

GENERAL NOTES

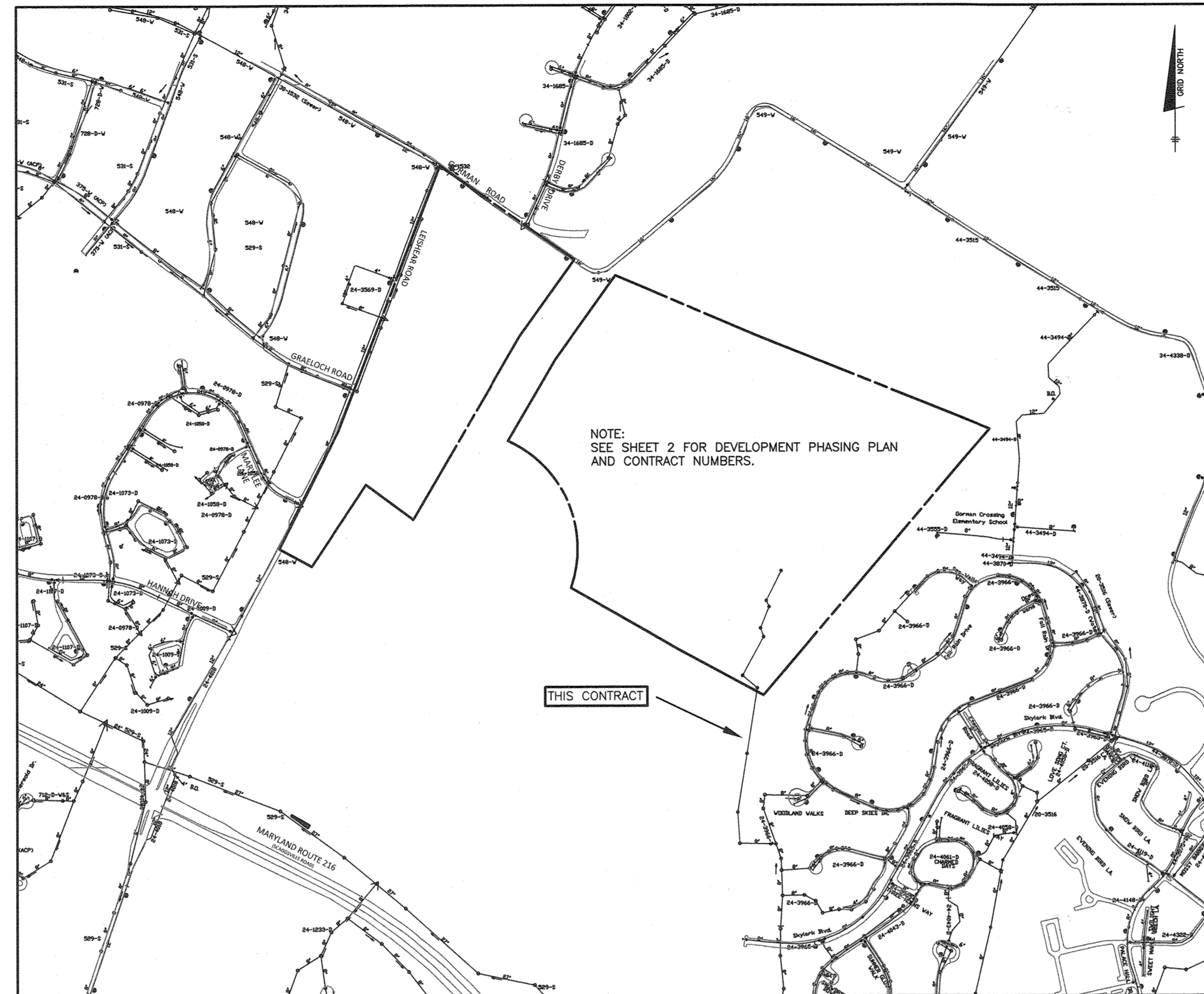
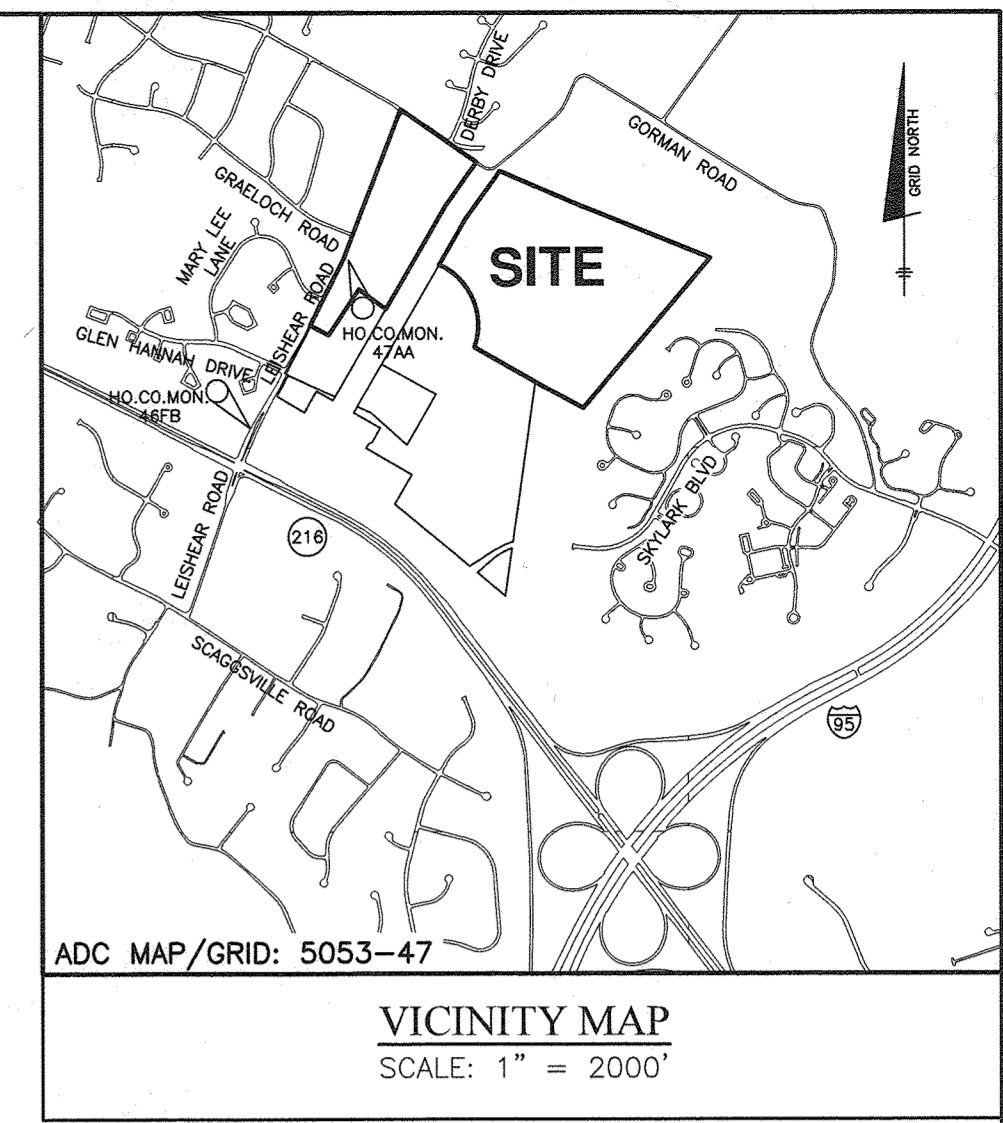
PART I

- APPROXIMATE LOCATIONS OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED IN OCTOBER, 2019 BY BENCHMARK ENGINEERING, INC.
- HORIZONTAL AND VERTICAL SURVEY CONTROLS:
THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD '83/91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 46FB AND NO. 47AA.
ALL VERTICAL CONTROLS ARE BASED ON NAVD '88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE 3805 AND 3806.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 12 INCHES. CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- FOR DETAILS NOT SHOWN ON THE DRAWING, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL [] AT THE LOCATIONS OF THE TEST PITS. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
AT&T.....1-800-252-1133
BGE (CONTRACTOR SERVICES).....410-637-8713
BGE (EMERGENCY).....410-688-0123
BUREAU OF UTILITIES.....410-313-6900
COLONIAL PIPELINE CO.....410-795-1390
MIS'S UTILITY.....1-800-257-7777
STATE HIGHWAY ADMINISTRATION.....410-531-5533
VERIZON.....1-800-743-0033
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410)-313-7450 AT LEAST FIVE WORKING DAYS BEFORE OPEN CUTTING OR BORING/JACKING OF ANY COUNTY ROAD FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(c) OF THE HOWARD COUNTY CODE.

PART III SEWER

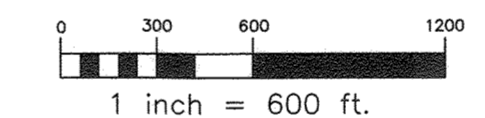
- ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C. UNLESS OTHERWISE NOTED.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- FORCE MAINS SHALL BE PVC ONLY.
- MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
- MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATER TIGHT FRAME AND COVER. STANDARD DETAIL 05.52. WHERE WATER TIGHT MANHOLE FRAMES AND COVERS ARE USED, SET TOP OF FRAME 1'-0" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT CELLAR CANNOT BE SERVED.

WELLINGTON FARMS SEWER EXTENSION CONTRACT NO. 24-5136-D



NOTE:
SEE SHEET 2 FOR DEVELOPMENT PHASING PLAN
AND CONTRACT NUMBERS.

LOCATION MAP
SCALE: 1" = 600'



TYPE OF BUILDING:	NA
NUMBER OF UNITS:	0
NUMBER OF SHC'S:	0
NUMBER OF WHC'S:	0
DRAINAGE AREA:	HAMMOND BRANCH
TREATMENT PLANT:	LITTLE PATUXENT WRP
WATER ZONE:	550 SOUTH
TEST GRADIENT:	NA
TEST PRESSURE:	NA

* THERE ARE NO PROPOSED LOTS/UNITS OR HOUSE CONNECTIONS ASSOCIATED WITH THIS CONTRACT. ULTIMATELY, THERE WILL BE 138 SFD LOTS AND 183 TOWNHOUSE LOTS EACH WITH HOUSE CONNECTIONS. CONNECTIONS THAT WILL BE SERVICED VIA THE SEWER MAIN PROPOSED ON THIS CONTRACT DRAWING

SHEET INDEX	
NO.	DESCRIPTION
1	TITLE SHEET
2	KEY SHEET
3	SEWER PLAN VIEW
4	SEWER PROFILE
5	SDIMENT AND EROSION CONTROL PLAN
6	SEDIMENT AND EROSION CONTROL PLAN AND DETAILS
7	SEDIMENT AND EROSION CONTROL NOTES

LEGEND

- W — W — EXIST. OFFSITE WATER MAIN
- S — S — EXIST. OFFSITE SEWER MAIN
- — — — — PROP. SEWER MAIN
- — — — — — PROP. SEWER MANHOLE

ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUF./SUPPLIER
8" DIP CL 52 SEWER	683 LF	185'	METAL	AMERICAN PIPE
8" PVC SDR-35 SEWER	1034 LF	1016'	PVC	N A P C O
MANHOLES	9 EA	9	CONCRETE	ATLANTIC CONCRETE
8" PVC DR-18, C 900	CHANGE	458'	PVC	N A P C O
NAME OF UTILITY CONTRACTOR: HTI CONTRACTORS				
SURVEY AND DRAFTING DIVISION AS-BUILT DATE:				

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

Alexander Bratchi 06/28/21
HOWARD SOIL CONSERVATION DISTRICT DATE

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 508 OF THE HOWARD COUNTY STANDARD SPECIFICATIONS AND AS PER THIS PLAN.

OWNER: ESC WELLINGTON, L.C.
5074 DORSEY HALL DRIVE, SUITE 205
ELLCOTT CITY, MARYLAND 21042
410-720-3021

DEVELOPER: ESC WELLINGTON, L.C.
5074 DORSEY HALL DRIVE, SUITE 205
ELLCOTT CITY, MARYLAND 21042
410-720-3021

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. 22390, Expiration Date: 6-30-2023.

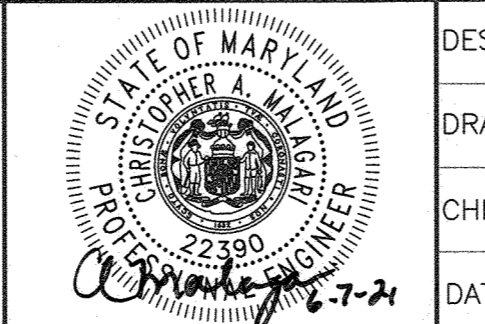
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Chris Day 6-22-21
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

Chad Anderson 7/7/21
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

BENCHMARK
ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE & SUITE 315 • ELLCOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6844
WWW.BE-CVLENGINEERING.COM



DESIGN: DBT					
DRAFT: DBT					
CHK: DBT					
DATE: 6/5/2021	WRA	AS BUILT "QUANTITIES"	6-15-22		
	BY	NO.	REVISIONS	DATE	

**FINAL
PUBLIC WATER AND SEWER
TITLE SHEET**

600 SCALE MAP # BLOCK: ---

**WELLINGTON FARMS
SEWER EXTENSION**

TAX MAP: 46 - GRID: 6 - PARCEL: 163
ZONED: R-20-MXD-3 / R-SC-MXD-3
ELECTION DISTRICT NO. 6 - HOWARD COUNTY, MARYLAND

CONTRACT NO. 24-5136-D

SCALE:
AS SHOWN

SHEET NO.
1 OF 7



OWNER: ESC WELLINGTON, L.C.
5074 DORSEY HALL DRIVE, SUITE 205
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410-720-3021

DEVELOPER: ESC WELLINGTON, L.C.
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8480 BALTIMORE NATIONAL PIKE & SUITE 315 A ELLCOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6844
WWW.BEI-CIVILENGINEERING.COM



DESIGN: DBT/LDD					
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CHK: DBT					
DATE: 6/5/2021	WRA	NO AS BUILT INFORMATION	6-15-22		
	BY NO.	REVISIONS	DATE		

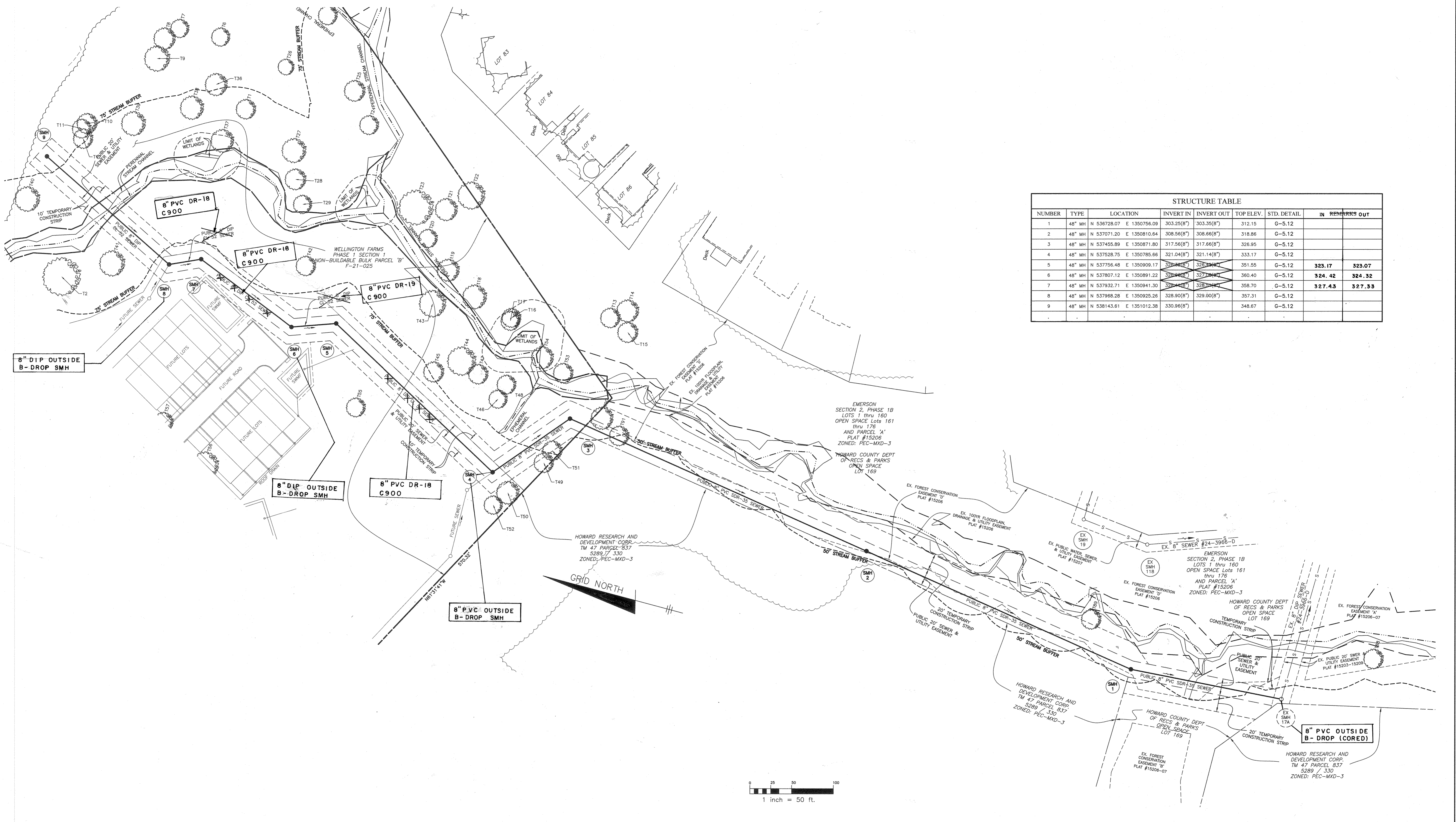
PHASING KEY SHEET

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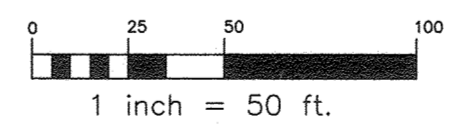
WELLINGTON FARMS
SEWER EXTENSION
TAX MAP: 46 - GRID: 6 - PARCEL: 163
ZONED: R-20-MXD-3 / R-SC-MXD-3
ELECTION DISTRICT NO. 6 - HOWARD COUNTY, MARYLAND
CONTRACT NO. 24-5136-D

SCALE:
AS SHOWN

SHEET NO.
2 OF 7



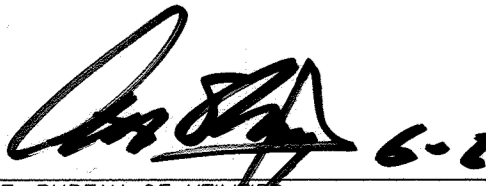
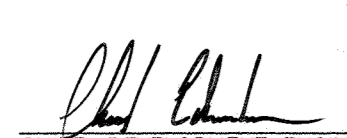

STRUCTURE TABLE									
NUMBER	TYPE	LOCATION	INVERT IN	INVERT OUT	TOP ELEV.	STD. DETAIL	IN	REMARKS	OUT
1	48" MH	N 536728.07 E 1350756.09	303.25(8')	303.35(8')	312.15	G-5.12			
2	48" MH	N 537071.20 E 1350810.64	308.56(8')	308.66(8')	318.86	G-5.12			
3	48" MH	N 537455.89 E 1350871.80	317.56(8')	317.66(8')	326.95	G-5.12			
4	48" MH	N 537528.75 E 1350785.66	321.04(8')	321.14(8')	333.17	G-5.12			
5	48" MH	N 537756.48 E 1350909.17	326.54(8')	326.64(8')	351.55	G-5.12	323.17		323.07
6	48" MH	N 537807.12 E 1350891.22	326.54(8')	327.14(8')	360.40	G-5.12	324.42		324.32
7	48" MH	N 537932.71 E 1350841.30	326.54(8')	326.64(8')	358.70	G-5.12	327.43		327.33
8	48" MH	N 537968.28 E 1350925.26	328.90(8')	329.00(8')	357.31	G-5.12			
9	48" MH	N 538143.61 E 1351012.38	330.96(8')		348.67	G-5.12			

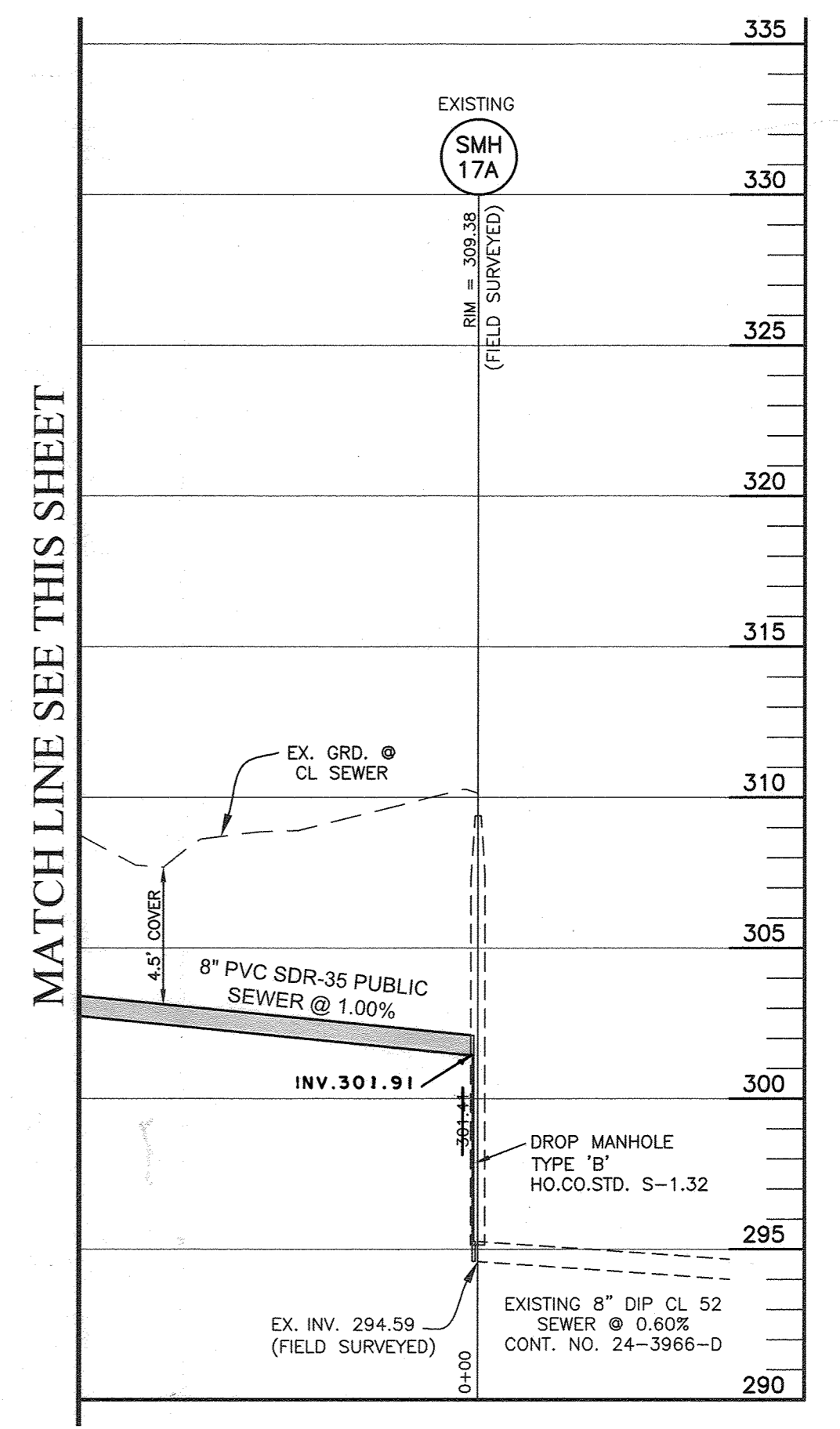
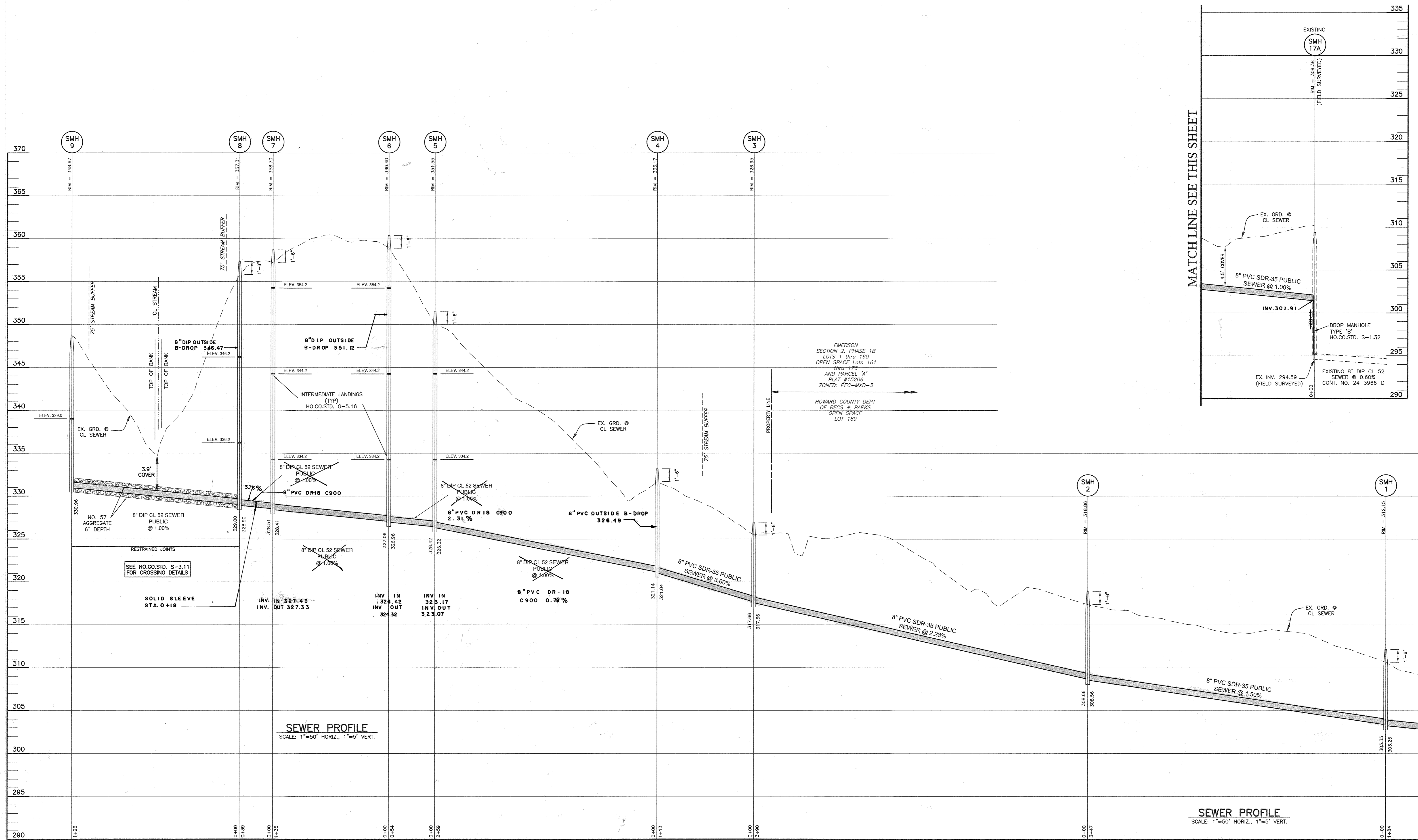


OWNER:
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DEVELOPER:
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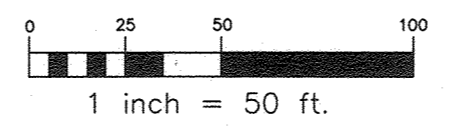
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND  DATE: 6-22-21	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND  DATE: 7-7-21	BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE & SUITE 315 A ELLCOTT CITY, MARYLAND 21043 (P) 410-485-8105 (F) 410-465-6844 WWW.BE-CIVILENGINEERING.COM	 DATE: 6/5/2021	DESIGN: DBT					WELLINGTON FARMS SEWER EXTENSION TAX MAP: 46 - GRID: 6 - PARCEL: 163 ZONED: R-20-MXD-3 / R-SC-MXD-3 ELECTION DISTRICT NO. 6 - HOWARD COUNTY, MARYLAND CONTRACT NO. 24-5136-D	SCALE: AS SHOWN
				DRAFT: DBT						SHEET NO. 3 OF 7
				CHECK: DBT						
				DATE: 6/5/2021	WRA: <input checked="" type="checkbox"/> AS BUILT	G-15-22	600 SCALE MAP # xx	BLOCK: ---		



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410-720-3021

DEVELOPER: ESC WELLINGTON, L.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. 22390, Expiration Date: 6-30-2023.



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature]
CHIEF, BUREAU OF UTILITIES
DATE: 6-22-24

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

[Signature]
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 7/2/24

BENCHMARK
ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE SUITE 315 ELLCOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6444
WWW.BE-CIVILENGINEERING.COM



DESIGN: DBT			
DRAFT: DBT			
CHK: DBT			
DATE: 6/5/2021			
BY: WRA	NO. 1	AS BUILT	DATE: 6-16-22
REVISIONS			

PUBLIC SEWER PROFILE

600 SCALE MAP # xx

BLOCK: ---

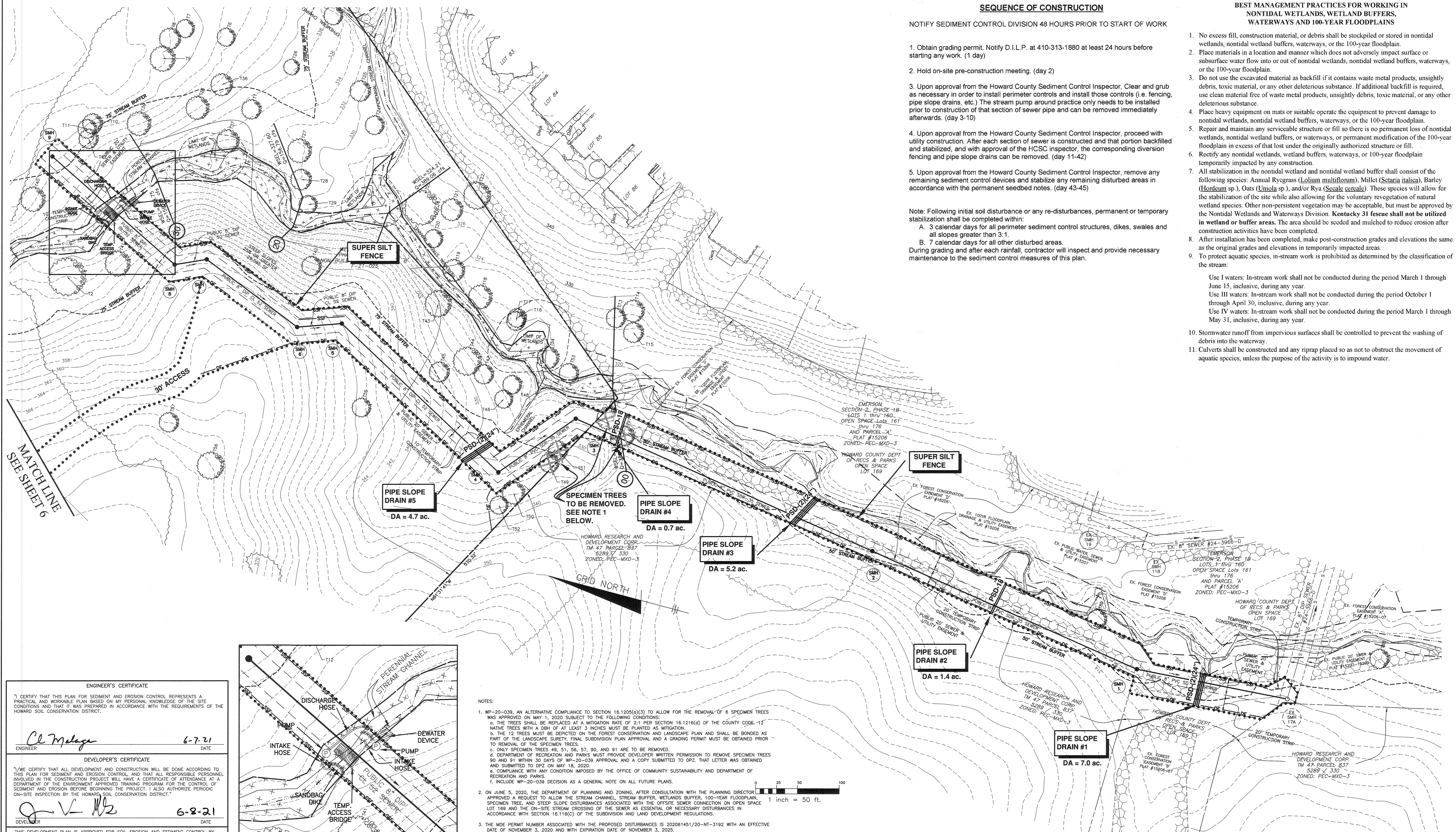
WELLINGTON FARMS
SEWER EXTENSION

TAX MAP: 46 - GRID: 6 - PARCEL: 163
ZONED: R-20-MXD-3 / R-SC-MXD-3
ELECTION DISTRICT NO. 6 - HOWARD COUNTY, MARYLAND

CONTRACT NO. 24-5136-D

SCALE: AS SHOWN

SHEET NO. 4 OF 7



SEQUENCE OF CONSTRUCTION

NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF WORK

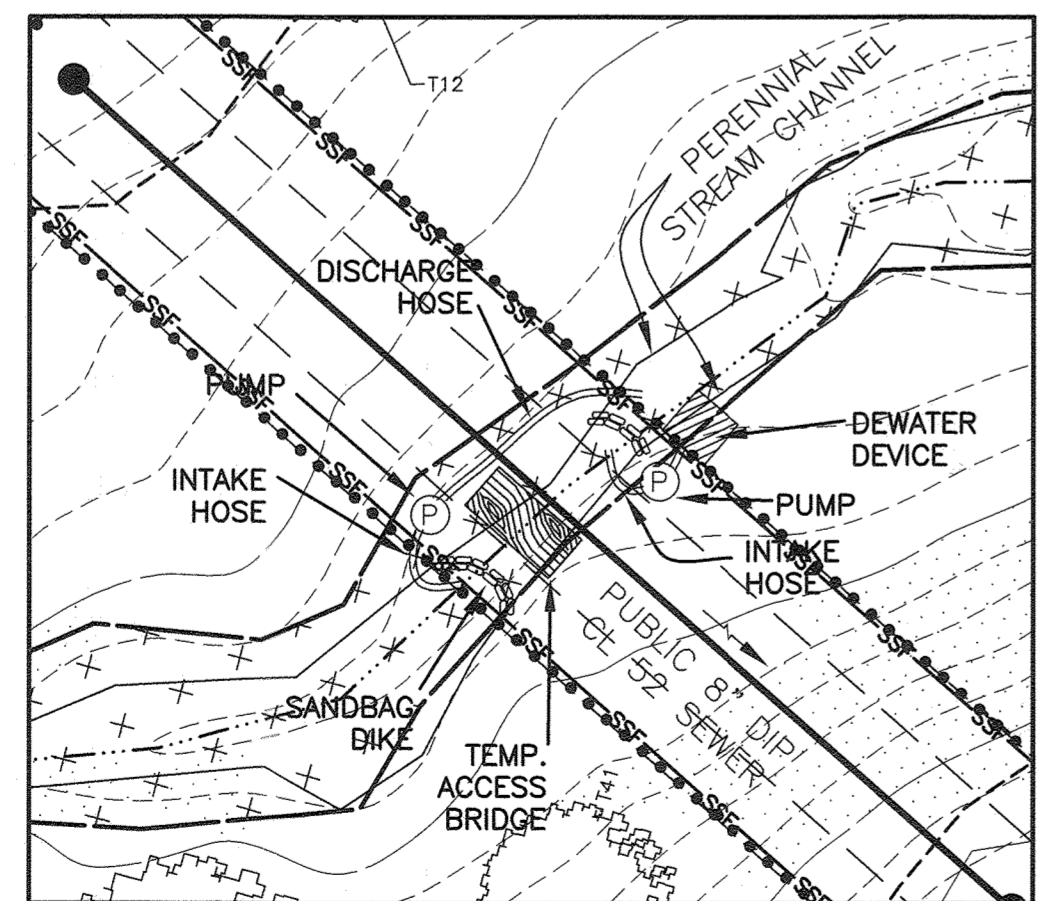
1. Obtain grading permit. Notify D.I.L.P. at 410-313-1880 at least 24 hours before starting any work. (1 day)
2. Hold on-site pre-construction meeting. (day 2)
3. Upon approval from the Howard County Sediment Control Inspector, Clear and grub as necessary in order to install perimeter controls and install those controls (i.e. fencing, pipe slope drains, etc.) The stream pump around practice only needs to be installed prior to construction of that section of sewer pipe and can be removed immediately afterwards. (day 3-10)
4. Upon approval from the Howard County Sediment Control Inspector, proceed with utility construction. After each section of sewer is constructed and that portion backfilled and stabilized, and with approval of the HCSC inspector, the corresponding diversion fencing and pipe slope drains can be removed. (day 11-42)
5. Upon approval from the Howard County Sediment Control Inspector, remove any remaining sediment control devices and stabilize any remaining disturbed areas in accordance with the permanent seedbed notes. (day 43-45)

Note: Following initial soil disturbance or any re-disturbances, permanent or temporary stabilization shall be completed within:
 A. 3 calendar days for all perimeter sediment control structures, dikes, swales and all slopes greater than 3:1.
 B. 7 calendar days for all other disturbed areas.
 During grading and after each rainfall, contractor will inspect and provide necessary maintenance to the sediment control measures of this plan.

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

1. No excess fill, construction material, or debris shall be stockpiled or stored in nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
2. 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.
3. 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.
4. Place heavy equipment on mats or suitable operate the equipment to prevent damage to nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
5. 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.
6. Rectify any nontidal wetlands, wetland buffers, waterways, or 100-year floodplain temporarily impacted by any construction.
7. 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 (*Avena sp.*), and/or Rye (*Secale cereale*). These species will allow for the stabilization of the site while also allowing for the voluntary revegetation of natural 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.
8. After installation has been completed, make post-construction grades and elevations the same as the original grades and elevations in temporarily impacted areas.
9. 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.
10. Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway.
11. 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.

MATCHLINE
SEE SHEET 6



PUMP AROUND DETAIL
1 inch = 60 ft.

- NOTES:
1. WP-20-039, AN ALTERNATIVE COMPLIANCE TO SECTION 16.1205(a)(3) TO ALLOW FOR THE REMOVAL OF 6 SPECIMEN TREES WAS APPROVED ON MAY 1, 2020 SUBJECT TO THE FOLLOWING CONDITIONS:
 - a. THE TREES SHALL BE REPLACED AT A MITIGATION RATE OF 2:1 PER SECTION 16.1216(d) OF THE COUNTY CODE. 12 NATIVE TREES WITH A DBH OF AT LEAST 3 INCHES MUST BE PLANTED AS MITIGATION.
 - b. THE 12 TREES MUST BE DEPICTED ON THE FOREST CONSERVATION AND LANDSCAPE PLAN AND SHALL BE BONDED AS PART OF THE LANDSCAPE SURETY. FINAL SUBDIVISION PLAN APPROVAL AND A GRADING PERMIT MUST BE OBTAINED PRIOR TO REMOVAL OF THE SPECIMEN TREES.
 - c. ONLY SPECIMEN TREES 49, 51, 56, 57, 90, AND 91 ARE TO BE REMOVED.
 - d. DEPARTMENT OF RECREATION AND PARKS MUST PROVIDE DEVELOPER WRITTEN PERMISSION TO REMOVE SPECIMEN TREES 90 AND 91 WITHIN 30 DAYS OF WP-20-039 APPROVAL AND A COPY SUBMITTED TO DP2. THAT LETTER WAS OBTAINED AND SUBMITTED TO DP2 ON MAY 18, 2020.
 - e. COMPLIANCE WITH ANY CONDITION IMPOSED BY THE OFFICE OF COMMUNITY SUSTAINABILITY AND DEPARTMENT OF RECREATION AND PARKS.
 - f. INCLUDE WP-20-039 DECISION AS A GENERAL NOTE ON ALL FUTURE PLANS.
 2. ON JUNE 5, 2020, THE DEPARTMENT OF PLANNING AND ZONING, AFTER CONSULTATION WITH THE PLANNING DIRECTOR, APPROVED A REQUEST TO ALLOW THE STREAM CHANNEL, STREAM BUFFER, WETLANDS BUFFER, 100-YEAR FLOODPLAIN, SPECIMEN TREE, AND STEEP SLOPE DISTURBANCES ASSOCIATED WITH THE OFFSITE SEWER CONNECTION ON OPEN SPACE LOT 169 AND THE ON-SITE STREAM CROSSING OF THE SEWER AS ESSENTIAL OR NECESSARY DISTURBANCES IN ACCORDANCE WITH SECTION 16.116(C) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
 3. THE MDE PERMIT NUMBER ASSOCIATED WITH THE PROPOSED DISTURBANCES IS 20206451/20-NI-3192 WITH AN EFFECTIVE DATE OF NOVEMBER 3, 2020 AND WITH EXPIRATION DATE OF NOVEMBER 3, 2025.

ENGINEER'S CERTIFICATE

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

Cl Malaga 6-7-21
ENGINEER DATE

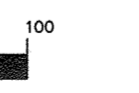
DEVELOPER'S CERTIFICATE

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

Q V M 6-8-21
DEVELOPER DATE

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

Alvander Butcher 06/28/21
HOWARD SOIL CONSERVATION DISTRICT DATE



OWNER:
ESC WELLINGTON, L.C.
5074 DORSEY HALL DRIVE, SUITE 205
ELLICOTT CITY, MARYLAND 21042
410-720-3021

DEVELOPER:
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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Cl Malaga 6-22-21
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

Cl Malaga 7-11-21
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

BENCHMARK
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(P) 410-465-6105 (F) 410-465-6644
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DESIGN: DBT			
DRAFT: DBT			
CHK: DBT			
DATE: 6/5/2021			
NO AS BUILT INFORMATION			
REVISIONS			
DATE: 6-16-22			

**PUBLIC SEWER
SEDIMENT AND EROSION
CONTROL PLAN**

600 SCALE MAP # xx BLOCK: ---

**WELLINGTON FARMS
SEWER EXTENSION**

TAX MAP: 46 - GRID: 6 - PARCEL: 163
ZONED: R-20-MXD-3 / R-SC-MXD-3
ELECTION DISTRICT NO. 6 - HOWARD COUNTY, MARYLAND

CONTRACT NO. 24-5136-D

SCALE:
AS SHOWN

SHEET NO.
5 OF 7

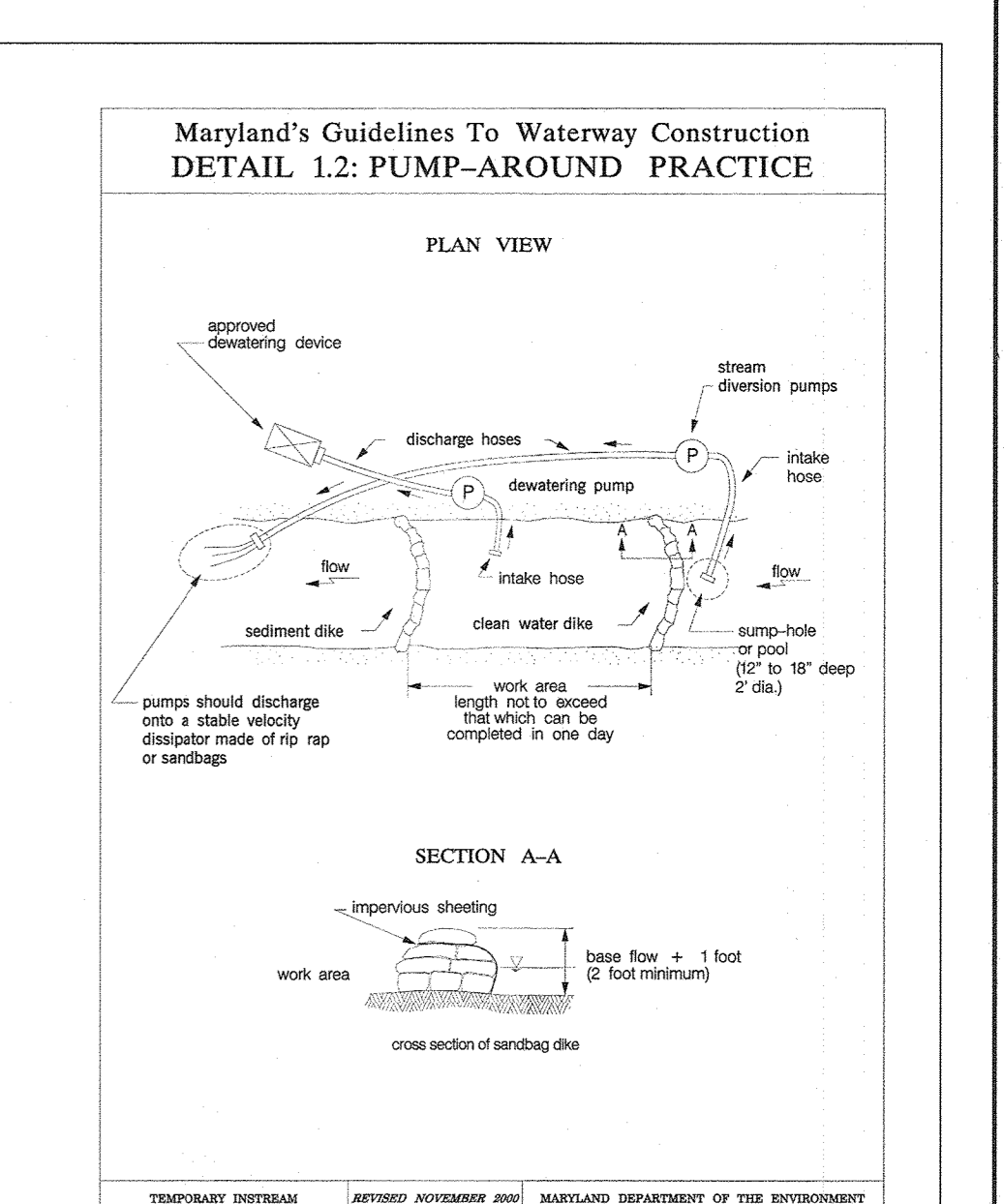
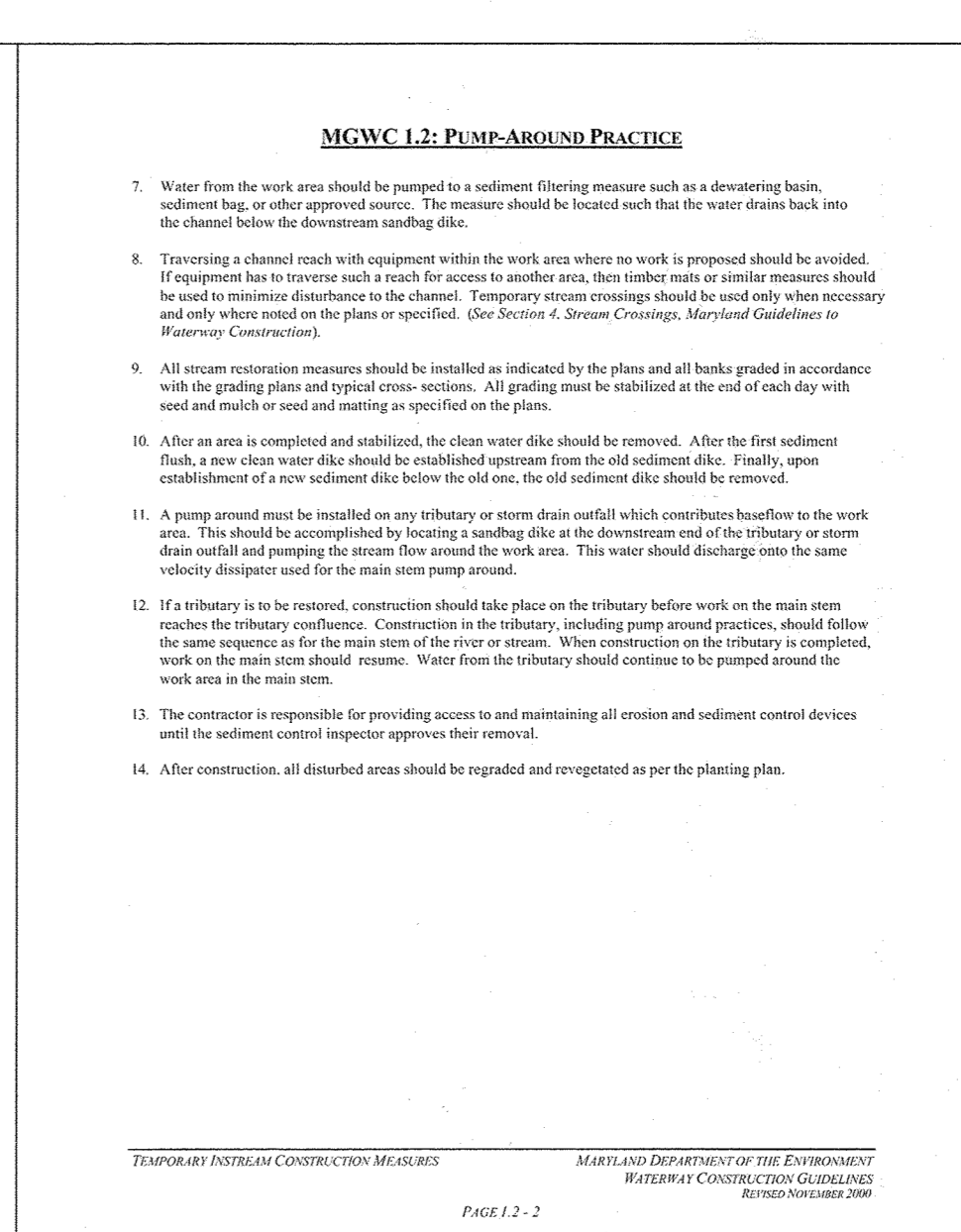
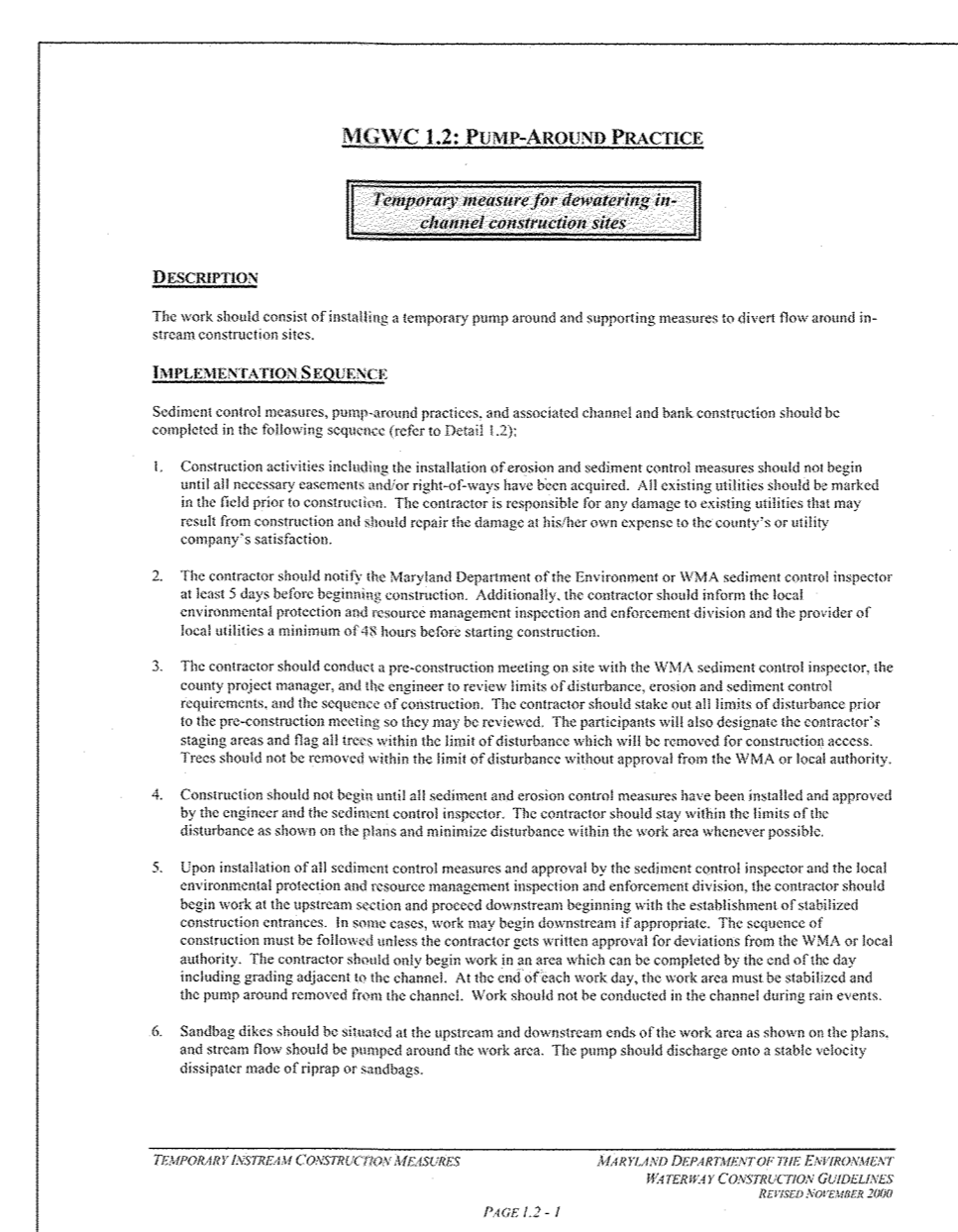
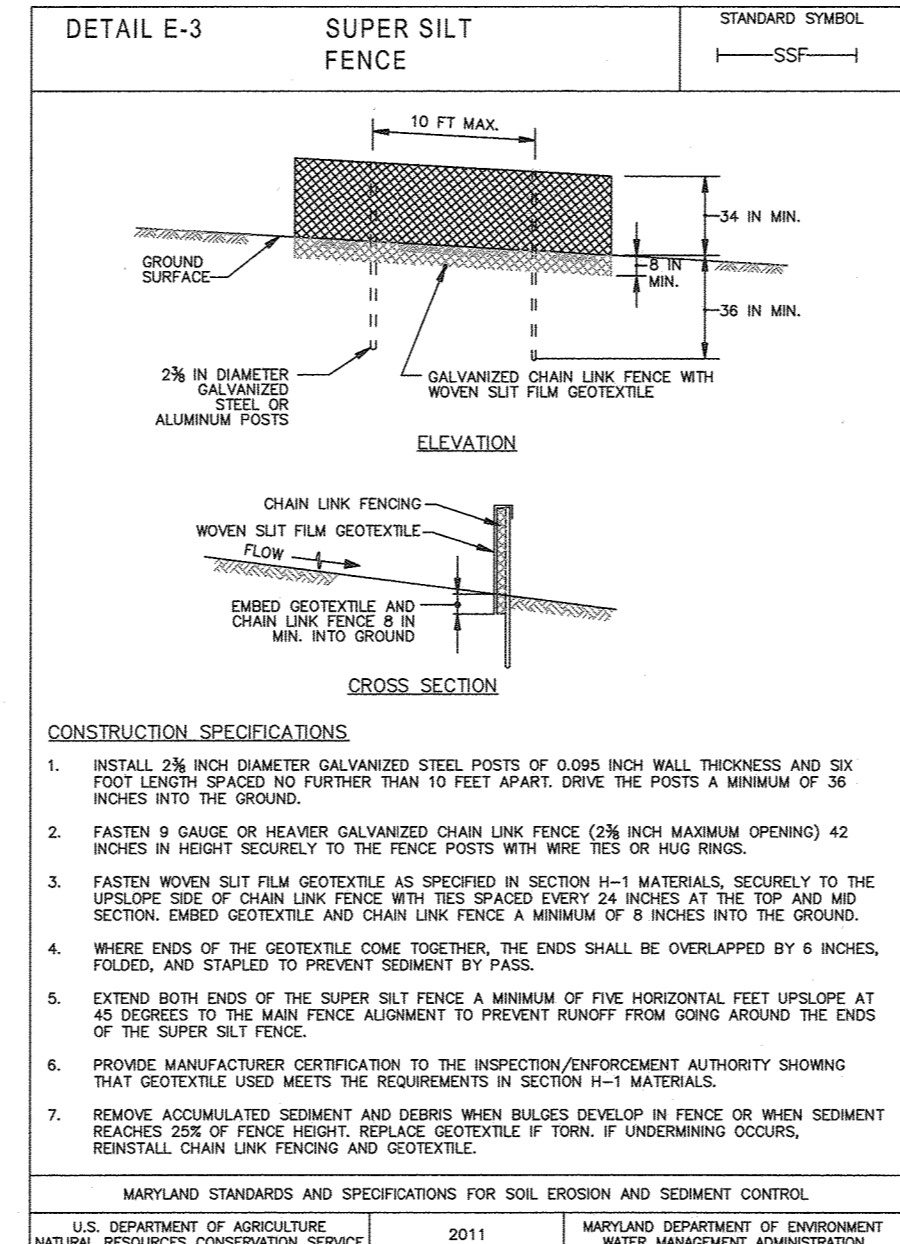
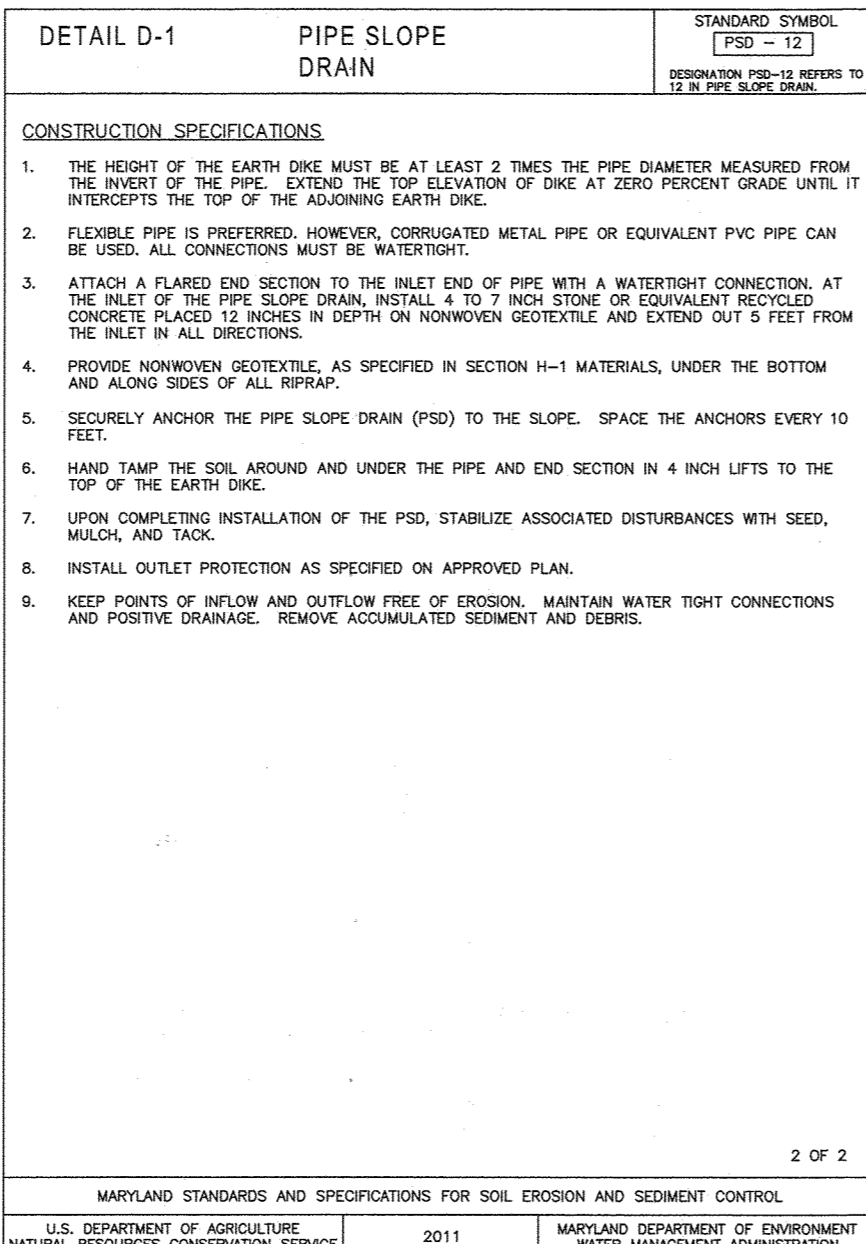
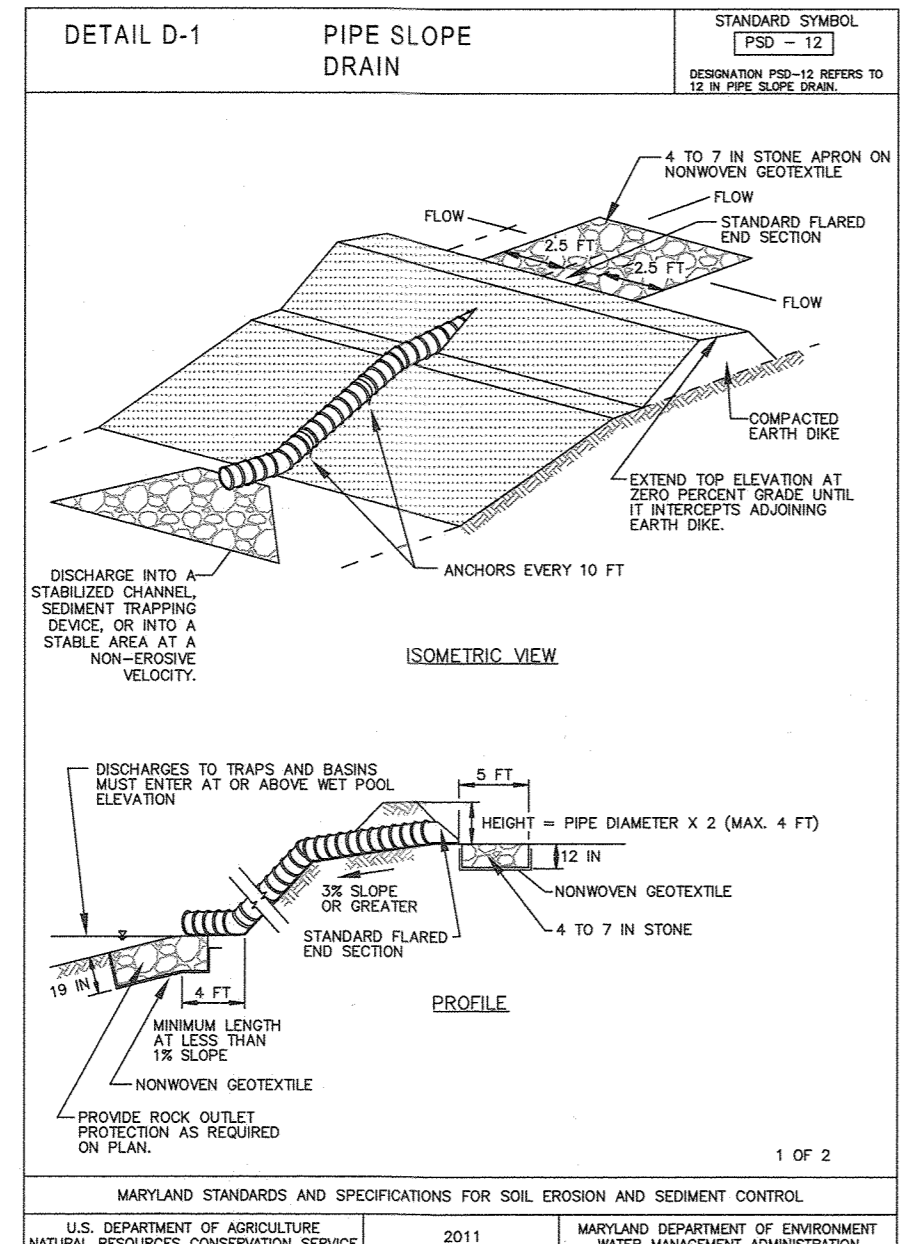
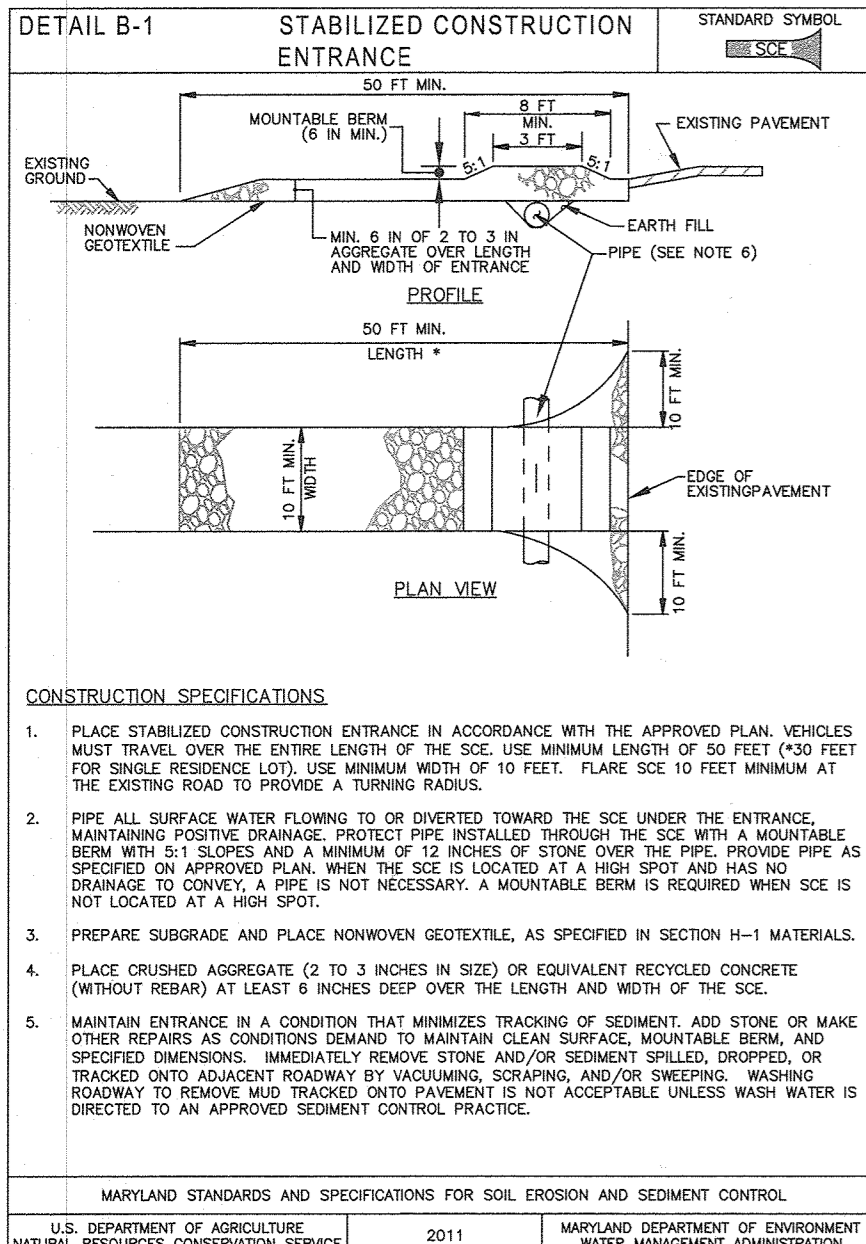
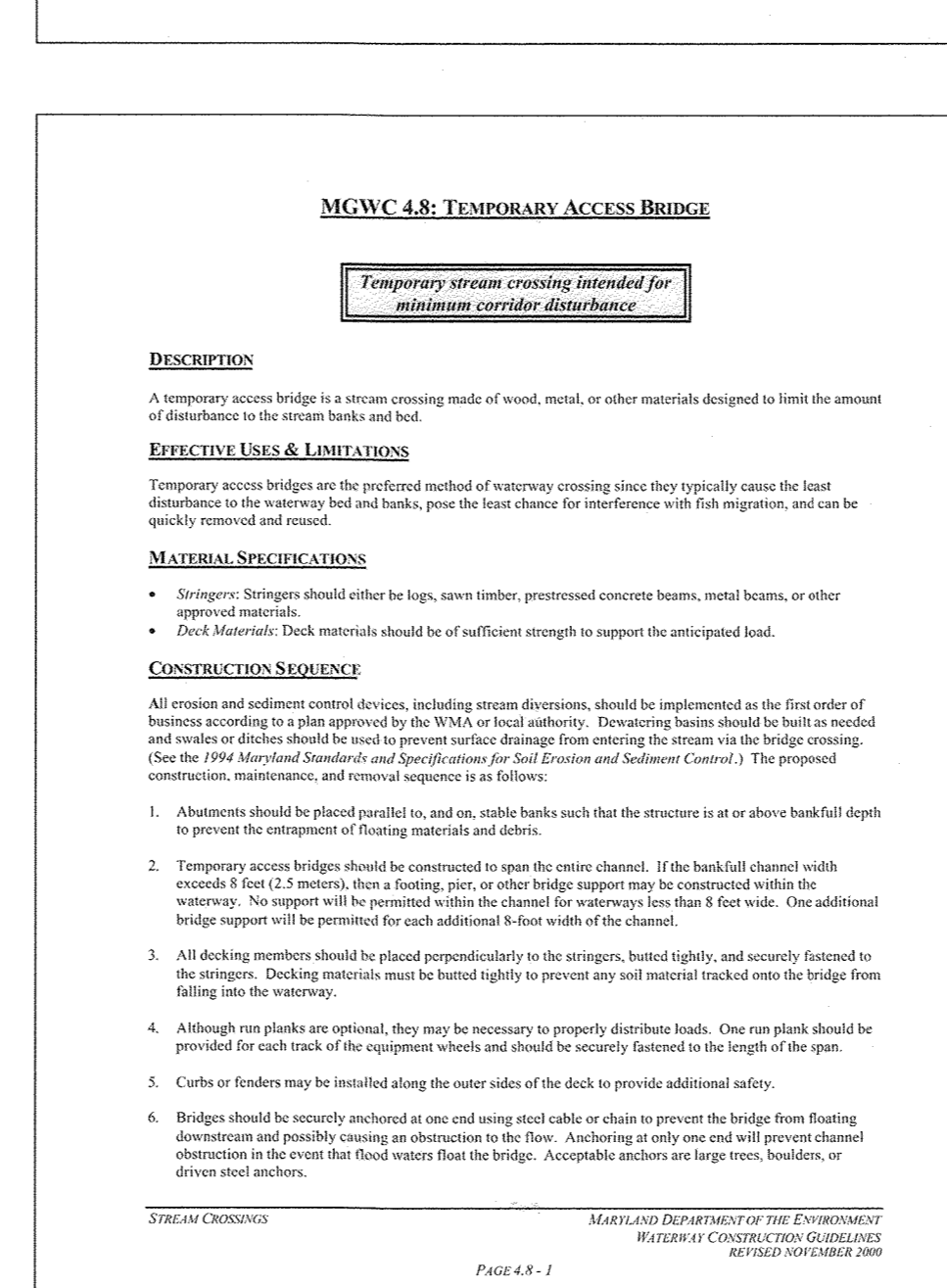
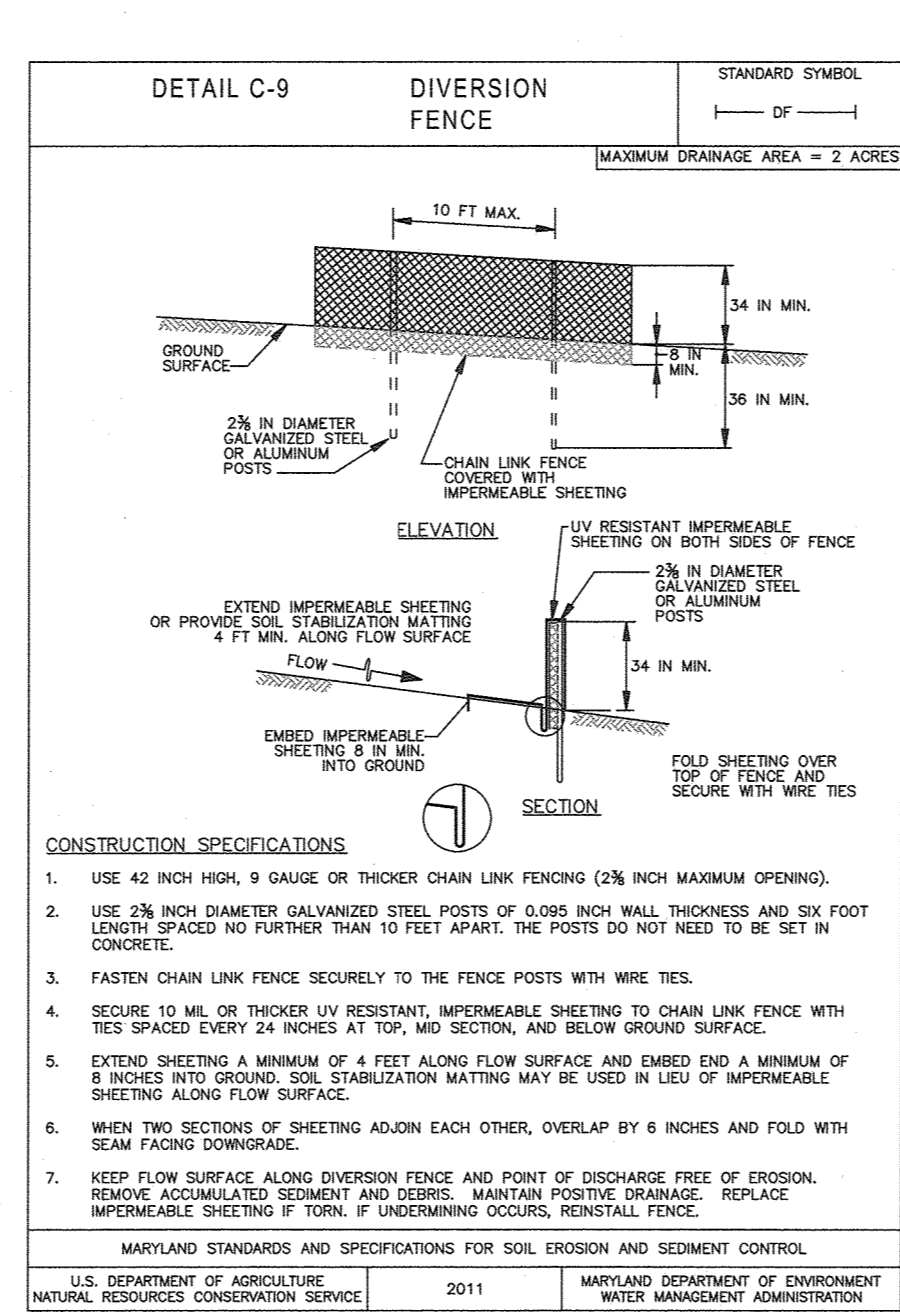
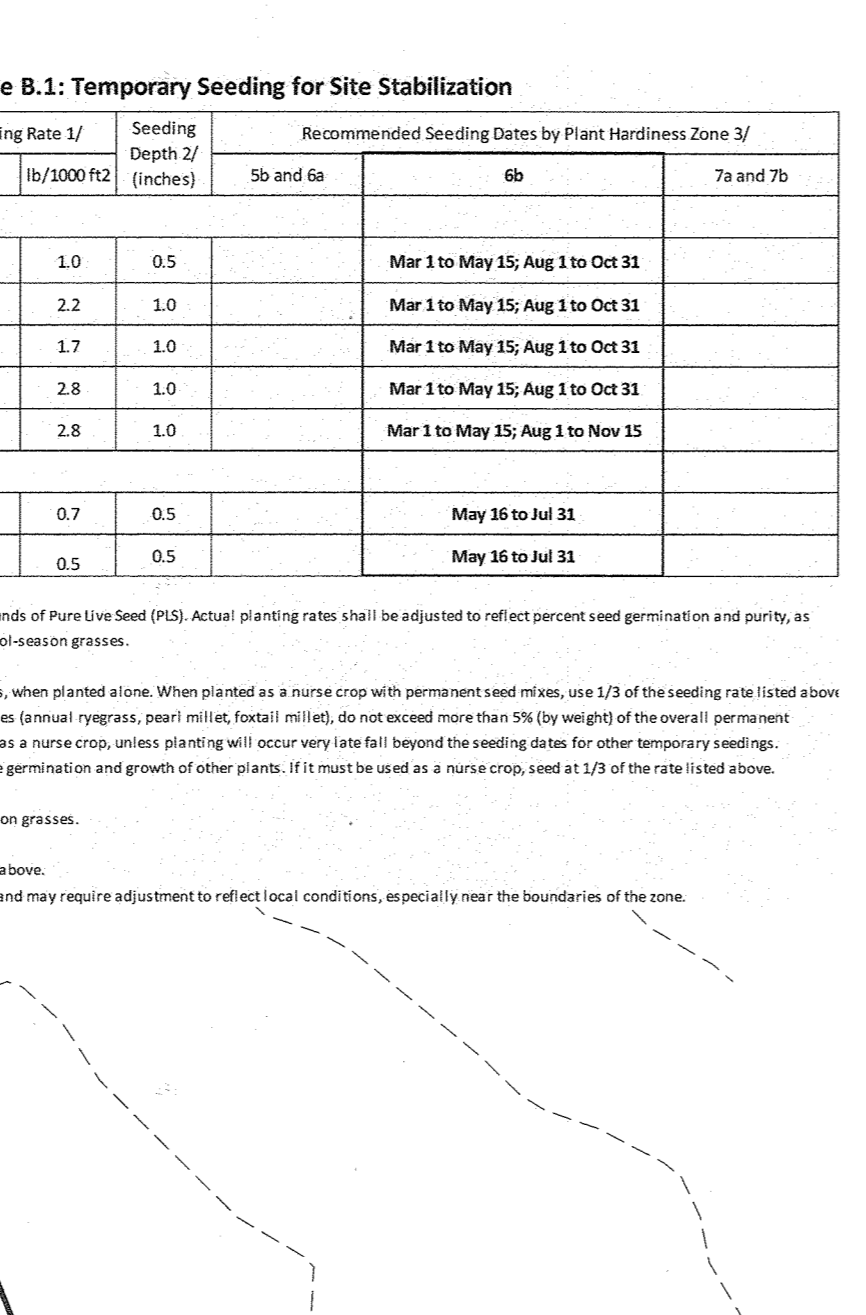
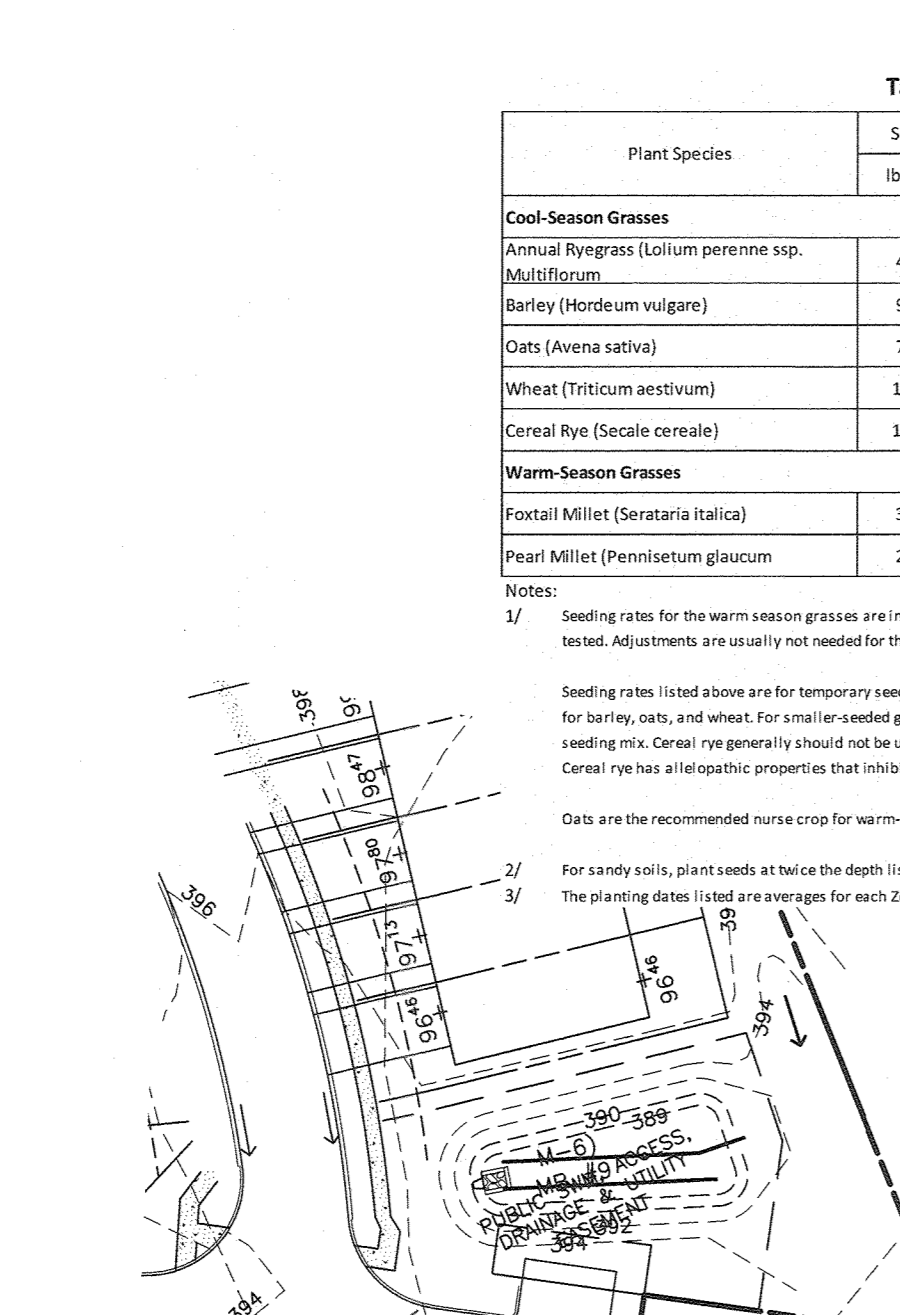


Table B.1: Temporary Seeding for Site Stabilization

Plant Species	Seeding Rate 1/		Recommended Seeding Dates by Plant Hardiness Zone 3/	
	lb/ac	lb/1000ft ²	5b and 6a	7a and 7b
Cool-Season Grasses				
Annual Ryegrass (<i>Lolium perenne</i> ssp. multisetum)	40	1.0	0.5	Mar 1 to May 15; Aug 1 to Oct 31
Barley (<i>Hordeum vulgare</i>)	96	2.2	1.0	Mar 1 to May 15; Aug 1 to Oct 31
Oats (<i>Avena sativa</i>)	72	1.7	1.0	Mar 1 to May 15; Aug 1 to Oct 31
Wheat (<i>Triticum aestivum</i>)	120	2.8	1.0	Mar 1 to May 15; Aug 1 to Oct 31
Cereal Rye (<i>Secale cereale</i>)	112	2.8	1.0	Mar 1 to May 15; Aug 1 to Nov 15
Warm-Season Grasses				
Forstal Millet (<i>Seriataria italica</i>)	30	0.7	0.5	May 16 to Jul 31
Pearl Millet (<i>Pennisetum glaucum</i>)	20	0.5	0.5	May 16 to Jul 31

Notes:
1/ Seeding rates for the warm season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as tested. Adjustments are usually not needed for the cool-season grasses.
2/ Seeding rates listed above are for temporary seedings, when planted alone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate listed above for barley, oats, and wheat. For smaller-seeded grasses (annual ryegrass, pearl millet, forstal millet), do not exceed more than 5% (by weight) of the overall permanent seed mix. Cereal rye generally should not be used as a nurse crop, unless planted well in advance of the seeding date for other temporary seedings. Cereal rye has allelopathic properties that inhibit the germination and growth of other plants. If it must be used as a nurse crop, seed at 1/2 of the rate listed above.
3/ Oats are the recommended nurse crop for warm-season grasses.
For sandy soils, plant seeds at twice the depth listed above.
The planting dates listed are averages for each zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.



Permanent Seeding Summary

No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	Fertilizer Rate (10-20-20)			Lime Rate
					N	P2O5	K2O	
9	Fescue, Tall	60	Mar 1 to May 15 Aug 1 to Oct 15	1/4 - 1/2 in	45 pounds per acre (110 lb/1000-sf)	90 lb/ac (210/1000-sf)	90 lb/ac (900/1000-sf)	2 tons/ac (900/1000-sf)
	Bluegrass, Kentucky	40	Mar 1 to May 15 Aug 1 to Oct 15	1/4 - 1/2 in				

ENGINEER'S CERTIFICATE
I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Cl Madaga 6-7-21
ENGINEER DATE

DEVELOPER'S CERTIFICATE
I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
J V RBZ 6-8-21
DEVELOPER DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Alexander Butcher 06/28/21
HOWARD SOIL CONSERVATION DISTRICT DATE

OWNER:
ESC WELLINGTON, L.C.
5074 DORSEY HALL DRIVE, SUITE 205
ELLIOTT CITY, MARYLAND 21042
410-465-3021

DEVELOPER:
ESC WELLINGTON, L.C.
5074 DORSEY HALL DRIVE, SUITE 205
ELLIOTT CITY, MARYLAND 21042
410-465-3021

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. 22390, Expiration Date: 6-30-2023.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
6-22-24
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
17-7-21
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

BENCHMARK
ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE & SUITE 315 ELLIOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
WWW.BE-CONENGINEERING.COM

DESIGN: DBT
DRAFT: DBT
CHK: DBT
DATE: 6/5/2021
WRA NO. AS BUILT INFORMATION 6-16-22
BY NO. REVISIONS DATE 600 SCALE MAP # xx BLOCK: ---

PUBLIC SEWER
SEDIMENT AND EROSION
CONTROL PLAN

WELLINGTON FARMS
SEWER EXTENSION
TAX MAP: 46 - GRID: 6 - PARCEL: 163
ZONED: R-20-MXD-3 / R-SC-MXD-3
ELECTION DISTRICT NO. 6 - HOWARD COUNTY, MARYLAND

SCALE:
AS SHOWN
SHEET NO.
6 OF 7
CONTRACT NO. 24-5136-D

MATCH LINE SEE SHEET 5

HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

1. A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-3133-1855 after the future LUD and protected areas are marked clearly in the field. A minimum of 48 hours notice to CID must be given at the following steps:

- Prior to the start of earth disturbance.
- 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.

2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.

3. 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.

4. 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 feet must be bermed with stable outlet. All concentrated flow steep slopes, and highly erodible areas shall receive soil stabilization mowing (Sec. B-4-6).

5. 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.

6. Site Analysis:

Total Area of Site:	N/A	Acres	*CUT/FILL NUMBERS ARE ROUGH ESTIMATE FOR SEDIMENT CONTROL PURPOSES ONLY. CONTRACTOR TO VERIFY.
Area Disturbed:	2.7	Acres	
Area to be roofed or paved:	0.0	Acres	
Area to be vegetatively stabilized:	2.7	Acres	
Total cut:	0	* Cu Yds	
Total fill:	0	* Cu Yds	
Off-site waste/borrow area location:	N/A		

7. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

8. Additional sediment control must be provided, if deemed necessary by the CID. The site inspection report and the construction water control plan must be submitted to the CID prior to 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).

9. 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 work day, whichever is shorter.

10. 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 be allowed by the CID per the list of HSCD-approved field changes.

11. 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 20 acres cumulatively may be disturbed at a given time.

12. Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure.

13. Topsoil shall be stockpiled and preserved on-site for redistribution to final grade.

14. All site fence and super silt fence shall be placed on-the-contour, and be imbricated at 25' minimum intervals, with lower ends curled up by 2' in elevation.

15. Stream channels must not be disturbed during the following restricted time periods (inclusive):

- Use I and IP March 1 - June 15
- Use III and IIP October 1 - April 30
- Use IV March 1 - May 31

16. 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.

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

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 more.

Criteria: 1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table B.1 permanent and time rates must be put on the plan.

- For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
- When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.1.8 and maintain until the next seeding season.

2. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 1/2 pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.

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: 1. The stockpile location and all related sediment control works must be clearly indicated on the 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.
- Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earthen 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 37 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 impermissible 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.

H-5 STANDARDS AND SPECIFICATIONS FOR DUST CONTROL

Definition: Controlling the suspension of dust particles from construction activities.

Purpose: To prevent blowing and movement of dust from exposed soil surfaces to reduce on and off-site damage including health and traffic hazards.

Conditions Where Practice Applies: Areas subject to dust blowing and movement where on and off-site damage is likely without treatment.

Specifications: 1. Mulches: See Section B-4-2 Soil Preparation, Topsoiling, and Soil Amendments, Section B-4-3 Seeding and Mulching, and Section B-4-4 Temporary Stabilization. Mulch must be anchored to prevent blowing.

2. Vegetation Cover: See Section B-4-4 Temporary Stabilization.

3. Tillage: Till to roughen surface and bring clods to the surface. Begin plowing on windward side of site. Chisel-till plows spaced about 12 inches apart, spring-toothed harrows, and similar plows are examples of equipment that may produce the desired effect.

4. Irrigation: Sprinkle site with water until the surface is moist. Repeat as needed. The site must not be irrigated to the point that runoff occurs.

5. Barriers: Solid board fences, silt fences, snow fences, burlap fences, straw bales, and similar material can be used to control air currents and soil blowing.

6. Chemical Treatment: Use of chemical treatment requires approval by the appropriate plan review authority.

B-4-3 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

1. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.

2. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guid. Section 342 - Critical Area Planting.

3. For sites having disturbed areas over 5 acres, use and show the rates recommended by the soil testing agency.

4. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 1/2 pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.

2. Turfgrass Mixtures

a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.

b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.

i. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky Bluegrass Cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

ii. Kentucky Bluegrass/Perennial Ryegrass: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky Bluegrass Cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

iii. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes: Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.

iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf areas. Mixture includes Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 1/2 to 3 pounds per 1000 square feet.

Notes: Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass 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. Tall 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 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 (1/4 to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is not especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).

1. General Specifications

a. Class of turfgrass must be Maryland State Certified. Sod labels must be made available to the job foreman and inspected.

b. Sod must be machine cut at a uniform soil thickness of 3/4 inch, plus or minus 1/8 inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable.

c. Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.

d. Sod must not be harvested or transported when moisture content (excessively dry or wet) may adversely affect its survival.

e. Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not wrapped within this period must be approved by an agronomist or soil scientist prior to its installation.

2. Sod Installation

a. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.

b. Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.

c. Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface.

d. Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of irrigating, tamping and irrigating for any piece of sod within eight hours.

3. Sod Maintenance

a. In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water sod during the heat of the day to prevent wilting.

b. After the first week, sod watering is required as necessary to maintain adequate moisture content. Do not mow until the sod is firmly rooted. No more than 1/3 of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.

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. General Use

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 rate 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 inoculants 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 phytotoxic 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 (phosphorus), 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. When hydroseeding do not incorporate seed into the soil.

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 to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, decayed, or excessively dry.

b. The original soil to be vegetated contains material toxic to plant growth.

c. The soil is so acidic that treatment with limestone is not feasible.

d. Areas having slopes steeper than 2:1 require special consideration and design.

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 subsols 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.

4. 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 and seeded preparation.

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 and 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, Petrosol, 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.

iv. Use of asphalt binders is strictly prohibited.

v. Lightweight plastic netting may be applied over the mulch according to manufacturer recommendations. Netting is usually available in rolls 15 to 15 feet wide and 300 to 3000 feet long.

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 ripped or dragged another 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 Seeding

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 to ii. and iii. is that, when 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. Rate 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 seeded 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. Seeded 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 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