


QUANTITIES				
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER / SUPPLIER
8" PVC C900 WATER DR 18"	1,917 LF	1,917 LF	C900 DR-18	JM EAGLE
6" PVC C900 WATER DR 18"	54 L.F.	54 LF	C900 DR-18	JM EAGLE
8" 1/8 HB	6 EA.	6 EA	MJ	TYLER UNION
8" 1/16 HB	6 EA.	6 EA	MJ	TYLER UNION
8" 1/32 HB	2 EA.	2 EA	MJ	TYLER UNION
12" X 8" TS&V	2 EA.	2 EA	MJ	AMERICAN FLOW
8" X 6" FHT	4 EA.	4 EA	MJ	TYLER UNION
FIRE HYDRANT	4 EA.	4 EA	MJ	AMERICAN DARLING
8" 1/32 VB	12 EA.	12 EA	MJ	TYLER UNION
8" PVC SDR 35 SEWER	200 L.F.	200 LF	SDR 35	JM EAGLE
PRECAST MANHOLE	8 EA.	8 EA	PRECAST	CONTRACTOR'S PRECAST CORP.
8" DIP CL 52 SEWER	1,237 L.F.	1,237 LF	DIP CL 52	US PIPE & FOUNDRY

*SEE NOTE 1 OF WATER NOTES

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 February 2016 by Pennoni Associates and Mapping Resource Group. The boundary survey is provided by Pennoni Associates, Inc., dated February 2016.
- Horizontal and Vertical Survey Controls:
The coordinates shown on the drawings are based on Maryland State Reference System NAD '83/91 as projected by Howard County Geodetic Control Stations No. 43CE and No. 43FC.
- 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 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 at the locations of the test pits. A note or notes containing the results of the test pit or pits is included on the drawings. Existing utilities in the vicinity of the proposed work for which test pits have not been dug shall be located by the contractor two weeks in advance of construction operations at his own expense.
- The contractor shall notify the following utility companies or agencies at least five working days before starting work shown on these plans:

AT&T	1-800-252-1133
BGE (contractor services)	410-637-8713
BGE (emergency)	410-685-0123
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 the Bureau of Highways, Howard County, at 410-313-7450 at least five working days before open cutting or boring/jacking of any County roads 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.
- A Design Manual Waiver to allow the use of alternate installation technology for sewer main installation, Section 5.14 of the Howard County Design Manual Volume II, was approved on February 23, 2017. The construction shall be in accordance with the applicable sections of the Howard County Design Manuals. This waiver includes the following conditions:
 - Casing pipe shall be 36" diameter with a minimum thickness of 0.5". Casing spacers and end seals shall be provided per the Design Manual requirements.
 - Provide an 8" carrier pipe using DIP completely between the manholes with push on Restrained Joint Ductile Iron Pipe.
 - Casing length shall extend a minimum of 5' outside limits of wetland buffer crossing and road paving.
 - Clearance to crossing utility shall be 12" minimum.

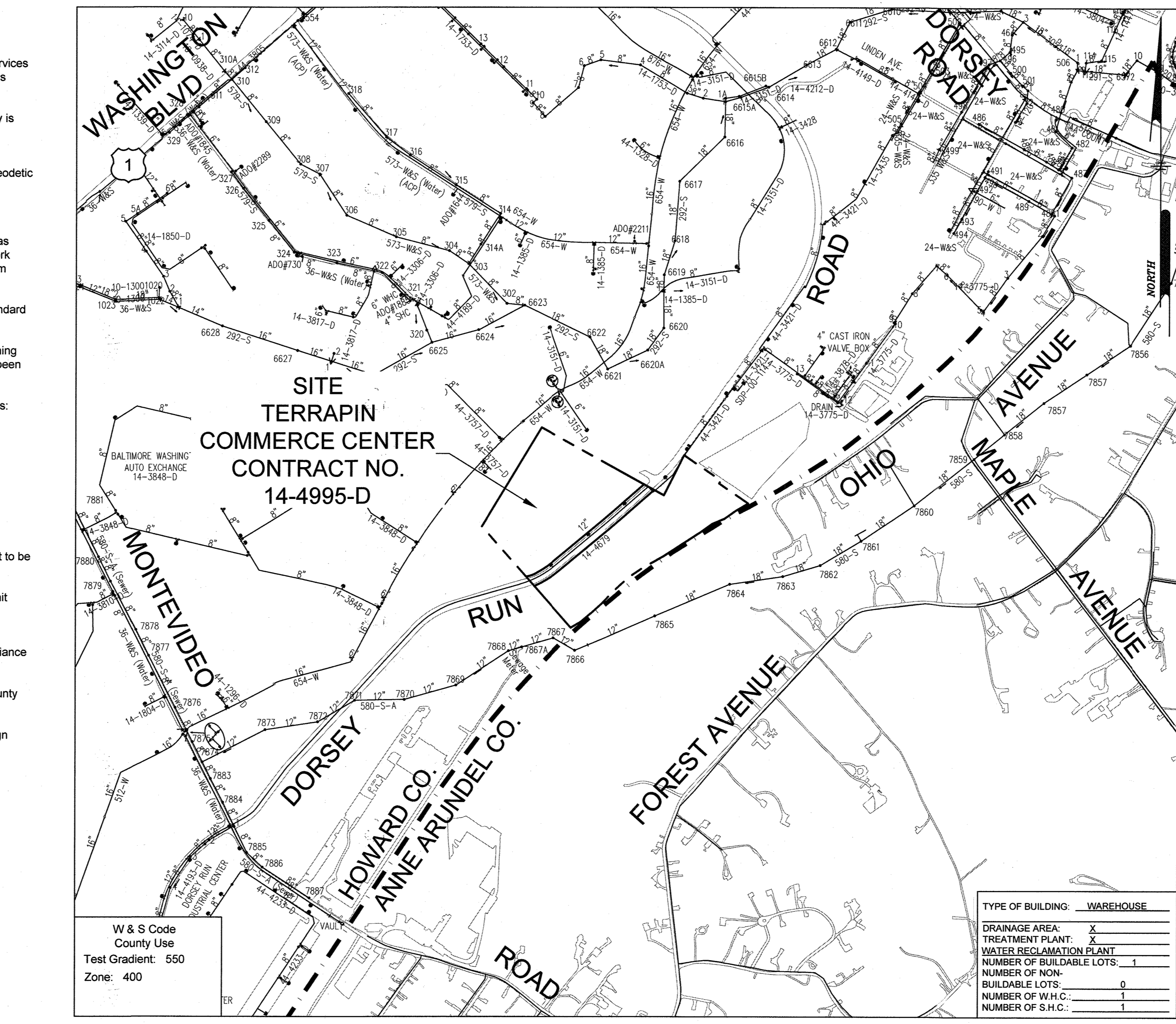
NAME OF UTILITY CONTRACTOR:		CHECKBOX
Sediment control measures for this contract will be implemented in accordance with Section 30B of the Specifications located in Design Manual IV and as shown on SDP-17-030.		AS-BUILT DATE: 7/24/18
OWNER:		SURVEY AND DRAFTING DIVISION
DCT MEARS LLC 12011 GUILFORD ROAD SUITE 102 ANNAPOLIS JUNCTION, MD 20701 ATTN: FRED FERRARO PHONE: 410-645-5020		DEVELOPER:
DCT INDUSTRIAL 12011 GUILFORD ROAD SUITE 102 ANNAPOLIS JUNCTION, MD 20701 ATTN: FRED FERRARO PHONE: 410-645-5020		
SITING DEVELOPMENT PLAN REFERENCE #: SDP-17-030 This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.		
 HOWARD SOIL CONSERVATION DISTRICT		DATE: 8/1/17

13. The final pavement repair associated with the work of contracts 4995 and 5012 shall extend 50 feet in both directions from the centerline of the farthest utility cut on either end - i.e. one complete final pavement patch is required.

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A QUALIFIED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 3886, EXPIRATION DATE: 5-23-2019.



Pennoni
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LOCATION MAP
SCALE: 1"=600'

TYPE OF BUILDING:	WAREHOUSE
DRAINAGE AREA:	X
TREATMENT PLANT:	X
WATER RECLAMATION PLANT:	X
NUMBER OF BUILDABLE LOTS:	1
NUMBER OF NON-BUILDABLE LOTS:	0
NUMBER OF WH. C.:	1
NUMBER OF S.H.C.:	1

WATER AND SEWER PLANS

TERRAPIN COMMERCE CENTER - BUILDING A

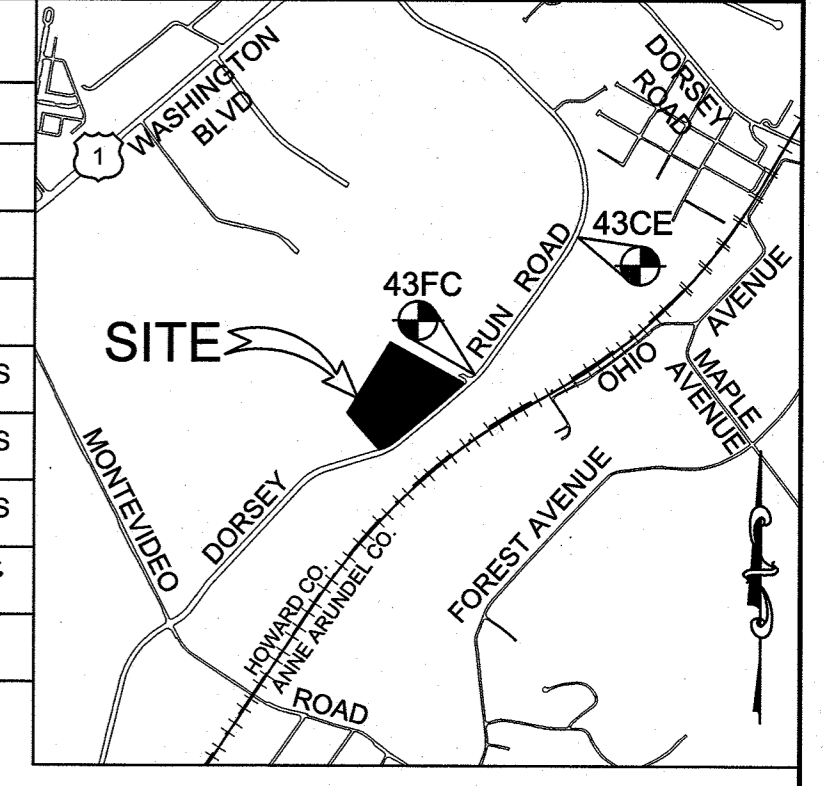
DORSEY RUN ROAD

1st ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

CONTRACT NO. 14-4995-D

SHEET INDEX	
NO.	DESCRIPTION
1	TITLE SHEET
2	PUBLIC WATER AND SEWER PLAN
3	PUBLIC WATER AND SEWER PLAN
4	PUBLIC WATER AND SEWER PROFILES
5	PUBLIC WATER AND SEWER PROFILES
6	PUBLIC WATER AND SEWER PROFILES
7	PUBLIC WATER AND SEWER PROFILES



VICINITY MAP

SCALE: 1"=2,000'
HOWARD COUNTY
ADC MAP 35 GRID A7
ADC MAP USE LICENSE #3652

BENCHMARKS

HOWARD COUNTY SURVEY CONTROL: 43CE
ELEVATION 198.143
N 545,595.935 E 1,391,719.808
LOCATION IS 3' FROM FACE OF CURB ALONG DORSEY RUN ROAD.

HOWARD COUNTY SURVEY CONTROL: 43FC
ELEVATION 157.933
N 545,199.448 E 1,390,081.244
LOCATION IS 3' FROM FACE OF CURB ALONG DORSEY RUN ROAD.

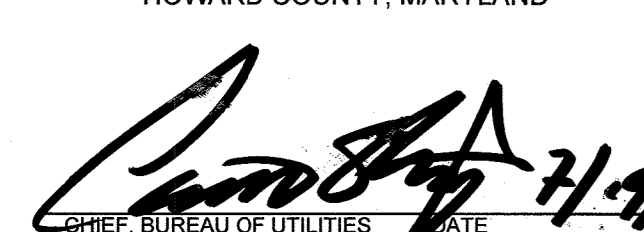
LEGEND:	
	EXISTING SEWER MAIN
	EXISTING WATER MAIN
	PROPOSED WATER MAIN
	PROPOSED SEWER MAIN
	PROPOSED FIRE HYDRANT
	PROPOSED VALVE

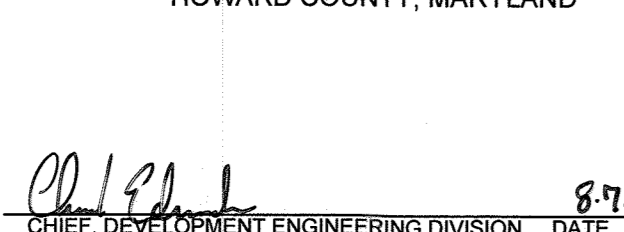
WATER NOTES

- ALL WATER MAINS TO BE C900 PVC WITH MIN WALL THICKNESS SDR 18 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
- ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE RESTRAINED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND 1005 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- TRACER WIRE AND CONTINUITY TEST STATIONS SHALL BE INSTALLED ON ALL DIP AND PVC WATER MAINS IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL.
- FOR PVC WATER MAINS, ALL RECORDS FOR THE QUALITY CONTROL AND QUALIFICATION TEST REQUIREMENTS NOTED IN SECTION 5.1 OF THE AWWA STANDARD C900 FOR PVC PRESSURE PIPE SHALL BE SUBMITTED WITH THE PIPE MATERIAL CERTIFICATIONS OR SHOP DRAWINGS PRIOR TO APPROVAL OF THE MATERIAL FOR USE. THE TEST RECORDS SHALL BE FOR THE PIPE TO BE INSTALLED UNDER THIS CONTRACT. ALL PVC PIPE SHALL CONTAIN MARKINGS TO ALLOW CROSS REFERENCING OF THE PIPE SUPPLIED TO THE TEST RECORDS RECEIVED.
- UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS SACRIFICIAL ANODES SHALL BE INSTALLED ON ALL VALVES AND METALLIC FITTINGS USED WITH PVC WATER MAINS IN ACCORDANCE WITH VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. SEVENTEEN (17) POUND MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING RESTRAINTS AND HARNESSES. TWELVE (12) POUND ZINC ANODES SHALL BE INSTALLED ON ALL STAINLESS STEEL FITTINGS AND SADDLES USED WITH PVC MAINS. ALL "TEES" USED WITH PVC MAINS SHALL BE DUCTILE IRON.
- PROPER ASSEMBLY OF GASKETED PVC PIPE JOINTS: THE MANUFACTURER'S INSERTION LINE OF GASKETED PVC PIPE JOINTS INDICATES THE MAXIMUM DEPTH OF INSERTION OF THE SPIGOT INTO THE BELL. AFTER ASSEMBLY OF THE JOINT, THE INSERTION LINE SHALL REMAIN VISIBLE. DUAL INSERTION LINES ON GASKETED PVC PIPE INDICATE THE MAXIMUM AND MINIMUM DEPTH OF INSERTION OF THE SPIGOT INTO THE BELL. THE CONTRACTOR SHALL NOT OVER INSERT OR OVER HOME THE SPIGOT INTO THE BELL OF THE PVC PIPE.
- ALL CHANGES IN HORIZONTAL OR VERTICAL DIRECTION OF PVC WATER PIPE SHALL BE MADE WITH STANDARD BENDS. 5-DEGREE SWEEPS OR HIGH DEFLECTION (HD) COUPLINGS. NO BENDING OF THE PIPE OR DEFLECTING OF PVC PIPE JOINTS IS PERMITTED. WHERE HIGH DEFLECTION COUPLINGS OR 5-DEGREE SWEEPS ARE PERMITTED, THE CONTRACTOR SHALL PROVIDE ON FULL PIPE LENGTH (20-FOOT LONG) ON EITHER SIDE OF THE HIGH DEFLECTION COUPLING OR 5-DEGREE SWEEP. THAT CONTRACTOR SHALL USE A VIBRATORY PLATE COMPACTOR OR OTHER APPROVED MEANS TO THOROUGHLY COMPACT THE #57 STONE ON BOTH SIDES OF THE HIGH DEFLECTION COUPLING OR 5-DEGREE SWEEP. TAKING CARE NOT TO USE COMPACTION EQUIPMENT DIRECTLY OVER THE FITTING.
- PVC HIGH DEFLECTION COUPLINGS SHALL BE LIMITED TO A TOTAL DEFLECTION OF 3-DEGREES (1 1/2 -DEGREE ON EITHER END OF THE COUPLING). SHALL BE RATED FOR A MINIMUM 200 PSI MEETING THE REQUIREMENTS OF AWWA C900. SHALL HAVE A MINIMUM LAY LENGTH OF 9-INCHES AND SHALL HAVE CENTER STOPS. PVC HIGH DEFLECTION COUPLINGS SHALL BE CERTAINTED PVC HIGH DEFLECTION (HD) STOP COUPLINGS OR EQUAL.
- FIVE DEGREE SWEEPS SHALL BE BELL BY SPIGOT, RATED FOR A MINIMUM 225 PSI, DR 18 MEETING THE REQUIREMENTS OF AWWA C900 AND SHALL BE MULTI FITTINGS (IPEX) BLUE BRUTE DR18 OR EQUAL.
- WHEN PVC HIGH DEFLECTION COUPLINGS OR PVC 5-DEGREE SWEEPS ARE USED TO FACILITATE CHANGES IN HORIZONTAL OR VERTICAL ALIGNMENTS OF AWWA C900 PVC PIPELINES, THE CONTRACTOR SHALL INSTALL DEVICES FOR THE PREVENTION OF OVER-INSERTION OF THE PVC PIPE SPIGOTS OR PLAIN ENDS INTO THE PUSH ON BELL JOINT ON BOTH SIDES OF THE HIGH DEFLECTION COUPLINGS AND 5-DEGREE SWEEPS. BELL STOPS SHALL BE PLACED AT THE PROPER INSERTION LINE FOR THE FITTING. THE BELL STOP SHALL BE MANUFACTURED OF DUCTILE IRON AND INCORPORATES AN EXPANSION RETENTION SPRING TO ALLOW FOR PIPE EXPANSION AND CONTRACTION. THE BELL STOPS SHALL BE SERIES 5000 MEGA-STOP, AS MANUFACTURED BY EBAA IRON, INC. OR APPROVED EQUAL.

SEWER NOTES

- ALL SEWER MAINS SHALL BE P.V.C. WITH MINIMUM WALL THICKNESS OF SDR 35 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 COVERS, STANDARD DETAIL G5.52. WHERE WATERTIGHT FRAME AND COVER IS 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.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

 CHIEF, BUREAU OF UTILITIES
DATE: 7/24/18

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

 CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 8/1/17

DES: AGS
DRN: AGS
CHK: SKC
DATE: 07/11/17

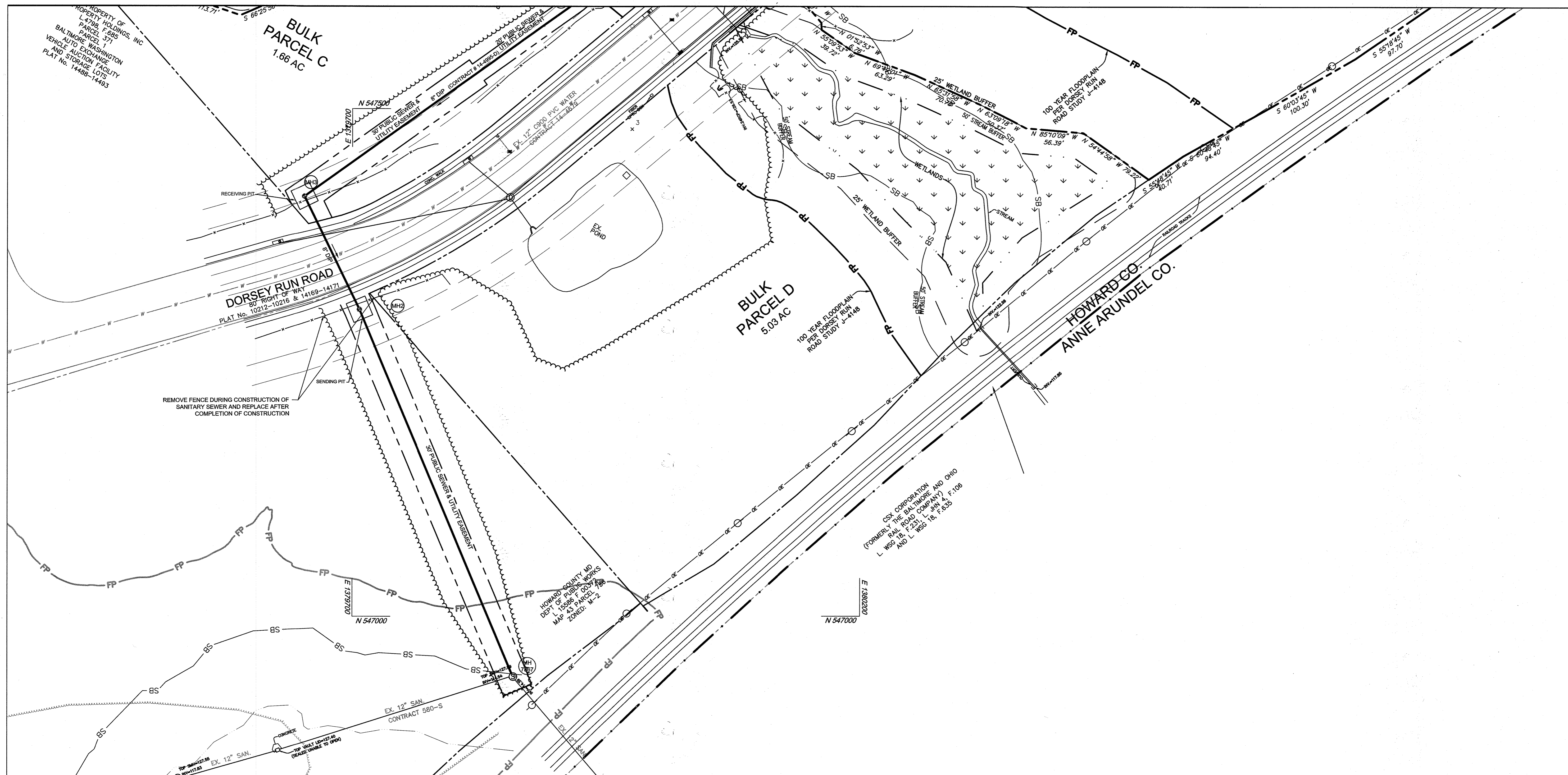
BY	NO.	REVISION	DATE
PA1	1	ADD GENERAL NOTE 13	7/24/18

PUBLIC WATER AND SEWER MAIN PLAN
800' SCALE MAP NO. _____ BLOCK NO. _____

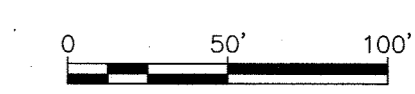
TERRAPIN COMMERCE CENTER
T.M. 43, PARCELS 51 GRID 10 ZONED M-2
1st ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 14-4995-D

SCALE
AS SHOWN
SHEET
1 OF 7

MATCHLINE SEE SHEET 3



PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 7086 CORPORATION DATE: 3-15-2017



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Sharon K. Cruz
CHIEF, BUREAU OF UTILITIES DATE: 3/14/17

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
Sharon K. Cruz
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 3-17-17

Pennoni
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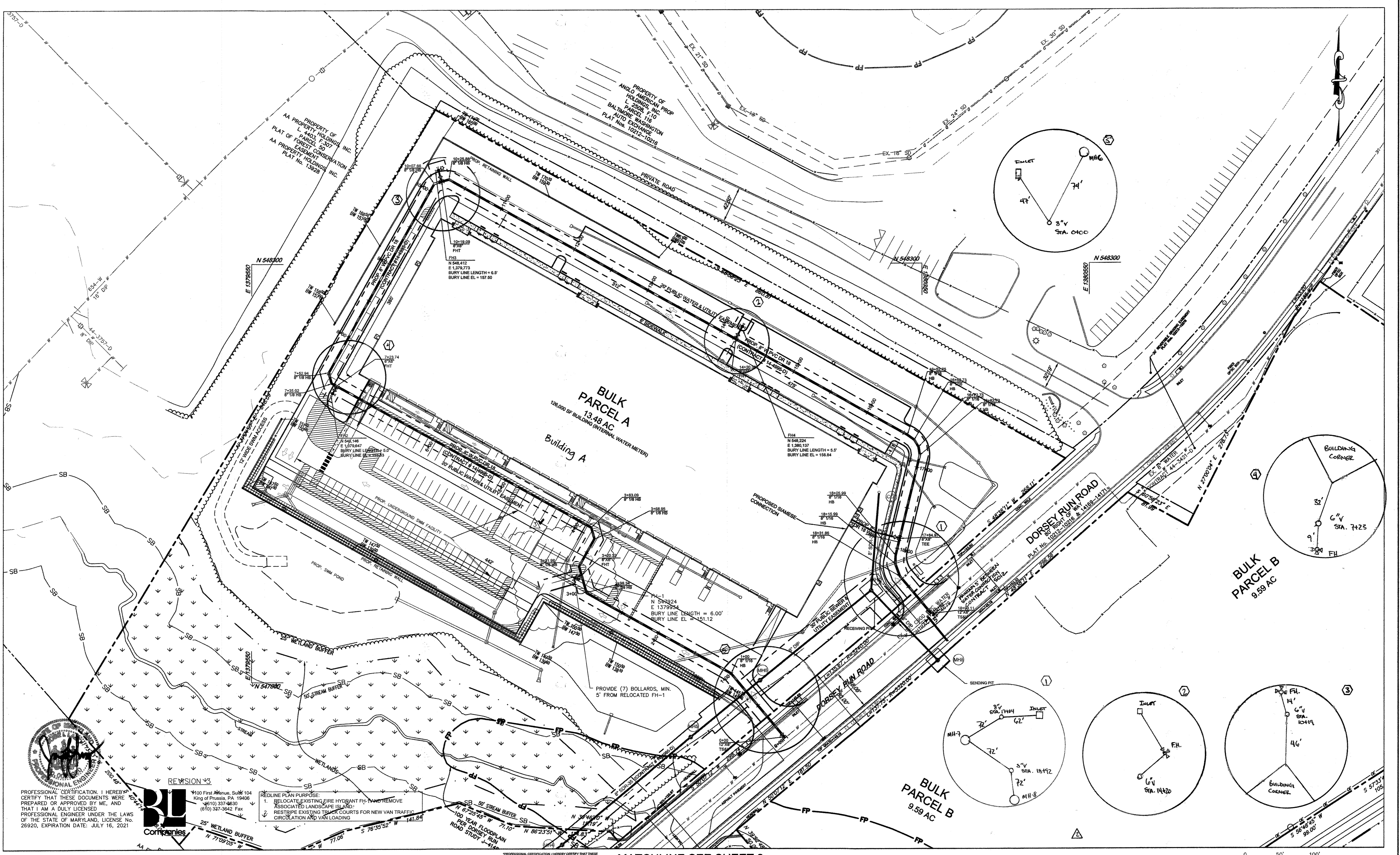


DES:	AGS				
DRN:	AGS				
CHK:	SKC				
DATE:	03/21/17	BY:	NO.	REVISION	DATE

PUBLIC WATER AND SEWER MAIN PLAN
600' SCALE MAP NO. _____ BLOCK NO. _____

TERRAPIN COMMERCE CENTER
T.M. 43, PARCELS 51 GRID 10 ZONED M-2
1st ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 14-4995-D

SCALE
1"=50'
SHEET
2 OF 7



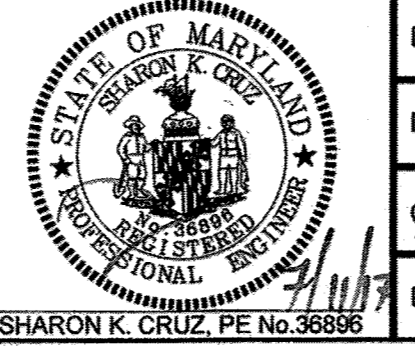
PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 26920, EXPIRATION DATE: JULY 16, 2021

REVISIONS
RL
 Companies

REDLINE PLAN PURPOSE:
 1. RELOCATE EXISTING FIRE HYDRANT FH-1 AND REMOVE ASSOCIATED LANDSCAPE ISLAND.
 2. RESTRIPE EXISTING TRUCK COURTS FOR NEW VAN TRAFFIC CIRCULATION AND VAN LOADING

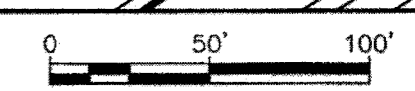
1100 First Avenue, Suite 104
 King of Prussia, PA 19406
 (610) 337-4630
 (610) 327-3542 Fax

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. 36866, EXPIRATION DATE: 3-12-2024



DES:	AGS		
DRN:	AGS		
CHK:	SKC	BL 3 FIRE HYDRANT LOCATION ADJUSTMENT	8/28/19
		KC1 2 AS-BUILT	8.24.19
DATE:	03/21/17	ALC 1 ADD NOTE	1.14.18
BY:	NO.	REVISION	DATE

MATCHLINE SEE SHEET 2



DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 DATE: 11-25-19
 CHIEF, BUREAU OF UTILITIES

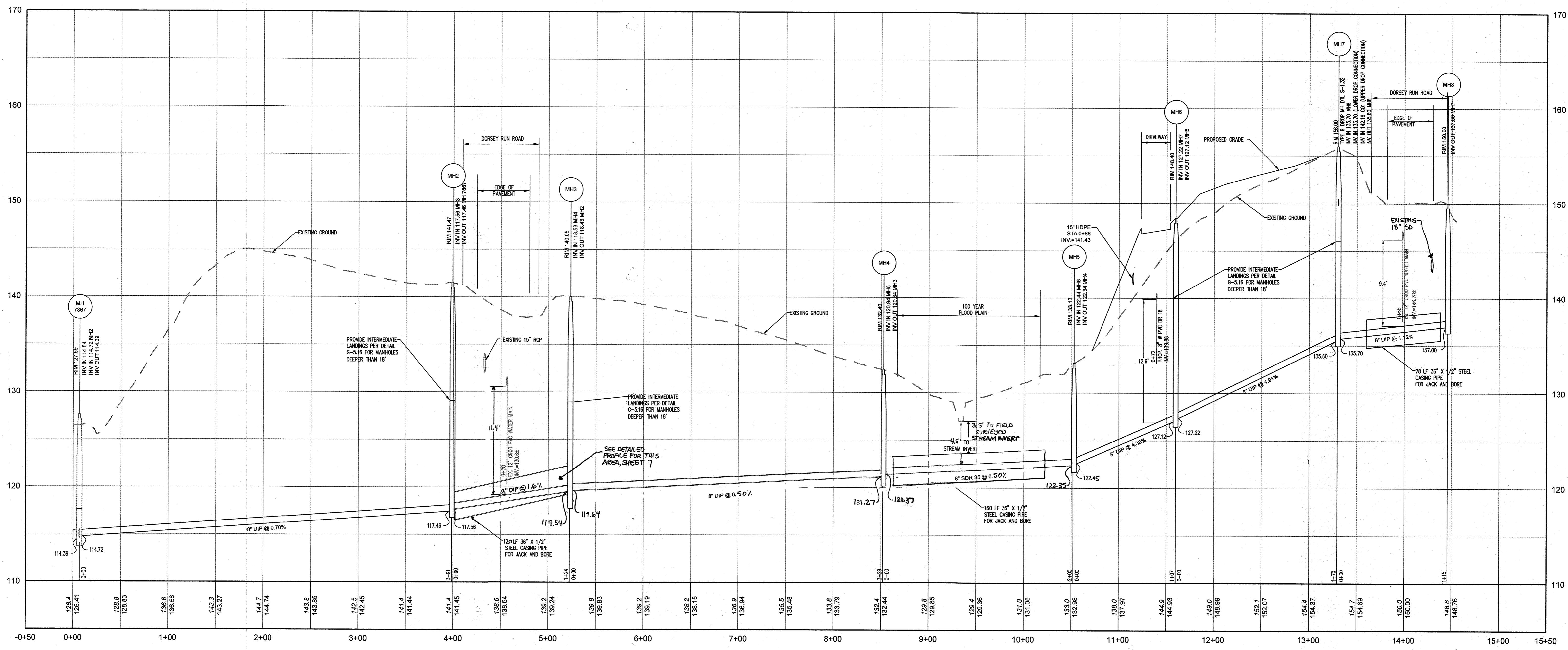
DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND
 DATE: 12-10-19
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

Pennoni
 Pennoni Associates Inc.
 Consulting Engineers
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 Columbia, MD 21045
 T 410.997.8900 F 410.997.9282

PUBLIC WATER AND SEWER MAIN PLAN

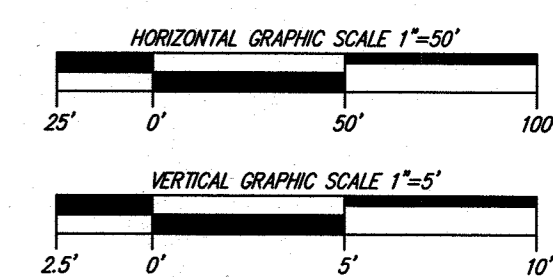
TERRAPIN COMMERCE CENTER
 T.M. 43, PARCELS 51 GRID 10 ZONED M-2
 1st ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 CONTRACT NO. 14-4995-D

SCALE
 1"=50'
 SHEET
 3 OF 7

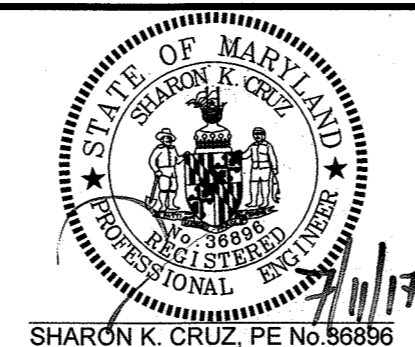


PUBLIC SEWER EXTENSION 18+00
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'

SANITARY SEWER STRUCTURE TABLE - PUBLIC SEWER EXTENSION						
ID	RIM ELEVATION	INV IN (FROM)	INV OUT (TO)	TYPE	NORTHING	EASTING
CO1	157.00		152.17 (8" SDR-35) MH7	CLEANOUT	548025.8698	1380298.9355
MH 7867	127.59	114.54 (12" SDR-35 @ 0.00%) 114.72 (8" DIP @ 0.70%) MH2	114.39 (12" SDR-35)	EX MH	546940.4655	1379858.4870
MH2	141.47	117.56 (8" DIP @ 0.70%) MH3	117.46 (8" DIP) MH 7867	48" MH, STD DETAIL G-5.12	547302.2307	1379706.9052
MH3	140.05	119.44 (8" DIP @ 0.70%) MH4	119.54 (8" DIP) MH2	48" MH, STD DETAIL G-5.12	547413.9120	1379652.8706
MH4	132.40	121.37 (8" SDR-35 @ 0.70%) MH5	121.27 (8" DIP) MH3	48" MH, STD DETAIL G-5.12	547605.4994	1379920.9979
MH5	133.13	122.45 (8" DIP @ 4.38%) MH6	122.35 (8" SDR-35) MH4	48" MH, STD DETAIL G-5.12	547733.8043	1380074.4762
MH6	148.40	127.22 (8" DIP @ 4.91%) MH7	127.12 (8" DIP) MH5	48" MH, STD DETAIL G-5.12	547801.3583	1380157.3485
MH7	156.00	135.70 (8" DIP @ 1.12%) MH8 149.83 (8" SDR-35 @ 2.00%) CO1	135.60 (8" DIP) MH6	48" DROP MH, STD DETAIL S-1.32	547909.1697	1380289.6084
MH8	150.00	137.00 (8" DIP) MH7		48" MH, STD DETAIL G-5.12	547825.2989	1380368.9859



PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 36954, EXPIRATION DATE 3/31/2017.



DES:	AGS				
DRN:	AGS				
CHK:	SKC				
DATE:	03/21/17	ALC	1	ADJUST INVERTS MH3, MH4 AND MH5	1/19/18
BY:	NO.			REVISION	DATE

PUBLIC WATER AND SEWER MAIN PROFILES
 600' SCALE MAP NO. _____ BLOCK NO. _____

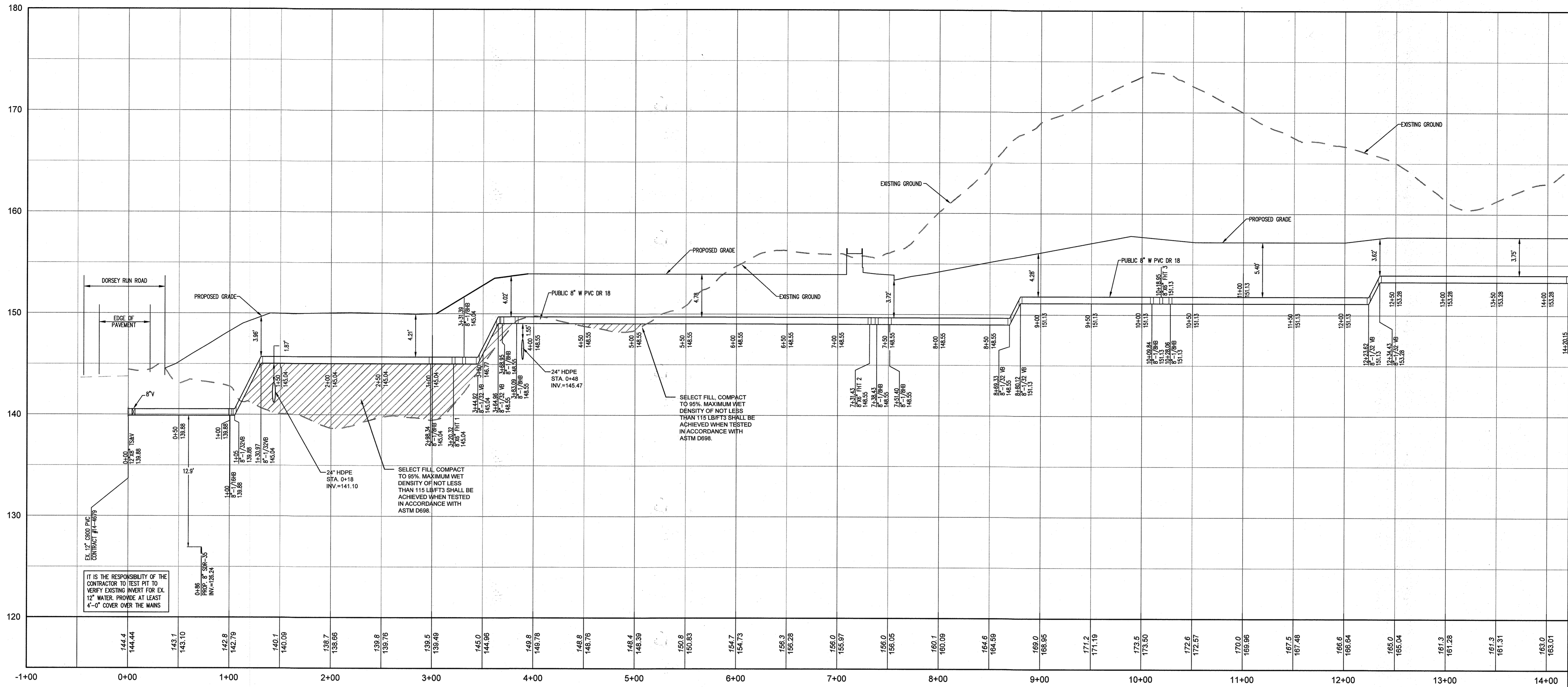
TERRAPIN COMMERCE CENTER
 T.M. 43, PARCELS 51 GRID 10 ZONED M-2
 1st ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 CONTRACT NO. 14-4995-D

SCALE AS SHOWN
 SHEET 4 OF 7

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Chief, Bureau of Utilities
 DATE: 7/19/17

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND
 Chief, Development Engineering Division
 DATE: M.G.

Pennoni
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 Consulting Engineers
 8818 Centre Park Drive Suite 200
 Columbia, MD 21045
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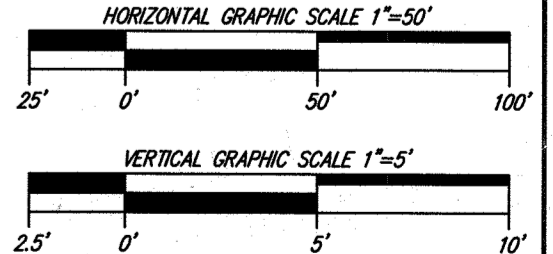


MATCH LINE SHEET 6

WATER ALIGNMENT BUILDING A
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'

ID	TYPE	NORTHING	EASTING	STATION
FHT-1	8"X6" FHT	547927.3444	1379944.0470	3+20.32
FHT-2	8"X6" FHT	548154.4263	1379651.5076	7+31.43
FHT-3	8"X6" FHT	548398.3515	1379776.8006	10+18.95
FHT-4	8"X6" FHT	548209.4287	1380127.7715	14+20.15
HB-1	8" 1/8" HB	547809.2338	1380123.0538	1+00
HB-2	8" 1/8" HB	547906.1903	1379950.0253	2+98.34
HB-3	8" 1/8" HB	547937.9953	1379941.0370	3+31.39
HB-3A	8" 1/8" HB	547970.7737	1379959.3707	3+68.95
HB-3B	8" 1/8" HB	547984.3828	1379955.5246	3+83.09
HB-4	8" 1/8" HB	548157.8433	1379645.3983	7+38.43
HB-5	8" 1/8" HB	548170.3174	1379641.8730	7+51.40
HB-6	8" 1/8" HB	548395.8732	1379768.0313	10+09.84
HB-7	8" 1/8" HB	548400.8297	1379785.5698	10+28.06
HB-8	8" 1/32" VB	548094.8217	1380332.6700	16+54.93
HB-9	8" 1/16" HB	548088.9534	1380340.7509	16+64.91
HB-10	8" 1/16" HB	548080.4283	1380345.9779	16+74.91
HB-11	8" 1/16" HB	548070.5517	1380347.5446	16+84.91
HB-12	8" 1/32" VB	547950.6903	1380318.7983	18+08.17
HB-13	8" 1/16" HB	547940.6979	1380318.4081	18+18.17
HB-14	8" 1/16" HB	547925.8116	1380323.9039	18+34.04

ID	TYPE	NORTHING	EASTING	STATION
TS&V-1	12"X8" TS&V	547732.6297	1380187.3334	0+00
TS&V-2	12"X8" TS&V	547881.1843	1380361.3390	18+92.29
VB-1	8" 1/32" VB	547811.6774	1380118.6928	1+05
VB-2	8" 1/32" VB	547824.3743	1380096.0342	1+30.97
VB-3	8" 1/32" VB	547949.8014	1379947.6404	3+44.92
VB-4	8" 1/32" VB	547967.2926	1379957.4236	3+64.96
VB-5	8" 1/32" VB	548273.2499	1379699.4454	8+69.33
VB-6	8" 1/32" VB	548282.6670	1379704.7126	8+80.12
VB-7	8" 1/32" VB	548305.3668	1379956.2459	12+23.62
VB-8	8" 1/32" VB	548300.0899	1379965.6804	12+34.43
VB-9	8" 1/32" VB	548106.8906	1380511.0974	16+30.21
VB-10	8" 1/32" VB	548097.2061	1380328.4120	16+50.05
VB-11	8" 1/32" VB	547817.2085	1380331.1206	18+45.27
VB-12	8" 1/32" VB	547908.5892	1380338.3507	18+56.52
WHC	8"X6" TEE	547971.1355	1380323.7017	17+67.15

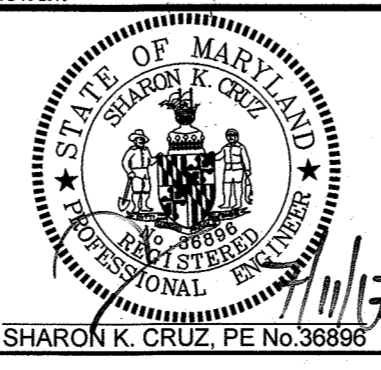


*PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 36984, EXPIRATION DATE 2-15-2025.

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Chief, Bureau of Utilities
 DATE: 7/19/17

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND
 Chief, Development Engineering Division
 DATE: 8.7.17
 M.C.

Pennoni
 Pennoni Associates Inc.
 Consulting Engineers
 8818 Centre Park Drive Suite 200
 Columbia, MD 21045
 T 410.997.8900 F 410.997.9282



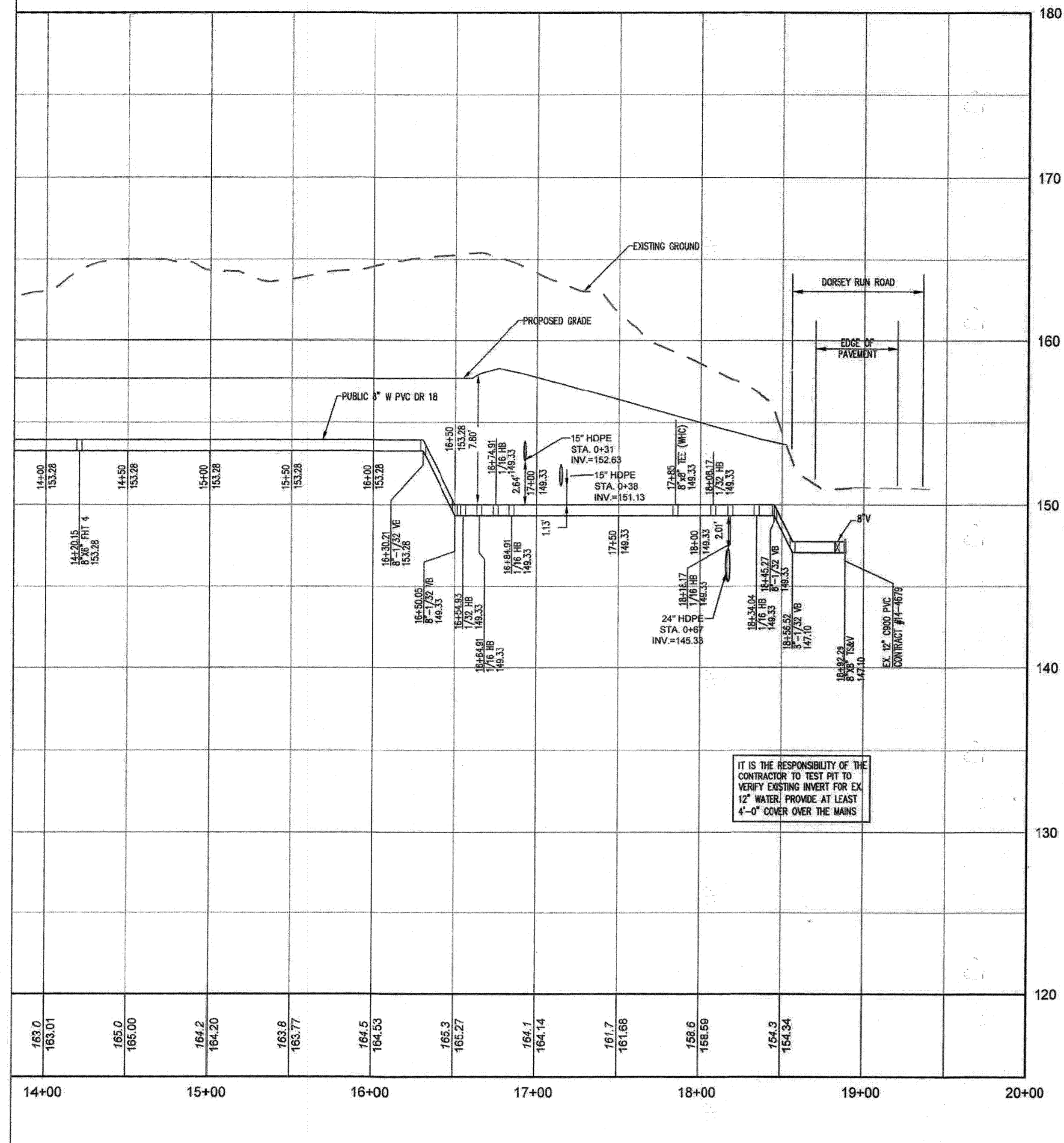
DES:	AGS			
DRN:	AGS			
CHK:	SKC			
DATE:	03/21/17			
BY:		NO.		
REVISION:				
DATE:				

PUBLIC WATER AND SEWER MAIN PROFILES
 600' SCALE MAP NO. _____ BLOCK NO. _____

TERRAPIN COMMERCE CENTER
 T.M. 43, PARCELS 51 GRID 10 ZONED M-2
 1st ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 CONTRACT NO. 14-4995-D

SCALE AS SHOWN
 SHEET 5 OF 7

MATCH LINE SHEET 5



WATER ALIGNMENT BUILDING A
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



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. 26920, EXPIRATION DATE: JULY 16, 2021

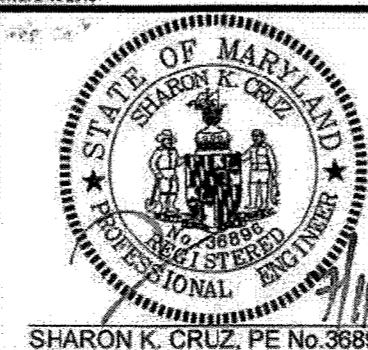
REVISION 1



1100 First Avenue, Suite 104
King of Prussia, PA 19381
(610) 337-3630
(910) 337-3642 Fax

- REDLINE PLAN PURPOSE:
1. RELOCATE EXISTING FIRE HYDRANT FH-1 AND REMOVE ASSOCIATED LANDSCAPE ISLAND.
 2. RESTRIPE EXISTING TRUCK COURTS FOR NEW VAN TRAFFIC CIRCULATION AND VAN LOADING

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. 3096, EXPIRATION DATE: 2-1-2022

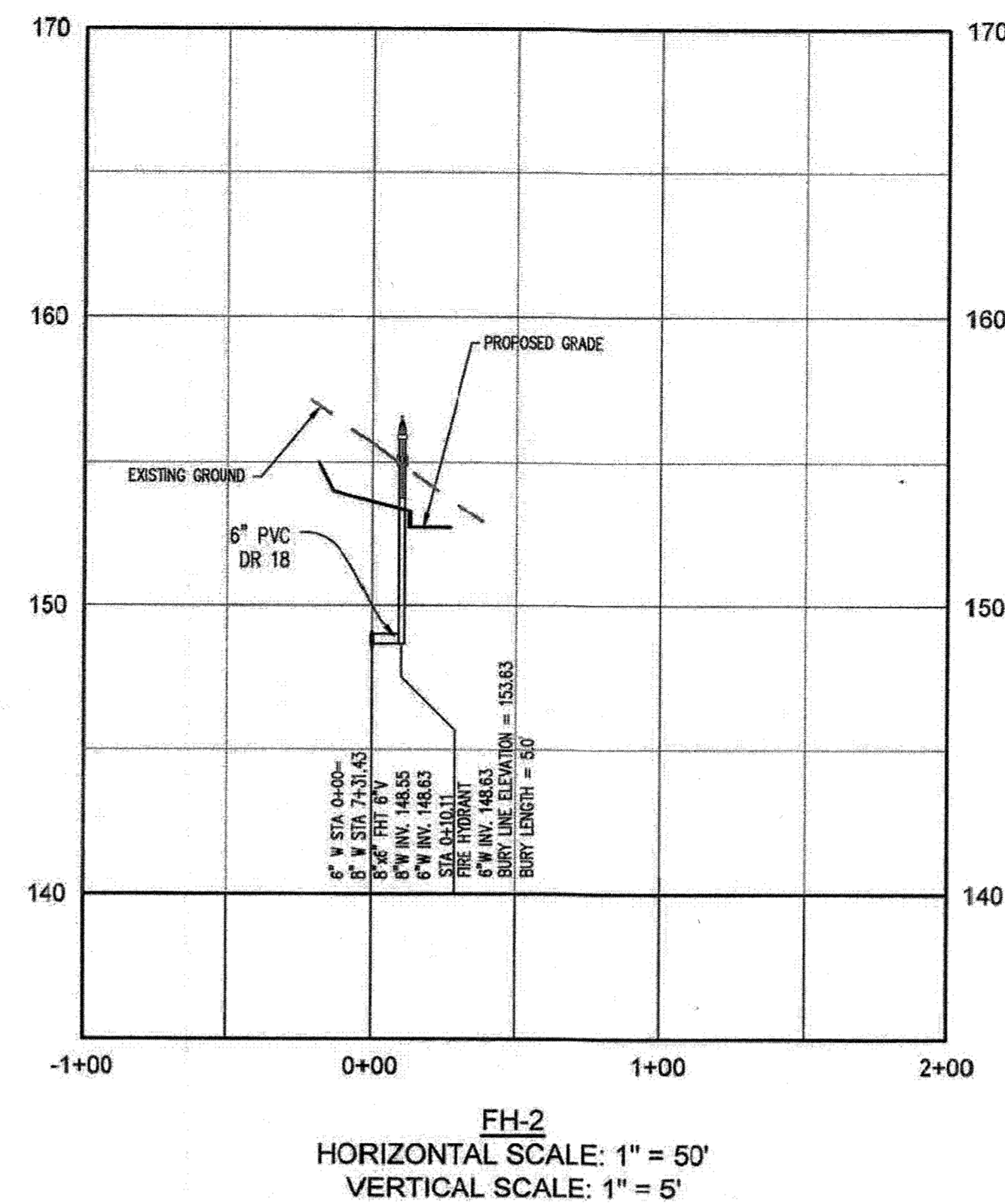


Pennoni
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Consulting Engineers
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Columbia, MD 21045
T 410.997.8900 F 410.997.9282

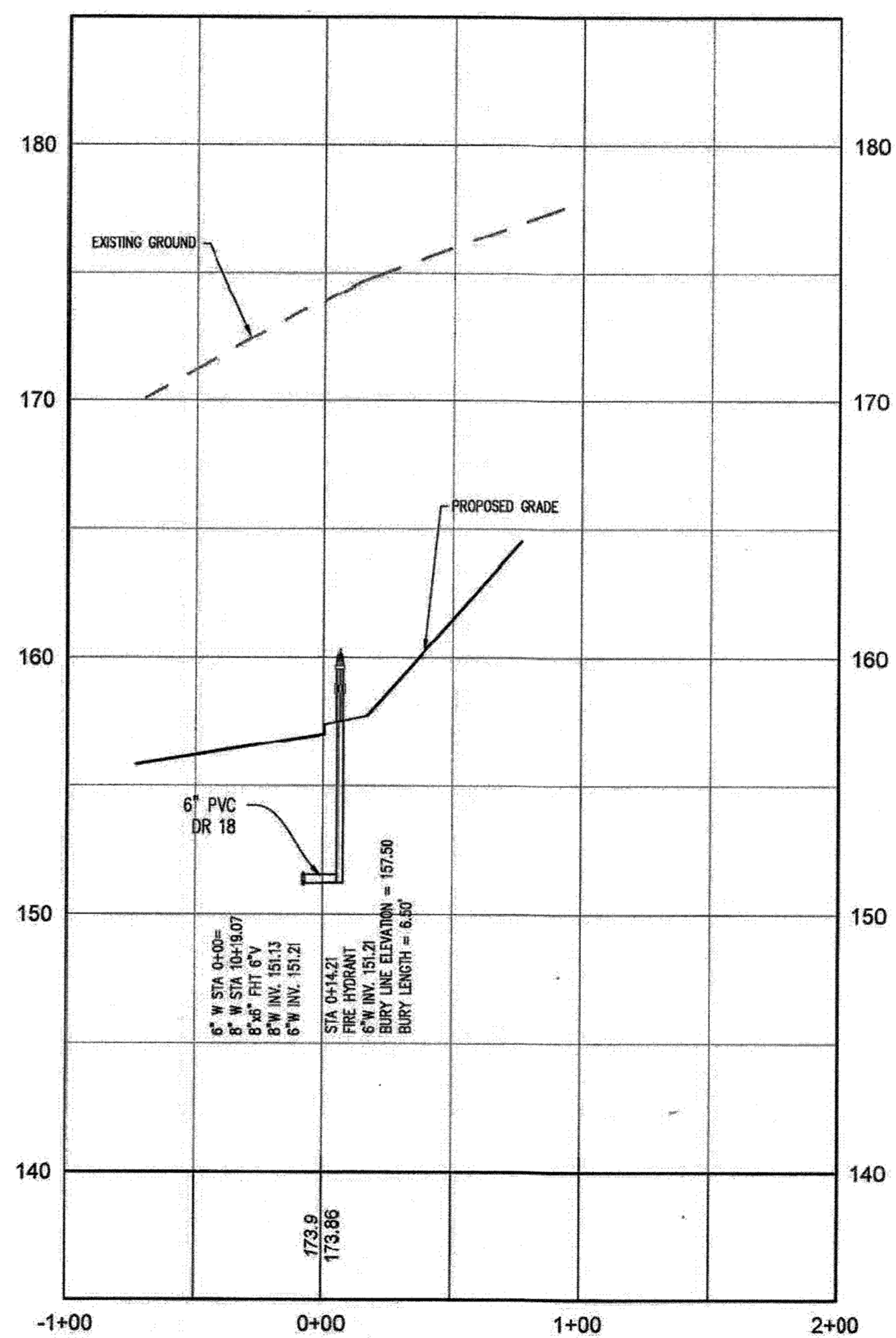
DES:	AGS		
DRN:	AGS		
CHK:	SKC		
DATE:	03/21/17		
BY:	NO.	REVISION	DATE
	1	FIRE HYDRANT LOCATION ADJUSTMENT	8/28/19

PUBLIC WATER
AND SEWER MAIN PROFILES

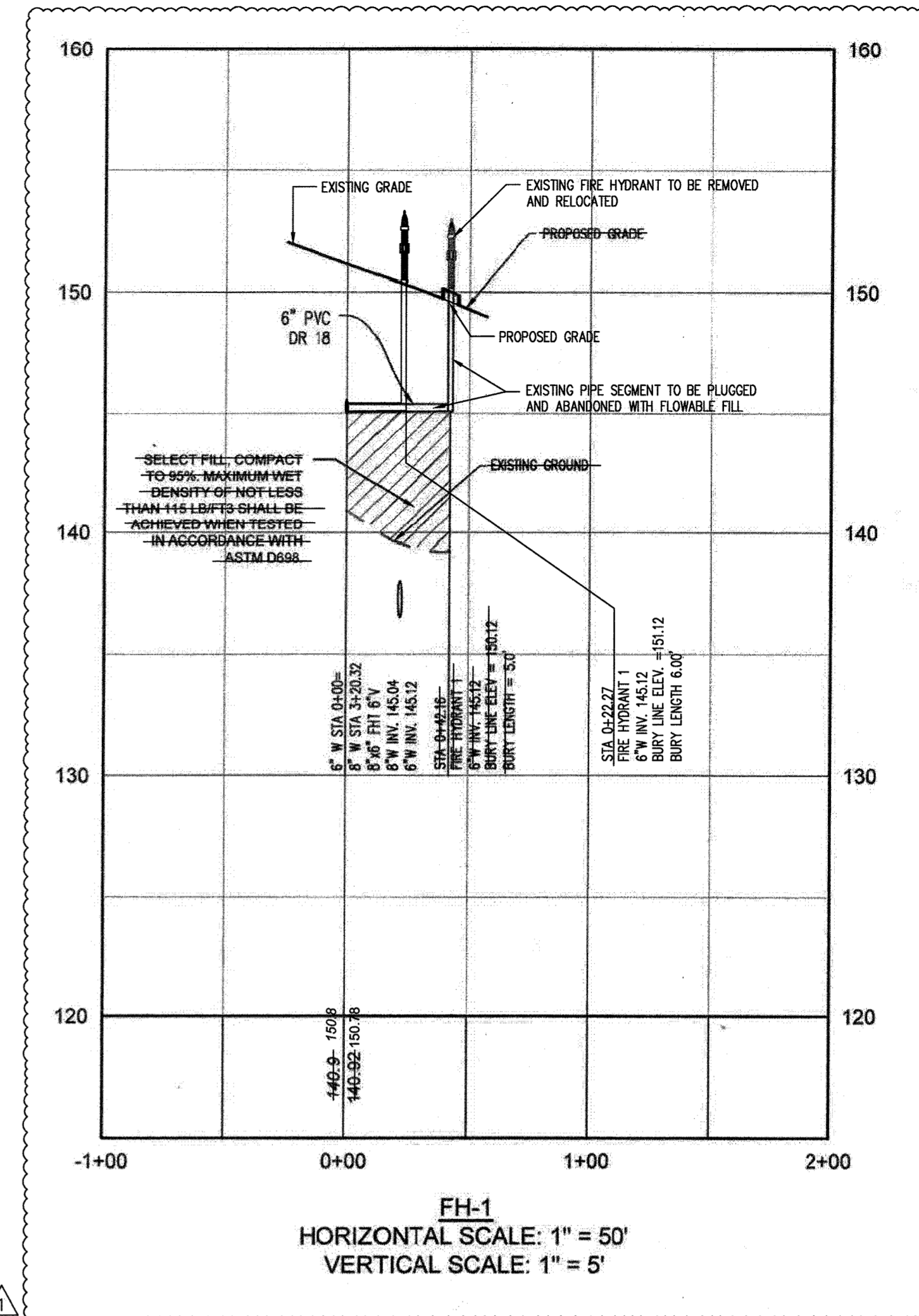
600' SCALE MAP NO. _____ BLOCK NO. _____



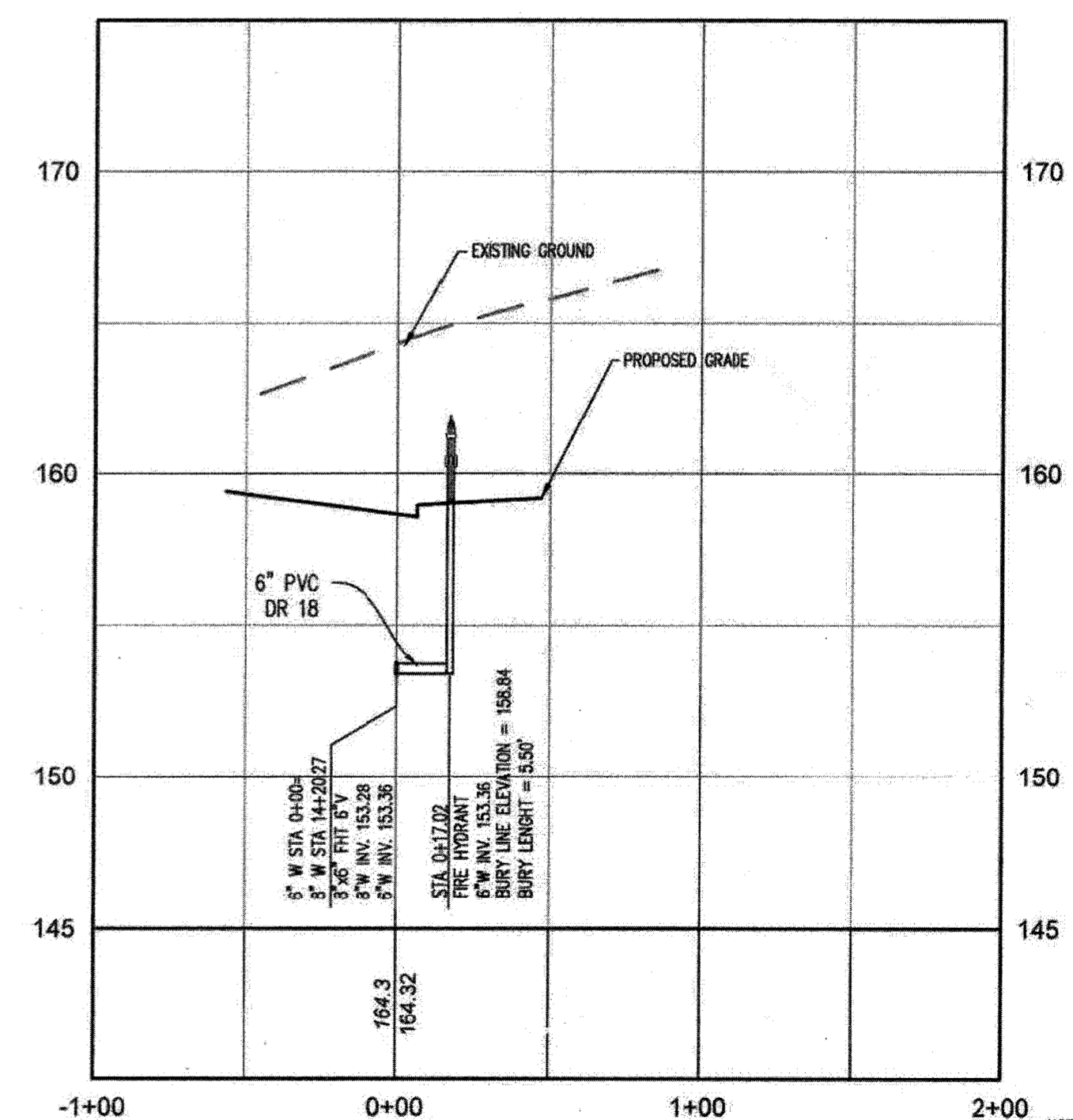
FH-2
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



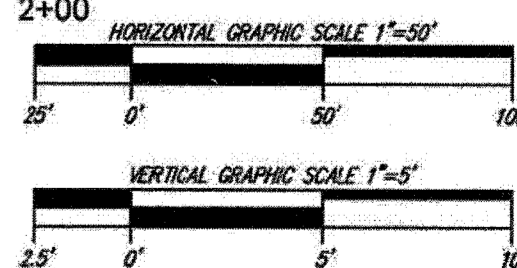
FH-3
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



FH-1
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



FH-4
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 11-25-19
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

[Signature] 12-10-19
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

TERRAPIN COMMERCE CENTER
T.M. 43, PARCELS 51 GRID 10 ZONED M-2
1st ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 14-4995-D

SCALE
AS SHOWN

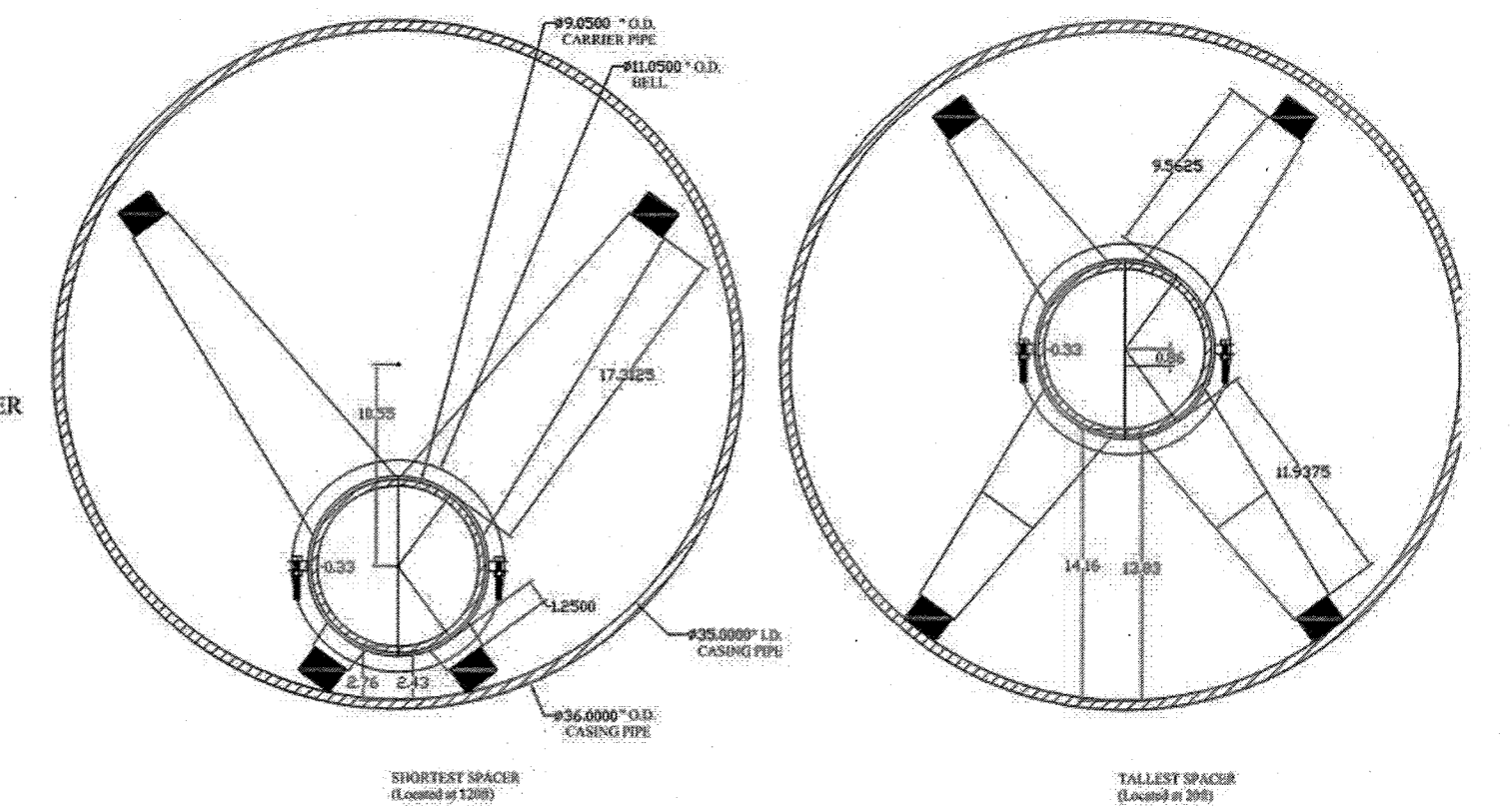
SHEET
6 OF 7

Spacer #	Position (ft)	H (in) OD TO ID	Riser A	Riser B	OD	ID
1	0.00	13.35	11.5625	9.9375	9.05	9.05
2	6.67	13.23	11.5000	10.0625	1.5	1.5
3	13.33	13.11	11.3750	10.1875	2	2
4	20.00	13.83	11.9375	9.5625	19	19
5	26.67	13.35	11.5625	9.9375	120	120
6	33.33	12.99	11.3125	10.2500	20	20
7	40.00	12.99	11.3125	10.2500		
8	46.67	12.87	11.1875	10.3750		
9	53.33	11.67	10.1875	11.2500		
10	60.00	11.07	9.6250	11.6875		
11	66.67	10.35	9.0000	12.2500		
12	73.33	9.27	8.0000	13.0000		
13	80.00	8.31	7.1250	13.6875		
14	86.67	7.59	6.4375	14.1875		
15	93.33	6.63	5.5000	14.8125		
16	100.00	5.79	4.6875	15.3125		
17	106.67	4.47	3.3750	16.1250		
18	113.33	3.27	2.1250	16.8125		
19	120.00	2.43	1.2500	17.3125		

CASING INSULATOR SPECIFICATION

PART#: SS18-2-0836-GE-4-V

- BAND**
8" WIDE
14 GA. (.074") 304 STAINLESS STEEL
2-B FINISH
RIBBED FLANGES
- LINER**
PVC LINER (0.096")
HARDNESS - DUROMETER "A" 85-90
OPERATING TEMP: 140 F
DIELECTRIC STRENGTH - 60,000 V
- RUNNER**
2" WIDE X 1 1/2" HIGH MOLDED POLYMER
2 TOP, 2 BOTTOM
- RISERS**
10 GA. (.134) 304 STAINLESS STEEL
MIG WELDED TO BAND
RISER 'A' = X" TALL
RISER 'B' = X" TALL
- SUPPORT PLATES**
10 GA. (.134) 304 STAINLESS STEEL
MIG WELDED TO BAND
SUPPORT PLATE 1# = X" LONG
- ASSEMBLY HARDWARE**
3 SETS PER FLANGE
1/4" - 20 X 2" STAINLESS STEEL BOLTS
1/4" STAINLESS STEEL WASHERS
1/4" STAINLESS STEEL NUTS



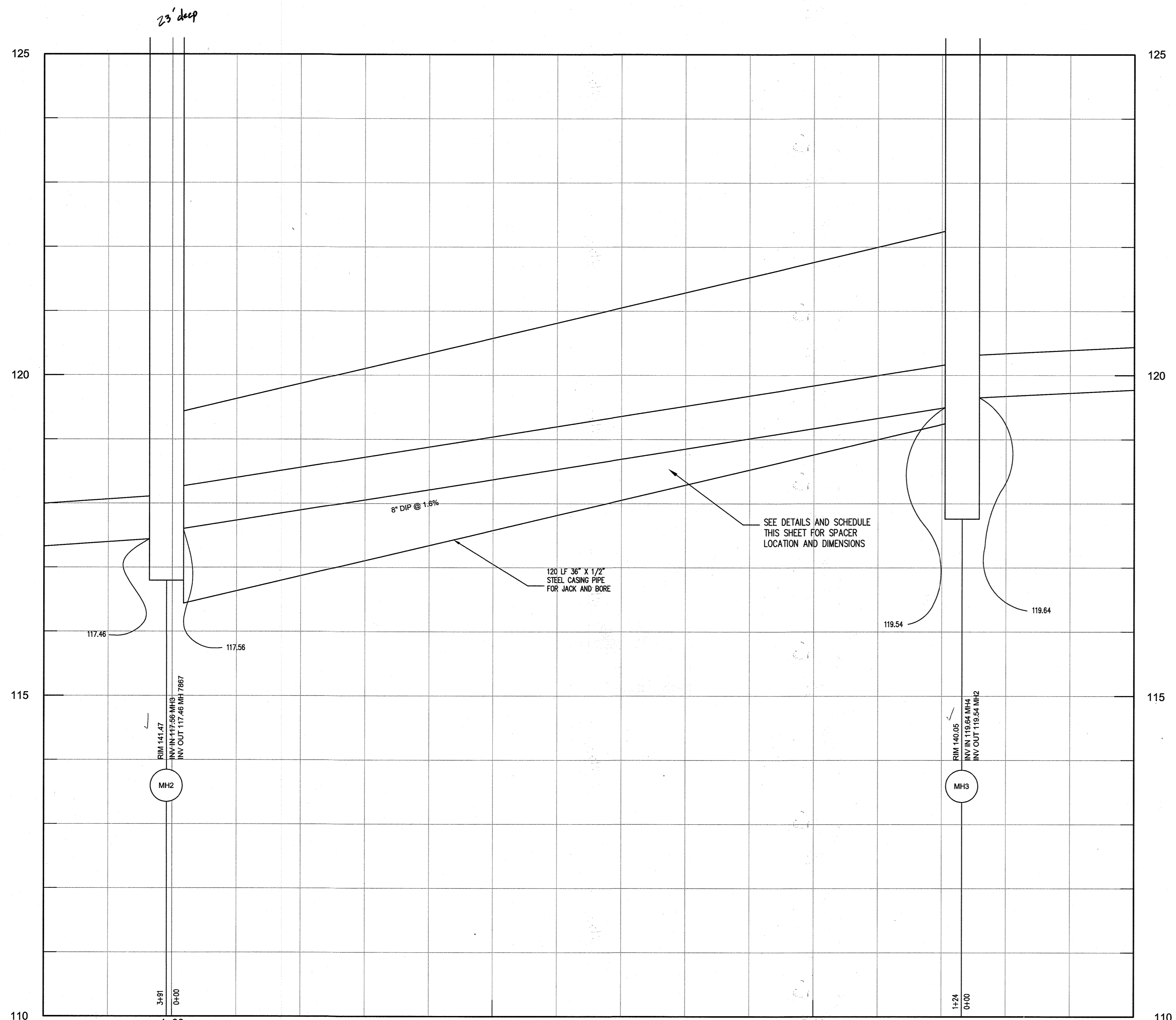
*** CONTROLLED COPY ***
PIPE (bs):XXXXX PIPE TYPE: DIP

Advance
Products & Systems, Inc.
P.O. Box 40298
Lansdale, PA 19034-0298
P.O. Box 21116
Pittsburgh, PA 15221-0116

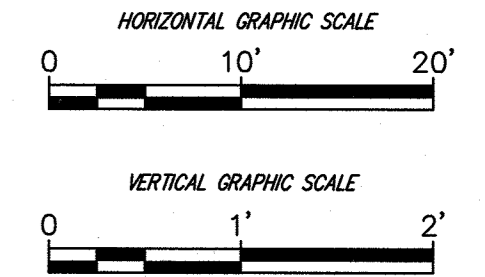
Casing Spacer
9.05 OD X 11.05B X 35.0 ID

Drawn by: MAR
Approved by: JEW
Date: 11/09/17

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DETAILED PROFILE MH2 TO MH3
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 5'



PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A QUALIFIED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 36896, EXPIRATION DATE: 9/30/2019



DES:	AGS				
DRN:	AGS				
CHK:	SKC				
DATE:	1/19/18				
BY:	SC	1	NEW CASING DETAIL SHEET TO SHOW REALIGNMENT	1/18	
NO.:					
REVISION:					
DATE:					

PUBLIC WATER AND SEWER MAIN PROFILES

600' SCALE MAP NO. _____ BLOCK NO. _____

TERRAPIN COMMERCE CENTER
T.M. 43, PARCELS 51 GRID 10 ZONED M-2
1st ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 14-4995-D

SCALE AS SHOWN
SHEET 7 OF 7

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature]
2-7-18
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

[Signature]
2.21.18
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Pennoni
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Consulting Engineers
8816 Centre Park Drive Suite 200
Columbia, MD 21045
T 410.997.8900 F 410.997.9282