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39 OF 40	MIRCO-BIORETENTION LANDSCAPE PLAN
40 OF 40	MIRCO-BIORETENTION LANDSCAPE PLAN

✓ ALL CHECKED BOXES ARE PART OF THE AS-BUILT DATED 10-19-2022

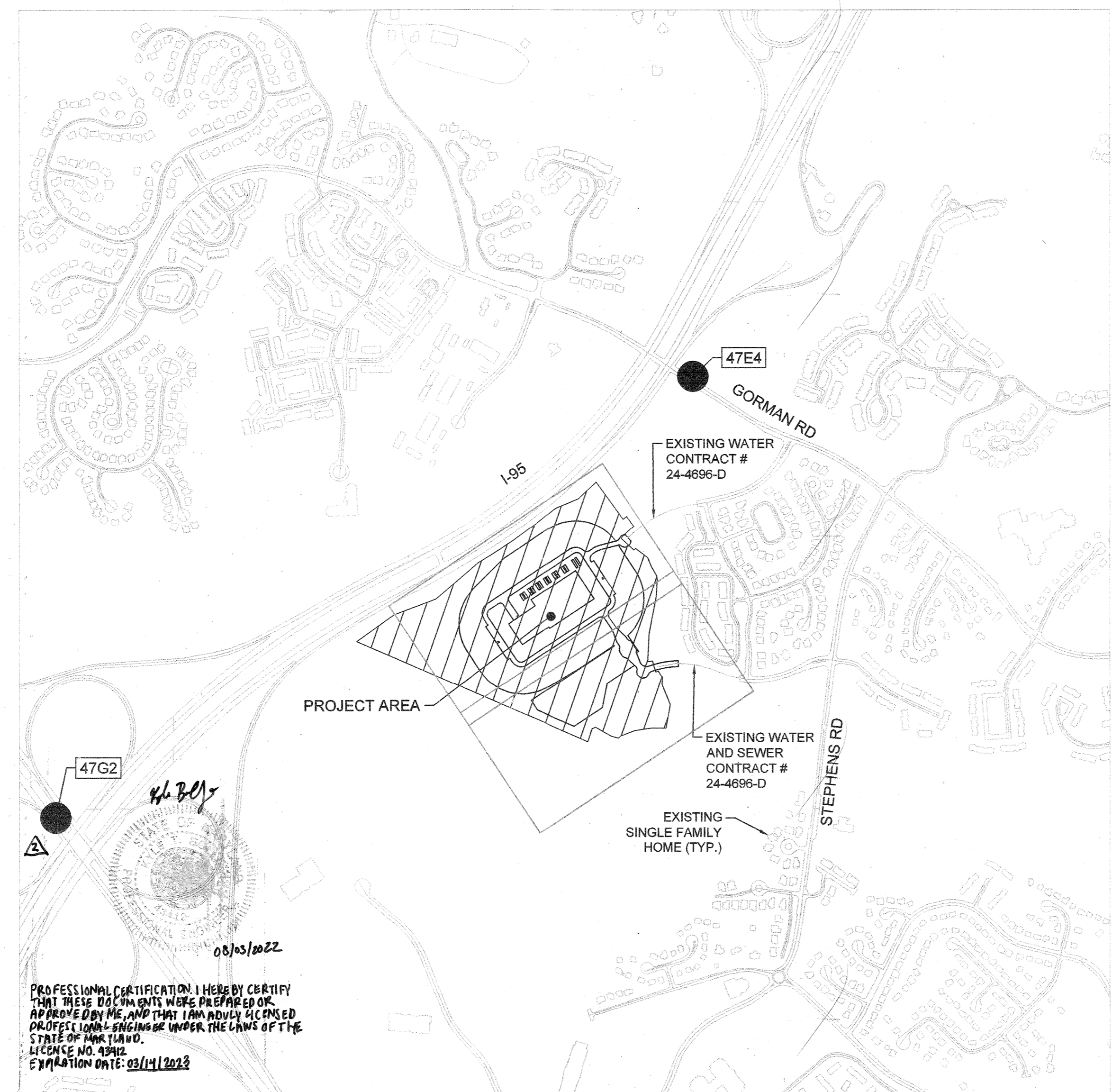
EMERSON PROJECT

SITE DEVELOPMENT PLAN

ELECTION DISTRICT NO. 6

HOWARD COUNTY, MD

REFERENCE PLAN ECP-21-012
CONTRACT NUMBER: 24-5162-D



PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM DULY LICENSED UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 31273 EXPIRATION DATE: 01/21/2023

REVISION 2 PURPOSE STATEMENT
REVISE LIMIT OF DISTURBANCE ON EROSION AND SEDIMENT CONTROL SHEETS TO ALLOW FOR CONSTRUCTION TEMPORARY PARKING AND STAGING AREA.

LOCATION PLAN
SCALE: 1"=600'

OWNER
EMERSON DEVELOPMENT IX LLC
C/O KNOTT REALTY GROUP
ATTN: JAMES F. KNOTT, JR.
ONE TEXAS STATION COURT
SUITE 200
TIMONIUM, MD 21093
P: 443-689-8008
E: JKNOTTJR@KNOTTREALTY.COM

STATION	NORTHING	EASTING	ELEVATION	DESCRIPTION
47G2	532938.964	1351224.095	364.210	X CUT
47E4	535846.138	1355431.196	338.909	CONC. MON.

DEVELOPER
KTJ 371, LLC.
DREW JOHNSON
400 WATER STREET, SUITE 200
EXCELSIOR, MN 55331
P: 952-540-4180
E: DREW@OPPIDAN.COM

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

Design Certification:
"I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

- GENERAL NOTES:
- THE SUBJECT PROPERTY IS ZONED MXD (MIXED USE DISTRICT) PER THE HOWARD COUNTY ZONING PLAN ADOPTED OCTOBER 6, 2013.
 - ALL EXISTING CONDITIONS ARE PROVIDED BY HOWARD COUNTY GIS DATA, AERIAL IMAGERY, PREVIOUSLY RECORDED PLATS, PREVIOUSLY APPROVED SITE DEVELOPMENT PLANS AND TOPOGRAPHIC SURVEY INFORMATION VIA ALTA/NSPS LAND SURVEY DATED JUNE 29, 2020.
 - BOUNDARY SHOWN HEREON IS BASED ON FIELD SURVEY BY BOWMAN CONSULTING GROUP DATED JUNE 29, 2020.
 - EASEMENTS SHOWN ARE ACCORDING TO APPLICABLE DPZ FILE REFERENCES: ZB-979M, F-04-053, S-99-12, PB-339, ZB-979-M, P-08-11, F-11-036, AND F-16-055, AND F-21-060.
 - HOWARD COUNTY GEODETIC COORDINATES REFERENCED IN VICINITY MAP: NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING, AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAM(S), OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS.
 - THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER FOREST MANAGEMENT PRACTICES AS DESCRIBED IN THE DEED OF FOREST CONSERVATION ARE ALLOWED. THE FOREST CONSERVATION OBLIGATION FOR THIS PARCEL WAS ADDRESSED UNDER F-11-036. REVISIONS TO THE FOREST CONSERVATION EASEMENTS WERE PROCESSED UNDER PLAT NO. 25121-25123.
 - KNOX BOXES SHALL BE LOCATED WITHIN 6' TO THE RIGHT OF THE MAIN ENTRANCE AT A RANGE OF 4'-5' IN HEIGHT. THE CONTRACTOR SHOULD CONTACT THE OFFICE OF THE FIRE MARSHAL PRIOR TO PURCHASING AND INSTALLING KNOX BOXES TO DETERMINE IF ADDITIONAL KNOX BOXES WILL BE REQUIRED AS WELL AS TO VERIFY THE LOCATION(S) WHERE THEY ARE TO BE MOUNTED.
 - PREVIOUS DEPARTMENT OF PLANNING AND ZONING FILE NUMBERS: F-11-036, F-16-055, S-99-012, PB 339, PB 359, ECP-21-012, P-08-008, F-04-053, ZB-979-M.
 - NO HISTORIC STRUCTURES EXISTING ON THIS PROPERTY.
 - NO CEMETERIES EXIST ON THIS SITE BASED ON A SITE VISIT AND ON AN EXAMINATION OF THE HOWARD COUNTY CEMETERY INVENTORY MAP.
 - ALL OUTDOOR LIGHTING SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 134.0 OF THE ZONING REGULATIONS.
 - THIS PROJECT IS SUBJECT TO COMPLIANCE WITH THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. DEVELOPMENT OR CONSTRUCTION ON THIS PROPERTY MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN OR BUILDING/GRADING PERMIT APPLICATIONS.
 - THE 65DBA NOISE LINE ESTABLISHED BY HOWARD COUNTY TO ALERT DEVELOPERS BUILDERS AND FUTURE RESIDENTS THAT AREAS BEYOND THIS THRESHOLD MAY EXCEED GENERALLY ACCEPTED NOISE LEVELS ESTABLISHED BY THE U.S. DEPT. OF HOUSING AND URBAN DEVELOPMENT.
 - THE STORMWATER MANAGEMENT FOR THIS SITE IS ACCOMPLISHED WITH MICRO-BIORETENTIONS PLACED THROUGHOUT THE SITE AND MULTIPLE OUTFALL POINTS TO MATCH EXISTING DRAINAGE PATTERNS.
 - A TRAFFIC STUDY EXEMPTION JUSTIFICATION MEMORANDUM HAS BEEN SUBMITTED SEPARATELY, DATED DECEMBER 8, 2020.
 - THE DEPARTMENT OF PLANNING AND ZONING DETERMINED THAT THE STREAM BUFFER DISTURBANCE ASSOCIATED WITH THE EXTENSION OF SOUTH ETHERNAL RINGS DRIVE IS NECESSARY IN ACCORDANCE WITH SECTION 16.116(C) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.

STANDARD STABILIZATION NOTE
FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:
a. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
b. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

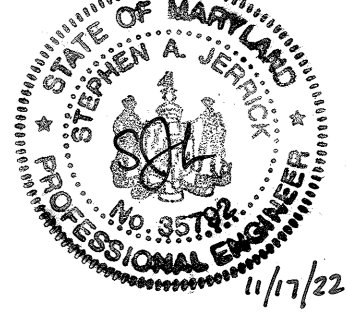
LANDSCAPING NOTE
THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE EMERSON DESIGN CRITERIA. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING SHALL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$26,100 FOR 54 SHADE TREES, 54 EVERGREEN TREES AND 60 SHRUBS.

EMPLOYMENT LAND USE CRITERIA
PARCEL SIZE - NO MINIMUM OR MAXIMUM PARCEL SIZES APPLY IN THE EMPLOYMENT LAND USE AREAS.
HEIGHT - MAXIMUM BUILDING HEIGHT SHALL BE LIMITED TO 120' UNLESS APPROVED TO BE GREATER BY THE HOWARD COUNTY PLANNING BOARD.
PERMITTED USES - THE FOLLOWING USES ARE PERMITTED IN EMPLOYMENT LAND USE AREAS: ALL USES PERMITTED AS A MATTER OF RIGHT IN THE POR, B-1 AND M-1 ZONING DISTRICTS, WITHOUT REGARD TO ANY LIMITATIONS OR RESTRICTIONS ON RETAIL OR PERSONAL SERVICE USES OTHERWISE PERMITTED IN SUCH DISTRICTS; FAST FOOD RESTAURANTS; GASOLINE SERVICES STATIONS, WHICH MAY INCLUDE A CAR WASH OR REPAIR FACILITIES OR CONVENIENCE STORES; COUNTRY CLUBS AND GOLF COURSES; MOVIE THEATERS, LEGITIMATE THEATERS AND DINNER THEATERS; PUBLIC UTILITY USES, EXCLUDING COMMUNICATION TOWERS; GROUP CARE FACILITIES, HOUSING FOR THE ELDERLY, AND/OR HANDICAPPED PERSON, NURSING HOMES, AND SHELTERED HOUSING.
COVERAGE - NO COVERAGE REQUIREMENT IS IMPOSED IN EMPLOYMENT LAND USE AREAS.
FLOOR AREA RATIO (FAR) - OVERALL LIMIT IS 0.23 CALCULATED ON THE TOTAL ACREAGE FOR ALL EMPLOYMENT LAND USE AREAS WITH A MAXIMUM FAR OF 0.35 FOR ANY INDIVIDUAL PARCEL CALCULATED ON TOTAL ACREAGE OF SUCH PARCEL.
PARKING* - INDUSTRIAL USES: WAREHOUSE - 0.5 SPACES PER 1,000 SQUARE FEET SETBACKS - NO STRUCTURE SHALL BE LOCATED WITHIN TWENTY-FIVE (25) FEET OF THE RIGHT-OF-WAY OF ANY PUBLIC STREET, ROAD OR HIGHWAY. NO STRUCTURE SHALL BE LOCATED WITHIN FIFTY (50) FEET OF THE RIGHT-OF-WAY LINE OF A PRINCIPAL OR INTERMEDIATE ARTERIAL HIGHWAY. NO PARKING LOT SHALL BE LOCATED WITHIN FIFTEEN (15) FEET OF THE RIGHT-OF-WAY OF ANY EXTERNAL PUBLIC STREET, ROAD OR HIGHWAY, OR TEN (10) FEET OF THE RIGHT-OF-WAY OF ANY INTERNAL PUBLIC STREET, ROAD OR HIGHWAY. NO STRUCTURE SHALL BE ERRECTED WITHIN FIFTY (50) FEET OF ANY BOUNDARY LINE OF ANY RESIDENTIAL DISTRICT. STRUCTURES MAY BE LOCATED ANYWHERE WITHIN SUCH SETBACKS IN ACCORDANCE WITH A SITE DEVELOPMENT PLAN APPROVED BY THE HOWARD COUNTY PLANNING BOARD. WHENEVER EMPLOYMENT AREAS ARE LOCATED WITHIN FIFTY (50) FEET OF A RESIDENTIAL USE AREA, PLANTING AND LANDSCAPING MUST BE PROVIDED IN ACCORDANCE WITH A SITE DEVELOPMENT PLAN APPROVED BY THE HOWARD COUNTY PLANNING BOARD.

LEGEND	
EXISTING	PROPOSED
---	PROPERTY LINE
---	STREAM CENTER LINE
---	100 YEAR FLOODPLAIN DELINEATION
---	50' STREAM BUFFER
---	TREELINE
---	ADJACENT PROPERTY LINE
---	SOIL DIVIDE (SEE SHEET 6 OF 40 FOR SOIL TABLE)
---	HYDROLOGIC SOIL GROUP
---	MAJOR CONTOUR
---	MINOR CONTOUR
---	FOREST CONSERVATION EASEMENT
---	ASPHALT
---	CONCRETE SIDEWALK
---	CONCRETE PAVEMENT
---	GRAVEL
---	MICROBIORETENTION AREA
---	FUTURE FOCA ¹ POINT AREA
---	VERIZON LINE
---	OVERHEAD ELECTRIC
---	WATER LINE
---	CABLE
---	FENCE
---	SEWER LINE
---	STORM LINE
---	25' WETLAND BUFFER
---	WETLAND
---	TELECOMMUNICATION STRUCTURE
---	SEWER MANHOLE
---	UTILITY POLE
---	GUY WIRE
---	WATER VALVE
---	FIRE HYDRANT
---	SIGN
---	TREE
---	GAS VALVE
---	HYDROLOGIC SOIL GROUP
---	SLOPES GREATER THAN 15%
---	HIGHLY ERODIBLE SOILS
---	SUPER SILT FENCE
---	EARTH DIKE
---	VEGETATION
---	SPECIMEN TREE (WITH CRITICAL ROOT ZONE)
---	PERMANENT SEEDING
---	STABILIZATION MATTING
---	DRAINAGE AREA DIVIDE
---	ACCESS EASEMENT
---	SANITARY SEWER EASEMENT
---	STORM DRAINAGE EASEMENT
---	PRESERVATION EASEMENT
---	FLOODPLAIN EASEMENT
---	BUFFER
---	FOREST CONSERVATION AREA
---	UNMITIGATED 65 DBA NOISE CONTOUR
---	45' BGE SETBACK FOR CREDITED FOREST RETENTION AREAS
---	VEHICULAR INGRESS/EGRESS RESTRICTED
---	TEMPORARY EASEMENT FOR FILLING POND
---	OUTLET DITCH EASEMENT
---	APPROXIMATE REFORESTATION AREA
---	WETLAND EASEMENT

HORIZONTAL DATUM FOR THIS AS-BUILT SURVEY IS BASED ON THE MARYLAND STATE REFERENCE SYSTEM AND 1983 COIL. AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS 47E4, 47E6, 47H3, 47H4.
VERTICAL DATUM FOR THIS AS-BUILT SURVEY IS NORTH AMERICA VERTICAL DATUM (NAVD) 1988 AS PROJECTED BY THE ABOVE MENTIONED HOWARD COUNTY GEODETIC CONTROL STATIONS OR HOWARD COUNTY VERTICAL CONTROL BENCH MARKS 47E4, 47E6, 47H3, 47H4.
THIS AS-BUILT SURVEY WAS PERFORMED BY KCI TECHNOLOGIES, INC. IN AUGUST 2022.
THE INSTRUMENTS USED IN PERFORMING THIS AS-BUILT SURVEY: LEICATS-16 TOTAL STATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT LOGGING OF THE UNDERGROUND SUMM FACILITY.
STEPHEN BARRICK, No. 35192, 10-19-2022



ADDRESS CHART	
LOT/PARCEL #	STREET ADDRESS
PARCEL 1078, LOT A-1	9800 SOUTH ETHERNAL RINGS DRIVE, LAUREL, MD 20723

PERMIT INFORMATION CHART			
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.	
EMERSON	SECTION 3 / AREA 7	1078 LOT A-1	
PLAT # OR L/F	GRID #	ZONING	TAX MAP NO.
#23639	#08	PEC-MXD-3	47
ELECT DISTRICT	CENSUS TRACT		
6	801108		

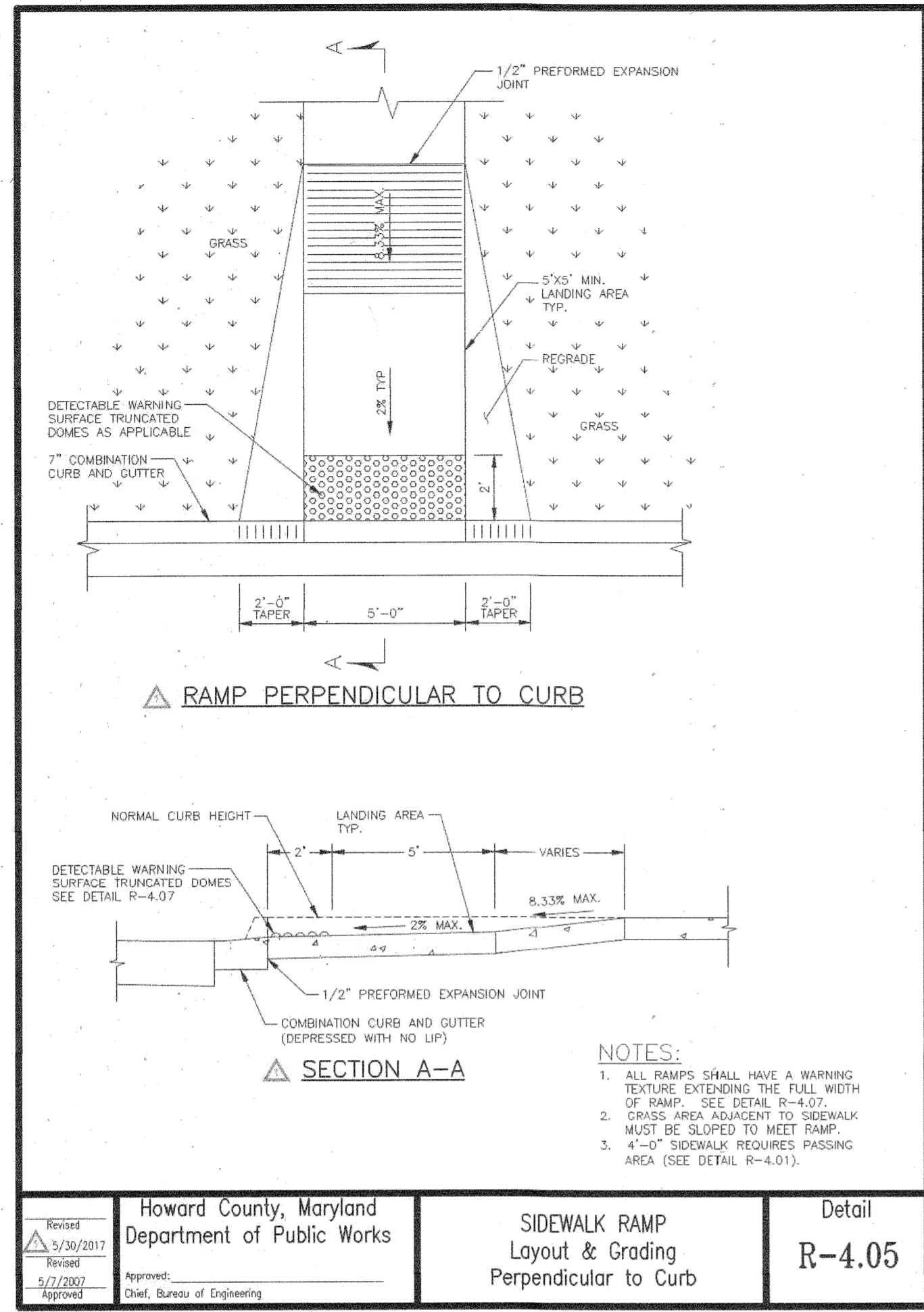
APPROVED: DEPARTMENT OF PLANNING & ZONING
 Chief, Development Engineering Division: 1-12-21
 Chief, Division of Land Development: 1-26-21
 Director: 4-29-21

No.	REVISIONS	DATE	BY
2.	TEMP PARKING AREA	01/28/21	KH

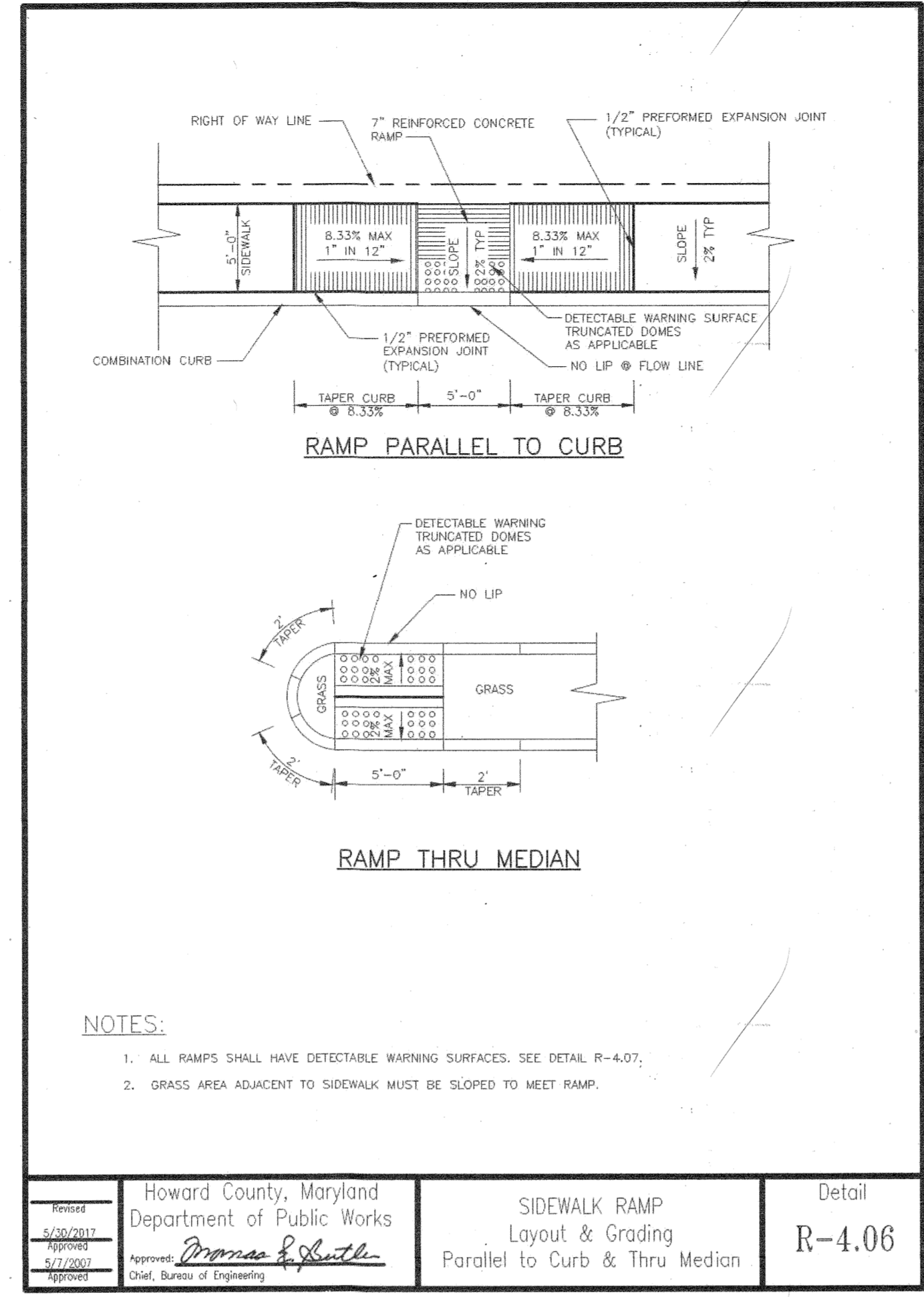
Kimley»Horn
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 1801 PORTER ST, SUITE 401, BALTIMORE, MD 21230
 PHONE: 443-743-3470
 WWW.KIMLEY-HORN.COM

EMERSON PROJECT
 SITE DEVELOPMENT PLAN
 (SDP-21-017)
 CONTRACT NO. 24-5162-D
 EMERSON SECTION 3, AREA 7, PARCEL A-1
 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
 MARYLAND DATE: 3-10-21

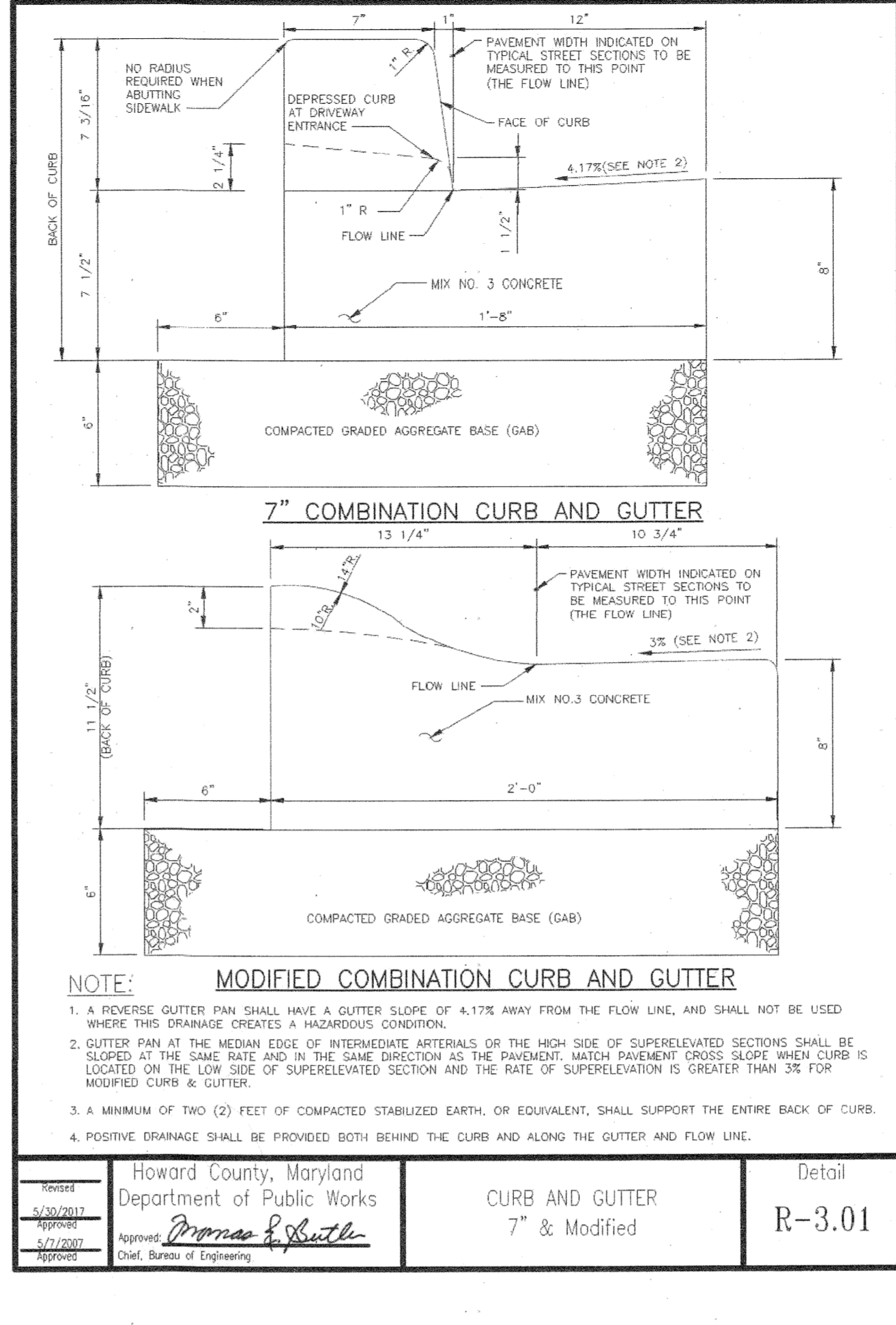
COVER SHEET
 SHEET NUMBER: 1 OF 40
 PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 31273
 EXPIRATION DATE: 01/21/2023



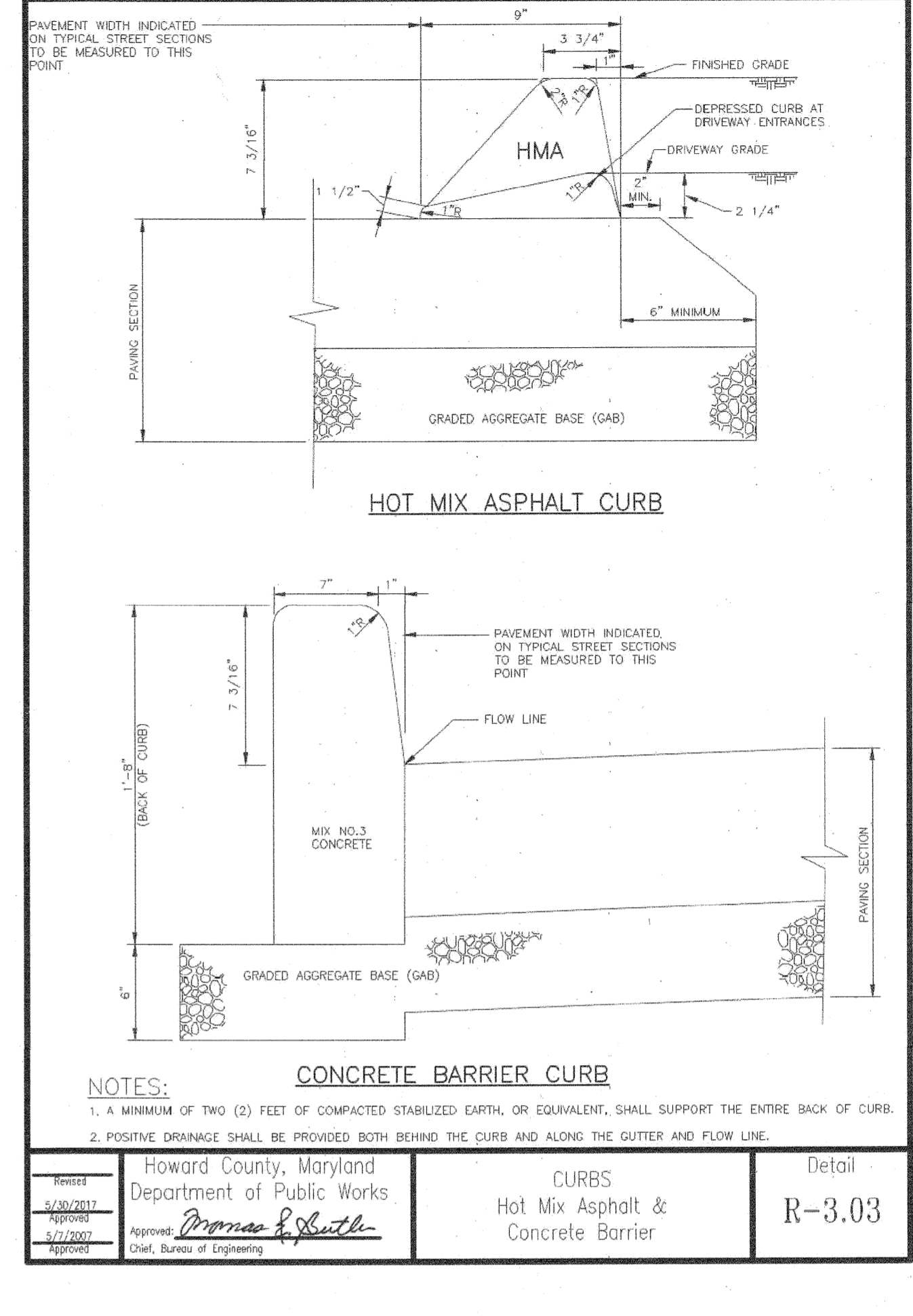
Howard County, Maryland Department of Public Works	SIDEWALK RAMP Layout & Grading Perpendicular to Curb	Detail R-4.05
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Howard County, Maryland Department of Public Works	SIDEWALK RAMP Layout & Grading Parallel to Curb & Thru Median	Detail R-4.06
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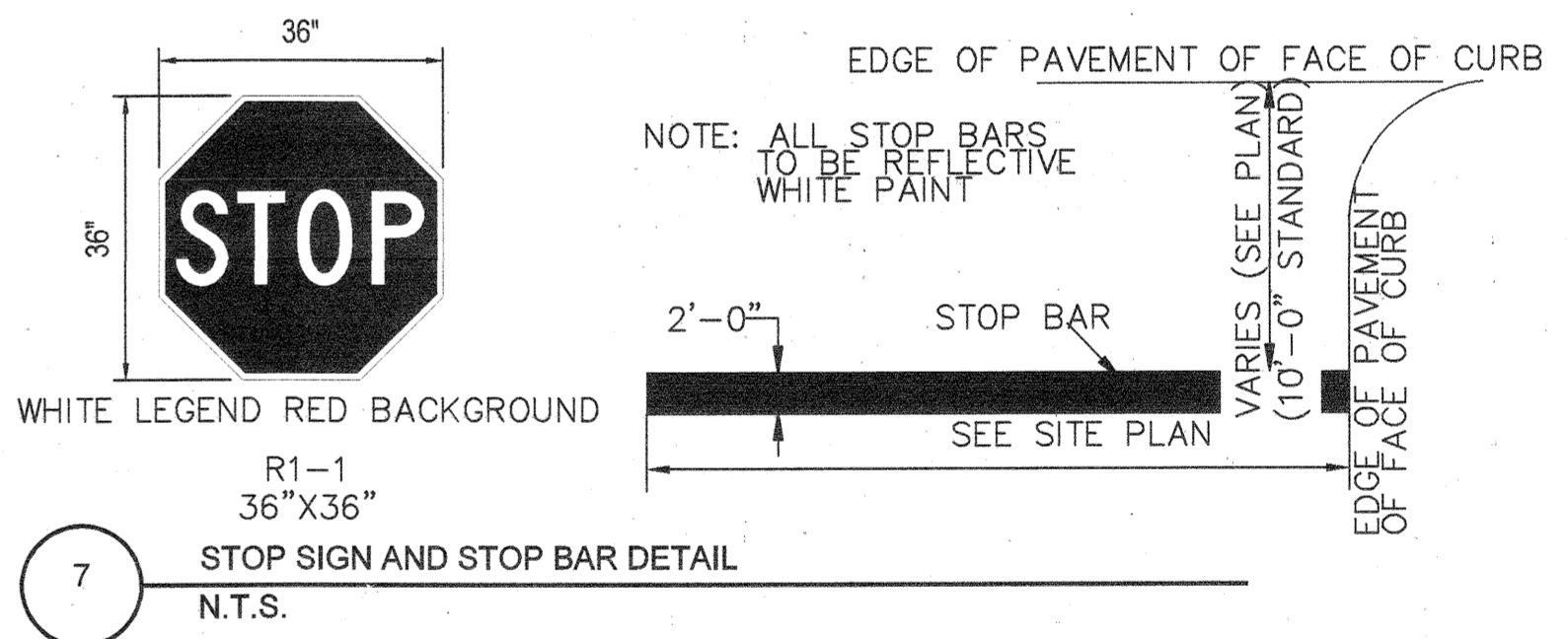
Howard County, Maryland Department of Public Works	CURB AND GUTTER 7\"/>	Detail R-3.01
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Howard County, Maryland Department of Public Works	CURBS Hot Mix Asphalt & Concrete Barrier	Detail R-3.03
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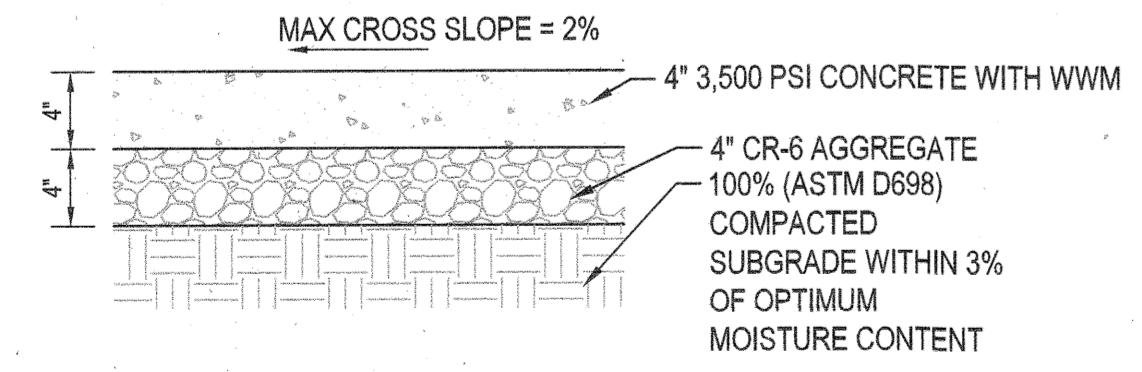
1 CURB RAMP DETAIL
N.T.S.

2 CURB AND GUTTER DETAILS
N.T.S.

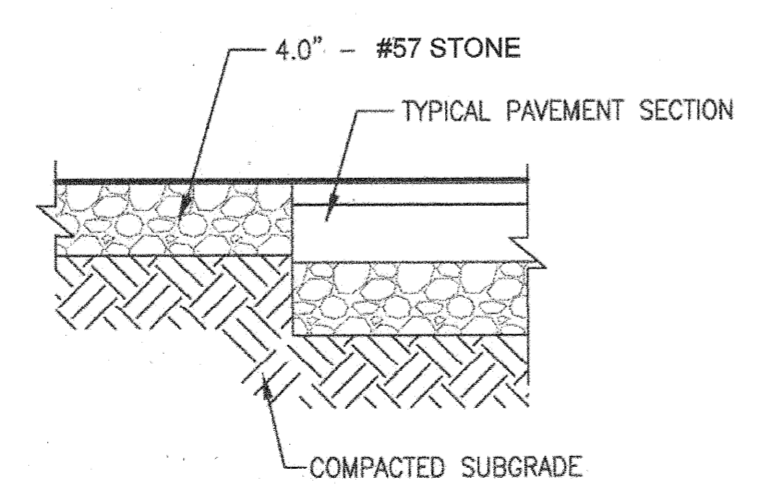


7 STOP SIGN AND STOP BAR DETAIL
N.T.S.

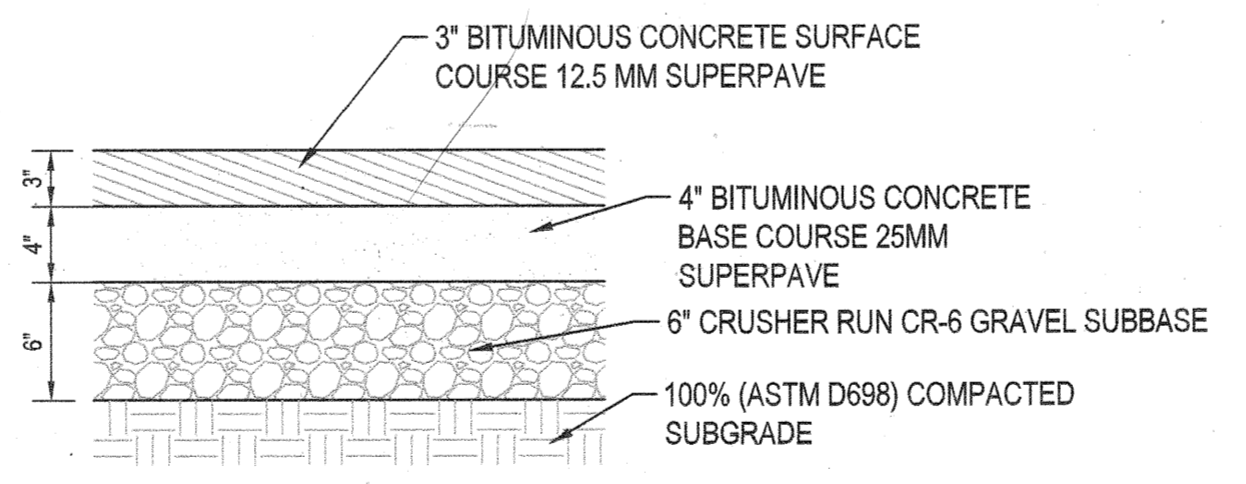
- PAVING NOTES:**
- SUBBASE NOTE: PRELIMINARY PAVEMENT DESIGN IS BASED ON A CBR VALUE OF 10 (PER GEOTECH REPORT). SOILS TEST OF SUBGRADE WILL BE PERFORMED FOR ACTUAL DETERMINATION OF REQUIRED SUBBASE THICKNESS PRIOR TO THE PAVEMENT OF SUBBASE. THE PAVEMENT DESIGN BASED ON THE DERIVED CBR VALUES SHALL BE SUBMITTED TO HOWARD COUNTY/MDOT FOR APPROVAL PRIOR TO INSTALLATION.
 - ALL FINAL PAVEMENT AND BASE COURSE THICKNESS SHALL BE DESIGNED IN ACCORDANCE WITH THE "PAVEMENT AND GEOTECHNICAL DESIGN GUIDE" (JUNE 2, 2016), BY PAULO DESOUSA, AND SHALL BE BASED UPON A SUFFICIENT NUMBER OF CBR TESTS TO DETERMINE THE TRUE SUPPORT VALUES OF THE VARIOUS SOILS IN THE SUBGRADE.
 - A SMOOTHING GRADE SHALL BE MAINTAINED FROM THE CENTERLINE OF THE EXISTING ROAD IN ORDER TO PRECLUDE THE FORMING OF FALSE GUTTERS AND/OR PONDING OF WATER ON THE ROADWAY.
 - STANDARD GUARDRAIL AND HANDRAIL SHALL BE INSTALLED AT HAZARDOUS LOCATIONS AS DESIGNATED DURING FINAL FIELD INSPECTIONS BY HOWARD COUNTY.
 - ALL SIDEWALKS SHALL BE CONSTRUCTED TO HOWARD COUNTY STANDARDS AND SPECIFICATIONS.



3 TYP. SECTION CONCRETE SIDEWALK
N.T.S.

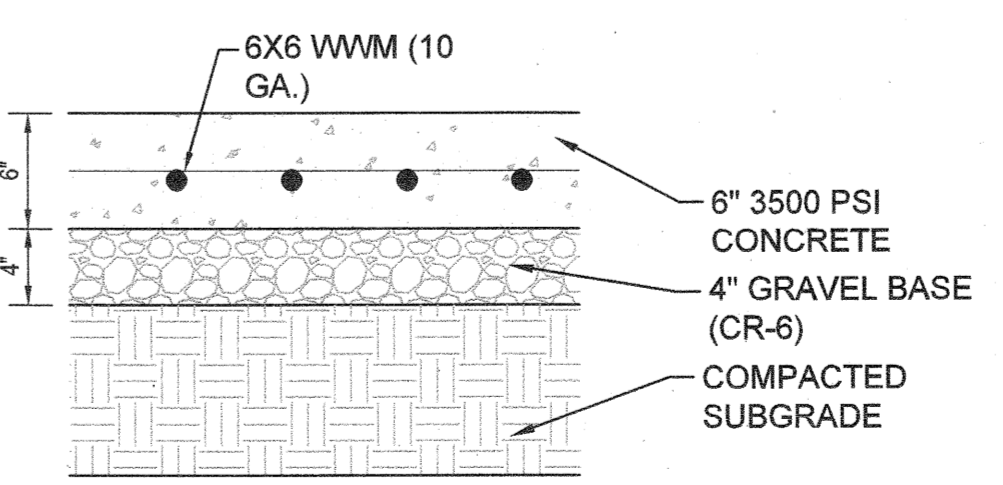


4 GRAVEL GENERATOR YARD DETAIL
N.T.S.

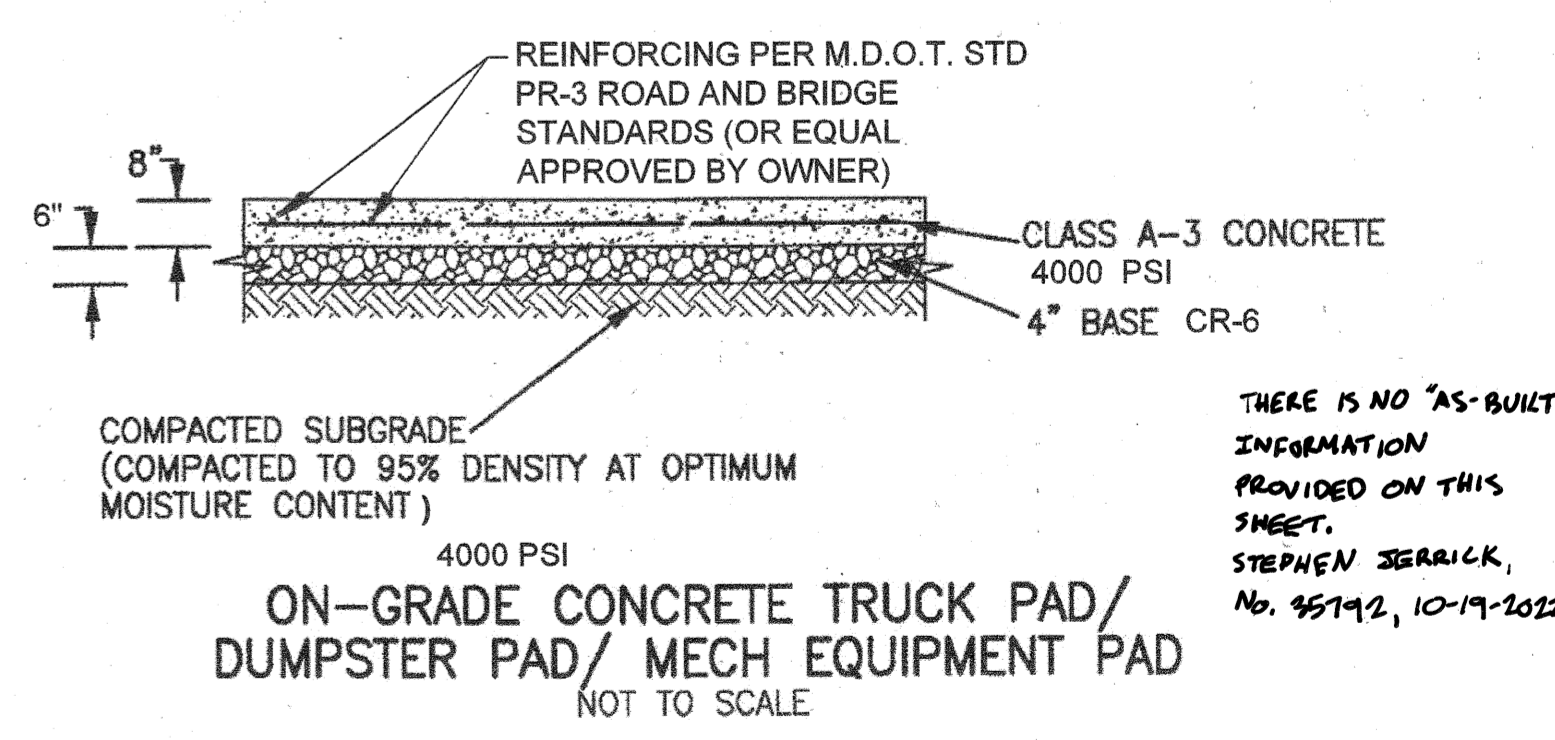


NOTE:
1. PAVEMENT SECTION SHOWN IS BASED ON PAVEMENT RECOMMENDATIONS IN THE GEOTECHNICAL ENGINEERING REPORT PREPARED BY ARUP DATED SEPTEMBER 30, 2020
2. PAVEMENT SECTION IS BASED ON A CBR VALUE OF 10. CONTRACTOR TO CONDUCT A SOIL TEST OF THE SUBGRADE FOR ACTUAL DETERMINATION OF REQUIRED PAVEMENT SECTION THICKNESS PRIOR TO CONSTRUCTION
3. CONTRACTOR SHALL INSPECT THE BASE COURSE FOR WEAR AND RUTTING, AND ANY AREAS FOUND DEFICIENT SHOULD BE CUT AND REPLACED. THE BASE COURSE SHOULD BE WELL CLEANED AND A TACK COAT PLACED ON THE TOP JUST BEFORE PLACEMENT OF THE SURFACE COURSE TO ACHIEVE ADEQUATE BONDING

5 TYP. SECTION ASPHALT PAVEMENT
N.T.S.



6 TYP. SECTION HEAVY DUTY CONCRETE PAVEMENT
Scale: N.T.S.



8 ON GRADE CONCRETE MECHANICAL EQUIPMENT PAD
N.T.S.

APPROVED: DEPARTMENT OF PLANNING & ZONING

 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 4-12-21

 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 4-29-21

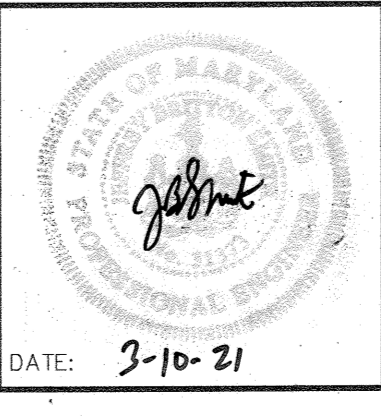
 DIRECTOR

No.	REVISIONS	DATE	BY

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 PHONE: 443-743-3470
 WWW.KIMLEY-HORN.COM

KHA PROJECT
110718001
DATE
03/10/2021
SCALE AS SHOWN
DESIGNED BY CJC
DRAWN BY CJC
CHECKED BY KTB

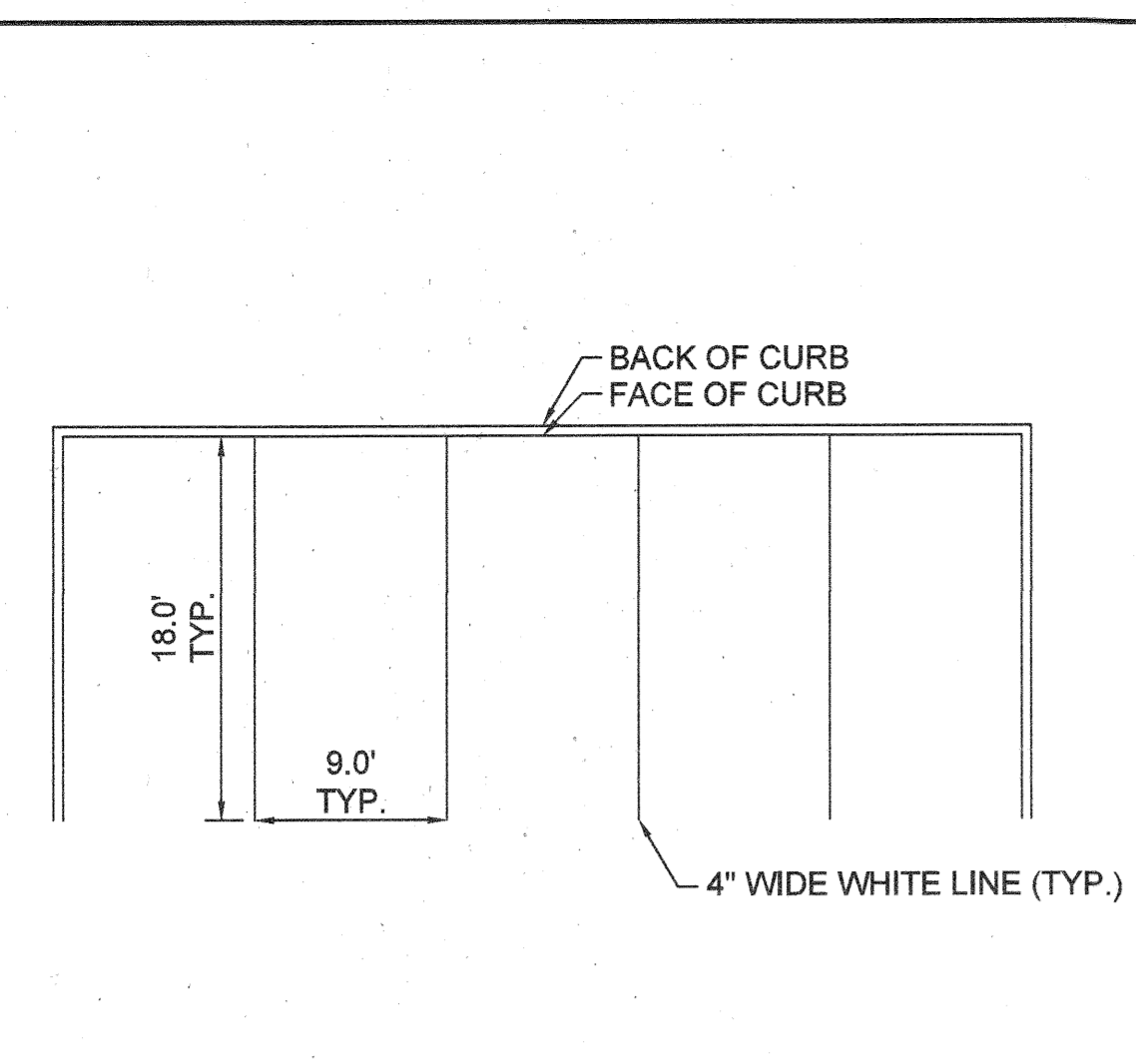
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 CONTRACT NO. 24-5162-D
 EMERSON SECTION 3, AREA 7, PARCEL A-1
 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
 MARYLAND



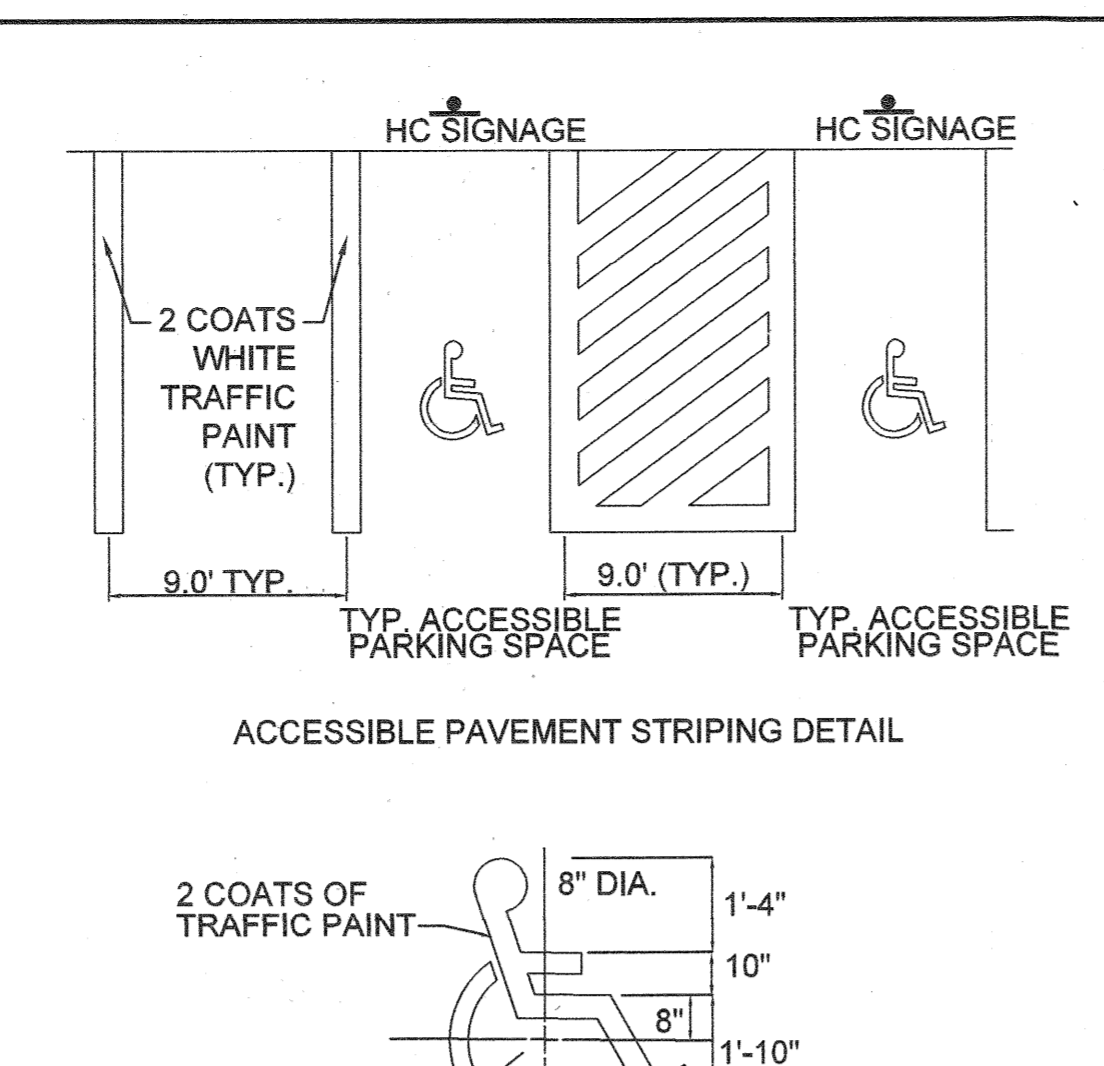
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 LICENSE NO.: 31373
 EXPIRATION DATE: 01/21/2023

SHEET NUMBER
2 OF 40
 SDP-21-017

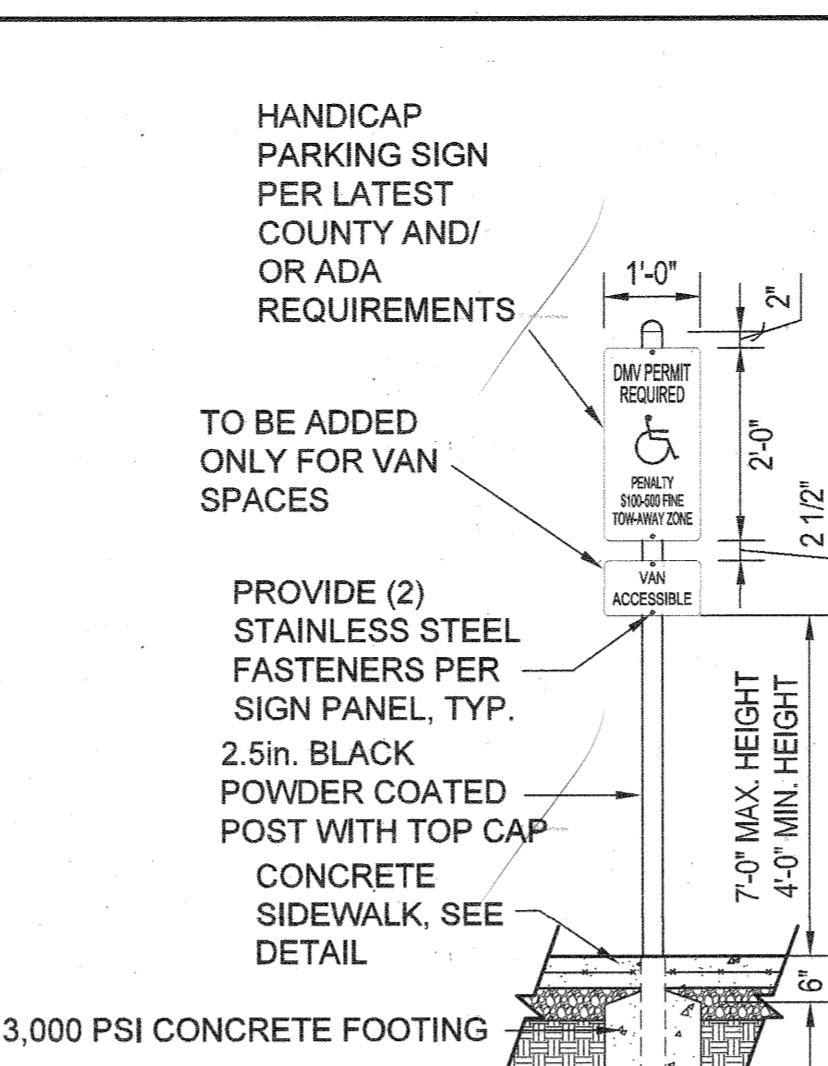
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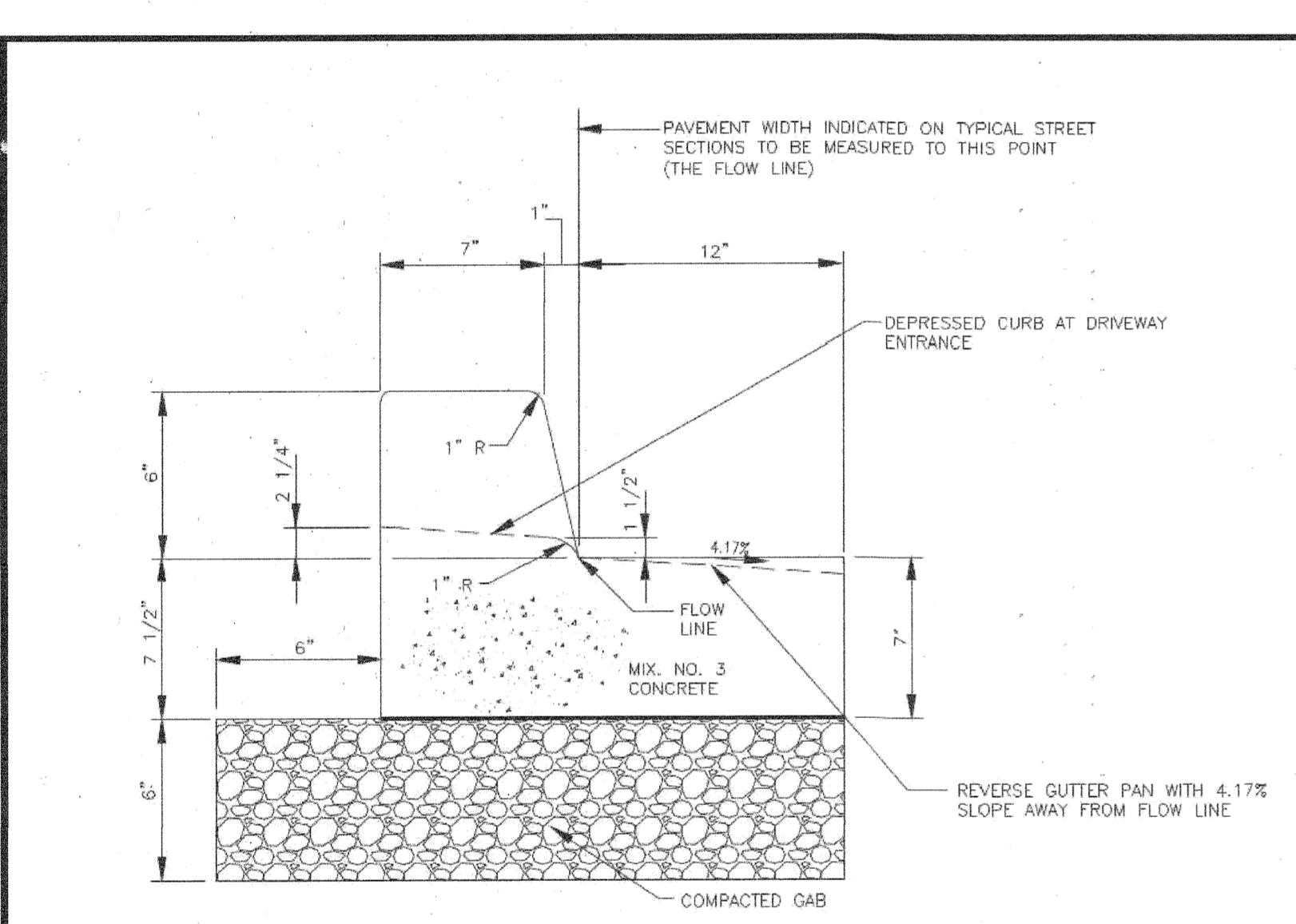
1 TYPICAL PARKING BAY DETAIL
1" = 10'



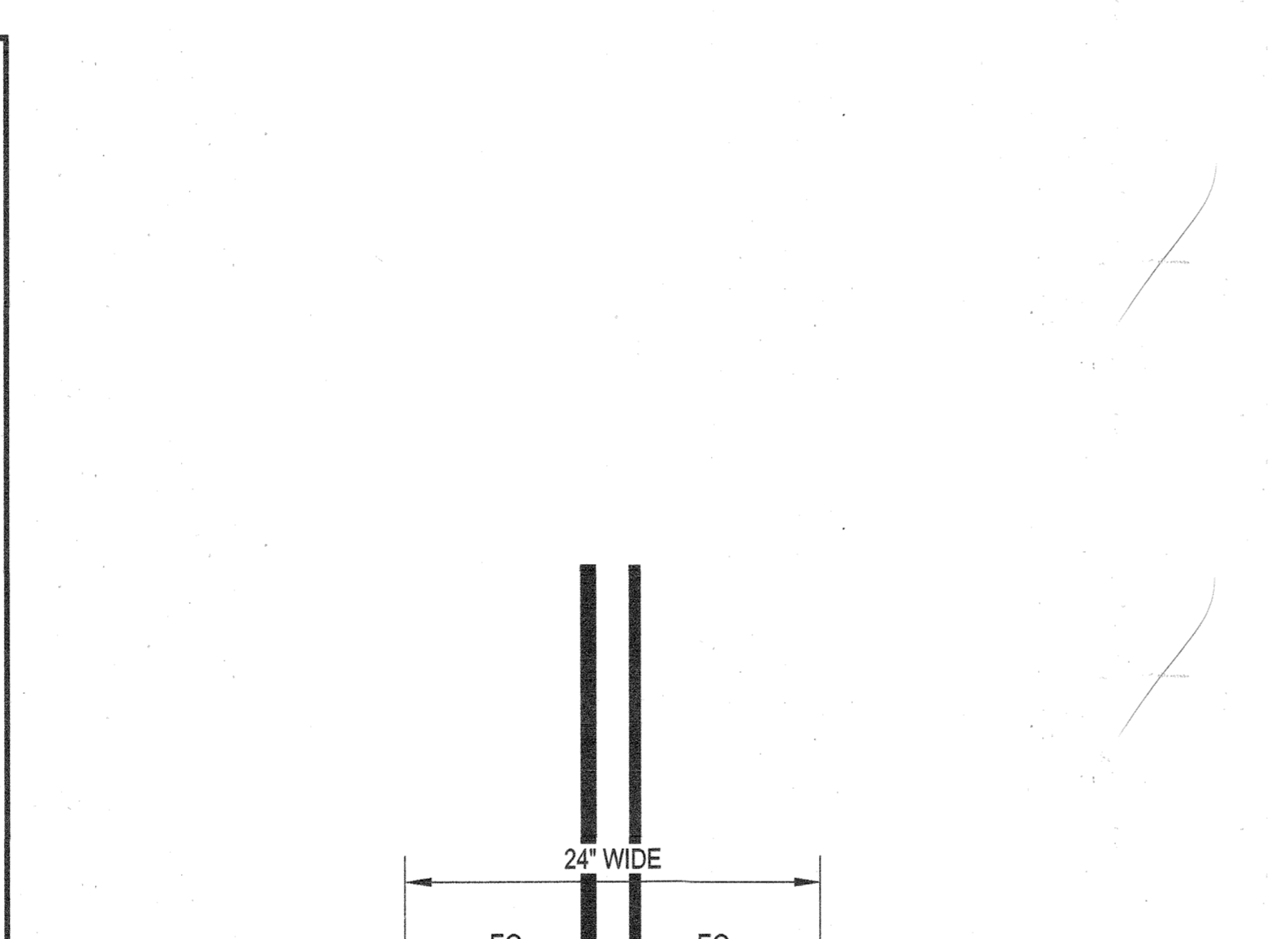
2 VAN ACCESSIBLE ADA PARKING
N.T.S.



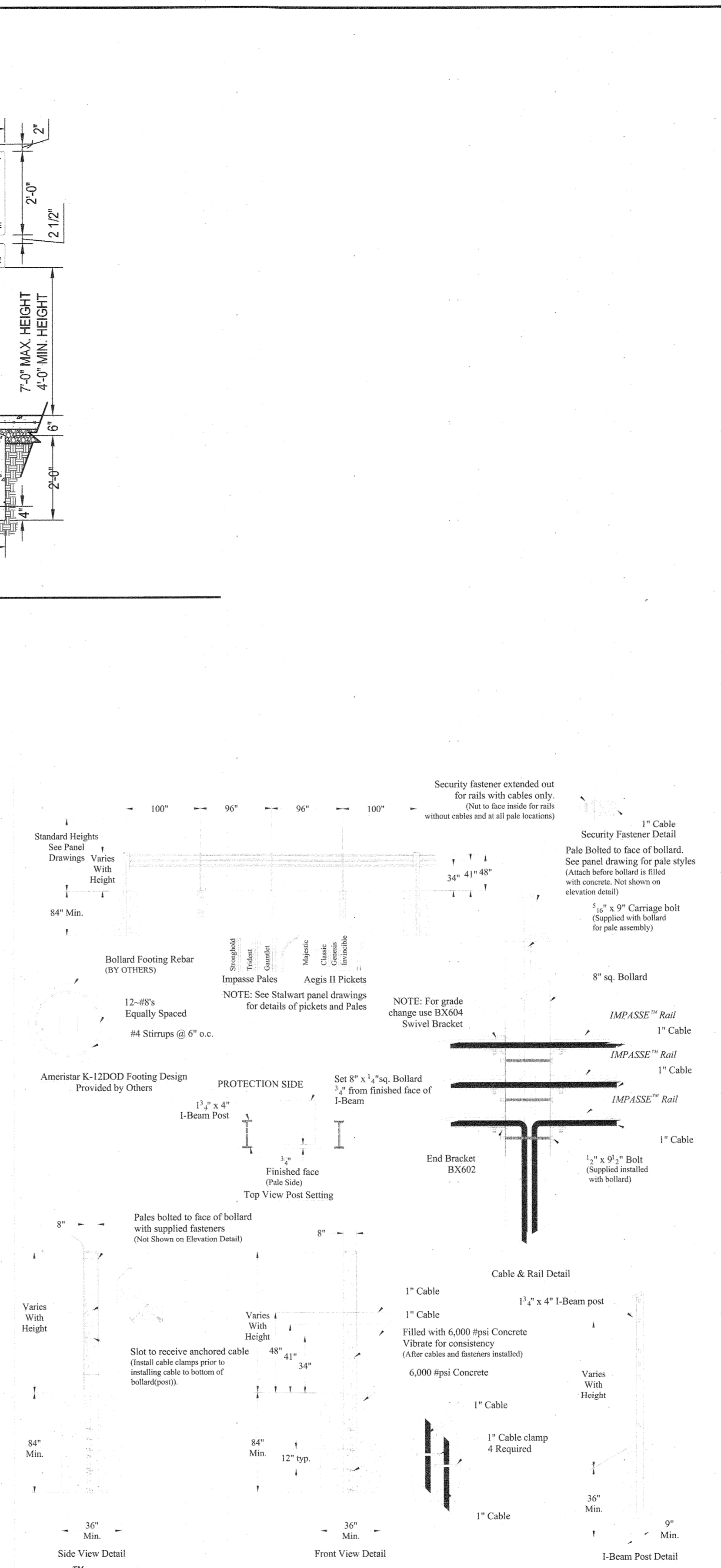
3 HANDICAP SIGN
N.T.S.



4 CURB AND GUTTER DETAIL
N.T.S.



5 FENCE LINE MOW STRIP
1" = 1'-0"



6 AMERISTAR STALWART FENCE WITH K12 CRASH RATING
N.T.S.

D-Series Size 0 LED Area Luminaire

Introduction
The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment. The D-Series distills the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire. The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing up to 400W metal halide with typical energy savings of 70% and expected service life of over 100,000 hours.

Specifications

EPA:	0.95 ft ²
Length:	26"
Width:	13"
Height:	3"
Height:	7"
Weight:	16 lbs
Weight (max):	19 lbs

Ordering information

EXAMPLE: DSX0 LED P6 40K T3M MVOLT SPA NLTAR2 PIRHN DOBXD

Series	LED	Color Temperature	Beam Spread	Mounting	Shipped included		
DSX0 LED	Forward optics	P1 4K	P2	T15 Type I short (Auto-vented)	T15 Type I short ¹	MVOLT ¹	Shipped
		P2 4K	P2	T15 Type II short	T15 Type II short ¹	130'	SPA
	P3 4K	P2	T2M Type I medium	T2M Type I medium ¹	208'	RPA	Round pole mounting
	P4 4K	P2	T3S Type II short	T3S Type II short ¹	240'	WBA	Wall bracket
	P5 4K	P2	T3M Type III medium	T3M Type III medium ¹	277'	SRMBA	Square pole universal mounting adapter ¹
	P6 4K	P2	T4M Type IV medium	T4M Type IV medium ¹	342'	RPUMBA	Round pole universal mounting adapter ¹
Rotated optics	P10 ¹	P2 ¹	TTM Forward low-medium	TTM Forward low-medium ¹	480'	RPUMBA	Round pole universal mounting adapter ¹
	P11 ¹	P3 ¹	TSVS Type I very short	TSVS Type I very short ¹		RMAS DOBXD II	Round arm mounting bracket adapter (specify finish)

Other options

Option	Description	Other options	Finish
SHIPPED INSTALLED	PR High flow, motion/ambient sensor 8-15' mounting height, ambient sensor enabled at 35'	SHIPPED INSTALLED	DOBXD Dark bronze
NLTAR2	High flow, motion/ambient sensor 8-15' mounting height, ambient sensor enabled at 35'	HS House-side-shield ¹	DLBXD Black
PIRHN	Network, High flow, motion/ambient sensor ¹	SF Single face (120, 277, 342) ¹	DLBXD Natural Aluminum
PER	MEVA hook-lock receptacle only (control cabled separately) ¹	DF Double face (208, 240, 480) ¹	DLBXD White
PERS	Free spin receptacle only (control cabled separately) ¹	LD Left recess optics ¹	DLBXD Beveled dark bronze
PERST	Seven-pin receptacle only (double end control cabled separately) ¹	RPO Right recess optics ¹	DLBXD Beveled black
DMG	0-10V dimming control end of housing for external control (control cabled separately) ¹	DDL Diffused drop lens ¹	DLBXD Beveled natural aluminum
		HA 50° ambient operation	HA 50° ambient operation
		SHIPPED SEPARATELY	SHIPPED SEPARATELY
		BS Bird spikes ¹	BS Bird spikes ¹
		ESS External glare shield	ESS External glare shield

LITHONIA LIGHTING
COMMERCIAL OUTDOOR

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THIS IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET. STEPHEN ZERBICK, No. 55742, 10-19-2012

Howard County, Maryland Department of Public Works	CURB AND GUTTER 6" Combination Curb and Gutter Private	Detail R-9.01
Approved: <i>Thomas R. Sautter</i> Chief, Bureau of Engineering		

4 CURB AND GUTTER DETAIL
N.T.S.

APPROVED: DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	4.12.21	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	4/12/21	DATE
DIRECTOR	4-29-21	DATE

No.	REVISIONS	DATE	BY

Kimley»Horn

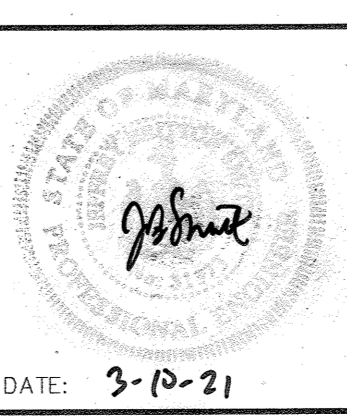
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1801 PORTER ST., SUITE 401, BALTIMORE, MD 21230
PHONE: 443-743-3470
WWW.KIMLEY-HORN.COM

EMERSON PROJECT
SITE DEVELOPMENT PLAN
(SDP-21-017)
CONTRACT NO. 24-5162-D

EMERSON SECTION 3, AREA 7, PARCEL A-1
TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC

1555 N. Mingo
Tulsa, OK 74116
1-888-333-3422
www.ameristarfence.com

DR: RTM SH.1of1 SCALE: DO NOT SCALE
CK: Date: 6/29/08 REV: a



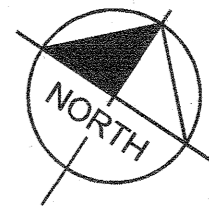
CONSTRUCTION DETAILS

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

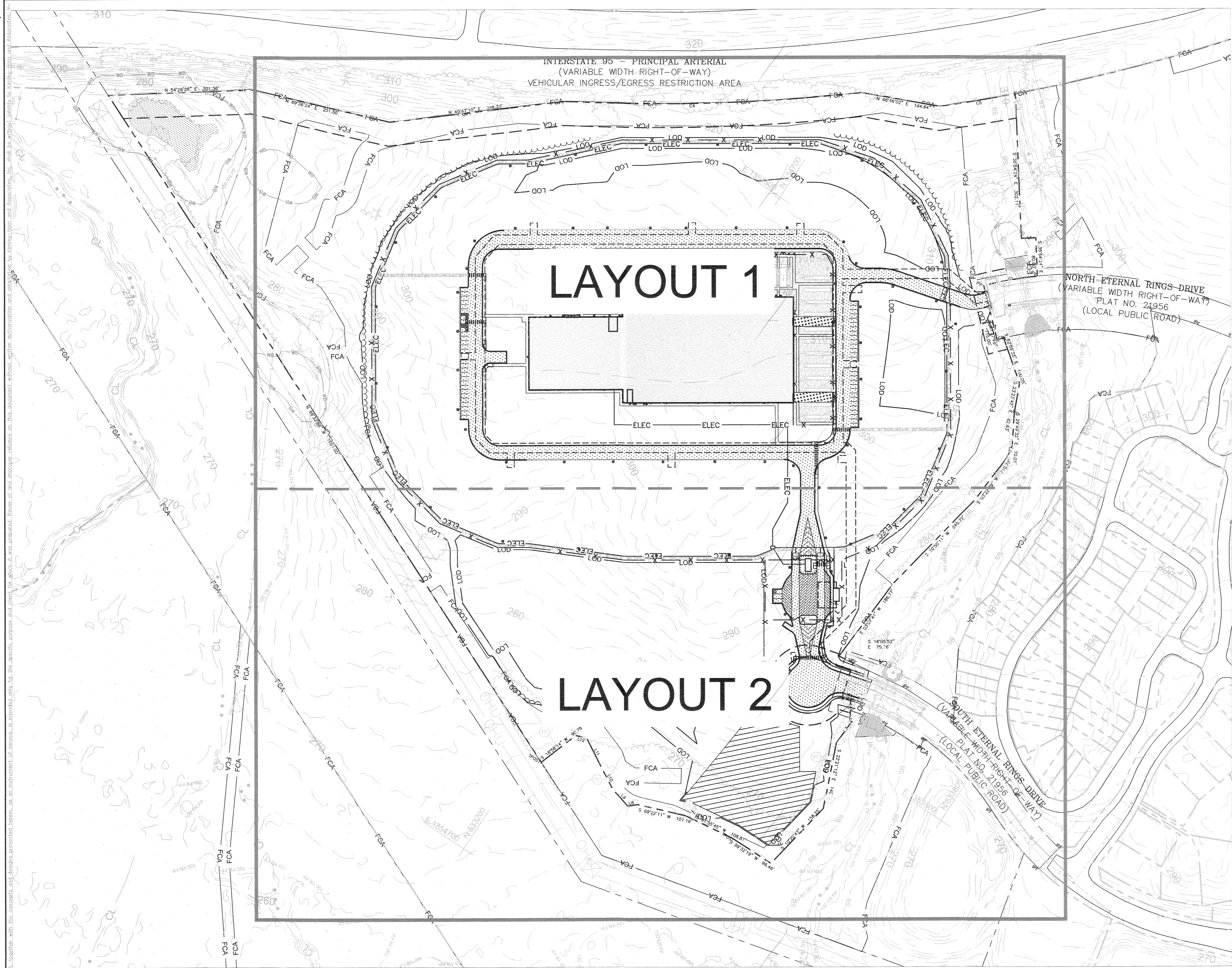
LICENSE NO. 31373
EXPIRATION DATE 01/21/2023

3 OF 40
SDP-21-017

CALL 48 HOURS BEFORE YOU DIG
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GRAPHIC SCALE IN FEET
0 50 100 200



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

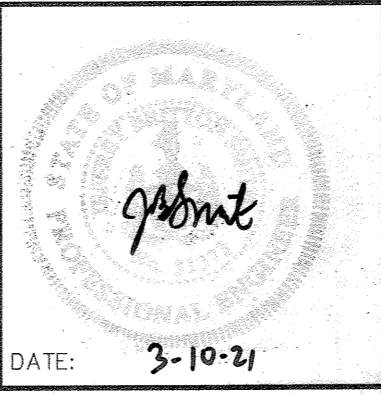
APPROVED: DEPARTMENT OF PLANNING & ZONING
[Signature]
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 4-12-21
CHIEF, DIVISION OF LAND DEVELOPMENT
[Signature]
DATE: 4/23/21
DIRECTOR
[Signature]
DATE: 4-29-21

No.	REVISIONS	DATE	BY

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KHA PROJECT 110718001
DATE 03/10/2021
SCALE AS SHOWN
DESIGNED BY CJC
DRAWN BY CJC
CHECKED BY KTB
HOWARD COUNTY

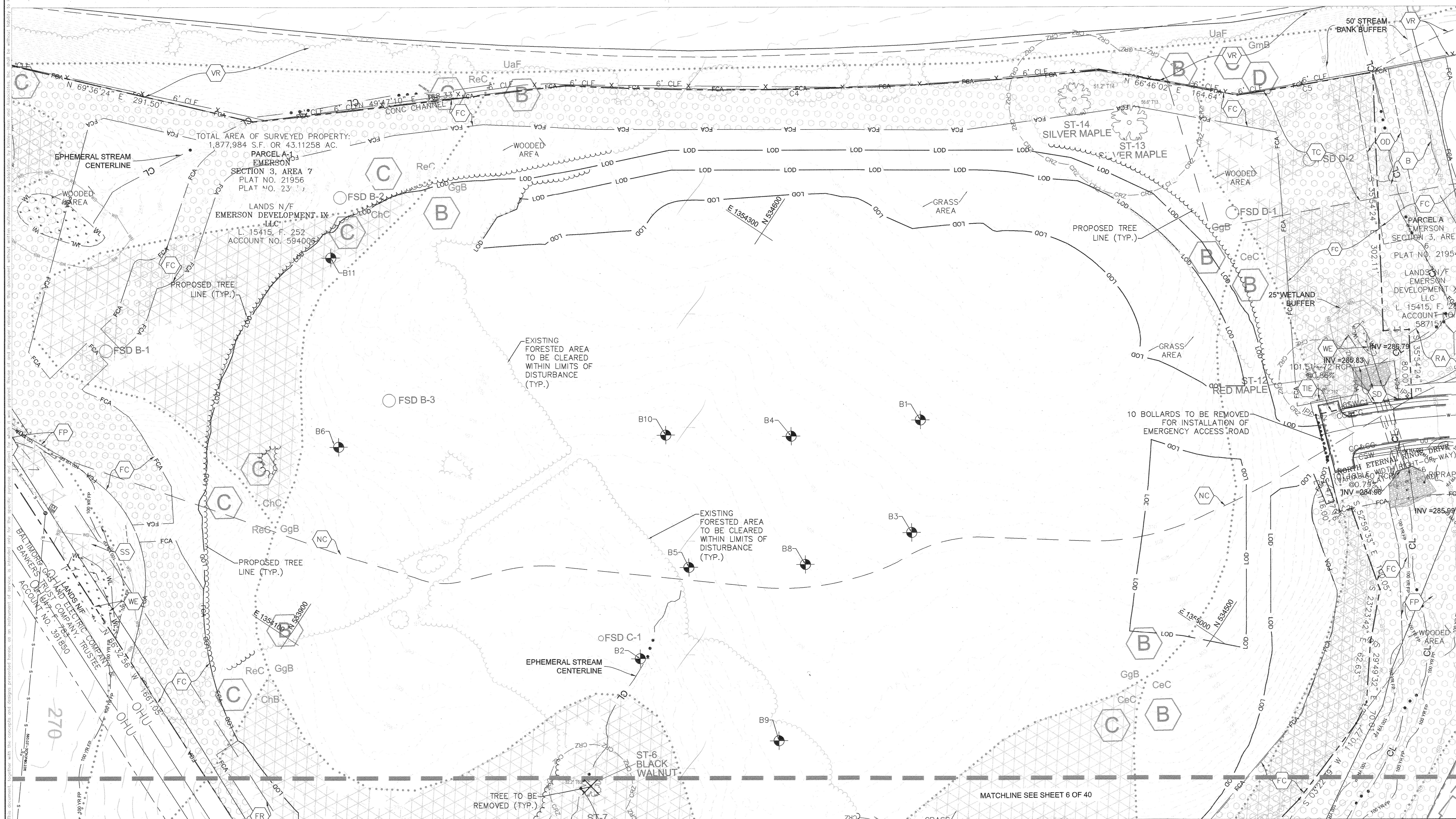
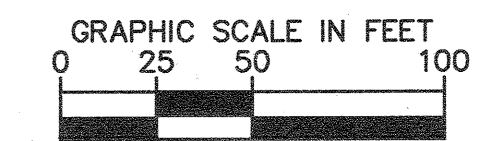
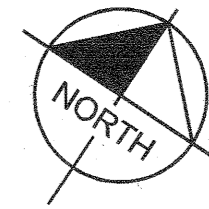
EMERSON PROJECT
SITE DEVELOPMENT PLAN (SDP-21-017)
CONTRACT NO. 24-5162-D
EMERSON SECTION 3, AREA 7, PARCEL A-1
TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
MARYLAND



OVERALL PLAN LAYOUT
PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 31373
EXPIRATION DATE 01/21/2023
SHEET NUMBER
4 OF 40
SDP-21-017

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
STEPHEN FERRICK, No. 36292, 10-19-2012

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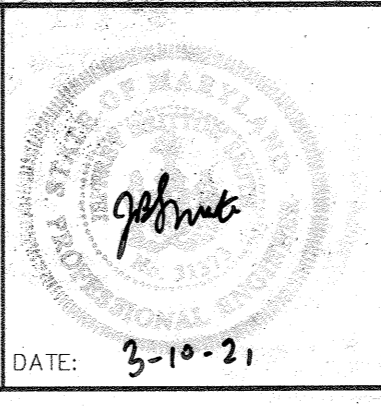
APPROVED: DEPARTMENT OF PLANNING & ZONING
 [Signature] 4.12.21
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
 [Signature] 4.21.21
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
 [Signature] 4-29-21
 DIRECTOR DATE

No.	REVISIONS	DATE	BY

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 DATE 03/10/2021
 SCALE AS SHOWN
 DESIGNED BY LVA
 DRAWN BY LVA
 CHECKED BY KTB
 HOWARD COUNTY

EMERSON PROJECT
 SITE DEVELOPMENT PLAN
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 CONTRACT NO. 24-5162-D
 EMERSON SECTION 3, AREA 7, PARCEL A-1
 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
 MARYLAND

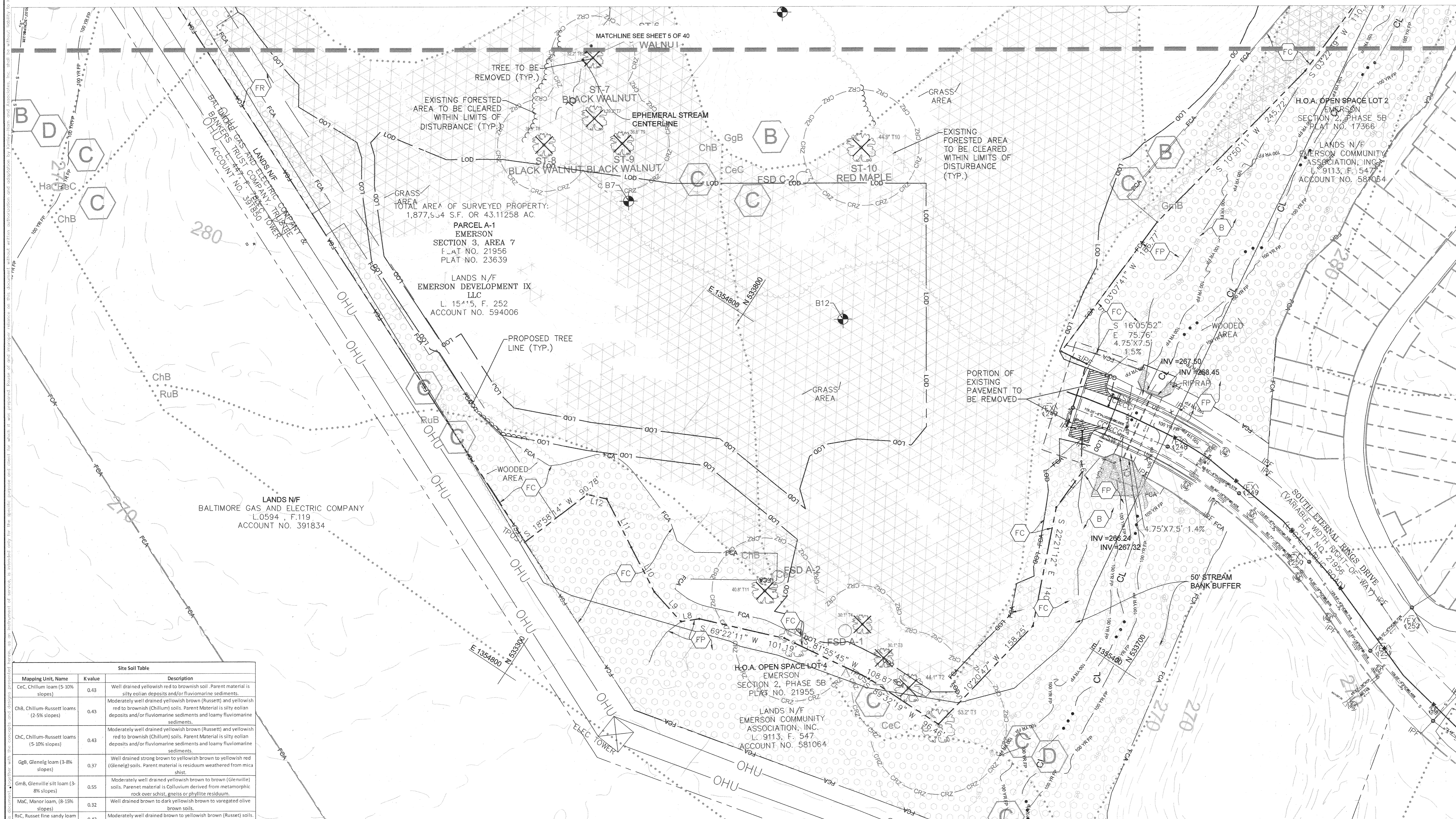
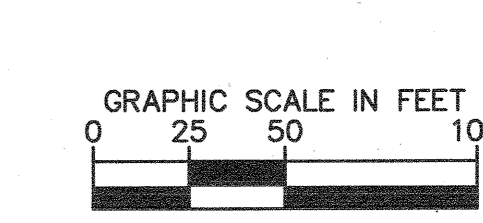


EXISTING CONDITIONS AND DEMOLITION PLAN
 PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 31373
 EXPIRATION DATE 01/21/2023

SHEET NUMBER
5 OF 40
 SDP-21-017

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
STEPHEN JERRICK, No. 46742, 10-19-2022

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

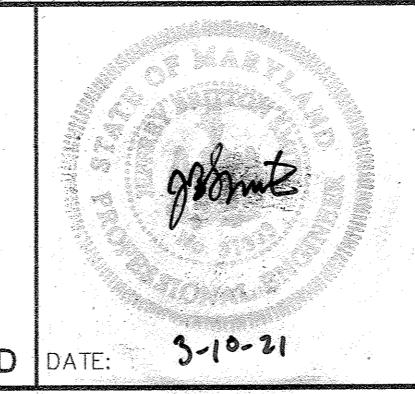
APPROVED: DEPARTMENT OF PLANNING & ZONING
[Signature]
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 4.12.21
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 4.21.21
 DIRECTOR
 DATE: 4.27.21

No.	REVISIONS	DATE	BY

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110718001
DATE
03/10/2021
SCALE AS SHOWN
DESIGNED BY LVA
DRAWN BY LVA
CHECKED BY KTB

EMERSON PROJECT
 SITE DEVELOPMENT PLAN
 (SDP-21-017)
 CONTRACT NO. 24-5162-D
 EMERSON SECTION 3, AREA 7, PARCEL A-1
 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
 MARYLAND



EXISTING CONDITIONS AND DEMOLITION PLAN
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 LICENSE NO. 31373
 EXPIRATION DATE 01/21/2023

SHEET NUMBER
6 OF 40
 SDP-21-017

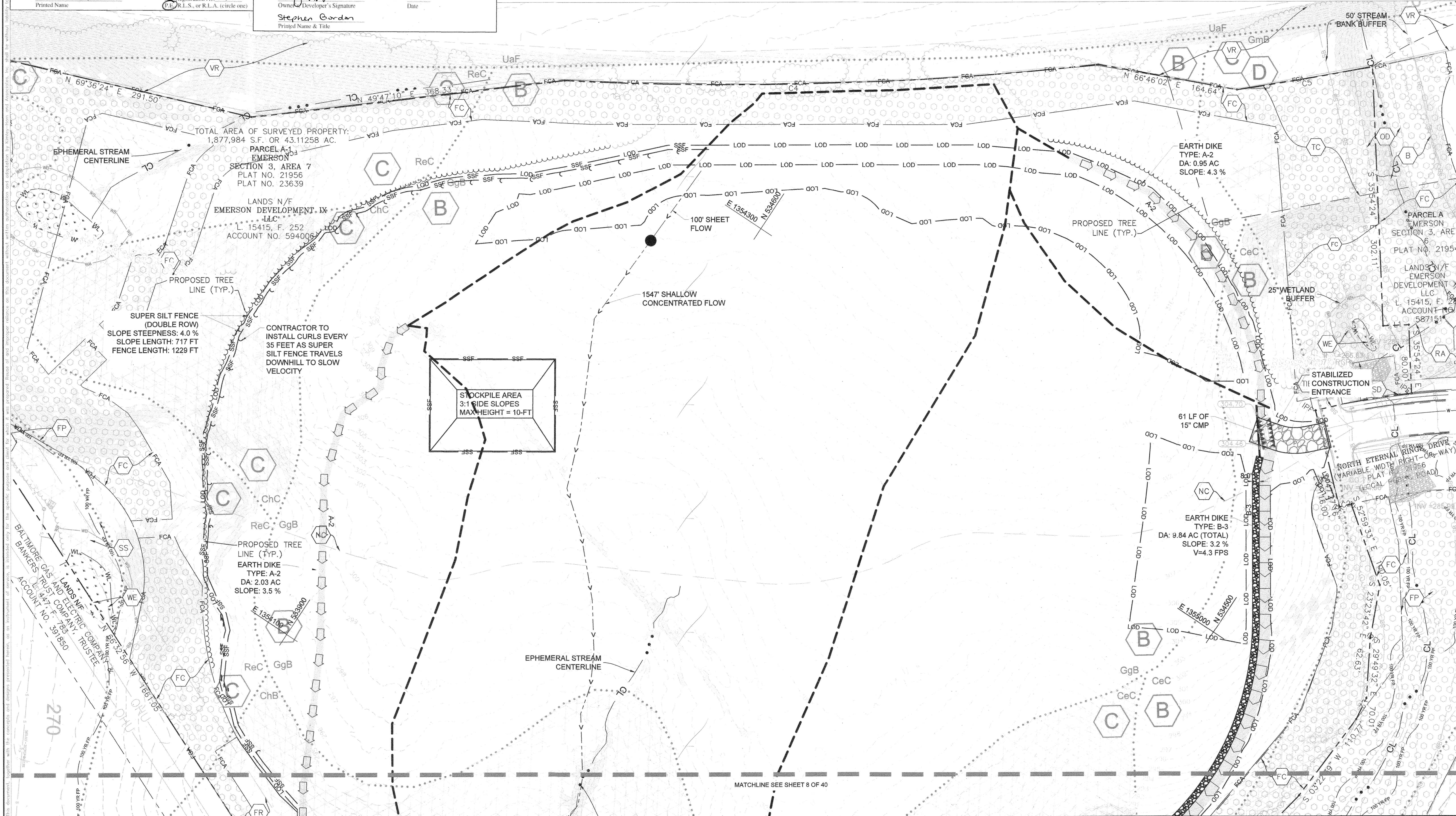
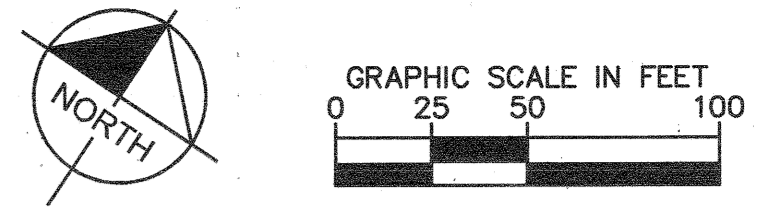
Design Certification:
 "I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."
Jeff Smith
 Designer's Signature
JEFF SMITH
 Printed Name
 3-10-21
 Date
 MD Registration No. 31373
 (P.E., R.L.S., or R.L.A. (circle one))

Owners/Developer Certification:
 "I/We hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right-of-entry for periodic on-site evaluation by Howard County, the Howard Soil Conservation District and/or MDE."
Stephen Gordon
 Owner's/Developer's Signature
Stephen Gordon
 Printed Name & Title
 3-10-21
 Date

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 STEPHEN BERRICK, No. 35242, 10-21-2022

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

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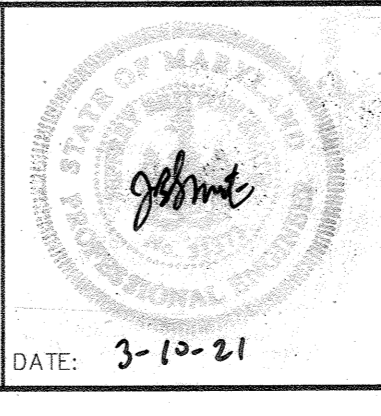
APPROVED: DEPARTMENT OF PLANNING & ZONING
[Signature]
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 4-2-21
 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT
[Signature]
 4-29-21
 DATE
 DIRECTOR

No.	REVISIONS	DATE	BY

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KHA PROJECT 110718001
 DATE 03/10/2021
 SCALES AS SHOWN
 DESIGNED BY CJC
 DRAWN BY CJC
 CHECKED BY KTB

EMERSON PROJECT
 SITE DEVELOPMENT PLAN
 (SDP-21-017)
 CONTRACT NO. 24-5162-D
 EMERSON SECTION 3, AREA 7, PARCEL A-1
 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
 MARYLAND



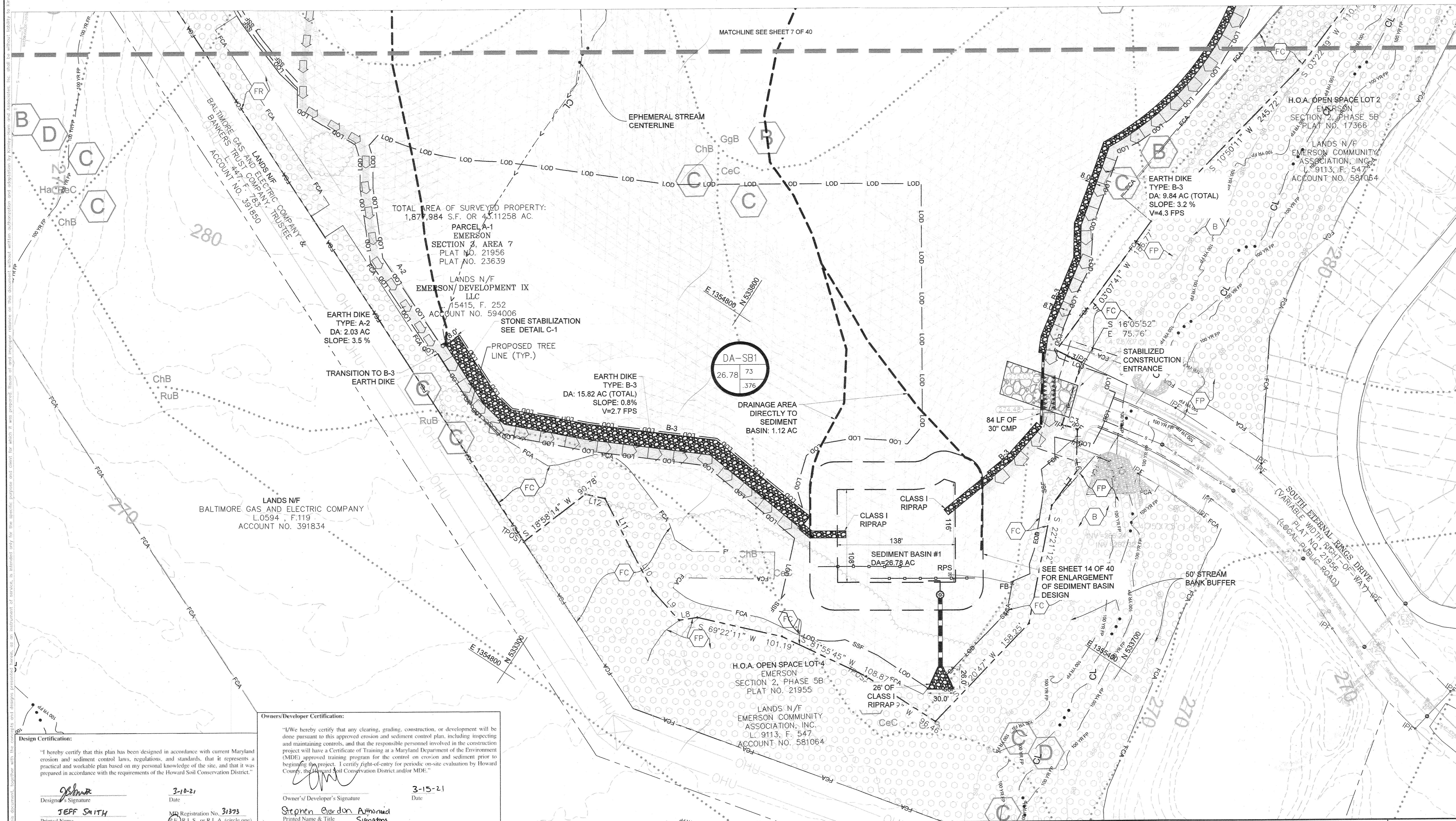
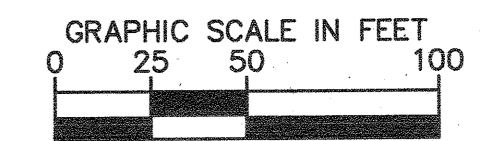
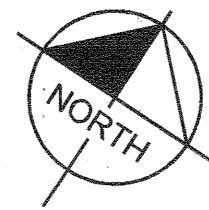
EROSION AND SEDIMENT CONTROL INITIAL PHASE
 PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 31373
 EXPIRATION DATE 01/21/2023

SHEET NUMBER
7 OF 40
 SDP-21-017

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
STEPHEN SERRICK, No. 2652AL, 10-19-2022

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

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Design Certification:
"I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."
Jeff Smith
Designer's Signature
JEFF SMITH
Printed Name
3-10-21
Date
MD Registration No. 31373
Professional Seal

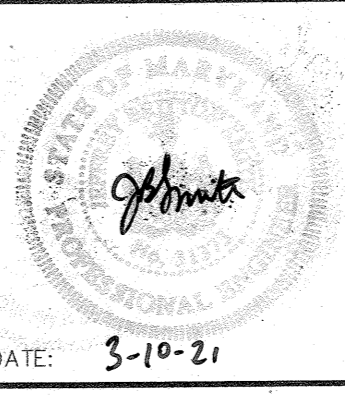
Owners/Developer Certification:
"I/We hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right-of-entry for periodic on-site evaluation by Howard County, the Howard Soil Conservation District and/or MDE."
Stephen Gordon
Owner's/Developer's Signature
Stephen Gordon Authorized Signatory
Printed Name & Title
3-15-21
Date

APPROVED: DEPARTMENT OF PLANNING & ZONING
[Signature]
CHIEF, DEVELOPMENT ENGINEERING DIVISION
4.12.21
DATE
[Signature]
CHIEF, DIVISION OF LAND DEVELOPMENT
4/23/21
DATE
[Signature]
DIRECTOR
4-27-21
DATE

No.	REVISIONS	DATE	BY

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EMERSON PROJECT
SITE DEVELOPMENT PLAN
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CONTRACT NO. 24-5162-D
EMERSON SECTION 3, AREA 7, PARCEL A-1
TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
MARYLAND
KHA PROJECT 110718001
DATE 03/10/2021
SCALE AS SHOWN
DESIGNED BY CJC
DRAWN BY CJC
CHECKED BY KTB
HOWARD COUNTY



EROSION AND SEDIMENT CONTROL INITIAL PHASE
PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 31373
EXPIRATION DATE 01/21/2023


SHEET NUMBER
8 OF 40
SDP-21-017

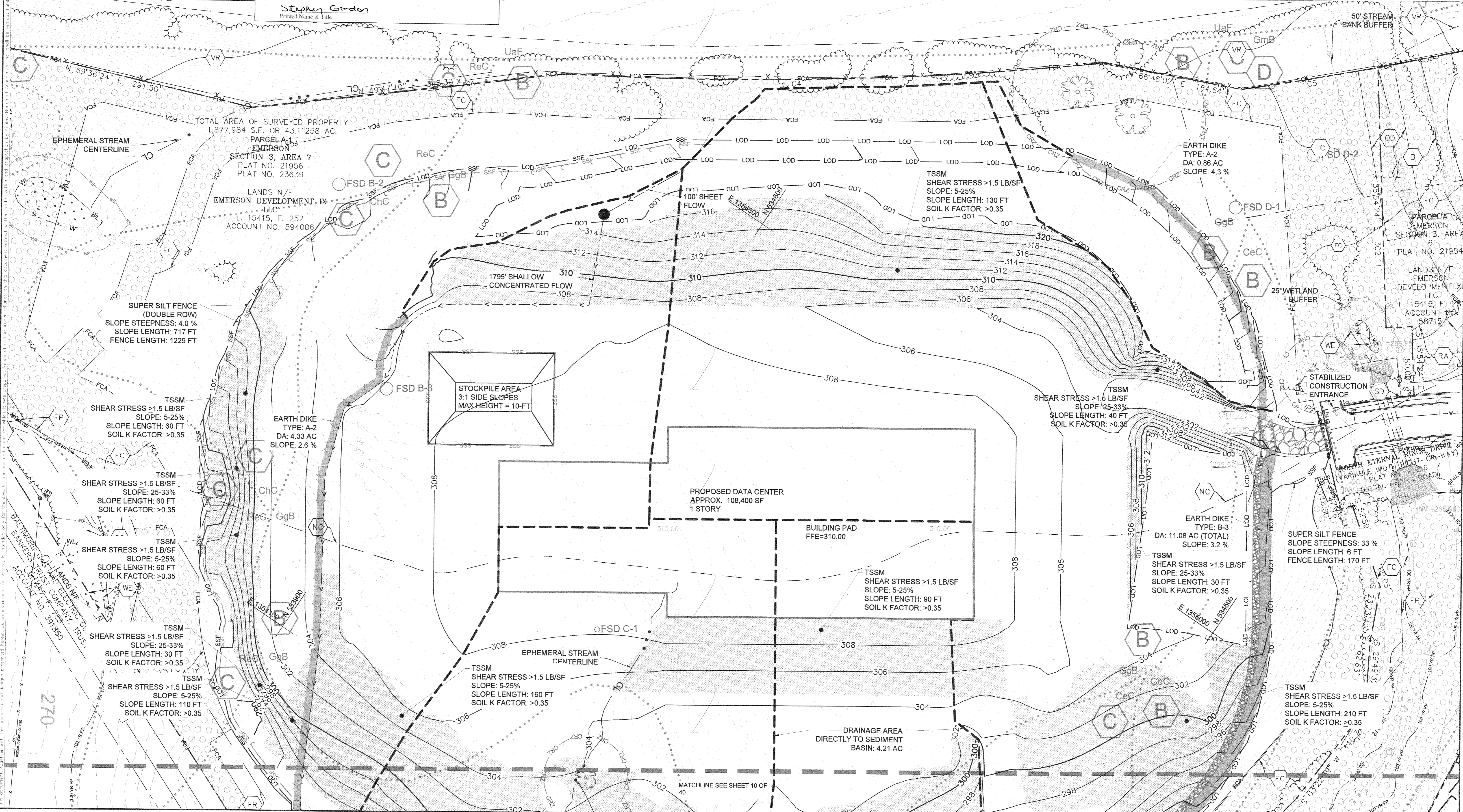
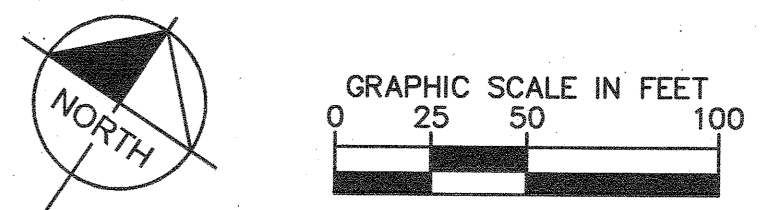
Design Certification:
 "I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."
 Designer's Signature: *Jeff Smith*
 Date: 3-10-21
 Printed Name: JEFF SMITH
 MD Registration No. 31273
 (P) R.L.S., or R.L.A. (circle one)

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

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 STEPHEN ZERAILK, No. 26102, 10-14-2012

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

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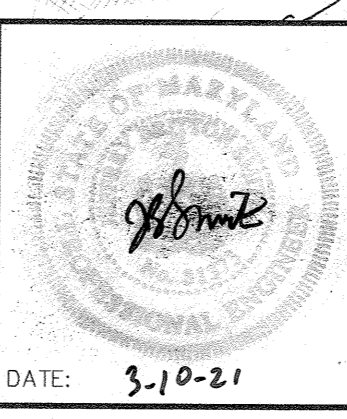


APPROVED: DEPARTMENT OF PLANNING & ZONING
 Chief, Development Engineering Division: *[Signature]* 4-12-21
 Chief, Division of Land Development: *[Signature]* 4/21/21
 Director: *[Signature]* 4-29-21

No.	REVISIONS	DATE	BY

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EMERSON PROJECT
 SITE DEVELOPMENT PLAN (SDP-21-017)
 CONTRACT NO. 24-5162-D
 EMERSON SECTION 3, AREA 7, PARCEL A-1
 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
 MARYLAND DATE: 3-10-21

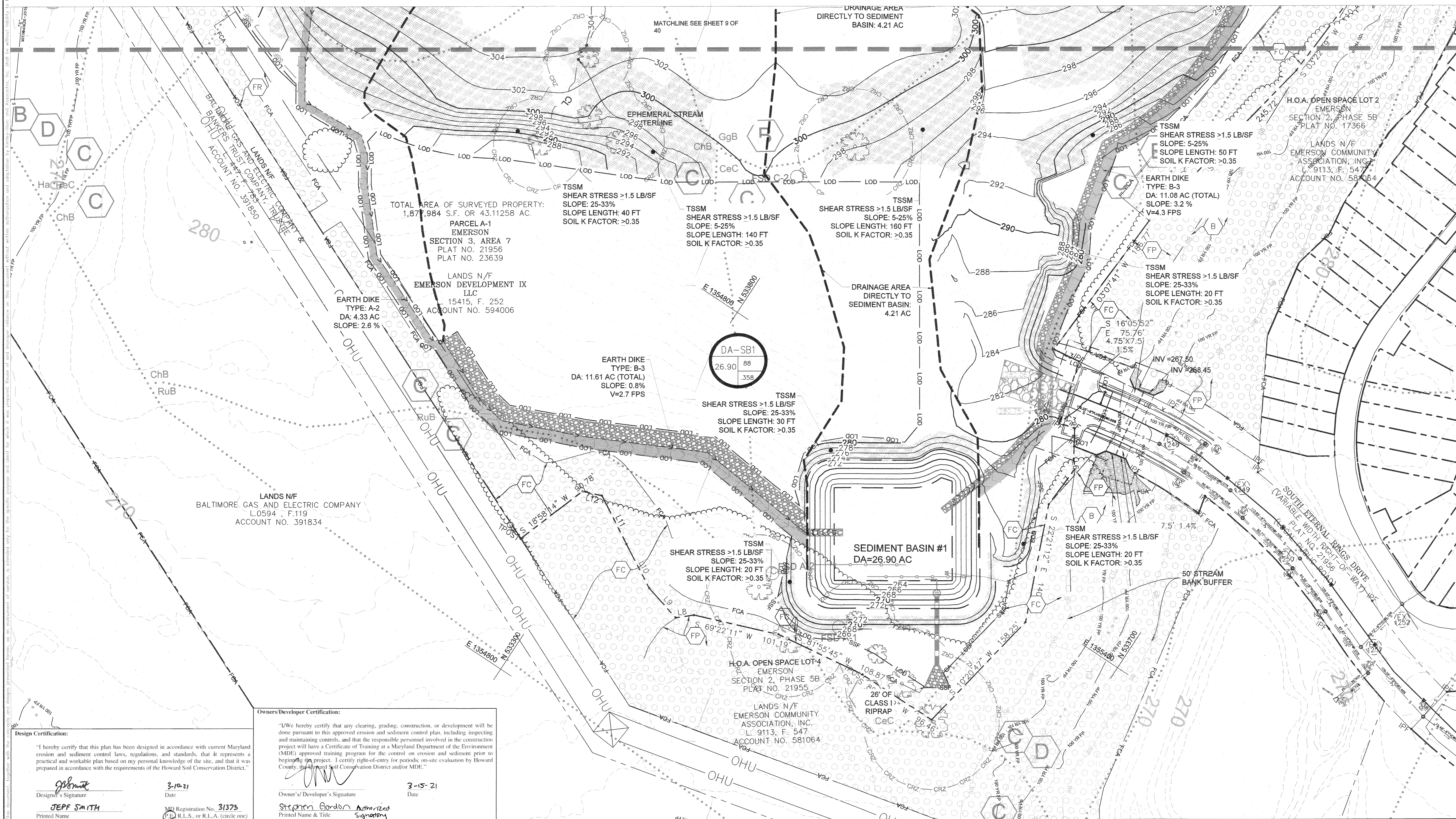
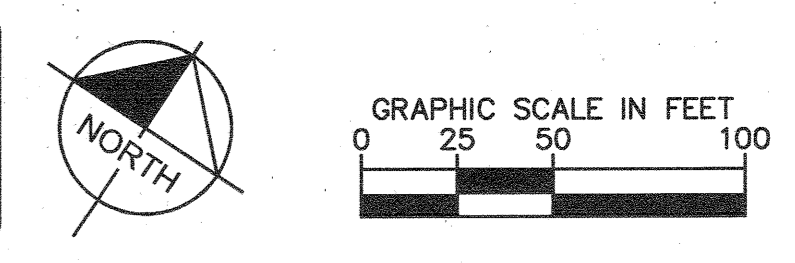


EROSION AND SEDIMENT CONTROL INTERIM PHASE
 SHEET NUMBER: 9 OF 40
 PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO.: 31273
 EXPIRATION DATE: 01/21/2023

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
STEPHEN JERRICK, No. 55192, 10-11-2012

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

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JEPF SMITH
Designer's Signature
3-10-21
Date
MD Registration No. 31375
Professional Seal

Owners/Developer Certification:
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Stephen Gordon
Owner's/Developer's Signature
3-15-21
Date
Printed Name & Title

APPROVED: DEPARTMENT OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION
CHIEF, DIVISION OF LAND DEVELOPMENT
DIRECTOR

No.	REVISIONS	DATE	BY

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EMERSON PROJECT
SITE DEVELOPMENT PLAN
(SDP-21-017)
CONTRACT NO. 24-5162-D
EMERSON SECTION 3, AREA 7, PARCEL A-1
TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
MARYLAND DATE: 3-10-21

EROSION AND SEDIMENT CONTROL INTERIM PHASE
PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 31373
EXPIRATION DATE 01/21/2023
SHEET NUMBER 10 OF 40
SDP-21-017

Design Certification:
 "I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."
 Designer's Signature: *Jeff Smith*
 Date: 3-10-21
 Printed Name: JEFF SMITH
 MD Registration No. 31373
 (P.E., R.L.S., or R.L.A. (circle one))

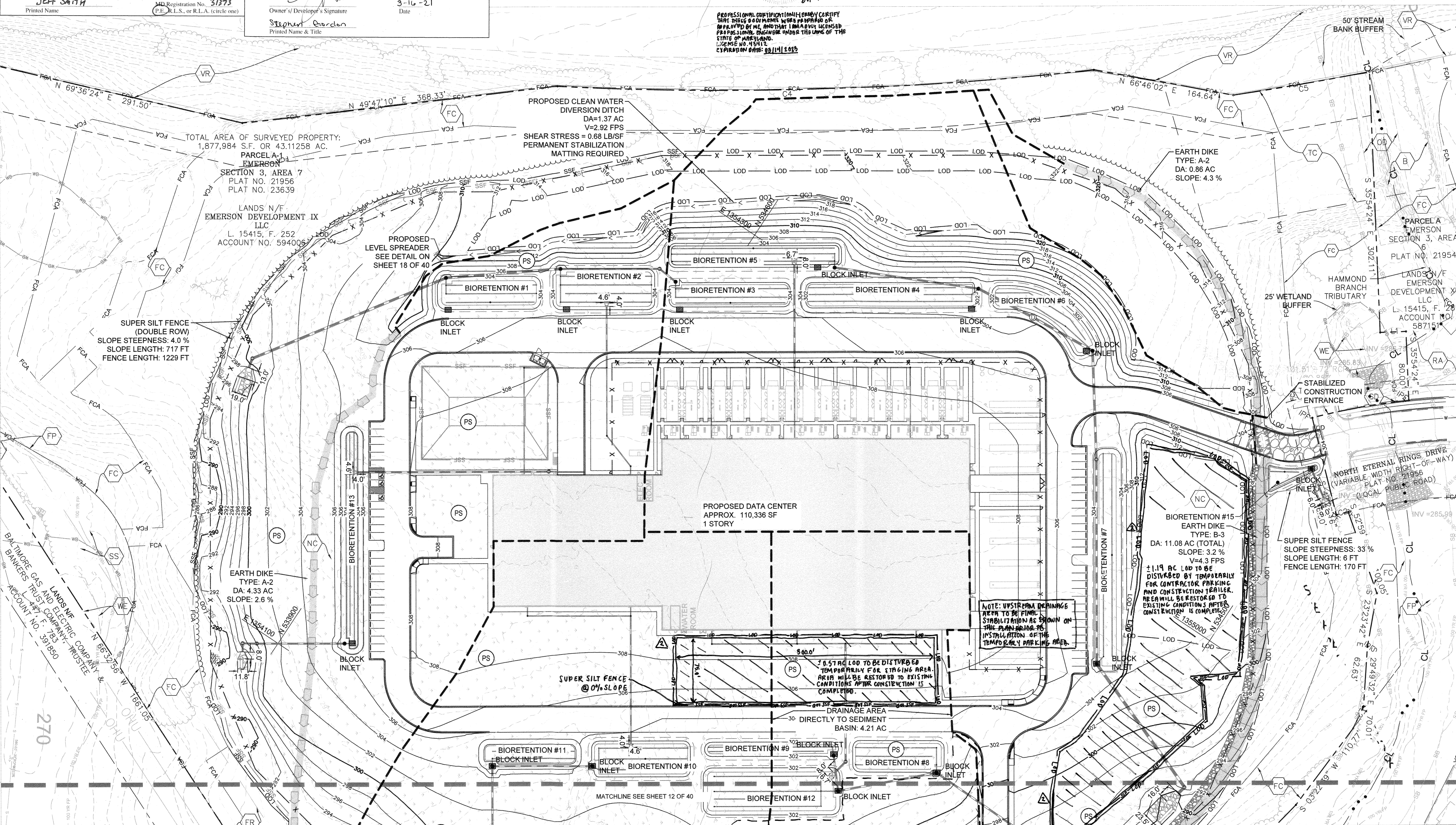
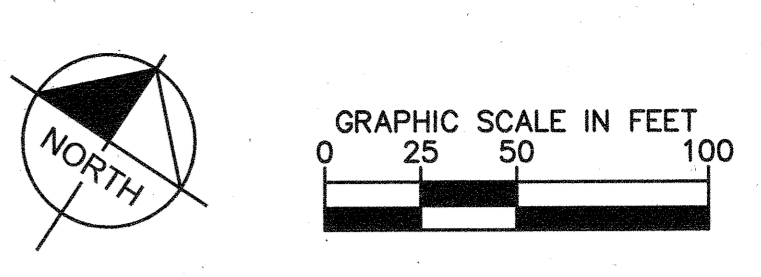
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 Owner's/Developer's Signature: *Stephen Gordon*
 Date: 3-16-21
 Printed Name & Title: Stephen Gordon

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 STEPHEN ZERAIK, No. 35142, 10-14-2022

K.H. Bell
 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. 45412
 EXPIRATION DATE: 02/14/2023

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

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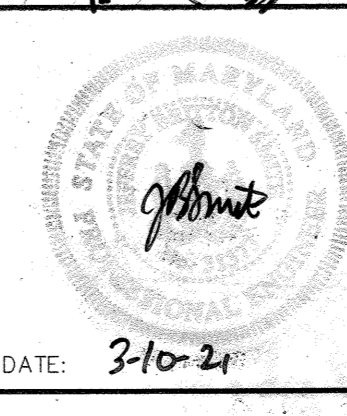


APPROVED: DEPARTMENT OF PLANNING & ZONING
 Chief, Development Engineering Division: *[Signature]* 4/12/21
 Chief, Division of Land Development: *[Signature]* 4/23/21
 Director: *[Signature]* 4/23/21

No.	REVISIONS	DATE	BY
2.	REVISED LIMITS OF DISTURBANCE	06/15/22	KH

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EMERSON PROJECT
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 EMERSON SECTION 3, AREA 7, PARCEL A-1
 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
 MARYLAND DATE: 3-10-21



EROSION AND SEDIMENT CONTROL FINAL PHASE

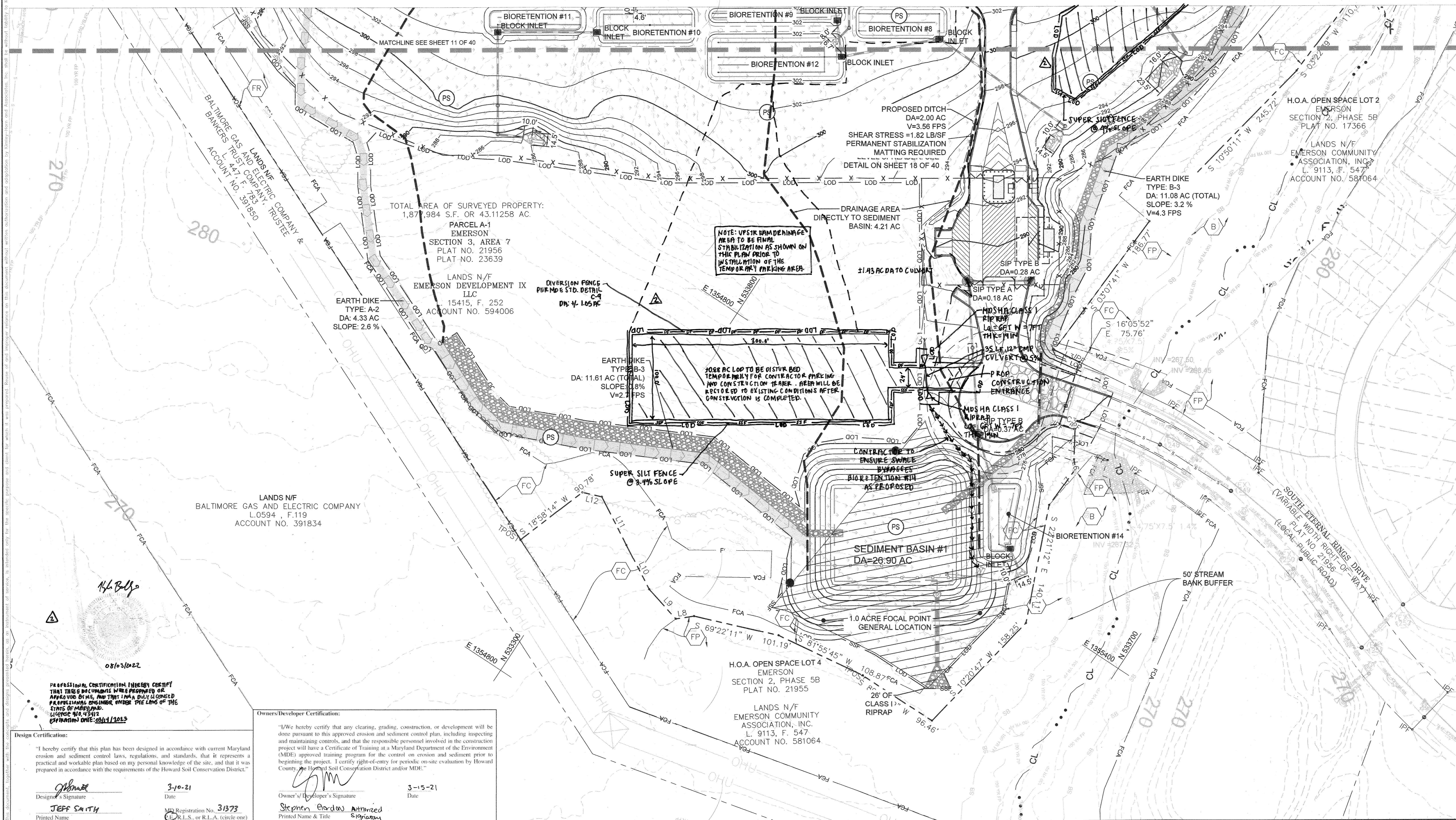
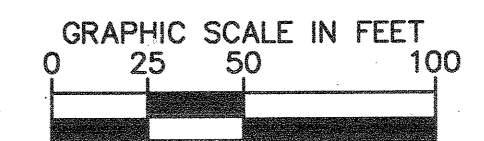
PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 31373
 EXPIRATION DATE: 01/21/2023

SHEET NUMBER: 11 OF 40
 SDP-21-017

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
STEPHEN SERRICK, NO. 35792, 10-19-2022

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

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PROFESSIONAL CERTIFICATION (MDEBN 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. 43412 EXPIRATION DATE: 03/31/2023

Design Certification:
"I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."
Signature: *Jeff Smith*
Date: 3-10-21
Registration No. 31373
P.L.S. or R.L.A. (circle one)

Owners/Developer Certification:
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Signature: *Stephen Gordon*
Date: 3-15-21
Printed Name & Title: Stephen Gordon, Authorized Signatory

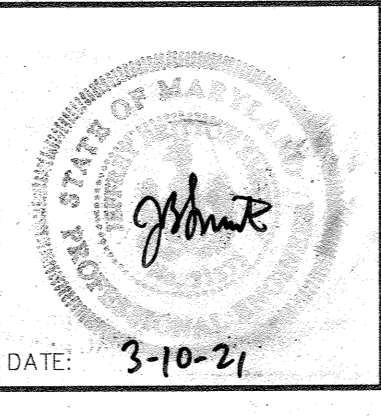
APPROVED: DEPARTMENT OF PLANNING & ZONING
Signature: *David Edman*
DATE: 4-12-21
CHIEF, DEVELOPMENT ENGINEERING DIVISION
Signature: *John Conner*
DATE: 4/28/21
CHIEF, DIVISION OF LAND DEVELOPMENT
Signature: *John Conner*
DATE: 4/28/21
DIRECTOR

No.	REVISIONS	DATE	BY
2.	REVISED LIMITS OF DISTURBANCE	06/15/22	KH

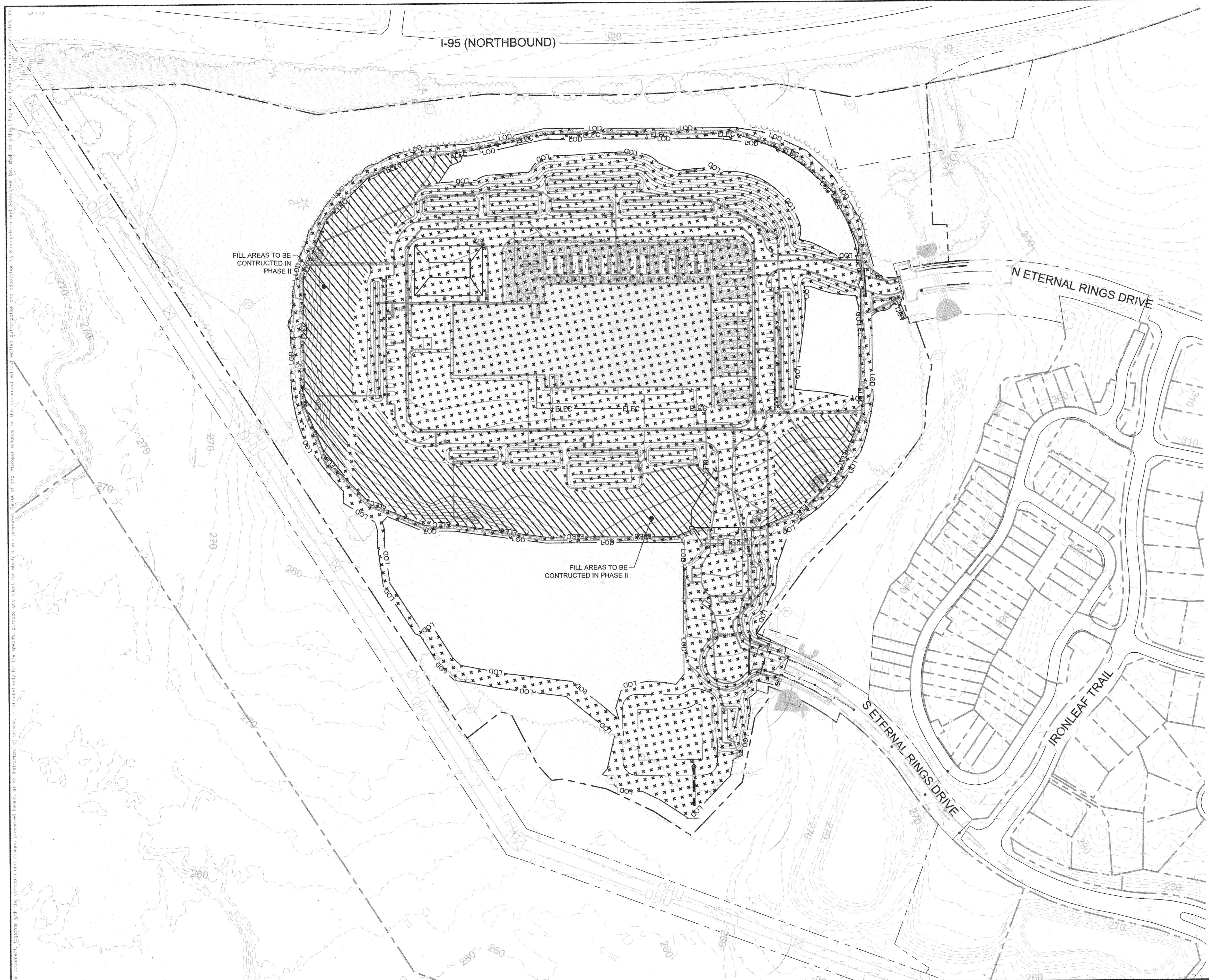
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KHA PROJECT 110718001
DATE 03/10/2021
SCALES AS SHOWN
DESIGNED BY CJC
DRAWN BY CJC
CHECKED BY KTB
HOWARD COUNTY

EMERSON PROJECT
SITE DEVELOPMENT PLAN (SDP-21-017)
CONTRACT NO. 24-5162-D
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EROSION AND SEDIMENT CONTROL FINAL PHASE
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LICENSE NO. 31373
EXPIRATION DATE 01/21/2023
SHEET NUMBER 12 OF 40
SDP-21-017





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Howard SCD Signature Block:
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Alexander Brestski 3/24/21
 Howard Soil Conservation District Date

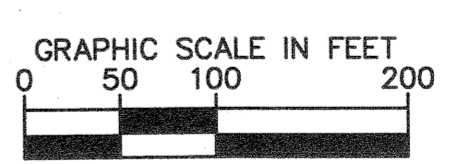
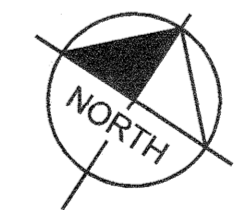
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[Signature] 3-10-21
 Owner's/Developer's Signature Date
 Stephen Gordon
 Printed Name & Title

Design Certification:
 "I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."
[Signature] 3-10-21
 Designer's Signature Date
 JEFF SMITH
 Printed Name Registration No. 31273
 P.E. (R.L.S., or R.L.A. (circle one))

LEGEND

-  PHASE I (19.62 AC)
-  PHASE II (4.67 AC)

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



THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 STEPHEN ZERACK, No. 96792, 10-19-2011

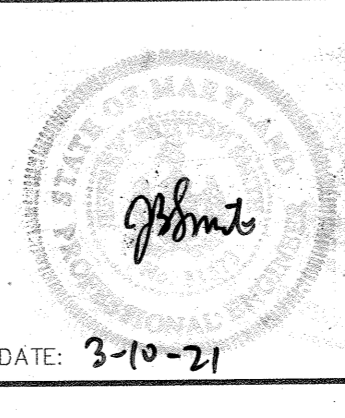
APPROVED: DEPARTMENT OF PLANNING & ZONING
[Signature] 4-12-21
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
[Signature] 4/29/21
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
[Signature] 4/27/21
 DIRECTOR DATE

No.	REVISIONS	DATE	BY

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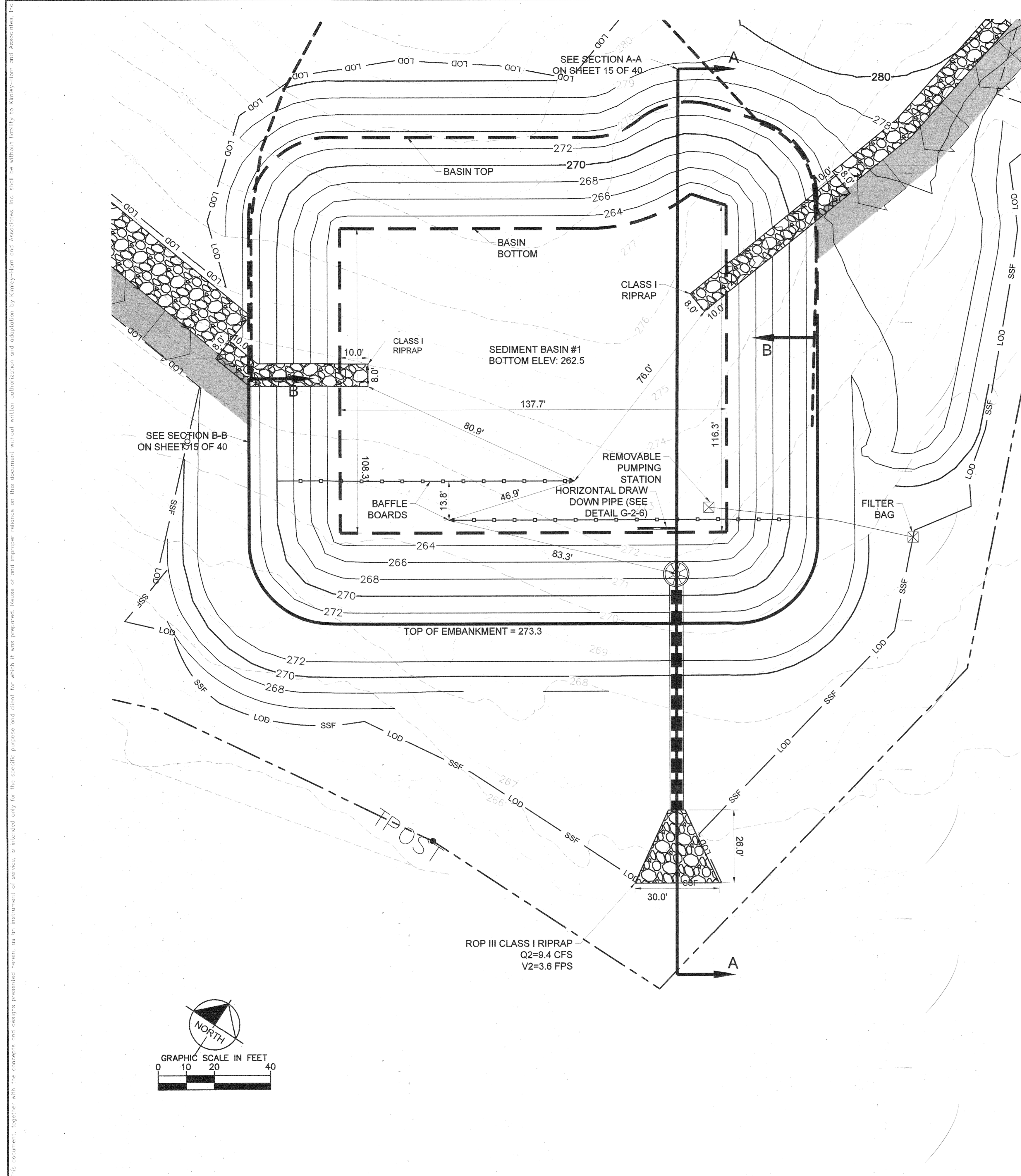
KHA PROJECT 110718001
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PHASING PLAN
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 LICENSE NO. 31273
 EXPIRATION DATE 01/21/2023

SHEET NUMBER
13 OF 40
 SDP-21-017



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

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Table G.26: Temporary Sediment Basin Design Data Sheet
 (Refer to instructions on page G.27 through G.29)

Computed By: CDW Date: 1/15/2021 Checked By: NL Date:
 Project Name: Rockfish Emersion Basin #: 1
 Location: Howard County

	Design Volumes and Elevations	Existing Conditions
1. Total area draining to basin =	26.78 acres (ac)	26.9 acres (ac)
2. Required Total storage volume = 3600 ft ³ /ac *	26.9 ac = 96,840 ft ³	26.9 ac = 96,840 ft ³
3. Required Wet storage volume = 1800 ft ³ /ac *	26.9 ac = 48,420 ft ³	26.9 ac = 48,420 ft ³
4. Required Dry storage volume = 1800 ft ³ /ac *	26.9 ac = 48,420 ft ³	26.9 ac = 48,420 ft ³
5. Basin bottom Elevation =	263 ft	
6. Riser or Weir Crest (total storage) Elevation =	269.7 ft	
7. Provided total storage volume =	152165 ft ³	
8. Wet storage (Permanent pool/draw-down) elevation =	265.5 ft	
9. Provided wet storage volume =	52558 ft ³	
10. Provided dry storage volume =	99806 ft ³	
11. Basin cleanout elevation (located at 1/2 wet storage depth) =	264.25 ft	
12. Distance from riser crest elevation to cleanout elevation =	5.45 ft	

Surface Area Design

13. Q₁₀ = 84.2 cfs (peak inflow from 10-yr, 24-hr storm event; see attached Hydrflow computations)
 14. Minimum basin surface area ≥ 0.0035 x Q₁₀ = 0.29 ac required ≤ 0.45 ac provided

Principal Spillway (Q₁₀)
 (See Figure G.1)

15. Design Q₁₀ for barrel = 84.2 cfs (min. 10% of Q₁₀)
 16. Barrel head, H = 4.73 ft; Barrel length, L = 84 ft
 17. Barrel dia. = 48 in (min. 10 inch); Q₁₀ = 125 (Q from Table G.7 or G.8)
 0.97 (length correction factor) = 121.25 cfs

Note: Q₁₀ must equal or exceed Design Q₁₀

18. Riser dia. = 60 in; Riser Height = 4.69 ft; Riser head (h) = 1.53 ft
 19. Trash Rack dia. = 90 in; Trash Rack Height = 37 in

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Stephen Gordon 3-16-21
 Owner's/Developer's Signature Date
 Stephen Gordon
 Printed Name & Title

Design Certification:

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Jeff Smith 3-10-21
 Design Signature Date
 JEFF SMITH
 Printed Name
 MD Registration No. 31373
 (P) R.L.S., or R.L.A. (circle one)

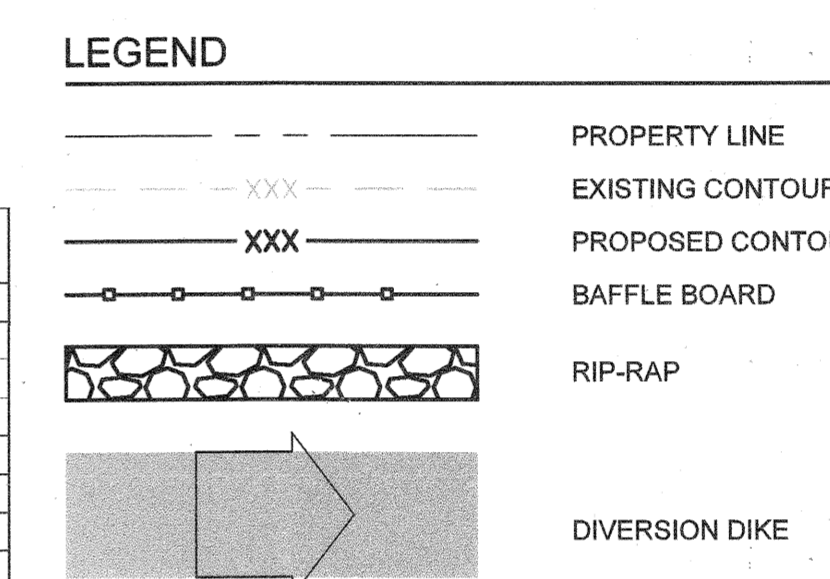


Table G.6: Temporary Sediment Basin Design Data Sheet (continued)

Elevation FT	Area SF	Average Area SF	Storage Interval FT	Interval Volume CF	Cumul. Volume CF	Cumul. Volume AC-FT
262.5	15183	15565	0.5	7783	0	0.000
263	15947	16737	1	16737	7783	0.179
264	17527	18347	1	18347	24520	0.563
265	19167	19384	0.5	9692	42867	0.984
265.5	19600	20232	0.5	10116	52558	1.207
266	20863	21740	1	21740	62674	1.439
267	22616	23521	1	23521	84414	1.938
268	24425	25358	1	25358	107934	2.478
269	26291	26961	0.7	18873	133292	3.060
269.7	27631	28912	0.3	8674	152165	3.493
270	28213	29203	1	29203	160838	3.692
271	30193	31211	1	31211	190041	4.363
272	32228	33274	1	33274	221252	5.079
273	34320	34640	0.3	10392	254526	5.843
273.3	34959				264918	6.082

Anti-Seep Collar Design (If Required) - Filter Diaphragm
 (See Figures G.5 and G.6)

26. y = 6.22 ft; z = 3 in; pipe slope = 0.7 %; LS = 37.2 ft
 27. Use 2 collars, 10'-0" x 10'-0" square; projection = 2.79 ft

Draw-Down Device
 (See Tables G.10 and Details G-2-6 and G-2-7)

28. Q₁₀ = 1.35 cfs
 29. Calculated A_s = 0.1669 ft²
 30. Calculated d_s = 0.461 ft 6 in
 31. Maximum diameter from Table G.10 = 6 in
 32. Design d_s = smaller of line 30 or line 31 = 6 in
 33. Draw-down device pipe diameter = 8 in
 34. Minimum AT = total area of perforations = 4 * A_s = 0.6677 ft²
 35. Perforation diameter = 1 in
 36. Minimum number of perforations = 122
 37. Number of longitudinal rows = 4
 38. Perforated pipe length = 16 ft
 39. Actual A_s = (0.0055 ft²) x (line 37 / 0.5 ft) x (line 38) = 0.704 ft² (must be line 34)

Baffle Board Design (Basin 1)
 (See Detail G-2-4)

40. A = surface area at wet storage elevation = 19600 ft²
 41. Effective width, W_e = (A/2)^{1/2} = 98.99 ft
 42. Flow length from inflow point to outlet = 94 ft
 43. If line 42 is less than W_e x 2, provide baffle boards to lengthen flow path. Need Baffles
 44. Effective flow length, L_e = L₁ + L₂ + L₃ = 206 ft (must be ≥ W_e x 2 = 198 ft)

Anti-Flotation Computations - Basin 1 Riser

Riser	Height (ft)	Radius (ft)	Thickness (ft)	How Many?	Volume (cf)	Specific Weight (lb/cf)	Weight (lbs)
Cylindrical Structure	4.69	2.50	0.01	1	0.39	436	170
Concrete Base (square)	1.50	8.00	n/a	1	96.00	150	14400
					Total Concrete	96.00	14570
Riser Openings	Diameter (ft)						
Draw down opening	0.50		0.01	1	0.00	436	0
Circ. Barrel Opening	4.00		0.01	1	0.07	436	-29
					Total Voids in Riser	0.07	-29
					Volume cf	92.09	Weight of Riser 14541
					Specific Weight lb/cf	62.4	Weight lbs 5746
					Factor of Safety		2.53

*Volume of water displaced is equal to the volume of the entire riser structure

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 STEPHEN JERRICK, N.B. 35102, 10-14-2022

NOTE: SEDIMENT BASIN IS TEMPORARY AND MUST BE REMOVED WITHIN 3 YEARS.

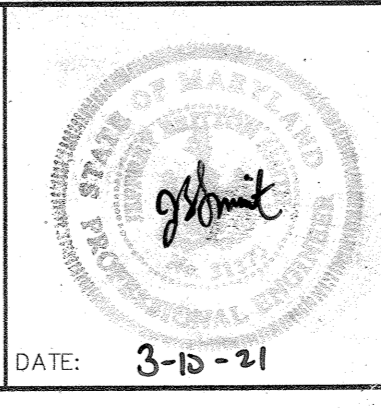
APPROVED: DEPARTMENT OF PLANNING & ZONING
David... 4/12/21
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT 4/29/21
 DIRECTOR DATE

No.	REVISIONS	DATE	BY

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KHA PROJECT 110718001
 DATE 03/10/2021
 SCALEAS SHOWN
 DESIGNED BY CJC
 DRAWN BY CJC
 CHECKED BY KTB

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SEDIMENT BASIN DETAIL SHEET
 PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 31373
 EXPIRATION DATE 01/21/2023

SHEET NUMBER
14 OF 40
 SDP-21-017

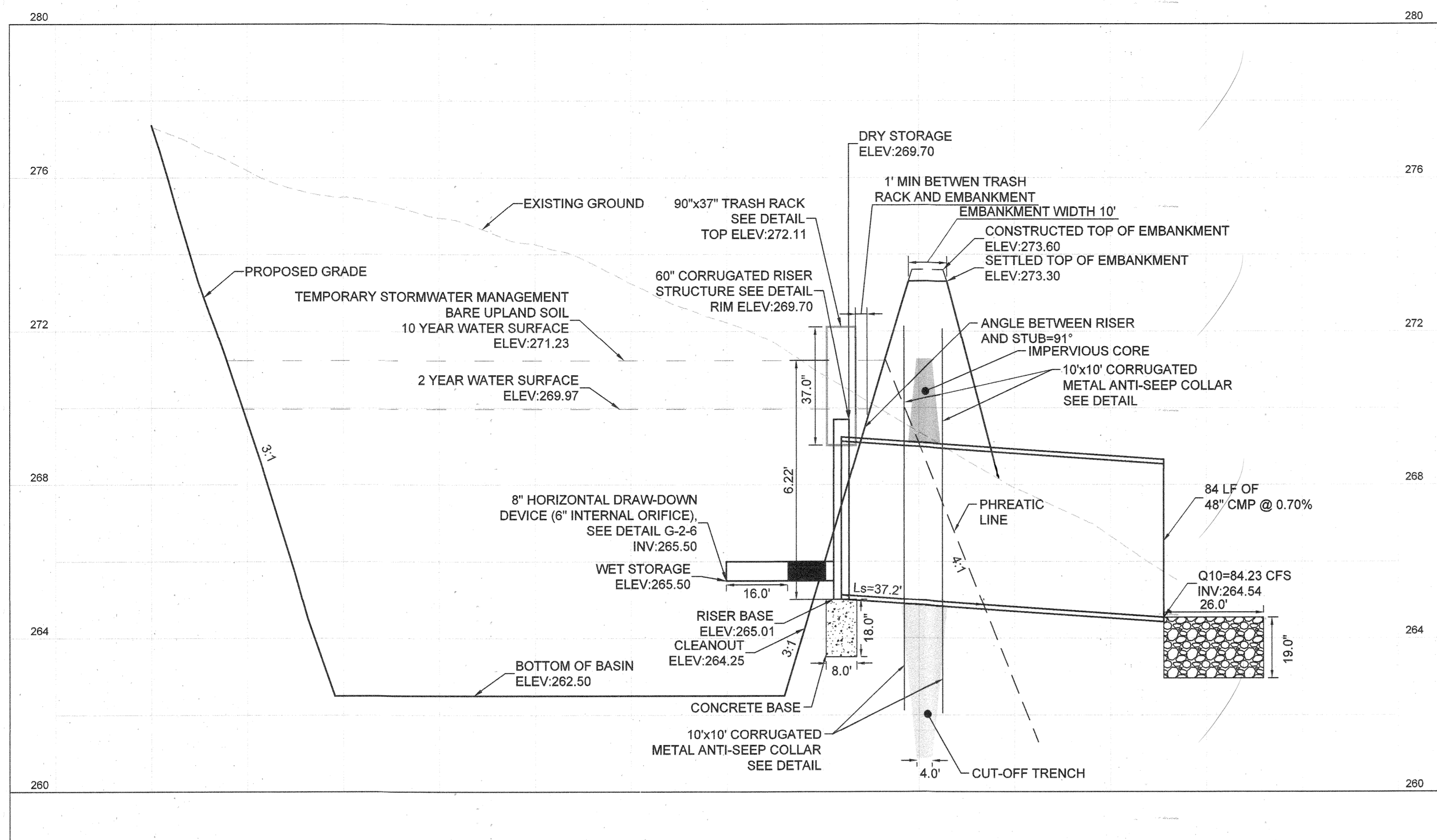
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Howard SCD Signature Block:
 This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.
Alexander Boustani 3/24/21
 Howard Soil Conservation District Date

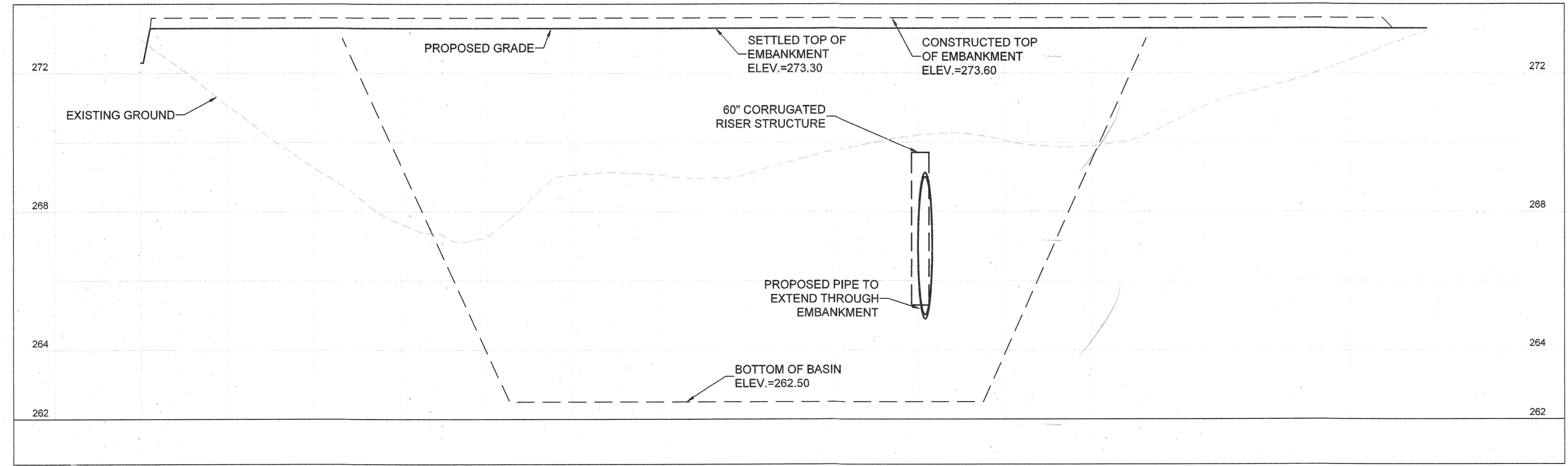
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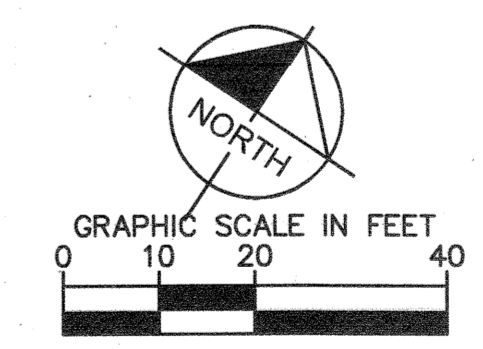
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[Signature] 3-10-21
 Design's Signature Date
 JEFF SMITH
 Printed Name
 MD Registration No. 31373
 (P.E., R.L.S., or R.L.A. (circle one))



SEDIMENT BASIN CROSS-SECTION A-A
 SCALE: 1" = 20' H
 1" = 2' V



POND EMBANKMENT CROSS-SECTION B-B
 SCALE: 1" = 20' H
 1" = 2' V



THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 STEPHEN JERRICK, No. 55192, 10-19-2022

NOTE: SEDIMENT BASIN IS TEMPORARY AND MUST BE REMOVED WITHIN 3 YEARS.

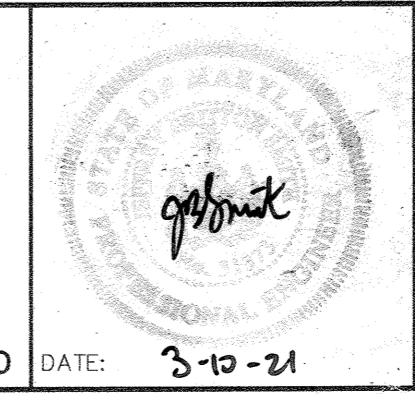
APPROVED: DEPARTMENT OF PLANNING & ZONING
[Signature] 4/28/21
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT
[Signature] 4/28/21
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No.	REVISIONS	DATE	BY

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 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
 MARYLAND COUNTY



SEDIMENT BASIN PROFILES
 PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 31373
 EXPIRATION DATE 01/21/2023

SHEET NUMBER
15 OF 40
 SDP-21-017

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

NOTES: SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND"

CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE

- c. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A) CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B) SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)

d. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1/2 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY. e. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

DEFINITION: THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER. PURPOSE: TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION. CONDITIONS WHERE PRACTICE APPLIES: TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING. CRITERIA:

- A. SEEDING 1. SPECIFICATIONS a. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW... b. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES... c. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED... d. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS... 2. APPLICATION a. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OF BROADCAST SPREADERS... i. INCORPORATE SEED INTO THE SUBSOIL... ii. APPLY SEED IN TWO DIRECTIONS... b. DRILL OR CULTIPACKER SEEDING... i. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED... ii. APPLY SEED IN TWO DIRECTIONS... c. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER... i. IF FERTILIZER IS BEING APPLIED... ii. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE... iii. MIX SEED AND FERTILIZER ON SITE... iv. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

DEFINITION: TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS. PURPOSE: TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS. CONDITIONS WHERE PRACTICE APPLIES: EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS... CRITERIA:

- 1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE... 2. FOR SITES HAVING SOIL TESTS PERFORMED... 3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON...

TEMPORARY SEEDING SUMMARY TABLE with columns: NO., SPECIES, APPLICATION RATE, SEEDING DATES, SEEDING DEPTHS, FERTILIZER RATE, LIME RATE. Includes rows for BARLEY and FOXTAIL MILLET.

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

DEFINITION: TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION. PURPOSE: TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS. CONDITIONS WHERE PRACTICE APPLIES: EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE. CRITERIA:

- A. SEED MIXTURES 1. GENERAL USE a. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3... b. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES... c. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES... d. FOR AREAS RECEIVING LOW MAINTENANCE... 2. TURFGRASS MIXTURES a. AREAS WHERE TURFGRASS MAY BE DESIRED... b. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW... c. KENTUCKY BLUEGRASS... d. KENTUCKY BLUEGRASS/PERENNIAL RYE... e. TALL FESCUE/KENTUCKY BLUEGRASS... f. KENTUCKY BLUEGRASS/FINE FESCUE

PERMANENT SEEDING SUMMARY TABLE with columns: NO., SPECIES, APPLICATION RATE, SEEDING DATES, SEEDING DEPTHS, FERTILIZER RATE (N, P205, K20), LIME RATE. Includes rows for TALL FESCUE, KENTUCKY BLUE GRASS, and PERENNIAL RYEGRASS.

NOTE: DURING TIMES OUTSIDE OF THE INCLUDED "SEEDING DATES" SOD MAY BE USED TO ESTABLISH PERMANENT STABILIZATION.

- B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS 1. GENERAL SPECIFICATIONS a. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED... b. SOD MUST BE MACHINE CUT... c. STANDARD SIZE SECTIONS OF SOD... d. SOD MUST NOT BE HARVESTED... e. SOD MUST BE HARVESTED, DELIVERED... 2. SOD INSTALLATION a. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE... b. LAY THE FIRST ROW OF SOD... c. WHEREVER POSSIBLE, LAY SOD... d. WATER THE SOD... 3. SOD MAINTENANCE a. IN THE ABSENCE OF ADEQUATE RAINFALL... b. AFTER THE FIRST WEEK... c. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED... d. MAINTAIN A GRASS HEIGHT...

- B. MULCHING 1. MULCH MATERIALS (IN ORDER OF PREFERENCE) a. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT... b. WOOD CELLULOSE FIBER MULCH (WCFM)... i. WCWM IS TO BE DYED GREEN... ii. WCWM, INCLUDING DYE, MUST CONTAIN NO GERMINATION... iii. WCWM MATERIALS ARE TO BE MANUFACTURED... iv. WCWM MATERIAL MUST NOT CONTAIN ELEMENTS... v. WCWM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS... 2. APPLICATION a. APPLY MULCH TO ALL SEEDED AREAS... b. WHEN STRAW MULCH IS USED... c. WOOD CELLULOSE FIBER USED AS MULCH... 3. ANCHORING a. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION... i. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT... ii. WOOD CELLULOSE FIBER MAY BE USED... iii. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR... iv. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH...

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET. STEPHEN JERRICK, NO. 99742, 10-19-2012

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

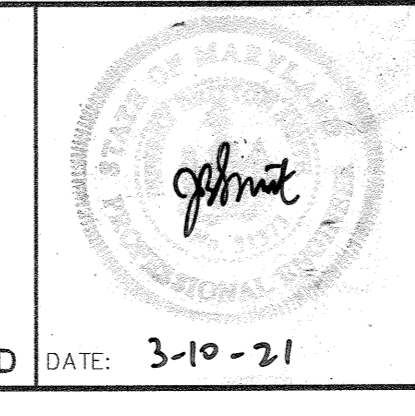
Design Certification: I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws... Owners/Developer Certification: I/We hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan...

APPROVED: DEPARTMENT OF PLANNING & ZONING. Chief, Development Engineering Division: [Signature] 4-12-21 DATE. Chief, Division of Land Development: [Signature] 4/12/21 DATE. Director: [Signature] 4-29-21 DATE.

Table with columns: No., REVISIONS, DATE, BY.

Kimley Horn logo and contact information: © 2021 KIMLEY-HORN AND ASSOCIATES, INC. 1801 PORTER ST, SUITE 401, BALTIMORE, MD 21230. PHONE: 443-743-3470. WWW.KIMLEY-HORN.COM

EMERSON PROJECT SITE DEVELOPMENT PLAN (SDP-21-017) CONTRACT NO. 24-5162-D. EMERSON SECTION 3, AREA 7, PARCEL A-1 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC MARYLAND DATE: 3-10-21



EROSION AND SEDIMENT CONTROL NOTES PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO.: 31373 EXPIRATION DATE: 01/21/2023

**HOWARD SOIL CONSERVATION DISTRICT (HSCD)
STANDARD SEDIMENT CONTROL NOTES**

B-4.8 STANDARDS AND SPECIFICATIONS

**FOR
STOCKPILE AREA**

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.

Criteria

- 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. Benching must be provided in accordance with Section B-3 Land Grading.
- Runoff from the stockpile area must drain to a suitable sediment control practice.
- Access the stockpile area from the upgrade side.
- Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
- Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
- Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
- If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

Maintenance

The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading.

G.25

- A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:
 - PRIOR TO THE START OF EARTH DISTURBANCE.
 - UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
 - PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT.
 - PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.
- OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15' OF CUT AND/OR FILL. STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6).
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE CID.
- SITE ANALYSIS:

TOTAL AREA OF SITE: 43.11 ACRES
 AREA DISTURBED: 24.29 ACRES
 AREA TO BE ROOFED OR PAVED: 8.17 ACRES
 AREA TO BE VEGETATIVELY STABILIZED: 16.12 ACRES
 TOTAL CUT: 61,164 CU. YDS.
 TOTAL FILL: 92,353 CU. YDS.
 OFFSITE WASTE/BORROW AREA LOCATION: N/A
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY, AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE:
 - INSPECTION DATE
 - INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT)
 - NAME AND TITLE OF INSPECTOR
 - WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION)
 - BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES
 - EVIDENCE OF SEDIMENT DISCHARGES
 - IDENTIFICATION OF PLAN DEFICIENCIES
 - IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE
 - IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS
 - COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS
 - PHOTOGRAPHS
 - MONITORING/SAMPLING
 - MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
 - OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE).
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
- ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES.
- DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE HSCD, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
- WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.
- TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.
- ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IMBRICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2' IN ELEVATION.
- STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):
 - USE I AND IP MARCH 1 - JUNE 15
 - USE III AND IIIP OCTOBER 1 - APRIL 30
 - USE IV MARCH 1 - MAY 31
- A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

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. 43412. EXPIRATION: 03/14/2023

4/6/21

03/14/2023

SEQUENCE OF CONSTRUCTION

INITIAL STAGE

- NOTIFY CID INSPECTOR 7 DAYS BEFORE CONSTRUCTION TO REQUEST CID PRE-CONSTRUCTION MEETING. NO CONSTRUCTION CAN BEGIN UNTIL THE RISER/BARREL ASSEMBLY ETC ARE ON SITE AND READY FOR INSTALLATION. (1 DAY)
- STAKE OUT LIMITS OF DISTURBANCE (LOD). (1 DAY)
- AFTER PRE-CONSTRUCTION MEETING, UPON SEDIMENT CONTROL INSPECTOR'S WRITTEN APPROVAL, CLEAR AND GRUB AS NECESSARY WITHIN THE LIMITS OF DISTURBANCE TO INSTALL THE PERIMETER CONTROLS. (3 DAYS)
- INSTALL PERIMETER CONTROLS (STABILIZED CONSTRUCTION ENTRANCE, SUPER SILT FENCE); ONLY CLEAR AND GRUB AREAS NEEDED TO INSTALL PERIMETER CONTROLS. (3 DAYS)
- INSTALL PROPOSED SEDIMENT BASIN, ASSOCIATED RIP RAP INFLOW PROTECTION, SUMP PIT, AND RISER STRUCTURE. ONLY CLEAR AND GRUB AREAS NECESSARY FOR INSTALLATION OF SEDIMENT BASIN. MAINTAIN EXISTING DITCHES FOR CONVEYANCE TO BASIN. (1 WEEK)
- INSTALL EARTH DIKE TO CONVEY FLOW TO BASIN. (2 DAYS)
- INSTALLATION OF DIVERSIONS TO THE BASIN, AS WELL AS OUTLET STRUCTURES, MUST BE COMPLETELY INSTALLED BEFORE DISTURBING AREAS DRAINING TO THIS FACILITY. (2 DAYS)
- UPON INSTALLATION OF THE SEDIMENT BASIN, ESTABLISH PROPOSED STOCKPILE AREAS AND, AS NECESSARY, CLEAR/GRUB REMAINING SITE AREAS. (1 DAY)
 - FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
 - THREE (3) CALENDAR DAYS FOR ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND
 - SEVEN (7) DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS IN THE PROJECT SITE.
- CONTINUE TO INTERIM STAGE.

INTERIM STAGE

- REPAIR, CLEAN OUT, AND/OR MAINTAIN PERIMETER SEDIMENT CONTROL PRACTICES AND SEDIMENT BASIN. (ONGOING)
- BEGIN ROUGH/MASS GRADING. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AT ALL TIMES, MAINTAINING DRAINAGE DIVIDES SHOWN ON PLANS. (2 WEEKS)
 - CONTRACTOR TO ADJUST EARTH DIKES AS NECESSARY IN ORDER TO ROUGH GRADE THE PERIMETER OF THE SITE.
 - CONTRACTOR TO ADJUST SCE'S AS NECESSARY IN ORDER TO ROUGH GRADE THE ENTRANCE LOCATIONS.
 - ESTABLISH GRADES AND ROUGH TOP ELEVATIONS FOR STORMWATER MANAGEMENT FACILITIES. FILTER MEDIA AND UNDERDRAINS SHALL NOT BE INSTALLED AT THIS TIME.
 - CONTRACTOR TO ONLY HAVE 20 ACRES "OPEN" AT ANY ONE TIME. CONTRACTOR SHALL ROUGH GRADE PHASE I AREAS OF THE SITE AND THE DOWN TO PHASE II AREAS AT A 3:1 SLOPE. ONCE PHASE I AREAS ARE TEMPORARY OR PERMANENTLY STABILIZED, CONTRACTOR SHALL ROUGH GRADE THE PHASE II AREAS. REFER TO PHASING PLAN ON SHEET 13 OF 40 FOR PHASING AREAS.
- BEGIN CONSTRUCTION OF UTILITIES. (1 MONTH)
- BEGIN CONSTRUCTION OF BUILDING. (4 MONTHS)
- BEGIN CONSTRUCTION OF PROPOSED ENTRANCES, CURB AND GUTTER, AND SIDEWALK. (1 MONTH)
- PROCEED TO FINAL STAGE.

FINAL STAGE

- REPAIR, CLEAN OUT, AND/OR MAINTAIN PERIMETER SEDIMENT CONTROL PRACTICES AND SEDIMENT BASIN. (ONGOING)
- COMPLETE CONSTRUCTION OF PROPOSED UTILITIES. INSTALL INLET PROTECTION WHERE SHOWN. COMPLETE FINE GRADING, STABILIZE PROPOSED SWALES, AND ALL SLOPES 3:1 AND STEEPER WITH PERMANENT SEED, AND SOIL STABILIZATION MATTING IMMEDIATELY FOLLOWING ESTABLISHMENT OF FINAL GRADES. (2 MONTHS)
- COMPLETE CONSTRUCTION OF PROPOSED PAVEMENT (OMITTING FINAL WEAR COURSE), CURB AND GUTTER, ENTRANCES, AND SIDEWALKS. PERMANENTLY STABILIZE ALL DISTURBED AREAS. (2 WEEKS)
- UPON STABILIZATION OF ALL CONTRIBUTING AREAS TO STORMWATER FACILITIES, COMPLETE PROPOSED STORMWATER MANAGEMENT FACILITIES, INSTALL FILTER MEDIA AND UNDERDRAINS PER THE APPROVED STORMWATER MANAGEMENT PLAN. WHEN FACILITIES ARE FINISHED, CONTRACTOR TO ENSURE THAT NO SEDIMENT LADEN WATER ENTERS THE FACILITIES. FOR INSTALLATION DETAILS REFER TO THE SWM SEQUENCE OF OPERATIONS ON SHEET 34 OF 40. (2 WEEKS)*1
- COMPLETE CONSTRUCTION OF PROPOSED BUILDING. (ONGOING)
- COMPLETE PERMANENT STABILIZATION, LANDSCAPING, HARDSCAPING, FINAL WEAR COURSE AND STRIPING OF PAVEMENT AREAS. (2 WEEKS)
- SUBMIT NOTICE OF TERMINATION AND PROCESS PERMITS CLOSURES AND BOND RELEASES. (1 WEEK)
- UPON PERMANENT STABILIZATION OF ALL CONTRIBUTING DRAINAGE AREAS, DURING A NOAA FORECAST 3-DAY DRY PERIOD, DE-WATER TEMPORARY SEDIMENT BASIN USING REMOVABLE PUMPING STATION AND FILTER BAG (OR APPROVED EQUAL), AND BACK-FILL TEMPORARY SEDIMENT BASIN BACK TO EXISTING GRADES. REMOVE TEMPORARY RISER STRUCTURE, PIPE AND RIPRAP OUTFALL. (1 WEEK)
- UPON COMPLETION, AND STABILIZATION OF SITE WITH ESTABLISHED VEGETATION AND WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL MEASURES AND STABILIZE THOSE AREAS DISTURBED BY THIS PROCESS. ENSURE PROPOSED GRADES ARE MAINTAINED ONCE EARTH DIKES ARE REMOVED. (1 WEEK)

*1. IF ESD WAS USED AS TEMP SEDIMENT CONTROL, MUCK OUT DEVICE TO 12" BELOW PROPOSED BOTTOM BEFORE CONSTRUCTING ESD.

Owners/Developer Certification:

"I/we hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right-of-entry for periodic on-site evaluation by Howard County, the Howard Soil Conservation District and/or MDE."

Owner/Developer's Signature: Stephen Gordon Date: 3-15-21

Printed Name & Title: Stephen Gordon Authorized Signatory

Design Professional's Signature: Jeff Smith Date: 3-10-21

Printed Name: JEFF SMITH

Registration No.: 31373

() R.L.S., or R.L.A. (circle one)

There is no "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET. STEPHEN JERRICK, No. 35192, 10-19-2022

Design Certification:

"I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Howard SCD Signature Block:

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

Alexander Bantini 3/24/21

Howard Soil Conservation District Date

- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:
 - THREE CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
 - SEVEN CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.
- THE CONTRACTOR SHALL CONTACT THE CONSTRUCTION INSPECTION DIVISION AT THE FOLLOWING STAGES OF THE PROJECT:
 - PRIOR TO THE START OF EARTH DISTURBANCE
 - UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING
 - PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT; AND
 - PRIOR TO THE REMOVAL OF SEDIMENT CONTROL PRACTICES
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN CONTINUOUS COMPLIANCE WITH THE LATEST VERSION OF THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
- ALL UTILITIES, SUCH AS STORM DRAIN, PUBLIC WATER, SANITARY SEWER, ELECTRIC POWER, TELEPHONE, CABLE AND GAS LINES THAT ARE NOT IN PAVED AREAS AND ARE NOT UNDERGOING ACTIVE GRADING SHALL BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 3 DAYS OF INITIAL DISTURBANCE.
- THE OWNER/DEVELOPER OR THEIR DESIGNATEE IS RESPONSIBLE FOR CONDUCTING ROUTINE INSPECTIONS AND REQUIRED MAINTENANCE. THE SITE AND CONTROLS SHOULD BE INSPECTED WEEKLY AND THE NEXT DAY AFTER EACH RAIN EVENT. ANY ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN A SUITABLE AREA AND SHALL BE TEMPORARILY OR PERMANENTLY STABILIZED.
- ALL DISTURBANCES FROM SECONDARY UTILITIES SUCH AS PHONE, CABLE, ELECTRIC CABLE, TV CABLE, ETC. WILL BE THE SUBCONTRACTOR'S RESPONSIBILITY TO BRING WORK AREA BACK TO GRADE LEVEL THAT WAS EXISTING AND SEED AND MULCH ANY DISTURBANCE FROM INSTALLATION OF LINES OR CONDUIT.
- SUBCONTRACTORS WILL BE RESPONSIBLE FOR RE-INSTALLING OR REPAIRING ANY SILT FENCE OR SEDIMENT CONTROLS THAT WERE EXISTING TO MAINTAIN PROPER SEDIMENT CONTROL THAT MIGHT HAVE BEEN DAMAGED.
- ALL DISTURBED AREAS TO BE SEED WITHIN 14 DAYS OF INITIAL GRADING. FOR TEMPORARY SEEDING SPECIFICATIONS, SEE SECTION B-4-4. 2011 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL, PUBLISHED JOINTLY BY WATER RESOURCES ADMINISTRATION, NATURAL RESOURCES CONSERVATION SERVICE, AND THE STATE SOIL CONSERVATION COMMITTEE.
- ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AT THE INITIATION OF GRADING.
- ALL STORM DRAIN AND SANITARY SEWER LINES NOT IN PAVED AREAS ARE TO BE MULCHED AND SEED WITHIN 14 DAYS OF INITIAL BACKFILL.
- ELECTRIC POWER, TELEPHONE AND GAS LINES ARE TO BE COMPACTED, SEED AND MULCHED WITHIN 14 DAYS AFTER INITIAL BACKFILL.
- ALL EARTH BERMS AND SEDIMENT DAMS ARE TO BE MULCHED AND SEED (SEE SECTION C-1 OF ABOVE REFERENCE) WITHIN 7 DAYS AFTER GRADING. ALL SOIL STOCKPILES ARE TO BE MULCHED AND SEED WITHIN 14 DAYS.
- DURING CONSTRUCTION, ALL SEDIMENT CONTROL STRUCTURES WILL BE INSPECTED AFTER EACH RAINFALL AND REPAIRED IF NECESSARY. SEDIMENT TO BE REMOVED TO A SUITABLE DISPOSAL AREA AND STABILIZED WITH PERMANENT VEGETATIVE COVER. (SEE SECTION B-4-5 OF 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL PUBLISHED JOINTLY BY WATER RESOURCES ADMINISTRATION, NATURAL RESOURCES CONSERVATION SERVICE, AND THE STATE SOIL CONSERVATION COMMITTEE).
- CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL SEDIMENT AND EROSION CONTROL MEASURES UNTIL DISTURBED AREAS ARE STABILIZED.
- AFTER FINE GRADING, ALL DISTURBED AREAS ARE TO BE PERMANENTLY MULCHED AND SEED (SEE SECTION B-4-5).
- NO SLOPE SHALL BE GREATER THAN 2:1.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN 7 CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND FOURTEEN DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. THIS DOES NOT APPLY TO THOSE AREAS WHICH ARE SHOWN ON THE PLAN AND ARE CURRENTLY BEING USED FOR MATERIAL STORAGE OR FOR THOSE AREAS ON WHICH ACTUAL CONSTRUCTION ACTIVITIES ARE CURRENTLY BEING PERFORMED. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO INSURE THAT STABILIZED AREAS CONTINUOUSLY MEET THE APPROPRIATE REQUIREMENTS OF THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL."
- ALL DEBRIS THAT WILL BE HAULED OFF-SITE SHALL BE TAKEN TO AN APPROVED SITE.

UTILITY NOTES

- NO STOCKPILING ALLOWED ON ASPHALT.
- ALL STOCKPILES LEFT AT THE END OF THE DAY NEED TO BE STABILIZED UNTIL THE NEXT REDISTURBANCE.
- DISTURBANCE OUTSIDE OF LODA CANNOT EXCEED 5,000 SQUARE FEET
- PLACE ALL EXCAVATED MATERIAL ON HIGH SIDE OF TRENCH
- ONLY DO AS MUCH WORK AS CAN BE DONE IN ONE DAY SO BACKFILLING, FINAL GRADING, SEEDING, AND MULCHING CAN OCCUR.
- ANY SEDIMENT CONTROL MEASURES DISTURBED BY CONSTRUCTION WILL BE REPAIRED THE SAME DAY

SECONDARY UTILITY NOTES

- ANY DISTURBANCE FROM SECONDARY UTILITIES SUCH AS PHONE CABLE, ELECTRIC CABLE, TV CABLE, ETC. WILL BE THE SUBCONTRACTOR'S RESPONSIBILITY TO BRING WORK AREA BACK TO GRADE LEVEL THAT WAS EXISTING AND SEED AND MULCH ANY DISTURBANCE FROM INSTALLATION OF LINES OR CONDUIT.
- SUBCONTRACTORS WILL BE RESPONSIBLE FOR RE-INSTALLING OR REPAIRING ANY SILT FENCE OR SEDIMENT CONTROLS THAT WERE EXISTING TO MAINTAIN PROPER SEDIMENT CONTROL THAT MIGHT HAVE BEEN DAMAGED.

STOCKPILE NOTES

- NO STOCKPILING ALLOWED ON ASPHALT.
- ALL STOCKPILES LEFT AT THE END OF THE DAY NEED TO BE STABILIZED UNTIL THE NEXT REDISTURBANCE.

TEMPORARY PARKING LOT + STAGING AREA

- UPON STABILIZATION OF ALL UPSTREAM AREAS INSTALL PERIMETER CONTROL (SUPER SILT FENCE) FOR TEMPORARY PARKING LOT AND STAGING AREA. INSTALL DIVERSION FENCE AND TEMPORARY PARKING LOT CURB/ERT.
- COMPLETE INTERIOR CONSTRUCTION OF PROPOSED BUILDING (ON GOING)
- CONTRACTOR TO ENSURE THAT NO SEDIMENT LADEN WATER ENTERS STORMWATER MANAGEMENT FACILITIES.
- UPON COMPLETION OF INTERIOR CONSTRUCTION REMOVE TEMPORARY PARKING LOT + STAGING AREA + STABILIZE SITE PERMANENTLY.
- UPON COMPLETION + STABILIZATION OF SITE ESTABLISH AND MAINTAIN PERMANENT SEDIMENT CONTROL MEASURES.

APPROVED: DEPARTMENT OF PLANNING & ZONING

John Edmond 4-12-21
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 4/20/21
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 4-29-21
DIRECTOR DATE

No.	REVISIONS	DATE	BY
2	Revised Limits of Disturbance	06/15/21	KH
1	Updated Landscape Plantings	10/05/21	KH

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EMERSON PROJECT
SITE DEVELOPMENT PLAN
(SDP-21-017)
CONTRACT NO. 24-5162-D

KHA PROJECT
110718001
DATE
03/10/2021

SCALES AS SHOWN
DESIGNED BY: CJC
DRAWN BY: CJC
CHECKED BY: KTB

HOWARD COUNTY

EMERSON SECTION 3, AREA 7, PARCEL A-1
TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
MARYLAND

DATE: 3-10-21

EROSION AND SEDIMENT CONTROL NOTES

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

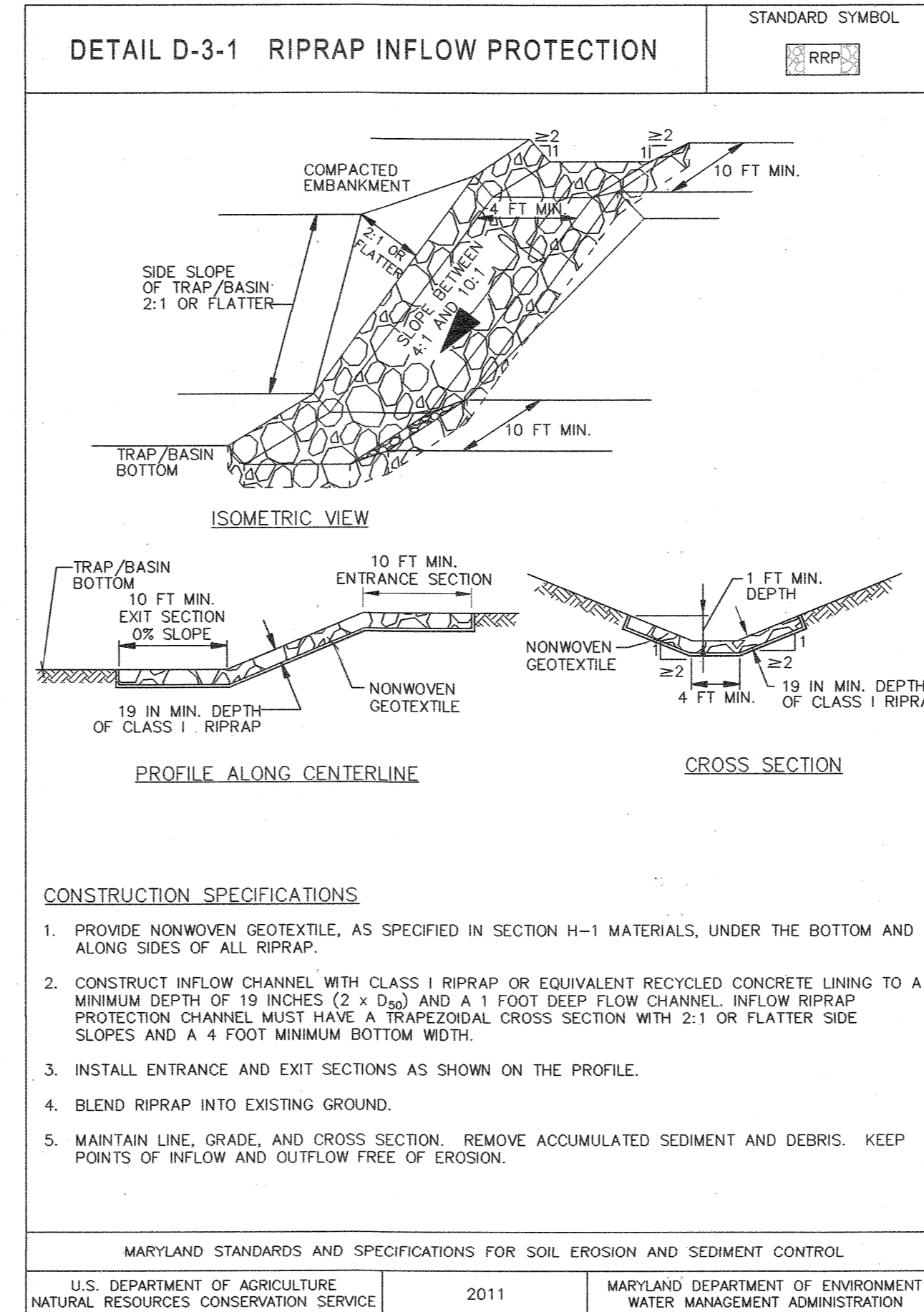
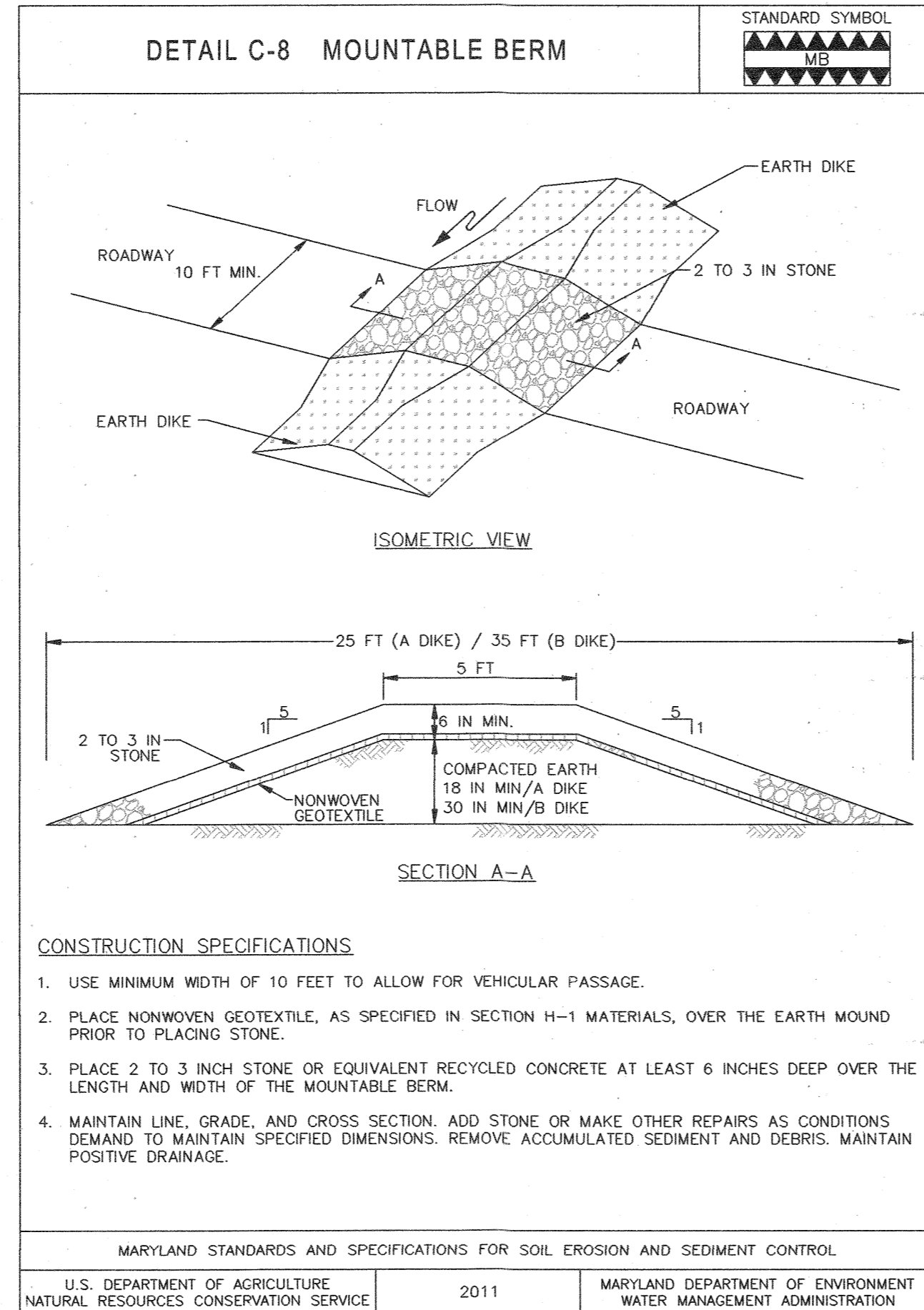
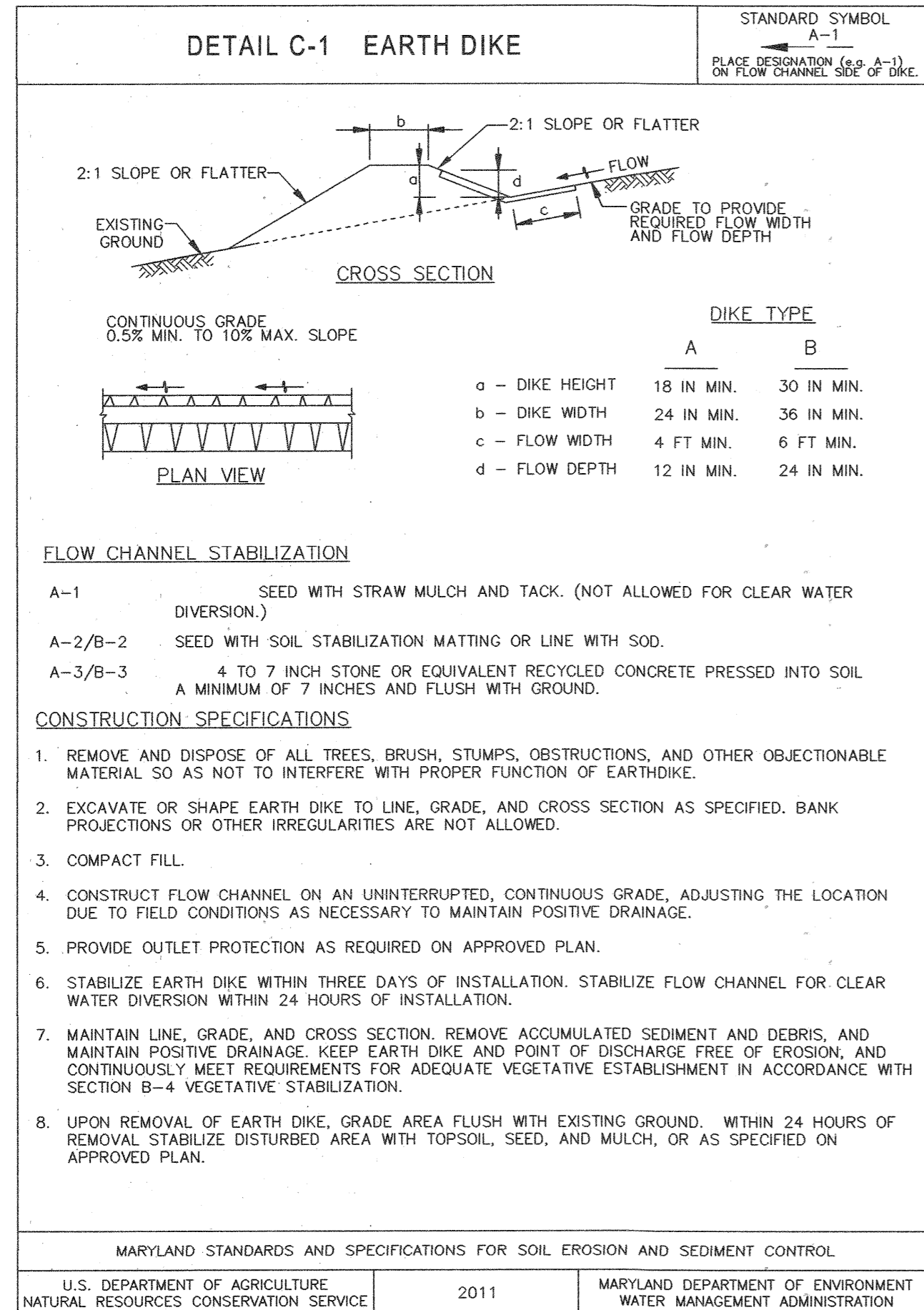
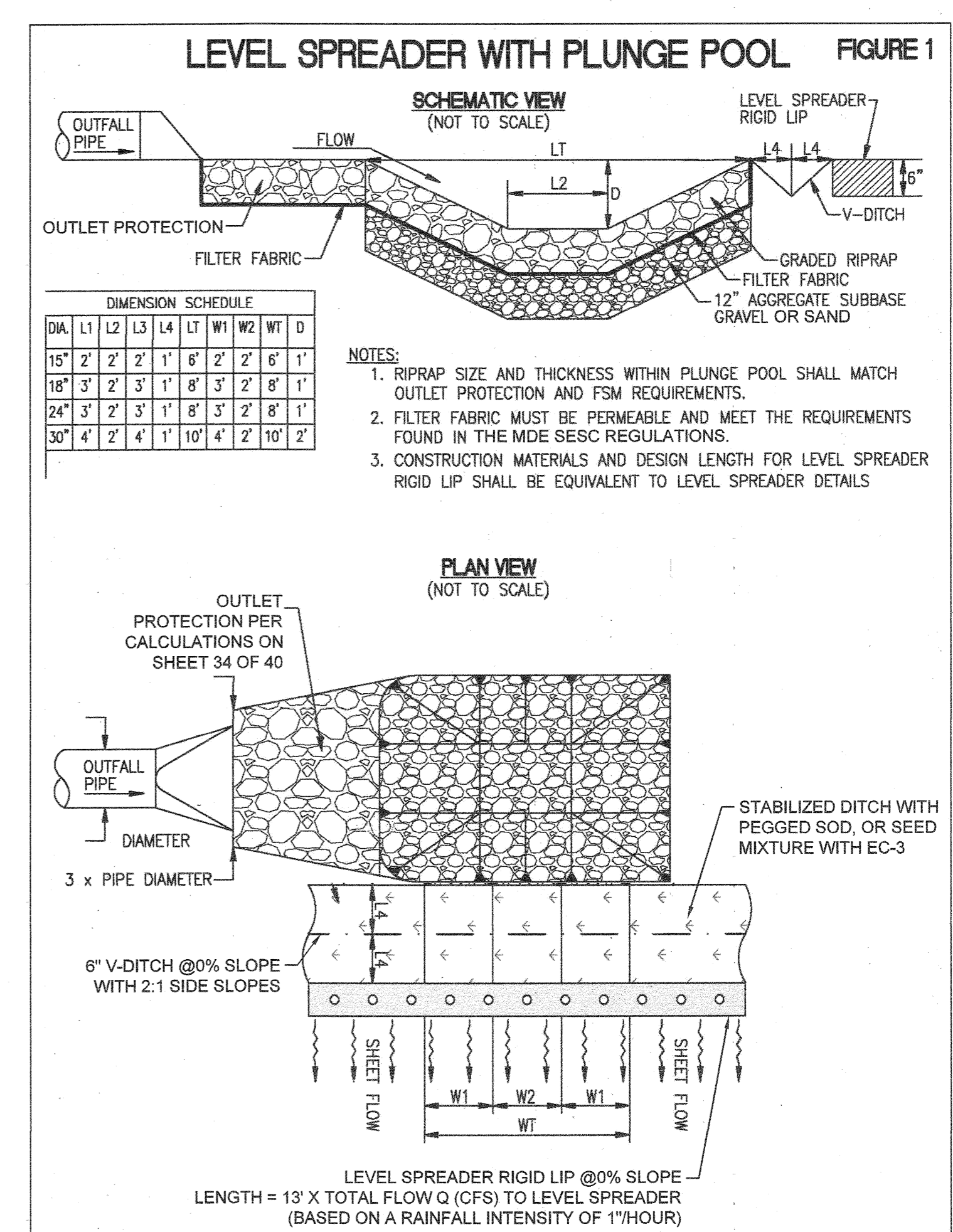
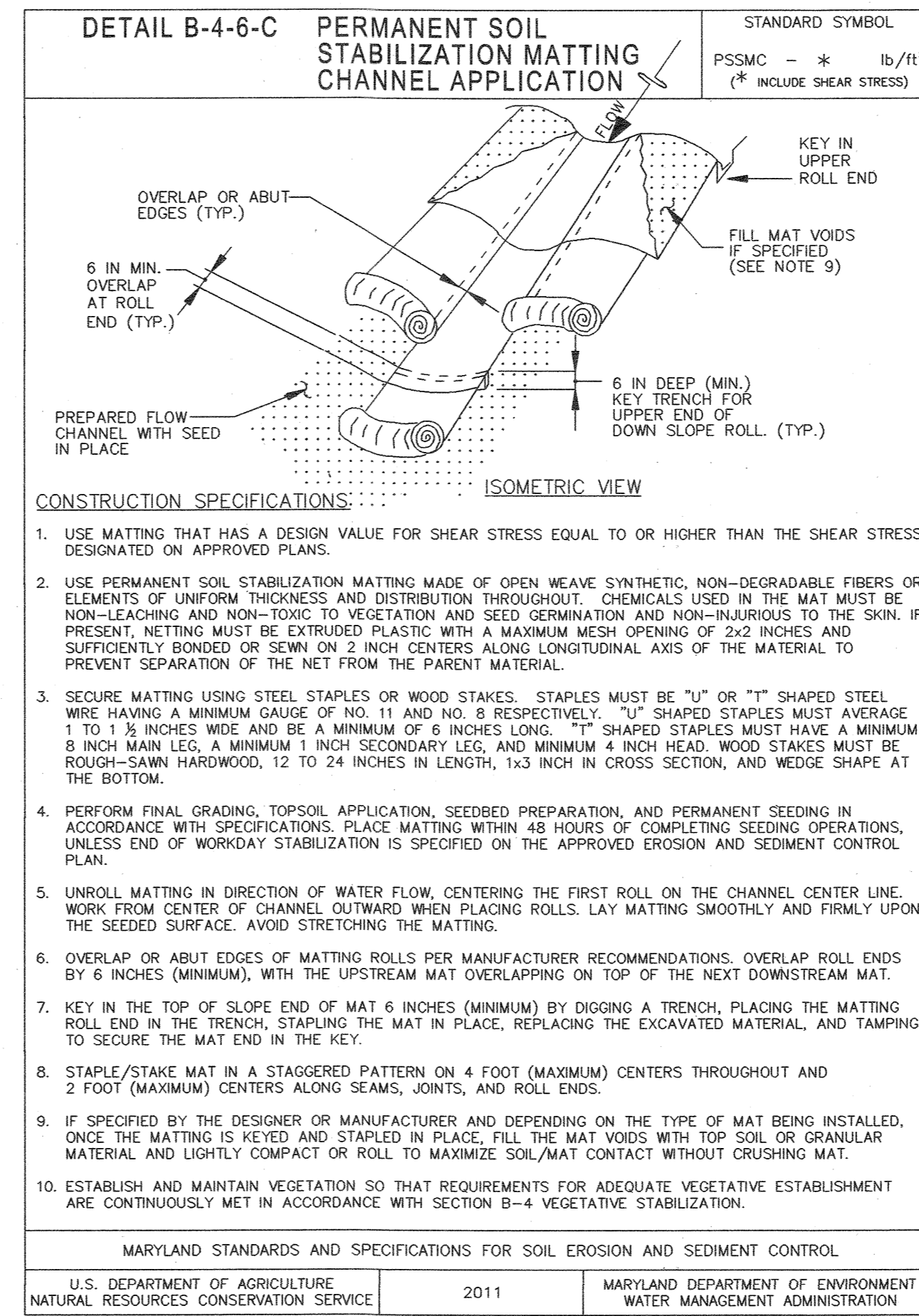
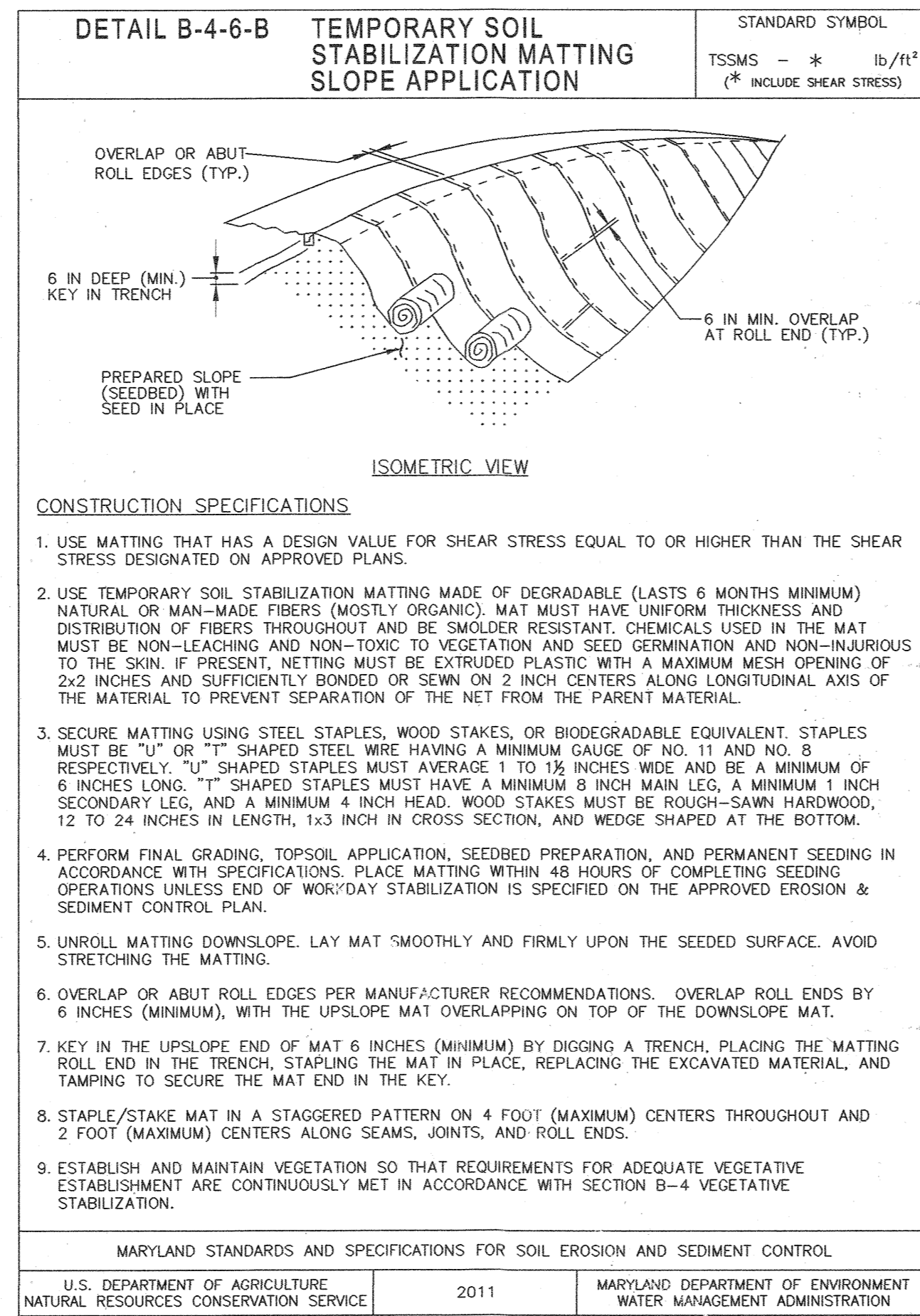
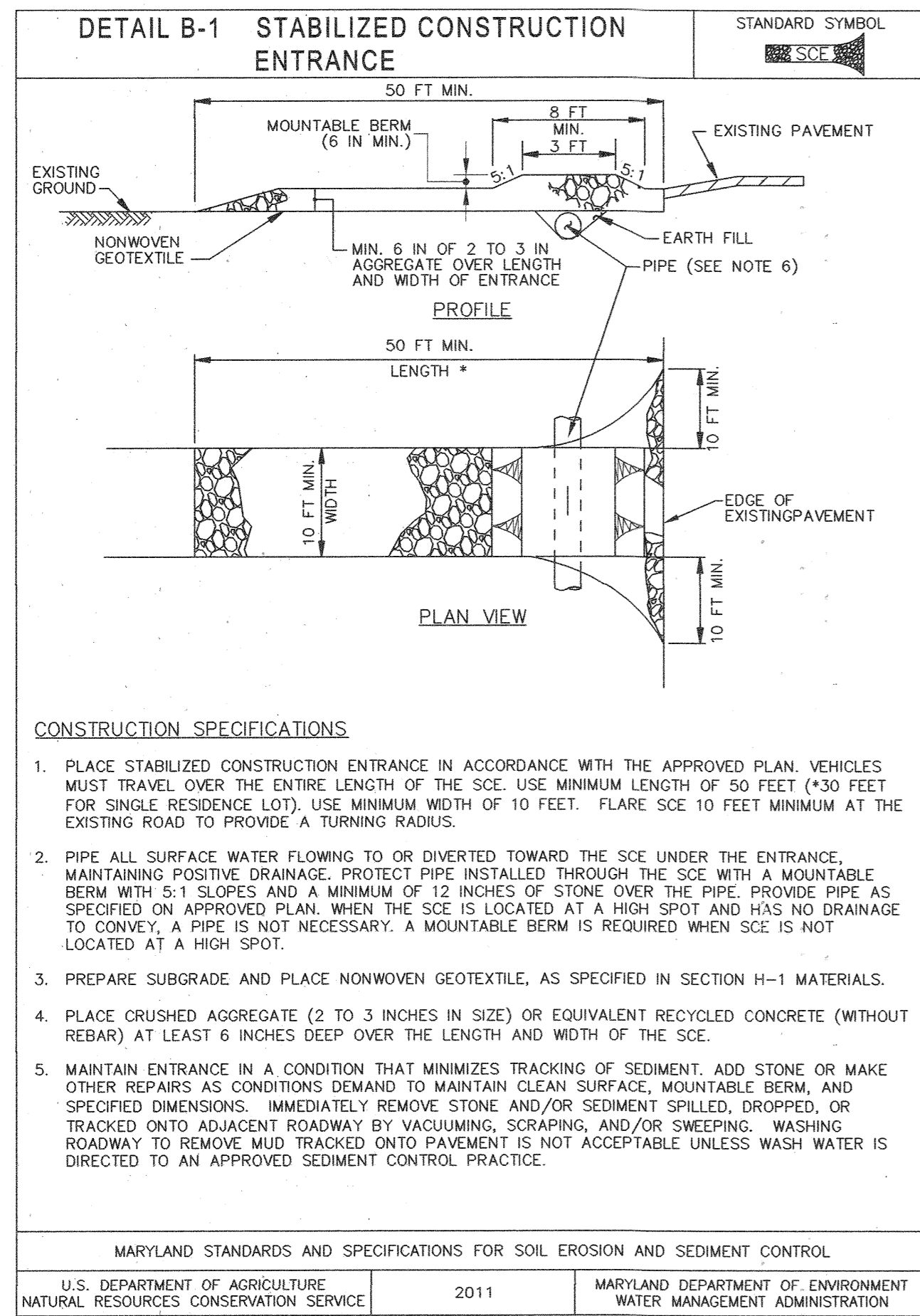
LICENSE NO.: 31373
EXPIRATION DATE: 01/21/2023

[Signature] 3-10-21

DATE: 3-10-21

17 OF 40

SDP-21-017



THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
STEPHEN ZERRKA, No. 95822, 10-19-2022

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

Alexander Bostick 3/24/21
Howard Soil Conservation District Date

Design Certification:
"I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Jeff Smith 3-10-21
Designer's Signature Date

JEFF SMITH MD Registration No. 31273
Printed Name R.L.S., or R.L.A. (circle one)

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

Stephen Gordon 3-15-2021
Owner's/Developer's Signature Date

Printed Name & Title *Stephen Gordon* Authorized Signatory

APPROVED: DEPARTMENT OF PLANNING & ZONING

Jeff Smith 4-12-21
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Stephane 4/21/21
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Stephane 4-29-21
DIRECTOR DATE

No.	REVISIONS	DATE	BY

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PHONE: 443-743-3470
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KHA PROJECT 110718001
DATE 03/10/2021
SCALES AS SHOWN
DESIGNED BY CJC
DRAWN BY CJC
CHECKED BY KTB

EMERSON PROJECT
SITE DEVELOPMENT PLAN (SDP-21-017)
CONTRACT NO. 24-5162-D

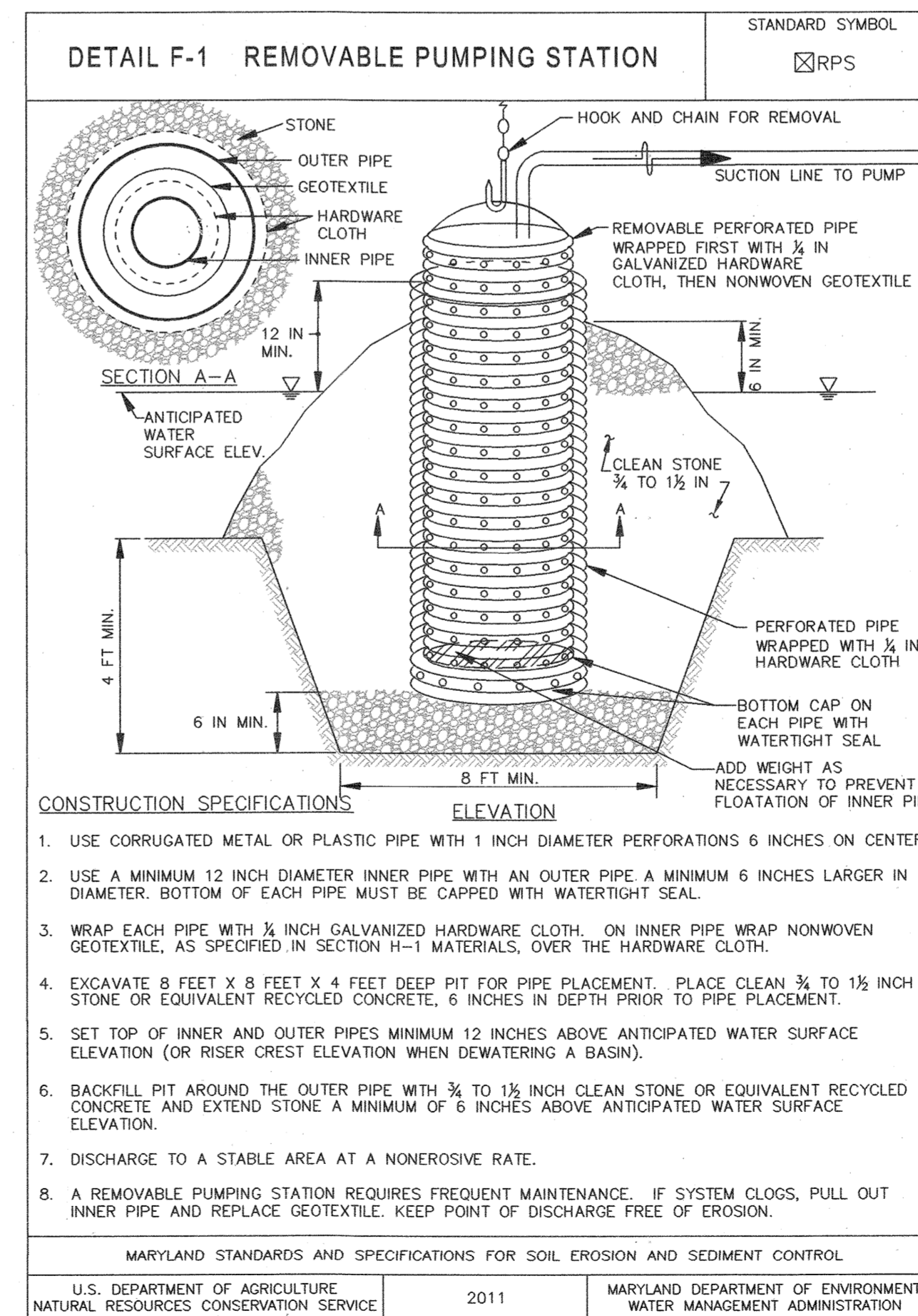
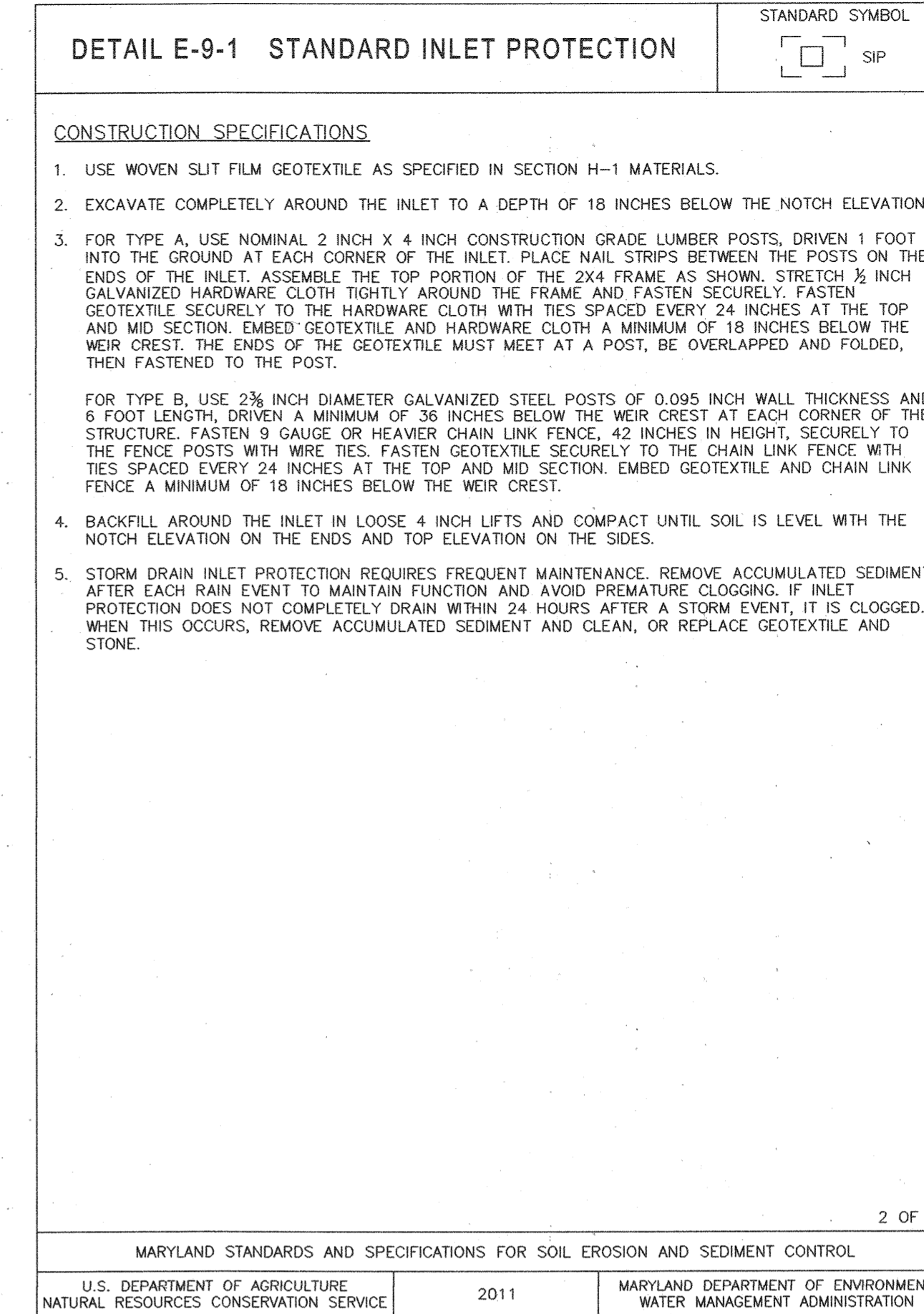
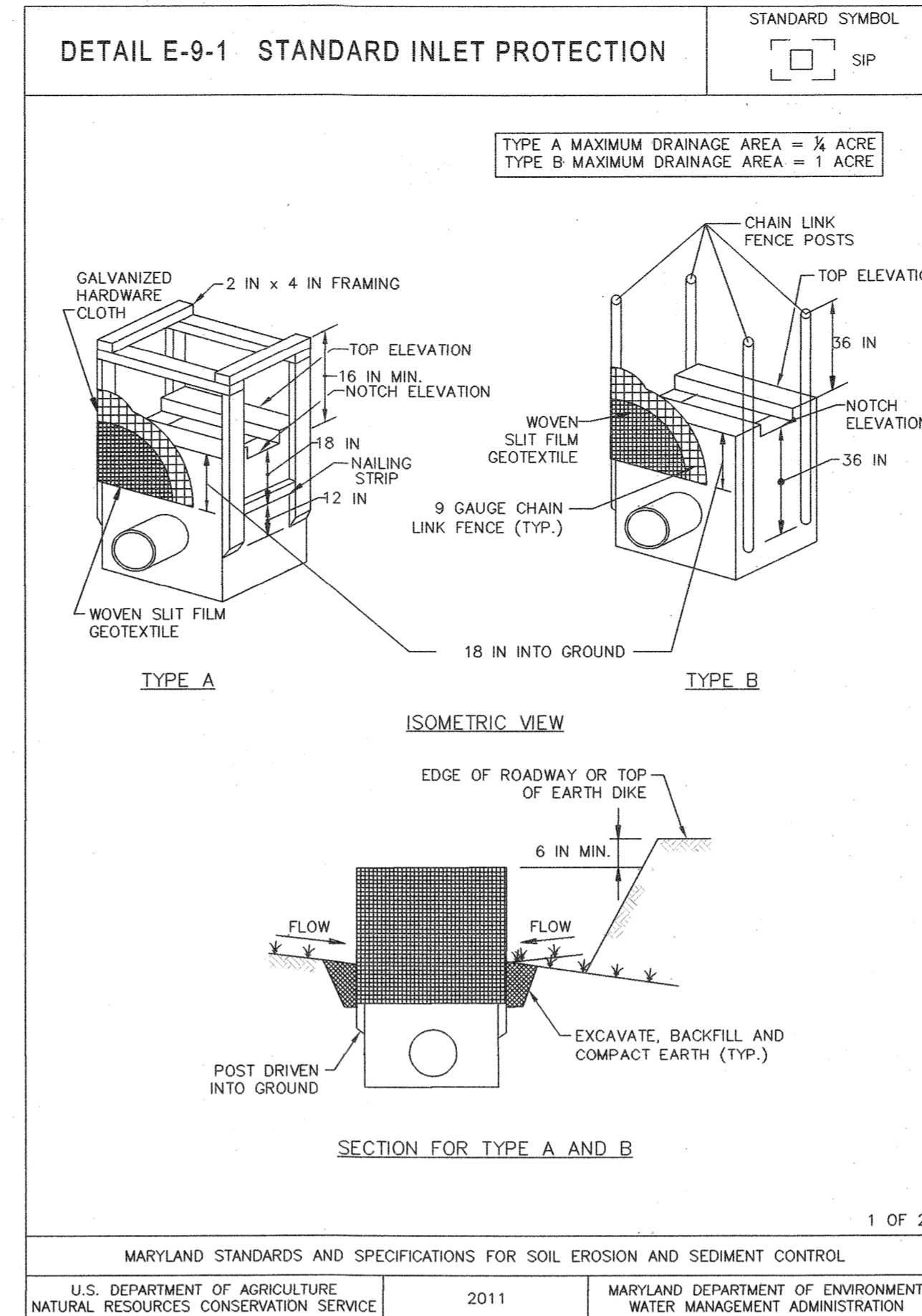
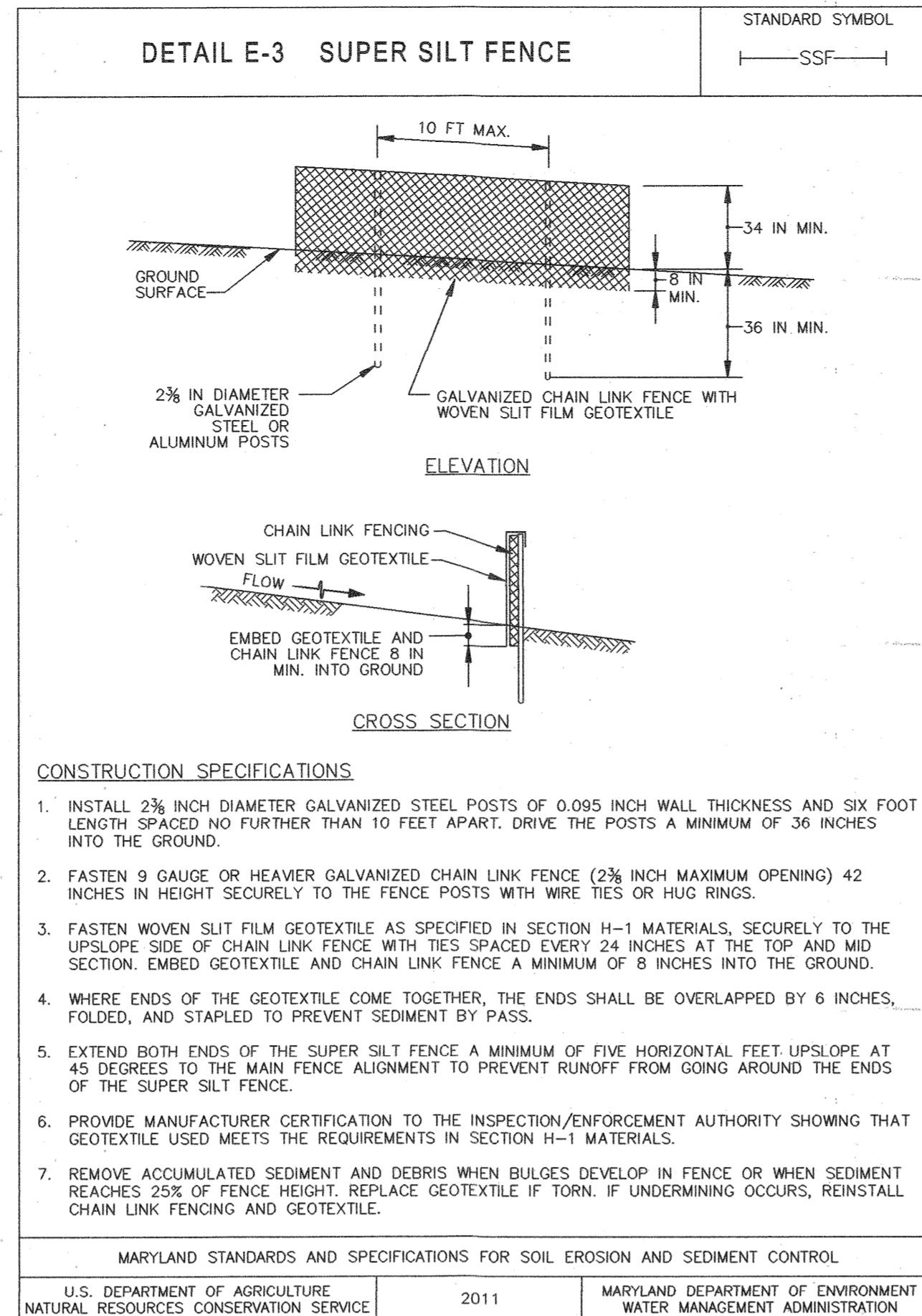
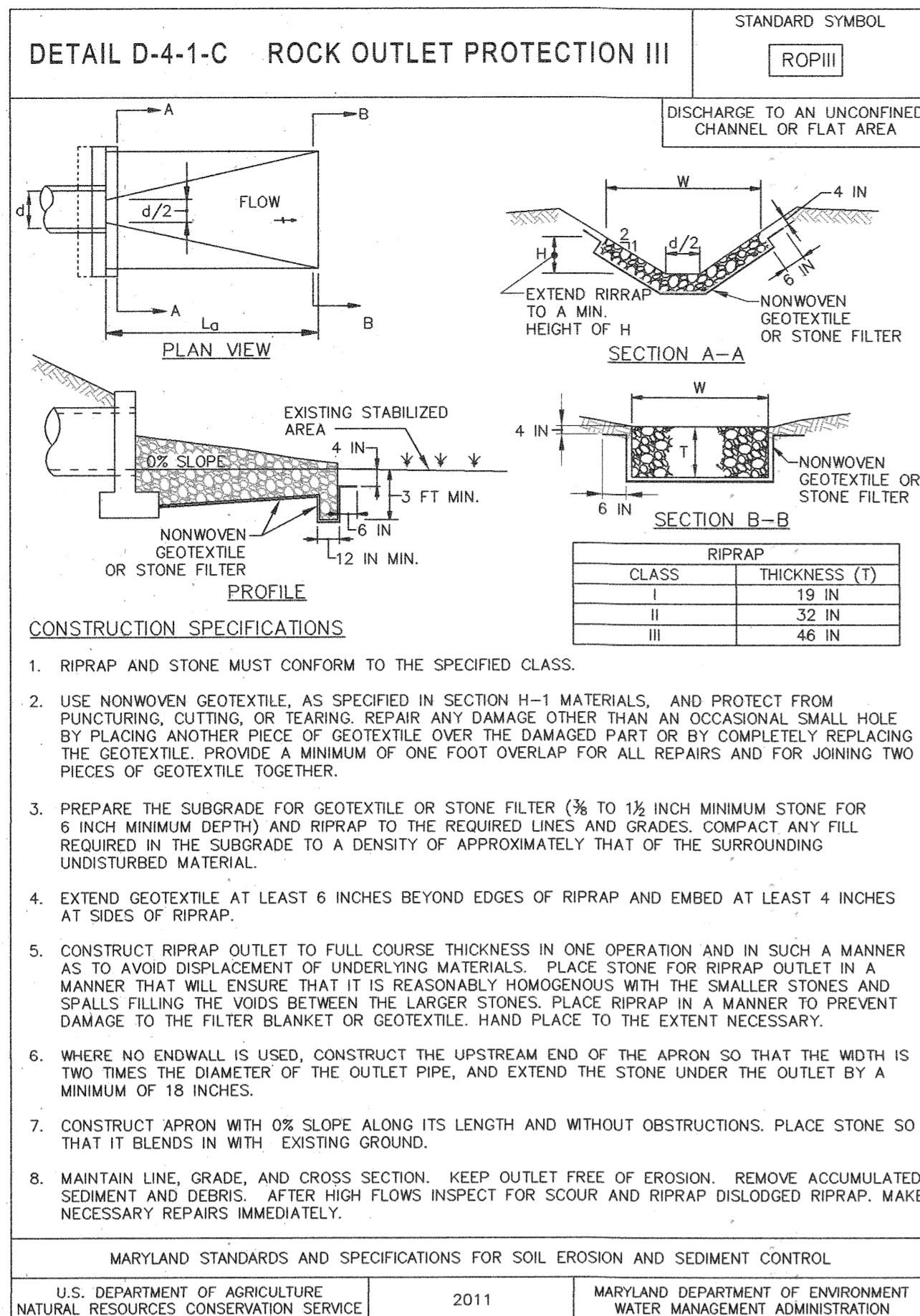
EMERSON SECTION 3, AREA 7, PARCEL A-1
TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
MARYLAND DATE: 3-10-21

EROSION AND SEDIMENT CONTROL DETAILS

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

LICENSE NO. 31373
EXPIRATION DATE 01/21/2023

SHEET NUMBER 18 OF 40
SDP-21-017



THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
STEPHEN TERRILL, No. 35192, 10/19/2022

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

Design Certification:
"I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Jeff Smith 3-10-21
Designer's Signature Date
JEFF SMITH MD Registration No. 31373
Printed Name (P.E., R.L.S., or R.L.A. (circle one))

Owners/Developer Certification:
"I/We hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify my right-of-entry for periodic on-site evaluation by Howard County, the Howard Soil Conservation District and/or MDE."
Stephen Gordon 3-15-21
Owner's/Developer's Signature Date
Stephen Gordon Authorized Signatory
Printed Name & Title

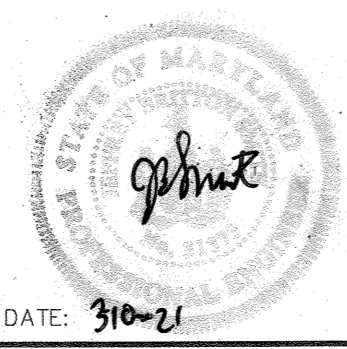
APPROVED: DEPARTMENT OF PLANNING & ZONING
John E. Blum 4-12-21
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
John E. Blum 4/12/21
CHIEF, DIVISION OF LAND DEVELOPMENT DATE
John E. Blum 4-29-21
DIRECTOR DATE

No.	REVISIONS	DATE	BY

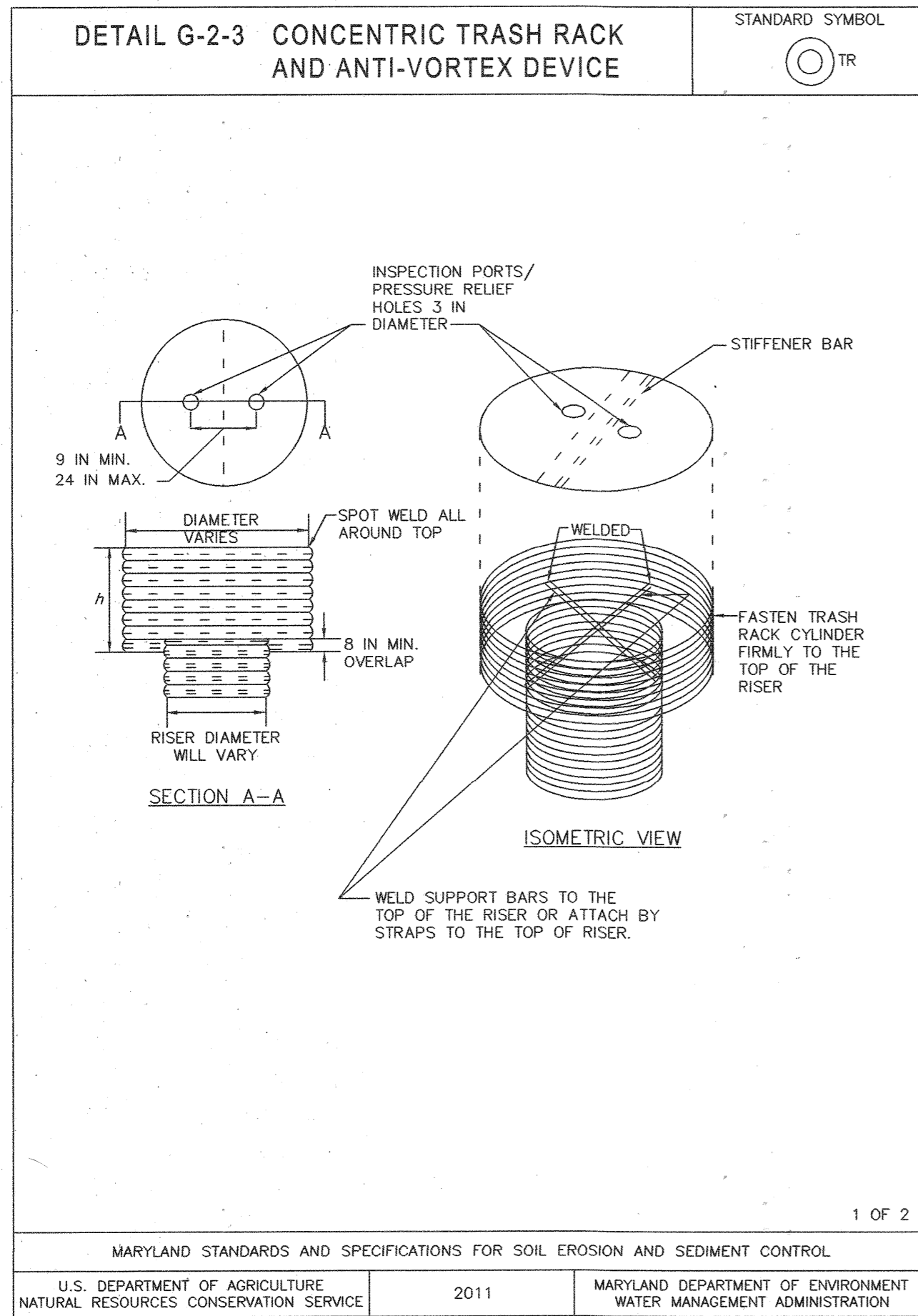
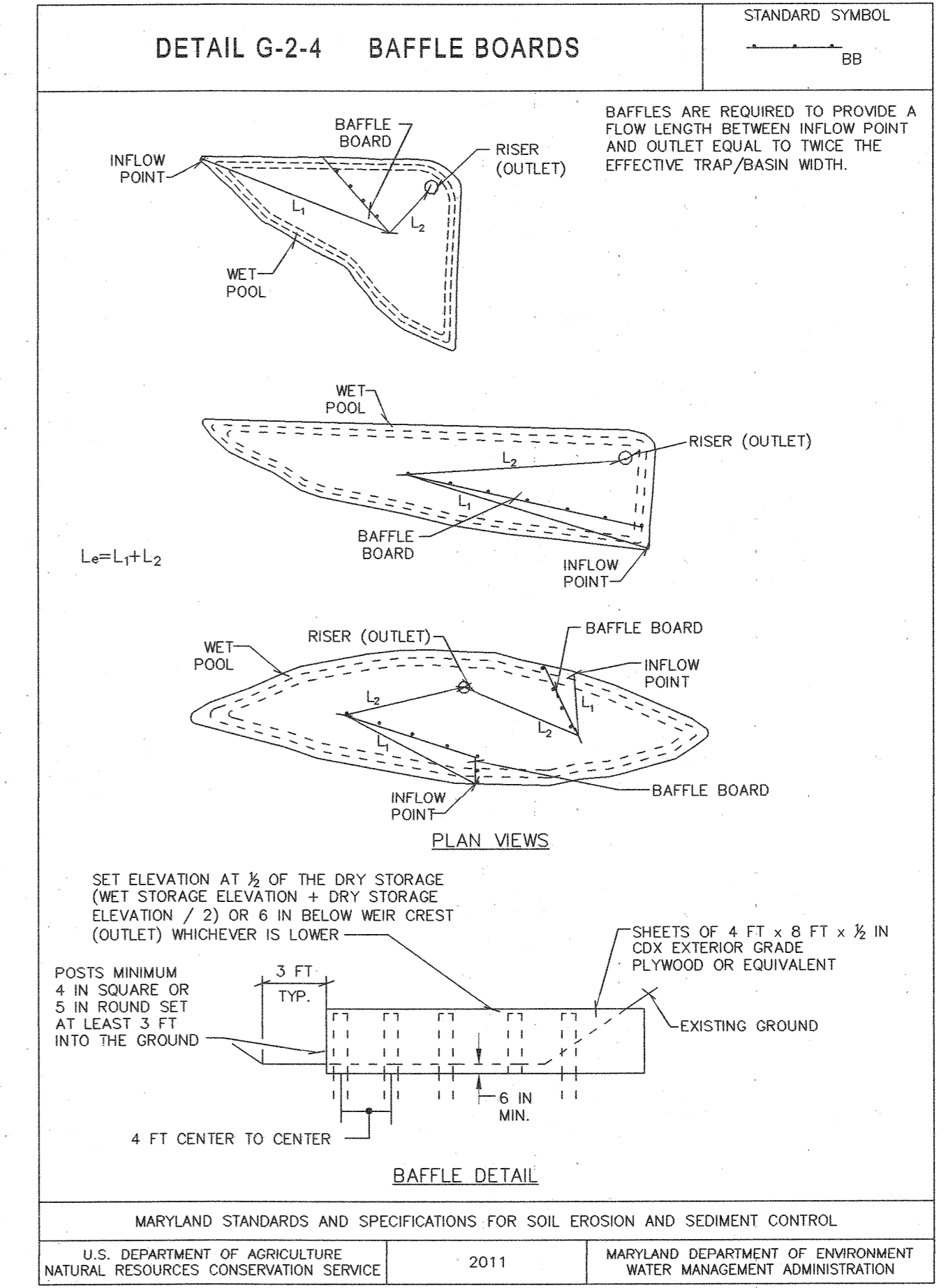
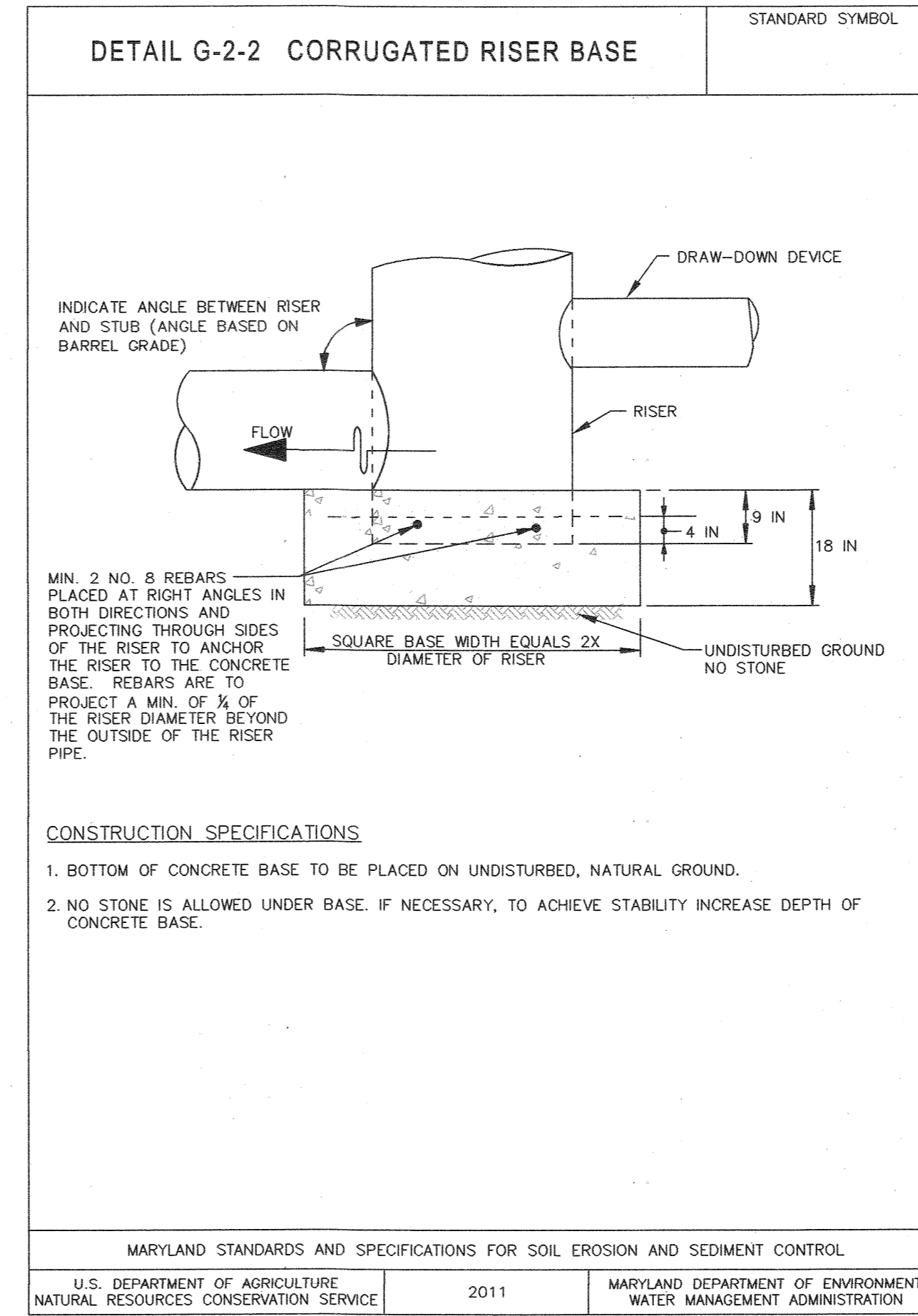
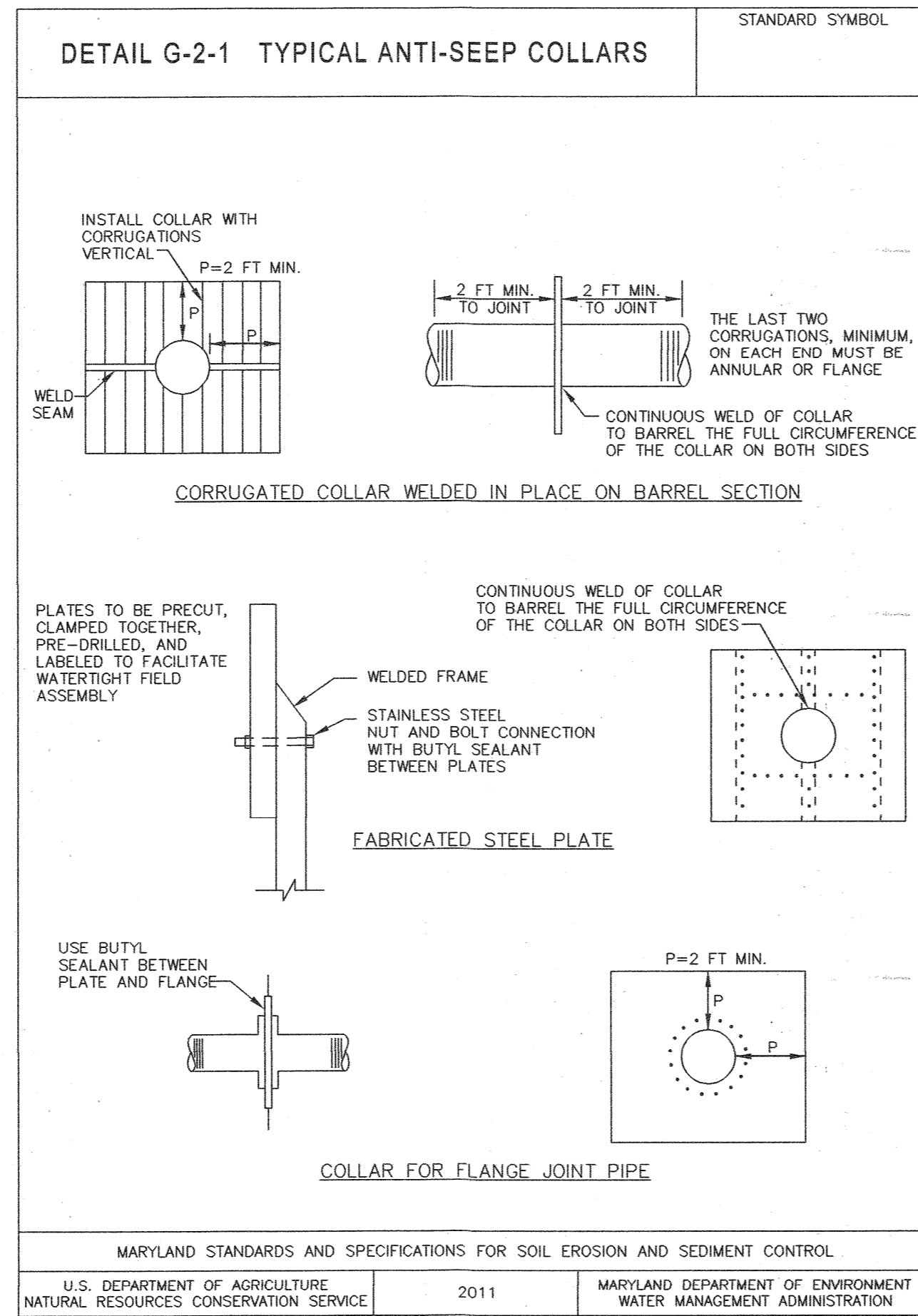
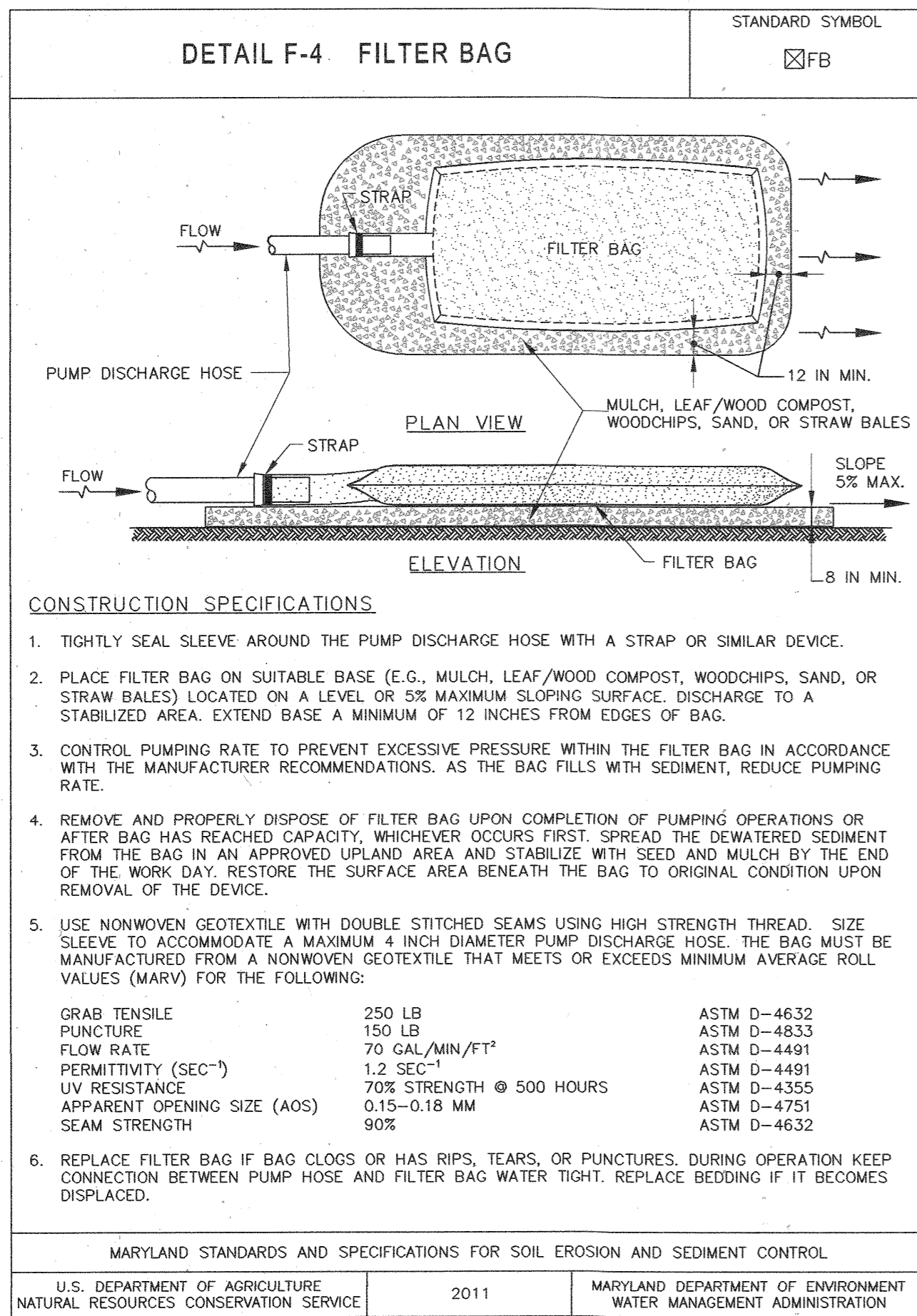
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KHA PROJECT
110718001
DATE
03/10/2021
SCALE AS SHOWN
DESIGNED BY CJC
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EMERSON PROJECT
SITE DEVELOPMENT PLAN
(SDP-21-017)
CONTRACT NO. 24-5162-D
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TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
MARYLAND DATE: 3/10/21



EROSION AND SEDIMENT CONTROL DETAILS
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LICENSE NO. 31373
EXPIRATION DATE 01/21/2023
SHEET NUMBER
19 OF 40
SDP-21-017

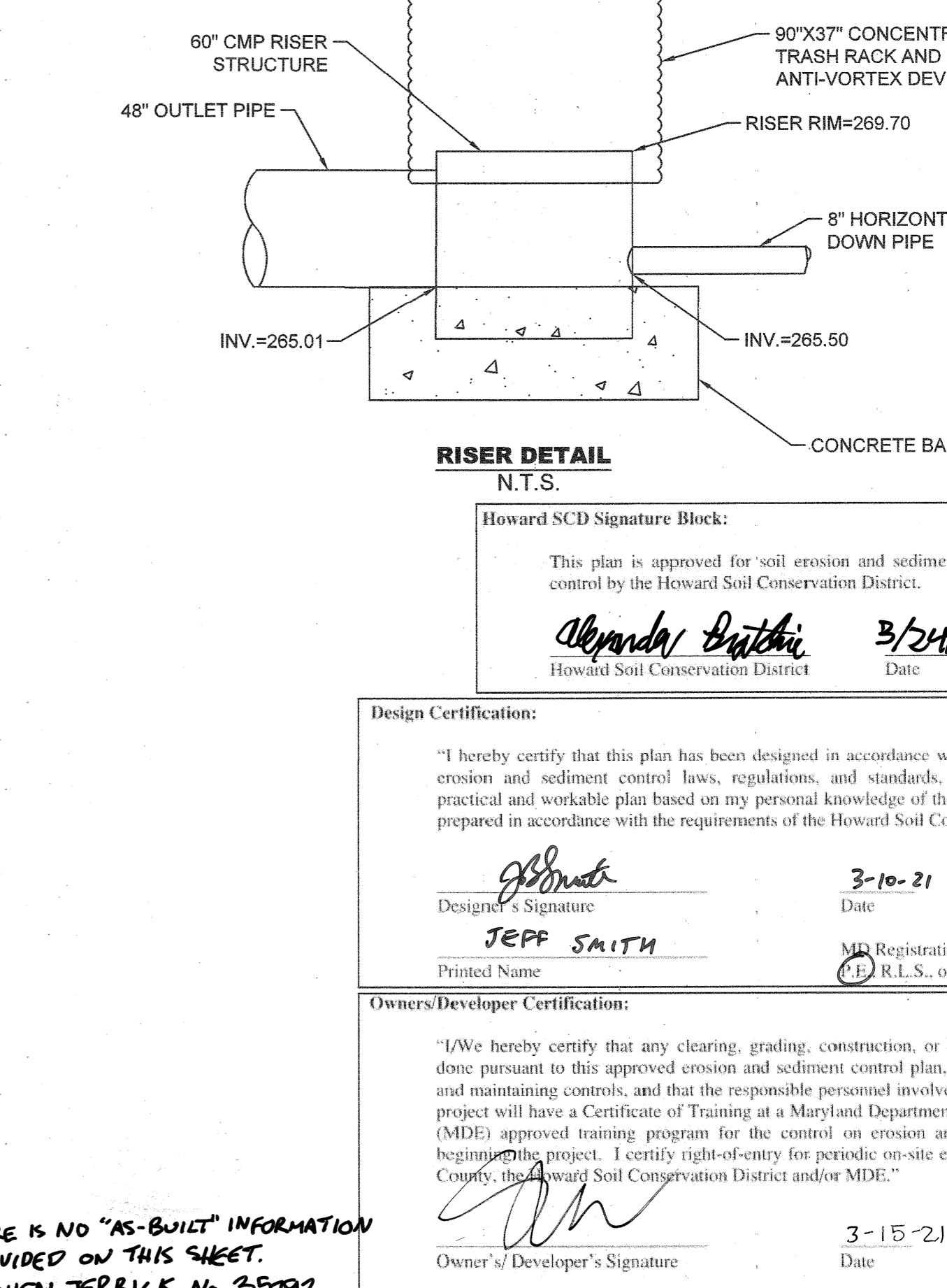
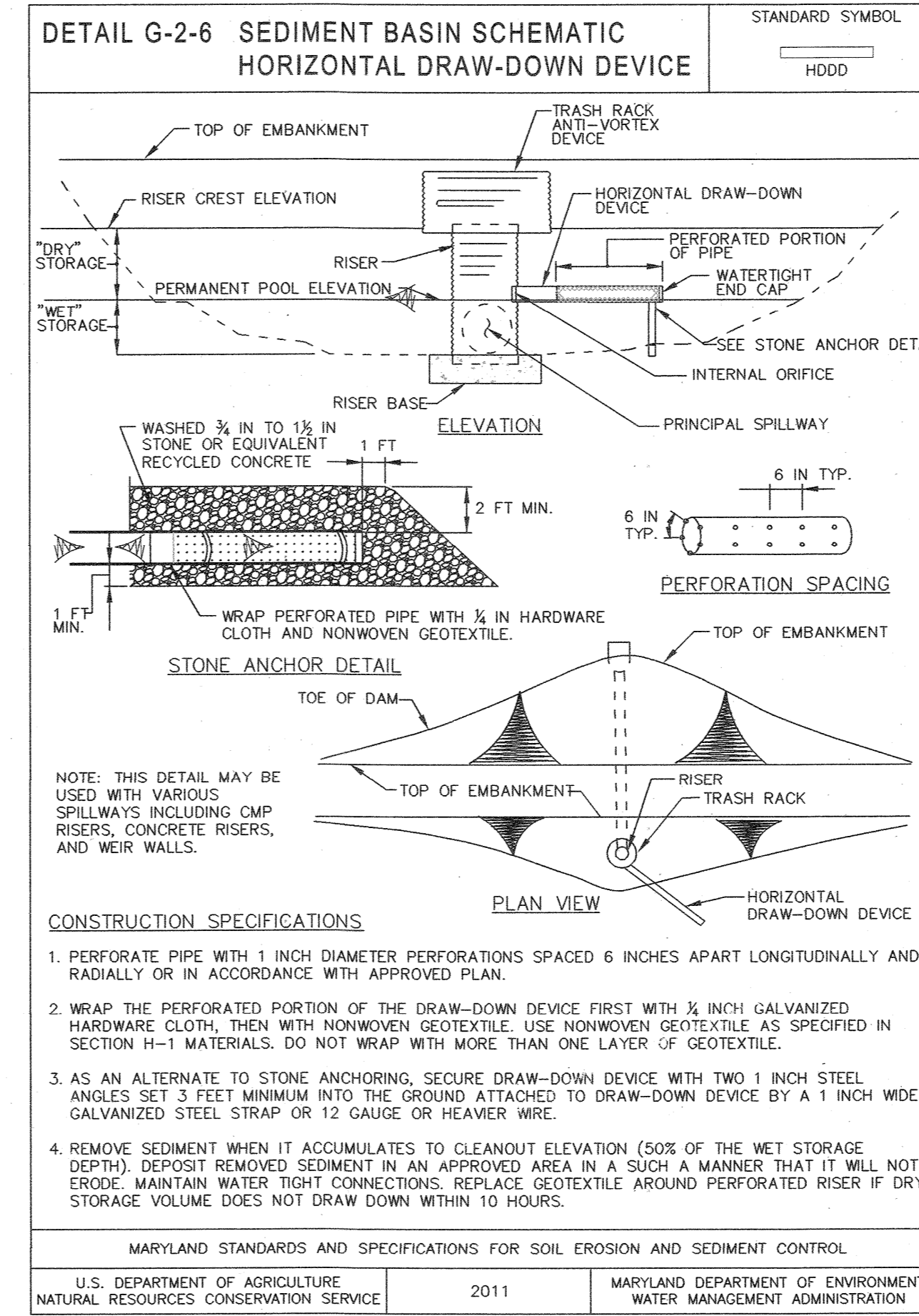


DETAIL G-2-3 CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE

RISER DIAM. (IN)	TRASH RACK CYLINDER			MINIMUM SIZE SUPPORT BAR	MINIMUM TOP STIFFENER	
	DIAM. (IN)	THICKNESS (GAUGE)	h (IN)		THICKNESS (GAUGE)	
12	18	16	14	#6 REBAR	16	N/A
15	21	16	15	#6 REBAR	16	N/A
18	27	16	16	#6 REBAR	16	N/A
21	30	16	19	#6 REBAR	16	N/A
24	36	16	21	#6 REBAR	14	N/A
27	42	16	21	#6 REBAR	14	N/A
36	54	14	25	#8 REBAR	12	N/A
42	60	14	27	#8 REBAR	12	N/A
48	72	12	29	1 1/2 IN PIPE OR 1 1/2 x 1 1/2 x 1/4 ANGLE	10	N/A
54	78	12	33	1 1/2 IN PIPE OR 1 1/2 x 1 1/2 x 1/4 ANGLE	10	N/A
60	90	12	37	1 1/2 IN PIPE OR 1 1/2 x 1 1/2 x 1/4 ANGLE	8	N/A
66	96	10	41	2 IN PIPE OR 2 x 2 x 3/16 ANGLE	8	2 x 2 x 1/4 ANGLE
72	102	10	44	2 IN PIPE OR 2 x 2 x 3/16 ANGLE	8	2 1/2 x 2 1/2 x 1/4 ANGLE
78	114	10	47	2 1/2 IN PIPE OR 2 x 2 x 1/4 ANGLE	8	2 1/2 x 2 1/2 x 1/4 ANGLE
84	120	10	50	2 1/2 IN PIPE OR 2 1/2 x 2 1/2 x 1/4 ANGLE	8	2 1/2 x 2 1/2 x 3/16 ANGLE

NOTE: THE ABOVE TRASH RACK AND ANTI-VORTEX DEVICE INFORMATION IS FOR CORRUGATED METAL PIPE ONLY. CONCRETE RISERS MUST MEET THE REQUIREMENTS OF MD 378.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



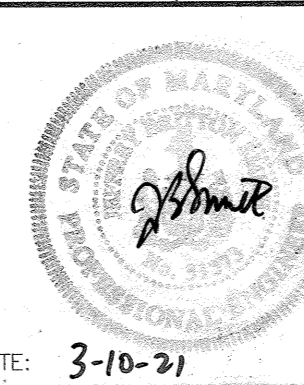
APPROVED: DEPARTMENT OF PLANNING & ZONING
Chief 4.12.21 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION
Chief 4/29/21 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT
Chief 4/29/21 DATE
DIRECTOR

No.	REVISIONS	DATE	BY

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KHA PROJECT 110718001
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EMERSON PROJECT
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TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
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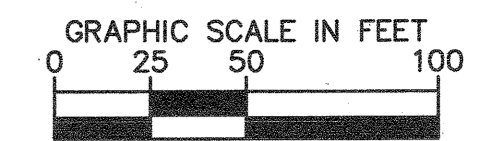
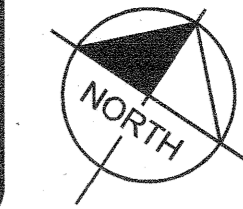
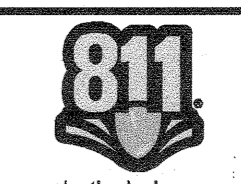


EROSION AND SEDIMENT CONTROL DETAILS
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LICENSE NO. 31373
EXPIRATION DATE 01/21/2023

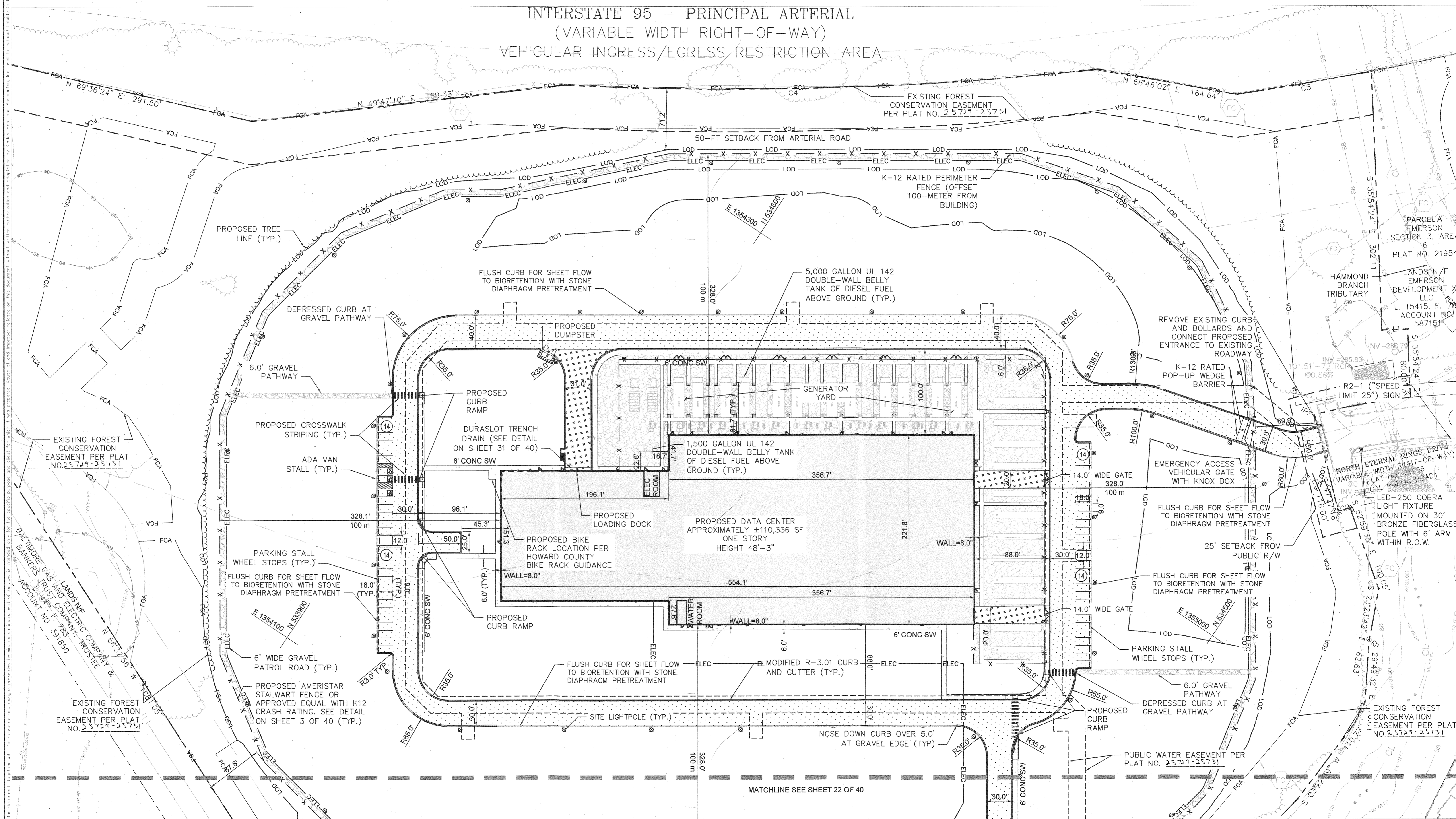
SHEET NUMBER
20 OF 40
SDP-21-017

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
STEPHEN ZERRICK, No. 25792, 10-19-2022

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



INTERSTATE 95 - PRINCIPAL ARTERIAL
(VARIABLE WIDTH RIGHT-OF-WAY)
VEHICULAR INGRESS/EGRESS RESTRICTION AREA



APPROVED: DEPARTMENT OF PLANNING & ZONING
 [Signature] 4-12-21
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
 [Signature] 4/29/21
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
 [Signature] 4-29-21
 DIRECTOR DATE

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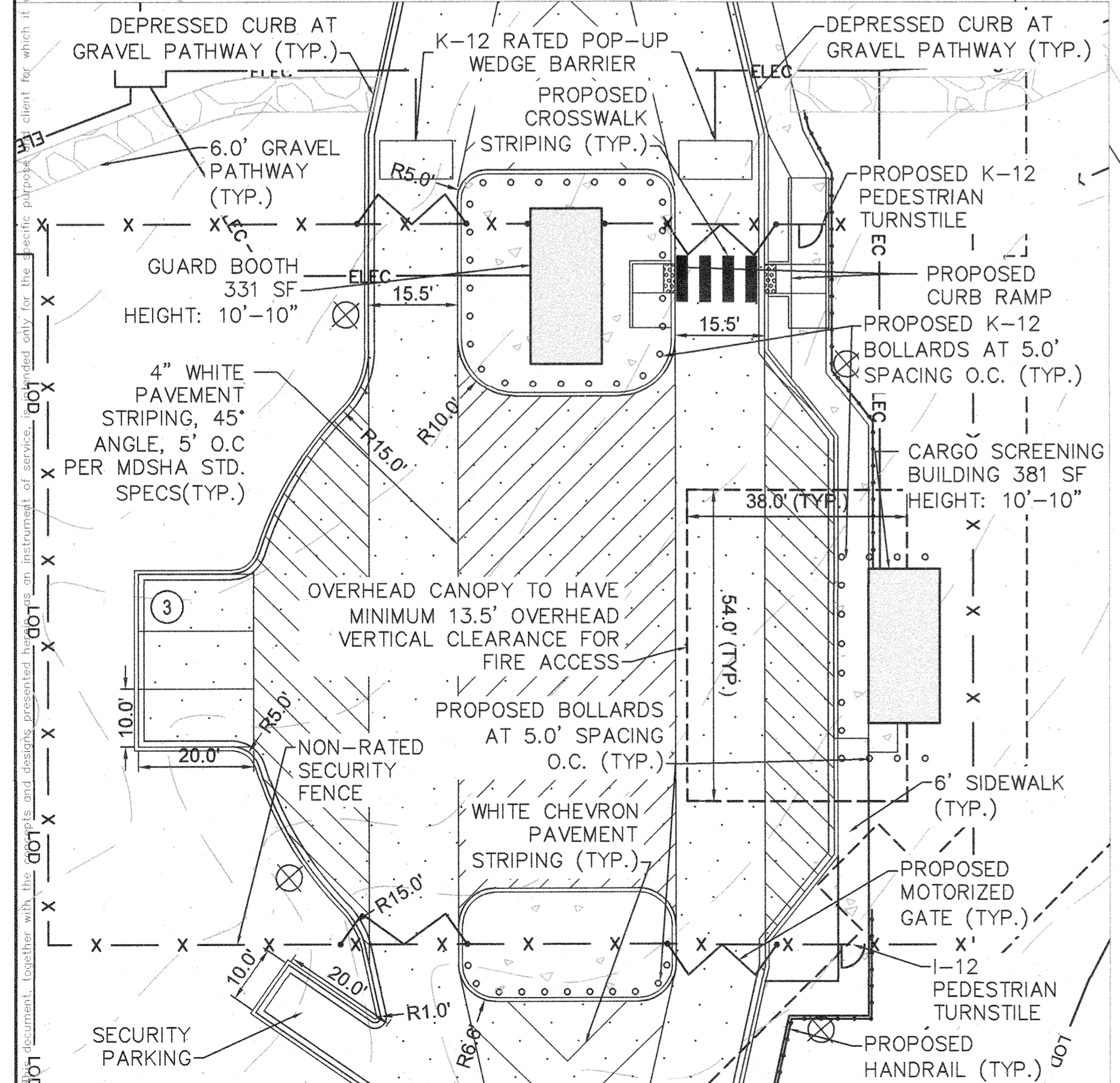
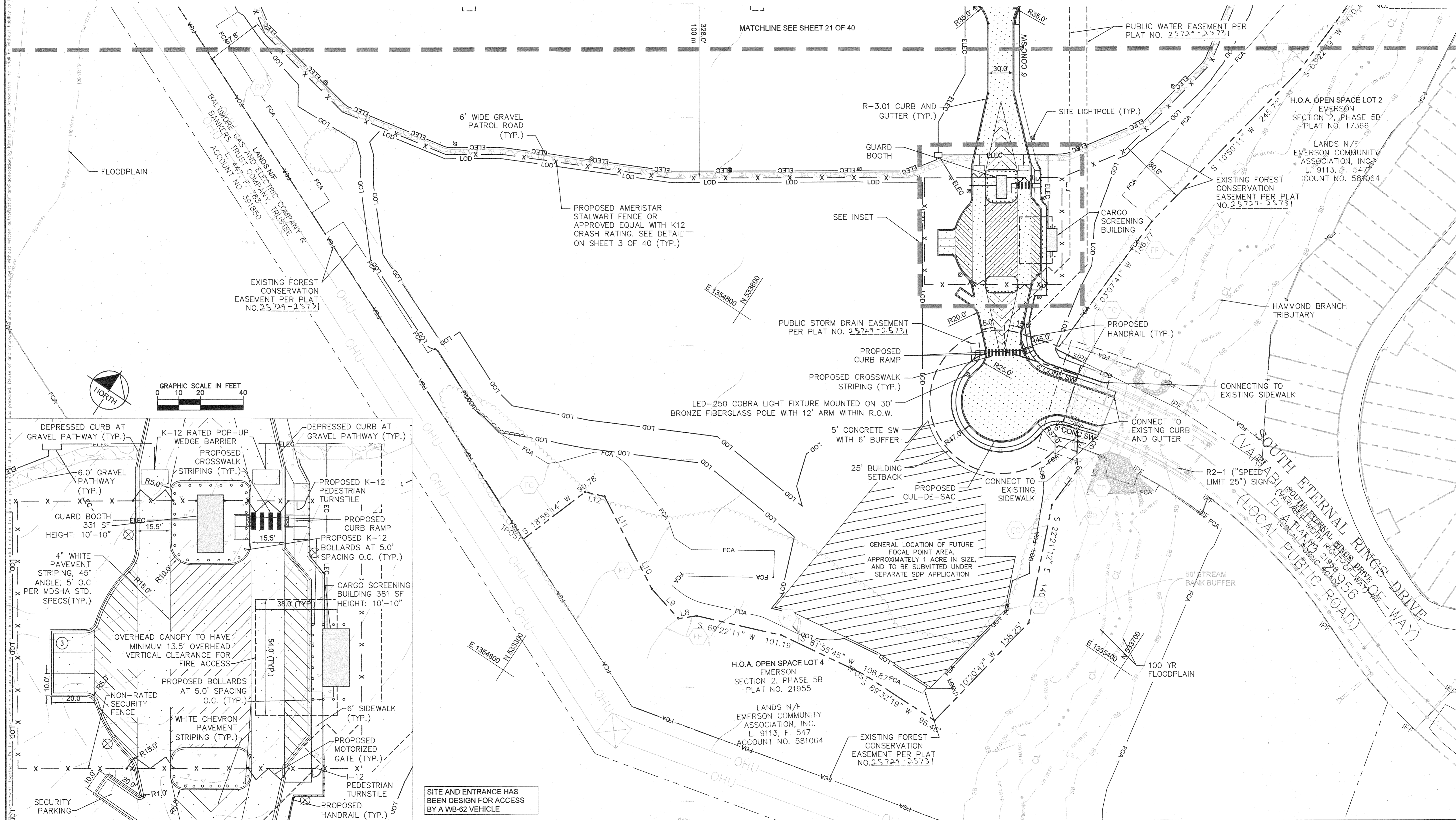
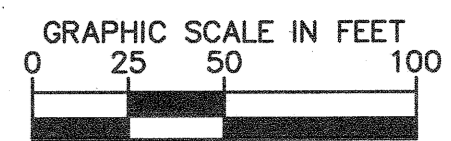
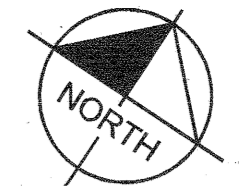
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SITE PLAN
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 LICENSE NO. 31373
 EXPIRATION DATE 01/21/2023
SHEET NUMBER
21 OF 40
 SDP-21-017

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
STEPHEN JERRICK, No. 39102, 10-17-2022

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IT'S THE LAW! DIAL 811
Know what's below. Call before you dig.



SITE AND ENTRANCE HAS BEEN DESIGN FOR ACCESS BY A WB-62 VEHICLE

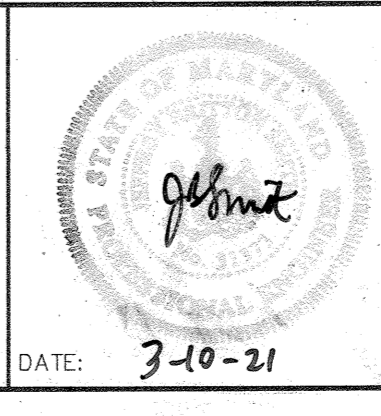
APPROVED: DEPARTMENT OF PLANNING & ZONING
[Signature] 4.12.21
CHIEF, DEVELOPMENT ENGINEERING DIVISION
[Signature] 4/12/21
CHIEF, DIVISION OF LAND DEVELOPMENT
[Signature] 4-29-21
DIRECTOR

No.	REVISIONS	DATE	BY

Kimley»Horn
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1801 PORTER ST, SUITE 401, BALTIMORE, MD 21230
PHONE: 443-743-3470
WWW.KIMLEY-HORN.COM

KHA PROJECT 110718001
DATE 03/10/2021
SCALEAS SHOWN
DESIGNED BY CJC
DRAWN BY CJC
CHECKED BY KTB

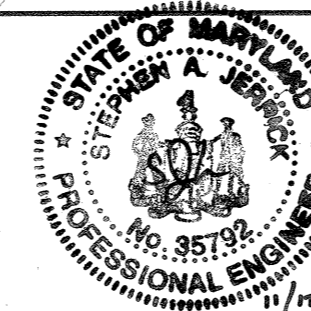
EMERSON PROJECT
SITE DEVELOPMENT PLAN (SDP-21-017)
CONTRACT NO. 24-5162-D
EMERSON SECTION 3, AREA 7, PARCEL A-1
TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
MARYLAND



SITE PLAN
PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 31373
EXPIRATION DATE 01/21/2023

SHEET NUMBER
22 OF 40
SDP-21-017

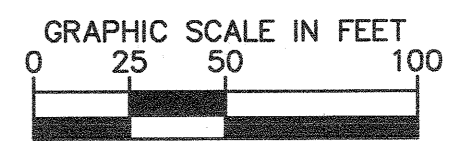
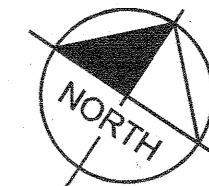
NOTES:
 CUT VOLUME: 61,164 CY
 FILL VOLUME: 92,353 CY
 NET VOLUME: 29,614 CY (FILL)



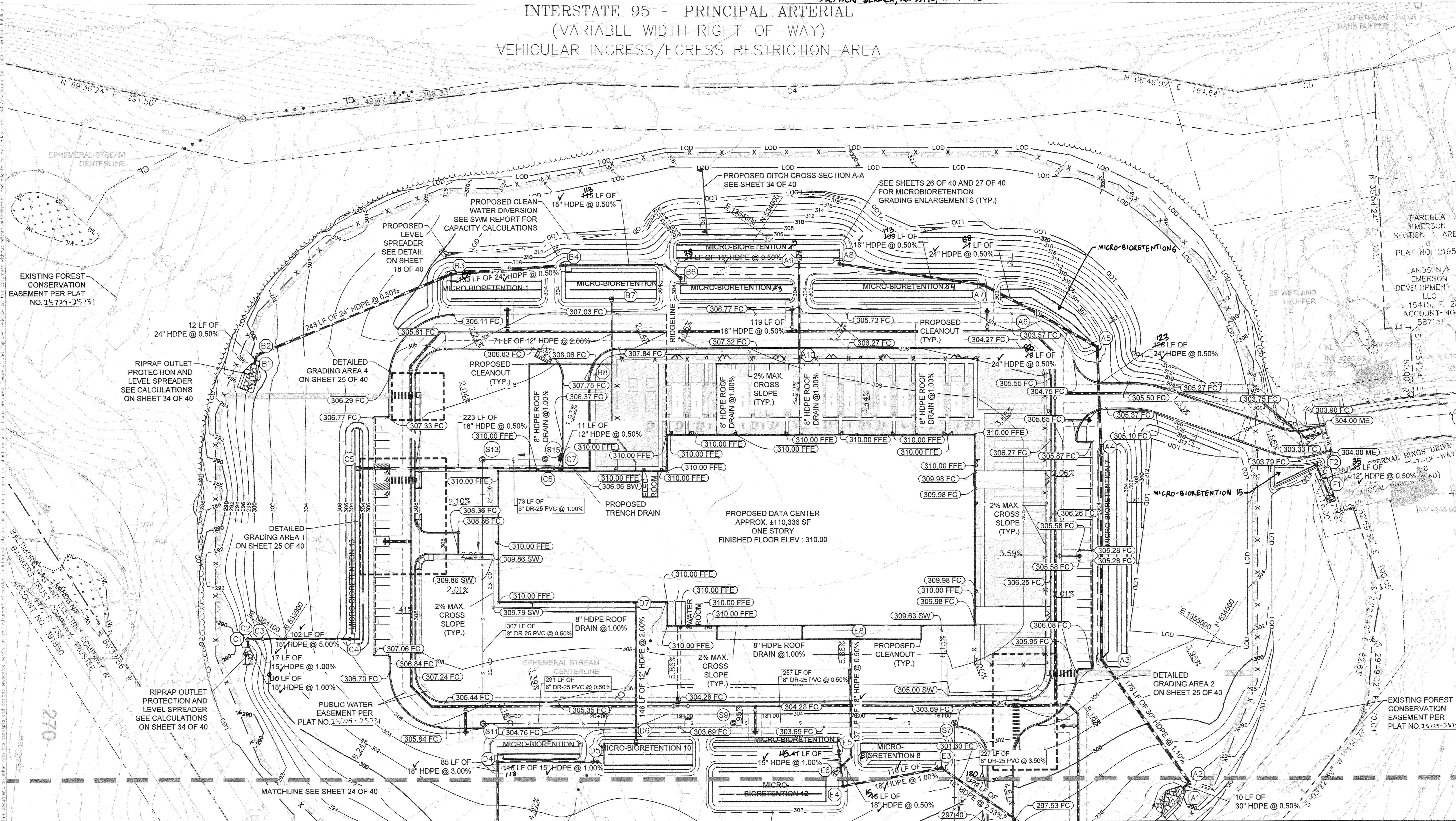
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SEWAGE FACILITY.
 STEPHEN JERRICK, No. 35192, 10-19-2022

ALL STORM SEWER PIPES AND STRUCTURES PROPOSED WITH THIS PROJECT TO BE PRIVATELY MAINTAINED.

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 DIAL 811



INTERSTATE 95 - PRINCIPAL ARTERIAL
 (VARIABLE WIDTH RIGHT-OF-WAY)
 VEHICULAR INGRESS/EGRESS RESTRICTION AREA



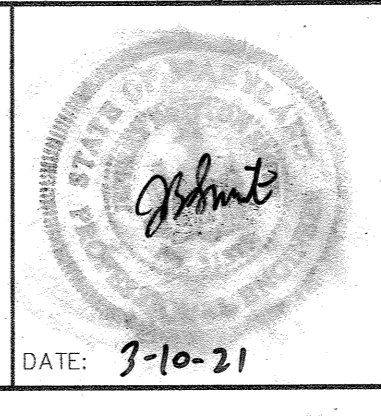
APPROVED: DEPARTMENT OF PLANNING & ZONING
 [Signature] 4-12-21
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
 [Signature] 4-29-21
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
 [Signature] 4-29-21
 DIRECTOR DATE

No.	REVISIONS	DATE	BY

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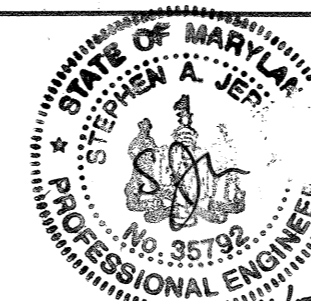
KHA PROJECT
 110718001
 DATE
 03/10/2021
 SCALE AS SHOWN
 DESIGNED BY CJC
 DRAWN BY CJC
 CHECKED BY KTB

EMERSON PROJECT
 SITE DEVELOPMENT PLAN
 (SDP-21-017)
 CONTRACT NO. 24-5162-D
 EMERSON SECTION 3, AREA 7, PARCEL A-1
 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
 MARYLAND DATE: 3-10-21



GRADING AND DRAINAGE PLAN
 PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 31373
 EXPIRATION DATE 01/21/2023

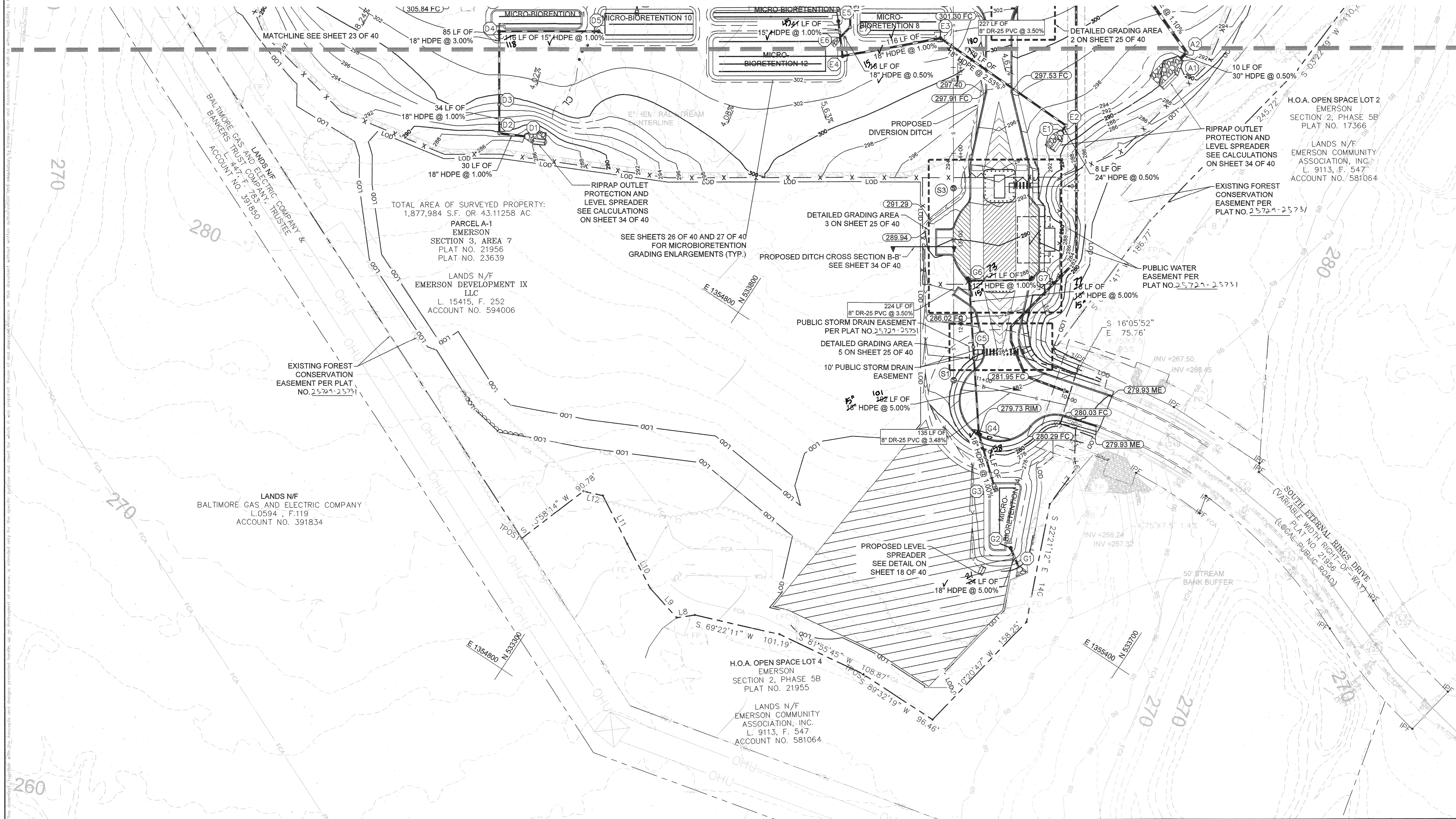
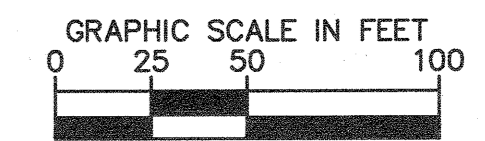
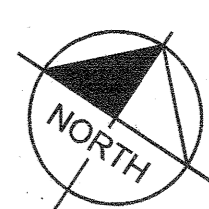
SHEET NUMBER
23 OF 40
 SDP-21-017



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

11/17/21
STEPHEN JERRICK, No. 39792, 10-19-2022

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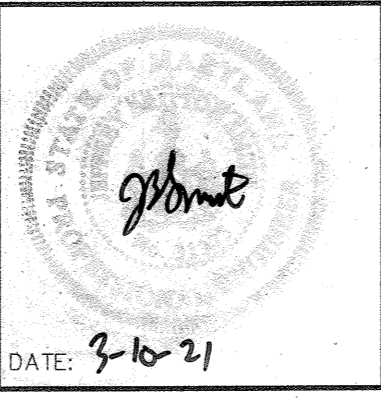
APPROVED: DEPARTMENT OF PLANNING & ZONING
 [Signature] 4-22-21
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
 [Signature] 4-29-21
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
 [Signature] 4-29-21
 DIRECTOR DATE

No.	REVISIONS	DATE	BY

Kimley»Horn
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 PHONE: 443-743-3470
 WWW.KIMLEY-HORN.COM

KHA PROJECT
 110718001
 DATE
 03/10/2021
 SCALES AS SHOWN
 DESIGNED BY CJC
 DRAWN BY CJC
 CHECKED BY KTB
 HOWARD COUNTY

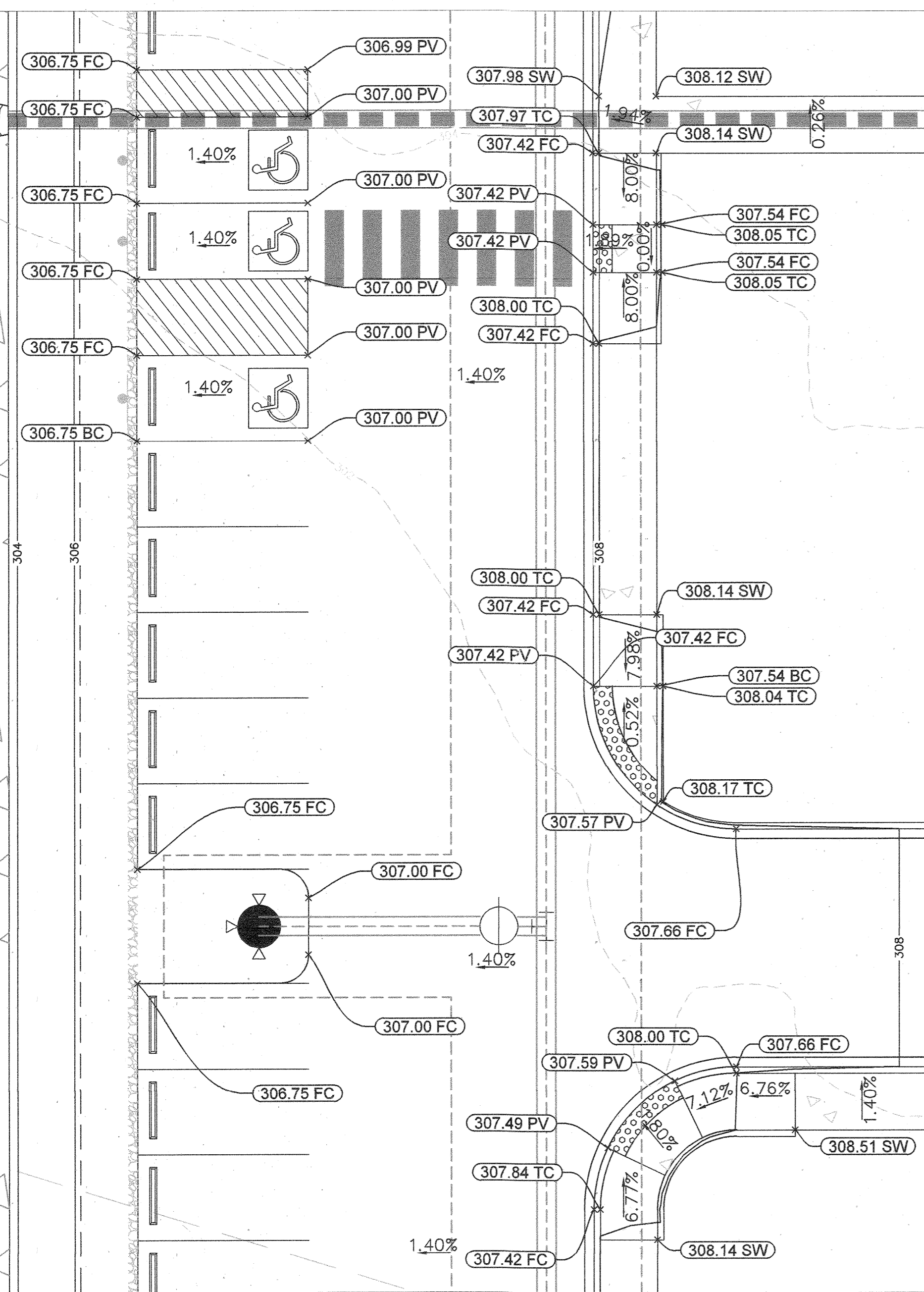
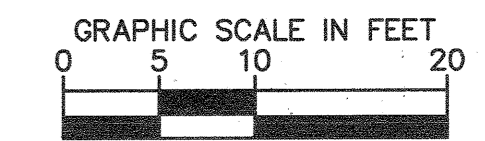
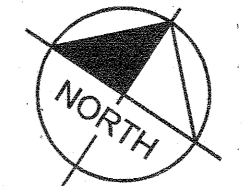
EMERSON PROJECT
 SITE DEVELOPMENT PLAN
 (SDP-21-017)
 CONTRACT NO. 24-5162-D
 EMERSON SECTION 3, AREA 7, PARCEL A-1
 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
 MARYLAND DATE: 3-10-21



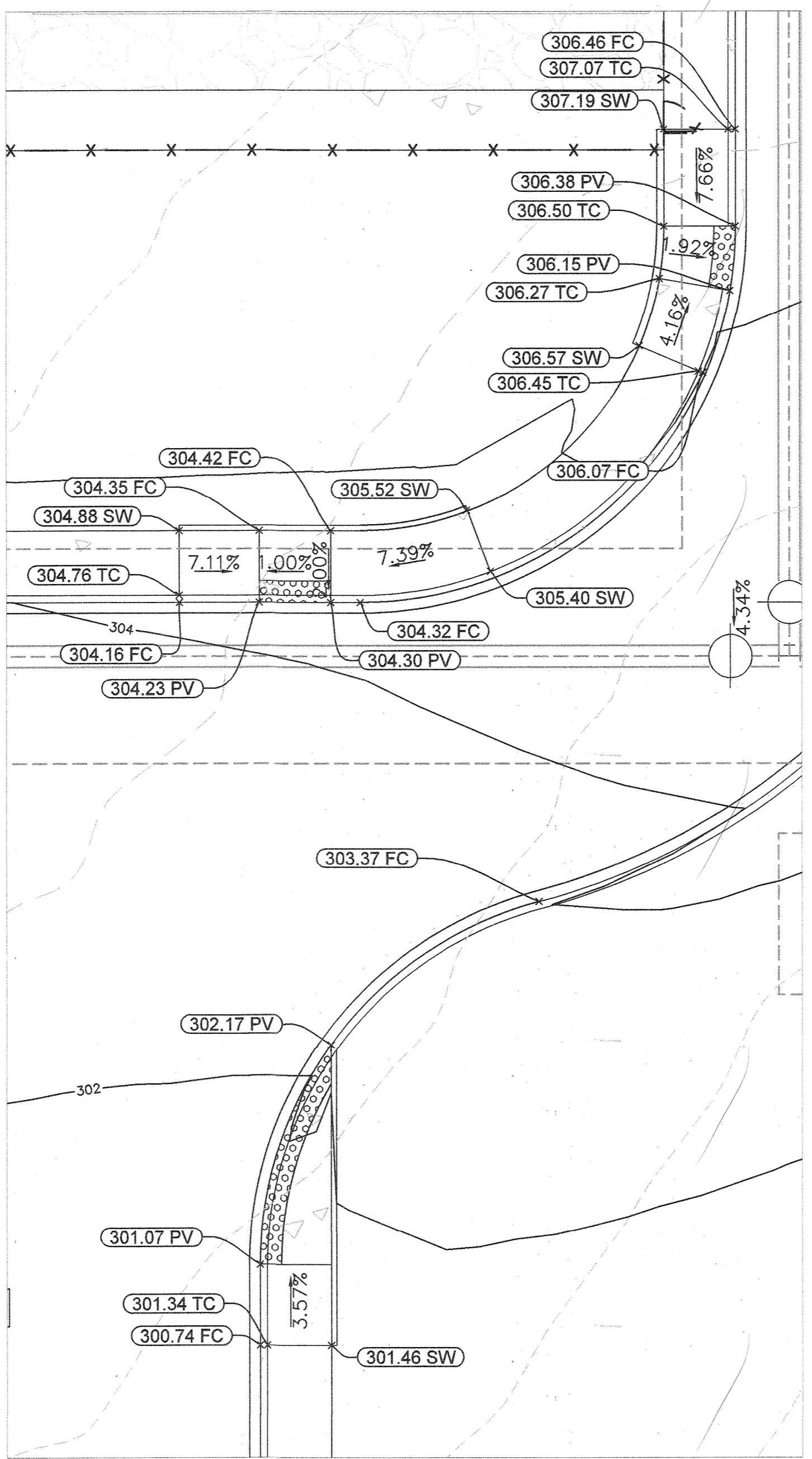
GRADING AND DRAINAGE PLAN
 PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 31373
 EXPIRATION DATE 01/21/2023

SHEET NUMBER
24 OF 40
 SDP-21-017

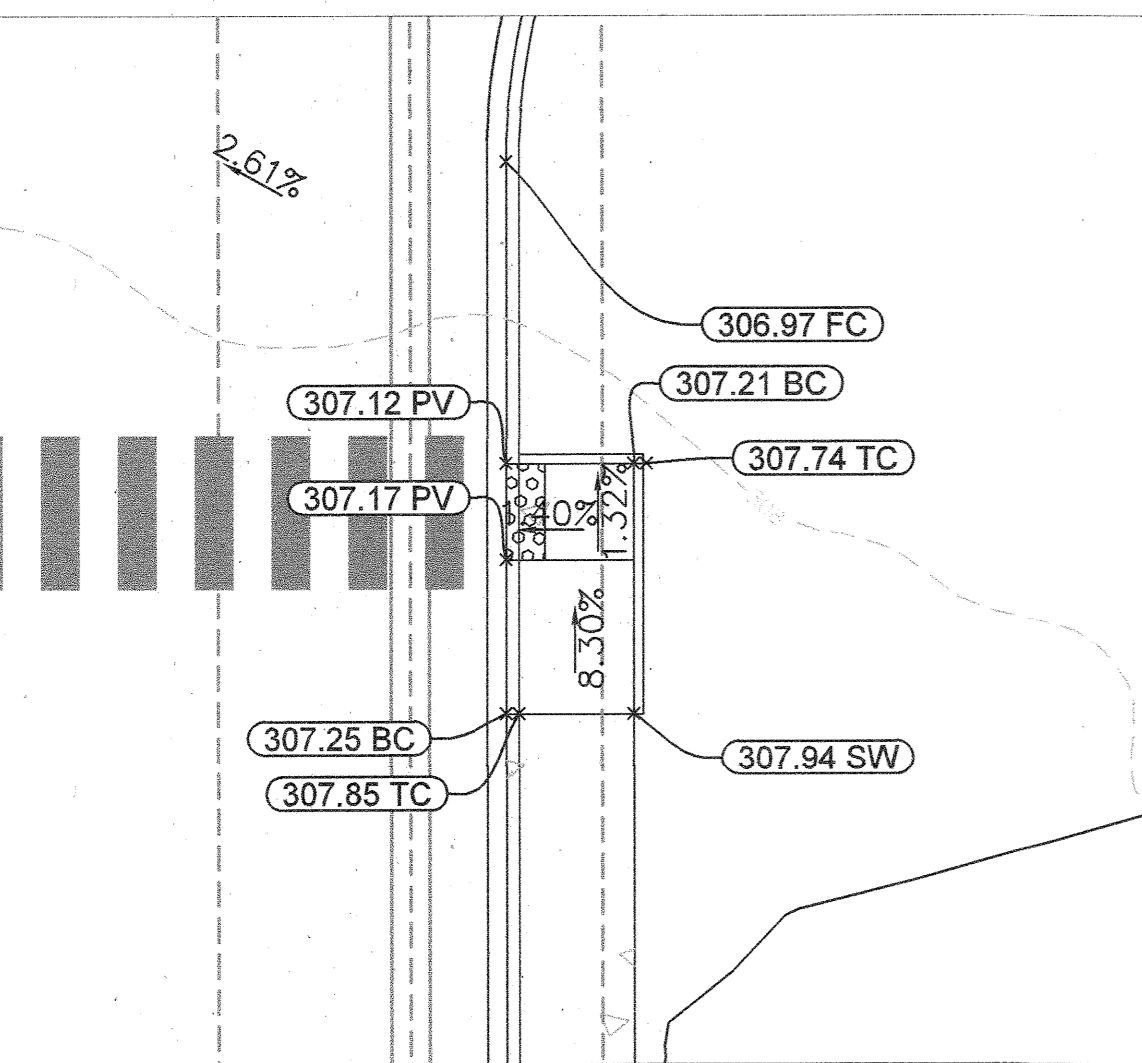
CALL 48 HOURS BEFORE YOU DIG
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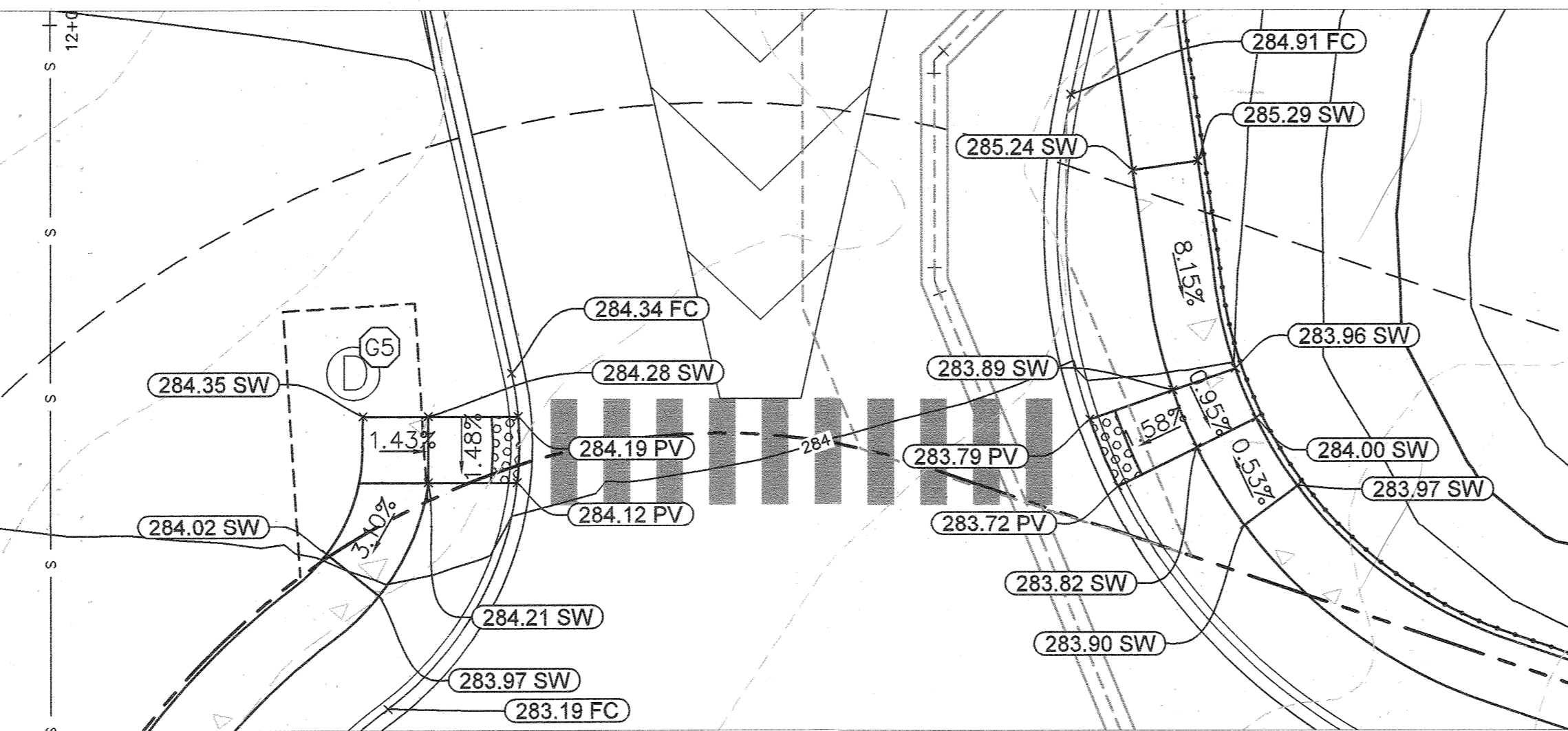
ADA GRADING DETAIL AREA 1
SCALE: 1" = 10'



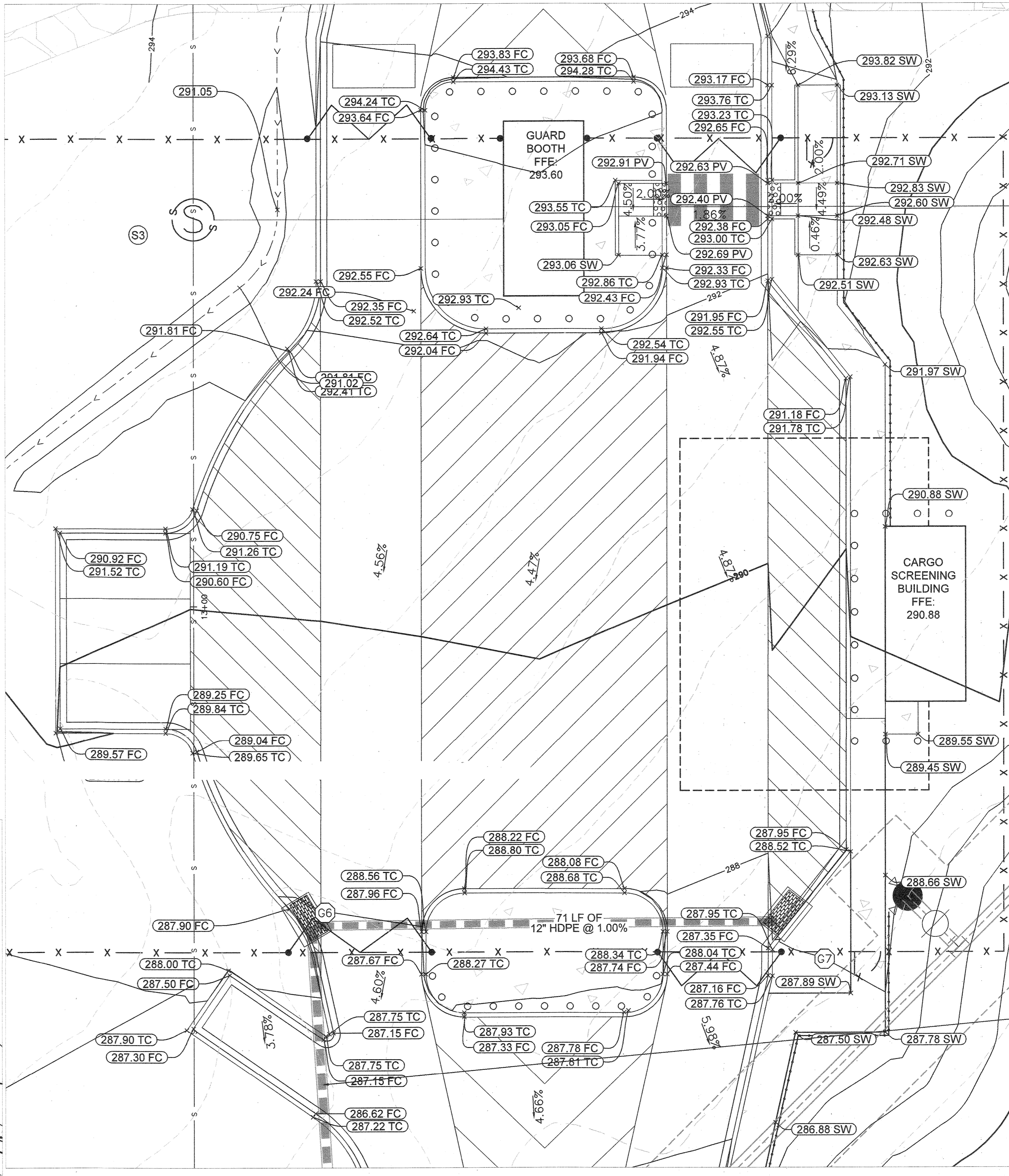
ADA GRADING DETAIL AREA 2
SCALE: 1" = 10'



ADA GRADING DETAIL AREA 4
SCALE: 1" = 10'



ADA GRADING DETAIL AREA 5
SCALE: 1" = 10'



ADA GRADING DETAIL AREA 3
SCALE: 1" = 10'

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
STEPHEN TERRICK, No. 367192, 10-19-2022

APPROVED: DEPARTMENT OF PLANNING & ZONING

 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 4.12.21

 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 4/21/21

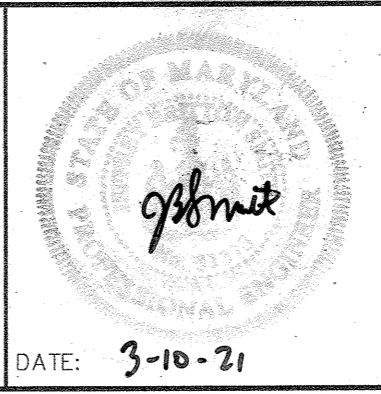
 DIRECTOR
 DATE: 4-29-21

No.	REVISIONS	DATE	BY

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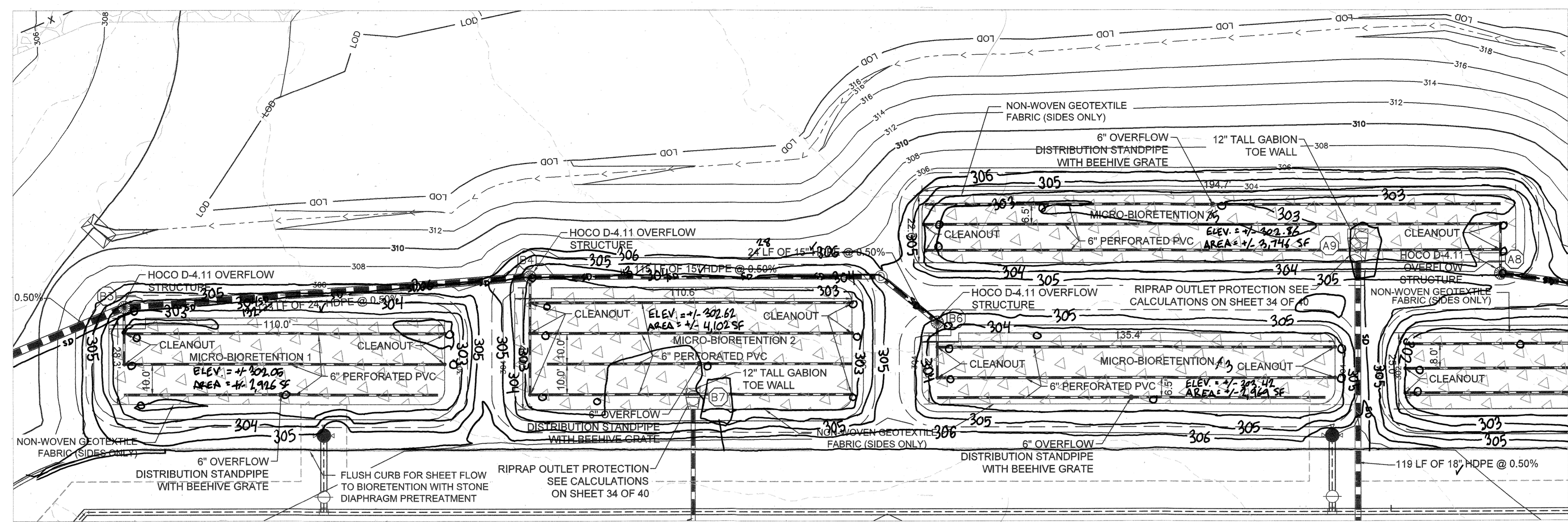
KHA PROJECT
 110718001
 DATE
 03/10/2021
 SCALE AS SHOWN
 DESIGNED BY CJC
 DRAWN BY CJC
 CHECKED BY KTB

EMERSON PROJECT
 SITE DEVELOPMENT PLAN
 (SDP-21-017)
 CONTRACT NO. 24-5162-D
 EMERSON SECTION 3, AREA 7, PARCEL A-1
 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
 MARYLAND

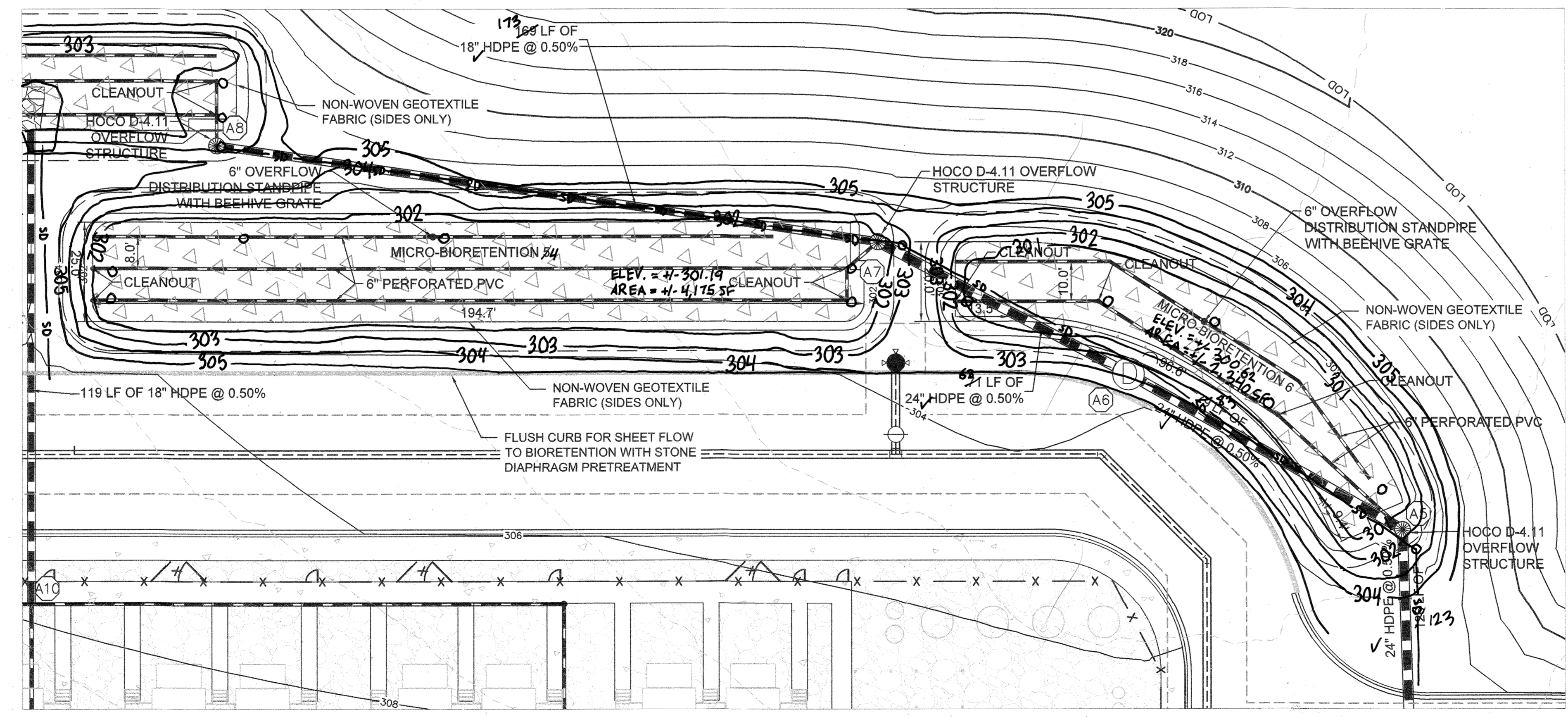


DETAILED GRADING PLAN
 PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO.: 31372
 EXPIRATION DATE: 01/21/2023

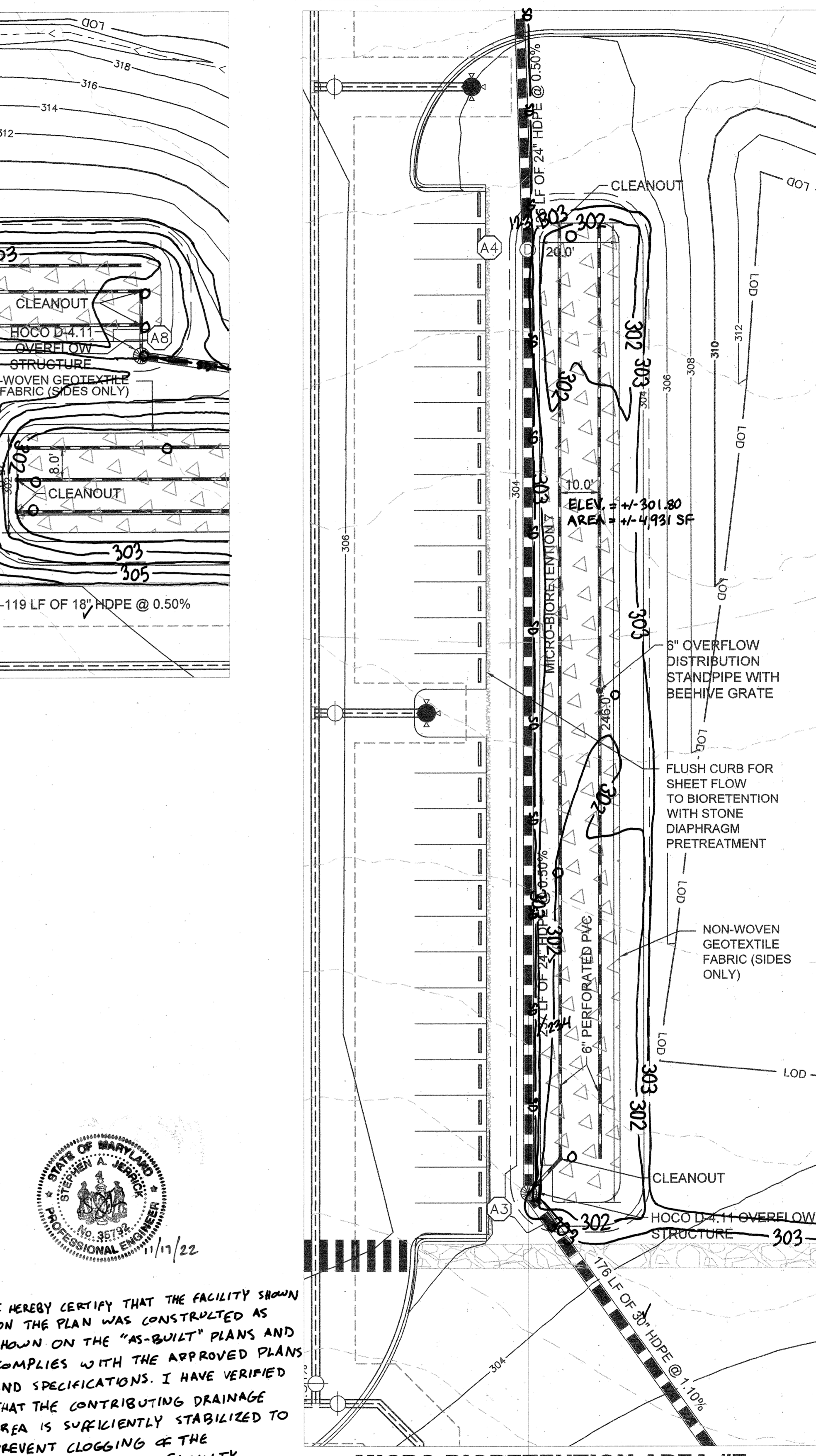
SHEET NUMBER
25 OF 40
 SDP-21-017



MICRO-BIORETENTION AREAS #1, #2, #3 & #4
SCALE: 1" = 20'



MICRO-BIORETENTION AREAS #5 & #6
SCALE: 1" = 20'



MICRO-BIORETENTION AREA #7
SCALE: 1" = 20'



I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.
STEPHEN JARRICK, No. 35172, 10-19-2022

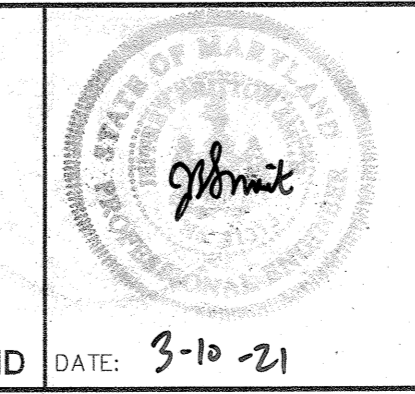
APPROVED: DEPARTMENT OF PLANNING & ZONING
Chad Elwood
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 4/12/21
 CHIEF, DIVISION OF LAND DEVELOPMENT
Walter
 DATE: 4/12/21
 DIRECTOR
Shy Gove
 DATE: 4-21-21

No.	REVISIONS	DATE	BY

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 PHONE: 443-743-3470
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KHA PROJECT
 110718001
 DATE
 03/10/2021
 SCALE AS SHOWN
 DESIGNED BY: CJC
 DRAWN BY: CJC
 CHECKED BY: KTB

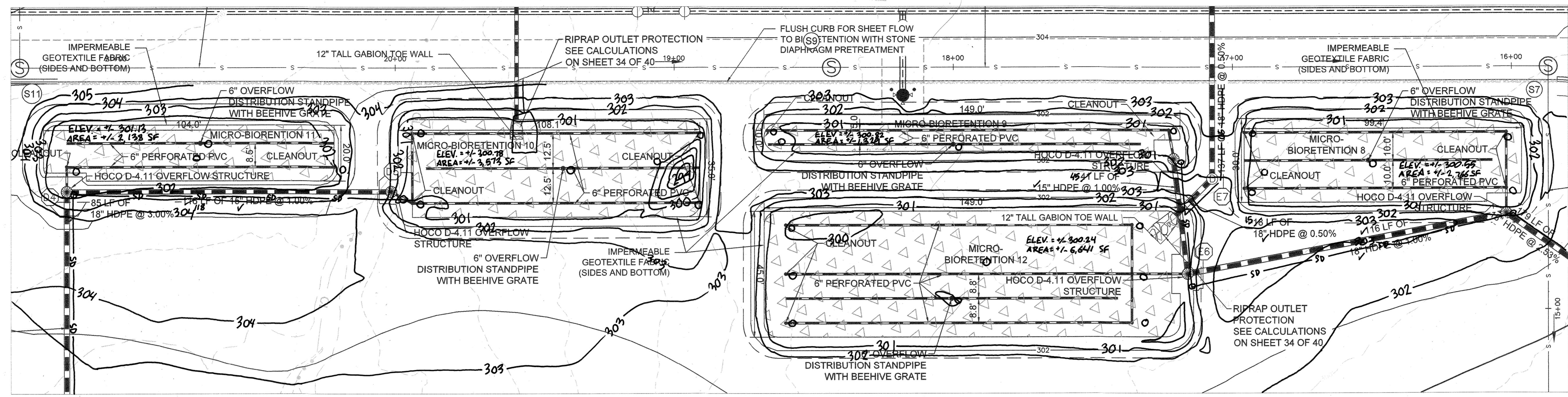
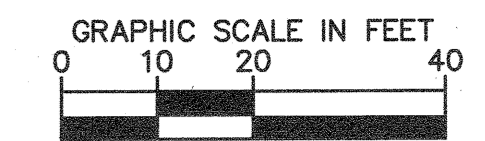
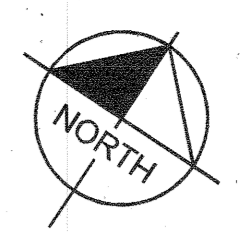
EMERSON PROJECT
 SITE DEVELOPMENT PLAN
 (SDP-21-017)
 CONTRACT NO. 24-5162-D
 EMERSON SECTION 3, AREA 7, PARCEL A-1
 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
 MARYLAND



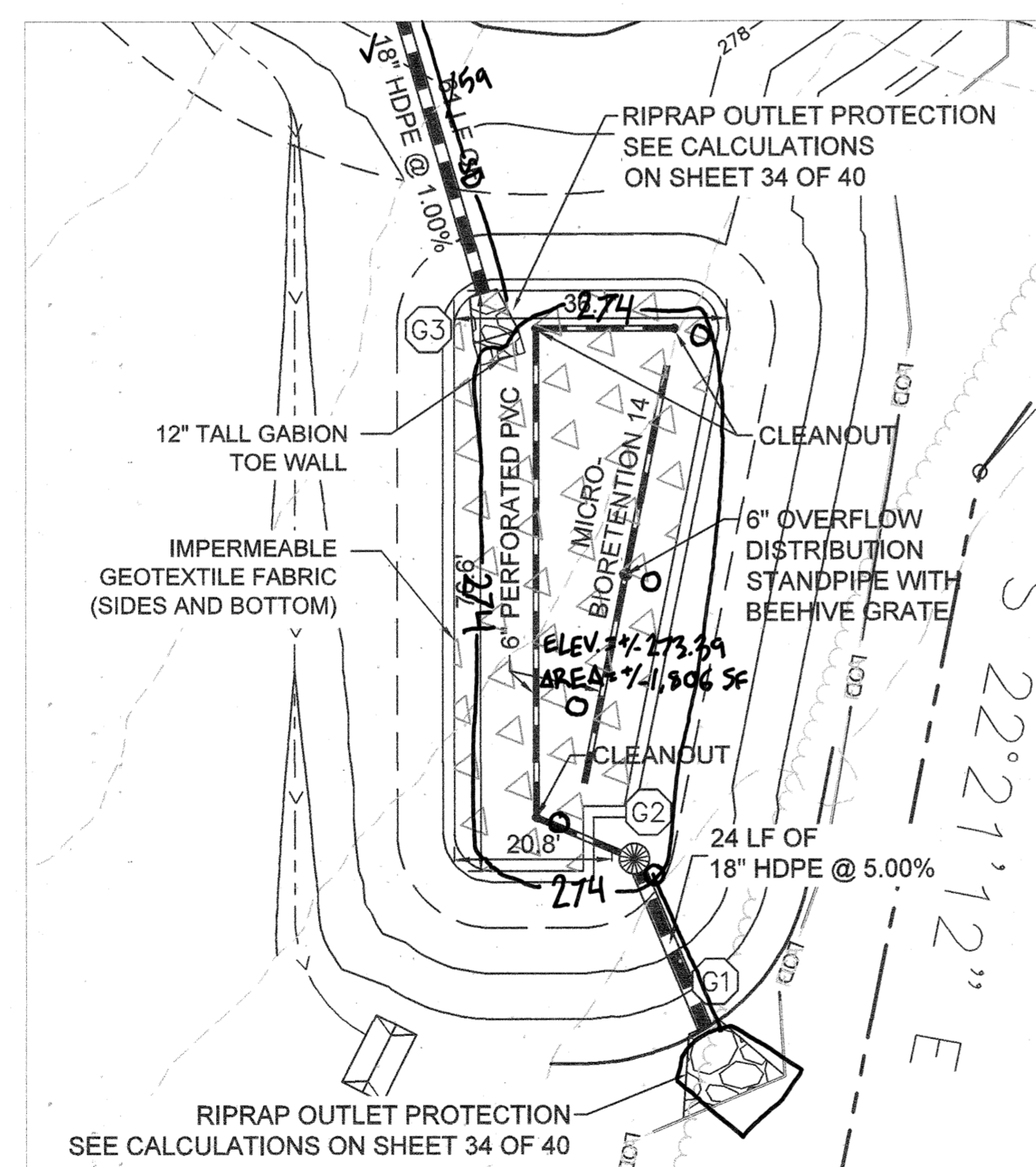
MICRO-BIORETENTION DETAILS
 PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 31373
 EXPIRATION DATE 01/21/2023

SHEET NUMBER
26 OF 40
 SDP-21-017

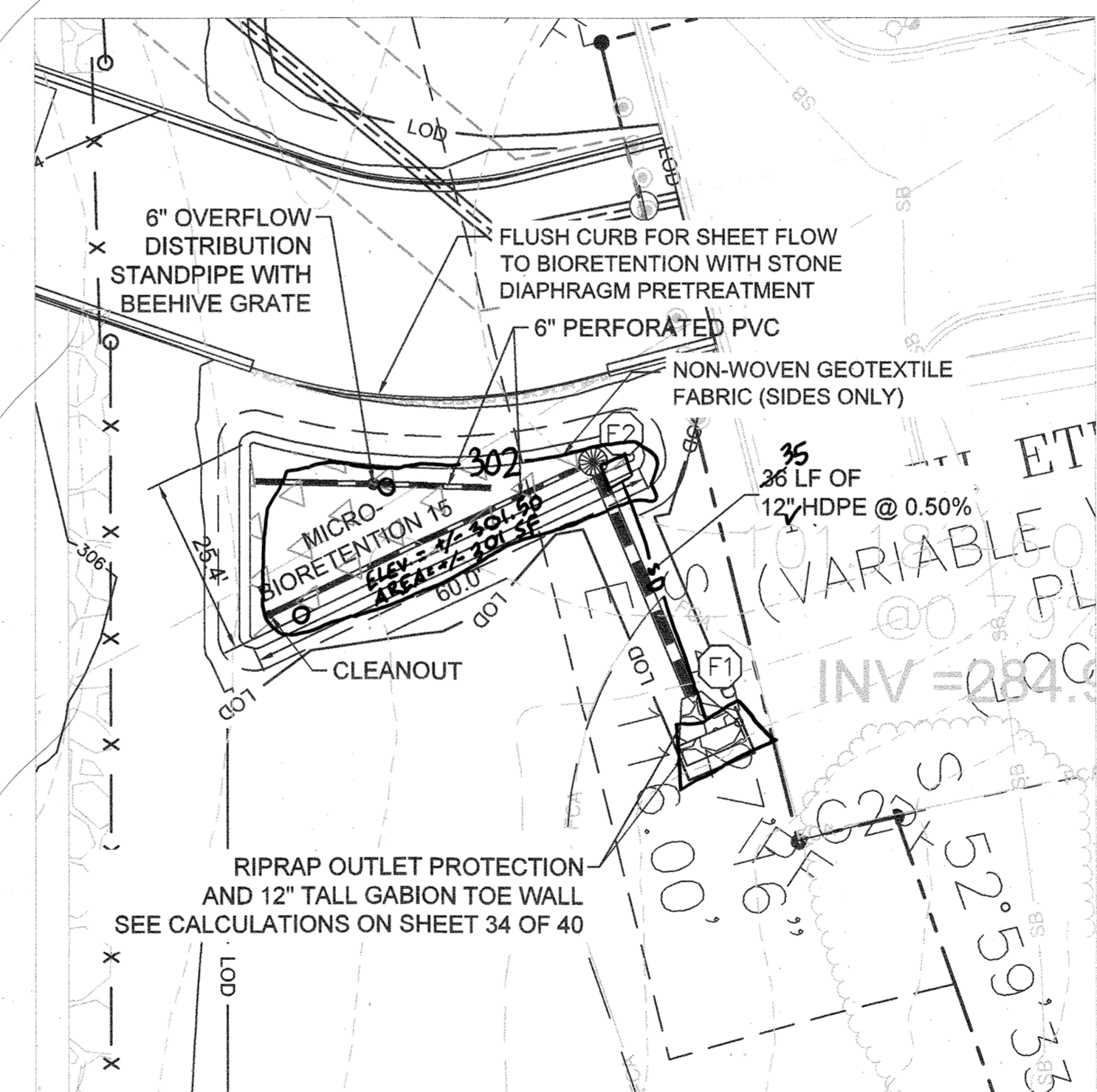
CALL 48 HOURS BEFORE YOU DIG
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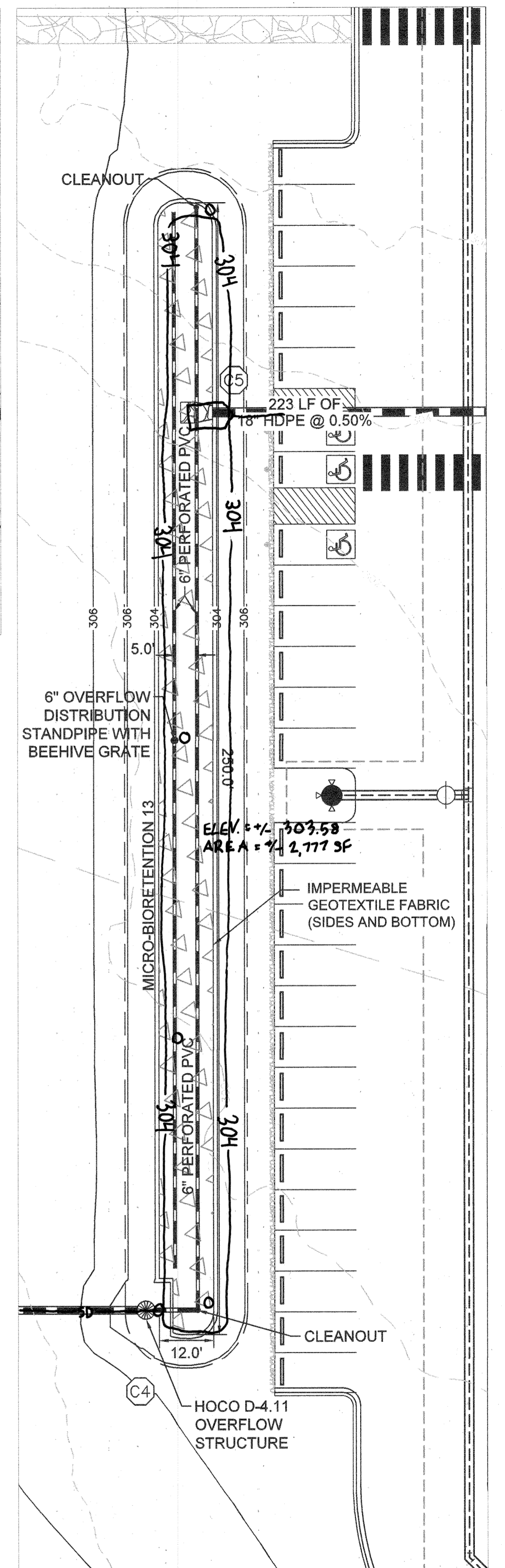
MICRO-BIORETENTION AREAS #8, #9, #10, #11, #12
SCALE: 1" = 20'



MICRO-BIORETENTION AREA #14
SCALE: 1" = 20'



MICRO-BIORETENTION AREA #15
SCALE: 1" = 20'



MICRO-BIORETENTION AREA #13
SCALE: 1" = 20'



I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOSINGS OF THE UNDERGROUND SWUM FACILITY.
STEPHEN JERRICK, No. 35921, 10-19-2022

APPROVED: DEPARTMENT OF PLANNING & ZONING

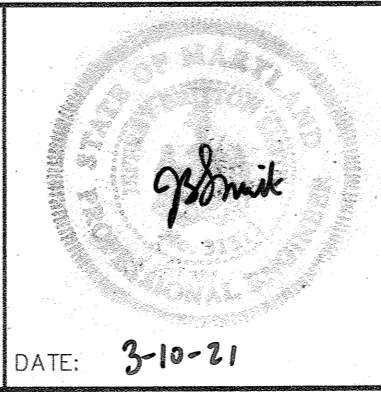
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 11-2-21
 DATE: 4-27-21
 DATE: 4-27-21
 DIRECTOR

No.	REVISIONS	DATE	BY

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 PHONE: 443-743-3470
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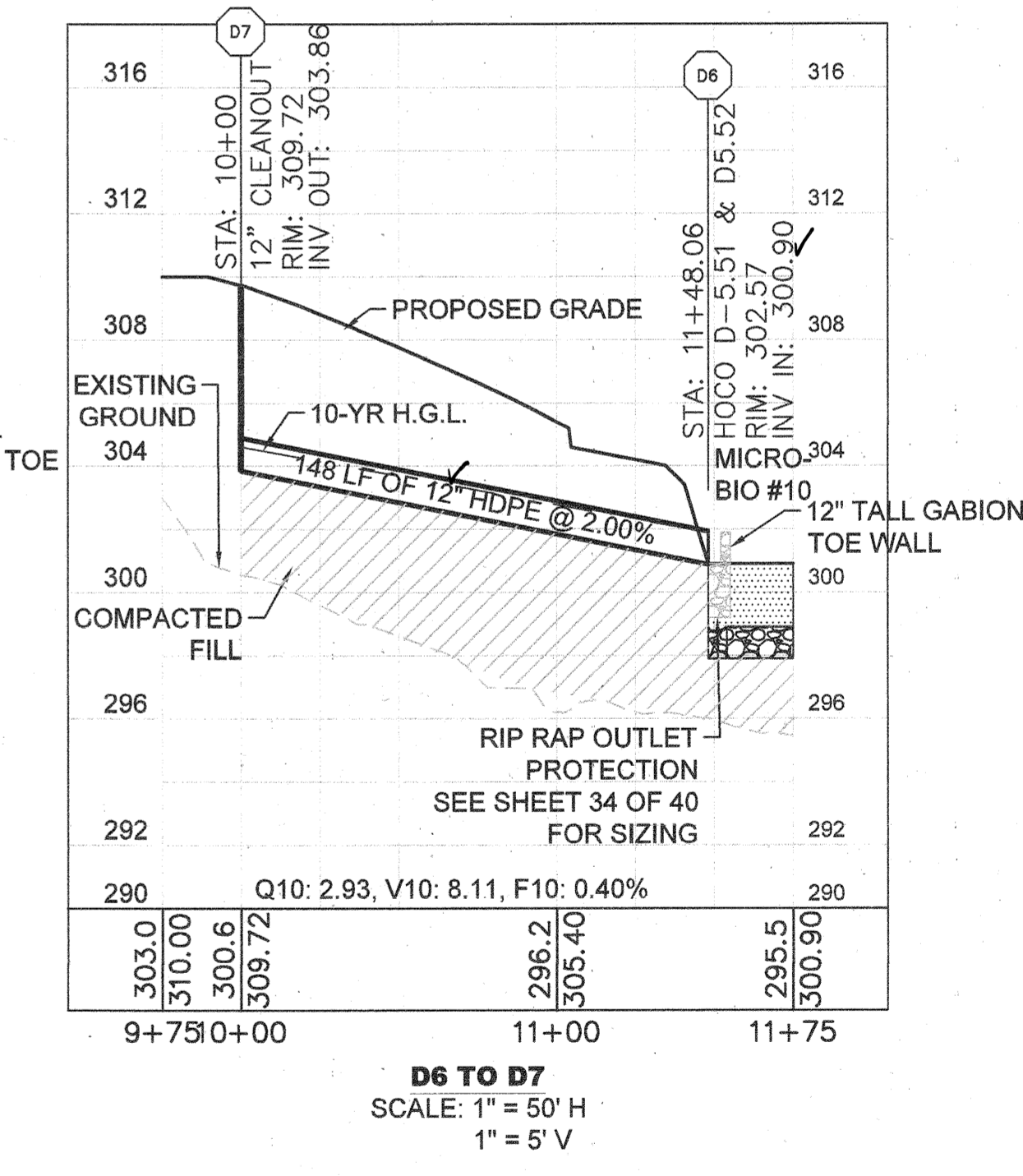
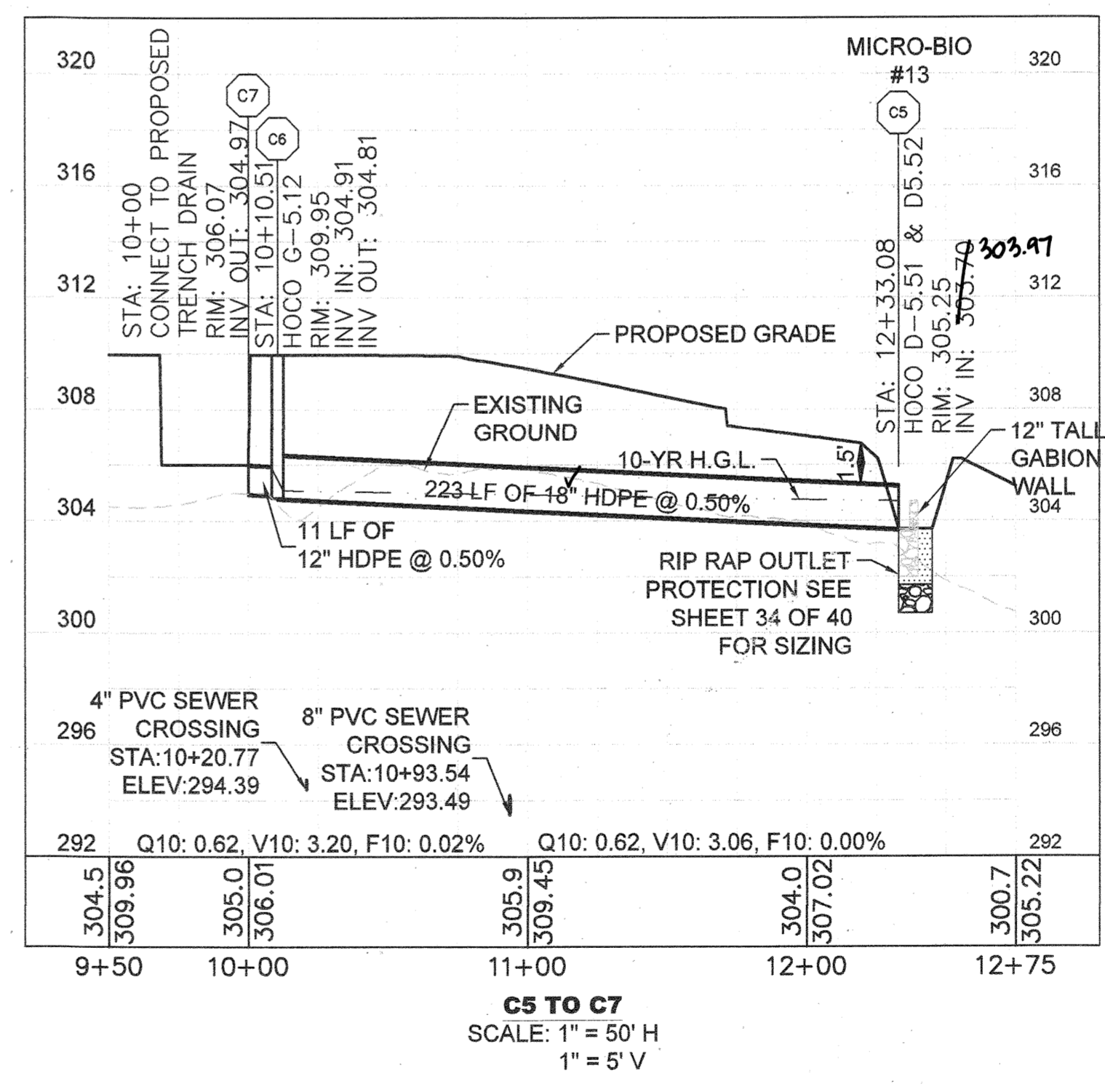
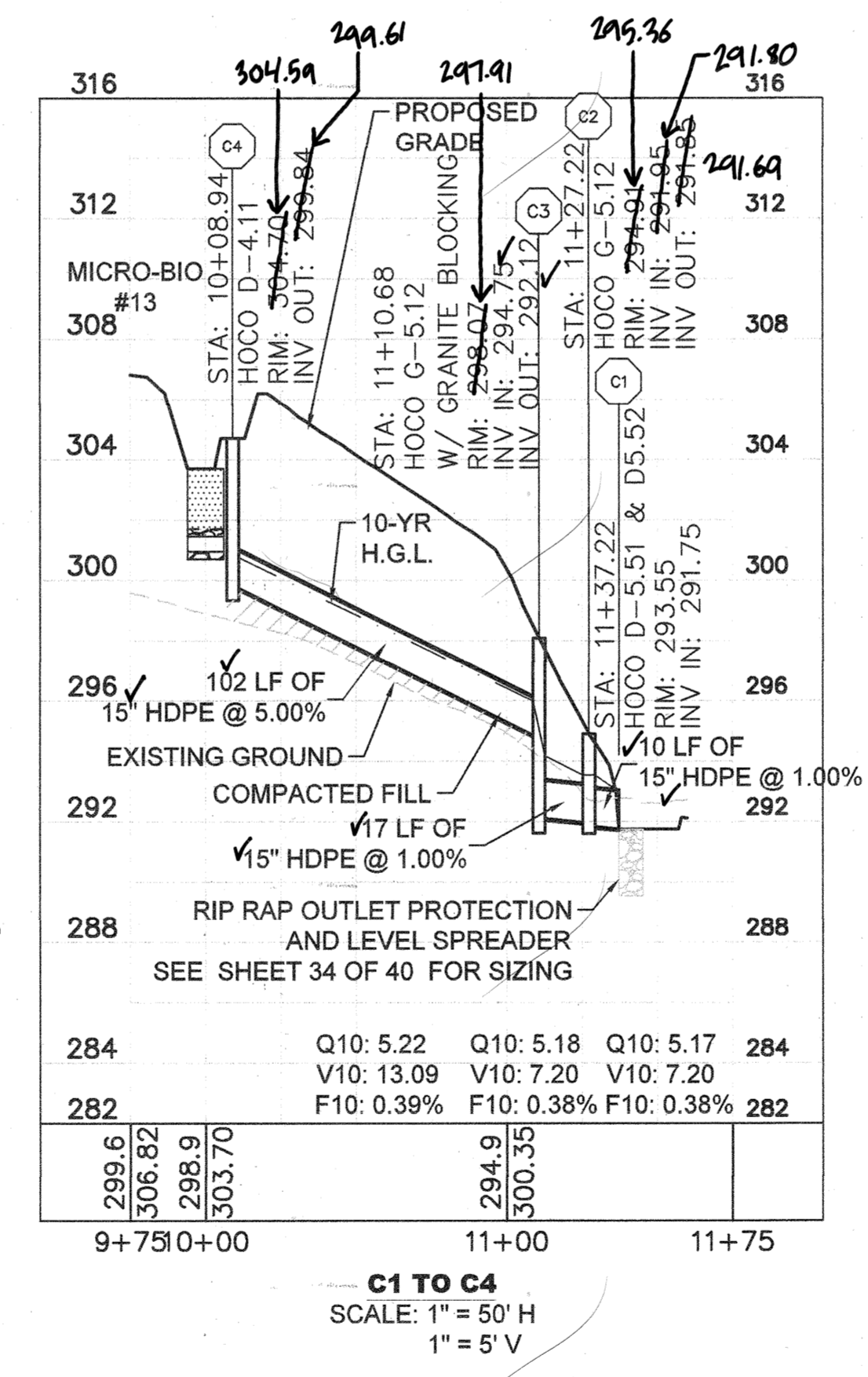
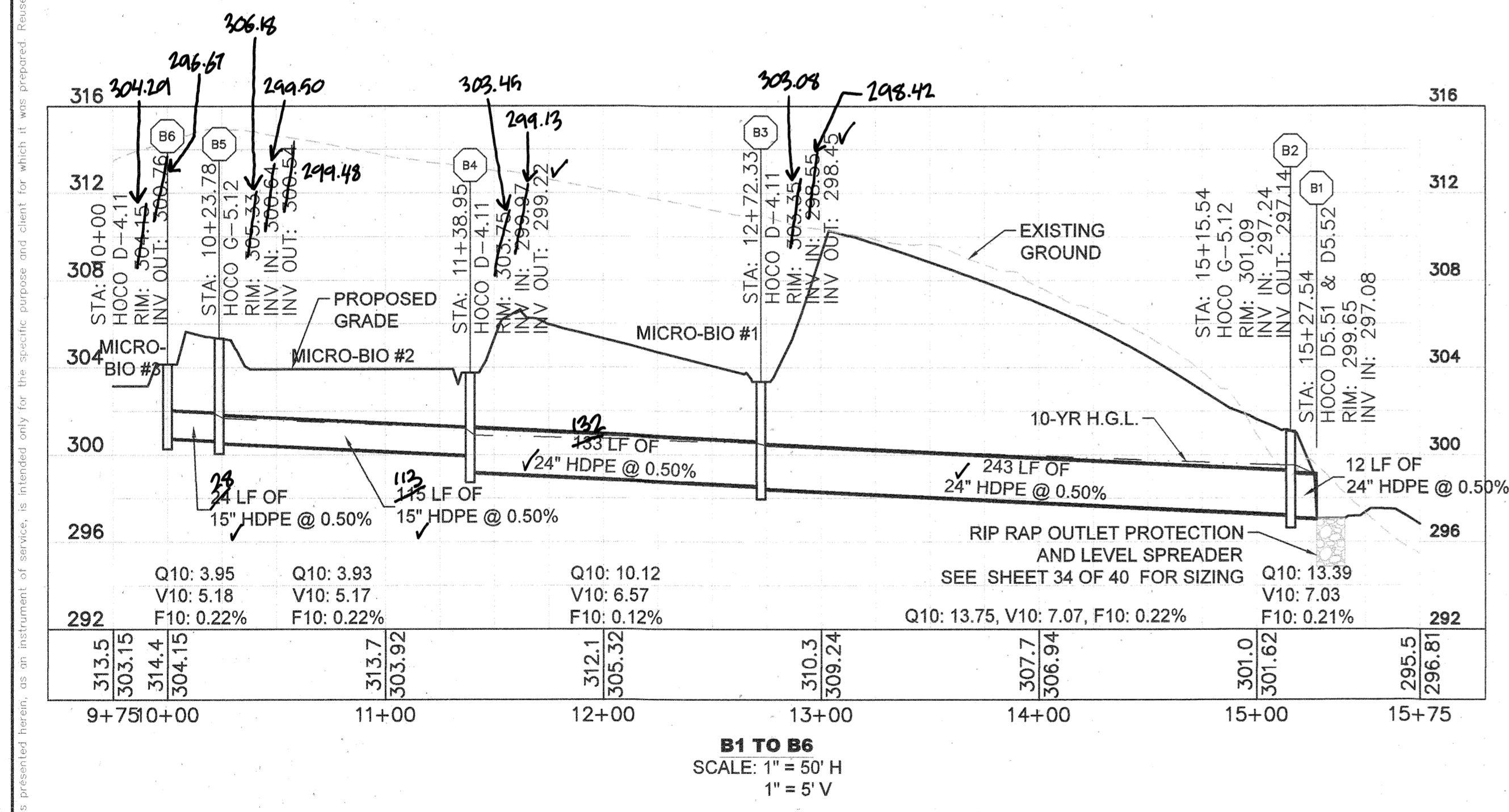
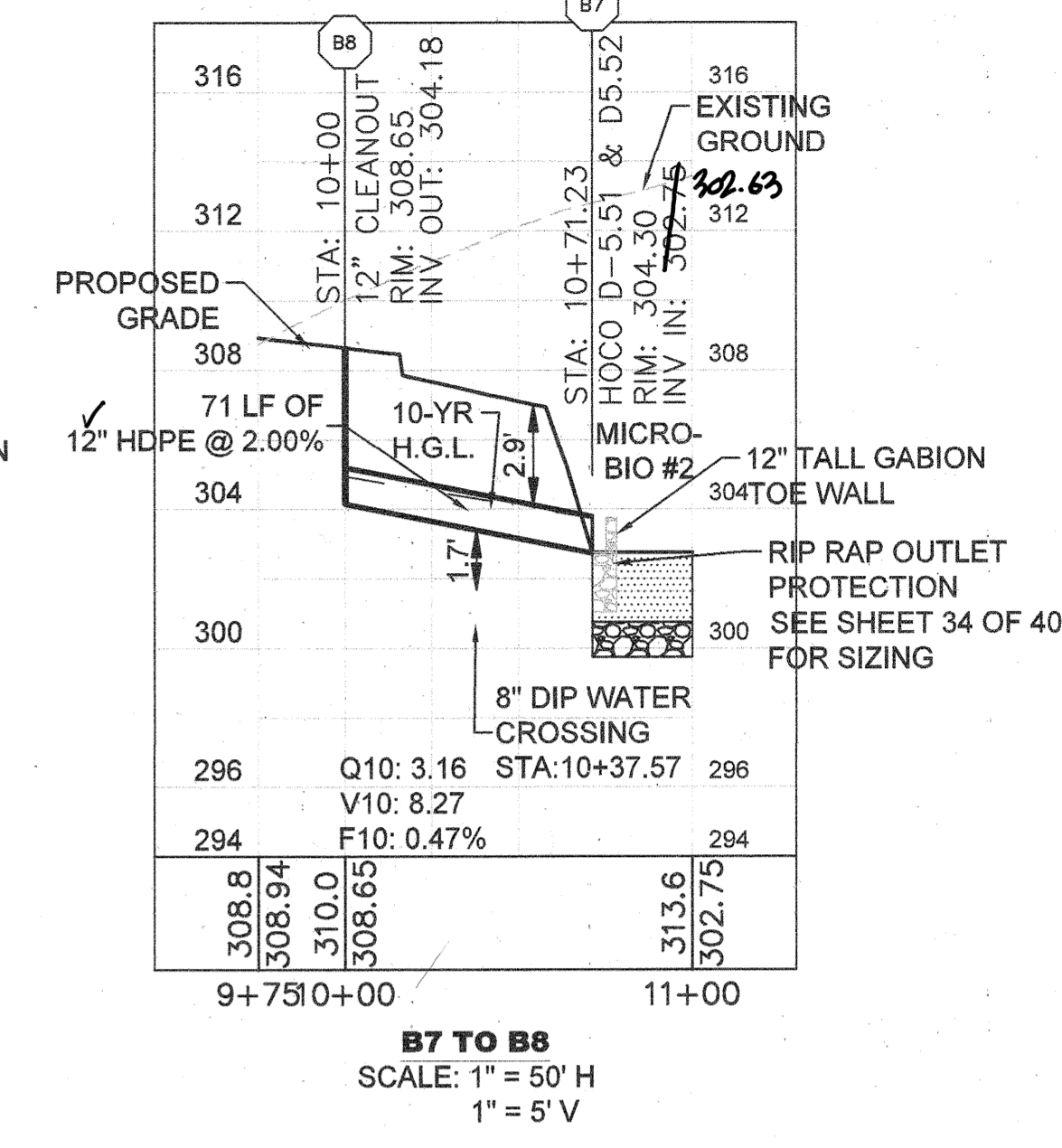
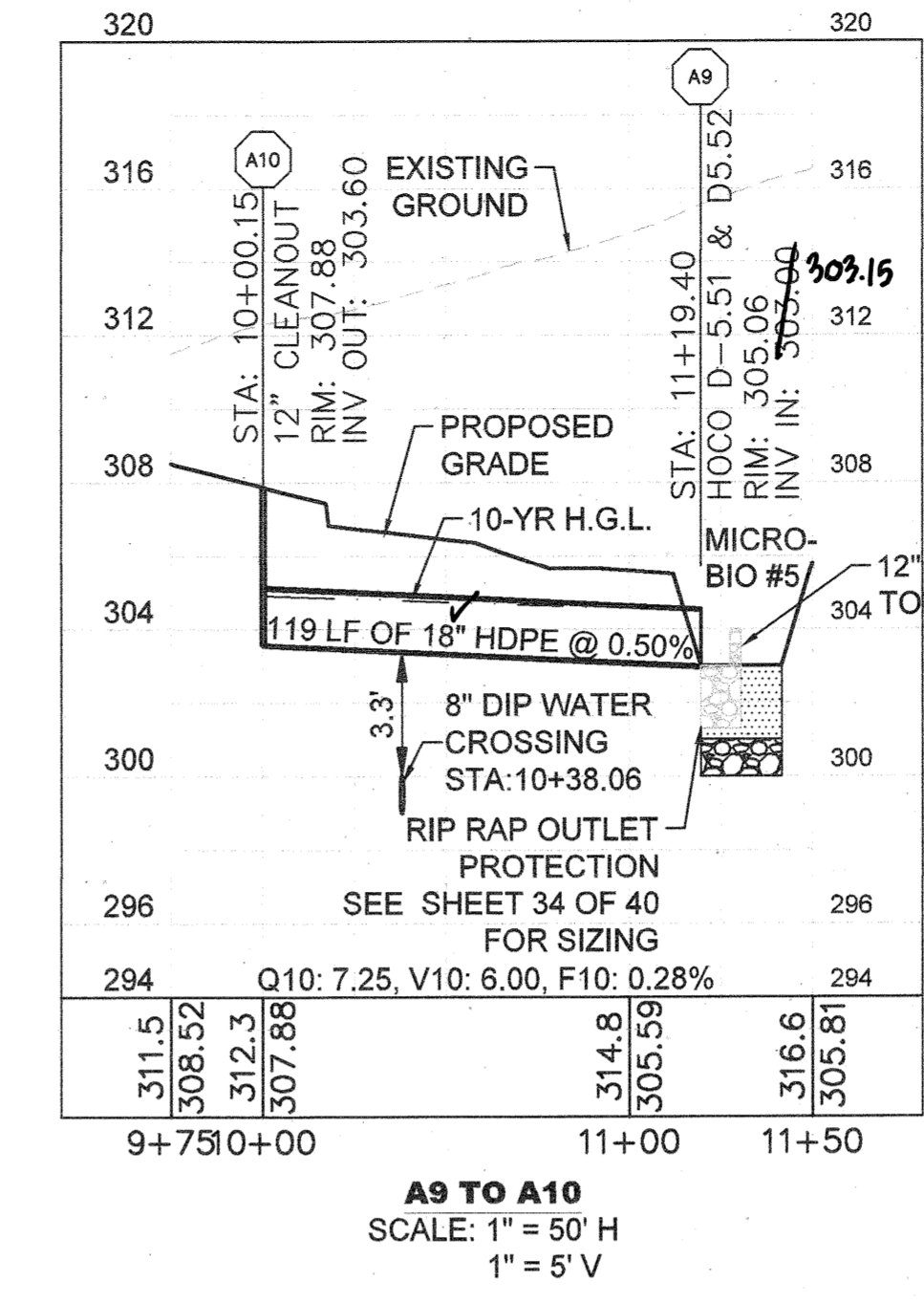
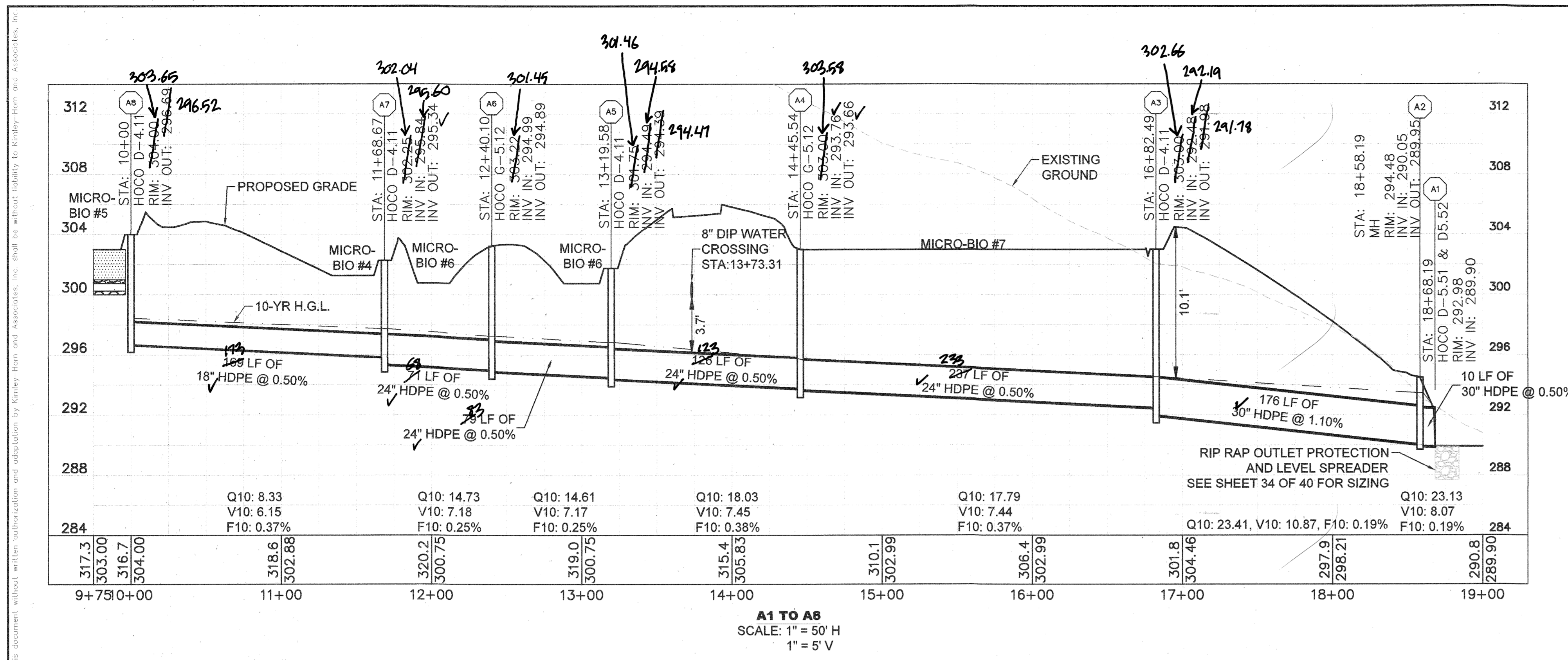
KHA PROJECT
 110718001
 DATE
 03/10/2021
 SCALES SHOWN
 DESIGNED BY CJC
 DRAWN BY CJC
 CHECKED BY KTB

EMERSON PROJECT
 SITE DEVELOPMENT PLAN
 (SDP-21-017)
 CONTRACT NO. 24-5162-D
 EMERSON SECTION 3, AREA 7, PARCEL A-1
 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
 MARYLAND



MICRO-BIORETENTION DETAILS
 PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 31373
 EXPIRATION DATE 01/21/2023

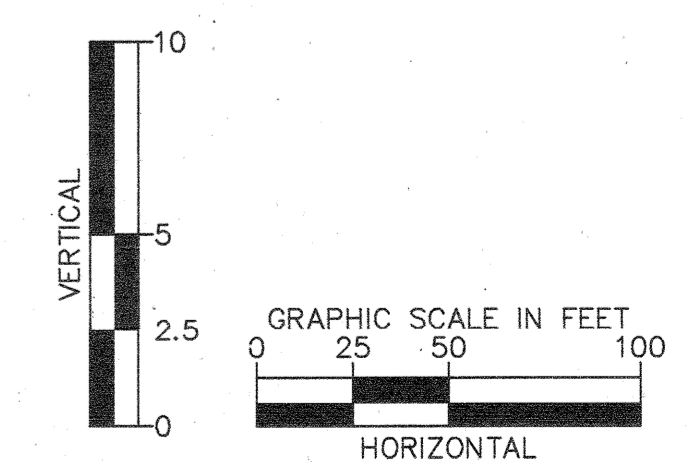
SHEET NUMBER
27 OF 40
 SDP-21-017



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

STEPHEN JERRICK, No. 35792, 10-19-2022

ALL STORM SEWER PIPES AND STRUCTURES PROPOSED WITH THIS PROJECT TO BE PRIVATELY MAINTAINED.



APPROVED: DEPARTMENT OF PLANNING & ZONING
 Chief, Development Engineering Division
 Chief, Division of Land Development
 Director

4/12/21
 4/29/21

No.	REVISIONS	DATE	BY

Kimley»Horn

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 PHONE: 443-743-3470
 WWW.KIMLEY-HORN.COM

KHA PROJECT
 110718001
 DATE
 03/10/2021
 SCALES AS SHOWN
 DESIGNED BY CJC
 DRAWN BY CJC
 CHECKED BY KTB

EMERSON PROJECT
 SITE DEVELOPMENT PLAN
 (SDP-21-017)
 CONTRACT NO. 24-5162-D

EMERSON SECTION 3, AREA 7, PARCEL A-1
 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC

MARYLAND
 DATE: 3-10-21

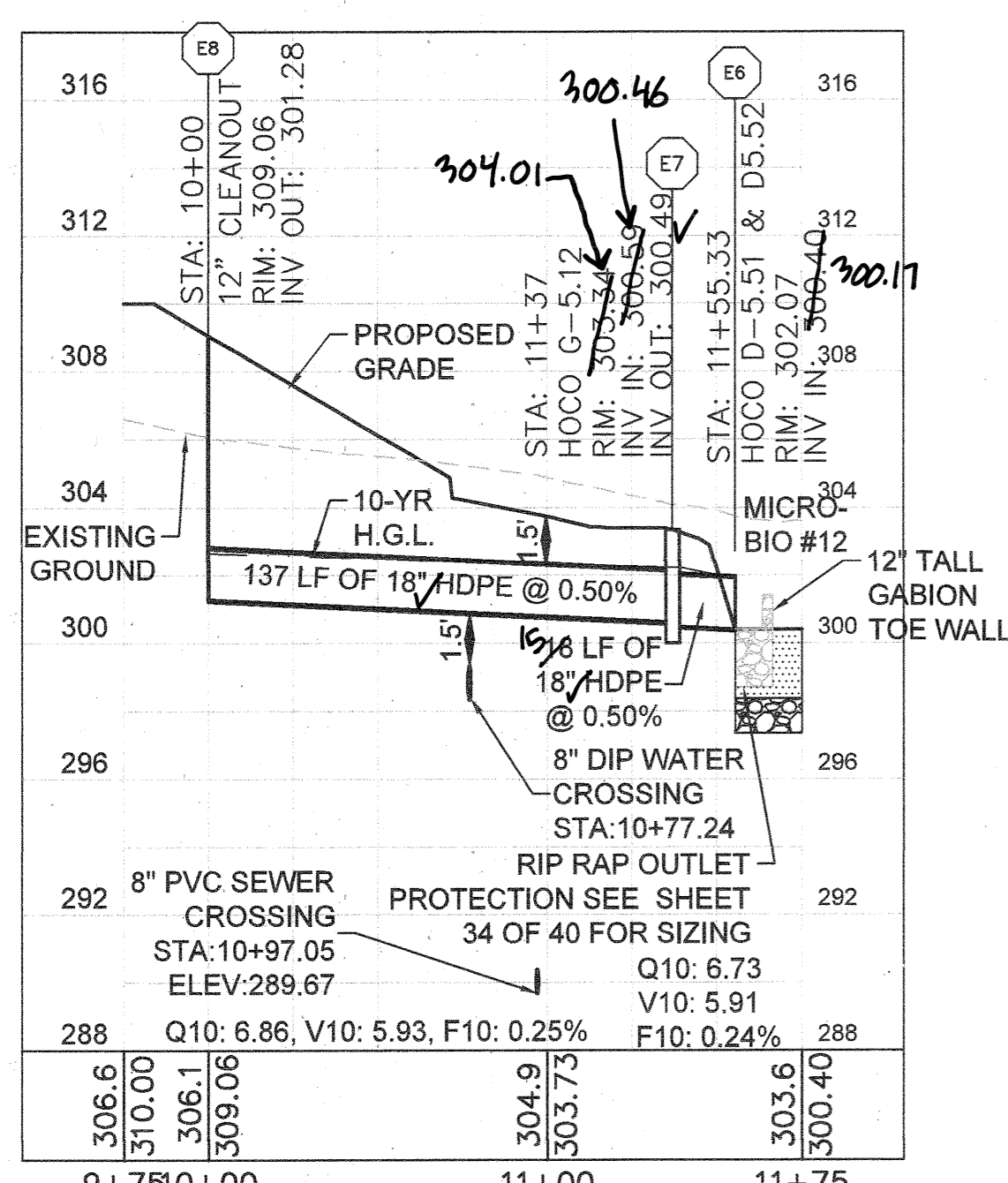
STORM SEWER PROFILES

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

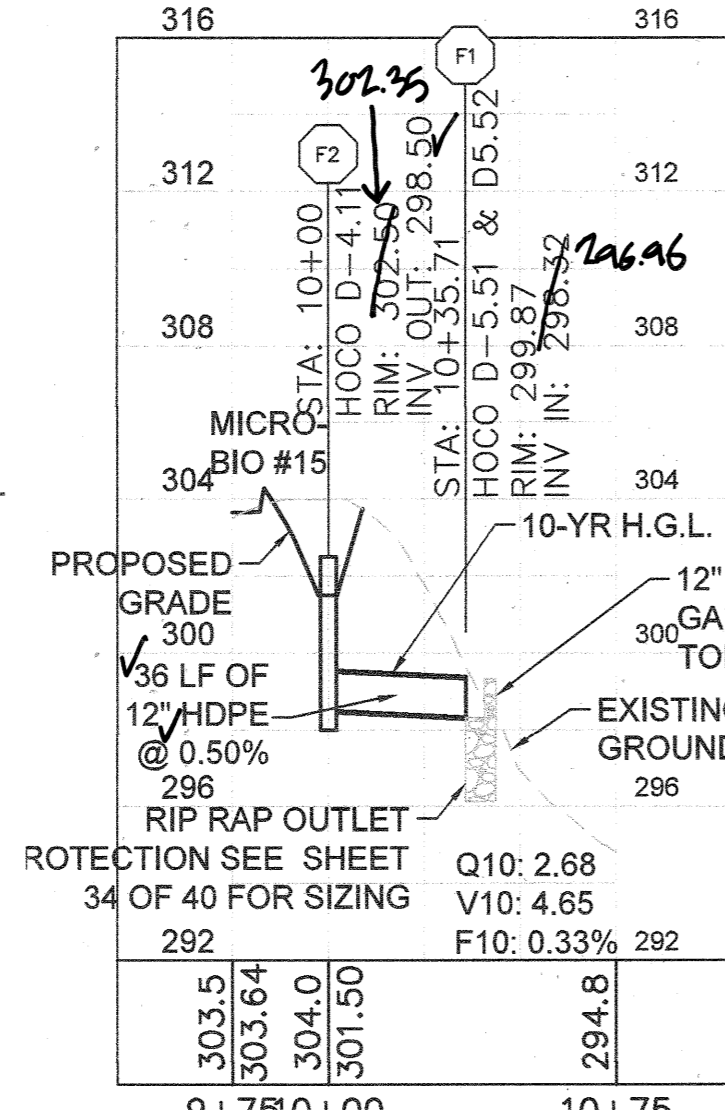
LICENSE NO. 31373
 EXPIRATION DATE 01/21/2023

SHEET NUMBER
28 OF 40
 SDP-21-017

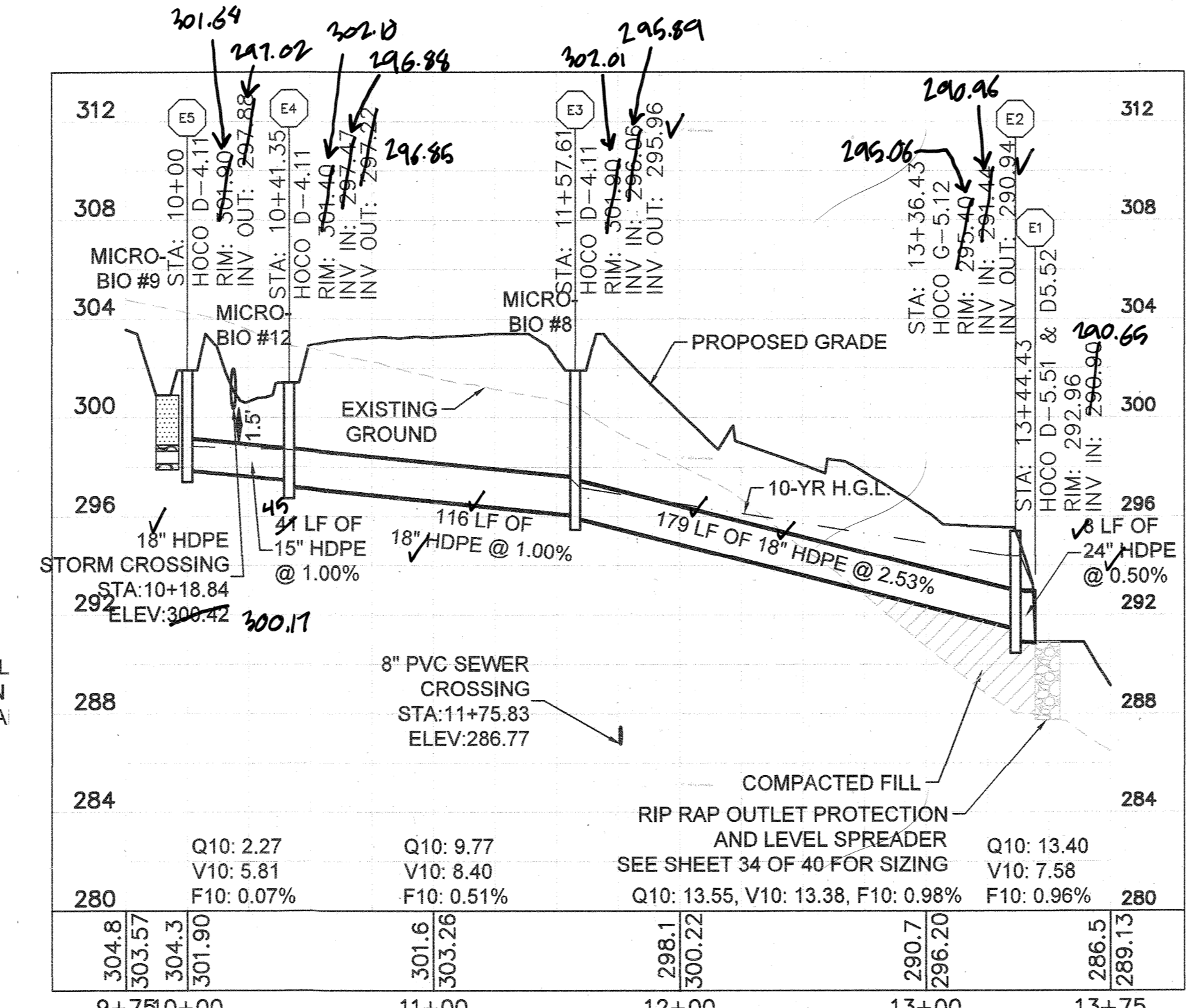
This document, together with the conceptual design presented herein, is an instrument of service for which the contractor shall be responsible for its preparation, accuracy, and compliance with all applicable laws, regulations, and standards. It is intended for the specific purpose and project for which it was prepared and shall not be used for any other purpose without the written consent of Kimley-Horn and Associates, Inc. All storm sewer pipes and structures proposed with this project to be privately maintained.



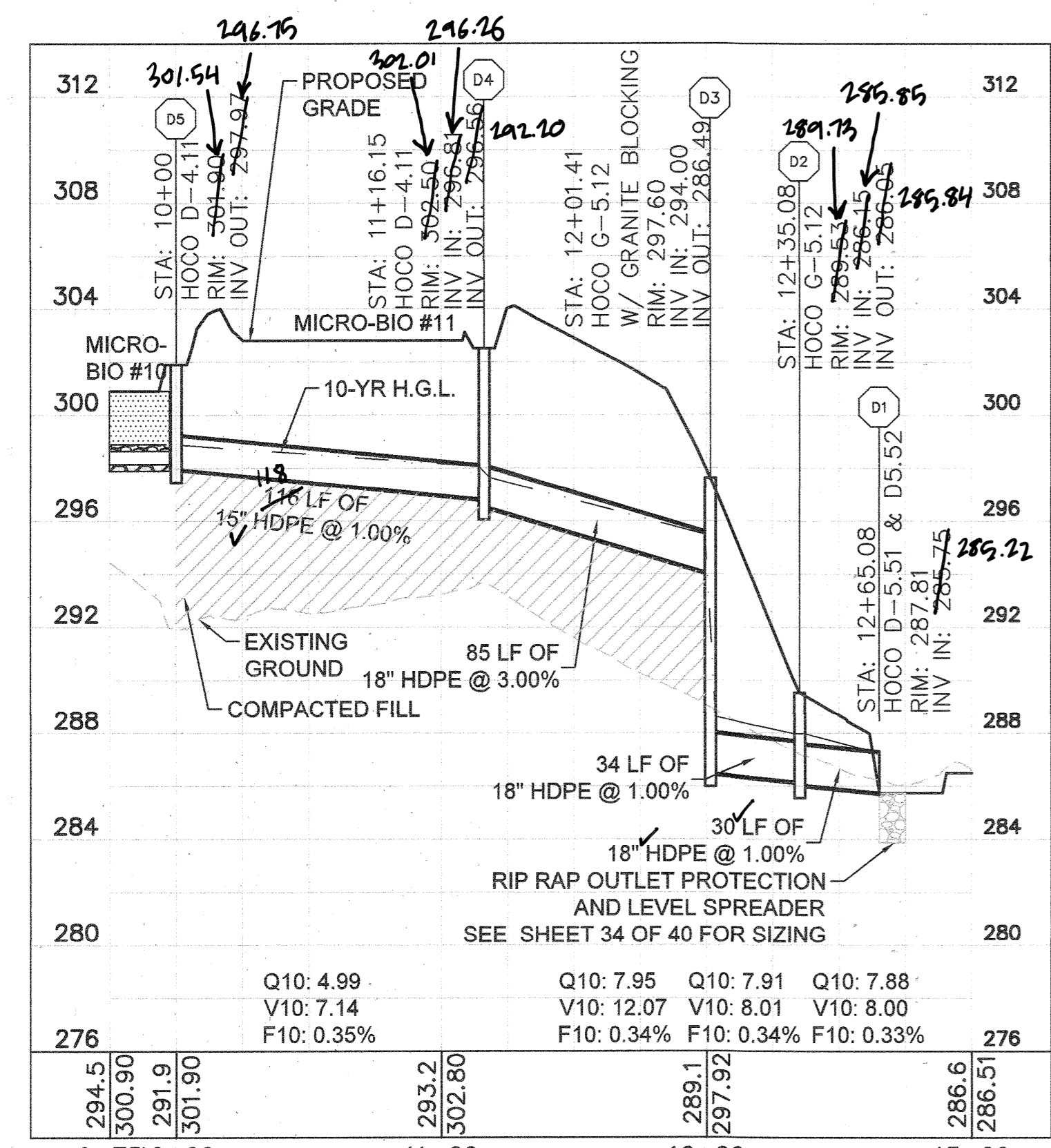
E6 TO E8
SCALE: 1" = 50' H
1" = 5' V



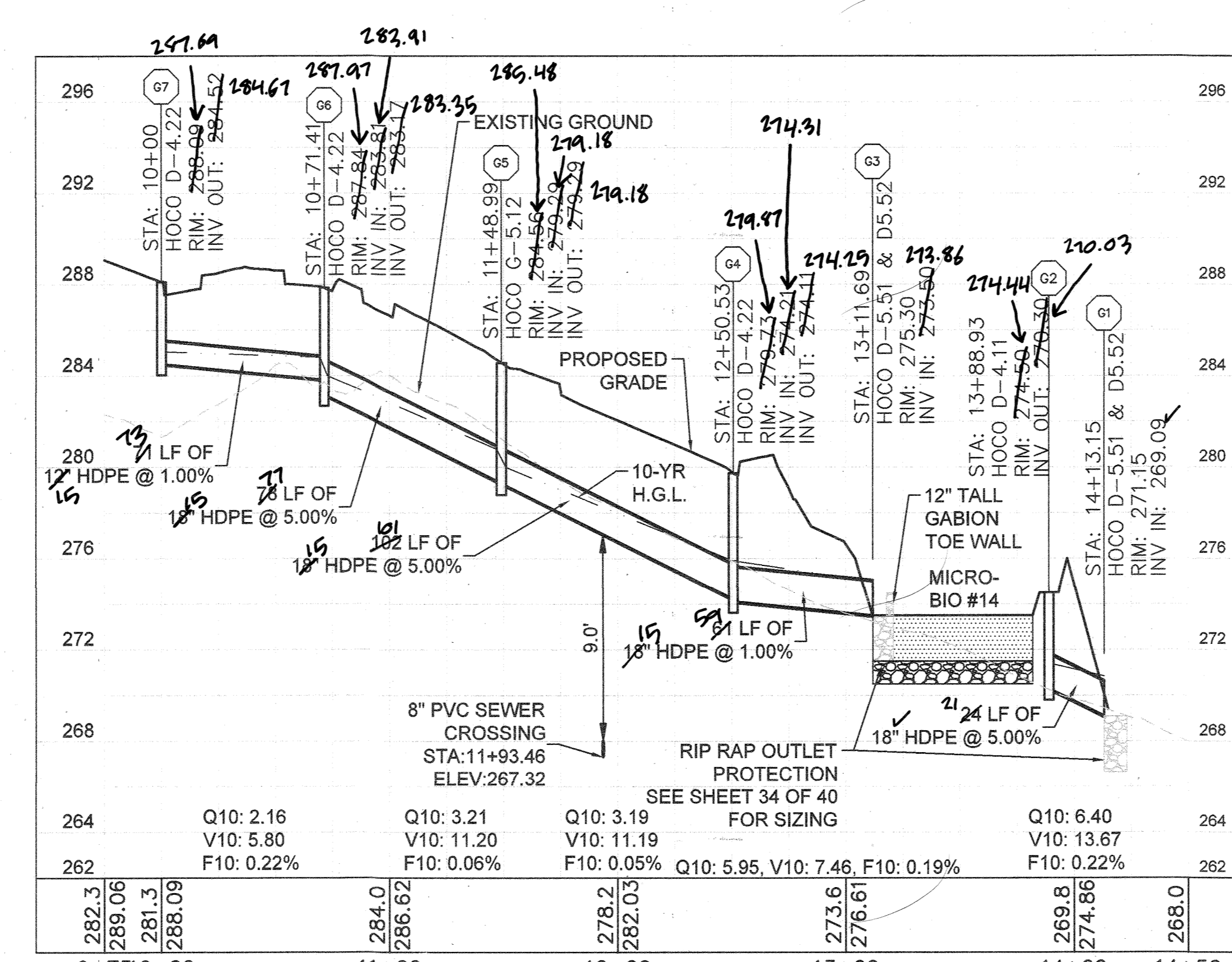
F1 TO F2
SCALE: 1" = 50' H
1" = 5' V



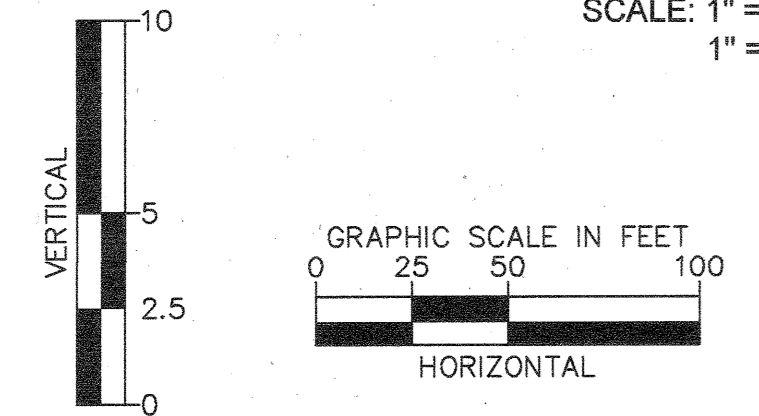
E1 TO E5
SCALE: 1" = 50' H
1" = 5' V



D1 TO D5
SCALE: 1" = 50' H
1" = 5' V



G1 TO G7
SCALE: 1" = 50' H
1" = 5' V



ALL STORM SEWER PIPES AND STRUCTURES PROPOSED WITH THIS PROJECT TO BE PRIVATELY MAINTAINED.



I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE ALSO VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND STORM FACILITY.
STEPHEN JERRACK, No. 35792, 10-19-2022

STORM SEWER STRUCTURE TABLE			
STRUCTURE NAME:	DETAILS:	PIPES IN:	PIPES OUT:
A1	HOCO D-5.51 & D5.52 RIM: 292.98 INV IN: 289.90	FROM A2, 30" HDPE INV IN: 289.90 @ 0.50%	
A2	HOCO G-5.12 RIM: 294.48 INV IN: 290.05 INV OUT: 289.95	FROM A3, 30" HDPE INV IN: 290.05 @ 1.10%	TO A1, 30" HDPE INV OUT: 289.95 @ 0.50%
A3	HOCO D-4.11 RIM: 292.55 INV IN: 289.85 INV OUT: 289.85	FROM A4, 24" HDPE INV IN: 290.05 @ 0.50%	TO A2, 30" HDPE INV OUT: 289.95 @ 1.10%
A4	HOCO G-5.12 RIM: 293.76 INV IN: 293.66 INV OUT: 293.66	FROM A5, 24" HDPE INV IN: 293.76 @ 0.50%	TO A3, 24" HDPE INV OUT: 293.66 @ 0.50%
A5	HOCO D-4.11 RIM: 294.75 INV IN: 294.45 INV OUT: 294.45	FROM A6, 24" HDPE INV IN: 294.45 @ 0.50%	TO A4, 24" HDPE INV OUT: 294.45 @ 0.50%
A6	HOCO G-5.12 RIM: 294.99 INV IN: 294.89 INV OUT: 294.89	FROM A7, 24" HDPE INV IN: 294.99 @ 0.50%	TO A5, 24" HDPE INV OUT: 294.89 @ 0.50%
A7	HOCO D-4.11 RIM: 292.25 INV IN: 292.54 INV OUT: 292.54	FROM A8, 18" HDPE INV IN: 292.54 @ 0.50%	TO A6, 24" HDPE INV OUT: 292.54 @ 0.50%
A8	HOCO D-4.11 RIM: 294.00 INV IN: 293.85 INV OUT: 293.85		TO A7, 18" HDPE INV OUT: 293.85 @ 0.50%
A9	HOCO D-5.51 & D5.52 RIM: 305.08 INV IN: 303.15	FROM A10, 18" HDPE INV IN: 303.15 @ 0.50%	
A10	12" CLEANOUT RIM: 307.88 INV OUT: 303.80		TO A9, 18" HDPE INV OUT: 303.80 @ 0.50%
B1	HOCO D5.51 & D5.52 RIM: 299.65 INV IN: 297.08 INV OUT: 297.14	FROM B2, 24" HDPE INV IN: 297.08 @ 0.50%	
B2	HOCO G-5.12 RIM: 301.09 INV IN: 297.24 INV OUT: 297.14	FROM B3, 24" HDPE INV IN: 297.24 @ 0.50%	TO B1, 24" HDPE INV OUT: 297.14 @ 0.50%
B3	HOCO D-4.11 RIM: 298.35 INV IN: 298.55 INV OUT: 298.45	FROM B4, 24" HDPE INV IN: 298.55 @ 0.50%	TO B2, 24" HDPE INV OUT: 298.45 @ 0.50%
B4	HOCO D-4.11 RIM: 298.75 INV IN: 298.75 INV OUT: 298.75	FROM B5, 18" HDPE INV IN: 298.75 @ 0.50%	TO B3, 24" HDPE INV OUT: 298.75 @ 0.50%
B5	HOCO G-5.12 RIM: 305.55 INV IN: 304.45 INV OUT: 304.45	FROM B6, 18" HDPE INV IN: 304.45 @ 0.50%	TO B4, 18" HDPE INV OUT: 304.45 @ 0.50%
B6	HOCO D-4.11 RIM: 298.75 INV IN: 298.75 INV OUT: 298.75	FROM B7, 18" HDPE INV IN: 298.75 @ 0.50%	TO B5, 18" HDPE INV OUT: 298.75 @ 0.50%
B7	HOCO D-5.51 & D5.52 RIM: 304.30 INV IN: 302.75	FROM B8, 12" HDPE INV IN: 302.75 @ 2.00%	
B8	12" CLEANOUT RIM: 308.65 INV OUT: 304.18		TO B7, 12" HDPE INV OUT: 304.18 @ 2.00%
C1	HOCO D-5.51 & D5.52 RIM: 293.55 INV IN: 291.44	FROM C2, 18" HDPE INV IN: 291.44 @ 1.00%	
C2	HOCO G-5.12 RIM: 294.85 INV IN: 294.85 INV OUT: 294.85	FROM C3, 18" HDPE INV IN: 294.85 @ 1.00%	TO C1, 18" HDPE INV OUT: 294.85 @ 1.00%
C3	HOCO G-5.12 RIM: 294.75 INV IN: 294.75 INV OUT: 294.75	FROM C4, 18" HDPE INV IN: 294.75 @ 5.00%	TO C2, 18" HDPE INV OUT: 294.75 @ 1.00%
C4	HOCO D-4.11 RIM: 294.75 INV IN: 294.75 INV OUT: 294.75	FROM C5, 18" HDPE INV IN: 294.75 @ 5.00%	TO C3, 18" HDPE INV OUT: 294.75 @ 5.00%
C5	HOCO D-5.51 & D5.52 RIM: 305.25 INV IN: 304.91	FROM C6, 18" HDPE INV IN: 304.91 @ 0.50%	
C6	HOCO G-5.12 RIM: 304.91 INV IN: 304.91 INV OUT: 304.81	FROM C7, 12" HDPE INV IN: 304.91 @ 0.50%	TO C5, 18" HDPE INV OUT: 304.81 @ 0.50%
C7	CONNECT TO PROPOSED TRENCH DRAIN RIM: 306.07 INV OUT: 304.97		TO C6, 12" HDPE INV OUT: 304.97 @ 0.50%

STORM SEWER STRUCTURE TABLE			
STRUCTURE NAME:	DETAILS:	PIPES IN:	PIPES OUT:
D1	HOCO D-5.51 & D5.52 RIM: 287.81 INV IN: 286.75 INV OUT: 286.22	FROM D2, 18" HDPE INV IN: 286.75 @ 1.00%	
D2	HOCO G-5.12 RIM: 289.75 INV IN: 288.75 INV OUT: 288.34	FROM D3, 18" HDPE INV IN: 288.75 @ 1.00%	TO D1, 18" HDPE INV OUT: 288.34 @ 1.00%
D3	HOCO G-5.12 RIM: 289.75 INV IN: 289.00 INV OUT: 288.49	FROM D4, 18" HDPE INV IN: 289.00 @ 3.00%	TO D2, 18" HDPE INV OUT: 288.49 @ 1.00%
D4	HOCO D-4.11 RIM: 288.01 INV IN: 287.26 INV OUT: 286.20	FROM D5, 18" HDPE INV IN: 287.26 @ 1.00%	TO D3, 18" HDPE INV OUT: 286.20 @ 3.00%
D5	HOCO D-4.11 RIM: 288.01 INV IN: 287.26 INV OUT: 286.20		TO D4, 18" HDPE INV OUT: 286.20 @ 1.00%
D6	HOCO D-5.51 & D5.52 RIM: 302.57 INV IN: 300.90 INV OUT: 300.90	FROM D7, 12" HDPE INV IN: 300.90 @ 2.00%	
D7	12" CLEANOUT RIM: 309.72 INV OUT: 303.86		TO D6, 12" HDPE INV OUT: 303.86 @ 2.00%
E1	HOCO D-5.51 & D5.52 RIM: 292.96 INV IN: 289.80	FROM E2, 24" HDPE INV IN: 289.80 @ 0.50%	
E2	HOCO G-5.12 RIM: 293.76 INV IN: 293.76 INV OUT: 293.76	FROM E3, 18" HDPE INV IN: 293.76 @ 2.53%	TO E1, 24" HDPE INV OUT: 293.76 @ 0.50%
E3	HOCO D-4.11 RIM: 294.00 INV IN: 293.85 INV OUT: 293.85	FROM E4, 18" HDPE INV IN: 293.85 @ 1.00%	TO E2, 18" HDPE INV OUT: 293.85 @ 2.53%
E4	HOCO D-4.11 RIM: 294.00 INV IN: 293.85 INV OUT: 293.85	FROM E5, 18" HDPE INV IN: 293.85 @ 1.00%	TO E3, 18" HDPE INV OUT: 293.85 @ 1.00%
E5	HOCO D-4.11 RIM: 294.00 INV IN: 293.85 INV OUT: 293.85		TO E4, 18" HDPE INV OUT: 293.85 @ 1.00%
E6	HOCO D-5.51 & D5.52 RIM: 302.07 INV IN: 300.17	FROM E7, 18" HDPE INV IN: 300.17 @ 0.50%	
E7	HOCO G-5.12 RIM: 304.01 INV IN: 300.49 INV OUT: 300.49	FROM E8, 18" HDPE INV IN: 300.49 @ 0.50%	TO E6, 18" HDPE INV OUT: 300.49 @ 0.50%
E8	12" CLEANOUT RIM: 309.09 INV OUT: 301.28		TO E7, 18" HDPE INV OUT: 301.28 @ 0.50%
F1	HOCO D-5.51 & D5.52 RIM: 299.87 INV IN: 296.52 INV OUT: 296.96	FROM F2, 12" HDPE INV IN: 296.52 @ 0.50%	
F2	HOCO D-4.11 RIM: 292.50 INV IN: 292.35 INV OUT: 292.35		TO F1, 12" HDPE INV OUT: 292.35 @ 0.50%
G1	HOCO D-5.51 & D5.52 RIM: 271.15 INV IN: 269.09	FROM G2, 18" HDPE INV IN: 269.09 @ 5.00%	
G2	HOCO D-4.11 RIM: 274.80 INV IN: 270.03	FROM G3, 18" HDPE INV IN: 270.03 @ 1.00%	TO G1, 18" HDPE INV OUT: 270.03 @ 5.00%
G3	HOCO D-5.51 & D5.52 RIM: 273.30 INV IN: 273.30	FROM G4, 18" HDPE INV IN: 273.30 @ 1.00%	
G4	HOCO D-4.22 RIM: 274.81 INV IN: 274.31 INV OUT: 274.25	FROM G5, 18" HDPE INV IN: 274.31 @ 5.00%	TO G3, 18" HDPE INV OUT: 274.25 @ 1.00%
G5	HOCO G-5.12 RIM: 274.81 INV IN: 274.31 INV OUT: 274.25	FROM G6, 18" HDPE INV IN: 274.31 @ 5.00%	TO G4, 18" HDPE INV OUT: 274.25 @ 5.00%
G6	HOCO D-4.22 RIM: 274.81 INV IN: 274.31 INV OUT: 274.25	FROM G7, 18" HDPE INV IN: 274.31 @ 1.00%	TO G5, 18" HDPE INV OUT: 274.25 @ 5.00%
G7	HOCO D-4.22 RIM: 274.81 INV IN: 274.31 INV OUT: 274.25		TO G6, 18" HDPE INV OUT: 274.25 @ 1.00%

PIPE SCHEDULE		
PIPE DIAMETER	PIPE MATERIAL	TOTAL LENGTH
6"	HDPE	3,094 LF
8"	HDPE	1,258 LF
12"	HDPE	337 LF
15"	HDPE	425 LF
18"	HDPE	1,375 LF
24"	HDPE	911 LF
30"	HDPE	186 LF

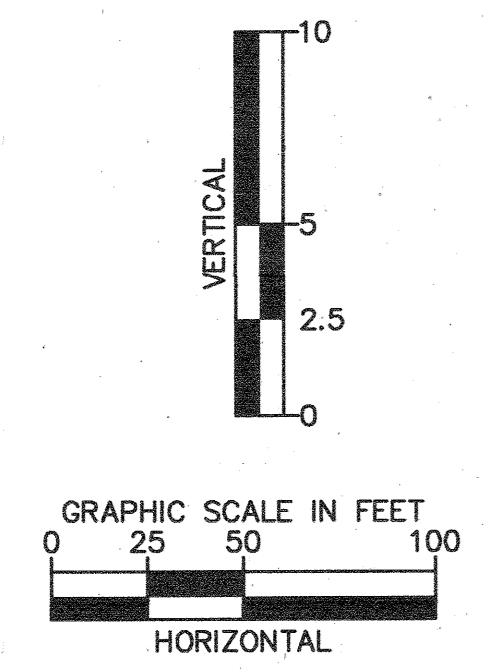
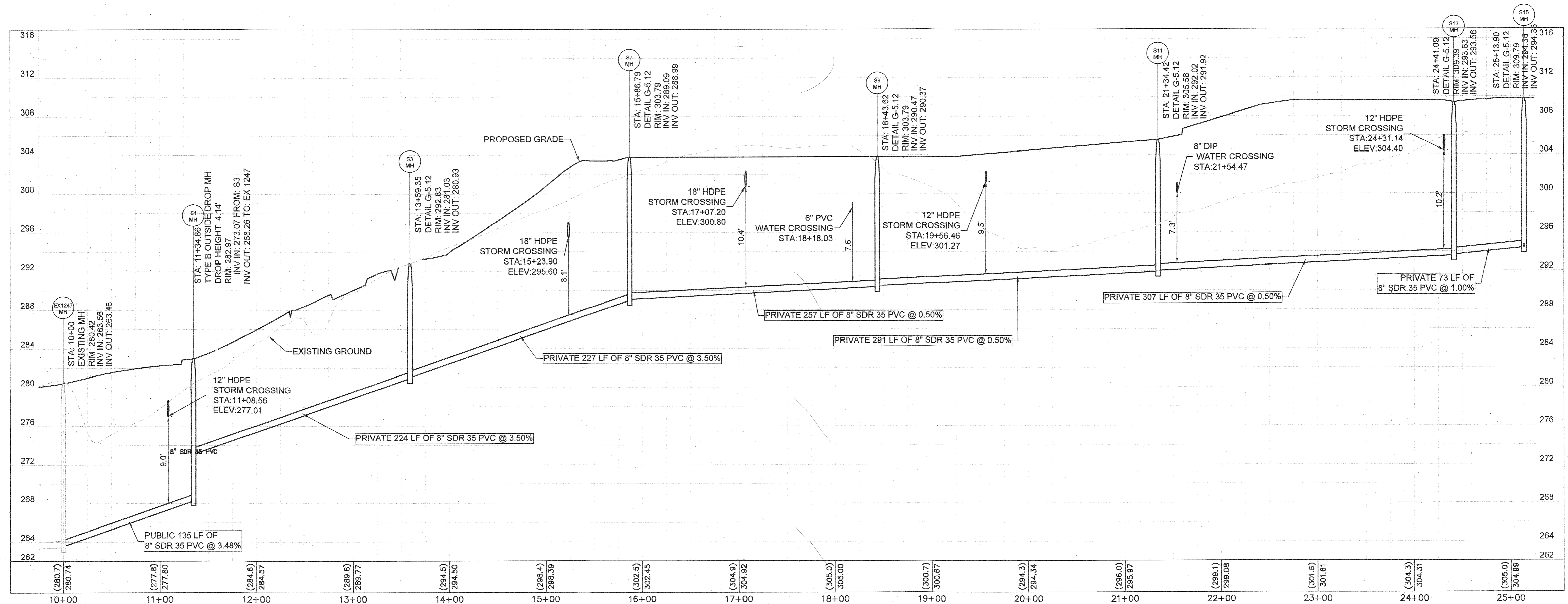
APPROVED: DEPARTMENT OF PLANNING & ZONING
 Chief, Development Engineering Division: 4-12-21
 Chief, Division of Land Development: 4/14/21
 Director: 4-29-21

No.	REVISIONS	DATE	BY

Kimley»Horn
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 PHONE: 443-743-3470
 WWW.KIMLEY-HORN.COM

EMERSON PROJECT
 SITE DEVELOPMENT PLAN
 (SDP-21-017)
 CONTRACT NO. 24-5162-D
 EMERSON SECTION 3, AREA 7, PARCEL A-1
 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
 MARYLAND

STORM SEWER PROFILES
 SHEET NUMBER: 29 OF 40
 SDP-21-017
 PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO.: 31373
 EXPIRATION DATE: 01/21/2023



STRUCTURE TABLE			
STRUCTURE NAME:	DETAILS:	PIPES IN:	PIPES OUT:
EX 1247	MH RIM: 280.42 INV IN: 263.56 INV OUT: 263.46	FROM S1, 8" PVC INV IN: 263.56 @ 3.48%	TO , 8" PVC INV OUT: 263.46 @ 0.50%
S1	TYPE B OUTSIDE DROP MH RIM: 282.97 INV IN: 273.07 INV OUT: 268.26	FROM S3, 8" PVC INV IN: 273.07 @ 3.50%	TO EX 1247, 8" PVC INV OUT: 268.26 @ 3.48%
S3	DETAIL G-5.12 RIM: 292.83 INV IN: 281.03 INV OUT: 280.93	FROM S7, 8" PVC INV IN: 281.03 @ 3.50%	TO S1, 8" PVC INV OUT: 280.93 @ 3.50%
S7	DETAIL G-5.12 RIM: 303.79 INV IN: 289.09 INV OUT: 288.99	FROM S9, 8" PVC INV IN: 289.09 @ 0.50%	TO S3, 8" PVC INV OUT: 288.99 @ 3.50%
S9	DETAIL G-5.12 RIM: 303.79 INV IN: 290.47 INV OUT: 290.37	FROM S11, 8" PVC INV IN: 290.47 @ 0.50%	TO S7, 8" PVC INV OUT: 290.37 @ 0.50%
S11	DETAIL G-5.12 RIM: 305.58 INV IN: 292.02 INV OUT: 291.92	FROM S13, 8" PVC INV IN: 292.02 @ 0.50%	TO S9, 8" PVC INV OUT: 291.92 @ 0.50%
S13	DETAIL G-5.12 RIM: 309.39 INV IN: 293.63 INV OUT: 293.56	FROM S15, 8" PVC INV IN: 293.63 @ 1.00%	TO S11, 8" PVC INV OUT: 293.56 @ 0.50%
S15	DETAIL G-5.12 RIM: 309.79 INV IN: 294.36 INV OUT: 294.36	FROM , 4" PVC INV IN: 294.36 @ 0.50%	TO S13, 8" PVC INV OUT: 294.36 @ 1.00%

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 STEPHEN JERRICK, No. 35792, 10-19-2012

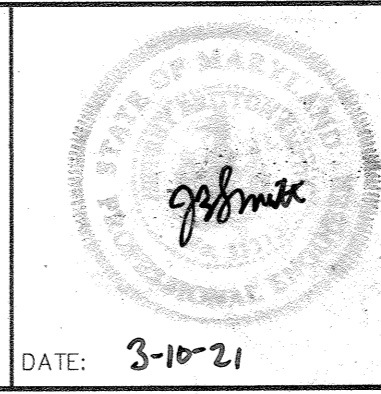
APPROVED: DEPARTMENT OF PLANNING & ZONING
 Chief, Development Engineering Division: *[Signature]* 4.12.21
 Chief, Division of Land Development: *[Signature]* 4/12/21
 Director: *[Signature]* 4/29/21

No.	REVISIONS	DATE	BY

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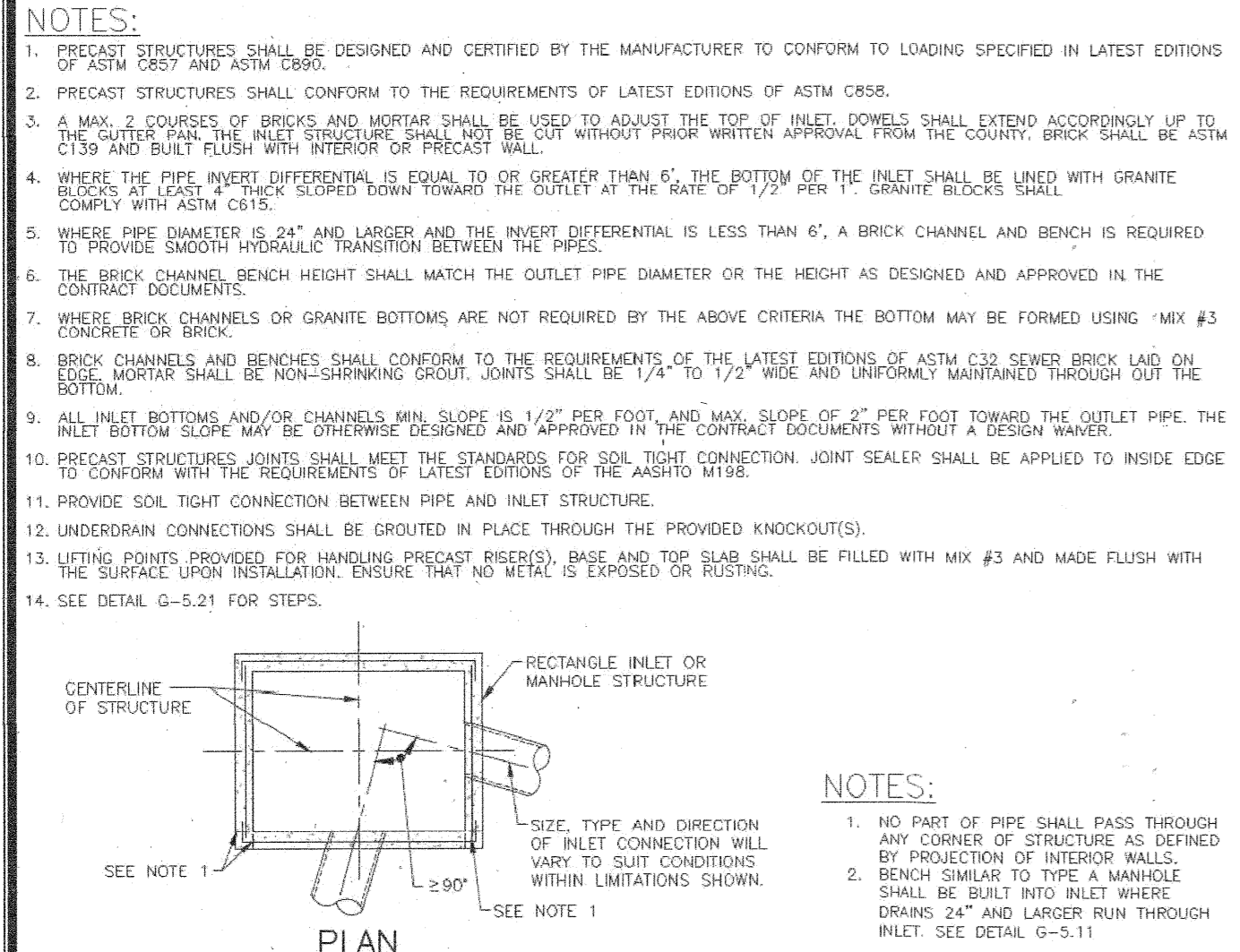
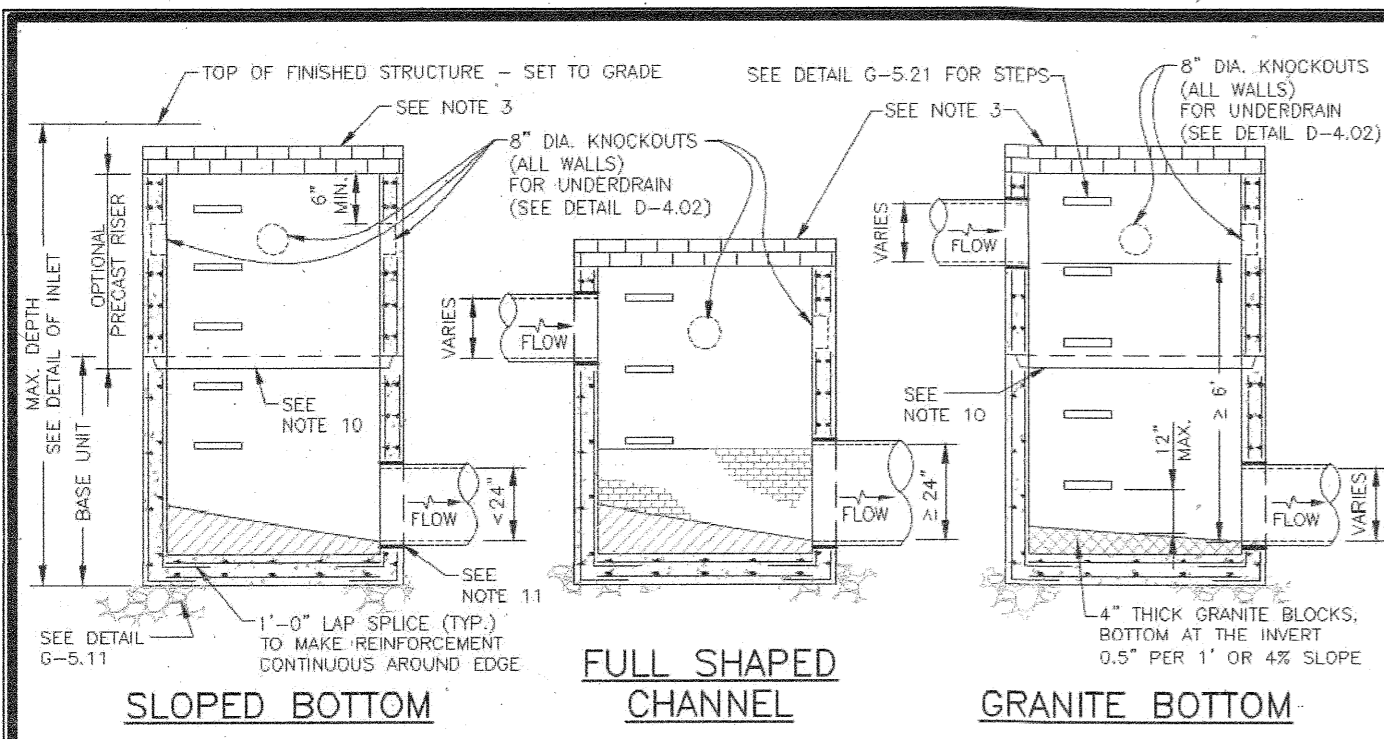
KHA PROJECT 110718001
 DATE 03/10/2021
 SCALE AS SHOWN
 DESIGNED BY CJC
 DRAWN BY CJC
 CHECKED BY KTB

EMERSON PROJECT
 SITE DEVELOPMENT PLAN
 (SDP-21-017)
 CONTRACT NO. 24-5162-D
 EMERSON SECTION 3, AREA 7, PARCEL A-1
 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
 MARYLAND

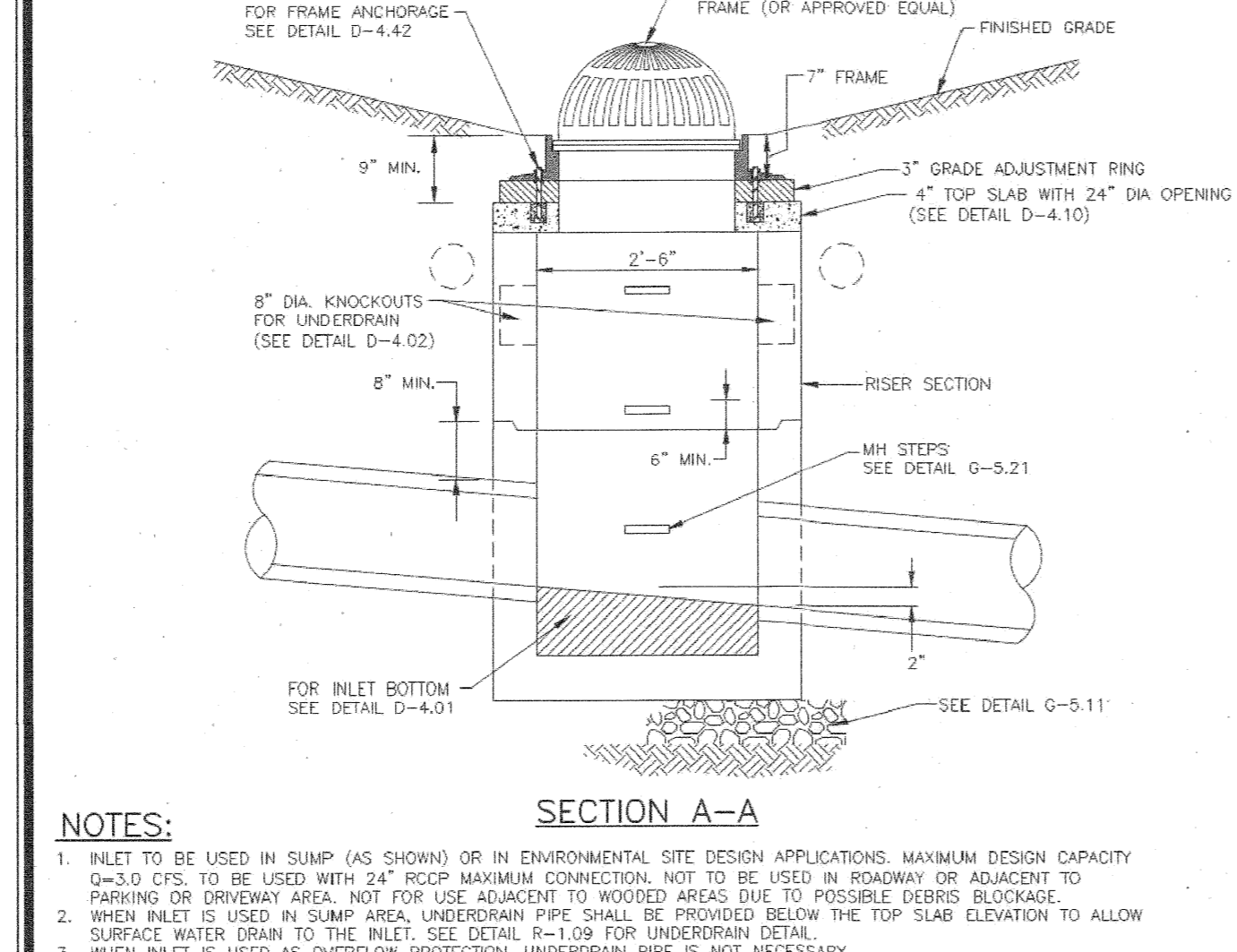
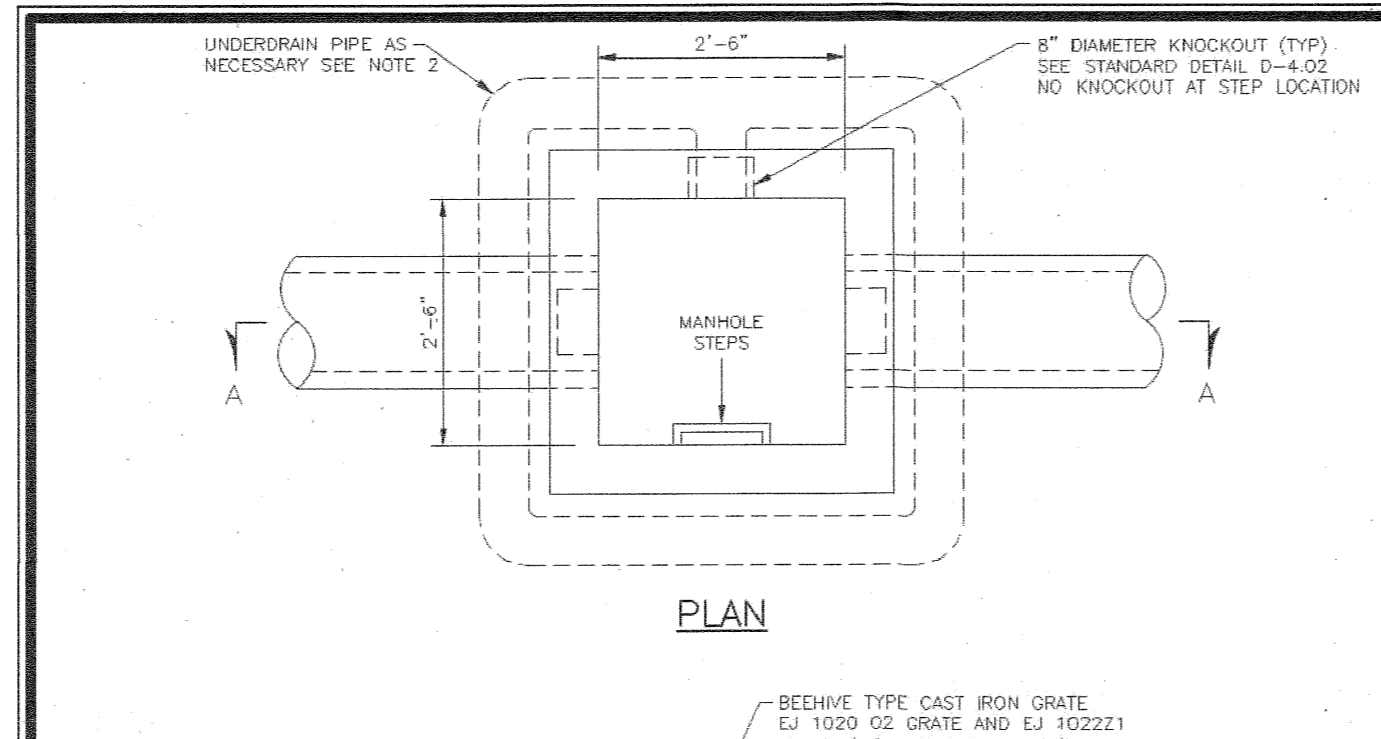


PRIVATE SEWER PROFILES
 PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 31373
 EXPIRATION DATE 01/21/2023

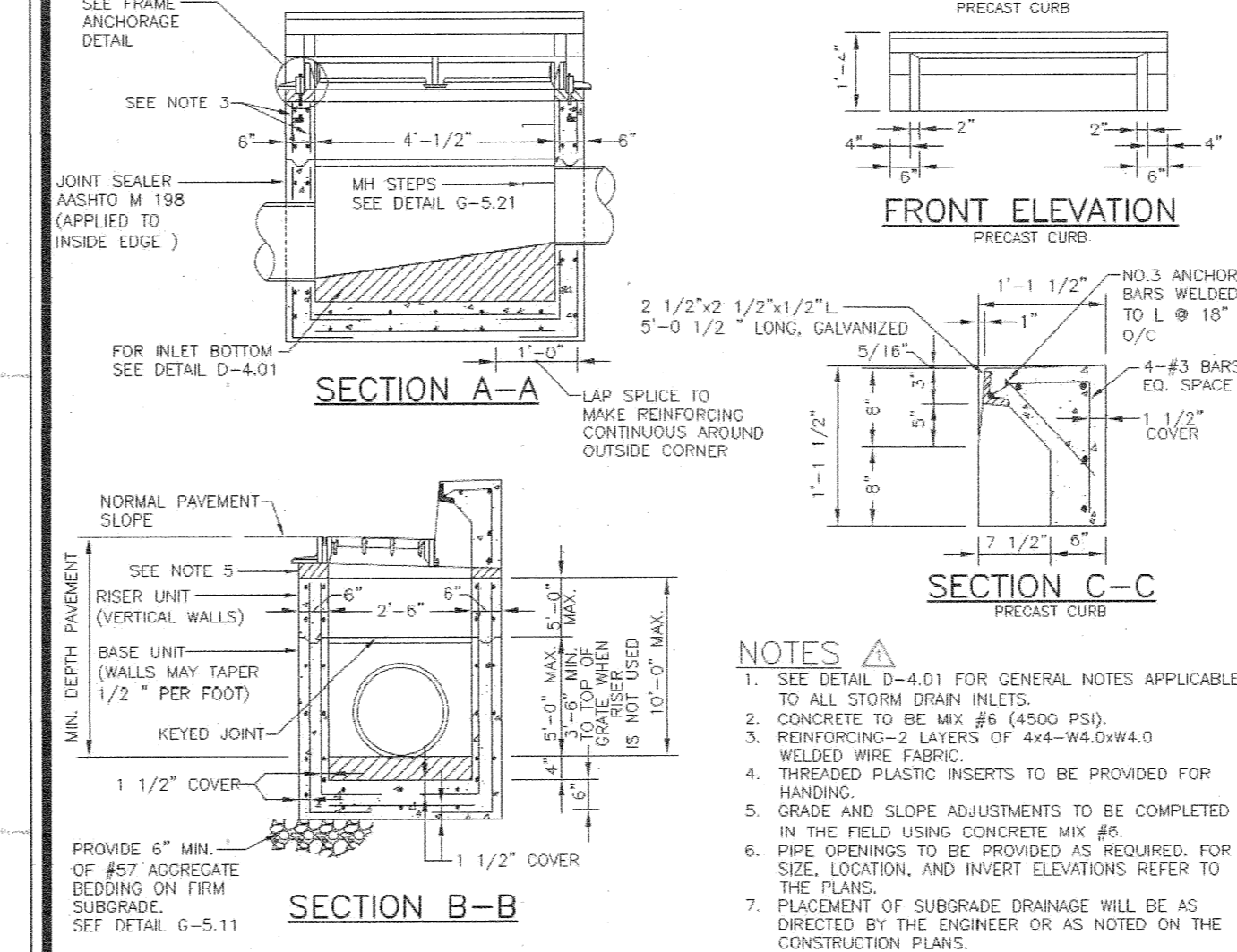
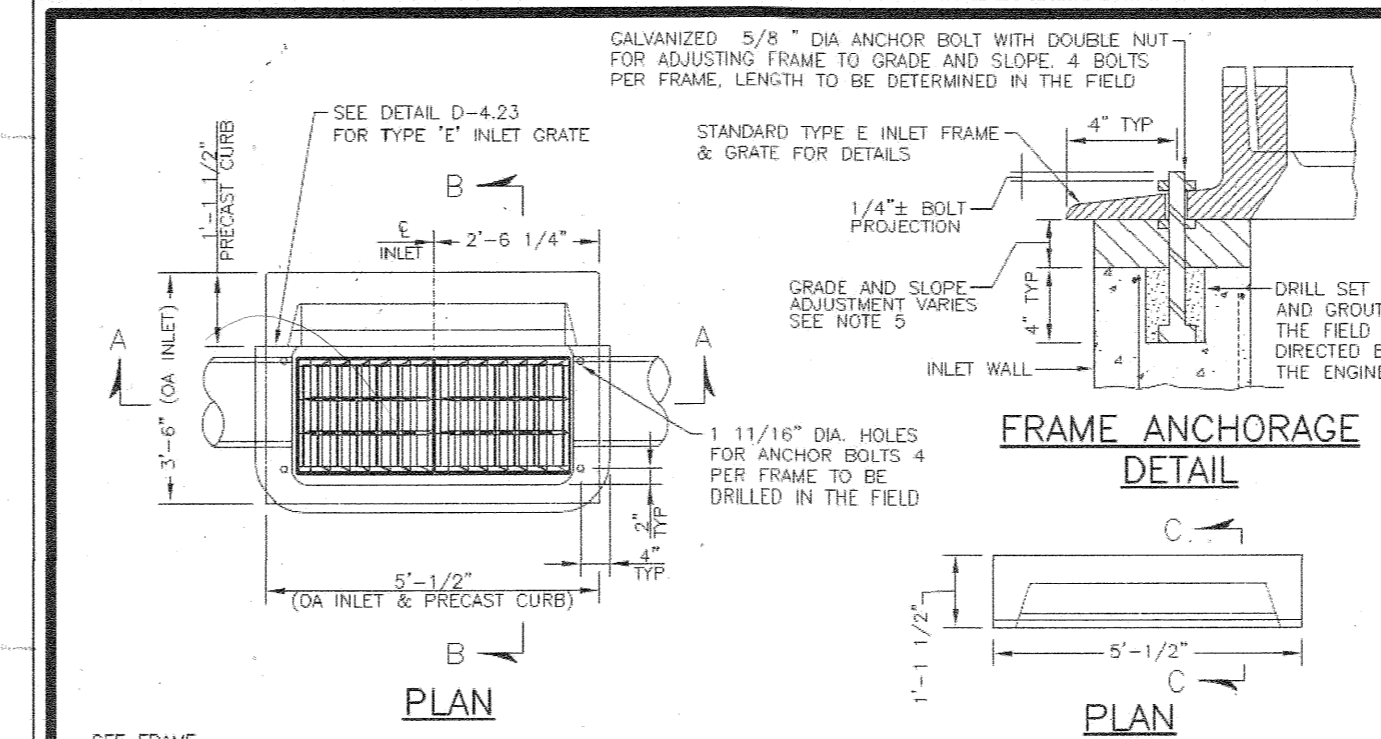
SHEET NUMBER
30 OF 40
 SDP-21-017



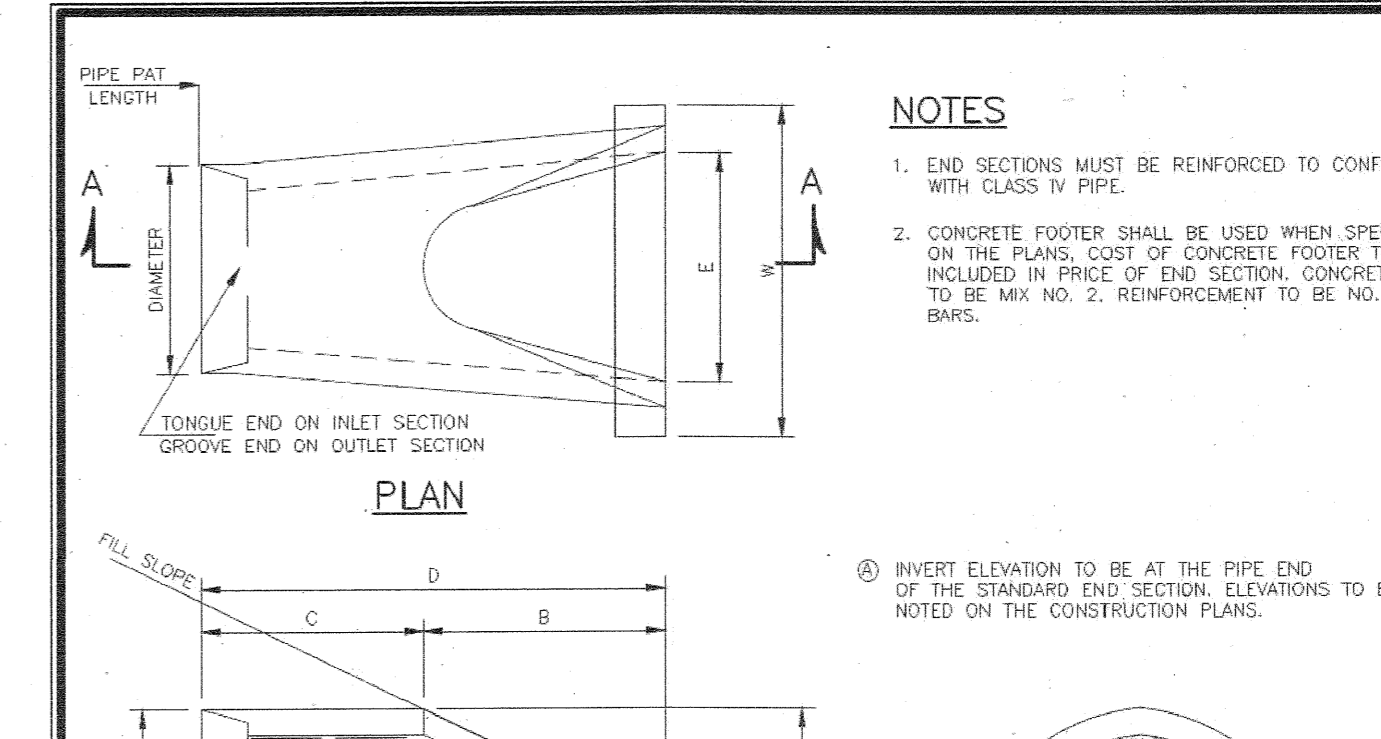
Revised 5/30/2017	Howard County, Maryland Department of Public Works	STORM DRAIN INLET General Requirement	Detail D-4.01
Approved 5/30/2017	<i>Promae & Shuttle</i>		
Approved 5/30/2017	Chief, Bureau of Engineering		



Revised 5/30/2017	Howard County, Maryland Department of Public Works	TYPE D INLET With Beehive Grate	Detail D-4.11
Approved 5/30/2017	<i>Promae & Shuttle</i>		
Approved 5/30/2017	Chief, Bureau of Engineering		

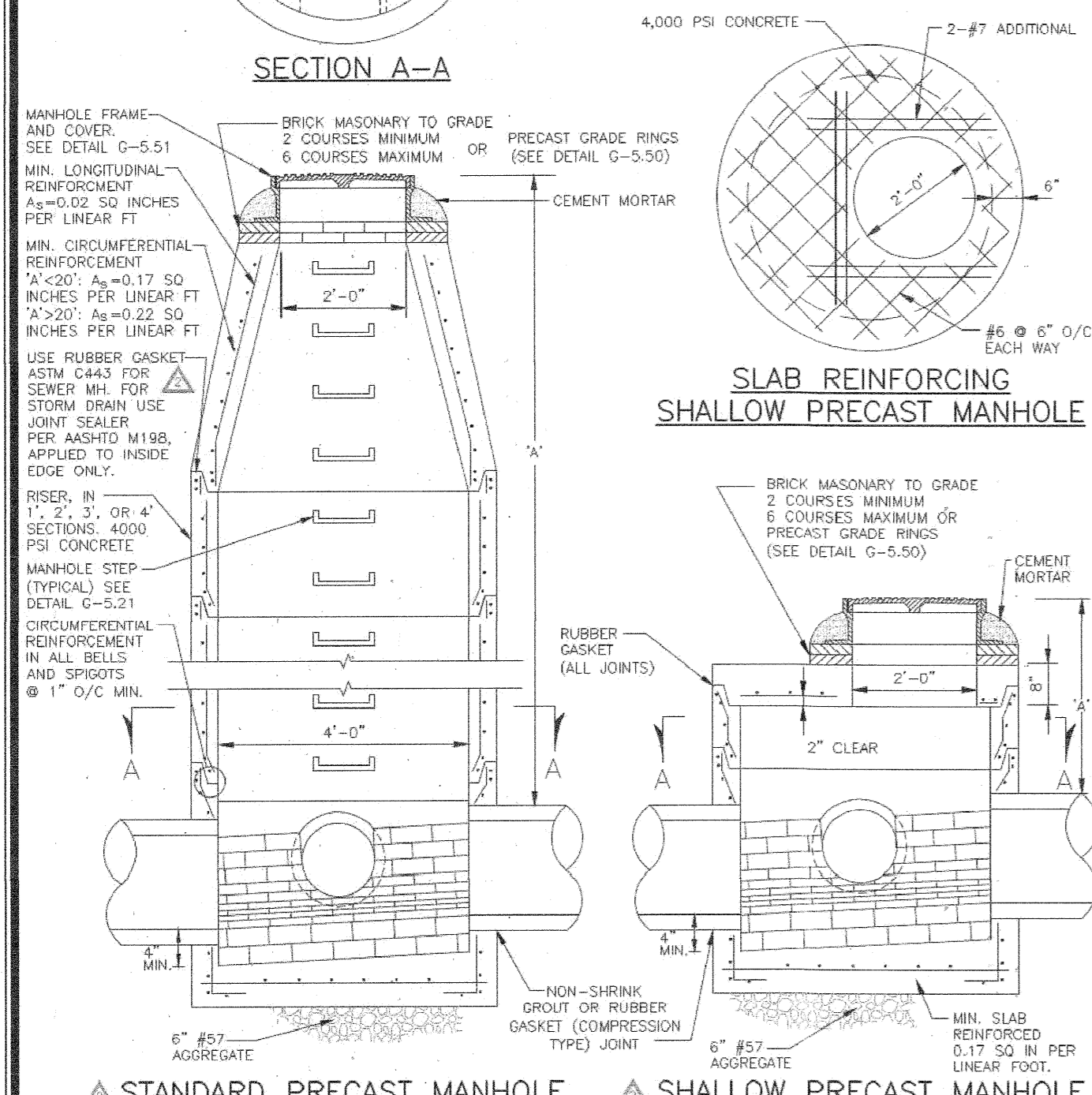
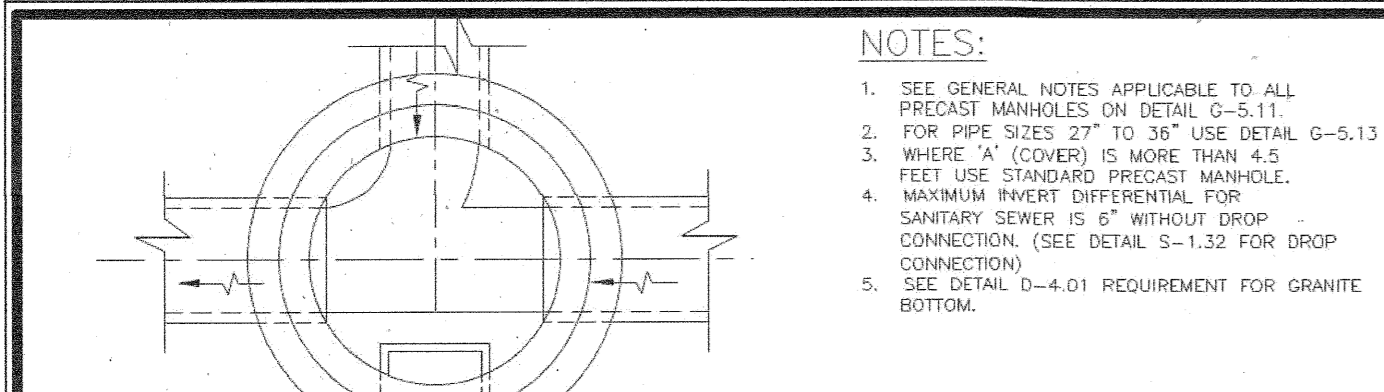


Revised 5/30/2017	Howard County, Maryland Department of Public Works	TYPE 'E' COMBINATION INLET	Detail D-4.22
Approved 5/30/2017	<i>Promae & Shuttle</i>		
Approved 5/30/2017	Chief, Bureau of Engineering		

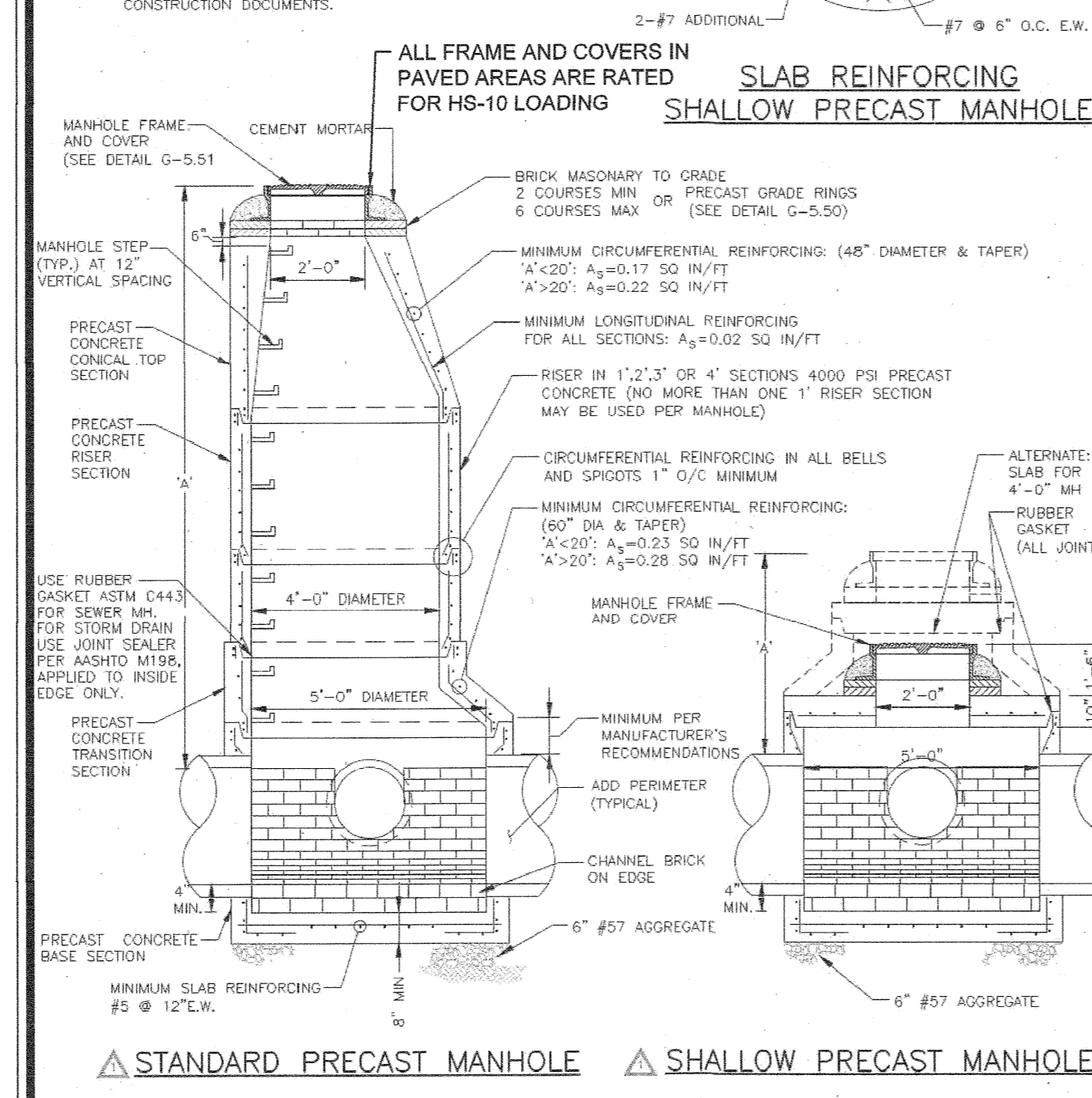
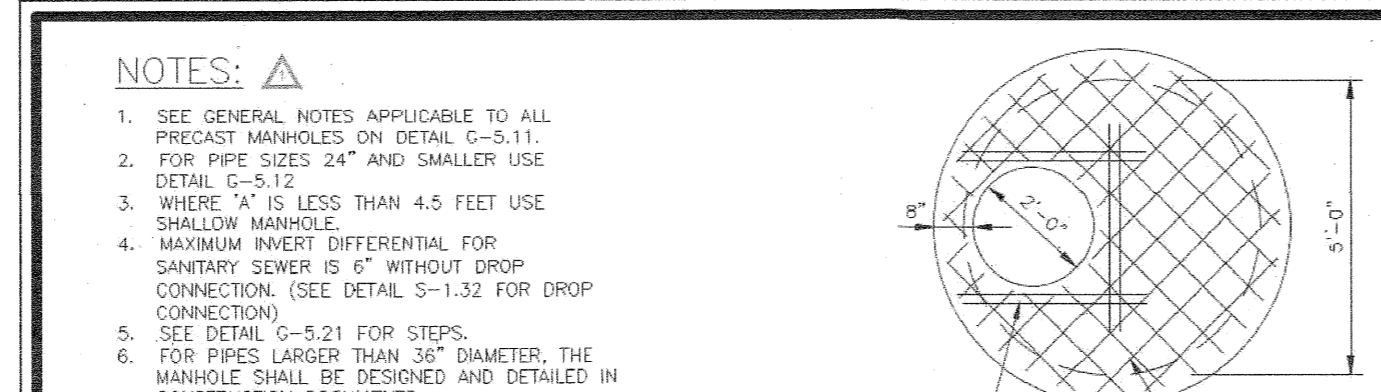


DIMENSIONS FOR ESTIMATING PURPOSES ONLY		QUANTITIES									
CONCRETE END SECTION		CONCRETE FOOTER									
DIAMETER	SLOPE	A	B	C	D	E	W	X	Y	CONC	STEEL
12"	3:1	4"	2'-0"	4'-0"	6'-0"	2'-0"	3'-0"	12"	9"	0.08	24.00
15"	3:1	6"	2'-4"	3'-10"	6'-2"	2'-6"	3'-6"	12"	9"	0.10	28.50
18"	3:1	10"	2'-2"	4'-0"	6'-2"	3'-0"	4'-0"	12"	9"	0.11	33.00
21"	3:1	9"	3'-0"	3'-10"	6'-10"	3'-6"	4'-6"	12"	9"	0.13	37.50
24"	3:1	11"	3'-7"	2'-8"	6'-3"	4'-0"	5'-0"	15"	9"	0.17	42.00
27"	3:1	10 1/2"	4'-10"	2'-0"	6'-10"	4'-6"	5'-6"	15"	9"	0.18	46.50
30"	3:1	1'-1"	4'-5"	1'-10"	6'-3"	5'-0"	6'-0"	15"	9"	0.21	51.00
33"	3:1	1'-2"	4'-7"	2'-2"	6'-9"	5'-6"	6'-6"	15"	9"	0.23	55.50
36"	3:1	1'-3 1/2"	5'-3"	3'-1"	6'-10"	6'-0"	7'-3"	15"	9"	0.25	62.25
42"	3:1	1'-9 1/2"	5'-5"	2'-10"	6'-3"	6'-6"	7'-9"	15"	9"	0.27	68.75
48"	3:1	2'-1"	6'-0"	2'-2"	6'-2"	7'-0"	8'-0"	18"	12"	0.47	73.50
54"	2:4:1	2'-5"	5'-2"	2'-10"	6'-0"	7'-6"	9'-0"	18"	12"	0.50	78.00
60"	3:1	2'-7"	4'-11 3/4"	0'-0"	6'-0"	8'-0"	9'-6"	18"	12"	0.53	82.50
66"	3:1	2'-4"	6'-6"	1'-9"	6'-3"	8'-6"	10'-0"	18"	12"	0.56	87.00
72"	3:1	2'-10"	6'-6"	1'-9"	6'-3"	9'-0"	10'-0"	18"	12"	0.60	93.75

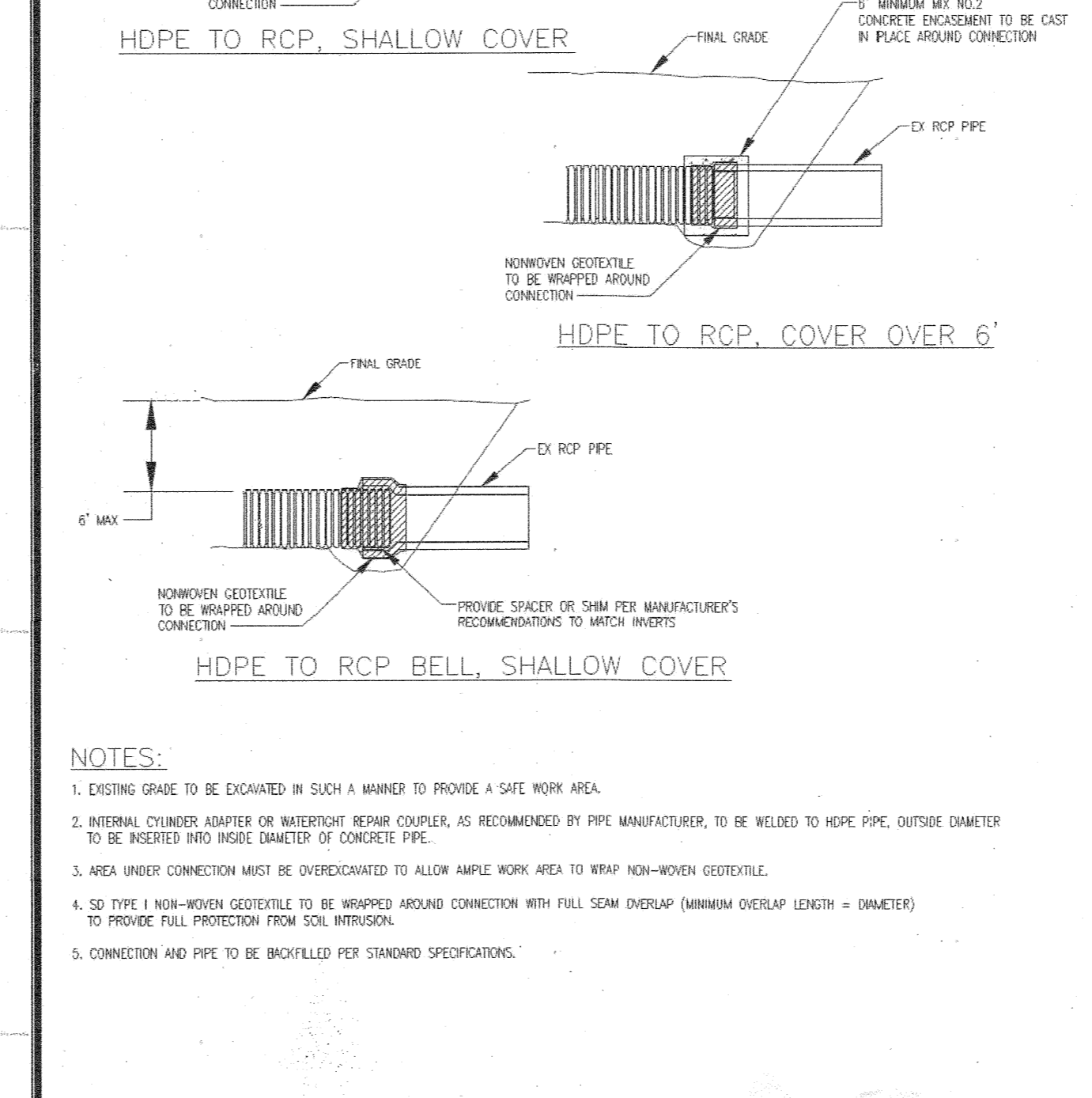
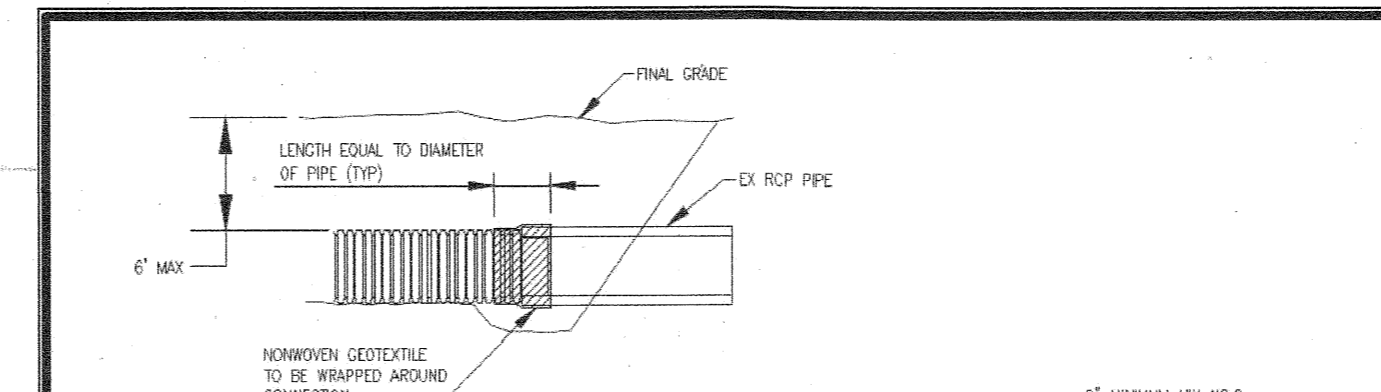
Revised 5/30/2017	Howard County, Maryland Department of Public Works	Concrete End Section Circular Concrete Pipe	Detail D-5.51
Approved 5/30/2017	<i>Promae & Shuttle</i>		
Approved 5/30/2017	Chief, Bureau of Engineering		



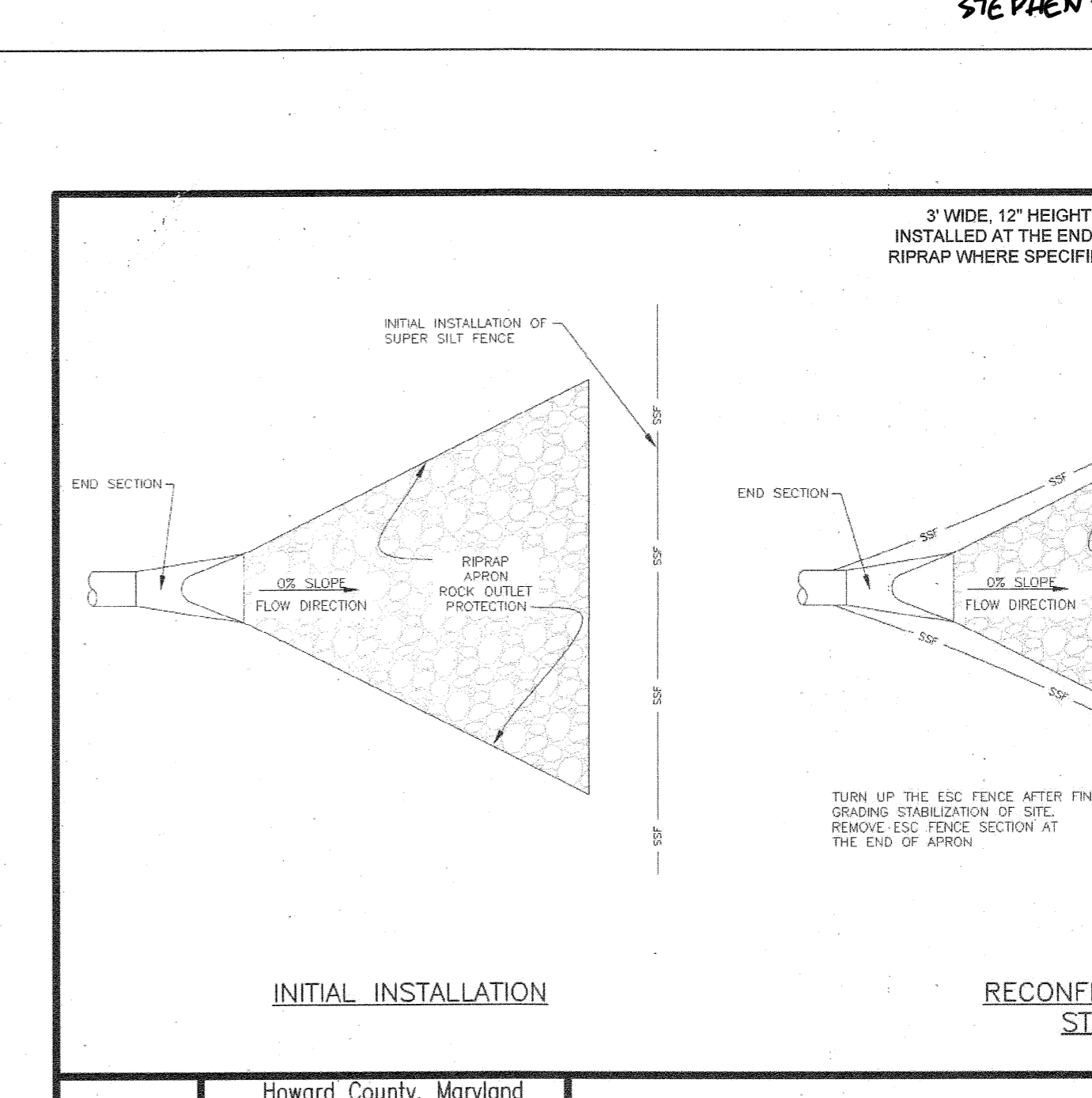
Revised 5/1/2014	Howard County, Maryland Department of Public Works	PRECAST MANHOLE Standard and Shallow 4'-0" for 24" Pipe and smaller	Detail G-5.12
Approved 5/7/2007	<i>Promae & Shuttle</i>		
Approved 5/7/2007	Chief, Bureau of Engineering		



Revised 5/30/2017	Howard County, Maryland Department of Public Works	PRECAST MANHOLE Standard and Shallow 5'-0" for 27" to 36" Pipe	Detail G-5.13
Approved 5/7/2007	<i>Promae & Shuttle</i>		
Approved 5/7/2007	Chief, Bureau of Engineering		



Revised 5/30/2017	Howard County, Maryland Department of Public Works	HDPE TO RCP Transition Connection	Detail D-5.52
Approved 5/7/2007	<i>Promae & Shuttle</i>		
Approved 5/7/2007	Chief, Bureau of Engineering		



Revised 5/30/2017	Howard County, Maryland Department of Public Works	SEDIMENT CONTROL FENCE RECONFIGURATION After Stabilization	Detail D-5.53
Approved 5/30/2017	<i>Promae & Shuttle</i>		
Approved 5/30/2017	Chief, Bureau of Engineering		

APPROVED: DEPARTMENT OF PLANNING & ZONING
Chad Clark
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 4-12-21
 CHIEF, DIVISION OF LAND DEVELOPMENT
Ally Conner
 DATE: 4-29-21
 DIRECTOR

Kimley»Horn

110718001
 03/10/2021
 CJC
 CJC
 KTB
 HOWARD COUNTY

EMERSON PROJECT
 SITE DEVELOPMENT PLAN
 (SDP-21-017)
 CONTRACT NO. 24-5162-D
 EMERSON SECTION 3, AREA 7, PARCEL A-1
 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
 MARYLAND
 DATE: 3-10-21

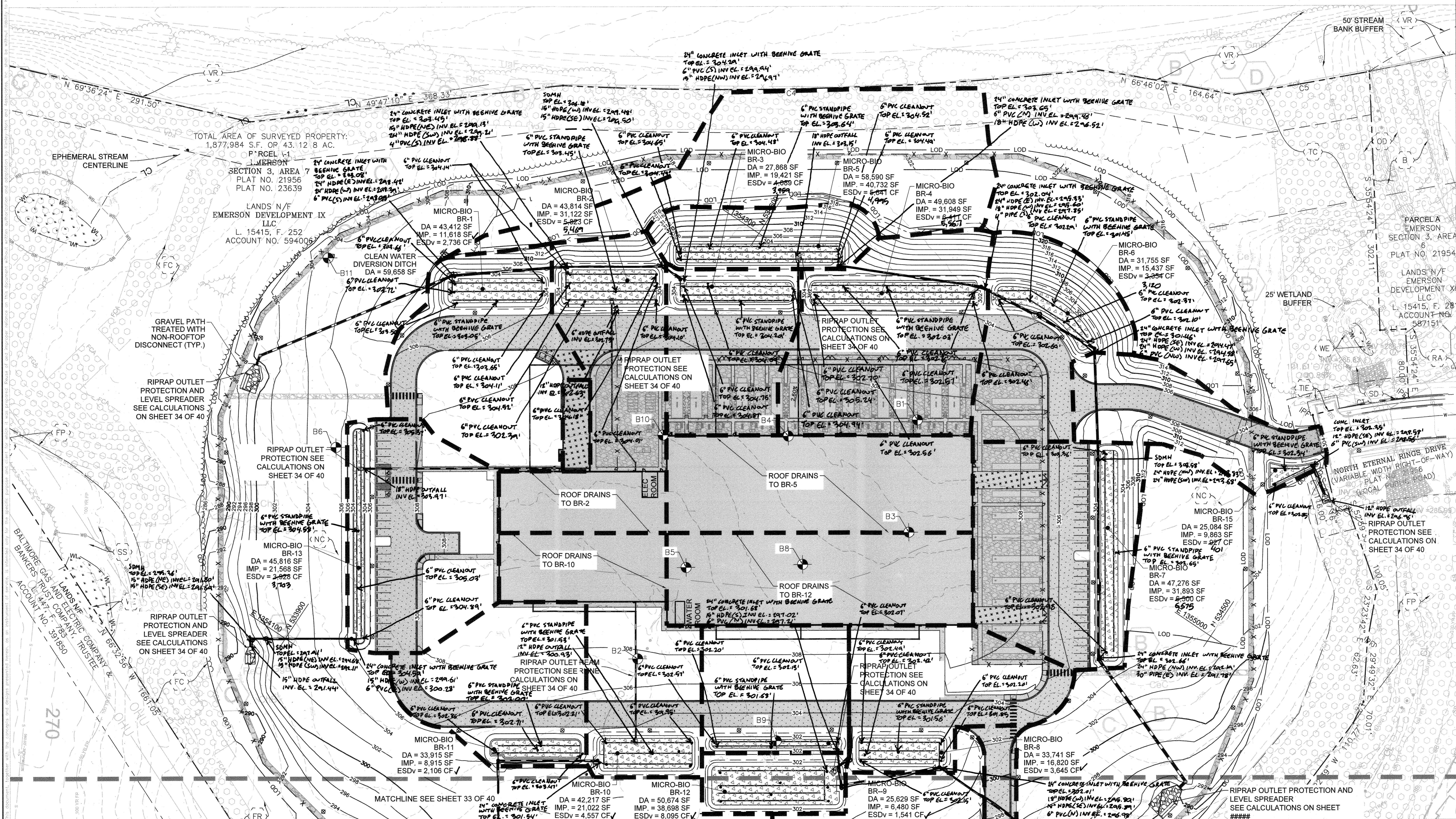
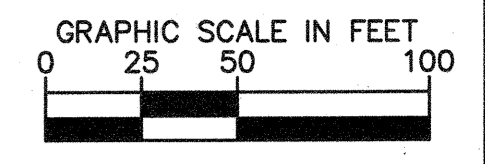
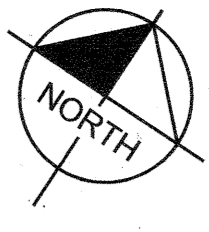
STORM SEWER DETAILS
 PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 31373
 EXPIRATION DATE 01/21/2023
 31 OF 40
 SDP-21-017



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

STEPHEN TERRICK, No. 35792, 10-19-2022

CALL 48 HOURS BEFORE YOU DIG
IT'S THE LAW!
DIAL 811



APPROVED: DEPARTMENT OF PLANNING & ZONING

Chief, Development Engineering Division
DATE: 4/12/21

Chief, Division of Land Development
DATE: 4/29/21

DIRECTOR
DATE: 4-29-21

No.	REVISIONS	DATE	BY

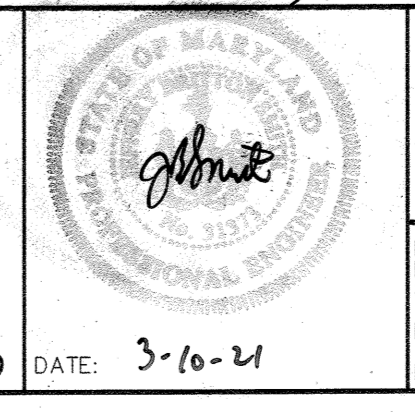
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PHONE: 443-743-3470
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KHA PROJECT
110718001
DATE
03/10/2021
SCALES SHOWN
DESIGNED BY CJC
DRAWN BY CJC
CHECKED BY KTB

EMERSON PROJECT
SITE DEVELOPMENT PLAN
(SDP-21-017)
CONTRACT NO. 24-5162-D

EMERSON SECTION 3, AREA 7, PARCEL A-1
TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
MARYLAND

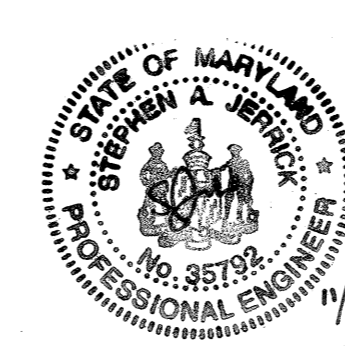


STORMWATER MANAGEMENT PLAN

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

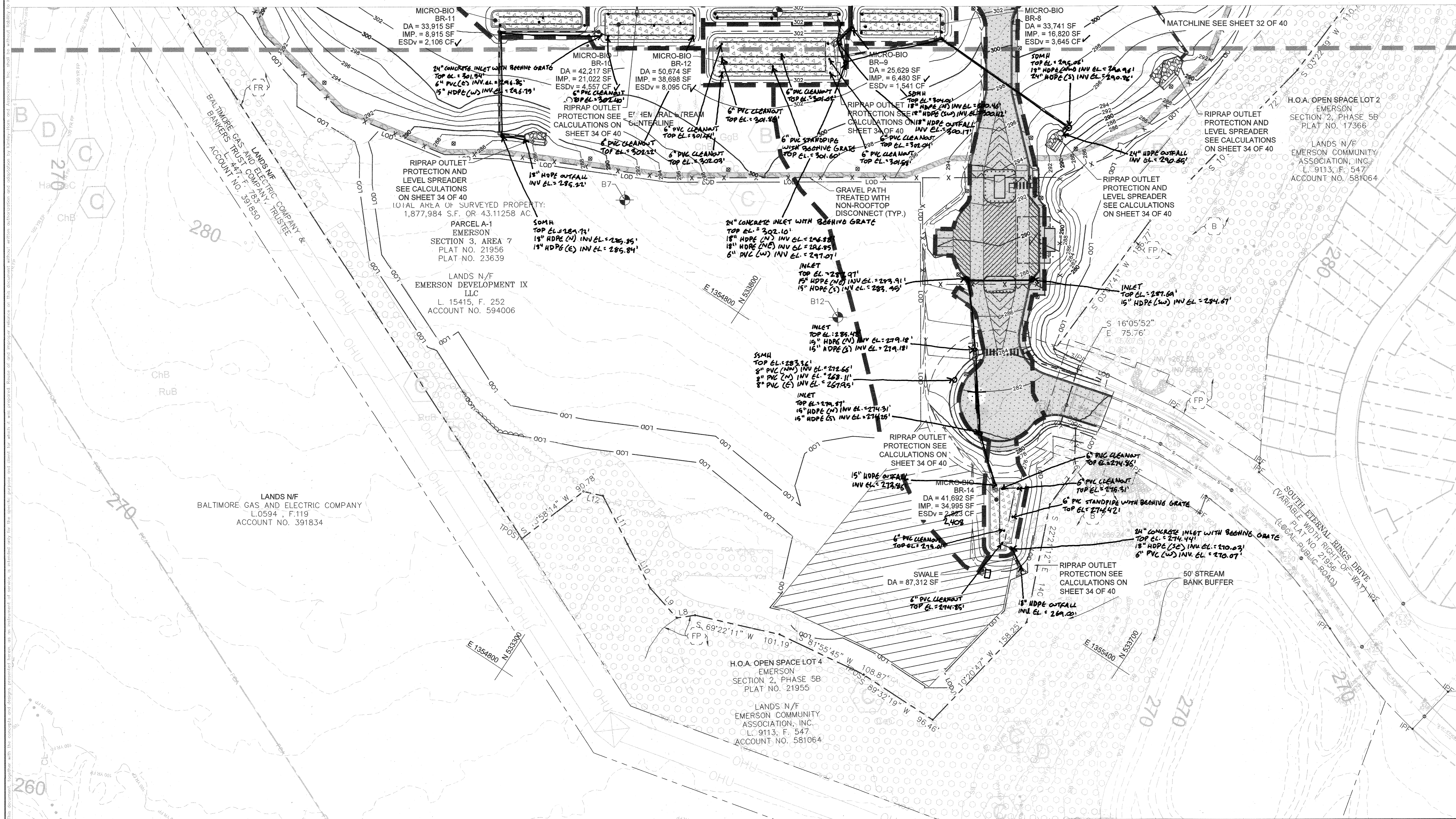
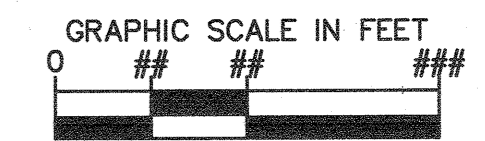
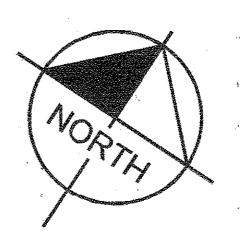
LICENSE NO. 313733
EXPIRATION DATE: 01/21/2023

SHEET NUMBER
32 OF 40
SDP-21-017



I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.
STEPHEN JERRICK, No. 95742, 10-19-2022
11/17/22

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



APPROVED: DEPARTMENT OF PLANNING & ZONING
 Chief, Development Engineering Division
 Chief, Division of Land Development
 Director

4.12.21
DATE
4/21/21
DATE
4-27-21
DATE

No.	REVISIONS	DATE	BY

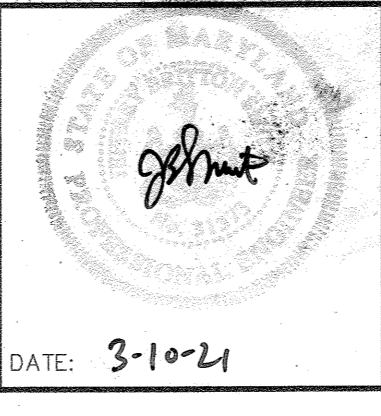
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EMERSON PROJECT
 SITE DEVELOPMENT PLAN
 (SDP-21-017)
 CONTRACT NO. 24-5162-D

EMERSON SECTION 3, AREA 7, PARCEL A-1
 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC

HOWARD COUNTY
 MARYLAND



STORMWATER MANAGEMENT PLAN

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

LICENSE NO. 31373
 EXPIRATION DATE 01/21/2023

SHEET NUMBER
33 OF 40
 SDP-21-017

SWM SEQUENCE OF OPERATIONS

- PRIOR TO EXCAVATION CONTRACTOR TO:
 - VERIFY SEDIMENT AND EROSION CONTROL FEATURES ARE IN PLACE TO PREVENT SEDIMENT INFLOW.
 - VERIFY ALL FLAGGING REQUIRED IN THE AREA OF SENSITIVE AREA PROTECTION.
 - VERIFY GRADING IS ACCURATELY STAKED-OUT AND RE-STAKED AS NEEDED. FACILITY DIMENSIONS SHALL BE VERIFIED AND SOILS CHECKED FOR INFILTRATION.
 - VERIFY SCARIFICATION OF INVERT AS NEEDED.
 - VERIFY CONTRIBUTING AREA IS PERMANENTLY STABILIZED. VERIFY THAT WATER IS NOT PRESENT.
 - VERIFY THAT COMPACTION OF FACILITY BASE IS MINIMIZED.
 - VERIFY THAT THE CONTRIBUTING DRAINAGE AREA IS PAVED, ALL BUILDINGS BUILT, AND ALL DISTURBED AREAS SUPPORTING A 2" STAND OF DENSE GRASS.
- CONTRACTOR TO CONTACT INSPECTING ENGINEER 72 HOURS BEFORE INSTALLATION OF STORMWATER MANAGEMENT FACILITIES TO COMPLETE CONSTRUCTION OBSERVATION / VERIFICATION AS NOTED IN SEQUENCE ITEMS 3 THROUGH 6 BELOW.
- CONTRACTOR TO VERIFY SIZE, MATERIAL, LOCATION, AND ELEVATIONS OF OUTFALL STRUCTURE AND PIPES. VERIFY PIPE JOINTS ARE SEALED. VERIFY THAT ALL STORM DRAINS ARE CONSTRUCTED AND ALL SEDIMENTS ARE REMOVED INCLUDING ACCUMULATED SEDIMENTS IN THE SWM FACILITIES.
- LOCATION, SIZE AND MATERIAL OF UNDERDRAIN AND OBSERVATION WELLS SHALL BE VERIFIED PRIOR TO STONE PLACEMENT. VERIFY PIPE ENDS CAPPED. VERIFY 3" M-6 STONE GRAVEL COVER.
- VERIFY INSTALLATION OF FILTER FABRIC ON THE SIDES. VERIFY BOTTOM LAYER MATERIAL AND THICKNESS. VERIFY PEA GRAVEL AND SAND LAYER MATERIAL AND THICKNESS. VERIFY TOP FILTER MEDIA LAYER. VERIFY MULCH LAYER.
- VERIFY INSTALLATION OF RIPRAP PAD IS FLUSH WITH TOP OF FILTER MEDIA.
- VERIFY SITE TOP SOILED, SEEDED AND MULCHED. VERIFY LOCATION, SIZE, TYPE, AND NUMBER OF PLANTED LANDSCAPE MATERIAL. VERIFY NO MORE THAN 1/8 INCH ROOT BALL EXPOSED. VERIFY PLANTING STOCK KEPT MOIST DURING ON-SITE STORAGE. PLEASE REFER TO FINAL STORMWATER PLANTING DETAILS ON SHEET L-200.
- VERIFY A MINIMUM OF 2" DENSE GRASS ESTABLISHED ON ALL SIDE SLOPES.
- SUBMIT AS-BUILT PAPERS TO BALTIMORE COUNTY WITHIN 30 DAYS OF COMPLETION.

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

- MATERIAL SPECIFICATIONS
THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.4.1.
- FILTERING MEDIA OR PLANTING SOIL
THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05.
THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:
 - SOIL COMPONENT - LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION)
 - ORGANIC CONTENT - MINIMUM 10% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (35% TO 40%) OR SANDY LOAM (30%), COARSE SAND (30%), AND COMPOST (40%).
 - CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.
 - PH RANGE - SHOULD BE BETWEEN 5.5 - 7.0. AMENDMENTS (E.G., LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED INTO THE SOIL TO INCREASE OR DECREASE PH.

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

- COMPACTION
IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING A LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.
COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS A CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REACH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REMOVE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT. ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTOTILLING) BASE.
WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE.
WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.
- PLANT INSTALLATION
COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE.
ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/8TH OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION.
TREES SHALL BE BRACED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL.
GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.
THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFEATS, OR AT A MINIMUM, IMPEDES THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.

- PLANT MATERIAL
RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.

- UNDERDRAINS
UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:
 - PIPE SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM F 758, TYPE PS 28, OR AASHTO-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G., PVC OR HDPE).
 - PERFORATIONS - IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/4" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 3/4" (NO. 4 OR 4X) GALVANIZED HARDWARE CLOTH.
 - GRAVEL - THE GRAVEL LAYER (NO. 57 STONE PREFERRED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.
 - A RIGID, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 10,000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER.
 - A 4" LAYER OF PEA GRAVEL (3/4" TO 1" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES INTO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".

- MISCELLANEOUS
THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED
- OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 10000 SQUARE FEET OF SURFACE AREA).

Kimley Horn

Site Name: Emerson Project Date: 01/15/21
 Project #: 110718001 By: KKW
 County: Howard County Checked: NJL

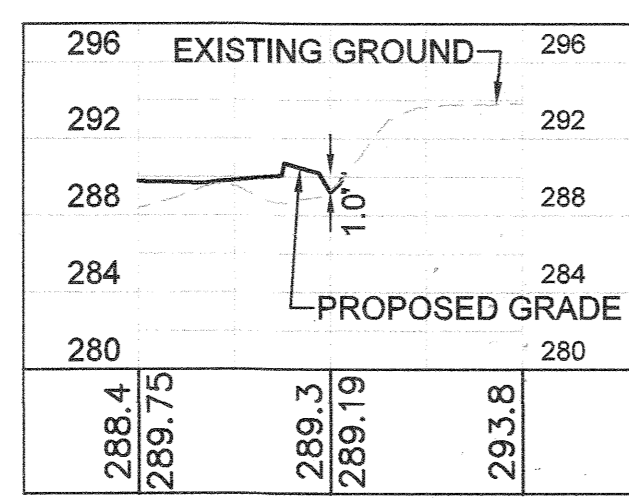
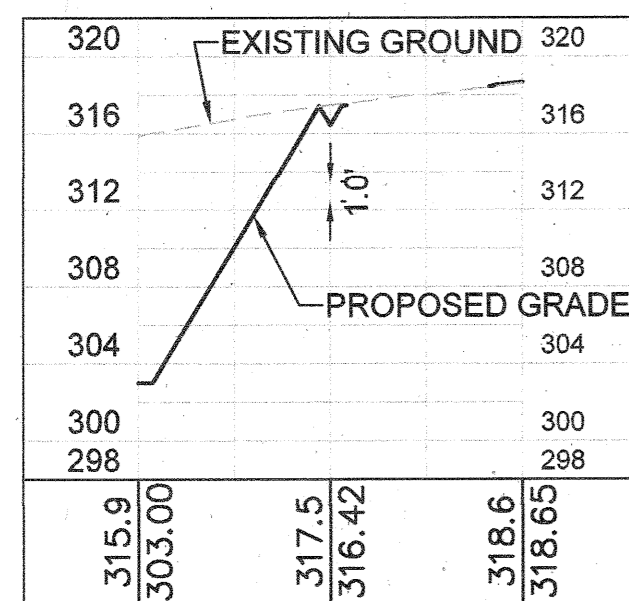
Stormwater Management - ESD Facility Design Summary

ESD ID	ESD Type	Mulch Top Elev	Filter Top Elev	Filter Bed Depth	Top of Sand Elev	Depth of Sand	Top of Pea Gravel Elev	Depth of Pea Gravel	Top of Gravel Elev	Underdrain Size	Inv Elev of Underdrain	Total Depth of Gravel	Depth of Gravel Below Underdrain	Bottom of Facility	Depth of Ponding	Overflow Inlet Elev
		(ft)	(ft)	(ft)	(ft)	(in)	(ft)	(in)	(ft)	(in)	(ft)	(in)	(in)	(ft)	(in)	(ft)
BR-1	M-6: Micro-Bioretenion	302.60	302.55	302.52	300.35	4	300.02	4	299.68	6	298.93	21	12	297.93	12	302.08
BR-2	M-6: Micro-Bioretenion	303.00	302.75	302.42	300.75	4	300.42	4	300.08	6	299.33	21	12	298.33	12	302.45
BR-3	M-6: Micro-Bioretenion	303.40	303.15	302.82	301.15	4	300.82	4	300.48	6	299.73	21	12	298.73	12	302.75
BR-4	M-6: Micro-Bioretenion	301.50	301.25	300.92	299.25	4	298.92	4	298.58	6	297.83	21	12	296.83	12	302.04
BR-5	M-6: Micro-Bioretenion	303.25	303.00	302.67	301.00	4	300.67	4	300.33	6	299.58	21	12	298.58	12	302.65
BR-6	M-6: Micro-Bioretenion	301.00	300.75	300.42	298.75	4	298.42	4	298.08	6	297.33	21	12	296.33	12	301.46
BR-7	M-6: Micro-Bioretenion	302.25	302.00	301.67	300.00	4	299.67	4	299.33	6	298.58	21	12	297.58	12	302.66
BR-8	M-6: Micro-Bioretenion	301.15	300.90	300.57	298.90	4	298.57	4	298.23	6	297.48	12	3	297.23	12	302.01
BR-9	M-6: Micro-Bioretenion	301.15	300.90	300.57	298.90	4	298.57	4	298.23	6	297.48	12	3	297.23	12	301.54
BR-10	M-6: Micro-Bioretenion	301.15	300.90	300.57	298.90	4	298.57	4	298.23	6	297.48	12	3	297.23	12	301.54
BR-11	M-6: Micro-Bioretenion	301.75	301.50	301.17	299.50	4	299.17	4	298.83	6	298.08	12	3	297.83	12	302.01
BR-12	M-6: Micro-Bioretenion	303.72	303.47	303.14	301.47	4	301.14	4	300.80	6	300.05	12	3	299.80	12	302.07
BR-13	M-6: Micro-Bioretenion	303.95	303.70	303.37	301.70	4	301.37	4	301.03	6	300.28	12	3	300.03	12	302.04
BR-14	M-6: Micro-Bioretenion	273.75	273.50	273.17	271.50	4	271.17	4	270.83	6	270.08	12	3	269.83	12	274.54
BR-15	M-6: Micro-Bioretenion	301.75	301.50	301.17	299.50	4	299.17	4	298.83	6	298.08	12	3	297.83	12	302.01

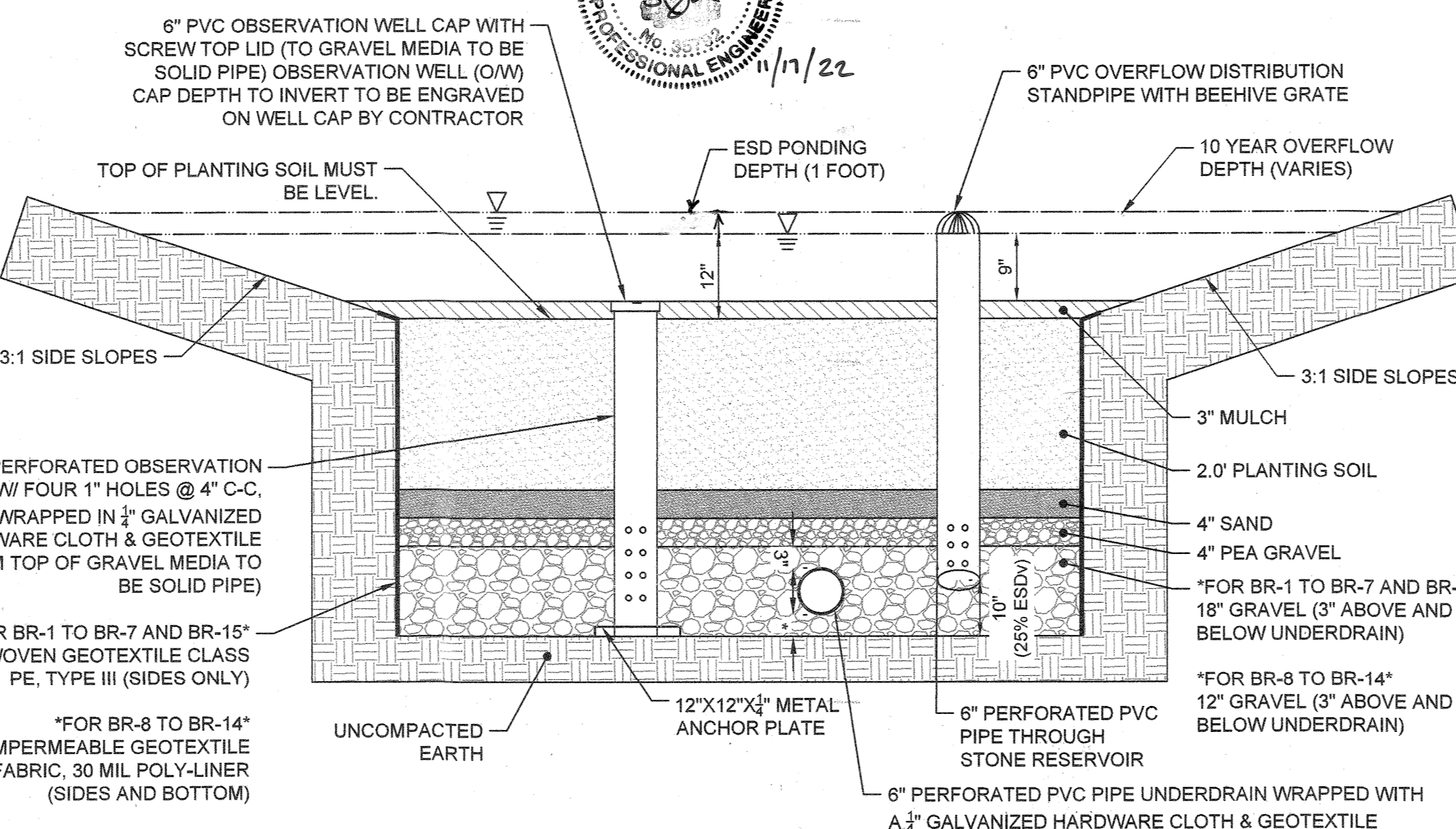
Outlet Protection Calculations

Outfall	Outlet Pipe Diameter	Discharge (10 year)	Velocity (10 year)	Tailwater Condition	Apron Length	Apron Width	Median Stone Size (d ₅₀)	Riprap Depth (d)	3" Pipe Diameter	Type of Protection	
	ft	cfs	fps		ft	ft	ft	in	ft		
A1	2.50	23.13	8.07	Minimum	16	23.50	1.1	13	2.5	7.50	Class II Riprap
A9	1.50	7.25	6.00	Maximum	8	7.70	1.1	13	2.5	4.50	Class I Riprap
B1	2.00	13.39	7.03	Minimum	13	19.00	1.1	13	2.5	6.00	Class I Riprap
B7	1.00	3.16	8.27	Maximum	4	4.60	1.1	13	2.5	3.00	Class II Riprap
C1	1.25	5.17	7.20	Minimum	8	11.75	1.1	13	2.5	3.75	Class I Riprap
C5	1.50	6.72	3.06	Maximum	4	6.10	1.1	13	2.5	4.50	Class I Riprap
D1	1.50	7.88	8.00	Minimum	10	14.50	1.1	13	2.5	4.50	Class II Riprap
D6	1.00	2.93	8.11	Maximum	4	4.60	1.1	13	2.5	3.00	Class II Riprap
E1	2.00	13.40	7.03	Minimum	10	16.00	1.1	13	2.5	6.00	Class I Riprap
E6	1.50	6.73	5.91	Maximum	8	7.70	1.1	13	2.5	4.50	Class I Riprap
F1	1.00	2.68	4.65	Minimum	6	9.00	1.1	13	2.5	3.00	Class I Riprap
G1	1.50	6.40	13.67	Minimum	10	14.50	1.1	13	2.5	4.50	Class II Riprap
G3	1.50	5.95	7.46	Maximum	6	6.90	1.1	13	2.5	4.50	Class I Riprap

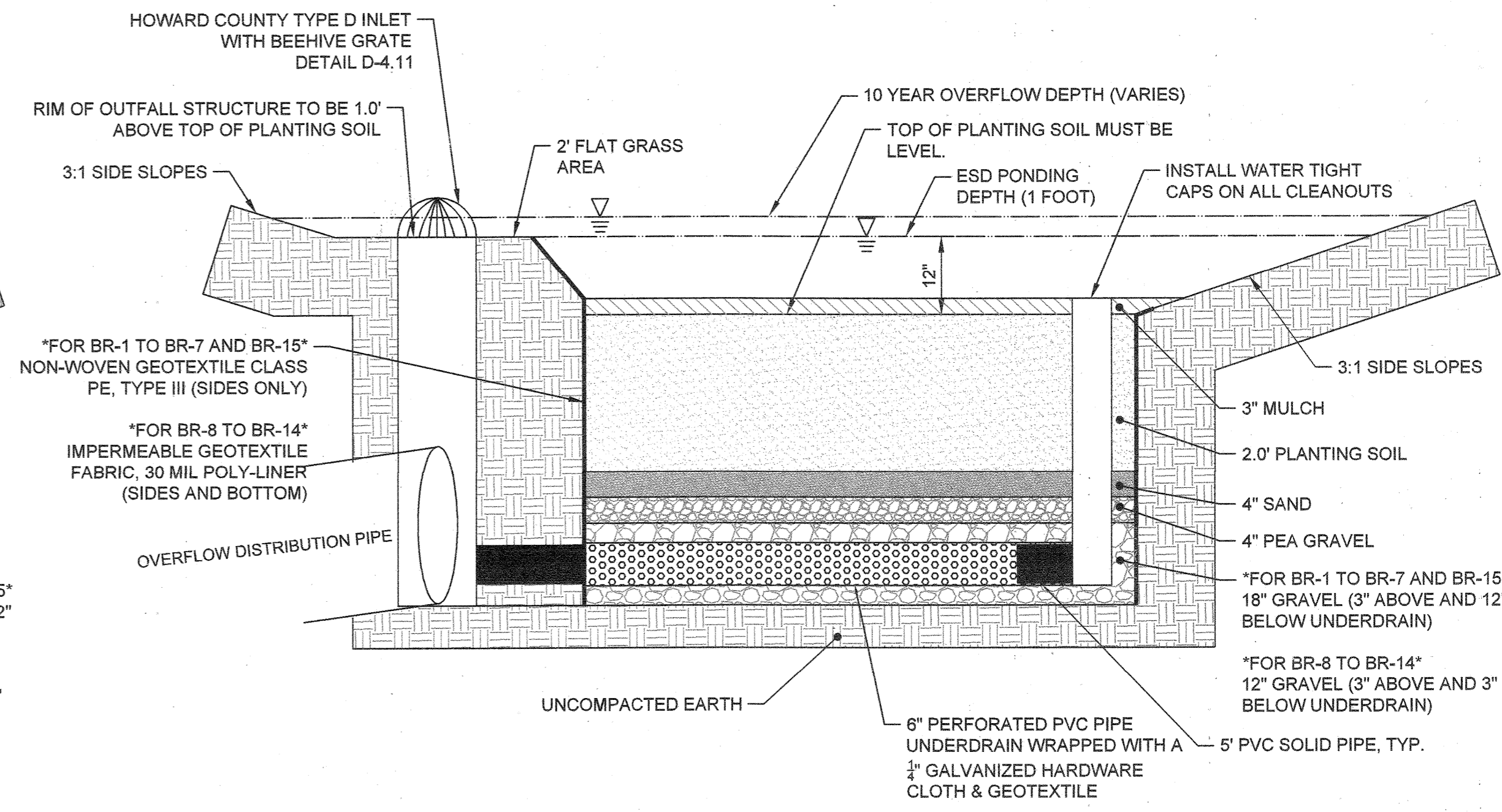
*ALL OUTLET PROTECTION AND LEVEL SPREADERS SHOULD BE PLACED ON A LAYER OF GEOTEXTILE FABRIC



I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.
 STEPHEN JERRICK, No. 35996, 10-19-2012



MICRO-BIORETENTION TYPICAL CROSS-SECTION #1
 REFER TO THE ESD FACILITY DESIGN SUMMARY TABLES, THIS SHEET FOR ELEVATIONS
 SCALE: N.T.S.



MICRO-BIORETENTION TYPICAL CROSS-SECTION #2
 REFER TO THE ESD FACILITY DESIGN SUMMARY TABLES, THIS SHEET FOR ELEVATIONS
 SCALE: N.T.S.

APPROVED: DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DIRECTOR

4-12-21
 4/24/21
 4-29-21

No.	REVISIONS	DATE	BY

Kimley Horn
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 1801 PORTER ST. SUITE 401, BALTIMORE, MD 21230
 PHONE: 443-743-3470
 WWW.KIMLEY-HORN.COM

KHA PROJECT
 110718001
 DATE
 03/10/2021
 SCALES AS SHOWN
 DESIGNED BY CJC
 DRAWN BY CJC
 CHECKED BY KTB

EMERSON PROJECT
 SITE DEVELOPMENT PLAN
 (SDP-21-017)
 CONTRACT NO. 24-5162-D
 EMERSON SECTION 3, AREA 7, PARCEL A-1
 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC
 MARYLAND

DATE: 3-10-21

STORMWATER MANAGEMENT
 DETAILS
 PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 31373
 EXPIRATION DATE: 01/21/2023

SHEET NUMBER
 34 OF 40
 SDP-21-017

KEY

	EXISTING TREELINE
	PROPOSED TREELINE
	6' WIDE GRAVEL PATROL ROAD

SCHEDULE A PERIMETER LANDSCAPE EDGE

Category	Adjacent to Roadways	Adjacent to Particular Properties	Adjacent to Particular Properties
Landscape Type	EDGE C	EDGE A	EDGE C
Linear Feet of Roadway Frontage/Perimeter	1,031	786	726
Credit for Existing Vegetation (Yes, No, Linear Feet) (Describe below if needed)	426+263 = 689 LF	NO	NO
Credit for Wall, Fence or Berm (Yes, No, Linear Feet) (Describe below if needed)	NO	NO	NO
Number of Plants Required			
Shade Trees	9	13	18
Evergreen Trees	18	0	36
Shrubs	-	0	0
Number of Plants Provided			
Shade Trees	9	13	18
Evergreen Trees	18	-	36
Other Trees (2:1 substitution)	-	-	-
Shrubs (10:1 substitution)	-	-	-
(Describe plant substitution credits below if needed)			

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING

Number of Parking Spaces	56
Number of Trees Required	3
Number of Trees Provided	6
Shade Trees	
Other Trees (2:1 substitution)	

LANDSCAPE DEVELOPER'S CERTIFICATE

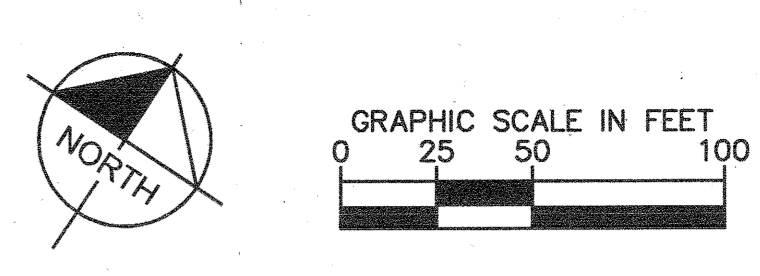
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE, THE HOWARD COUNTY LANDSCAPE MANUAL, AND THE LANDSCAPE DESIGN CRITERIA. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION ACCOMPANIED BY AN EXECUTED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

SIGNATURE: *[Signature]* DATE: 3-10-21

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

STEPHEN JERRICK, No. 35792, 10-19-2022

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

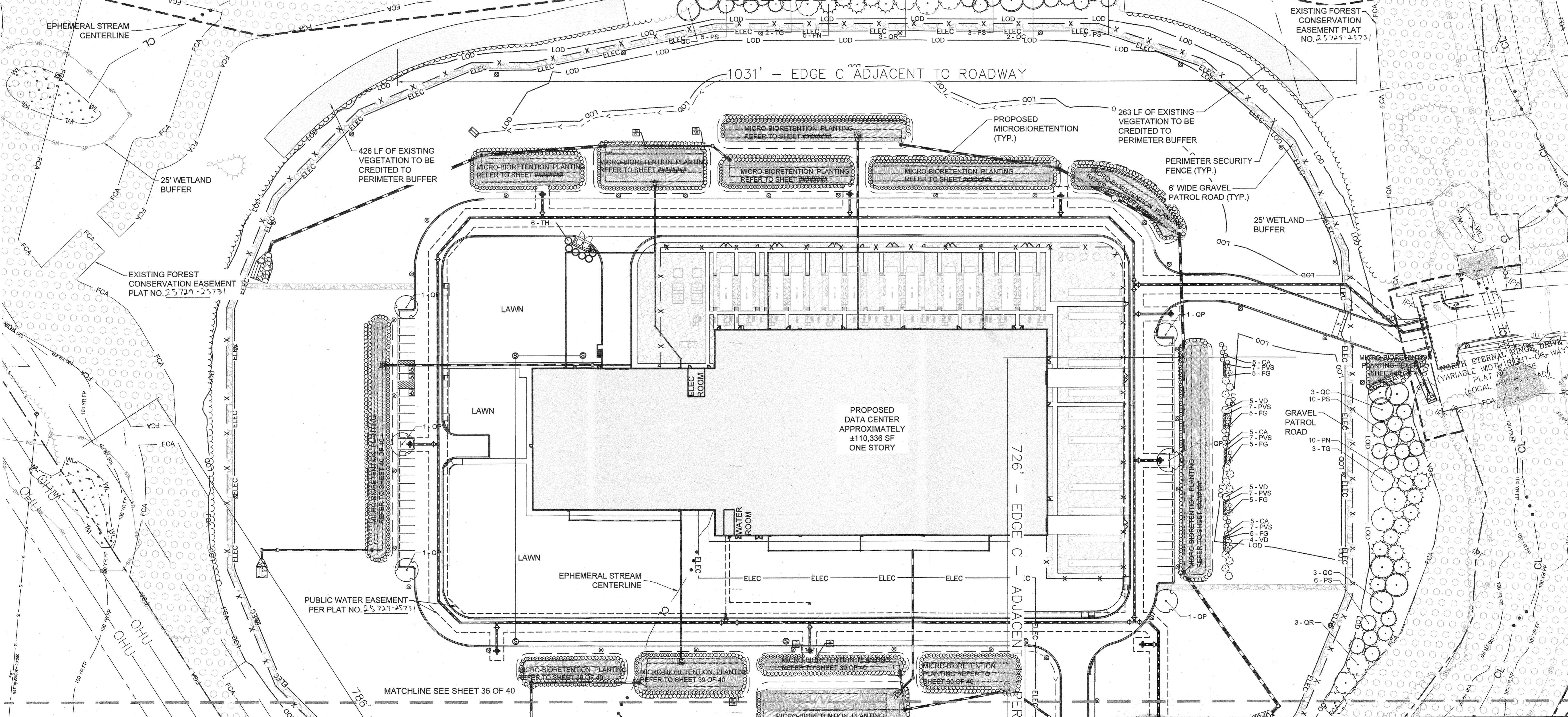


-THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING (.54 SHADE TREES, .54 EVERGREEN TREES, AND .60 SHRUBS), WILL BE POSTED AS PART OF THE DEVELOPER AGREEMENT IN THE AMOUNT OF \$28,100.

-THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES, AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUES COMPLIANCE WITH APPLICABLE REGULATIONS.

STREET TREE REQUIREMENTS

REQUIREMENT:	1 STREET TREE PER EVERY 40' OF PROPOSED PUBLIC RIGHT OF WAY
PROVIDED:	8 STREET TREES



APPROVED: DEPARTMENT OF PLANNING & ZONING

4/21/21 DATE

4/21/21 DATE

4-29-21 DATE

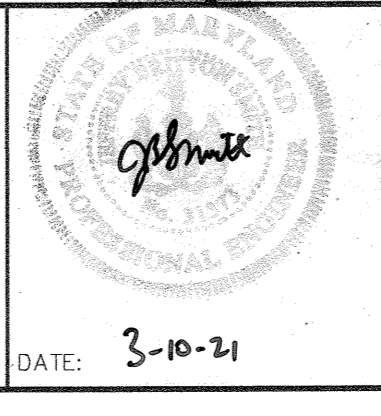
No.	REVISIONS	DATE	BY

Kimley»Horn

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1801 PORTER ST, SUITE 401, BALTIMORE, MD 21230
PHONE: 443-743-3470
WWW.KIMLEY-HORN.COM

EMERSON PROJECT
SITE DEVELOPMENT PLAN (SDP-21-017)
CONTRACT NO. 24-5162-D

EMERSON SECTION 3, AREA 7, PARCEL A-1
TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC



LANDSCAPE PLAN

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

LICENSE NO. 31373
EXPIRATION DATE 01/21/2023

DATE: 3-10-21

SHEET NUMBER
35 OF 40
SDP-21-017

LANDSCAPE DEVELOPER'S CERTIFICATE

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

SIGNATURE

DATE

3-16-21

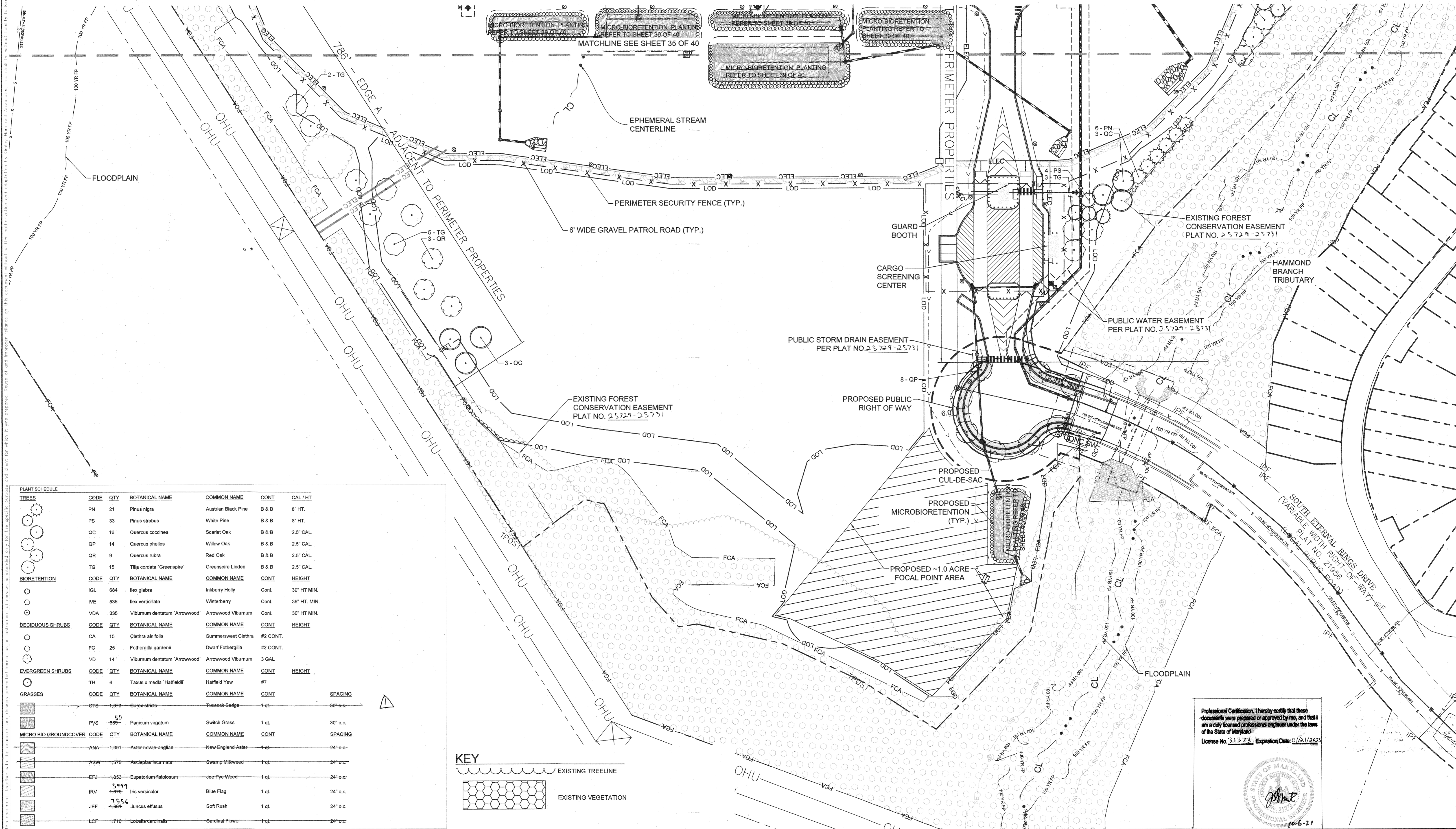
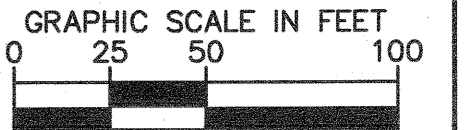
THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
STEPHEN JERRALCK, No. 35702, 10-14-2022

CALL 48 HOURS BEFORE YOU DIG

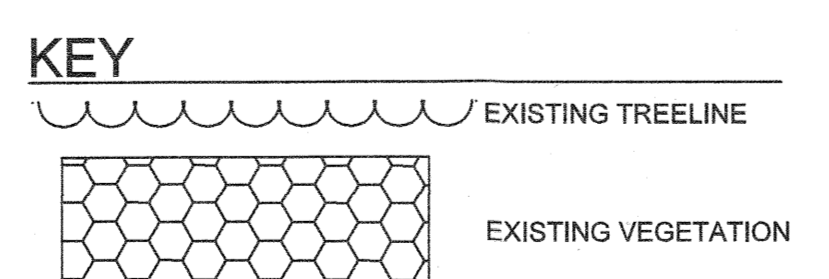


IT'S THE LAW! DIAL 811

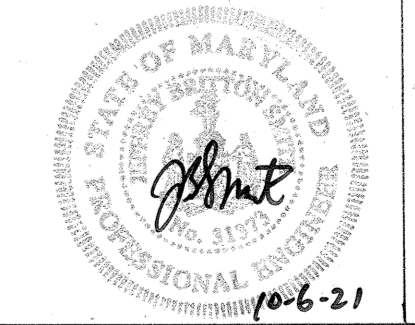
Know what's below. Call before you dig.



PLANT SCHEDULE						
TREES						
CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT.	CAL / HT.	
PN	21	Pinus nigra	Austrian Black Pine	B & B	8' HT.	
PS	33	Pinus strobus	White Pine	B & B	8' HT.	
QC	16	Quercus coccoinea	Scarlet Oak	B & B	2.5" CAL.	
QP	14	Quercus phellos	Willow Oak	B & B	2.5" CAL.	
QR	9	Quercus rubra	Red Oak	B & B	2.5" CAL.	
TG	15	Tilia cordata 'Greenspire'	Greenspire Linden	B & B	2.5" CAL.	
BIORETENTION						
CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT.	HEIGHT	
IGL	684	Ilex glabra	Inkberry Holly	Cont.	30" HT. MIN.	
IVE	536	Ilex verticillata	Winterberry	Cont.	36" HT. MIN.	
VDA	335	Viburnum dentatum 'Arrowwood'	Arrowwood Viburnum	Cont.	30" HT. MIN.	
DECIDUOUS SHRUBS						
CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT.	HEIGHT	
CA	15	Clethra alnifolia	Summersweet Clethra	#2 CONT.		
FG	25	Fothergilla gardenii	Dwarf Fothergilla	#2 CONT.		
VD	14	Viburnum dentatum 'Arrowwood'	Arrowwood Viburnum	3 GAL		
EVERGREEN SHRUBS						
CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT.	HEIGHT	
TH	6	Taxus x media 'Haffieldii'	Haffield Yew	#7		
GRASSES						
CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT.	SPACING	
CTS	1,073	Carex stricta	Tussock Sedge	1 qt.	30" o.c.	
PVS	50	Panicum virgatum	Switch Grass	1 qt.	30" o.c.	
MICRO BIO GROUND COVER						
CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT.	SPACING	
ANA	1,381	Aster novae-angliae	New England Aster	1 qt.	24" o.c.	
ASW	1,575	Asclepias incarnata	Swamp Milkweed	1 qt.	24" o.c.	
EFJ	1,553	Eupatorium altissimum	Joe-Pye-Weed	1 qt.	24" o.c.	
IRV	544	Iris versicolor	Blue Flag	1 qt.	24" o.c.	
JEF	756	Juncus effusus	Soft Rush	1 qt.	24" o.c.	
LOF	1,710	Lobelia cardinalis	Cardinal Flower	1 qt.	24" o.c.	



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 31373, Expiration Date: 01/31/2023



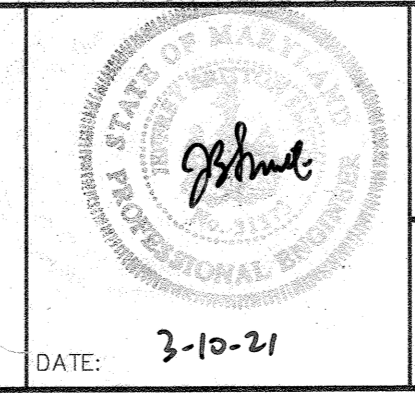
APPROVED: DEPARTMENT OF PLANNING & ZONING
 Chief, Development Engineering Division: [Signature] DATE: 4-12-21
 Chief, Division of Land Development: [Signature] DATE: 4-21-21
 Director: [Signature] DATE: 4-21-21

No.	REVISIONS	DATE	BY
1	Landscape Plantings	10-05-21	KH

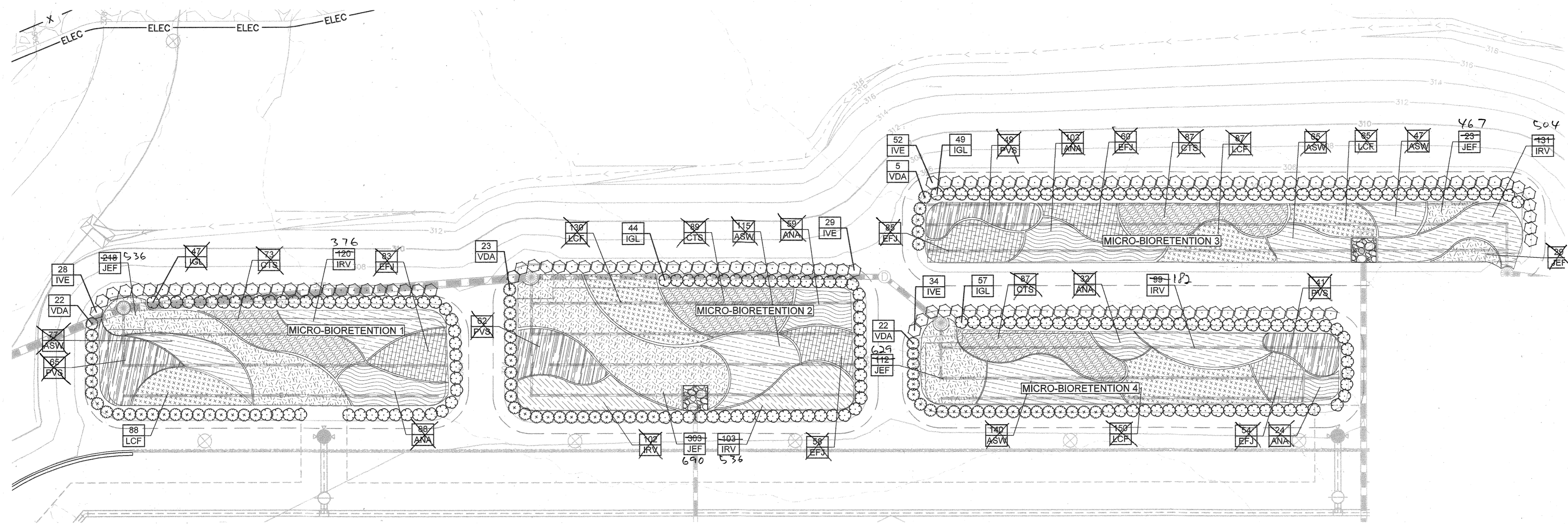
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 PHONE: 443-743-3470
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KHA PROJECT 110718001
 DATE 03/10/2021
 SCALES SHOWN
 DESIGNED BY CJC
 DRAWN BY CJC
 CHECKED BY KTB

EMERSON PROJECT
 SITE DEVELOPMENT PLAN (SDP-21-017)
 CONTRACT NO. 24-5162-D
 EMERSON SECTION 3, AREA 7, PARCEL A-1
 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC

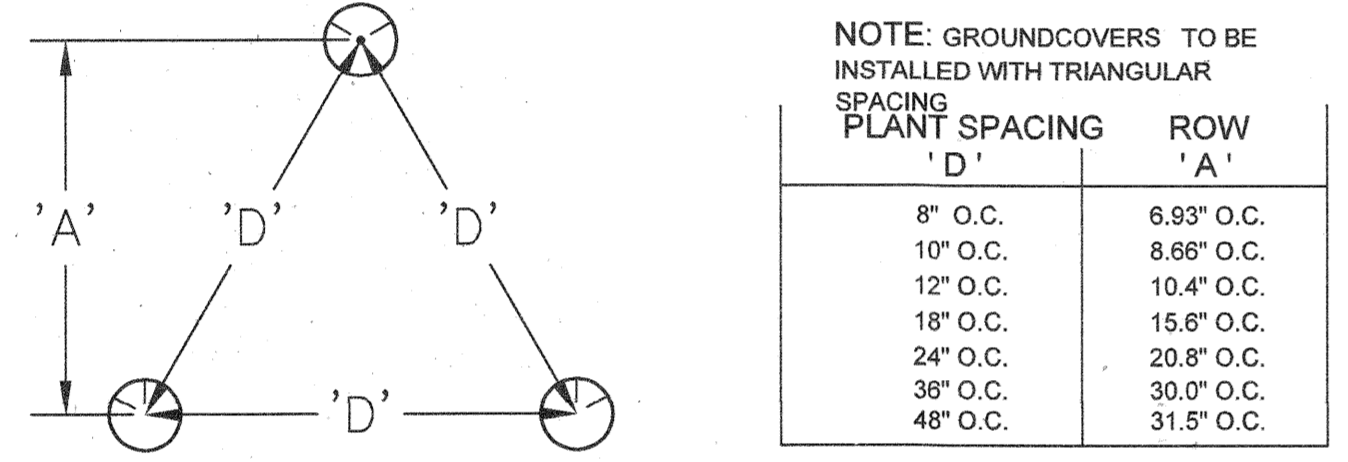


LANDSCAPE PLAN
 SHEET NUMBER 36 OF 40
 SDP-21-017
 PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 31373
 EXPIRATION DATE 01/21/2023



LANDSCAPE DEVELOPER'S CERTIFICATE
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE, THE HOWARD COUNTY LANDSCAPE MANUAL, AND THE LANDSCAPE DESIGN CRITERIA. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF ANY MATERIALS WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.
3-16-21
SIGNATURE DATE

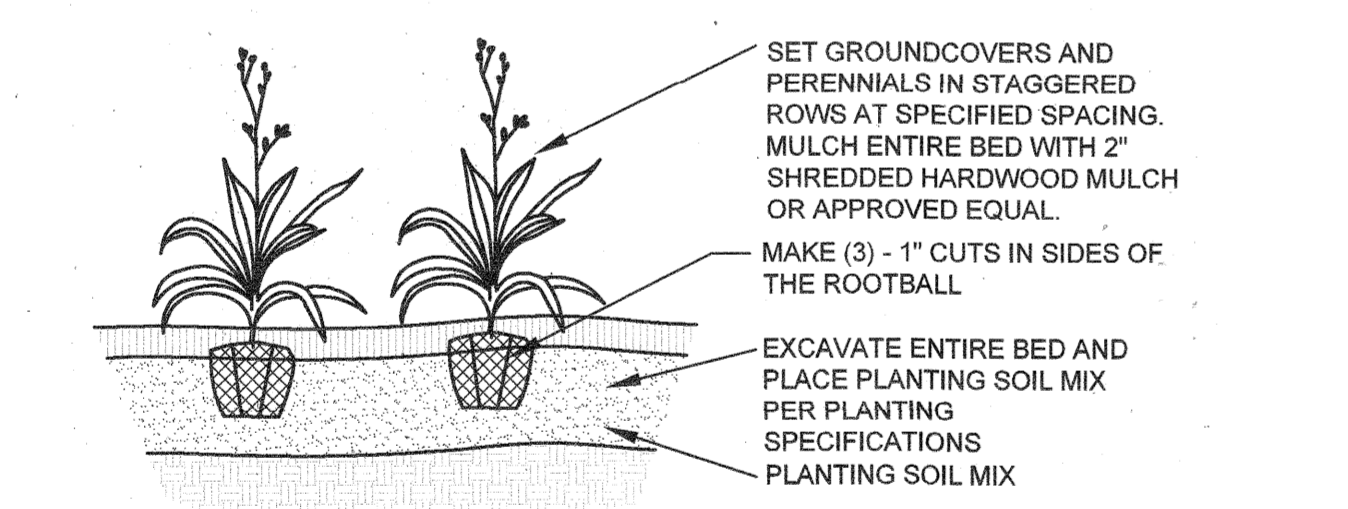
MIRCO-BIORETENTION AREAS #1, #2, #3, & #4
SCALE: 1" = 20'



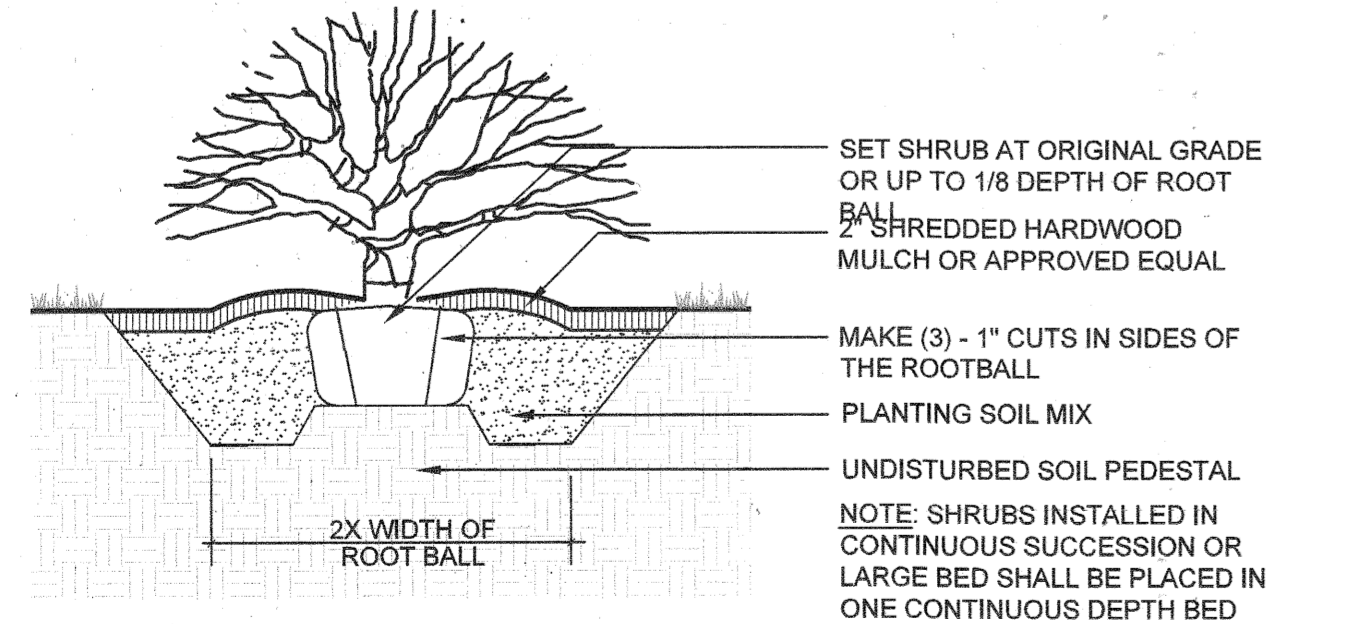
NOTE: GROUNDCOVERS TO BE INSTALLED WITH TRIANGULAR SPACING

PLANT SPACING 'D'	ROW 'A'
8" O.C.	6.93" O.C.
10" O.C.	8.66" O.C.
12" O.C.	10.4" O.C.
15" O.C.	12.5" O.C.
24" O.C.	20.8" O.C.
36" O.C.	30.5" O.C.
48" O.C.	31.5" O.C.

A GROUNDCOVER SPACING
NOT TO SCALE



B GROUNDCOVER PLANTING
NOT TO SCALE



C SHRUB PLANTING
NOT TO SCALE

PLANT SCHEDULE MICRO BIO 1

BIORETENTION	QTY	BOTANICAL NAME	COMMON NAME	CONT	HEIGHT
IGL	47	Ilex glabra	Inkberry Holly	Cont.	30" HT. MIN.
IVE	28	Ilex verticillata	Winterberry	Cont.	36" HT. MIN.
VDA	22	Viburnum dentatum 'Arrowwood'	Arrowwood Viburnum	Cont.	30" HT. MIN.
GRASSES					
GTS	73	Carex stricta	Tussock Sedge	1 qt.	36" o.c.
PVS	66	Panicum virgatum	Switch Grass	1 qt.	36" o.c.
MIRCO BIO GROUNDCOVER					
ASW	77	Asclepias incarnata	Swamp Milkweed	1 qt.	24" o.c.
ANA	88	Aster novae-angliae	New England Aster	1 qt.	24" o.c.
EFJ	83	Eupatorium fistulosum	Joe-Pye Weed	1 qt.	24" o.c.
IRV	376	Iris versicolor	Blue Flag	1 qt.	24" o.c.
JEF	536	Juncus effusus	Soft Rush	1 qt.	24" o.c.
LCF	88	Lobelia cardinalis	Cardinal Flower	1 qt.	24" o.c.

PLANT SCHEDULE MICRO BIO 2

BIORETENTION	QTY	BOTANICAL NAME	COMMON NAME	CONT	HEIGHT
IGL	44	Ilex glabra	Inkberry Holly	Cont.	30" HT. MIN.
IVE	29	Ilex verticillata	Winterberry	Cont.	36" HT. MIN.
VDA	23	Viburnum dentatum 'Arrowwood'	Arrowwood Viburnum	Cont.	30" HT. MIN.
GRASSES					
GTS	69	Carex stricta	Tussock Sedge	1 qt.	36" o.c.
PVS	62	Panicum virgatum	Switch Grass	1 qt.	36" o.c.
MIRCO BIO GROUNDCOVER					
ASW	115	Asclepias incarnata	Swamp Milkweed	1 qt.	24" o.c.
ANA	59	Aster novae-angliae	New England Aster	1 qt.	24" o.c.
EFJ	60	Eupatorium fistulosum	Joe-Pye Weed	1 qt.	24" o.c.
IRV	610	Iris versicolor	Blue Flag	1 qt.	24" o.c.
JEF	536	Juncus effusus	Soft Rush	1 qt.	24" o.c.
LCF	180	Lobelia cardinalis	Cardinal Flower	1 qt.	24" o.c.

PLANT SCHEDULE MICRO BIO 3

BIORETENTION	QTY	BOTANICAL NAME	COMMON NAME	CONT	HEIGHT
IGL	49	Ilex glabra	Inkberry Holly	Cont.	30" HT. MIN.
IVE	52	Ilex verticillata	Winterberry	Cont.	36" HT. MIN.
VDA	5	Viburnum dentatum 'Arrowwood'	Arrowwood Viburnum	Cont.	30" HT. MIN.
GRASSES					
GTS	87	Carex stricta	Tussock Sedge	1 qt.	36" o.c.
PVS	49	Panicum virgatum	Switch Grass	1 qt.	36" o.c.
MIRCO BIO GROUNDCOVER					
ASW	112	Asclepias incarnata	Swamp Milkweed	1 qt.	24" o.c.
ANA	103	Aster novae-angliae	New England Aster	1 qt.	24" o.c.
EFJ	145	Eupatorium fistulosum	Joe-Pye Weed	1 qt.	24" o.c.
IRV	504	Iris versicolor	Blue Flag	1 qt.	24" o.c.
JEF	467	Juncus effusus	Soft Rush	1 qt.	24" o.c.
LCF	162	Lobelia cardinalis	Cardinal Flower	1 qt.	24" o.c.

PLANTING NOTES

Plant Identification - All plants shall be properly marked for identification and checking.

List of Plant Material - The quantities given in the plant list are approximate only. The contractor will verify plant quantities prior to bidding and any discrepancies shall be brought to the attention of the landscape architect. The Contractor shall furnish, and plant, all plants required to complete the work as shown on the drawings. Substitutions shall not be made without the written approval of Kimley-Horn and the owner. This contract will be based on the bidder having verified prior to bidding the availability of the required plant materials as specified on the Plant Materials List.

Plant Quality - All shrubs shall be dense, heavy to the ground, and well grown, showing evidence of having been pruned regularly, and shall be vigorous, healthy and of good color. All plants shall be sound, free of plant disease, infestation, or insect eggs and shall have a healthy, normal root system. Plants shall be freshly dug and not heeled-in stock, nor stock from cold storage. All plants shall be nursery grown. Plants shall not be pruned prior to delivery. The shape of the plant shall, in general, conform to its natural growth proportions unless otherwise specified. All plants, including container grown, shall conform to the branching, caliber and height specifications of the American Association of Nurserymen's Publication entitled American Standard for Nursery Stock, ANSIZ60.1-2004 or latest edition, and shall have a well-shaped, heavy-branched structure for the species. Evergreen trees are to have an internode no greater than 24" and shall be uniformly well-shaped. Plants of a given size shall not measure less than the minimum size as set forth in the American Standard for Nursery Stock, ANSIZ60.1-2004 or latest edition.

Plant Tagging - The contractor shall prepare a list of nurseries supplying the specified plant material for the owner and Kimley-Horn to inspect, at their option, and tag prior to digging.

Plant Spacing - Plant spacing is to scale on plan.

Rootball Size - The ball size shall conform to the American Association of Nurserymen's Publication entitled American Standard for Nursery Stock, ANSIZ60.1-2004 or latest edition, and shall be wrapped in untreated burlap.

Excavation - Holes for shrubs shall be 12" wider than the root ball. Beds for mass planting shall be entirely rototilled to a depth of 8" and shall be 18" beyond the average outside edge of plant balls. Organic material (leafmold) will be incorporated into plant beds by tilling again to a depth of 8". Proportions of soil to organic material will be two parts existing soil to one part organic material.

Maintenance - The Contractor shall be responsible during the contract and up to the time of acceptance for keeping the planting and work incidental thereto in good condition by replanting, plant replacement, watering, weeding, cultivating, pruning, spraying, restaking and cleaning up, and by performing all other necessary operations of care for the promotion of good plant growth so that all work is in satisfactory condition at the time of acceptance at no additional cost to the owner.

Fertilizer & Inoculation - All fertilizer shall be granular, with 35 to 80 percent of the total nitrogen in a slowly available form. For shrubs, and groundcover, fertilizer shall be a complete fertilizer with a minimum analysis of 10 percent nitrogen, 9 percent phosphorus and 4 percent potassium. For perennials, annuals, and bulbs; fertilizer shall be a time-released, high-phosphate fertilizer, i.e., osmocote. For bulbs, fertilizer shall be bone meal (commercial, raw and finely-round), with an analysis of 4 percent nitrogen and 20 percent phosphoric acid.

Fertilizer shall be added depending on the size of the plant and the manufacturer's recommendation using the following application rates:
1. Shrubs: Use 1/4 lb. of 10-6-4 fertilizer per foot of height or spread per plant, or 3-5 lbs of 10-6-4 fertilizer per 100 square feet of bed area.
2. Groundcover: Use 3 lbs. of 10-6-4 fertilizer per 100 square feet of bed area.
3. Perennials, Annuals, Bulbs: Use 3 lbs. of time-release, high-phosphate fertilizer (5-10-5) per 100 square feet of bed area.

Ground Cover - All areas of groundcover shall be rototilled to a depth of 6" Apply 2" of organic material (leafmold) and rototill until thoroughly mixed. Apply fertilizer as stated above.

Guarantee and Replacement - All plant material shall be unconditionally guaranteed for one year. The guarantee will begin on the date of final acceptance of the work. After a plant has been determined to be dead, dying or damaged from handling or installation, it will be replaced during the next growing season. For example, if a plant is found dead during the summer months, it will be replaced during the fall planting season. The guarantee will end for all plant material one year after acceptance. During the guarantee period, the Contractor will not be responsible for mechanical injury or vandalism caused by other parties.

Material Inspection - Owner and/or Kimley-Horn shall, at their discretion, inspect plant material before and during delivery and installation. Plant material will be properly delivered in covered trucks, and promptly uncovered when delivered to prevent damage. Material will be unloaded and properly handled in such a way as not to damage plants. Plants will be inspected and may be rejected upon delivery and/or installation by the owner for mechanical damage, and damage that will subsequently cause mishapen or deformed material. Owner will have authority to observe site preparation and planting installations, and have the right to reject any work if the specifications and construction documents are not followed. All plant material shall be of the quality specified and installed as described above, and unless these minimum standards are satisfied, the plants will be rejected.

Erosion Control Matting - All basin side slopes to be lined with Premier Straw/Coconut Blend Erosion Control Blanket. All basin floors to be lined with Premier Coconut Erosion Control Blanket. Manufacturer: American Excelsior Company based out of Arlington, Texas.

Mulch: Install 3" of Soil Mix for Mulched Shrub and Perennial Beds on Grade which shall consist of clay loam to sandy clay loam soil, sand, and composted pine bark fines at a rate of 5:5:1 to 10:5:1.5

PLANT SCHEDULE MICRO BIO 4

BIORETENTION	QTY	BOTANICAL NAME	COMMON NAME	CONT	HEIGHT
IGL	57	Ilex glabra	Inkberry Holly	Cont.	30" HT. MIN.
IVE	34	Ilex verticillata	Winterberry	Cont.	36" HT. MIN.
VDA	22	Viburnum dentatum 'Arrowwood'	Arrowwood Viburnum	Cont.	30" HT. MIN.
GRASSES					
GTS	67	Carex stricta	Tussock Sedge	1 qt.	36" o.c.
PVS	41	Panicum virgatum	Switch Grass	1 qt.	36" o.c.
MIRCO BIO GROUNDCOVER					
ASW	140	Asclepias incarnata	Swamp Milkweed	1 qt.	24" o.c.
ANA	56	Aster novae-angliae	New England Aster	1 qt.	24" o.c.
EFJ	64	Eupatorium fistulosum	Joe-Pye Weed	1 qt.	24" o.c.
IRV	171	Iris versicolor	Blue Flag	1 qt.	24" o.c.
JEF	629	Juncus effusus	Soft Rush	1 qt.	24" o.c.
LCF	150	Lobelia cardinalis	Cardinal Flower	1 qt.	24" o.c.

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 21373 - Expiration Date: 01/21/2023

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
STEPHEN TERRICK, No. 97792, 10-19-2012

APPROVED: DEPARTMENT OF PLANNING & ZONING
4/12/21 DATE
4/20/21 DATE
4-21-21 DATE

No.	REVISIONS	DATE	BY
1	Updated Landscape Plantings	10/09/21	KH

Kimley»Horn
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1801 PORTER ST, SUITE 401, BALTIMORE, MD 21230
PHONE: 443-743-3470
WWW.KIMLEY-HORN.COM

EMERSON PROJECT
SITE DEVELOPMENT PLAN
(SDP-21-017)
CONTRACT NO. 24-5162-D
EMERSON SECTION 3, AREA 7, PARCEL A-1
TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC

MIRCO-BIORETENTION LANDSCAPE PLAN
PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 31373
EXPIRATION DATE 01/21/2023

SHEET NUMBER
37 OF 40
SDP-21-017

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

SIGNATURE

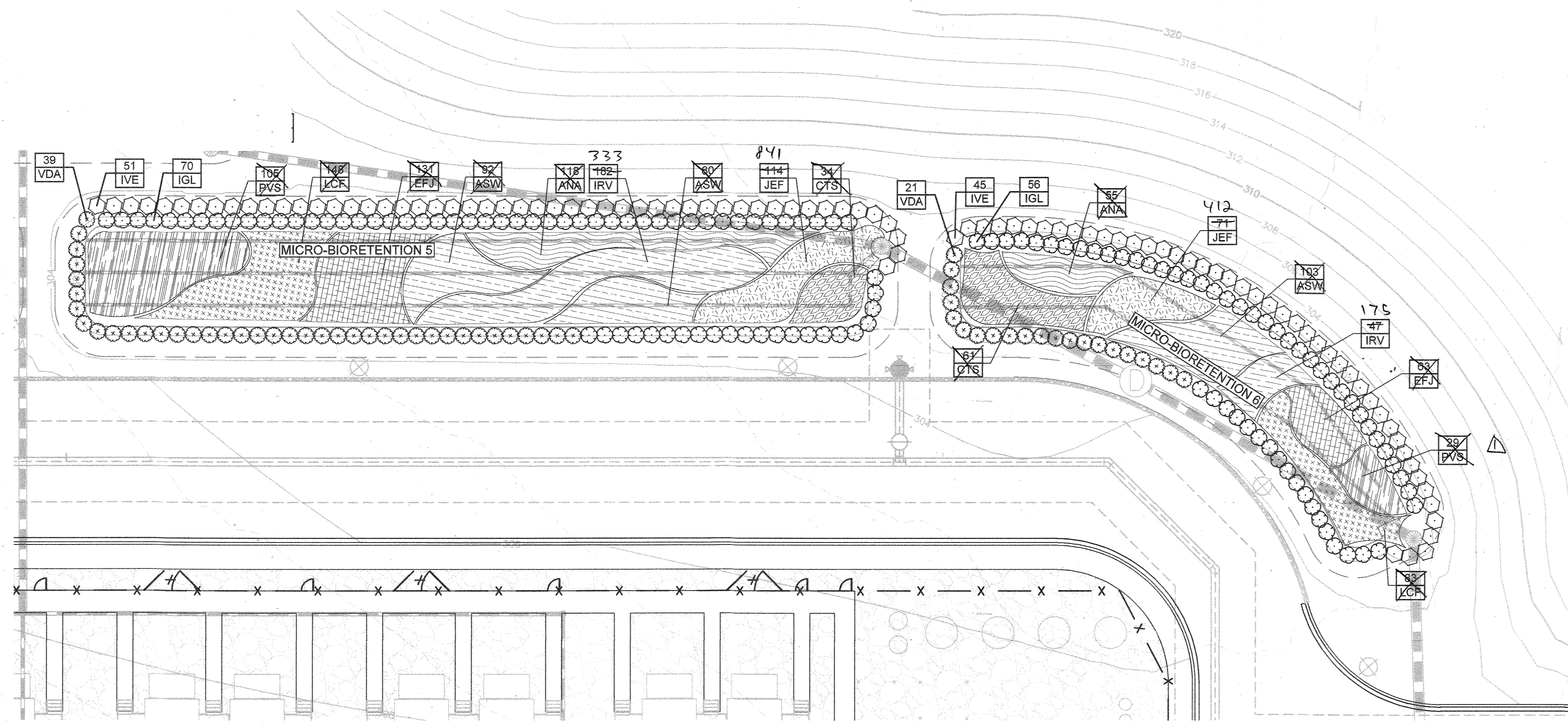
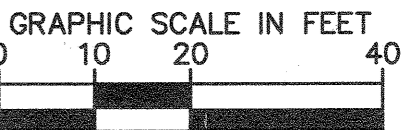
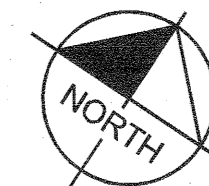
DATE

CALL 48 HOURS BEFORE YOU DIG



IT'S THE LAW!
DIAL 811

Know what's below.
Call before you dig.



MICRO-BIORETENTION AREAS #5 & #6

SCALE: 1" = 20'

PLANT SCHEDULE MICRO BIO 5

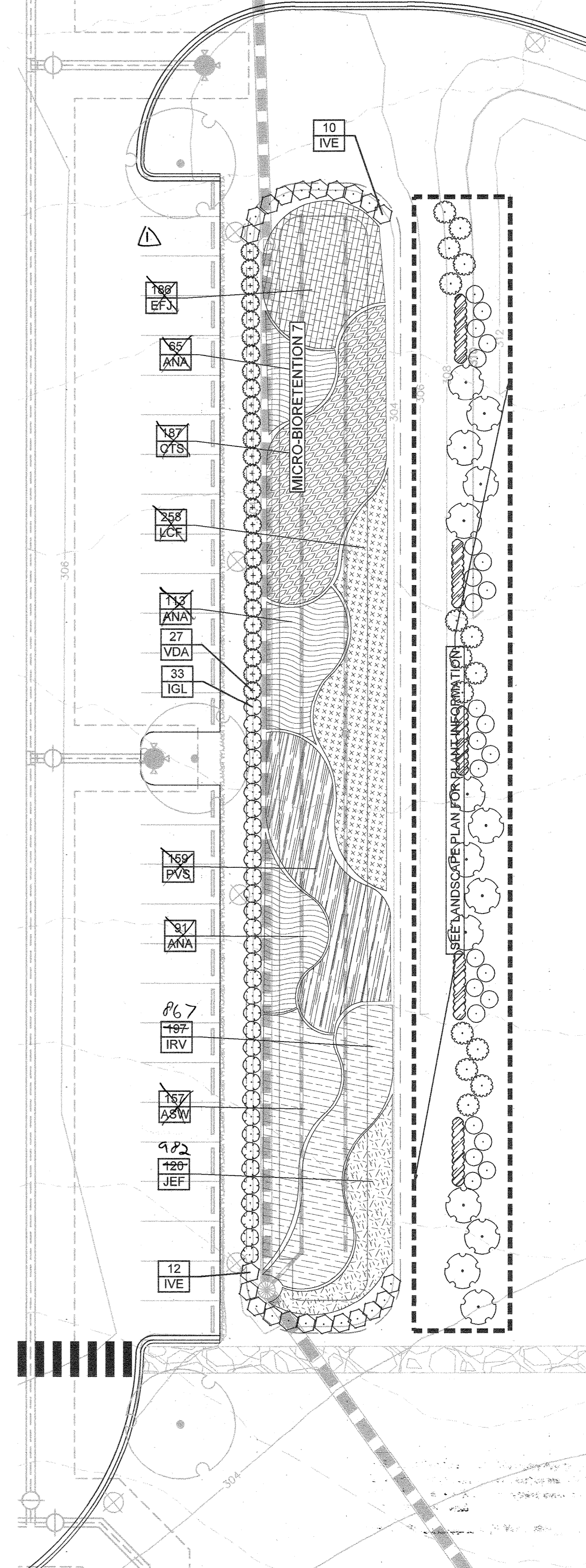
BIORETENTION	QTY	BOTANICAL NAME	COMMON NAME	CONT.	HEIGHT
IGL	70	Ilex glabra	Inkberry Holly	Cont.	30" HT. MIN.
IVE	51	Ilex verticillata	Winterberry	Cont.	36" HT. MIN.
VDA	39	Viburnum dentatum 'Arrowwood'	Arrowwood Viburnum	Cont.	30" HT. MIN.
GRASSES	QTY	BOTANICAL NAME	COMMON NAME	CONT.	SPACING
CTS	34	Carex striata	Tussock Sedge	1 qt.	30" o.c.
PVS	105	Panicum virgatum	Switch Grass	1 qt.	30" o.c.
MICRO BIO GROUNDCOVER	QTY	BOTANICAL NAME	COMMON NAME	CONT.	SPACING
ASW	172	Aselepias inornata	Swamp Milkweed	1 qt.	24" o.c.
ANA	148	Aster novae-angliae	New England Aster	1 qt.	24" o.c.
EFJ	131	Eupatorium fistulosum	Joe-Pye-Weed	1 qt.	24" o.c.
IRV	333	Irish versicolor	Blue Flag	1 qt.	24" o.c.
JEF	141	Juncus effusus	Soft Rush	1 qt.	24" o.c.
LCF	148	Lobelia cardinalis	Cardinal Flower	1 qt.	24" o.c.

PLANT SCHEDULE MICRO BIO 6

BIORETENTION	QTY	BOTANICAL NAME	COMMON NAME	CONT.	HEIGHT
IGL	56	Ilex glabra	Inkberry Holly	Cont.	30" HT. MIN.
IVE	45	Ilex verticillata	Winterberry	Cont.	36" HT. MIN.
VDA	21	Viburnum dentatum 'Arrowwood'	Arrowwood Viburnum	Cont.	30" HT. MIN.
GRASSES	QTY	BOTANICAL NAME	COMMON NAME	CONT.	SPACING
CTS	61	Carex striata	Tussock Sedge	1 qt.	30" o.c.
PVS	29	Panicum virgatum	Switch Grass	1 qt.	30" o.c.
MICRO BIO GROUNDCOVER	QTY	BOTANICAL NAME	COMMON NAME	CONT.	SPACING
ASW	103	Aselepias inornata	Swamp Milkweed	1 qt.	24" o.c.
ANA	55	Aster novae-angliae	New England Aster	1 qt.	24" o.c.
EFJ	63	Eupatorium fistulosum	Joe-Pye-Weed	1 qt.	24" o.c.
IRV	175	Irish versicolor	Blue Flag	1 qt.	24" o.c.
JEF	112	Juncus effusus	Soft Rush	1 qt.	24" o.c.
LCF	53	Lobelia cardinalis	Cardinal Flower	1 qt.	24" o.c.

PLANT SCHEDULE MICRO BIO 7

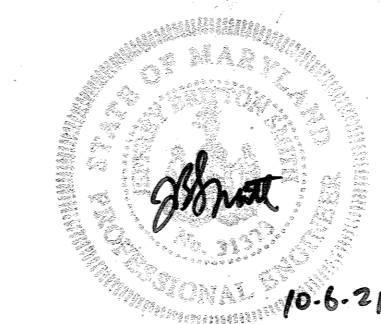
BIORETENTION	QTY	BOTANICAL NAME	COMMON NAME	CONT.	HEIGHT
IGL	33	Ilex glabra	Inkberry Holly	Cont.	30" HT. MIN.
IVE	22	Ilex verticillata	Winterberry	Cont.	36" HT. MIN.
VDA	27	Viburnum dentatum 'Arrowwood'	Arrowwood Viburnum	Cont.	30" HT. MIN.
GRASSES	QTY	BOTANICAL NAME	COMMON NAME	CONT.	SPACING
CTS	187	Carex striata	Tussock Sedge	1 qt.	30" o.c.
PVS	159	Panicum virgatum	Switch Grass	1 qt.	30" o.c.
MICRO BIO GROUNDCOVER	QTY	BOTANICAL NAME	COMMON NAME	CONT.	SPACING
ASW	167	Aselepias inornata	Swamp Milkweed	1 qt.	24" o.c.
ANA	280	Aster novae-angliae	New England Aster	1 qt.	24" o.c.
EFJ	186	Eupatorium fistulosum	Joe-Pye-Weed	1 qt.	24" o.c.
IRV	497	Irish versicolor	Blue Flag	1 qt.	24" o.c.
JEF	120	Juncus effusus	Soft Rush	1 qt.	24" o.c.
LCF	259	Lobelia cardinalis	Cardinal Flower	1 qt.	24" o.c.



MICRO-BIORETENTION AREA #7

SCALE: 1" = 20'

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 31373, Expiration Date: 01/21/2023



THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 STEPHEN JERRICK, No. 35792, 10-19-2022

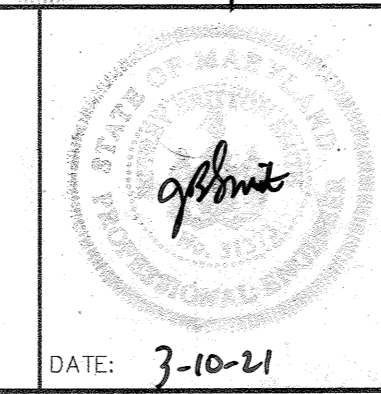
APPROVED: DEPARTMENT OF PLANNING & ZONING
 Chief, Development Engineering Division: [Signature] 4/22/21
 Chief, Division of Land Development: [Signature] 4/29/21
 Director: [Signature] 4/29/21

No.	REVISIONS	DATE	BY
1	Updated Landscape Plantings	10-05-21	KH

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 PHONE: 443-743-3470
 WWW.KIMLEY-HORN.COM

KHA PROJECT 110718001
 DATE 03/10/2021
 SCALES SHOWN
 DESIGNED BY CJC
 DRAWN BY CJC
 CHECKED BY KTB

EMERSON PROJECT
 SITE DEVELOPMENT PLAN
 (SDP-21-017)
 CONTRACT NO. 24-5162-D
 EMERSON SECTION 3, AREA 7, PARCEL A-1
 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC



MIRCO-BIORETENTION LANDSCAPE PLAN
 PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 31373
 EXPIRATION DATE 01/21/2023

SHEET NUMBER
38 OF 40
 SDP-21-017

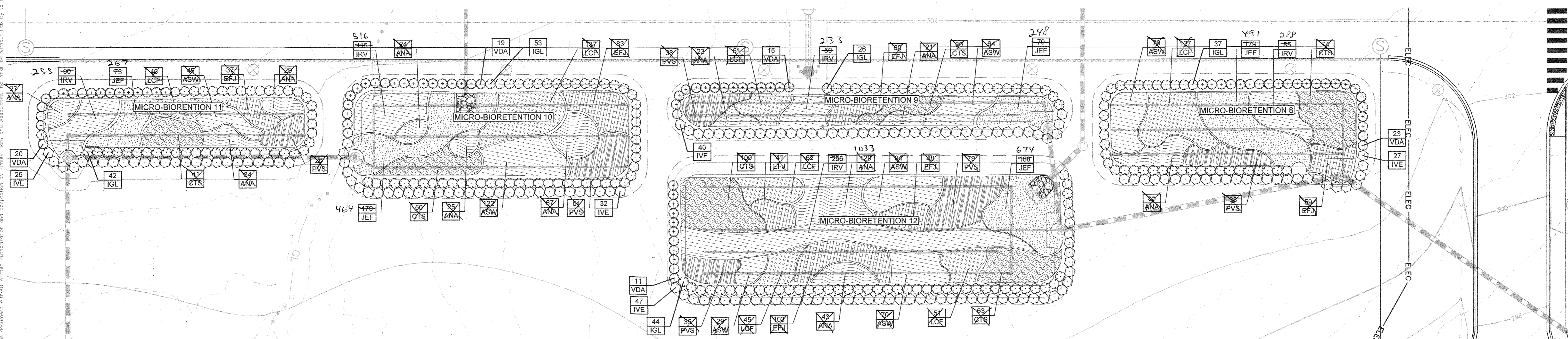
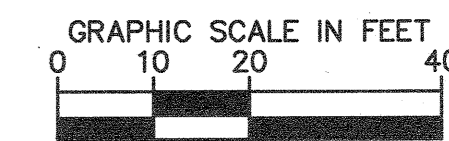
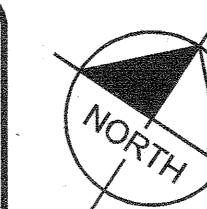
LANDSCAPE DEVELOPER'S CERTIFICATE

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

SIGNATURE

3-16-21 DATE

CALL 48 HOURS BEFORE YOU DIG
IT'S THE LAW!
DIAL 811



MICRO-BIORETENTION AREAS #8, #9, #10, #11, #12

SCALE: 1" = 20'

PLANT SCHEDULE MICRO BIO 8

BIORETENTION	QTY	BOTANICAL NAME	COMMON NAME	CONT	HEIGHT
IGL	37	Ilex glabra	Inkberry Holly	1 qt.	30" HT. MIN.
IVE	27	Ilex verticillata	Winterberry	1 qt.	36" HT. MIN.
VDA	23	Viburnum dentatum 'Arrowwood'	Arrowwood Viburnum	1 qt.	30" HT. MIN.
GRASSES					
CTS	74	Carex stricta	Tussock Sedge	1 qt.	30" o.c.
PVS	38	Panicum virgatum	Switch Grass	1 qt.	30" o.c.
MICRO BIO GROUNDCOVER					
ASW	70	Asclepias incarnata	Swamp Milkweed	1 qt.	24" o.c.
ANA	66	Aster novae-angliae	New England Aster	1 qt.	24" o.c.
EFJ	59	Eupatorium fistulosum	Joe Pye Weed	1 qt.	24" o.c.
IRV	85	Iris versicolor	Blue Flag	1 qt.	24" o.c.
JEF	479	Juncus effusus	Soft Rush	1 qt.	24" o.c.
LCF	127	Lobelia cardinalis	Cardinal Flower	1 qt.	24" o.c.

PLANT SCHEDULE MICRO BIO 11

BIORETENTION	QTY	BOTANICAL NAME	COMMON NAME	CONT	HEIGHT
IGL	42	Ilex glabra	Inkberry Holly	1 qt.	30" HT. MIN.
IVE	25	Ilex verticillata	Winterberry	1 qt.	36" HT. MIN.
VDA	20	Viburnum dentatum 'Arrowwood'	Arrowwood Viburnum	1 qt.	30" HT. MIN.
GRASSES					
CTS	41	Carex stricta	Tussock Sedge	1 qt.	30" o.c.
PVS	26	Panicum virgatum	Switch Grass	1 qt.	30" o.c.
MICRO BIO GROUNDCOVER					
ASW	46	Asclepias incarnata	Swamp Milkweed	1 qt.	24" o.c.
ANA	90	Aster novae-angliae	New England Aster	1 qt.	24" o.c.
EFJ	37	Eupatorium fistulosum	Joe Pye Weed	1 qt.	24" o.c.
IRV	255	Iris versicolor	Blue Flag	1 qt.	24" o.c.
JEF	267	Juncus effusus	Soft Rush	1 qt.	24" o.c.
LCF	46	Lobelia cardinalis	Cardinal Flower	1 qt.	24" o.c.

PLANT SCHEDULE MICRO BIO 9

BIORETENTION	QTY	BOTANICAL NAME	COMMON NAME	CONT	HEIGHT
IGL	28	Ilex glabra	Inkberry Holly	1 qt.	30" HT. MIN.
IVE	40	Ilex verticillata	Winterberry	1 qt.	36" HT. MIN.
VDA	15	Viburnum dentatum 'Arrowwood'	Arrowwood Viburnum	1 qt.	30" HT. MIN.
GRASSES					
CTS	30	Carex stricta	Tussock Sedge	1 qt.	30" o.c.
PVS	38	Panicum virgatum	Switch Grass	1 qt.	30" o.c.
MICRO BIO GROUNDCOVER					
ASW	64	Asclepias incarnata	Swamp Milkweed	1 qt.	24" o.c.
ANA	44	Aster novae-angliae	New England Aster	1 qt.	24" o.c.
EFJ	60	Eupatorium fistulosum	Joe Pye Weed	1 qt.	24" o.c.
IRV	233	Iris versicolor	Blue Flag	1 qt.	24" o.c.
JEF	248	Juncus effusus	Soft Rush	1 qt.	24" o.c.
LCF	51	Lobelia cardinalis	Cardinal Flower	1 qt.	24" o.c.

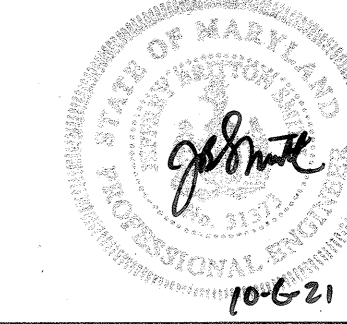
PLANT SCHEDULE MICRO BIO 12

BIORETENTION	QTY	BOTANICAL NAME	COMMON NAME	CONT	HEIGHT
IGL	44	Ilex glabra	Inkberry Holly	1 qt.	30" HT. MIN.
IVE	47	Ilex verticillata	Winterberry	1 qt.	36" HT. MIN.
VDA	11	Viburnum dentatum 'Arrowwood'	Arrowwood Viburnum	1 qt.	30" HT. MIN.
GRASSES					
CTS	163	Carex stricta	Tussock Sedge	1 qt.	30" o.c.
PVS	114	Panicum virgatum	Switch Grass	1 qt.	30" o.c.
MICRO BIO GROUNDCOVER					
ASW	103	Asclepias incarnata	Swamp Milkweed	1 qt.	24" o.c.
ANA	172	Aster novae-angliae	New England Aster	1 qt.	24" o.c.
EFJ	182	Eupatorium fistulosum	Joe Pye Weed	1 qt.	24" o.c.
IRV	1033	Iris versicolor	Blue Flag	1 qt.	24" o.c.
JEF	674	Juncus effusus	Soft Rush	1 qt.	24" o.c.
LCF	158	Lobelia cardinalis	Cardinal Flower	1 qt.	24" o.c.

PLANT SCHEDULE MICRO BIO 10

BIORETENTION	QTY	BOTANICAL NAME	COMMON NAME	CONT	HEIGHT
IGL	53	Ilex glabra	Inkberry Holly	1 qt.	30" HT. MIN.
IVE	32	Ilex verticillata	Winterberry	1 qt.	36" HT. MIN.
VDA	19	Viburnum dentatum 'Arrowwood'	Arrowwood Viburnum	1 qt.	30" HT. MIN.
GRASSES					
CTS	50	Carex stricta	Tussock Sedge	1 qt.	30" o.c.
PVS	61	Panicum virgatum	Switch Grass	1 qt.	30" o.c.
MICRO BIO GROUNDCOVER					
ASW	122	Asclepias incarnata	Swamp Milkweed	1 qt.	24" o.c.
ANA	116	Aster novae-angliae	New England Aster	1 qt.	24" o.c.
EFJ	83	Eupatorium fistulosum	Joe Pye Weed	1 qt.	24" o.c.
IRV	516	Iris versicolor	Blue Flag	1 qt.	24" o.c.
JEF	464	Juncus effusus	Soft Rush	1 qt.	24" o.c.
LCF	137	Lobelia cardinalis	Cardinal Flower	1 qt.	24" o.c.

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 31373 Expiration Date: 01/21/2023



THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
STEPHEN JEAROK, No. 35792,
10-19-2022

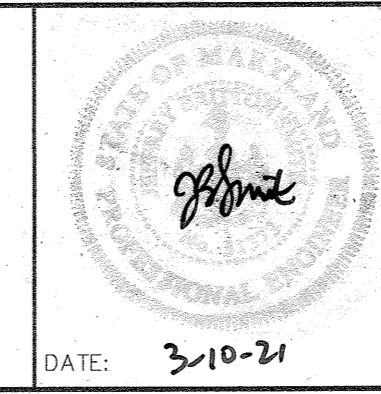
APPROVED: DEPARTMENT OF PLANNING & ZONING
 Chief, Development Engineering Division: 4-12-21
 Chief, Division of Land Development: 4/12/21
 Director: 4-29-21

No.	REVISIONS	DATE	BY
1	Updated Landscape Plantings	10-05-21	KH

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KHA PROJECT 110718001
 DATE 03/10/2021
 SCALE(S) SHOWN
 DESIGNED BY JSH
 DRAWN BY JSH
 CHECKED BY WDW

EMERSON PROJECT
 SITE DEVELOPMENT PLAN
 (SDP-21-017)
 CONTRACT NO. 24-5162-D
 EMERSON SECTION 3, AREA 7, PARCEL A-1
 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC



MICRO-BIORETENTION LANDSCAPE PLAN
 PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 31373
 EXPIRATION DATE 01/21/2023

SHEET NUMBER
39 OF 40
 SDP-21-017

LANDSCAPE DEVELOPER'S CERTIFICATE

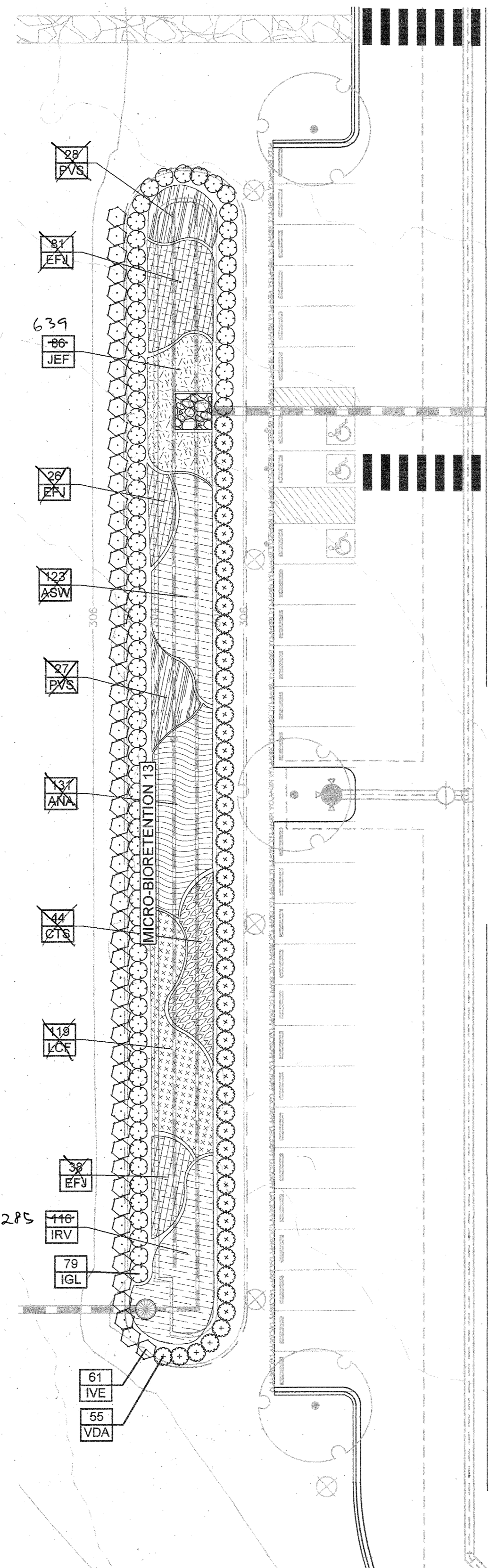
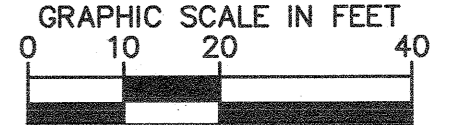
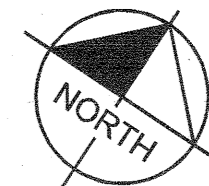
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE, THE HOWARD COUNTY LANDSCAPE MANUAL, AND THE LANDSCAPE DESIGN CRITERIA. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION ACCOMPANIED BY AN EXECUTED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

SIGNATURE

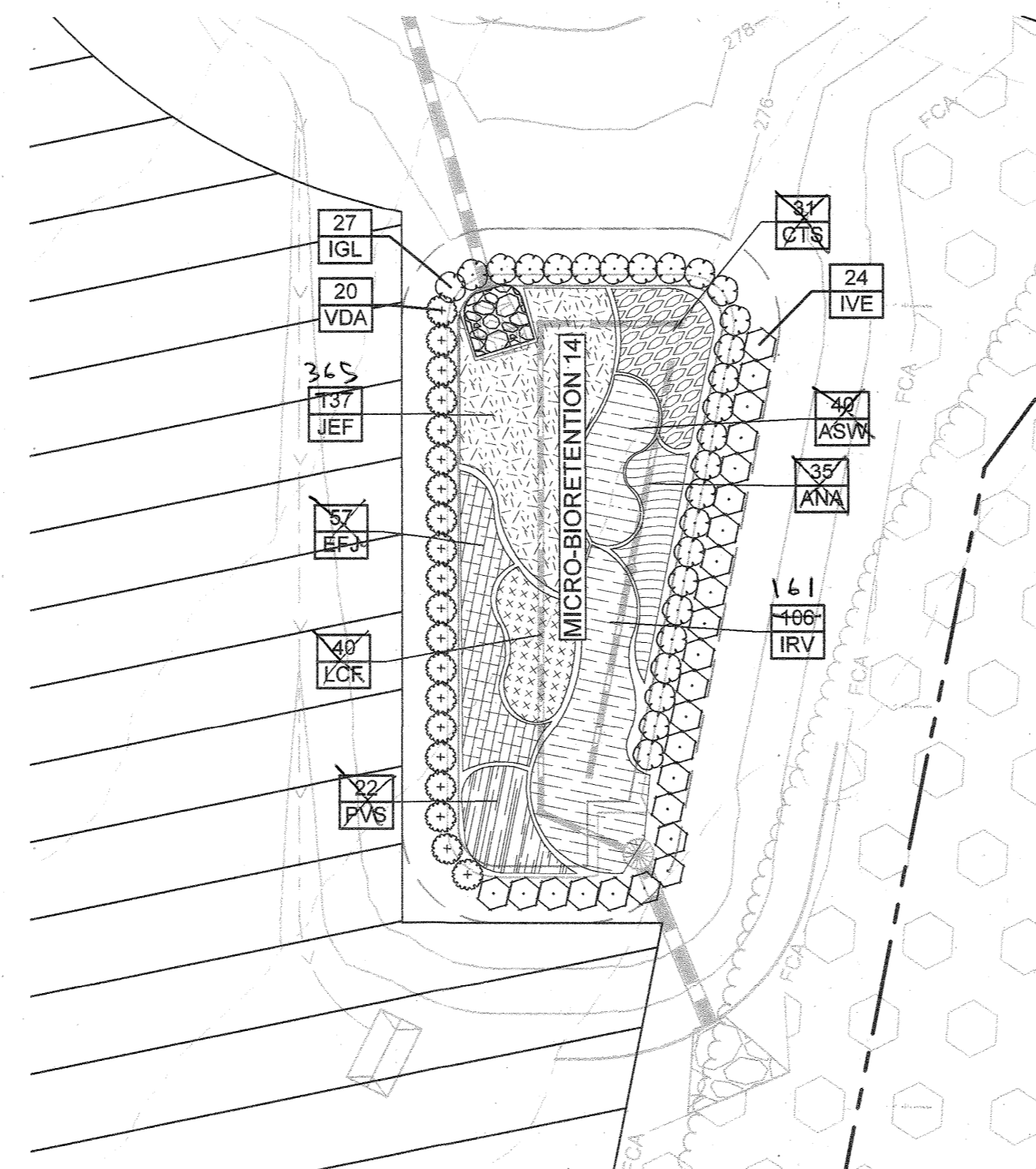
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3-16-21

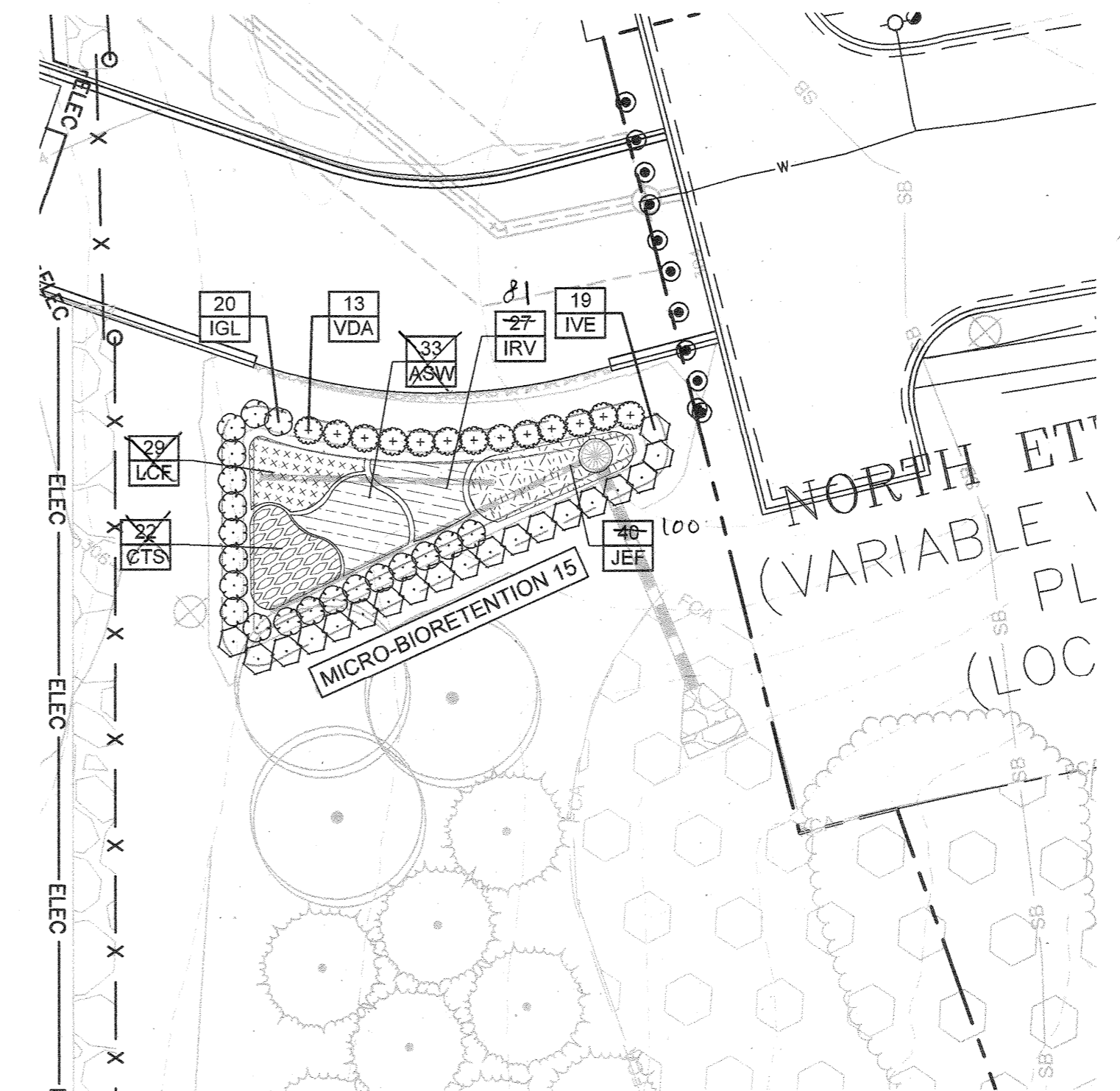
CALL 48 HOURS BEFORE YOU DIG
IT'S THE LAW! DIAL 811
Know what's below. Call before you dig.



MICRO-BIORETENTION AREA #13
SCALE: 1" = 20'



MICRO-BIORETENTION AREA #14
SCALE: 1" = 20'



MICRO-BIORETENTION AREA #15
SCALE: 1" = 20'

PLANT SCHEDULE MICRO BIO 13

BIORETENTION	QTY	BOTANICAL NAME	COMMON NAME	CONT	HEIGHT
IGL	79	Ilex glabra	Inkberry Holly	Cont.	30" HT. MIN.
IVE	61	Ilex verticillata	Winterberry	Cont.	36" HT. MIN.
VDA	55	Viburnum dentatum 'Arrowwood'	Arrowwood Viburnum	Cont.	30" HT. MIN.
GRASSES	QTY	BOTANICAL NAME	COMMON NAME	CONT	SPACING
CTS	44	Carex striata	Tussock Sedge	1 qt.	30" o.c.
PVS	55	Panicum virgatum	Switch Grass	1 qt.	30" o.c.
MICRO BIO GROUNDCOVER	QTY	BOTANICAL NAME	COMMON NAME	CONT	SPACING
ASW	123	Asclepias incarnata	Swamp Milkweed	1 qt.	24" o.c.
ANA	131	Aster novae-angliae	New England Aster	1 qt.	24" o.c.
EFJ	145	Eupatorium fistulosum	Joe Pye Weed	1 qt.	24" o.c.
IRV	2 PS 116	Iris versicolor	Blue Flag	1 qt.	24" o.c.
JEF	639	Juncus effusus	Soft Rush	1 qt.	24" o.c.
LGF	110	Lobelia cardinalis	Cardinal Flower	1 qt.	24" o.c.

PLANT SCHEDULE MICRO BIO 14

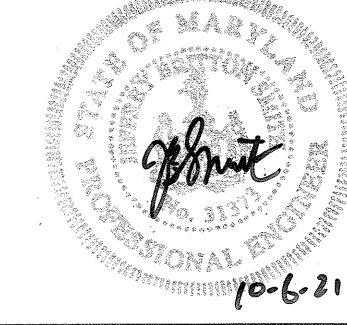
BIORETENTION	QTY	BOTANICAL NAME	COMMON NAME	CONT	HEIGHT
IGL	27	Ilex glabra	Inkberry Holly	Cont.	30" HT. MIN.
IVE	24	Ilex verticillata	Winterberry	Cont.	36" HT. MIN.
VDA	20	Viburnum dentatum 'Arrowwood'	Arrowwood Viburnum	Cont.	30" HT. MIN.
GRASSES	QTY	BOTANICAL NAME	COMMON NAME	CONT	SPACING
CTS	31	Carex striata	Tussock Sedge	1 qt.	30" o.c.
PVS	22	Panicum virgatum	Switch Grass	1 qt.	30" o.c.
MICRO BIO GROUNDCOVER	QTY	BOTANICAL NAME	COMMON NAME	CONT	SPACING
ASW	40	Asclepias incarnata	Swamp Milkweed	1 qt.	24" o.c.
ANA	36	Aster novae-angliae	New England Aster	1 qt.	24" o.c.
EFJ	57	Eupatorium fistulosum	Joe Pye Weed	1 qt.	24" o.c.
IRV	161	Iris versicolor	Blue Flag	1 qt.	24" o.c.
JEF	365	Juncus effusus	Soft Rush	1 qt.	24" o.c.
LGF	40	Lobelia cardinalis	Cardinal Flower	1 qt.	24" o.c.

PLANT SCHEDULE MICRO BIO 15

BIORETENTION	QTY	BOTANICAL NAME	COMMON NAME	CONT	HEIGHT
IGL	20	Ilex glabra	Inkberry Holly	Cont.	30" HT. MIN.
IVE	19	Ilex verticillata	Winterberry	Cont.	36" HT. MIN.
VDA	13	Viburnum dentatum 'Arrowwood'	Arrowwood Viburnum	Cont.	30" HT. MIN.
GRASSES	QTY	BOTANICAL NAME	COMMON NAME	CONT	SPACING
CTS	22	Carex striata	Tussock Sedge	1 qt.	30" o.c.
MICRO BIO GROUNDCOVER	QTY	BOTANICAL NAME	COMMON NAME	CONT	SPACING
ASW	33	Asclepias incarnata	Swamp Milkweed	1 qt.	24" o.c.
IRV	81 27	Iris versicolor	Blue Flag	1 qt.	24" o.c.
JEF	100 49	Juncus effusus	Soft Rush	1 qt.	24" o.c.
LGF	20	Lobelia cardinalis	Cardinal Flower	1 qt.	24" o.c.

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Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 31373 Expiration Date: 01/21/2023



THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
STEPHEN SERRICK No. 35192, D-19-2012

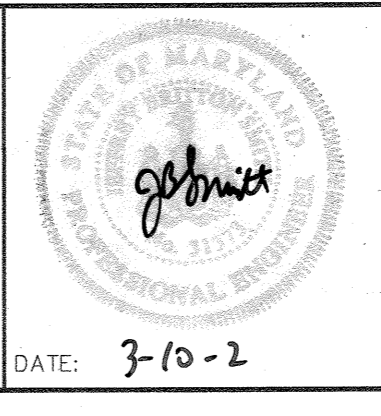
APPROVED: DEPARTMENT OF PLANNING & ZONING
 [Signature] 4/12/21
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 4/26/21
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 4-29-21
 DIRECTOR

No.	REVISIONS	DATE	BY
1	Updated Landscape Plantings	10-05-21	KH

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 PHONE: 443-743-3470
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KHA PROJECT 110718001
 DATE 03/10/2021
 SCALE(S) SHOWN
 DESIGNED BY WDW
 DRAWN BY JSH
 CHECKED BY WDW

EMERSON PROJECT
 SITE DEVELOPMENT PLAN
 (SDP-21-017)
 CONTRACT NO. 24-5162-D
 EMERSON SECTION 3, AREA 7, PARCEL A-1
 TAX MAP 47, GRID 8, PARCEL 1078, 43.112 AC



MICRO-BIORETENTION LANDSCAPE PLAN
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 LICENSE NO. 31373
 EXPIRATION DATE 01/21/2023

SHEET NUMBER
40 OF 40
 SDP-21-017