

SHEET INDEX	
1	TITLE SHEET
2	OVERALL VIEW
3	PLAN VIEW OF WATER AND SEWER MAINS
4	PLAN VIEW OF WATER AND SEWER MAINS
5	PLAN VIEW OF WATER AND SEWER MAINS
6	PLAN VIEW OF WATER AND SEWER MAINS
7	PLAN VIEW OF WATER AND SEWER MAINS
8	PLAN VIEW OF WATER AND SEWER MAINS
9	PROFILES OF WATER AND SEWER MAINS
10	PROFILES OF WATER AND SEWER MAINS
11	PROFILES OF WATER AND SEWER MAINS
12	PROFILES OF WATER AND SEWER MAINS

# WATER AND SEWER EXTENSIONS

# BENSON EAST, ONSITE

## 6th ELECTION DISTRICT

## HOWARD COUNTY, MARYLAND

## CONTRACT NO. 24-4284-D

### BENCHMARKS

GEODETIC SURVEY CONTROL 37GD  
 N 553,237.204  
 E 1,372,353.605  
 ELEV. 290.931  
 LOCATED 30' EAST OF FIRE HYDRANT ACROSS FROM DEEP RUN ELEMENTARY SCHOOL

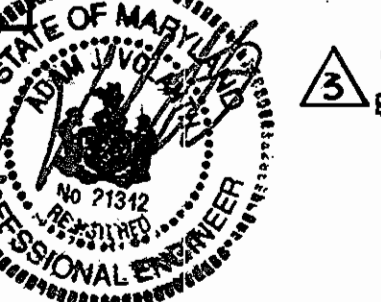
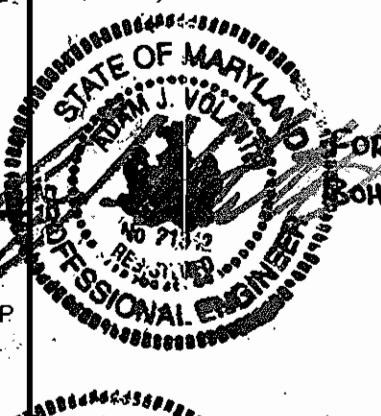
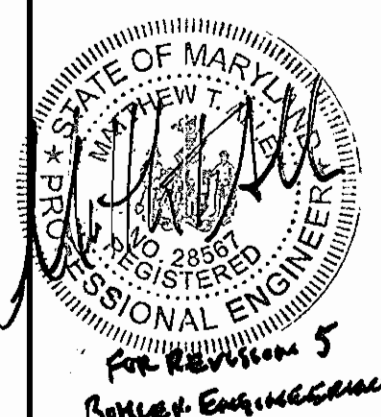
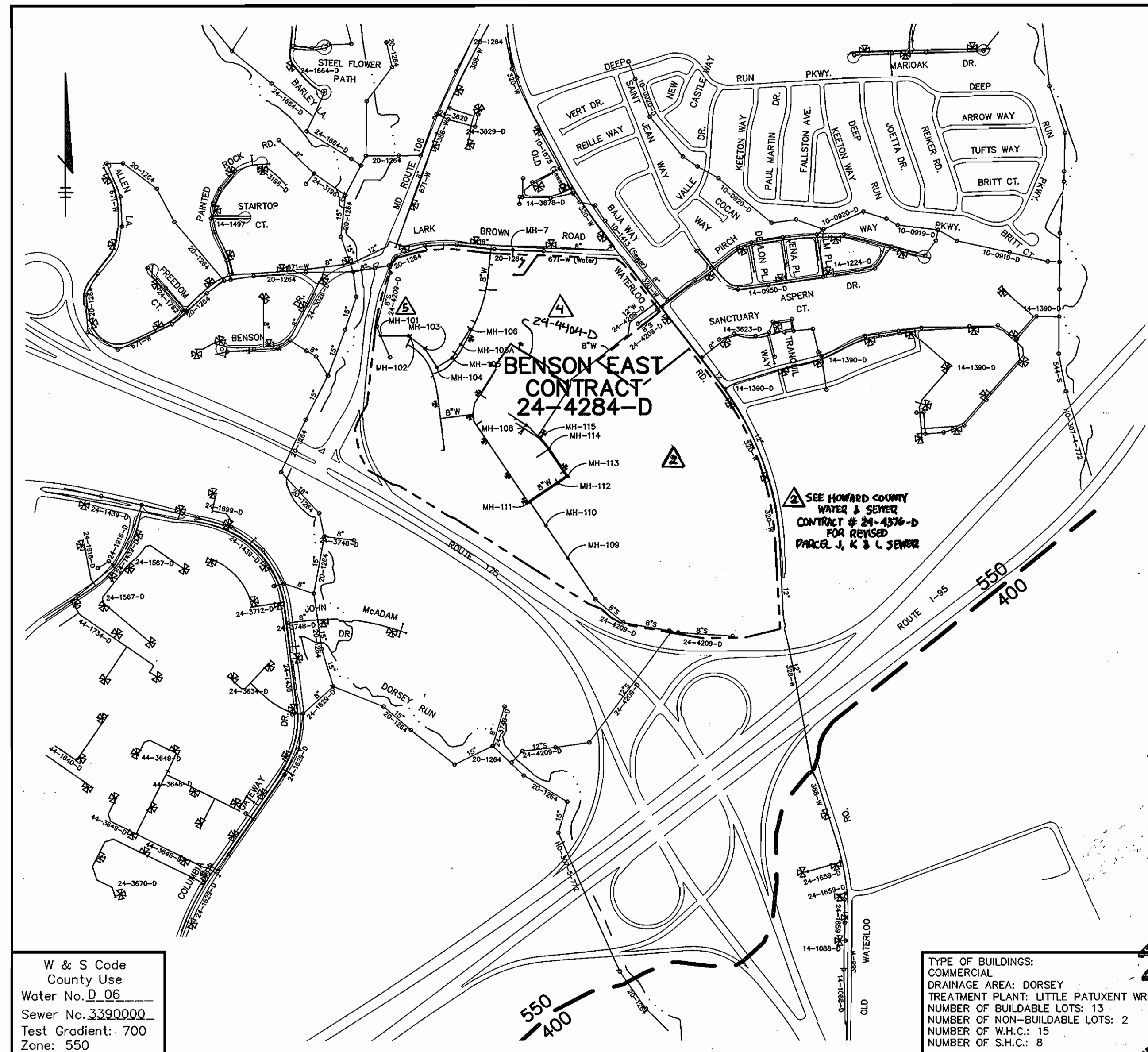
GEODETIC SURVEY CONTROL 37GC  
 N 555,250.791  
 E 1,370,946.348  
 ELEV. 331.855  
 LOCATED ON THE SOUTH SIDE OF OLD WATERLOO ROAD ACROSS FROM DEEP RUN PARKWAY

### 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 MAY 2003 by DAFT McCUNE WALKER, INC.
- 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. 37GD and No. 37GC.
  - All vertical controls on NAVD '88. Vertical Controls on the drawings are ELEVATION 290.931 and ELEVATION 331.855.
- 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(c) of the Howard County Code.

QUANTITIES				
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER / SUPPLIER
8" WATER	5010 LF	5000	CL-52 DIP	GRIFFIN PIPE
6" WATER	149 LF	149	"	"
FIRE HYDRANTS	9 EA	9	5'-7-5'	MUELLER CO
8" x 8" TSV	1 EA	1	S.S. TAPSLEEVE	JCM.
8" SEWER	4270 LF	4270	SDR 35	J.Y. MFG.
8" DIP CL 52	630 LF	630	CL-52 DIP	GRIFFIN PIPE
SEWER MANHOLES	28 EA	28	PRECAST	ATLANTIC CONCRETE



NAME OF UTILITY CONTRACTOR: C.C.S. INC.

Sediment control measures for this contract will be implemented in accordance with Section 219 of the Specifications and as shown on F-05-058

Review for Howard Soil Conservation District and meets technical requirements.

*Jim Meyer* 4/27/06  
NATURAL RESOURCE CONSERVATION SERVICE DATE

*John R. Roberts* 4/27/06  
HOWARD SOIL CONSERVATION DISTRICT DATE

OWNER / DEVELOPER  
HRD LAND HOLDINGS, INC.  
HOWARD RESEARCH AND DEVELOPMENT CORPORATION  
THE ROUSE BUILDING  
10275 LITTLE PATUXENT PARKWAY  
COLUMBIA, MARYLAND 21044  
410-992-6000

W & S Code  
County Use  
Water No. D\_06  
Sewer No. 3390000  
Test Gradient: 700  
Zone: 550

CHECKBOX  
AS-BUILT DATE 10/10/06  
SURVEY AND DRAFTING DIVISION

VICINITY MAP  
SCALE: 1"=600'

NOTE: "THIS SHEET SUPERSEDES THE PREVIOUS PLAN SIGNED ON AUGUST 10, 2005, BY THE CHIEF OF THE DEVELOPMENT ENGINEERING DIVISION."

- ### WATER NOTES
- All water mains shall be D.I.P. Class 52 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 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.
- ### 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.

FOR REVISION 5  
Bohler Engineering, P.C.

FOR REVISION 4  
Bohler Engineering, P.C.

FOR REVISION 3  
Bohler Engineering, P.C.

FOR BENSON NO. 2  
HARRIS & RUTHE ASSOCIATES, INC.  
*Kevin S. Ruthe* 1/16/07  
KEVIN S. RUTHE, PE NO. LC 20185

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Mark Wells* 4/18/06  
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND

*Robert S. Bohler* 5/1/06  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Patton Harris Rust & Associates, pc  
Engineers, Surveyors, Planners, Landscape Architects.  
8818 Centre Park Drive  
Columbia, MD 21045  
T 410.997.8900  
F 410.997.9282

*Robert S. Bohler* 4/16/06  
DOMENICK W. COLANGELO #27200

DES.	C.J.R.	KCI	6	AS-BUILT DATA ADDED	5/16/05
		Bohler	5	Revised to ADD Domestic & Irrigation Meters	2/25/07
DRN:	DAM	Bohler	4	REVISED TO ADD WATERLINE FOR CONTRACT #24-4284-D	4/25/07
		Bohler	3	REVISED WHC FOR PARCEL G	4/11/07
CHK:	C.J.R.	MRA	2	REMOVED PARCEL J, K & L SEWER LINES	11/27/06
		EMR	1	REVISED QUANTITIES AND VICINITY MAP	04/08/06
DATE:	6/8/05				
BY	NO.			REVISION	DATE

PARCEL NO.	482, 587, 382, 421 & 547
600' SCALE MAP NO.	37 & 43, BLOCK NO. 20 & 2

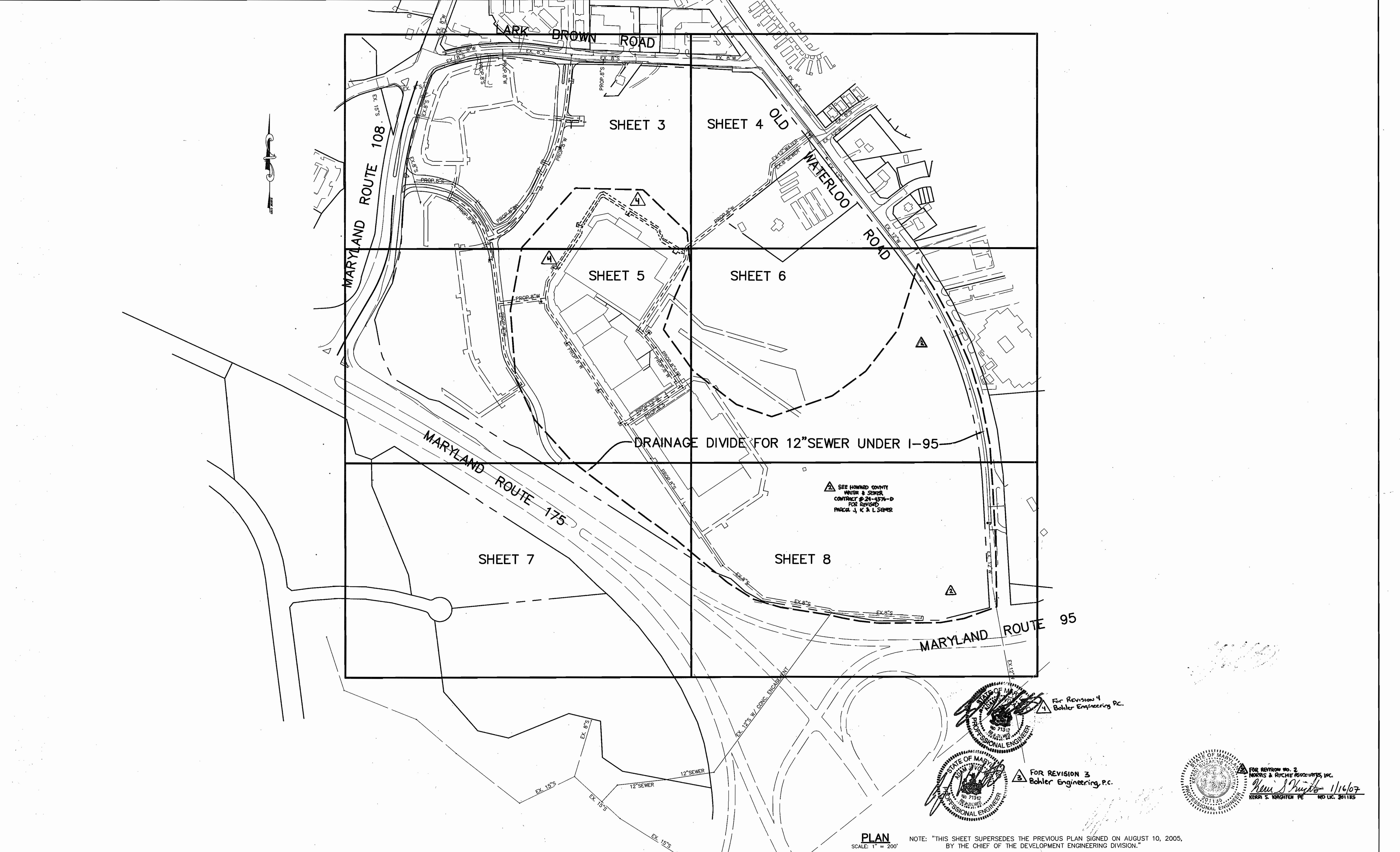
**TITLE SHEET**

**BENSON EAST, ONSITE**  
**PARCELS A - O**  
**6th ELECTION DISTRICT**  
**HOWARD COUNTY, MARYLAND**  
**CONTRACT 24-4284-D**

SCALE AS SHOWN  
SHEET 1 OF 12

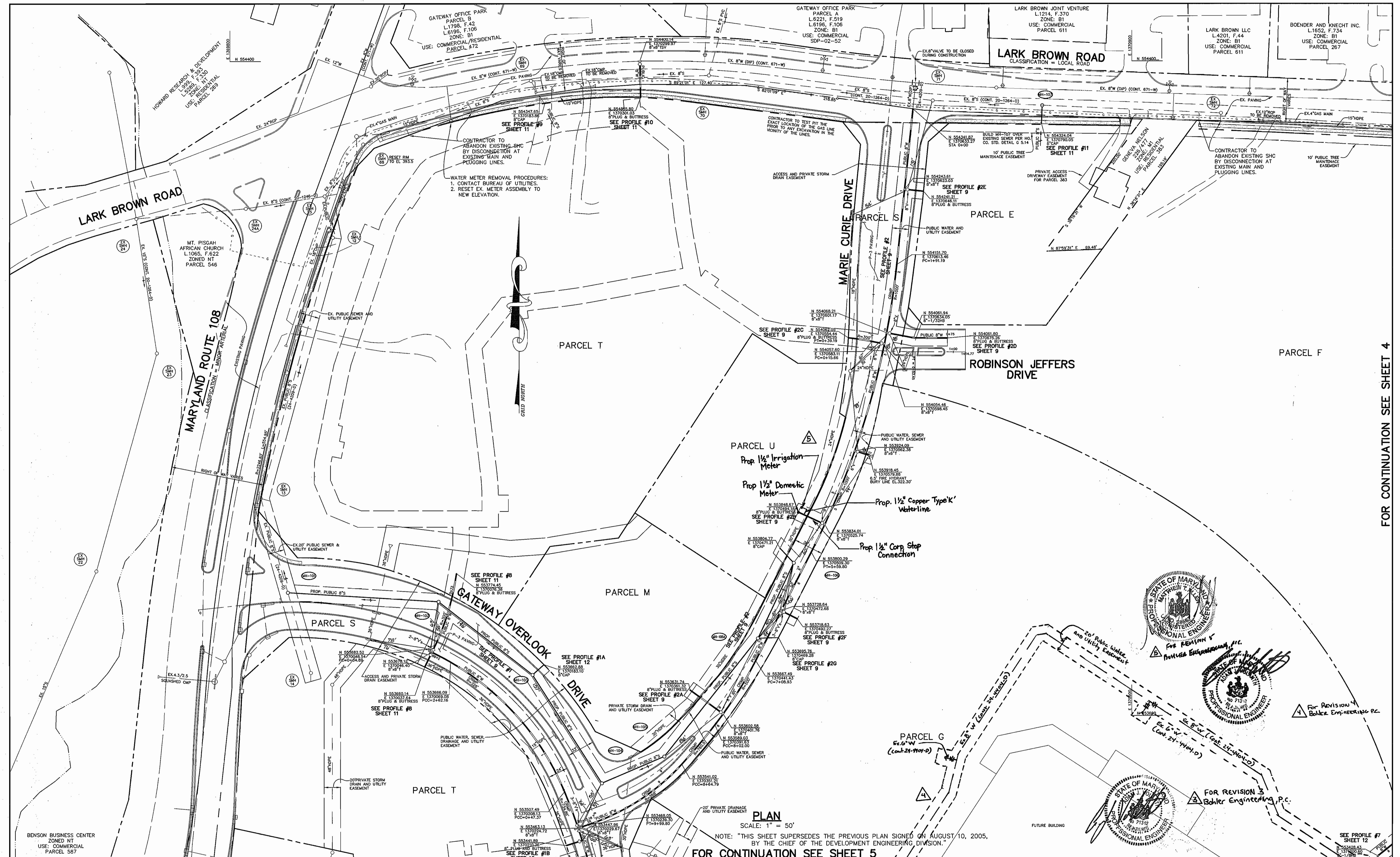
P:\Projects\116211-06\p\p\PRELIM\W&S ONSITE Final Rdring.MXD 4/19/2006 3:02:30 PM





DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND		DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND		 DOMENICK W. COLANGELO #27200		DES: C.J.R. DRN: DAM CHK: C.J.R. EMR: 1 BY: NO.		<table border="1"> <tr> <th>NO.</th> <th>REVISION</th> <th>DATE</th> </tr> <tr> <td>4</td> <td>Revised to Add Waterlines Per Contract # 24-4401D</td> <td>4/16/06</td> </tr> <tr> <td>3</td> <td>REVISED WMC FOR PARCEL G</td> <td>4/11/07</td> </tr> <tr> <td>2</td> <td>REMOVED PARCEL J, K &amp; L SEWER LINES</td> <td>11/27/04</td> </tr> <tr> <td>1</td> <td>REV. WTR. &amp; SEW. LINES; REV. BUILD. &amp; PROP. LINE</td> <td>04/08/06</td> </tr> </table>		NO.	REVISION	DATE	4	Revised to Add Waterlines Per Contract # 24-4401D	4/16/06	3	REVISED WMC FOR PARCEL G	4/11/07	2	REMOVED PARCEL J, K & L SEWER LINES	11/27/04	1	REV. WTR. & SEW. LINES; REV. BUILD. & PROP. LINE	04/08/06	OVERALL PLAN PARCEL NO. 482, 587, 382, 421 & 547 60' SCALE MAP NO. 37 & 43 BLOCK NO. 20 & 2		BENSON EAST, ONSITE PARCELS A - O 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT 24-4284-D		SCALE AS SHOWN
NO.	REVISION	DATE																											
4	Revised to Add Waterlines Per Contract # 24-4401D	4/16/06																											
3	REVISED WMC FOR PARCEL G	4/11/07																											
2	REMOVED PARCEL J, K & L SEWER LINES	11/27/04																											
1	REV. WTR. & SEW. LINES; REV. BUILD. & PROP. LINE	04/08/06																											
 CHIEF, BUREAU OF UTILITIES		 CHIEF, DEVELOPMENT ENGINEERING DIVISION		 KEARA S. WRIGHTEN PE MD LIC. 201135		DATE: 6/8/05		SHEET 2 OF 12																					

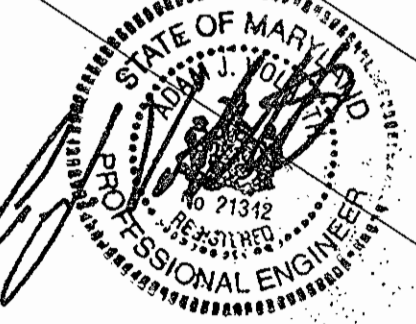
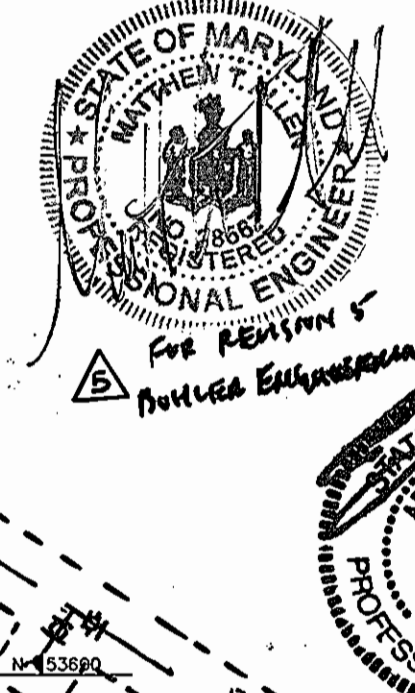




FOR CONTINUATION SEE SHEET 4

**PLAN**  
SCALE: 1" = 50'  
NOTE: "THIS SHEET SUPERSEDES THE PREVIOUS PLAN SIGNED ON AUGUST 10, 2005, BY THE CHIEF OF THE DEVELOPMENT ENGINEERING DIVISION."

FOR CONTINUATION SEE SHEET 5



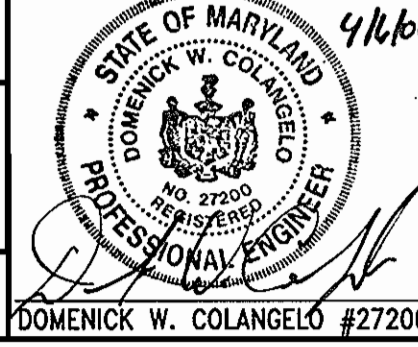
FOR REVISION 3  
Bohler Engineering, P.C.

FOR REVISION 4  
Bohler Engineering, P.C.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND

Patton Harris Rust & Associates, P.C.  
Engineers, Surveyors, Planners, Landscape Architects.  
**PHRA**  
8818 Centre Park Drive  
Columbia, MD 21045  
T 410.997.8900  
F 410.997.9282



DES:	C.J.R.	KCI	6	AS-BUILT DATA ADDED	5/16/08
DRN:	DAM	Bohler	4	Revised to ADD Domestic & Irrigation Meters	8/25/07
CHK:	C.J.R.	Bohler	3	Revised to Add Waterlines Per Contract # 24-4284-D	4/15/07
CHK:	C.J.R.	Bohler	3	REVISED WHC FOR PARCEL G	4/11/07
EMR:	1			REVISED PARCEL NUMBERS AND ROAD NAMES	04/08/06
BY:	NO.			REVISION	DATE

**PLAN VIEW OF WATER AND SEWER MAINS**  
PARCEL NO. 482, 587, 382, 421 & 547  
600' SCALE MAP NO. 37 & 43 BLOCK NO. 20 & 2

**BENSON EAST, ONSITE**  
6th ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
CONTRACT 24-4284-D

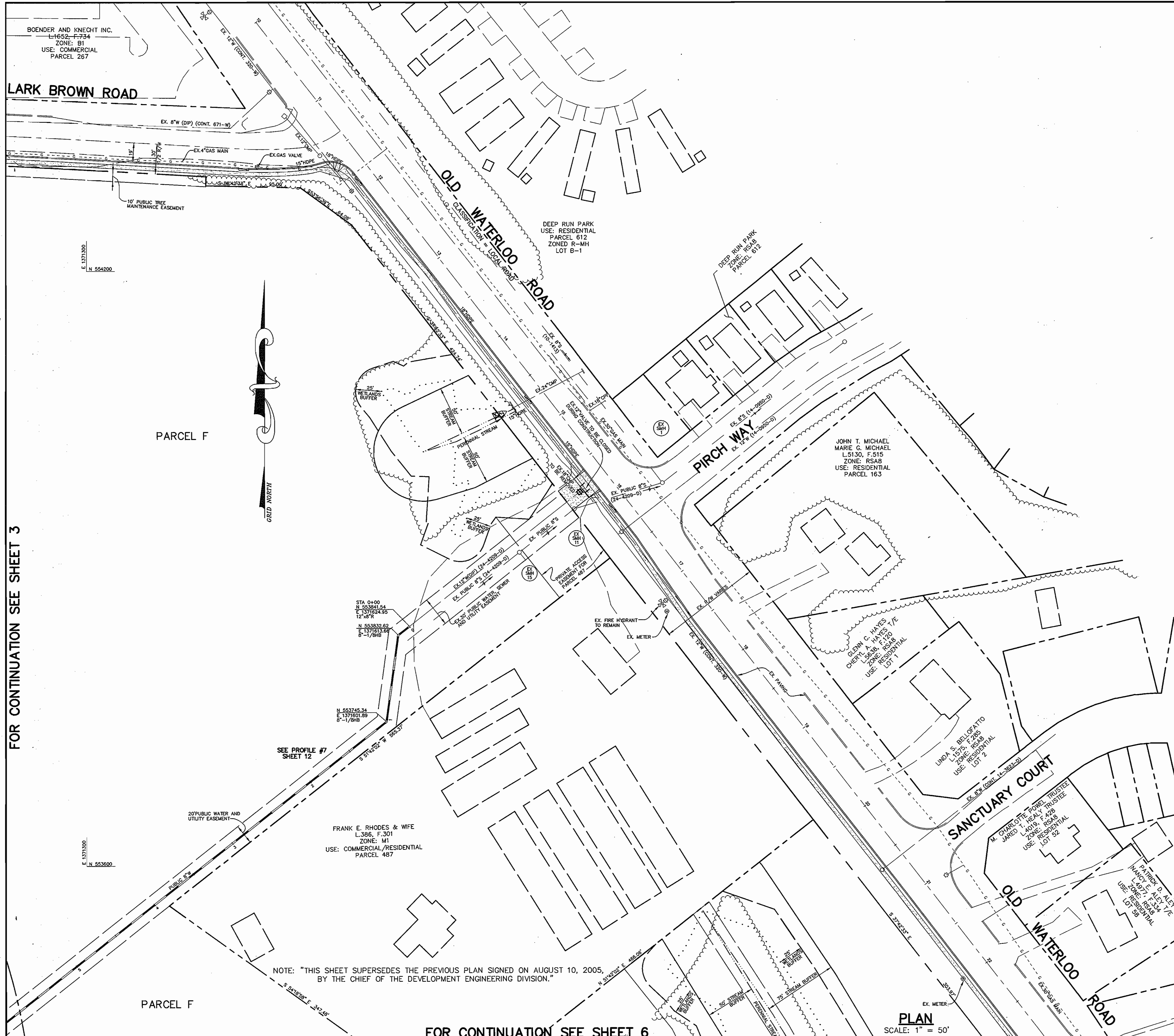
SCALE AS SHOWN  
SHEET 3 OF 12

*Jeffery L. Long* 4/15/04  
CHIEF, BUREAU OF UTILITIES

*Domenick W. Colangelo* 5/16/08  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

DATE





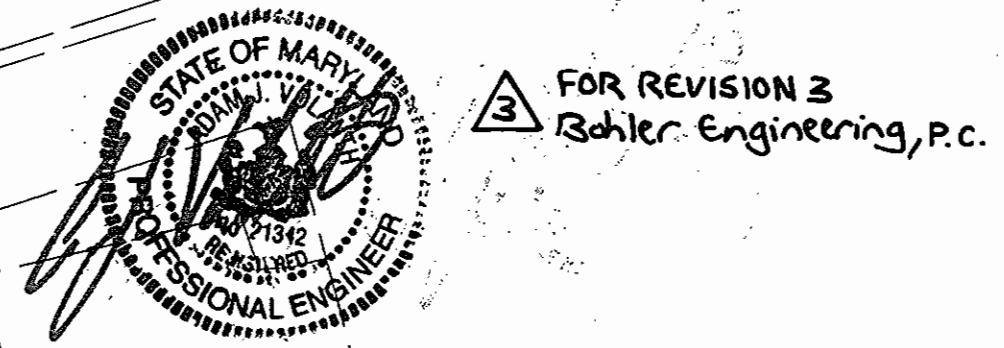
STRUCTURE SCHEDULE							
STRUCTURE	TYPE	LOCATION	INV. IN	INV. OUT	TOP	REMARKS	
SMH-101	4"-0" DIA.	N 553751 E 1369870	280.72 (8')	280.62 (8')	288.95	HOCO STD. DETAIL G-5.11	
SMH-102	4"-0" DIA.	N 553740 E 1370054	281.74 (8')	281.64 (8')	295.88	HOCO STD. DETAIL G-5.11	
SMH-103	4"-0" TYPE B DIA. DROP	N 553650 E 1370169	291.00 (8') 291.00 (8')	286.00 (8')	304.69	HOCO STD. DETAIL G-5.11/S-1.32	
SMH-104	4"-0" DIA.	N 553517 E 1370253	301.15 (8')	301.05 (8')	312.63	HOCO STD. DETAIL G-5.11	
SMH-105	4"-0" DIA.	N 553550 E 1370329	301.67 (8')	301.57 (8')	317.4	HOCO STD. DETAIL G-5.11	
SMH-106	4"-0" DIA.	N 553787 E 1370487	303.30 (8')	303.20 (8')	321.9	HOCO STD. DETAIL G-5.11	
SMH-107	4"-0" DIA.	N 554346 E 1370790	308.63 (8')	308.53 (8')	323.0	HOCO STD. DETAIL G-5.11	
SMH-108	4"-0" DIA.	N 553106 E 1370883	319.33 (8') 319.68 (8')	317.65 (8')	326.6	HOCO STD. DETAIL G-5.11	
SMH-109	4"-0" TYPE B DIA. DROP	N 552166 E 1371176	320.43 (6') 310.19 (8')	310.09 (8')	328.1	HOCO STD. DETAIL G-5.11/S-1.32	
SMH-110	4"-0" DIA.	N 552397 E 1371021	313.00 (8') 311.99 (8')	311.89 (8')	328.4	HOCO STD. DETAIL G-5.11	
SMH-111	4"-0" DIA.	N 552563 E 1370910	313.26 (8')	313.16 (8')	328.0	HOCO STD. DETAIL G-5.11	
SMH-112	4"-0" TYPE B DIA. DROP	N 552696 E 1371108	322.80 (8') 314.55 (8')	314.21 (8')	320.0	HOCO STD. DETAIL G-5.11/S-1.32	
SMH-113	4"-0" DIA.	N 552743 E 1371179	315.08 (8')	314.98 (8')	328.2	HOCO STD. DETAIL G-5.11	
SMH-114	4"-0" DIA.	N 552940 E 1371046	316.37 (8') 316.37 (8')	314.45 (8')	327.0	HOCO STD. DETAIL G-5.11	
SMH-115	4"-0" DIA.	N 553019 E 1370983	316.98 (8') 316.98 (8')	316.88 (8')	328.2	HOCO STD. DETAIL G-5.11	
SMH-116	4"-0" DIA.	N 551977 E 1372505	266.17 (8')	266.07 (8')	SET TO 6" EX. GROUND	HOCO STD. DETAIL G-5.11	
SMH-117	4"-0" DIA.	N 552092 E 1372442	266.92 (8')	266.82 (8')	SET TO 6" EX. GROUND	HOCO STD. DETAIL G-5.11	
SMH-118	4"-0" DIA.	N 552158 E 1372298	267.81 (8')	267.71 (8')	SET TO 6" EX. GROUND	HOCO STD. DETAIL G-5.11	
SMH-119	4"-0" DIA.	N 552249 E 1372340	268.41 (8')	268.31 (8')	SET TO 6" EX. GROUND	HOCO STD. DETAIL G-5.11	
SMH-120	4"-0" DIA.	N 552319 E 1372562	269.67 (8')	269.57 (8')	SET TO 6" EX. GROUND	HOCO STD. DETAIL G-5.11	
SMH-121	4"-0" DIA.	N 552438 E 1372524	270.39 (8')	270.29 (8')	SET TO 6" EX. GROUND	HOCO STD. DETAIL G-5.11	
SMH-122	4"-0" DIA.	N 552538 E 1372414	271.23 (8')	271.13 (8')	SET TO 6" EX. GROUND	HOCO STD. DETAIL G-5.11	
SMH-123	4"-0" DIA.	N 552653 E 1372328	272.05 (8')	271.95 (8')	SET TO 6" EX. GROUND	HOCO STD. DETAIL G-5.11	
SMH-124	4"-0" DIA.	N 552800 E 1372353	272.89 (8')	272.79 (8')	SET TO 6" EX. GROUND	HOCO STD. DETAIL G-5.11	
SMH-125	4"-0" DIA.	N 552954 E 1372400	273.79 (8')	273.69 (8')	SET TO 6" EX. GROUND	HOCO STD. DETAIL G-5.11	
SMH-126	4"-0" DIA.	N 553088 E 1372371	-	274.48 (8')	SET TO 6" EX. GROUND	HOCO STD. DETAIL G-5.11	
SMH-105A	4"-0" DIA.	N 553694 E 1370444	302.69 (8') 302.69 (8')	302.59 (8')	321.0	HOCO STD. DETAIL G-5.11	
SMH-127	4"-0" TYPE A DIA. DROP	N 552921 E 1371018	317.66 (4') 319.65 (4')	316.70 (4')	327.2	HOCO STD. DETAIL G-5.11/S-1.32	

- FIRE HYDRANT REMOVAL PROCEDURES:
1. CONTACT BUREAU OF UTILITIES.
  2. REMOVE EX. HYDRANT ASSEMBLY.
  3. RETURN EX. HYDRANT TO BUREAU OF UTILITIES.
- WATER METER REMOVAL PROCEDURES:
1. CONTACT BUREAU OF UTILITIES.
  2. RESET EX. METER ASSEMBLY TO NEW ELEVATION.

FOR CONTINUATION SEE SHEET 3

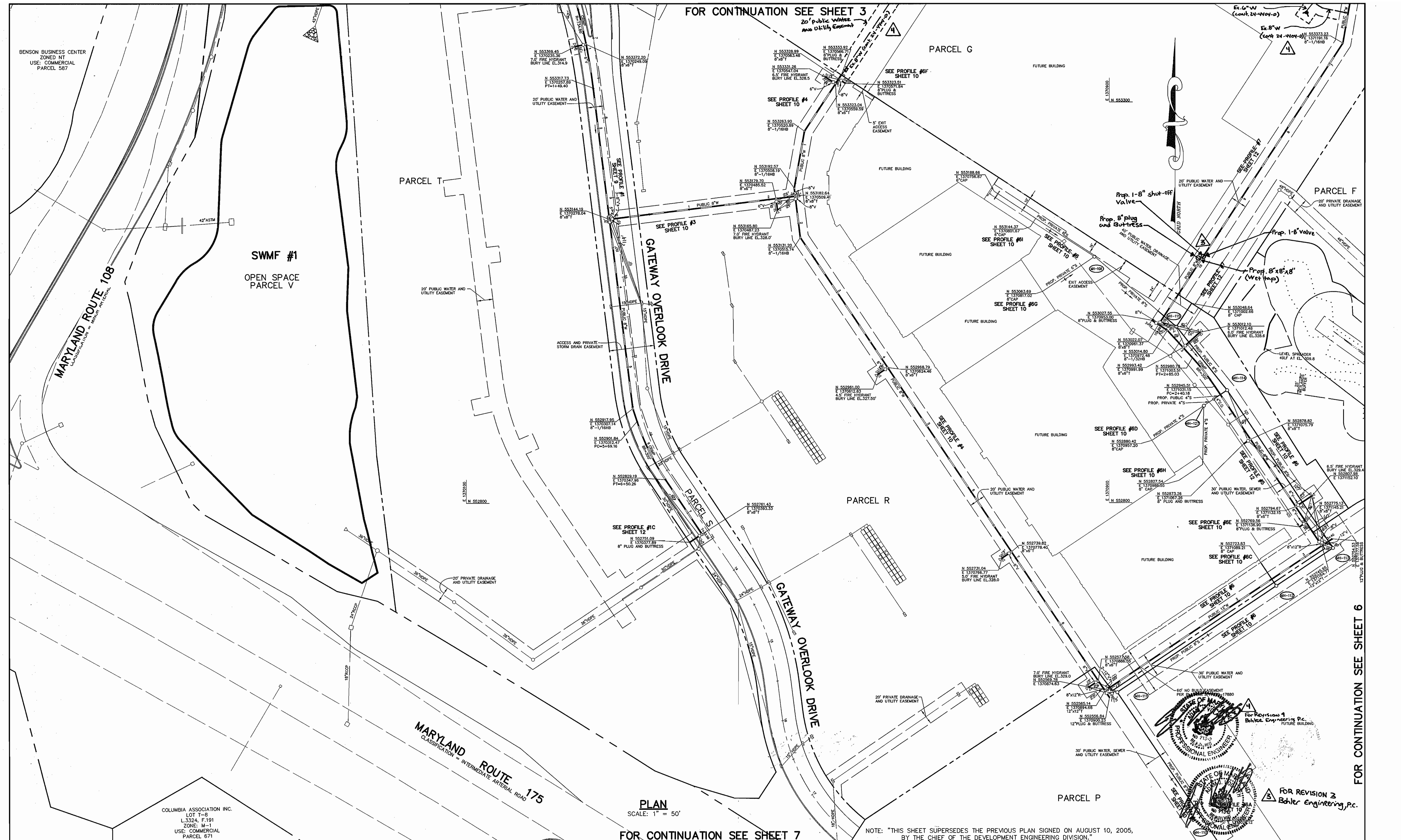
FOR CONTINUATION SEE SHEET 6

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND 		DES: C.J.R. DRN: DAM CHK: C.J.R. DATE: 6/8/05	4/1/06 REVISION WHC FOR PARCEL G 4/1/07 REVISION STRUCTURE SCHEDULE 04/08/08	PLAN VIEW OF WATER AND SEWER MAINS PARCEL NO. 482, 587, 382, 421 & 547 600' SCALE MAP NO. 37 & 43 BLOCK NO. 20 & 2	BENSON EAST, ONSITE PARCELS A - O 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT 24-4284-D	SCALE AS SHOWN SHEET 4 OF 12
---	--	--	--	--	---	--	---------------------------------



NOTE: "THIS SHEET SUPERSEDES THE PREVIOUS PLAN SIGNED ON AUGUST 10, 2005, BY THE CHIEF OF THE DEVELOPMENT ENGINEERING DIVISION."





FOR CONTINUATION SEE SHEET 3  
20' PUBLIC WATER AND UTILITY EASEMENT

FOR CONTINUATION SEE SHEET 6

PLAN  
SCALE: 1" = 50'

NOTE: "THIS SHEET SUPERSEDES THE PREVIOUS PLAN SIGNED ON AUGUST 10, 2005, BY THE CHIEF OF THE DEVELOPMENT ENGINEERING DIVISION."

FOR REVISION 1  
Bohler Engineering, P.C.

FOR REVISION 2  
Bohler Engineering, P.C.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*John L. Lemo* 4/10/06  
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND

*John L. Lemo* 5/1/06  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Patton Harris Rust & Associates, P.C.  
Engineers, Surveyors, Planners, Landscape Architects.  
8818 Centre Park Drive  
Columbia, MD 21045  
T 410.997.8900  
F 410.997.9282

STATE OF MARYLAND  
DOMENICK W. COLANGELO #27200  
PROFESSIONAL ENGINEER

DES:	C.J.R.	KCI	5	AS-BUILT DATA ADDED	5/16/06
DRN:	DAM	Bohler	4	Revised to Add Manholes For Contract #24-4284-D	4/10/06
CHK:	C.J.R.	Bohler	3	REVISED WAC FOR PARCEL G	4/11/06
DATE:	6/8/05	EMR	1	REV. WTR. AND SWR. LINES, PARCELS & RD. NAMES	04/08/06
BY	NO.	BY	NO.	REVISION	DATE

PLAN VIEW OF  
WATER AND SEWER MAINS

PARCEL NO. 482, 587, 382, 421 & 547  
600' SCALE MAP NO. 37 & 43, BLOCK NO. 20 & 2

BENSON EAST, ONSITE  
PARCELS A - O  
6th ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
CONTRACT 24-4284-D

SCALE  
AS  
SHOWN

SHEET  
5 OF 12



FOR CONTINUATION SEE SHEET 4

FIRE HYDRANT REMOVAL PROCEDURES:  
1. CONTACT BUREAU OF UTILITIES.  
2. REMOVE EX-HYDRANT ASSEMBLY.  
3. RETURN EX. HYDRANT TO BUREAU OF UTILITIES.

SHERWOOD CROSSING APTS.  
USE: RESIDENTIAL  
PARCEL 637  
ZONED R-A-15

PARCEL F



E 137860  
N 553100

PARCEL J

OLD WATERLOO ROAD  
CLASSIFICATION LOCAL ROAD

DEEP RUN ELEMENTARY SCHOOL  
L 252, F 546  
USE: EXEMPT COMMERCIAL  
PARCEL 168  
ZONED R-A-15

SWMF #3

FOR CONTINUATION SEE SHEET 5

20' PUBLIC DRAINAGE AND UTILITY EASEMENT

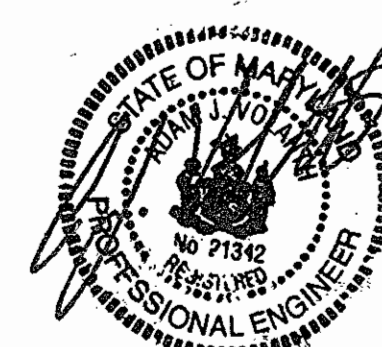
SEE HOWARD COUNTY WATER & SEWER CONTRACT # 24-4284-D FOR REVISED PARCEL J, K & L SEWER

PARCEL K

EX. FIRE HYDRANT TO REMAIN

OPEN SPACE  
PARCEL Q

DEEP RUN PARK  
PARCEL 1  
ZONED R-A-15



FOR REVISION 3  
Bohler Engineering, P.C.

FOR REVISION NO. 2  
MORRIS & RITCHE ASSOCIATES, INC.  
*Kerr S. Knighten* 1/16/07  
KERR S. KNIGHTEN, PE #21193

PARCEL P

PLAN  
SCALE: 1" = 50'

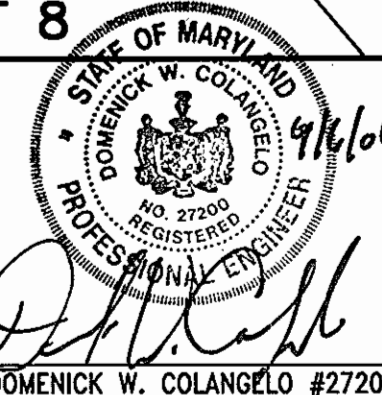
NOTE: THIS SHEET SUPERSEDES THE PREVIOUS PLAN SIGNED ON AUGUST 10, 2005, BY THE CHIEF OF THE DEVELOPMENT ENGINEERING DIVISION.

FOR CONTINUATION SEE SHEET 8

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND

Patton Harris Rust & Associates, pc  
Engineers, Surveyors, Planners, Landscape Architects.  
8812 Centre Park Drive  
Columbia, MD 21045  
T 410.997.8900  
F 410.997.9282



DES:	C.J.R.			
DRN:	DAM			
CHK:	C.J.R.	Bohler 3	REVISED WHC FOR PARCEL G	4/11/07
		MRA 2	REMOVED PARCEL J, K & L SEWER LINES	11/27/04
DATE:	6/8/05	EMR 1	REVISED SEWER LINE AND PARCEL NUMBERS	04/06/04
BY:	NO.		REVISION	DATE

PARCEL NO. 482, 587, 382, 421 & 547  
600' SCALE MAP NO. 37 & 43 BLOCK NO. 20 & 2

PLAN VIEW OF  
WATER AND SEWER MAINS

BENSON EAST, ONSITE  
PARCELS A - O  
6th ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
CONTRACT 24-4284-D

SCALE  
AS  
SHOWN

SHEET  
6 OF 12

*M. Kelly* 4/14/07  
CHIEF, BUREAU OF UTILITIES

*Domenick W. Colangelo* 5/16/07  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

FOR CONTINUATION SEE SHEET 5

BENSON EAST PARCEL P

SEE PROFILE #6 SHEET 10

SEE PROFILE #6 SHEET 10

SEE PROFILE #6 SHEET 10

FOR CONTINUATION SEE SHEET 8

EX. ST'S (20-1244-0)

EX. 304 172



COLUMBIA ASSOCIATION INC.  
LOT T-9  
L.3324, F.191  
ZONE: M-1  
USE: COMMERCIAL  
PARCEL 671

COLUMBIA ASSOCIATION INC.  
LOT T-8  
L.3324, F.191  
ZONE: M-1  
USE: COMMERCIAL  
PARCEL 671

JOHN McADAM DRIVE

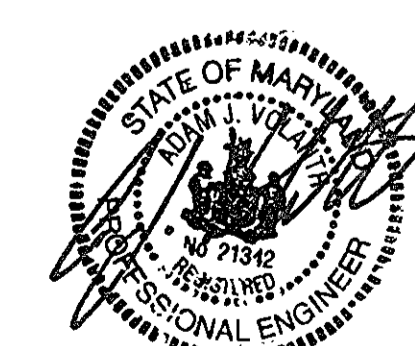
MARYLAND ROUTE 175

COLUMBIA ASSOCIATION INC.  
LOT T-6  
L.3324, F.191  
ZONE: M-1  
USE: COMMERCIAL  
PARCEL 671

COLUMBIA ASSOCIATION INC.  
LOT T-7  
L.3324, F.191  
ZONE: M-1  
USE: COMMERCIAL  
PARCEL 671

PLAN  
SCALE: 1" = 50'

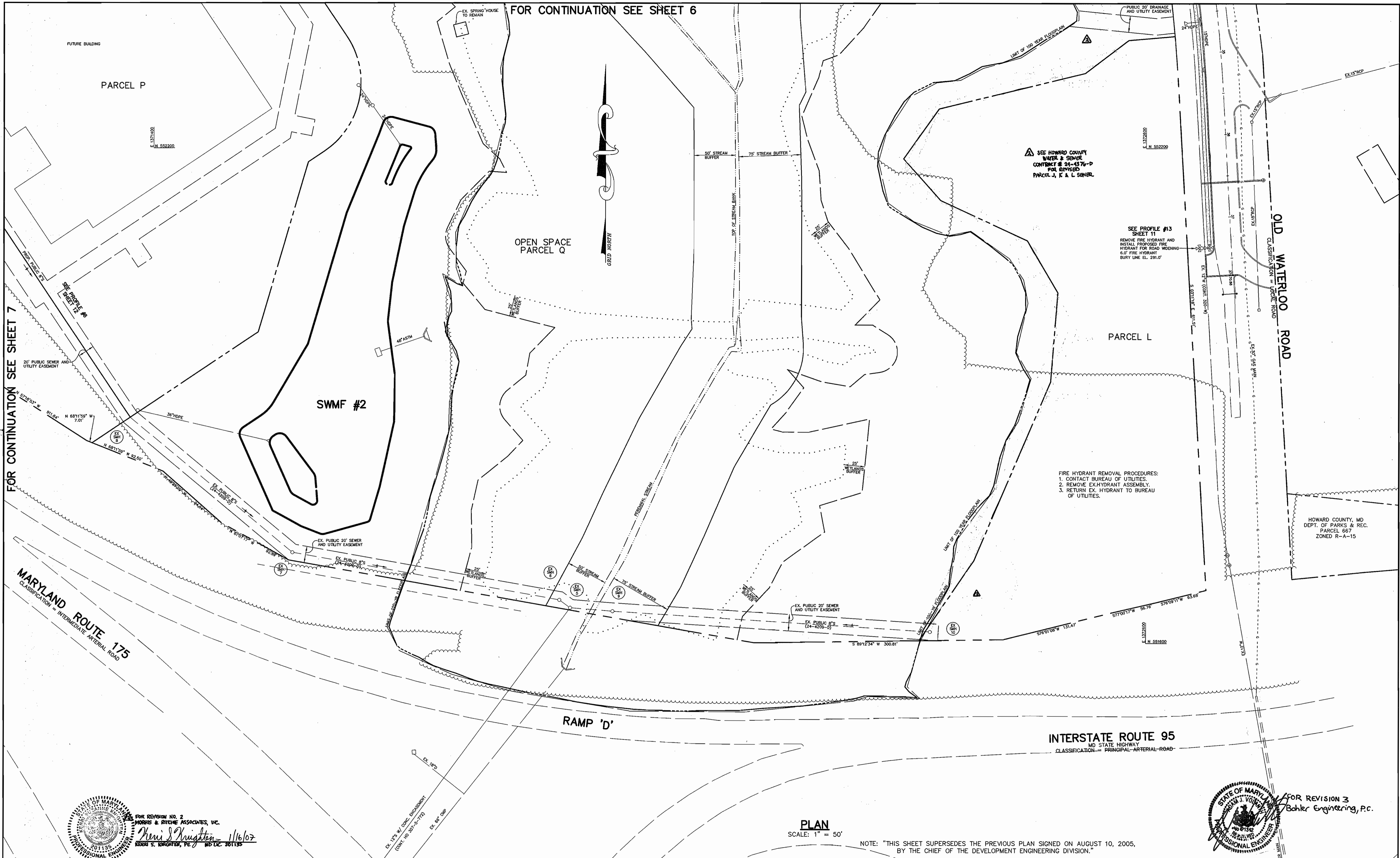
NOTE: "THIS SHEET SUPERSEDES THE PREVIOUS PLAN SIGNED ON AUGUST 10, 2005, BY THE CHIEF OF THE DEVELOPMENT ENGINEERING DIVISION."



FOR REVISION 3  
Bohler Engineering, P.C.

<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p><i>[Signature]</i> 4/12/06 CHIEF, BUREAU OF UTILITIES</p>	<p>DEPARTMENT OF PLANNING &amp; ZONING HOWARD COUNTY, MARYLAND</p> <p><i>[Signature]</i> 5/1/06 CHIEF, DEVELOPMENT ENGINEERING DIVISION</p>	<p>Patton Harris Rust &amp; Associates, pc Engineers, Surveyors, Planners, Landscape Architects. <b>PHRA</b> 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282</p>	<p> DOMENICK W. COLANGELO #27200</p>	<table border="1"> <tr> <td>DES:</td> <td>C.J.R.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>DRN:</td> <td>DAM</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CHK:</td> <td>C.J.R.</td> <td>Bohler</td> <td>3</td> <td>REVISED WHC FOR PARCEL G 4/11/07</td> </tr> <tr> <td>DATE:</td> <td>6/8/05</td> <td></td> <td></td> <td></td> </tr> <tr> <td>BY:</td> <td>NO.</td> <td>REVISION</td> <td>DATE</td> <td></td> </tr> <tr> <td>EMR:</td> <td>1</td> <td>REV. PARCEL NO. &amp; BOUNDARY LINE; ADDED SEWER</td> <td>04/06/06</td> <td></td> </tr> </table>	DES:	C.J.R.				DRN:	DAM				CHK:	C.J.R.	Bohler	3	REVISED WHC FOR PARCEL G 4/11/07	DATE:	6/8/05				BY:	NO.	REVISION	DATE		EMR:	1	REV. PARCEL NO. & BOUNDARY LINE; ADDED SEWER	04/06/06		<p>PLAN VIEW OF WATER AND SEWER MAINS</p> <p>PARCEL NO. 482, 587, 382, 421 &amp; 547 600' SCALE MAP NO. 37 &amp; 43 BLOCK NO. 20 &amp; 2</p>	<p>BENSON EAST, ONSITE PARCELS A - O 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT 24-4284-D</p>	<p>SCALE AS SHOWN</p> <p>SHEET 7 OF 12</p>
DES:	C.J.R.																																				
DRN:	DAM																																				
CHK:	C.J.R.	Bohler	3	REVISED WHC FOR PARCEL G 4/11/07																																	
DATE:	6/8/05																																				
BY:	NO.	REVISION	DATE																																		
EMR:	1	REV. PARCEL NO. & BOUNDARY LINE; ADDED SEWER	04/06/06																																		





FOR CONTINUATION SEE SHEET 6

FOR CONTINUATION SEE SHEET 7

SEE HOWARD COUNTY WATER & SEWER CONTRACT # 24-4376-D FOR REVISED PARCEL J, K & L SEWER.

SEE PROFILE #13 SHEET 11 REMOVE FIRE HYDRANT AND INSTALL PROPOSED FIRE HYDRANT FOR ROAD WIDENING 6.0' FIRE HYDRANT BURY LINE EL. 291.0'

FIRE HYDRANT REMOVAL PROCEDURES:  
 1. CONTACT BUREAU OF UTILITIES.  
 2. REMOVE EX. HYDRANT ASSEMBLY.  
 3. RETURN EX. HYDRANT TO BUREAU OF UTILITIES.

HOWARD COUNTY, MD DEPT. OF PARKS & REC. PARCEL 667 ZONED R-A-15

MARYLAND ROUTE 175  
 CLASSIFICATION = INTERMEDIATE ARTERIAL ROAD

INTERSTATE ROUTE 95  
 CLASSIFICATION = PRINCIPAL ARTERIAL ROAD

RAMP 'D'

PLAN  
 SCALE: 1" = 50'

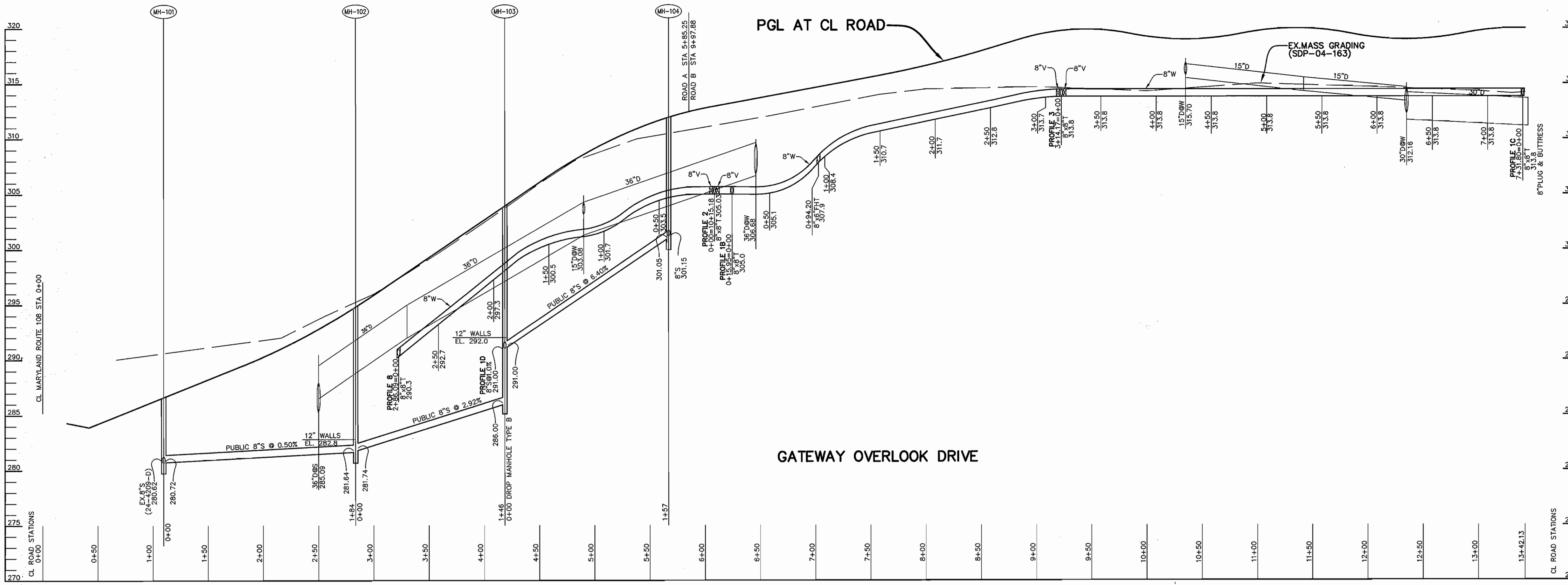
NOTE: "THIS SHEET SUPERSEDES THE PREVIOUS PLAN SIGNED ON AUGUST 10, 2005, BY THE CHIEF OF THE DEVELOPMENT ENGINEERING DIVISION."

FOR REVISION NO. 2  
 MORRIS & RITCHIE ASSOCIATES, INC.  
*Nancy Krugton* 1/16/07  
 KERRI S. KIRCHGESSER, P.E. MS.CE. 201135

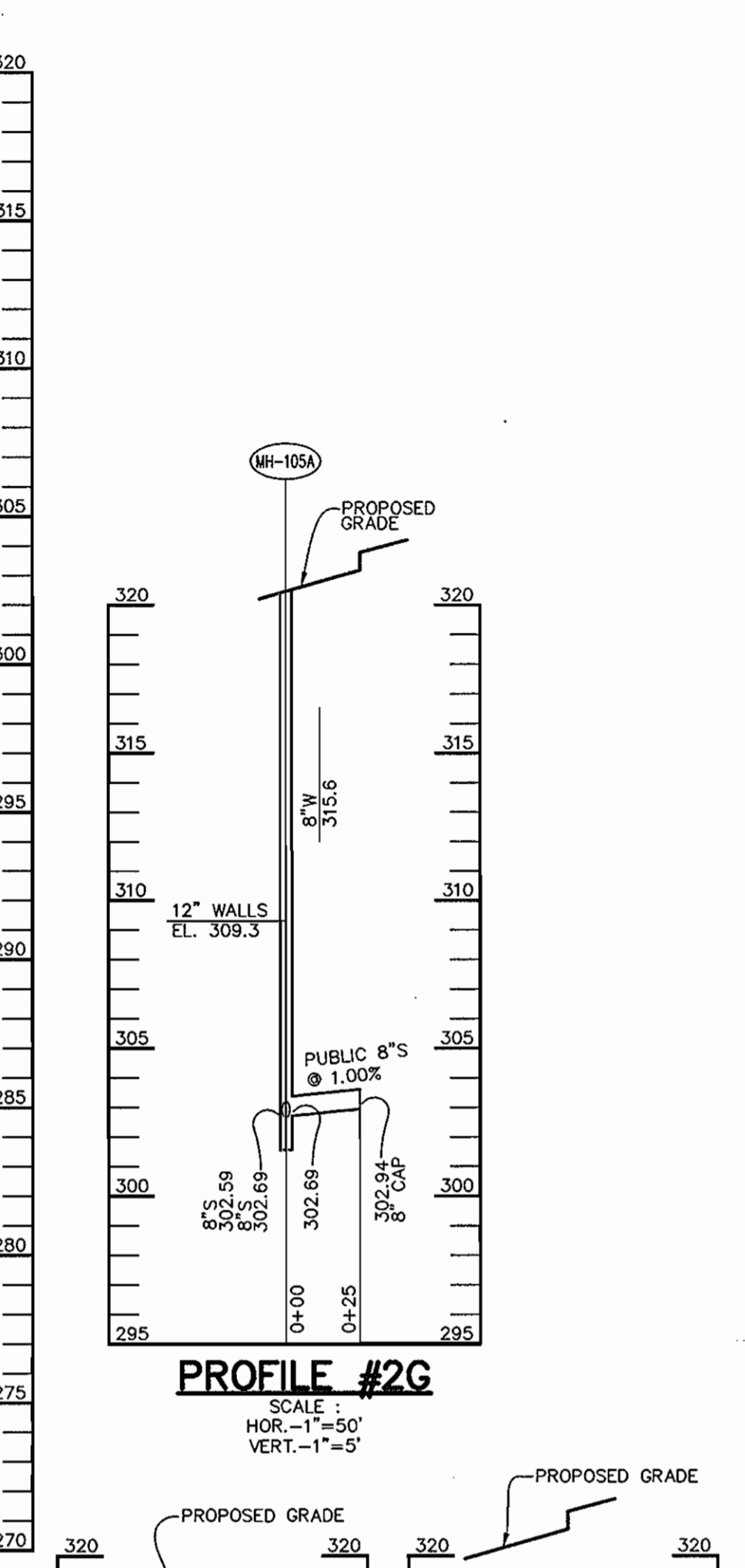
FOR REVISION 3  
 Bahler Engineering, P.C.  
 STATE OF MARYLAND  
 DOMINICK W. COLANGELO  
 PROFESSIONAL ENGINEER

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>Michael R. Luo</i> 4/16/07 CHIEF, BUREAU OF UTILITIES	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND <i>William J. ...</i> 5/16/07 CHIEF, DEVELOPMENT ENGINEERING DIVISION	Patton Harris Rust & Associates, PC Engineers, Surveyors, Planners, Landscape Architects. <b>P.H.R.A.</b> 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	STATE OF MARYLAND DOMINICK W. COLANGELO PROFESSIONAL ENGINEER 4/16/07 <i>Dom Colangelo</i>	DES: C.J.R. DRN: DAM CHK: C.J.R. DATE: 6/8/05	<table border="1"> <tr> <th>NO.</th> <th>REVISION</th> <th>DATE</th> </tr> <tr> <td>3</td> <td>REVISED WHC FOR PARCEL G</td> <td>4/11/07</td> </tr> <tr> <td>2</td> <td>REMOVED PARCEL J, K &amp; L SEWER LINES</td> <td>1/27/06</td> </tr> <tr> <td>1</td> <td>REV. SEWER LINE, PARCEL NOS. &amp; PROP. LINE</td> <td>04/08/06</td> </tr> </table>	NO.	REVISION	DATE	3	REVISED WHC FOR PARCEL G	4/11/07	2	REMOVED PARCEL J, K & L SEWER LINES	1/27/06	1	REV. SEWER LINE, PARCEL NOS. & PROP. LINE	04/08/06	PLAN VIEW OF WATER AND SEWER MAINS PARCEL NO. 482, 587, 382, 421 & 547 600' SCALE MAP NO. 37 & 43 BLOCK NO. 20 & 2	BENSON EAST, ONSITE PARCELS A - O 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT 24-4284-D SCALE AS SHOWN SHEET 8 OF 12
NO.	REVISION	DATE																	
3	REVISED WHC FOR PARCEL G	4/11/07																	
2	REMOVED PARCEL J, K & L SEWER LINES	1/27/06																	
1	REV. SEWER LINE, PARCEL NOS. & PROP. LINE	04/08/06																	

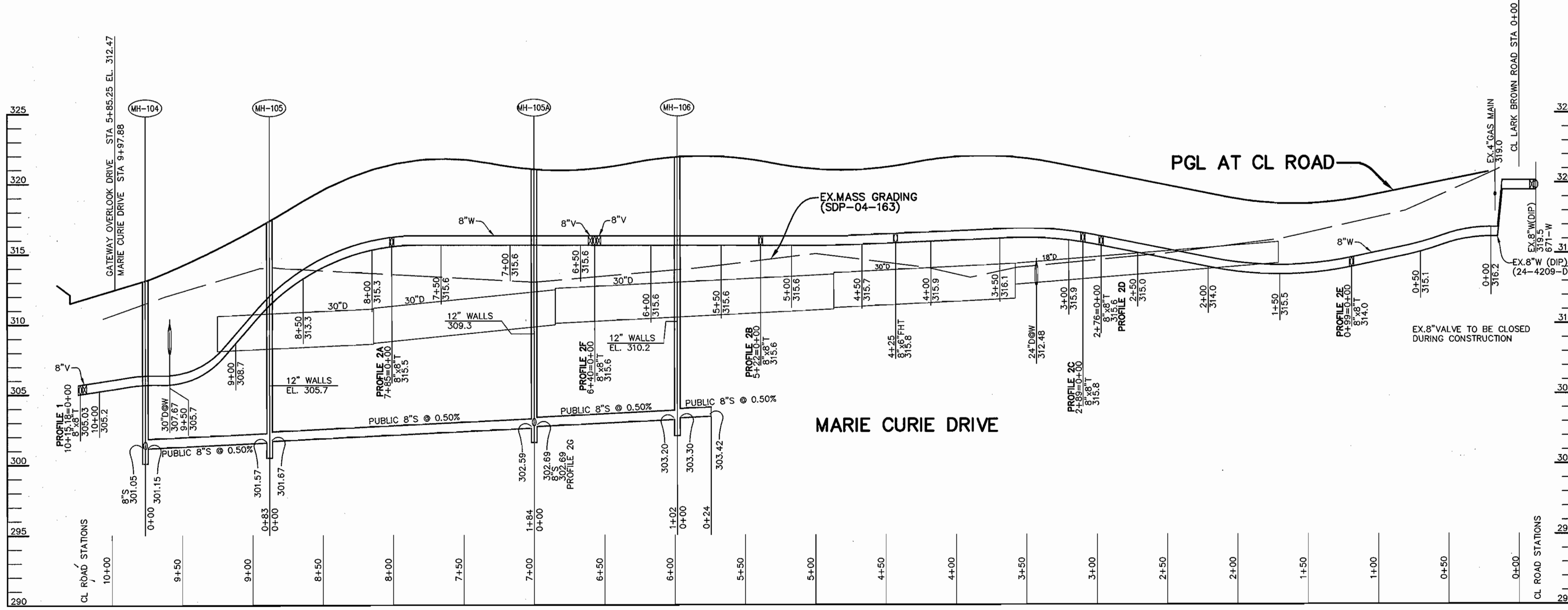




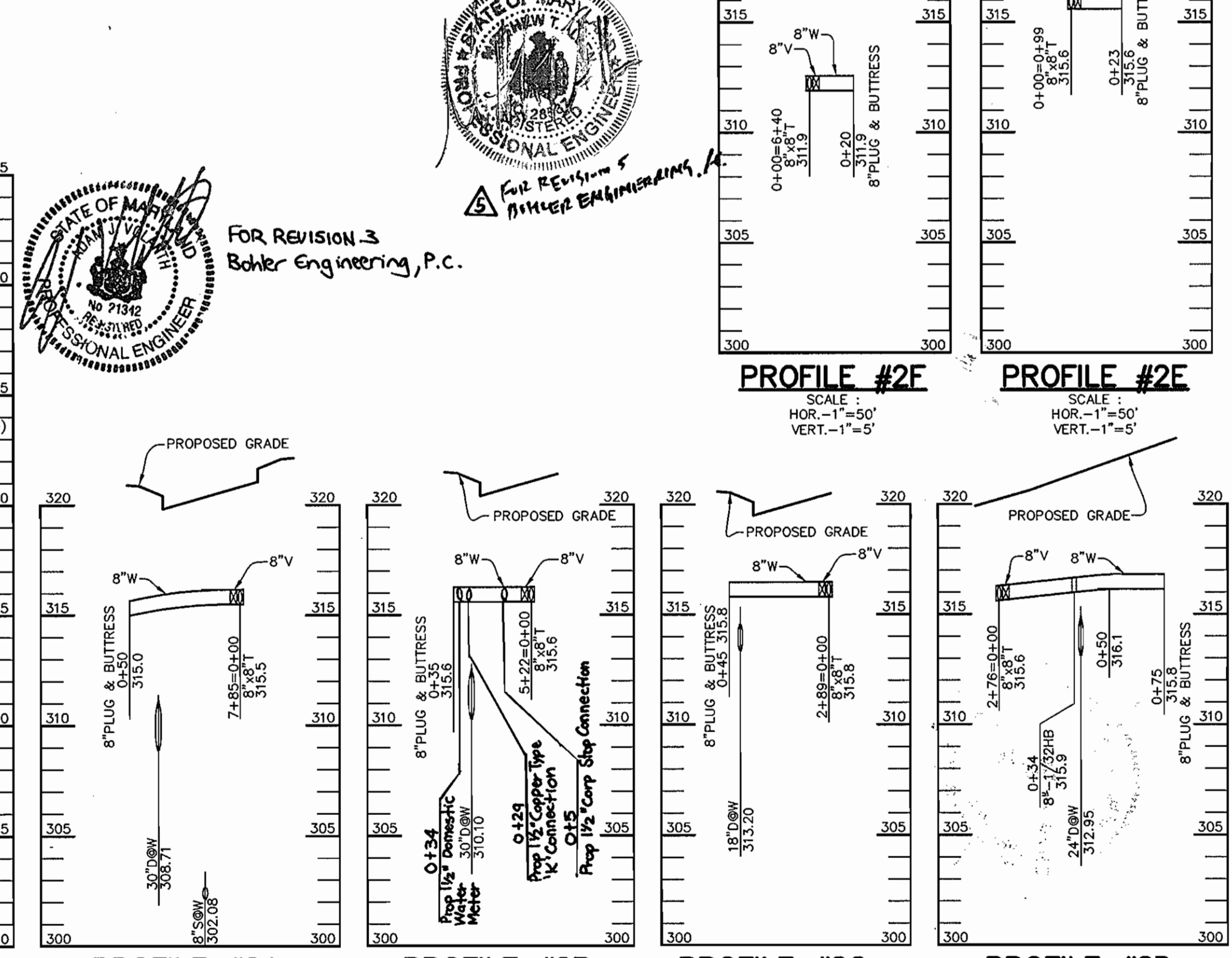
**PROFILE #1**  
SCALE:  
HOR. - 1" = 50'  
VERT. - 1" = 5'



**PROFILE #2G**  
SCALE:  
HOR. - 1" = 50'  
VERT. - 1" = 5'



**PROFILE #2**  
SCALE:  
HOR. - 1" = 50'  
VERT. - 1" = 5'



**PROFILE #2A**  
SCALE:  
HOR. - 1" = 50'  
VERT. - 1" = 5'

**PROFILE #2B**  
SCALE:  
HOR. - 1" = 50'  
VERT. - 1" = 5'

**PROFILE #2C**  
SCALE:  
HOR. - 1" = 50'  
VERT. - 1" = 5'

**PROFILE #2D**  
SCALE:  
HOR. - 1" = 50'  
VERT. - 1" = 5'

NOTE: "THIS SHEET SUPERSEDES THE PREVIOUS PLAN SIGNED ON AUGUST 10, 2005, BY THE CHIEF OF THE DEVELOPMENT ENGINEERING DIVISION."

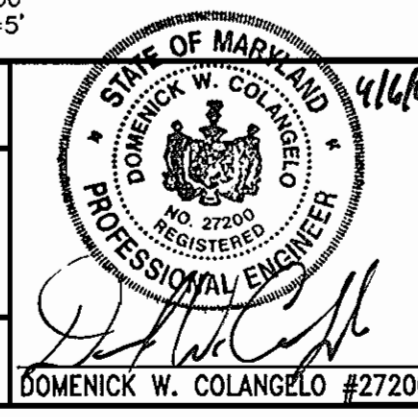


FOR REVISION 3  
Bohler Engineering, P.C.

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**  
3818 Centre Park Drive  
Columbia, MD 21045  
T 410.997.8900  
F 410.997.9282



DES:	C.J.R.				
DRN:	DAM	Bohler	5	Revised to ADD Domestic & Irrigation Meters	4/26/07
CHK:	C.J.R.	Bohler	3	REVISED WPC FOR PARCEL G	4/10/07
DATE:	6/8/05	EMR	1	REVISED PROFILES	04/08/06
BY:	NO.			REVISION	DATE

**PROFILES OF  
WATER AND SEWER MAINS**  
PARCEL NO. 482, 587, 382, 421 & 547  
600' SCALE MAP NO. 37 & 43, BLOCK NO. 20 & 2

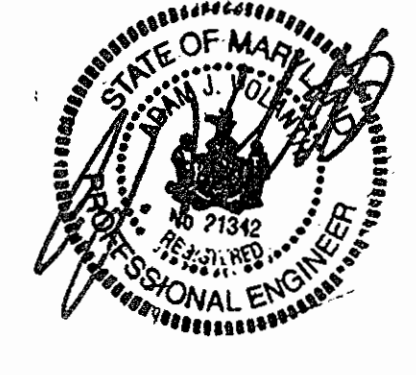
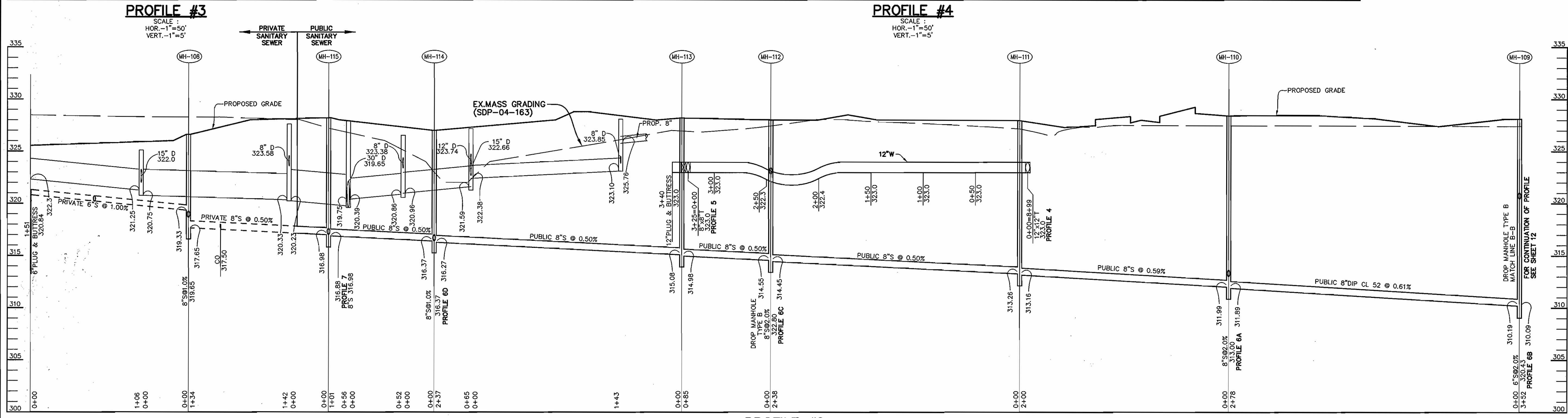
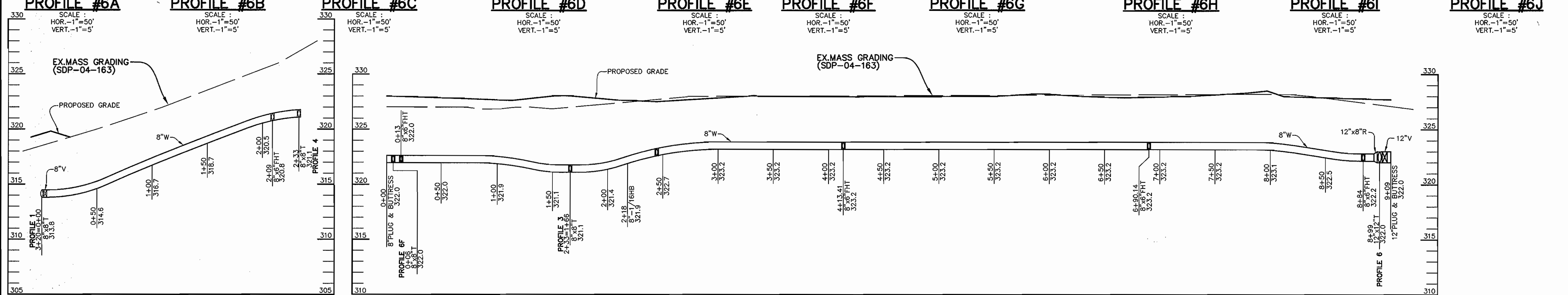
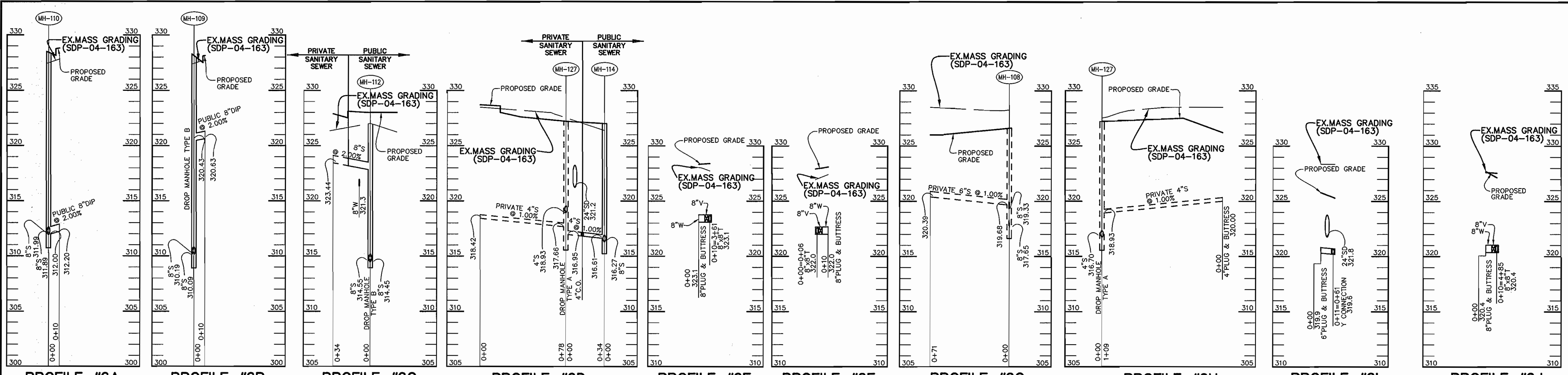
**BENSON EAST, ONSITE  
PARCELS A - O**  
6th ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
CONTRACT 24-4284-D

SCALE  
AS  
SHOWN  
  
SHEET  
9 OF 12

*M. Kelly & P. Ross* 4/10/06  
BUREAU OF UTILITIES DATE

*Domenick W. Colangelo* 5/1/06  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



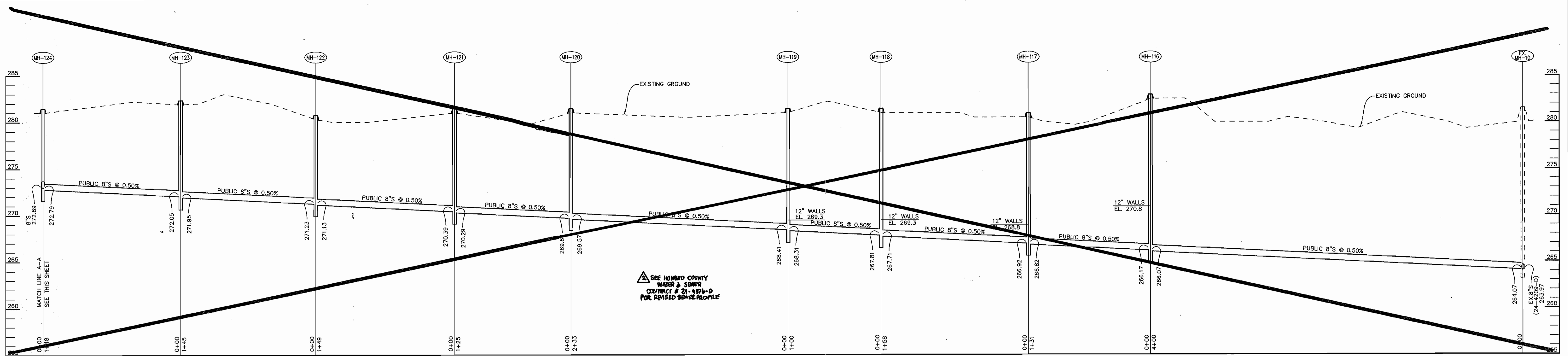


FOR REVISION 3  
Bohler Engineering, P.C.

NOTE: "THIS SHEET SUPERSEDES THE PREVIOUS PLAN SIGNED ON AUGUST 10, 2005, BY THE CHIEF OF THE DEVELOPMENT ENGINEERING DIVISION."

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES <i>[Signature]</i>	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND CHIEF, DEVELOPMENT ENGINEERING DIVISION <i>[Signature]</i>	Patton Harris Rust & Associates, P.C. Engineers, Surveyors, Planners, Landscape Architects. P.H.R.A. 8815 Centre Park Drive Columbia, MD 21046 T 410.597.8900 F 410.597.9282	DES: C.J.R. DRN: DAM CHK: C.J.R. DATE: 6/8/05	BOHLER 3 REVISED W/H FOR PARCEL G	M/W/OT 04/08/08	PARCEL NO. 482, 587, 382, 421 & 547 600' SCALE MAP NO. 37 & 43 BLOCK NO. 20 & 2	PROFILES OF WATER AND SEWER MAINS	BENSON EAST, ONSITE PARCELS A - O 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT 24-4284-D	SCALE AS SHOWN SHEET 10 OF 12
---	---	--	--	--------------------------------------	--------------------	--	--------------------------------------	--	----------------------------------

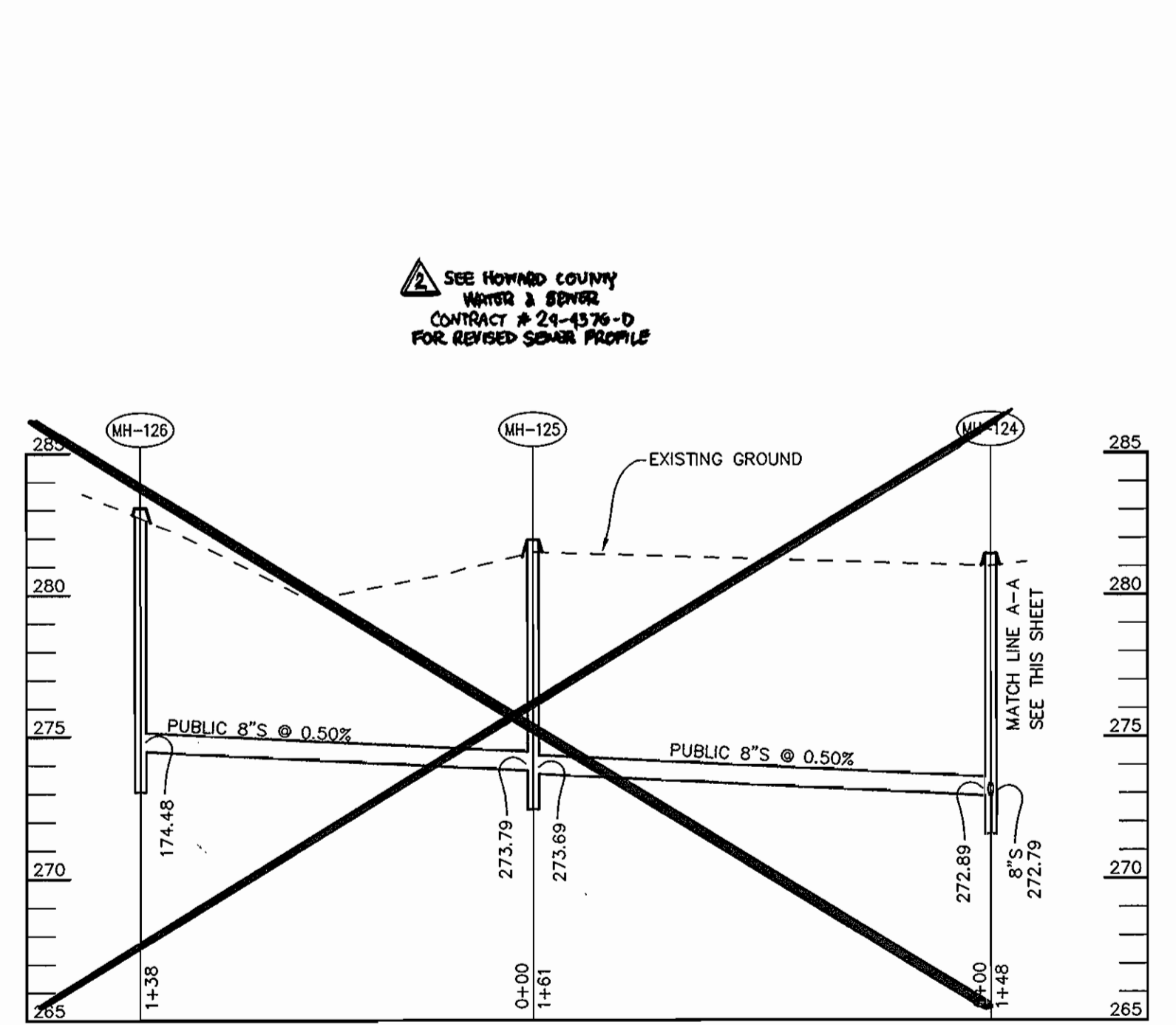




**PROFILE #12**

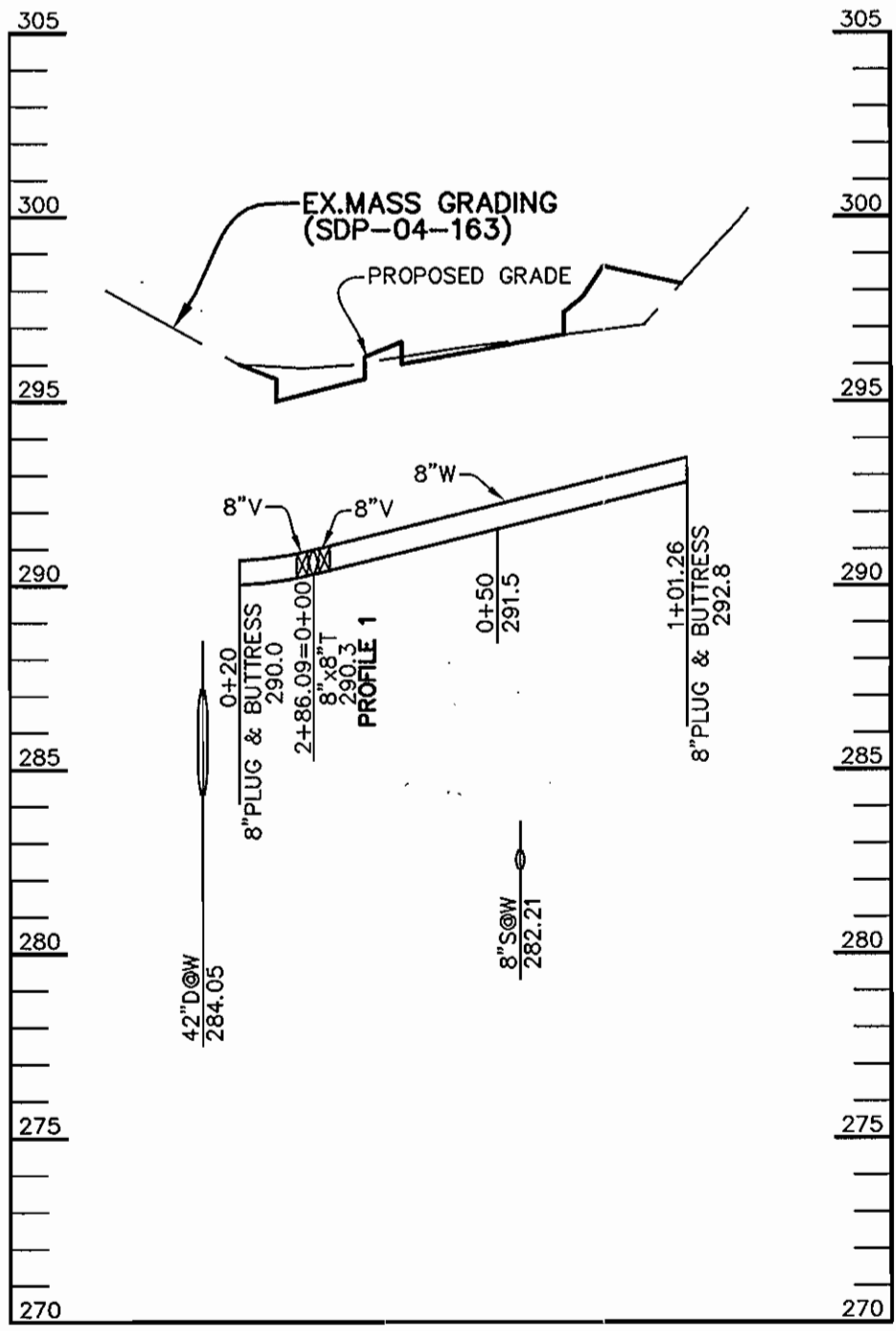
SCALE:  
HOR.-1"=50'  
VERT.-1"=5'

SEE HOWARD COUNTY  
WATER & SEWER  
CONTRACT # 24-4376-D  
FOR REVISED SEWER PROFILE



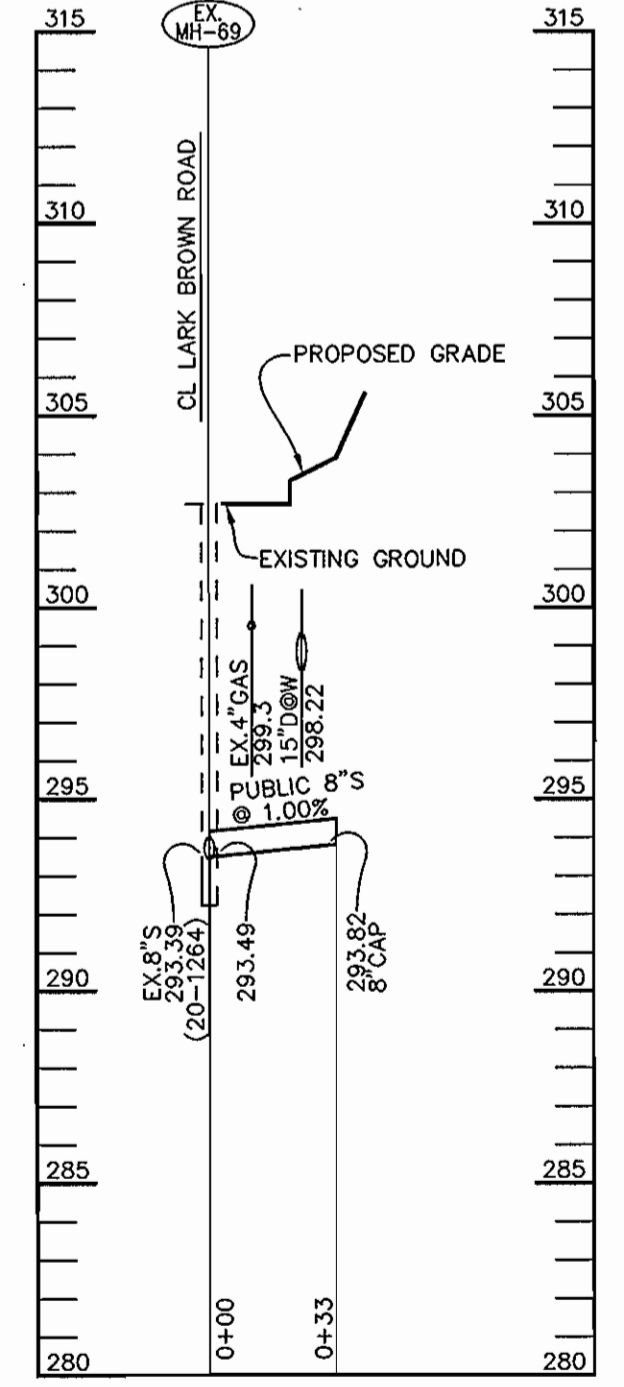
**PROFILE #12**

SCALE:  
HOR.-1"=50'  
VERT.-1"=5'



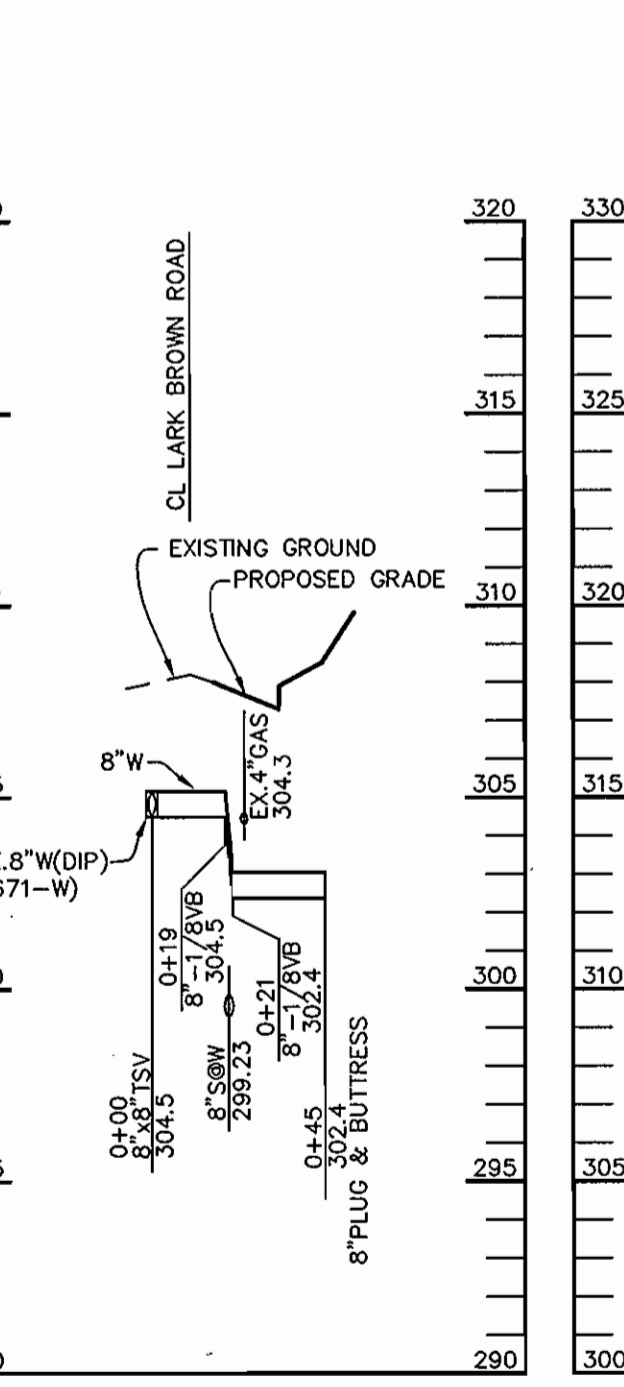
**PROFILE #8**

SCALE:  
HOR.-1"=50'  
VERT.-1"=5'



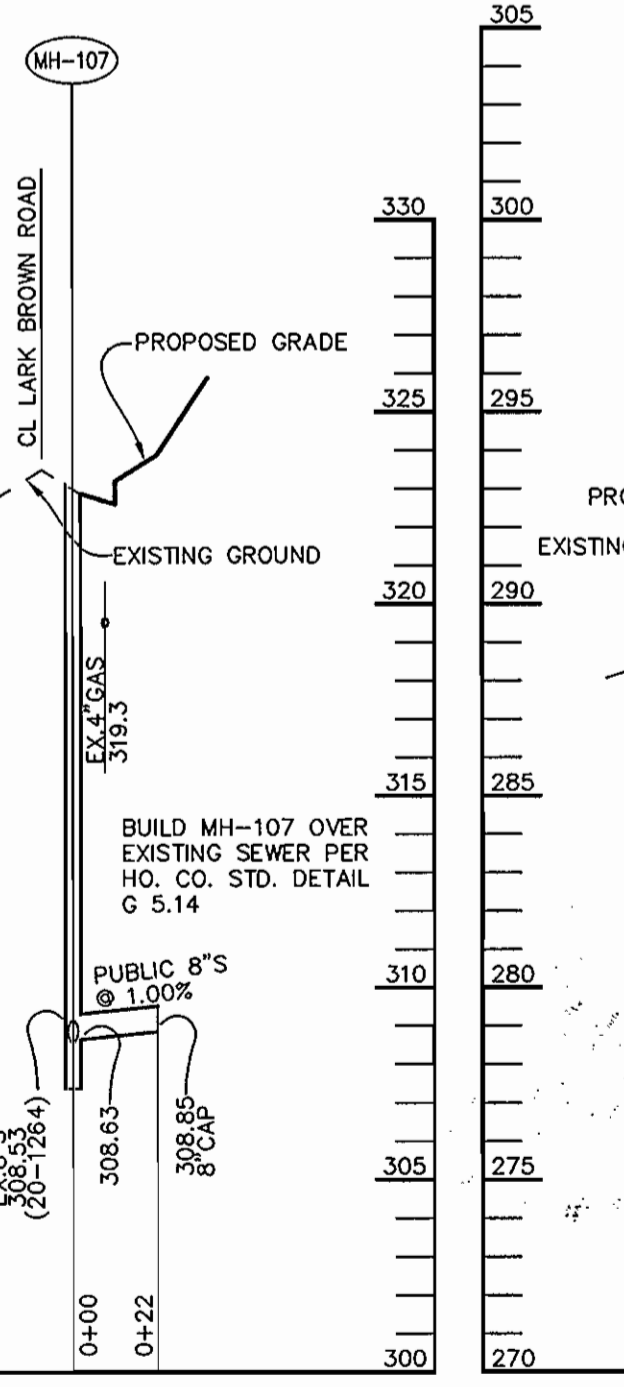
**PROFILE #9**

SCALE:  
HOR.-1"=50'  
VERT.-1"=5'



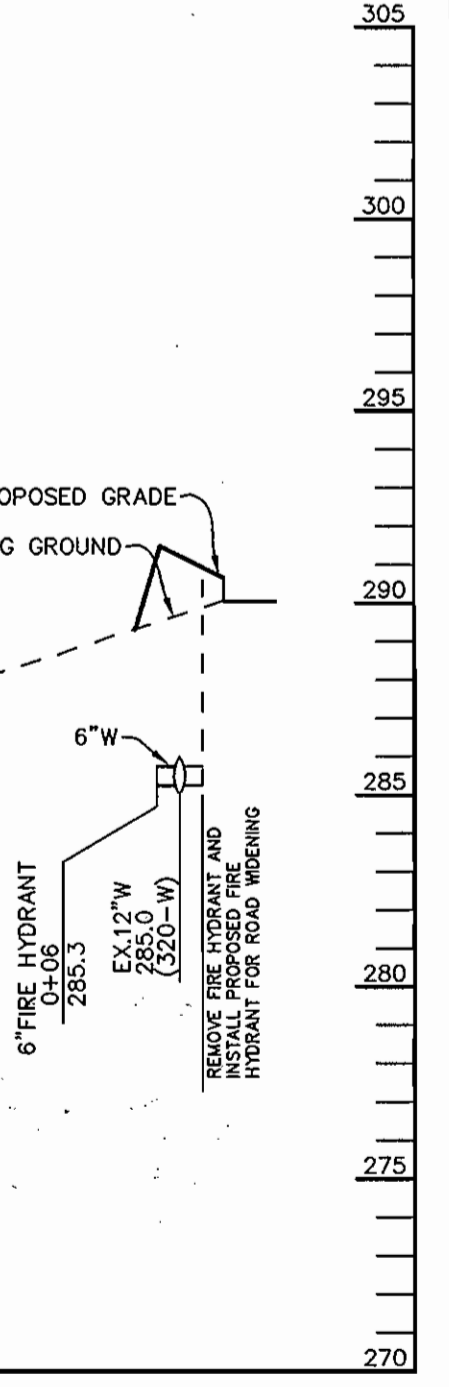
**PROFILE #10**

SCALE:  
HOR.-1"=50'  
VERT.-1"=5'



**PROFILE #11**

SCALE:  
HOR.-1"=50'  
VERT.-1"=5'



**PROFILE #13**

SCALE:  
HOR.-1"=50'  
VERT.-1"=5'

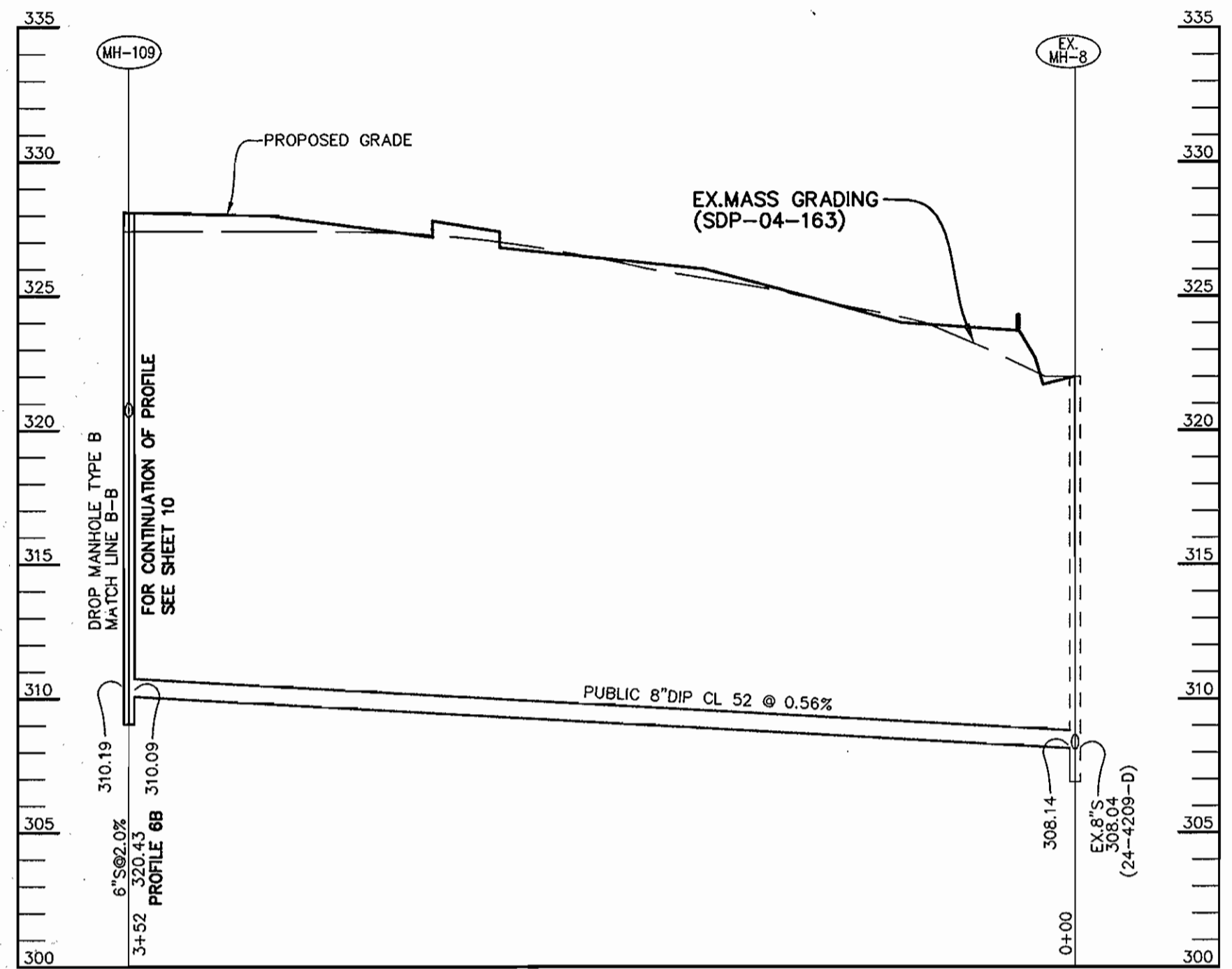
NOTE: "THIS SHEET SUPERSEDES THE PREVIOUS PLAN SIGNED ON AUGUST 10, 2005, BY THE CHIEF OF THE DEVELOPMENT ENGINEERING DIVISION."

FOR REVISION 3  
Bohler Engineering, P.C.

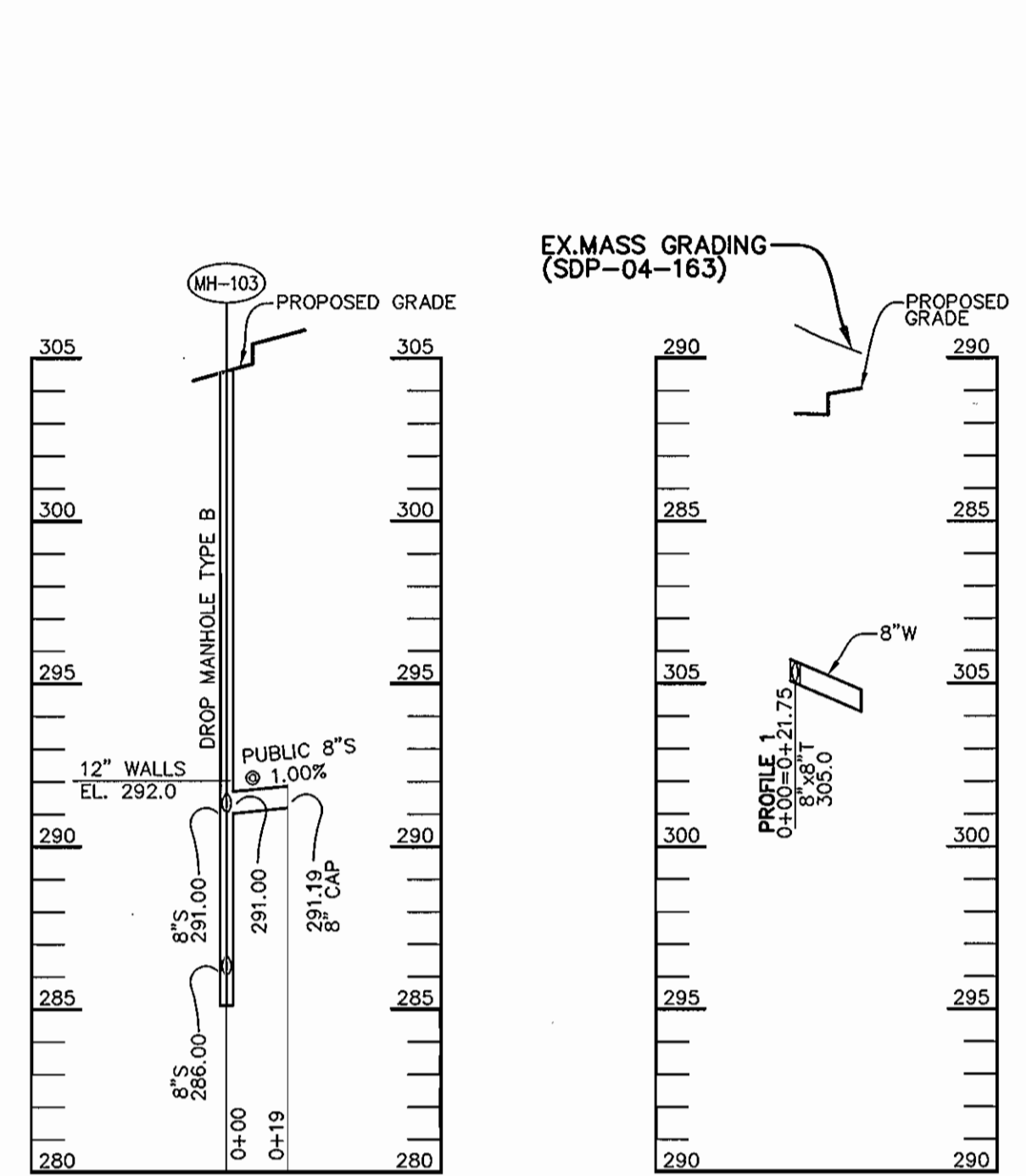
FOR REVISION NO. 2  
MORRIS & RUTCHER ASSOCIATES, INC.  
Kevin S. Knighton 1/16/07  
KEVIN S. KNIGHTON, PE MD LIC. 201136

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND	Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. <b>P.H.R.A.</b> 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	DES: C.J.R. DRN: DAM CHK: C.J.R. EMR: 1 BY: NO.	DATE: 6/8/05 REVISION: 4/16/06 DATE: 4/11/07 DATE: 11/27/04 DATE: 04/08/08	<b>PROFILES OF WATER AND SEWER MAINS</b> PARCEL NO. 482, 587, 382, 421 & 547 600' SCALE MAP NO. 37 & 43 BLOCK NO. 20 & 2	<b>BENSON EAST, ONSITE PARCELS A - O</b> 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT 24-4284-D	SCALE AS SHOWN  SHEET 11 OF 12
---	--	---	---	--	--	--	---

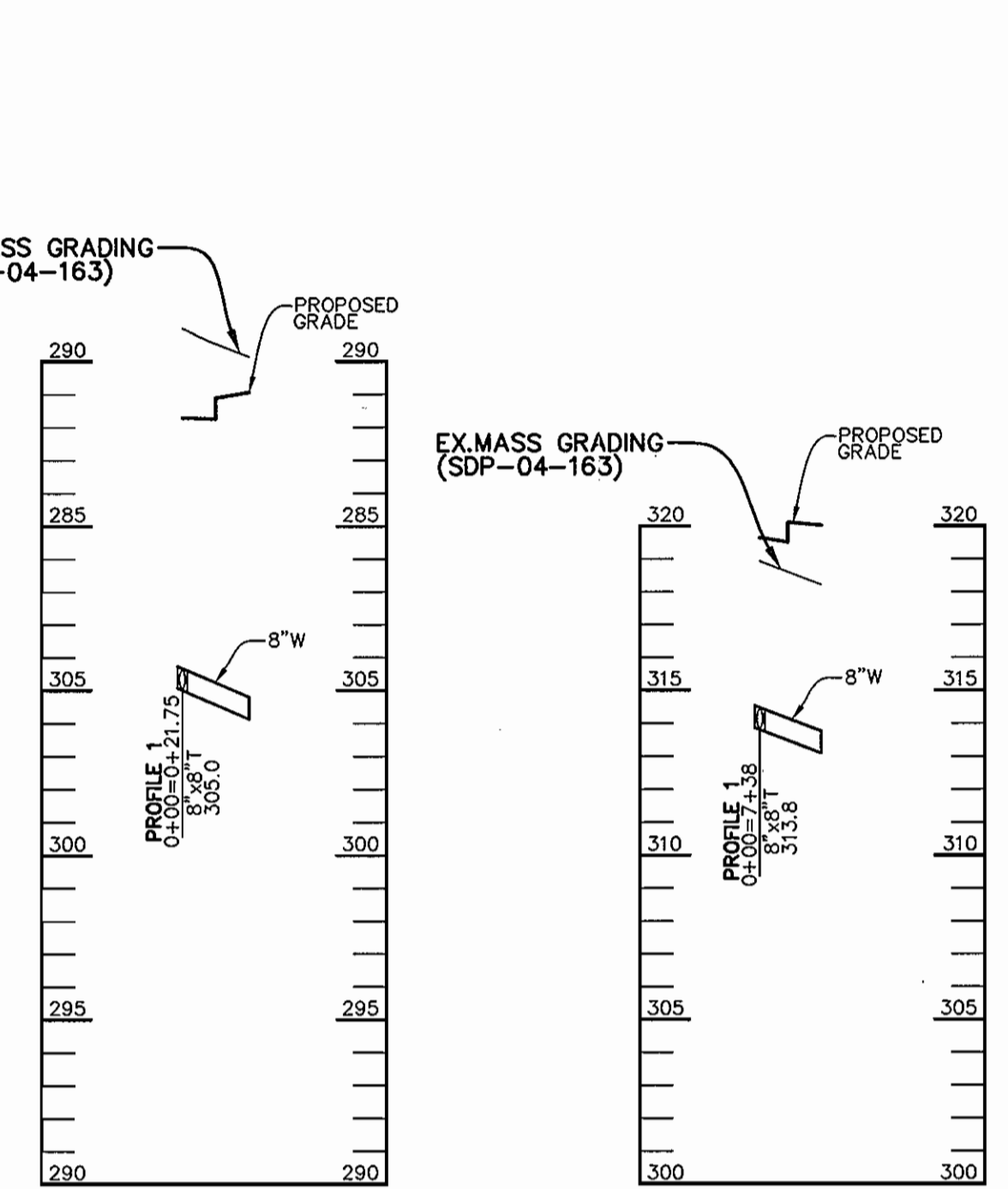




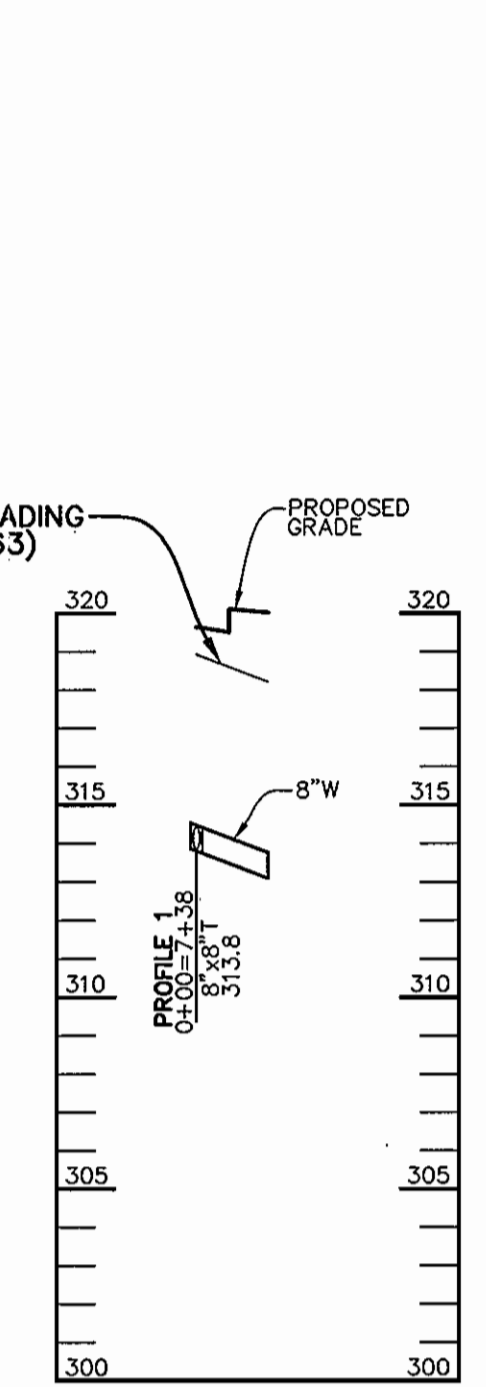
**PROFILE #6**  
SCALE:  
HOR. - 1" = 50'  
VERT. - 1" = 5'



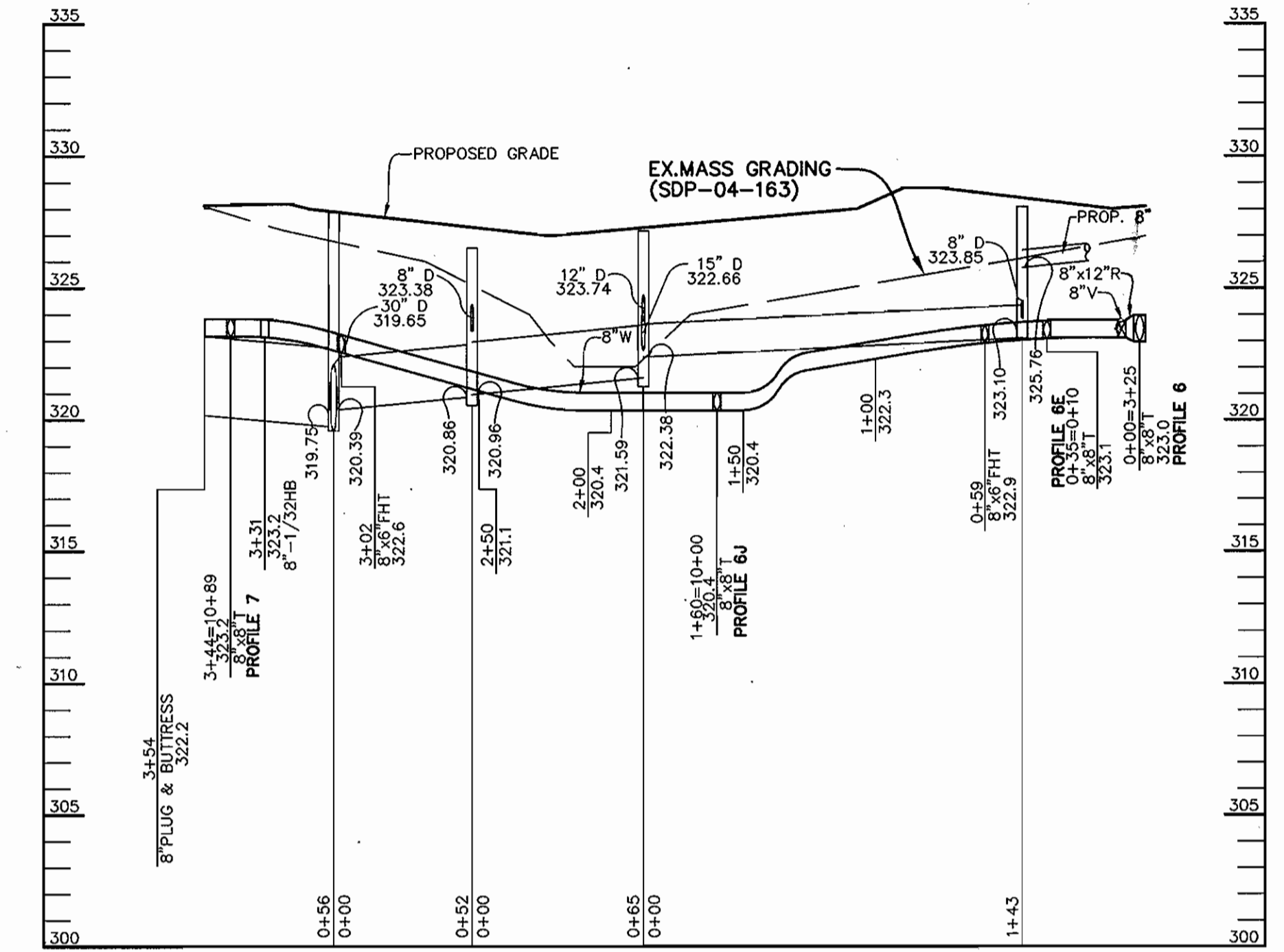
**PROFILE #1A**  
SCALE:  
HOR. - 1" = 50'  
VERT. - 1" = 5'



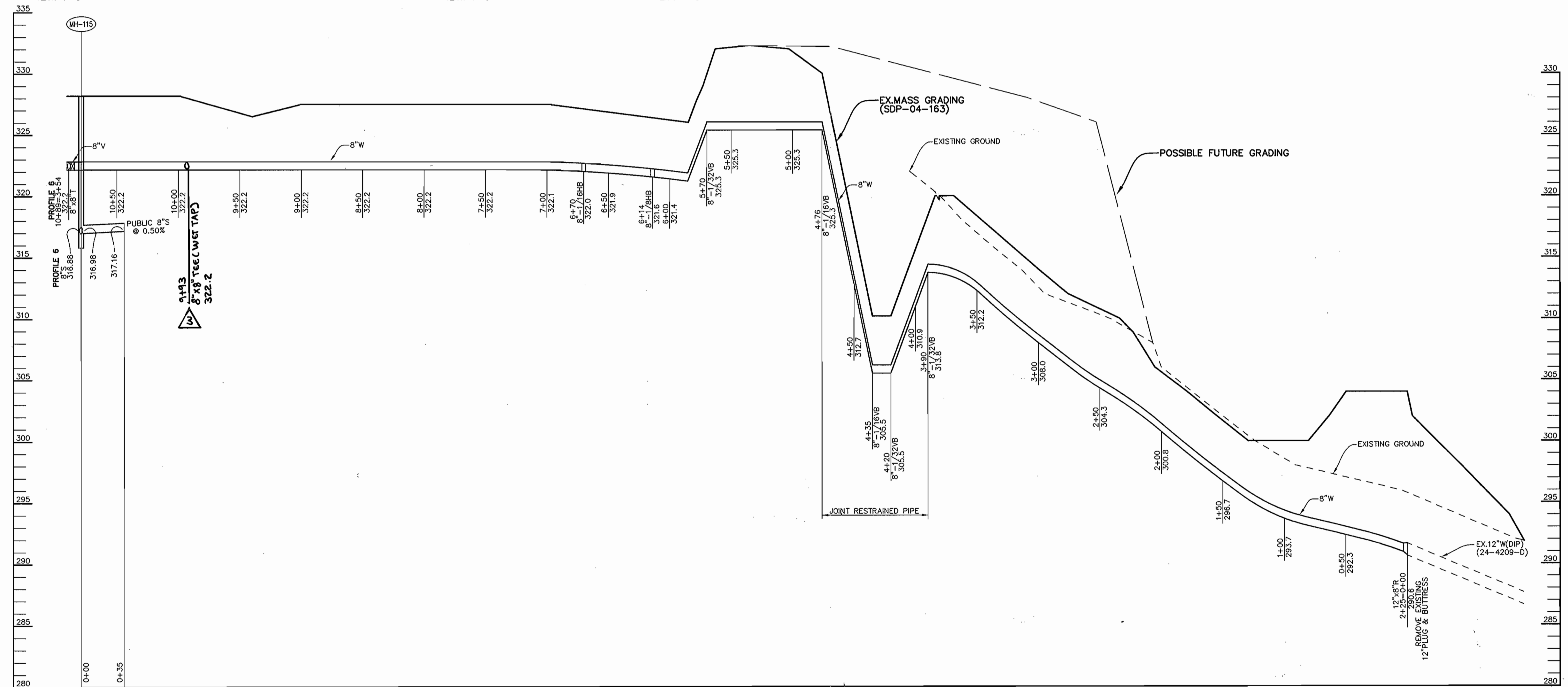
**PROFILE #1B**  
SCALE:  
HOR. - 1" = 50'  
VERT. - 1" = 5'



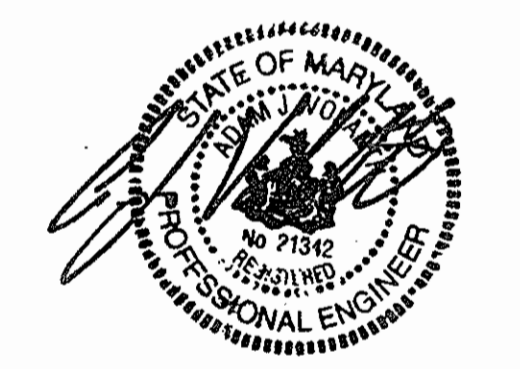
**PROFILE #1C**  
SCALE:  
HOR. - 1" = 50'  
VERT. - 1" = 5'



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



**PROFILE #7**  
SCALE:  
HOR. - 1" = 50'  
VERT. - 1" = 5'



FOR REVISION 3  
Bohler Engineering, P.C.

NOTE: "THIS SHEET SUPERSEDES THE PREVIOUS PLAN SIGNED ON AUGUST 10, 2005, BY THE CHIEF OF THE DEVELOPMENT ENGINEERING DIVISION."

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 4/11/07	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND DATE: 5/1/07	Patton Harris Rust & Associates, PC Engineers, Surveyors, Planners, Landscape Architects. <b>PHRA</b> 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	STATE OF MARYLAND DOMENICK W. COLANGELO PROFESSIONAL ENGINEER No. 71342	DES: C.J.R.				<b>PROFILES OF          WATER AND SEWER MAINS</b>	SCALE AS SHOWN
				DRN: DAM					
				CHK: C.J.R.	3	REVISED WHC For PARCEL G		PARCEL NO. 482, 587, 382, 421 & 547 600' SCALE MAP NO. 37 & 43 BLOCK NO. 20 & 2	SHEET 12 OF 12
				DATE: 6/8/05					