


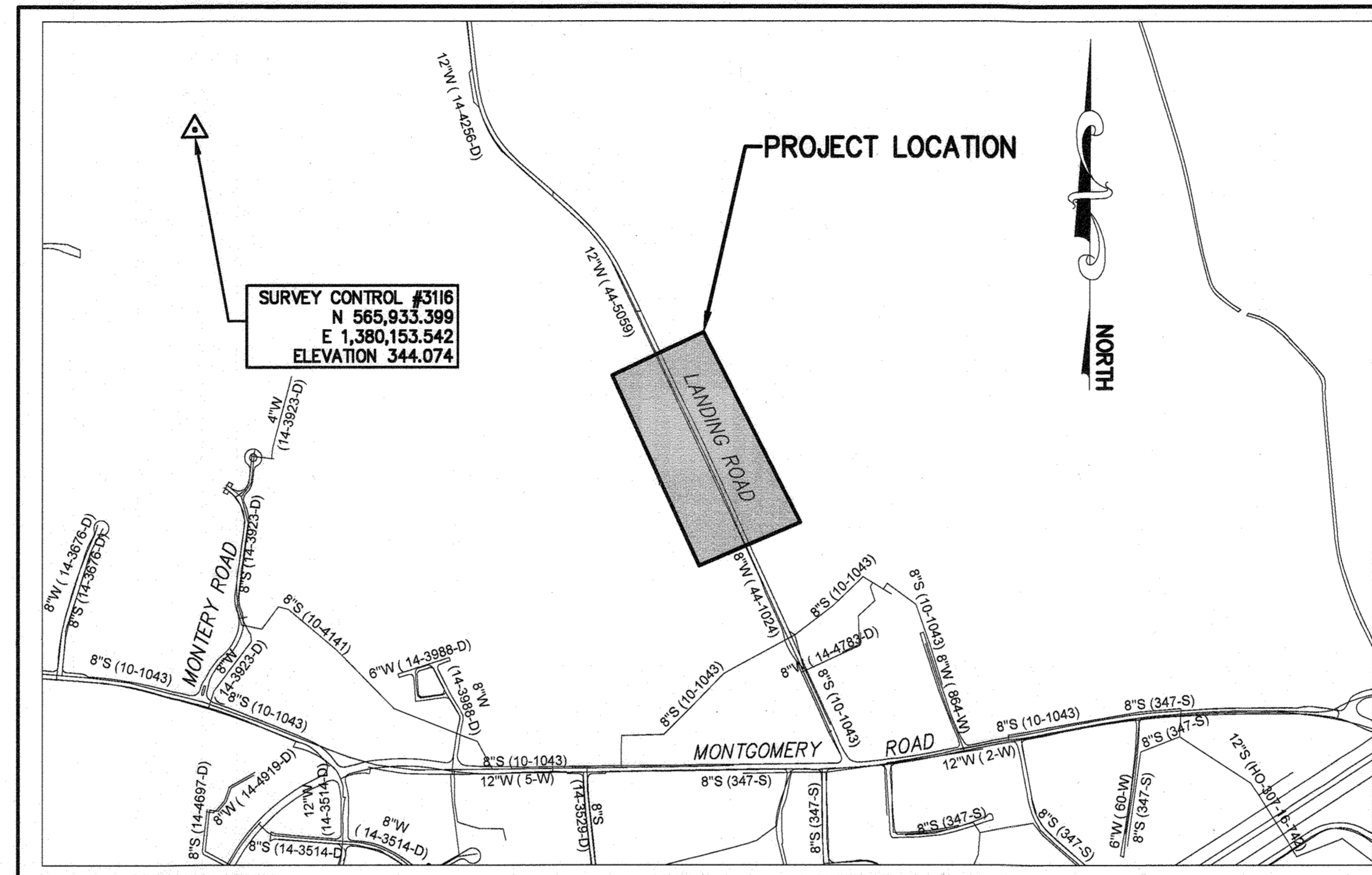
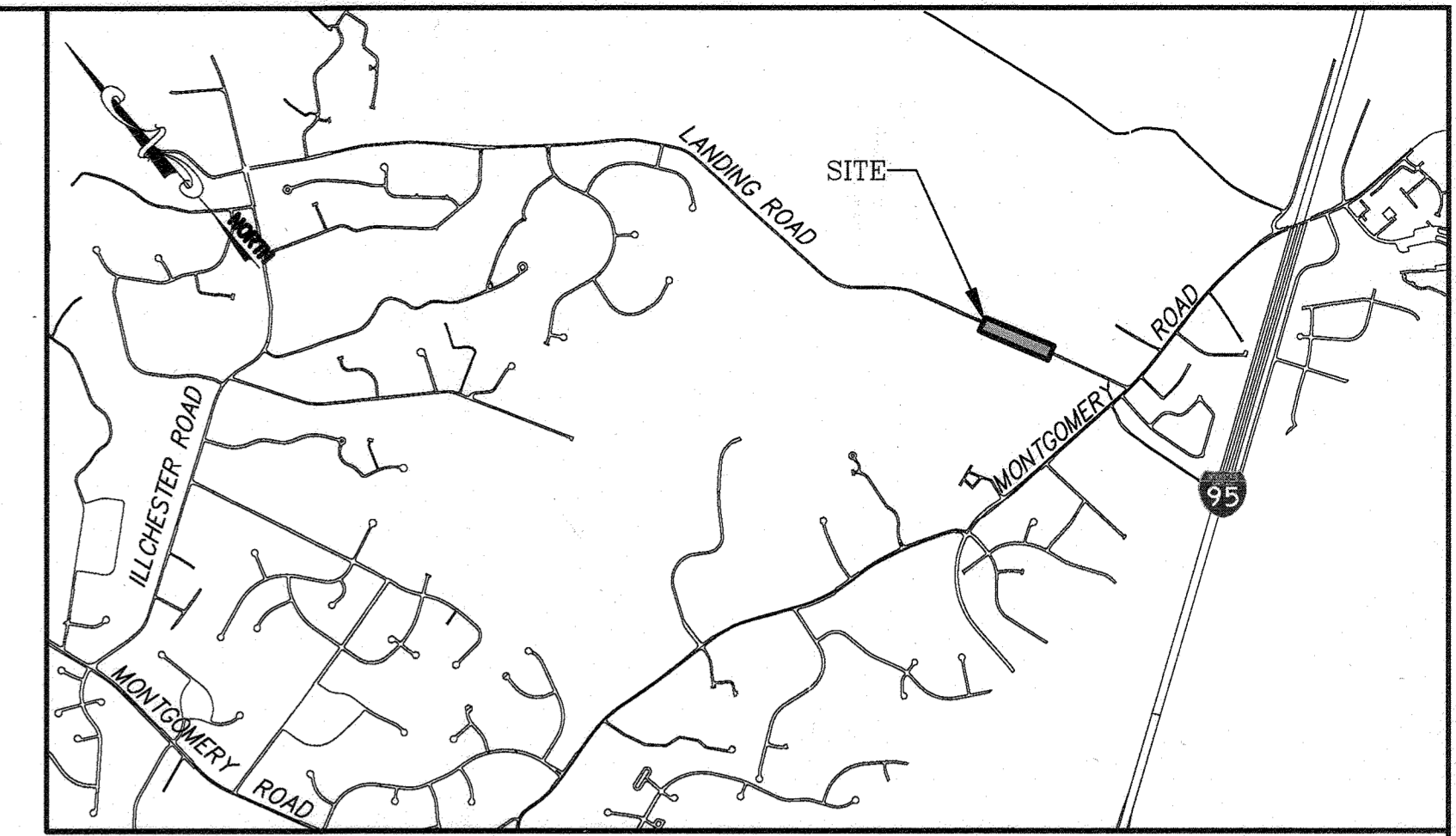
LANDING ROAD SEWER EXTENSION

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CAPITAL PROJECT NO. S6698 CONTRACT NO. 10-5226

GENERAL NOTES:

- 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 NOVEMBER 2017 AND SUPPLEMENTED IN OCTOBER 2022 BY RUMMEL, KLEPPER & KAHL, LLP (RK&K).
- HORIZONTAL AND VERTICAL SURVEY CONTROLS:
THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD '83 (ADJUSTED 2011) AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATION NO. 31EB AND NO. 3116. ALL VERTICAL CONTROLS ARE BASED ON NAVD '88.
- 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 OR DESCRIBED IN THE CONTRACT DOCUMENTS, 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 ARE 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 (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
AT&T.....1-800-252-1133
BGE (CONSTRUCTION SERVICES).....410-637-8713
BGE (EMERGENCY)800-685-0123
BUREAU OF UTILITIES.....410-313-4900
COLONIAL PIPELINE CO.410-795-1390
MISS 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 THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- THE CONTRACTOR SHALL NOTIFY BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-7450 AT LEAST FIVE (5) 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(A) OF THE HOWARD COUNTY CODE.



TYPE OF BUILDINGS: N/A NUMBER OF PARCELS: N/A NO. OF WATER CONNECTIONS: N/A NO. OF SEWER CONNECTIONS: 3 DRAINAGE AREA: PATAPSCO	VICINITY MAP SCALE: 1" = 600'	HOWARD COUNTY GEODETIC SURVEY CONTROL POINTS: STATION# EAST NORTH ELEVATION 31EB 1,376,273.635 568,730.995 452.657 3116 1,380,153.542 565,933.399 344.074
---	----------------------------------	--

ITEM	ESTIMATED QUANTITY	AS-BUILT		
		QUANTITY	TYPE	MANUFACTURER/SUPPLIER
8" SEWER PVC SDR 35	297 LF	300 LF	SDR-35	NATIONAL PIPE AND PLASTIC
1-1/2" LPSS PVC SDR 21	81 LF	80 LF	SDR-21	CRESLINE PLASTIC PIPE CO. INC.
48" MANHOLE	2 EA	2EA	---	CONTRACTOR'S PRECAST GRP
8" X 4" WYE BRANCH	1 EA	1EA	SDR-35	CPK
LPSS 1-1/2" IN-LINE VALVE	1 EA	1EA	---	MATCO - NORCA
TERMINAL FLUSHING CONNECTION	1 EA	1EA	---	VARIOUS MANUFACTURERS
4" DIA. SHC	6 LF	10 LF	SDR-35	NATIONAL PIPE AND PLASTIC
1-1/2" DIA. SHC	12 LF	23 LF	SDR-21	CRESLINE PLASTIC PIPE CO. INC.
1-1/2" LPSS SERVICE VALVE ASSEMBLY	2 EA	2 EA	---	VARIOUS MANUFACTURERS
CLEANOUT	1 EA	1EA	---	PRISM PRECAST
LPSS CONTINUITY TEST STATION	1 EA	1EA	---	VARIOUS MANUFACTURERS

SEWER NOTES:

- 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 D.I.P. ONLY.
- MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
- MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVER, STANDARD DETAIL G5.52. WHERE WATERTIGHT MANHOLE FRAMES AND COVERS ARE USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT THE CELLAR CANNOT BE SERVED.

SEWER HOUSE CONNECTION (SHC) NOTES:

- SHC SHALL BE PVC MATCHING MATERIAL OF THE SEWER MAIN. SHC SHALL BE PER STANDARD DETAIL S-2.11, S-4.03 AND S-4.05.
- SHC SHALL BE BUILT TO THE PROPERTY LINE. CLEANOUTS AND SERVICE VALVES SHALL BE PROVIDED AT THE PROPERTY LINE AS SHOWN ON THE HOMEOWNER'S SIDE PER STANDARD DETAIL S-2.22 AND S-4.03.
- CONTRACTOR SHALL PROVIDE A PLUG AT THE PROPERTY LINE CLEANOUT AND SERVICE VALVES FOR THE PRIVATE BUILDING SEWER AS NOTED ON THE PLAN.
- MINIMUM COVER OVER ALL SHC WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE 4- FEET.

PURPOSE STATEMENT: IN RESPONSE TO PROPERTY OWNER REQUEST, CONTRACT NO. 10-5226 WILL EXTEND PUBLIC SEWER ON LANDING ROAD, WHICH IS INCORPORATED IN THE METROPOLITAN DISTRICT AND ELIGIBLE FOR PUBLIC WATER AND SEWER SERVICE.


INDEX OF DRAWINGS

SHEET NO.	DRAWING NO.	DESCRIPTION
01	G-01	TITLE SHEET, GENERAL NOTES AND INDEX OF DRAWINGS
02	G-02	LEGEND, ABBREVIATIONS, AND HSCD STANDARD NOTES
03	G-03	SURVEY CONTROL AND STAKEOUT
04	C-01	SEWER PLAN AND PROFILE
05	MT-01	MAINTENANCE OF TRAFFIC NOTES AND DETAILS
06	ES-01	EROSION & SEDIMENT CONTROL PLAN
07	ES-02	EROSION & SEDIMENT CONTROL DETAILS
08	ES-03	EROSION & SEDIMENT CONTROL STANDARDS AND SPECIFICATIONS

AS-BUILT DRAWINGS:
I HEREBY CERTIFY THIS PLAN HAS BEEN REVISED TO REFLECT THE AS-BUILT CONDITIONS OF LANDING ROAD SEWER EXTENSION RECORDED BY HOWARD COUNTY'S CONTRACTOR AND INSPECTOR.
Nirav K. Shah MD 35329 2/15/2024
ENGINEER'S SIGNATURE REGISTRATION NUMBER DATE

AS-BUILT 01-25-2024

RK&K\Projects\2017\17240_HoCo\WEDS\Task 028 - Landing Road Sewer Extension\CAD\DWG (Plan)\1-101_LANDING RD.dwg Jun 27, 2023 - 3:29pm
 ENV\CTB Plot Scale 1"=1' Plot By: rgenr Tab: G-01

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 THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF 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 Date: 7/7/2023

HOWARD SOIL CONSERVATION DISTRICT CERTIFICATION:
THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT (HSCD).
ACCORDING TO HOWARD SOIL CONSERVATION DISTRICT, THIS PROJECT QUALIFIES FOR STANDARD E&S PLAN FOR MINOR DISTURBANCES. NO FORMAL APPROVAL REQUIRED.
THIS IS A STANDARD PLAN.
XXXX NO EP NUMBER XX
Howard Soil Conservation District Date

ENGINEER'S 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.
Nirav K. Shah MD 35329 6/28/23
Engineer's Signature - Registration Number Date

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
7/20/23
7-11-23
7/14/2023
7/14/2023
7/14/2023
7/14/2023

RK&K
P: 410.728.2900
700 East Pratt Street, Suite 500 | Baltimore, MD 21202
Engineers | Construction Managers | Planners | Scientists
www.rk&k.com
Responsive People | Creative Solutions

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. 35329, EXPIRATION DATE: 01/14/2024.

DES:	BY:	NO.	REVISION	DATE
REG				
DRN:	KMT			
CHK:	NKS			
SIGN DATE:	06/28/2023			

JUNE 2023
TITLE SHEET, GENERAL NOTES, AND INDEX OF DRAWINGS
600' SCALE MAP NO. 37
BLOCK NO. 5, 6

PROJECT NO. S6698
CONTRACT NO. 10-5226
LANDING ROAD SEWER EXTENSION
SCALE AS SHOWN
SHEET NO. 01 OF 08
HSCD EP-23-13 ELECTION DISTRICT NO. 7
HOWARD COUNTY, MARYLAND

ABBREVIATIONS

Table of abbreviations including ADA, ACI, ALT, AA, ACMP, AS, AASHTO, ASTM, AWG, AWWA, BGE, BLDG, B.M., BCCMP, CI, C/C, C&G, C, CE, CLR, CL, CNS, C.O., CONC, CONST., CRZ, CSK, CU, CY, DFT, DIA, DIAG, DI, DIP, EW, ELEV, EX, FFE, F.O., FT, FM, GAB, GALV, GA, HC, HB, HOR., HDPE, HMA, INV., ID, IN., JT, K, LBS, LF, LPSS, MAX, MIN, MJ, MH, MECH, MIL, NO., #, NPT, NRCP, NTS, O/C, OD, OH, OA, PCPP, PESCP, PRV, PSI, PROP., PVC, R, RC, RCAP, RCCP, RCEP, RCP, REINF, R/W.

LEGEND

Legend table listing symbols for existing and proposed features such as Sanitary Sewer, Water, Storm Drain, and various utility lines.

HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

- 1. A PRECONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS... 2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED... 3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE... 4. ALL DISTURBED AREAS MUST BE STABILIZED... 5. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE... 6. SITE ANALYSIS: TOTAL AREA OF SITE: 0.04 ACRES... 7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED... 8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED... 9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED... 10. ANY MAJOR CHANGES OR REVISIONS ON THE PLAN... 11. DISTURBANCE SHALL NOT OCCUR OUTSIDE THE LOD... 12. WASH WATER FROM ANY EQUIPMENT... 13. TOPSOIL SHALL BE STOCKPILED... 14. ALL SILT FENCE AND SUPER SILT FENCE... 15. STREAM CHANNELS MUST NOT BE DISTURBED... 16. A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS...

AS BUILT 01-25-2024

Vertical text on the left margin: RRC21 SYS - ...

Department of Public Works Howard County, Maryland. Includes signatures and dates for Director of Public Works and Chief, Bureau of Engineering.

RK&K logo and contact information: 700 East Pratt Street, Suite 500 | Baltimore, MD 21202.

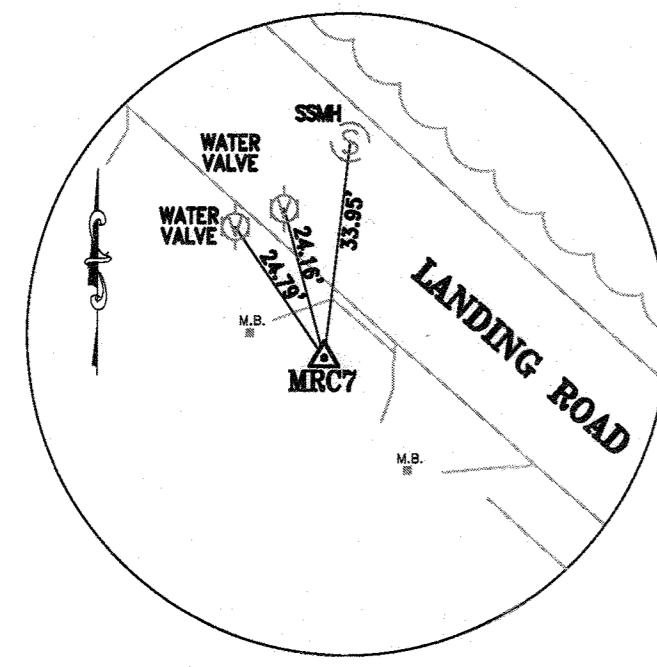
Professional Certification for R. K. K... License No. 35329, Expiration Date: 01/14/2024.

Revision table with columns for Description, By, No., Revision, and Date. Includes entries for REG, KMT, and NKS.

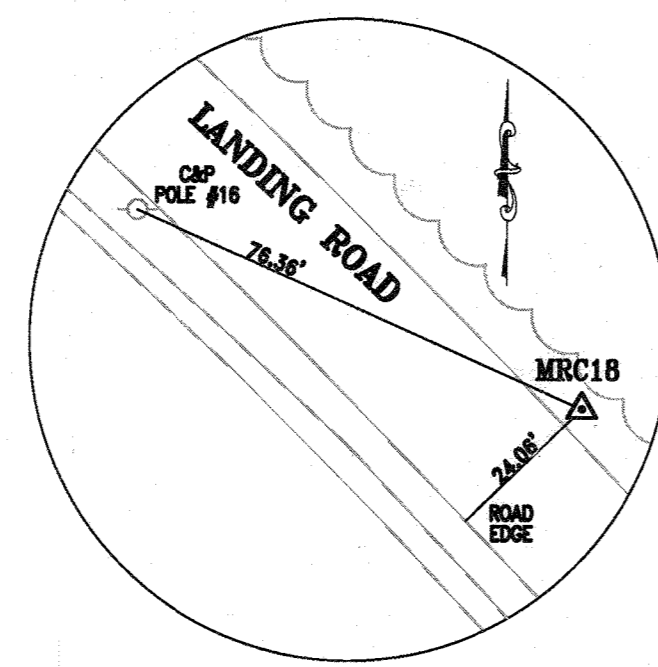
Legend, Abbreviations, and HSCD Standard Notes. Includes scale map no. 37 and block no. 5, 6.

Project information: PROJECT NO. S6698, CONTRACT NO. 10-5226, LANDING ROAD SEWER EXTENSION.

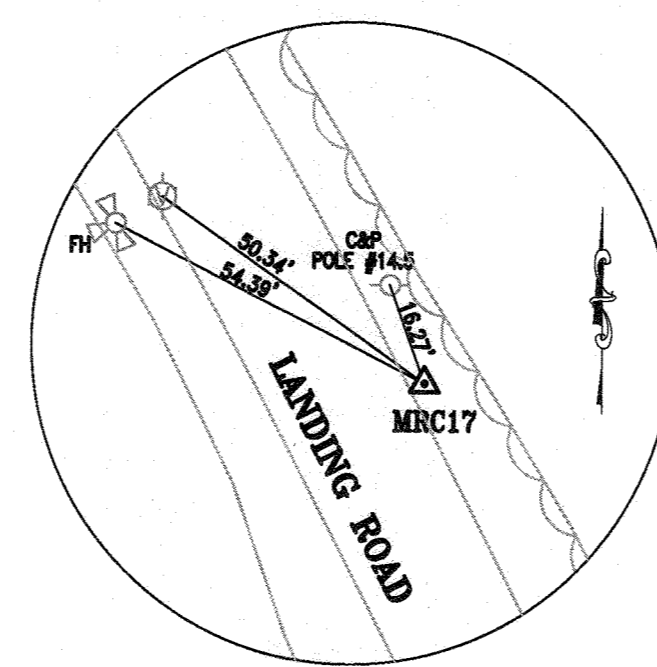
RK&K SYSTEMS - \\hrc.com\apps\Projects\2017\7240_Hoco\WFDS\Task 028 - Landing Road Sewer Extension\CADD\Civil (Plans)\3-PGN-T003_LANDING RD.dwg Jun 27, 2023 - 3:27pm
 ENV/CTB Plot Scale 1=1 Plot By: rpgren Tab: G-03



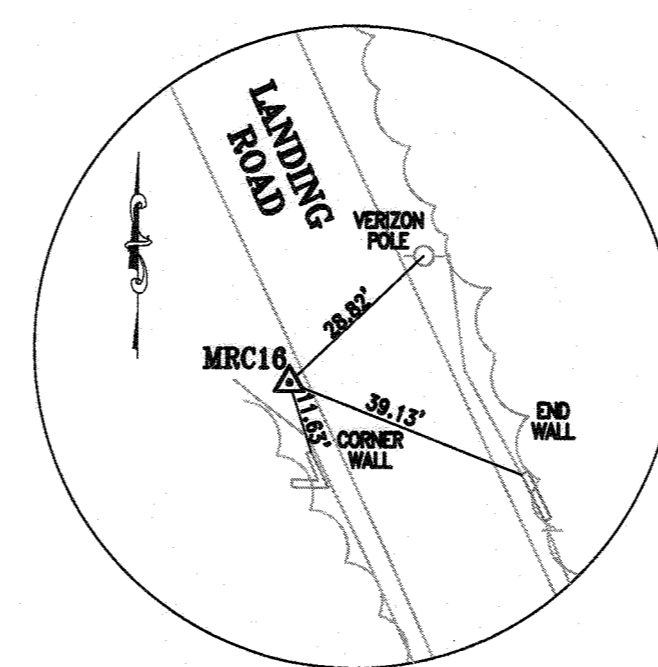
MRC7
 NORTHING = 571,429.8382
 EASTING = 1,377,594.2172
 ELEVATION = 427.630



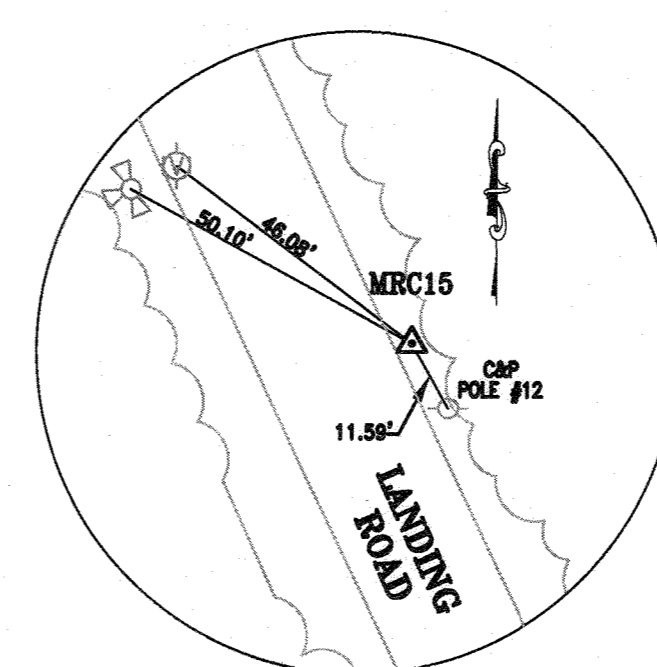
MRC18
 NORTHING = 565,447.2171
 EASTING = 1,382,187.5897
 ELEVATION = 297.510



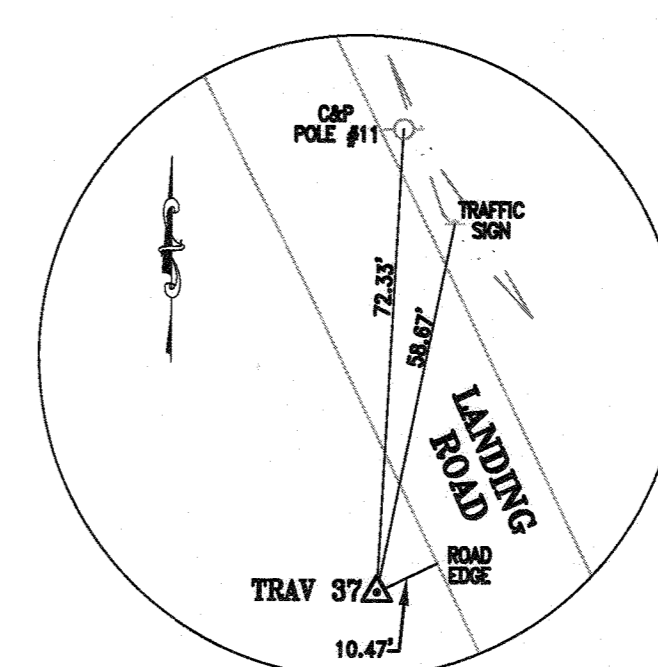
MRC17
 NORTHING = 565,208.4395
 EASTING = 1,382,355.3259
 ELEVATION = 305.000



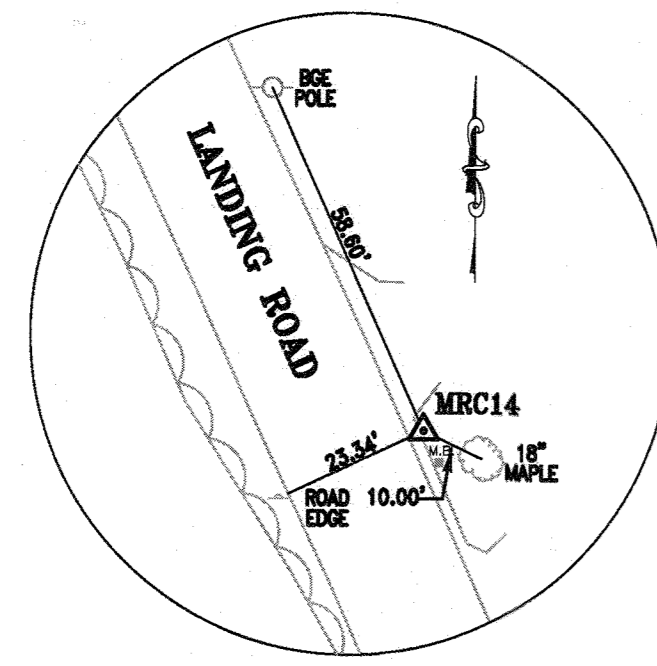
MRC16
 NORTHING = 564,858.2150
 EASTING = 1,382,494.5181
 ELEVATION = 286.990



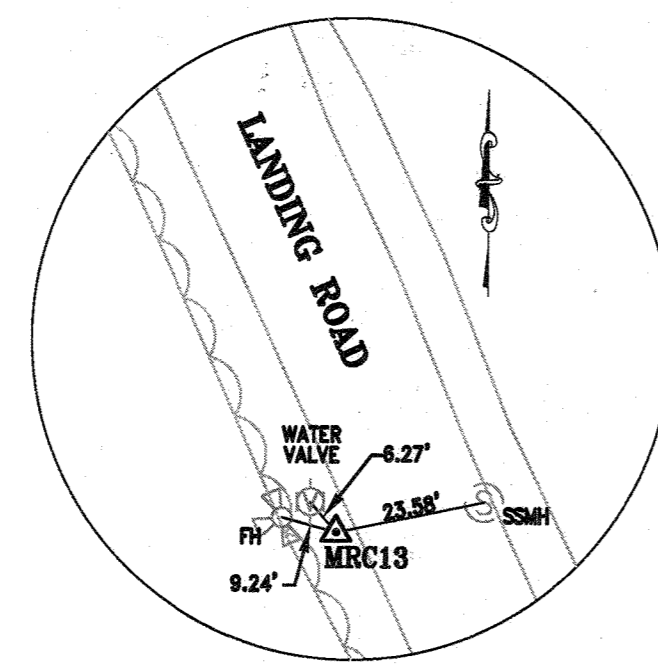
MRC15
 NORTHING = 564,647.9438
 EASTING = 1,382,622.6564
 ELEVATION = 274.560



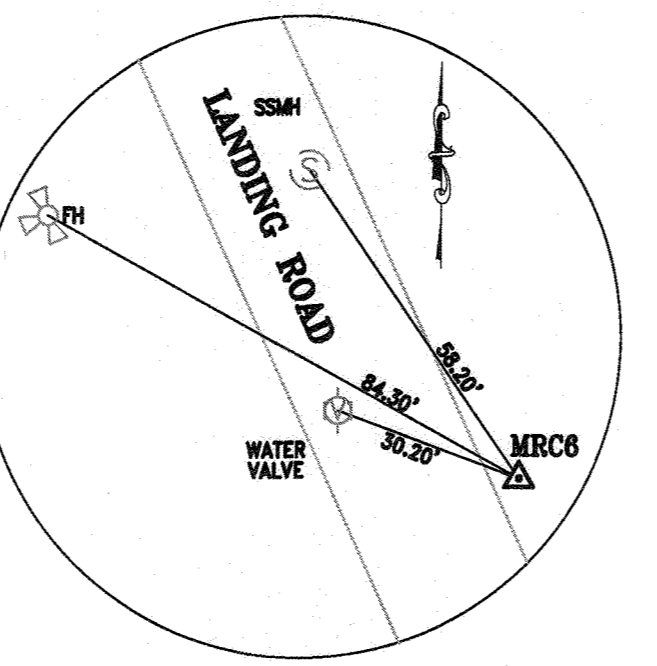
TRAV 37
 NORTHING = 564,321.5212
 EASTING = 1,382,742.8353
 ELEVATION = 256.894



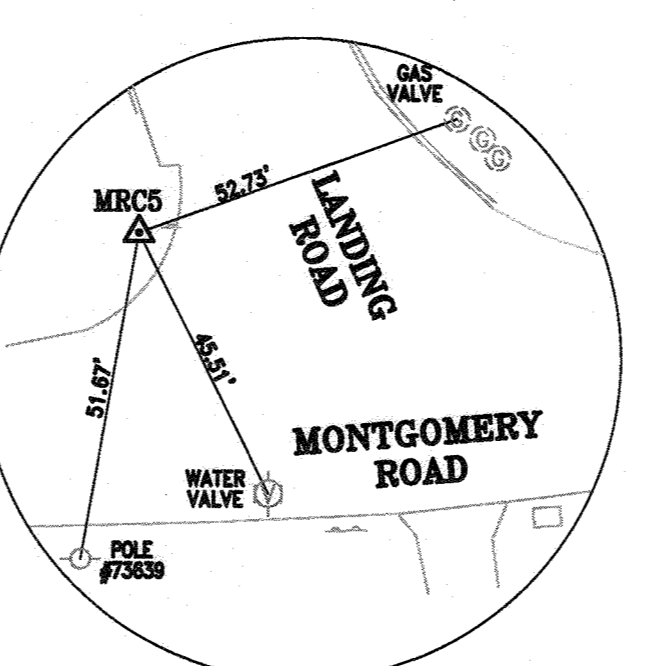
MRC14
 NORTHING = 564,124.0750
 EASTING = 1,382,872.0608
 ELEVATION = 244.330



MRC13
 NORTHING = 563,656.8579
 EASTING = 1,383,054.0141
 ELEVATION = 251.650



MRC6
 NORTHING = 563,140.7191
 EASTING = 1,383,319.1746
 ELEVATION = 237.770



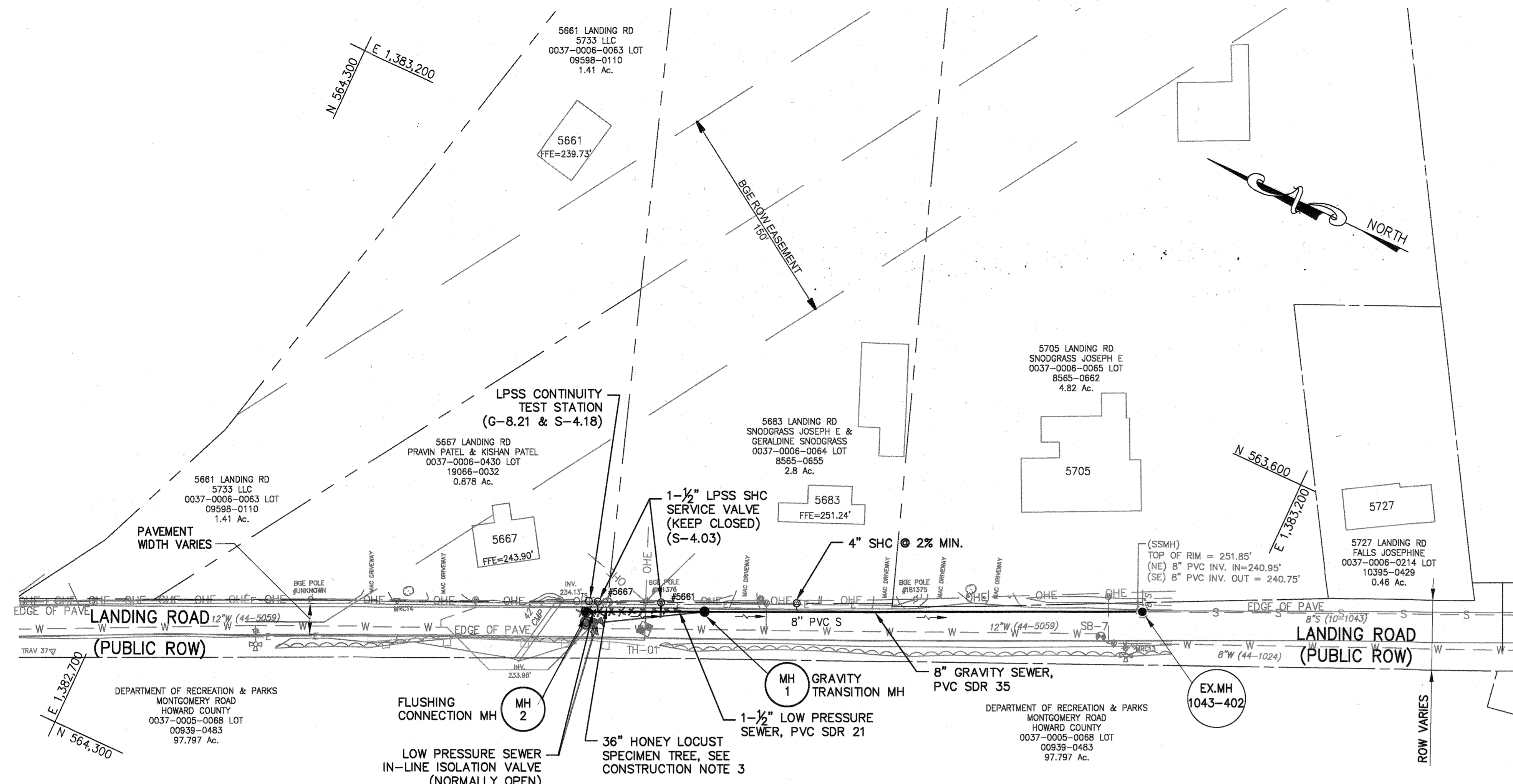
MRC5
 NORTHING = 562,699.2042
 EASTING = 1,383,477.2989
 ELEVATION = 257.200

AS BUILT 01-25-2024

G-03

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND		P: 410.728.2900 700 East Pratt Street, Suite 600 Baltimore, MD 21202 Engineers Construction Managers Planners Scientists www.rkk.com Responsive People Creative Solutions	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. 35329 EXPIRATION DATE: 01/14/2024		DES:	REG	BY	NO.	REVISION	DATE	JUNE 2023	PROJECT NO. S6698 CONTRACT NO. 10-5226 SURVEY CONTROL AND STAKEOUT LANDING ROAD SEWER EXTENSION HSCD: EP-23-13 ELECTION DISTRICT NO. 7 HOWARD COUNTY, MARYLAND	SCALE	AS SHOWN
DIRECTOR OF PUBLIC WORKS <i>[Signature]</i> 7/20/23	CHIEF, BUREAU OF ENGINEERING <i>[Signature]</i> 7-11-23				DRN: KMT	CHK: NKS	SIGN DATE: 06/28/2023	600' SCALE MAP NO. 37 BLOCK NO. 5, 6	SHEET NO. 03 OF 08					

R622\GIS - \Vendor\GIS - \Cloud\Projects\2017\17246_Howard\SEWER\Task 028 - Landing Road Sewer Extension\CAD\DWG\Plan\AS-BUILT-POD-LANDING RD.dwg Jun 27, 2023 - 3:20pm
 BNVCTB Plot Scale 1" = 50' Plot By: rgreen Tab: C-01



PROPOSED SEWER HOUSE CONNECTIONS								
PROPERTY ADDRESS	FIRST FLOOR ELEVATION	ASSUMED CELLAR ELEVATION	PROP. SHC INVERT AT PROPERTY LINE	SERVICE TYPE	BUILDING TYPE	SHC SIZE & TYPE	SHC SLOPE	APPROXIMATE SHC LENGTH
5661 LANDING ROAD ^{1,3}	239.73	N/A	240.20	FIRST FLOOR ONLY (CNS) (NO CELLAR ON PROPERTY)	RESIDENTIAL	1 1/2" LPSS	N/A	317'
5667 LANDING ROAD ¹	243.90	235.90	238.08	CELLAR	RESIDENTIAL	1 1/2" LPSS	N/A	64'
5683 LANDING ROAD ²	251.24	243.07	242.10	FIRST FLOOR ONLY (CNS)	RESIDENTIAL	4" GRAVITY	2.0%	60'

¹ 1-1/2" LPSS FROM THE HOUSE TO THE LPSS CONNECTION AT THE PROPERTY LINE, INCLUDING THE GRINDER PUMP, TO BE INSTALLED BY THE PROPERTY OWNER.
² 4" SHC FROM THE HOUSE TO THE CLEANOUT TO BE INSTALLED BY THE PROPERTY OWNER.
³ A PRIVATE EASEMENT TO BE GRANTED BY 5683 TO 5661 FOR INSTALLATION OF LPSS FROM THE HOME TO THE SERVICE VALVE.

SEWER HOUSE CONNECTION AS-BUILT LOCATION TABLE		
PROPERTY ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2
5661 LANDING ROAD	52 LF TO MH-2	32 LF TO MH-1
5667 LANDING ROAD	41.5 LF TO MH-2	72 LF TO MH-1
5683 LANDING ROAD	92 LF TO BGE#11376	52 LF TO MH-1

NOTE: SHCs #5661 & #5683 ARE 82 FT APART

SOIL BORINGS			
BORING NUMBER	COORDINATES		PAVEMENT THICKNESS
	NORTH	EAST	
SB-7	N 563,680.32	E 1,383,049.65	8" ASPHALT

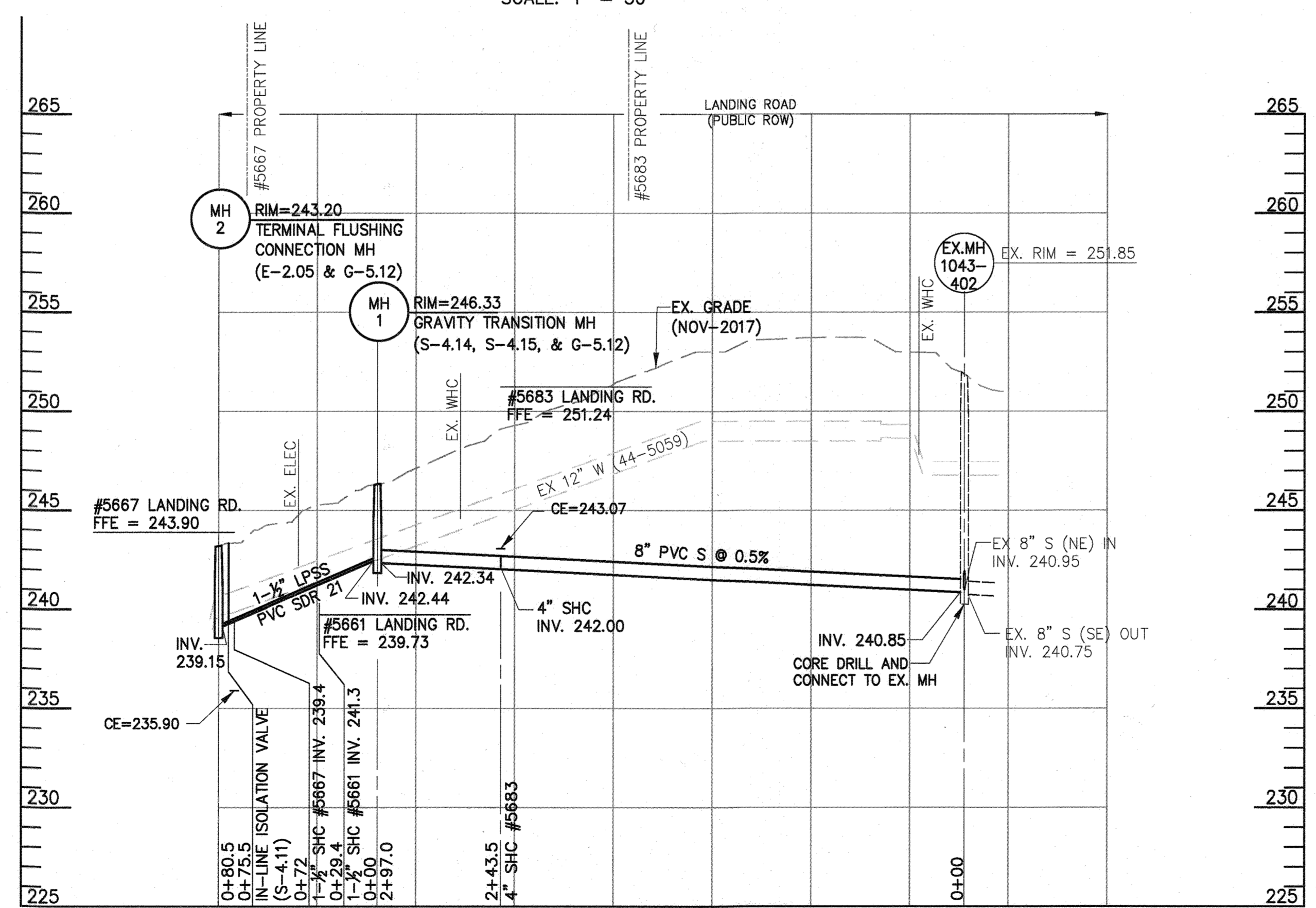
NOTE: BORING CONDUCTED IN MARCH 2018 BY FINDLING INC.

AS-BUILT LOCATION TABLE			
ITEM	DIM 1	DIM 2	DIM 3
TEST STATION	12 LF TO MH#2	77 LF TO MH#1	-
IN-LINE VALVE	11 LF TO #5667	5 LF TO MH#2	10 LF TO TS

SEWER MANHOLE LOCATION TABLE					
ID	COORDINATES		AS-BUILT		
	NORTH	EAST	NORTH	EAST	RIM ELEV
EX. MH 1043-402	N 563,661.60	E 1,383,077.11	N/A	N/A	N/A
MH 1	N 563,931.28	E 1,382,952.67			
MH 2	N 564,004.36	E 1,382,918.85			

UTILITY TEST HOLE				
TEST HOLE #	NORTHING	EASTING	TOP OF UTILITY	DESCRIPTION
TH-01	563,963.55	1,382,925.20	241.17	(3) 1.5" ELECTRIC

NOTE: TEST HOLE CONDUCTED IN NOVEMBER 2018 BY EDWARDS UTILITY MAPPING CORP.



FINDLING, INC.		BORING LOG				
Contract No.: 4400001983		Project Description: Landing Road Water Main Loop (W-8305)				
Boring No.: SB-7		Station: 123+38.6				
Easting: 1383049.66		Northing: 563668.33				
Date Started: 1/25/18		Date Completed: 1/25/18				
Inspector: [Signature]		Logged by: D. Talhaya				
Rig Type: Mobile B57		Rig No.: R-9				
Drive Hammer Weight: 140 lbs		Auger Size: 3.50 in				
Auger Size: 3.50 in		Size of Core: 2 in				
Size of Bit OD: 2 in		Hammer Energy Ratio: %				
Auger Depth: 11 ft		Rig Depth: 11 ft				
DEPTH IN FEET	ELEV. IN FEET	MATERIAL DESCRIPTION	DEPTH IN FEET	ELEV. IN FEET	LAB. INDEX TESTS	REMARKS
0.0	252.68	0-2" OF				
0.8	252.68	Brown, damp, medium dense CLAY SAND (SC), some trace GRAVEL (PLL)	1	5-6-7.4	10-9.0	14 21
3.0	250.28	Brown, damp, stiff CLAY (CL), some SILT, trace SAND (PLL)	2	4-4-7.8	3.0-5.0	15 41.4
5.0	248.29	Yellowish light brown, damp, stiff CLAY SILT (ML), trace SAND	3	2-3-5.7	5.0-7.0	15 60.8 91 38
7.0	248.28	Fine, white to brown, damp, stiff SILT (ML)	4	4-6-8-10	7.0-9.0	15 46.1
11.0	242.28	Bottom of Boring @ 11'	5	4-4-7.8	9.0-11.0	17 60.5

SEWER PLAN NOTES:

- THE CONTRACTOR SHALL RESTORE UNPAVED AREAS DISTURBED WITHIN PUBLIC ROW WITH 3" MINIMUM OF WOOD CHIP MULCH.

CONSTRUCTION NOTES:

- THE SOIL BORING WAS CONDUCTED IN MARCH 2018 FOR CONTRACT 40-5059 AND THE RESULTS SHOWN ARE FOR INFORMATION ONLY.
- UTILITY TEST HOLES WERE CONDUCTED IN NOVEMBER 2018 FOR CONTRACT 40-5059 AND THE RESULTS SHOWN IN THE TABLE ABOVE ARE FOR INFORMATION ONLY.
- THE CONTRACTOR SHALL PROTECT THE SPECIMEN TREE AS REQUIRED USING TREE PROTECTION FENCE AND ROOT PRUNING PER DETAIL ON SHEET 6.

AS-BUILT DRAWINGS:

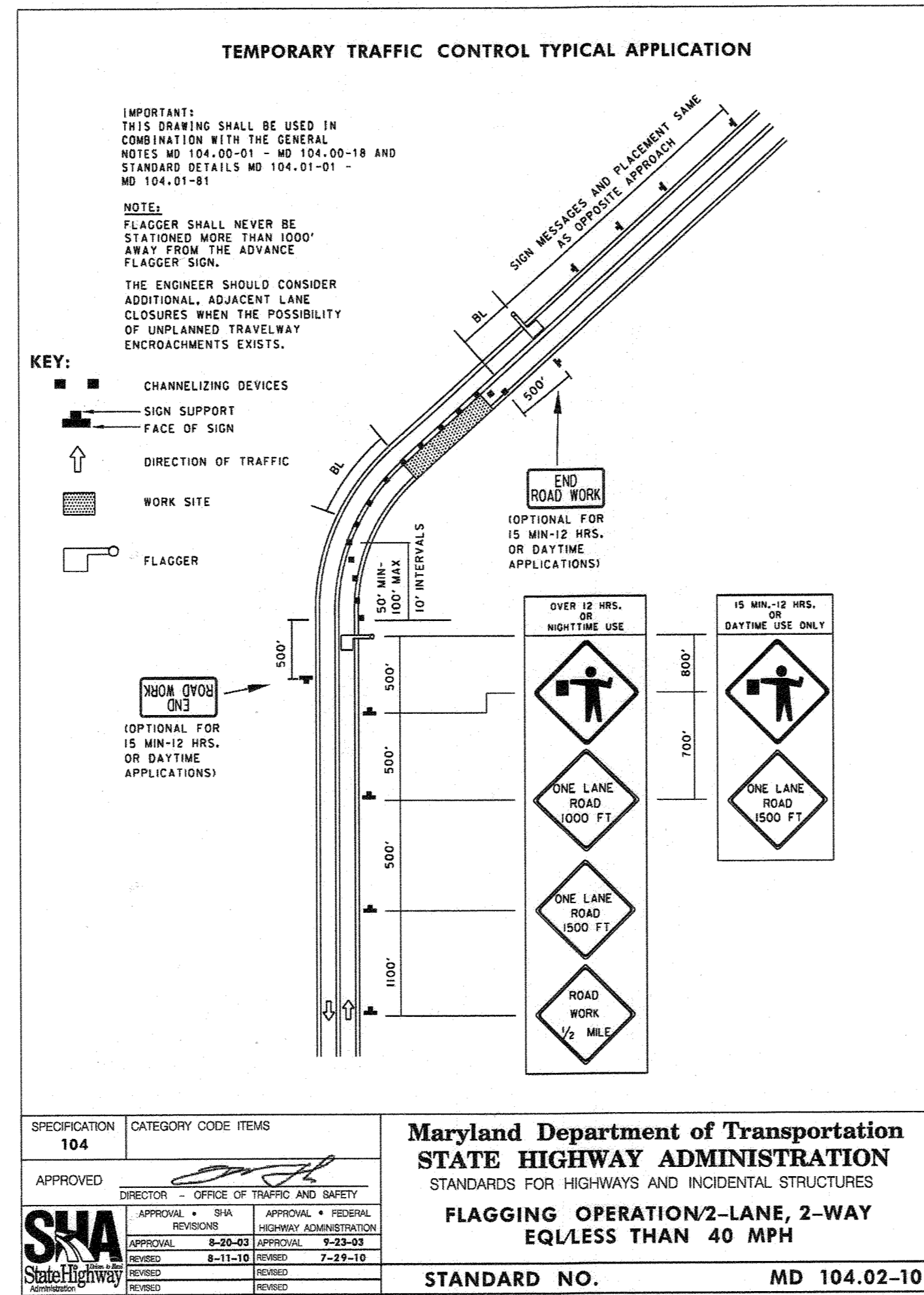
I HEREBY CERTIFY THIS PLAN HAS BEEN REVISED TO REFLECT THE AS-BUILT CONDITIONS OF LANDING ROAD SEWER EXTENSION RECORDED BY HOWARD COUNTY'S CONTRACTOR AND INSPECTOR.

Nizaw Khandani MD/35329 2/15/2024
 ENGINEER'S SIGNATURE — REGISTRATION NUMBER DATE

AS-BUILT 01-25-2024

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS: [Signature] 7/20/23 CHIEF, BUREAU OF UTILITIES: [Signature] 7/14/23		CHIEF, BUREAU OF ENGINEERING: [Signature] 7-1-23 CHIEF, UTILITY DESIGN DIVISION: [Signature] 7/11/23		RK&K P: 410.728.2900 700 East Pratt Street, Suite 500 Baltimore, MD 21202 Engineers Construction Managers Planners Scientists www.rkk.com Responsive People Creative Solutions		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. 35329, EXPIRATION DATE: 01/14/2024.		DES: REG BY: KMT NO. [] CHK: NKS SIGN DATE: 06/28/2023		REVISION [] DATE []		JUNE 2023 SEWER PLAN AND PROFILE 600' SCALE MAP NO. 37		PROJECT NO. S6698 CONTRACT NO. 10-5226 LANDING ROAD SEWER EXTENSION BLOCK NO. 5, 6 HSOD: EP-23-13 ELECTION DISTRICT NO. 7		SCALE: AS SHOWN SHEET NO. 04 OF 08	
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RKK\GIS - \\adk.com\16\Cloud\Projects\2017\17240_Jico\WFD\Task 028 - Landing Road Sewer Extension\AAD\DWG (Plans)\5-MT-001_LANDING RD.dwg Jun 27, 2023 - 3:20pm EN/CDB Plot Scale 1=1 Plot By: rgreen Tab: MT-01



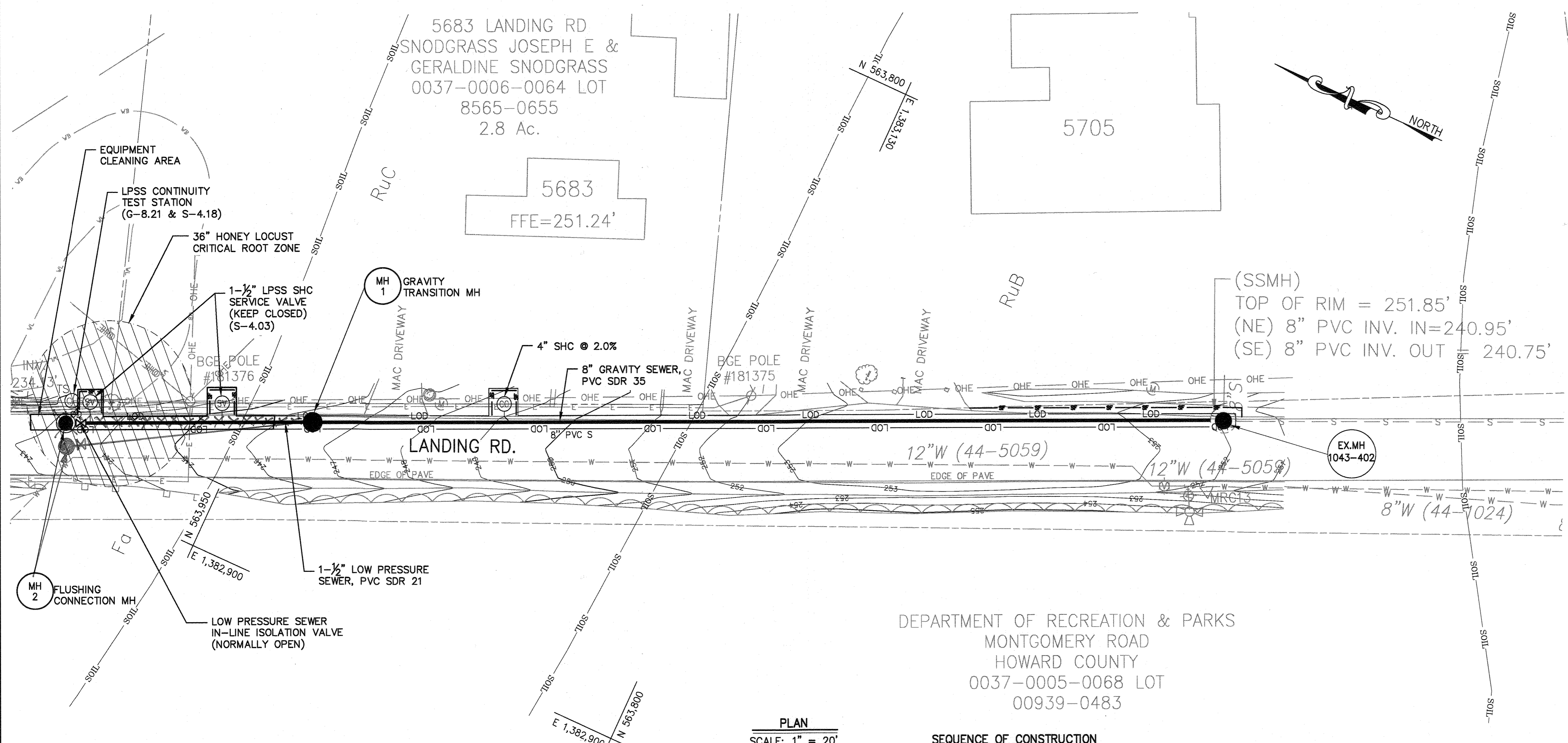
TRAFFIC CONTROL PLAN – GENERAL NOTES

- HOWARD COUNTY TRAFFIC SHALL BE NOTIFIED AT LEAST 3 DAYS PRIOR TO BEGINNING ANY WORK IN ORDER TO SCHEDULE A FIELD INSPECTION OF TRAFFIC CONTROL DEVICES. CONTACT THE TRAFFIC DIVISION AT (410) 313-2430.
- ALL CONSTRUCTION AND MATERIALS FOR THE TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE STANDARDS CONTAINED IN THE LATEST EDITION OF THE STATE OF MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- TRAVEL LANES SHALL BE A MINIMUM OF TEN FEET IN WIDTH. WHEN ONLY ONE LANE IS OPEN, FLAGGERS AND THE APPROPRIATE SIGNING SHALL BE PROVIDED. THE ROADWAY SHALL BE REOPENED TO TWO WAY TRAFFIC AT THE END OF EACH WORK SHIFT.
- ALL CONSTRUCTION SHALL TAKE PLACE BETWEEN THE HOURS OF 9AM AND 4PM EACH WORKING DAY.
- REFLECTORIZED CHANNELIZING DEVICES SHALL BE USED AT NIGHT ALONG THE CONSTRUCTION AREA.
- THE CONTRACTOR SHALL BACKFILL THE TRENCH IMMEDIATELY AFTER THE INSTALLATION OF A SECTION OF PIPE. IF STEEL PLATES ARE TO BE USED, APPROPRIATE SIGNING WILL BE REQUIRED. STEEL PLATES MUST BE PINNED. STEEL PLATES ON ALL COUNTY ROADWAYS MUST BE RECESSED, AS MUST ALL STEEL PLATES TO BE PLACED FOR MORE THAN 24 HOURS BETWEEN DECEMBER 1st AND MARCH 15th. THE CONTRACTOR SHALL NOT LEAVE AN OPEN TRENCH UNATTENDED.
- THE CONTRACTOR SHALL INSTALL W8-8(4) "STEEL PLATES" SIGN (IN ACCORDANCE WITH LATEST EDITION OF MDT SHA'S STANDARD SIGN BOOK) FOR EACH DIRECTION OF TRAFFIC APPROACHING THE STEEL PLATES, APPROXIMATELY 500 FEET IN ADVANCE OF THE STEEL PLATES.
- ALL TEMPORARY SIGNS THAT DO NOT APPLY WHEN ROAD IS OPEN SHALL BE COVERED OR REMOVED, OR TURNED AWAY.
- CHANNELIZING DEVICES AND TEMPORARY STRIPING SHALL BE REMOVED AS SOON AS PRACTICAL.
- ALL TRAFFIC CONTROL DEVICES SHALL BE KEPT IN THEIR PROPER POSITION AT ALL TIMES AND SHALL BE REPAIRED, REPLACED OR CLEANED AS NECESSARY TO PRESERVE THEIR APPEARANCE AND CONTINUITY.
- ALL CONSTRUCTION SIGNING SHALL BE IN ACCORDANCE WITH THE TYPICAL SIGN PLACEMENT SHOWN ON THESE PLANS AND SHALL NOT OBSTRUCT EXISTING TRAFFIC CONTROL DEVICES.
- ANY CHANGES TO THE TCP SHALL BE SUBMITTED TO THE TRAFFIC ENGINEERING DIVISION FOR REVIEW AND APPROVAL. REQUESTS FOR DETOURS AND ROAD CLOSURES SHALL BE SUBMITTED TO THE TRAFFIC DIVISION AT 410-313-2430 5 DAYS IN ADVANCE WITH A DETOUR PLAN FOR APPROVAL.
- CONSTRUCTION & WORKER'S VEHICLES SHALL NOT BE PARKED IN A MANNER THAT WILL IMPEDE TRAFFIC OR IMPAIR SIGHT DISTANCE. THESE VEHICLES SHOULD BE PARKED OFF-STREET ON THE CONSTRUCTION SITE OR ON A SIDE STREET NOT UNDER CONSTRUCTION.
- FLAGGERS SHALL BE CERTIFIED FLAGGER AND SHALL HAVE THEIR CERTIFIED FLAGGER CARD WITH THEM AT ALL TIMES DURING FLAGGING OPERATIONS.
- CONTRACTOR'S TRAFFIC MANAGER MUST HAVE A MDSA TEMPORARY TRAFFIC CONTROL MANAGER'S TRAINING COURSE CARD.
- THE HOWARD COUNTY PUBLIC SCHOOL SYSTEM, 410-313-6278, SHALL BE ADVISED OF WORK ACTIVITIES WHICH MAY AFFECT BUS ROUTE TIMING AS EARLY AS PRACTICAL.
- PORTABLE VARIABLE MESSAGE SIGNS (PVMS), SHALL BE PLACED 10 DAYS PRIOR TO ROAD WORK. CONTACT THE TRAFFIC DIVISION FOR LOCATION AND MESSAGES ON THE PVMS.

AS BUILT 01-25-2024

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS: <i>Rebecka</i> 7/12/23 CHIEF, BUREAU OF UTILITIES: <i>Horvath</i> 7/14/23		 P: 410.728.2900 700 East Pratt Street, Suite 500 Baltimore, MD 21202 Engineers Construction Managers Planners Scientists www.rkk.com Responsive People Creative Solutions		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. 35329, EXPIRATION DATE: 01/14/2024.		DES: REG DRN: KMT CHK: NKS SIGN DATE: 06/28/2023		JUNE 2023 MAINTENANCE OF TRAFFIC NOTES AND DETAILS 600' SCALE MAP NO. 37		PROJECT NO. S6698 CONTRACT NO. 10-5226 LANDING ROAD SEWER EXTENSION HSOD: EP-23-13 ELECTION DISTRICT NO. 7 HOWARD COUNTY, MARYLAND		MT-01 SCALE AS SHOWN SHEET NO. 05 OF 08
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RK&K 2023 - \\udrk.com\Projects\2017\17240_HoCoWFEDS\Task 028 - Landing Road Sewer Extension\CAUD\DWG (Plans)\6-ES-01-LANDING RD.dwg Jun 27, 2023 - 3:17pm
 ENV.GTB Plot Scale 1"=20' Plot By: rgreen Table: ES-01



DEPARTMENT OF RECREATION & PARKS
 MONTGOMERY ROAD
 HOWARD COUNTY
 0037-0005-0068 LOT
 00939-0483

PLAN
 SCALE: 1" = 20'

SUPPLEMENTAL EROSION AND SEDIMENT CONTROL NOTES

- WORK MAY NOT COMMENCE UNTIL THE CONTRACTOR AND RESPONSIBLE PERSONNEL HAVE MET ON SITE WITH THE COUNTY SEDIMENT AND EROSION CONTROL INSPECTOR TO REVIEW THE APPROVED PLANS.
- CONTRACTOR SHALL DIRECT ALL WATER PUMPED DURING TRENCH DEWATERING OPERATIONS TO AN APPROVED PORTABLE SEDIMENT TANK. CLEAN OUT TANK WHEN ONE-THIRD (1/3) FILLED WITH SILT. HAUL SEDIMENT TO A HOWARD COUNTY APPROVED SITE.
- NO EXCAVATED MATERIAL SHALL BE PLACED ON THE PRIVATE PROPERTIES ADJACENT TO THE TRENCH. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PREVENT THE DISTURBANCE OF EXISTING VEGETATED AREAS TO THE EXTENT POSSIBLE. ANY VEGETATED AREAS DISTURBED BY THE CONTRACTOR'S WORK OPERATIONS SHALL BE STABILIZED BY THE END OF THE WORK DAY AND RESTORED BY THE END OF THE PROJECT.
- STABILIZED CONSTRUCTION ENTRANCE (SCE) AND EQUIPMENT CLEANING AREA (ECA):
 THERE ARE NO SCEs INCLUDED IN THIS PROJECT. PROVIDE AN EQUIPMENT CLEANING AREA (ECA) DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER. REFER TO ECA DETAIL ON DRAWING ES-02 (SHEET 7 OF 8). REMOVE ACCUMULATED STONE AND SEDIMENT PRIOR TO DISMANTLING THE ECA.
- SEQUENCE OF CONSTRUCTION
 THE SEQUENCE OF CONSTRUCTION INCLUDED IN THESE PLANS IS APPROVED BY HOWARD COUNTY. THIS SEQUENCE OF CONSTRUCTION MAY BE MODIFIED BY THE CONTRACTOR. HOWEVER, THE CONTRACTOR MUST OBTAIN HOWARD COUNTY APPROVAL FOR ANY MODIFICATIONS PRIOR TO IMPLEMENTING A REVISED SEQUENCE OF CONSTRUCTION IN THE FIELD.
 NO DISTURBED AREAS SHALL BE LEFT UNSTABILIZED OVERNIGHT, UNLESS RUNOFF IS DIRECTED TO AN APPROVED SEDIMENT CONTROL DEVICE.
- CONTRACTOR SHALL REMOVE SPOILS TO A SITE WITH AN APPROVED SEDIMENT AND EROSION CONTROL PERMIT.
- NO STOCKPILING WILL BE ALLOWED ON-SITE.

SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMIT AND A PRECONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOURS NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:....THREE (3) DAY
 - PRIOR TO THE START OF EACH DISTURBANCE
 - UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING
 - PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT,
 - PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.
- INSTALL PERIMETER CONTROLS AND TREE PROTECTION FENCE FOR ROOT PRUNING AS NECESSARY.... ONE (1) DAY
- CONTACT CID PER 1.B ABOVE....ONE (1) DAY
- PERFORM THE FOLLOWING SEQUENCE FOR EACH DAY OF UTILITY CONSTRUCTION OPERATIONS:....SEVEN (7) DAYS
 - EXCAVATE AND INSTALL GRAVITY AND LOW PRESSURE SANITARY SEWERS AND APPURTENANCES. PLACE BACKFILL AND COMPACT. CONTRACTOR SHOULD OPEN ONLY THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY.
 - PLACE SOIL ON UPHILL SIDE OF TRENCH.
 - PLACE TOPSOIL, FINE GRADE, SEED AND APPLY SOIL STABILIZATION MATTING AS REQUIRED TO DISTURBED AREA.
 - ALL ROADWAYS (PUBLIC & PRIVATE) ARE TO BE SWEEPED FREE OF DIRT AND DEBRIS.
 - ANY SEDIMENT LADEN WATER RESULTING FROM DEWATERING OPERATIONS SHALL BE DISCHARGED THROUGH A PORTABLE SEDIMENT TANK WHICH WILL NOT BE MEASURED FOR PAYMENT BUT SHALL BE CONSIDERED INCIDENTAL TO PROJECT CONSTRUCTION
- COMPLETE TIE-IN TO EXISTING SEWER MANHOLE.... THREE (3) DAYS
- RESTORE PAVING AND SURROUNDING AREAS, CONTACT CID PER STEP 1 ABOVE.... THREE (3) DAYS
- ONCE THE PROJECT SITE IS STABILIZED AND CONTROLS CAN BE REMOVED, CONTACT CID PER 1.D ABOVE....ONE (1) DAY
- REMOVE ANY REMAINING SEDIMENT CONTROLS AND STABILIZE AREAS DISTURBED BY REMOVAL OF SEDIMENT CONTROLS.... ONE (1) DAY

SOIL NOTES

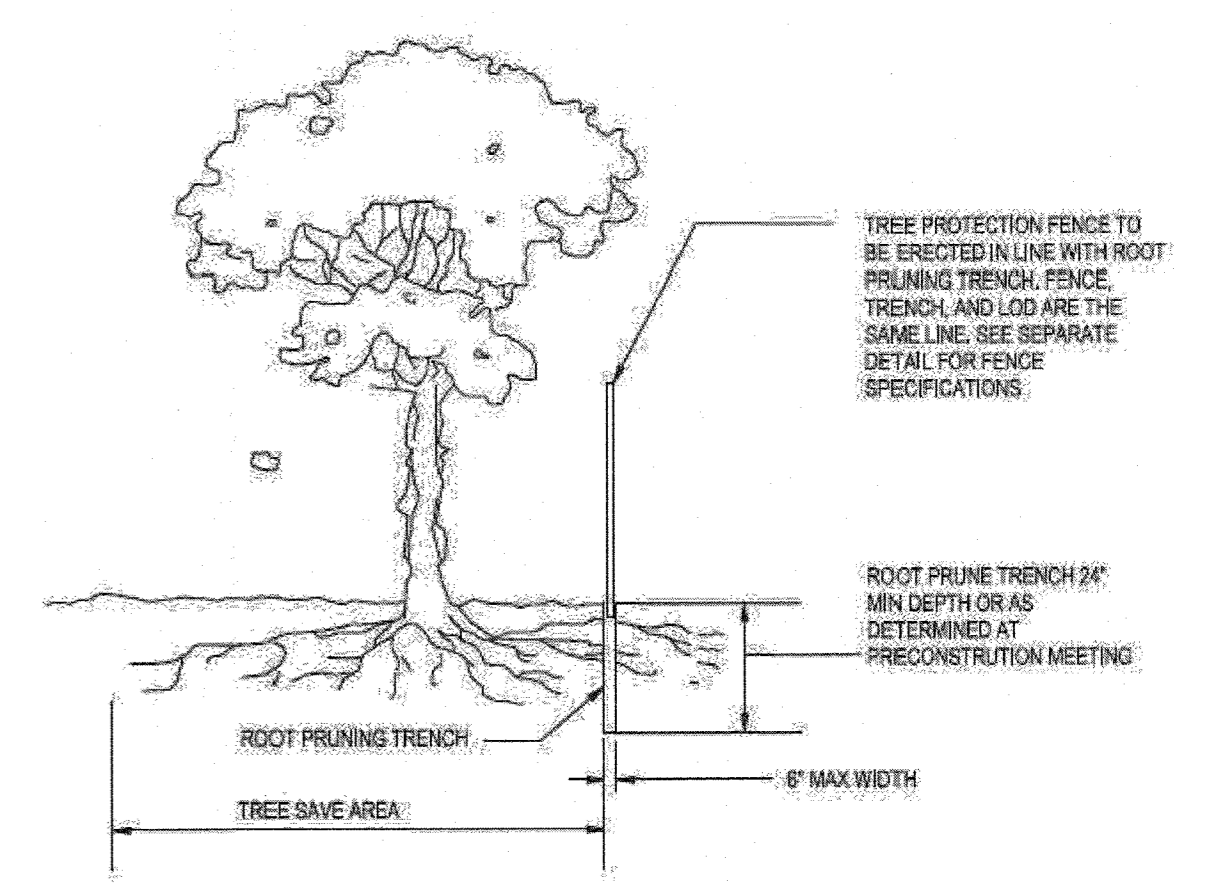
- SOIL DATA IS BASED ON THE WEB SOIL SURVEY WEBSITE BY THE USDA NATURAL RESOURCES CONSERVATION SERVICE:
 - FoaA FALLSINGTON SANDY LOAMS, 0 TO 2 PERCENT SLOPE, K = NOT RATED
 - RuB RUSSETT AND BELTSVILLE SOILS, 2 TO 5 PERCENT SLOPES, K = 0.28
 - RuC RUSSETT AND BELTSVILLE SOILS, 5 TO 10 PERCENT SLOPES, K = 0.28
- TOP SOIL SHALL BE PROVIDED IN ACCORDANCE WITH THE LATEST EDITION OF THE SHA STANDARD SPECIFICATIONS OF CONSTRUCTION AND MATERIALS. SECTION 920 - LANDSCAPING MATERIALS.

UTILITY TRENCH SEDIMENT CONTROL PROCEDURES

- EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH.
- IMMEDIATELY FOLLOWING PIPE INSTALLATION THE TRENCH SHALL BE BACKFILLED, COMPACTED AND STABILIZED AT THE END OF EACH WORKING DAY. SEE HSCD NOTE #9 ON DWG. G-02 (SHT 2 OF 8).
- TEMPORARY STEEL PLATES SHALL BE PLACED ON ANY DISTURBED AREA DAILY.

PAVEMENT RESTORATION NOTE

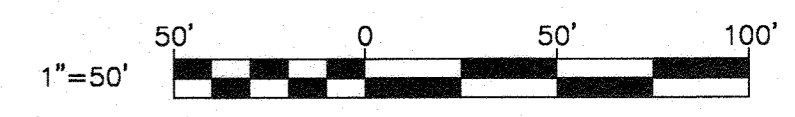
LANDING ROAD IS A RESIDENTIAL ROADWAY. REFER TO STANDARD DETAILS G-4.01 AND R-2.01, PAVING SECTION P-2 AND CBR 5 TO <7 FOR RESTORATION OF THE ROADWAY AFTER THE SEWER EXTENSION IS COMPLETE.



- NOTES:**
- RETENTION AREAS WILL BE SET AS PART OF THE REVIEW PROCESS AND PRECONSTRUCTION MEETING.
 - BOUNDARIES OF RETENTION AREAS MUST BE STAKED AT THE PRECONSTRUCTION MEETING AND FLAGGED PRIOR TO TRENCHING.
 - EXACT LOCATION OF TRENCH SHALL BE DETERMINED IN THE FIELD IN COORDINATION WITH THE FOREST CONSERVATION (FC) INSPECTOR.
 - TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH EXCAVATED SOIL OR OTHER ORGANIC SOIL AS SPECIFIED PER PLAN OR BY THE FC INSPECTOR.
 - ROOTS SHALL BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.
 - ALL PRUNING MUST BE EXECUTED WITH LOD SHOWN ON PLANS OR AS AUTHORIZED IN WRITING BY THE FC INSPECTOR.

ROOT PRUNING DETAIL

AS BUILT 01-25-2024



ES-01

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Director of Public Works: *K. Beck* 7/20/23
 Chief, Bureau of Engineering: *[Signature]* 7-11-23
 Chief, Bureau of Utilities: *[Signature]* 7/19/23
 Chief, Utility Design Division: *[Signature]* 7/11/23

RK&K
 P: 410.728.2900
 700 East Pratt Street, Suite 500 | Baltimore, MD 21202
 Engineers | Construction Managers | Planners | Scientists
 www.rkk.com
 Responsive People | Creative Solutions

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. 35329, EXPIRATION DATE: 01/14/2024.

DES:	BY:	NO.:	REVISION:	DATE:
REG	KMT			
CHK:	NKS			
SIGN DATE:	06/28/2023			

JUNE 2023
EROSION AND SEDIMENT CONTROL PLAN
 600' SCALE MAP NO. 37
 BLOCK NO. 5, 6

PROJECT NO. S6698
 CONTRACT NO. 10-5226
LANDING ROAD SEWER EXTENSION
 HSCD: EP-23-13
 ELECTION DISTRICT NO. 7
 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN
 SHEET NO. 06 OF 08

Plot By: rgreen Tab: ES-02 Plot Scale: 1"=1'

ENV/C/B

3:14pm

\\drk\projects\2017\17240_Jocow\WFEDS\Task 028 - Landing Road Sewer Extension\CAAD\DWG\Plan\Y-RES-007_LANDING RD.dwg Jun 27, 2023

DETAIL B-4-6-B TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL: TSSMS - 2.25 lb/ft² (* INCLUDE SHEAR STRESS)

CONSTRUCTION SPECIFICATIONS

- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
- USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
- SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 1/2 INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
- PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
- UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
- OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
- KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
- STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
- ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

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

DETAIL B-4-6-D PERMANENT SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL: PSSMS - 2.25 lb/ft² (* INCLUDE SHEAR STRESS)

CONSTRUCTION SPECIFICATIONS

- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
- USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
- SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 1/2 INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
- PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
- UNROLL MATTING DOWN SLOPE. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
- OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
- KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
- STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
- IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEVED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
- ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

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

DETAIL F-3 PORTABLE SEDIMENT TANK

STANDARD SYMBOL: PST

CONSTRUCTION SPECIFICATIONS

- PROVIDE 1 CUBIC FOOT OF STORAGE FOR EACH GALLON PER MINUTE OF PUMP CAPACITY. REQUIRED STORAGE VOLUME MAY BE ATTAINED BY PLACEMENT OF TANKS IN PARALLEL WITH INFLOW EVENLY DISTRIBUTED AMONG TANKS. OVERTOPPING OF TANKS IS NOT PERMITTED.
- USE 60 INCH CORRUGATED METAL OR PLASTIC PIPE WITH 1 INCH DIAMETER PERFORATIONS, 8 INCHES ON CENTER FOR THE INNER PIPE. LINE PIPE WITH NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, SANDWICHED BETWEEN, AND ATTACHED TO, 1/4 INCH HARDWARE CLOTH.
- OVERLAP GEOTEXTILE 8 INCHES MINIMUM AT VERTICAL SEAM AND AT THE BOTTOM PLATE.
- ANCHOR GEOTEXTILE AT BOTTOM OF TANK WITH 4 INCHES OF 2 TO 3 INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE.
- USE 72 INCH CORRUGATED METAL OR PLASTIC OUTER PIPE WITH PERMANENT OUTFLOW PIPE WITH INVERT LOWER THAN INFLOW PIPE.
- INFLOW PIPE MUST DISCHARGE INTO INNER PIPE AND BE REMOVABLE.
- PLACE TANK ON LEVEL SURFACE AND DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
- A PORTABLE SEDIMENT TANK REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT FROM INNER PIPE WHEN IT REACHES TWO FEET IN DEPTH. IF SYSTEM CLOGS, PULL OUT INNER PIPE, REMOVE ACCUMULATED SEDIMENT, AND REPLACE GEOTEXTILE. KEEP POINT OF DISCHARGE FREE OF EROSION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF

CONSTRUCTION SPECIFICATIONS

- USE WOOD POSTS 1 1/4 X 1 1/4 X 3/8 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 SLIT 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

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF

CONSTRUCTION SPECIFICATIONS

- USE WOOD POSTS 1 1/4 X 1 1/4 X 3/8 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 SLIT 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

DETAIL E-2 SILT FENCE ON PAVEMENT

STANDARD SYMBOL: SFOP

CONSTRUCTION SPECIFICATIONS

- USE NOMINAL 2 INCH X 4 INCH LUMBER.
- USE WOVEN SLIT FILM GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
- 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.
- SPACE UPRIGHT SUPPORTS NO MORE THAN 10 FEET APART.
- PROVIDE A TWO FOOT OPENING BETWEEN EVERY SET OF SUPPORTS AND PLACE STONE IN THE OPENING OVER GEOTEXTILE.
- KEEP SILT FENCE TAUT AND SECURELY STAPLE TO THE UPSLOPE SIDE OF UPRIGHT SUPPORTS. EXTEND GEOTEXTILE UNDER 2x4.
- WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, FOLD, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL. ATTACH LATHE.
- PROVIDE A MASTIC SEAL BETWEEN PAVEMENT, GEOTEXTILE, AND 2x4 TO PREVENT SEDIMENT-LADEN WATER FROM ESCAPING BENEATH SILT FENCE INSTALLATION.
- SECURE BOARDS TO PAVEMENT WITH 40D 5 INCH MINIMUM LENGTH NAILS.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. MAINTAIN WATER TIGHT SEAL ALONG BOTTOM. REPLACE STONE IF DISPLACED.

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

U-SHAPED EQUIPMENT CLEANING AREA

STANDARD SYMBOL: SFOP

NOTES:

- SFOP TO MEET DETAIL E-2 AND CONSTRUCTION SPECIFICATIONS THEREOF.
- ECA TO BE PLACED AT LOWEST END OF LOD AND CLEANED DAILY.
- IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING.
- CID MAY WAIVE INSTALLATION OF ECA WHERE INSPECTOR ACCEPTS SAME-DAY STABILIZATION WITH SEED/SSM OR SOD.

AS BUILT 01-25-2024

1"=50'

ES-02

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

7/10/23
7-11-23

7/14/23
7/11/23

7/14/23
7/11/23

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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. 35329, EXPIRATION DATE: 01/14/2024.

DES: REG BY NO. REVISION DATE

DRN: KMT

CHK: NKS

SIGN DATE: 06/28/2023

EROSION AND SEDIMENT CONTROL DETAILS

600' SCALE MAP NO. 37

JUNE 2023

BLOCK NO. 5, 6

PROJECT NO. S6698
CONTRACT NO. 10-5226

LANDING ROAD SEWER EXTENSION

HSCD: EP-23-13
ELECTION DISTRICT NO. 7

HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SHEET NO. 07 OF 08

B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

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 LOOSEND, 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.

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.

B. TOPSOILING

- 1. TOPSOILING 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.

- 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.

- 6. TOPSOIL APPLICATION a. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL. b. UNFORMALLY 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 SOODING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE.

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

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.

2. APPLICATION

- a. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS. b. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL. c. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).

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.

- 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.

- 3. ANCHORING a. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER.

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 LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

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.

TEMPORARY SEEDING SUMMARY

Table with columns: NO., SPECIES, APPLICATION RATE (LB/AC), SEEDING DATES, SEEDING DEPTHS, FERTILIZER RATE (10-20-20), LIME RATE. Includes entries for Annual Ryegrass and Ryegrass.

PERMANENT SEEDING SUMMARY

Table with columns: NO., SPECIES, APPLICATION RATE (LB/AC), SEEDING DATES, SEEDING DEPTHS, FERTILIZER RATE (10-20-20) (N, P2O5, K2O), LIME RATE. Includes entries for Tall Fescue, Kentucky Bluegrass, and Creeping Red Fescue.

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION CRITERIA

A. SEED MIXTURES

1. GENERAL USE

- a. 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.

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.

- i. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION IS REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE.

- ii. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT.

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

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

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

CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B)

SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)

- d. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES. LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1/4 INCHES IN DIAMETER.

B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

1. GENERAL SPECIFICATIONS

- a. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR. b. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS 1/8 INCH.

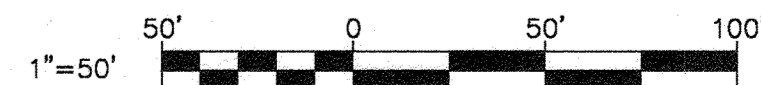
2. SOD INSTALLATION

- 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.

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.

AS BUILT 01-25-2024



ES-03

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

Director of Public Works and Chief, Bureau of Engineering signatures and dates.

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Professional certification seal for KMT, License No. 35329, Expiration Date: 01/14/2024.

Table with columns: DES, REG, DRN, CHK, SIGN DATE, NO., REVISION, DATE.

EROSION AND SEDIMENT CONTROL STANDARDS AND SPECIFICATIONS 600' SCALE MAP NO. 37

JUNE 2023 PROJECT NO. S6698 CONTRACT NO. 10-5226 LANDING ROAD SEWER EXTENSION

SCALE AS SHOWN SHEET NO. 08 OF 08