

GENERAL NOTES

PART I

- 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 JANUARY 2002 BY FREDERICK WARD AND ASSOCIATES.
- 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 NO. 38AA, NO. 38A3, NO. 38A4, NO. 38A5, NO. 38A6, NO. 38A7, NO. 38A8, NO. 38A9, NO. 38B1, NO. 38B2, NO. 38B3, NO. 38B4, NO. 38B5, NO. 38B6, NO. 38B7, NO. 38B8, NO. 38B9, NO. 38C1, NO. 38C2, NO. 38C3, NO. 38C4, NO. 38C5, NO. 38C6, NO. 38C7, NO. 38C8, NO. 38C9, NO. 38D1, NO. 38D2, NO. 38D3, NO. 38D4, NO. 38D5, NO. 38D6, NO. 38D7, NO. 38D8, NO. 38D9, NO. 38E1, NO. 38E2, NO. 38E3, NO. 38E4, NO. 38E5, NO. 38E6, NO. 38E7, NO. 38E8, NO. 38E9, NO. 38F1, NO. 38F2, NO. 38F3, NO. 38F4, NO. 38F5, NO. 38F6, NO. 38F7, NO. 38F8, NO. 38F9, NO. 38G1, NO. 38G2, NO. 38G3, NO. 38G4, NO. 38G5, NO. 38G6, NO. 38G7, NO. 38G8, NO. 38G9, NO. 38H1, NO. 38H2, NO. 38H3, NO. 38H4, NO. 38H5, NO. 38H6, NO. 38H7, NO. 38H8, NO. 38H9, NO. 38I1, NO. 38I2, NO. 38I3, NO. 38I4, NO. 38I5, NO. 38I6, NO. 38I7, NO. 38I8, NO. 38I9, NO. 38J1, NO. 38J2, NO. 38J3, NO. 38J4, NO. 38J5, NO. 38J6, NO. 38J7, NO. 38J8, NO. 38J9, NO. 38K1, NO. 38K2, NO. 38K3, NO. 38K4, NO. 38K5, NO. 38K6, NO. 38K7, NO. 38K8, NO. 38K9, NO. 38L1, NO. 38L2, NO. 38L3, NO. 38L4, NO. 38L5, NO. 38L6, NO. 38L7, NO. 38L8, NO. 38L9, NO. 38M1, NO. 38M2, NO. 38M3, NO. 38M4, NO. 38M5, NO. 38M6, NO. 38M7, NO. 38M8, NO. 38M9, NO. 38N1, NO. 38N2, NO. 38N3, NO. 38N4, NO. 38N5, NO. 38N6, NO. 38N7, NO. 38N8, NO. 38N9, NO. 38O1, NO. 38O2, NO. 38O3, NO. 38O4, NO. 38O5, NO. 38O6, NO. 38O7, NO. 38O8, NO. 38O9, NO. 38P1, NO. 38P2, NO. 38P3, NO. 38P4, NO. 38P5, NO. 38P6, NO. 38P7, NO. 38P8, NO. 38P9, NO. 38Q1, NO. 38Q2, NO. 38Q3, NO. 38Q4, NO. 38Q5, NO. 38Q6, NO. 38Q7, NO. 38Q8, NO. 38Q9, NO. 38R1, NO. 38R2, NO. 38R3, NO. 38R4, NO. 38R5, NO. 38R6, NO. 38R7, NO. 38R8, NO. 38R9, NO. 38S1, NO. 38S2, NO. 38S3, NO. 38S4, NO. 38S5, NO. 38S6, NO. 38S7, NO. 38S8, NO. 38S9, NO. 38T1, NO. 38T2, NO. 38T3, NO. 38T4, NO. 38T5, NO. 38T6, NO. 38T7, NO. 38T8, NO. 38T9, NO. 38U1, NO. 38U2, NO. 38U3, NO. 38U4, NO. 38U5, NO. 38U6, NO. 38U7, NO. 38U8, NO. 38U9, NO. 38V1, NO. 38V2, NO. 38V3, NO. 38V4, NO. 38V5, NO. 38V6, NO. 38V7, NO. 38V8, NO. 38V9, NO. 38W1, NO. 38W2, NO. 38W3, NO. 38W4, NO. 38W5, NO. 38W6, NO. 38W7, NO. 38W8, NO. 38W9, NO. 38X1, NO. 38X2, NO. 38X3, NO. 38X4, NO. 38X5, NO. 38X6, NO. 38X7, NO. 38X8, NO. 38X9, NO. 38Y1, NO. 38Y2, NO. 38Y3, NO. 38Y4, NO. 38Y5, NO. 38Y6, NO. 38Y7, NO. 38Y8, NO. 38Y9, NO. 38Z1, NO. 38Z2, NO. 38Z3, NO. 38Z4, NO. 38Z5, NO. 38Z6, NO. 38Z7, NO. 38Z8, NO. 38Z9.
- 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 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 PITS. 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
BGE (CONTRACTOR SERVICE)	410-850-4620
BGE (EMERGENCY)	410-685-1400
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 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 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 WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(G) OF THE HOWARD COUNTY CODE.
- ON JANUARY 17, 2008, THE HOWARD COUNTY BUREAU OF ENGINEERING APPROVED A REQUEST FOR WAIVER OF BASEMENT GRAVITY SEWER SERVICE FOR LOTS 4, 5, 8, 10, AND 21. FURTHERMORE, THIS APPROVAL INCLUDES WAIVER OF GRAVITY SEWER FOR LOTS 14, 15, 16, 17, AND 18. LOTS 14, 15, 16, 17, AND 18 AND THESE LOTS WILL BE SERVICED BY PRIVATE ON-SITE PUMPS AND PRIVATE LOW PRESSURE SEWERS.

PART II - WATER

- ALL WATER MAINS TO BE C-900 PVC (DR-18), UNLESS OTHERWISE NOTED. ALL WATER IN FILL SHALL HAVE RESTRAINED JOINTS.
- 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 RESTRAINED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH THE 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.
- ALL WATER HOUSE CONNECTIONS SHALL BE FOR INSIDE METER SETTING UNLESS OTHERWISE NOTED ON PLANS OR IN SPECIFICATIONS.
- FOR SPRINKLER SYSTEM FOR ALL TOWN HOMES OR MULTI-FAMILY DWELLING UNITS SHOULD HAVE A MINIMUM OF 1" CONNECTION WITH A 3/4" METER.

PART III - SEWER

- ALL SEWER MAINS SHALL BE C-900 PVC (DR-18). ALL SEWER IN FILL SHALL HAVE RESTRAINED JOINTS.
- PROVIDE SPREAD FOOTERS FOR MANHOLES 6, 7, 8, AND 9.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- ALL FORCE MAINS SHALL BE PVC (SDR-21).
- MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
- MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERRIGHT FRAME AND COVER, STANDARD DETAIL G5.52. WHERE WATERRIGHT MANHOLE FRAME 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.A.S." INDICATES THAT CELLAR CANNOT BE SERVED.

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATIONS AND WITH FINAL ROAD CONSTRUCTION PLAN F-06-097.

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

 JOHN R. HUNTER, DATE 6/12/08
 HOWARD COUNTY SOIL CONSERVATION DISTRICT

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

 JOHN R. HUNTER, DATE 6/12/08
 U.S. SOIL CONSERVATION DISTRICT

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. 16193 EXPIRATION DATE: SEPTEMBER 27, 2008.

APPROVED: HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS

 STEVE C. COON, DATE 6/12/08
 CHIEF, BUREAU OF UTILITIES

APPROVED: HOWARD COUNTY, MARYLAND DEPARTMENT OF PLANNING AND ZONING

 CHAD EDWARDS, DATE 6/16/08
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

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

DES: RHV
 DRN: JMR
 CHK: RHV
 DATE: MAY, 2008
 BY NO. REVISION DATE 600' SCALE MAP NO. 38 BLOCK NO. 9

SHEET INDEX

SHEET NO.	TITLE
1	COVER SHEET
2	WATER AND SEWER LAYOUT
3	SEWER PROFILES
4	SEWER PROFILES
5	WATER PROFILES

FINAL WATER AND SEWER PLAN COVER SHEET

SHADY LANE CROSSING LOTS 1-23 CONTRACT NO. 14-4348-D

ZONING: R12
 TAX MAP 38 BLOCK 9
 1ST ELECTION DISTRICT
 PARCEL 235
 HOWARD COUNTY, MARYLAND
 SCALE AS SHOWN
 SHEET 1 OF 5

FINAL WATER AND SEWER PLAN

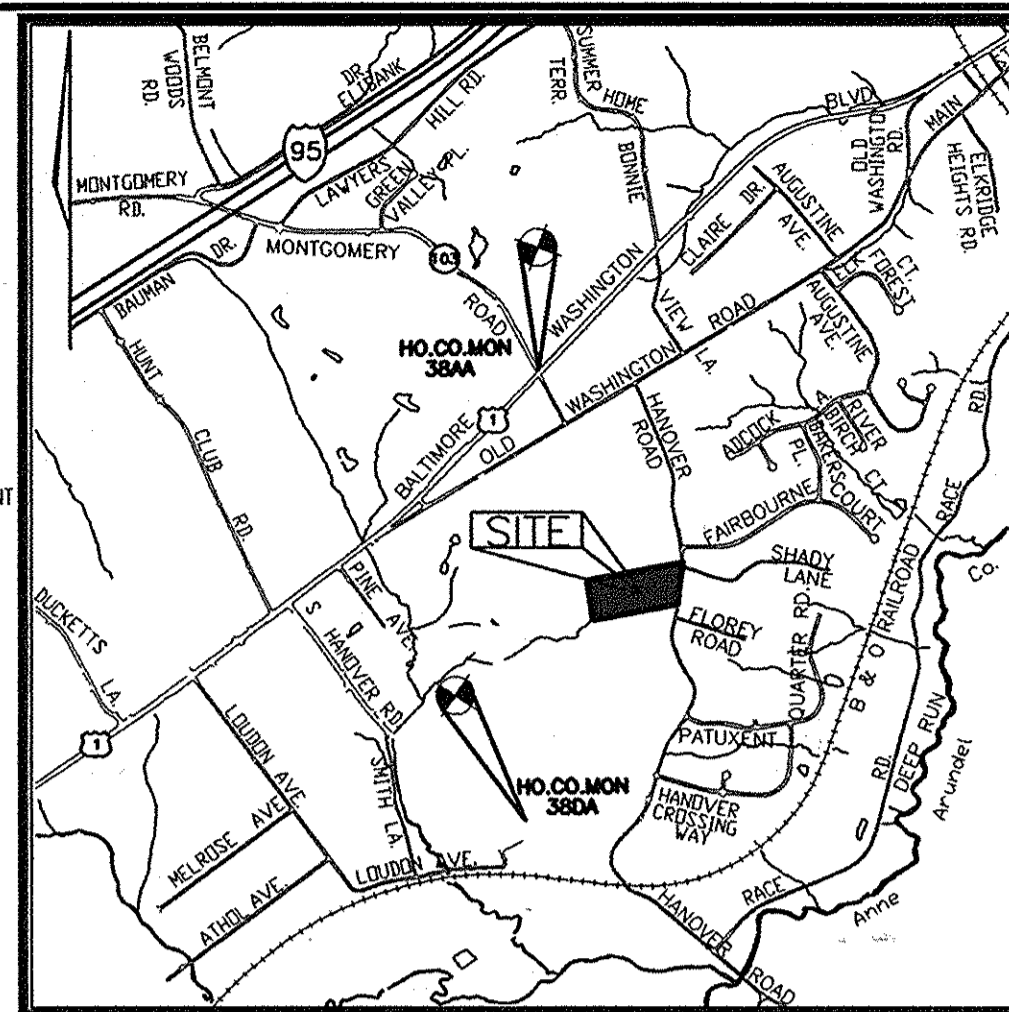
SHADY LANE CROSSING

HOWARD COUNTY, MARYLAND

CONTRACT NO. 14-4348-D

LEGEND

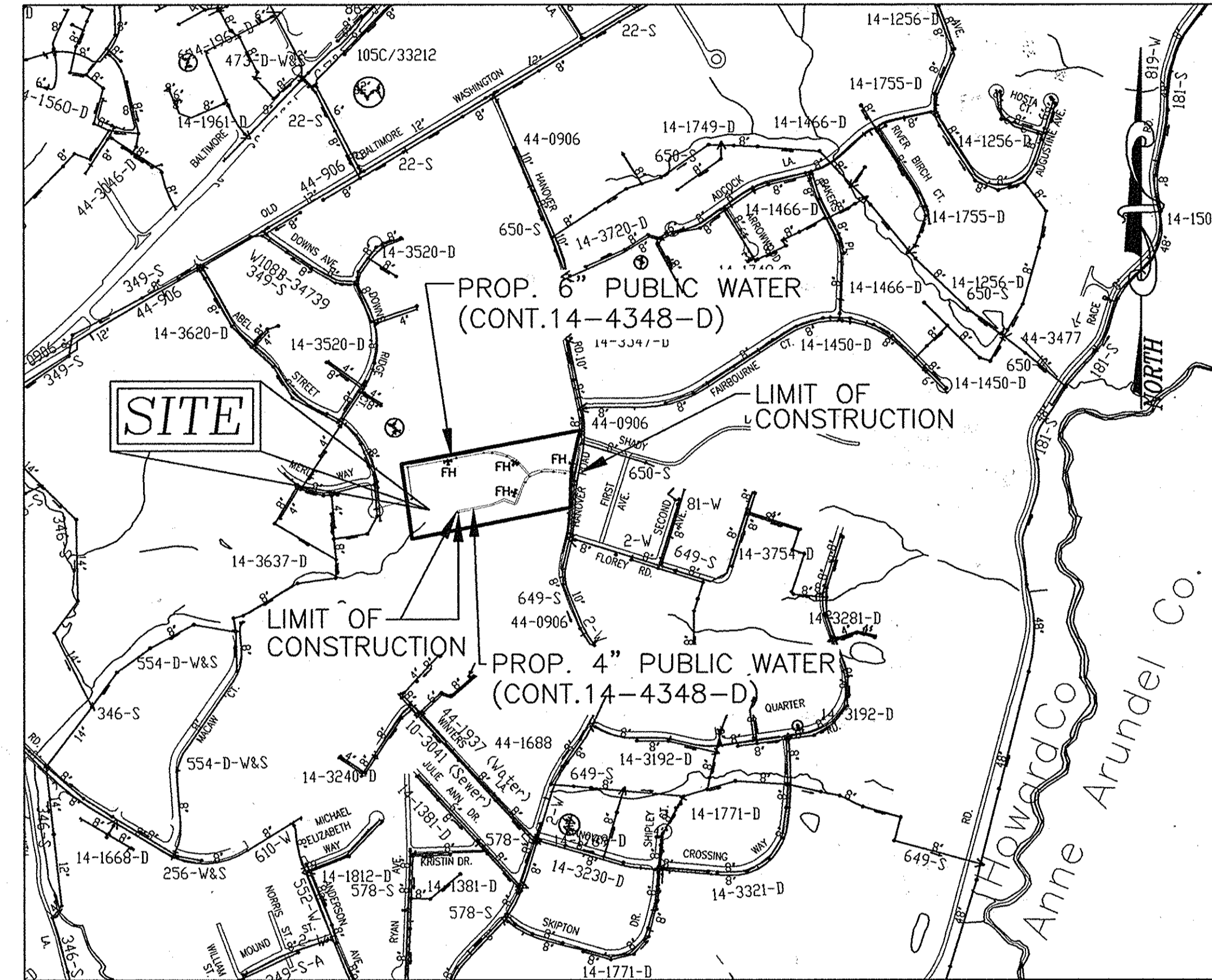
- BOUNDARY LINE
- ADJACENT BOUNDARY LINE
- LOT LINES
- FOREST CONSERVATION EASEMENT
- RETAINING WALL CONSTRUCTION, MAINTENANCE EASEMENT, AND NO TREE ZONE
- STREAM
- STREAM BUFFER
- WETLAND BUFFER
- USE-IN-COMMON ACCESS EASEMENT
- 10' PRIVATE DRAINAGE AND UTILITY EASEMENT
- NO WOODY VEGETATION BUFFER
- TREE MAINTENANCE EASEMENT
- 100 YEAR FLOODPLAIN EASEMENT
- PUBLIC DRAINAGE & UTILITY EASEMENT
- NON TIDAL WETLAND
- EX. 20' PUBLIC SEWER AND UTILITY EASEMENT
- PRIVATE STORMDRAIN AND UTILITY EASEMENT



LOCATION MAP

BENCHMARKS

NO.	NORTHING	EASTING	ELEVATION
38AA	561158.819	1,389726.332	220.044
38DA	556796.303	1,390221.477	126.133



VICINITY MAP
SCALE: 1"=600'

WATER CODE: A 01
 SEWER CODE: 21.30000
 WATER TEST GRADIENT: 550

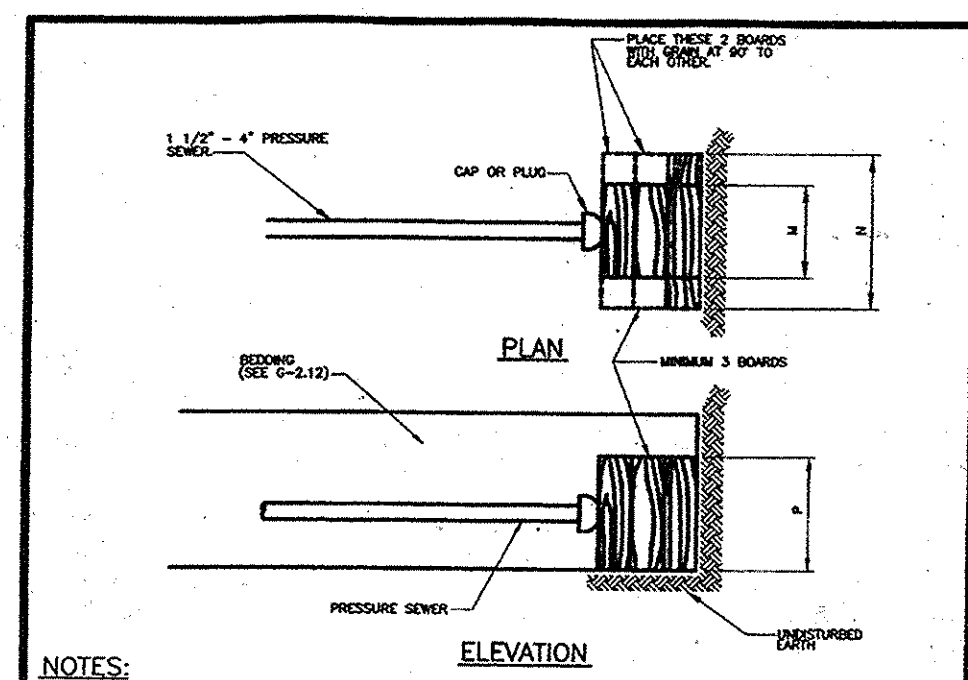
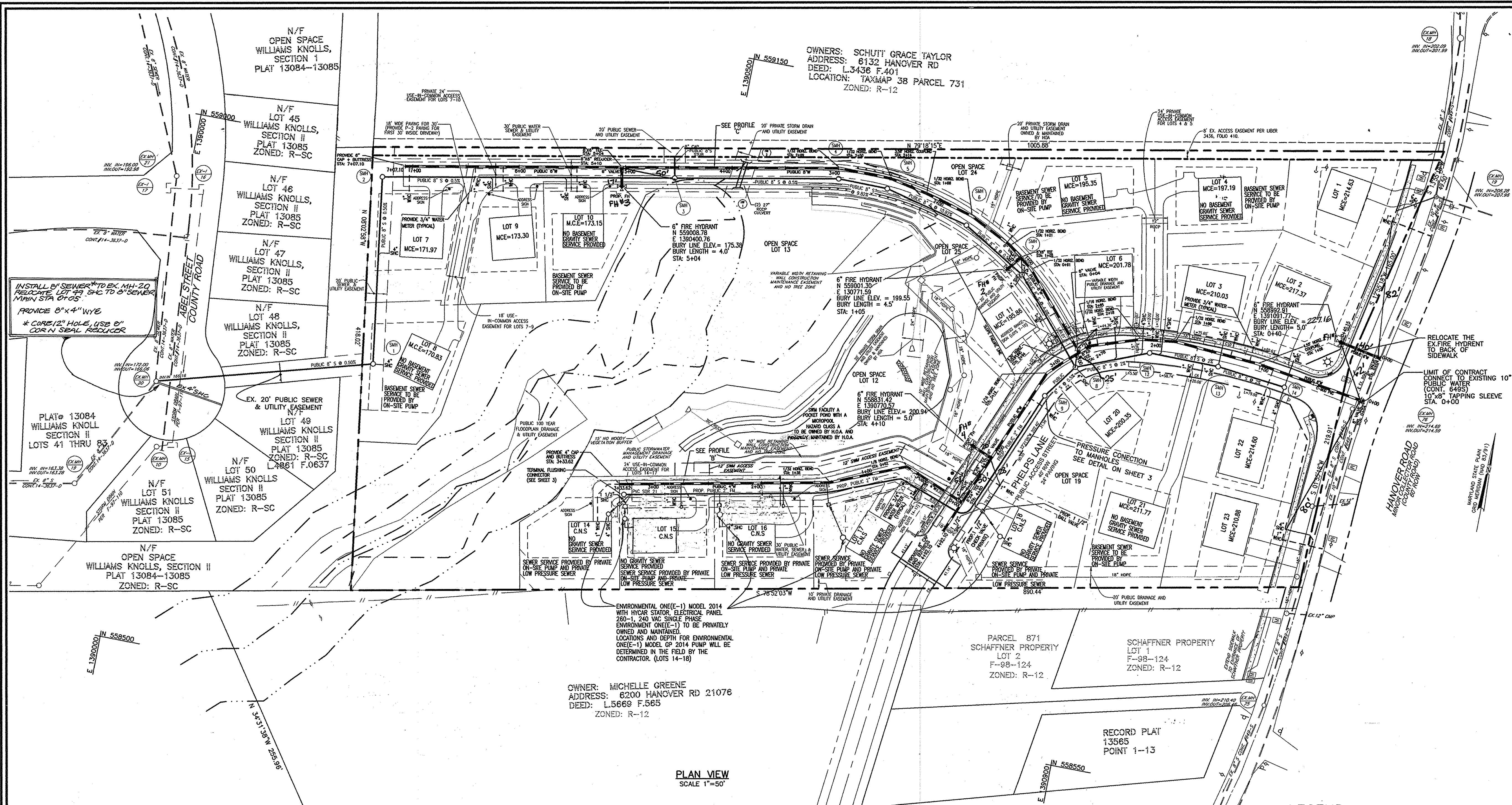
TYPE OF BUILDING:	RESIDENTIAL
NO. OF LOTS/PARCELS:	25
NO. OF WATER HOUSE CONNECTIONS:	20
NO. OF SEWER HOUSE CONNECTIONS:	20
DRAINAGE AREA:	PATAPSCO
TREATMENT PLANT:	PATAPSCO WASTE WATER TREATMENT PLANT

QUANTITIES

NAME OF UTILITY CONTRACTOR :		SURVEY AND DRAFTING DIVISION AS-BUILT DATE :		
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
4" W (C-900 PVC)	334 LF		C-900PVC	JM EAGLE
6" W (C-900 PVC)	293 LF		C-900 PVC	JM EAGLE
8" W (C-900 PVC)	979 LF		C-900 PVC	JM EAGLE
FIRE HYDRANT	4 EACH	4	DUCTILE	MUELLER Co.
8" VALVE	2 EACH	2	COATED DIP	MUELLER Co.
6" VALVE	4 EACH	4	COATED DIP	MUELLER Co.
4" VALVE	1 EACH	1	COATED DIP	MUELLER Co.
10"x8" TEE	1 EACH	1	COATED DIP	STAR PIPE PRODUCTS
10"x6" TEE	1 EACH	1	COATED DIP	STAR PIPE PRODUCTS
8"x8" TEE	1 EACH	1	COATED DIP	STAR PIPE PRODUCTS
8"x6" TEE	2 EACH	2	COATED DIP	STAR PIPE PRODUCTS
8"x4" TEE	1 EACH	1	COATED DIP	STAR PIPE PRODUCTS
6"x6" TEE	1 EACH	1	COATED DIP	STAR PIPE PRODUCTS
8" CAP & BUTTRESS	1 EACH	1	COATED DIP	STAR PIPE PRODUCTS
6" CAP & BUTTRESS	1 EACH	1	COATED DIP	STAR PIPE PRODUCTS
4" CAP & BUTTRESS	1 EACH	1	COATED DIP	STAR PIPE PRODUCTS
8"x6" REDUCER	1 EACH	1	COATED DIP	STAR PIPE PRODUCTS
8" COUPLING	2 EACH	2	COATED DIP	STAR PIPE PRODUCTS
6" COUPLING	1 EACH	1	COATED DIP	STAR PIPE PRODUCTS
8" - 11.25' HORIZ. BEND	3 EACH	3	COATED DIP	STAR PIPE PRODUCTS
8" - 22.50' HORIZ. BEND	2 EACH	2	COATED DIP	STAR PIPE PRODUCTS
6" - 11.25' HORIZ. BEND	4 EACH	4	COATED DIP	STAR PIPE PRODUCTS
4" - 11.25' HORIZ. BEND	1 EACH	1	COATED DIP	STAR PIPE PRODUCTS
4" - 45.00' HORIZ. BEND	1 EACH	1	COATED DIP	STAR PIPE PRODUCTS
1" WHC	462 LF		COPPER	CAMBRIDGE LEE
8" S (C-900 PVC)(DR-18)	1,267 LF		C-900	JM EAGLE
2" S (PVC SDR 21)	464 LF		SDR-21	NORTH AMERICAN PIPE CORP.
MANHOLES	12 EACH	12	PRECAST	CONTRACTORS PRECAST CORP.
4" SHC	337 LF		PVC	NATIONAL PIPE & PLASTICS
1 1/2" SHC	136 LF		PVC	NORTH AMERICAN PIPE CORP.

AS-BUILTS
 DATE: 10-23-14

DEVELOPER
 6168 INVESTMENT & RENTAL PROPERTIES, LLC
 5705 LANDING ROAD
 ELKBRIDGE, MARYLAND 21075
 (410) 796-1850

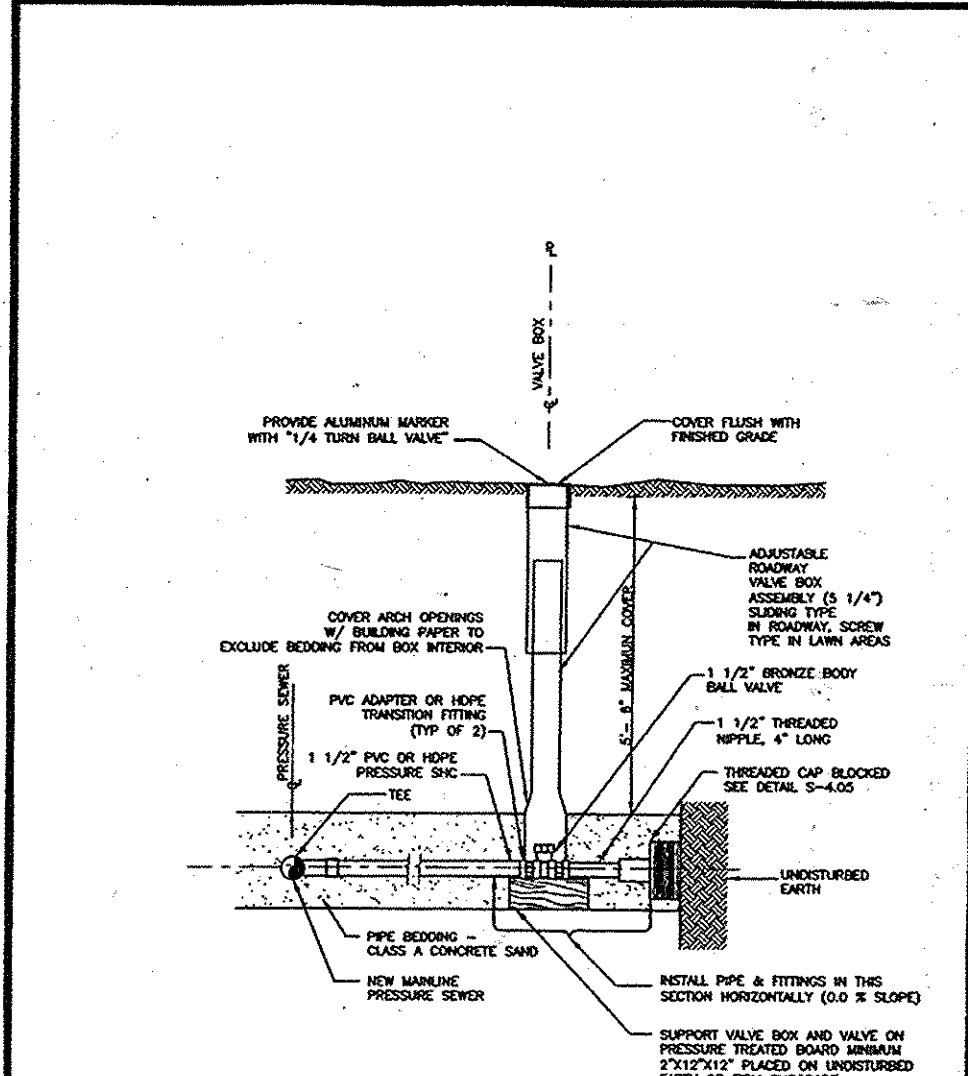


NOTES:

- CARRY ALL BEARING SURFACES TO UNDERLINED
- BORINGS SHOWN FOR 150 PS
- MINIMUM THICKNESS OF EACH BOARD IS 2"
- ALL BOARDS TO BE GROUND CONTACT TREATED

SIZE	W	H	L	P
1 1/2"	6"	6"	6"	6"
1 1/2"	6"	6"	6"	6"
1 1/2"	6"	6"	6"	6"
1 1/2"	6"	6"	6"	6"
1 1/2"	6"	6"	6"	6"

Howard County, Maryland
Department of Public Works
Pressure Sewer
House Connection
Cap & Plug Blocking
S-4.05



SEWER CONNECTION TABULATION

LOT NO	TYPE	ELEV. @ MAIN	ELEV. @ R/W OR EASEMENT	ELEV. @ UNIT	M.C.E.	
1	4" SHC @ 2.0%	208.28	40' 209.08	31' 209.70	214.63	
2	4" SHC @ 2.0%	211.34	27' 213.41	38' 214.17	217.37	
3	4" DSHC @ 2.0%	206.55	26' 207.07	23' 207.53	210.03	
4	4" SHC @ 2.0%	205.23	24' 205.71	13' 208.77	197.19	
5	4" SHC @ 2.0%	198.09	26' 198.61	150' 201.61	193.35	
6	4" DSHC @ 2.0%	197.59	31' 198.21	29' 198.79	204.78	
7	4" SHC @ 2.0%	167.96	11' 168.18	10' 168.38	171.97	
8	4" SHC @ 2.0%	167.63	10' 167.83	12' 168.07	170.83	
9	4" SHC @ 2.0%	168.94	14' 169.22	25' 169.72	173.30	
10	4" SHC @ 2.0%	169.28	14' 169.56	21' 169.98	173.15	
11	4" DSHC @ 2.0%	189.52	* 191.94	12' 192.18	18' 192.54	195.86
12	OPEN SPACE					
13	OPEN SPACE					
14	1 1/2" SHC	166.29	14' 166.63	N/A	N/A	
15	1 1/2" SHC	166.29	13' 166.61	N/A	N/A	
16	1 1/2" SHC	167.58	13' 167.90	N/A	N/A	
17	1 1/2" SHC	182.93	11' 183.21	N/A	N/A	
18	1 1/2" SHC	192.80	12' 193.05	N/A	N/A	
19	OPEN SPACE					
20	4" SHC @ 2.0%	197.11	14' 197.25	30' 197.85	200.35	
21	4" SHC @ 2.0%	206.05	15' 206.35	146' 209.27	211.77	
22	4" SHC @ 2.0%	211.34	13' 211.60	27' 212.14	214.60	
23	4" SHC @ 1.0%	212.84	30' 213.14	32' 213.46	215.92	
24	OPEN SPACE					
25	OPEN SPACE					

* CONNECTION AT MANHOLE

- LEGEND
- BOUNDARY LINE
 - ADJACENT BOUNDARY LINE
 - LOT LINES
 - FOREST CONSERVATION EASEMENT
 - RETAINING WALL CONSTRUCTION, MAINTENANCE EASEMENT, AND NO TREE ZONE
 - STREAM
 - STREAM BUFFER
 - WETLAND BUFFER
 - USE-IN-COMMON ACCESS EASEMENT
 - SOIL BORING
 - 10' PRIVATE DRAINAGE AND UTILITY EASEMENT
 - NO WOODY VEGETATION BUFFER
 - TREE MAINTENANCE EASEMENT
 - 100 YEAR FLOODPLAIN EASEMENT
 - PUBLIC DRAINAGE & UTILITY EASEMENT
 - NON TIDAL WETLAND
 - EX. 20' PUBLIC SEWER AND UTILITY EASEMENT
 - PRIVATE STORMDRAIN AND UTILITY EASEMENT
 - 15" HOPE
 - PROPOSED STORMDRAIN
 - PROPOSED WATER LINE
 - PROPOSED SEWER LINE
 - EXISTING WATER LINE
 - EXISTING SEWER LINE
 - PROPOSED SHC
 - PROPOSED SHC
 - PROPOSED SIGN
 - SCd SOIL TYPES
 - Ba SOIL TYPES

CURVE DATA

CURVE	ARC	RADIUS	TANGENT	DELTA	CHORD
C2	25.83'	140.00'	12.95'	10'34'21"	N17'03'22"E 25.79'
C6	158.78'	480.00'	80.12'	18'57'12"	N89'01'50"W 158.06'
C7	82.55'	80.00'	45.37'	59'07'37"	S51'54'17"W 78.94'
C8	0.80'	100.00'	0.40'	0'27'37"	S22'06'39"W 0.80'
C9	123.85'	120.00'	68.07'	59'08'07"	N51'54'32"E 118.42'
C10	171.30'	520.00'	86.43'	18'52'32"	S89'04'10"E 170.53'

PROFESSIONAL CERTIFICATION
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DEPARTMENT OF PUBLIC WORKS

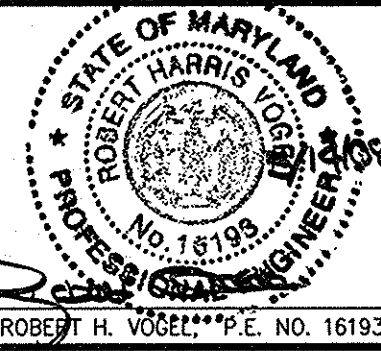
APPROVED: HOWARD COUNTY, MARYLAND
DEPARTMENT OF PLANNING AND ZONING

CHIEF, BUREAU OF UTILITIES

CHIEF, DEVELOPMENT ENGINEERING DIVISION

6-16-8

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



DES:	DRN:	CHK:	DATE:	BY:	NO.	REVISION	DATE:
RHV	JMR	RHV	MAY, 2008				
		RHV			3	REVISE FIRE HYDRANT PROFILE	7/8/14
		RHV			1	RELOCATE EX. 9" SHC FOR WILLIAM KNOLLS LOT 49	6/25/14
		RHV			2	MODIFY WOODY AND SHC LOCATIONS FOR LOTS 13 THRU 17	09/03/13

FINAL WATER AND SEWER PLAN PLAN VIEW

600' SCALE MAP NO. 38

BLOCK NO. 9

SHADY LANE CROSSING LOTS 1-23 CONTRACT NO. 14-4348-D

ZONING: R12
TAX MAP 38 BLOCK 9
1ST ELECTION DISTRICT

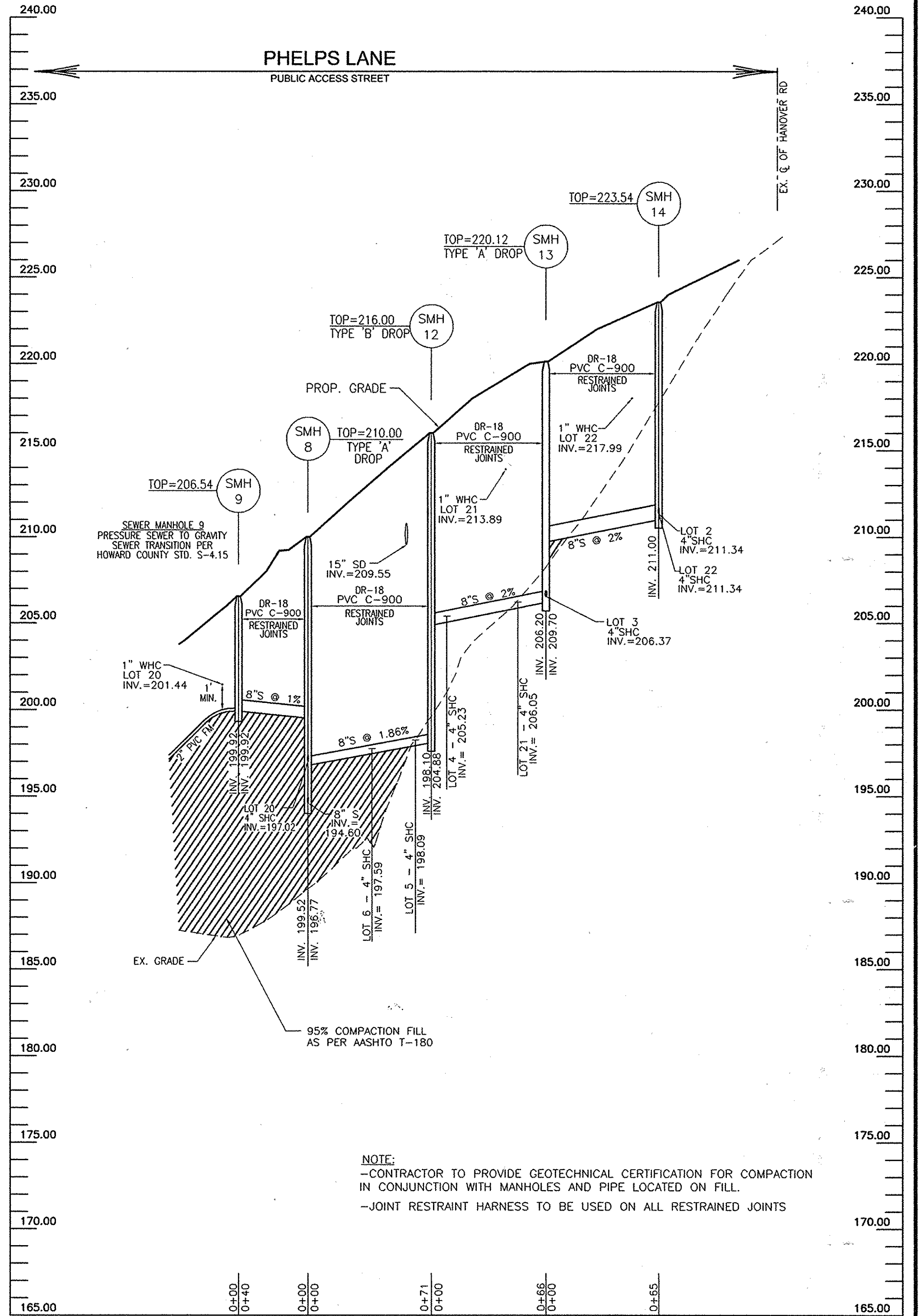
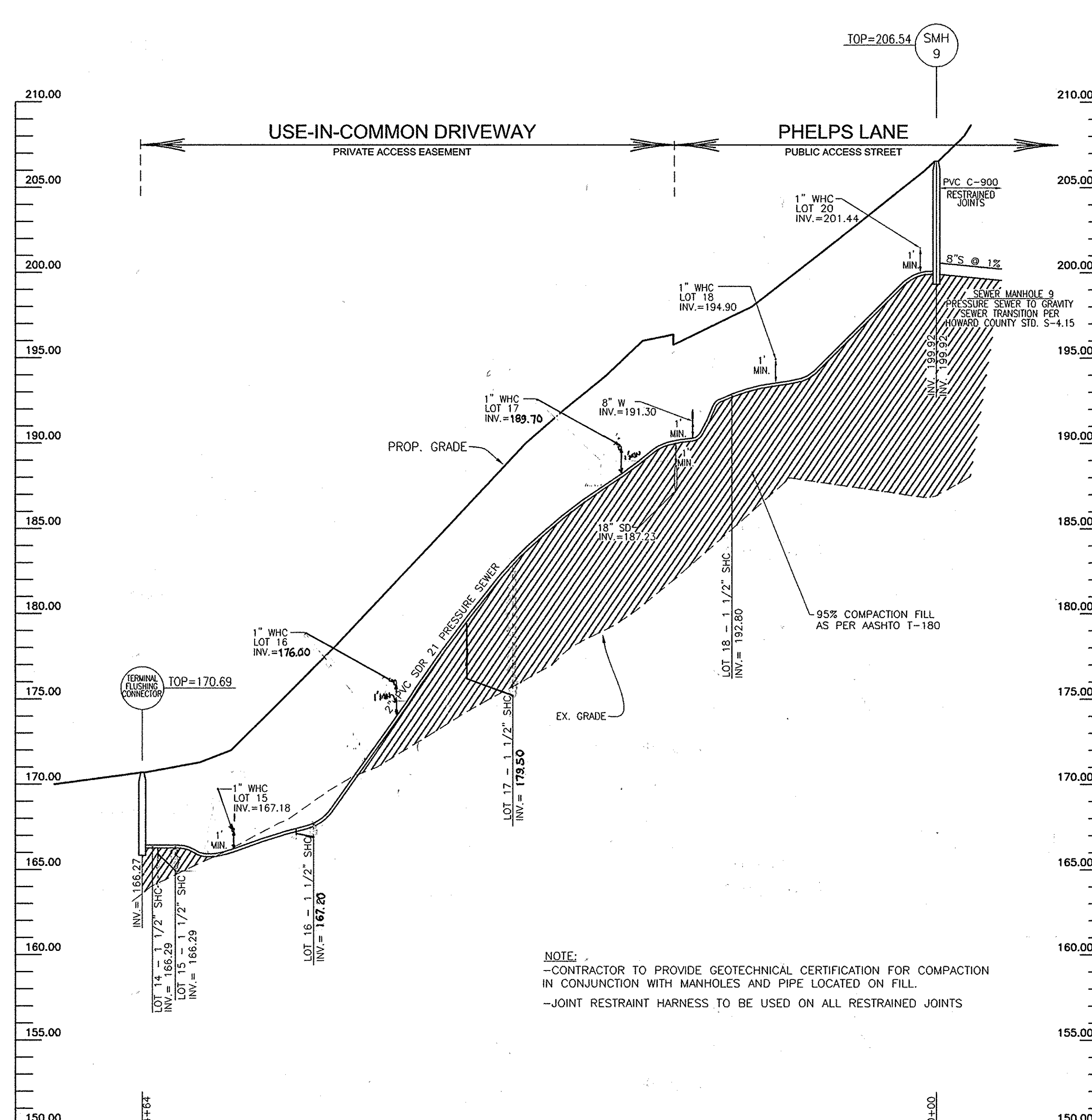
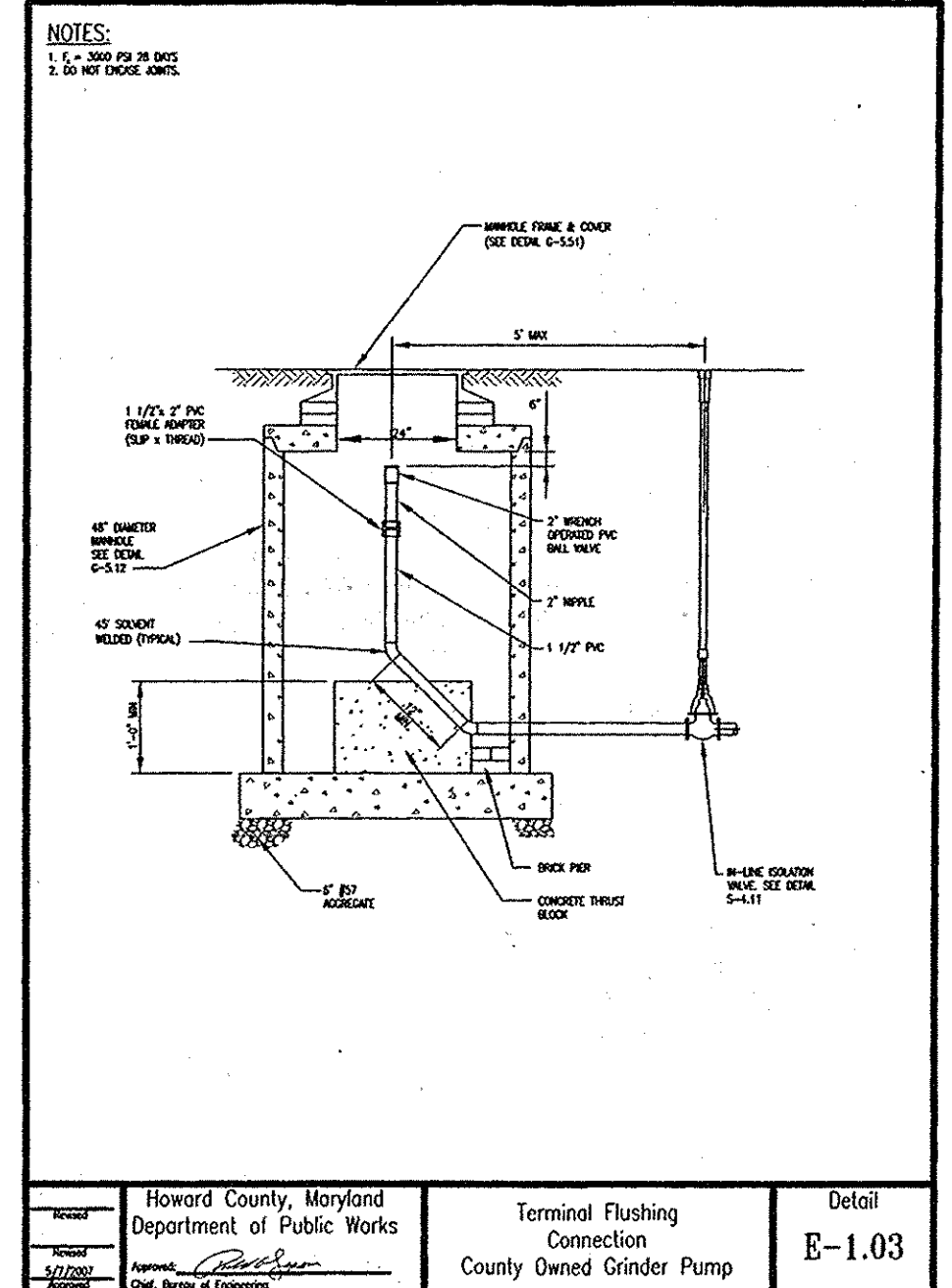
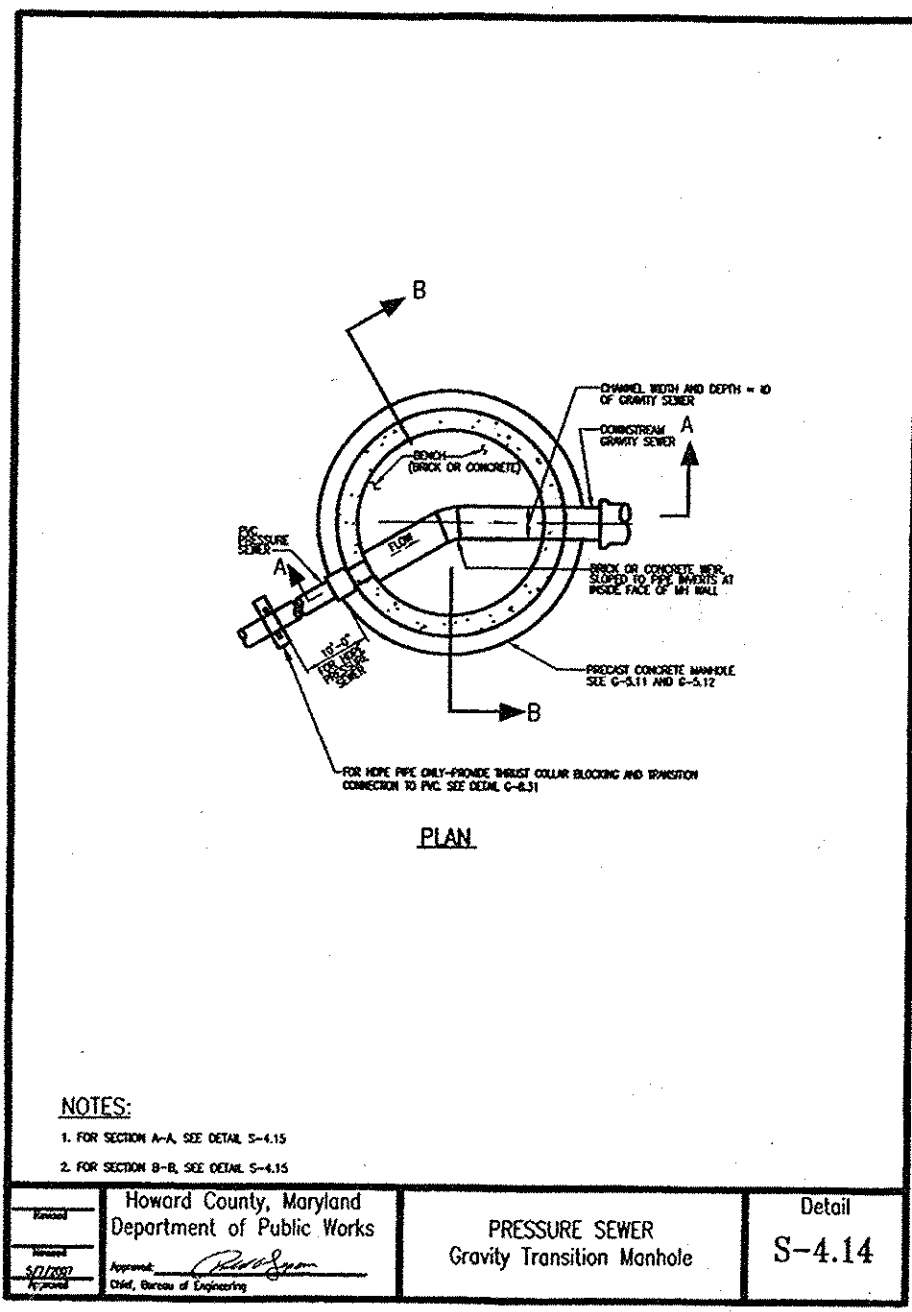
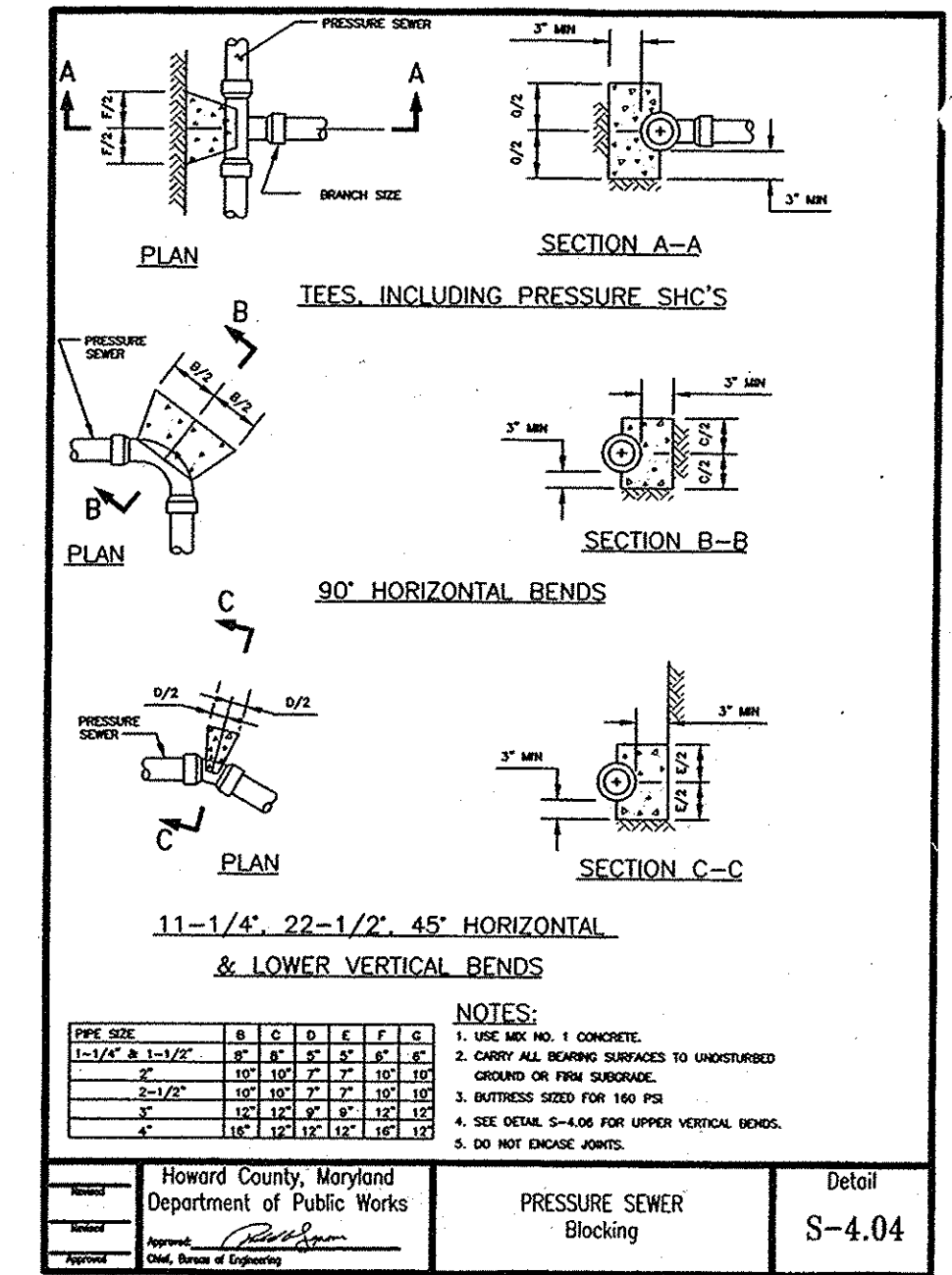
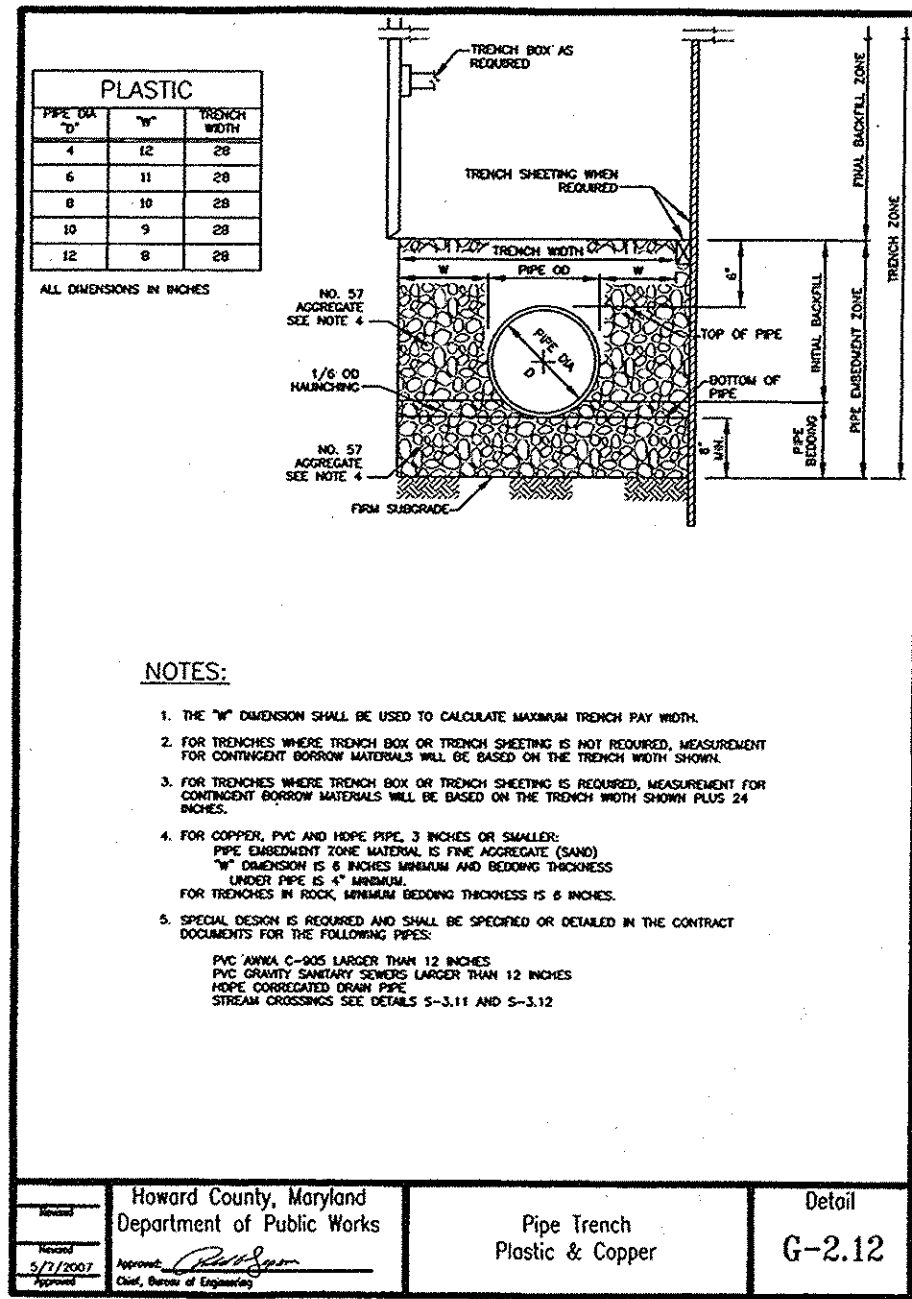
PARCEL 235
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 2 OF 5

AS BUILT
DATE: 10-22-14

DEVELOPER
6168 INVESTMENT & RENTAL PROPERTIES, LLC
5705 LANDING ROAD
ELKRIDGE, MARYLAND 21075
(410) 796-1850



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. 16193 EXPIRATION DATE: SEPTEMBER 27, 2008.

APPROVED: HOWARD COUNTY, MARYLAND
 DEPARTMENT OF PUBLIC WORKS

APPROVED: HOWARD COUNTY, MARYLAND
 DEPARTMENT OF PLANNING AND ZONING

APPROVED: HOWARD COUNTY, MARYLAND
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 DEPARTMENT OF PLANNING AND ZONING

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

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 ROBERT H. VOGEL, P.E. NO. 16193

DES:	RHV				
DRN:	JMR				
CHK:	RHV				
DATE:	MAY, 2008	BY:	NO.	REVISION	DATE

FINAL WATER AND SEWER PLAN PROFILE

SHADY LANE CROSSING LOTS 1-23 CONTRACT NO. 14-4348-D

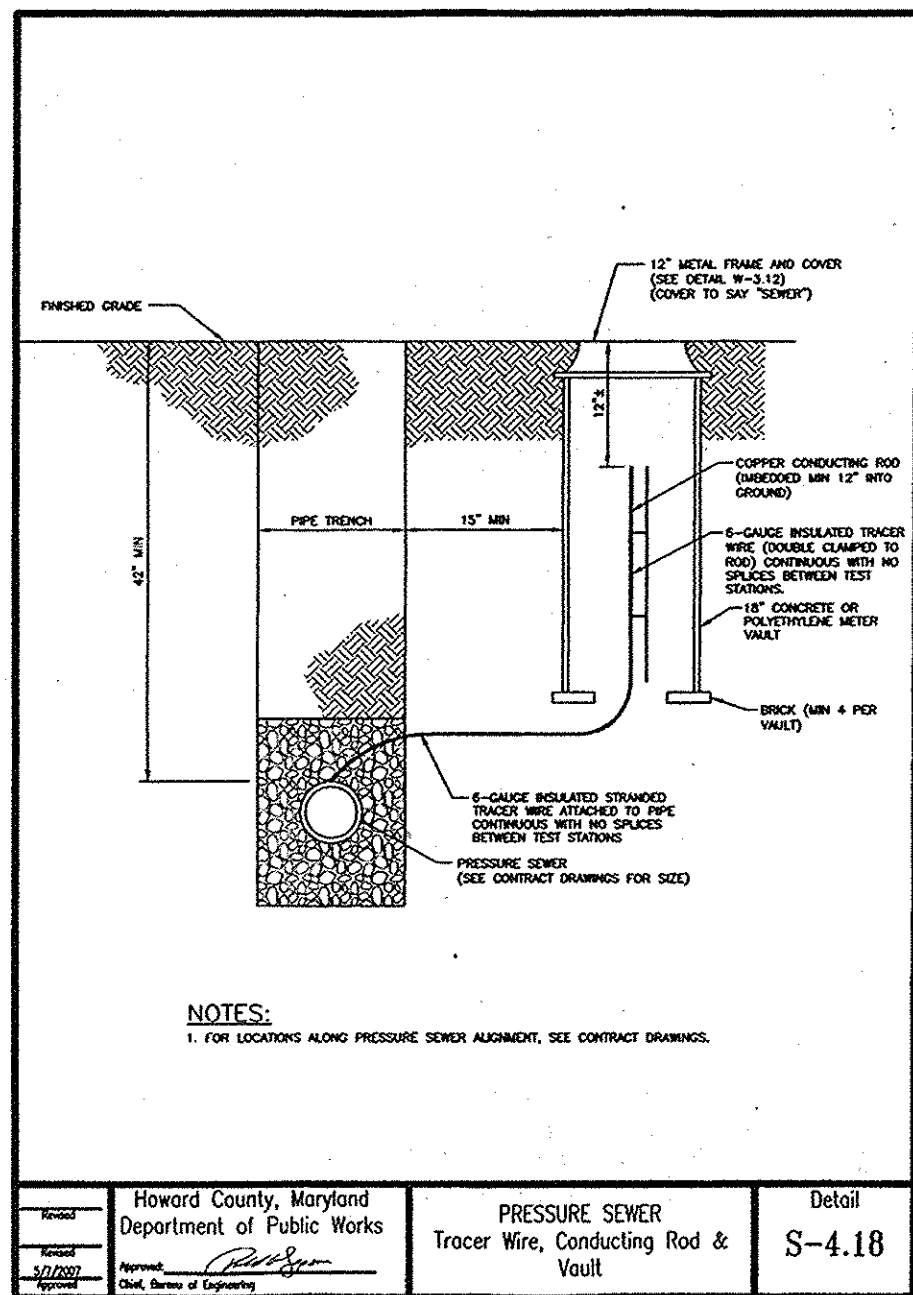
ZONING: R12
 TAX MAP 38 BLOCK 9
 1ST ELECTION DISTRICT

PARCEL 235
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 3 OF 5

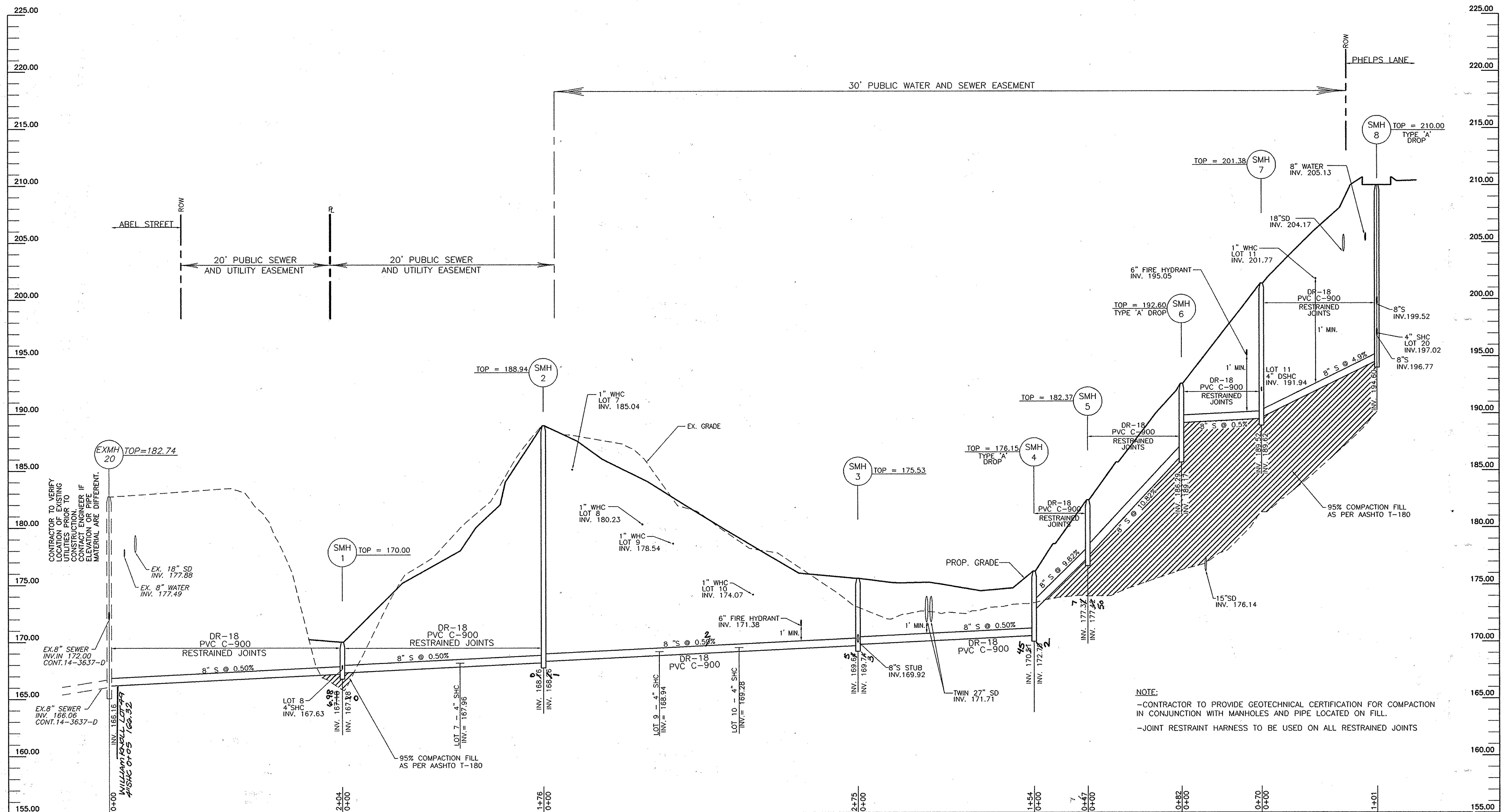
AS BUILT
 8/10/08 DATE 10-22-14

DEVELOPER
 6168 INVESTMENT & RENTAL PROPERTIES, LLC
 5705 LANDING ROAD ELKRIDGE, MARYLAND 21075 (410) 796-1850

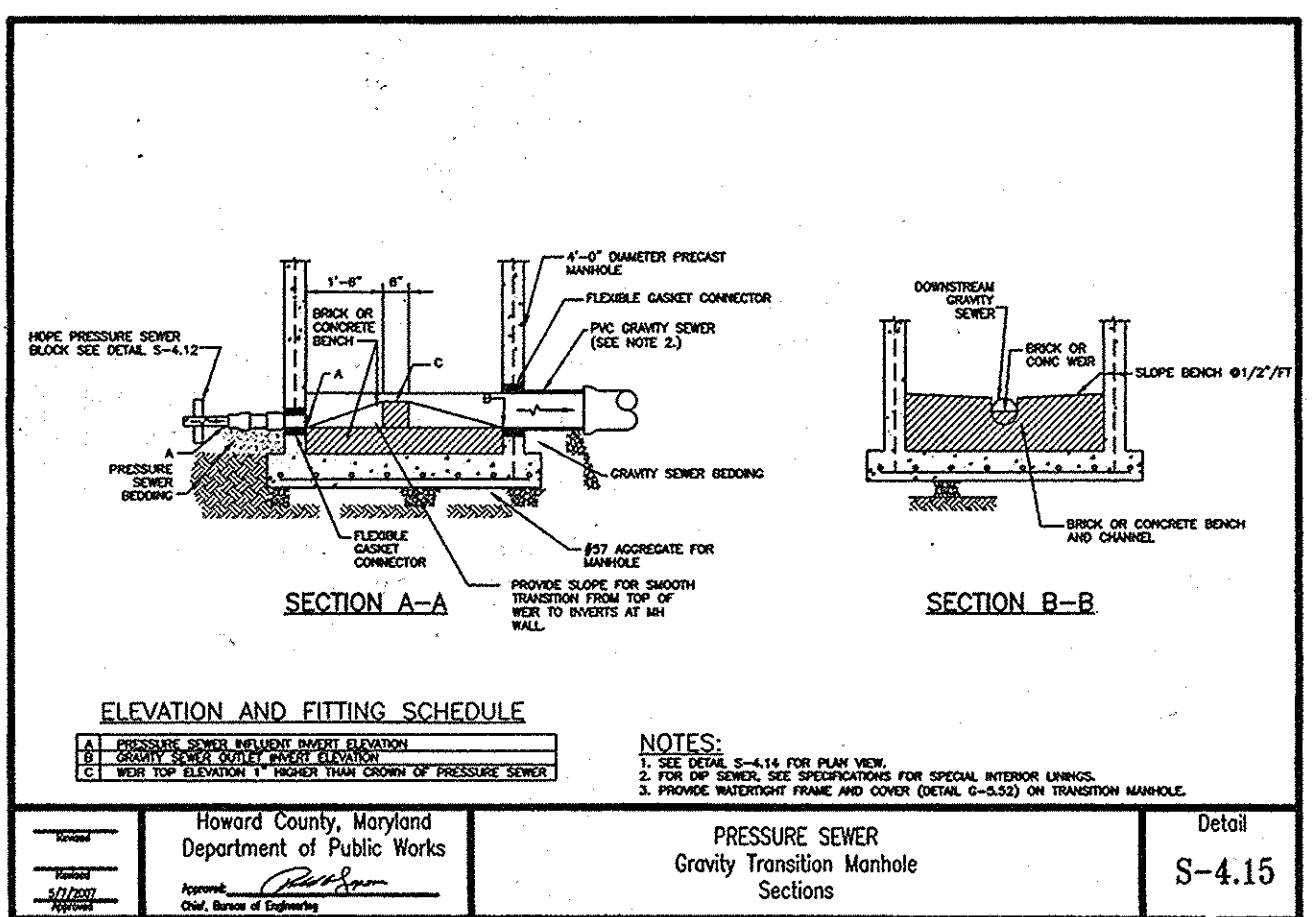


AS-BUILT UTILITY LOCATION CHART - SEWER HOUSE CONNECTIONS

FROM	TO	DISTANCE
LOT #1 SHC	EXMH#13	41.00'
LOT #1 SHC	BGE POLE #81927 G	48.00'
LOT #2 SHC	F.H.#1	46.00'
LOT #2 SHC	SMH#14	27.00'
LOT #3 SHC	SMH#14	74.00'
LOT #3 SHC	SMH#15	28.00'
LOT #4 SHC	SMH#15	41.00'
LOT #4 SHC	SMH#12	54.00'
LOT #6 SHC	F.H.#2 EX FIRST ROAD OFF PHELPS LANE	19.00'
LOT #6 SHC	SMH#7	15.00'
LOT #5 SHC	SMH#12	25.00'
LOT #5 SHC	SMH#8	47.00'
LOT #7 SHC	SMH#2	72.00'
LOT #7 SHC	SMH#6	33.00'
LOT #8 SHC	SMH#1	5.00'
LOT #8 SHC	LOT #7 SHC	105.00'
LOT #9 SHC	LOT #9 WHC	10.00'
LOT #9 SHC	LOT #10 WHC	60.00'
LOT #10 SHC	LOT #9 WHC	71.00'
LOT #10 SHC	F.H.#3	42.00'
LOT #11 SHC	SMH#7	16.00'
LOT #11 SHC	F.H.#2	19.00'
LOT #14 SHC	SMH AT END OF SECOND ROAD	11.00'
LOT #14 SHC	SEWER MAIN VALVE	17.00'
LOT #15 SHC	SMH AT END OF SECOND ROAD	13.00'
LOT #15 SHC	LOT #11 WHC	19.00'
LOT #16 SHC	LOT #16 WHC	44.00'
LOT #16 SHC	LOT #15 WHC	37.00'
LOT #17 SHC	LOT #17 WHC	79.00'
LOT #17 SHC	LOT #16 WHC	68.00'
LOT #18 SHC	F.H.#4	59.00'
LOT #18 SHC	TEST STATION	6.00'
LOT #18 SHC	VALVE IN PHELPS LANE	46.00'
LOT #20 SHC	LOT #20 WHC	48.00'
LOT #20 SHC	SMH#8	16.00'
LOT #20 SHC	WATER VALVE IN FIRST ROAD @ PHELPS LANE	40.00'
LOT #21 SHC	SMH#13	19.00'
LOT #21 SHC	SMH#12	55.00'
LOT #23 SHC	SMH#14	19.00'
LOT #23 SHC	SMH#13	67.00'
LOT #23 SHC	BGE POLE #370959	46.00'
LOT #23 SHC	LOT #23 WHC	16.00'



SEWER PROFILE
SCALE: 1"=50' HORIZ.
1"=5' VERT.



SEWER MANHOLE SCHEDULE

NO.	TYPE	COMMENTS	LOCATION	TOP ELEV.	INV. IN	INV. OUT
SMH 1	STANDARD PRE-CAST MANHOLE	HO. CO. STD. G-5.12	N 558800.24 , E 1390203.10	170.00	167.63	167.18
SMH 2	STANDARD PRE-CAST MANHOLE	HO. CO. STD. G-5.12	N 558974.79 , E 1390178.35	188.94	168.26	168.16
SMH 3	STANDARD PRE-CAST MANHOLE	HO. CO. STD. G-5.12	N 559025.75 , E 1390448.15	175.53	169.92	169.64
SMH 4	STANDARD PRE-CAST MANHOLE	HO. CO. STD. G-5.12 -- TYPE 'A' DROP MANHOLE	N 559054.34 , E 1390599.50	176.15	172.70	170.51
SMH 5	STANDARD PRE-CAST MANHOLE	HO. CO. STD. G-5.12	N 559053.89 , E 1390646.18	182.37	177.42	177.32
SMH 6	STANDARD PRE-CAST MANHOLE	HO. CO. STD. G-5.12 -- TYPE 'A' DROP MANHOLE	N 559034.26 , E 1390725.69	192.60	189.17	186.29
SMH 7	STANDARD PRE-CAST MANHOLE	HO. CO. STD. G-5.12	N 558998.50 , E 1390785.67	201.38	191.94	189.52
SMH 8	STANDARD PRE-CAST MANHOLE	HO. CO. STD. G-5.12 -- TYPE 'A' DROP MANHOLE	N 558922.35 , E 1390851.56	210.00	199.92	194.60
SMH 9	STANDARD PRE-CAST MANHOLE	HO. CO. STD. G-5.12	N 558890.39 , E 1390828.43	206.54	199.92	199.92
TERMINAL FLUSHING	TERMINAL FLUSHING CONNECTION	HO. CO. STD. E-1.03	N 558724.12 , E 1390457.74	179.60	-	166.27
SMH 12	STANDARD PRE-CAST MANHOLE	HO. CO. STD. G-5.12 -- TYPE 'B' DROP MANHOLE	N 558948.79 , E 1390917.51	216.00	204.88	198.10
SMH 13	STANDARD PRE-CAST MANHOLE	HO. CO. STD. G-5.12 -- TYPE 'A' DROP MANHOLE	N 558948.48 , E 1390983.02	220.12	209.70	206.20
SMH 14	STANDARD PRE-CAST MANHOLE	HO. CO. STD. G-5.12	N 558941.15 , E 1391047.78	223.54	212.87	211.00

AS BUILT
DATE: 10-22-14

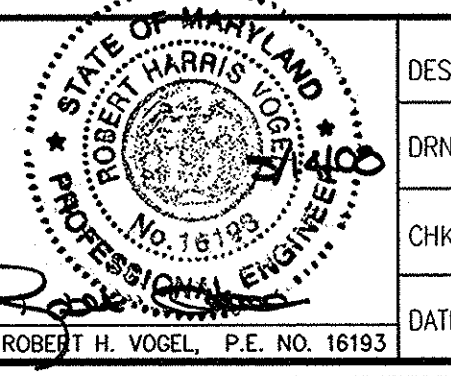
DEVELOPER
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ELKCRIDGE, MARYLAND 21075
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APPROVED: HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
[Signature]
CHIEF, BUREAU OF UTILITIES
DATE: 6/25/14

APPROVED: HOWARD COUNTY, MARYLAND
DEPARTMENT OF PLANNING AND ZONING
[Signature]
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 6/16/8

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
2407 MAIN STREET
ELLIGOTT CITY, MD 21043
TEL: 410.461.2666
FAX: 410.461.8961



DES: RHV
DRN: JMR
CHK: RHV
DATE: MAY, 2008

NO.	BY	NO.	REVISION	DATE
1	RHV	2	RELOCATE EX. 4" SHC. WILLIAMS KNOLLS LOT #9	6/25/14

FINAL WATER AND SEWER PLAN PROFILE
600' SCALE MAP NO. 38
BLOCK NO. 9

SHADY LANE CROSSING LOTS 1-23
CONTRACT NO. 14-4348-D
ZONING: R12
TAX MAP 38 BLOCK 9
1ST ELECTION DISTRICT
PARCEL 235
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 4 OF 5

