CRESTLEIGH SUBDIVISION DRAINAGE IMPROVEMENTS

CAPITAL PROJECT D-1157

INDEX OF DRAWINGS

TITLE SHEET

STORM DRAIN PLAN

C-02 STORM DRAIN PROFILES MISCELLANEOUS DETAILS I & II

C-03, C-04 C-05

EROSION AND SEDIMENT CONTROL PLAN

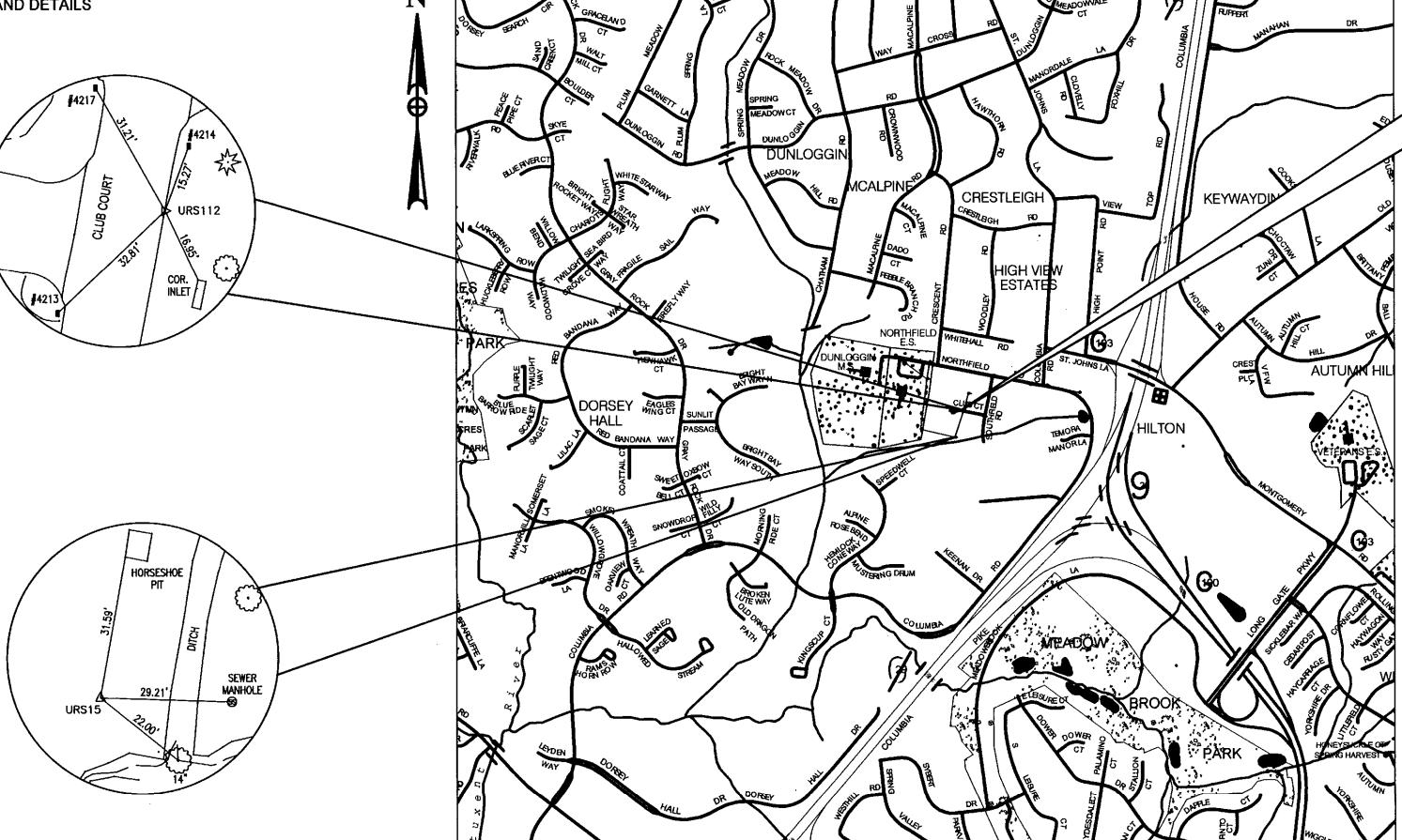
C-06, C-07

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

DRAINAGE AREA MAP

SITE **LOCATION**

6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND



GENERAL NOTES

- 1. THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AND MISS UTILITY AT 1-800-257-7777 AT LEAST FIVE (5) WORKING DAYS BEFORE
- 2. COORDINATES SHOWN HEREON ARE BASED ON THE MARYLAND STATE REFERENCE SYSTEM NAD '83/'2011 AS PROJECTED BY HOWARD COUNTY PROJECT CONTROL STATIONS
- 3. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND
- 4. ALL WORK SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL," ISSUED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT AND THE NATURAL RESOURCES CONSERVATION SERVICE.
- 5. TOPOGRAPHIC SURVEYS WERE PERFORMED BY URS CORPORATION IN APRIL, 2015.
- 6. THÉ PROPERTY LINES SHOWN HERE ON ARE BASED ON A FIELD RUN SURVEY PREFORMED
- . Should the contractor discover discrepancies between the plans and the field SHOULD THE CONTRACTOR MAKE FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE ENGINEER, THEN THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR
- 8. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHOD, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- . APPROXIMATE UTILITIES ARE SHOWN FROM AVAILABLE RECORDS AND/OR FIELD RECONNAISSANCE. CONTRACTOR SHALL INDEPENDENTLY VERIFY & LOCATE THE EXISTING UTILITIES VIA A PRIVATE UTILITY DESIGNATOR. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.

10. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.

11. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A PRIVATE UTILITY LOCATION COMPANY TO VERIFY LOCATIONS OF ALL EXISTING UTILITIES WITHIN THE SCOPE OF WORK PRIOR TO START OF CONSTRUCTION AT HIS OWN EXPENSE.

12. UTILITY CONTACTS:

(410)-597-7835 (ELECTRIC) (410)-291-5101 (GAS) BGE: (410)-224-9285VERIZON: MCI: (912)-729-6016 XPEIUS: (703) - 386 - 2340ABOVENET: (443)-250-1873(410)-513-3207 COMCAST:

13. ACCORDING TO HOWARD COUNTY, MARYLAND CODE OF ORDINANCES TITLE 15. SUBTITLE 12- FOREST CONSERVATION, THE PROJECT, CLUB COURT DRAINAGE IMPROVEMENTS, IS EXEMPT FROM FOREST CONSERVATION PLAN REQUIREMENTS. NO MORE THAN THE THREE TREES IDENTIFIED ON THE PROJECT PLAN SHEET C-01 WILL BE REMOVED AS A RESULT OF THIS PROJECT. ADDITIONAL EFFORT WILL BE MADE TO SAVE THE TWO IDENTIFIED TREES LOCATED ON 4213 CLUB COURT AS GRADING ACTIVITIES MAY IMPACT A MINOR PORTION OF THE CRITICAL ROOT ZONE.

TRAVERSE POINTS AND BENCHMARK INFORMATION

TRAVERSE FORM S AND BENCHWARK INFORMATION									
POINT NO.	NORTHING	EASTING	ELEVATION	MARKER TYPE					
0010/24IA	579,167.044	1,360,260.252	357.15'	HOWARD CO. DISK					
24IB	578,753.501	1,362,302.987	390.56'	HOWARD CO. DISK					
URS6	578,836.069	1,361,939.043	381.81	MAGNAIL					
URS7	578,842.187	1,361,758.175	378.23'	MAGNAIL					
URS13	578,945.386	1,361,351.365	371.68	MAGNAIL					
URS15	578,262.725	1,360.919.906	341.24'	REBAR & CAP					
URS111	578.490.970	1,361,240.960	356.22'	MAGNAIL					
URS112	578,559.625	1,361,018.396	352.08'	MAGNAIL					

DESIGN CERTIFICATION

OWNERS/ DEVELOPER CERTIFICATION

OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED

MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE

OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND

RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD

COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.*

SEDIMENT PRIOR TO BEGINNING THE PROJECT, I CERTIFY'

"I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION,

EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND

"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

DESIGNER'S SIGNATURE

OWNER'S/ DEVELOPER'S SIGNATURE-)

6-13-16

MD REGISTRATION NO. 16156 P.E. R.L.S., OR R.L.A. (CIRCLE ONE) DAVID T. MORICON!

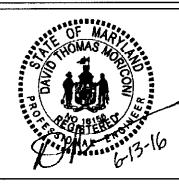
THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEPARTMENT OF PUBLIC WORKS

HOWARD COUNTY, MARYLAND

FILE NAME: U:\Projects\H\HoCo\20837215\CAD\PlanSet\T-1_CLUB-CT.dwg LAYOUT NAME: T-01 PLOTTED: Monday, June 13, 2016 - 12:40pm USER: bruce_wild





PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND,

LICENSE NO. <u>16156</u> EXPIRATION DATE: <u>8/28/2016</u>

				· · · · · · · · · · · · · · · · · · ·		
)	DES: MCS					
	DRN: CDF					
_	CHK: DTM					
	DATE: 01/2016					
DATE: 01/2016	BY	NO.	REVISION	DATE		

LOCATION MAP

HOWARD COUNTY

SCALE: 1" = 1000'

1000

TITLE SHEET

SCALE MAP NO.

___ BLOCK NO.

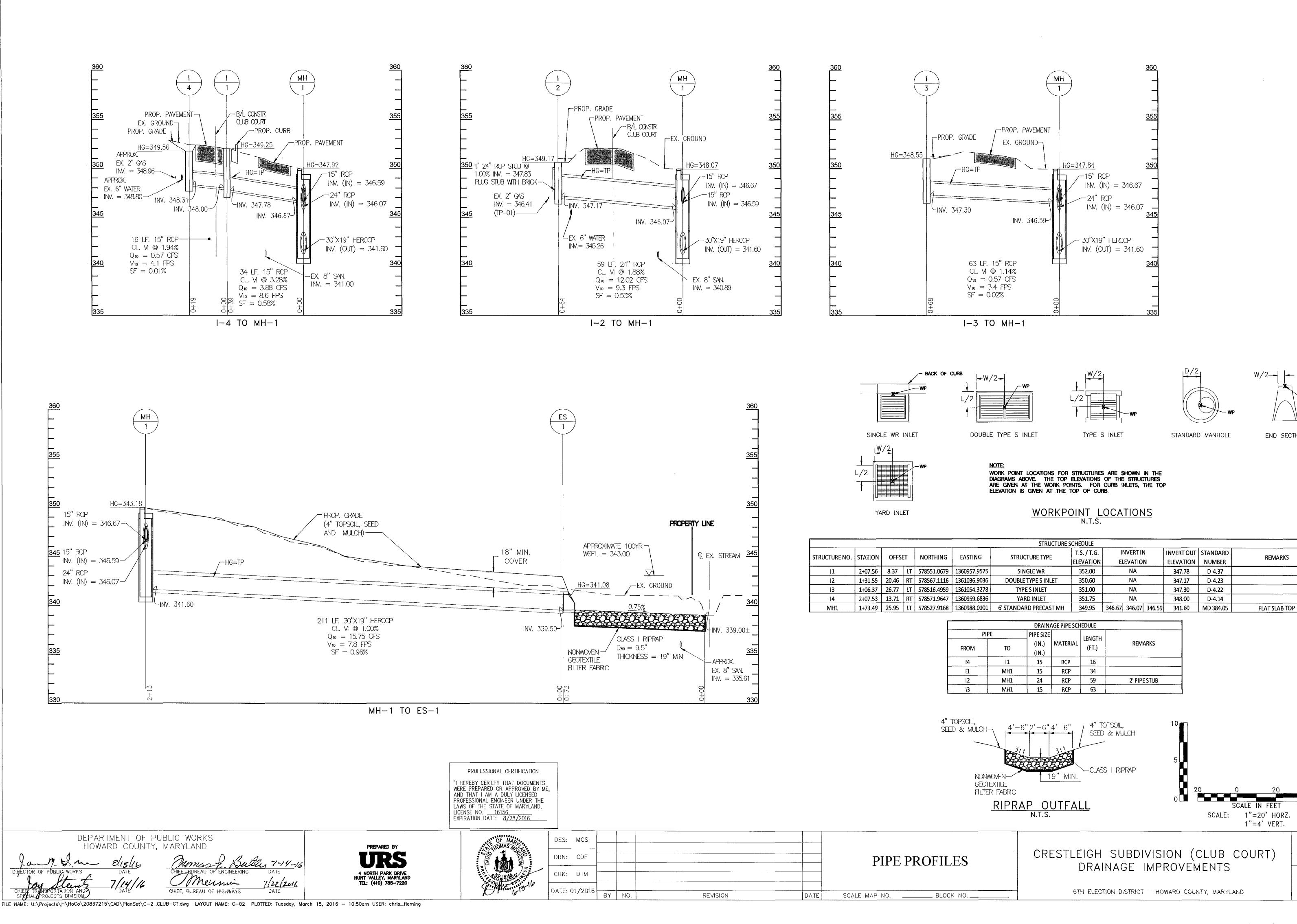
CRESTLEIGH SUBDIVISION (CLUB COURT) DRAINAGE IMPROVEMENTS

6TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SCALE

AS SHOWN

DWG NO.



SCALE

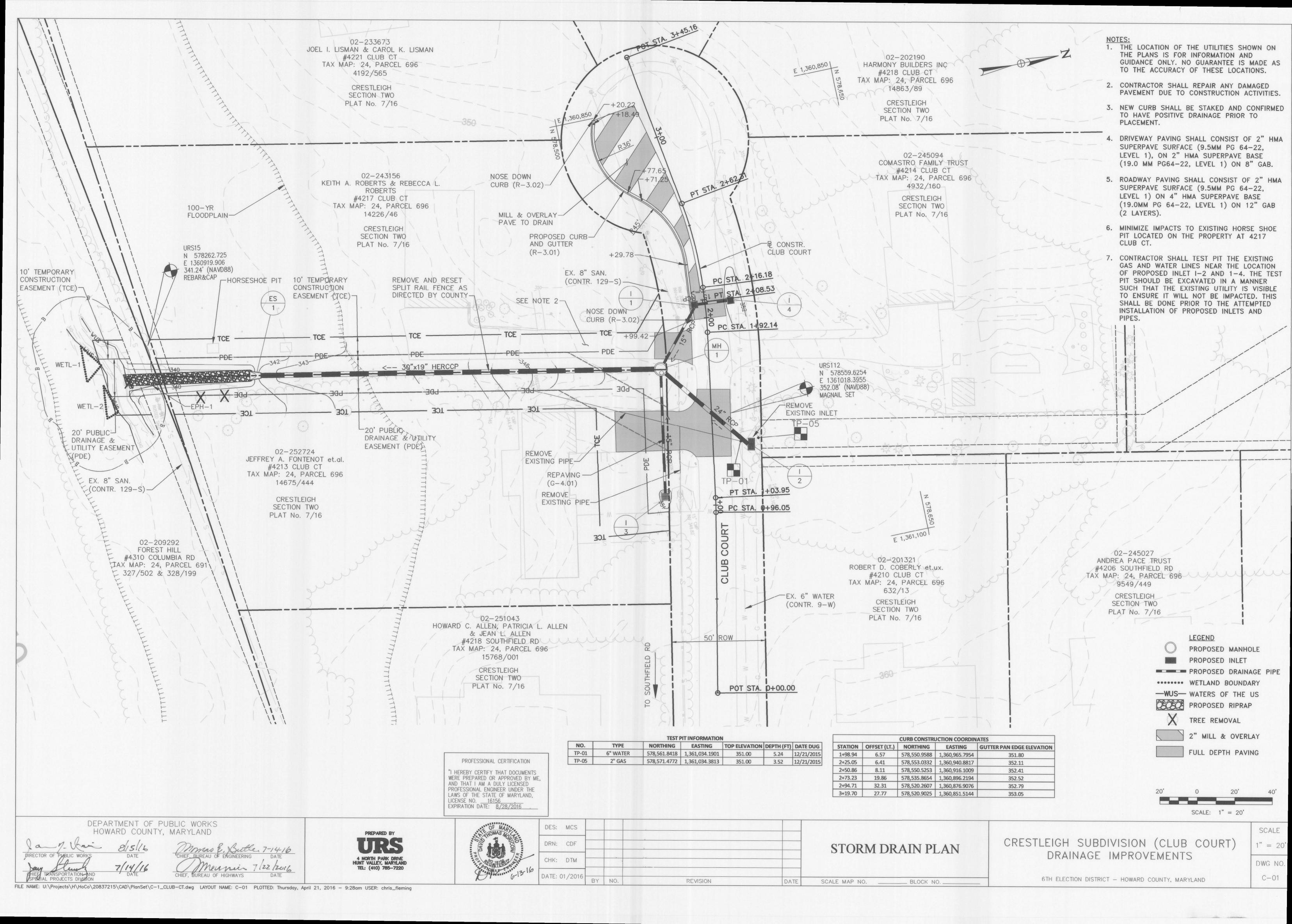
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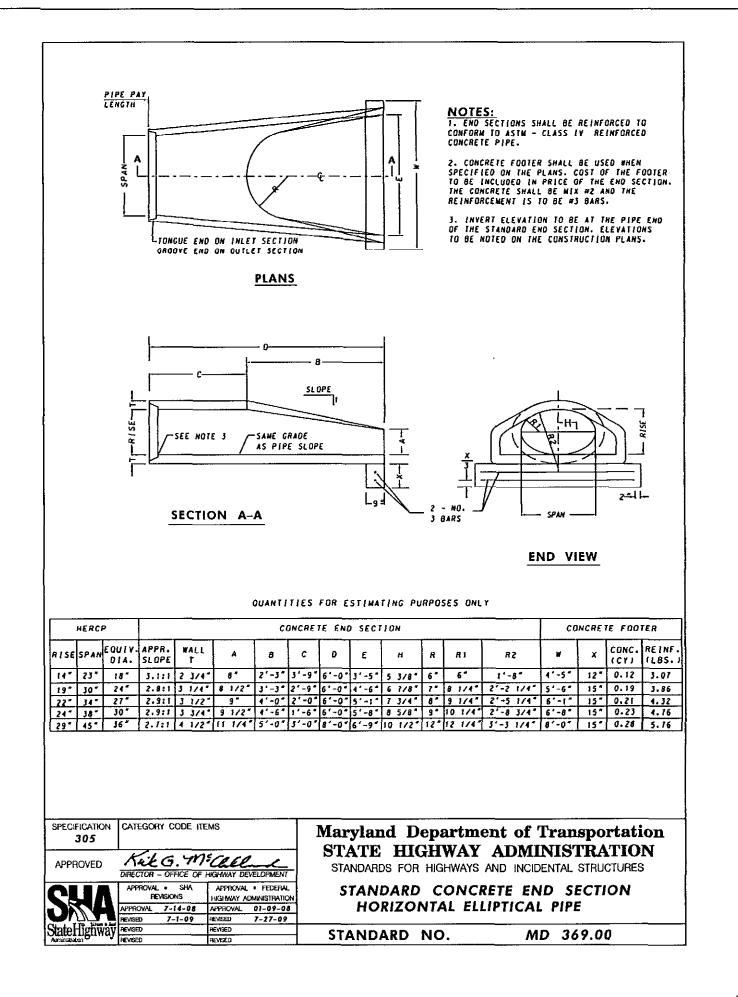
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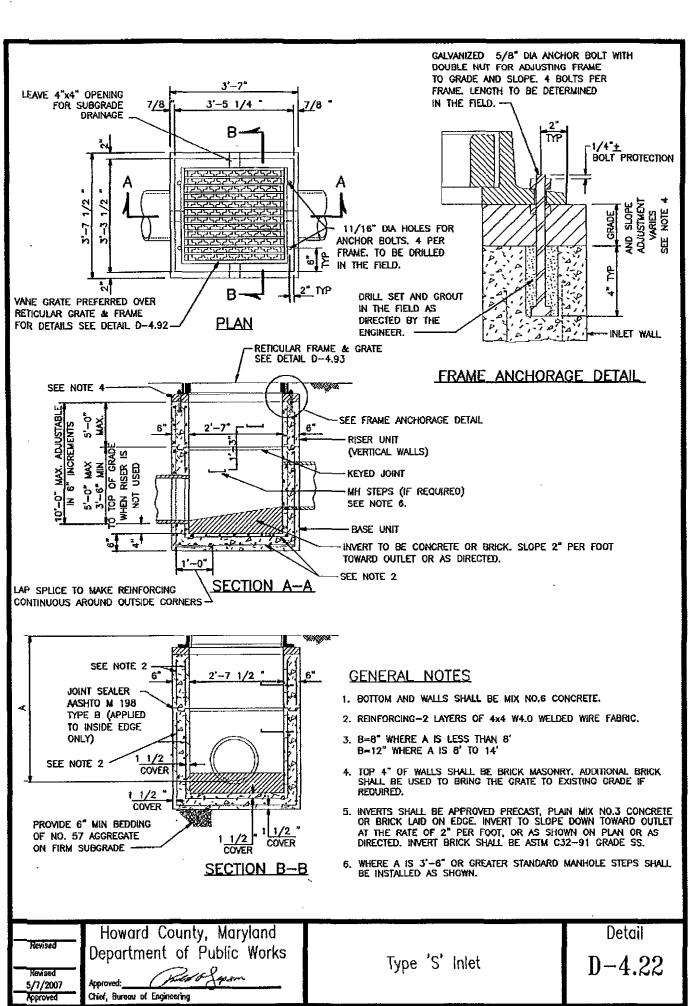
C-02

END SECTION

REMARKS

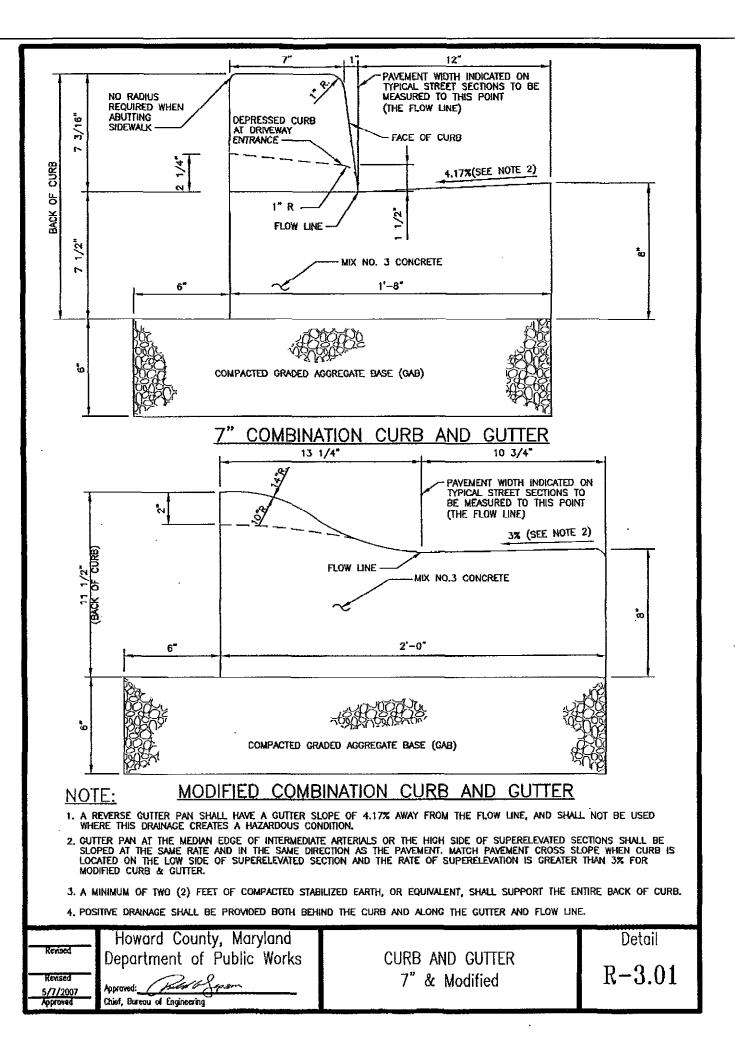


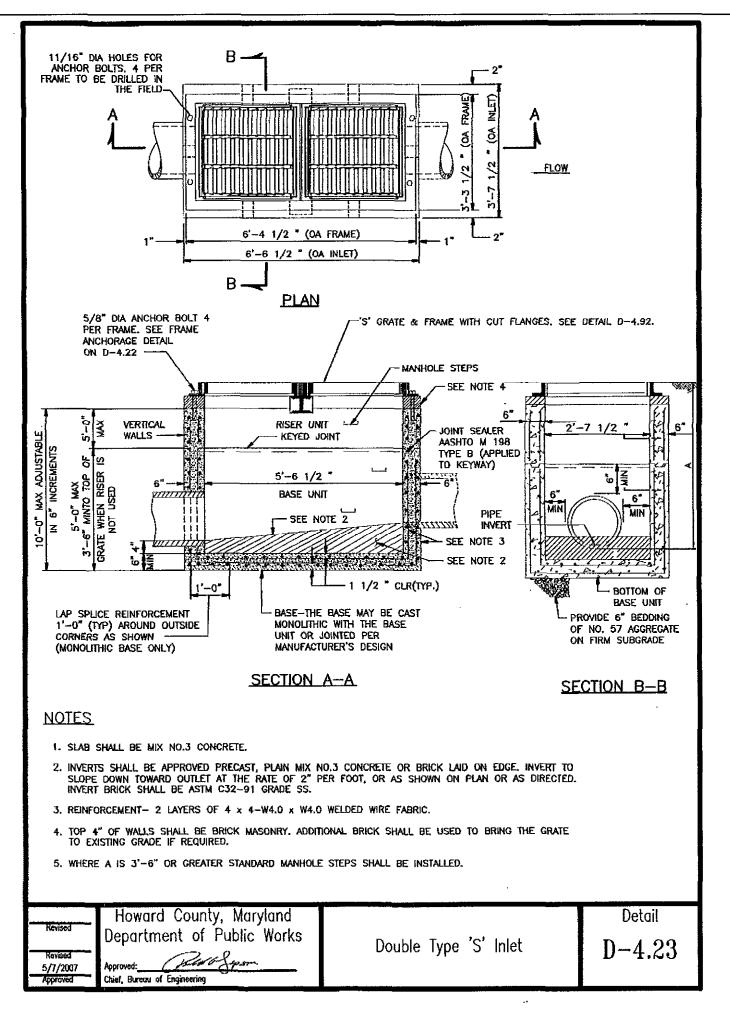


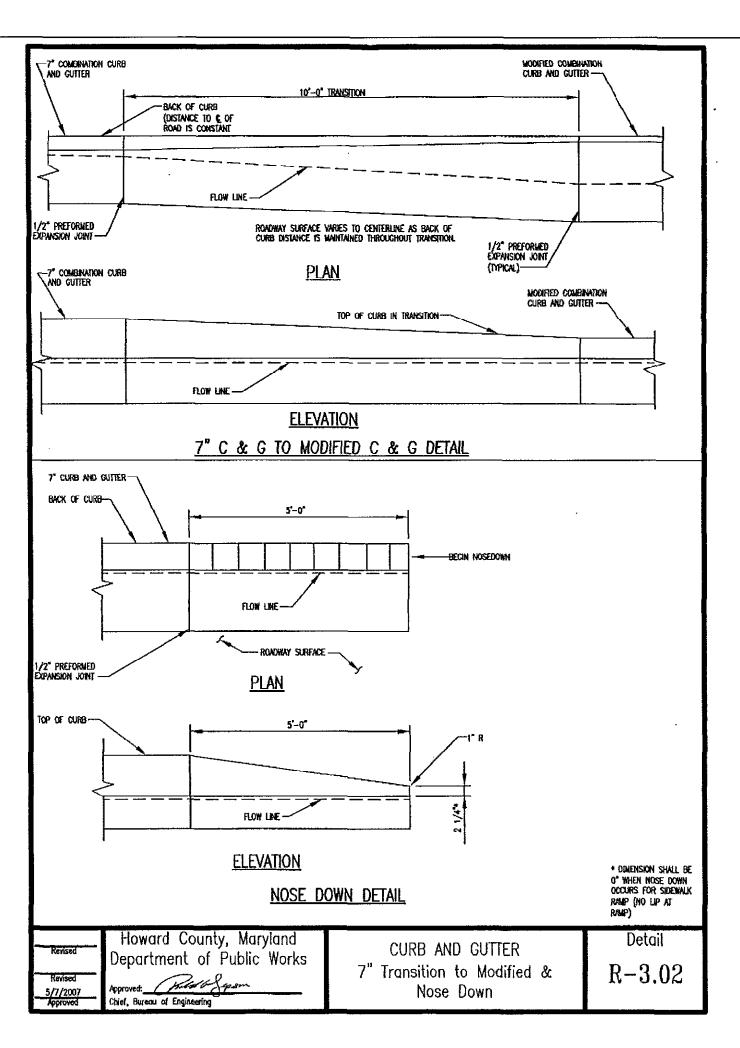


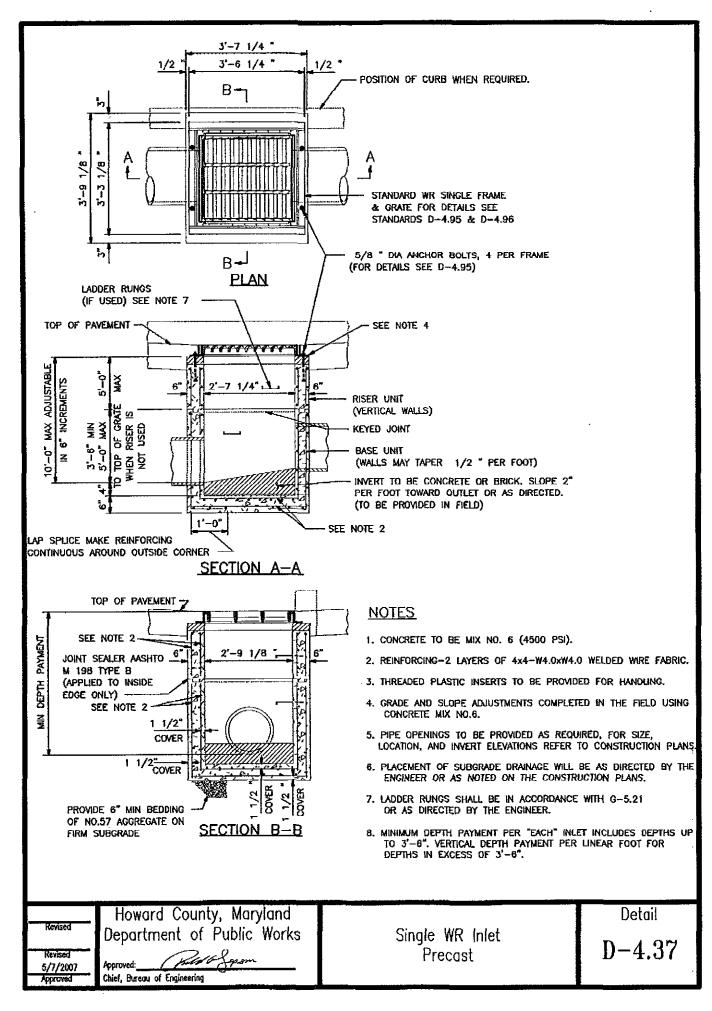
DEPARTMENT OF PUBLIC WORKS

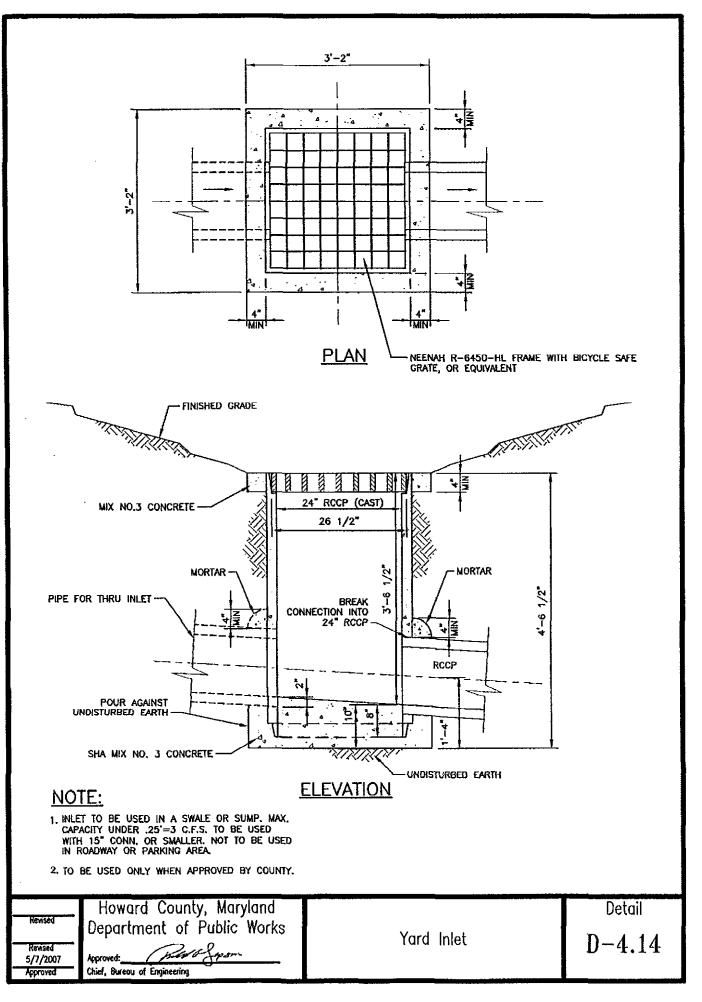
HOWARD COUNTY, MARYLAND

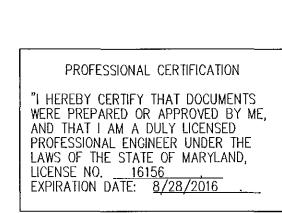




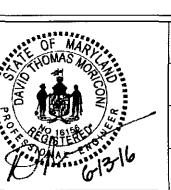












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	DES:	MCS					
	DRN:	CDF					
	CHK:	DTM					
	DATE:	01/2016	BY	NO.	REVISION	DATE	

MISCELLANEOUS DETAILS - I

SCALE MAP NO.

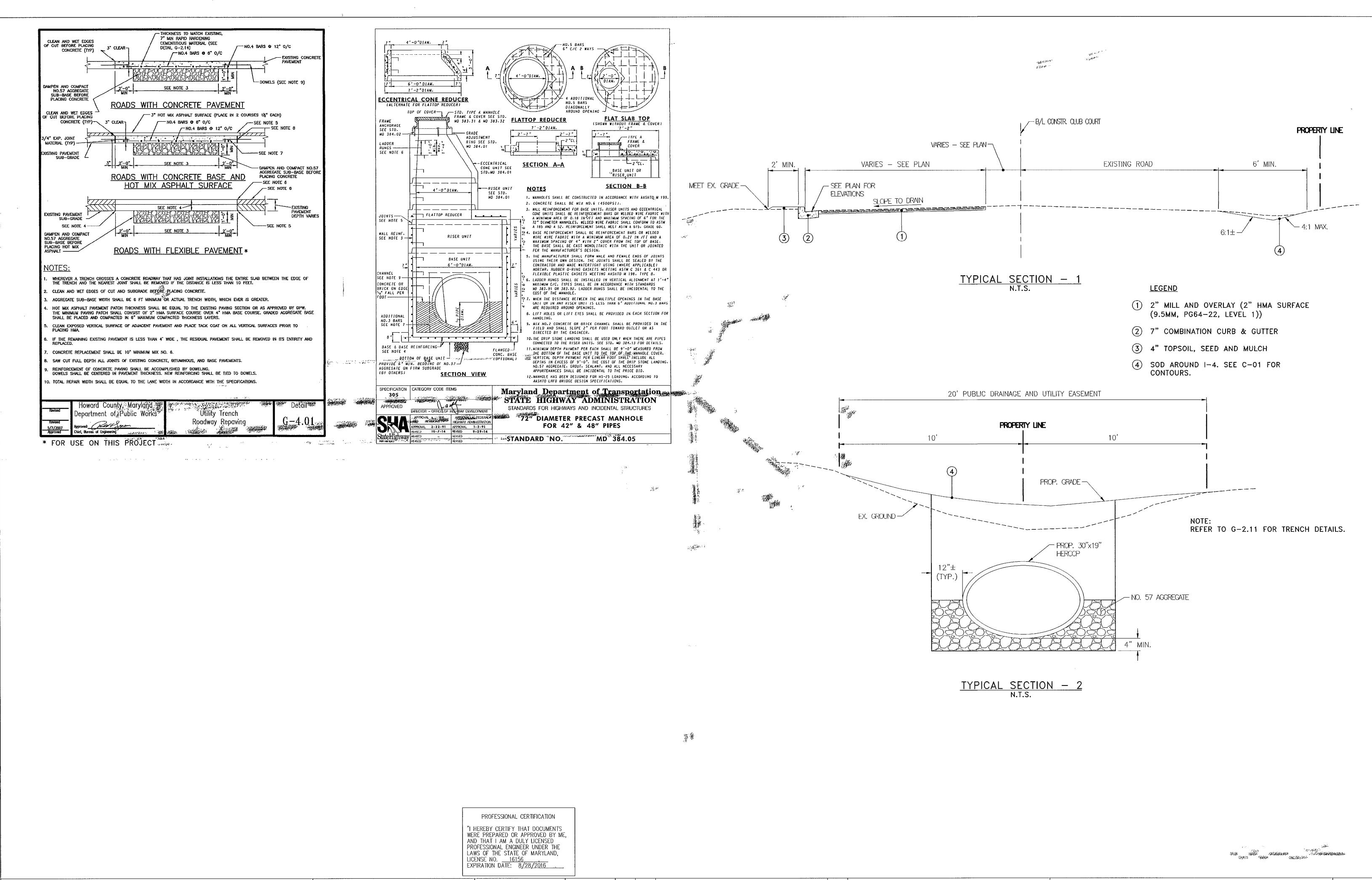
CRESTLEIGH SUBDIVISION (CLUB COURT) DRAINAGE IMPROVEMENTS

6TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SCALE N.T.S. DWG NO.

C - 03

FILE NAME: U:\Projects\H\HoCo\20837215\CAD\PlanSet\C-3_CLUB~CT.dwg LAYOUT NAME: C-03 PLOTTED: Tuesday, March 15, 2016 - 10:50am USER: chris_fleming



DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND





DES: MCS			
DRN: CDF			
CHK: DTM			
DATE: 01 /0010			
DATE: 01/2016	BY	NO.	REVISION

MISCELLANEOUS DETAILS - II

SCALE MAP NO.

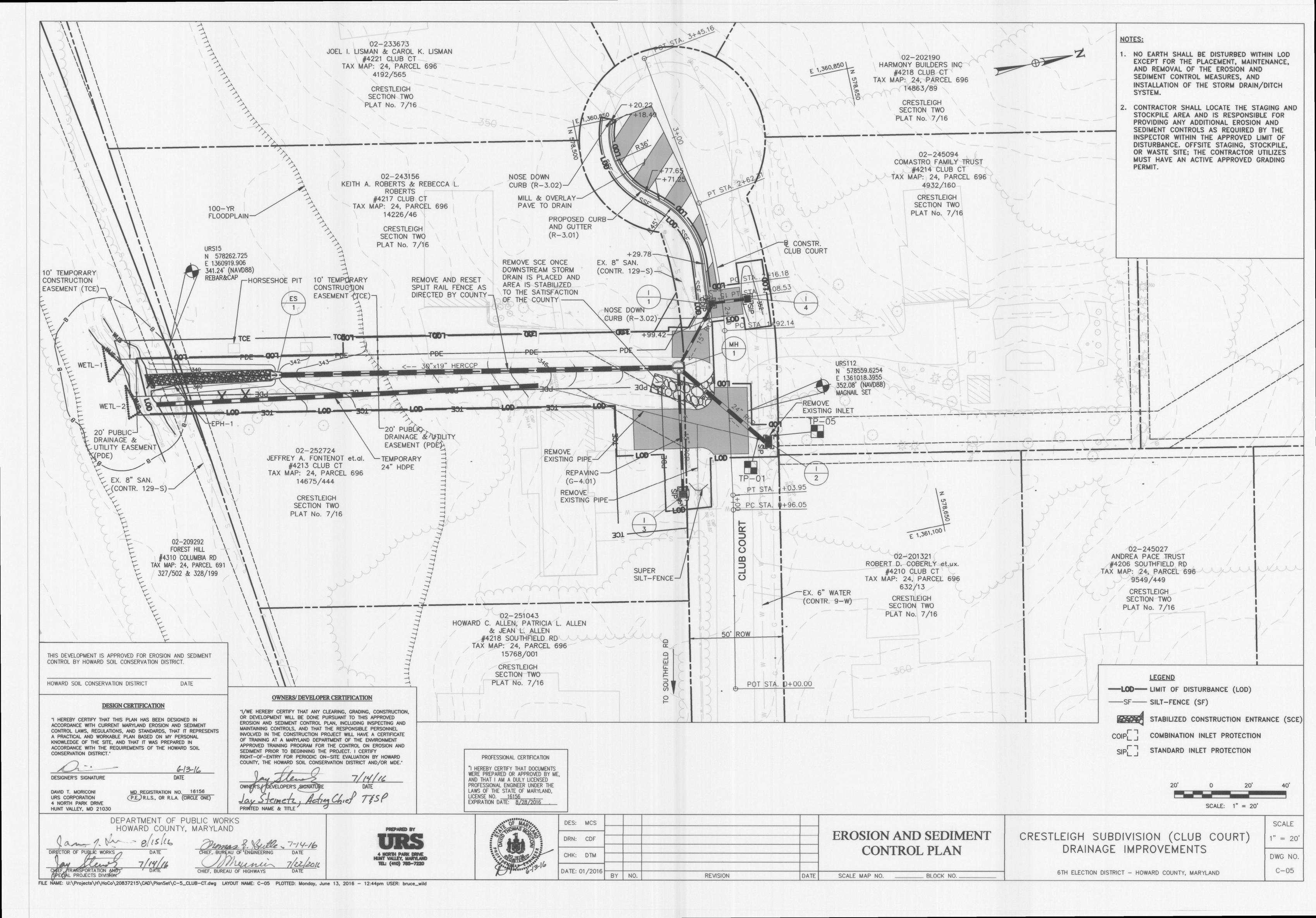
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CRESTLEIGH SUBDIVISION (CLUB COURT) DRAINAGE IMPROVEMENTS

6TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SCALE N.T.S. DWG NO. C - 04

FILE NAME: U:\Projects\H\HoCo\20837215\CAD\PlanSet\C-3_CLUB-CT.dwg LAYOUT NAME: C-04 PLOTTED: Thursday, March 17, 2016 - 3:53pm USER: chris_fleming



The process of preparing the soils to sustain adequate vegetative stabilization.

To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies

Purpose

Where vegetative stabilization is to be established.

A. Soil Preparation

1. Temporary Stabilization

- a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches 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 must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked 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 to 5 inches of soil by disking or other suitable

2. Permanent Stabilization

- a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
- i. Soil pH between 6.0 and 7.0.
- ii. Soluble salts less than 500 parts per million (ppm).
- iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay)
- iv. Soil contains 1.5 percent minimum organic matter by weight.
- v. Soil contains sufficient pore space to permit adequate root penetration. b. Application of amendments or topsoil is required if on-site soils do not meet the above
- c. Graded areas must be maintained in a true and even grade as specified on the approved plan,
- then scarified or otherwise loosened to a depth of 3 to 5 inches. d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil
- e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means, Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas,

- 1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is 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.
- 2. Topsoil salvaged from an existing site may be used provided 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-NRCS.
- 3. Topsoiling 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.
- 4. Areas having slopes steeper than 2:1 require special consideration and design
- 5. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
- a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils gravel, sticks, roots, trash, or other materials larger than 11/2 inches in diameter.
- b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified
- c. 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.
- a. Erosion and sediment control practices must be maintained when applying topsoil.
- b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that solding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
- c. Topsoil must not be placed if 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

Soil Amendments (Fertilizer and Lime Specifications)

DESIGN CERTIFICATION

DESIGNER'S SIGNATURE

DAVID T. MORICONI

URS CORPORATION

4 NORTH PARK DRIVE

HUNT VALLEY, MD 21030

- 1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also he used for chemical analyses.
- 2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
- 3. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydrosceding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.
- 4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.

DATE

MD_REGISTRATION NO. 16156

P.E., R.L.S., OR R.L.A. (CIRCLE ONE)

DEPARTMENT OF PUBLIC WORKS

HOWARD COUNTY, MARYLAND

5. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

B-4-3 STANDARDS AND SPECIFICATIONS

<u>FOR</u> **SEEDING AND MULCHING**

To protect disturbed soils from erosion during and at the end of construction

The application of seed and mulch to establish vegetative cover

Conditions Where Practice Applies

To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

- a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
- b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
- c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydrosceding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
- d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has clapsed (14 days min.) to permit dissipation of phyto-toxic materials.

2. Application

- a. Dry Seeding: This includes use of conventional drop or broadcast spreaders
- i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
- ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil
- i. 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. ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in
- c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
- i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P2O5 (phosphorous), 200 pounds per acre; K₂O (potassium), 200 pounds per acre.
- ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydrosceding). Normally, not more than 2 tons are applied by hydrosceding at any one time. Do not use burnt or hydrated lime when hydroseeding.
- iii. Mix seed and fertilizer on site and seed immediately and without interruption
- iv. When hydroseeding do not incorporate seed into the soil.

B. Mulching

1. Mulch Materials (in order of preference)

- a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
- b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
- i. WCFM is to 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
- ii. WCFM, including dyc, must contain no germination or growth inhibiting factors. iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and wil blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch
- without inhibiting the growth of the grass seedlings. iv. WCFM material must not contain elements or compounds at concentration levels that will

material must form a blotter-like ground cover, on application, having moisture absorption

and percolation properties and must cover and hold grass seed in contact with the soil

v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.

a. Apply mulch to all seeded areas immediately after seeding.

- b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
- c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

- a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
- i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 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 follow the contour.
- ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
- iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly
- iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000

OWNERS/ DEVELOPER CERTIFICATION

"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN 1/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND CONSERVATION DISTRICT." SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD 6-13-16

> My Slew OWNER'S DEVELOPER'S SIGNATURE Jay Steinetz, Acting Chief TESP PRINTED NAME & TITLE

COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.*

PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT DOCUMENTS WERE PREPARED OR APPROVED BY ME. AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. <u>16156</u> EXPIRATION DATE: <u>8/28/2016</u>

B-4-5 STANDARDS AND SPECIFICATIONS

PERMANENT STABILIZATION

To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for 6 months or more.

To stabilize disturbed soils with permanent vegetation

A. Seed Mixtures General Use

- a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
- b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
- c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil
- d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 ½ pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.

- a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance
- b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
- i. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight ii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where
- management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight. iii. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or
- for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes; Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended. iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes;
- to 70 percent. Seeding Rate: 11/2 to 3 pounds per 1000 square feet. Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland"

Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60

- Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line
- Ideal Times of Seeding for Turf Grass Mixtures
- Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a) Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b)
- Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)
- d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 11/2 inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will
- e. If soil moisture is deficient, supply new seedings with adequate water for plant growth (1/2 to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

Permanent Seeding Summary

		Zone (from Figure re (from Table B		1	Lime Rate			
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P2O5	K₂0	- Lime Rate
	TALL FESCUE	100	3/1-5/15	1/4-1/2 in	45 pounds	90 lb/ac	90 lb/ac	2 tons/ac
			8/1-10/15	%- ½ in	per acre (1.0 lb/	(2 lb/	(2 lb/ 1000 sf)	(90 lb/
				14-12 in	1000 sf)	1000 sf)		1000 sf)

B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter)

- a. Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.
- b. Sod must be machine cut at a uniform soil thickness of ¼ inch, plus or minus ¼ inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable.
- c. Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the

d. Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may

- e. Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by an agronomist or soil scientist prior to its
- Sod Installation a. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.
- b. Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
- c. Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface.
- d. Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of laying, tamping and irrigating for any piece of sod within eight hours.

- a. In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water sod during the heat of the day to prevent wilting. b. After the first week, sod watering is required as necessary to maintain adequate moisture
- c. Do not mow until the sod is firmly rooted. No more than 1/2 of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless

B-4-4 STANDARDS AND SPECIFICATIONS

<u>FOR</u>

SEDIMENT CONTROL GENERAL NOTES

ANOTHER GRADING UNIT.

AVOID CONFLICTS WITH THIS PLAN.

CONTROL, AND REVISIONS THERETO.

BEEN OBTAINED FROM THE CID.

TOTAL AREA OF SITE: _____O.4___ ACRES

AREA TO BE ROOFED OR PAVED: _____O.O___ ACRES

AREA TO BE VEGETATIVELY STABILIZED: _____O.O ____ ACRES

7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR

PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY:

WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT

• BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR

CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND

8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE

• INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT)

• IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE

• MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED

. IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS

COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND

• OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR

9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS

10. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION

MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH

CONSTRUCTION. MINOR REVISIONS MAY ALLOWED BY THE CID PER THE LIST OF

SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM

THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CID.

SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT

13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO

14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR. AND

BE IMBRICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2'

15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME

16. A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR

SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE

12. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER

SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN

UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE CID, NO MORE THAN 30 ACRES

ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A

11. DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. A PROJECT IS TO BE

STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE).

OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF

AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE

AREA DISTURBED: 0.4 ACRES

TOTAL CUT: _____75____ CU. YDS.

TOTAL FILL: 75 CU. YDS.

SITE ANALYSIS:

SHOULD INCLUDE:

• INSPECTION DATE

CURRENT ACTIVITIES

PHOTOGRAPHS

• MONITORING/SAMPLING

HSCD-APPROVED FIELD CHANGES.

STRUCTURE.

IN ELEVATION.

PERIODS (INCLUSIVE):

NAME AND TITLE OF INSPECTOR

OF LAST RECORDED PRECIPITATION)

• EVIDENCE OF SEDIMENT DISCHARGES

STABILIZATION REQUIREMENTS

EACH WORKDAY, WHICHEVER IS SHORTER.

CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

USE I AND IP MARCH 1 - JUNE 15

USE IV MARCH 1 - MAY 31

AND AVAILABLE WHEN THE SITE IS ACTIVE.

USE III AND HIP OCTOBER 1 - APRIL 30

• IDENTIFICATION OF PLAN DEFICIENCIES

FOR THOSE AREAS UNDER ACTIVE GRADING.

a. PRIOR TO THE START OF EARTH DISTURBANCE.

1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT

THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A

MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:

OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID). 410-313-1855 AFTER

b. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT

c. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF

d. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.

2. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED. TO ENSURE COORDINATION AND TO

3. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT

4. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR

THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011

TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE

SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES,

AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1): AND SEVEN (7)

IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL

EROSION AND SEDIMENT CONTROL FOR TOPSOIL (SEC. B-4-2), PERMANENT SEEDING

TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE

(SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3).

STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH

BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND

MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS

>15' OF CUT AND/OR FILL. STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST

HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. 8-4-6).

HOWARD COUNTY LANDFILL /

OFFSITE WASTE/BORROW AREA LOCATION: APPROVED SITE WITH AN ACTIVE GRADING PERMIT

FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. INCREMENTAL

6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE

CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT

5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE

CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR

TEMPORARY STABILIZATION

Definition

To stabilize disturbed soils with vegetation for up to 6 months.

permanent stabilization practices are required.

To use fast growing vegetation that provides cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time,

- 1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along
- 2. For sites having soil tests performed, use and show the recommended rates by the testing agency Soil tests are not required for Temporary Seeding.

completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.

3. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A.1.b and maintain until the next seeding season.

with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and

Temporary Seeding Summary

	Hardiness Zo Seed Mixtur	Fertilizer Rate	Lime Rate				
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	(10-20-20)	Zime Rate	
	FOXTAIL MILLET	30	5/16 - 7/31	0.5 IN.	436 lb/ac		
	PEARL MILLET	20	5/16 - 7/31	0.5 IN.		436 lb/ac	2 tons/ac
					(10 lb/1000 sf)	(90 lb/1000 sf	

SEOUENCE OF CONSTRUCTION - GENERAL NOTES

- 1. THE CONTRACTOR SHALL NOTIFY THE HOWARD SOIL CONSERVATION DISTRICT AT (410) 489-7987 AT LEAST SEVEN (7) DAYS PRIOR TO ANY EARTH DISTURBANCE TO SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE
- 2. EXISTING UTILITIES AND STORM DRAINS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLANS ARE FOR THE GUIDANCE OF THE CONTRACTOR ONLY, CONTRACTOR SHALL CALL "MISS UTILITY" AT 1-800-257-7777 48 HOURS PRIOR TO THE START OF WORK. THE EXCAVATOR MUST NOTIFY ALL PUBLIC UTILITY COMPANIES WITH UNDERGROUND UTILITIES IN THE AREA OF THE PROPOSED EXCAVATION AND HAVE THOSE UTILITIES LOCATED BY THE UTILITY COMPANIES PRIOR TO COMMENCING EXCAVATION.
- 3. THE EROSION AND SEDIMENT CONTROL MEASURES MUST BE IN PLACE AND FUNCTIONING PRIOR TO CLEARING THE ENTIRE SITE. CLEAR AND GRUB FOR EROSION AND SEDIMENT CONTROL MEASURES OR DEVICES ONLY ON COMMENCEMENT OF CONSTRUCTION.
- 4. INSTALL STABILIZED CONSTRUCTION ENTRANCES, AND OTHER EROSION AND SEDIMENT CONTROL DEVICES AS PER THE EROSION AND SEDIMENT CONTROL PLANS. THE LOCATIONS FOR STABILIZED CONSTRUCTION ENTRANCES SHOWN ON THE PLANS ARE APPROXIMATE, AND EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD WITH APPROVAL FROM THE ENGINEER AND
- 5. MAINTAIN ALL SEDIMENT CONTROL PRACTICES ACCORDING TO THE MARYLAND 2011 STANDARDS UNTIL THE ENTIRE SITE IS STABILIZED.
- 6. CONTRACTOR SHALL LOCATE THE STAGING AND STOCKPILE AREA AND IS RESPONSIBLE FOR PROVIDING ANY ADDITIONAL E/S CONTROLS FOR STAGING AND STOCKPILE AREAS AS REQUIRED BY THE INSPECTOR.
- 7. CLEAR AND GRUB AND PROCEED TO CONSTRUCTION ACCORDING TO THE SEQUENCE OF CONSTRUCTION SPECIFIED ON THIS SHEET. STORM DRAIN INLET PROTECTIONS SHALL BE INSTALLED AT INLETS BEFORE ANY DISTURBANCE IN THE WORK AREA. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUN OFF IS DIRECTED TO AN MDE APPROVED SEDIMENT CONTROL DEVICE. CONTRACTOR SHALL USE PORTABLE SEDIMENT TANK TO DEWATER THE WORKING AREA DURING CONSTRUCTION.
- 8. CONSTRUCTION SHALL BE COMPLETED IN THE FOLLOWING SEQUENCE:

SEQUENCE OF CONSTRUCTION

- 1. CONTACT THE HOWARD COUNTY DEPARTMENT OF CONSTRUCTION INSPECTION AT (410) 313-1880 AT LEAST 72 HOURS PRIOR TO THE START OF ANY 2. ACCESS TO DRIVEWAYS MUST BE MAINTAINED AT ALL TIMES.
- CLUB COURT, 4214 CLUB COURT, AND 4210 CLUB COURT PRIOR TO ANY DISTURBANCE AND SHALL MINIMIZE ACCESS LIMITATIONS TO THE RESPECTIVE

3. CLEAR AND GRUB THE SITE TO PLACE PERIMETER CONTROLS. CONTRACTOR

MUST COORDINATE WITH OWNER/RESIDENTS OF 4217 CLUB COURT, 4218

4. INSTALL THE STABILIZED CONSTRUCTION ENTRANCE (SCE), TEMPORARY 24" HDPE CONNECTED TO THE EXISTING 24" CMP AT STATION 1+67.68 LT, STANDARD INLET PROTECTION (SIP) AT THE EXISTING INLET AT STATION

INSTALL THE RIPRAP OUTFALL AND STABILIZE WITH TOPSOIL AND SOD.

- 1+31.83 RT, SUPER SILT FENCE (SSF) AND SILT FENCE (SF) AS INDICATED. 5. WORKING DOWNSTREAM TO UPSTREAM, GRADE THE OUTFALL AT ES-1,
- 6. WORKING DOWNSTREAM TO UPSTREAM, INSTALL STORM DRAIN SYSTEM FROM ES-1 TO I-2. UP TO THE EXISTING INLET AT STATION 1+31.83 RT. I-2 AND THE REMAINING PORTION OF THE DOWNSTREAM STORM DRAIN SHALL BE INSTALLED IMMEDIATELY AFTER THE EXISTING INLET AND DOWNSTREAM STORM DRAIN ARE REMOVED. INSTALL SIP AT I-2. ONLY CONSTRUCT THAT PORTION OF THE STORM DRAIN THAT MAY BE EXCAVATED, INSTALLED, AND STABILIZED THE SAME DAY. ALL DISTURBED AREAS MUST BE STABILIZED WITH TEMPORARY SEED AND MULCH AT THE END OF THE WORK DAY. DISTURBED PAVEMENT AREAS SHALL BE STEEL PLATED AT THE END OF EACH WORK
- 7. REMOVE EXISTING STORM DRAIN AT STATION 1+08.05 AND IMMEDIATELY INSTALL STORM DRAIN SYSTEM FROM MH-1 TO 1-3. INSTALL SIP AT 1-3. ONLY CONSTRUCT THAT PORTION OF THE STORM DRAIN THAT MAY BE EXCAVATED, INSTALLED, AND STABILIZED THE SAME DAY. ALL DISTURBED AREAS MUST BE STABILIZED WITH TEMPORARY SEED AND MULCH AT THE END OF THE WORK DAY. DISTURBED PAVEMENT AREAS SHALL BE STEEL PLATED AT THE END OF EACH WORK DAY.
- 8. INSTALL STORM DRAIN SYSTEM FROM MH-1 TO I-4. INSTALL SIP AT I-4 AND COMBINATION INLET PROTECTION (COIP) AT I-1. ONLY CONSTRUCT THAT PORTION OF THE STORM DRAIN THAT MAY BE EXCAVATED, INSTALLED, AND STABILIZED THE SAME DAY. ALL DISTURBED AREAS MUST BE STABILIZED WITH TEMPORARY SEED AND MULCH AT THE END OF THE WORK DAY. DISTURBED PAVEMENT AREAS SHALL BE STEEL PLATED AT THE END OF EACH WORK
- 9. CONSTRUCT CURB AND GUTTER AT THE LIMITS SHOWN. CONSTRUCT ASPHALT DRIVEWAY APRONS, DRIVEWAY TIE-INS, AND MILL/OVERLAY CLUB COURT AS INDICATED ON THE PLANSET.
- 10. UPON APPROVAL FROM THE HOWARD COUNTY INSPECTOR, REMOVE ALL REMAINING PERIMETER CONTROLS AND IMMEDIATELY STABILIZE ANY DISTURBED

SCALE MAP NO.

CONTROL NOTES AND **DETAILS**

EROSION AND SEDIMENT

DRAINAGE IMPROVEMENTS

CRESTLEIGH SUBDIVISION (CLUB COURT)

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT

SCALE

DWG NO.

C-06

PROJECTS DIVISIO FILE NAME: U:\Projects\H\HoCo\20837215\CAD\PlanSet\C-6_CLUB-CT.dwg LAYOUT NAME: C-06 PLOTTED: Monday, June 13, 2016 — 12:45pm USER: bruce_wild



DES: MCS

DRN: CDF CHK: DTM DATE: 01/2016 BY NO. REVISION

BLOCK NO.

6TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

B-4-8 STANDARDS AND SPECIFICATIONS

FOR

STOCKPILE AREA Definition

A mound or pile of soil protected by appropriately designed erosion and sediment control measures.

To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.

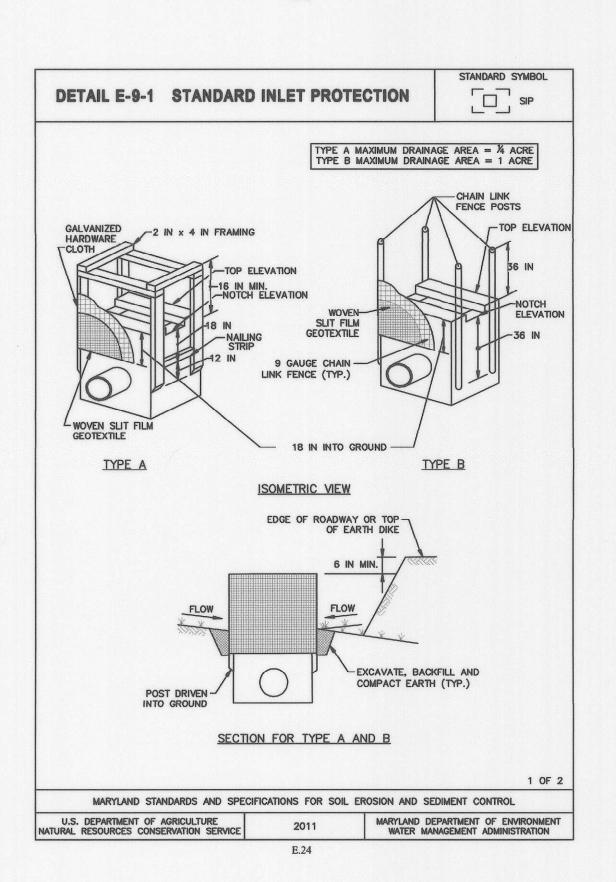
Conditions Where Practice Applies

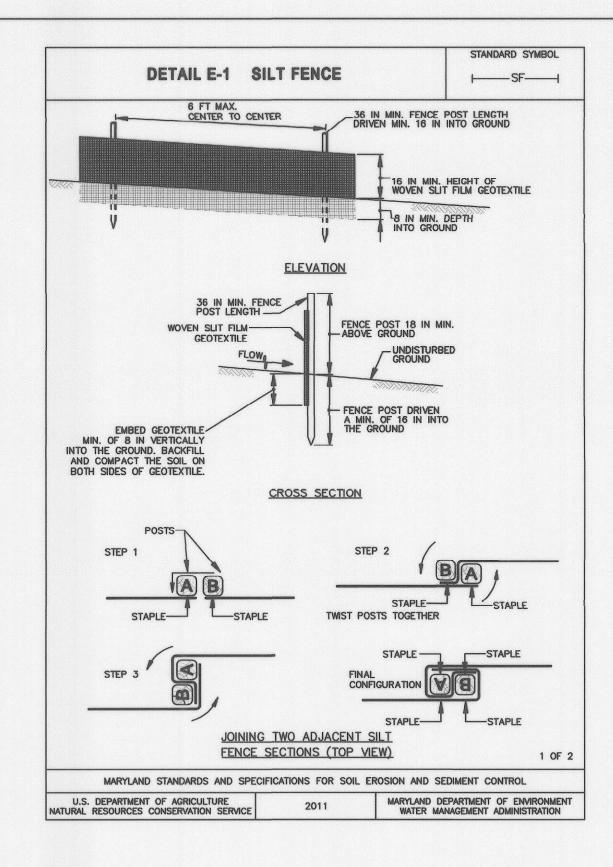
Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

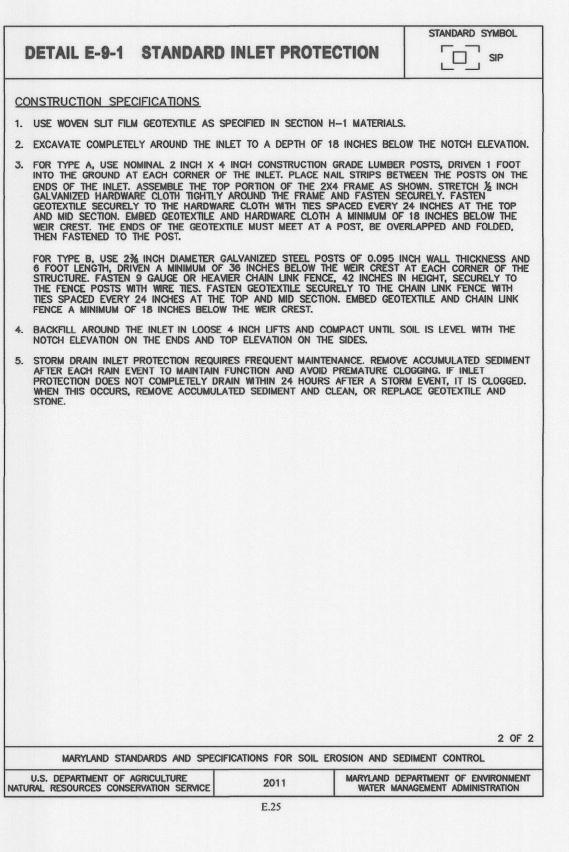
- 1. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
- 2. The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
- 3. Runoff from the stockpile area must drain to a suitable sediment control practice. 4. Access the stockpile area from the upgrade side.
- 5. Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
- 6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
- 7. Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
- 8. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

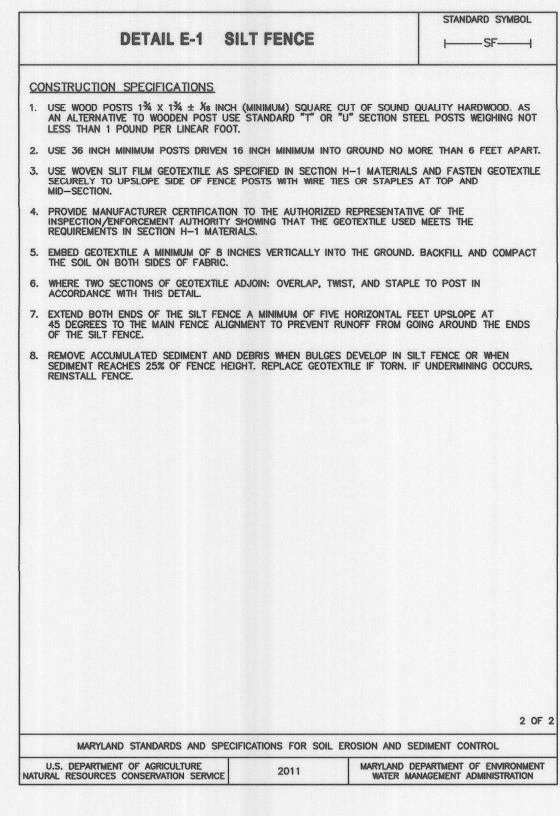
The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading.

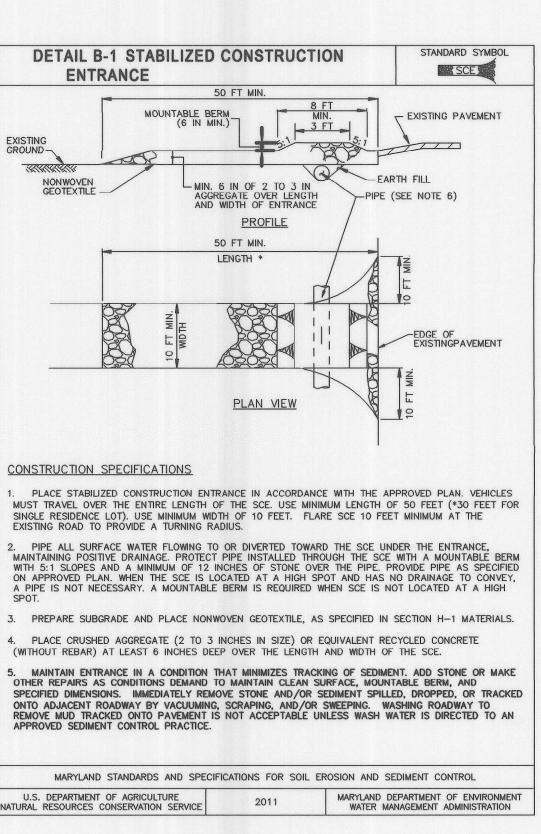
B.43

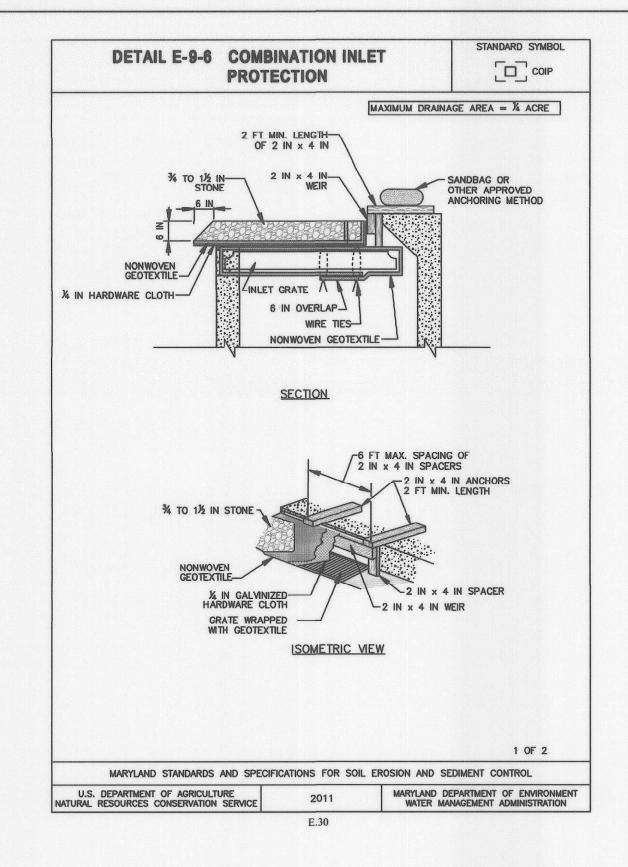


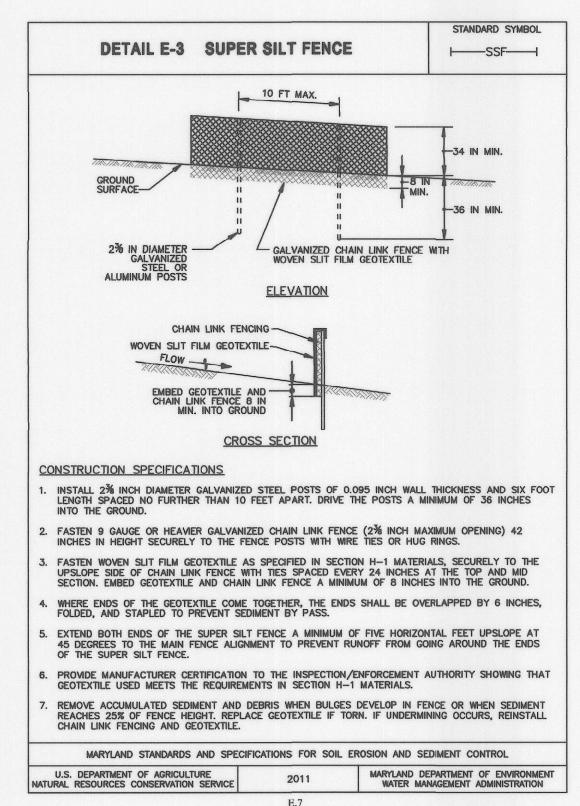












CONSTRUCTION SPECIFICATIONS 1. USE NOMINAL 2 INCH x 4 INCH LUMBER. 2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS. LIFT GRATE, AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS, THEN SET GRATE BACK IN PLACE. ATTACH A CONTINUOUS PIECE OF $\frac{1}{2}$ INCH GALVANIZED HARDWARE CLOTH WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2X4 WEIR, EXTENDING 2 FEET BEYOND THROAT ON EACH SIDE. 5. PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH IT TO THE WEIR. NAIL THE 2X4 WEIR TO THE TOP OF A 9 INCH LONG VERTICAL SPACER TO BE LOCATED BETWEEN THE WEIR AND THE INLET FACE (MAXIMUM 4 FEET APART). PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2X4 ANCHORS (MINIMUM 2 FOOT LENGTHS OF 2x4 INCH TO THE TOP OF THE WEIR AT SPACER LOCATIONS). EXTEND 2X4 ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING B. INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND BOTH ENDS OF THE THROAT OPENING. 9. FORM THE ¼ INCH HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND AGAINST THE FACE OF THE CURB ON BOTH SIDES OF THE INLET. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE OVER THE HARDWARE CLOTH AND GEOTEXTILE IN SUCH A MANNER TO PREVENT WATER FROM ENTERING THE INLET UNDER OR AROUND THE GEOTEXTILE. 10. AT NON-SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET 1. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND 2 OF 2 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL E.31

DETAIL E-9-6 COMBINATION INLET

PROTECTION

STANDARD SYMBOL

COIP

DESIGN CERTIFICATION

"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

DESIGNER'S SIGNATURE

MD REGISTRATION NO. 16156 DAVID T. MORICONI (P.E.) R.L.S., OR R.L.A. (CIRCLE ONE) URS CORPORATION 4 NORTH PARK DRIVE HUNT VALLEY, MD 21030

OWNERS/ DEVELOPER CERTIFICATION

"I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."

OWNER'S DEVELOPER'S SIGNATURE

PROFESSIONAL CERTIFICATION HEREBY CERTIFY THAT DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. <u>16156</u> EXPIRATION DATE: <u>8/28/2016</u>

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

6-13-16

DIRECTOR OF PUBLIC WORKS DATE

4 NORTH PARK DRIVE HUNT VALLEY, MARYLAND TEL: (410) 785-7220



	DES:	MCS					
	DRN:	CDF					
_	CHK:	DTM					
	DATE: (01/2016	BY	NO.	REVISION	DATE	

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

BLOCK NO.

SCALE MAP NO.

CRESTLEIGH SUBDIVISION (CLUB COURT) DRAINAGE IMPROVEMENTS

6TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT

CONTROL BY HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT

SCALE N.T.S.

DWG NO C - 07

SPECIAL PROJECTS DIVISION FILE NAME: U:\Projects\H\HoCo\20837215\CAD\PlanSet\C-6_CLUB-CT.dwg LAYOUT NAME: C-07 PLOTTED: Monday, June 13, 2016 - 12:46pm USER: bruce_wild

