

**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.
  - THE EXISTING TOPOGRAPHY SHOWN HEREON IS TAKEN FROM AN AERIAL TOPOGRAPHIC SURVEY PREPARED BY POTOMAC AERIAL SURVEYS, DATED MARCH, 1998.
  - THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD 83/91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS 35HA AND 35HB. ALL VERTICAL CONTROLS ARE BASED ON NAVD 88. VERTICAL CONTROLS PROVIDED ON DRAWINGS ARE:  
 GEODETIC SURVEY CONTROL 35HA (N 553,966.7457 E 1,340,476.9524 )  
 BRASS DISC SET ON TOP OF A CONCRETE MONUMENT  
 GEODETIC SURVEY CONTROL 35HB (N 554,836.4156 E 1,337,888.3861 )  
 BRASS DISC SET ON TOP OF A CONCRETE MONUMENT
  - ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED.
  - 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 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 OPERATION 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) 410-637-8713  
 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 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 C-900 PVC (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.
  - SPRINKLER SYSTEM FOR SINGLE RESIDENTIAL DWELLING UNITS SHALL HAVE WATER HOUSE CONNECTIONS AND WATER METERS THAT ARE SIZED IN ACCORDANCE WITH THE DESIGN OF THE SPRINKLER SYSTEMS. SPRINKLER SYSTEMS FOR SINGLE RESIDENTIAL DWELLINGS SHALL HAVE A MINIMUM OF 1.5" SERVICE CONNECTION WITH A 1" OUTSIDE METER SETTING.
  - 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 REST 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 HARNESSSES. 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 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 ONE 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 #7 STONE ON BOTH SIDES OF THE HIGH DEFLECTION COUPLING OR 5-DEGREE SWEEP, TAKING CARE NOT TO USE COMPACTOR EQUIPMENT THAT WILL DAMAGE 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, DR18 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 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 INCORPORATE AN EXPANSION RESTRAINT 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.

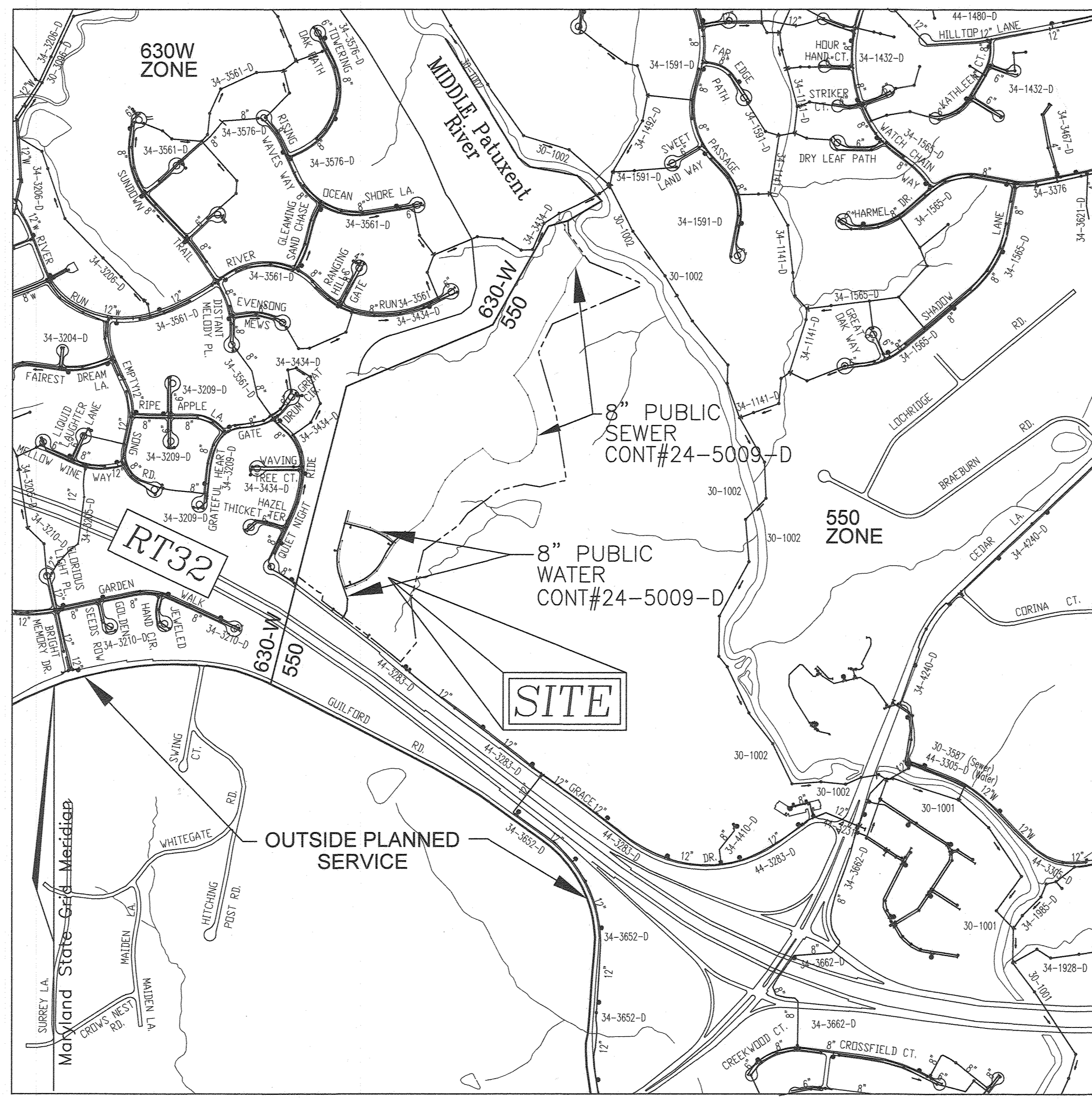
SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE SPECIFICATIONS AND WITH FINAL PLAN F-18-041

- 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.I. 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 CELLAR CANNOT BE SERVED.

# FINAL WATER AND SEWER CONSTRUCTION PLAN

## CEDAR CREEK - PHASE 1

LOTS 1-8 AND 39-82  
 CONTRACT 24-5009-D  
 HOWARD COUNTY, MARYLAND



**LOCATION MAP**  
 SCALE: 1"=600'

WATER ZONE: 550  
 TEST PRESSURE: 209 PSI  
 TEST GRADIENT: 827

Type of Building :	RESIDENTIAL
No. of Lots/Parcels :	65 SFD + 42 SFA
No. of single Water House Connections :	22
No. of Twin Water House Connections :	15
No. of Sewer House Connections :	105
No. of Sewer Sewer House Connections :	1
Sewer Shed :	PATUXENT RIVER
Treatment Plant :	PATUXENT RIVER (MIDDLE)

**WATER PRESSURE NOTE**

THE HOMES SERVED BY THIS CONTRACT ARE WITHIN AN AREA OF STATIC PRESSURE WHICH WILL EXCEED 80PSI THEREFORE ARE CONSIDERED TO BE WITHIN A HIGH PRESSURE ZONE. A PRESSURE REDUCING VALVE (PRV) AT THE WATER HOUSE SERVICE CONNECTION (WHC) WILL BE REQUIRED FOR ALL LOTS.

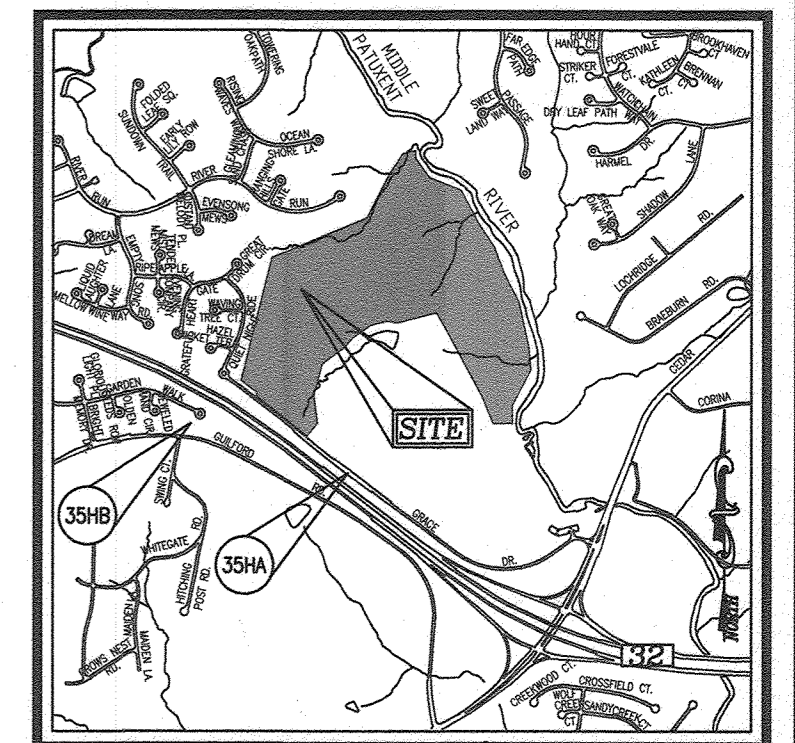
**BENCHMARKS**

BM 35HA\*  
 N 553,966.7457 E 1,340,476.9524  
 NAD 83 (Adj 07)  
 NAVD 88  
 ELEV. 404.584

BEING A STAMPED BRASS OR ALUMINUM DISC SET ON TOP OF A 3 FOOT DEEP COLUMN OF CONCRETE APPROXIMATELY 90'± NORTH OF GRACE DRIVE AND 160'± EAST OF THE EASTERN MOST ENTRY DRIVE FOR THE PROPERTY. (ALSO KNOWN AS "R-109" AND "0068").

BM 35HB\*  
 N 554,836.4156 E 1,337,888.3861  
 NAD 83 (Adj 07)  
 NAVD 88  
 ELEV. 449.699

BEING A STAMPED BRASS OR ALUMINUM DISC SET ON TOP OF A 3 FOOT DEEP COLUMN OF CONCRETE AT THE INTERSECTION OF GULFORD ROAD AND WHITEGATE ROAD, APPROXIMATELY 5'± NORTH OF GULFORD ROAD.



**VICINITY MAP**  
 SCALE: 1"=2000'  
 ADC MAP COORDINATE: 32  
 GRID B-3, C-3, B-4 & C-4

**SHEET INDEX**

DESCRIPTION	SHEET NO.
COVER SHEET & LOCATION MAP	1 OF 10
OVERALL SITE EXHIBIT	2 OF 10
EXISTING CONDITIONS PLAN	3 OF 10
LAYOUT PLANS	4-6 OF 10
WATER PROFILES	7 OF 10
SEWER PROFILES	8-10 OF 10

**LEGEND**

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

**QUANTITIES**

ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
<b>WATER</b>				
8" WATER C-900 (DR-18)	1,666 LF	1,666	DR-18	North American
6" WATER C-900 (DR-18)	120 LF	120		North American
8" X 8" TEE	3 EA	3		
8" X 6" TEE	6 EA	4	MJ Hydramatic	Sigma
12" X 8" TAPPING SLEEVE & VALVE	1 EA	1		Ford / Kennedy Valve
8" VALVE	8 EA	8		Kennedy
6" VALVE	6 EA	4		Kennedy
FIRE HYDRANT	6 EA	6		Kennedy
8" CAP & BUTTRESS	2 EA	2		Sigma
5" SWEEP	1 EA	Not Used		
1/16 BEND	3 EA	3		Sigma
1/32 H. BEND	10 EA	8		Sigma
<b>SEWER</b>				
MANHOLE	39 EA	39		Contractors Precast Corp.
8" S. PVC	3,055 LF	3,055	SDR-35	
8" S. DIP CLASS 52	1,262 LF	1,262		US Pipe & Foundry

**OWNER/DEVELOPER**  
 SIMPSON OAKS CRP3, LLC  
 4750 OWINGS MILLS BOULEVARD  
 OWINGS MILLS, MARYLAND 21117  
 410-356-9900

THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
  
 7/18/20  
 SOIL CONSERVATION DISTRICT

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND
 CHIEF, BUREAU OF UTILITIES	 CHIEF, DEVELOPMENT ENGINEERING DIVISION
6/23/20	7.16.20

**VOGEL ENGINEERING**  
  
**TIMMONS GROUP**  
 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043  
 P: 410.461.7666 F: 410.461.8961 www.timmons.com

PROFESSIONAL CERTIFICATE  
 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. 17033, EXPIRATION DATE: 09-27-2020

DRN: KG DES: VTG  
 CHK: RHV  
 DATE: JUNE 2020

ROBERT H. VOGEL, PE, No. 16193

BY	NO.	REVISION	DATE
WRA	2	AS BUILT DATA	04-01-21
VTG	1	REVISE WATER MAIN MATERIAL FROM DIP TO PVC-C900, AND REDUCE PROPOSED LOT DESIGN FOR PHASE 1 FROM 122 LOTS TO 52 LOTS	06-05-20

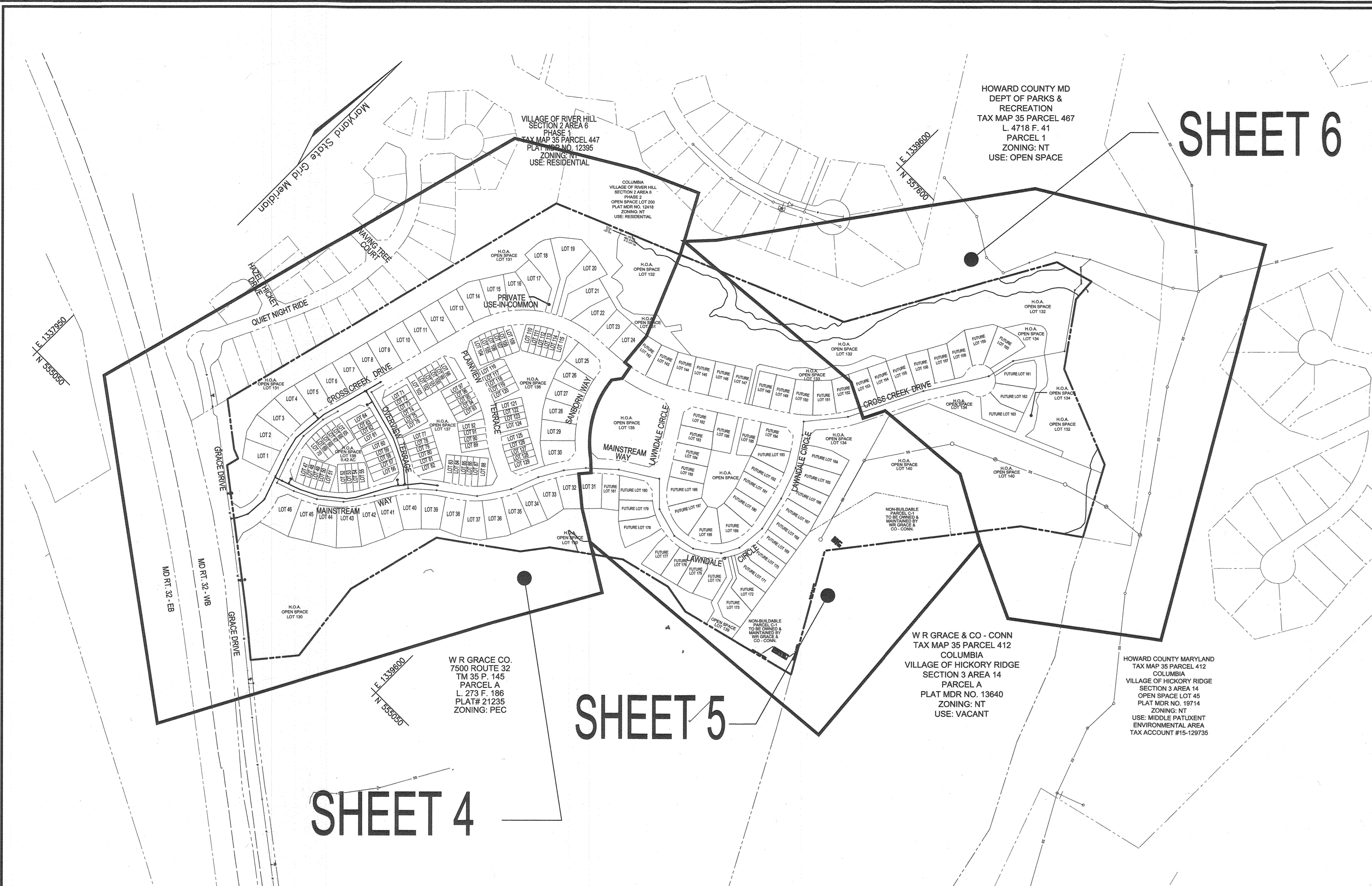
**FINAL WATER AND SEWER CONSTRUCTION PLAN-PH 1**  
**CONTRACT 24-5009-D**  
**COVER SHEET**

**CEDAR CREEK - PHASE 1**  
 LOTS 1-8 AND 39-82

600' SCALE MAP NO. 35 BLOCK NO. 21  
 TAX MAP 35 GRID 21 5TH ELECTION DISTRICT  
 ZONED: CEF-R HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 1 OF 10

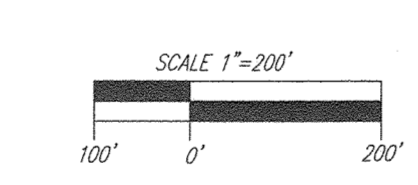




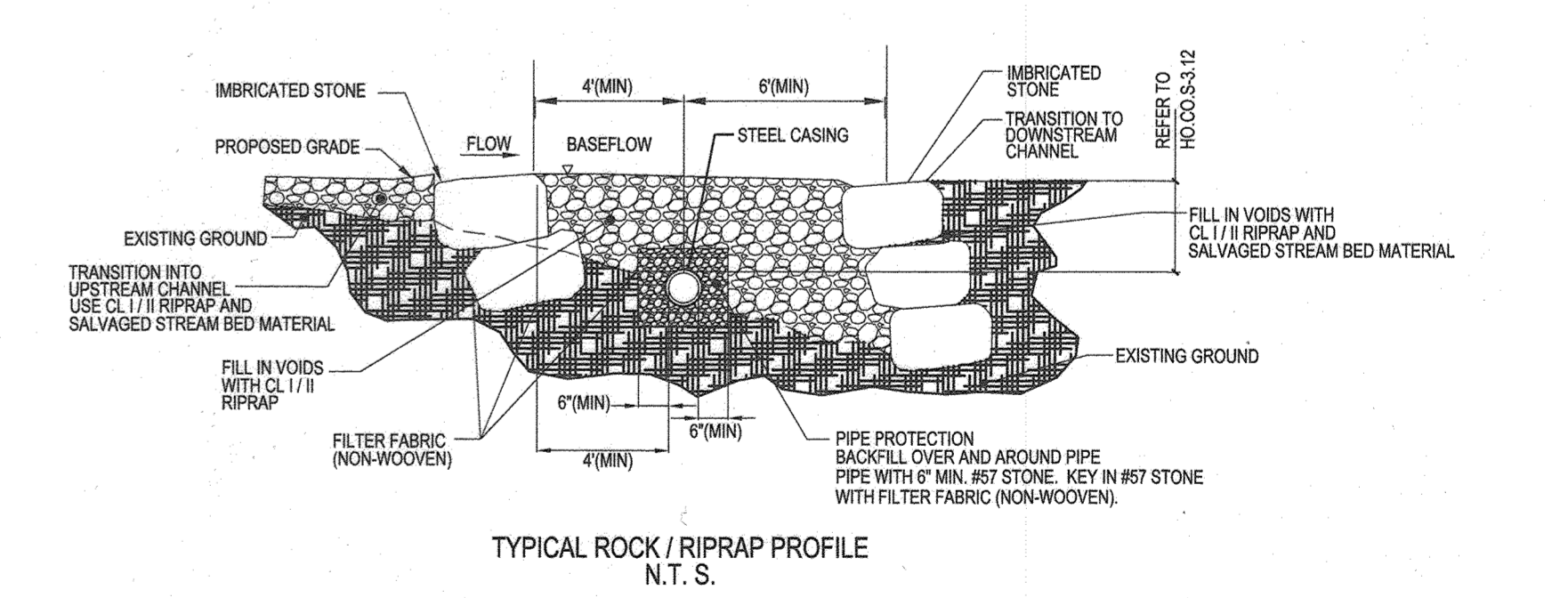
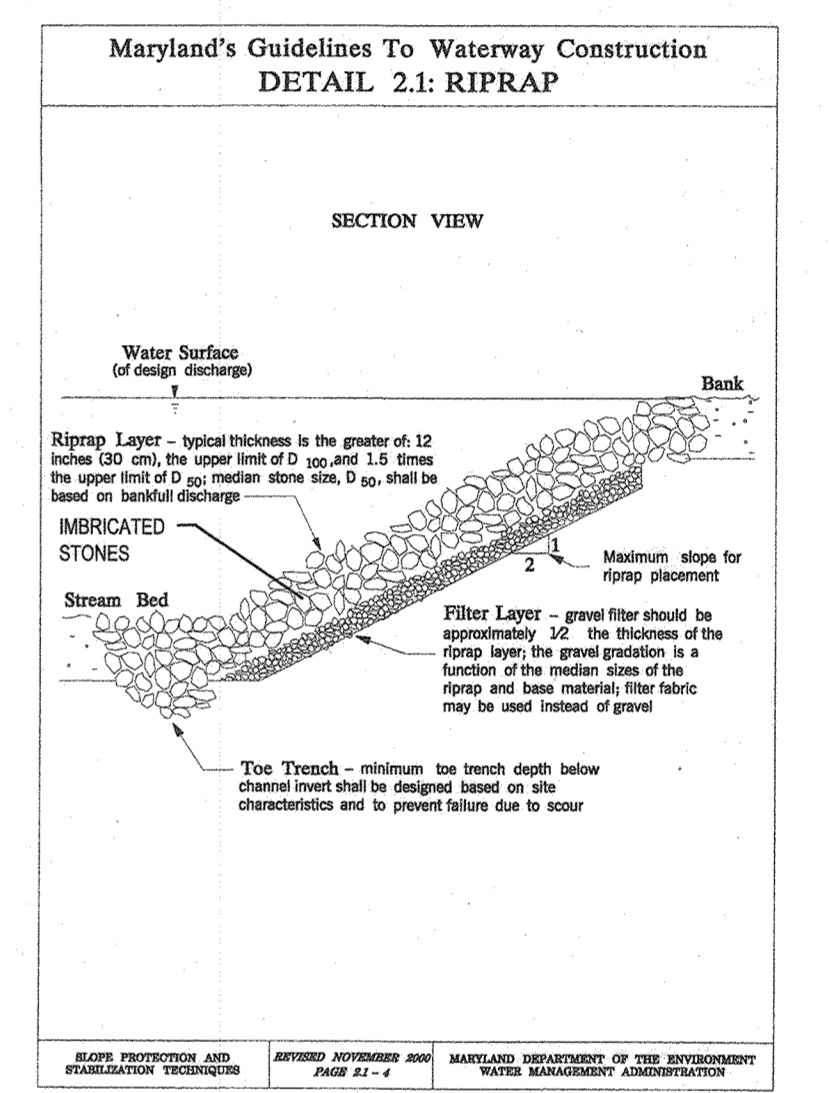
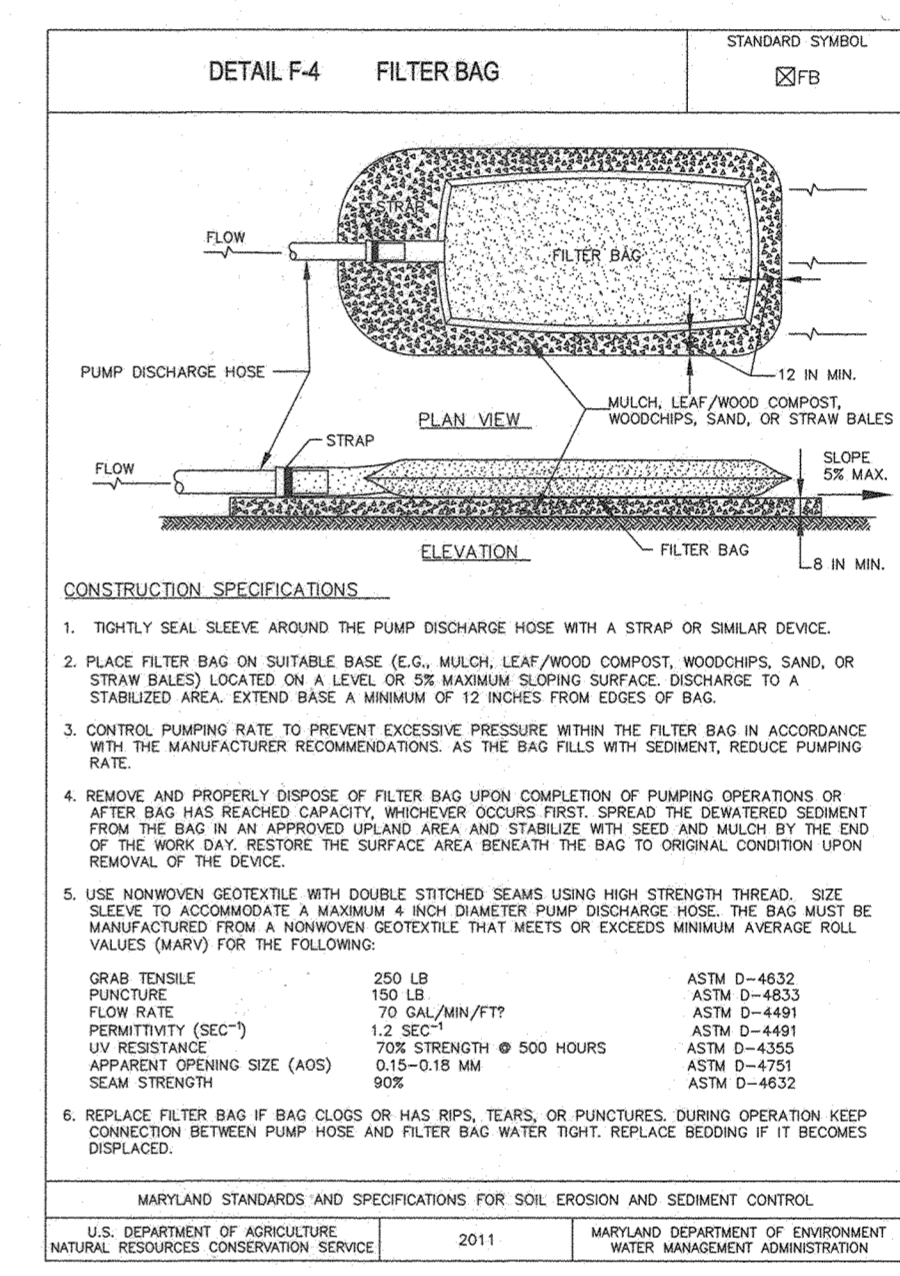
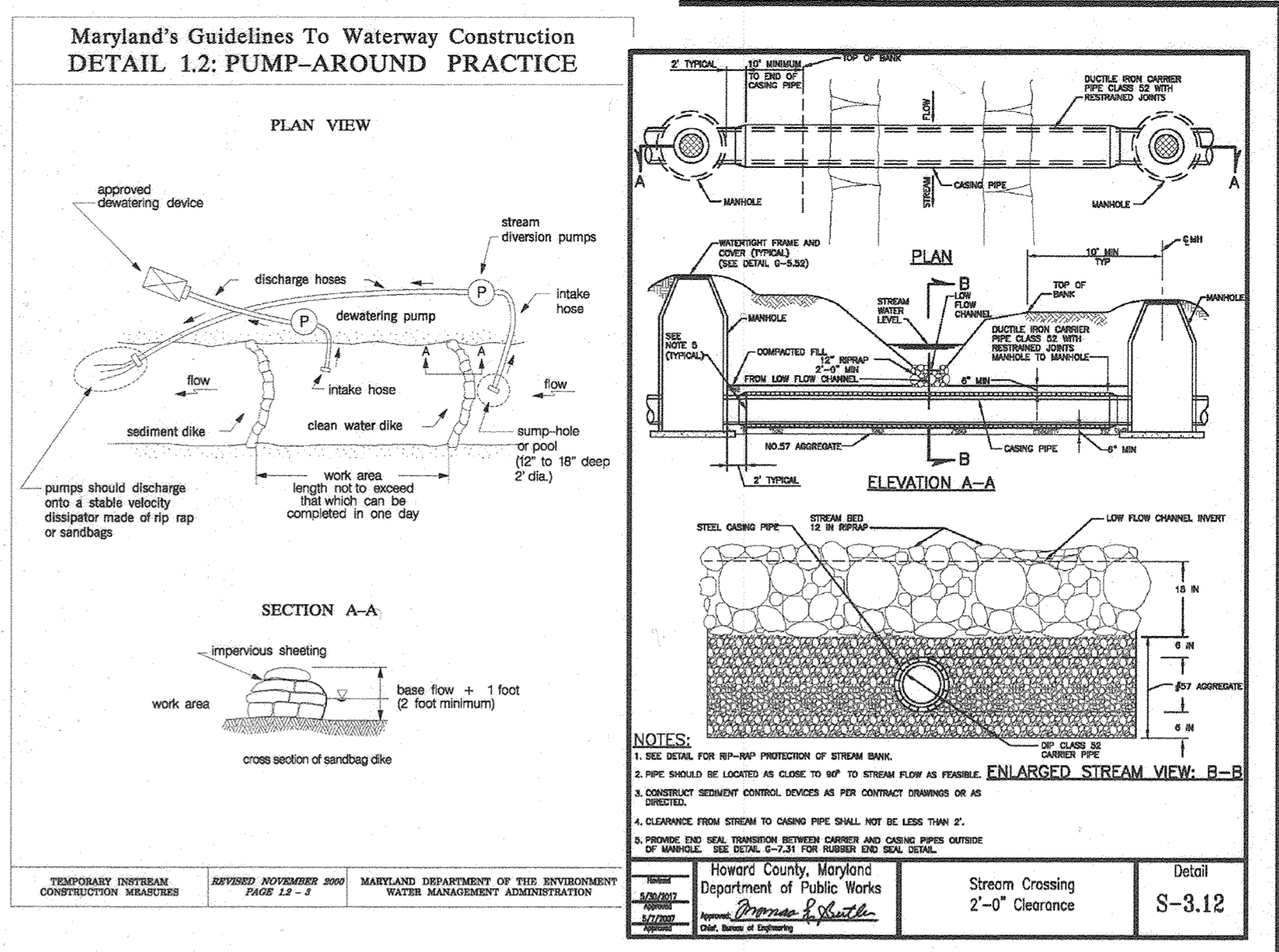
# SHEET 6

# SHEET 5

# SHEET 4

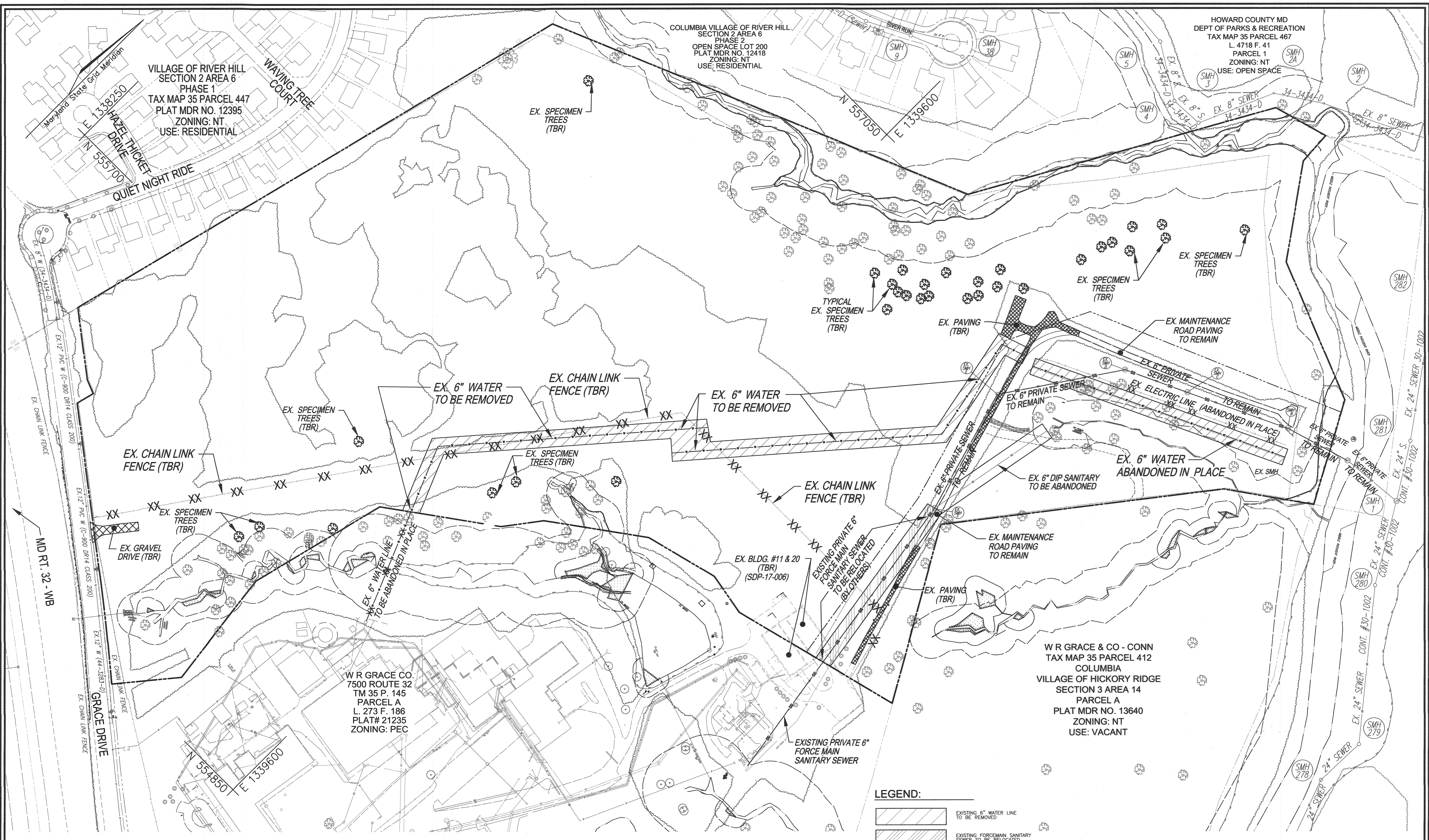


OVERALL SITE EXHIBIT PLAN  
SCALE: 1" = 200'

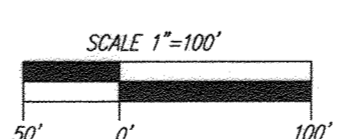


DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND 	<b>VOGEL ENGINEERING</b>  <b>TIMMONS GROUP</b> 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043 P: 410.461.7666 F: 410.461.8961 www.timmons.com		PROFESSIONAL CERTIFICATE I HEREBY CERTIFY 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. 18192 EXPIRATION DATE: 09-27-2020 DRN: KG DES: VTG CHK: RHV DATE: JUNE 2020	<table border="1"> <tr> <th>NO.</th> <th>REVISION</th> <th>DATE</th> </tr> <tr> <td>1</td> <td>REVISE WATER MAIN MATERIAL FROM DIP TO PVC-C900, AND REDUCE PROPOSED LOT DESIGN FOR PHASE 1 FROM 122 LOTS TO 62 LOTS</td> <td>06-05-20</td> </tr> </table>	NO.	REVISION	DATE	1	REVISE WATER MAIN MATERIAL FROM DIP TO PVC-C900, AND REDUCE PROPOSED LOT DESIGN FOR PHASE 1 FROM 122 LOTS TO 62 LOTS	06-05-20	<b>FINAL WATER AND SEWER CONSTRUCTION PLAN-PH 1 CONTRACT 24-5009-D</b> <b>OVERALL SITE EXHIBIT</b> 600' SCALE MAP NO. 35 BLOCK NO. 21	<b>CEDAR CREEK - PHASE 1</b> LOTS 1-B AND 39-82 TAX MAP 35 GRID 21 5TH ELECTION DISTRICT ZONED: CEF-R HOWARD COUNTY, MARYLAND	OWNER/DEVELOPER <b>SIMPSON OAKS CRP 3, LLC</b> 4750 OWINGS MILLS BOULEVARD OWINGS MILLS, MARYLAND 21117 410-356-9900	SCALE AS SHOWN  SHEET 2 OF 10
NO.	REVISION	DATE													
1	REVISE WATER MAIN MATERIAL FROM DIP TO PVC-C900, AND REDUCE PROPOSED LOT DESIGN FOR PHASE 1 FROM 122 LOTS TO 62 LOTS	06-05-20													





EXISTING CONDITION PLAN  
SCALE: 1" = 100'



**LEGEND:**

	EXISTING 6" WATER LINE TO BE REMOVED
	EXISTING FORCEMAIN SANITARY SEWER TO BE RELOCATED
	EXISTING PAVING TO BE REMOVED

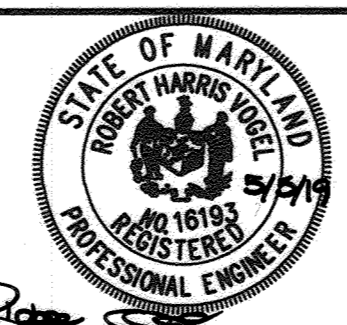
DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 6-19-19  
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND

*[Signature]* 6-19-19  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

**ROBERT H. VOGEL ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
3300 NORTH RIDGE ROAD, SUITE 110  
ELLIOTT CITY, MD 21043  
TEL: 410.461.7666 FAX: 410.461.8961



PROFESSIONAL CERTIFICATE

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. 16193, EXPIRATION DATE 09-27-2020

DRN:	VTG	DES:	VTG
CHK:	RHV	DATE:	MAY 2019
BY NO.	VTG	REVISION	1 REVISE WATER MAIN MATERIAL FROM DIP TO PVC-C900, AND REDUCE PROPOSED LOT DESIGN FOR PHASE 1 FROM 122 LOTS TO 52 LOTS
DATE	MAY 2019	DATE	6-5-20

**FINAL WATER AND SEWER CONSTRUCTION PLAN**  
CONTRACT 24-5009-D  
**EXISTING CONDITIONS PLAN**

**CEDAR CREEK - PHASE 1**  
LOTS 1-8 AND 39-82

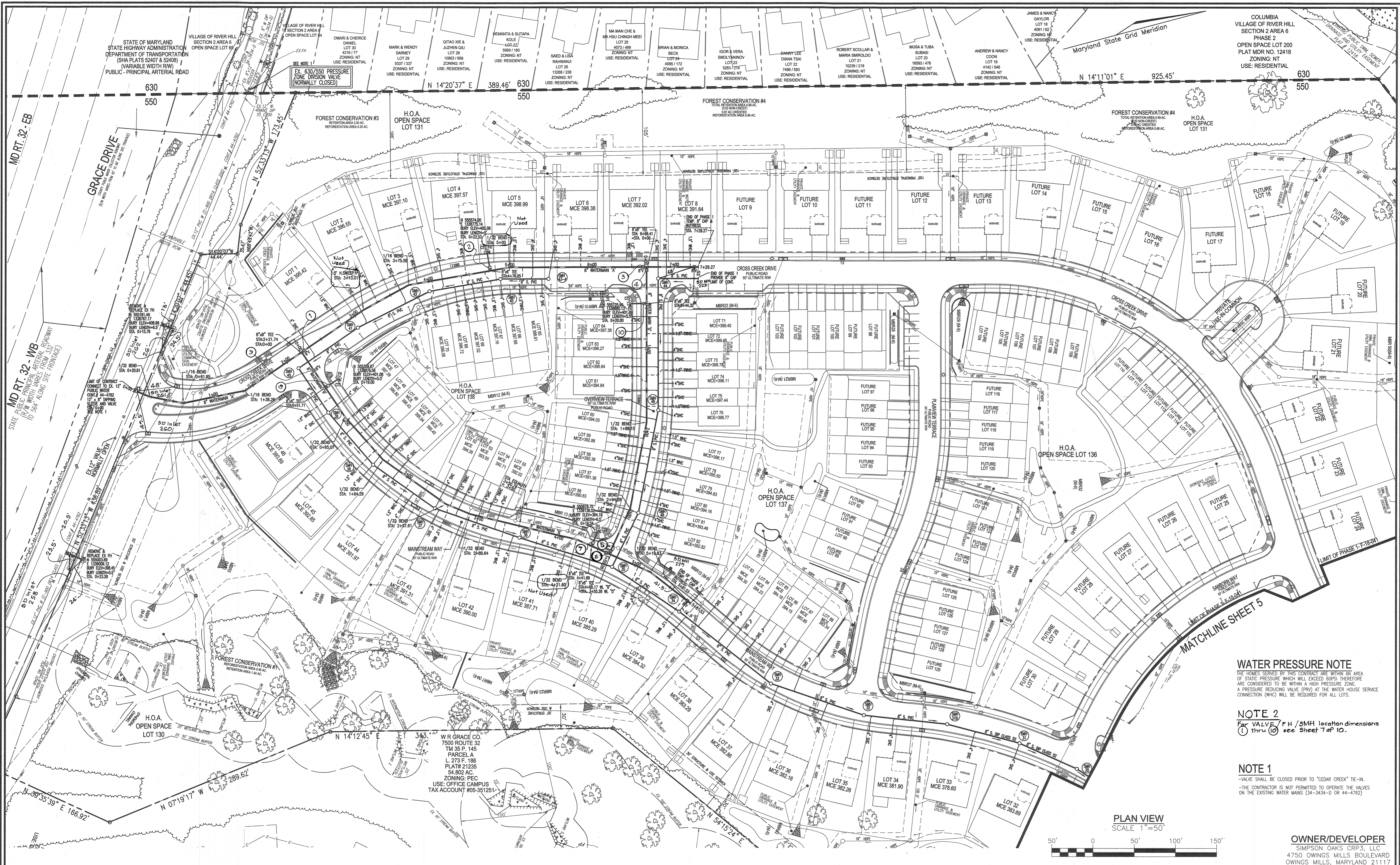
TAX MAP 35 GRID 21  
5TH ELECTION DISTRICT

ZONED: CEF-R  
HOWARD COUNTY, MARYLAND

**OWNER/DEVELOPER**  
SIMPSON OAKS CRP3, LLC  
4750 OWINGS MILLS BOULEVARD  
OWINGS MILLS, MARYLAND 21117  
410-356-9900

SCALE AS SHOWN  
SHEET 3 OF 10





**WATER PRESSURE NOTE**  
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**NOTE 2**  
 For VALVE / F.H. / SMH location dimensions ① thru ⑩ see Sheet 7 of 10.

**NOTE 1**  
 -VALVE SHALL BE CLOSED PRIOR TO "CEDAR CREEK" TIE-IN.  
 -THE CONTRACTOR IS NOT PERMITTED TO OPERATE THE VALVES ON THE EXISTING WATER MAINS (34-3434-D OR 44-4762)

PLAN VIEW  
 SCALE 1"=50'

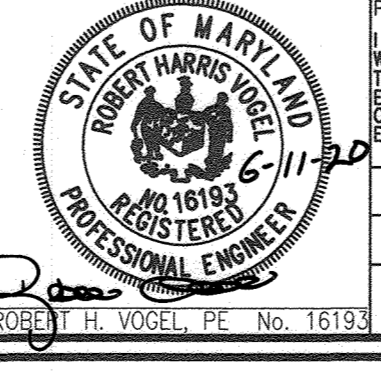


**OWNER/DEVELOPER**  
 SIMPSON OAKS CRP3, LLC  
 4750 OWINGS MILLS BOULEVARD  
 OWINGS MILLS, MARYLAND 21117  
 410-356-9900

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Chief, Bureau of Utilities  
 DATE: 7.16.20

DEPARTMENT OF PLANNING & ZONING  
 HOWARD COUNTY, MARYLAND  
 Chief, Development Engineering Division  
 DATE: 7.16.20

**VOGEL ENGINEERING**  
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 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043  
 P: 410.461.7666 F: 410.461.8961 www.timmons.com



NO.	REVISION	DATE
1	PROPOSED LOT DESIGN FOR PHASE 1 FROM 122 LOTS TO 52 LOTS	06-05-20
2	AS BUILT DATA	04-01-21

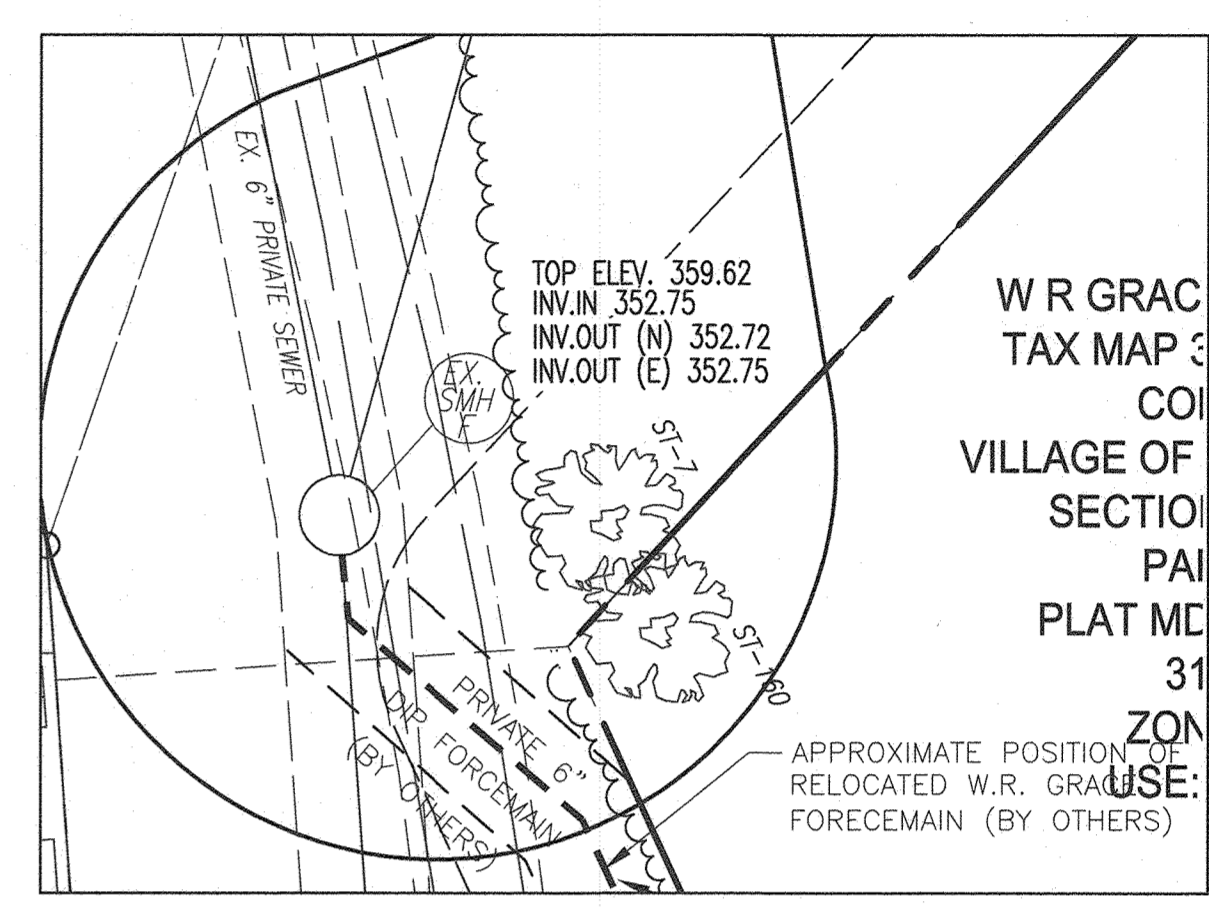
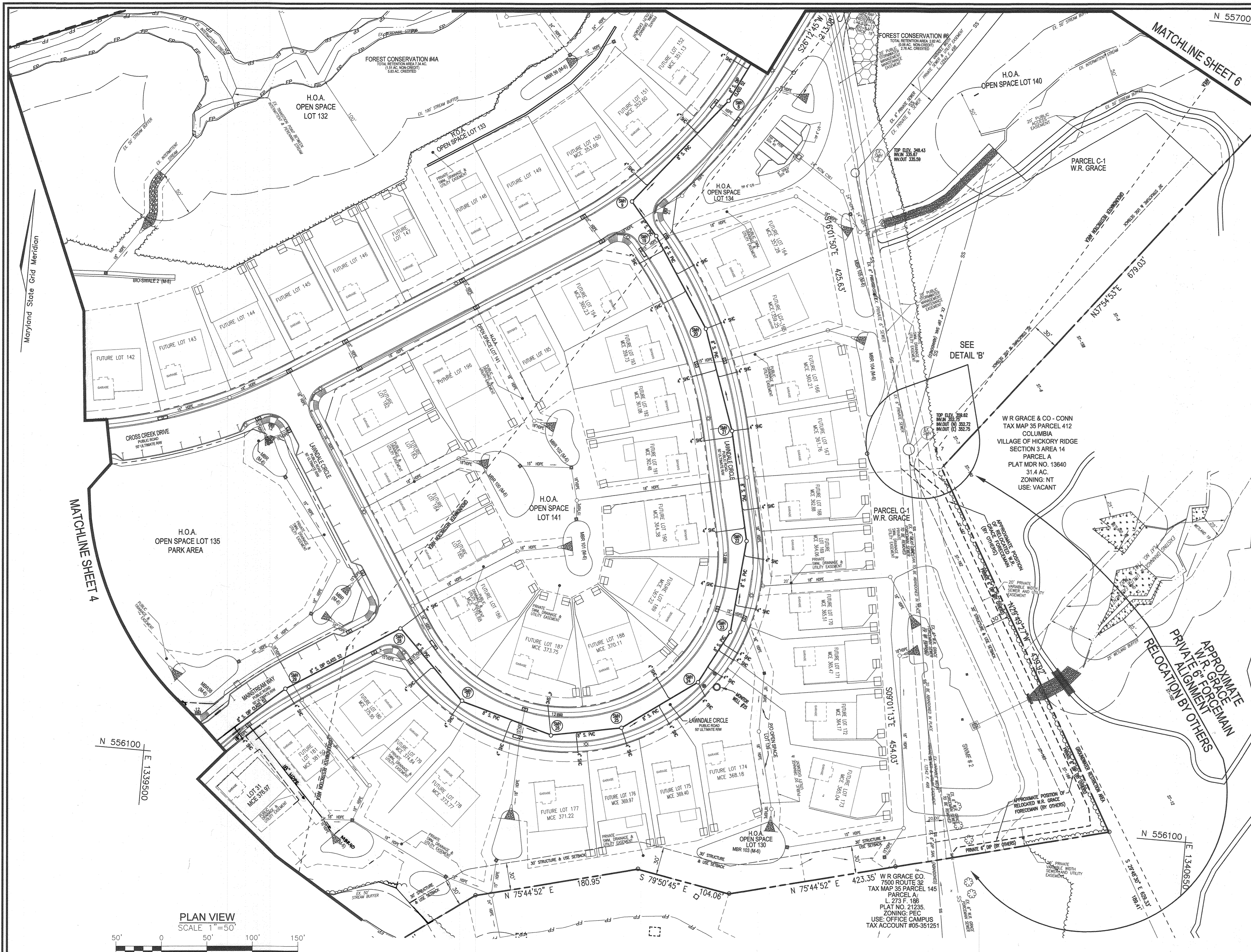
**FINAL WATER AND SEWER CONSTRUCTION PLAN-PH 1 CONTRACT 24-5009-D LAYOUT PLAN**

**CEDAR CREEK - PHASE 1 LOTS 1-8 AND 39-82**

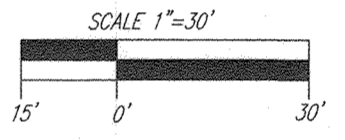
SCALE AS SHOWN  
 SHEET 4 OF 10

TAX MAP 35 GRID 21 5TH ELECTION DISTRICT  
 ZONED: CEF-R HOWARD COUNTY, MARYLAND





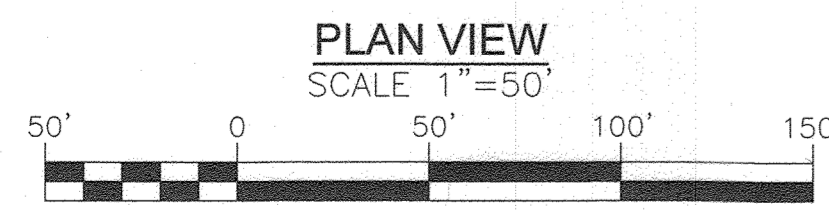
**DETAIL 'B'**  
EXISTING W.R. GRACE PRIVATE SMH-F  
GRAVITY TRANSITION MANHOLE



- NOTES**
1. RELOCATION DESIGN SHALL FOLLOW HOWARD COUNTY DESIGN MANUAL VOLUME II SECTION 4.6 - FORCE MAIN DESIGN THE STANDARDS OF SECTION 5.17 - PERMITS AND APPROVAL AND SECTION 6 - WASTEWATER PUMPING STATION DESIGN.
  2. SMH-F SHALL BE VERIFIED AS THE GRAVITY TRANSITION MANHOLE THAT IT MEETS THE CURRENT STANDARDS OF THE HOWARD COUNTY DESIGN MANUAL VOLUME IV, AND MEETS THE HYDROGEN SULPHIDE COATING REQUIREMENTS.

**WATER PRESSURE NOTE**  
THE HOMES SERVED BY THIS CONTRACT ARE WITHIN AN AREA OF STATIC PRESSURE WHICH WILL EXCEED 60PSI THEREFORE ARE CONSIDERED TO BE WITHIN A HIGH PRESSURE ZONE. A PRESSURE REDUCING VALVE (PRV) AT THE WATER HOUSE SERVICE CONNECTION (WHC) WILL BE REQUIRED FOR ALL LOTS.

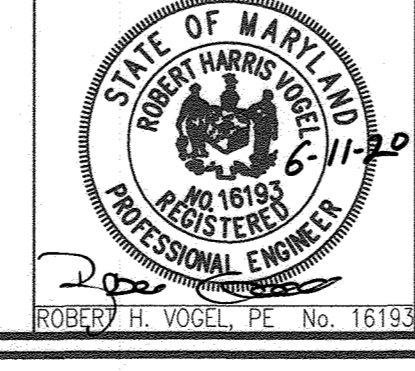
**OWNER/DEVELOPER**  
SIMPSON OAKS CRP3, LLC  
4750 OWINGS MILLS BOULEVARD  
OWINGS MILLS, MARYLAND 21117  
410-356-9900



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
*[Signature]* 6/23/20  
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND  
*[Signature]* 7.16.20  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

**VOGEL ENGINEERING**  
**TIMMONS GROUP**  
3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21143  
P: 410.461.7666 F: 410.461.8961 www.timmons.com



PROFESSIONAL CERTIFICATE  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND LICENSE NO. 16193 EXPIRATION DATE: 06-27-2020  
DRN: KG DES: VTG  
CHK: RHV  
DATE: JUNE 2020

NO.	REVISION	DATE
1	REVISE WATER MAIN MATERIAL FROM DIP TO PVC-C900, AND REDUCE	06-05-20
2	PROPOSED LOT DESIGN FOR PHASE 1 FROM 122 LOTS TO 52 LOTS	

**FINAL WATER AND SEWER  
CONSTRUCTION PLAN-PH 1  
CONTRACT 24-5009-D**  
**LAYOUT PLAN**

**CEDAR CREEK - PHASE 1**  
LOTS 1-8 AND 39-82

600' SCALE MAP NO. 35 BLOCK NO. 21

TAX MAP 35 GRID 21  
5TH ELECTION DISTRICT  
ZONED: CEF-R  
HOWARD COUNTY, MARYLAND

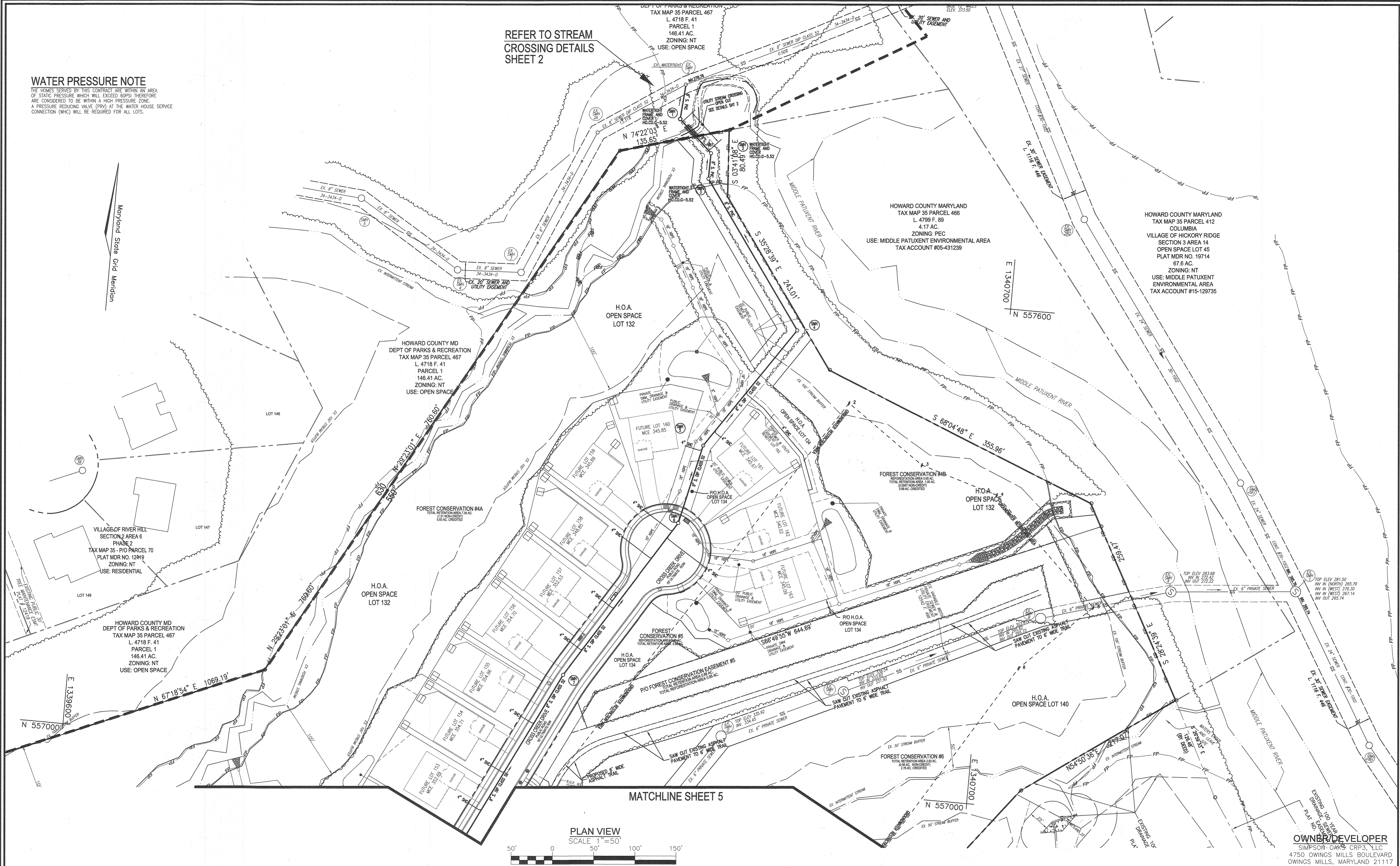
SCALE AS SHOWN  
SHEET 5 OF 10



**WATER PRESSURE NOTE**

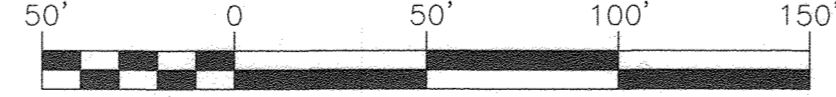
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REFER TO STREAM CROSSING DETAILS SHEET 2



MATCHLINE SHEET 5

PLAN VIEW SCALE 1"=50'



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND

**VOGEL ENGINEERING**

**TIMMONS GROUP**

3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21103  
P: 410.461.7666 F: 410.461.8961 www.timmons.com



PROFESSIONAL CERTIFICATE  
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NO.	BY	NO.	REVISION	DATE
1	VTG	1	REVISE WATER MAIN MATERIAL FROM DIP TO PVC-C900, AND REDUCE PROPOSED LOT DESIGN FOR PHASE 1 FROM 122 LOTS TO 52 LOTS	06-05-20

**FINAL WATER AND SEWER CONSTRUCTION PLAN-PH 1 CONTRACT 24-5009-D**

LAYOUT PLAN

600' SCALE MAP NO. 35 BLOCK NO. 21

**CEDAR CREEK - PHASE 1**  
LOTS 1-8 AND 39-82

TAX MAP 35 GRID 21  
5TH ELECTION DISTRICT

ZONED: CEF-R  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

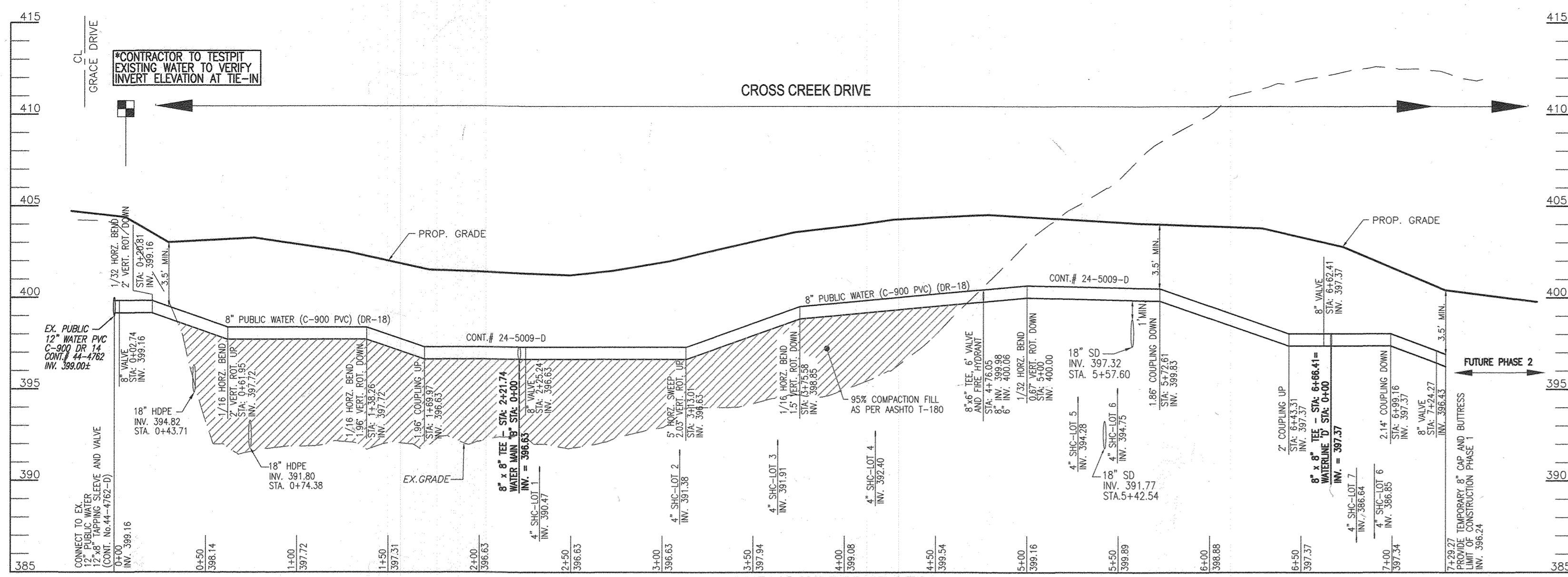
SHEET 6 OF 10

**OWNER/DEVELOPER**  
SIMPSON-OAKS CRP3, LLC  
4750 OWINGS MILLS BOULEVARD  
OWINGS MILLS, MARYLAND 21117  
410-356-9900

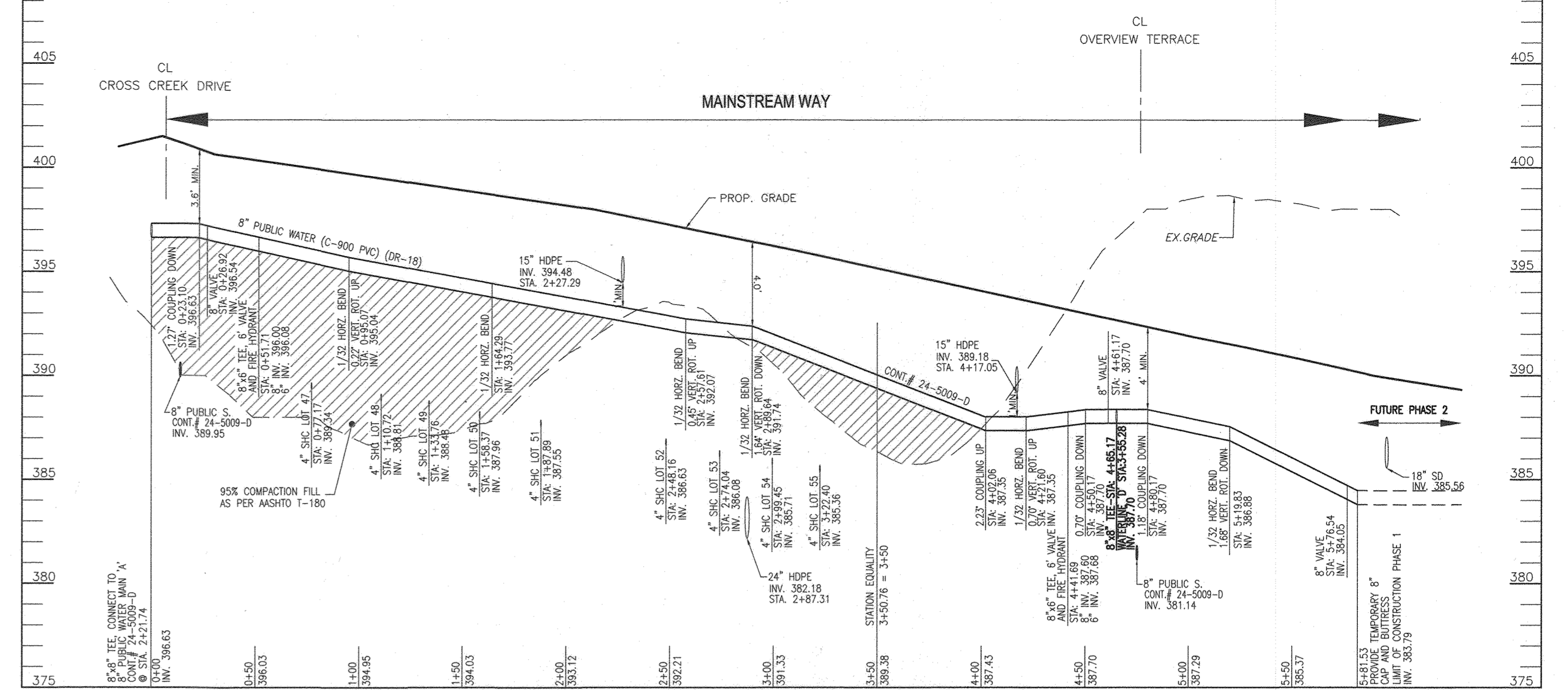
6/23/20  
DATE

7.16.20  
DATE

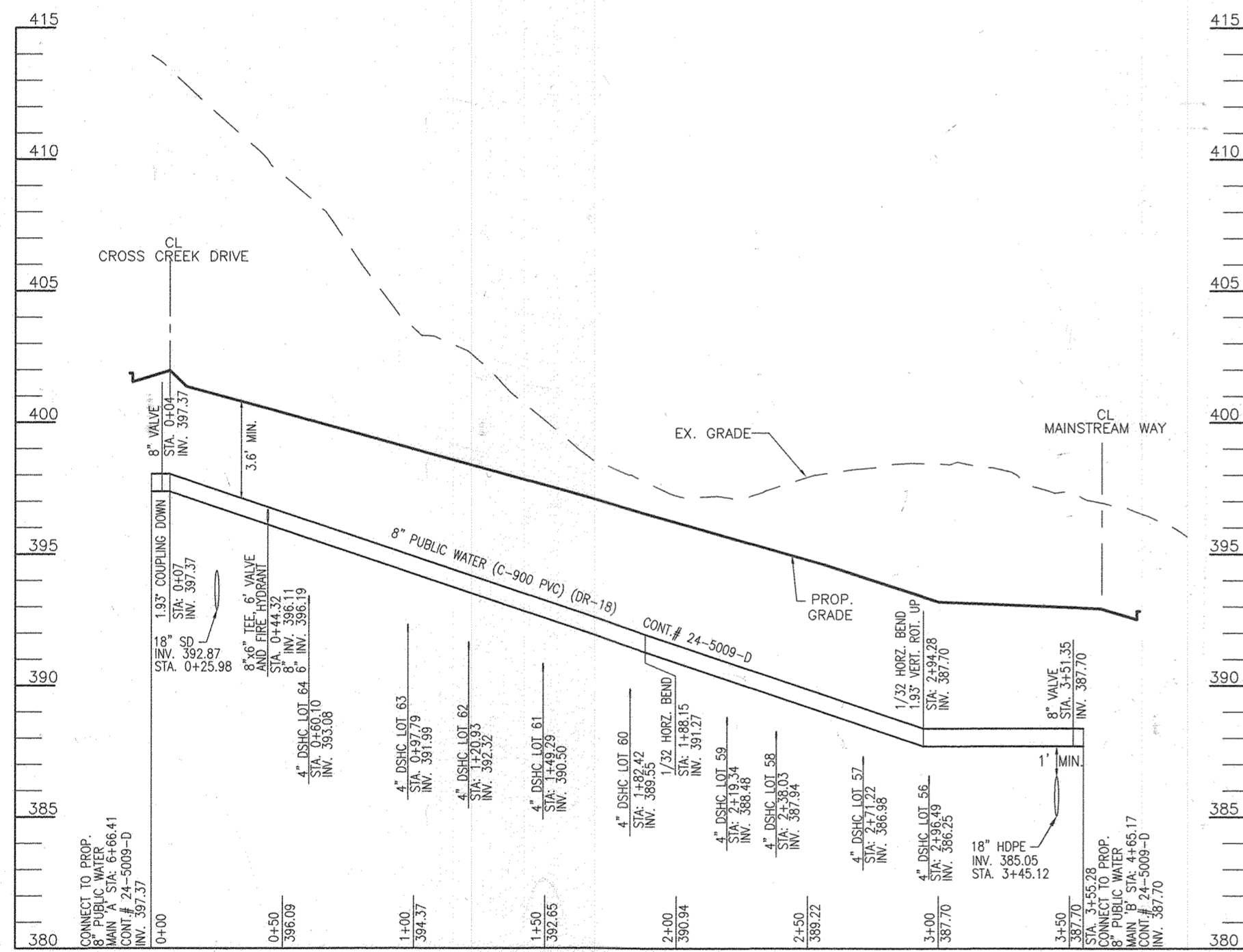




**8" PUBLIC WATER PROFILE  
CROSS CREEK DRIVE  
WATER MAIN 'A'**  
SCALE: HORIZONTAL = 1"=50'  
VERTICAL = 1"=5'



**8" PUBLIC WATER PROFILE  
MAINSTREAM WAY  
WATER MAIN 'B'**  
SCALE: HORIZONTAL = 1"=50'  
VERTICAL = 1"=5'

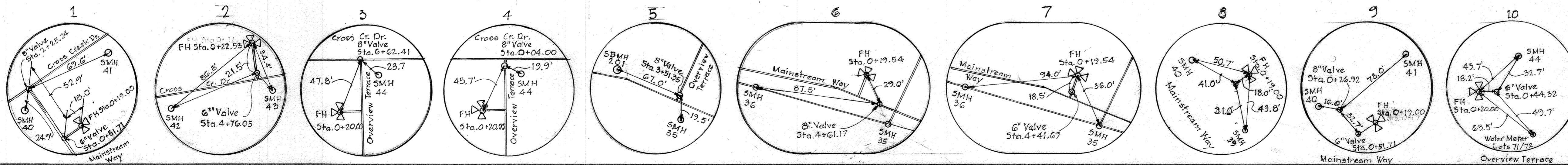


**8" PUBLIC WATER PROFILE  
OVERVIEW TERRACE  
WATER MAIN 'D'**  
SCALE: HORIZONTAL = 1"=50'  
VERTICAL = 1"=5'

WATER HOUSE CONNECTION - AS-BUILT LOCATION TABLE											
LOT	STREET ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2	LOT	STREET ADDRESS	LOC DIM 1	LOC DIM 2	LOT	STREET ADDRESS	LOC DIM 1	LOC DIM 2
LOT 1	Cross Creek Dr.	MH-40 - 89.5'	MH-41 - 88.5'	LOT 72	Overview Terrace	FH-0+20.00-63.5'	Cl-out-62 - 64.5'				
LOT 2		MH-41 - 52.0'	MH-42 - 71.0'	LOT 73		Cl-out-63 - 57.5'	Cl-out-61 - 56.8'				
LOT 3		MH-42 - 32.5'	MH-43 - 101.0'	LOT 74		Cl-out-62 - 57.2'	Cl-out-61 - 96.8'				
LOT 4		MH-43 - 52.5'	MH-42 - 59.0'	LOT 75		Cl-out-61 - 52.2'	MH-49 - 19.3'				
LOT 5		MH-43 - 35.0'	MH-43A-56.5'	LOT 76		Cl-out-61 - 52.2'	MH-49 - 19.3'				
LOT 6		MH-43A-50.0'	SDMH-222-49.0'	LOT 77		MH-49 - 32.6'	Cl-out-59-54.0'				
LOT 7		MH-44 - 46.0'	SDMH-222-62.5'	LOT 78		MH-48 - 74.0'	MH-49 - 60.0'				
LOT 8	Cross Creek Dr.	MH-44 - 51.0'	SDMH-223-41.5'	LOT 79		MH-48 - 40.0'	MH-49 - 75.0'				
				LOT 80		MH-48 - 40.0'	MH-49 - 75.0'				
LOT 39	Mainstream Way	MH-34 - 21.0'	SDMH-229-59.5'	LOT 81		MH-35 - 72.0'	MH-48 - 20.0'				
LOT 40		MH-34 - 75.0'	MH-35 - 34.0'	LOT 82	Overview Terrace	MH-35 - 72.0'	MH-48 - 20.0'				
LOT 41		MH-35 - 76.0'	MH-36 - 28.0'								
LOT 42		MH-36 - 29.0'	MH-37 - 93.0'								
LOT 43		MH-37 - 23.0'	SMH-206-45'								
LOT 44		MH-37 - 49.0'	MH-38 - 50.0'								
LOT 45		MH-38 - 21.0'	Cl-out-49 - 54.5'								
LOT 46		MH-39 - 22.0'	MH-40 - 53.0'								
LOT 47		MH-39 - 40.0'	MH-38 - 69.0'								
LOT 48		MH-39 - 40.0'	MH-38 - 69.0'								
LOT 49		MH-39 - 54.0'	MH-38 - 50.5'								
LOT 50		MH-38 - 34.0'	MH-37 - 86.0'								
LOT 51		MH-36 - 34.0'	MH-37 - 86.0'								
LOT 52		MH-36 - 94.0'	MH-37 - 36.5'								
LOT 53		MH-36 - 94.0'	MH-37 - 56.5'								
LOT 54		MH-36 - 54.0'	MH-37 - 70.0'								
LOT 55	Mainstream Way	MH-36 - 54.0'	MH-37 - 70.0'								
LOT 56	Overview Terrace	MH-48 - 32.0'	MH-35 - 67.0'								
LOT 57		MH-48 - 55.0'	MH-49 - 84.0'								
LOT 58		MH-48 - 55.0'	MH-49 - 84.0'								
LOT 59		MH-49 - 45.0'	Transformer N/E 35.0'								
LOT 60		MH-49 - 45.0'	Transformer N/E 35.0'								
LOT 61		MH-49 - 54.0'	FH-0+20.00-66.0'								
LOT 62		MH-49 - 54.0'	FH-0+20.00-66.0'								
LOT 63		MH-44 - 78.0'	FH-0+20.00-43.0'								
LOT 64	Overview Terrace	MH-44 - 78.0'	FH-0+20.00-43.0'								
LOT 65	Cross Creek	MH-43 - 30.5'	MH-43A - 42.0'								
LOT 66		MH-43 - 30.5'	MH-43A - 42.0'								
LOT 67		MH-45 - 23.5'	FH-0+19.78-53.0'								
LOT 68		MH-45 - 50.0'	FH-0+19.78-63.5'								
LOT 69		MH-45 - 50.0'	FH-0+19.78-63.5'								
LOT 70	Cross Creek	MH-43 - 90.0'	MHSD-215 - 20.5'								
LOT 71	Overview Terrace	FH-0+20.00-63.5'	Cl-out-62 - 64.5'								

WATER MAIN LOCATION CHART			
STATION	APPURTENANCE	NORTHING	EASTING
WATER LINE 'A'			
Sta: 0+00	12" x 8" T&B, CONNECT TO EX12" PUBLIC WATER, CONT# 44-4782		
Sta: 0+02.74	8" VALVE		
Sta: 0+20.81	1/32" HORZ. BEND, 2" COUPLING DOWN		
Sta: 0+61.95	1/16" HORZ. BEND, 2" COUPLING UP		
Sta: 1+38.26	1/16" HORZ. BEND, 1.9" COUPLING DOWN		
Sta: 1+69.97	1.9" COUPLING UP		
Sta: 2+21.74	8" x 8" TEE (WATER LINE 'B')		
Sta: 2+25.24	8" VALVE		
Sta: 3+13.01	5" HORZ. SWEEP, 2.03" COUPLING UP		
Sta: 3+75.58	1/16" HORZ. BEND, 1.5" COUPLING DOWN		
Sta: 4+76.05	8" x 6" FHT & 6" VALVE		
Sta: 5+00	1/32" HORZ. BEND, 0.67" COUPLING DOWN		
Sta: 5+72.61	1.8" COUPLING DOWN		
Sta: 6+43.31	2" COUPLING UP		
Sta: 6+62.41	8" VALVE		
Sta: 6+66.41	8" x 8" TEE (WATER LINE 'D')		
Sta: 6+99.16	2.14" COUPLING DOWN		
Sta: 7+24.27	8" VALVE		
Sta: 7+29.27	TEMPORARY 8" CAP AND BUTTRISS		
WATER LINE 'B'			
Sta: 0+00.00	8" x 8" TEE, CONNECT TO 8" PUBLIC WATER MAIN 'A'		
Sta: 0+23.10	1.27" COUPLING DOWN		
Sta: 0+26.92	8" VALVE		
Sta: 0+51.71	8" x 6" FHT & 6" VALVE		
Sta: 0+95.07	1/32" HORZ. BEND, 0.22" COUPLING UP		
Sta: 1+64.29	1/32" HORZ. BEND		
Sta: 2+57.61	1/32" HORZ. BEND, 0.29" VERT. ROT. UP		
Sta: 2+89.64	1/32" HORZ. BEND, 1.64" VERT. ROT. DOWN		
Sta: 4+02.06	2.69" COUPLING UP		
Sta: 4+21.60	1/32" HORZ. BEND, 0.70" COUPLING UP		
Sta: 4+41.69	8" x 6" FHT & 6" VALVE		
Sta: 4+50.17	0.70" COUPLING DOWN		
Sta: 4+61.17	8" VALVE		
Sta: 4+65.17	8" x 8" TEE (WATER LINE 'D')		
Sta: 4+80.17	1.18" COUPLING DOWN		
Sta: 5+19.83	1/32" HORZ. BEND, 1.68" COUPLING DOWN		
Sta: 5+76.54	8" VALVE		
Sta: 5+81.53	8" TEMPORARY CAP & BUTTRISS		
WATER LINE 'D'			
Sta: 0+00.00	8" x 8" TEE, CONNECT TO 8" PUBLIC WATER MAIN 'A'		
Sta: 0+04.00	8" VALVE		
Sta: 0+07.00	1.83" COUPLING DOWN		
Sta: 0+44.32	8" x 6" FHT & 6" VALVE		
Sta: 1+88.15	1/32" HORZ. BEND		
Sta: 2+84.28	1/32" HORZ. BEND, 1.93" COUPLING UP		
Sta: 3+51.35	8" VALVE		
Sta: 3+55.28	8" x 8" TEE, CONNECT TO 8" PUBLIC WATER MAIN 'B'		

NOTE: For VALVE/FH/SMH location dimensions ① thru ⑩ in "PLAN" see Sheet 4 of 10

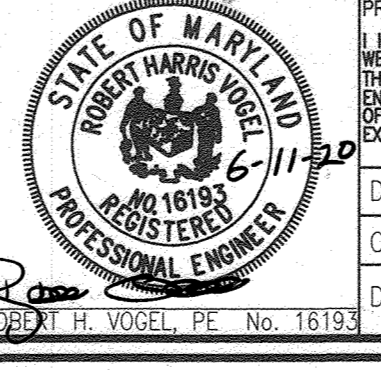


OWNER/DEVELOPER  
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4750 OWINGS MILLS BOULEVARD  
OWINGS MILLS, MARYLAND 21117  
410-356-9900

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
DATE: 7.16.20

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND  
DATE: 7.16.20

**VOGEL ENGINEERING**  
**TIMMONS GROUP**  
3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043  
P: 410.461.7666 F: 410.461.8961 www.timmons.com



PROFESSIONAL CERTIFICATE	DATE: 04-01-21
DRN: KG DES: VTG	DATE: 06-05-20
CHK: RHV	DATE: JUNE 2020
DATE: JUNE 2020	DATE: 06-05-20

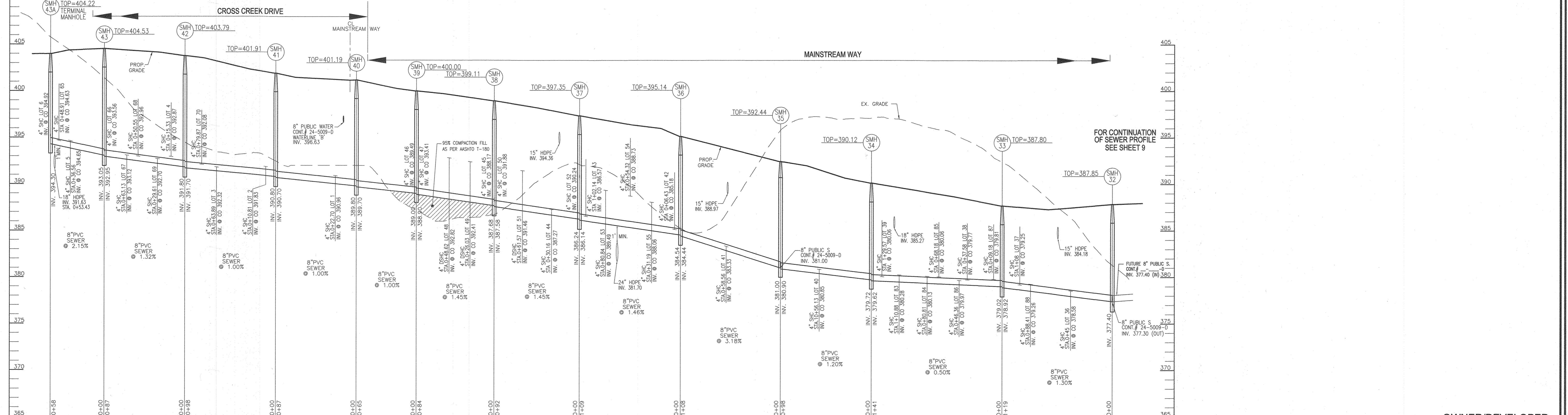
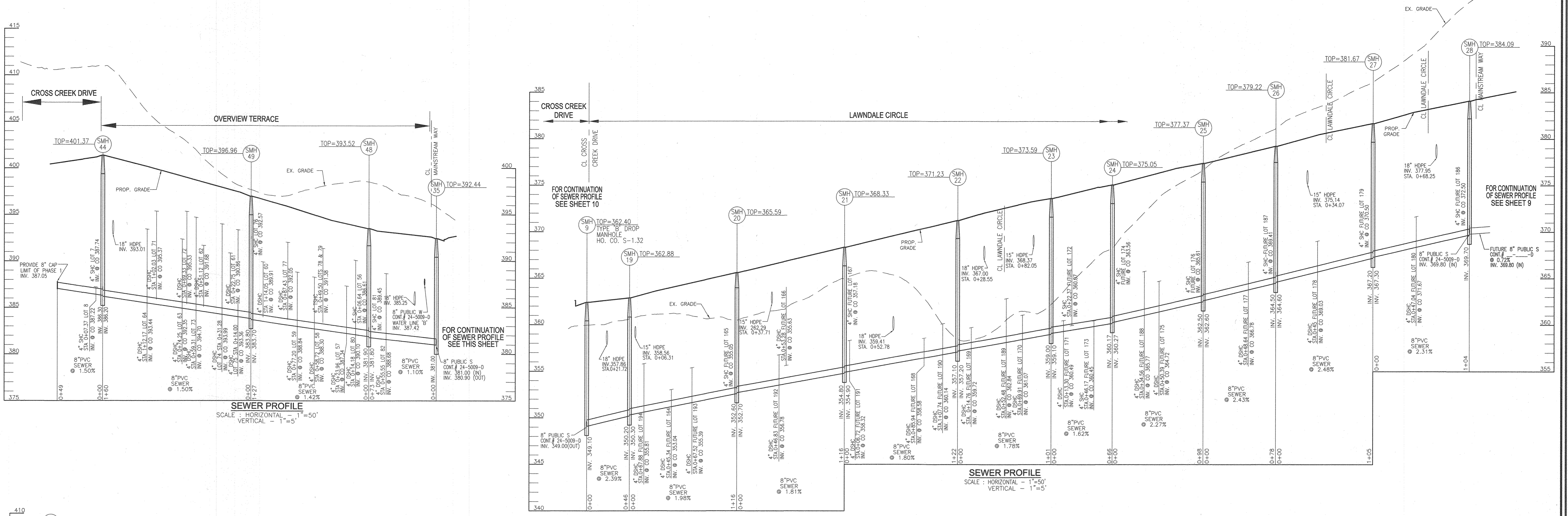
**FINAL WATER AND SEWER  
CONSTRUCTION PLAN-PH 1  
CONTRACT 24-5009-D  
WATER PROFILES**

**CEDAR CREEK - PHASE 1  
LOTS 1-8 AND 39-82**

SCALE AS SHOWN  
SHEET 7 OF 10

TAX MAP 35 GRID 21  
5TH ELECTION DISTRICT  
ZONED: CEF-R  
HOWARD COUNTY, MARYLAND





DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND  <i>[Signature]</i> DATE: 6/23/20	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND  <i>[Signature]</i> DATE: 7.16.20	<b>VOGEL ENGINEERING</b> <b>TIMMONS GROUP</b> 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043 P: 410.461.7666 F: 410.461.8961 www.timmons.com		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. 16193 EXPIRATION DATE: 09-27-2020 DRN: KG DES: VTG CHK: RVV DATE: JUNE 2020	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>NO.</th> <th>REVISION</th> <th>DATE</th> </tr> <tr> <td>1</td> <td>REVISE WATER MAIN MATERIAL FROM DIP TO PVC-C900, AND REDUCE PROPOSED LOT DESIGN FOR PHASE 1 FROM 122 LOTS TO 52 LOTS</td> <td>06-05-20</td> </tr> </table>	NO.	REVISION	DATE	1	REVISE WATER MAIN MATERIAL FROM DIP TO PVC-C900, AND REDUCE PROPOSED LOT DESIGN FOR PHASE 1 FROM 122 LOTS TO 52 LOTS	06-05-20	<b>FINAL WATER AND SEWER          CONSTRUCTION PLAN-PH 1          CONTRACT 24-5009-D          SEWER PROFILES</b>	<b>OWNER/DEVELOPER</b> SIMPSON OAKS CRP3, LLC 4750 OWINGS MILLS BOULEVARD OWINGS MILLS, MARYLAND 21117 410-356-9900	SCALE AS SHOWN  SHEET <b>8</b> OF 10
NO.	REVISION	DATE												
1	REVISE WATER MAIN MATERIAL FROM DIP TO PVC-C900, AND REDUCE PROPOSED LOT DESIGN FOR PHASE 1 FROM 122 LOTS TO 52 LOTS	06-05-20												



SEWER HOUSE CONNECTION - AS-BUILT LOCATION TABLE

LOT	STREET ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2	LOT	STREET ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2	LOT	STREET ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2
LOT 1	Cross Creek Dr.	MH-40-48.0'	MH-41-72.0'	LOT 63	Overview Terrace	MH-49-84.0'	FH-020.0-93.9'	LOT 163	Cross Creek Dr.	MH-6-60.5'	FH-021.55-70.5'
LOT 2		MH-41-39.6'	MH-42-92.0'	LOT 64	Overview Terrace	MH-44-93.0'	FH-020.0-16.0'	LOT 164	Lawndale Cir.	MH-20-72.0'	FH-1152.66-74.0'
LOT 3		MH-41-76.5'	MH-42-48.0'	LOT 65		MH-43-54.0'	MH-43A-21.5'	LOT 165		MH-20-72.0'	C/O Lot 166-50.0'
LOT 4		MH-42-41.0'	MH-43-77.0'	LOT 66		MH-43-28.0'	MH-43A-62.0'	LOT 166		MH-21-67.0'	MH-20-52.0'
LOT 5		MH-43-91.0'	MH-43A-40.0'	LOT 67		MH-43-31.0'	FH-0197.8-66.0'	LOT 167		MH-21-20.0'	SDMH 41-54.0'
LOT 6		MH-43-66.0'	MH-44-34.0'	LOT 68		MH-43-42.0'	FH-0197.8-62.0'	LOT 168		MH-22-39.0'	SDMH 41-37.0'
LOT 7		FH-020.0-72.0'	MH-44-35.0'	LOT 69		MH-43-60.0'	FH-0197.8-73.0'	LOT 169		MH-23-85.0'	MH-22-28.0'
LOT 8	Cross Creek Dr.	MH-44-81.0'	SDMH 223-50.5'	LOT 70	Overview Terrace	SDMH-215-15.0'	MH-43-99.0'	LOT 170		MH-23-35.0'	SDMH 40-29.0'
LOT 31	Mainstream Way	MH-29-74.0'	MH-30-46.0'	LOT 71	Overview Terrace	FH-020.0-38.0'	MH-44-89.0'	LOT 171		MH-24-57.5'	MH-23-26.0'
LOT 32		MH-31-23.0'	FH-020.45-76.0'	LOT 72		FH-020.0-80.0'	MH-44-91.0'	LOT 172		MH-24-45.0'	MH-23-80.0'
LOT 33		MH-31-41.0'	MH-31-62.0'	LOT 73		FH-020.0-87.5'	WM-73/74-11.0'	LOT 173		MH-24-28.0'	MH-23-55.5'
LOT 34		MH-32-42.0'	SD-I-142.9/34.5	LOT 74		MH-49-39.0'	WM-73/74-18.0'	LOT 174		MH-24-21.0'	MH-23-80.0'
LOT 35		MH-32-20.5'	SD-I-180-52.0'	LOT 75		MH-49-27.0'	N/W Transformer 54.0'	LOT 175		MH-25-52.5'	FH-6+50.28-69.5'
LOT 36		MH-33-25.0'	FH-019.58-60.0'	LOT 76		MH-49-20.0'	WM-77-23.0'	LOT 176		MH-25-22.0'	MH-24-82.0'
LOT 37		MH-33-73.0'	FH-019.58-60.0'	LOT 77		MH-49-42.0'	WM-78-21.0'	LOT 177		MH-26-37.0'	MH-25-57.0'
LOT 38		MH-33-45.0'	SD-I-185A-N/E-22.0'	LOT 78		MH-48-64.0'	MH-49-71.0'	LOT 178		MH-27-61.0'	MH-26-55.0'
LOT 39		MH-34-21.5'	SDMH-185-26.0'	LOT 79		MH-48-59.0'	MH-49-76.0'	LOT 179	Mainstream Way	MH-27-23.0'	FH-3+64.38-49.0'
LOT 40		MH-35-44.5'	MH-34-61.0'	LOT 80		MH-35-80.0'	MH-48-21.0'	LOT 180		MH-28-61.0'	MH-27-56.0'
LOT 41		MH-35-62.5'	MH-36-59.5'	LOT 81	Overview Terrace	MH-35-61.5'	MH-48-27.0'	LOT 181		MH-29-21.5'	SDMH 94-8.5'
LOT 42		MH-37-20.5'	MH-38-60.5'	LOT 82	Mainstream Way			LOT 182	Lawndale Cir.	MH-28-37.0'	C/O Lot 180-84.0'
LOT 43		MH-37-39.0'	MH-38-18.5'	LOT 83		MH-33-73.5'	MH-34-76.0'	LOT 183		MH-26-34.0'	C/O Lot 178-62.5'
LOT 44		MH-39-88.0'	MH-39-16.5'	LOT 84		MH-33-56.0'	SD-I-185A-44.5'	LOT 184		MH-22-54.0'	MH-23-55.0'
LOT 45		MH-40-34.5'	MH-40-69.0'	LOT 85		FH-019.58-46.5'	MH-33-37.0'	LOT 185		SDMH 41-78.0'	MH-22-37.0'
LOT 46		MH-40-61.0'	MH-40-69.0'	LOT 86	Mainstream Way	MH-33-43.0'	FH-019.58-10.5'	LOT 186		MH-21-56.0'	MH-19-80.0'
LOT 47		MH-40-61.0'	MH-40-69.0'	LOT 87				LOT 187		MH-19-37.0'	FH-11+82.66+9.0'
LOT 48		MH-40-61.0'	MH-40-69.0'	LOT 88				LOT 188			
LOT 49		MH-40-61.0'	MH-40-69.0'	LOT 89				LOT 189			
LOT 50		MH-40-61.0'	MH-40-69.0'	LOT 90				LOT 190			
LOT 51		MH-40-61.0'	MH-40-69.0'	LOT 91				LOT 191			
LOT 52		MH-40-61.0'	MH-40-69.0'	LOT 92				LOT 192			
LOT 53		MH-40-61.0'	MH-40-69.0'	LOT 93				LOT 193			
LOT 54		MH-40-61.0'	MH-40-69.0'	LOT 94				LOT 194			
LOT 55	Mainstream Way	MH-36-53.0'	MH-37-82.0'	LOT 150							
LOT 56	Overview Terrace	MH-40-31.0'	MH-35-74.0'	LOT 151							
LOT 57		MH-35-99.0'	MH-35-99.0'	LOT 152							
LOT 58		MH-49-72.0'	MH-48-67.0'	LOT 153							
LOT 59		MH-49-54.0'	N/E Transformer 46.0'	LOT 154							
LOT 60		MH-49-34.0'	N/W Transformer 100.0'	LOT 155							
LOT 61		MH-49-49.0'	N/W Transformer 16.0'	LOT 156							
LOT 62	Overview Terrace	MH-49-62.0'	FH-020.0-77.0'	LOT 157							
				LOT 158							
				LOT 159							
				LOT 160							
				LOT 161							
				LOT 162							

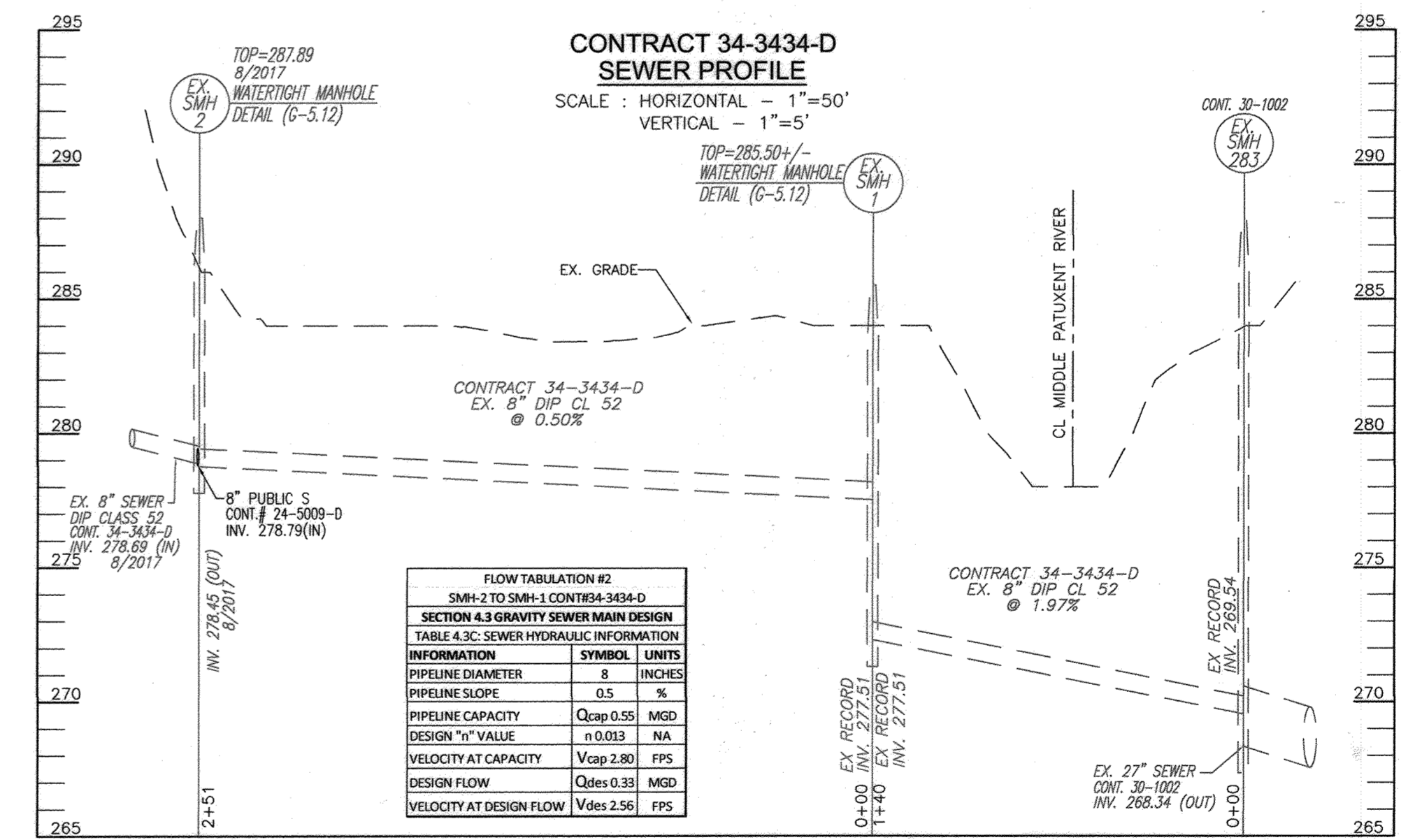
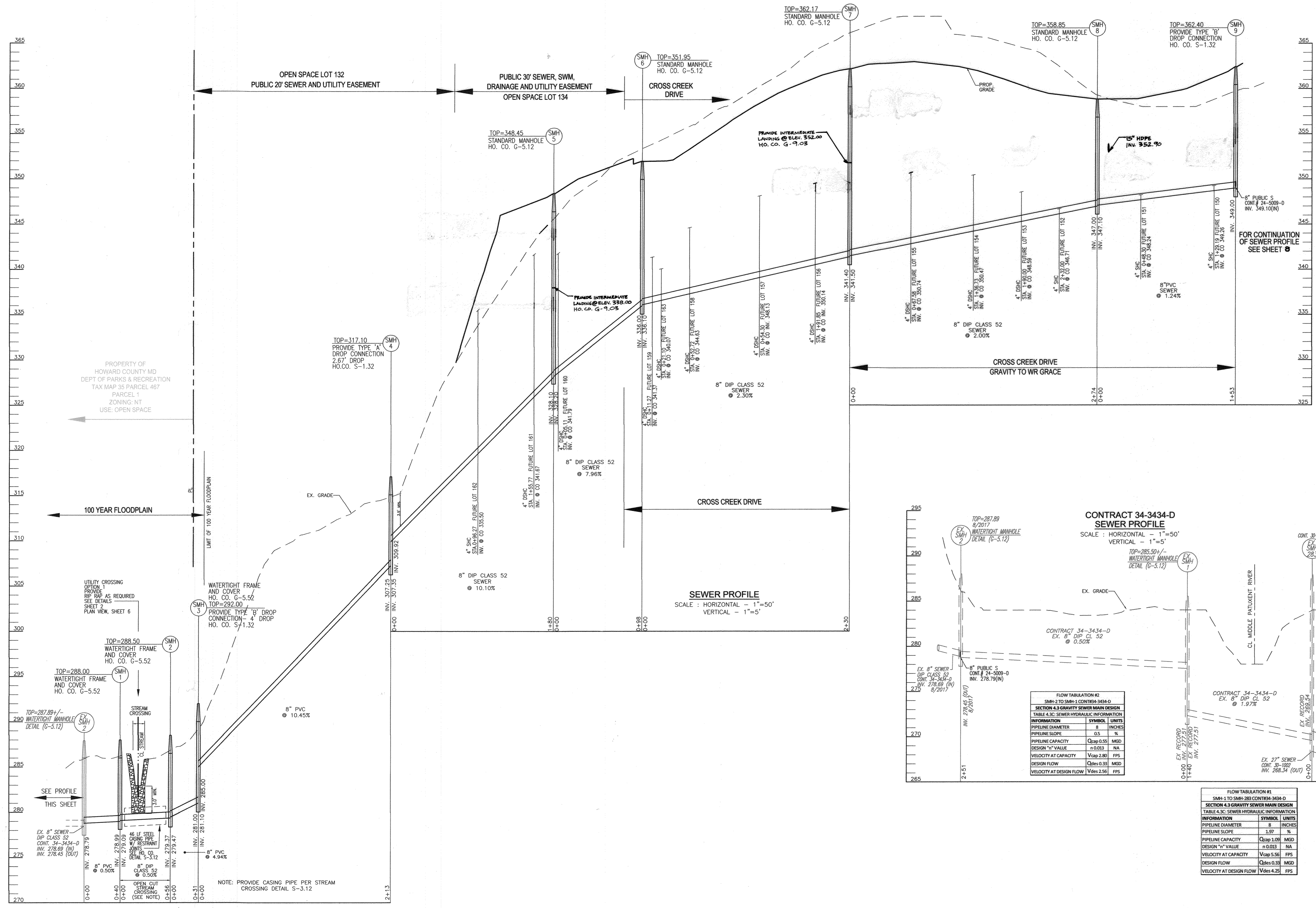
MINIMUM CELLAR ELEVATION (MCE)

LOT #	INV 4" SHC	TYPE	DIST TO ESMT/R/W	EL @ ROW	DIST ESMT - HSE	SHC SLOPE	EL @ HOUSE	MCE	BF ELEV
1	390.20	SINGLE	38	390.96	98	2.0%	392.92	396.42	396.03
2	391.07	SINGLE	38	391.83	111	2.0%	394.05	398.55	397.42
3	391.96	SINGLE	38	392.72	114	2.0%	394.80	399.10	398.49
4	392.17	SINGLE	35	392.87	110	2.0%	395.07	399.57	398.90
5	394.01	SINGLE	32	394.65	92	2.0%	396.49	398.99	399.03
6	394.32	MH	30	394.92	95	1.0%	395.88	398.38	398.39
7	397.14	MH	30	397.74	89	2.0%	399.52	399.02	398.95
8	398.58	SINGLE	32	399.28	86	2.0%	401.04	400.54	399.24
31	372.31	SINGLE	16	372.63	92	2.0%	374.47	376.97	384.72
32	379.17	MH	17	379.51	84	2.0%	381.19	383.69	385.01
33	374.04	SINGLE	17	374.38	86	2.0%	376.10	378.60	383.92
34	377.22	SINGLE	19	377.60	90	2.0%	379.40	381.90	387.40
35	377.34	SINGLE	19	377.72	102	2.0%	379.76	382.26	383.03
36	378.14	SINGLE	22	378.58	110	1.0%	379.68	382.18	383.38
37	378.85	SINGLE	20	379.25	111	1.0%	380.38	382.88	383.90
38	379.35	SINGLE	21	379.77	102	1.0%	380.79	383.29	383.68
39	379.74	SINGLE	18	380.06	88	2.0%	381.82	384.32	385.38
40	380.57	SINGLE	14	380.85	97	2.0%	382.79	385.29	387.36
41	383.03	SINGLE	15	383.33	94	2.0%	385.21	387.71	388.84
42	384.80	SINGLE	19	385.18	116	2.0%	387.50	390.00	392.11
43	386.21	SINGLE	18	386.57	112	2.0%	388.81	391.31	393.92
45	387.85	MH	16	388.17	109	2.0%	390.35	392.85	394.38
46	389.17	MH	18	389.49	85	2.0%	391.19	393.69	395.25

MINIMUM CELLAR ELEVATION (MCE)

LOT #	INV 4" SHC	TYPE	DIST TO ESMT/R/W	EL @ ROW	DIST ESMT - HSE	SHC SLOPE	EL @ HOUSE	MCE	SLAB ELEV
47	389.17	MH	30	393.41	74	2.0%	394.89	397.39	402.98
48	388.56	DSHC	30	392.82	74	2.0%	394.30	396.80	402.31
49	388.23	DSHC	30	392.41	76	2.0%	393.93	396.43	402.31
50	387.85	MH	30	393.44	73	2.0%	394.92	397.42	401.64
51	387.31	DSHC	29	391.46	72	2.0%	392.90	395.40	400.97
52	387.34	MH	30	393.24	76	2.0%	394.76	397.26	402.47
53	385.90	DSHC	29	389.48	78	2.0%	391.05	393.55	399.80
54	385.51	DSHC	28	388.73	74	2.0%	390.21	392.71	399.13
55	385.17	DSHC	28	388.06	73	2.0%	389.52	392.02	398.46
56	382.07	DSHC	28	386.61	76	2.0%	388.13	390.63	396.99
57	382.41	DSHC	29	387.34	76	2.0%	388.88	391.38	397.66
58	382.90	DSHC	28	388.30	79	2.0%	389.88	392.38	398.33
59	383.16	DSHC	29	388.84	77	2.0%	390.38	392.88	399.00
60	383.69	DSHC	32	389.91	81	2.0%	391.53	394.03	399.67
61	384.30	DSHC	32	390.86	74	2.0%	392.34	394.84	401.13
62	384.74	DSHC	32	391.68	73	2.0%	392.54	395.04	401.80
63	385.08	DSHC	32	392.35	71	2.0%	393.77	396.27	402.47
64	385.65	DSHC	32	393.44	72	2.0%	394.88	397.38	403.14
65	394.27	SINGLE	18	394.63	74	2.0%	396.11	398.61	406.44
66	393.22	MH	17	393.58	81	2.0%	395.18	397.68	407.11
67	392.80	SINGLE	16	393.12	77	2.0%	394.66	397.16	407.11
68	392.64	SINGLE	16	392.96	79	2.0%	394.52	397.02	407.11
69	392.38	SINGLE	17	392.70	76	2.0%	394.22	396.72	406.44
70	391.70	SINGLE	19	392.06	75	2.0%	393.58	396.08	405.77
71	385.50	DSHC	18	395.37	79	2.0%	396.95	399.45	401.45
72	385.01	DSHC	18	395.33	81	2.0%	396.95	399.45	401.45
73	384.86	DSHC	18	394.70	79	2.0%	396.28	398.78	400.78
74	384.44	DSHC	18	393.99	81	2.0%	395.51	398.01	400.11
75	381.18	DSHC	18	393.38	79	2.0%	394.94	397.44	399.44
76	384.64	MH	18	392.57	85	2.0%	394.27	396.77	398.77
77	383.31	DSHC	21	392.05	81	2.0%	393.67	396.17	398.17
78	382.77	TWIN	23	391.38	81	2.0%	393.00	395.50	397.50
79	382.77	TWIN	23	390.79	77	2.0%	392.33	394.83	396.83
80	382.27	DSHC	21	390.10	78	2.0%	391.68	394.18	396.18
81	382.74	MH	18	390.45	77	2.0%	390.		





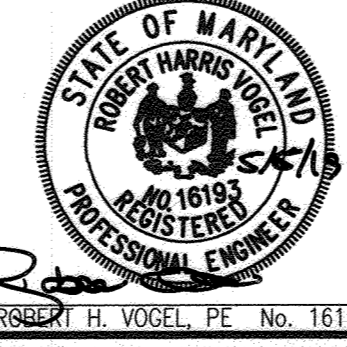
INFORMATION	SYMBOL	UNITS
PIPELINE DIAMETER	8	INCHES
PIPELINE SLOPE	1.97	%
PIPELINE CAPACITY	Q <sub>cap</sub> 1.05	MGD
DESIGN "n" VALUE	n 0.013	NA
VELOCITY AT CAPACITY	V <sub>cap</sub> 5.56	FPS
DESIGN FLOW	Q <sub>des</sub> 0.33	MGD
VELOCITY AT DESIGN FLOW	V <sub>des</sub> 4.25	FPS

**OWNER/DEVELOPER**  
 SIMPSON OAKS CRP3, LLC  
 4750 OWINGS MILLS BOULEVARD  
 OWINGS MILLS, MARYLAND 21117  
 410-356-9900

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 DATE: 5-17-19

DEPARTMENT OF PLANNING & ZONING  
 HOWARD COUNTY, MARYLAND  
 DATE: 6.3.19

**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 3300 NORTH RIDGE ROAD, SUITE 110  
 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. 16193 EXPIRATION DATE 09-27-2020

DRN:	VTG	DES:	VTG
CHK:	RHV		
DATE:	MAY 2019		

**FINAL WATER AND SEWER CONSTRUCTION PLAN**  
**CONTRACT 24-5009-D**  
**SEWER PROFILES**

**CEDAR CREEK - PHASE 1**  
 LOTS 1-8 AND 39-82

TAX MAP 35 GRID 21  
 5TH ELECTION DISTRICT  
 ZONED: CEF-R  
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 10 OF 10