

# PUBLIC WATER AND SEWER PLAN

# FAIRWAYS AT TURF VALLEY

PHASE 1 SECTION 2: GOLF OPEN SPACE LOTS 52-56;  
 PHASE 2: LOTS 57-89; OPEN SPACE LOT 90-94; GOLF SPACE LOT 95  
 PODS 'F' AND PART OF 'H' SECTION IV : RESIDENTIAL PHASE IV D  
 HOWARD COUNTY, MARYLAND

## CONTRACT NO. #24-4671-D

BENCHMARKS				
NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
161B	590,475.2538	1,344,753.9350	469.892	11.5' SOUTHWEST OF WBL RT. 40, 20.8' WEST OF PK NAIL IN SHOULDER, 66.4' SOUTH OF LAST POST IN GUARDRAIL.
17AB	598,435.249	1,348,615.2482	508.469	SE OF INTERSECTION OF RTE. 50 AND WETHERBURN ROAD, 14.8' WEST OF FENCE POST, 35' NE OF MANHOLE

### 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.
- TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED IN JANUARY, 2006 BY WINGS AERIAL MAPPING CO., 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 NO. 0012 AND NO. 16E1.  
 ALL VERTICAL CONTROLS ARE BASED ON NAVD 88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE 0012 AND 16E1.
- 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 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 ON THESE PLANS:  
 AT&T.....1-800-252-1133  
 BGE (CONTRACTOR 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 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/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(C) OF THE HOWARD COUNTY CODE.

#### PART II WATER

- ALL WATER MAINS TO BE D.I.P. CLASS 54 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 THE 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 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 TEST RECORDS RECEIVED.
- UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS SACRIFICIAL ANODES SHALL BE INSTALLED ON ALL STEEL FITTINGS AND METAL FITTINGS INSTALLED 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 HARNESSES. 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 THE 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 THE SPIGOT INTO THE BELL OF PVC PIPE.
- ALL CHANGES IN HORIZONTAL AND VERTICAL DIRECTION OF PVC WATER PIPE SHALL BE MADE WITH STANDARD BENDS, 5-DEGREE 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 THE BELL 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.

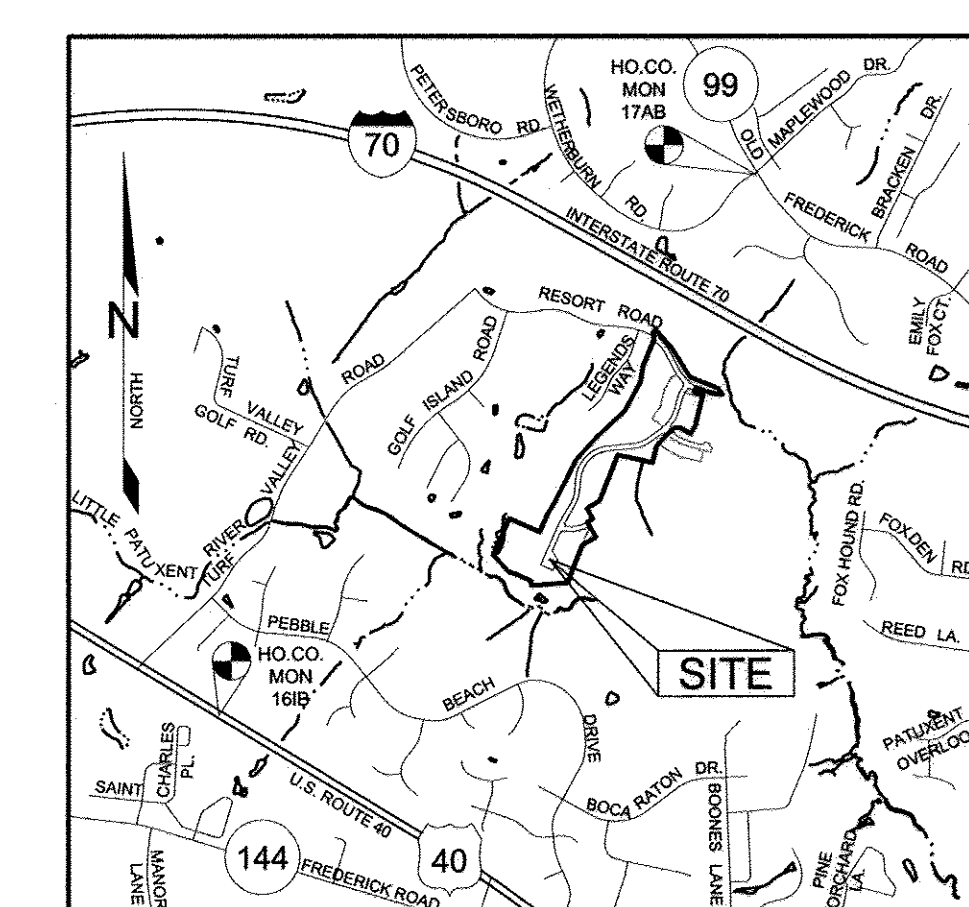
PVC HIGH DEFLECTION COUPLINGS SHALL BE LIMITED TO A TOTAL DEFLECTION OF 3-DEGREES (1 DEGREE ON EITHER END OF THE COUPLING). SHALL BE RATED FOR A MINIMUM 200 PSI MEETING THE REQUIREMENTS OF AWWA C900, SHALL HAVE A MINIMUM LAY LENGTH OF 9-INCHES AND SHALL HAVE CENTER STOPS. PVC HIGH DEFLECTION COUPLINGS SHALL BE CERTANTEED PVC HIGH DEFLECTION (HD) STOP COUPLINGS OR EQUAL.

5-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 (PEX) BLUE BRUTE DR18 OR EQUAL.

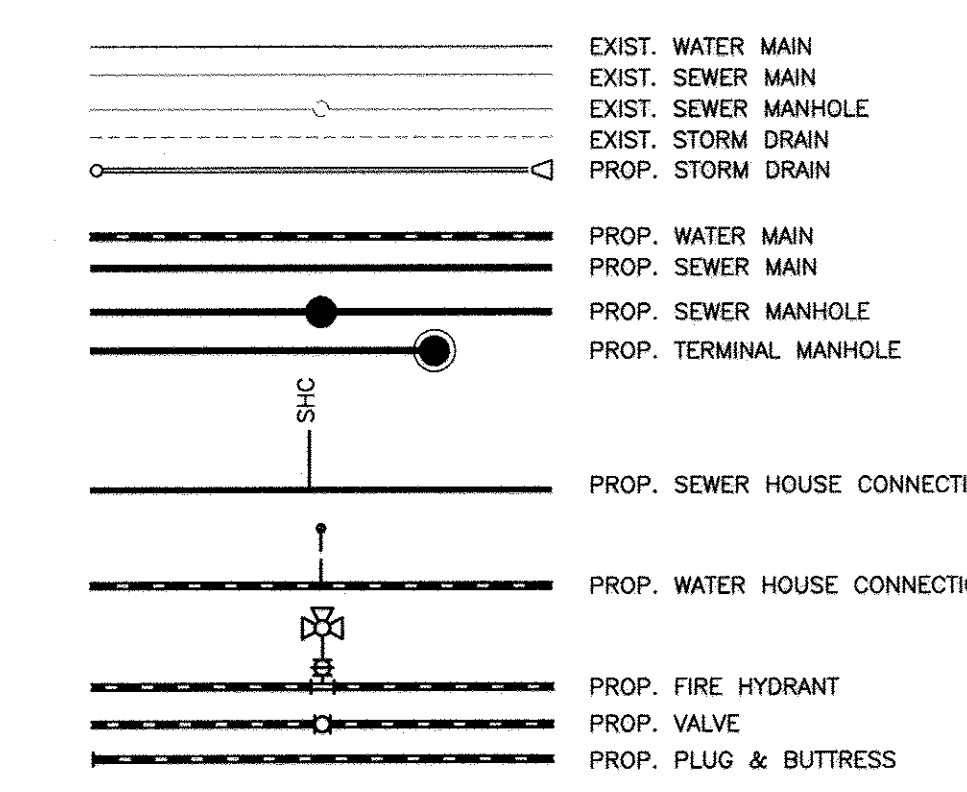
WHEN PVC HIGH DEFLECTION COUPLINGS OR PVC 5-DEGREE SWEEPS ARE USED TO FACILITATE CHANGES IN HORIZONTAL OR VERTICAL ALIGNMENTS OF AWWA C-900 PVC PIPELINES, THE CONTRACTOR SHALL INSTALL DEPRESSOR OR OVER-INSERTION OF THE PVC PIPE SPIGOTS OR PLAN ENDS INTO THE PUSH OR BELL JOINT ON BOTH SIDES OF THE HIGH 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 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 APPROVED EQUAL.

#### PART III SEWER

- ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C. UNLESS OTHERWISE NOTED.
- ALL MANHOLES SHALL BE 4'-0" IN 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 05.52. WHERE WATERTIGHT MANHOLE FRAMES AND COVERS ARE USED, SET TOP OF FRAME 1'-4" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT CELLAR CANNOT BE SERVED.



#### LEGEND

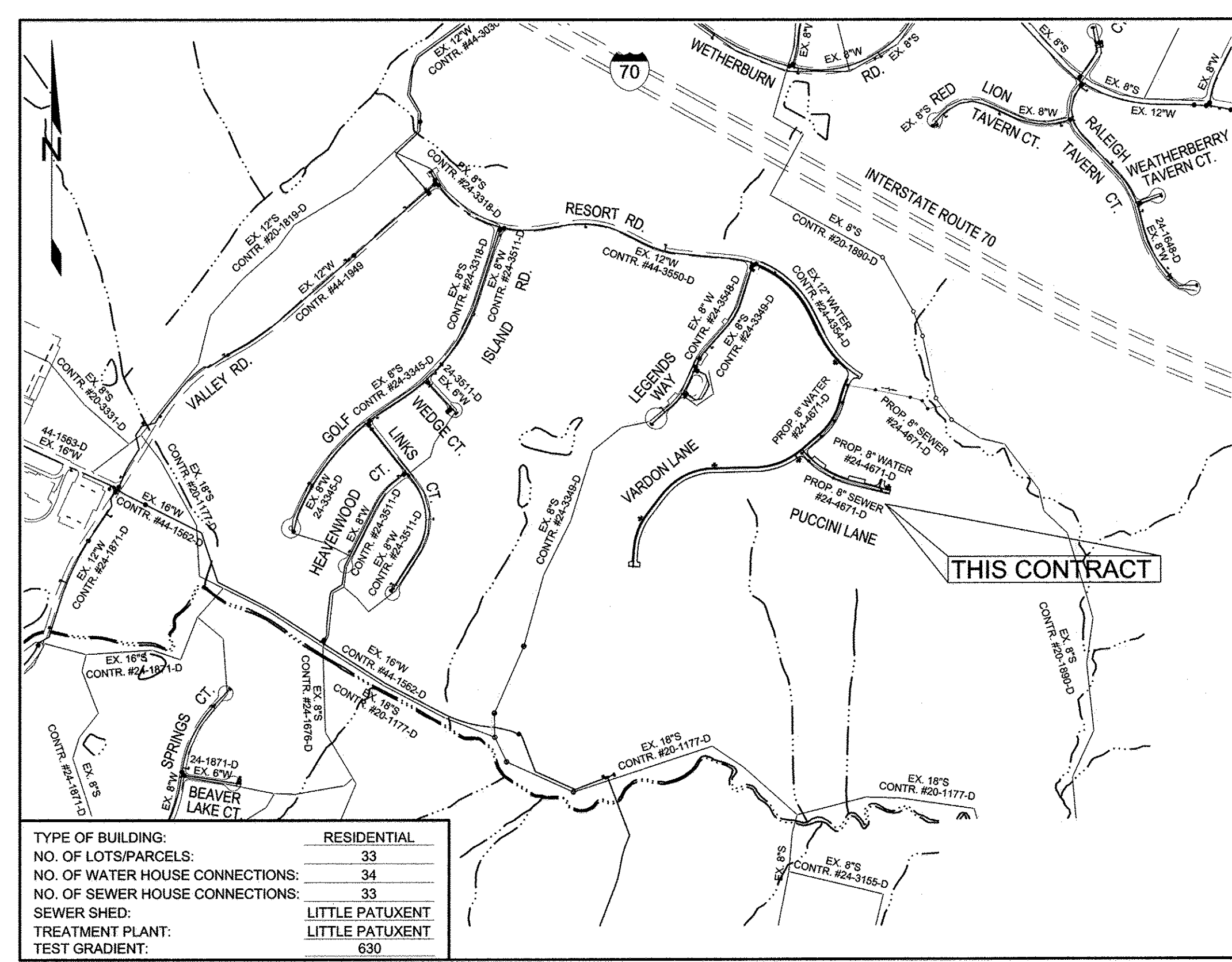


NOTE:  
 ALL WATER HOUSE CONNECTIONS SHALL BE 1.5" WITH A 1" METER (OUTSIDE SETTING).  
 ALL SEWER HOUSE CONNECTIONS SHALL BE 4" PVC.

QUANTITIES				
NAME OF UTILITY CONTRACTOR:				
SURVEY AND DRAFTING DIVISION AS-BUILT:				
ITEMS	QUANTITIES ESTIMATED	QUANTITIES	TYPE	AS-BUILT MANUFACTURER/SUPPLIER
8" D.I.P. WATER	2,324 LF	2,324 LF	DIP	McJANNET / FERGUSON
8" CAP & BUTRESS	3 EA	3	DIP	TYLER / FERGUSON
8"x8" TEE	2 EA	2	DIP	TYLER / FERGUSON
8" VALVE	6 EA	6	DIP	MUELLER / FERGUSON
FIRE HYDRANT, TEE & VALVE	4 EA	4	DIP	MUELLER / FERGUSON
1.5" WHC	914 LF	914 LF	COPPER	CERRO PLUM / FERGUSON
1" METER VAULT	34 EA	34	CONCRETE	HOBAS / FERGUSON
8" PVC SEWER (SDR-35)	993 LF	993 LF	PVC	NATIONAL PIPE / FERGUSON
8" PVC SEWER (C-900)	358 LF	358 LF	PVC	NATIONAL PIPE / FERGUSON
8" DIP SEWER	79 LF	79 LF	DIP	McJANNET / FERGUSON
SEWER MANHOLE	13 EA	13	CONCRETE	ATLANTIC PRECAST
4" SHC	781 LF	781 LF	PVC	NATIONAL PIPE / FERGUSON
DROP HOUSE CONNECTION	15 EA	15	PVC	NATIONAL PIPE / FERGUSON

#### Lot Frontage Chart

Lot Number	Distance (feet)
57	35.45
58	30.08
59	30.00
60	35.00
61	35.20
62	30.01
63	35.19
64	35.00
65	30.00
66	30.00
67	35.00
68	37.50
69	30.00
70	30.04
71	37.88
72	35.08
73	30.02
74	35.24
75	35.14
76	30.00
77	35.00
78	38.64
79	30.00
80	38.08
81	38.09
82	30.01
83	38.09
84	38.18
85	30.02
86	38.00
87	38.00
88	30.00
89	38.00



TYPE OF BUILDING:	RESIDENTIAL
NO. OF LOTS/PARCELS:	33
NO. OF WATER HOUSE CONNECTIONS:	33
NO. OF SEWER HOUSE CONNECTIONS:	33
SEWER SHED:	LITTLE PATUXENT
TREATMENT PLANT:	LITTLE PATUXENT
TEST SPRIOT:	630

LOCATION PLAN  
 SCALE: 1"=600'

OWNER/DEVELOPER:  
 MANGIONE ENTERPRISES OF TURF VALLEY, LP  
 1205 YORK ROAD, PENTHOUSE  
 LUTHERVILLE, MARYLAND 21093  
 410-825-8400

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

5/14/17 DATE

THIS SHEET REPLACES THE PREVIOUS SHEET 1 SIGNED ON 7-1-2016

SHEET INDEX	
NO.	DESCRIPTION
1	COVER SHEET
2	WATER AND SEWER PLAN
3	WATER PROFILES
4	SEWER AND WATER PROFILES
5	SEWER PROFILES & STREAM CROSSING DETAILS

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. 22390, Registration Date: 6-30-2017.

NO.	DESCRIPTION	DATE
BEI 5	REMOVE LOTS 1-47 AND ASSOCIATED WATER AND SEWER FROM THIS CONTRACT TO CONTRACT 24-4672-D. UPDATE QUANTITIES CHART, LOT FRONTAGE CHART, LOCATION MAP, AND SHEET INDEX.	5-5-2017
BEI 4	UPDATE PVC SEWER LF IN QUANTITIES CHART	10-6-2016
BEI 3	UPDATE GENERAL NOTES TO LATEST EDITION. UPDATE QUANTITY CHART AND TITLE BLOCK. ADD LOT FRONTAGE CHART. ADD ALL WATER AND SEWER ALONG VARDON LANE TO THIS CONTRACT.	5-24-2016
BEI 2	UPDATE SEWER PIPE AND MH QUANTITIES	10-13-2015
SAA 1	REVISED QUANTITIES BOX	6-21-2010
BY NO.	REVISIONS	DATE

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING  
 HOWARD COUNTY, MARYLAND

5-19-17 DATE

BENCHMARK ENGINEERING, INC.  
 8480 BALTIMORE NATIONAL PIKE & SUITE 315 ELLICOTT CITY, MARYLAND 21043  
 (P) 410-465-8105 (F) 410-465-8644  
 WWW.BE-CIVILENGINEERING.COM

#### COVER SHEET

FAIRWAYS AT TURF VALLEY  
 PHASE 1 SECTION 2: GOLF SPACE LOTS 52-56;  
 PHASE 2: LOTS 57-89; OPEN SPACE LOTS 91-94; GOLF SPACE LOT 95  
 PODS 'F' AND PART OF 'H' SECTION IV: RESIDENTIAL PHASE IV D

SCALE: AS SHOWN

SHEET NO. 1 OF 5

TAX MAP: 16 - BLOCK: 16 - PARCEL: P/O 8 AND 706 - ZONED: PGCC - ELECTION DISTRICT: 2

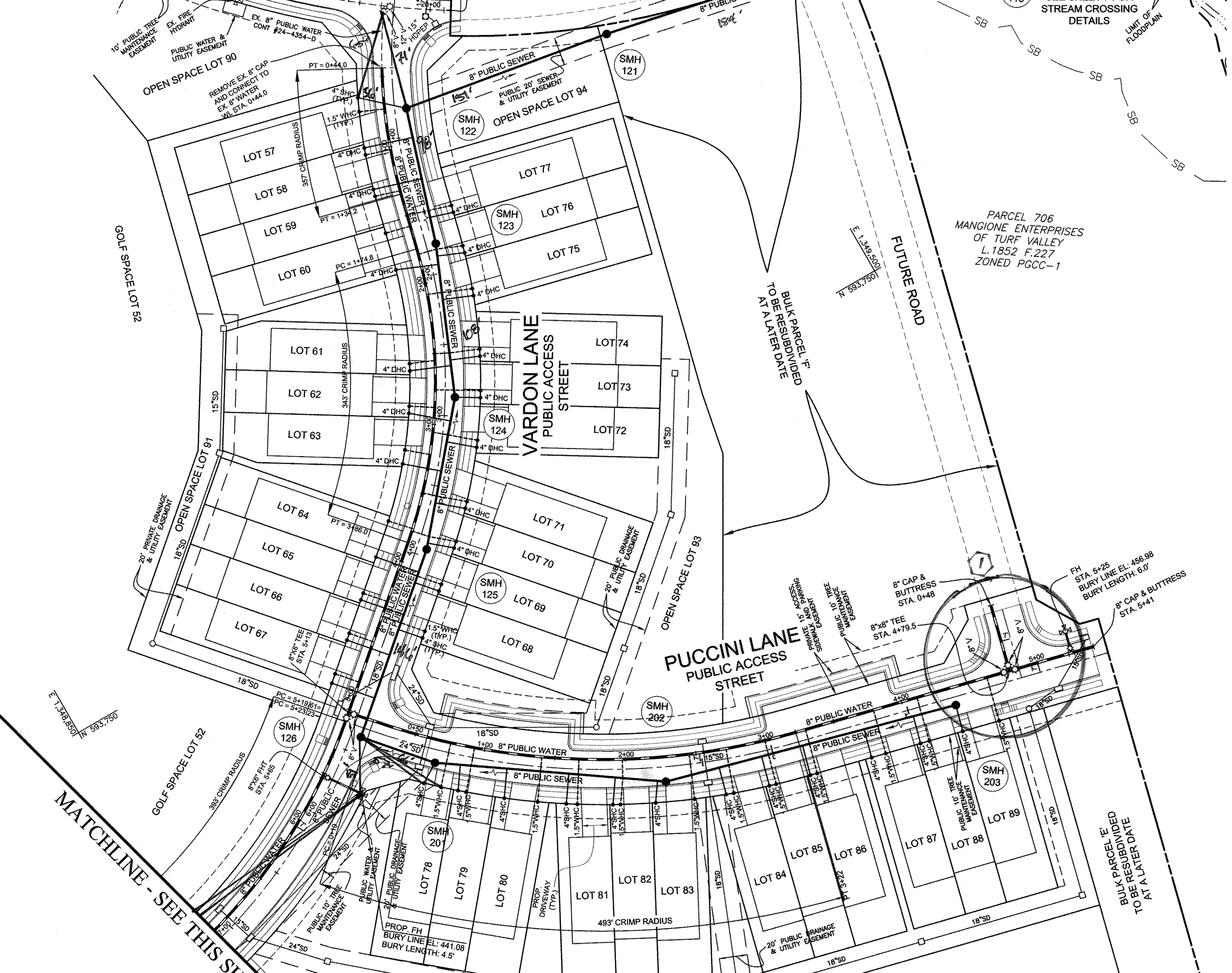
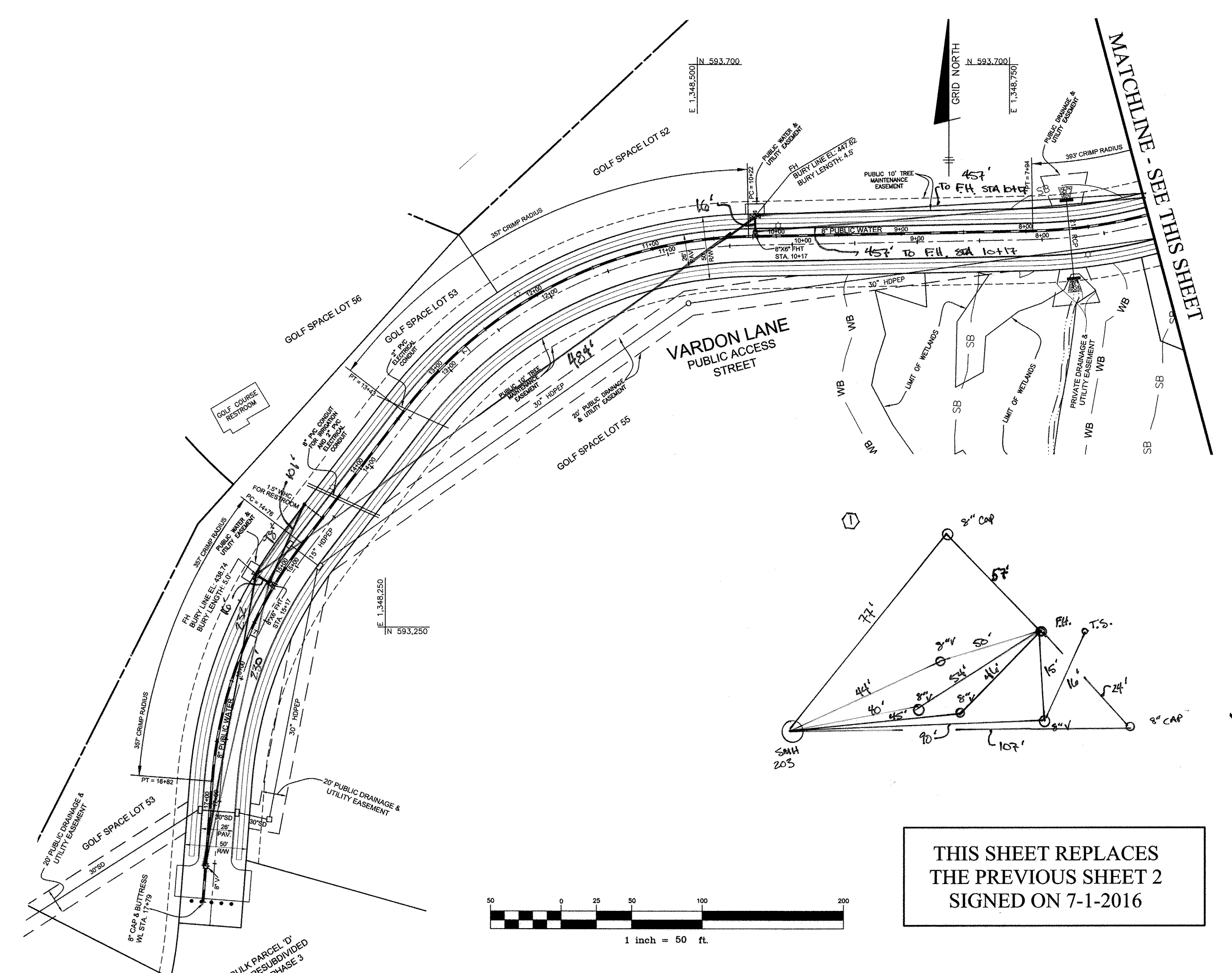
CONTRACT NO. 24-4671-D



WATER HOUSE CONNECTION AS-BUILT LOCATION TABLE					
LOT	ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2	SMH	SMH
57	VARDON LANE	13'6"	10'8"	51'	SMH 122
58	VARDON LANE	13'6"	10'8"	51'	SMH 122
59	VARDON LANE	13'6"	10'8"	51'	SMH 122
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66	VARDON LANE	13'6"	10'8"	51'	SMH 122
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74	VARDON LANE	13'6"	10'8"	51'	SMH 122
75	VARDON LANE	13'6"	10'8"	51'	SMH 122
76	VARDON LANE	13'6"	10'8"	51'	SMH 122
77	VARDON LANE	13'6"	10'8"	51'	SMH 122
78	VARDON LANE	13'6"	10'8"	51'	SMH 122
79	PUCCHINI LANE	13'6"	10'8"	51'	SMH 201
80	PUCCHINI LANE	13'6"	10'8"	51'	SMH 201
81	PUCCHINI LANE	13'6"	10'8"	51'	SMH 201
82	PUCCHINI LANE	13'6"	10'8"	51'	SMH 201
83	PUCCHINI LANE	13'6"	10'8"	51'	SMH 201
84	PUCCHINI LANE	13'6"	10'8"	51'	SMH 201
85	PUCCHINI LANE	13'6"	10'8"	51'	SMH 201
86	PUCCHINI LANE	13'6"	10'8"	51'	SMH 201
87	PUCCHINI LANE	13'6"	10'8"	51'	SMH 201
88	PUCCHINI LANE	13'6"	10'8"	51'	SMH 201
89	PUCCHINI LANE	13'6"	10'8"	51'	SMH 201

SEWER HOUSE CONNECTION AS-BUILT LOCATION TABLE					
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88	PUCCHINI LANE	13'6"	10'8"	51'	SMH 201
89	PUCCHINI LANE	13'6"	10'8"	51'	SMH 201

SMH 117	SMH 514	52'	SMH 118	50'
SMH 118	SMH 514	52'	SMH 119	50'
SMH 119	SMH 514	52'	SMH 120	50'
SMH 120	SMH 514	52'	SMH 121	50'
SMH 121	SMH 514	52'	SMH 122	50'
SMH 122	SMH 514	52'	SMH 123	50'
SMH 123	SMH 514	52'	SMH 124	50'
SMH 124	SMH 514	52'	SMH 125	50'
SMH 125	SMH 514	52'	SMH 126	50'
SMH 126	SMH 514	52'	SMH 127	50'
SMH 127	SMH 514	52'	SMH 128	50'
SMH 128	SMH 514	52'	SMH 129	50'
SMH 129	SMH 514	52'	SMH 130	50'
SMH 130	SMH 514	52'	SMH 131	50'
SMH 131	SMH 514	52'	SMH 132	50'
SMH 132	SMH 514	52'	SMH 133	50'
SMH 133	SMH 514	52'	SMH 134	50'
SMH 134	SMH 514	52'	SMH 135	50'
SMH 135	SMH 514	52'	SMH 136	50'
SMH 136	SMH 514	52'	SMH 137	50'
SMH 137	SMH 514	52'	SMH 138	50'
SMH 138	SMH 514	52'	SMH 139	50'
SMH 139	SMH 514	52'	SMH 140	50'
SMH 140	SMH 514	52'	SMH 141	50'
SMH 141	SMH 514	52'	SMH 142	50'
SMH 142	SMH 514	52'	SMH 143	50'
SMH 143	SMH 514	52'	SMH 144	50'
SMH 144	SMH 514	52'	SMH 145	50'
SMH 145	SMH 514	52'	SMH 146	50'
SMH 146	SMH 514	52'	SMH 147	50'
SMH 147	SMH 514	52'	SMH 148	50'
SMH 148	SMH 514	52'	SMH 149	50'
SMH 149	SMH 514	52'	SMH 150	50'
SMH 150	SMH 514	52'	SMH 151	50'
SMH 151	SMH 514	52'	SMH 152	50'
SMH 152	SMH 514	52'	SMH 153	50'
SMH 153	SMH 514	52'	SMH 154	50'
SMH 154	SMH 514	52'	SMH 155	50'
SMH 155	SMH 514	52'	SMH 156	50'
SMH 156	SMH 514	52'	SMH 157	50'
SMH 157	SMH 514	52'	SMH 158	50'
SMH 158	SMH 514	52'	SMH 159	50'
SMH 159	SMH 514	52'	SMH 160	50'
SMH 160	SMH 514	52'	SMH 161	50'
SMH 161	SMH 514	52'	SMH 162	50'
SMH 162	SMH 514	52'	SMH 163	50'
SMH 163	SMH 514	52'	SMH 164	50'
SMH 164	SMH 514	52'	SMH 165	50'
SMH 165	SMH 514	52'	SMH 166	50'
SMH 166	SMH 514	52'	SMH 167	50'
SMH 167	SMH 514	52'	SMH 168	50'
SMH 168	SMH 514	52'	SMH 169	50'
SMH 169	SMH 514	52'	SMH 170	50'
SMH 170	SMH 514	52'	SMH 171	50'
SMH 171	SMH 514	52'	SMH 172	50'
SMH 172	SMH 514	52'	SMH 173	50'
SMH 173	SMH 514	52'	SMH 174	50'
SMH 174	SMH 514	52'	SMH 175	50'
SMH 175	SMH 514	52'	SMH 176	50'
SMH 176	SMH 514	52'	SMH 177	50'
SMH 177	SMH 514	52'	SMH 178	50'
SMH 178	SMH 514	52'	SMH 179	50'
SMH 179	SMH 514	52'	SMH 180	50'
SMH 180	SMH 514	52'	SMH 181	50'
SMH 181	SMH 514	52'	SMH 182	50'
SMH 182	SMH 514	52'	SMH 183	50'
SMH 183	SMH 514	52'	SMH 184	50'
SMH 184	SMH 514	52'	SMH 185	50'
SMH 185	SMH 514	52'	SMH 186	50'
SMH 186	SMH 514	52'	SMH 187	50'
SMH 187	SMH 514	52'	SMH 188	50'
SMH 188	SMH 514	52'	SMH 189	50'
SMH 189	SMH 514	52'	SMH 190	50'
SMH 190	SMH 514	52'	SMH 191	50'
SMH 191	SMH 514	52'	SMH 192	50'
SMH 192	SMH 514	52'	SMH 193	50'
SMH 193	SMH 514	52'	SMH 194	50'
SMH 194	SMH 514	52'	SMH 195	50'
SMH 195	SMH 514	52'	SMH 196	50'
SMH 196	SMH 514	52'	SMH 197	50'
SMH 197	SMH 514	52'	SMH 198	50'
SMH 198	SMH 514	52'	SMH 199	50'
SMH 199	SMH 514	52'	SMH 200	50'



THIS SHEET REPLACES THE PREVIOUS SHEET 2 SIGNED ON 7-1-2016

OWNER/DEVELOPER:  
MANGIONE ENTERPRISES OF TURF VALLEY, LP  
1205 YORK ROAD, PENTHOUSE  
LUTHERVILLE, MARYLAND 21093  
410-825-8400

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. 22390. Expiration Date: 6-30-2017.



**BENCHMARK**  
ENGINEERS & LAND SURVEYORS & ENGINEERS  
**ENGINEERING, INC.**  
8490 BALTIMORE NATIONAL PIKE & SUITE 315 • ELLICOTT CITY, MARYLAND 21043  
(P) 410-485-8105 (F) 410-485-8844  
WWW.BE-CIVILENGINEERING.COM

REV	NO.	DESCRIPTION	DATE
1	5	As-Built	9-2-17
2	4	TERMINATE WATER AT STA. 79+79. END VARDON LANE AT STATION 0+00. REMOVE AND RELOCATE LOTS 1-47 AND ASSOCIATED WATER AND SEWER TO PHASE 3 CONTRACT #24-4672-D	5-5-2017
3	3	ADD WATER AND SEWER ALONG VARDON LANE TO THIS CONTRACT. SHOW LOTS 57-77 ADJ HOUSE CONNECTIONS. ADD WHC FOR GOLF COURSE RESTROOM. ADD CONDUITS VARDON LANE STA 13+40 & 14+40.	5-24-2016
4	2	REVISE SEWER PROFILE FROM SMH 117 TO SMH 119. UPDATE STREAM DIVERSION PLAN AND STRUCTURE SCHEDULE.	10-13-2015
5	1	ADDED SHC'S TO PROFILE	6-21-2010
6	NO.	REVISIONS	DATE

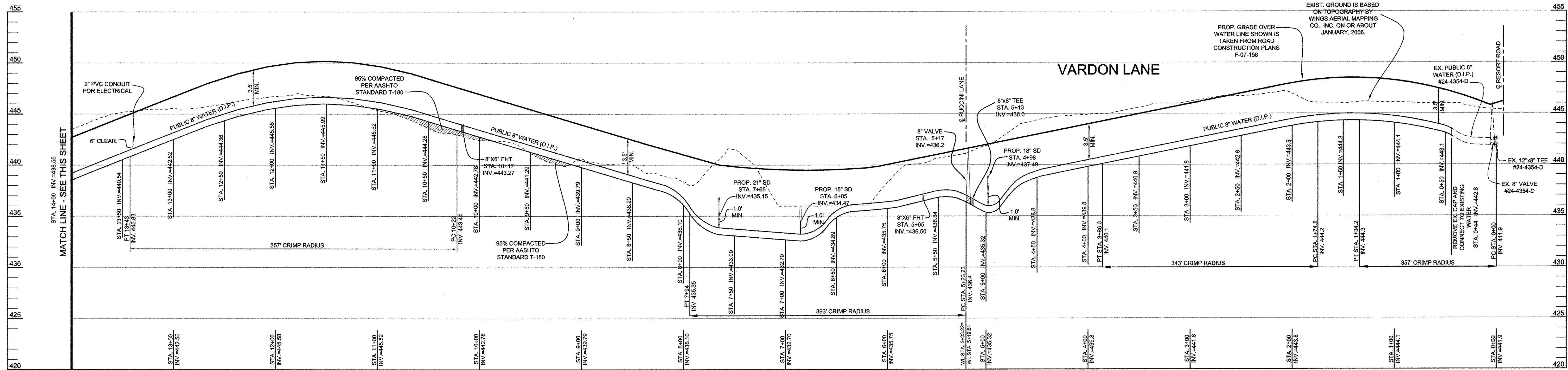
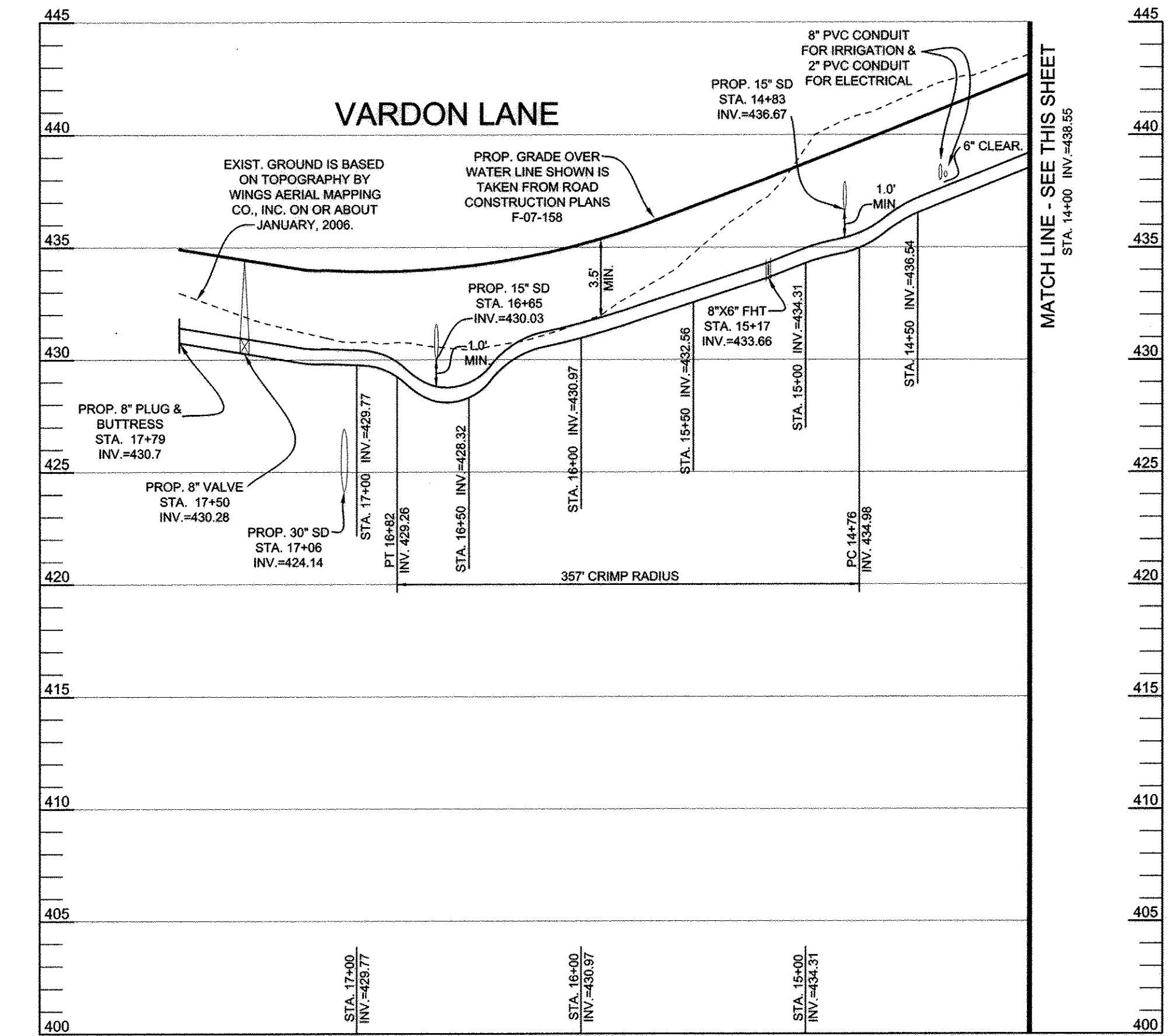
DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

**WATER AND SEWER PLAN**

**FAIRWAYS AT TURF VALLEY**  
PHASE 1 SECTION 2: GOLF SPACE LOTS 52-56;  
PHASE 2: LOTS 57-89; OPEN SPACE LOTS 90-94; GOLF SPACE LOT 95  
PODS 'I' AND PART OF 'H' SECTION IV: RESIDENTIAL PHASE IV D  
TAX MAP: 16 - BLOCK: 16 - PARCEL: P/O B AND 706 - ZONED: PGCC - ELECTION DISTRICT: 2  
**CONTRACT NO. 24-4671-D**





**THIS SHEET REPLACES  
PREVIOUS SHEET 3  
SIGNED ON 7-1-2016**

**OWNER/DEVELOPER:**  
MANGIONE ENTERPRISES OF TURF VALLEY, LP  
1205 YORK ROAD, PENTHOUSE  
LUTHERVILLE, MARYLAND 21093  
410-825-8400

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. 22390, Expiration Date: 6-30-2017.

**BENCHMARK  
ENGINEERING, INC.**

8480 BALTIMORE NATIONAL PIKE & SUITE 315 • ELICOTT CITY, MARYLAND 21043  
(P) 410-465-8105 (F) 410-465-8844  
WWW.BE-CIVLENGINEERING.COM



DES:	DBT				
DRAFT:	DBT	BEI	2	REMOVE WATER PROFILE FROM STATION 17+79 TO END ALONG VARDON LANE. ADD P&B AT STA. 17+79. UPDATE TITLE BLOCK	5-5-2017
CHK:	CAM	BEI	1	ADD THIS SHEET TO THIS CONTRACT TO SHOW WATER LINE PROFILES FOR VARDON LANE.	5-24-2016
DATE:	5/2016	BY	NO.	REVISIONS	DATE

**WATER PROFILES**

600 SCALE MAP # 16      BLOCK: 16

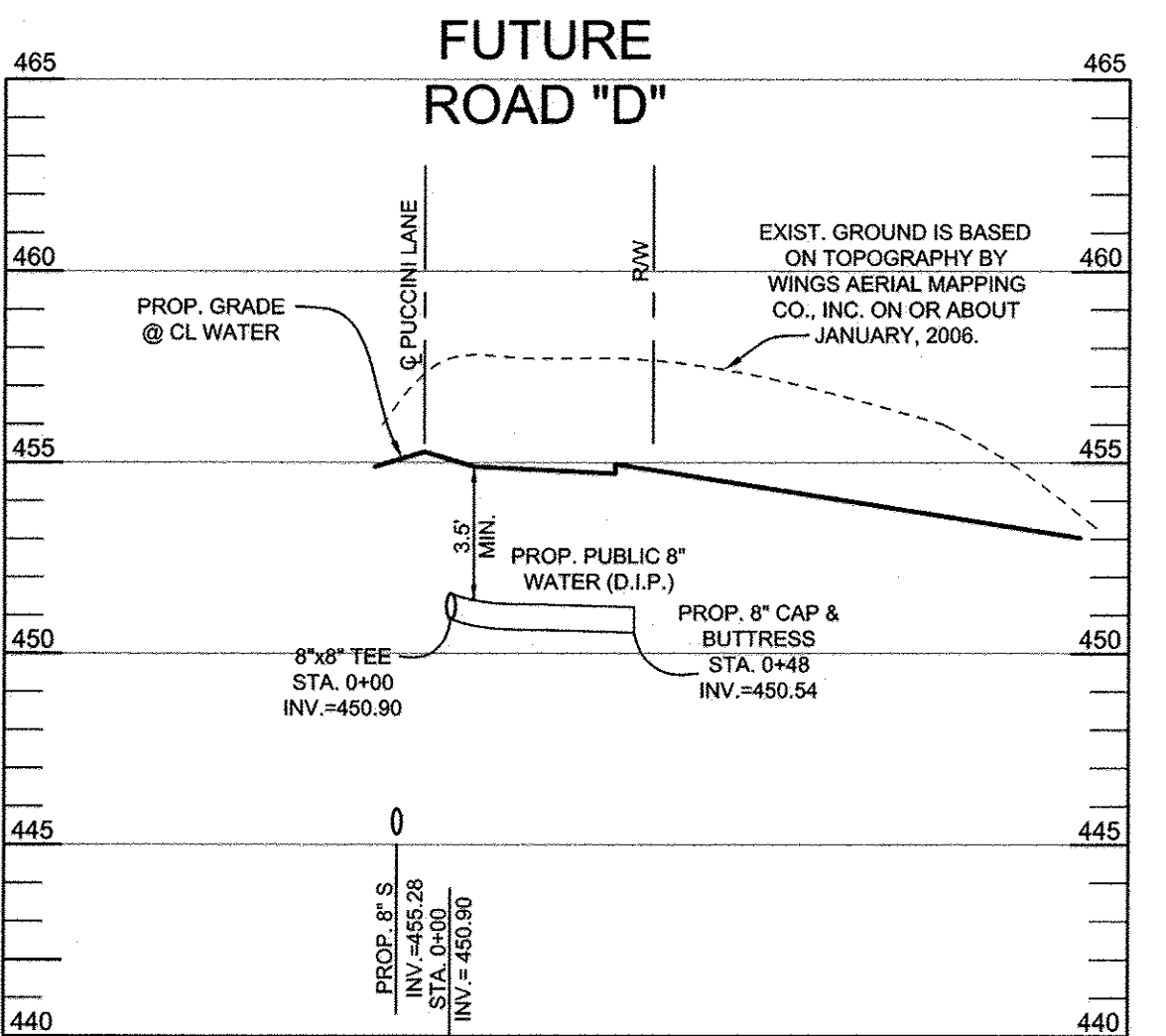
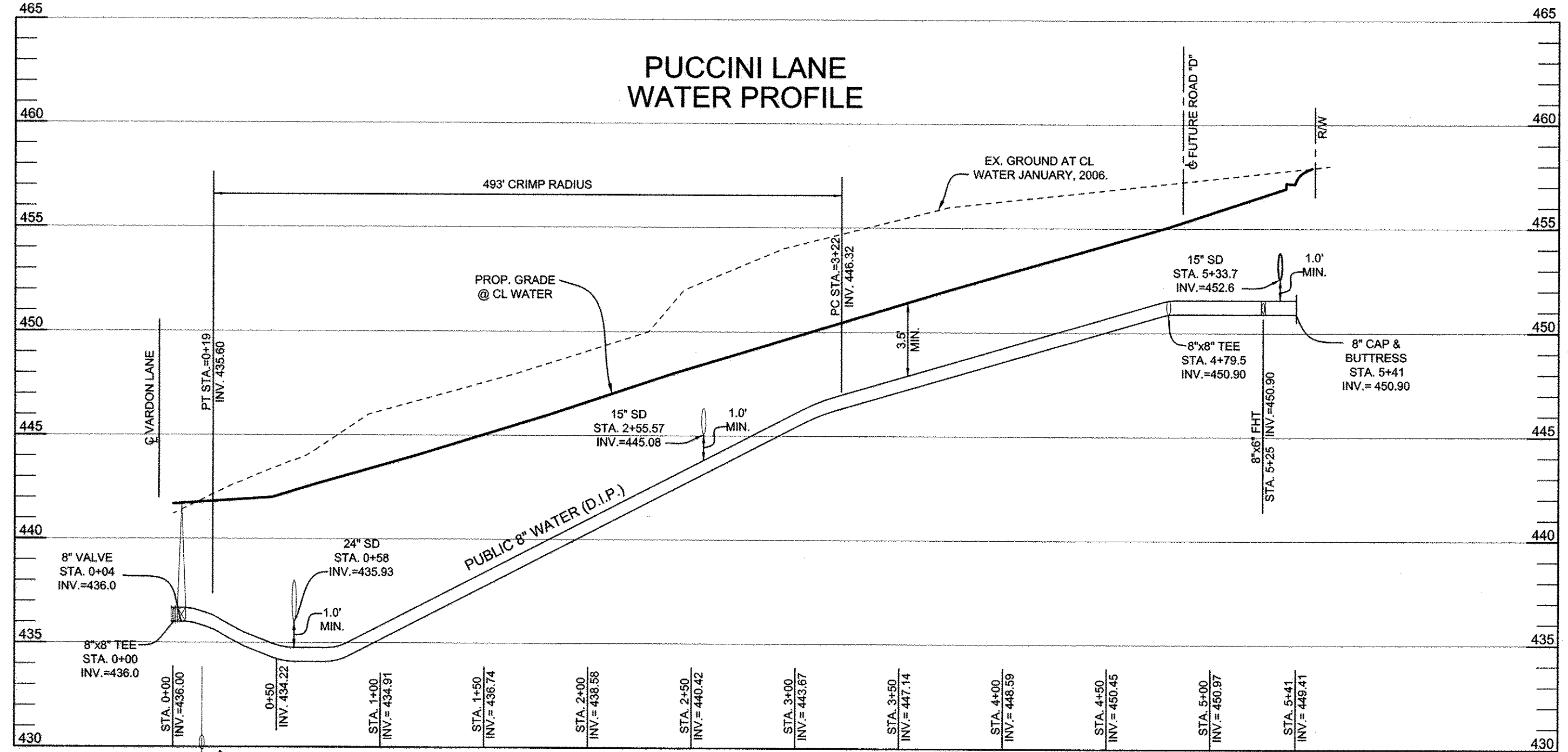
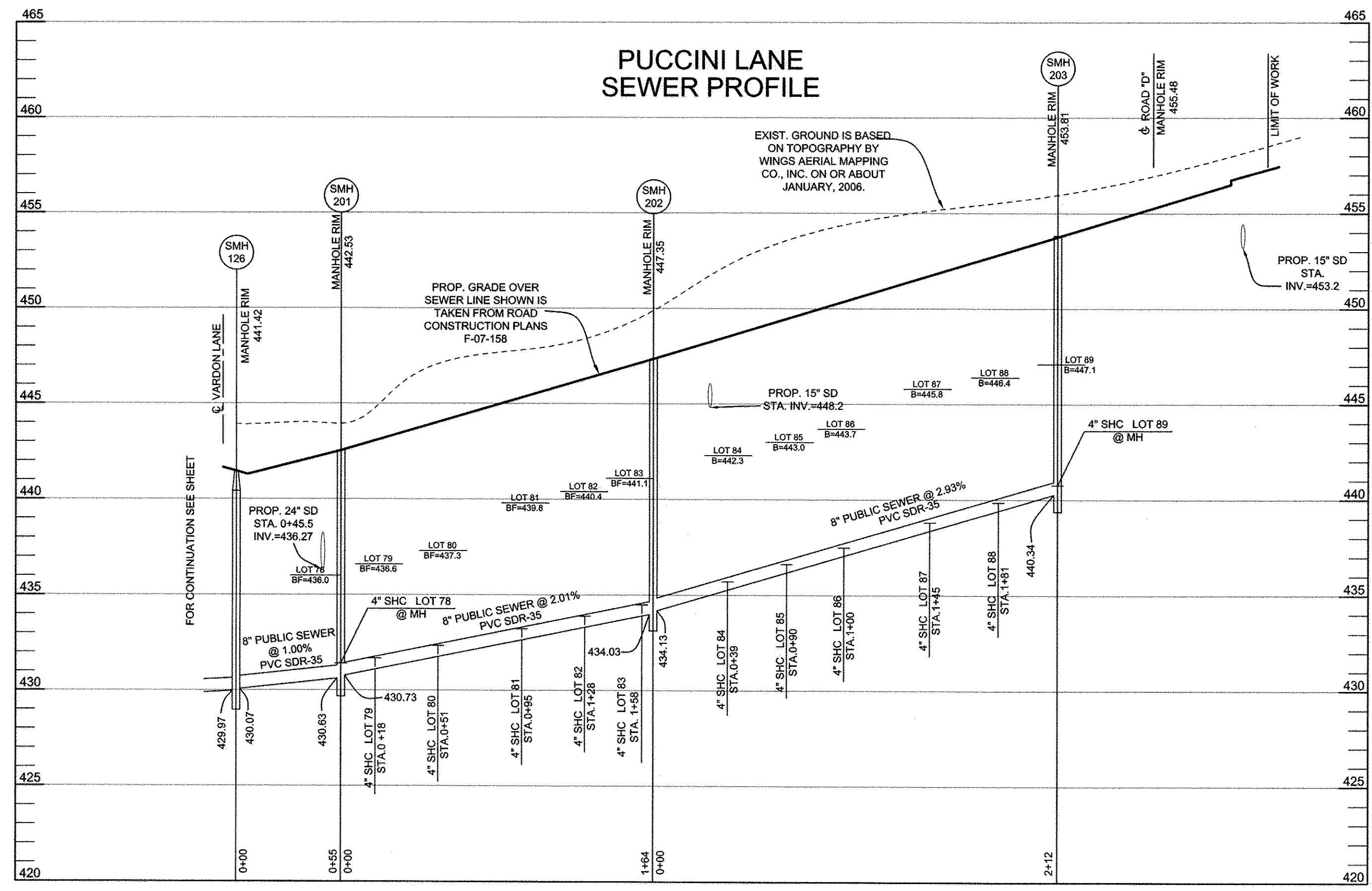
**FAIRWAYS AT TURF VALLEY**  
PHASE 1 SECTION 2: GOLF SPACE LOTS 52-56;  
PHASE 2: LOTS 57-89; OPEN SPACE LOTS 90-94; GOLF SPACE LOT 95  
PODS 'F' AND PART OF 'H' SECTION IV: RESIDENTIAL PHASE IV D

**CONTRACT NO. 24-4671-D**

TAX MAP: 16 - BLOCK: 16 - PARCEL: P/O 8 AND 706 - ZONED: PGCC - ELECTION DISTRICT: 2

SCALE:  
AS SHOWN

SHEET NO.  
3 OF 5



OWNER/DEVELOPER:  
MANGIONE ENTERPRISES OF TURF VALLEY, LP  
1205 YORK ROAD, PENTHOUSE  
LUTHERVILLE, MARYLAND 21093  
410-825-8400

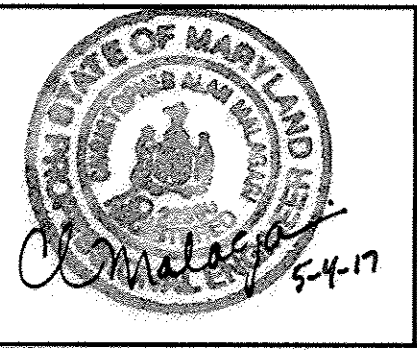
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 22390, Expiration Date: 6-30-2017.

THIS SHEET REPLACES THE  
PREVIOUS SHEET 4  
SIGNED ON 7-1-2016

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
*Steve C. Green*  
CHIEF, BUREAU OF UTILITIES  
DATE: 5-19-17

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND  
*Paul P. ...*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 5-19-17

**BENCHMARK**  
ENGINEERS & LAND SURVEYORS & PLANNERS  
**ENGINEERING, INC.**  
8480 BALTIMORE NATIONAL PIKE & SUITE 310 • ELLICOTT CITY, MARYLAND 21043  
(P) 410-465-6105 (F) 410-465-6614  
WWW.BEV-ENGINEERING.COM



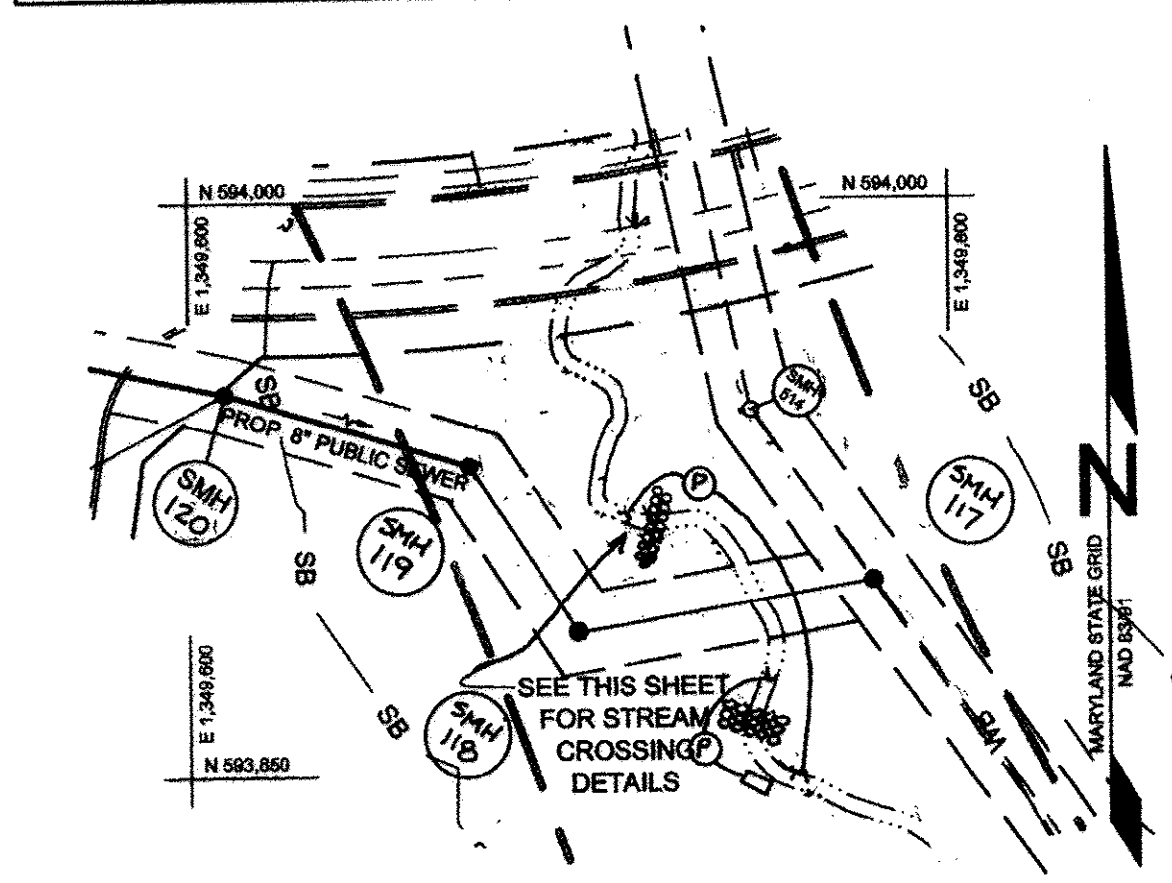
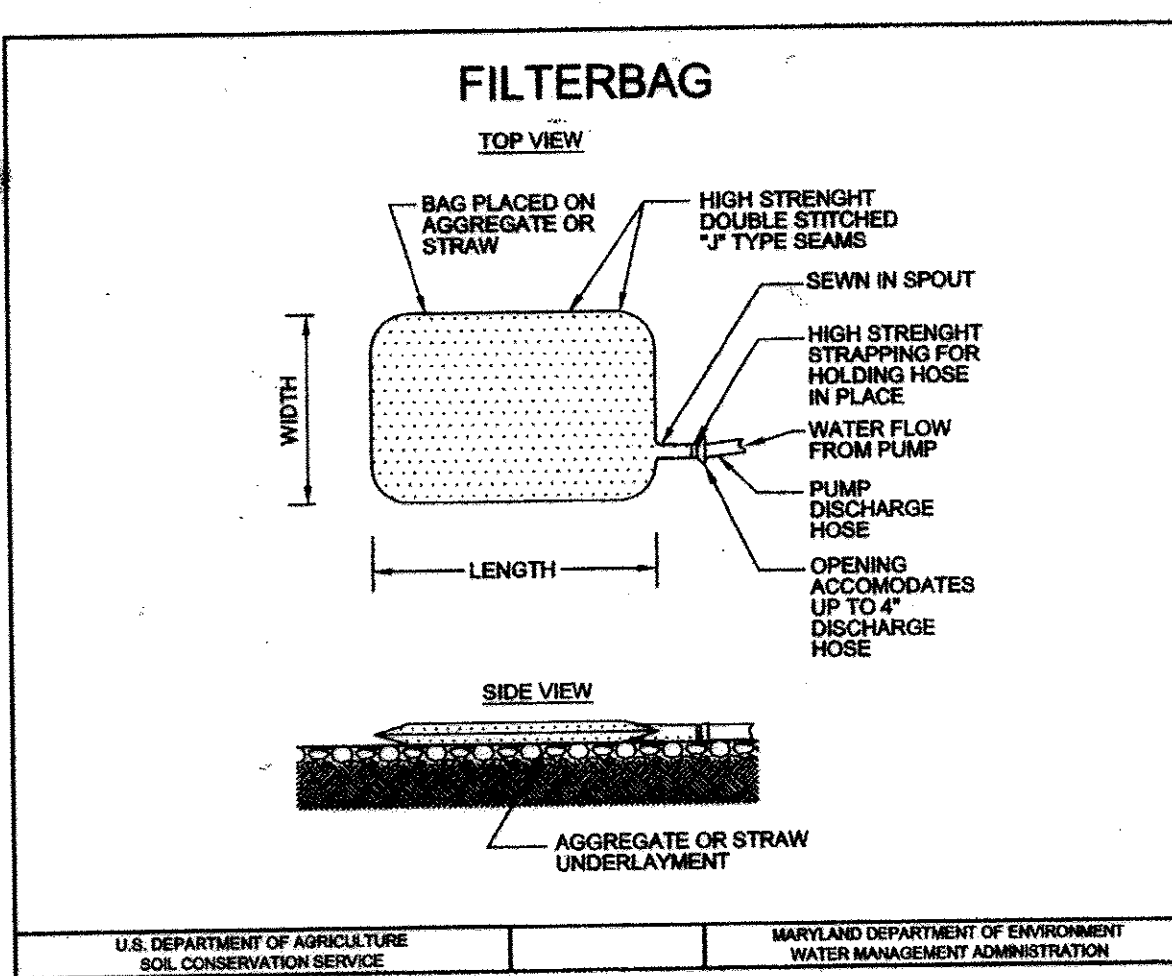
DES:	DBT		
DRAFT:	DBT	BEI 2	REMOVE WATER PROFILE ALONG VERDI COURT AND TIE IN AT EX CONTRACT 44-4562-D. THEY HAVE BEEN RELOCATED TO CONTRACT 24-4672-D. 5-5-2017
CHK:	CAM	BEI 1	RELOCATE THE PUCCINI LANE PROFILES TO THIS NEW SHEET. ADD VERDI COURT PROFILE TO THIS CONTRACT. 5-24-2016
DATE:	5/2016	BY	NO.
		REVISIONS	
		DATE	

WATER PROFILES	
600 SCALE MAP # 16	BLOCK: 16

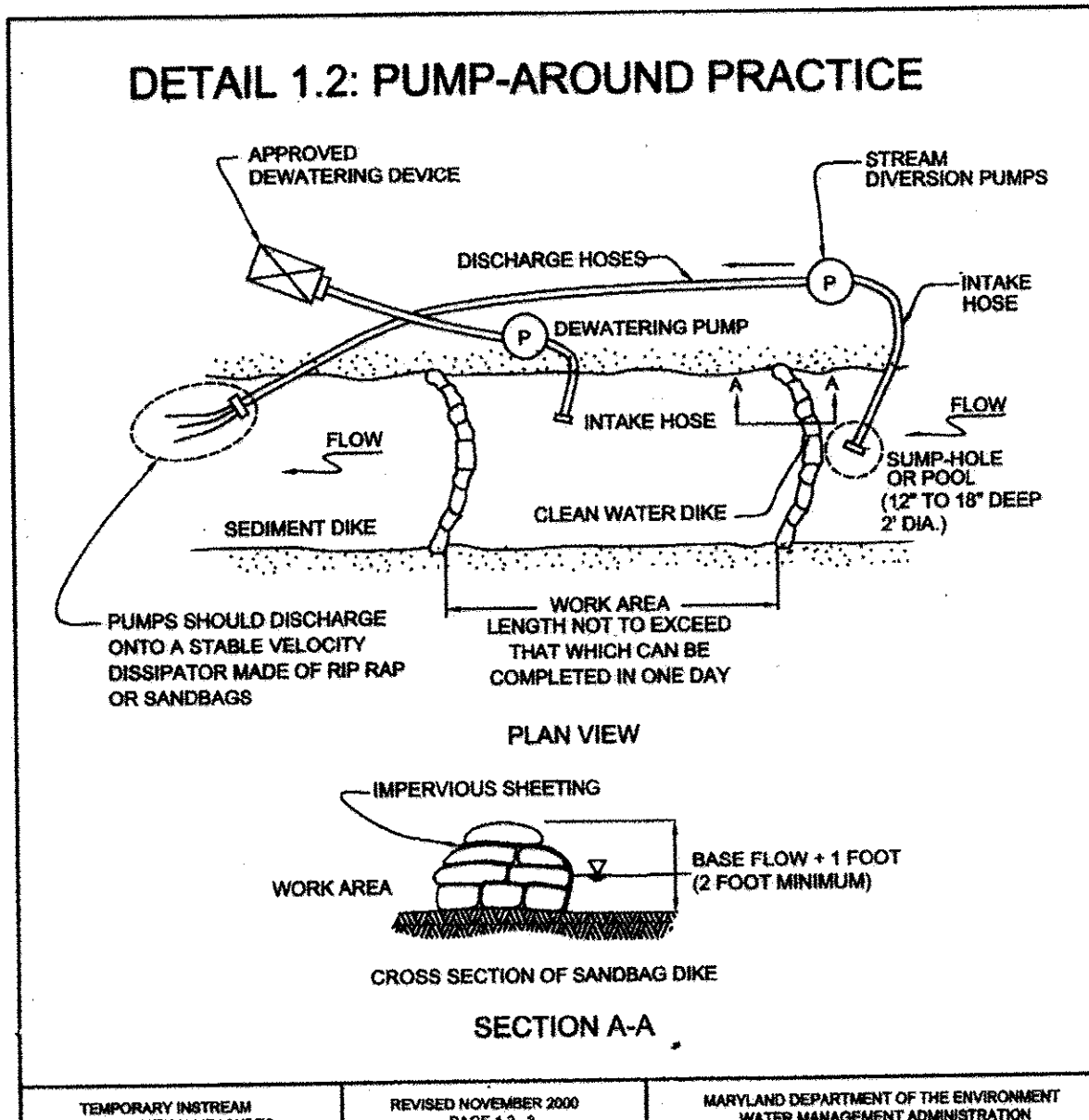
**FAIRWAYS AT TURF VALLEY**  
PHASE 1 SECTION 2: GOLF SPACE LOTS 52-56;  
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PODS 'F' AND PART OF 'H' SECTION IV: RESIDENTIAL PHASE IV D  
TAX MAP: 16 - BLOCK: 16 - PARCEL: P/O 8 AND 706 - ZONED: PGCC - ELECTION DISTRICT: 2  
**CONTRACT NO. 24-4671-D**

SCALE:  
AS SHOWN  
SHEET NO.  
4 OF 5





**STREAM DIVERSION PLAN**  
SCALE: 1"=50'



**SECTION A-A**

Sewer Structure Schedule					
Manhole	Location (NAD '83)	Rim Elevation	Invert In	Invert Out	Howard County Standard Detail
117	N 593801.3 E 1349780.9	432.25	422.17	422.07	G-5.14, G-5.52
118	N 593887.8 E 1349703.4	434.30	423.06	422.96	G-5.12, G-5.52
119	N 593930.0 E 1349674.0	436.70	424.67	424.57	G-5.12, G-5.52
120	N 593950.0 E 1349609.7	438.95	425.10	425.00	G-5.12
121	N 593990.3 E 1349419.8	444.29	426.17	426.07	G-5.12, G-5.16
122	N 594015.9 E 1349271.0	447.76	427.03	426.93	G-5.12, G-5.16
123	N 593922.5 E 1349241.2	448.34	427.62	427.52	G-5.12, G-5.16
124	N 593821.7 E 1349198.7	446.38	428.27	428.17	G-5.12, G-5.16
125	N 593738.4 E 1349127.6	444.22	428.92	428.82	G-5.12
126	N 593647.0 E 1349021.2	441.42	430.17	429.97	G-5.12
201	N 593604.9 E 1349057.3	442.53	430.73	430.63	G-5.12
202	N 593511.4 E 1349191.9	447.35	434.13	434.03	G-5.12
203	N 593455.4 E 1349396.4	453.81	-	446.34	G-5.12

- Notes:
- Top elevations for precast manholes are to the center top of manhole cover.
  - Top slope of structures to conform to slope of paving/ground.
  - Location coordinates are center of structure for manholes.

SHC CHART						
Lot Number	Drop Connection	Invert @ main	DHC standpipe length/height	Invert @ R/W or esmt line	Minimum Cellar Elevation	Basement Floor
57	Yes	427.36	7.0	435.06	439.70	441.96
58	Yes	427.31	8.0	436.01	440.55	442.63
59	Yes	427.46	8.0	436.16	440.64	443.30
60	Yes	427.87	8.0	436.47	441.01	442.63
61	Yes	428.23	5.0	433.81	438.35	441.12
62	Yes	428.63	5.0	434.13	438.73	440.45
63	Yes	428.71	5.0	434.25	438.75	439.78
64	-	429.22	-	429.86	434.36	438.21
65	-	429.49	-	430.13	434.63	437.54
66	-	429.68	-	430.32	434.82	436.87
67	-	429.92	-	430.72	435.22	436.87
68	-	429.54	-	429.90	434.40	437.52
69	-	429.28	-	429.64	434.14	438.19
70	Yes	428.97	3.0	432.35	436.85	438.86
71	Yes	428.82	3.0	432.24	436.74	439.53
72	Yes	428.60	5.0	434.02	438.52	439.91
73	Yes	428.60	5.0	433.96	438.46	440.58
74	Yes	428.21	5.0	433.63	438.13	441.25
75	Yes	427.99	8.0	436.43	440.93	442.14
76	Yes	427.84	8.0	436.22	440.72	442.14
77	Yes	427.60	8.0	435.94	440.44	442.14
78	-	431.06	-	431.38	435.88	436.00
79	-	431.26	-	431.62	436.12	436.60
80	-	431.93	-	432.35	436.85	437.30
81	-	432.81	-	433.23	437.73	439.80
82	-	431.26	-	431.64	436.14	440.40
83	-	434.08	-	434.39	438.89	441.10
84	-	435.44	-	435.84	440.34	442.30
85	-	436.94	-	437.37	441.87	443.00
86	-	437.23	-	437.66	442.16	443.70
87	-	438.55	-	438.97	443.47	445.80
88	-	439.60	-	440.00	444.50	446.40
89	-	440.51	-	440.89	445.39	447.10

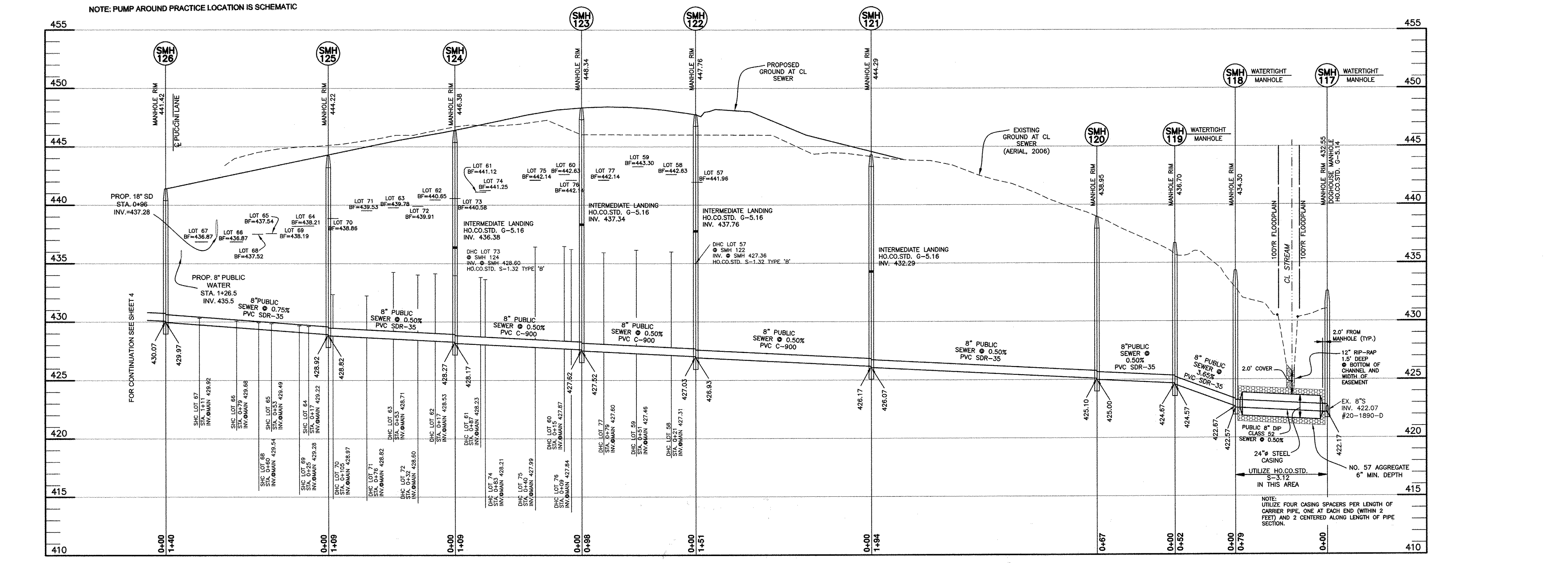
All Drop connections are HoCoStd S-2.12 Type 'A'

**MWGC 2.: PUMP-AROUND PRACTICE**

- DESCRIPTION: THE WORK SHALL CONSIST OF INSTALLING A TEMPORARY PUMP AROUND AND SUPPORTING MEASURES TO DIVERT FLOW AROUND IN-STREAM CONSTRUCTION SITES.
- IMPLEMENTATION SEQUENCE: SEDIMENT CONTROL MEASURES, PUMP AROUNDS, AND ASSOCIATED CHANNEL AND BANK CONSTRUCTION SHALL BE COMPLETED IN THE FOLLOWING SEQUENCE:
- CONSTRUCTION ACTIVITIES INCLUDING THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES SHALL NOT BEGIN UNTIL ALL NECESSARY EASEMENTS AND/OR RIGHT-OF-WAYS HAVE BEEN ACQUIRED. ALL EXISTING UTILITIES SHALL BE MARKED IN THE FIELD PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES THAT MAY RESULT FROM CONSTRUCTION AND SHALL REPAIR THE DAMAGE AT HIS/HER OWN EXPENSE TO THE COUNTY'S SATISFACTION.
  - THE CONTRACTOR SHALL NOTIFY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT OR WMA SEDIMENT CONTROL INSPECTOR AT LEAST 5 DAYS BEFORE BEGINNING CONSTRUCTION. ADDITIONALLY, THE CONTRACTOR SHALL INFORM THE LOCAL ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT INSPECTION AND ENFORCEMENT DIVISION AND THE PROVIDER OF LOCAL UTILITIES A MINIMUM OF 48 HOURS BEFORE STARTING CONSTRUCTION.
  - THE CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION MEETING ON SITE WITH THE WMA SEDIMENT CONTROL INSPECTOR, THE COUNTY PROJECT MANAGER, AND THE ENGINEER TO REVIEW LIMITS OF DISTURBANCE. THE CONTRACTOR SHALL STAKE OUT ALL SEDIMENT CONTROL REQUIREMENTS, AND THE SEQUENCE OF CONSTRUCTION. THE CONTRACTOR SHALL ALSO DESIGNATE THE CONTRACTOR'S STAGING AREAS AND FLAG ALL TREES WITHIN THE LIMIT OF DISTURBANCE WHICH WILL BE REMOVED FOR CONSTRUCTION ACCESS. TREES SHALL NOT BE REMOVED WITHIN THE LIMIT OF DISTURBANCE WITHOUT APPROVAL FROM THE WMA OR LOCAL AUTHORITY.
  - CONSTRUCTION SHALL NOT BEGIN UNTIL ALL SEDIMENT AND EROSION CONTROL MEASURES HAVE BEEN INSTALLED AND APPROVED BY THE ENGINEER AND THE SEDIMENT CONTROL INSPECTOR. THE CONTRACTOR SHALL STAY WITHIN THE LIMITS OF THE DISTURBANCE AS SHOWN ON THE PLANS AND MINIMIZE DISTURBANCE WITHIN THE WORK AREA WHENEVER POSSIBLE.
  - UPON INSTALLATION OF ALL SEDIMENT CONTROL MEASURES AND APPROVAL BY THE SEDIMENT CONTROL INSPECTOR AND THE LOCAL ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT INSPECTION AND ENFORCEMENT DIVISION, THE CONTRACTOR SHALL BEGIN WORK AT THE UPSTREAM SECTION AND PROCEED DOWNSTREAM BEGINNING WITH THE ESTABLISHMENT OF STABILIZED CONSTRUCTION ENTRANCES. THE SEQUENCE OF CONSTRUCTION MUST BE FOLLOWED UNLESS THE CONTRACTOR GETS WRITTEN APPROVAL FOR DEVIATIONS FROM THE WMA OR LOCAL AUTHORITY. THE CONTRACTOR SHALL ONLY BEGIN WORK IN AN AREA WHICH CAN BE COMPLETED BY THE END OF THE DAY INCLUDING GRADING ADJACENT TO THE CHANNEL. AT THE END OF EACH WORK DAY, THE WORK AREA MUST BE STABILIZED AND THE PUMP AROUND REMOVED FROM THE CHANNEL. WORK SHALL NOT BE CONDUCTED IN THE CHANNEL DURING RAIN EVENTS.
  - SANDBAG DIKES SHALL BE SITUATED AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE WORK AREA AS SHOWN ON THE PLANS, AND STREAM FLOW SHALL BE PUMPED AROUND THE WORK AREA. THE PUMP SHALL DISCHARGE ONTO A STABLE VELOCITY DISSIPATER MADE OF RIPRAP OR SANDBAGS.
  - WATER FROM THE WORK AREA SHALL BE PUMPED TO SEDIMENT FILTERING MEASURE SUCH AS A SEDIMENT BAG. THE MEASURE SHALL BE LOCATED SUCH THAT THE WATER DRAINS BACK INTO THE CHANNEL BELOW THE DOWNSTREAM SANDBAG DIKE.
  - TRAVERSING A CHANNEL REACH WITH EQUIPMENT WHERE NO WORK IS PROPOSED SHOULD BE AVOIDED. IF EQUIPMENT HAS TO TRAVEL SUCH A REACH FOR ACCESS TO ANOTHER AREA, THEN TIMBER MATS OR SIMILAR MEASURES SHALL BE USED TO MINIMIZE DISTURBANCE TO THE CHANNEL. TEMPORARY STREAM CROSSINGS SHALL BE USED ONLY WHEN NECESSARY AND ONLY WHERE NOTED ON THE PLANS OR SPECIFIED BY THE ENGINEER.
  - ALL STREAM RESTORATION MEASURES SHALL BE INSTALLED AS INDICATED BY THE PLANS AND ALL BANKS GRADED IN ACCORDANCE WITH THE GRADING PLANS AND TYPICAL CROSS-SECTIONS. ALL GRADING MUST BE PERMANENTLY STABILIZED AT THE END OF EACH DAY WITH SEED AND MULCH OR SEED AND MATTING AS SPECIFIED ON THE PLANS.
  - AFTER AN AREA IS COMPLETED AND STABILIZED, SANDBAG DIVERSIONS, THE WATER PUMP, AND SEDIMENT FILTERING MEASURE SHALL BE MOVED TO THE NEXT WORK AREA. THIS SHALL BE ACCOMPLISHED BY FIRST MOVING THE DOWNSTREAM SANDBAG DIKE TO THE NEW UPSTREAM PUMP AROUND LOCATION AND THEN BY RELOCATING THE UPSTREAM SANDBAG DIKE, VELOCITY DISSIPATER, AND SEDIMENT FILTER TO THE NEW DOWNSTREAM LOCATION.
  - A PUMP AROUND MUST BE INSTALLED ON ANY TRIBUTARY OR STORM DRAIN OUTFALL WHICH CONTRIBUTES TO THE MAIN STEM FLOW TO THE WORK AREA. THIS SHOULD BE ACCOMPLISHED BY LOCATING A SANDBAG DIKE AT THE DOWNSTREAM END OF THE TRIBUTARY OR STORM DRAIN OUTFALL AND PUMPING THE STREAM FLOW AROUND THE WORK AREA. THIS WATER SHOULD DISCHARGE ONTO THE SAME VELOCITY DISSIPATER USED FOR THE MAIN STEM PUMP AROUND.
  - IF A TRIBUTARY IS TO BE RESTORED, CONSTRUCTION SHOULD TAKE PLACE ON THE TRIBUTARY BEFORE WORK ON THE MAIN STEM REACHES THE TRIBUTARY CONFLUENCE. CONSTRUCTION IN THE TRIBUTARY, INCLUDING PUMP AROUND CONSTRUCTION ON THE TRIBUTARY IS COMPLETED, WORK ON THE MAIN STEM SHALL RESUME. WATER FROM THE TRIBUTARY SHALL CONTINUE TO BE PUMPED AROUND THE WORK AREA IN THE MAIN STEM.
  - THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ACCESS TO AND MAINTAINING ALL EROSION AND SEDIMENT CONTROL DEVICES AND THE SEDIMENT CONTROL INSPECTOR APPROVED THEIR REMOVAL.
  - AFTER CONSTRUCTION, ALL DISTURBED AREAS SHALL BE REGRADED AND REVEGETATED AS PER THE PLANTING PLAN.

**BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS**

- NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR 100-YEAR FLOODPLAIN.
- PLACE MATERIAL IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
- DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
- PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
- REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE 100-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
- RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
- ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES:
  - ANNUAL RYE GRASS (*Lolium multiflorum*)
  - MILLET (*Syntherisma hallii*)
  - BARLEY (*Hordeum sp.*)
  - OATS (*Avena sp.*)
  - RYE (*Syntherisma carolin*)
 THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION, KENTUCKY 51 RESCUE SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.
- AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST-CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
- TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM
  - USE I WATERS: IN STREAM WORK SHALL BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR.
- STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
- CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS IMPOUNDING WATER.



**SEWER PROFILE**  
SCALE: 1" = 50' HORZ., 1" = 5' VERT.

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. 22390, Expiration Date: 6-30-2017.

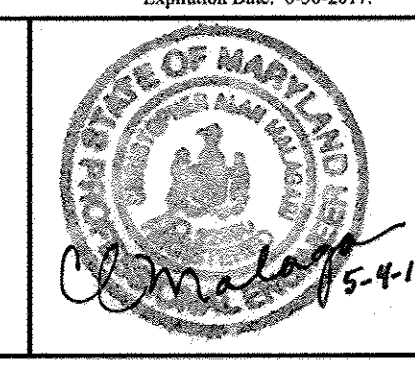
OWNER/DEVELOPER:  
MANGIONE ENTERPRISES OF TURF VALLEY, LP  
1205 YORK ROAD, PENTHOUSE  
LUTHERVILLE, MARYLAND 21093  
410-825-8400

THIS SHEET REPLACES  
PREVIOUS SHEET 5  
SIGNED ON 7-1-2016

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

**BENCHMARK**  
ENGINEERING, INC.  
8480 BALTIMORE NATIONAL PIKE SUITE 315 & ELLICOTT CITY, MARYLAND 21043  
(P) 410-465-8105 (F) 410-465-8644  
WWW.BE-CIVILENGINEERING.COM



DES:	BEI	NO.	REVISIONS	DATE
DBT	4	4	REMOVE MANHOLES 101 thru 116 FROM STRUCTURE SCHEDULE. UPDATE TITLE BLOCK AND SHEET NUMBER.	5-5-2017
DBT	3	3	ADDED THIS ENTIRE SHEET TO CONTRACT 24-4671. REVISED PROFILE FROM SMH 121 TO SMH 126. REVISE SHC'S UPDATE SHC CHART AND SEWER STRUCTURE SCHEDULE. INDICATED PIPE MATERIAL.	5-24-2016
CAM	2	2	REVISE SEWER PROFILE FROM SMH 117 TO SMH 119. UPDATE STREAM DIVERSION PLAN AND STRUCTURE SCHEDULE.	10-13-2015
BY	1	1	ADDED THIS SHEET TO THIS CONTRACT	4-25-2016

**SEWER PROFILE & STREAM DIVERSION DETAILS**  
600 SCALE MAP # 16 BLOCK: 16

**FAIRWAYS AT TURF VALLEY**  
PHASE 1 SECTION 2: GOLF SPACE LOTS 52-56;  
PHASE 2: LOTS 57-89; OPEN SPACE LOTS 90-94; GOLF SPACE LOT 95  
PODS 'F' AND PART OF 'H' SECTION IV: RESIDENTIAL PHASE IV D  
SCALE: AS SHOWN  
SHEET NO. 5 OF 5  
TAX MAP: 16 - BLOCK: 16 - PARCEL: P/O 8 AND 706 - ZONED: PGCC - ELECTION DISTRICT: 2  
**CONTRACT NO. 24-4671-D**