


GENERAL NOTES

PART I - GENERAL

1. Approximate location of existing mains are shown. The contractor shall take all necessary precautions to protect existing mains and services and maintain uninterrupted supply. Any damage incurred shall be repaired immediately to the satisfaction of the Engineer at the contractor's expense.
2. All horizontal controls are based on Maryland State Coordinates (North American Datum of 1983 (NAD 83/91)).
3. All vertical controls are based on U.S.G.S. data (NAVD 88).
4. All pipe elevations shown are invert elevations unless otherwise noted on the plans.
5. 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 the bracing of additional poles or damages shall be deducted from money owed the contractor. The contractor shall coordinate with the utility companies to schedule the bracing of the poles.
6. 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.
7. 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.
8. The Contractor shall notify the following utility companies or agencies at least five (5) working days before starting work shown on these plans:

State Highway Administration	410.531.5633
BAE(Contractor Services)	410.350.4620
BAE(Underground Damage Control)	410.291.4607
Miss Utility	1.800.257.7777
Colonial Pipeline Company	410.549.4120
Howard County, Dept. of Public Works, Bureau of Utilities	410.313.4900
Howard County Health Department	410.313.2640
Bureau of Utilities	410.313.4900
Verizon	1.800.743.0033 / 410.224.9210

9. 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.
10. 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.
11. The contractor shall notify the Bureau of Highways, Howard County, at 410.313.2450 at least five (5) working days before any open cut of any County road or boring/jacking operation in County roads for laying water/sewer mains or house connections. The approval of these drawings will constitute compliance with DPH requirements per Section 18.114(a) of the Howard County Code.

PART II - WATER

1. All water mains to be D.I.P. Class 52 unless otherwise noted.
2. Tops of all water mains to have a minimum of 3'-6" cover unless otherwise noted.
3. Valves adjacent to tees shall be strapped to tees.
4. All fittings shall be buttressed or anchored with concrete in accordance with Standard Details unless otherwise provided for on the drawings.
5. 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 Standard Details. The soil around the fire hydrant shall be compacted in accordance with Section 1000 and Section 1005 of the Standard Specifications.
6. The Contractor shall not operate any water main valves on the existing water system.
7. All water house connections shall be for inside meter settings unless otherwise noted on the plans or in specifications.
8. For sprinkler system for all townhomes or multi-family dwelling units should have a minimum of 1" connection with a 3/4" meter.

PART III - SEWER

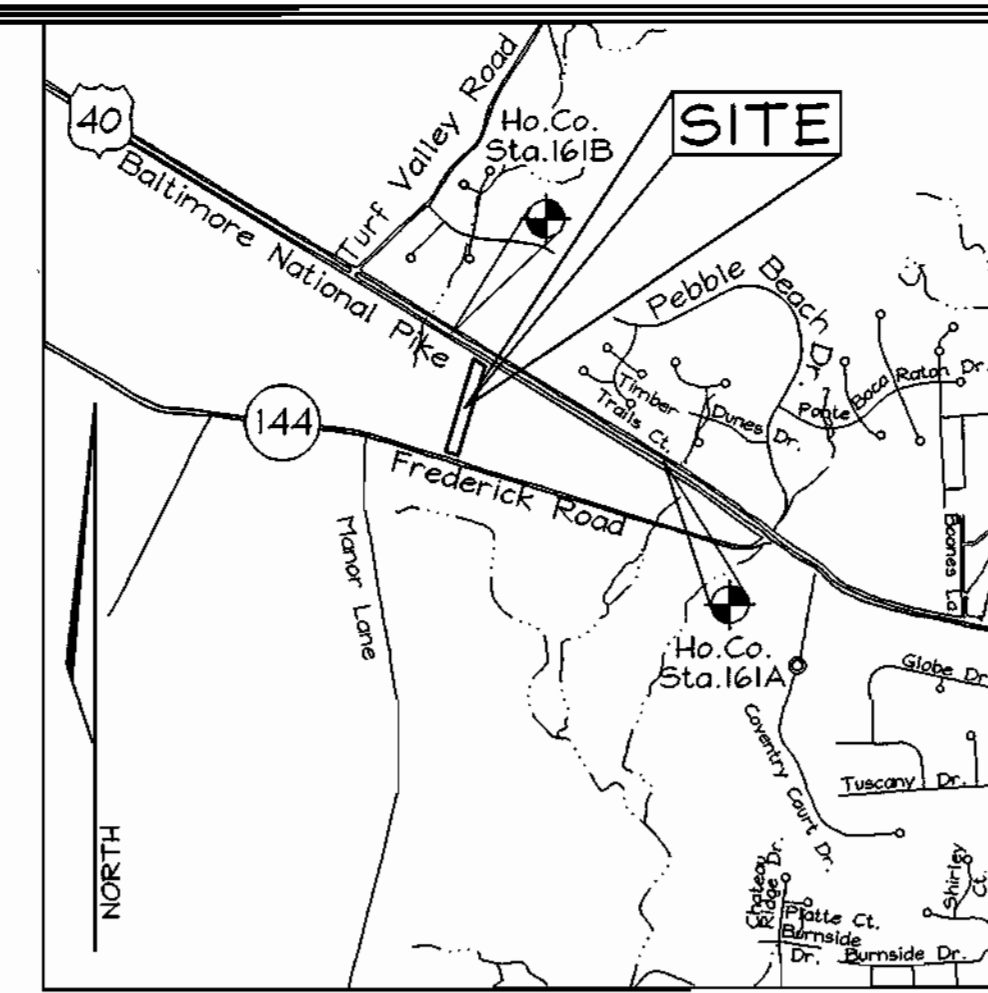
1. All sewer mains shall be D.I.P. or P.V.C. unless otherwise noted.
2. All manholes shall be 4'-0" inside diameter unless otherwise noted.
3. Force mains shall be D.I.P. only.
4. Manholes shown with 12" and 16" walls are for brick manholes only.
5. Manholes designated W.T. in plan and profile shall have watertight frame & covers, Standard Detail G-5.5. Where watertight manhole frames and covers are used, set top of frame 1'-6" above finished grade unless otherwise noted on the drawings.
6. House(s) with the symbol "C.N.S." indicates that cellar cannot be served.
7. The Contractor shall provide a joint in all sewer mains within 2'-0" of exterior manhole wall.

PUBLIC WATER AND SEWER PLANS

VANBORINE PLACE

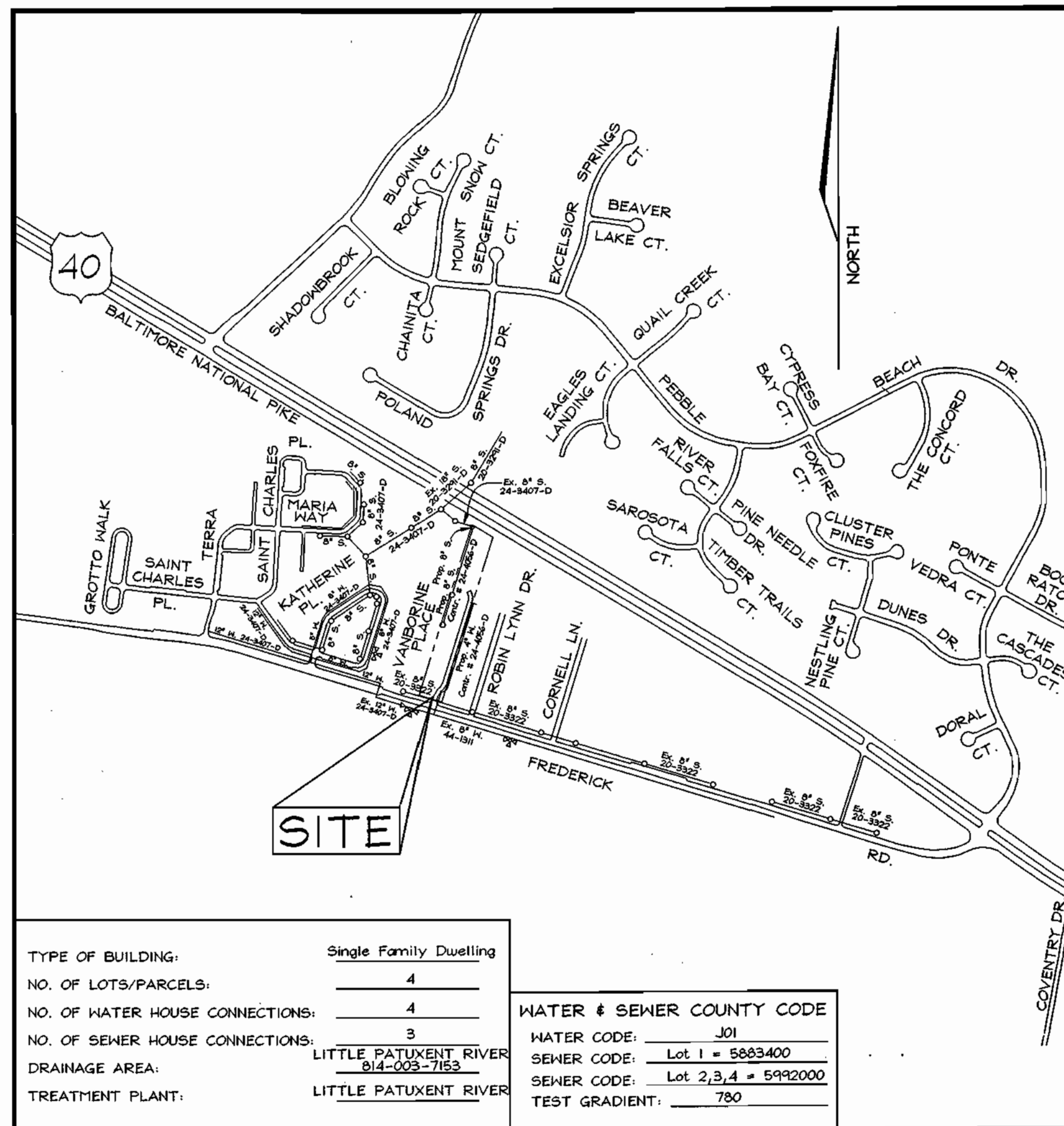
HOWARD COUNTY, MARYLAND

CONTRACT NO. 24-4056-D



BENCHMARKS

Sta. 161A	N 179,682.8211	E 410,366.3677	El.: 141.3280 (meters)
	N 589,509.388	E 1,346,343.658	El.: 463.674 (feet)
Sta. 161B	N 179,977.2258	E 409,881.8290	El.: 143.4319 (meters)
	N 590,475.281	E 1,344,753.967	El.: 470.576 (feet)



TYPE OF BUILDING:	Single Family Dwelling	WATER & SEWER COUNTY CODE
NO. OF LOTS/PARCELS:	4	WATER CODE: J01
NO. OF WATER HOUSE CONNECTIONS:	4	SEWER CODE: Lot 1 = 5883400
NO. OF SEWER HOUSE CONNECTIONS:	3	SEWER CODE: Lot 2,3,4 = 5992000
DRAINAGE AREA:	LITTLE PATUXENT RIVER 814-003-7183	TEST GRADIENT: 780
TREATMENT PLANT:	LITTLE PATUXENT RIVER	

LOCATION MAP
SCALE: 1"=600'

Lot #	Inv. @ Main	Inv. @ Easement	Min. Cellar El.
2	467.53	467.76	473.47
3	468.72	468.92	473.00
4	470.14	470.54	475.00

NOTE: All SHC at 2.0%

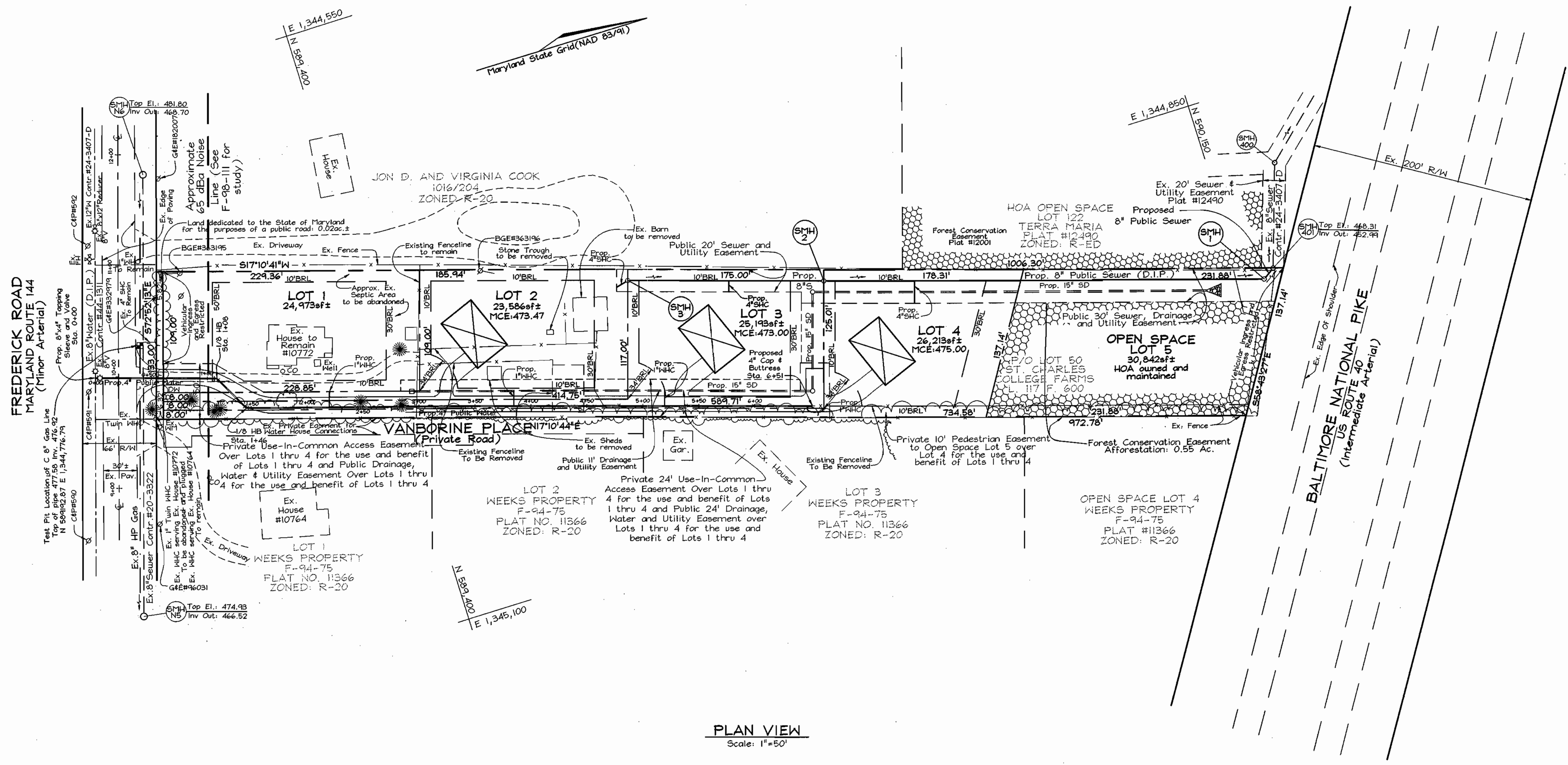
QUANTITIES

NAME OF UTILITY CONTRACTOR :				
SURVEY AND DRAFTING DIVISION AS-BUILT DATE :				
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
MANHOLE	3			
8" SEWER	188 LF			
8" D.I.P.	398 LF			
4" SHC	42 LF			
4" WATER	651 LF			
1" WHC	59 LF			
8"x4" T&V	1			
4" CAP & BUTTRESS	1			
1/8 HB	2			

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATIONS AND WITH ROAD CONSTRUCTION PLANS F-03-36

THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.	REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
<i>John K. Roberts</i> 3/12/03 SOIL CONSERVATION DISTRICT DATE	<i>Jim Mylon</i> 3/12/03 S.O. SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>Ruth Bunn</i> 3-17-03 CHIEF, BUREAU OF UTILITIES DATE	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND <i>[Signature]</i> 4/16 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE	FSH Associates Engineers Planners Surveyors 8318 Forrest Street Ellicott City, MD 21043 Tel: 410-750-2251 Fax: 410-750-7350 E-mail: FSHAssociates@cs.com	DESIGN BY: PS DRAWN BY: Slim CHECKED BY: ZYF DATE: Mar. 5, 2003	WATER AND SEWER PLAN AND PROFILES 600' SCALE MAP NO.: 16 BLOCK NO.: 24	VANBORINE PLACE LOTS 1 THRU 4 AND OPEN SPACE 5 CONTRACT NO. 24-4056-D TAX MAP 16 GRID 24 PARCEL 12 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND	OWNER Paul D. and Dolores E. Henderson 10772 Frederick Road Ellicott City, Md. 21042	DEVELOPER Knuff Development LLC. 4979 Bucksin Lake Drive Ellicott City, Md. 21042
SCALE AS SHOWN							
SHEET NO. 1 OF 3							



PLAN VIEW
Scale: 1"=50'

OWNER
Paul D. and Dolores E. Henderson
10772 Frederick Road
Ellicott City, Md. 21042

DEVELOPER
Knauff Development LLC.
4979 Buckskin Lake Drive
Ellicott City, Md. 21042

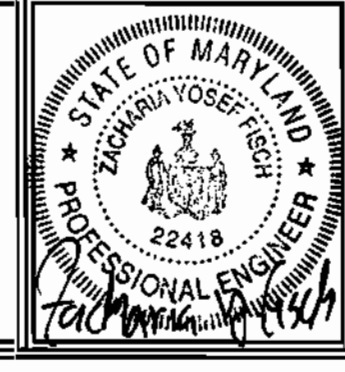
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature]
3-17-03
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

[Signature]
DATE

FSH Associates
Engineers Planners Surveyors
8318 Forest Street, Ellicott City, MD 21043
Tel: 410-750-2251 Fax: 410-750-7350
E-mail: FSHAssociates@cs.com



DESIGN BY: PS	BY NO.	REVISION	DATE
DRAWN BY: Slim			
CHECKED BY: ZYF			
DATE: Mar. 5, 2003			

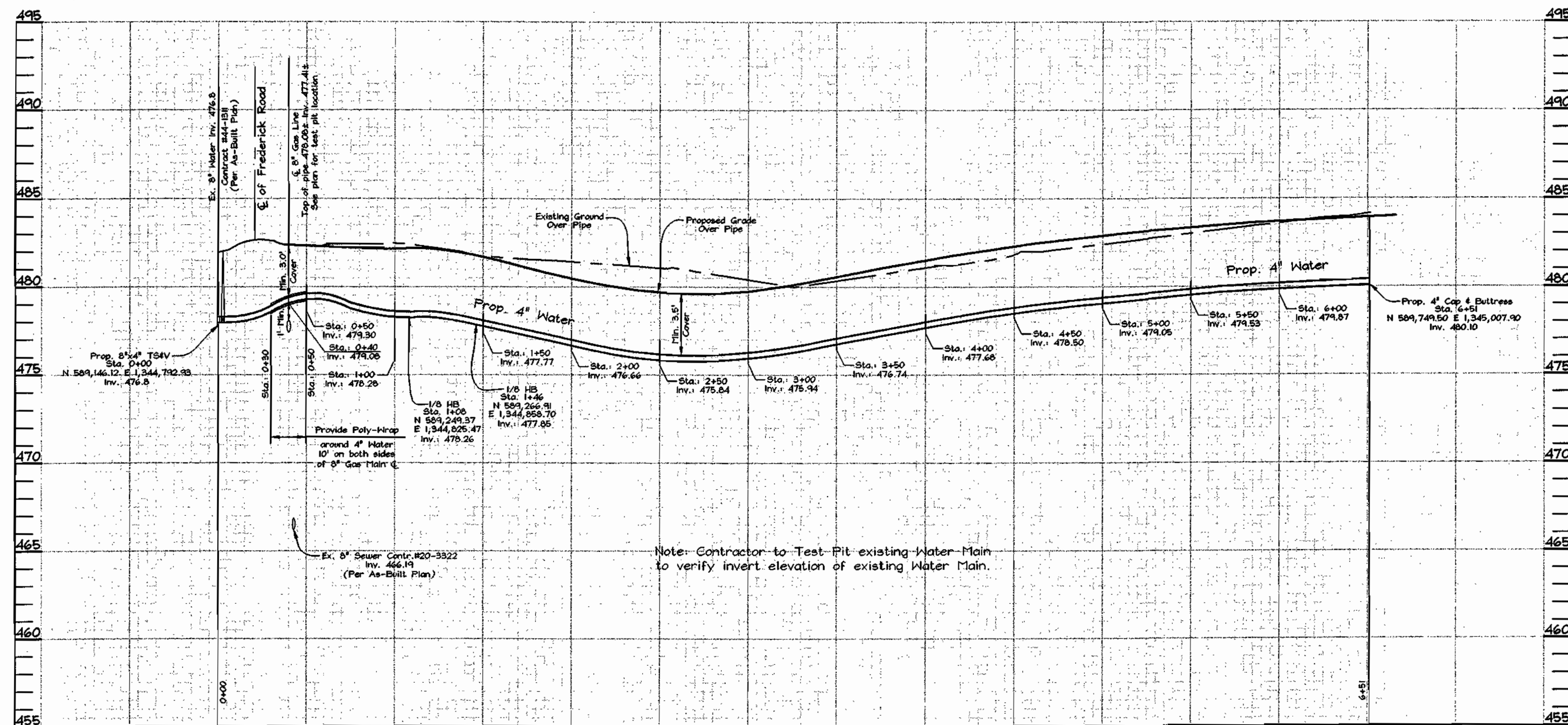
WATER AND SEWER PLAN

600' SCALE MAP NO.: 16 BLOCK NO.: 24

VANBORINE PLACE
LOTS 1 THRU 4 AND OPEN SPACE 5
CONTRACT NO. 24-4056-D

TAX MAP 16 GRID 24 PARCEL 12
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

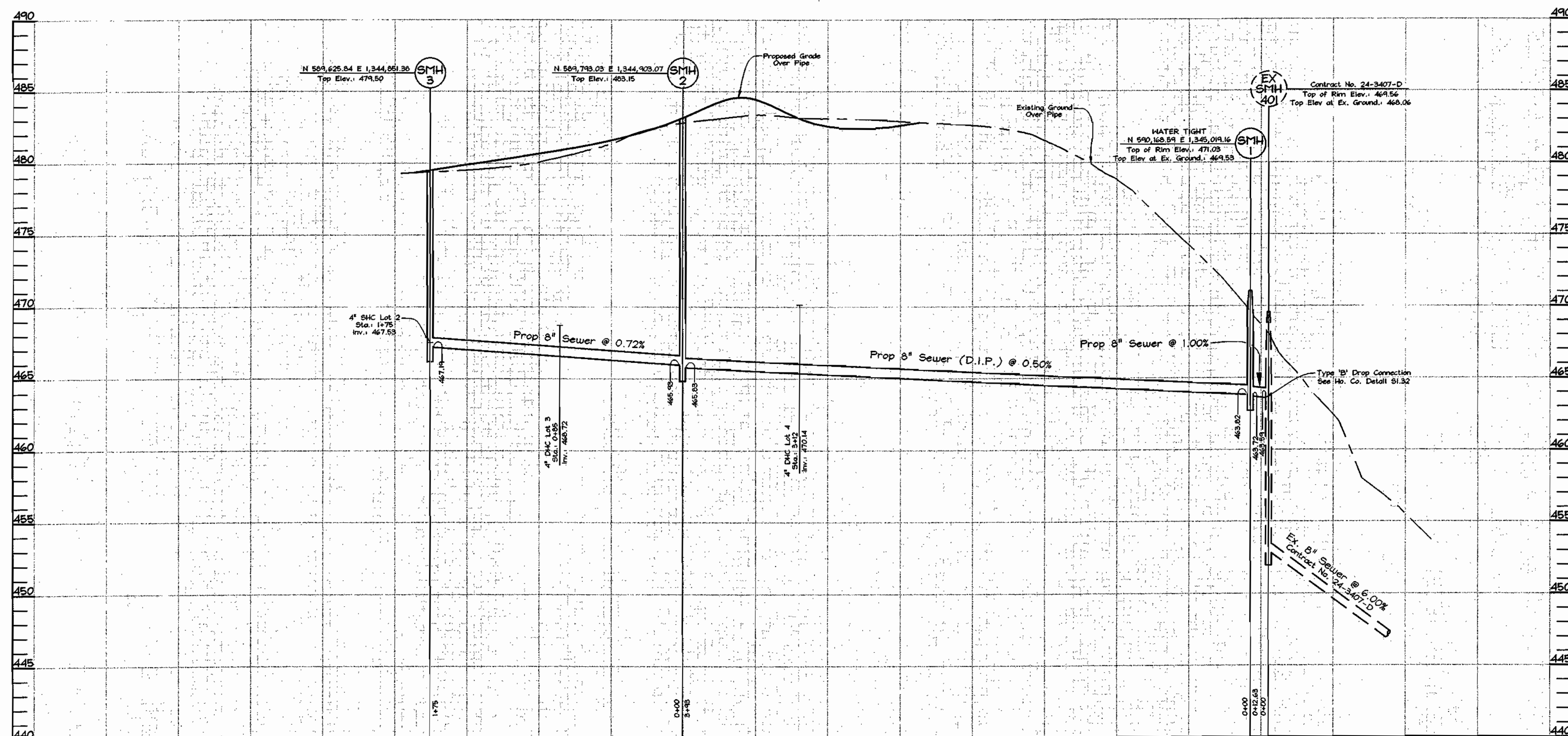
SCALE AS SHOWN
SHEET NO. 2 OF 3



WATER PROFILE

SCALE: 1" = 50' HORIZ.

1" = 5' VERT.



SEWER PROFILE

SCALE: 1" = 50' HORIZ.

1" = 5' VERT.

OWNER

Paul D. and Dolores E. Henderson
10772 Frederick Road
Ellicott City, Md. 21042

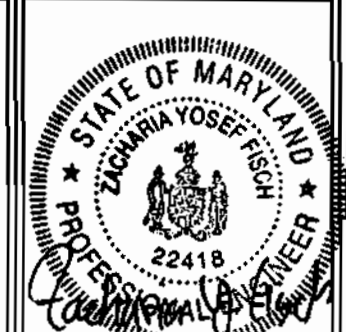
DEVELOPER

Knaff Development LLC.
4979 Buckskin Lake Drive
Ellicott City, Md. 21042

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

FSH Associates
Engineers Planners Surveyors
8318 Forest Street Ellicott City, MD 21043
Tel: 410-750-2251 Fax: 410-750-7350
E-mail: FSHAssociates@cs.com



DESIGN BY: PS
DRAWN BY: Slim
CHECKED BY: ZYF
DATE: Mar. 5, 2003

**WATER AND SEWER
PLAN**

600' SCALE MAP NO.: 16 BLOCK NO.: 24

VANBORINE PLACE

LOTS 1 THRU 4 AND OPEN SPACE 5
CONTRACT NO. 24-4056-D

TAX MAP 16 GRID 24
2ND ELECTION DISTRICT

PARCEL 12
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

SHEET NO.


3 OF 3

Robert Beaman 3-17-03
CHIEF, BUREAU OF UTILITIES

[Signature] 4/16/03
CHIEF, DEVELOPMENT ENGINEERING DIVISION

GENERAL NOTES

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PART III - SEWER

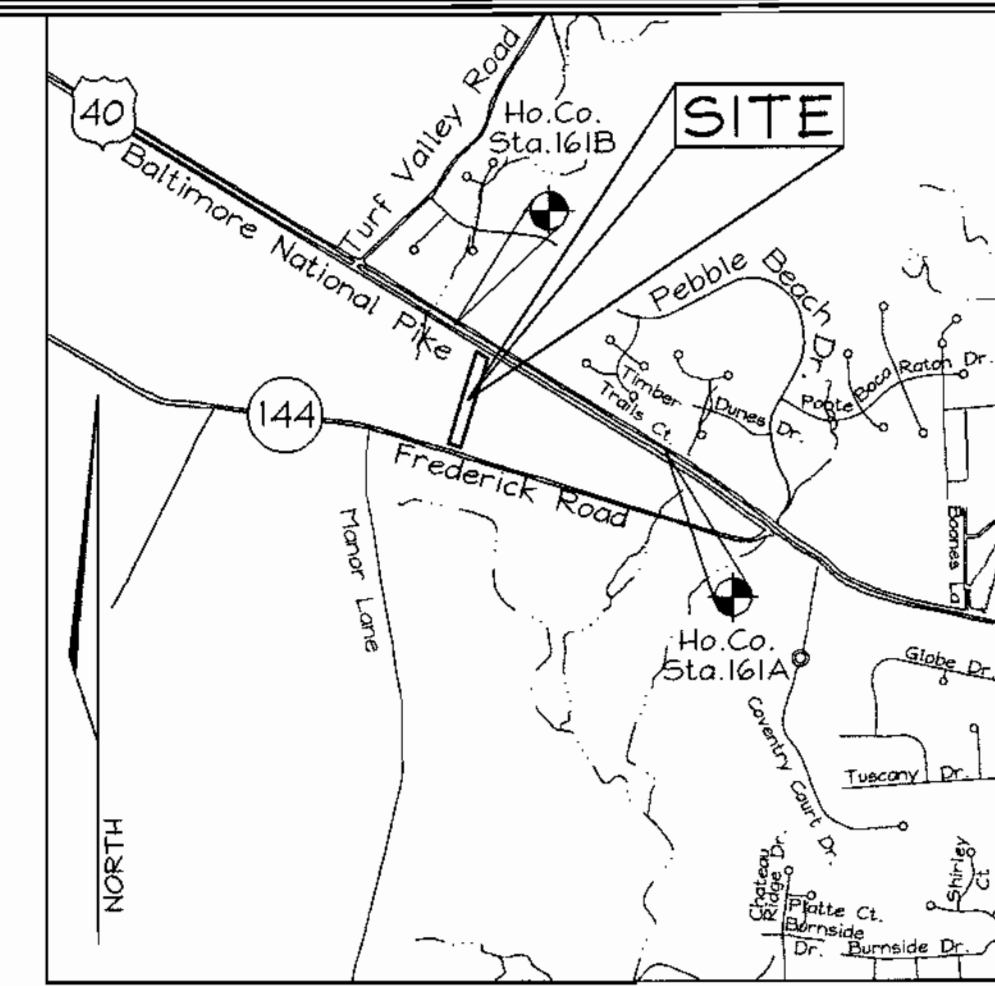
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PUBLIC WATER AND SEWER PLANS

VANBORINE PLACE

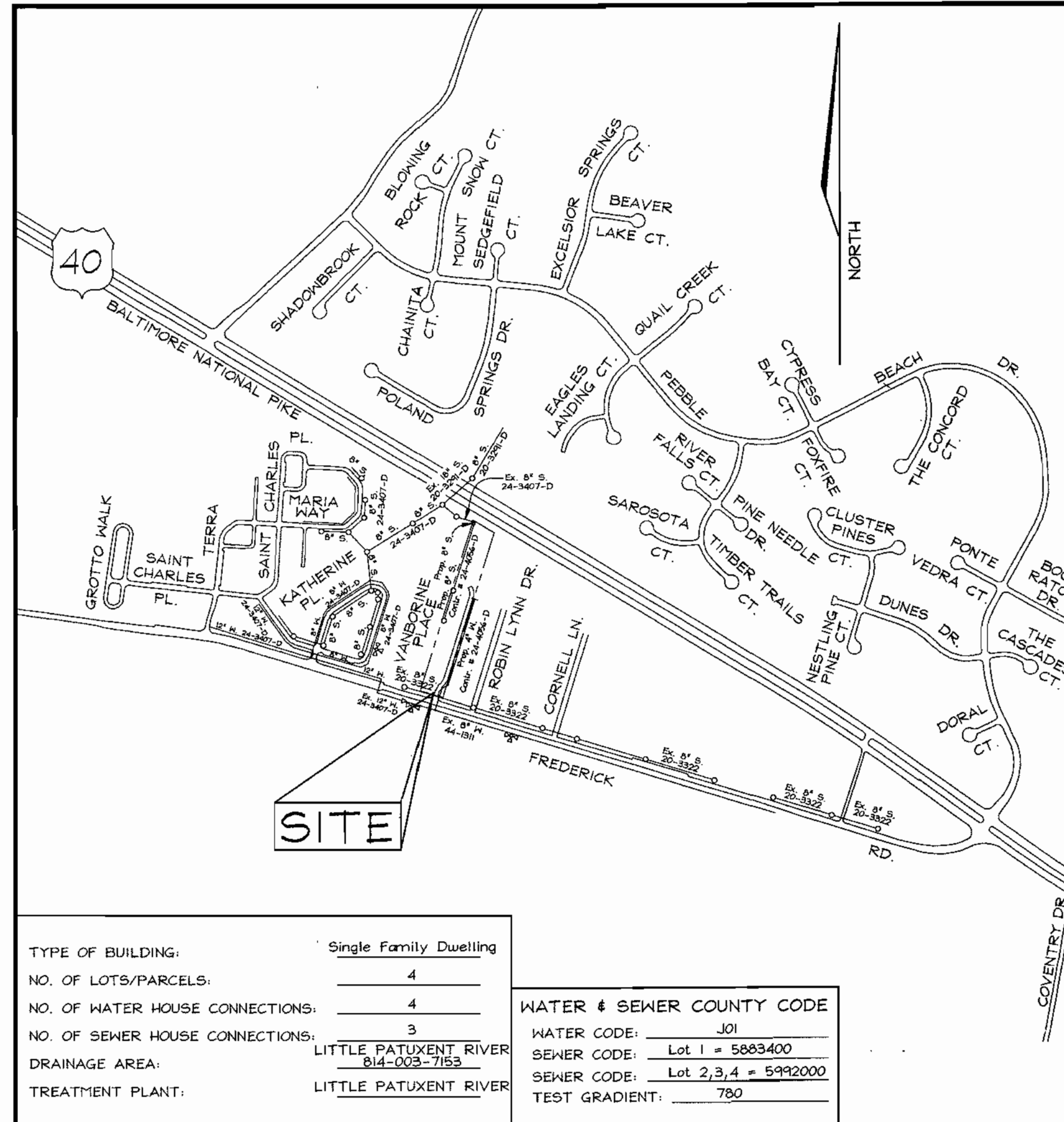
HOWARD COUNTY, MARYLAND

CONTRACT NO. 24-4056-D



BENCHMARKS

Sta.	N	E	El.
161A	179,682.8211	410,366.3677	141.3280 (meters)
161B	599,509.388	1,346,343.650	463.674 (feet)
161C	179,977.2258	409,881.8290	143.4319 (meters)
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TREATMENT PLANT:	LITTLE PATUXENT RIVER	

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NOTE: All SHC at 2.0%

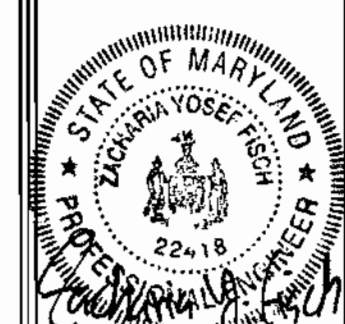
QUANTITIES

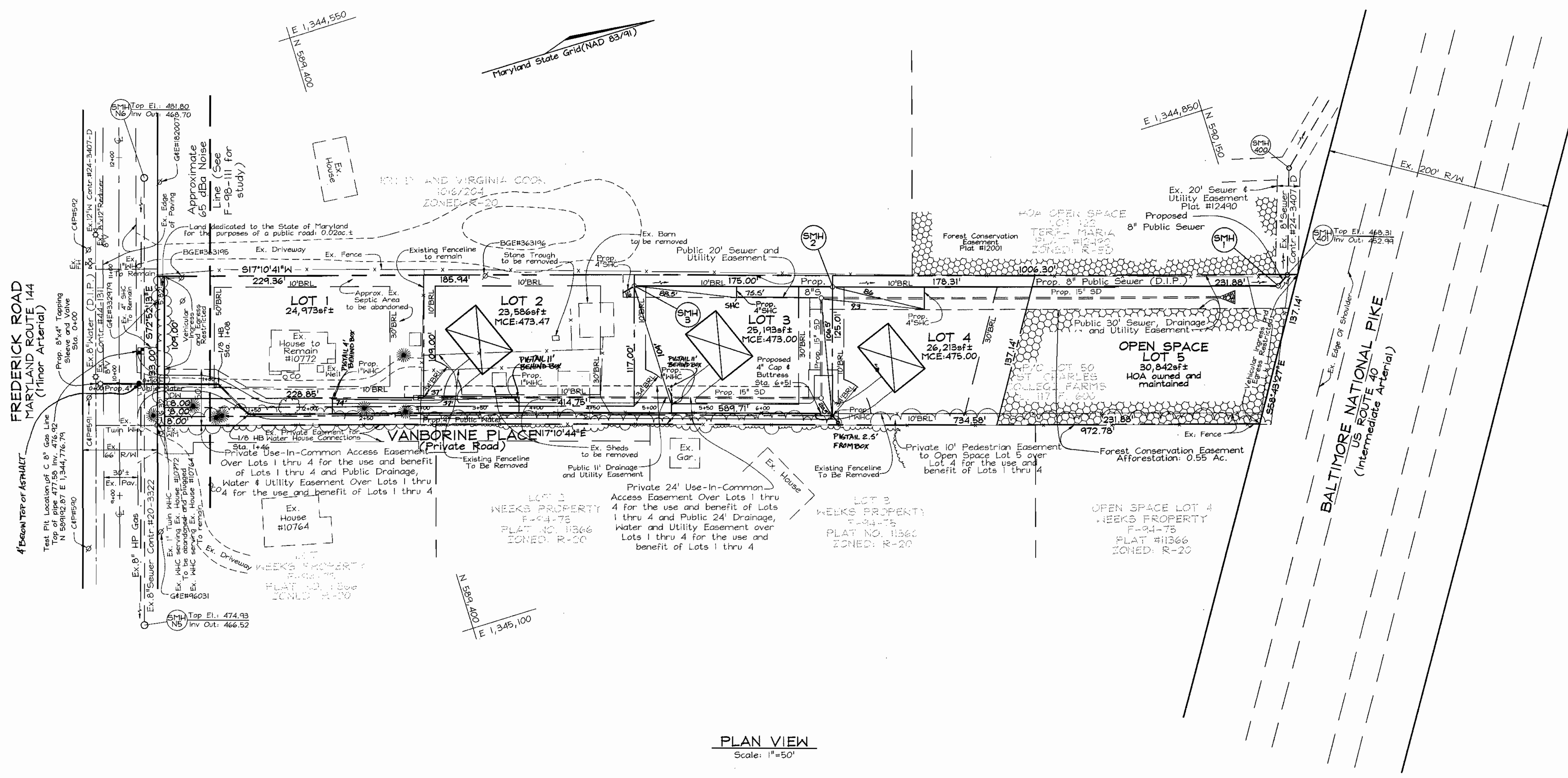
NAME OF UTILITY CONTRACTOR :				
SURVEY AND DRAFTING DIVISION AS-BUILT DATE :				
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
MANHOLE	3	3		ATLANTIC CONCRETE PRODUCTS
8" SEWER	188 LF	178LF	SDR-35	DIAMOND PLASTIC / HUGHES
8" D.I.P.	398 LF	389LF	52 CL	GRIFFIN PIPE
4" SHC	42 LF	42 LF	SDR-35	DIAMOND PLASTIC / HUGHES
4" WATER	651 LF	648 LF	52 CL	GRIFFIN PIPE
1" WHC	59 LF	59 LF	COPPER	HONELL METAL / HUGHES
8"x4" TS&V	1	1#1	C207 & C507	FORD & KENNEDY VALVE / HUGHES
4" CAP & BUTTRESS	1	1	M3	TRUER / HUGHES
1/8 HB	2	2	MT (85)	" "

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATIONS AND WITH ROAD CONSTRUCTION PLANS F-03-36

THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.	REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
<i>John K. Robertson</i> 3/17/03 SOIL CONSERVATION DISTRICT DATE	<i>Jim Mayhew</i> 3/17/03 S.O.S. SOIL CONSERVATION DISTRICT DATE

OWNER Paul D. and Dolores E. Henderson 10772 Frederick Road Ellicott City, Md. 21042	DEVELOPER Knauff Development LLC. 4874 Buckskin Lake Drive Ellicott City, Md. 21042
--	---

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>Ruth Bunn</i> 3-17-03 CHIEF, BUREAU OF UTILITIES DATE	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND <i>[Signature]</i> 4/16/04 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE	FSH Associates Engineers Planners Surveyors 8318 Forest Street Ellicott City, MD 21043 Tel: 410-750-2251 Fax: 410-750-7350 E-mail: FSHAssociates@es.com		DESIGN BY: PS DRAWN BY: Slim CHECKED BY: ZYF DATE: Mar. 5, 2003	WATER AND SEWER PLAN AND PROFILES 600' SCALE MAP NO.: 16 BLOCK NO.: 24	VANBORINE PLACE LOTS 1 THRU 4 AND OPEN SPACE 5 CONTRACT NO. 24-4056-D TAX MAP 16 GRID 24 PARCEL 12 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET NO. 1 OF 3
--	--	--	---	--	--	--	--



PLAN VIEW
Scale: 1"=50'

OWNER
Paul D. and Dolores E. Henderson
10772 Frederick Road
Ellicott City, Md. 21042

DEVELOPER
Knouff Development LLC
4979 Buckskin Lake Drive
Ellicott City, Md. 21042

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert Berman
3-17-03
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

[Signature]
4/16/04
CHIEF, DEVELOPMENT ENGINEERING DIVISION

FSH Associates
Engineers Planners Surveyors
8318 Forest Street, Ellicott City, MD 21043
Tel: 410-750-2251 Fax: 410-750-7350
E-mail: FSHAssociates@cs.com



DESIGN BY: PS			
DRAWN BY: Slim			
CHECKED BY: ZYF			
DATE: Mar. 5, 2003			
KCI	ASBUILT DATA SHOWN ON PLAN	04/16/04	
BY NO.	REVISION	DATE	

WATER AND SEWER PLAN

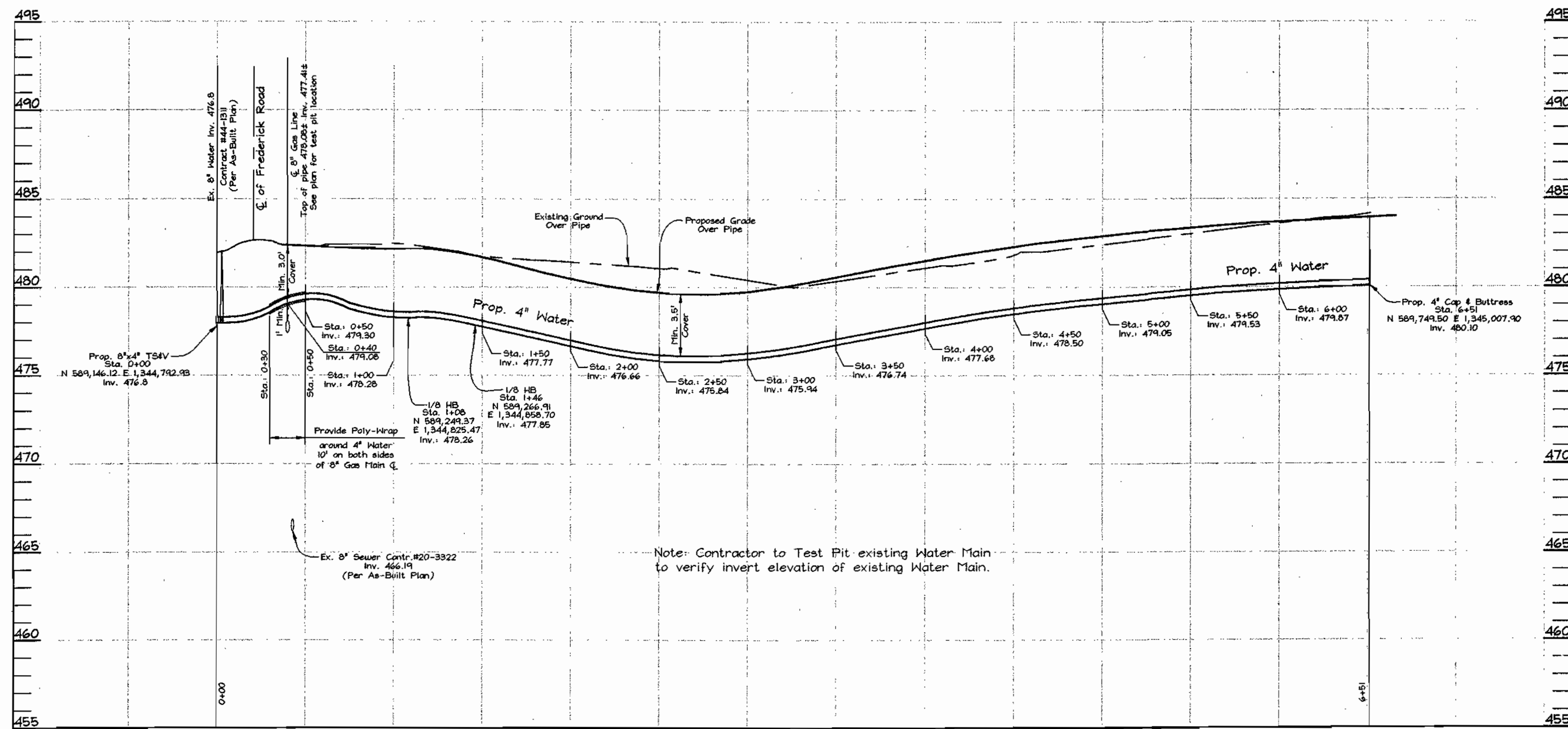
600' SCALE MAP NO.: 16 BLOCK NO.: 24

VANBORINE PLACE
LOTS 1 THRU 4 AND OPEN SPACE 5
CONTRACT NO. 24-4056-D
TAX MAP 16 GRID 24
2ND ELECTION DISTRICT

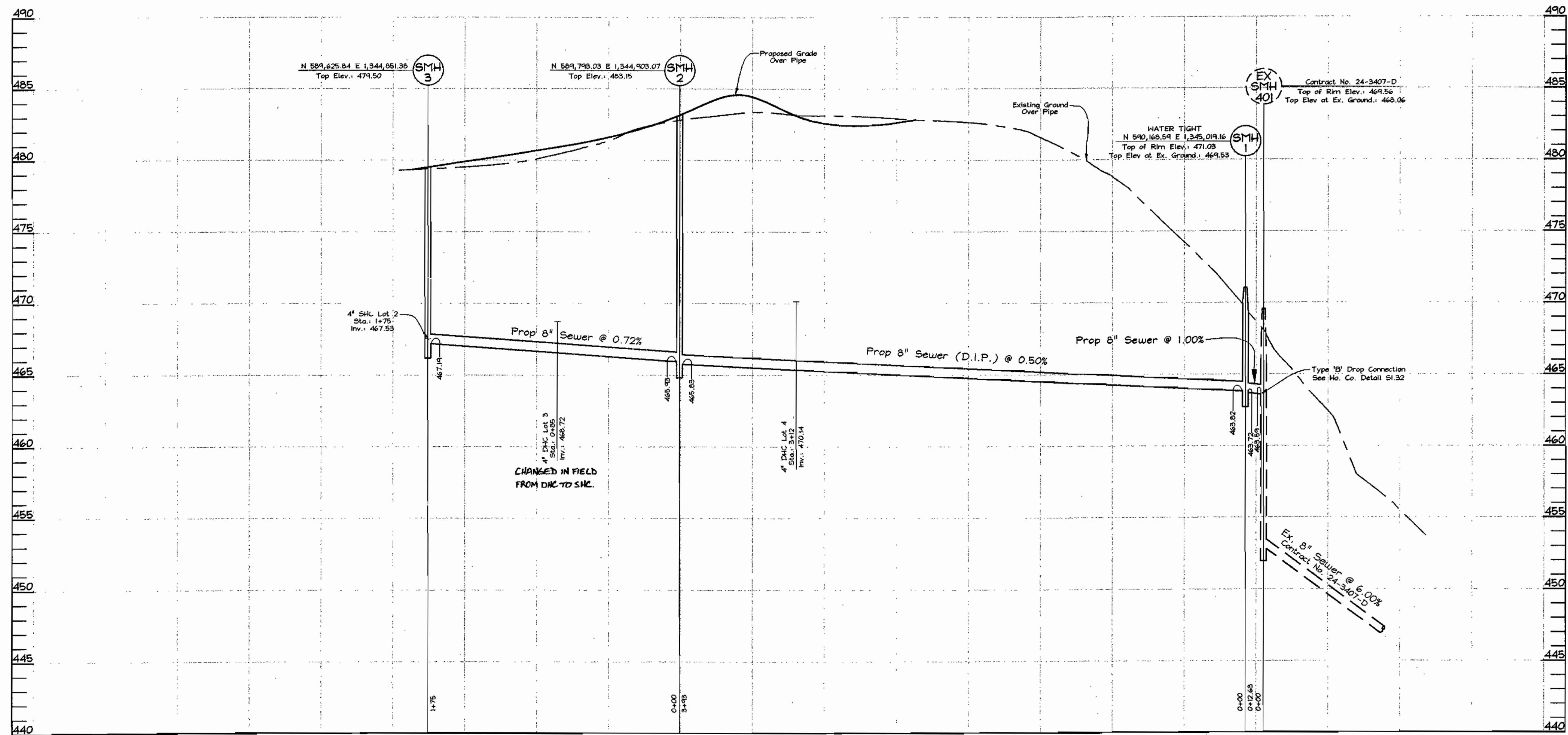
PARCEL 12
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET NO. 2 of 3



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



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

OWNER

Paul D. and Dolores E. Henderson
 10772 Frederick Road
 Ellicott City, Md. 21042

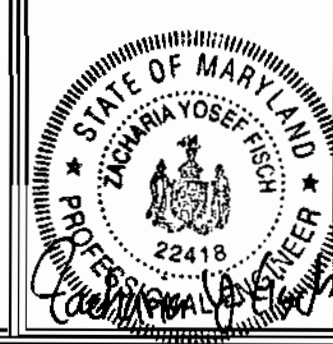
DEVELOPER

Knauff Development LLC.
 4979 Buckskin Lake Drive
 Ellicott City, Md. 21042

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND

FSH Associates
 Engineers Planners Surveyors
 8318 Forrest Street Ellicott City, MD 21043
 Tel: 410-750-2251 Fax: 410-750-7350
 E-mail: FSHAssociates@cs.com



DESIGN BY: PS
 DRAWN BY: Slim
 CHECKED BY: ZYP
 DATE: Mar. 5, 2003

BY	NO.	REVISION	DATE

WATER AND SEWER PLAN

600' SCALE MAP NO.: 16 BLOCK NO.: 24

VANBORINE PLACE

LOTS 1 THRU 4 AND OPEN SPACE
 CONTRACT NO. 24-40F6-D
 TAX MAP 16 GRID 24 PARCEL 12
 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE
 AS
 SHOWN

SHEET NO.
 3 OF 3

R.H. Benner 3-17-03
 CHIEF, BUREAU OF UTILITIES DATE

[Signature] 4/16/03
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE