

GENERAL NOTES

PART I

- APPROXIMATE LOCATIONS OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- TOPOGRAPHY SHOWN HEREON FOR THE DEEP RUN PROPERTY MANAGEMENT LLC PARCEL IS BASED ON A FIELD RUN TOPOGRAPHIC SURVEY PERFORMED BY MORRIS & RITCHE ASSOCIATES, INC. IN DECEMBER 2007. TOPOGRAPHY SHOWN HEREON FOR THE HORSE FARM LLC PARCEL WAS ACQUIRED FROM A.B. CONSULTANTS, INC. AND IS BASED ON A FIELD RUN TOPOGRAPHIC SURVEY PERFORMED IN OCTOBER 2007.
- 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. 3784 AND NO. 3782. ALL VERTICAL CONTROLS ARE BASED ON NAVD '88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE CONCRETE MONUMENTS WITH BRASS DISK TOPS.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 12 INCHES. CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- FOR DETAILS NOT SHOWN ON THE DRAWING, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATIONS OF THE TEST PITS. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN MADE 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	800-252-1133
BGE (CONTRACTOR SERVICES)	410-637-8713
BGE (EMERGENCY)	410-666-0123
BUREAU OF UTILITIES	410-313-4000
COLONIAL PIPELINE CO.	410-795-1390
MISS UTILITY	800-257-7777
STATE HIGHWAY ADMINISTRATION	410-531-5533
VERIZON	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/STACKING 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.

BOUNDARY NOTE
 --- BOUNDARY INFORMATION SHOWN HEREON FOR THE DEEP RUN PROPERTY MANAGEMENT LLC PARCEL IS BASED ON A FIELD RUN SURVEY PERFORMED BY MORRIS & RITCHE ASSOC., INC. IN DECEMBER 2007.
 --- BOUNDARY INFORMATION SHOWN HEREON FOR THE HORSE FARM LLC PARCEL IS BASED ON SHA PLAT NO. 56632.

WETLANDS AND WATERS OF THE U.S. SHOWN HEREON WERE DELINEATED AND GPS LOCATED BY GEO-TECHNOLOGY ASSOCIATES, INC. ON DECEMBER 17, 2007 AND RECONFIRMED ON AUGUST 24, 2011.

FLOOD PLAIN NOTE
 PORTIONS OF THIS SITE LIE WITHIN A 100 YEAR FLOOD PLAIN AS SHOWN ON SHA PLAT NO. 54587 DATED MARCH 13, 2007.

PERPETUAL EASEMENTS
 PERPETUAL EASEMENTS, FOR THE BENEFIT OF PARCEL 748, WERE PROVIDED BY THE STATE HIGHWAY ADMINISTRATION ON SHA PLAT 56632. THESE INCLUDE: PERPETUAL EASEMENTS FOR PUBLIC SANITARY SEWER LINE AND DRAINAGE RIGHT TO DISCHARGES.

PART II - WATER

- ALL WATER MAINS SHALL BE PVC C900 DR-18 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS SHALL 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 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 INSTALLED IN ACCORDANCE WITH STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND SECTION 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 QUALIFICATIONS TEST REQUIREMENTS NOTED IN SECTION 5.1 OF THE ANNA STANDARD C900 FOR PVC PRESSURE PIPES 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. 17 POUND MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING RESTRAINTS AND HARNESSSES. 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. THE 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 COMPACTOR 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 ANNA 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, OR 18 MEETING THE REQUIREMENTS OF ANNA C900 AND SHALL BE MULTI FITTINGS (PEX) 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 ANNA C-900 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 EBMA IRON, INC. OR APPROVAL EQUAL.

FOR SINGLE FAMILY RESIDENTIAL FIRE SPRINKLER SYSTEMS, ALL SINGLE FAMILY DWELLINGS SHALL HAVE A 1-1/2" WIC, WITH A 1" METER, OUTSIDE SETTINGS.

PART III - SEWER

- ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C. UNLESS OTHERWISE NOTED.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- FORCE MAINS SHALL BE 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 05-2 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 THE CELLAR CANNOT BE SERVED.

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 IN VOLUME IV OF THE SPECIFICATIONS AND AS SHOWN ON F-18-107 THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

John P. Robinson/CS 2/12/19
 HOWARD SOIL CONSERVATION DISTRICT DATE

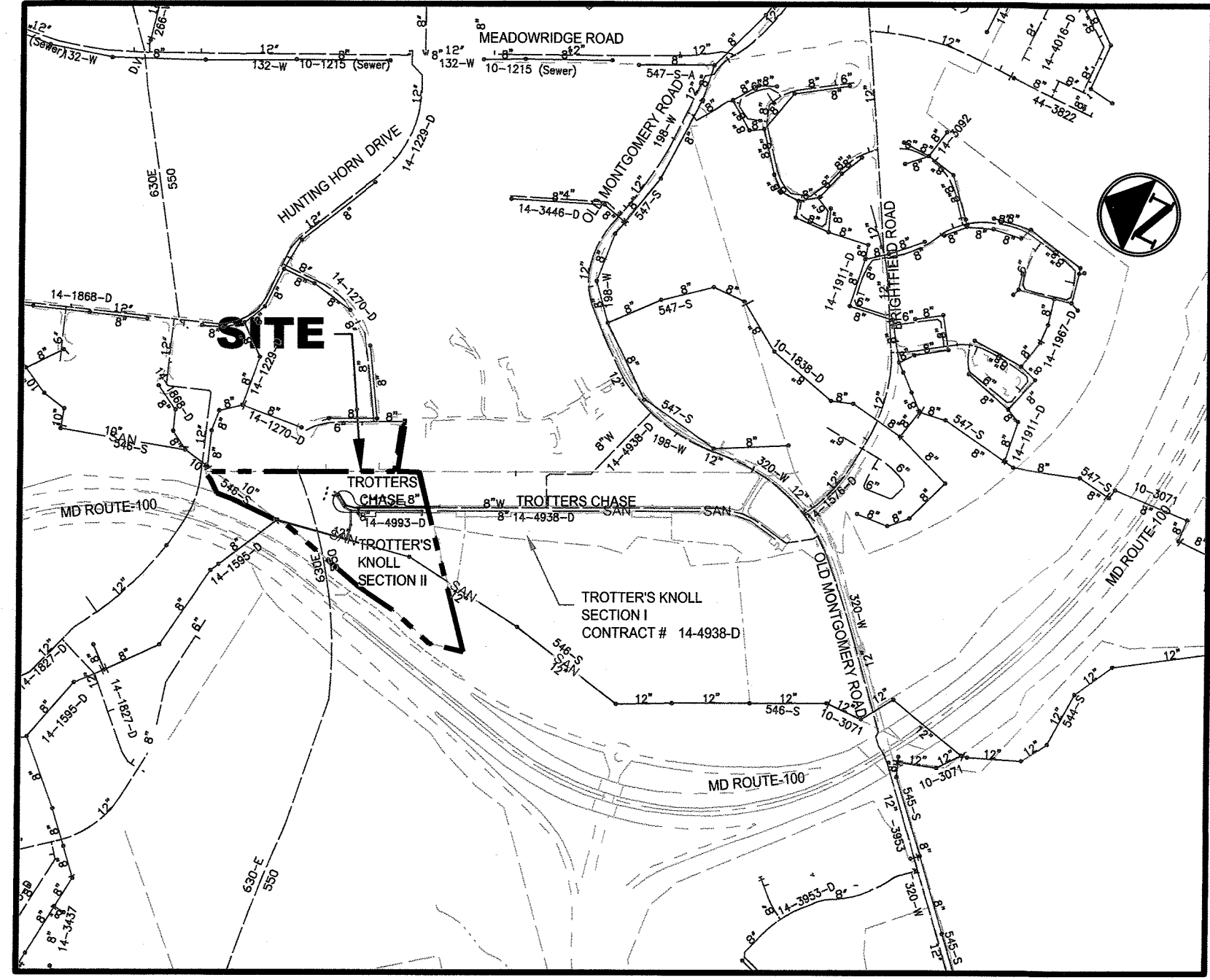
FINAL WATER AND SEWER PLAN

TROTTER'S KNOLL - SECTION II

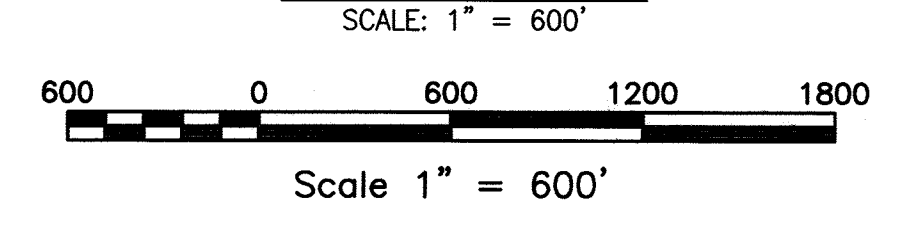
LOTS 85-100

SUBDIVISION OF PARCEL 753

CONTRACT 14-4993-D



LOCATION MAP



QUANTITIES					
NAME OF UTILITY CONTRACTOR:					
SURVEY AND DRAFTING DIVISION AS-BUILT DATE:					
QUANTITIES ESTIMATED	SIZE	DESCRIPTION	QUANTITIES	TYPE	AS-BUILT MANUFACTURER/SUPPLIER
PUBLIC WATER					
22 LF	6"	WATER MAIN - PVC C900 DR 18	22 LF	C-400	NORTH AMERICAN PIPE / LB WATER
437 LF	8"	WATER MAIN - PVC C900 DR 18	437 LF	DR-18	NORTH AMERICAN PIPE / LB WATER
1	6"	VALVE & ROADWAY BOX	1		AMERICAN FLOW / LB WATER
1	8"	1/18 HORIZONTAL BEND	1		STAR PIPE / LB WATER
1	8"	1/8 HORIZONTAL BEND	1		STAR PIPE / LB WATER
1	5 1/4"	FIRE HYDRANT	1		AMERICAN DARLING / LB WATER
1	8"x6"	TEE	1		STAR PIPE / LB WATER
265 LF	1.5"	1 1/2" COPPER WATER HOUSE CONNECTION	265 LF	TYPE K	CAMBRIDGE LEE / LB WATER
2	EA	METER VAULT 1 1/2" SERVICE, 1" METER SETTING (SINGLE)	7	C-800	AY McDONALD / LB WATER
7	EA	METER VAULT 1 1/2" SERVICE, 1" METER SETTING (DOUBLE)	2	C-800	AY McDONALD / LB WATER
PUBLIC SANITARY SEWER					
456 LF	8"	PVC SDR-35 GRAVITY SEWER MAIN	456 LF	SDR-35	NORTH AMERICAN PIPE / LB WATER
387 LF	4"	PVC SDR-35 HOUSE CONNECTION	387 LF	SDR-35	NORTH AMERICAN PIPE / LB WATER
64 LF	8"	CLASS 52 DIP GRAVITY SEWER MAIN	60LF	CI-52	US PIPE
5	48"	STANDARD PRECAST MANHOLE (100G HOUSE)	5		CPC
1	48"	TYPE "B" DROP MANHOLE	1		CPC
16	4"	CLEANOUT	16	SDR-35	NORTH AMERICAN PIPE / LB WATER
			16		CONC CLEANOUT / PRISM PRECAST / LB WATER BLOCK

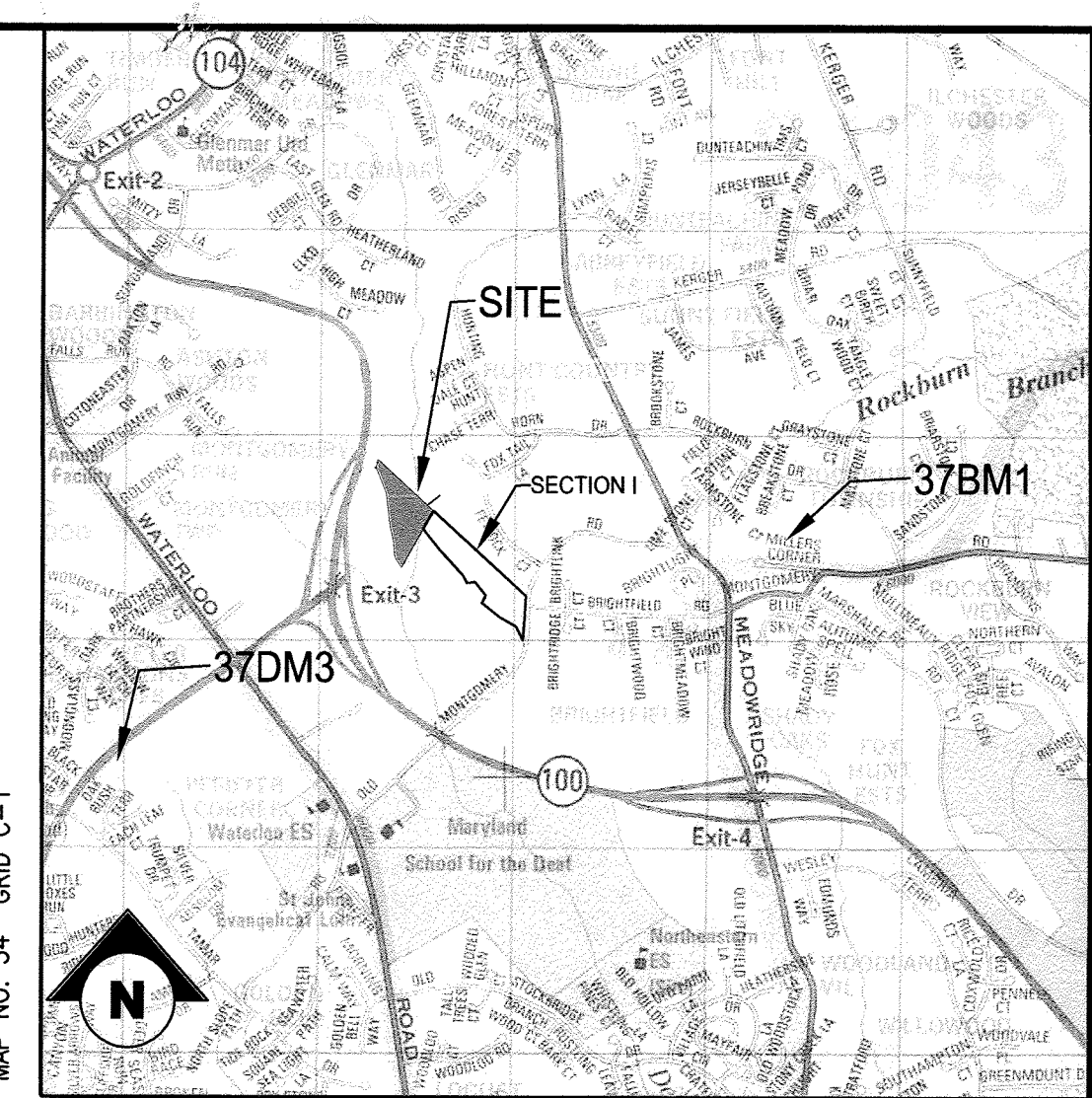
W & S COUNTY USE	TYPE OF BUILDINGS: FEE SIMPLE TOWNHOUSES
WATER ZONE: 550	DRAINAGE AREA: DEEP RUN, PATAPSCO
TEST GRADIENT: 827	TREATMENT PLANT: PATAPSCO WATERTREATMENT PLANT
TEST PRESSURE: 193 psi	NUMBER OF UNITS: 16
	NUMBER OF NON-BUILDABLE LOTS: 3
	NUMBER OF W.H.C.: 9 (7-1" TWIN METERS & 2-1" SINGLE METERS)
	NUMBER OF S.H.C.: 16

ADDRESS CHART	
LOT/PARCEL #	STREET ADDRESS
753	8090 OLD MONTGOMERY ROAD, ELLICOTT CITY MD

BENCH MARKS

37BM1
 N 563,400.0583 E 1,374,319.8700
 NAD 83 (Adj 07)
 NAVD 88

37DM3
 N 561,077.4764 E 1,367,289.7870
 NAD 83 (Adj 07)
 NAVD 88



VICINITY MAP
 SCALE: 1" = 2,000'

LEGEND

- EX. PROPERTY LINE
- EX. ADJACENT PROPERTY LINE
- EX. RIGHT OF WAY
- EX. EASEMENT
- EX. ELECTRIC CONDUIT
- EX. LIGHT POLES
- EX. GAS LINE
- EX. STORM DRAIN
- EX. CONDUIT
- EX. FIBER OPTIC
- EX. TV LINE
- EX. ELECTRIC MANHOLE
- EX. TELEPHONE MANHOLE
- PR. 8" SANITARY PIPE
- PR. 8" WATER PIPE
- PR. WATER HOUSE CONNECTION
- PR. SEWER HOUSE CONNECTION
- BURY LINE ELEVATION
- BURY LENGTH

SHEET INDEX

1	COVER SHEET
2	LAYOUT PLAN
3	WATER & SEWER PROFILES

OWNER / DEVELOPER :

DEEP RUN PROPERTY MANAGEMENT, LLC
 C/O GLENN CURTIS
 5240 WEBB CT
 MOREHEAD CITY, NC 28557
 PHONE: (252) 726-6633
 EMAIL: GCURTIS1@ECR.COM

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND
<i>[Signature]</i> 2-1-19 CHIEF, BUREAU OF UTILITIES DATE	<i>[Signature]</i> 5-28-19 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

MORRIS & RITCHE ASSOCIATES, INC.
 ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS

14280 PARK CENTER DRIVE, SUITE A
 LAUREL, MARYLAND 20707
 (410) 792-9792 or (301) 776-1690
 FAX (410) 792-7395

MD 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. 19916, EXPIRATION DATE: 01/14/19.

DES: ATS	BY NO.	REVISIONS	DATE
DRN: MZR			
CHK: DJ			
DATE: 05/31/18			

FINAL WATER AND SEWER PLAN

COVER SHEET

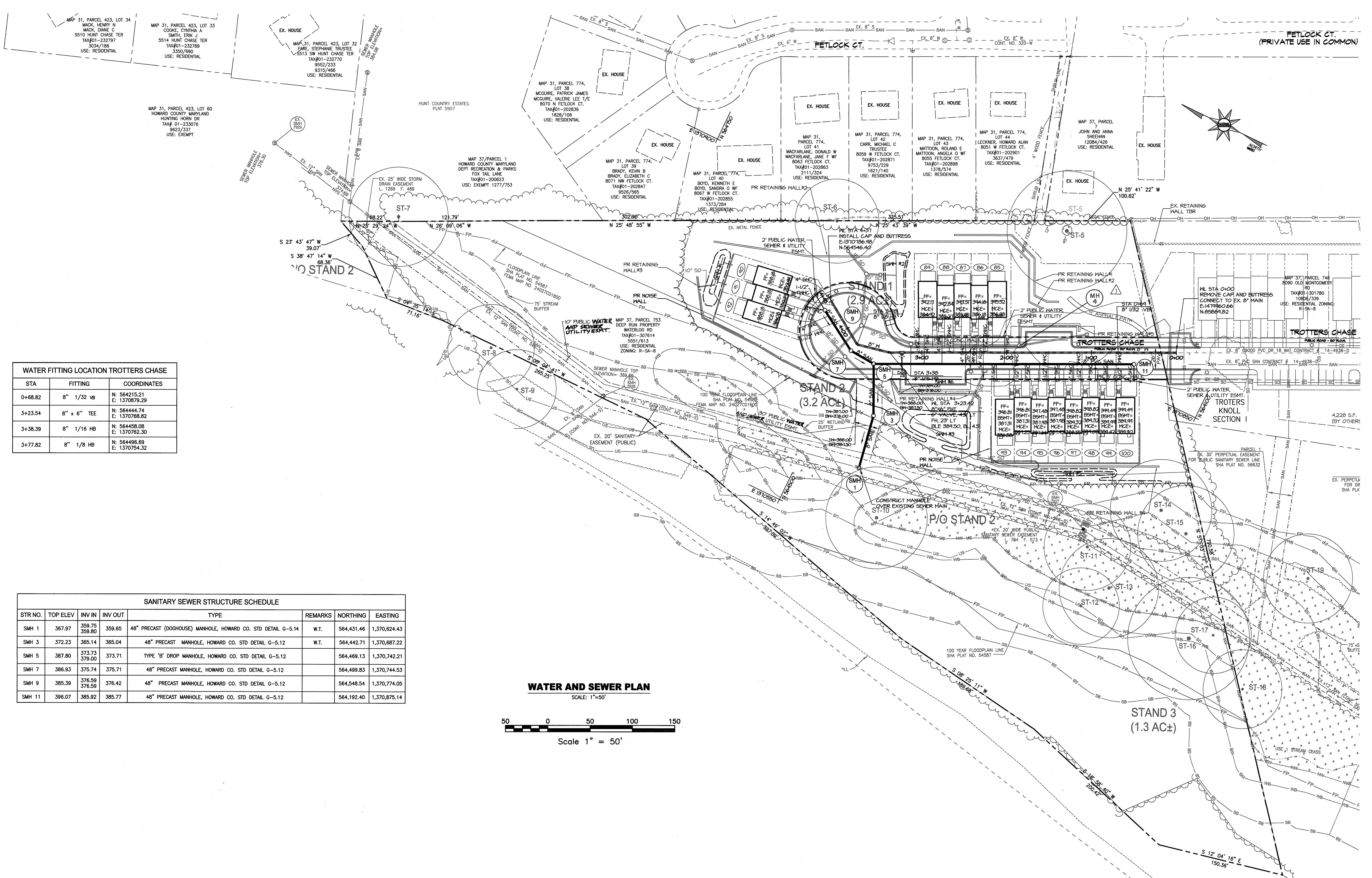
600' SCALE MAP No. 31&37 BLOCK NO. 3

TROTTER'S KNOLL - SECTION II
THE DEEP RUN PROPERTY
CONTRACT NO. 14-4993-D

JOB NO.: 15368X03
 SCALE: AS SHOWN
 SHEET 1 OF 3

LIBER: 5551 ~ FOLIO: 613
 ZONED: R-SA-8 ~ TAX MAP: 37 ~ GRID: 2 ~ PARCEL: 753
 1ST ELECTION DISTRICT ~ HOWARD COUNTY, MARYLAND

P:\PROJ\15368 TROTTERS KNOLL\PLANS\DEC 2\PLAN\PLAN SETS\FINAL\WATER AND SEWER\15368-FIN-01-COVER SHEET.dwg, 1/21/2019 8:56:45 AM, 10/26/18
 11, Copyright 2018 Morris & Ritchie Associates, Inc.



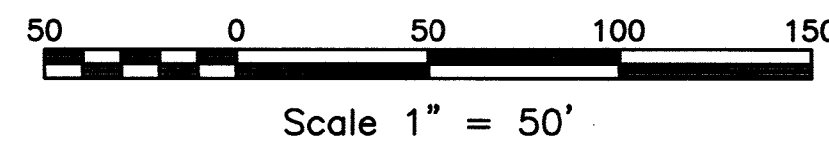
WATER FITTING LOCATION TROTTERS CHASE

STA	FITTING	COORDINATES
0+68.82	8" 1/32 VB	N: 564215.21 E: 1370879.29
3+23.54	8" x 6" TEE	N: 564444.74 E: 1370768.82
3+38.39	8" 1/16 HB	N: 564458.08 E: 1370762.30
3+77.82	8" 1/8 HB	N: 564496.69 E: 1370754.32

SANITARY SEWER STRUCTURE SCHEDULE

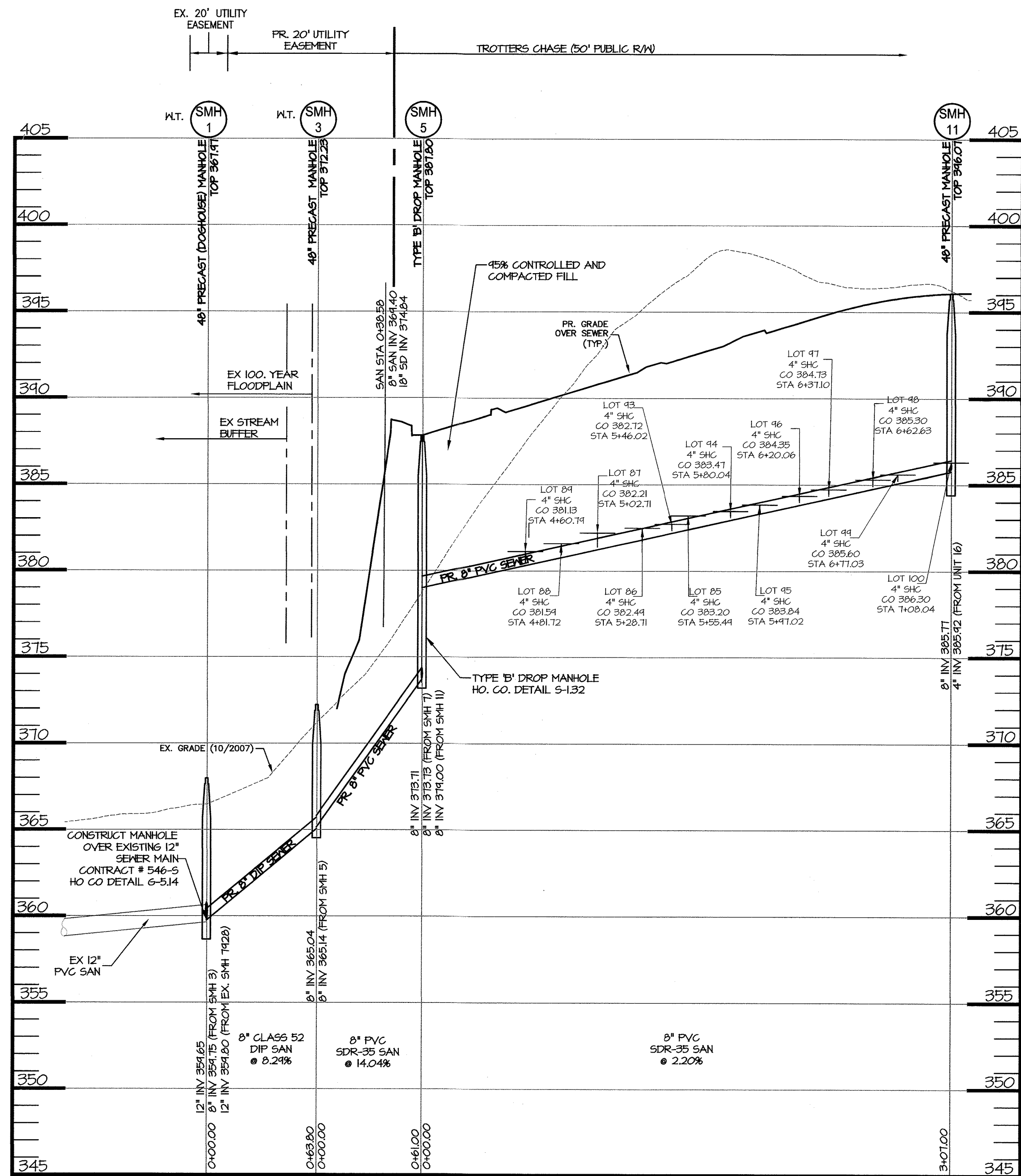
STR NO.	TOP ELEV	INV IN	INV OUT	TYPE	REMARKS	NORTHING	EASTING
SMH 1	367.97	359.75 359.80	359.65	48" PRECAST (DOGHOUSE) MANHOLE, HOWARD CO. STD DETAIL G-5.14	W.T.	564,431.46	1,370,624.43
SMH 3	372.23	365.14	365.04	48" PRECAST MANHOLE, HOWARD CO. STD DETAIL G-5.12	W.T.	564,442.71	1,370,687.22
SMH 5	387.80	373.73 379.00	373.71	TYPE 'B' DROP MANHOLE, HOWARD CO. STD DETAIL G-5.12		564,469.13	1,370,742.21
SMH 7	386.93	375.74	375.71	48" PRECAST MANHOLE, HOWARD CO. STD DETAIL G-5.12		564,499.83	1,370,744.53
SMH 9	385.39	376.59 376.59	376.42	48" PRECAST MANHOLE, HOWARD CO. STD DETAIL G-5.12		564,548.54	1,370,774.05
SMH 11	396.07	385.92	385.77	48" PRECAST MANHOLE, HOWARD CO. STD DETAIL G-5.12		564,192.40	1,370,875.14

WATER AND SEWER PLAN
SCALE: 1"=50'

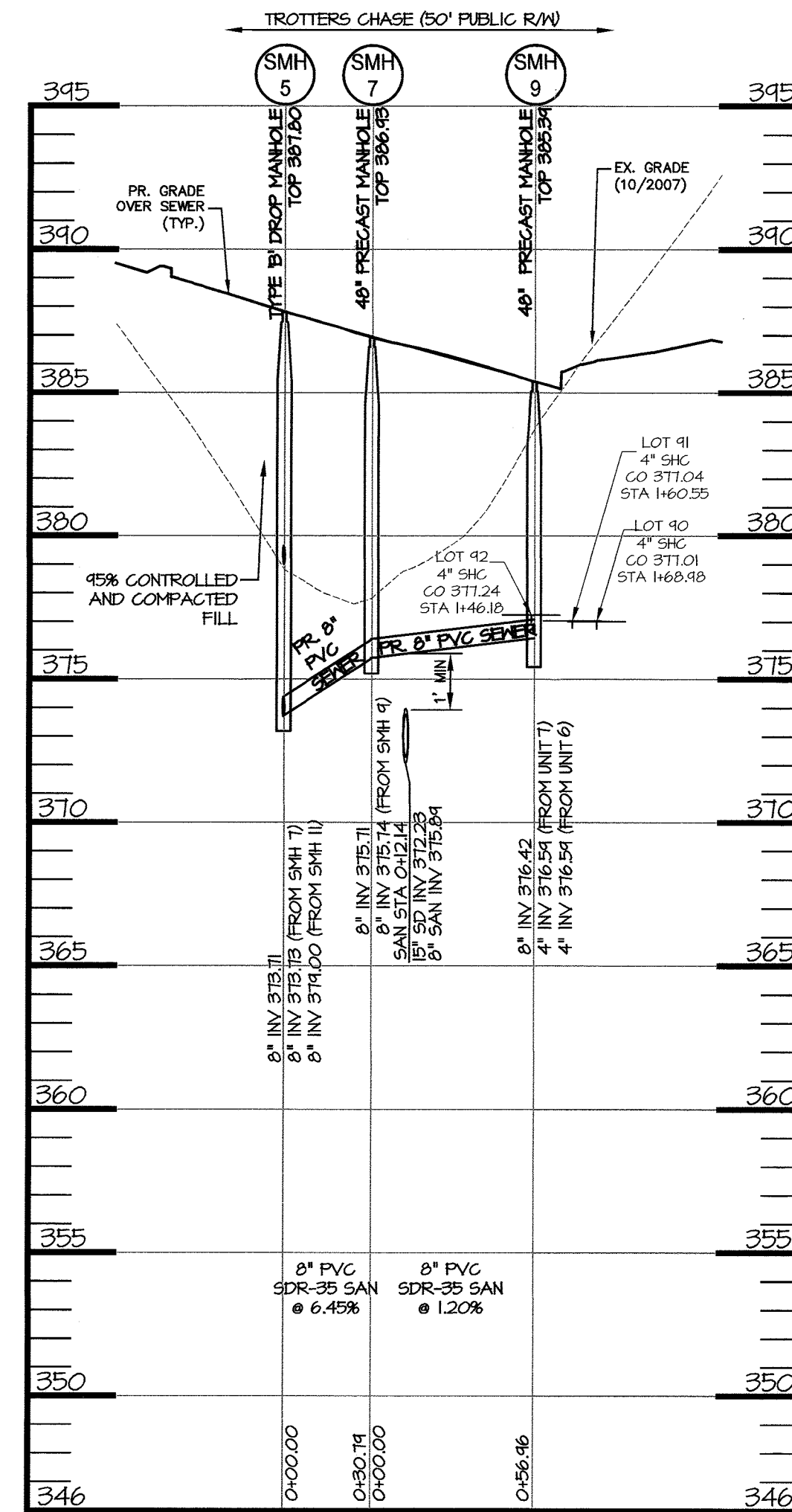


<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p>5-8-19 CHIEF, BUREAU OF UTILITIES</p>	<p>DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND</p> <p>5-28-19 CHIEF, DEVELOPMENT ENGINEERING DIVISION</p>	<p>MRA MORRIS & FITCHE ASSOCIATES, INC. ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS</p> <p>14280 PARK CENTER DRIVE, SUITE A LAUREL, MARYLAND 20707 (410) 792-9792 or (301) 776-1690 FAX (410) 792-7595</p>	<p>NO PROFESSIONAL CERTIFICATION</p> <p>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. 19916, EXPIRATION DATE: 01/14/21</p> <p> 3-4-19</p>	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>DES:</th> <th>BY NO.</th> <th>REVISIONS</th> <th>DATE</th> </tr> <tr> <td>ATS</td> <td></td> <td></td> <td></td> </tr> <tr> <td>MZR</td> <td></td> <td></td> <td></td> </tr> <tr> <td>DJ</td> <td></td> <td></td> <td></td> </tr> <tr> <td>DATE:</td> <td>05/31/18</td> <td>WRA</td> <td>MH-4 DETAIL BUBBLE ADDED</td> </tr> </table>	DES:	BY NO.	REVISIONS	DATE	ATS				MZR				DJ				DATE:	05/31/18	WRA	MH-4 DETAIL BUBBLE ADDED	<p>FINAL WATER AND SEWER PLAN</p> <p>LAYOUT PLAN</p> <p>600' SCALE MAP NO. 31&37 BLOCK NO. 3</p>	<p>TROTTERS KNOLL - SECTION II THE DEEP RUN PROPERTY CONTRACT NO. 14-4993-D</p> <p>LIBER: 5551 ~ FOLIO: 613 ZONED: R-SA-8 ~ TAX MAP: 37 ~ GRID: 2 ~ PARCEL: 753 1ST ELECTION DISTRICT ~ HOWARD COUNTY, MARYLAND</p>	<p>JOB NO.: 15368X03</p> <p>SCALE: 1" = 50'</p> <p>SHEET 2 OF 3</p>
DES:	BY NO.	REVISIONS	DATE																								
ATS																											
MZR																											
DJ																											
DATE:	05/31/18	WRA	MH-4 DETAIL BUBBLE ADDED																								

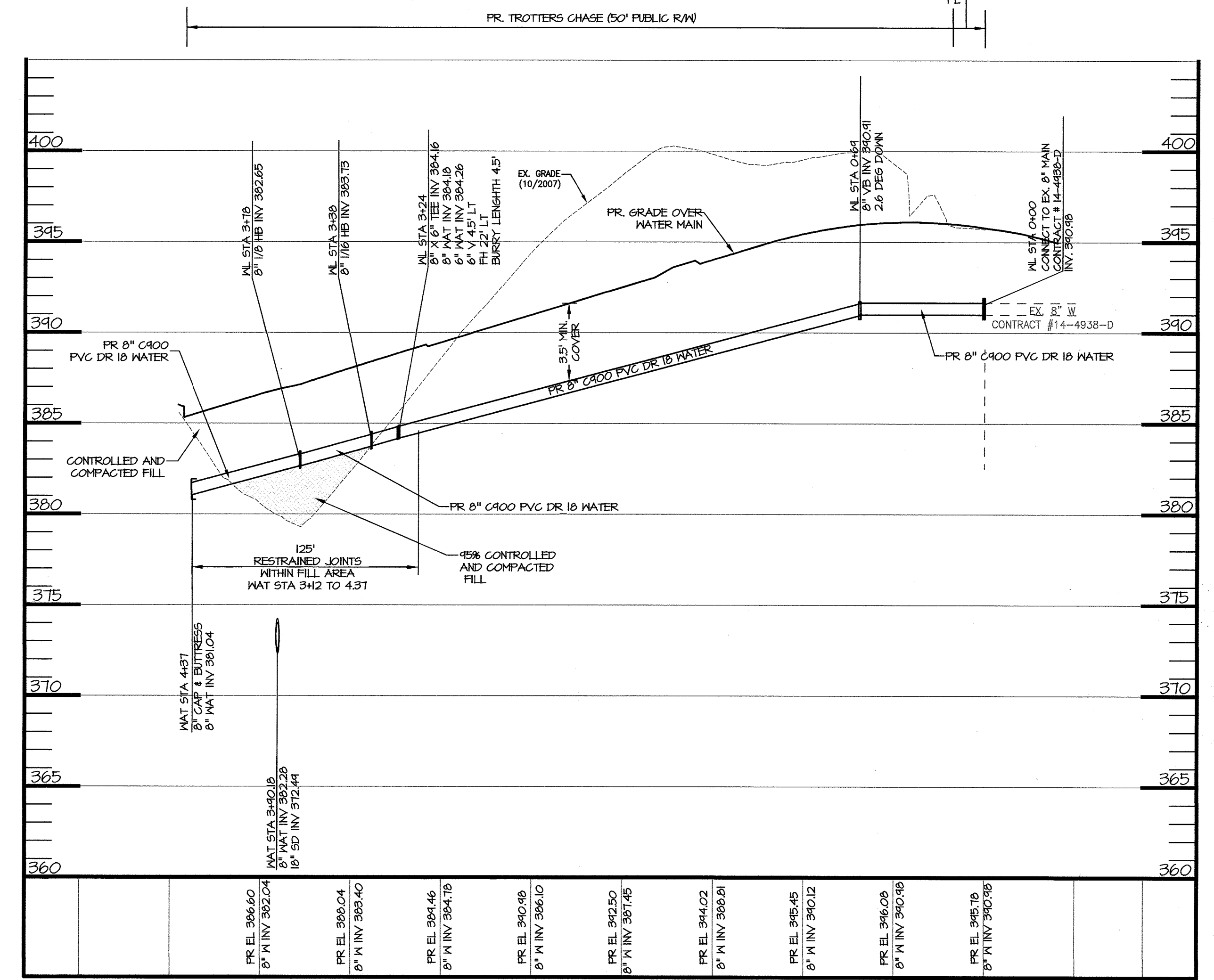
V:\PROJ\15368 TROTTERS KNOLL\PLANS\DWG\SEC 2\PILOT\PLAN STES\FINAL\WATER AND SEWER\15368-FIN-02-PLAN.dwg, 2/28/2019 9:55:46 AM, JGardner, 1, Copyright 2019 Morris & Fitch Associates, Inc.



PUBLIC SEWER PROFILE
SCALE: H: 1"=50'
V: 1"=5'



PUBLIC SEWER PROFILE
SCALE: H: 1"=50'
V: 1"=5'



TROTTERS CHASE WATER PROFILE
SCALE: H: 1"=50'
V: 1"=5'

CONTROLLED AND COMPACTED FILL PER ASTM D-1557 TO BE CERTIFIED BY AN APPROVED ON-SITE GEOTECHNICAL ENGINEER

COMPACTED SPECIFICATIONS FOR UTILITIES IN FILL

WHERE UTILITY PIPES ARE TO BE PLACED ON COMPACTED FILL, THE FOLLOWING APPLIES:

- A. PRIOR TO PLACEMENT OF COMPACTED FILL, ANY SOFT OR OTHERWISE UNSUITABLE SOILS ENCOUNTERED AT THE EXISTING RAVINE BOTTOM OR SLOPE, SHALL BE UNDERCUT AND REMOVED FROM THE CONSTRUCTION AREA.
- B. ACCEPTABLE COMPACTED FILL SHALL BE PLACED IN SIX INCH THICK LOOSE LIFTS AND COMPACTED TO AT LEAST 95 PERCENT OF THE MAXIMUM DENSITY AS DETERMINED BY ASTM D-1557, CLASS I FILL.
- C. THE COMPACTED FILL SHALL BE BENCHED INTO THE EXISTING VIRGIN SLOPES WITH EACH LIFT PLACED TO A SMOOTH TRANSITION FROM VIRGIN TO FILL SOILS.

Unit #	4" Invert @ main	Slope	Maximum Length (C)	Min. Cellar Elevation (M.C.E.)	Actual Lowest Floor Elevation
SMH 11 TO SMH 5					
89	380.49	2.00%	64.33	384.92	388.33
88	380.95	2.00%	59.00	385.27	389.00
87	381.57	2.00%	62.01	385.95	389.66
86	381.85	2.00%	59.07	386.18	391.00
93	382.36	2.00%	56.33	386.35	392.30
85	382.56	2.00%	64.33	386.98	391.66
94	383.11	2.00%	51.99	387.01	393.00
95	383.48	2.00%	54.00	387.42	393.66
96	383.99	2.00%	52.00	387.89	394.33
97	384.36	2.00%	54.00	388.31	395.00
98	384.93	2.00%	52.00	388.84	395.66
99	385.24	2.00%	54.00	389.19	396.33
100	385.92	2.00%	54.33	389.87	397.00
SMH 9 TO SMH 7					
92	376.50	2.00%	67.05	381.08	383.50
91	376.59	2.00%	62.53	380.79	383.50
90	376.59	2.00%	73.71	380.99	383.50

SEWER HOUSE CONNECTION AS-BUILT LOCATION TABLE						
UNIT	FROM	TO	FEET	TO	FEET	
85	SHC	MH-4	21.5	FH STA. 3+24	129.0	
86	SHC	MH-4	52.0	FH STA. 3+24	98.5	
87	SHC	MH-4	65.0	FH STA. 3+24	87.0	
88	SHC	MH-4	93.0	FH STA. 3+24	65.0	
89	SHC	MH-4	115.0	FH STA. 3-24	52.0	
90	SHC	SMH-9	25.5	SMH-7	83.0	
91	SHC	SMH-9	26.5	SMH-7	79.0	
92	SHC	SMH-9	43.0	SMH-7	73.0	
93	SHC	SMH-II	164.0	MH-4	52.0	
94	SHC	SMH-II	131.0	MH-4	43.0	
95	SHC	SMH-II	114.0	MH-4	48.5	
96	SHC	SMH-II	91.0	MH-4	61.5	
97	SHC	SMH-II	74.5	MH-4	75.5	
98	SHC	SMH-II	50.0	MH-4	98.0	
99	SHC	SMH-II	37.5	MH-4	111.0	
100	SHC	SMH-II	24.0	MH-4	140.0	
FHV STA. 3+24		SMH-5	38.3	FH STA. 3+24	23.4	

WATER HOUSE CONNECTION AS-BUILT LOCATION TABLE						
UNIT	FROM	TO	FEET	TO	FEET	
85/86	TWHC	MH-4	42.0	FH STA. 3+24	108.0	
87/88	TWHC	MH-4	81.0	FH STA. 3+24	73.0	
89	WHC	MH-4	123.0	FH STA. 3-24	46.5	
90/91	TWHC	SMH-9	22.0	SMH-7	79.0	
92	WHC	SMH-9	47.0	SMH-7	64.0	
93/94	TWHC	SMH-II	143.0	MH-4	42.0	
95/96	TWHC	SMH-II	102.5	MH-4	54.0	
97/98	TWHC	SMH-II	64.0	MH-4	84.0	
99/100	TWHC	SMH-II	30.0	MH-4	121.0	

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND CHIEF, DEVELOPMENT ENGINEERING DIVISION	MRA MORRIS & FITCHE ASSOCIATES, INC. ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS 14280 PARK CENTER DRIVE, SUITE A LAUREL, MARYLAND 20707 (410) 792-9792 or (301) 776-1690 FAX (410) 792-7395	 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. 19916, EXPIRATION DATE: 01/14/21.	DES: ATS BY NO: DRN: MZR CHK: DJ DATE: 05/31/18	REVISIONS DATE	FINAL WATER AND SEWER PLAN WATER & SEWER PROFILES	TROTTERS KNOLL - SECTION II THE DEEP RUN PROPERTY CONTRACT NO. 14-4993-D	JOB NO.: 15368X03 SCALE: 1" = 50' SHEET 3 OF 3
--	--	--	---	---	-------------------	--	---	--

P:\PROJ\15368 TROTTERS KNOLL\PLANS\DEVE\SEC 2\PLAN\PLAN SETS\FINAL\WATER AND SEWER\15368-FIN-03-PROF.dwg, 1/8/2019 11:32:16 AM, JGould, 1:1, Copyright 2018, Morris & Ritchie Associates, Inc.