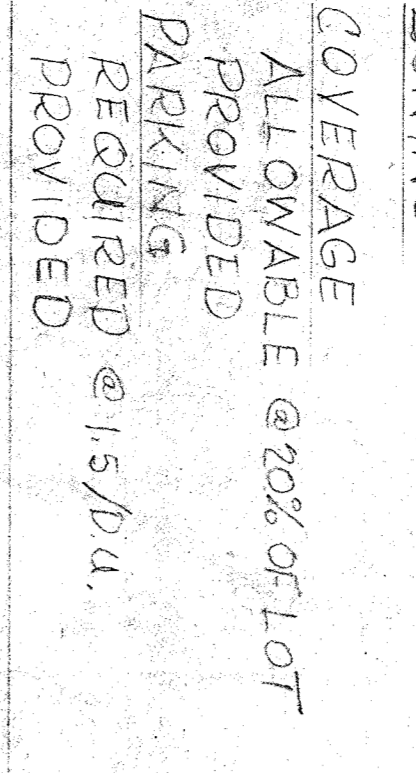
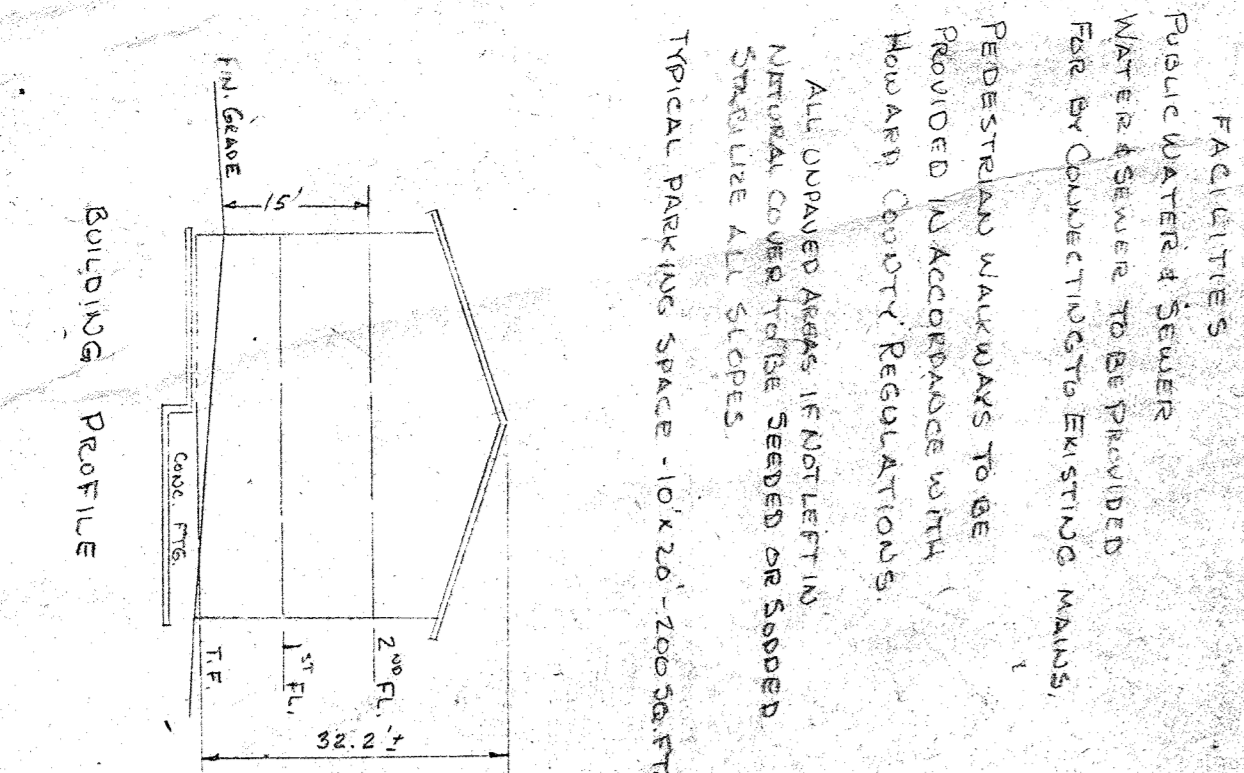


SITE ANALYSIS
 AREA OF SITE (NET) 24766 sq ft
 ACRES 0.567
 SOFT 1078.546 sq ft
 UNIT COUNT 385
 ALLOWABLE @ 2800 + D.U. 312
 PROVIDED 385
 NO OF ONE BEDROOMS 150
 NO OF TWO BEDROOMS 162
 AREA OF SMALLEST 1 BDRM. 663 sq ft
 AREA OF TWO BEDROOMS 923 sq ft
 ZONING R A 1
 COVERPAGE ALL DWABLE @ 20% OF LOT 215,709 sq ft
 PROVIDED 105,862 sq ft
 PARKING REQUIRED @ 15/D.U. 468
 PROVIDED 468



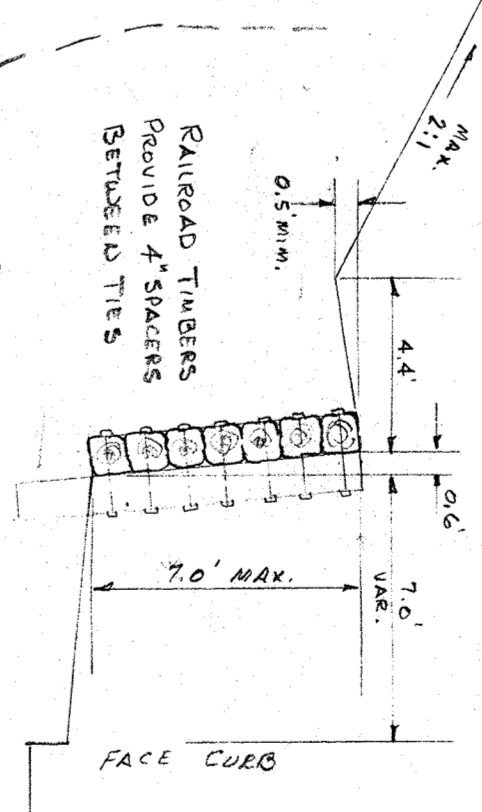
TYPICAL PARKING LOT SECTION



APPROVED FOR PUBLIC SERVICE WATER AND PUBLIC UTILITY HEALTH DEPARTMENT
 COUNTY HEALTH DEPARTMENT
 APPROVED FOR PUBLIC SERVICE WATER AND PUBLIC UTILITY HEALTH DEPARTMENT
 COUNTY HEALTH DEPARTMENT
 APPROVED FOR PUBLIC SERVICE WATER AND PUBLIC UTILITY HEALTH DEPARTMENT
 COUNTY HEALTH DEPARTMENT



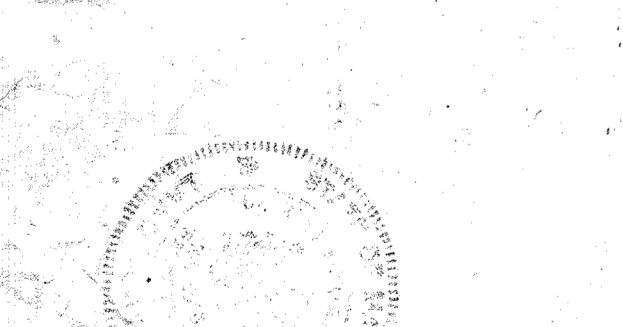
SECTION 1 & LEVEL
 REVISED SECTION FOR
TOWN & COUNTY
 2ND ELECTION DISTRICT HOWARD COUNTY
 MARCH 28, 1969
 REVISED MARCH 11, 1969
 COUNTY ENGINEER
 REVISED MARCH 11, 1969
 COUNTY ENGINEER



RETAINING WALL
 TYPICAL SECTION FOR
 SCALE: 1/8" = 1'-0"

NO.	DATE	DESCRIPTION
1	3/11/69	PRELIMINARY PLAN
2	3/11/69	REVISION TO PRELIMINARY PLAN
3	3/11/69	REVISION TO PRELIMINARY PLAN
4	3/11/69	REVISION TO PRELIMINARY PLAN
5	3/11/69	REVISION TO PRELIMINARY PLAN
6	3/11/69	REVISION TO PRELIMINARY PLAN
7	3/11/69	REVISION TO PRELIMINARY PLAN
8	3/11/69	REVISION TO PRELIMINARY PLAN
9	3/11/69	REVISION TO PRELIMINARY PLAN
10	3/11/69	REVISION TO PRELIMINARY PLAN

APPROVAL FOR MAINTENANCE BLDG. ADDITION
 HOWARD COUNTY
 DATE: 7/30/69
 SDR-69-014



DATE: 7/30/69
 SDR-69-014

REVISION TO SDR-69-014 TO ADDRESS PORTAL BRG
 (LOCATION INDICATED) IN ORDER TO MEET THE
 REQUIREMENTS OF THE STATE OF MARYLAND
 I AM A duly licensed Professional Engineer
 LICENSE: 44918 / Exp. 12/31/2015

FOR COUNTY AND STATE RECORD
 THIS PLAN IS FILED IN THE OFFICE OF THE
 COUNTY ENGINEER
 DATE: 7/30/69

TOWN & COUNTRY, SECTION 5, REVISED SECTION 4 HOWARD CROSSING GARDENS, LLC ELLCOTT CITY, MD

STANDARD SYMBOLS


- LOD — LIMITS OF DISTURBANCE
- ⊕ SS — EXISTING SANITARY LINE AND MANHOLE
- UGE — EXISTING UGE LINE
- GAS — EXISTING GAS LINE
- W — EXISTING WATER LINE
- OHE — EXISTING OHE LINE
- ⊙ — EXISTING UTILITY POLE
- ⊙ — EXISTING LIGHT POLE
- ⊙ — EXISTING GAS UTILITY
- ⊙ — EXISTING TRAVERSE POINT
- ⊙ — BENCHMARK
- SD — EXISTING STORMWATER PIPE
- ⊕ — EXISTING STORMWATER MANHOLE
- — — — — PROPERTY BOUNDARY
- — — — — EXISTING EASEMENT
- — — — — EX. EDGE OF PAVEMENT
- X — X — X — EXISTING FENCE
- — — — — SURVEYED TREELINE
- ⊙ — EVERGREEN TREE
- ⊙ — DECIDUOUS TREE
- ⊙ — 35" TULIP POPLAR
- ⊙ — T1 — SURVEYED SPECIMEN TREE
- CRZ — CRITICAL ROOT ZONE (SPECIMEN TREE)
- FCE — FOREST CONSERVATION EASEMENT
- — — — — SURVEYED NONTIDAL WETLAND
- WB — WB — WETLAND BUFFER (25')
- WUS — SURVEYED WATERS OF THE US
- ⊕ — EX. STRUCTURE
- 370 — EX. MAJOR CONTOUR
- 369 — EX. MINOR CONTOUR
- MaC — SOIL BOUNDARY
- ⊙ — GNB — HYDROLOGIC SOIL GROUP
- — — — — HIGHLY ERODIBLE (>5%) SOILS
- — — — — HIGHLY ERODIBLE (>15%) SOILS
- — — — — STEEP (>20%) SLOPES
- 370 — PROPOSED CONTOUR
- 100EX — EXISTING 100-YR WATER SURFACE (HYDRAULIC MODEL)
- 100PR — PROPOSED 100-YR WATER SURFACE (HYDRAULIC MODEL)
- — — — — CLASS II RIPRAP
- ⊕ — TREE REMOVAL
- — — — — MULCH ACCESS ROAD
- — — — — STAGING/STOCKPILE AREA
- OCF — ORANGE CONSTRUCTION FENCE
- TPF — TREE PROTECTION FENCE
- ⊙ — P — PUMP
- ⊕ — FB — FILTER BAG
- ⊕ — SANDBAG DIKE

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."

Joseph D. Arrowsmith 4/17/2023
DESIGNER'S SIGNATURE DATE

JOSEPH ARROWSMITH MD REGISTRATION NO 44918
PRINTED NAME (P.E.) R.L.S., OR R.L.A. (CIRCLE ONE)



OWNER/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 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 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."

T. Richard Linton, Jr. 4/19/2023
OWNER'S/DEVELOPER'S SIGNATURE DATE

T. Richard Linton, Jr. Authorized Signatory
PRINTED NAME & TITLE

HOWARD SCD SIGNATURE BLOCK:

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

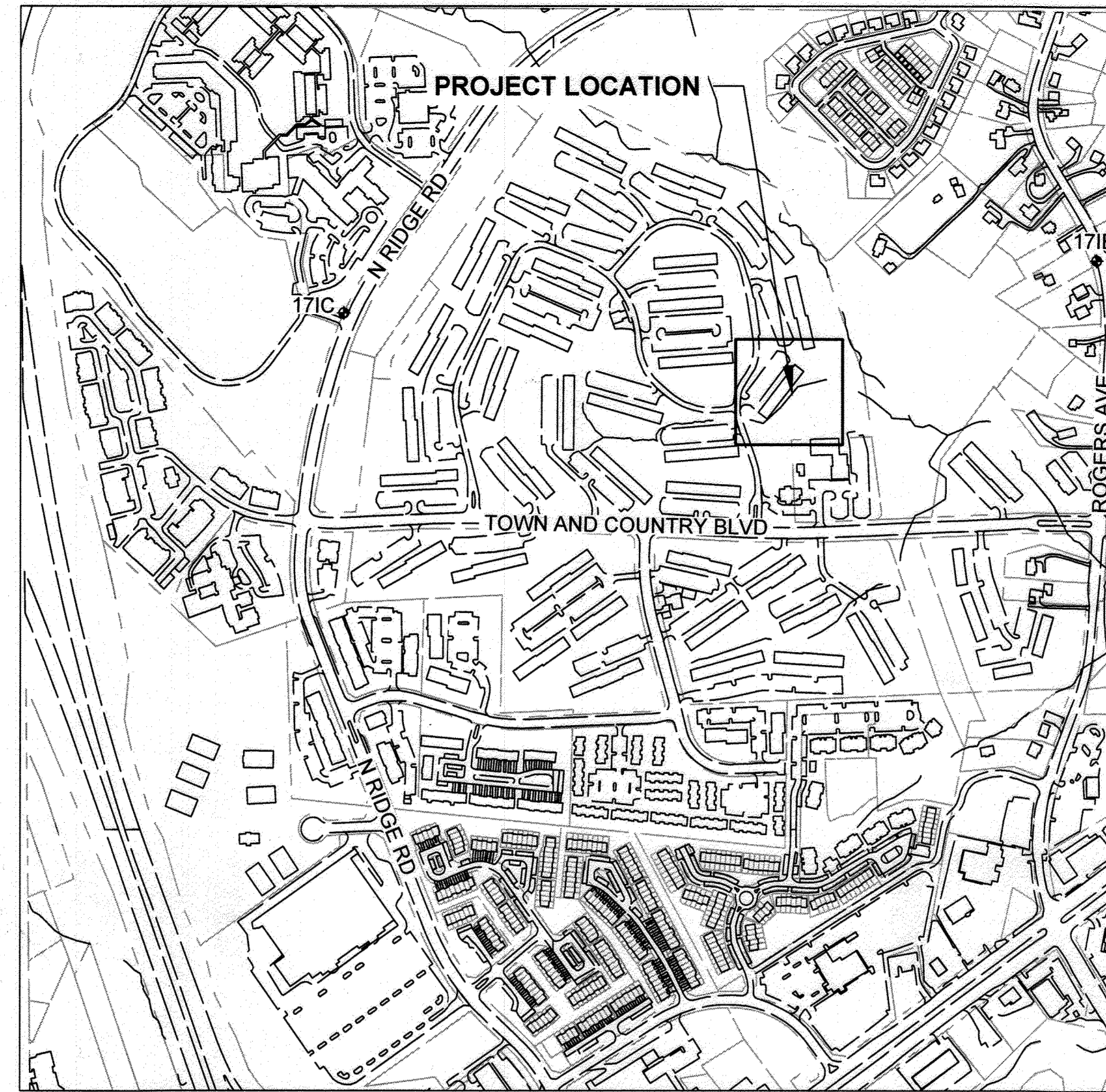
Alexander Butcher 05/08/23
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division 5-16-23
Date

Chief, Division of Land Development 5/25/23
Date

Mary A. Kendall 6/15/23
Director Date



VICINITY MAP
SCALE: 1"=500'

SITE ANALYSIS
TAX MAP/PARCEL/LOT: 17/355
DEED REF: 14115/00159
DISTRICT: 1
USE: HIGH DENSITY RESIDENTIAL R-A-15
PROPERTY AREA: 94.97 AC
WATERSHED: PATAPSCO RIVER L N BR (021309061017)
PROPERTY OWNER: HARBOR CROSSING GARDENS, LLC
LIMIT OF DISTURBANCE: 11,692 SF
TOTAL VEGETATED AREA: 10,745 SF
TEMPORARY STAGING AREA: 1,222 SF
CUT: 27 CY, FILL: 90 CY (DERIVED FROM AUTOCAD SURFACE)
OFFSITE WASTE LOCATION: SITE WITH ACTIVE GRADING PERMIT

APPROVALS & TRACKING			
AGENCY	APPROVAL OR TRACKING #	DATE APPLIED	DATE APPROVED
MDE WETLANDS/WATERWAY AUTHORIZATION	22-NT-3179	9/14/2022	10/7/2022
USACE AUTHORIZATION	202261218	9/14/2022	10/7/2022
HOWARD COUNTY REDLINE REVISION		12/20/2022	3/28/2023

GENERAL NOTES:

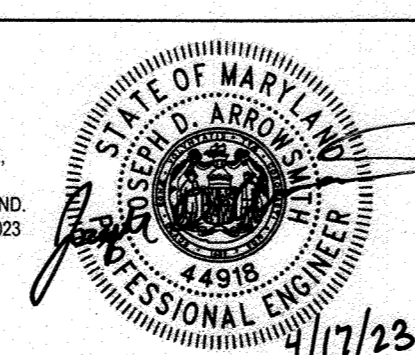
1. THE CONTRACTOR SHALL NOTIFY THE HARBOR GROUP MANAGEMENT AT 757-640-0800 AT LEAST FIVE (5) DAYS PRIOR TO STARTING WORK.
2. THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1.800.257.7777 AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK.
3. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO STARTING WORK.
4. THE SYSTEM OF COORDINATES USED IS BASED ON THE FOLLOWING DATUMS:
 - HORIZONTAL: MARYLAND STATE PLANE NAD OF 1983/2011
 - VERTICAL: NORTH AMERICAN VERTICAL DATUM (NAVD) 1988
5. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY.
6. TOPOGRAPHIC SURVEYS WERE PERFORMED BY ACCURATE INFRASTRUCTURE DATA, INC., UNDER SUBCONTRACT TO O'CONNELL AND LAWRENCE, INC IN MARCH AND APRIL 2022.
7. UTILITY SURVEY WAS PERFORMED BY O'CONNELL AND LAWRENCE, INC. IN MARCH 2022.
8. PROPERTY LINES AND EASEMENTS SHOWN ON THIS PLAN ARE APPROXIMATE AND FOR REFERENCE ONLY.
9. SHOULD THE CONTRACTOR DISCOVER ANY DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS, THE COLUMBIA ASSOCIATION IS TO BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. SHOULD THE CONTRACTOR MAKE FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE COLUMBIA ASSOCIATION, THEN THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THOSE CHANGES.
10. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
11. UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND TAKEN FROM AVAILABLE PLANS, RECORDS, AND/OR FIELD RECONNAISSANCE. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO LOCATE AND PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO THE CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
12. UTILITY CONTACTS:
 - BALTIMORE GAS AND ELECTRIC - USIC SOUTH AND EAST HOWARD: 443.239.4412
 - VERIZON CUSTOMER SERVICE: 800.922.0204
 - COMCAST CUSTOMER SERVICE: 800.934.6489
12. THE WETLAND DELINEATION FOR THIS SITE WAS PERFORMED BY STRAUGHAN ENVIRONMENTAL IN MARCH 2022.
13. THE PROJECT HAS MDE PERMIT NUMBER 22-NT-3179.

PROJECT NOTES:

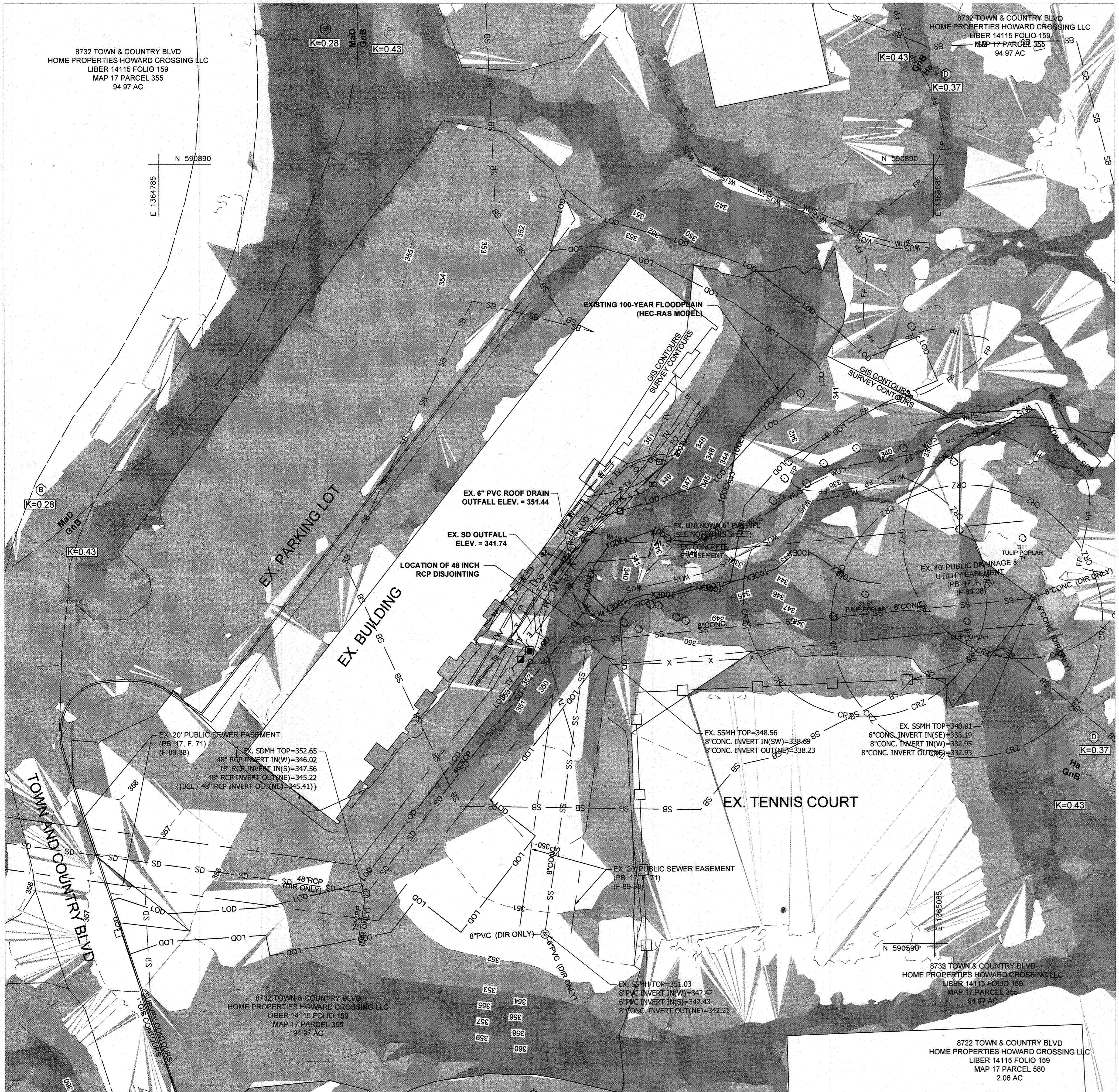
1. THIS WORK TAKES PLACE IN USE I WATERS. IN-STREAM WORK IS PROHIBITED BETWEEN MARCH 1 AND JUNE 15 OF ANY CALENDAR YEAR INCLUSIVE.
2. AN AREA OF MINIMAL FLOOD HAZARD, ZONE X, IS LOCATED AT THE PROJECT LOCATION (FEMA FIRM 24027C00900 - EFFECTIVE NOVEMBER 2013). AN AREA OF 1% HAZARD, ZONE AE, IS LOCATED AT THE PROJECT LOCATION (FEMA, 2022)
3. NATURAL RESOURCES DELINEATED ON THIS PLAN WERE FIELD VERIFIED BY STRAUGHAN ENVIRONMENTAL IN MARCH 2022.
4. THE SITE IS LOCATED IN THE PATAPSCO RIVER LOWER NORTH BRANCH WATERSHED. THIS PORTION OF THE WATERSHED IS IMPAIRED BY E. COLI, ARSENIC, TOTAL PHOSPHORUS, TOTAL NITROGEN, CHLORDANE, TOTAL SUSPENDED SEDIMENTS, CHANNELIZATION, AND SELENIUM AS DEFINED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT. THE RECEIVING WATERS ARE NOT CLASSIFIED UNDER TIER II HIGH QUALITY WATERS.
5. THE CONTRACTOR SHALL CONTINUALLY MONITOR WEATHER FORECASTS DURING WORK ACTIVITIES AND SCHEDULE WORK DURING FAVORABLE CONDITIONS.
6. THE CONTRACTOR SHALL EXERCISE CARE IN ACTIVITIES THAT INVOLVE CUTTING, FILLING, OR GRADING IN THE VICINITY OF TREES THAT ARE TO REMAIN. THESE ACTIVITIES SHALL BE PERFORMED IN A MANNER THAT DOES NOT DISTURB THE CRITICAL ROOT ZONE WITHIN THE DRIP LINE OF THE TREE. PROTECTIVE ORANGE FENCING SHALL BE INSTALLED ALONG THE LIMITS OF DISTURBANCE FOR MAINTAINED TREES PRIOR TO CONSTRUCTION.
7. THE CONTRACTOR SHALL NOT STORE EQUIPMENT, MATERIALS, AND/OR SUPPLIES BEYOND THE LIMITS OF DISTURBANCE SHOWN ON THE PLANS.
8. UPON COMPLETION OF THE WORK, BUT PRIOR TO DE-MOBILIZATION, THE CONTRACTOR SHALL REMOVE ALL REMNANTS OF CONSTRUCTION MATERIALS FROM THE SITE. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO A CONDITION EQUAL TO OR BETTER THAN THE PRE-CONSTRUCTION CONDITIONS.
9. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES, PHOTOGRAPHS OF THE PROPOSED WORK AREA AND ACCESS SHALL BE TAKEN BY THE CONTRACTOR.
10. ALL MATERIAL SHALL BE REMOVED AND DISPOSED OF OFFSITE. REMOVED TREES AND BRUSH MAY BE REDISTRIBUTED ON SITE AT THE DISCRETION OF THE ENGINEER AND COLUMBIA ASSOCIATION REPRESENTATIVE.
11. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN EXITING THE PROJECT SITE AND PAY CLOSE ATTENTION TO PEDESTRIANS WALKING NEAR THE PROJECT SITE.
12. WORKING HOURS ARE 7AM TO 7PM MONDAY THROUGH SATURDAY.
13. THE CONTRACTOR SHALL AVOID TRACKING HEAVY EQUIPMENT OVER THE CRITICAL ROOT ZONE OF SPECIMEN TREES. IF UNAVOIDABLE, SPECIAL PRECAUTIONS SHOULD BE USED WHEN TRACKING OVER THE CRITICAL ROOT ZONES.
14. HOWARD COUNTY DIVISION OF LAND DEVELOPMENT APPROVED THE NECESSARY DISTURBANCE ON JANUARY 31, 2023, SUBJECT TO THE FOLLOWING CONDITIONS AND MITIGATION METHODS:
 - 14.1. THE RETROFIT OF THE STORM DRAIN SYSTEM AND STABILIZATION OF THE STREAM BANK SHALL ONLY DISTURB THOSE ENVIRONMENTAL AREAS AS STATED IN THE REQUEST AND AS DELINEATED ON THE HOWARD CROSSING EROSION PROJECT PLAN DATE NOVEMBER 2022. ANY DISTURBANCES TO REGULATED ENVIRONMENTAL FEATURES BEYOND THIS REQUEST ARE NOT PERMITTED UNLESS THE APPLICANT SUBMITS A FORMAL REQUEST TO THE DEPARTMENT OF PLANNING & ZONING IN ACCORDANCE WITH SECTION 16.116(c).
 - 14.2. THE DISTURBED AREAS SHALL BE STABILIZED AND SEEDED OR PLANTED WITH NATIVE VEGETATION IN ACCORDANCE WITH THE DESIGN PLANS.
 - 14.3. THE APPLICANT WILL BE REQUIRED TO OBTAIN ALL NECESSARY APPROVAL AND AUTHORIZATIONS BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) AND THE U.S. ARMY CORPS OF ENGINEERS (USACE) FOR ACTIVITIES IN REGULATED AREAS PRIOR TO SUBMISSION OF A GRADING PERMIT APPLICATION. COPIES OF THE APPROVED MDE PERMITS SHALL BE SUBMITTED WITH THE GRADING PERMIT APPLICATION.

PURPOSE STATEMENT/DESIGN NARRATIVE:

THE PURPOSE OF THESE ADDITIONAL DESIGN SHEETS ARE TO FACILITATE REPAIR AND RESTORATION OF A FAILING STORM DRAIN OUTFALL VIA SITE DEVELOPMENT PLAN REDLINE TO SDP-69-917 (TOWN & COUNTRY, SECTION 5, REVISED SECTION 4). THE PROJECT IS ON HOWARD CROSSING GARDENS, LLC PROPERTY NORTH OF TOWN AND COUNTRY BLVD IN ELLICOTT CITY, MD. THE OWNER INTENDS TO PERFORM AN IN-KIND REPLACEMENT OF AN EXISTING REINFORCED CONCRETE STORM DRAIN SECTION AND ENDWALL. IN ADDITION, THE OWNER INTENDS TO STABILIZE AN ERODING STREAM BANK IMMEDIATELY ADJACENT TO THE STORM DRAIN OUTFALL USING IMBRICATED RIPRAP AND BANK GRADING.



DES:	BY:	NO:	REVISIONS	DATE
JW/JA	JA	1	REVISION TO SDP-69-914 TO ADDRESS OUTFALL REPAIR (LOCATION INDICATING), INCLUDING ADDITION OF SHEETS 2-11.	4/23
DRN:	JW			
CHK:	JA			
DATE:	4/2023			



UTILITY LEGEND

□	CATV BOX	○	SANITARY CLEANOUT
□	CATV PEDESTAL	○	SANITARY MANHOLE
□	FIBER OPTIC HANDBOX	ABAND	ABANDONED UTILITY
□	TELEPHONE PEDESTAL	NAU	NO ASSOCIATED UTILITY DETECTED
□	ELECTRIC METER	NFL	NOT FIELD LOCATABLE
■	ELECTRIC TRANSFORMER	RCP	REINFORCED CONCRETE PIPE
X	END OF ELECTRONIC INFORMATION		
○	STORM DRAIN DOWNSPOUT		
○	STORM DRAIN MANHOLE		
---	TV	---	CABLE TV LINE (QLB)
---	TV	---	CABLE TV LINE (QLC OR QLD)
---	E	---	ELECTRIC LINE (QLB)
---	E	---	ELECTRIC LINE (QLC OR QLD)
---	FO	---	FIBER OPTIC LINE (QLB)
---	FO	---	FIBER OPTIC LINE (QLC OR QLD)
---	G	---	GAS LINE (QLB)
---	G	---	GAS LINE (QLC OR QLD)
---	SS	---	SANITARY SEWER LINE (QLB)
---	SS	---	SANITARY SEWER LINE (QLC OR QLD)
---	SD	---	STORM DRAIN LINE (QLB)
---	SD	---	STORM DRAIN LINE (QLC OR QLD)
---	T	---	TELECOMMUNICATIONS LINE (QLC OR QLD)
---	T	---	TELECOMMUNICATIONS LINE (QLB)
---	UK	---	UNKNOWN DETECTED UTILITY/ CONDUCTOR (QLB)
---	W	---	WATER LINE (QLB)
---	W	---	WATER LINE (QLC OR QLD)

EXISTING CONDITIONS LEGEND

---	LOD	---	LIMITS OF DISTURBANCE
△		△	EXISTING TRAVERSE POINT
⊕		⊕	BENCHMARK
---		---	EXISTING STORMWATER PIPE
⊕		⊕	EXISTING STORMWATER MANHOLE
---		---	PROPERTY BOUNDARY
---		---	EXISTING EASEMENT
---		---	EX. EDGE OF PAVEMENT
X X X		X X X	EXISTING FENCE
---		---	SURVEYED TREE LINE
---		---	EVERGREEN TREE
---		---	DECIDUOUS TREE
---		---	SURVEYED SPECIMEN TREE
---		---	CRITICAL ROOT ZONE
---		---	FOREST CONSERVATION EASEMENT
---		---	SURVEYED NONTIDAL WETLAND
---		---	WETLAND BUFFER (25')
---		---	SURVEYED WATERS OF THE US
---		---	WATERWAY BUFFER (75')
---		---	EX. STRUCTURE
---		---	EX. MAJOR CONTOUR
---		---	EX. MINOR CONTOUR
---		---	SOIL BOUNDARY
---		---	HYDROLOGIC SOIL GROUP
---		---	EXISTING FEMA 100-YR WATER SURFACE
---		---	EX. 100-YR WSEL (HYDRAULIC MODEL)
---		---	HIGHLY ERODIBLE (>5%) SOILS
---		---	HIGHLY ERODIBLE (>15%) SOILS
---		---	STEEP (>20%) SLOPES

UTILITY DESIGNATING NOTES

- UTILITY DEPICTIONS CONFORM TO C/ASCE STANDARD 38-02.
- UTILITY QUALITY LEVELS DEFINED AS FOLLOWS:
 - QUALITY LEVEL D (QLD) - INFORMATION COMES SOLELY FROM EXISTING UTILITY RECORDS.
 - QUALITY LEVEL C (QLC) - INVOLVES SURVEYING VISIBLE ABOVEGROUND UTILITY FACILITIES, SUCH AS MANHOLES, VALVE BOXES, POSTS, ETC., AND CORRELATING THIS INFORMATION WITH EXISTING UTILITY RECORDS.
 - QUALITY LEVEL B (QLB) - DESIGNATING INVOLVES THE USE OF SURFACE GEOPHYSICAL TECHNIQUES TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF UNDERGROUND UTILITIES.
 - QUALITY LEVEL A (QLA) - LOCATING INVOLVES THE USE OF NONDESTRUCTIVE DIGGING EQUIPMENT AT CRITICAL POINTS TO DETERMINE THE PRECISE HORIZONTAL AND VERTICAL POSITION OF UNDERGROUND UTILITIES, AS WELL AS THE TYPE, SIZE, CONDITION, MATERIAL, AND OTHER CHARACTERISTICS.
- THE SUBSURFACE UTILITIES DEPICTED HEREON AT QLB REPRESENT THE REMOTELY SENSED INDICATION OF THE SUBSURFACE UTILITY. UTILITY PIPE SIZES AND CONFIGURATIONS HAVE BEEN TAKEN FROM RECORD DRAWINGS AND ACCESSIBLE FIELD EVIDENCE. THE ACTUAL LOCATION, SIZE AND EXTENT OF ALL SUBSURFACE UTILITIES MUST BE DETERMINED THROUGH TEST HOLE OR OTHER QLA INVESTIGATION METHODS.
- AN EFFORT HAS BEEN MADE TO DEPICT UTILITIES AT QLB. SOME UTILITIES ARE SHOWN AT QLC OR QLD AS NECESSARY.
- ALL GRAVITY SYSTEMS REPRESENTED AT QLC UNLESS OTHERWISE INDICATED.
- UTILITY SURFACE FEATURES, E.G. VALVES, MANHOLES, AND VAULTS, ARE SHOWN SYMBOLICALLY AND THEIR SIZES AND SHAPES ARE SCHEMATIC AND NOT TO SCALE. EXCEPT AS SPECIFICALLY STATED HEREON, SUBSURFACE CONDITIONS SUCH AS SIZE AND ORIENTATION OF ANY ASSOCIATED STRUCTURE HAVE NOT BEEN DETERMINED. ACTUAL DIMENSIONS AND POSITIONS MUST BE DETERMINED THROUGH ADDITIONAL SUBSURFACE UTILITY INVESTIGATION.
- THE UNDERGROUND UTILITY LOCATIONS SHOWN HEREON REPRESENT A PROFESSIONAL OPINION AND INTERPRETATION BASED ON RECORD INDICATIONS AND FIELD EVIDENCE INCLUDING THE USE OF ELECTRONIC UTILITY DETECTION EQUIPMENT. THE RESULTS OF THIS UTILITY INVESTIGATION MAY BE AFFECTED BY THE AVAILABILITY OF UTILITY RECORD INFORMATION AND A VARIETY OF EXISTING SITE CONDITIONS. SITE CONDITIONS THAT MAY AFFECT THE RELIABILITY OF UTILITY DETECTION INCLUDE SOIL CONTENT, DEPTH OF UTILITY, DENSITY OF UTILITY CLUSTERS, AND ELECTROMAGNETIC CHARACTERISTICS OF THE TARGET UTILITY.
- AUTOCAD REFERENCE FILES USED IN THIS DRAWING: "HOWARD COUNTY GIS 2015-06-20.dwg" PROVIDED BY HOWARD COUNTY GIS DOWNLOAD FOR BASE MAP/PLANIMETRIC FEATURES.

SURVEY REFERENCE NOTES

ALL HORIZONTAL AND VERTICAL SURVEY DATA CONTAINED IN UTILITY MAPPING FILE "02-Existing-Conditions.dwg" ARE REFERENCED TO SURVEY CONTROL POINTS PROVIDED BY O'CONNELL & LAWRENCE, LLC, INCLUDING:

POINT#	NORTHING	EASTING	ELEVATION	DESCRIPTION
900	590657.27	1364702.19	360.06	REBAR & CAP
901	590540.54	1364863.36	361.25	REBAR & CAP

DIGITAL DATA DISCLAIMER

THE DIGITAL DATA CONTAINED WITHIN THIS ELECTRONIC FILE WAS PREPARED BY ACCURATE INFRASTRUCTURE DATA, INC. (A/I/DATA). REASONABLE STEPS HAVE BEEN TAKEN TO ENSURE THE INTEGRITY OF THE DATA CONTAINED IN THIS FILE; HOWEVER, A/I/DATA CANNOT GUARANTEE THAT CHANGES AND/OR ALTERATIONS HAVE NOT BEEN MADE. NO RELIANCE ON THE DATA CONTAINED HEREIN SHALL BE MADE UNLESS FIRST COMPARED TO EITHER A PRINTED RECORD SET OR A PORTABLE DOCUMENT FORMAT (PDF) VERSION OF THE ORIGINAL DATA. A/I/DATA ASSUMES NO RESPONSIBILITY AND MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, CONCERNING THE INTEGRITY OF DATA THAT HAS BEEN TRANSMITTED OR RECEIVED BY COMPUTER OR OTHER ELECTRONIC MEANS. USE OF THIS ELECTRONIC FILE AND THE DATA WITHIN CONSTITUTES ACKNOWLEDGMENT AND ACCEPTANCE OF THESE CONDITIONS.

NOTE: SITE SURVEY REVEALED AN EXISTING 6" PVC PIPE EXPOSED ABOVE GRADE BEFORE ENTERING INTO A CONCRETE ENCASUREMENT ALONG THE STREAM BED. THE ELEVATION AND ALIGNMENT OF THE PIPE SUGGEST THAT THIS PIPE MAY BE A SEWER HOUSE CONNECTION BETWEEN THE BUILDING AND THE NEARBY 8" SANITARY SEWER LINE. THE UTILITY DESIGNATION (QLB) WAS UNABLE TO CONFIRM THE PURPOSE AND FUNCTION OF THIS PIPE.

SOIL GROUPS

SOIL NAME	SOIL SYMBOL	HSG	K FACTOR
GLENNVILLE-BAILE SILT LOAM	GnB	C	0.43
HATBORO-CODORUS SILT LOAMS	Ha	B/D	0.37
MANOR LOAM	MaD	B	0.28

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division: *[Signature]* 5/16/23 Date

Chief, Division of Land Development: *[Signature]* 5/15/23 Date

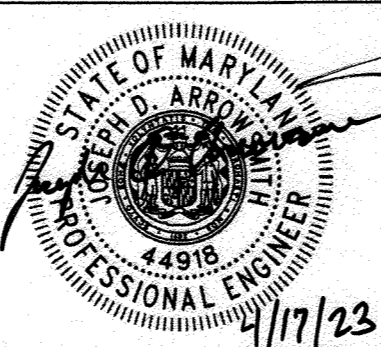
Director: *[Signature]* 6/15/23 Date

STRAUGHAN ENVIRONMENTAL
 10245 Old Columbia Road | Columbia, MD 21046
 301.362.9200 | www.straughanenvironmental.com

HOWARD CROSSING GARDENS, LLC
 999 WATERSIDE DRIVE
 SUITE 2300
 NORFOLK, VA 23510

JOSEPH D. ARROWSMITH, P.E.
 PROFESSIONAL CERTIFICATION
 I, JOSEPH D. ARROWSMITH CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 44919. EXPIRATION DATE: DECEMBER 22, 2023.

JOSEPH D. ARROWSMITH, P.E.
 10245 OLD COLUMBIA ROAD
 COLUMBIA, MARYLAND 21046
 BUSINESS PH. 443.539.2548



DES	BY	NO.	REVISIONS	DATE
JW/JA	JA	1	REVISION TO SDP-69-914 TO ADDRESS OUTFALL REPAIR (LOCATION INDICATING), INCLUDING ADDITION OF SHEETS 2-11.	4/23
DRN	JW			
CHK	JA			
DATE:				4/2023

EXISTING CONDITIONS

REVISED SITE DEVELOPMENT PLAN (SDP-69-914)

NAD83/NAVD88

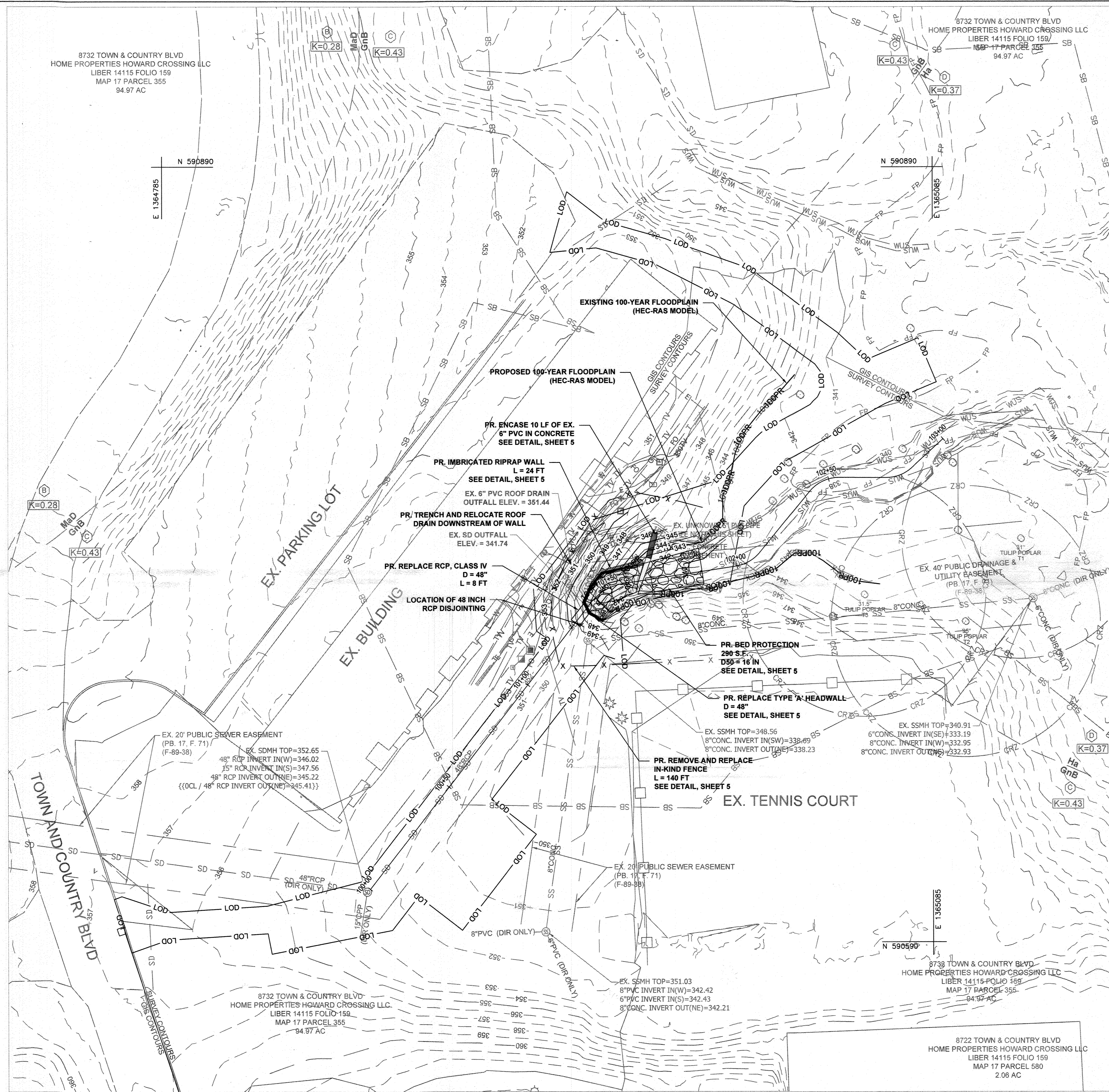
TOWN & COUNTRY, SECTION 5, REVISED SECTION 4

HOWARD CROSSING GARDENS, LLC
 8732 TOWN & COUNTRY BLVD
 ELLICOTT CITY, HOWARD COUNTY MD
 R-A-15 / TAX MAP 17 / PARCEL 355
 DISTRICT 1

SCALE 1"=20'

SHEET 03 OF 11

SDP-69-914



STREAM RESTORATION LEGEND

- LOD — LIMITS OF DISTURBANCE
- △ EXISTING TRAVERSE POINT
- ⊕ BENCHMARK
- SD — EXISTING STORMWATER PIPE
- ⊙ EXISTING STORMWATER MANHOLE
- — — PROPERTY BOUNDARY
- ▭ EXISTING EASEMENT
- - - EX. EDGE OF PAVEMENT
- X - X - EXISTING FENCE
- ~~~~~ SURVEYED TREELINE
- * EVERGREEN TREE
- DECIDUOUS TREE
- 35" TULIP POPLAR T1
- CRZ CRITICAL ROOT ZONE
- FCE FOREST CONSERVATION EASEMENT
- TW WL SURVEYED NONTIDAL WETLAND
- WB WB WETLAND BUFFER (25')
- WUS SURVEYED WATERS OF THE US
- SB SB WATERWAY BUFFER (75')
- EX STRUCTURE
- - - 370 - - EX. MAJOR CONTOUR
- - - 369 - - EX. MINOR CONTOUR
- MaC SOIL BOUNDARY
- GnB
- ⊙ HYDROLOGIC SOIL GROUP
- FP EXISTING FEMA 100-YR WATER SURFACE
- 100EX EX. 100-YR WSEL (HYDRAULIC MODEL)
- 100PR PR. 100-YR WSEL (HYDRAULIC MODEL)
- 370 PROPOSED CONTOUR
- IMBRICATED RIPRAP WALL
- CLASS II RIPRAP
- UTILITY ENCASEMENT

PURPOSE STATEMENT/DESIGN NARRATIVE:
 THE PURPOSE OF THESE ADDITIONAL DESIGN SHEETS ARE TO FACILITATE REPAIR AND RESTORATION OF A FAILING STORM DRAIN OUTFALL VIA SITE DEVELOPMENT PLAN REDLINE TO SDP-69-917 (TOWN & COUNTRY, SECTION 5, REVISED SECTION 4).

THE PROJECT IS ON HOWARD CROSSING GARDENS, LLC PROPERTY NORTH OF TOWN AND COUNTRY BLVD IN ELLICOTT CITY, MD. THE OWNER INTENDS TO PERFORM AN IN-KIND REPLACEMENT OF AN EXISTING REINFORCED CONCRETE STORM DRAIN SECTION AND ENDWALL. IN ADDITION, THE OWNER INTENDS TO STABILIZE AN ERODING STREAM BANK IMMEDIATELY ADJACENT TO THE STORM DRAIN OUTFALL USING IMBRICATED RIPRAP AND BANK GRADING.

**HEC-RAS 1-D MODEL SUBCRITICAL
100-YEAR WATER SURFACE ELEVATIONS**

CONSTRUCTION CENTERLINE STATION	EXISTING WSEL, FT	PROPOSED WSEL, FT
101+42.98	343.77	344.11
101+56.57	343.51	343.79
101+61.98	343.49	343.83
101+66.17	343.33	343.57
101+86.17	343.18	342.95
101+93.18	343.23	343.22
102+20.98	343.21	343.21
102+55.98	343.27	343.27
102+70.98	343.30	343.30

NOTE: SITE SURVEY REVEALED AN EXISTING 6" PVC PIPE EXPOSED ABOVE GRADE BEFORE ENTERING INTO A CONCRETE ENCASEMENT ALONG THE STREAM BED. THE ELEVATION AND ALIGNMENT OF THE PIPE SUGGEST THAT THIS PIPE MAY BE A SEWER HOUSE CONNECTION BETWEEN THE BUILDING AND THE NEARBY 8" SANITARY SEWER LINE. THE UTILITY DESIGNATION (QLB) WAS UNABLE TO CONFIRM THE PURPOSE AND FUNCTION OF THIS PIPE.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 5/14/23
 Chief, Development Engineering Division Date

[Signature] 5/16/23
 Chief, Division of Land Development Date

[Signature] 6/15/22
 Director Date



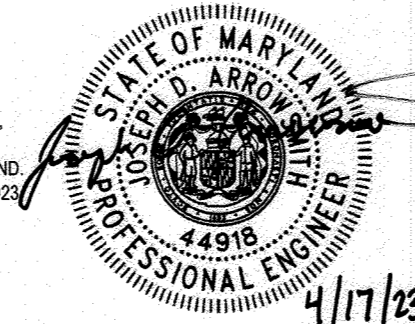
HC-03



HOWARD CROSSING GARDENS, LLC
 999 WATERSIDE DRIVE
 SUITE 2300
 NORFOLK, VA 23510

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DES: JW/JA BY: JA NO. 44918
 DRN: JW
 CHK: JA
 DATE: 4/2023

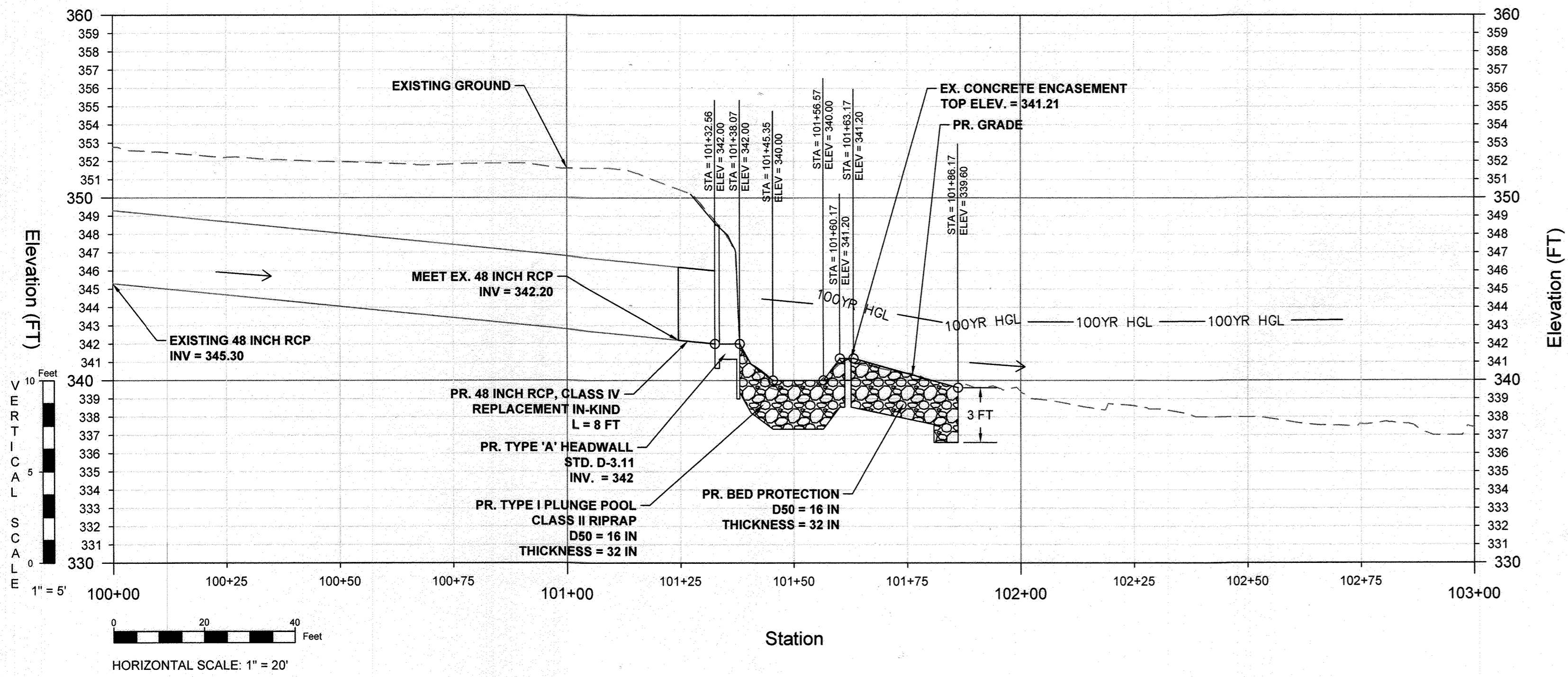
REVISIONS	DATE
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PROPOSED CONDITIONS
REVISED SITE DEVELOPMENT PLAN (SDP-69-914)
 NAD83/NAVD88

TOWN & COUNTRY, SECTION 5, REVISED SECTION 4
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 R-A-15 / TAX MAP 17 / PARCEL 355
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SCALE 1"=20'
 SHEET 04 OF 11
 SDP - 69 - 914

HOWARD CROSSING PROFILE



LEGEND

- CLASS II RIPRAP (D50 = 16 IN)
- IMBRICATED RIPRAP WALL BOULDER

NOTES:

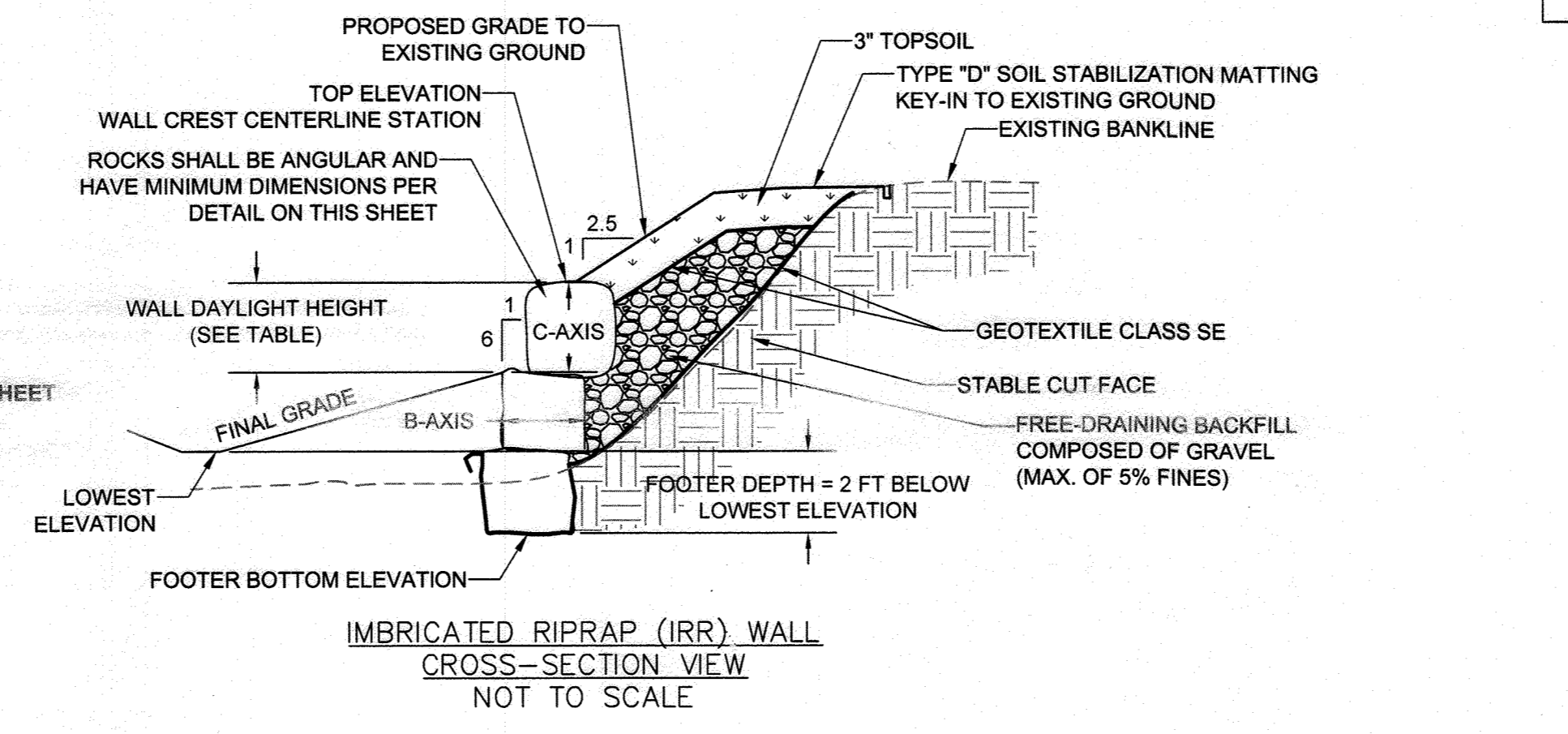
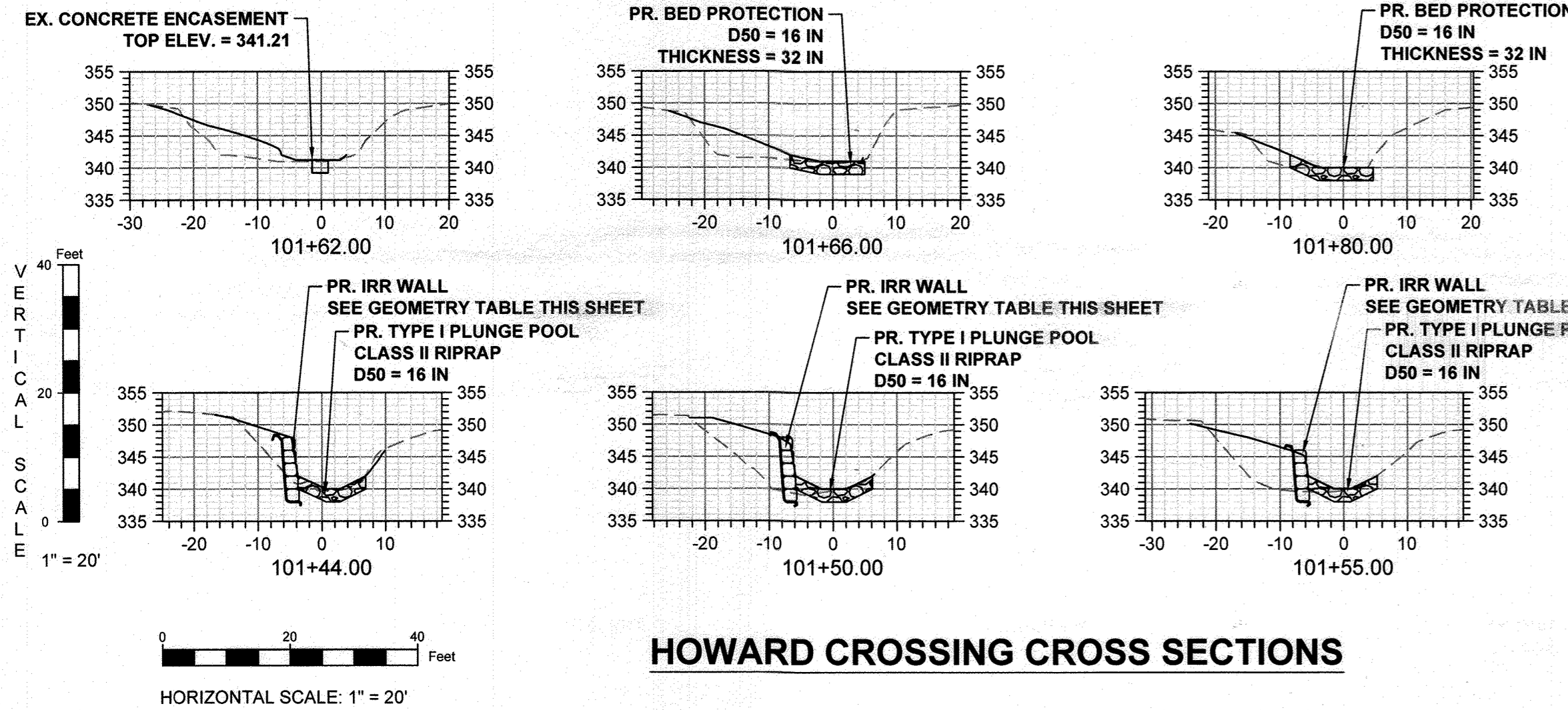
1. CONTRACTOR SHALL PROVIDE 3"-45° BEVEL AROUND PIPE OPENINGS UPSTREAM HEADWALLS.

D	E	F	G	H	J	K	L	N	R	Δ VOL. CY	Δ - BASED ON 2:1 CHANNEL SIDE SLOPES AND 45° ANGLE
12"	2'-8"	7'-2"	3'-0"	2'-6"	2'-0"	8"	8"	8"	#5-12" O/C	1.50	1.50
15"	2'-11"	7'-5"	3'-0"	2'-9"	2'-0"	8"	8"	8"	#5-12" O/C	1.70	1.80
18"	3'-0"	7'-8"	3'-0"	3'-0"	2'-0"	8"	8"	8"	#5-12" O/C	1.90	2.00
21"	3'-4"	7'-9"	3'-3"	3'-3"	2'-0"	8"	8"	8"	#5-12" O/C	2.85	
24"	3'-8"	8'-0"	3'-0"	3'-0"	2'-0"	8"	8"	8"	#5-12" O/C	3.15	
27"	3'-11"	8'-3"	3'-0"	3'-0"	2'-0"	8"	8"	8"	#5-12" O/C	3.87	
30"	4'-2"	8'-6"	3'-0"	4'-0"	2'-1.8"	8"	10"	10"	#5-12" O/C	6.50	
36"	4'-8"	10'-0"	3'-6"	4'-6"	2'-3"	8"	10"	10"	#5-12" O/C	7.98	
42"	5'-3"	11'-6"	4'-0"	5'-0"	2'-9"	8"	10"	10"	#5-12" O/C	9.14	
48"	5'-10"	13'-0"	4'-6"	5'-6"	3'-0"	8"	10"	12"	#5-12" O/C	11.10	
54"	6'-5"	14'-6"	5'-0"	6'-0"	3'-3"	9"	12"	12"	#6-8" O/C		
60"	7'-0"	16'-0"	5'-6"	6'-6"	3'-6"	9"	12"	12"	#6-8" O/C		
66"	7'-7"	17'-6"	6'-0"	7'-0"	3'-9"	9"	12"	14"	#6-8" O/C		
72"	8'-2"	19'-0"	6'-6"	7'-6"	4'-3"	9"	12"	14"	#6-8" O/C		

Howard County, Maryland
Department of Public Works
Approved: *Thomas J. Smith*
Chief, Bureau of Engineering

TYPE 'A' Headwall
Circular Pipe

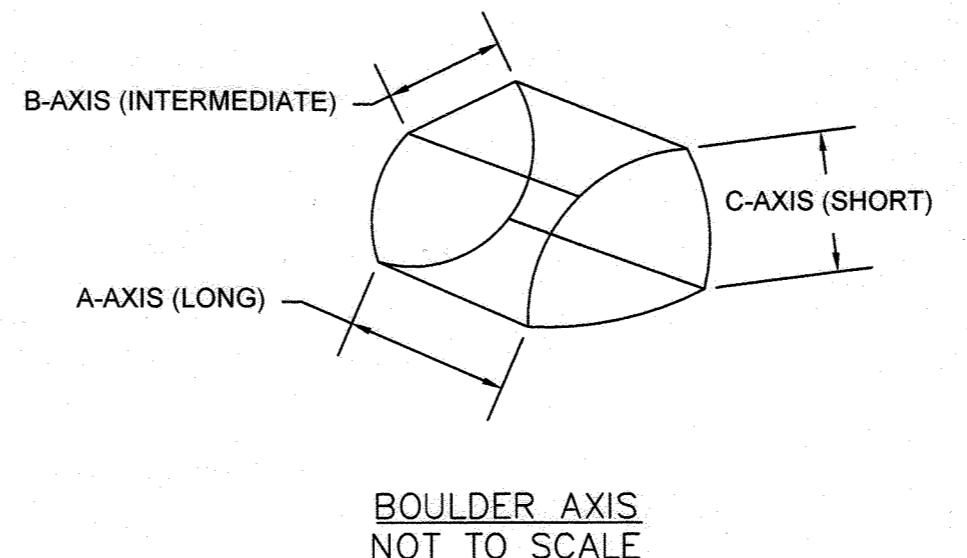
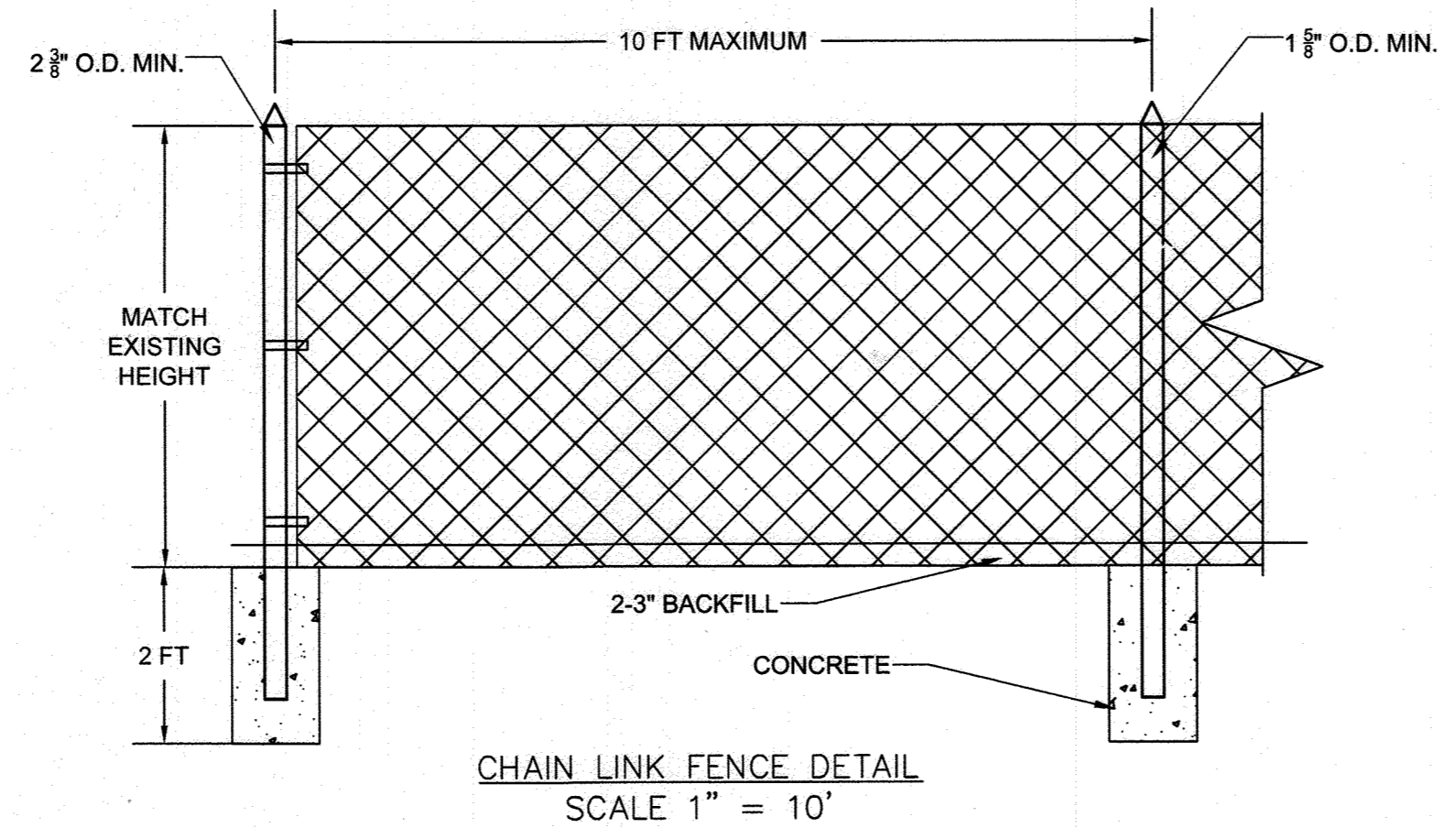
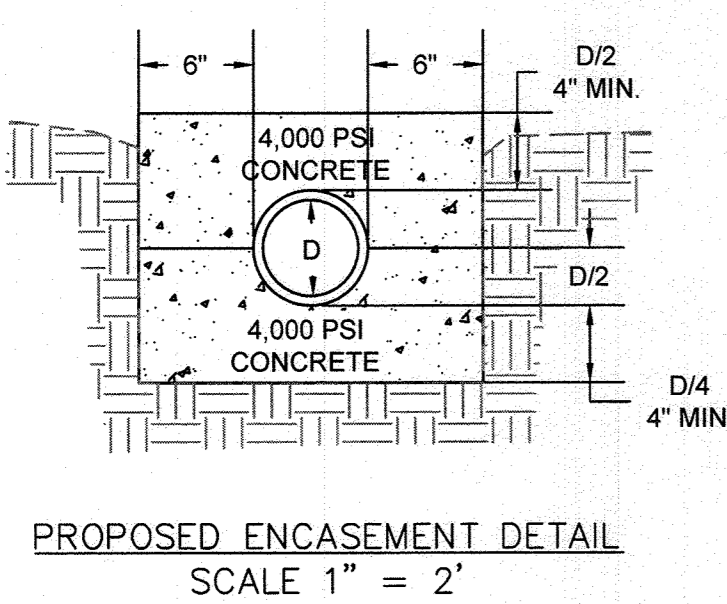
Detail D-5.11



IMBRICATED RIPRAP (IRR) WALL GEOMETRY ELEVATIONS						
CENTERLINE CENTERLINE STATION	OFFSET	L/RT	TOP ELEVATION, FT	LOWEST ELEVATION, FT	FOOTER DEPTH, FT	FOOTER BOTTOM ELEVATION, FT
101+43.84	4.02	LT	348.0	340.0	2.0	338.0
101+49.25	5.65	LT	348.0	340.0	2.0	338.0
101+55.43	6.13	LT	345.3	340.0	2.0	338.0
101+64.06	6.96	LT	343.0	340.0	2.0	338.0

BED PROTECTION GEOMETRY						
CENTERLINE STATION	LEFT OFFSET	LEFT TOP ELEVATION, FT	RIGHT OFFSET	RIGHT TOP ELEVATION, FT	D50, FT	DEPTH, FT
101+62.63	6.8	342.00	5.0	341.2	1.33	2.67
101+66.17	9.0	342.00	5.0	339.6	1.33	2.67

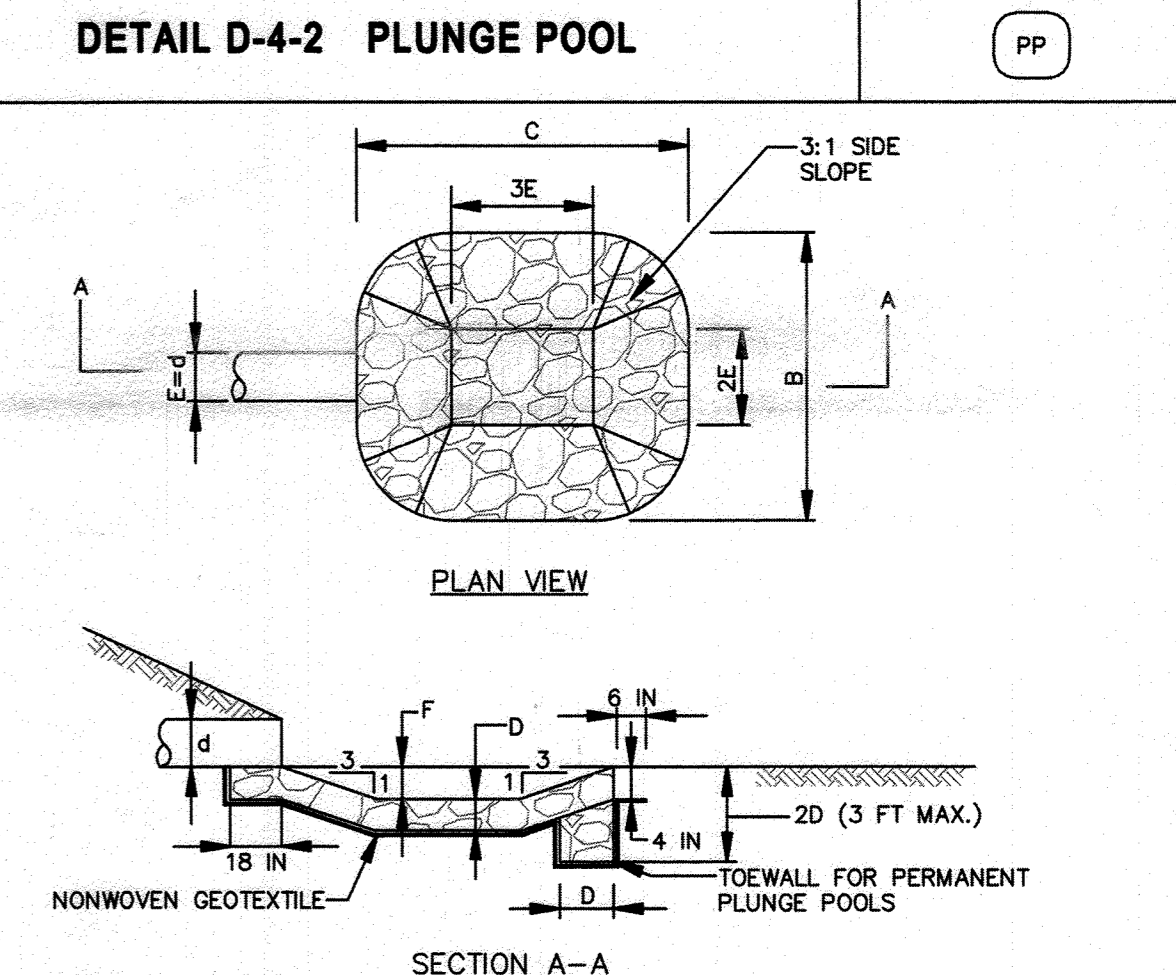
BED PROTECTION MATERIAL		
RIPRAP CLASS	2	
D50, IN	16	
THICKNESS (2xD50), IN	32	



BOULDER DIMENSIONS (IN)			
	A-AXIS	B-AXIS	C-AXIS
IRR WALL	30" MIN.	30" MIN.	12-24"
IRR WALL FOOTER	30" MIN.	30" MIN.	24" MIN.

NOTE: BOULDERS SHALL HAVE MINIMUM UNIT WEIGHT OF 165 LBS/CF.

PLUNGE POOL GEOMETRY	
STATION START	101+38.06
STATION END	101+61.25
TYPE	TYPE I
Q10, cfs	138.07
E=d, ft	4
Tw, ft	2.14
F, ft	2
C, ft	24
B, ft	20
ZE, ft	8.00
SE, ft	12.00
Minimum d50, ft	0.66
Safety Factor	2.0
Proposed d50, ft	1.31
Proposed d50, in	15.8
D, ft	2.63
Riprap Class	Class II



- ### CONSTRUCTION SPECIFICATIONS
- USE SPECIFIED CLASS OF RIPRAP.
 - USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCHING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE.
 - PREPARE THE SUBGRADE FOR THE PLUNGE POOL TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
 - EMBED THE GEOTEXTILE A MINIMUM OF 4 INCHES AND EXTEND THE GEOTEXTILE A MINIMUM OF 6 INCHES BEYOND THE EDGE OF THE SCOUR HOLE.
 - STONE FOR THE PLUNGE POOL MAY BE PLACED BY EQUIPMENT. CONSTRUCT TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. DELIVER AND PLACE THE STONE FOR THE PLUNGE POOL IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE STONE FOR THE PLUNGE POOL IN A MANNER TO PREVENT DAMAGE TO THE GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
 - AT THE PLUNGE POOL OUTLET, PLACE THE STONE SO THAT IT MEETS THE EXISTING GRADE.
 - MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION, ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

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 AND ZONING

Chief Development Engineering Division 5/1/23 Date

Chief, Division of Land Development 5/1/23 Date

Mary A. Kendall 4/15/23 Date
Director

10245 Old Columbia Road | Columbia, MD 21046
301.362.9200 | www.straughanenvironmental.com

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SUITE 2300
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4/19/23

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CHK:	JA				
DATE:	4/2023				

PROPOSED PROFILE, SECTIONS, & DETAILS
REVISED SITE DEVELOPMENT PLAN (SDP-69-914)
NAD83/NAVD88

TOWN & COUNTRY, SECTION 5, REVISED SECTION 4
HOWARD CROSSING GARDENS, LLC
8732 TOWN & COUNTRY BLVD
ELLCOTT CITY, HOWARD COUNTY MD
R-A-15 / TAX MAP 17 / PARCEL 355
DISTRICT 1

SCALE AS SHOWN
SHEET 05 OF 11

EROSION AND SEDIMENT CONTROL LEGEND

- LOD — LIMITS OF DISTURBANCE
- △ EXISTING TRAVERSE POINT
- ⊕ BENCHMARK
- SD — EXISTING STORMWATER PIPE
- ⊙ EXISTING STORMWATER MANHOLE
- - - - - PROPERTY BOUNDARY
- ▭ EXISTING EASEMENT
- - - - - EX. EDGE OF PAVEMENT
- x - x - x - EXISTING FENCE
- ~ ~ ~ ~ ~ SURVEYED TREELINE
- * EVERGREEN TREE
- DECIDUOUS TREE
- 35° TULIP POPLAR SURVEYED SPECIMEN TREE
- CRZ CRITICAL ROOT ZONE
- FCE FOREST CONSERVATION EASEMENT
- WL SURVEYED NONTIDAL WETLAND
- WB WETLAND BUFFER (25')
- WUS SURVEYED WATERS OF THE US
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- 369 EX. MINOR CONTOUR
- MaC SOIL BOUNDARY
- GnB
- D HYDROLOGIC SOIL GROUP
- FP EXISTING FEMA 100-YR WATER SURFACE
- 100EX EX. 100-YR WSEL (HYDRAULIC MODEL)
- 100PR PR. 100-YR WSEL (HYDRAULIC MODEL)
- 370 PROPOSED CONTOUR
- IMBRICATED RIPRAP WALL
- CLASS II RIPRAP
- UTILITY ENCASUREMENT
- HIGHLY ERODIBLE (>5%) SOILS
- HIGHLY ERODIBLE (>15%) SOILS
- STEEP (>20%) SLOPES
- TREE REMOVAL
- MULCH ACCESS ROAD
- STAGING/STOCKPILE AREA
- SOIL STABILIZATION MATTING
- OCF ORANGE CONSTRUCTION FENCE
- TPF TREE PROTECTION FENCE
- P PUMP
- FB FILTER BAG
- SANDBAG DIKE

NOTE: SITE SURVEY REVEALED AN EXISTING 8" PVC PIPE EXPOSED ABOVE GRADE BEFORE ENTERING INTO A CONCRETE ENCASUREMENT ALONG THE STREAM BED. THE ELEVATION AND ALIGNMENT OF THE PIPE SUGGEST THAT THIS PIPE MAY BE A SEWER HOUSE CONNECTION BETWEEN THE BUILDING AND THE NEARBY 8" SANITARY SEWER LINE. THE UTILITY DESIGNATION (QLB) WAS UNABLE TO CONFIRM THE PURPOSE AND FUNCTION OF THIS PIPE.

10-YEAR STORM SUBCRITICAL FLOW HYDRAULICS				
FEATURE	V10 (FT/S)	d10 (FT)	T10 (PSF)	MAX ALLOWABLE V (FT/S)
PLUNGE POOL	6.71	2.54	1.45	12.50
BED PROTECTION	6.77	1.42	1.46	12.50
LEFT OVERBANK	0.76	0.15	0.16	2.50
RIGHT OVERBANK	0.00	0.00	0.00	2.50

SPECIMEN TREE LIST			
TREE ID	DBH, IN	SPECIES	REMOVED?
T1	31	TULIP POPLAR	NO
T2	35	TULIP POPLAR	NO
T3	31.5	TULIP POPLAR	NO



DESIGN CERTIFICATION:

"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNATED 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: *Joseph Arrowsmith* DATE: 4/17/23

JOSEPH ARROWSMITH MD REGISTRATION NO. 44918 DATE: (P) R.L.S., OR R.L.A. (CIRCLE ONE)

OWNER/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 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: *T. Richard Litton, Jr.* DATE: 4/18/23

T. Richard Litton, Jr. Authorized Signatory PRINTED NAME & TITLE

HOWARD SCD SIGNATURE BLOCK:

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

Alexander Bratcher DATE: 05/08/23

HOWARD SOIL CONSERVATION DISTRICT

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division: *[Signature]* DATE: 5-16-23

Chief, Division of Land Development: *[Signature]* DATE: 5/25/23

Director: *[Signature]* DATE: 6/15/23

STRAUGHAN ENVIRONMENTAL

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EROSION AND SEDIMENT CONTROL PLAN

REVISED SITE DEVELOPMENT PLAN (SDP-69-914)

NAD83/NAVD88

TOWN & COUNTRY, SECTION 5, REVISED SECTION 4

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8732 TOWN & COUNTRY BLVD
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R-A-15 / TAX MAP 17 / PARCEL 355
DISTRICT 1

SCALE: 1"=20'

SHEET: 07 OF 11

SDP-69-914

B-4-2 STANDARDS AND SPECIFICATIONS

**FOR
SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS**

Definition

The process of preparing the soils to sustain adequate vegetative stabilization.

Purpose

To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies

Where vegetative stabilization is to be established.

Criteria

- A. Soil Preparation
 - 1. Temporary Stabilization
 - a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
 - b. Apply fertilizer and lime as prescribed on the plans.
 - c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
 - 2. Permanent Stabilization
 - a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
 - i. Soil pH between 6.0 and 7.0.
 - ii. Soluble salts less than 500 parts per million (ppm).
 - iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
 - iv. Soil contains 1.5 percent minimum organic matter by weight.
 - v. Soil contains sufficient pore space to permit adequate root penetration.
 - b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
 - c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.
 - d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
 - e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

- B. Topsoiling
 - 1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
 - 2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
 - 3. Topsoiling is limited to areas having 2:1 or flatter slopes where:
 - a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
 - b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
 - c. The original soil to be vegetated contains material toxic to plant growth.
 - d. The soil is so acidic that treatment with limestone is not feasible.
 - 4. Areas having slopes steeper than 2:1 require special consideration and design.
 - 5. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
 - a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2 inches in diameter.
 - b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
 - c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
 - 6. Topsoil Application
 - a. Erosion and sediment control practices must be maintained when applying topsoil.
 - b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
 - c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading

- C. Soil Amendments (Fertilizer and Lime Specifications)
 - 1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
 - 2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
 - 3. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.
 - 4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
 - 5. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

B-4-3 STANDARDS AND SPECIFICATIONS

**FOR
SEEDING AND MULCHING**

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

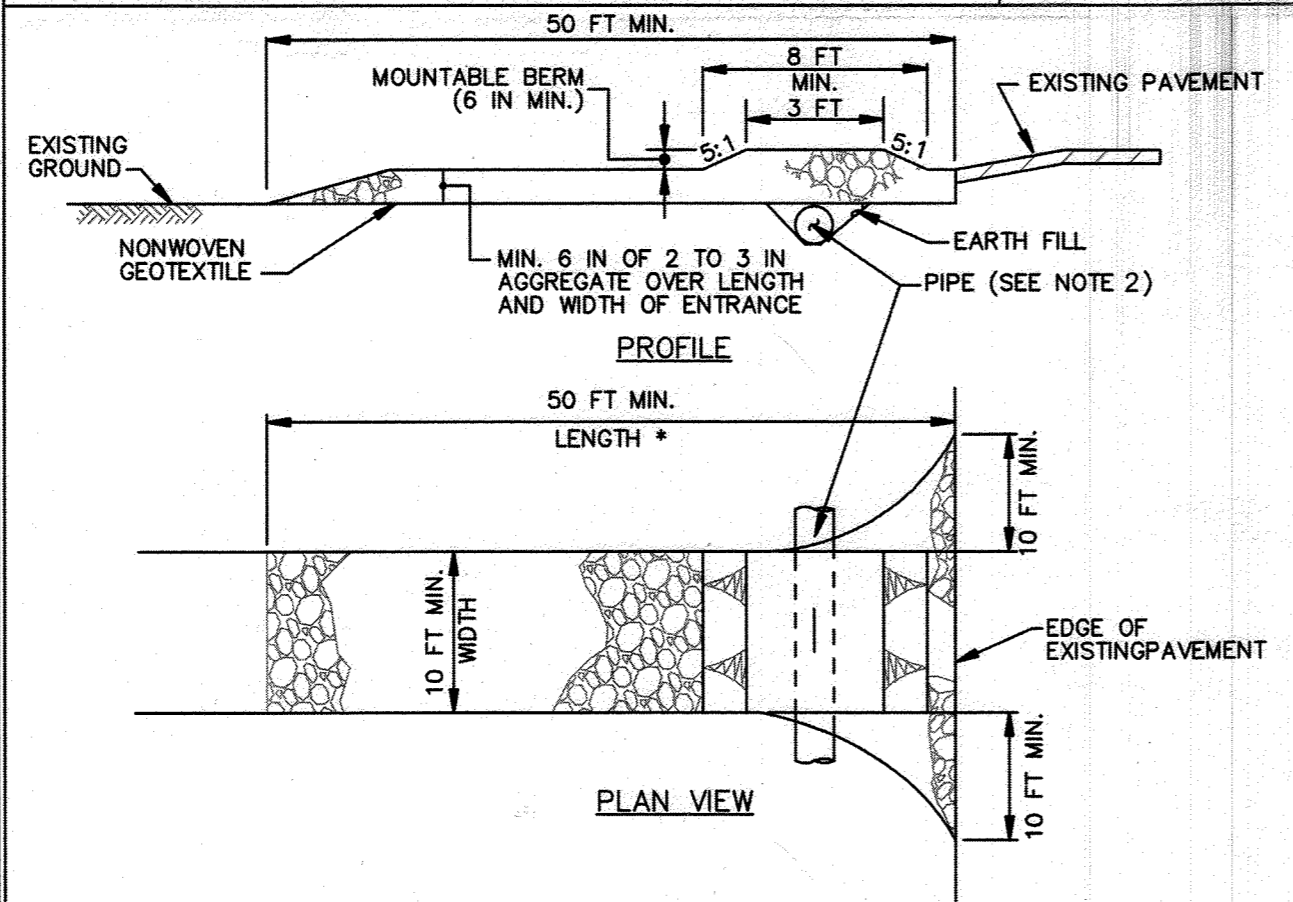
- A. Seeding
 - 1. Specifications
 - a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
 - b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
 - c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
 - d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.
 - 2. Application
 - a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
 - i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
 - ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.

- b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
 - i. Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
 - ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
- c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
 - i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P₂O₅ (phosphorous), 200 pounds per acre; K₂O (potassium), 200 pounds per acre.
 - ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
 - iii. Mix seed and fertilizer on site and seed immediately and without interruption.
 - iv. When hydroseeding do not incorporate seed into the soil.

- 2. Application
 - a. Apply mulch to all seeded areas immediately after seeding.
 - b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
 - c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
- 3. Anchoring
 - a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
 - i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.
 - ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 - iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.
 - iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

- B. Mulching
 - 1. Mulch Materials (in order of preference)
 - a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. **Note: Use only sterile straw mulch in areas where one species of grass is desired.**
 - b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
 - i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
 - ii. WCFM, including dye, must contain no germination or growth inhibiting factors.
 - iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
 - iv. WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic.
 - v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.

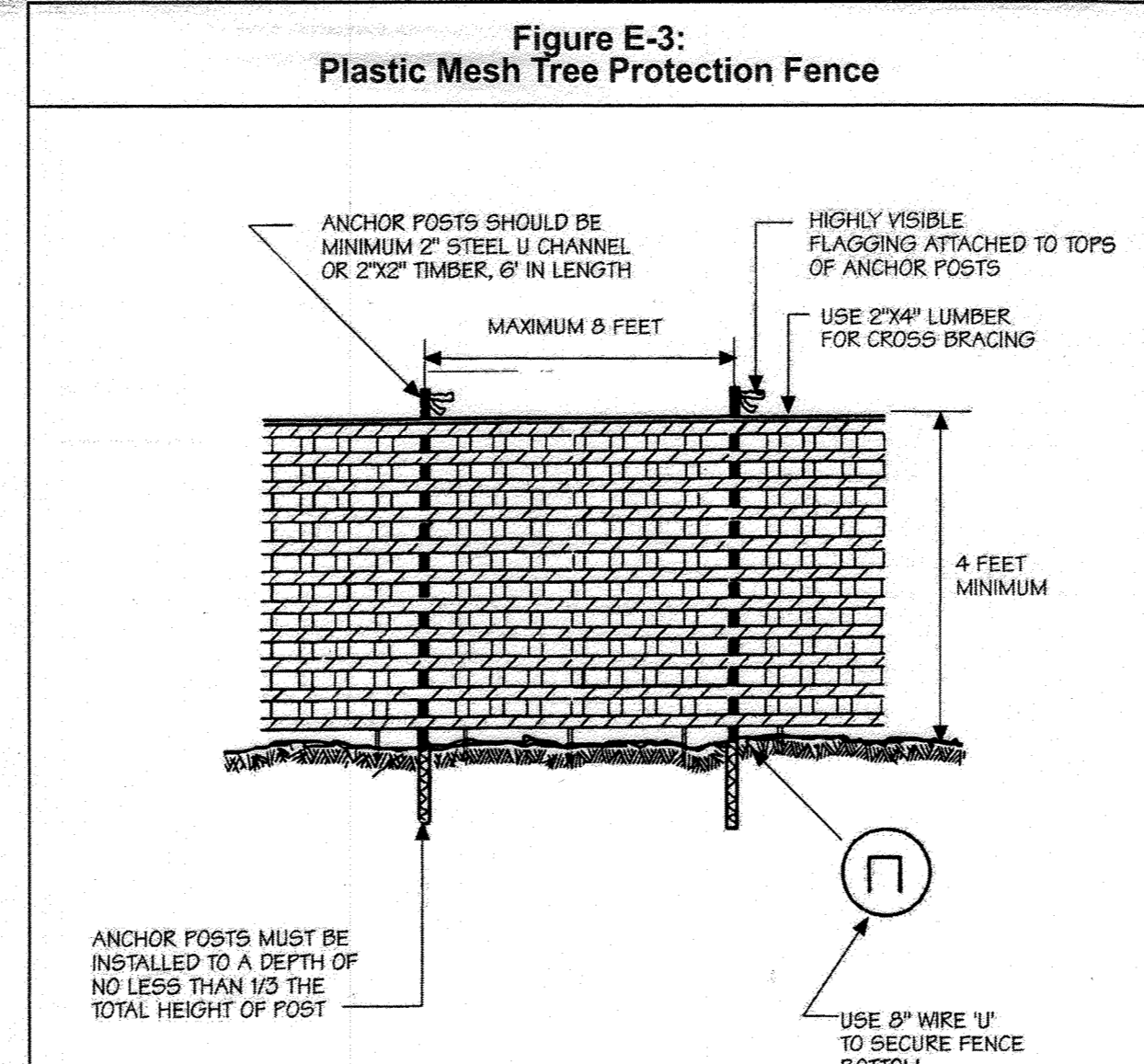
DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE



- CONSTRUCTION SPECIFICATIONS**
- PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
 - PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE. MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
 - PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
 - PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
 - MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE. MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

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

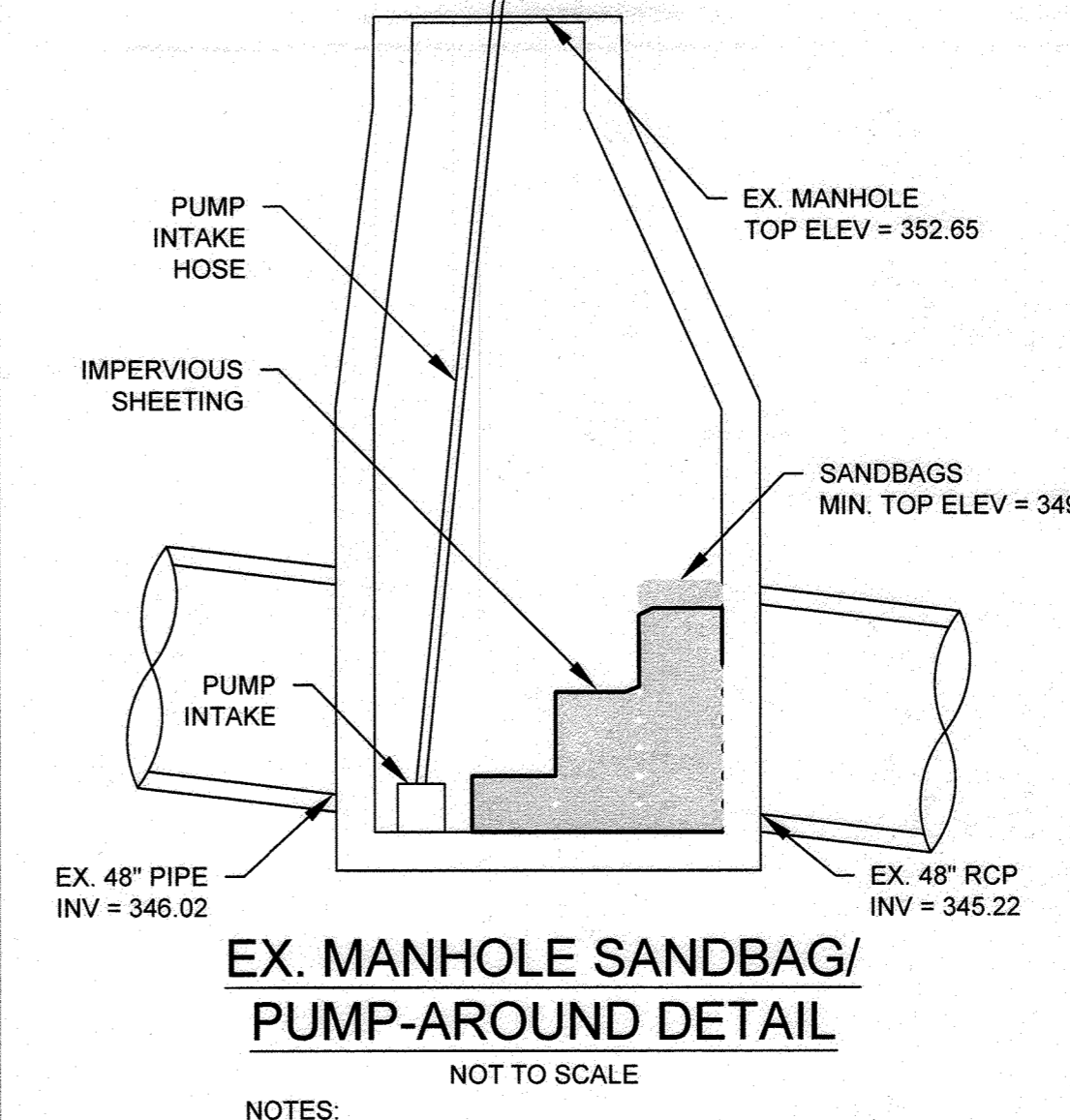
Figure E-3: Plastic Mesh Tree Protection Fence



- Notes:**
- Blaze orange or blue plastic mesh fence for forest protection device, only.
 - Boundaries of Retention Area will be established as part of the Forest Conservation Plan review process.
 - Stake and flag boundaries of Retention Area prior to installing device.
 - Avoid damage to critical root zone. Do not damage or sever large roots when installing posts.
 - Protection signs are required, see Figures E-1 and E-2.
 - Maintain device throughout construction.

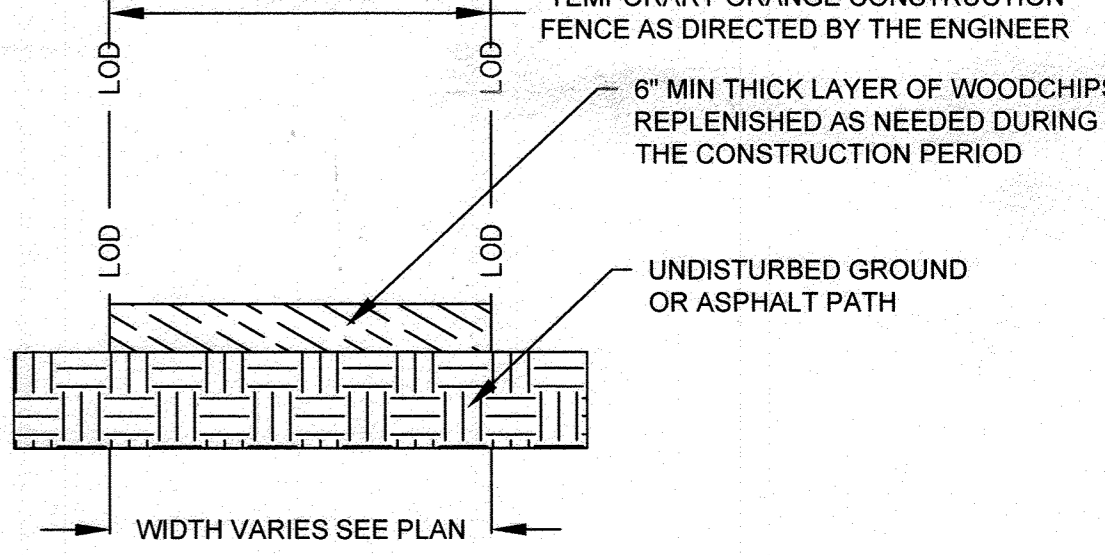
Source: Adapted from Prince George's County, Maryland: Woodland Conservation Manual and State Forest Conservation Technical Manual, 1991

EX. MANHOLE SANDBAG/ PUMP-AROUND DETAIL



- NOTES:**
- PUMP AROUND PRACTICE TO BE USED IN EXISTING STORM SEWER MANHOLE UPSTREAM OF OUTFALL DURING CONSTRUCTION OF PROPOSED MANHOLE STRUCTURE, PIPE, ENDWALL, AND PLUNGE POOL.

WOODCHIP ACCESS DETAIL



- NOTES:**
- WOODCHIP ACCESS ROUTES TO BE VERIFIED BY ENGINEER AT EROSION AND SEDIMENT CONTROL MEETING. REVISIONS TO THE ALIGNMENT THAT MINIMIZE TREE DISTURBANCE ARE ENCOURAGED AND REQUIRE REVIEW AND APPROVAL BY THE ENGINEER.
 - CONTRACTOR SHALL MAINTAIN WOODCHIP ACCESS THROUGHOUT THE CONSTRUCTION PERIOD. UPON COMPLETION OF PROJECT, WOODCHIPS SHALL BE FULLY REMOVED IN ALL PLANTING ZONES.

HOWARD SCD SIGNATURE BLOCK:
THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Olivera Pratchni 05/08/23
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Development Engineering Division 4 5-16-23 Date
Chief, Division of Land Development 3 5/25/23 Date
Mary A. Kendall 06/15/23 Date
Director

STRAUGHAN ENVIRONMENTAL
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HOWARD CROSSING GARDENS, LLC
999 WATERSIDE DRIVE
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NORFOLK, VA 23510

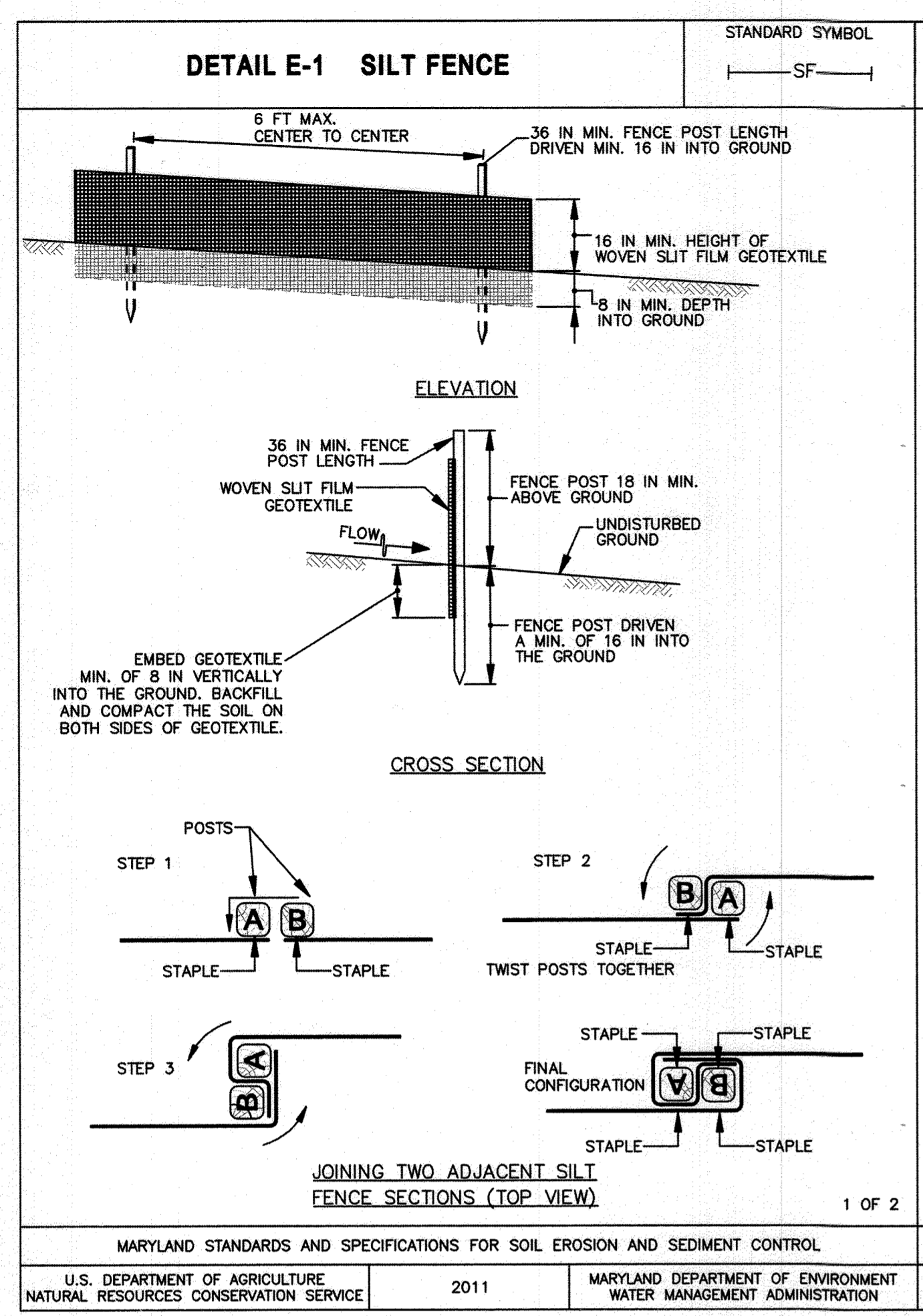
JOSEPH D. ARROWSMITH, P.E.
PROFESSIONAL CERTIFICATION
I, JOSEPH D. ARROWSMITH CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 44918. EXPIRATION DATE: DECEMBER 22, 2023.
JOSEPH D. ARROWSMITH, P.E.
10245 OLD COLUMBIA ROAD
COLUMBIA, MARYLAND 21046
BUSINESS PH. 443.539.2548

DES:	BY:	NO.:	REVISIONS	DATE
JW/JA	JA	1	REVISION TO SDP-69-914 TO ADDRESS OUTFALL REPAIR (LOCATION INDICATING), INCLUDING ADDITION OF SHEETS 2-11.	4/23
DRN:	JW			
CHK:	JA			
DATE:	4/2023			

EROSION AND SEDIMENT CONTROL DETAILS
REVISED SITE DEVELOPMENT PLAN (SDP-69-914)
NAD83/NAV88

TOWN & COUNTRY, SECTION 5, REVISED SECTION 4
HOWARD CROSSING GARDENS, LLC
8732 TOWN & COUNTRY BLVD
ELLCOTT CITY, HOWARD COUNTY MD
R-A-15/ TAX MAP 17/ PARCEL 355
DISTRICT 1

SCALE AS SHOWN
SHEET 08 OF 11
SDP-69-914



DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF

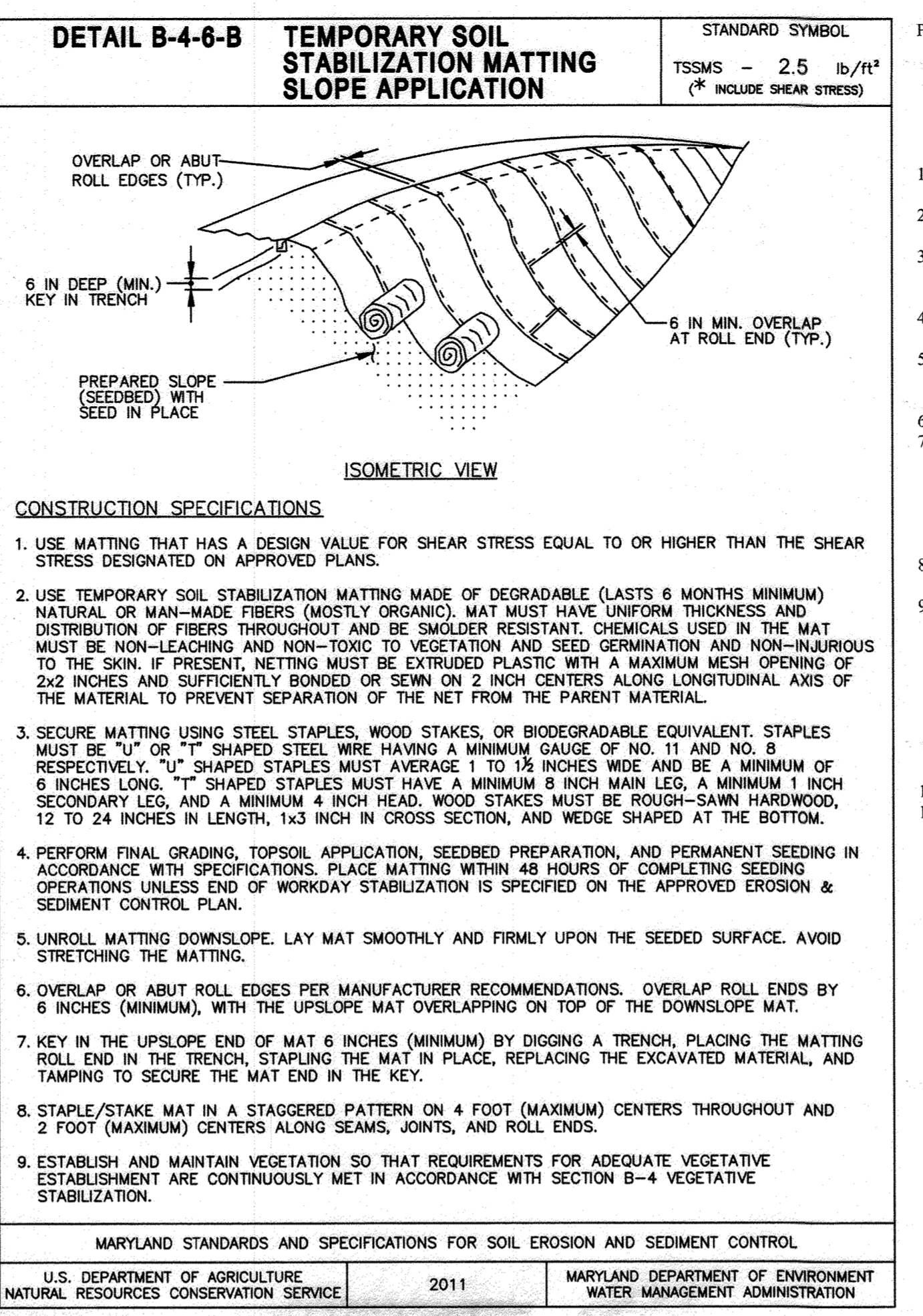
CONSTRUCTION SPECIFICATIONS

- USE WOOD POSTS 1 3/4 x 1 3/4 x 1/4 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD, AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
- USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
- USE WOVEN SILT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
- PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
- WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
- EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN, IF UNDERMINING OCCURS, REINSTALL FENCE.

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

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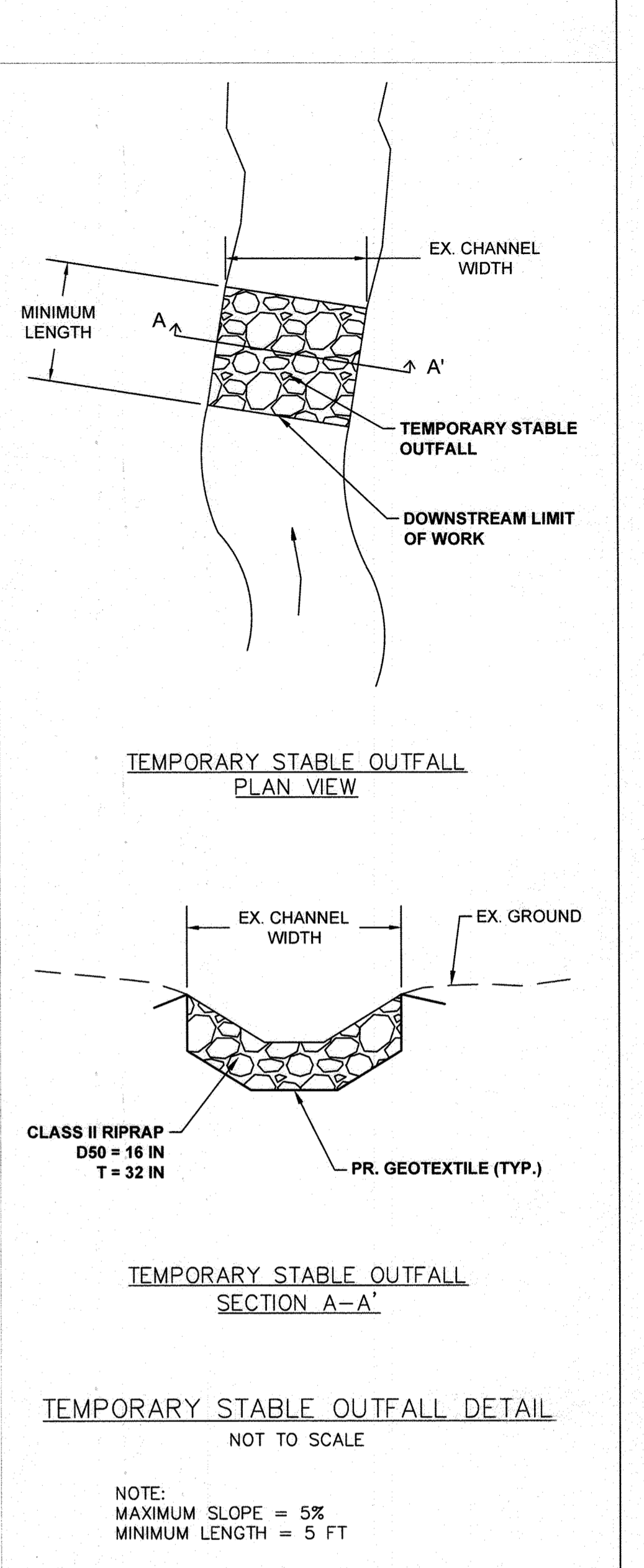


PERMIT NO. 22-NT-3179/202261218

PAGE 4 of 4

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

- No excess fill, construction material, or debris shall be stockpiled or stored in nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- Do not use the excavated material as backfill if it contains waste metal products, unsightly debris, toxic material, or any other deleterious substance. If additional backfill is required, use clean material free of waste metal products, unsightly debris, toxic material, or any other deleterious substance.
- Place heavy equipment on mats or suitably operate the equipment to prevent damage to nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- Repair and maintain any serviceable structure or fill so there is no permanent loss of nontidal wetlands, nontidal wetland buffers, or waterways, or permanent modification of the 100-year floodplain in excess of that lost under the originally authorized structure or fill.
- Rectify any nontidal wetlands, wetland buffers, waterways, or 100-year floodplain temporarily impacted by any construction. All stabilization in the nontidal wetland and nontidal wetland buffer shall consist of the following species: Annual Ryegrass (*Lolium multiflorum*), Millet (*Setaria italica*), Barley (*Hordeum sp.*), Oats (*Liniola sp.*), and/or Rye (*Secale cereale*). These species will allow for the stabilization of the site while also allowing for the voluntary revegetation of nontidal wetland species. Other non-persistent vegetation may be acceptable, but must be approved by the Nontidal Wetlands and Waterways Division. Kentucky 31 fescue shall not be utilized in wetland or buffer areas. The area should be seeded and mulched to reduce erosion after construction activities have been completed.
- After installation has been completed, make post-construction grades and elevations the same as the original grades and elevations in temporarily impacted areas.
- To protect aquatic species, in-stream work is prohibited as determined by the classification of the stream:
 - Use I waters: In-stream work shall not be conducted during the period March 1 through June 15, inclusive, during any year.
 - Use III waters: In-stream work shall not be conducted during the period October 1 through April 30, inclusive, during any year.
 - Use IV waters: In-stream work shall not be conducted during the period March 1 through May 31, inclusive, during any year.
- Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway.
- Culverts shall be constructed and any riprap placed so as not to obstruct the movement of aquatic species, unless the purpose of the activity is to impound water.



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.

B.43

MGWC 1.2: PUMP-AROUND PRACTICE

Temporary measure for dewatering in-channel construction sites

DESCRIPTION

The work should consist of installing a temporary pump around and supporting measures to divert flow around in-stream construction sites.

IMPLEMENTATION SEQUENCE

Sediment control measures, pump-around practices, and associated channel and bank construction should be completed in the following sequence (refer to Detail 1.2):

- Construction activities including the installation of erosion and sediment control measures should not begin until all necessary easements and/or right-of-ways have been acquired. All existing utilities should be marked in the field prior to construction. The contractor is responsible for any damage to existing utilities that may result from construction and should repair the damage at his/her own expense to the county's or utility company's satisfaction.
- The contractor should notify the Maryland Department of the Environment or WMA sediment control inspector at least 5 days before beginning construction. Additionally, the contractor should inform the local environmental protection and resource management inspection and enforcement division and the provider of local utilities a minimum of 48 hours before starting construction.
- The contractor should conduct a pre-construction meeting on site with the WMA sediment control inspector, the county project manager, and the engineer to review limits of disturbance, erosion and sediment control requirements, and the sequence of construction. The contractor should stake out all limits of disturbance prior to the pre-construction meeting so they may be reviewed. The participants will also designate the contractor's staging areas and flag all trees within the limit of disturbance which will be removed for construction access. Trees should not be removed within the limit of disturbance without approval from the WMA or local authority.
- Construction should not begin until all sediment and erosion control measures have been installed and approved by the engineer and the sediment control inspector. The contractor should stay within the limits of the disturbance as shown on the plans and minimize disturbance within the work area whenever possible.
- Upon installation of all sediment control measures and approval by the sediment control inspector and the local environmental protection and resource management inspection and enforcement division, the contractor should begin work at the upstream section and proceed downstream beginning with the establishment of stabilized construction entrances. In some cases, work may begin downstream if appropriate. The sequence of construction must be followed unless the contractor gets written approval for deviations from the WMA or local authority. The contractor should only begin work in an area which can be completed by the end of the day including grading adjacent to the channel. At the end of each work day, the work area must be stabilized and the pump around removed from the channel. Work should not be conducted in the channel during rain events.
- Sandbag dikes should be situated at the upstream and downstream ends of the work area as shown on the plans, and stream flow should be pumped around the work area. The pump should discharge onto a stable velocity dissipator made of riprap or sandbags.

TEMPORARY INSTREAM CONSTRUCTION MEASURES MARYLAND DEPARTMENT OF THE ENVIRONMENT WATERWAY CONSTRUCTION GUIDELINES REVISED NOVEMBER 2000

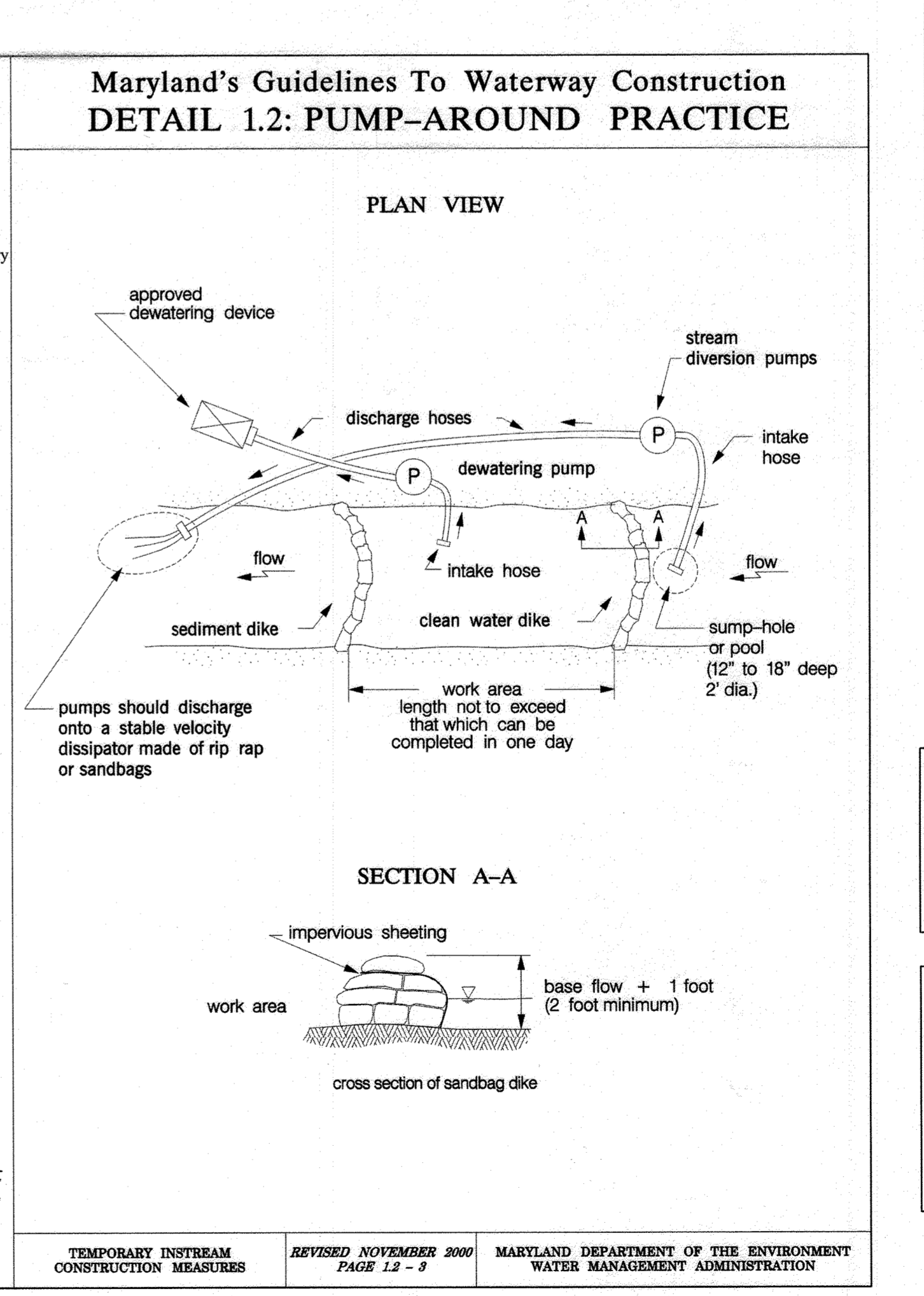
PAGE 1.2 - 1

MGWC 1.2: PUMP-AROUND PRACTICE

- Water from the work area should be pumped to a sediment filtering measure such as a dewatering basin, sediment bag, or other approved source. The measure should be located such that the water drains back into the channel below the downstream sandbag dike.
- Traversing a channel reach with equipment within the work area where no work is proposed should be avoided. If equipment has to traverse such a reach for access to another area, then timber mats or similar measures should be used to minimize disturbance to the channel. Temporary stream crossings should be used only when necessary and only where noted on the plans or specified. (See Section 4, Stream Crossings, Maryland Guidelines to Waterway Construction).
- All stream restoration measures should be installed as indicated by the plans and all banks graded in accordance with the grading plans and typical cross-sections. All grading must be stabilized at the end of each day with seed and mulch or seed and matting as specified on the plans.
- After an area is completed and stabilized, the clean water dike should be removed. After the first sediment flush, a new clean water dike should be established upstream from the old sediment dike. Finally, upon establishment of a new sediment dike below the old one, the old sediment dike should be removed.
- A pump around must be installed on any tributary or storm drain outfall which contributes baseflow to the work area. This should be accomplished by locating a sandbag dike at the downstream end of the tributary or storm drain outfall and pumping the stream flow around the work area. This water should discharge onto the same velocity dissipator used for the main stem pump around.
- If a tributary is to be restored, construction should take place on the tributary before work on the main stem reaches the tributary confluence. Construction in the tributary, including pump around practices, should follow the same sequence as for the main stem of the river or stream. When construction on the tributary is completed, work on the main stem should resume. Water from the tributary should continue to be pumped around the work area in the main stem.
- The contractor is responsible for providing access to and maintaining all erosion and sediment control devices until the sediment control inspector approves their removal.
- After construction, all disturbed areas should be regraded and revegetated as per the planting plan.

TEMPORARY INSTREAM CONSTRUCTION MEASURES MARYLAND DEPARTMENT OF THE ENVIRONMENT WATERWAY CONSTRUCTION GUIDELINES REVISED NOVEMBER 2000

PAGE 1.2 - 2



HOWARD SCD SIGNATURE BLOCK:

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

Howard SCD 05/08/23
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief Development Engineering Division 5/16/23
Date

Chief, Division of Land Development 5/15/23
Date

Director 05/15/23
Date

HC-08

STRAUGHAN ENVIRONMENTAL

10245 Old Columbia Road | Columbia, MD 21046
301.362.9200 | www.straughanenvironmental.com

HOWARD CROSSING GARDENS, LLC
999 WATERSIDE DRIVE SUITE 2300 NORFOLK, VA 23510

JOSEPH D. ARROWSMITH, P.E.
PROFESSIONAL CERTIFICATION

I, JOSEPH D. ARROWSMITH CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 44918. EXPIRATION DATE: DECEMBER 22, 2023

JOSEPH D. ARROWSMITH, P.E.
10245 OLD COLUMBIA ROAD COLUMBIA, MARYLAND 21046 BUSINESS PH. 443.539.2548

4/17/23

DES:	BY:	NO.	REVISIONS	DATE
JW/JA	JA	1	REVISION TO SDP-69-914 TO ADDRESS OUTFALL REPAIR (LOCATION INDICATING), INCLUDING ADDITION OF SHEETS 2-11.	4/23
DRN:	JW			
CHK:	JA			
DATE:	4/2023			

EROSION AND SEDIMENT CONTROL DETAILS

REVISED SITE DEVELOPMENT PLAN (SDP-69-914)

NAD83/NAV88

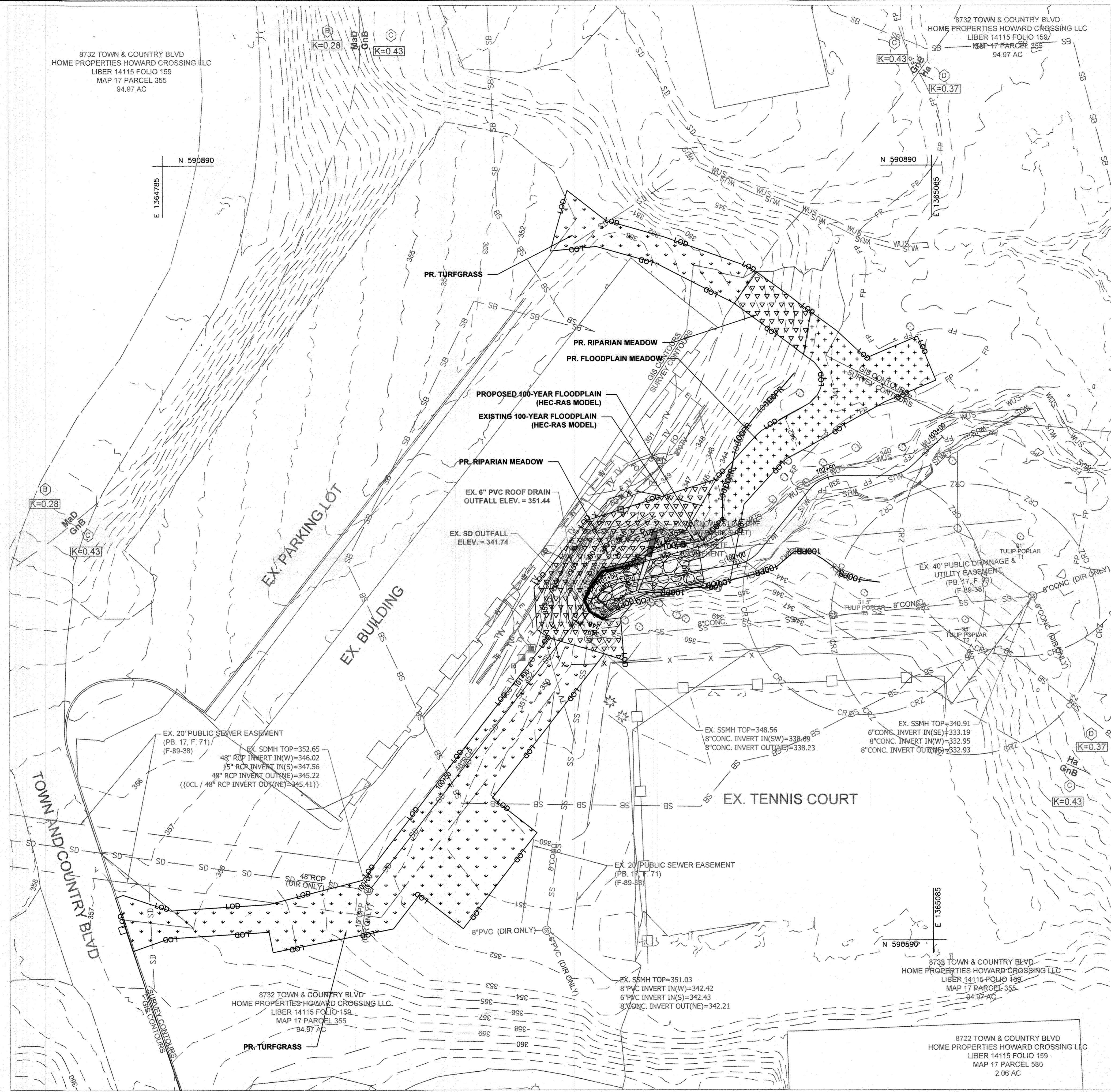
TOWN & COUNTRY, SECTION 5, REVISED SECTION 4

HOWARD CROSSING GARDENS, LLC
8732 TOWN & COUNTRY BLVD
ELLCOTT CITY, HOWARD COUNTY MD
R-A-15 / TAX MAP 17 / PARCEL 355
DISTRICT 1

SCALE AS SHOWN

SHEET 09 OF 11

SDP-69-914



LANDSCAPING PLAN LEGEND

LOD	LIMITS OF DISTURBANCE
[Symbol: + + + +]	FLOODPLAIN MEADOW
[Symbol: ▽ ▽ ▽ ▽]	RIPARIAN MEADOW
[Symbol: ▽ ▽ ▽ ▽]	TURFGRASS
FP	EXISTING FEMA 100-YR WATER SURFACE
-100EX	EX. 100-YR WSEL (HYDRAULIC MODEL)
-100PR	PR. 100-YR WSEL (HYDRAULIC MODEL)

NOTE: SITE SURVEY REVEALED AN EXISTING 6" PVC PIPE EXPOSED ABOVE GRADE BEFORE ENTERING INTO A CONCRETE ENCASUREMENT ALONG THE STREAM BED. THE ELEVATION AND ALIGNMENT OF THE PIPE SUGGEST THAT THIS PIPE MAY BE A SEWER HOUSE CONNECTION BETWEEN THE BUILDING AND THE NEARBY 8" SANITARY SEWER LINE. THE UTILITY DESIGNATION (QLB) WAS UNABLE TO CONFIRM THE PURPOSE AND FUNCTION OF THIS PIPE.

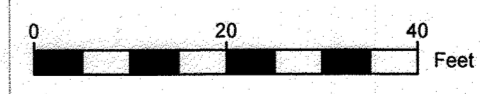
PLANTING	AREA, SF	AREA, AC
FLOODPLAIN MEADOW	2289	0.05
RIPARIAN MEADOW	2209	0.05
TURFGRASS	6247	0.14

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 5/16/23
 Chief, Development Engineering Division Date

[Signature] 5/16/23
 Chief, Division of Land Development Date

[Signature] 6/15/23
 Director Date



HC-09

STRAUGHAN ENVIRONMENTAL
 10245 Old Columbia Road | Columbia, MD 21046
 301.362.9200 | www.straughanenvironmental.com

HOWARD CROSSING GARDENS, LLC
 999 WATERSIDE DRIVE
 SUITE 2300
 NORFOLK, VA 23510

JOSEPH D. ARROWSMITH, P.E.
 PROFESSIONAL CERTIFICATION
 I, JOSEPH D. ARROWSMITH CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44918. EXPIRATION DATE: DECEMBER 22, 2023.
 JOSEPH D. ARROWSMITH, P.E.
 10245 OLD COLUMBIA ROAD
 COLUMBIA, MARYLAND 21046
 BUSINESS PH. 410.230.2548



DES:	BY:	NO.	REVISIONS	DATE
JW/JA	JA	1	REVISION TO SDP-69-914 TO ADDRESS OUTFALL REPAIR (LOCATION INDICATING), INCLUDING ADDITION OF SHEETS 2-11.	4/23
DRN:	JW			
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DATE:	4/2023			

LANDSCAPING PLAN
REVISED SITE DEVELOPMENT PLAN (SDP-69-914)
 NAD83/NAVD88

TOWN & COUNTRY, SECTION 5, REVISED SECTION 4
 HOWARD CROSSING GARDENS, LLC
 8732 TOWN & COUNTRY BLVD
 ELLICOTT CITY, HOWARD COUNTY MD
 R-A-15 / TAX MAP 17 / PARCEL 355
 DISTRICT 1

SCALE
 1"=20'
 SHEET
 10 OF 11
 SDP-69-914

PLANTING AREA, AC		0.05		
TYPE	BOTANICAL NAME	COMMON NAME	% of mix	25 Lb/AC
Native mix	<i>Carex vulpinoidea</i>	Fox Sedge	20%	5.0
	<i>Elymus virginicus</i>	Virginia Wild Rye	30%	7.5
	<i>Elymus riparius</i>	Riverbank Wild Rye	25%	6.25
	<i>Dichanthelium clandestinum</i>	Deer Tongue	15%	3.75
	<i>Juncus effusus</i>	Softrush	10%	2.5
			% of mix	10 Lb/AC
Forbs	<i>Impatiens capensis</i>	Jewelweed	30%	3.0
	<i>Verbena hastata</i>	Blue vervain	30%	3.0
	<i>Onoclea sensibilis</i>	Sensitive Fern	20%	2.0
	<i>Thelypteris novboracensis</i>	New York Fern	20%	2.0
			% of mix	10 Lb/AC
Temporary Seeding	<i>Avena sativa</i>	Cereal grain	100%	10
			RATE, LB/AC	45
QUANTITY, LBS		2.4		

PLANTING AREA, AC		0.05		
TYPE	BOTANICAL NAME	COMMON NAME	% of mix	35 Lb/AC
Native mix	<i>Elymus hystrix</i>	Bottlebrush Grass	25%	8.75
	<i>Elymus virginicus</i>	Virginia Wild Rye	25%	8.75
	<i>Schizachyrium scoparium</i>	Little bluestem	20%	7.0
	<i>Dichanthelium clandestinum</i>	Deer Tongue	15%	5.3
	<i>Tridens flavus</i>	Purpletop	10%	3.5
	<i>Rudbeckia hirta</i>	Black-eyed Susan	5%	1.8
			% of mix	10 Lb/AC
Temporary Seeding	<i>Avena sativa</i>	Cereal grain	100%	10
			RATE, LB/AC	45
QUANTITY, LBS		2.3		

PLANTING AREA, AC		0.14		
TYPE	BOTANICAL NAME	COMMON NAME	% of mix	150 Lb/AC
Turfgrass mix	<i>Festuca rubra</i>	Creeping Red Fescue	35%	52.5
	<i>Festuca brevipila</i>	Hard Fescue	25%	37.5
	<i>Poa pratensis</i>	Kentucky Bluegrass	25%	37.5
	<i>Festuca ovina</i>	Sheep Fescue	15%	22.5
			% of mix	10 Lb/AC
Temporary Seeding	<i>Avena sativa</i>	Cereal Grain	100%	10
			RATE, LB/AC	160
QUANTITY, LBS		22.9		

SEEDING SCHEDULE			
Seed Mixture	Spacing	Quantity (lbs.)	
FLOODPLAIN MEADOW SEED MIX (2,289 s.f. / 0.05 ac.)			
Wet Meadow Seed Mix (Table 1)	45 lbs/ac	2	
UPLAND/RIPARIAN WET MEADOW SEED MIX (2,209 s.f. / 0.05 ac.)			
Upland/Riparian Meadow Seed Mix (Table 2)	45 lbs/ac	2	
TURFGRASS SEED MIX (6,247 s.f. / 0.14 ac.)			
Turfgrass Seed Mix (Table 3)	160 lbs/ac	23	

GENERAL NOTES

- ALL TREE PROTECTION WORK SHALL BE DONE IN ACCORDANCE WITH ANSI A300 STANDARDS, ANSI Z60 STANDARDS, SECTION 710 OF THE HOWARD COUNTY VOLUME IV DESIGN MANUAL: STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AND ASSOCIATED PROJECT SPECIFICATIONS.
- PLANTS MAY BE SUBSTITUTED FOR OTHER NATIVE SPECIES IF A CERTAIN SPECIES IS NOT AVAILABLE. THE CONTRACTOR SHALL NOTIFY THE COUNTY OR COUNTY REPRESENTATIVE OF WHICH PLANTS ARE NOT AVAILABLE AND WHICH PLANTS ARE SELECTED FOR SUBSTITUTION BEFORE PLANTING. PRIOR APPROVAL FOR SUBSTITUTIONS FROM THE COUNTY OR COUNTY REPRESENTATIVE IS REQUIRED.
- ALL SEED MATERIAL SHALL BE SOURCED WITHIN 100 MILES OF THE PROJECT SITE.
- SEED MATERIAL SHALL CONFORM TO THE CURRENT EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1).
- THE CONTRACTOR SHALL PROPERLY WATER ALL PLANTING AREAS THE DAY THEY ARE INSTALLED.
- THE DESIGNATED REGULATORY AGENCY SHALL INSPECT THE SITE.
- THE COUNTY OR COUNTY REPRESENTATIVE SHALL HAVE THE RIGHT, AT ANY STAGE OF THE OPERATION, TO REJECT ANY AND ALL WORK AND MATERIALS WHICH, IN HIS OR HER OPINION, DOES NOT MEET THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS. ALL MATERIALS SHALL BE INSPECTED TO BE FREE FROM DISEASE, DAMAGES, AND INSECT INFESTATION UPON DELIVERY TO THE SITE. ALL PLANTS SHOULD BE HEALTHY AND WELL STRUCTURED. PLANTS IN POOR CONDITION SHALL BE REJECTED, REMOVED FROM THE SITE, AND REPLACED WITH ACCEPTABLE MATERIALS.

PLANT INSTALLATION DATES

- TEMPORARY/PERMANENT SEED MIXES INCLUDING COVER CROP SHALL BE APPLIED WITHIN 3 DAYS FOLLOWING FINAL GRADING AND BEFORE INSTALLATION OF MATTING, WHERE APPLICABLE. SEE PERMANENT SEEDING SCHEDULE, THIS SHEET.

PERMANENT SEEDING

- SEEDING IS REQUIRED IN ALL LANDSCAPED AREAS FOR STABILIZATION AND HABITAT CREATION.
- THREE SEED MIXES WILL BE USED THROUGHOUT THE PLANTING AREAS. ALL MIXES WILL CONSIST OF NATIVE PLANT SPECIES THAT CURRENTLY COLONIZE ON-SITE, IN ADDITION TO HIGH VALUE SPECIES FOR ENHANCEMENT OF OVERALL RIPARIAN HABITAT VALUE.
- RIPARIAN MEADOW SEED SHALL BE APPLIED TO ALL RIPARIAN MEADOW ZONES. THIS MIX SHALL CONTAIN COVER CROP SPECIES (NATIVE AND/OR NON-PERSISTENT ANNUALS) AND NATIVE GRASS AND FORBS.
- FLOODPLAIN MEADOW SEED MIX SHALL BE APPLIED TO ALL FLOODPLAIN MEADOW ZONES. THIS MIX SHALL CONTAIN COVER CROP SPECIES (NATIVE AND/OR NON-PERSISTENT ANNUALS) AND NATIVE GRASSES, SEDGES, FERNS, AND FLOWERING SPECIES.
- TURFGRASS SEED MIX SHALL BE APPLIED TO ALL TURFGRASS ZONES. THIS MIX SHALL CONTAIN COVER CROP SPECIES (NATIVE AND/OR NON-PERSISTENT ANNUALS) AND NATIVE TURFGRASSES AND SEDGES.

SEQUENCE

- TEMPORARY/PERMANENT SEEDING SHALL BE APPLIED IMMEDIATELY FOLLOWING COMPLETION OF GRADING AND PRIOR TO INSTALLMENT OF MATTING, WHERE APPLICABLE.

FOREST CONSERVATION WORKSHEET FOR: Howard Crossing Erosion Project

A. Total (Gross) Tract Area	A = 95.0
B. Area within 100-year Floodplain	B = 0.0
C. Other Deductions (Identify: _____)	C = 94.7
D. Net Tract Area	D = 0.3

Insert the number "1" under the appropriate land use (limit to only one entry)						
Resid.	Resid.	Resid.	Inst./	Retail/Ind./	Mixed Use/	
Rural LD	Rural MD	Suburban	Linear	Office	PUD	
0	0	0	1	0	0	

E. Afforestation Threshold	(Net Tract Area x 15%)	E = 0.0
F. Reforestation Threshold	(Net Tract Area x 20%)	F = 0.1

G. Existing Forest Cover within the Net Tract Area	G = 0.0
H. Area of Forest above Afforestation Threshold	H = 0.0
I. Area of Forest above Reforestation Threshold	I = 0.0

J. Break Even Point	J = 0.0
K. Forest Clearing Permitted without Mitigation	K = 0.0

L. Total Area of Forest to be Cleared	L = 0.0
M. Total Area of Forest to be Retained	M = 0.0

N. Reforestation for Clearing above the Reforestation Threshold	N = 0.0
P. Reforestation for Clearing below the Reforestation Threshold	P = 0.1
Q. Credit for Retention above the Reforestation Threshold	Q = 0.0
R. Total Reforestation Required	R = 0.1
S. Total Afforestation Required	S = 0.0
T. Total Reforestation and Afforestation Requirement	T = 0.1
U. 75% of Total Obligation (Retention + Planting)	U = 0.1
V. Planting Required Onsite to meet 75% Obligation	V = 0.1

W. Total Planting within Development Site Watershed	W = 0.0
X. Total Afforestation Required	X = 0.0
Y. Remaining Planting within Watershed for Reforestation Credit	Y = 0.0
Z. Reforestation for Clearing above the Reforestation Threshold	Z = 0.0
AA. Reforestation for Clearing below the Reforestation Threshold	AA = 0.2
BB. Credit for Retention above the Reforestation Threshold	BB = 0.0
CC. Total Reforestation Required	CC = 0.2
DD. Total Afforestation and Reforestation Requirement	DD = 0.2

Date: 31-Jan-23

Plan Number	Limits of Disturbance (SF)	Forest Conservation Obligation (AC)
SDP-69-914	11,692	0.2
Total LOD (SF):		11,692

NOTE: THE LOD AND FOREST CONSERVATION OBLIGATION FOR ALL FUTURE PROJECTS ONSITE SHALL BE TRACKED UNTIL THE CUMULATIVE LOD EXCEEDS 40,000 SQUARE FEET.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 5-16-23
Chief, Development Engineering Division Date

[Signature] 5/16/23
Chief, Division of Land Development Date

[Signature] 6/15/23
Director Date

HC-10



HOWARD CROSSING GARDENS, LLC
999 WATERSIDE DRIVE
SUITE 2300
NORFOLK, VA 23510

JOSEPH D. ARROWSMITH, P.E.
PROFESSIONAL CERTIFICATION
I, JOSEPH D. ARROWSMITH CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 44918. EXPIRATION DATE: DECEMBER 22, 2023.

JOSEPH D. ARROWSMITH, P.E.
10245 OLD COLUMBIA ROAD
COLUMBIA, MARYLAND 21046
BUSINESS PH. 443.539.2548

DES:	BY:	NO.:	REVISIONS	DATE
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LANDSCAPING NOTES AND DETAILS

REVISED SITE DEVELOPMENT PLAN
(SDP-69-914)

NAD83/NAVD88

TOWN & COUNTRY, SECTION 5,
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SCALE AS SHOWN

SHEET 11 OF 11

SDP-69-914