


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.
- THE TOPOGRAPHY SHOWN HEREON IS BASED ON AN AERIAL SURVEY BY POTOMAC AERIAL SURVEYS, DATED MAY 15, 2009.
- HORIZONTAL AND VERTICAL SURVEY CONTROLS:**
THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM AND '83/91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS 43EC AND 43EB.
ALL VERTICAL CONTROLS ARE BASED ON (NAVD '22). VERTICAL CONTROLS PROVIDED ON DRAWINGS ARE:
GEODETIC SURVEY CONTROL 43 EC (N 550,601.597 E 1,376,866.072)
BRASS DISC SET ON TOP OF A CONCRETE MONUMENT, LOCATED AT IN GORMAN ROAD, 7' NORTH OF EDGE OF SIDEWALK, ±21' EAST OF BRIDGE AND 11.60' NORTH OF GUARDRAIL.
GEODETIC SURVEY CONTROL 43 EB (N 551,654.993 E 1,378,176.951)
BRASS DISC SET ON TOP OF A CONCRETE MONUMENT, LOCATED IN GORMAN ROAD, BETWEEN SKYLARK BLVD AND I-95 BRIDGE, 1.9' NORTH SIDE OF SIDEWALK, AND 48.3' AWAY FROM END OF GUARDRAIL.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED.
- CLEAR ALL UTILITIES BY A MINIMUM OF 12 INCHES. CLEAR ALL POLES BY 5'-0" MINIMUM OR TOWER AS REQUIRED UNLESS OTHERWISE NOTED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON 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 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 LOCATION OF THE TEST PIT. A NOTES 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 OPERATION AT HIS OWN EXPENSE.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN THESE PLANS:

AT&T	1-800-252-1133
BCE (CONTRACTOR SERVICE)	410-637-8713
BCE (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	1-800-743-0033
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 REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE CONSTRUCTION OF THE MAIN.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-7450 AT LEAST FIVE WORKING DAYS BEFORE ANY OPEN CUTTING OR BORING/JACKING OF ANY COUNTY ROAD FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS SHALL CONSTITUTE COMPLIANCE WITH DPM REQUIREMENTS PER SECTION 18.114(c) OF THE HOWARD COUNTY CODE.


PART II - WATER

- ALL WATER MAINS TO BE PVC (C-900) 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.
- 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 ANNA STANDARD CS900 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, 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 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.
- FOR FIRE SPRINKLER SYSTEM, ALL SINGLE FAMILY DWELLINGS WILL HAVE A MINIMUM OF A 1-1/2" WHC WITH A 1" OUTSIDE METER SETTING.

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 GS.52. WHERE WATERTIGHT MANHOLE FRAME AND COVERS ARE USED, SET TOP OF FRAME -5' ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT CELLAR CANNOT BE SERVED.

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE SPECIFICATIONS AND WITH SITE DEVELOPMENT PLAN SDP-12-001.

THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 10/2/12
 SOIL CONSERVATION DISTRICT DATE

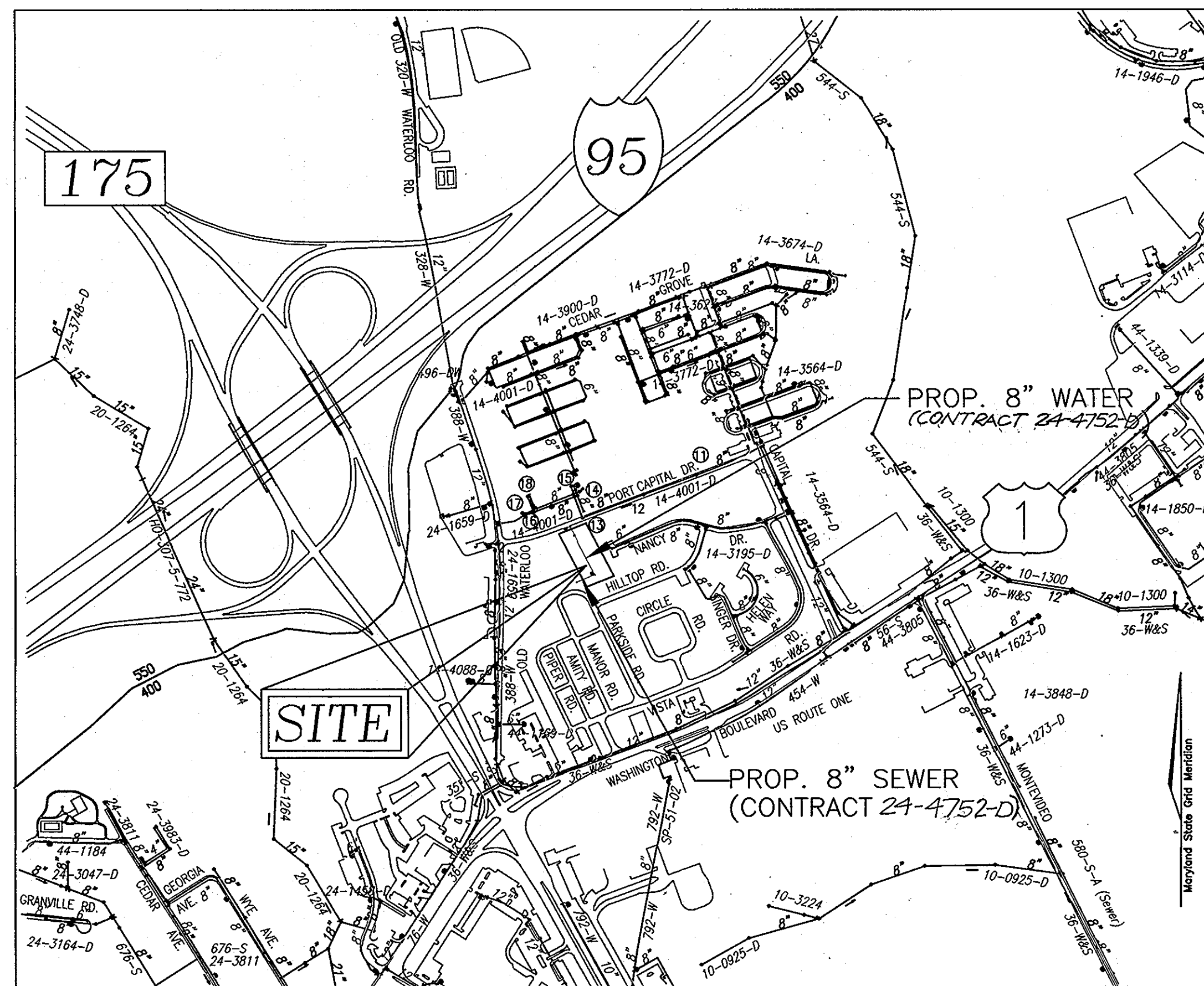
FINAL WATER AND SEWER PLAN

BUCH PROPERTY

TOWNHOUSES AND OFFICE BUILDING

L. 11977, F.517

CONTRACT 24-4752-D



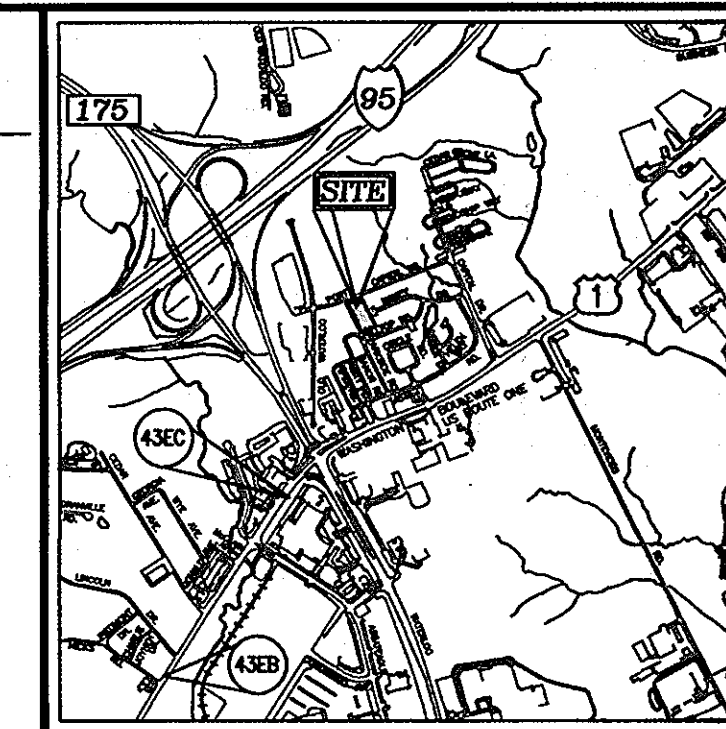
VICINITY MAP
SCALE: 1"=600'

WATER ZONE:	550
TEST GRADIENT:	700

TYPE OF BUILDING :	TOWNHOUSES, APARTMENTS, AND OFFICE BUILDING
NO. OF LOTS/PARCELS :	1
NO. OF TOWNHOUSE/APARTMENT UNITS :	19
NO. OF SINGLE WATER HOUSE CONNECTIONS :	2
NO. OF TWIN WATER HOUSE CONNECTIONS :	8
NO. OF SEWER HOUSE CONNECTIONS :	-
NO. OF TWIN SEWER HOUSE CONNECTIONS :	-
DRAINAGE AREA :	LITTLE PATUXENT RIVER
TREATMENT PLANT :	LITTLE PATUXENT WASTEWATER TREATMENT PLANT



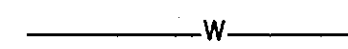













BENCHMARKS

HOWARD COUNTY BENCHMARK 43EB
 N 551,654.993 E 1,378,176.951 ELEV.: 209.601'
 HOWARD COUNTY BENCHMARK 43EC
 N 550,601.597 E 1,376,866.072 ELEV.: 210.559'



LOCATION MAP
SCALE: 1"=2000'
ADC MAP COORDINATES: 5054 E2


LEGEND


- EXISTING TREELINE 
- PROPOSED TREELINE 
- EXISTING WATER MAIN 
- PROPOSED WATER MAIN 
- FIRE HYDRANT 
- PROPOSED VALVE 
- PROPOSED TEE 
- PROPOSED STORM DRAIN 
- EXISTING STORM DRAIN 
- PROPOSED PRIVATE SEWER 
- EXISTING SEWER 
- SEWER MANHOLE 
- WATER HOUSE CONNECTION 
- SEWER HOUSE CONNECTION 
- PROPOSED SIGN 
- PROPOSED LIGHT 

QUANTITIES

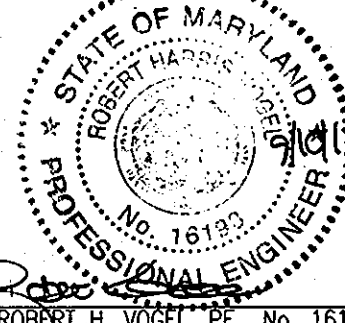
NAME OF UTILITY CONTRACTOR :		AS-BUILT			
SURVEY AND DRAFTING DIVISION AS-BUILT DATE :					
ITEMS	QUANTITIES ESTIMATED	QUANTITIES	TYPE	MANUFACTURER/SUPPLIER	
WATER					
8" WATER CS900 PVC (DR-14)	540 LF				
6" WATER CS900 PVC (DR-14)	49 LF				
8" x 8" TEE	3 EA				
6" VALVE	3 EA				
FIRE HYDRANT	2 EA				
1-1/2" WHC	190 LF				
8" 1/8 BENDS	5 EA				
8" 1/8 BENDS	4 EA				
8" x 5" SWEEP	1 EA				
8" COUPLINGS	4 EA				
SEWER					
MANHOLE	1 EA				
8" SEWER	18 LF				

OWNER/DEVELOPER
 RESIDUARY TRUST OF
 JAMES R. BUCH JR.
 13130 CLARKSVILLE PIKE
 HIGHLAND, MD 20777
 240-375-6294

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

 CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND

 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

ROBERT H. VOGEL, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET TEL: 410.461.7666
 ELLICOTT CITY, MD 21043 FAX: 410.461.8961



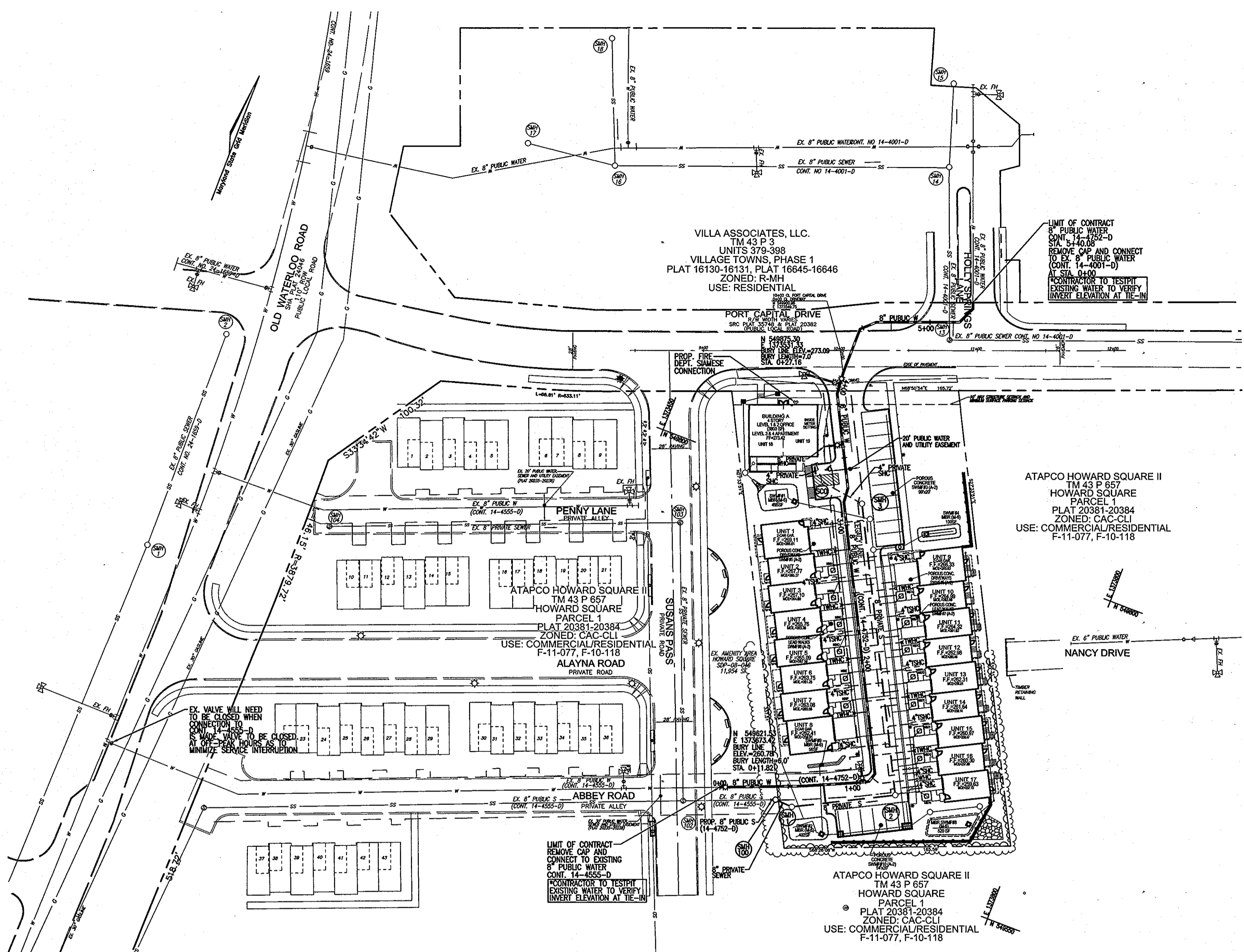
PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS
 WERE PREPARED OR APPROVED BY ME AND
 THAT I AM A DULY LICENSED PROFESSIONAL
 ENGINEER UNDER THE LAWS OF THE STATE
 OF MARYLAND, LICENSE NO. 18193
 EXPIRATION DATE: 09-27-2012
 DRN: DZ DES: DZ
 CHK: RHV
 DATE: SEPTEMBER 2012

BY	NO.	REVISION	DATE

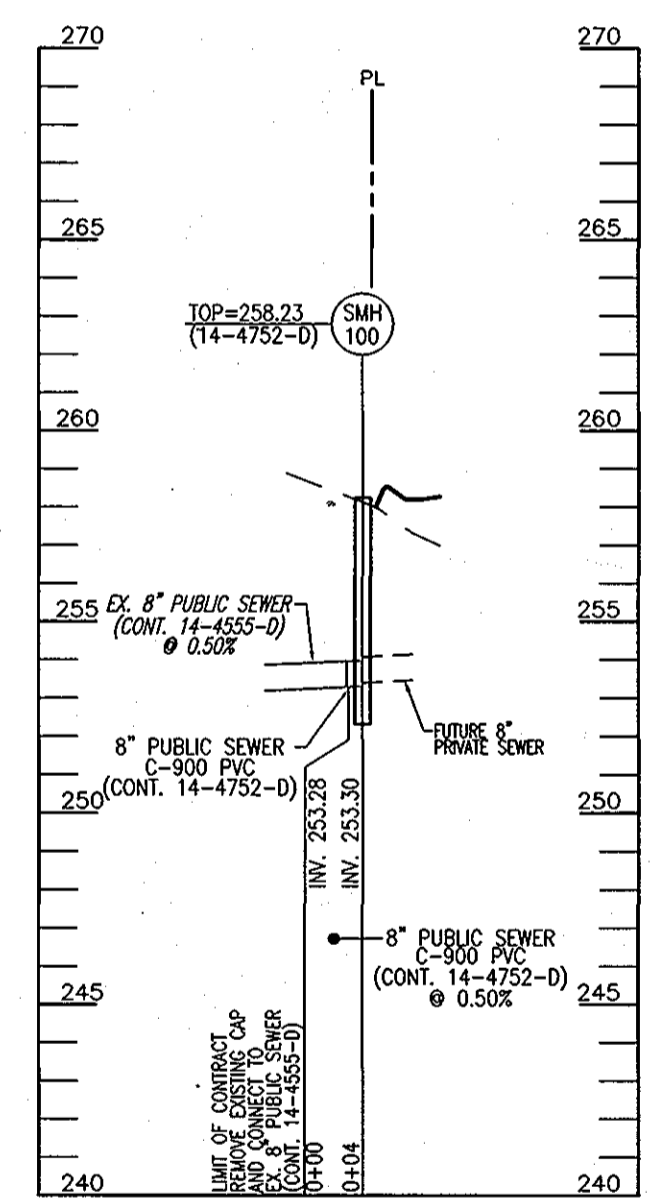
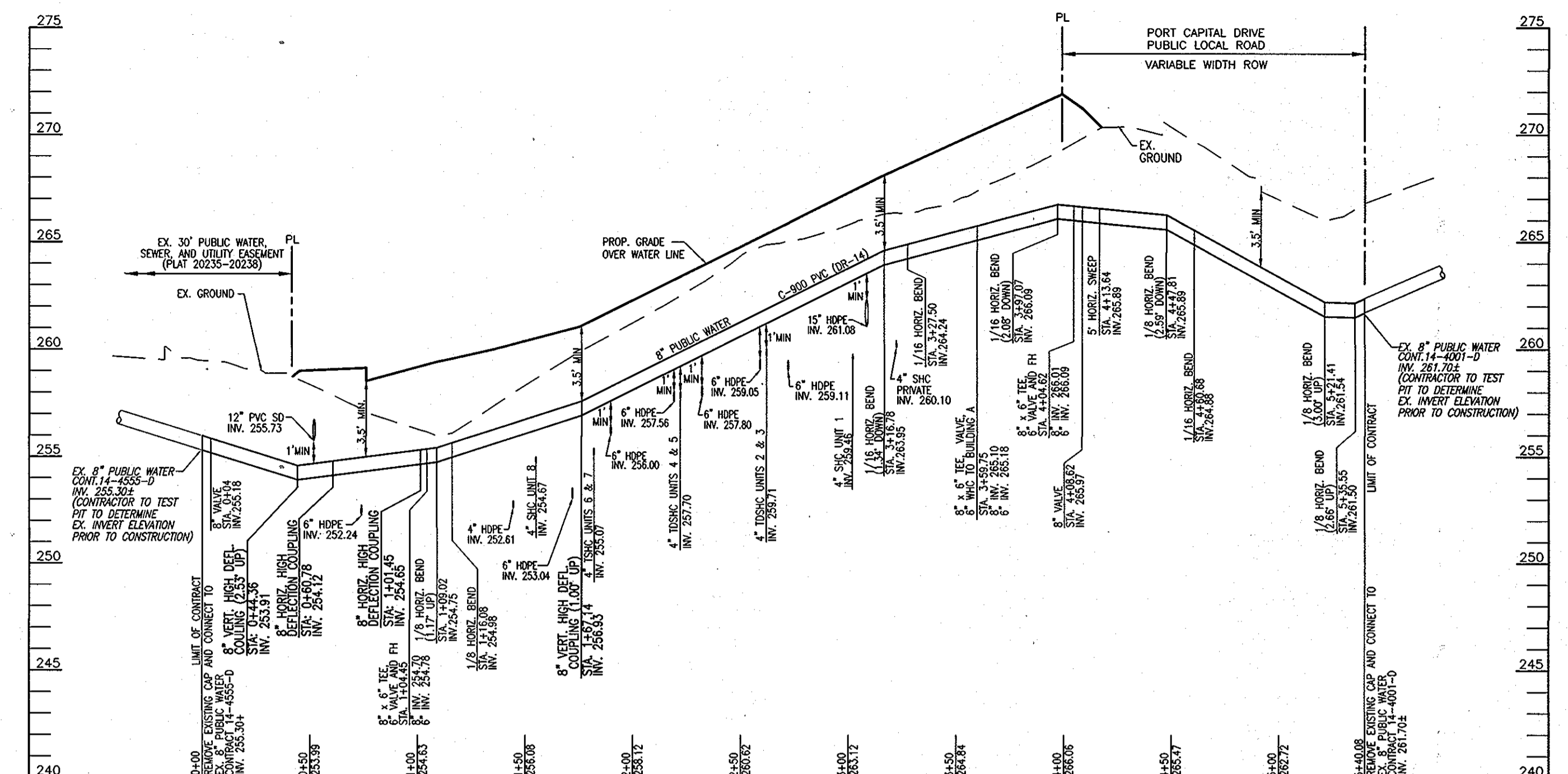
FINAL WATER AND SEWER PLAN
COVER SHEET
CONTRACT 24-4752-D

BUCH PROPERTY
 TOWNHOUSES AND OFFICE BUILDING
 L. 11977, F.517
 ZONED CAC-CU
 PARCEL 426
 1ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 1 OF 2



PLAN VIEW
SCALE: 1"=50'



WATER MAIN LOCATION CHART

WL STA.	APPURTENANCE
WL STA. 0+04	8" VALVE
WL STA. 0+44.36	8" VERT. HIGH DEFLECTION COUPLING (2.54" UP)
WL STA. 0+60.78	8" HORIZ. HIGH DEFLECTION COUPLING (2.70")
WL STA. 1+01.45	8" HORIZ. HIGH DEFLECTION COUPLING (3.00")
WL STA. 1+04.45	8"x6" TEE, 8" VALVE AND 8" FH
WL STA. 1+10.02	8" 1/8 HORIZ. BEND (1.17" UP)
WL STA. 1+16.08	8" 1/8 HORIZ. BEND
WL STA. 1+67.14	8" VERT. HIGH DEFLECTION COUPLING (1.00" UP)
WL STA. 3+16.78	8" 1/16 HORIZ. BEND (1.34" DOWN)
WL STA. 3+27.50	8" 1/16 HORIZ. BEND
WL STA. 3+59.75	8" x 6" TEE, VALVE, 10L 6" WHC
WL STA. 3+97.07	8" 1/16 HORIZ. BEND (2.08" DOWN)
WL STA. 4+04.52	8"x6" TEE, 8" VALVE AND 8" FH
WL STA. 4+08.62	8" VALVE
WL STA. 4+13.64	8" - 5" HORIZ. SWEEP
WL STA. 4+47.81	8" 1/8 HORIZ. BEND (2.59" DOWN)
WL STA. 4+60.68	8" 1/16 HORIZ. BEND
WL STA. 5+21.41	8" 1/8 HORIZ. BEND (3.00" UP)
WL STA. 5+35.55	8" 1/8 HORIZ. BEND (2.66" UP)

SEWER MANHOLE SCHEDULE

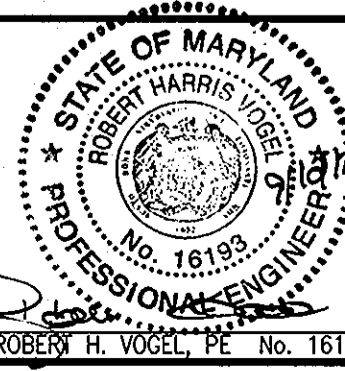
NO.	TYPE	LOCATION		TOP ELEV.	INV. IN.	INV. OUT.
		EASTING	NORTHING			
SMH 100	STD. PRECAST MH NO. CO. STD. DET. G5.12	E 1373624.18	N 549576.13	258.20	253.40	253.30

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

10/6/12

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DRN: DZ DES: DZ
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DATE: SEPTEMBER 2012

FINAL WATER AND SEWER PLAN
PLAN VIEW AND WATER PROFILES
CONTRACT 24-4752-D

OWNER/DEVELOPER
RESIDUARY TRUST OF
JAMES R. BUCH JR.
13130 CLARKSVILLE PIKE
HIGHLAND, MD 20777
240-375-6294

BUCH PROPERTY
TOWNHOUSES AND OFFICE BUILDING
L 11977, F.517

ZONED CAC-CL1
PARCEL 426
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 2 OF 2