

**GENERAL NOTES**

**PART I**

- APPROXIMATE LOCATION 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 MARCH 2006 BY ROBERT H. VOGEL ENGINEERING, INC.
- HORIZONTAL AND VERTICAL SURVEY CONTROLS:  
THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD '83/'91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS 37AA AND 37AB.  
ALL VERTICAL CONTROLS ARE BASED ON NAVD' 88. VERTICAL CONTROLS PROVIDED ON DRAWINGS ARE:  
GEODETIC SURVEY CONTROL 3044005R (N. 578233.92, E. 1473142.33)  
BRASS DISC SET ON TOP OF A CONCRETE MONUMENT, LOCATED IN THE GRASS MEDIAN ALONG ROUTE 175; 1000'+/- WEST OF TAMAR DRIVE; 4.3' OFF EXISTING PAVING OF WB LANE OF 175, AND 45' WEST AND DIRECTLY SIDE OF THE WEST 175 SHOW RTE SIGN.  
GEODETIC SURVEY CONTROL 3044004R (N. 578128.03, E. 1473460.71)  
BRASS DISC SET ON TOP OF A CONCRETE MONUMENT, LOCATED IN THE GRASS MEDIAN ALONG ROUTE 175; 0.1+/- MILE EAST OF TAMAR DRIVE; 4.3' OFF EXISTING PAVING OF WB LANE OF 175.
- 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 DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- FOR DETAILS NOT SHOWN ON THE DRAWING, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATIONS OF THE TEST PITS. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN THESE PLANS:  
AT&T \_\_\_\_\_ 1-800-252-1133  
BGE (CONSTRUCTION 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 THE CONSTRUCTION OF THE MAIN.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-7450 AT LEAST FIVE WORKING DAYS BEFORE ANY 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.

**PART II - WATER**

- ALL WATER MAINS SHALL BE D.I.P. CLASS 54 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 INSTALLED 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 MAIN 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 ANNA STANDARD CODE 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 INSTALLED UNDER THIS CONTRACT. ALL PVC PIPE SHALL CONTAIN MARKINGS TO ALLOW THE CROSS REFERENCING OF THE PIPE SUPPLIED TO THE TEST RECORDS RECEIVED.
- UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS, SEVENTEEN (17) POUND 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. MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING RESTRAINTS AND HARNESSSES. ZINC ANODES SHALL BE INSTALLED ON ALL STAINLESS STEEL FITTINGS AND SADDLES USED WITH PVC MAINS. ALL "TREES" USED WITH PVC MAINS SHALL BE DUCTILE IRON. (CONTINUED...)

**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 CS-52. WHERE WATERTIGHT MANHOLE FRAMES AND COVERS ARE USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT CELLAR CANNOT BE SERVED.

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE SPECIFICATIONS AND WITH FINAL ROAD CONSTRUCTION PLANS **8-13-19**

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

*[Signature]* **5/16/13**  
SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
*[Signature]* **5/21/13**  
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND  
*[Signature]* **5/21/13**  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

# FINAL WATER AND SEWER PLAN

## AUTUMN RIVER PHASE IV

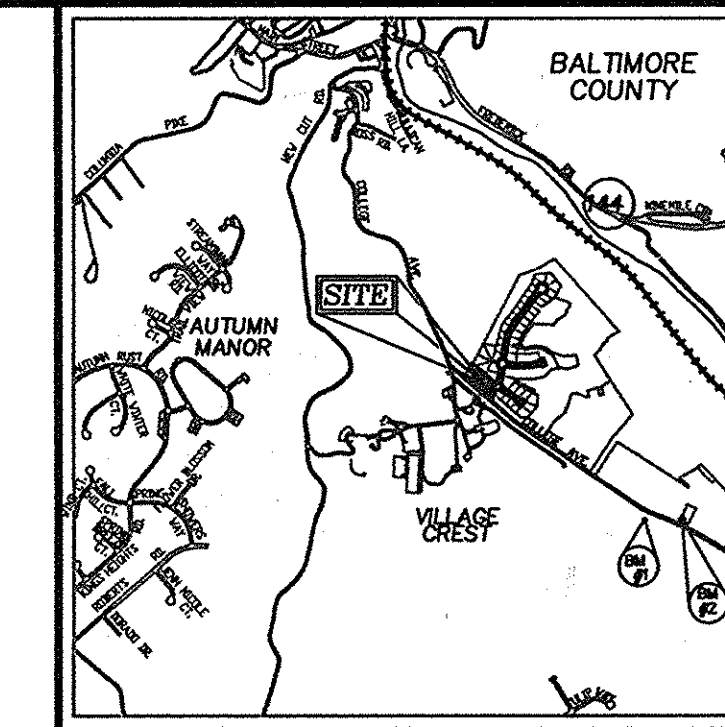
### LOTS 111-119 AND 110-113

## CONTRACT 14-4720-D

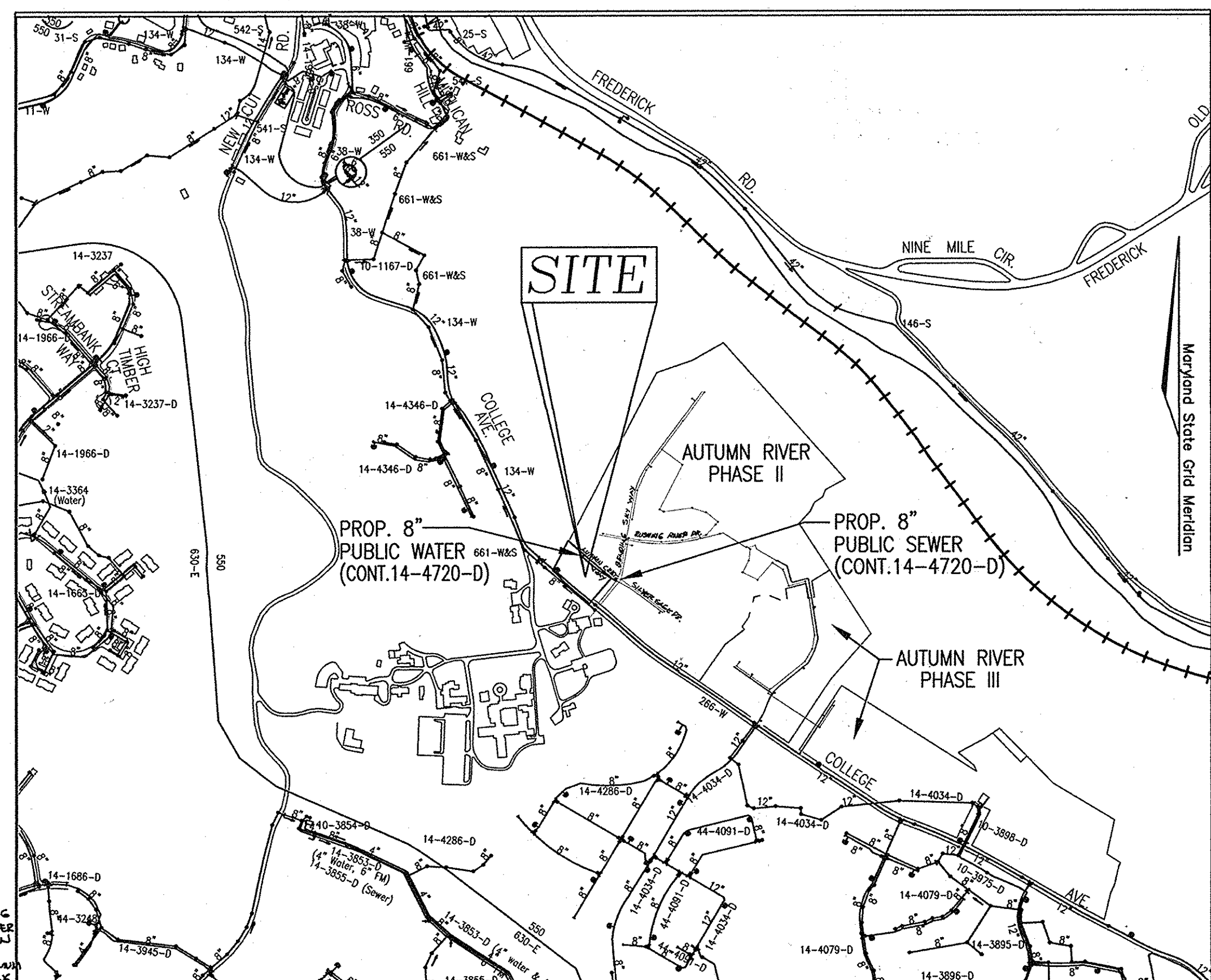
**BENCHMARKS**

BENCHMARK NO. 1: COUNTY CONTROL #3044005R  
3/4" REBAR 0.8' BELOW SURFACE  
N. 578233.92, E. 1473142.33  
ELEV. = 374.389

BENCHMARK NO. 2: COUNTY CONTROL #3044004R  
3/4" REBAR 0.6' BELOW SURFACE  
N. 578128.03, E. 1473460.71  
ELEV. = 362.575



LOCATION MAP  
SCALE: 1"=2000  
ADC MAP COORDINATE: PG. 4815 G3



VICINITY MAP  
SCALE: 1"=600'

**PART II - WATER (CONTINUATION...)**

- SPRINKLER SYSTEM FOR SINGLE RESIDENTIAL DWELLING UNITS SHALL HAVE WATER HOSE CONNECTIONS AND WATER MAINS THAT ARE GIVEN IN ACCORDANCE WITH THE DETAILS OF THE SPRINKLER SYSTEMS, SPRINKLER SYSTEM FOR... SINGLE RESIDENTIAL DWELLINGS SHALL HAVE A MINIMUM OF 1.5" SERVICE CONNECTION WITH 1" OUTSIDE WATER SERVICE.

Type of Building :	SINGLE FAMILY ATTACHED
No. of Lots/Parcels :	9
No. of single Water House Connections :	7
No. of twin Water House Connections :	0
No. of Sewer House Connections :	7
Sewer Shed :	PATAPSCO
Treatment Plant :	PATAPSCO
Water Zone :	550
Test Gradient:	700

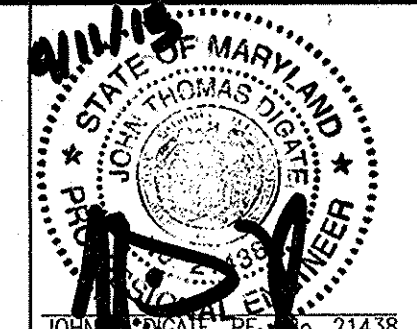
**LEGEND**

- EXISTING WATER MAIN
- PROPOSED WATER MAIN
- FIRE HYDRANT
- PROPOSED VALVE
- PROPOSED TEE
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- PROPOSED SEWER
- EXISTING SEWER
- SEWER MANHOLE
- WATER HOUSE CONNECTION
- SEWER HOUSE CONNECTION
- PROPOSED SIGN
- PROPOSED LIGHT

**QUANTITIES**

NAME OF UTILITY CONTRACTOR :				
SURVEY AND DRAFTING DIVISION AS-BUILT DATE :				
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
WATER				
8"x8" T&V	1 EA			SMITH BLAIR
8"x6" TEE	1 EA			TYLER / UNION FOUNDRY
6" WATER	19 LF	30'		AMSTEAD / GRIFFIN
8" WATER	242 LF	242'		AMSTEAD / GRIFFIN
1 1/2" WHC	280 LF	120'		MUELLER INDUSTRIES
8" CAP & BUTTRESS	1 EA			MUELLER INDUSTRIES
FIRE HYDRANT & VALVE	1 EA			MUELLER INDUSTRIES
SEWER				
4" SHC	557 LF	168'		DIAMOND PLASTICS
8" SEWER	250 LF	211'		DIAMOND PLASTICS
MANHOLE	3 EA	3		ATLANTIC

**ROBERT H. VOGEL ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961



PROFESSIONAL CERTIFICATE  
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. 21438 EXPIRATION DATE: 12-16-2016

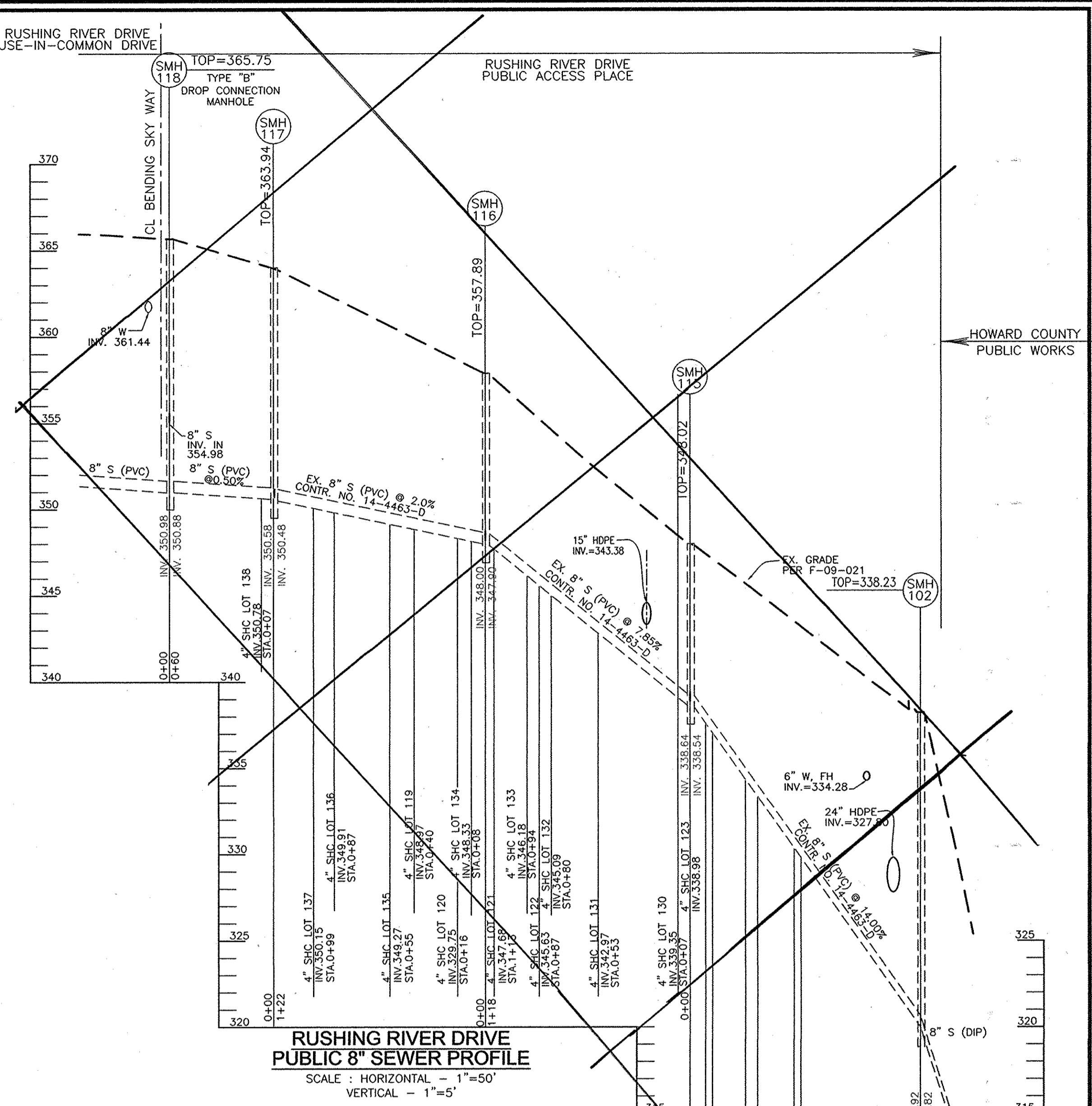
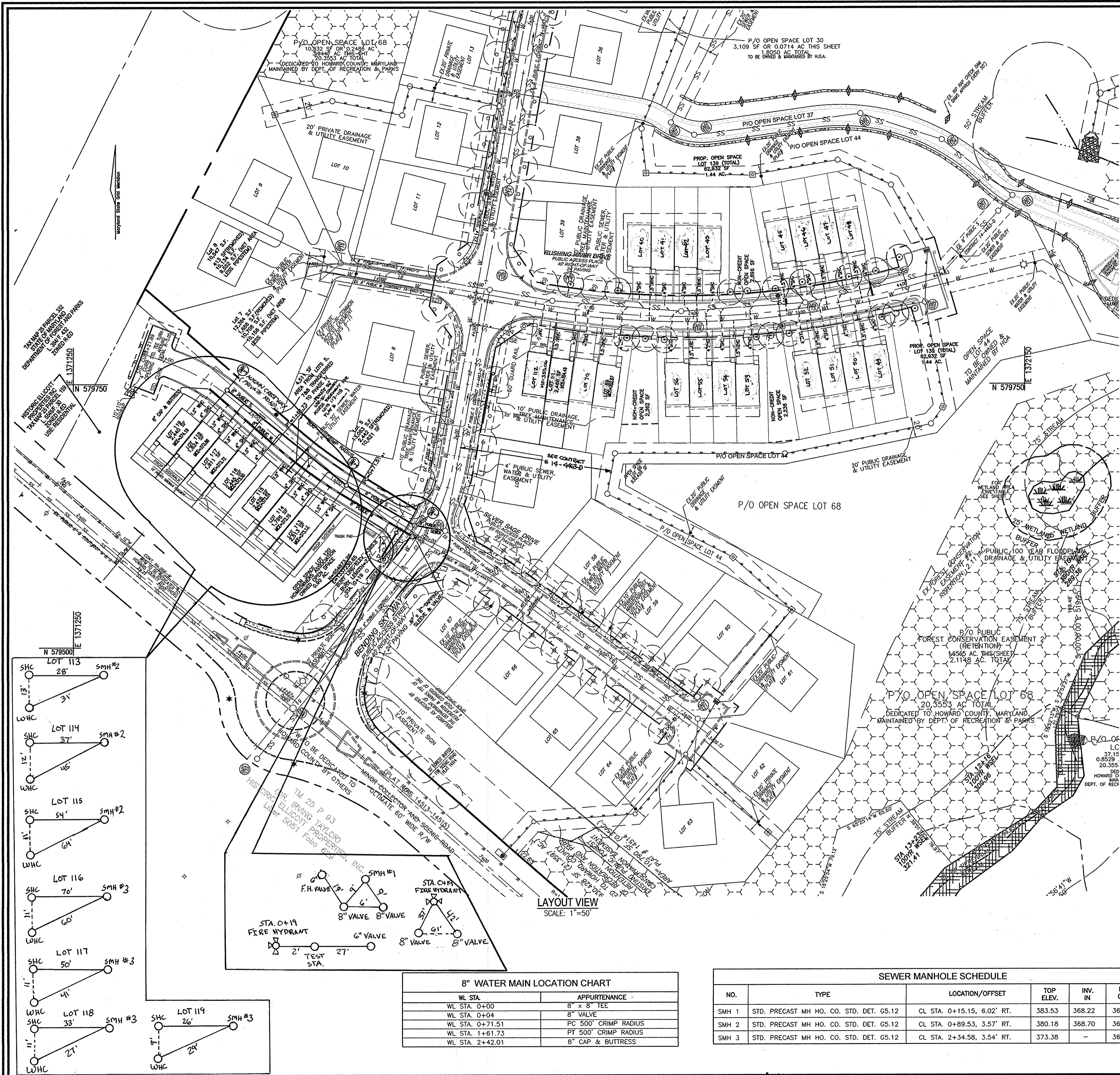
DCS: RHV		
DRN: KG	2 AS-BUILT	W/10/14
CHK: RHV	1 REDUCE NUMBER OF LOTS FROM 21 TO 9	02-12-13
DATE: NOVEMBER 2011	NO.	REVISION

**FINAL WATER & SEWER PLAN**  
**CONTRACT 14-4720-D**  
**COVER SHEET**

**AUTUMN RIVER PHASE IV**  
**LOTS 111-119**

600' SCALE MAP NO. 25 BLOCK NO. 14 & 21  
TAX MAP 25 GRID 14 & 21 PARCELS 172, 279  
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 1 OF 3



**AUTUMN RIVER PHASE IV MCE's**

LOT #	EL @ MAIN	TYPE	DIST TO RW	EL @ RW	DIST RW - HSE	MCE
113	369.04	SHC	20	369.44	59	373.12
114	369.03	SHC	22	369.47	59	373.15
115	369.18	SHC	23	369.64	55	373.24
116	369.44	SHC	23	369.90	55	373.50
117	369.60	SHC	22	370.04	59	373.72
118	369.80	SHC	21	370.22	57	373.86
119	370.09	SHC	20	370.49	60	374.19
119	348.97	SHC	13	349.23	66	353.05
120	348.49	SHC	14	348.77	64	352.85
121	347.68	SHC	14	347.96	67	351.80
122	345.63	SHC	13	345.89	63	349.65
123	332.94	SHC	16	333.30	67	343.14
124	337.45	SHC	15	337.75	65	341.55
125	333.25	SHC	13	333.51	67	337.35
126	329.75	SHC	13	330.01	64	333.79
127	330.31	SHC	21	330.85	67	334.69
128	334.23	SHC	27	334.77	63	338.53
129	336.89	SHC	26	337.41	66	341.23
130	339.35	SHC	25	339.85	64	343.63
131	342.97	SHC	27	343.51	68	347.37
132	345.85	SHC	26	346.61	64	349.39
133	346.18	SHC	26	346.70	66	350.52
134	346.33	SHC	26	346.85	64	352.63
135	349.27	SHC	27	349.81	68	353.76
136	349.91	SHC	27	350.45	64	354.23
111	350.15	SHC	26	350.67	66	354.49
112	350.78	SHC	25	351.28	64	355.06

**SEWER MANHOLE SCHEDULE**

NO.	TYPE	LOCATION/OFFSET	TOP ELEV.	INV. IN	INV. OUT
SMH 1	STD. PRECAST MH HO. CO. STD. DET. GS.12	CL STA. 0+15.15, 6.02' RT.	383.53	368.22	368.12
SMH 2	STD. PRECAST MH HO. CO. STD. DET. GS.12	CL STA. 0+89.53, 3.57' RT.	380.18	368.70	368.60
SMH 3	STD. PRECAST MH HO. CO. STD. DET. GS.12	CL STA. 2+34.58, 3.54' RT.	373.38	-	369.75

**OWNERS**  
HISTORIC ELLICOTT PROPERTIES, INC.  
4100 COLLEGE AVE.  
ELLICOTT CITY MD 21042-7819  
21043 - 5506  
(410) 465-3500

**DEVELOPER**  
AUTUMN DEVELOPMENT CORPORATION  
C/O LAND DESIGN & DEVELOPMENT, INC.  
5300 DORSEY HALL DR STE 102  
ELLICOTT CITY MD 21042-7819  
ATTN: MR. DONALD R. REUER  
(443) 367-0422

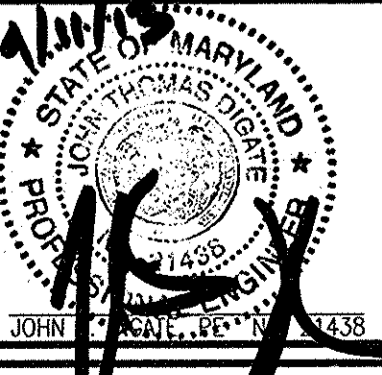
DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Steve Chan*  
5/11/13  
DATE

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND

*John Taylor*  
5/22/13  
DATE

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ENGINEER UNDER THE LAWS OF THE STATE  
OF MARYLAND, LICENSE NO. 2462  
EXPIRATION DATE: 12-16-2014

DES: RHV  
DRN: KG  
CHK: RHV

DATE: NOVEMBER 2011

NO. 2 AS-SUBT  
1 REDUCE NUMBER OF LOTS FROM 21 TO 9

DATE: 11/10/14  
12-12-13

**FINAL WATER & SEWER PLAN**  
**CONTRACT 14-4720-D**  
**PLAN AND PROFILE**

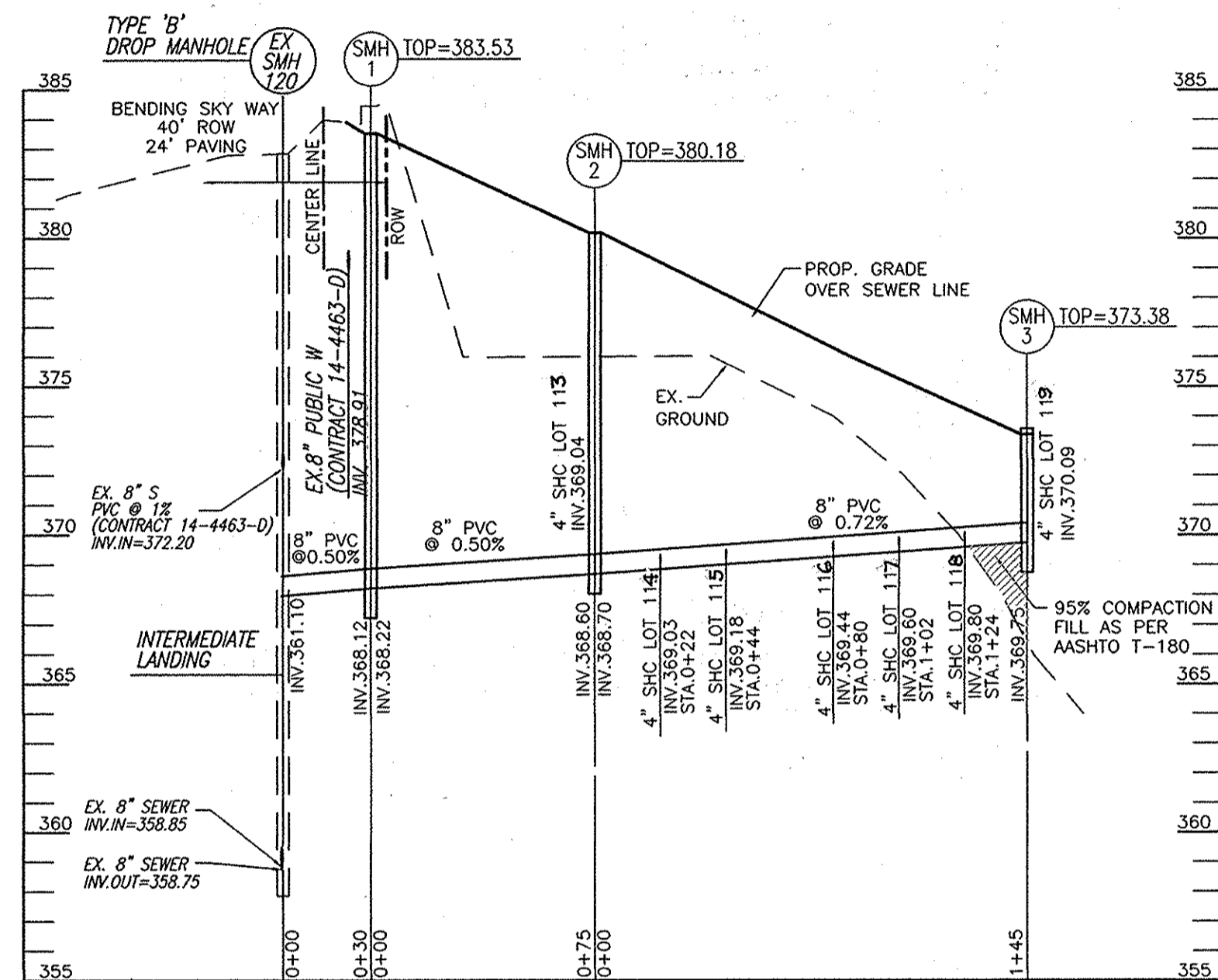
600' SCALE MAP NO. 25  
BLOCK NO. 14 & 21

**AUTUMN RIVER PHASE IV**  
LOTS 111-119

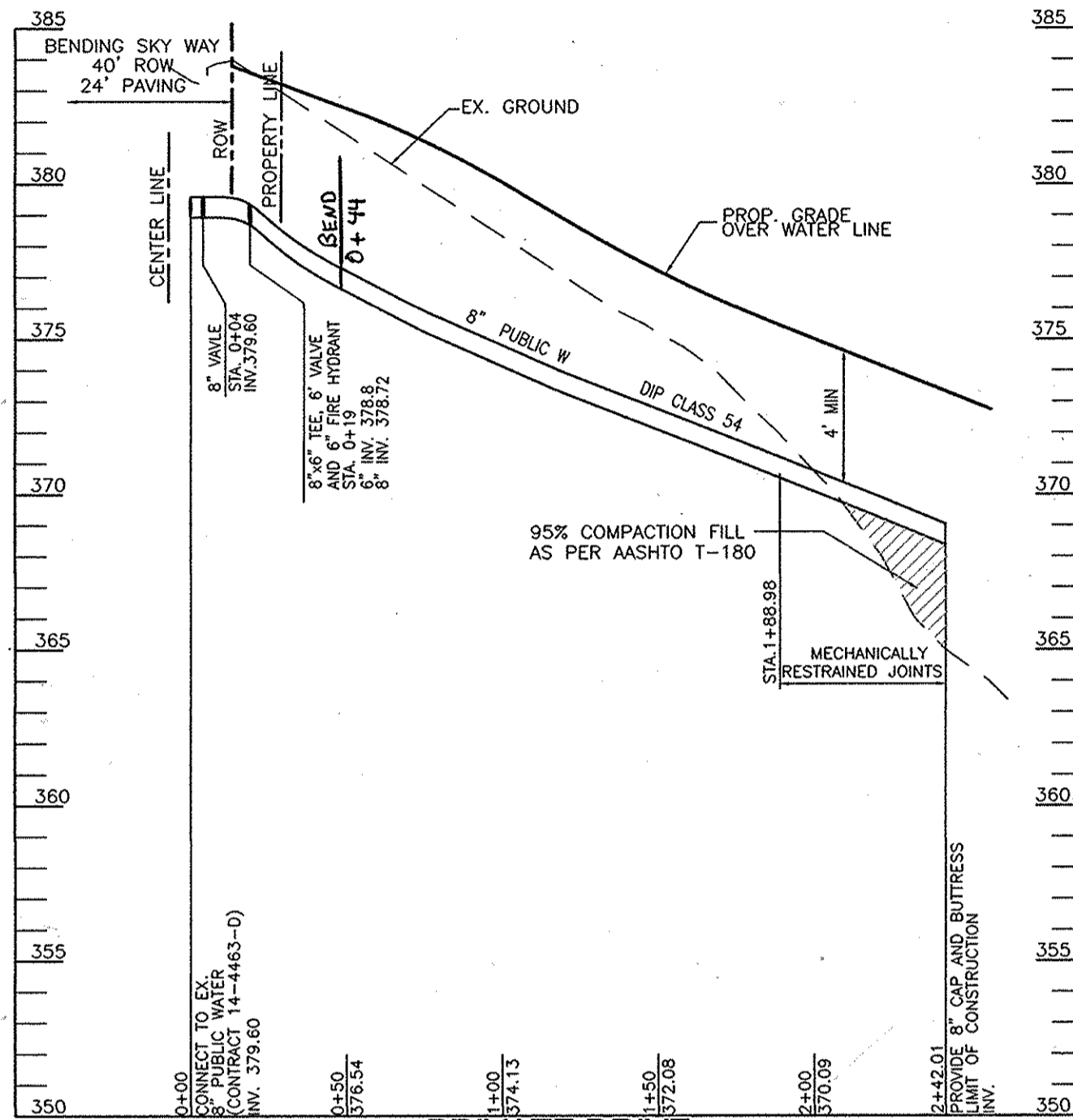
TAX MAP 25 GRID 14 & 21  
1ST ELECTION DISTRICT

PARCELS 172, 279  
HOWARD COUNTY, MARYLAND

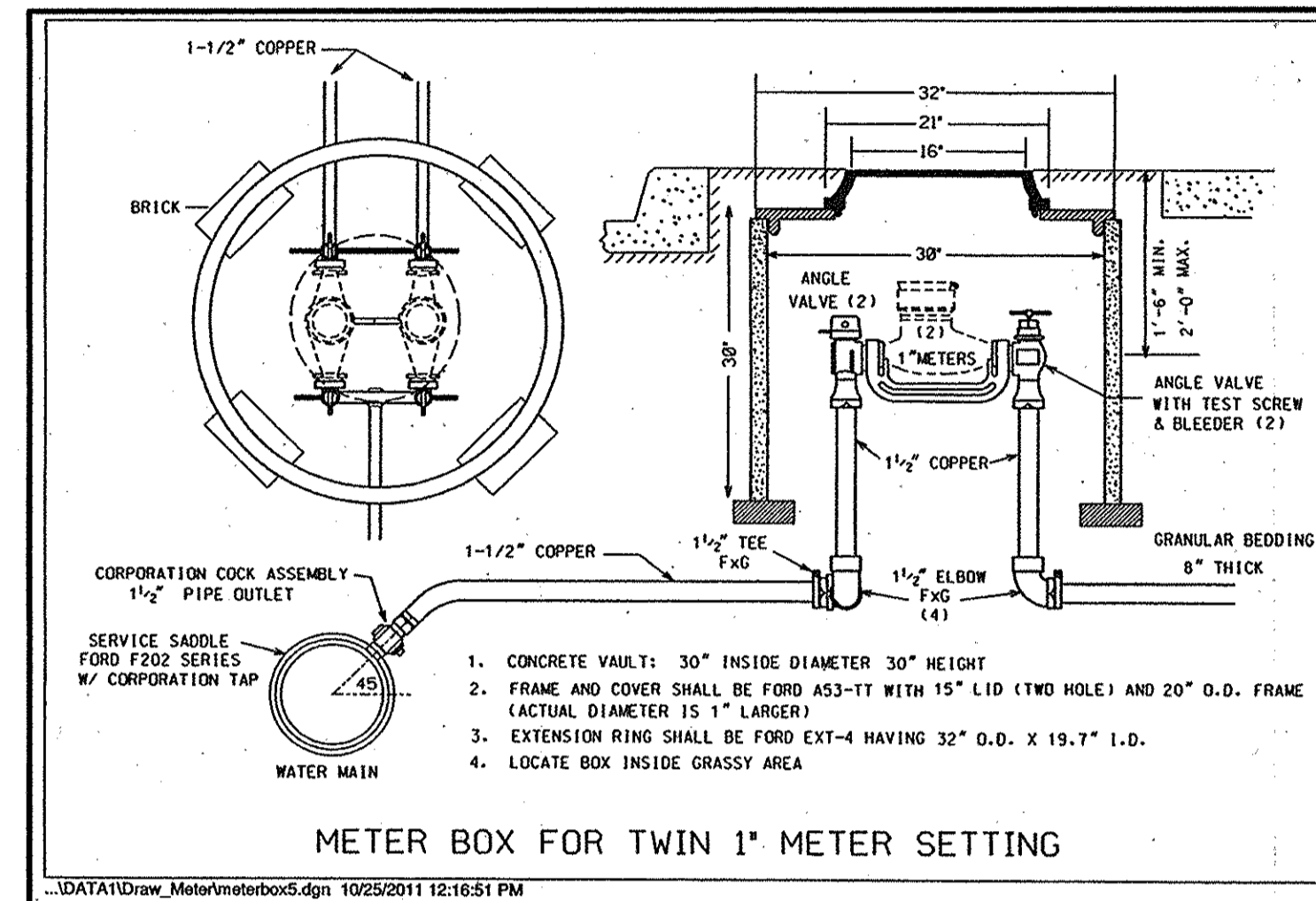
SCALE AS SHOWN  
SHEET 2 OF 3



**PRIVATE DRIVE  
8\"/>**



**PRIVATE DRIVE  
8\"/>**



8\"/>	
WL STA	APPURTENANCE
WL STA. 0+00	8' x 8' TEE
WL STA. 0+04	8' VALVE
WL STA. 0+71.51	PC 500' CRIMP RADIUS
WL STA. 1+61.73	PT 500' CRIMP RADIUS
WL STA. 2+42.01	8\"/>

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HOWARD COUNTY, MARYLAND

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EXPIRATION DATE: 12-16-2014

DES: RHV  
DRN: KG  
CHK: RHV  
DATE: NOVEMBER 2011

**FINAL WATER & SEWER PLAN  
CONTRACT 14-4720-D  
PLAN AND PROFILE**

**AUTUMN RIVER PHASE IV  
LOTS 111-119**

TAX MAP 25 GRID 14 & 21  
1ST ELECTION DISTRICT

PARCELS 172, 279  
HOWARD COUNTY, MARYLAND

SCALE  
AS  
SHOWN

SHEET  
3 OF 3