

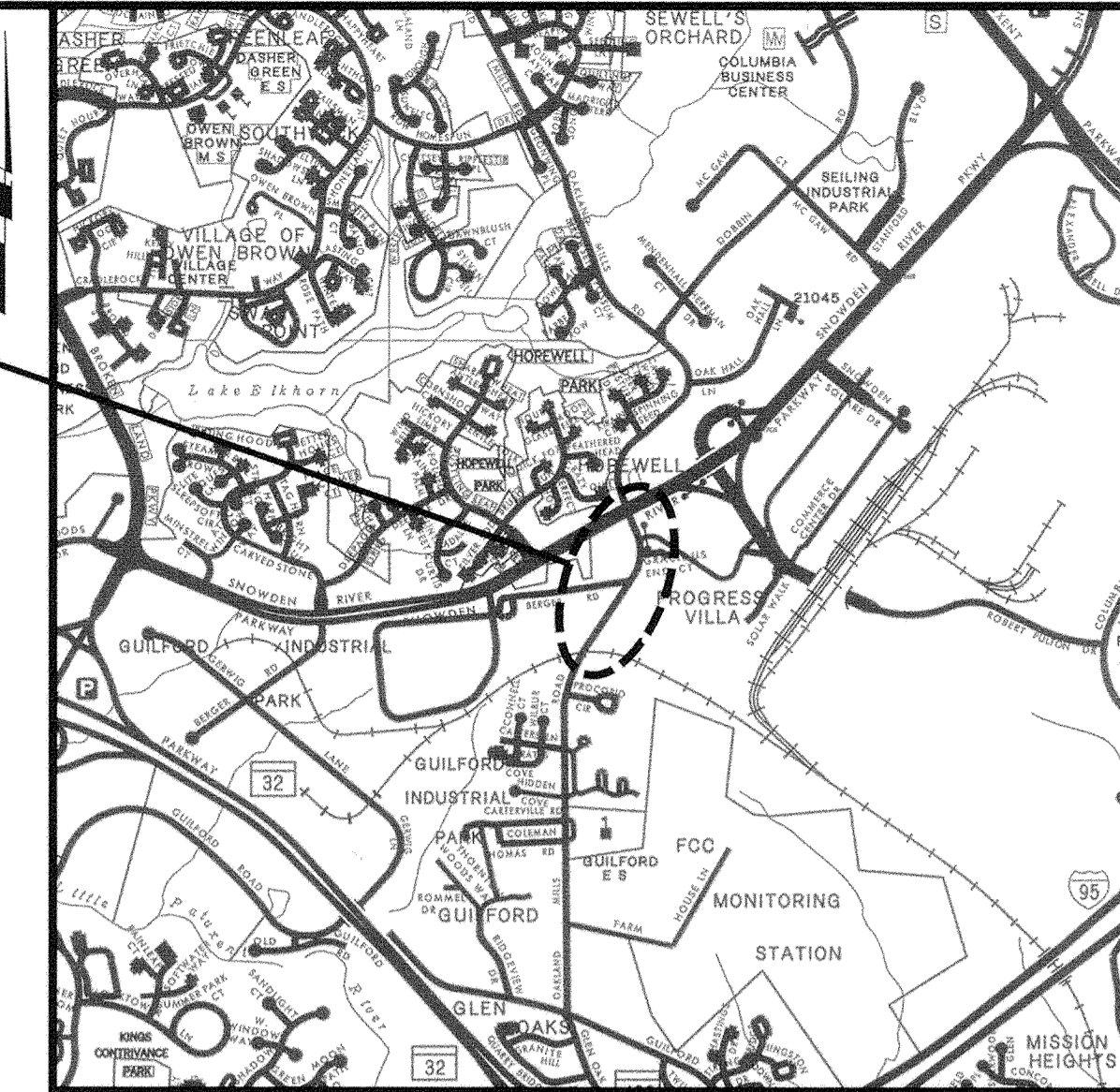
# OAKLAND MILLS ROAD IMPROVEMENTS

## HOWARD COUNTY, MARYLAND

### DEPARTMENT OF PUBLIC WORKS

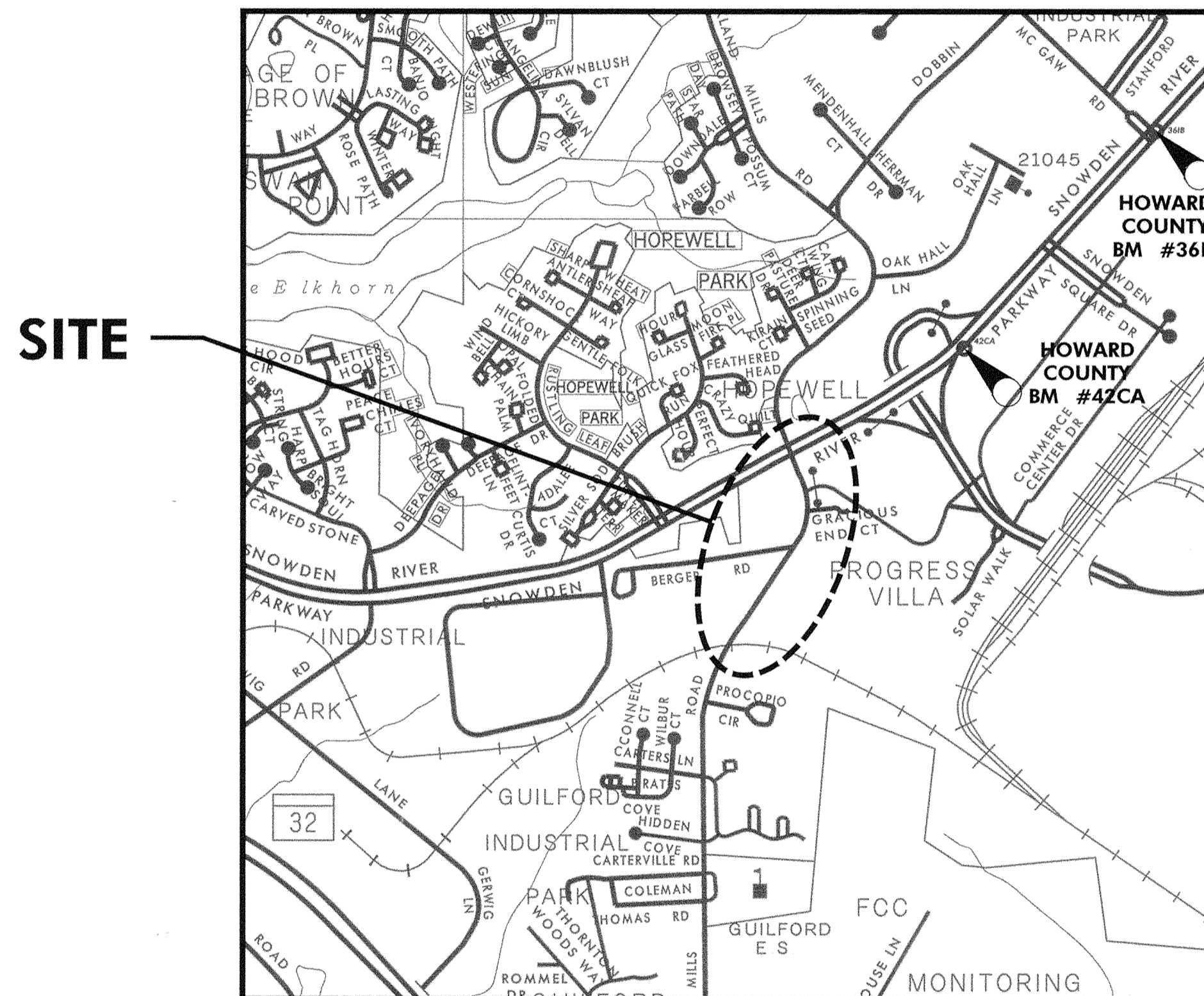
#### CAPITAL PROJECT NO.: J-4134

SITE



VICINITY MAP

SCALE: 1" = 2000'



SITE

HOWARD COUNTY BM INFO

BM #361B,  
N 553348.652, E 1364085.211  
BM #42CA,  
N 551695.745, E 1362506.381

LOCATION MAP

SCALE: 1" = 1000'

GENERAL NOTES

- INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM THE BEST AVAILABLE RECORDS. THE CONTRACTOR MUST DETERMINE THE EXACT LOCATIONS AND ELEVATIONS OF THE UTILITIES BY DIGGING TEST PITS AT ALL UTILITY CROSSINGS PRIOR TO CONSTRUCTION. IF CLEARANCES ARE LESS THAN SPECIFIED ON THIS PLAN OR LESS THAN 12 INCHES WHEN NOT SPECIFIED, CONTACT THE ENGINEER AND THE OWNER OF OTHER INVOLVED UTILITY.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
  - MISS UTILITY 1-800-257-7777
  - CONSTRUCTION INSPECTION DIVISION, HOWARD COUNTY (410) 313-1880
  - BALTIMORE GAS & ELECTRIC COMPANY - UNDERGROUND ELECTRIC DISTRIBUTION CUSTOMER SERVICE (410) 685-0123
  - VERIZON 1-410-224-3285
  - AMERICAN TELEPHONE & TELEGRAPH CABLE LOCATION DIVISION (410) 393-3553
  - BUREAU OF UTILITIES, HOWARD COUNTY (410) 313-2040
- SITE SURVEY WAS PERFORMED BY J.A. RICE, INC. FROM FEBRUARY 14, 2002 TO FEBRUARY 26, 2002. COORDINATES SHOWN ARE BASED ON MARYLAND NAD 83 (9) AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 42CA AND 361B. VERTICAL CONTROL IS BASED ON NGVD29.
- AVOID DAMAGE TO TREES ON THE SITE TO MAXIMUM EXTENT. OTHER TREES WITHIN LIMITS OF CONSTRUCTION SHALL NOT BE DESTROYED WITHOUT APPROVAL OF THE ENGINEER. TREES > 12" DBH WITHIN LOD SHALL BE PROTECTED USING TREE PROTECTIVE FENCING.
- ALL GRADING SHALL BE INSIDE THE L.O.D. SHOWN INCLUDING SIDE SLOPES AND STABILIZATION ONLY. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED AS FOLLOWS:
  - A. SEVEN (7) CALENDAR DAYS FOR THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES, AND ALL SLOPES GREATER THAN THREE HORIZONTAL TO ONE VERTICAL (3:1).
  - B. FOURTEEN (14) CALENDAR DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- FOR DETAILS NOT SHOWN ON THESE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD CO. DESIGN MANUAL, VOL. IV STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOL. IV ON THE JOB.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE PLACED PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- WATER IS PUBLIC, CONTRACT NO. 178-W AND 389-W.
- SEWER IS PUBLIC, CONTRACT NO. 1.

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5	ROADWAY PROFILE SHEET 1
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7	CONSTRUCTION DETAILS AND TYPICAL SECTIONS
8	SEDIMENT AND EROSION CONTROL PLAN SHEET 1
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10	SEDIMENT AND EROSION CONTROL PLAN SHEET 3
11	SEDIMENT & EROSION CONTROL NOTES
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13	TRAFFIC CONTROL PLAN SHEET 1
14	TRAFFIC CONTROL PLAN SHEET 2
15	TRAFFIC CONTROL PLAN SHEET 3
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17	CROSS SECTIONS SHEET 1
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19	WATER MAIN RELOCATION PLAN
20	WATER MAIN RELOCATION PROFILE

DEVELOPERS CERTIFICATE

"I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approval Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

*Robert J. Spon* 6/4/04  
Signature Chief, Bureau of Engineering Date

ENGINEERS CERTIFICATE

"I certify that this plan for erosion and sediment control represents a practical and workable plan based on personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

*Daniel J. Maletic* June 6, 2004  
Signature of Engineer Date

I hereby certify that to the best of my knowledge that this "As-Built" truly represents existing field conditions including but not limited to sizes, diameters, line and grade, and elevations, shown [X]



*Daniel J. Maletic*  
Daniel J. Maletic  
Maryland Registered Professional Engineer No. 13759

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

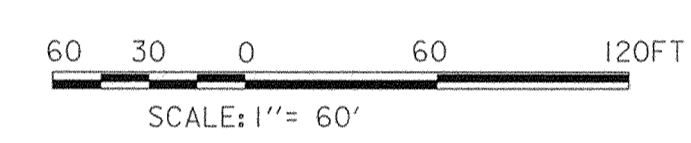
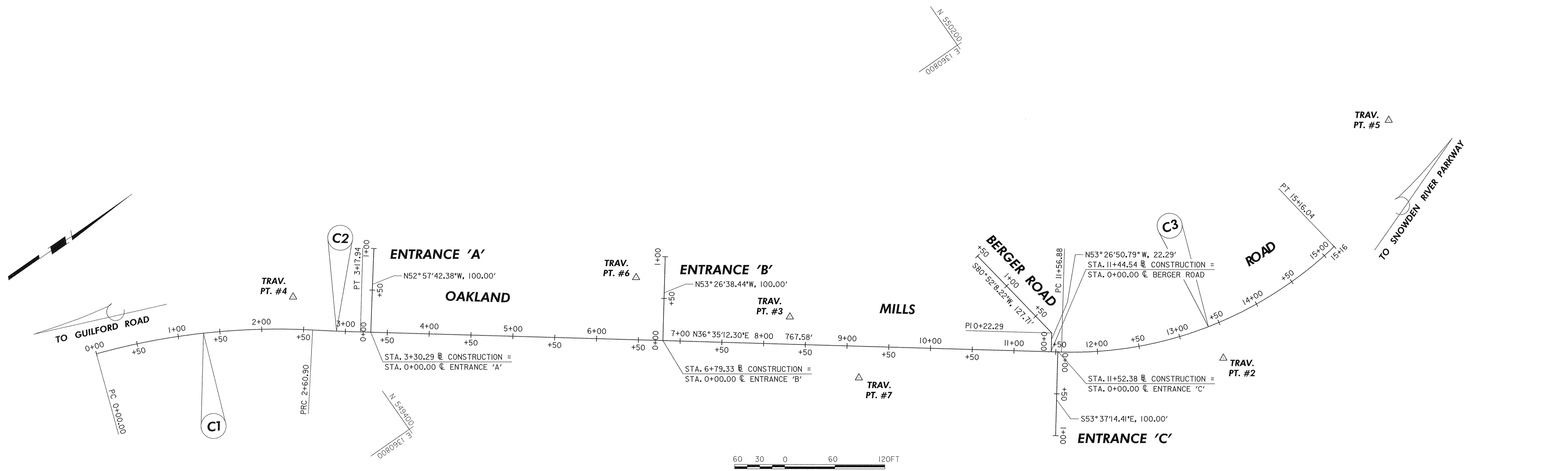
*Jim Meyer* 6/8/04  
Date

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

*John R. Roberts* 6/18/04  
Date

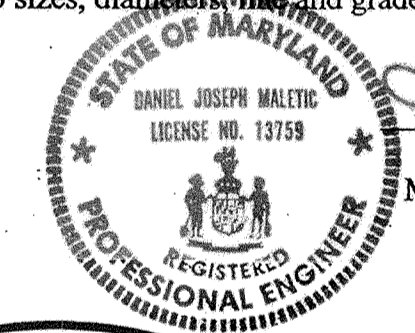
**AS-BUILT**  
June, 2006

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>Jan J. Chan</i> 6/10/04 DIRECTOR OF PUBLIC WORKS DATE <i>William J. Walsh</i> 6-7-04 CHIEF, BUREAU OF HIGHWAYS DATE		GREENMAN-PEDERSEN, INC. ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS 10620 GUILFORD ROAD, SUITE 100, JESSUP, MD, 20794 WASH. D.C. 470-2772 BALT. 460-880-2055 FAX 410-490-2649 www.gpi.net.com		DES: W.R.F. DRN: W.K.T. CHK: M.S.Z. DATE: JUNE, 2004		TITLE SHEET SCALE MAP NO. _____ BLOCK NO. _____		OAKLAND MILLS ROAD IMPROVEMENTS HOWARD COUNTY, MARYLAND CAPITAL PROJECT NO. J-4134		SCALE: AS SHOWN SHEET 1 OF 20
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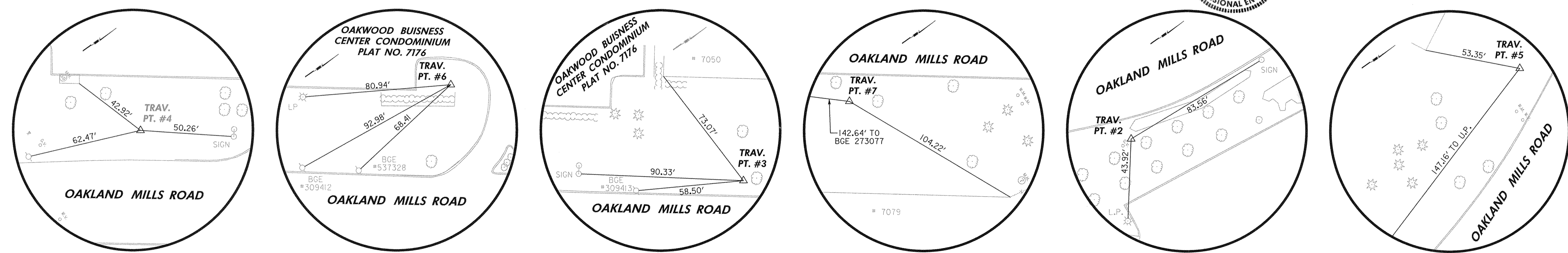


POINT	STATION	LINE DATA			CURVE DATA				COORDINATE DATA	
		DISTANCE	BEARING	LENGTH	DEGREE OF CURVE	DELTA (d)	RADIUS	TANGENT	NORTHING	EASTING
PC	0+00.00							549145.488	1360511.831	
PI	1+31.57			260.90	7°00'15.75"	8°16'27.62"	818	549299.417	1360556.008	
PRC	2+60.90							549373.242	1360636.816	
PRC	2+60.90							549373.242	1360636.816	
PI	2+89.42			57.04	2°17'30.59"	1°18'26.10"	-2500	549395.750	1360654.334	
PT	3+17.94							549418.651	1360671.334	
		838.9375	N 38°35'12.30" E							
PC	11+56.88							560092.280	1361171.373	
PI	13+46.49			359.16	12°38'39.10"	4°52'48.39"	453.139	560244.532	1361284.391	
PT	15+16.04							560431.901	1361255.295	

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*Daniel J. Maletic*  
 Daniel J. Maletic  
 Maryland Registered Professional Engineer No. 13759



**TRAV. PT. #4**  
 N 549376.48  
 E 1360591.55  
 ELEV. 384.42

**TRAV. PT. #6**  
 N 549725.49  
 E 1360806.94  
 ELEV. 390.97

**TRAV. PT. #3**  
 N 549849.54  
 E 1360950.74  
 ELEV. 398.15

**TRAV. PT. #7**  
 N 549875.81  
 E 1361057.50  
 ELEV. 398.56

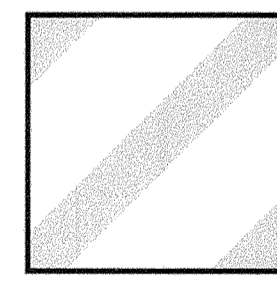
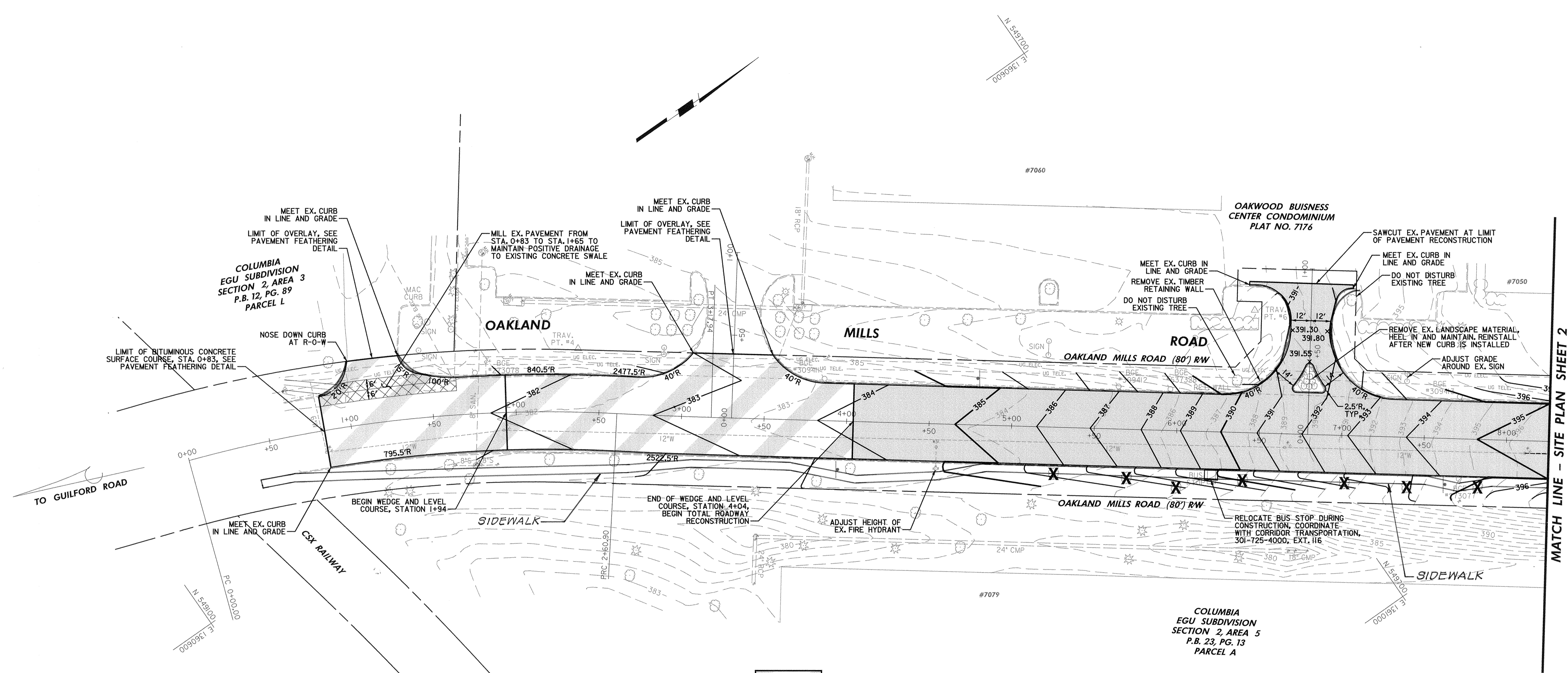
**TRAV. PT. #2**  
 N 550246.92  
 E 1361288.16  
 ELEV. 385.33

**TRAV. PT. #5**  
 N 550571.89  
 E 1361169.22  
 ELEV. 371.92

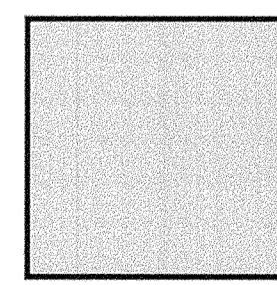
**REFERENCE TIES**  
 SCALE: 1" = 30'

**AS-BUILT**  
 June, 2006

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director: <i>John J. ...</i> 6/7/04 Chief, Bureau of Engineering: <i>Steve Shaver</i> 6/4/04 Chief, Division of Transportation Projects and Watershed Management: <i>Steve Shaver</i> 6/4/04	<b>GPI</b> GREENMAN-PEDERSEN, INC. ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS 10620 GUILFORD ROAD, SUITE 100, JESSUP, MD, 20794 BALI, 1401 880-3055 FAX: 1301 490-2549 www.gpi.net	Daniel J. Maletic License No. 13759 Registered Professional Engineer	DES: W.R.F. DRN: W.K.T. CHK: M.S.Z. DATE: JUNE, 2004	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>BY</th> <th>NO</th> <th>REVISION</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	BY	NO	REVISION	DATE					<b>GEOMETRY SHEET</b> SCALE MAP NO. _____ BLOCK NO. _____	<b>OAKLAND MILLS ROAD IMPROVEMENTS</b> HOWARD COUNTY, MARYLAND CAPITAL PROJECT NO. J-4134	SCALE: AS SHOWN SHEET 2 OF 20
BY	NO	REVISION	DATE												

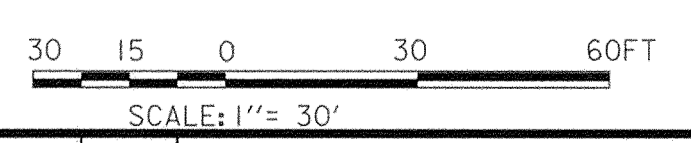


LIMIT OF BITUMINOUS CONCRETE SURFACE COURSE

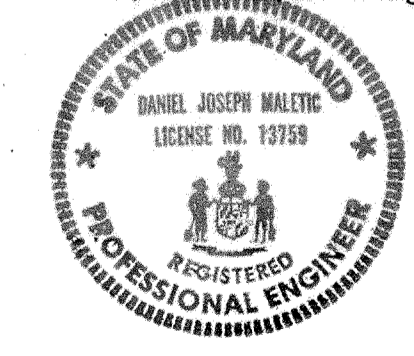


LIMIT OF TOTAL ROADWAY RECONSTRUCTION

X TREES TO BE REMOVED AND REPLACED



I hereby certify that to the best of my knowledge that this "As-Built" truly represents existing field conditions including but not limited to sizes, diameters, line and grade, and elevations, shown.



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Maryland Registered Professional Engineer No. 13759

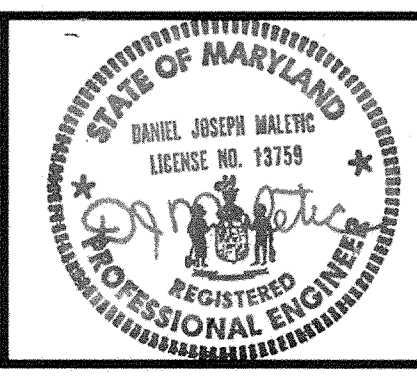
**AS-BUILT**  
June, 2006

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*William F. Mahoney* 6-7-04  
DIRECTOR OF PUBLIC WORKS DATE

*Steve Shaver* 6/4/04  
CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DATE

**GPI** GREENMAN-PEDERSEN, INC.  
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS  
10620 GUILFORD ROAD, SUITE 100, JESSUP, MD, 20794  
WASH. (301) 410-2172 BALT. (410) 860-3655  
FAX: (301) 490-2649 www.gpinet.com



DES: W.R.F.			
DRN: W.K.T.			
CHK: M.S.Z.			
DATE: JUNE, 2004	BY	NO	REVISION

**SITE GRADING PLAN SHEET 1**

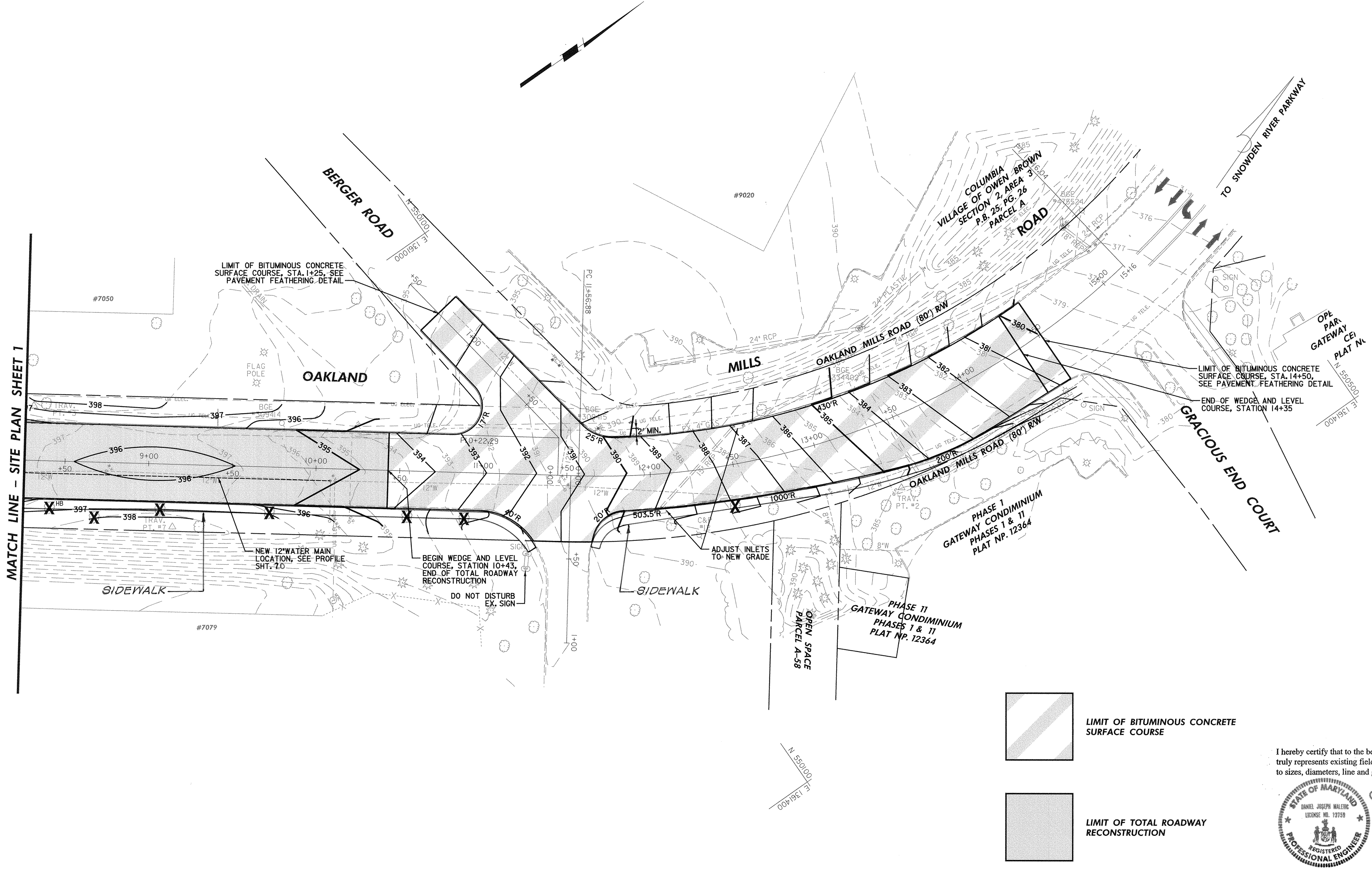
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**OAKLAND MILLS ROAD IMPROVEMENTS**

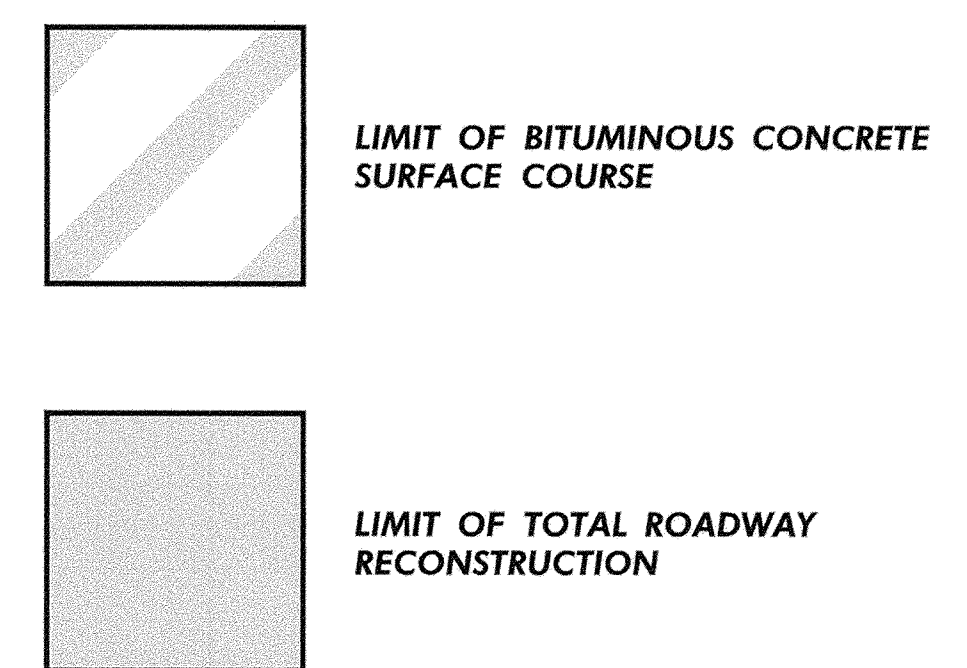
HOWARD COUNTY, MARYLAND  
CAPITAL PROJECT NO. J-4134

SCALE: AS SHOWN

SHEET 3 OF 20



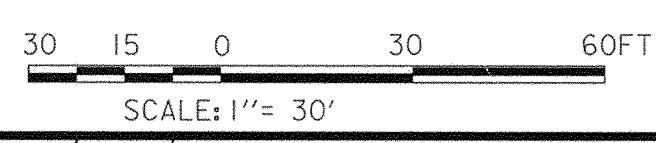
MATCH LINE - SITE PLAN SHEET 1



I hereby certify that to the best of my knowledge that this "As-Built" truly represents existing field conditions including but not limited to sizes, diameters, line and grade, and elevations, shown [X].

*Daniel J. Maletic*  
 Daniel J. Maletic  
 Maryland Registered Professional Engineer  
 License No. 13759

**AS-BUILT**  
 June, 2006



DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

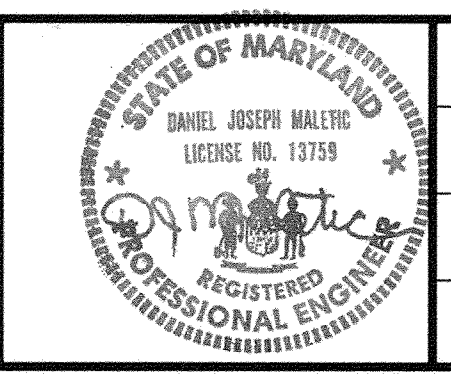
*John J. ...* 6/7/04  
 DIRECTOR OF PUBLIC WORKS DATE

*Steve Shaver* 6/14/04  
 CHIEF, BUREAU OF ENGINEERING DATE

*William J. ...* 6-7-04  
 CHIEF, BUREAU OF HIGHWAYS DATE

Steve Shaver 6/14/04  
 CHIEF, DIVISION OF TRANSPORTATION  
 PROJECTS AND WATERSHED MANAGEMENT DATE

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERS, ARCHITECTS, PLANNERS, CONTRACTORS, DESIGNERS & INSPECTORS  
 10620 GULFORD ROAD, SUITE 100, JESSUP, MD, 20794  
 WASH. (301) 470-2172 BALT. (410) 880-3055  
 FAX (301) 490-2448 www.gpi.net



DES: W.R.F.				
DRN: W.K.T.				
CHK: M.S.Z.				
DATE: JUNE, 2004	BY	NO	REVISION	DATE

**SITE GRADING PLAN SHEET 2**

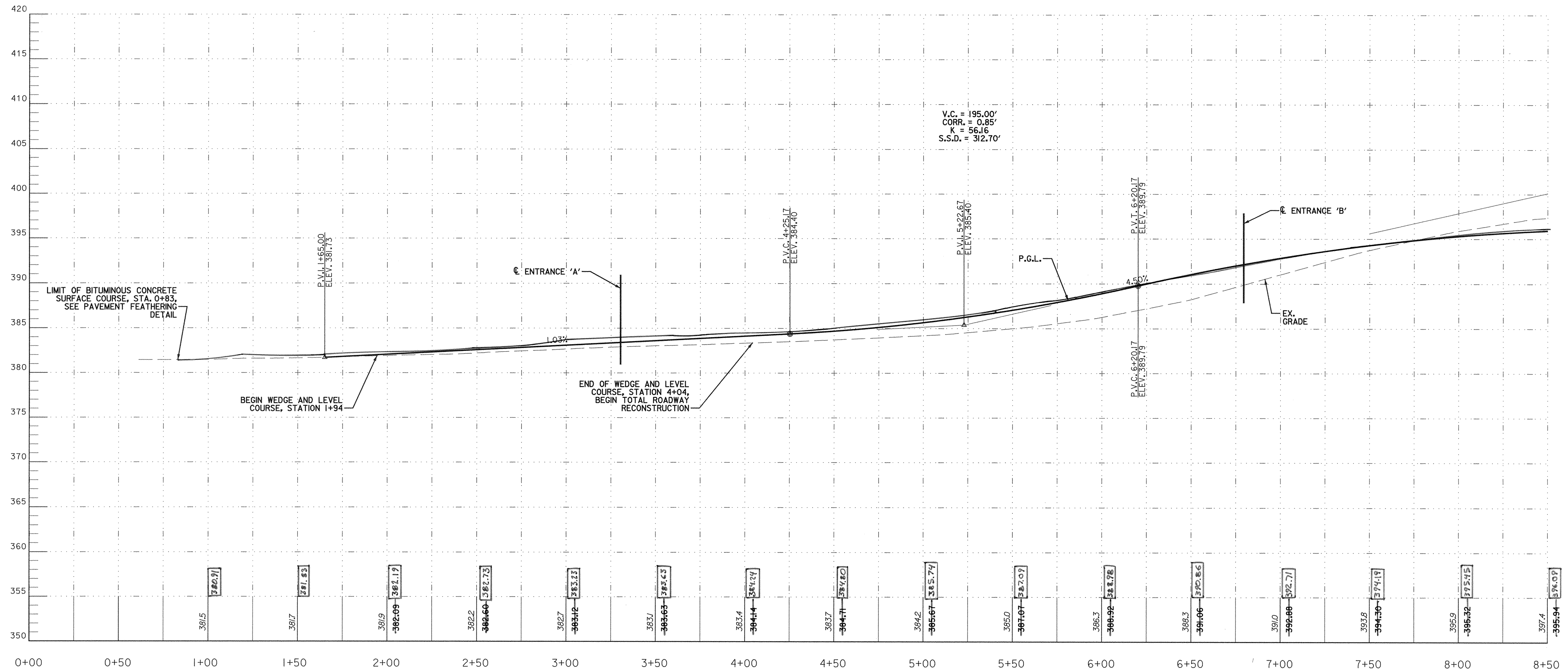
\* SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

**OAKLAND MILLS ROAD IMPROVEMENTS**

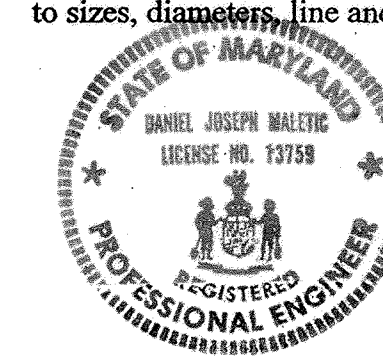
HOWARD COUNTY, MARYLAND  
 CAPITAL PROJECT NO. J-4134

SCALE: AS SHOWN

SHEET 4 OF 20

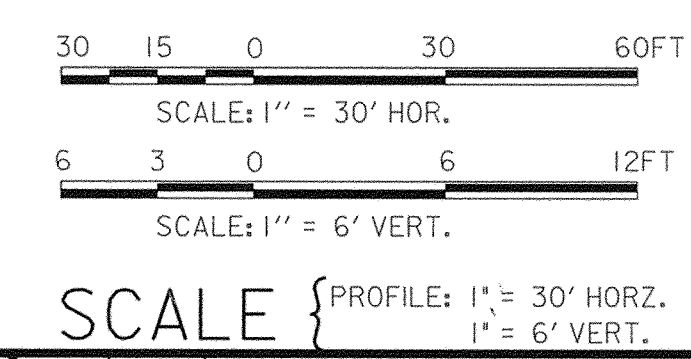


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*D. J. Maletic*  
Daniel J. Maletic  
Maryland Registered Professional Engineer No. 13759

**AS-BUILT**  
June, 2006

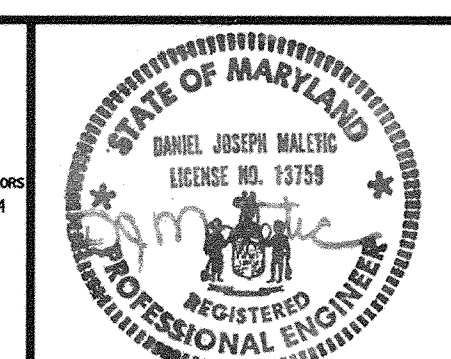


DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*William F. Mahan* 6/7/04  
DIRECTOR OF PUBLIC WORKS DATE

*Steve Shaver* 6/4/04  
CHIEF, BUREAU OF HIGHWAYS DATE

**GPI** GREENMAN-PEDERSEN, INC.  
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WASH. (301) 470-2772 BALT. (410) 890-3005  
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DRN: W.K.T.			
CHK: M.S.Z.			
DATE: JUNE, 2004	BY	NO	REVISION

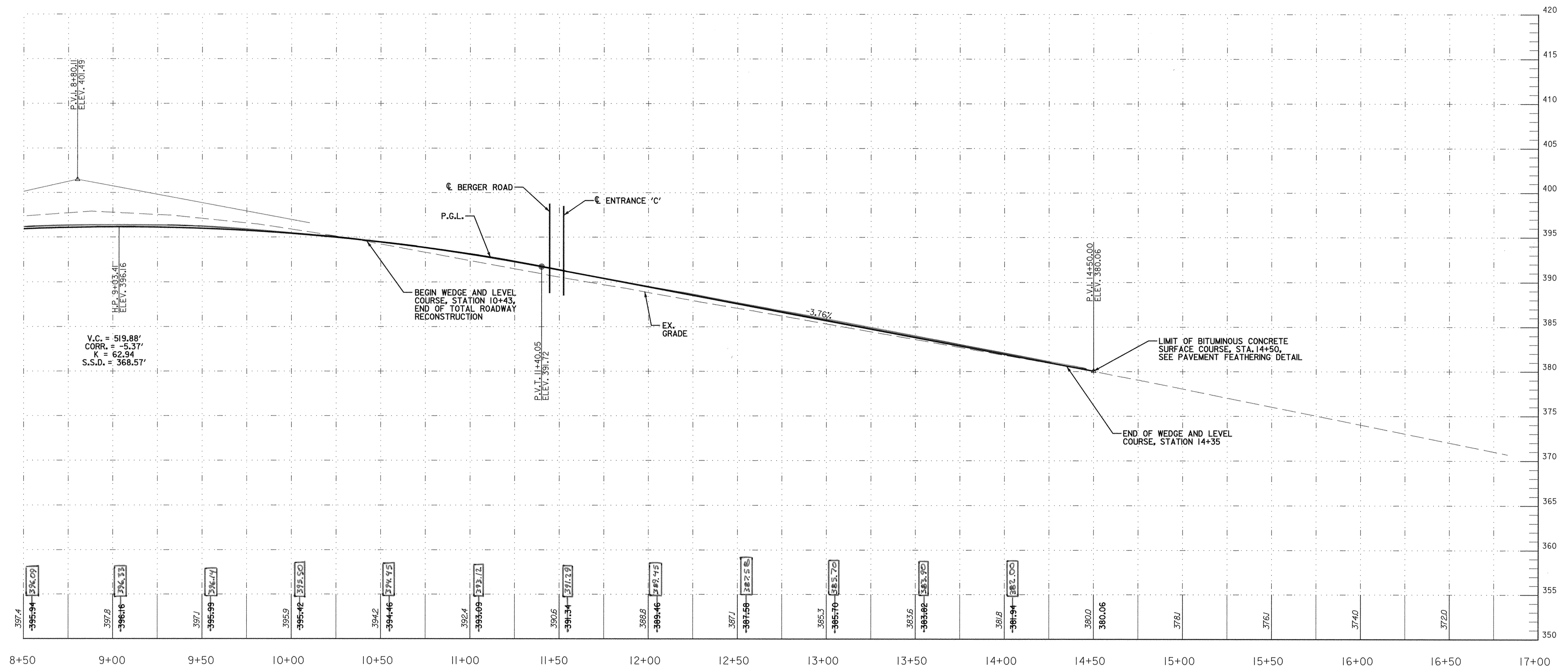
**ROADWAY PROFILE SHEET 1**

SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

**OAKLAND MILLS ROAD IMPROVEMENTS**

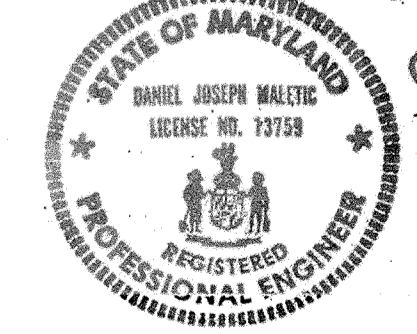
HOWARD COUNTY, MARYLAND  
CAPITAL PROJECT NO. J-4134

SCALE: AS SHOWN  
SHEET 5 OF 20



397.4	397.8	397.1	395.9	394.2	392.4	390.6	388.8	387.1	385.3	383.6	381.8	380.0	378.1	376.1	374.0	372.0
-395.94	-396.16	-395.99	-395.12	-394.46	-393.09	-391.34	-389.46	-387.58	-385.70	-383.82	-381.94	-380.06				
3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%				

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*D. Maletic*  
Daniel J. Maletic  
Maryland Registered Professional Engineer No. 13759

30 15 0 30 60 FT  
SCALE: 1" = 30' HOR.

6 3 0 6 12 FT  
SCALE: 1" = 6' VERT.

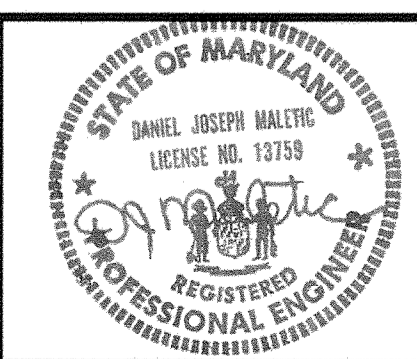
SCALE { PROFILE: 1" = 30' HORZ.  
1" = 6' VERT.

**AS-BUILT**

June, 2006

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
Director of Public Works: *John J. ...* DATE: 6/7/04  
Chief, Bureau of Engineering: *Paul G. ...* DATE: 6/4/04  
Chief, Bureau of Highways: *William J. ...* DATE: 6-7-04  
Chief, Division of Transportation Projects and Watershed Management: *Steve Shaver* DATE: 6/4/04

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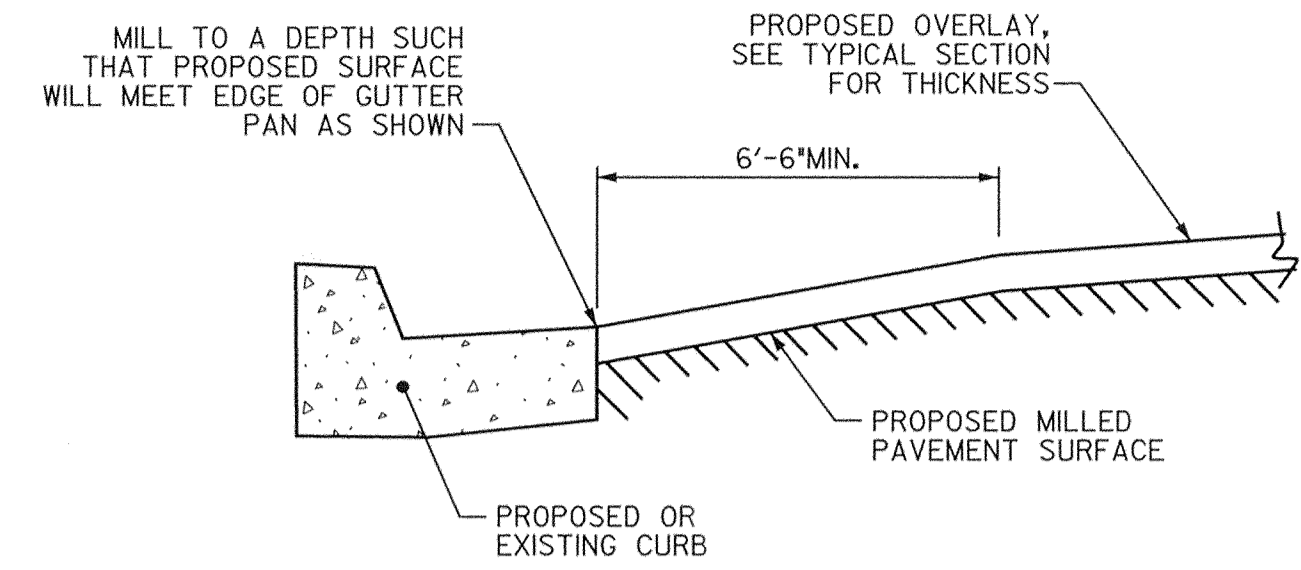


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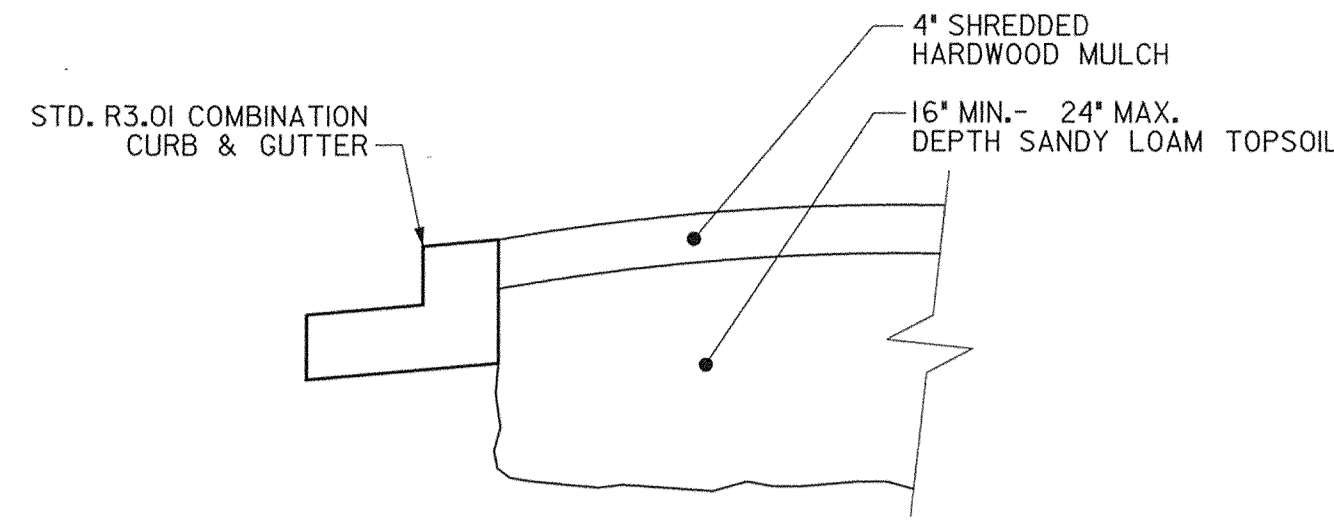
**ROADWAY PROFILE SHEET 2**

**OAKLAND MILLS ROAD IMPROVEMENTS**  
HOWARD COUNTY, MARYLAND  
CAPITAL PROJECT NO. J-4134

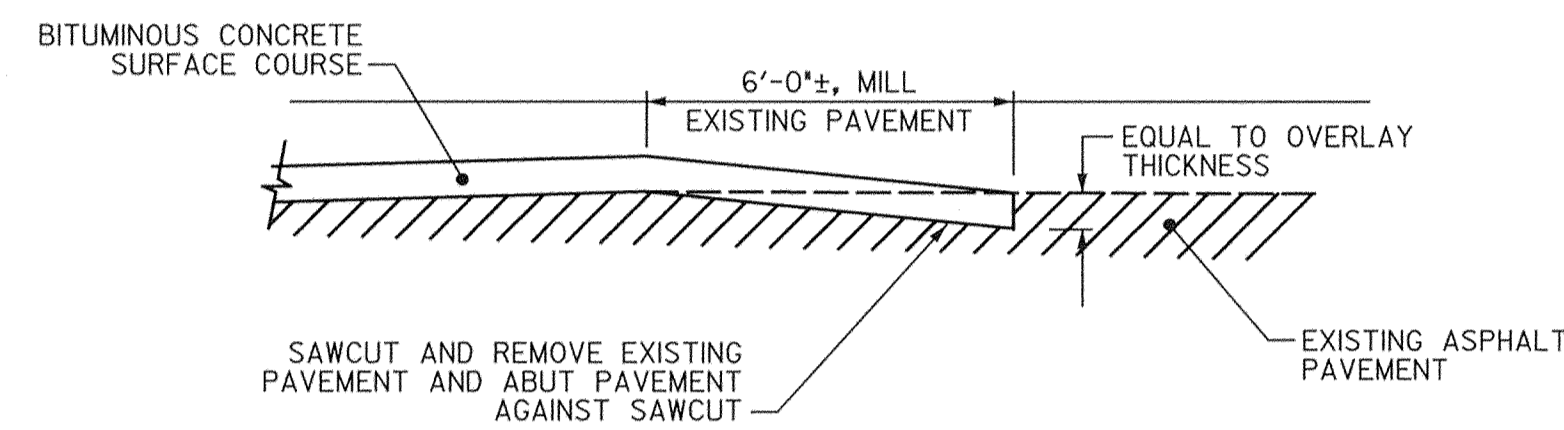
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SHEET 6 OF 20



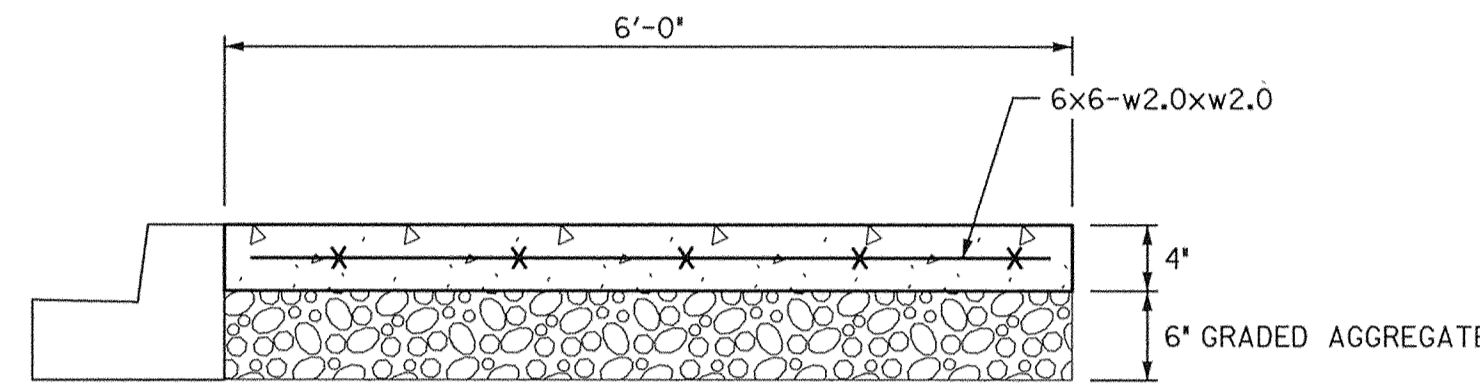
**PAVEMENT MILLING DETAIL**  
NOT TO SCALE



**DETAILED ISLAND CURB SECTION**  
NOT TO SCALE

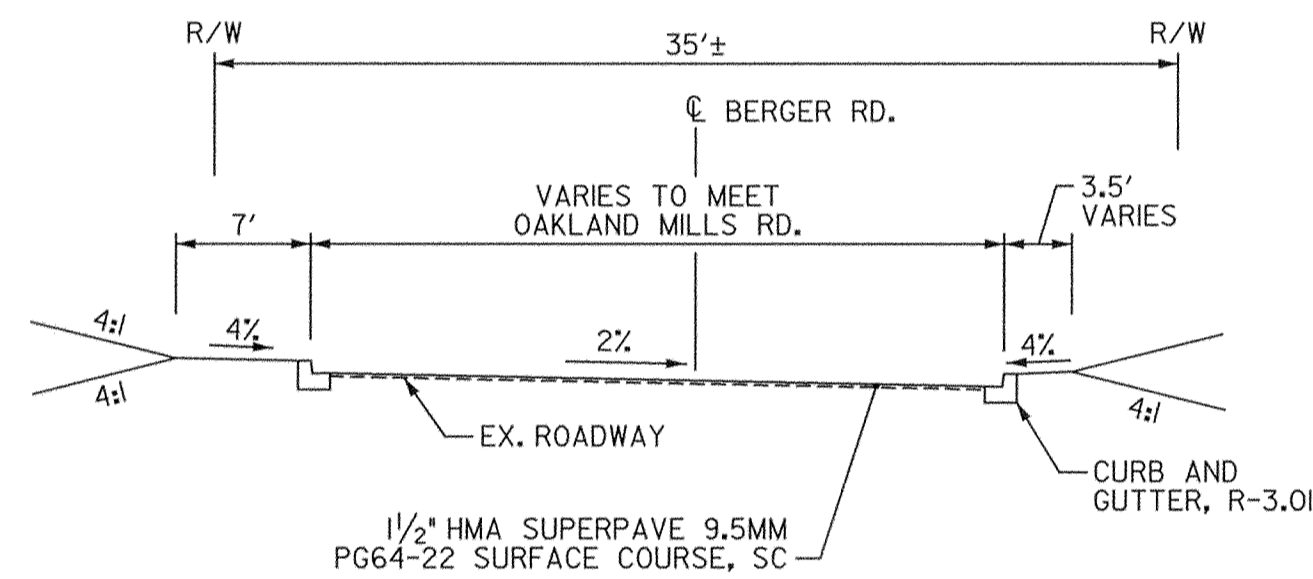


**PAVEMENT FEATHERING DETAIL**  
NOT TO SCALE

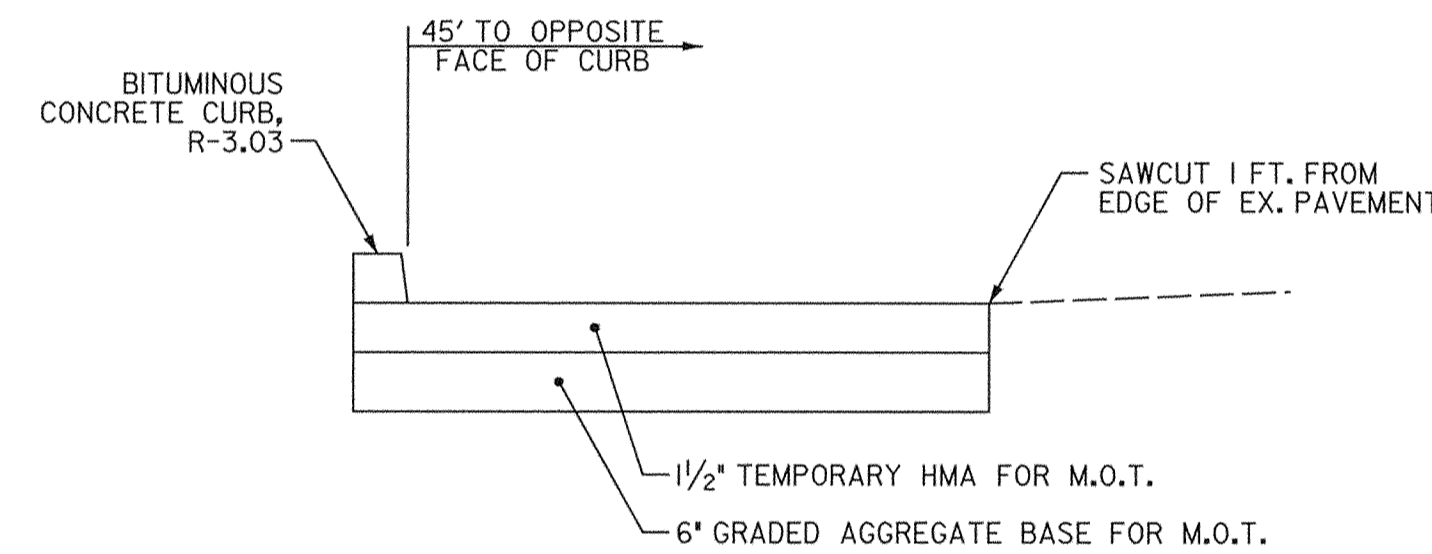


- NOTES:**
1. SEE CONCRETE SIDEWALK DETAIL R-3.05 FOR ADDITIONAL INFORMATION.
  2. CONCRETE PAD IS EIGHT FEET WIDE.

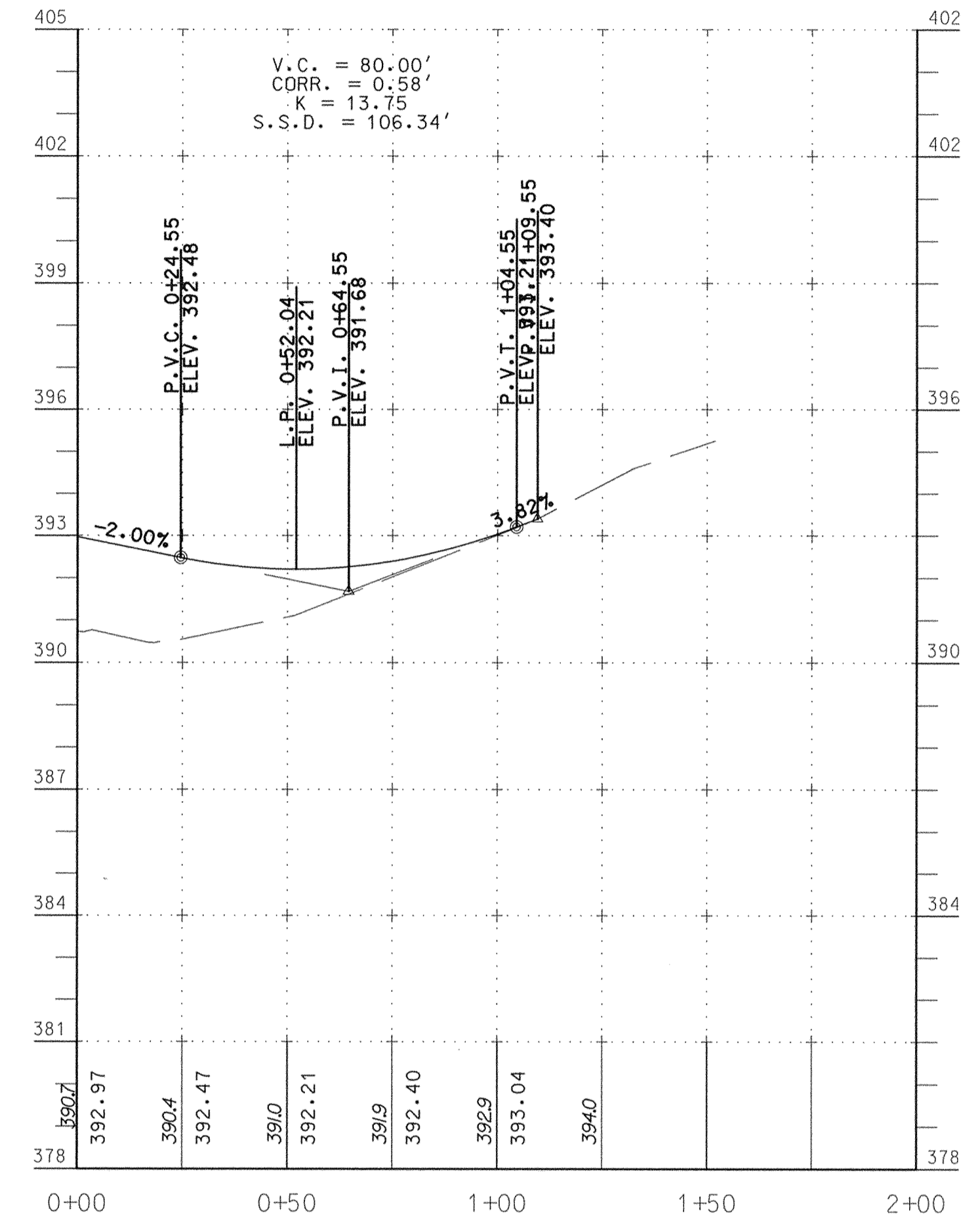
**BUS STOP PAD**  
NOT TO SCALE



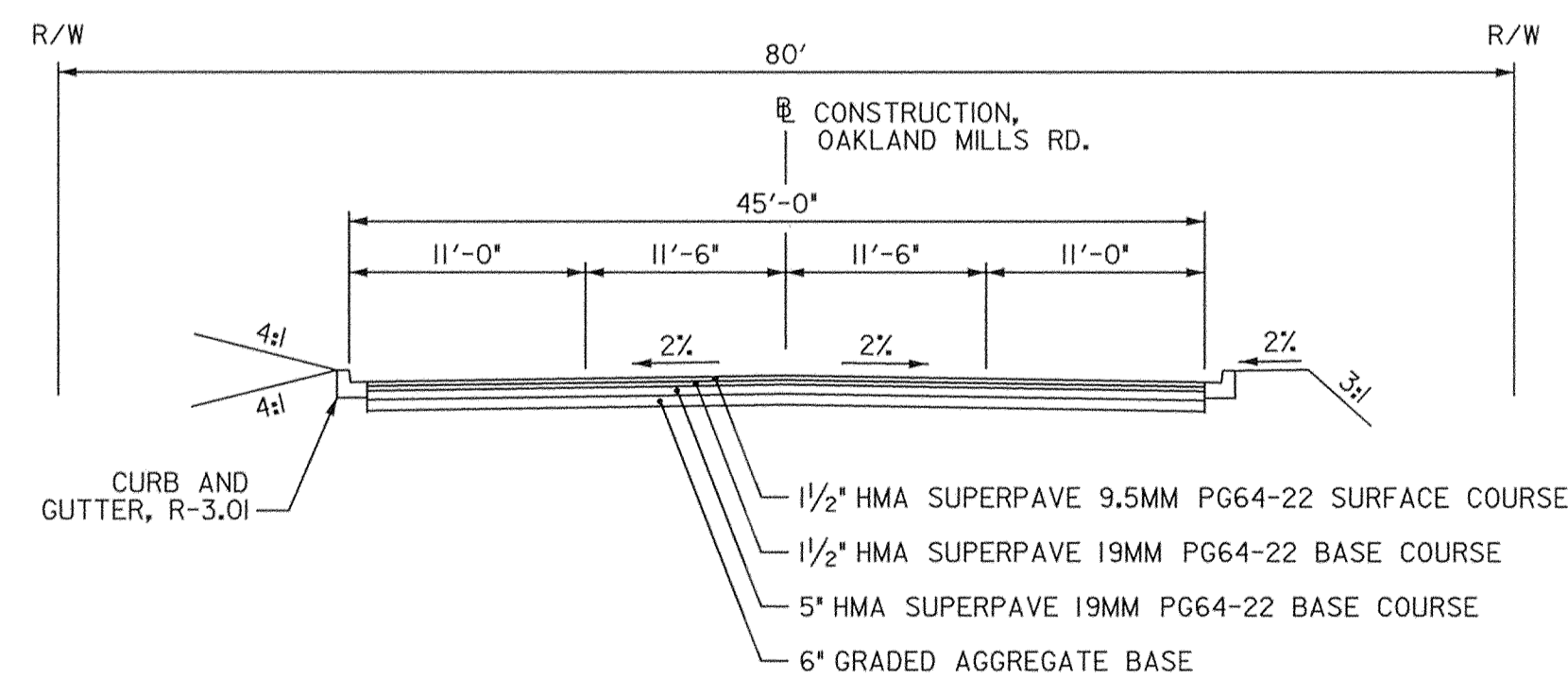
**BERGER ROAD SECTION**  
NOT TO SCALE



**TEMPORARY PAVEMENT WIDENING**  
NOT TO SCALE



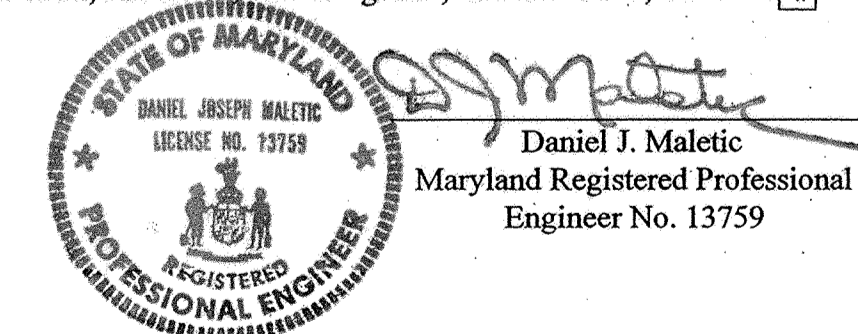
**ROADWAY PROFILE - BERGER ROAD**  
SCALE: HORIZ. 1" = 3', VERT. 1" = 30'



**OAKLAND MILLS ROAD SECTION**  
NOT TO SCALE

STATION 1+65 TO STATION 10+70,  
STATION 0+83 TO STATION 1+65 AND  
STATION 10+70 TO STATION 14+50  
TRANSITION TO MEET EXISTING WIDTH

I hereby certify that to the best of my knowledge that this "As-Built" truly represents existing field conditions including but not limited to sizes, diameters, line and grade, and elevations, shown [ # ]

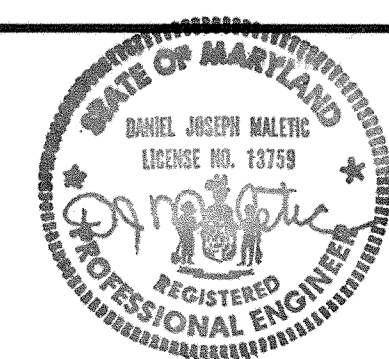


**AS-BUILT**  
June, 2006

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *Raymond J. ...* 6/7/04  
 Chief, Bureau of Engineering: *Paul J. ...* 6/4/04  
 Chief, Bureau of Highways: *William F. ...* 6-7-04  
 Chief, Division of Transportation Projects and Watershed Management: *Steve Shavano* 6/4/04

**GPI** GREENMAN-PEDERSEN, INC.  
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTORS, INTERIORS & INFRASTRUCTURE  
10620 GULFORD ROAD, SUITE 100, JESSUP, MD. 20794  
WASH. (301) 470-2772 BALTIMORE (410) 880-3055  
FAX (301) 460-2649 www.gpiinc.com



DES: W.R.F.				
DRN: W.K.T.				
CHK: M.S.Z.				
DATE: JUNE, 2004	BY	NO	REVISION	DATE

**CONSTRUCTION DETAILS AND TYPICAL SECTIONS**

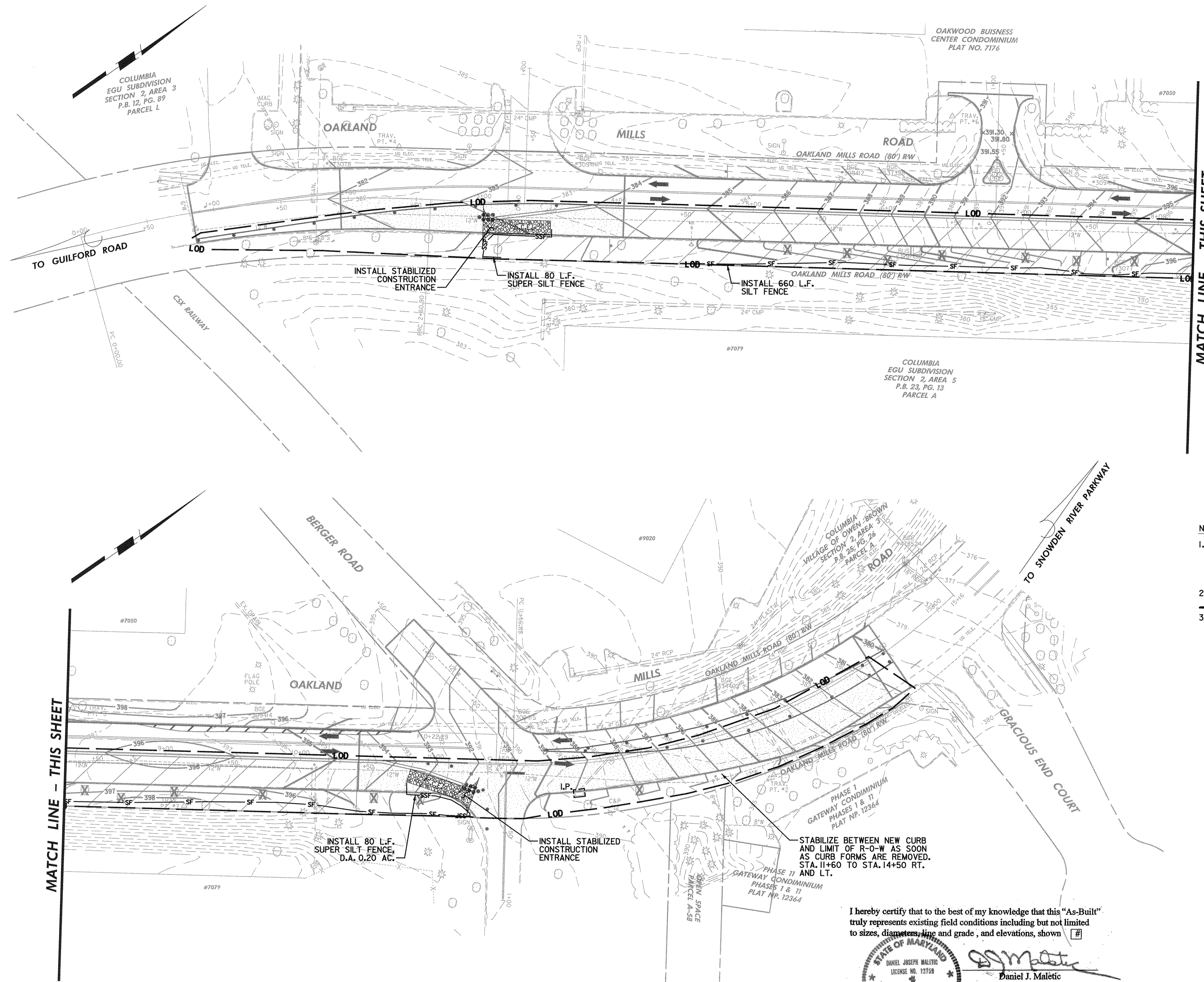
SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

**OAKLAND MILLS ROAD IMPROVEMENTS**

HOWARD COUNTY, MARYLAND  
CAPITAL PROJECT NO. J-4134

SCALE: AS SHOWN

SHEET 7 OF 20



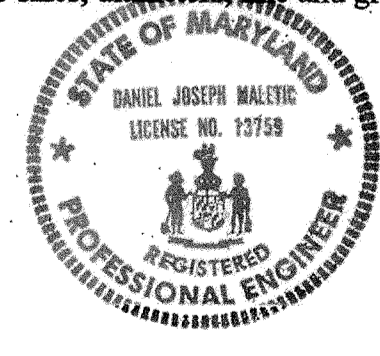
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- NOTES:**
1. CONSTRUCTION PHASING AND ESTIMATED DURATIONS ARE FOR THE PURPOSE OF EVALUATING EROSION AND SEDIMENT CONTROL MEASURES. THE CONTRACTOR MAY SUBMIT REVISIONS TO THE CONSTRUCTION PHASING TO THE ENGINEER AND HOWARD COUNTY SOIL CONSERVATION DISTRICT FOR REVIEW AND APPROVAL.
  2. THE CONTRACTOR SHALL CURL SILT FENCE AND SUPER SILT FENCE ENDS UPHILL BY TWO FEET IN ELEVATION FOR CONTAINMENT.
  3. WORK SHALL PROGRESS ACCORDING TO THE PHASING OF THE TRAFFIC CONTROL PLAN, UNLESS APPROVED OTHERWISE. BEFORE BEGINNING EACH PHASE, THE PERIMETER CONTROLS AND CONSTRUCTION ENTRANCE MUST BE INSTALLED. SEDIMENT CONTROL DEVICES CAN ONLY BE REMOVED WITH APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR.

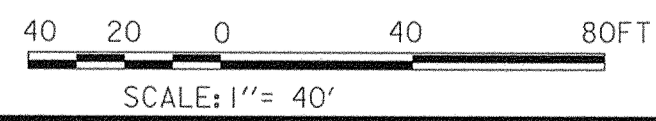
I hereby certify that to the best of my knowledge that this "As-Built" truly represents existing field conditions including but not limited to sizes, diameters, line and grade, and elevations, shown [ # ]

**Daniel J. Malotic**  
 Maryland Registered Professional  
 Engineer No. 13759



**AS-BUILT**  
 June, 2006

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.  
*Jim Myers* 6/18/04  
 Date  
 Natural Resources Service  
 THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
*John R. Robinson* 6/18/04  
 Date  
 Howard Soil Conservation District



DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

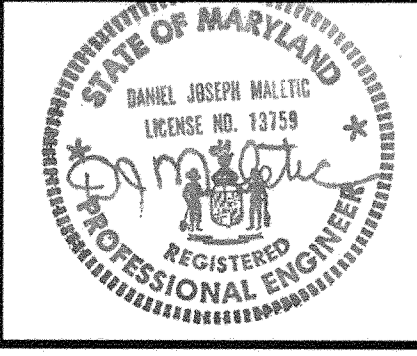
*San J. Chen* 6/14/04  
 DIRECTOR OF PUBLIC WORKS DATE

*Steve Shaver* 6/14/04  
 CHIEF, BUREAU OF ENGINEERING DATE

*William R. Gabel* 6-7-04  
 CHIEF, BUREAU OF HIGHWAYS DATE

*Steve Shaver* 6/14/04  
 CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DATE

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS  
 10620 GUILFORD ROAD, SUITE 100, JESSUP, MD. 20794  
 WASH. (301) 470-2772 BALT. (410) 880-3055  
 FAX (301) 490-2549 www.gpi.net.com



DES: W.R.F.					
DRN: W.K.T.					
CHK: M.S.Z.					
DATE: JUNE, 2004	BY	NO	REVISION	DATE	

**SEDIMENT AND EROSION CONTROL PLAN SHEET PHASE 1**

SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

**OAKLAND MILLS ROAD IMPROVEMENTS**

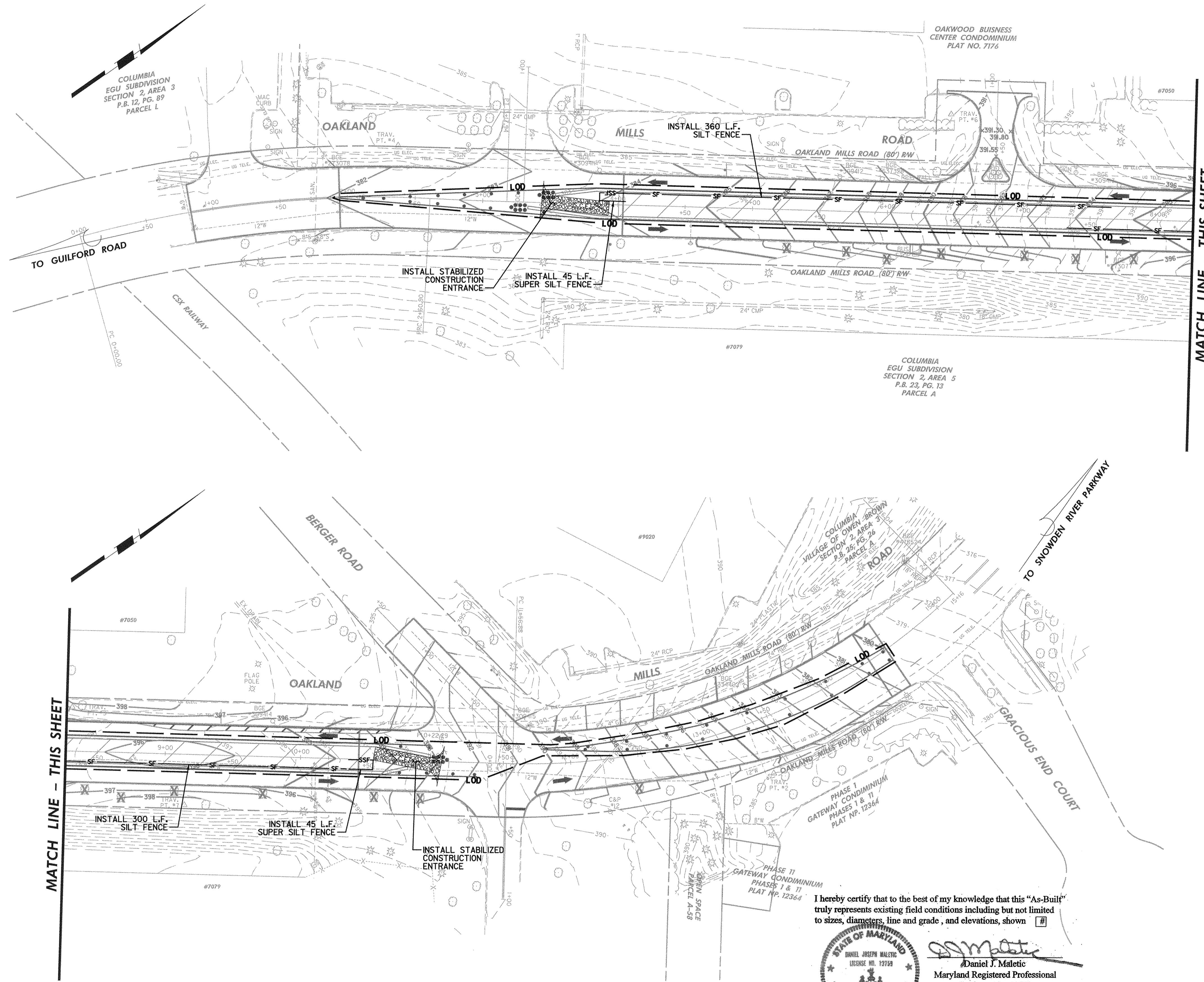
HOWARD COUNTY, MARYLAND  
 CAPITAL PROJECT NO. J-4134

SCALE: AS SHOWN

SHEET 8 OF 20

ES 1 OF 5

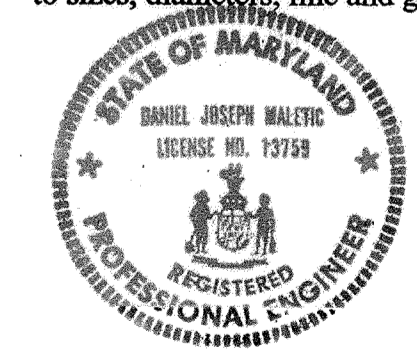




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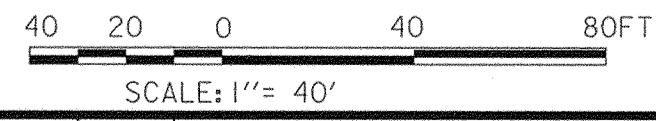
I hereby certify that to the best of my knowledge that this "As-Built" truly represents existing field conditions including but not limited to sizes, diameters, line and grade, and elevations, shown [ ]



*Daniel J. Maletic*  
 Daniel J. Maletic  
 Maryland Registered Professional  
 Engineer No. 13759

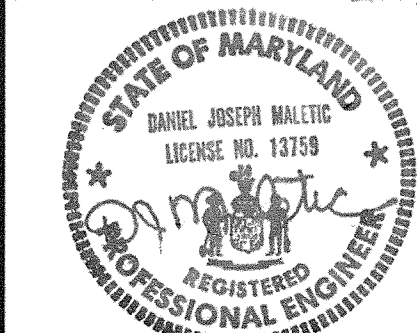
REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENT  
*Jim M. Jurek* 6/8/04  
 Jim M. Jurek  
 Natural Resources Conservation Service  
 Date  
 THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT  
*John R. Robinson* 6/8/04  
 John R. Robinson  
 Howard Soil Conservation District  
 Date

**AS-BUILT**  
 June, 2006



DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
*Jan J. Ehr* 6/7/04  
 DIRECTOR OF PUBLIC WORKS DATE  
*William F. Walsh Jr.* 6-7-04  
 CHIEF, BUREAU OF HIGHWAYS DATE  
*Paul G. Johnson* 6/4/04  
 CHIEF, BUREAU OF ENGINEERING DATE  
*Steve Sharr* 6/14/04  
 CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DATE

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERS, ARCHITECTS, PLANNING, CONSTRUCTION SERVICES & INSPECTORS  
 10620 GUILFORD ROAD, SUITE 100, JESSUP, MD 20794  
 WASH. DC: 410-272-7172 BALT. 410-860-3055  
 FAX: (301) 490-2649 www.gpi.net

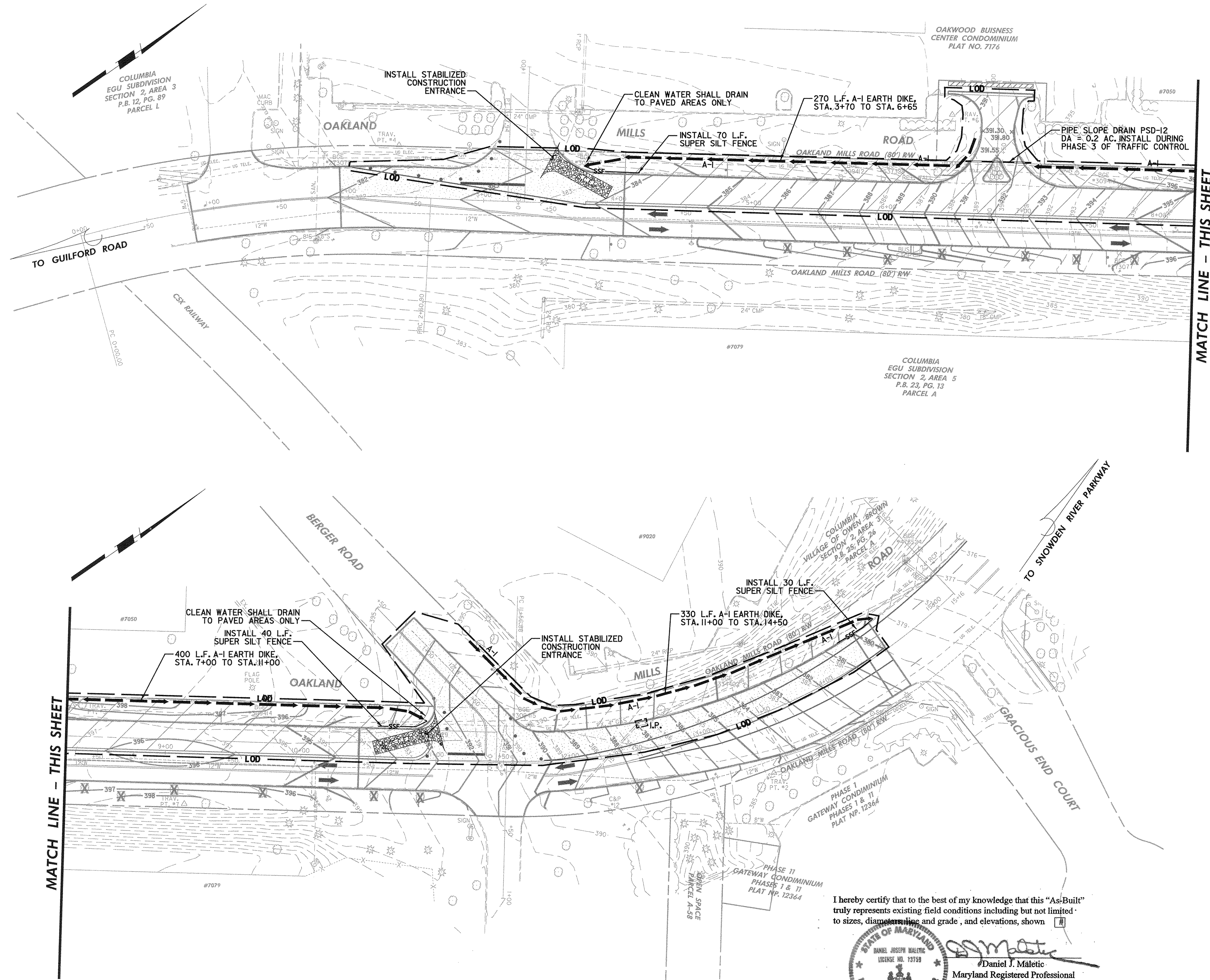


DES: W.R.F.					
DRN: W.K.T.					
CHK: M.S.Z.					
DATE: JUNE, 2004	BY	NO	REVISION	DATE	

**SEDIMENT AND EROSION CONTROL PLAN SHEET PHASE 2**  
 SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

**OAKLAND MILLS ROAD IMPROVEMENTS**  
 HOWARD COUNTY, MARYLAND  
 CAPITAL PROJECT NO. J-4134

SCALE: AS SHOWN  
 SHEET 9 OF 20  
 ES 2 OF 5



MATCH LINE - THIS SHEET

MATCH LINE - THIS SHEET

I hereby certify that to the best of my knowledge that this "As-Built" truly represents existing field conditions including but not limited to sizes, diameters and grade, and elevations, shown [ ]

**Daniel J. Maletic**  
 Maryland Registered Professional Engineer No. 13759

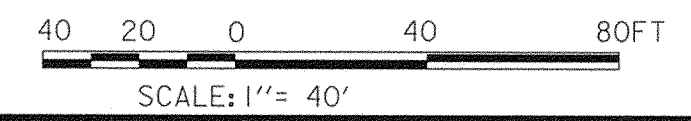


**AS-BUILT**  
 June, 2006

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

*Jim Meyer* 6/8/04  
 Natural Resource Conservation Service

*John K. Blanton* 6/8/04  
 Howard Soil Conservation District

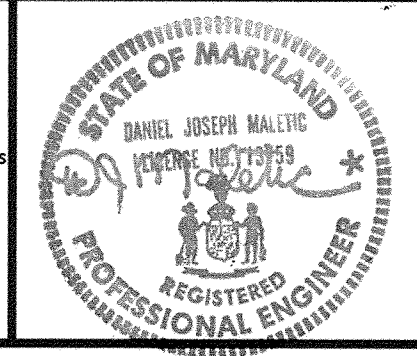


DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*Jan M. Slom* 6/14/04  
 DIRECTOR OF PUBLIC WORKS DATE

*Steve Shivas* 6/14/04  
 CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DATE

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS  
 10620 GUILFORD ROAD, SUITE 100, JESSUP, MD. 20794  
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DES: W.R.F.					
DRN: W.K.T.					
CHK: M.S.Z.					
DATE: JUNE, 2004					
BY	NO	REVISION	DATE	SCALE MAP NO.	BLOCK NO.

**SEDIMENT AND EROSION CONTROL PLAN SHEET PHASE 3**

**OAKLAND MILLS ROAD IMPROVEMENTS**

HOWARD COUNTY, MARYLAND  
 CAPITAL PROJECT NO. J-4134

ES 3 OF 5  
 SCALE: AS SHOWN  
 SHEET 10 OF 20

### DETAIL 22 - SILT FENCE

**Construction Specifications**

- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum cut) or 1 1/2" diameter (minimum round) and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:
 

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft <sup>2</sup> /minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reaches 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-15-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### SILT FENCE

**Silt Fence Design Criteria**

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-15-3A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### DETAIL 33 - SUPER SILT FENCE

**Construction Specifications**

- Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.
- Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wires, bracing and truss rods, drive anchors and post caps are not required except at the ends of the fence.
- Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
- Filter cloth shall be embedded a minimum of 8" into the ground.
- When two sections of filter cloth adjoin each other, they shall be overlapped by 8" and folded.
- Maintenance shall be performed as needed and all bulges removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height.
- Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:
 

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft <sup>2</sup> /minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE H-26-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### SUPER SILT FENCE

**Design Criteria**

Slope	Slope Steepness	Slope Length (Maximum)	Silt Fence Length (Maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	100 feet	1,000 feet
33 - 50%	3:1 - 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE H-26-3A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### DETAIL 4 - PIPE SLOPE DRAIN

**Construction Specifications - Pipe Slope Drain**

- The Pipe Slope Drain (PSD) shall have a slope of 3 percent or steeper.
- The top of the earth dike over the inlet pipe shall be at least 2 times the pipe diameter measured at the invert of the pipe.
- Flexible tubing is preferred. However, corrugated metal pipe or equivalent PVC pipe can be used. All connections shall be watertight.
- A flared end section shall be attached to the inlet end of pipe with a watertight connection. Filter cloth shall be placed under the inlet of the pipe slope drain and shall extend out 5' from the inlet. The filter cloth shall be "keyed in" on all sides.
- The Pipe Slope Drain shall be securely anchored to the slope by staking at the grates provided. Spacing for anchors shall be as provided by manufacturer's specification. In no case shall less than two (2) anchors be provided, equally spaced along the length of pipe. These details should be provided by pipe suppliers.
- The soil around and under the pipe and end section shall be hand tamped in 4 inch lifts to the top of the earth dike.
- All pipe connections shall be watertight.
- Whenever possible where a PSD drains an unestablished area, it shall outlet into a sediment trap or basin. If this is not possible then the slope drain will discharge into a stable conveyance that leads to a sediment trap or basin. When discharging into a trap or basin the PSD shall discharge at the same elevation as the well point elevation. The discharge from the PSD must be as far away from the sediment control outlet as possible.
- When the drainage area is established, the PSD shall discharge onto a stabilized area at a non-erosive velocity.
- Inspection and any required maintenance shall be performed periodically and after each rain event.
- The inlet must be kept open at all times.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE B-5-4 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE

**Construction Specifications**

- Length - minimum of 50' (#30' for single residence lot).
- Width - 10' minimum, should be flared at the existing road to provide a turning radius.
- Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. The plan approval authority may not require single family residences to use geotextile.
- Stone - crushed aggregate (2" to 3") or recycled or re-paved concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
- Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
- Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE F-17-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### STABILIZED CONSTRUCTION ENTRANCE

**Construction Specifications**

- Length - minimum of 50' (#30' for single residence lot).
- Width - 10' minimum, should be flared at the existing road to provide a turning radius.
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- Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE F-17-3A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### DETAIL 1 - EARTH DIKE

**Construction Specifications**

- Seed and cover with straw mulch.
- Seed and cover with Erosion Control Matting or lime with sod.
- 4" - 7" stone or recycled concrete equivalent pressed into the soil 1" minimum.

**Construction Specifications**

- All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
- Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
- Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, established area at a non-erosive velocity.
- All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.
- The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.
- Fill shall be compacted by earth moving equipment.
- All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.
- Inspection and maintenance must be provided periodically and after each rain event.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE A-1-6 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### DETAIL 23B - AT GRADE INLET PROTECTION

**Construction Specifications**

- Lift grate and wrap with Geotextile Class E to completely cover all openings, then set grate back in place.
- Place 1/2" to 1 1/2" stone, 4"-6" thick on the grate to secure the fabric and provide additional filtration.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE B-5-4A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### DETAIL 23C - CURB INLET PROTECTION (COG OR COS INLETS)

**Construction Specifications**

- Attach a continuous piece of wire mesh (30" minimum width by throat length plus 4" to the 2" x 4" weir (measuring throat length plus 2" as shown on the standard drawing).
- Place a continuous piece of Geotextile Class E the same dimensions as the wire mesh over the wire mesh and securely attach it to the 2" x 4" weir.
- Securely nail the 2" x 4" weir to a 3" long vertical spacer to be located between the weir and the inlet face (max. 4" apart).
- Place the assembly against the inlet throat and nail (minimum 2" lengths of 2" x 4" to the top of the weir at spacer locations). These 2" x 4" anchors shall extend across the inlet top and be held in place by endlogs or alternate weight.
- The assembly shall be placed so that the end spacers are a minimum 1" beyond both ends of the throat opening.
- Form the 1/2" x 1/2" wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean 3/4" x 1 1/2" stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.
- The type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.
- Ensure that storm flow does not bypass the inlet by installing a temporary earth or asphalt dike to direct the flow to the inlet.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE B-5-4B MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*John J. ...* 6/7/04  
DIRECTOR OF PUBLIC WORKS DATE

*William E. ...* 6/7/04  
CHIEF, BUREAU OF HIGHWAYS DATE

*...* 6/4/04  
CHIEF, BUREAU OF ENGINEERING DATE

*Steve ...* 6/4/04  
CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DATE

**GPI** GREENMAN-PEDERSEN, INC.  
10620 GULFORD ROAD, SUITE 100, JESSUP, MD 20794  
BALT. (410) 880-3055 FAX (301) 490-2649

**STATE OF MARYLAND**  
DANIEL JOSEPH MALETIC  
LICENSE NO. 13759  
REGISTERED PROFESSIONAL ENGINEER

DES: W.R.F.			
DRN: W.K.T.			
CHK: M.S.Z.			
DATE: JUNE, 2004	BY: NO	REVISION:	DATE:

AS-BUILT  
June, 2006

SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

I hereby certify that to the best of my knowledge that this "As-Built" truly represents existing field conditions including but not limited to sizes, diameters, line and grade, and elevations, shown [H]

**STATE OF MARYLAND**  
DANIEL JOSEPH MALETIC  
LICENSE NO. 13759  
REGISTERED PROFESSIONAL ENGINEER

Daniel J. Maletic  
Maryland Registered Professional Engineer No. 13759

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND METS TECHNICAL REQUIREMENTS.

*Jim ...* 6/18/04  
U.S. Natural Resources Conservation Service Date

*John ...* 6/18/04  
HOWARD SOIL CONSERVATION DISTRICT Date

**OAKLAND MILLS ROAD IMPROVEMENTS**

HOWARD COUNTY, MARYLAND  
CAPITAL PROJECT NO. J-4134

SCALE: AS SHOWN

SHEET 11 OF 20

ES 4 OF 5

19.0 STANDARDS AND SPECIFICATIONS

FOR LAND GRADING  
Design Criteria

The grading plan should be based upon the incorporation of building designs and street layouts that fit and utilize existing topography and desirable natural surroundings to avoid extreme grade modifications. Information submitted must provide sufficient topographic surveys and soil investigations to determine limitations that must be imposed on the grading operation related to slope stability, effect on adjacent properties and drainage patterns, measures for drainage and water removal and vegetative treatment, etc.

Many counties have regulations and design procedures already established for land grading and cut and fill slopes. Where these requirements exist, they shall be followed. The plan must show existing and proposed contours of the areas to be graded. The plan shall also include practices for erosion control, slope stabilization, safe disposal of runoff water and drainage, such as waterways, lined ditches, reverse slope benches (include grade and cross section), grade stabilization structures, retaining walls, and surface and subsurface drains. The plan shall also include phasing of these practices. The following shall be incorporated into the plan:

- I. Provisions shall be made to safely conduct surface runoff to storm drains, protected outlets or to stable water courses to insure that surface runoff will not damage slopes or other graded areas.
- II. Cut and fill slopes that are to be stabilized with grasses shall not be steeper than 2:1. (Where the slope is to be mowed the slope should be no steeper than 3:1; 4:1 is preferred because of safety factors related to mowing steep slopes.) Slopes exceeding 2:1 shall require special design and stabilization considerations that shall be adequately shown on the plans.
- III. Reverse benches shall be provided whenever the vertical interval (height) of any 2:1 slope exceeds 20 feet; for 3:1 slope it shall be increased to 30 feet and for 4:1 to 40 feet. Benches shall be located to divide the slope face as equally as possible and shall convey the water to a stable outlet. Sills, seeps, rock outcrops, etc., shall also be taken into consideration when designing benches.
  - A. Benches shall be a minimum of six-feet wide to provide for ease of maintenance.
  - B. Benches shall be designed with a reverse slope of 6:1 or flatter to the toe of the upper slope and with a minimum of one foot in depth. Bench gradient to the outlet shall be between 2 percent and 3 percent, unless accompanied by appropriate design and computations.
  - C. The flow length within a bench shall not exceed 800' unless accompanied by appropriate design and computations. For flow channel stabilization see temporary
- IV. Surface water shall be diverted from the face of all cut and/or fill slopes by the use of earth dikes, ditches and swales or conveyed downslope by the use of a designed structure, except
  - A. The face of the slope is or shall be stabilized and the face of all graded slopes shall be protected from surface runoff until they are stabilized.
  - B. The face of the slope shall not be subject to any concentrated flows of surface water such as from natural drainageways, graded swales, downspouts, etc.
  - C. The face of the slope will be protected by special erosion control materials, to include, but not limited to approved vegetative stabilization practices (see section C), rip-rap or other approved stabilization methods.
- V. Cut slopes occurring in ripable rock shall be serrated as shown on the following diagram. These serrations shall be made with conventional equipment as the excavation is made. Each step or serration shall be constructed on the contour and will have steps cut at nominal two-foot intervals with nominal three-foot horizontal shelves. These steps will vary depending on the slope ratio or the cut slope. The nominal slope line is 1:1. These steps will weather and act to hold moisture, lime, fertilizer and seed thus producing a much quicker and longer lived vegetative cover and better slope stabilization. Overland flow shall be diverted from the top of all serrated cut slopes and carries to a suitable outlet.
- VI. Subsurface drainage shall be provided where necessary to intercept seepage that would otherwise adversely affect slope stability or create excessively wet site conditions.
- VII. Slopes shall not be created so close to property lines as to endanger adjoining properties without adequately protecting such properties against sedimentation, erosion, slippage, settlement, subsidence or other related damages.
- VIII. Fill material shall be free of brush, rubbish, rocks, logs, stumps, building debris, and other objectionable material. It should be free of stones over two (2) inches in diameter where compacted by hand or mechanical tampers or over eight (8) inches in diameter where compacted by rollers or other equipment. Frozen material shall not be placed in the fill nor shall the fill material be placed on a frozen foundation.
- IX. Stockpiles, borrow areas and spoil shall be shown on the plans and shall be subject to the provisions of this Standard and Specifications.
- X. All disturbed areas shall be stabilized structurally or vegetatively in compliance with 20.0 Standards and Specifications for Vegetative Stabilization.

Seed Mix Table For Turf Establishment In Shaded areas

Common Name	Percent of Seed Mix	Purity Percent Min.	Weedseed Percent Max.	Germination Percent Min.
Shadow chewing fescue or other improved chewing fescue	30	90	1	80
Aurora hard fescue or other improved hard fescue	30	90	1	80
Flyer creeping red fescue or other creeping red fescue	20	90	1	80
Glade kentucky bluegrass or improved kentucky bluegrass	10	90	1	80
Manhattan II, Affinity or other improved perennial ryegrass	10	90	1	80

Note:  
 \* Application rate shall be 20 lbs./acre.  
 \* Seed mix percentages are based upon weight.  
 \* This seed mix will supersede any other permanent seed mixtures listed in the Contract Documents unless otherwise allowed by the engineer.  
 \* Seeds shall be mixed offsite and delivered thoroughly mixed.  
 \* This mix is to be used for temporary seeding when directed by the engineer.

20.0 STANDARD AND SPECIFICATIONS

FOR TOPSOIL  
Definition

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose

To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies

I. This practice is limited to areas having 2:1 or flatter slopes where:

- A. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
- B. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
- C. The original soil to be vegetated contains material toxic to plant growth.
- D. The soil is so acidic that treatment with limestone is not feasible.

II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

Construction and Material Specifications

I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.

II. Topsoil Specifications - Soil to be used as topsoil must meet the following:

- A. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of clinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.
- B. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, johnsongrass, nutseeds, poison ivy, thistle, or others as specified.
- C. Where the subsoil is either heavy acidic or composed of heavy clays, (ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

III. For sites having disturbed areas under 5 acres place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

IV. For sites having disturbed areas over 5 acres:

- A. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
  1. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
  2. Organic content of topsoil shall be not less than 1.5 percent by weight.
  3. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
  4. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

B. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

V. Topsoil Application

A. When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.

1. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.
2. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
3. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seeded preparation.

VI. Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

A. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:

1. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
  2. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
  3. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
- B. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Sodding MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

HOWARD SOIL CONSERVATION DISTRICT

PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seedbed Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:  
 1. Preferred - Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) And 600 lbs/acre 10-10-10 fertilizer (4 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil. At time of seeding, apply 400 lbs/acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq. ft.)  
 2. Acceptable - Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 1000 lbs/acre 10-10-10 fertilizer (23 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil.

Seeding: For the periods March 1 - April 30, and August 1 - October 15, seed with 60 lbs/acre (4 lbs/1000 sq. ft.) of Kentucky 31 Tall Fescue per acre and 2 lbs/acre (.05 lbs/1000 sq. ft.) of weeping lovegrass. During the period of October 16 - February 28, protect site by:  
 Option 1 - Two tons per acre of well anchored straw mulch and seed as soon as possible in the spring.  
 Option 2 - use sod.  
 Option 3 - seed with 60 lbs/acre Kentucky 30 tall fescue and mulch with 2 tons/acre well anchored straw.

Mulching: Apply 1-1/2 to 2 tons per acre (70 - 90 lbs/1000 sq. ft.) of rotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (8 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slope 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq. ft.) for anchoring.

Maintenance: Inspect all seeding areas and make needed repairs, replacements and reseeding.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be re-disturbed where a short-term vegetative cover is needed.

Seedbed Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil Amendments: Apply 600 lbs/acre 10-10-10 fertilizer (4 lbs/1000 sq. ft.)

Seeding: For periods March 1 - April 30 and from August 15 - October 15, seed with 2-1/2 bushel per acre of annual rye (2 lbs/1000 sq. ft.). For the period May 1 - August 14, seed with 3 lbs/acre of weeping lovegrass (0.07 lbs/1000 sq. ft.). For the period November 16 - February 28, protect site by applying 2 tons/acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: Apply 1-1/2 to 2 tons per acre (70 - 90 lbs/1000 sq. ft.) of rotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (8 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slope 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq. ft.) for anchoring.

HOWARD SOIL CONSERVATION DISTRICT

STANDARD SEDIMENT CONTROL NOTES

I. A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to start of any construction (313-1855).

2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.

3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within:  
 A) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes steeper than 3:1.  
 B) 14 calendar days as to all other disturbed or graded areas on the project site.

4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. I, Chapter 7 of the HOWARD COUNTY DESIGN MANUAL, Storm drainage.

5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding, sod, temporary seeding and mulching (section 9). Temporary stabilization with mulch alone shall only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.

6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.

7. Site Analysis:  
 Total Area of Site = 2.68 Acres  
 Area Disturbed = 2.68 Acres  
 Area to be Roofed or Paved = 1.65 Acres  
 Area to be Vegetatively Stabilized = 1.03 Acres  
 Total Fill = 0 Cu. Yds.

• Offsite waste/borrow area location... To be determined by the contractor.  
 • A site with a current active grading permit is needed for offsite waste/borrow. Site plan, grading permit or waiver may be necessary.

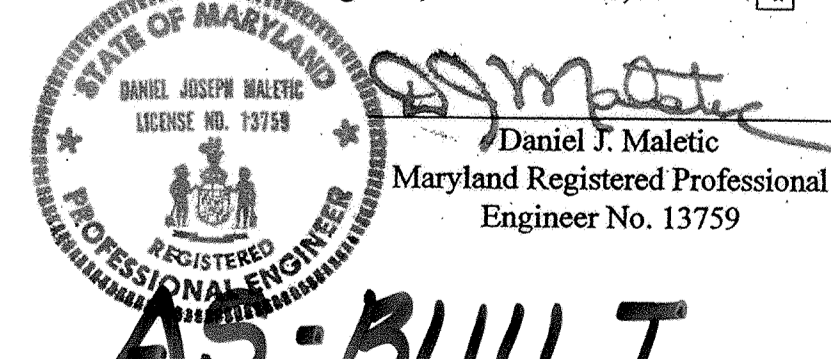
8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

9. Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.

10. On all sites with disturbed areas in excess of 2 acres, approval of the Inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the Inspection agency is made.

II. Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized within one working day, whichever is shorter.

I hereby certify that to the best of my knowledge that this "As-Built" truly represents existing field conditions including but not limited to sizes, diameters, line and grade, and elevations, shown [initials]



AS-BUILT  
June, 2006

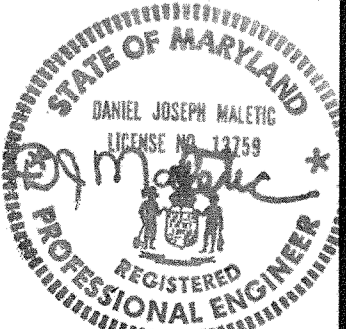
REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.	
<i>Jim Mayer</i>	6/8/06
Use: Natural Resources Conservation Service	Date:
THIS DEVELOPMENT APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.	
<i>John P. ...</i>	6/8/06
Howard Soil Conservation District	Date:

ES 5 OF 5

DEPARTMENT OF PUBLIC WORKS

HOWARD COUNTY, MARYLAND

*John P. ...* 6/7/06  
 DIRECTOR OF PUBLIC WORKS  
*William F. ...* 6-7-04  
 CHIEF, BUREAU OF HIGHWAYS  
*Steve Sharav* 6/14/04  
 CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT



DES: W.R.F.					
DRN: W.K.T.					
CHK: M.S.Z.					
DATE: JUNE, 2004					
BY NO		REVISION		DATE	

SEDIMENT AND EROSION CONTROL NOTES

SCALE MAP NO. BLOCK NO.

OAKLAND MILLS ROAD IMPROVEMENTS

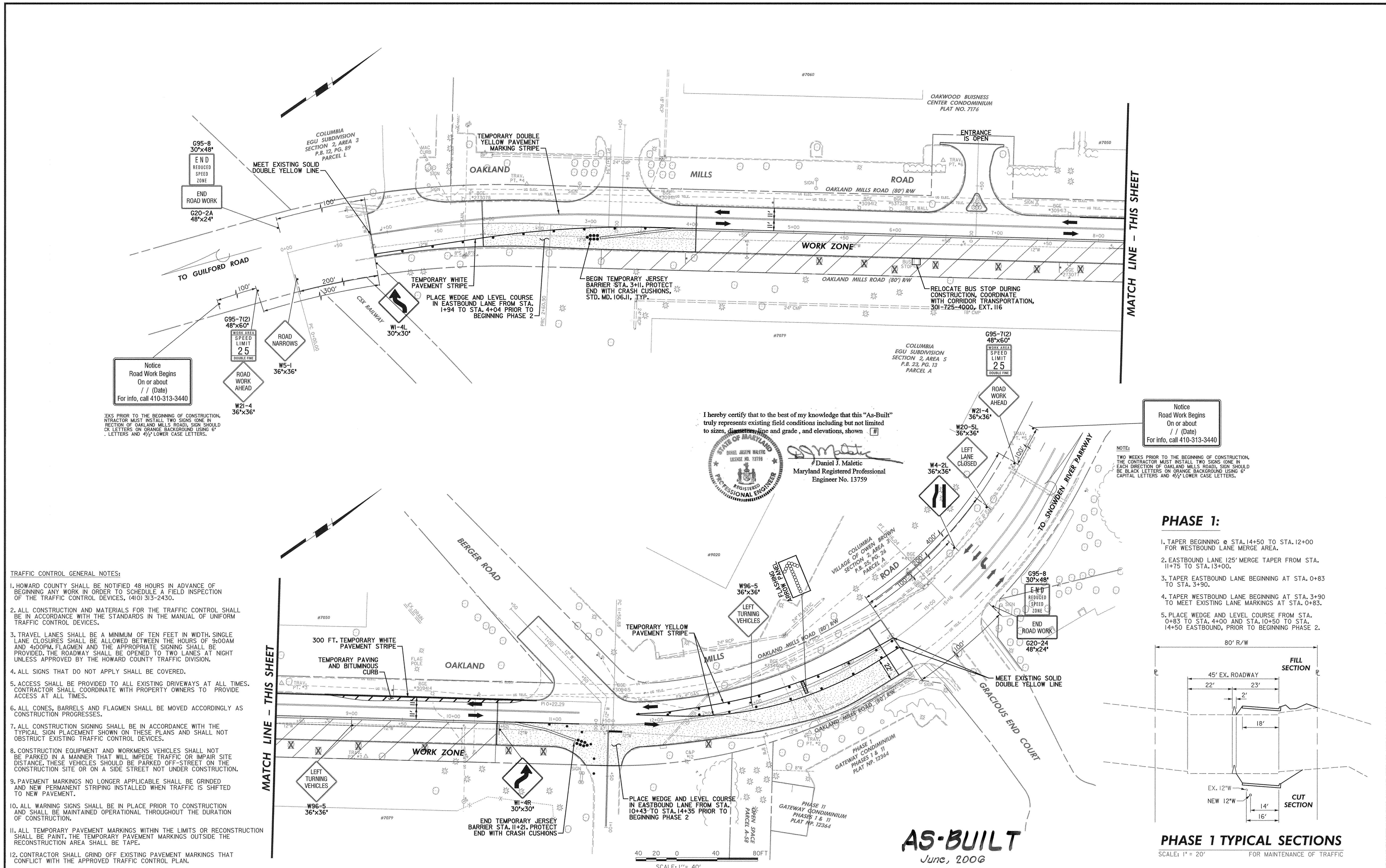
HOWARD COUNTY, MARYLAND  
 CAPITAL PROJECT NO. J-4134

SCALE:

AS SHOWN

SHEET

12 OF 20



NOTICE  
Road Work Begins  
On or about  
// (Date)  
For info, call 410-313-3440

NOTICE  
Road Work Begins  
On or about  
// (Date)  
For info, call 410-313-3440

- TRAFFIC CONTROL GENERAL NOTES:**
1. HOWARD COUNTY SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF BEGINNING ANY WORK IN ORDER TO SCHEDULE A FIELD INSPECTION OF THE TRAFFIC CONTROL DEVICES. (410) 313-2430.
  2. ALL CONSTRUCTION AND MATERIALS FOR THE TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE STANDARDS IN THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
  3. TRAVEL LANES SHALL BE A MINIMUM OF TEN FEET IN WIDTH. SINGLE LANE CLOSURES SHALL BE ALLOWED BETWEEN THE HOURS OF 9:00AM AND 4:00PM. FLAGMEN AND THE APPROPRIATE SIGNING SHALL BE PROVIDED. THE ROADWAY SHALL BE OPENED TO TWO LANES AT NIGHT UNLESS APPROVED BY THE HOWARD COUNTY TRAFFIC DIVISION.
  4. ALL SIGNS THAT DO NOT APPLY SHALL BE COVERED.
  5. ACCESS SHALL BE PROVIDED TO ALL EXISTING DRIVEWAYS AT ALL TIMES. CONTRACTOR SHALL COORDINATE WITH PROPERTY OWNERS TO PROVIDE ACCESS AT ALL TIMES.
  6. ALL CONES, BARRELS AND FLAGMEN SHALL BE MOVED ACCORDINGLY AS CONSTRUCTION PROGRESSES.
  7. ALL CONSTRUCTION SIGNING SHALL BE IN ACCORDANCE WITH THE TYPICAL SIGN PLACEMENT SHOWN ON THESE PLANS AND SHALL NOT OBSTRUCT EXISTING TRAFFIC CONTROL DEVICES.
  8. CONSTRUCTION EQUIPMENT AND WORKMENS VEHICLES SHALL NOT BE PARKED IN A MANNER THAT WILL IMPEDE TRAFFIC OR IMPAIR SITE DISTANCE. THESE VEHICLES SHOULD BE PARKED OFF-STREET ON THE CONSTRUCTION SITE OR ON A SIDE STREET NOT UNDER CONSTRUCTION.
  9. PAVEMENT MARKINGS NO LONGER APPLICABLE SHALL BE GRINDED AND NEW PERMANENT STRIPING INSTALLED WHEN TRAFFIC IS SHIFTED TO NEW PAVEMENT.
  10. ALL WARNING SIGNS SHALL BE IN PLACE PRIOR TO CONSTRUCTION AND SHALL BE MAINTAINED OPERATIONAL THROUGHOUT THE DURATION OF CONSTRUCTION.
  11. ALL TEMPORARY PAVEMENT MARKINGS WITHIN THE LIMITS OR RECONSTRUCTION SHALL BE PAINTED. THE TEMPORARY PAVEMENT MARKINGS OUTSIDE THE RECONSTRUCTION AREA SHALL BE TAPE.
  12. CONTRACTOR SHALL GRIND OFF EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH THE APPROVED TRAFFIC CONTROL PLAN.

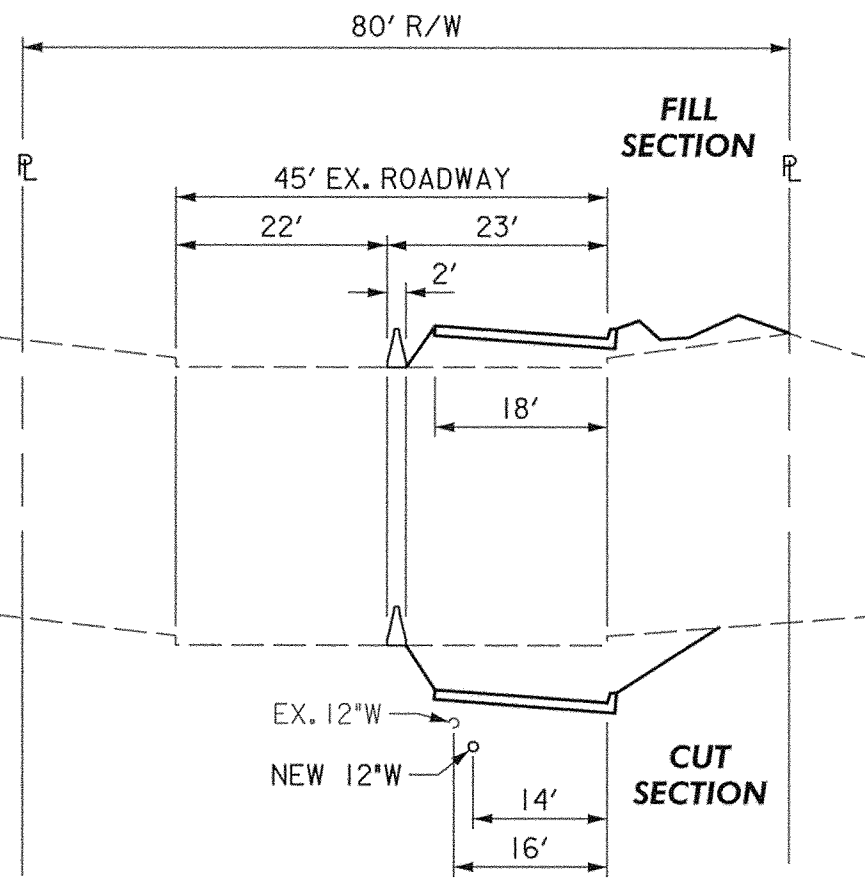
I hereby certify that to the best of my knowledge that this "As-Built" truly represents existing field conditions including but not limited to sizes, diameters, line and grade, and elevations, shown.

*Daniel J. Maletic*  
Daniel J. Maletic  
Maryland Registered Professional Engineer No. 13759

NOTE:  
TWO WEEKS PRIOR TO THE BEGINNING OF CONSTRUCTION, THE CONTRACTOR MUST INSTALL TWO SIGNS (ONE IN EACH DIRECTION OF OAKLAND MILLS ROAD). SIGN SHOULD BE BLACK LETTERS ON ORANGE BACKGROUND USING 6" CAPITAL LETTERS AND 4 1/2" LOWER CASE LETTERS.

**PHASE 1:**

1. TAPER BEGINNING @ STA. 14+50 TO STA. 12+00 FOR WESTBOUND LANE MERGE AREA.
2. EASTBOUND LANE 125' MERGE TAPER FROM STA. 11+75 TO STA. 13+00.
3. TAPER EASTBOUND LANE BEGINNING AT STA. 0+83 TO STA. 3+90.
4. TAPER WESTBOUND LANE BEGINNING AT STA. 3+90 TO MEET EXISTING LANE MARKINGS AT STA. 0+83.
5. PLACE WEDGE AND LEVEL COURSE FROM STA. 0+83 TO STA. 4+00 AND STA. 10+50 TO STA. 14+50 EASTBOUND, PRIOR TO BEGINNING PHASE 2.



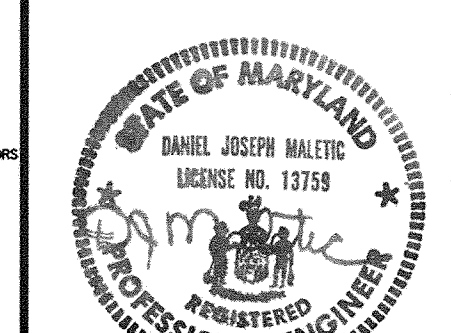
**AS-BUILT**  
June, 2006

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*John J. ...* 6/14/04  
DIRECTOR OF PUBLIC WORKS DATE

*Steve Shaver* 6/14/04  
CHIEF, DIVISION OF HIGHWAYS DATE

**GPI** GREENMAN-PEDERSEN, INC.  
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS  
10620 GUILFORD ROAD, SUITE 100, JESSUP, MD, 20794  
WASH. (301) 470-2772 FAX (301) 470-2772  
BALD. (410) 880-3055 FAX (410) 880-2949 www.gpi.com



DES: W.R.F.			
DRN: W.K.T.			
CHK: M.S.Z.			
DATE: JUNE, 2004	BY	NO	REVISION

**TRAFFIC CONTROL PLAN SHEET PHASE 1**

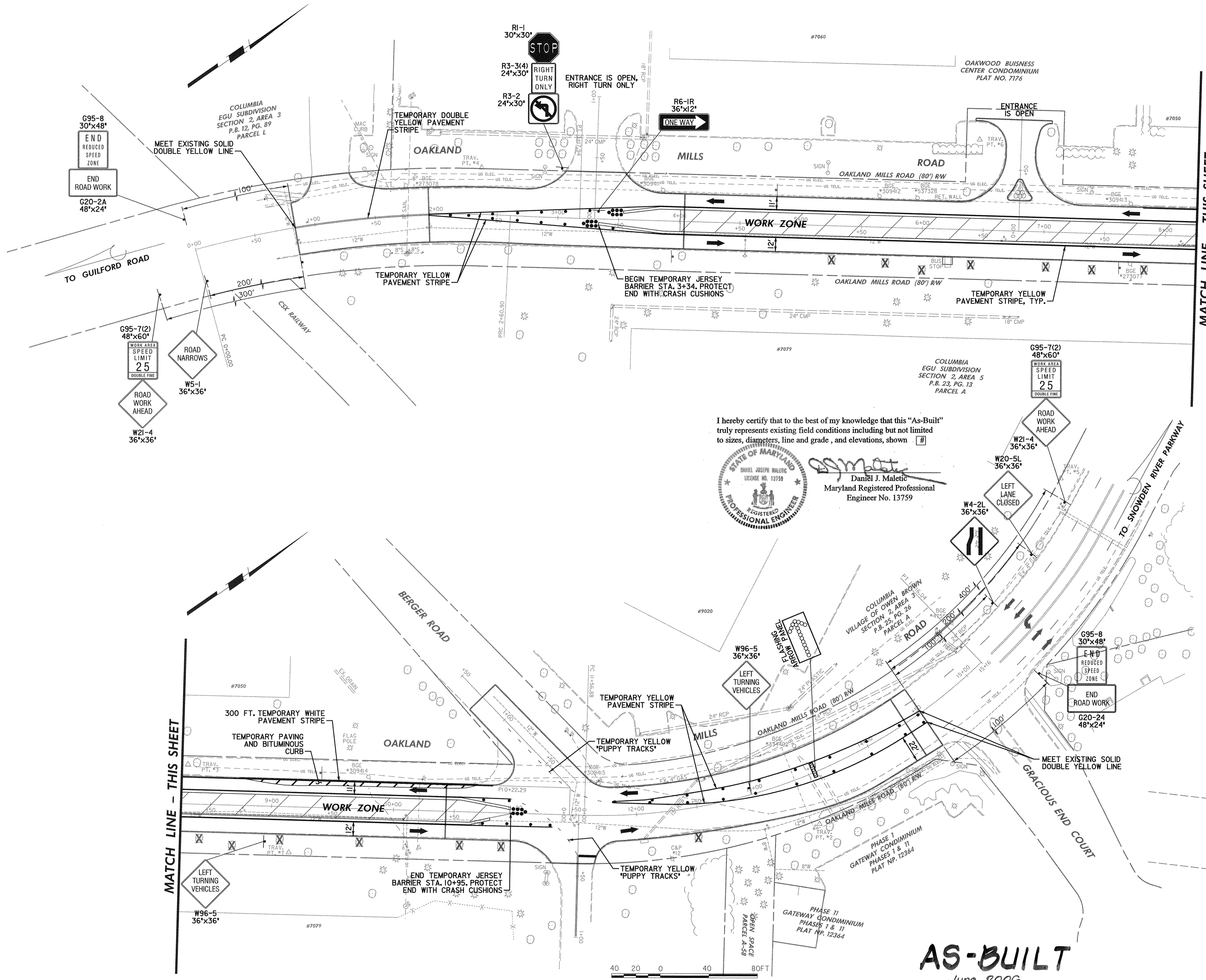
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**OAKLAND MILLS ROAD IMPROVEMENTS**

HOWARD COUNTY, MARYLAND  
CAPITAL PROJECT NO. J-4134

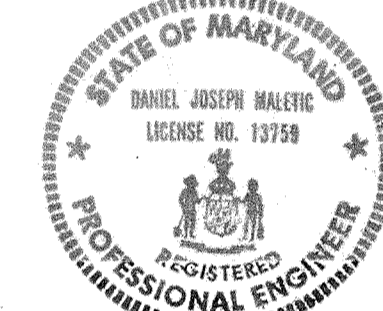
SCALE: AS SHOWN

SHEET 13 OF 20



I hereby certify that to the best of my knowledge that this "As-Built" truly represents existing field conditions including but not limited to sizes, diameters, line and grade, and elevations, shown.

**Daniel J. Maletic**  
 Maryland Registered Professional Engineer No. 13759

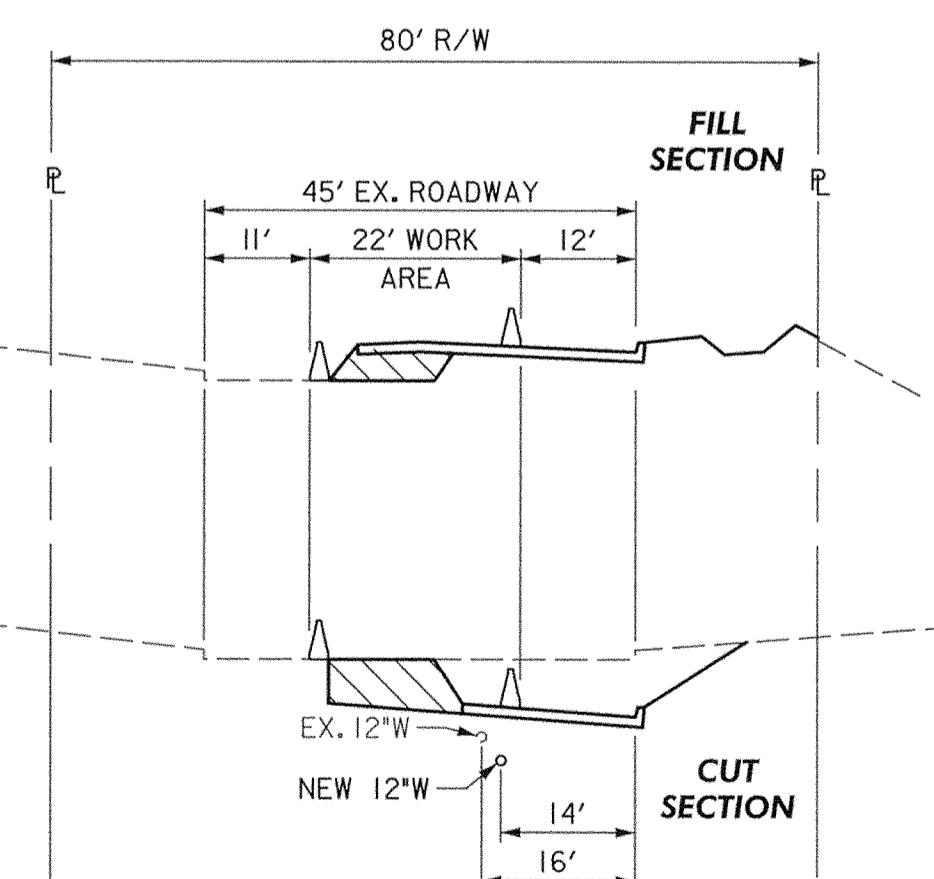


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**PHASE 2:**

1. TAPER BEGINNING @ STA. 14+50 TO STA. 12+00 FOR WESTBOUND LANE MERGE AREA.
2. EASTBOUND LANE 100' MERGE TAPER FROM STA. 11+75 TO STA. 12+75.



**AS-BUILT**  
 June, 2006

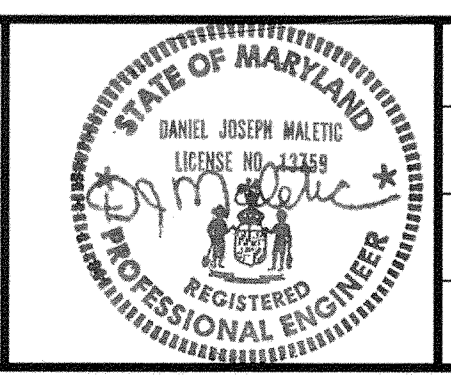
DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*John J. ...* 6/16/04  
 DIRECTOR OF PUBLIC WORKS DATE

*Steve Shavar* 6/16/04  
 CHIEF, BUREAU OF HIGHWAYS DATE

*Steve Shavar* 6/16/04  
 CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DATE

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS  
 10620 GUILFORD ROAD, SUITE 100, JESSUP, MD, 20794  
 WASH. (301) 410-2772 BALT. (410) 980-3055  
 FAX (301) 410-2649 www.gpi-nw.com



DES: W.R.F.					
DRN: W.K.T.					
CHK: M.S.Z.					
DATE: JUNE, 2004	BY	NO	REVISION	DATE	

**TRAFFIC CONTROL PLAN SHEET PHASE 2**

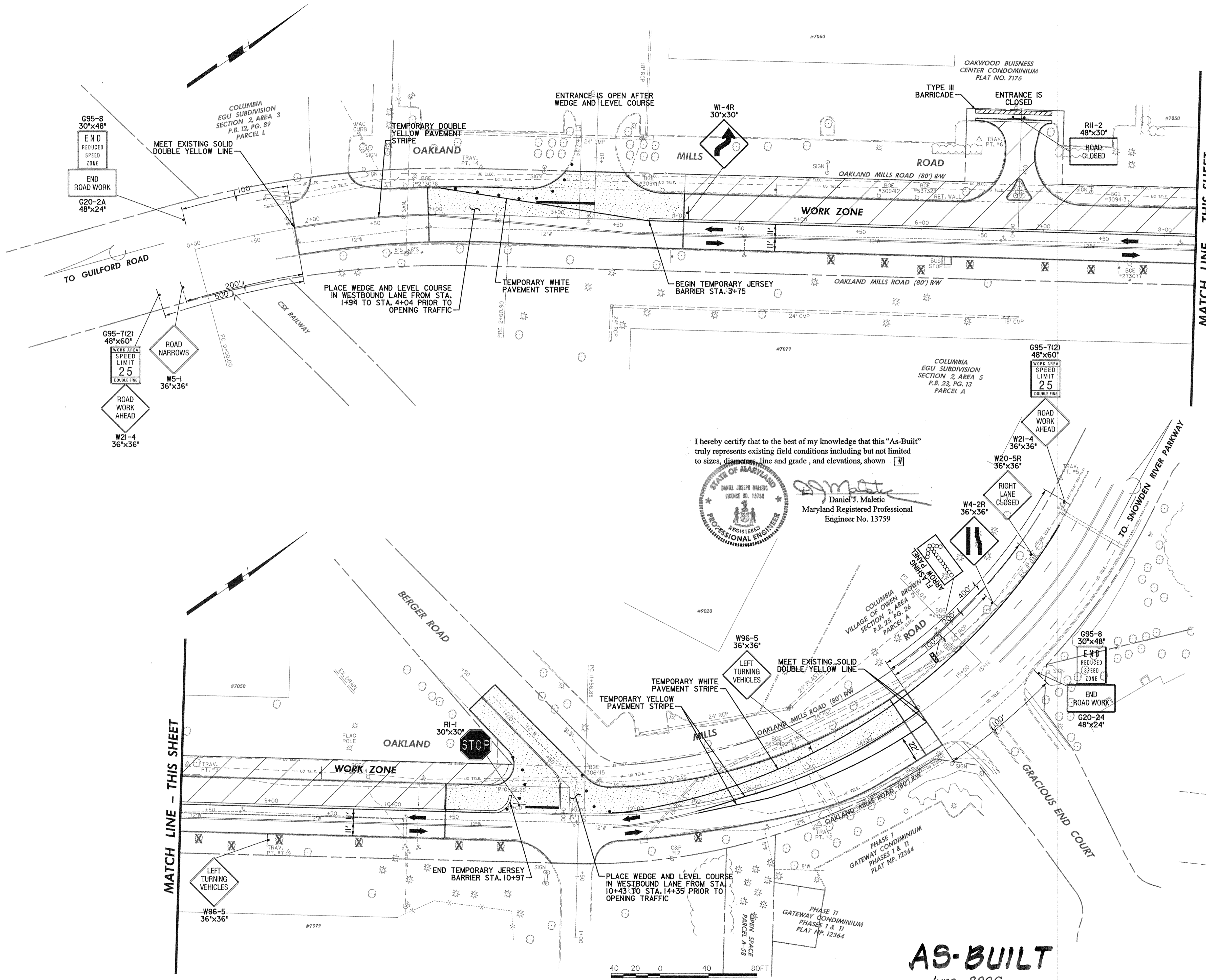
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**OAKLAND MILLS ROAD IMPROVEMENTS**

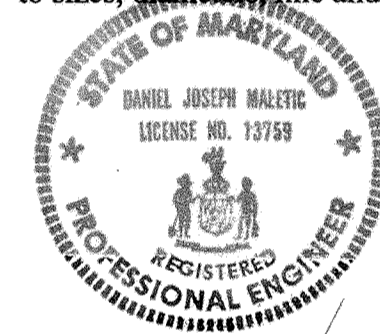
HOWARD COUNTY, MARYLAND  
 CAPITAL PROJECT NO. J-4134

SCALE: AS SHOWN  
 SHEET 14 OF 20

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 DATE: 06/02/2004 10:56:36 AM



I hereby certify that to the best of my knowledge that this "As-Built" truly represents existing field conditions including but not limited to sizes, diameters, line and grade, and elevations, shown.



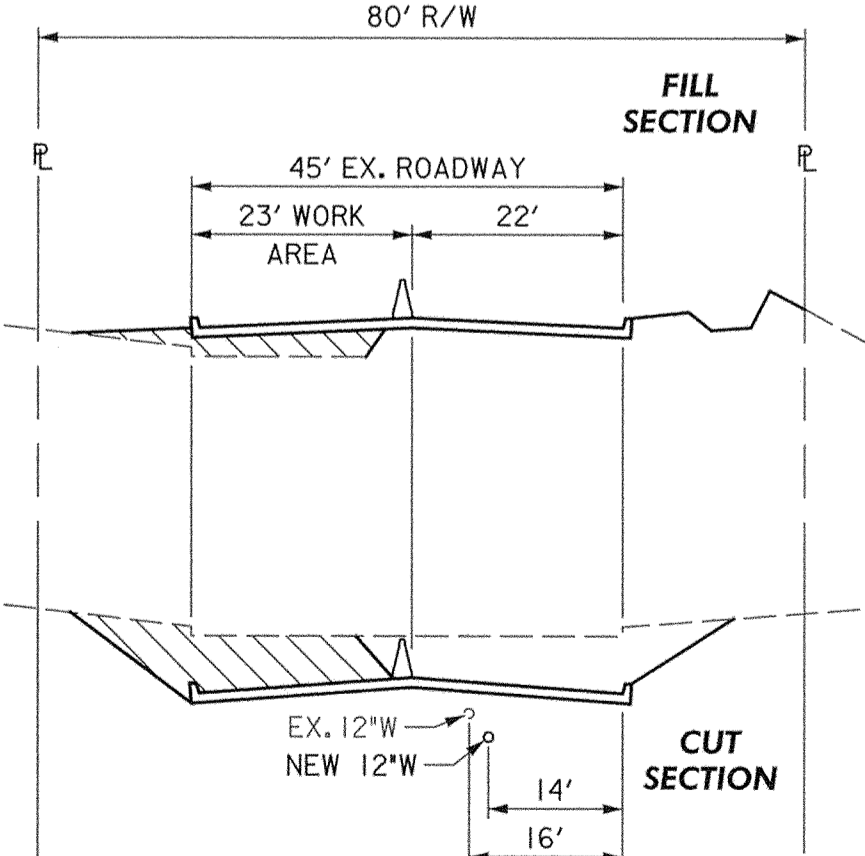
Daniel J. Maletic  
Maryland Registered Professional Engineer No. 13759

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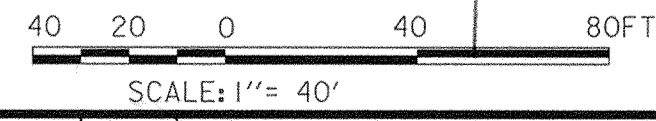
**PHASE 3:**

1. WESTBOUND LANE 250' MERGE TAPER FROM STA. 16+50 TO STA. 14+00, LANE SHIFT 200' TAPER FROM STA. 14+00 TO STA. 12+00.
2. EASTBOUND LANE 100' MERGE TAPER FROM STA. 12+00 TO STA. 13+00.
3. PLACE WEDGE AND LEVEL COURSE FROM STA. 10+50 TO STA. 14+50 AND STA. 0+83 TO STA. 4+00 WESTBOUND, PRIOR TO OPENING TRAFFIC.
4. TEMPORARILY RESTORE EXISTING STRIPING FROM STA. 15+00 TO STA. 16+60.



**PHASE 3 TYPICAL SECTIONS**  
SCALE: 1" = 20' FOR MAINTENANCE OF TRAFFIC

**AS-BUILT**  
June, 2006

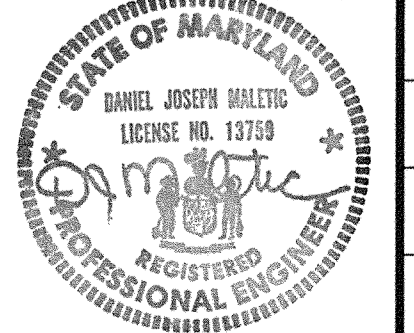


DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*John A. ...* 6/4/04  
DIRECTOR OF PUBLIC WORKS DATE

*Steve Shaver* 6/4/04  
CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DATE

**GPI** GREENMAN-PEDERSEN, INC.  
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS  
10620 GUILFORD ROAD, SUITE 100, JESSUP, MD, 20794  
WASH. (301) 470-2772 BALT. (410) 880-3005  
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DES: W.R.F.				
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CHK: M.S.Z.				
DATE: JUNE, 2004	BY	NO	REVISION	DATE

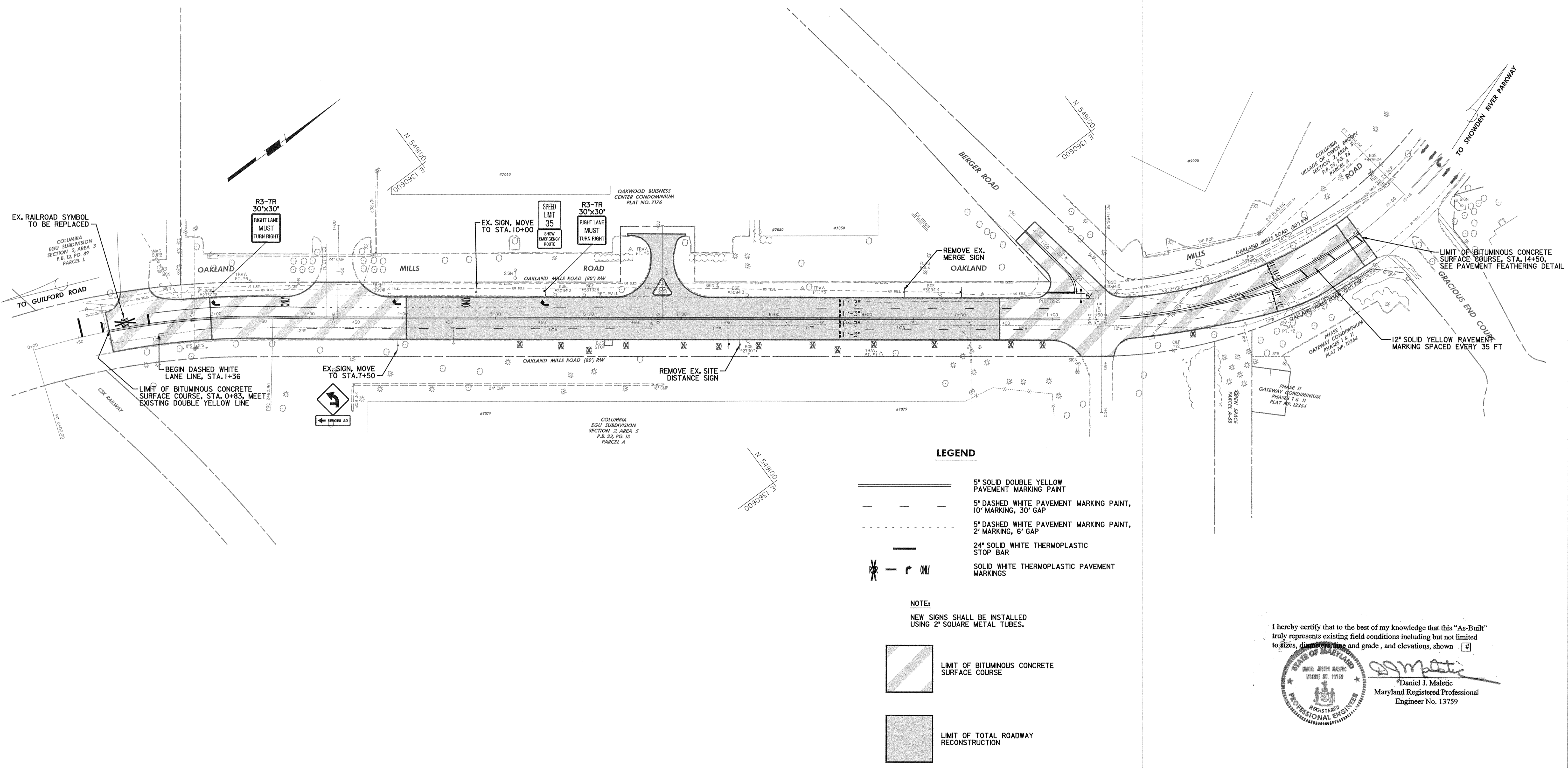
**TRAFFIC CONTROL PLAN SHEET PHASE 3**

SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_






**OAKLAND MILLS ROAD IMPROVEMENTS**

HOWARD COUNTY, MARYLAND  
CAPITAL PROJECT NO. J-4134

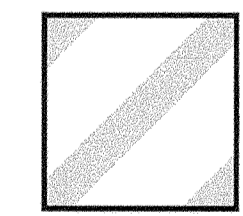
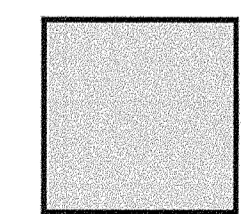
SCALE: AS SHOWN  
SHEET 15 OF 20



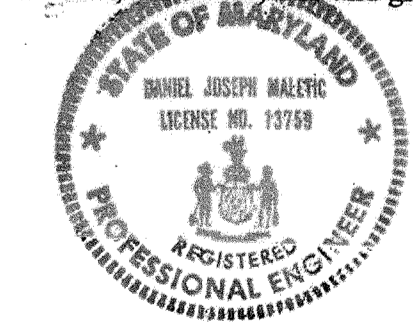
**LEGEND**

-  5' SOLID DOUBLE YELLOW PAVEMENT MARKING PAINT
-  5' DASHED WHITE PAVEMENT MARKING PAINT, 10' MARKING, 30' GAP
-  5' DASHED WHITE PAVEMENT MARKING PAINT, 2' MARKING, 6' GAP
-  24' SOLID WHITE THERMOELASTIC STOP BAR
-  SOLID WHITE THERMOELASTIC PAVEMENT MARKINGS

**NOTE:**  
NEW SIGNS SHALL BE INSTALLED USING 2" SQUARE METAL TUBES.

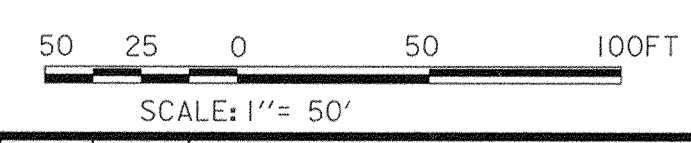
-  LIMIT OF BITUMINOUS CONCRETE SURFACE COURSE
-  LIMIT OF TOTAL ROADWAY RECONSTRUCTION

I hereby certify that to the best of my knowledge that this "As-Built" truly represents existing field conditions including but not limited to sizes, dimensions, line and grade, and elevations, shown.



*Daniel J. Maletic*  
Daniel J. Maletic  
Maryland Registered Professional Engineer No. 13759

**AS-BUILT**  
June, 2006

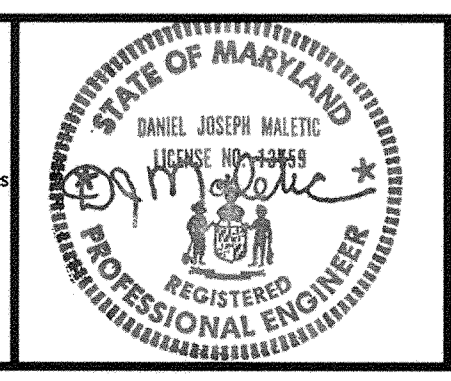


DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Janet W. ...* 6/1/04  
DIRECTOR OF PUBLIC WORKS DATE

*Steve Sharav* 6/14/04  
CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DATE

**GPI** GREENMAN-PEDERSEN, INC.  
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS  
10620 GUILFORD ROAD, SUITE 100, JESSUP, MD, 20794  
WASH. (301) 470-2772 BALT. (410) 880-3055  
FAX (301) 490-2649 www.gpi.net.com



DES: W.R.F.					
DRN: W.K.T.					
CHK: M.S.Z.					
DATE: JUNE, 2004	BY	NO	REVISION	DATE	

**SIGNING AND PAVEMENT MARKING PLAN SHEET**

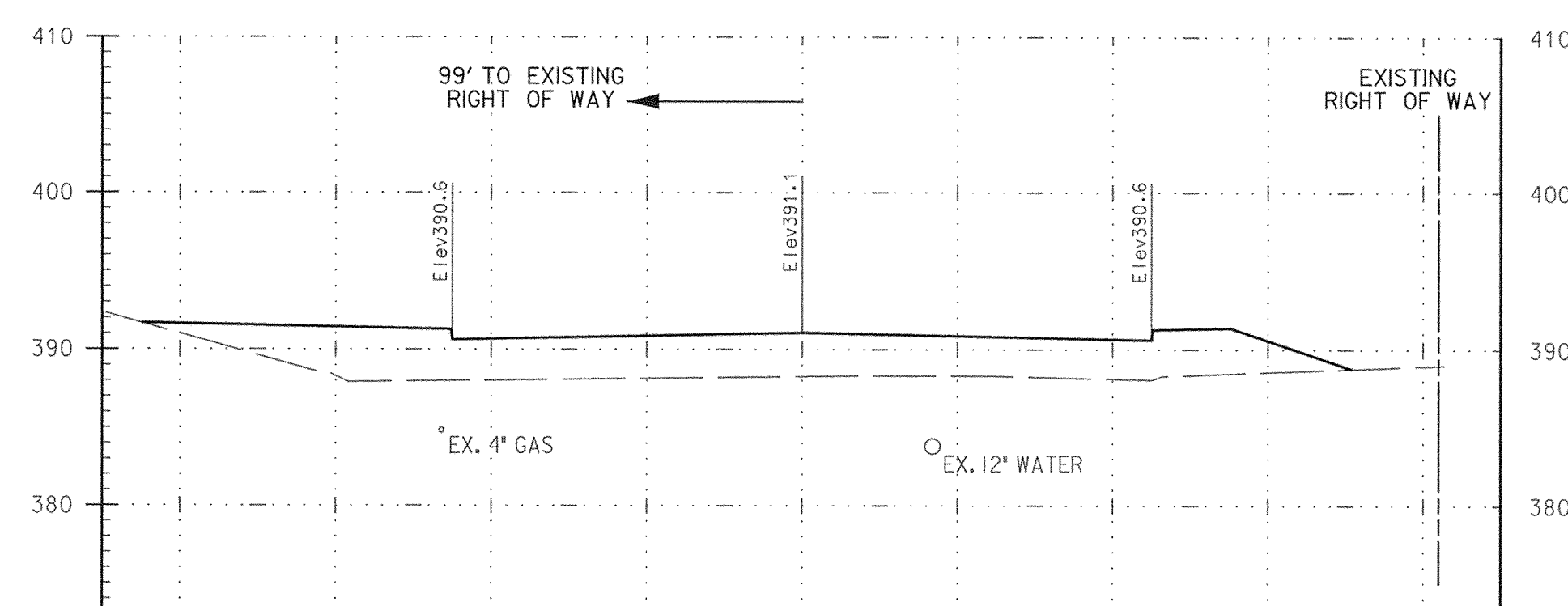
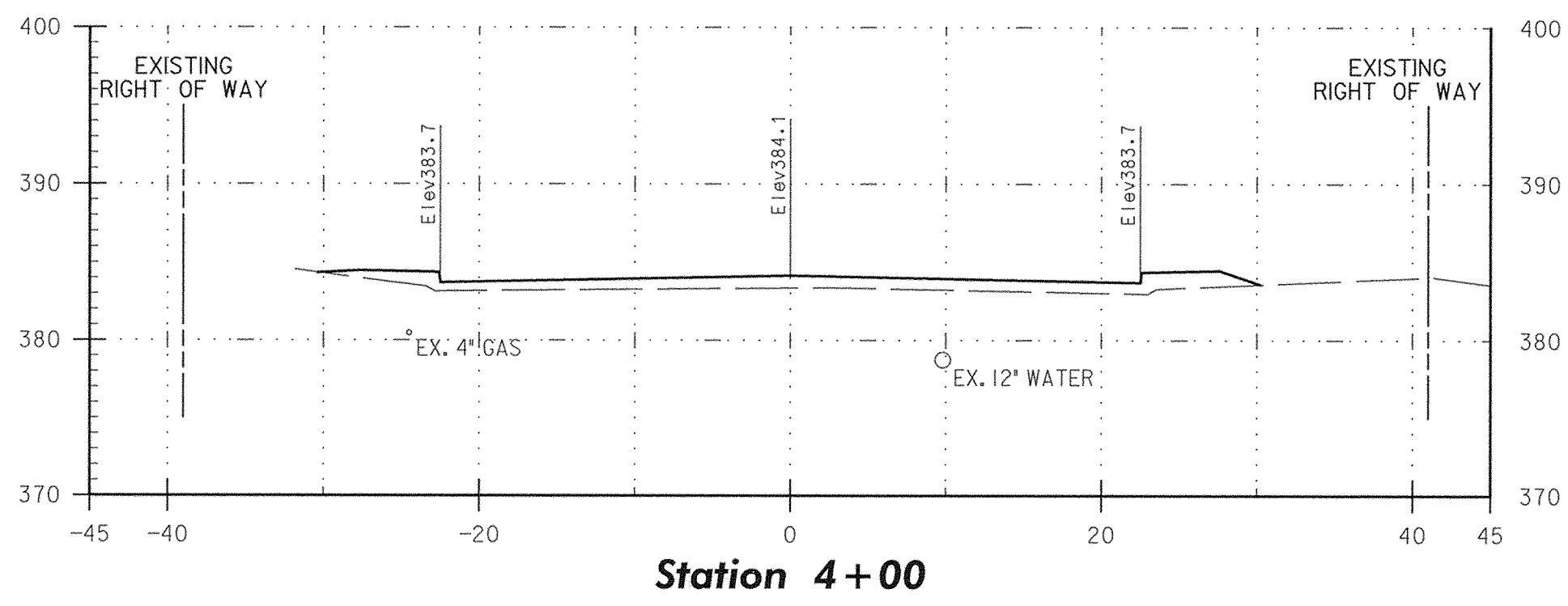
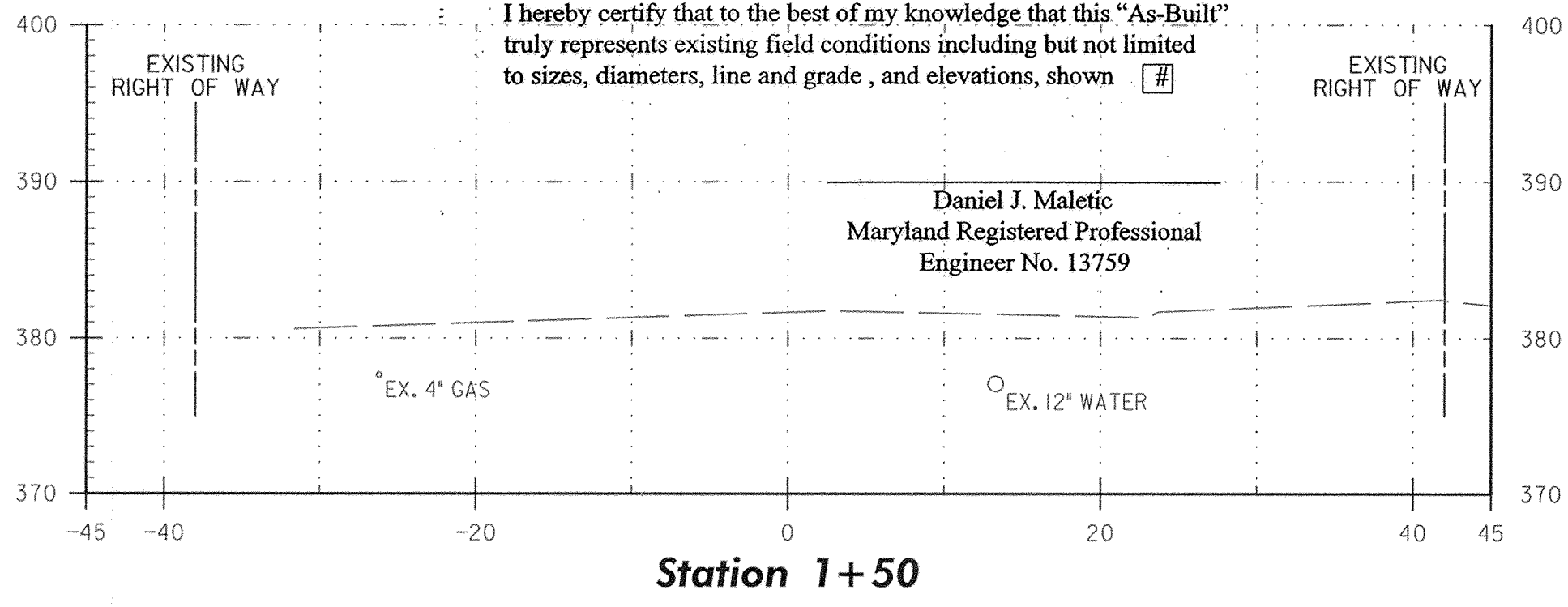
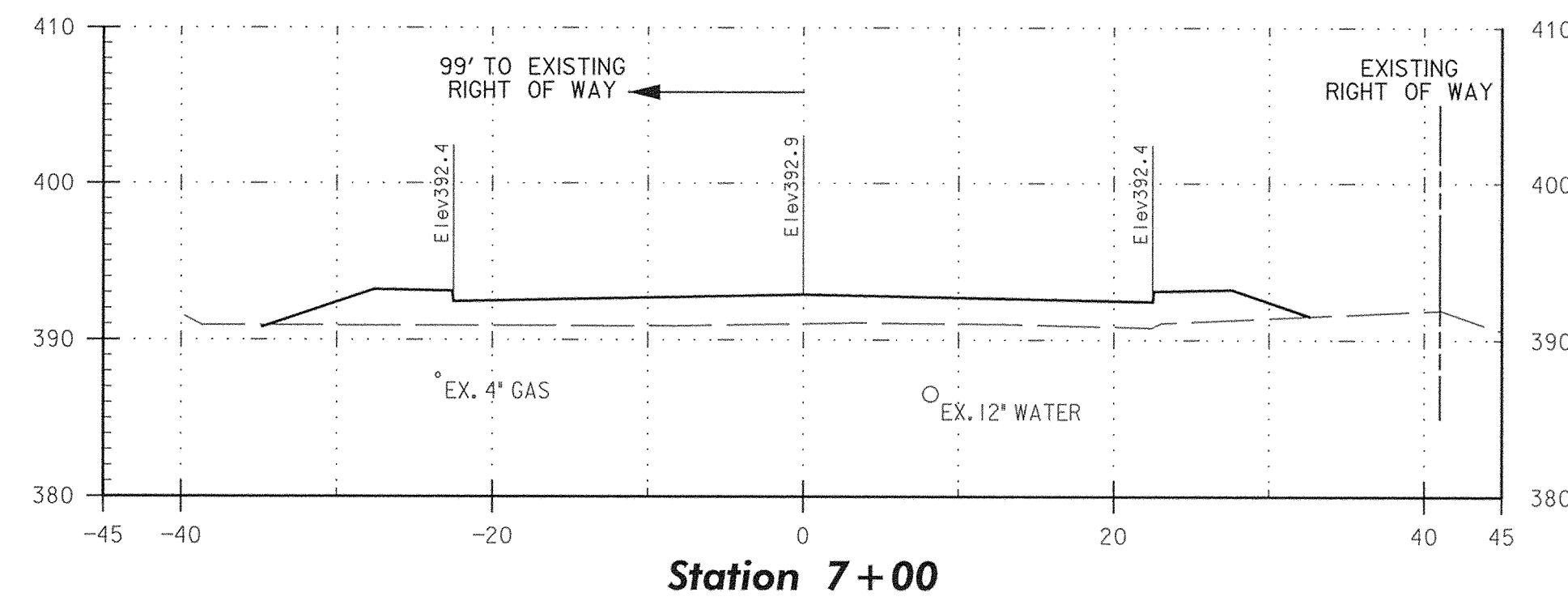
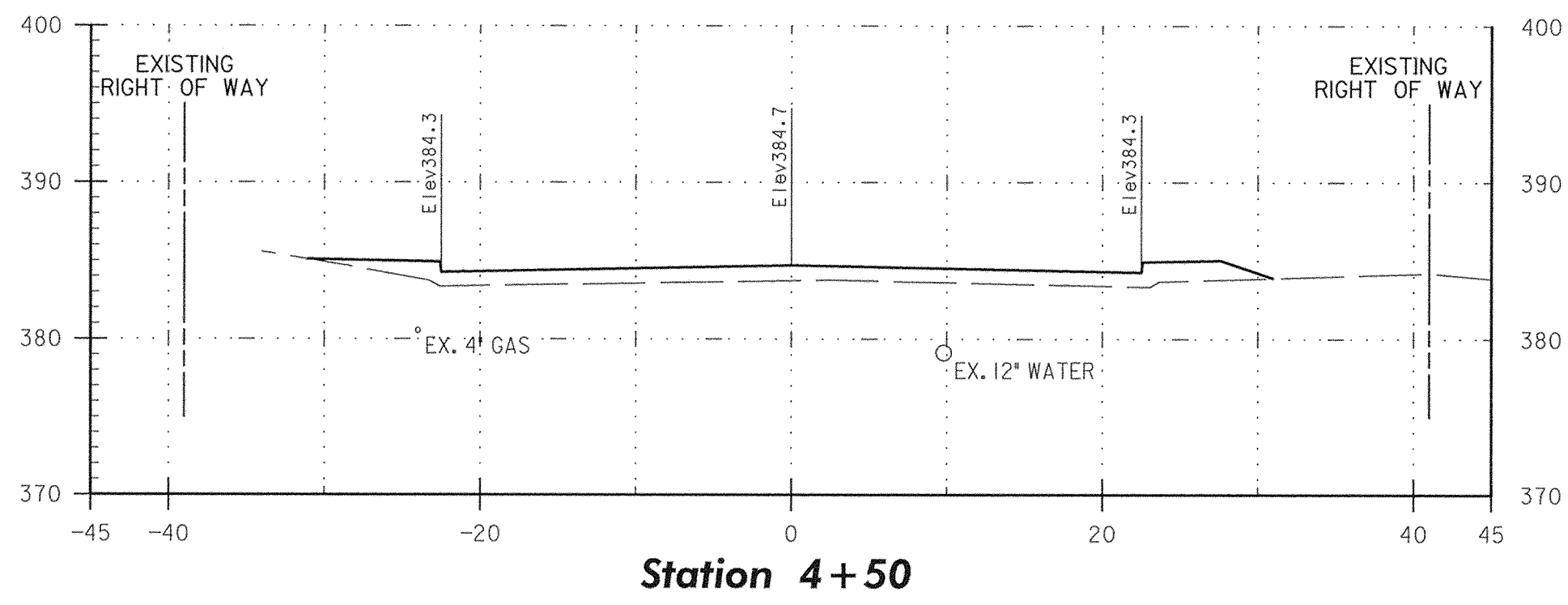
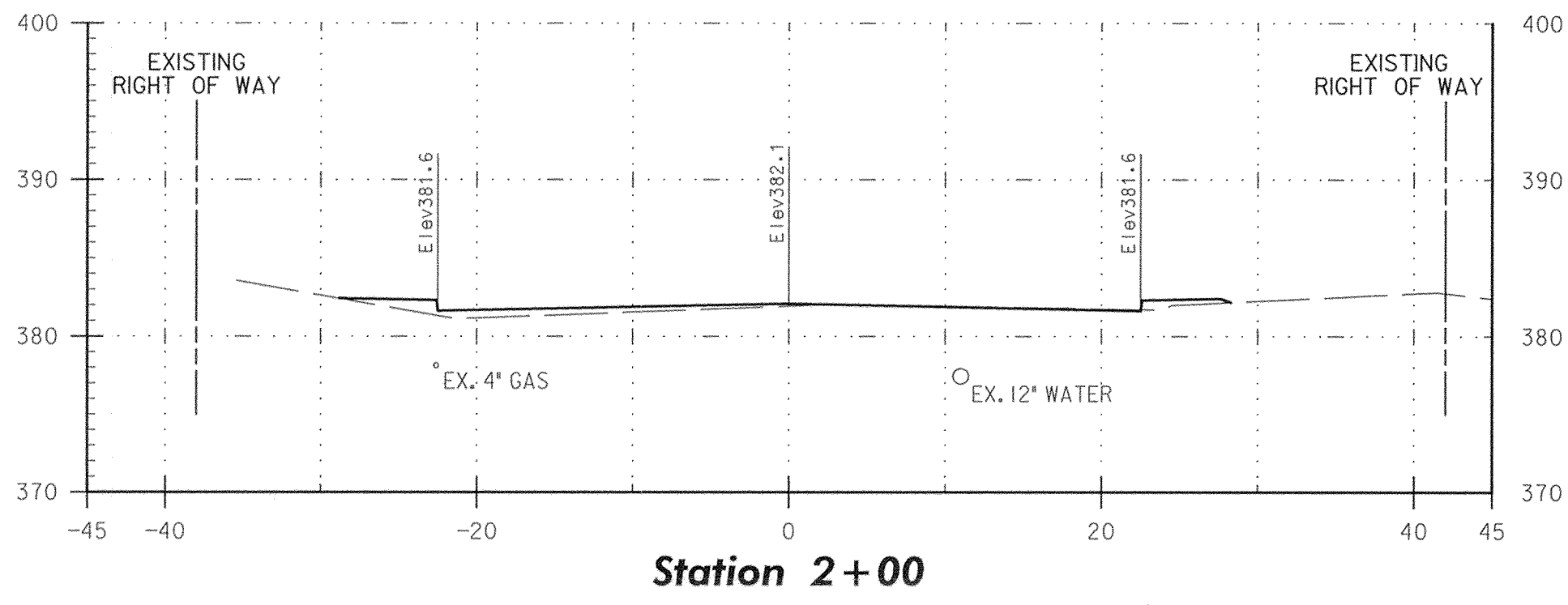
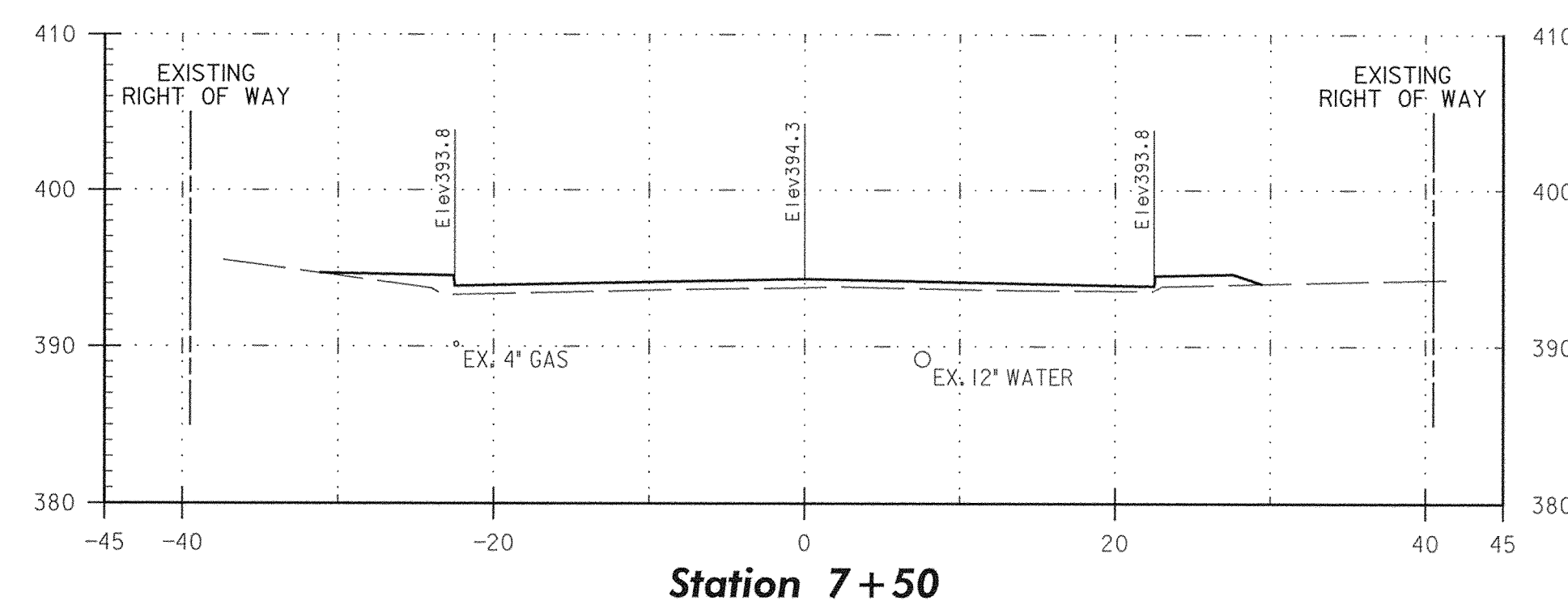
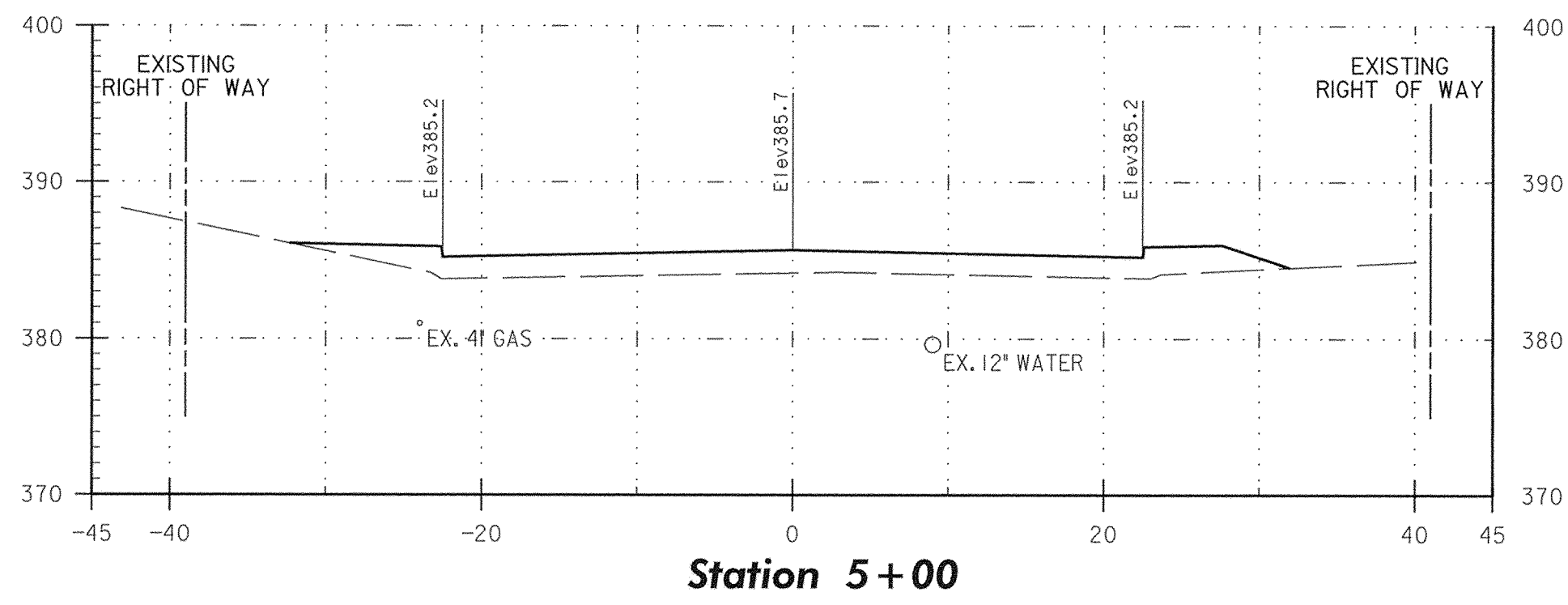
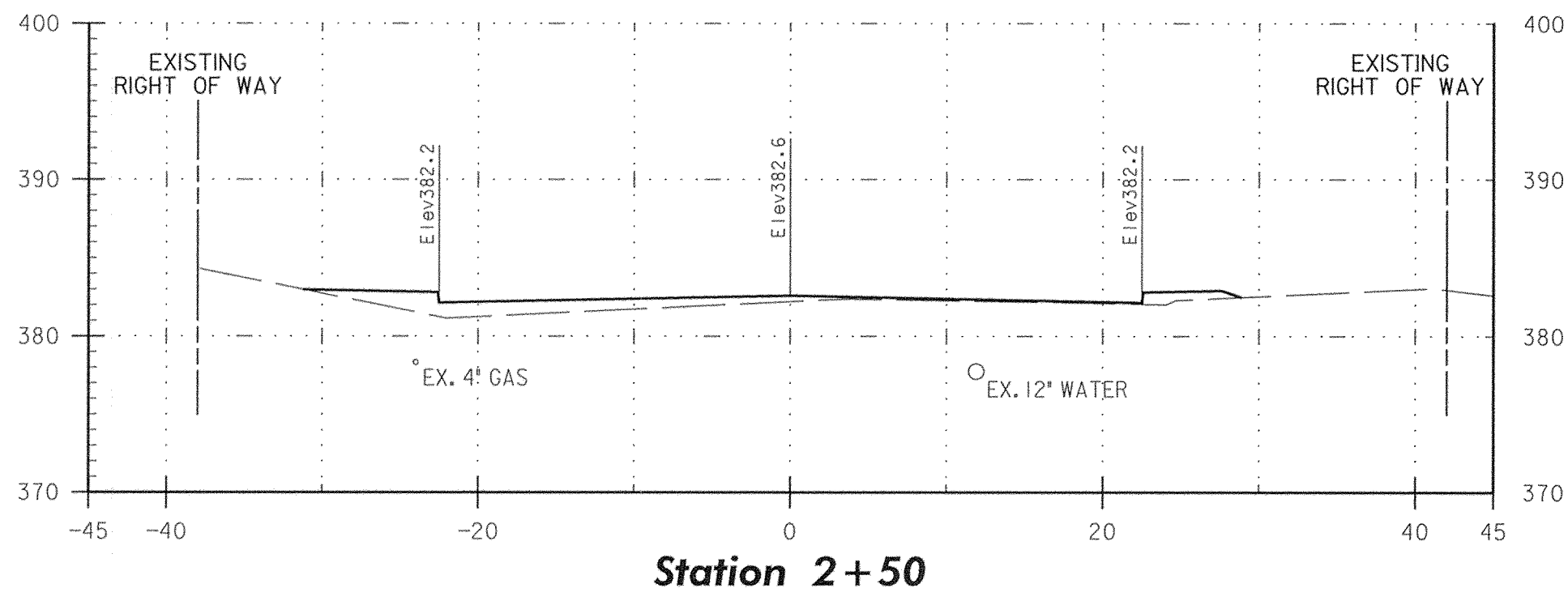
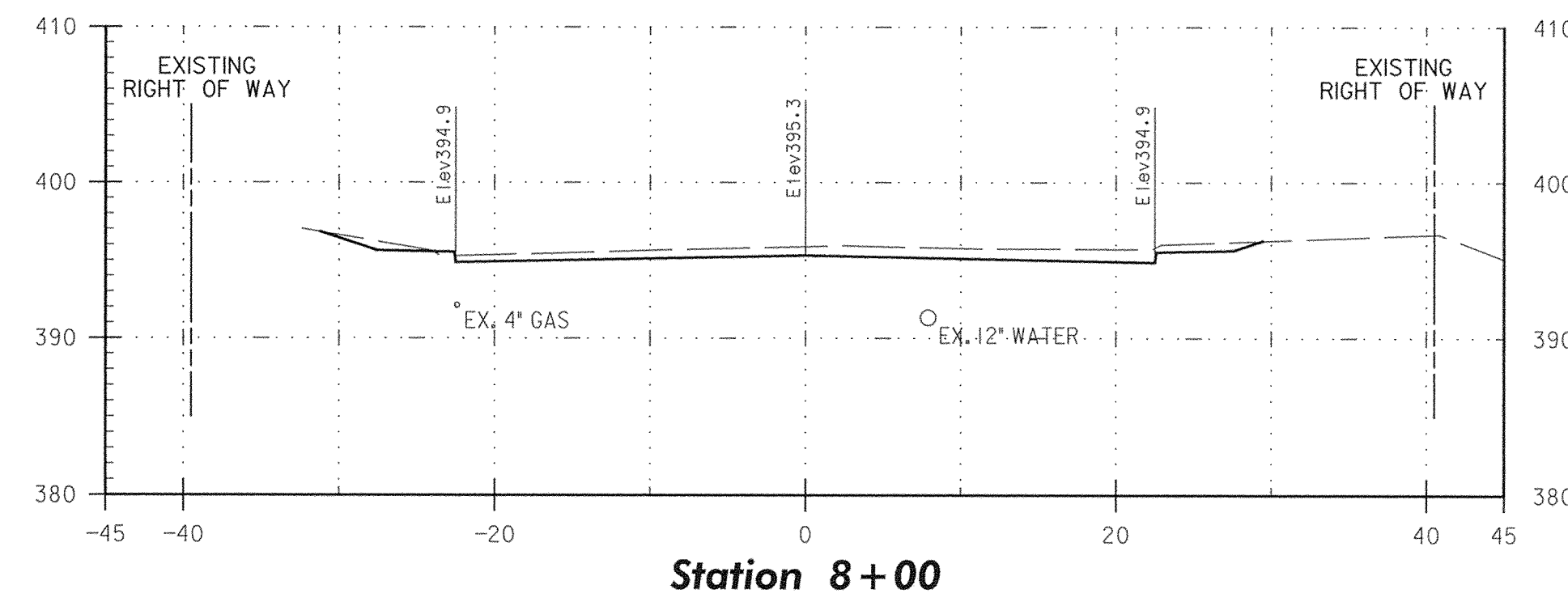
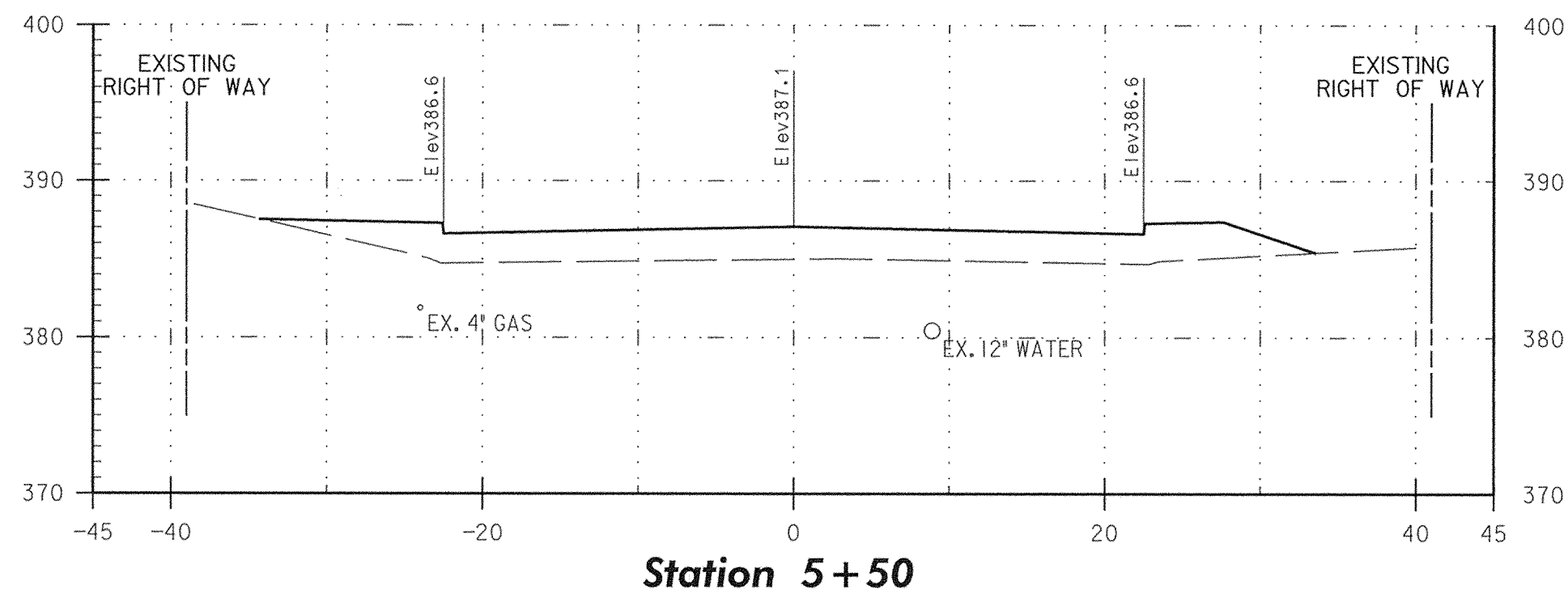
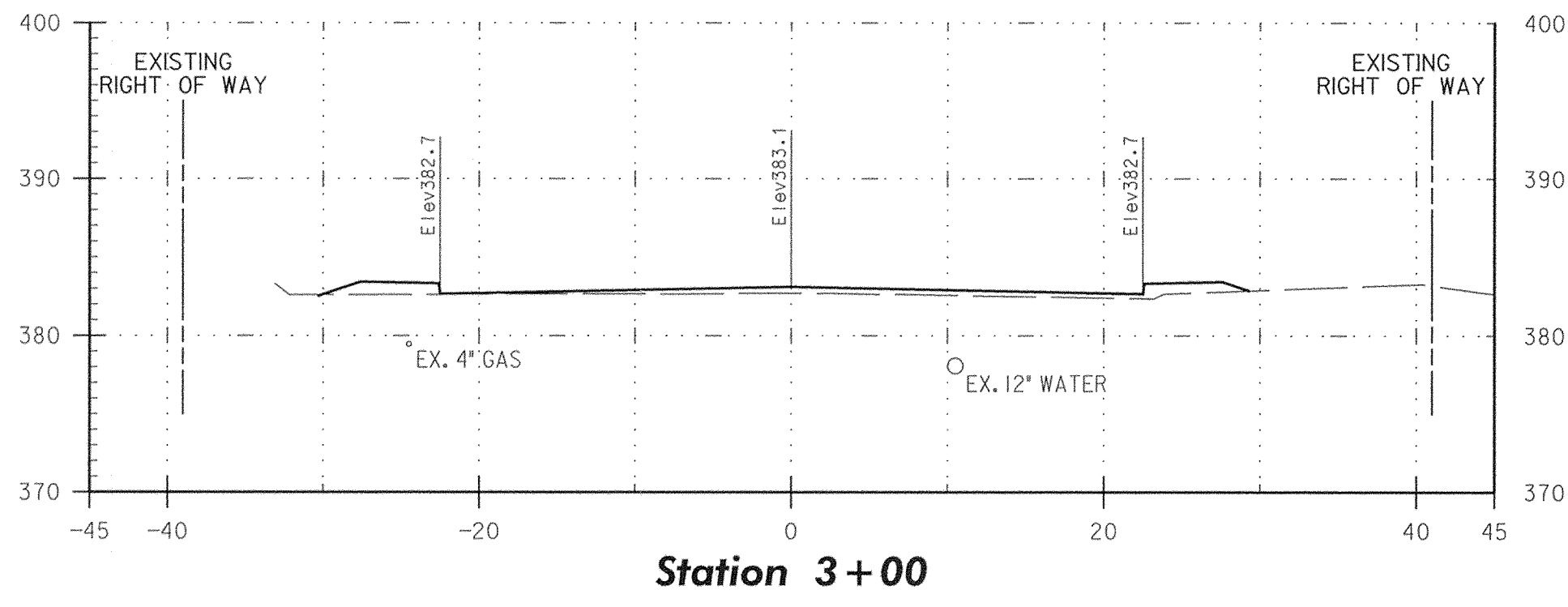
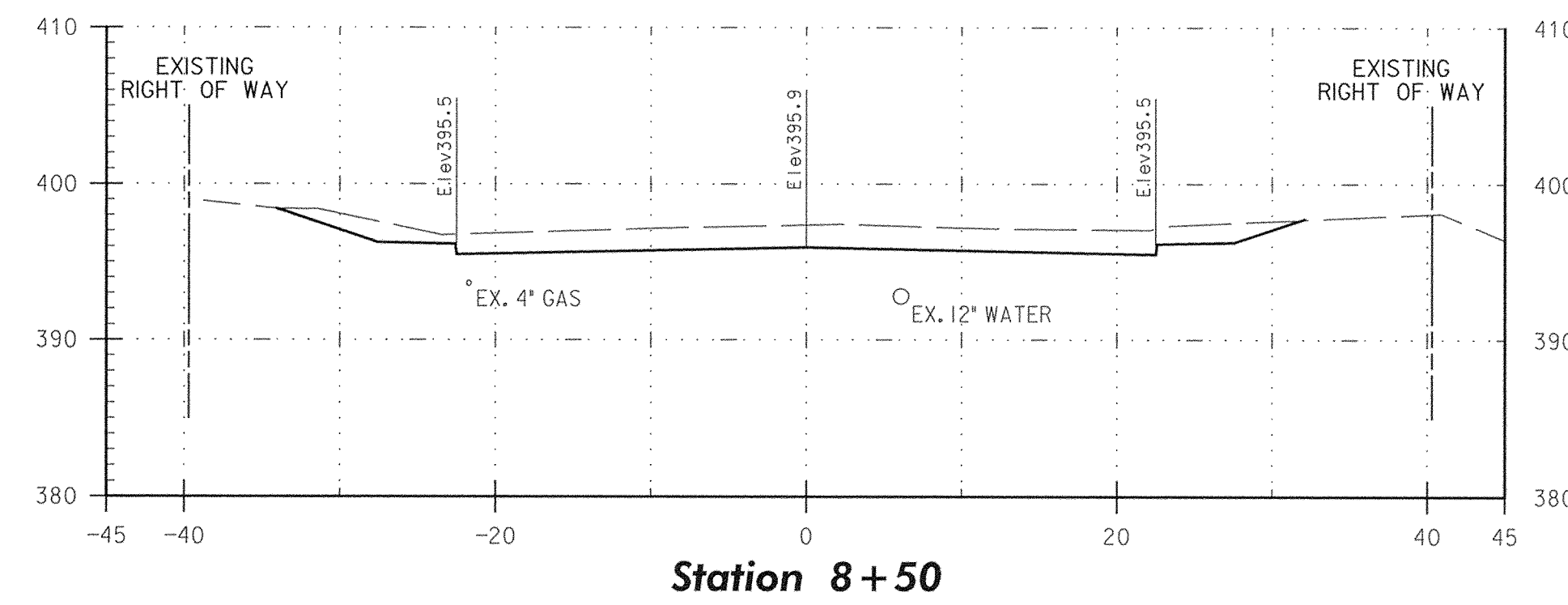
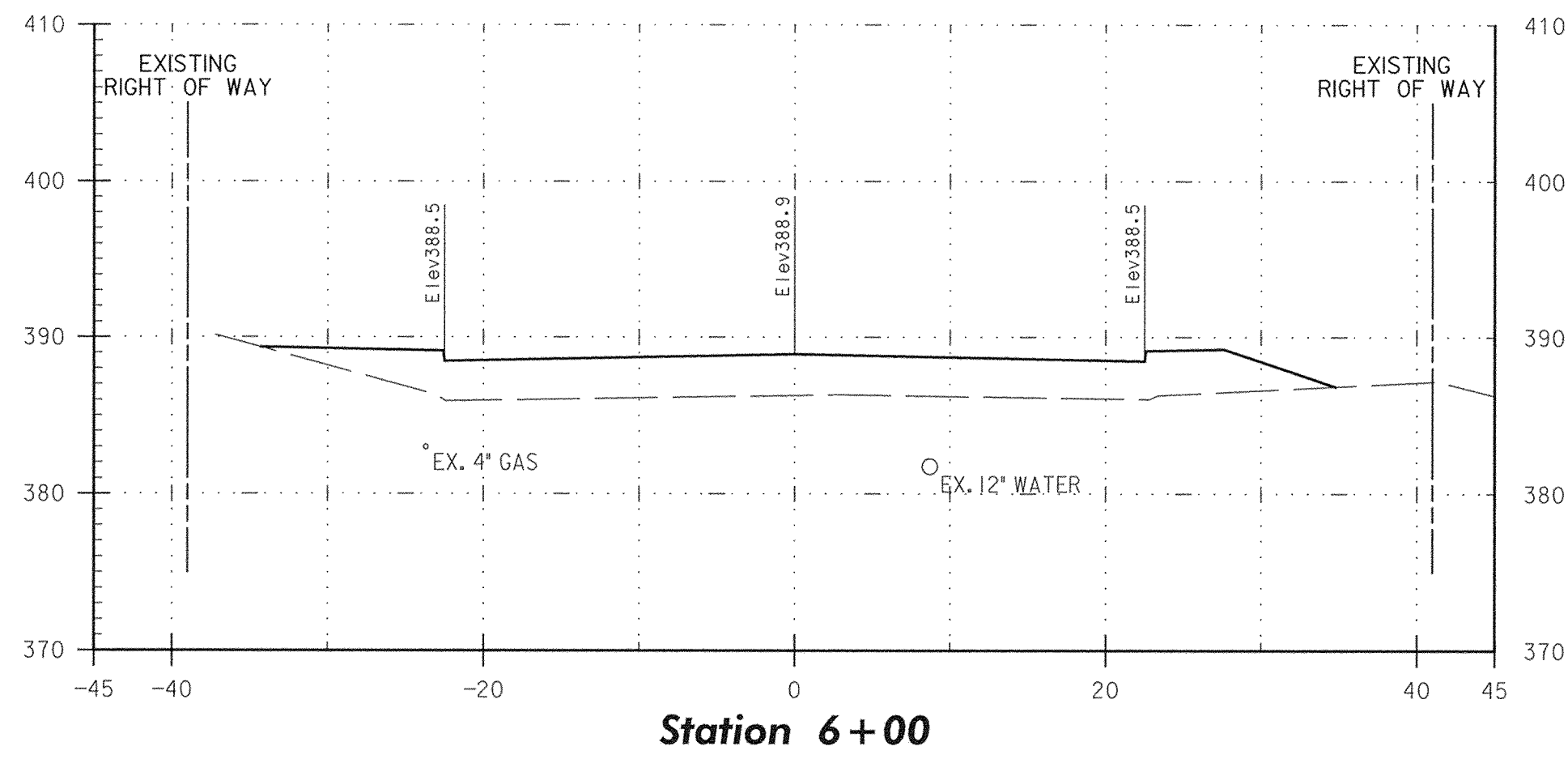
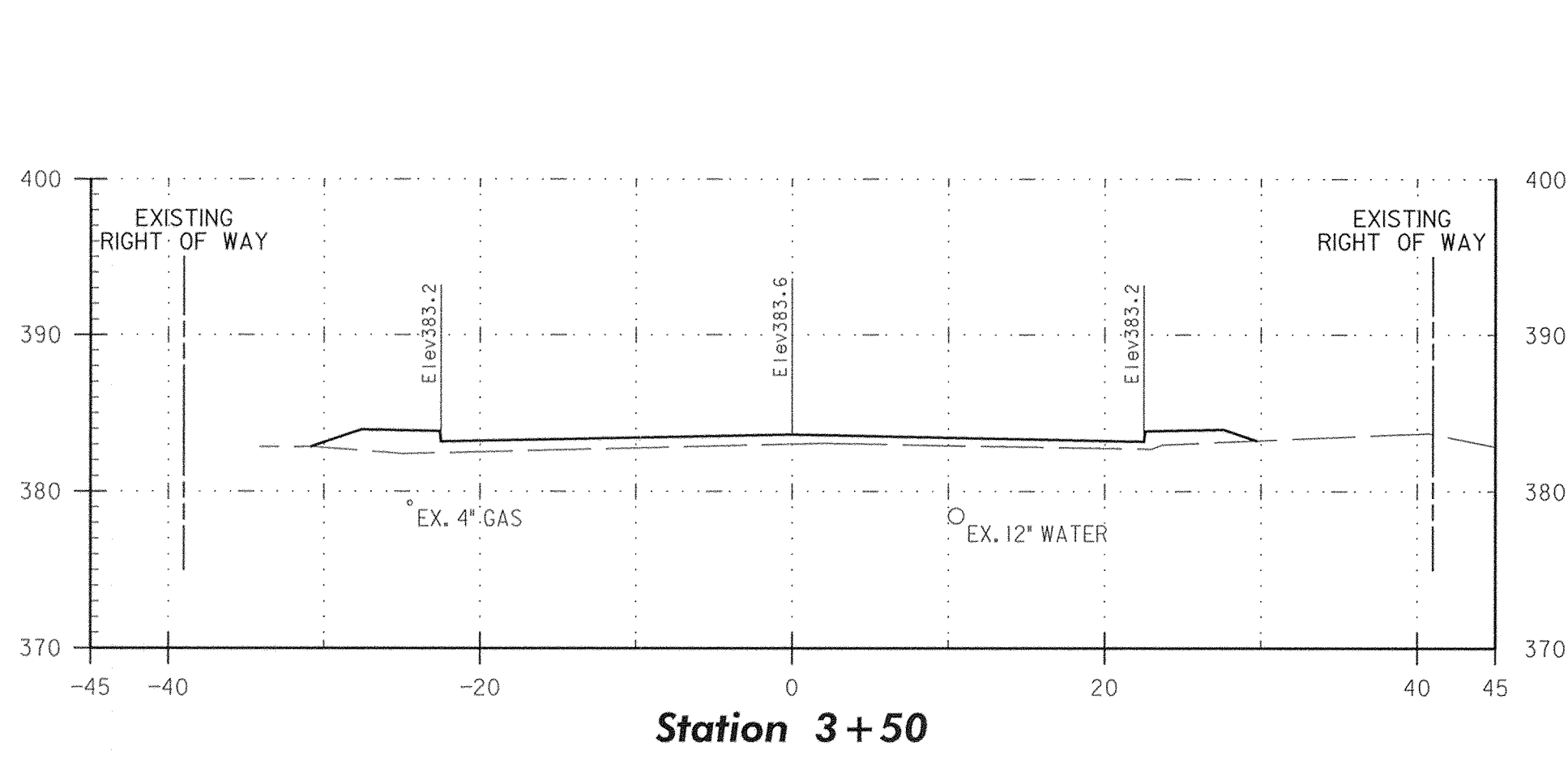
SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

**OAKLAND MILLS ROAD IMPROVEMENTS**

HOWARD COUNTY, MARYLAND  
CAPITAL PROJECT NO. J-4134

SCALE: AS SHOWN  
SHEET 16 OF 20





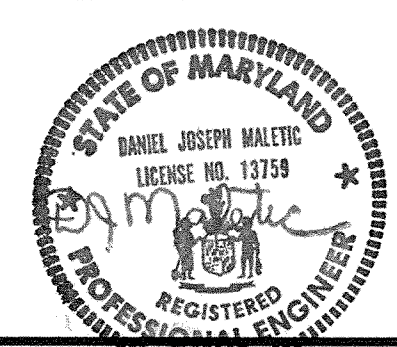
I hereby certify that to the best of my knowledge that this "As-Built" truly represents existing field conditions including but not limited to sizes, diameters, line and grade, and elevations, shown [ ]

Daniel J. Maletic  
Maryland Registered Professional Engineer No. 13759

**AS-BUILT**  
June, 2006

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
Director of Public Works: *Jan J. Van...* 6/14/04  
Chief, Bureau of Engineering: *Robert P. ...* 6/14/04  
Chief, Bureau of Highways: *William F. ...* 6-7-04  
Chief, Division of Transportation Projects and Watershed Management: *Steve Shavar* 6/14/04

**GPI** GREENMAN-PEDERSEN, INC.  
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS  
10620 GULFORD ROAD, SUITE 100, JESSUP, MD, 20794  
PASA, (301) 470-2172 BALT. (410) 880-3055  
FAX (301) 490-2649 www.gpi.net.com

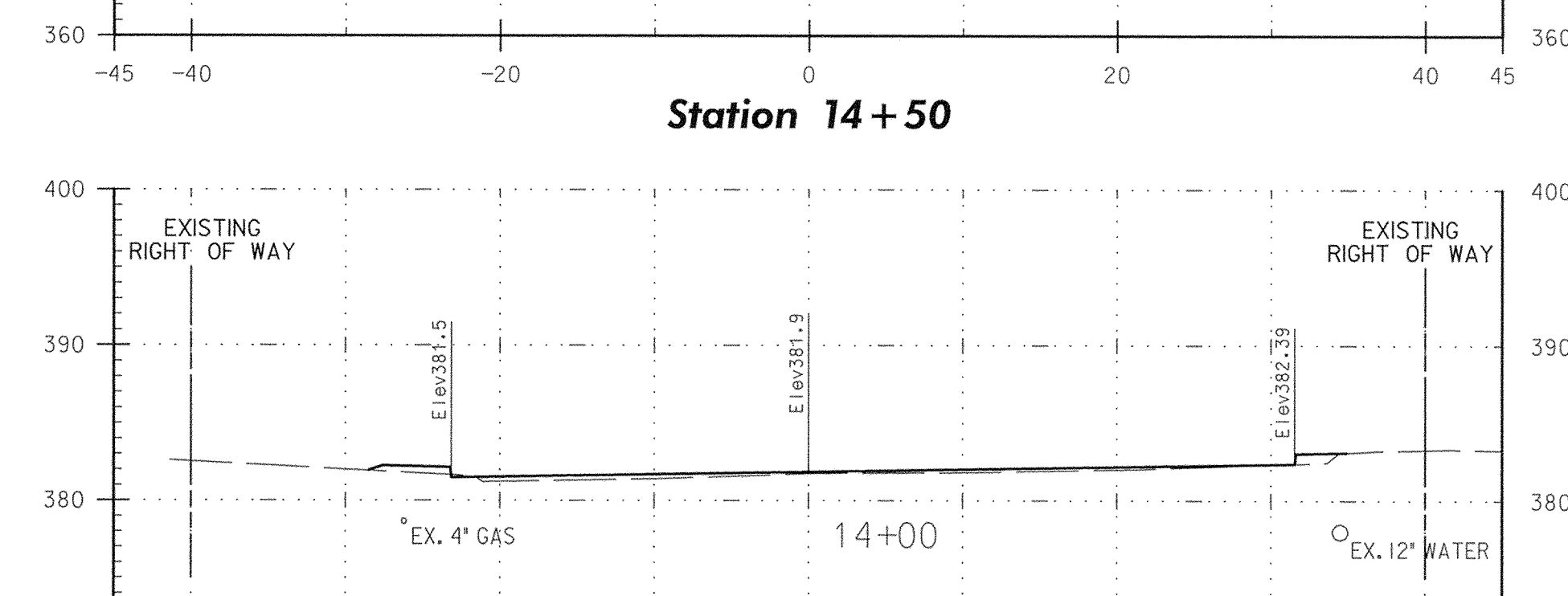
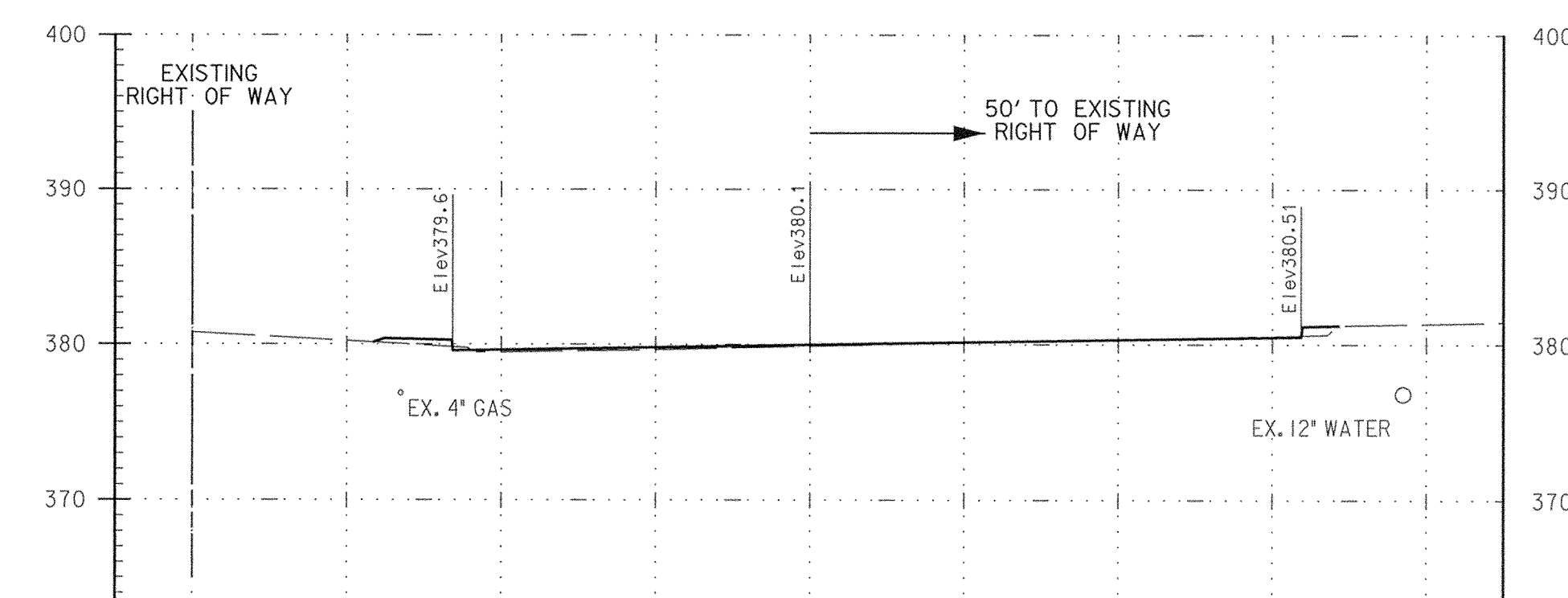
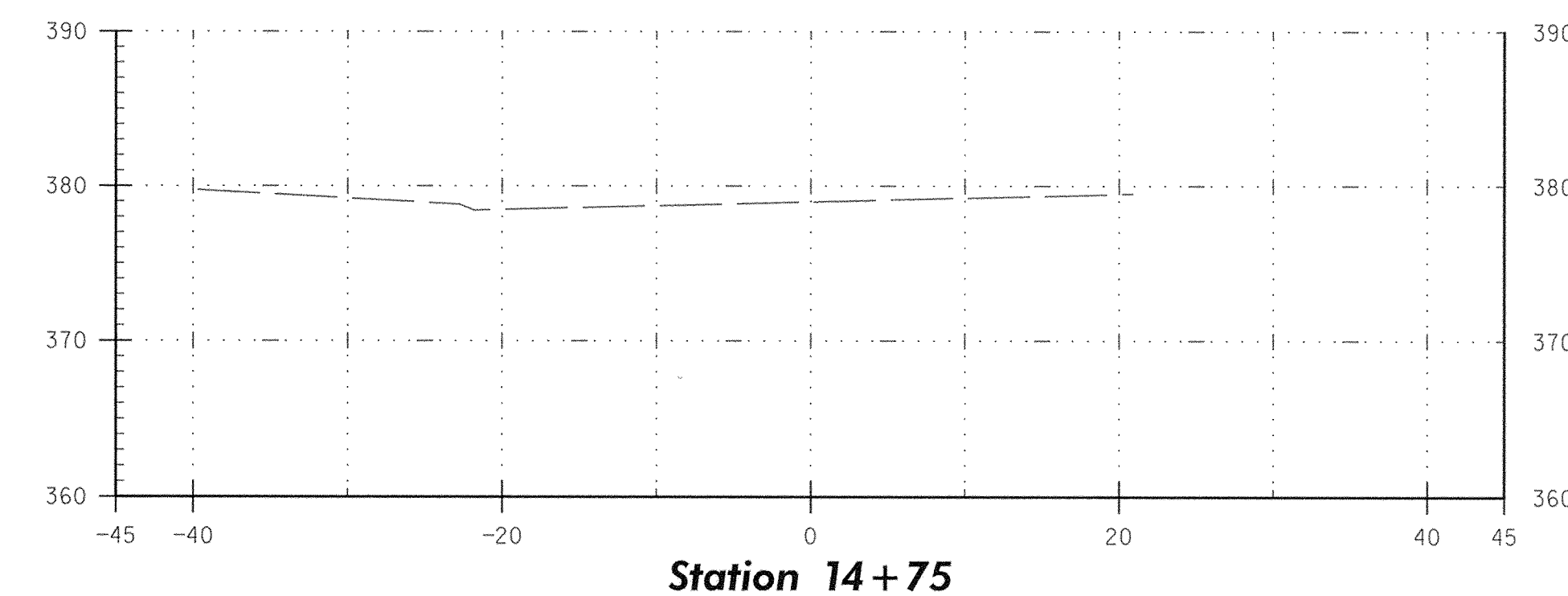
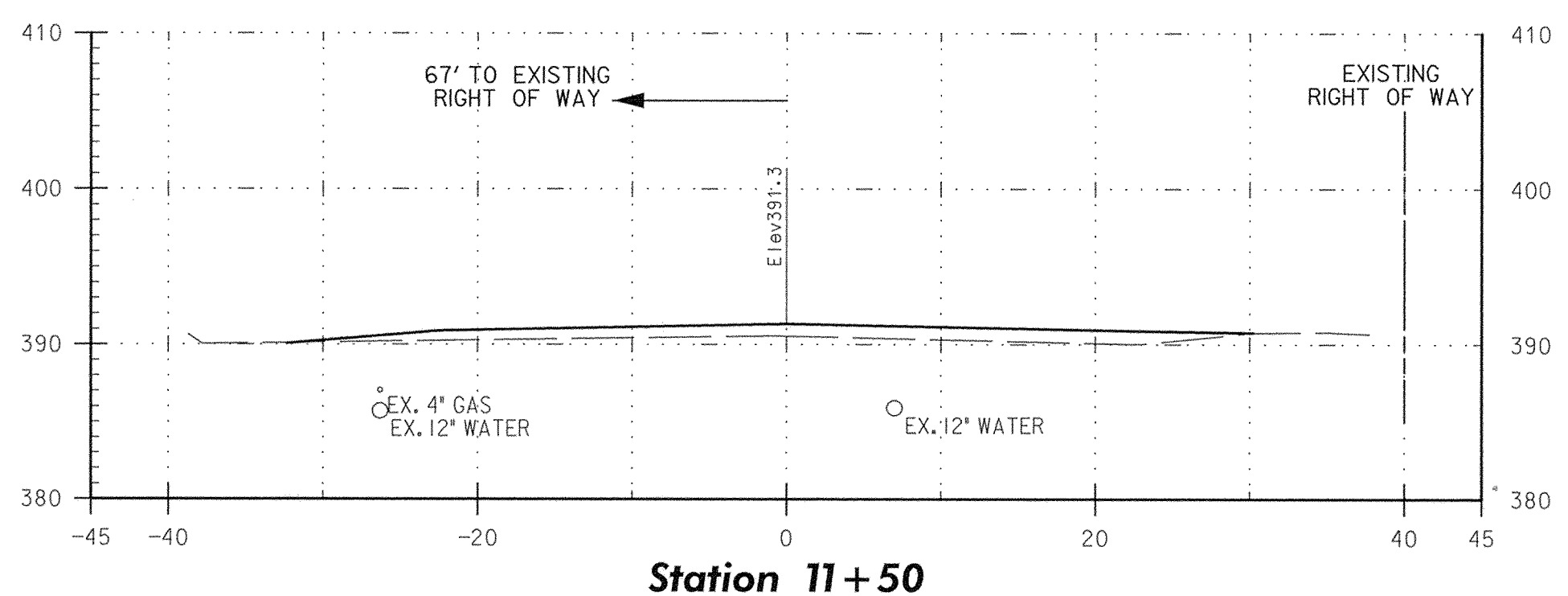
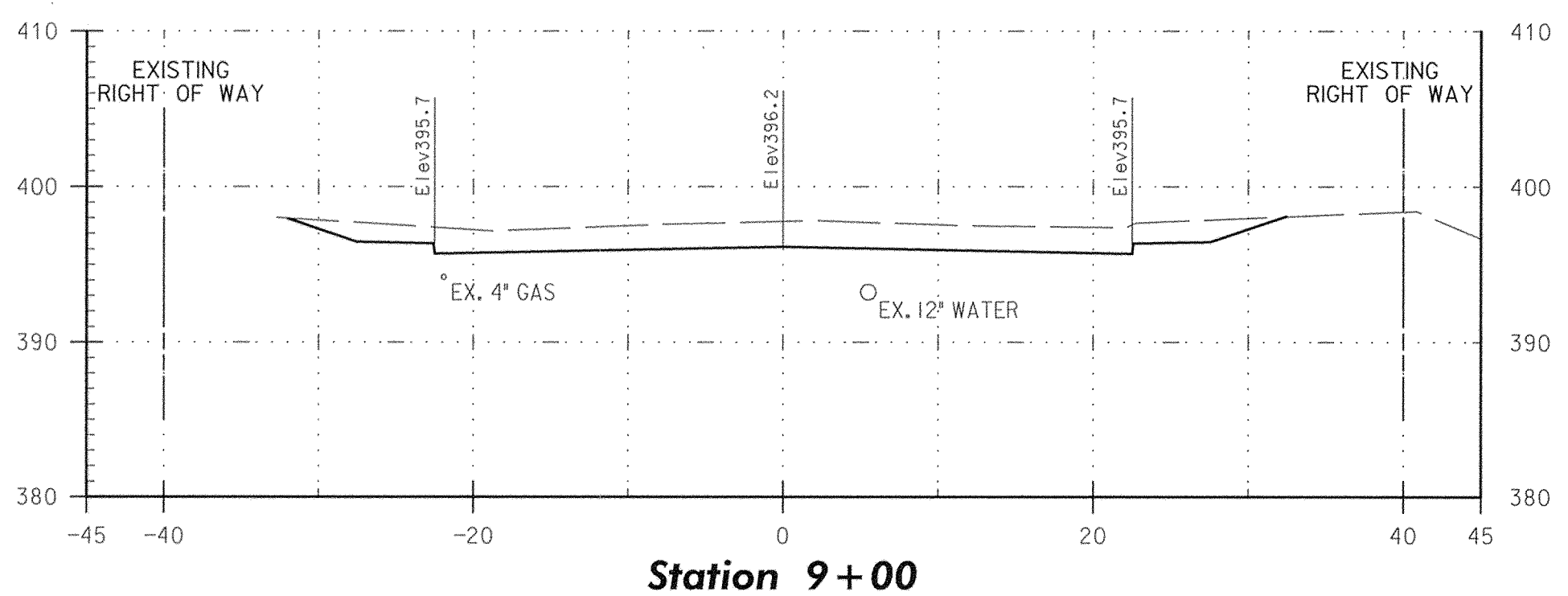
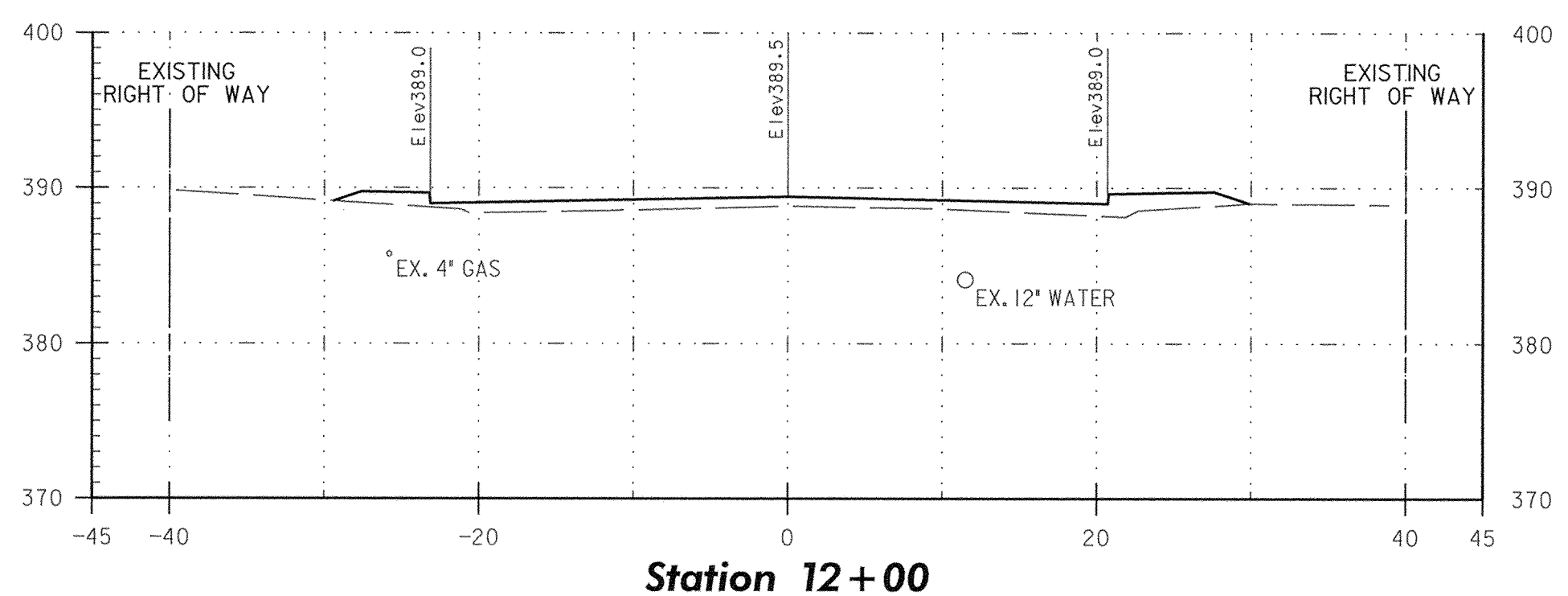
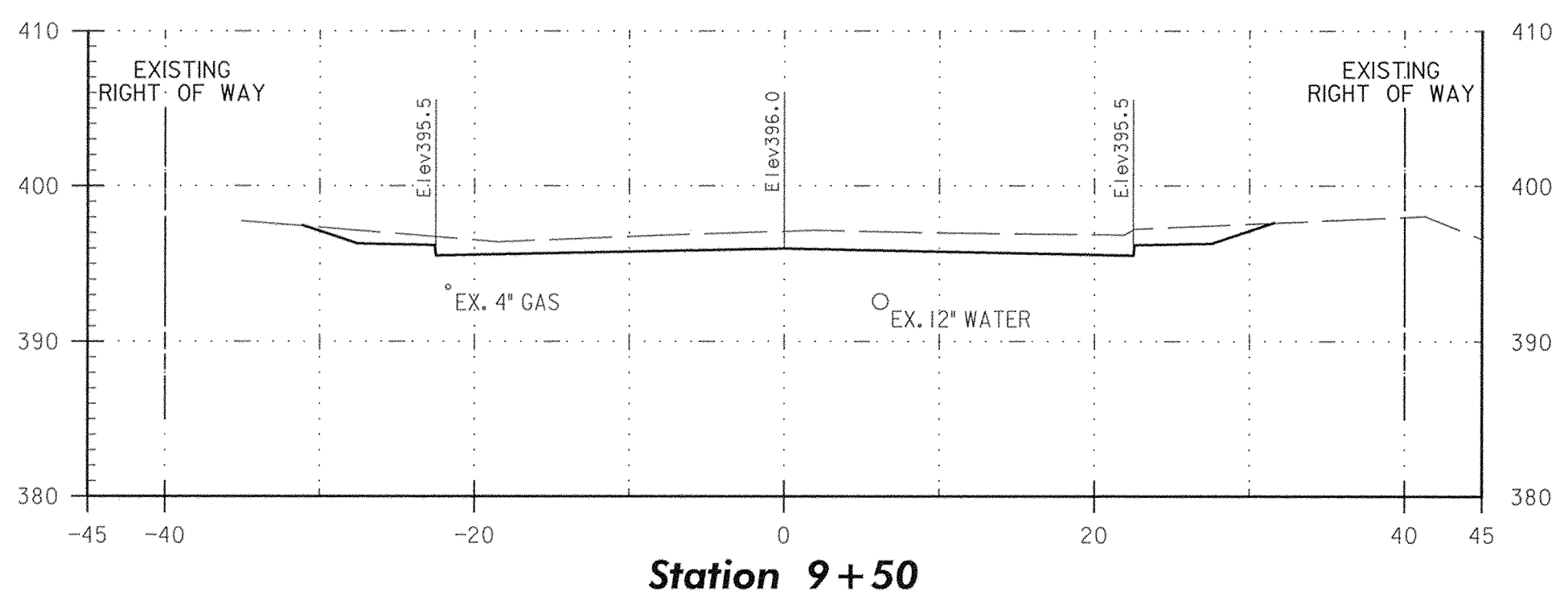
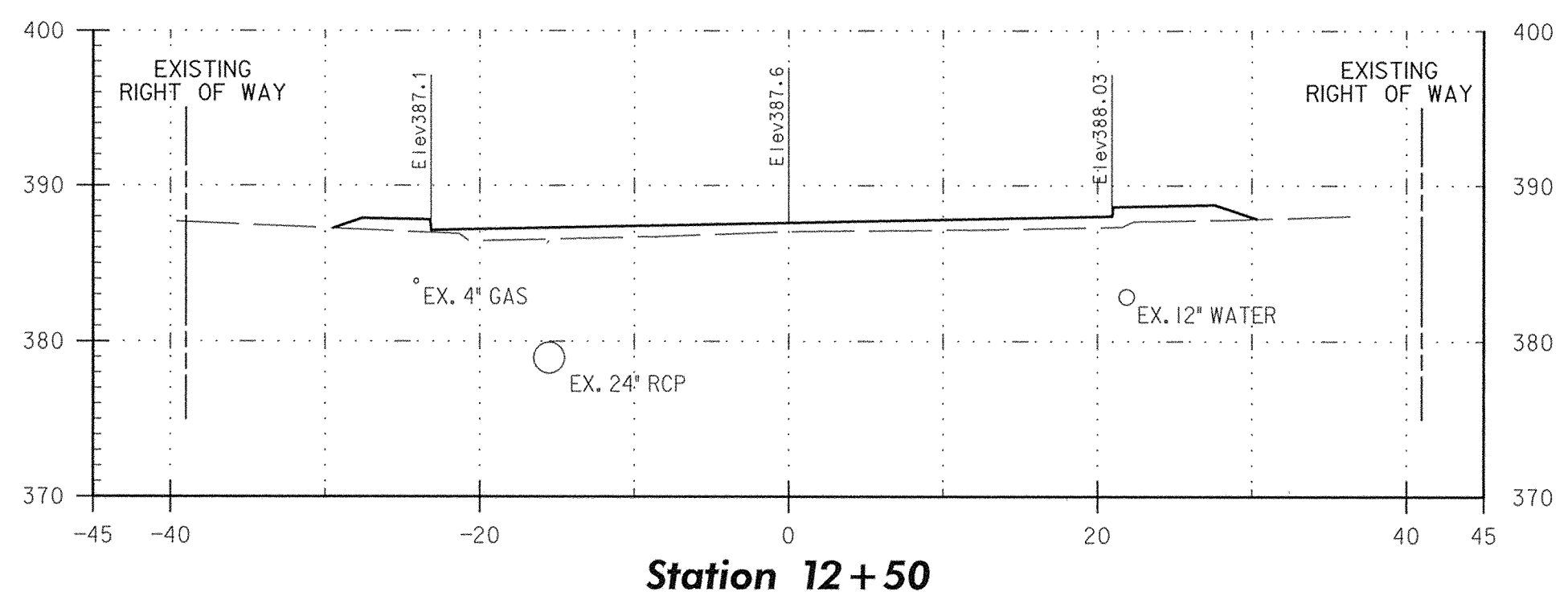
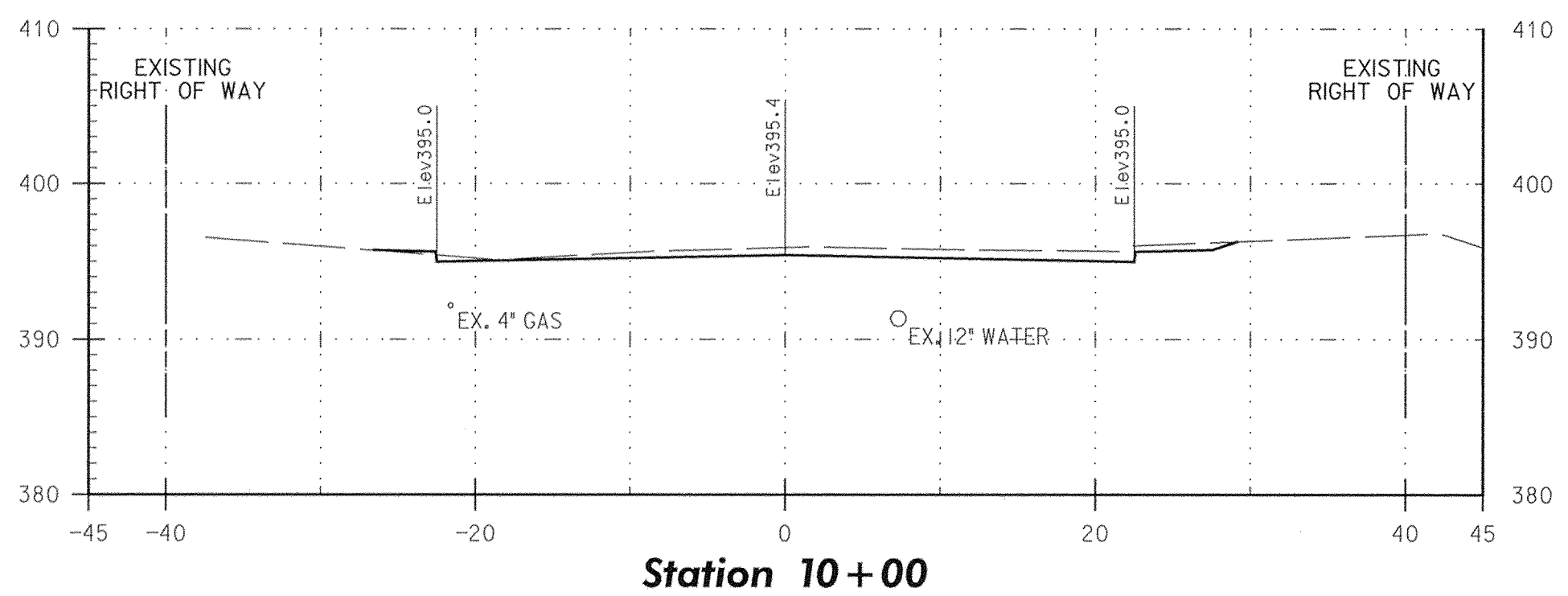
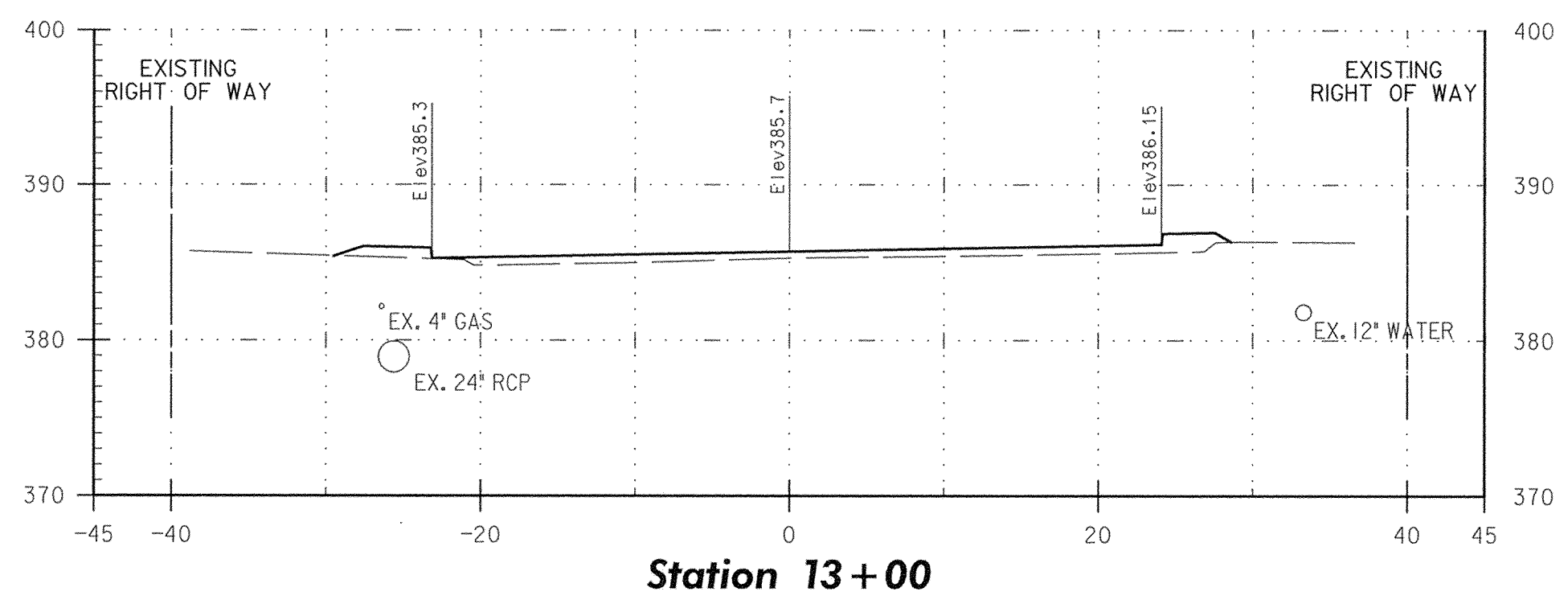
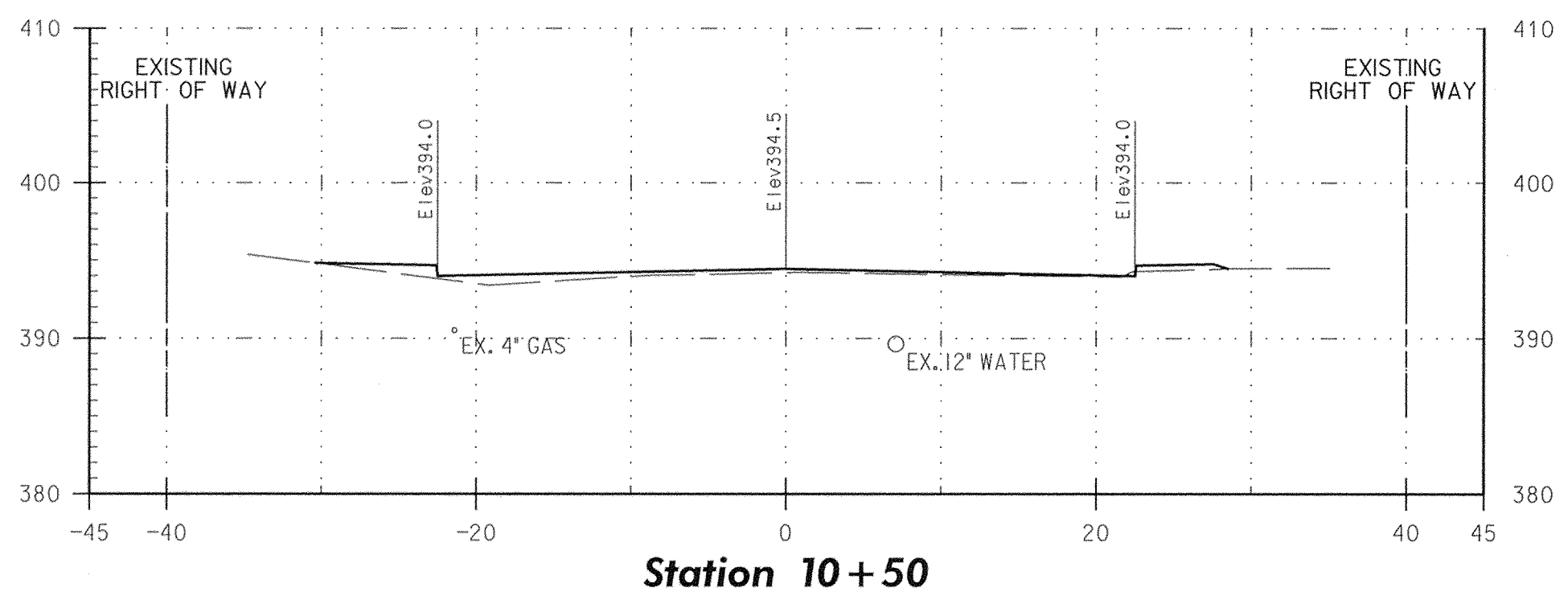
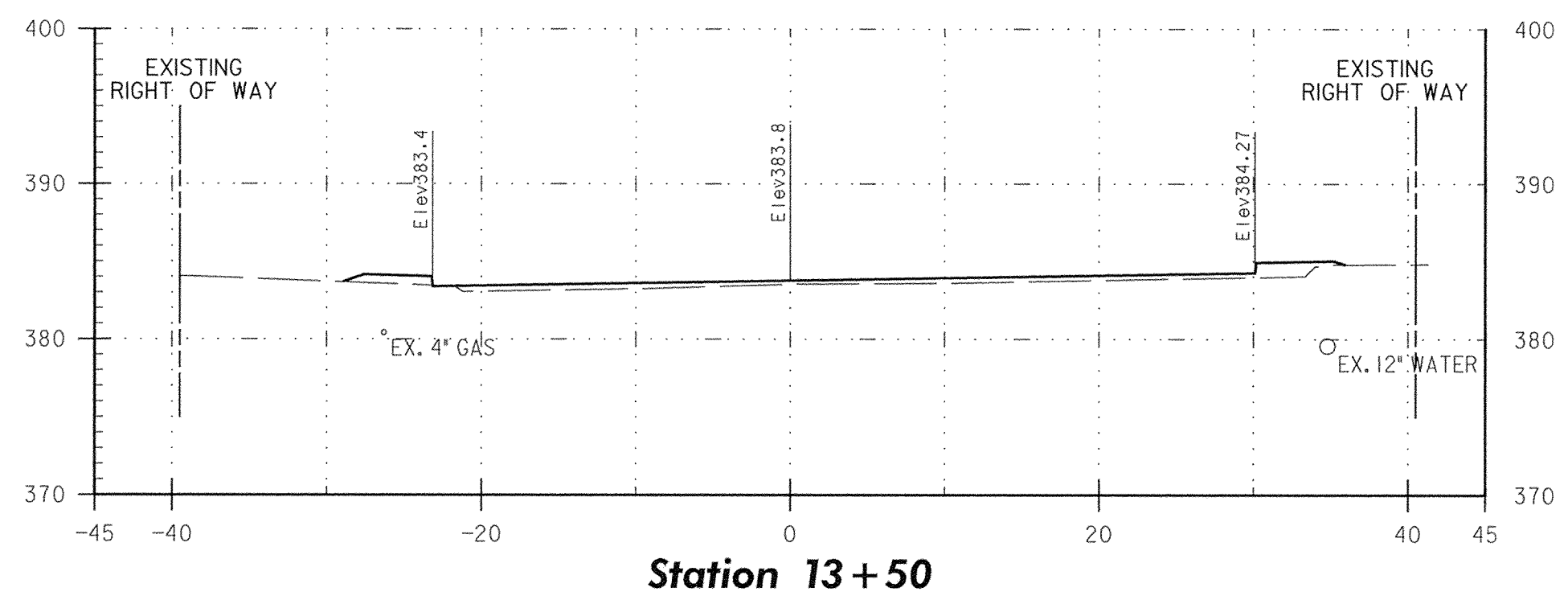
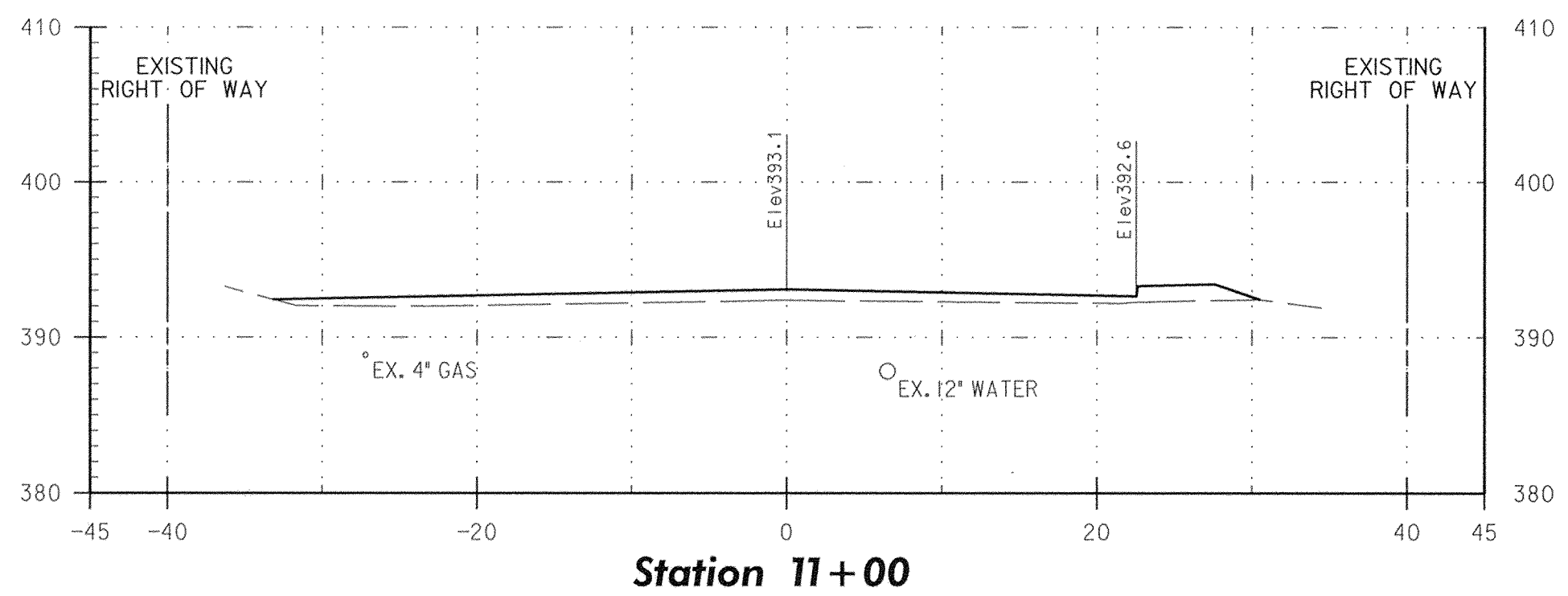


DES: W.R.F.				
DRN: W.K.T.				
CHK: M.S.Z.				
DATE: JUNE, 2004				
BY	NO	REVISION	DATE	

**CROSS SECTIONS SHEET 1**  
SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

**OAKLAND MILLS ROAD IMPROVEMENTS**  
HOWARD COUNTY, MARYLAND  
CAPITAL PROJECT NO. J-4134

SCALE: AS SHOWN  
SHEET 17 OF 20



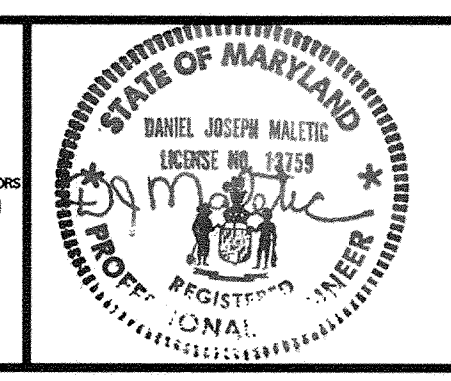
I hereby certify that to the best of my knowledge that this "As-Built" truly represents existing field conditions including but not limited to sizes, diameters, line and grade, and elevations, shown [ # ]

Daniel J. Maletic  
Maryland Registered Professional  
Engineer No. 13759

**AS-BUILT**  
June, 2006

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
Director of Public Works: [Signature] DATE: 6/14/04  
Chief, Bureau of Engineering: [Signature] DATE: 6/14/04  
Chief, Division of Transportation Projects and Watershed Management: Steve Shavar DATE: 6/14/04

**GPI** GREENMAN-PEDERSEN, INC.  
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTORS, ENGINEERS & INSPECTORS  
10620 GULFORD ROAD, SUITE 100, JESSUP, MD, 20794  
WASH. (200) 470-2772 BALTY. (410) 880-3055  
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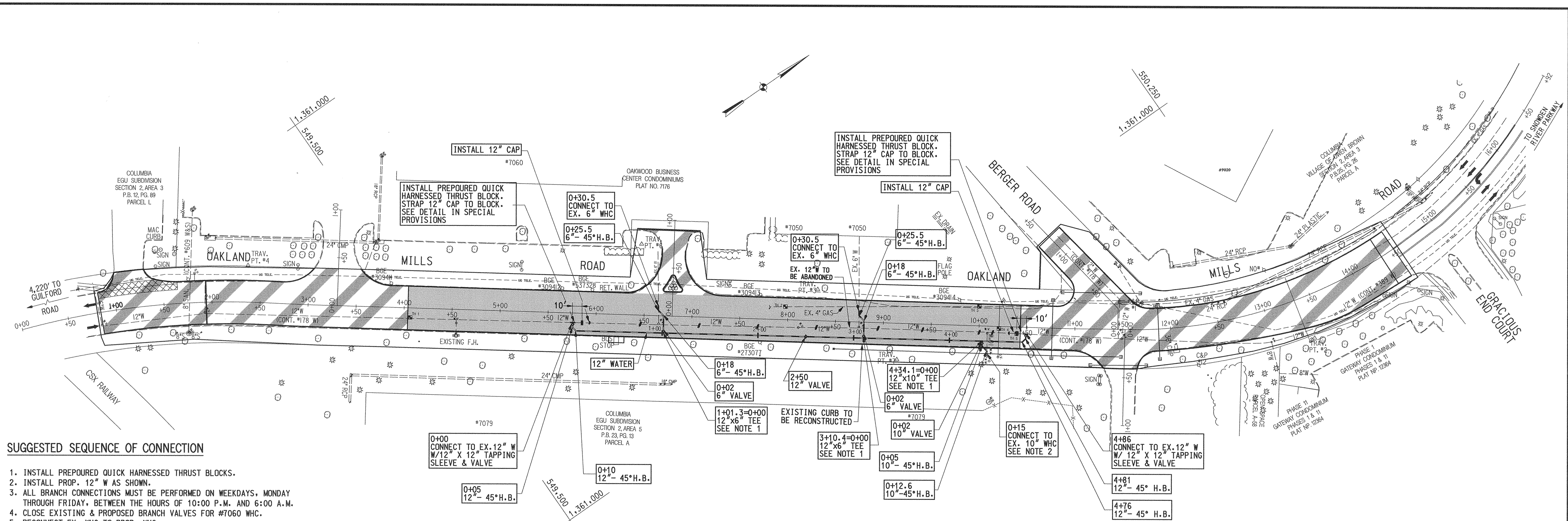


DES: W.R.F.			
DRN: W.K.T.			
CHK: M.S.Z.			
DATE: JUNE, 2004	BY	NO	REVISION

**CROSS SECTIONS SHEET 2**

**OAKLAND MILLS ROAD IMPROVEMENTS**  
HOWARD COUNTY, MARYLAND  
CAPITAL PROJECT NO. J-4134

SCALE: AS SHOWN  
SHEET 18 OF 20



**SUGGESTED SEQUENCE OF CONNECTION**

1. INSTALL PREPOURED QUICK HARNESSSED THRUST BLOCKS.
2. INSTALL PROP. 12" W AS SHOWN.
3. ALL BRANCH CONNECTIONS MUST BE PERFORMED ON WEEKDAYS, MONDAY THROUGH FRIDAY, BETWEEN THE HOURS OF 10:00 P.M. AND 6:00 A.M.
4. CLOSE EXISTING & PROPOSED BRANCH VALVES FOR #7060 WHC.
5. RECONNECT EX. WHC TO PROP. WHC.
6. OPEN PROP. BRANCH VALVE. EXISTING BRANCH VALVE TO REMAIN CLOSED.
7. REPEAT STEPS 3, 4, 5 & 6 ABOVE FOR #7050 THEN #7079 WHC'S.
8. CLOSE BOTH VALVES AT OAKLAND MILLS ROAD AND BERGER ROAD. CLOSE VALVE AT OAKLAND MILLS ROAD AND GUILFORD ROAD.
9. CAP EXISTING 12" MAIN AT BL STA'S. 5+93.39 AND 10+31.56.
10. ABANDON EXISTING 12" MAIN AND BRANCH VALVES FOR #7060, #7050 & #7079
11. OPEN VALVES AT OAKLAND MILLS ROAD AND BERGER ROAD.

**NOTES**

1. THE CONTRACTOR SHALL TEST PIT THE WATER SERVICES BEFORE CONSTRUCTION OF THE WATER MAIN TO VERIFY THE SIZE AND MATERIAL OF THE WATER SERVICE CONNECTIONS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SHOULD THE LOCATION, SIZE OR MATERIALS OF THE WATER SERVICE CONNECTIONS DIFFER FROM THAT SHOWN ON THE PLAN.
2. RECONNECT EXISTING 2" WHC TO PROPOSED 10" WHC IF AFFECTED BY 10" WHC RELOCATION. LOCATION OF 2" WHC UNCERTAIN. CONTRACTOR TO FIELD VERIFY.

TEST HOLE DATA			
TH #	SIZE/TYPE UTILITY	DEPTH	TOP ELEV.
1	12" D.I.P. WATER LINE	6.13'	377.25
2	4" PLASTIC GAS LINE	3.24'	392.13
3	4" PLASTIC GAS LINE	3.99'	391.36
4	4" PLASTIC GAS LINE	1.85'	393.24
5	12" D.I.P. WATER LINE	5.48'	388.97

NOT CONSTRUCTED WATER QUANTITIES				
ITEM	QUANTITIES		TYPE MATERIAL	ITEM
	ESTIMATED	AS BUILT		
12" WATER	486 LF		D. I. P.	
10" WATER	15 LF		D. I. P.	
6" WATER	61 LF		D. I. P.	
2" WATER	10 LF		TYPE "K" COPPER TUBE	
12" X 12" TAPPING SLEEVE & VALVE	2 EA.			

NOT CONSTRUCTED WATER STAKEOUT CHART: 12" WATER MAIN				
STATION	DESCRIPTION	NORTH	EAST	
0+00	CONNECT TO EX. 12" W W/12" X 12" T.S. & V.	549619.91	1360832.98	
0+05	12" - 45° H.B.	549616.96	1360837.01	
0+10	12" - 45° H.B.	549617.72	1360841.95	
1+01.3=0+00	12" X 6" TEE, WHC #7060	549691.34	1360895.89	
2+50	12" VALVE	549811.33	1360983.79	
3+10.4=0+00	12" X 6" TEE, WHC #7050	549860.04	1361019.49	
4+34.1=0+00	12" X 10" TEE, WHC #7079	549959.82	1361092.59	
4+76	12" - 45° H.B.	549993.55	1361117.30	
4+81	12" - 45° H.B.	549998.51	1361116.65	
4+86	CONNECT TO EX. 12" W W/12" X 12" T.S. & V.	550001.56	1361112.69	

NOT CONSTRUCTED WATER STAKEOUT CHART: 6" W (WHC #7060)				
STATION	DESCRIPTION	NORTH	EAST	
0+00=1+01.3	12" X 6" TEE	549691.34	1360895.89	
0+02	6" VALVE	549692.52	1360894.28	
0+18	6" - 45° H.B.	549701.75	1360881.23	
0+25.5	6" - 45° H.B.	549700.52	1360873.88	
0+30.5	CONNECT TO EX. 6" WHC	549703.33	1360869.74	

NOT CONSTRUCTED WATER STAKEOUT CHART: 6" W (WHC #7050)				
STATION	DESCRIPTION	NORTH	EAST	
0+00=3+10.4	12" X 6" TEE	549860.04	1361019.49	
0+02	6" VALVE	549861.22	1361017.87	
0+18	6" - 45° H.B.	549870.66	1361004.98	
0+25.5	6" - 45° H.B.	549869.53	1360997.61	
0+30.5	CONNECT TO EX. 6" WHC	549872.40	1360993.51	

NOT CONSTRUCTED WATER STAKEOUT CHART: 10" W (WHC #7079)				
STATION	DESCRIPTION	NORTH	EAST	
0+00=4+34.1	12" X 10" TEE	549959.82	1361092.59	
0+02	10" VALVE	549958.52	1361094.34	
0+05	10" - 45° H.B.	549956.83	1361096.60	
0+12.6	10" - 45° H.B.	549957.94	1361104.12	
0+15	CONNECT TO EX. 10" WHC	549956.19	1361106.56	

As-Built June 2006

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 4/16/04  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 4-16-04  
CHIEF, BUREAU OF UTILITIES DATE

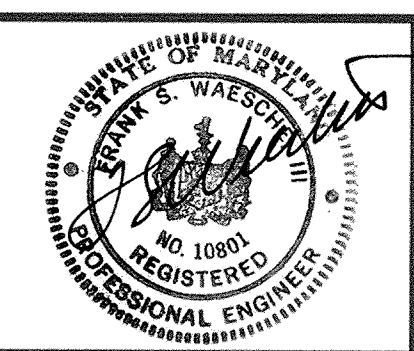
*[Signature]* 4-16-04  
CHIEF, BUREAU OF ENGINEERING DATE

*[Signature]* 4-16-04  
CHIEF, UTILITY DESIGN DIVISION DATE

**WALLACE, MONTGOMERY & ASSOCIATES, LLP**

CIVIL AND STRUCTURAL ENGINEERS  
110 WEST ROAD  
TOWSON, MARYLAND 21204

*[Professional Engineer Seal]*



DES: WCW	
DRN: MEK, RJD	
CHK: LAF	
DATE: APRIL 2004	
BY: NO.	REVISION
	DATE

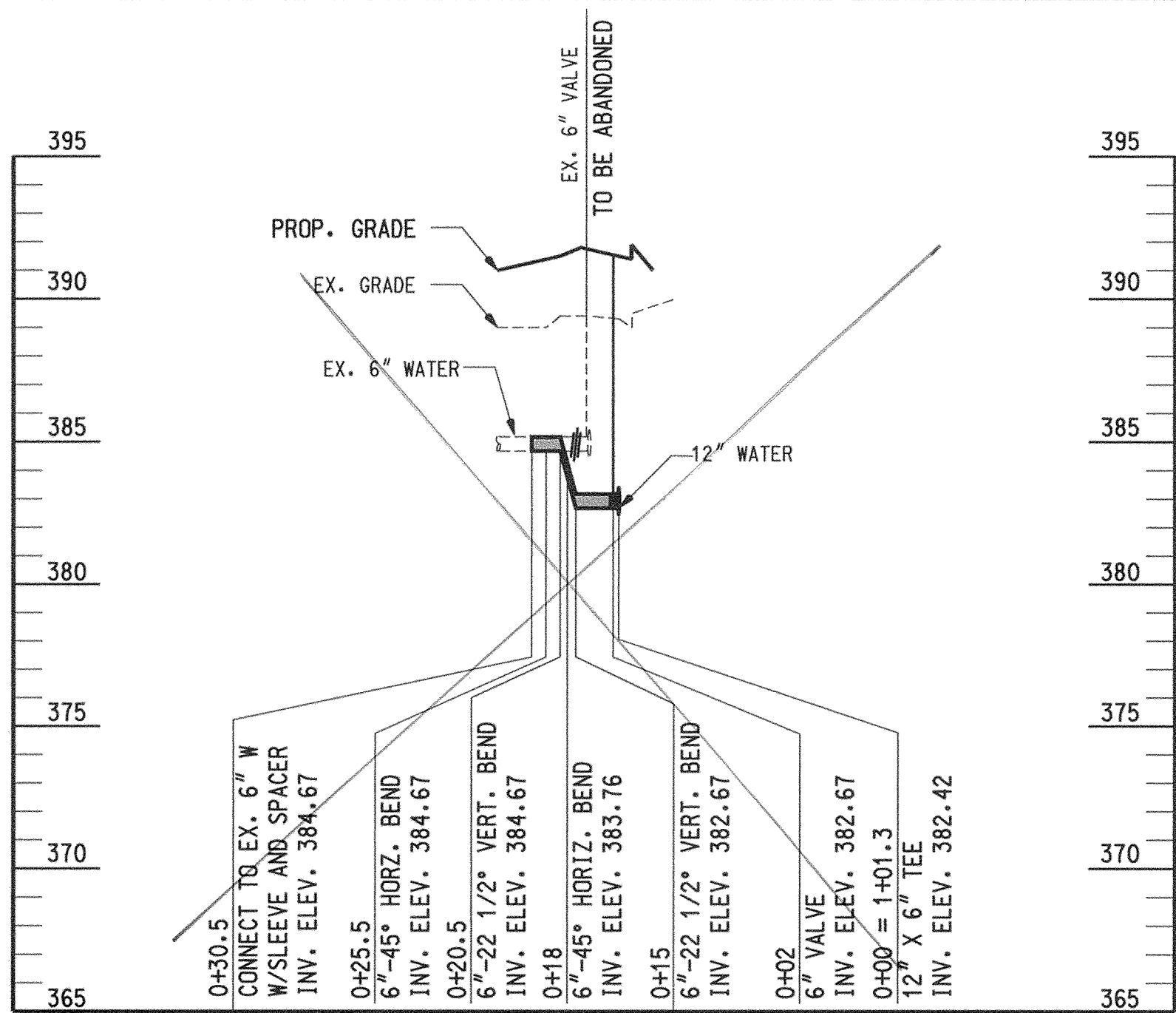
600' SCALE MAP NO. 42 BLOCK NO. 5

OAKLAND MILLS ROAD WATER MAIN RELOCATION  
CAPITAL PROJECT W- 8248  
CONTRACT NO. 178- W  
ELECTION DISTRICT NO. 6  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

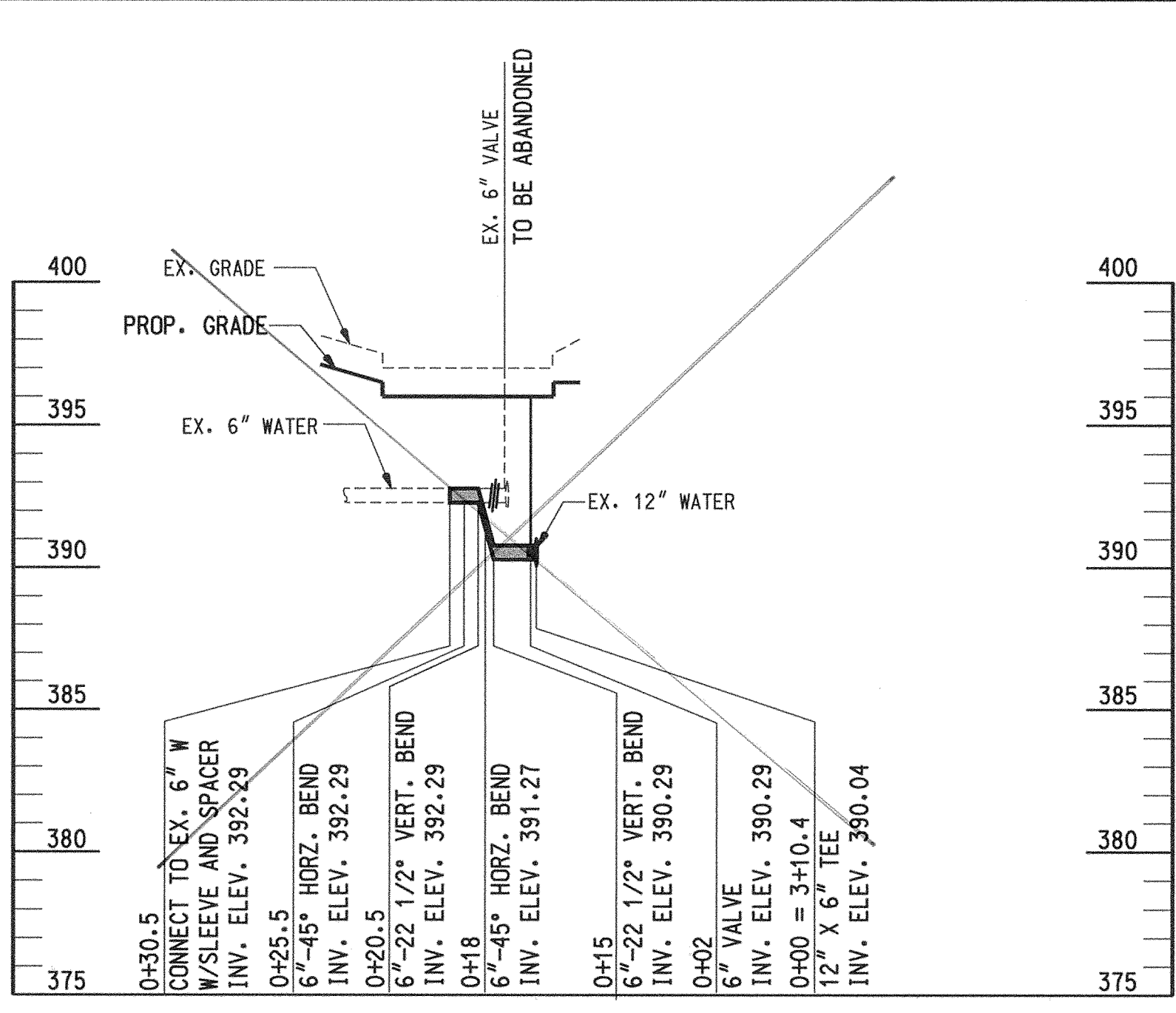
SHEET 5A OF 9

19 OF 20



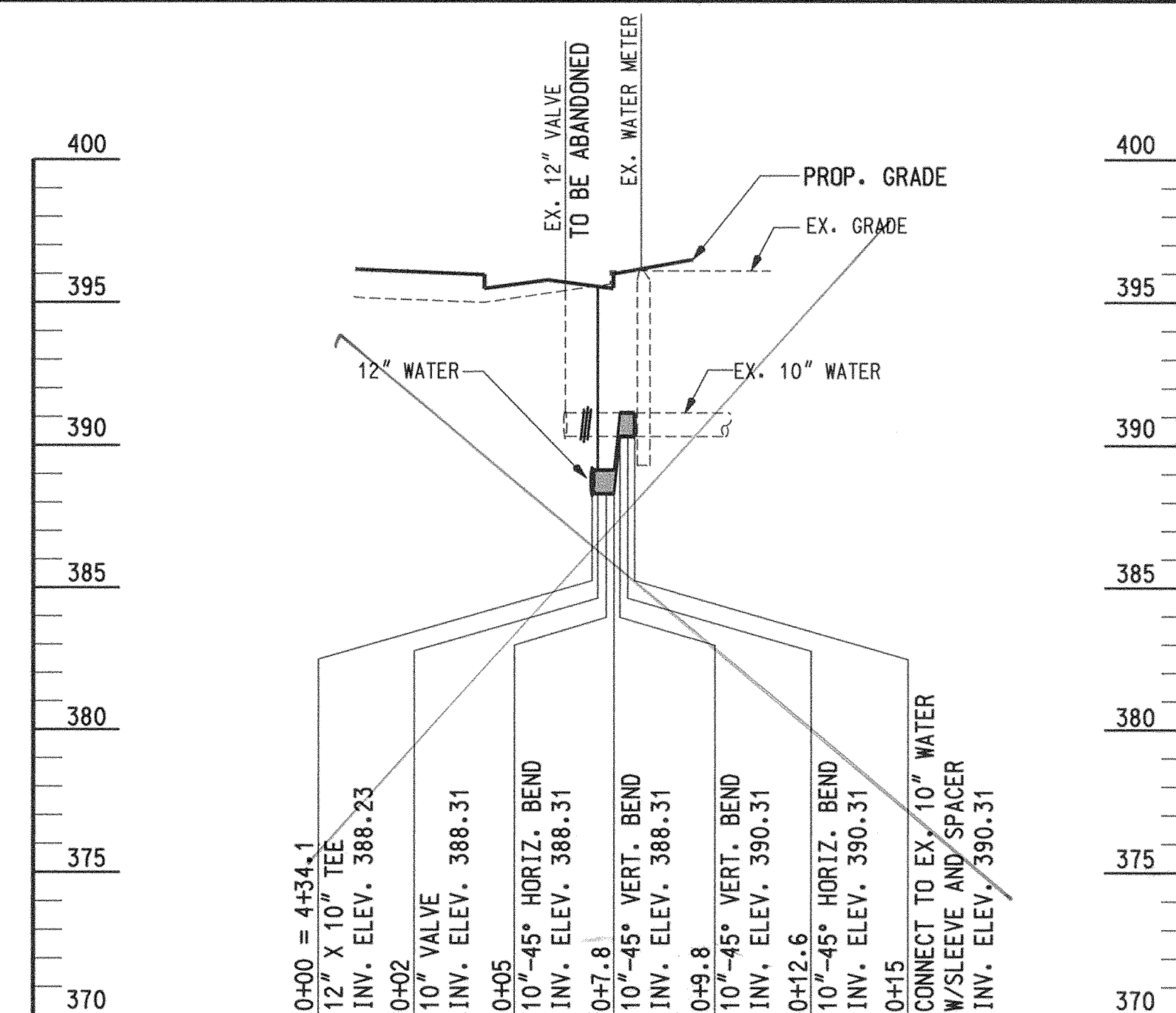
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SCALE: HORIZ. 1" = 50'  
VERT. 1" = 5'



PROFILE: 6" WATER (WHC # 7050)

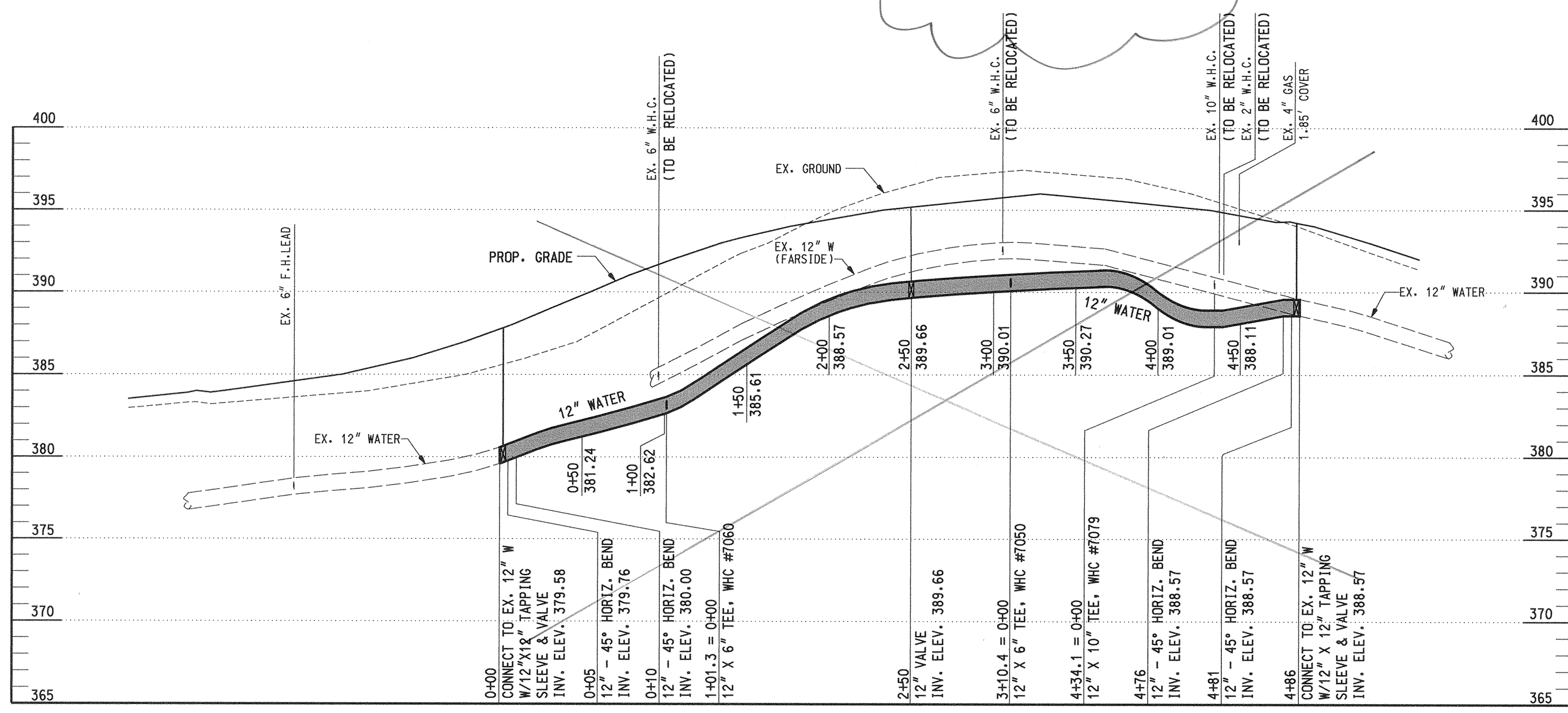
SCALE: HORIZ. 1" = 50'  
VERT. 1" = 5'



PROFILE: 10" WATER (WHC # 7079)

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

NOT CONSTRUCTED



PROFILE: 12" WATER

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

AS-BUILT June 2006

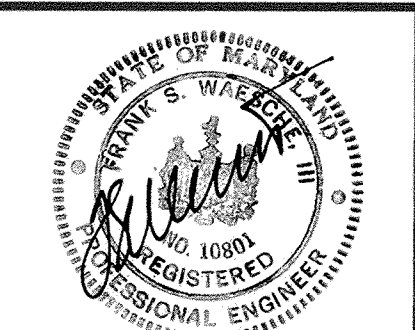
DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 4/16/04  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 4-19-04  
CHIEF, BUREAU OF UTILITIES DATE

*[Signature]* 4-16-04  
CHIEF, UTILITY DESIGN DIVISION DATE

**WALLACE, MONTGOMERY & ASSOCIATES, LLP**  
CIVIL AND STRUCTURAL ENGINEERS  
110 WEST ROAD  
TOWSON, MARYLAND 21204



DES:	WCW
DRN:	MEK, RJD
CHK:	LAF
DATE:	APRIL 2004
BY:	NO.
REVISION:	
DATE:	

600' SCALE MAP NO. 42 BLOCK NO. 5

OAKLAND MILS ROAD WATER MAIN RELOCATION  
CAPITAL PROJECT W- 8248  
CONTRACT NO. 178- W  
ELECTION DISTRICT NO. 6  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 5B OF 9  
20 of 20