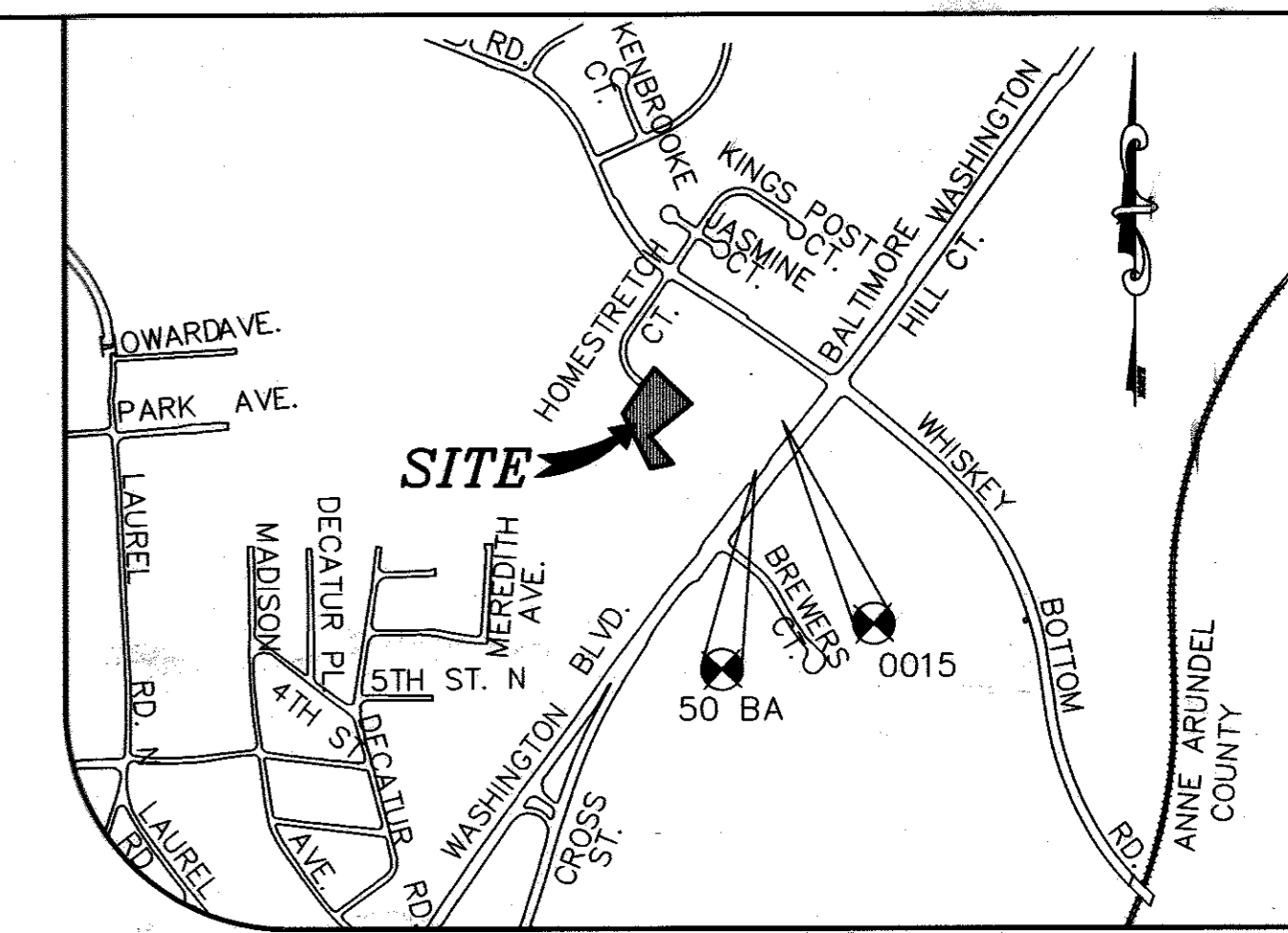


QUANTITY TABLE

ITEMS	QUANTITIES		TYPE	MANUFACTURER/SUPPLIER
	ESTIMATED	QUANTITIES		
8" WATER MAIN (PVC C-900, DR-18)	104 LF	110.0 LF	C-900	NORTH AMERICAN
1 1/2" WATER HOUSE CONNECTION	286 LF	226.0 LF	TYPE K	CAMBRIDGE LEE
# 1 1/2" WHC	6 EACH	6 EACH		
6"x6" T.S. & V.	1 EACH	1 EACH	SS.	FORD METER BOX / KENNEDY
STANDARD MH (HO. CO. STD.G-5.11)	1 EACH	1 EACH	C-478	C.P. & P.
8" SEWER MAIN	103 LF	102.0 LF	SDR35	NORTH AMERICAN
4" SHC	232 LF	295.0 LF	SDR35	NORTH AMERICAN
# 4" SHC	6 EACH	6 EACH	SDR35	PLASTIC TRENDS
NAME OF UTILITY CONTRACTOR: JACOBONI				
SURVEY AND DRAFTING DIVISION AS-BUILT DATE				

CONTRACT NO.: 24-4872-D
WHISKEY BOTTOM POINT
LOTS 1 THRU 6 AND OPEN SPACE LOTS 7, 8 & 9
FINAL WATER AND SEWER
CONSTRUCTION PLANS
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS



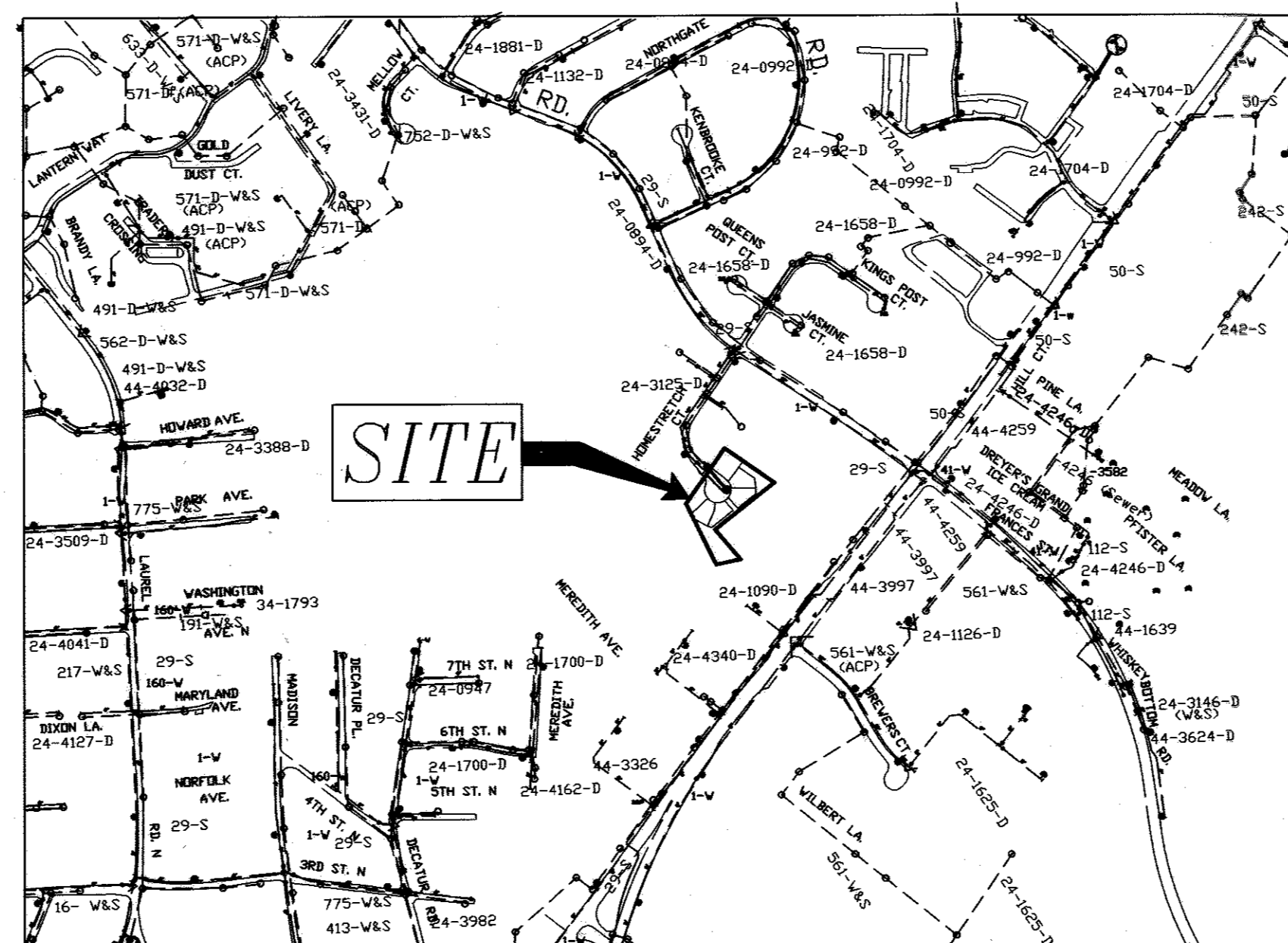
VICINITY MAP
 SCALE: 1" = 1000'
 ADC MAP 40, GRID D-7

INDEX OF DRAWINGS

NO.	DESCRIPTION
1	COVER SHEET
2	WATER AND SEWER PLAN AND PROFILES

LEGEND

- EXISTING SEWER MAIN AND MANHOLE
- EXISTING WATER MAIN AND VALVE
- EXISTING FIRE HYDRANT
- 8" W PROPOSED WATER MAIN
- 1 1/2" WHC PROPOSED WATER HOUSE CONNECTION
- PROPOSED FIRE HYDRANT
- PROPOSED TEE
- PROPOSED BEND
- PROPOSED VALVE
- 8" S PROPOSED SEWER MAIN
- PROPOSED SEWER MANHOLE



LOCATION MAP
 SCALE: 1" = 600'

TYPE OF BUILDING	RESIDENTIAL
No. OF LOTS	6
No. OF WATER HOUSE CONNECTION	6
No. OF SEWER HOUSE CONNECTIONS	6
DRAINAGE AREA	HAMMOND BRANCH
TREATMENT PLANT	LITTLE PATUXENT

WATER ZONE: 400
 TEST GRADIENT: 550

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 ON OR ABOUT OCTOBER, 2004 BY CHRISTOPHER CONSULTANTS, 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. 37-BA AND NO. 37BB. ALL VERTICAL CONTROLS ARE BASED ON NAVD '88. MILDENBERG, BOENDER & ASSOCIATES, INC. SHALL PROVIDE DESCRIPTION OF VERTICAL CONTROL POINTS, I.E., IRON BARS, CROSS CUTS ON CONCRETE STRUCTURES, ETC).
- 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 (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 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 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 STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED 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 WIRES 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 ORDERING 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 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 #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 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 CERTAINTIEED 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 (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 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 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.
- FOR A MINIMUM 1.5" WHC FOR SINGLE FAMILY DWELLINGS OUTSIDE METER SETTINGS FOR 1" METERS SHALL BE USED.

PART III SEWER

- ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C. UNLESS OTHERWISE NOTED.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- FORCE MAINS SHALL BE D.I.P. ONLY.
- MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
- MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVER, STANDARD DETAIL G5.52. WHERE WATERTIGHT MANHOLE FRAMES AND COVERS ARE USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT THE CELLAR CANNOT BE SERVED.

AS-BUILT

By [Signature] Date 8/4/16

PLAN REFERENCE NUMBERS:
 ECP-13-055
 SP-14-007
 F-16-040

EROSION AND SEDIMENT CONTROL
FOR THIS CONTRACT IS PROVIDED
UNDER : F-16-040

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

[Signature] 5/4/16
 HOWARD SOIL CONSERVATION DISTRICT DATE

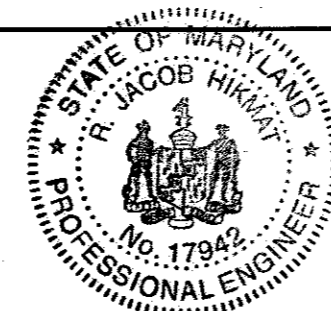
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 17942, EXP DATE 09/03/16

[Signature] 4/14/16
 R. JACOB HIKMAT P.E. DATE

OWNER
 JENMAR HOMES AT
 WHISKEY BOTTOM, LLC
 3403 OLD POST DRIVE
 BALTIMORE, MD. 21208
 (410) 486-5693

DEVELOPER
 JENMAR HOMES, INC.
 3403 OLD POST DRIVE
 BALTIMORE, MD. 21208
 (410) 486-5693

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 7350-B Grace Drive, Columbia, MD 21044
 (410) 997-0296 Ball. (410) 997-0298 Fax.



engineering	illustration	approval	project	date	BY	NO.	REVISION	DATE
MMM	MMT/MMM	RJH	12-007	APR 2018				

COVER SHEET

600' SCALE MAP NO. 50 BLOCK NO. 4

WHISKEY BOTTOM POINT
LOTS 1 THRU 6, AND OPEN SPACE LOT 7, 8 & 9
 CONTRACT 24-4872-DD
 TAX MAP 50 PARCEL 488, BULK PARCEL B-3
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

scale AS SHOWN
1 of 2

WATER/SEWER MAIN TABULATION CHART

APPURTENANCE	NORTHING	EASTING
SMH 100	527,899.3	1,359,348.1
8"x6" T.S.&V.	527,967.2	1,359,277.6
1/8 H.B.	527,961.2	1,359,273.4
1/8 H.B.	527,954.3	1,359,274.6
8" C&B	527,889.5	1,359,336.8

SEWER HOUSE CONNECTIONS CHART

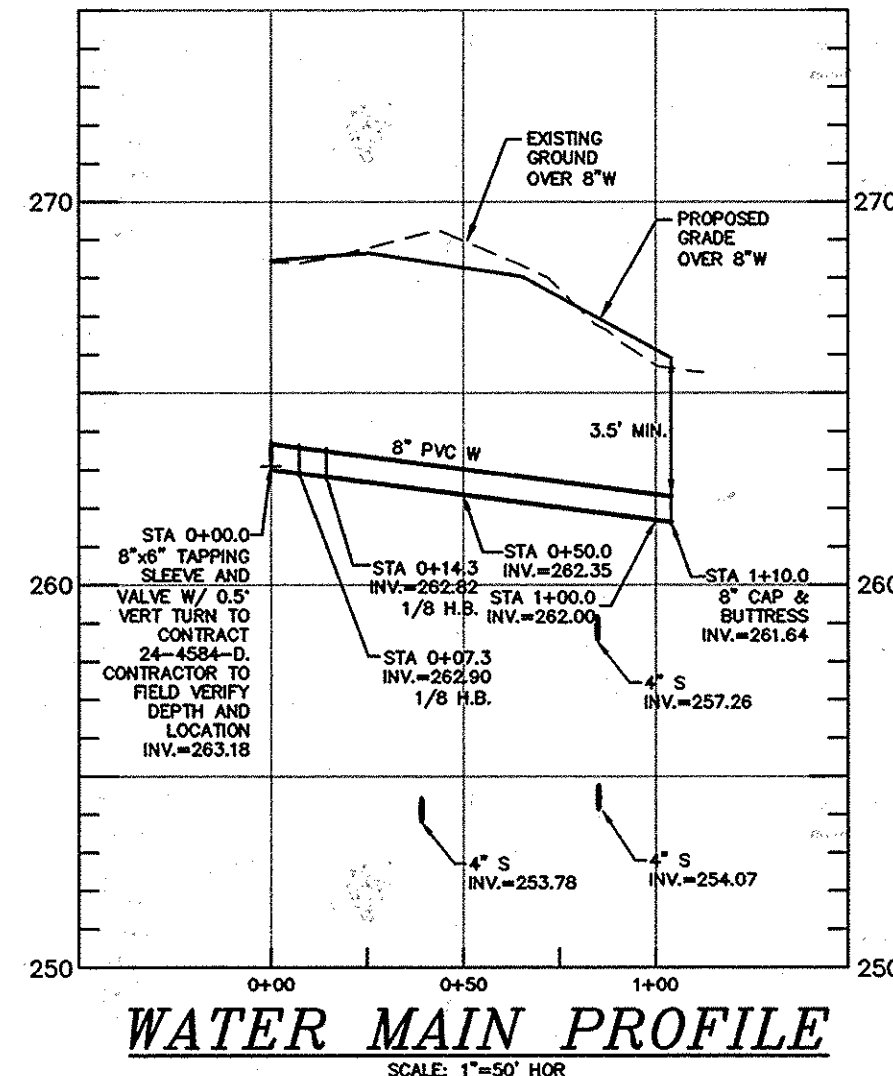
LOT	INV. @ R/W	MCE	SLOPE
1	255.29	259.39	2.00%
2	257.26	261.06	2.00%
3	257.47	260.57	1.00%
4	256.81	259.91	1.00%
5	256.56	260.16	2.00%
6	255.62	259.32	2.00%

WATER HOUSE CONNECTION AS-BUILT LOCATION TABLE

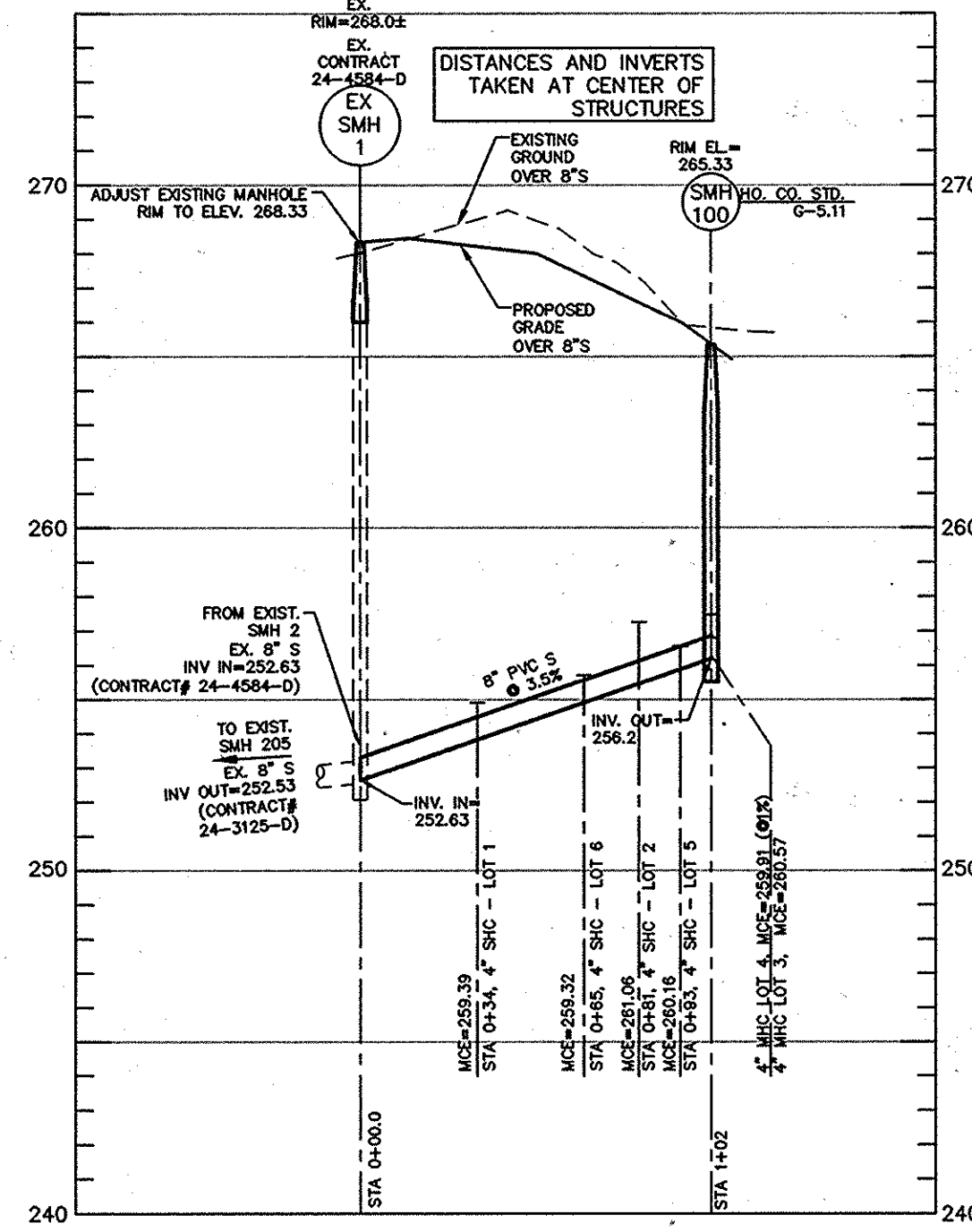
LOT	ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2
1	9252 HOMESTRETCH COURT		
2	9256 HOMESTRETCH COURT		
3	9260 HOMESTRETCH COURT		
4	9259 HOMESTRETCH COURT		
5	9255 HOMESTRETCH COURT		
6	9251 HOMESTRETCH COURT		

SEWER HOUSE CONNECTION AS-BUILT LOCATION TABLE

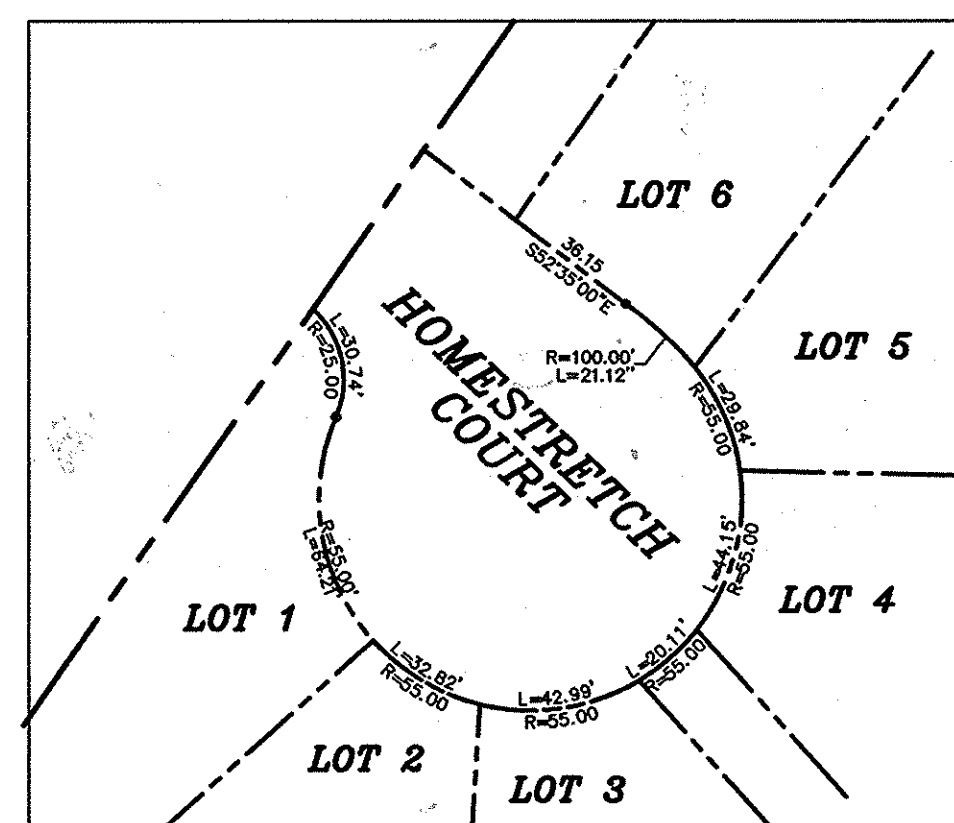
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2	9256 HOMESTRETCH COURT		
3	9260 HOMESTRETCH COURT		
4	9259 HOMESTRETCH COURT		
5	9255 HOMESTRETCH COURT		
6	9251 HOMESTRETCH COURT		



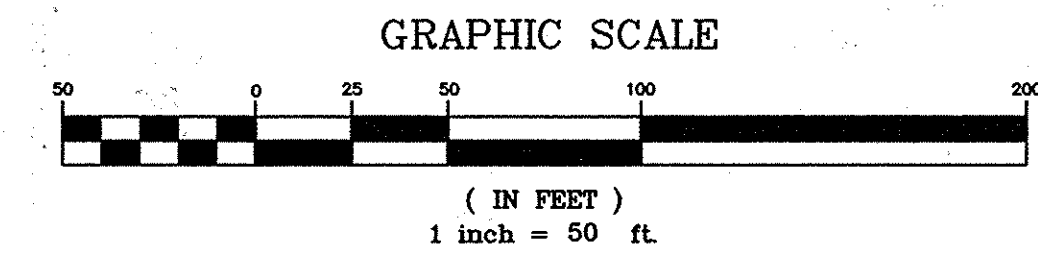
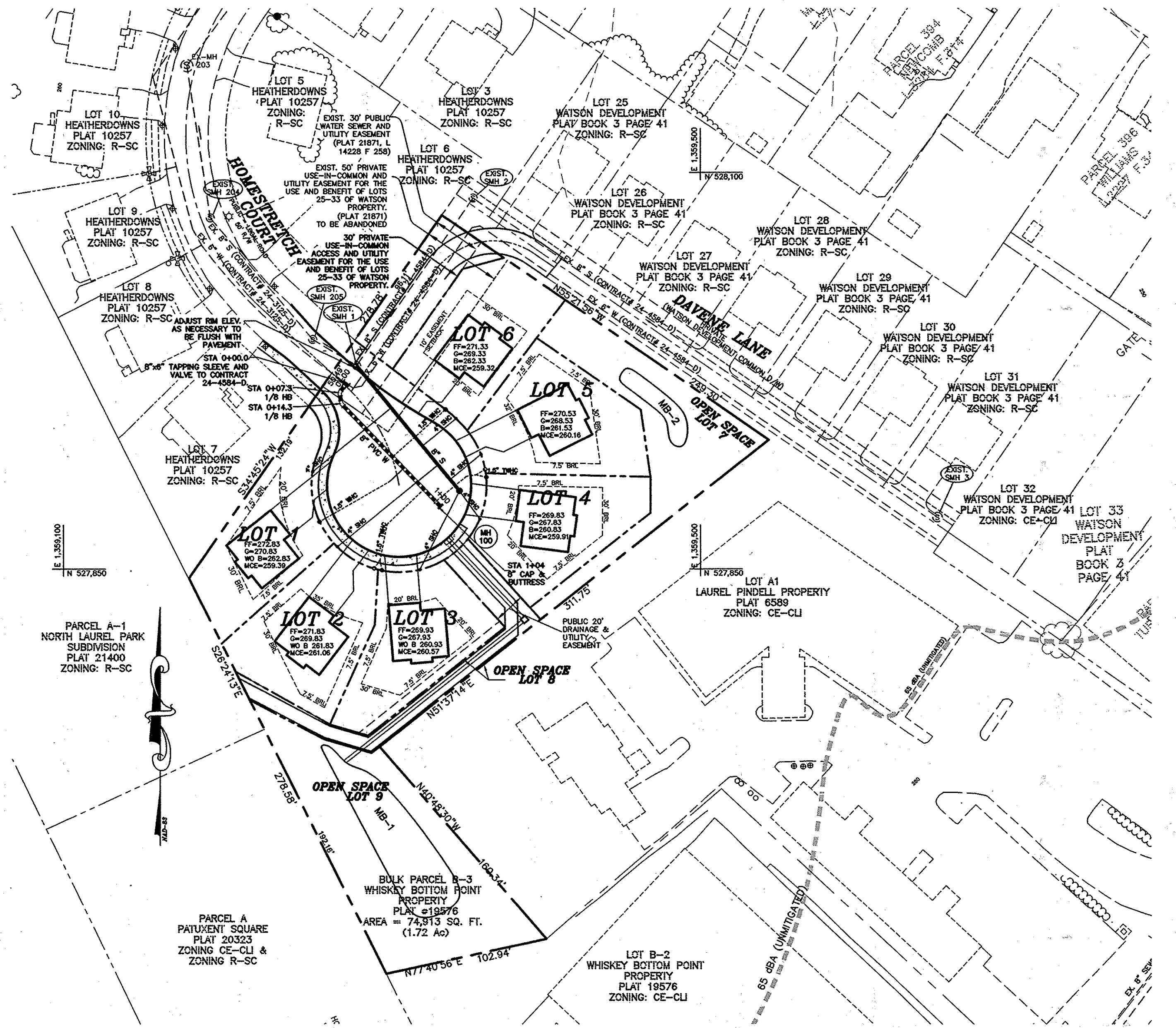
WATER MAIN PROFILE
SCALE: 1"=50' HOR
1"=5' VER



SEWER PROFILE - SMH 100 TO EXSMH 1
SCALE: 1"=50' HOR
1"=5' VER



RFontage Detail
SCALE: 1"=50'



OUTSIDE METER SETTINGS FOR 1" METERS SHALL BE USED.

REFER TO HOWARD COUNTY STD. DETAILS G-8.21 AND W-1.15 FOR CONTINUITY TEST STATION DETAILS.

OWNER
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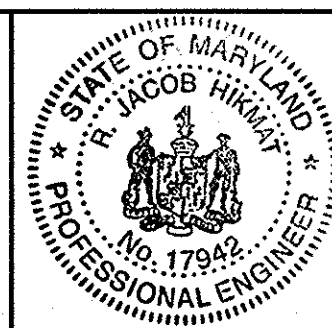
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R. JACOB HIKMAT P.E. DATE: 4/14/16

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
7350-B Orace Drive, Columbia, MD 21044
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engineering	illustration	approval	project	date
MMM	MMT/MMM	RJH	12-007	APR 2016

WATER AND SEWER PLAN AND PROFILE

DATE: 600' SCALE MAP NO. 50 BLOCK NO. 4

WHISKEY BOTTOM POINT LOTS 1 THRU 6, AND OPEN SPACE LOT 7, 8 & 9

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TAX MAP 50 PARCEL 488, BULK PARCEL B-3
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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2 OF 2