


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 March 2001 by M. Najib Rashan.
- 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. 471C, and No. 471B.
All vertical controls based on NAVD 88. Vertical controls provided on the drawings are based on Geodetic Survey Controls 471C and 471B.
- 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, 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 DPN requirements per Section 18.14(a) of the Howard County Code.
- Property zoned "R-MH" per 02/02/04 Comprehensive Zoning Plan and the Comp. Lite Zoning Amendments adopted 7/26/06.
- There are no floodplains, historic structures or cemeteries on-site.
- Public water and public sewer are proposed to tie into existing Contract #24-0942-D, #24-1658-D, and 1-N.
- Existing sanitary manhole 5 is not accessible and there are no field survey invert elevations available to confirm the inverts of the existing pipes. Prior to beginning of work, existing sanitary manhole number 5 must be uncovered and invert elevations of the existing pipes field surveyed.


PART II WATER

- All water mains shall be PVC C-900 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 in accordance with Section 1000 and Section 1005 of the Standard Specifications.
- The contractor shall not operate any water main valves on the existing water system.
- 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 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 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.
- The construction of the C-900 PVC water main must be in accordance with all applicable Howard County Design Standards, and to the satisfaction of the Howard County Inspector. Refer to the following Howard County Design Manual sections: 1002.02.06, 1002.03.04, 1002.05.02, and Details C-5.01 through 5.04, C-1.02, C-2.01 through C-2.14, and C-3.02. (Other Howard County Design Standards may also apply.)

PART III SEWER

- All sewer mains shall be 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 M.T. in plan and profiles shall have watertight frame and cover, Standard Details 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.
- High-deflection couplings shall be utilized at each change in vertical alignment. The maximum deflection using these couplings is 3". Prior to construction, the contractor shall test pit the area where the proposed 8" water main will hook into the existing 8" water main (Contract #1-N). Contractor is to verify both the horizontal location and the invert elevation and immediately call the Engineer with any discrepancies.

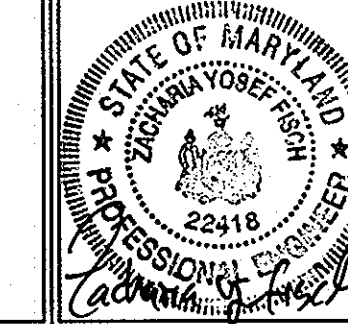
SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE STANDARD SPECIFICATIONS AND WITH SITE DEVELOPMENT PLANS SDP-10-050.

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

 DATE: 12/14/10

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 CHIEF, BUREAU OF UTILITIES
 DATE: 12/17/10

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 12/17/10

FSH Associates
 Engineers Planners Surveyors
 6339 Howard Lane Ellicott City, MD 21075
 Tel: 410-567-5200 Fax: 410-796-1562
 E-mail: info@fshri.com



DESIGN BY: CRH2
 DRAWN BY: CRH2
 CHECKED BY: ZYF
 DATE: Nov. 29, 2010

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. #22418, Expiration Date: 07/29/2011.

BY	NO.	REVISION	DATE

FINAL PUBLIC WATER AND SEWER COVER SHEET
 600' SCALE MAP NO.: 50 BLOCK NO.: 4

BEECHCREST APARTMENTS
 PARCEL "B"
 BUILDINGS #1 & #2
 CONTRACT NO. 24-4656-D
 TAX MAP 50 GRIDS 4 & 5, TAX MAP 47 GRID 22 & 23; PARCEL 435
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

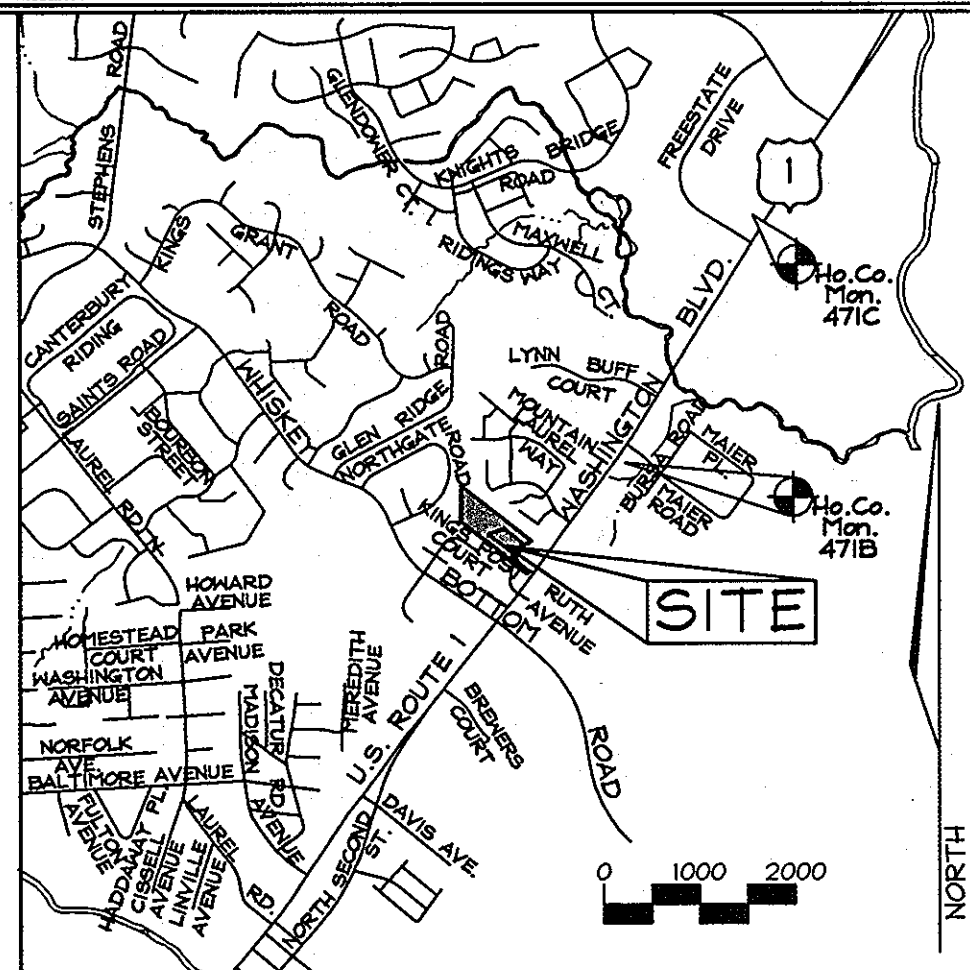
SCALE AS SHOWN
 SHEET NO. 1 OF 3

FINAL PUBLIC WATER AND SEWER PLANS

BEECHCREST APARTMENTS

PARCEL "B"

BUILDINGS #1 AND #2

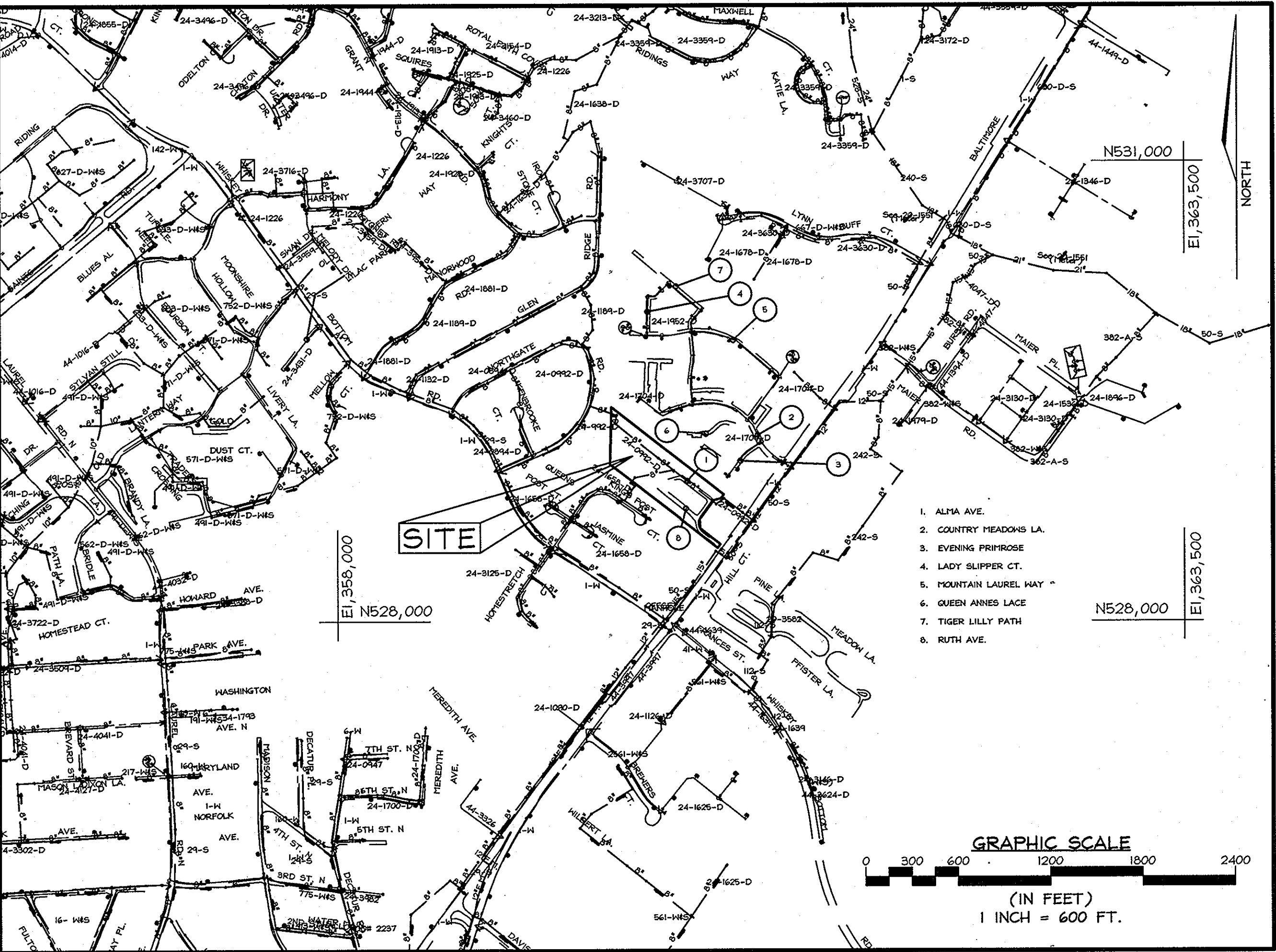


VICINITY MAP
 SCALE: 1:2000'
 ADC MAP 20, GRID 11-B

GEODETIC SURVEY CONTROLS
 Sta. 471B N 529,701.5413 E 1,361,469.7379 Elev. 179.884 (feet)
 Sta. 471C N 532,036.8697 E 1,362,819.0718 Elev. 188.267 (feet)

LEGEND

R/W Line	-----
Property Line	-----
Easement Line	-----
Ex. Sewer Line	-----
Prop. Sewer Line	-----
Ex. Water Line	-----
Prop. Water Line	-----
Ex. F.H.	-----
Prop. F.H.	-----
Stream	-----



LOCATION PLAN
 SCALE: 1"=600'

TYPE OF BUILDING:	Apartment Buildings
NO. OF LOTS/PARCELS:	1
NO. OF WATER HOUSE CONNECTIONS:	2
NO. OF SEWER HOUSE CONNECTIONS:	2
DRAINAGE AREA:	Little Patuxent
TREATMENT PLANT:	Patuxent
WATER ZONE:	400
TEST GRADIENT:	550

WATER HOUSE CONNECTION AS-BUILT LOCATION TABLE

BUILDING	ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2
#1	9750 Washington Boulevard		
#2	9750 Washington Boulevard		

SEWER HOUSE CONNECTION AS-BUILT LOCATION TABLE

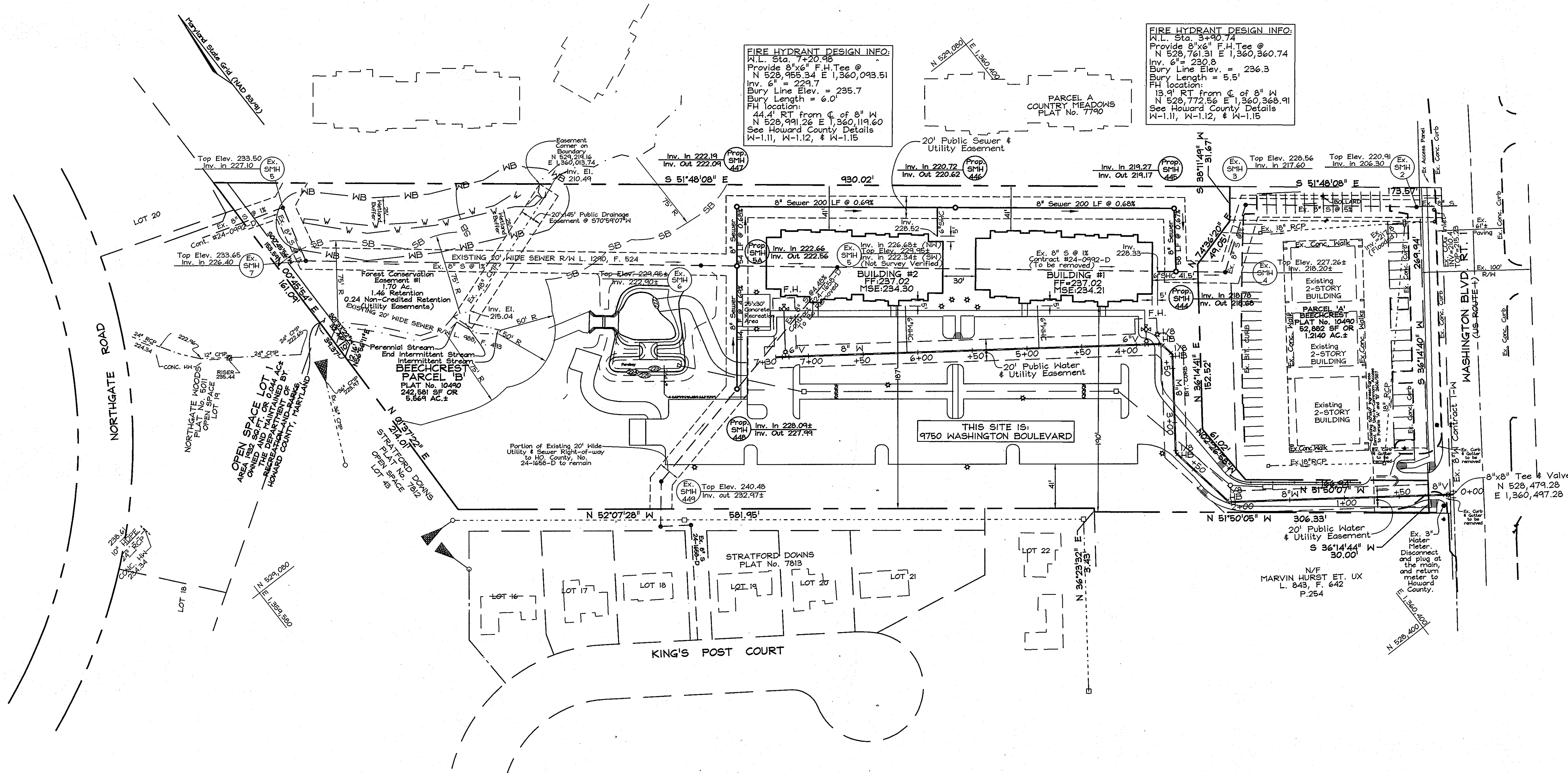
BUILDING	ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2
#1	9750 Washington Boulevard		
#2	9750 Washington Boulevard		

QUANTITIES

NAME OF UTILITY CONTRACTOR :	SURVEY AND DRAFTING DIVISION AS-BUILT DATE :	AS-BUILT			
		QUANTITIES ESTIMATED	QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
		6			
		627 L.F.			
		4			
		730 L.F.			
		2			
		1			
		54 L.F.			
		1			
		1			

SHEET INDEX

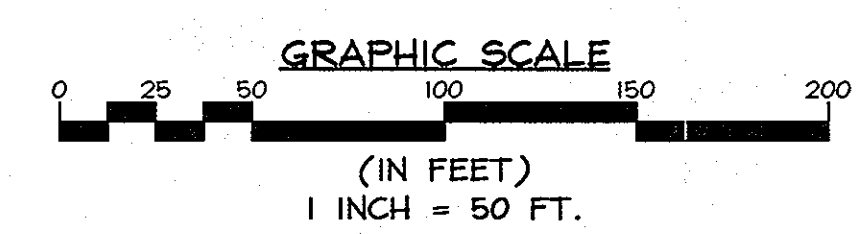
DESCRIPTION	SHEET No.
COVER SHEET	1 of 3
WATER AND SEWER PLAN	2 of 3
WATER AND SEWER PROFILES	3 of 3



FIRE HYDRANT DESIGN INFO:
 N.L. Sta. 7+20.48
 Provide 8 1/2" F.H. Tee @
 N 528,955.34 E 1,360,093.51
 Inv. 6" = 229.7
 Bury Line Elev. = 235.7
 Bury Length = 6.0'
 F.H. location:
 44.4' RT from C of 8" W
 N 528,991.26 E 1,360,119.60
 See Howard County Details
 W-1.11, W-1.12, & W-1.15

FIRE HYDRANT DESIGN INFO:
 N.L. Sta. 3+40.74
 Provide 8 1/2" F.H. Tee @
 N 528,761.31 E 1,360,360.74
 Inv. 6" = 230.8
 Bury Line Elev. = 236.3
 Bury Length = 5.5'
 F.H. location:
 13.9' RT from C of 8" W
 N 528,772.56 E 1,360,368.91
 See Howard County Details
 W-1.11, W-1.12, & W-1.15

PLAN VIEW
 SCALE: 1" = 50'

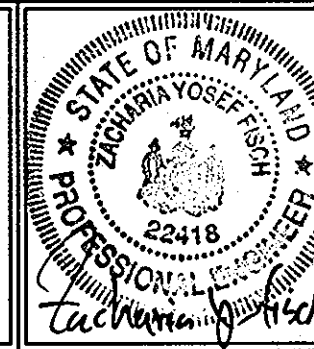


PROFESSIONAL CERTIFICATION
 I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. #22418, Expiration Date: 07/29/2011.

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Chief, Bureau of Utilities
 12/7/10

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND
 Chief, Development Engineering Division
 12/7/10

FSH Associates
 Engineers Planners Surveyors
 6339 Howard Lane Elkridge, MD 21075
 Tel: 410-567-5200 Fax: 410-796-1592
 E-mail: info@fsher.com



DESIGN BY: CRH2				
DRAWN BY: CRH2				
CHECKED BY: ZYF				
DATE: Nov. 29, 2010	BY NO.	REVISION	DATE	

FINAL PUBLIC WATER AND SEWER PLAN
 600' SCALE MAP NO.: 50 BLOCK NO.: 4

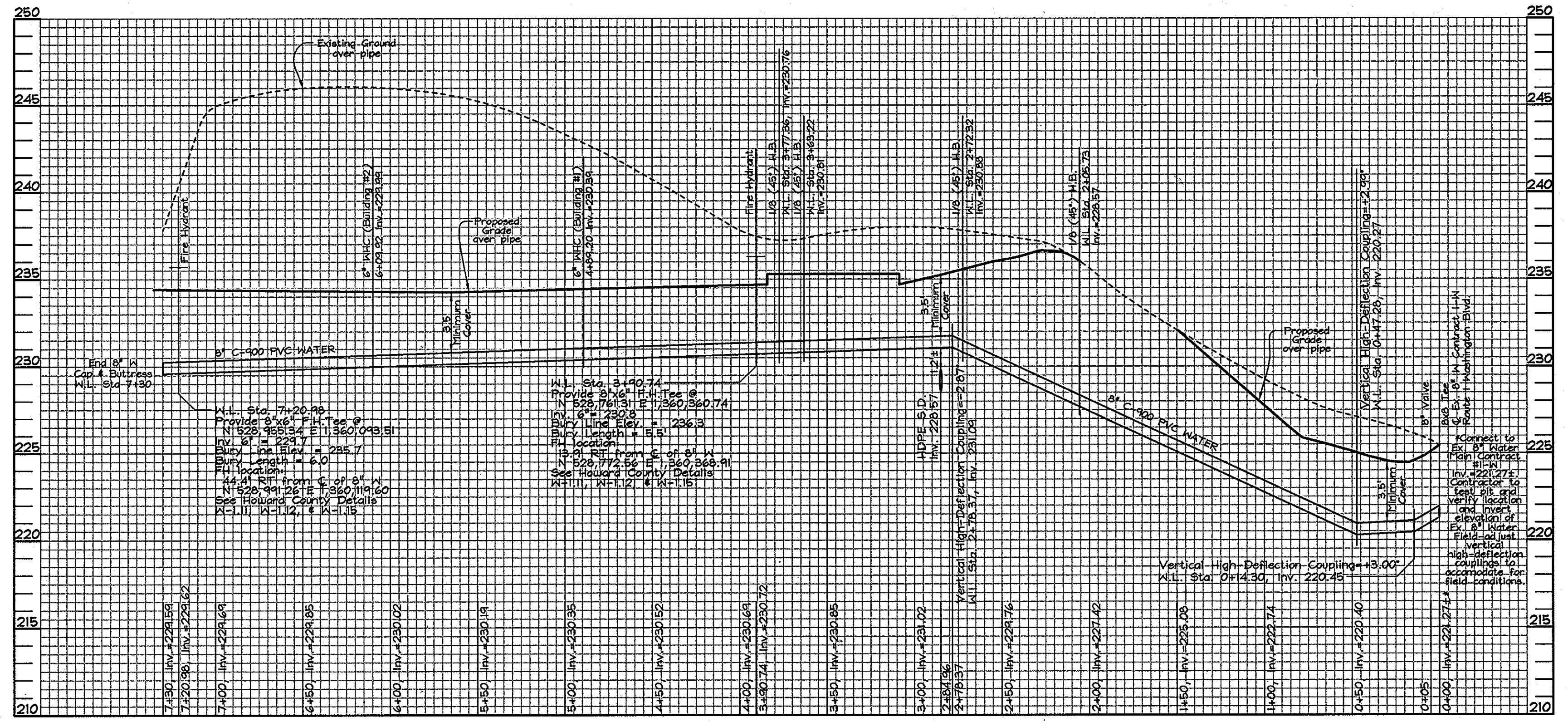
BEECHCREST APARTMENTS
 PARCEL "B"
 BUILDINGS #1 & #2
 CONTRACT NO. 24-4656-D
 TAX MAP 50 GRIDS 4 & 5, TAX MAP 47 GRID 22 & 23; PARCEL 435
 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET NO. 2 OF 3

WATER MAIN LOCATION CHART		
FEATURE / DESCRIPTION	WATER STA.	COORDINATES
8"x8" Tee* (with I-N)	0+00.00	N 528,479.28 E 1,360,497.28
8" Valve	5+00	N 528,482.21 E 1,360,493.23
1/8" Horizontal Bend	2+05.73	N 528,600.15 E 1,360,330.81
1/8" Horizontal Bend	2+72.32	N 528,665.92 E 1,360,320.37
1/8" Horizontal Bend	3+63.22	N 528,739.48 E 1,360,373.78
1/8" Horizontal Bend	3+77.36	N 528,753.45 E 1,360,371.57
8"x6" Tee (for F.H.)	3+40.74	N 528,761.31 E 1,360,360.74
Fire Hydrant	3+40.74	N 528,772.56 E 1,360,368.91
8"x6" Tee (for F.H.)	7+20.98	N 528,955.34 E 1,360,093.51
Fire Hydrant	7+20.98	N 528,991.26 E 1,360,119.60
End Water Main (Cap & Buttriss)	7+30	N 528,960.64 E 1,360,086.22

* See Note Below

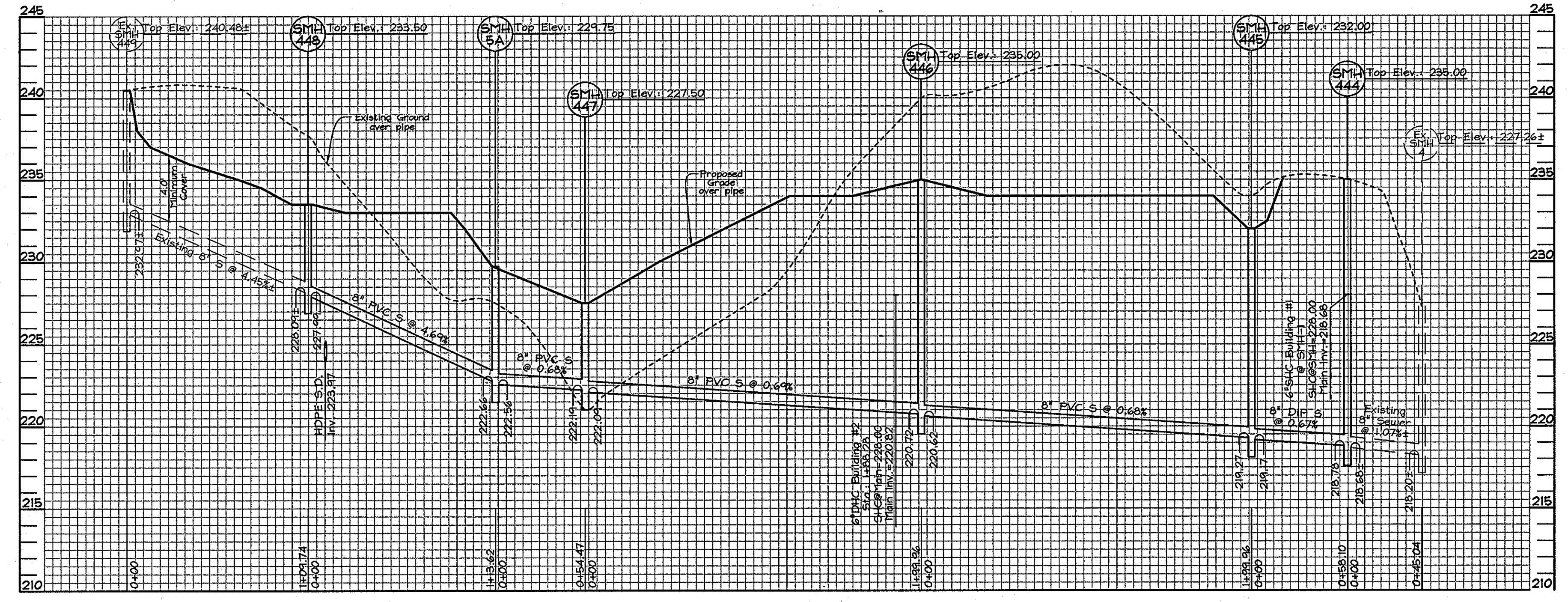
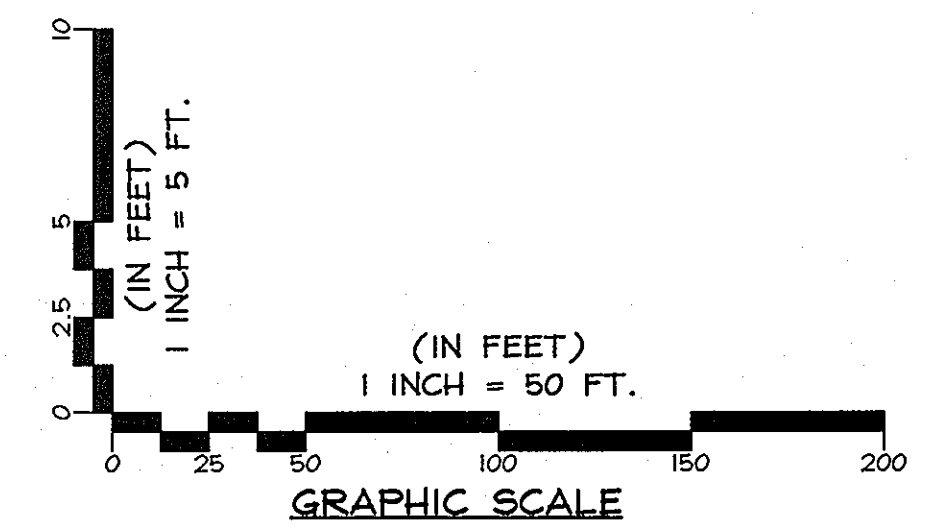
* NOTE: Prior to the installation of the proposed water main, the contractor shall test pit to verify the location and invert elevation of the existing 8" Water Main I-N. The contractor shall contact the engineering immediately with any discrepancies.



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

SEWER MANHOLE TABLE					
SMH #	COORDINATES	TOP MH ELEVATION	REMARKS	M.H. TYPE & Ho.Co. STD. DET.	
444	N 528,797.59 E 1,360,423.26	235.00	6" SHC from Bldg #1	STD.	G-5.11
445	N 528,844.46 E 1,360,457.59	232.00		STD.	G-5.11
446	N 528,969.11 E 1,360,300.44	235.00		STD.	G-5.11
447	N 529,041.76 E 1,360,143.30	227.50		STD.	G-5.11
5A	N 529,048.77 E 1,360,109.86	228.75		STD.	G-5.11
448	N 528,959.09 E 1,360,040.11	233.50		STD.	G-5.11

SEWER HOUSE CONNECTION CHART					
Building No.	8" Sewer Main Inv. @ SHC	House Connect Type	6" SHC Inv. @ 8" S or SMH	MINIMUM SLAB ELEVATION	DESIGNED SLAB ELEVATION
1	218.68	Drop	228.00	234.21	237.02
2	220.82	SMH-444	228.00	234.30	237.02



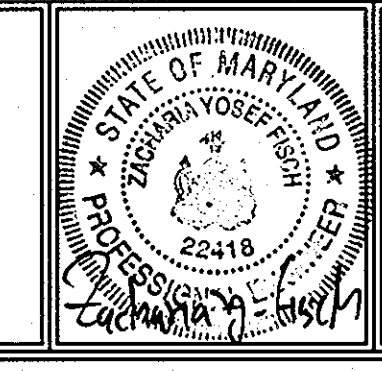
SEWER MAIN PROFILE
SCALE- HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

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. #22418, Expiration Date 07/29/2011.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
S. J. CLARK
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
M. J. [Signature]
CHIEF, DEVELOPMENT ENGINEERING DIVISION

FSH Associates
Engineers Planners Surveyors
6339 Howard Lane Elkridge, MD 21075
Tel: 410-567-5200 Fax: 410-796-1562
E-mail: info@fsh.net



DESIGN BY: CRH2				
DRAWN BY: CRH2				
CHECKED BY: ZYF				
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FINAL PUBLIC WATER AND SEWER PROFILES
600' SCALE MAP NO.: 50 BLOCK NO.: 4

BEECHCREST APARTMENTS
PARCEL "B"
BUILDINGS #1 & #2
CONTRACT NO. 24-4656-D
TAX MAP 50 GRIDS 4 & 5, TAX MAP 47 GRID 22 & 23; PARCEL 435
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET NO. 3 OF 3