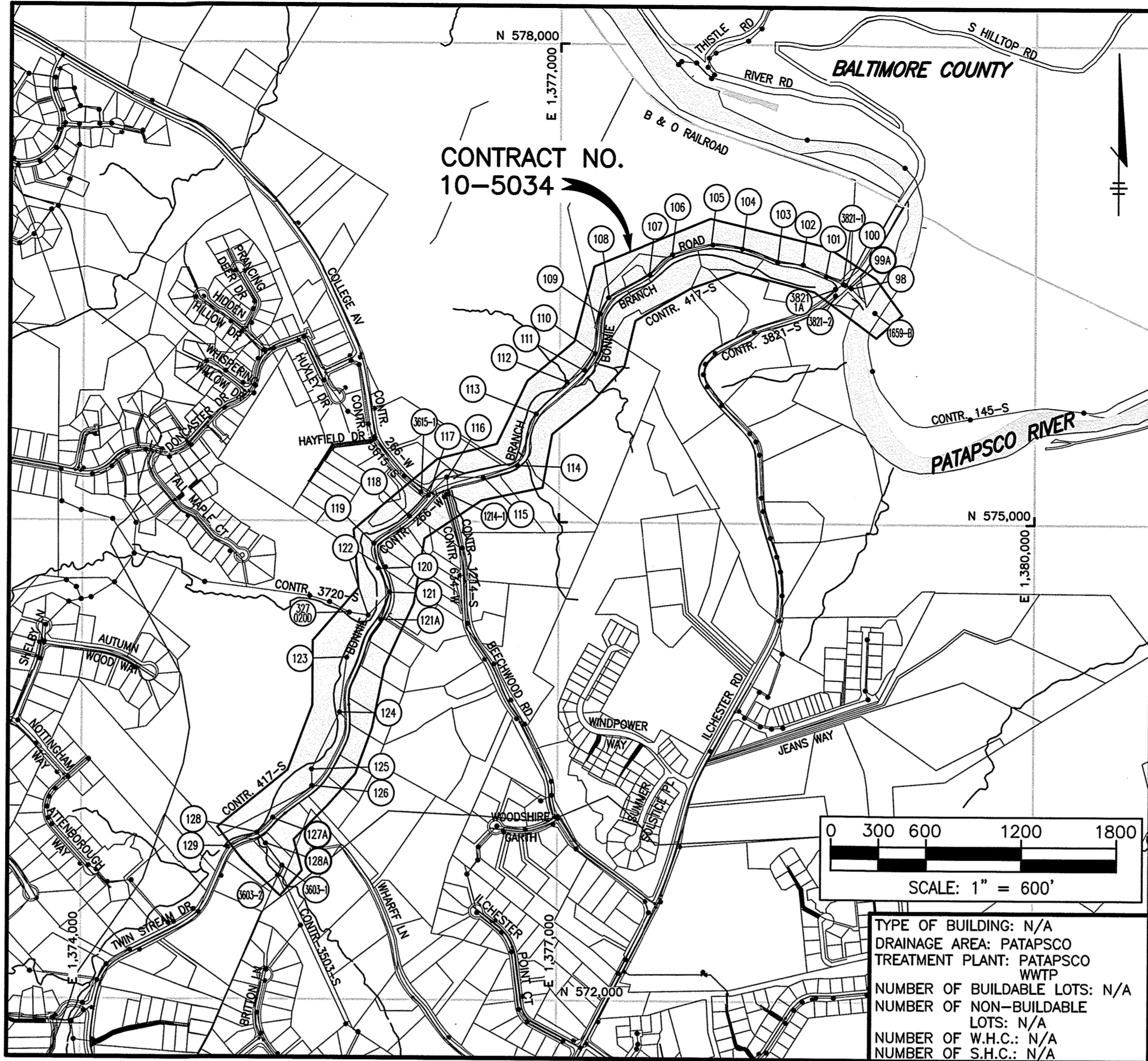


INDEX OF SHEETS	
NO.	DESCRIPTION
1	TITLE SHEET
2	LEGEND, NOTES, AND DETAILS
3	EXISTING PLAN AND PROFILE
4	EXISTING PLAN AND PROFILE
5	EXISTING PLAN AND PROFILE
6	EXISTING PLAN AND PROFILE
7	EXISTING PLAN AND PROFILE
8	EXISTING AND PROPOSED PLAN AND PROFILE AT MANHOLE 128
9	STRUCTURE SCHEDULE
10	PROPOSED BILLING FLOW METER - PLANS AND SECTIONS
11	ELECTRICAL PLAN, DETAILS AND NOTES
12	EROSION AND SEDIMENT CONTROL DETAILS AND NOTES
13	EROSION AND SEDIMENT CONTROL NOTES
14	MAINTENANCE OF TRAFFIC
15	MAINTENANCE OF TRAFFIC
16	MAINTENANCE OF TRAFFIC



CONTRACT NO.
10-5034

VICINITY MAP

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 during May and June, 2017, by C.C. Johnson & Malhotra, P.C. for the areas from existing MH 101 to existing MH 098 and for the area from existing MH 127 to existing MH 3503-1. Howard County GIS topography is used in all other areas.
- Horizontal and Vertical Survey Controls:
 - The coordinates shown on the drawings are based on Maryland State Reference System NAD '83 / '91 and the vertical controls shown on the drawings are based on NAVD '88 as projected by the following Howard County Geodetic Control Stations:
 - 31BA - N 575987.759, E 1375729.958, Elev. 376.098
 - 31DA - N 571982.665, E 1372145.130, Elev. 481.603
 - 31EA - N 569641.138, E 1374816.086, Elev. 468.877
 - 31EB - N 568730.995, E 1376273.635, Elev. 452.657
 - 0081 - N 572335.338, E 1377504.092, Elev. 477.919
- All pipe elevations shown are invert elevations unless otherwise noted on the plans.
- Maintain a minimum of ten (10) feet horizontal and eighteen (18) inches vertical separation (outside diameter to outside diameter) from all water mains. Clear all other 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 drawings, 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 (M) 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 (Construction Services)	410-850-4620
BGE (Emergency)	410-885-1400
Bureau of Utilities	410-313-4900
Colonial Pipeline Co.	410-795-1390
COMCAST	1-888-987-8600
Miss Utility	1-800-257-7777
State Highway Administration	410-531-5533
Verizon	1-800-743-0033 / 410-224-9210
- Trees within the temporary construction strips and temporary construction easements shall not be removed or damaged by the contractor. Shrubs within the temporary construction strips and temporary construction easements shall be protected from damage to the maximum extent possible.
- The contractor shall remove trees, stumps and roots along the line of excavation. Payment for such removal shall be included in the bid item prices for contingent Tree Removal and Clearing and Grubbing.
- 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(a) of the Howard County Code.

BILL OF MATERIALS				
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	UNITS	PRODUCT MANUFACTURER.
INSTALL MANHOLE INSERT	32 EA			
MH WALL GROUT INJECTION	14 EA			
EPOXY/POLYURETHANE MH INTERIOR RESURFACING	33 EA			
OPEN CUT 12" SEWER POINT REPAIR - 13 LINEAR FEET	6 EA			
OPEN CUT 12" SEWER POINT REPAIR - ADDITIONAL REPAIR LENGTH	39 EA			
GROUT MAINLINE SEWER PIPE JOINT	8 EA			
LATERAL SEWER POINT REPAIR	1 EA			
GROUT LATERAL SEWER PIPE JOINT	3 EA			
12" PVC SEWER PIPE	47 LF			
16" PVC SEWER PIPE	25 LF			
NEW 5' DIAMETER PRECAST MANHOLE INSTALLATION	2 EA			
NEW 5' DIAMETER PRECAST DOGHOUSE MANHOLE INSTALLATION	1 EA			
NEW 5' DIAMETER PRECAST MANHOLE INSTALLATION - ADDITIONAL DEPTH	6 VLF			
FLOW METER	1 EA			
REPLACE MANHOLE COVER	1 EA			
REPLACE MH STEPS	285 EA			

BONNIE BRANCH INTERCEPTOR SEWER IMPROVEMENTS CAPITAL PROJECT S6282 CONTRACT NO. 10-5034 HOWARD COUNTY, MARYLAND

PROJECT PURPOSE

The purpose of this Capital Project is to rehabilitate 30 existing Manholes of Contract 417-S, make various point repairs to existing Sanitary Sewer Pipe, provide a smoother transition of flow from Contract No. 3503-S to Contract No. 417-S at existing Manhole 128, and replace the existing Billing Flow Meter and Vault with a new Billing Flow Meter and Vault at Ichester Road.

NAME OF UTILITY CONTRACTOR :

Sediment control measures for this contract will be implemented in accordance with Section 308 of the Specifications and as shown on these plans.

CHECKBOX

AS-BUILT DATE

SURVEY AND DRAFTING DIVISION

BY THE OWNER / DEVELOPER:

I/WE CERTIFY THAT ALL CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO THE BEGINNING OF THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

Staver Choi
DEVELOPER/OWNER
DATE: 01/06/2021

BY THE ENGINEER :

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 COUNTY SOIL CONSERVATION DISTRICT.

W. Mark Gardocky
ENGINEER
DATE: 01/04/2021

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. 30875, EXPIRATION DATE NOVEMBER 29, 2022.

W. Mark Gardocky
W. MARK GARDOCKY, P.E.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Tom E. Butler
1/12/2021
DATE
CHIEF, BUREAU OF ENGINEERING

Tom E. Butler
1-11-21
DATE
CHIEF, BUREAU OF UTILITIES

Staver Choi
1/7/2021
DATE
CHIEF, UTILITY DESIGN DIVISION

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GEORGE, MILES & BUHR, LLC
ARCHITECTS & ENGINEERS
SALESURY - BALTIMORE - SEAFORD
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DES: WMG					
DRN: JWB					
CHK: AWW					
DATE: 12/2020	BY	NO.	REVISION	DATE	

TITLE SHEET

600 SCALE MAP NO. 31

BLOCK NO. 4

BONNIE BRANCH
INTERCEPTOR SEWER IMPROVEMENTS
CONTRACT NO. 10-5034
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 01 OF 16

PROJECT NOTES

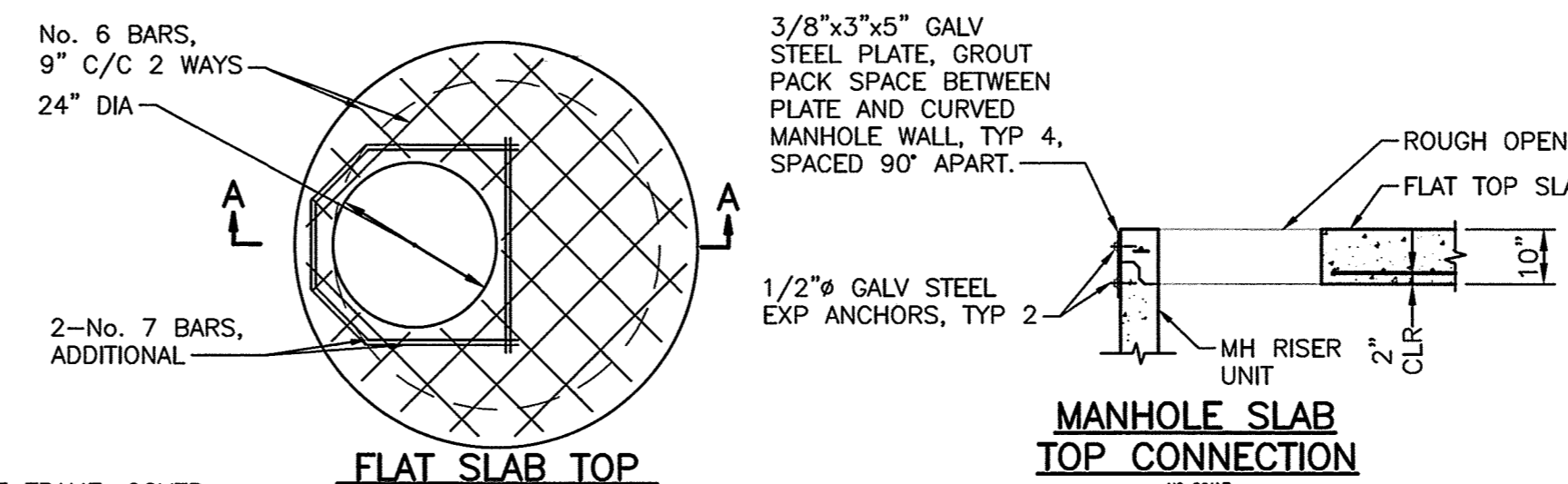
1. Spoil from trenching operations is to be placed on the uphill side of the trench.
2. The contractor shall be responsible for acquiring any additional staging and/or stockpile areas that the contractor deems necessary.
3. The contractor shall be responsible for repairing and replacing any existing fences, signs, concrete curb, driveways, paving, curb and gutter pan, walkways, etc., damaged or removed during construction. All disturbed areas shall be returned to their original or better condition.
4. This project is exempt from Forest Conservation requirements under section 16.1202.b.1.x of the Howard County Forest Conservation Code.
5. The site is not located within a Tier II watershed.
6. The site is located within an impaired waterway with respect to total suspended solids, sulfates and chlorides.
7. Work shall be limited to that which can be stabilized in the same day. Soil stabilization matting shall be used as appropriate per Table B.7 Soil Stabilization on Slopes on Sheet 13.

SEWER NOTES

1. All sewer mains shall be AWWA C-900 / DR-25 PVC unless otherwise noted.
2. All manholes shall be 4'-0" or 5'-0" inside diameter as noted in the Existing Manhole Schedule and Proposed Manhole Schedule.
3. Manholes designated W.T. in profile shall have watertight frames and covers. Where watertight manhole frames and covers are used, set top of manhole with embedded frame 1'-6" above finished grade unless otherwise noted on the drawings.
4. The existing sewer shall remain in service at all times and be protected during construction.
5. Contractor shall CCTV the pipe prior to any excavation to verify repair location.

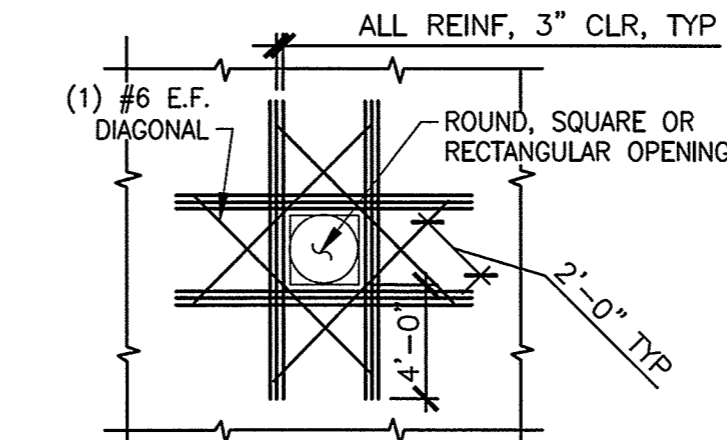
HANDLING ASBESTOS CONTAINING MATERIAL

1. The existing water main is asbestos cement pipe (ACP). It must be removed in accordance with applicable federal, state, and local regulations, including but not limited to, 29CFR1926.1101, 40CFR61, 262, and 263 and COMAR 26.11.21. This work requires submission and acceptance of an asbestos abatement work plan that describes in detail the methods the contractor will use to comply with applicable regulations including training, respiratory protection, and waste disposal. This item also includes design and implementation of engineering controls and dust control measures to reduce visible emissions while performing asbestos abatement. The contractor shall dispose of all ACP in a permitted facility.
2. The work may require entry into permit-required confined spaces. The contractor is responsible for complying with applicable regulations including 29CFR1910.146.

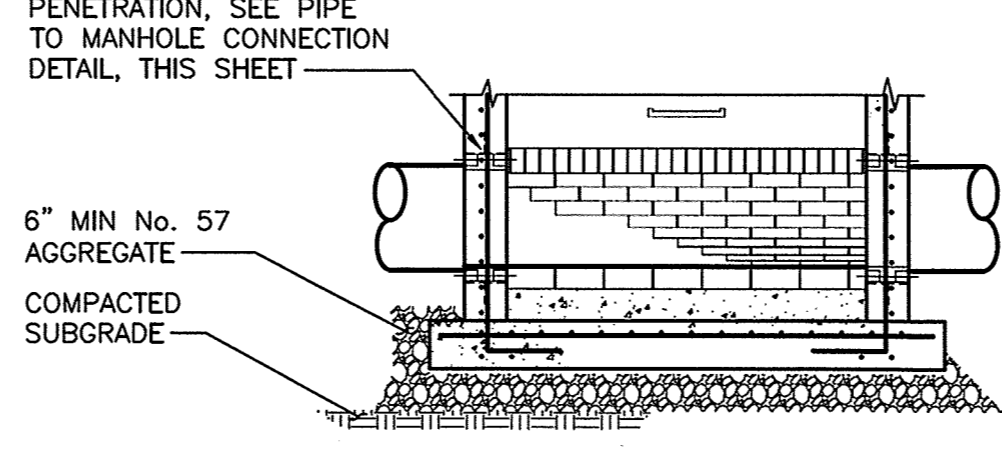
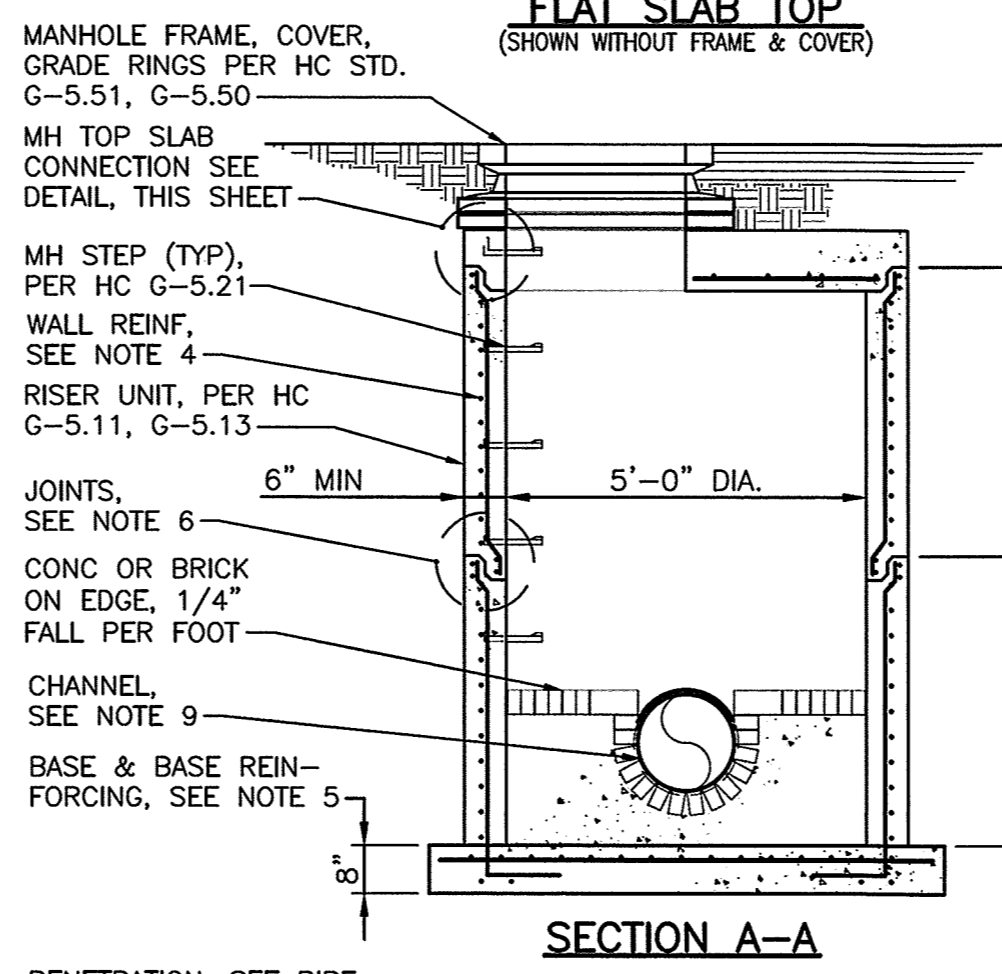


- NOTES:**
1. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C-478 AND THE GENERAL NOTES APPLICABLE TO ALL PRECAST MANHOLES ON STANDARD DETAIL G-5.11.
 2. MH 127A WILL BE A DOGHOUSE MANHOLE WITH THE BASE CONSTRUCTED ACCORDING TO STANDARD DETAIL G-5.14 AND OTHERWISE IN ACCORDANCE WITH THE DETAILS AS SEEN ON THIS SHEET.
 3. CONCRETE SHALL BE MIX NO.6 (4500 PSI) AND AIR ENTRAINED (5% ±1%). CONCRETE SHALL HAVE A SLUMP OF 4" (±1").
 4. WALL REINFORCEMENT FOR BASE UNITS AND RISER UNITS SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.23 IN²/FT FOR THE 60" DIAMETER MANHOLES. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-1064. REINFORCEMENT BARS SHALL MEET ASTM A-615, GRADE 60.
 5. BASE REINFORCEMENT TO BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.23 IN²/FT. THE BASE SHALL BE CAST MONOLITHIC WITH THE BASE UNIT OR JOINTED PER MANUFACTURER'S DESIGN.
 6. THE MANUFACTURER SHALL FORM MALE AND FEMALE ENDS OF JOINTS USING THEIR OWN DESIGN. THE JOINTS SHALL BE SEALED BY THE CONTRACTOR AND MADE WATERTIGHT USING RUBBER O-RING GASKETS MEETING ASTM C-443.
 7. MINIMUM DISTANCE BETWEEN PIPE OPENINGS IN MANHOLE WALL SHALL BE 12 INCHES.
 8. LIFT HOLES OR LIFT EYES SHALL BE PROVIDED IN EACH SECTION FOR HANDLING.
 9. MIX NO. 6 PRECAST CONCRETE OR BRICK CHANNEL SHALL BE PROVIDED AND SHALL SLOPE TOWARD OUTLET AS DIRECTED BY THE ENGINEER.
 10. NO MORE THAN ONE 1' RISER SECTION MAY BE USED PER MANHOLE.
 11. MANHOLE INTERIOR LINER IS REQUIRED. REFER TO "SANITARY SEWER MANHOLES" SECTION OF THE SPECIAL PROVISIONS.

* DIMENSIONS TO BE CONFIRMED BY THE MANUFACTURER.
NOTICE: "STANDARD DETAIL" REFERS TO DETAILS IN HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION, LATEST EDITION.



- NOTES -- REBAR OPENING DETAIL:**
1. PROVIDE ADDITIONAL REINFORCING (MINIMUM OF ONE-HALF THE NUMBER OF PRINCIPAL REINFORCING BARS BEING INTERRUPTED BY THE OPENING AT EACH FACE ON EACH SIDE).
 2. FOR OPENINGS LESS THAN 12" DIAMETER, NO ADDITIONAL REINFORCING IS REQUIRED PROVIDED NO REINFORCING IS INTERRUPTED BY THE OPENING.



5'-0" DIAMETER PRECAST MANHOLE

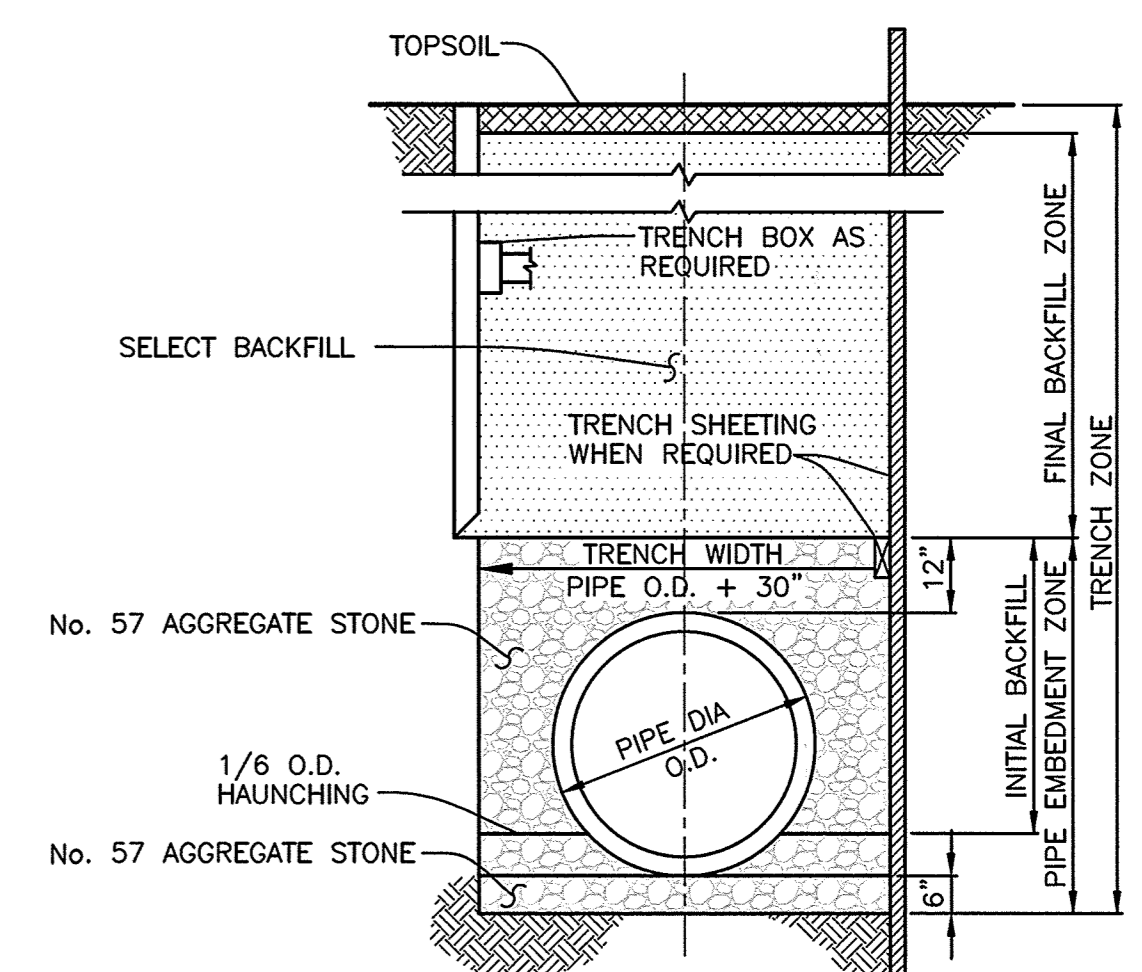
NO SCALE

ABBREVIATIONS

AB'D, ABAND	ABANDONED	P/L, P	PROPERTY LINE
C/L, C	CENTERLINE	PVM'T	PAVEMENT
CO	CLEANOUT	RED, ROCR	REDUCER
CPLG	COUPLING	R/W, ROW	RIGHT-OF-WAY
DIA, Ø	DIAMETER	UG	UNDERGROUND
E, EL, ELEC	ELECTRIC	UP	UTILITY POLE
EOP	EDGE OF PAVEMENT	SAN	SANITARY
ESM'T	EASEMENT	SD	(STORM) DRAIN
EX	EXISTING	SF	SILT FENCE
FH	FIRE HYDRANT	SSF	SUPER SILT FENCE
FHT	FIRE HYDRANT TEE	T	TEE
FP	FLOOD PLAIN	TEL, PHN	TELEPHONE
G	GAS	TP	TREE PROTECTION
HORZ, HZ	HORIZONTAL	TRAV	TRAVERSE
LOD	LIMIT-OF-DISTURBANCE	V	VALVE
LP	LIGHT POLE	VT, VERT	VERTICAL
MH	MANHOLE	VB	VEGETATION BUFFER
OH	OVERHEAD	W	WATER, WETLANDS
PED	PEDESTAL		

LEGEND

	UTILITY -- EXISTING		PLAT		ESC
	SANITARY SEWER; =>12", MH, <12"		EX. FENCE		EX. SPECIMEN TREE
	STORM DRAIN; =>12", MH, <12"		EX. STRUCTURES		100-YEAR FLOODPLAIN
	WATER MAIN; =>12", MH, <12"		EX. FOOT PATH		EX. WETLAND BUFFER
	REDUCER, TEE, FIRE HYDRANT, VALVE		EX. GUARDRAIL		EX. VEGETATION BUFFER
	WATER MAIN VALVE VAULT		EX. PAVEMENT MARKINGS		LIMIT OF DISTURBANCE
	UNDERGROUND ELECTRIC, MH		EX. EDGE OF PAVEMENT		SILT FENCE
	OVERHEAD UTILITY (ELEC., TEL., CTV)		EX. EDGE DIRT, GRAVEL, MACADAM		SUPER SILT FENCE
	GAS MAIN, MH		EX. RIGHT-OF-WAY		TREE PROTECTION FENCE
	UTILITY POLE (ELEC., TEL., CTV)		PROPERTY BOUNDARY		WETLANDS
	ABANDONED UTILITY		ADJACENT PROPERTIES -- SAME OWNER		SURVEYOR
	SANITARY SEWER; =>12", MH, <12"		EX. TREELINE		TRAVERSE
	SANITARY SEWER; =>12", MH, <12"		FLOW		EXISTING TERRAIN
			EX. SIGN		EX. MARSH
			EX. TRAFFIC POLE		HYDROGRAPHY, SURFACE FLOW
			EX. UTILITY PEDESTAL		10 FOOT CONTOURS
			EX. RIPRAP		2 FOOT CONTOURS
			PROPOSED UTILITY EASEMENT		
			PROPOSED CONSTRUCTION EASEMENT		



- NOTES:**
1. CONTRACTOR TO STRICTLY ADHERE TO SECTION 1000.03.05, "EXCAVATION AND SUBGRADE PREPARATION", OF THE STANDARD SPECIFICATIONS AND DETAILS OF CONSTRUCTION, VOLUME IV.
 2. TRENCH BACKFILL IN THE FINAL BACKFILL ZONE, FROM 12 INCHES ABOVE THE CROWN OF PIPE TO 6 INCHES BELOW THE FINAL GRADE, SHALL CONSIST OF SELECT BACKFILL.
 3. ALL TRENCHING IN ASPHALT ROADS SHALL BE RESTORED ACCORDING TO STANDARD DETAIL G-4.01 FOR ROADS WITH FLEXIBLE PAVEMENT.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Michael J. ... 1/12/2021
DIRECTOR OF PUBLIC WORKS DATE

John ... 1/18/2021
CHIEF, BUREAU OF ENGINEERING DATE

... 1-11-21
CHIEF, BUREAU OF UTILITIES DATE

... 1/7/2021
CHIEF, UTILITY DESIGN DIVISION DATE

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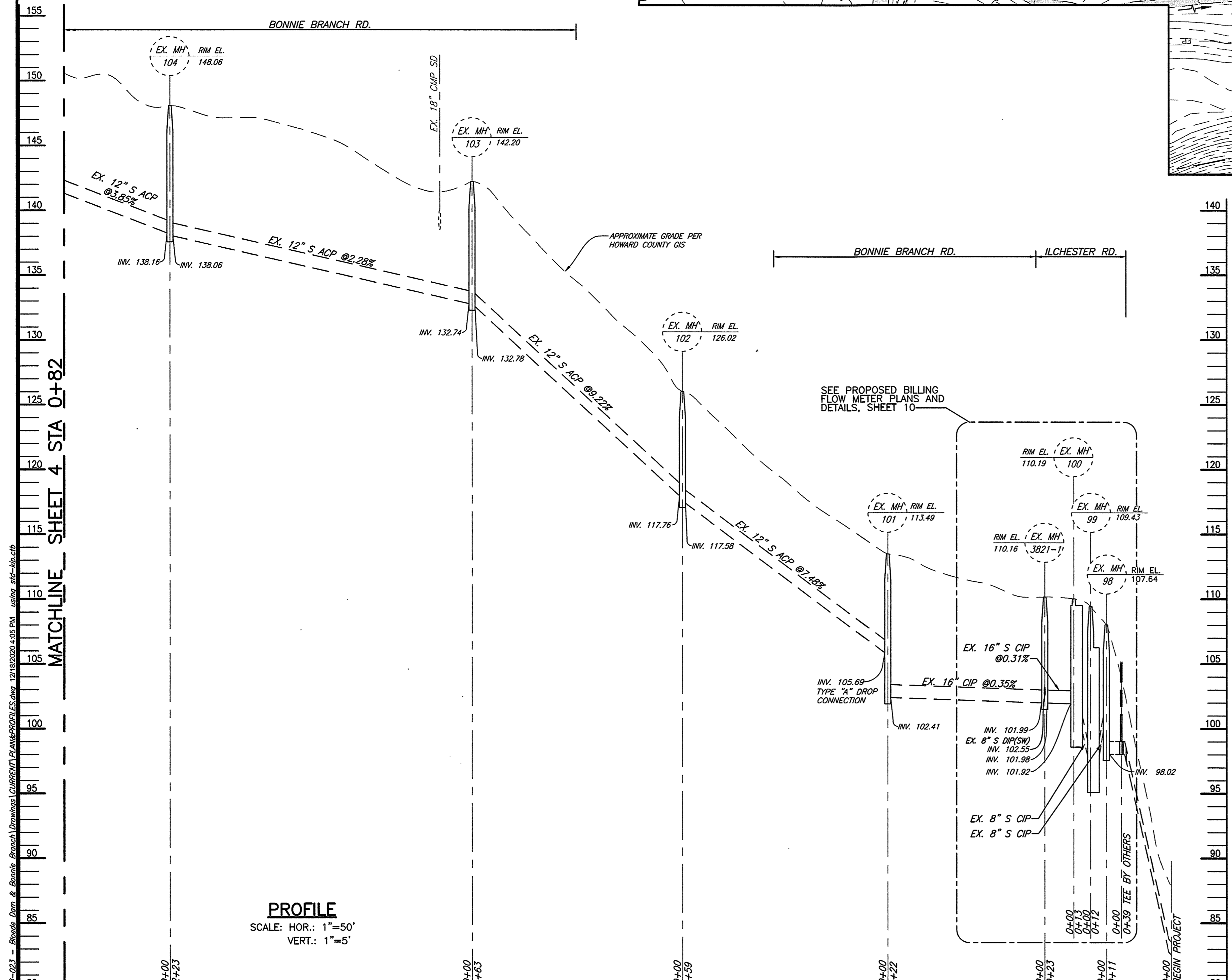
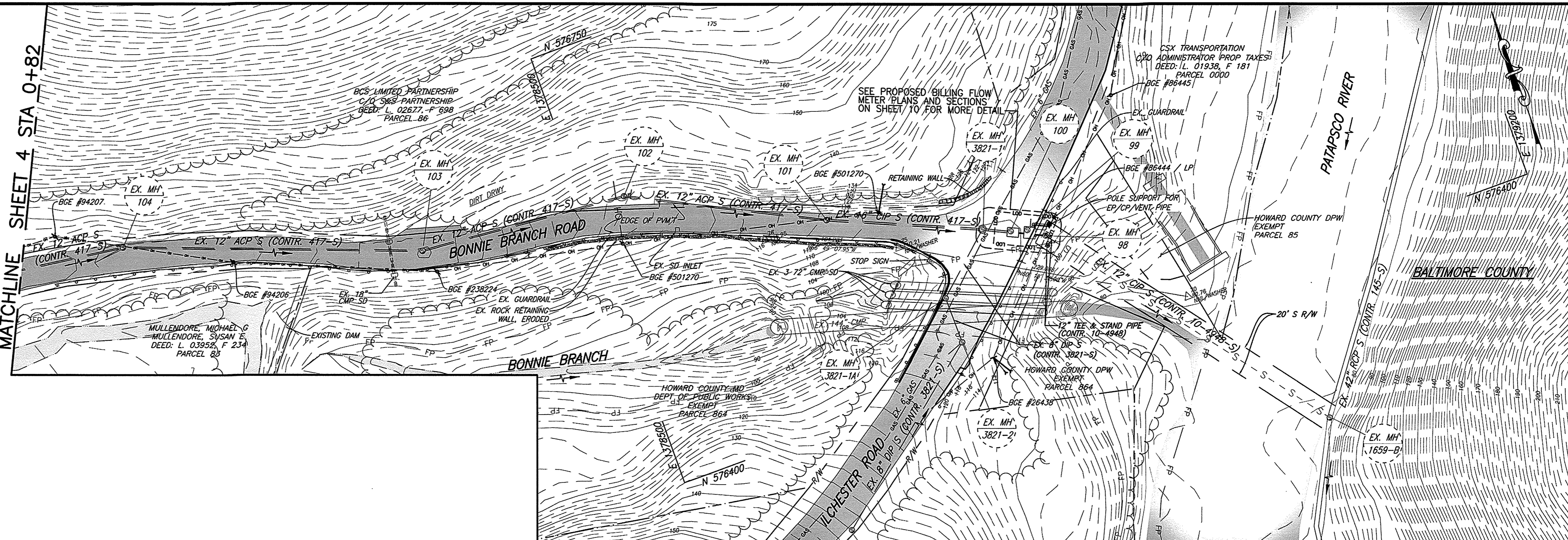
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CHK:	AWW				
DATE:	12/2020	BY	NO.	REVISION	DATE

LEGEND, NOTES, AND DETAILS

600 SCALE MAP NO. 31 BLOCK NO. 4

**BONNIE BRANCH
INTERCEPTOR SEWER IMPROVEMENTS**
CONTRACT NO. 10-5034
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

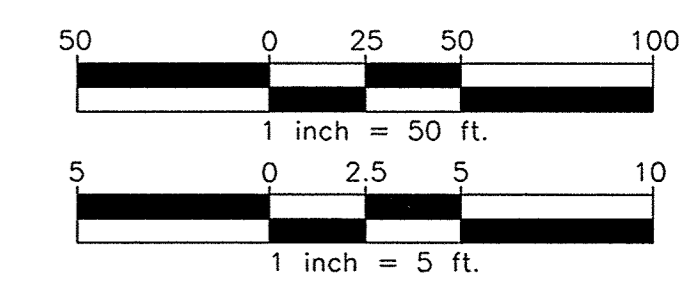
SCALE AS SHOWN
SHEET 02 OF 16



PLAN
SCALE: 1"=50'

NOTES:

- EXISTING MANHOLES TO BE REHABILITATED:
98, 3821-1, 101 THRU 104
- REFER TO STRUCTURE SCHEDULE SHEET 09 FOR INFORMATION ON ALL EXISTING AND PROPOSED STRUCTURES INCLUDING REHABILITATION OF EXISTING MANHOLES.
- INVERT ELEVATIONS AND PIPE INFORMATION BETWEEN MH 98 AND MH 3821-1 SHOWN ON SHEET 10.
- SEE SHEET 09 FOR TRAVERSE DETAILS.



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 11/2/2021
DIRECTOR OF PUBLIC WORKS DATE

[Signature] 1-8-2021
CHIEF, BUREAU OF ENGINEERING DATE

[Signature] 1-4-21
CHIEF, BUREAU OF UTILITIES DATE

[Signature] 11/2021
CHIEF, UTILITY DESIGN DIVISION DATE

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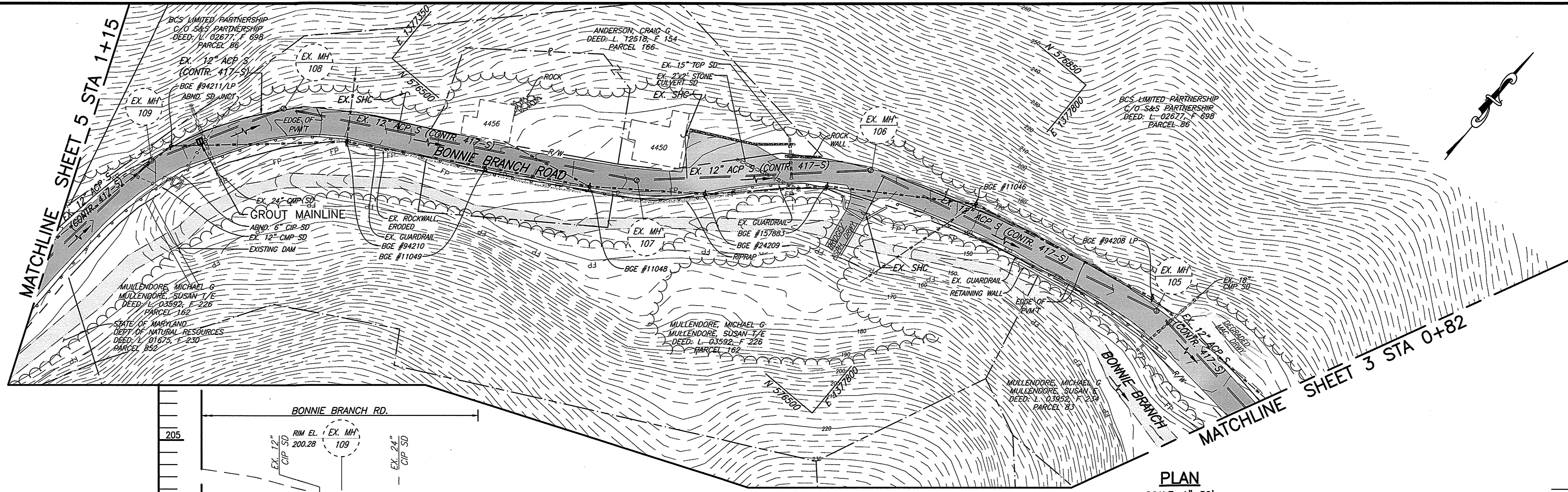
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CHK:	AWW				
DATE:	12/2020	BY:	NO.	REVISION	DATE

EXISTING PLAN AND PROFILE

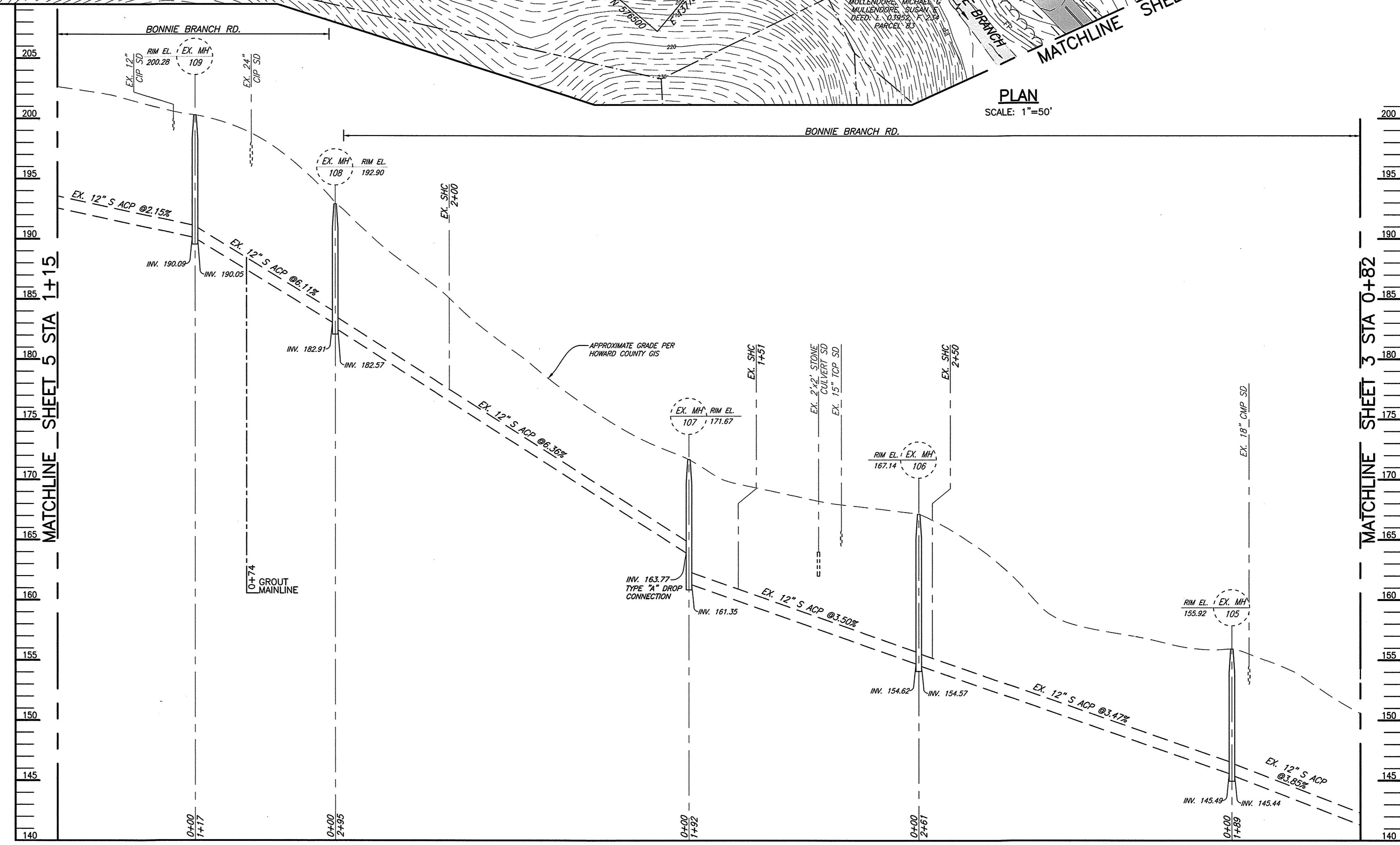
600 SCALE MAP NO. 31 BLOCK NO. 4

BONNIE BRANCH INTERCEPTOR SEWER IMPROVEMENTS
CONTRACT NO. 10-5034
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 03 OF 16

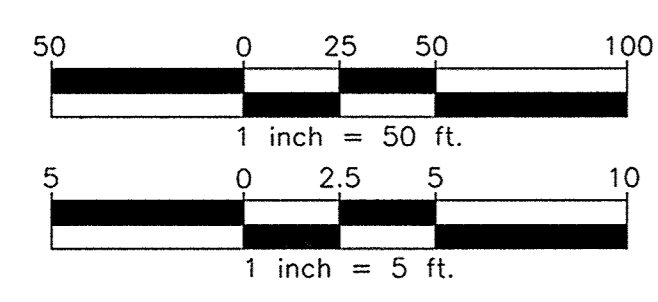


PLAN
SCALE: 1"=50'



PROFILE
SCALE: HOR.: 1"=50'
VERT.: 1"=5'

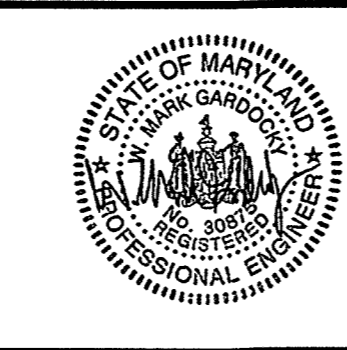
- NOTES:**
- EXISTING MANHOLES TO BE REHABILITATED: 105 THRU 109
 - REFER TO STRUCTURE TABLE SHEET 09 FOR INFORMATION ON ALL EXISTING AND PROPOSED STRUCTURES INCLUDING REHABILITATION OF EXISTING MANHOLES.



DATE: 1/20/2021 12:01:58 PM - Bonnie Branch Drawings Current/PLANS/PROFILES Area 12/18/2020 4:04 PM ushina_sfp-isp.ctb

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND		DIRECTOR OF PUBLIC WORKS <i>Morgan</i> 1/22/2021		CHIEF, BUREAU OF ENGINEERING <i>Anthony John Deford</i> 1/8/2021	
CHIEF, BUREAU OF UTILITIES <i>Scott</i> 1-11-21		CHIEF, UTILITY DESIGN DIVISION <i>S. Davis</i> 1/7/2021			

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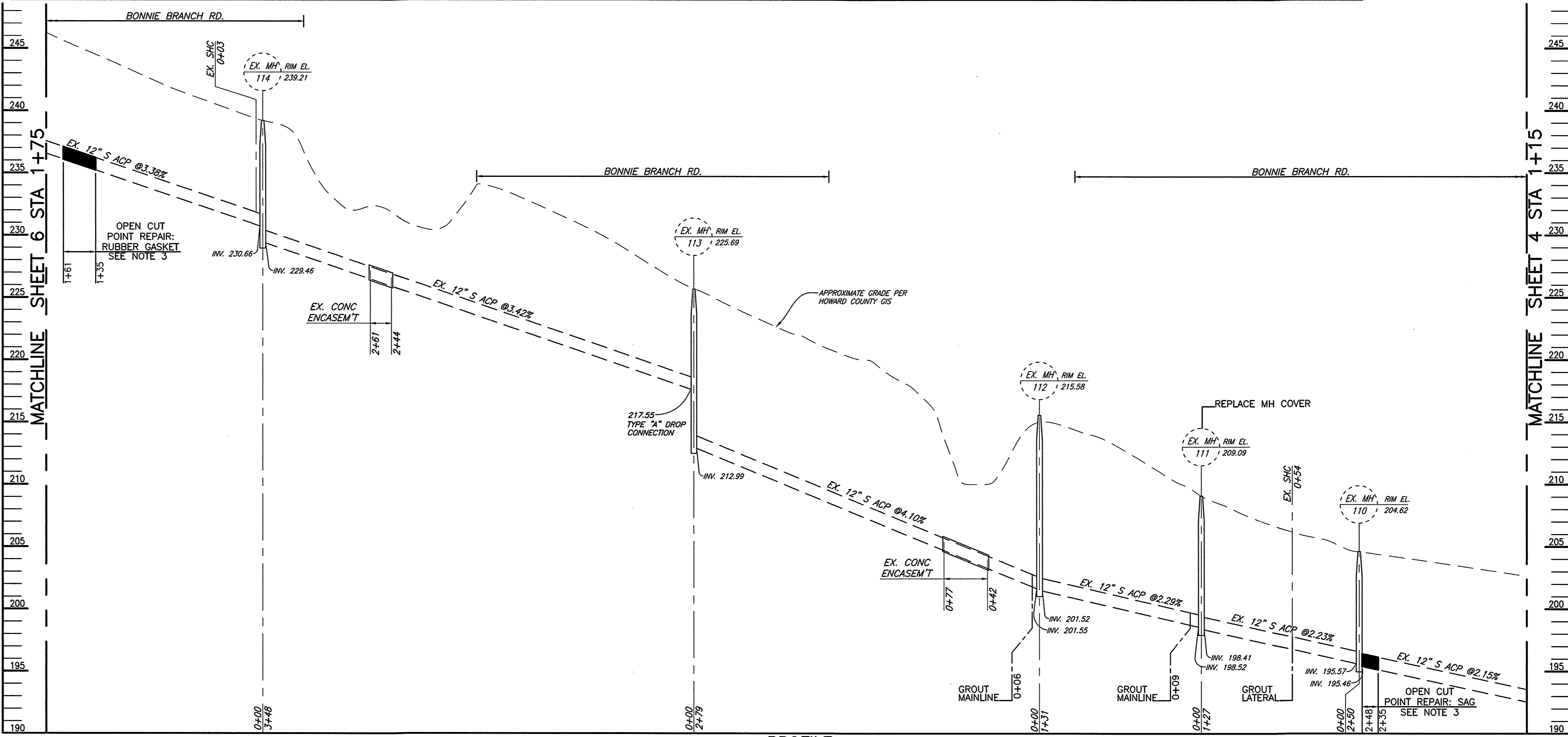
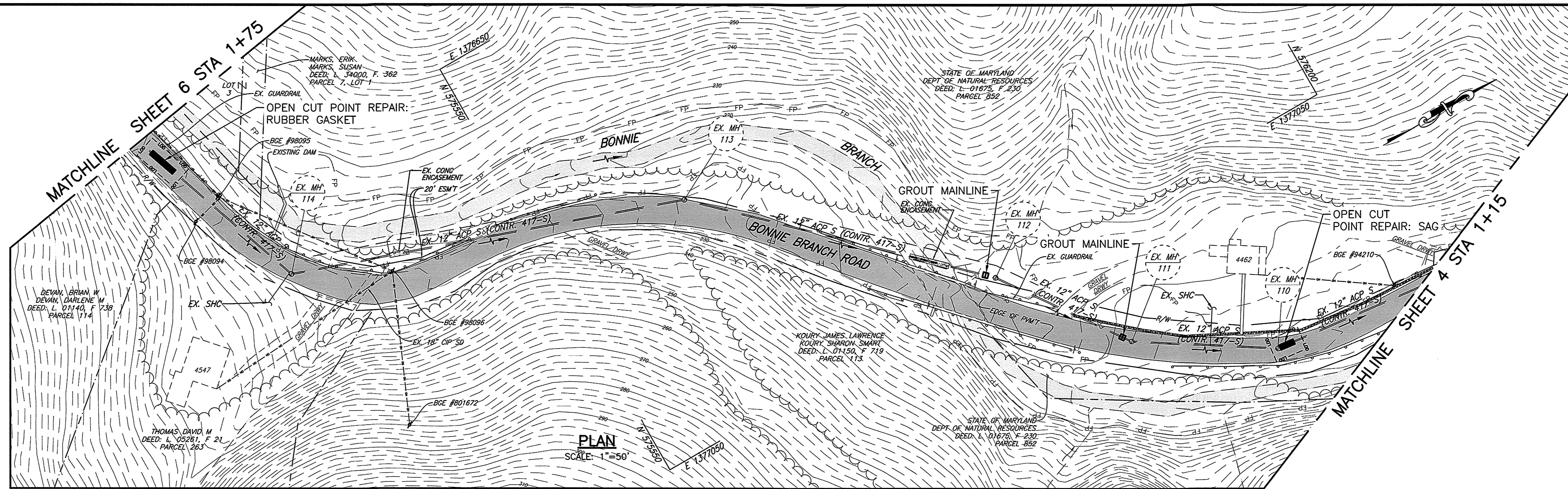


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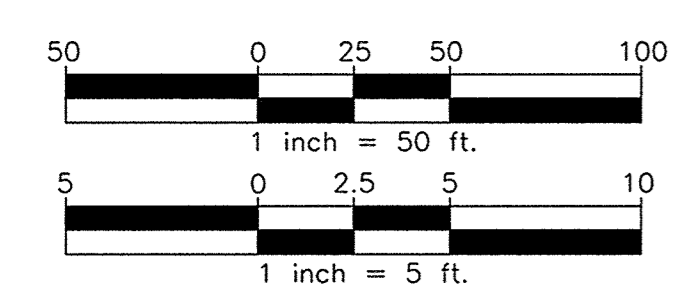
EXISTING
 PLAN AND PROFILE
 600 SCALE MAP NO. 31
 BLOCK NO. 4

**BONNIE BRANCH
 INTERCEPTOR SEWER IMPROVEMENTS**
 CONTRACT NO. 10-5034
 2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE
 AS SHOWN
 SHEET
 04 OF 16



- NOTES:**
- EXISTING MANHOLES TO BE REHABILITATED: 110 THRU 114
 - REFER TO STRUCTURE TABLE SHEET 09 FOR INFORMATION ON ALL EXISTING AND PROPOSED STRUCTURES INCLUDING REHABILITATION OF EXISTING MANHOLES.
 - CONTRACTOR SHALL CHECK AND COMPACT THE SUB-GRADE TO 6" MINIMUM AND FILL TRENCH TO 1'-0" ABOVE TOP OF PIPE WITH #57 STONE AND FILL THE REST OF THE WAY WITH SELECT BACKFILL.

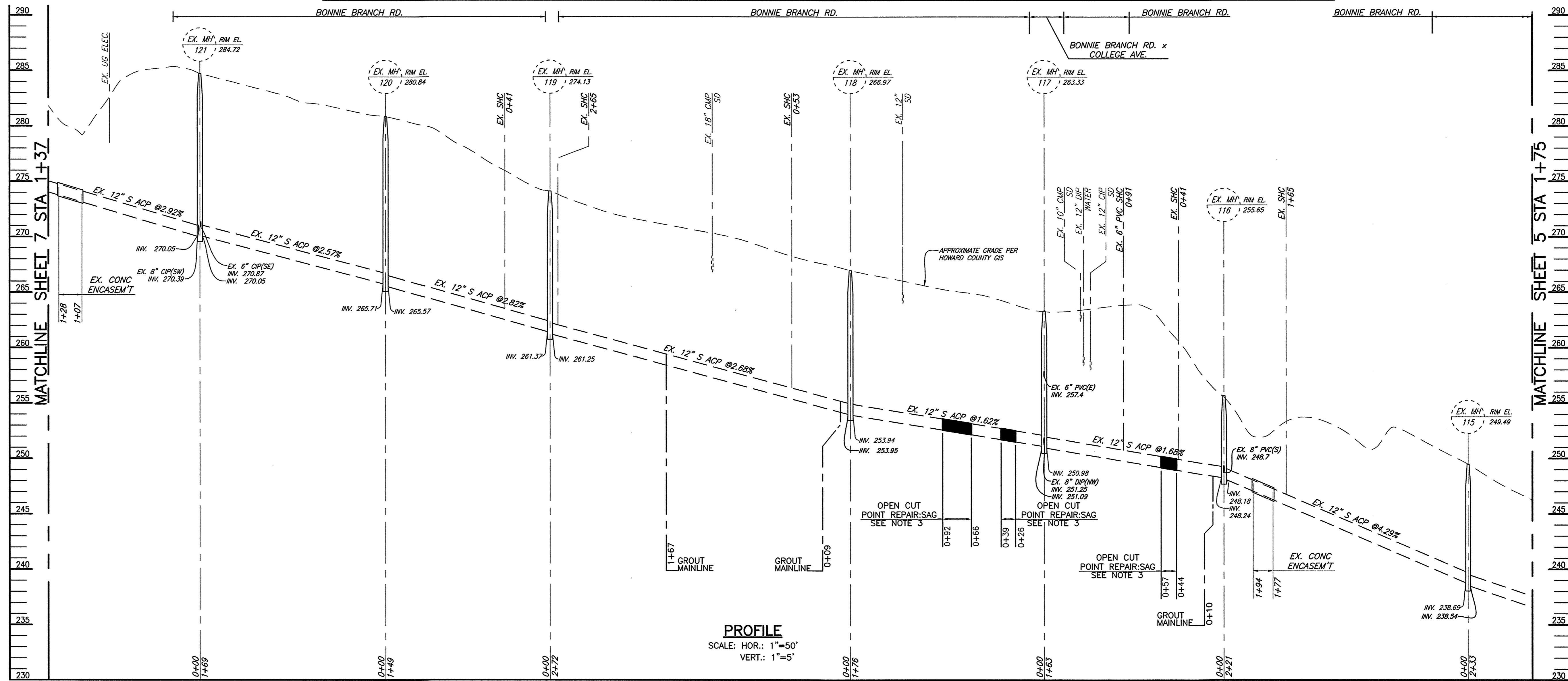
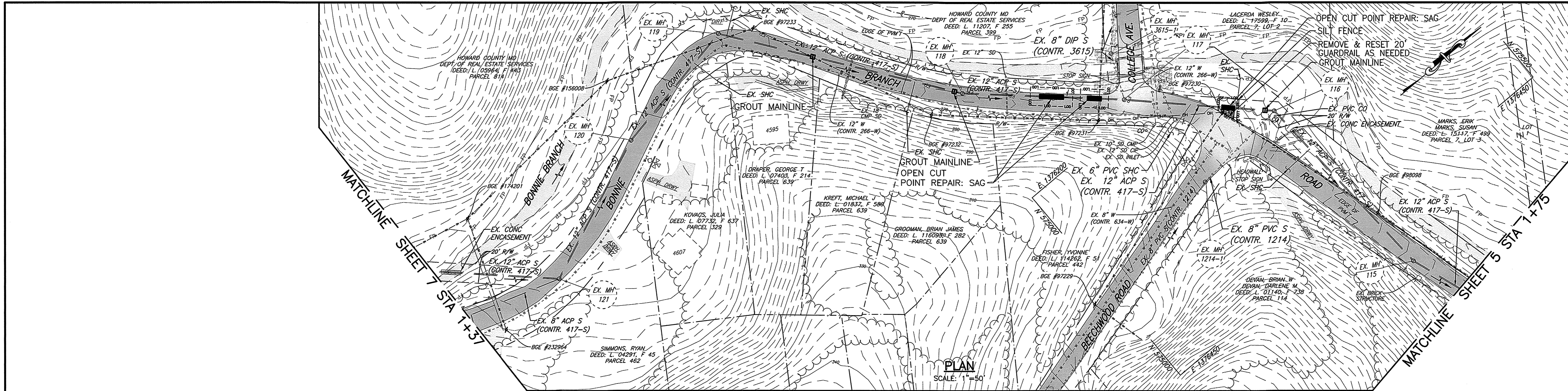


PROFILE
SCALE: HOR.: 1"=50'
VERT.: 1"=5'

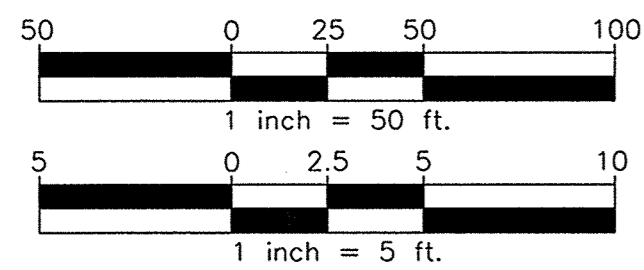
P:\Projects\2021\10-5034-Bonnie Branch\Drawings\CURRENT\PLAN\PROFILES.dwg, 12/18/2020, 4:01 PM, using sfp-fbp.ctb

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND		 GEORGE, MILES & BUHR, LLC ARCHITECTS & ENGINEERS SALISBURY • BALTIMORE • SEAFORD www.gmbnet.com		 STATE OF MARYLAND DEPARTMENT OF NATURAL RESOURCES DEED L. 01670, F. 230 PARCEL 852	
DIRECTOR OF PUBLIC WORKS <i>[Signature]</i> DATE: 1/12/2021	CHIEF, BUREAU OF ENGINEERING <i>[Signature]</i> DATE: 1-8-2021	CHIEF, BUREAU OF UTILITIES <i>[Signature]</i> DATE: 1-11-21	CHIEF, UTILITY DESIGN DIVISION <i>[Signature]</i> DATE: 1/12/2021	DES: WMG DRN: BRW CHK: AWW DATE: 12/2020	BY NO. REVISION DATE

EXISTING PLAN AND PROFILE		BONNIE BRANCH INTERCEPTOR SEWER IMPROVEMENTS CONTRACT NO. 10-5034 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND		SCALE AS SHOWN
600 SCALE MAP NO. 31		BLOCK NO. 4		SHEET 05 OF 16

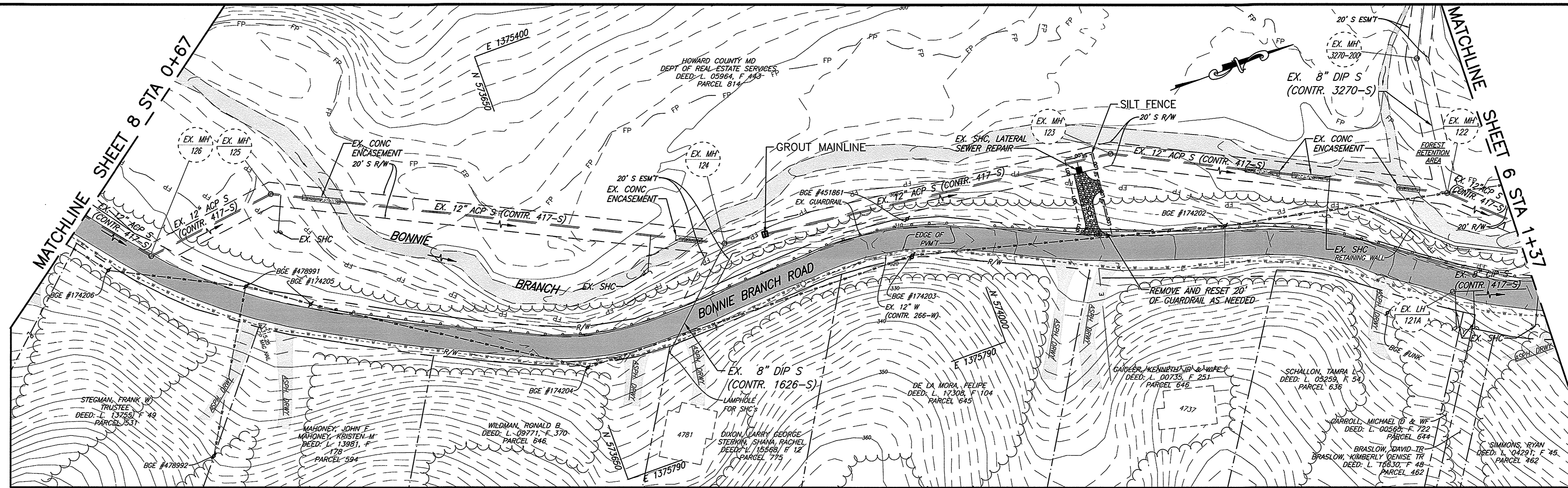


- NOTES:**
- EXISTING MANHOLES TO BE REHABILITATED: 115 THRU 121
 - REFER TO STRUCTURE TABLE SHEET 09 FOR INFORMATION ON ALL EXISTING AND PROPOSED STRUCTURES INCLUDING REHABILITATION OF EXISTING MANHOLES.
 - CONTRACTOR SHALL CHECK AND COMPACT THE SUB-GRADE TO 6" MINIMUM AND FILL TRENCH TO 1'-0" ABOVE TOP OF PIPE WITH #57 STONE AND FILL THE REST OF THE WAY WITH SELECT BACKFILL



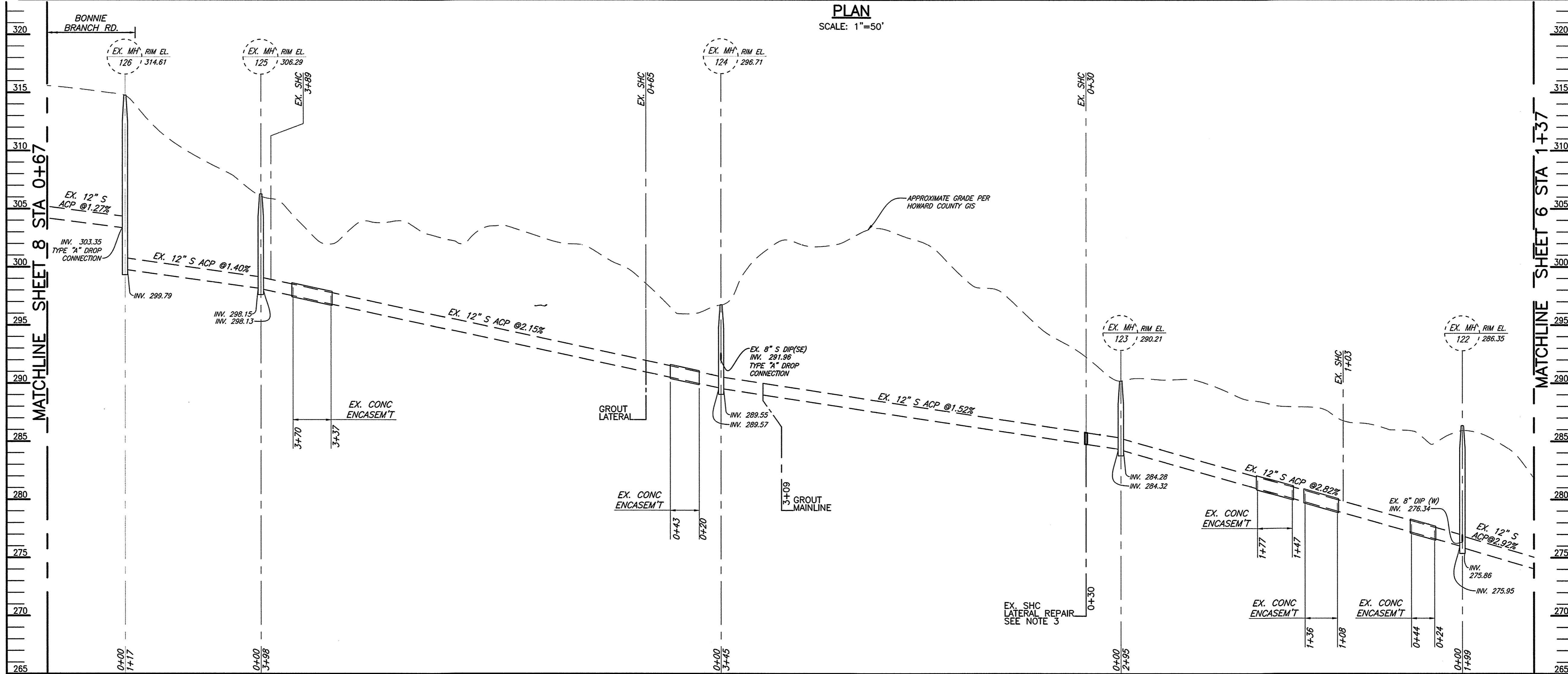
1/10/2021 12:01:09 PM - Bonnie Branch Interceptor Sewer Improvements - Plan and Profile - 1218192020.sxd PWA - usdms - stp - 2021

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND		GMB GEORGE MILES & BUHR, LLC ARCHITECTS & ENGINEERS SAUSSBURY - BALTIMORE - SEAFORD www.gmbnet.com				DES: WMG DRN: BRW CHK: AWW DATE: 12/20/20	600 SCALE MAP NO. 31 BLOCK NO. 4	BONNIE BRANCH INTERCEPTOR SEWER IMPROVEMENTS CONTRACT NO. 10-5034 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 06 OF 16
DIRECTOR OF PUBLIC WORKS <i>[Signature]</i> 1/18/2021 DATE	CHIEF, BUREAU OF ENGINEERING <i>[Signature]</i> 1/18/2021 DATE	CHIEF, BUREAU OF UTILITIES <i>[Signature]</i> 1/18/2021 DATE	CHIEF, UTILITY DESIGN DIVISION <i>[Signature]</i> 1/18/2021 DATE	BY: NO.	REVISION	DATE	DATE	DATE	DATE



PLAN

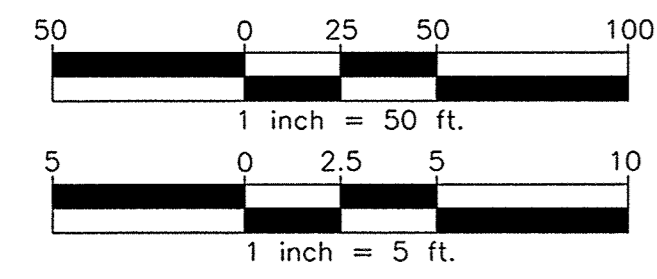
SCALE: 1"=50'



PROFILE

SCALE: HOR.: 1"=50'
VERT.: 1"=5'

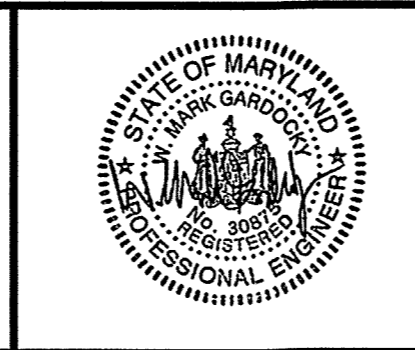
- NOTES:**
- EXISTING MANHOLES TO BE REHABILITATED: 122 THRU 126
 - REFER TO STRUCTURE TABLE SHEET 09 FOR INFORMATION ON ALL EXISTING AND PROPOSED STRUCTURES INCLUDING REHABILITATION OF EXISTING MANHOLES.
 - CONTRACTOR SHALL CHECK AND COMPACT THE SUB-GRADE TO 6" MINIMUM AND FILL TRENCH TO 1'-0" ABOVE TOP OF PIPE WITH #57 STONE AND FILL THE REST OF THE WAY WITH SELECT BACKFILL.
 - STABILIZED CONSTRUCTION ENTRANCE PER MDE WMA DETAIL B-1.



Path: I:\Projects\2021\2021-09-03 - Bonnie Branch Encasement\Drawings\CONTRACT\PLAN\EXISTING PLAN.dwg 12/18/2020 3:58 PM user: afp-afp.ctb

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND		1-8-2021 DATE
 DIRECTOR OF PUBLIC WORKS	 CHIEF, BUREAU OF ENGINEERING	DATE
 CHIEF, BUREAU OF UTILITIES	 CHIEF, UTILITY DESIGN DIVISION	DATE

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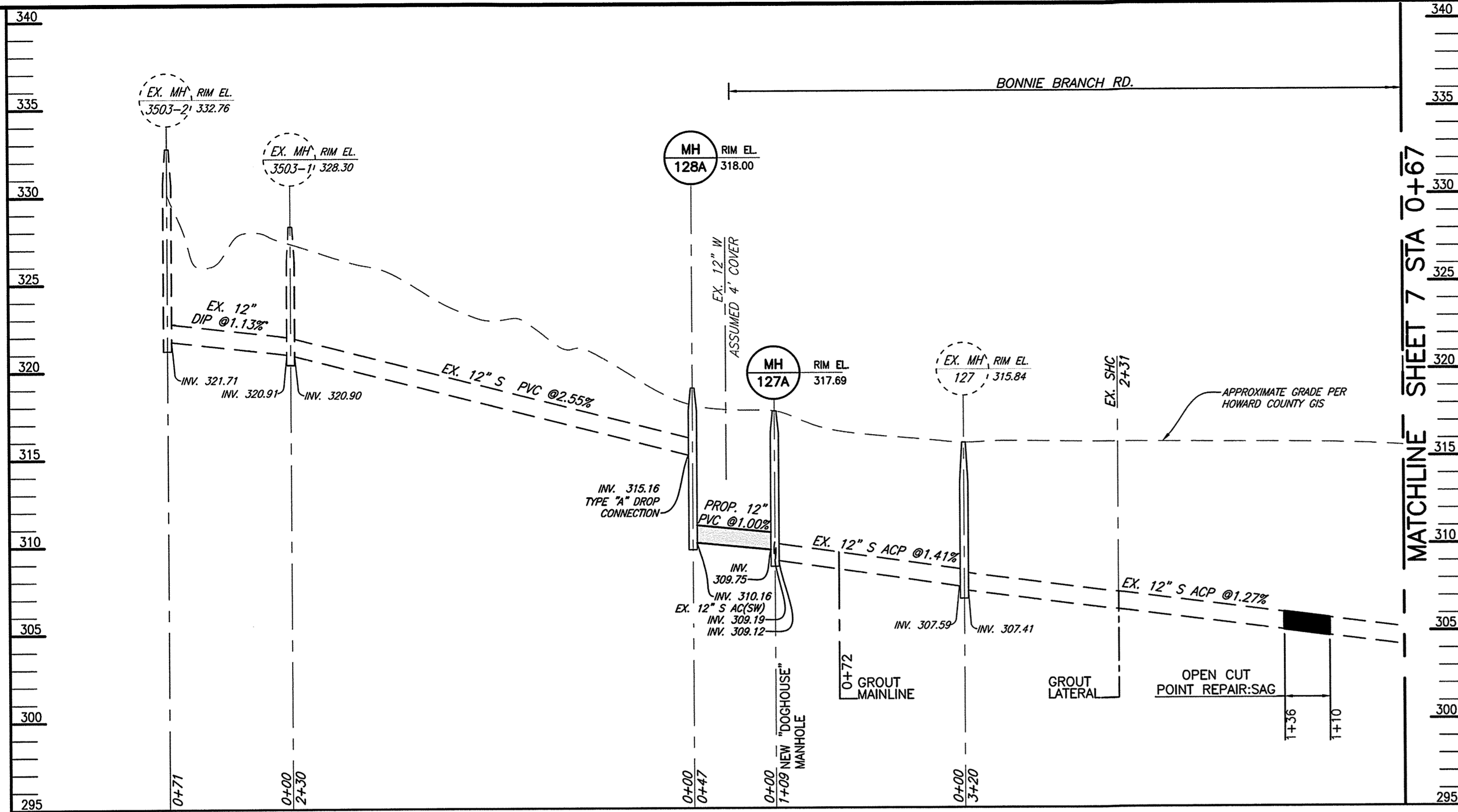


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DRN:	BRW
CHK:	AWW
DATE:	12/2020
BY:	NO.
REVISION:	
DATE:	

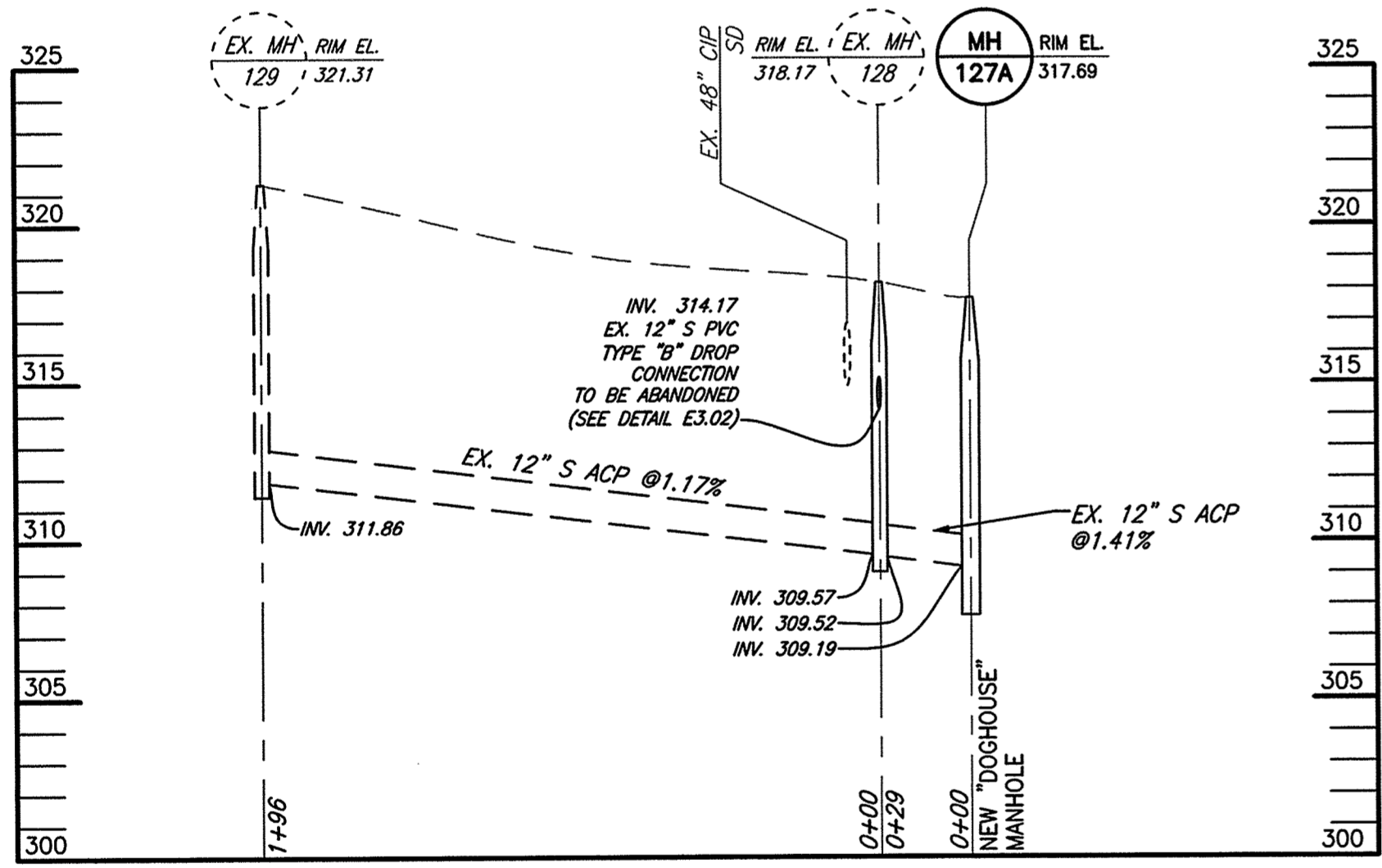
600 SCALE MAP NO.	31
BLOCK NO.	4

BONNIE BRANCH
INTERCEPTOR SEWER IMPROVEMENTS
 CONTRACT NO. 10-5034
 2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 07 OF 16

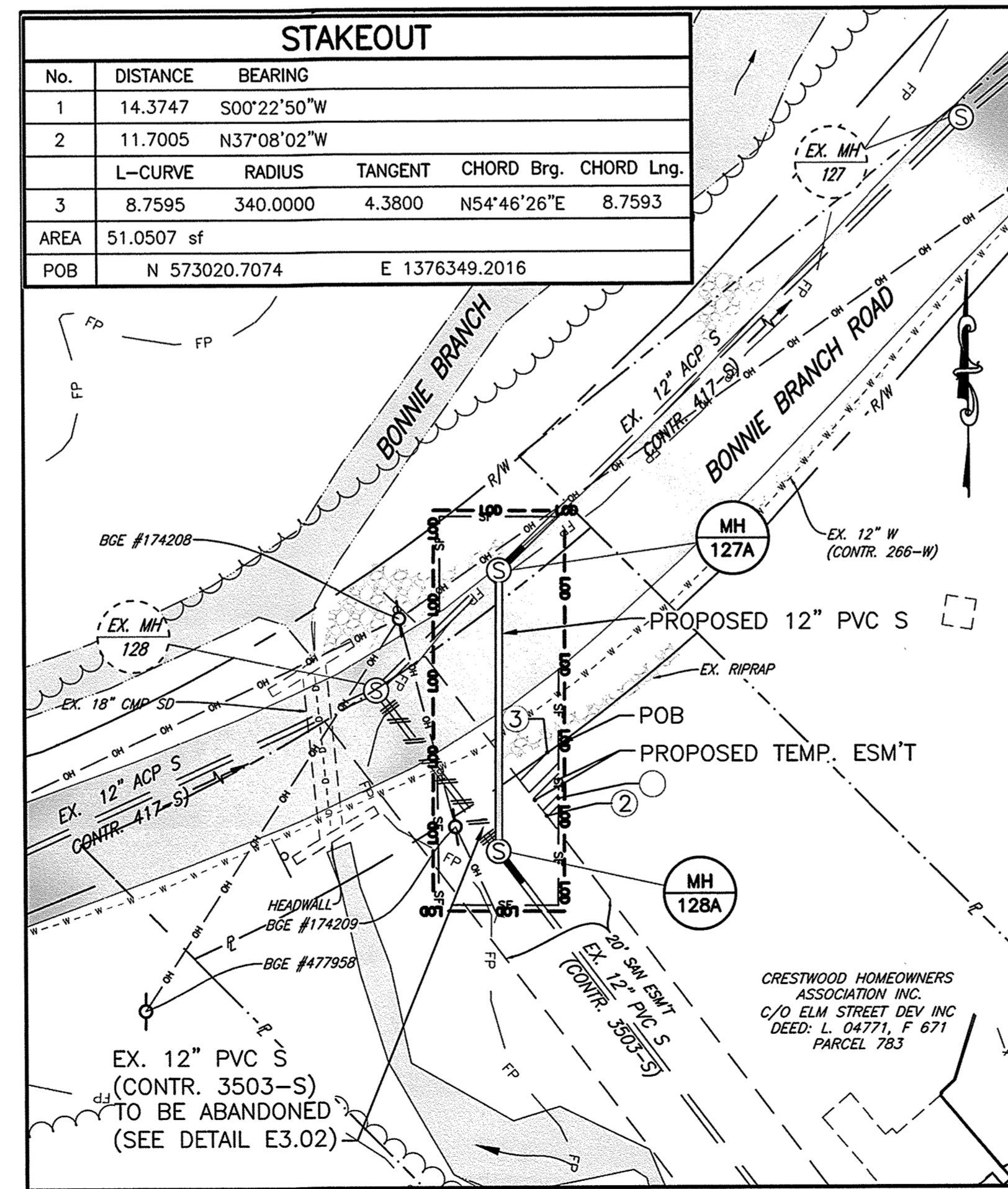


PROFILE
SCALE: HOR.: 1"=50'
VERT.: 1"=5'

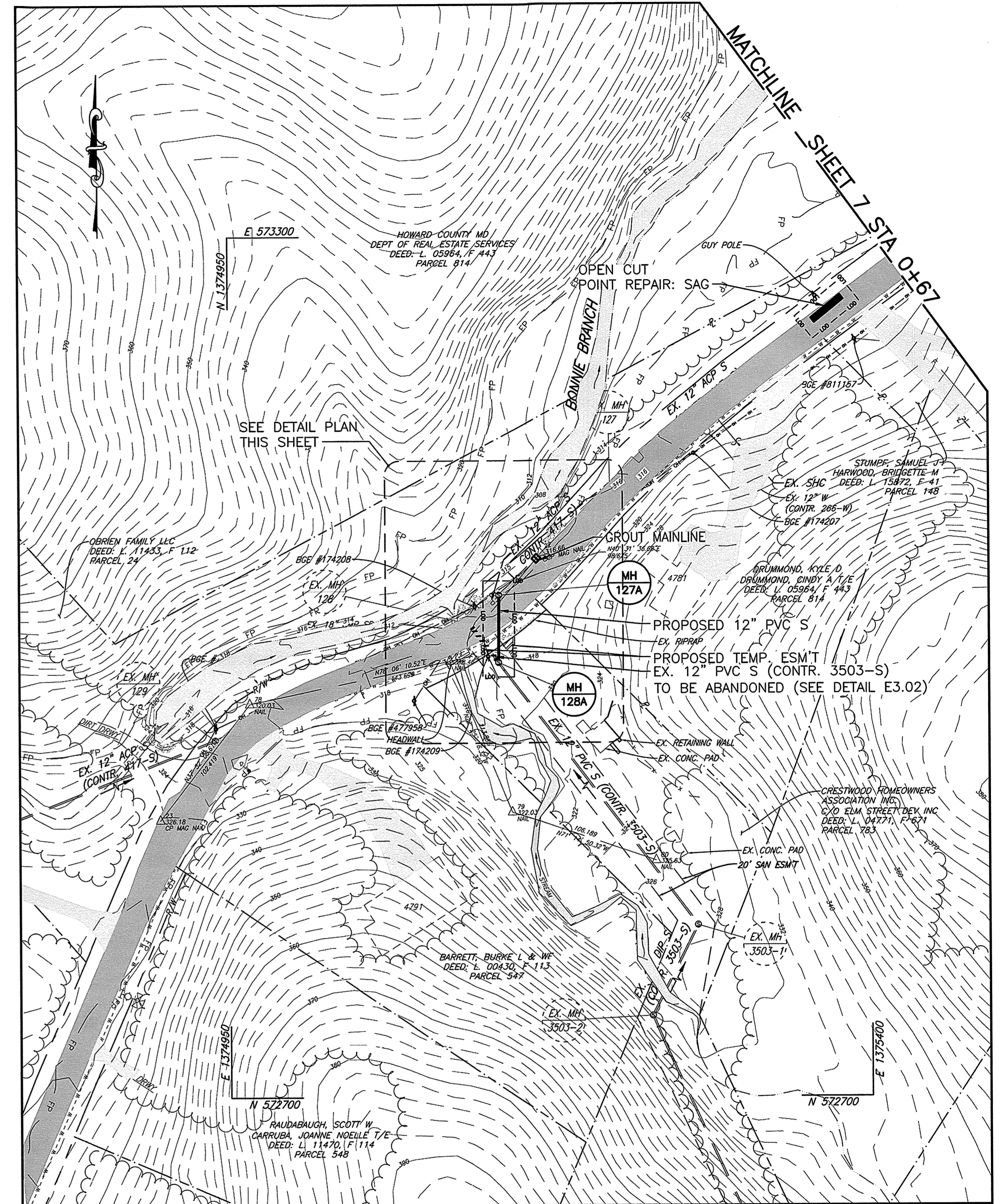


PROFILE
SCALE: HOR.: 1"=50'
VERT.: 1"=5'

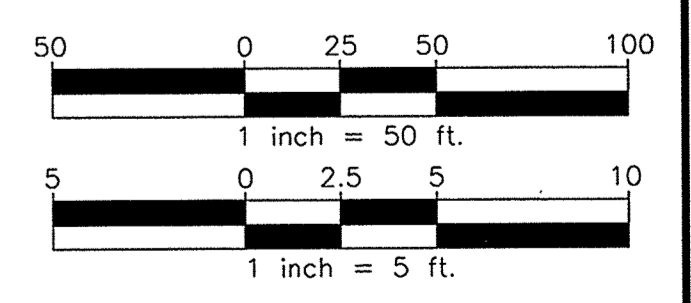
- NOTES:**
- EXISTING MANHOLES TO BE REHABILITATED: 127, 128
 - REFER TO STRUCTURE TABLE SHEET 09 FOR INFORMATION ON ALL EXISTING AND PROPOSED STRUCTURES INCLUDING REHABILITATION OF EXISTING MANHOLES.
 - CONTRACTOR SHALL CHECK AND COMPACT THE SUB-GRADE TO 6" MINIMUM AND FILL TRENCH TO 1'-0" ABOVE TOP OF PIPE WITH #57 STONE AND FILL THE REST OF THE WAY WITH SELECT BACKFILL.
 - SEE SHEET 09 FOR TRAVERSE DETAILS.
 - PIPE ABANDONMENT AT THE MANHOLE SHALL BE IN CONFORMANCE WITH STANDARD DETAIL E-3.02.
 - PROPOSED MANHOLE 127A SHALL BE A PRECAST DOGHOUSE MANHOLE WITH THE BASE OF THE MANHOLE CONSTRUCTED ACCORDING TO STANDARD DETAIL G-5.14 AND THE REST CONSTRUCTED ACCORDING TO THE 5'-0" DIAMETER PRECAST MANHOLE DETAIL ON SHEET 02.
 - PROPOSED MANHOLE 128A SHALL BE CONSTRUCTED ACCORDING TO THE 5'-0" DIAMETER PRECAST MANHOLE DETAIL ON SHEET 02.



DETAIL PLAN
SCALE: 1"=20'



PLAN
SCALE: 1"=50'



1/2/2021 1:00:00 PM 12/21/2020 1:35:24 PM 12/21/2020 1:35:24 PM 12/21/2020 1:35:24 PM

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

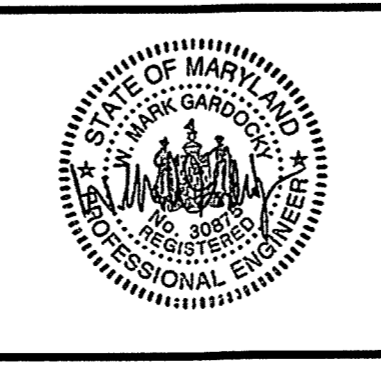
M. J. [Signature] 11/2/2021
DIRECTOR OF PUBLIC WORKS DATE

[Signature] 1-8-2021
CHIEF, BUREAU OF ENGINEERING DATE

[Signature] 1-4-21
CHIEF, BUREAU OF UTILITIES DATE

[Signature] 11/2/2021
CHIEF, UTILITY DESIGN DIVISION DATE

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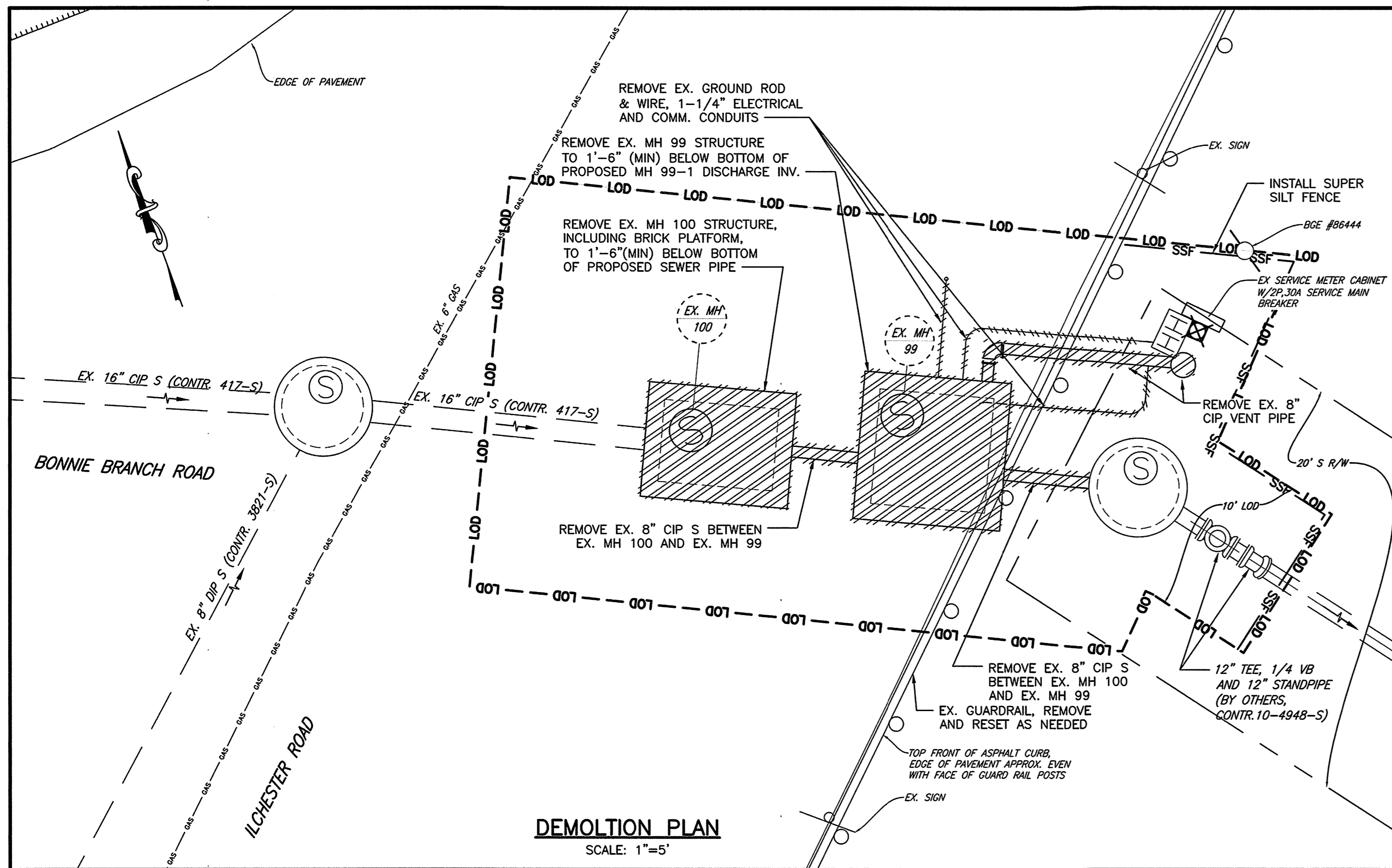
DES: WMG			
DRN: BRW			
CHK: AWW			
DATE: 12/2020	BY:	NO.	REVISION

EXISTING AND PROPOSED PLAN AND PROFILE AT MANHOLE 128

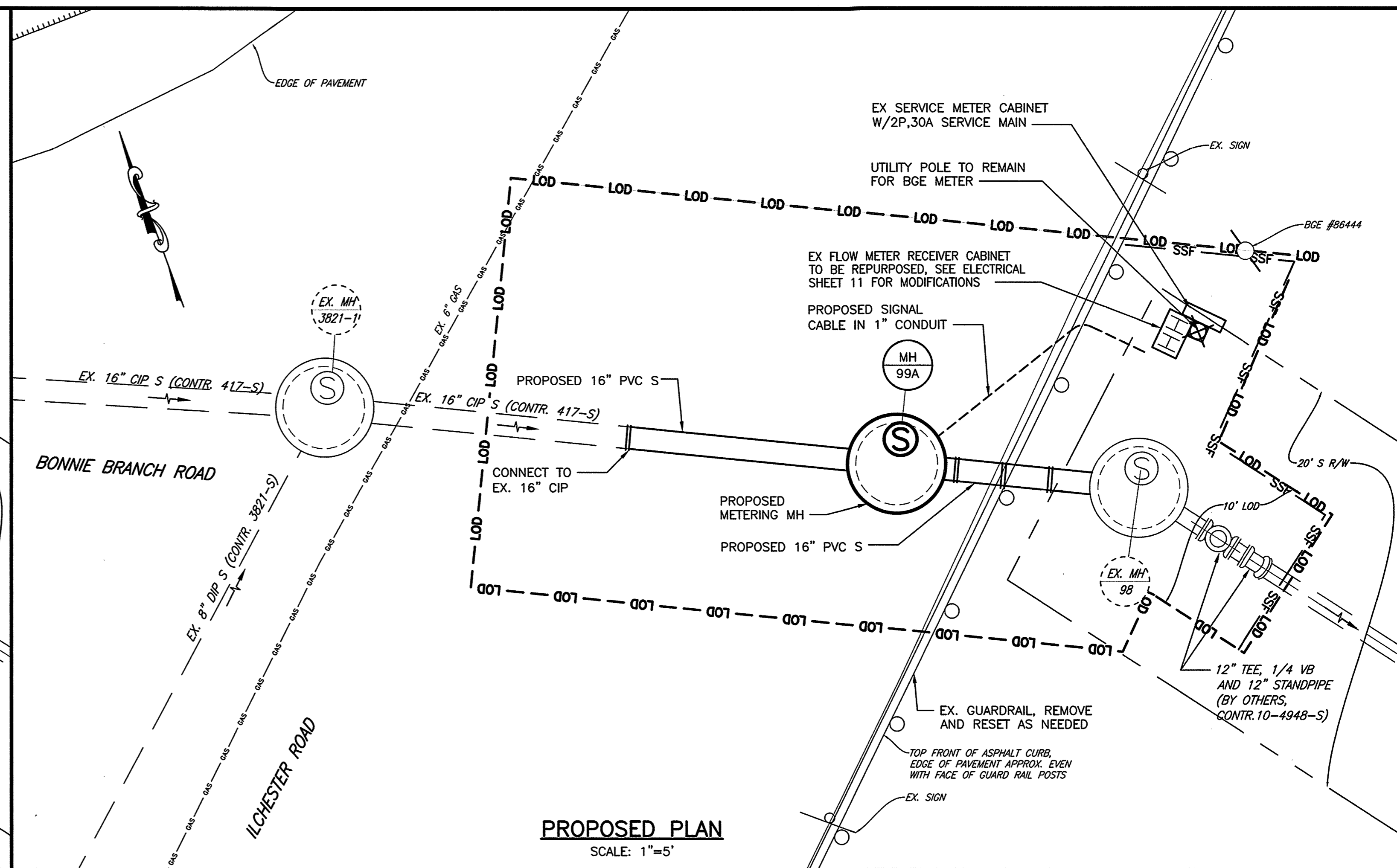
600 SCALE MAP NO. 31 BLOCK NO. 4

BONNIE BRANCH INTERCEPTOR SEWER IMPROVEMENTS
CONTRACT NO. 10-5034
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

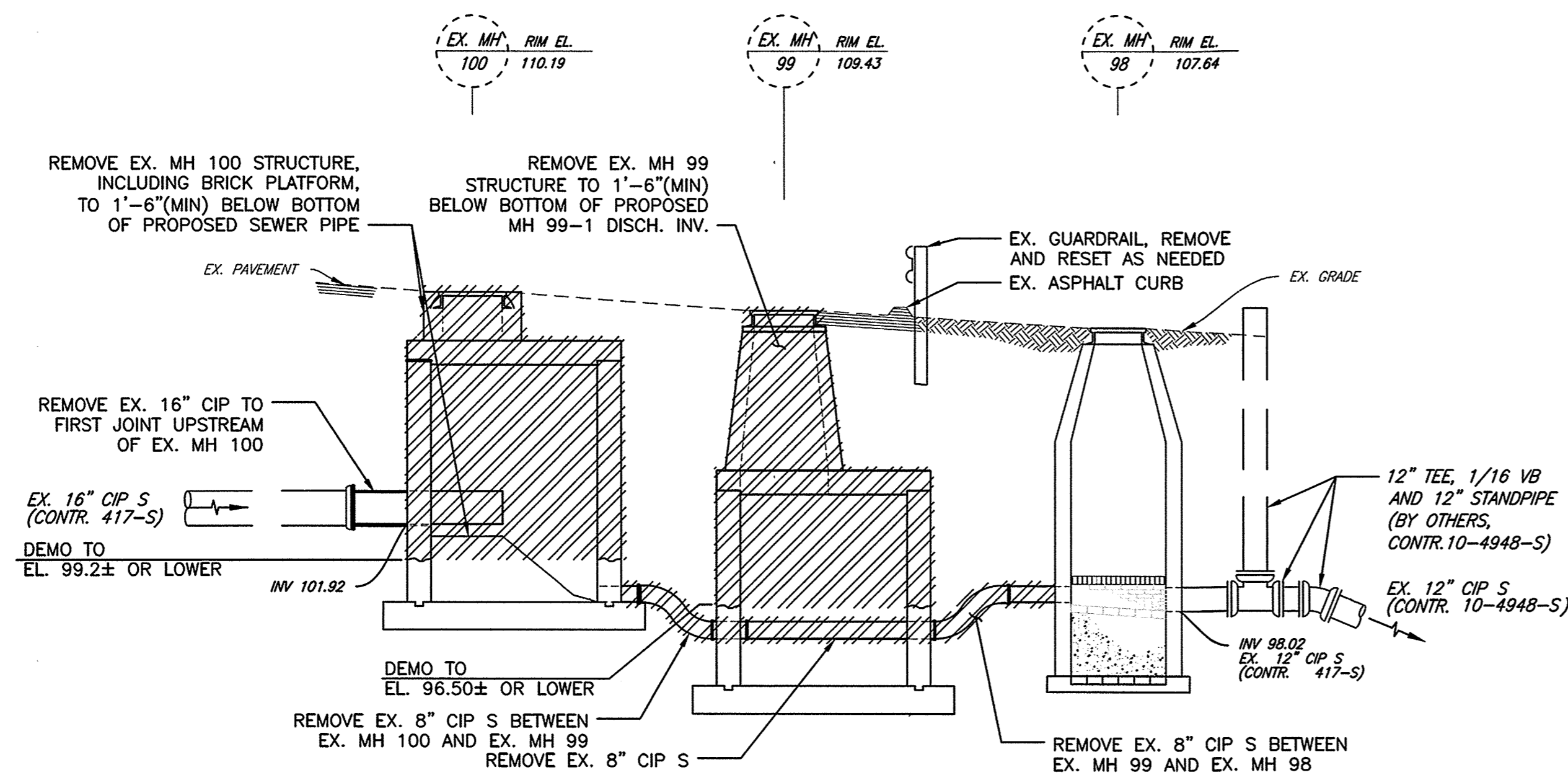
SCALE AS SHOWN
SHEET 08 OF 16



DEMOLITION PLAN
SCALE: 1"=5'



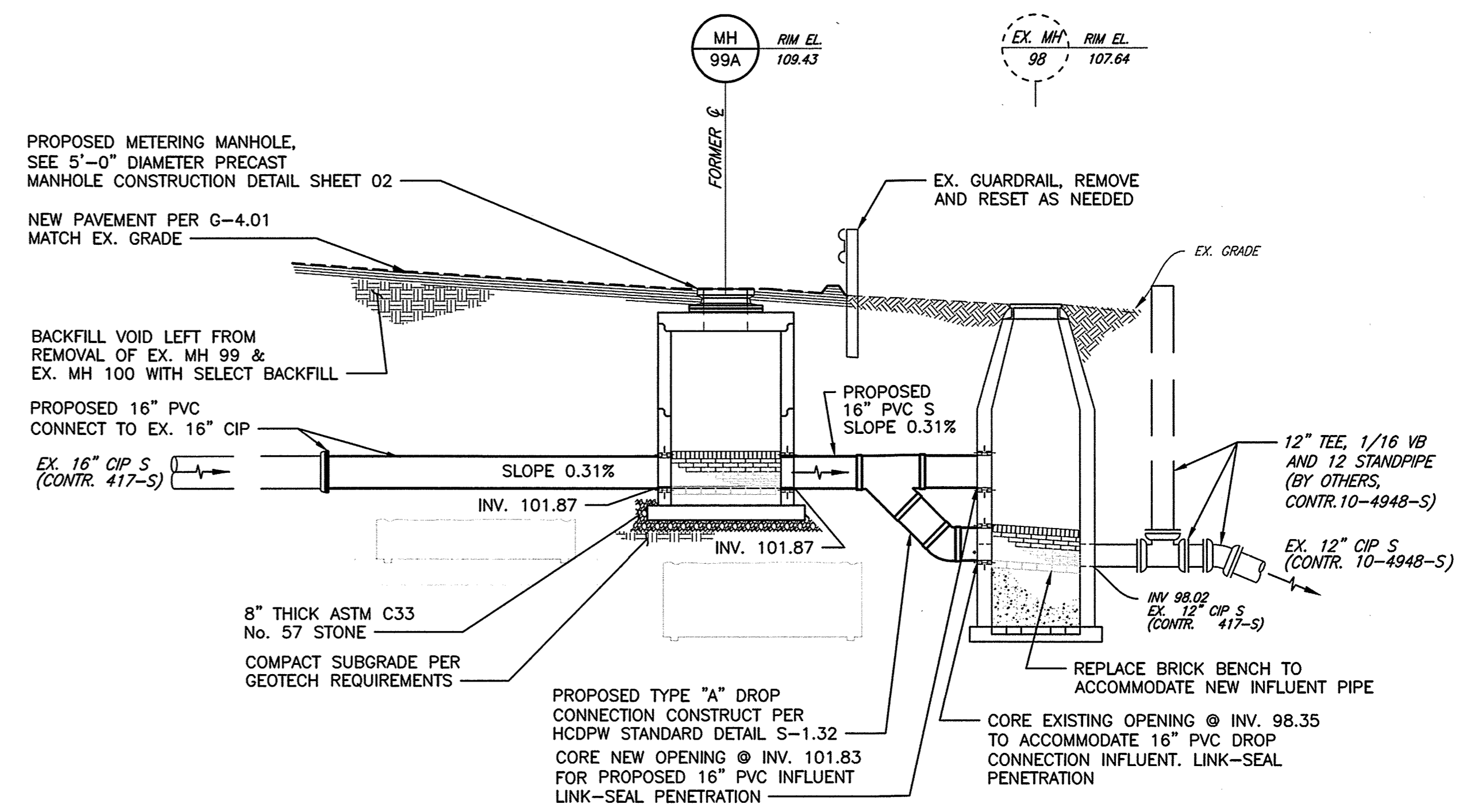
PROPOSED PLAN
SCALE: 1"=5'



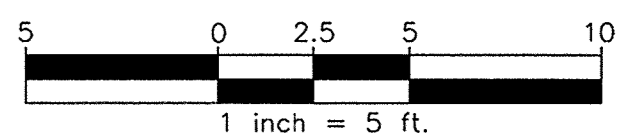
DEMOLITION SECTION
SCALE: 1"=5'

NOTE:

EXISTING FLOW METER VAULT (MH-99) TO BE TAKEN OUT OF SERVICE, DISMANTLED AS SHOWN & ABANDONED IN PLACE. DISCONNECT ALL EXISTING POWER, INSTRUMENTATION & COMMUNICATION CIRCUITRY TO THE VAULT. REMOVE ALL EXISTING WIRING COMING FROM THE EXISTING SERVICE / METER PANEL TO THE VAULT. ABANDON EXISTING CONDUITS IN PLACE.



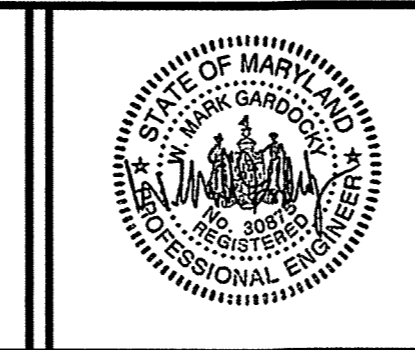
PROPOSED SECTION
SCALE: 1"=5'



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DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
<i>M. J. ...</i> DIRECTOR OF PUBLIC WORKS DATE: 1-11-21	<i>John ...</i> CHIEF, BUREAU OF ENGINEERING DATE: 1-8-2021
<i>...</i> CHIEF, BUREAU OF UTILITIES DATE: 11/10/21	<i>...</i> CHIEF, UTILITY DESIGN DIVISION DATE: 11/10/21

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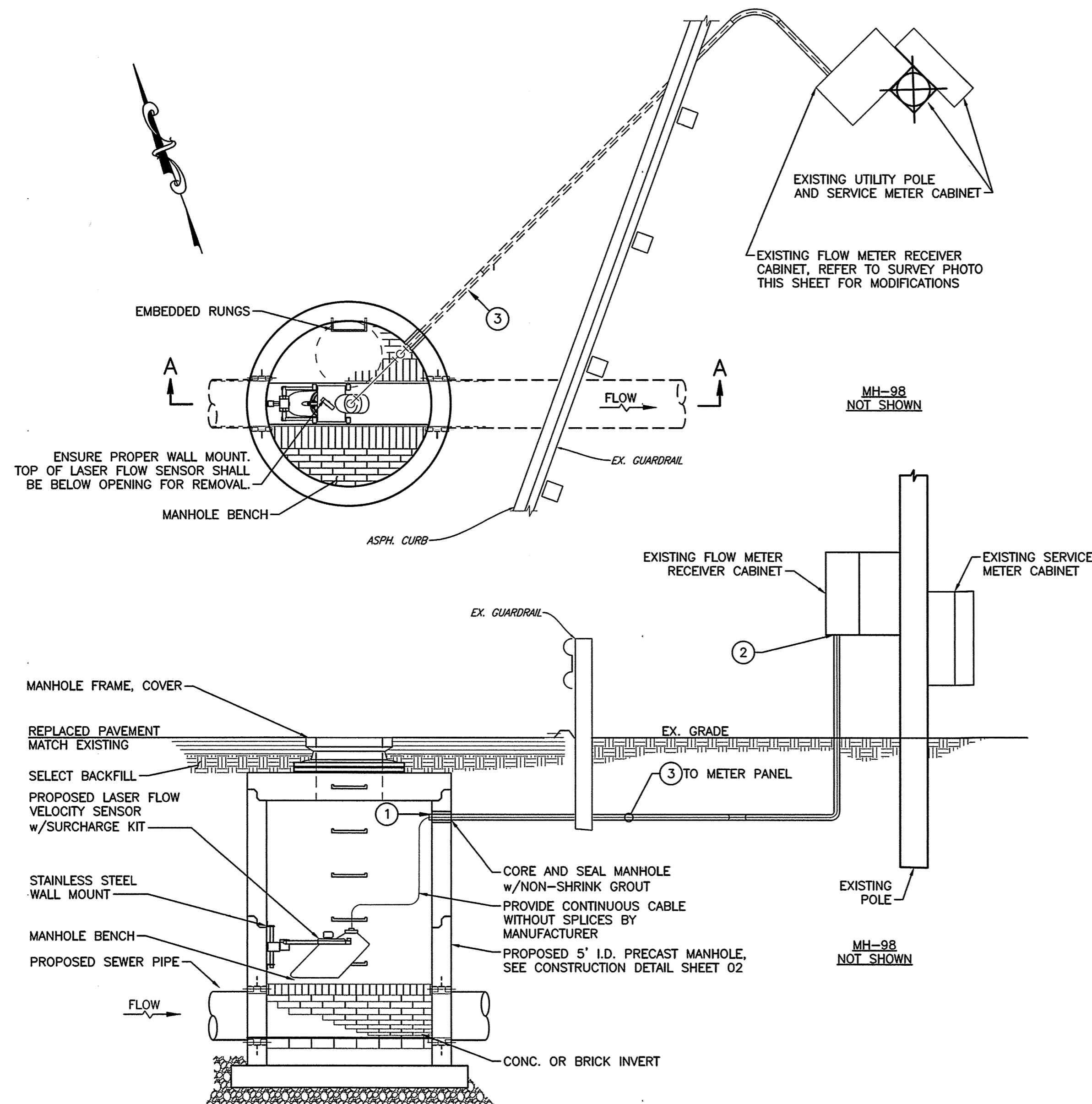


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DRN:	BRW				
CHK:	AWW				
DATE:	12/2020	BY:	NO.	REVISION	DATE

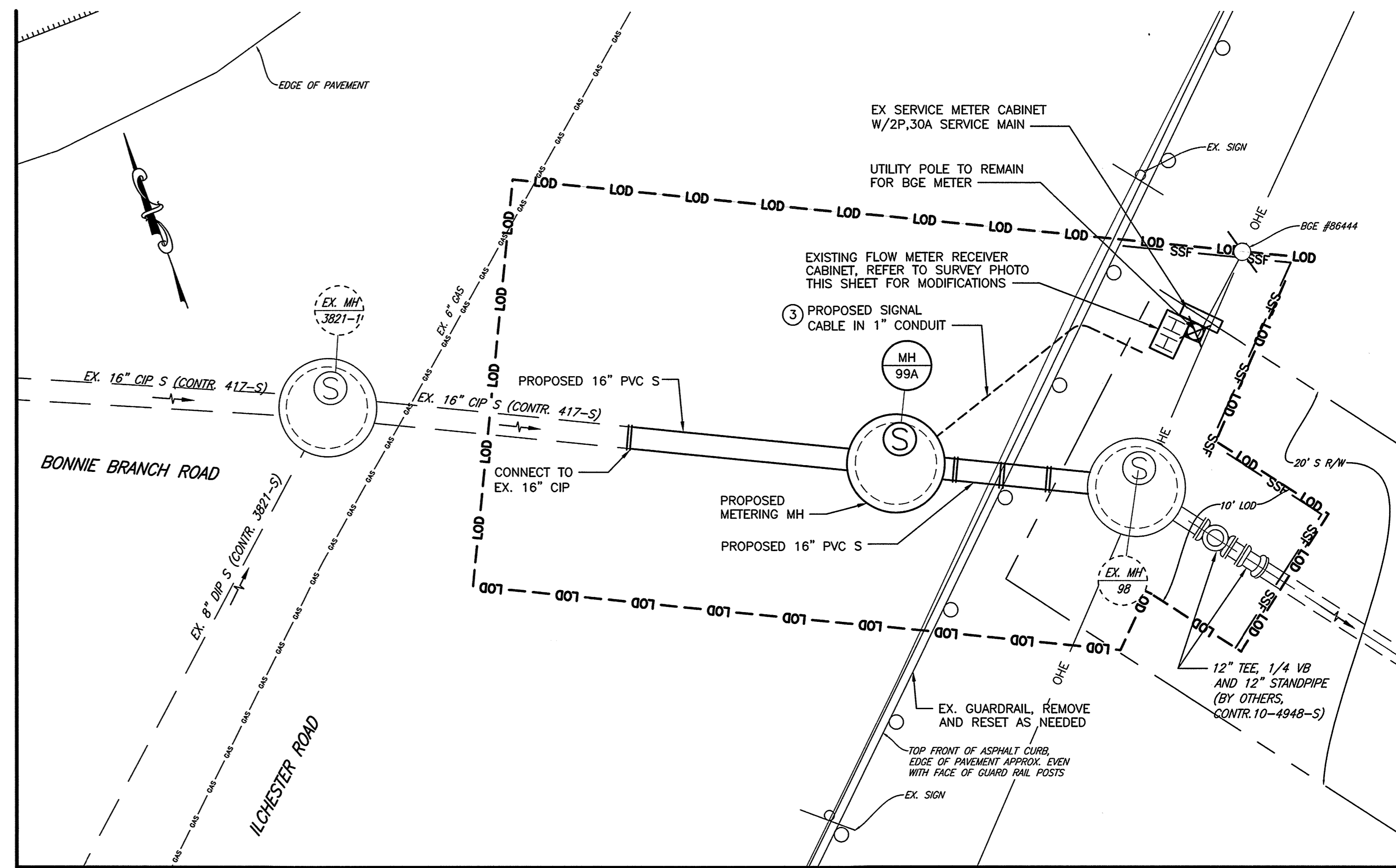
PROPOSED BILLING FLOW METER PLANS AND SECTIONS

BONNIE BRANCH INTERCEPTOR SEWER IMPROVEMENTS
 CONTRACT NO. 10-5034
 2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

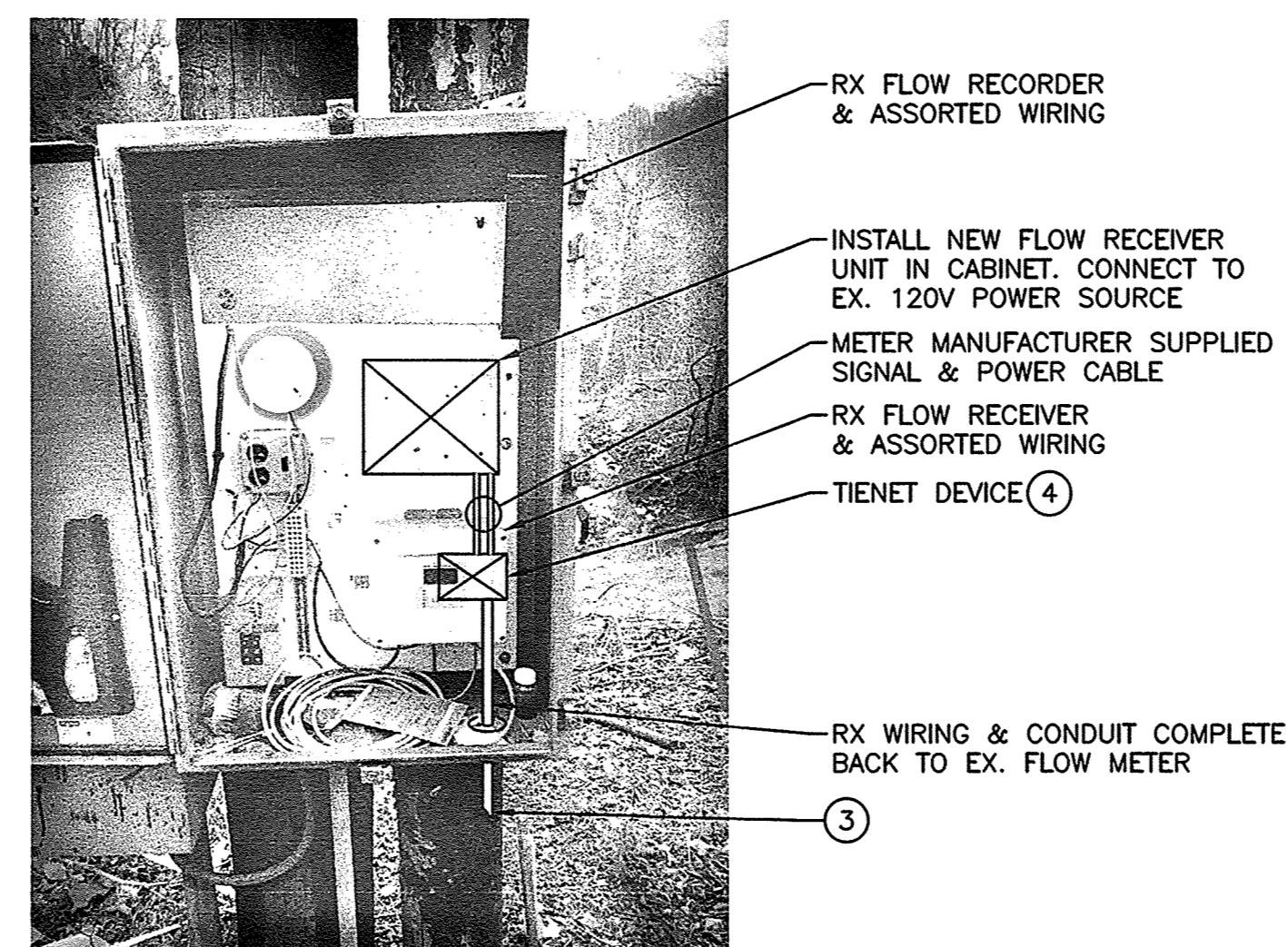
SCALE AS SHOWN
 SHEET 10 OF 16



SECTION A-A
PROPOSED FLOW METER AT 99A DETAIL
 SCALE: NTS



PROPOSED PLAN
 SCALE: 1"=5'



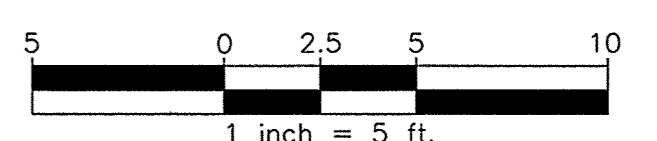
EXISTING FLOW METER RECEIVER CABINET
 (SURVEY PHOTO 2017-12-12)

SHEET NOTES:

- 1 TERMINATE CONDUIT 3" BEYOND INTERIOR FACE OF MANHOLE. PROVIDE INSULATED BUSHING & STAINLESS STEEL CABLE STRAIN RELIEF DEVICE.
- 2 PROVIDE SEALING FITTING PRIOR TO CONDUIT ENTRY INTO JUNCTION BOX. SEALING FITTING SHALL BE COMPOUND FILLED.
- 3 INSTALL SIGNAL CABLE SUPPLIED BY METER MANUFACTURER IN 1" C. FROM MANHOLE TO TIENET DEVICE IN EXISTING FLOW METER RECEIVER CABINET.
- 4 INSTALL TIENET DEVICE IN EXISTING FLOW METER RECEIVER CABINET. UTILIZE CORD-GRIP FITTINGS SUPPLIED BY FLOW METER MANUFACTURER FOR ALL CABLE CONNECTIONS TO TIENET DEVICE.

ELECTRICAL LEGEND:

- A AMPERES
- C CONDUIT
- EX EXISTING
- JB JUNCTION BOX
- MFR MANUFACTURER
- RX REMOVE EXISTING
- V VOLTS
- ⊠ SPECIAL DEVICE AS NOTED
- # DENOTES REFERENCE TO SHEET NOTE NUMBER.
- CONDUIT - UNDERGROUND IN PLAN



DATE: 1/17/2021 12:01:58 PM - Bonnie Branch & Bonnie Branch Interceptor Electrical Details.dwg 12/21/2020 1:52 PM usdra mfb-lps-ctb

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Melvin 1/12/2021
 DIRECTOR OF PUBLIC WORKS DATE

John 1-8-2021
 CHIEF, BUREAU OF ENGINEERING DATE

John 1-17-2021
 CHIEF, UTILITY DESIGN DIVISION DATE

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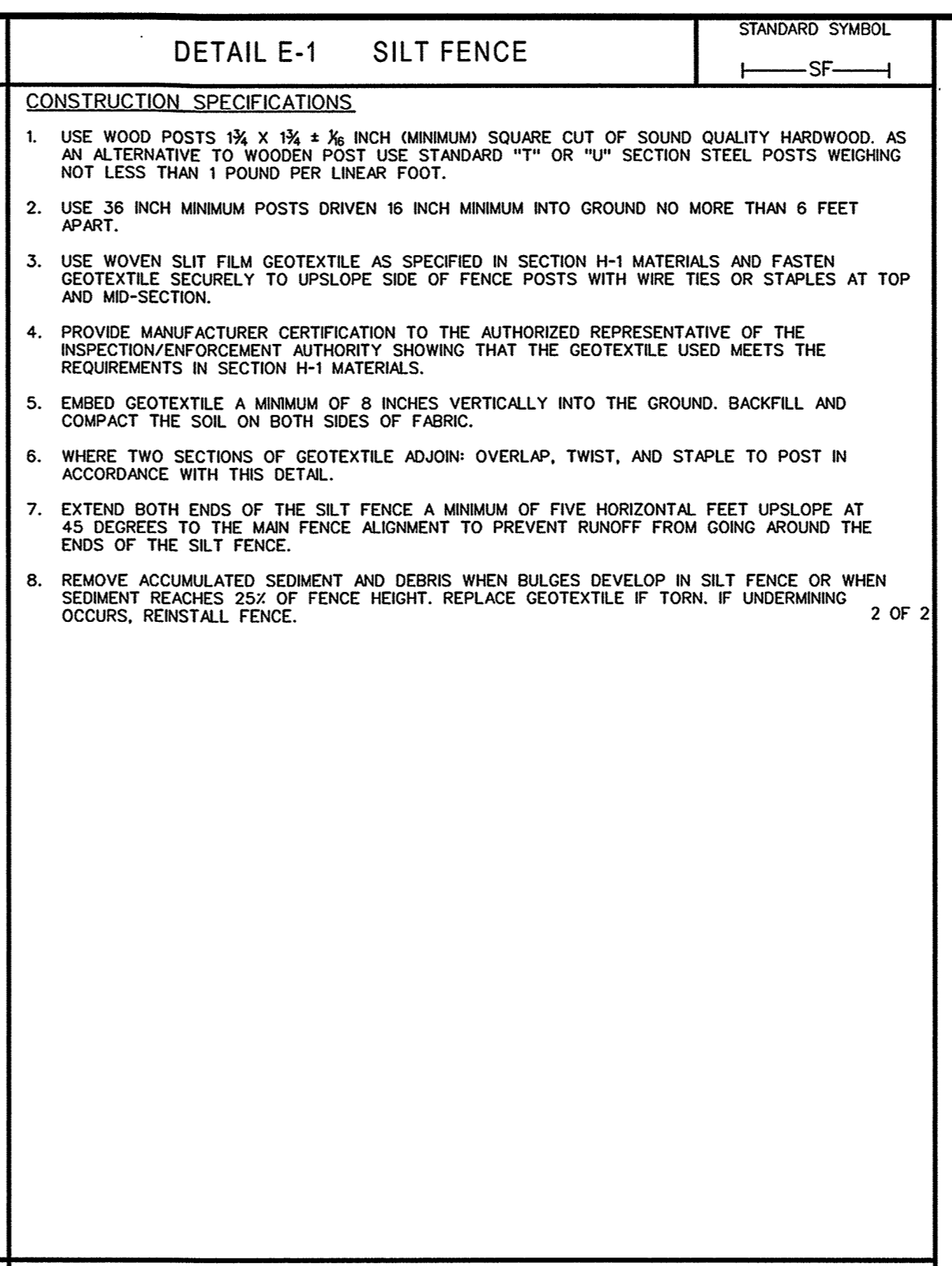
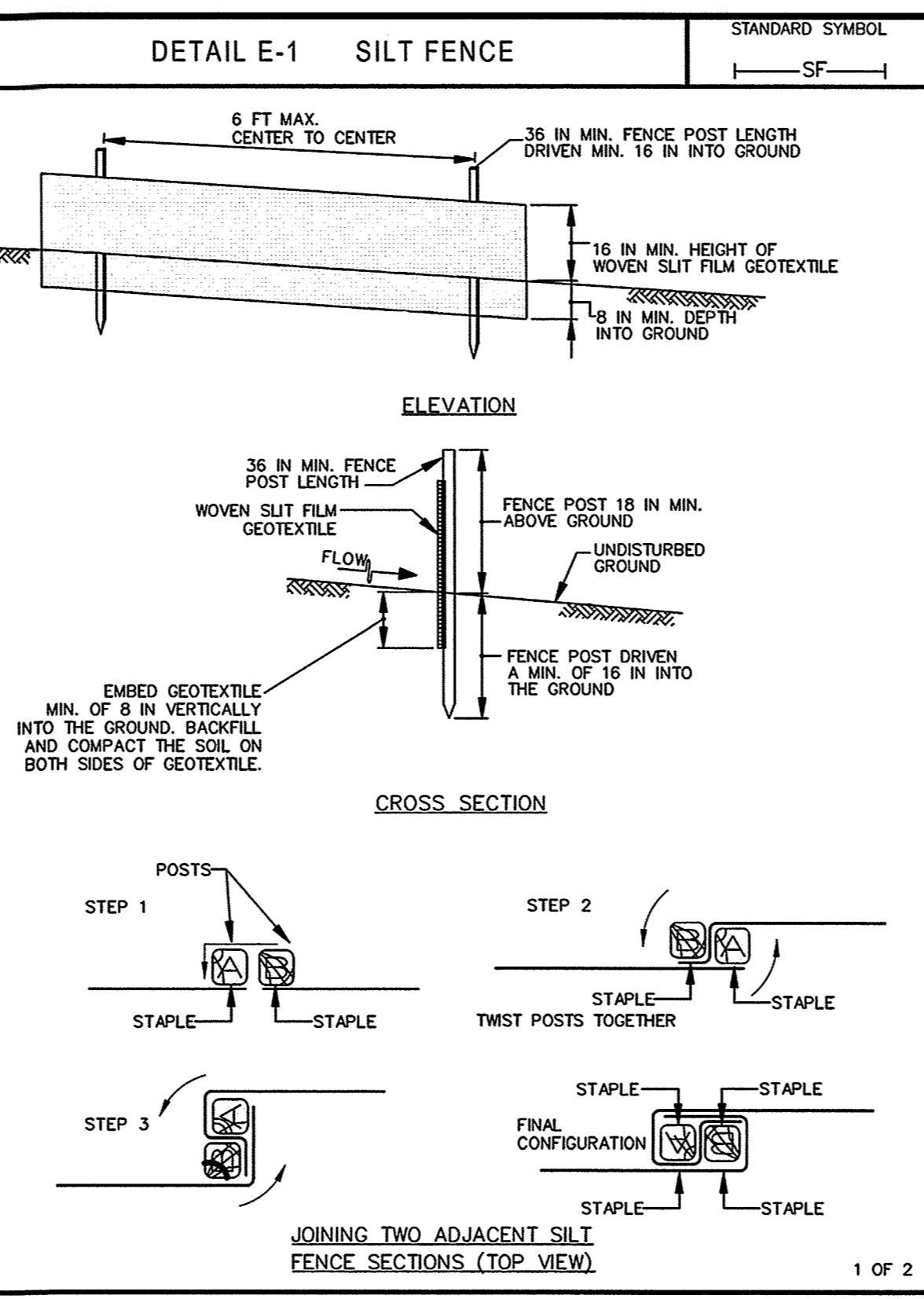
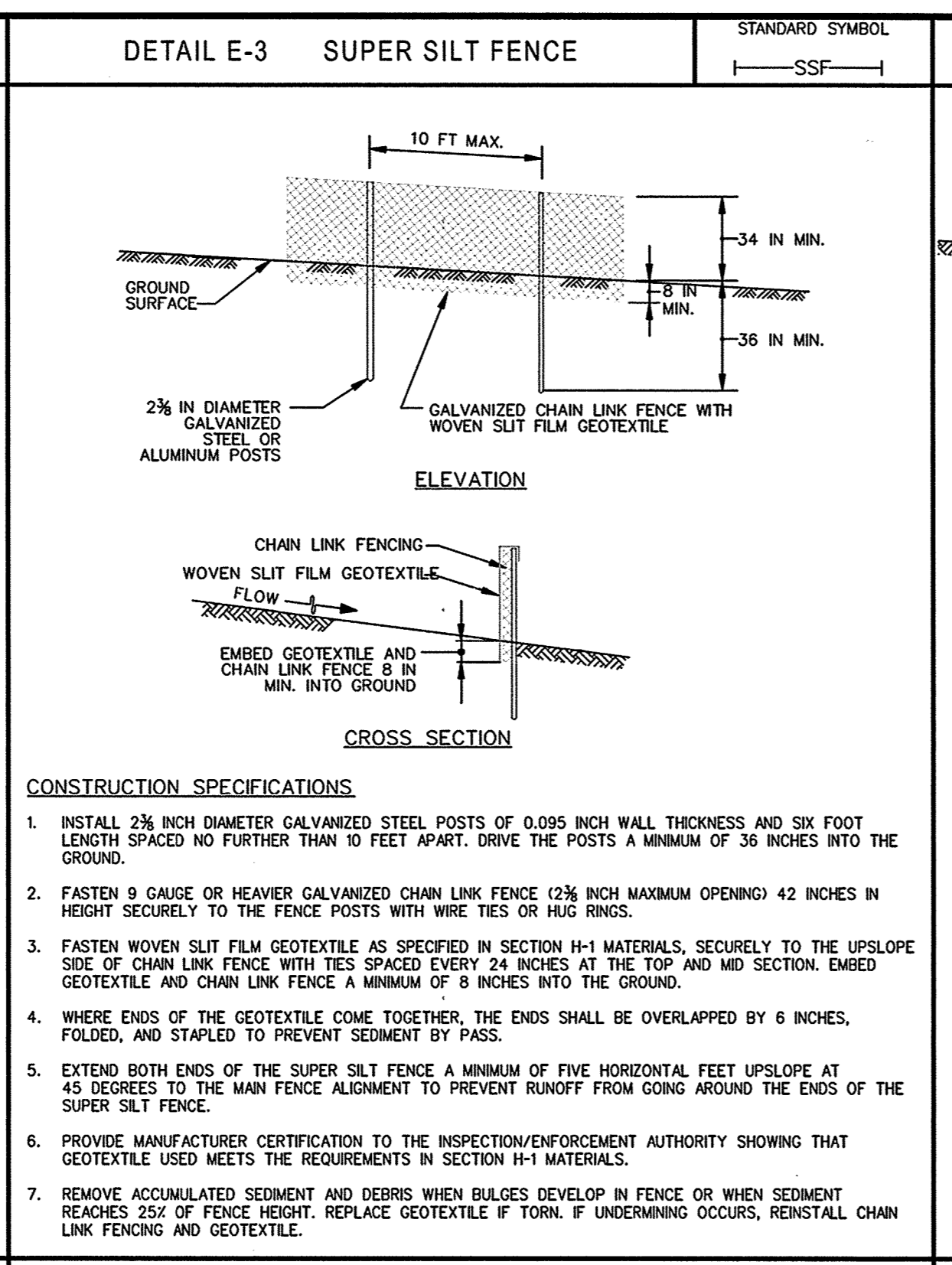
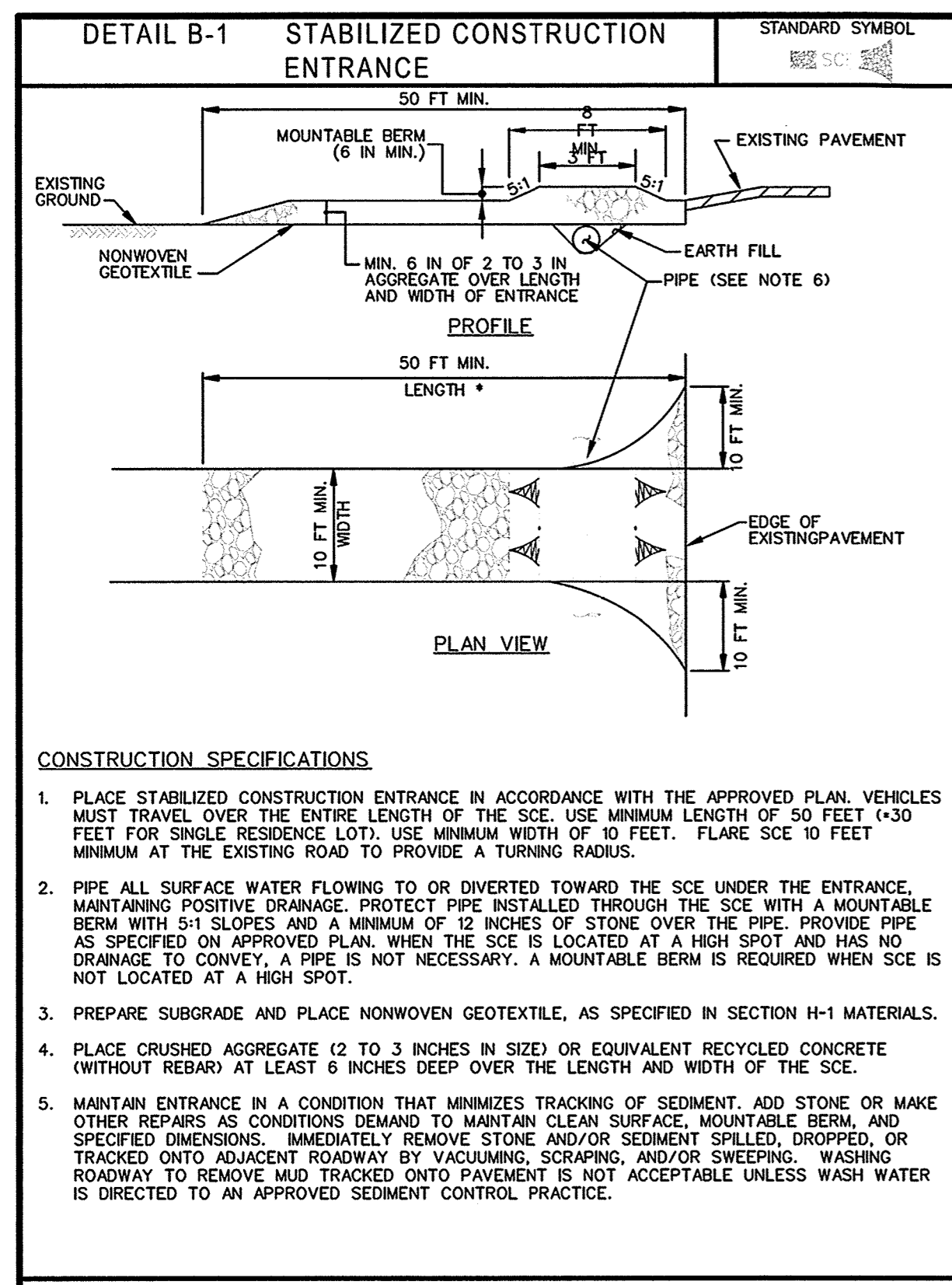
DES:	WMG				
DRN:	BRW				
CHK:	AWW				
DATE:	12/2020	BY:	NO.	REVISION	DATE

ELECTRICAL PLAN, DETAILS AND NOTES

600 SCALE MAP NO. 31 BLOCK NO. 4

BONNIE BRANCH INTERCEPTOR SEWER IMPROVEMENTS
 CONTRACT NO. 10-5034
 2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 11 OF 16



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

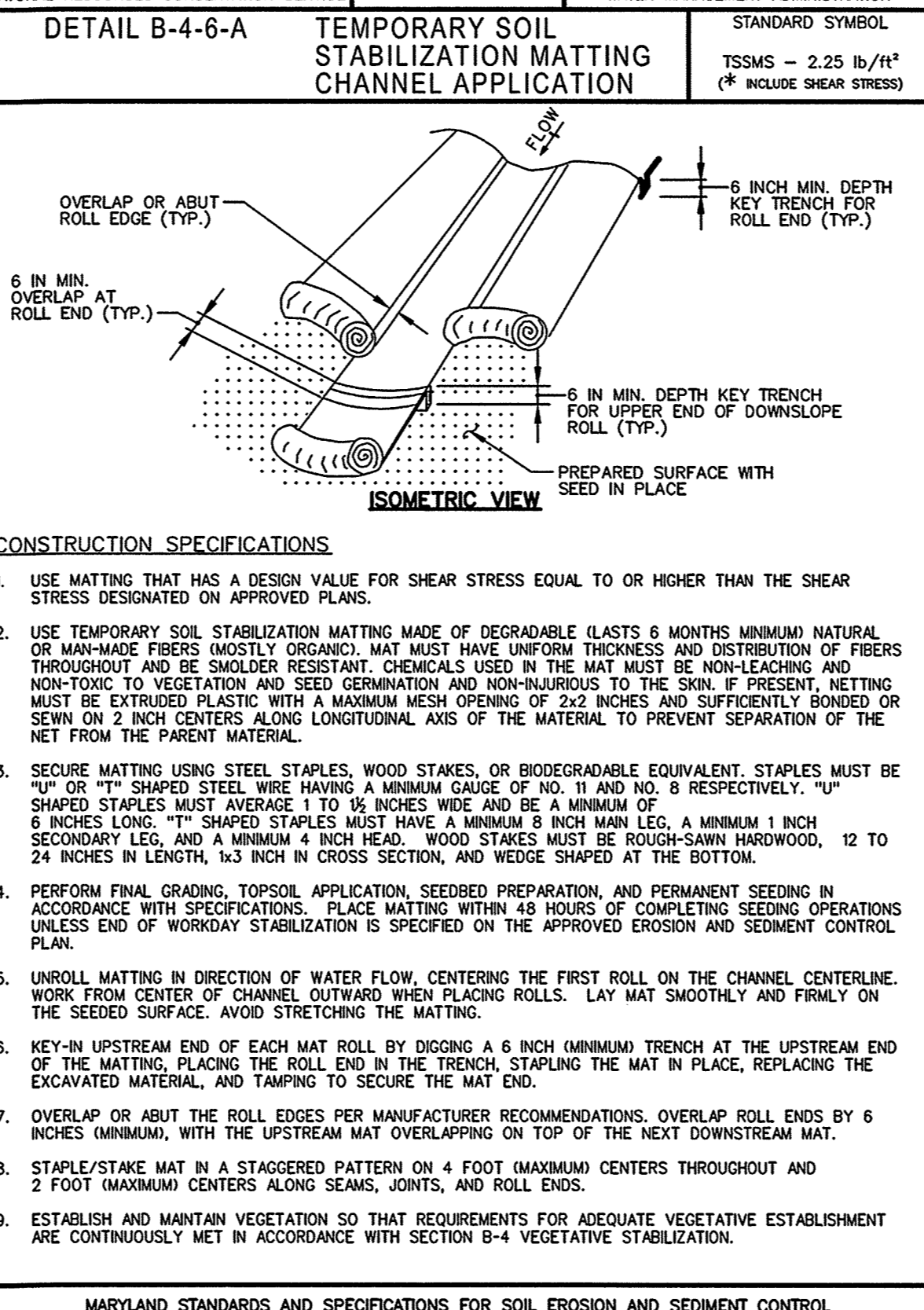
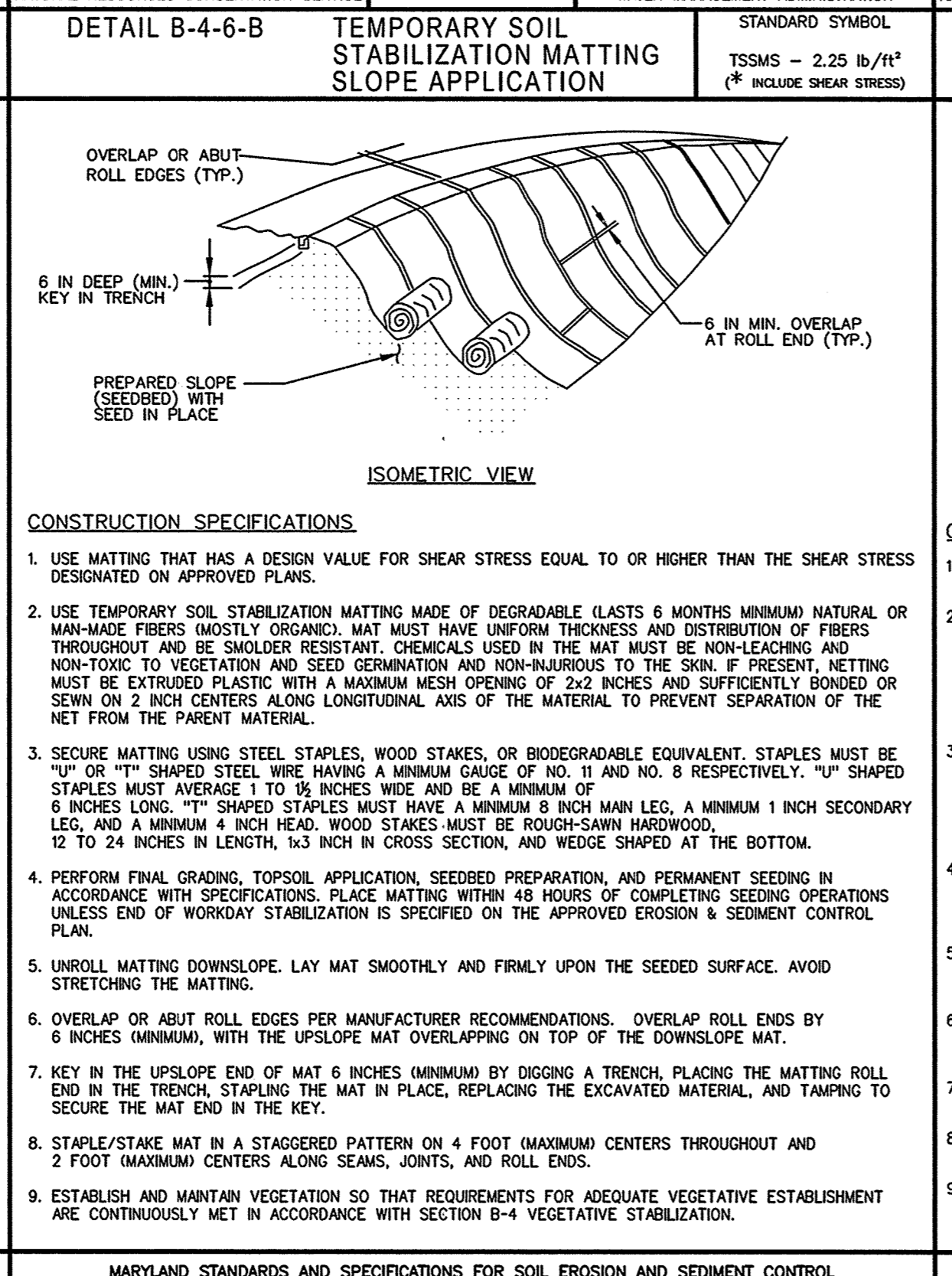
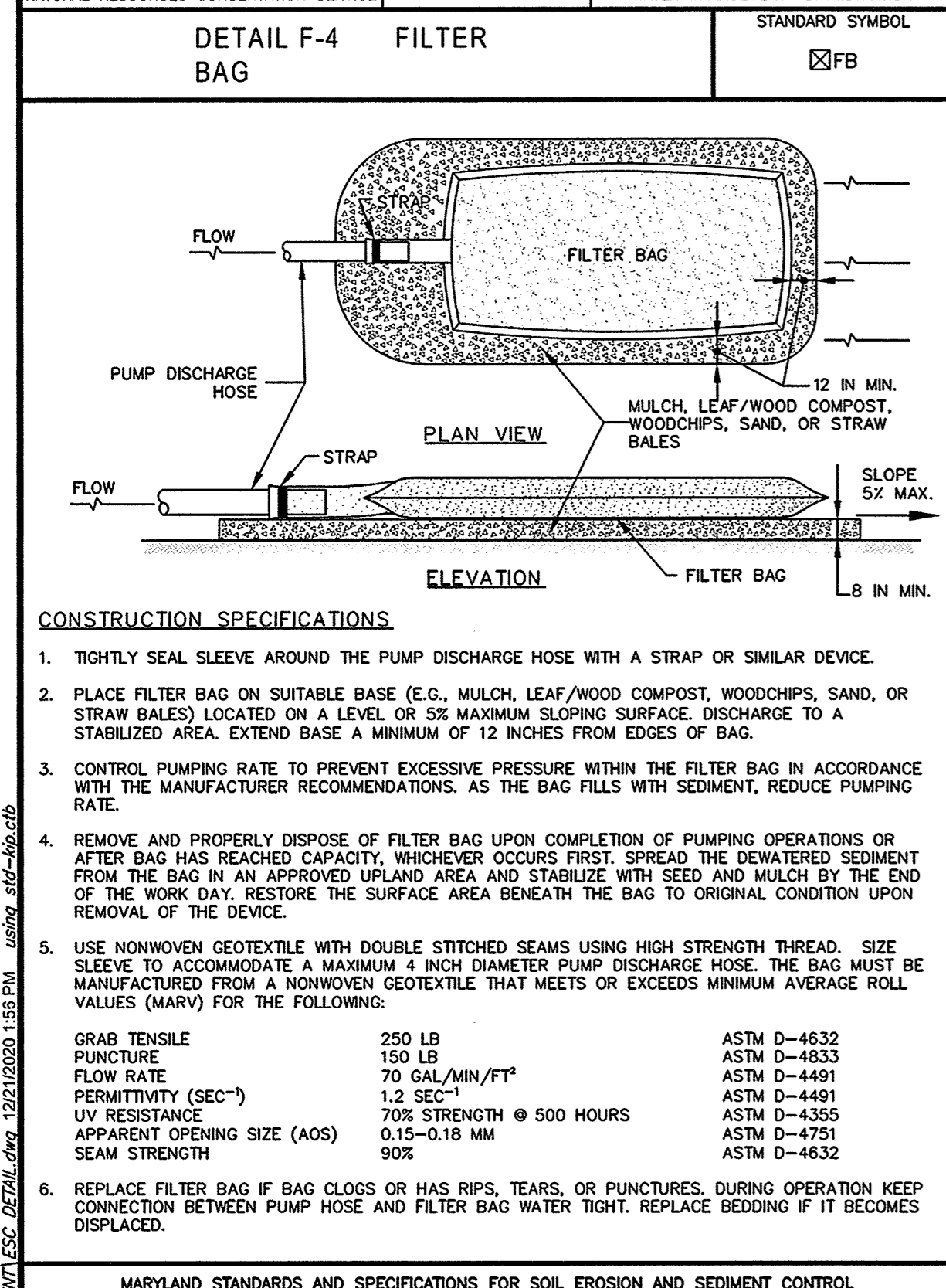
- No excess fill, construction material, or debris shall be stockpiled or stored in nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- Do not use the excavated material as backfill if it contains waste metal products, unsightly debris, toxic material, or any other deleterious substance. If additional backfill is required, use clean material free of waste metal products, unsightly debris, toxic material, or any other deleterious substances.
- Place heavy equipment on mats or suitably operate the equipment to prevent damage to nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- Repair and maintain any serviceable structure or fill so there is no permanent loss of nontidal wetlands, nontidal wetland buffers, or waterways, or permanent modification of the 100-year flood plain in excess of that lost under the originally authorized structure or fill.
- Rectify any nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year flood plain temporarily impacted by any construction.
- All stabilization in the nontidal wetland and nontidal wetland buffer shall consist of the following species: annual ryegrass (*Lolium multiflorum*), millet (*Setaria italica*), barley (*Hordeum sp.*), oats (*Avena sp.*), and/or rye (*Secale cereale*). These species will allow for 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 rescue shall not be utilized in wetland or buffer areas. The area should be seeded and mulched to reduce erosion after construction activities have been completed.
- After installation has been completed, make post-construction grades and elevations the same as the original grades and elevations in temporarily impacted areas.
- To protect aquatic species, in-stream work is prohibited as determined by classification of the stream:
 - Use 1 water: in-stream work shall not be conducted during the period of march 1 through June 15, inclusive, during any year.
- Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway.
- Culverts shall be constructed and any riprap placed so as not to obstruct the movement of the aquatic species, unless the purpose of the activity is to impound water.

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	

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	

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	

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	



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	

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	

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	

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	

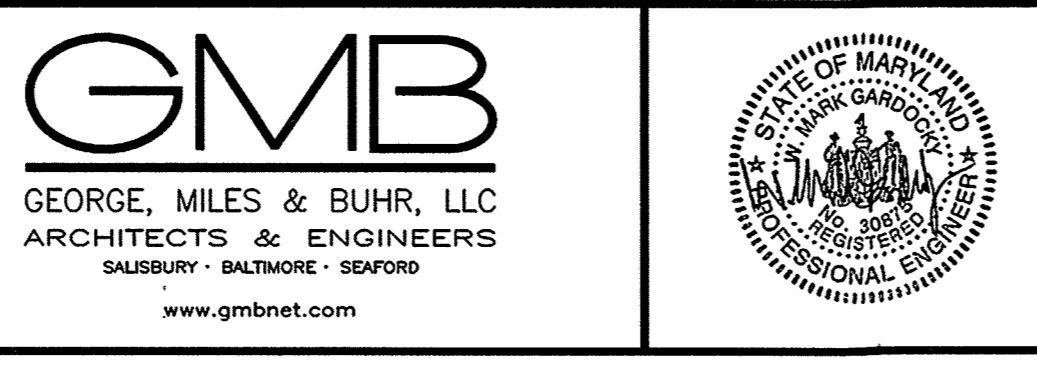
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

M. J. ... 11/2/2021
DIRECTOR OF PUBLIC WORKS DATE

A. ... 1-8-2021
CHIEF, BUREAU OF ENGINEERING DATE

C. ... 1-11-21
CHIEF, BUREAU OF UTILITIES DATE

S. ... 1/7/2021
CHIEF, UTILITY DESIGN DIVISION DATE



DES: WMG
DRN: BRW
CHK: AWW
DATE: 12/2020

BY	NO.	REVISION	DATE

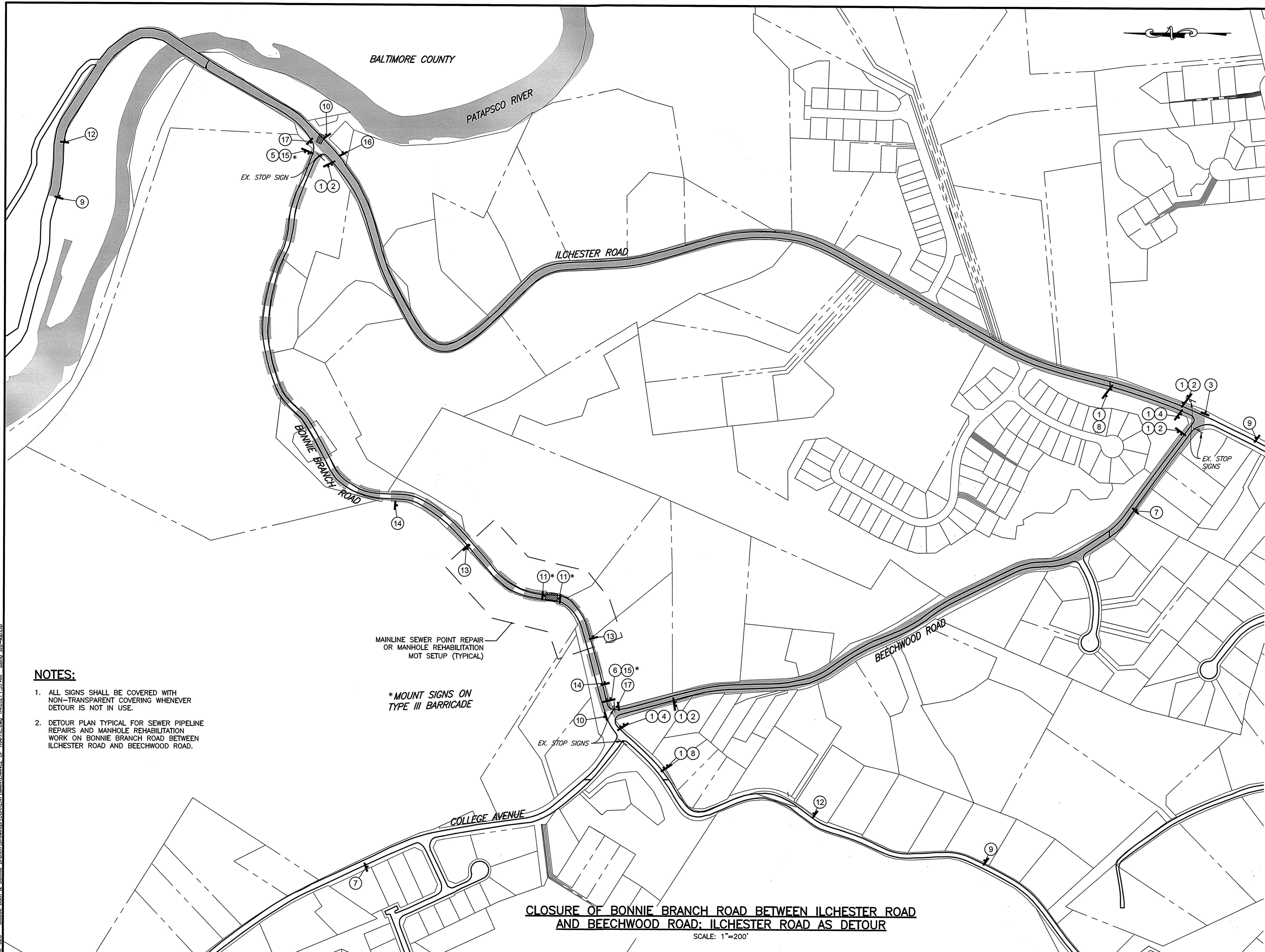
EROSION AND SEDIMENT CONTROL DETAILS AND NOTES

BONNIE BRANCH
INTERCEPTOR SEWER IMPROVEMENTS
CONTRACT NO. 10-5034
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

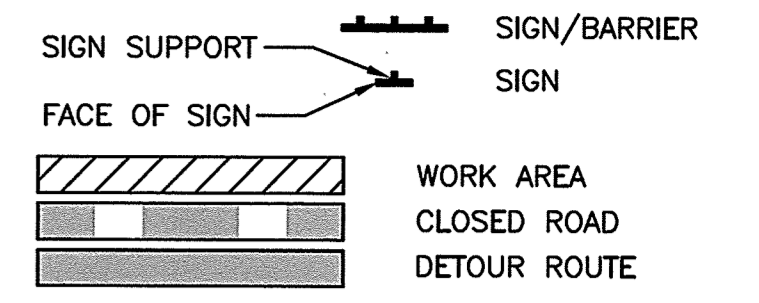
SCALE AS SHOWN

SHEET 12 OF 16

DATE: 1/11/2021 12:01:08 PM - BONNIE BRANCH, HOWARD COUNTY, MARYLAND



LEGEND



SIGNAGE

ICON No.	DETAIL	REFERENCE
1	BONNIE BRANCH ROAD	M4-9(1) 30"x12"
2	DETOUR	M4-9(MOD) 30"x24"
3	DETOUR	M4-9L 30"x24"
4	DETOUR	M4-9R 30"x24"
5	DETOUR	M4-10L 48"x18"
6	DETOUR	M4-10R 48"x18"
7	DETOUR	M5-1L(MOD) 30"x24"
8	DETOUR	M5-1R(MOD) 30"x24"
9	NOTICE BONNIE BRANCH ROAD CLOSED AT BEECHWOOD ROAD FOLLOW DETOUR	R11-2(all) 60"x48" BLACK ON YELLOW BLACK ON WHITE BLACK ON ORANGE
10	END DETOUR	M4-8a(1) 34"x24"
11	ROAD CLOSED	R11-2 48"x30"
12	DETOUR 800 FT	W20-2(1) 48"x48"
13	ROAD CLOSED AHEAD	W20-3 48"x48"
14	ROAD CLOSED 800 FT	W20-3 48"x48"
15	ROAD CLOSED AHEAD LOCAL TRAFFIC ONLY	R11-3a 60"x30"
16	NO LEFT TURN	R3-2L 24"x24"
17	NO RIGHT TURN	R3-1R 24"x24"

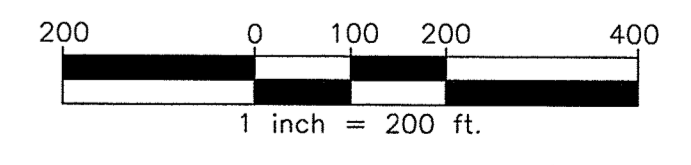
NOTES:

- ALL SIGNS SHALL BE COVERED WITH NON-TRANSPARENT COVERING WHENEVER DETOUR IS NOT IN USE.
- DETOUR PLAN TYPICAL FOR SEWER PIPELINE REPAIRS AND MANHOLE REHABILITATION WORK ON BONNIE BRANCH ROAD BETWEEN ILCHESTER ROAD AND BEECHWOOD ROAD.

MAINLINE SEWER POINT REPAIR OR MANHOLE REHABILITATION NOT SETUP (TYPICAL)

*MOUNT SIGNS ON TYPE III BARRICADE

CLOSURE OF BONNIE BRANCH ROAD BETWEEN ILCHESTER ROAD AND BEECHWOOD ROAD: ILCHESTER ROAD AS DETOUR
SCALE: 1"=200'



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Morgan 11/2/2021
DIRECTOR OF PUBLIC WORKS DATE

James 1/9/2021
CHIEF, BUREAU OF ENGINEERING DATE

Go 1-10-24
CHIEF, BUREAU OF UTILITIES DATE

JD 11/2/2021
CHIEF, UTILITY DESIGN DIVISION DATE

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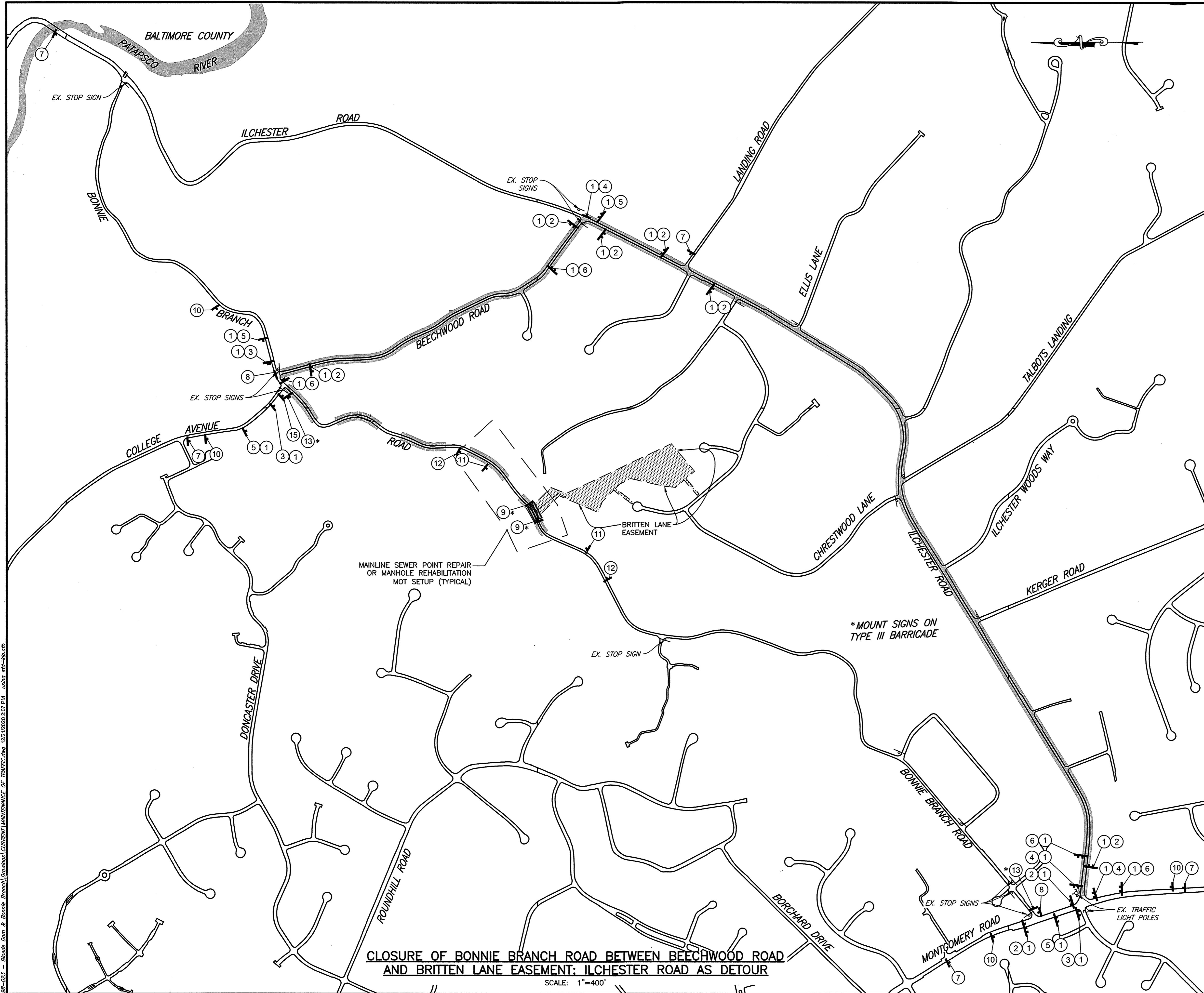
DES: WMG				
DRN: BRW				
CHK: AWW				
DATE: 12/2020	BY NO.	REVISION	DATE	

MAINTENANCE OF TRAFFIC

600 SCALE MAP NO. 31 BLOCK NO. 4

BONNIE BRANCH INTERCEPTOR SEWER IMPROVEMENTS
CONTRACT NO. 10-5034
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 15 OF 16



LEGEND

SIGN SUPPORT ——— SIGN/BARRIER
 FACE OF SIGN ——— SIGN

WORK AREA (hatched box)
 CLOSED ROAD (dashed line)
 DETOUR ROUTE (solid line)

NOTES:

- ALL SIGNS SHALL BE COVERED WITH NON-TRANSPARENT COVERING WHENEVER DETOUR IS NOT IN USE.
- DETOUR PLAN TYPICAL FOR SEWER PIPELINE AND MANHOLE REHABILITATION WORK ON BONNIE BRANCH ROAD BETWEEN COLLEGE AVENUE AND BRITTEN LANE EASEMENT
- BRITTEN LANE EASEMENT CONSISTS OF COMBINED WATER & SEWER EASEMENTS OF BRITTEN LANE AND FOREST CONSERVATION EASEMENT OPEN SPACE LOT 22 DEED: L. 04771, F 671

SIGNAGE

ICON No.	DETAIL	REFERENCE
①	BONNIE BRANCH ROAD	M4-9(1) 30"x12"
②	DETOUR (up arrow)	M4-9(MOD) 30"x24"
③	DETOUR (left arrow)	M4-9L 30"x24"
④	DETOUR (right arrow)	M4-9R 30"x24"
⑤	DETOUR (left turn arrow)	M5-1L 30"x24"
⑥	DETOUR (right turn arrow)	M5-1R 30"x24"
⑦	NOTICE: BONNIE BRANCH ROAD CLOSED AT COLLEGE AVENUE. FOLLOW DETOUR	R11-2(alt) 60"x48" <small>BLACK ON YELLOW BLACK ON WHITE BLACK ON ORANGE</small>
⑧	END DETOUR	M4-8a(1) 34"x24"
⑨	ROAD CLOSED	R11-2 48"x30"
⑩	DETOUR 800 FT	W20-2(1) 48"x48"
⑪	ROAD CLOSED AHEAD	W20-3 48"x48"
⑫	ROAD CLOSED 800 FT	W20-3 48"x48"
⑬	ROAD CLOSED AHEAD LOCAL TRAFFIC ONLY	R11-3a 60"x30"
⑭	No Right Turn	R3-2L 24"x24"
⑮	No Left Turn	R3-1R 24"x24"

SCALE: 1"=400'
 1 inch = 400 ft.

CLOSURE OF BONNIE BRANCH ROAD BETWEEN BEECHWOOD ROAD AND BRITTEN LANE EASEMENT: ILCHESTER ROAD AS DETOUR

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

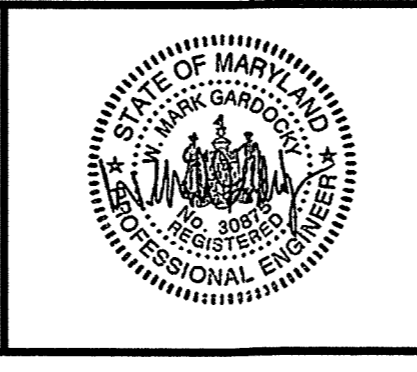
Melvin 1/2/2021
 DIRECTOR OF PUBLIC WORKS DATE

Anthony 1/8/2021
 CHIEF, BUREAU OF ENGINEERING DATE

John 1-11-21
 CHIEF, BUREAU OF UTILITIES DATE

John 1/7/2021
 CHIEF, UTILITY DESIGN DIVISION DATE

GMB
 GEORGE, MILES & BUHR, LLC
 ARCHITECTS & ENGINEERS
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MAINTENANCE OF TRAFFIC

600 SCALE MAP NO. 31 BLOCK NO. 4

BONNIE BRANCH INTERCEPTOR SEWER IMPROVEMENTS
 CONTRACT NO. 10-5034
 2ND ELECTION DISTRICT
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SCALE AS SHOWN
 SHEET 18 OF 18

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