

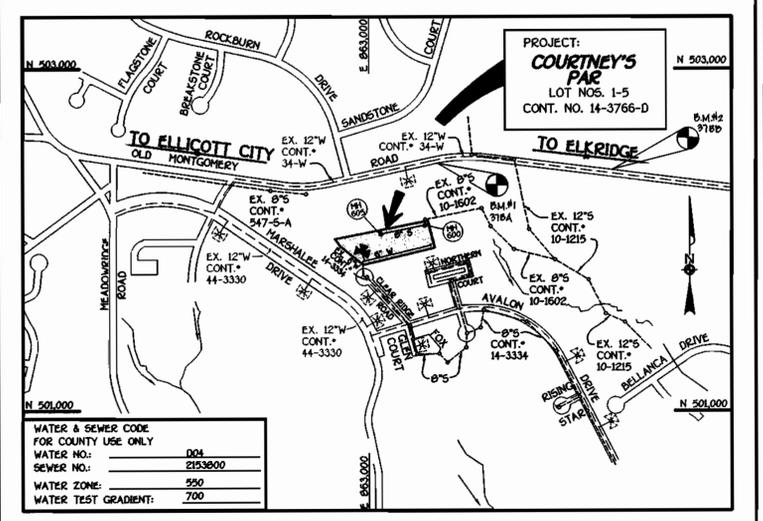
**PLAN**  
SCALE 1" = 50'

QUANTITIES				
ITEM	ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	SUPPLIER
8" SEWER	250 L.F.			
6" SEWER	10 L.F.			
4" SEWER	112 L.F.			
MANHOLES	2 EACH			
6" WATER	512 L.F.			
FIRE HYDRANTS	1 EACH			
1" WVC	156 L.F.			
6" x 6" TEE	1 EACH			
6" VALVE	1 EACH			
6" - 1/8" H.B.	1 EACH			
6" PLUG & BUTTRESS	1 EACH			
1 1/2" DRAIN	1 EACH			

NAME OF UTILITY CONTRACTOR:  
SURVEY & DRAFTING DIVISION AS-BUILT DATE:

NOTE: SEE SHEET 2 FOR SILT FENCE NOTES AND DETAILS.

NOTE: SEE SHEET 3 FOR SEDIMENT AND EROSION CONTROL NOTES AND DETAILS.



TYPE OF BUILDING:	RESIDENTIAL SINGLE FAMILY DETACHED
NUMBER OF LOTS:	5 (4 BUILT)
NO. OF WATER HOUSE CONNECTIONS:	4
NO. OF SEWER HOUSE CONNECTIONS:	4
DRAINAGE AREA:	PATAPSCO
TREATMENT PLANT:	PATAPSCO WASTEWATER TREATMENT PLANT, CITY OF BALTIMORE

**VICINITY MAP**

SCALE: 1"=600'

**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 SUPPLY. ANY 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.
- ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. DATUM.
- ALL PIPE ELEVATIONS ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 2'-0" MINIMUM.
- 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 (1991 AMENDMENTS). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB SITE.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL  $\text{M}$  AT THE LOCATION OF THE TEST PIT. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE VERIFIED BY THE CONTRACTOR TO HIS OWN SATISFACTION. ANY DAMAGE TO EXISTING FACILITIES DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
  - STATE HIGHWAY ADMINISTRATION - 531-5533
  - BALTIMORE GAS & ELECTRIC CO. - CONTRACTOR SERVICES - 650-6820
  - BALTIMORE GAS & ELECTRIC CO. - UNDERGROUND DAMAGE CONTROL - 787-9068
  - MISS UTILITY - 1-800-257-7777
  - COLONIAL PIPELINE CO. - 795-1930
  - BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS - 313-4900
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C. UNLESS OTHERWISE NOTED.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- T.B. DENOTES TEST BORING.
- MANHOLES SHOWN WITH 12" AND 18" WALLS ARE FOR BRICK MANHOLES ONLY.
- MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVERS, STANDARD DETAIL G 5.52.
- WHERE WATERTIGHT MANHOLE FRAME AND COVER IS USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS.
- HOUSES WITH THE SYMBOL "C.N.S." INDICATES THAT THE CELLAR CANNOT BE SERVED.
- ALL WATER HOUSE CONNECTIONS SHALL BE FOR INSIDE METER SETTING, UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS.
- MANHOLES LOCATED WITHIN THE PROPOSED ROADWAY SHALL HAVE STANDARD HEAVY TRAFFIC MANHOLE FRAMES AND COVERS, STANDARD DETAIL G5.51.
- WATER MAINS AND WATER HOUSE CONNECTION LINES MUST BE PLACED AS TO HAVE ONE (1) FOOT SEPARATION FROM THE SEWER MAIN OR SEWER HOUSE CONNECTION AS THEY PASS ABOUT IT.
- ALL WATER MAINS SHALL BE D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3'-1/2" COVER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
- ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATION SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE RESTRAINED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS (M11 AND W213). SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND 1005 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- ALL D.I.P. FITTINGS SHALL BE IN ACCORDANCE WITH AWWA SPECIFICATIONS C-153, DUCTILE IRON COMPACT FITTINGS, 3-INCH THROUGH 12-INCH FOR WATER AND OTHER LIQUIDS.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, @ 410) 313-2450 AT LEAST FIVE WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD OR BORING/JACKING OPERATION IN COUNTY ROADS FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(d) OF THE HOWARD COUNTY CODE.

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

*Cheryl Simmons* 6/3/99  
U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE DATE

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

APPROVED:  
*John R. Blanton* 6/3/99  
HOWARD SOIL CONSERVATION DISTRICT DATE

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY DESIGN MANUAL & STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS AS SHOWN ON THESE PLANS.

*John R. Blanton* 5/16/99  
SIGNATURE OF DEVELOPER DATE

SHC INVERT • PROPERTY LINE CHART		
STATION	LOT	ELEVATION
MH 600 TO MH 605		
0+10 LT.	1	378.35 ( @ 1.00d )
0+75 LT.	2	381.52
2+00 LT.	3	387.44 ( @ 1.00d )
@ MH 600 CT.	RICE PROPERTY, LOT 1	390.03
@ MH 600 LT.	4	390.55 ( @ 1.00d )

**DEVELOPER'S CERTIFICATION**

I/WE HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

*John R. Blanton* 5/16/99  
SIGNATURE OF DEVELOPER DATE

**ENGINEER'S CERTIFICATION**

I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*John R. Blanton* 5/16/99  
SIGNATURE OF ENGINEER DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Robert M. Buringer* 5-28-99  
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*John R. Blanton* 6/7/99  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SERVICE OFFICE PARK - 10272 BALTIMORE NATIONAL PkE  
ELICOTT CITY, MARYLAND 21042  
410-338-2200

REGISTERED PROFESSIONAL ENGINEER  
TERRELL A. FISHER

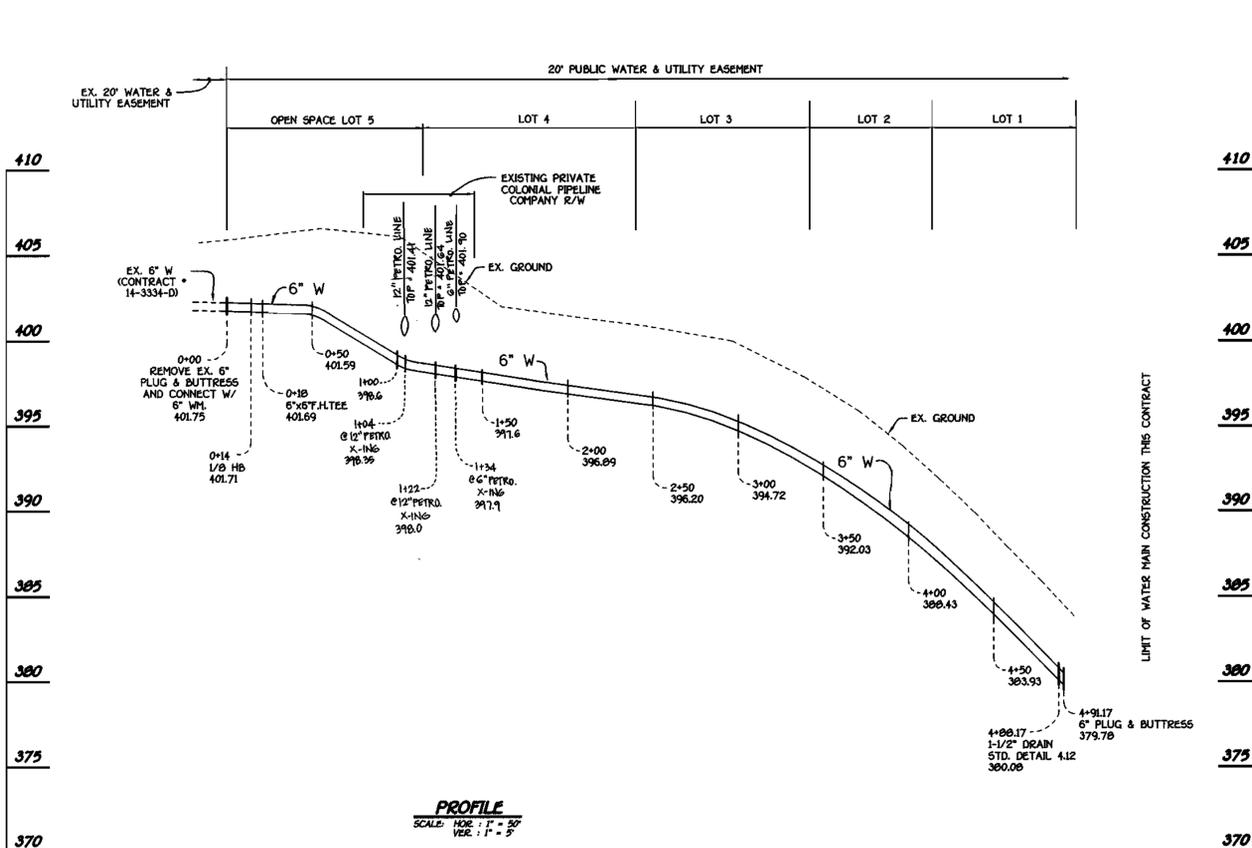
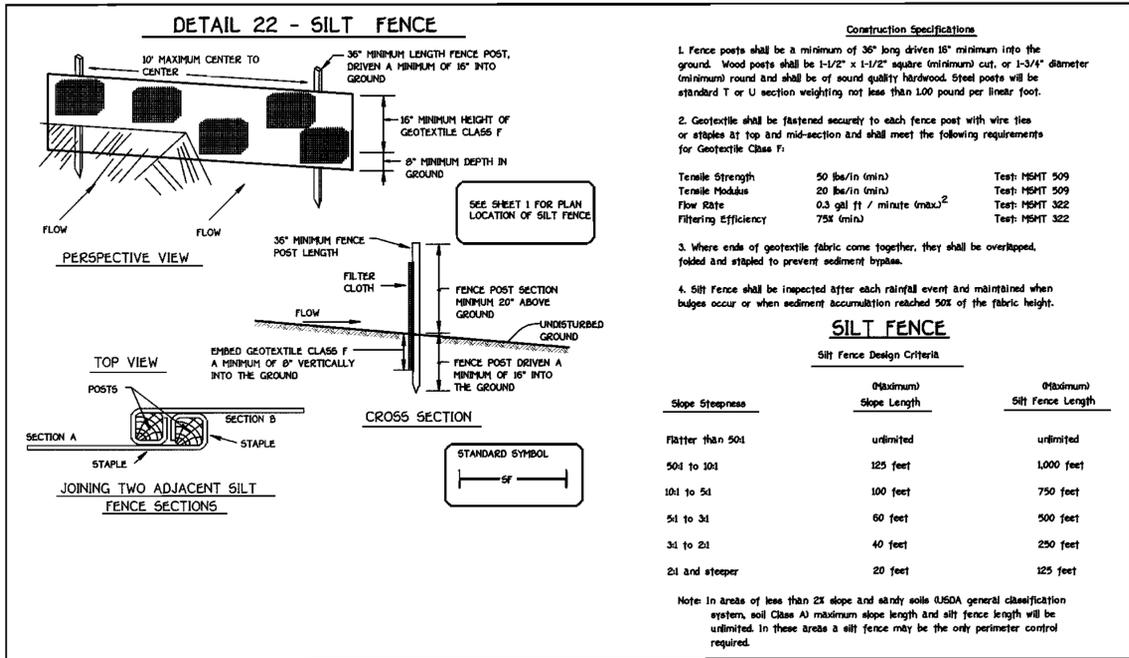
DESIGNED BY:	M.J.M.		
DRAWN BY:	J.E.P.		
CHECKED BY:	M.J.M.	JAIL	SHOW LOCATIONS OF PETRO. LINES 5/19/99
DATE:	MOT		ADDRESS HOWARD COUNTY D.E.D. COMMENTS 5/3/99
APRIL 23, 1999	BY NO.		REVISION

PLAN VIEW  
WATER & SEWER MAINS

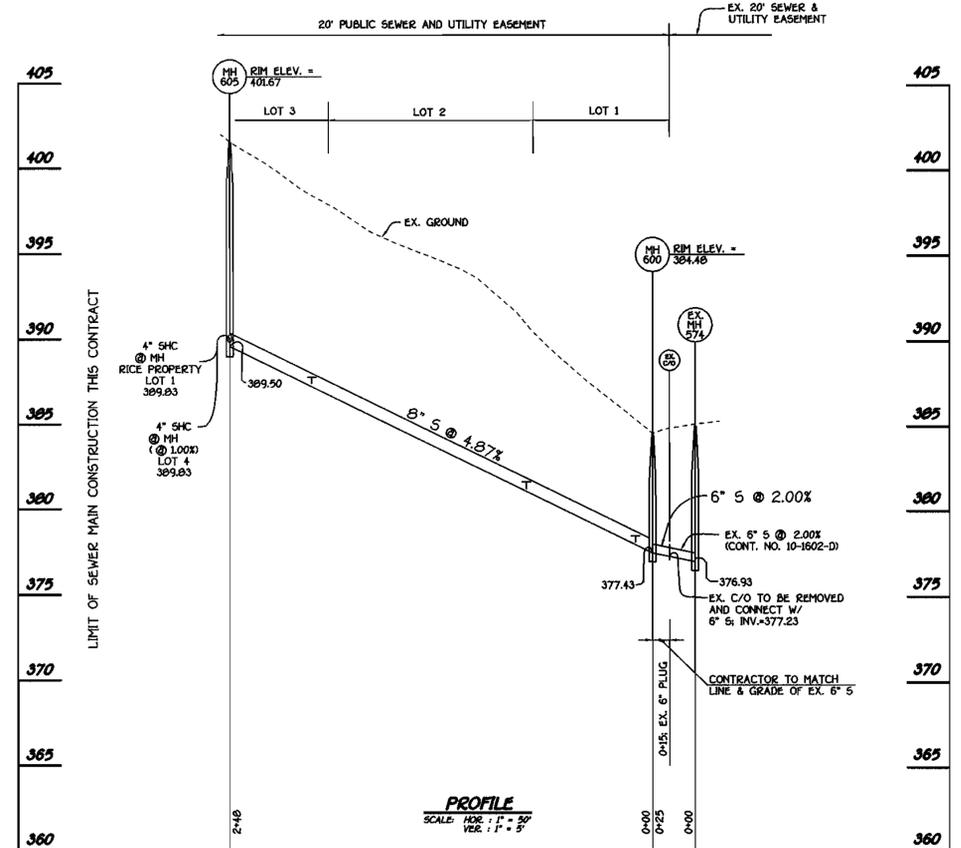
600' SCALE MAP NO. 37 BLOCK NO. 3 & 4  
F.C.C. WORK ORDER NO. 30568  
FILE NAME: G/30568/WATSEW/MASPLAN.DWG

**COURTNEY'S PAR**  
LOT NOS. 1-5  
CONTRACT NO. 14-3766-D  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 1 OF 3



**6" WATER MAIN EXTENSION  
IN MULLINEAUX ROAD**



**SEWER MAIN EXTENSION**

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Robert W. Reisinger* 5-28-99  
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*John J. Danaher* 6/7/99  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

CONTINENTAL SQUARE OFFICE PARK - 18772 BALTIMORE NATIONAL PIKE  
ELLSWORTH CITY, MARYLAND 21042  
(410) 481-2555



DESIGNED BY: M.J.M.  
DRAWN BY: J.E.P.  
CHECKED BY: M.J.M.  
DATE: APRIL 23, 1999

BY NO. \_\_\_\_\_

REVISION \_\_\_\_\_

**WATER & SEWER MAINS**

600' SCALE MAP NO. 37 BLOCK NO. 3 & 4  
F.C.C. WORK ORDER NO. 30566  
FILE NAME: G/30566/WATSEW/was profiles.DWG

**COURTNEY'S PAR**  
LOT NOS. 1-5  
CONTRACT NO. 14-3766-D  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 2 of 3

CONTRACT NO. 14-3766-D  
COURTNEY'S PAR  
LOT NOS. 1-5  
WATER & SEWER MAIN EXTENSIONS  
HOWARD COUNTY, MARYLAND

**SECTION 20 :  
STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION**

**DEFINITION**  
Using vegetation as cover for barren soil to protect it from erosion that cause erosion. Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas, and improving wildlife habitat and visual resources.

**CONDITIONS WHERE PRACTICE APPLIES**  
This practice shall be used on denuded areas as specified on the plan and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration up to one year, and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary soil stockpiles, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are dunes, dikes, cut and fill slopes and other areas at final grade, former stockpile and staging areas, etc.

**EFFECTS ON WATER QUALITY AND QUANTITY**  
Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration evaporation, transpiration, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating these substances present within the root zone. Sediment control devices must remain in place during grading, seeded preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

- SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS**
- A. Site Preparation**
- Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
  - Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
  - Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.
- B. Soil Amendments (Fertilizer and Lime Specifications)**
- Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analysis.
  - Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warranty of the producer.
  - Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total plus magnesium oxide. Limestone oxide plus magnesium oxide plus calcium oxide plus fineness that at least 50% will pass through a #100 mesh sieve and 90-100% will pass through a #20 mesh sieve.
  - Incorporate lime and fertilizer into the top 3-5" of soil by diking or other suitable means.
- C. Seeded Preparation**
- Temporary Seeding
    - Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or decompacted, but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
    - Apply fertilizer and lime as prescribed on the plan.
    - Incorporate lime and fertilizer into the top 3-5" of soil by diking or other suitable means.
  - Permanent Seeding
    - Minimum soil conditions required for permanent vegetative establishment:
      - Soil pH shall be between 6.0 and 7.0.
      - Soluble salts shall be less than 500 parts per million (ppm).
      - The soil shall contain less than 40% clay, but enough fine grained material (0.30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if loesslike or serecia loesslike soils is to be planted, then a sandy soil (50% silt plus clay) would be acceptable.
      - Soil shall contain 1% minimum organic matter by weight.
      - Soil must contain sufficient pore space to permit adequate root penetration.
      - If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard Specification for Topsoil.
    - Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
    - Apply soil amendments as per soil test or as included on the plan.
    - Mix soil amendments into the top 3-5" of topsoil by diking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and rebar the area for seed application. Where site conditions will not permit normal seeded preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the surface in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seeded loosening may not be necessary on newly disturbed areas.
- D. Seed Specifications**
- All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to retesting in a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.
  - Seed tags shall be made available to the inspector to verify type and rate of seed used.
  - Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used after the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 70 degrees F. can weaken bacteria and make the inoculant less effective.
- E. Methods of Seeding**
- Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cut/packer seeder.
    - If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: 100 lbs. per acre total of soluble nitrogen P205 (phosphorus) 200 lbs./ac. K2O (potassium) 200 lbs./ac.
    - Lime - use only ground agricultural limestone, 0 to 3 tons per acre may be applied by hydroseeding. Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
    - Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
  - Dry Seeding: This includes use of conventional drop or broadcast spreaders.
    - Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary Seeding Summary or Tables 265 or 266. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
    - Where aerial seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
  - Drill or Cut/packer Seeding: Mechanized seeders that apply and cover seed with soil.
    - Cut/packer seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeded must be firm after planting.
    - Where aerial seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
- F. Muck Specifications (in order of preference)**
- Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
  - Wood Cellulose Fiber Muck (WCFM)
    - WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
    - WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniform green slurry.
    - WCFM including dye, shall contain no germination or growth inhibiting factors.
    - WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber muck will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The muck material shall form a blotter-like ground cover, on application having moisture absorption and percolation properties and shall cover and hold grass seed to contact with the soil without inhibiting the growth of the grass seedlings.
    - WCFM material shall contain no elements or compounds at concentration levels that will be phytotoxic.
    - WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 9.5, ash content of 15% maximum and water holding capacity of 90% minimum.
- Note:** Only sterile straw muck should be used in areas where one species of grass is desired.
- G. Mulching Seeded Areas - Muck shall be applied to all seeded areas immediately after seeding.**
- If grading is completed outside of the seeding season mulch alone shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
  - When straw muck is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Muck shall be applied to a uniform loose depth of between 1" and 2", which applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a muck anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
  - Wood cellulose fiber muck shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
- H. Securing Straw Muck (Muck Anchoring)** Muck anchoring shall be performed immediately following muck application to minimize loss by wind or water. This may be done by one of the following methods listed by preference, depending upon size of area and erosion hazard.
- A muck anchoring tool is a tractor drawn implement designed to punch and anchor muck into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.
  - Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
  - Application of liquid binders should be heavier at the edges where wind catches muck, such as in valleys and crests of ridges. The remainder of area should be applied uniform after binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-70 Petro-Tek, Terra Tack II, Terra Tack AK or other approved equal may be used at rates recommended by the manufacturer to anchor muck.
  - Lightweight plastic netting may be stapled over the muck according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.

**SEDIMENT CONTROL NOTES**

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (938-1825).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERE TO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN 30 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, BY 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 50, SOD (SEC. 5A), TEMPORARY SEEDING (SEC. 50, AND MULCHING (SEC. 50). TEMPORARY STABILIZATION WITH MULCH ALONE 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
 

TOTAL AREA OF SITE	1995 ACRES
AREA DISTURBED	0.31 ACRES
AREA TO BE ROOFED OR PAVED	0.9 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.32 ACRES
TOTAL CUT	100 CU.YDS.
TOTAL FILL	100 CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION	N/A CU.YDS.
- 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.
- 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.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

**PERMANENT SEEDING NOTES**

- ALL DISTURBED AREAS SHALL BE STABILIZED AS FOLLOWS:
- SEEDBED PREPARATION**  
LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.
- SOIL AMENDMENTS**  
APPLY TWO TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1,000 SQ.FT.) AND 600 LBS. PER ACRE 0-20-20 FERTILIZER (14 LBS./1,000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL, AT TIME OF SEEDING. APPLY 400 LBS. PER ACRE 38-0-0 UREAFORM FERTILIZER TO LBS./1,000 SQ.FT.) AND 500 LBS. PER ACRE (15 LBS./1,000 SQ.FT.) OF 10-20-20 FERTILIZER.
- SEEDING**  
FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 100 LBS. PER ACRE (2.3 LBS./1,000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE, FOR THE PERIOD MAY 1 THROUGH JULY 31, SEED WITH 60 LBS./ACRE (1.4 LBS./1,000 SQ.FT.) KENTUCKY 31 TALL FESCUE AND 2 LBS. PER ACRE (0.05 LBS./1,000 SQ.FT.) OF WEeping LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28, PROJECT SITE BY: OPTION (1) - TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING; OR OPTION (2) - 500 LBS. PER ACRE SEED WITH 100 LBS./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH TWO TONS/ACRE WELL ANCHORED STRAW. ALL SLOPES SHOULD BE HYDROSEED.
- MULCHING**  
APPLY 1 TO 2 TONS PER ACRE (10 TO 90 LBS./1,000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING 200 GALLONS PER ACRE (5 GAL./1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT ACRES, ON SLOPES 6 FEET OR HIGHER USE 340 GALLONS PER ACRE (8 GAL./1,000 SQ.FT.) FOR ANCHORING.
- MAINTENANCE**  
INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

**TEMPORARY SEEDING NOTES**

- APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.
- SEEDBED PREPARATION**  
LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.
- SOIL AMENDMENTS**  
APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1,000 SQ.FT.)
- SEEDING**  
FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 15 BUSHELS PER ACRE OF ANNUAL RYE (32 LBS./ACRE OF WEeping LOVEGRASS 07 LBS./1,000 SQ.FT. FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28. PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE 500.
- MULCHING**  
APPLY 1.5 TO 2 TONS PER ACRE (10 TO 90 LBS./1,000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHORING TOOL OR 210 GALLONS PER ACRE (5 GAL./1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT ACRES ON SLOPES 6 FEET OR HIGHER USE 340 GALLONS PER ACRE (8 GAL./1,000 SQ.FT.) FOR ANCHORING.
- REFER TO THE 1996 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

**SEQUENCE OF CONSTRUCTION**

- OBTAIN THE REQUIRED GRADING PERMIT.
- NOTIFY MISS UTILITY 48 HOURS BEFORE BEGINNING ANY WORK (800-257-7777). NOTIFY HOWARD COUNTY CONSTRUCTION/INSPECTION DIVISION 24 HOURS BEFORE STARTING ANY WORK (800-33-1819).
- INSTALL THE REQUIRED SEDIMENT AND EROSION CONTROL DEVICES AS INDICATED ON SHEET I OF THIS CONTRACT (1 DAY).
- CLEAR AND GRUB AS NECESSARY, ONLY AS REQUIRED FOR EXCAVATION AND INSTALLATION OF THE WATER AND SEWER MAINS AND ONLY WITHIN THE DESIGNATED WATER, SEWER AND UTILITY EASEMENTS (1 DAY).
- NOTE: THE LENGTH OF OPEN WATER AND/OR SEWER MAIN TRENCH SHALL BE LIMITED TO THREE (3) PIPE LENGTHS OR THAT WHICH WILL BE BACKFILLED AND STABILIZED WITHIN ONE (1) WORKING DAY, WHICHEVER IS SHORTER.
- CONSTRUCT THE WATER MAIN/SEWER MAIN AND APPURTENANCES (10 DAYS).
- STABILIZE SEED AND MULCH ALL DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES SHOWN ON THIS SHEET (1 DAY) FOLLOWING SUCCESSFUL STABILIZATION OF ALL DISTURBED AREAS, AND AFTER PERMISSION HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL EROSION AND SEDIMENT CONTROL DEVICES (1 DAY).

**SECTION 21 :  
STANDARD AND SPECIFICATIONS FOR TOPSOIL**

- DEFINITION** PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.
- PURPOSE** TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.
- SPECIFICATIONS** A. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND.  
B. TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING SUBSOILS.  
C. TOPSOIL SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1.5" IN DIAMETER.  
D. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED BY A 4" - 6" DEPTH AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". AVOID SURFACE IRREGULARITIES.  
E. REPLACE TOPSOIL AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION".  
F. TOPSOIL SHALL NOT BE PLACED DURING FROZEN, MUDDY, OR EXCESSIVELY WET CONDITIONS.
- APPLICATION**

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

Robert M. Bowers  
CHIEF, BUREAU OF UTILITIES

5-28-99  
DATE

6/2/99  
DATE

9757

FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

CENTRAL SQUARE OFFICE PARK - 18772 BALTIMORE NATIONAL PIKE  
ELLSWORTH CITY, MARYLAND 21117  
410.418.2855

STATE OF MARYLAND  
REGISTERED PROFESSIONAL ENGINEER  
TERRELL A. FISHER

DESIGNED BY:	M.J.M.				
DRAWN BY:	D.A.N.				
CHECKED BY:	M.J.M.				
DATE:	APRIL 23, 1999	MDT	---	ADDRESS HOWARD COUNTY D.E.D. COMMENTS	5/3/99
BY	NO.	REVISION			

SEDIMENT AND EROSION CONTROL NOTES	
600' SCALE MAP NO. 37	BLOCK NO. 3 & 4
F.C.C. WORK ORDER NO. 30568	
FILE NAME:	G:\30568\WATSEW\30568wbs details.dwg

CONTRACT NO. 14-3766-D  
COURTNEY'S PAR  
LOT NOS. 1-5  
WATER & SEWER MAIN EXTENSIONS  
HOWARD COUNTY, MARYLAND

COURTNEY'S PAR  
LOT NOS. 1-5  
CONTRACT NO. 14-3766-D  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 3 of 3



**SECTION 20 :  
STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION**

**DEFINITION**  
Using vegetation as cover for barren soil to protect it from erosion. Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation the soil is more likely to allow infiltration of rainfall thereby reducing sediment loads and runoff to downstream areas, and improving wildlife habitat and visual resources.

**CONDITIONS WHERE PRACTICE APPLIES**  
This practice shall be used on eroded areas as specified on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration up to one year, and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary soil stockpiles, disturbed areas being left between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dams, cut and fill slopes and other areas at final grade, former stockpile and staging areas, etc.

**EFFECTS ON WATER QUALITY AND QUANTITY**  
Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration evaporation, transpiration and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone. Sediment control devices must remain in place during grading, seeded preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

- SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS**
- Site Preparation**
    - Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
    - Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
    - Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.
  - Soil Amendments (Fertilizer and Lime Specifications)**
    - Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analysis.
    - Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warranty of the producer.
    - Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides of calcium plus magnesium oxide. Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 90-100% will pass through a #20 mesh sieve.
    - Incorporate lime and fertilizer into the top 3-5" of soil by diking or other suitable means.
  - Seeded Preparation**
    - Temporary Seeding**
      - Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or discompacted, but left in the roughened condition. Sloped areas greater than 3:1 should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
      - Apply fertilizer and lime as prescribed on the plans.
      - Incorporate lime and fertilizer into the top 3-5" of soil by diking or other suitable means.
    - Permanent Seeding**
      - Minimum soil conditions required for permanent vegetative establishment:
        - Soil pH shall be between 6.0 and 7.0.
        - Salinity shall be less than 500 parts per million (ppm).
        - The soil shall contain less than 40% clay, but enough fine grained material (30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if leucaena or sericea lespedeza is to be planted, then a sandy soil (30% silt plus clay) would be acceptable.
        - Soil shall contain 1.5% minimum organic matter by weight.
        - Soil must contain sufficient pore space to permit adequate root penetration.
        - If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 standard and specification for Topsoil.
      - Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
      - Apply soil amendments as per soil test or as included on the plans.
      - Mix soil amendments into the top 3-5" of topsoil by diking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application, where site conditions will not permit normal seeded preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (greater than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seeded loosening may not be necessary on newly disturbed areas.

- Seed Specifications**
  - All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to testing by a recognized laboratory. All seed shall have been tested within the 6 months immediately preceding the date of sowing such material on the job.
  - Seed tags shall be made available to the inspector to verify type and rate of seed used.
  - Inoculant** - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used after the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective.
- Methods of Seeding**
  - Hydroseeding** - Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cultipacker seeder.
    - If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the maximum of 100 lbs. per acre total of soluble nitrogen P205 (phosphorous); 200 lbs./ac. K2O (potassium); 200 lbs./ac.
    - Lime - use only ground agricultural limestone, (Up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
    - Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
  - Dry Seeding** - This includes use of conventional drop or broadcast spreaders.
    - Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 265 or 266. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
    - Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
  - Drill or Cultipacker Seeding** - Mechanized seeders that apply and cover seed with soil.
    - Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeded must be firm after planting.
    - Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
- Mulch Specifications (In order of preference)**
  - Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
  - Wood Cellulose Fiber Mulch (WCFM)**
    - WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
    - WCFM shall be dried green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniform spread slurry.
    - WCFM, including dye, shall contain no preservatives or growth limiting factors.
    - WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application having moisture absorption and retention properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
    - WCFM material shall contain no elements or compounds at concentration levels that will be phytotoxic.
    - WCFM must conform to the following physical requirements: fiber length to be approximately 10 mm., diameter approximately 1 mm., pH range of 6.0 to 8.5, ash content of 16% maximum and water holding capacity of 30% minimum.

- Mulching Seeded Areas** - Mulch shall be applied to all seeded areas immediately after seeding.
  - If grading is completed outside of the seeding season, mulch alone shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
  - When straw mulch is used, it shall be spread over all seeded areas at the rate of 2.5 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
  - Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
- Securing Straw Mulch (Mulch Anchoring)** - Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods listed by preference, depending upon size of area and erosion hazard.
  - A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.
  - Wood cellulose fiber may be used for anchoring straw. The fiber under shall be applied at a net dry weight of 100 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
  - Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and front of dikes. The remainder of seed should be applied uniform after binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-70 Petro-Tack, Terra Tack II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
  - Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.

**SEDIMENT CONTROL NOTES**

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (3-3-99).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERE TO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN 21 7-CALCULATED DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, BY 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 22 OF THE HOWARD COUNTY DESIGN MANUAL - STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 50), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING TYPES 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:**

TOTAL AREA OF SITE	1,985 ACRES
AREA TO BE GRADED OR PAVED	0.31 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.12 ACRES
TOTAL CUT	100 CU.YDS.
TOTAL FILL	100 CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION	N/A CU.YDS.
- 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.
- 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.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

**PERMANENT SEEDING NOTES**

- ALL DISTURBED AREAS SHALL BE STABILIZED AS FOLLOWS:
- SEEDBED PREPARATION**  
LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.
- SOIL AMENDMENTS**  
APPLY TWO TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1,000 SQ.FT.) AND 600 LBS. PER ACRE 0-20-20 FERTILIZER (4 LBS./1,000 SQ.FT.) TO SOIL. APPLY SEEDING HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 38-0-0 UREAPFORM FERTILIZER (9 LBS./1,000 SQ.FT.) AND 500 LBS. PER ACRE (0.5 LBS./1,000 SQ.FT.) OF 10-20-20 FERTILIZER.
- SEEDING**  
FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 100 LBS. PER ACRE (2.3 LBS./1,000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THROUGH JULY 31, SEED WITH 60 LBS./ACRE (4 LBS./1,000 SQ.FT.) KENTUCKY 31 TALL FESCUE AND 2 LBS. PER ACRE (0.05 LBS./1,000 SQ.FT.) OF WEeping LOVEGRASS DURING THE PERIOD OF OCTOBER 15 THROUGH FEBRUARY 28. PROJECT SITE BY: OPTION (1) - TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING; OPTION (2) - USE SOD. OPTION (3) - SEED WITH 100 LBS./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH TWO TONS/ACRE WELL ANCHORED STRAW. ALL SLOPES SHOULD BE HYDROSEED.
- MULCHING**  
APPLY 1 TO 2 TONS PER ACRE (10 TO 90 LBS./1,000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING 200 GALLONS PER ACRE (5 GAL./1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT ACRES, ON SLOPES 6 FEET OR HIGHER USE 340 GALLONS PER ACRE (8 GAL./1,000 SQ.FT.) FOR ANCHORING.
- MAINTENANCE**  
INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

**TEMPORARY SEEDING NOTES**

- APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.
- SEEDBED PREPARATION**  
LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.
- SOIL AMENDMENTS**  
APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (4 LBS./1,000 SQ.FT.)
- SEEDING**  
FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 1.5 BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS./ACRE OF WEeping LOVEGRASS (0.7 LBS./1,000 SQ.FT.) FOR THE PERIOD NOVEMBER 15 THRU FEBRUARY 28. PROJECT SITE BY: APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.
- MULCHING**  
APPLY 1.5 TO 2 TONS PER ACRE (70 TO 90 LBS./1,000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHORING TOOL OR 210 GALLONS PER ACRE (5 GAL./1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT ACRES, ON SLOPES 6 FEET OR HIGHER USE 340 GALLONS PER ACRE (8 GAL./1,000 SQ.FT.) FOR ANCHORING.
- REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

**SEQUENCE OF CONSTRUCTION**

- OBTAIN THE REQUIRED GRADING PERMIT.
- NOTIFY MISS UTILITY 48 HOURS BEFORE BEGINNING ANY WORK (4-800-257-7777). NOTIFY HOWARD COUNTY CONSTRUCTION/INSPECTION DIVISION 24 HOURS BEFORE STARTING ANY WORK (410-311-1878).
- INSTALL THE REQUIRED SEDIMENT AND EROSION CONTROL DEVICES AS INDICATED ON SHEET 1 OF THIS CONTRACT (1 DAY).
- CLEAR AND GRUB AS NECESSARY ONLY AS REQUIRED FOR EXCAVATION AND INSTALLATION OF THE WATER AND SEWER MAINS, AND ONLY WITHIN THE DESIGNATED WATER, SEWER AND UTILITY EASEMENTS (1 DAY).
- NOTE: THE LENGTH OF OPEN WATER AND/OR SEWER MAIN TRENCH SHALL BE LIMITED TO THREE (3) PIPE LENGTHS OR THAT WHICH WILL BE BACKFILLED AND STABILIZED WITHIN ONE (1) WORKING DAY, WHICHEVER IS SHORTER.
- CONSTRUCT THE WATER MAIN/SEWER MAIN AND APPURTENANCES (10 DAYS).
- STABILIZE SEED AND MULCH ALL DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES SHOWN ON THIS SHEET (1 DAY) FOLLOWING SUCCESSFUL STABILIZATION OF ALL DISTURBED AREAS.
- AFTER PERMISSION HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL EROSION AND SEDIMENT CONTROL DEVICES (1 DAY).

**SECTION 21 :  
STANDARD AND SPECIFICATIONS FOR TOPSOIL**

- DEFINITION**  
PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.
- PURPOSE**  
TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.
- SPECIFICATIONS**  
TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND.  
TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING SUBSOILS.  
TOPSOIL SHALL CONTAIN LESS THAN 2% BY VOLUME OF CHINERS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1.5" IN DIAMETER.  
TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED BY A 4" x 2" L-PILE AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4" ; AVOID SURFACE IRREGULARITIES.  
REPLACE TOPSOIL AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION".  
TOPSOIL SHALL NOT BE PLACED DURING FROZEN, MUDDY, OR EXCESSIVELY WET CONDITIONS.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*Robert M. Reisinger*  
CHIEF, BUREAU OF UTILITIES  
DATE: 5-28-99

*Michael J. ...*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 6/7/99

FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10775 BALTOWNE NATIONAL PARK  
CLAYTON, OHIO 44024  
(440) 488 - 2055



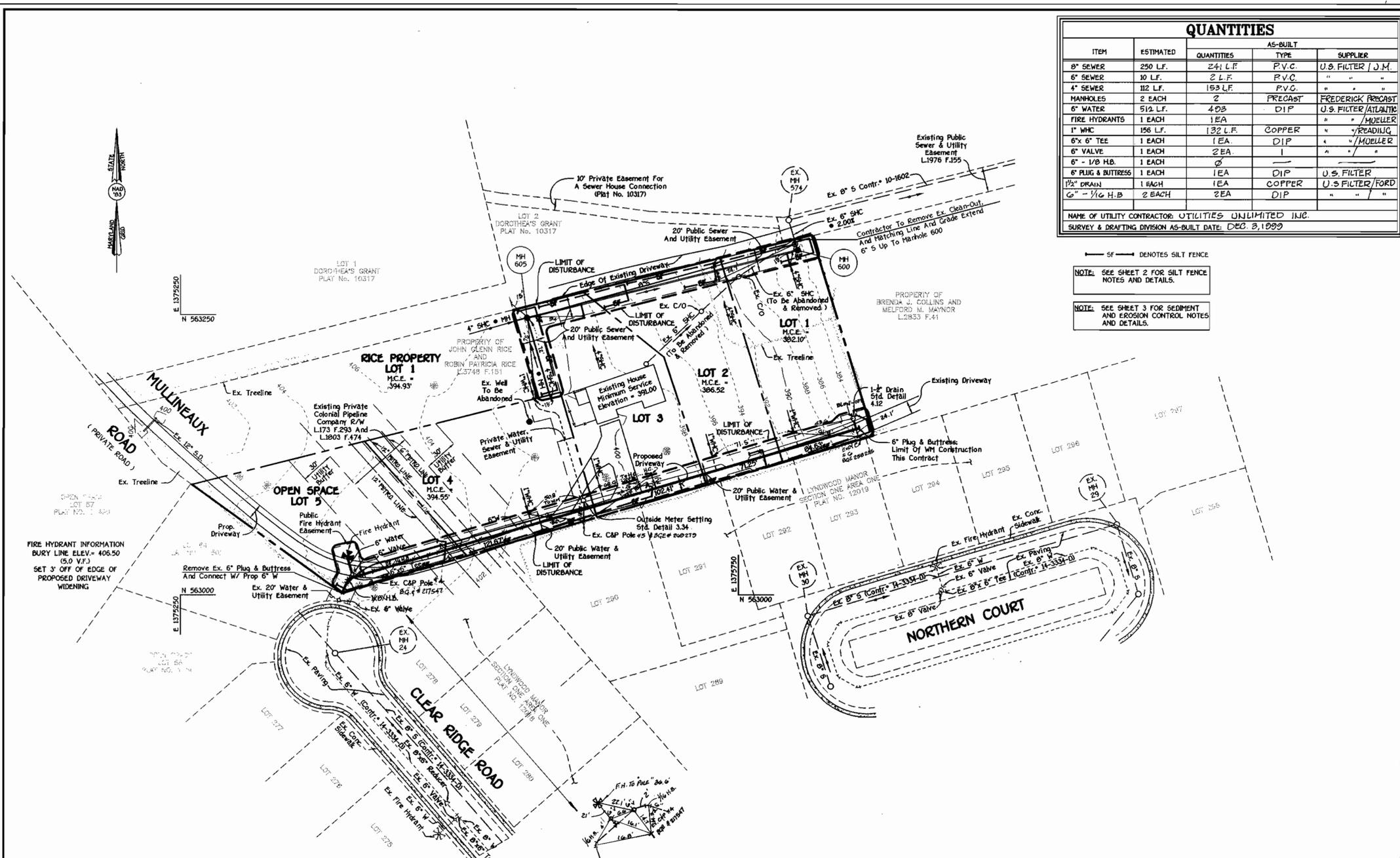
DESIGNED BY:	MJM	DATE:	5/3/99
DRAWN BY:	D.A.N.	BY:	NO.
CHECKED BY:	MJM	DATE:	APRIL 23, 1999
DATE:	5/3/99	REVISION:	

SEDIMENT AND EROSION CONTROL NOTES	
60' SCALE MAP NO. 37	BLOCK NO. 3 & 4
F.C.C. WORK ORDER NO. 30568	FILE NAME: G:\30568\WATER\30568wds details.dwg

**COURTNEY'S PAR**  
LOT NOS. 1-5  
CONTRACT NO. 14-3766-D  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 3 OF 3

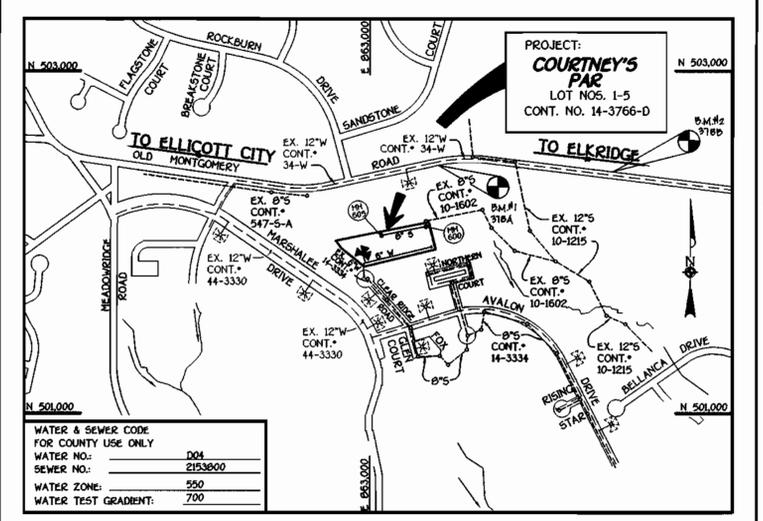
CONTRACT NO. 14-3766-D  
COURTNEY'S PAR  
LOT NOS. 1-5  
WATER & SEWER MAIN EXTENSIONS  
HOWARD COUNTY, MARYLAND



### QUANTITIES

ITEM	ESTIMATED	AS-BUILT		SUPPLIER
		QUANTITIES	TYPE	
8" SEWER	250 L.F.	241 L.F.	P.V.C.	U.S. FILTER / J.M.
6" SEWER	10 L.F.	2 L.F.	P.V.C.	"
4" SEWER	112 L.F.	153 L.F.	P.V.C.	"
MANHOLES	2 EACH	2	PRECAST	FREDERICK PRECAST
6" WATER	512 L.F.	408	DIP	U.S. FILTER / ATLANTIC
FIRE HYDRANTS	1 EACH	1EA	"	" / MOELLER
1" WMC	156 L.F.	132 L.F.	COPPER	" / READIQU
6" Tee	1 EACH	1EA	DIP	" / MOELLER
6" VALVE	1 EACH	2EA	"	"
6" 1/2" H.B.	1 EACH	2	"	"
6" PLUG & BUTTRISS	1 EACH	1EA	DIP	U.S. FILTER
1/2" DRAIN	1 EACH	1EA	COPPER	U.S. FILTER / FORD
6" 1/2" H.B.	2 EACH	2EA	DIP	"

NAME OF UTILITY CONTRACTOR: UTILITIES UNLIMITED INC.  
 SURVEY & DRAFTING DIVISION AS-BUILT DATE: DEC. 2, 1999



WATER & SEWER CODE FOR COUNTY USE ONLY  
 WATER NO.: 004  
 SEWER NO.: 2153600  
 WATER ZONE: 550  
 WATER TEST GRADIENT: 700

### VICINITY MAP

SCALE: 1"=600'

TYPE OF BUILDING	RESIDENTIAL-SINGLE FAMILY DETACHED
NUMBER OF LOTS	5 (4 BUILDABLE)
NO. OF WATER HOUSE CONNECTIONS	4
NO. OF SEWER HOUSE CONNECTIONS	4
DRAINAGE AREA	PATAPSCO
TREATMENT PLANT	PATAPSCO WASTEWATER TREATMENT PLANT, CITY OF BALTIMORE

### 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 SUPPLY. ANY 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.
- ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. DATUM.
- ALL PIPE ELEVATIONS ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 2'-0" MINIMUM.
- 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 (99) AMENDMENTS) THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB SITE.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATION OF THE TEST PIT. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE VERIFIED BY THE CONTRACTOR TO HIS OWN SATISFACTION. ANY DAMAGE TO EXISTING FACILITIES DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

- STATE HIGHWAY ADMINISTRATION - 531-5533
  - BALTIMORE GAS & ELECTRIC CO. - CONTRACTOR SERVICES - 850-4620
  - BALTIMORE GAS & ELECTRIC CO. - UNDER GROUND DAMAGE CONTROL - 787-9066
  - MESS UTILITY - 1-800-257-7777
  - COLONIAL PIPELINE CO. - 795-1390
  - BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS - 313-4900
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
  - CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
  - ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C. UNLESS OTHERWISE NOTED.
  - ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
  - T.B. DENOTES TEST BORING.
  - MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
  - MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVERS, STANDARD DETAIL G.5.2. WHERE WATERTIGHT MANHOLE FRAME AND COVER IS USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS.
  - HOUSE(S) WITH THE SYMBOL "C.A.S." INDICATES THAT THE CELLAR CANNOT BE SERVED.
  - ALL WATER HOUSE CONNECTIONS SHALL BE FOR INSIDE METER SETTING, UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS.
  - MANHOLES LOCATED WITHIN THE PROPOSED ROADWAY SHALL HAVE STANDARD HEAVY TRAFFIC MANHOLE FRAMES AND COVERS, STANDARD DETAIL G.5.1.
  - WATER MAINS AND WATER HOUSE CONNECTION LINES MUST BE PLACED AS TO HAVE ONE (1) FOOT SEPARATION FROM THE SEWER MAIN OR SEWER HOUSE CONNECTION AS THEY PASS ABOUT IT.
  - ALL WATER MAINS SHALL BE D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
  - TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3'-0" COVER UNLESS OTHERWISE NOTED.
  - VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
  - ALL FITTINGS SHALL BE BUTTRISSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
  - FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATION SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE RESTRAINED AND BUTTRISSED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS (W.111 AND W.213). SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND 1005 OF THE STANDARD SPECIFICATIONS.
  - THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
  - ALL D.I.P. FITTINGS SHALL BE IN ACCORDANCE WITH AWWA SPECIFICATIONS C-153; DUCTILE IRON COMPACT FITTINGS, 3-INCH THROUGH 12-INCH FOR WATER AND OTHER LIQUIDS.
  - THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, (410) 313-2450 AT LEAST FIVE WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD OR BORING/JACKING OPERATION IN COUNTY ROADS FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(d) OF THE HOWARD COUNTY CODE.

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

*Cheryl Simmons* 6/3/99  
 U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE DATE

APPROVED:  
*John R. Blanton* 6/3/99  
 HOWARD SOIL CONSERVATION DISTRICT DATE

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY DESIGN MANUAL & STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS AS SHOWN ON THESE PLANS.

*John R. Blanton* 5/6/99  
 SIGNATURE OF DEVELOPER DATE

### SHC INVERT • PROPERTY LINE CHART

STATION	LOT	ELEVATION
MH 600 TO MH 605		
0+05 0+10 LT.	1	371.43 - 370.35 ( @ -1.00%) 2.00%
0+75 LT.	2	380.85 - 381.52 2.00%
2+00 LT.	3	387.45 - 387.44 ( @ -1.00%) 2.00%
@ MH 600 CT.	RICE PROPERTY, LOT 1	390.50 - 390.03 @ 2.00%
@ MH 600 LT.	4	391.21 - 390.55 ( @ -1.66%) 2.00%

### DEVELOPER'S CERTIFICATION

I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

*John R. Blanton* 5/6/99  
 SIGNATURE OF DEVELOPER DATE

### ENGINEER'S CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CONSERVATION DISTRICT.

*Terrell A. Fisher* 5/6/99  
 SIGNATURE OF ENGINEER DATE

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*Robert M. Bringer* 5-28-99  
 CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING  
 HOWARD COUNTY, MARYLAND

*John R. Blanton* 6/7/99  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MARYLAND 21114  
 (410) 461-2255

*Terrell A. Fisher*  
 TERRILL A. FISHER

DESIGNED BY:	M.J.M.	
DRAWN BY:	J.E.P.	
CHECKED BY:	M.J.M.	1/10/00
DATE:	JUL	9/2/99
BY:	MDT	5/3/99
REVISION:		

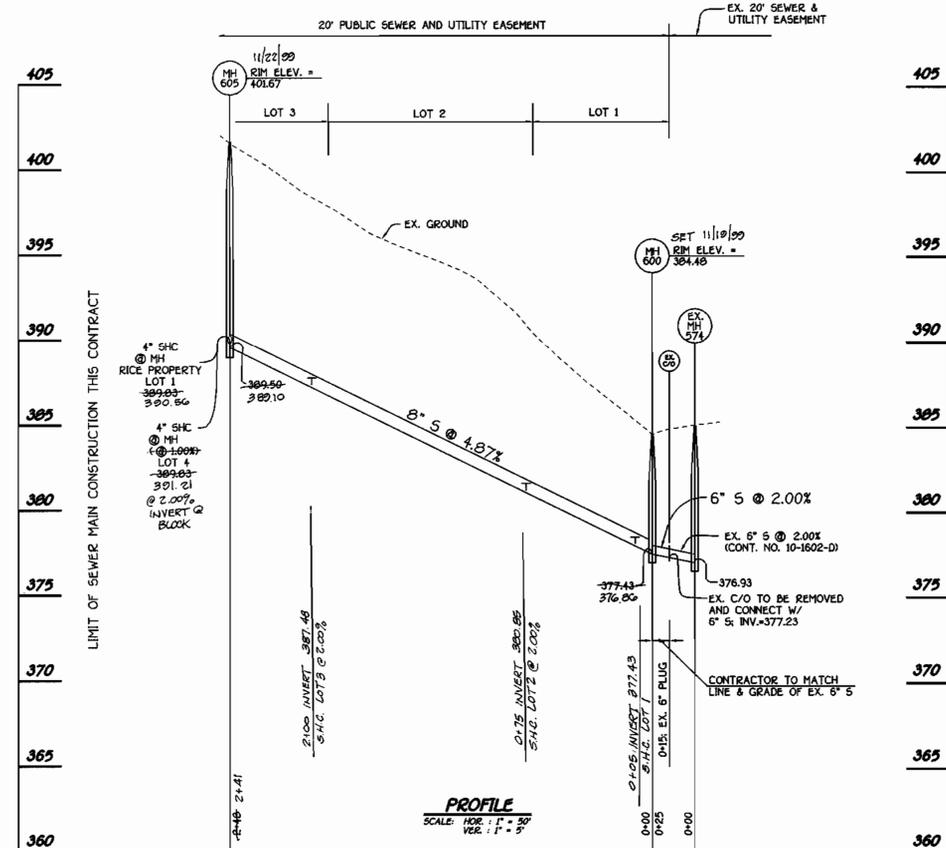
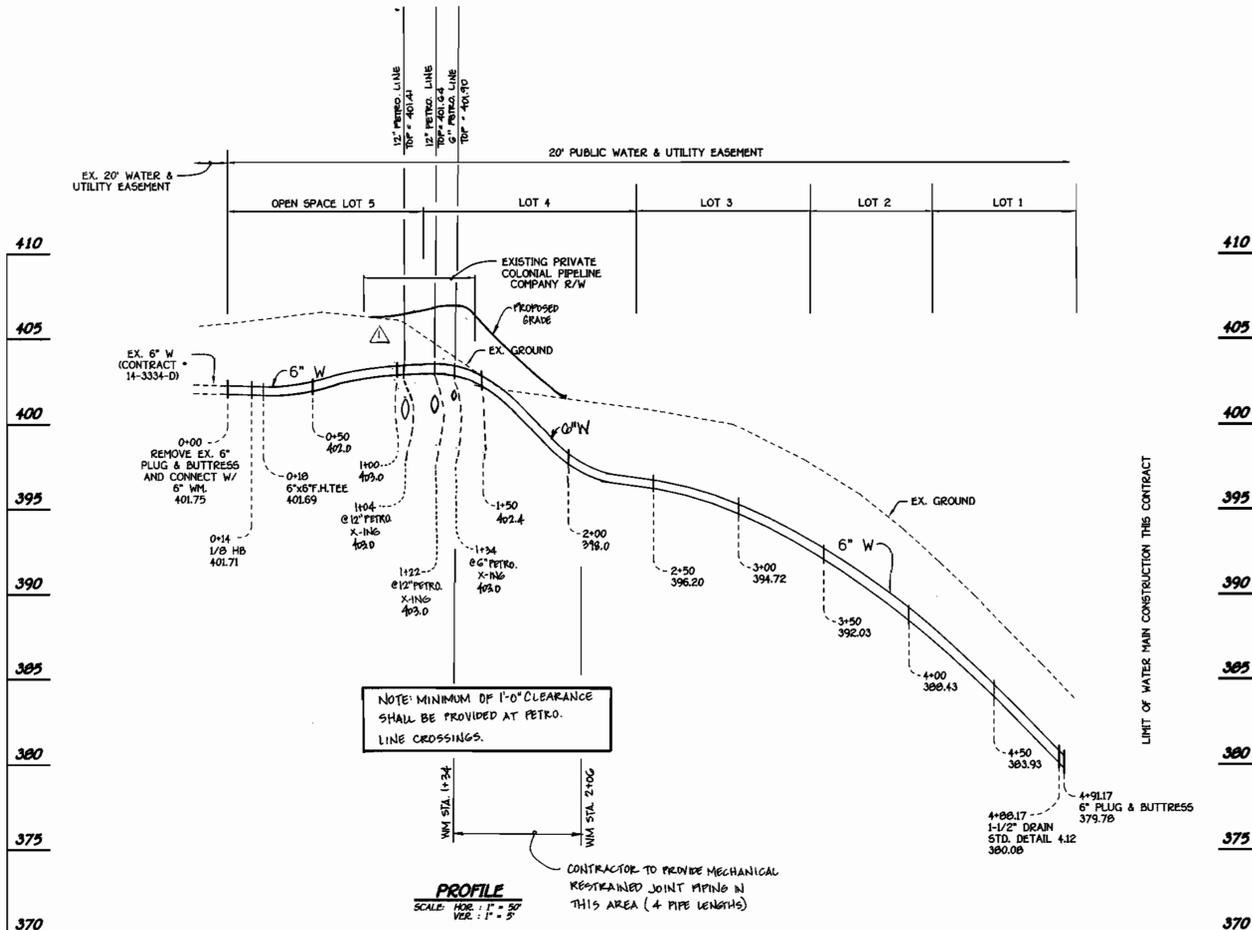
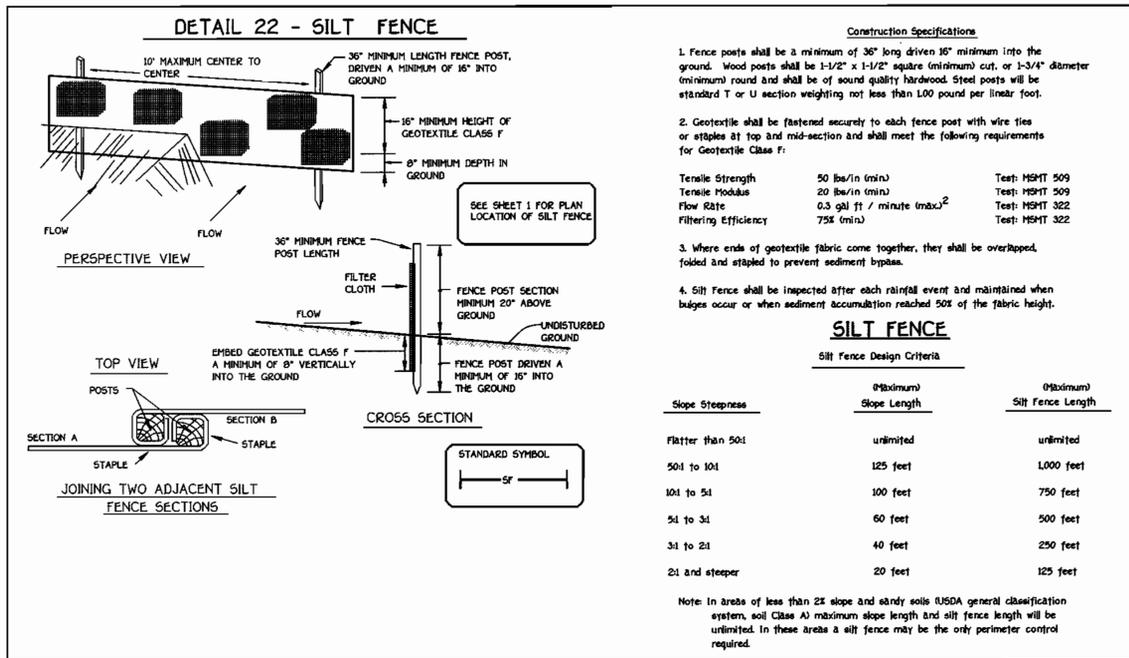
### PLAN VIEW WATER & SEWER MAINS

600' SCALE MAP NO. 37 BLOCK NO. 3 & 4  
 F.C.C. WORK ORDER NO. 30568  
 FILE NAME: G:\30568\WATER\WASPLAN.DWG

## COURTNEY'S PAR

LOT NOS. 1-5  
 CONTRACT NO. 14-3766-D  
 FIRST ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 1 OF 3



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Robert W. Deisinger* 5-28-99  
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

*John J. Deisinger* 6/2/99  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENAL SQUARE OFFICE PARK - 18272 BALTIMORE NATIONAL PIKE  
CLIKOTT CITY, MARYLAND 21026  
(410) 461-2200



DESIGNED BY:	M.J.M.
DRAWN BY:	J.E.P.
CHECKED BY:	M.J.M.
DATE:	APRIL 23, 1999
BY NO.	
REVISION	
1	AS-BUILT CONDITIONS ADDED TO PLAN
2	REVISE WM PROFILE IN ACCORDANCE WITH PETRO. LINE LOCATIONS

WATER & SEWER MAINS

600' SCALE MAP NO. 37 BLOCK NO. 3 & 4  
F.C.C. WORK ORDER NO. 30568  
FILE NAME: G/30568/WATSEW/wse\_profiles.DWG

**COURTNEY'S PAR**  
LOT NOS. 1-5  
CONTRACT NO. 14-3766-D  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 2 OF 3

CONTRACT NO. 14-3766-D  
COURTNEY'S PAR  
LOT NOS. 1-5  
WATER & SEWER MAIN EXTENSIONS  
HOWARD COUNTY, MARYLAND