

FILE: \\1998\98175\98175_10\dgn\101brnt.dgn
DATE: 04/28/2004 01:32:15 PM

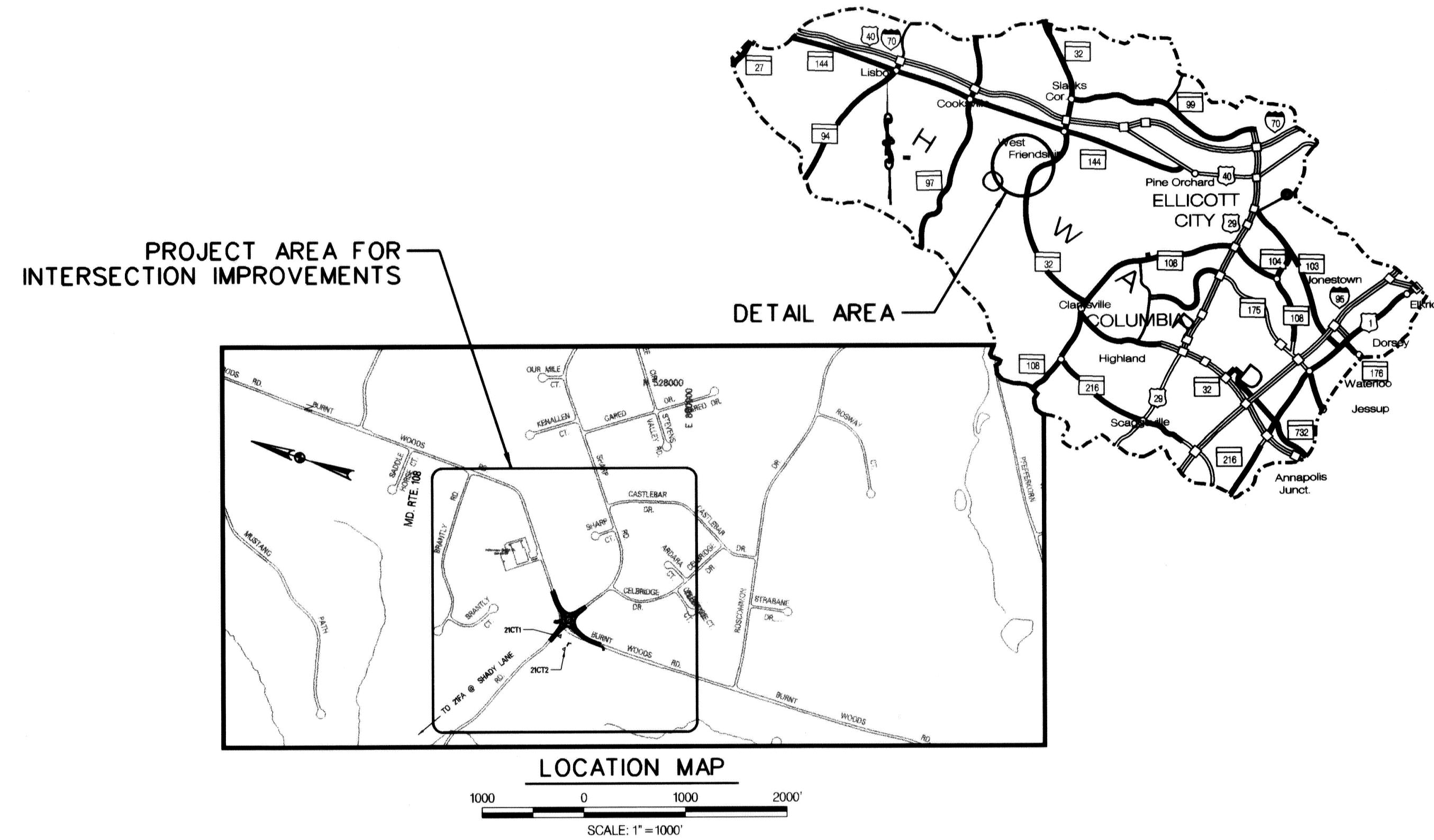
Howard County, Maryland – Department of Public Works

INTERSECTION IMPROVEMENTS BURNTWOODS ROAD ROUNDABOUT

CAPITAL PROJECT NO. J-4164-02

INDEX OF SHEETS

TITLE SHEET	1
PLAN SHEET - 1	2
PLAN SHEET - 2	3
GEOMETRY SHEET	4
TYPICAL SECTIONS AND MISC. DETAILS	5
PROFILE SHEET	6
PIPE PROFILE SHEET	7
GRADING, EROS. & SED. CONTROL PLAN	8-11
GRADING, EROS. & SED. CONTROL DETAILS	12-13
SIGNING AND PAVEMENT MARKING PLAN	14
MAINTENANCE OF TRAFFIC PLANS	15-19
CROSS SECTIONS	20-26



GENERAL NOTES

- ALL STATIONING AND DIMENSIONING ARE TO BE FIELD VERIFIED BY THE CONTRACTOR.
- APPROXIMATE LOCATIONS OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE HOWARD COUNTY ENGINEER BY THE CONTRACTOR AND AT THE CONTRACTOR'S EXPENSE. THE 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
 STATE HIGHWAY ADMINISTRATION DISTRICT 7-0 301-624-8100
 BALTIMORE GAS & ELECTRIC COMPANY - UNDERGROUND ELECTRIC 410-855-6958
 BALTIMORE GAS & ELECTRIC COMPANY - GAS ENGINEERING & CONSTRUCTION 410-291-5834
 DISTRIBUTION CUSTOMER SERVICE 685-0123
 ENGINEERING DAMAGE CONTROL 234-5621
 BELL ATLANTIC TELEPHONE 1-800-870-0000
 AMERICAN TELEPHONE & TELEGRAPH CABLE LOCATION DIVISION 393-3553
 COLONIAL PIPELINE COMPANY 781-4641
 BUREAU OF UTILITIES, HOWARD COUNTY 410-313-4900
 COMCAST CABLE 888-793-1800

THE CONTRACTOR SHALL CONTACT THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION OF ENGINEERING FOR VERIFICATION AND/OR INFORMATION REGARDING:
 A. EXISTING/PROPOSED RIGHT-OF-WAY.
 B. UTILITY RELOCATION.
 C. MAINTENANCE OF TRAFFIC DURING CONSTRUCTION.
 D. EROSION/SEDIMENT CONTROL CERTIFICATION AND PERMIT.
 E. HORIZONTAL/VERTICAL CONTROL.
 F. GRADING PERMIT.

- PLACE REGULATION "ROAD WORK" AND WARNING SIGNS AS REQUIRED TO COMPLY WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS AT LIMIT OF WORK ALONG BURNTWOODS ROAD AND SHARP ROADS.
- ALL GRADING SHALL BE LIMITED TO EXISTING R.O.W. INCLUDING SIDE SLOPES AND STABILIZATION. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED IN ACCORDANCE WITH THE SEDIMENT CONTROL NOTES AND DETAILS ON SHEETS 12-13.
- FOR DETAILS NOT SHOWN ON THESE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, THE CONTRACTOR SHALL ABIDE BY THE HOWARD COUNTY STANDARDS AND SPECIFICATIONS, THE PROJECT INVITATION FOR BID BOOKLET, THE SPECIAL PROVISIONS AND THE MARYLAND STATE HIGHWAY ADMINISTRATION'S "BOOK OF STANDARDS FOR HIGHWAY AND INCIDENTAL STRUCTURES" AND "STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS." IN THE EVENT OF ANY DISCREPANCY BETWEEN THESE SOURCES, THE SPECIAL PROVISIONS SHALL GOVERN.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MD SHA STANDARDS AND SPECIFICATIONS.
- STAGING AND STOCKPILE AREA WILL BE DETERMINED BY CONTRACTOR.
- HORIZONTAL AND VERTICAL CONTROL IS BASED ON THE MARYLAND STATE PLANE SYSTEM (NAD 83/91 AND NGVD29) AND ARE REFERENCED TO THE FOLLOWING HOWARD COUNTY MONUMENTS: 21CT1, 21CT2, 21FA REBAR, AND 21FA (CONCRETE MONUMENTS).

21CT2 : N585953.202 E130959.045 ELEV. 552.645
 21CT1 : N586286.953 E1311276.019 ELEV. 558.666
 21FA : N582028.73 E1308457.87 ELEV. 528.916

THE PROJECT SURVEY WAS PERFORMED BY RK&K IN MARCH, 1998

- MDE TRACKING NO. 03-NT-0121/200362873.

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.

Paul T. Hagan 6/1/04
 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.

Dan J. Maletic 7/27/2004
 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.

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

MDE TRACKING NO. 200362873

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
Jim Myer 5/24/04
 U.S. Natural Resources Conservation Service Date
 THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Paul T. Hagan 5/24/04
 Howard Soil Conservation District Date

AS-BUILT
 October, 2006

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
La. J. ... 6/3/04
 CHIEF, BUREAU OF HIGHWAYS DATE
Paul T. Hagan 6/1/04
 CHIEF, BUREAU OF ENGINEERING DATE
Steve Sharav 5/28/04
 CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS DATE

GPI Greenman-Pedersen, Inc.
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
 10620 GUILDFORD RD. SUITE 100, JESSUP, MD. 20794
 WASH. (301) 470-2772 BALT. (410) 581-3565
 FAX: (301) 480-2649 www.gpi.com

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

DES: K.P.					
DRN: C.R.					
CHK: M.S.Z.					
DATE: 04/28/2004	BY: NO	REVISION	DATE	SCALE MAP NO.	BLOCK NO.

TITLE SHEET

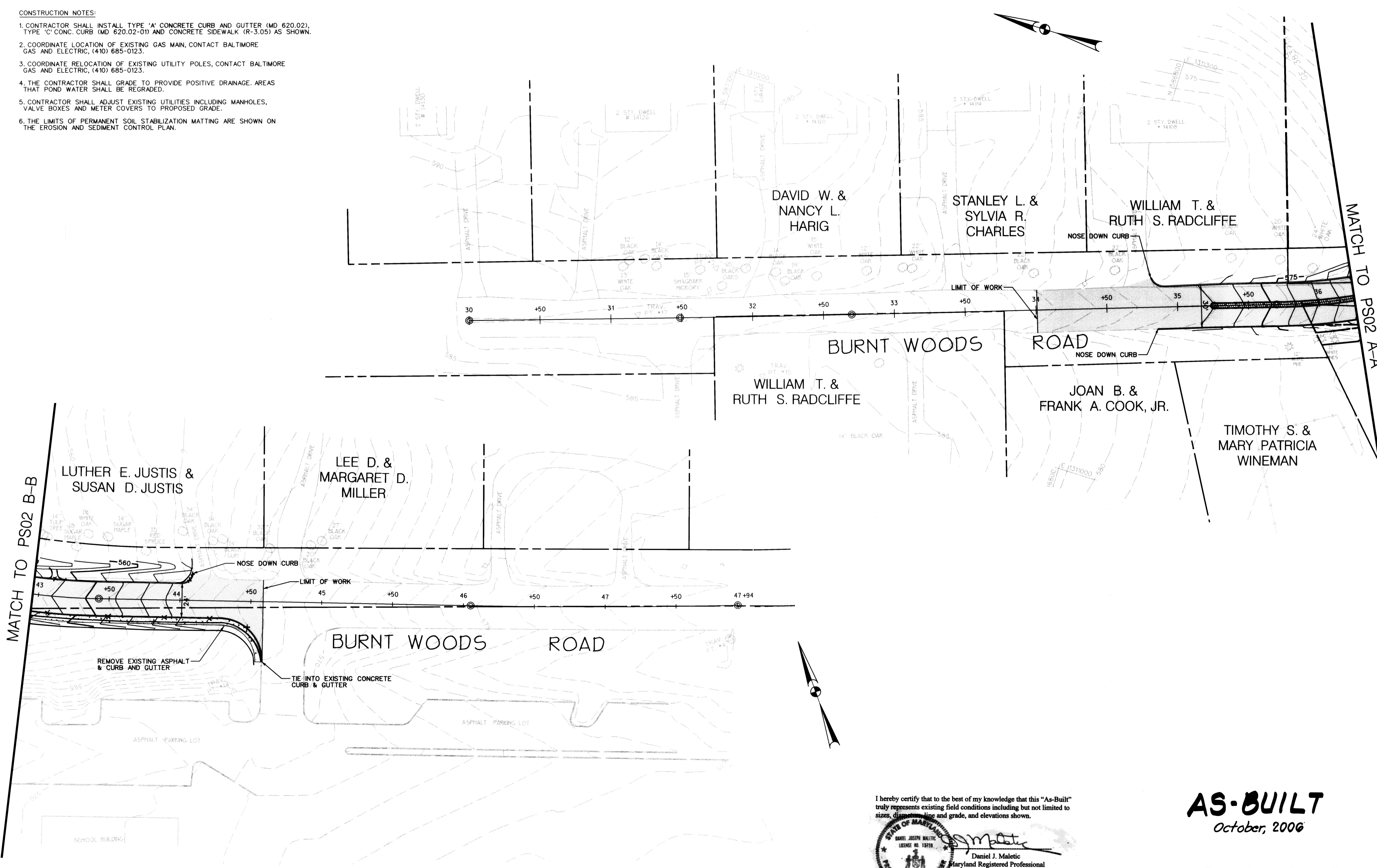
BURNTWOODS ROAD ROUNDABOUT
 INTERSECTION IMPROVEMENTS
 HOWARD COUNTY, MARYLAND
 CAPITOL PROJECT NO. J-4164-02

SCALE AS SHOWN
 SHEET 1 OF 26


FILE: n:\1998\98175\98175.10\dgn\PS01BRNT.dgn
 DATE: 04/28/2004 01:32:41 PM

CONSTRUCTION NOTES:

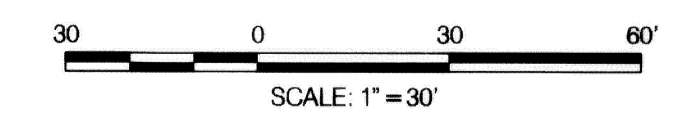
1. CONTRACTOR SHALL INSTALL TYPE 'A' CONCRETE CURB AND GUTTER (MD 620.02), TYPE 'C' CONC. CURB (MD 620.02-01) AND CONCRETE SIDEWALK (R-3.05) AS SHOWN.
2. COORDINATE LOCATION OF EXISTING GAS MAIN, CONTACT BALTIMORE GAS AND ELECTRIC, (410) 685-0123.
3. COORDINATE RELOCATION OF EXISTING UTILITY POLES, CONTACT BALTIMORE GAS AND ELECTRIC, (410) 685-0123.
4. THE CONTRACTOR SHALL GRADE TO PROVIDE POSITIVE DRAINAGE. AREAS THAT POND WATER SHALL BE REGRADED.
5. CONTRACTOR SHALL ADJUST EXISTING UTILITIES INCLUDING MANHOLES, VALVE BOXES AND METER COVERS TO PROPOSED GRADE.
6. THE LIMITS OF PERMANENT SOIL STABILIZATION MATTING ARE SHOWN ON THE EROSION AND SEDIMENT 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
 Maryland Registered Professional Engineer No. 13759

AS-BUILT
 October, 2006



DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

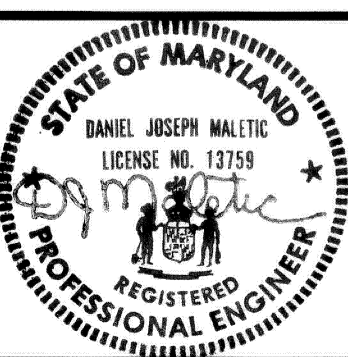
James J. White 6/3/04
 DIRECTOR OF PUBLIC WORKS DATE

Steve Shaver 5/28/04
 CHIEF, BUREAU OF HIGHWAYS DATE

Paul J. Ryan 6/1/04
 CHIEF, BUREAU OF ENGINEERING DATE

Steve Shaver 5/28/04
 CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS DATE

GPI Greenman-Pedersen, Inc.
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
 10620 GUILFORD RD, SUITE 100, JESSUP, MD, 20794
 WASH. (301) 470-2772 BALT. (410) 880-3055
 FAX: (301) 490-2649 www.gpinc.com



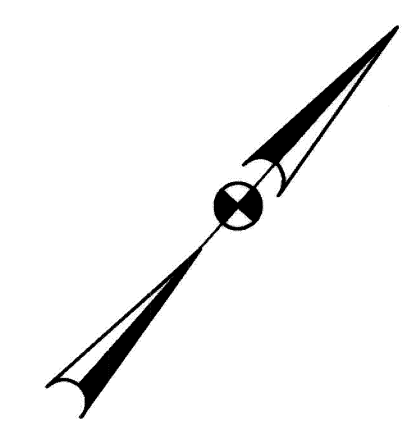
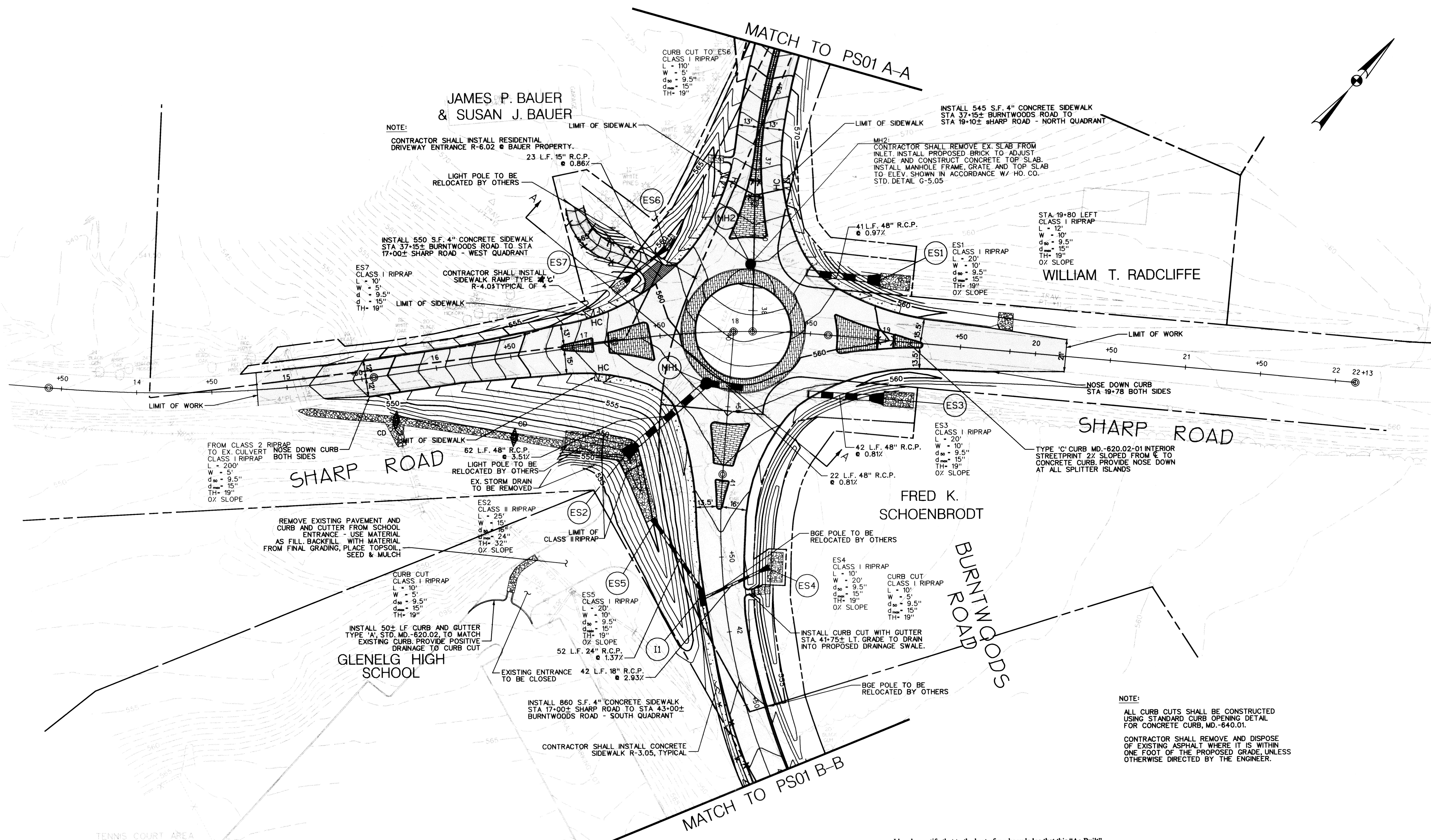
DES: K.P.					
DRN: C.R.					
CHK: M.S.Z.					
DATE: 04/28/2004	BY: NO	REVISION:	DATE:	SCALE MAP NO.:	BLOCK NO.:

PLAN SHEET 1

BURNTWOODS ROAD ROUNDABOUT INTERSECTION IMPROVEMENTS
 HOWARD COUNTY, MARYLAND
 CAPITOL PROJECT NO. J-4164-02

SCALE AS SHOWN
 SHEET 2 OF 26

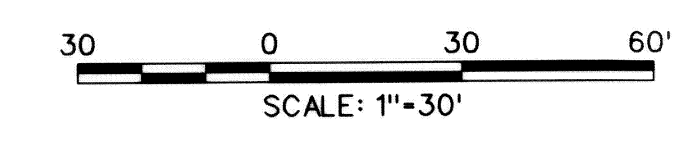
FILE: n:\1998\98175\98175_10.dgn\PS02BRNT.dgn
 DATE: 04/28/2004 01:33:08 PM



NOTE:
 ALL CURB CUTS SHALL BE CONSTRUCTED USING STANDARD CURB OPENING DETAIL FOR CONCRETE CURB, MD.-640.01.
 CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING ASPHALT WHERE IT IS WITHIN ONE FOOT OF THE PROPOSED GRADE, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

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.

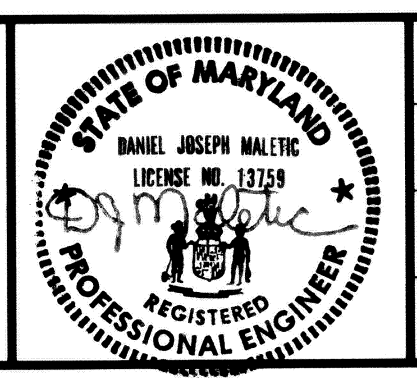
Daniel J. Maletic
 Daniel J. Maletic
 Maryland Registered Professional Engineer No. 13759



AS-BUILT
 October, 2006

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Director of Public Works: *William Z. ...* 6/3/04
 Chief, Bureau of Engineering: *Steve Sharon* 6/12/04
 Chief, Division of Transportation and Special Projects: *Steve Sharon* 6/12/04

GPI Greenman-Pedersen, Inc.
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
 10620 GULFORD RD, SUITE 100, LESSUP, MD, 20794
 WASH. (301) 470-2772 BALT. (410) 880-3055
 FAX: (301) 490-2649 www.gpinet.com



DES: K.P.	
DRN: C.R.	
CHK: M.S.Z.	
DATE: 04/28/2004	
BY: NO	REVISION
DATE	SCALE MAP NO. BLOCK NO.

PLAN SHEET 2

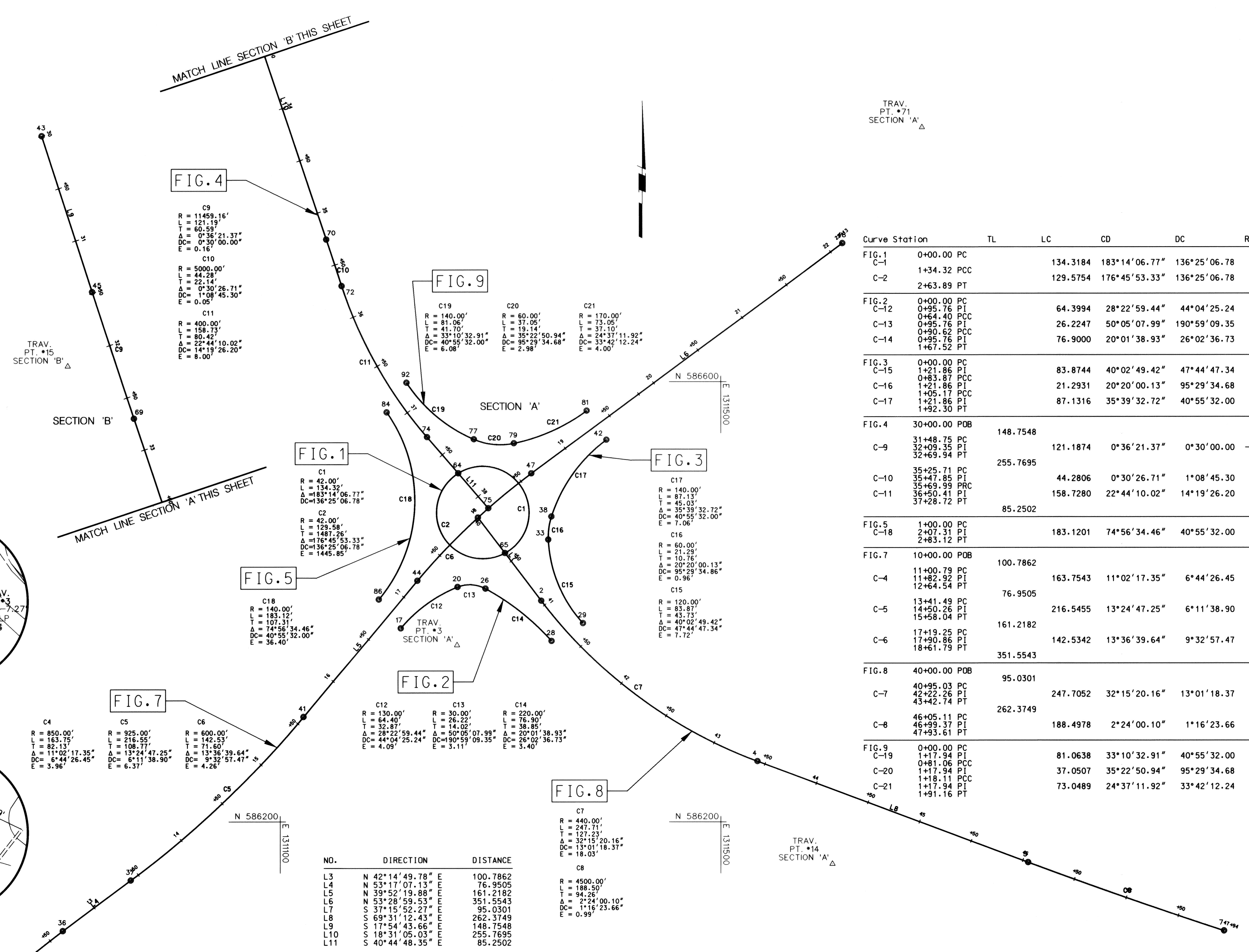
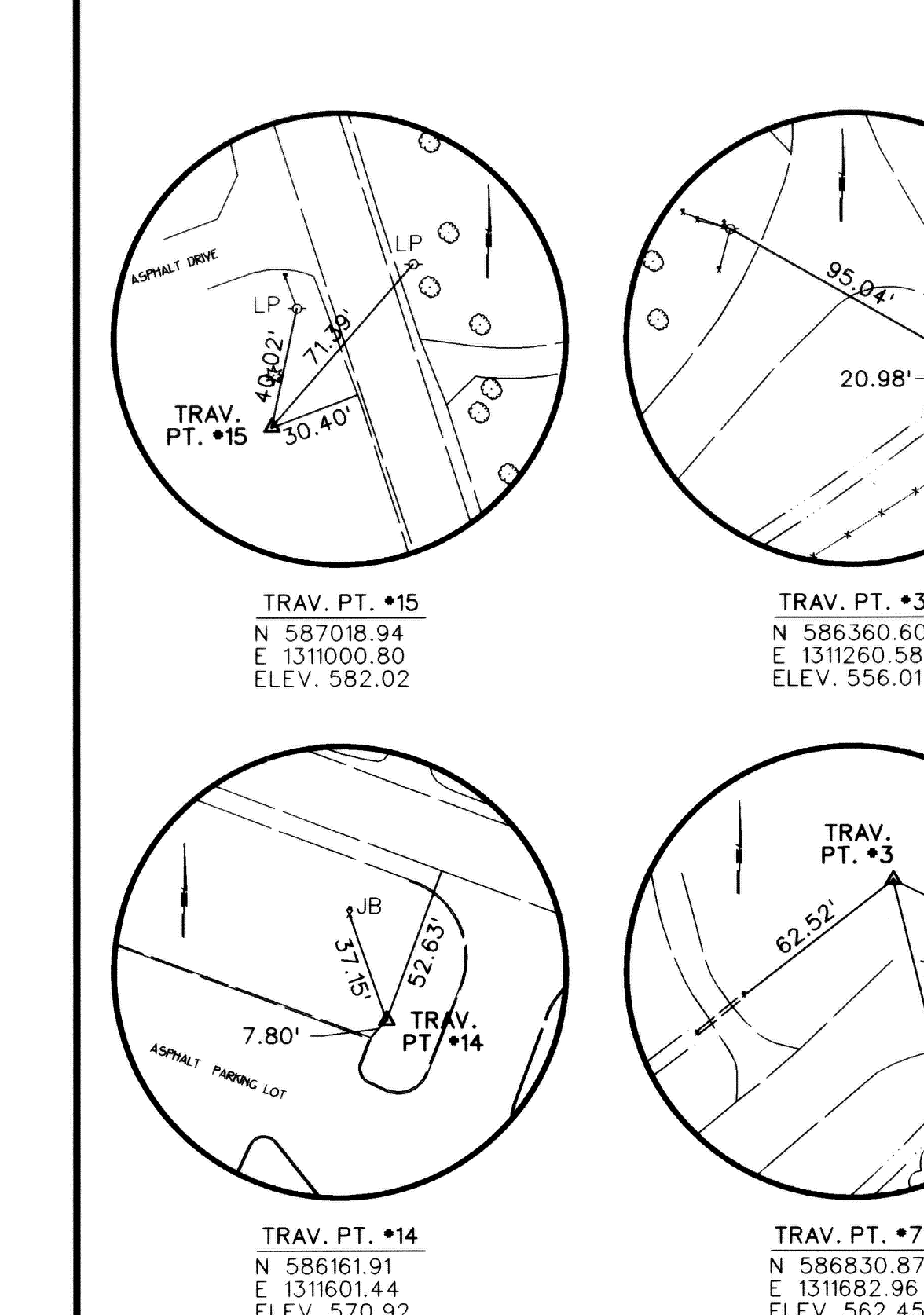
BURNTWOODS ROAD ROUNDABOUT INTERSECTION IMPROVEMENTS
 HOWARD COUNTY, MARYLAND
 CAPITOL PROJECT NO. J-4164-02

SCALE AS SHOWN
 SHEET 3 OF 26

FILE: n:\1998\98175\98175_10.dgn\PS02BRNT.dgn
 DATE: 04/28/2004 01:33:08 PM

Point Figure Northing Easting Type

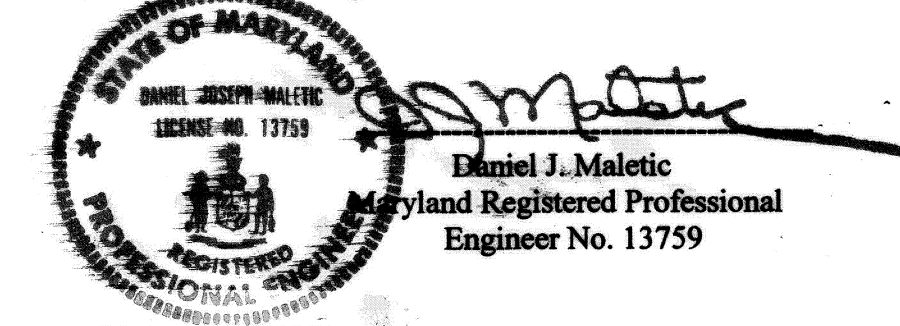
Table of coordinates for points 65 to 81. Columns: Point, Figure, Northing, Easting, Type.



Tables for curve data (FIG. 1-11), direction/distance, and delta/tangent/arc/radius/chord/chord bearing.

Table with columns: Curve Station, TL, LC, CD, DC, RC, Bearing, North, East.

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, diameter, line and grade, and elevations shown.



AS-BUILT October, 2000

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND. Director of Public Works: [Signature] DATE: 6/1/04. Chief, Bureau of Engineering: [Signature] DATE: 5/28/04.

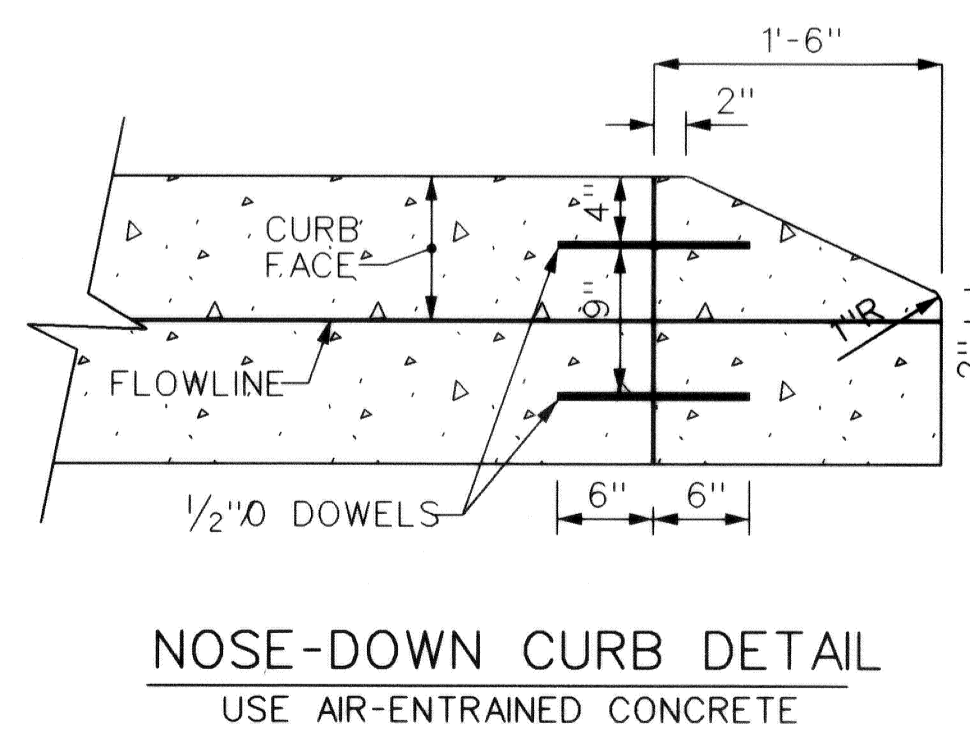
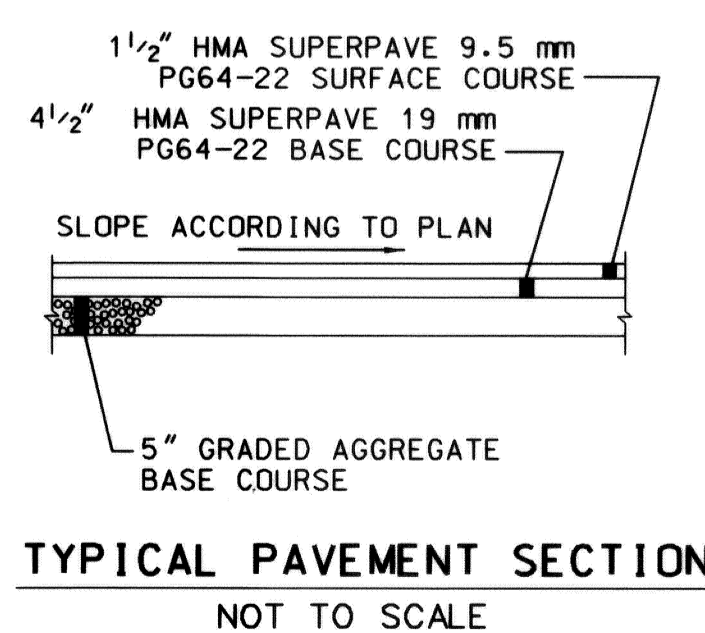
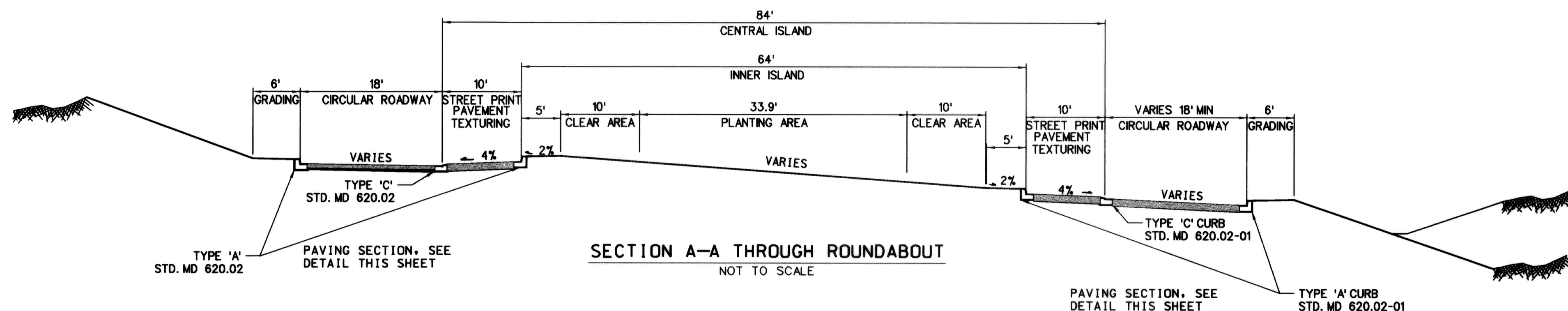
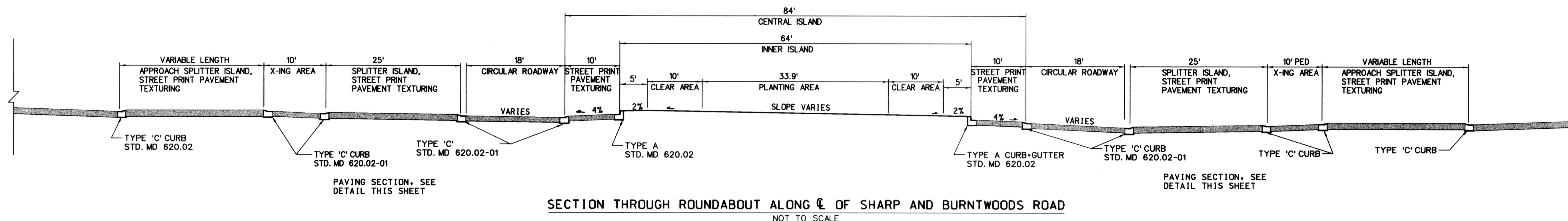
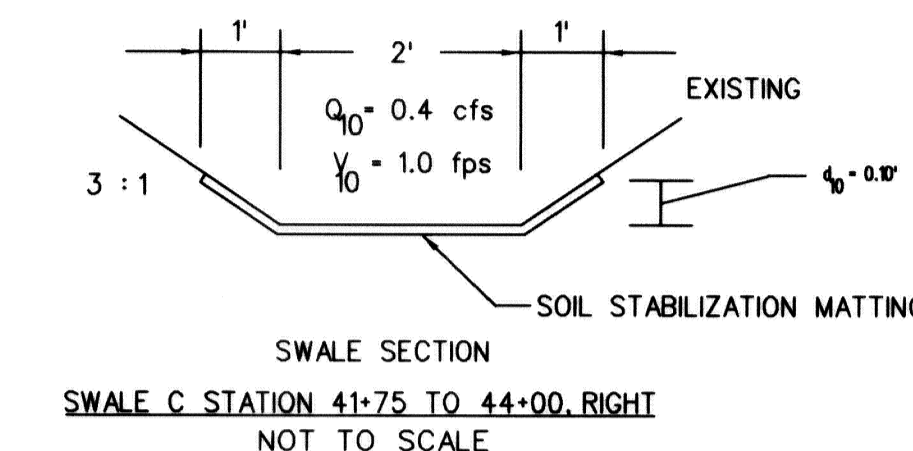
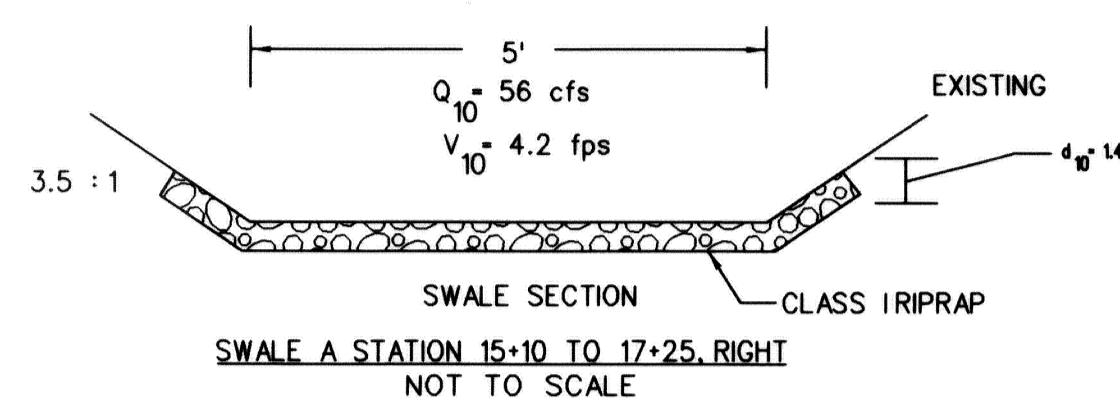
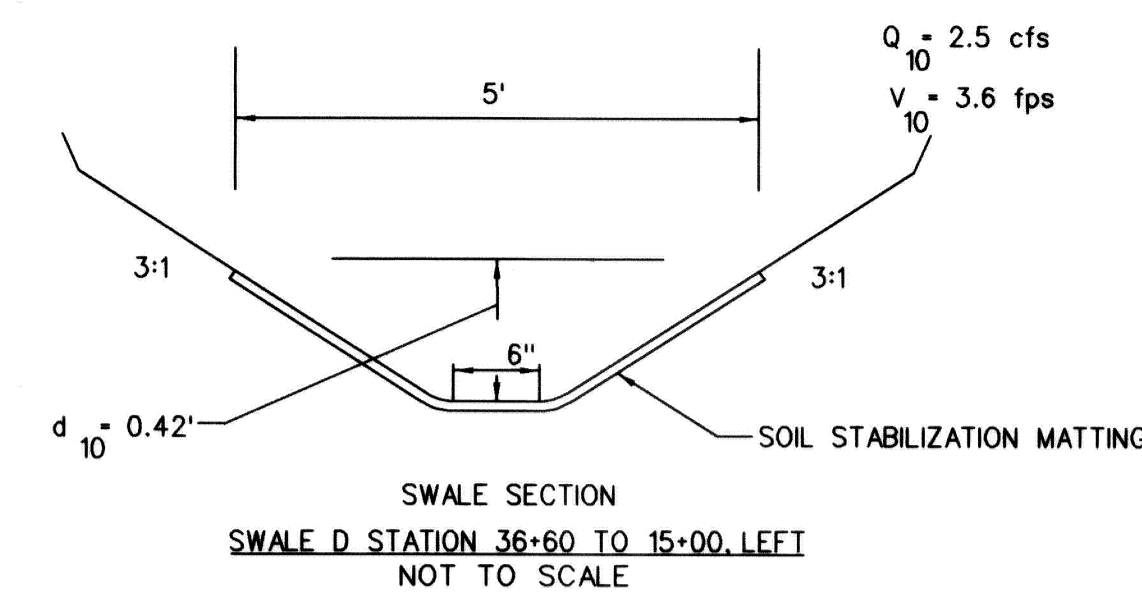
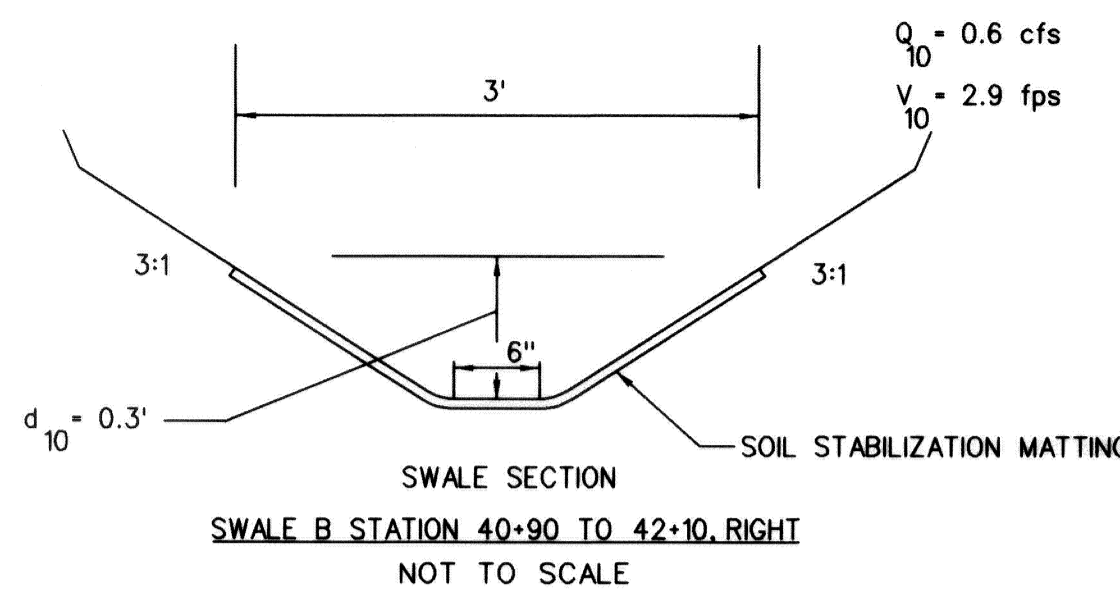
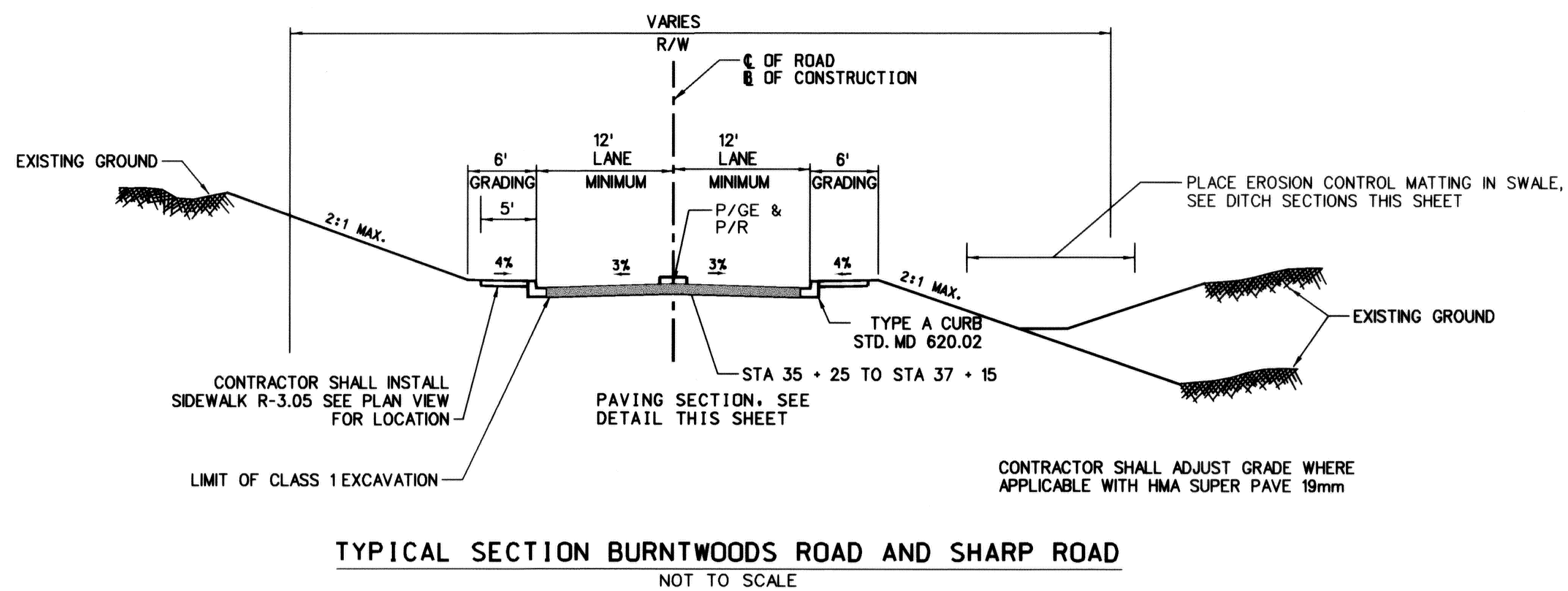
GPI Greenman-Pedersen, Inc. ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS. 10620 GULFORD RD., SUITE 100, JESSUP, MD. 20794. WASH. (301) 470-2772 BALT. (410) 880-3065 FAX: (301) 490-2649 www.gpi.com

DES: K.P. DRN: C.R. CHK: M.S.Z. DATE: 04/28/2004

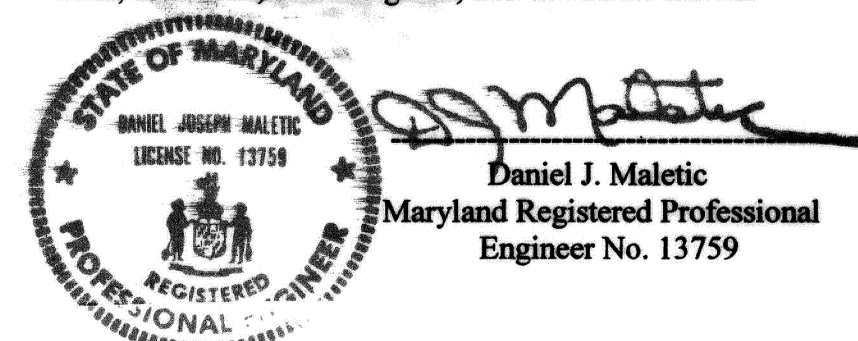
GEOMETRY SHEET. SCALE MAP NO. BLOCK NO.

BURNTWOODS ROAD ROUNDABOUT INTERSECTION IMPROVEMENTS. HOWARD COUNTY, MARYLAND. CAPITOL PROJECT NO. J-4164-02. SCALE AS SHOWN. SHEET 4 OF 26.

FILE: n:\1998\98175\98175_10\dgn\ts01brnt.dgn
DATE: 04/28/2004 01:35:27 PM



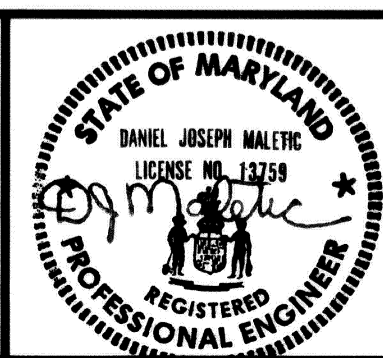
I hereby certify that to the best of my knowledge that this "As-Built" truly represents existing field conditions including but not limited to sizes, diameters, line and grade, and elevations shown.



AS-BUILT
October, 2006

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Director of Public Works: *William J. ...* 6/3/04
Chief, Bureau of Engineering: *Steve Sharan* 6/1/04
Chief, Division of Transportation and Special Projects: *Steve Sharan* 5/28/04

GPI Greenman-Pedersen, Inc.
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
10820 GUILFORD RD, SUITE 100, JESSUP, MD, 20794
WASH. (301) 470-2772 BALT. (410) 980-3055
FAX: (301) 490-2649 www.gpiinc.com



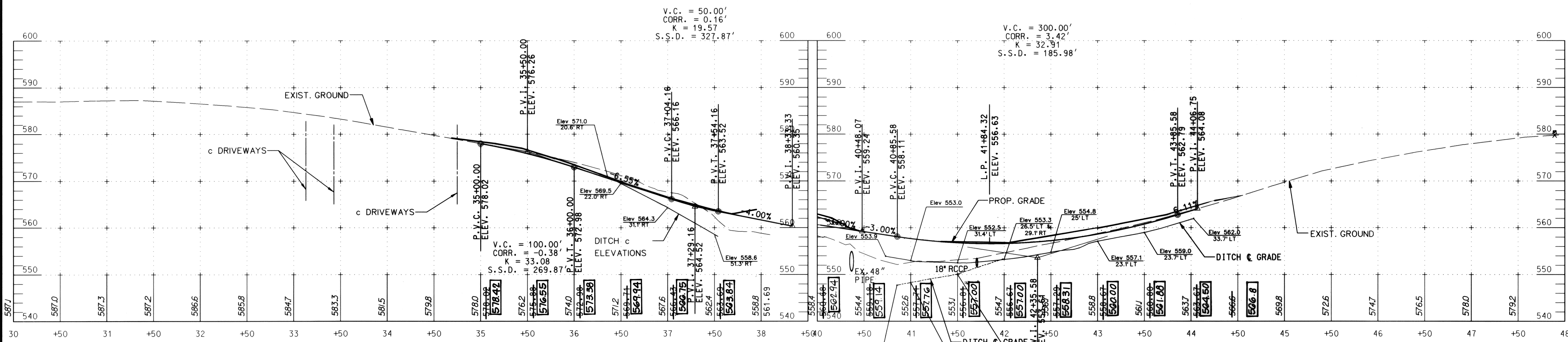
DES: K.P.					
DRN: C.R.					
CHK: M.S.Z.					
DATE: 04/28/2004	BY: NO	REVISION	DATE	SCALE MAP NO.	BLOCK NO.

TYPICAL SECTIONS

BURNTWOODS ROAD ROUNDABOUT INTERSECTION IMPROVEMENTS
HOWARD COUNTY, MARYLAND
CAPITOL PROJECT NO. J-4164-02

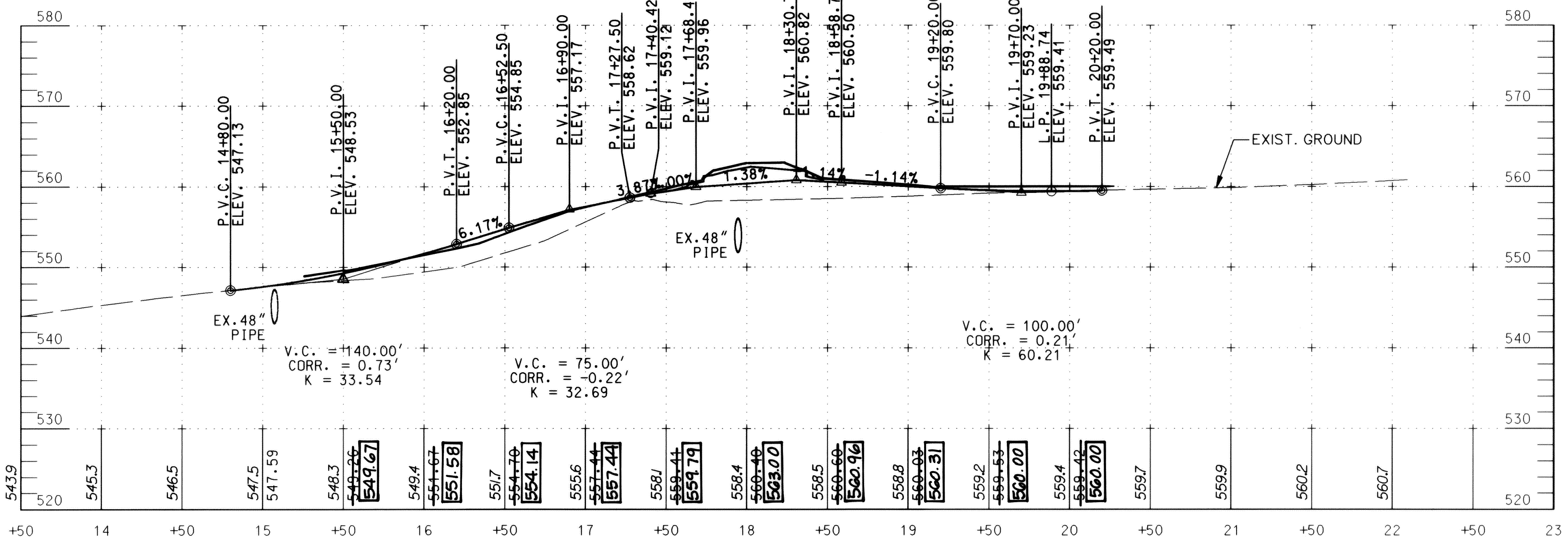
SCALE AS SHOWN
SHEET 26 OF 26

FILE: n:\1998\98175\98175_10\dgn\ts01brnt.dgn
DATE: 04/28/2004 01:35:27 PM

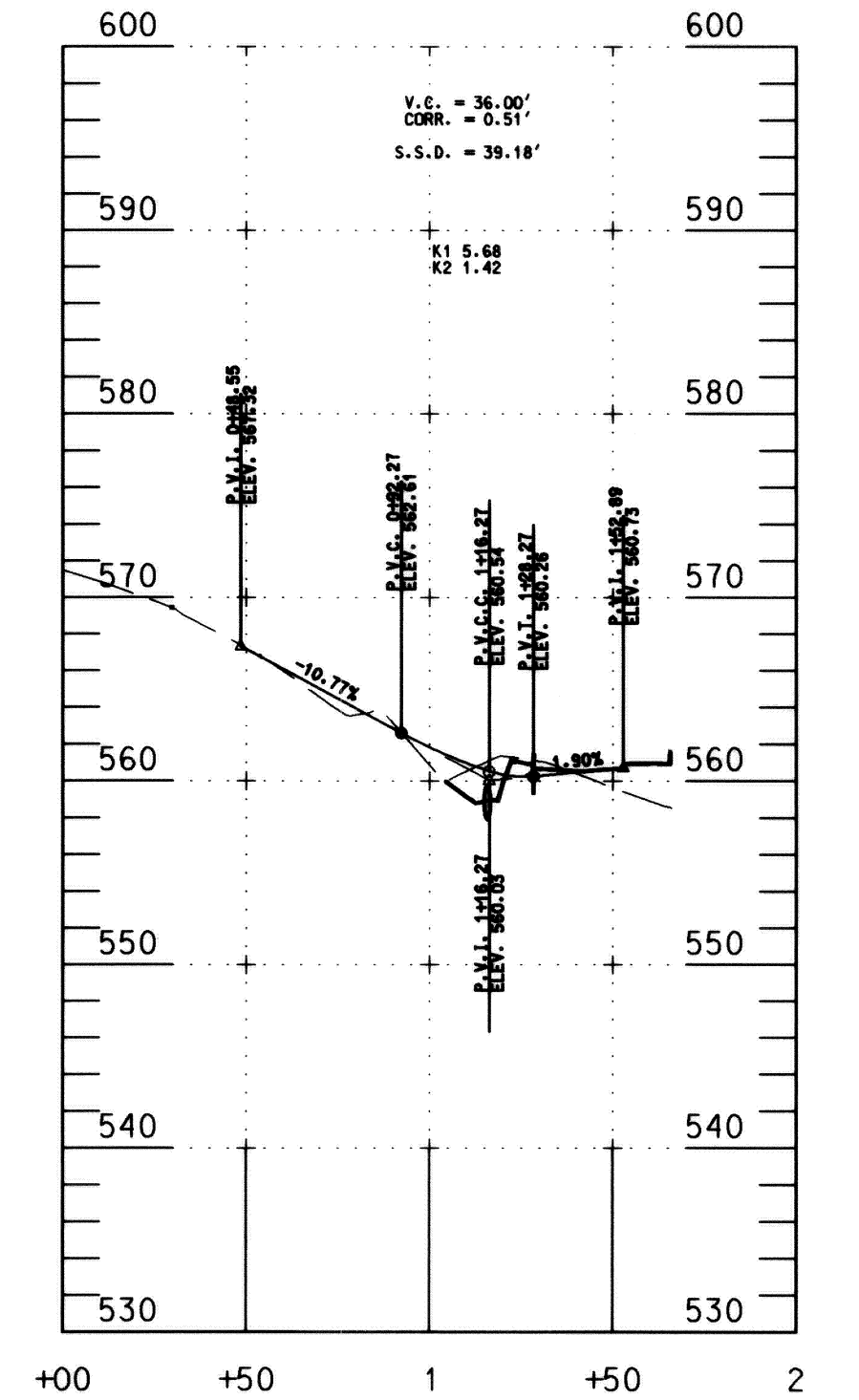


BURNTWOODS ROAD (WEST) PROFILE

BURNTWOODS ROAD (EAST) PROFILE



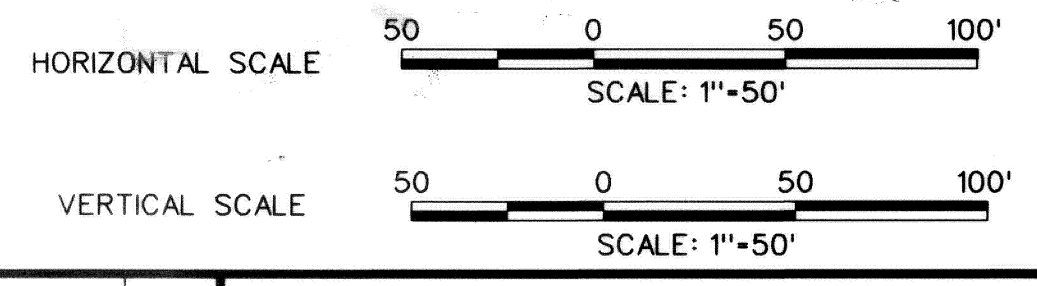
SHARP ROAD PROFILE



RELOCATED DRIVEWAY PROFILE - STATION 17± LT. SHARP ROAD
AS-BUILT
 October, 2006

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



DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Jan P. Chmura 6/1/04
 DIRECTOR OF PUBLIC WORKS DATE

Steve Shaner 5/28/04
 CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS DATE

GPI Greenman-Pedersen, Inc.
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
 10620 GUILFORD RD, SUITE 100, JESSUP, MD, 20794
 WASH. (301) 470-2772 BALT. (410) 880-3055
 FAX: (301) 480-2849 www.gpi.net

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

DES: K.P.	
DRN: C.R.	
CHK: M.S.Z.	
DATE: 04/28/2004	
BY: NO	
REVISION	
DATE	

ROADWAY PROFILES

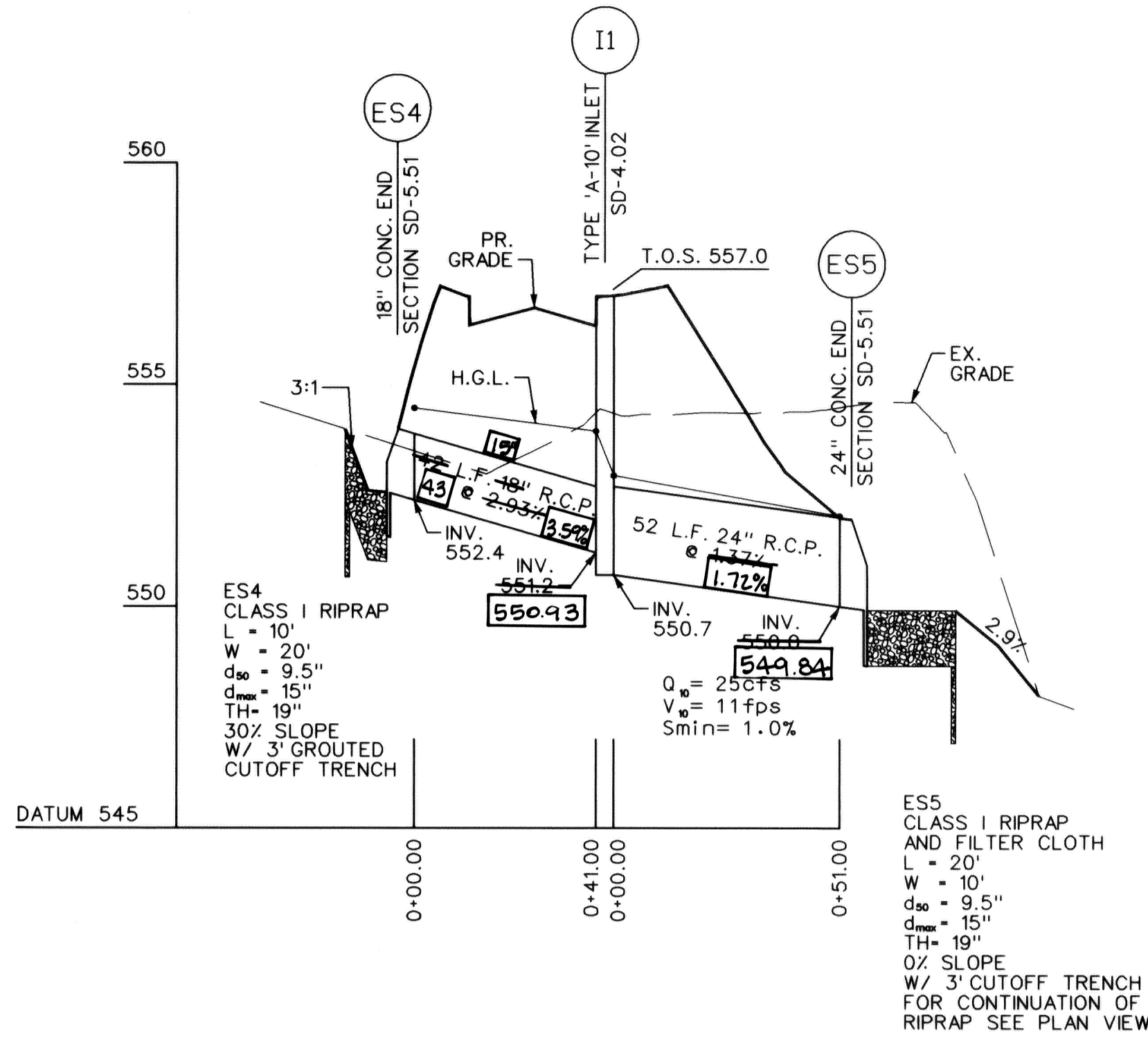
SCALE MAP NO. _____ BLOCK NO. _____

BURNTWOODS ROAD ROUNDABOUT INTERSECTION IMPROVEMENTS
 HOWARD COUNTY, MARYLAND
 CAPITOL PROJECT NO. J-4164-02

SCALE AS SHOWN
 SHEET 6 OF 26

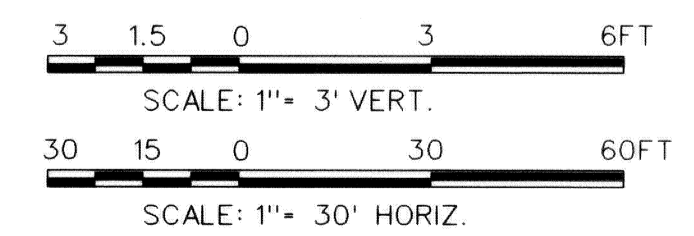
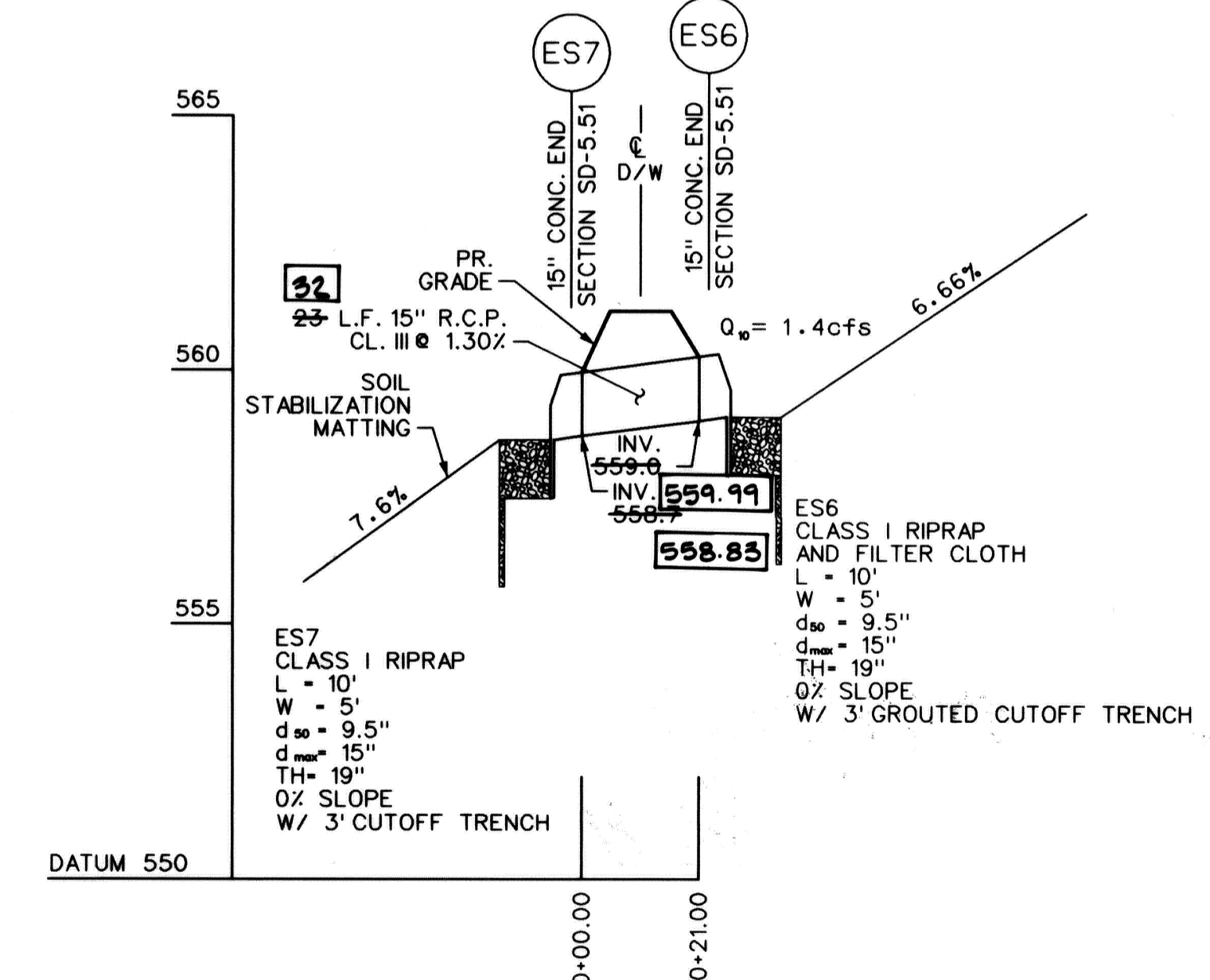
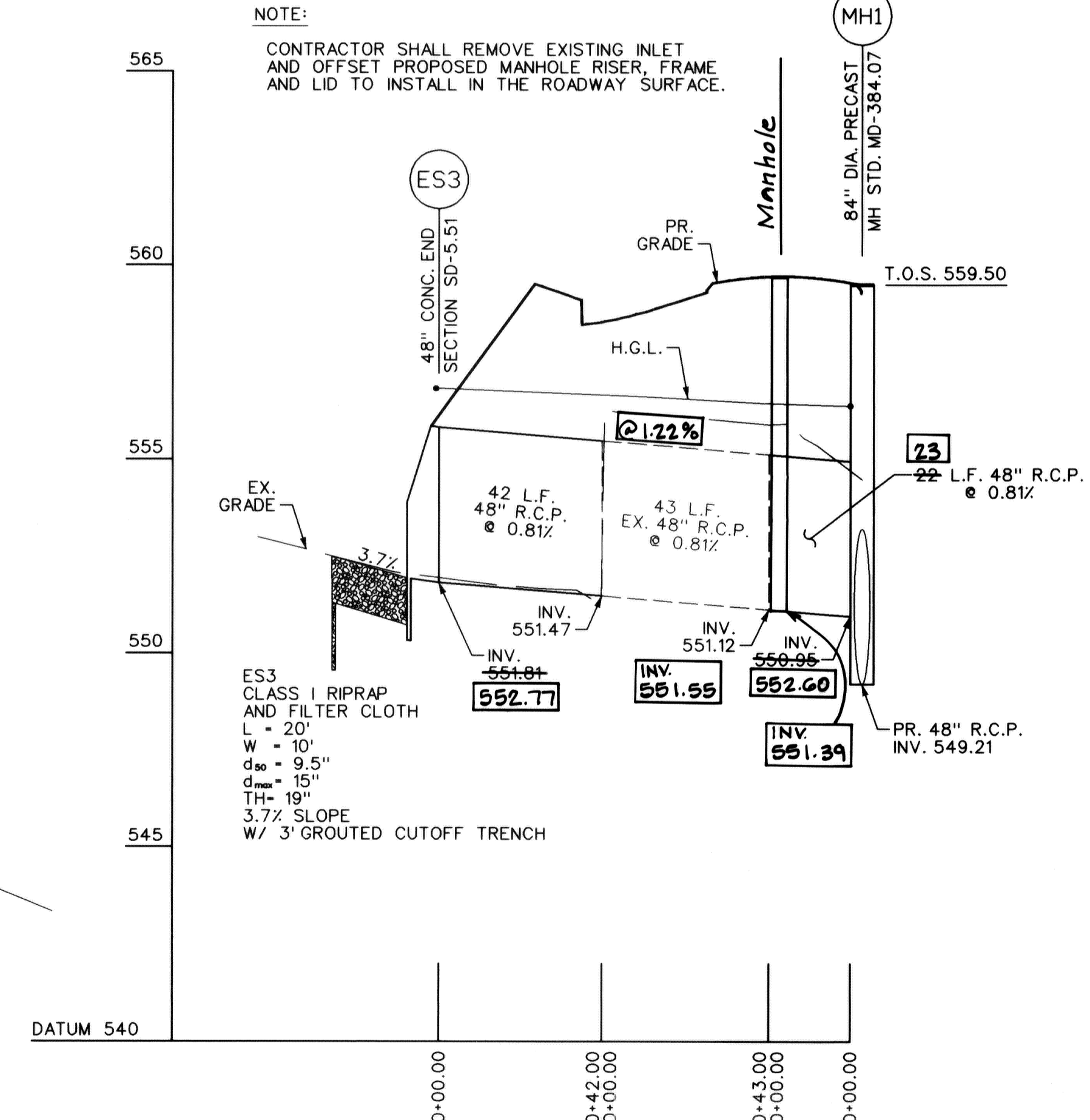
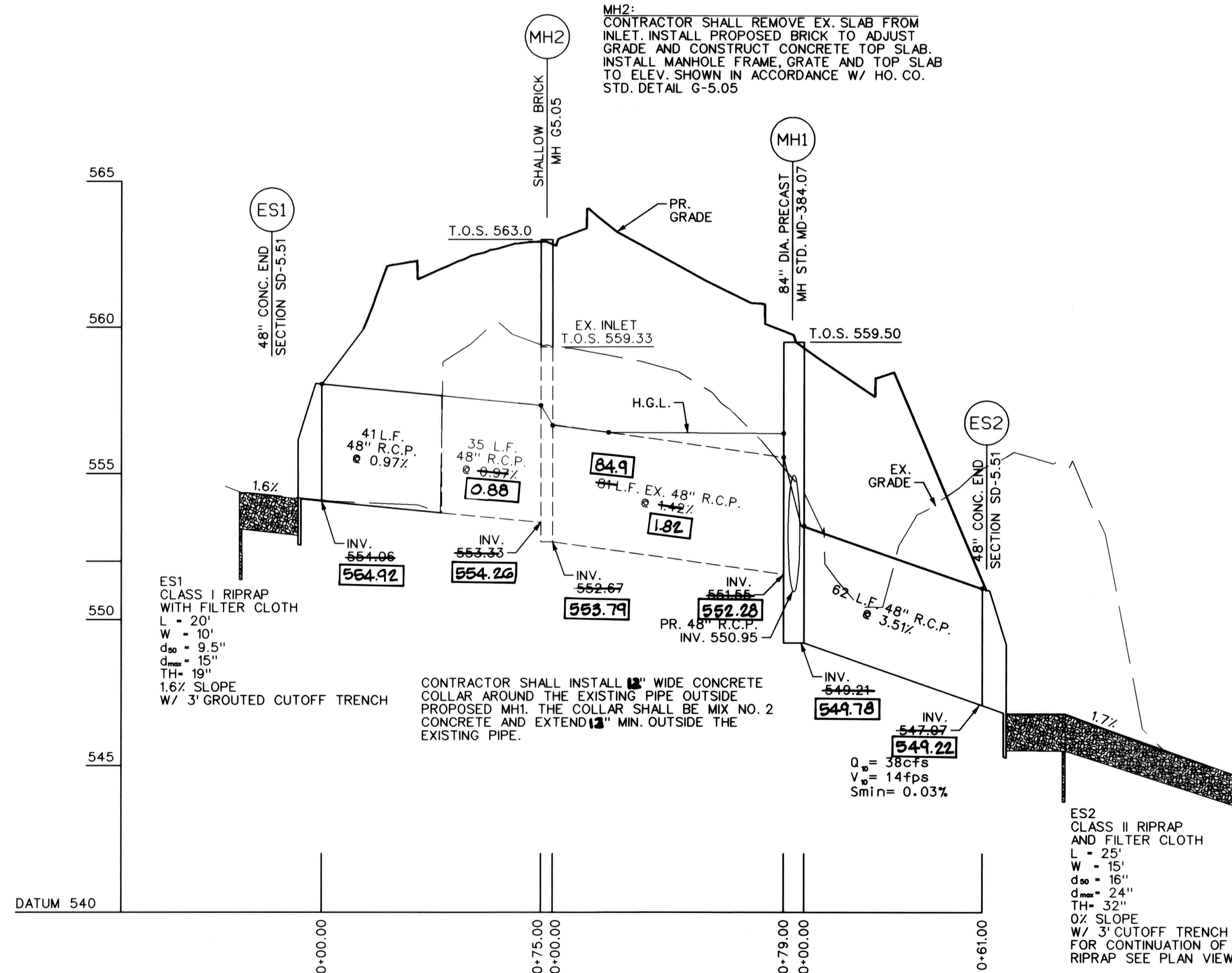
STRUCTURE SCHEDULE				
NO.	STANDARD	LOCATION	T.O.S.	INV. OUT
ES1	SD-5.51	N 583455.04 E 1366132.72	261.50	257.50
MH2	G-5.05	N 583456.00 E 1366196.94	258.20	256.73
MH1	MD 384.07	N 586728.04 E 1310717.21	559.50	549.21
ES2	SD-5.51	N 586656.67 E 1310708.55	551.07	547.07
ES3	SD-5.51	N 586807.62 E 1310823.63	556.31	551.93
ES4	SD-5.51	N 586664.34 E 1310829.31	553.90	552.40
II	SD-4.02	N 586332.02 E 1311382.85	557.00	550.70
ES5	SD-5.51	N 583336.89 E 1310750.40	552.00	550.00
ES6	SD-5.51	N 586484.80 E 1311208.46	560.30	559.00
ES7	SD-5.51	N 586456.54 E 1311203.92	559.95	558.70

PIPE SCHEDULE			
FROM	TO	TYPE	LENGTH
ES4	II	15" R.C.P. CL. IV	42 L.F.
II	ES5	24" R.C.P. CL. III	52 L.F.
ES1	EX. PIPE	48" R.C.P. CL. III	41 L.F.
MH1	ES2	48" R.C.P. CL. IV	62 L.F.
ES3	EX. PIPE	48" R.C.P. CL. III	42 L.F.
EX. PIPE	MH1	48" R.C.P. CL. III	22 L.F.
ES7	ES6	15" R.C.P. CL. III	23 L.F.

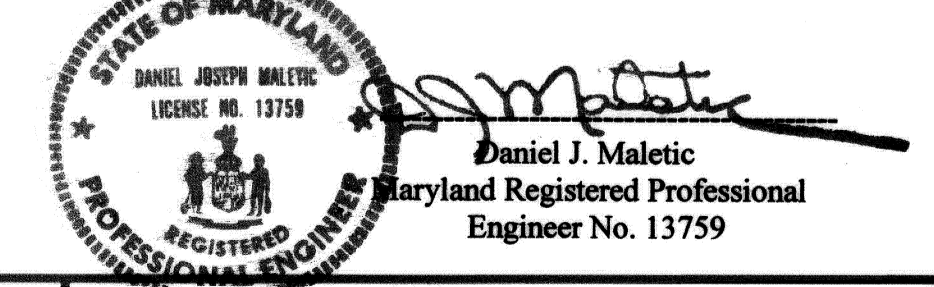


UTILITY NOTES:

- APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SUPPLY. DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES (NORTH AMERICAN DATUM 1983 (NAD 83)).
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 2'-0" MINIMUM OR TUNNEL AS REQUIRED. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF POLES.
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAIL FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
- 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 BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-7450 AT LEAST FIVE (5) WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD.



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
October, 2006

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 6/3/04
Chief, Bureau of Engineering: *[Signature]* 6/1/04
Chief, Bureau of Highways: *[Signature]* 5-22-04
Chief, Division of Transportation and Special Projects: *[Signature]* 5/28/04

GPI Greenman-Pedersen, Inc.
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
10620 GULFORD RD, SUITE 100, JESSUP, MD, 20794
WASH. (301) 470-2772 BALT. (410) 880-3055
FAX: (301) 480-2649 www.gpinc.com

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

DES: K.P.			
DRN: C.R.			
CHK: M.S.Z.			
DATE: 04/28/2004	BY: NO	REVISION:	DATE:

DRAINAGE PROFILES

SCALE MAP NO. _____ BLOCK NO. _____

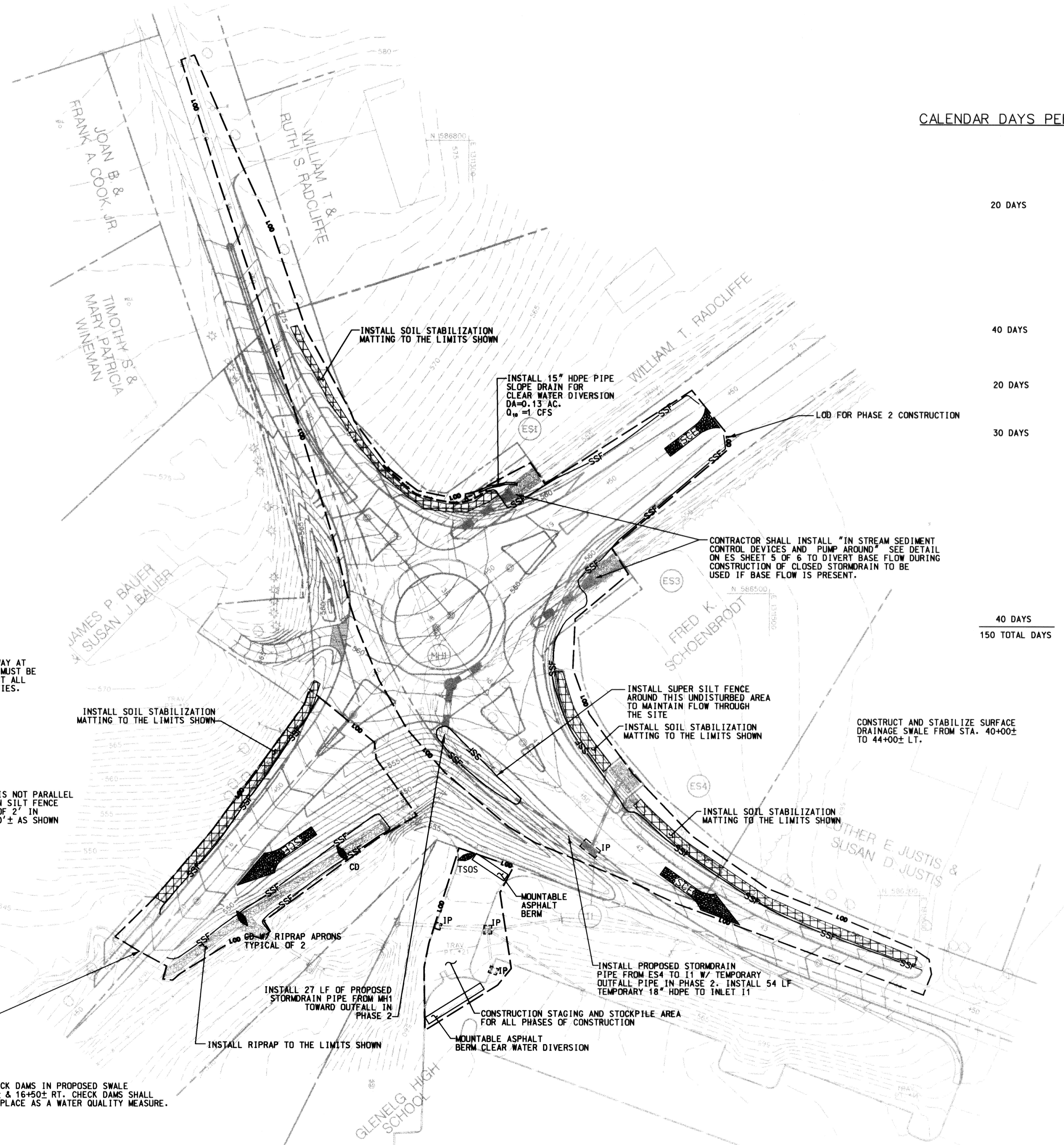
BURNTWOODS ROAD ROUNDABOUT
INTERSECTION IMPROVEMENTS

HOWARD COUNTY, MARYLAND
CAPITOL PROJECT NO. J-4164-02

SCALE AS SHOWN

SHEET 7 OF 26

FILE: n:\1998\98175\98175.10\dgn\Sec2brnt.dgn
DATE: 04/28/2004 01:37:35 PM



CALENDAR DAYS PER PHASE

20 DAYS
40 DAYS
20 DAYS
30 DAYS
40 DAYS
150 TOTAL DAYS

SEQUENCE OF CONSTRUCTION

- Phase 1**
- 1) OBTAIN GRADING PERMIT. THE MDE TRACKING NO. IS 03-NI-0121/200362873
 - 2) CONTACT THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR 48 HOURS PRIOR TO START OF WORK. INFORM THE INSPECTOR OF THE STARTING DATE.
 - 3) INSTALL ALL PERIMETER CONTROLS
 - 4) CONSTRUCT & STABILIZE SURFACE DRAINAGE DITCHES. STABILIZE ROADSIDE SWALES WITH SOIL STABILIZATION MATTING AND INSTALL SSF BETWEEN THE DRAINAGE SWALS AND ROADWAY
 - 5) CONSTRUCT & STABILIZE PHASE 1 PAVEMENT SECTION & SHOULDER REGRADING.
- Phase 2**
- 6) IMPLEMENT DETOUR AND ROAD CLOSURE. INSTALL STABILIZED CONSTRUCTION ENTRANCES.
 - 7) INSTALL INSTREAM DIVERSION IF NECESSARY TO PUMP AROUND BASE FLOW AND CONSTRUCT PHASE 2 PORTION OF THE STORMDRAIN SYSTEM AS SHOWN ON THE PHASE 2 TRAFFIC CONTROL PLAN. INSTALLATION OF THE PIPE MAY NOT BEGIN WITHOUT THE APPROVAL OF THE SEDIMENT AND EROSION CONTROL INSPECTOR AND THERE IS A FORECAST FOR 5 CONSECUTIVE DAYS WITH NO RAIN FROM THE NATIONAL WEATHER SERVICE. INSTALL TEMPORARY DRAINAGE PIPE FROM I1.
 - 8) GRADE ROADSIDE SWALES AND STABILIZE WITH SOIL STABILIZATION MATTING AND SUPER SILT FENCE.
 - 9) INSTALL PHASE 2 PORTION OF THE ROUNDABOUT AS SHOWN ON THE PHASE 2 TRAFFIC CONTROL PLAN WHILE CLEAN WATER IS DIRECTED INTO CLOSED STORMDRAIN SYSTEM THROUGH THE WORK AREA.
- Phase 3**
- 10) WITH PERIMETER SEDIMENT CONTROL DEVICES STILL IN PLACE CONSTRUCT PHASE 3 PORTION OF THE WORK AS SHOWN ON THE PHASE 3 TRAFFIC CONTROL PLAN.
 - 11) COMPLETE PHASE 3a TRANSITION AREA.
 - 12) COMPLETE NORTH AND SOUTH APPROACH OF BURNTWOODS ROAD IN PHASE 3b.
- Phase 4**
- 13) WITH PERIMETER SEDIMENT CONTROL DEVICES STILL IN PLACE CONSTRUCT PHASE 4 PORTION OF THE WORK AS SHOWN ON THE PHASE 4 TRAFFIC CONTROL PLAN.
 - 14) COMPLETE PHASE 4a TRANSITION AREA.
 - 15) COMPLETE NORTH AND SOUTH APPROACH WIDENING OF BURNTWOODS ROAD IN PHASE 4b.
- Phase 5**
- 16) CONSTRUCT & STABILIZE SURFACE DRAINAGE DITCHES. STABILIZE ROADSIDE SWALES WITH SOIL STABILIZATION MATTING AND INSTALL SSF BETWEEN THE DRAINAGE SWALE AND ROADWAY. FROM THE BAUER DRIVEWAY TO STA. 35+50 RT. DOWNSTREAM TO UPSTREAM THIS AREA SHALL BE STABILIZED THE SAME WORK DAY AS WORK PROGRESSES. WITH PERIMETER SEDIMENT CONTROL DEVICES STILL IN PLACE CONSTRUCT PHASE 5 PORTION OF THE WORK.
 - 17) WITH PERIMETER SEDIMENT CONTROL DEVICES STILL IN PLACE CONSTRUCT PHASE 5 PORTION OF THE WORK. ONCE THE ROUNDABOUT IS FUNCTIONAL, COMPLETE THE REMAINING CONCRETE CURB & GUTTER AND ISLAND INSTALLATION.
 - 18) GRADE AND STABILIZE THE SHOULDER WEST OF BURNTWOODS ROAD, DOWNSTREAM TO UPSTREAM, FROM THE JAMES BAUER DRIVEWAY TO STA. 35+50 RT. THIS AREA SHALL BE STABILIZED AT THE END OF EACH DAY AS WORK PROGRESSES.
 - 19) STABILIZE ROADSIDE SWALES STA. 40+50 TO 44+00 WITH SOIL STABILIZATION MATTING AND INSTALL SSF BETWEEN THE DRAINAGE SWALE AND ROADWAY.
 - 20) REMOVE EXISTING PAVEMENT, GRADE AND STABILIZE THE SHOULDER FROM 40+50 TO 44+00 RT. OF BURNTWOODS ROAD. INSTALL INSTREAM DIVERSION TO PUMP AROUND BASE FLOW DURING COMPLETION OF CLOSED STORMDRAIN SYSTEM FROM ES5 TO I1 AND THE REMAINDER OF PIPE BETWEEN ES2 AND MH1 STABILIZED AT THE END OF EACH DAY AS WORK PROGRESSES.
 - 21) AFTER RECEIVING APPROVAL FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL PERIMETER CONTROLS (ALL CHECK DAMS TO REMAIN AS WATER QUALITY CONTROLS)

NOTE: ACCESS TO THE DRIVEWAY AT THE BAUER RESIDENCE MUST BE MAINTAINED THROUGHOUT ALL CONSTRUCTION ACTIVITIES.

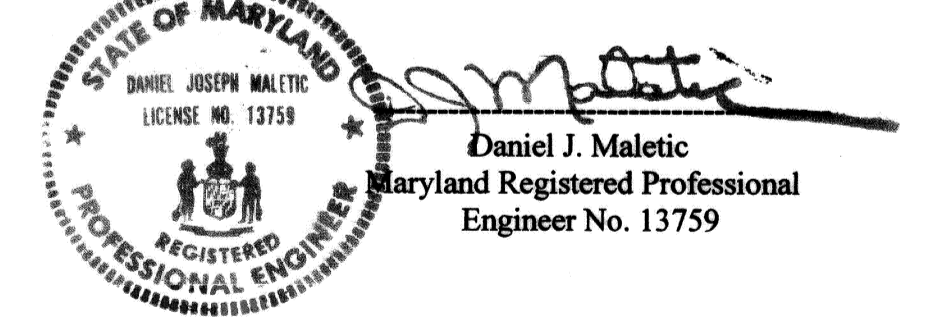
WHERE SILT FENCE IS NOT PARALLEL TO A CONTOUR, TURN SILT FENCE UPHILL A MINIMUM OF 2' IN ELEVATION EVERY 50' ± AS SHOWN

CONTRACTOR SHALL INSTALL "IN STREAM SEDIMENT CONTROL DEVICES AND PUMP AROUND" SEE DETAIL ON ES SHEET 5 OF 6 TO DIVERT BASE FLOW DURING CONSTRUCTION OF CLOSED STORMDRAIN TO BE USED IF BASE FLOW IS PRESENT.

CONSTRUCT AND STABILIZE SURFACE DRAINAGE SWALE FROM STA. 40+00± TO 44+00± LT.

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. CLOSE ALL SILT FENCE & SUPER SILT FENCE OVER ENDWALLS AND HEADWALLS.
4. ALTHOUGH ULTIMATE GRADES ARE SHOWN, GRADING IS LIMITED TO WITHIN LOD OF EACH PHASE ONLY, TO BE PERMANENTLY STABILIZED BEFORE MOVING TO THE NEXT PHASE.

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.



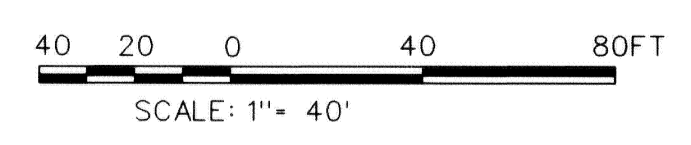
AS-BUILT
October, 2006

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

John Hym / 05 5/24/06
Natural Resources Conservation Service Date

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

Shawn / 06 5/24/06
Howard Soil Conservation District Date

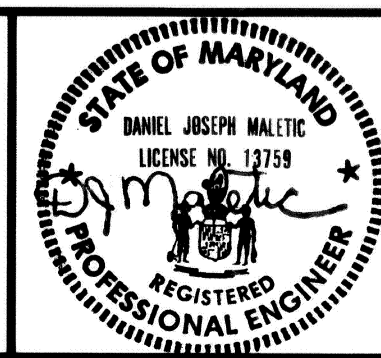


DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Ray 6/3/04
DIRECTOR OF PUBLIC WORKS DATE

Steve Sharav 5/28/04
CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS DATE

GPI Greenman-Pedersen, Inc.
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
10620 GUILFORD RD. SUITE 100, JESSUP, MD. 20794
WASH. (301) 470-2772 BALT. (410) 880-3055
FAX (301) 490-2649 www.gpi.net



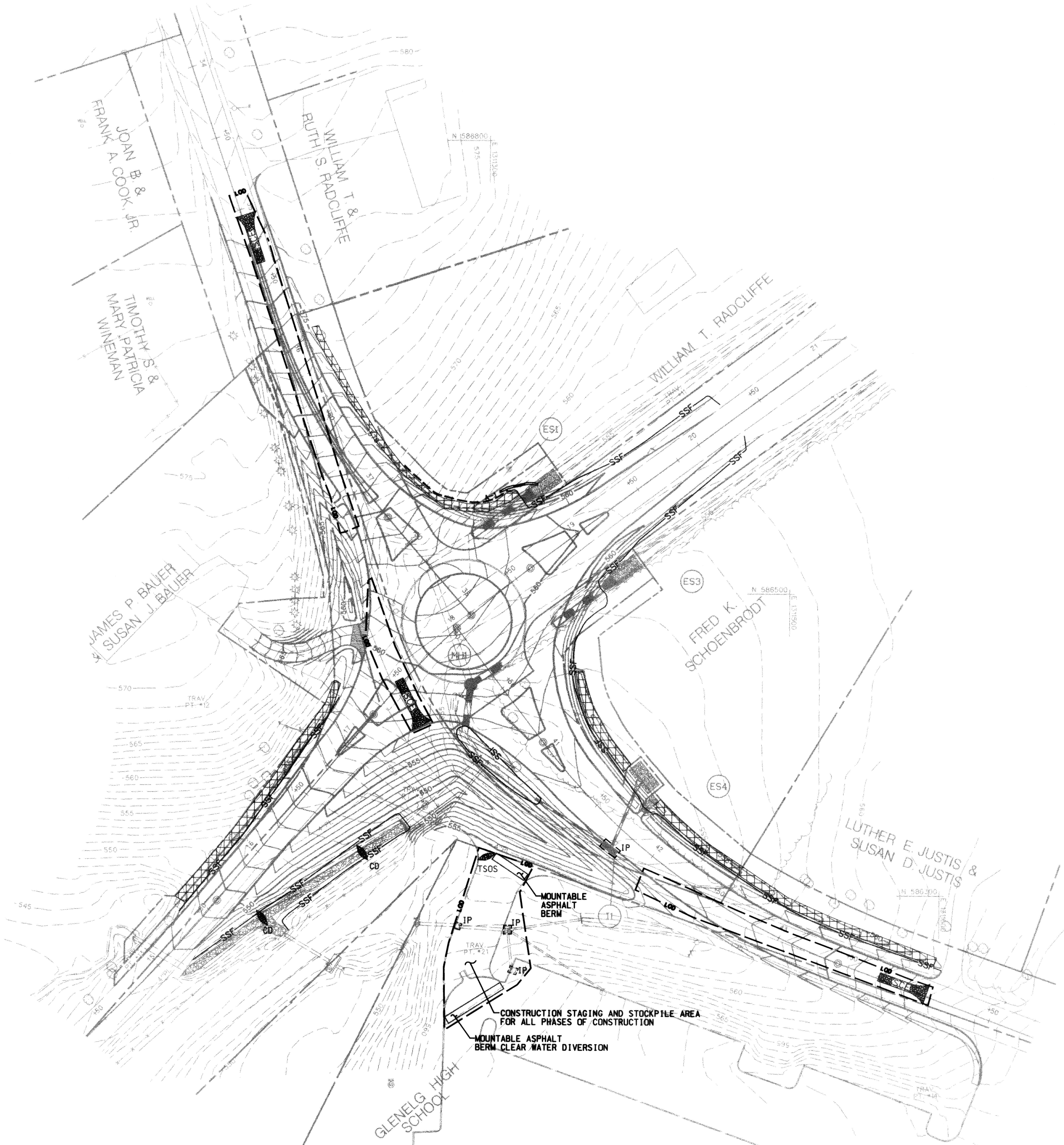
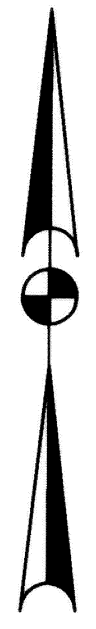
DES: K.P.					
DRN: C.R.					
CHK: M.S.Z.					
DATE: 04/28/2004	BY: NO	REVISION	DATE	SCALE MAP NO.	BLOCK NO.

PHASES 1 & 2
SEDIMENT AND EROSION
CONTROL PLAN

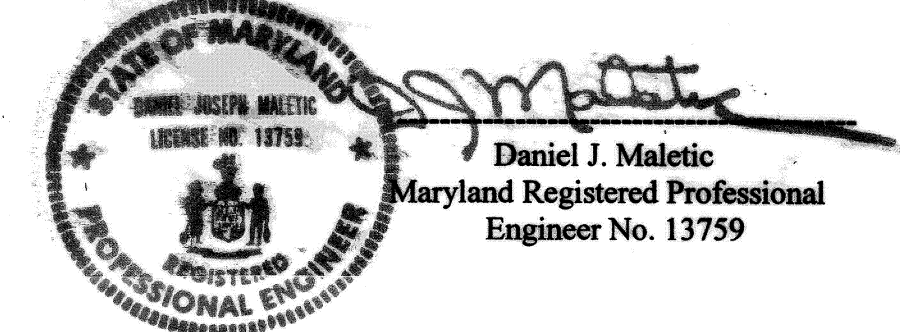
BURNTWOODS ROAD ROUNDABOUT
INTERSECTION IMPROVEMENTS
HOWARD COUNTY, MARYLAND
CAPITOL PROJECT NO. J-4164-02

FILE: n:\1998\98175\98175.10\dgn\Sec2brnt.dgn
DATE: 04/28/2004 01:37:35 PM

FILE: n:\1998\98175\98175_10\dgn\Sec3brnt.dgn
 DATE: 04/28/2004 01:37:55 PM



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
 October, 2006

40 20 0 40 80 FT
 SCALE: 1" = 40'

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

Jim Myer / CS 5/28/04
 U.S. Natural Resources Conservation Service Date

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

Steve Shavar 5/28/04
 Date

Howards Soil Conservation District

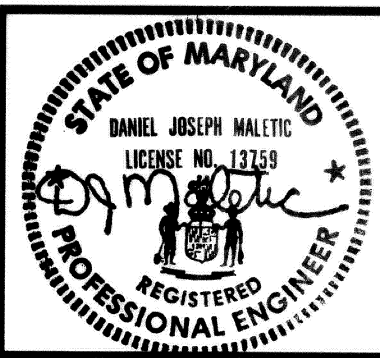
DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

John Z. Walsh 6/3/04
 DIRECTOR OF PUBLIC WORKS DATE

Steve Shavar 6/1/04
 CHIEF, BUREAU OF ENGINEERING DATE

Steve Shavar 5/28/04
 CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS DATE

GPI Greenman-Pedersen, Inc.
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
 10020 GUILFORD RD. SUITE 100, JESSUP, MD. 20794
 WASH. (301) 470-2772 BALT. (410) 980-3065
 FAX: (301) 480-2649 www.gpi.net.com



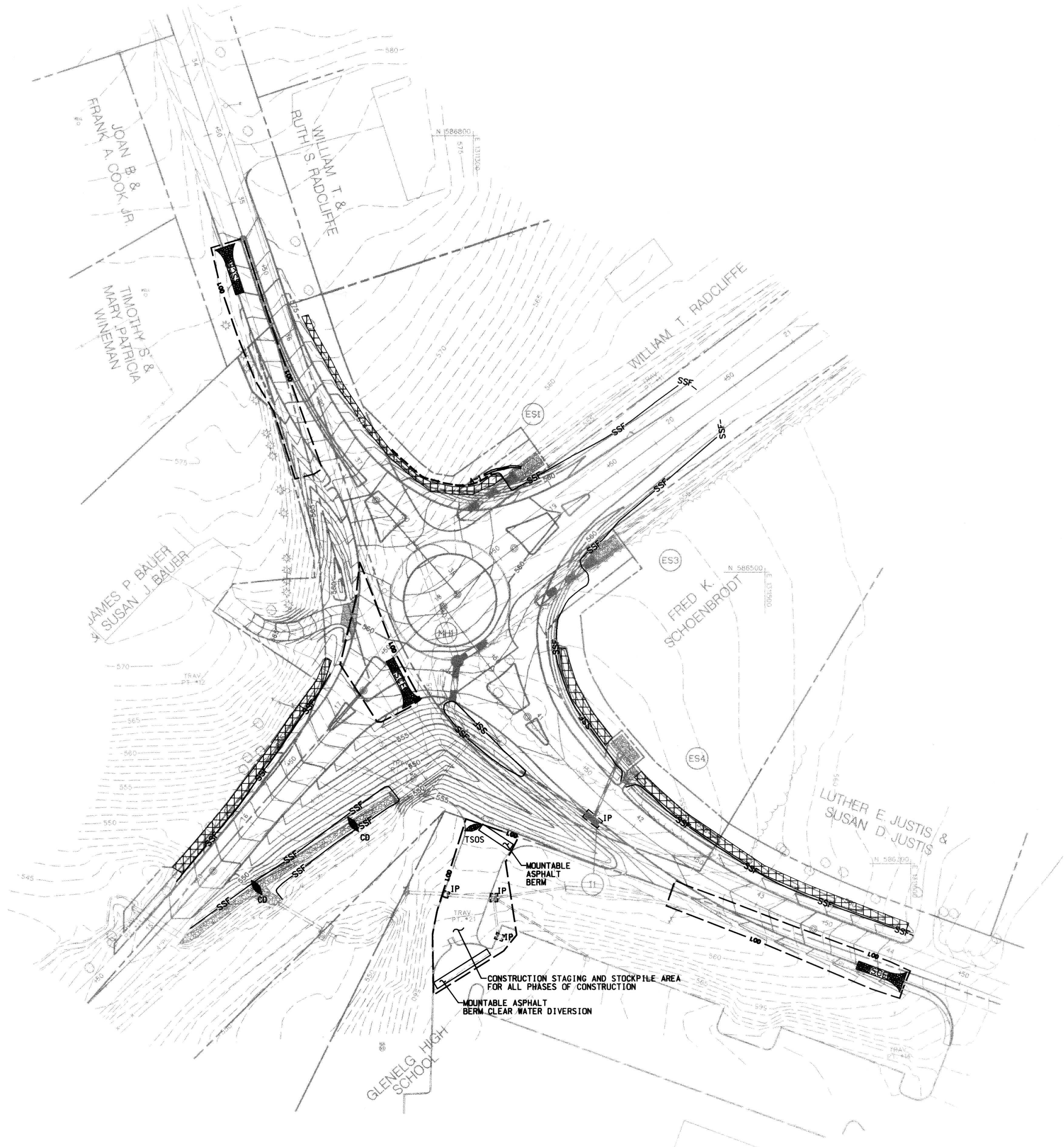
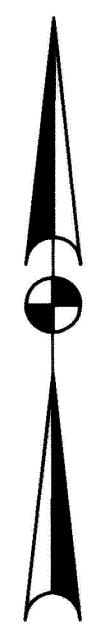
DES: K.P.					
DRN: C.R.					
CHK: M.S.Z.					
DATE: 04/28/2004	BY: NO	REVISION	DATE	SCALE MAP NO.	BLOCK NO.

PHASE 3
 SEDIMENT AND EROSION
 CONTROL PLAN

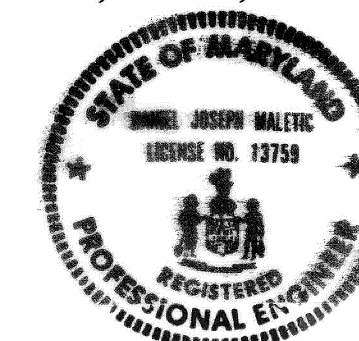
**BURNTWOODS ROAD ROUNDABOUT
 INTERSECTION IMPROVEMENTS**
 HOWARD COUNTY, MARYLAND
 CAPITOL PROJECT NO. J-4164-02

ES 2 OF 6
 SCALE AS SHOWN
 SHEET 9 OF 26

FILE: n:\1998\98175\98175_10\dgn\Sec3brnt.dgn
 DATE: 04/28/2004 01:37:55 PM



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

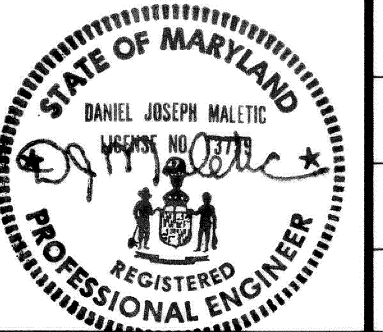
AS-BUILT
 October, 2006

40 20 0 40 80FT
 SCALE: 1" = 40'

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
Jim Hynes 5/20/04
 U.S. Natural Resource Conservation Service Date
 THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Steve St... 5/20/04
 Howard Soil Conservation District Date

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Director of Public Works: *La...* 6/1/04
 Chief, Bureau of Engineering: *Steve Sharar* 5/28/04
 Chief, Bureau of Highways: *Steve Sharar* 5/28/04
 Chief, Division of Transportation and Special Projects: *Steve Sharar* 5/28/04

GPI Greenman-Pedersen, Inc.
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
 10620 GUILDFORD RD., SUITE 100, JESSUP, MD, 20794
 WASH. (301) 470-2772 BALT. (410) 880-3065
 FAX: (301) 480-2649 www.gpi.com

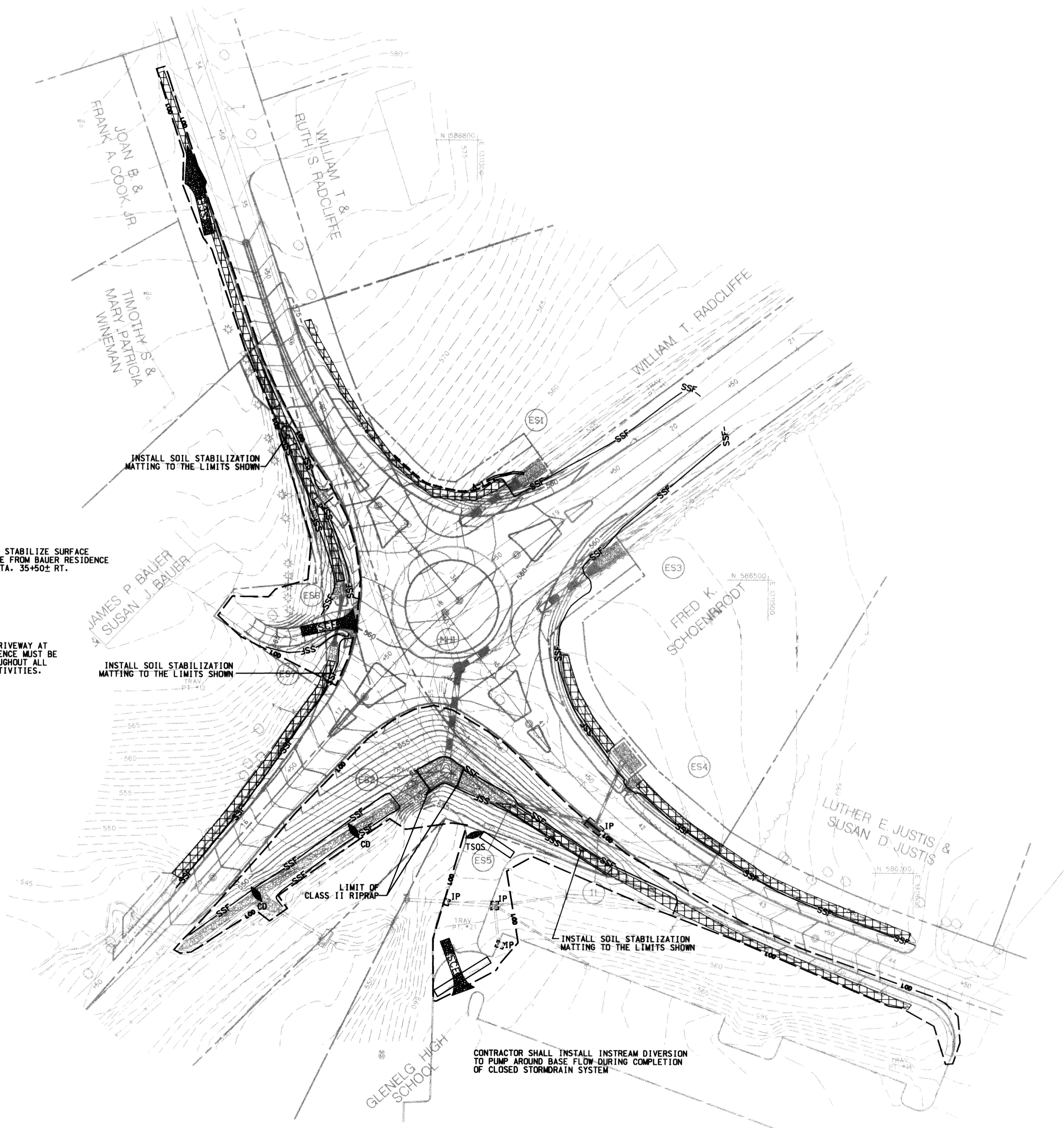


DES: K.P.					
DRN: C.R.					
CHK: M.S.Z.					
DATE: 04/28/2004	BY: NO	REVISION	DATE	SCALE MAP NO.	BLOCK NO.

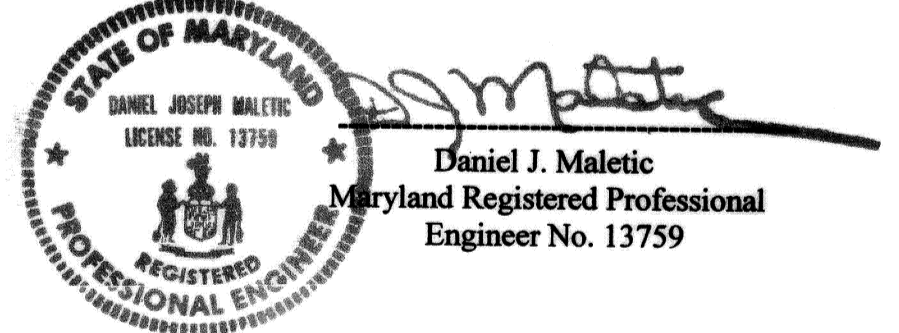
PHASE 4
 SEDIMENT AND EROSION
 CONTROL PLAN

BURNTWOODS ROAD ROUNDABOUT
 INTERSECTION IMPROVEMENTS
 HOWARD COUNTY, MARYLAND
 CAPITOL PROJECT NO. J-4164-02

FILE: n:\1998\98175\98175.10\dgn\Sec5brnt.dgn
 DATE: 04/28/2004 01:38:32 PM



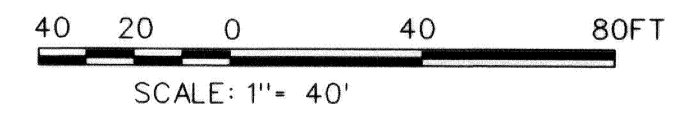
I hereby certify that to the best of my knowledge that this "As-Built" truly represents existing field conditions including but not limited to sizes, diameters, line and grade, and elevations shown.



AS-BUILT
 October, 2006

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
Jim Meyer / us. 5/22/06
 U.S. Natural Resources Conservation Service Date

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Steve Spolter
 Howard Soil Conservation District Date

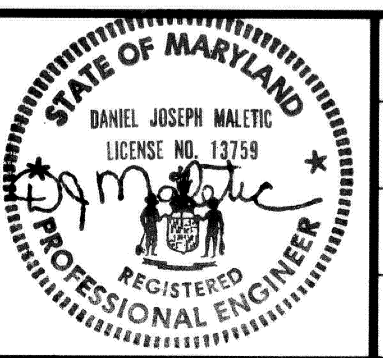


DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Jan P. ... 6/3/04
 DIRECTOR OF PUBLIC WORKS DATE

Steve Sharon 5/22/04
 CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS DATE

GPI Greenman-Pedersen, Inc.
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
 10620 GULFORD RD, SUITE 100, JESSUP, MD, 20794
 WASH. (301) 470-2772 BALT. (410) 880-3065
 FAX: (301) 490-2649 www.gpinc.com



DES: K.P.					
DRN: C.R.					
CHK: M.S.Z.					
DATE: 04/28/2004	BY: NO	REVISION:	DATE:	SCALE MAP NO.:	BLOCK NO.:

PHASE 5
 SEDIMENT AND EROSION
 CONTROL PLAN

BURNTWOODS ROAD ROUNDABOUT
 INTERSECTION IMPROVEMENTS
 HOWARD COUNTY, MARYLAND
 CAPITOL PROJECT NO. J-4164-02

ES 4 OF 6
 SCALE AS SHOWN
 SHEET 11 OF 26

FILE: n:\1998\98175\98175.10\dgn\Sec5brnt.dgn
 DATE: 04/28/2004 01:38:32 PM

FILE: n:\1998\98175\98175_10\dgn\es02brnt.dgn
DATE: 04/28/2004 01:39:29 PM

INCREMENTAL STABILIZATION - CUT SLOPES

INCREMENTAL STABILIZATION - CUT SLOPES

- ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 15'.
- CONSTRUCTION SEQUENCE (REFER TO FIGURE 3 BELOW):
 - EXCAVATE AND STABILIZE ALL TEMPORARY SWALES, SIDE DITCHES, OR BERMS THAT WILL BE USED TO CONVEY RUNOFF FROM THE EXCAVATION.
 - PERFORM PHASE 1 EXCAVATION, DRESS, AND STABILIZE.
 - PERFORM PHASE 2 EXCAVATION, DRESS, AND STABILIZE. OVERSEED PHASE 1 AREAS AS NECESSARY.
 - PERFORM FINAL PHASE EXCAVATION, DRESS, AND STABILIZE. OVERSEED PREVIOUSLY SEEDED AREAS AS NECESSARY.

NOTE: ONCE EXCAVATION HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF TEMPORARY STABILIZATION.

FIGURE 4 - INCREMENTAL STABILIZATION - CUT

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 G - 20 - 6

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

DETAIL 33 - SUPER SILT FENCE

NOTE: FENCE POST SPACING SHALL NOT EXCEED 10' CENTER TO CENTER

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 wire, brace and truss rods, drive anchors and post caps are not required except on 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 6" and folded.
- Maintenance shall be performed as needed and silt buildup 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 ² /minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE H - 26 - 3

EROSION CONTROL MATTING

Construction Specifications

- Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".
- Staple the 4" overlap in the channel center using an 18" spacing between staples.
- Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
- Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.
- Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.
- The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

Note: If flow will enter from the edge of the matting then the area affected by the flow must be keyed-in.

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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE G - 22 - 2A

DETAIL 30 - EROSION CONTROL MATTING

CROSS-SECTION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE G - 22 - 2

FILE: n:\1998\98175\98175_10\dgn\es02brnt.dgn
DATE: 04/28/2004 01:39:29 PM

INCREMENTAL STABILIZATION - FILL SLOPES

INCREMENTAL STABILIZATION OF EMBANKMENTS - FILL SLOPES

- EMBANKMENTS SHALL BE CONSTRUCTED IN LIFTS AS PRESCRIBED ON THE PLANS.
- SLOPES SHALL BE STABILIZED IMMEDIATELY WHEN THE VERTICAL HEIGHT OF THE MULTIPLE LIFTS REACHES 15', OR WHEN THE GRADING OPERATION CEASES AS PRESCRIBED IN THE PLANS.
- AT THE END OF EACH DAY, TEMPORARY BERMS AND PIPE SLOPE DRAINS SHOULD BE CONSTRUCTED ALONG THE TOP EDGE OF THE EMBANKMENT TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER TO A SEDIMENT TRAPPING DEVICE.
- CONSTRUCTION SEQUENCE: REFER TO FIGURE 4 (BELOW).
 - EXCAVATE AND STABILIZE ALL TEMPORARY SWALES, SIDE DITCHES, OR BERMS THAT WILL BE USED TO DIVERT RUNOFF AROUND THE FILL. CONSTRUCT SLOPE SILT FENCE ON LOW SIDE OF FILL AS SHOWN IN FIGURE 5, UNLESS OTHER METHODS SHOWN ON THE PLANS ADDRESS THIS AREA.
 - PLACE PHASE 1 EMBANKMENT, DRESS AND STABILIZE.
 - PLACE PHASE 2 EMBANKMENT, DRESS AND STABILIZE.
 - PLACE FINAL PHASE EMBANKMENT, DRESS AND STABILIZE. OVERSEED PREVIOUSLY SEEDED AREAS AS NECESSARY.

NOTE: ONCE THE PLACEMENT OF TILL HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOP SOIL (IF REQUIRED) AND PERMANENT SEED AND ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

FIGURE 5 - INCREMENTAL STABILIZATION - FILL

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

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE G - 20 - 7

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 ² /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 reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E - 15 - 3

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 reclaimed or recycled 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 entrance 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

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 3/4" x 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 E - 16 - 5A

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

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 9" 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 sandbags 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.
- This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.
- Assure 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 E - 16 - 5B

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *Janet J. ...* DATE: 6/10/04
Chief, Bureau of Engineering: *Steve Shuman* DATE: 5/28/04
Chief, Bureau of Highways: *...* DATE: 5/28/04
Chief, Division of Transportation and Special Projects: *...* DATE: 5/28/04

GPI Greenman-Pedersen, Inc.
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
10020 GULFORD RD, SUITE 100, JESSUP, MD, 20794
WASH. (301) 470-2772 BALT. (410) 880-3065
FAX: (301) 490-2649 www.gpnet.com

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

DES: K.P.
DRN: C.R.
CHK: M.S.Z.
DATE: 04/28/2004

BY: NO REVISION

STANDARD EROSION & SEDIMENT CONTROL DETAILS

SCALE MAP NO. _____ BLOCK NO. _____

AS-BUILT
October, 2006

BURNTWOODS ROAD ROUNDABOUT INTERSECTION IMPROVEMENTS
HOWARD COUNTY, MARYLAND
CAPITOL PROJECT NO. J-4164-02

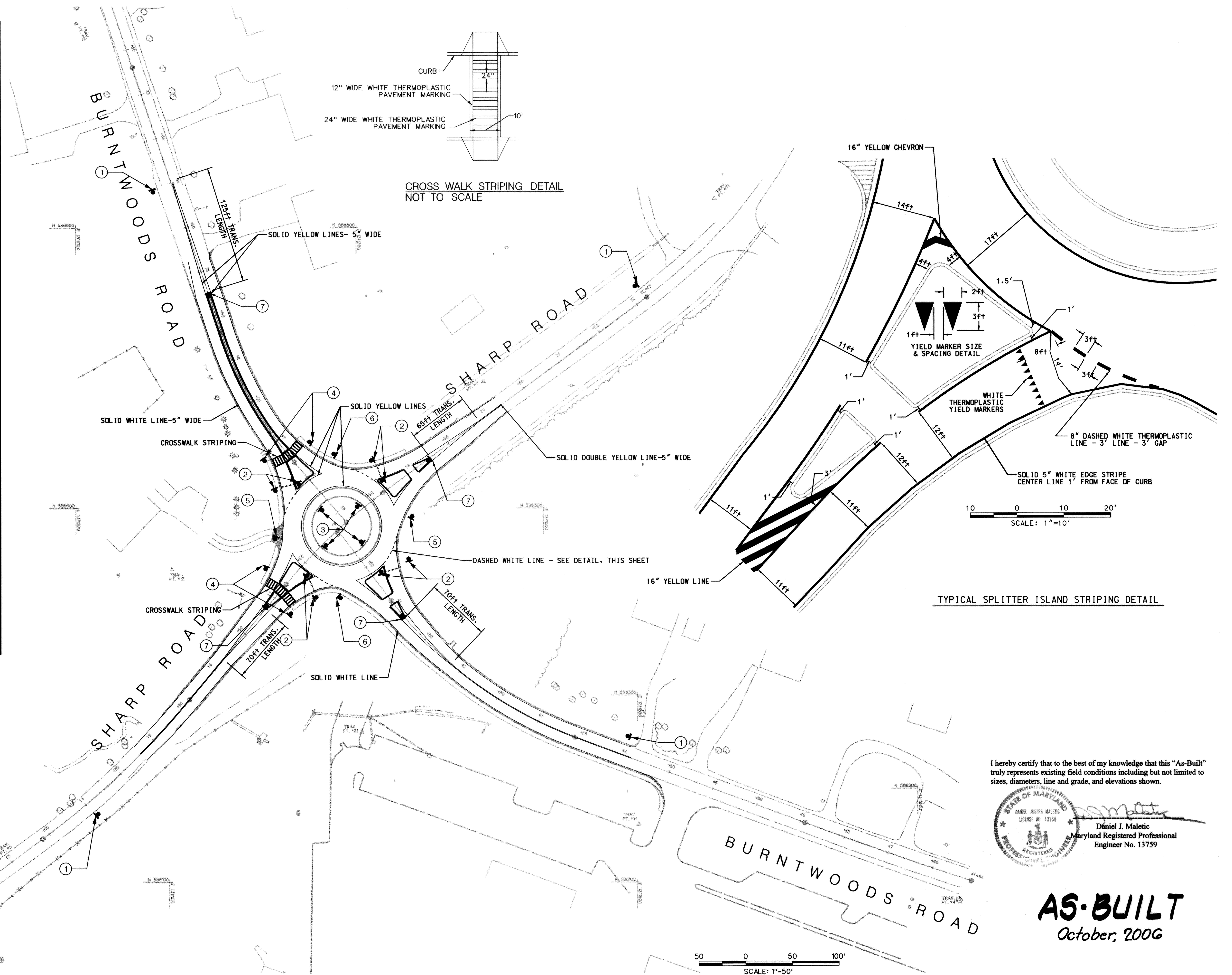
ES 6 OF 6
SCALE AS SHOWN
SHEET 13 OF 26

FILE: n:\1998\98175\98175_10\dgn\es02brnt.dgn
DATE: 04/28/2004 01:39:29 PM

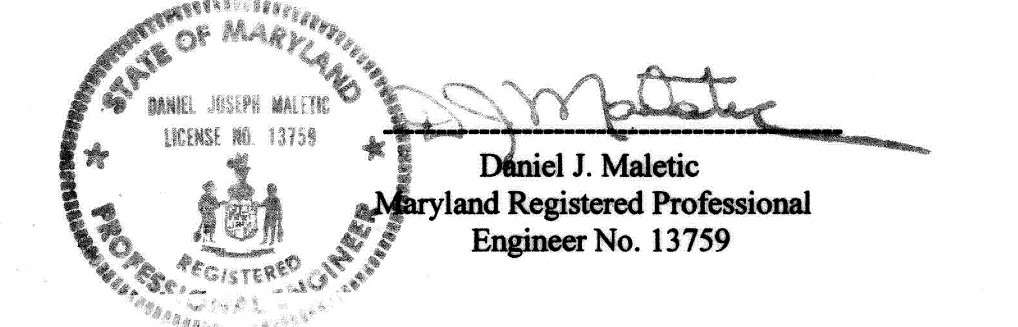
SIGN NUMBER	SIGNS TO BE PLACED	TOTAL NUMBER	COLORS	REMARKS
1	W96-9 36"x36" 20 MPH W13-1 12"x36"	4	BLACK ON YELLOW	RE-USE SIGN FROM MOT
2	R1-2 36"x36" TO TRAFFIC IN CIRCLE W96-10 30"x18"	8	RED ON WHITE BLACK ON YELLOW	RE-USE SIGN FROM MOT
3	R6-1R 36"x12" ONE WAY OM-3C 36"x12"	4	BLACK ON WHITE BLACK ON YELLOW	
4	W11-2A 30"x30" M6-2L 21"x15"	4	BLACK ON YELLOW	
5	D3 36"x12" SHARP ROAD M6-2R 21"x15"	2	WHITE ON GREEN	
6	D3 36"x12" BURNTWOODS RD. M6-2R 21"x15"	2	WHITE ON GREEN	
7	R4-7 24"x30" M6-2R 21"x15"	4	BLACK ON WHITE	

GENERAL NOTES:

1. THE CENTER LINE OF SOLID WHITE EDGE STRIPE TO BE PLACED 12" FROM FACE OF CURB. ALL OTHER STRIPING IS YELLOW, EXCEPT FOR YIELD MARKINGS, YIELD DASHES AND CROSSWALK LINES.
2. ALL WIDTHS OR OFFSETS SHOWN ARE MEASURED TO CENTER OF STRIPE EXCEPT DOUBLE YELLOW LINES, WHICH ARE MEASURED TO CENTER OF GAP BETWEEN PAIRS OF LINES.
3. SIGNS AND MARKING LOCATIONS MUST BE APPROVED BY THE TRAFFIC ENGINEERING DIVISION PRIOR TO INSTALLATION OF ANY SIGNS OR MARKINGS.



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
October, 2006

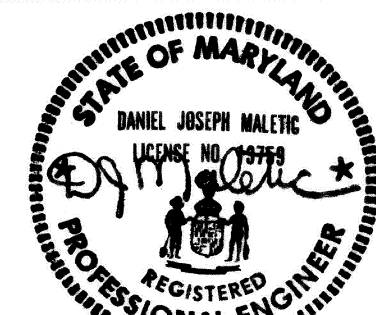
DEPARTMENT OF PUBLIC WORKS

HOWARD COUNTY, MARYLAND

Director of Public Works: *Janet...* 6/1/04
 Chief, Bureau of Engineering: *Steve Shavar* 5/28/04
 Chief, Bureau of Highways: *...* 5-28-04
 Chief, Division of Transportation and Special Projects: *...* 5/28/04

GPI Greenman-Pedersen, Inc.

ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
 10620 GULFORD RD, SUITE 100, JESSUP, MD, 20794
 WASH. (301) 470-2772 BALT. (410) 880-3065
 FAX: (301) 490-2649 www.gpinc.com



DES: K.P.			
DRN: C.R.			
CHK: M.S.Z.			
DATE: 04/28/2004	BY: NO	REVISION	DATE

SIGNING & MARKING PLAN

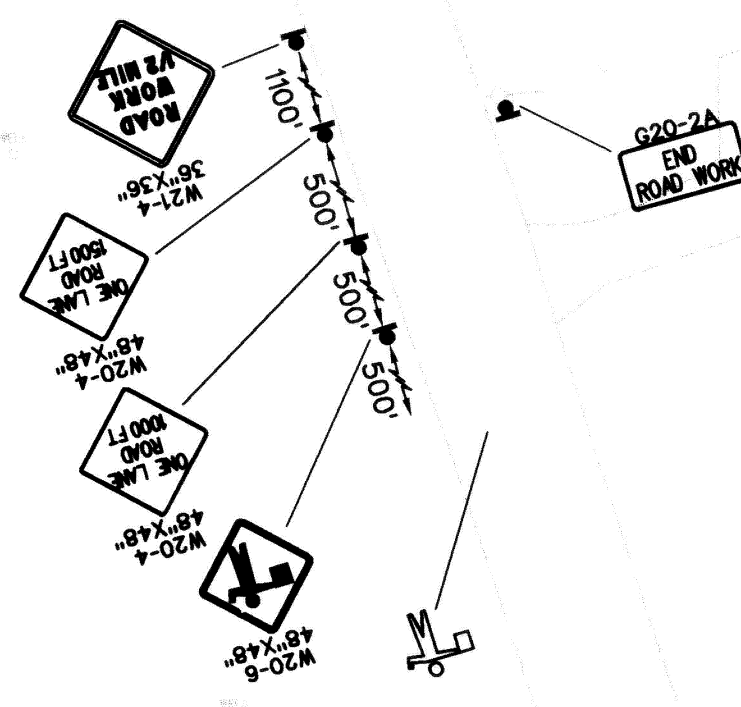
SCALE MAP NO. BLOCK NO.

BURNTWOODS ROAD ROUNDABOUT INTERSECTION IMPROVEMENTS

HOWARD COUNTY, MARYLAND
 CAPITOL PROJECT NO. J-4164-02

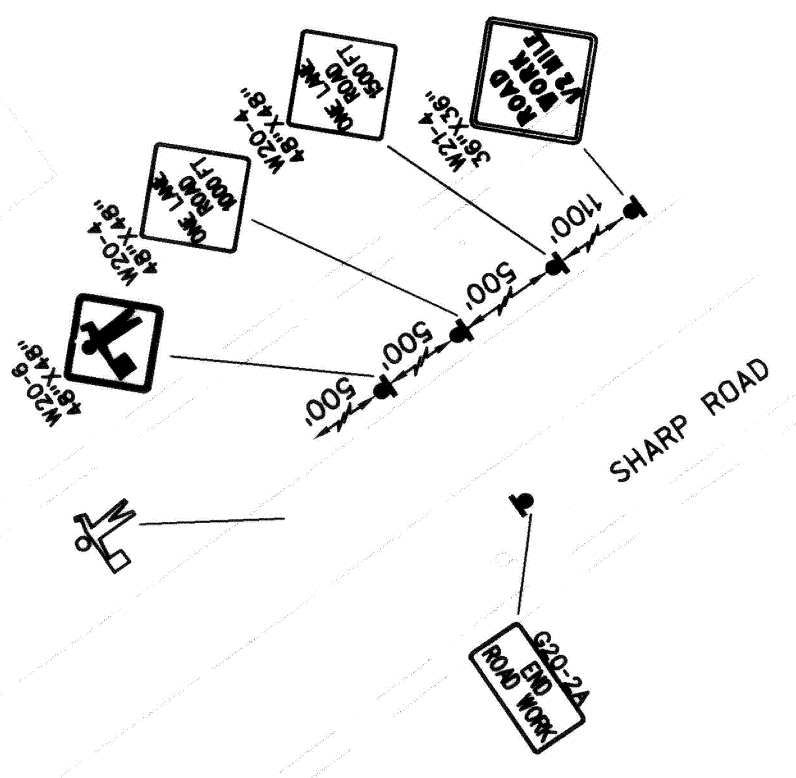
SCALE AS SHOWN

SHEET 14 OF 26



PHASE 1 CONSTRUCTION:
While maintaining traffic on existing roadways of Burnt Woods Road and Sharp Road, the contractor shall perform the following:
Place Road Work signs (use Standard No. MD 104.03-02) at the project limits of Burnt Woods Road and Sharp Road.
Contractor shall install concrete curb and gutter from sta 14+80 to 16+80 and install bituminous pavement and adjust to proposed grade using 3" lifts alternating North and South bound lanes along Sharp Road.
Standard No. MD 104.92 shall be used at all pavement drop-off locations.
As work progresses follow standards MD 104.02-02 and MD104.04-02.
Concrete curb and gutter shall be constructed when road grade is within 8" of proposed grade. Once curb and gutter are constructed install bituminous pavement between curb and gutter to final grade.

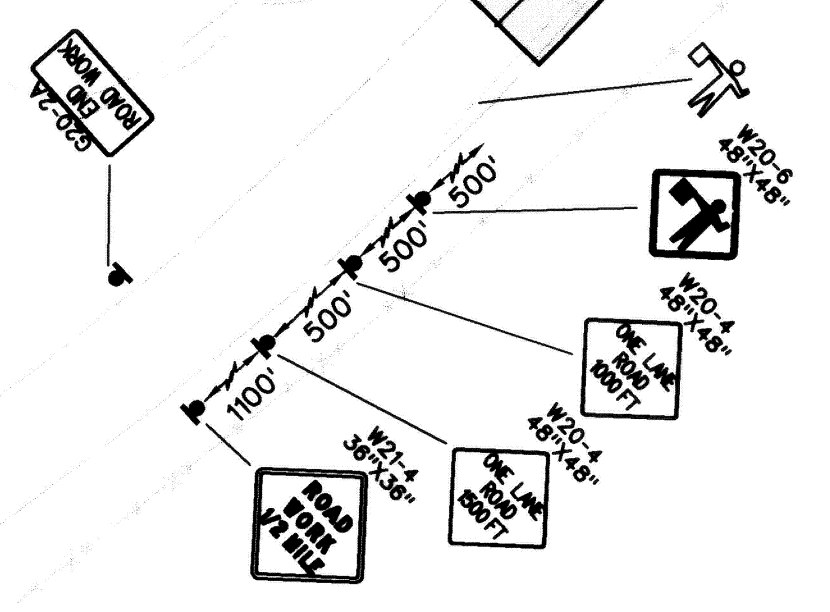
TIME FRAME FOR PHASE 1 CONSTRUCTION
20 DAYS



ALL FINAL SURFACE COURSE SHALL BE INSTALLED IN PHASE 5

PLACE PROPOSED CURB ON HMA BASE. USE TOPSOIL TO BACK UP BEHIND CURB FOR EDGE ADJUSTMENT.
EXISTING PAVED SURFACE SHALL BE SCARIFIED BEFORE PLACING SUBSEQUENT LIFTS.
ALL FINAL SURFACE COURSE SHALL BE INSTALLED IN PHASE 5

INSTALL ISLAND IN PHASE 1



LEGEND
 CONSTRUCTION - THIS PHASE
 FLAGGER
 TEMPORARY TRAFFIC DRUM
 TEMPORARY TRAFFIC BARRIER

CONSTRUCTION SIGN MATRIX																	
MUTCD SIGN	SIGN DIMENSION	NUMBER OF SIGNS/PHASE				TOTAL # OF SIGNS	SQUARE FOOTAGE	COLOR	MUTCD SIGN	SIGN DIMENSION	NUMBER OF SIGNS/PHASE				TOTAL # OF SIGNS	SQUARE FOOTAGE	COLOR
		PH 1	PH 2	PH 3	PH 4						PH 1	PH 2	PH 3	PH 4			
G20-2(A) NOTICE ROAD AHEAD CLOSED WITH ROAD WORK NO HOV OR HOV 2+ (SEE 3502)	48"x36"	0	4	0	0	4	48	TOP BLK ON YELLOW BOTTOM BLK ON WHITE	M-5B SHARP ROAD	30"x24"	0	21	0	0	21	105	BLK ON WHITE
G20-2(B) NOTICE ROAD AHEAD CLOSED WITH ROAD WORK NO HOV OR HOV 2+ (SEE 3502)	48"x36"	0	5	0	0	5	60	TOP BLK ON YELLOW BOTTOM BLK ON WHITE	R11-3(A) ROAD CLOSED 500 FEET AHEAD LOCAL TRAFFY ONLY	48"x30"	0	2	0	0	2	20	BLK ON ORANGE
W20-2 DETOUR SIGN	48"x48"	0	6	0	0	6	96	BLK ON ORANGE	R11-3(B) ROAD CLOSED 1000 FEET AHEAD LOCAL TRAFFY ONLY	48"x30"	0	1	0	0	1	10	BLK ON ORANGE
M4-(B/A-R) DETOUR (ADVANCED RIGHT)	30"x24"	0	4	0	0	5	25	BLK ON ORANGE	M4-BA END DETOUR	24"x18"	0	4	0	0	4	12	BLK ON ORANGE
M4-(B/A-L) DETOUR (ADVANCED LEFT)	30"x24"	0	2	0	0	2	10	BLK ON ORANGE	R11-2 ROAD CLOSED	48"x30"	0	2	0	0	2	20	BLK ON ORANGE
M4-(S) DETOUR SIGN	30"x24"	0	6	0	0	5	25	BLK ON ORANGE	VMS VARIABLE MESSAGE SIGN	N/A	0	2	0	0	0	N/A	N/A
M4-(R) DETOUR SIGN	30"x24"	0	8	0	0	7	35	BLK ON ORANGE	W21-4 ROAD WORK 2 MILE	36"x36"	4	3	4	4	4	36	BLK ON ORANGE
COOP. MAX. FROM TURN M4-S(L) DETOUR	30" x 24"	0	3	0	0	3	15	BLK ON ORANGE	W20-4 ONE LANE ROAD 500 FT	48"x48"	4	0	0	1	4	64	BLK ON ORANGE
COOP. MAX. FROM TURN W20-6	48"x48"	4	0	0	1	4	64	BLK ON ORANGE	W20-4 ONE LANE ROAD 500 FT	48"x48"	4	0	0	1	4	64	BLK ON ORANGE
W20-1 ROAD WORK 500 FT	48"x48"	0	3	4	3	4	64	BLK ON ORANGE	W6-3	30"x30"	0	2	0	0	3	18.75	BLK ON ORANGE
R4-7a KEEP RIGHT	18"x24"	0	0	2	0	0	2	BLK ON WHITE	W20-5(B) LANE SHIFT 500 FT	48"x48"	0	0	2	2	2	32	BLK ON ORANGE
W1-4(RD) DETOUR SIGN	30"x30"	0	0	2	2	2	12.5	BLK ON ORANGE	W1-4(L) DETOUR SIGN	30"x30"	0	0	2	2	2	12.5	BLK ON ORANGE
G20-2A END ROAD WORK	48"x24"	4	3	4	4	4	32	BLK ON ORANGE	W20-1 ROAD WORK 500 FT	48"x48"	0	3	2	1	3	48	BLK ON ORANGE
R1-1 STOP	30"x30"	0	0	2	2	2	12.5	STD	BE PREPARED TO STOP	48"x48"	0	0	4	4	4	64	BLK ON ORANGE
R2-2 YIELD	36"x36"x36"	0	0	2	2	2	9	RED ON WHITE	VW-27	24"x60"	0	0	4	4	4	40	BLK ON ORANGE
* W98-9	36"x36"	0	0	4	4	4	36	BLK ON YELLOW	ILLUMINATED FLASHING ARROW PANEL	N/A	0	0	2	0	0	N/A	N/A
* W96-10	30"x18"	0	0	2	2	2	14	BLK ON YELLOW	TO TRAFFIC IN CIRCLE	30"x18"	0	0	2	2	2	14	BLK ON YELLOW
* R4-TR	24" x 30"	0	0	1	0	1	6	BLK ON WHITE			0	0	1	0	1	6	BLK ON WHITE

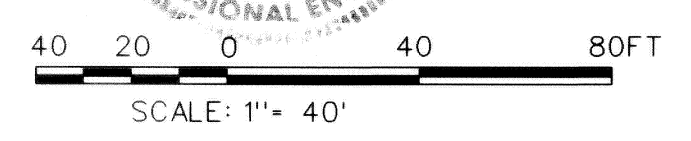
* SHALL BE USED FOR FUTURE PERMANENT TRAFFIC CONTROL SIGN

LEGEND

- CONSTRUCTION AND MAINTENANCE SIGN
- FACE OF SIGN/BARRICADE
- TYPE III BARRICADE

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
October, 2006

NOTE: THE EXACT PLACEMENT OF THE TWO VARIABLE MESSAGE SIGNS (VMS) - ONE IN EACH DIRECTION ON SHARP RD WILL BE DETERMINED BY THE HOWARD COUNTY DISTRICT TRAFFIC ENGINEER. THEY WILL BE INSTALLED AND OPERATIONAL FOR A MINIMUM OF ONE WEEK PRIOR TO IMPLEMENTATION OF THE DETOUR AND REMAIN IN PLACE FOR A MINIMUM OF ONE WEEK AFTER CONSTRUCTION BEGINS OR AS DIRECTED BY HOWARD COUNTY TRAFFIC ENGINEER.

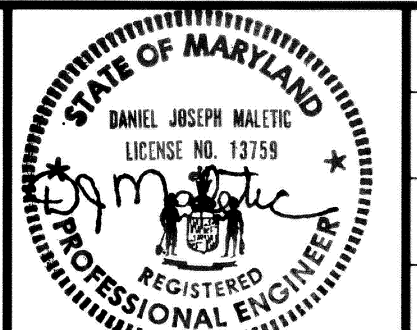
CONTACT THE HOWARD COUNTY TRAFFIC ENGINEER TO OBTAIN LOCATION FOR VMS PLACEMENT AS WELL AS VERIFICATION OF MESSAGE(S) TO BE PROGRAMMED.

CONTRACTOR SHOULD DETOUR SHARP ROAD TRAFFIC THRU SCHOOL PARKING LOT WHILE SCHOOL IS OUT DURING PHASE I. DETOUR SIGNAGE SHALL BE APPROVED BY COUNTY TRAFFIC ENGINEER.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *William J. Walsh* 5-28-04
 Chief, Bureau of Engineering: *Steve Sharan* 5/28/04
 Chief, Division of Transportation and Special Projects: *Steve Sharan* 5/28/04

GPI Greenman-Pedersen, Inc.
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
10620 GUILFORD RD. SUITE 300, BETHESDA, MD 20784
WASH. (301) 470-2772 BALT. (410) 880-3055
FAX: (301) 490-2649 www.gpi.net



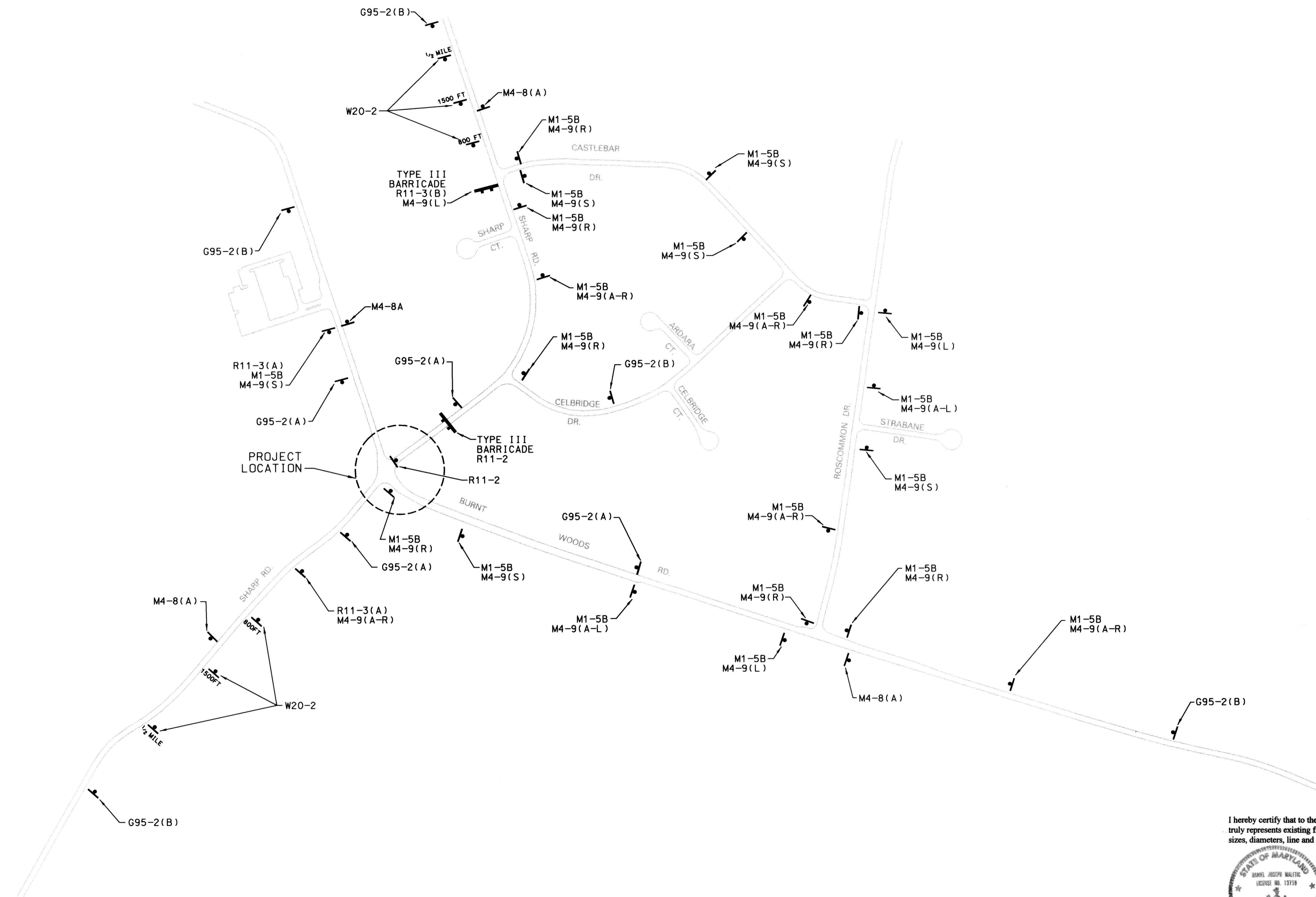
DES: K.P.					
DRN: C.R.					
CHK: M.S.Z.					
DATE: 04/28/2004	BY: NO	REVISION	DATE		

PHASE 1 TRAFFIC CONTROL

BURNTWOODS ROAD ROUNDABOUT INTERSECTION IMPROVEMENTS

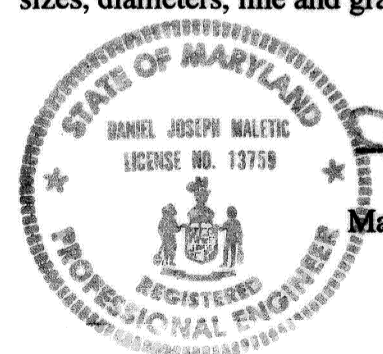
HOWARD COUNTY, MARYLAND
CAPITOL PROJECT NO. J-4164-02

SCALE AS SHOWN
SHEET 15 OF 26

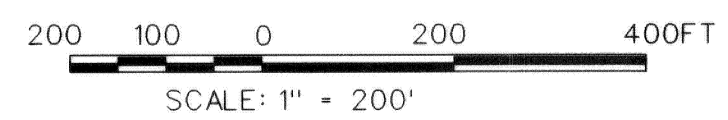


CONSTRUCTION SIGN MATRIX			
MUTCD SIGN	SIGN DIMENSION	MUTCD SIGN	SIGN DIMENSION
095-2(A) NOTICE	48"x36"	M1-5B SHARP ROAD	30"x24"
095-2(B) NOTICE	48"x36"	R11-3(A) ROAD CLOSED	48"x30"
W20-2	48"x48"	R11-3(B) ROAD CLOSED	48"x30"
M4-9(A-R) DETOUR	30"x24"	M4-8A END DETOUR	24"x18"
M4-9(A-L) DETOUR	30"x24"	R11-2 ROAD CLOSED	48"x30"
M4-9(S) DETOUR	30"x24"	VMS VARIABLE MESSAGE SIGN	N/A
M4-9(R) DETOUR	30"x24"	W21-4 ROAD WORK	36"x36"
M4-9(L) DETOUR	30" x 24"	W20-4 ONE LANE ROAD	48"x48"
W20-6	48"x48"	W20-4 ONE LANE ROAD	48"x48"
W20-1	48"x48"	W3-3	30"x30"
R4-7a	18"x24"	W20-5(6) LINE SHFT	48"x48"
W1-4(R)	30"x30"	W1-4(L)	30"x30"
G20-2A	48"x24"	W20-1 ROAD WORK	48"x48"
R1-1	30"x30"	R1-1 BE PREPARED TO STOP	48"x48"
R1-2	36"x36"x36"	G95-24 NEW TRAFFIC PATTERN	24"x60"
W96-9	36"x36"	ILLUMINATED FLASHING ARROW PANEL	N/A
R4-TR	24" x 30"	W96-10 TO TRAFFIC IN CIRCLE	30"x18"

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
 October, 2006



DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

John J. ... 6/3/04
 DIRECTOR OF PUBLIC WORKS DATE

Steve Sharan 5/28/04
 CHIEF, BUREAU OF HIGHWAYS DATE

Steve Sharan 5/28/04
 CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS DATE

GPI Greenman-Pedersen, Inc.
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
 10620 GUILFORD RD. SUITE 100, JESSUP, MD, 20794
 WASH. (301) 470-2772 DALL. (410) 880-3055
 FAX: (301) 490-2646 www.gpinet.com

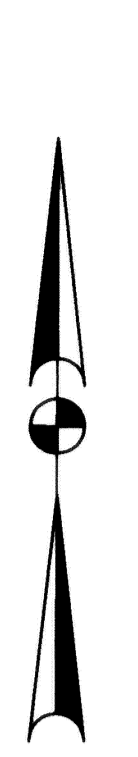
STATE OF MARYLAND
 DANIEL JOSEPH MALETIC
 LICENSE NO. 13759
 REGISTERED PROFESSIONAL ENGINEER

DES: K.P.					
DRN: C.R.					
CHK: M.S.Z.					
DATE: 04/28/2004	BY: NO	REVISION	DATE	SCALE MAP NO.	BLOCK NO.

**PHASE 2 & 3
 TRAFFIC DETOUR
 PLAN**

**BURNTWOODS ROAD ROUNDABOUT
 INTERSECTION IMPROVEMENTS**
 HOWARD COUNTY, MARYLAND
 CAPITOL PROJECT NO. J-4164-02

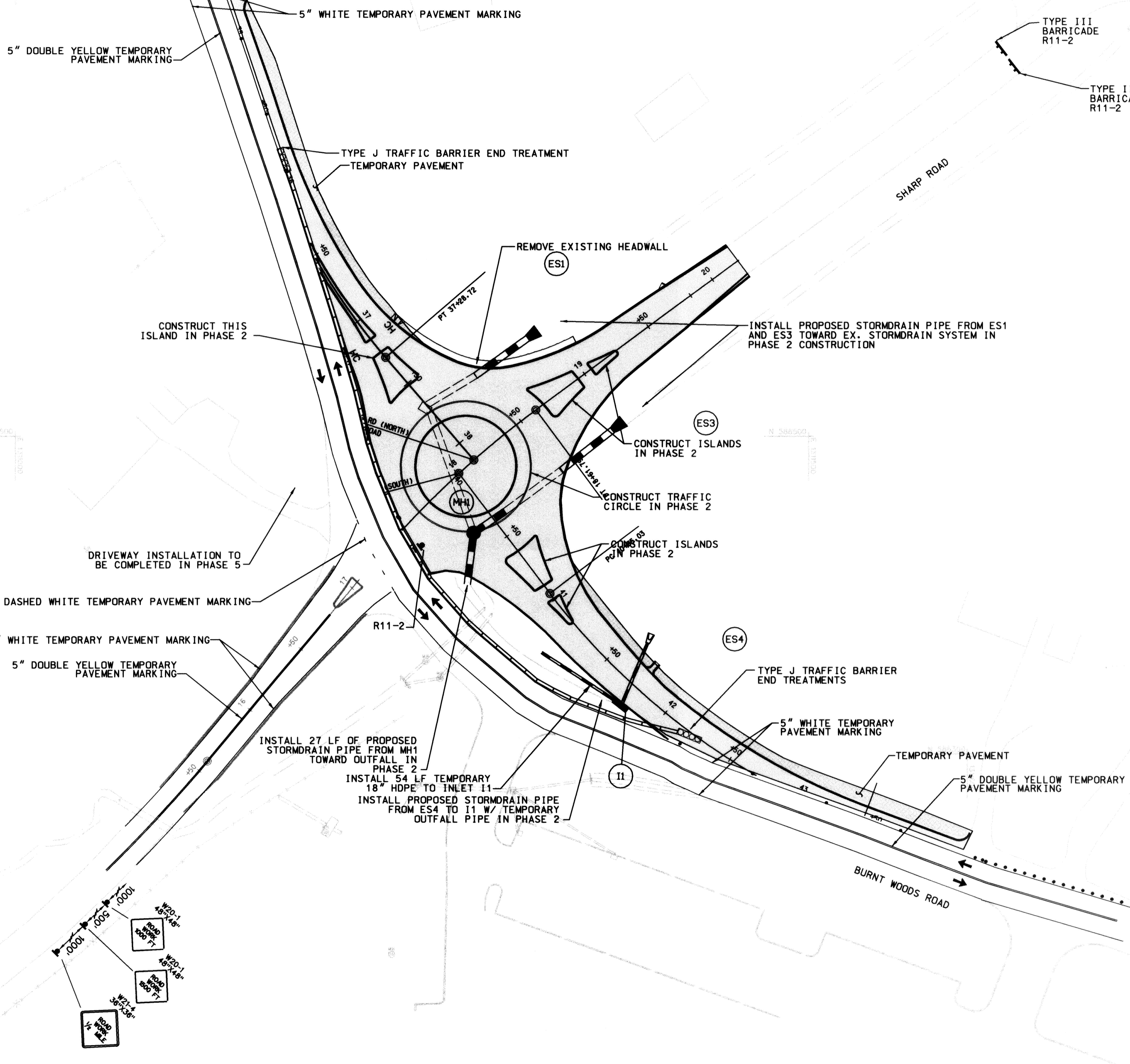
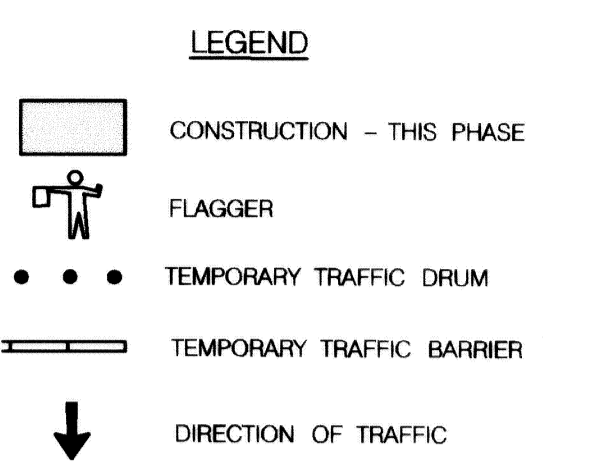
SCALE AS SHOWN
 SHEET 16 OF 26



PHASE 2 CONSTRUCTION:
 While maintaining traffic on existing Burnt Woods Road and utilizing the detour plan for Sharp Road, the contractor shall perform the following:
 Place Road Work signs as shown at the project limits of Burnt Woods Road and Sharp Road. See Phase 2 traffic detour plan for detour signing.
 Contractor shall construct traffic circle as shown while maintaining two way traffic along Burntwoods Road and the South leg of Sharp Road. Construct closed stormdrain extension to limits shown.
 Contractor shall install concrete curb and gutter from sta 18+75 to 20+20 (both sides) and 40+50 to 41+50 RT. Install bituminous pavement to proposed grade.
 Standard No. MD 104.92 shall be used at all pavement drop-off locations.
 As work progresses follow standards MD 104.02-02 and MD104.04-02.
 The Surface Course of HMA pavement shall be installed in the last Phase after all other work is complete.

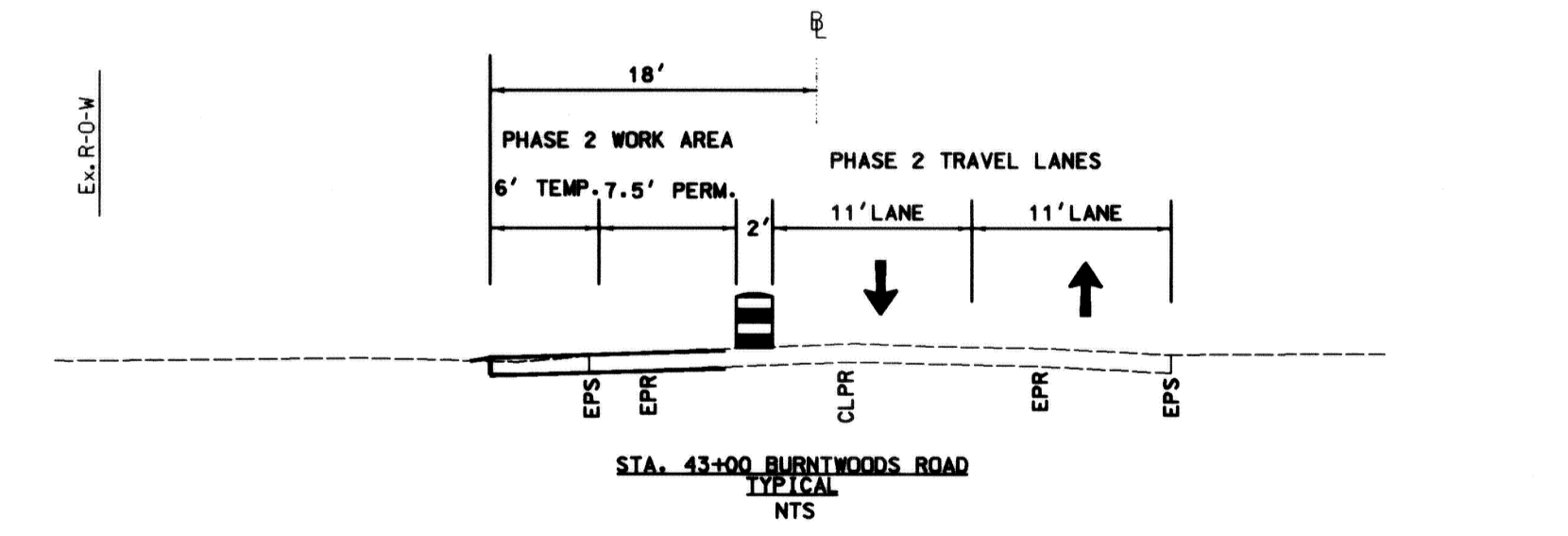
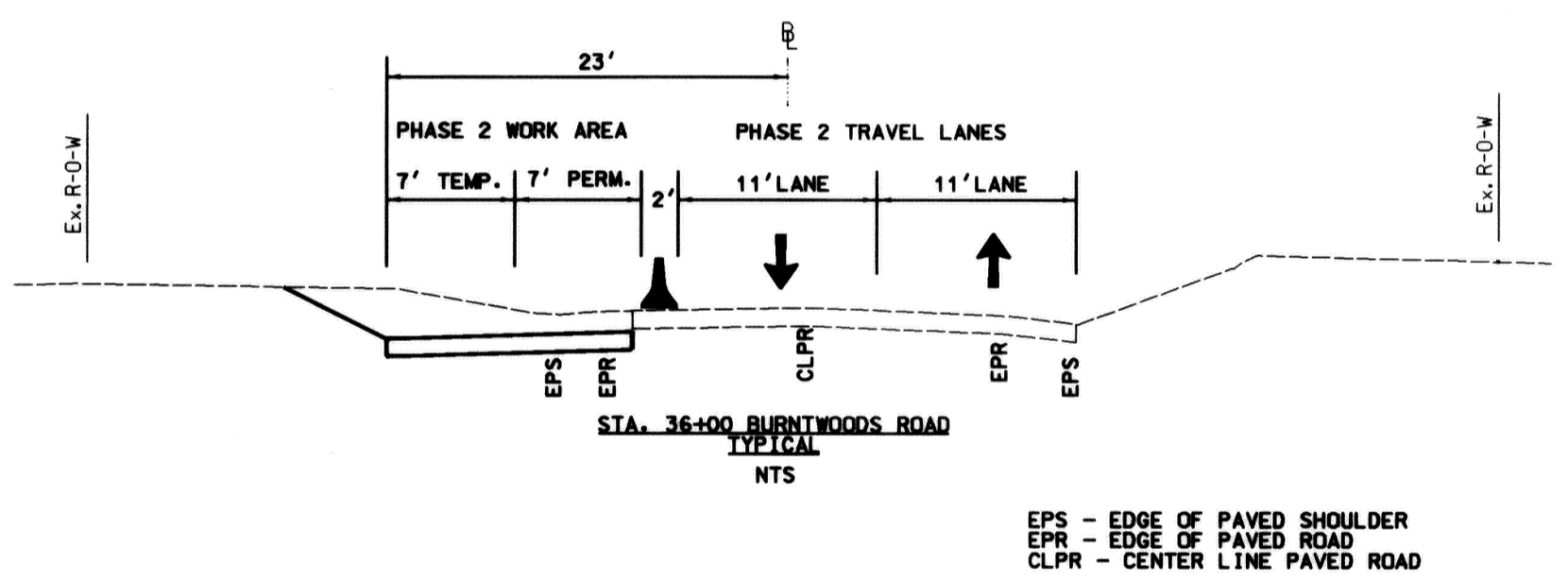
TIME FRAME FOR PHASE 2 CONSTRUCTION
 40 DAYS

- 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 JAMES & SUSAN J. BAUER 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.



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
 October, 2006

SCALE: 1" = 40'

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

San J. Lee 6/3/04
 DIRECTOR OF PUBLIC WORKS DATE

Steve Shaver 5-28-04
 CHIEF, BUREAU OF HIGHWAYS DATE

Robert Johnson 6/1/04
 CHIEF, BUREAU OF ENGINEERING DATE

Steve Shaver 5/28/04
 CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS DATE

GPI Greenman-Pedersen, Inc.
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
 10820 GUILFORD RD, SUITE 100, JESSUP, MD, 20794
 WASH. (301) 470-2772 BALT. (410) 880-3055
 FAX: (301) 480-2648 www.gpi.com

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

DES: K.P.			
DRN: C.R.			
CHK: M.S.Z.			
DATE: 04/28/2004	BY: NO	REVISION	DATE

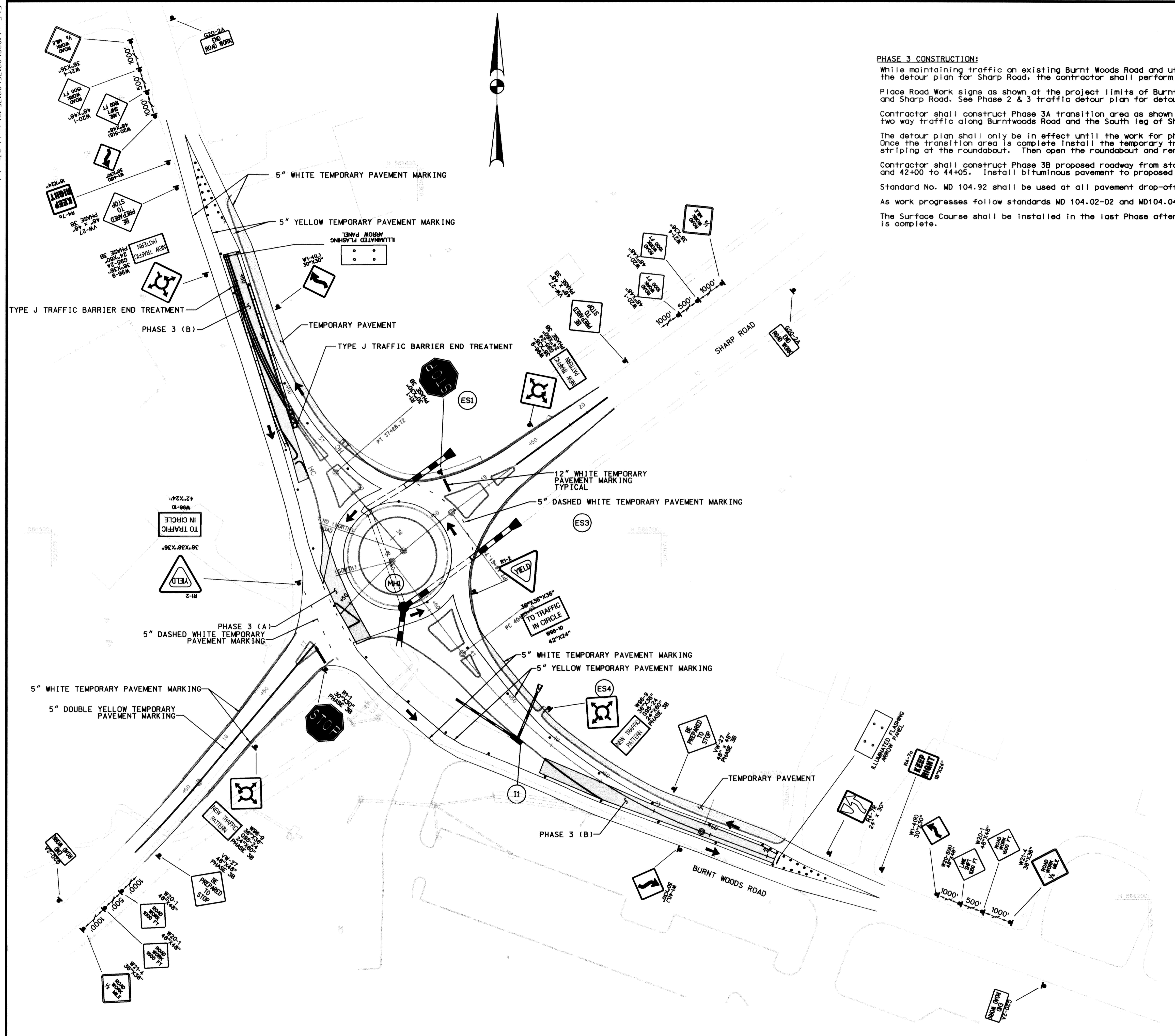
PHASE 2 TRAFFIC CONTROL

SCALE MAP NO. _____ BLOCK NO. _____

BURNTWOODS ROAD ROUNDABOUT INTERSECTION IMPROVEMENTS
 HOWARD COUNTY, MARYLAND
 CAPITOL PROJECT NO. J-4164-02

SCALE AS SHOWN
 SHEET 17 OF 26

FILE: n:\1998\98175\98175_10\dgn\tc03brnt.dgn
 DATE: 04/28/2004 01:42:04 PM



PHASE 3 CONSTRUCTION:

While maintaining traffic on existing Burnt Woods Road and utilizing the detour plan for Sharp Road, the contractor shall perform the following:
 Place Road Work signs as shown at the project limits of Burnt Woods Road and Sharp Road. See Phase 2 & 3 traffic detour plan for detour signing.

Contractor shall construct Phase 3A transition area as shown while maintaining two way traffic along Burntwoods Road and the South leg of Sharp Road.

The detour plan shall only be in effect until the work for phase 3A is completed. Once the transition area is complete install the temporary traffic control signs and striping at the roundabout. Then open the roundabout and remove the detour signing.

Contractor shall construct Phase 3B proposed roadway from sta 35+25 to 37+25 and 42+00 to 44+05. Install bituminous pavement to proposed grade.

Standard No. MD 104.92 shall be used at all pavement drop-off locations.

As work progresses follow standards MD 104.02-02 and MD104.04-02.

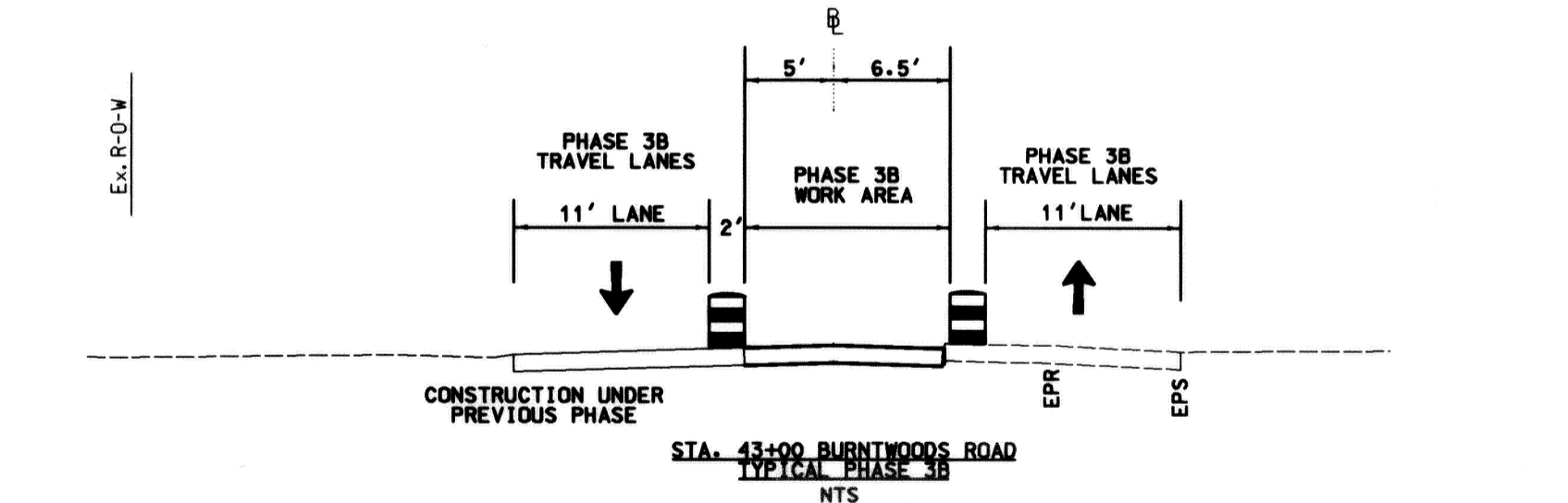
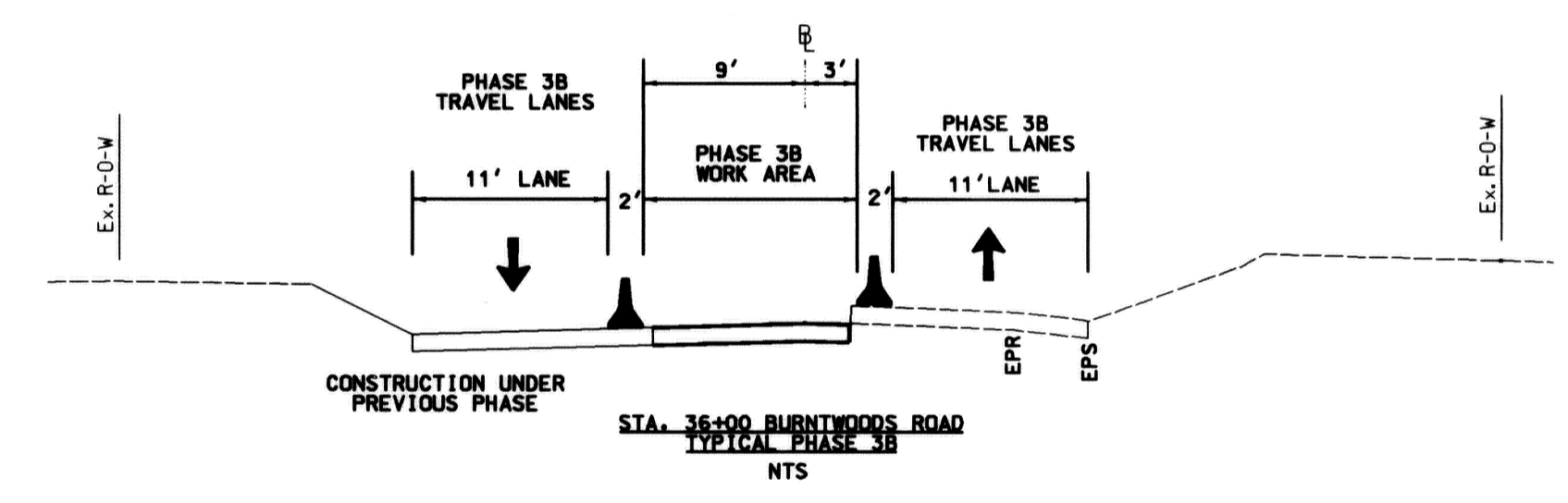
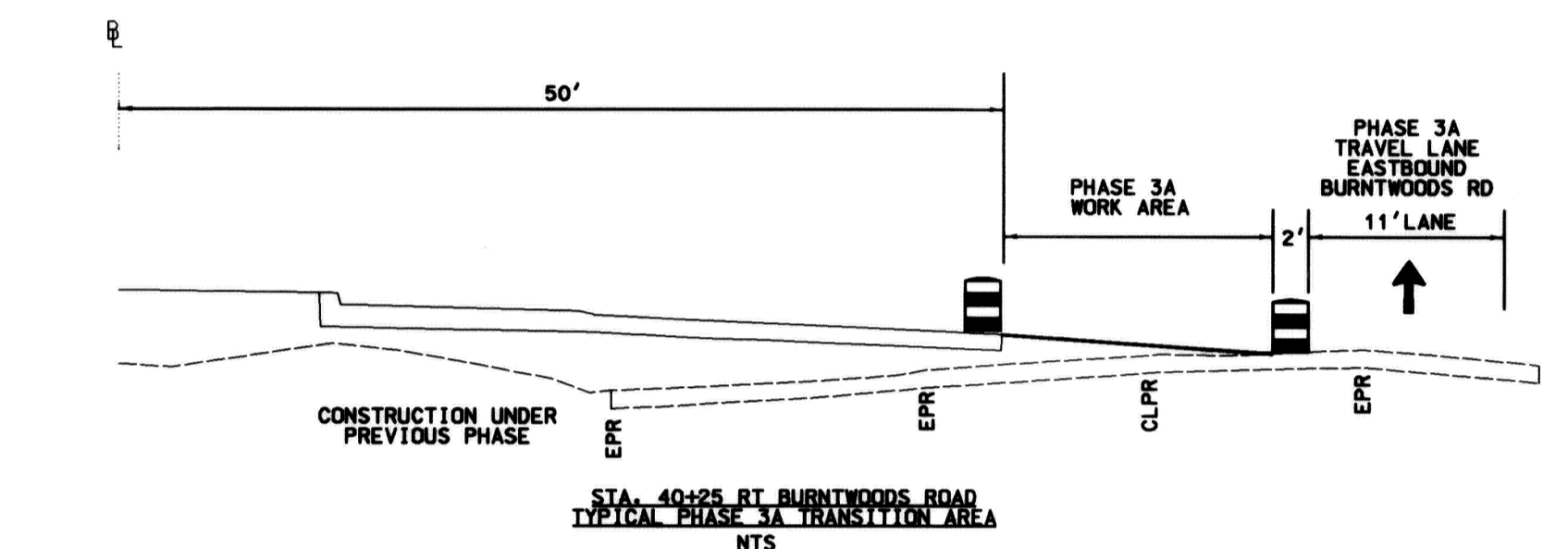
The Surface Course shall be installed in the last Phase after all other work is complete.

TIME FRAME FOR PHASE 3 CONSTRUCTION

20 DAYS

LEGEND

- CONSTRUCTION - THIS PHASE
- FLAGGER
- TEMPORARY TRAFFIC DRUM
- TEMPORARY TRAFFIC BARRIER
- DIRECTION OF TRAFFIC

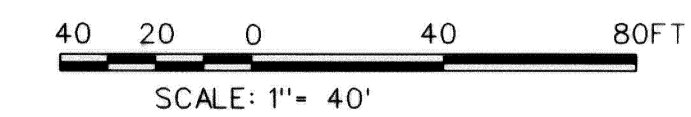


EPS - EDGE OF PAVED SHOULDER
 EPR - EDGE OF PAVED ROAD
 CLPR - CENTER LINE PAVED ROAD

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.

STATE OF MARYLAND
 DANIEL JOSEPH MALETIC
 LICENSE NO. 13759
 REGISTERED PROFESSIONAL ENGINEER
 Daniel J. Maletic
 Maryland Registered Professional Engineer No. 13759

AS-BUILT
 October, 2006



DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Director of Public Works: *William J. Williams* DATE: 5-28-04
 Chief, Bureau of Engineering: *Paul H. Johnson* DATE: 6/1/04
 Chief, Division of Transportation and Special Projects: *Steve Sharon* DATE: 5/28/04

GPI Greenman-Pedersen, Inc.
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
 10820 GUILFORD RD, SUITE 100, JESSUP, MD, 20794
 WASH. (301) 470-2772 BALT. (410) 880-3066
 FAX: (301) 480-2649 www.gpiinc.com

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

DES: K.P.	BY: NO	REVISION:	DATE:
DRN: C.R.			
CHK: M.S.Z.			
DATE: 04/28/2004			

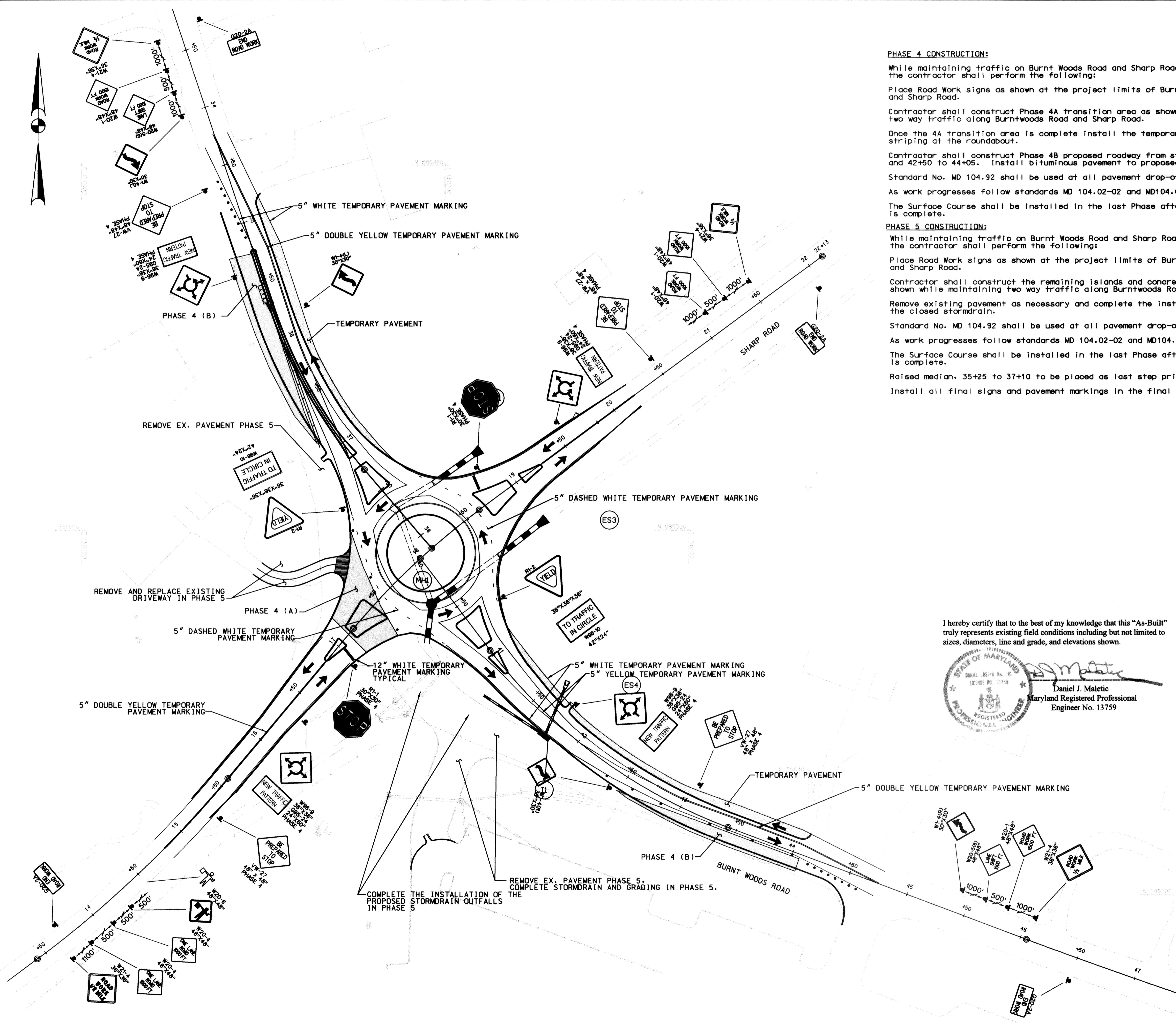
PHASE 3 TRAFFIC CONTROL

SCALE MAP NO. _____ BLOCK NO. _____

BURNTWOODS ROAD ROUNDABOUT INTERSECTION IMPROVEMENTS
 HOWARD COUNTY, MARYLAND
 CAPITOL PROJECT NO. J-4164-02

SCALE AS SHOWN
 SHEET 18 OF 26

FILE: n:\1998\98175\98175_10\dgn\tc03brnt.dgn
 DATE: 04/28/2004 01:42:04 PM



PHASE 4 CONSTRUCTION:

While maintaining traffic on Burnt Woods Road and Sharp Road, the contractor shall perform the following:
 Place Road Work signs as shown at the project limits of Burnt Woods Road and Sharp Road.

Contractor shall construct Phase 4A transition area as shown while maintaining two way traffic along Burntwoods Road and Sharp Road.

Once the 4A transition area is complete install the temporary traffic control signs and striping at the roundabout.

Contractor shall construct Phase 4B proposed roadway from sta 35+25 to 37+00 and 42+50 to 44+05. Install bituminous pavement to proposed grade.

Standard No. MD 104.92 shall be used at all pavement drop-off locations.

As work progresses follow standards MD 104.02-02 and MD104.04-02.

The Surface Course shall be installed in the last Phase after all other work is complete.

Place Road Work signs as shown at the project limits of Burnt Woods Road and Sharp Road.

Contractor shall construct the remaining islands and concrete curb and gutter as shown while maintaining two way traffic along Burntwoods Road and Sharp Road.

Remove existing pavement as necessary and complete the installation of the closed stormdrain.

Standard No. MD 104.92 shall be used at all pavement drop-off locations.

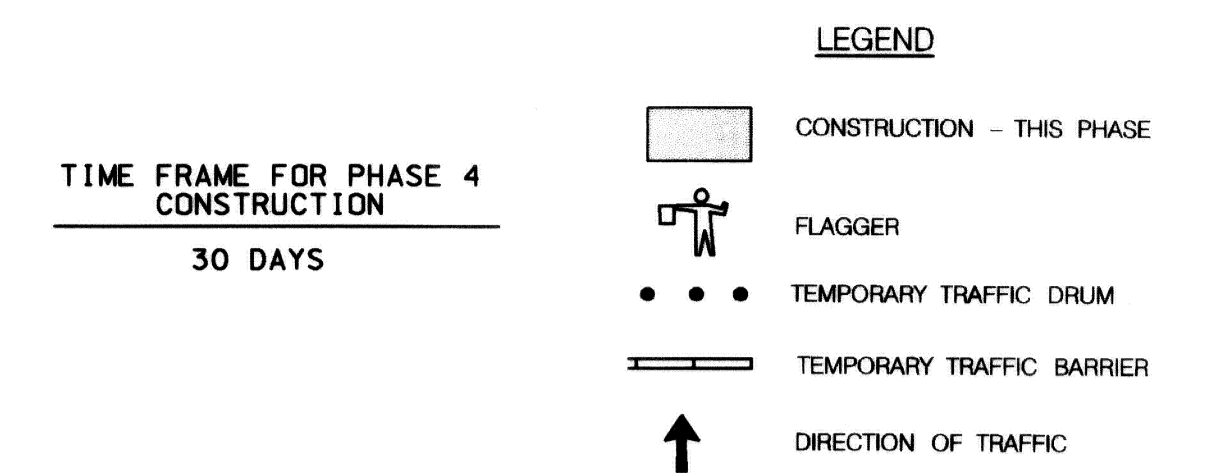
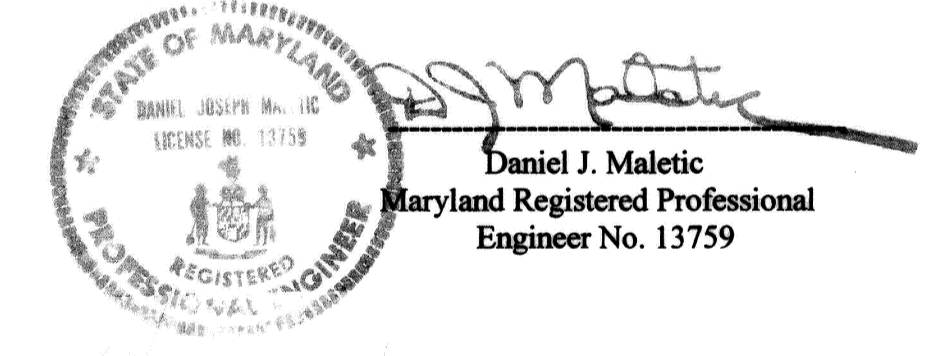
As work progresses follow standards MD 104.02-02 and MD104.04-02.

The Surface Course shall be installed in the last Phase after all other work is complete.

Raised median, 35+25 to 37+10 to be placed as last step prior to finished surface.

Install all final signs and pavement markings in the final phase.

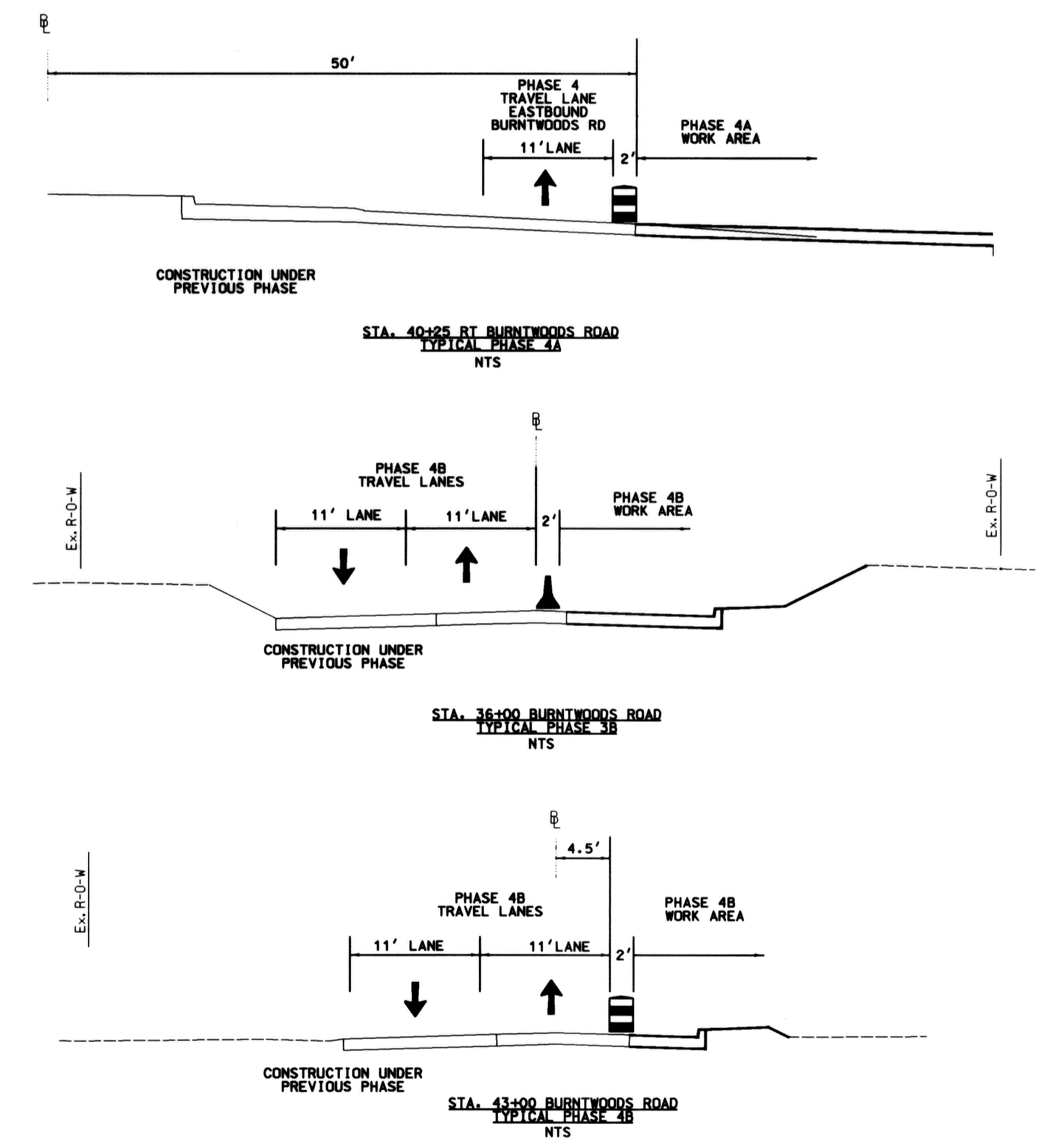
I hereby certify that to the best of my knowledge that this "As-Built" truly represents existing field conditions including but not limited to sizes, diameters, line and grade, and elevations shown.



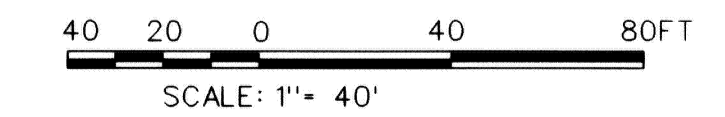
TIME FRAME FOR PHASE 4 CONSTRUCTION
 30 DAYS

TIME FRAME FOR PHASE 5 CONSTRUCTION
 40 DAYS

TOTAL CALENDAR DAYS
 150 DAYS



AS-BUILT
 October, 2006



DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Carly Ann 6/1/04
 DIRECTOR OF PUBLIC WORKS DATE

Steve Shuman 5/28/04
 CHIEF, BUREAU OF HIGHWAYS DATE

GPI Greenman-Pedersen, Inc.
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
 10620 GULFORD RD, SUITE 100, JESSUP, MD, 20794
 WASH. (301) 470-2772 BALT. (410) 880-3065
 FAX: (301) 480-2649 www.gpinet.com

STATE OF MARYLAND
 DANIEL JOSEPH MALETIC
 REGISTERED PROFESSIONAL ENGINEER

DES: K.P.			
DRN: C.R.			
CHK: M.S.Z.			
DATE: 04/28/2004	BY: NO	REVISION	DATE

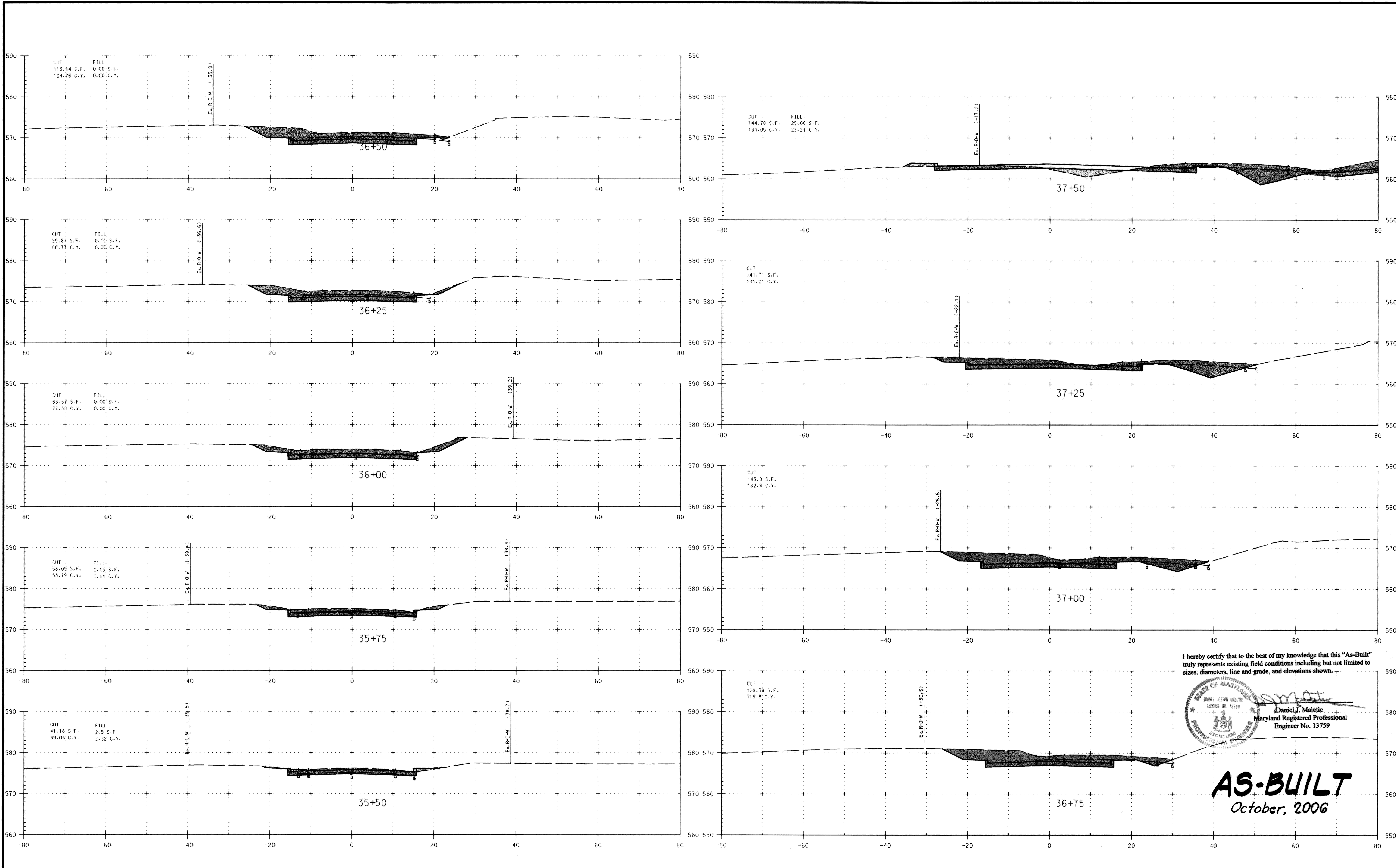
PHASE 4 TRAFFIC CONTROL

SCALE MAP NO. _____ BLOCK NO. _____

BURNTWOODS ROAD ROUNDABOUT INTERSECTION IMPROVEMENTS
 HOWARD COUNTY, MARYLAND
 CAPITOL PROJECT NO. J-4164-02

SCALE AS SHOWN
 SHEET 19 OF 26

FILE: n:\1998\98175\98175.10\dgn\cs05brnt.dgn
DATE: 04/28/2004 01:44:08 PM



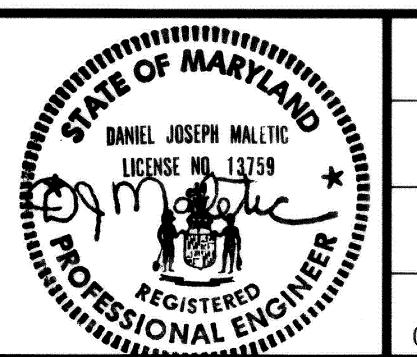
I hereby certify that to the best of my knowledge that this "As-Built" truly represents existing field conditions including but not limited to sizes, diameters, line and grade, and elevations shown.

Daniel J. Maletic
Maryland Registered Professional Engineer No. 13759

AS-BUILT
October, 2006

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Jan M. ... 6/3/04
 DIRECTOR OF PUBLIC WORKS DATE
Steve Shuman 5/28/04
 CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS DATE

GPI Greenman-Pedersen, Inc.
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
10620 GULFORD RD, SUITE 100, JESSUP, MD, 20794
WASH. (301) 470-2772 BALT. (410) 880-3055
FAX: (301) 480-2648 www.gpi.com



DES: K.P.	
DRN: C.R.	
CHK: M.S.Z.	
DATE: 04/28/2004	
BY: NO	
REVISION	
DATE	

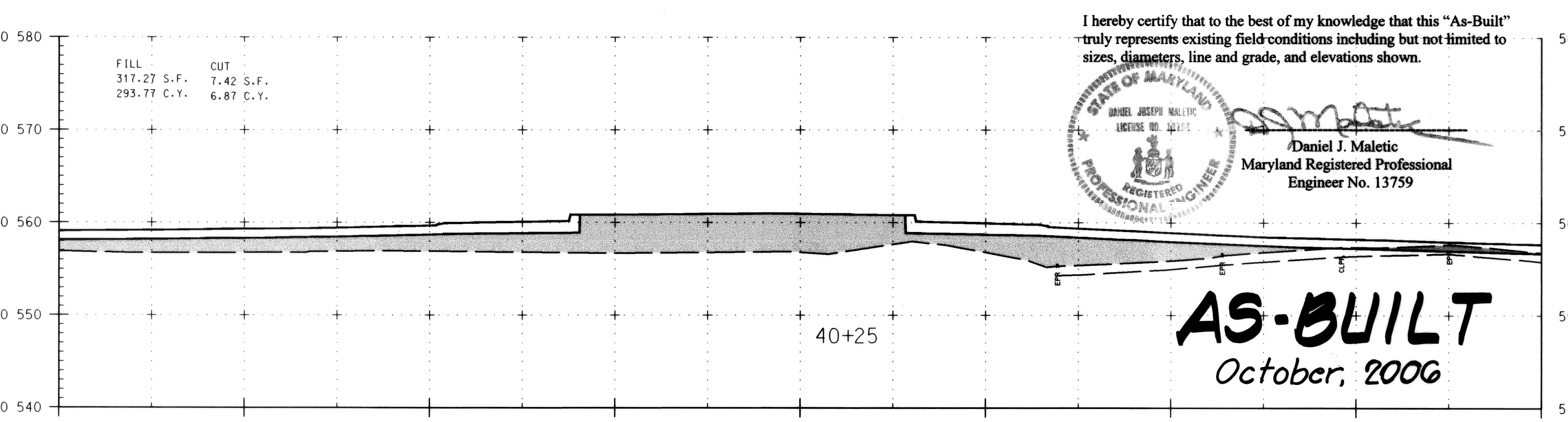
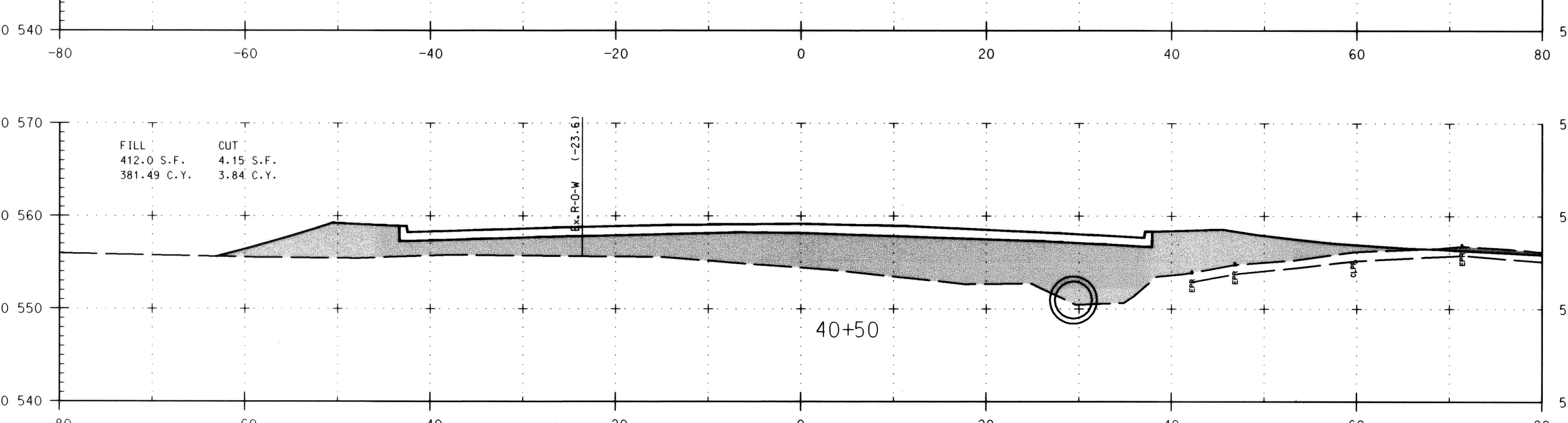
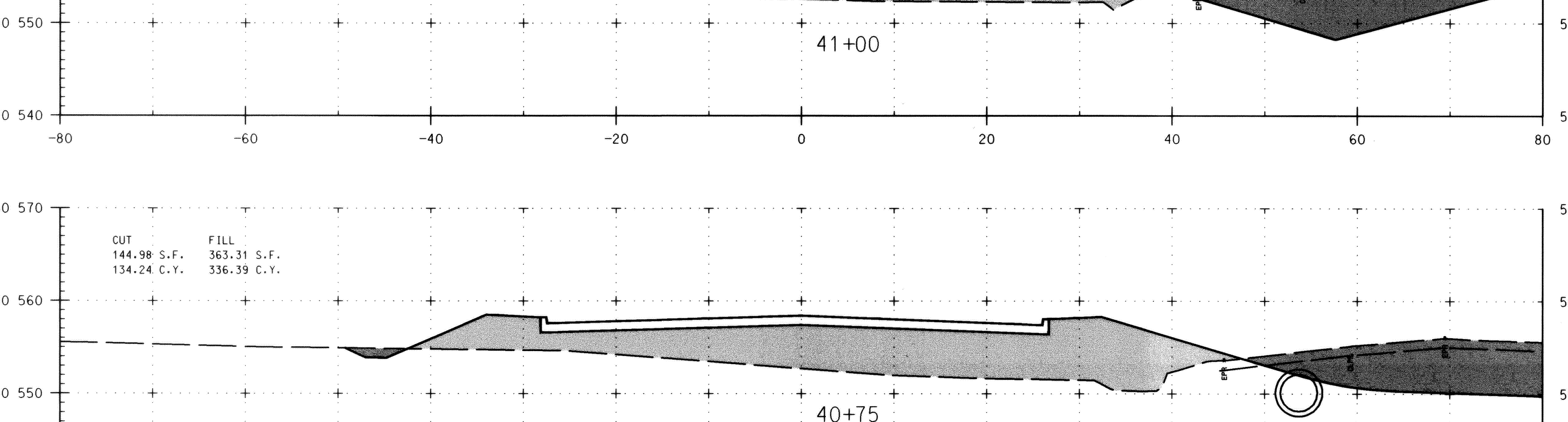
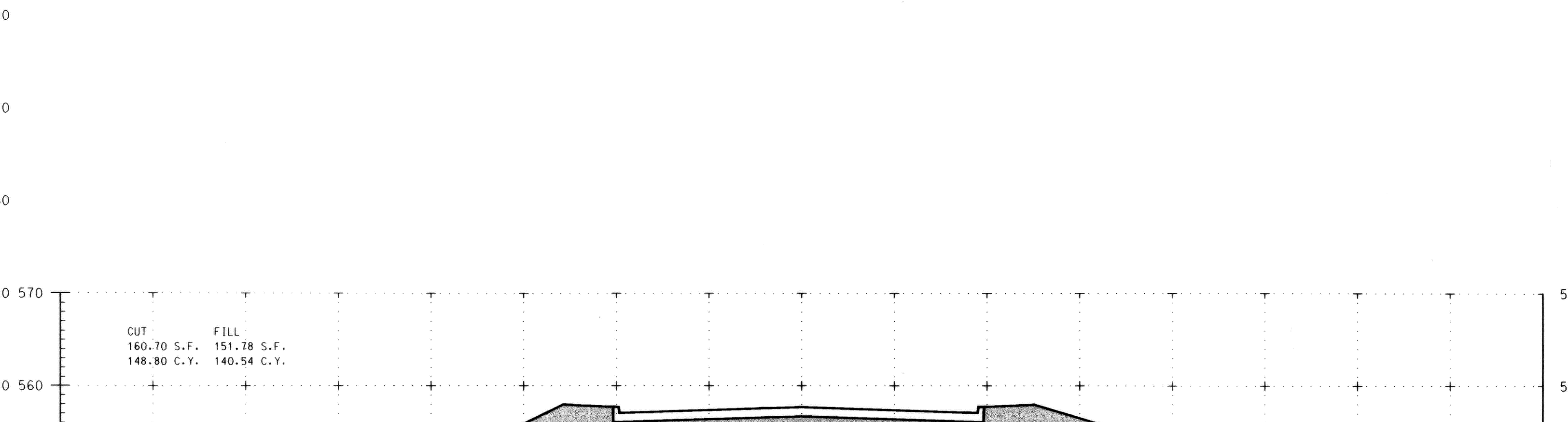
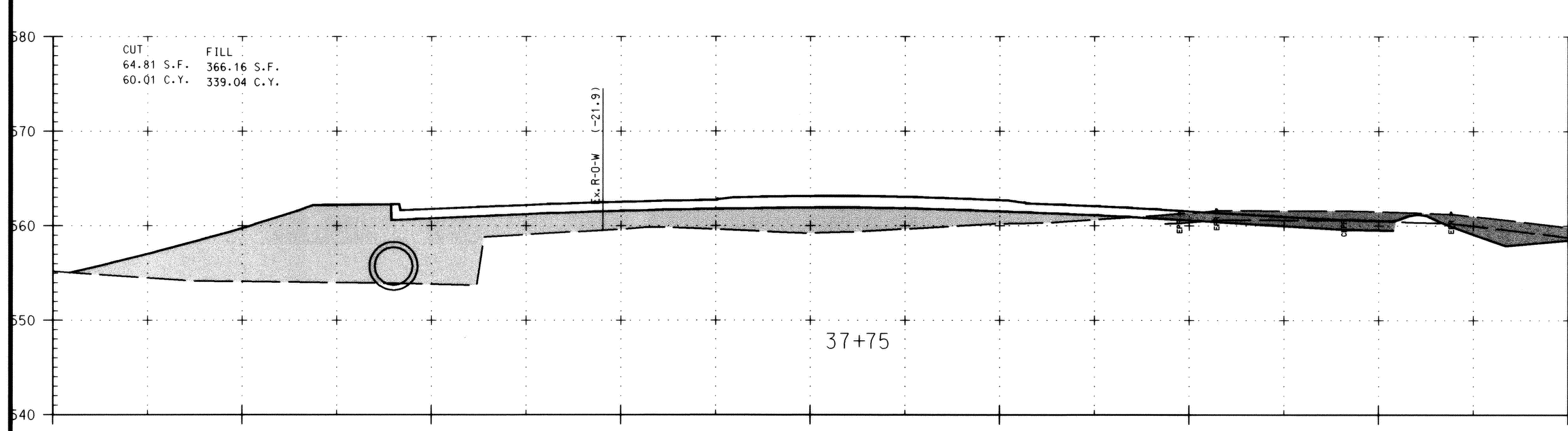
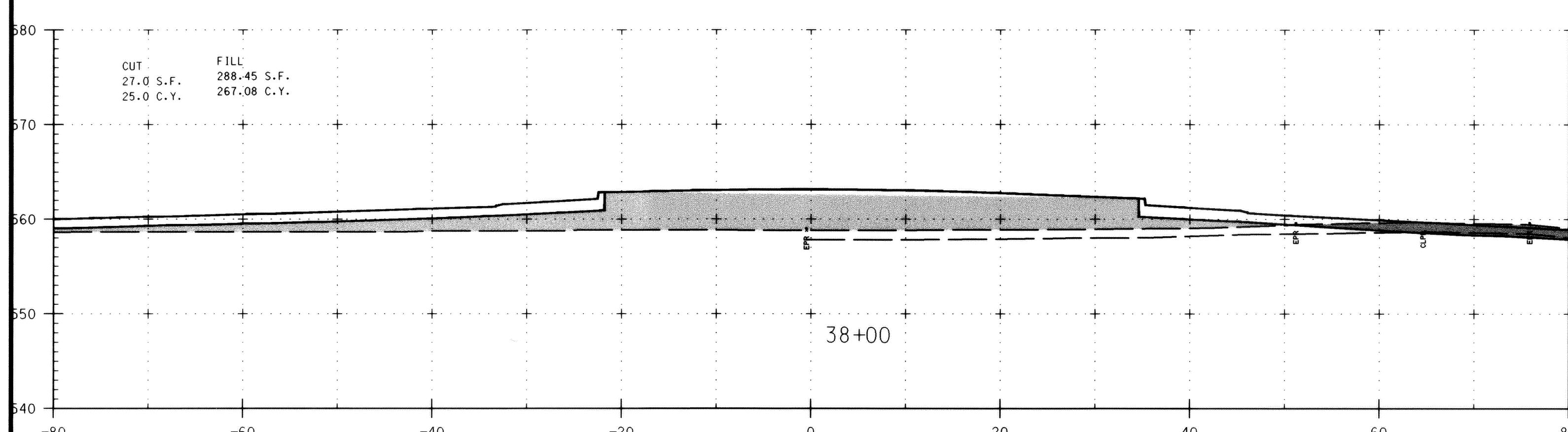
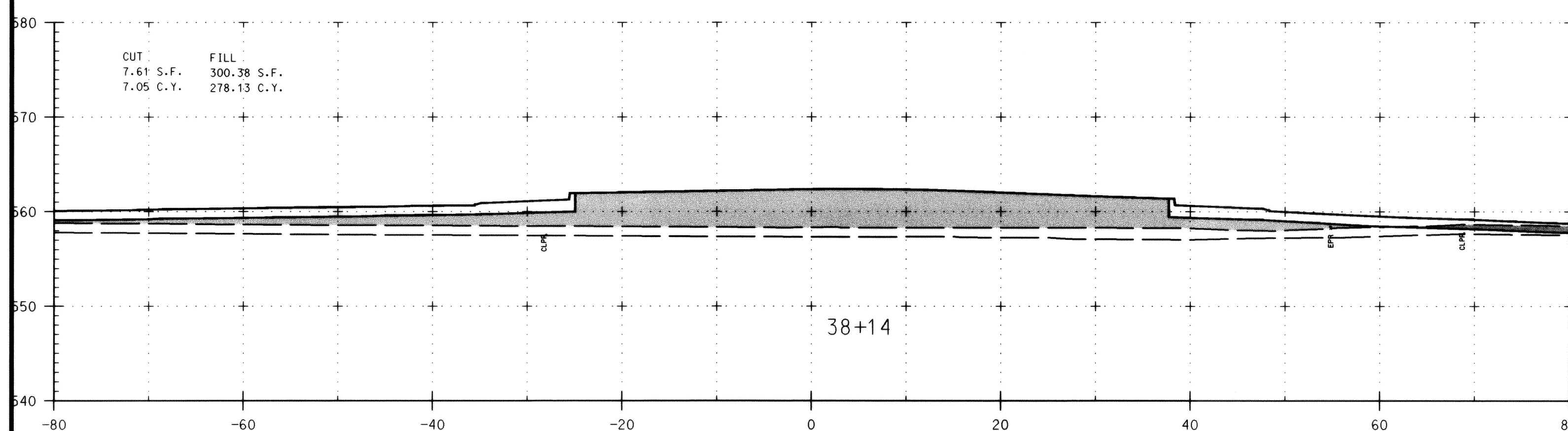
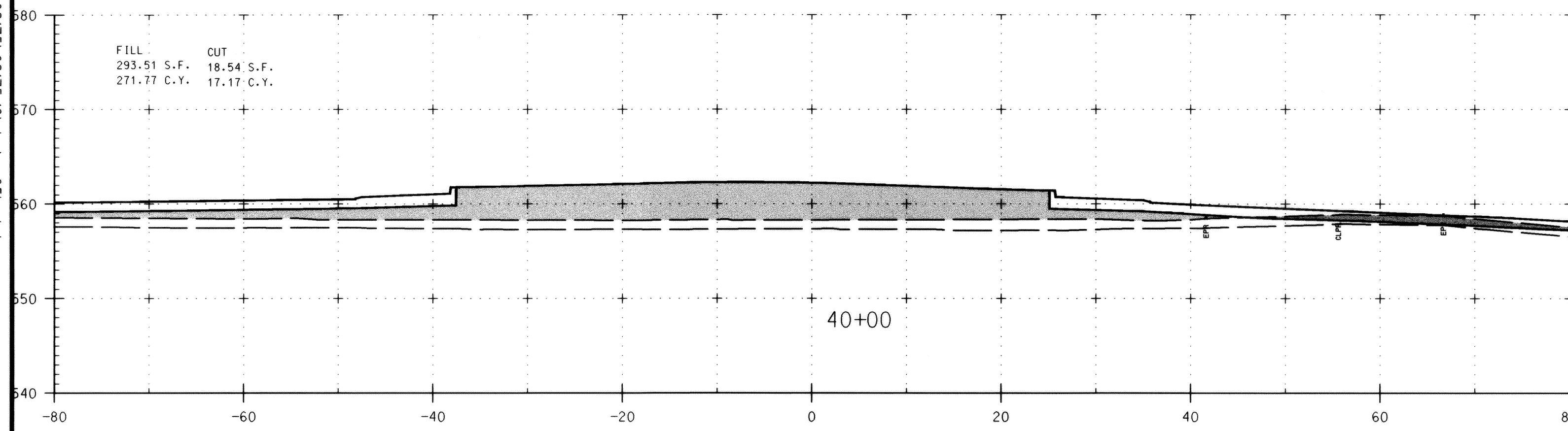
CROSS SECTION SHEET 1
SCALE MAP NO. BLOCK NO.

BURNTWOODS ROAD ROUNDABOUT INTERSECTION IMPROVEMENTS
HOWARD COUNTY, MARYLAND
CAPITOL PROJECT NO. J-4164-02

SCALE AS SHOWN
SHEET 20 OF 26

FILE: n:\1998\98175\98175.10\dgn\cs05brnt.dgn
DATE: 04/28/2004 01:44:08 PM

FILE: n:\1998\98175\98175_10\dgn\cs05brnt.dgn
DATE: 04/28/2004 01:44:25 PM



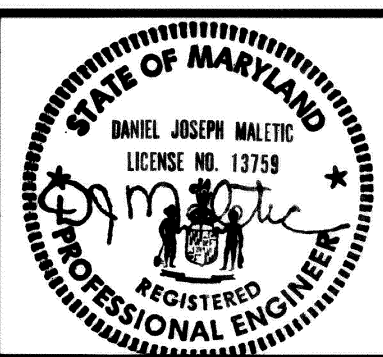
I hereby certify that to the best of my knowledge that this "As-Built" truly represents existing field conditions including but not limited to sizes, diameters, line and grade, and elevations shown.

STATE OF MARYLAND
DANIEL JOSEPH MALETIC
LICENSE NO. 13759
REGISTERED PROFESSIONAL ENGINEER
Daniel J. Maletic
Maryland Registered Professional
Engineer No. 13759

AS-BUILT
October, 2006

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Director of Public Works: *Jan J. Kim* 6/1/04
Date: *6/1/04*
Chief, Bureau of Engineering: *Steve Shauer* 5/28/04
Date: *5/28/04*
Chief, Division of Transportation and Special Projects

GPI Greenman-Pedersen, Inc.
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
10020 GULFORD RD, SUITE 100, JESSUP, MD, 20794
WASH. (301) 470-2772 BALT. (410) 880-3055
FAX: (301) 490-2649 www.gpinc.com



DES: K.P.			
DRN: C.R.			
CHK: M.S.Z.			
DATE: 04/28/2004	BY:	NO:	REVISION:

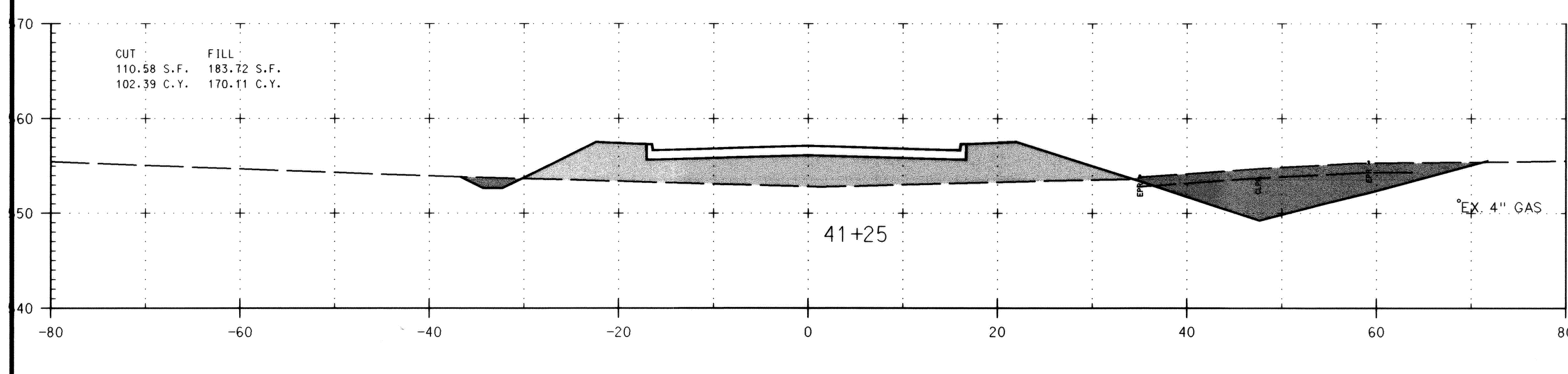
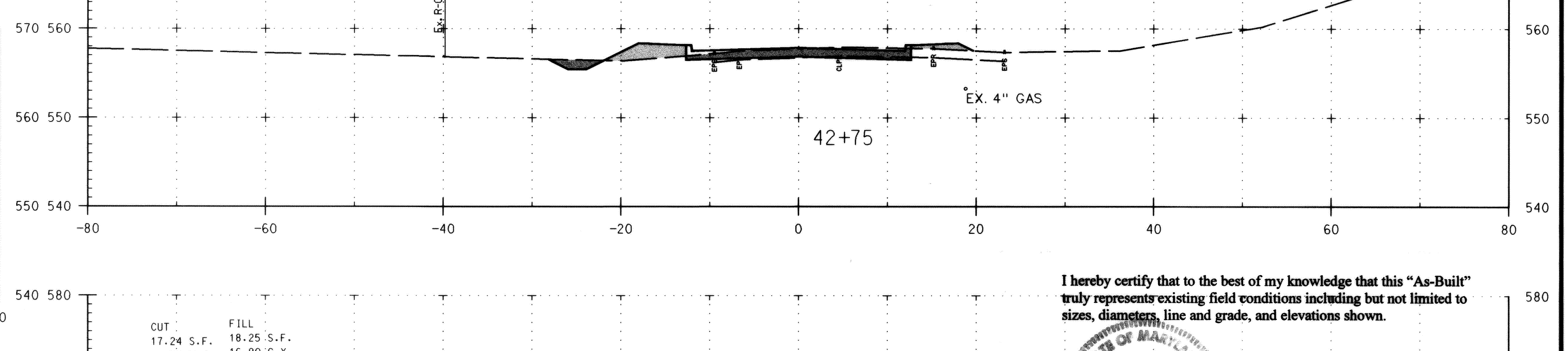
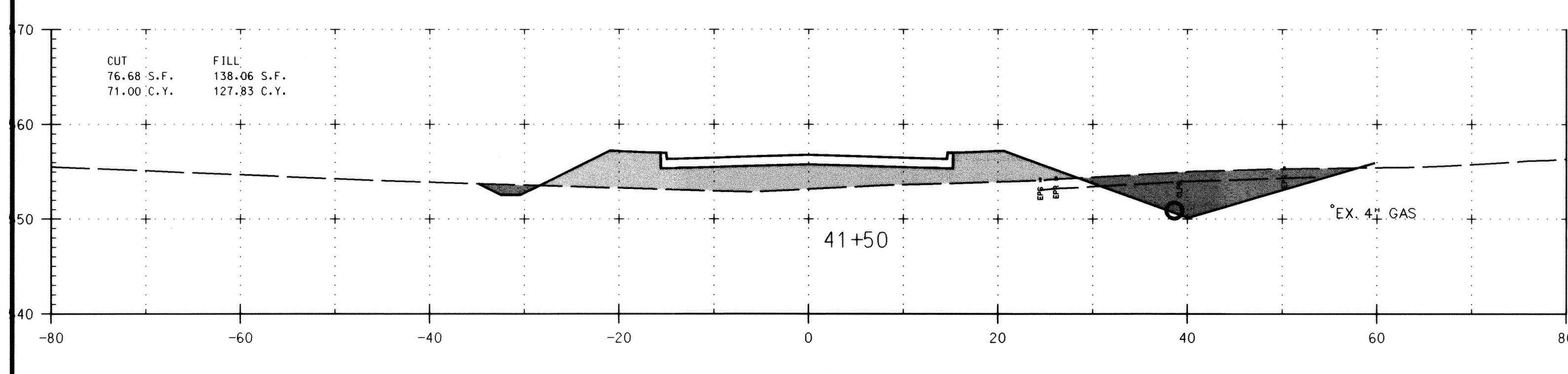
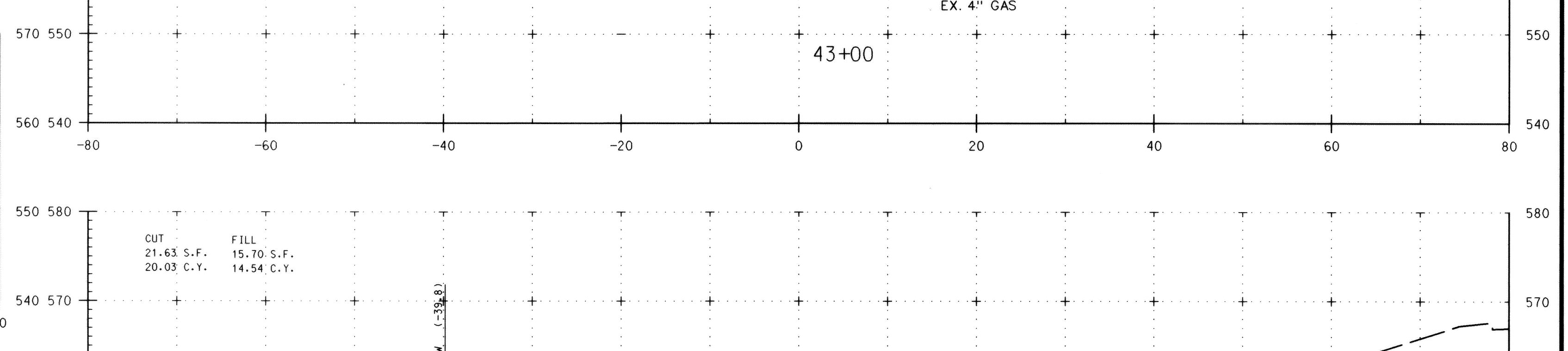
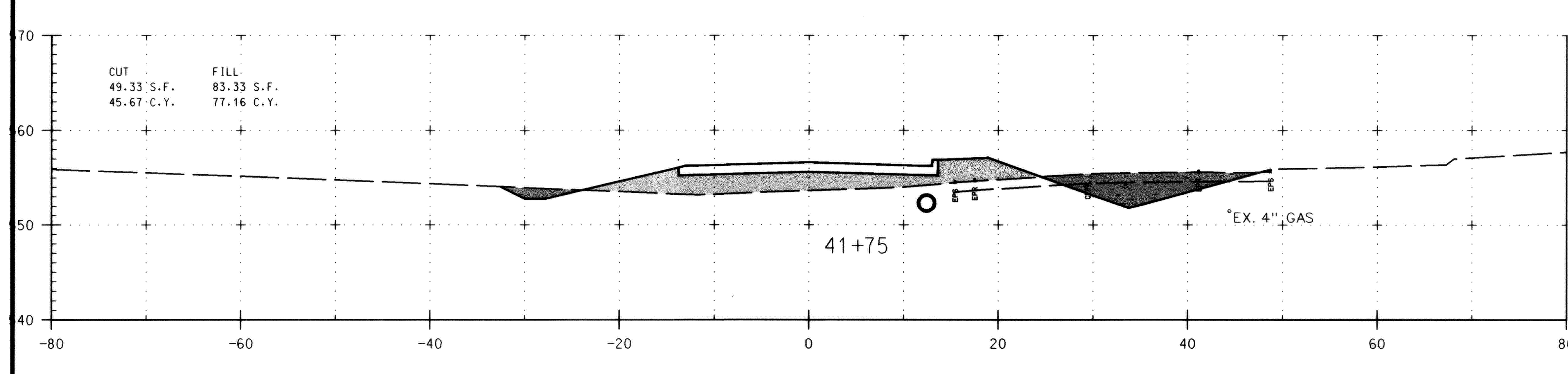
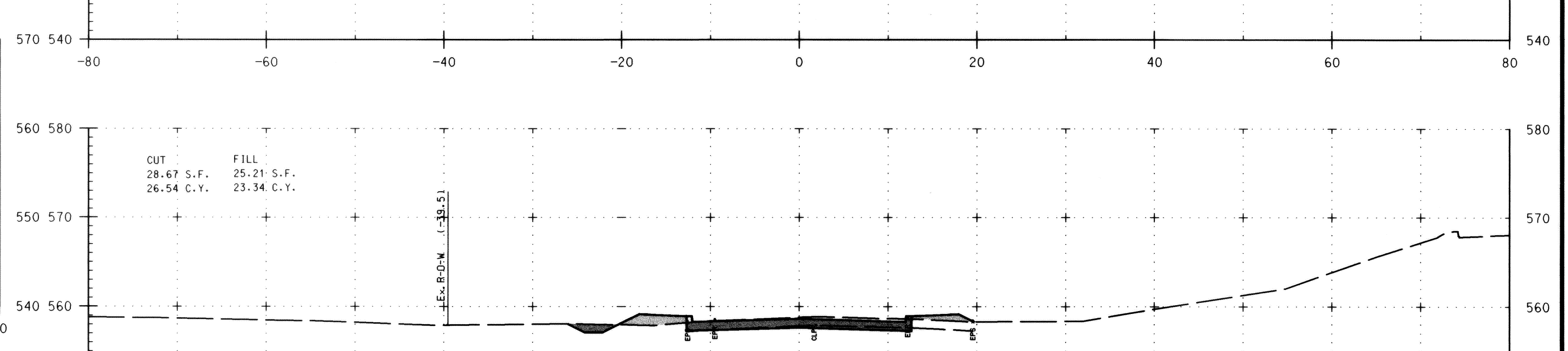
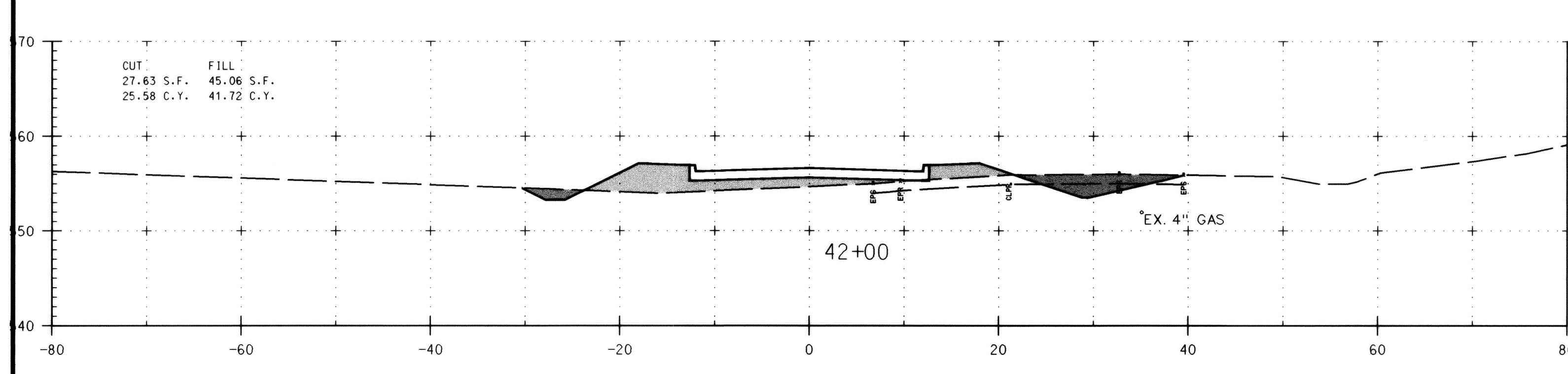
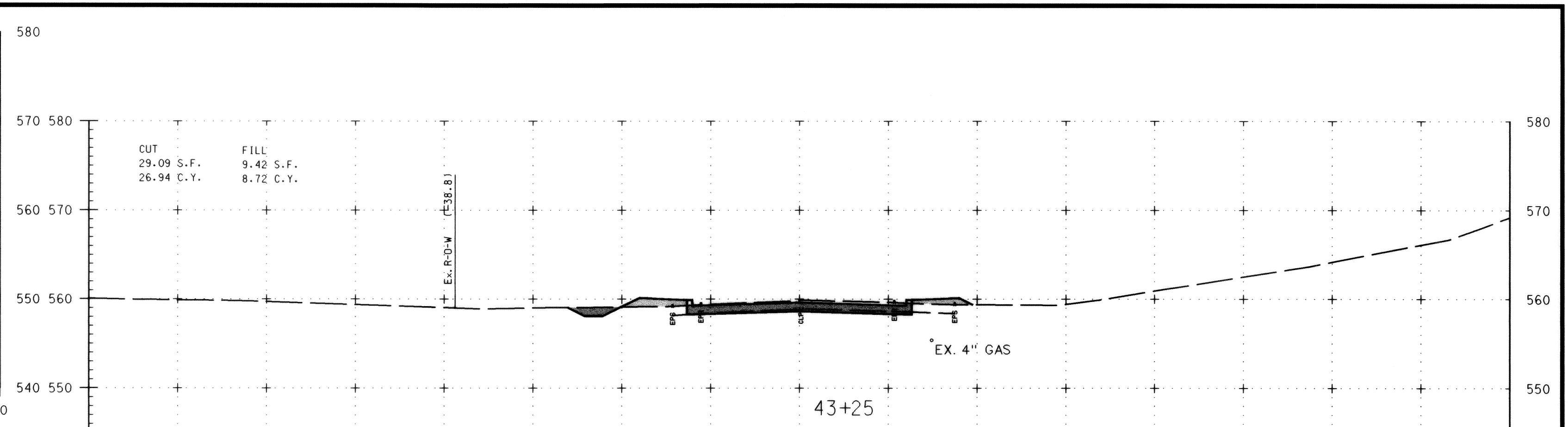
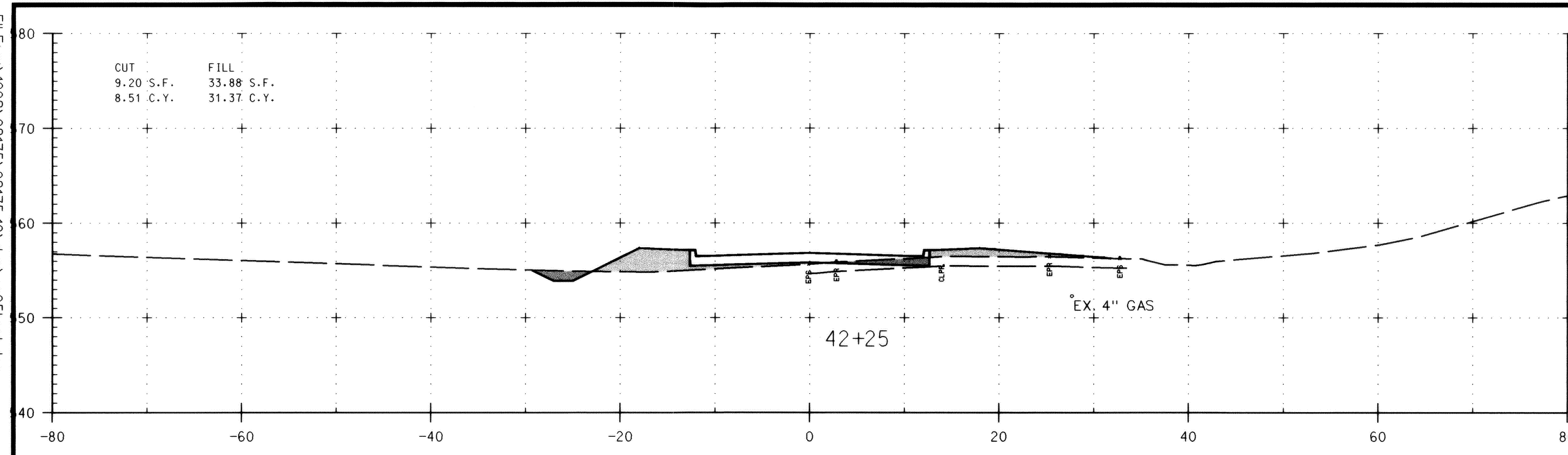
CROSS SECTION SHEET 2
SCALE MAP NO. _____ BLOCK NO. _____

BURNTWOODS ROAD ROUNDABOUT
INTERSECTION IMPROVEMENTS
HOWARD COUNTY, MARYLAND
CAPITOL PROJECT NO. J-4164-02

SCALE AS SHOWN
SHEET 21 OF 26

FILE: n:\1998\98175\98175_10\dgn\cs05brnt.dgn
DATE: 04/28/2004 01:44:25 PM

FILE: n:\1998\98175\98175_10\dgn\cs05brnt.dgn
 DATE: 04/28/2004 01:44:43 PM



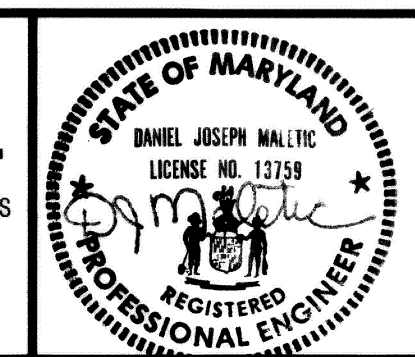
I hereby certify that to the best of my knowledge that this "As-Built" truly represents existing field conditions including but not limited to sizes, diameters, line and grade, and elevations shown.

Daniel J. Maletic
 Maryland Registered Professional Engineer No. 13759

AS-BUILT
 October, 2006

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Director of Public Works: *Raymond...* DATE: 6/1/02
 Chief, Bureau of Engineering: *Steve Sharar* DATE: 5/28/04
 Chief, Bureau of Highways: *...* DATE: 5-28-04
 Chief, Division of Transportation and Special Projects: *...* DATE: 5/28/04

GPI Greenman-Pedersen, Inc.
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
 10620 GUILFORD RD, SUITE 100, JESSUP, MD, 20794
 WASH. (301) 470-2772 BALT. (410) 880-3055
 FAX: (301) 480-2849 www.gpi.com



DES: K.P.			
DRN: C.R.			
CHK: M.S.Z.			
DATE: 04/28/2004	BY: NO	REVISION	DATE

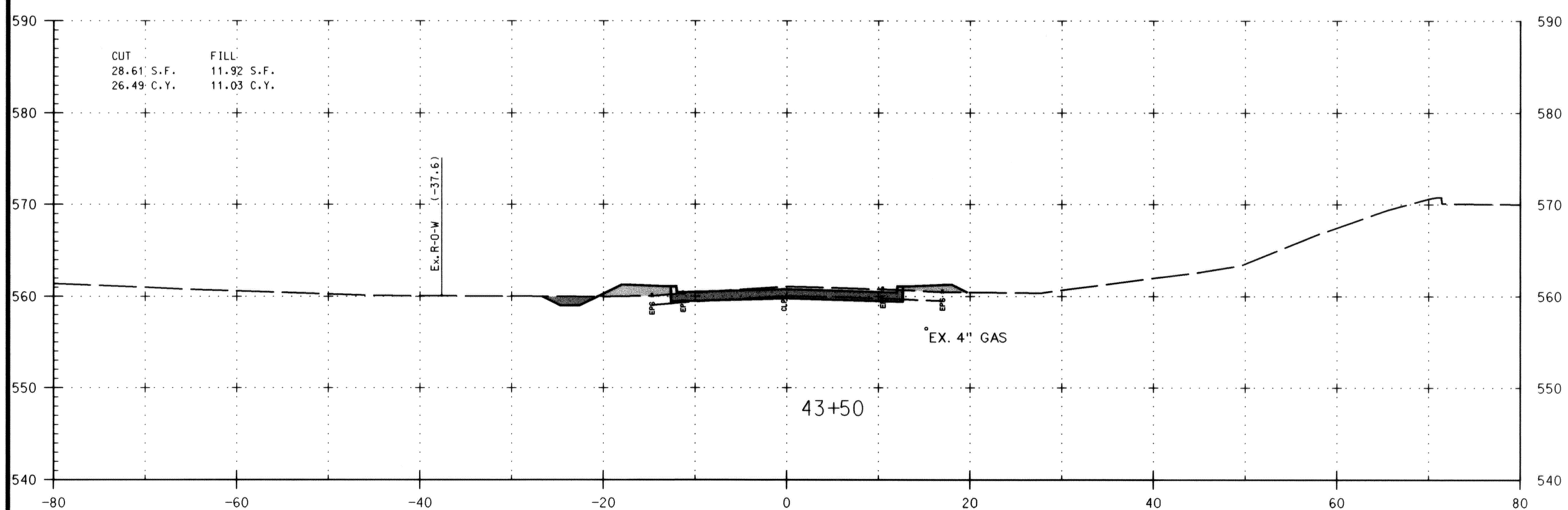
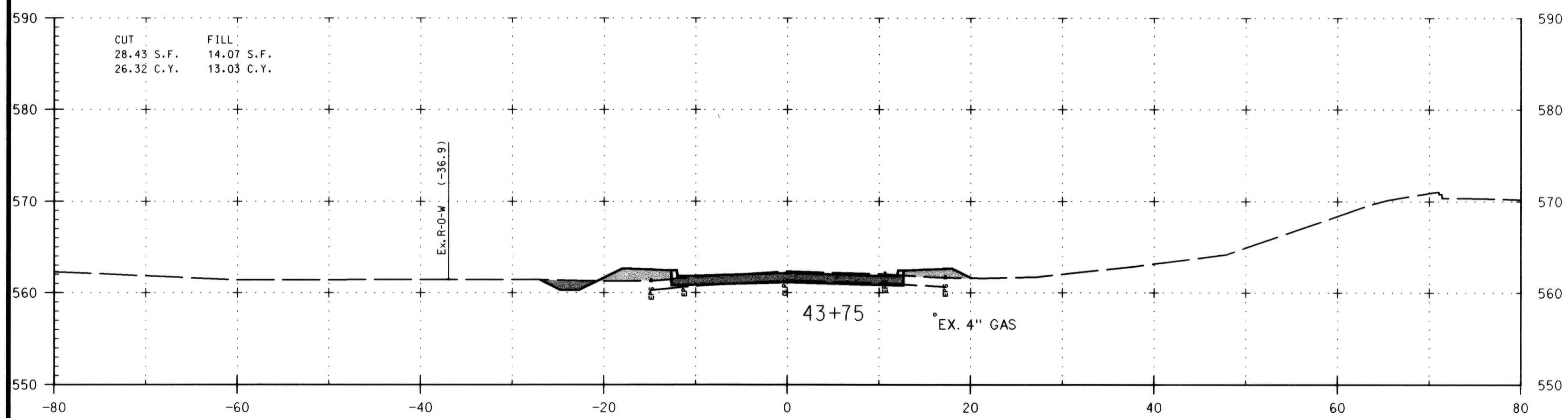
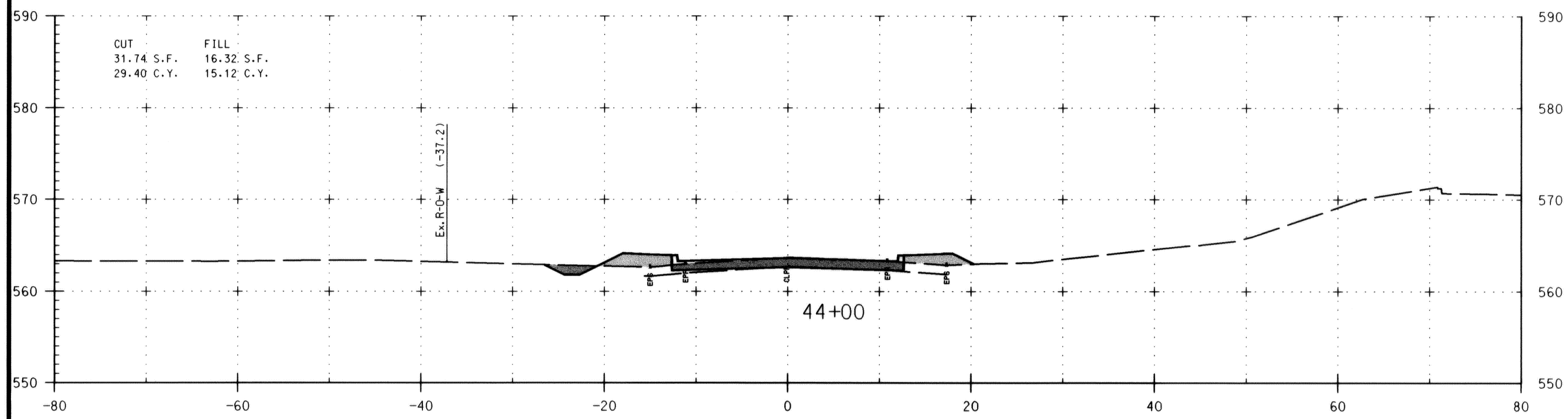
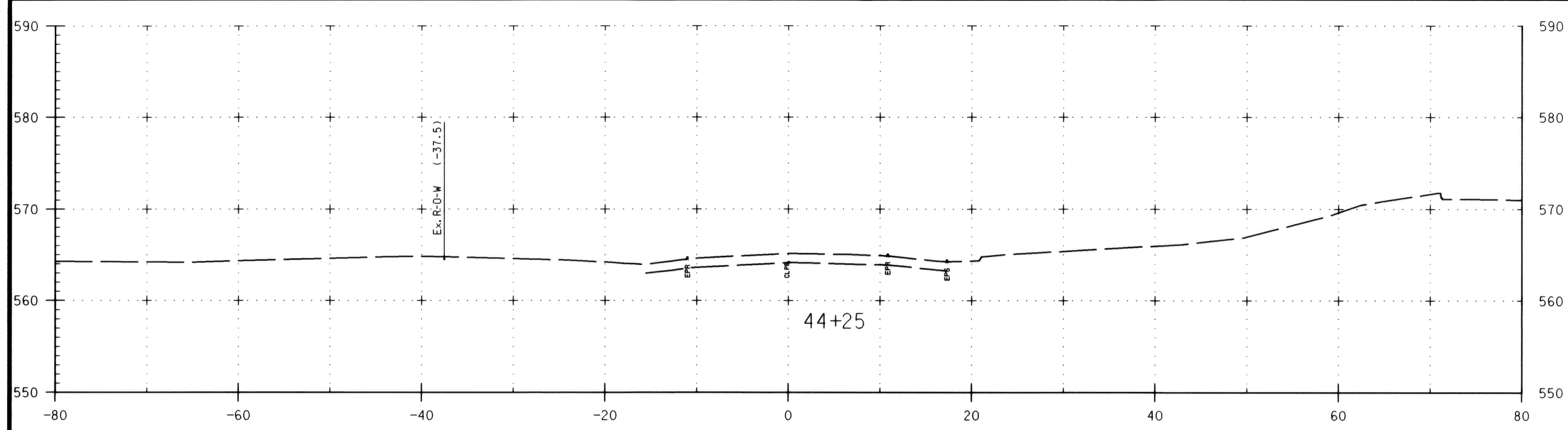
CROSS SECTION SHEET 3

BURNWOODS ROAD ROUNDABOUT INTERSECTION IMPROVEMENTS
 HOWARD COUNTY, MARYLAND
 CAPITOL PROJECT NO. J-4164-02

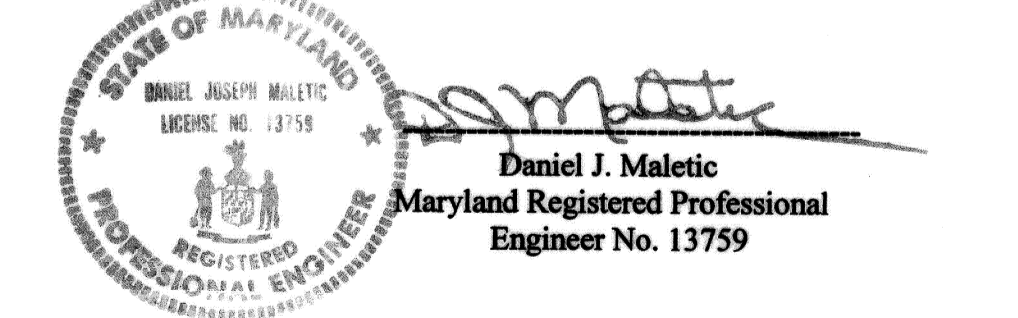
SCALE AS SHOWN
 SHEET 22 OF 26

FILE: n:\1998\98175\98175_10\dgn\cs05brnt.dgn
 DATE: 04/28/2004 01:44:43 PM

FILE: n:\1998\98175\98175_10\dgn\cs05brnt.dgn
 DATE: 04/28/2004 01:45:03 PM



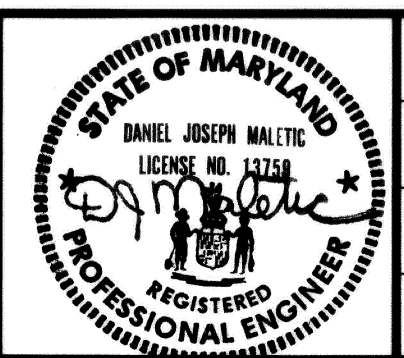
I hereby certify that to the best of my knowledge that this "As-Built" truly represents existing field conditions including but not limited to sizes, diameters, line and grade, and elevations shown.



AS-BUILT
 October, 2006

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Director of Public Works: *Jan J. [Signature]* DATE: 6/3/04
 Chief, Bureau of Engineering: *Robert [Signature]* DATE: 6/1/04
 Chief, Bureau of Highways: *Steve [Signature]* DATE: 5-28-04
 Chief, Division of Transportation and Special Projects: *Steve Sharar* DATE: 5/28/04

GPI Greenman-Pedersen, Inc.
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
 10820 GULFORD RD, SUITE 100, JESSUP, MD, 20794
 WASH. (301) 470-2772 BALT. (410) 880-3055
 FAX: (301) 480-2849 www.gpi.net.com



DES: K.P.			
DRN: C.R.			
CHK: M.S.Z.			
DATE: 04/28/2004	BY: NO	REVISION	DATE

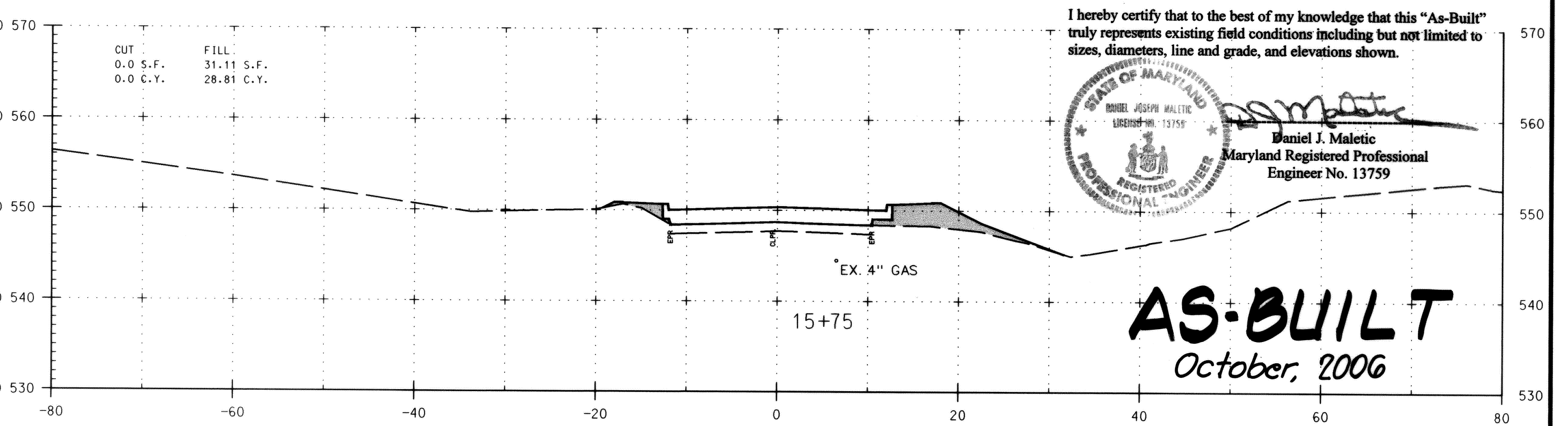
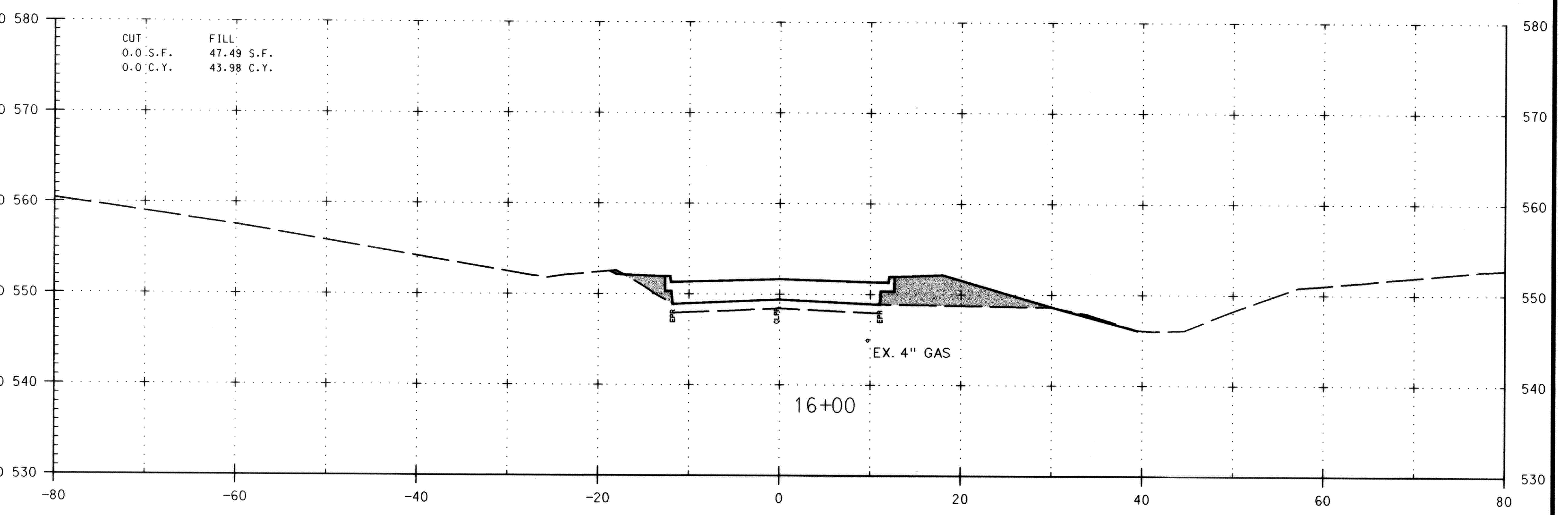
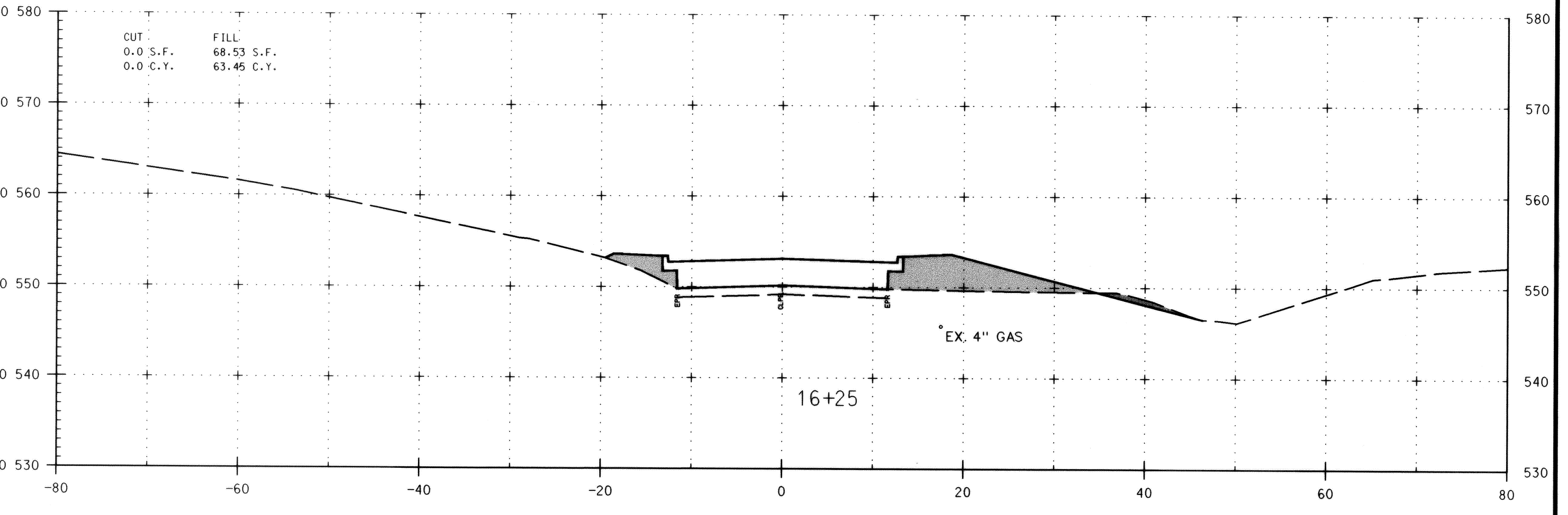
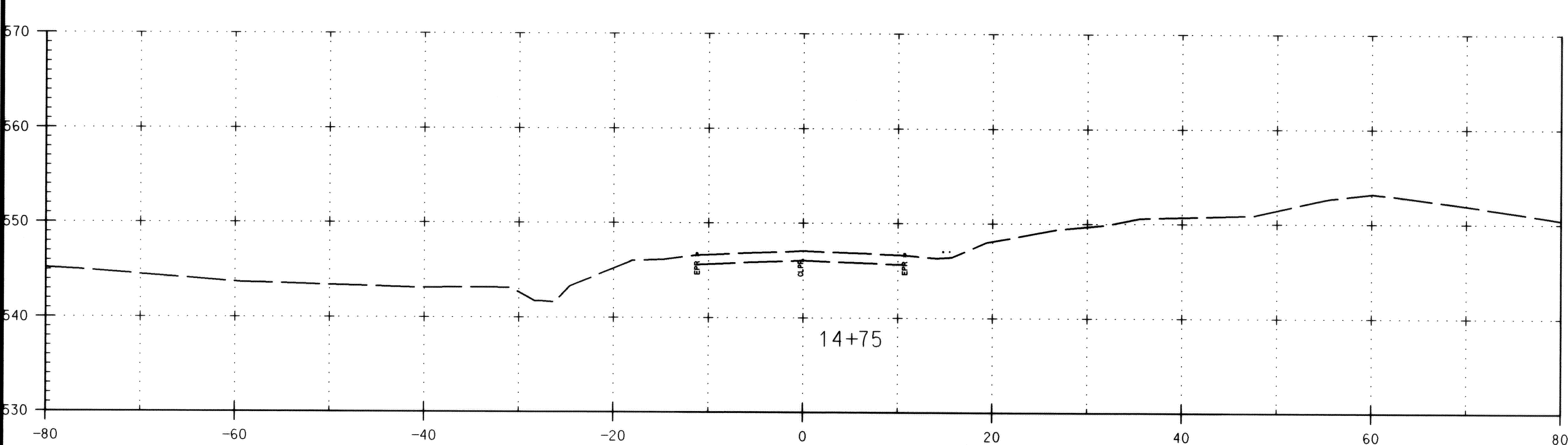
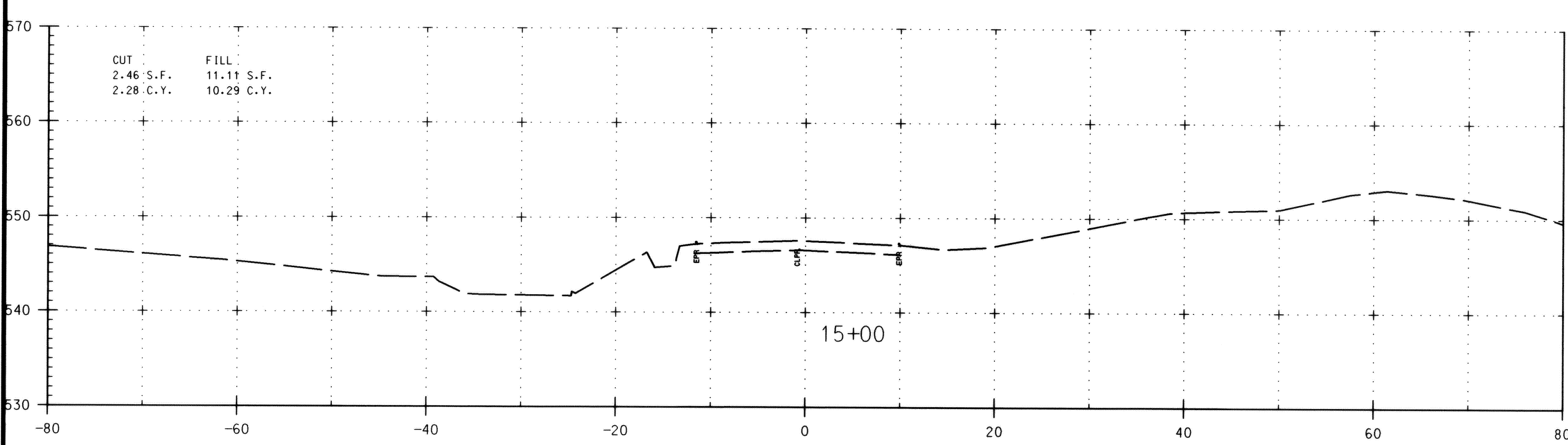
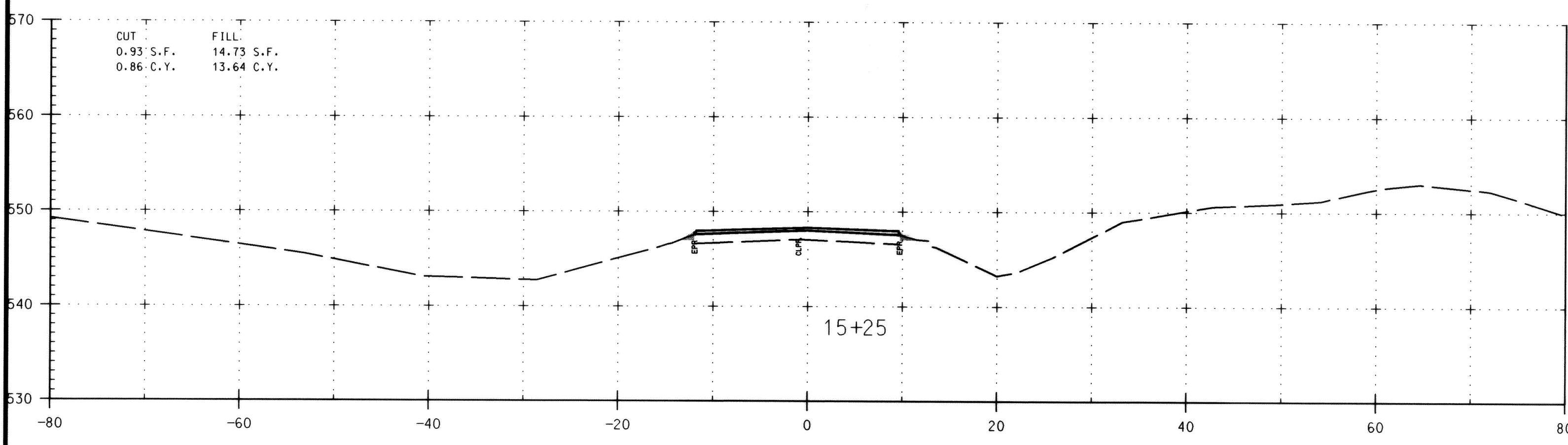
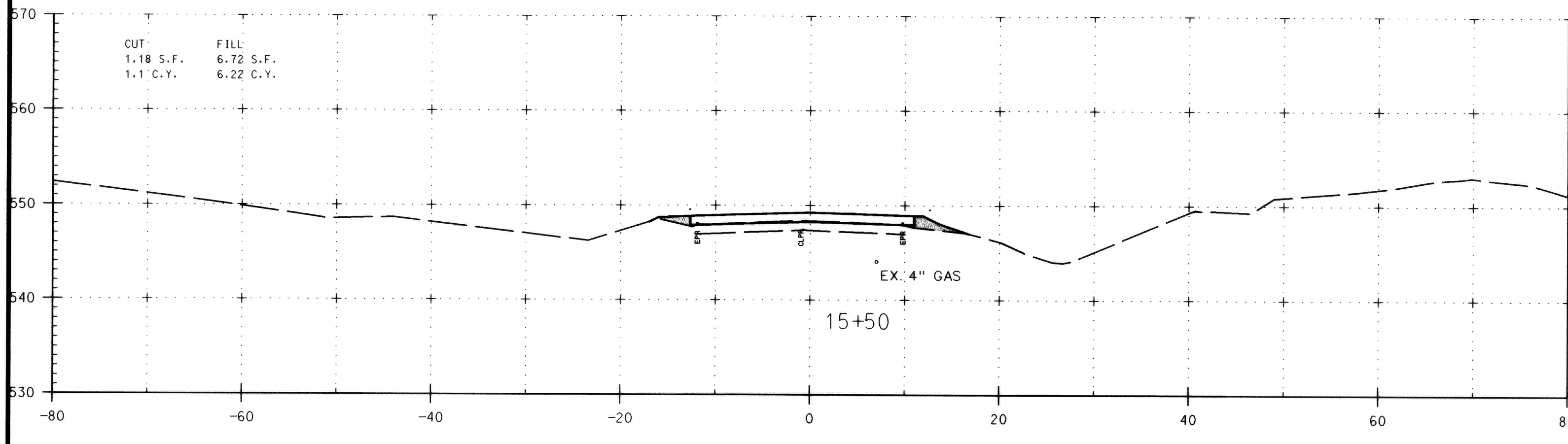
CROSS SECTION SHEET 4
 SCALE MAP NO. _____ BLOCK NO. _____

BURNTWOODS ROAD ROUNDABOUT
 INTERSECTION IMPROVEMENTS
 HOWARD COUNTY, MARYLAND
 CAPITOL PROJECT NO. J-4164-02

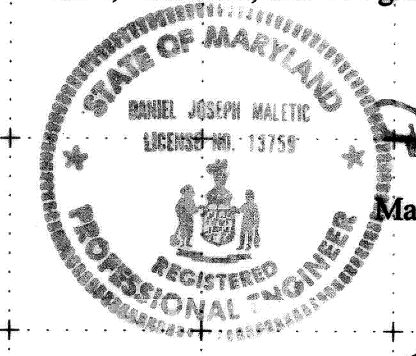
SCALE AS SHOWN
 SHEET 23 OF 26

FILE: n:\1998\98175\98175_10\dgn\cs05brnt.dgn
 DATE: 04/28/2004 01:45:03 PM

FILE: n:\1998\98175\98175_10\gn\cs05brnt.dgn
 DATE: 04/28/2004 01:45:24 PM



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
 October, 2006

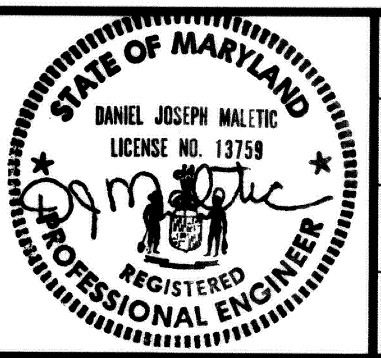
DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

John J. ... 6/3/04
 DIRECTOR OF PUBLIC WORKS DATE

Steve Sharan 5/28/04
 CHIEF, BUREAU OF HIGHWAYS DATE

Steve Sharan 5/28/04
 CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS DATE

GPI Greenman-Pedersen, Inc.
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
 10020 GULFORD RD, SUITE 100, JESSUP, MD, 20794
 WASH. (301) 470-2772 BALT. (410) 880-3065
 FAX: (301) 490-2640 www.gpi.net



DES: K.P.	
DRN: C.R.	
CHK: M.S.Z.	
DATE: 04/28/2004	
BY: NO:	
REVISION:	
DATE:	

CROSS SECTION SHEET 5

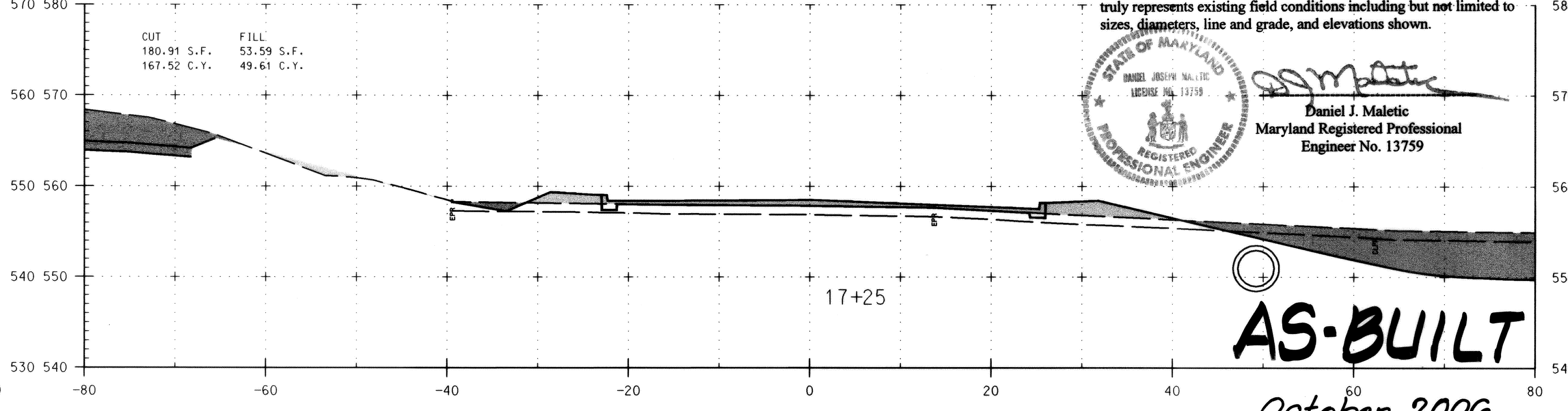
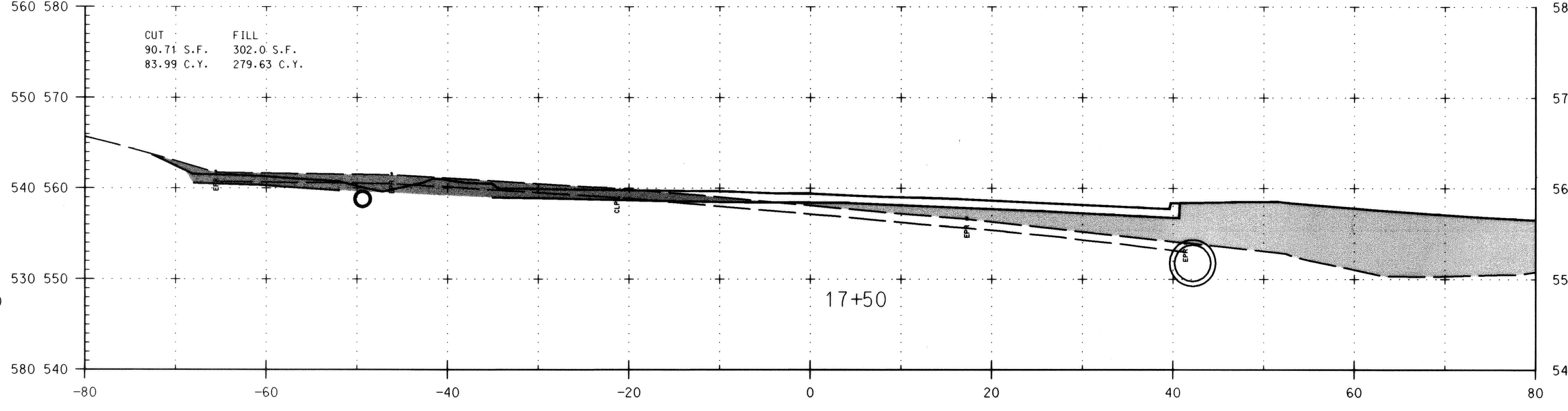
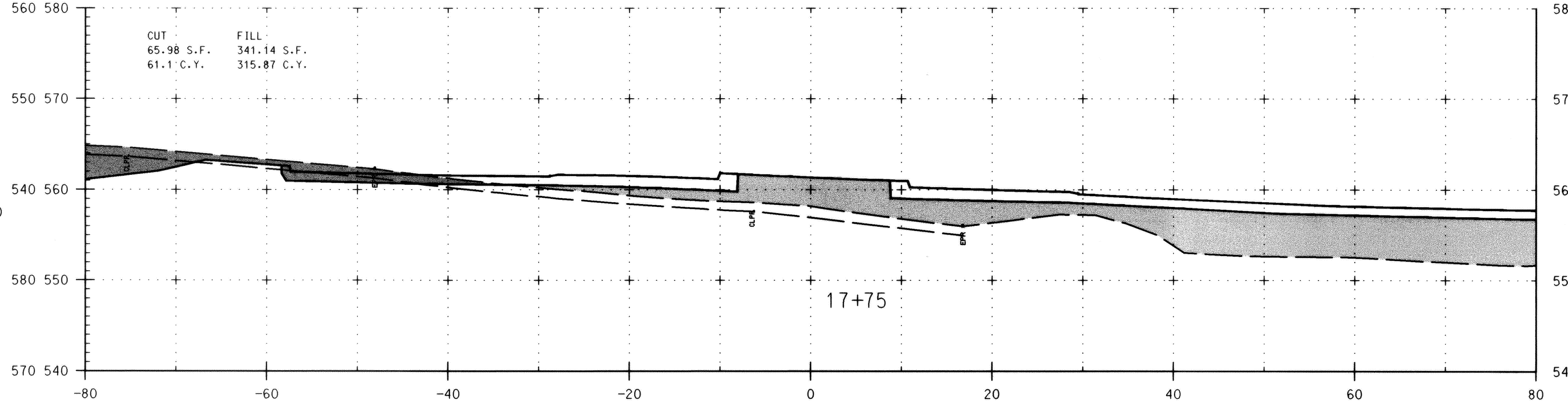
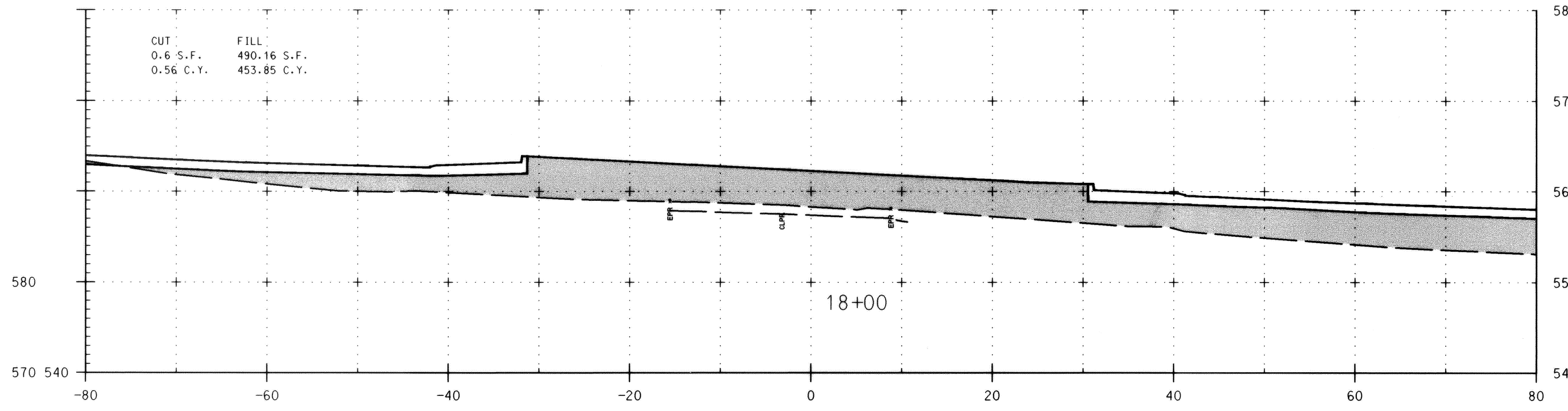
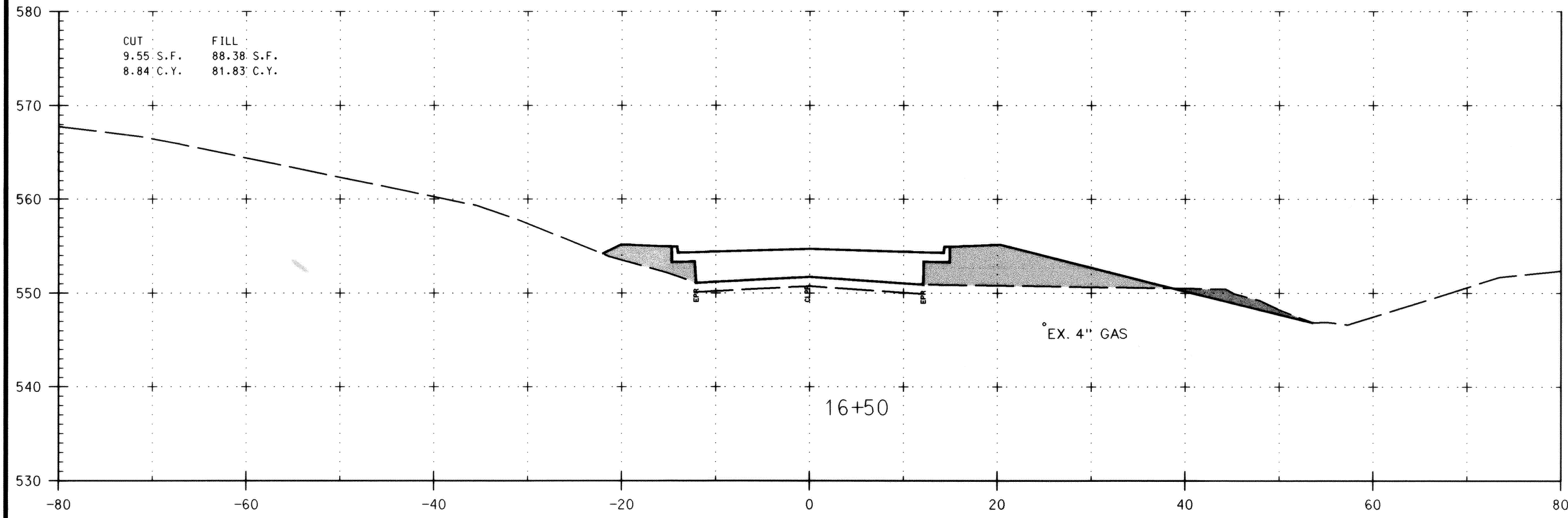
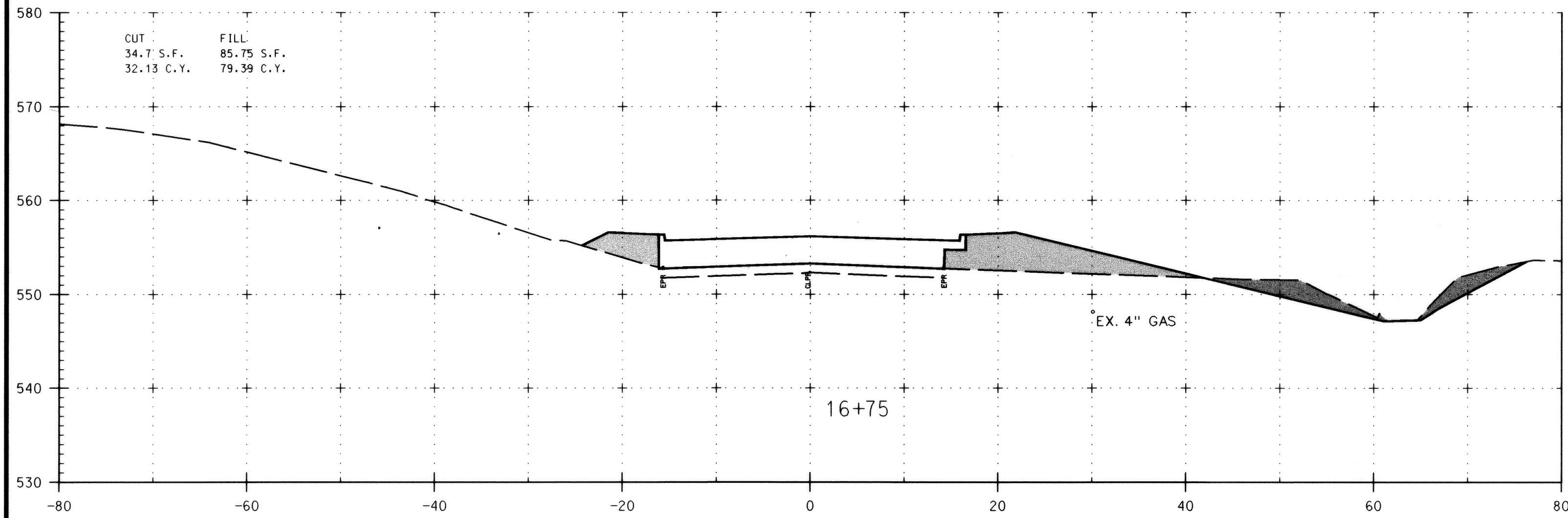
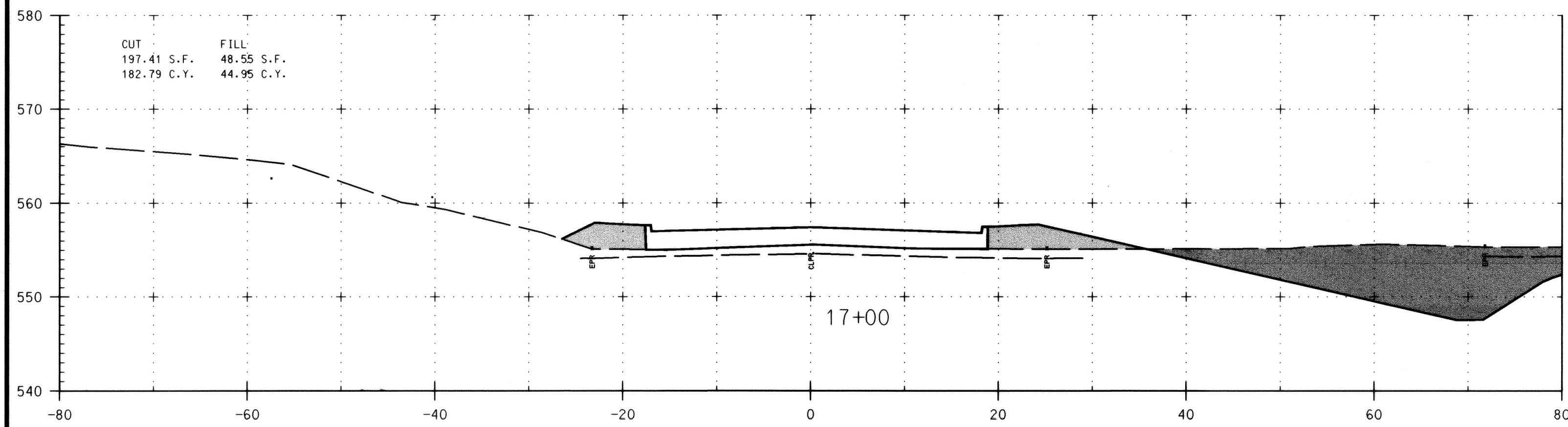
SCALE MAP NO. _____ BLOCK NO. _____

BURNTWOODS ROAD ROUNDABOUT INTERSECTION IMPROVEMENTS
 HOWARD COUNTY, MARYLAND
 CAPITOL PROJECT NO. J-4164-02

SCALE AS SHOWN
 SHEET 24 OF 26

FILE: n:\1998\98175\98175_10\gn\cs05brnt.dgn
 DATE: 04/28/2004 01:45:24 PM

FILE: n:\1998\98175\98175.10\dgn\cs05brnt.dgn
 DATE: 04/28/2004 01:45:41 PM



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.

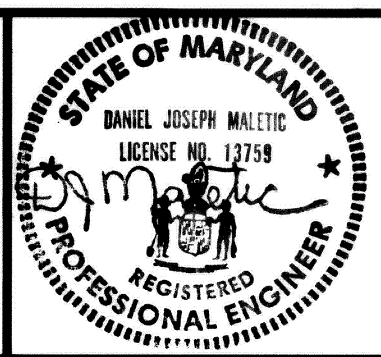
Daniel J. Maletic
 Maryland Registered Professional Engineer No. 13759

AS-BUILT
 October, 2006

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Director of Public Works: *William Z. ...* DATE: 5-28-04
 Chief, Bureau of Engineering: *Steve Shaner* DATE: 5/28/04
 Chief, Division of Transportation and Special Projects

GPI Greenman-Pedersen, Inc.
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
 10620 GULFORD RD, SUITE 100, JESSUP, MD, 20794
 WASH. (301) 470-2772 BALT. (410) 880-3055
 FAX: (301) 480-2649 www.gpi.com



DES: K.P.			
DRN: C.R.			
CHK: M.S.Z.			
DATE: 04/28/2004	BY: NO	REVISION	DATE

CROSS SECTION SHEET 6

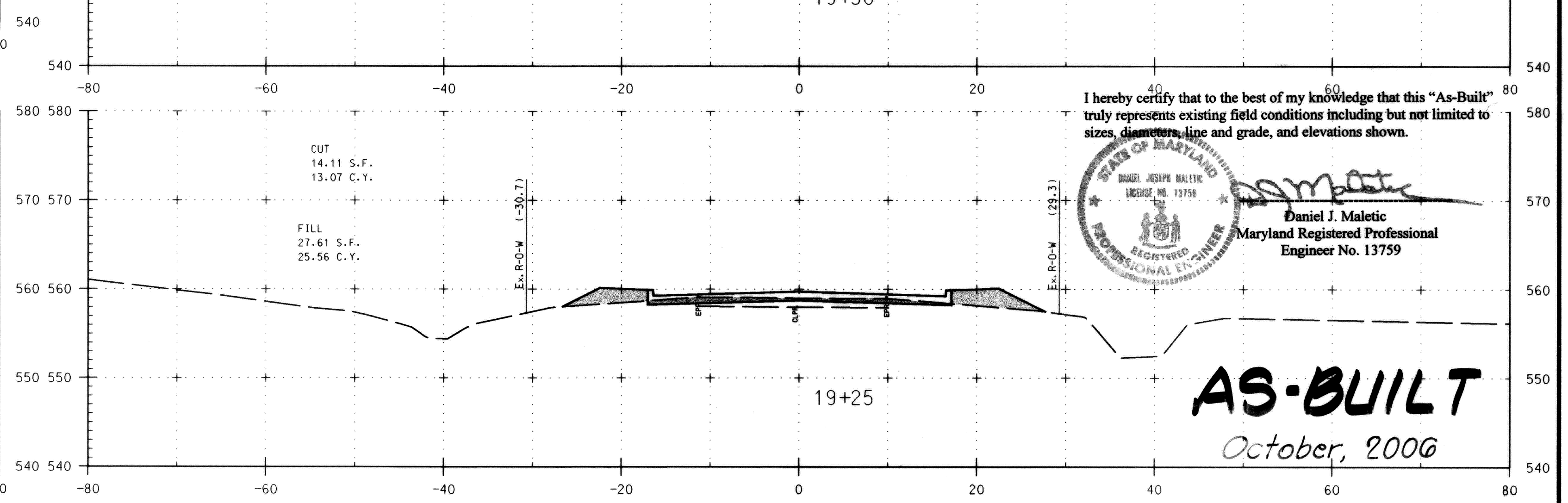
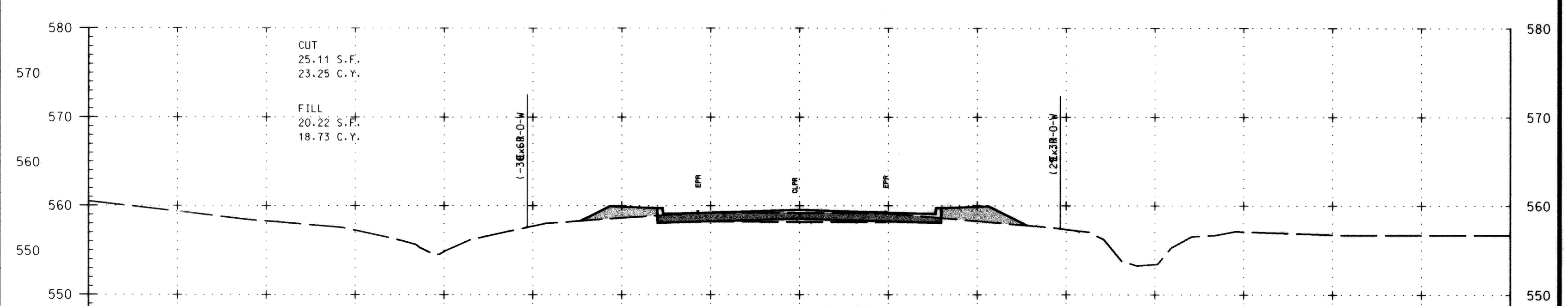
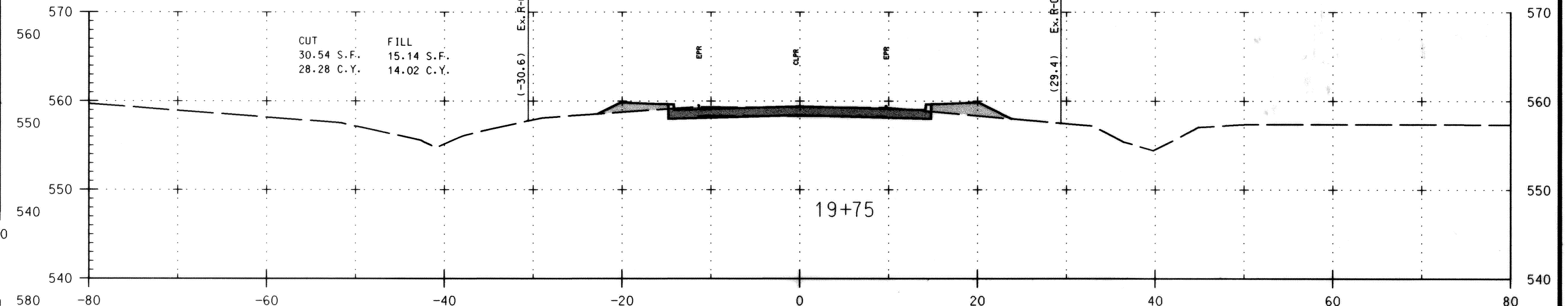
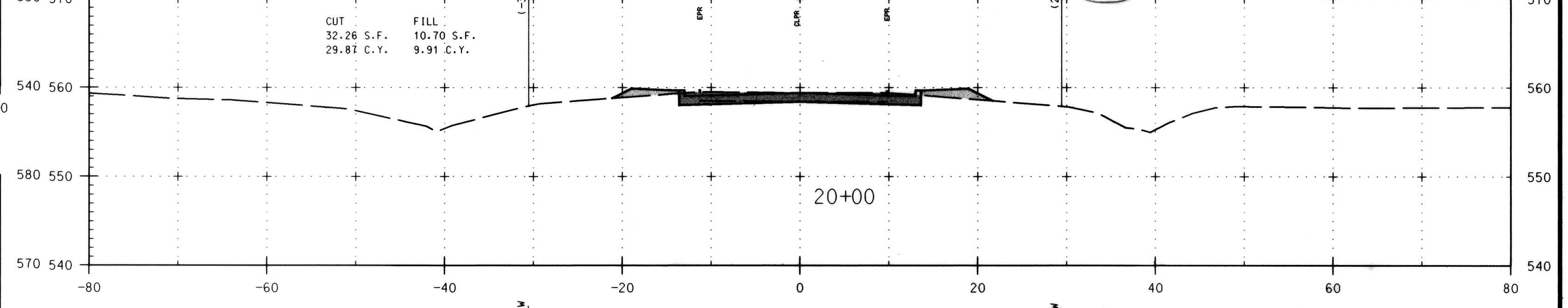
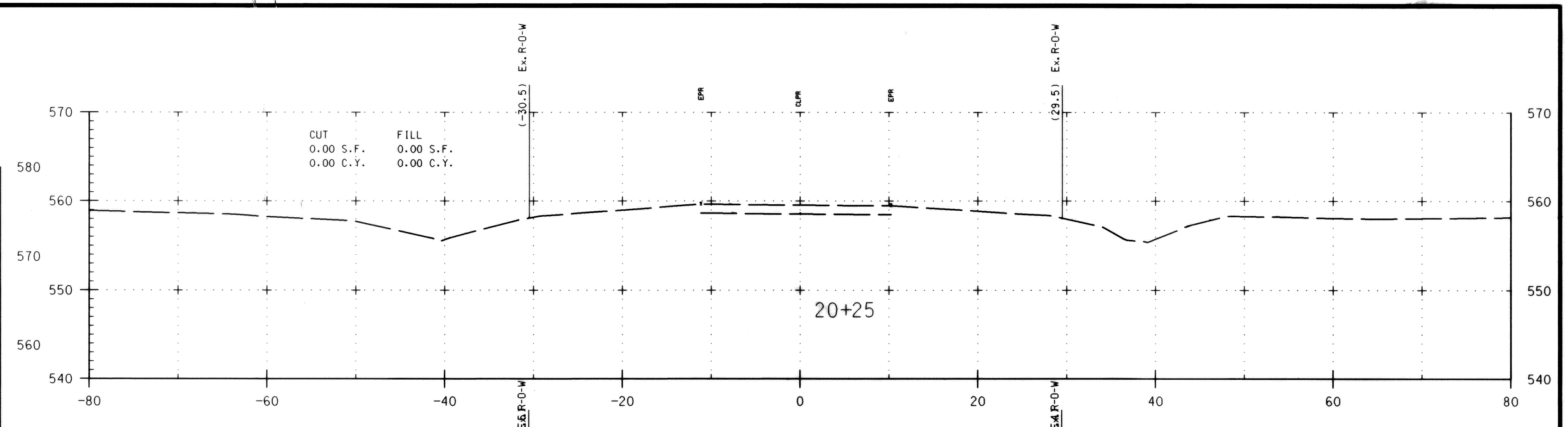
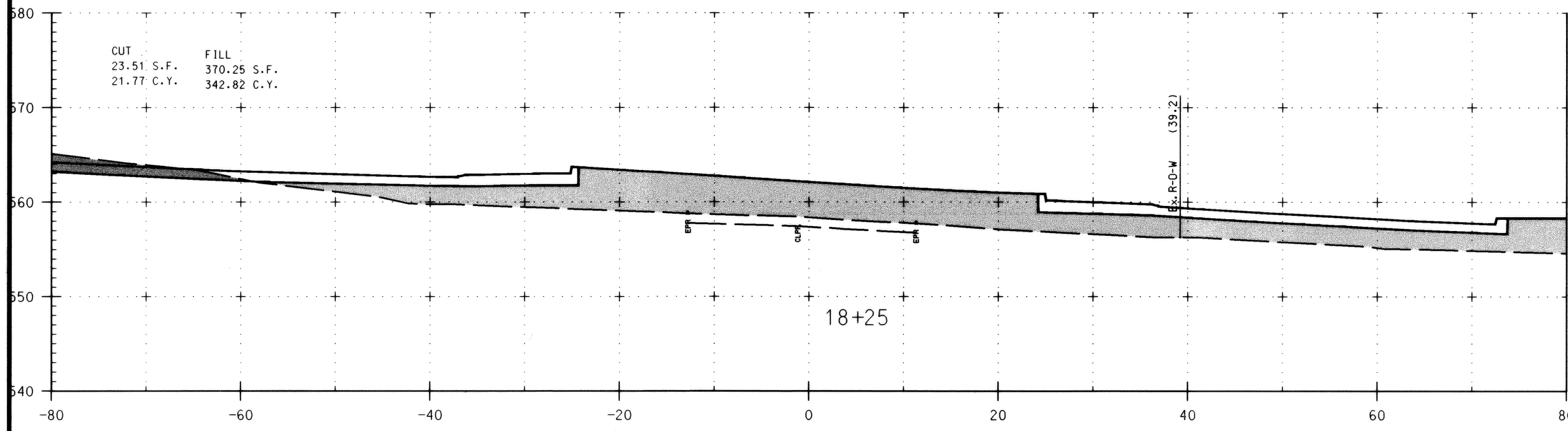
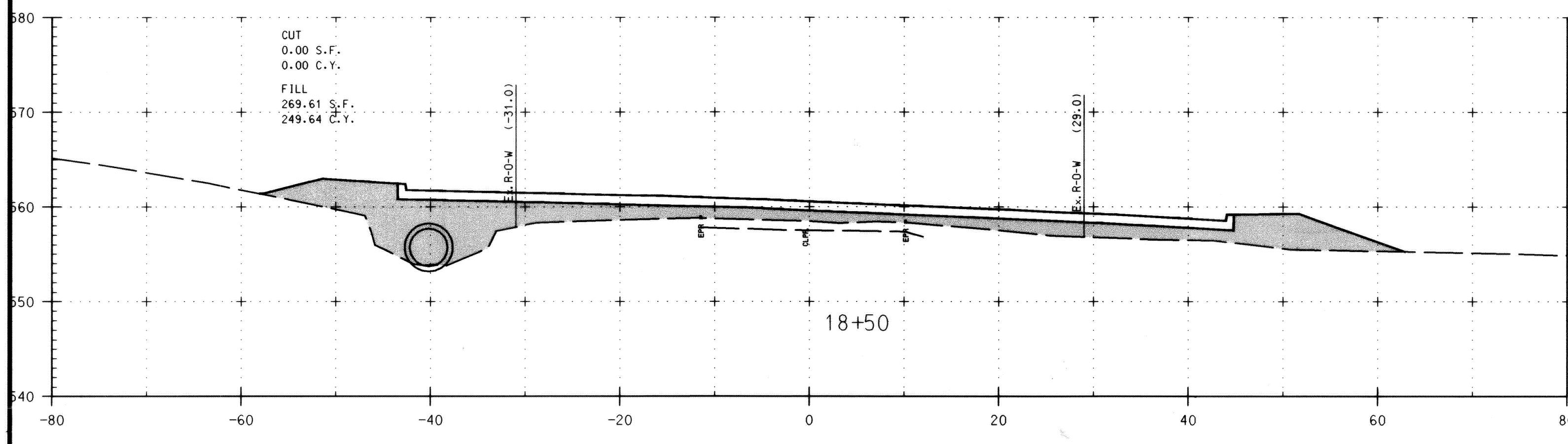
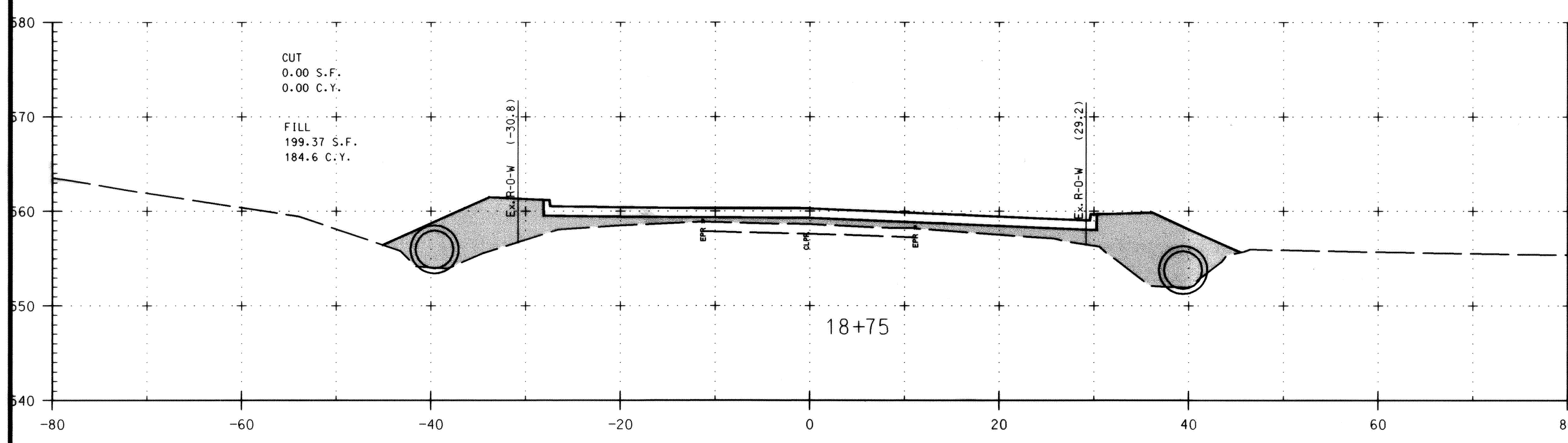
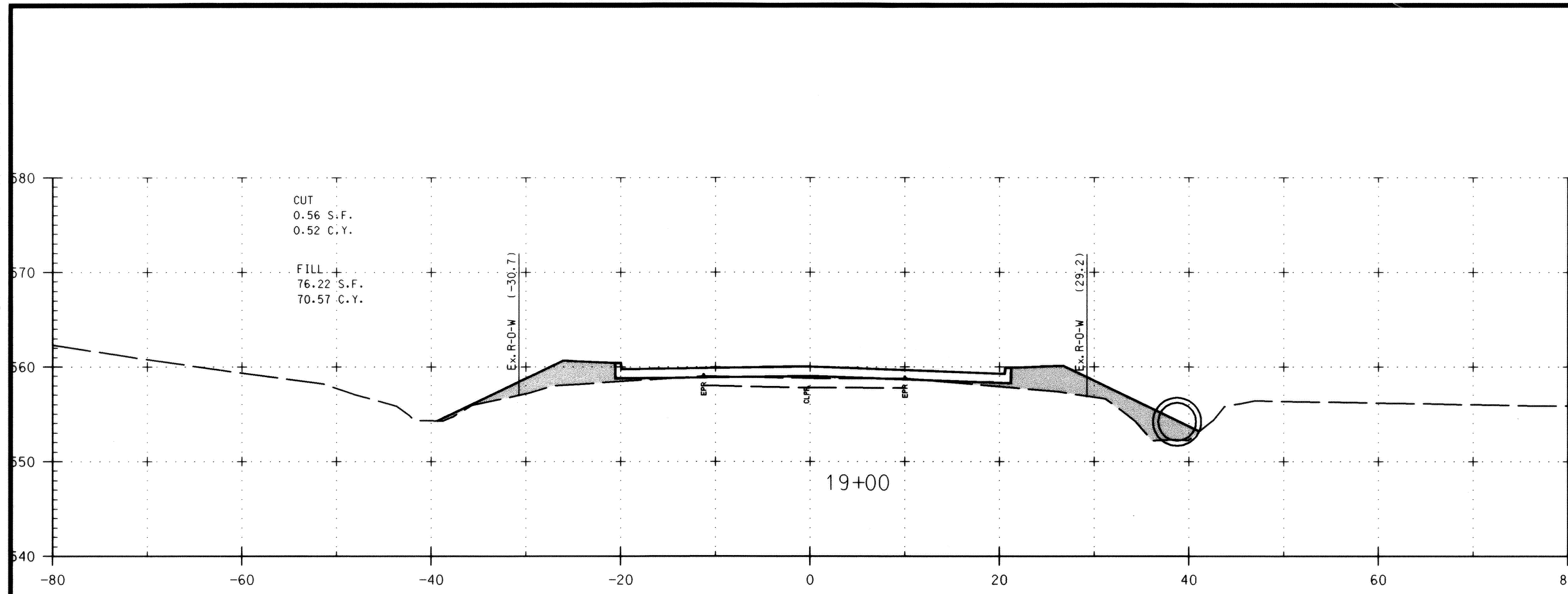
SCALE MAP NO. _____ BLOCK NO. _____

BURNWOODS ROAD ROUNDABOUT
 INTERSECTION IMPROVEMENTS
 HOWARD COUNTY, MARYLAND
 CAPITOL PROJECT NO. J-4164-02

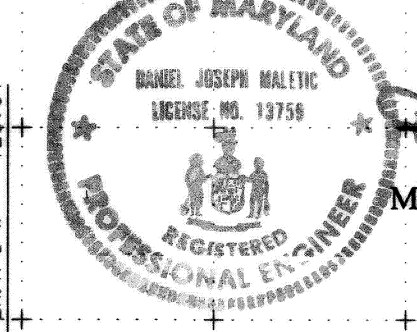
SCALE AS SHOWN
 SHEET 25 OF 26

FILE: n:\1998\98175\98175.10\dgn\cs05brnt.dgn
 DATE: 04/28/2004 01:45:41 PM

FILE: n:\1998\98175\98175.10\gn\cs05brnt.dgn
DATE: 04/28/2004 01:46:01 PM



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.

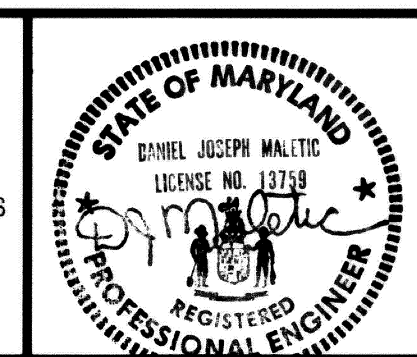


Daniel J. Maletic
Maryland Registered Professional Engineer No. 13759

AS-BUILT
October, 2006

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Director of Public Works: *John J. ...* DATE: 6/1/04
Chief, Bureau of Engineering: *Steve Sharan* DATE: 5/28/04

GPI Greenman-Pedersen, Inc.
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION ENGINEERS & INSPECTORS
10020 GULFORD RD, SUITE 100, JESSUP, MD, 20794
WASH. (301) 470-2772 BALT. (410) 880-3066
FAX: (301) 490-2648 www.gpinc.com



DES: K.P.			
DRN: C.R.			
CHK: M.S.Z.			
DATE: 04/28/2004	BY: _____	NO: _____	REVISION: _____

CROSS SECTION SHEET 7
SCALE MAP NO. _____ BLOCK NO. _____

BURNTWOODS ROAD ROUNDABOUT INTERSECTION IMPROVEMENTS
HOWARD COUNTY, MARYLAND
CAPITOL PROJECT NO. J-4164-02

SCALE AS SHOWN
SHEET 26 OF 26

FILE: n:\1998\98175\98175.10\gn\cs05brnt.dgn
DATE: 04/28/2004 01:46:01 PM