

QUANTITY TABLE

ITEMS	QUANTITIES ESTIMATED	QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
STANDARD MH	3	3		CONCRETE PIPE AND PRECAST
8" SEWER MAIN (PVC)	364 L.F.	360 L.F.	SDR-35	NORTH AMERICAN PIPE
4" SEWER HOUSE CONNECTION	220 L.F.	230	SDR-35	NORTH AMERICAN PIPE
# SEWER HOUSE CONNECTIONS	10	10		
# MH CONNECTIONS	3	3		
1/8 H.B. (8")	8	8	C900	STAR PIPE PRODUCTS
8" WATER (PVC C-900, DR-18)	762 L.F.	760	C900	NORTH AMERICAN PIPE
1 1/2" WHC	130 L.F.	130	TYPE K	MUELLER
# TWHC	6	6		
# WHC	1	1		
8"x6" FHT&V	1	1	C153	STAR PIPE PRODUCTS
FIRE HYDRANTS	1	1	C502	KENNEDY VALVE
8"x8" TS&V	2	1	C207	FORD METER BOX
8" CAP & BUTTRESS	1	1	C153	STAR PIPE PRODUCTS
NAME OF UTILITY CONTRACTOR: SITEMASTERS INC.				
SURVEY AND DRAFTING DIVISION AS-BUILT DATE 1/31/2018				

INDEX OF DRAWINGS

NO.	DESCRIPTION
1	TITLE SHEET
2	WATER & SEWER PLAN
3	WATER & SEWER PROFILES

LEGEND

- 8" S EXISTING SEWER MAIN AND MANHOLE
- 8" W EXISTING WATER MAIN AND VALVE
- EXISTING FIRE HYDRANT
- PROPOSED SEWER MAIN
- PROPOSED WATER MAIN, TAPPING SLEEVE AND VALVE
- PROPOSED FIRE HYDRANT
- PROPOSED TEE AND VALVES
- PROPOSED HALF BEND
- PROPOSED WATER AND SEWER EASEMENT
- PROPOSED SEWER HOUSE CONNECTION
- PROPOSED WATER HOUSE CONNECTION
- PROPOSED TWIN SEWER HOUSE CONNECTION
- PROPOSED SEWER MANHOLE
- PROPOSED TWIN WATER HOUSE CONNECTION
- PROPOSED END CAP AND BUTTRESS

EROSION AND SEDIMENT CONTROL FOR THIS CONTRACT IS PROVIDED UNDER : CP-12-041007

OWNER

LENNOX PARK LIMITED PARTNERSHIP
6800 DEERPATH ROAD
SUITE 100
ELKRIDGE MARYLAND 21075-6200

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER'S SIGNATURE
MARK LEVY
DEVELOPER'S NAME
DATE 7/16/13

I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

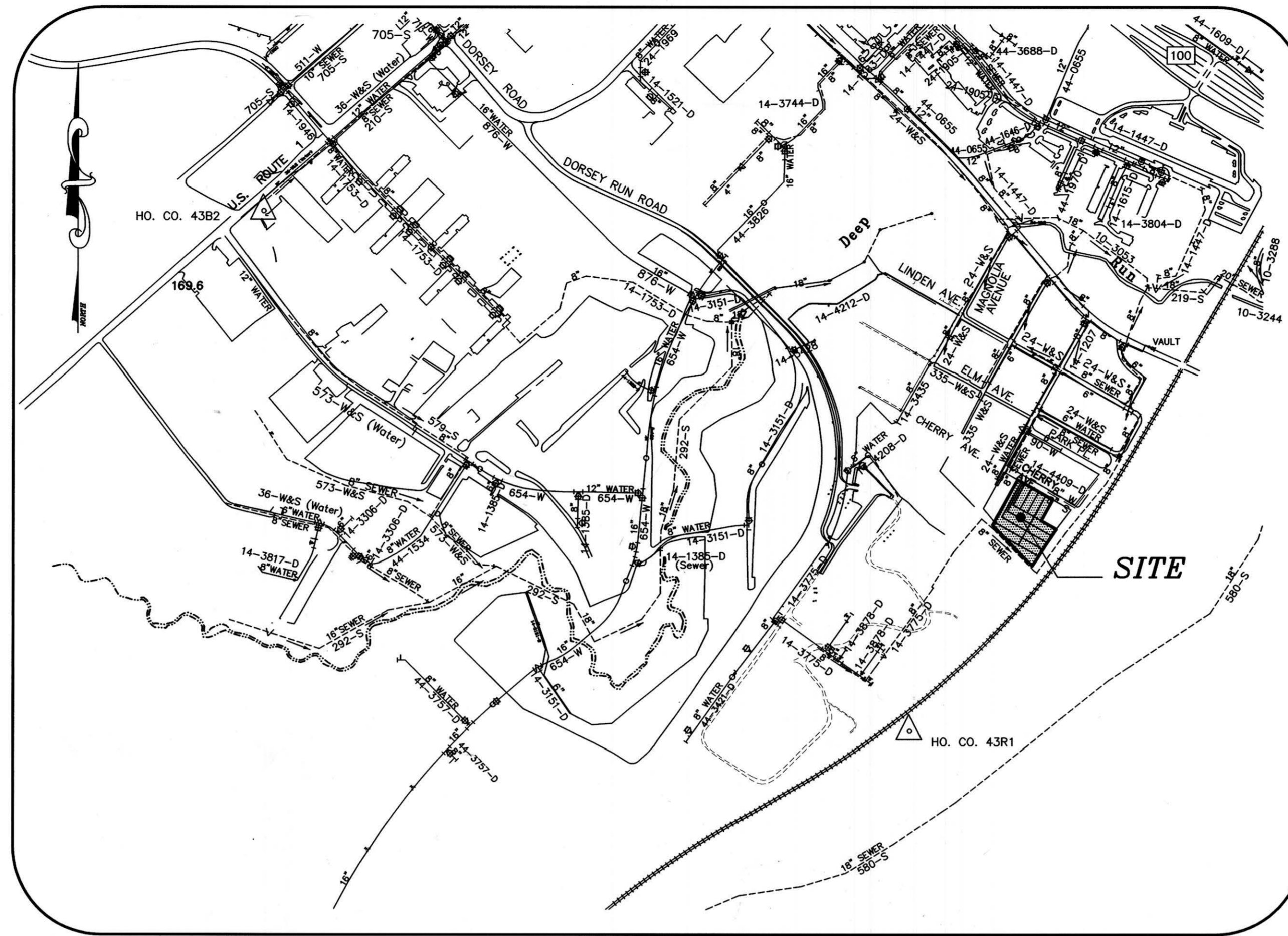
ENGINEER'S SIGNATURE
R. JACOB HIKMAT, P.E.
ENGINEER'S NAME
DATE 7/16/13

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

HOWARD SCD
John K. Robertson
DATE 7/18/13

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 09/10/14

R. JACOB HIKMAT P.E.
DATE 7/17/13



LOCATION MAP

SCALE : 1" = 600'
ADC MAP 35, GRID B-6

TYPE OF BUILDING	SFD
No. OF UNITS	13
No. OF WATER HOUSE CONNECTION	1
No. OF SEWER HOUSE CONNECTIONS	13
No. OF TWIN WATER HOUSE CONNECTION	6
No. OF TWIN SEWER CONNECTIONS	0
DRAINAGE AREA	PATAPSCO
TREATMENT PLANT	PATAPSCO

TEST GRADIENT: 550
WATER ZONE: 400

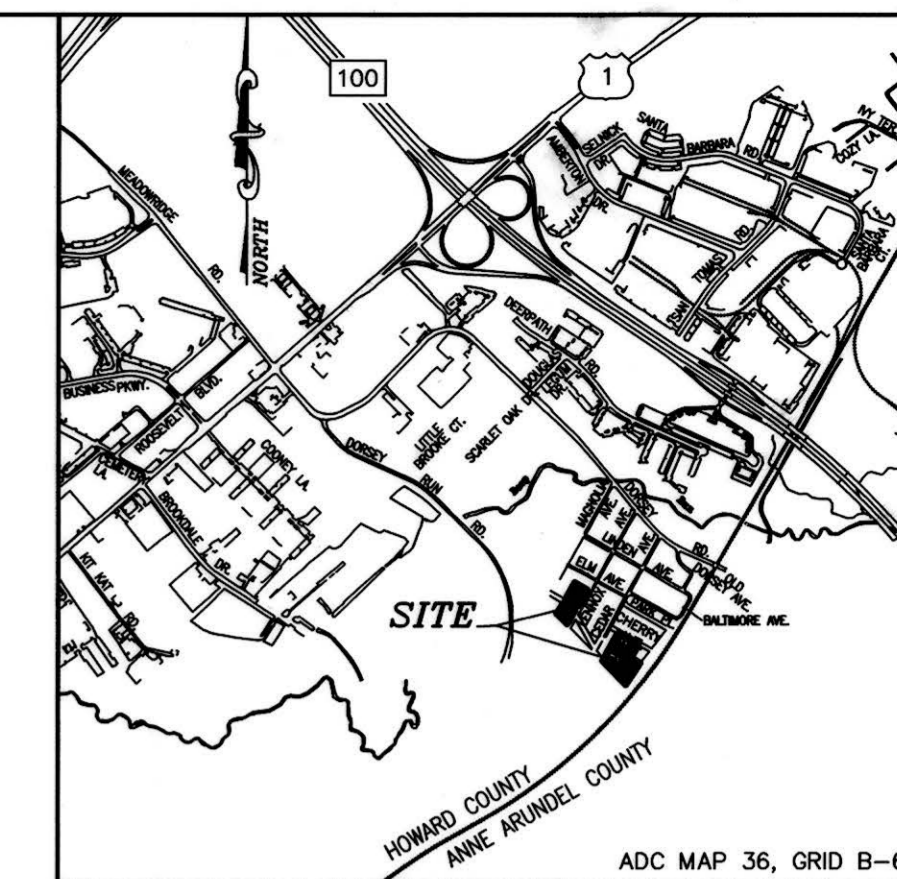
**CONTRACT NO.: 14-4809-D
LENNOX PARK,
LOTS: 422, 424, 426, 428, 430-438
PRELIMINARY WATER & SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS**

AS-BUILT

By **1/24** Date 2/19/18

GENERAL NOTES

- A. 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 DAMAGES INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
 - B. TOPOGRAPHY SHOWN HEREON IS BASED ON AN AERIAL SURVEY PERFORMED ON OR ABOUT FEBRUARY 2003 BY WINGS AERIAL MAPPING, SUPPLEMENTED FIELD RUN SURVEY PERFORMED BY MILDENBERG, BOENDER ASSOCIATES IN DECEMBER 2007.
 - C. 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. 43R1 AND NO. 43B2.
 - D. ALL VERTICAL CONTROLS ARE BASED ON NAVD '88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE HO.CO. GEODETIC CONTROL STA. 43R1 AND 43B2.
 - E. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
 - F. 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.
 - G. 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.
 - H. WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL [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.
 - I. 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
BCE(CONTRACTOR SERVICES).....410-637-8713
BCE(EMERGENCY).....410-685-0123
BUREAU OF UTILITIES.....410-313-4900
COLONIAL PIPELINE CO.....410-795-1390
STATE HIGHWAY ADMINISTRATION.....410-331-5533
VERIZON.....1-800-743-0033/410-224-9210
MISS UTILITY.....1-800-257-7777
 - J. 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.
 - K. 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.
 - L. 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.
- WATER**
- A. ALL WATER MAINS SHALL BE PVC (C-900), DR-18 UNLESS OTHERWISE NOTED.
 - B. TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED.
 - C. VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
 - D. ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
 - E. 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.
 - F. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
 - G. 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 RESULTS SHALL BE SUBMITTED TO SECTION 51 OF THE ANNA 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.
 - H. UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS, SEVENTEEN (17) POND 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.
 - I. ALL NEW WATER MAIN JOINTS ARE TO BE RESTRAINED.
 - J. FOR A MINIMUM 1.5" WHC FOR SINGLE FAMILY DWELLINGS OUTSIDE METER SETTINGS FOR 1" METERS SHALL BE USED.
- SEWER**
- A. ALL SEWER MAINS SHALL BE P.V.C. UNLESS OTHERWISE NOTED.
 - B. ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
 - C. FORCE MAINS SHALL BE D.I.P. ONLY.
 - D. MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
 - E. 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.
 - F. HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATED THAT THE CELLAR CANNOT BE SERVED.
- NOTES:**
1. EROSION AND SEDIMENT CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 108 OF THE HOWARD COUNTY DESIGN MANUAL VOLUME IV.
 2. SEE HO.CO.STD. W-3.32 FOR TWIN 1" OUTSIDE METER SETTING.
 3. SEE HO.CO.STD. W-3.28 DIR SINGLE 1" OUTSIDE METER SETTING.



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE 7/16/13
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
DATE 7/18/13
CHIEF, DEVELOPMENT ENGINEERING DIVISION

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
6800 Deerpath Road, Suite 150, Elkridge, Maryland 21075
(410) 997-0286 Bull. (410) 997-0289 Fax



engineering	MMT/MMT	illustration	MMT	approval	RJH	project	1996-076	date	JULY 2013	BY	NO.	REVISION	DATE

TITLE SHEET
600' SCALE MAP NO. 43 BLOCK NO. 6

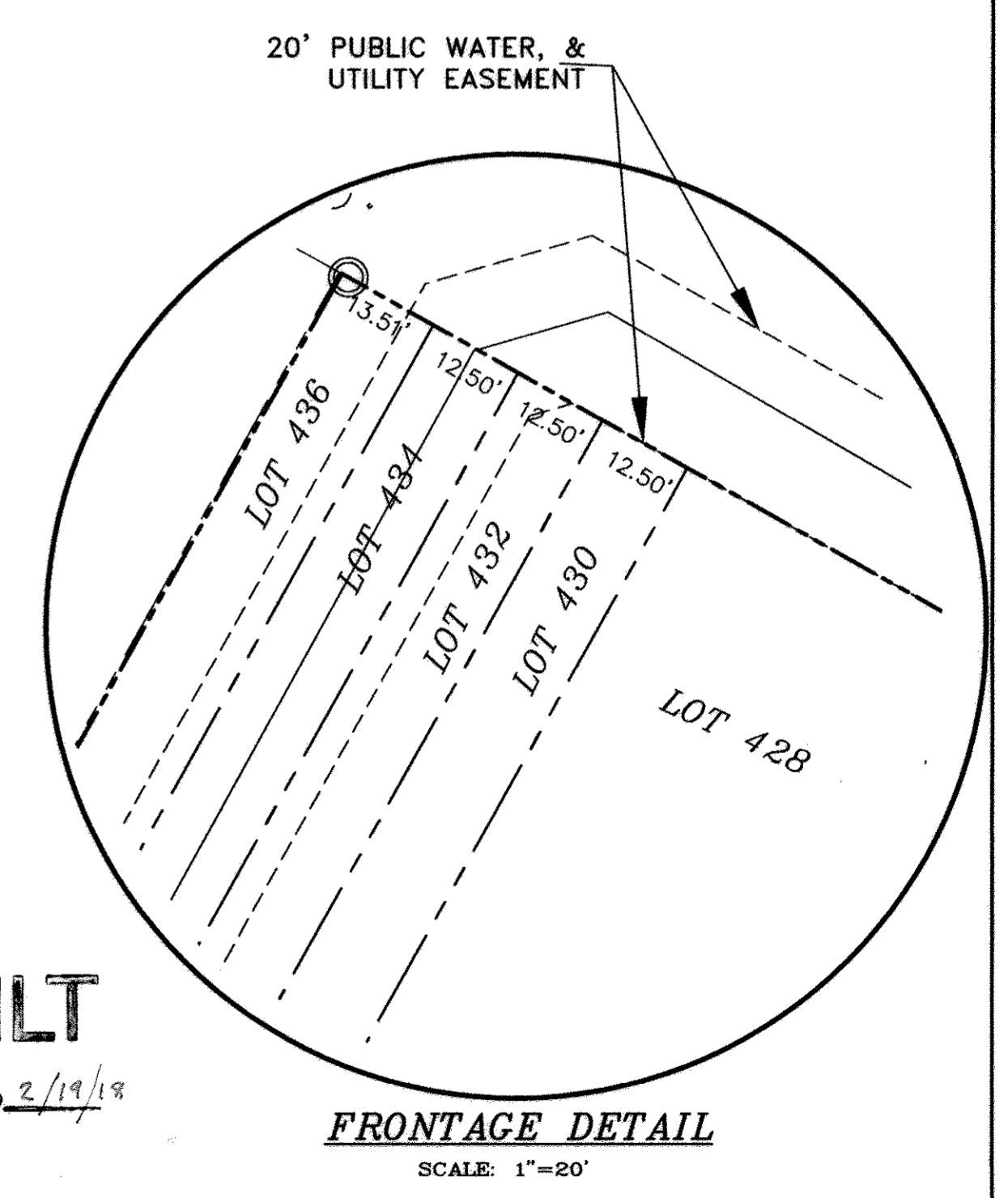
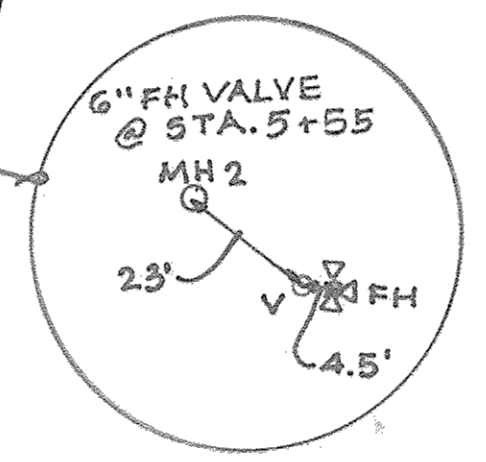
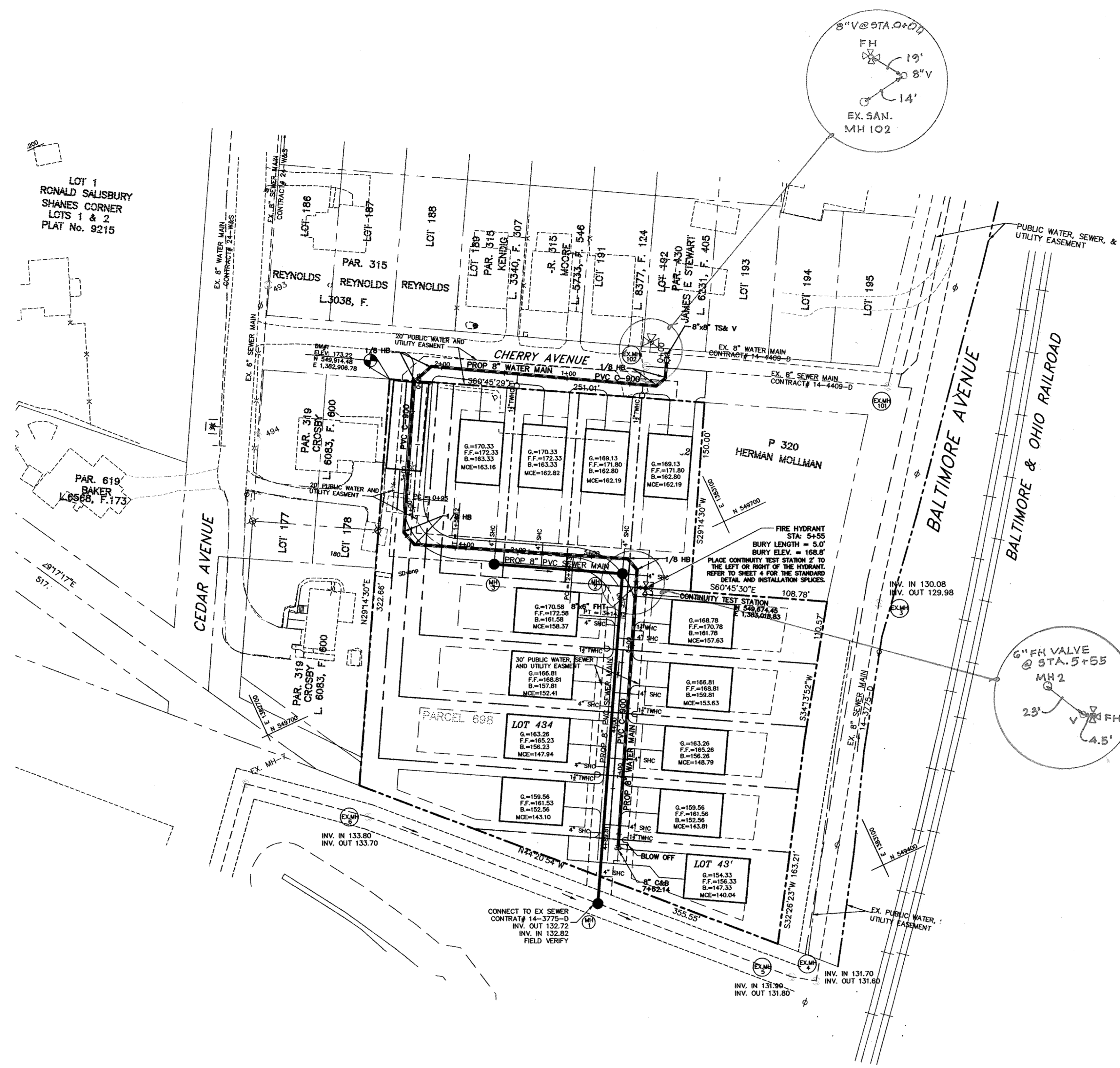
**LENNOX PARK,
LOTS: 422, 424, 426, 428, 430-438**
CONTRACT NO. 14-4809-D
TAX MAP 43 PARCEL 698
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

scale AS SHOWN
1 of 3

SEWER HOUSE CONNECTION AS-BUILT LOCATION TABLE				WATER HOUSE CONNECTION AS-BUILT LOCATION TABLE			
LOT	ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2	LOT	ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2
422	7014 CHERRY AVE.	MH-3: 125'	MH-2: 27'	422	7014 CHERRY AVE.	MH-102: 27'	FH: 48'
424	7012 CHERRY AVE.	MH-3: 104'	FH: 35'	424	7012 CHERRY AVE.	MH-102: 27'	FH: 45'
426	7010 CHERRY AVE.	MH-3: 140'	MH-2: 66'	426	7010 CHERRY AVE.	MH-102: 108'	FH: 113'
428	7008 CHERRY AVE.	MH-3: 125'	MH-2: 97'	428	7008 CHERRY AVE.	MH-102: 108'	FH: 113'
430	7008 BERWYN LANE	FH: 46'	FH VALVE: 43'	430	7008 BERWYN LANE	FH: 87'	FH VALVE: 55.5'
431	7111 BERWYN LANE	FH: 43'	FH VALVE: 43.5'	431	7111 BERWYN LANE	FH: 36'	FH VALVE: 36'
432	7112 BERWYN LANE	FH: 100'	FH VALVE: 98.5'	432	7112 BERWYN LANE	FH: 97'	FH VALVE: 55.5'
433	7113 BERWYN LANE	FH: 85.5'	FH VALVE: 86'	433	7113 BERWYN LANE	FH: 99'	FH VALVE: 100'
434	7114 BERWYN LANE	MH-1A: 107'	BLOW OFF VALVE: 67'	434	7114 BERWYN LANE	MH-1A: 101'	BLOW OFF VALVE: 69'
435	7115 BERWYN LANE	MH-1A: 115'	BLOW OFF VALVE: 68'	435	7115 BERWYN LANE	FH VALVE: 100'	FH: 99'
436	7116 BERWYN LANE	MH-1A: 59'	BLOW OFF VALVE: 28'	436	7116 BERWYN LANE	MH-1A: 101'	BLOW OFF VALVE: 59'
437	7117 BERWYN LANE	MH-1A: 64'	BLOW OFF VALVE: 14'	437	7117 BERWYN LANE	MH-1A: 86'	BLOW OFF VALVE: 6'
438	7119 BERWYN LANE	MH-1A: 30'	BLOW OFF VALVE: 27.8'	438	7119 BERWYN LANE	MH-1A: 86'	BLOW OFF VALVE: 6'

SEWER HOUSE CONNECTION TABLE						
LOT	SHC TYPE	INV. @ 8'S /MH	INV. @ EASEMENT	MCE	SLOPE	BE
422	MHSHC	158.29	158.69	162.19	1%	162.80
424	MHSHC	158.29	158.69	162.19	1%	162.80
426	SHC	157.92	158.32	162.82	2%	163.33
428	MHSHC	158.26	158.66	163.16	2%	163.33
430	SHC	153.67	153.87	158.37	2%	161.58
431	SHC	152.73	153.13	157.63	2%	161.78
432	SHC	147.71	147.91	152.41	2%	157.81
433	SHC	148.73	149.13	153.63	2%	159.81
434	SHC	143.24	143.44	147.94	2%	156.23
435	SHC	143.89	144.29	148.79	2%	156.26
436	SHC	138.40	138.60	143.10	2%	152.62
437	SHC	139.05	139.45	143.81	2%	152.56
438	SHC	135.14	135.34	140.04	2%	147.33

WATER / SEWER MAIN TABULATION CHART		
APPURTENANCE	NORTHING	EASTING
MH 1	N 549468.0874	E 1382881.5132
MH 2	N 549696.5731	E 1383009.4277
MH 3	N 549746.5204	E 1382920.2100
8" x 6" FHT&V	N 549882.2980	E 1383014.6161
8" 1/8" HB	N 549694.4687	E 1383021.3156
8" 1/8" HB	N 549705.4355	E 1383018.1512
8" 1/8" HB	N 549787.6101	E 1382869.3202
8" 1/8" HB	N 549799.6863	E 1382865.8356
8" 1/8" HB	N 549804.5721	E 1382923.7487
8" 1/8" HB	N 549808.5666	E 1382941.0557
8" 1/8" HB	N 549819.9534	E 1383096.4192
8" 1/8" HB	N 549822.3916	E 1383105.5035
8" x 8" TS&V (CHERRY AVE.)	N 549839.4449	E 1383115.2692
8" CAP AND BUTTRISS	N 549500.2413	E 1382913.9830
BLOW OFF	N 549500.3550	E 1382922.4887



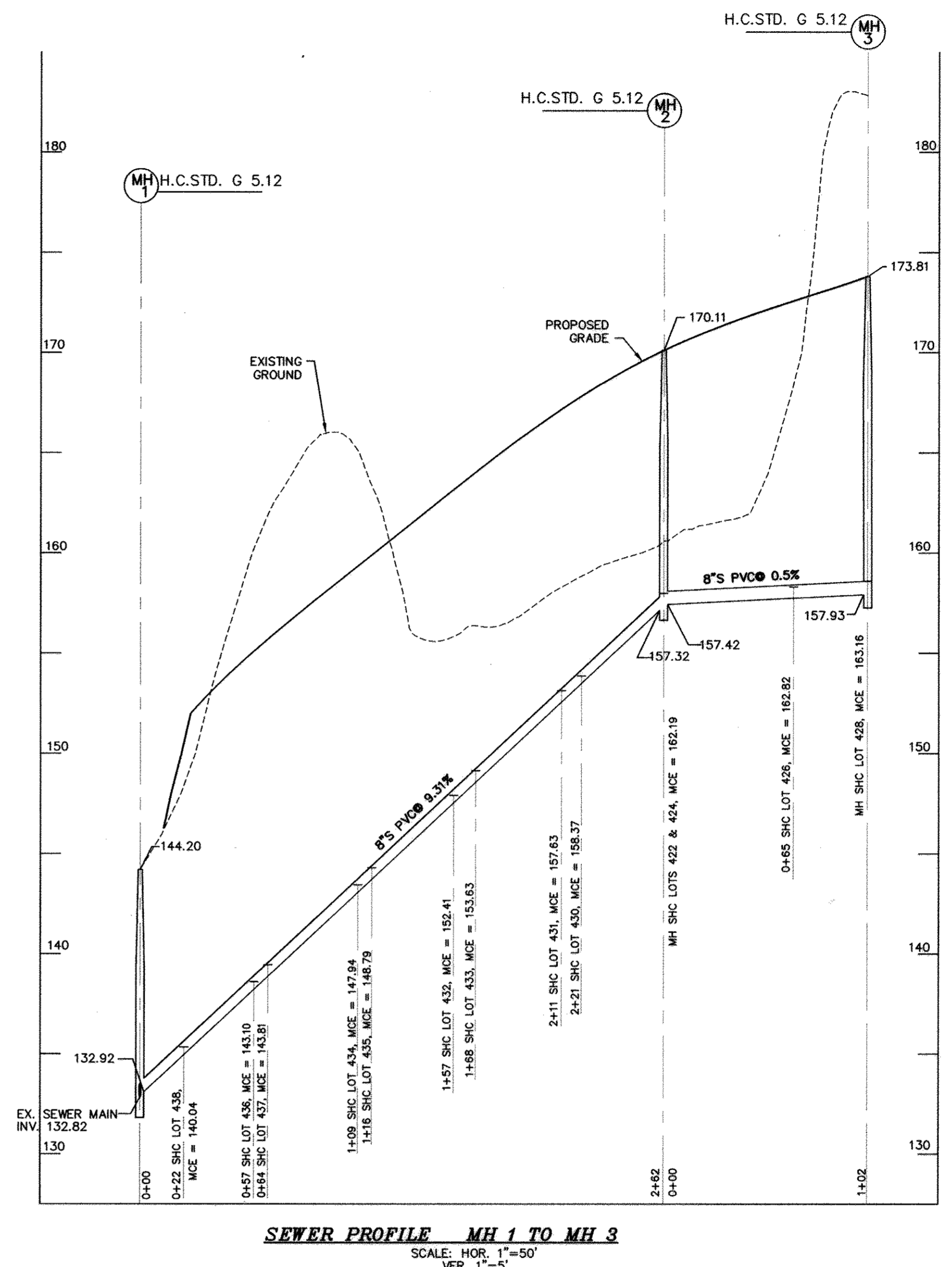
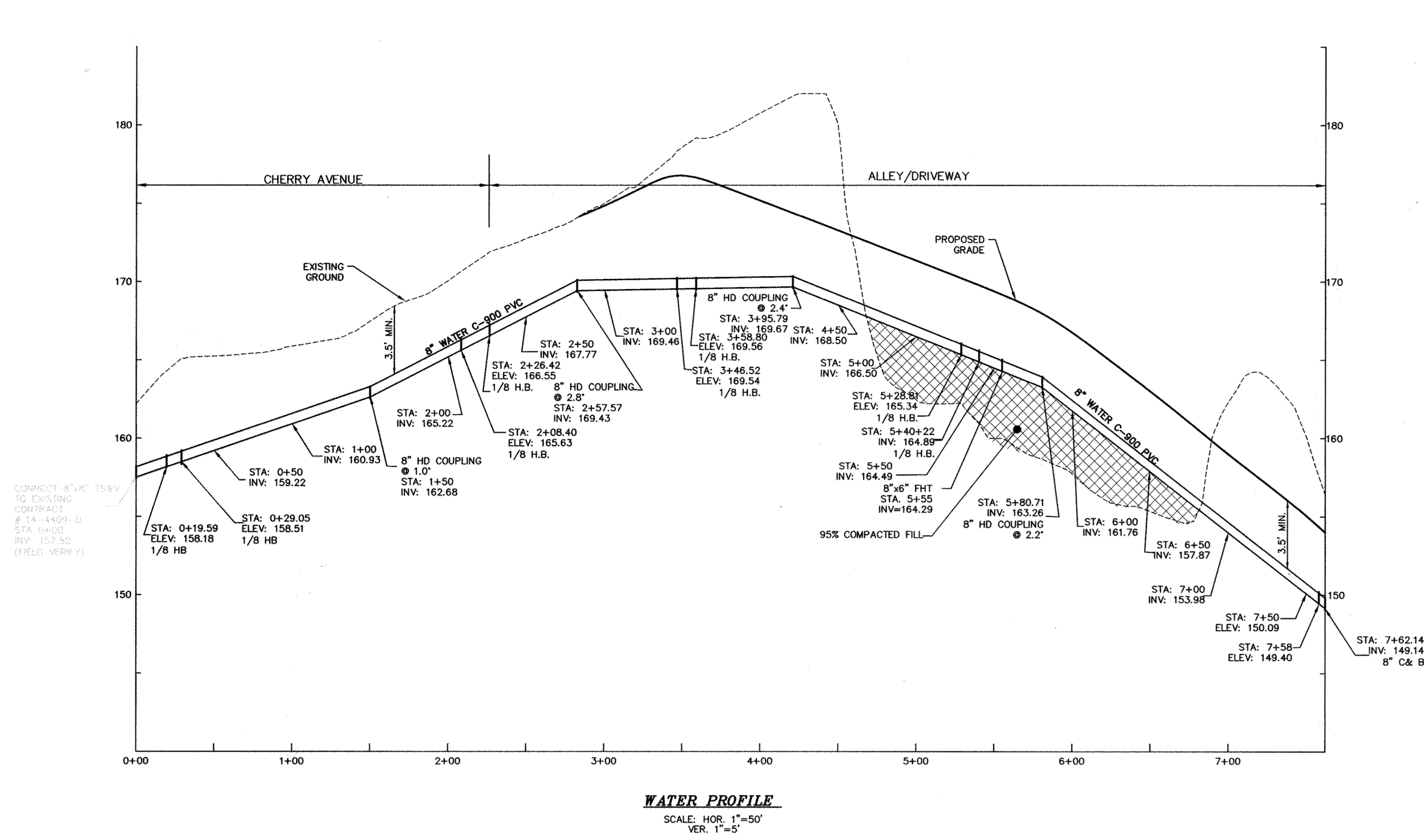
AS-BUILT

Date: 2/19/13

FRONTAGE DETAIL
SCALE: 1"=20'

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, EXPIRE DATE 09/10/14
R. JACOB HIKMAT P.E. 7/17/13 DATE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Chief, Bureau of Utilities 7/19/13 DATE	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND Chief, Development Engineering Division 7/23/13 DATE	MILDENBERG, BOENDER & ASSOC., INC. Engineers Planners Surveyors 6800 Deerpath Road, Suite 150, Elbridge, Maryland 2075 (410) 997-0286 Ext. (410) 997-0286 Fax	engineering: MMM/MMT illustration: MMT approval: RJH project: 1996-076 date: JULY 2013	WATER AND SEWER PLAN 600' SCALE MAP NO. 43 BLOCK NO. 6	LENNOX PARK, LOTS: 422, 424, 426, 428, 430-438 CONTRACT NO. 14-4809-D TAX MAP 43 PARCEL 698 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND	scale: 1"=50' 2 OF 3
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R. JACOB HIKMAT
R. JACOB HIKMAT P.E.
DATE: 7/17/13

AS-BUILT

DATE 2/19/13

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>John C. Green</i> CHIEF, BUREAU OF UTILITIES DATE: 7/23/13	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND <i>John DeWitt</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 7/23/13	 MILDENBERG, BOENDER & ASSOC., INC. Engineers Planners Surveyors 6800 Deerpath Road, Suite 150, Ellicott City, Maryland 21075 (410) 997-0296 Fax: (410) 997-0298 Fax	 PROFESSIONAL ENGINEER R. JACOB HIKMAT NO. 17942	engineering MMM/MMT						WATER AND SEWER PROFILE 600' SCALE MAP NO. 43 BLOCK NO. 6	LENNOX PARK, LOTS: 422, 424, 426, 428, 430-438 CONTRACT NO. 14-4809-D TAX MAP 43 PARCEL 698 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND	scale 1"=50'
				illustration MMT	approval RJH	project 1996-076	date JULY 2013	BY NO.	REVISION			DATE