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2	PLAN AND PROFILE OF WATER AND SEWER MAINS

# WATER AND SEWER EXTENSIONS ARBOR MEADOWS

## 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 14-4191-D

**BENCH MARKS**

HOWARD COUNTY MONUMENT 0048  
N 557,526.343 E 1,370,661.989 ELEV. 348.719  
LOCATED 103' +/- NORTH OF MAYFIELD AVENUE  
CENTERLINE OF ROAD AND 5.3' WEST OF POLE  
#254657.

HOWARD COUNTY MONUMENT 37GC  
N 555,250.791 E 1,370,946.348 ELEV. 331.855  
LOCATED ON OLD WATERLOO ROAD, 63.91'  
NORTHEAST FROM 2 STORY BUILDING (#6528),  
107.3' SOUTHEAST FROM WATER MANHOLE, 64.5'  
NORTHWEST FROM FIRE HYDRANT.

**GENERAL NOTES**

- 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 December 2002 by PHRA.
- 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. 0048 and No. 37GC. All vertical controls on NAVD '88. Vertical Controls on the drawings are a stamped disc set on top of concrete column.
- 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 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 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.
- 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)	410-850-4620
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 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 DPW requirements per Section 18.114(a) of the Howard County Code.

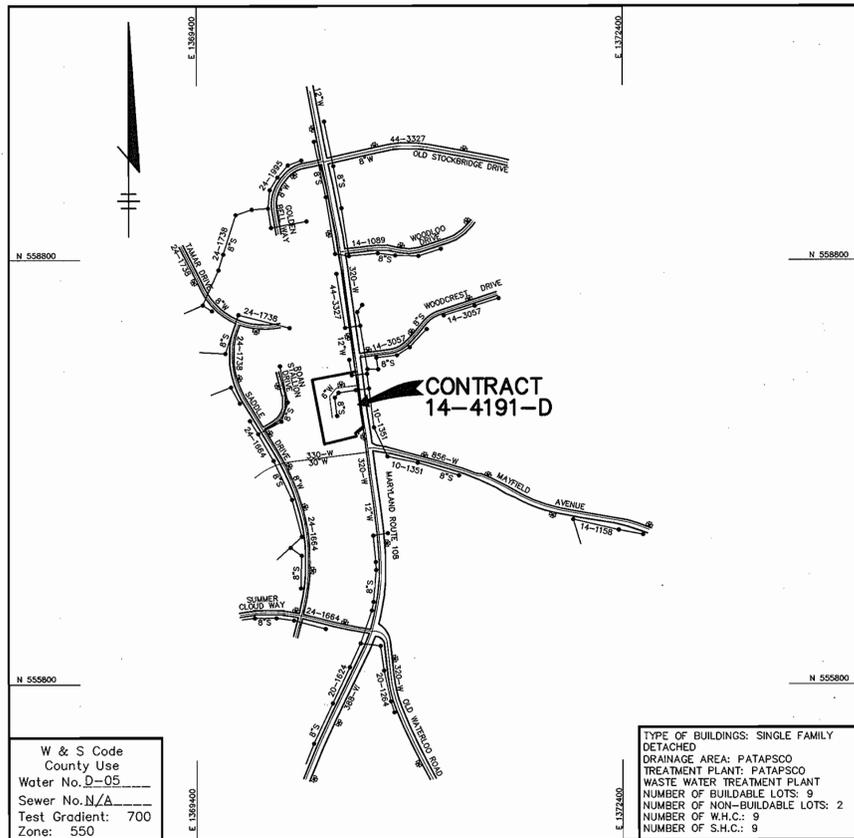
**WATER NOTES**

- 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 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.
- All ductile iron pipes to be used on the public water system shall be class 54. Ductile iron fittings shall meet the requirements of the Howard County Design Manual Volume IV-Standard Specifications and Details for Construction and shall be epoxy coated in accordance with AWWA C116.
- All water house connections shall be copper meeting the requirements of and constructed in accordance with the Howard County Design Manual Volume IV-Standard Specifications and Details for Construction.
- All fire hydrant leads including tee shall be ductile iron class 54 meeting the requirements of and constructed in accordance with the Howard County Design Manual Volume IV-Standard Specifications and Details for Construction.
- All water mains constructed in fill areas shall be restrained iron pipe class 54 meeting the requirements of and constructed in accordance with the Howard County Design Manual Volume IV-Standard Specifications and Details for Construction.
- All water mains constructed in fill areas shall be restrained ductile iron pipe class 54 meeting the requirements of and constructed in accordance with the Howard County Design Manual Volume IV-Standard Specifications and Details for Construction.
- The following note is added to Howard County Standard Detail W2.22, Buttresses and Anchors for Vertical Bends, "When anchoring PVC pipe, the strapping in contact with the pipe surface shall be 1-inch wide by 1/4-inch thick steel. The remaining portion of the strap shall be bor sized in accordance with the pertinent chart as shown on the detail."
- Except as indicated on the Plans and noted above, all public water mains shall be polyvinylchloride (PVC) pipe meeting the requirements of AWWA C900 DR 18, pressure Class 150 and the Howard County Design Manual Volume IV-Standard Specifications and Details for Construction and all subsequent amendments thereto.

**SEWER NOTES**

- All sewer mains shall be D.I.P. and 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 covers, Standard Detail GS.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: THIS SHEET SUPERSEDES THE PREVIOUS MYLARS SIGNED ON JUNE 8, 2005.



**VICINITY MAP**  
SCALE: 1"=600'

**AS BUILT**  
DATE: JANUARY 2007

**QUANTITIES**

ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER / SUPPLIER
8" WATER	128 LF	110 LF	DIP CLASS 52	US PIPE/BELAIR RD. SUPPLY
6" WATER	229 LF	220 LF	DIP CLASS 52	US PIPE/BELAIR RD. SUPPLY
4" WATER	22 LF			
FIRE HYDRANTS	1 EA.	1 EA.	MUELLER	MUELLER CO./BELAIR RD. SUPPLY
1" WHC	197 LF	200 LF	COPPER (K)	CAMBRIDGE/BELAIR RD. SUPPLY
12"x8"TSV	1 EA.	1 EA.	ASSY	MUELLER CO./BELAIR RD. SUPPLY
4" SHC	135 LF	175 LF	PVC SDR-35	JMMANUF./BELAIR RD. SUPPLY
8" SEWER DIP CL 52	237 LF	237 LF	DIP CLASS 52	US PIPE/BELAIR RD. SUPPLY
8" SEWER	178 LF	179 LF	PVC SDR-35	JMMANUF./BELAIR RD. SUPPLY
SEWER MANHOLES	5 EA.	5 EA.	PRECAST	ATLANTIC CONC./ATLANTIC CONC.
BORING AND JACKING	60 LF	90 LF	STEEL	BALTIMORE PIPE/BALTO. PIPE
3" BLOW - OFF	1 EA.	1 EA.	KUPFERLE	KUPFERLE/BELAIR RD. SUPPLY
6" x 4" TEE	1 EA.			
4"-1/4 HB	1 EA.			
6" SEWER	13 LF	13 LF	PVC SDR-35	JMMANUF./BELAIR RD. SUPPLY

NAME OF UTILITY CONTRACTOR : **W. F. WILSON**

Sediment control measures for this contract will be implemented in accordance with Section 219 of the Specifications and as shown on F-05-086	CHECKBOX
	AS-BUILT DATE: <b>JANUARY 2007</b>
	SURVEY AND DRAFTING DIVISION

Review for Howard Soil Conservation District and meets technical requirements.

*Jim Myers* 4/25/06  
NATURAL RESOURCES CONSERVATION SERVICE DATE

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

*John K. Robinson* 4/25/06  
HOWARD SOIL CONSERVATION DISTRICT DATE

OWNER  
ARBOR MEADOWS, LLC  
c/o BRIAN D. BOY  
9691 NORFOLK AVENUE  
LAUREL, MD 20723  
(410) 792-2565

DEVELOPER  
CORNERSTONE HOLDINGS, LLC  
ATTN: BRIAN BOY  
9691 NORFOLK AVENUE  
LAUREL, MD 20723  
(410) 792-2565

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

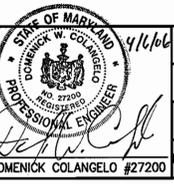
*R. B. B...* 4-11-06  
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND

*...* 4/21/06  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Patton Harris Rust & Associates, pc  
Engineers, Surveyors, Planners, Landscape Architects.

**PHRA**  
8819 Centre Park Drive  
Columbia, MD 21045  
T 410.997.8900  
F 410.997.9282



DES: C.J.R.			
DRN: DAM			
FILE:			
DATE: 5/20/05	ACR 1	ADDED EX. 36" WATER MAIN AND MOVED MANHOLE SMH 102	04/04/06
BY NO.		REVISION	DATE

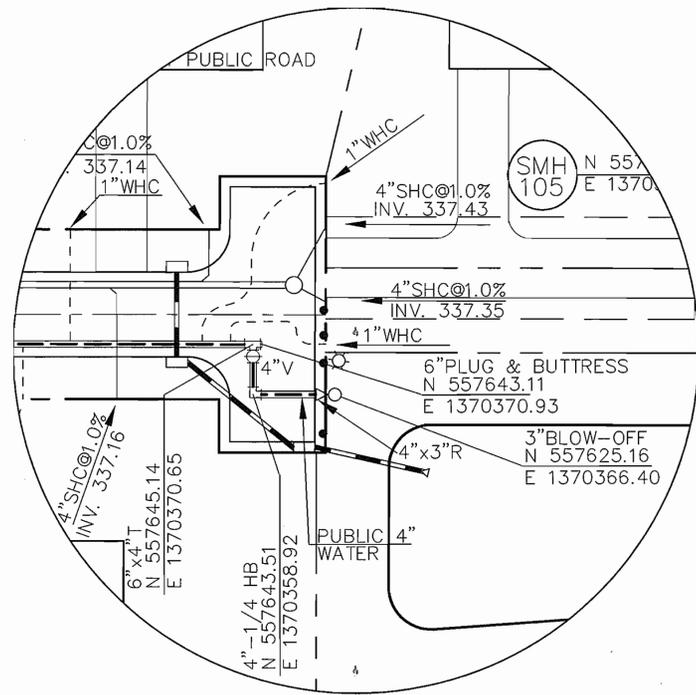
**TITLE SHEET**

600' SCALE MAP NO. 37 BLOCK NO. 14

**ARBOR MEADOWS**  
LOTS 1 THRU 11  
6th ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
CONTRACT 14-4191-D

SCALE AS SHOWN  
SHEET 1 OF 2

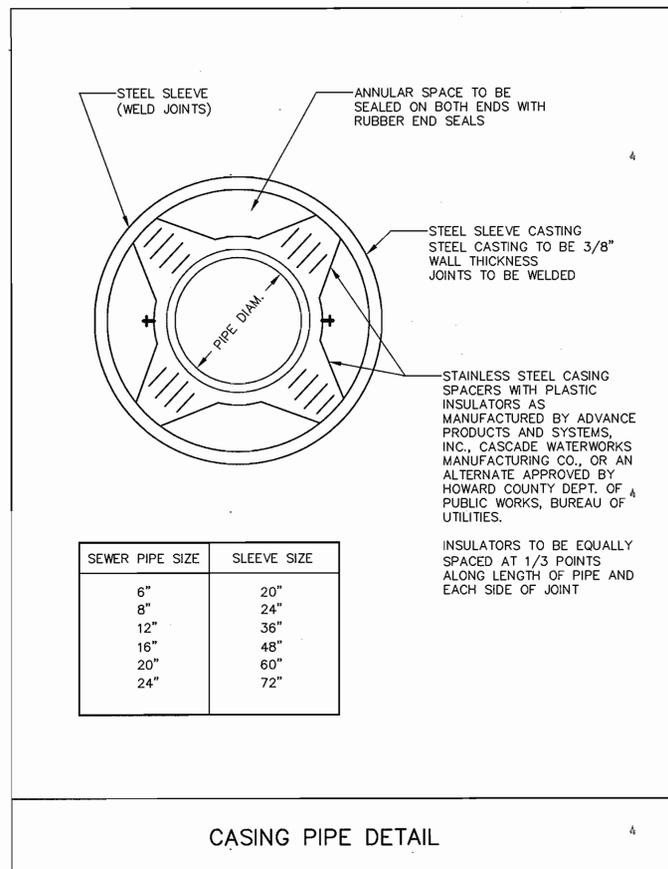
\*PRIOR TO UTILITY WORK IN MD RTE 108 R/W, A UTILITY PERMIT FROM MSHA MUST BE OBTAINED.



**BLOW-UP**  
SCALE: 1"=20'

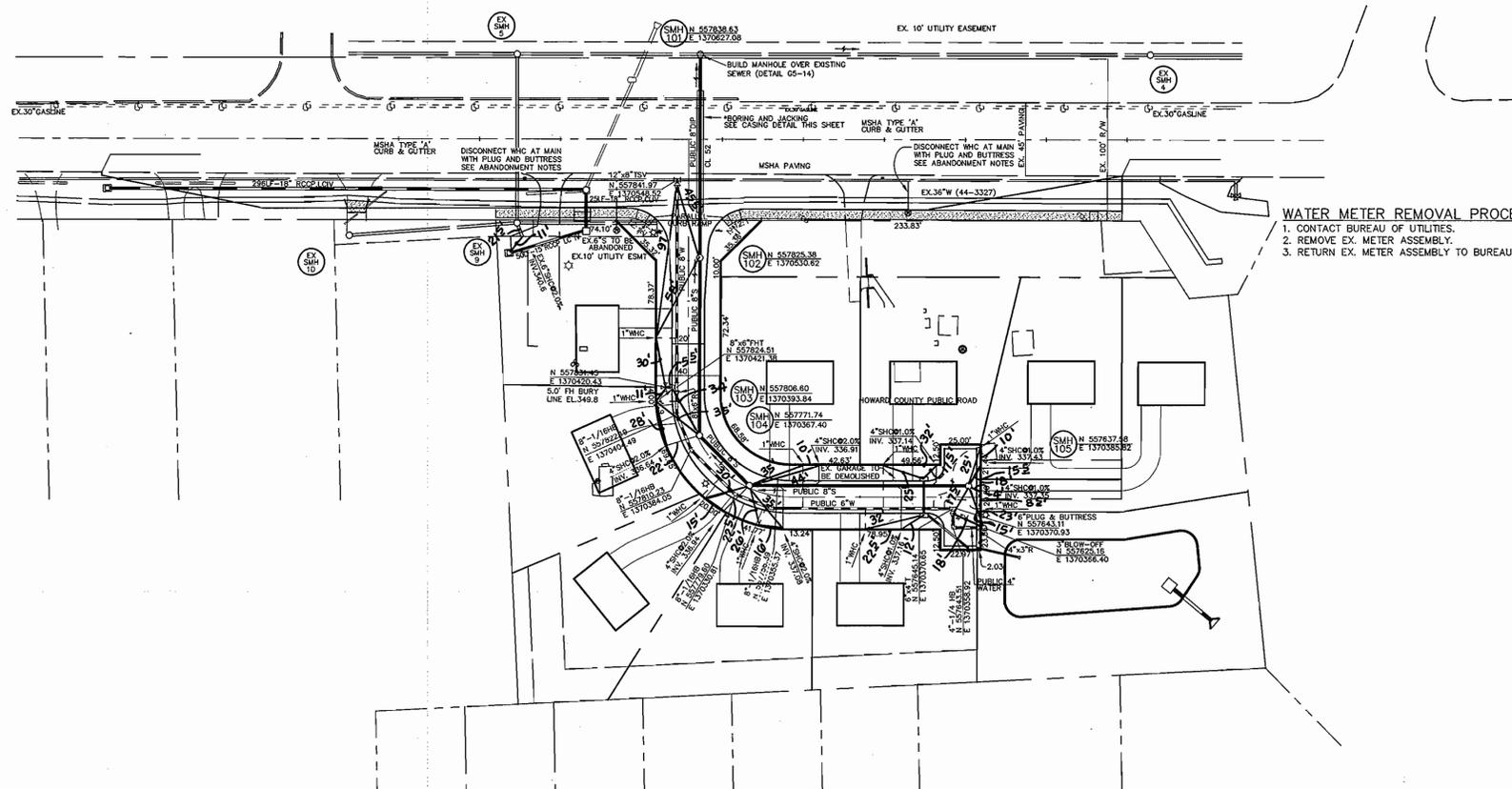
**NOTES:**

1. BORE AND JACK CASING PIPE BEFORE SETTING MANHOLE 3.
2. ADJUST SLOPE OF SEWER PIPE USING ADJUSTABLE CASING SPACERS.

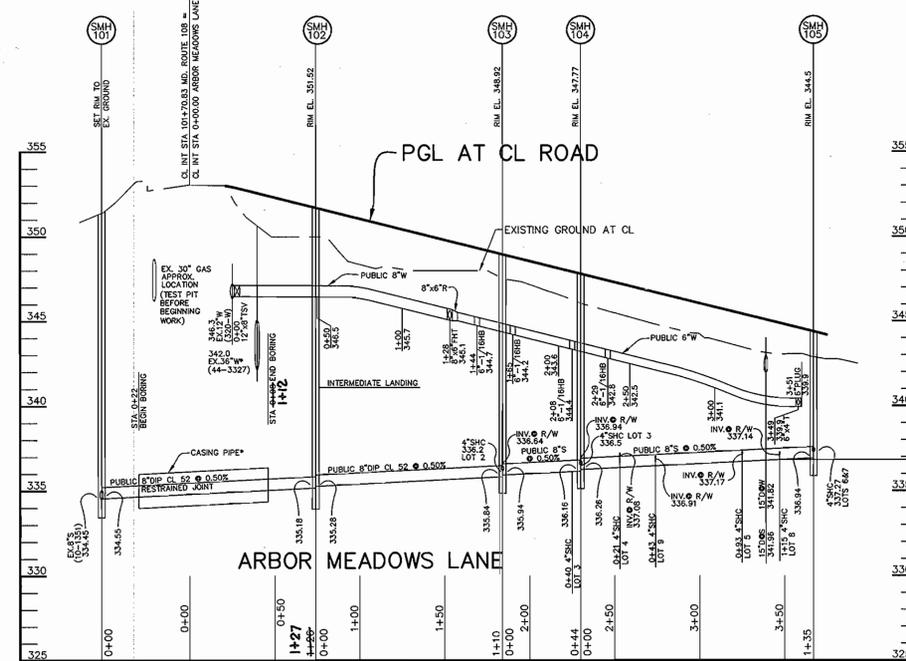


SEWER PIPE SIZE	SLEEVE SIZE
6"	20"
8"	24"
12"	36"
16"	48"
20"	60"
24"	72"

**CASING PIPE DETAIL**



**PLAN**  
SCALE: 1"=50'



**PROFILE**  
SCALE: HOR. 1"=50'  
VERT. 1"=5'

**AS BUILT**  
DATE: JANUARY 2007

\*NOTE: THE 36" WATER MAIN SHALL NOT BE EXPOSED AT ANY TIME DURING THE CASING/SEWER INSTALLATION. ADEQUATE SHORING SHALL BE USED TO SUPPORT THE TRENCH AROUND THE 36" WATER MAIN AT ALL TIMES. MAINTAIN A MIN. 5' SEPARATION BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE FACE OF THE JACKING PIT. THE CASING SHOULD EXTEND A MIN. 5' FROM THE EDGE OF THE WATER MAIN.

NOTE: THIS SHEET SUPERSEDES THE PREVIOUS MYLARS SIGNED ON JUNE 8, 2005.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND

Patton Harris Rust & Associates, pc  
Engineers, Surveyors, Planners, Landscape Architects.  
**P-H-R-A**  
8818 Centre Park Drive  
Columbia, MD 21045  
T 410.997.8900  
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DES: C.J.R.			
DRN: DAM			
FILE:			
DATE: 5/20/05	ACR 1	ADDED EX. 36" WATER MAIN AND MOVED MANHOLE SMH 102	04/04/06
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**PLAN AND PROFILE OF WATER AND SEWER MAINS**

600' SCALE MAP NO. 37 BLOCK NO. 14

**ARBOR MEADOWS**  
LOTS 1 THRU 11  
6th ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
CONTRACT 14-4191-D

SCALE AS SHOWN  
SHEET 2 OF 2

*Ruth Bauman* 4/11/06  
CHIEF, BUREAU OF UTILITIES DATE

*Domenick Colangelo* 4/21/06  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE