


**GENERAL NOTES**

**PART I**

- 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. (NORTH AMERICAN DATUM OF 1984 (NAD '83)).
- ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. NGVD 29
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6'. CLEAR ALL POLES BY 2'-0" MINIMUM OR TUNNEL AS REQUIRED. THE 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 MONEY 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 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 DONE SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:  
 STATE HIGHWAY ADMINISTRATION (410) 531-5533  
 BGE CONTRACTOR SERVICES (410) 850-4620  
 BGE UNDER GROUND DAMAGE CONTROL (410) 291-4607  
 MISS UTILITY (800) 257-7777  
 COLONIAL PIPELINE CO. (410) 549-4120  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, BUREAU OF UTILITIES (410) 313-4900  
 BELL ATLANTIC (800) 446-5266
- 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 LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- GENERAL NOTES (SEE ATTACHED).
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-2450 AT LEAST FIVE (5) 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(c) OF THE HOWARD COUNTY CODE.

**PART II - WATER**

- ALL WATER MAINS TO 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 ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE RESTRAINED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS. 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.

**PART III - SEWER**

- ALL SEWER MAINS SHALL BE DIP CLASS 52 OR PVC UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL SEWER MAINS WITHIN 2'-0" OF EXTERIOR MANHOLE WALL.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- 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 C5.52. WHERE WATERTIGHT MANHOLES FRAME AND COVER IS USED, SET TOP OF FRAME 18" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT CELLAR CANNOT BE SERVED.

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATIONS AND WITH SITE DEVELOPMENT PLAN SDP 00-91

HOWARD SCD # GP-00-127

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

*Reyl Simmons* 8/4/00  
 USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

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

APPROVED: *John Robertson* 8/4/00  
 HOWARD S.C.D. DATE

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
*Robert M. Beaman* 8-1-00  
 CHIEF - BUREAU OF UTILITIES - DATE

DEPARTMENT OF PLANNING & ZONING  
 HOWARD COUNTY, MARYLAND  
*Howie D. Dammann* 8/4/00  
 CHIEF - DEVELOPMENT ENGINEERING DIVISION - DATE

**PURDUM and JESCHKE, LLC**  
 Consulting Engineers and Land Surveyors  
 Civil - Structural - Environmental  
 The Professional Engineering Center  
 8005 Hartwood Road - Baltimore, Maryland 21234  
 Phone: 410-668-8800 - Fax: 410-668-8801



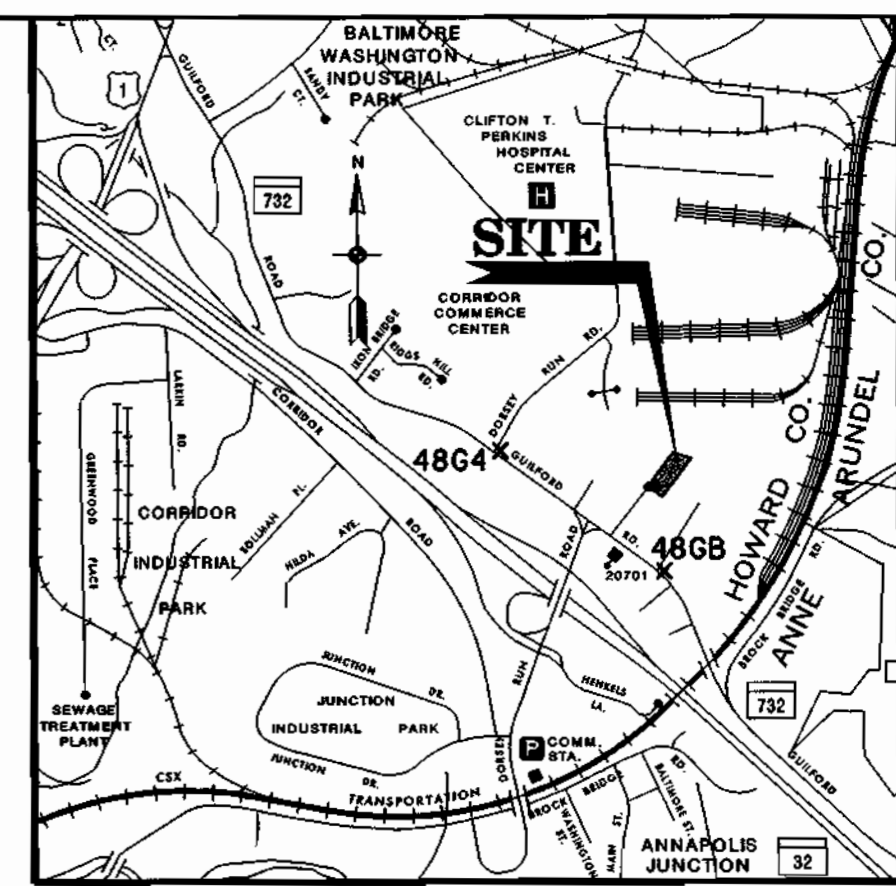
DES.	TAM				
DRN.	PWR				
CHK.	CWB				
DATE:	05/00	BY:	NO.	REVISION	DATE

**TITLE SHEET**  
 600' SCALE MAP NO. 48 BLOCK NO. 14, 20

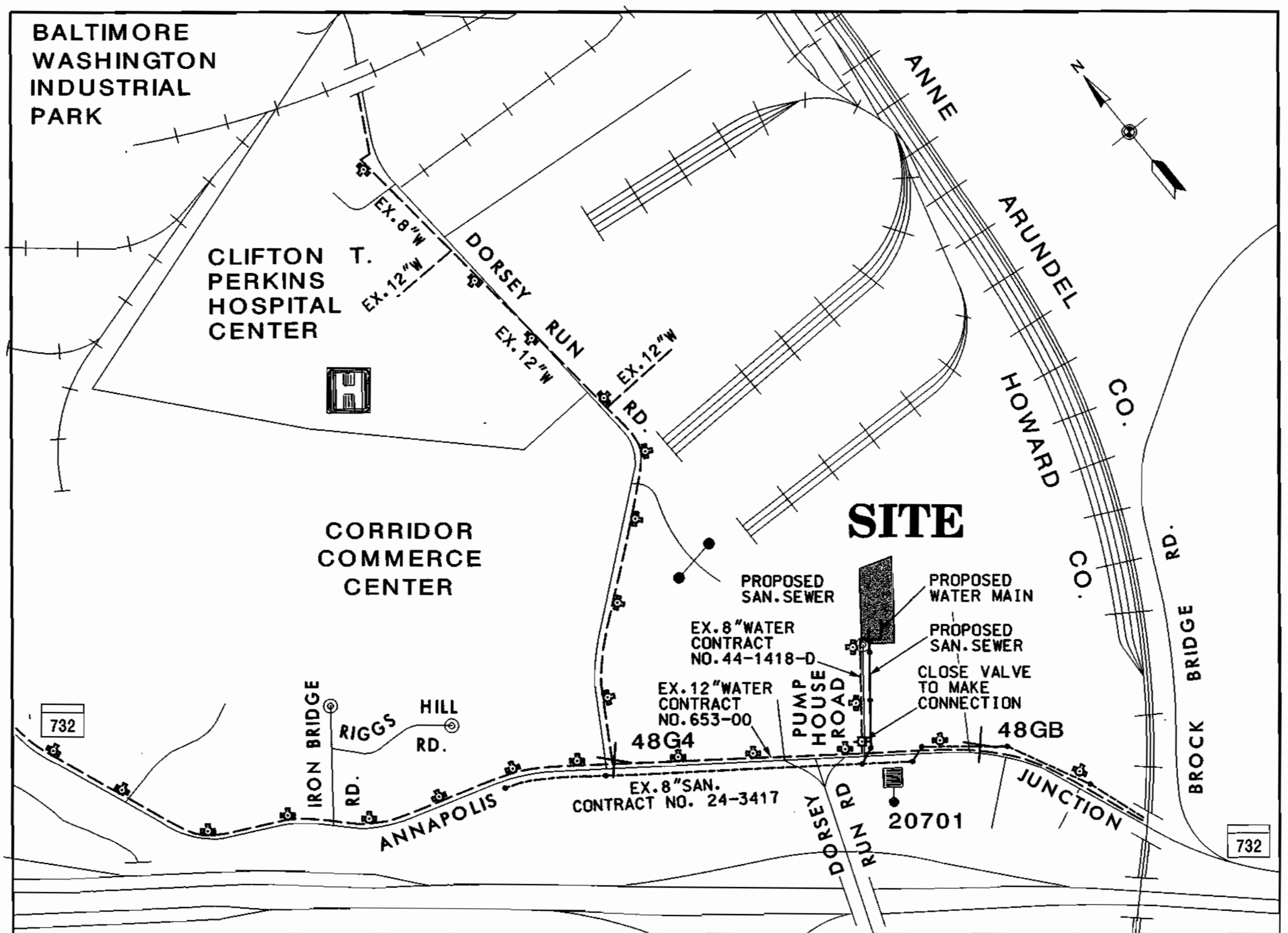
**ATLAS PLUMBING**  
 CW & COMPANY PARCEL A3, Δ86/65 PUMP HOUSE ROAD  
 ANNAPOLIS JUNCTION ROAD  
 CONTRACT NO. 24-3857-D  
 TAX MAP #48 PARCEL 68  
 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 1 OF 4

**ATLAS PLUMBING**  
**CW & COMPANY PARCEL A-3, 86/65**  
**PUBLIC WATER & SEWER PLANS**  
**HOWARD COUNTY, MARYLAND**  
**CONTRACT NO. 24-3857-D**



VICINITY MAP  
 1"=2000'



VICINITY MAP  
 1"=600'

WATER CODE: 802  
 SEWER CODE: 4020000  
 TEST GRADIENT: 550

HOWARD COUNTY CONTROL POINTS				
NO.	NORTHING	EASTING	ELEV.	DESCRIPTION
48G4	532.530.284	1.370.623.784	228.580	BRASS OR ALUMINUM DISK SET ON TOP CONCRETE COLUMN
48GB	531.519.241	1.371.659.842	206.628	BRASS OR ALUMINUM DISK SET ON TOP CONCRETE COLUMN

TYPE OF BUILDING:	COMMERCIAL
NO. OF LOTS/PARCELS:	3
NO. OF WATER HOUSE CONNECTIONS:	1
NO. OF SEWER HOUSE CONNECTIONS:	2
DRAINAGE AREA:	LITTLE PATUXENT
TREATMENT PLANT:	PATUXENT

QUANTITIES				
NAME OF UTILITY CONTRACTOR :				
SURVEY AND DRAFTING DIVISION AS-BUILT DATE :				
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
MANHOLE	7 EA			
MANHOLE	35 VF			
8" DIP SEWER	526 LF			
8" SEWER	213 LF			
6" SEWER	47 LF			
4" SEWER	6 LF			
6" VALVE	2 EA			
8" VALVE	2 EA			
8"x 6" TEE	2 EA			
8"x 8" TEE	1 EA			
6" FIRE HYDRANT	1 EA			
8" CAP & BUTTRESS	2 EA			
6" WATER	20 LF			
8" WATER	303 LF			

SHEET INDEX	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	SEWER PLAN & PROFILE
3	WATER PLAN & PROFILE
4	SEDIMENT CONTROL DETAILS & SPECIFICATIONS

**MISS UTILITY**  
 THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES BY CONTACTING "MISS UTILITY" (1-800-257-7777) 72 HOURS PRIOR TO THE START OF CONSTRUCTION.

**ENGINEER'S Certification**  
 I CERTIFY THAT THIS PLAN OF SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS, AND THAT IS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.  
*Charles W. Bradley* 5/8/00  
 Signature of Engineer Date  
*Charles W. Bradley* 10489  
 Print Name MD License Number

**DEVELOPER'S Certification**  
 I/ WE HEREBY CERTIFY THAT DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECTS WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY HOWARD COUNTY SOIL CONSERVATION DISTRICT.  
*Edward J. St. Louis* 5/9/00  
 Signature of Owner/Developer Date  
*Edward J. St. Louis* 29421  
 Print Name Title





20.0 STANDARD AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

TABLE 25 PERMANENT SEEDING FOR LOW MAINTENANCE AREAS

MIX	SEED MIX (USE CERTIFIED MATERIAL IF AVAILABLE)	PLANTING LBS./AC. LBS./1000 SQ.FT.	SITE CONDITIONS	USDA HARD- NESS ZONES	RECOMMENDED PLANTING DATES								
					3/1- 5/15	3/15- 6/1	5/16- 8/14	6/2- 7/31	8/1- 10/1	8/15- 10/15	8/15- 11/15		
1	TALL FESCUE (75%), CANADA BLUEGRASS (10%), KENTUCKY BLUEGRASS (10%), REDFOP (5%)	150 3.4	MOIST TO DRY	6b	X						X		A
4	RED FESCUE OR CHEVINGS FESCUE (80%) PERENNIAL RYEGRASS (20%)	60 60 15	MOIST TO DRY	6b	X						X		D
7	TALL FESCUE (83%) WEeping LOVEGRASS (12%) PLUS SERECA LESPEDEZA (5%)	110 3 20	DRY TO VERY DRY	6b	X		X				X		G

FERTILIZER RATES: 00-20-20  
N 2LBS./1000 S.F., P 30 LBS./ACRE  
K2O 4 LBS./1000 S.F., 175 LBS./ACRE  
K2O 4 LBS./1000 S.F., 175 LBS./ACRE  
LIME RATE 100 LBS./1000 S.F., 2 TONS/ACRE

A - USED BY SMA ON SLOPED AREAS. ADD A LEGUME FOR SLOPES > 3%.  
B - BEST USE ON SHADY SLOPES NOT ON POORLY DRAINING CLAYS.  
C - WEeping LOVEGRASS MAY BE SEEDING WITH TALL FESCUE IN MID-SUMMER.  
SERECA LESPEDEZA IS BEST SUITED FOR TONES 7a AND 7b.

TABLE 26 - TEMPORARY SEEDING RATES, DEPTHS, AND DATES

SPECIES	MINIMUM SEEDING RATES PER ACRE	LBS./1000 SQ.FT.	PLANTING DEPTH INCHES	PLANT HARDNESS ZONE 6b								
				HARDNESS ZONES AND SEEDING DATES								
				7a and 7b	6b	6a and 5b						
BARLEY OR RYE PLUS FOXTAIL MILLET #1	150 lbs	3.45	1	2/1- 4/30	5/1- 8/14	8/15- 11/30	3/1- 5/15	5/16- 8/14	8/15- 11/15	3/15- 6/1	6/1- 7/31	8/1- 10/31
				X	X	X	X	X	X	X	X	X

- 36 APPLICABLE ON SLOPES OF 3d OR FLATTER
- 37 REFER TO FIGURE A - ADOPED FROM USDA, ARS MISCELLANEOUS PUBLICATION #1475, JANUARY 1990
- 38 BETWEEN FALL AND SPRING SEEDING DATES. USE MULCH ONLY IF GROUND IS FROZEN AND RESEED WHEN THAWED
- 40 MARYLAND STATE HIGHWAY ADMINISTRATION TEMPORARY SEED MIX.

HOWARD SOIL CONSERVATION DISTRICT  
STANDARD SEDIMENT CONTROL NOTES

- A minimum of 48 hours notice must be given to the Howard County Department of Inspection, Licenses and Permits, Sediment Control Division prior to the start of any construction.
- 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.
- Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within 7 calendar days for all permanent sediment control structures, dikes, areas on the project site.
- All sediment treatment structures shall 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 USE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, for permanent seeding (Sec. 51) and (Sec. 54) temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch does not constitute a permanent stabilization and shall be replaced by permanent stabilization as soon as possible.
- 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.

SEQUENCE OF CONSTRUCTION

SEQUENCE	NUMBER OF DAYS
1. OBTAIN A GRADING PERMIT.	7
2. WHILE CONSTRUCTING UTILITIES THE LIMIT OF DISTURBANCE SHALL INCLUDE ONLY THREE (3) PIPE LENGTHS OR THAT WHICH WILL BE BACKFILLED AND STABILIZED IN ONE WORK DAY. SEE UTILITY NOTES ON PLAN SHEETS.	14
3. STABILIZE ALL AREAS IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS.	14
4. UPON APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, REMOVE ALL EROSION AND SEDIMENT CONTROL MEASURES AND STABILIZE.	7

SECTION I - 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 rates 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 analysis 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. Material may be substituted with fertilizer with prior approval from the appropriate approval authority. Fertilizers shall be delivered to the site fully labeled according to the applicable State fertilizer laws and shall bear the name, trade name or trademark, and warranties of the producer.
  - Lime materials shall be ground limestone (hydrated or burnt lime) may be substituted which contains at least 90% total solids (calcium plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98-100% will pass through a #20 mesh sieve.
  - Incorporate lime and fertilizer into the top 3 - 5" of soil by disking 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 disk harrows or chisel plows or ripers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth surface in the roughness of the soil. The soil should be left in a rough condition 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 disking 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 400:1 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 lovegrass or sercela 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 exist 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 soil shall be graded 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 disking or other suitable means. Loam areas should be rolled to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Where site conditions will not permit normal seeded preparation, loosen surface by dragging with a heavy stake or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges 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 re-testing by 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.
  - Note: 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 other than the date indicated on the container of fresh inoculant or packaged inoculant. 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.

- E. Methods of Seeding**
- Hydroseeding:** Apply seed uniformly with hydroseeder (latury includes seed and fertilizer), broadcast or drop seeder, or a cutbacker seeder.
  - If fertilizer is being applied at the time of seeding, the application rate amounts will not exceed the following: Nitrogen: 100 lbs/acre total of soluble nitrogen P2O5 (phosphorus) 200 lbs/acre; K2O (potassium) 200 lbs/acre.
  - 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 25 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
    - Where practical, seed shall be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
  - Drill or Cutbacker Seeding:** Mechanized seeders that apply and cover seed with soil.
    - Cutbacker 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 shall be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

- F. Mulch Specifications (in order of preference)**
- Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonably free 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 dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread 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 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 percolation 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 phyto-toxic.
    - WCFM must conform to the following physical requirements: fiber length to approximately 10 mm, diameter approximately 1 mm, pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.
- Note: Only sterile straw mulch should be used in areas where one species of grass is desired.

- G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.**
- If grading is completed outside for the seeding season, mulch along should 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 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.
- H. 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 hazards):
- A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface 12 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 150 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 on crests of banks. The remainder of area should appear uniform after binder application. Synthetic binders such as Acrylic DLR (Agra-Track), DCA-70, Petrosat, Terra Top 5, Terra Top 46, 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.

TOPSOIL SPECIFICATIONS FOR SEDIMENT CONTROL/STABILIZATION PURPOSES

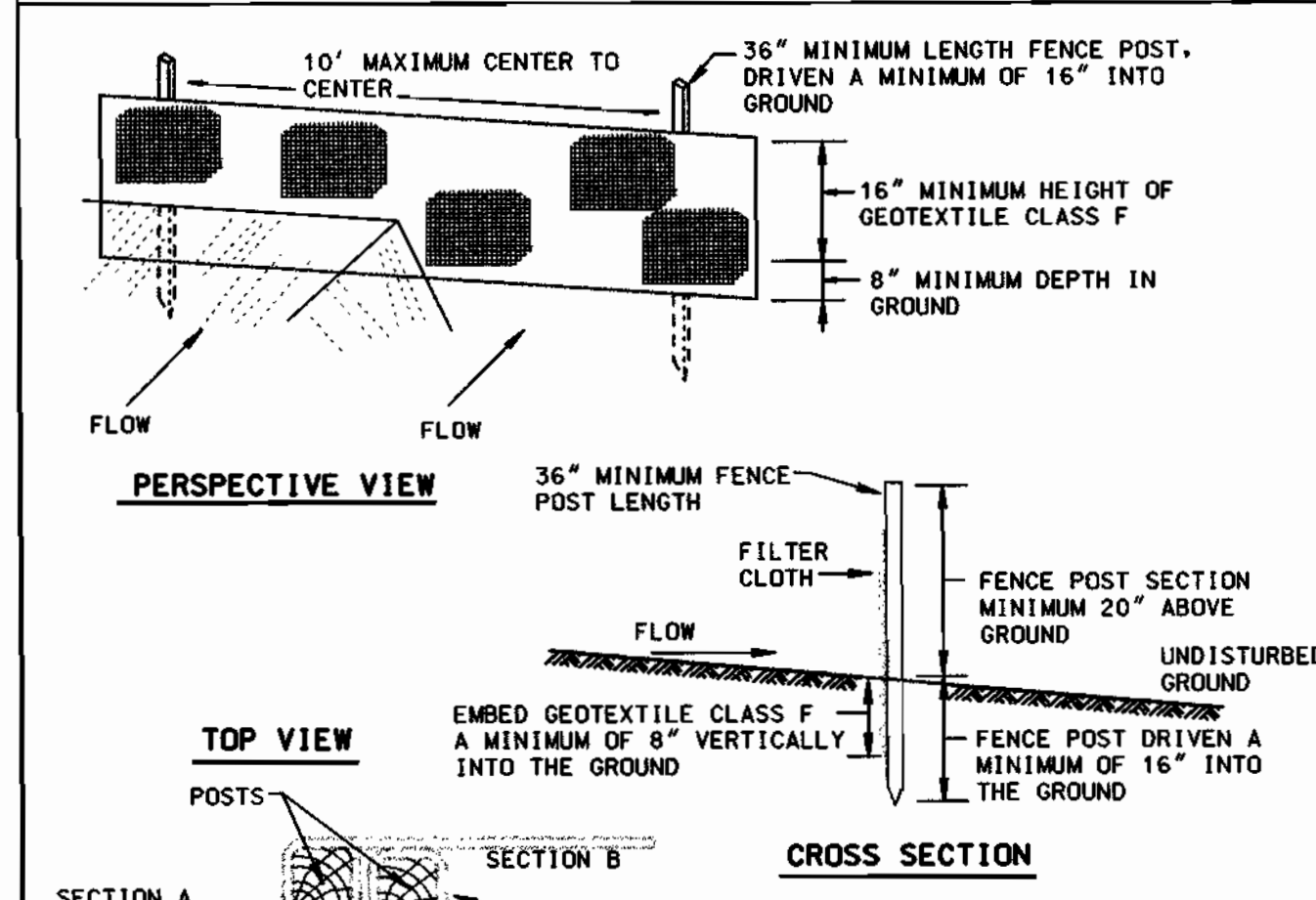
- 20.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL**
- Definition**  
Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.
- Purpose**  
To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
- Conditions Where Practice Applies**
- This practice is limited to areas having 2d or flatter slopes where:
    - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
    - The soil material is so shallow the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
    - The original soil to be vegetative contains material toxic to plant growth.
    - The soil is so acidic that treatment with limestone is not feasible.
  - For the purpose of these Standards and Specifications, areas having slopes steeper than 2d require special consideration and design for adequate stabilization. Areas having slopes steeper than 2d shall have the appropriate stabilization shown on the plans.

- Construction and Material Specifications**
- Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SSC in cooperation with Maryland Agricultural Experiment Station.
  - Top soil specifications - Soil to be used as topsoil must be the following:
    - Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand, or 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 mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, logs, coarse fragments, gravel sticks, roots, trash, and other materials larger than 1 inch in diameter.
    - Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnsongrass, nutgrass, poison ivy, thistle, or others as specified.
    - Where the subsoil is either highly acidic or composed of heavy clay, 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.

- IV. For sites having disturbed areas under 5 acres:**
- Place topsoil if required and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
- IV. For sites having disturbed areas over 5 acres:**
- On soil meeting Topsoil specifications, obtain test results indicating fertilizer and lime amendments required to bring the soil into compliance with the following:
    - pH for topsoil shall be between 6.0 and 7.5. If tested soil demonstrates a pH of less than 6.0, sufficient lime shall be pre-applied to raise the pH to 6.5 or higher.
    - Organic contents of topsoil shall not be less than 1.5 percent by weight.
    - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
    - No soil or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (30 days) to permit dispersion of phyto-toxic materials.
  - Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority may be used in lieu of natural topsoil.

- V. Topsoil Application**
- When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, 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 seeded preparation.

DETAIL 22 - SILT FENCE



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

Tensile Strength	50 lb/in (min.)	Test: MSMT 509
Tensile Modulus	20 lb/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft <sup>2</sup> /minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322
  - Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
  - Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.
- U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE      PAGE 8 - 15 - 8      MARYLAND DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES WATER MANAGEMENT ADMINISTRATION

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND

8-1-00  
CHIEF - BUREAU OF UTILITIES - DATE

8/10  
CHIEF - DEVELOPMENT ENGINEERING DIVISION / DATE

**PURDUM and JESCHKE, LLC**  
Consulting Engineers and Land Surveyors  
Civil - Structural - Environmental

The Professional Engineering Center  
8005 Hartford Road - Baltimore, Maryland 21234  
Phone: 410-668-8800 - Fax: 410-668-8801

STATE OF MARYLAND  
PROFESSIONAL ENGINEER

DES. TAM  
DRN. PWR  
CHK. CWB  
DATE. 05/00

BY NO. REVISION

DATE 600 SCALE MAP NO. 48 BLOCK NO. 14, 20

**SEDIMENT CONTROL DETAILS & SPECIFICATIONS**


**ATLAS PLUMBING**  
CW & COMPANY PARCEL A3, Δ86/65 PUMP HOUSE ROAD  
ANNAPOLIS JUNCTION ROAD  
CONTRACT NO. 24-3857-D

TAX MAP #48 PARCEL 68  
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 4 OF 4

**GENERAL NOTES**

**PART I**

- 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. (NORTH AMERICAN DATUM OF 1984 (NAD '83)).
- ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. NGVD 29
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6'. CLEAR ALL POLES BY 2'-0" MINIMUM OR TUNNEL AS REQUIRED. THE 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 MONEY 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 (LATES 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 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 LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:  
 STATE HIGHWAY ADMINISTRATION (410) 531-5533  
 BGE CONTRACTOR SERVICES (410) 850-4620  
 BGE UNDER GROUND DAMAGE CONTROL (410) 291-4607  
 MISS UTILITY (800) 257-7777  
 COLONIAL PIPELINE CO. (410) 549-8120  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, BUREAU OF UTILITIES (410) 313-4900  
 BELL ATLANTIC (800) 446-5266
- 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 LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- GENERAL NOTES (SEE ATTACHED).
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-2450 AT LEAST FIVE (5) 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(a) OF THE HOWARD COUNTY CODE.

**PART II - WATER**

- ALL WATER MAINS TO 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 ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE RESTRAINED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS. 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.

**PART III - SEWER**

- ALL SEWER MAINS SHALL BE DIP CLASS 52 OR PVC UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL SEWER MAINS WITHIN 2'-0" OF EXTERIOR MANHOLE WALL.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- 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 G5.52. WHERE WATERTIGHT MANHOLES FRAME AND COVER IS USED, SET TOP OF FRAME 18" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT CELLAR CANNOT BE SERVED.

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATIONS AND WITH SITE DEVELOPMENT PLAN SDP 00-91

HOWARD SCD # GP-00-127

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

*Cheryl Simmons* 8/4/00  
 USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*John Robertson* 8/4/00  
 APPROVED DATE  
 HOWARD S.C.D.

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING  
 HOWARD COUNTY, MARYLAND

**PURDUM and JESCHKE, LLC**  
 Consulting Engineers and Land Surveyors  
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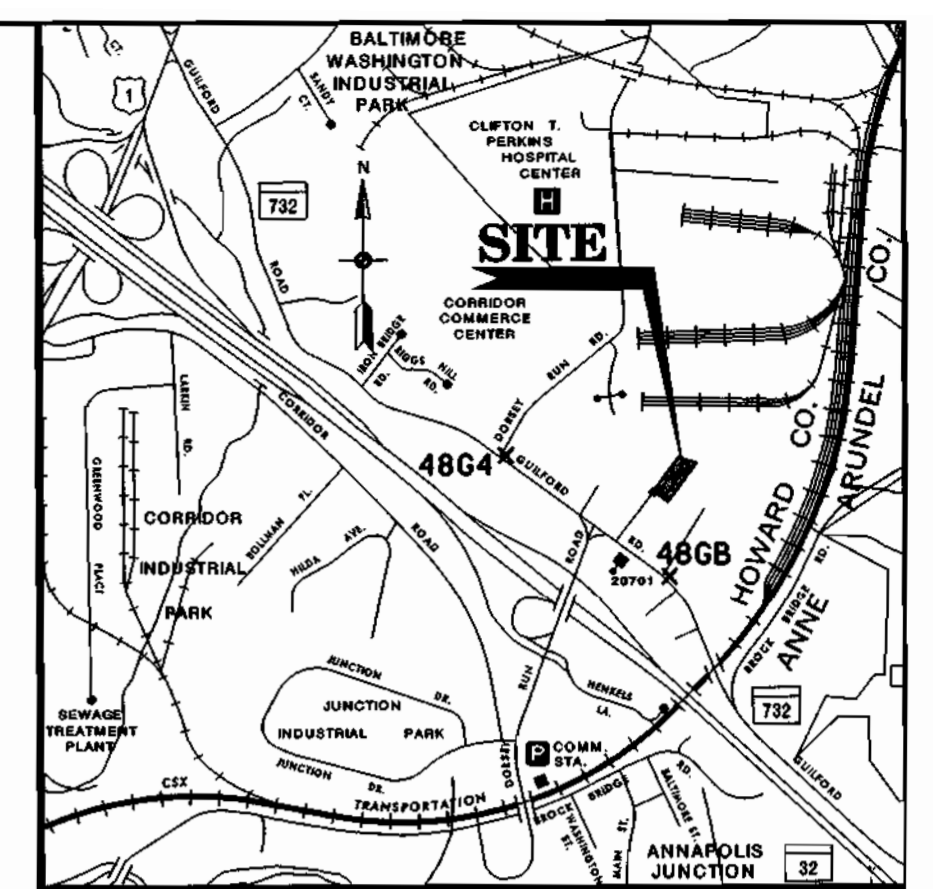
DES. TAM			
DRN. PWR			
CHK. CWB			
DATE. 05/00	BY. RJI	NO. 1	REVISION. AS-BUILT CONDITIONS ADDED TO PLAN
			DATE. 6/16/01

**TITLE SHEET**

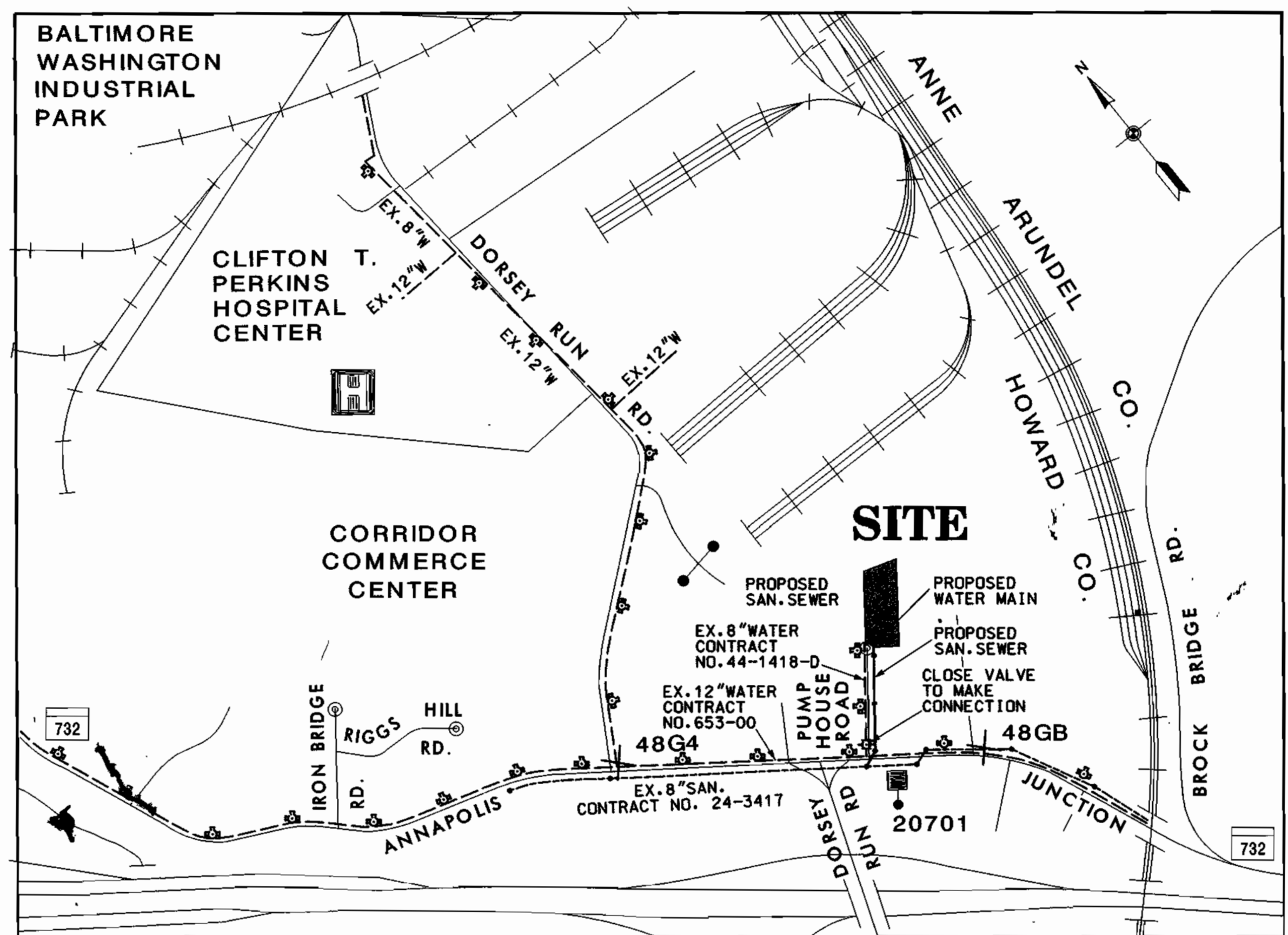
**ATLAS PLUMBING**  
 CW & COMPANY PARCEL A3, Δ86/65 PUMP HOUSE ROAD  
 ANNAPOLIS JUNCTION ROAD  
 CONTRACT NO. 24-3857-D  
 TAX MAP #48 PARCEL 68  
 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 1 OF 4

**ATLAS PLUMBING**  
**CW & COMPANY PARCEL A-3, 86/65**  
**PUBLIC WATER & SEWER PLANS**  
**HOWARD COUNTY, MARYLAND**  
**CONTRACT NO. 24-3857-D**



VICINITY MAP  
 1"=2000'



VICINITY MAP  
 1"=600'

WATER CODE 802  
 SEWER CODE 4020000  
 TEST GRADIENT 550

**ENGINEER'S Certification**

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

*Charles W. Bradley* 5/8/00  
 Signature of Engineer Date  
*Charles W. Bradley* 10489  
 Print Name MD License Number

**DEVELOPER'S Certification**

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

*Edward J. Sullivan* 5/9/00  
 Signature of Owner/Developer Date  
*Edward J. Sullivan* 8921  
 Print Name Title

**MISS UTILITY**

THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES BY CONTACTING "MISS UTILITY" (1-800-257-7777) 72 HOURS PRIOR TO THE START OF CONSTRUCTION.

**HOWARD COUNTY CONTROL POINTS**

NO.	NORTHING	EASTING	ELEV.	DESCRIPTION
4864	532,530.284	1,370,623.784	228.580	BRASS OR ALUMINUM DISK SET ON TOP CONCRETE COLUMN
4868	531,519.241	1,371,658.842	206.628	BRASS OR ALUMINUM DISK SET ON TOP CONCRETE COLUMN

TYPE OF BUILDING:	COMMERCIAL
NO. OF LOTS/PARCELS:	3
NO. OF WATER HOUSE CONNECTIONS:	1
NO. OF SEWER HOUSE CONNECTIONS:	2
DRAINAGE AREA:	LITTLE PATUXENT
TREATMENT PLANT:	PATUXENT

**QUANTITIES**

NAME OF UTILITY CONTRACTOR : CALVERT UTILITIES  
 SURVEY AND DRAFTING DIVISION AS-BUILT DATE :

ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
MANHOLE	7 EA	7	PRE CAST	ATLANTIC CONC./SAME
MANHOLE	35 VF		PRE CAST	
8" DIP SEWER	526 LF		D.I.P. CL-52	GRIFFIN/MUNICIPAL/CONTRACTOR SALES
8" SEWER	213 LF		J.H. PIPE F.V.2	J.H. PIPE/MUNICIPAL/CONTRACTOR SALES
6" SEWER	47 LF	74	" " " "	" " " "
4" SEWER	6 LF		" " " "	" " " "
6" VALVE	2 EA	2 EA	GATE VALVE	KENNDY, VALVES/MUNICIPAL/CONTRACTOR SALES
8" VALVE	2 EA	2 EA	" " " "	" " " "
8"x 6" TEE	2 EA	2 EA	BIF C-153	TYLER/MUNICIPAL/CONTRACTOR SALES
8"x 8" TEE	1 EA	1 EA	" " " "	" " " "
6" FIRE HYDRANT	1 EA	1 EA	STD HOW CO	KENNDY VALVES/
8" CAP & BUTTRESS	2 EA	2 EA	D.I.F. C-153	TYLER/
6" WATER	20 LF	19 L.F.	D.I.F. CLASS 52	GRIFFIN/
8" WATER	303 LF		D.I.P. CLASS 52	GRIFFIN/





20.0 STANDARD AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

TABLE 25 PERMANENT SEEDING FOR LOW MAINTENANCE AREAS

MIX	SEED MIX (USE CERTIFIED MATERIAL IF AVAILABLE)	PLANTING		SITE CONDITIONS	USDA HARD- NESS ZONES	RECOMMENDED PLANTING DATES									
		LBS./AC.	LBS./1000 SQ.FT.			3/1- 5/5	3/15- 6/1	5/16- 8/4	6/2- 7/3	8/1- 10/1	8/15- 10/15	8/15- 11/15			
1	TALL FESCUE (75%) CANADA BLUEGRASS (20%), KENTUCKY BLUEGRASS (10%), REDFOP (5%)	150	3.4	MOIST TO DRY	6b	X							X		A
4	RED FESCUE OR CERBERUS FESCUE (80%) PERENNIAL RYEGRASS (20%)	60 16	.32 .34	MOIST TO DRY	6b	X							X		D
7	TALL FESCUE (80%) KEEPIE LOVEGRASS (20) PLUS SERECIA LESPEDEZA (5%)	110 3 20	2.5 .07 .46	DRY TO VERY DRY	6b	X			X					X	G

FERTILIZER RATE: (10-20-20)  
N 205/1000 S.F., 90 LBS./ACRE  
P205 485/1000 S.F., 175 LBS./ACRE  
K2O 4 LBS./1000 S.F., 175 LBS./ACRE  
LIME RATE 100 LBS./1000 S.F., 2 TONS/ACRE

A - USED BY SHA ON SLOPED AREAS. ADD A LEGUME FOR SLOPES > 3%.

10 - BEST USE ON SHADY SLOPES NOT ON POORLY DRAINED CLAYS.

G - WEEPIE LOVEGRASS MAY BE SEEDING WITH TALL FESCUE IN MID-SUMMER.

SERECIA LESPEDEZA IS BEST SUITED FOR ZONES 7a AND 7b.

TABLE 26 - TEMPORARY SEEDING RATES, DEPTHS, AND DATES

SPECIES	MINIMUM SEEDING RATES		PLANTING DEPTH * INCHES	PLANT HARDNESS ZONE 6b										
	PER ACRE	LBS./1000 SQ.FT.		HARDNESS ZONES 7a AND SEEDING DATES 7b										
				2/1- 4/30	5/1- 8/4	8/15- 11/30	3/1- 4/30	5/1- 8/4	8/15- 11/30	3/15- 6/1	6/1- 10/31			
BARLEY OR RYE PLUS FOXTAIL MILLET *	150 lbs	3.45	1	X	X	X	X	X	X	X	X	X	X	X
36	APPLICABLE ON SLOPES OF 3% OR FLATTER			FERTILIZER RATE: (10-10-10) 15 LBS./1000 S.F., 600 LBS./ACRE LIME RATE: 100 LBS./1000 S.F., 2 TONS/ACRE										
37	REFER TO FIGURE A - ADOPTED FROM USDA, ARS MISCELLANEOUS PUBLICATION #1475, JANUARY 1990													
38	BETWEEN FALL AND SPRING SEEDING DATES, USE MULCH ONLY IF GROUND IS FROZEN AND RESEED WHEN THAWED													
40	MARYLAND STATE HIGHWAY ADMINISTRATION TEMPORARY SEED MIX.													

HOWARD SOIL CONSERVATION DISTRICT  
STANDARD SEDIMENT CONTROL NOTES

- A minimum of 48 hours notice must be given to the Howard County Department of Inspection, Licenses and Permits, Sediment Control Division prior to the start of any construction (33-105.0).
- 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 MARIAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto.
- Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within 7 calendar days for all perimeter sediment control structures, dikes, areas on the project site.
- All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. II, Chapter 12 of the MARIAND SMITH DESIGN MANUAL, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1984 MARIAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding (Sec. 52), temporary stabilization with mulch (Sec. 54), temporary seeding (Sec. 56) and mulching (Sec. 52). Temporary stabilization with mulch shall only be done when recommended seeding rates do not allow for proper preparation and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until vegetation has been established. For their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:  
Total Area of Site: 0.20 Acres  
Area Disturbed: 0.20 Acres  
Area to be seeded or paved: 0.20 Acres  
Total Cut: 2500 Cu.Yds.  
Total Fill: 2500 Cu.Yds.  
Offsite water/borrow area location: TBD
- Any sediment control practices which are disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control 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 inspection approvals may not be authorized until this initial approval by the inspection agency is made.
- Trenches for the construction of utilities be finished to three plus lengths or that which shall be back-filled and stabilized by the end of each work day, whichever is shorter.

SEQUENCE OF CONSTRUCTION

SEQUENCE	NUMBER OF DAYS
1. OBTAIN A GRADING PERMIT.	7
2. WHILE CONSTRUCTING UTILITIES THE LIMIT OF DISTURBANCE SHALL INCLUDE ONLY THREE (3) PIPE LENGTHS OR THAT WHICH WILL BE BACKFILLED AND STABILIZED IN ONE WORK DAY. SEE UTILITY NOTES ON PLAN SHEETS.	14
3. STABILIZE ALL AREAS IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS.	14
4. UPON APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, REMOVE ALL EROSION AND SEDIMENT CONTROL MEASURES AND STABILIZE.	7

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 areas 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 purposes.
  - 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. Fertilizer shall be delivered to the site fully labeled according to the applicable State fertilizer laws and shall bear the name, trade name or trademark and varieties of the producer.
  - Lime materials shall be ground limestone (hydrated or burnt lime) may be substituted which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98-100% will pass through a #20 mesh sieve.
  - Incorporate lime and fertilizer into the top 3 - 5" of soil by disking 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 disk harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth but left in the roughened condition, sloped areas (greater than 3%) 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 disking or other suitable means.
  - Permanent Seeding
    - Minimum soil conditions required for permanent vegetative establishment:
      - Soil pH shall be between 6.0 and 7.0.
      - Soil 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 capability to hold an adequate amount of moisture. An exception is if leucaena or serotia 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 moisture 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 Specifications 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 disking or other suitable means. Lawn areas should be rolled to smooth the surface, remove large objects like stones and branches, and apply the seed 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%) shall 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.

- D. Seed Specifications**
- All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of seeding on this job.
  - Note: 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 mixture shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used other than 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.

- E. Methods of Seeding**
- Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeder, or a cut/packer seeder.
    - If fertilizer is being applied at the time of seeding, the application rate amounts will not exceed the following: 100 lbs. maximum of 100 lbs. maximum of total of soluble nitrogen/P205 (phosphorus) 200/100/500/200 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 Schedules or Tables 25 or 26. 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 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 practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

- F. Mulch Specifications (in order of preference)**
- Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonably bright in color, and shall not be musty, moldy, soaked, 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 dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread 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 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 percolation 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 phyto-toxic.
    - WCFM must conform to the following physical requirements: fiber length to approximately 10 mm, diameter approximately 1mm, pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.

- G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.**
- If grading is completed outside for the seeding season, mulch along should 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 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.
- H. 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 (2 inches by 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 150 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 on crests of banks. The remainder of area should appear uniform after binder application. Synthetic binders such as Acrylic DLR (Agra-Tack), DCA-70, Petrosset, Terra Tack II, Terra Tack 46, 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 applied in rolls 4' to 15' feet wide and 300 to 3,000 feet long.

TOPSOIL SPECIFICATIONS FOR SEDIMENT CONTROL/STABILIZATION PURPOSES

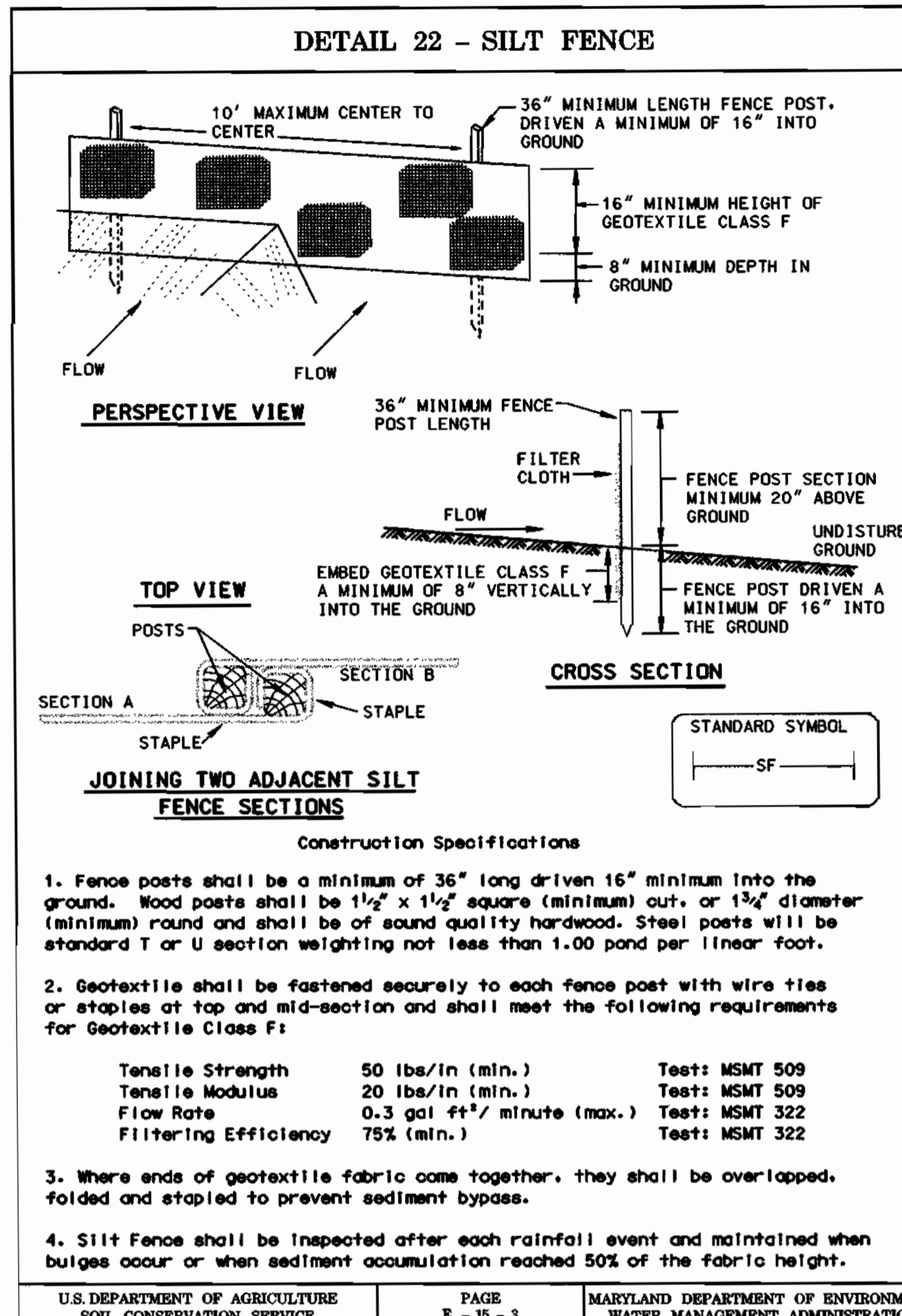
20.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

- Definition**
- Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.
- Purpose**
- To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
- Conditions Where Practice Applies**
- This practice is limited to areas having 2% or flatter slopes where:
    - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
    - The soil material is so shallow the rooting zone is not deep enough to support plants or furnish containing supplies of moisture and plant nutrients.
    - The original soil to be vegetative contains material toxic to plant growth.
    - The soil is so acidic that treatment with limestone is not feasible.
  - For the purpose of these Standards and Specifications, areas having slopes steeper than 2% require special consideration and design for adequate stabilization. Areas having slopes steeper than 2% shall have the appropriate stabilization shown on the plans.

- Construction and Material Specifications**
- Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experiment Station.
  - Top soil 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, slags, coarse fragments, gravel sticks, roots, trash, and other materials larger than 1 inch in diameter.
    - Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnsongrass, nutgrass, 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.

- For sites having disturbed areas under 5 acres:
  - Place topsoil if required and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
- For sites having disturbed areas over 5 acres:
  - On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
    - pH for topsoil shall be between 6.0 and 7.5. If tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
    - Organic contents of topsoil shall not be less than 1.5 percent by weight.
    - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
    - No seed or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (64 days min) to permit dissipation of phytotoxic materials.
  - Notes: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority may be used in lieu of natural topsoil.
- Place topsoil if required and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.

- V. Topsoil Application**
- When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Silt Fence and Sediment Traps and Basins.
  - Grades on the areas to be topsoiled, which have been previously established, shall be maintained, about 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 seeded preparation.



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE B - 15 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Chief - Bureau of Utilities - DATE 8-1-00	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND Chief - Development Engineering Division - DATE 8/1/00	PURDUM and JESCHKE, LLC Consulting Engineers and Land Surveyors Civil - Structural - Environmental The Professional Engineering Center 8005 Harford Road - Baltimore, Maryland 21234 Phone: 410-668-8800 - Fax: 410-668-8801	DES. TAM DRN. PWR CHK. CWB DATE. 05/00	SEDIMENT CONTROL DETAILS & SPECIFICATIONS 600' SCALE MAP NO. 48 BLOCK NO. 14, 20	ATLAS PLUMBING CW & COMPANY PARCEL A3, Δ86/65 PUMP HOUSE ROAD ANNAPOLIS JUNCTION ROAD CONTRACT NO. 24-3857-D TAx MAP #48 PARCEL 68 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 4 OF 4
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