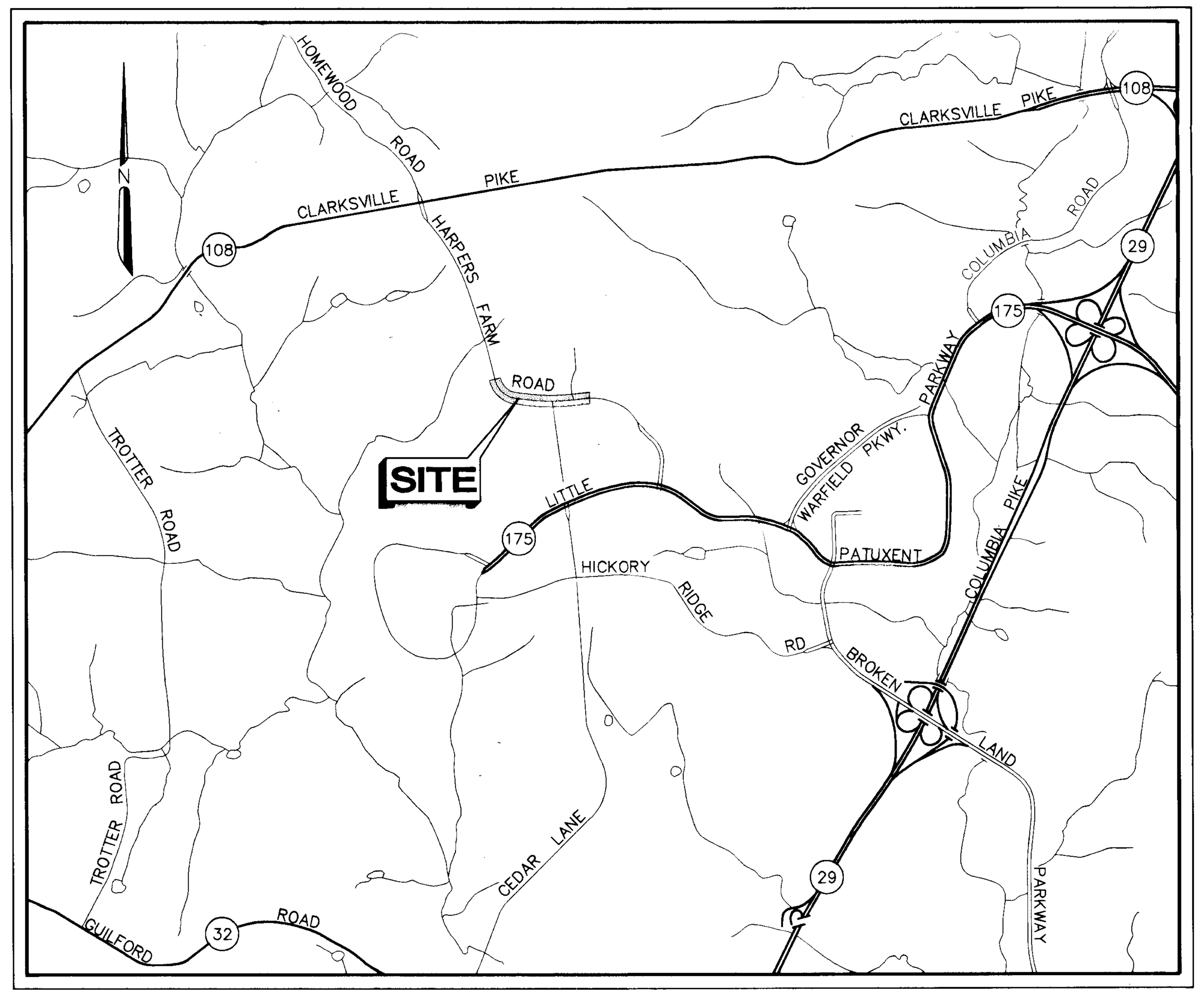
INDEX OF SHEETS



LOCATION MAP
SCALE 1" = 2000'

GENERAL NOTES

1. ALL INFORMATION AND DETAILS ON THESE DRAWINGS SHALL BE AS DIRECTED BY THE HOWARD COUNTY ENGINEER.
2. ALL STATIONING AND DIMENSIONING ARE TO BE FIELD VERIFIED BY CONTRACTOR.
3. STORM DRAINAGE SLOPES ARE TO BE AS DIRECTED BY HOWARD COUNTY ENGINEER UNLESS OTHERWISE SHOWN ON PLANS.
4. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS.

   MISS UTILITY 1-800-257-7777
   Baltimore Gas & Electric Company – Electric Distribution

   THE CONTRACTOR SHALL CONTACT THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION OF ENGINEERING FOR VERIFICATION AND/OR INFORMATION REGARDING:
   A. PROPOSED/EXISTING RIGHT-OF-WAY.
   B. UTILITY RELOCATION.
   C. MAINTENANCE OF TRAFFIC DURING CONSTRUCTION.
   D. EROSION/SEDIMENT CONTROL CERTIFICATION AND PERMIT
   E. HORIZONTAL/VERTICAL SURVEY CONTROL.
5. SEE HOWARD COUNTY STANDARD DETAILS NO'S G-1.01 & G-1.02 FOR STANDARD SYMBOLS.
6. A STAGING AND STOCKPILE AREA TO BE DETERMINED BY CONTRACTOR AND APPROVED BY HOWARD COUNTY ENGINEER.
7. TOPOGRAPHIC SURVEY INFORMATION BASED ON FIELD SURVEY PREFORMED BY R.B.A. ON 5/8/97
8. CONTRACTOR TO EXCAVATE TEST PITS AS NECESSARY TO VERIFY THE LOCATION AND ELEVATION OF ANY UTILITIES IN THE VICINTIY OF DRAINAGE STRUCTURES.
9. CONTRACTOR TO VERIFY OFFSET DISTANCE AND TOP ELEVATIONS FOR DRAINAGE STRUCTURES TO CONFORM WITHOUT IRREGULARITY TO PROPOSED FINISHED PAVING SURFACE AND TOP CURB GRADES RESPECTIVELY.
10. TRAFFIC SIGNAL STRUCTURES, WIRING AND CONTROLS TO BE RELOCATED "BY OTHERS" UNDER SEPERATE CONTRACT PRIOR TO CONSTRUCTION OF IMPROVEMENTS SHOWN ON THESE PLANS.

CAPITAL PROJECT NO. J-4164

Harpers Farm Road

STA. 45+00 to STA. 54+40 (STAGE I)

HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
[signature] 9/2/97
U.S. Natural Resources Conservation Service — Date

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
[signature] 9/2/97
Howard Soil Conservation District — Date

APPROVED: FOR STORM DRAINAGE SYSTEMS AND PUBLIC ROADS, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT. — DATE

C744DZ01

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS — DATE
[signature] 9/2/97 CHIEF, BUREAU OF ENGINEERING — DATE
for [signature] 8/29/97 CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION — DATE
[signature] 9-2-97 CHIEF, BUREAU OF HIGHWAYS — DATE

A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 96-309-028

STATE OF MARYLAND — SCOTT R HOLDEN — No. 21350 — REGISTERED PROFESSIONAL ENGINEER

DES: S.R.H.
DRN: J.N.W.
CHK: J.M.C.
DATE: 6/97

BY	NO.	REVISION	DATE

CAPITAL PROJECT NO.
J-4164
600' SCALE MAP NO. ________ DATE: ________

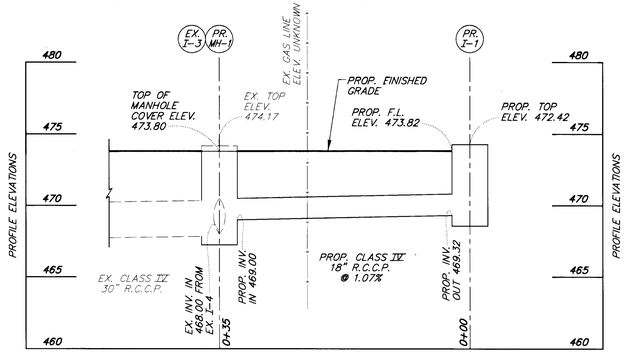
TITLE SHEET
Harpers Farm Road
STA. 45+00 to STA. 52+40 (STAGE I)

SCALE AS SHOWN

SHEET 1 OF 5

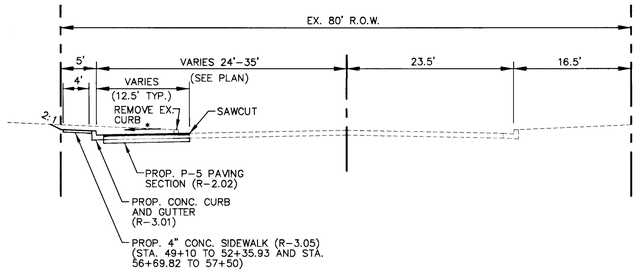
STORM DRAIN PROFILE NOTES:

1. PAVED SURFACE IS SKEWED TO ROADWAY X-SLOPE.
2. EXISTING DRAINAGE STRUCTURE I.D. NUMBERS ARE BASED ON HARPER'S FARM ROAD "AS-BUILT" PLANS.



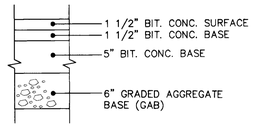
STORM DRAIN PROFILE

SCALE: HORZ. 1" = 10'
VERT. 1" = 5'



TYPICAL SECTION

STA. 46+69.55 TO STA. 52+35.93
SCALE: 1"=10'



P-5 PAVING SECTION (R-2.02)

NOT TO SCALE

LINE DATA		
LINE NO.	DIRECTION	DISTANCE
L1	S85° 59'29"E	956.85'
L2	S86° 49'19"E	114.34'
L3	N85° 59'28"W	49.20'
L4	N85° 59'28"W	0.44'

REMOVE EXISTING TREE

STA. 47+70 LT. ---------- 1 EA.
STA. 48+05 LT. ---------- 1 EA.
STA. 48+90 LT. ---------- 1 EA.
STA. 50+45 LT. ---------- 1 EA.
STA. 50+70 LT. ---------- 1 EA.
STA. 50+90 LT. ---------- 1 EA.

RELOCATE EXISTING SIGNS AS DIRECTED BY ENGINEER

STA. 51+52 LT. ---------- 1 EA.
STA. 51+65 LT. ---------- 1 EA.

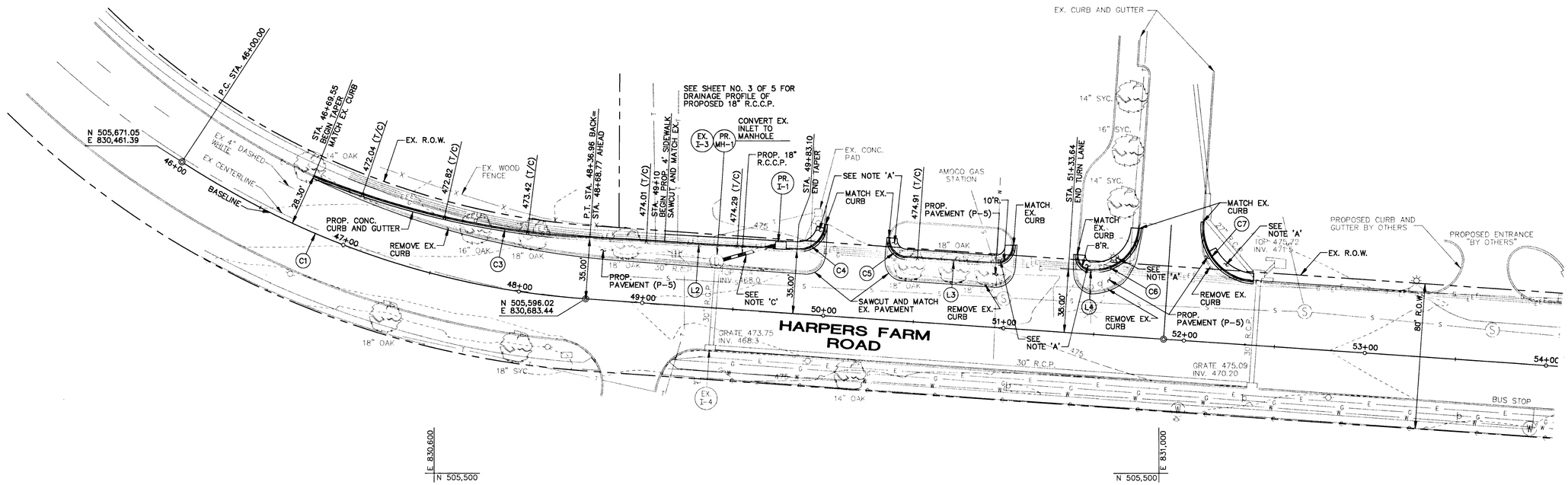
RELOCATE EXISTING STREET LIGHT (BY OTHERS)

STA. 51+47 LT. ---------- 1 EA.

CURVE DATA						
CURVE NO.	P.C. STA./ OFFSET	P.T. STA./ OFFSET	Δ	R	T	L
C1	46+00.00/0'	48+36.96/0'	29° 19'24.8"	463.00'	121.14'	236.96'
C3	46+69.55/28.30' LT.	48+36.96/33.26' LT.	18° 43'07"	478.19'	78.81'	156.22'
C4	49+83.10/34.92' LT.	49+97.88/50.13' LT.	90° 04'48"	15.00'	15.02'	23.58'
C5	50+33.30/45.00' LT.	50+43.30/35.00' LT.	91° 50'36"	10.00'	10.33'	16.03'
C6	51+46.27/35.00' LT.	51+71.27/59.94' LT.	85° 52'02"	25.00'	24.94'	39.21'
C7	52+05.93/64.73' LT.	52+43.30/35.00' LT.	89° 40'06"	30.00'	29.83'	46.95'

STRUCTURE SCHEDULE			
STRUCTURE NO.	TYPE	REMARKS	STATION/OFFSET
I-1	A-5 INLET SD-4.01 OR SD-4.40	A=5.1' TOP ELEV. 474.42	49+74.0 35.0' LT.
MH-1	CONVERT EX. INLET TO M.H.	TOP M.H. SURF. ELEV. 473.80 HEAVY TRAFFIC M.H. COVER REQUIRED G-5.51	49+40.0 25.0' LT.

PIPE SCHEDULE							
FROM	TO	TYPE	SIZE	LENGTH	SLOPE	INV. FROM	INV. TO
I-1	MH-1	R.C.C.P.	18"	30 LF.	1.07%	469.32	469.00



PLAN

SCALE: 1"=30'

NOTES

A. TYPE 'C' SIDEWALK RAMP (R-4.03) TO BE INCLUDED AT ALL SIDE ENTRANCES.

B. BASELINE STATIONING AND ALIGNMENT WAS ESTABLISHED FROM AS-BUILT PLANS FOR HARPERS FARM ROAD DATED: FEBRUARY, 1967.

C. CONTRACTOR TO TEST PIT AT EX. GAS LINE CROSSING WITH PROP. 18" R.C.C.P. TO VERIFY VERTICAL CLEARANCE. 1' VERTICAL CLEARANCE TO BE MAINTAINED OR AS DIRECTED BY ENGINEER.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS — DATE
for CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION — 8/29/97 DATE

CHIEF, BUREAU OF ENGINEERING — 9/2/97 DATE
CHIEF, BUREAU OF HIGHWAYS — 9-2-97 DATE

A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 96-309-028

DES: S.R.H.
DRN: J.N.W.
CHK: J.M.C.
DATE: 6/97

BY	NO.	REVISION	DATE

CAPITAL PROJECT NO.
J-4164
600' SCALE MAP NO. _____ DATE: _____

PLAN AND TYPICAL SECTIONS
Harpers Farm Road
STA. 45+00 to STA. 52+40 (STAGE I)

SCALE AS SHOWN

SHEET 2 OF 5

SEDIMENT CONTROL NOTES

1. 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 (410-313-1855).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS, SOD, TEMPORARY SEEDING, AND MULCHING (SEC. G). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7) SITE ANALYSIS:

TOTAL AREA OF SITE	N/A
AREA DISTURBED	0.45 ACRES
AREA TO BE ROOFED OR PAVED	0.15 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.30 ACRES
TOTAL CUT	275 CU. YDS.
TOTAL FILL	0 CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION	TO BE DETERMINED BY CONTRACTOR (SITE WITH A CURRENT ACTIVE GRADING PERMIT)

8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY INSPECTOR.
10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11. 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.

Section I – Vegetative Stabilization Methods and Materials

A. Site Preparation
- i. Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
- ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
- iii. Schedule required soil tests to determine soil amendment composition and application rates for site having disturbed area over 5 acres.

B. Soil Amendments (Fertilizer and Lime Specifications)
- i. 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 analyses.
- ii. 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 warrantee of the producer.
- iii. 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.
- iv. Incorporate lime and fertilizer into the top 3–5" of soil by disking or other suitable means.

C. Seedbed Preparation
- i. Temporary Seeding
  - a. Seedbed 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 e rolled or dragged smooth 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.
  - b. Apply fertilizer and lime as prescribed on the plans.
  - c. Incorporate lime and fertilizer into the top 3 – 5" of soil by disking or other suitable means.
- ii. Permanent Seeding
  - a. Minimum soil conditions required for permanent vegetative establishment:
    1. Soil pH shall be between 6.0 and 7.0.
    2. Soluble salts shall be less than 500 parts per million (ppm).
    3. The soil shall contain less than 40% clay but enough fine grained material (>30% split plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or serecia lespedeza is to be planted, then a sandy soil (<30% silt plus clay) would be acceptable.
    4. Soil shall contain 1.5% minimum organic matter by weight.
    5. Soil must contain sufficient pore space to permit adequat root penetration.
    6. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
  - b. 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.
  - c. Apply soil amendments as per soil test or as included on the plans.
  - d. Mix soil amendments into the top 3 – 5" of topsoil by disking or other suitable mans. Lawn areas should be raked 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 seedbed 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 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. Seedbed loosening may not be necessary on newly disturbed areas.

D. Seed Specifications
- i. 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.
- ii. 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. Inoculant shall not be used later 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
- i. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeder, or a cultipacker seeder.
  - a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen; maximum of 100 lbs. per acre total of soluble nitrogen; P205 (phosphorous): 200 lbs/ac; K20 (potassium): 200 lbs/ac.
  - b. 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.
  - c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
- ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
  - a. 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.
  - b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
- iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
  - a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
  - b. 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)
- i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonably 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.
- ii. Wood Cellulose Fiber Mulch (WCFM).
  - a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
  - b. 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.
  - c. WCFM, including dy, shall contain no germination or growth inhibiting factors.
  - d. 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 seedings.
  - e. WCFM material shall contain no elements or compounds at concentration levels that will be phyto-toxic.
  - f. 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.
- i. 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.
- ii. 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.
- iii. 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:
- i. A mulch anchoring tool is a tractor drawing implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. The 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.
- ii. 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 e mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
- iii. 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 to e uniform after binder application. Synthetic binders – such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.

STANDARD AND SPECIFICATIONS FOR TOPSOIL

Definition and Purpose

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

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

Conditions Where Practice Applies

I. This practice is limited to areas having 2:1 or flatter slopes where:
- a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
- b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
- c. The original soil to be vegetated contains material toxic to plant growth.
- d. The soil is so acidic that treatment with limestone is not feasible.

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

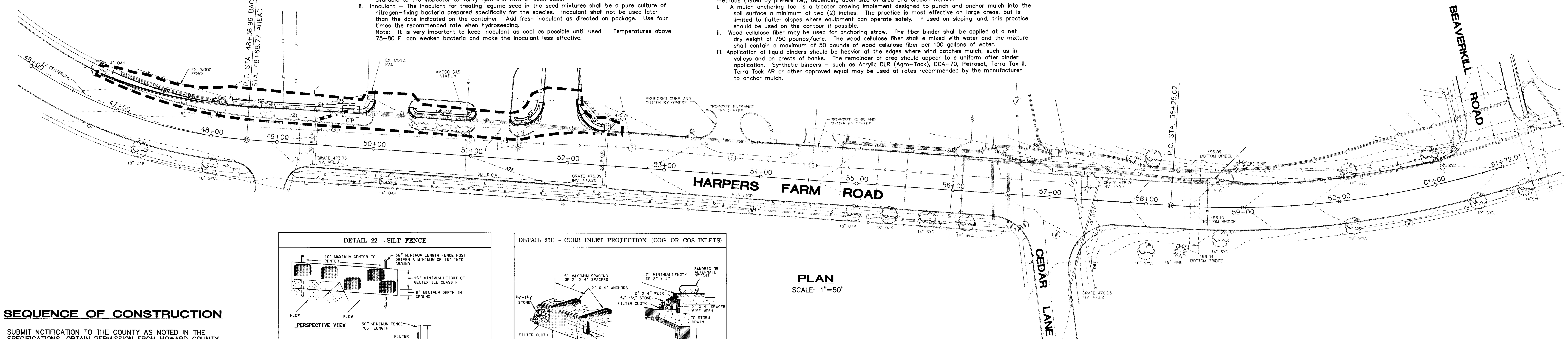
Construction and Material Specifications

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

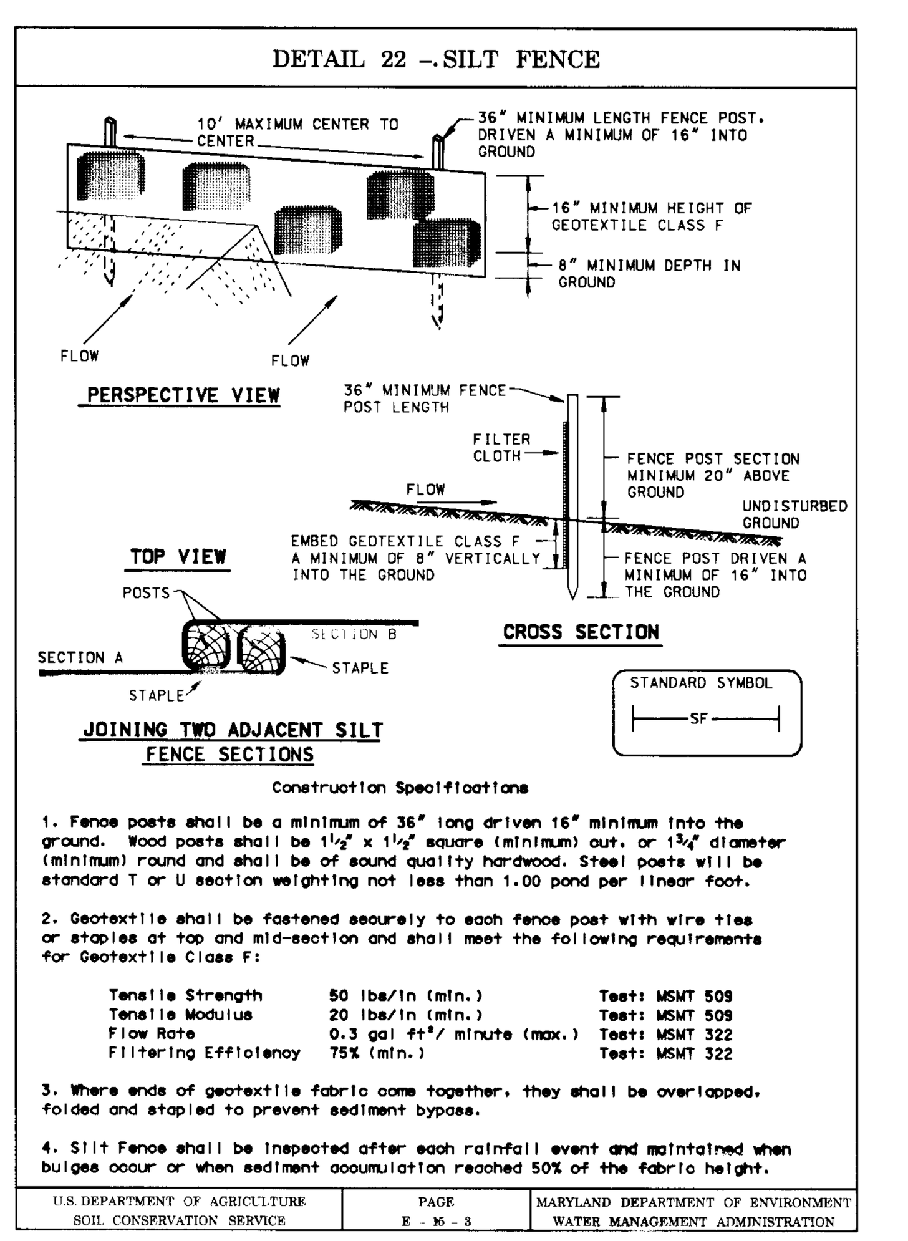
II. Topsoil Specifications – Soil to be used as topsoil must meet the following:
- i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting texture subsoils and shall contain less than 5% by volume of cinders, stone, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.
- ii. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, johnsongrass, nutsedge, poison ivy, thistle, or others as specified.
- iii. 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.

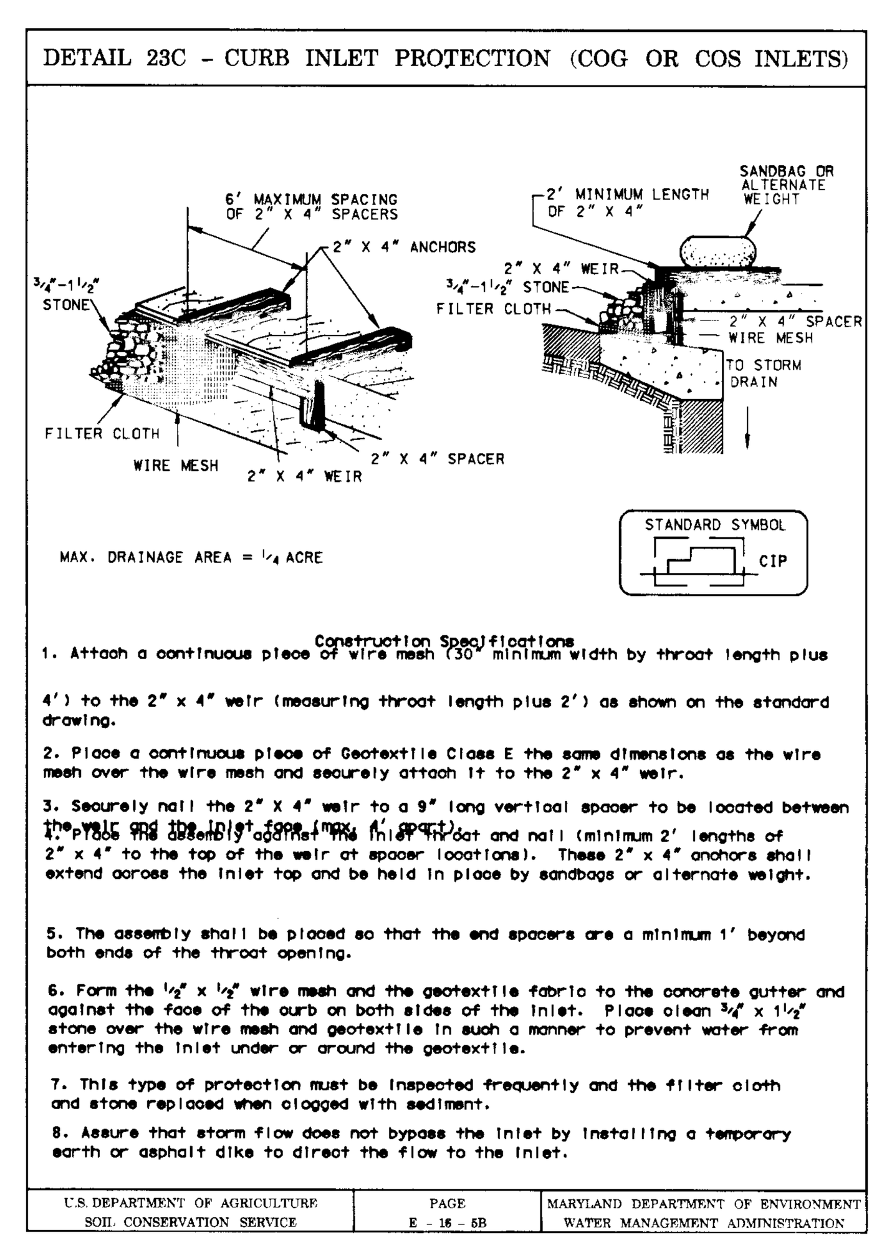
III. For sites having disturbed areas under 5 acres:
- i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization – Section I – Vegetative Stabilization Methods and Materials.

V. Topsoil Application
- i. When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
- ii. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4"–8" higher in elevation.
- iii. Topsoil shall be uniformly disturbed in a 4" – 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be preformed 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.
- iv. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.



PLAN
SCALE: 1"=50'





SEQUENCE OF CONSTRUCTION

1. SUBMIT NOTIFICATION TO THE COUNTY AS NOTED IN THE SPECIFICATIONS. OBTAIN PERMISSION FROM HOWARD COUNTY SEDIMENT CONTROL INSPECTOR PRIOR TO ANY CONSTRUCTION.
2. INSTALL SEDIMENT CONTROL MEASURES SHOWN ON PLANS.
3. BEGIN EXCAVATION FOR CURB AND GUTTER, ROADWAY AND DRAINAGE STRUCTURES.
4. STABILIZE CURB AND GUTTER AND ROADWAY WITH D.G.A.B. MATERIAL. STABILIZE ALL TEMPORARY AND PERMANENT SLOPES EXPOSED DURING CONSTRUCTION. INSTALL SODDING TO ALL PERMANENT SLOPE AREAS DISTURBED BY CONSTRUCTION. THE CONTRACTOR IS NOT TO EXPOSE EARTH THAT CANNOT BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 24 HOURS.
5. CONSTRUCT AND INSTALL DRAINAGE STRUCTURES, PIPES AND INLET PROTECTION FILTERS.
6. PLACE PERMANENT STABILIZATION ON EARTH SLOPES.
7. INSTALL BITUMINOUS CONCRETE BASE COURSE ON ROADWAY. PLACE BITUMINOUS CONCRETE SURFACE COURSE.
8. REMOVE ALL SEDIMENT CONTROLS WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR.
9. STABILIZE ANY AREAS DISTURBED BY THEIR REMOVAL.

NOTE

PLACE SILT FENCE AS REQUIRED AND/OR AS DIRECTED BY THE EROSION AND SEDIMENT CONTROL INSPECTOR FOR AREAS DISTURBED BY UTILITY AND TRAFFIC SIGNAL RELOCATION. PERMANENTLY STABILIZE WITH SODDING.

ENGINEER CERTIFICATE

"I 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."

[signature] 8/29/97
SIGNATURE OF ENGINEER — DATE
PRINT NAME BELOW SIGNATURE
SCOTT R. HOLDEN

DEVELOPER'S CERTIFICATE

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

[signature] 9/2/97
SIGNATURE OF DEVELOPER — DATE
PRINT NAME BELOW SIGNATURE

LEGEND

- LIMIT OF DISTURBANCE
- SF — SILT FENCE
- CIP — STANDARD CURB INLET PROTECTION

FOR SEDIMENT & EROSION CONTROL ONLY

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS — DATE
[signature] 8/29/97
CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION — DATE

[signature] 9/2/97
CHIEF, BUREAU OF ENGINEERING — DATE
[signature] 9-2-97
CHIEF, BUREAU OF HIGHWAYS — DATE

A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 96-309-028

DES: D.P.O.
DRN: J.N.W.
CHK: J.M.C.
DATE: 6/97

BY	NO.	REVISION	DATE

CAPITAL PROJECT NO.
J-4164

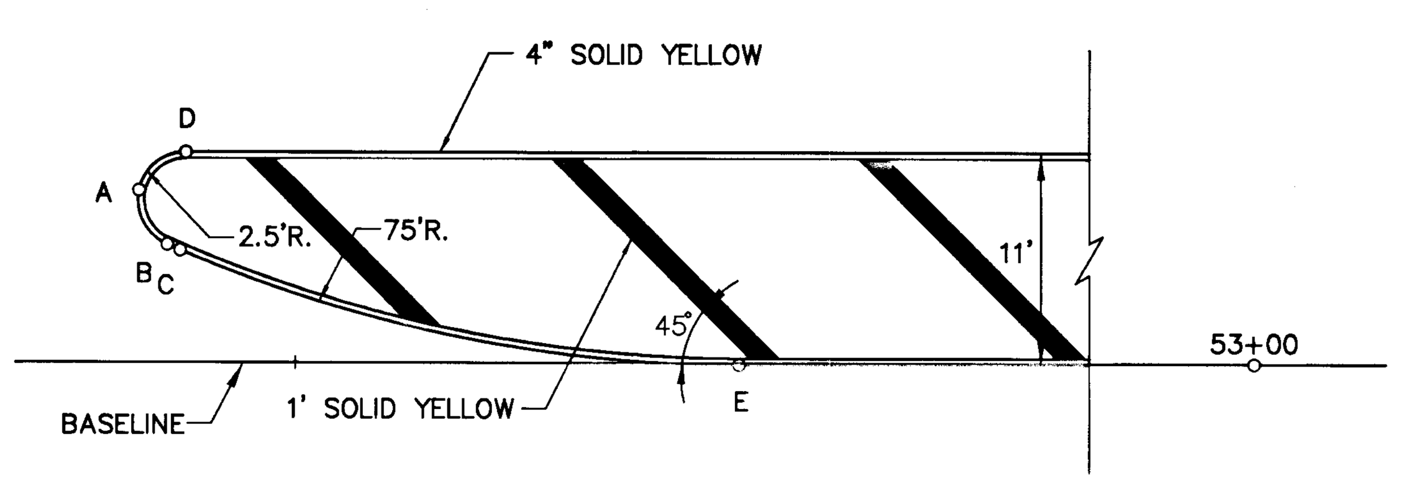
600' SCALE MAP NO. ________ DATE: ________

SEDIMENT AND EROSION CONTROL PLAN
Harpers Farm Road
STA. 45+00 to STA. 52+40 (STAGE I)

SCALE AS SHOWN
SHEET 3 OF 5

PLAN

SCALE: 1" = 50'



REF.	STATION	OFFSET
A	52+41.77	8.42'
B	52+43.30	6.11'
C	52+43.98	5.83'
D	52+44.27	10.92'
E	52+73.16	0'

MEDIAN DETAIL 'A'

SCALE: 1"=10'

NOTES:

1. EXISTING DASHED WHITE PAVEMENT MARKING (LANE DIVIDE) ALONG WESTBOUND LANES BETWEEN STATION 46+70 AND 56+50 SHALL BE REMOVED.
2. ALL SIGNS SHOWN ARE EXISTING AND ARE TO BE RELOCATED AS SHOWN ON PLAN. EXCEPT NO LEFT TURN SIGN AT STA. 53+45.
3. EXISTING PAVEMENT MARKINGS NOT SHOWN ON THESE PLANS TO BE REMOVED, THAT CONFLICT WITH PROPOSED, SHALL BE REMOVED AS DIRECTED BY THE ENGINEER.

LEGEND

➔ – DIRECTION OF TRAFFIC

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS — DATE
CHIEF, BUREAU OF ENGINEERING — DATE 9/2/97
CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION — DATE 8/29/97
CHIEF, BUREAU OF HIGHWAYS — DATE 9-2-97

A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 96-309-028

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER

DES: S.R.H.
DRN: J.N.W.
CHK: J.M.C.
DATE: 6/97

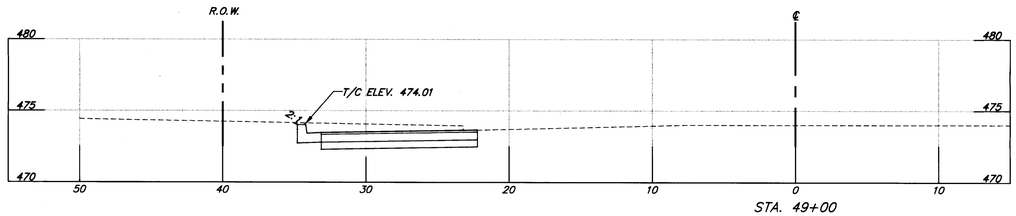
BY	NO.	REVISION	DATE

CAPITAL PROJECT NO.
J-4164

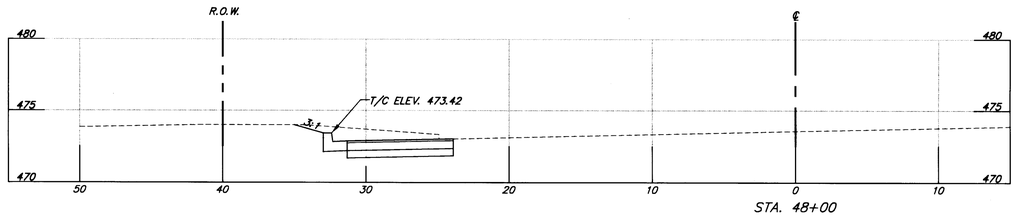
600' SCALE MAP NO. ______ DATE: ______

SIGNING AND STRIPING PLAN
Harpers Farm Road
STA. 45+00 to STA. 52+40 (STAGE I)

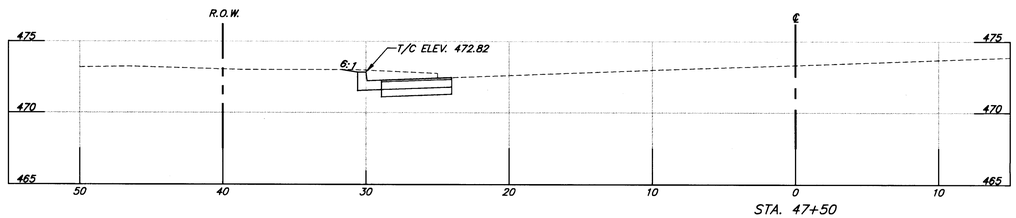
SCALE AS SHOWN



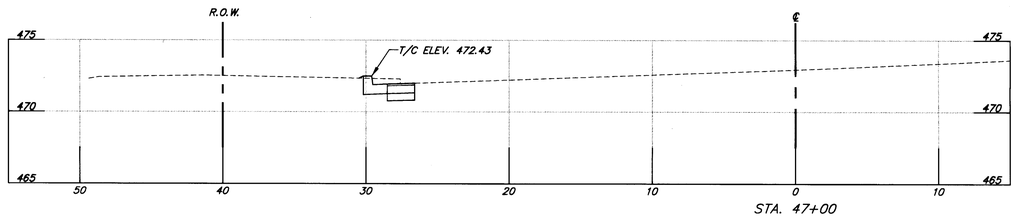
STA. 49+00



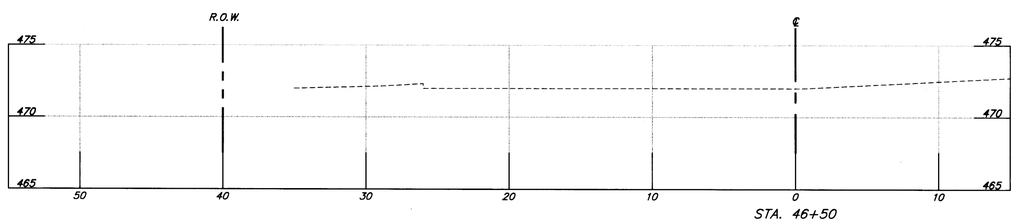
STA. 48+00



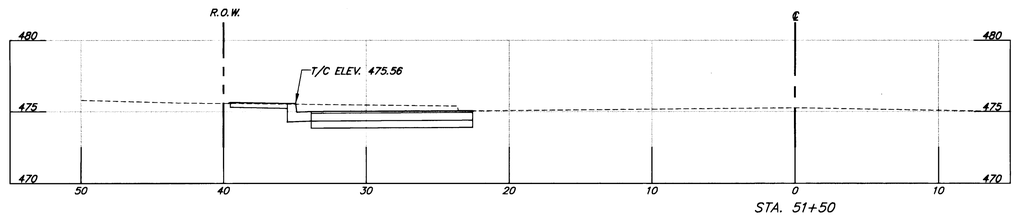
STA. 47+50



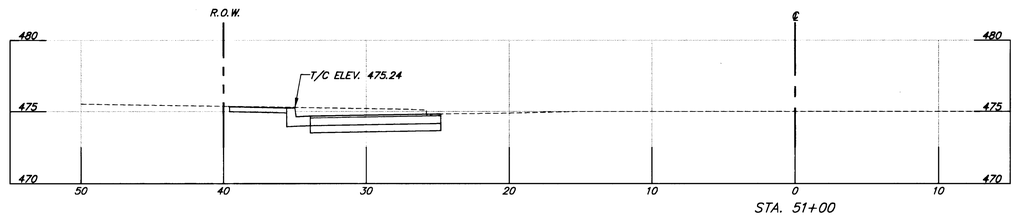
STA. 47+00



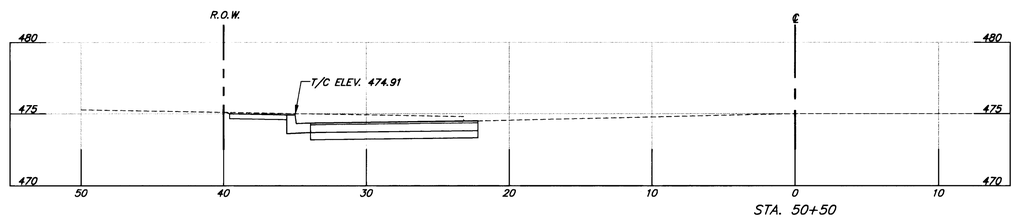
STA. 46+50



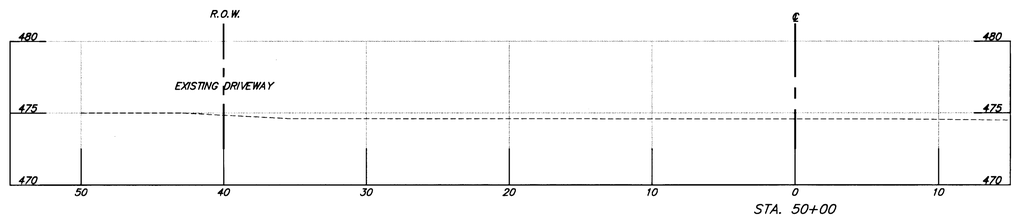
STA. 51+50



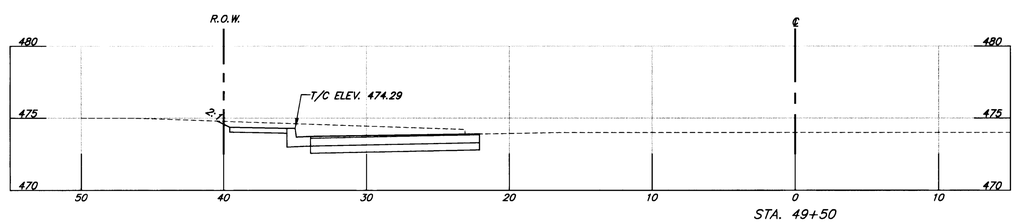
STA. 51+00



STA. 50+50



STA. 50+00



STA. 49+50

CROSS SECTIONS

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS — DATE

CHIEF, BUREAU OF ENGINEERING — DATE 9/2/97

for CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION — DATE 8/29/97

CHIEF, BUREAU OF HIGHWAYS — DATE 9-2-97

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STATE OF MARYLAND — SCOTT R. HOLDEN — 21210 — REGISTERED PROFESSIONAL ENGINEER

DES: S.R.H.
DRN: J.N.W.
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DATE: 6/97

BY	NO.	REVISION	DATE

CAPITAL PROJECT NO.
J-4164
600' SCALE MAP NO. _____ DATE: _____

CROSS SECTIONS
Harpers Farm Road
STA. 45+00 to STA. 52+40 (STAGE I)

SCALE AS SHOWN

SHEET 5 OF 5