

ITEMS	QUANTITIES		AS-BUILT	MANUF./SUPPLIER
	ESTIMATED QUANTITIES	QUANTITIES		
8" WATER (DIP)	464 L.F.	415		American Cast Iron Pipe
6" WATER (DIP)	21 L.F.	10		American Cast Iron Pipe
1.5" WHC	130	92.5		Mueller Co.
FIRE HYDRANT	1	1		Tyler/Union Foundry
6"x6" TSV	1	1		Tyler/Union Foundry
8"x6" REDUCER	1	1		Tyler/Union Foundry
8" CAP & BUTTRESS	1	1		Tyler/Union Foundry
1 1/2" DRAIN	1	1		
8" SEWER (PVC)	420 L.F.	470		National Pipe & Plastics
MANHOLE	3 EACH	3		Contractors Pipe & Cast
4" SHC	90 L.F.	3		National Pipe & Plastics

NAME OF UTILITY CONTRACTOR: J And A Construction
 SURVEY AND DRAFTING DIVISION AS-BUILT DATE:

PUBLIC WATER AND SEWER MAIN EXTENSIONS

MELVIN PROPERTY

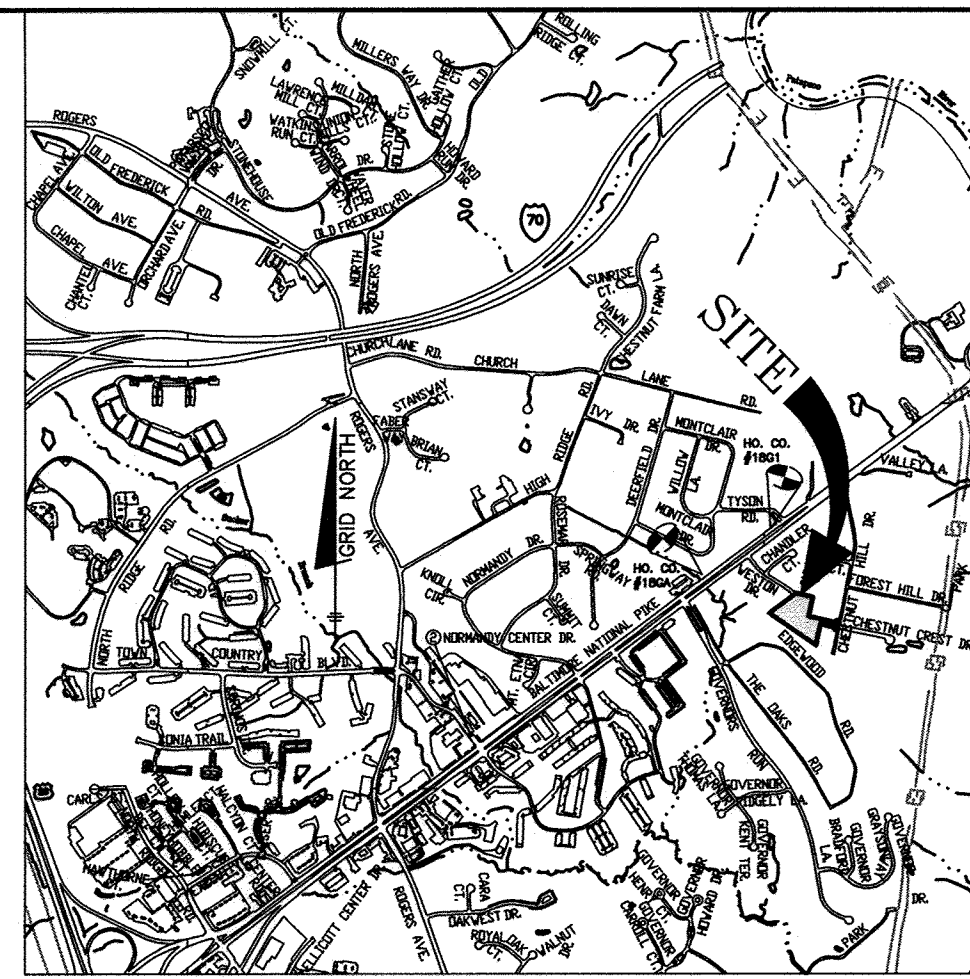
LOT 5 OF MELNOR PROPERTY

TAX MAP 18, PARCEL 351; GRID 20

1st ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

CONTRACT NO.: 24-4796-D



BENCHMARKS NAD'83 HORIZONTAL

HO. CO. #18GA
 STAMPED DISK SET ON TOP OF CONCRETE BASE.
 N 591872.0034' E 1370380.4297'
 ELEVATION: 445.769'

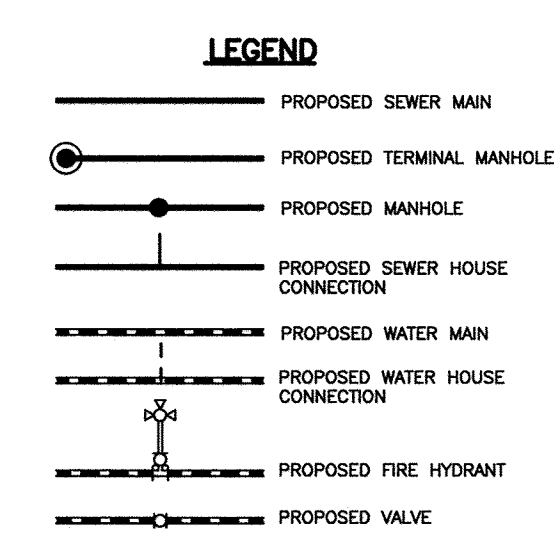
HO. CO. #18G1
 STAMPED DISK SET ON TOP OF CONCRETE BASE.
 N 589985.0097' E 1367750.2346'
 ELEVATION: 407.734'

NOTE: USE HO. CO. STD. DETAIL W-3.26 FOR SINGLE OUTSIDE METER SETTINGS

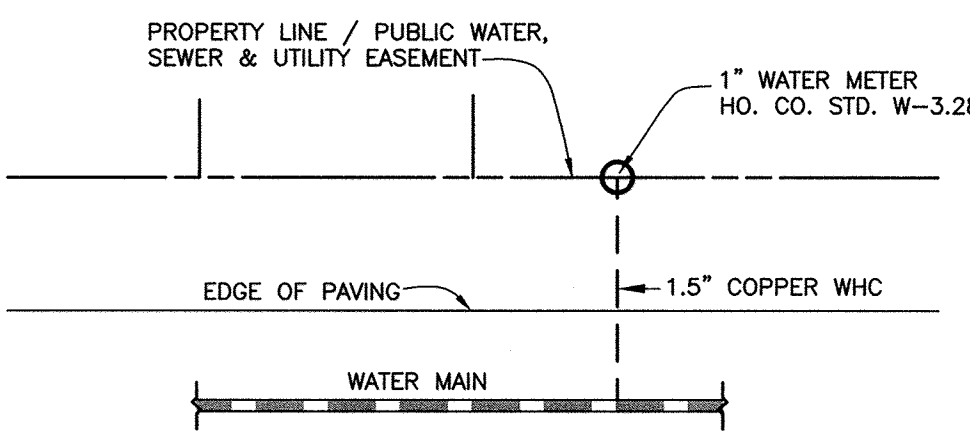
Lot#	Location Dim#1	Location Dim#2
1	25' to MH 2	10' to SHC 1
2	22' to MH 2	100' to SHC 2
3	26' to MH 2	85' to SHC 3
4	14' to Water Drain	7' to SHC 4
5	82' to MH 3	10' to SHC 5
6	24' to MH 3	17' to SHC 6

NOTE: ALL JOINTS AND CONNECTIONS LOCATED WITHIN STRUCTURAL FILL AREAS SHALL BE MECHANICALLY RESTRAINED IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION)

Lot#	Location Dim#1	Location Dim#2
1	85' to MH 2	10' to WHC 1
2	22' to MH 2	100' to WHC 2
3	111' to MH 2	85' to WHC 3
4	12' to Water Drain	7' to WHC 4
5	21' to MH 3	10' to WHC 5
6	17' to MH 3	17' to WHC 6



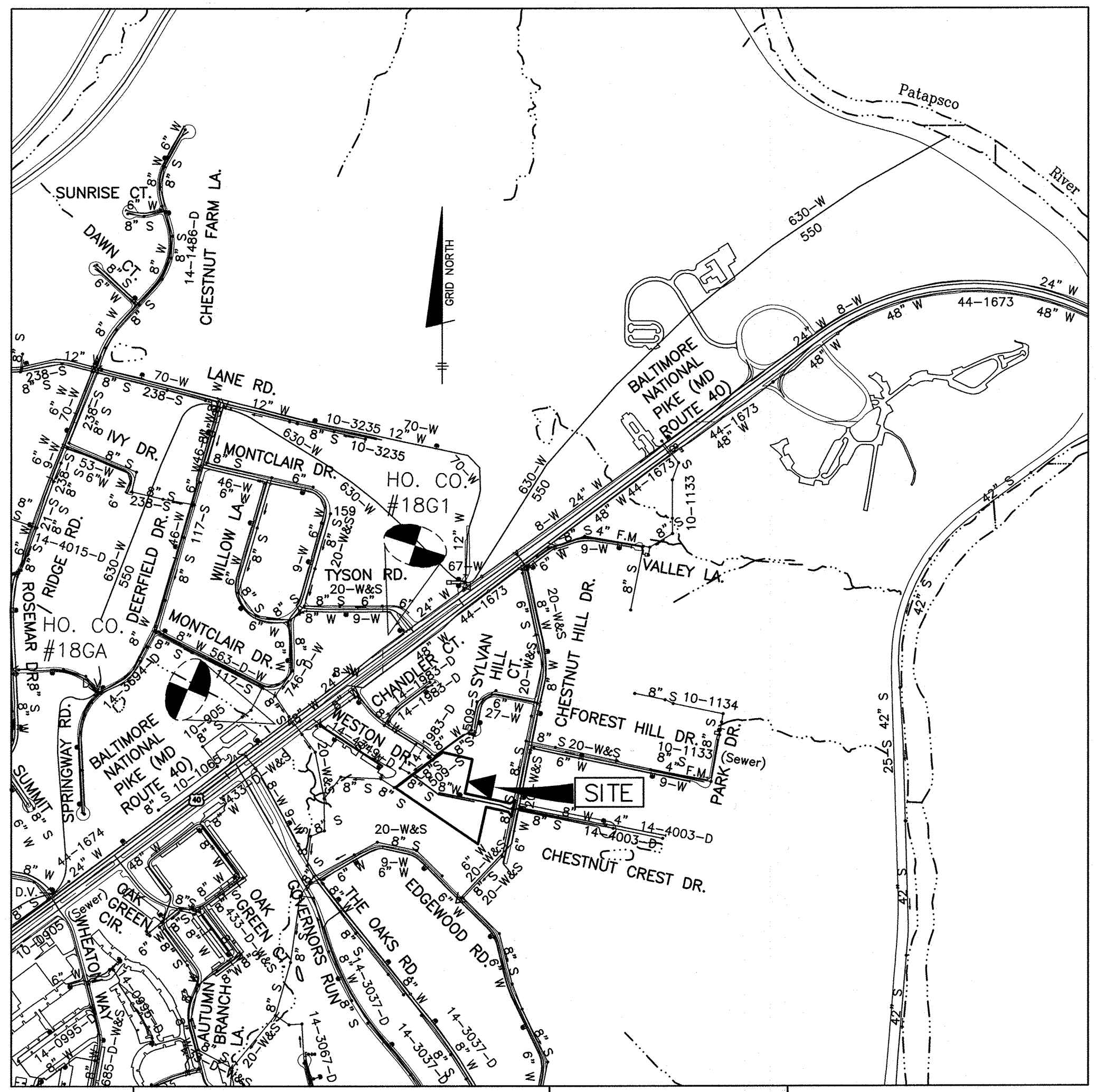
MANHOLE	LOCATION	INV. IN	INV. OUT	TOP ELEV.	NOTES
1	N 590917.97 E 1370169.97	392.6	392.8	396.70	OVER EX. MAIN
2	N 590796.06 E 1370335.86	395.06	394.86	404.00	-
3	N 590753.69 E 1370545.56	NA	399.00	412.80	TERMINAL



Lot	Dimension (ft)	Road
1	28.99	Chestnut Hill Drive
2	4.00	Chestnut Hill Drive
3	4.00	Chestnut Hill Drive
4	4.00	Chestnut Hill Drive
5	4.00	Chestnut Hill Drive
6	56.07	Chestnut Hill Drive

DEVELOPER:
 HIGHLAND DEVELOPMENT CORPORATION
 PO BOX 228
 CLARKSVILLE, MARYLAND 21029
 PHONE: 410-365-0414

OWNER:
 VERA JEANNE MELVIN
 R3010 CHESTNUT HILL DRIVE
 ELLICOTT CITY, MARYLAND 21043
 PHONE:



TYPE OF BUILDING: SFD
 NUMBER OF UNITS: 6
 DRAINAGE AREA: PATAPSCO
 TREATMENT PLANT: PATAPSCO WASTEWATER TREATMENT PLANT
 WATER ZONE: 550
 TEST GRADIENT: 700

NUMBER OF SHC'S: 6
 NUMBER OF WHC'S: 6

LOCATION MAP
 SCALE: 1" = 600'

- #### GENERAL NOTES
- PART 1 - GENERAL**
- APPROXIMATE LOCATION 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 FEBRUARY 2003 BY WINGS AERIAL MAPPING AND SUPPLEMENTED BY TOPOGRAPHIC SURVEY PERFORMED BY MILDENBERG BOENDER & ASSOCIATES IN DECEMBER 2007 AND ARE SHOWN AT 2' INTERVALS.
 - THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM, NAD 83/91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS 43R1 AND 43R2. ALL VERTICAL CONTROLS ARE BASED ON NAVD 88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE HO.CO. GEODETIC CONTROL STA. 43R1 & 43R2.
 - ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON PLANS.
 - CLEAR ALL UTILITIES BY A MINIMUM OF 12". 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 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 OPERATIONS AT HIS OWN EXPENSE.
 - 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
B&E (CONSTRUCTION SERVICES)	410-850-4620
B&E (EMERGENCY)	410-855-1400
HO. CO. DPW - 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	1-800-743-0033/410-224-9210
 - TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
 - 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 HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(a) OF THE HOWARD COUNTY CODE.
- PART 2 - WATER**
- ALL WATER MAINS TO BE DUCTILE IRON PIPE 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 INSTALLED IN ACCORDANCE WITH STANDARD DETAILS. 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.
 - TRACE WIRE AND CONTINUITY TEST STATIONS SHALL BE INSTALLED ON ALL D.I.P. AND P.V.C. WATER MAINS IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL.
 - FOR PVC WATER MAINS, ALL RECORDS FOR THE QUANTITY CONTROL AND QUALIFICATION TEST REQUIREMENTS NOTED IN SECTION 5.1 OF ANWA STANDARD C900 FOR PVC PRESSURE PIPE SHALL BE SUBMITTED WITH THE PIPE MATERIAL CERTIFICATIONS OR SHOP DRAWINGS PRIOR TO APPROVAL OF MATERIAL FOR USE. TEST RECORDS SHALL BE FOR THE PIPE TO BE INSTALLED. ALL PVC PIPE SHALL CONTAIN MARKINGS TO ALLOW CROSS REFERENCING OF THE PIPE SUPPLIED TO THE TEST RECORD 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 HARNESSES. 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.
 - FIRE SPRINKLER SYSTEMS FOR ALL SINGLE FAMILY DWELLINGS SHALL HAVE A MINIMUM OF A 1-1/2" CONNECTION WITH A 1" OUTSIDE METER SETTING.
- PART 3 - 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 G-5.52. 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 CELLAR CANNOT BE SERVED.

NOTE: HOUSE CONNECTIONS TO BE SIZED ACCORDINGLY:
 SINGLE WHC = 1-1/2"
 SINGLE SHC = 4"

NOTE: HO. CO. STD. DETAILS C-5.01 THRU C-5.03 ARE NOT APPLICABLE; THIS PROJECT IS NOT WITHIN AN AREA IDENTIFIED AS HAVING CORROSIVE SOILS

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

John M. Robertson 9/9/17
 HOWARD SOIL CONSERVATION DISTRICT
 DATE

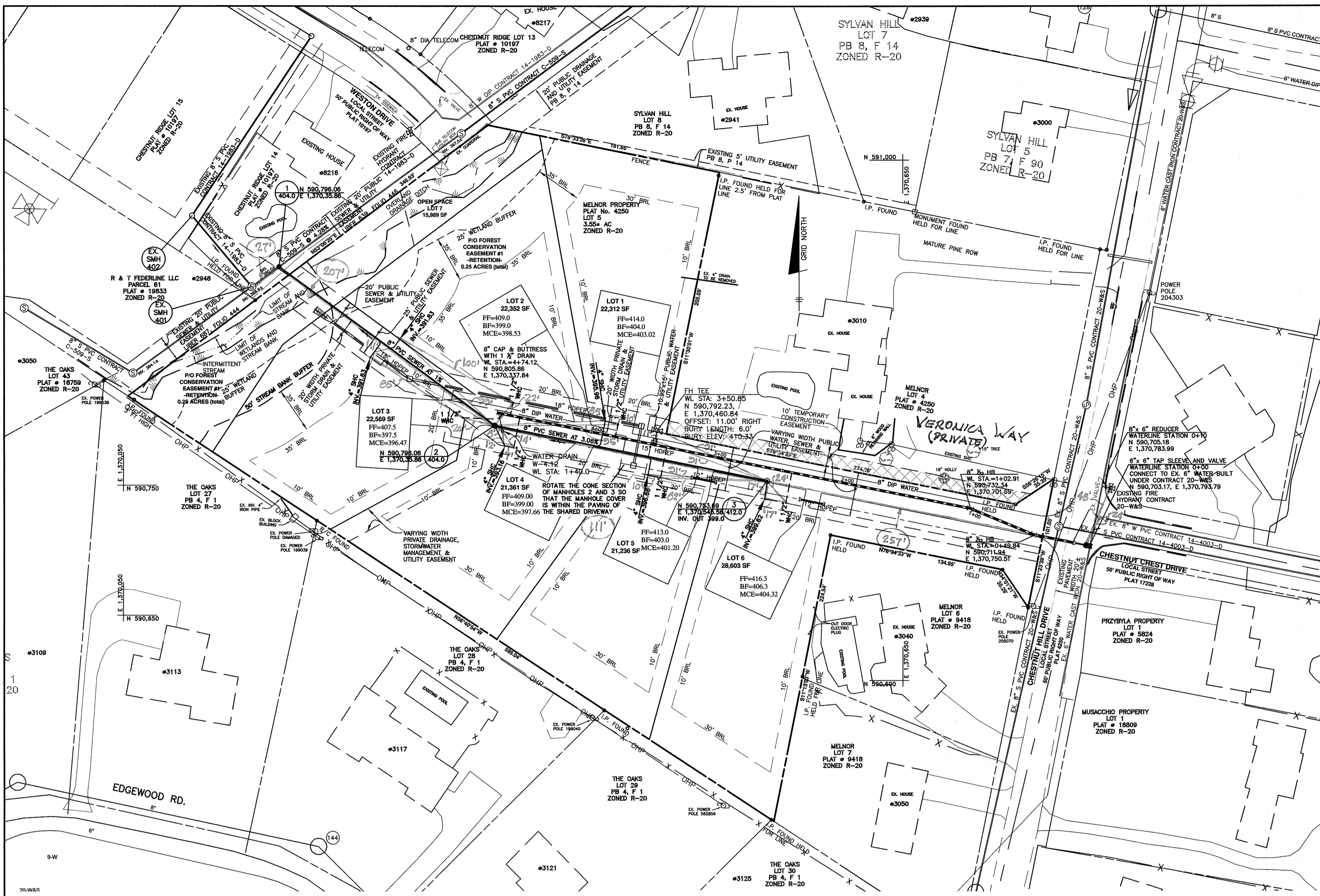
SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE HOWARD COUNTY STANDARD SPECIFICATIONS AND AS PER APPROVED DEVELOPMENT PLANS F-15-106.

NO.	DESCRIPTION
1	TITLE SHEET PUBLIC WATER & SEWER MAINS
2	PLAN VIEW PUBLIC WATER & SEWER MAINS AND PROFILE OF SEWER MAIN

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. 45577;
 Expiration Date: 06-08-2018

John M. Robertson
 PROFESSIONAL ENGINEER
 7/30/17

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND	BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE & SUITE 315 & ELLICOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-6644 WWW.BE-CHILENENGINEERING.COM	DES: JC DRN: JC CHK: - DATE: 07/2017	BY: NO. REVISIONS DATE: 600 SCALE MAP: 18	BLOCK: 20	MELVIN PROPERTY LOT 5 OF THE MELNOR PROPERTY TAX MAP 18, PARCEL 351, GRID 20 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 24-4796-D	SCALE: AS SHOWN SHEET NO. 1 OF 2
---	--	--	---	---	-----------	--	---



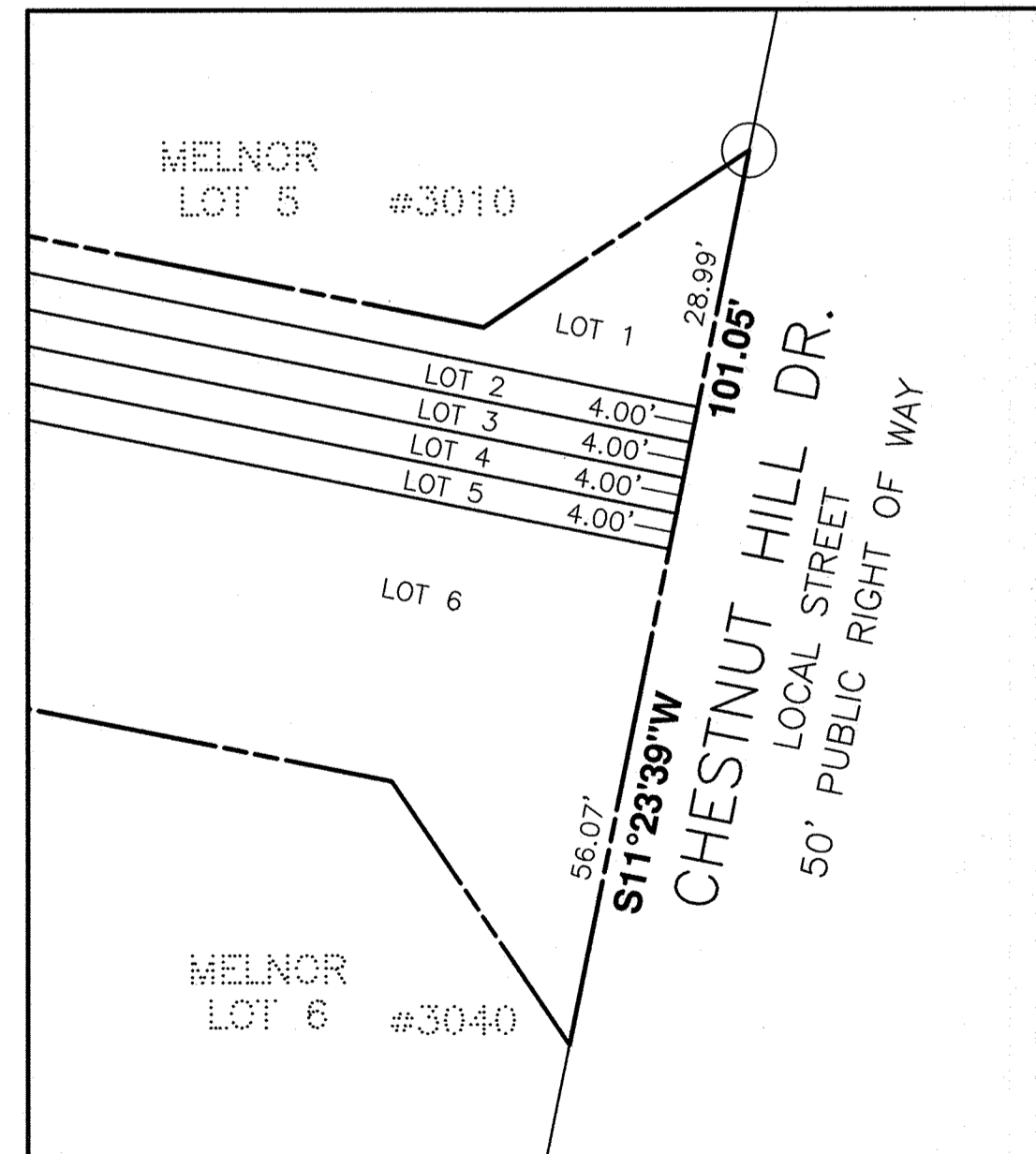
PLAN VIEW
SCALE: 1" = 50'

DEVELOPER:
HIGHLAND DEVELOPMENT
CORPORATION
PO BOX 228
CLARKSVILLE, MARYLAND 21029
PHONE: 410-365-0414

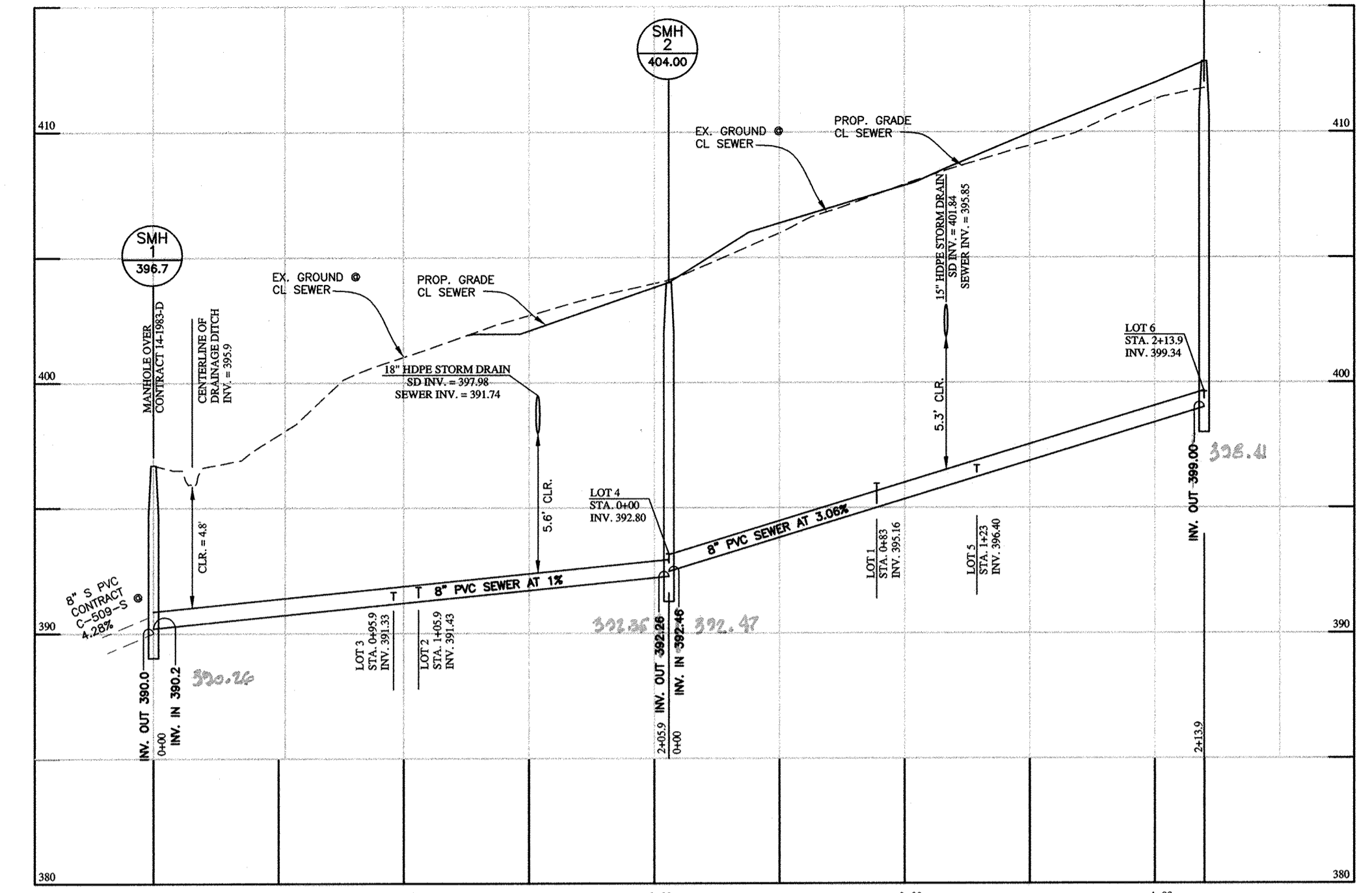
OWNER:
VERA JEANNE MELVIN
R3010 CHESTNUT HILL DRIVE
ELLCOTT CITY, MARYLAND 21043
PHONE:

NOTE: HOUSE CONNECTIONS
TO BE SIZED ACCORDINGLY:
SINGLE WHC = 1-1/2"
SINGLE SHC = 4"

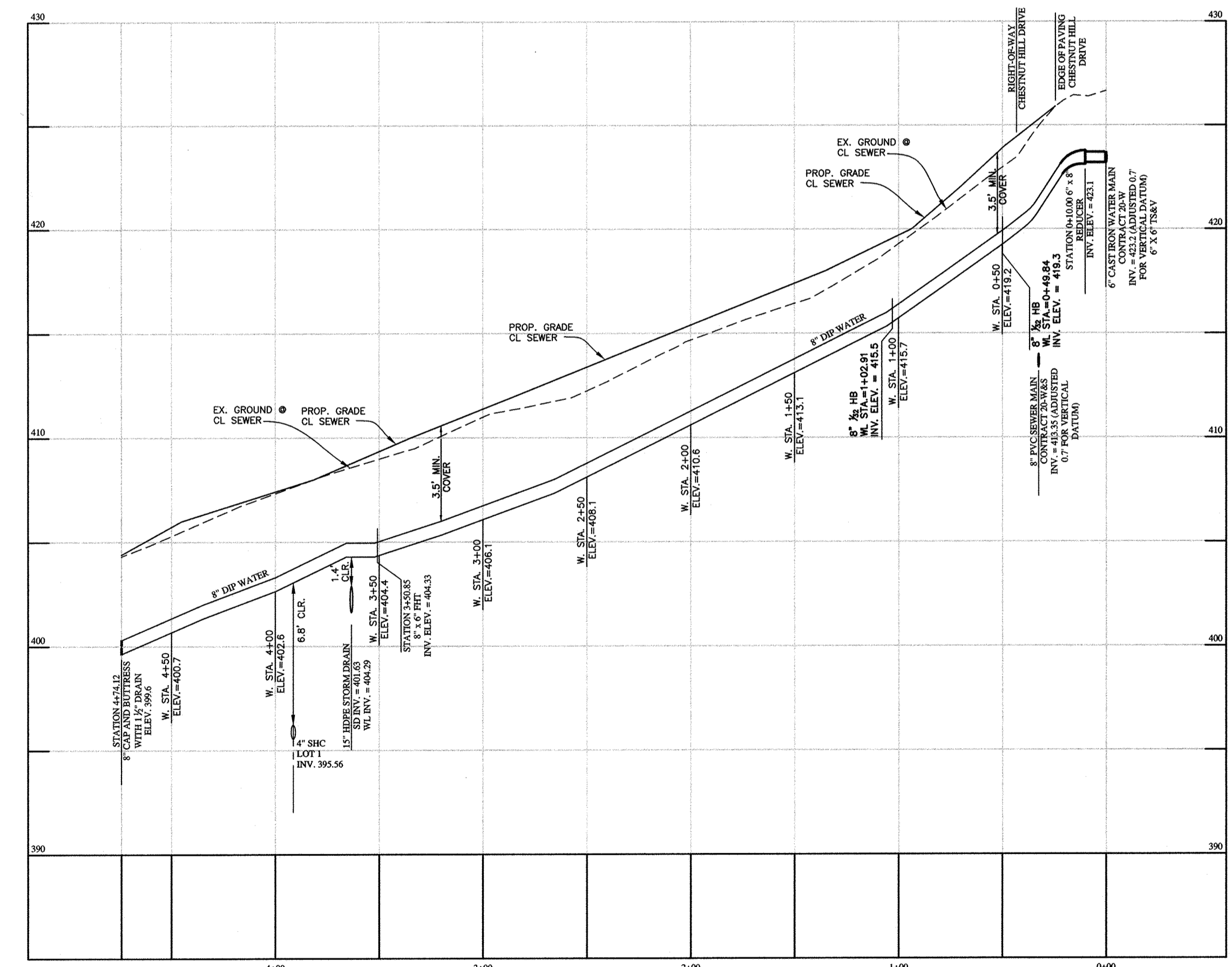
SHC CHART					
Lot Number	Invert @ main or manhole	Drop House	Invert @ top of standpipe	Invert @ R/W or esmt	Notes
1	395.16	No	395.96	403.02	SHC @ 4.0%
2	391.43	No	391.83	398.53	SHC @ 4.0%
3	391.33	No	391.63	396.47	SHC @ 2.0%
4	392.80	No	393.16	397.66	SHC @ 2.0%
5	396.40	No	396.68	401.20	SHC @ 2.0%
6	399.34	No	399.62	404.32	SHC @ 2.0%



FRONT FOOT ENLARGEMENT
SCALE: 1" = 20'

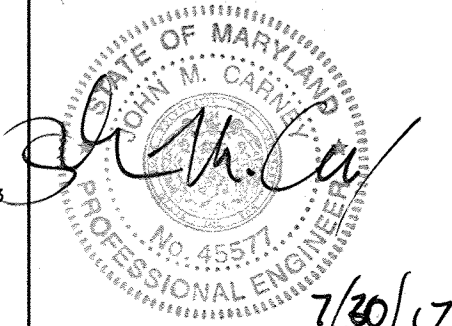


PUBLIC SEWER PROFILE
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



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

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. 45577;
Expiration Date: 06-06-2018



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

David C. Smith
DATE: 8/23/2017
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

John P. ...
DATE: 9-18-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION

BENCHMARK
ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE & SUITE 315 • ELLCOTT CITY, MARYLAND 21043
(P) 410-465-9100 (F) 410-465-9644
WWW.BE-CIVILENGINEERING.COM

DES:	JC				
DRN:	JC				
CHK:	-				
DATE:	07/2017	BY	NO.	REVISIONS	DATE

PUBLIC WATER AND SEWER PLAN

SCALE: 1" = 50'

600 SCALE MAP: 18

BLOCK: 20

MELVIN PROPERTY
LOT 5 OF THE MELNOR PROPERTY

TAX MAP 18, PARCEL 351, GRID 20
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

CONTRACT No. 24-4796-D

SCALE:
1" = 50'

SHEET NO.
2 OF 2