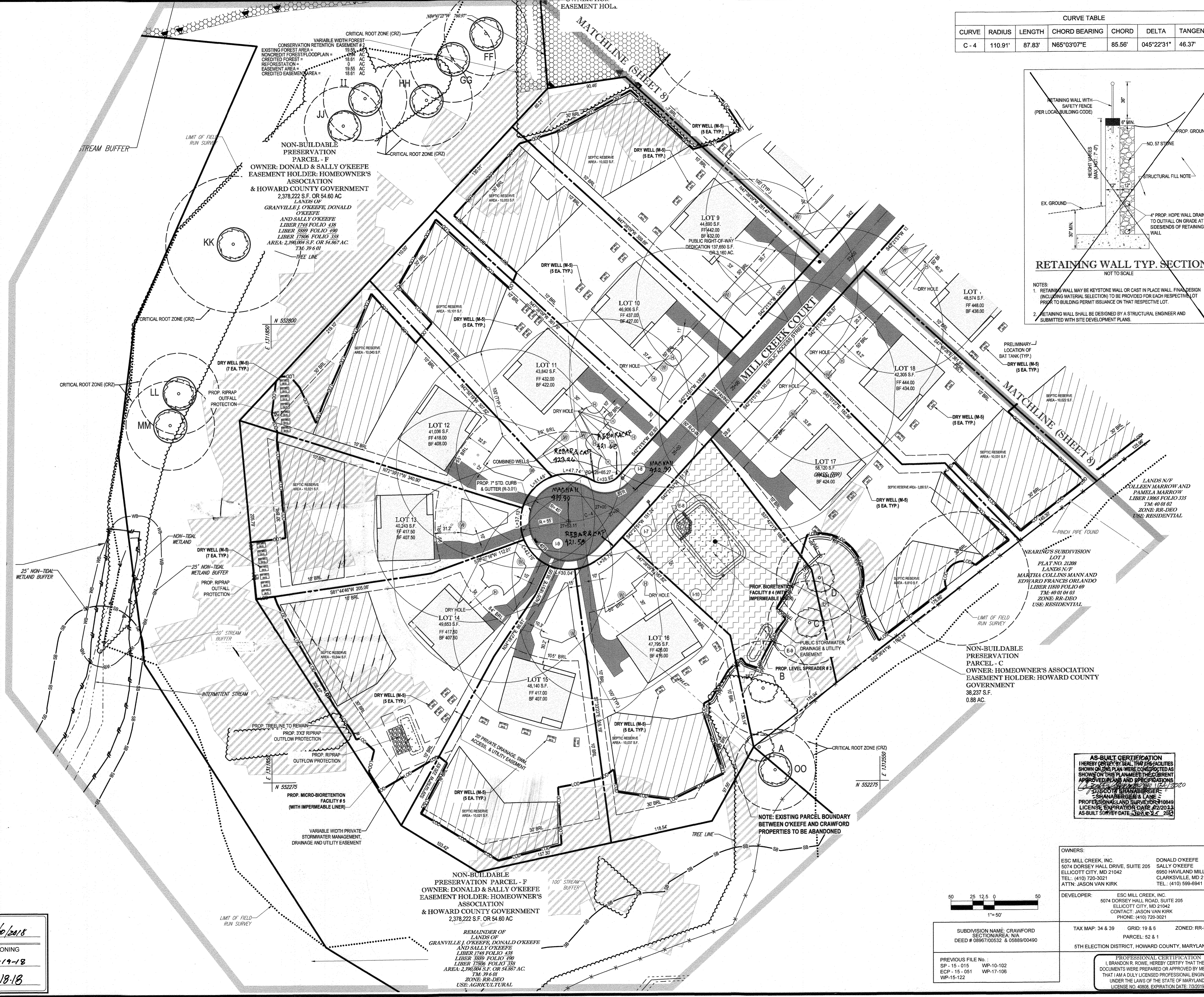
801 DULANEY VALLEY ROAD,
SUITE 801
TOWSON, MARYLAND 21284
Phone: (410) 821-7900
Fax: (410) 821-7987
www.BohlerEngineering.com

B.R. ROWE

PROFESSIONAL ENGINEER
No. 50389
Professional Engineering
Maryland

SHEET TITLE:
SITE PLAN

SHEET NUMBER:
9 of 39



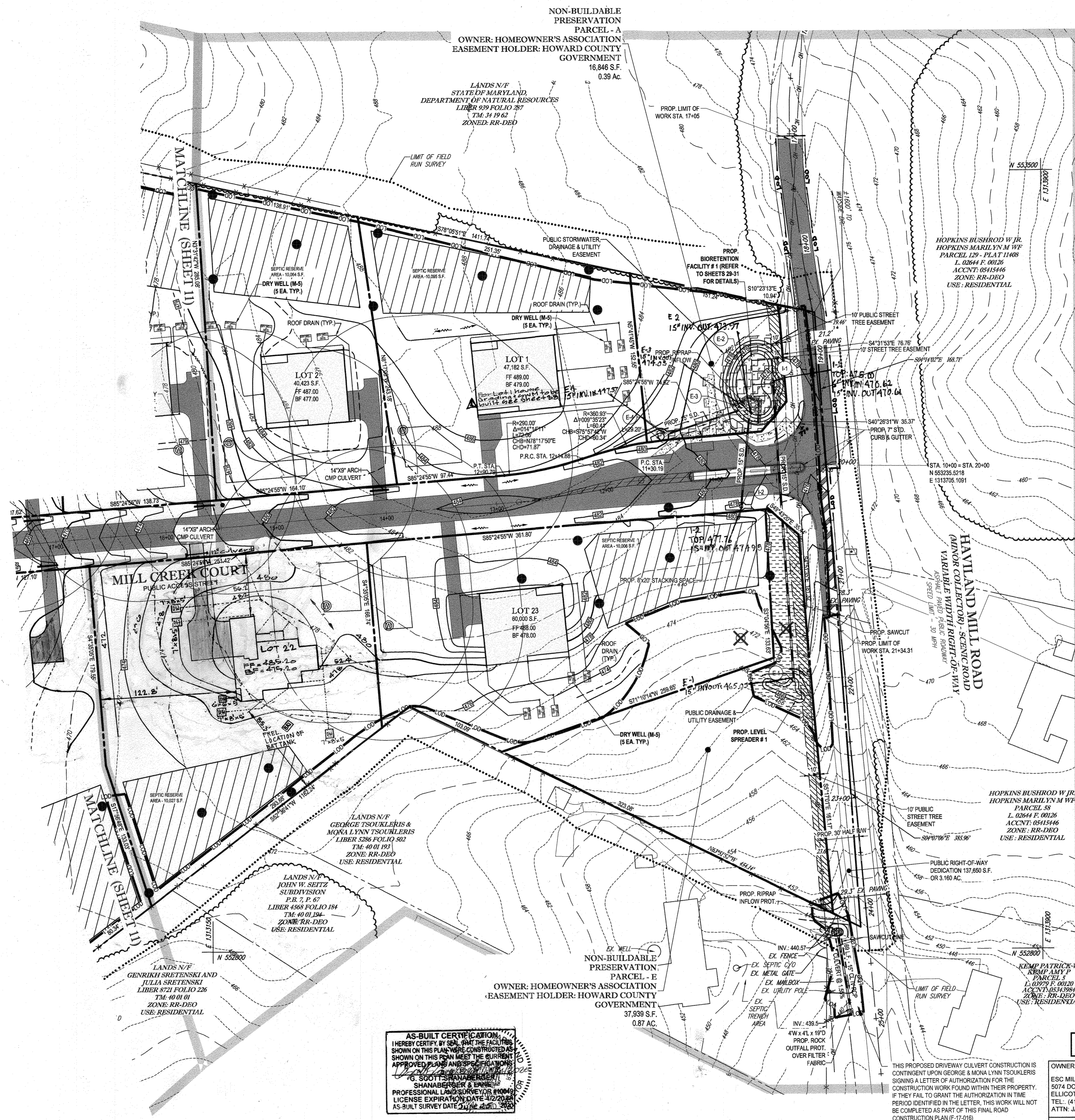
APPROVED: DEPARTMENT OF PUBLIC WORKS
DATE: 1/6/2018

APPROVED: DEPARTMENT OF PLANNING AND ZONING
DATE: 1-19-18

DATE: 1-18-18

OWNER: ESC MILL CREEK, INC. 5074 DORSEY HALL DRIVE, SUITE 205 ELICOTT CITY, MD 21042 TEL: (410) 720-3021 ATTN: JASON VAN KIRK	DEVELOPER: ESC MILL CREEK, INC. 5074 DORSEY HALL ROAD, SUITE 205 ELICOTT CITY, MD 21042 CONTACT: JASON VAN KIRK PHONE: (410) 720-3021
OWNER: DONALD O'KEEFE SALLY O'KEEFE 6950 HAVILAND MILL ROAD CLARKSVILLE, MD 21029 TEL: (410) 599-6941	DEVELOPER: ESC MILL CREEK, INC. 5074 DORSEY HALL ROAD, SUITE 205 ELICOTT CITY, MD 21042 CONTACT: JASON VAN KIRK PHONE: (410) 720-3021
SUBDIVISION NAME: CRAWFORD SECTION AREA, N/A DEED # 05897/05352 & 05899/00490	
PREVIOUS FILE NO.: SP-15-015 WP-10-102 ECP-15-051 WP-17-106 WP-15-122	
TAX MAP: 34 & 39 GRID: 19 & 6 ZONED: RR-DEO PARCEL: 52 & 1 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND	
PROFESSIONAL CERTIFICATION I, BRANDON R. ROWE, 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. 40608, EXPIRATION DATE: 7/3/2019	

STANDARD DRAWING LEGEND		
FOR ENTIRE PLAN SET (NOT TO SCALE)		
EXISTING NOTE	TYPICAL NOTE TEXT	PROPOSED NOTE
---	ONSITE PROPERTY LINE / R.O.W. LINE	---
---	NEIGHBORING PROPERTY LINE / INTERIOR PARCEL LINE	---
---	EASEMENT LINE	---
---	SETBACK LINE	---
---	CONCRETE CURB & GUTTER	---
---	DEPRESSED CURB AND GUTTER	---
---	TYPICAL SIGN	---
---	TYPICAL END SECTION	---
---	CLEAN OUT	---
EXISTING NOTE	TYPICAL NOTE TEXT	PROPOSED NOTE
---	YARDOVERFLOW INLET	---
---	SEPTIC EASEMENT RESERVE AREA	---
WB	25' WETLAND BUFFER	WB
SB	100' STREAM BUFFER	SB
FP	100 YR. FLOODPLAIN	FP
---	WETLAND	---
---	TREELINE	---
---	FULL DEPTH PAVEMENT	---
---	PERENNIAL STREAM	---
---	BIORETENTION FACILITY	---
---	WELL AREA	---
---	DRY HOLE	---
---	LIMIT OF FIELD RUN SURVEY	---
---	CONC. SIDEWALK	---
---	PUBLIC STORMWATER DRAINAGE & UTILITY EASEMENT	---
---	PUBLIC DRAINAGE & UTILITY EASEMENT	---
---	FOREST CONSERVATION EASEMENT	---
---	FOREST CONSERVATION EASEMENT SIGNAGE	---
---	PERC HOLE (PASSED)	---
---	PERC HOLE (FAILED)	---
---	STEEP SLOPES (>25%)	---
---	STEEP SLOPES (15%-25%)	---
---	CONTOUR LINE	---
---	WELL	---
---	STORM MANHOLE	---
---	UNDERGROUND ELECTRIC LINE	---
---	STORM DRAIN	---
---	OVERHEAD WIRE	---

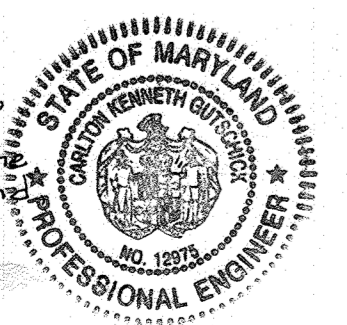


Add note to sheet 98 for Lot 1 house, grading & swm to be built. By GLW 06/10/19

show lots 19, 21, 22, house grading & swm to be built per plan. By CLW

Revisions by GLW 3909 National Dr. Suite 250 Burtonville MD

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. 12974
Expiration Date: May 26, 2020
Signature of Registered Engineer: [Signature]
Date: 10/26/18



AS-BUILT CERTIFICATION
I HEREBY CERTIFY BY SEAL THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN MEETING THE CURRENT APPROVED PLANS AND SPECIFICATIONS.
G. SHANBERGER & ASSOCIATES
PROFESSIONAL LAND SURVEYORS
LICENSE EXPIRATION DATE 12/31/2020
AS-BUILT SURVEY DATE 10/26/18

ESD SUMMARY TABLE	
SITE AREA (LOD)	26.33 AC.
ESDV	23,688 S.F. (REQUIRED), 28,994 C.F. (PROVIDED)
Rev	4,803 C.F. (REQUIRED), 2,034 C.F. (PROVIDED)
CPV	INCLUDED IN ESDV
QP10	NOT REQUIRED
QP100	NOT REQUIRED

APPROVED DEPARTMENT OF PUBLIC WORKS
SHEFFER BUREAU OF HIGHWAYS DATE 1/10/2018
APPROVED DEPARTMENT OF PLANNING AND ZONING
T. M. [Signature] DATE 1-19-18
CHIEF, DIVISION OF LAND DEVELOPMENT
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 1/18/18

THIS PROPOSED DRIVEWAY CULVERT CONSTRUCTION IS CONTINGENT UPON GEORGE & MONA LYNN TSOULERIS SIGNING A LETTER OF AUTHORIZATION FOR THE CONSTRUCTION WORK FOUND WITHIN THEIR PROPERTY. IF THEY FAIL TO GRANT THE AUTHORIZATION IN TIME PERIOD IDENTIFIED IN THE LETTER, THIS WORK WILL NOT BE COMPLETED AS PART OF THIS FINAL ROAD CONSTRUCTION PLAN (F-17-019).

OWNERS:
ESC MILL CREEK, INC.
5074 DORSEY HALL DRIVE, SUITE 205
ELLCOTT CITY, MD 21042
TEL: (410) 720-3021
ATTN: JASON VAN KIRK

DONALD O'KEEFE
SALLY O'KEEFE
6950 HAVILAND MILL ROAD
CLARKSVILLE, MD 21029
TEL: (410) 599-6941

DEVELOPER:
ESC MILL CREEK, INC.
5074 DORSEY HALL ROAD, SUITE 205
ELLCOTT CITY, MD 21042
CONTACT: JASON VAN KIRK
PHONE: (410) 720-3021

TAX MAP: 34 & 39 GRID: 19 & 6 ZONED: RR-DEO
PARCEL: 52 & 1
5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

PREVIOUS FILE NO:
SP-15-015 WP-10-102
ECP-15-051 WP-17-106
WP-15-122

NOTE: HAZARD CLASS FOR ALL SWM FACILITIES IS "A" DUE TO NO LIFE LOSS FROM FAILURE.

NOTE: ALL ROOF DRAINS SHALL BE 6"

BOHLER ENGINEERING
CORPORATE OFFICE:
WARREN, NJ
OFFICES:
BOWIE, MD
SOUTHBOURGH, MA
ROCKFORD, VA
ROCKFORD, VA
STERLING, VA
CENTREVILLE, VA
CENTREVILLE, VA
TAMPA, FL
PHILADELPHIA, PA

CIVIL & CONSULTING ENGINEERS
SURVEYORS
PROJECT MANAGERS
ENVIRONMENTAL CONSULTANTS
LANDSCAPE ARCHITECTS

REVISIONS				
REV	DATE	COMMENT	BY	

THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATES OF VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE CALL 811 (VA 1-800-245-4848) (PA 1-800-242-1776) (DC 1-800-257-7777) (MD 1-800-652-7001) (DE 1-800-257-7777) (DE 1-800-292-8550)

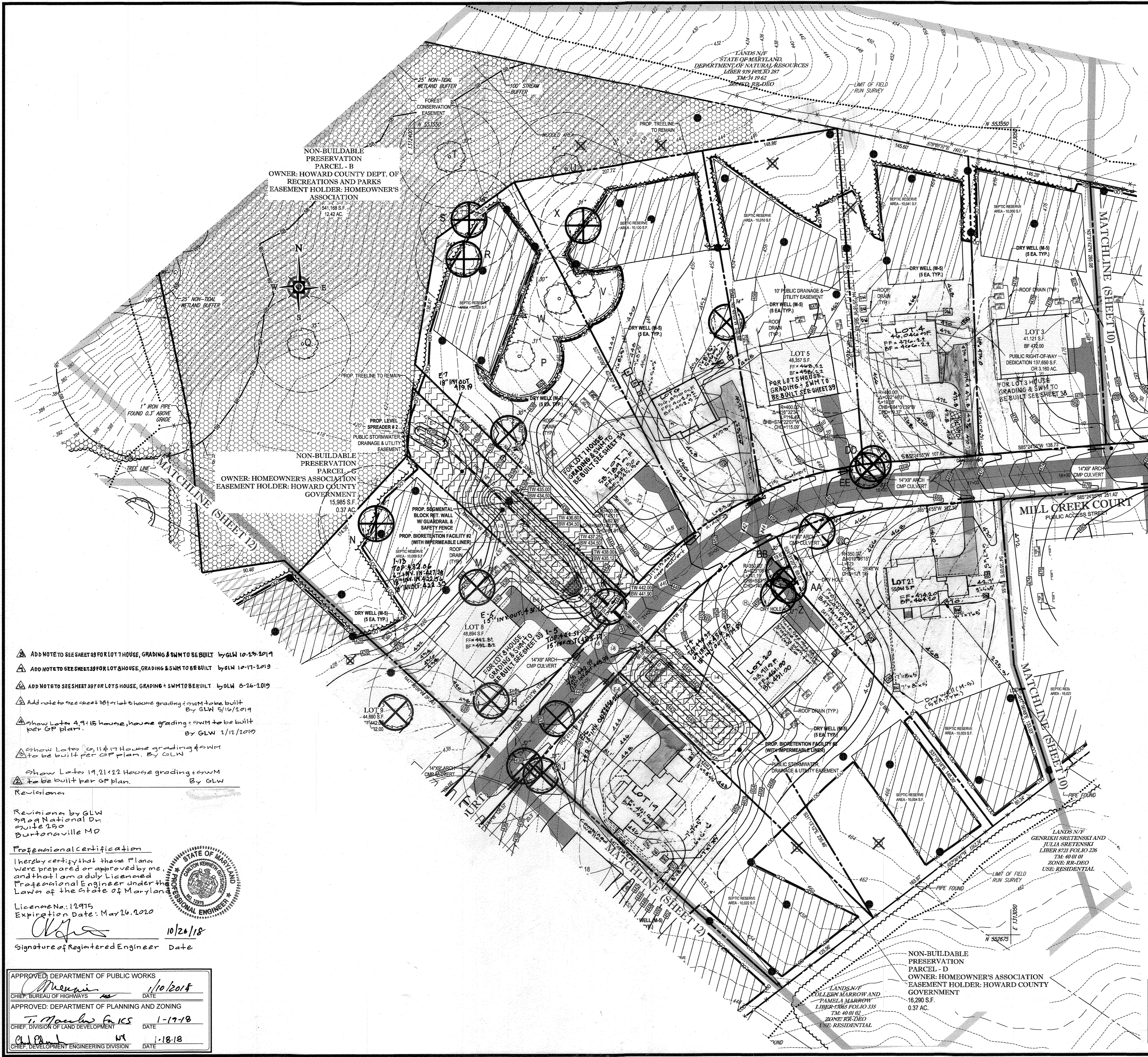
PROJECT NO.: MD142038
DRAWN BY: AVG
CHECKED BY: BRR
DATE: 12/01/17
SCALE: 1" = 50'
CAD I.D.: SSS

PROJECT:
FINAL ROAD CONSTRUCTION PLAN
FOR
CRAWFORD SUBDIVISION
LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G
LOCATION OF SITE
6780 HAVILAND MILL ROAD
TAX MAP 34, GRID 19 & PARCEL 52
TAX MAP 39, GRID 6 & PARCEL 1
5TH ELECTION DISTRICT
HOWARD COUNTY, MD

BOHLER ENGINEERING
901 DULANEY VALLEY ROAD, SUITE 801
TOWSON, MARYLAND 21284
Phone: (410) 821-7900
Fax: (410) 821-7987
www.BohlerEngineering.com

B.R. ROWE
PROFESSIONAL ENGINEER
LICENSE NO. 40888
EXPIRES 7/31/2019

SHEET TITLE:
GRADING AND STORMWATER MANAGEMENT PLAN
SHEET NUMBER:
10 of 39



STORMWATER MANAGEMENT PRACTICES

LOT NO.	PERMEABLE PAVING A-2 (Y/N)	ESD FACILITY TYPE AND NUMBER	TOTAL AREA (Ac)	ESDv	
				REQUIRED (C.F.)	PROVIDED (C.F.)
1	N	(6) DRYWELLS (M-5)	0.09	554	554
2	N	(6) DRYWELLS (M-5)	0.09	554	554
3	N	(6) DRYWELLS (M-5)	0.09	554	554
4	N	(6) DRYWELLS (M-5)	0.09	554	554
5	N	(6) DRYWELLS (M-5)	0.09	554	554
6	N	(6) DRYWELLS (M-5)	0.09	554	554
7	N	(6) DRYWELLS (M-5)	0.09	554	554
8	N	(6) DRYWELLS (M-5)	0.09	554	554
9	N	(6) DRYWELLS (M-5)	0.09	554	554
10	N	(6) DRYWELLS (M-5)	0.09	554	554
11	N	(6) DRYWELLS (M-5)	0.09	554	554
12	N	(7) DRYWELLS (M-5)	0.19	940	862
13	N	(7) DRYWELLS (M-5)	0.18	892	846
14	N	(6) DRYWELLS (M-5)	0.09	554	554
15	N	(6) DRYWELLS (M-5)	0.09	554	554
16	N	(6) DRYWELLS (M-5)	0.09	554	554
17	N	(6) DRYWELLS (M-5)	0.09	554	554
18	N	(6) DRYWELLS (M-5)	0.09	554	554
19	N	(6) DRYWELLS (M-5)	0.09	554	554
20	N	(6) DRYWELLS (M-5)	0.09	554	554
21	N	(6) DRYWELLS (M-5)	0.09	554	554
22	N	(6) DRYWELLS (M-5)	0.09	554	554
23	N	(6) DRYWELLS (M-5)	0.09	554	554
PUBLIC ROAD	N	BIORETENTION FACILITY #1	1.24	1080	1990
PUBLIC ROAD	N	BIORETENTION FACILITY #2	2.51	2624	4104
PUBLIC ROAD	N	BIORETENTION FACILITY #3	3.76	2293	4313
PUBLIC ROAD	N	BIORETENTION FACILITY #4	3.56	3877	4484
DRIVEWAYS 14 & 15	N	MICRO-BIORETENTION FACILITY #5	0.42	344	757
TOTALS			13.79	23,688	28,994

* LOTS 12 & 13 PROVIDES ESDv FOR THE PROPOSED DWELLING, AS WELL AS THEIR RESPECTIVE DRIVEWAY.

BOHLER ENGINEERING

CORPORATE OFFICE: WARREN, NJ

OFFICES: BOWIE, MD; SOUTH BOROUGHS, MA; STURBRIDGE, MA; WASHINGTON, VA; STURBRIDGE, MA; CHILMARK, MA; PHILADELPHIA, PA; TAMPA, FL

CIVIL & CONSULTING ENGINEERS SURVEYORS

PROJECT MANAGERS: ENVIRONMENTAL CONSULTANTS LANDSCAPE ARCHITECTS

REVISIONS

REV.	DATE	COMMENT	BY

LEGEND

- SPECIMEN TREE (TO BE REMOVED)
- CRITICAL ROOT ZONE

THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATES OF MARYLAND, THE DISTRICT OF COLUMBIA, AND VIRGINIA: MARYLAND, THE DISTRICT OF COLUMBIA, AND VIRGINIA. CALL 781-734-1111 (MA), 1-800-245-4648 (VA), 1-800-242-3778 (DC), 1-800-257-7777 (VA), 1-800-552-7001 (MD), 1-800-257-7777 (DE), 1-800-282-8559 (NC).

PROJECT NO.: MD142038
 DRAWN BY: AVG
 CHECKED BY: BRR
 DATE: 12/01/17
 SCALE: 1" = 50'
 CAD I.D.: SSA

PROJECT: **FINAL ROAD CONSTRUCTION PLAN**

FOR **CRAWFORD SUBDIVISION**

LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

LOCATION OF SITE
 6780 HAVILAND MILL ROAD
 TAX MAP 34, GRID 19 & PARCEL 52
 TAX MAP 39, GRID 6 & PARCEL 1
 5TH ELECTION DISTRICT
 HOWARD COUNTY, MD

BOHLER ENGINEERING

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 Fax: (410) 821-7987
 www.BohlerEngineering.com

B.R. ROWE

PROFESSIONAL ENGINEER
 LICENSE NO. 40808
 EXPIRATION DATE 12/31/17

SHEET TITLE: **GRADING AND STORMWATER MANAGEMENT PLAN**

SHEET NUMBER: **11 of 39**

- ▲ Add NOTE TO SEE SHEET 39 FOR LOT 7 HOUSE, GRADING & SWM TO BE BUILT BY GLW 10-19-2019
- ▲ Add NOTE TO SEE SHEETS 39 FOR LOT 8 HOUSE, GRADING & SWM TO BE BUILT BY GLW 10-17-2019
- ▲ Add NOTE TO SEE SHEET 39 FOR LOT 5 HOUSE, GRADING & SWM TO BE BUILT BY GLW 8-16-2019
- ▲ Add note to see sheet 39 for lot 1 house grading & swm to be built by GLW 5/16/2019
- ▲ Show Lots 4, 9, & 15 house, house grading & swm to be built by GLW 1/12/2019
- ▲ Show Lots 6, 11 & 17 House grading & swm to be built per GP Plan. By GLW
- ▲ Show Lots 19, 21 & 22 House grading & swm to be built per GP Plan. By GLW

Revisions by GLW
 3909 National Dr
 Suite 250
 Burtonsville MD

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.: 12915
 Expiration Date: May 26, 2020

[Signature] 10/20/18
 Signature of Registered Engineer Date

APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 1/10/2018
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 1-17-18
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 1-18-18
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

AS-BUILT CERTIFICATION
 I HEREBY CERTIFY THAT THE CONDITIONS SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN AND APPROVED BY ME.
 APPROVED FOR AND BY:
 J. SCOTT SHANAGER
 SHANAGER & LANE
 PROFESSIONAL LAND SURVEYORS
 LICENSE EXPIRATION DATE 12/31/2022
 AS-BUILT SURVEY DATE: 11/18/18

NOTE: ALL ROOF DRAINS SHALL BE 6"

NOTE: HAZARD CLASS FOR ALL SWM FACILITIES IS "A" DUE TO NO LIFE LOSS FOR FAILURE.

OWNERS:
 ESC MILL CREEK, INC.
 5074 DORSEY HALL DRIVE, SUITE 205
 ELLICOTT CITY, MD 21042
 TEL: (410) 720-3021
 ATTN: JASON VAN KIRK

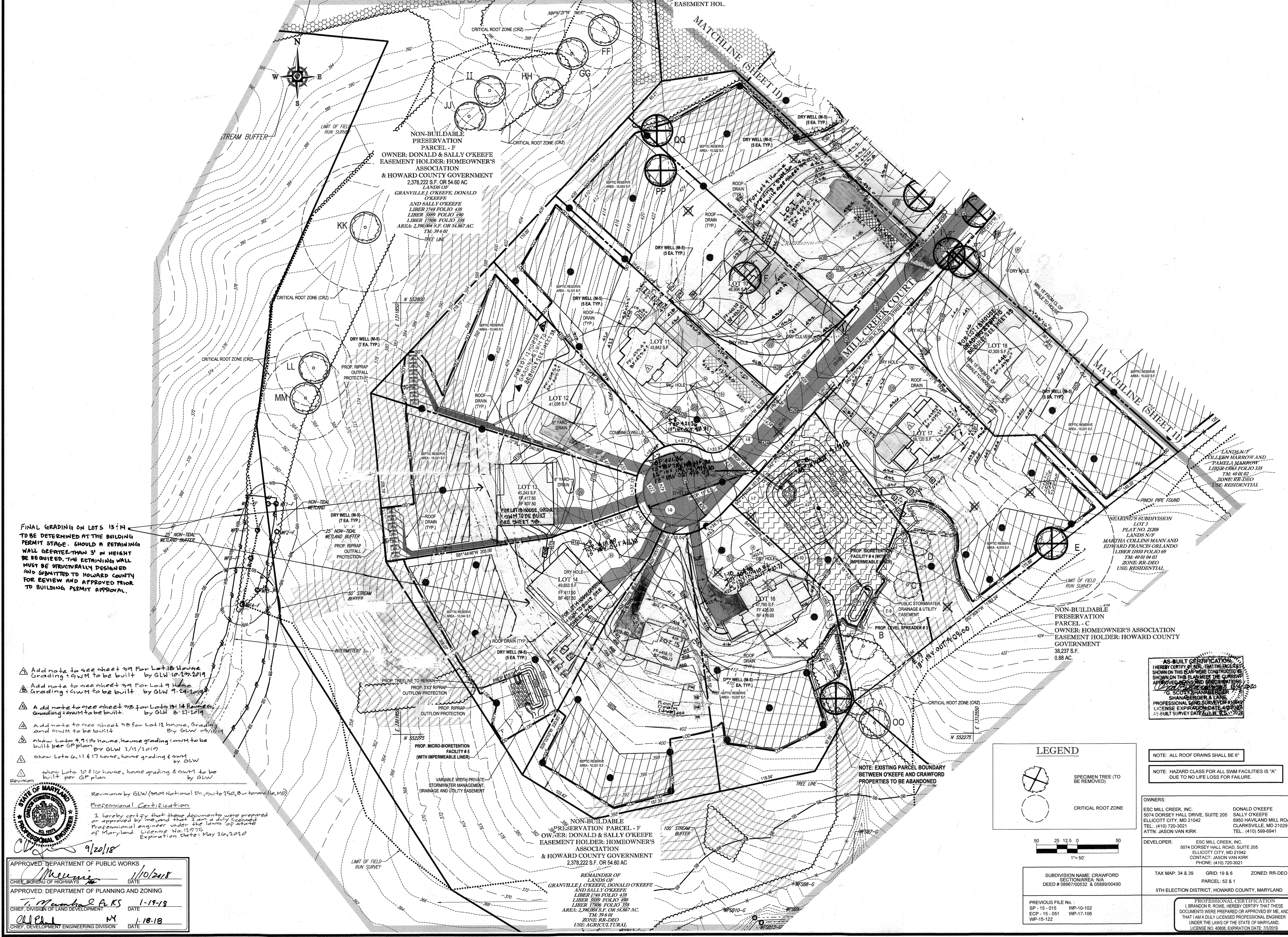
DONALD O'KEEFE
 SALLY O'KEEFE
 6950 HAVILAND MILL ROAD
 CLARKSVILLE, MD 21029
 TEL: (410) 599-6941

DEVELOPER:
 ESC MILL CREEK, INC.
 5074 DORSEY HALL DRIVE, SUITE 205
 ELLICOTT CITY, MD 21042
 CONTACT: JASON VAN KIRK
 PHONE: (410) 720-3021

TAX MAP: 34 & 39 GRID: 19 & 6 ZONED: RR-DEO
 PARCEL: 52 & 1
 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

PREVIOUS FILE NO.:
 SP-15-015 WP-10-102
 ECP-15-051 WP-17-106
 WP-15-122

PROFESSIONAL CERTIFICATION
 I, BRANDON R. ROWE, 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. 40808, EXPIRATION DATE: 7/31/2019



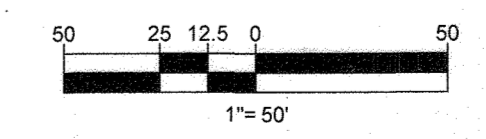
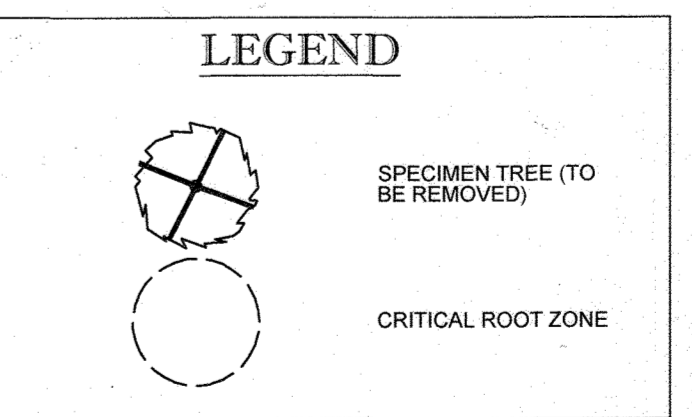
FINAL GRADING ON LOTS 13-14 TO BE DETERMINED AT THE BUILDING PERMIT STAGE. SHOULD A RETAINING WALL GREATER THAN 3' IN HEIGHT BE REQUIRED, THE RETAINING WALL MUST BE STRUCTURALLY DESIGNED AND SUBMITTED TO HOWARD COUNTY FOR REVIEW AND APPROVED PRIOR TO BUILDING PERMIT APPROVAL.

- ▲ Add note to see sheet 39 For Lot 13 House Grading - SWM to be built by GLW 10-17-2019
- ▲ Add note to see sheet 39 For Lot 14 House Grading - SWM to be built by GLW 9-24-2019
- ▲ Add note to see sheet 38 For Lot 15 House Grading - SWM to be built by GLW 8-11-2019
- ▲ Add note to see sheet 38 For Lot 12 House Grading and SWM to be built by GLW 09/11/19
- ▲ show Lots 4, 7, 15 house, house grading & SWM to be built per GP plan by GLW 1/11/2019
- ▲ show Lots 6, 11 & 17 house, house grading & SWM by GLW
- ▲ show Lots 10 & 16 house, house grading & SWM to be built per GP plan by GLW

Revisions by GLW (3900 National Dr., Suite 250, Burtonville, MD)
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. 12975. Expiration Date: May 26, 2020.
9/20/18

APPROVED: DEPARTMENT OF PUBLIC WORKS
 DATE: 11/02/18
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 DATE: 1-19-19
 DATE: 1-18-18

NON-BUILDABLE PRESERVATION PARCEL - F
 OWNER: DONALD & SALLY O'KEEFE EASEMENT HOLDER: HOMEOWNER'S ASSOCIATION & HOWARD COUNTY GOVERNMENT
 2,378,222 S.F. OR 54.60 AC
 REMAINDER OF LANDS OF GRANVILLE J. O'KEEFE, DONALD O'KEEFE AND SALLY O'KEEFE
 LIBER 1745 FOLIO 438
 LIBER 3589 FOLIO 390
 LIBER 1786 FOLIO 358
 AREA: 2,390,091 S.F. OR 54,867 AC.
 TM: 39.6 01
 ZONE: RR-DEO
 USE: AGRICULTURAL



SUBDIVISION NAME: CRAWFORD SECTION/AREA: N/A
 DEED # 0589770552 & 05869100490

PREVIOUS FILE No.
 SP-15-015 WP-10-102
 ECP-15-051 WP-17-106
 WP-15-122

AS-BUILT CERTIFICATION
 I HEREBY CERTIFY THAT THE UTILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN UNDER THE CLOSEST APPROVED PERMITS AND SPECIFICATIONS.
 G. SCOTT SHANBERGER, P.E.
 SHANBERGER & LANE
 PROFESSIONAL LAND SURVEYOR #18648
 LICENSE EXPIRES 03/31/2020
 FULL SURVEY DATE: 08/11/2018

NOTE: ALL ROOF DRAINS SHALL BE 6"
 NOTE: HAZARD CLASS FOR ALL SWM FACILITIES IS "A" DUE TO NO LIFE LOSS FOR FAILURE.

OWNERS:
 ESC MILL CREEK, INC. DONALD O'KEEFE
 5074 DORSEY HALL DRIVE, SUITE 205 SALLY O'KEEFE
 ELLICOTT CITY, MD 21042 6950 HAVILAND MILL ROAD
 TEL: (410) 720-3021 CLARKSVILLE, MD 21029
 ATTN: JASON VAN KIRK TEL: (410) 599-9941

DEVELOPER:
 ESC MILL CREEK, INC.
 5074 DORSEY HALL DRIVE, SUITE 205
 ELLICOTT CITY, MD 21042
 CONTACT: JASON VAN KIRK
 PHONE: (410) 720-3021

TAX MAP: 34 & 39 GRID: 19 & 6 ZONED: RR-DEO
 PARCEL: 52 & 1
 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

PROFESSIONAL CERTIFICATION
 I, BRANDON R. ROWE, 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. 40808. EXPIRATION DATE: 7/3/2019

BOHLER ENGINEERING

CORPORATE OFFICE:
 WARREN, NJ

CIVIL & CONSULTING ENGINEERS
 SURVEYORS

PROJECT MANAGERS
 ENVIRONMENTAL CONSULTANTS
 LANDSCAPE ARCHITECTS

OFFICES:
 BOWEN, MD
 SOUTHROCK, MA
 HONOLULU, HI
 WASHINGTON, VA
 STERLING, VA
 CHATEAUGUAY, NY
 CHATEAUGUAY, PA
 TAMPA, FL
 PHILADELPHIA, PA

REVISIONS

REV	DATE	COMMENT	BY

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PROJECT No.: MD142038
 DRAWN BY: AVG
 CHECKED BY: BRR
 DATE: 12/01/17
 SCALE: 1" = 50'
 CAD I.D.: SSA

FINAL ROAD CONSTRUCTION PLAN

FOR
CRAWFORD SUBDIVISION
 LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

LOCATION OF SITE
 6780 HAVILAND MILL ROAD
 TAX MAP 34, GRID 19 & PARCEL 52
 TAX MAP 39, GRID 6 & PARCEL 1
 5TH ELECTION DISTRICT
 HOWARD COUNTY, MD

BOHLER ENGINEERING

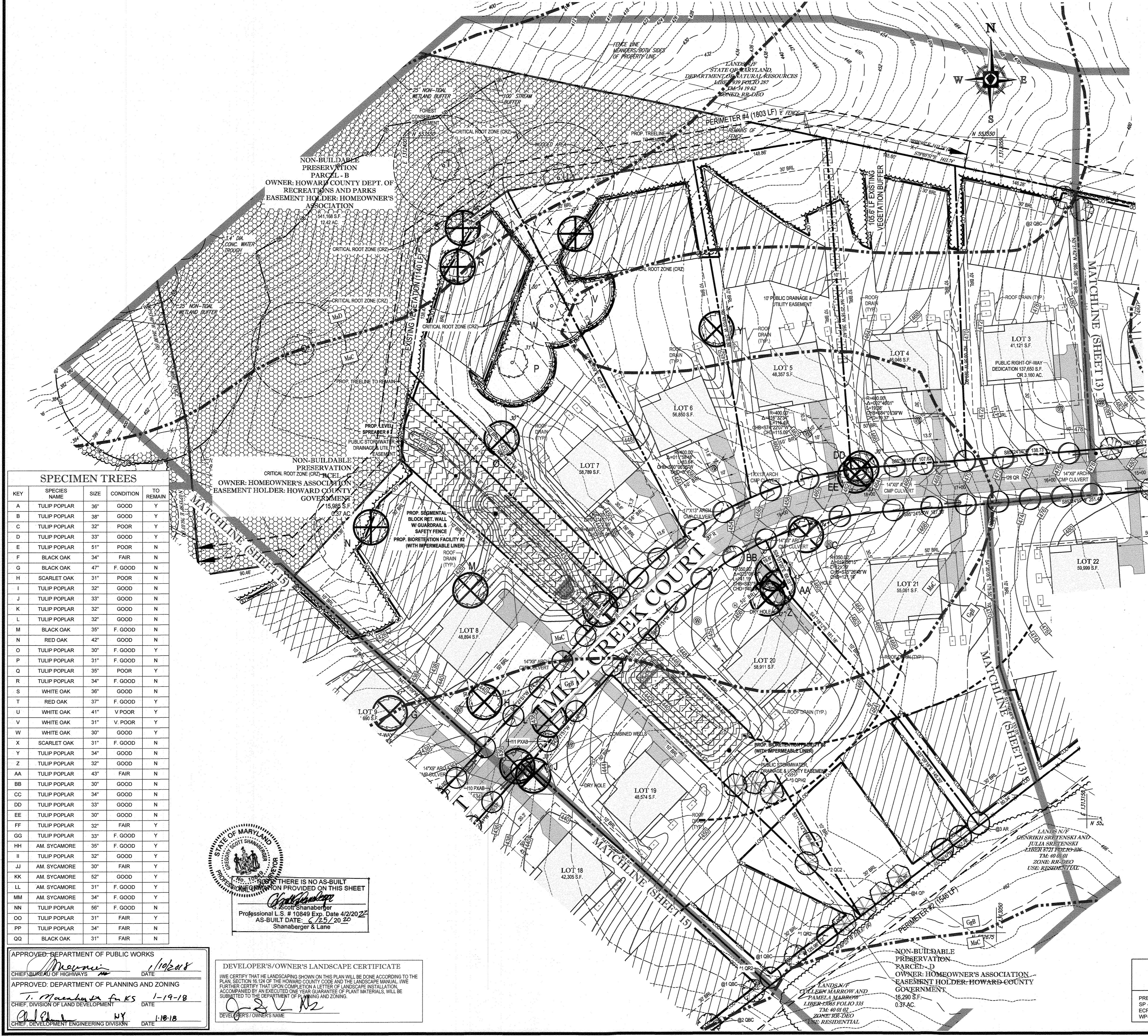
901 DULANEY VALLEY ROAD,
 SUITE 801
 TOWSON, MARYLAND 21284
 Phone: (410) 821-7900
 Fax: (410) 821-7967
 www.BohlerEngineering.com

B. R. ROWE

PROFESSIONAL ENGINEER
 LICENSE NO. 40808
 EXPIRES 7/3/2019

SHEET TITLE:
GRADING AND STORMWATER MANAGEMENT PLAN

SHEET NUMBER:
12 of 39



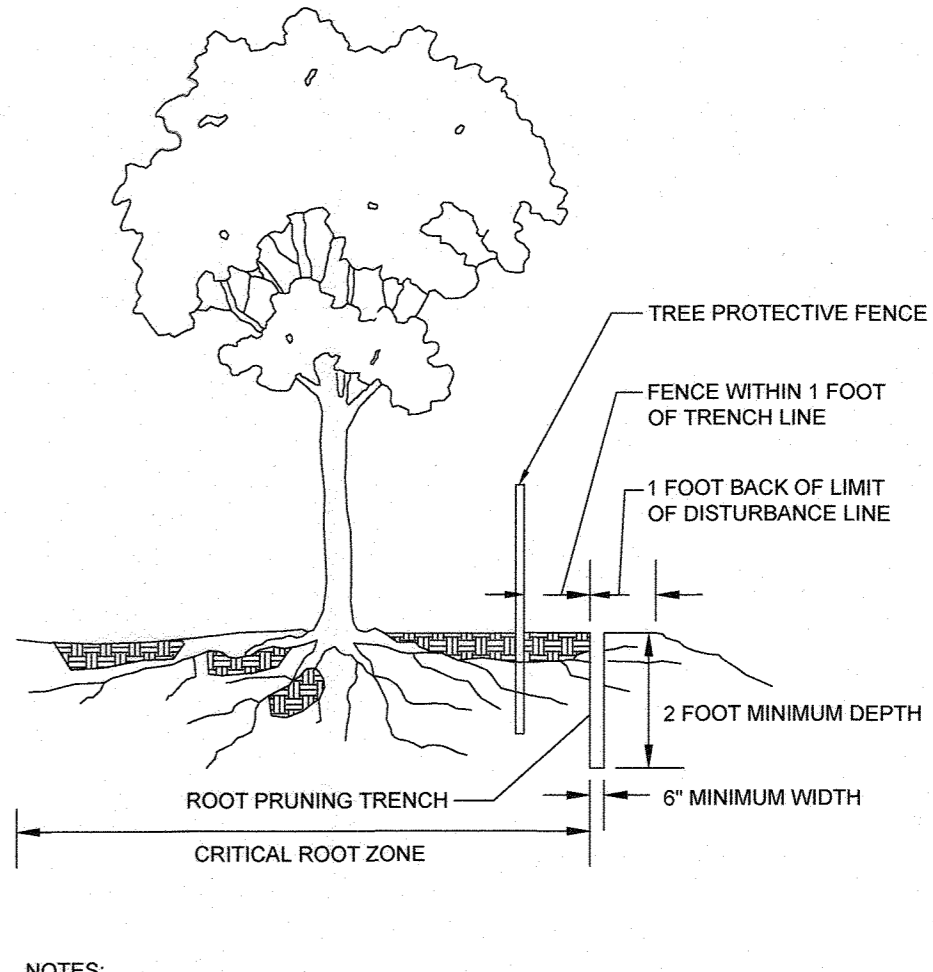
SPECIMEN TREES

KEY	SPECIES NAME	SIZE	CONDITION	TO REMAIN
A	TULIP POPLAR	36"	GOOD	Y
B	TULIP POPLAR	38"	GOOD	Y
C	TULIP POPLAR	32"	POOR	Y
D	TULIP POPLAR	33"	GOOD	Y
E	TULIP POPLAR	51"	POOR	N
F	BLACK OAK	34"	FAIR	N
G	BLACK OAK	47"	F. GOOD	N
H	SCARLET OAK	31"	POOR	N
I	TULIP POPLAR	32"	GOOD	N
J	TULIP POPLAR	33"	GOOD	N
K	TULIP POPLAR	32"	GOOD	N
L	TULIP POPLAR	32"	GOOD	N
M	BLACK OAK	35"	F. GOOD	N
N	RED OAK	42"	GOOD	N
O	TULIP POPLAR	30"	F. GOOD	Y
P	TULIP POPLAR	31"	F. GOOD	N
Q	TULIP POPLAR	35"	POOR	Y
R	TULIP POPLAR	34"	F. GOOD	N
S	WHITE OAK	36"	GOOD	N
T	RED OAK	37"	F. GOOD	Y
U	WHITE OAK	41"	V. POOR	Y
V	WHITE OAK	31"	V. POOR	Y
W	WHITE OAK	30"	GOOD	Y
X	SCARLET OAK	31"	F. GOOD	N
Y	TULIP POPLAR	34"	GOOD	N
Z	TULIP POPLAR	32"	GOOD	N
AA	TULIP POPLAR	43"	FAIR	N
BB	TULIP POPLAR	30"	GOOD	N
CC	TULIP POPLAR	34"	GOOD	N
DD	TULIP POPLAR	33"	GOOD	N
EE	TULIP POPLAR	30"	GOOD	N
FF	TULIP POPLAR	32"	FAIR	Y
GG	TULIP POPLAR	33"	F. GOOD	Y
HH	AM. SYCAMORE	35"	F. GOOD	Y
II	TULIP POPLAR	32"	GOOD	Y
JJ	AM. SYCAMORE	30"	FAIR	Y
KK	AM. SYCAMORE	52"	GOOD	Y
LL	AM. SYCAMORE	31"	F. GOOD	Y
MM	AM. SYCAMORE	34"	F. GOOD	Y
NN	TULIP POPLAR	56"	F. GOOD	N
OO	TULIP POPLAR	31"	FAIR	Y
PP	TULIP POPLAR	34"	FAIR	N
QQ	BLACK OAK	31"	FAIR	N

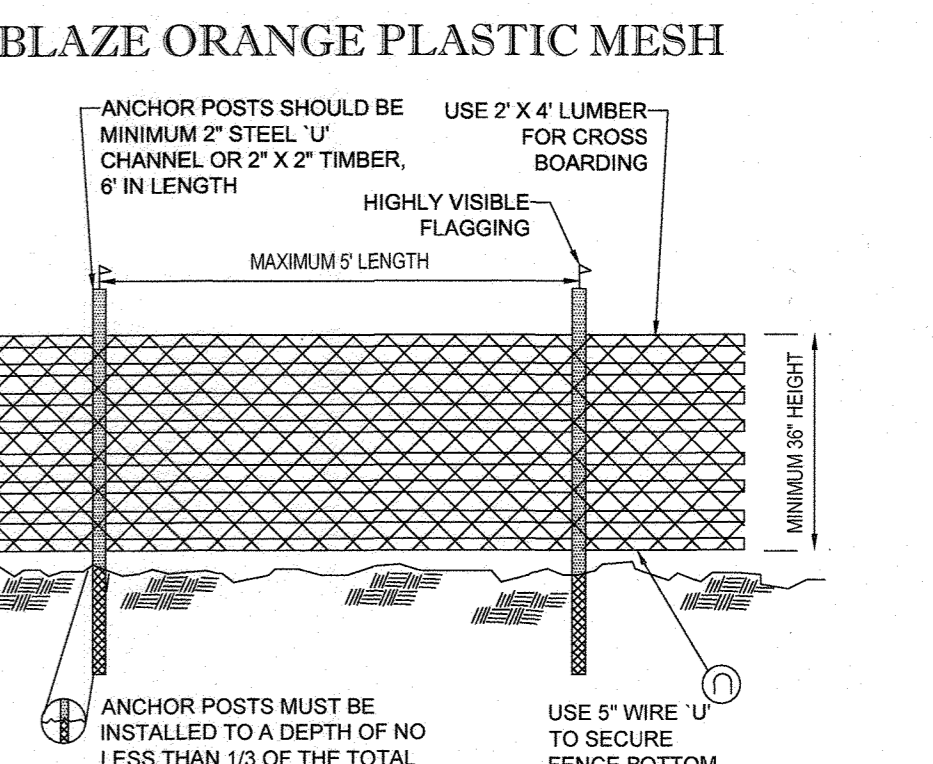
STATE OF MARYLAND
 PROFESSIONAL LANDSCAPE ARCHITECT
 THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET
 Scott Shanaberger
 Professional L.S. # 10849 Exp. Date 4/2/2022
 AS-BUILT DATE: 6/25/2022
 Shanaberger & Lane

APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF: BUREAU OF HIGHWAYS DATE: 1/10/2018
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF: DIVISION OF LAND DEVELOPMENT DATE: 1-19-18
 CHIEF: DEVELOPMENT ENGINEERING DIVISION DATE: 1-18-18

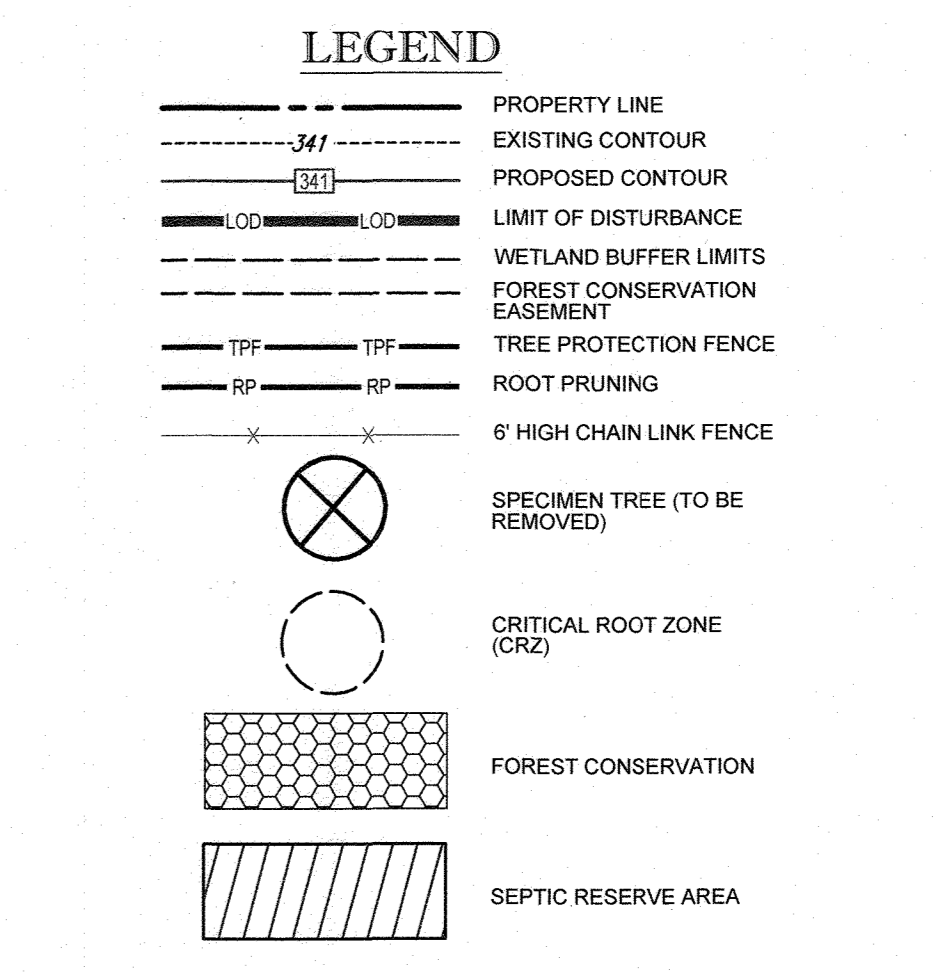
DEVELOPER'S/OWNER'S LANDSCAPE CERTIFICATE
 I WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. I WILL FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.
 DEVELOPER'S/OWNER'S NAME: [Signature]



- NOTES:
- RETENTION AREAS WILL BE SET AS PART OF THE REVIEW PROCESS.
 - BOUNDARIES OF RETENTION AREAS SHOULD BE STAKED FLAGGED PRIOR TO TRENCHING.
 - EXACT LOCATION OF TRENCH SHOULD BE IDENTIFIED.
 - TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH SOIL REMOVED OR OTHER HIGH ORGANIC SOIL.
 - ROOTS SHOULD BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.



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



OWNERS:
 ESC MILL CREEK, INC.
 5074 DORSEY HALL DRIVE, SUITE 205
 ELLICOTT CITY, MD 21042
 TEL: (410) 720-3021
 ATTN: JASON VAN KIRK

DEVELOPER:
 ESC MILL CREEK, INC.
 5074 DORSEY HALL DRIVE, SUITE 205
 ELLICOTT CITY, MD 21042
 CONTACT: JASON VAN KIRK
 PHONE: (410) 720-3021

DEED # 0596770552 & 05889100490

TAX MAP: 34 & 39 GRID: 19 & 6 ZONED: RR-DEO PARCEL: 52 & 1 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

PREVIOUS FILE No.: SP-15-015 WP-10-102 ECP-15-051 WP-17-106 WP-15-122

PROFESSIONAL CERTIFICATION
 I, E.R. McWILLIAMS, HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 3667, EXPIRATION DATE: 9/20/18

BOHLER ENGINEERING

CONSULTING OFFICE:
 WAREN, NJ

OFFICES:
 BOWIE, MD
 STONINGTON, VA
 WASHINGTON, VA
 CHARLESTON, SC
 CHARLOTTE, NC
 TAMPA, FL
 PHILADELPHIA, PA

CIVIL & CONSULTING ENGINEERS
 SURVEYORS
 PROJECT MANAGERS
 ENVIRONMENTAL CONSULTANTS
 LANDSCAPE ARCHITECTS

REVISIONS

REV	DATE	COMMENT	BY

BOHLER ENGINEERING

THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATOR, DESIGNER, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATES IN VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE: CALL: 800-252-7777 (VA) 1-800-245-4848 (VA) 1-800-242-1776 (DC) 1-800-252-7777 (MD) 1-800-552-7001 (DE) 1-800-252-8559

PROJECT NO.: MD142038
 DRAWN BY: BRR
 DATE: 12/01/17
 SCALE: 1"=50'
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FINAL ROAD CONSTRUCTION PLAN

FOR
CRAWFORD SUBDIVISION
 LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

LOCATION OF SITE
 6780 HAVILAND MILL ROAD
 TAX MAP 34, GRID 19 & PARCEL 52
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 5TH ELECTION DISTRICT
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BOHLER ENGINEERING

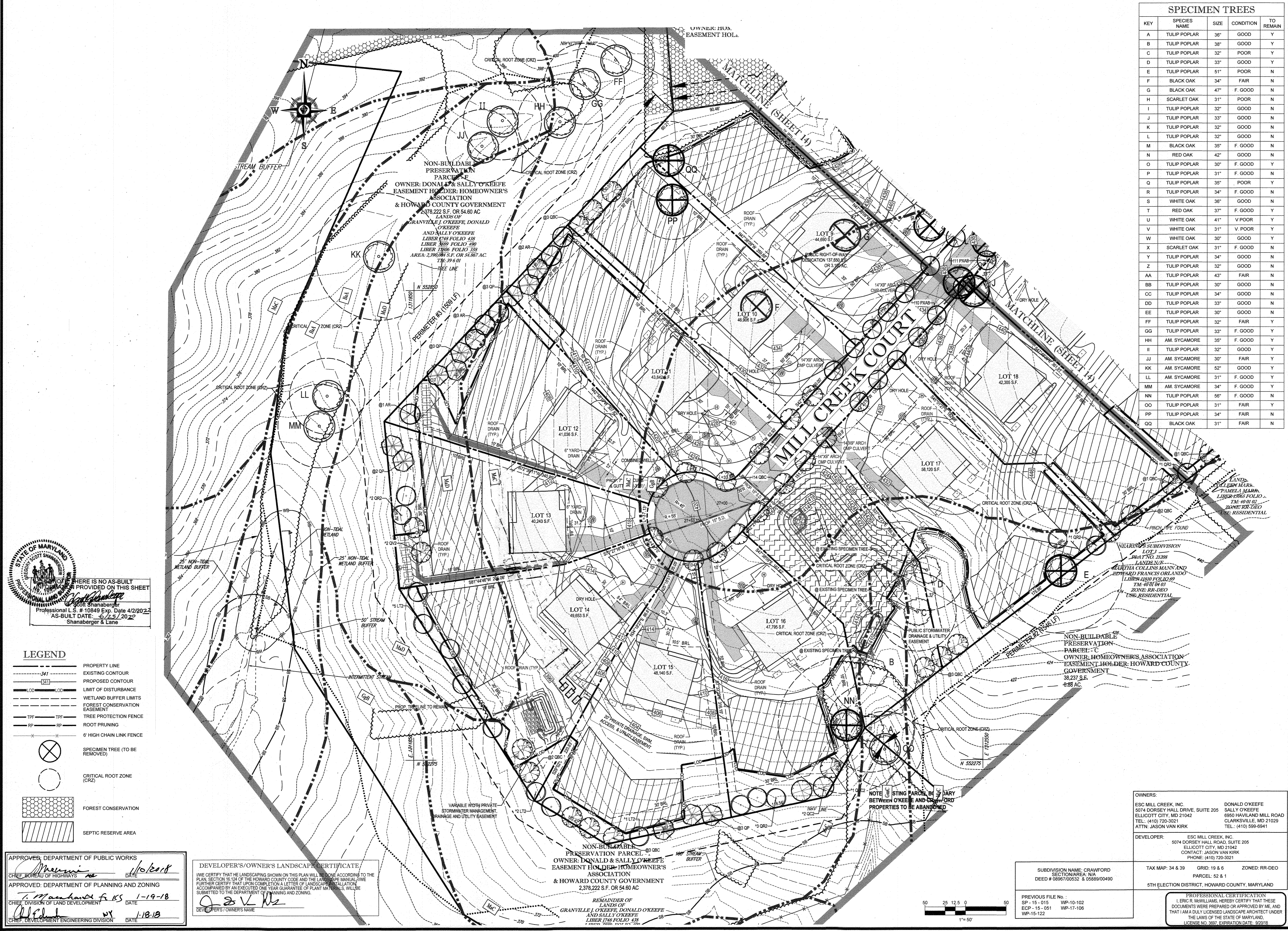
901 DULANEY VALLEY ROAD, SUITE 801
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 Phone: (410) 821-7900
 Fax: (410) 821-7987
 www.BohlerEngineering.com

E.R. McWILLIAMS

REGISTERED LANDSCAPE ARCHITECT
 (MARYLAND LICENSE # 3667)

SHEET TITLE:
LANDSCAPE PLAN

SHEET NUMBER:
14 of 39



KEY	SPECIES NAME	SIZE	CONDITION	TO REMAIN
A	TULIP POPLAR	36"	GOOD	Y
B	TULIP POPLAR	36"	GOOD	Y
C	TULIP POPLAR	32"	POOR	Y
D	TULIP POPLAR	33"	GOOD	Y
E	TULIP POPLAR	51"	POOR	N
F	BLACK OAK	34"	FAIR	N
G	BLACK OAK	47"	F. GOOD	N
H	SCARLET OAK	31"	POOR	N
I	TULIP POPLAR	32"	GOOD	N
J	TULIP POPLAR	33"	GOOD	N
K	TULIP POPLAR	32"	GOOD	N
L	TULIP POPLAR	32"	GOOD	N
M	BLACK OAK	35"	F. GOOD	N
N	RED OAK	42"	GOOD	N
O	TULIP POPLAR	30"	F. GOOD	Y
P	TULIP POPLAR	31"	F. GOOD	N
Q	TULIP POPLAR	35"	POOR	Y
R	TULIP POPLAR	34"	F. GOOD	N
S	WHITE OAK	36"	GOOD	N
T	RED OAK	37"	F. GOOD	Y
U	WHITE OAK	41"	V. POOR	Y
V	WHITE OAK	31"	V. POOR	Y
W	WHITE OAK	30"	GOOD	Y
X	SCARLET OAK	31"	F. GOOD	N
Y	TULIP POPLAR	34"	GOOD	N
Z	TULIP POPLAR	32"	GOOD	N
AA	TULIP POPLAR	43"	FAIR	N
BB	TULIP POPLAR	30"	GOOD	N
CC	TULIP POPLAR	34"	GOOD	N
DD	TULIP POPLAR	33"	GOOD	N
EE	TULIP POPLAR	30"	GOOD	N
FF	TULIP POPLAR	32"	FAIR	Y
GG	TULIP POPLAR	33"	F. GOOD	Y
HH	AM. SYCAMORE	35"	F. GOOD	Y
II	TULIP POPLAR	32"	GOOD	Y
JJ	AM. SYCAMORE	30"	FAIR	Y
KK	AM. SYCAMORE	52"	GOOD	Y
LL	AM. SYCAMORE	31"	F. GOOD	Y
MM	AM. SYCAMORE	34"	F. GOOD	Y
NN	TULIP POPLAR	55"	F. GOOD	N
OO	TULIP POPLAR	31"	FAIR	Y
PP	TULIP POPLAR	34"	FAIR	N
QQ	BLACK OAK	31"	FAIR	N

STATE OF MARYLAND
PROFESSIONAL LANDSCAPE ARCHITECT
Scott Shanaberg
Professional L.S. # 10849 Exp. Date 4/2/2022
AS-BUILT DATE: 6/15/2022
Shanaberg & Lane

- LEGEND**
- PROPERTY LINE
 - EXISTING CONTOUR
 - PROPOSED CONTOUR
 - LIMIT OF DISTURBANCE
 - WETLAND BUFFER LIMITS
 - FOREST CONSERVATION EASEMENT
 - TREE PROTECTION FENCE
 - ROOT PRUNING
 - 6" HIGH CHAIN LINK FENCE
 - SPECIMEN TREE (TO BE REMOVED)
 - CRITICAL ROOT ZONE (CRZ)
 - FOREST CONSERVATION
 - SEPTIC RESERVE AREA

APPROVED DEPARTMENT OF PUBLIC WORKS
CHIEF OF BUREAU OF HIGHWAYS DATE: 1/19/18
APPROVED DEPARTMENT OF PLANNING AND ZONING
CHIEF OF DIVISION OF LAND DEVELOPMENT DATE: 1-19-18
CHIEF OF DEVELOPMENT ENGINEERING DIVISION DATE: 1-18-18

DEVELOPER'S/OWNER'S LANDSCAPE CERTIFICATE
I ME CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN SECTION 15.04 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. I WILL FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.
DATE: 1/19/18
BY: [Signature]

NON-BUILDABLE PRESERVATION PARCEL
OWNER: DONALD & SALLY O'KEEFE
EASEMENT HOLDER: HOMEOWNERS' ASSOCIATION & HOWARD COUNTY GOVERNMENT
2,378,222 S.F. OR 54.60 AC

NOTE: EXISTING PARCEL BOUNDARY BETWEEN O'KEEFE AND CRAWFORD PROPERTIES TO BE ABANDONED

50 25 12.5 0 50
1" = 50'

SUBDIVISION NAME: CRAWFORD
SECTION AREA: N/A
DEED # 0699700532 & 0698900490
PREVIOUS FILE NO.: SP-15-015 WP-10-102
ECP-15-051 WP-17-106
WP-15-122

OWNERS:
ESC MILL CREEK, INC.
5074 DORSEY HALL DRIVE, SUITE 205
ELICOTT CITY, MD 21042
TEL: (410) 720-3021
ATTN: JASON VAN KIRK

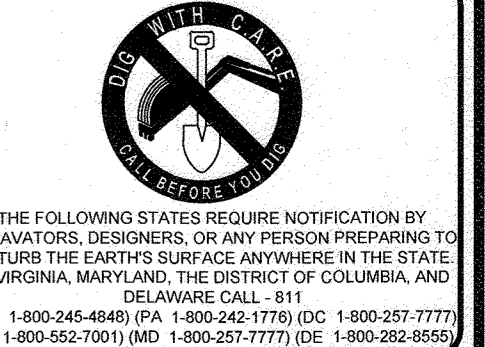
DEVELOPER:
ESC MILL CREEK, INC.
5074 DORSEY HALL DRIVE, SUITE 205
ELICOTT CITY, MD 21042
CONTACT: JASON VAN KIRK
PHONE: (410) 720-3021

TAX MAP: 34 & 39
GRID: 19 & 6
PARCEL: 52 & 1
ZONED: RR-DEO
5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

BOHLER ENGINEERING
CORPORATE OFFICE: WARREN, NJ
SURVEYORS: SOUTHBRIDGE, MA; BOWEN, MD; WESTERHOUT, VA; SHERIDAN, VA; RONKOWSKI, NY; FORT LAUDERDALE, FL; PHILADELPHIA, PA.
CIVIL & CONSULTING ENGINEERS
PROJECT MANAGERS
ENVIRONMENTAL CONSULTANTS
LANDSCAPE ARCHITECTS

REVISIONS

REV	DATE	COMMENT	BY



THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE IN VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE CALL: 811
TOW: 1-800-245-4646 (PA: 1-800-245-1795) DC: 1-800-257-7777
VA: 1-800-662-7001 (MD: 1-800-257-7777) DE: 1-800-262-8550

FINAL ROAD CONSTRUCTION PLAN
FOR
CRAWFORD SUBDIVISION
LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G
LOCATION OF SITE
6780 HAVILAND MILL ROAD
TAX MAP 34, GRID 19 & PARCEL 52
TAX MAP 39, GRID 6 & PARCEL 1
5TH ELECTION DISTRICT
HOWARD COUNTY, MD

BOHLER ENGINEERING
901 DULANEY VALLEY ROAD,
SUITE 801
TOWSON, MARYLAND 21284
Phone: (410) 821-7900
Fax: (410) 821-7987
www.BohlerEngineering.com

E.R. McWILLIAMS
REGISTERED LANDSCAPE ARCHITECT
No. 074577

SHEET TITLE: **LANDSCAPE PLAN**
SHEET NUMBER: **15 of 39**

MILL CREEK

23 SINGLE FAMILY DETACHED UNITS

EROSION AND SEDIMENT CONTROL QUANTITIES (PROJECT TOTAL)

TOTAL AREA OF DISTURBANCE (LOD):	26.33 AC
AREA DISTURBED STEPS 1-13 (LOW):	19.29 AC
SILT FENCE:	1,430 LF
SUPER SILT FENCE:	6,960 LF
STANDARD INLET PROTECTION:	9 EA
CURB INLET PROTECTION:	1 EA
A-2 EARTH DIKE:	1,560 LF
TREE PROTECTION FENCE:	3,265 LF
27' CMP:	254 LF
30' CMP:	51 LF

TOTAL CUT =	81,360 CY
TOTAL FILL =	88,900 CY (15% SHRINKAGE FACTOR APPLIED)
TOTAL EXPORT =	22,460 CY

SPOIL MATERIAL SHALL BE DISCARDED AT A SITE WITH AN ACTIVE GRADING PERMIT AND APPROVED SEDIMENT CONTROL PLAN. BORROW MATERIAL SHALL BE OBTAINED FROM AN APPROVED SITE WITH AN ACTIVE GRADING PERMIT AND AN APPROVED SEDIMENT CONTROL PLAN.

EARTH QUANTITIES LISTED ABOVE ARE FOR SEDIMENT CONTROL USE ONLY. CONTRACTOR SHALL NOT RELY ON THESE FIGURES FOR ESTIMATING AND BONDING PURPOSES.

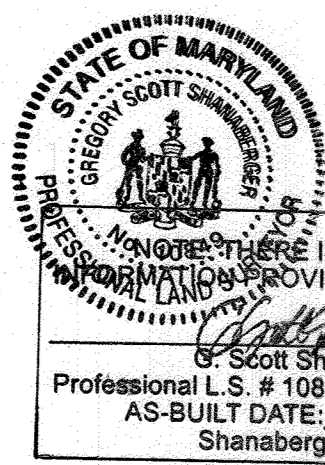
A MAXIMUM OF 20 ACRES OF ACTIVE DISTURBANCE AREA WITH AN ADDITIONAL 10 ACRES OF RECENTLY STABILIZED OR TRANSITIONAL AREA IS PERMITTED. NO MORE THAN 30 ACRES, CUMULATIVELY, MAY BE DISTURBED AT ANY GIVEN TIME.

EROSION AND SEDIMENT CONTROL NOTES

- TEMPORARY DIVERSION DIKES SHALL HAVE A MIN. SLOPE OF 0.50%.
- CONTRACTOR TO ACCOUNT FOR BASEMENT CUT BY LOWERING ELEVATIONS OF LOTS AS REQUIRED. GENERAL GRADING DESIGN SHOULD REMAIN THE SAME. LOTS SHOULD BE BROUGHT TO FINAL GRADE AFTER SDP APPROVAL WHEN HOUSES ARE BUILT AND CUT IN BASEMENTS IS AVAILABLE.
- ALL PROPOSED WORK OUTSIDE OF PERIMETER CONTROLS SHALL BE STABILIZED AT THE END OF EACH WORK DAY.
- PROPOSED SILT FENCE IS TO BE CHANGED TO SUPER SILT FENCE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
- ALL EARTH DIKES INTERRUPTED BY THE INSTALLATION OF STORM DRAINS ARE TO BE REPAIRED IMMEDIATELY - SAME DAY.
- EITHER TEMPORARY OR PERMANENT SEEDING IS TO BE PERFORMED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR AT THE TIME FRAMES REQUIRED BY THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, WHICHEVER IS MORE RESTRICTIVE.
- CONTRACTOR TO INSTALL SOIL STABILIZATION MATTING IN ALL SWALES AND ON ALL SLOPES 3:1 OR GREATER.
- IF A STOCKPILE EXCEEDS 15 FEET IN HEIGHT, IT MUST BE BENCHED.

EROSION AND SEDIMENT CONTROL LEGEND

- STABILIZED CONSTRUCTION ENTRANCE
- LIMIT OF DISTURBANCE
- LIMIT OF WORK
- SILT FENCE
- A-2 EARTH DIKE
- SUPER SILT FENCE
- TREE PROTECTION FENCE
- AT GRADE INLET PROTECTION
- STANDARD INLET PROTECTION TYPE 'A' OR 'B'
- CURB INLET PROTECTION
- STEEP SLOPES (15%-25%)
- STEEP SLOPES (>25%)
- SOIL DIVIDE
- SOIL LABEL
- LANDLOK TRM 435 SOIL STABILIZATION MATTING
- RIPRAP STABILIZATION
- DRAINAGE DIVIDE
- BAFFLE BOARD
- TRASH RACK
- SUMP PIT



ENGINEER'S CERTIFICATE
 I HEREBY 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 IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 Signature of Engineer: *Scott Shanaberg*
 Professional L.S. # 10849 Exp. Date 4/2/2022
 AS-BUILT DATE: 6/23/2020
 Shanaberg & Lane

DEVELOPER'S CERTIFICATE
 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 SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
 Signature of Developer: *Brandon R. Rowe*
 DATE: 12-7-17

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 Signature of Howard SCD: *John R. ...*
 DATE: 12/19/17

EROSION AND SEDIMENT CONTROL UTILITY INSTALLATION NOTES:

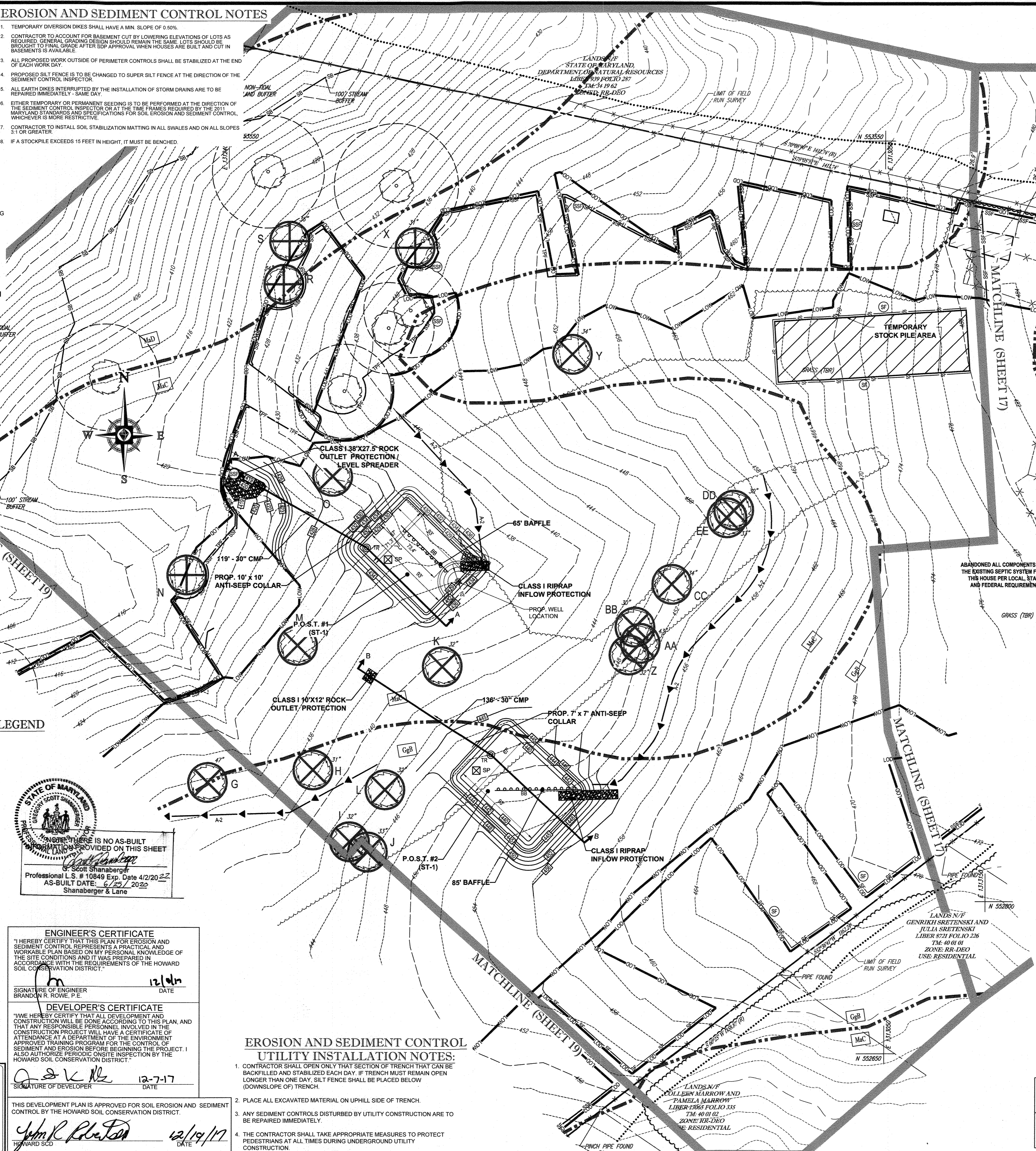
- CONTRACTOR SHALL OPEN ONLY THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. IF TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY, SILT FENCE SHALL BE PLACED BELOW (DOWNSLOPE OF) TRENCH.
- PLACE ALL EXCAVATED MATERIAL ON UPHILL SIDE OF TRENCH.
- ANY SEDIMENT CONTROLS DISTURBED BY UTILITY CONSTRUCTION ARE TO BE REPAIRED IMMEDIATELY.
- THE CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO PROTECT PEDESTRIANS AT ALL TIMES DURING UNDERGROUND UTILITY CONSTRUCTION.

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Signature: *Michael ...*
 DATE: 1/10/2018

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Signature: *J. ...*
 DATE: 1-19-18

APPROVED: DEPARTMENT OF LAND DEVELOPMENT
 Signature: *...*
 DATE: 1-18-18

12/19/17 10:00 AM 12/19/17 10:00 AM 12/19/17 10:00 AM



DETAIL G-1-1 PIPE OUTLET SEDIMENT TRAP ST-1

STANDARD SYMBOL	ST-1
PIPE OUTLET SEDIMENT TRAP STA. TRAP NO. 1	
DRAINAGE AREA - INITIAL	3.84 ACRES
DRAINAGE AREA - INTERIM	N/A ACRES
DRAINAGE AREA - FINAL	2.37 ACRES
TOTAL STORAGE REQUIRED	13,874 CF
WET STORAGE PROVIDED	16,984 CF
WET STORAGE REQUIRED	6,912 CF
WET STORAGE PROVIDED	7,979 CF
DRY STORAGE REQUIRED	6,912 CF
DRY STORAGE PROVIDED	9,005 CF
TRAP BOTTOM ELEVATION	429.00 FT
TRAP BOTTOM DIMENSIONS	67 X 93 FT X FT
RISER CREST (DRY STORAGE) ELEVATION	431.40 FT
OUTLET (WET STORAGE) ELEVATION	430.20 FT
CLEANOUT ELEVATION	429.60 FT
TOP OF ENKAMMENT ELEVATION	434.00 FT
SIDE SLOPE	2:1 H:V RATIO
EMBANKMENT TOP WIDTH	4 FT
PRINCIPAL SPILLWAY MATERIAL (BARREL, RISER, ANTI-SEEP COLLAR)	CMP
RISER DIAMETER	36 IN
BARREL DIAMETER	27 IN
TRASH RACK DIAMETER	54 IN
TRASH RACK HEIGHT	27 IN
ANTI-SEEP COLLAR DIMENSIONS	10' X 10' FT
OUTLET PROTECTION - LENGTH	38 FT
OUTLET PROTECTION - WIDTH	27.5 FT
OUTLET PROTECTION - DEPTH	19 IN

P.O.S.T. #1 BAFFLE DESIGN

A =	6,045 S.F.
Wb = (A ²) ^{1/2}	55
Le =	115 FT
LaWb = 11055 =	2.09
2.09 > 2	OK

TRAP #1 TEMPORARY STORMWATER MANAGEMENT

TEMP. SWM FOR 1 YR. STORM	17,076 C.F. @ EL. 433.00
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DETAIL G-1-1 PIPE OUTLET SEDIMENT TRAP ST-1

STANDARD SYMBOL	ST-1
PIPE OUTLET SEDIMENT TRAP STA. TRAP NO. 2	
DRAINAGE AREA - INITIAL	3.77 ACRES
DRAINAGE AREA - INTERIM	N/A ACRES
DRAINAGE AREA - FINAL	3.17 ACRES
TOTAL STORAGE REQUIRED	13,872 CF
WET STORAGE PROVIDED	25,747 CF
WET STORAGE REQUIRED	6,798 CF
WET STORAGE PROVIDED	7,979 CF
DRY STORAGE REQUIRED	6,798 CF
DRY STORAGE PROVIDED	9,005 CF
TRAP BOTTOM ELEVATION	449.00 FT
TRAP BOTTOM DIMENSIONS	67 X 93 FT X FT
RISER CREST (DRY STORAGE) ELEVATION	442.40 FT
OUTLET (WET STORAGE) ELEVATION	441.20 FT
CLEANOUT ELEVATION	440.60 FT
TOP OF ENKAMMENT ELEVATION	445.00 FT
SIDE SLOPE	2:1 H:V RATIO
EMBANKMENT TOP WIDTH	4 FT
PRINCIPAL SPILLWAY MATERIAL (BARREL, RISER, ANTI-SEEP COLLAR)	CMP
RISER DIAMETER	36 IN
BARREL DIAMETER	27 IN
TRASH RACK DIAMETER	54 IN
TRASH RACK HEIGHT	27 IN
ANTI-SEEP COLLAR DIMENSIONS	7' X 7' FT
OUTLET PROTECTION - LENGTH	10 FT
OUTLET PROTECTION - WIDTH	12 FT
OUTLET PROTECTION - DEPTH	19 IN

P.O.S.T. #2 BAFFLE DESIGN

A =	6,045 S.F.
Wb = (A ²) ^{1/2}	55
Le =	120 FT
LaWb = 12055 =	2.18
2.18 > 2	OK

TRAP #2 TEMPORARY STORMWATER MANAGEMENT

TEMP. SWM FOR 1 YR. STORM	16,771 C.F. @ EL. 444.00
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INLET PROTECTION NOTE
 THE CONTRACTOR IS REQUIRED TO INSTALL INLET PROTECTION ON ALL STORM DRAIN INLETS WITH THE EXCEPTION OF THE FOLLOWING:
 1) ANY INLET DIRECTLY OUTFALLING INTO A SEDIMENT TRAPPING DEVICE
 2) INLETS ON PRIVATE OR PUBLIC ROAD OPEN TO THE PUBLIC
 ALL INLET PROTECTION WILL BE INSTALLED AS DIRECTED BY THE INSPECTOR IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, PAGE E-23. THE REMOVAL OF ANY INLET PROTECTION DEVICES WILL REQUIRE APPROVAL FROM THE INSPECTOR.

OWNERS:
 ESC MILL CREEK, INC.
 5074 DORSEY HALL DRIVE, SUITE 205
 ELLICOTT CITY, MD 21042
 TEL: (410) 720-3021
 ATTN: JASON VAN KIRK

DONALD O'KEEFE
 SALLY O'KEEFE
 6950 HAVILAND MILL ROAD
 CLARKSVILLE, MD 21029
 TEL: (410) 999-6941

DEVELOPER:
 ESC MILL CREEK, INC.
 5074 DORSEY HALL DRIVE, SUITE 205
 ELLICOTT CITY, MD 21042
 CONTACT: JASON VAN KIRK
 PHONE: (410) 720-3021

TAX MAP: 34 & 39 GRID: 19 & 6 ZONED: RR-DEO
 PARCEL: 52 & 1
 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

PREVIOUS FILE No.:
 SP - 15 - 015 WP-10-102
 ECP - 15 - 051 WP-17-106
 WP-15-122

PROFESSIONAL CERTIFICATION
 I, BRANDON R. ROWE, 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. 49838, EXPIRATION DATE: 7/31/2019

BOHLER ENGINEERING

CORPORATE OFFICE:
 1000 W. ...
 WARRERS, NY

OFFICES:
 BOWEN, MD
 TOWSON, MD
 WASHINGTON, VA
 CHARLOTTE, NC
 TAMPA, FL
 PHILADELPHIA, PA

PROJECT MANAGERS:
 ENVIRONMENTAL CONSULTANTS
 LANDSCAPE ARCHITECTS

CIVIL & CONSULTING ENGINEERS
 SURVEYORS

REVISIONS

REV.	DATE	COMMENT	BY

THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE IN VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE CALL: 811

1-800-245-4848 (VA) 1-800-242-3716 (DC) 1-800-251-7777 (MD) 1-800-552-7001 (DE) 1-800-282-8550

FINAL ROAD CONSTRUCTION PLAN

FOR
CRAWFORD SUBDIVISION
 LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

LOCATION OF SITE
 6780 HAVILAND MILL ROAD
 TAX MAP 34, GRID 19 & PARCEL 52
 TAX MAP 39, GRID 6 & PARCEL 1
 5TH ELECTION DISTRICT
 HOWARD COUNTY, MD

BOHLER ENGINEERING

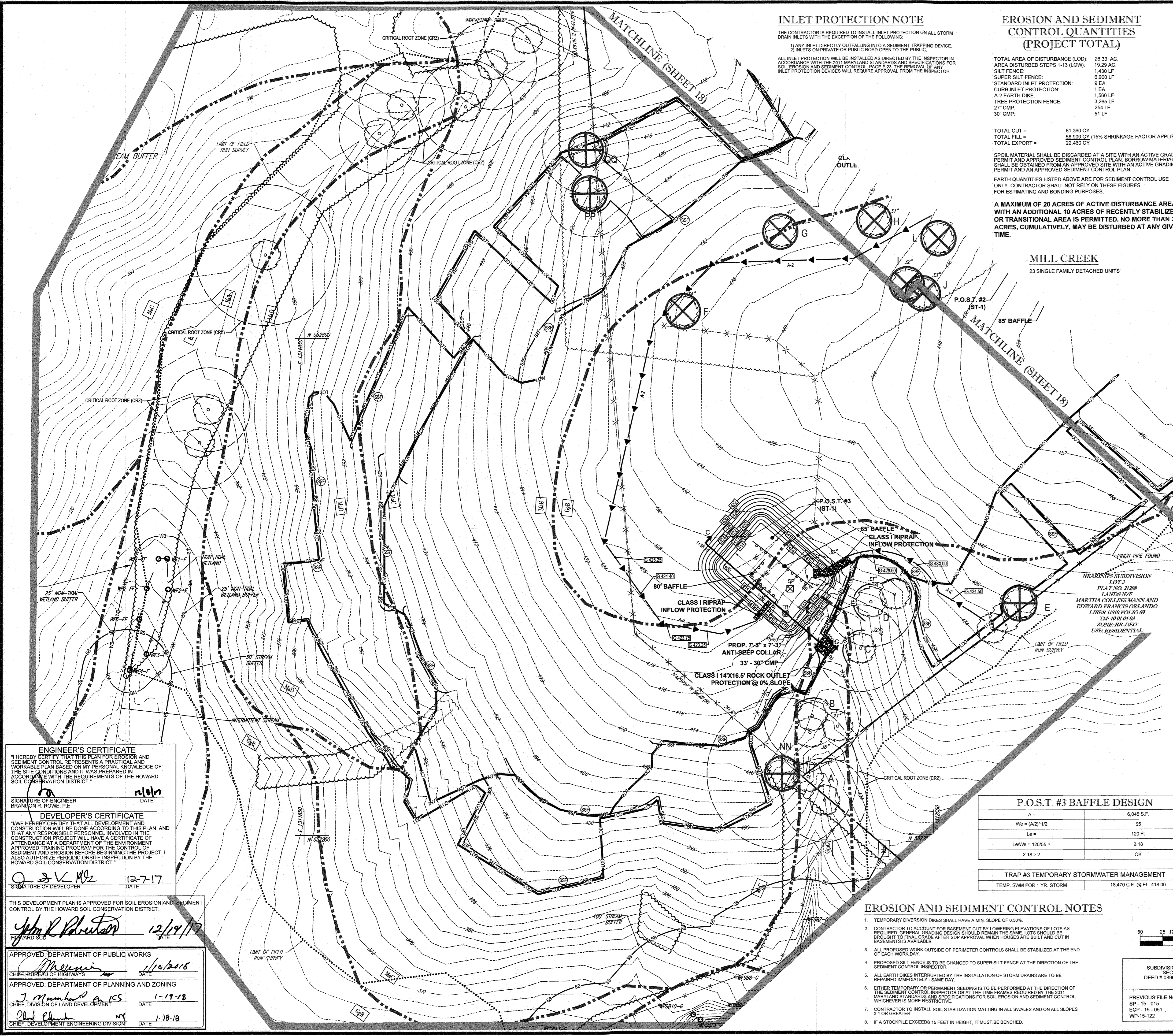
901 DULANEY VALLEY ROAD,
 SUITE 801
 TOWSON, MARYLAND 21204
 Phone: (410) 821-7900
 Fax: (410) 821-7987
 www.BohlerEngineering.com

B.R. ROWE

PROFESSIONAL ENGINEER
 License No. 49838
 12/19/17

PHASE I EROSION AND SEDIMENT CONTROL PLAN

SHEET NUMBER:
18 of 39



INLET PROTECTION NOTE
 THE CONTRACTOR IS REQUIRED TO INSTALL INLET PROTECTION ON ALL STORM DRAIN INLETS WITH THE EXCEPTION OF THE FOLLOWING:
 1) ANY INLET DIRECTLY OUTFALLING INTO A SEDIMENT TRAPPING DEVICE.
 2) INLETS ON PRIVATE OR PUBLIC ROAD OPEN TO THE PUBLIC.
 ALL INLET PROTECTION WILL BE INSTALLED AS DIRECTED BY THE INSPECTOR IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, PAGE E-23. THE REMOVAL OF ANY INLET PROTECTION DEVICES WILL REQUIRE APPROVAL FROM THE INSPECTOR.

EROSION AND SEDIMENT CONTROL QUANTITIES (PROJECT TOTAL)
 TOTAL AREA OF DISTURBANCE (LOD): 26.33 AC.
 AREA DISTURBED STEPS 1-13 (LOW): 19.29 AC.
 SILT FENCE: 1,430 LF
 SUPER SILT FENCE: 6,960 LF
 STANDARD INLET PROTECTION: 9 EA.
 CURB INLET PROTECTION: 1 EA.
 A-2 EARTH DIKE: 1,560 LF
 TREE PROTECTION FENCE: 3,265 LF
 27" CMP: 254 LF
 30" CMP: 51 LF

TOTAL CUT = 81,360 CY
 TOTAL FILL = 58,900 CY (15% SHRINKAGE FACTOR APPLIED)
 TOTAL EXPORT = 22,460 CY
 SPOIL MATERIAL SHALL BE DISCARDED AT A SITE WITH AN ACTIVE GRADING PERMIT AND APPROVED SEDIMENT CONTROL PLAN. BORROW MATERIAL SHALL BE OBTAINED FROM AN APPROVED SITE WITH AN ACTIVE GRADING PERMIT AND AN APPROVED SEDIMENT CONTROL PLAN.
 EARTH QUANTITIES LISTED ABOVE ARE FOR SEDIMENT CONTROL USE ONLY. CONTRACTOR SHALL NOT RELY ON THESE FIGURES FOR ESTIMATING AND BONDING PURPOSES.

A MAXIMUM OF 20 ACRES OF ACTIVE DISTURBANCE AREA WITH AN ADDITIONAL 10 ACRES OF RECENTLY STABILIZED OR TRANSITIONAL AREA IS PERMITTED. NO MORE THAN 30 ACRES, CUMULATIVELY, MAY BE DISTURBED AT ANY GIVEN TIME.

EROSION AND SEDIMENT CONTROL LEGEND

- LOD - LOD: LIMIT OF DISTURBANCE
- LOW - LOW: LIMIT OF WORK
- SF - SF: SILT FENCE
- SSF - SSF: SUPER SILT FENCE
- TPF - TPF: TREE PROTECTION FENCE
- AGIP: AT GRADE INLET PROTECTION
- SIP/A OR B: STANDARD INLET PROTECTION TYPE 'A' OR 'B'
- CIP: CURB INLET PROTECTION
- 15%-25%: STEEP SLOPES (15%-25%)
- 2-25%: STEEP SLOPES (>25%)
- SOIL DIVIDE: SOIL DIVIDE
- Mab: SOIL LABEL
- LANDLOK TRM 435: LANDLOK TRM 435 SOIL STABILIZATION MATTING
- RIPRAP: RIPRAP STABILIZATION
- DRAINAGE DIVIDE: DRAINAGE DIVIDE
- BAFFLE BOARD: BAFFLE BOARD
- TR: TRASH RACK
- SP: SUMP PIT

UTILITY INSTALLATION NOTES:
 1. CONTRACTOR SHALL OPEN ONLY THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. IF TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY, SILT FENCE SHALL BE PLACED BELOW (DOWNSLOPE OF) TRENCH.
 2. PLACE ALL EXCAVATED MATERIAL ON UPHILL SIDE OF TRENCH.
 3. ANY SEDIMENT CONTROLS DISTURBED BY UTILITY CONSTRUCTION ARE TO BE REPAIRED IMMEDIATELY.
 4. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO PROTECT PEDESTRIANS AT ALL TIMES DURING UNDERGROUND UTILITY CONSTRUCTION.

MILL CREEK
 23 SINGLE FAMILY DETACHED UNITS

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 P. O. SHANBERGER
 LICENSE NO. 10049 Exp. Date 4/2/2022
 AS-BUILT DATE: 6/25/2022
 Shanberger & Lane

DETAIL G-1-1 PIPE OUTLET SEDIMENT TRAP ST-1

PIPE OUTLET SEDIMENT TRAP ST-1, TRAP NO. 3	STANDARD SYMBOL
DRAINAGE AREA - INTAL	4.16 ACRES
DRAINAGE AREA - INTERM	N/A ACRES
DRAINAGE AREA - FINAL	3.30 ACRES
TOTAL STORAGE REQUIRED	14,978 CF
TOTAL STORAGE PROVIDED	19,187 CF
WET STORAGE REQUIRED	7,488 CF
WET STORAGE PROVIDED	8,929 CF
DRY STORAGE REQUIRED	7,488 CF
DRY STORAGE PROVIDED	10,258 CF
TRAP BOTTOM ELEVATION	414.00 FT
TRAP BOTTOM DIMENSIONS	67' X 96' FT X FT
RISER CREST (DRY STORAGE) ELEVATION	416.50 FT
OUTLET (WET STORAGE) ELEVATION	415.25 FT
CLEANOUT ELEVATION	414.63 FT
TOP OF EMBANKMENT ELEVATION	419.00 FT
SIDE SLOPE	2:1 H:V RATIO
EMBANKMENT TOP WIDTH	4 FT
PRINCIPAL SPILLWAY MATERIAL (BARREL RISER, ANTI-SEEP COLLAR)	CMP
RISER DIAMETER	42 IN
BARREL DIAMETER	30 IN
TRASH RACK DIAMETER	60 IN
TRASH RACK HEIGHT	27 IN
ANTI-SEEP COLLAR DIMENSIONS	7'-3" X 7'-3" FT
OUTLET PROTECTION - LENGTH	14 FT
OUTLET PROTECTION - WIDTH	16.5 FT
OUTLET PROTECTION - DEPTH	18 IN

P.O.S.T. #3 BAFFLE DESIGN

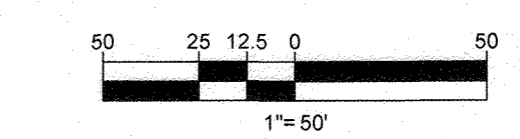
A =	6,045 S.F.
We = (A/2) ^{1/2}	55
Le =	120 FT
LeWe = 120(55) =	2.18
2.18 > 2	OK

TRAP #3 TEMPORARY STORMWATER MANAGEMENT

TEMP. SWM FOR 1 YR. STORM	18,470 C.F. @ EL. 418.00
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EROSION AND SEDIMENT CONTROL NOTES

- TEMPORARY DIVERSION DIKS SHALL HAVE A MIN. SLOPE OF 0.50%.
- CONTRACTOR TO ACCOUNT FOR BASEMENT CUT BY LOWERING ELEVATIONS OF LOTS AS REQUIRED. GENERAL GRADING DESIGN SHOULD REMAIN THE SAME. LOTS SHOULD BE BROUGHT TO FINAL GRADE AFTER SDP APPROVAL WHEN HOUSES ARE BUILT AND CUT IN BASEMENTS IS AVAILABLE.
- ALL PROPOSED WORK OUTSIDE OF PERIMETER CONTROLS SHALL BE STABILIZED AT THE END OF EACH WORK DAY.
- PROPOSED SILT FENCE IS TO BE CHANGED TO SUPER SILT FENCE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
- ALL EARTH DIKS INTERRUPTED BY THE INSTALLATION OF STORM DRAINS ARE TO BE REPAIRED IMMEDIATELY - SAME DAY.
- EITHER TEMPORARY OR PERMANENT SEEDING IS TO BE PERFORMED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR OR AT THE TIME FRAMES REQUIRED BY THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, WHICHEVER IS MORE RESTRICTIVE.
- CONTRACTOR TO INSTALL SOIL STABILIZATION MATTING IN ALL SWALES AND ON ALL SLOPES 3:1 OR GREATER.
- IF A STOCKPILE EXCEEDS 15 FEET IN HEIGHT, IT MUST BE BENCHED.



SUBDIVISION NAME: CRAWFORD
 SECTION/AREA: N/A
 DEED #: 0597/00532 & 0598/00490

TAX MAP: 34 & 39 GRID: 19 & 6 ZONED: RR-DEO
 PARCEL: 52 & 1
 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

PREVIOUS FILE No.: SP-15-015 WP-10-102
 ECP-15-051 WP-17-106
 WP-15-122

OWNERS:
 ESC MILL CREEK, INC.
 5074 DORSEY HALL DRIVE, SUITE 205
 ELLICOTT CITY, MD 21042
 TEL: (410) 720-3021
 ATTN: JASON VAN KIRK
 PHONE: (410) 599-6941

DEVELOPER:
 ESC MILL CREEK, INC.
 5074 DORSEY HALL DRIVE, SUITE 205
 ELLICOTT CITY, MD 21042
 CONTACT: JASON VAN KIRK
 PHONE: (410) 720-3021

PROFESSIONAL CERTIFICATION:
 I, BRANDON R. ROWE, 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. 40808, EXPIRATION DATE: 7/31/2019

ENGINEER'S CERTIFICATE
 I HEREBY 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 IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF ENGINEER: BRANDON R. ROWE, P.E.
 DATE: 12/17

DEVELOPER'S CERTIFICATE
 I/WE 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 SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF DEVELOPER: J. V. M...
 DATE: 12-7-17

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

APPROVED: DEPARTMENT OF PUBLIC WORKS
 DATE: 1/6/2018

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 DATE: 1-19-18

APPROVED: DEVELOPMENT ENGINEERING DIVISION
 DATE: 1.18.18

BOHLER ENGINEERING
 CORPORATE OFFICE: WARREN, NJ
 SURVEYORS: SOUTHROOD, MA
 PROJECT MANAGERS: BOWEN, MD; STERLING, VA; ROCKAWAY, NJ; CENTERVILLE, PA; TAMPA, FL
 ENVIRONMENTAL CONSULTANTS: PHILADELPHIA, PA
 LANDSCAPE ARCHITECTS: PHILADELPHIA, PA

REVISIONS

REV	DATE	COMMENT	BY

FINAL ROAD CONSTRUCTION PLAN

FOR CRAWFORD SUBDIVISION
 LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

LOCATION OF SITE
 6780 HAVILAND MILL ROAD
 TAX MAP 34, GRID 19 & PARCEL 52
 TAX MAP 39, GRID 6 & PARCEL 1
 5TH ELECTION DISTRICT
 HOWARD COUNTY, MD

BOHLER ENGINEERING
 901 DULANEY HALL ROAD, SUITE 801
 TOWSON, MARYLAND 21284
 Phone: (410) 821-7900
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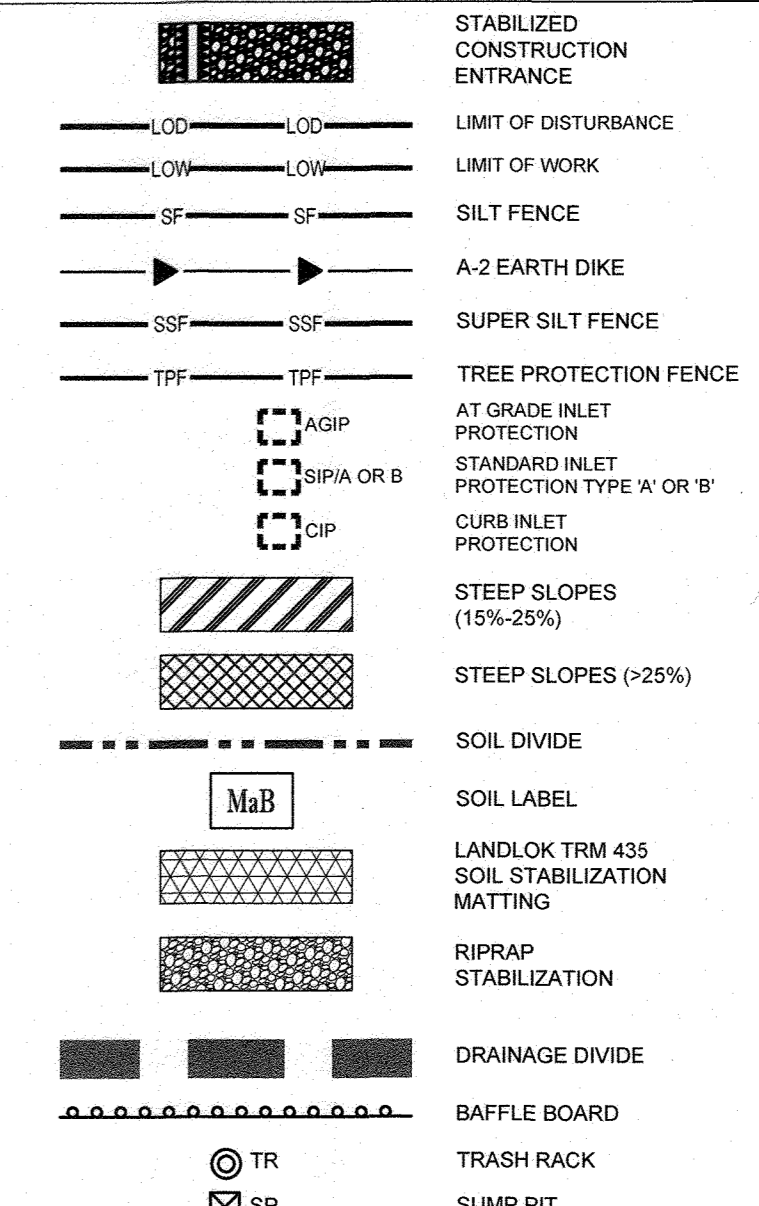
B.R. ROWE
 PROFESSIONAL ENGINEER
 LICENSE NO. 40808

PHASE I EROSION AND SEDIMENT CONTROL PLAN

SHEET NUMBER: 19 of 39

SOILS TABLE					
SOILS NAME	SOILS DESCRIPTION	HYDROLOGIC SOILS GROUP	HIGHLY ERODIBLE SOIL	K FACTOR	AREA - AC.
BaA	BAILE SILT LOAM, 0 TO 3 PERCENT SLOPES	C/D	YES	0.37	3.90
GaC	GAILA LOAM, 8 TO 15 PERCENT SLOPES	B	YES	0.55	0.40
GmB	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	YES	0.43	3.40
GmC	GLENVILLE SILT LOAM, 8 TO 15 PERCENT SLOPES	C	YES	0.43	1.90
GnB	GLENVILLE-BAILE SILT LOAMS, 0 TO 3 PERCENT SLOPES	C	YES	0.43	1.90
GoB	GLENVILLE-CODORUS SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	YES	0.43	11.50
Ha	HATBORO-CODORUS SILT LOAMS, 0 TO 3 PERCENT SLOPES	B/D	YES	0.37	10.90

EROSION AND SEDIMENT CONTROL LEGEND



EROSION AND SEDIMENT CONTROL NOTES

- TEMPORARY DIVERSION DIKES SHALL HAVE A MIN. SLOPE OF 0.50%.
- CONTRACTOR TO ACCOUNT FOR BASEMENT CUT BY LOWERING ELEVATIONS OF LOTS AS REQUIRED. GENERAL GRADING DESIGN SHOULD REMAIN THE SAME. LOTS SHOULD BE BROUGHT TO FINAL GRADE AFTER SDP APPROVAL WHEN HOUSES ARE BUILT AND CUT IN BASEMENTS IS AVAILABLE.
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MILL CREEK

23 SINGLE FAMILY DETACHED UNITS

EROSION AND SEDIMENT CONTROL QUANTITIES (PROJECT TOTAL)

TOTAL AREA OF DISTURBANCE (LOD):	26.33 AC
AREA DISTURBED STEPS 1-13 (LOW):	19.29 AC
SILT FENCE:	1,430 LF
SUPER SILT FENCE:	6,990 LF
STANDARD INLET PROTECTION:	9 EA
CURB INLET PROTECTION:	1 EA
TREE PROTECTION FENCE:	1,560 LF
27' CMP:	3,295 LF
30' CMP:	254 LF
51 LF	

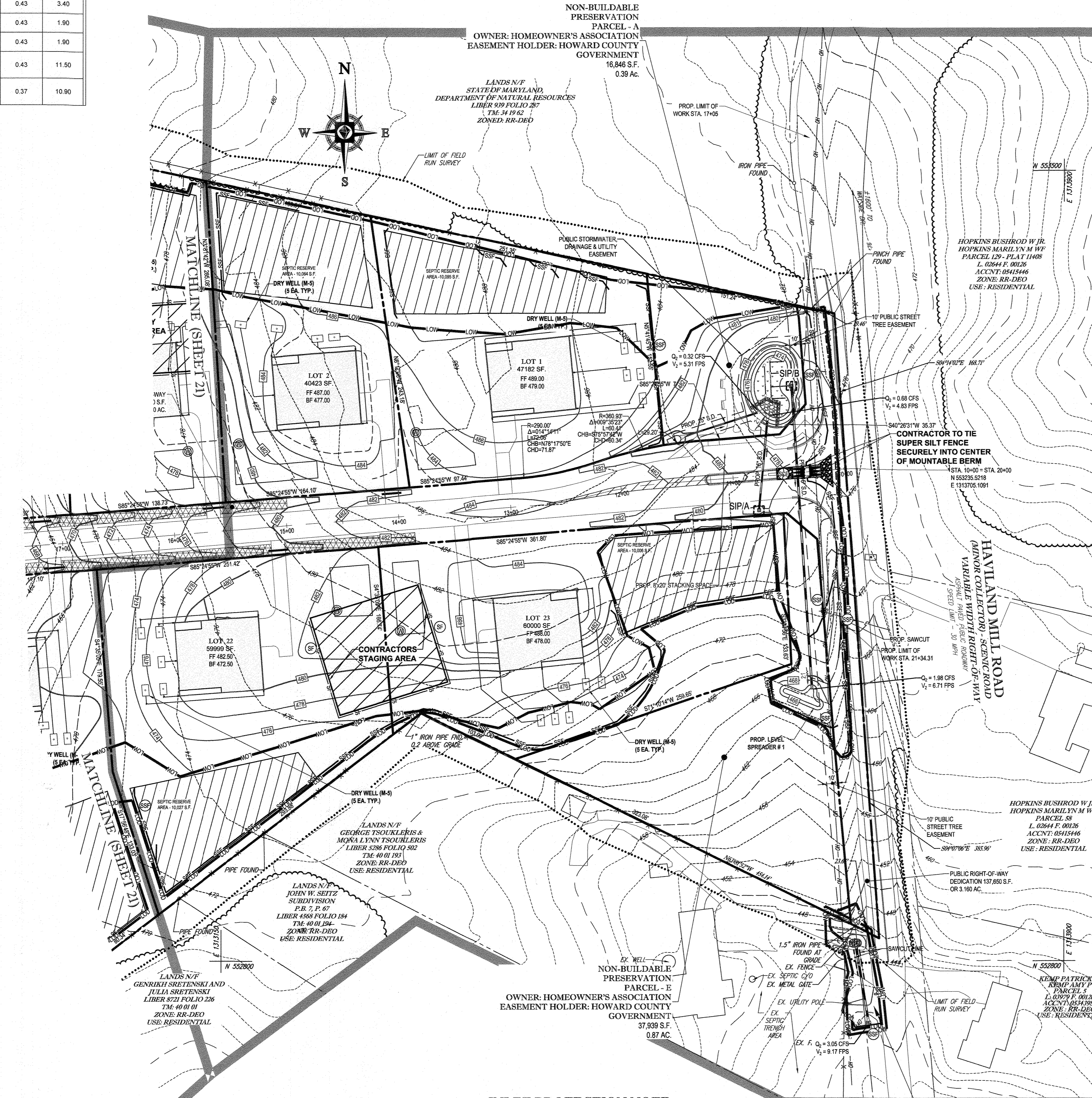
TOTAL CUT = 81,360 CY
 TOTAL FILL = 55,900 CY (15% SHRINKAGE FACTOR APPLIED)
 TOTAL EXPORT = 22,460 CY

SPOIL MATERIAL SHALL BE DISCARDED AT A SITE WITH AN ACTIVE GRADING PERMIT AND APPROVED SEDIMENT CONTROL PLAN. BORROW MATERIAL SHALL BE OBTAINED FROM AN APPROVED SITE WITH AN ACTIVE GRADING PERMIT AND AN APPROVED SEDIMENT CONTROL PLAN.

EARTH QUANTITIES LISTED ABOVE ARE FOR SEDIMENT CONTROL USE ONLY. CONTRACTOR SHALL NOT RELY ON THESE FIGURES FOR ESTIMATING AND BIDDING PURPOSES.

EROSION AND SEDIMENT CONTROL UTILITY INSTALLATION NOTES:

- CONTRACTOR SHALL OPEN ONLY THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. IF TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY, SILT FENCE SHALL BE PLACED BELOW (DOWNSLOPE OF) TRENCH.
- PLACE ALL EXCAVATED MATERIAL ON UPHILL SIDE OF TRENCH.
- ANY SEDIMENT CONTROLS DISTURBED BY UTILITY CONSTRUCTION ARE TO BE REPAIRED IMMEDIATELY.
- THE CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO PROTECT PEDESTRIANS AT ALL TIMES DURING UNDERGROUND UTILITY CONSTRUCTION.



INLET PROTECTION NOTE

THE CONTRACTOR IS REQUIRED TO INSTALL INLET PROTECTION ON ALL STORM DRAIN INLETS WITH THE EXCEPTION OF THE FOLLOWING:
 1) ANY INLET DIRECTLY OUTFALLING INTO A SEDIMENT TRAPPING DEVICE.
 2) INLETS ON PRIVATE OR PUBLIC ROAD OPEN TO THE PUBLIC.
 ALL INLET PROTECTION WILL BE INSTALLED AS DIRECTED BY THE INSPECTOR IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, PAGE 5.5. THE REMOVAL OF AN INLET PROTECTION DEVICE WILL REQUIRE APPROVAL FROM THE INSPECTOR.

THIS PROPOSED DRIVEWAY CULVERT CONSTRUCTION IS CONTINGENT UPON GEORGE & MONA LYNN TSOUKLERIS SIGNING A LETTER OF AUTHORIZATION FOR THE CONSTRUCTION WORK FOUND WITHIN THESE PROPERTIES. IF THEY FAIL TO GRANT THE AUTHORIZATION, THIS WORK WILL NOT BE COMPLETED AS PART OF THIS FINAL ROAD CONSTRUCTION PLAN (P-17-016).

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 BRANDON R. ROWE, P.E.
 THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET
 Signature: [Signature]
 Date: 12/19/17
 Professional L.S. # 10849 Exp. Date 4/2/2022
 AS-BUILT DATE: 6/25/2022
 Shanaberger & Lane

ENGINEER'S CERTIFICATE
 I HEREBY 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 IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 Signature: [Signature]
 Date: 12/17

DEVELOPER'S CERTIFICATE
 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 SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
 Signature: [Signature]
 Date: 12-7-17

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 Signature: [Signature]
 Date: 12/19/17

APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 1/6/2018
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 1-19-18
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 1-18-18

BOHLER ENGINEERING
 CIVIL & CONSULTING ENGINEERS
 SURVEYORS
 PROJECT MANAGERS
 ENVIRONMENTAL CONSULTANTS
 LANDSCAPE ARCHITECTS
 CORPORATE OFFICE:
 WARREN, NJ
 OFFICES:
 BOWNE, MD
 SOUTHBRIDGE, MA
 HONOLULU, HI
 WASHINGTON, VA
 STERLING, VA
 CHARLESTON, SC
 CHARLESTON, WV
 TAMPA, FL
 PHILADELPHIA, PA

REVISIONS

REV	DATE	COMMENT	BY

THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE IN VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE CALL 811
 (WV 1-800-245-4848) (PA 1-800-242-3775) (DC 1-800-257-7777) (VA 1-800-552-7001) (MD 1-800-257-7777) (DE 1-800-352-8557)

PROJECT No.: MD142038
 DRAWN BY: AVG
 CHECKED BY: BRR
 DATE: 12/01/17
 SCALE: 1" = 50'
 CAD ID: EPA

FINAL ROAD CONSTRUCTION PLAN

FOR
CRAWFORD SUBDIVISION
 LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

LOCATION OF SITE
 6780 HAVLAND MILL ROAD
 TAX MAP 34, GRID 19 & PARCEL 52
 TAX MAP 39, GRID 6 & PARCEL 1
 5TH ELECTION DISTRICT
 HOWARD COUNTY, MD

BOHLER ENGINEERING
 901 DULANEY HILL ROAD, SUITE 801
 TOWSON, MARYLAND 21284
 Phone: (410) 821-7900
 Fax: (410) 821-7987
 www.BohlerEngineering.com

B.R. ROWE
 PROFESSIONAL ENGINEER
 LICENSE NO. 14174

SHEET TITLE:
PHASE II EROSION AND SEDIMENT CONTROL PLAN
 SHEET NUMBER:
20 of 39

OWNERS:
 ESC MILL CREEK, INC.
 5074 DORSEY HALL DRIVE, SUITE 205
 ELLICOTT CITY, MD 21042
 TEL: (410) 720-3021
 ATTN: JASON VAN KIRK

DEVELOPER:
 ESC MILL CREEK, INC.
 5074 DORSEY HALL ROAD, SUITE 205
 ELLICOTT CITY, MD 21042
 CONTACT: JASON VAN KIRK
 PHONE: (410) 720-3021

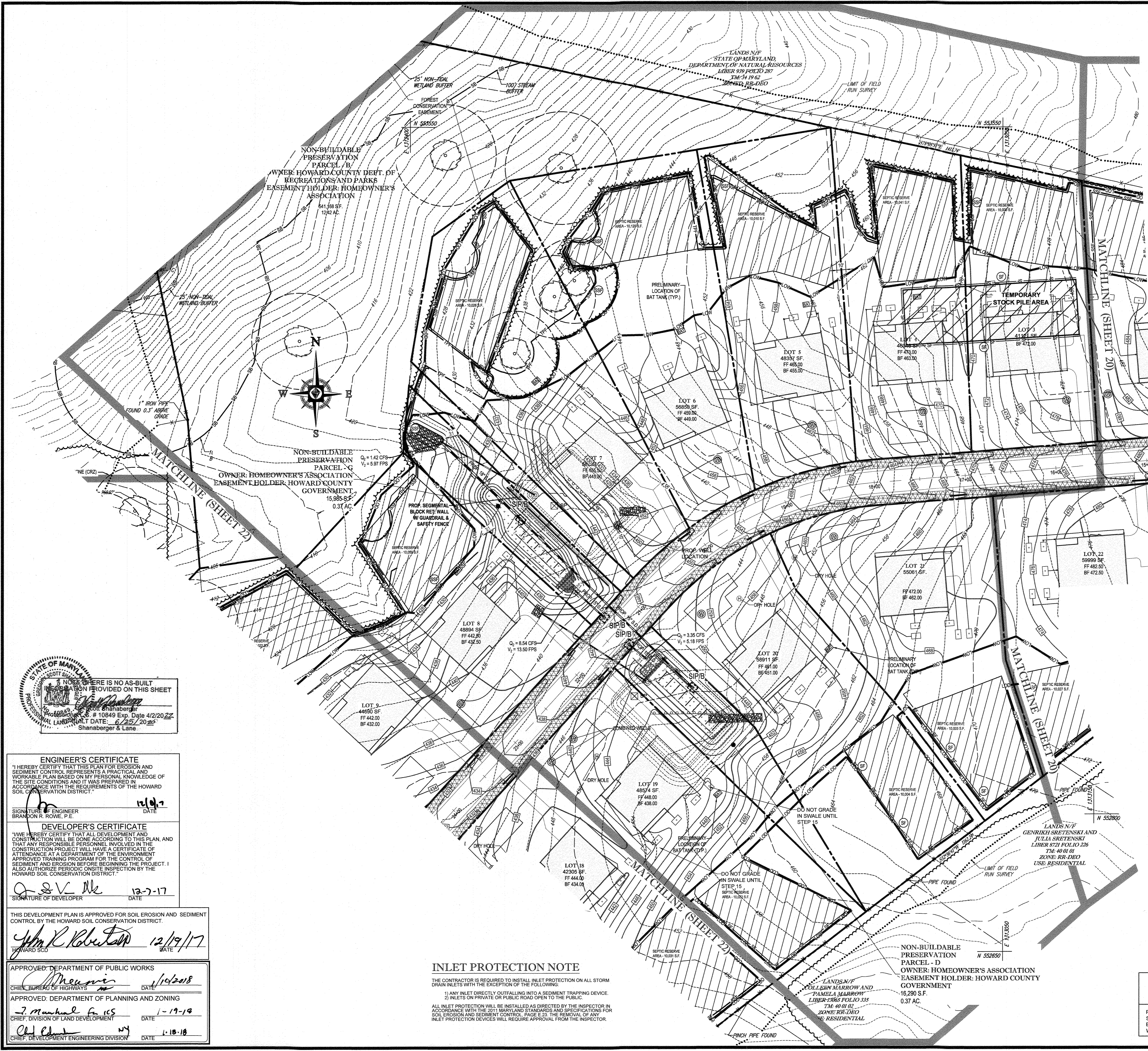
5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

PREVIOUS FILE No.
 SP-15-015 WP-10-102
 ECP-15-051 WP-17-106
 WP-15-122

OWNERS:
 DONALD O'KEEFE
 SALLY O'KEEFE
 6950 HAVLAND MILL ROAD
 CLARKSVILLE, MD 21029
 TEL.: (410) 599-6941

DEVELOPER:
 ESC MILL CREEK, INC.
 5074 DORSEY HALL ROAD, SUITE 205
 ELLICOTT CITY, MD 21042
 CONTACT: JASON VAN KIRK
 PHONE: (410) 720-3021

TAX MAP: 34 & 39
 GRID: 19 & 6
 PARCEL: 52 & 1
 ZONED: RR-DEO



EROSION AND SEDIMENT CONTROL LEGEND

- STABILIZED CONSTRUCTION ENTRANCE
- LIMIT OF DISTURBANCE
- LIMIT OF WORK
- SILT FENCE
- A-2 EARTH DIKE
- SUPER SILT FENCE
- TREE PROTECTION FENCE
- AT GRADE INLET PROTECTION
- STANDARD INLET PROTECTION TYPE 'A' OR 'B'
- CURB INLET PROTECTION
- STEEP SLOPES (15%-25%)
- STEEP SLOPES (>25%)
- SOIL DIVIDE
- SOIL LABEL
- LANDLOCK TRM 435 SOIL STABILIZATION MATTING
- RIPRAP STABILIZATION
- DRAINAGE DIVIDE
- BAFFLE BOARD
- TRASH RACK
- SUMP PIT
- INTERIM CONTOUR

EROSION AND SEDIMENT CONTROL NOTES

- TEMPORARY DIVERSION DIKES SHALL HAVE A MIN. SLOPE OF 0.50%.
- CONTRACTOR TO ACCOUNT FOR BASEMENT CUT BY LOWERING ELEVATIONS OF LOTS AS REQUIRED. GENERAL GRADING DESIGN SHOULD REMAIN THE SAME. LOTS SHOULD BE BROUGHT TO FINISH GRADE AFTER SDP APPROVAL WHEN HOUSES ARE BUILT AND CUT IN BASEMENTS IS AVAILABLE.
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- EITHER TEMPORARY OR PERMANENT SEEDING IS TO BE PERFORMED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR OR AT THE TIME FRAMES REQUIRED BY THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, WHICHEVER IS MORE RESTRICTIVE.
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MILL CREEK
23 SINGLE FAMILY DETACHED UNITS

EROSION AND SEDIMENT CONTROL QUANTITIES (PROJECT TOTAL)

TOTAL AREA OF DISTURBANCE (LOD):	26.33 AC.
AREA DISTURBED STEPS 1-13 (LOW):	19.23 AC.
SILT FENCE:	1,430 LF
SUPER SILT FENCE:	6,960 LF
STANDARD INLET PROTECTION:	9 EA.
CURB INLET PROTECTION:	1 EA.
A-2 EARTH DIKE:	1,660 LF
TREE PROTECTION FENCE:	3,265 LF
27' CMP:	254 LF
30' CMP:	51 LF
TOTAL CUT =	81,360 CY
TOTAL FILL =	58,900 CY (15% SHRINKAGE FACTOR APPLIED)
TOTAL EXPORT =	22,460 CY

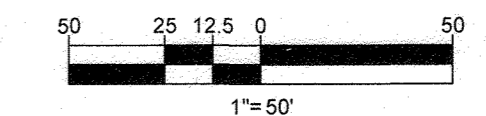
SPOIL MATERIAL SHALL BE DISCARDED AT A SITE WITH AN ACTIVE GRADING PERMIT AND APPROVED SEDIMENT CONTROL PLAN. BORROW MATERIAL SHALL BE OBTAINED FROM AN APPROVED SITE WITH AN ACTIVE GRADING PERMIT AND AN APPROVED SEDIMENT CONTROL PLAN.

EARTH QUANTITIES LISTED ABOVE ARE FOR SEDIMENT CONTROL USE ONLY. CONTRACTOR SHALL NOT RELY ON THESE FIGURES FOR ESTIMATING AND BIDDING PURPOSES.

A MAXIMUM OF 20 ACRES OF ACTIVE DISTURBANCE AREA WITH AN ADDITIONAL 10 ACRES OF RECENTLY STABILIZED OR TRANSITIONAL AREA IS PERMITTED. NO MORE THAN 30 ACRES, CUMULATIVELY, MAY BE DISTURBED AT ANY GIVEN TIME.

EROSION AND SEDIMENT CONTROL UTILITY INSTALLATION NOTES:

- CONTRACTOR SHALL OPEN ONLY THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. IF TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY, SILT FENCE SHALL BE PLACED BELOW (DOWNSLOPE OF) TRENCH.
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SUBDIVISION NAME: CRAWFORD SECTION/AREA 'A'	TAX MAP: 34 & 39	GRID: 19 & 6	ZONED: RR-DEO
DEED # 05997/0552 & 05998/0490	PARCEL: 52 & 1	5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND	
PREVIOUS FILE NO.:	SP - 15 - 015	WP-10-102	
	EC - 15 - 051	WP-17-106	
	WP-15-122		

OWNERS: ESC MILL CREEK, INC. 5074 DORSEY HALL DRIVE, SUITE 205 ELlicOTT CITY, MD 21042 TEL: (410) 720-3021 ATTN: JASON VAN KIRK	DONALD O'KEEFE SALLY O'KEEFE 6950 HAVILAND MILL ROAD CLARKSVILLE, MD 21029 TEL: (410) 599-6941
DEVELOPER: ESC MILL CREEK, INC. 5074 DORSEY HALL ROAD, SUITE 205 ELlicOTT CITY, MD 21042 CONTACT: JASON VAN KIRK PHONE: (410) 720-3021	

PROFESSIONAL CERTIFICATION
I, BRANDON R. ROWE, 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. 40808, EXPIRATION DATE: 7/31/2019

INLET PROTECTION NOTE

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NOTICE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET.
Shanaberg & Lane
Professional Engineers
10883 Greenleaf Lane, # 10849 Exp. Date 4/2/2022
LIC. NO. 10883
NOTAL LANDSHEET DATE: 6/25/2022
Shanaberg & Lane

ENGINEER'S CERTIFICATE
I HEREBY 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 IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
SIGNATURE OF ENGINEER: BRANDON R. ROWE, P.E.
DATE: 12/19/17

DEVELOPER'S CERTIFICATE
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 SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ONSITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
SIGNATURE OF DEVELOPER: Q & V LLC
DATE: 12-7-17

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
John R. Robertson
12/19/17
HOWARD SCD

APPROVED: DEPARTMENT OF PUBLIC WORKS
DATE: 1/4/2018
APPROVED: DEPARTMENT OF PLANNING AND ZONING
DATE: 1-19-19
APPROVED: DEVELOPMENT ENGINEERING DIVISION
DATE: 1-18-18

BOHLER ENGINEERING
CORPORATE OFFICE: WARREN, NJ
OFFICES:
BOWIE, MD
SOUTHBRIDGE, MA
ROKONOMA, NY
CENTREVILLE, VA
PHILADELPHIA, PA
CIVIL & CONSULTING ENGINEERS
SURVEYORS
PROJECT MANAGERS
ENVIRONMENTAL CONSULTANTS
LANDSCAPE ARCHITECTS
TAMPA, FL

REVISIONS

REV	DATE	COMMENT	BY

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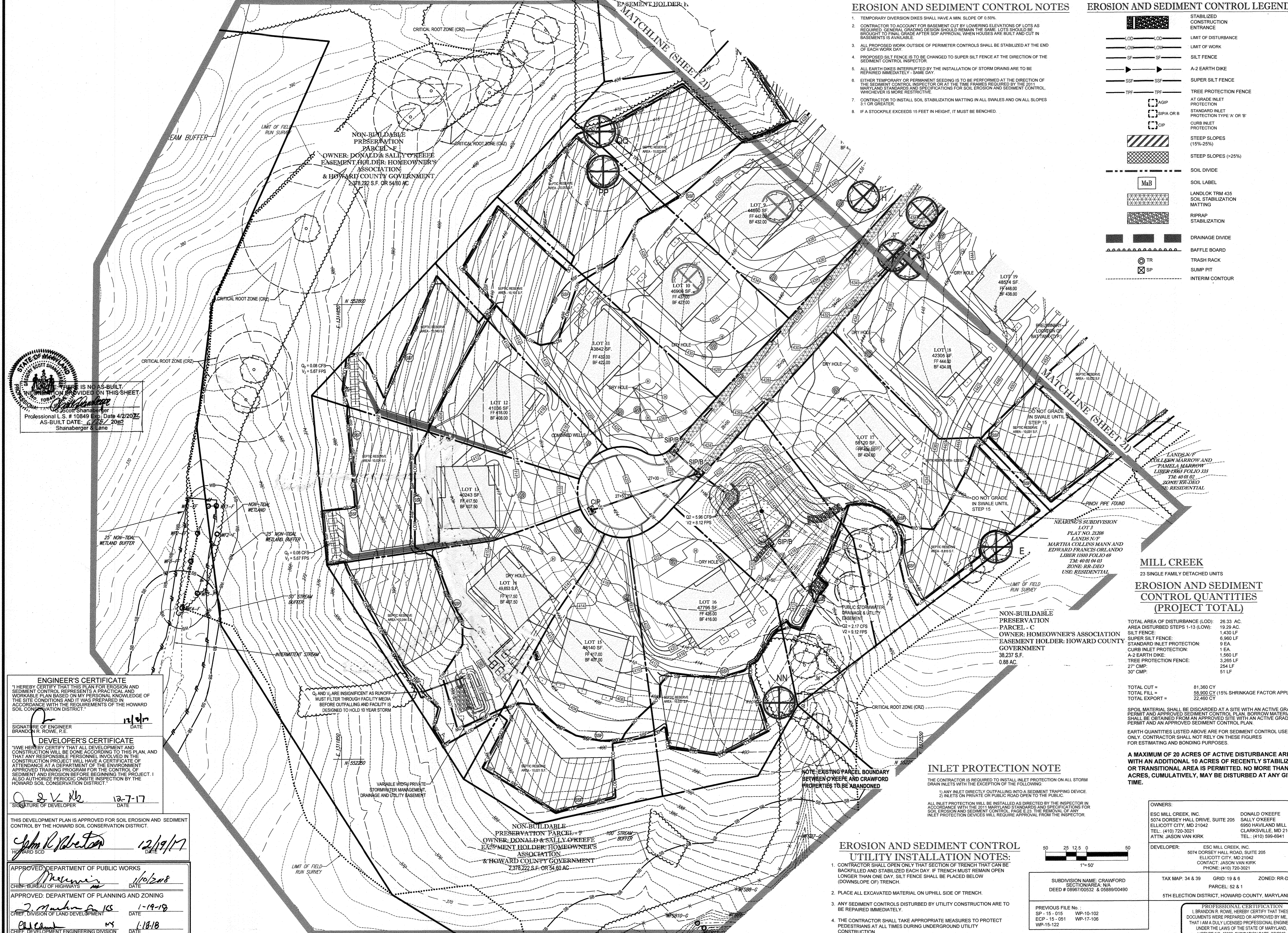
PROJECT NO.: MD142038
DRAWN BY: AVG
CHECKED BY: BRR
DATE: 12/01/17
SCALE: 1" = 50'
CAD ID: EP4

FINAL ROAD CONSTRUCTION PLAN
FOR
CRAWFORD SUBDIVISION
LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G
LOCATION OF SITE
6780 HAVILAND MILL ROAD
TAX MAP 34, GRID 19 & PARCEL 52
TAX MAP 39, GRID 6 & PARCEL 1
5TH ELECTION DISTRICT
HOWARD COUNTY, MD

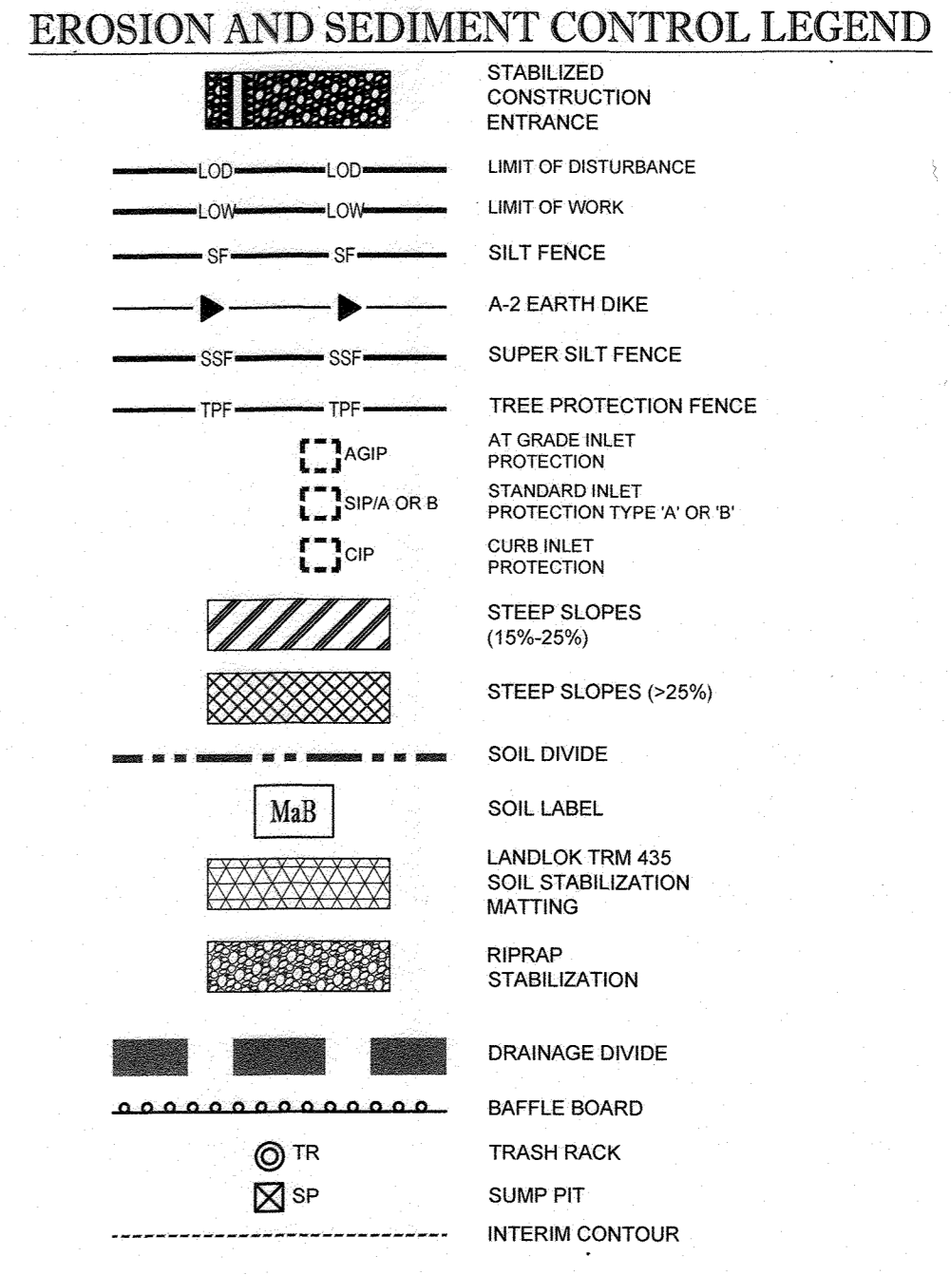
BOHLER ENGINEERING
901 DULANEY VALLEY ROAD, SUITE 801
TOWSON, MARYLAND 21204
Phone: (410) 821-7900
Fax: (410) 821-7987
www.BohlerEngineering.com

B.R. ROWE
PROFESSIONAL ENGINEER
LICENSE NO. 40808

SHEET TITLE:
PHASE II EROSION AND SEDIMENT CONTROL PLAN
SHEET NUMBER:
21 of 39



- ### EROSION AND SEDIMENT CONTROL NOTES
- TEMPORARY DIVERSION DIKES SHALL HAVE A MIN. SLOPE OF 0.50%.
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 - PROPOSED SILT FENCE IS TO BE CHANGED TO SUPER SILT FENCE IN THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
 - ALL EARTH DIKES INTERRUPTED BY THE INSTALLATION OF STORM DRAINS ARE TO BE REPAIRED IMMEDIATELY - SAME DAY.
 - EITHER TEMPORARY OR PERMANENT SEEDING IS TO BE PERFORMED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR OR AT THE TIME FRAMES REQUIRED BY THE 2014 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, WHICHEVER IS MORE RESTRICTIVE.
 - CONTRACTOR TO INSTALL SOIL STABILIZATION MATTING IN ALL SWALES AND ON ALL SLOPES 3:1 OR GREATER.
 - IF A STOCKPILE EXCEEDS 15 FEET IN HEIGHT, IT MUST BE BENCHED.



BOHLER ENGINEERING

CONSULTING ENGINEERS
SURVEYORS

PROJECT MANAGERS
ENVIRONMENTAL CONSULTANTS
LANDSCAPE ARCHITECTS

OFFICES
BOWIE, MD
TOWSON, MD
HUMANSVILLE, VA
CHARLOTTESVILLE, VA
PHILADELPHIA, PA
TAMPA, FL

REVISIONS

REV.	DATE	COMMENT	BY

THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE OF VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE: CALL 811 (WWW.800.245.4548) (PA. 1-800-242-1776) (DC 1-800-257-7777) (VA 1-800-852-7071) (MD 1-800-257-7777) (DE 1-800-292-8559)

PROJECT No.: MD142038
DRAWN BY: AVG
CHECKED BY: BRR
DATE: 12/01/17
SCALE: 1" = 50'
CAD I.D.: EPA

FINAL ROAD CONSTRUCTION PLAN

FOR
CRAWFORD SUBDIVISION
LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

LOCATION OF SITE
6780 HAVILAND MILL ROAD
TAX MAP 34, GRID 19 & PARCEL 52
TAX MAP 39, GRID 6 & PARCEL 1
5TH ELECTION DISTRICT
HOWARD COUNTY, MD

BOHLER ENGINEERING

901 DULANEY VALLEY ROAD,
SUITE 801
TOWSON, MARYLAND 21204
Phone: (410) 621-7900
Fax: (410) 621-7987
www.BohlerEngineering.com

B.R. ROWE
PROFESSIONAL ENGINEER
LICENSE NO. 141817

SHEET TITLE:
**PHASE II
EROSION AND
SEDIMENT
CONTROL PLAN**

SHEET NUMBER:
22 of 39

THIS IS NOT A BUILDING PERMIT. INFORMATION PROVIDED ON THIS SHEET IS FOR INFORMATIONAL PURPOSES ONLY. PROFESSIONAL S.E. # 10949 E.P. Date 4/2/2022 AS-BUILT DATE: 6/22/2022 Shanaberger & Lane

ENGINEER'S CERTIFICATE

I HEREBY 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 IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF ENGINEER: *Brandon R. Rowe* DATE: 12/19/17
BRANDON R. ROWE, P.E.

DEVELOPER'S CERTIFICATE

I HAVE HEREBY CERTIFIED 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 SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ONSITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF DEVELOPER: *John R. Robertson* DATE: 12-7-17
JOHN R. ROBERTSON

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

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF: BUREAU OF HIGHWAYS DATE: 11/02/2018
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF: DIVISION OF LAND DEVELOPMENT DATE: 1-19-19
CHIEF: DEVELOPMENT ENGINEERING DIVISION DATE: 1-18-19

MILL CREEK 23 SINGLE FAMILY DETACHED UNITS

EROSION AND SEDIMENT CONTROL QUANTITIES (PROJECT TOTAL)

TOTAL AREA OF DISTURBANCE (LOD):	26.33 AC.
AREA DISTURBED STEPS 1-13 (LOW):	19.29 AC.
SILT FENCE:	1,430 LF
SUPER SILT FENCE:	6,960 LF
STANDARD INLET PROTECTION:	9 EA.
CURB INLET PROTECTION:	1 EA.
A-2 EARTH DIKE:	1,560 LF
TREE PROTECTION FENCE:	3,265 LF
27' CMP:	254 LF
30' CMP:	51 LF

TOTAL CUT = 81,360 CY
TOTAL FILL = 58,900 CY (15% SHRINKAGE FACTOR APPLIED)
TOTAL EXPORT = 22,460 CY

SOIL MATERIAL SHALL BE DISCARDED AT A SITE WITH AN ACTIVE GRADING PERMIT AND APPROVED SEDIMENT CONTROL PLAN. BORROW MATERIAL SHALL BE OBTAINED FROM AN APPROVED SITE WITH AN ACTIVE GRADING PERMIT AND AN APPROVED SEDIMENT CONTROL PLAN.

EARTH QUANTITIES LISTED ABOVE ARE FOR SEDIMENT CONTROL USE ONLY. CONTRACTOR SHALL NOT RELY ON THESE FIGURES FOR ESTIMATING AND BONDING PURPOSES.

A MAXIMUM OF 20 ACRES OF ACTIVE DISTURBANCE AREA WITH AN ADDITIONAL 10 ACRES OF RECENTLY STABILIZED OR TRANSITIONAL AREA IS PERMITTED. NO MORE THAN 30 ACRES, CUMULATIVELY, MAY BE DISTURBED AT ANY GIVEN TIME.

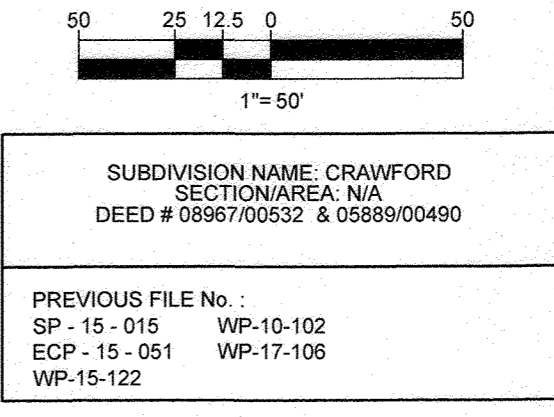
INLET PROTECTION NOTE

THE CONTRACTOR IS REQUIRED TO INSTALL INLET PROTECTION ON ALL STORM DRAIN INLETS WITH THE EXCEPTION OF THE FOLLOWING:

- ANY INLET DIRECTLY OUTFALLING INTO A SEDIMENT TRAPPING DEVICE
- INLETS ON PRIVATE OR PUBLIC ROAD OPEN TO THE PUBLIC

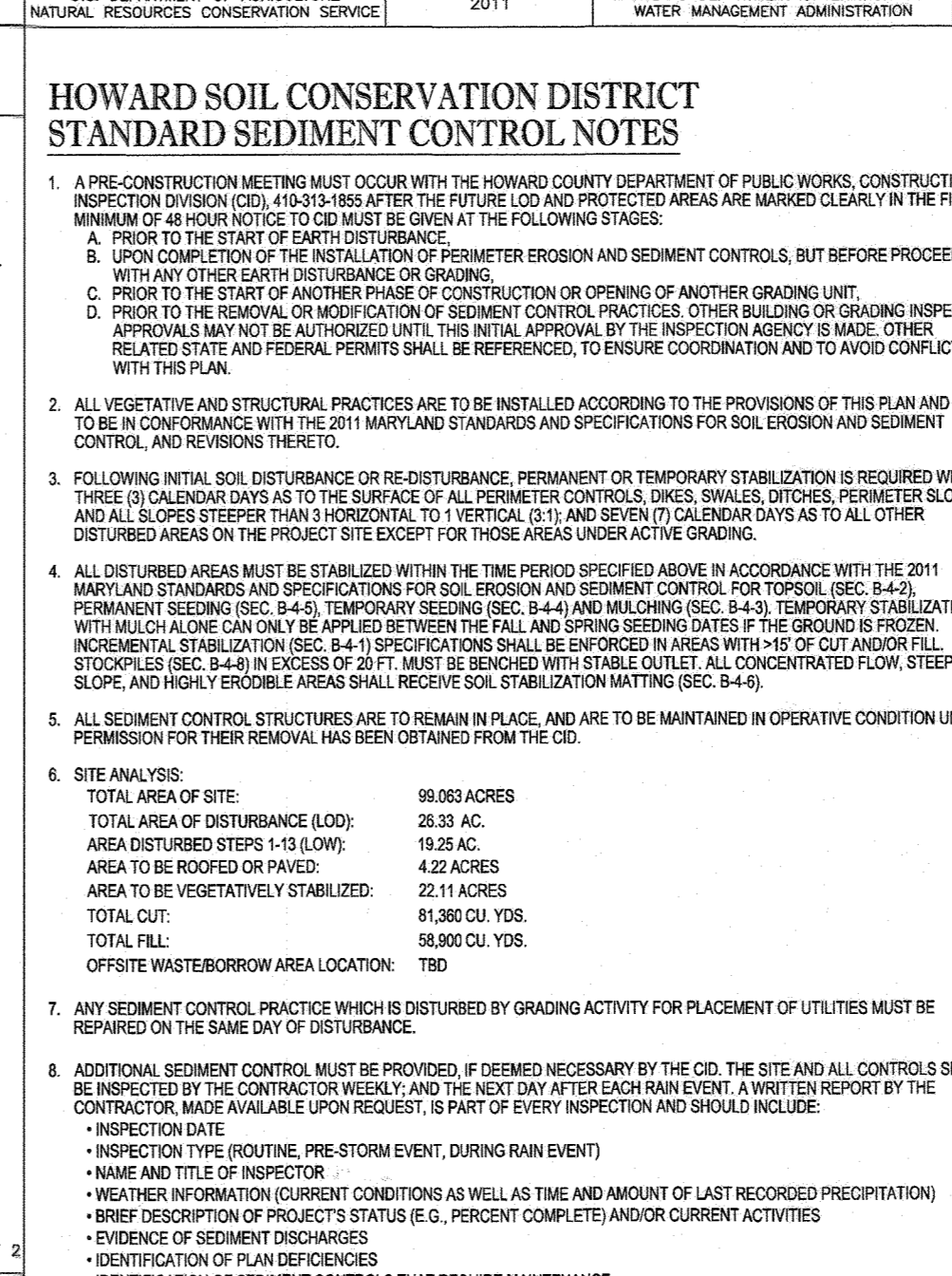
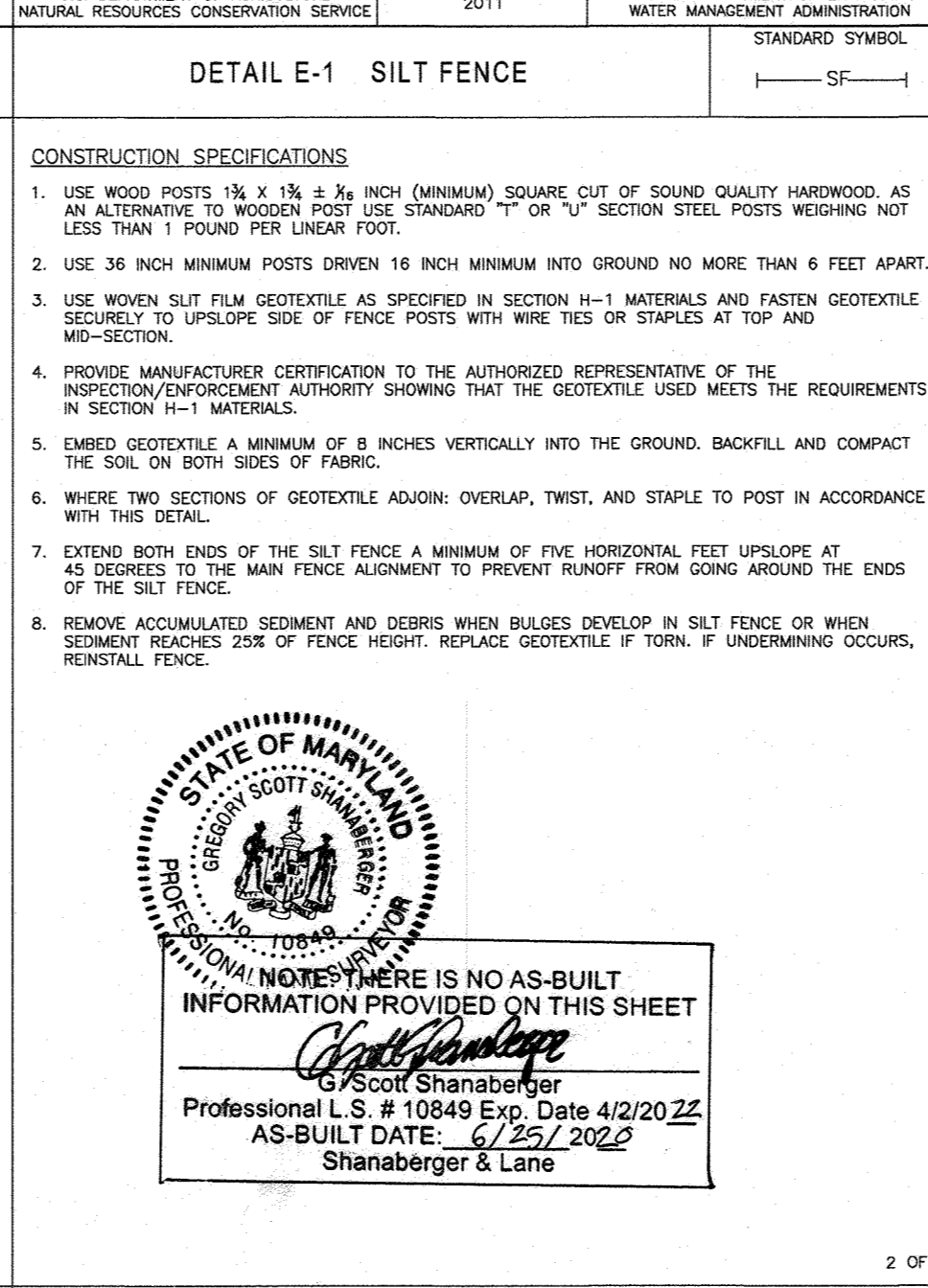
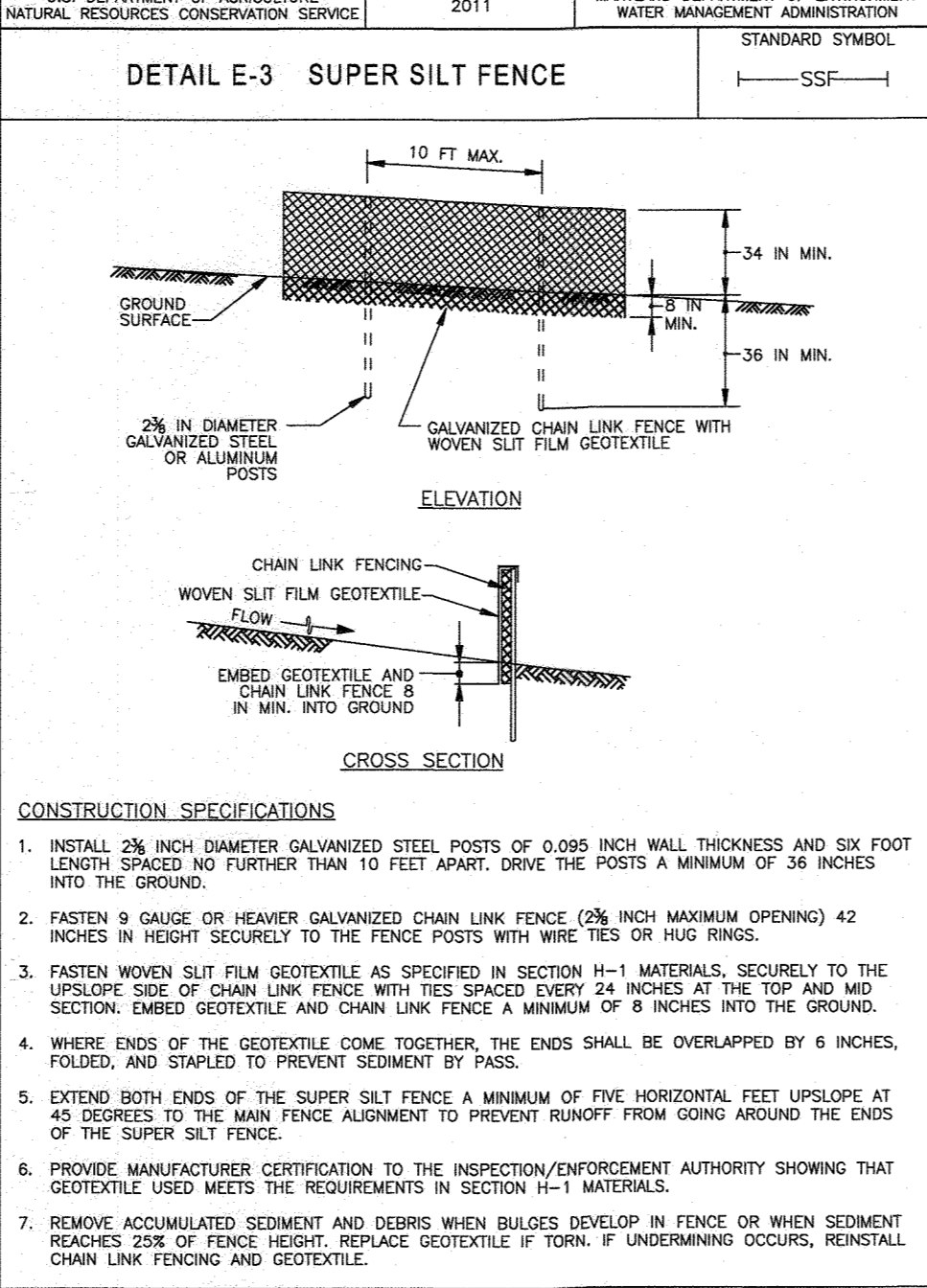
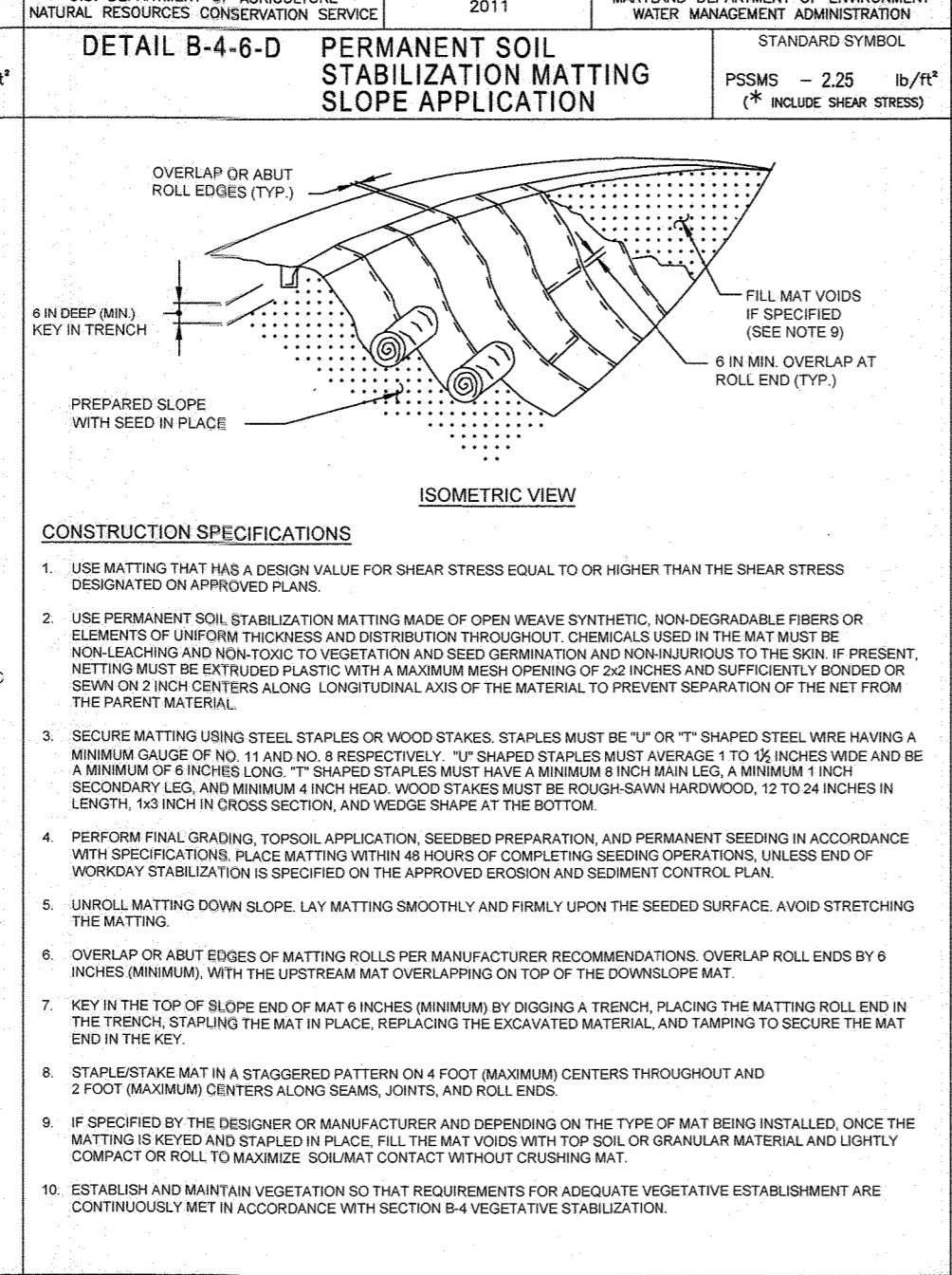
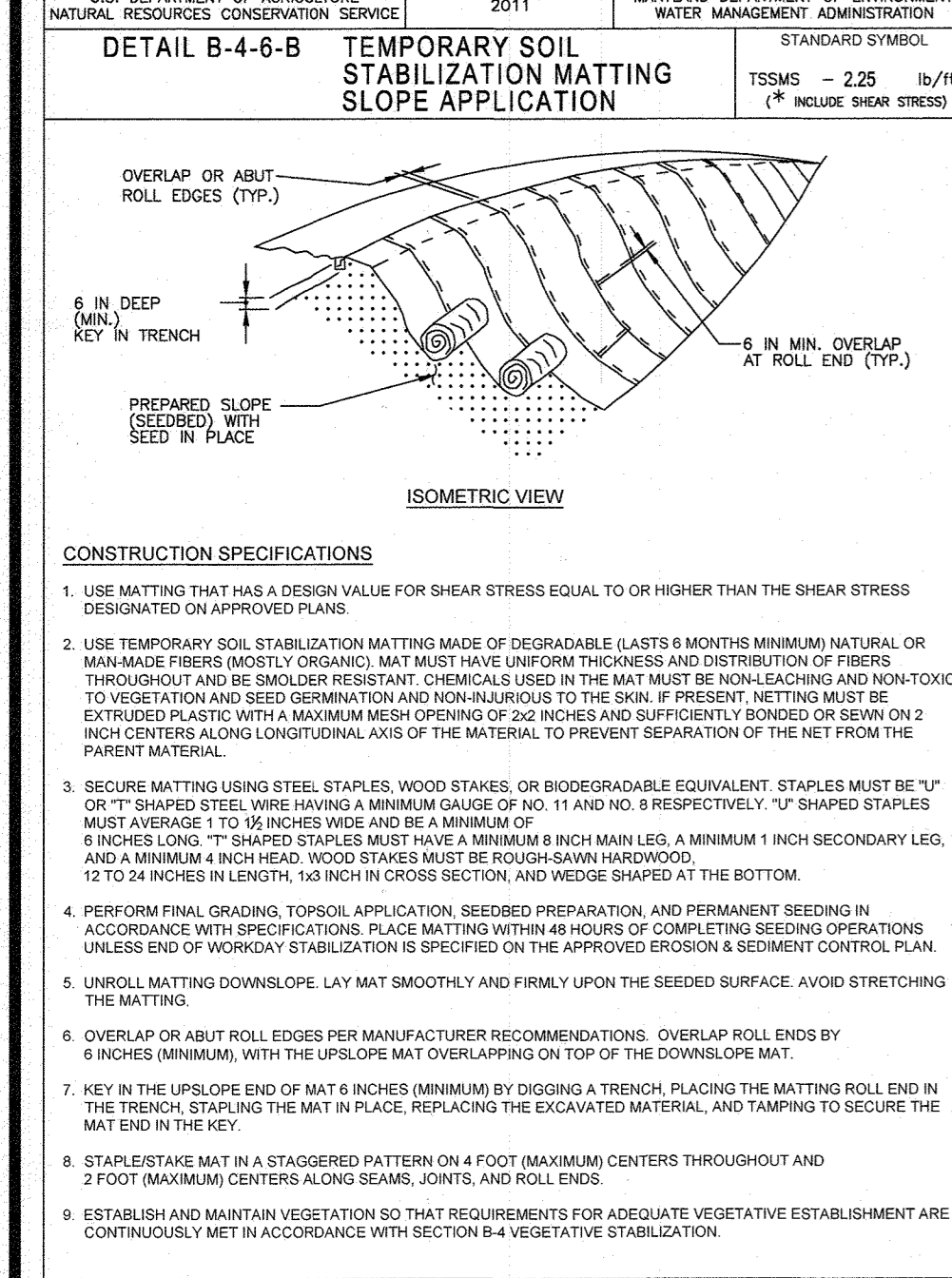
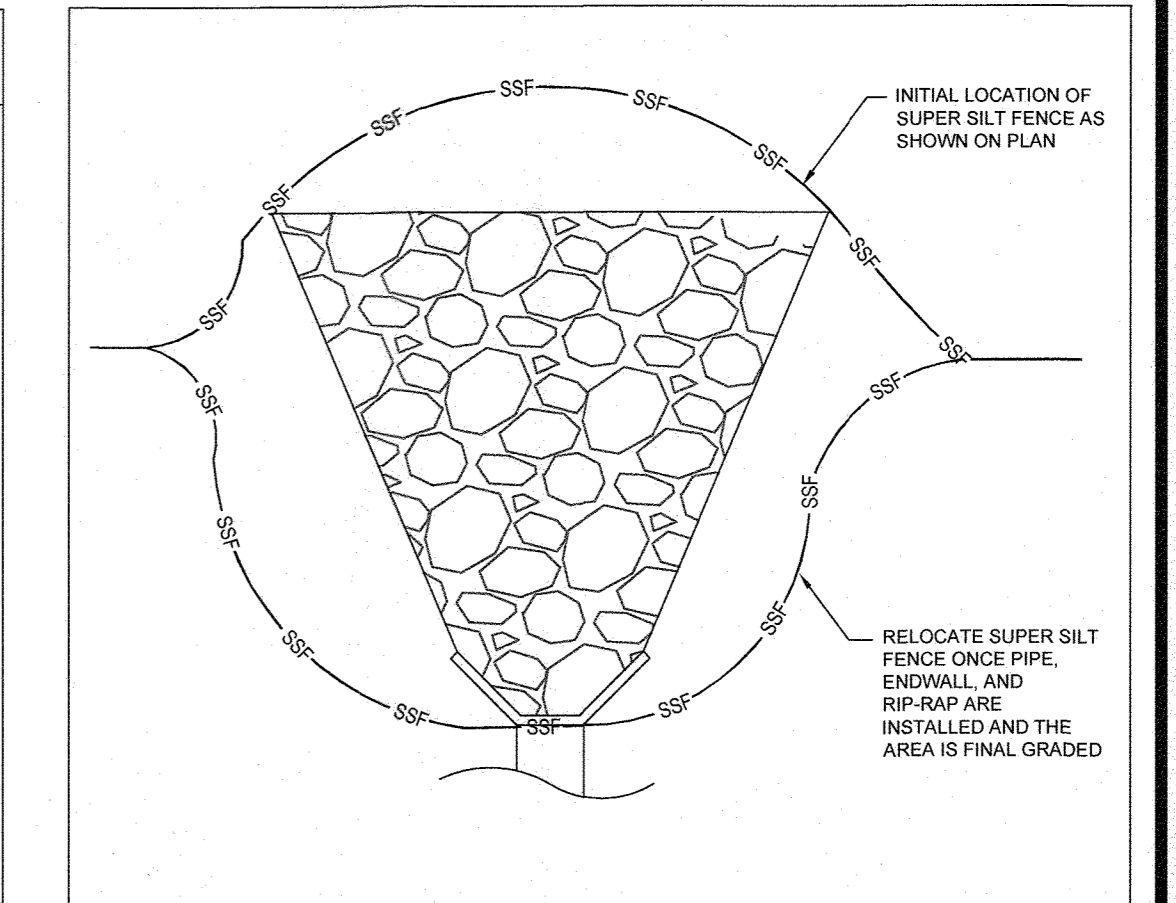
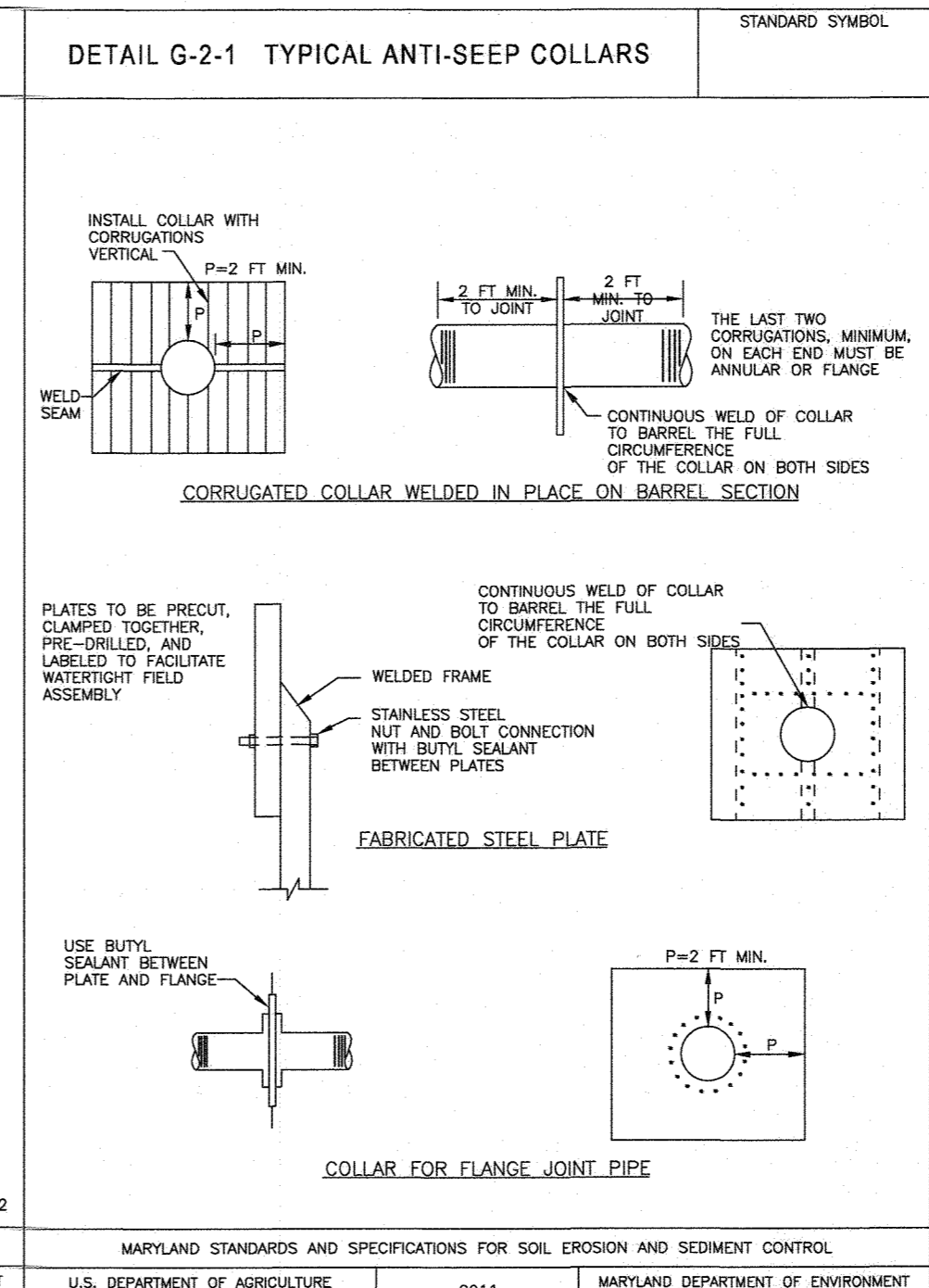
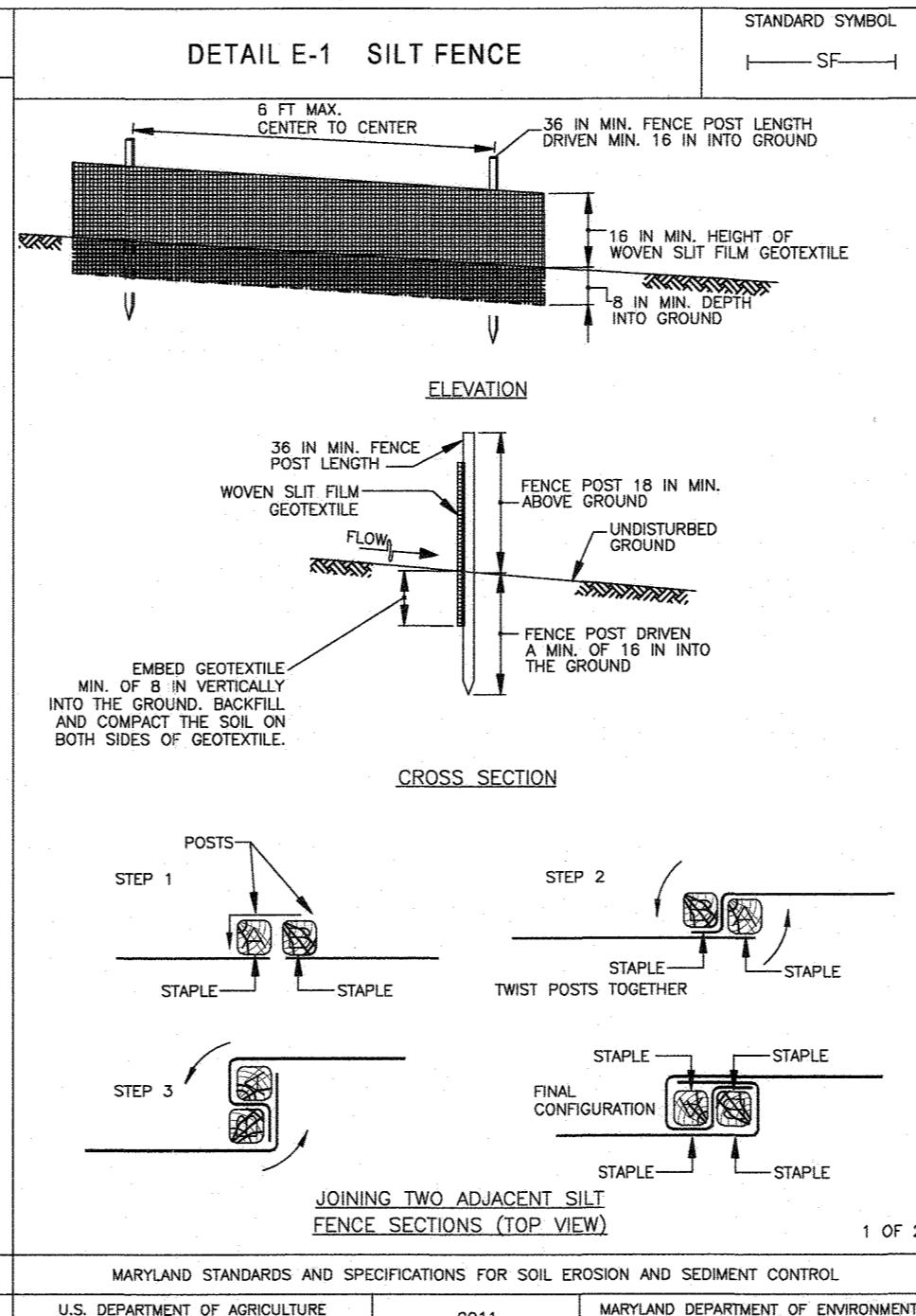
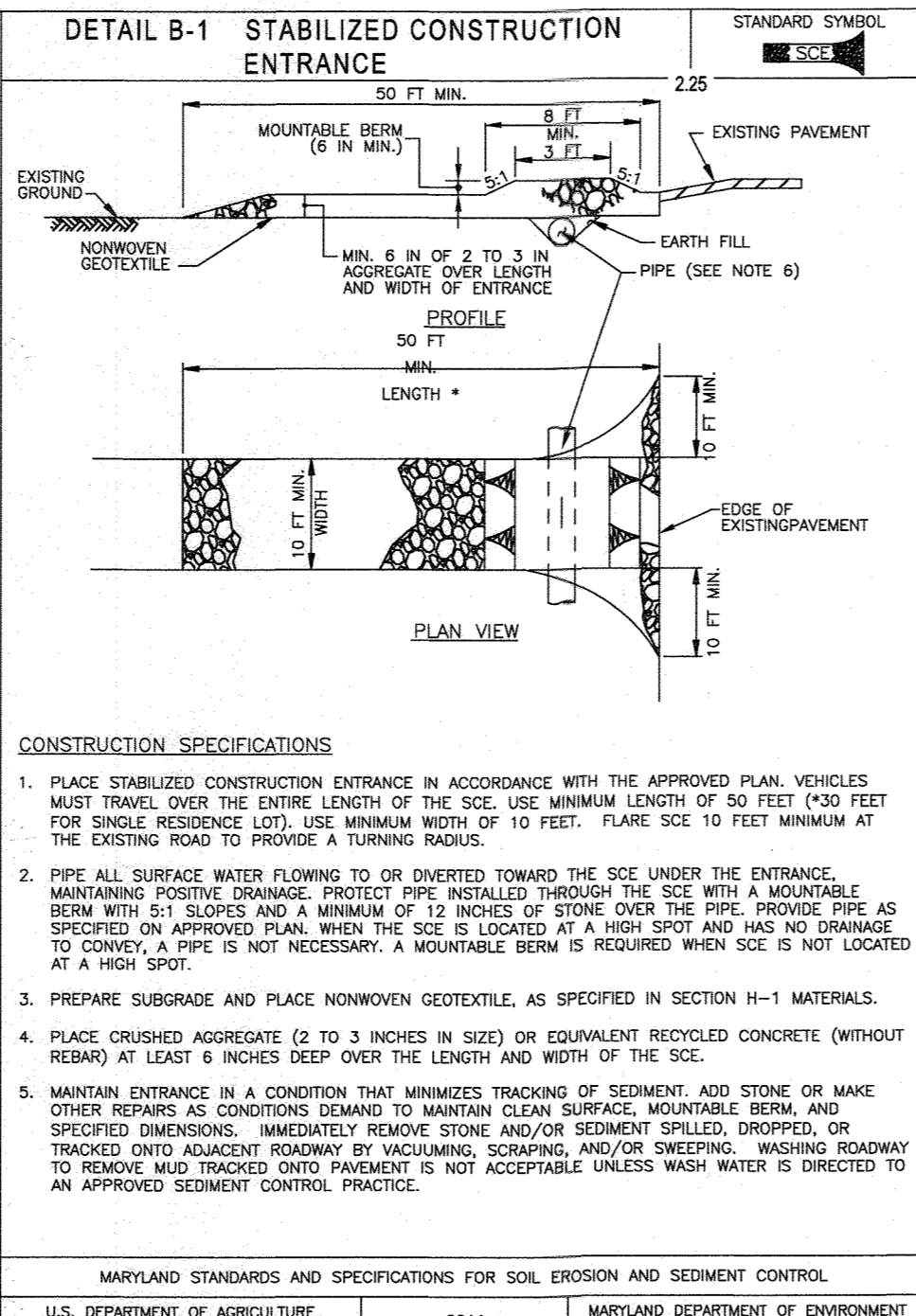
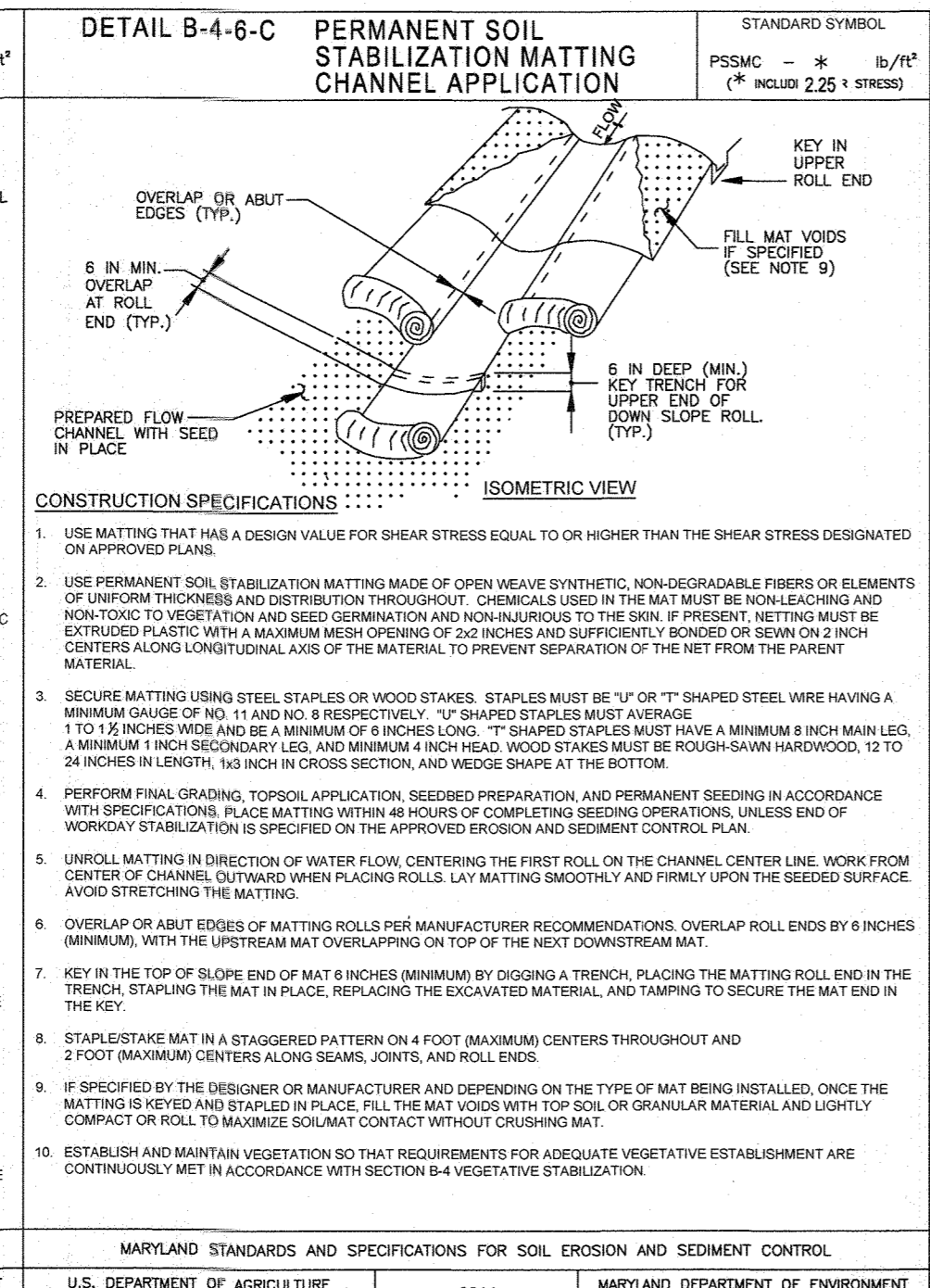
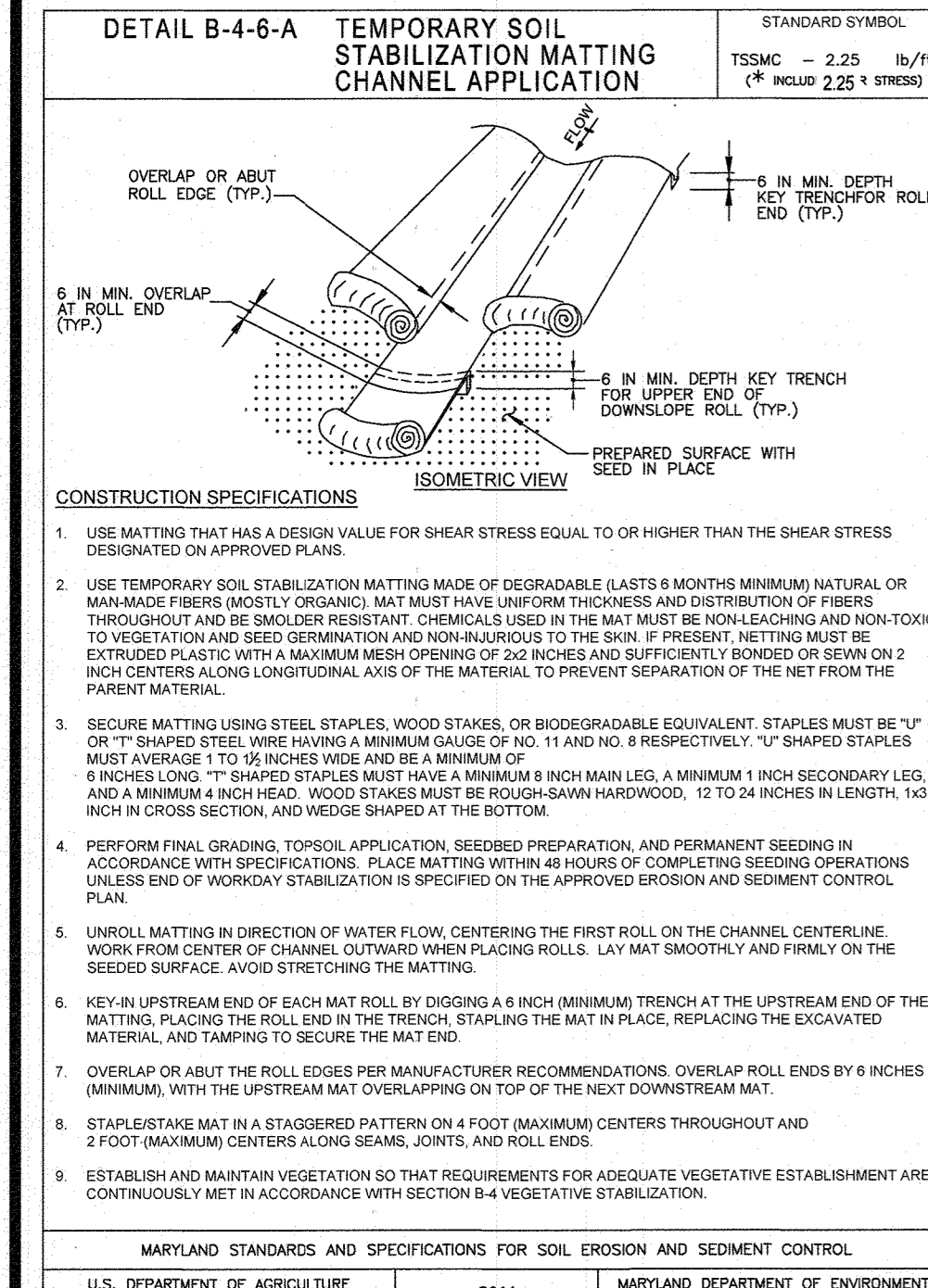
ALL INLET PROTECTION WILL BE INSTALLED AS DIRECTED BY THE INSPECTOR IN ACCORDANCE WITH THE 2014 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, PAGE E-23. THE REMOVAL OF ANY INLET PROTECTION DEVICES WILL REQUIRE APPROVAL FROM THE INSPECTOR.

- ### EROSION AND SEDIMENT CONTROL UTILITY INSTALLATION NOTES:
- CONTRACTOR SHALL OPEN ONLY THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. IF TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY, SILT FENCE SHALL BE PLACED BELOW (DOWNSLOPE OF) TRENCH.
 - PLACE ALL EXCAVATED MATERIAL ON UPHILL SIDE OF TRENCH.
 - ANY SEDIMENT CONTROLS DISTURBED BY UTILITY CONSTRUCTION ARE TO BE REPAIRED IMMEDIATELY.
 - THE CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO PROTECT PEDESTRIANS AT ALL TIMES DURING UNDERGROUND UTILITY CONSTRUCTION.

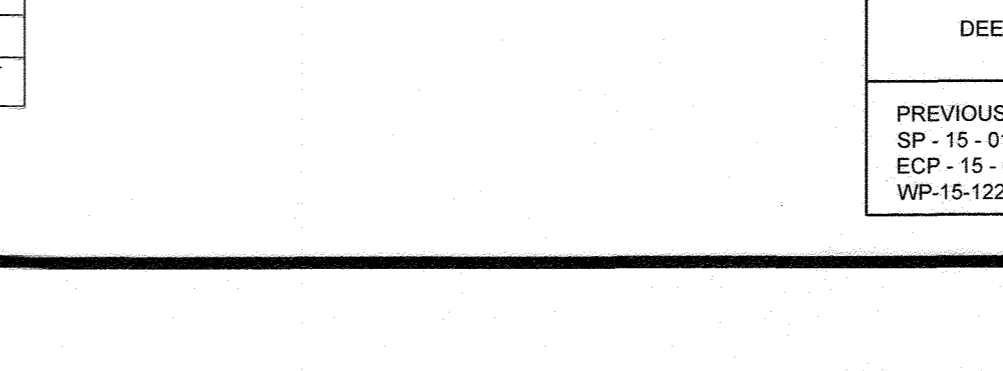
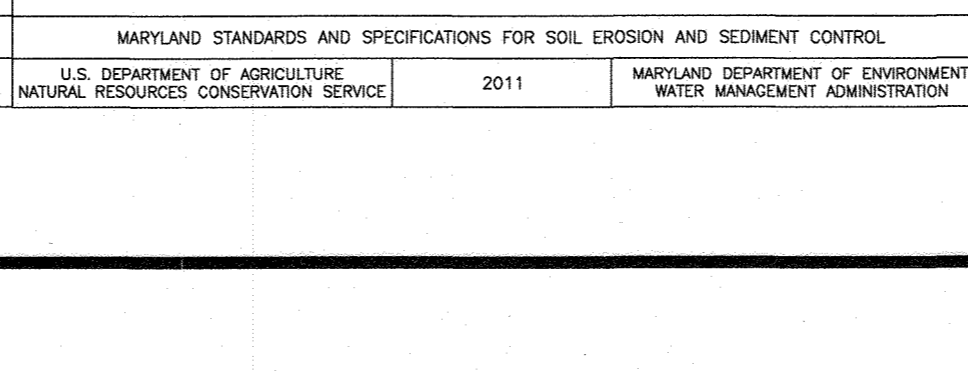
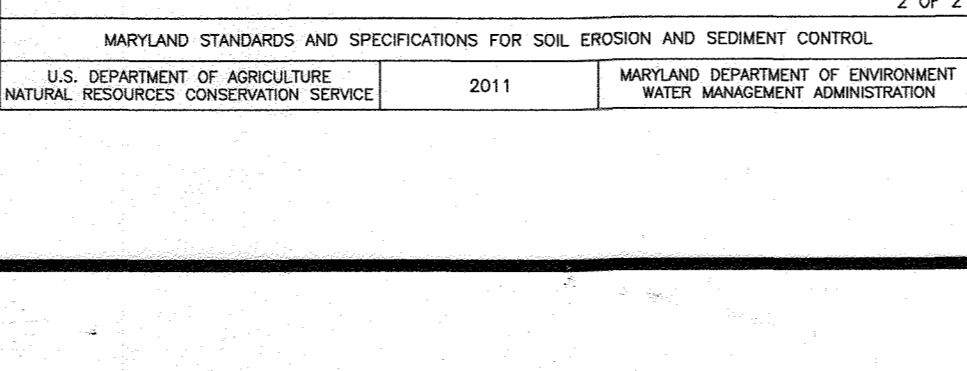
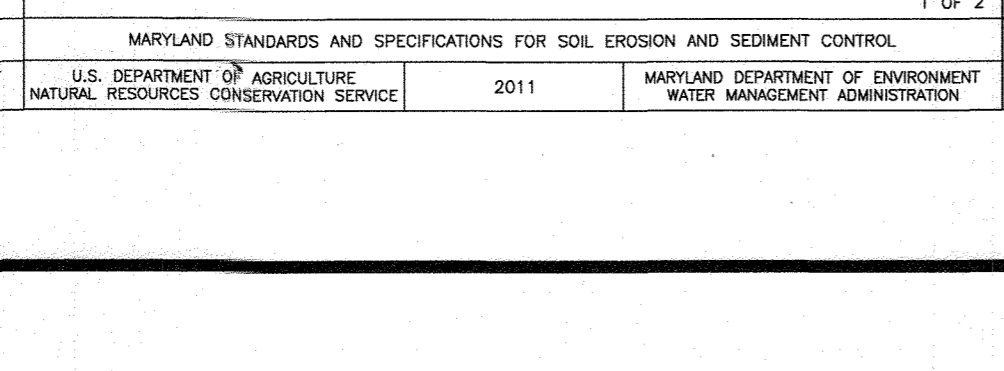
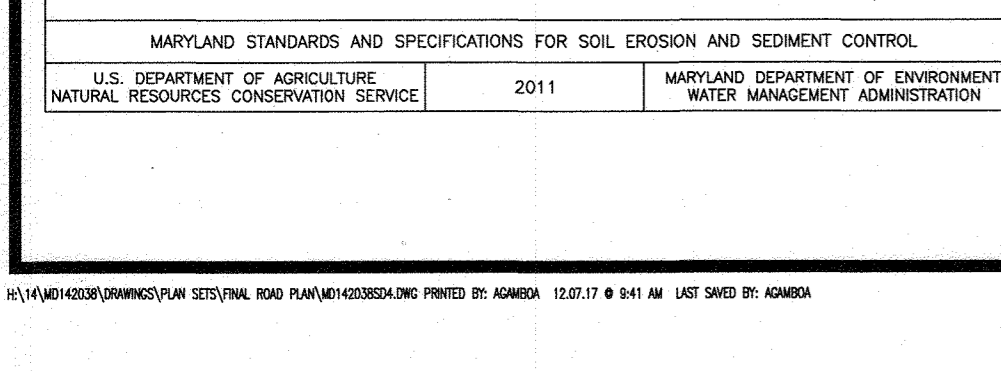
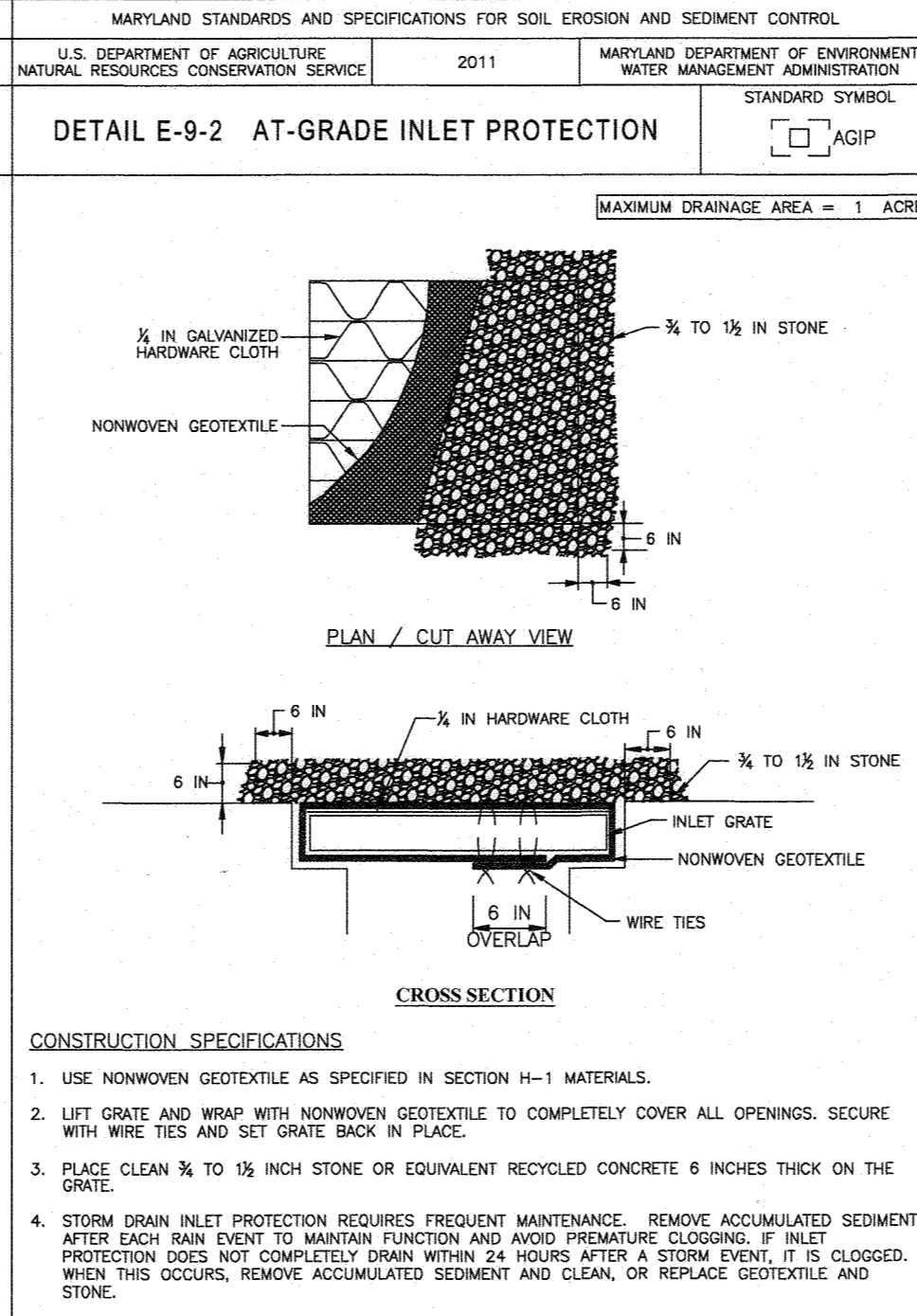
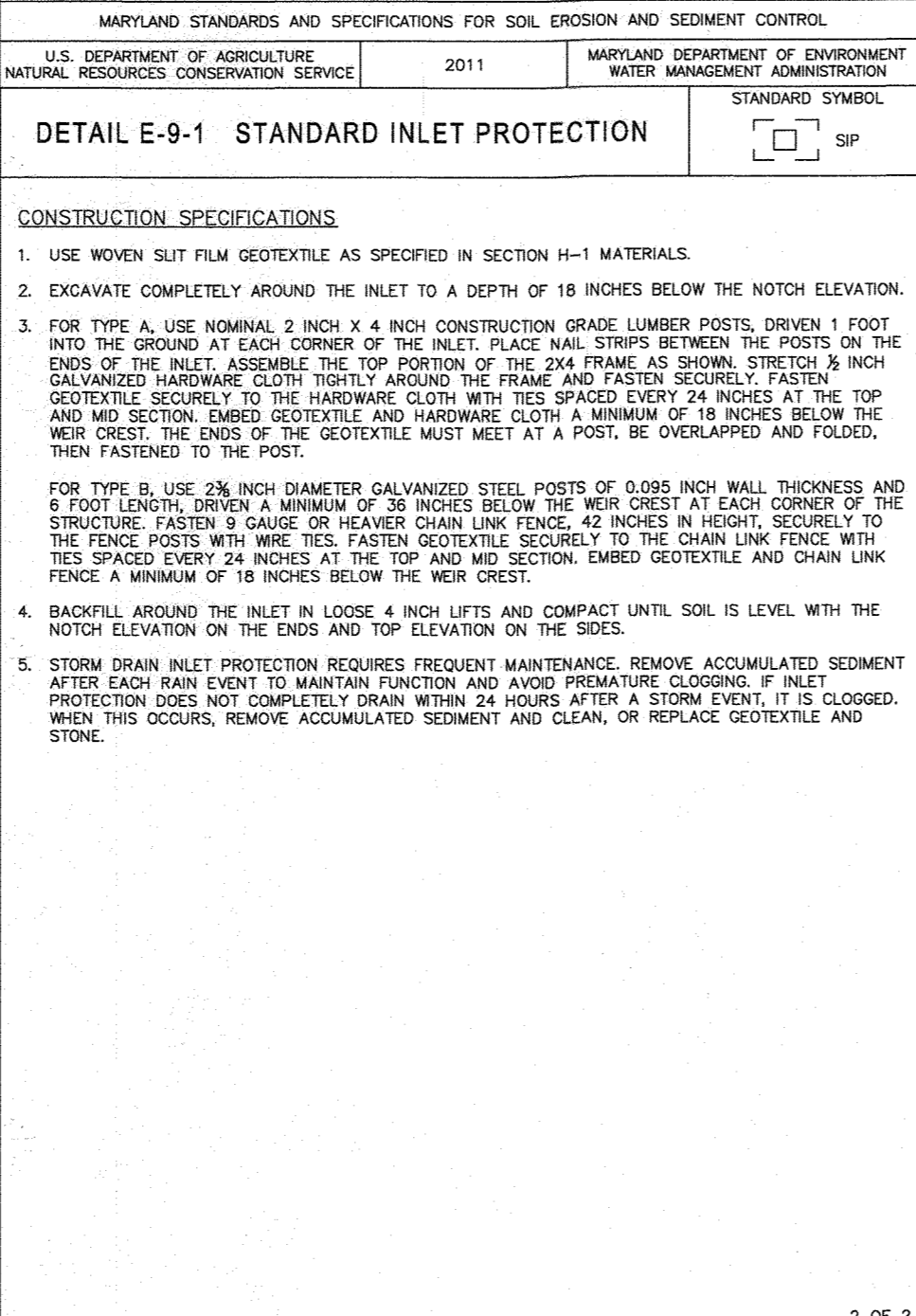
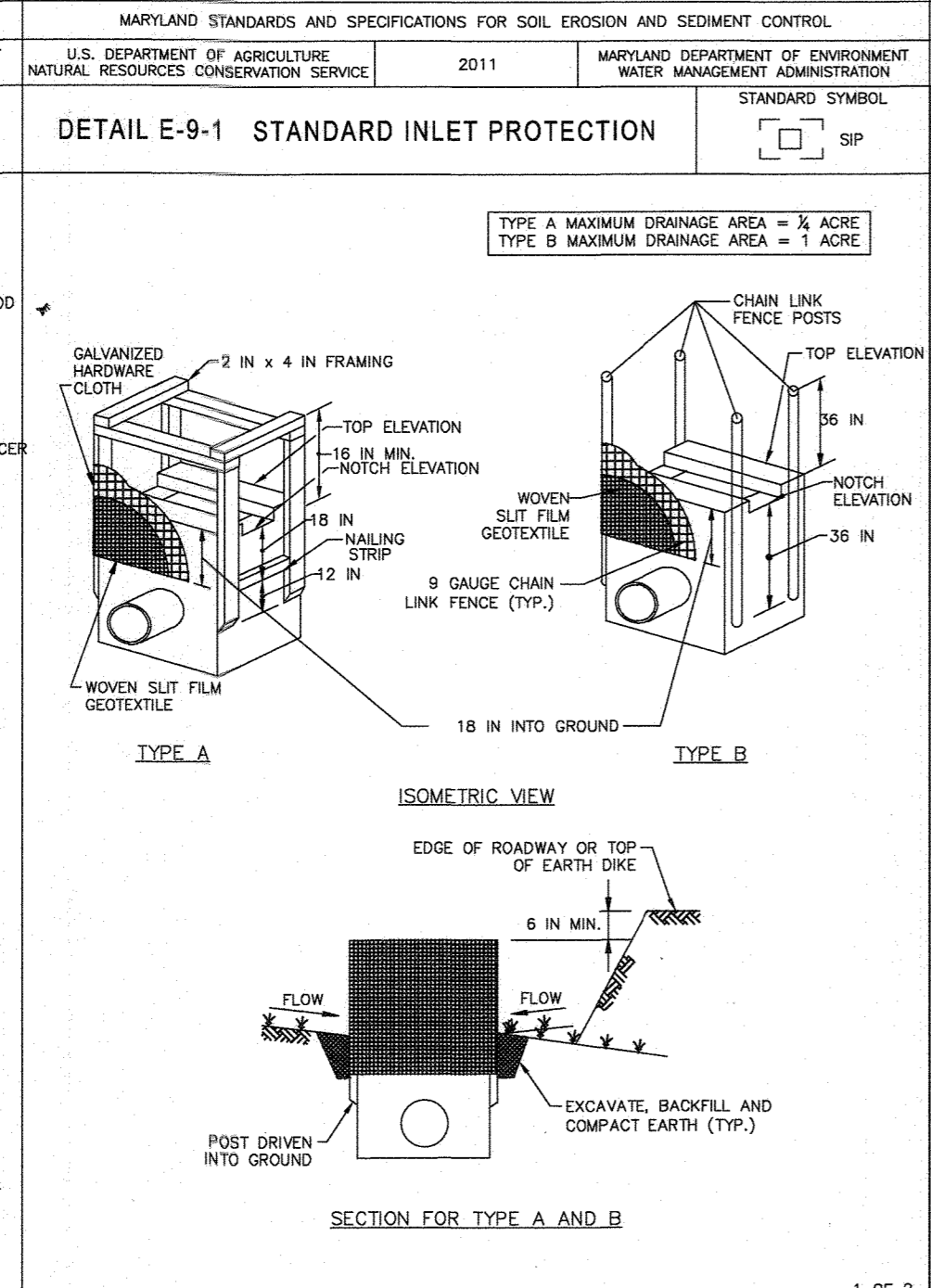
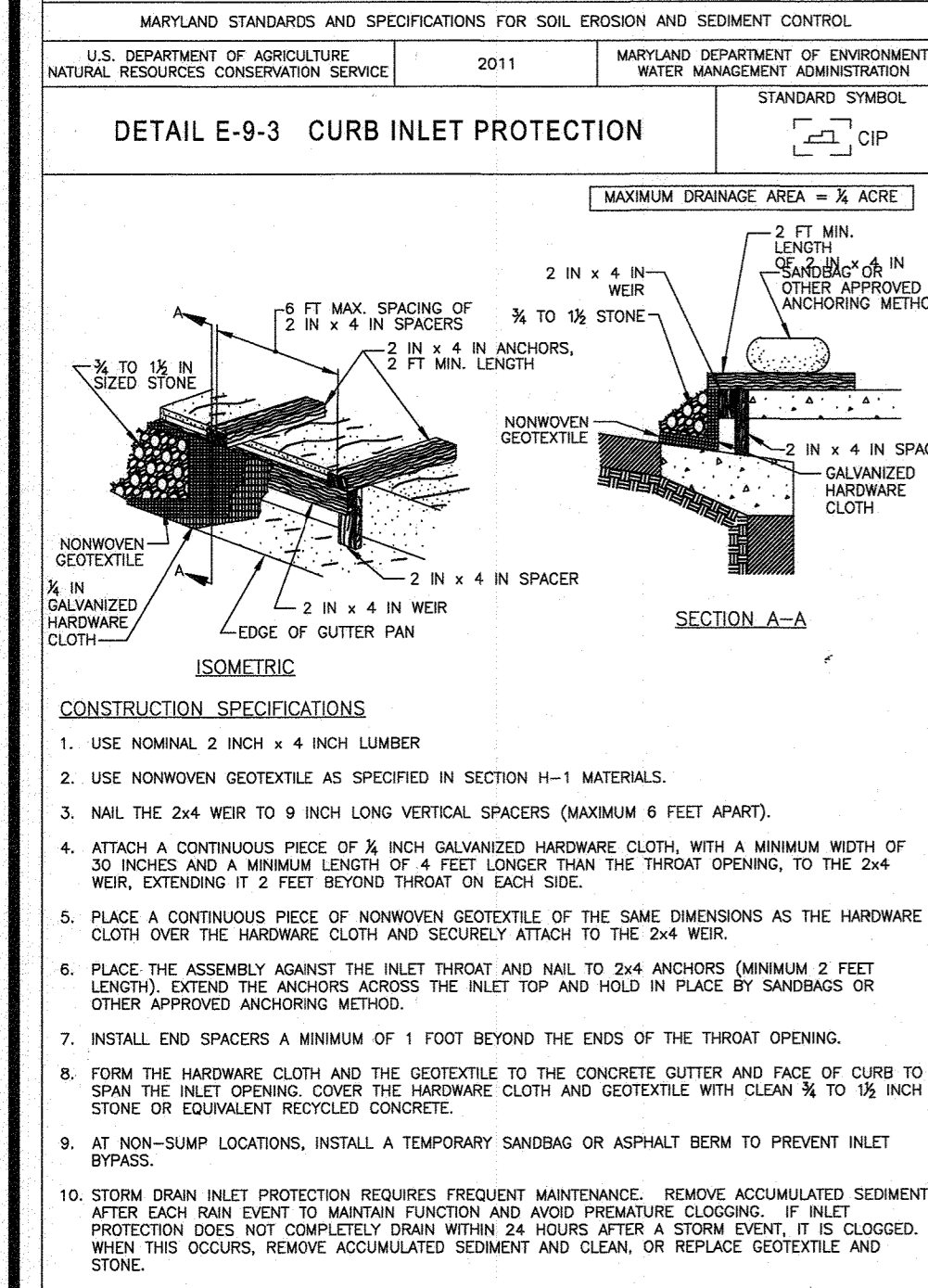
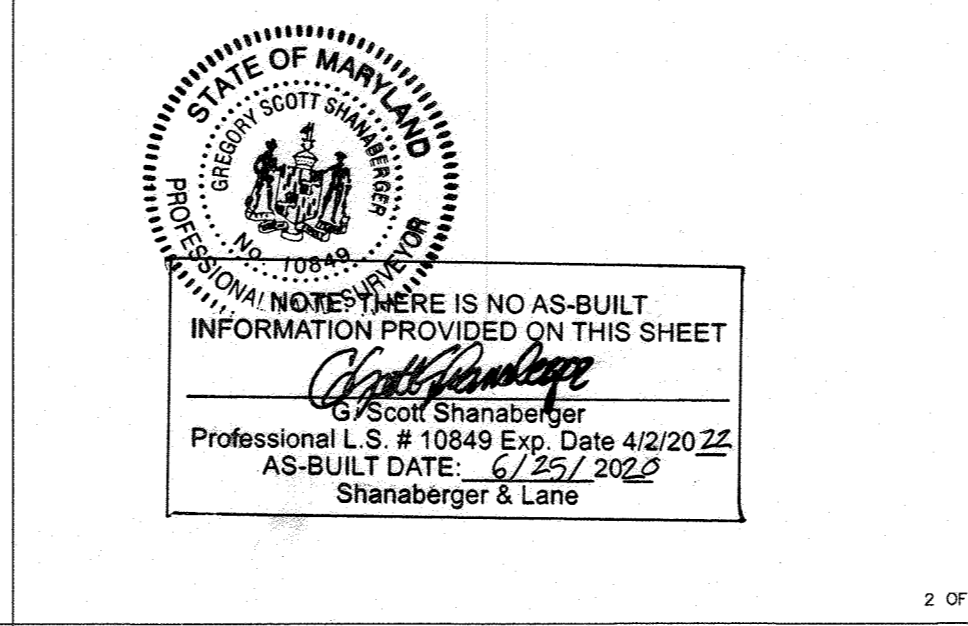


OWNERS:	ESC MILL CREEK, INC. 5074 DORSEY HALL DRIVE, SUITE 205 ELLICOTT CITY, MD 21042 TEL: (410) 720-3021 ATTN: JASON VAN KIRK	DONALD O'KEEFE 6950 HAVILAND MILL ROAD CLARKSVILLE, MD 21029 TEL: (410) 599-6941
DEVELOPER:	ESC MILL CREEK, INC. 5074 DORSEY HALL ROAD, SUITE 205 ELLICOTT CITY, MD 21042 CONTACT: JASON VAN KIRK PHONE: (410) 720-3021	
TAX MAP:	34 & 39	GRID: 19 & 6
		PARCEL: 52 & 1
		ZONED: RR-DEO
		5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

PREVIOUS FILE No. SP-15-015 WP-10-102 ECP-15-051 WP-17-106 WP-15-122



B-4-7 STANDARDS AND SPECIFICATIONS FOR HEAVY USE AREA PROTECTION
DEFINITION: THE STABILIZATION OF AREAS FREQUENTLY AND INTENSIVELY USED BY SURFACING WITH SUITABLE MATERIALS (E.G., MULCH AND AGGREGATE).
PURPOSE: TO PROVIDE A STABLE, NON-ERODING SURFACE FOR AREAS FREQUENTLY USED AND TO IMPROVE THE WATER QUALITY FROM THE RUNOFF OF THESE AREAS.
CONDITIONS WHERE PRACTICE APPLIES: THIS PRACTICE APPLIES TO INTENSIVELY USED AREAS (E.G., EQUIPMENT AND MATERIAL STORAGE, STAGING AREAS, HEAVILY USED TRAVEL LANS).
DEFINITION: THE HEAVY USE AREAS MUST BE MAINTAINED IN A CONDITION THAT MINIMIZES EROSION. THIS PRACTICE REQUIRES SUITABLE MATERIALS, AS SPECIFIED ON THE APPROVED PLANS, TO MAINTAIN A CLEAN SURFACE.
B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA PROTECTION
DEFINITION: A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.
PURPOSE: TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.
CONDITIONS WHERE PRACTICE APPLIES: STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.
DEFINITION: THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN. THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BRANCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.
MAINTENANCE: THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE ESTABLISHMENT. STOCKPILES MUST BE MAINTAINED TO NOT EXCEED A HEIGHT OF 2:1 TO THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR SLOPES 3:1 OR MORE, OR 15 FEET FOR SLOPES OF 4:1 SLOPES, BRANCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.



PREVIOUS EDITIONS

REV	DATE	COMMENT	BY

FINAL ROAD CONSTRUCTION PLAN

FOR CRAWFORD SUBDIVISION

LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

LOCATION OF SITE
6780 HAVILAND MILL ROAD
TAX MAP 34, GRID 19 & PARCEL 52
TAX MAP 39, GRID 6 & PARCEL 1
5TH ELECTION DISTRICT
HOWARD COUNTY, MD

BOHLER ENGINEERING

901 DULANEY WAY ROAD,
SUITE 801
TOWSON, MARYLAND 21284
Phone: (410) 821-7987
Fax: (410) 821-7987
www.BohlerEngineering.com

APPROVED DEPARTMENT OF PUBLIC WORKS
DATE: 12/19/17
CHIEF: BUREAU OF HIGHWAYS

APPROVED DEPARTMENT OF PLANNING AND ZONING
DATE: 1-19-18
CHIEF: DIVISION OF LAND DEVELOPMENT
DATE: 1-18-18

OWNERS:
ESG MILL CREEK, INC.
5074 DORSEY HALL ROAD, SUITE 205
ELLIOTT CITY, MD 21042
TEL: (410) 720-3021
ATTN: JASON VAN KIRK

DEVELOPER:
ESG MILL CREEK, INC.
5074 DORSEY HALL ROAD, SUITE 205
ELLIOTT CITY, MD 21042
CONTACT: JASON VAN KIRK
PHONE: (410) 720-3021

APPROVED DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DATE: 1-18-18
CHIEF: DEVELOPMENT ENGINEERING DIVISION

DEED # 05867/00532 & 05868/00490
PARCEL: 52 & 1
5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

BOHLER ENGINEERING

CONSULTING ENGINEERS
WARREN, NJ
OFFICES:
BOWLE, MD
TOWSON, MD
HUMPHREYS, VA
VIRGINIA BEACH, VA
BALTIMORE, MD
HARRISBURG, PA
TAMPA, FL
PHILADELPHIA, PA

PROJECT MANAGERS
SURVEYORS
ENVIRONMENTAL CONSULTANTS
LANDSCAPE ARCHITECTS

PROFESSIONAL CERTIFICATION
I, BRANDON R. ROWE, HEREBY CERTIFY THAT THIS DOCUMENT WAS PREPARED OR APPROVED BY ME, AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 45868. EXPIRATION DATE: 7/31/2019.

REVISIONS

REV	DATE	COMMENT	BY

PROJECT NO.: MD142038
DRAIN BY: AVG
CHECKED BY: BRR
DATE: 12/01/17
SCALE: AS SHOWN
CAD I.D.: SD

PROJECT:
FINAL ROAD CONSTRUCTION PLAN

BOHLER ENGINEERING

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(410) 821-7987 (MD) (410) 241-1181 (DC) (1-800-257-7777) (VA) (800-562-7001) (MD) (1-800-257-7777) (DC) (1-800-257-8509)

BOHLER ENGINEERING

FINAL ROAD CONSTRUCTION PLAN

FOR CRAWFORD SUBDIVISION

LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

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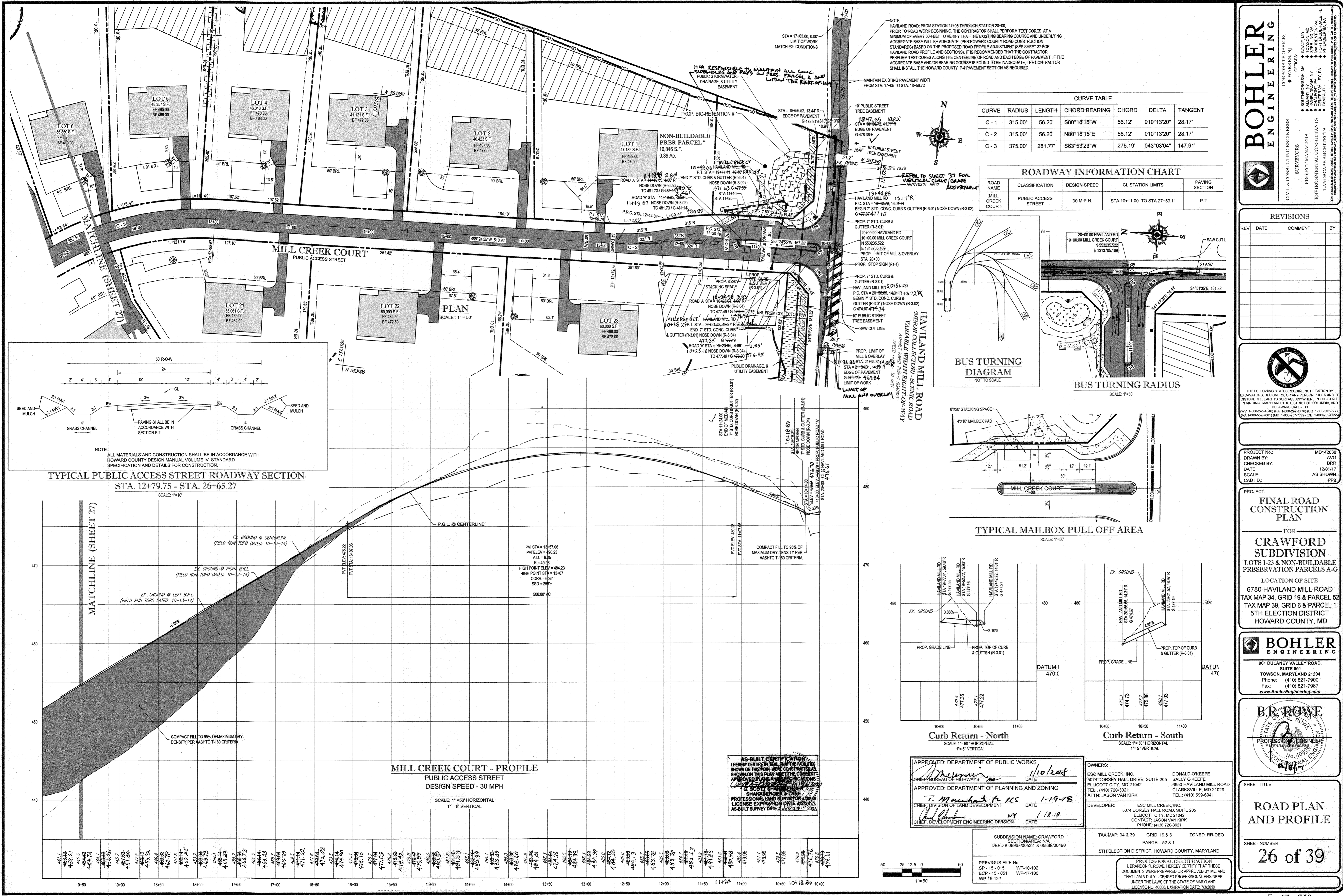
APPROVED DEPARTMENT OF PUBLIC WORKS
DATE: 12/19/17
CHIEF: BUREAU OF HIGHWAYS

APPROVED DEPARTMENT OF PLANNING AND ZONING
DATE: 1-19-18
CHIEF: DIVISION OF LAND DEVELOPMENT

BOHLER ENGINEERING

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

SHEET NUMBER:
24 of 39



CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C-1	315.00'	56.20'	S80°18'15"W	56.12'	010°13'20"	28.17'
C-2	315.00'	56.20'	N80°18'15"E	56.12'	010°13'20"	28.17'
C-3	375.00'	281.77'	S63°53'23"W	275.19'	043°03'04"	147.91'

ROAD NAME	CLASSIFICATION	DESIGN SPEED	CL STATION LIMITS	PAVING SECTION
MILL CREEK COURT	PUBLIC ACCESS STREET	30 M.P.H.	STA 10+11.00 TO STA 27+65.11	P-2

BOHLER ENGINEERING

CONSULTING OFFICE:
WARREN, NJ

PROJECT MANAGERS:
SOUTH BRIDGE, MA
TOWSON, MD
HARRISBURG, PA
CHILMARK, MA
LANCASTER, PA
TAMPA, FL

ENVIRONMENTAL CONSULTANTS:
LANCASTER, PA

LANDSCAPE ARCHITECTS:
LANCASTER, PA

REGISTERED PROFESSIONAL ENGINEER
STATE OF MARYLAND
LICENSE NO. 49808, EXPIRATION DATE: 7/31/2019

REV	DATE	COMMENT	BY

BOHLER ENGINEERING

THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATES OF VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE: CALL 1-800-245-4640 (PA) 1-800-242-1776 (DC) 1-800-257-7777 (VA) 1-800-652-7001 (MD) 1-800-257-7777 (DE) 1-800-282-8550

PROJECT No.:	MD142038
DRAWN BY:	AVG
CHECKED BY:	BRR
DATE:	10/01/17
SCALE:	AS SHOWN
CAD I.D.:	PPF

FINAL ROAD CONSTRUCTION PLAN

FOR
CRAWFORD SUBDIVISION

LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

LOCATION OF SITE
6780 HAVILAND MILL ROAD
TAX MAP 34, GRID 19 & PARCEL 52
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5TH ELECTION DISTRICT
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B.R. ROWE

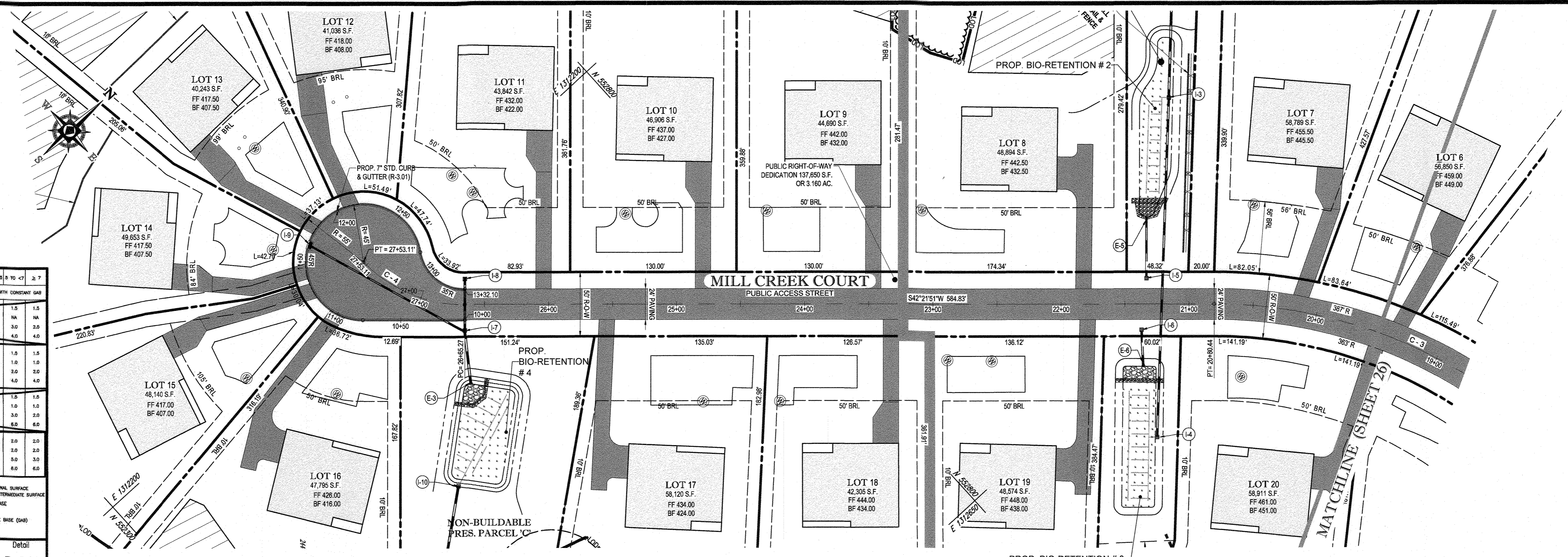
PROFESSIONAL ENGINEER
STATE OF MARYLAND
LICENSE NO. 49808, EXPIRATION DATE: 7/31/2019

ROAD PLAN AND PROFILE

SHEET TITLE:
26 of 39

SHEET NUMBER:

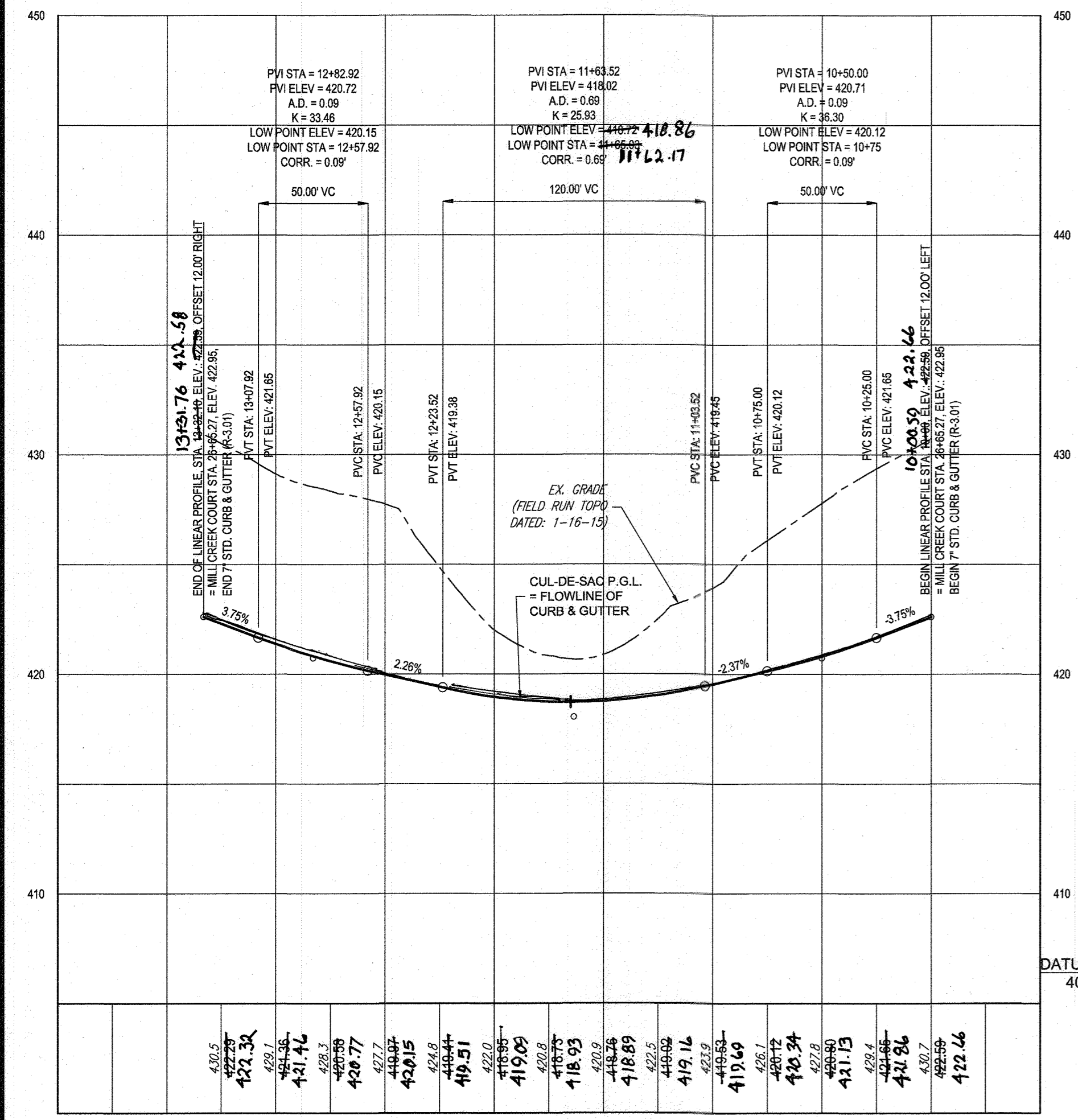
CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C-3	375.00'	281.77'	S63°53'23"W	275.19'	043°03'04"	147.91'
C-4	110.91'	87.83'	N65°03'07"E	85.56'	045°22'31"	46.37'



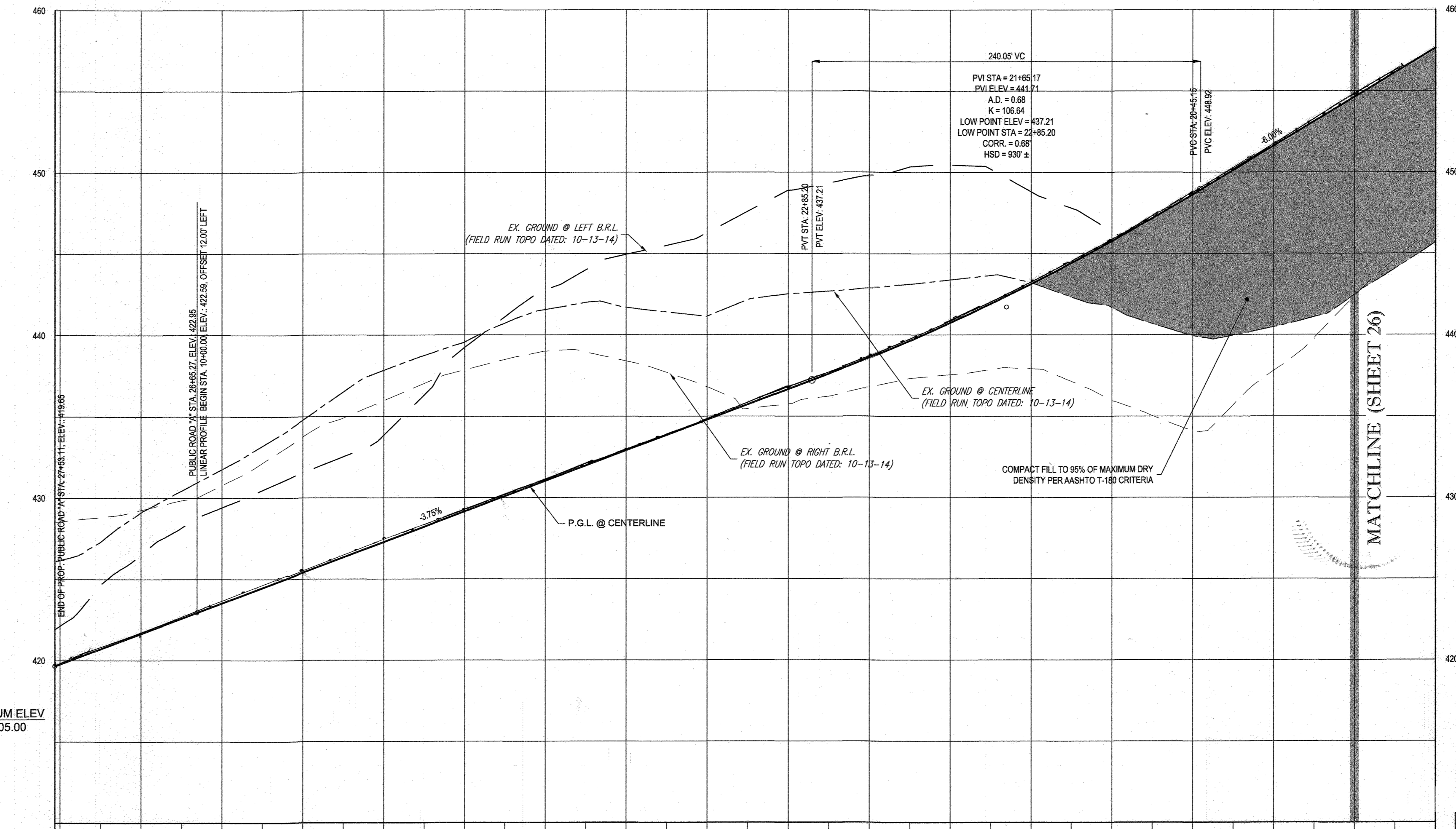
SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)	3 TO 4.5	4.5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 12
P-1	RESIDENTIAL	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
P-2	RESIDENTIAL	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
P-3	RESIDENTIAL	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
P-4	RESIDENTIAL	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

Notes:
 1) ALL SURFACE LAYERS SHALL BE PLACED IN APPROXIMATE COMPACTED LIFT THICKNESS...
 2) ALL SURFACE LAYERS SHALL BE PLACED IN APPROXIMATE COMPACTED LIFT THICKNESS...
 3) ALL SURFACE LAYERS SHALL BE PLACED IN APPROXIMATE COMPACTED LIFT THICKNESS...
 4) ALL SURFACE LAYERS SHALL BE PLACED IN APPROXIMATE COMPACTED LIFT THICKNESS...

Howard County, Maryland
 Department of Public Works
 Paving Sections P-1 to P-4
 R-2.01



CUL-DE-SAC LINEAR PROFILE
 SCALE: 1" = 50' HORIZONTAL
 1" = 5' VERTICAL



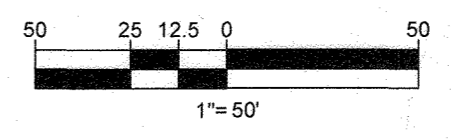
MILL CREEK COURT - PROFILE
 PUBLIC ACCESS STREET
 DESIGN SPEED - 30 MPH

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

SUBDIVISION NAME: CRAWFORD
 SECTION/AREA: N/A
 DEED # 05957/00532 & 05958/00490

OWNERS:
 ESC MILL CREEK, INC.
 5074 DORSEY HALL ROAD, SUITE 205
 ELLICOTT CITY, MD 21042
 CONTACT: JASON VAN KIRK
 PHONE: (410) 720-3021

DEVELOPER:
 ESC MILL CREEK, INC.
 5074 DORSEY HALL ROAD, SUITE 205
 ELLICOTT CITY, MD 21042
 CONTACT: JASON VAN KIRK
 PHONE: (410) 720-3021



BOHLER ENGINEERING
 CORPORATE OFFICE: WARREN, NJ
 SURVEYORS: SOUTH BRIDGE, MA; BOWEN, MD; WESTPORT, MA; WESTPORT, MA; WESTPORT, MA
 PROJECT MANAGERS: WESTPORT, MA; WESTPORT, MA; WESTPORT, MA
 ENVIRONMENTAL CONSULTANTS: WESTPORT, MA; WESTPORT, MA; WESTPORT, MA
 LANDSCAPE ARCHITECTS: WESTPORT, MA; WESTPORT, MA; WESTPORT, MA

REVISIONS				
REV	DATE	COMMENT	BY	

THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH SURFACE ANYWHERE IN THE STATES OF VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE: CALL 811
 (VA) 1-800-245-4648 (PA) 1-800-245-1776 (DC) 1-800-257-7777 (MD) 1-800-362-7001 (MD) 1-800-257-7777 (DE) 1-800-262-8859

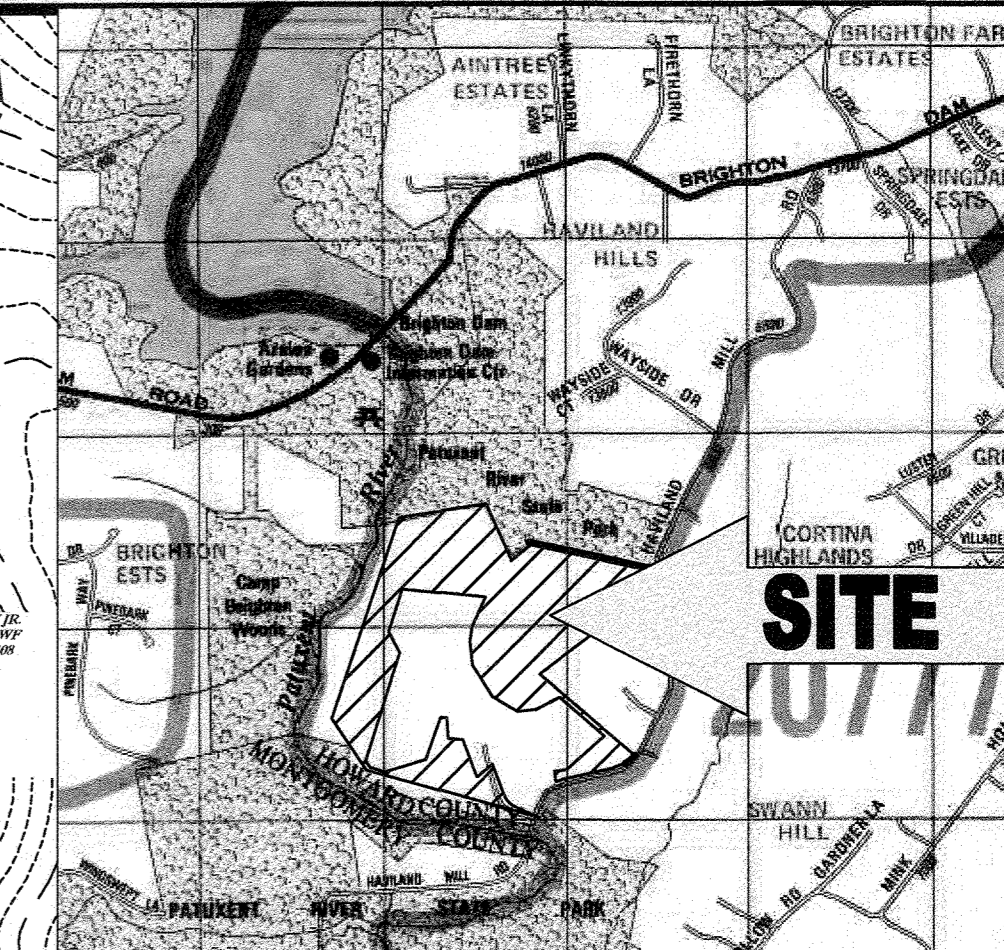
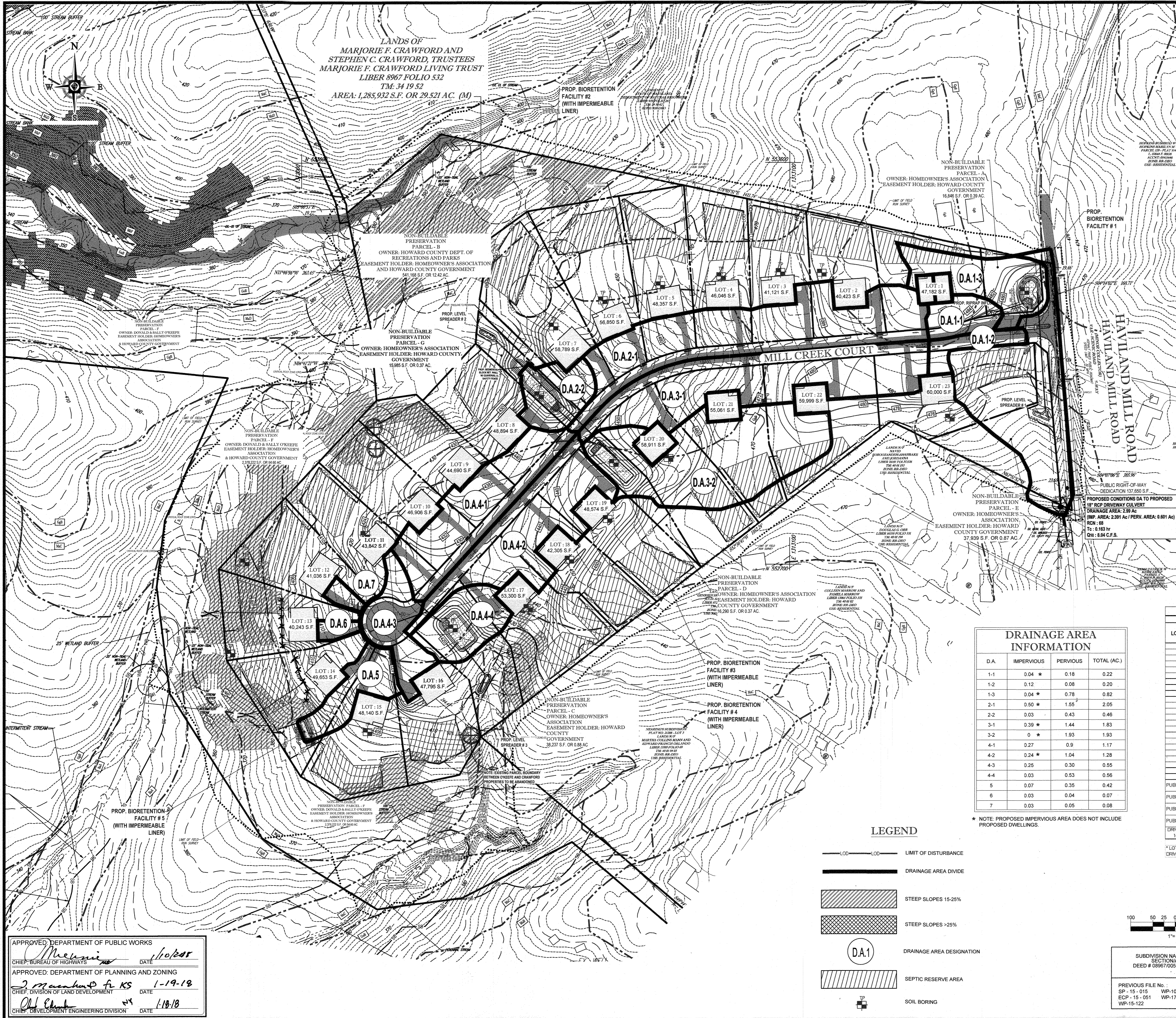
PROJECT No.: MD142038
 DRAWN BY: AVG
 CHECKED BY: BRR
 DATE: 12/01/17
 SCALE: AS SHOWN
 CAD I.D.: PFB

FINAL ROAD CONSTRUCTION PLAN
 FOR
CRAWFORD SUBDIVISION
 LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G
 LOCATION OF SITE
 6780 HAVILAND MILL ROAD
 TAX MAP 34, GRID 19 & PARCEL 52
 TAX MAP 39, GRID 6 & PARCEL 1
 5TH ELECTION DISTRICT
 HOWARD COUNTY, MD

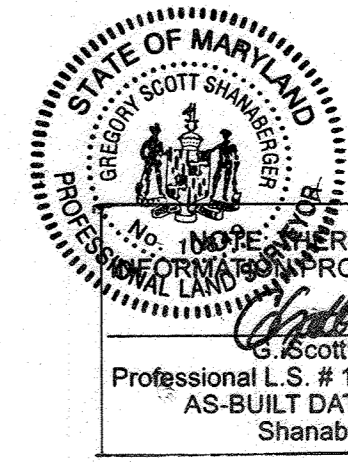
BOHLER ENGINEERING
 901 DULANEY VALLEY ROAD, SUITE 801
 TOWSON, MARYLAND 21284
 Phone: (410) 821-7900
 Fax: (410) 821-7987
 www.BohlerEngineering.com

B.R. ROWE
 PROFESSIONAL ENGINEERS
 LICENSE EXPIRATION DATE: 6/30/22
 AS-BUILT SURVEY DATE: June 22, 2020

ROAD PLAN AND PROFILE
 SHEET NUMBER:
27 of 39



VICINITY MAP
COPYRIGHT ADC THE MAP PEOPLE
PERMIT USE NO. 20602153-5
SCALE: 1"=200'
ADC MAP COORDINATES: 5051/A1



THERE IS NO AS-BUILT
PROVIDED ON THIS SHEET
Scott Shanaberger
Professional L.S. # 10849 Exp. Date 4/20/22
AS-BUILT DATE: 6/25/2022
Shanaberger & Lane

BOHLER ENGINEERING

CORPORATE OFFICE:
WARREN, NJ

OFFICES:
BOWLING GREEN, OH
DENVER, CO
GAITHERSBURG, MD
HARRISBURG, PA
KANSAS CITY, MO
PHILADELPHIA, PA
PITTSBURGH, PA
SPRINGFIELD, MA
TAMPA, FL

PROJECT MANAGERS
SURVEYORS
ENVIRONMENTAL CONSULTANTS
LANDSCAPE ARCHITECTS

CIVIL & CONSULTING ENGINEERS

REVISIONS

REV	DATE	COMMENT	BY

THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATES OF VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE: CALL: 800-245-4848 (PA 1-800-245-4776) (DC 1-800-257-7777) (VA 1-800-552-7001) (DE 1-800-582-8559)

PROJECT NO.: MD142038
DRAWN BY: AVG
CHECKED BY: BRR
DATE: 09/29/17
SCALE: AS NOTED
CAD ID: DAZ

PROJECT:
FINAL ROAD CONSTRUCTION PLAN

FOR
CRAWFORD SUBDIVISION
LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

LOCATION OF SITE
6780 HAVILAND MILL ROAD
TAX MAP 34, GRID 19 & PARCEL 52
5TH ELECTION DISTRICT
HOWARD COUNTY, MD

901 DULANEY VALLEY ROAD, SUITE 801
TOWSON, MARYLAND 21204
Phone: (410) 821-7900
Fax: (410) 821-7967
www.BohlerEngineering.com

PROFESSIONAL ENGINEER
B.R. ROWE
No. 41038
10/1/2016

SHEET TITLE:
STORMWATER MANAGEMENT/ STORM DRAIN DRAINAGE AREA MAP

SHEET NUMBER:
28 of 39

STORMWATER MANAGEMENT PRACTICES

LOT NO.	PERMEABLE PAVING A2 (Y/18)	ESD FACILITY TYPE AND NUMBER	TOTAL AREA (AC)	ESDv	
				REQUIRED (C.F.)	PROVIDED (C.F.)
1	N	(5) DRYWELLS (M-5)	0.09	554	554
2	N	(5) DRYWELLS (M-5)	0.09	554	554
3	N	(5) DRYWELLS (M-5)	0.09	554	554
4	N	(5) DRYWELLS (M-5)	0.09	554	554
5	N	(5) DRYWELLS (M-5)	0.09	554	554
6	N	(5) DRYWELLS (M-5)	0.09	554	554
7	N	(5) DRYWELLS (M-5)	0.09	554	554
8	N	(5) DRYWELLS (M-5)	0.09	554	554
9	N	(5) DRYWELLS (M-5)	0.09	554	554
10	N	(5) DRYWELLS (M-5)	0.09	554	554
11	N	(5) DRYWELLS (M-5)	0.09	554	554
* 12	N	(7) DRYWELLS (M-5)	0.19	940	882
* 13	N	(7) DRYWELLS (M-5)	0.18	892	846
14	N	(5) DRYWELLS (M-5)	0.09	554	554
15	N	(5) DRYWELLS (M-5)	0.09	554	554
16	N	(5) DRYWELLS (M-5)	0.09	554	554
17	N	(5) DRYWELLS (M-5)	0.09	554	554
18	N	(5) DRYWELLS (M-5)	0.09	554	554
19	N	(5) DRYWELLS (M-5)	0.09	554	554
20	N	(5) DRYWELLS (M-5)	0.09	554	554
21	N	(5) DRYWELLS (M-5)	0.09	554	554
22	N	(5) DRYWELLS (M-5)	0.09	554	554
23	N	(5) DRYWELLS (M-5)	0.09	554	554
PUBLIC ROAD	N	BIORETENTION FACILITY #1	1.24	1080	1980
PUBLIC ROAD	N	BIORETENTION FACILITY #2	2.51	2024	4104
PUBLIC ROAD	N	BIORETENTION FACILITY #3	3.78	2293	4313
PUBLIC ROAD	N	BIORETENTION FACILITY #4	3.58	3077	4484
PUBLIC ROAD	N	BIORETENTION FACILITY #5	0.42	344	757
DRIVEWAYS 14 & 15	N	MICRO-BIORETENTION FACILITY #6	0.42	344	757
TOTALS			13.78	23,680	28,894

* LOTS 12 & 13 PROVIDES ESDv FOR THE PROPOSED DWELLING, AS WELL AS THEIR RESPECTIVE DRIVEWAY.

DRAINAGE AREA INFORMATION

D.A.	IMPERVIOUS	PERVIOUS	TOTAL (AC.)
1-1	0.04 *	0.18	0.22
1-2	0.12	0.08	0.20
1-3	0.04 *	0.78	0.82
2-1	0.80 *	1.55	2.05
2-2	0.03	0.43	0.46
3-1	0.39 *	1.44	1.83
3-2	0 *	1.93	1.93
4-1	0.27	0.9	1.17
4-2	0.24 *	1.04	1.28
4-3	0.25	0.30	0.55
4-4	0.03	0.53	0.56
5	0.07	0.35	0.42
6	0.03	0.04	0.07
7	0.03	0.05	0.08

* NOTE: PROPOSED IMPERVIOUS AREA DOES NOT INCLUDE PROPOSED DWELLINGS.

LEGEND

--- LOD --- LOD --- LIMIT OF DISTURBANCE

--- DRAINAGE AREA DIVIDE

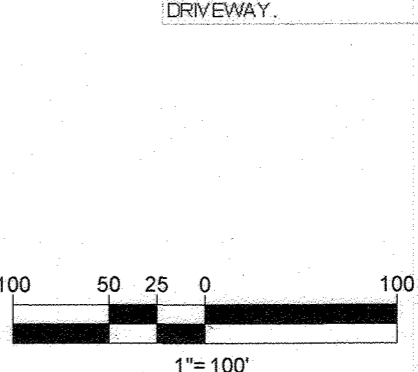
STEEP SLOPES 15-25%

STEEP SLOPES >25%

DA.1 DRAINAGE AREA DESIGNATION

SEPTIC RESERVE AREA

TP SOIL BORING



APPROVED DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS DATE: 1/18/18

APPROVED DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 1-19-18

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 1/18/18

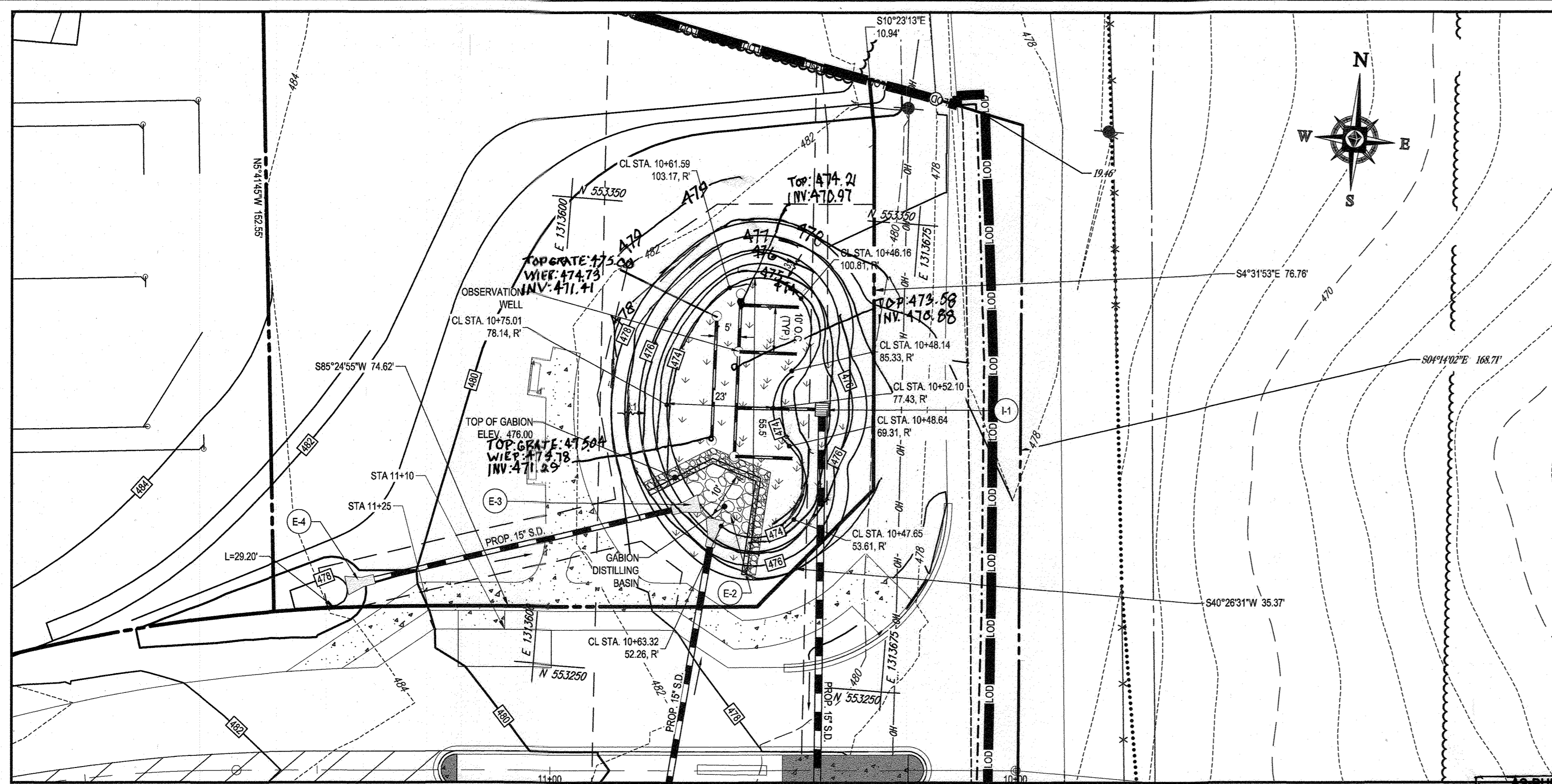
OWNERS:
ESC MILL CREEK, INC.
5074 DORSEY HALL DRIVE, SUITE 205
ELLICOTT CITY, MD 21042
TEL: (410) 720-3021
ATTN: JASON VAN KIRK

DONALD O'KEEFE
SALLY O'KEEFE
6950 HAVILAND MILL ROAD
CLARKSVILLE, MD 21029
TEL: (410) 599-9941

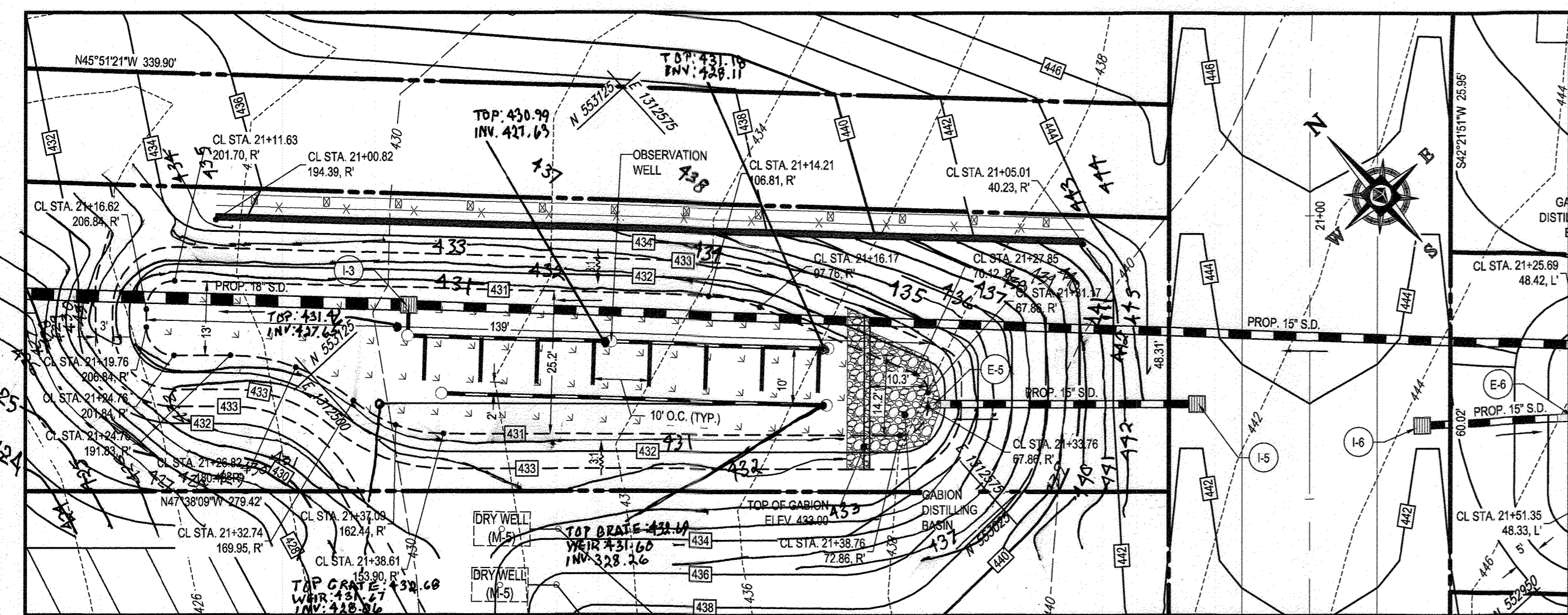
DEVELOPER:
ESC MILL CREEK, INC.
5074 DORSEY HALL ROAD, SUITE 205
ELLICOTT CITY, MD 21042
CONTACT: JASON VAN KIRK
PHONE: (410) 720-3021

TAX MAP: 34 & 39 GRID: 19 & 6 ZONED: RR-DEO
PARCEL: 52 & 1
5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

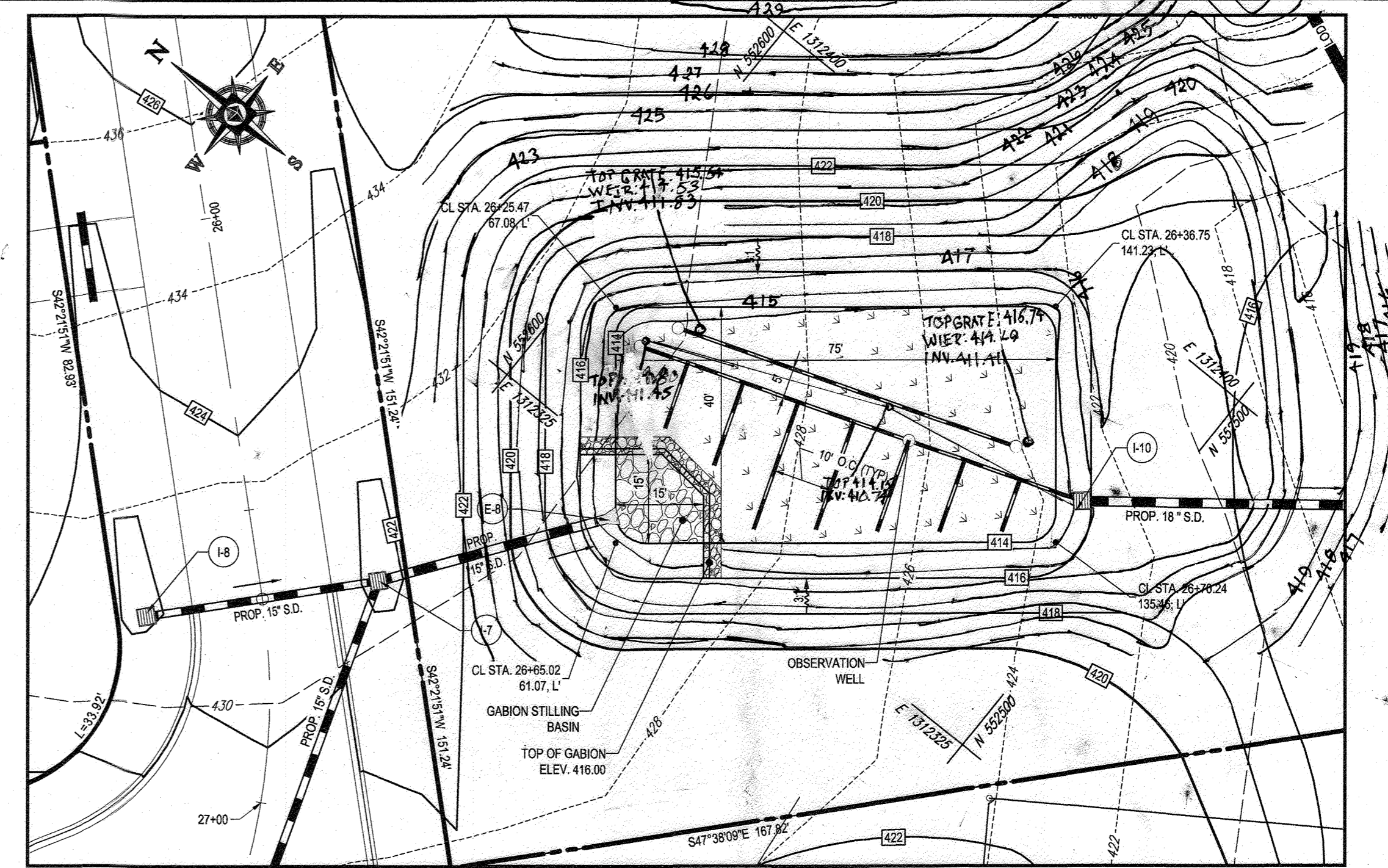
PROFESSIONAL CERTIFICATION
I, BRANDON R. ROWE, HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 40888 EXPIRATION DATE: 7/31/2019



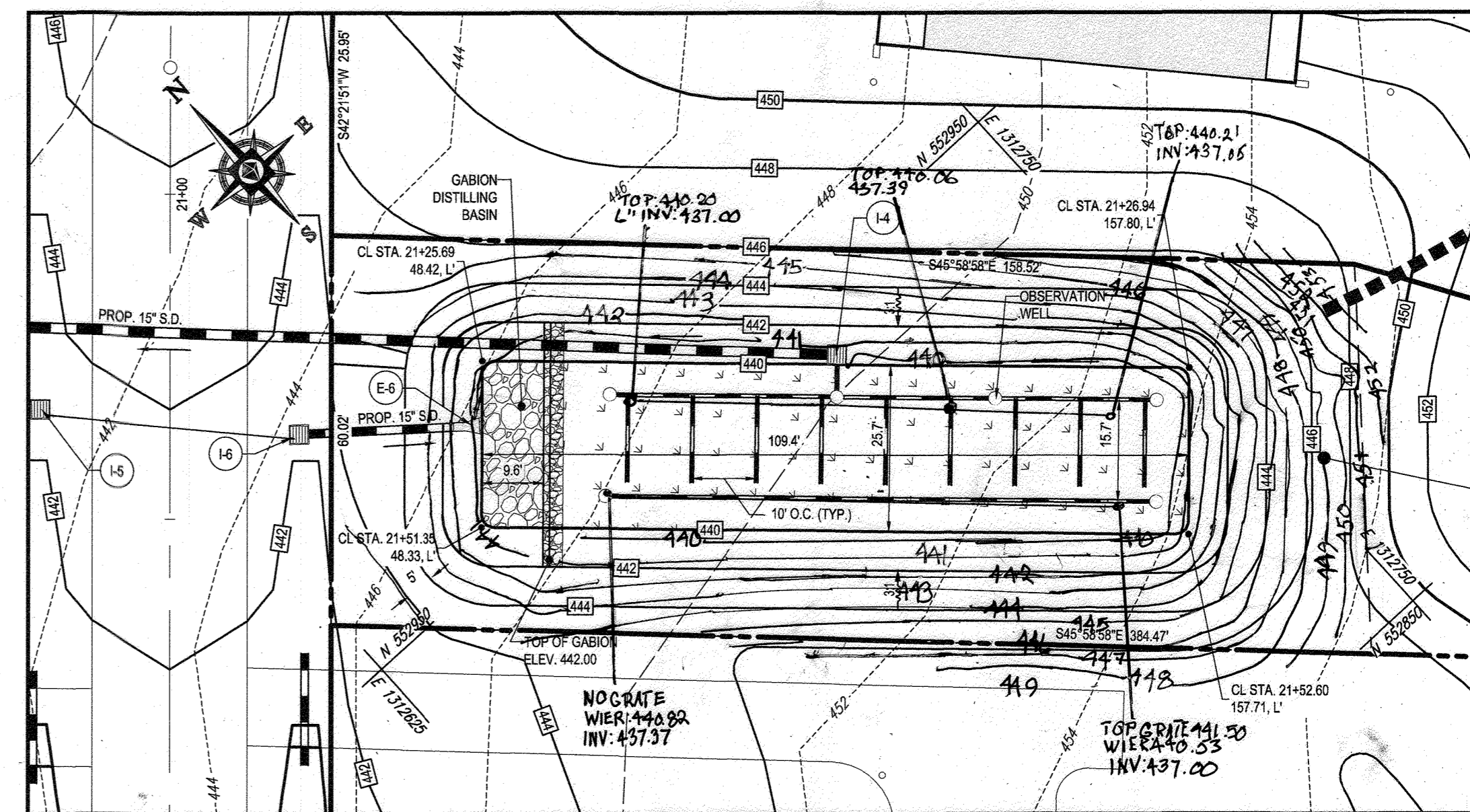
BIORETENTION FACILITY No. 1
SCALE "1" = 20'



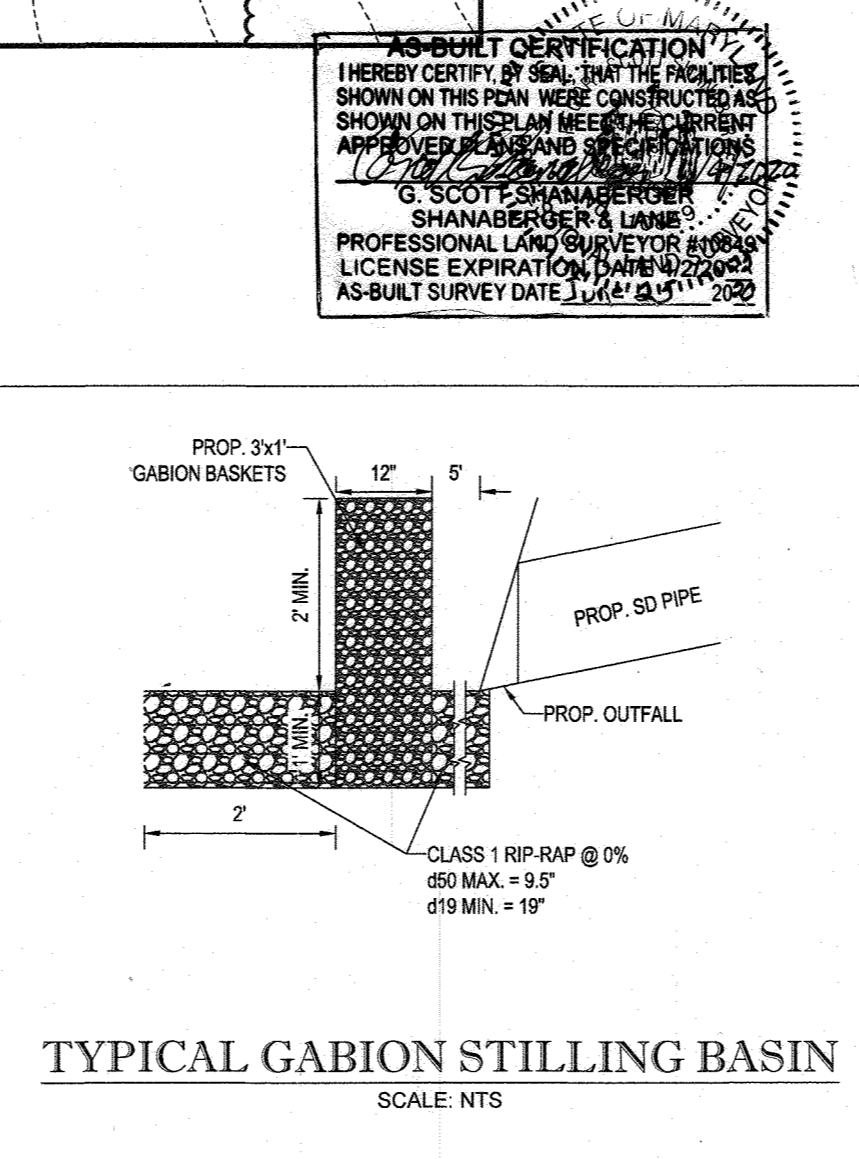
BIORETENTION FACILITY No. 2
SCALE "1" = 20'



BIORETENTION FACILITY No. 4
SCALE "1" = 20'



BIORETENTION FACILITY No. 3
SCALE "1" = 20'



AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN AND ARE IN ACCORDANCE WITH THE APPROVED PERMITS AND SPECIFICATIONS.
G. SCOTT SHANABARGER
SHANABARGER & LANE
PROFESSIONAL LAND SURVEYOR
LICENSE EXPIRATION DATE: 12/31/2020
AS-BUILT SURVEY DATE: 12/11/2020

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

HOWARD SCD DATE

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

SIGNATURE OF ENGINEER: **BRANDON R. ROWE, P.E.** DATE: **12/10/18**

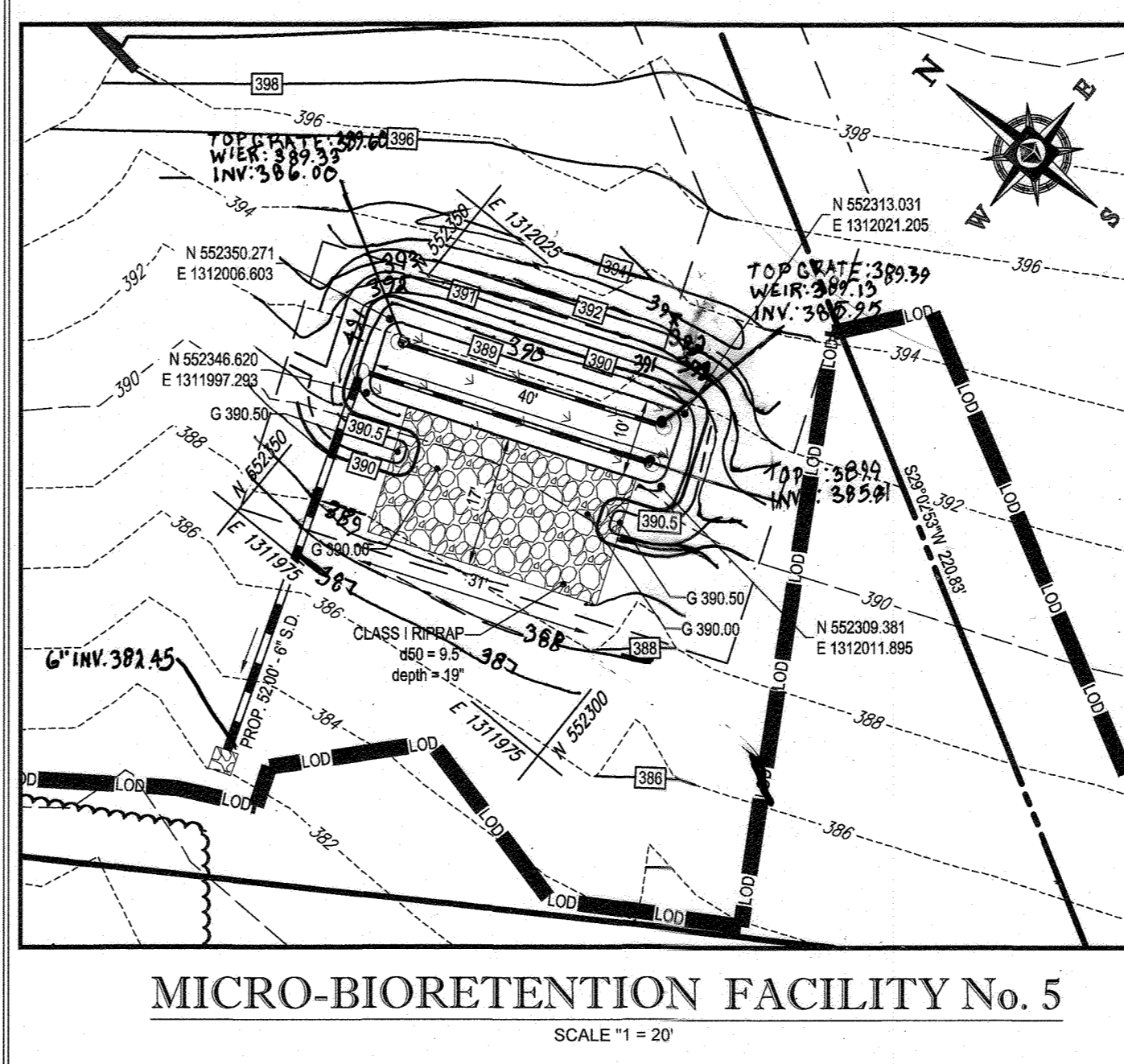
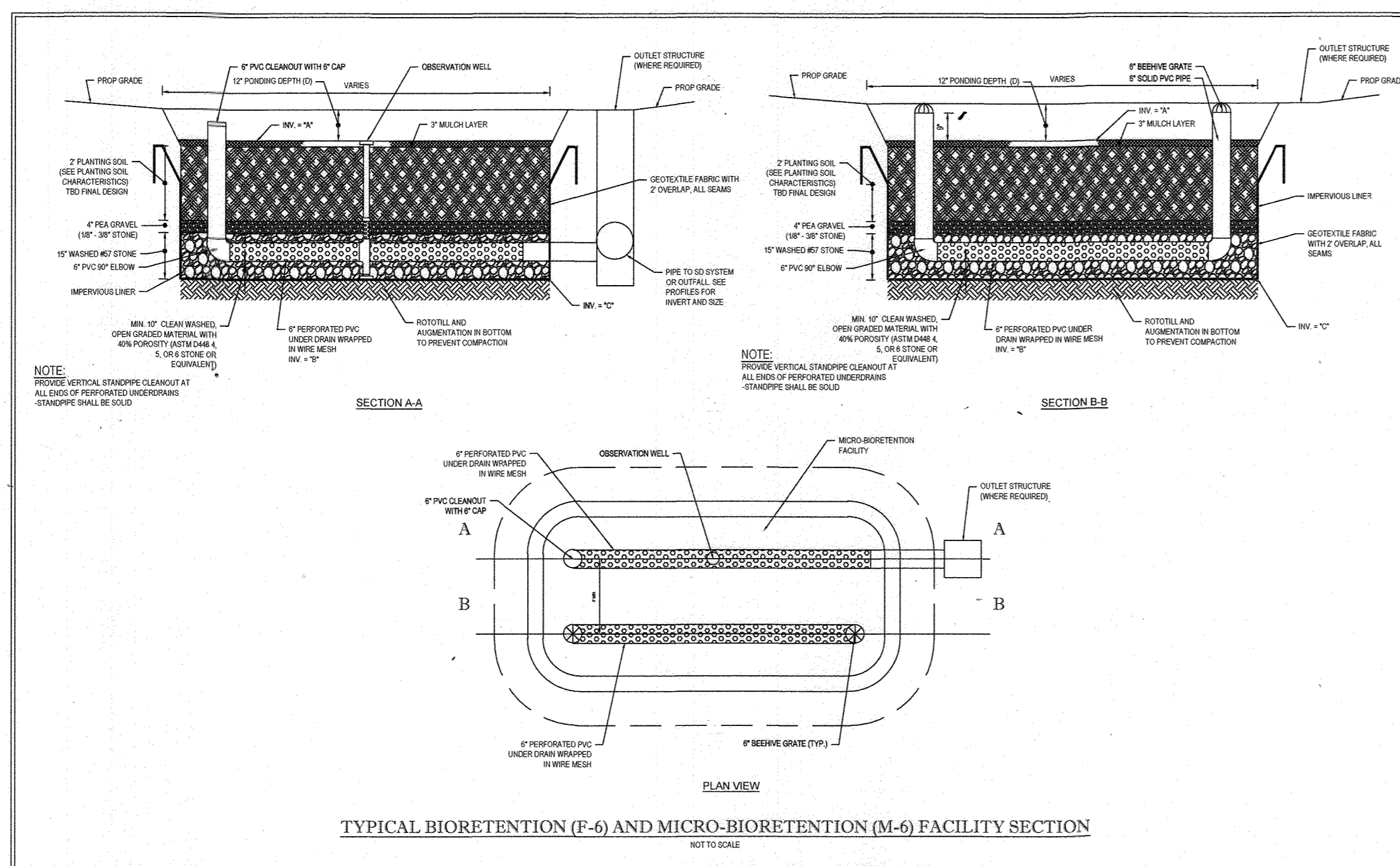
DEVELOPER'S CERTIFICATE
I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF SEDIMENT AND EROSION CONTROL AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED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

SIGNATURE OF DEVELOPER: **Q & V KD** DATE: **12-7-17**

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF: **BUREAU OF HIGHWAYS** DATE: **1/10/18**

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF: **DIVISION OF LAND DEVELOPMENT** DATE: **1-19-18**

CHIEF: **DEVELOPMENT ENGINEERING DIVISION** DATE: **1/18/18**



MICRO-BIORETENTION FACILITY No. 5
SCALE "1" = 20'

BIORETENTION FACILITIES - TABLE

FACILITY NO.	A	B	C	D	TOP OF GRATEWEIR ELEV.	TOP BERM ELEV.	Q10 (CFS)	10-YR WS ELEV.
1 (F-6)	437.4	470.00	469.84	478.0	477.00	2.85	475.09	
2 (F-6)	430.9	471.70	426.84	478.0	473.0	6.57	432.19	
3 (F-6)	439.9	472.70	435.84	478.0	473.0	7.45	441.18	
4 (F-6)	442.0	470.86	409.84	478.0	473.0	9.53	415.21	
5 (M-6)	389.1	406.75	424.84	409.84	390.50	1.00	390.08	

NOTE: ALL ROOF DRAINS WILL BE 6"

NOTE: HAZARD GLASS FOR ALL SWM FACILITIES IS "A" DUE TO NO LIFE LOSS FOR FAILURE.

OWNERS:
ESC MILL CREEK, INC. 5074 DORSEY HALL DRIVE, SUITE 205 ELLICOTT CITY, MD 21042 TEL: (410) 720-3021 ATTN: JASON VAN KIRK
DONALD O'KEEFE 8950 HAVILAND MILL ROAD CLARKSVILLE, MD 21029 TEL: (410) 599-6941

DEVELOPER:
ESC MILL CREEK, INC. 5074 DORSEY HALL DRIVE, SUITE 205 ELLICOTT CITY, MD 21042 CONTACT: JASON VAN KIRK PHONE: (410) 720-3021

TAX MAP: 34 & 39 GRID: 19 & 6 PARCEL: 52 & 1 ZONED: RR-DEO
5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

PROFESSIONAL CERTIFICATION
I, BRANDON R. ROWE, 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. 40888 EXPIRATION DATE: 7/31/2019

PREVIOUS FILE No.:
SP-15-015 WP-10-102
ECP-15-051 WP-17-106
WP-15-122

SCALE: 1" = 50'

BOHLER ENGINEERING
CORPORATE OFFICE: WARREN, NJ
OFFICES: BOWEN, MD; SOUTHBOROUGH, MA; STURBRIDGE, MA; WARREN, NJ; WESTPORT, MA; WILMINGTON, VA; CHARLOTTE, NC; PHILADELPHIA, PA; TAMPA, FL

CIVIL & CONSULTING ENGINEERS SURVEYORS
PROJECT MANAGERS
ENVIRONMENTAL CONSULTANTS
LANDSCAPE ARCHITECTS

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PROJECT NO.: MD142038
DRAWN BY: AUG
CHECKED BY: BRR
DATE: 12/01/17
SCALE: AS SHOWN
CAD I.D.: SMA

PROJECT:
FINAL ROAD CONSTRUCTION PLAN
FOR
CRAWFORD SUBDIVISION
LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

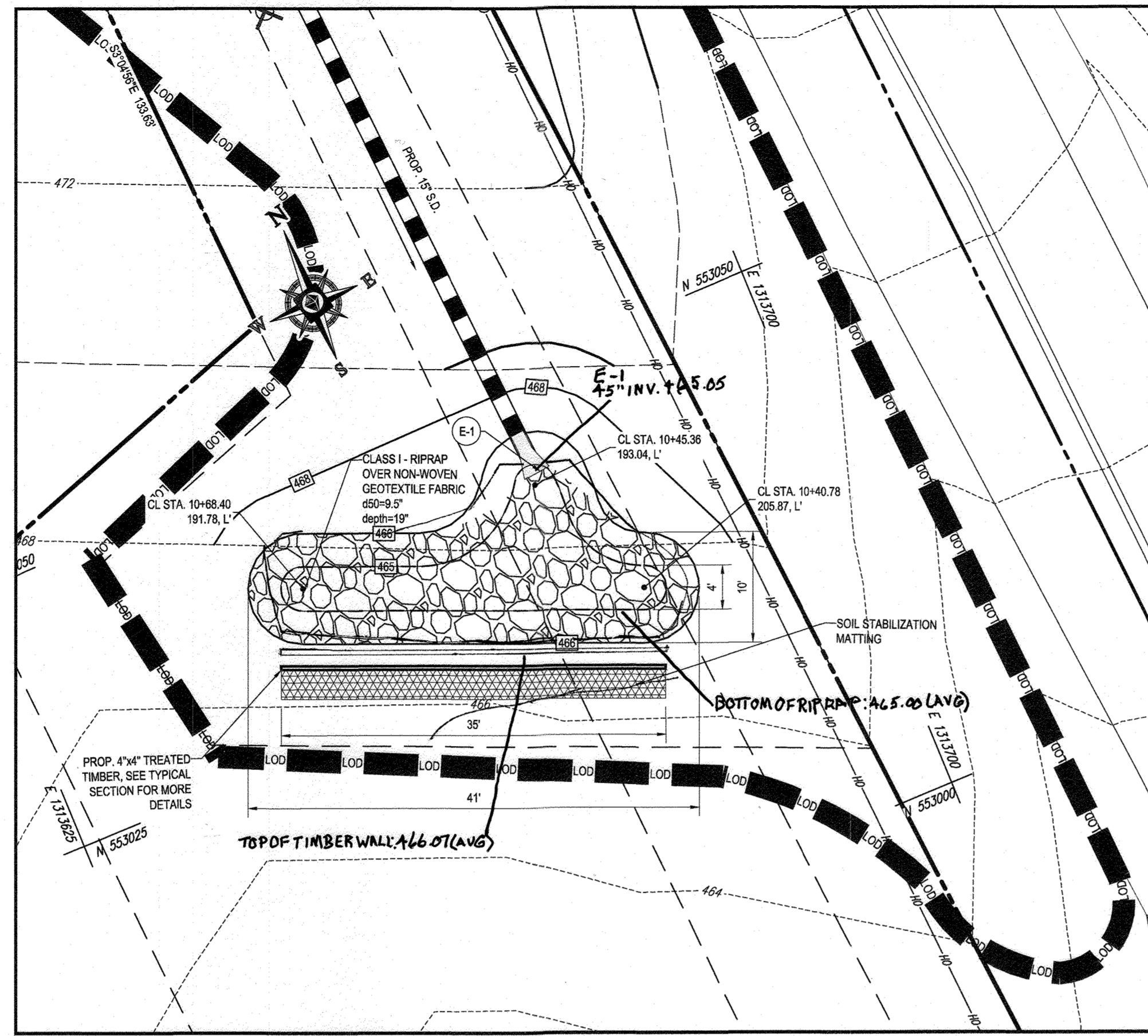
LOCATION OF SITE:
6780 HAVILAND MILL ROAD
TAX MAP 34, GRID 19 & PARCEL 52
TAX MAP 39, GRID 6 & PARCEL 1
5TH ELECTION DISTRICT
HOWARD COUNTY, MD

BOHLER ENGINEERING
901 DULANEY VALLEY ROAD, SUITE 801
TOWSON, MARYLAND 21284
Phone: (410) 821-7900
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www.BohlerEngineering.com

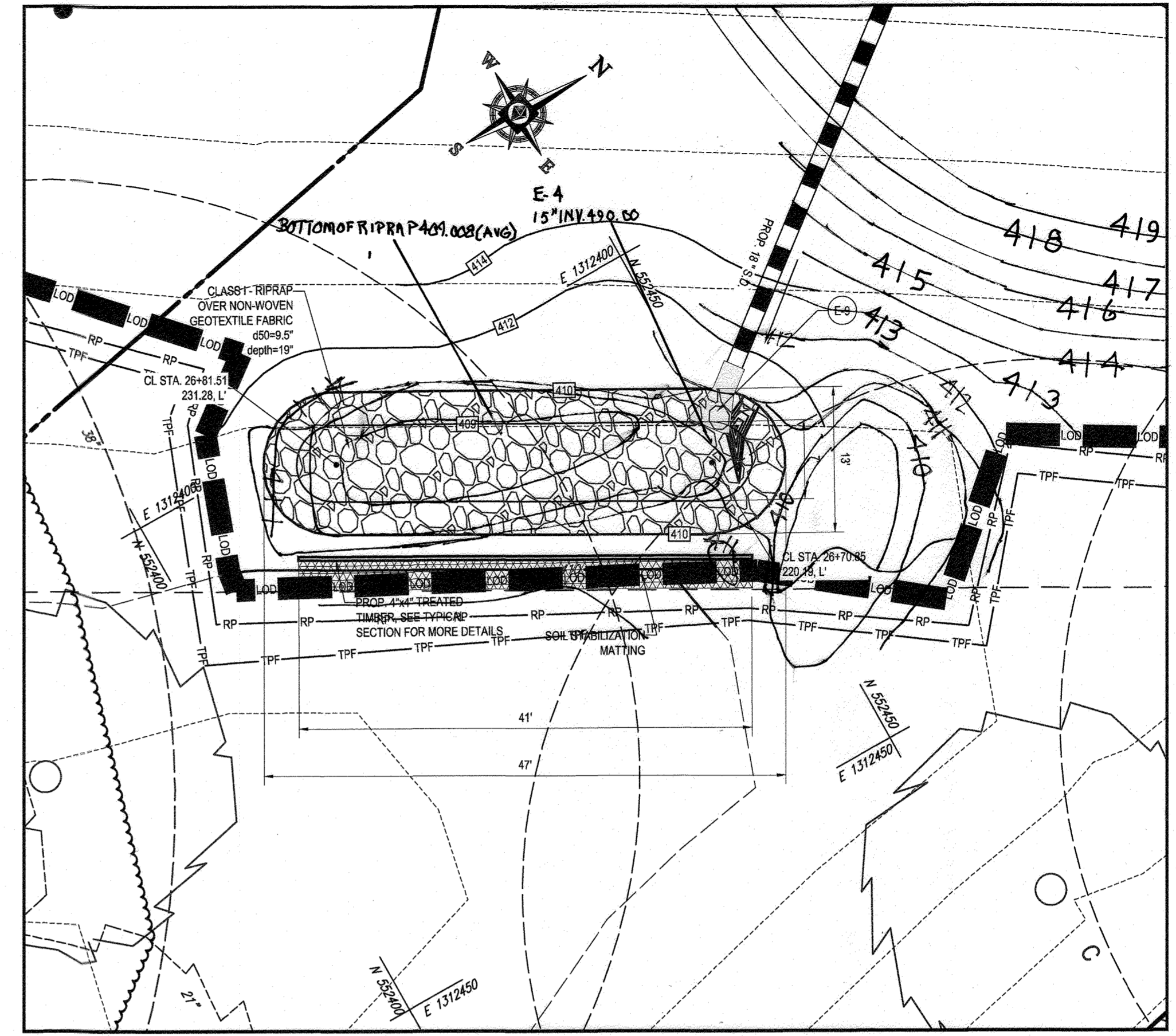
B. R. ROWE
PROFESSIONAL ENGINEER
LICENSE NO. 40888
EXPIRATION DATE: 7/31/2019

SHEET TITLE:
STORMWATER MANAGEMENT AND STORM DRAIN NOTES AND DETAILS
SHEET NUMBER:
29 of 39

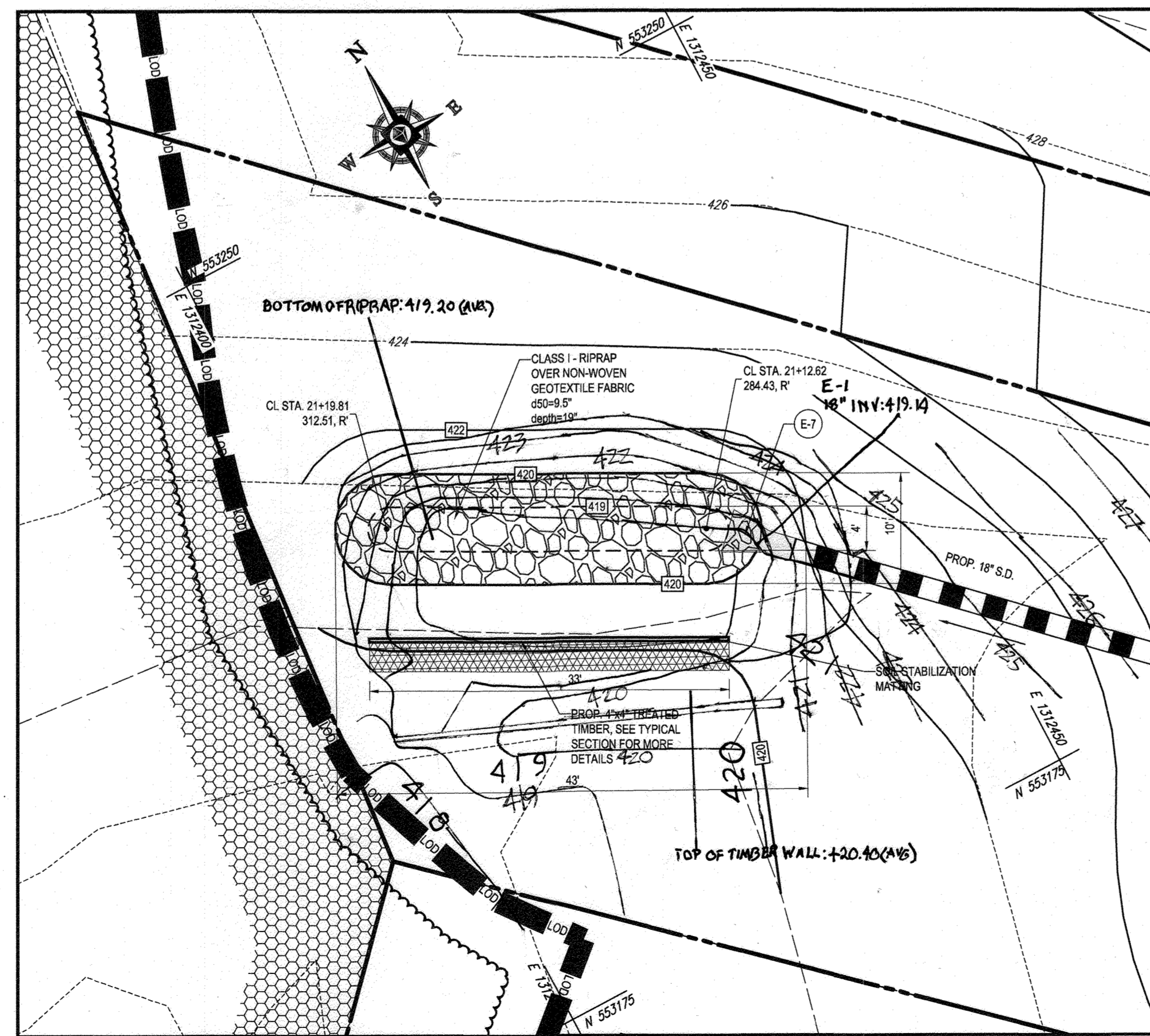
F-17-016



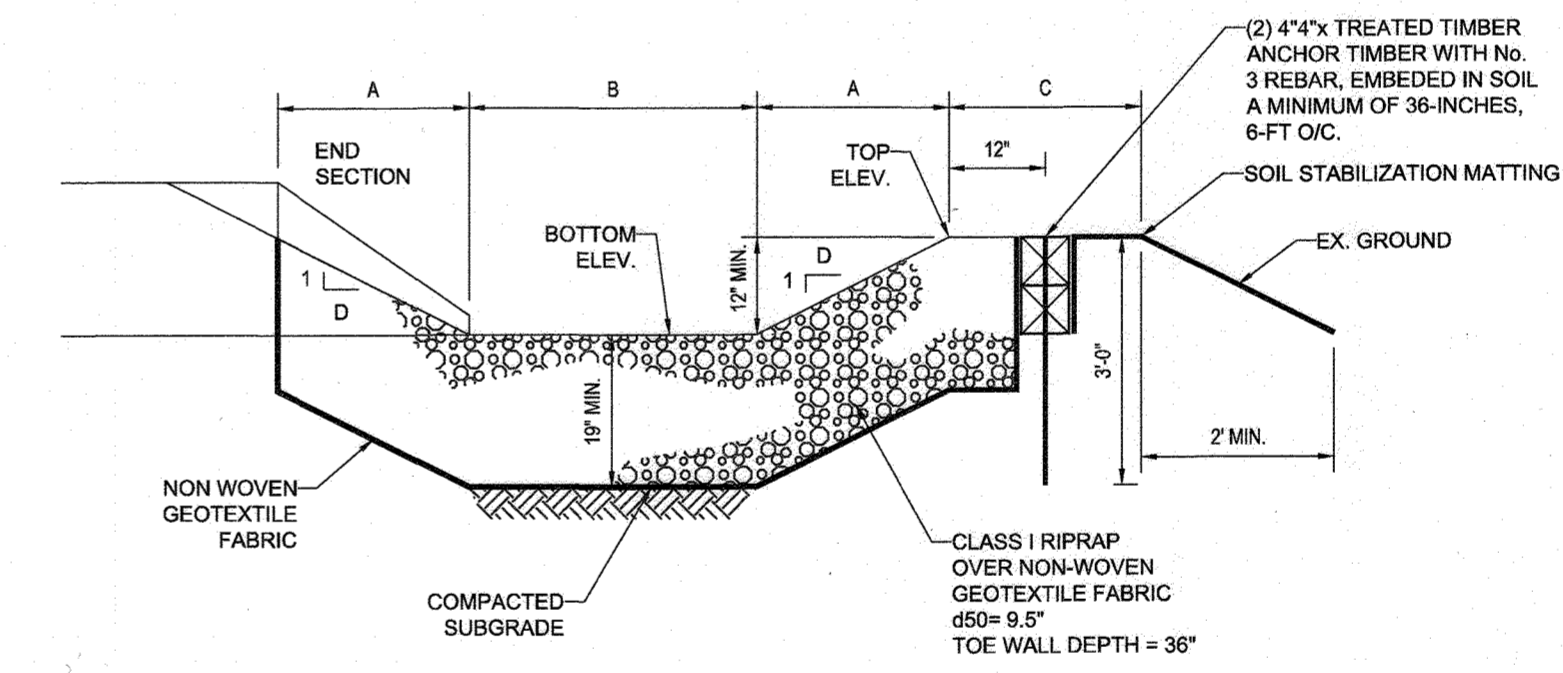
LEVEL SPREADER # 1
SCALE: 1" = 10'



LEVEL SPREADER # 3
SCALE: 1" = 10'



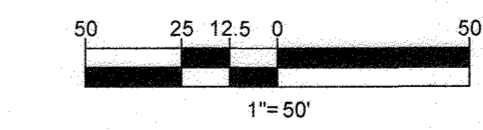
LEVEL SPREADER # 2
SCALE: 1" = 10'



LEVEL SPREADER TYPICAL SECTION
SCALE: 1" = 2'

DIMENSION CHART						
LEVEL SPREADER NO.	A	B	C	D	BOTTOM ELEV.	TOP ELEV.
1	2'-0"	4'-0"	2'-0" MIN.	2'-0"	405.0	466.0
2	2'-0"	4'-0"	2'-0" MIN.	2'-0"	419.0	420.0
3	2'-0"	7'-0"	2'-0" MIN.	2'-0"	409.0	410.0

AS-BUILT CERTIFICATION
I HEREBY CERTIFY BY SEAL THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN AND IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS OF SCOTT SHANABERGER & ASSOCIATES, INC. SHANABERGER & ASSOCIATES, INC. PROFESSIONAL LAND SURVEYOR #10042 LICENSE EXPIRES 01/01/2025 AS-BUILT SURVEY DATE 7/24/25



SUBDIVISION NAME: CRAWFORD SECTION AREA: N/A DEED # 08957/00532 & 05889/00490
PREVIOUS FILE NO.: SP-15-015 WP-10-102 ECP-15-051 WP-17-106 WP-15-122
OWNERS: ESC MILL CREEK, INC. 5074 DORSEY HALL DRIVE, SUITE 205 ELLICOTT CITY, MD 21042 TEL: (410) 720-3021 ATTN: JASON VAN KIRK
DONALD O'KEEFE 6950 HAVILAND MILL ROAD CLARKSVILLE, MD 21029 TEL: (410) 599-6941
DEVELOPER: ESC MILL CREEK, INC. 5074 DORSEY HALL ROAD, SUITE 205 ELLICOTT CITY, MD 21042 CONTACT: JASON VAN KIRK PHONE: (410) 720-3021
TAX MAP: 34 & 39 GRID: 19 & 6 PARCEL: 52 & 1 ZONED: RR-DEO
5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
PROFESSIONAL CERTIFICATION I, BRANDON R. ROWE, 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. 43088, EXPIRATION DATE: 7/31/2019

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

HOWARD SCD DATE

ENGINEER'S CERTIFICATE
I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
SIGNATURE OF ENGINEER: BRANDON R. ROWE, P.E. DATE: 1/10/18

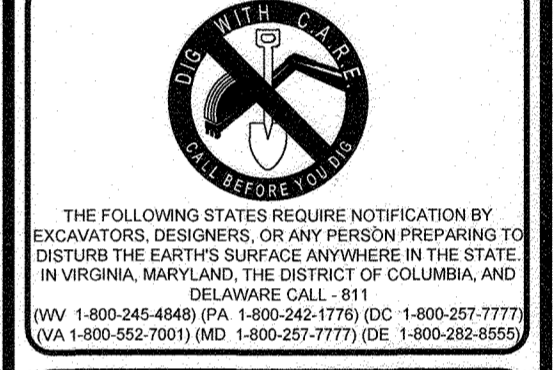
DEVELOPER'S CERTIFICATE
I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ONSITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
SIGNATURE OF DEVELOPER: J. S. V. Klb DATE: 12-7-17

APPROVED DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS DATE: 1/10/2018
APPROVED DEPARTMENT OF PLANNING AND ZONING
J. M. M... G. KS DATE: 1/10/18
CHIEF, DIVISION OF LAND DEVELOPMENT
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 1-10-18

BOHLER ENGINEERING
CORPORATE OFFICE: WARREN, NJ
OFFICES: SOUTHROCK, MA; BOWEN, MD; STERLING, VA; HONOLULU, HI; CENTER VALLEY, PA; TAMPA, FL; PHILADELPHIA, PA
CIVIL & CONSULTING ENGINEERS; SURVEYORS; PROJECT MANAGERS; ENVIRONMENTAL CONSULTANTS; LANDSCAPE ARCHITECTS

REVISIONS

REV	DATE	COMMENT	BY

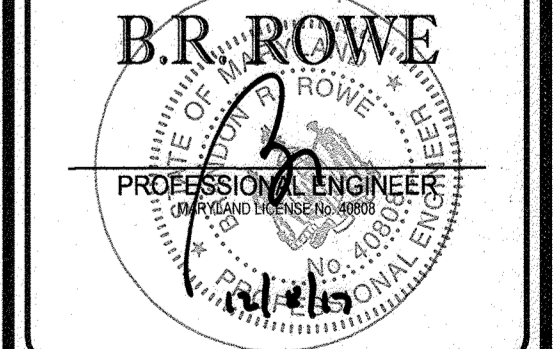


THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE OF VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE: CALL 811 (TOLL FREE 1-800-245-4848) (PA 1-800-245-1776) (DC 1-800-257-7777) (VA 1-800-552-7001) (MD 1-800-257-7777) (DE 1-800-282-8855)

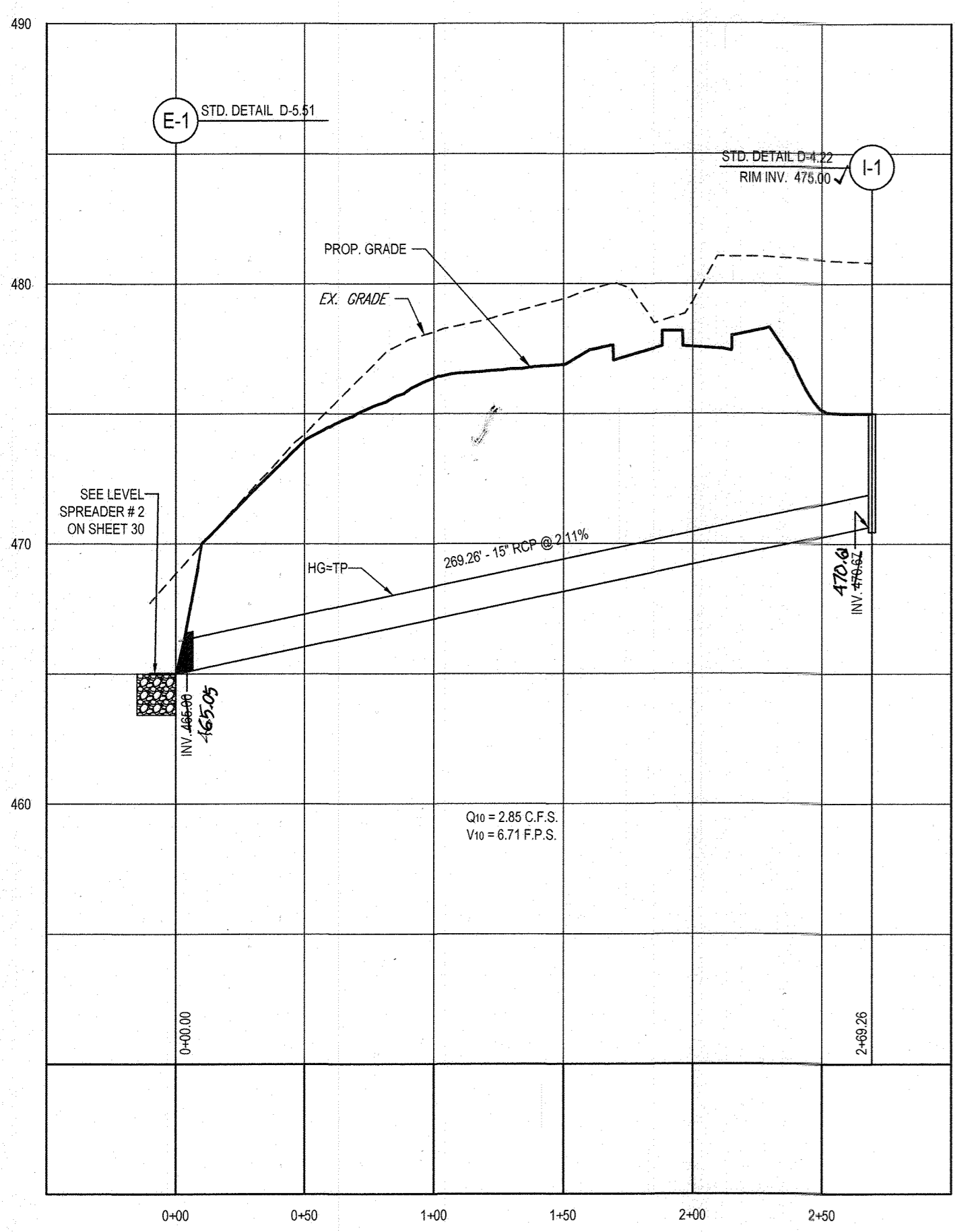
PROJECT No.: MD142038
DRAWN BY: AVG
CHECKED BY: BRR
DATE: 12/01/17
SCALE: AS SHOWN
CAD I.D.: SMA

FINAL ROAD CONSTRUCTION PLAN
FOR
CRAWFORD SUBDIVISION
LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G
LOCATION OF SITE
6780 HAVILAND MILL ROAD
TAX MAP 34, GRID 19 & PARCEL 52
TAX MAP 39, GRID 6 & PARCEL 1
5TH ELECTION DISTRICT
HOWARD COUNTY, MD

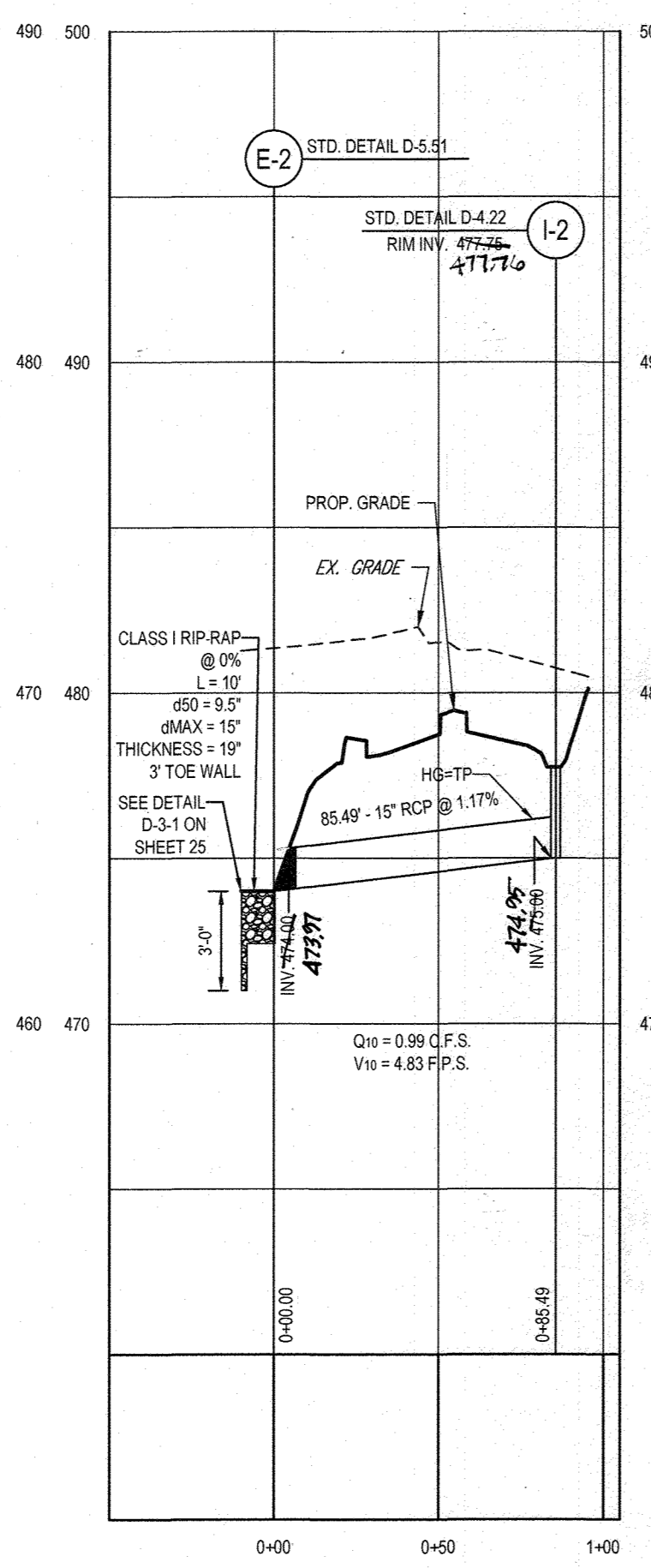
BOHLER ENGINEERING
901 DULANEY VALLEY ROAD, SUITE 801
TOWSON, MARYLAND 21284
Phone: (410) 821-7900
Fax: (410) 821-7987
www.BohlerEngineering.com



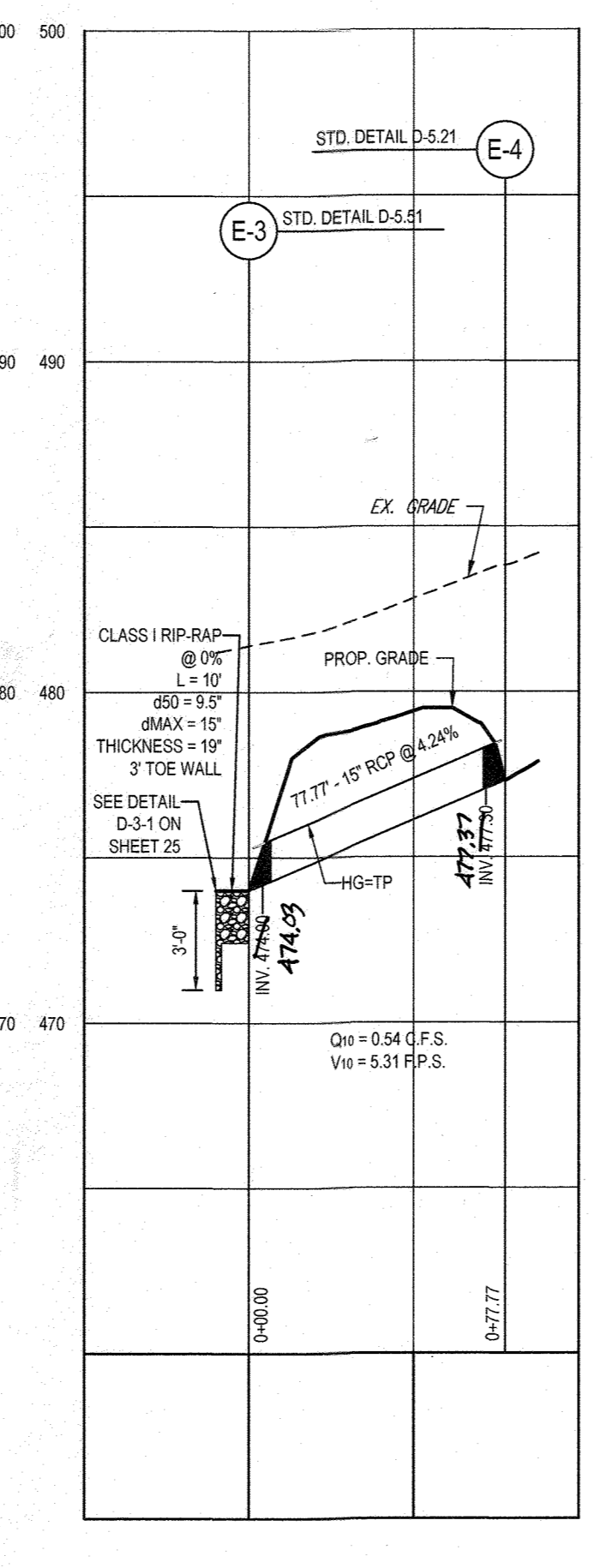
SHEET TITLE:
STORMWATER MANGEMENT AND STORM DRAIN NOTES AND DETAILS
SHEET NUMBER:
30 of 39



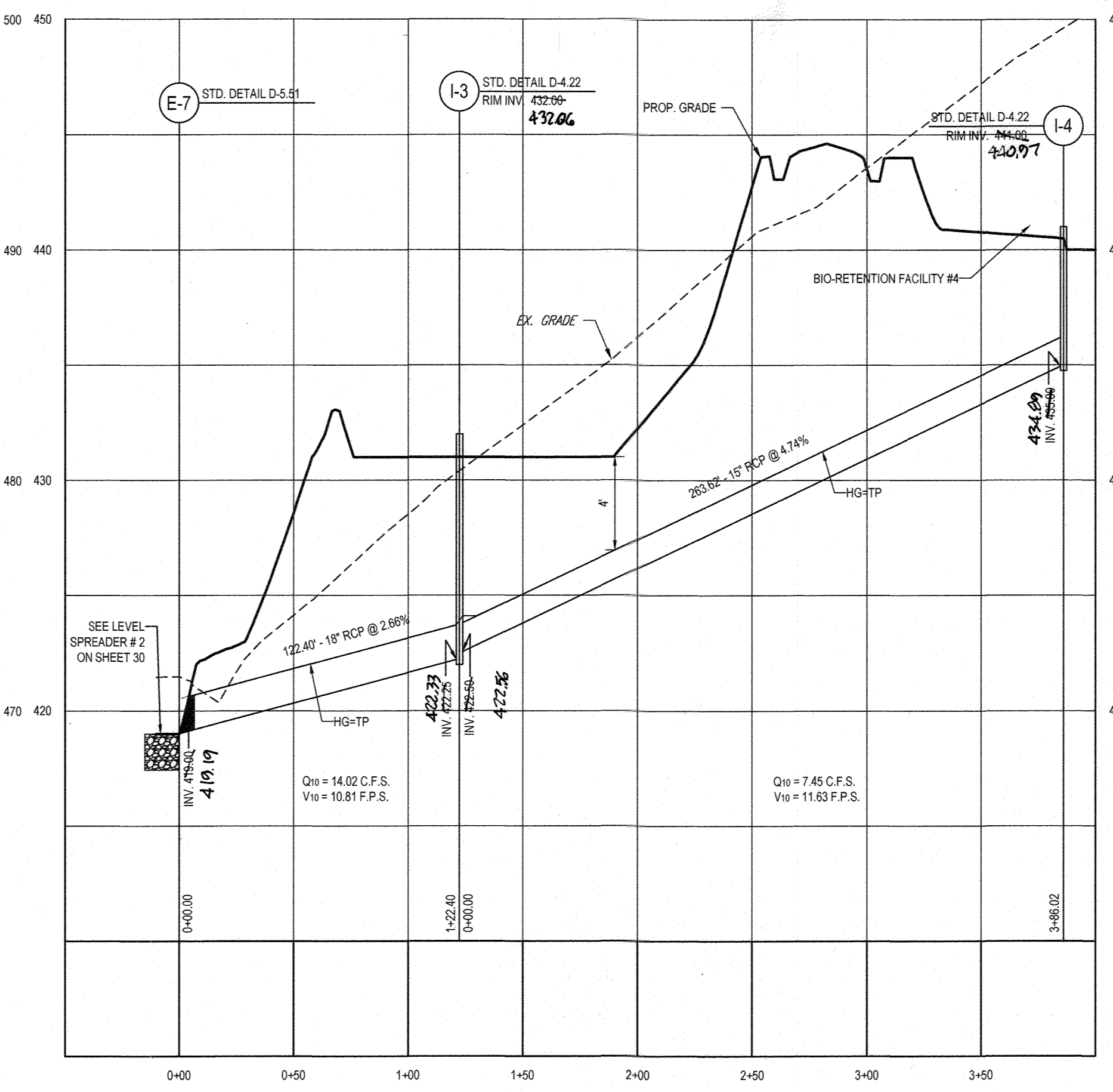
PROP. STORM DRAIN PROFILE - I-1 TO E-1
SCALE: 1" = 50' HORIZONTAL
1" = 5' VERTICAL



PROP. STORM DRAIN PROFILE - I-2 TO E-2
SCALE: 1" = 50' HORIZONTAL
1" = 5' VERTICAL



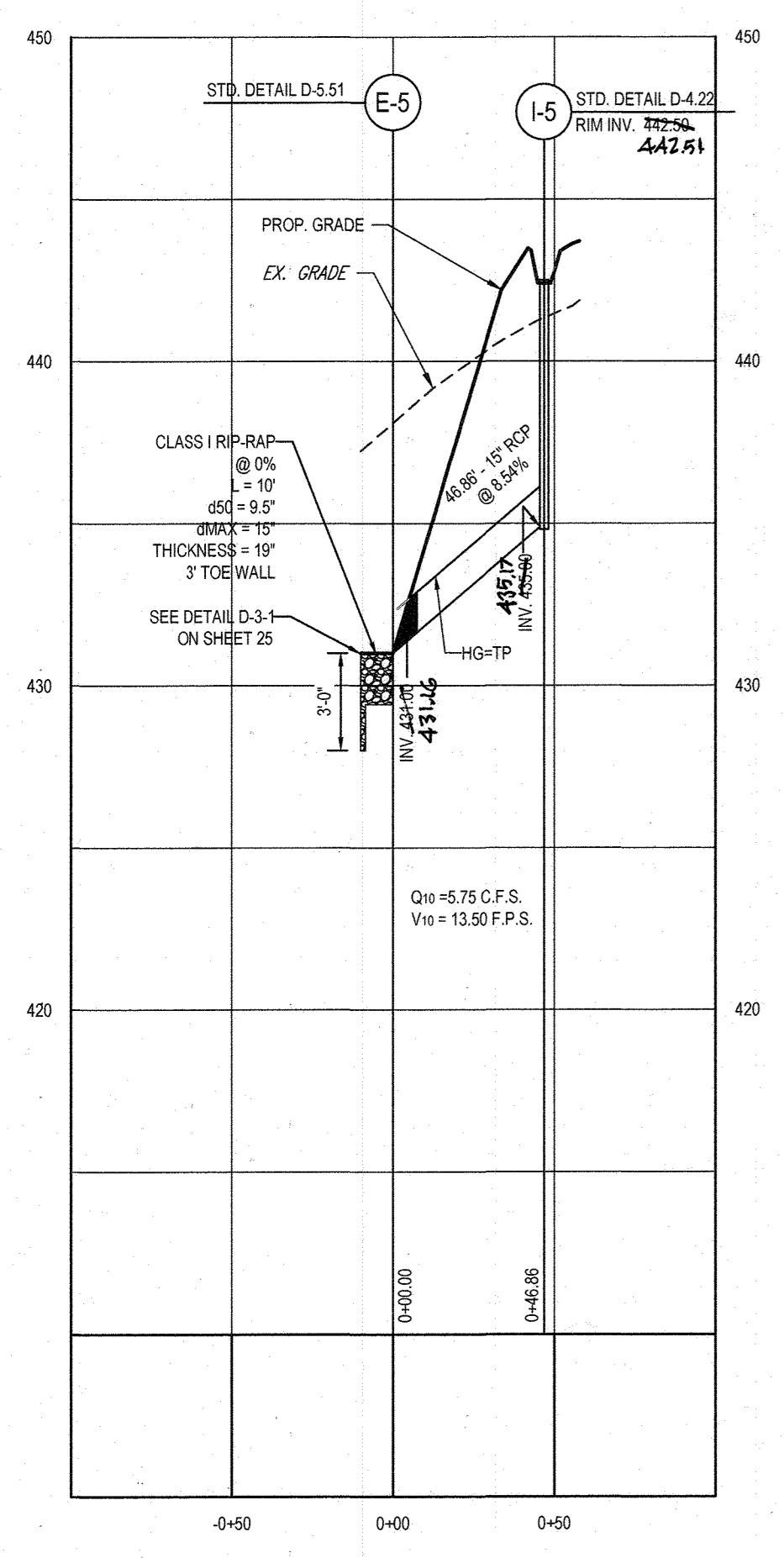
PROP. STORM DRAIN PROFILE - E-4 TO E-3
SCALE: 1" = 50' HORIZONTAL
1" = 5' VERTICAL



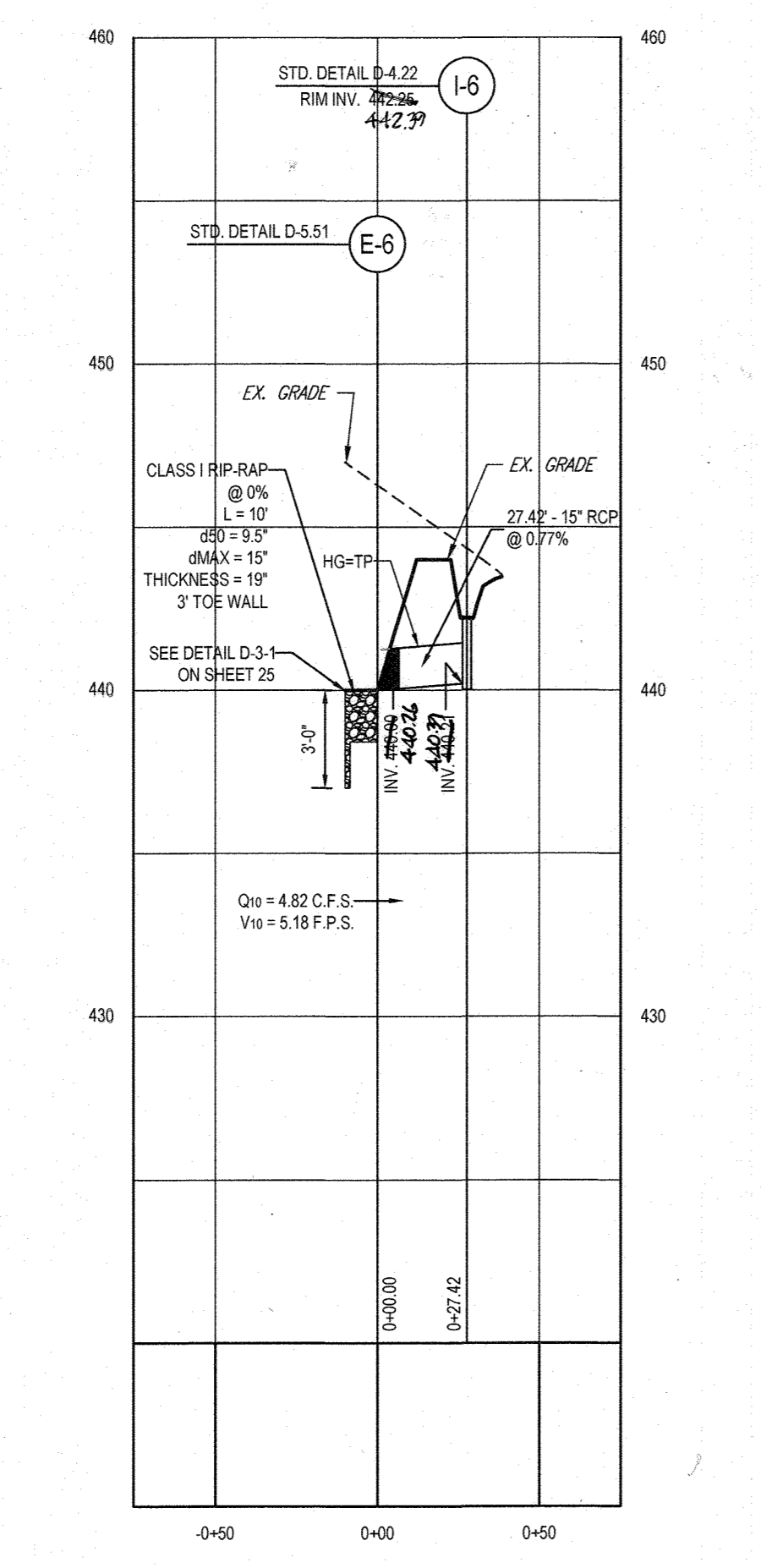
PROP. STORM DRAIN PROFILE - I-4 TO E-7
SCALE: 1" = 50' HORIZONTAL
1" = 5' VERTICAL

STORM STRUCTURE SCHEDULE			
NAME	TYPE	RIM ELEV. (FT.)	LOCATION
E-1	END SECTION	N/A	N 553040 744.45 E 1313675 786.91
E-2	END SECTION	N/A	N 55328 744.45 E 1313632 742.99
E-3	END SECTION	N/A	N 55328 744.45 E 1313632 742.99
E-4	END SECTION	N/A	N 55328 744.45 E 1313632 742.99
E-5	END SECTION	N/A	N 553047 744.45 E 1312677 744.45
E-6	END SECTION	N/A	N 552967 744.45 E 1312681 744.45
E-7	END SECTION	N/A	N 553207 744.45 E 1312433 744.45
E-8	END SECTION	N/A	N 552570 744.45 E 1312313 744.45
E-9	END SECTION	N/A	N 552449 744.45 E 1312411 744.45
I-1	TYPE 'S' INLET	475.00	N 553307 744.45 E 1313657 744.45
I-2	TYPE 'S' INLET	477.70	N 553307 744.45 E 1313657 744.45
I-3	TYPE 'S' INLET	432.00	N 553307 744.45 E 1312752 744.45
I-4	TYPE 'S' INLET	440.97	N 553307 744.45 E 1312752 744.45
I-5	TYPE 'S' INLET	442.31	N 553307 744.45 E 1312612 744.45
I-6	TYPE 'S' INLET	442.31	N 552984 744.45 E 1312640 744.45
I-7	TYPE 'S' INLET	421.30	N 552984 744.45 E 1312284 744.45
I-8	TYPE 'S' INLET	421.30	N 552984 744.45 E 1312253 744.45
I-9	TYPE 'S' INLET	418.99	N 552984 744.45 E 1312152 744.45
I-10	TYPE 'S' INLET	414.99	N 552984 744.45 E 1312369 744.45

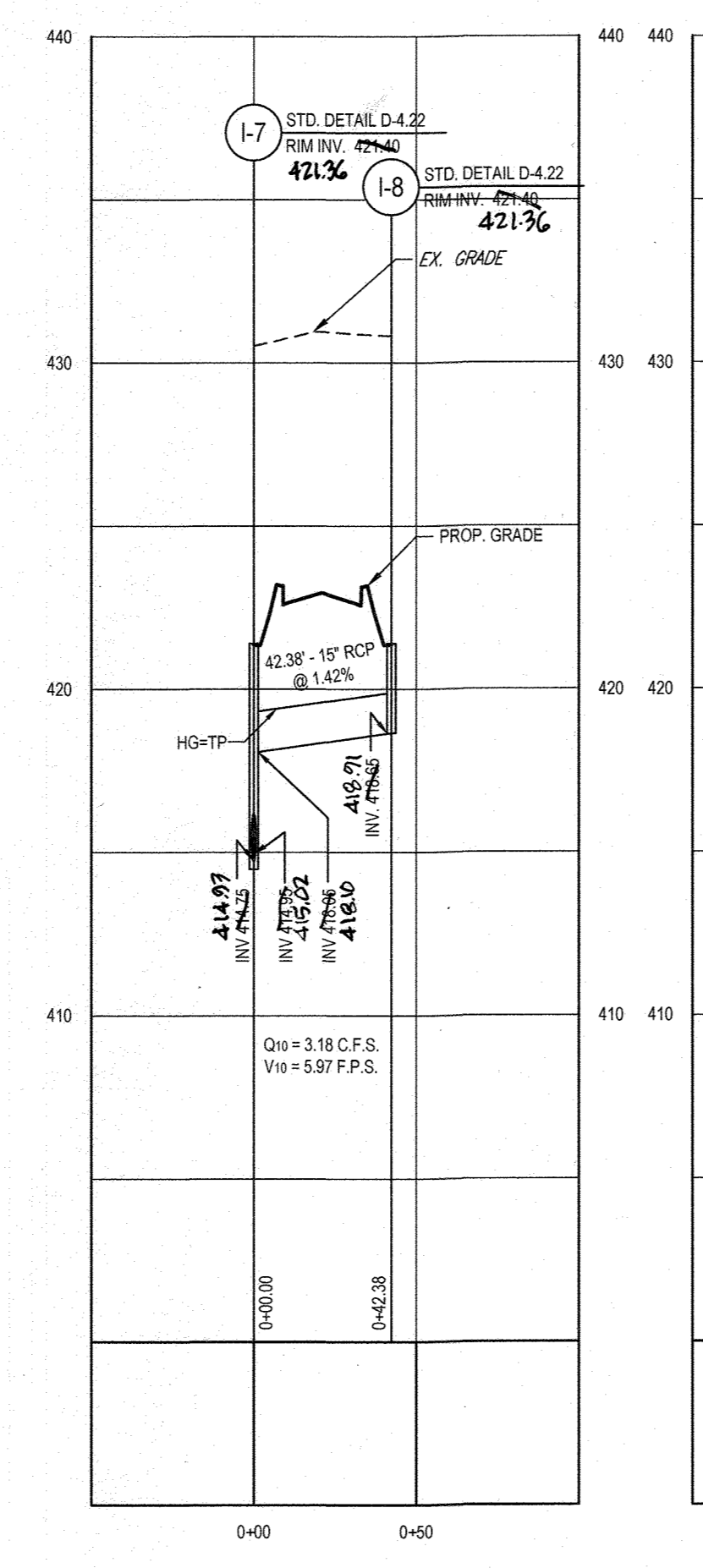
STORM DRAIN SCHEDULE					
FROM	TO	LENGTH (FT)	SIZE (in.)	SLOPE (%)	MATERIAL
E-9	I-10	77.09	18"	2.17%	RCP
E-2	I-2	85.49	15"	1.17%	RCP
E-4	E-3	77.77	15"	4.24%	RCP
I-1	E-1	269.28	15"	2.11%	RCP
I-3	E-7	122.40	18"	2.66%	RCP
I-4	I-3	263.62	15"	4.74%	RCP
I-5	E-5	48.86	15"	8.54%	RCP
I-6	E-6	27.42	15"	0.77%	RCP
I-7	I-8	42.38	15"	1.42%	RCP
I-7	I-9	139.31	15"	0.75%	RCP
I-7	E-8	41.02	18"	1.71%	RCP



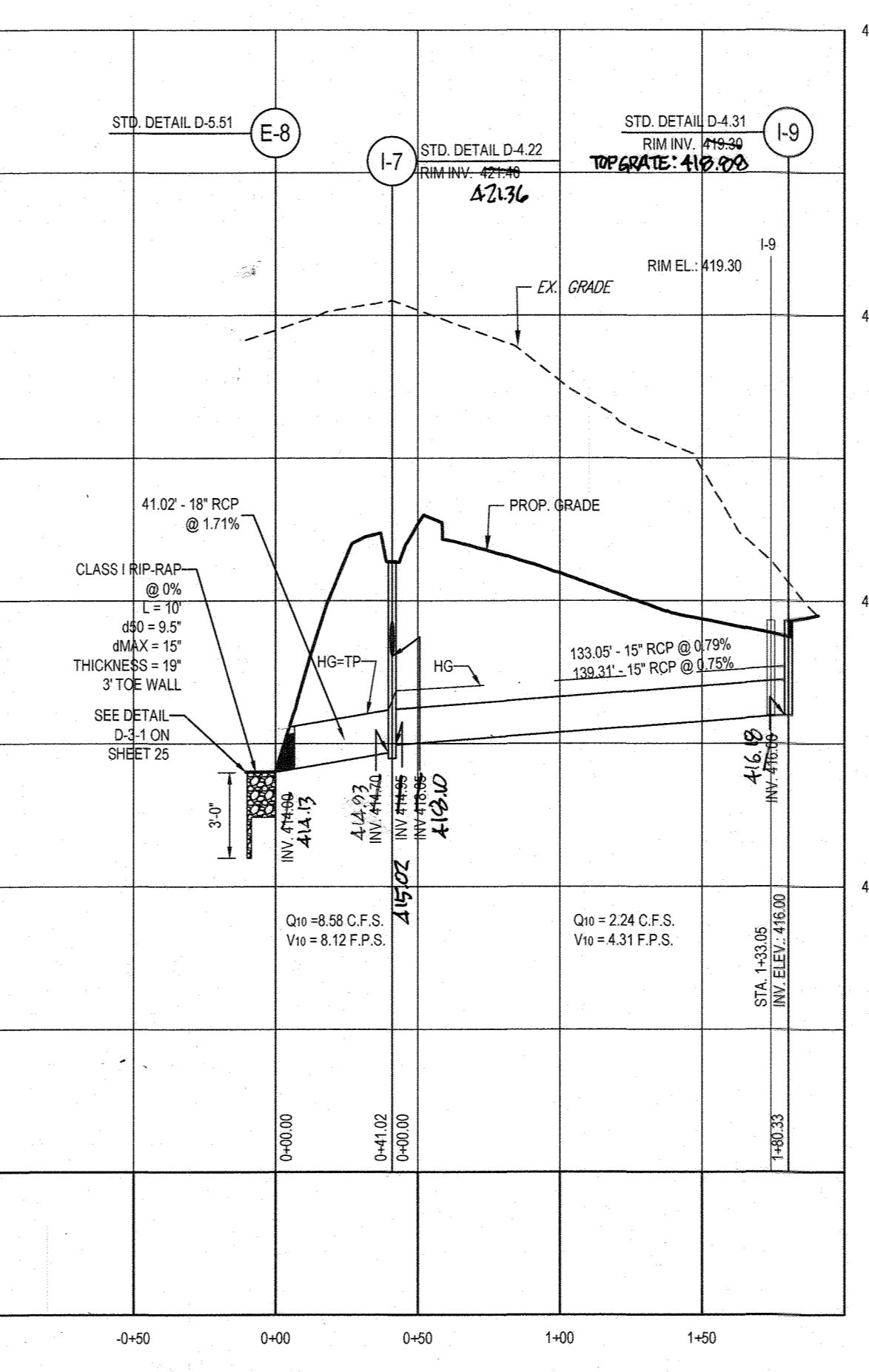
STORM DRAIN PROFILE - I-5 TO E-5
SCALE: 1" = 50' HORIZONTAL
1" = 5' VERTICAL



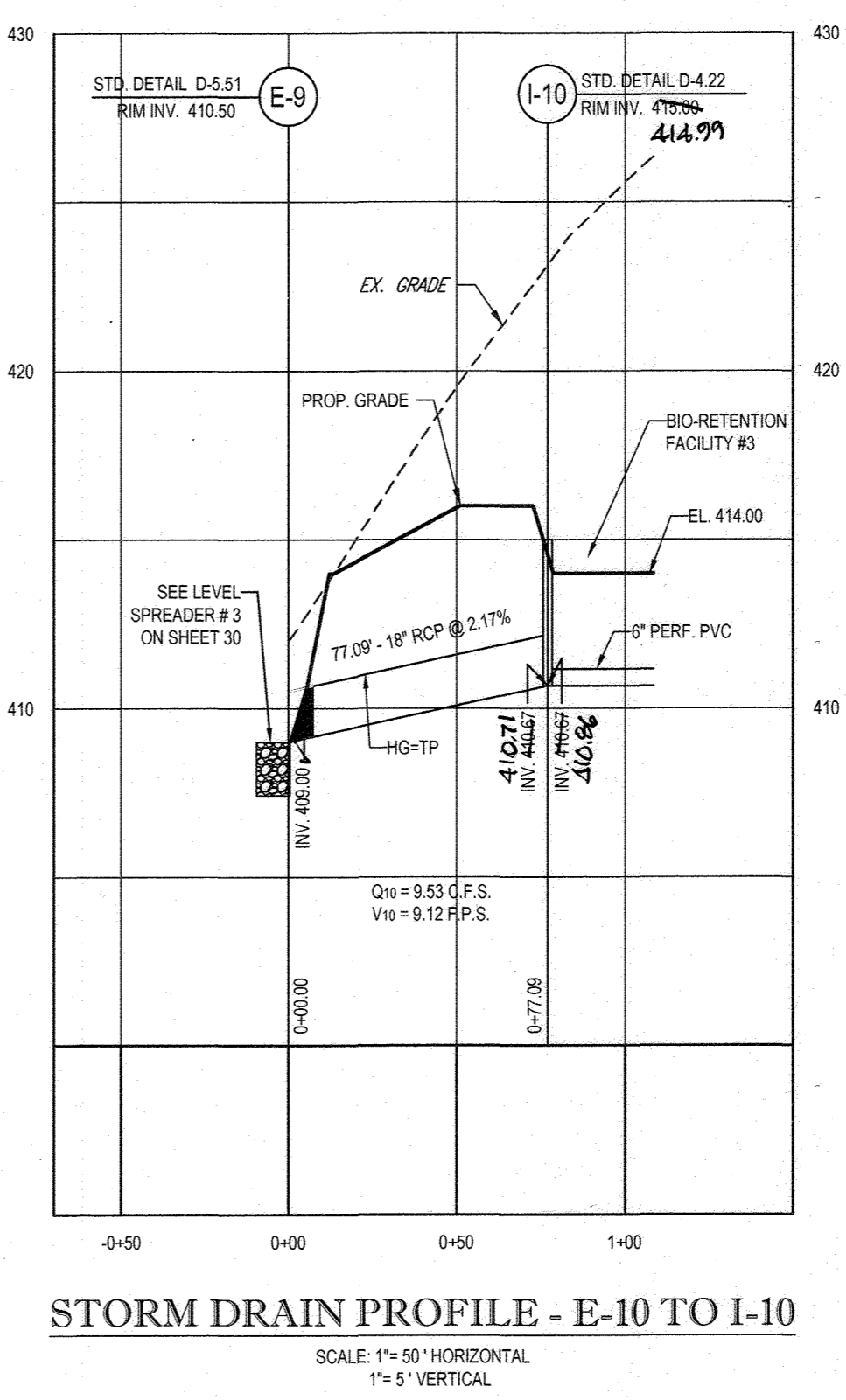
STORM DRAIN PROFILE - I-6 TO E-6
SCALE: 1" = 50' HORIZONTAL
1" = 5' VERTICAL



STORM DRAIN PROFILE - I-8 TO I-7
SCALE: 1" = 50' HORIZONTAL
1" = 5' VERTICAL



STORM DRAIN PROFILE - I-9 TO E-8
SCALE: 1" = 50' HORIZONTAL
1" = 5' VERTICAL



STORM DRAIN PROFILE - E-10 TO I-10
SCALE: 1" = 50' HORIZONTAL
1" = 5' VERTICAL

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS DATE 1/10/18
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT DATE 1/19/18
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 1/18/18

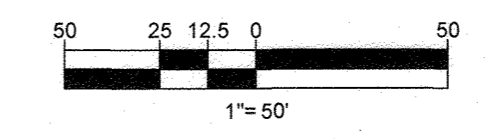
OWNERS:
ESC MILL CREEK, INC.
5074 DORSEY HALL ROAD, SUITE 205
ELICOTT CITY, MD 21042
TEL: (410) 720-3021
ATTN: JASON VAN KIRK

DEVELOPER:
ESC MILL CREEK, INC.
5074 DORSEY HALL ROAD, SUITE 205
ELICOTT CITY, MD 21042
CONTACT: JASON VAN KIRK
PHONE: (410) 720-3021

SUBDIVISION NAME: CRAWFORD SECTION/AREA: N/A DEED # 05877/05532 & 05883/00490
TAX MAP: 34 & 39 GRID: 19 & 6 ZONED: RR-DEO PARCEL: 52 & 1
5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

PREVIOUS FILE No.: SP-15-015 WP-10-102 ECP-15-051 WP-17-106 WP-15-122

PROFESSIONAL CERTIFICATION: I, BRANDON R. ROWE, 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. 40808, EXPIRATION DATE: 7/31/19



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SURVEYORS
PROJECT MANAGERS
ENVIRONMENTAL CONSULTANTS
LANDSCAPE ARCHITECTS

CIVIL & CONSULTING ENGINEERS

REVISIONS			
REV	DATE	COMMENT	BY

THE STATE OF MARYLAND

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PROJECT No.: MD142038
DRAWN BY: AVG
CHECKED BY: BRR
DATE: 12/01/17
SCALE: AS SHOWN
CAD I.D.: SP4

FINAL ROAD CONSTRUCTION PLAN

FOR
CRAWFORD SUBDIVISION

LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

LOCATION OF SITE
6780 HAVILAND MILL ROAD
TAX MAP 34, GRID 19 & PARCEL 52
TAX MAP 39, GRID 6 & PARCEL 1
5TH ELECTION DISTRICT
HOWARD COUNTY, MD

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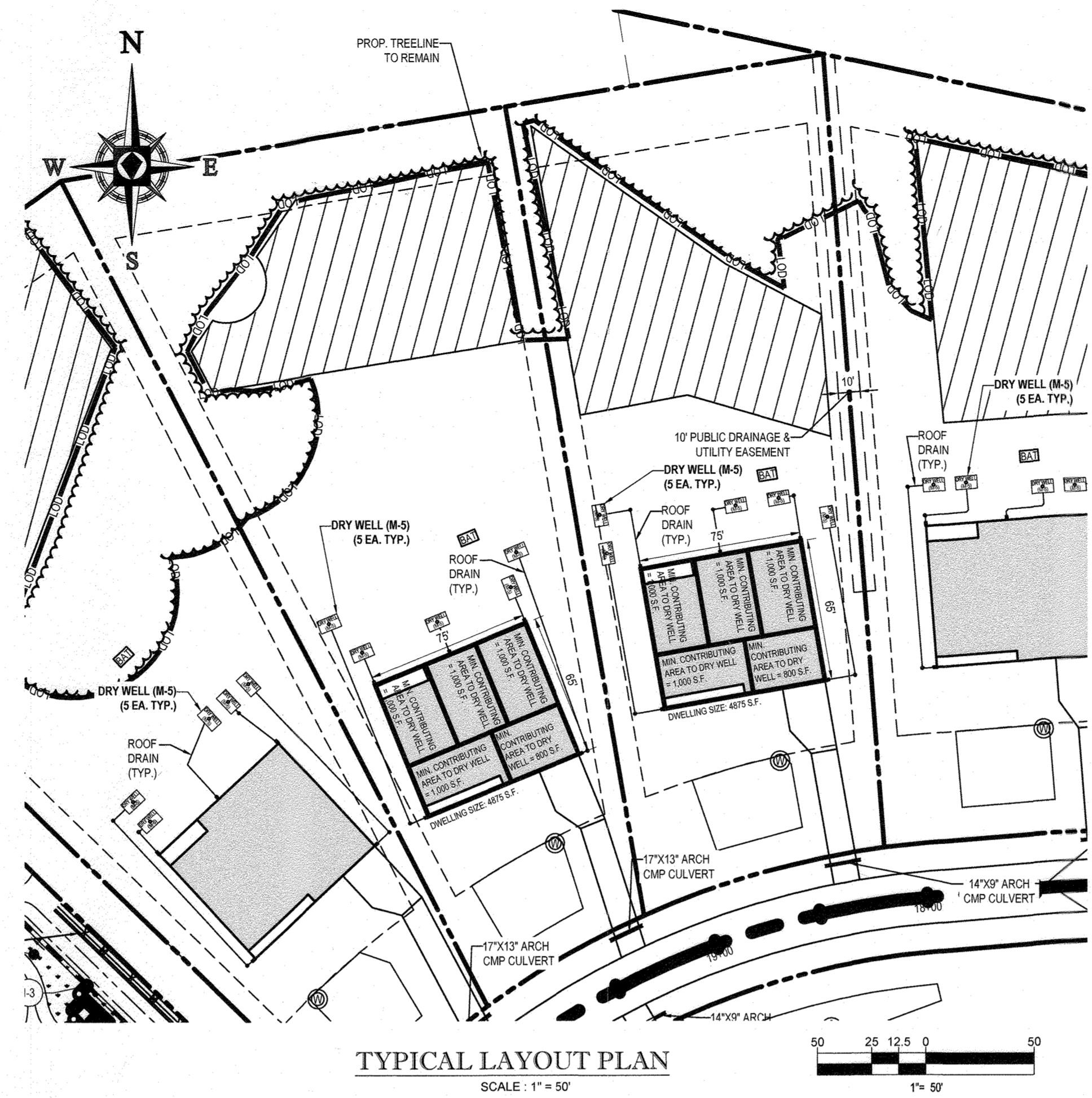
B.R. ROWE

PROFESSIONAL ENGINEER
LICENSE NO. 40808
EXPIRATION DATE: 7/31/19

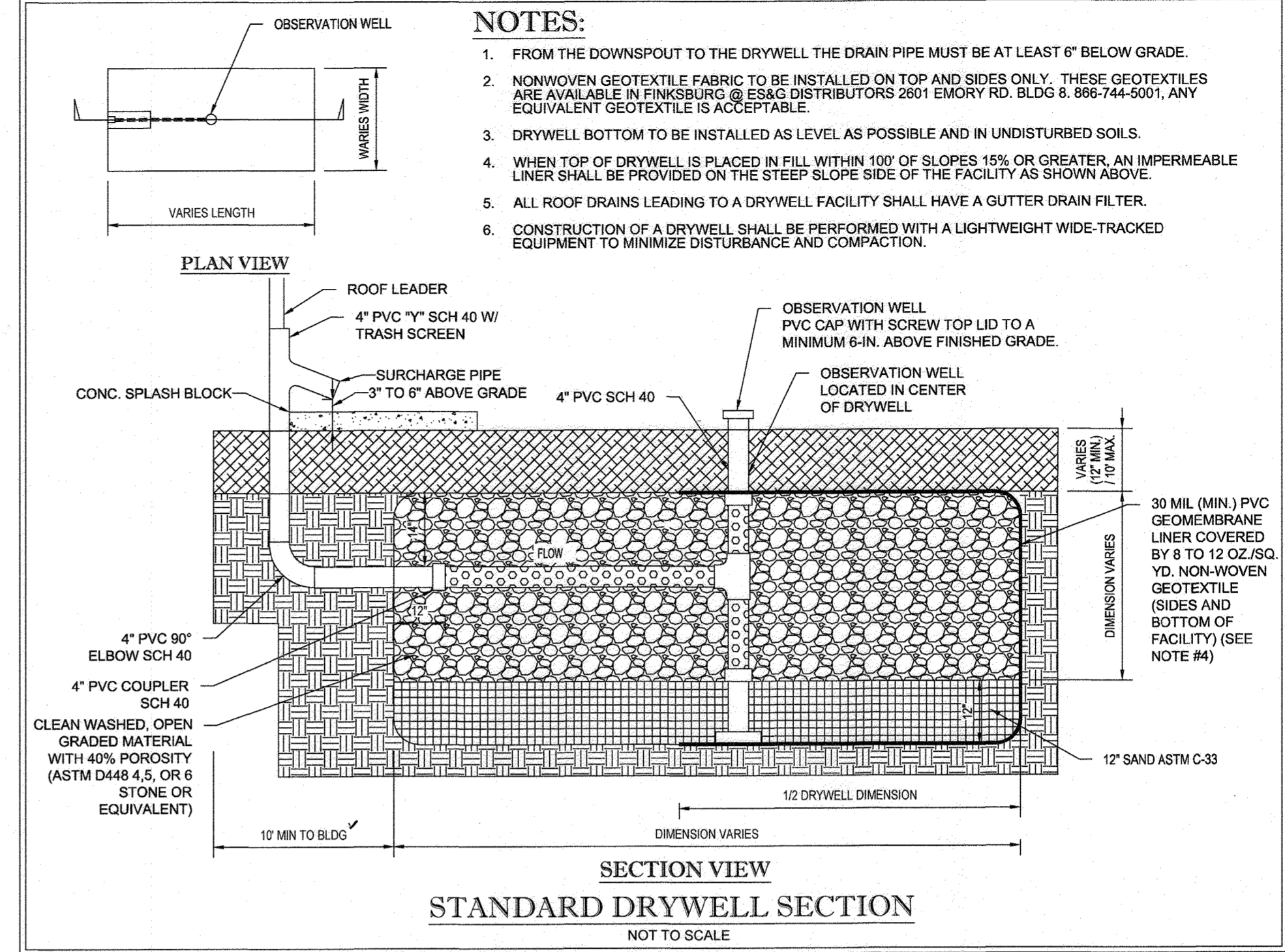
STORM DRAIN PROFILES

SHEET TITLE:
32 of 39

SHEET NUMBER:



TYPICAL LAYOUT PLAN
SCALE: 1" = 50'



SECTION VIEW
STANDARD DRYWELL SECTION
NOT TO SCALE

NOTES:

1. FROM THE DOWNSPOUT TO THE DRYWELL THE DRAIN PIPE MUST BE AT LEAST 6" BELOW GRADE.
2. NONWOVEN GEOTEXTILE FABRIC TO BE INSTALLED ON TOP AND SIDES ONLY. THESE GEOTEXTILES ARE AVAILABLE IN FINKSBURG @ ES&G DISTRIBUTORS 2601 EMORY RD. BLDG 8, 866-744-5001, ANY EQUIVALENT GEOTEXTILE IS ACCEPTABLE.
3. DRYWELL BOTTOM TO BE INSTALLED AS LEVEL AS POSSIBLE AND IN UNDISTURBED SOILS.
4. WHEN TOP OF DRYWELL IS PLACED IN FILL WITHIN 100' OF SLOPES 15% OR GREATER, AN IMPERMEABLE LINER SHALL BE PROVIDED ON THE STEEP SLOPE SIDE OF THE FACILITY AS SHOWN ABOVE.
5. ALL ROOF DRAINS LEADING TO A DRYWELL FACILITY SHALL HAVE A GUTTER DRAIN FILTER.
6. CONSTRUCTION OF A DRYWELL SHALL BE PERFORMED WITH A LIGHTWEIGHT WIDE-TRACKED EQUIPMENT TO MINIMIZE DISTURBANCE AND COMPACTION.

DRY WELL CONSTRUCTION SPECIFICATIONS

- REGULAR INSPECTIONS SHALL BE DURING THE FOLLOWING STAGES OF CONSTRUCTION:
- DURING EXCAVATION TO SUBGRADE
 - DURING PLACEMENT OF BACKFILL AND PERFORATED INLET PIPE AND OBSERVATION WELL
 - DURING PLACEMENT OF GEOTEXTILES AND ALL FILTER MEDIA
 - DURING CONSTRUCTION OF THE APPURTENANT CONVEYANCE
 - UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED DRY WELLS

1. PRIVATELY OWNED PRACTICES SHALL HAVE A MAINTENANCE PLAN AND SHALL BE PROTECTED BY EASEMENT, DEED RESTRICTION, ORDINANCE, OR OTHER LEGAL MEASURES PREVENTING ITS NEGLECT, ADVERSE ALTERATION, AND REMOVAL.
2. DRY WELLS SHALL BE INSPECTED AND CLEANED ANNUALLY BY THE OWNER. THIS INCLUDES GUTTERS, DOWNSPOUTS, AND ALL FILTERS.
3. PONDING, STANDING WATER, OR ALGAL GROWTH ON THE TOP OF A DRY WELL MAY INDICATE FAILURE DUE TO SEDIMENTATION IN THE GRAVEL MEDIA. IF WATER PONDING FOR MORE THAN 48 HOURS AFTER A MAJOR STORM OR MORE THAN SIX INCHES OF SEDIMENT HAS ACCUMULATED, THE GRAVEL MEDIA SHOULD BE EXCAVATED AND REPLACED.

NOTES:

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2. NONWOVEN GEOTEXTILE FABRIC TO BE INSTALLED ON TOP AND SIDES ONLY. THESE GEOTEXTILES ARE AVAILABLE IN FINKSBURG @ ES&G DISTRIBUTORS 2601 EMORY RD. BLDG 8, 866-744-5001, ANY EQUIVALENT GEOTEXTILE IS ACCEPTABLE.
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STORMWATER MANAGEMENT NOTES

1. STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH THE 2005 MARYLAND STORMWATER DESIGN MANUAL.

OWNERS:		ESC MILL CREEK, INC. 5074 DORSEY HALL DRIVE, SUITE 205 ELlicOTT CITY, MD 21042 TEL: (410) 720-3021 ATTN: JASON VAN KIRK	DONALD O'KEEFE SALLY O'KEEFE 6950 HAVILAND MILL ROAD CLARKSVILLE, MD 21029 TEL: (410) 599-0941
DEVELOPER:		ESC MILL CREEK, INC. 5074 DORSEY HALL ROAD, SUITE 205 ELlicOTT CITY, MD 21042 CONTACT: JASON VAN KIRK PHONE: (410) 720-3021	
SUBDIVISION NAME: CRAWFORD SECTION/AREA: N/A DEED # 03667/00532 & 05888/00490		TAX MAP: 34 & 39 GRID: 19 & 6 PARCEL: 52 & 1 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND	ZONED: RR-DEO
PREVIOUS FILE No. SP-15-015 ECP-15-051 WP-15-122		PROFESSIONAL CERTIFICATION I, BRANDON R. ROWE, 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. 40868 EXPIRATION DATE: 7/31/2019	

BOHLER ENGINEERING

CORPORATE OFFICE:
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OFFICES:
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BOWLING GREEN, OH
ROCKFORD, IL
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CENTREVILLE, VA
PHILADELPHIA, PA
TAMPA, FL

CIVIL & CONSULTING ENGINEERS
SURVEYORS
PROJECT MANAGERS
ENVIRONMENTAL CONSULTANTS
LANDSCAPE ARCHITECTS

REVISIONS

REV	DATE	COMMENT	BY

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PROJECT No.:	MD142038
DRAWN BY:	AVG
CHECKED BY:	BRR
DATE:	12/01/17
SCALE:	AS SHOWN
CAD ID:	SDA

FINAL ROAD CONSTRUCTION PLAN

FOR
CRAWFORD SUBDIVISION

LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

LOCATION OF SITE
6780 HAVILAND MILL ROAD
TAX MAP 34, GRID 19 & PARCEL 52
TAX MAP 39, GRID 6 & PARCEL 1
5TH ELECTION DISTRICT
HOWARD COUNTY, MD

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B.R. ROWE

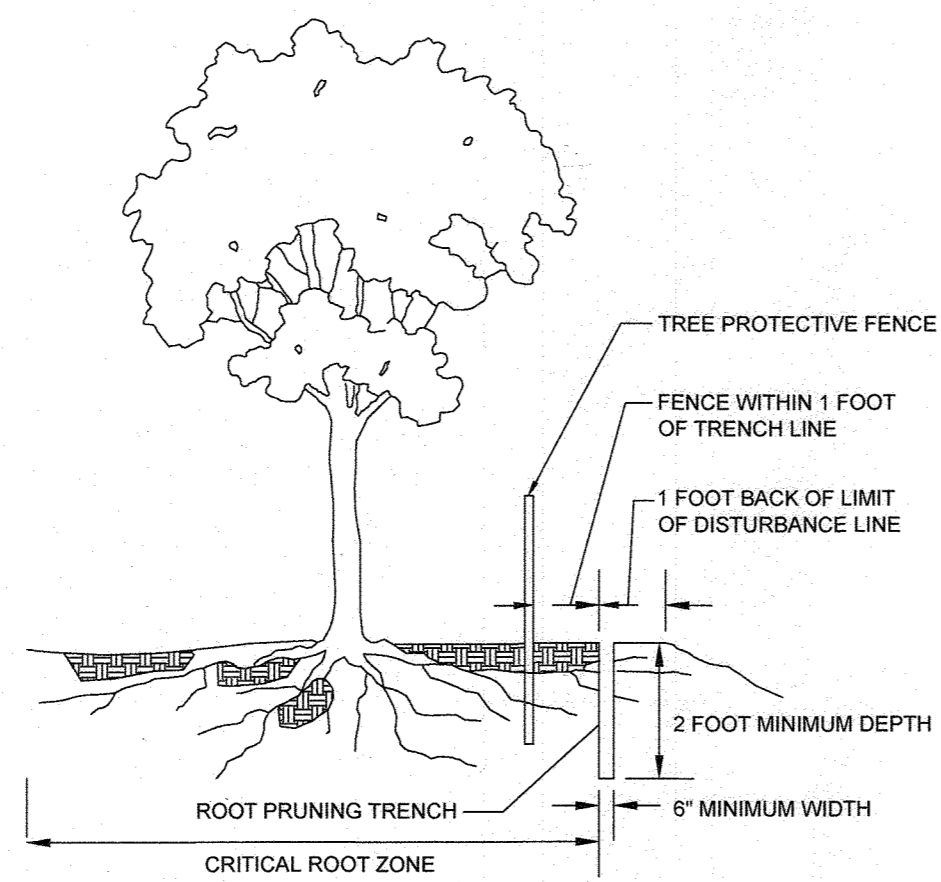
PROFESSIONAL ENGINEER
STATE OF MARYLAND
LICENSE NO. 40868
EXPIRES 7/31/2019

FUTURE STORMWATER MANAGEMENT DETAILS

SHEET NUMBER:
33 of 39

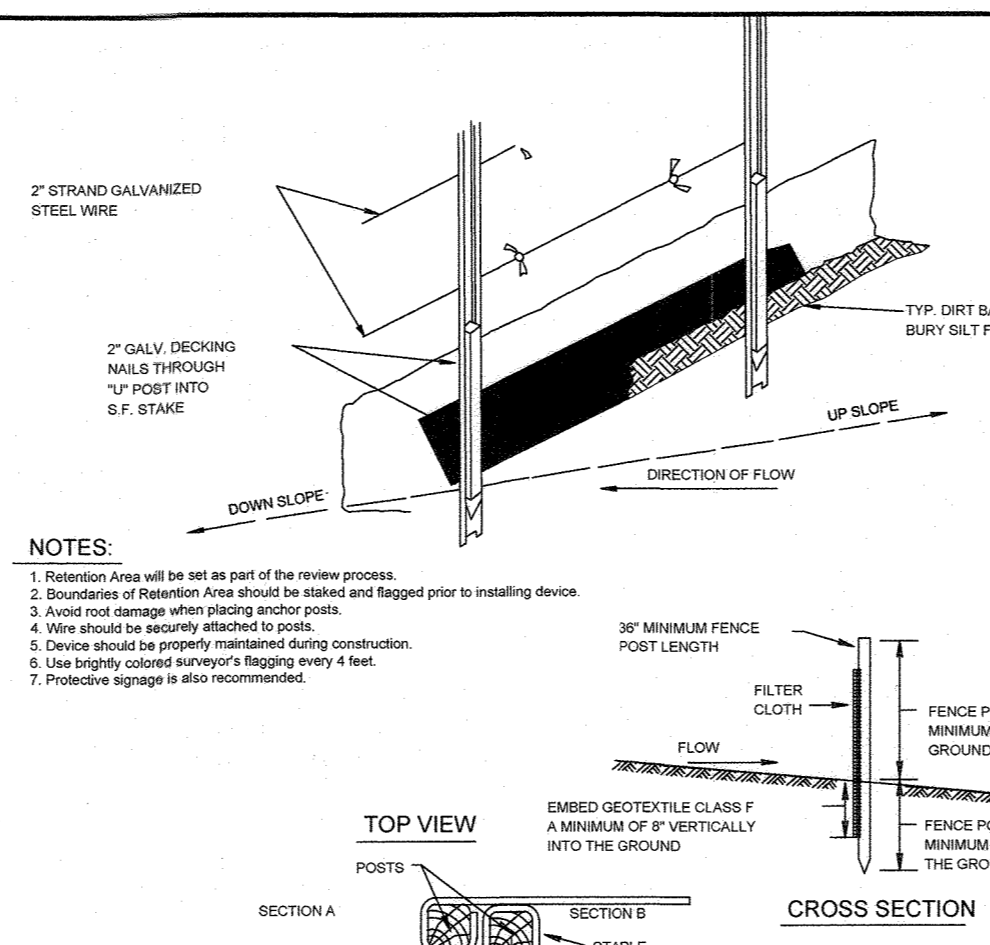
STATE OF MARYLAND
Professional L.S. # 10849 Exp. Date 4/2/2022
AS-BUILT DATE: 6/25/2022
Shanaberger & Lane

APPROVED, DEPARTMENT OF PUBLIC WORKS	DATE: 1/10/2018
CHIEF, BUREAU OF HIGHWAYS	
APPROVED, DEPARTMENT OF PLANNING AND ZONING	DATE: 1/19/18
CHIEF, DIVISION OF LAND DEVELOPMENT	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE: 1-28-18



- NOTES:**
- RETENTION AREAS WILL BE SET AS PART OF THE REVIEW PROCESS.
 - BOUNDARIES OF RETENTION AREAS SHOULD BE STAKED FLAGGED PRIOR TO TRENCHING.
 - EXACT LOCATION OF TRENCH SHOULD BE IDENTIFIED.
 - TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH SOIL REMOVED OR OTHER HIGH ORGANIC SOIL.
 - ROOTS SHOULD BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.

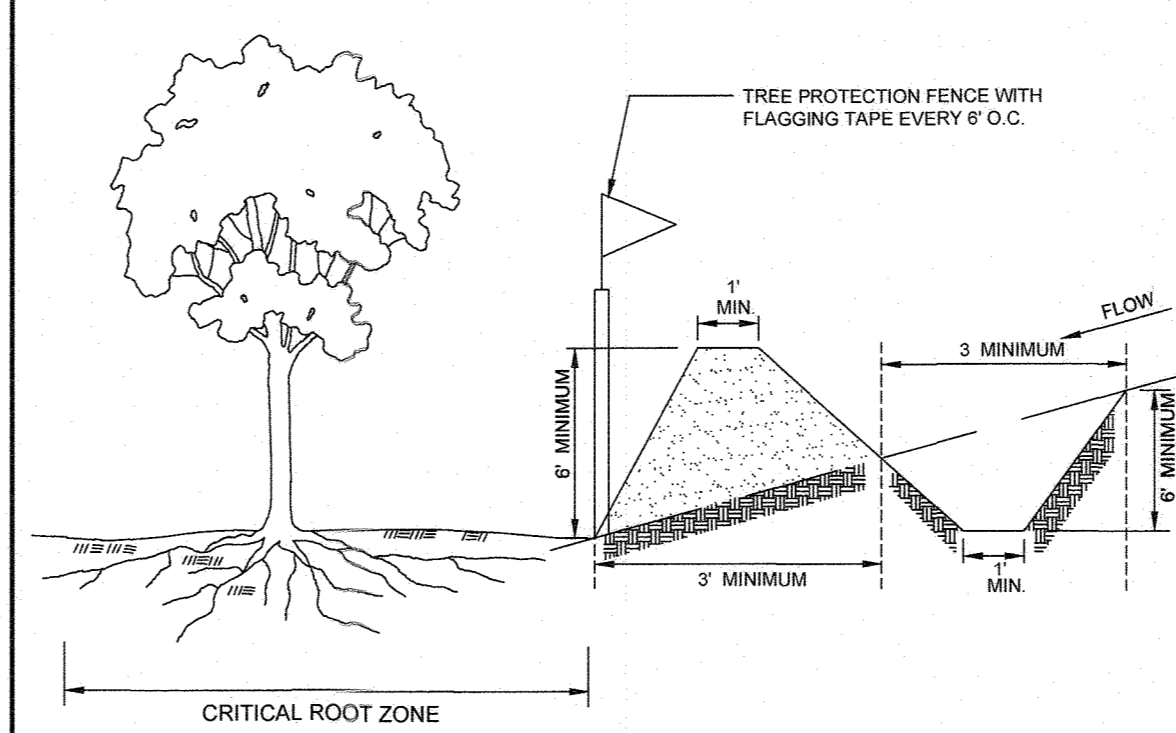
ROOT PRUNING DETAIL
NOT TO SCALE



- NOTES:**
- Retention Area will be set as part of the review process.
 - Boundaries of Retention Area should be staked and flagged prior to installing device.
 - Avoid root damage when placing anchor posts.
 - Device should be properly maintained during construction.
 - Use brightly colored surveyor's flagging every 4 feet.
 - Protective signage is also recommended.
- CONSTRUCTION SPECIFICATIONS**
- Fence posts shall be a minimum of 36" long driven 18" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" (min) (max) or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard 1" or 1 1/2" section weighing not less than 150 pound per line foot.
 - Geotextile shall be certified accuracy to meet these posts with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

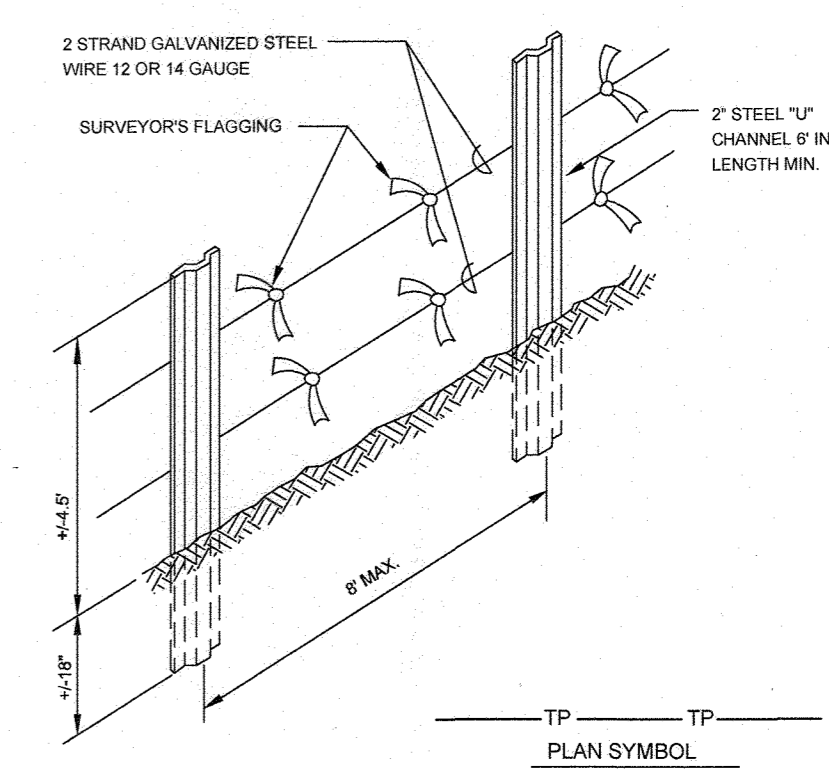
Tensile Strength	50 lb/ft (min.)	Test: MSMT 509
Tensile Modulus	20 lb/ft (min.)	Test: MSMT 509
Flow Rate	1.3 gal/ft (min.)	Test: MSMT 522
Filtration Efficiency	75% (min.)	Test: MSMT 522
 - Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent end-to-end leakage.
 - Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

COMBINATION SILT FENCE & TREE PROTECTION - TYPE II
NOT TO SCALE



- NOTES:**
- Combination sediment control and forest protection device.
 - Boundaries of the Retention Area will be set as part of the forest conservation plan review process.
 - Boundaries of Retention Area should be staked prior to installing protective device.
 - Root damage should be avoided.
 - The top of slope should be outside the critical root zone.
 - Equipment is prohibited within critical root zone of retention area; place dike accordingly.
 - All standard maintenance for earthen dikes and swales apply to these details.
 - All standard reclamation practices for earthen dikes and swales shall apply to these details.

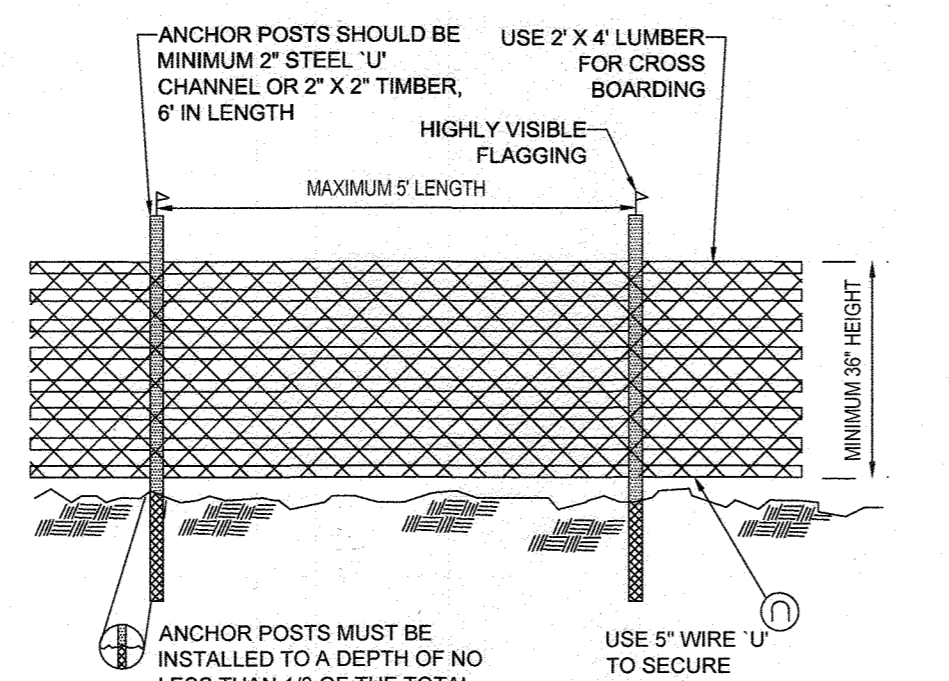
COMBINATION EARTH DIKE & TREE PROTECTION - TYPE III
NOT TO SCALE



- NOTES:**
- Forest preservation, specimen tree and re-forestation protection device.
 - Protected areas will be set as part of the review process.
 - Boundaries of protected areas should be staked and flagged prior to installing device.
 - Avoid root damage when placing anchor posts.
 - Wire should be securely attached to posts.
 - Device should be properly maintained during construction.
 - Use brightly colored surveyor's flagging every 4'.
 - Protective signage is also recommended.
 - Contractor may use blaze orange tree protection fence or equal according to MD State Forest Conservation Technical Manual Figure D-5.

TREE PROTECTION FENCING - TYPE I
NOT TO SCALE

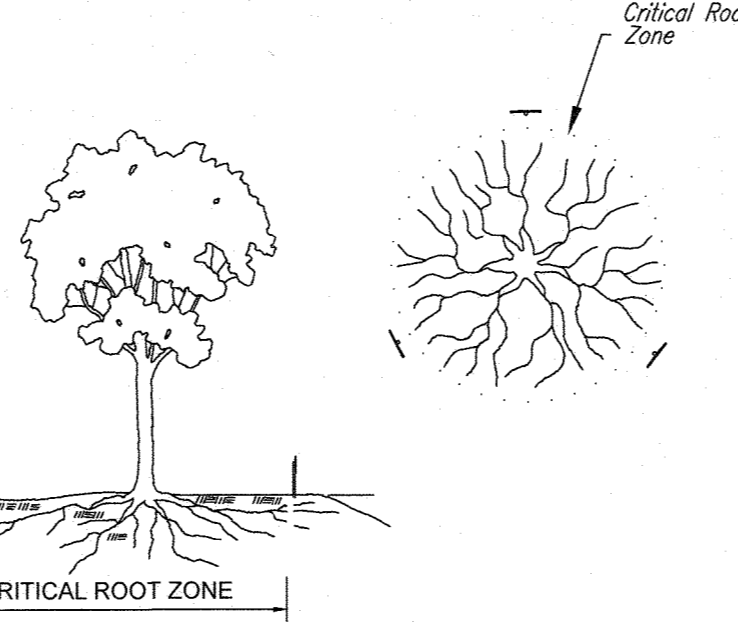
BLAZE ORANGE PLASTIC MESH



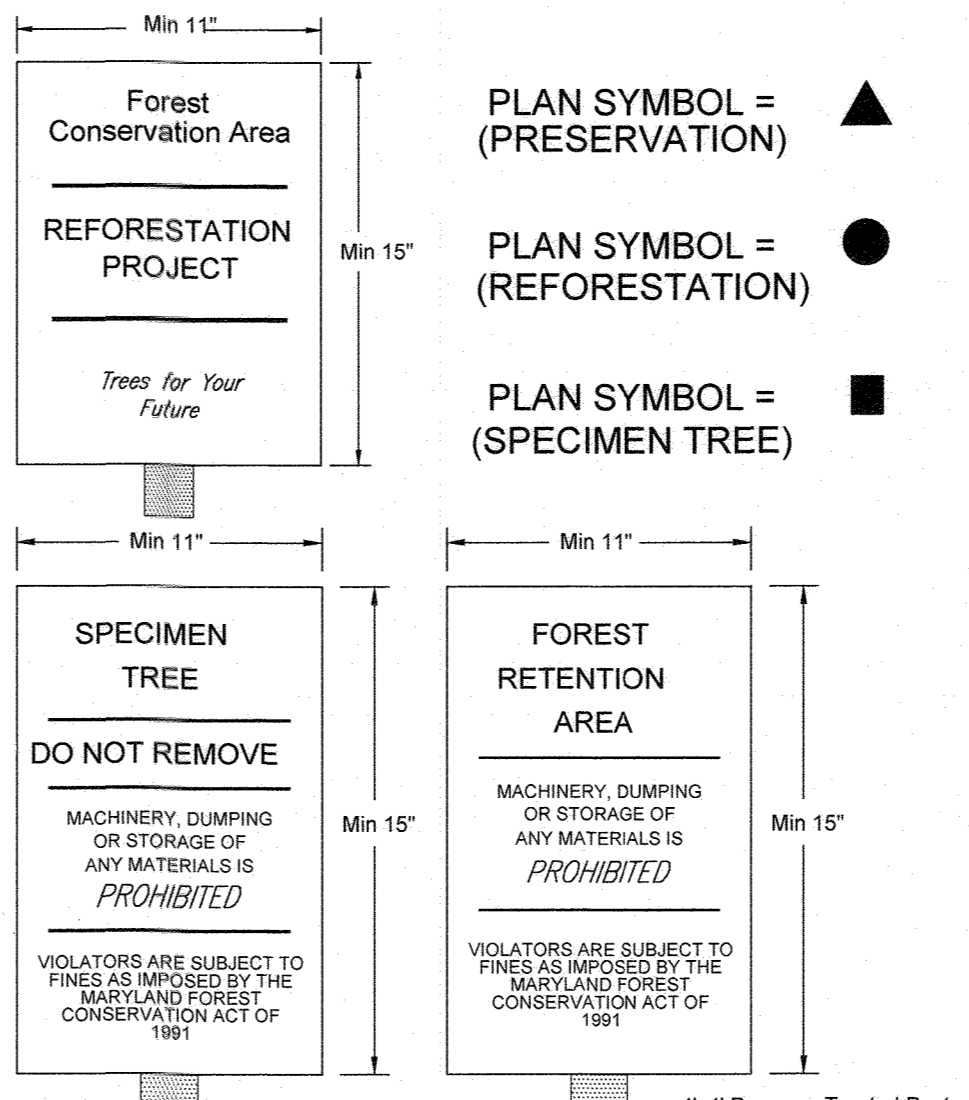
- NOTES:**
- FOREST PROTECTION DEVICE ONLY.
 - RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
 - BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
 - ROOT DAMAGE SHOULD BE AVOIDED.
 - PROTECTIVE SIGNAGE MAY ALSO BE USED.
 - DEVICE SHALL BE MAINTAINED THROUGHOUT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

TEMPORARY TREE PROTECTION FENCING
NOT TO SCALE

Specimen/Champion Tree Protection Signage

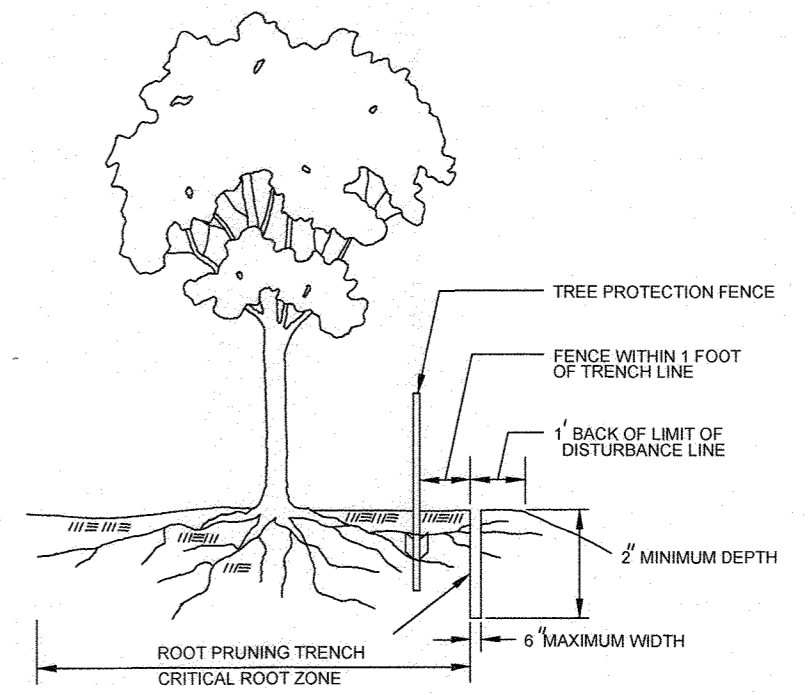


- NOTES:**
- Retention Areas will be set as part of the review process.
 - Boundaries of Retention Areas/Critical Root Zones should be marked with signage prior to construction.
 - Signs should be placed at edge or 1-foot outside the Critical Root Zone.
 - Signs should be placed around each specimen tree as indicated on the plan.



- NOTES:**
- Bottom of signs to be no lower than top of tree protection fence but higher than 6".
 - Signs to be placed approximately 50 feet apart. Conditions on site affecting visibility may warrant placing signs closer or farther apart.
 - Attachment of signs to trees is prohibited.
 - Signs to be posted on 4"x4" pressure treated wood posts driven a minimum of 1.5' into ground or 2" steel "U" channel (minimum 6" length) driven into ground.
 - Signs to be attached to posts with 2 galvanized bolts, each with 2 washers and a galvanized nut.

SIGNAGE
NOT TO SCALE



- NOTES:**
- Retention Areas to be established as part of the forest conservation plan review process.
 - Boundaries of Retention Areas should be staked, flagged and/or fenced prior to trenching.
 - Exact location of trench should be identified.
 - Trench should be immediately backfilled with soil removed or other high organic soil.
 - Roots should be cleanly cut using vibratory knife or other acceptable equipment.

ROOT PRUNING
NOT TO SCALE

FCP NOTES

- ANY FOREST CONSERVATION EASEMENT (FCE) AREA SHOWN HEREON IS SUBJECT TO PROTECTIVE COVENANTS WHICH MAY BE FOUND IN THE LAND RECORDS OF HOWARD COUNTY WHICH RESTRICT THE DISTURBANCE AND USE OF THESE AREAS.
- FORESTED AREAS OCCURRING OUTSIDE OF THE FCE SHALL NOT BE CONSIDERED PART OF THE FCE AND SHALL NOT BE SUBJECT TO PROTECTIVE LAND COVENANTS.
- LIMITS OF DISTURBANCE SHALL BE RESTRICTED TO AREAS OUTSIDE THE LIMIT OF TEMPORARY FENCING OR THE FCE BOUNDARY, WHICHEVER IS GREATER.
- THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENT, EXCEPT AS PERMITTED BY HOWARD COUNTY DPZ.
- NO STOCKPILES, PARKING AREAS, EQUIPMENT CLEANING AREAS, ETC. SHALL OCCUR WITHIN AREAS DESIGNATED AS FOREST CONSERVATION EASEMENTS.
- TEMPORARY FENCING SHALL BE USED TO PROTECT FOREST RESOURCES DURING CONSTRUCTION. FENCING SHALL BE INSTALLED ALONG LIMITS OF DISTURBANCE OCCURRING WITHIN 50 FEET OF THE PROPOSED FCE LIMITS.
- PERMANENT SIGNAGE WILL BE POSTED AT 60-100 FOOT INTERVALS ALONG ALL FCE LIMITS.
- FOREST CONSERVATION REQUIREMENTS PER SECTION 16 1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION WILL BE FULFILLED BY RETENTION OF EXISTING FOREST IN THE AMOUNT OF 23.3 ACRES, FOR A TOTAL CONSERVATION EASEMENT AREA OF 24.42 ACRES (THIS INCLUDES 1.12 AC. OF EXISTING FLOODPLAIN).

OWNERS:
ESC MILL CREEK, INC.
5074 DORSEY HALL DRIVE, SUITE 205
ELICOTT CITY, MD 21042
TEL: (410) 720-3021
ATTN: JASON VAN KIRK

DEVELOPER:
ESC MILL CREEK, INC.
5074 DORSEY HALL DRIVE, SUITE 205
ELICOTT CITY, MD 21042
CONTACT: JASON VAN KIRK
PHONE: (410) 720-3021

DONALD O'KEEFE
SALLY O'KEEFE
8950 HAVILAND MILL ROAD
CLARKSVILLE, MD 21029
TEL: (410) 599-6941

SUBDIVISION NAME: CRAWFORD SECTION/AREA: NA
DEED #: 0896700532 & 0588900490

TAX MAP: 34 & 39 GRID: 19 & 6 PARCEL: 52 & 1
5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

PREVIOUS FILE No.
SP-15-015 WP-10-102
ECP-15-051 WP-17-106
WP-15-122

PROFESSIONAL CERTIFICATION
I, ERIC R. McWILLIAMS, HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 3887 EXPIRATION DATE: 8/20/16

THIS IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

Eric R. Shanaberger
Professional L.S. # 10849 Exp. Date 4/2/2022
AS-BUILT DATE: 6/25/2020
Shanaberger & Lane

APPROVED: DEPARTMENT OF PLANNING AND ZONING

J. Meehan 1/19/18
CHIEF DEVELOPMENT ENGINEERING DIVISION DATE

David Clark 1/18/18
CHIEF DIVISION OF LAND DEVELOPMENT DATE

BOHLER ENGINEERING

CORPORATE OFFICE:
WARREN, NJ

OFFICES:
BOWEN, MD
SOUTHBRIDGE, MA
WARRINGTON, VA
ROCKFORD, IL
CENTREVILLE, VA
TAMPA, FL
PHILADELPHIA, PA

CIVIL & CONSULTING ENGINEERS
SURVEYORS
PROJECT MANAGERS
ENVIRONMENTAL CONSULTANTS
LANDSCAPE ARCHITECTS

REVISIONS

REV	DATE	COMMENT	BY

THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATES OF VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE CALL: 811

(VA 1-800-245-4848) (PA 1-800-245-3779) (DC 1-800-257-7777) (MD 1-800-552-7001) (DE 1-800-257-7777)

PROJECT No.: MD142038
DRAWN BY: AVG
CHECKED BY: BRR
DATE: 12/01/17
SCALE: AS SHOWN
CAD I.D.: FCA

FINAL ROAD CONSTRUCTION PLAN

FOR
CRAWFORD SUBDIVISION
LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

LOCATION OF SITE
6780 HAVILAND MILL ROAD
TAX MAP 34, GRID 19 & PARCEL 52
TAX MAP 39, GRID 6 & PARCEL 1
5TH ELECTION DISTRICT
HOWARD COUNTY, MD

BOHLER ENGINEERING

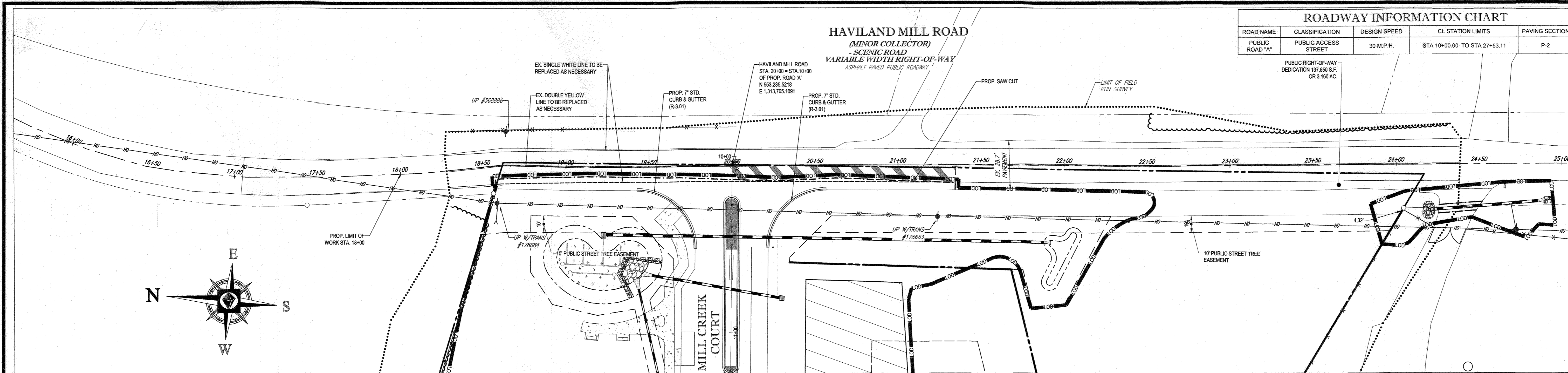
901 DULANEY VALLEY ROAD, SUITE 801
TOWSON, MARYLAND 21284
Phone: (410) 821-7900
Fax: (410) 821-7987
www.BohlerEngineering.com

E.R. McWILLIAMS

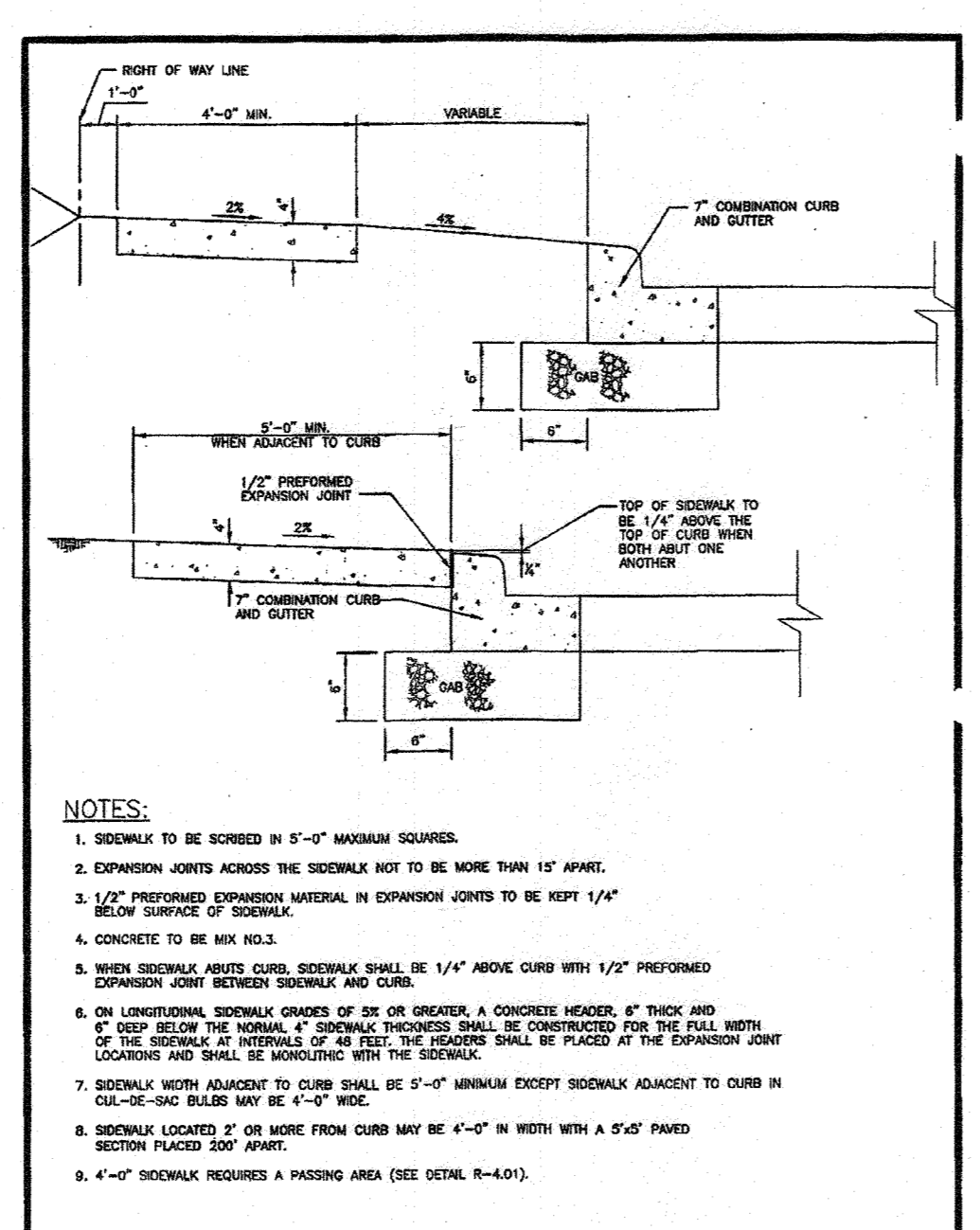
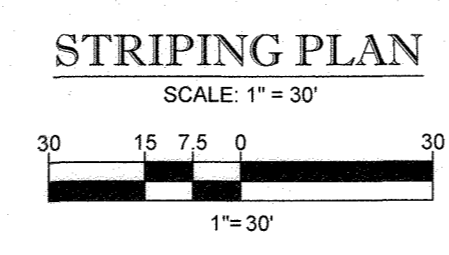
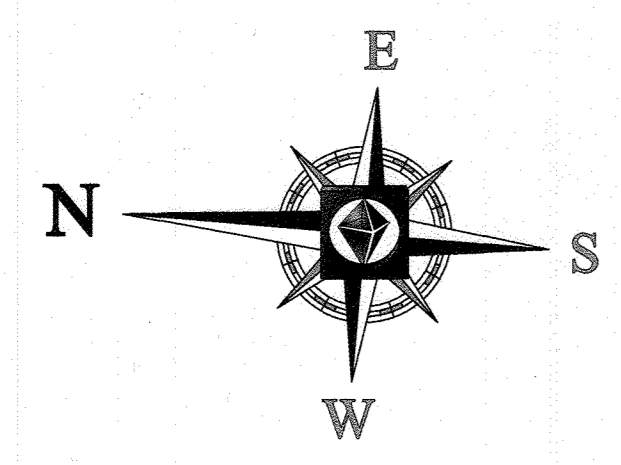
REGISTERED LANDSCAPE ARCHITECT

SHEET TITLE:
FOREST CONSERVATION NOTES AND DETAILS

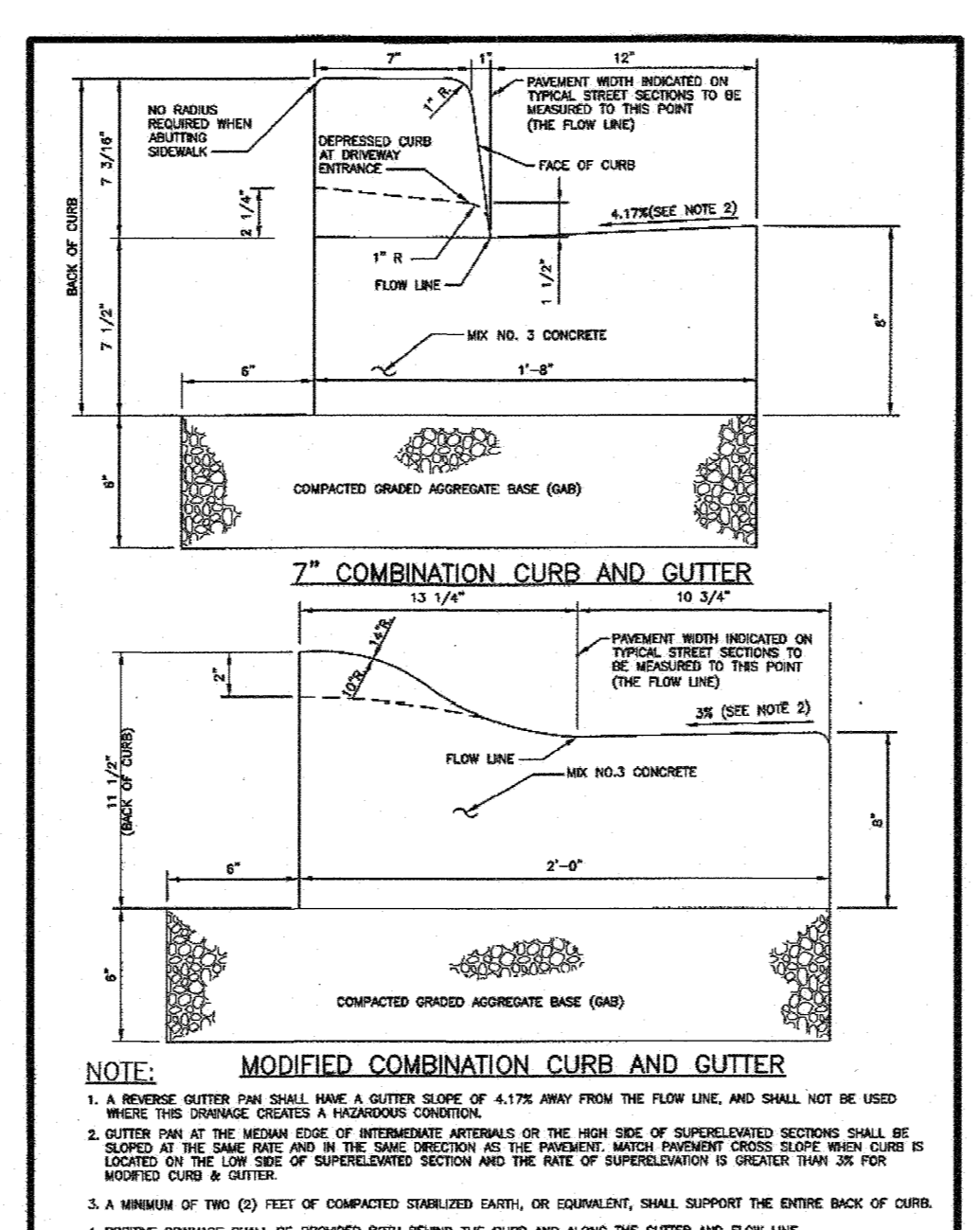
SHEET NUMBER:
35 of 39



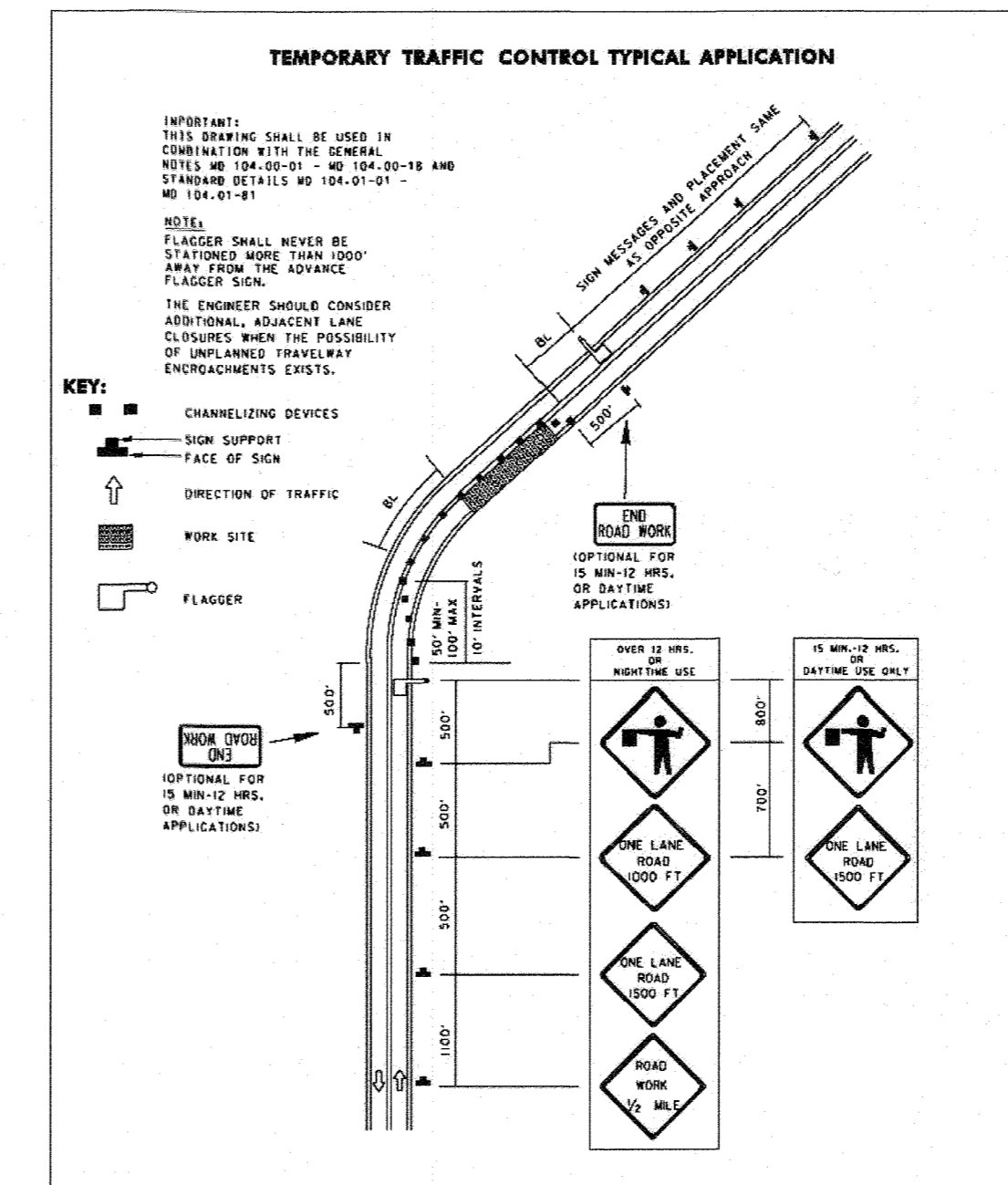
ROADWAY INFORMATION CHART				
ROAD NAME	CLASSIFICATION	DESIGN SPEED	CL STATION LIMITS	PAVING SECTION
PUBLIC ROAD "A"	PUBLIC ACCESS STREET	30 M.P.H.	STA 10+00.00 TO STA 27+53.11	P-2



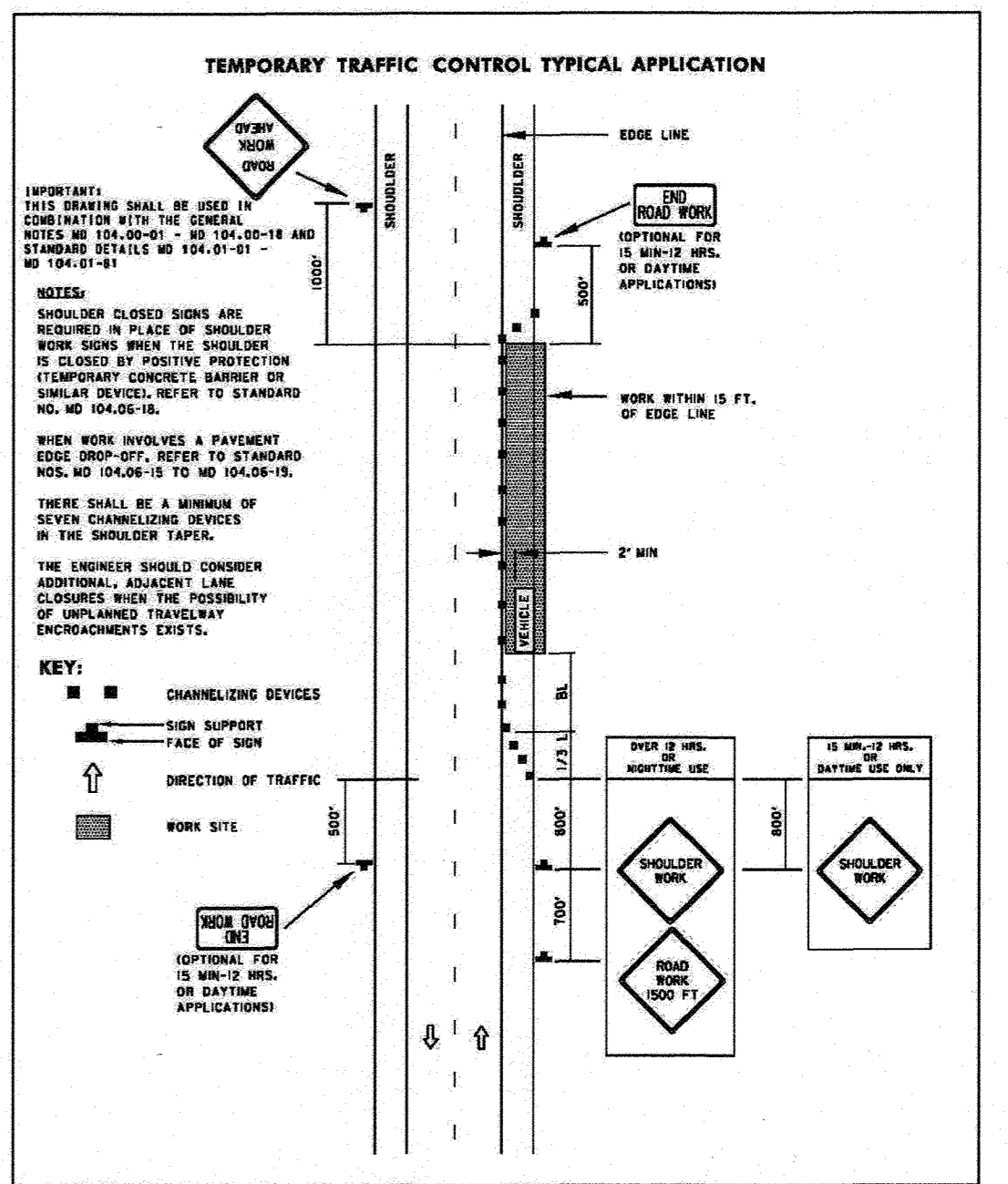
HOWARD COUNTY, MARYLAND Department of Public Works	Concrete Sidewalk	Detail R-3.05
---	-------------------	------------------



HOWARD COUNTY, MARYLAND Department of Public Works	CURB AND GUTTER 7" Modified	Detail R-3.01
---	--------------------------------	------------------



PROVISION	104	CATEGORY	CODE	TIME
APPROVED				
Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES FLAGGING OPERATION-2-LANE, 2-WAY EQL/LESS THAN 40 MPH STANDARD NO. MD 104.02-10				



PROVISION	104	CATEGORY	CODE	TIME
APPROVED				
Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES SHOULDER WORK/2-LANE, 2-WAY EQL/LESS THAN 40 MPH STANDARD NO. MD 104.02-02				

STATE OF MARYLAND
DEPARTMENT OF PUBLIC WORKS
Professional L.S. # 10849 Exp. Date 4/2/2022
AS-BUILT DATE: 6/25/2020
Shanaberger & Lane

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF BUREAU OF HIGHWAYS DATE 1/10/2018
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF DIVISION OF LAND DEVELOPMENT DATE 1/19/18
CHIEF DEVELOPMENT ENGINEERING DIVISION DATE 1.18.18

OWNERS:
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5074 DORSEY HALL DRIVE, SUITE 205
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TEL: (410) 720-3021
ATTN: JASON VAN KIRK

DEVELOPER:
ESC MILL CREEK, INC.
5074 DORSEY HALL DRIVE, SUITE 205
ELICOTT CITY, MD 21042
CONTACT: JASON VAN KIRK
PHONE: (410) 720-3021

SUBDIVISION NAME: CRAWFORD
SECTION/AREA: N/A
DEED # 05907/00532 & 05909/04090

TAX MAP: 34 & 39 GRID: 19 & 6 ZONED: RR-DEO
PARCEL: 52 & 1
5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

PROFESSIONAL CERTIFICATION
I, BRANDON R. ROWE, 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. 42808, EXPIRATION DATE: 7/31/2019

BOHLER ENGINEERING
CORPORATE OFFICE:
WARREN, NJ
SURVEYORS
CIVIL & CONSULTING ENGINEERS

PROJECT MANAGERS
ENVIRONMENTAL CONSULTANTS
LANDSCAPE ARCHITECTS

OFFICES:
BOWNE, MD
STURBRIDGE, MA
WARRINGTON, VA
ROCKFORD, IL
PHILADELPHIA, PA
TAMPA, FL

REVISIONS			
REV	DATE	COMMENT	BY

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1-800-245-4848 (PA) 1-800-242-1776 (DC) 1-800-257-7777 (VA) 1-800-552-7001 (MD) 1-800-257-7777 (DE) 1-800-282-8559

PROJECT NO.: MD142038
DRAWN BY: BRR
CHECKED BY: BRR
DATE: 12/01/17
SCALE: 1" = 50'
CAD I.D.: TTP

FINAL ROAD CONSTRUCTION PLAN

FOR
CRAWFORD SUBDIVISION
LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G

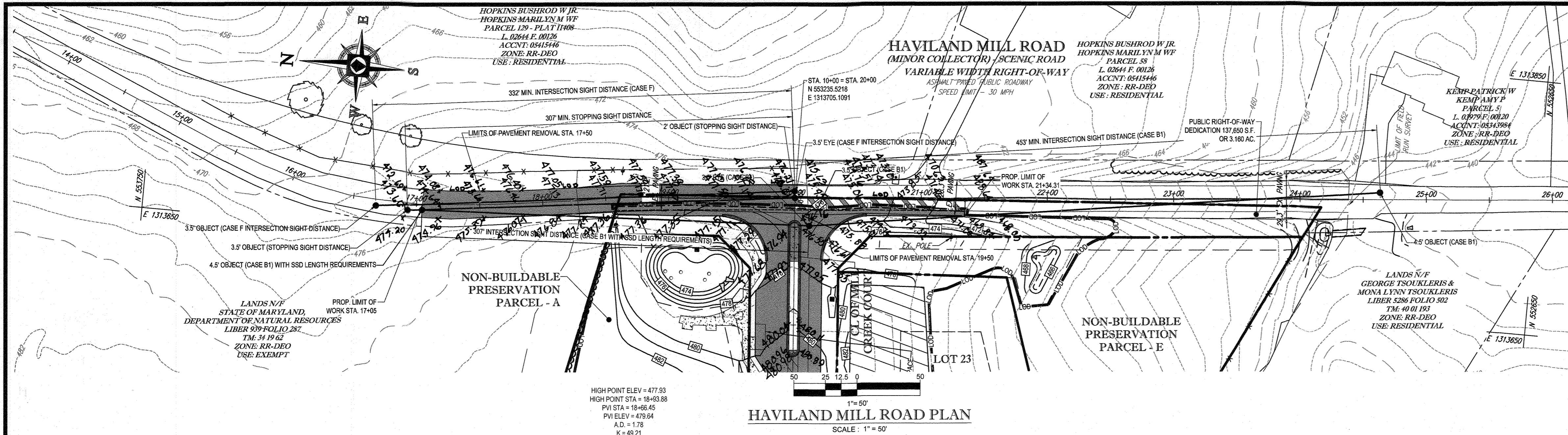
LOCATION OF SITE
6780 HAVILAND MILL ROAD
TAX MAP 34, GRID 19 & PARCEL 52
TAX MAP 39, GRID 6 & PARCEL 1
5TH ELECTION DISTRICT
HOWARD COUNTY, MD

BOHLER ENGINEERING
901 DULANEY VALLEY ROAD, SUITE 801
TOWSON, MARYLAND 21204
Phone: (410) 821-7900
Fax: (410) 821-7967
www.BohlerEngineering.com

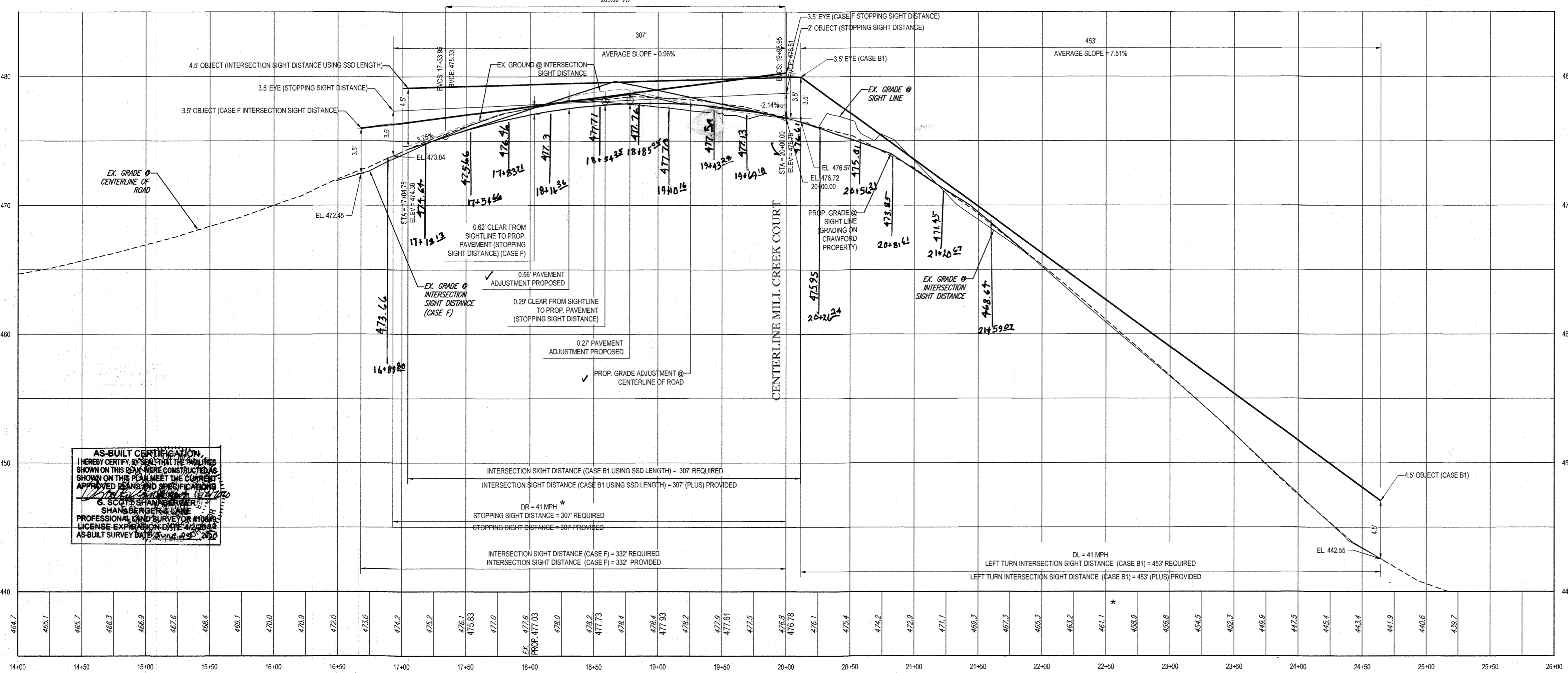
B.R. ROWE
PROFESSIONAL ENGINEER
No. 42808
EXPIRATION DATE: 7/31/2019

SHEET TITLE:
HAVILAND MILL RD STRIPING ROAD DETAILS AND TRAFFIC CONTROL PLAN

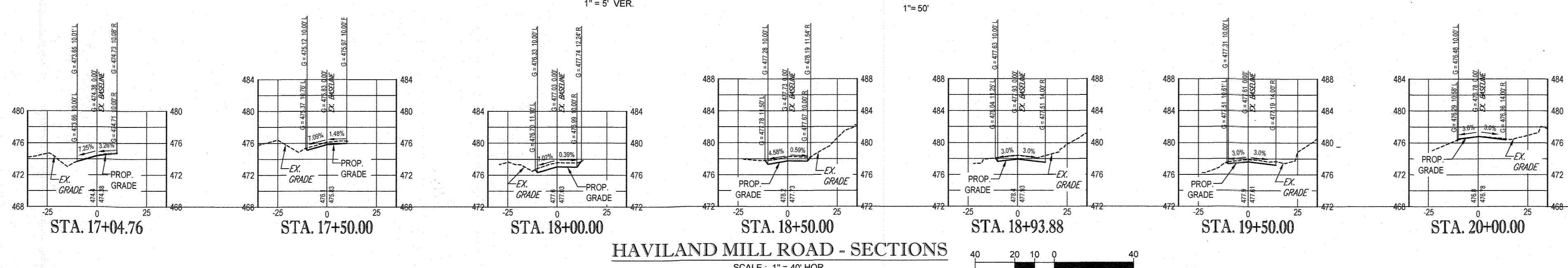
SHEET NUMBER:
36 of 39



HAVILAND MILL ROAD PLAN
SCALE: 1" = 50'



HAVILAND MILL ROAD SIGHT DISTANCE PROFILE
SCALE: 1" = 50' HOR, 1" = 5' VER.



HAVILAND MILL ROAD - SECTIONS
SCALE: 1" = 40' HOR, 1" = 10' VER.



BOHLER ENGINEERING
Project: Crawford Property
Location: Howard County, MD
Road Name: Haviland Mill Road
Posted Speed Limit: 30 mph
By: BSR
Checked By: BRR
Date: 6/12/2015
Job# MD142038

SIGHT DISTANCE ANALYSIS

Road Data	
V_{major}	41 (Design Speed, mph - Major Road)
V	41 (Design Speed, mph)
a	11.2 (Deceleration Rate, ft/s ² [Std decel rate for Passenger Cars = 11.2 sec])
G_1	7.6 (Road Grade % - To Right [for left turn])
G_2	1.15 (Road Grade % - To Left [for right turn])
$t_{g(Case B1)}$	7.5 - Passenger Car = 7.5 sec - Single Unit Truck = 9.5 sec - Combination truck = 11.5 sec
$t_{g(Case B2)}$	6.5 - Passenger Car = 6.5 sec - Single Unit Truck = 8.5 sec - Combination truck = 10.5 sec
$t_{g(Case F)}$	5.5 - Passenger Car = 5.5 sec - Single Unit Truck = 6.5 sec - Combination truck = 7.5 sec
t	2.5 (Brake Reaction Time, seconds)
BRT=	Distance traveled during braking reaction time
BDG=	Distance traveled during braking (braking to a stopped position)

CASE B1 - Intersection Sight Distance (left turn from minor street)

$$ISD = 1.47 \times V_{major} \times t_g$$

$$ISD = 1.47 \times 41 \times 7.5$$

$$ISD = 452.03 \text{ ft}$$

CASE B2 - Intersection Sight Distance (right turn from minor street)

$$ISD = 1.47 \times V_{major} \times t_g$$

$$ISD = 1.47 \times 41 \times 6.5$$

$$ISD = 391.76 \text{ ft}$$

CASE F - Intersection Sight Distance (left turn from major street)

$$ISD = 1.47 \times V_{major} \times t_g$$

$$ISD = 1.47 \times 41 \times 5.5$$

$$ISD = 331.49 \text{ ft}$$

Stopping Sight Distance

$$d = 1.47 Vt + 1.075 (V^2 / a)$$

$$d = 1.47 \times 41 \times 2.5 + 1.075 \times 41^2 / 11.2$$

$$d = 312.02$$

Stopping Sight Distance (on Grades)

$$SSD = BRT + BDG$$

Braking Reaction Time = Distance Traveled

$$BRT = 1.47Vt$$

$$BRT = 1.47 \times 41 \times 2.5$$

$$BRT = 150.675 \text{ ft}$$

Left Turn

$$BDG = \frac{V^2}{30((a/32.2) \pm G_1)}$$

$$BDG = \frac{41^2}{30((11.2 / 32.2) \pm 7.6 \%)}$$

$$BDG = \frac{1681}{12.71}$$

$$BDG = 132.24 \text{ ft}$$

$BRT + BDG = SSD (Left)$

$$151 + 132 = 283 \text{ ft}$$

Right Turn

$$BDG = \frac{V^2}{30((a/32.2) \pm G_2)}$$

$$BDG = \frac{41^2}{30((11.2 / 32.2) \pm 1.15 \%)}$$

$$BDG = \frac{1681}{10.78}$$

$$BDG = 155.94 \text{ ft}$$

$BRT + BDG = SSD (Right)$

$$151 + 156 = 307 \text{ ft}$$

OWNERS:
ESC MILL CREEK, INC.
5074 DORSEY HALL DRIVE, SUITE 205
ELlicOTT CITY, MD 21042
TEL: (410) 720-3021
ATTN: JASON VAN KIRK

DONALD O'KEEFE
6950 HAVILAND MILL ROAD
CLARKSVILLE, MD 21029
TEL: (410) 599-9941

DEVELOPER:
ESC MILL CREEK, INC.
5074 DORSEY HALL DRIVE, SUITE 205
ELlicOTT CITY, MD 21042
CONTACT: JASON VAN KIRK
PHONE: (410) 720-3021

TAX MAP: 34 & 39 GRID: 19 & 6 ZONED: RR-DEO
PARCEL: 52 & 1
5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SUBDIVISION NAME: CRAWFORD
SECTION/AREA: N/A
DEED # 05967/00532 & 05869/00490

PREVIOUS FILE No:
SP-15-015 WP-10-102
ECP-15-051 WP-17-106
WP-15-122

PROFESSIONAL CERTIFICATION
I, BRANDON R. ROWE, 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. 40888 EXPIRATION DATE: 7/2/2019



REVISIONS

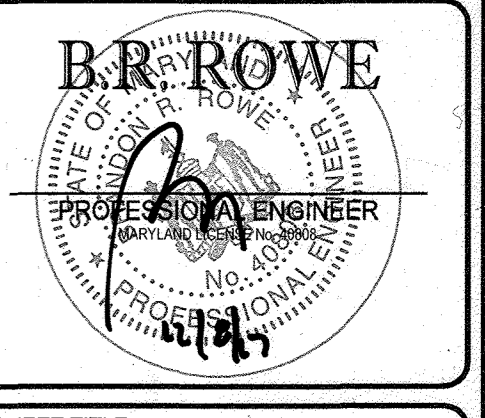
REV	DATE	COMMENT	BY

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PROJECT NO.: MD142038
DRAWN BY: BRR
CHECKED BY: BRR
DATE: 12/01/17
SCALE: AS SHOWN
CAD I.D.: SAB

FINAL ROAD CONSTRUCTION PLAN
FOR
CRAWFORD SUBDIVISION
LOTS 1-23 & NON-BUILDABLE PRESERVATION PARCELS A-G
LOCATION OF SITE
6780 HAVILAND MILL ROAD
TAX MAP 34, GRID 19 & PARCEL 52
TAX MAP 39, GRID 6 & PARCEL 1
5TH ELECTION DISTRICT
HOWARD COUNTY, MD

BOHLER ENGINEERING
901 DULANEY VALLEY ROAD, SUITE 801
TOWSON, MARYLAND 21284
Phone: (410) 821-7900
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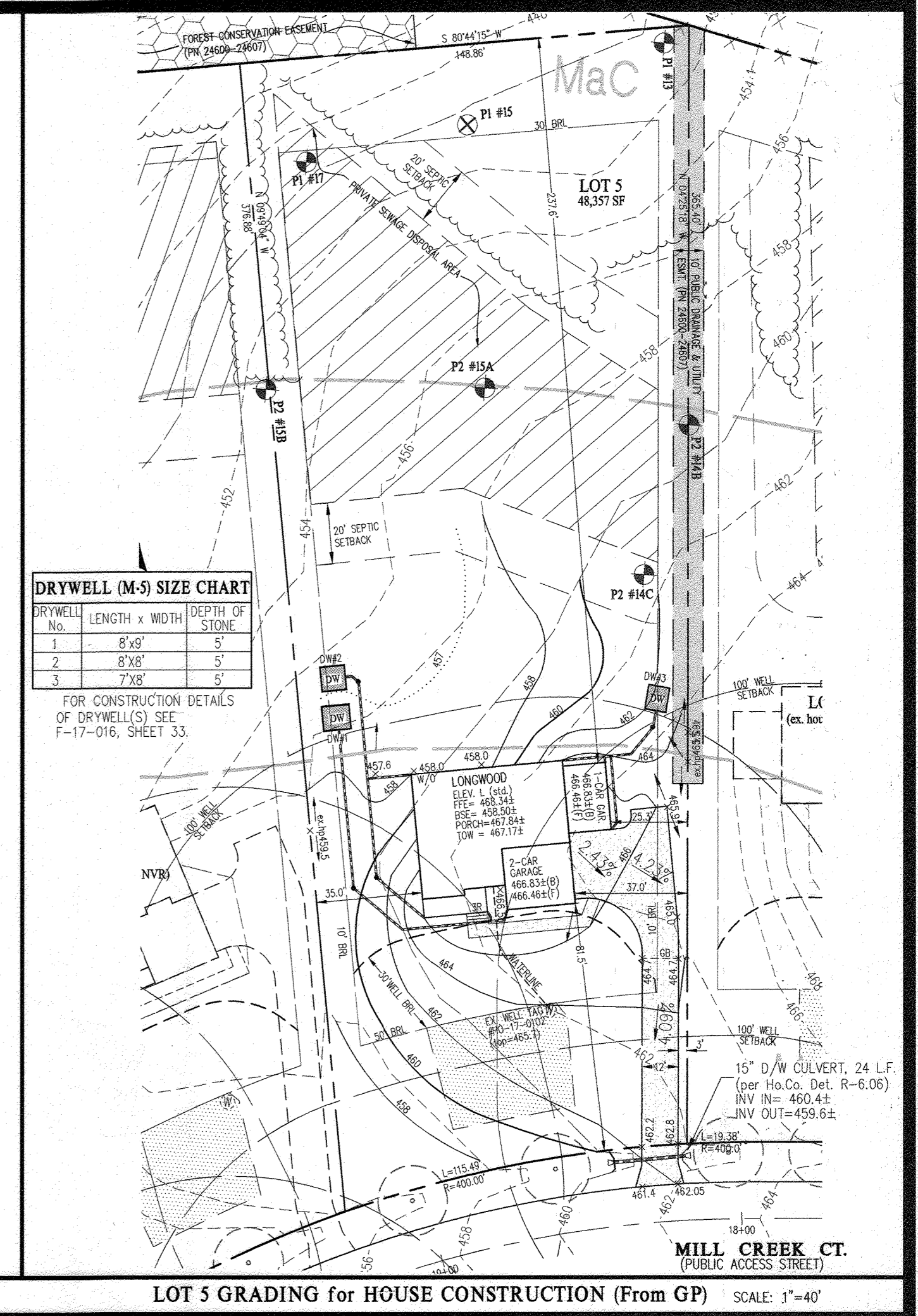
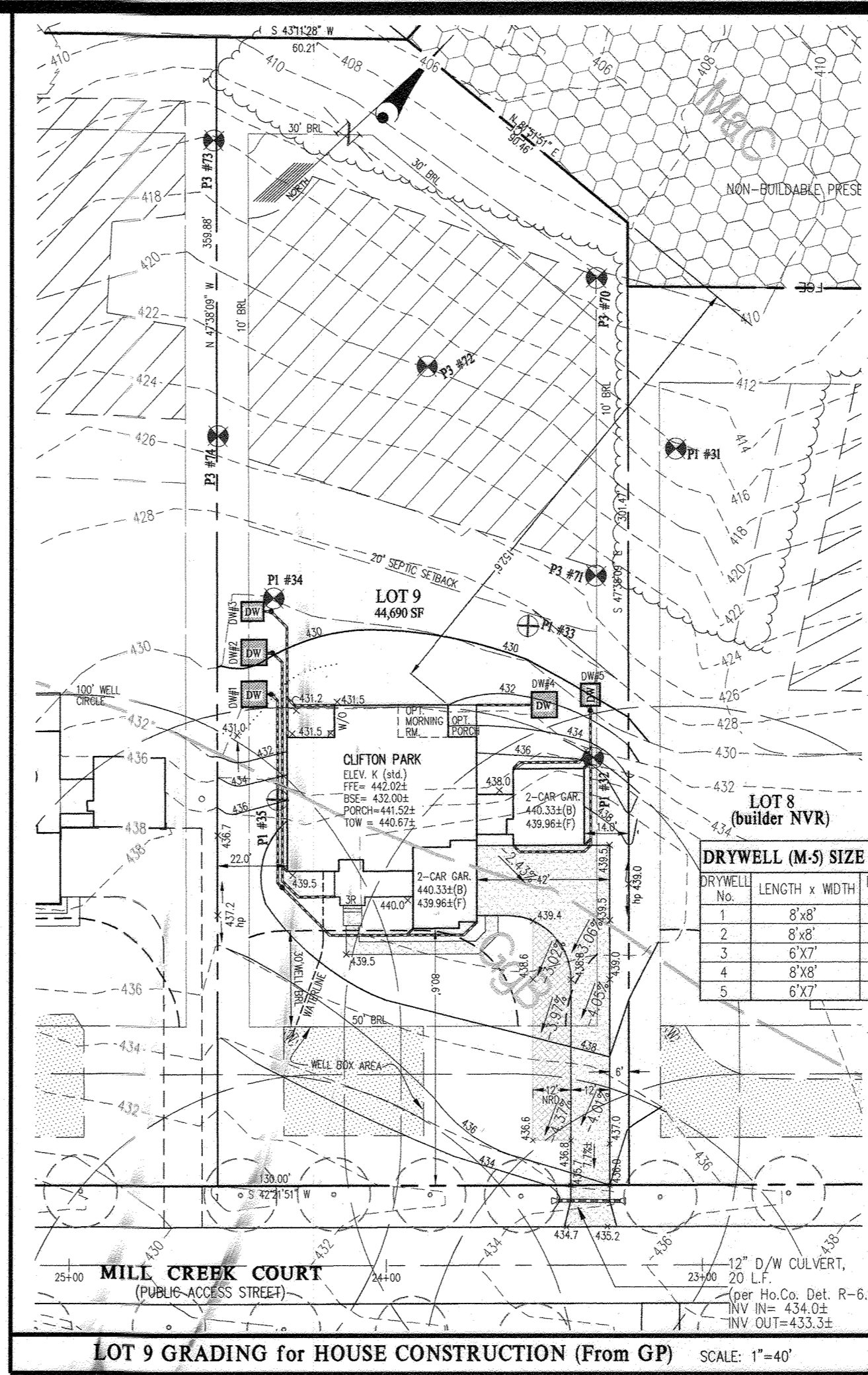
SHEET TITLE:
SIGHT DISTANCE ANALYSIS AND ROAD CROSS SECTIONS

SHEET NUMBER:
37 of 39

APPROVED: DEPARTMENT OF PLANNING AND ZONING
J. Mendenhall
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 1/19/18

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE: 1-18-18

APPROVED FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT
DATE: _____



LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- FIRST FLOOR ELEVATION
- TOP OF FOUNDATION WALL
- BASEMENT SLAB ELEVATION
- SEWAGE DISPOSAL AREA
- PERCOLATION TEST HOLES (PASSED)
- PERCOLATION TEST HOLES (FAILED)
- EXISTING WELL LOCATION
- DOWN SPOUT NUMBER
- DRYWELL (SIZE & LOCATION AS SHOWN ON THIS SHEET)
- CLEANOUT (TYPICAL AT BENDS IN PVC PIPE)
- SOILS DELINEATION

NOTES:

- EXISTING TOPOGRAPHY SHOWN IS FROM AERIAL TOPO DONE BY BOHLER ENGINEERING, DATED 1/16/15 AND F-17-016 GRADING PLUS FIELD RUN TOPO BY G.L.W. (PROFESSIONAL LAND SURVEYORS) OF THE MASS GRADED LOTS DONE FEBRUARY 2018.
- SEE SEPARATE PLANS APPROVED BY THE HEALTH DEPARTMENT FOR PRIVATE SEWAGE DISPOSAL SYSTEMS ON EACH LOT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Karl Sheehy Chief, Division of Land Development Date: 10/01/19

D.J. Chamberlain Chief, Development Engineering Division Date: 9/30/19

GLW PLANNING | ENGINEERING | SURVEYING

3909 NATIONAL DRIVE | SUITE 250 | BURTONSVILLE, MD 20866 | GLWPA.COM
PHONE: 301-421-4024 | BALT: 410-880-1820 | DCGVA: 301-989-2524 | FAX: 301-421-4186

DESIGNED BY:	DATE	REVISION	BY	APP'R.
MBT				
DRAWN BY:				
KLP				
CHECKED BY:	9-24-2019	Replacement mylar - Added Lot 9 actual house, grading & SWM to be built	kjp	
CKG	7-2019	New sheet added to this F-plan to show actual house, grading & SWM on Lot 5	kjp	

PREPARED FOR:

NVR INC.
9720 PATUXENT WOODS DRIVE
COLUMBIA, MARYLAND 21046
PH: 410-379-5956

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. 12975

EXPIRATION DATE: MAY 26, 2020

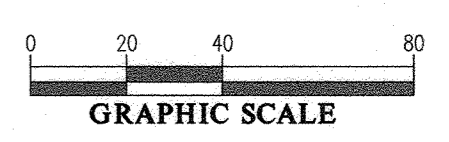
9/24/19

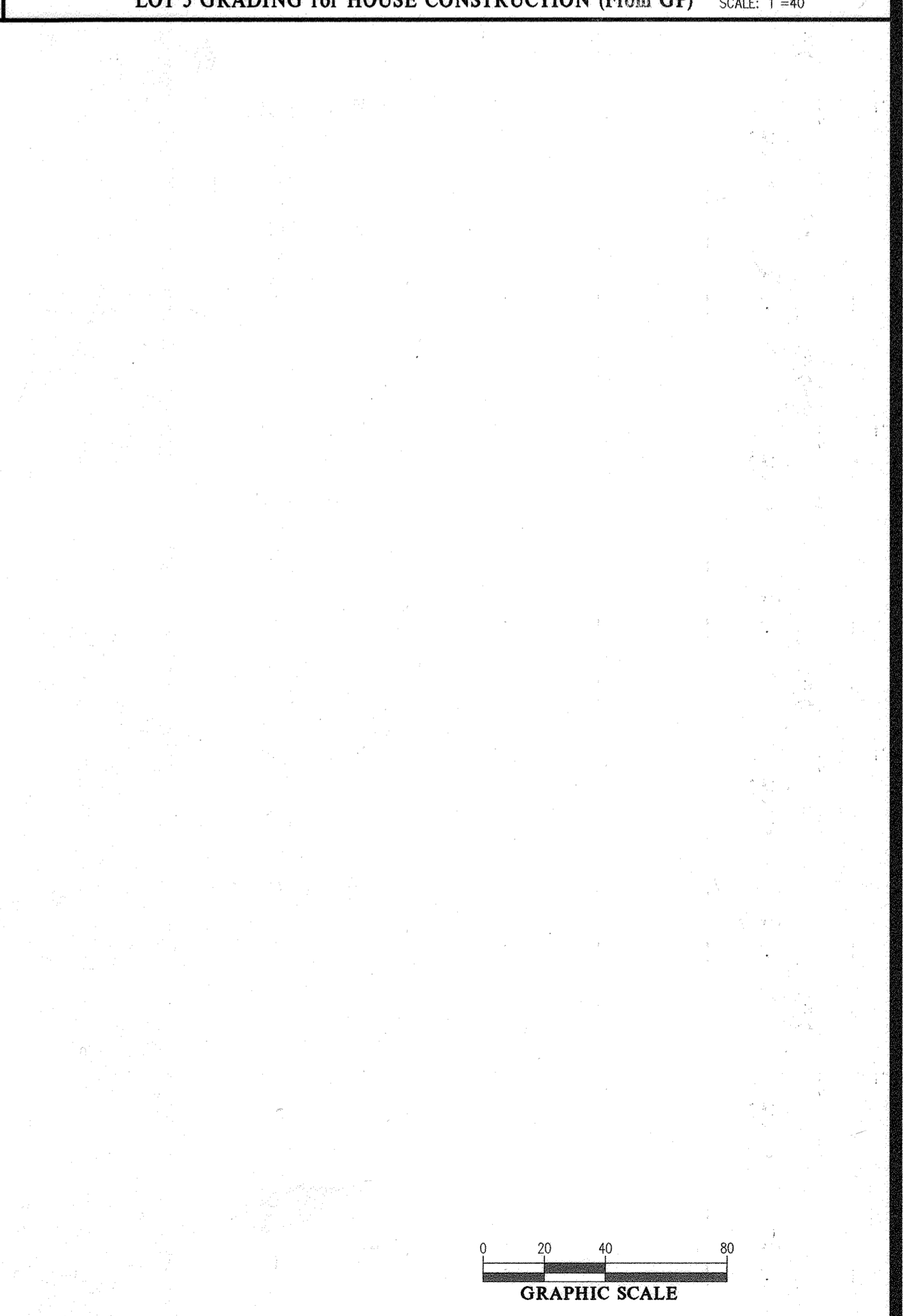
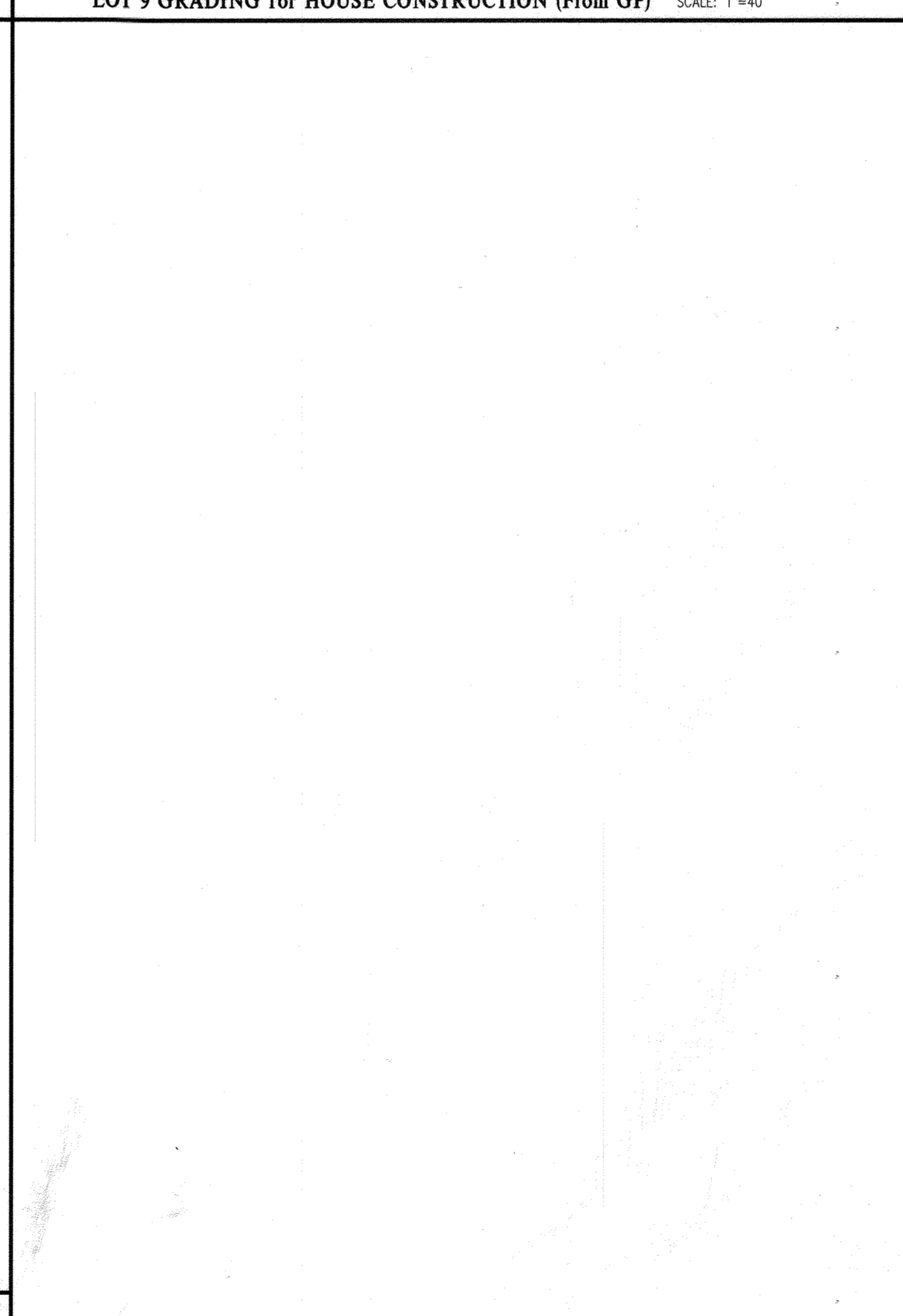
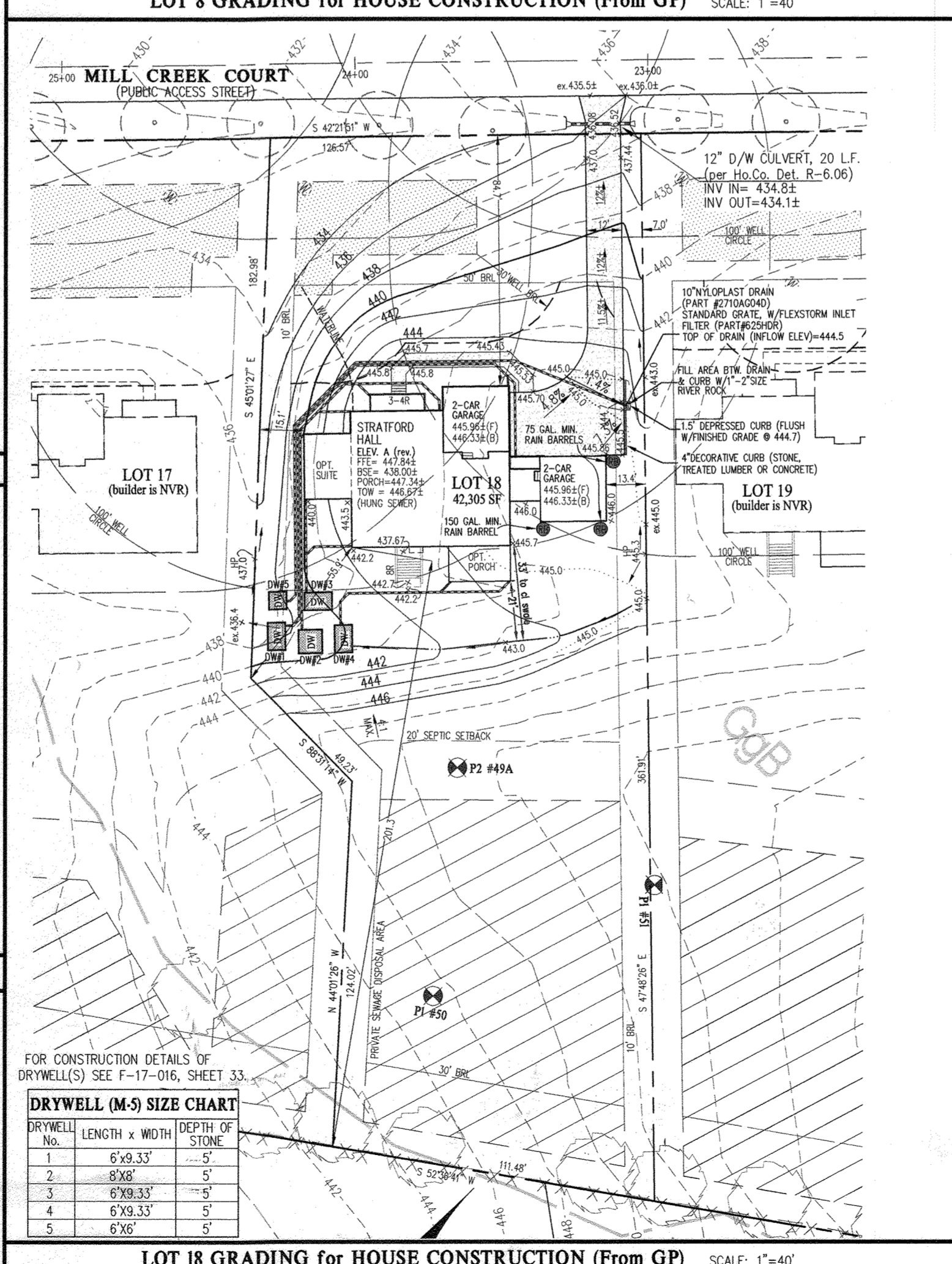
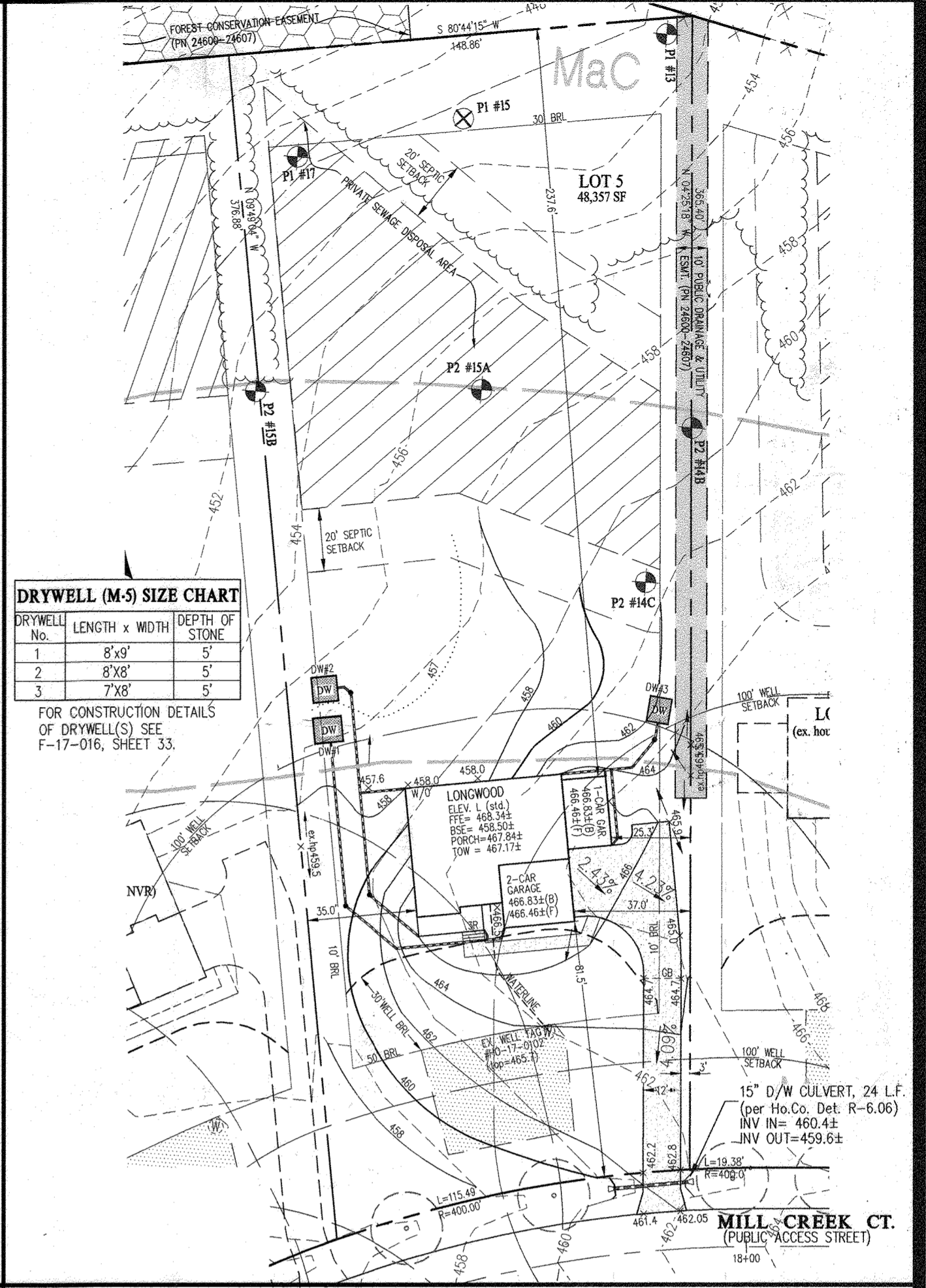
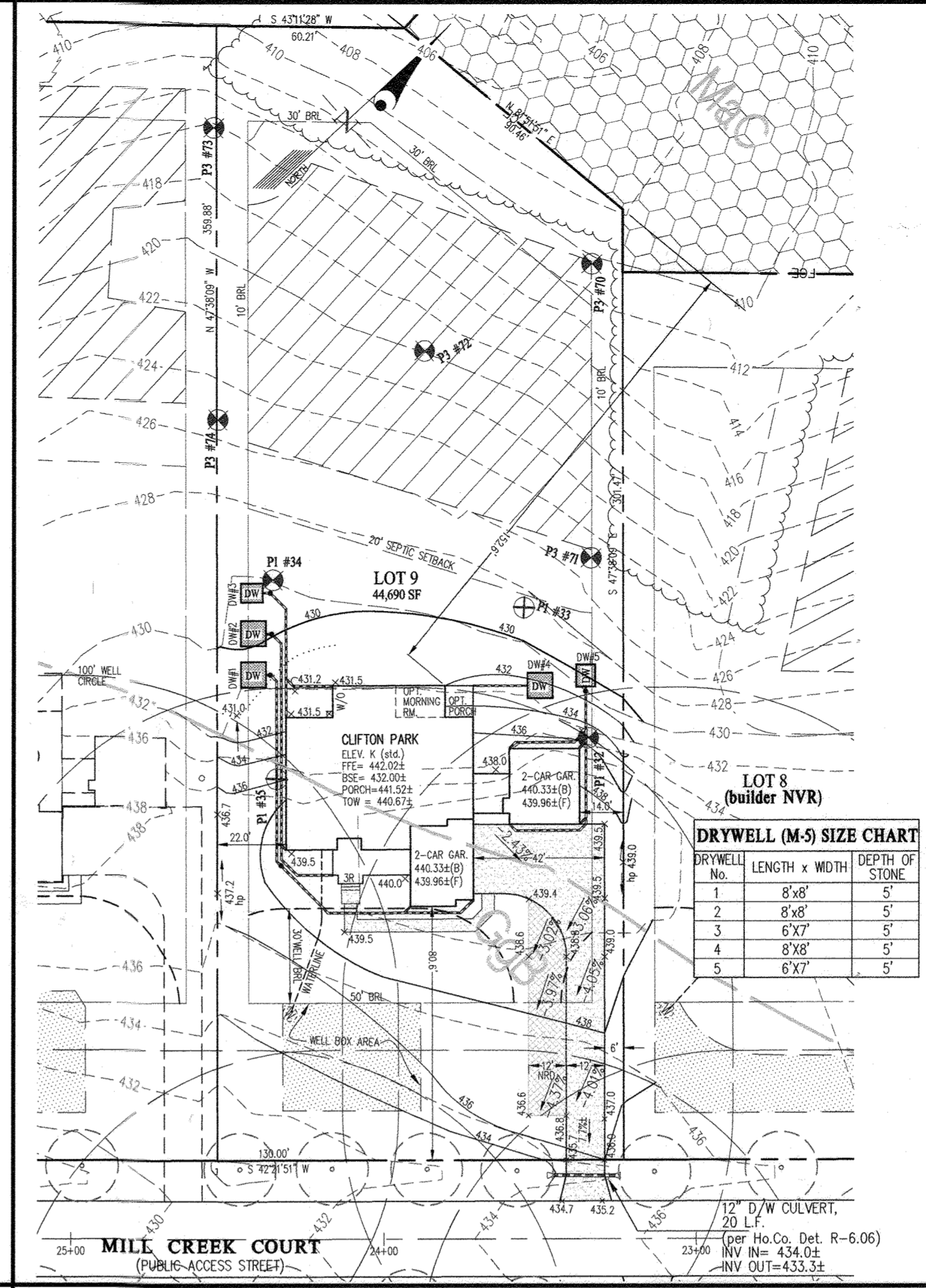
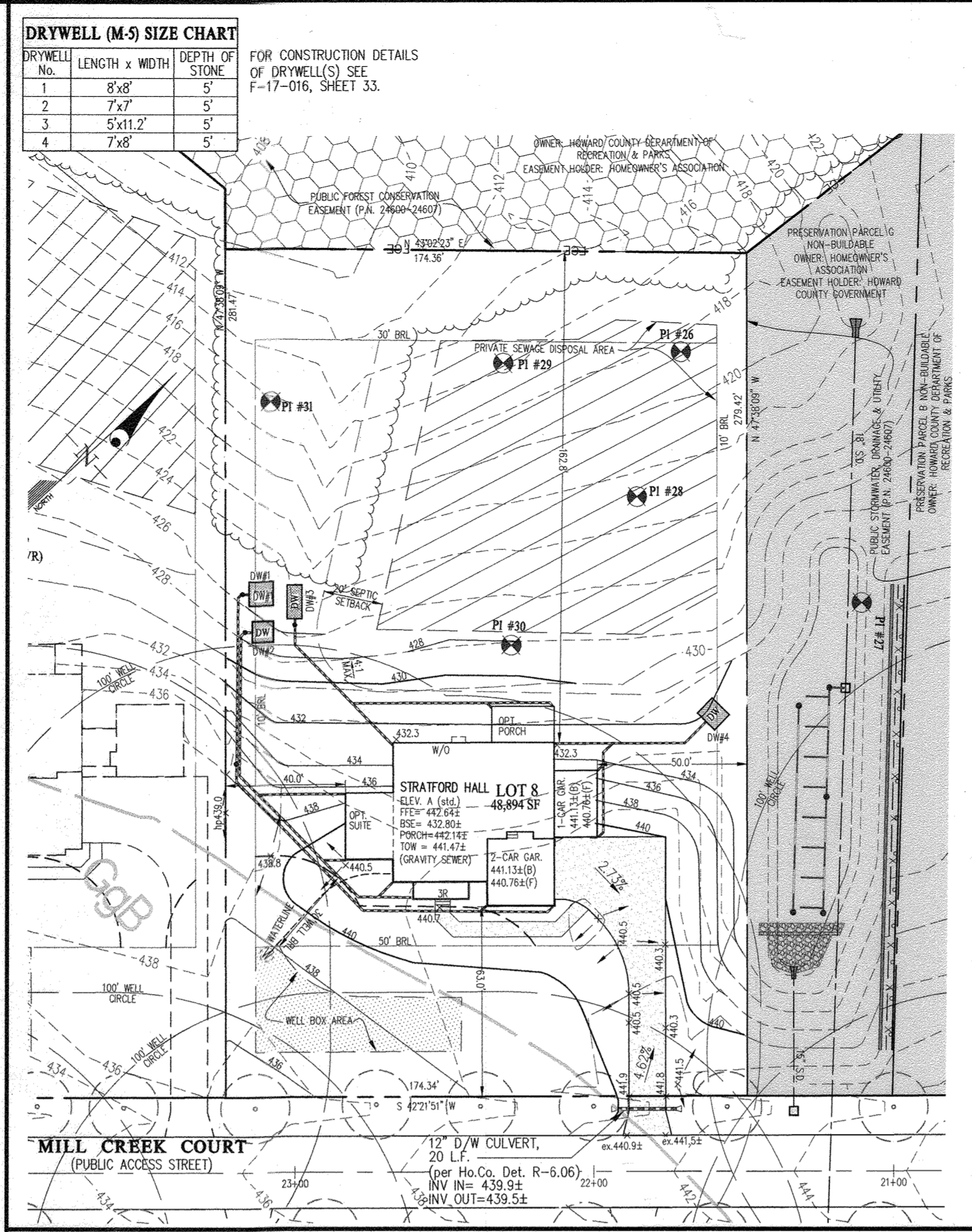
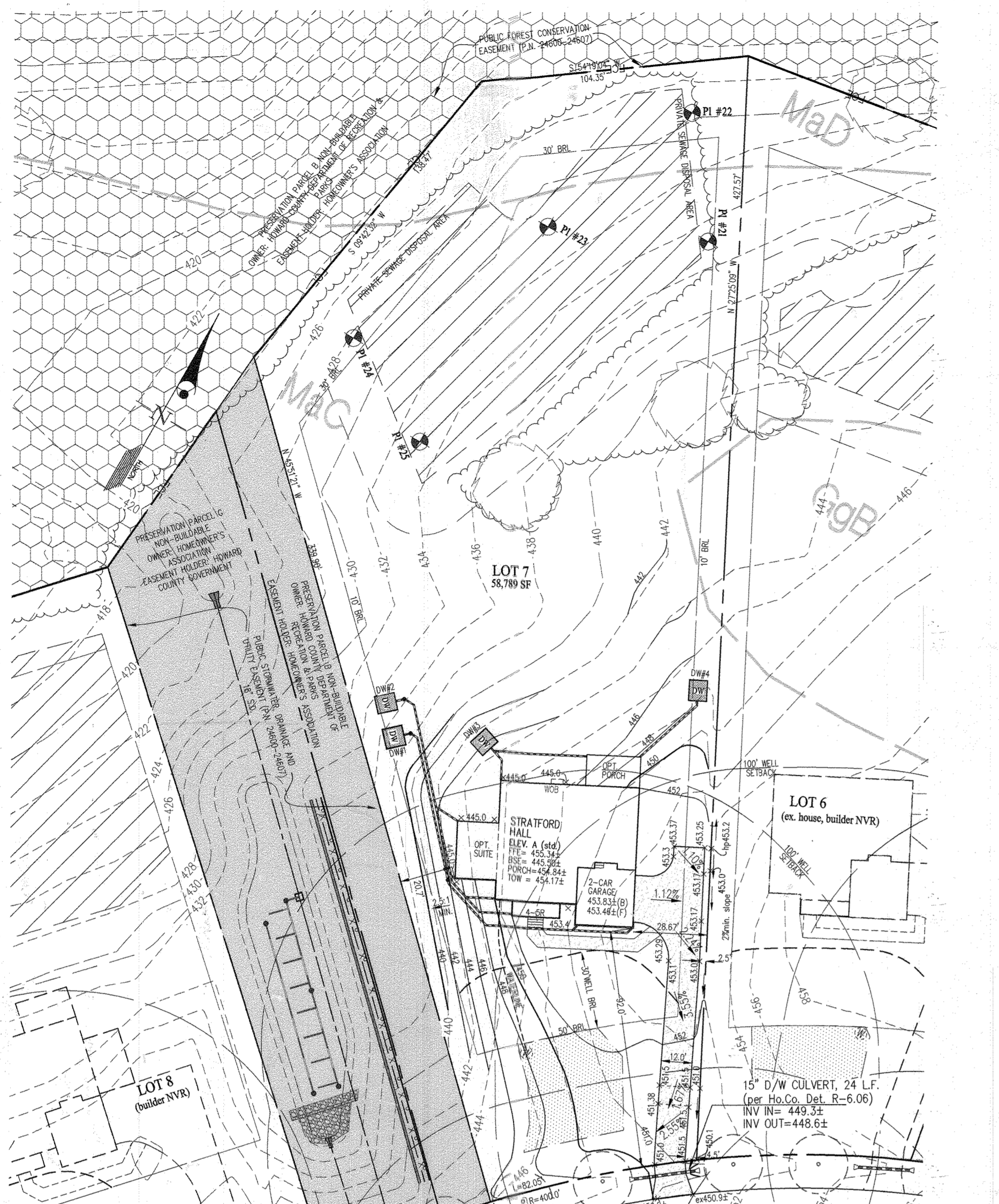
(REVISED) GRADING PLAN FOR HOUSE CONSTRUCTION

CRAWFORD SUBDIVISION
LOTS 1-23 and NON-BUILDABLE PRESERVATION PARCELS A-G
PLAT No. 24600-24607

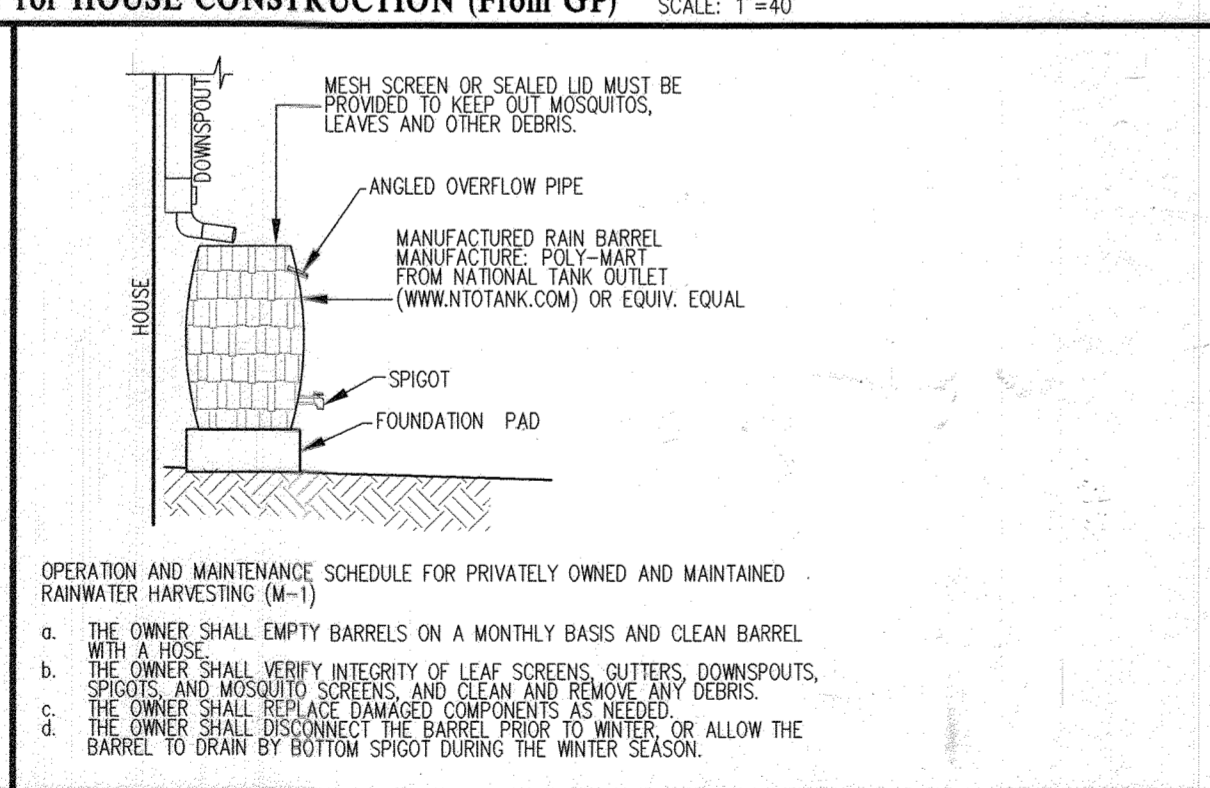
ELECTION DISTRICT No. 5

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	RR-DEO	17071
DATE	TAX MAP - GRID	SHEET
JULY 2019	34&39-19&6	38 OF 39





- LEGEND**
- EXISTING CONTOUR
 - PROPOSED CONTOUR
 - FIRST FLOOR ELEVATION
 - TOP OF FOUNDATION WALL
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 - SEWAGE DISPOSAL AREA
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 - MANUFACTURED RAIN BARREL (DETAIL THIS SHEET & SIZE PER PLAN)
 - SOILS DELINEATION



NOTES:

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APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Ved Steuker 10-31-19
Chief, Division of Land Development Date

Chad Chubb 10-30-19
Chief, Development Engineering Division Date

GLW
PLANNING | ENGINEERING | SURVEYING

3909 NATIONAL DRIVE | SUITE 201 | BURTONSVILLE, MD 20886 | GLWPA.COM
PHONE: 301-421-4024 | BALT: 410-880-1820 | DC&VA: 301-988-2524 | FAX: 301-421-4186

DESIGNED BY: MBT

DRAWN BY: KLP

CHECKED BY: CKG

DATE: 7-2019

REVISION

BY: APPR.

PREPARED FOR:

NVR INC.
9720 PATUXENT WOODS DRIVE
COLUMBIA, MARYLAND 21046
PH: 410-379-5956

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. 12975.

EXPIRATION DATE: MAY 26, 2020

10/23/19

(REVISED) GRADING PLAN FOR HOUSE CONSTRUCTION

CRAWFORD SUBDIVISION
LOTS 1-23 and NON-BUILDABLE PRESERVATION PARCELS A-G
PLAT No. 24600-24607

ELECTION DISTRICT No. 5

HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1" = 40'	RR-DEO	17071
DATE	TAX MAP - GRID	SHEET
JULY 2019	34&39-19&6	39 OF 39