# PUBLIC WATER PLAN
# TURF VALLEY
## PARCELS E-1 & B-1 AND
## NON-BUILDABLE BULK PARCELS E-2, B-2, B-3, B-4, B-5 & B-6
## HOWARD COUNTY, MARYLAND
## CONTRACT NO. 44-4855-D

## GENERAL NOTES

I. STANDARD GENERAL NOTES

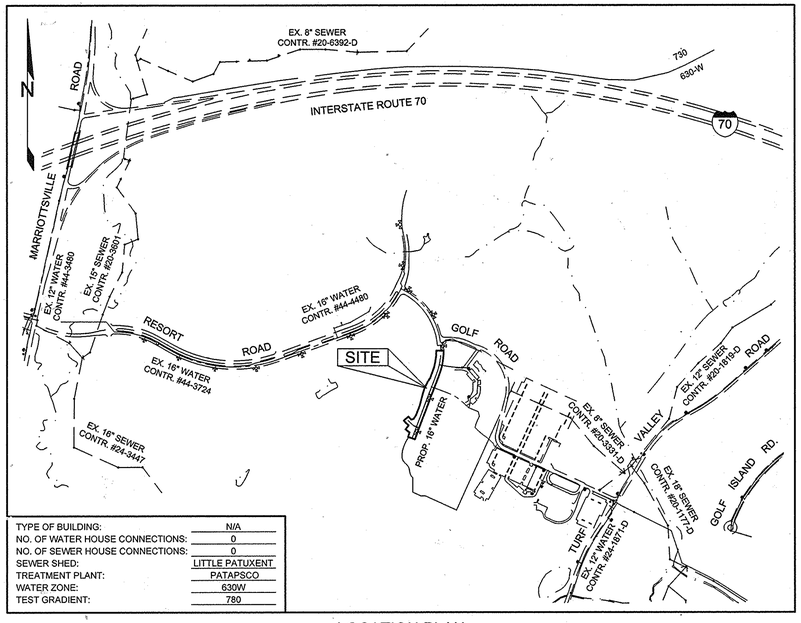
1. APPROXIMATE LOCATIONS OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
2. TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED ON OR ABOUT JANUARY, 2006 BY WINGS AERIAL MAPPING CO., INC.
3. THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON THE MARYLAND STATE REFERENCE SYSTEM NAD '83/91' AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO.16IB AND NO. 17AB. ALL VERTICAL CONTROLS ARE BASED ON NAVD '88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE CONCRETE MONUMENTS.
4. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
5. 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 BY THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
6. 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.
7. 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 IN 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.
8. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON PLANS:

| | |
|---|---|
| A T & T | 1-800-252-1133 |
| BGE (CONSTRUCTION SERVICES) | 410-850-4620 |
| BGE (EMERGENCY) | 410-685-1400 |
| BUREAU OF UTILITIES | 410-313-4900 |
| COLONIAL PIPELINE COMPANY | 410-795-1390 |
| MISS UTILITY | 1-800-257-7777 |
| STATE HIGHWAY ADMINISTRATION | 410-531-5533 |
| VERIZON | 1-800-743-0033/1-800-224-9210 |

9. 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.
10. 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.
11. THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410)313-7450 AT LEAST 5 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.

II. STANDARD WATER MAIN GENERAL NOTES

1. ALL WATER MAINS TO BE D.I.P. CLASS 54 UNLESS OTHERWISE NOTED.
2. TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED.
3. VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
4. ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
5. 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.
6. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
7. TRACER WIRE AND CONTINUITY TEST STATIONS SHALL BE INSTALLED ON ALL DIP AND PVC WATER MAINS IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL.
8. FOR PVC WATER MAINS, ALL RECORDS FOR THE QUALITY CONTROL AND QUALIFICATION TEST REQUIREMENTS NOTES IN SECTION 5.1 OF THE AWWA STANDARD C900 FOR PVC PRESSURE PIPES SHALL BE SUBMITTED WITH THE PIPE MATERIAL CERTIFICATIONS OF SHOP DRAWINGS PRIOR TO APPROVAL OF THE MATERIALS 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.
9. 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 AND SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. 17 POUND MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING RESTRAINTS AND HARNESSES. 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.
10. 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.
11. 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 OF 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 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 REQUIREMENTS OF AWWA C900, SHALL HAVE A MINIMUM LAY LENGTH OF 9-INCHES AND SHALL HAVE CENTER STOPS. PVC HIGH DEFLECTION COUPLINGS SHALL BE CERTAIN TEED 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.
12. 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 TH EPVC PIPE SPIGOTS OR PLAIN ENDS INTO THE PUSH ON BELL JOINT ON BOTH SIDES OF THE HIGH DEFLECTION COUPLING OR 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.

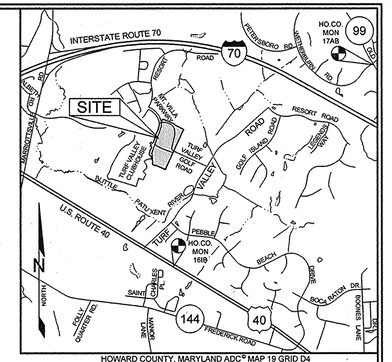



LOCATION PLAN
SCALE:1"=600'

| | |
|---|---|
| TYPE OF BUILDING: | N/A |
| NO. OF WATER HOUSE CONNECTIONS: | 0 |
| NO. OF SEWER HOUSE CONNECTIONS: | 0 |
| SEWER SHED: | LITTLE PATUXENT |
| TREATMENT PLANT: | PATAPSCO |
| WATER ZONE: | 630W |
| TEST GRADIENT: | 780 |

### WATER MAIN FITTING SCHEDULE

| APPURTENANCE | ROAD STATION & OFFSET | WATERLINE STATION | COORDINATE |
|---|---|---|---|
| MOUNT VILLA PARKWAY | | | |
| 16"x12" REDUCER | 9+75.80 7.0' LEFT | 9+70.86 | N 594,383.9 E 1,343,787.8 |
| 2.0 DEGREE HDC | 9+89.11 7.0' LEFT | 9+84.17 | N 594,371.5 E 1,343,783.1 |
| 12"x6" FHT | 10+00.00 7.0' LEFT | 9+95.05 | N 594,361.3 E 1,343,779.2 |
| 1.0 DEGREE HDC | 10+23.44 7.0' LEFT | 10+18.50 | N 594,339.4 E 1,343,770.9 |
| 1.0 DEGREE HDC | 11+29.95 7.0' LEFT | 11+25.01 | N 594,239.8 E 1,343,733.1 |
| AIR RELEASE MH | 11+89.94 7.0' LEFT | 11+85.00 | N 594,183.7 E 1,343,711.9 |
| 1/8 VB | 13+01.35 7.0' LEFT | 12+96.41 | N 594,079.5 E 1,343,672.4 |
| 1/8 VB | 13+03.14 7.0' LEFT | 12+98.20 | N 594,077.8 E 1,343,671.7 |
| 12"x8" CROSS | 13+08.27 7.0' LEFT | 13+03.32 | N 594,073.4 E 1,343,648.4 |
| 12" VALVE | 13+13.27 7.0' LEFT | 13+08.32 | N 594,068.4 E 1,343,668.1 |
| 12"x6" FHT | 13+40.00 7.0' LEFT | 13+34.99 | N 594,043.4 E 1,343,658.8 |
| 12" CAP & BUTTRESS | 14+09.35 5.0' LEFT | 14+04.15 | N 593,978.8 E 1,343,634.2 |
| BRAVA COURT | | | |
| 8" VALVE | -0+02.00 7.0' LEFT | 0+05.00 | N 594,074.8 E 1,343,665.2 |
| 1/16 HB (ROTATED) | 0+17.46 7.6' LEFT | 0+25.00 | N 594,081.9 E 1,343,646.5 |
| 8" CAP & BUTTRESS | 0+77.79 1.0' RIGHT | 0+86.76 | N 594,123.8 E 1,343,601.2 |
| PARCEL E-1 | | | |
| 8" VALVE | N/A | 0+05.00 | N 594,071.3 E 1,343,674.6 |
| 8" CAP & BUTTRESS | N/A | 0+23.00 | N 594,064.9 E 1,343,691.4 |




HOWARD COUNTY, MARYLAND ADC® MAP 19 GRID D4
VICINITY MAP
SCALE:1"=2000'

### LEGEND

| | |
|---|---|
| SIGN | |
| LIGHT POLE | POST TOP |
| EXISTING UTILITY POLE | |
| DIRECTION OF FLOW | |
| FIRE HYDRANT | |
| HOUSE CONNECTIONS | SHC / WHC |
| SEWER MANHOLES | TERMINAL / STANDARD |
| WATER TEE AND VALVE | |
| WATER HORIZONTAL BEND | |
| STORM DRAIN STRUCTURES | INLETS / ENDSECTION / PIPE |

### BENCHMARKS

| NUMBER | NORTHING | EASTING | ELEVATION | DESCRIPTION |
|---|---|---|---|---|
| 16IB | 590,475.2538 | 1,344,753.9350 | 469.892 | 11.5' SOUTHWEST OF WBL RT. 40, 20.8' WEST OF PK NAIL IN SHOULDER, 68.4' SOUTH OF LAST POST IN GUARDRAIL |
| 17AB | 598,435.249 | 1,348,615.2482 | 508.469 | SE OF INTERSECTION OF RTE. 99 AND WETHERBURN ROAD, 14.8' WEST OF FENCE POST, 35' NE OF MANHOLE |

### QUANTITIES

NAME OF UTILITY CONTRACTOR: UTILITIES UNLIMITED
SURVEY AND DRAFTING DIVISION AS-BUILT: DFI

| ITEMS | QUANTITIES ESTIMATED | AS-BUILT QUANTITIES | AS-BUILT TYPE | AS-BUILT MANUFACTURER/SUPPLIER |
|---|---|---|---|---|
| 8" PVC (WATER) | 110 LF | | C-900 | NATIONAL PIPE/FERGUSON |
| 12" PVC (WATER) | 434 LF | | C-900 | NATIONAL PIPE / FERGUSON |
| 8" VALVE | 2 | 2 | DIP | AMERICAN FLOW CONTROL / FERGUSON |
| 12" VALVE | 1 | 1 | DIP | AMERICAN FLOW CONTROL / FERGUSON |
| 12"x6" FHT | 2 | 2 | DIP | TYLER UNION FOUNDRY / FERGUSON |
| FIRE HYDRANT | 2 | 2 | | AMERICAN FLOW CONTROL / FERGUSON |
| 1" HDC | 2 | 2 | C-900 | NORTH AMERICAN SPECIALTY / FERGUSON |
| 2" HDC | 1 | 1 | C-900 | NORTH AMERICAN SPECIALTY / FERGUSON |
| 12"x8" CROSS | 1 | 1 | DIP | TYLER UNION FOUNDRY / FERGUSON |
| 1/16 VB | 1 | 1 | DIP | TYLER UNION FOUNDRY / FERGUSON |
| 1/8 VB | 2 | 2 | DIP | TYLER UNION FOUNDRY / FERGUSON |
| 16"x12" REDUCER | 1 | 1 | DIP | TYLER UNION FOUNDRY / FERGUSON |
| AIR RELEASE MH | 1 | 1 | CONCRETE | ATLANTIC |
| 12" CAP & BUTTRESS | 1 | 1 | DIP | TYLER UNION FOUNDRY / FERGUSON |
| 8" CAP & BUTTRESS | 2 | 2 | DIP | TYLER UNION FOUNDRY / FERGUSON |

### SHEET INDEX



AS BUILTS
BY: JM DATE: 12-15-15

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE STANDARD SPECIFICATIONS AND WITH ROAD CONSTRUCTION PLANS F-14-096
THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

SOIL CONSERVATION DISTRICT — DATE 7/8/14

OWNER/DEVELOPER
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410.825.8400

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES — DATE 7/1/14

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
CHIEF, DEVELOPMENT ENGINEERING DIVISION M.G. — DATE 7.11.14


SILL ENGINEERING GROUP, LLC
3300 North Ridge Road, Suite 160
Ellicott City, Maryland 21043
Phone: 443.325.7682
Fax: 443.325.7685
Email: info@sillengineering.com
Civil Engineering for Land Development


STATE OF MARYLAND — PAUL SILL — No. 32025 — PROFESSIONAL ENGINEER

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. 32025, EXPIRATION DATE: JUNE 20, 2015

DESIGNED BY: PS
DRAWN BY: PS
CHECKED BY: PS
DATE: JUNE 27, 2014

| NO. | DESCRIPTION | DATE |
|---|---|---|
| | REVISIONS | |

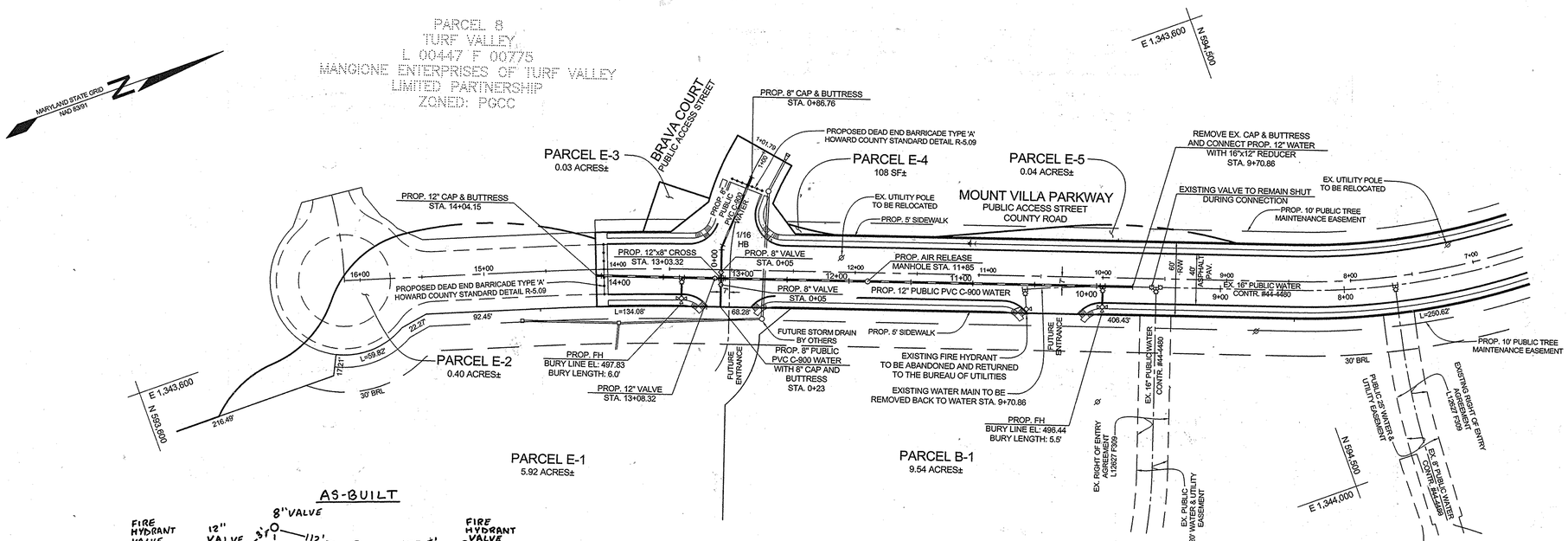
COVER SHEET

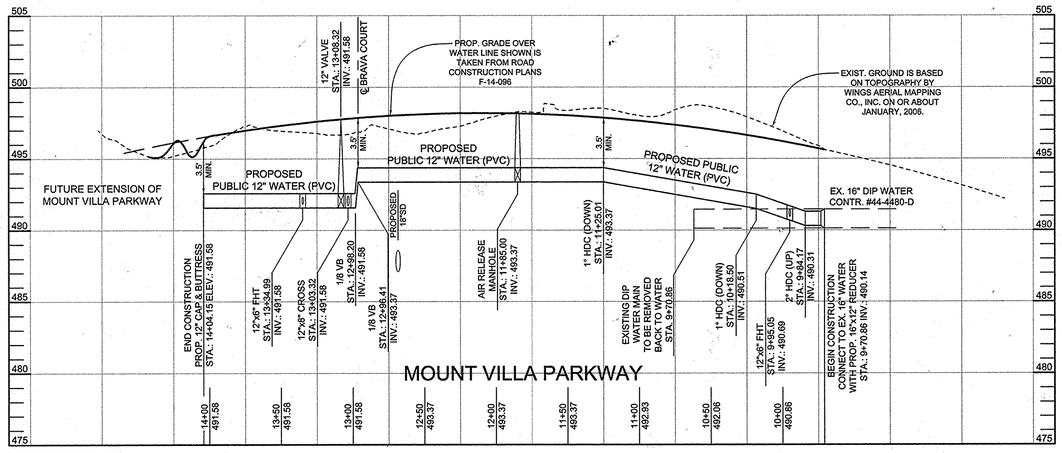
600' SCALE MAP NO. 16 — BLOCK NO. 19

TURF VALLEY
PARCELS E-1 & B-1 AND
NON-BUILDABLE BULK PARCELS E-2, B-2, B-3, B-4, B-5 & B-6
TAX MAP 16 GRID 19 — PART OF PARCELS 8 AND 394
3RD ELECTION DISTRICT — HOWARD COUNTY, MARYLAND
CONTRACT NO. 44-4855-D

SCALE: AS SHOWN

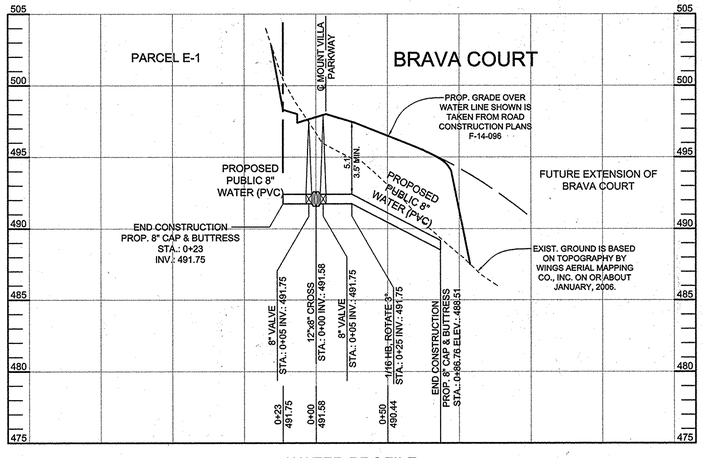
SHEET NO. 1 OF 2




WATER PROFILE

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




WATER PROFILE

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

AS BUILTS
BY: SPI DATE: 12-15-15

OWNER/DEVELOPER

MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410.825.8400

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES — DATE 7/1/14

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7.11.14

SILL ENGINEERING GROUP, LLC
3300 North Ridge Road, Suite 160
Ellicott City, Maryland 21043
Phone: 443.325.7682
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STATE OF MARYLAND — PAUL M. SILL — No. 32025 — PROFESSIONAL ENGINEER

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DESIGNED BY: PS
DRAWN BY: PS
CHECKED BY: PS
DATE: JUNE 27, 2014

| NO. | DESCRIPTION | DATE |
|---|---|---|
| | REVISIONS | |

# WATER PLAN AND PROFILE

600' SCALE MAP NO. 16 — BLOCK NO. 19

# TURF VALLEY
## PARCELS E-1 & B-1 AND NON-BUILDABLE BULK PARCELS E-2, B-2, B-3, B-4, B-5 & B-6

TAX MAP 16 GRID 19 — 3RD ELECTION DISTRICT
PART OF PARCELS 8 AND 394 — HOWARD COUNTY, MARYLAND

CONTRACT NO. 44-4855-D

SCALE: AS SHOWN

SHEET NO. 2 OF 2