

**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 ROBERT H. VOGEL ENGINEERING INC. DATED APRIL 11, 2016. OFFSITE AND SUPPLEMENTAL TOPOGRAPHY FROM HOWARD COUNTY GIS.
  - THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD 83/91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS 0016 AND 42EA. ALL VERTICAL CONTROLS ARE BASED ON NAVD 88. VERTICAL CONTROLS PROVIDED ON DRAWINGS ARE:  
 GEODETIC SURVEY CONTROL 0016 (N 550279.375 E 1357329.021)  
 BRASS DISC SET ON TOP OF A CONCRETE MONUMENT.  
 GEODETIC SURVEY CONTROL 42EA (N 547603.659 E 1355440.285)  
 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 OPW REQUIREMENTS PER SECTION 18.114(o) OF THE HOWARD COUNTY CODE.

- PART II - WATER**
- ALL WATER MAINS TO BE DIP CLASS 54 UNLESS OTHERWISE NOTED.
  - TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3'-6" 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 DETAIL. 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 REST 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 "TEES" USED WITH PVC MAINS SHALL BE DUCTILE IRON.

- 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 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.
- SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE SPECIFICATIONS AND WITH SITE DEVELOPMENT PLAN SDP-17-044.

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

*John P. Robertson* 9/20/17  
 SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
*Charles G. ...* 9/20/17  
 CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING  
 HOWARD COUNTY, MARYLAND  
*...* 9-22-17  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 MAIN STREET TEL: 410.461.7666  
 ELLICOTT CITY, MD 21043 FAX: 410.461.9961  
 PROFESSIONAL ENGINEER  
 STATE OF MARYLAND  
 ROBERT H. VOGEL, P.E. No. 16193

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: 09-27-2018  
 DRN: KG DES: DZE  
 CHK: RHV  
 DATE: AUGUST 2017  
 BY NO. REVISION DATE

600' SCALE MAP NO.	42	BLOCK NO.	15
REVISION	1	DATE	06-21-18
REVISION	2	DATE	
REVISION	3	DATE	
REVISION	4	DATE	
REVISION	5	DATE	

**COVER SHEET**  
 FINAL WATER AND SEWER CONSTRUCTION PLAN  
 CONTRACT 24-5013-D  
 600' SCALE MAP NO. 42 BLOCK NO. 15

**GUILFORD SELF STORAGE**  
 SELF-STORAGE FACILITY  
 9201 OLD GUILFORD ROAD  
 ZONED: M-1  
 L.12349/F.421  
 SCALE AS SHOWN  
 SHEET 1 OF 2  
 TAX MAP 42 GRID 15  
 6TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 PARCEL 28

# FINAL WATER AND SEWER CONSTRUCTION PLAN

## GUILFORD SELF STORAGE

### SELF-STORAGE FACILITY

#### 9201 OLD GUILFORD ROAD

#### CONTRACT 24-5013-D

#### HOWARD COUNTY, MARYLAND

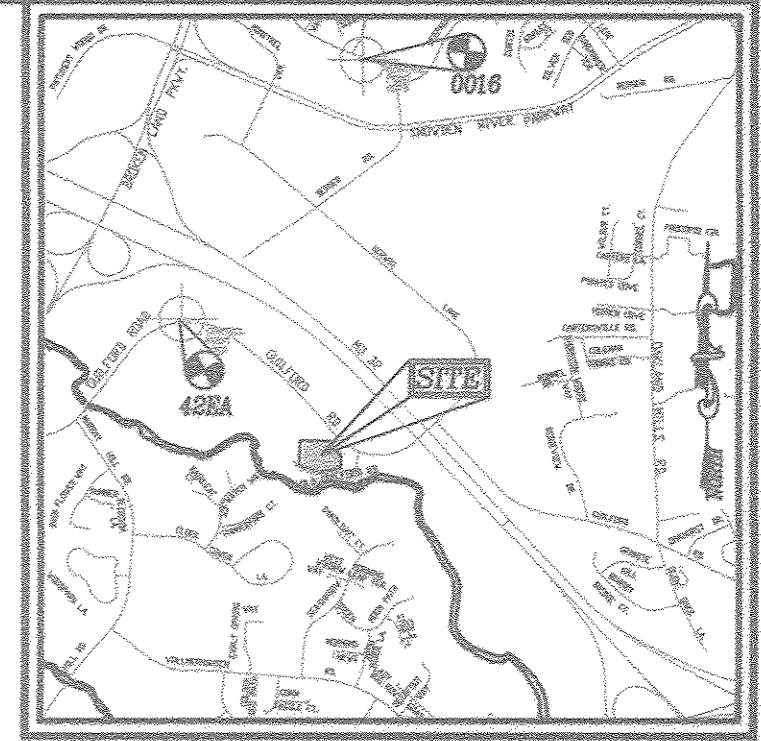


VICINITY MAP  
 SCALE: 1"=600'

WATER ZONE	400
TEST GRADIENT	550

Type of Building :	SELF STORAGE FACILITY
No. of Lots/Parcels :	1
No. of single Water House Connections :	1
No. of Sewer House Connections :	1
Sewer Shed :	LITTLE PATUXENT RIVER
Treatment Plant :	LITTLE PATUXENT RIVER

**BENCHMARKS**  
 BENCHMARK NO. 1: COUNTY CONTROL #0016  
 N. 550279.375, E. 1357329.021 ELEV. = 358.894  
 BENCHMARK NO. 2: COUNTY CONTROL #42EA  
 N. 547603.659, E. 1355440.285 ELEV. = 312.512

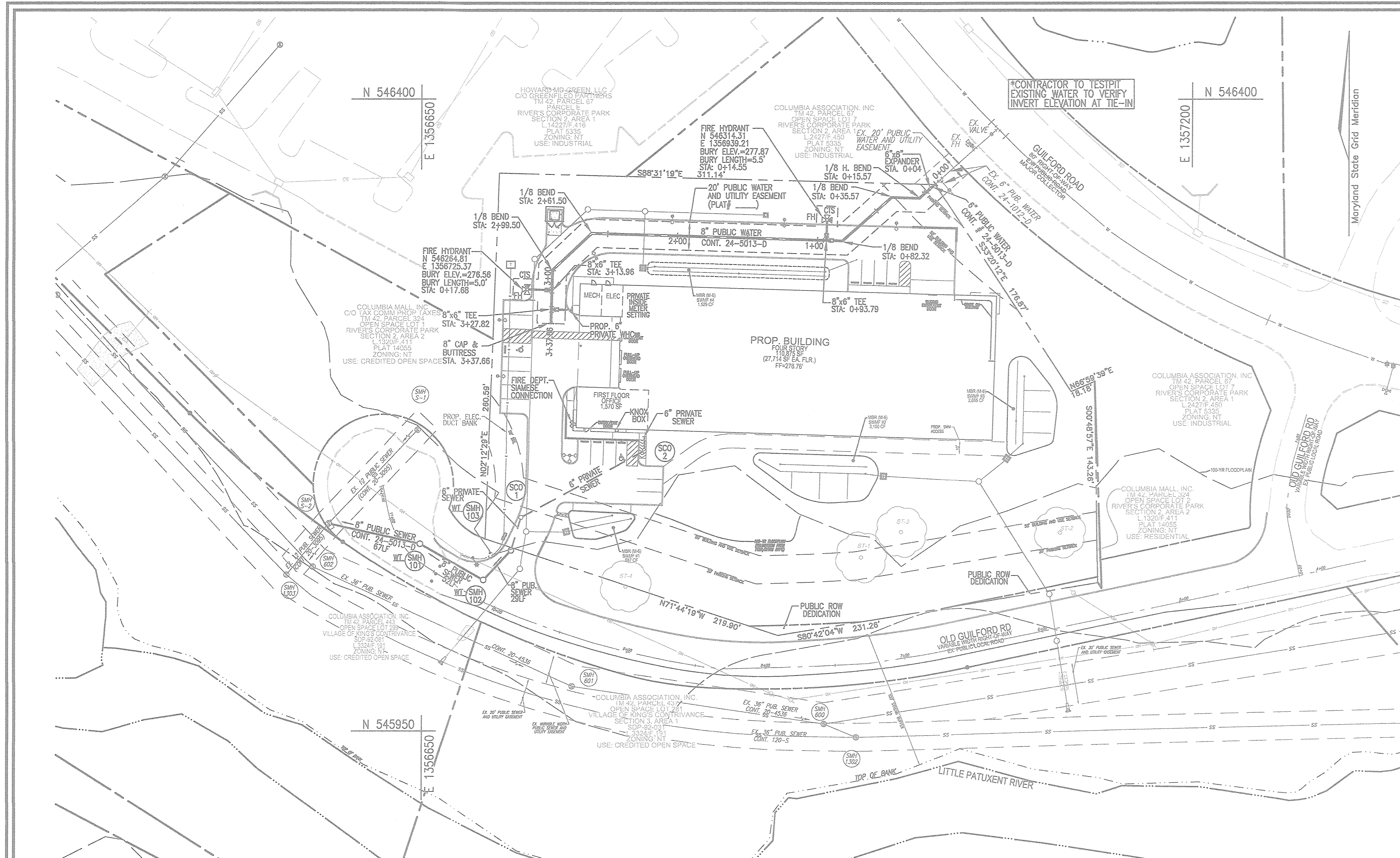


**LEGEND**

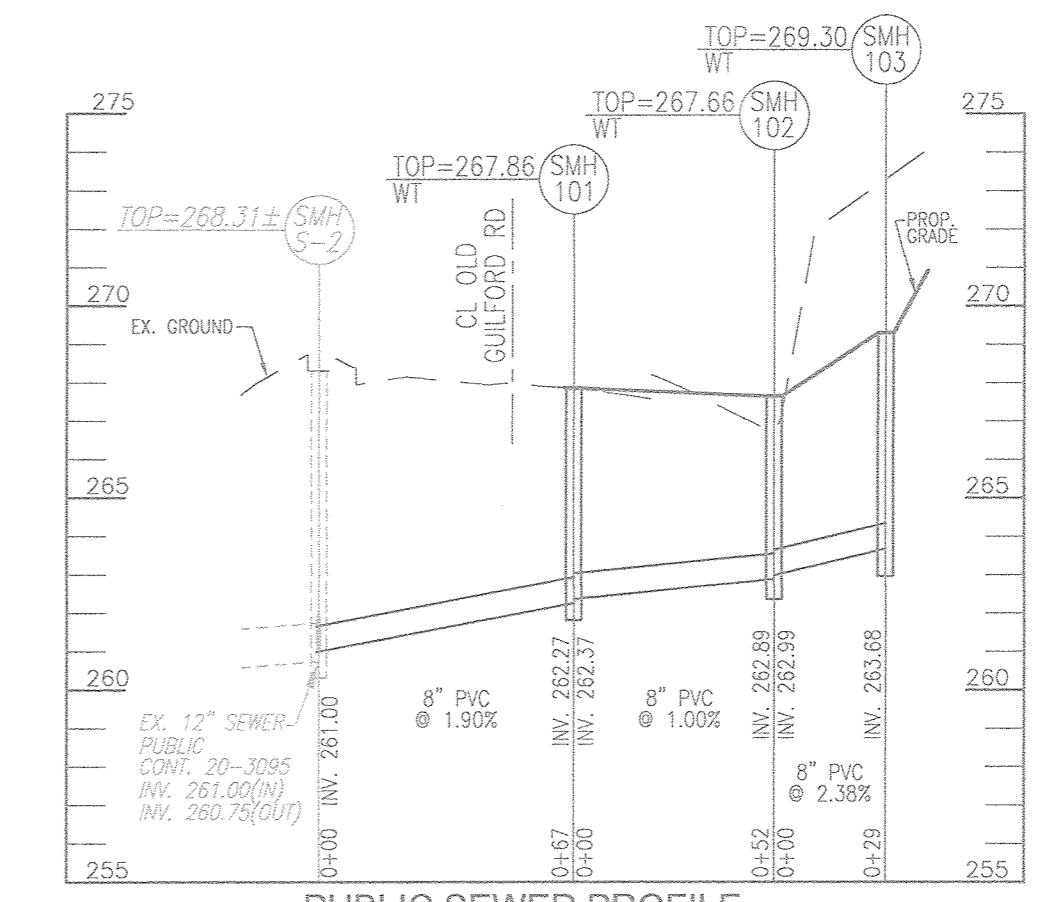
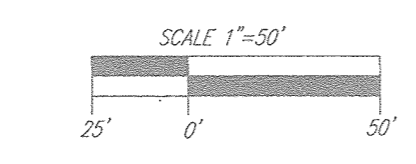
EXISTING WATER MAIN	— W —
PROPOSED WATER MAIN	— W —
FIRE HYDRANT	
PROPOSED VALVE	
PROPOSED TEE	
PROPOSED STORM DRAIN	— SD —
EXISTING STORM DRAIN	— SD —
EXISTING SEWER	— SS —
SEWER MANHOLE	
PRIVATE WATER HOUSE CONNECTION	— — —
PRIVATE SEWER HOUSE CONNECTION	— — —
PROPOSED SIGN	
PROPOSED LIGHT	
PUBLIC SEWER MAIN	— W —

**QUANTITIES**

NAME OF UTILITY CONTRACTOR :	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
SURVEY AND DRAFTING DIVISION AS-BUILT DATE :				
		WATER		
8" DIP WATER	334 LF			
6" DIP WATER	47 LF			
8" X 6" TEE	3 EA			
6" X 8" EXPANDER	1 EA			
6" VALVE	3 EA			
6" FIRE HYDRANT	2 EA			
1/8" HORIZONTAL BEND	5 EA			
8" CAP	1 EA			
		SEWER		
STANDARD 4" PRECAST MANHOLE	3 EA			
8" SEWER	148 LF			

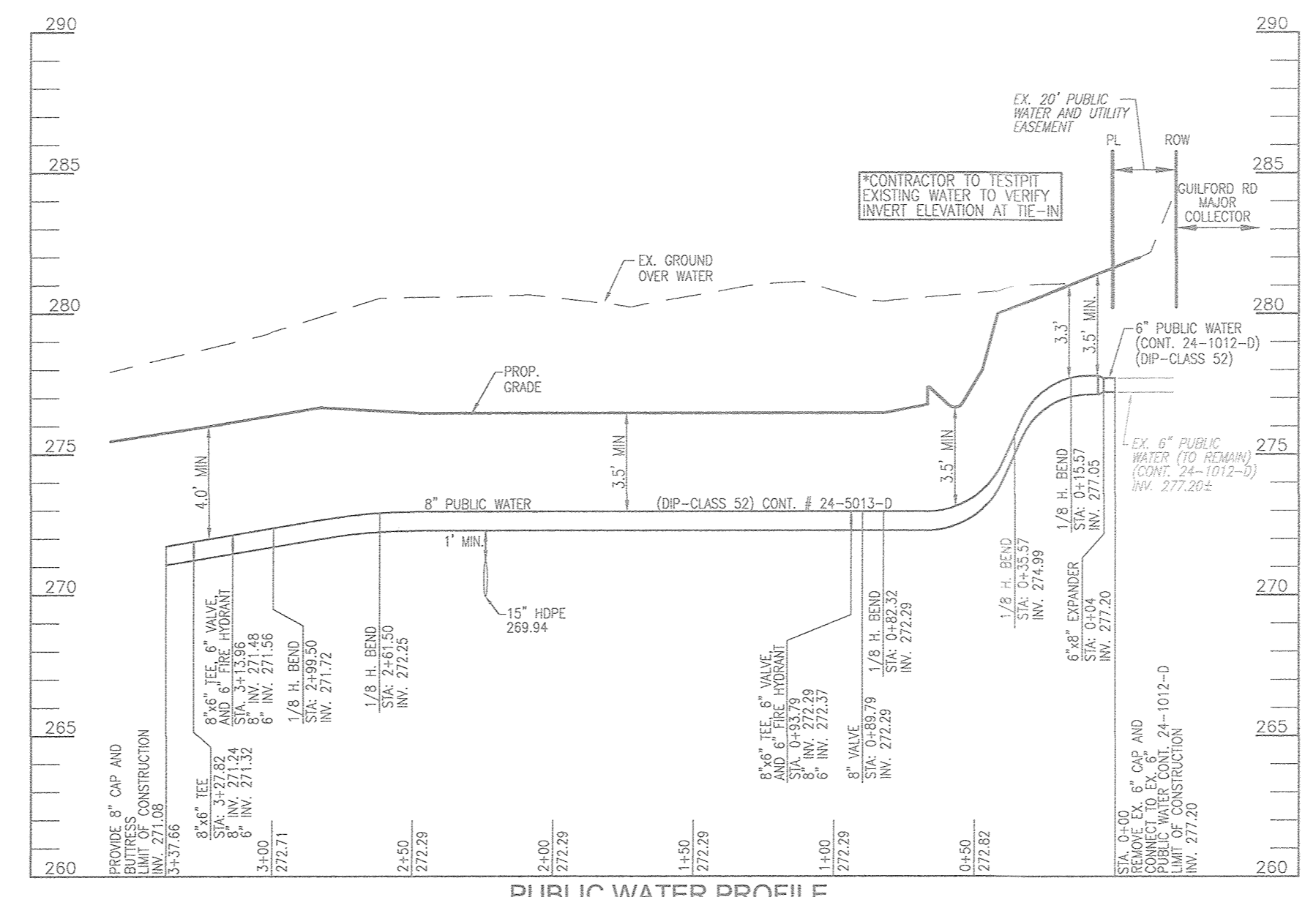


LAYOUT PLAN  
SCALE: 1"=50'



PUBLIC SEWER PROFILE  
SCALE: HORIZONTAL - 1"=50'  
VERTICAL - 1"=5'

SEWER MANHOLE SCHEDULE						
NO.	TYPE	LOCATION	TOP ELEV.	INV. IN.	INV. OUT.	NOTES
SMH-S-2	EXISTING MANHOLE	N 546097.99 E 1356263.27	268.31	261.00	260.70	HO. CO. STD. DET. G-5.12
SMH 101	PRECAST MANHOLE (WATER TIGHT)	N 546083.51 E 1356648.99	267.86	262.27	262.37	HO. CO. STD. DET. G-5.12
SMH 102	PRECAST MANHOLE (WATER TIGHT)	N 546057.96 E 1356693.88	267.66	262.89	262.99	HO. CO. STD. DET. G-5.12
SMH 103	PRECAST MANHOLE (WATER TIGHT)	N 546079.05 E 1356713.86	269.30	-	263.68	HO. CO. STD. DET. G-5.12



PUBLIC WATER PROFILE  
SCALE: HORIZONTAL - 1"=50'  
VERTICAL - 1"=5'

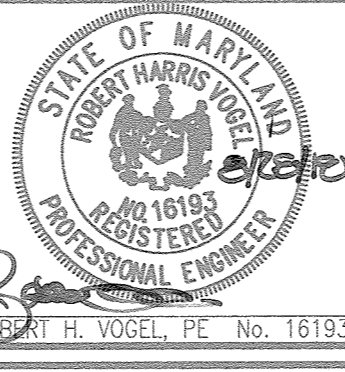
WATER MAIN LOCATION CHART	
PROP. WATER MAIN	
WL STA.	APPURTENANCE
WL STA. 0+00.00	CONNECT TO EX. 6" WATER
WL STA. 0+04.00	6" x 8" EXPANDER
WL STA. 0+15.57	1/8" HORIZONTAL BEND
WL STA. 0+35.57	1/8" HORIZONTAL BEND
WL STA. 0+82.32	1/8" HORIZONTAL BEND
WL STA. 0+93.79	8" x 6" TEE (6" VALVE AND FIRE HYDRANT)
WL STA. 2+61.50	1/8" HORIZONTAL BEND
WL STA. 2+99.50	1/8" HORIZONTAL BEND
WL STA. 3+13.96	8" x 6" TEE (6" VALVE AND FIRE HYDRANT)
WL STA. 3+27.82	8" x 6" TEE
WL STA. 3+37.66	8" CAP AND BUTTRISS

OWNER  
9201 GUILFORD PROPERTIES LLC  
2711 MOORES VALLEY DR  
BALTIMORE, MD 21209  
C/O EUGENE POVERNI  
(410) 861-2408

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
*Chief*  
9/5/18

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND  
*Chief*  
9.17.18

**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. 16183 EXPIRATION DATE: 06-27-2018

DRN: KG/DZE	DES: DZE
CHK: RHV	V+T: 1
DATE: JULY 2018	REVISION: REVISE WATER AND SEWER MAIN DESIGN PER CHANGES TO THE SITE DESIGN.
BY: NO.	DATE: 06-21-18

LAYOUT AND PROFILE  
FINAL WATER AND SEWER  
CONSTRUCTION PLAN  
CONTRACT 24-5013-D

GUILFORD SELF STORAGE  
SELF-STORAGE FACILITY  
9201 OLD GUILFORD ROAD  
ZONED: M-1  
L12349/F.421

SCALE AS SHOWN  
SHEET 2 OF 2

TAX MAP 42 GRID 15  
6TH ELECTION DISTRICT  
PARCEL 28  
HOWARD COUNTY, MARYLAND