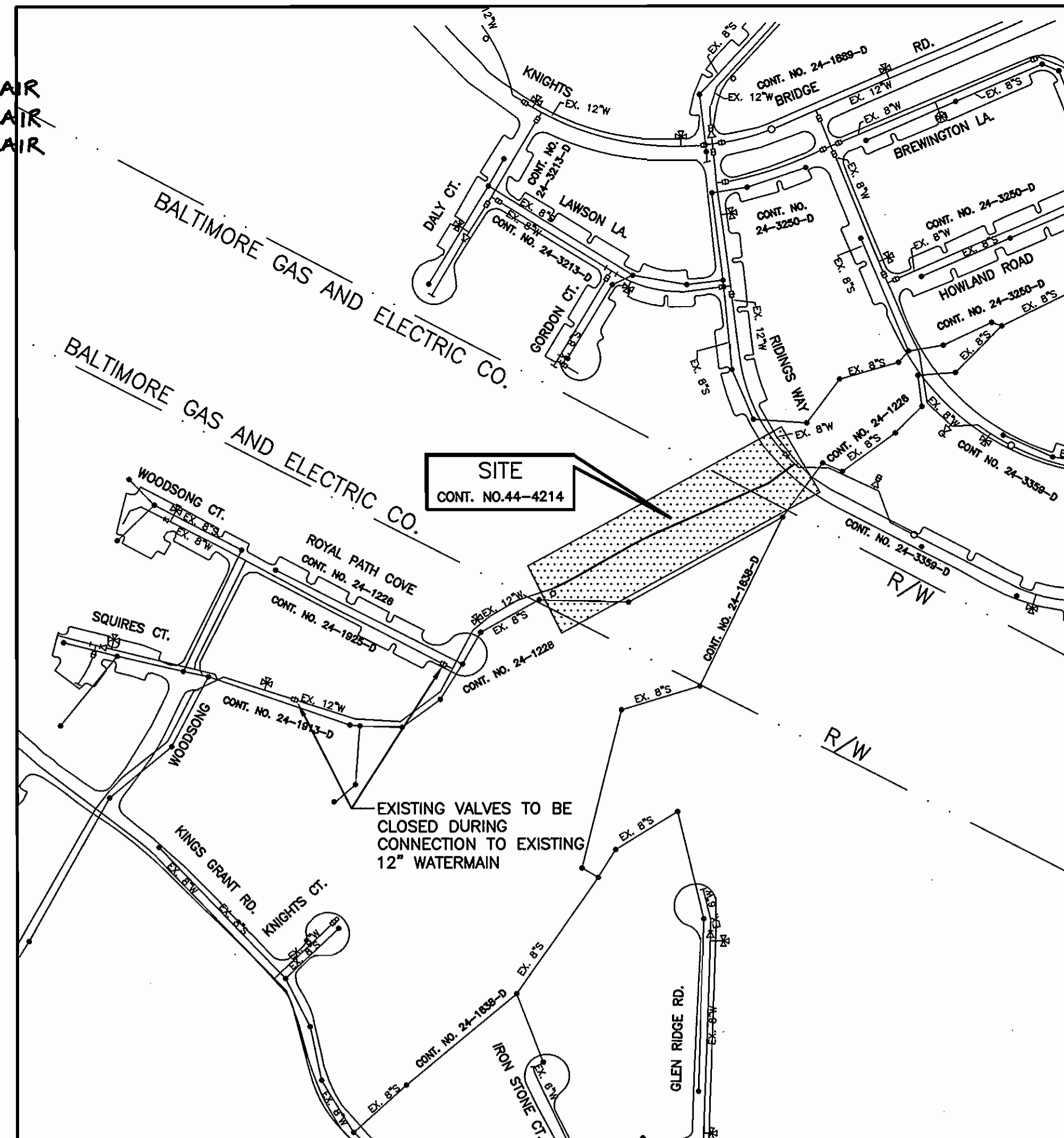


QUANTITIES				MANUFACTURER	
BID ITEM NO.	ITEM	BID	AS-BUILT	MATERIAL	/SUPPLIER
A-1	12" AWWA C900 DR 18 PVC	597 L.F.	555 LF		JM MFG / BELAIR
A-2	12" TAPPING SLEEVE AND VALVE	1 EA.	1		MUELLER CO. / BELAIR
A-3	BLOW-OFF ASSEMBLY	1 EA.	1		KUPFERLEI / BELAIR

INDEX OF DRAWINGS	
TITLE	DRAWING NUMBER
COVER SHEET	1
PLAN & PROFILE - STA. 0+00 TO STA. 5+96.33	2
MISCELLANEOUS DETAILS	3
EROSION AND SEDIMENT CONTROL PLAN AND DETAILS	4

RESTORATION SCHEDULE		
STATIONING	DESCRIPTION OF LOCATION/RESTORATION TYPE	
FROM	TO	
0+00.00	0+26.00	DESCRIPTION: MACADAM ROAD PAVEMENT SURFACE RESTORATION: REPLACE EXISTING MACADAM SURFACE IN KIND
0+26.00	1+91.99	DESCRIPTION: UNDEVELOPED LAND RESTORATION: SEED AND MULCH W/ TURF TYPE TALL FESCUE
1+91.99	1+96.65	DESCRIPTION: EX. GRAVEL DRIVEWAY RESTORATION: RESTORE EX. GRAVEL DRIVEWAY PER BG&E SPECIFICATIONS.
1+96.65	4+25.73	DESCRIPTION: UNDEVELOPED LAND RESTORATION: SEED AND MULCH W/ TURF TYPE TALL FESCUE
4+25.73	4+38.30	DESCRIPTION: EX. GRAVEL DRIVEWAY RESTORATION: RESTORE EX. GRAVEL DRIVEWAY PER BG&E SPECIFICATIONS.
4+38.30	5+44.00	DESCRIPTION: UNDEVELOPED LAND RESTORATION: SEED AND MULCH W/ TURF TYPE TALL FESCUE AND REPLACE GUARDRAIL IN KIND
5+44.00	5+96.33	DESCRIPTION: RIDINGS WAY PAVEMENT SURFACE WITH CURB & GUTTER RESTORATION: REPLACE CONCRETE CURB & GUTTER IN KIND AND PATCH TRENCH, ASPHALT PAVING SECTION PER HOWARD COUNTY STANDARD DETAIL P-3

BENCHMARK TABLE				
BM#	DESCRIPTION	ELEVATION	NORTHING	EASTING
1	X CUT ON MANHOLE #9A COVER	257.46	531551.34	1359245.20
2	SQUARE CUT IN CONCRETE	231.58	531861.81	1359911.15
3	NORTH ANCHOR BOLT CENTER POWER LINE POLE	240.09	531820.73	1359596.65



WATER AND SEWER CODE FOR COUNTY USE ONLY:
 WATER CODE NO.: C-03
 NO. OF CONNECTIONS: 0
 SEWER CODE NO.: N.A.
 NO. OF CONNECTION: N.A.
 DRAINAGE AREA: LITTLE PATUXENT

VICINITY MAP
 SCALE: 1" = 600'

HARMONY LANE WATERMAIN LOOP: ROYAL PATH COVE TO RIDINGS WAY

CAPITAL PROJECT: W-8243
 CONTRACT NO.: 44-4214
 HOWARD COUNTY, MARYLAND
 DEPARTMENT OF PUBLIC WORKS

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT.

GENERAL NOTES:

- APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED ON (MARCH & APRIL, 2004) BY A. MORTON THOMAS.
- HORIZONTAL AND VERTICAL SURVEY CONTROLS. THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD '83/'91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. HC47HA AND HC47H2 WITH ELEVATIONS TIED TO LOCAL BENCHMARKS PI-8 AND P-12 FROM THE WATER AND SEWER CONTRACTS. ALL VERTICAL CONTROLS ARE BASED ON NAVD '88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE:

SURVEY CONTROL COORDINATES				
STA	DESCRIPTION	ELEVATION	NORTHING	EASTING
8	REBAR & CAP	243.66	531694.7707	1359463.7963
9	REBAR & CAP	220.38	531642.3752	1359930.8162
100	REBAR & CAP	237.77	531954.8522	1359773.4524
101	REBAR & CAP	258.02	531621.0026	1359251.6136
103	HOWARD COUNTY	232.76	531877.9554	1359878.7973
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 12 INCHES. CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATIONS OF THE TEST PITS. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PITS IS INCLUDED ON THE DRAWINGS OR WITHIN THE SPECIFICATIONS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

AT&T	1-800-252-1133
BCE (CONTRACTOR SERVICES)	1-410-850-4620
BCE (UNDERGROUND DAMAGE CONTROL)	1-410-787-9068
BUREAU OF UTILITIES	1-410-313-4900
COLONIAL PIPELINE COMPANY	1-410-795-1390
MISS UTILITY	1-800-257-7777
STATE HIGHWAY ADMINISTRATION	1-410-531-5333
VERIZON	1-800-743-0033/410-224-9210
MCI WORLDWIDE	1-800-624-9675
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE 10' (FT.) WIDE TEMPORARY CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- CONTRACTOR SHALL REMOVE TREES, STUMPS, AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN. TREES REMOVED OR DAMAGED DURING CONSTRUCTION ACTIVITIES SHALL BE REPLACED IN KIND AS DIRECTED BY ENGINEER.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410)-313-7450 AT LEAST FIVE WORKING DAYS BEFORE OPEN CUTTING OR BORING/JACKING OF ANY COUNTY ROAD FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(A) OF THE HOWARD COUNTY CODE.
- TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED.
- ALL WATER MAINS SHALL BE PVC PIPE MEETING THE REQUIREMENTS OF AWWA C900 DR18, AND THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AND ALL SUBSEQUENT AMENDMENTS THERETO.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES, UNLESS OTHERWISE NOTED.
- ALL FITTINGS ON THE 12" MAIN SHALL BE RESTRAINED JOINT, UNLESS OTHERWISE NOTED. ALL FITTINGS ON SMALLER MAINS SHALL BE RESTRAINED JOINT OR BUTTRESSED/ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATION SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND SECTION 1005 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- ALL TIE-INS TO EXISTING WATER MAINS SHALL BE COORDINATED WITH THE HOWARD COUNTY BUREAU OF UTILITIES AT LEAST 10 WORKING DAYS PRIOR TO SCHEDULING WORK.
- THE CONTRACTOR SHALL LOCATE ANY WATER AND OR SEWER HOUSE CONNECTIONS, AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THESE EXISTING CONNECTIONS. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE. TEMPORARY SERVICE SHALL BE PROVIDED AS REQUIRED.
- EXISTING STORM DRAINS DISTURBED BY THE CONSTRUCTION SHALL BE REPLACED IN KIND AT THE SAME LINE AND GRADE AS THE EXISTING STORM DRAINS.
- ANY TREES, OUTSIDE OF EXISTING EASEMENTS, DISTURBED BY CONSTRUCTION SHALL BE REPLACED IN KIND. (3" CALIPER MINIMUM.)
- SALVAGEABLE VALVES AND APPURTENANCES TO BE REMOVED SHALL BE DELIVERED TO THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS - BUREAU OF UTILITIES AS DIRECTED BY THE ENGINEER OR COUNTY.
- THE CONTRACTOR MUST FOLLOW ALL CONDITIONS AND REQUIREMENTS AS SET FORTH IN THE FOLLOWING PERMITS/APPLICATIONS:
 - BALTIMORE GAS & ELECTRIC RIGHT-OF-ENTRY TO HIGH PIKE TRANSMISSION CORRIDOR
- WHERE THE PROPOSED MAIN PARALLELS EXISTING MAINS, THE APPROXIMATE ELEVATION OF THE EXISTING MAIN IS SHOWN IN THE PROFILES. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING MAIN AS WELL AS ANY EXISTING THRUST RESTRAINT.
- HIGH DEFLECTION COUPLINGS SHALL BE PER HOWARD COUNTY SPECIFICATIONS.
- ALL DUCTILE IRON PIPES TO BE USED ON THE PUBLIC WATER SYSTEM SHALL BE CLASS 54. DUCTILE IRON FITTINGS SHALL MEET THE REQUIREMENTS OF THE HOWARD COUNTY DESIGN MANUAL VOLUME IV-STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AND SHALL BE EXTERIOR EPOXY COATED IN ACCORDANCE WITH AWWA C116.
- ALL WATER HOUSE CONNECTIONS SHALL BE COPPER MEETING THE REQUIREMENTS OF AND CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME IV-STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- ALL FIRE HYDRANT LEADS INCLUDING THE TEE SHALL BE DUCTILE IRON CLASS 54 MEETING THE REQUIREMENTS OF AND CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME IV-STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- ALL WATER MAINS WITHIN CASING PIPES SHALL BE RESTRAINED DUCTILE IRON PIPE CLASS 54 MEETING THE REQUIREMENTS OF AND CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME IV-STANDARD SPECIFICATIONS AND DETAIL FOR CONSTRUCTION.
- HOWARD COUNTY STANDARD DETAIL W2.22, BUTTRESS AND ANCHORAGES FOR VERTICAL BENDS, SHALL BE AMENDED TO INDICATE "WHEN ANCHORING PVC PIPE, THE STRAPPING IN CONTACT WITH THE PIPE SURFACE SHALL BE 1" WIDE BY 1/2" THICK STEEL. THE REMAINING PORTION OF THE STRAP SHALL BE REINFORCING BAR SIZED IN ACCORDANCE WITH PERTINENT CHART ON THE DETAIL."

AS-BUILT

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

William T. McNeil 1-3-07
 DIRECTOR OF PUBLIC WORKS DATE

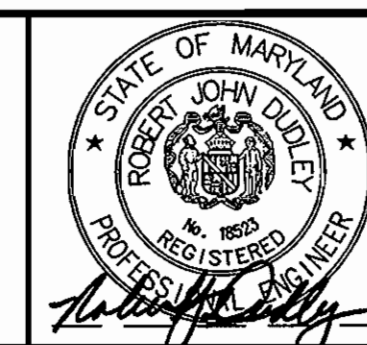
Robert J. Ryan 1/2/07
 CHIEF - BUREAU OF ENGINEERING DATE

Ruth Burgess 1-4-07
 CHIEF, BUREAU OF UTILITIES DATE

Oliver DeLozier 1-2-07
 CHIEF, UTILITY DESIGN DIVISION DATE

O'BRIEN & GERE
 ENGINEERS, INC.

8201 Corporate Drive
 Suite 1000
 Landover, Maryland 20785
 (301) 731-5622
 FAX: (301) 577-4737



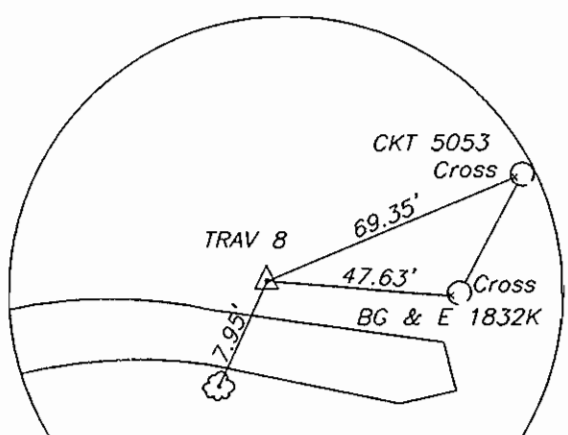
DSN. BY:	YLM	1	AS-BUILT REVISIONS	11/07
DRN. BY:	RPW			
CHK. BY:	RJD			
DATE:	12/05/06			
BY	NO.	REVISION	DATE	

COVER SHEET	
600' SCALE MAP NO.	47
BLOCK NO.	22

HARMONY LANE WATERMAIN LOOP:
 ROYAL PATH COVE TO RIDINGS WAY

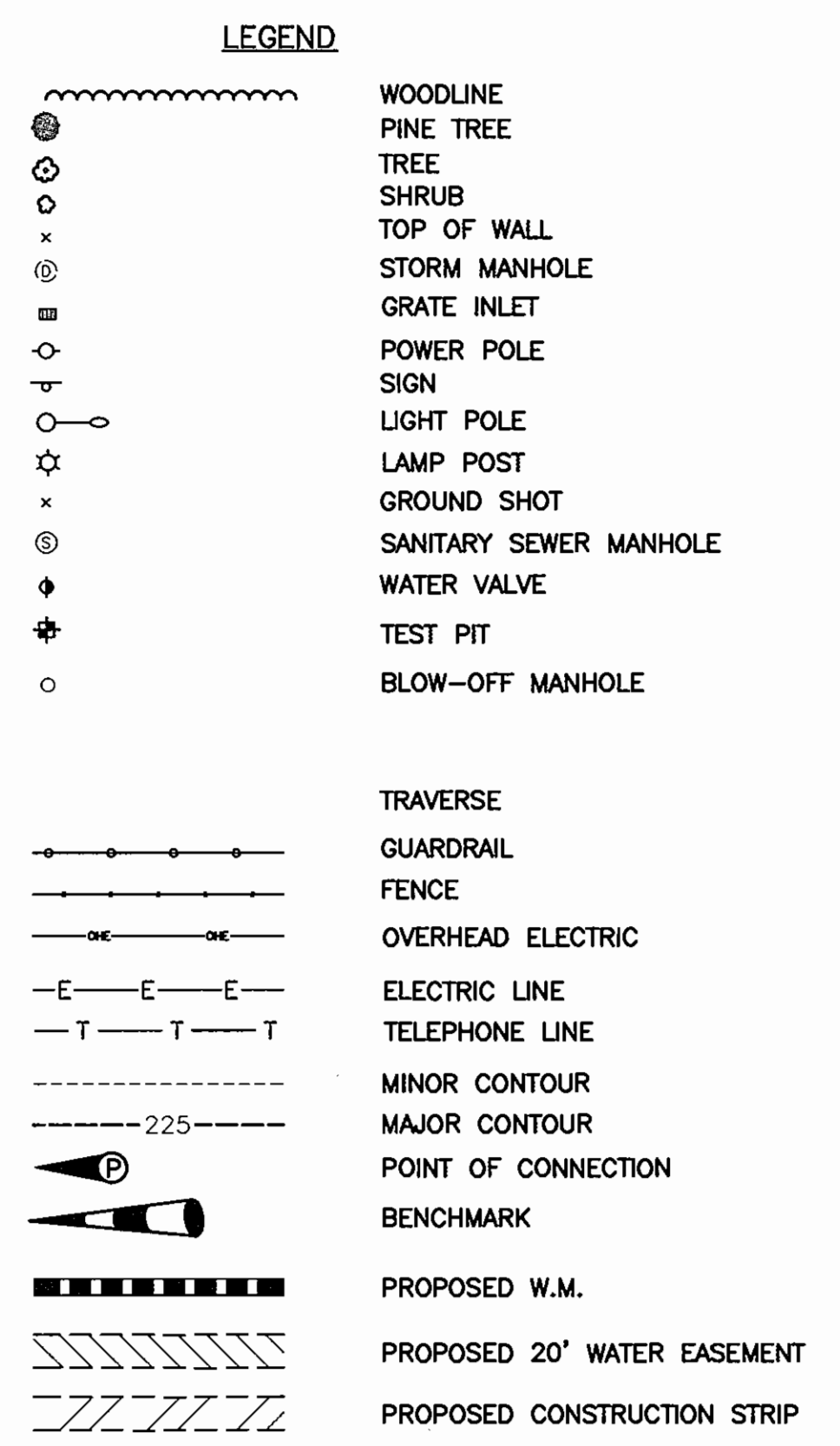
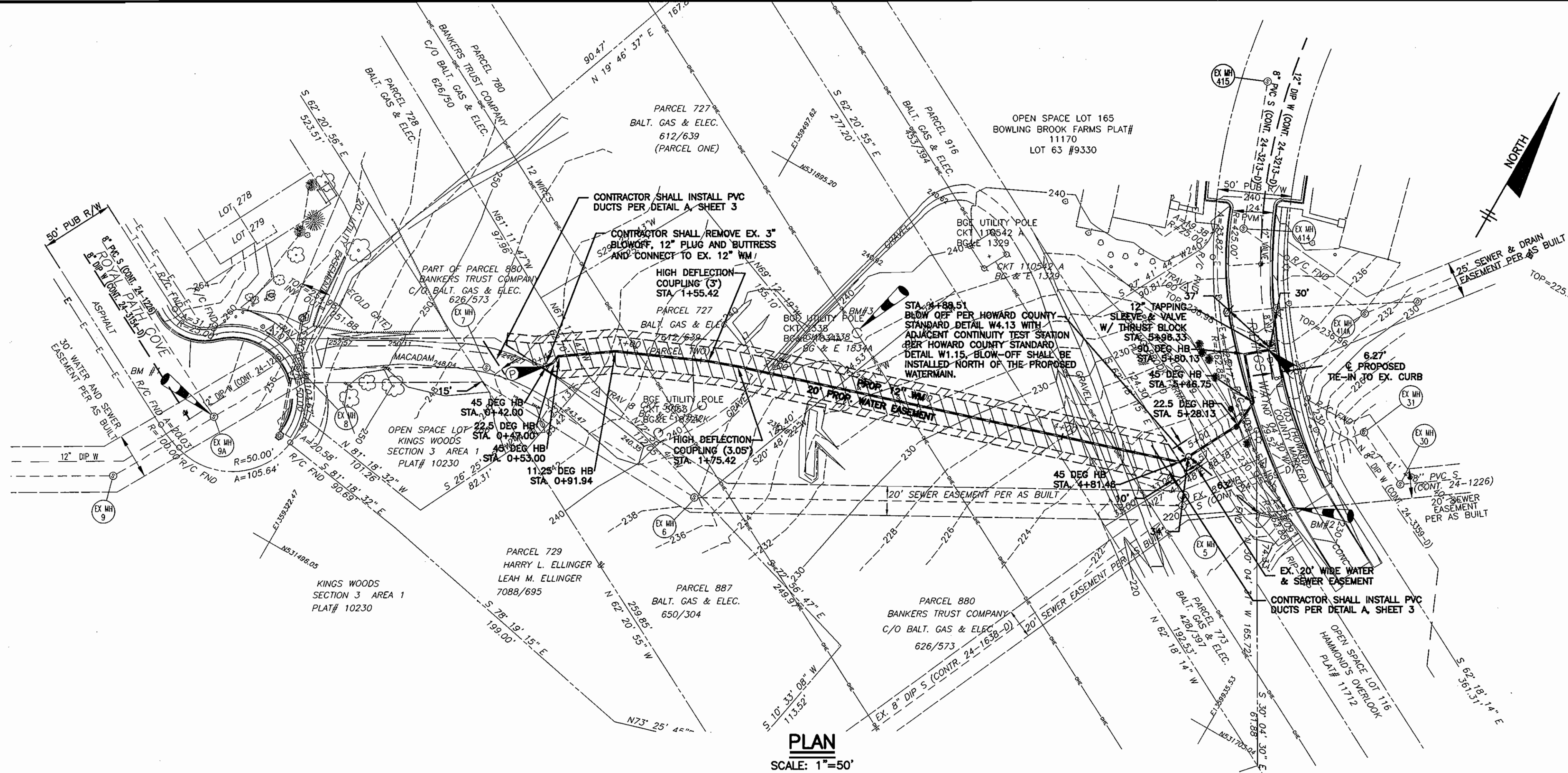
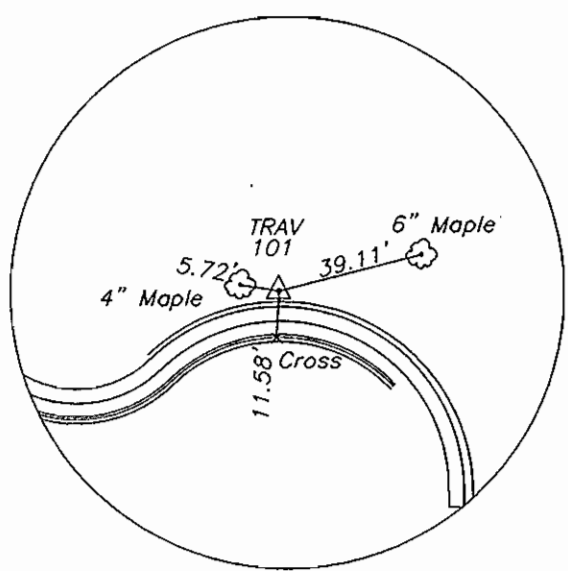
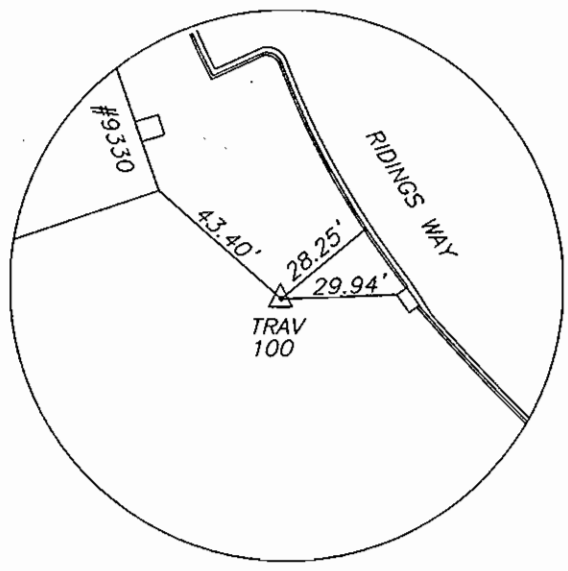
CAPITAL PROJECT: W-8243
 CONTRACT NO.: 44-4214
 ELECTION DISTRICT NO. 6
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET
 1 OF 4



MANHOLE DATA

- MANHOLE 1: TOP= 18" ABOVE EX. GRADE NOT FIELD VERIFIED
- MANHOLE 2: TOP= 219.59
- MANHOLE 3: TOP= 221.46
- MANHOLE 4: TOP= 239.32
- MANHOLE 5: TOP= 246.66 INV. IN= 237.19 INV. OUT= 237.03
- MANHOLE 6: TOP= 256.14 INV. IN= 241.37 INV. OUT= 241.27
- MANHOLE 7: TOP= 257.34 INV. OUT= 245.64
- MANHOLE 8: TOP= 260.00 NOT FIELD VERIFIED
- MANHOLE 9: TOP= 239.05
- MANHOLE 10: TOP= 233.89
- MANHOLE 11: TOP= 242.78



PLAN
SCALE: 1"=50'

BENCHMARK TABLE

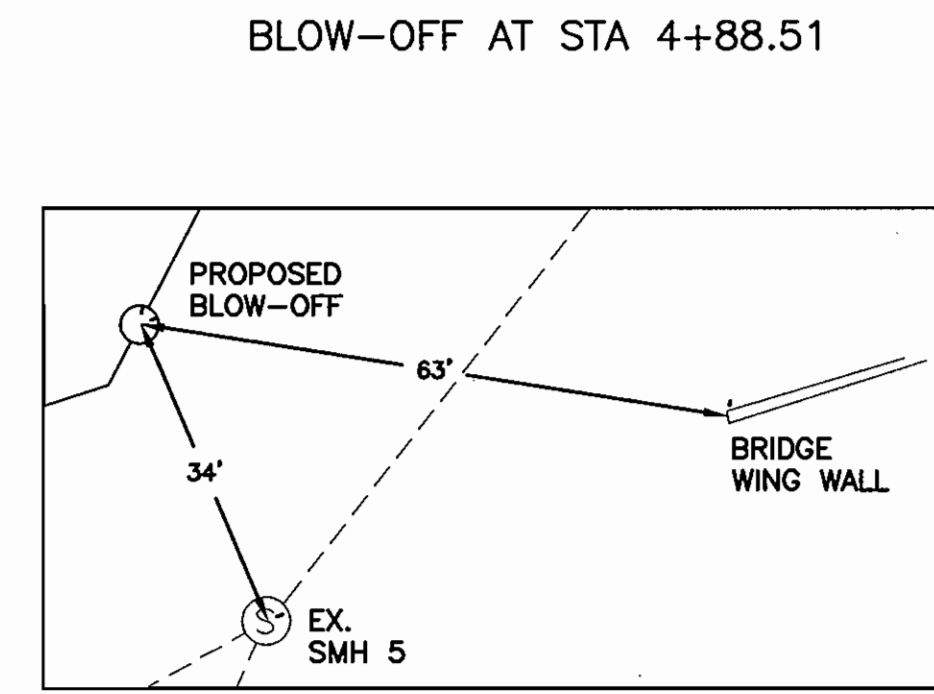
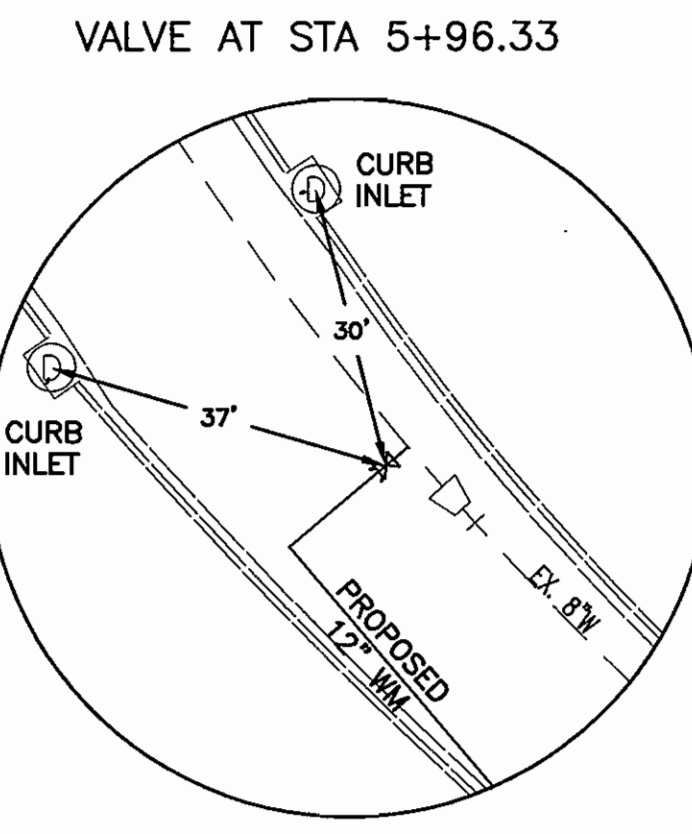
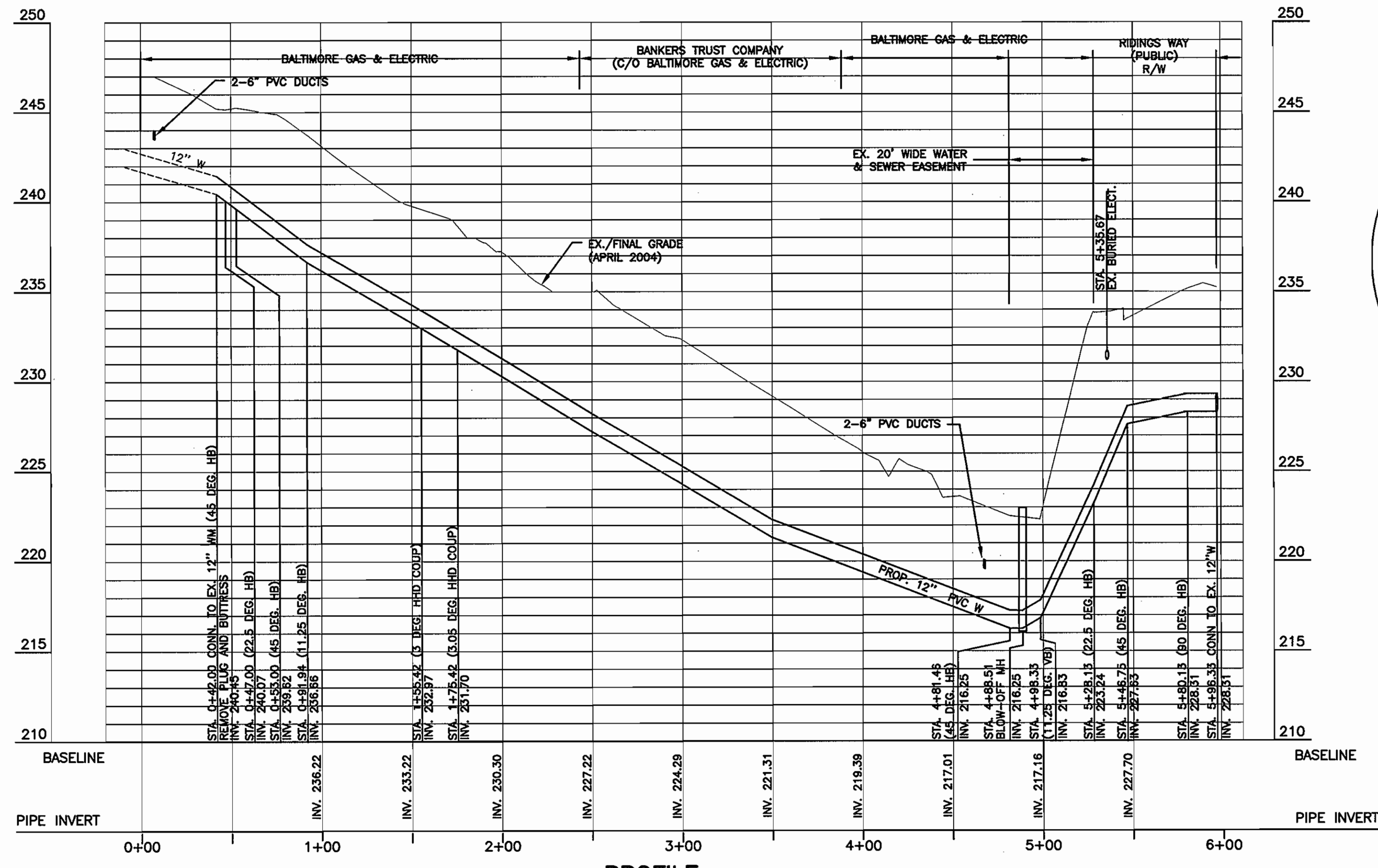
BM#	DESCRIPTION	ELEVATION	NORTHING	EASTING
1	'X' CUT ON MANHOLE #9A COVER	257.46	531551.34	1359245.20
2	SQUARE CUT IN CONCRETE	231.58	531861.81	1359911.15
3	NORTH ANCHOR BOLT CENTER POWER LINE POLE	240.09	531820.73	1359596.65

SURVEY CONTROL COORDINATES

STA	NORTHING	EASTING	ELEV	DESCRIPTION
8	531694.7707	1359463.7963	243.66	REBAR & CAP
9	531642.3752	1359930.8162	220.38	REBAR & CAP
100	531954.8522	1359773.4524	237.77	REBAR & CAP
101	531621.0026	1359251.6136	258.02	REBAR & CAP
103	531877.9554	1359878.7973	232.76	HOWARD COUNTY

WATER LINE FIXTURES COORDINATE TABLE

STATION	ITEM	NORTHING	EASTING
0+42.00	P.O.C. - 45° H. BEND	531692.72	1359425.31
0+47.00	22.5° H. BEND	531696.93	1359428.00
0+53.00	45° H. BEND	531702.84	1359429.05
0+91.94	11.25° H. BEND	531725.15	1359460.97
1+55.42	HIGH DEFLECTION COUPLING (4')	531750.68	1359519.10
1+75.42	HIGH DEFLECTION COUPLING (2.05')	531757.42	1359537.93
4+67.44	2-6" PVC DUCTS	531679.65	1359383.97
4+81.46	45° H. BEND	531850.23	1359829.55
4+88.51	BLOW OFF	531856.50	1359832.79
4+98.33	11.25° V. BEND	531865.22	1359837.30
5+28.13	22.5° H. BEND	531891.69	1359850.99
5+46.75	45° H. BEND	531910.24	1359852.56
5+80.13	90° H. BEND	531935.76	1359831.03
5+96.33	12" TAPPING SLEEVE & VALVE	531946.20	1359843.41



NOTES:

- ALL FITTINGS SHALL BE DUCTILE IRON AND THRUST BLOCKED IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAIL W2.22.
- WHERE FIELD CONDITIONS DICTATE CHANGES TO THE PLANS, REQUEST REVISIONS FROM THE ENGINEER IN WRITING PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL TEST PIT AND LOCATE EXISTING MAINS AT STATION 0+00 AND 5+96.33 PRIOR TO CONSTRUCTION. NOTIFY ENGINEER IF REVISIONS TO PROFILE ARE REQUIRED.
- EX. IN-LINE THRUST COLLAR FOUND IN VICINITY OF STATION 0+42.00. THRUST COLLAR REUSED, NEW HORIZONTAL BEND TIED INTO EX. COLLAR.

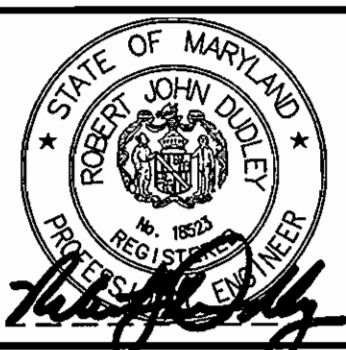


IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 11/28/07
 Chief - Bureau of Engineering: *[Signature]* 11/28/07
 Chief - Bureau of Utilities: *[Signature]* 11/28/07
 Chief, Utility Design Division: *[Signature]* 11/28/07

O'BRIEN & GERE ENGINEERS, INC.
 8201 Corporate Drive Suite 1000
 Landover, Maryland 20785
 (301) 731-5622
 FAX: (301) 577-4737



DSN. BY: GFR	YLM 1	AS-BUILT REVISIONS	11/07
DRN. BY: RPW			
CHK. BY: RJD			
DATE: 12/05/06			

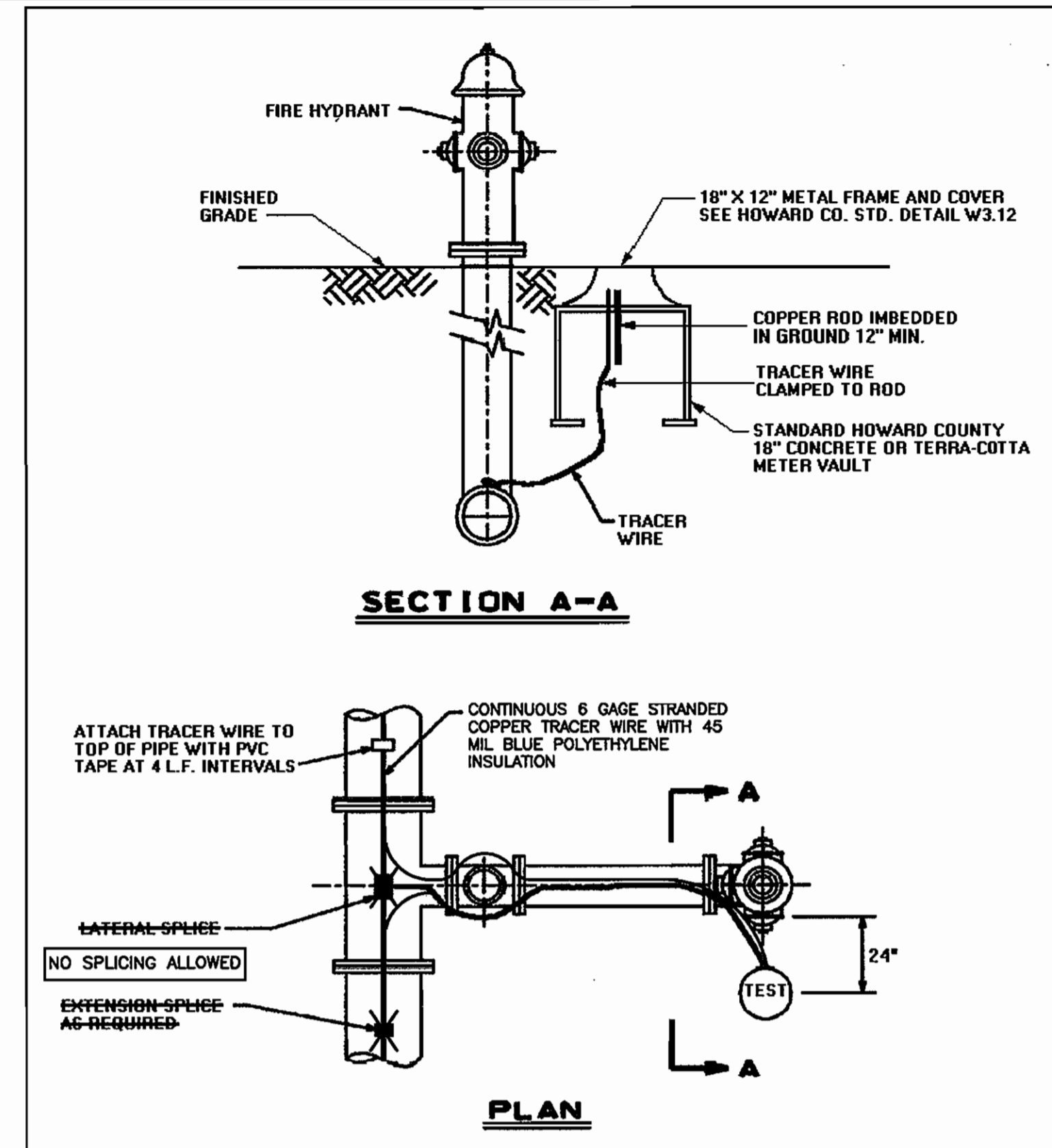
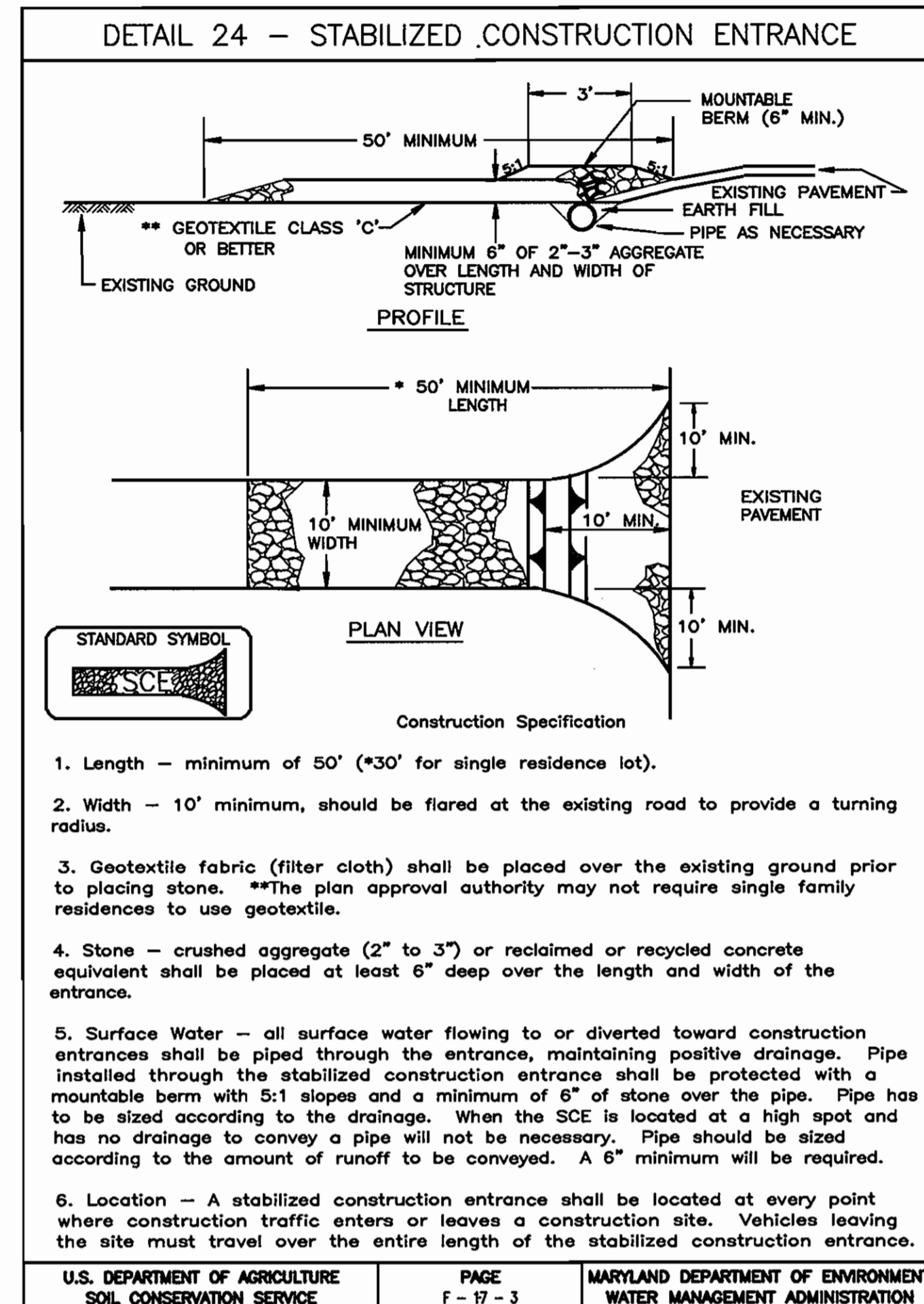
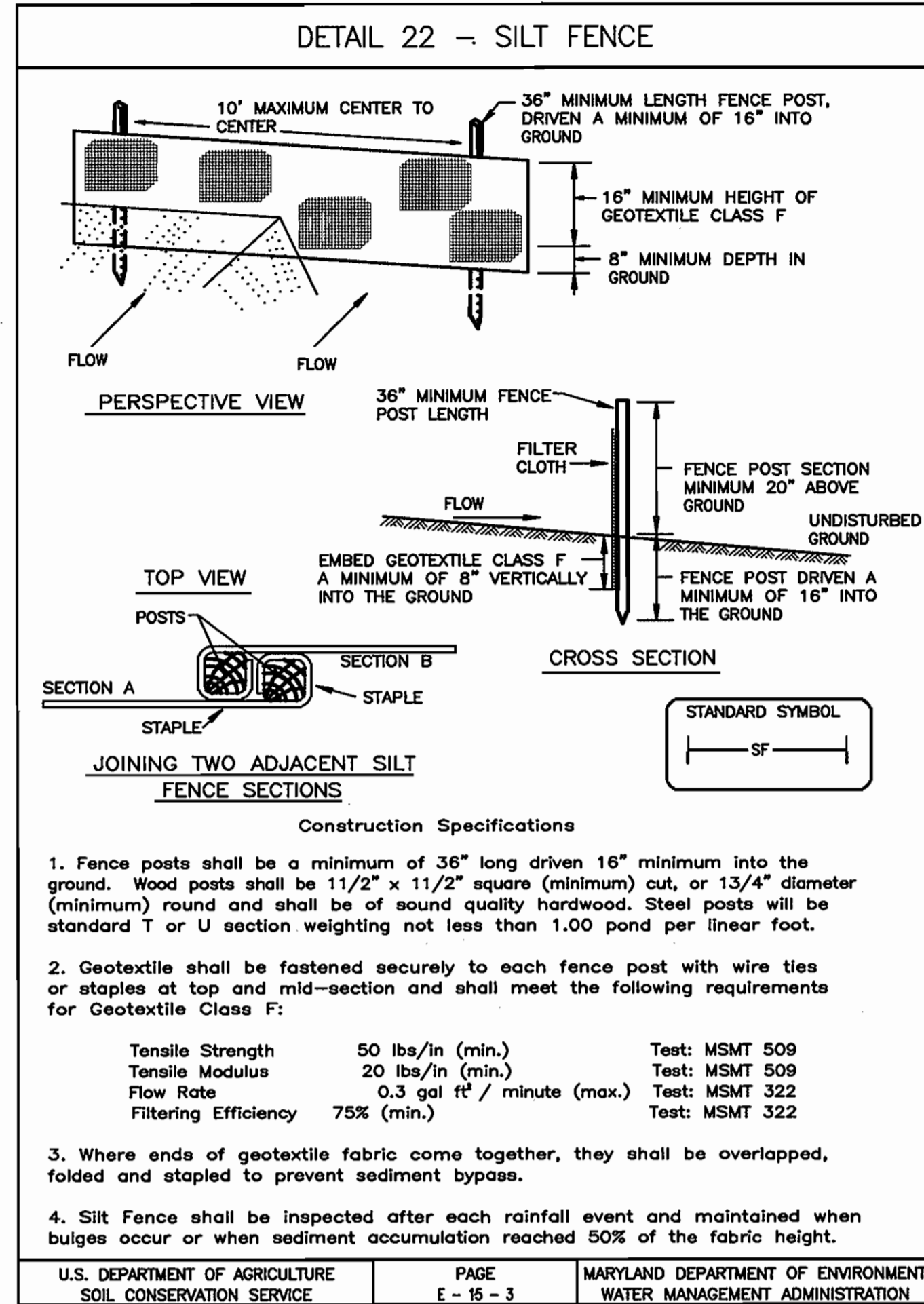
PLAN AND PROFILE
 STA. 0+00 TO STA. 5+96.33

600' SCALE MAP NO. 47 BLOCK NO. 22

HARMONY LANE WATERMAIN LOOP: ROYAL PATH COVE TO RIDINGS WAY

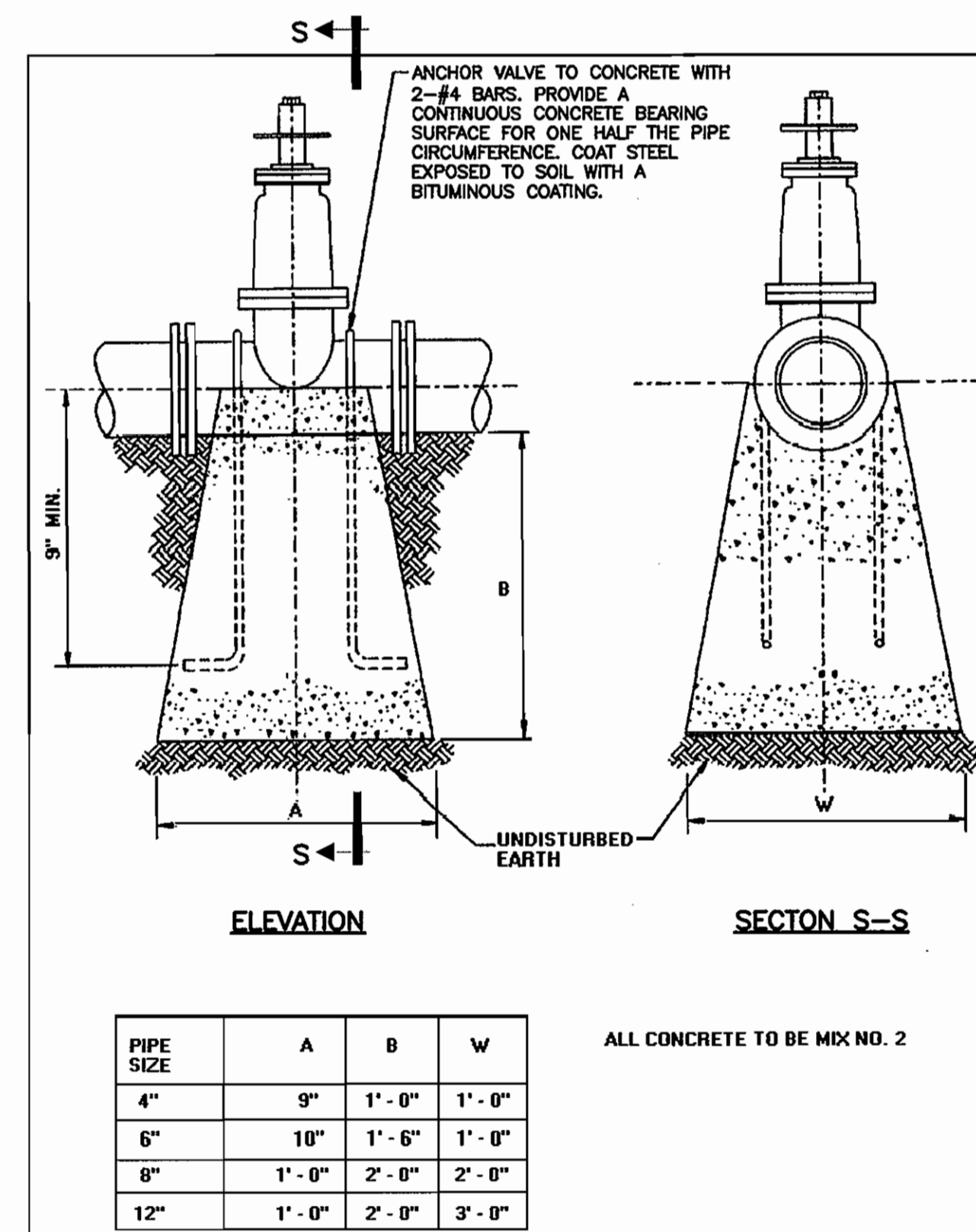
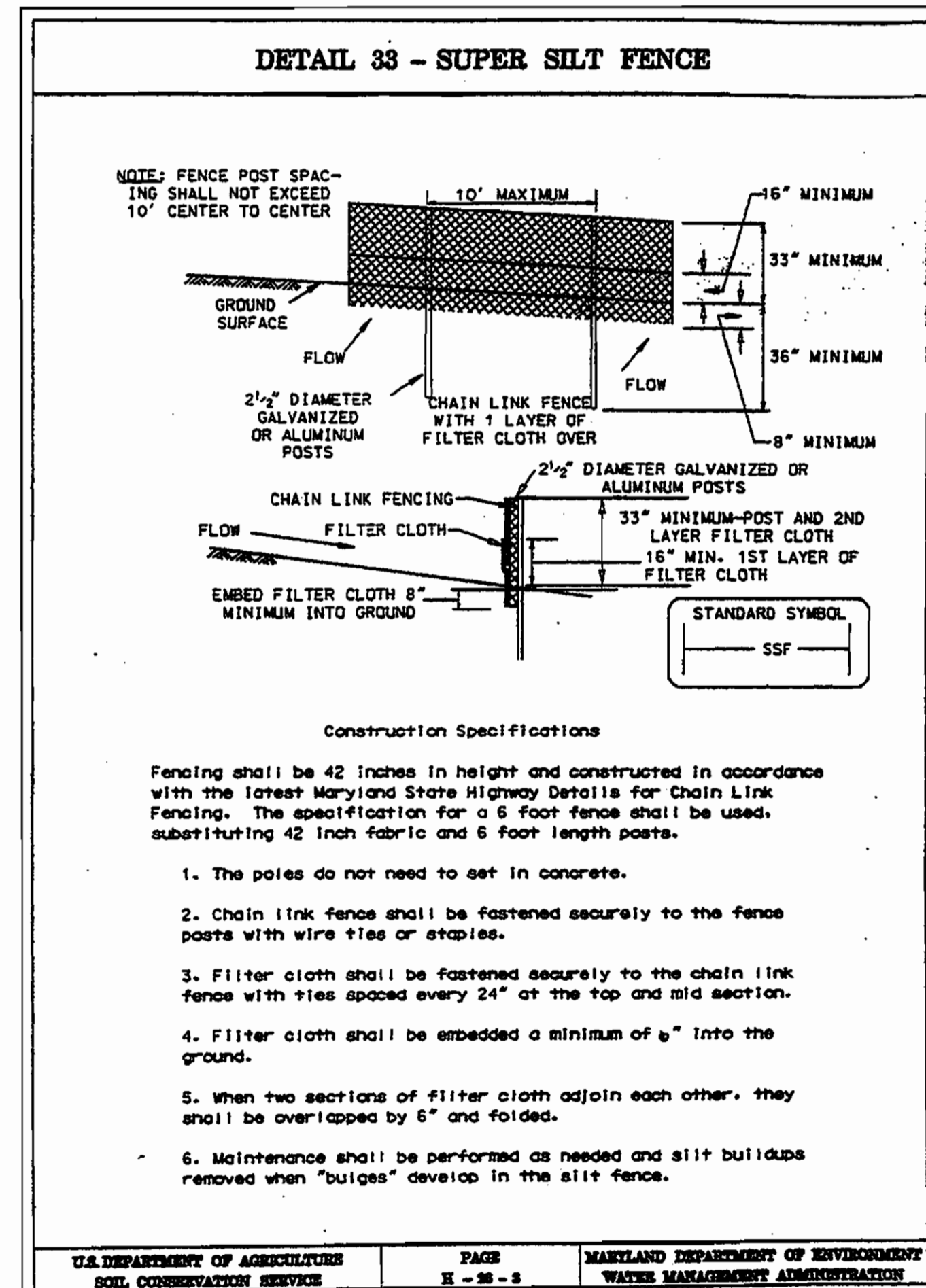
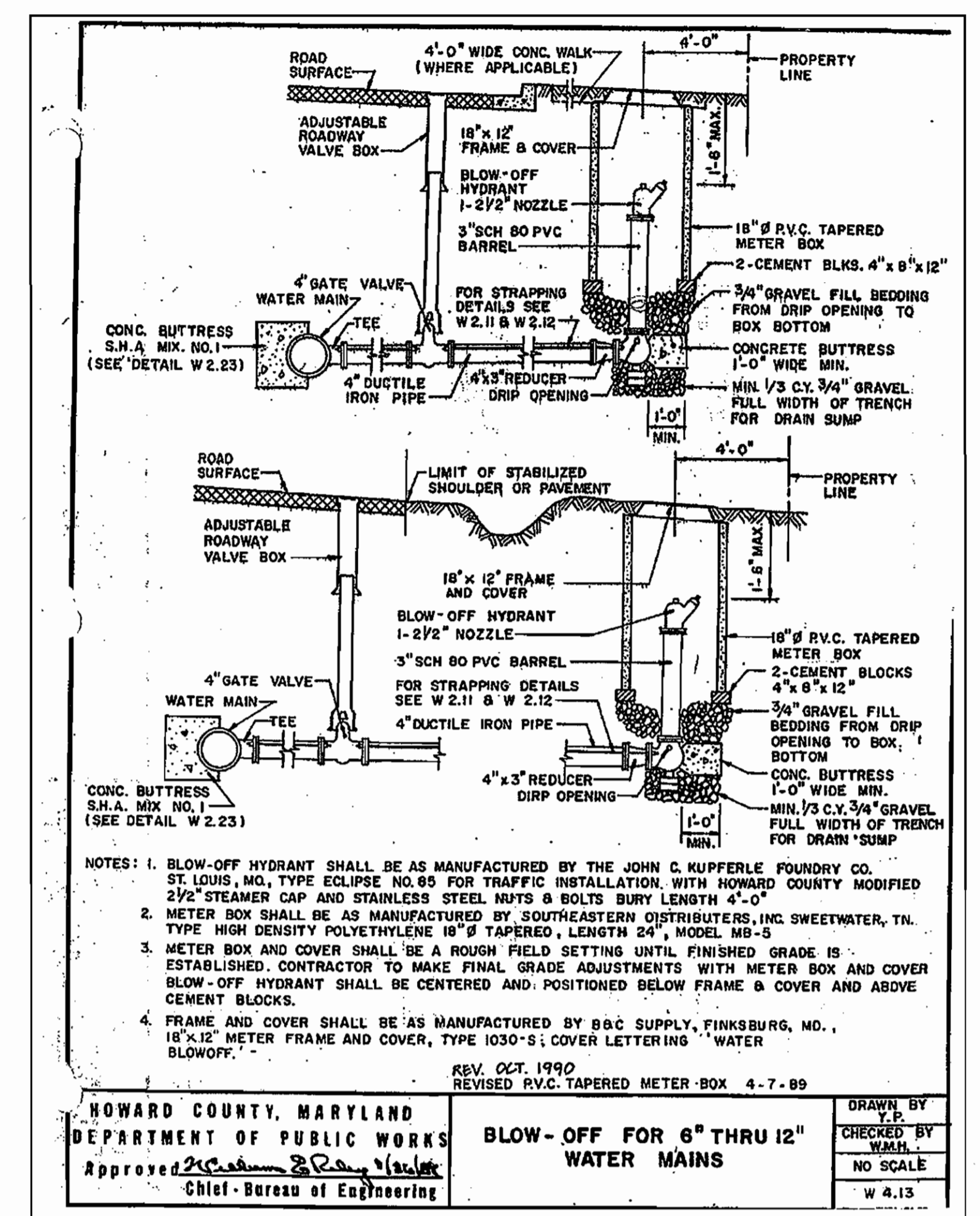
CAPITAL PROJECT: W-8243
 CONTRACT NO.: 44-4214
 ELECTION DISTRICT NO. 6
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 2 OF 4



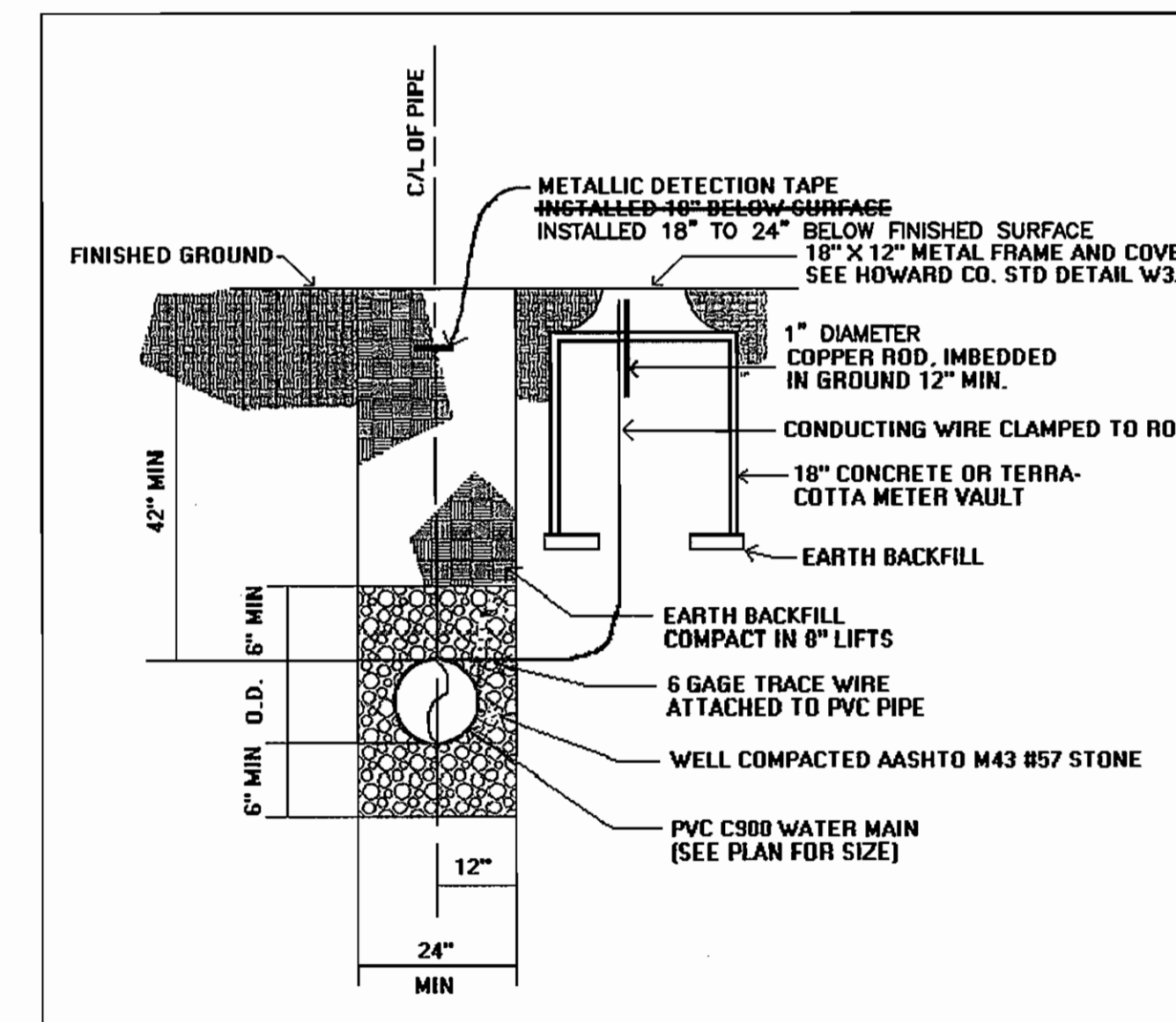
CONTINUITY TEST STATION DETAIL (COUNTY STANDARD DETAIL W1.15)

NOT TO SCALE



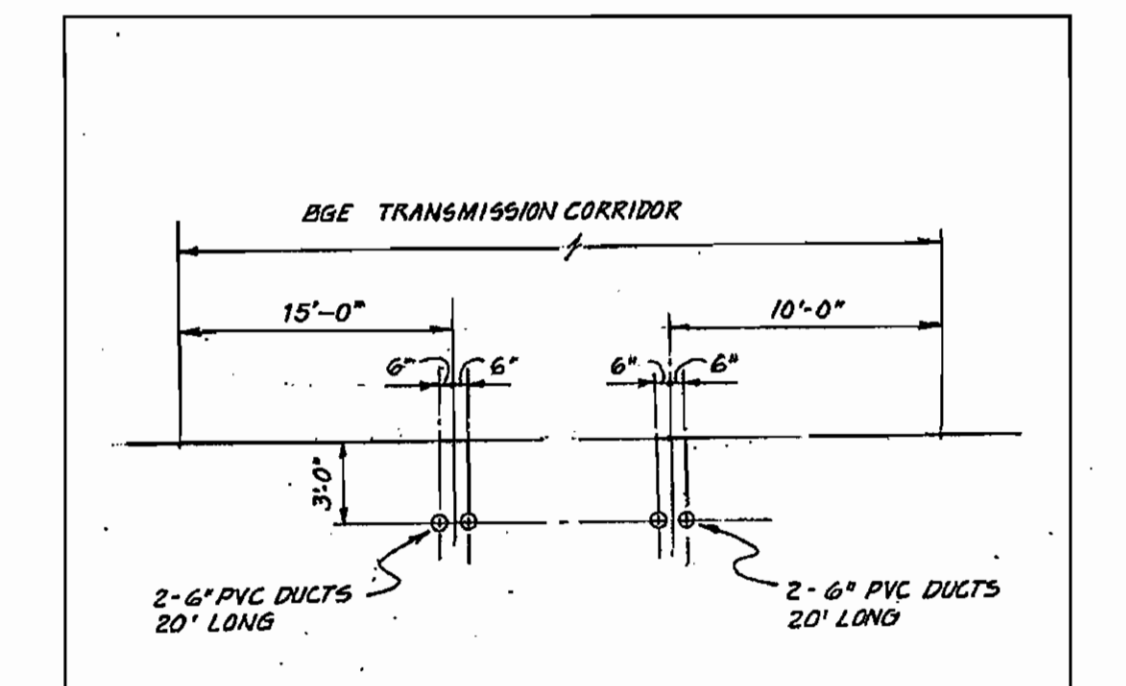
PVC WATERMAIN VALVE ANCHOR DETAIL (COUNTY STANDARD DETAIL W5.01)

NOT TO SCALE



TRENCH DETAIL

NOT TO SCALE



PVC DUCT INSTALLATION DETAIL

NOT TO SCALE

AS-BUILT

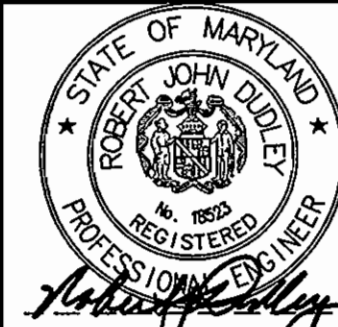
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

William J. Mohr 1-5-07
DIRECTOR OF PUBLIC WORKS FOR DATE

Ruth Beaman 1-4-07
CHIEF, BUREAU OF UTILITIES DATE

Robert J. Brown 1-2-07
CHIEF, UTILITY DESIGN DIVISION DATE

O'BRIEN & GERE
ENGINEERS, INC.
8201 Corporate Drive
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Landover, Maryland 20785
(301) 731-5622
FAX: (301) 577-4737



DSN. BY:	GFR	YLM	1	AS-BUILT REVISIONS	11/07
DRN. BY:	RPW				
CHK. BY:	RJD				
DATE:	12/05/06				
BY	NO.	REVISION	DATE	600' SCALE MAP NO.	47 BLOCK NO.

MISCELLANEOUS DETAILS

HARMONY LANE WATERMAIN LOOP:
ROYAL PATH COVE TO RIDINGS WAY
CAPITAL PROJECT: W-8243
CONTRACT NO.: 44-4214
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 3 OF 4

GENERAL SEDIMENT CONTROL NOTES:

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS AND PERMITS PRIOR TO THE START OF ANY CONSTRUCTION.
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THE PLAN AND ARE TO BE IN CONFORMANCE WITH THE "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION CONTROL" AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE AND REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
 - 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, e.g., TEMPORARY DIVERSION DIKES AND ALL SLOPES GREATER THAN 3:1 AND
 - 14 DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE LATEST EDITION OF THE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION CONTROL FOR PERMANENT SEEDINGS (SEC. 51) AND (SEC. 54), TEMPORARY SEEDINGS (SEC. 50) AND MULCHING (SEC. 53). TEMPORARY STABILIZATION WITH MULCH CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:

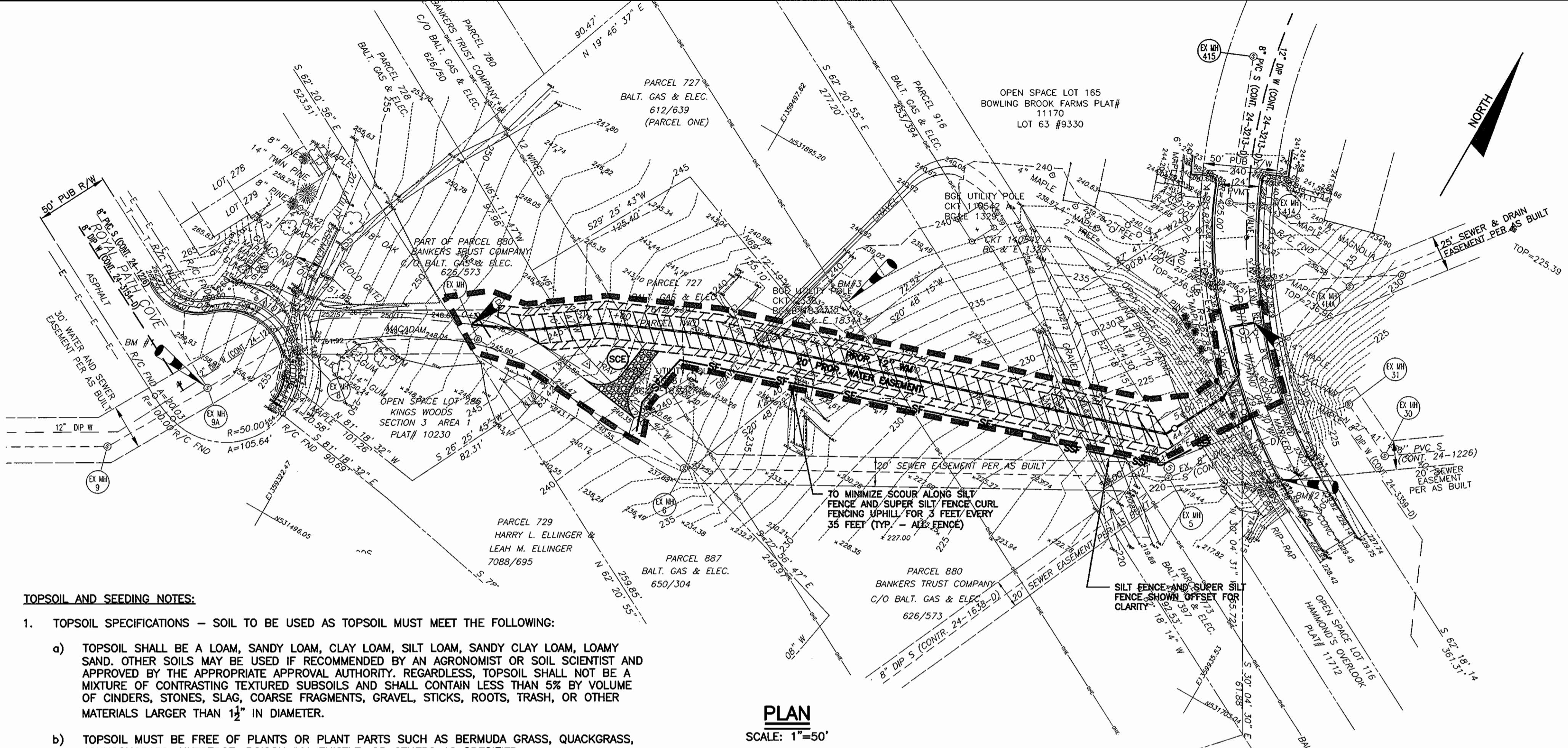
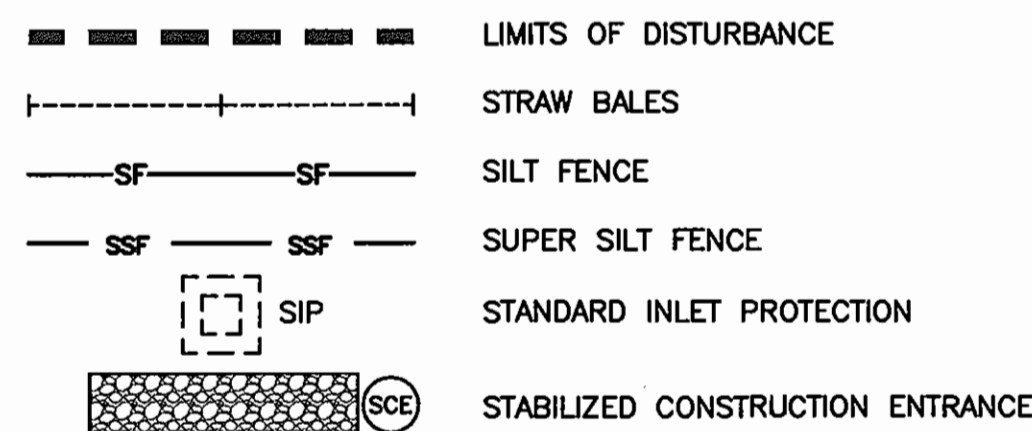
AREA DISTURBED (LOD) = 0.64 AC.
 AREA TO BE PAVED = 0.005 AC.
 AREA TO BE VEGETATIVELY STABILIZED = 0.635 AC.
 TOTAL CUT = 236 CU. YD.
 TOTAL FILL = 236 CU. YD.

- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN OPERATING CONDITION.
- CUT AND FILL QUANTITIES PROVIDED UNDER SITE ANALYSIS DO NOT REPRESENT BID QUANTITIES. THESE QUANTITIES DO NOT DISTINGUISH BETWEEN TOPSOIL, STRUCTURAL FILL OR EMBANKMENT MATERIAL NOR DO THEY REFLECT CONSIDERATION OF UNDERCUTTING OR REMOVAL OF UNSUITABLE MATERIAL. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE SITE CONDITIONS, WHICH MAY AFFECT THE WORK.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- CONTRACTOR SHALL MAKE EVERY EFFORT TO AVOID DAMAGE TO EXISTING TREES.
- CONTRACTOR SHALL NOT ALLOW SOIL TO ENTER EXISTING STORM DRAINS OR BE TRACKED ONTO EXISTING ROADWAYS.
- AT ALL CONSTRUCTION ACCESS POINTS, CONTRACTOR SHALL INSTALL A STABILIZED CONSTRUCTION ENTRANCE AS REQUIRED. ALL CONSTRUCTION VEHICLES EXITING DISTURBED AREAS SHALL UTILIZE THE STABILIZED CONSTRUCTION ENTRANCE. ALL MUD TRACKED ONTO ADJACENT ROADS SHALL BE CLEANED UP IMMEDIATELY.

SEQUENCE OF CONSTRUCTION:

- OBTAIN GRADING PERMIT AND OTHER NECESSARY PERMITS PRIOR TO BEGINNING CONSTRUCTION. ALL EROSION AND SEDIMENT CONTROL SHALL CONFORM TO THE LATEST MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- STAKEOUT THE WATER MAIN ALIGNMENT - 1 DAY.
- INSTALL EROSION AND SEDIMENT CONTROL DEVICES AS SHOWN ON THESE PLANS. DURATION - 1 DAY.
- BEGIN CONSTRUCTION. CONTRACTOR WILL OPEN ONLY THAT LENGTH OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. PLACE EXCAVATED MATERIAL ON THE UPHILL SIDE OF THE TRENCH. IF TRENCH MUST REMAIN OPEN LONGER THAN ONE (1) DAY, SILT FENCE SHALL BE PLACED DOWN SLOPE OF THE TRENCH. ALL DITCHES, SWALES AND CONCENTRATED FLOW AREAS SHALL BE STABILIZED IMMEDIATELY WITH SOD. COMPLETE 12" WATER MAIN LINE CONSTRUCTION. DURATION - 2 WEEKS.
- PROVIDE SEEDING AND PAVING AS APPLICABLE. PAVING TO BE PER CONSTRUCTION PLANS AND SPECIFICATIONS, COMPLETE SITE CLEANUP. DURATION - 1 WEEK.
- UPON APPROVAL OF HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE AREAS DISTURBED BY THIS PROCESS WITH PERMANENT, TEMPORARY OR SPECIAL SEEDING IN ALL AREAS AS REQUIRED. DURATION - 30 DAYS.

EROSION AND SEDIMENT CONTROL LEGEND



TOPSOIL AND SEEDING NOTES:

- TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
 - TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2" IN DIAMETER.
 - TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
 - WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.
- TOPSOIL APPLICATION
 - WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.
 - GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBEIT 4"-8" HIGHER IN ELEVATION.
 - TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4"-8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
 - TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

3. TEMPORARY SEEDING SCHEDULE

SPECIES	SEED MIXTURE (FOR HARDINESS ZONE 6b)		SEEDING DEPTHS	FERTILIZER RATE (10-20-20)		LIME RATE
	APPLICATION RATE (lb/ac)	SEEDING DATES		N	P2O5	
BARLEY OR RYE PLUS FOXTAIL MILLET	150	3/1-10/15	1-INCH	600 tons/ac (15 lb/1000 sf)	2 tons/ac (100 lb/1000 sf)	

4. PERMANENT SEEDING SCHEDULE

No.	SPECIES	SEED MIXTURE (FOR HARDINESS ZONE 6b)		SEEDING DEPTHS	FERTILIZER RATE (10-20-20)			LIME RATE
		APPLICATION RATE (lb/ac)	SEEDING DATES		N	P2O5	K2O	
7	TALL FESCUE (83K)	110	3/1-8/14	1-INCH				
7	WEEPING LOVEGRASS (2K) PLUS	3	3/1-8/14	1/4-1/2 INCHES	90 lb/ac (2.0 lb/1000 sf)	175 lb/ac (4.0 lb/1000 sf)	175 lb/ac (4.0 lb/1000 sf)	2 tons/ac (100 lb/1000 sf)
7	SERECIA LESPEDEZA (18K)	20	3/1-8/14	1-INCH				

PLAN SCALE: 1"=50'

ENGINEER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE IN ACCORDANCE TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING OF THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF ENGINEER: Robert H. Bradley DATE: 12/13/06

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS. SIGNATURE: Jim Murray DATE: 1/8/07

THIS DEVELOPMENT IS APPROVED FOR EROSION AND CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT. SIGNATURE: John R. Robertson DATE: 1/8/07

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATION AND AS SHOWN ON THESE PLANS. SIGNATURE: Paul D. Egan DATE: 1/2/07

NOTE: THE PROJECT AREA IS ABOVE THE 100 YEAR FLOOD ELEVATION. THE 100 YEAR FLOOD ELEVATION IS BASED UPON FEMA FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NUMBER 240044 0043 B REVISED DECEMBER 4, 1986.



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT.

THIS SHEET FOR EROSION AND SEDIMENT CONTROL ONLY

AS-BUILT

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Director: William F. McNeill 1-3-07
 Chief, Bureau of Public Works

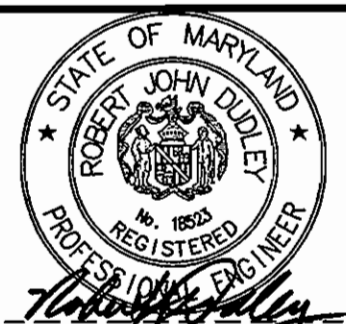
Chief: Robert H. Bradley 1-4-07
 Chief, Bureau of Utilities

Chief: Paul D. Egan 1/2/07
 Chief - Bureau of Engineering

Chief: John R. Robertson 1-2-07
 Chief, Utility Design Division

O'BRIEN & GERE
 ENGINEERS, INC.

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 Landover, Maryland 20785
 (301) 731-5622
 FAX: (301) 577-4737



DSN. BY: GFR YLM 1 AS-BUILT REVISIONS 1/07

DRN. BY: RPW

CHK. BY: RJD

DATE: 12/05/06

BY	NO.	REVISION	DATE

EROSION AND SEDIMENT CONTROL
 PLAN AND DETAILS

600' SCALE MAP NO. 47 BLOCK NO. 22

HARMONY LANE WATERMAIN LOOP:
 ROYAL PATH COVE TO RIDINGS WAY

CAPITAL PROJECT: W-8243
 CONTRACT NO.: 44-4214
 ELECTION DISTRICT NO. 6
 HOWARD COUNTY, MARYLAND