

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Richard Blood 2/7/97
 CHIEF, DIVISION OF LAND DEVELOPMENT JPA DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
Andrew M. Pancker 1-20-97
 CHIEF, BUREAU OF HIGHWAYS MS DATE

ROAD CONSTRUCTION, STORM DRAINAGE AND GRADING PLANS FOR

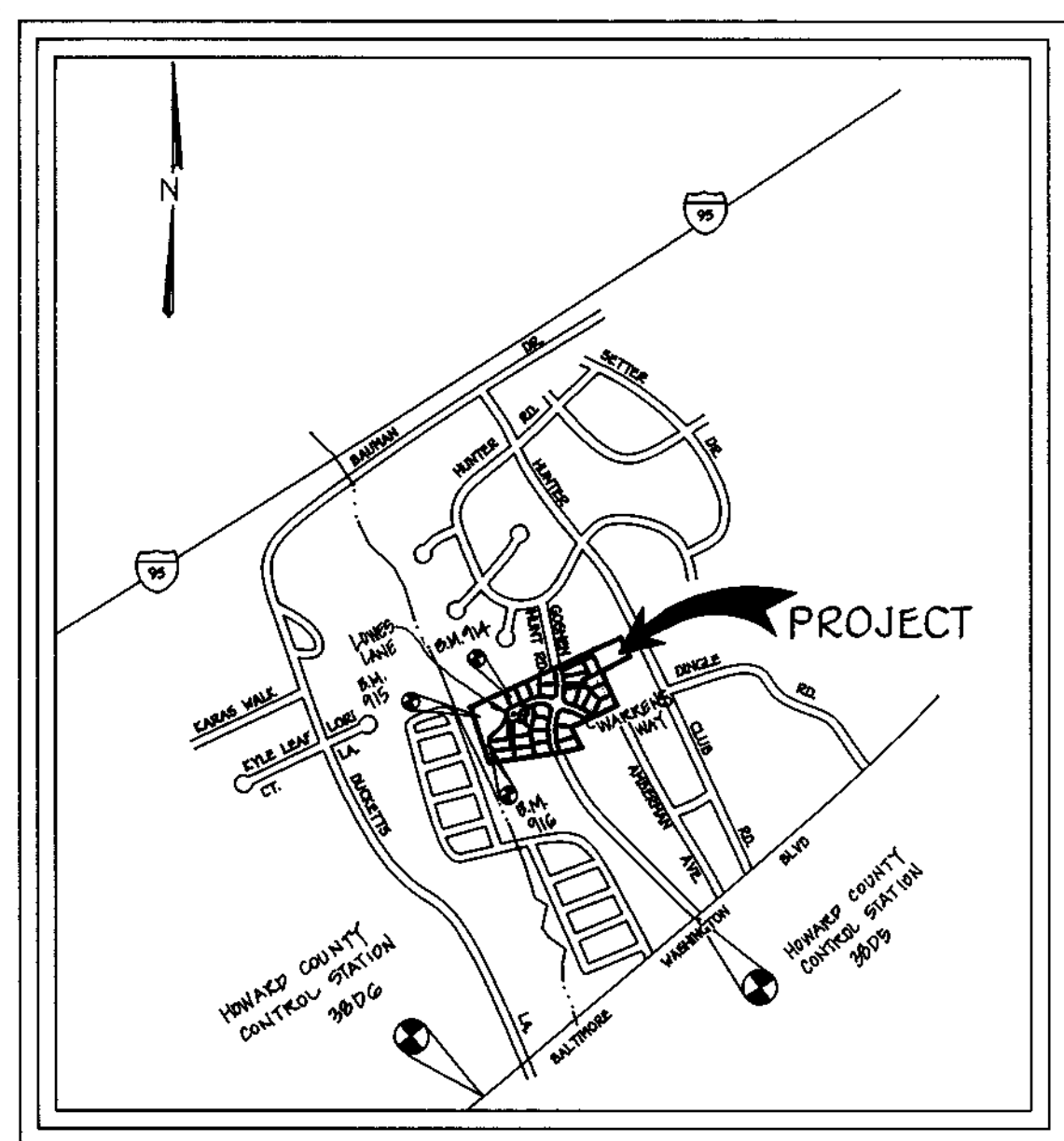
GOSHEN ESTATES

ZONED: R-12

SHEET INDEX	
No.	TITLE
1.	FINAL CONSTRUCTION PLAN COVER SHEET
2.	PLAN & PROFILE-GOSHEN HUNT ROAD
3.	PLAN & PROFILE-LOWES LANE & WARRENS WAY
4.	SEDIMENT AND EROSION CONTROL & GRADING PLAN
5.	LANDSCAPE PLAN & DRAINAGE AREA MAP
6.	STORM DRAIN PROFILES
7.	SEDIMENT CONTROL DETAILS
8.	S.W.M. PLAN, PROFILE AND DETAILS

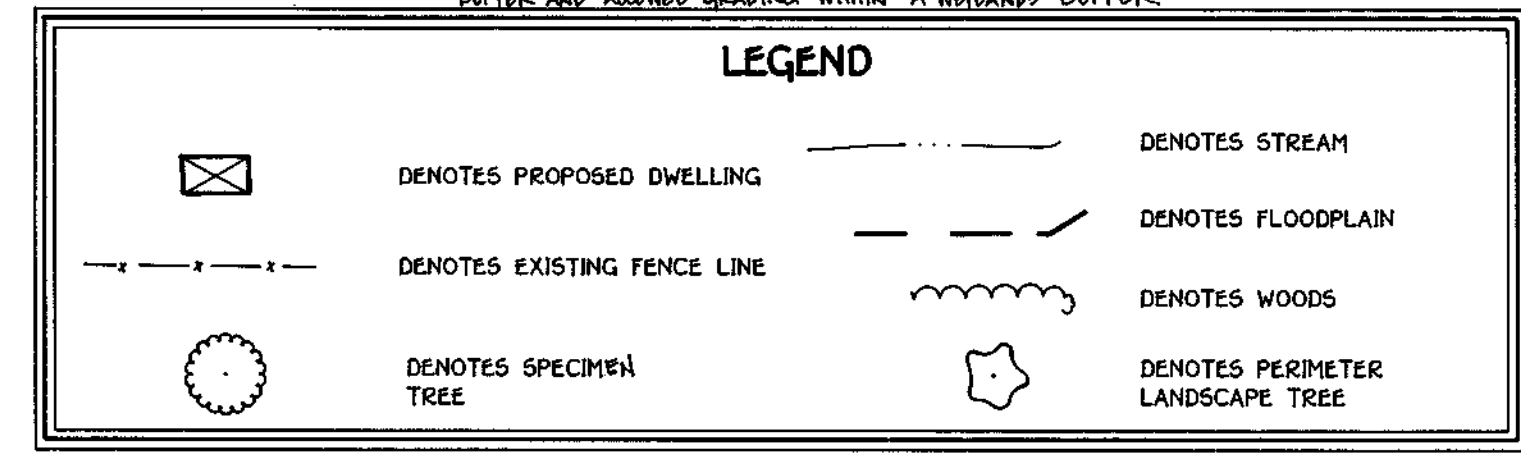
GENERAL NOTES:

- Unless otherwise noted, all construction is to be in accordance with the following:
 - Howard County standard specifications and details for construction.
 - Maryland State Highway Administration standard specifications for construction and materials, as amended.
 - Soil Conservation Service 1983 standards and specifications for soil erosion and sediment control.
 - Soil Conservation Service 1993 standards and specifications for pond construction (code 370).
- The contractor shall notify the Department of Public Works Division of Construction Inspection at 410-381-2890 at least (5) working days prior to the start of construction.
- The contractor shall notify "MISS UTILITY" at 1-800-257-7777 at least 48 hours prior to any excavation.
- Site Data:
 - Location: Tax Map: 38 Parcel No: 60 Zoning: R-12 Election District No: 1 Total Tract Area: 10.39 ACS. Total No. of Single Family Lots: 28
- Traffic Control devices, markings, and signing shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of asphalt.
- Topographic survey by Fisher, Collins, and Carter Inc., 1986 1994 2 foot contour interval.
- Horizontal Control is based on the following Howard County control points:
 - 3806 - Denotes conc. monument N 577,155.4590 E 1,384,992.82549
 - 3805 - Denotes conc. monument N 558,378.5751 E 1,386,524.1931
- Water and sewer systems are public and they are located in the Patesco drainage area.
- Storm Water management is provided via a detention pond and extended detention for water quality. It is a public facility to be maintained by Home Owners Association.
- Wetlands and Forest Stand Delineations by Eco-science Professionals, Inc. March 1994, revised February 1995.
- A.P.F.C. Traffic Study by Lee Cunningham and Assoc., Inc. March 1994, revised August 1994.
- Noise study by The Wilson T. Ballard Co. Sept. 1995
- Geotechnical report prepared by Herbst and Assoc., March 1994.
- Existing utilities were located by actual field measurement where possible supplement by information obtained from the various agencies involved. We cannot guarantee the accuracy or the completeness of the information received. The contractor must verify all such information to their own satisfaction prior to the start of the construction.
- Any material or earthwork quantities shown hereon are provided for the approving authorities use only. The contractor is responsible for verifying all quantities to their own satisfaction prior to bidding the work.
- Section 16.115(a)(6) of the Subdivision and Land Development Regulations prohibits clearing, grading, or construction activity within the required wetland or stream bank buffers.
- Traffic studies by the traffic group approved under 505-03
- Wetlands and Forest Analysis by Wildman Environmental Services Approved under 595-03
- PROHIBIT THE NUMBERING, PILING, OR MARKING OF ALLOWED WORK WITHIN THE FLOODPLAIN, ALLOWED GRADING WITHIN A STREAM BUFFER AND ALLOWED GRADING WITHIN A WETLANDS BUFFER.



VICINITY MAP
 SCALE: 1" = 1200'

20. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SELECTED SHALL BE IN ACCORDANCE WITH THE LATEST HOWARD COUNTY DESIGN MANUAL, VOLUME III (1985) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS JUNE 1995". A MINIMUM SPACING OF 20 SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.

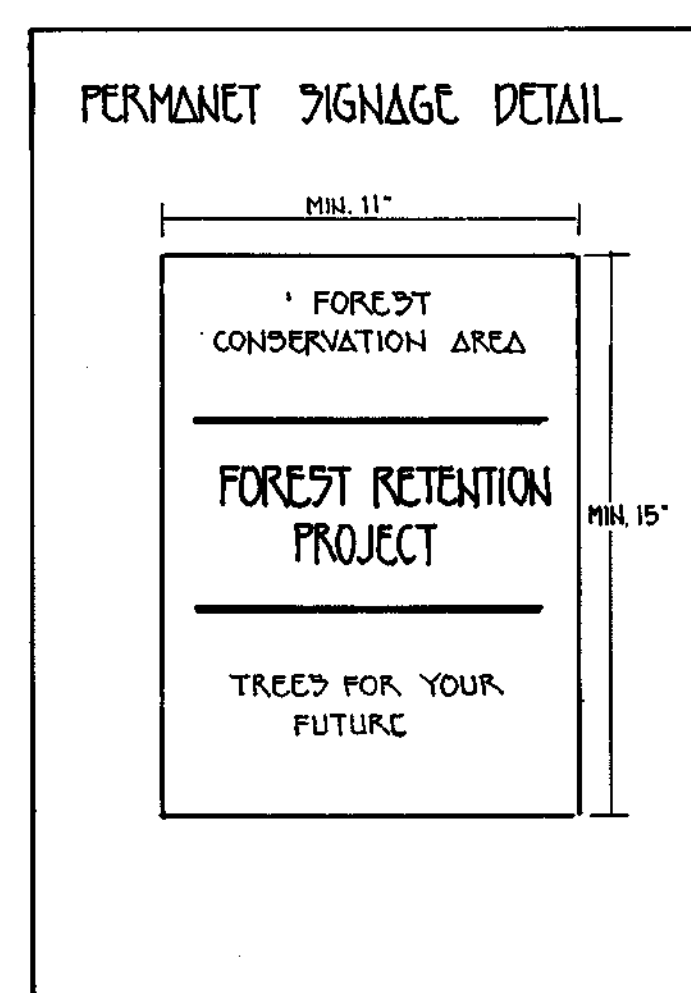


LOTS 1-30 TAX MAP NO. 38 PARCEL NUMBER 60 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

STREET LIGHT CHART			
STREET NAME	STATION	OFF. SET	FIXTURE/POLE TYPE
GOSHEN HUNT ROAD	3+26	17'L	100-WATT "TRADITIONAIRE" HPS VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON 14 FOOT BLACK FIBERGLASS POLE
GOSHEN HUNT ROAD	6+04	14'L	100-WATT "TRADITIONAIRE" HPS VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON 14 FOOT BLACK FIBERGLASS POLE
LOWES LANE	1+193	2'	100-WATT "TRADITIONAIRE" HPS VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON 14 FOOT BLACK FIBERGLASS POLE

BENCH MARKS
 914 REBAR AND CAP SET ELEV. 171.91 N 594805.600 E 1388944.040
 915 REBAR AND CAP SET ELEV. 166.24 N 594774.013 E 1388960.965
 916 REBAR AND CAP SET ELEV. 159.61 N 594781.498 E 1388888.947

TRAFFIC CONTROL SIGNS				
STREET NAME	STATION	OFFSET	POSTED SIGN	SIGN CODE
WARRENS WAY	0+40	15'	STOP	R-1
LOWES LANE	0+40	15'	STOP	R-1

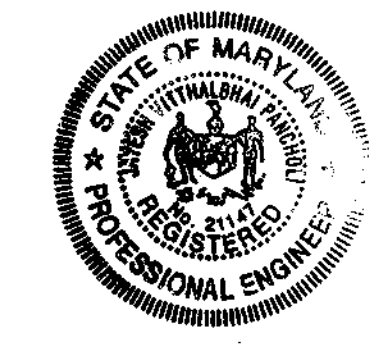


CATEGORY	Adjacent to Roadways	Adjacent to Perimeter Properties										
		A	A	A	A	A	A	A	A	A	A	A
LANDSCAPE TYPE	N/A											
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	N/A	P1: 450LF	P2: 385LF	P3: 696LF	P4: 387LF	P5: 145LF	P6: 152LF	P7: 115LF	P8: 172LF	P9: 251LF	P10: 216LF	P11: 140LF
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	N/A	YES 450 LF	NO	YES 896 LF	NO	NO	NO	NO	NO	NO	YES 216 LF	YES 140 LF
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE IF NEEDED)	N/A	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED												
SHADE TREES		-	6	-	6	2	2	2	2	4	-	-
EVERGREEN TREES		-	-	-	-	-	-	-	-	-	-	-
SHRUBS		-	-	-	-	-	-	-	-	-	-	-
NUMBER OF PLANTS PROVIDED												
SHADE TREES		-	6	-	6	2	2	2	2	4	-	-
EVERGREEN TREES		-	-	-	-	-	-	-	-	-	-	-
OTHER TREES (2:1 SUBSTITUTION) SHRUBS (10:1 SUBSTITUTION)		-	-	-	-	-	-	-	-	-	-	-

OWNER: GEORGE CARR, 9728 GUDER DRIVE, ELLICOTT CITY, MARYLAND 21042

DEVELOPER: LANDMARK DEVELOPMENT SERVICE, INC., 14821 SARLING WAY, GLENELG, MARYLAND 21737

OWNER: WARREN LOWE, 6696 WASHINGTON BLVD., ELK RIDGE, MARYLAND 21227

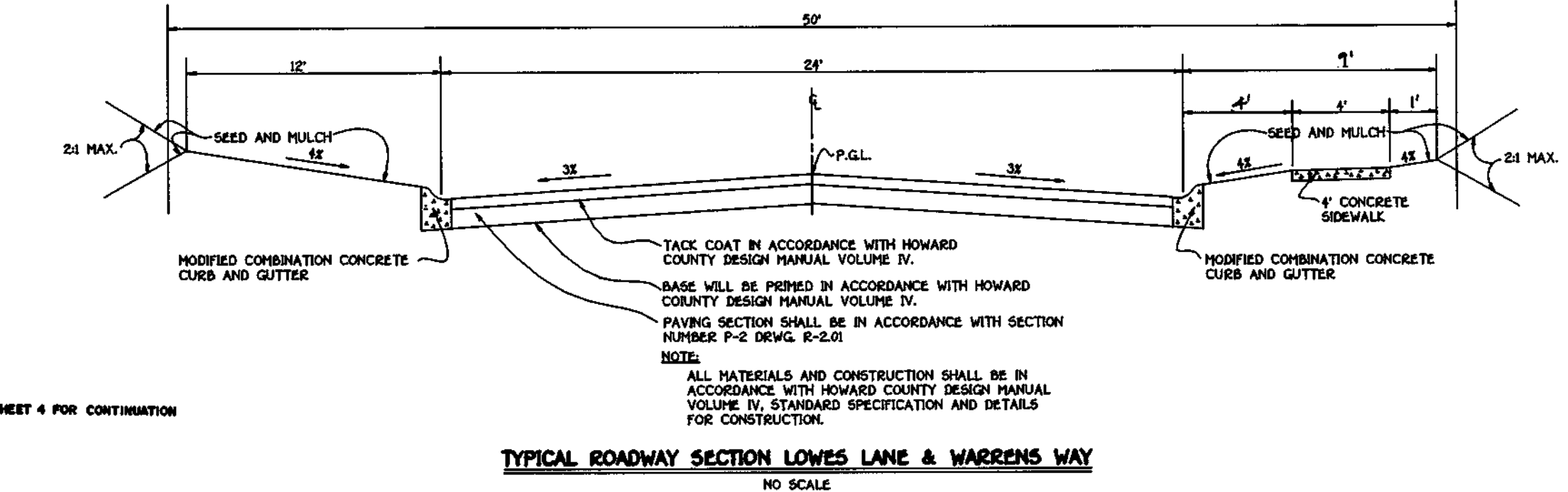
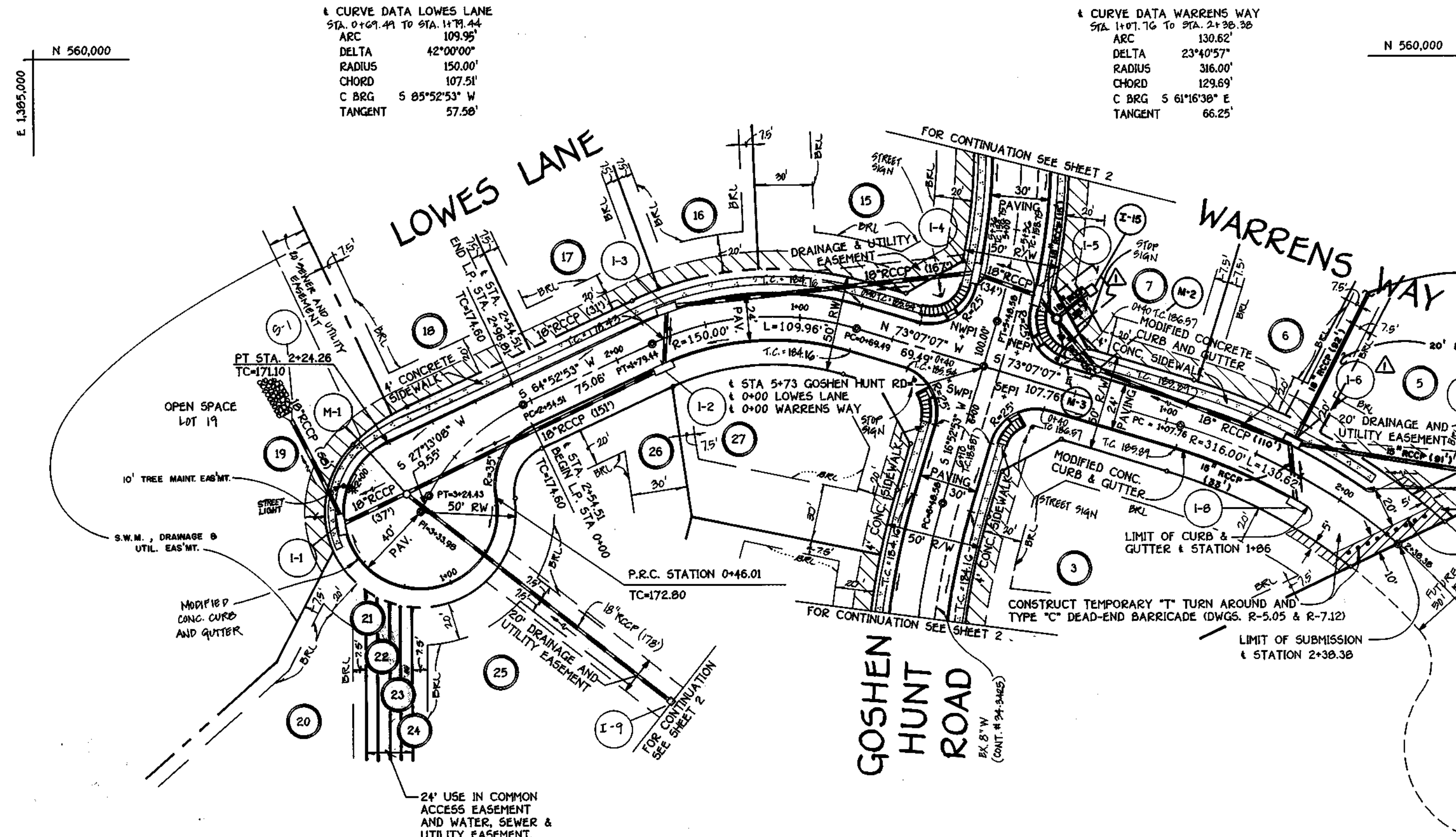


GOSHEN ESTATES
 LOTS 1 - 30
 TAX MAP No. 38, PARCEL #60
 FIRST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 DATE: JULY 1, 1998
 SHEET 1 OF 8

Jayesh Pancholi 7-22-98
 JAYESH V. PANCHOLI DATE

1848

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK • 10722 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 410-411-2095



APPROVED: DEPARTMENT OF PLANNING AND ZONING

Richard Blood 2/3/97
 CHIEF, DIVISION OF LAND DEVELOPMENT JA DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

John D. ... 2/3/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

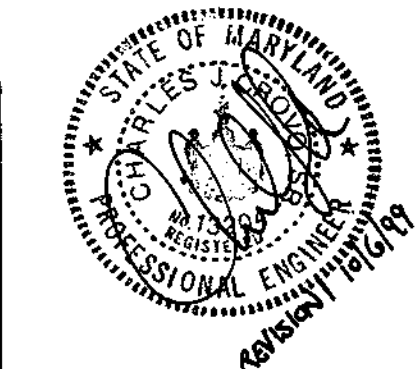
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Richard M. Daniels 1-20-97
 CHIEF, BUREAU OF HIGHWAYS HS DATE

PLAN SCALE: 1"=50'

NOTE: ALL R.C.C.P. STORM DRAIN PIPES ARE TO BE CLASS III.

NO.	DESCRIPTION	DATE
1	ADDED I-15, I-14 & I-15	10-6-99



GOSHEN ESTATES
 LOTS 1-30

TAX MAP NO. 38 FIRST ELECTION DISTRICT PARCEL NUMBER 60 HOWARD COUNTY, MARYLAND

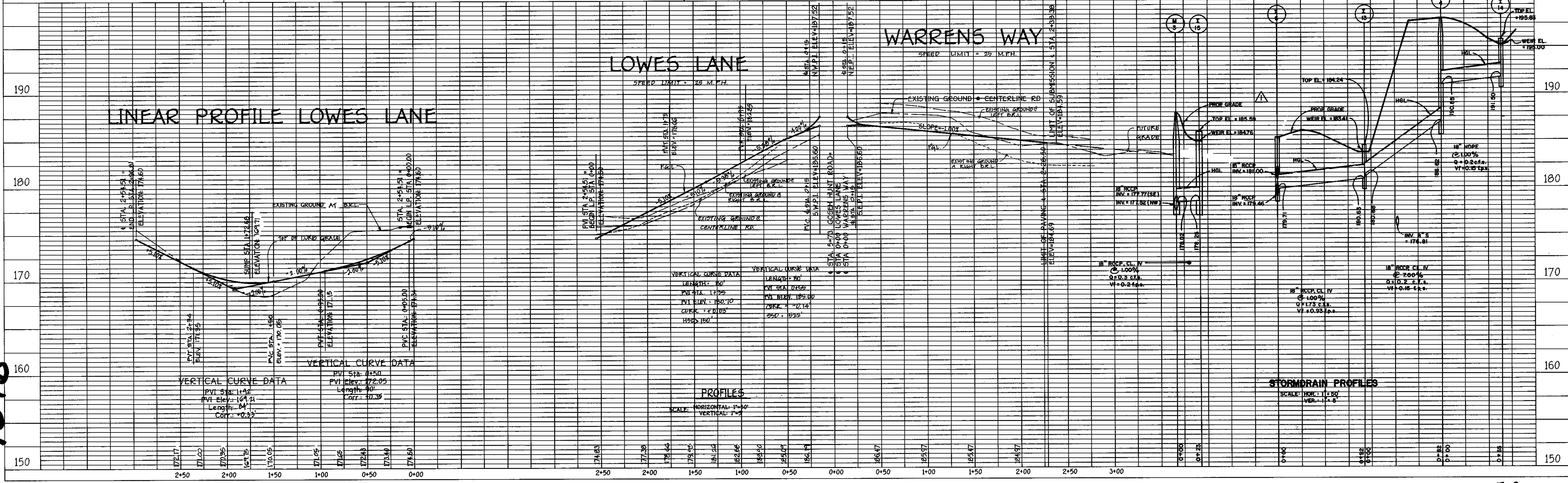
LOWES LANE & WARRENS WAY
 PLAN AND PROFILE

OWNER	OWNER
GEORGE CLAR 9728 GUELDR DRIVE ELLCOTT CITY, MARYLAND 21042	WARREN LONE 6696 WASHINGTON BLVD. ELKBRIDGE, MARYLAND 21527

DEVELOPER: LANDMARK DEVELOPMENT SERVICES, INC.
 1431 SHELBY WAY
 GLENELG, MARYLAND 21737

SCALE: AS SHOWN DATE: 7/1/96 DWG. NO. 3 OF 8
 DES. M.A.K. DRN. M.A.K. CHK. B.J.K.

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 1872 BALTIMORE NATIONAL PIKE
 ELLCOTT CITY, MARYLAND 21042
 (410) 411-2255



1848

DEVELOPER'S CERTIFICATE

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

Joseph W. Linn July 22, 1996
SIGNATURE OF DEVELOPER DATE

ENGINEER'S CERTIFICATE

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

Janice Rancoli 7-22-96
SIGNATURE OF ENGINEER DATE

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

Charles Summers 4/5/97
S.O.D.A. NATURAL RESOURCES CONSERVATION SERVICE DATE

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

Robert W. Zuber 4/5/97
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Richard Blood 2/7/97
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Charles Summers 2/3/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

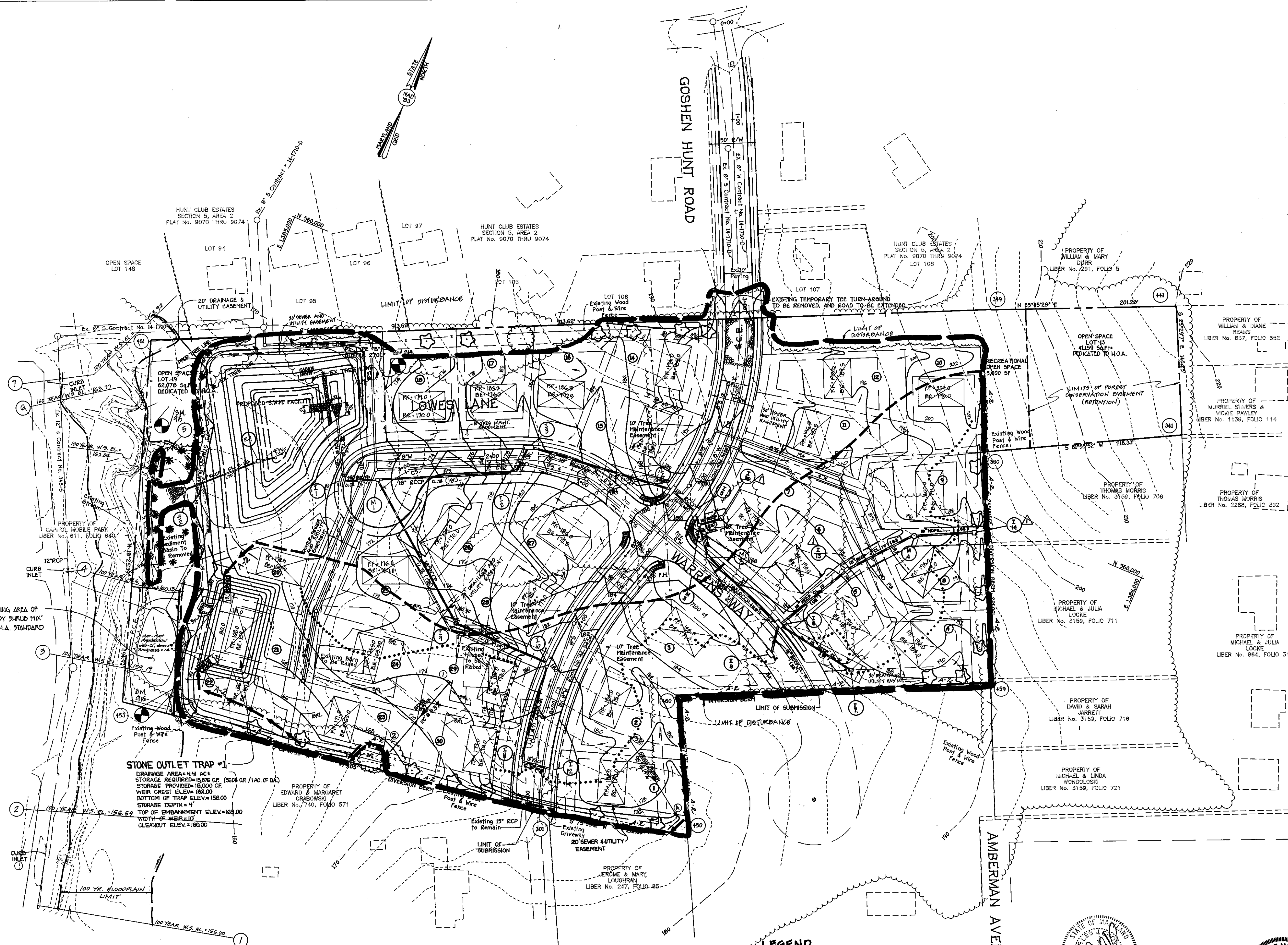
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

James M. Daniels 1-20-97
CHIEF, BUREAU OF HIGHWAYS DATE

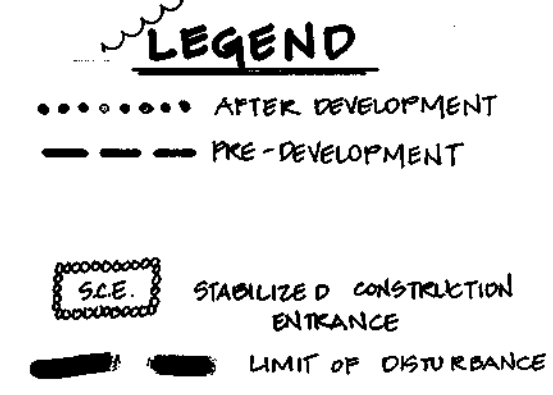
HUNT CLUB ROAD

AMBERMAN AVENUE

GOSHEN HUNT ROAD

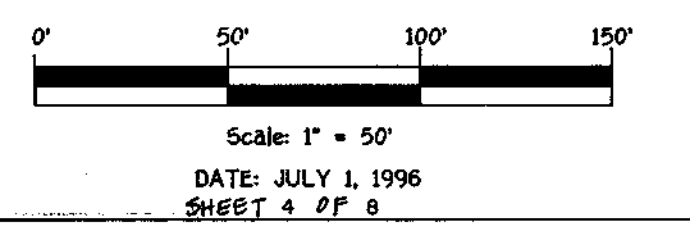


STONE OUTLET TRAP #1
DRAINAGE AREA = 4.41 AC ±
STORAGE REQUIRED = 15,876 CF (3600 CF / 1 AC OF DA)
STORAGE PROVIDED = 16,000 CF
WEIR CREST ELEV = 158.00
BOTTOM OF TRAP ELEV = 158.00
STORAGE DEPTH = 4"
TOP OF EMBANKMENT ELEV = 163.00
WIDTH OF WEIR = 10'
CLEANOUT ELEV = 160.00



NO.	DESCRIPTION	DATE
1	ADDED I-13, I-14 & I-15	10-6-99

SEDIMENT AND EROSION CONTROL AND GRADING PLAN
GOSHEN ESTATES
LOTS 1 - 30
TAX MAP No. 38, PARCEL #60
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND



FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLCOTT CITY, MARYLAND 21114
(410) 461-2055

OWNER
GEORGE CARR
3720 GUIDEL DRIVE
ELLCOTT CITY, MARYLAND 21042

DEVELOPER
LANDMARK DEVELOPMENT SERVICES, INC.
14031 SAPHLING WAY
GLENELG, MARYLAND 21737

OWNER
WARREN LOWE
6696 WASHINGTON BLVD.
ELK RIDGE, MARYLAND 21227

0481

SCHEDULE D	
LINEAR FEET OF PERIMETER	840 L.F.
NUMBER OF TREES REQUIRED	640/50=12 SHADE 640/40=16 EVERGREEN (BASED ON 640')
CREDIT FOR EXISTING VEGETATION (YES, NO, AND %)	YES, 20%
CREDIT FOR WALL FENCE OR BERM (YES, NO, LINEAR FEET)	NO
NUMBER OF PLANTS REQUIRED	12 SHADE TREES 16 EVERGREEN TREES SHRUBS

LEGEND

- (A) DRAINAGE AREA'S
- (I-1) INLET NUMBER
- DRAINAGE AREA LINE
- (ST-1) SPECIMEN TREE
- NEW TREE PROTECTION

DRAINAGE AREA DATA					
STRUCTURE NO.	DRAINAGE AREA	AREA	C	ZONED	X IMP.*
I-1	A	0.83 AC.	0.29	R-12	0.35
I-2	B	0.10 AC.	0.29	R-12	0.35
I-3	C	0.56 AC.	0.29	R-12	0.35
I-4	D	0.21 AC.	0.29	R-12	0.35
I-5	E	1.30 AC.	0.29	R-12	0.35
I-15	F	0.12 AC.	0.29	R-12	0.35
I-7	G	0.06 AC.	0.29	R-12	0.35
I-8	H	0.16 AC.	0.29	R-12	0.35
I-9	I	0.42 AC.	0.29	R-12	0.35
I-10	J	0.10 AC.	0.29	R-12	0.35
I-11	K	0.13 AC.	0.29	R-12	0.35
I-12	L	0.44 AC.	0.29	R-12	0.35
I-6	M	0.24 AC.	0.29	R-12	0.35
I-13	N	0.82 AC.	0.29	R-12	0.35
I-14	O	0.08 AC.	0.29	R-12	0.35

* PER HOWARD COUNTY MANUAL (TABLE 3.0 (B)) RATIONAL FORMULA RUNOFF COEFFICIENTS.

DEVELOPER'S CERTIFICATE
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND THAT ANY RESPONSIBLE PERSONNEL IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES 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 OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.
 Signature: *George W. Carr* DATE: July 22 1996

ENGINEER'S CERTIFICATE
 I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITION AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 Signature: *Janech Panchish* DATE: 7-22-96

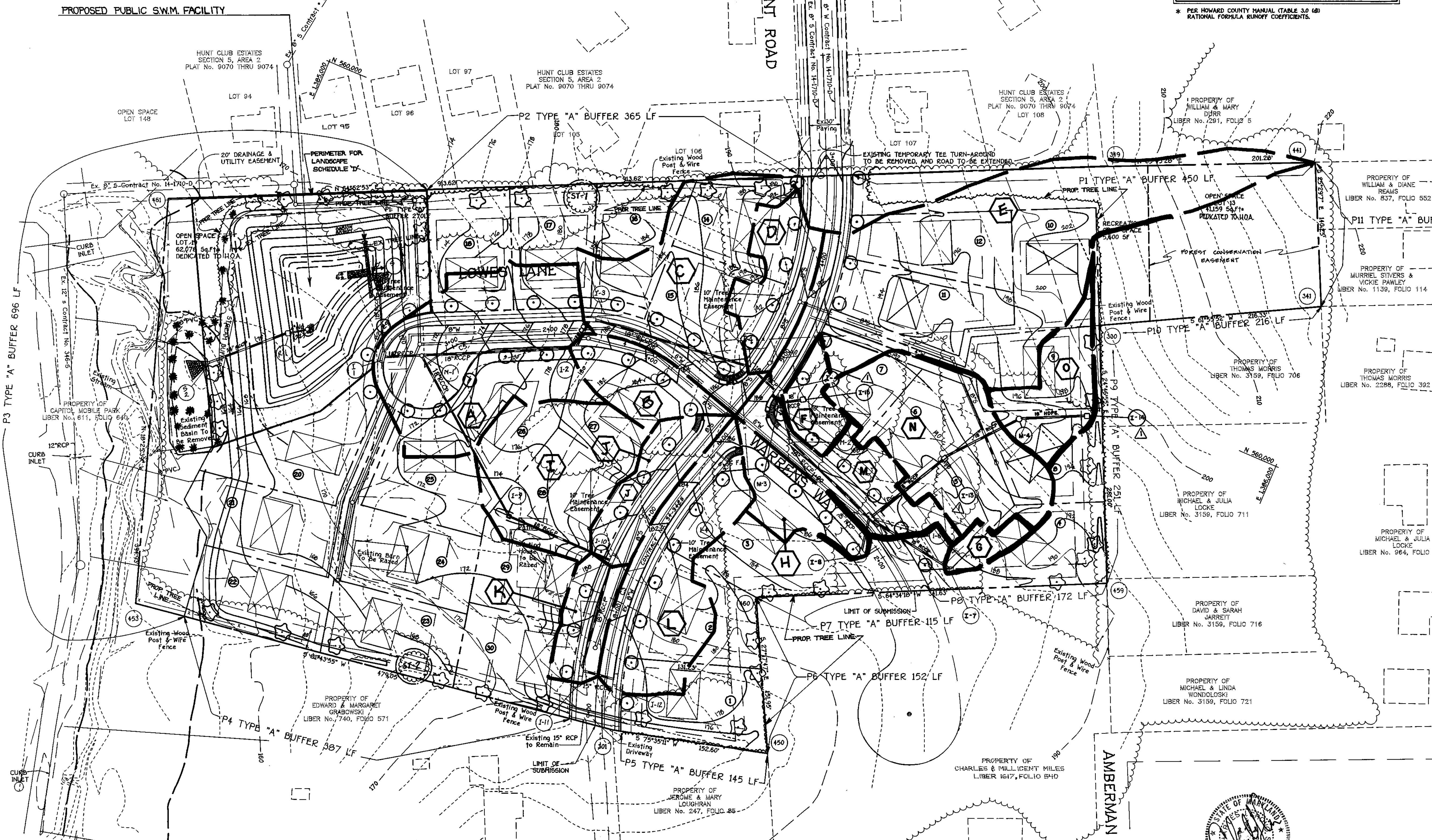
REVIEW FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
 Signature: *Carol Simmons* DATE: 11/3/97
 U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 Signature: *Robert W. Ziehm* DATE: 11/97
 HOWARD SOIL CONSERVATION DISTRICT

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Signature: *Kurtland Blood* DATE: 2/1/97
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Signature: *Bill Drayman* DATE: 2/1/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Signature: *Stephen M. Panchish* DATE: 1-20-97
 CHIEF, BUREAU OF HIGHWAYS



PLANT LIST

QTY	KEY	NAME	SIZE
20	*	PLUM SYROPSIS EASTERN WHITE PINE (EVERGREEN)	6'-8' HEIGHT
36	*	ACER RUBRUM RED SUNSET RED MAPLE	2 1/2"-3" CAL.

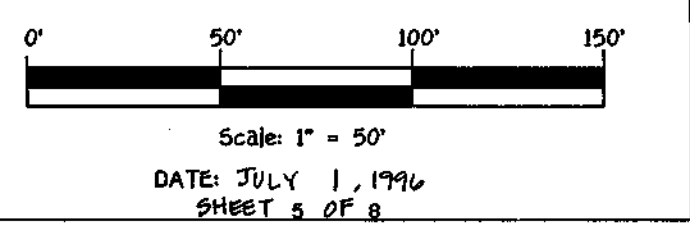
STREET TREE SCHEDULE

SYMBOL	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
○	ACER RUBRUM 'OCTOBER GLORY' RED MAPLE	2 1/2"-3" CAL.	40' APART ON PUBLIC- RIGHT-OF- WAY.

NOTE: STREET TREES ARE ONLY A RECOMMENDATION, THIS MAY BE REVISED TO A COUNTY ACCEPTABLE EQUIVALENT.
 TOTAL NUMBER OF STREET TREES: 36



LANDSCAPE PLAN & DRAINAGE AREA MAP
GOSHEN ESTATES
 LOTS 1 - 30
 TAX MAP No. 38, PARCEL #50
 FIRST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND



SPECIMEN TREES

NO.	NAME	CONDITION
ST-1	30" MOCKERNUT HICKORY	EXCELLENT
ST-2	31" PIN OAK	EXCELLENT

NO.	DESCRIPTION	DATE
1	ADDED I-13, I-14 & I-15	10-6-99

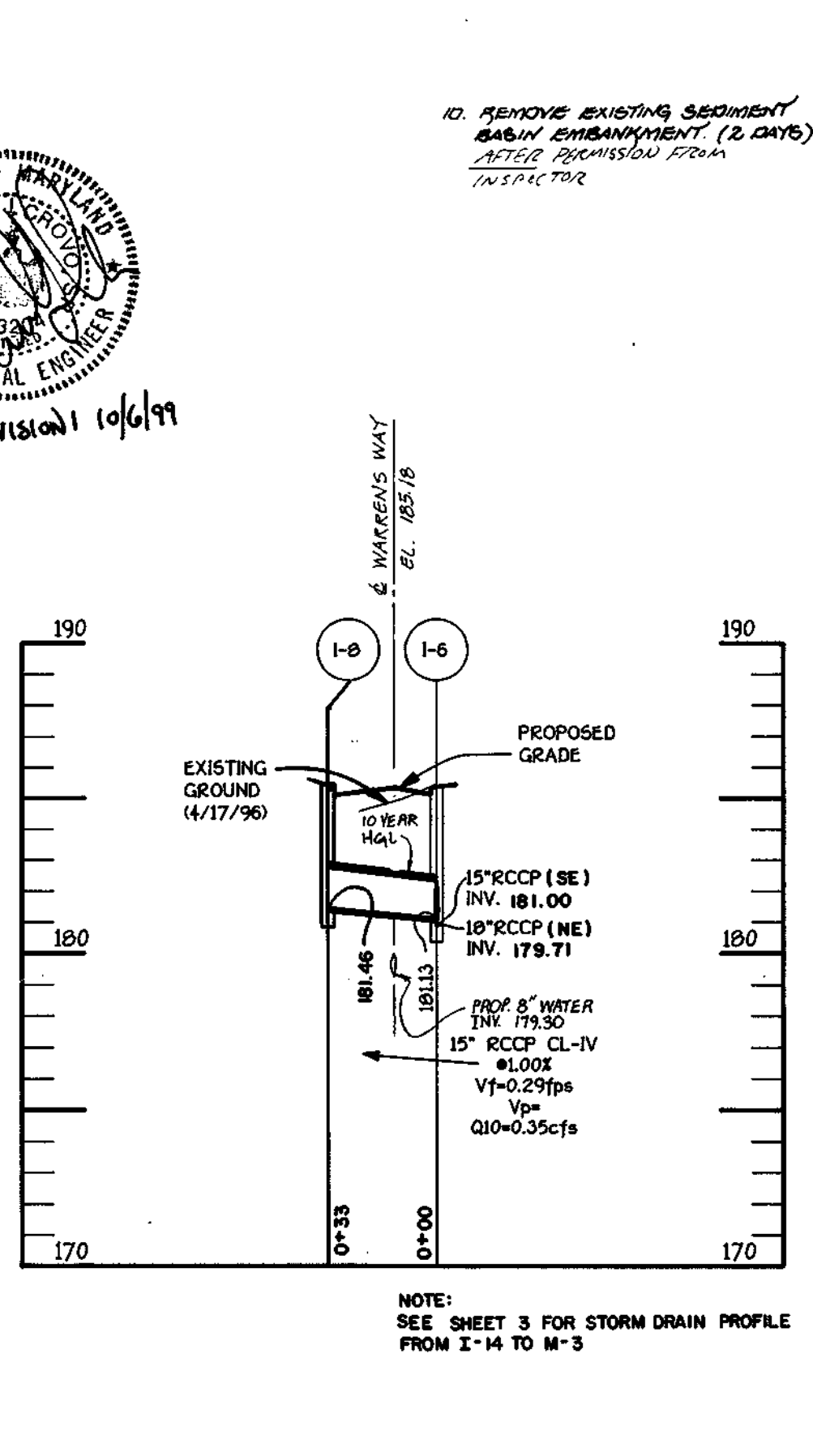
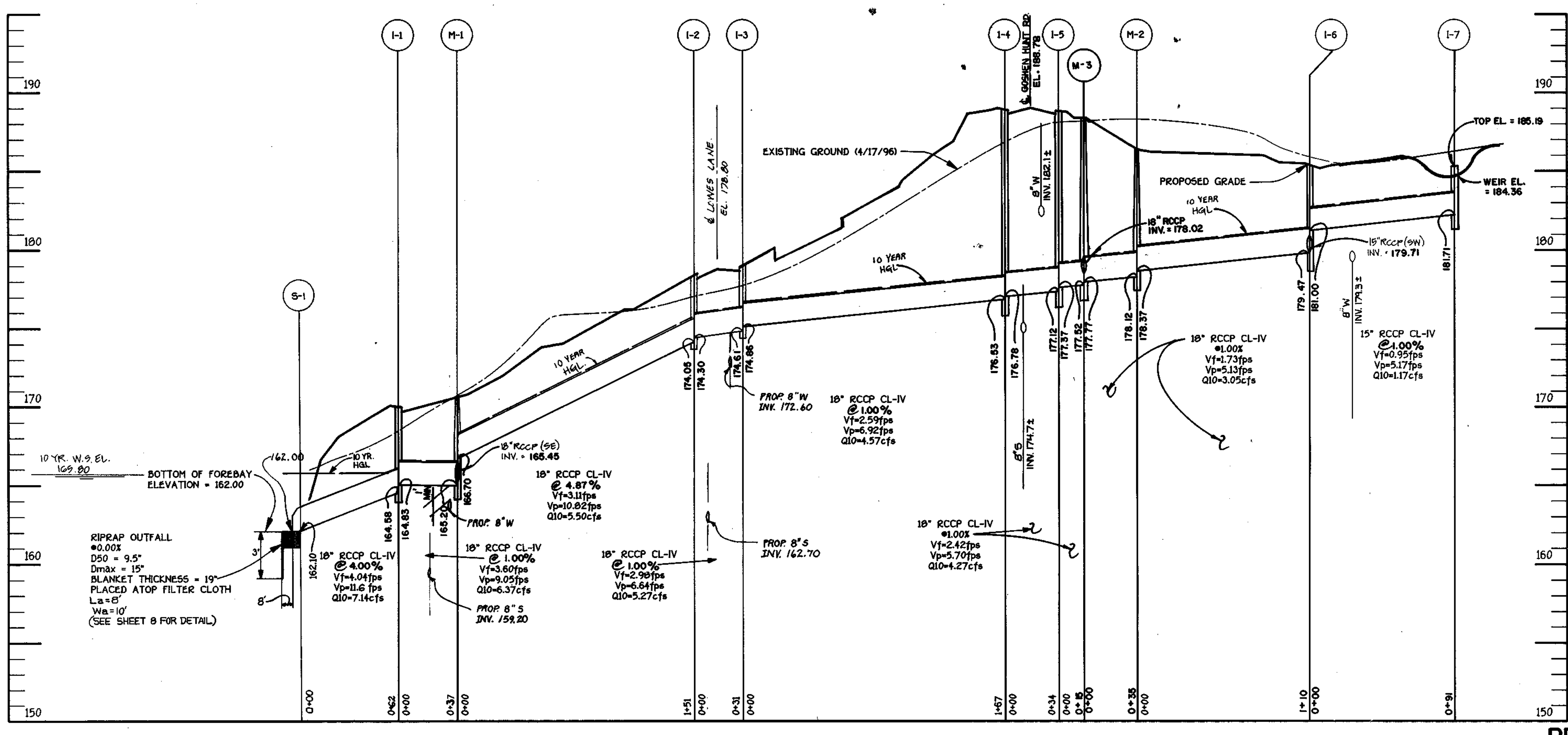
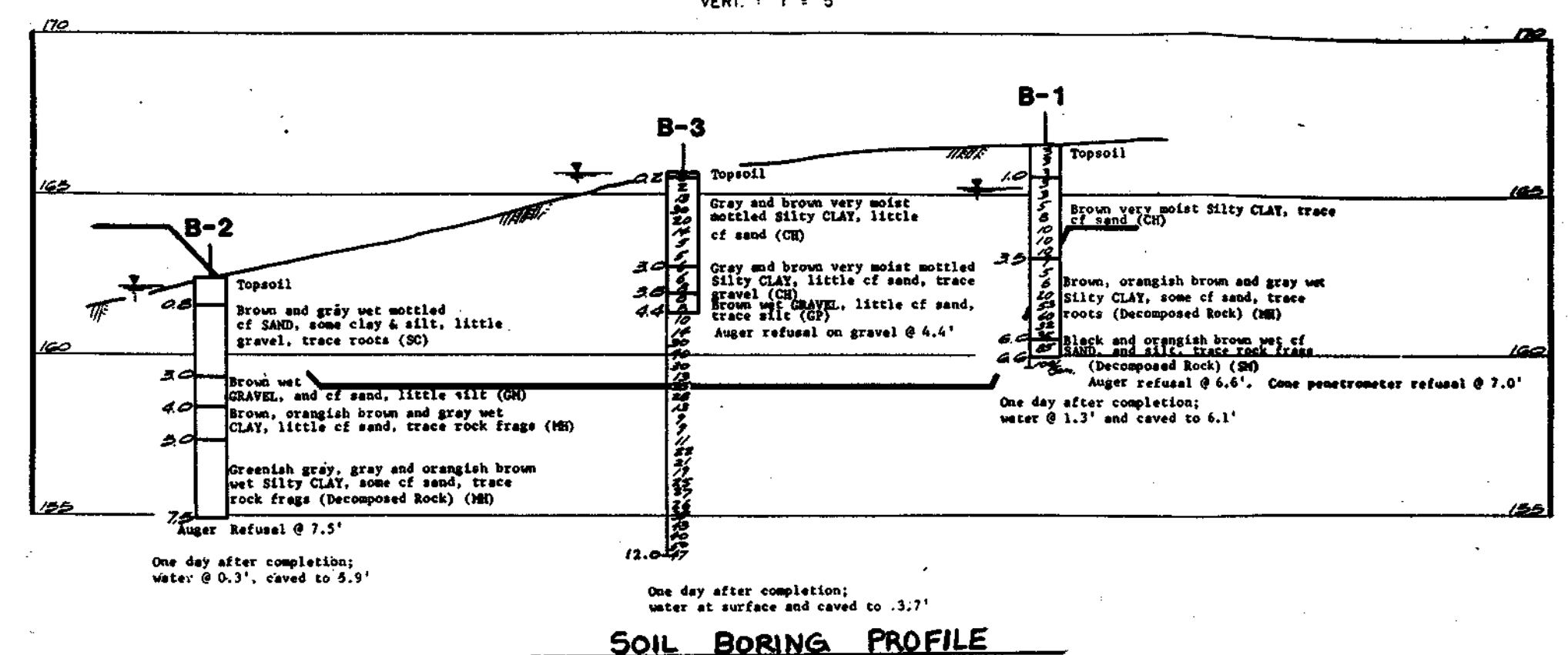
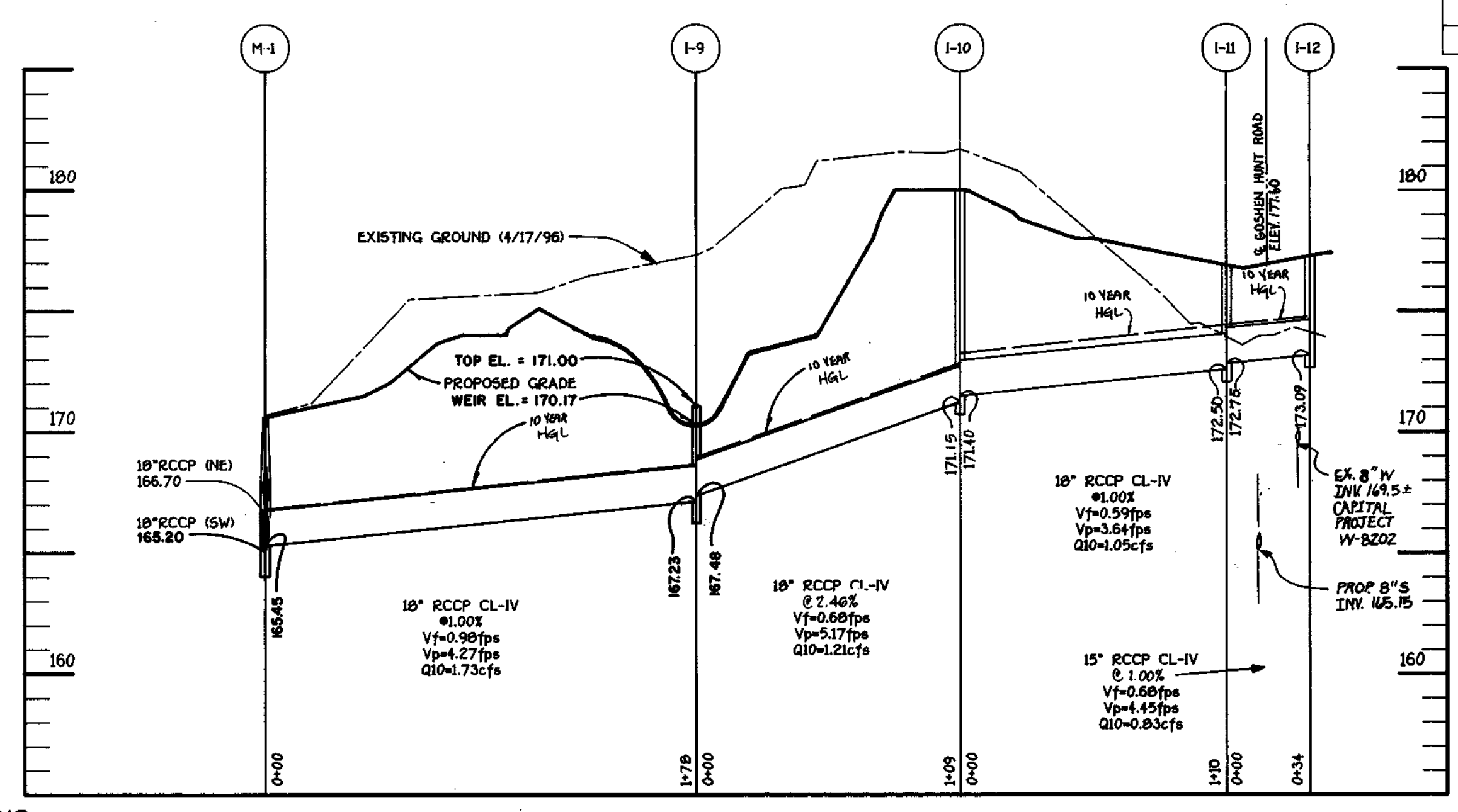
OWNER
 GEORGE CARR
 9728 GUIDEL DRIVE
 ELLICOTT CITY, MARYLAND 21042

DEVELOPER
 LANDMARK DEVELOPMENT SERVICES, INC.
 14831 SHELBY WAY
 GLENELG, MARYLAND 21737

OWNER
 WARREN LOVE
 6896 WASHINGTON BLVD.
 ELK RIDGE, MARYLAND 21121

FISHER, COLLINS & CARTER, INC.
 CIVIL, ENGINEERING, CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10275 BALTIMORE NATIONAL Pkwy
 ELLICOTT CITY, MARYLAND 21044
 (410) 481-2855

8481



NO.	DESCRIPTION	DATE
1	ADDED I-13, I-14 & I-15 AND ADJUSTED STORM DRAIN INVERTS ACCORDINGLY	10-6-99

STRUCTURE SCHEDULE								
STRUCTURE NO.	TOP ELEVATION	INV IN	INV OUT	ROAD NAME	ROAD STA.	OFFSET	TYPE	REMARKS
I-1	169.71	164.83	164.56	LOWES LANE	LP STA. 172.68	---	A-10	S.D. 4.41
I-2	174.45	174.30	174.05	LOWES LANE	CL STA. 1479	14LT	A-5	S.D. 4.40
I-3	171.11	174.86	174.81	LOWES LANE	CL STA. 1466	14RT	A-5	S.D. 4.40
I-4	186.59	176.79	176.53	GOSHEN HUNT ROAD	CL STA. 5433	17RT	A-5	S.D. 4.40
I-5	186.68	177.37	177.32	GOSHEN HUNT ROAD	CL STA. 5405.5	17LT	A-10	S.D. 4.41
I-6	185.32	179.71	180.80	WARRENS WAY	CL STA. 1465	14LT	A-5	S.D. 4.40
I-7	185.19	---	181.91	---	N 5567834 E 14652937	---	10" INLET	S.D. 4.11
I-8	185.15	---	181.46	WARRENS WAY	CL STA. 1463	14RT	A-5	S.D. 4.40
I-9	171.00	167.48	167.23	---	N 5567837 E 14653334	---	10" INLET	S.D. 4.11
I-10	180.06	171.40	171.15	GOSHEN HUNT ROAD	CL STA. 7496	17RT	A-5	S.D. 4.40
I-11	177.63	172.75	172.50	GOSHEN HUNT ROAD	CL STA. 8464	17RT	A-5	S.D. 4.40
I-12	177.57	---	173.09	GOSHEN HUNT ROAD	CL STA. 8471	17LT	A-5	S.D. 4.40
I-13	184.24	180.80	180.63	---	---	---	10" INLET	S.D. 4.11
I-14	195.83	---	191.50	---	---	---	10" INLET	S.D. 4.11
I-15	185.59	---	178.25	GOSHEN HUNT ROAD	CL STA. 5473	43LT	10" INLET	S.D. 4.11
M-1	171.26	185.45, 166.70	165.20	LOWES LANE	N 5567725 E 14652937	---	STD. MANHOLE	G - 5.13
M-2	186.48	176.37	176.12	WARRENS WAY	CL STA. 0458	19LT	STD. MANHOLE	G - 5.13
M-3	187.84	178.02, 177.77	177.52	GOSHEN HUNT ROAD	CL STA. 5440	29LT	STD. MANHOLE	G - 5.13
M-4	198.20	190.85	186.62	---	---	---	STD. MANHOLE	G - 5.13
S-1	163.60	162.10	162.00	---	N 5568632 E 14653124	---	CONC. END SECTION	S.D. 5.51

POUND SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard Specifications for Road and Bridge Construction, 1997 Edition, Section 100.01.

Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, rocks and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped no steeper than 1:1.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, stumps, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 50 foot radius around the weir structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Earth Fill

The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 10" in diameter or other objectionable material. Fill material for the center of the embankment and out of trench shall conform to Unified Soil Classification (SC, CL, or CH). Consideration may be given to the use of other materials in the embankment design and construction are approved by a geotechnical engineer.

Placement

Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill material shall be placed in maximum 8 inch lifts (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with the placement and not excavated into the embankment.

Compaction

The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture to attain the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture when it is formed into a ball it will not crumble yet not so wet that water can be squeezed out.

Where a minimum required density is specified, it shall not be less than 96% of maximum dry density with moisture content within $\pm 2\%$ of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by ASTM Method T-99.

Cut Off Trench

The cutoff trench shall be excavated 120 inches maximum along or parallel to the crest of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The bottom shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Structure Backfill

Backfill adjacent to pipes of structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in uniform layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At times during the backfilling operation shall be given any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Measurements

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be checked an adequate number of connections to accommodate the bend widths. The following type connections are acceptable for pipe less than 24" in diameter: flanges on both ends of the pipe, a 12" wide standard lap type joint band with 3/8" thick closed cell neoprene gasket, and a 12" wide rubber pipe band with 3/8" thick closed cell neoprene gasket. The diameter of the pipe shall be 1/2" greater than the connection diameter. Pipes 24" in diameter and larger shall be connected by 24" long standard flange connections using bolts and nuts. A 12" wide 3/8" thick closed cell neoprene gasket shall be installed on the end of each pipe for a size of 24".

Hot Dip Galvanized Steel

Hot dip galvanized steel pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene gasket.

Aluminum Coated Steel Pipe

This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-192 with waterproof coupling bands or flanges. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pot of the surrounding soil shall be between 4 and 5.

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Reinforced Concrete Pipe

All of the following criteria shall apply for reinforced concrete pipe:

- Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-301.
- Backfill - All reinforced concrete pipe conduits shall be laid in a geotextile bedding for their entire length. This bedding shall consist of four 2 inch compacted layers of the pipe and up to the sides of the pipe at least 1 1/2" of its outside diameter with a minimum thickness of 3 inches, or as shown on the drawings.
- Laying pipe - Bell and spigot pipe shall be placed with the bell and upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the pipe is seated for the entire line, the bedding shall be placed and all spaces under the pipe shall be filled. Care shall be exercised to prevent any voids from the original line and grade of the pipe. The first joint must be located within 2 feet from the riser.
- Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

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POUND SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard Specifications for Road and Bridge Construction, 1997 Edition, Section 100.01.

Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, rocks and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped no steeper than 1:1.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, stumps, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 50 foot radius around the weir structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Earth Fill

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Placement

Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill material shall be placed in maximum 8 inch lifts (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with the placement and not excavated into the embankment.

Compaction

The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture to attain the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture when it is formed into a ball it will not crumble yet not so wet that water can be squeezed out.

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- Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DATE: _____

CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: DEPARTMENT OF PUBLIC WORKS

DATE: _____

CHIEF, BUREAU OF HIGHWAYS

ENGINEER'S CERTIFICATE

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL, REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Jayesh Bhandari 7-22-96

REGISTERED PROFESSIONAL ENGINEER

DEVELOPER'S CERTIFICATE

I HAVE CERTIFIED THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS OF DEVELOPMENT AND PLANS, 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 DURING CONSTRUCTION. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Joseph Law 7-22-96

SIGNATURE OF DEVELOPER

REVIEWED: HOWARD COUNTY SOIL CONSERVATION DISTRICT AND HELTS TECHNICAL REQUIREMENTS

Michael Simmons 11/5/97

REGISTERED PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Robert W. Zuhm 11/5/97

REGISTERED PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Michael Blood 2/2/97

REGISTERED PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

John D. ... 2/2/97

REGISTERED PROFESSIONAL ENGINEER

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Charles M. ... 1-22-97

CHIEF, BUREAU OF HIGHWAYS

- SEQUENCE OF CONSTRUCTION
- OBTAIN GRADING PERMIT (1 DAY).
 - NOTIFY "MIS UTILITY" 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY HOWARD COUNTY OFFICE OF CONSTRUCTION INSPECTION DIVISION (410) 313-1870, 24 HOURS BEFORE STARTING ANY WORK.
 - INSTALL ALL TREE PROTECTION FENCE FOR TREES TO BE UNDISTURBED (1 DAY).
 - INSTALL SEDIMENT CONTROL MEASURES, STONE CONSTRUCTION ENTRANCE, EARTH DICES AND SILT FENCE. STORMWATER MANAGEMENT PONDS ARE TO BE BUILT. UTILIZE FOR SEDIMENT CONTROL CONTRACTOR IS TO INSTALL SWALES/CHANNELS WITH TEMPORARY SEEDING AND SILENT MATING. GET PERMISSION FROM SEDIMENT CONTROL INSPECTORS TO PROCEED.
 - GRADE SITE TO SUBGRADE, STABILIZE AND INSTALL STORM DRAINS (4 WEEKS).
 - THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON AFTER EACH RAINFALL AND ON A DAILY BASIS.
 - SEDIMENT SHALL BE REMOVED FROM THE STORMWATER MANAGEMENT POND. ONCE THE CLEANOUT ELEVATIONS HAVE BEEN REACHED, SEDIMENT MUST BE PLACED UPHILL FROM THE POND AREA.
 - INSTALL CURB AND GUTTER AND ROAD BASE COURSE (7 DAYS).
 - STABILIZE ALL DISTURBED AREAS AND OBTAIN PERMISSION FROM SEDIMENT CONTROL INSPECTORS TO PROCEED (2 DAYS).
 - CONVERT STORMWATER MANAGEMENT PONDS FROM SEDIMENT BASIN TO THE PERMANENT STORMWATER MANAGEMENT POND (2 DAYS).
 - UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROL MEASURES NOT NEEDED AND FLUSH STORM DRAIN SYSTEM TO REMOVE TRAPPED SEDIMENT (2 DAYS).
 - ALL AREAS DISTURBED DUE TO THE REMOVAL OF SEDIMENT CONTROL: MEASURES SHALL BE GRADED AND STABILIZED BY PERMANENT SEEDING (2 DAYS).

GOSHEN ESTATES
LOTS 1-30

TAX MAP NO. 38 FIRST ELECTION DISTRICT PARCEL NUMBER 60 HOWARD COUNTY, MARYLAND

STORM DRAIN PROFILES

OWNER: GEORGE CARP 9728 QUAIL DRIVE ELLICOTT CITY, MARYLAND 21042

OWNER: WARDEN LOVE 6696 WASHINGTON BLVD. ELLICOTT CITY, MARYLAND 21042

DEVELOPER: LANDMARK DEVELOPMENT SERVICES, INC. 1831 SARLING WAY GLENELG, MARYLAND 21737

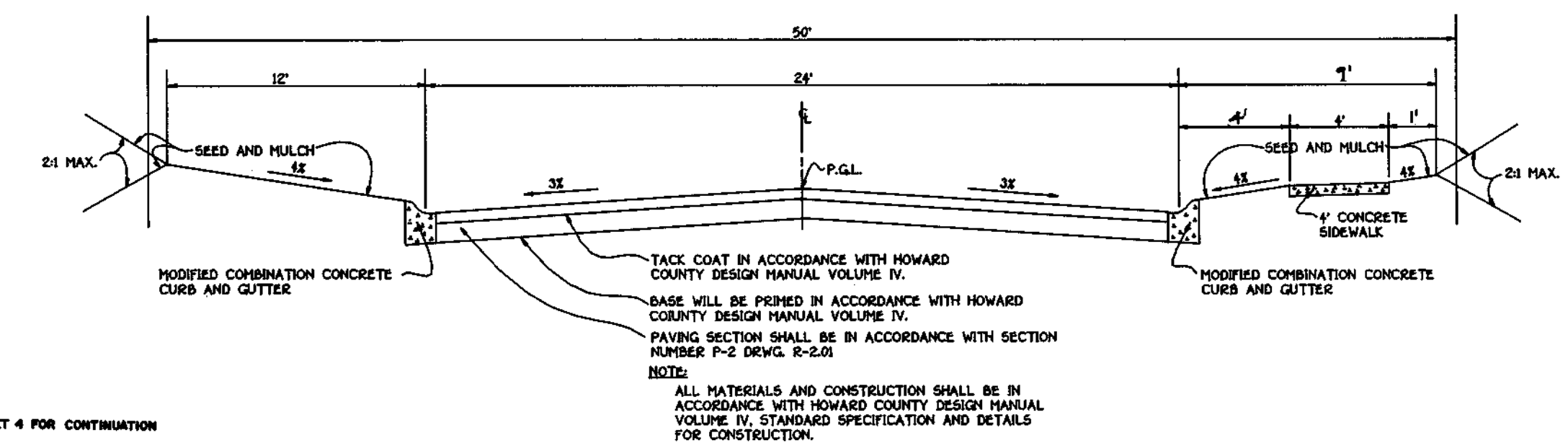
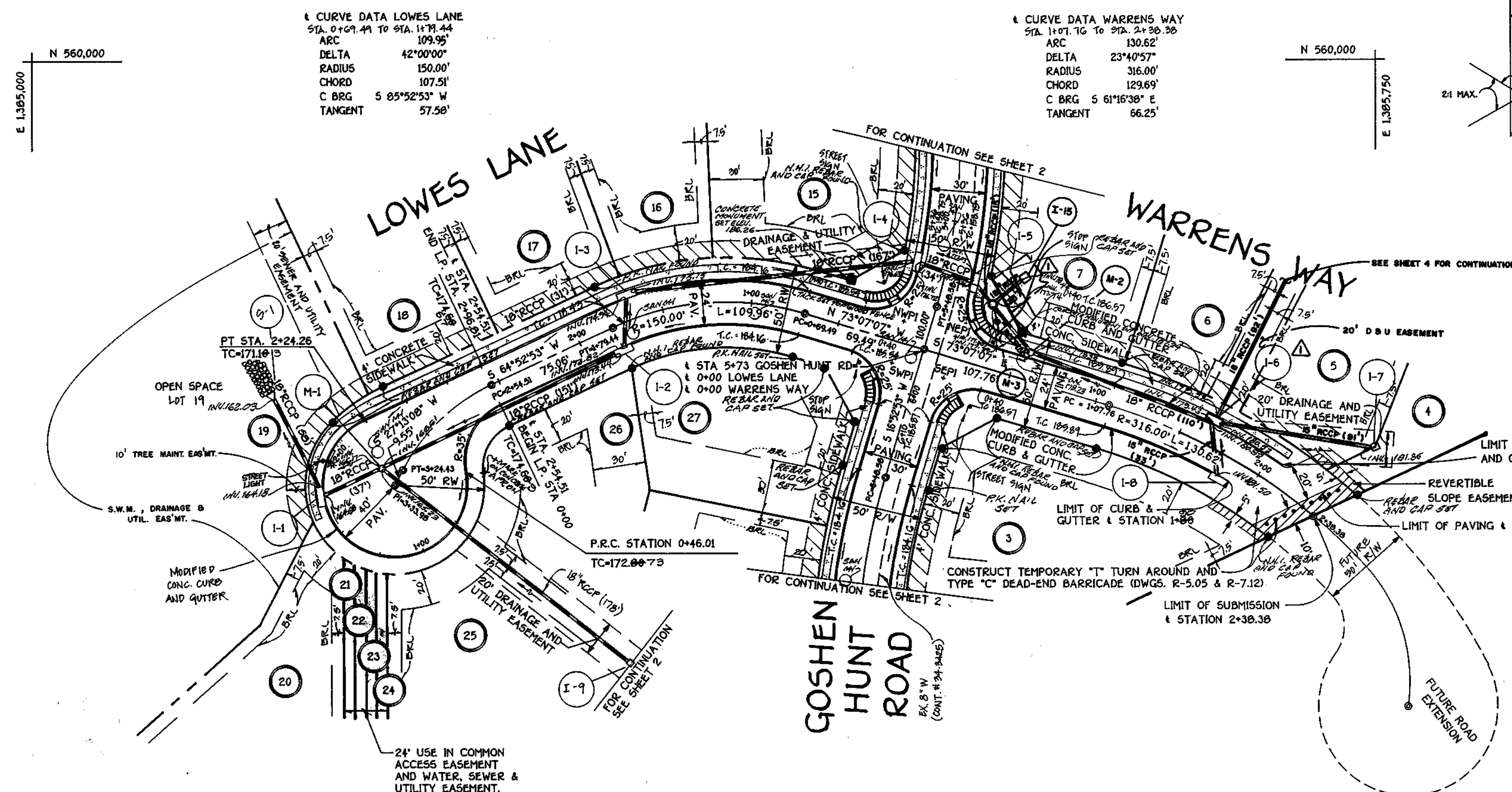
SCALE: AS SHOWN DATE: 7/1/96 DWG. NO. 6 OF 8

DES. M.A.K. DRN. M.A.L. CHK. B.J.K.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL Pkwy ELLICOTT CITY, MARYLAND 21042 410-481-2992

1849

F-97-23



ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	STATION LIMITS
WARRENS WAY	CUL-DE-SAC	25 M.P.H.	R-12	0+00 TO 2+08
LOWES LANE	CUL-DE-SAC	25 M.P.H.	R-12	0+00 TO 2+54.81

GOSHEN ESTATES
 LOTS 1-30

TAX MAP NO. 38
 FIRST ELECTION DISTRICT

PARCEL NUMBER 60
 HOWARD COUNTY, MARYLAND

LOWES LANE & WARRENS WAY
 PLAN AND PROFILE

OWNER	OWNER
GEORGE CARB 9729 GUIDEL DRIVE ELLCOTT CITY, MARYLAND 21042	WARREN LOME 6696 WASHINGTON BLVD. ELKDRIDGE, MARYLAND 21227

DEVELOPER
 LANDMARK DEVELOPMENT SERVICES, INC.
 1401 SHELBY WAY
 CLEMENS, MARYLAND 21737

SCALE	DATE	DWG. NO.
AS SHOWN	7/1/99	3 OF 8

DES. M.A.K. DSN. M.A.K. CHK. B.J.K.

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CONTINENTAL SQUARE OFFICE PARK - 1872 BALTIMORE NATIONAL PIKE
 ELLCOTT CITY, MARYLAND 21042
 410 481 - 2855

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Richard Blood 2/1/97
 CHIEF, DIVISION OF LAND DEVELOPMENT JA DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chad Dammann 2/3/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

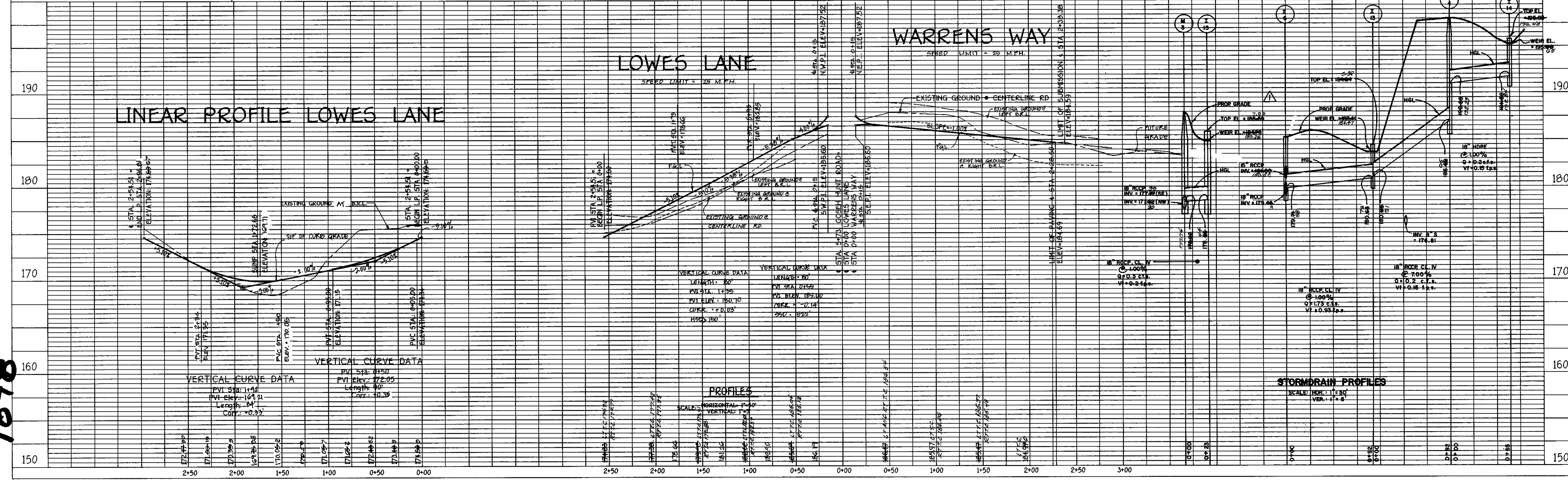
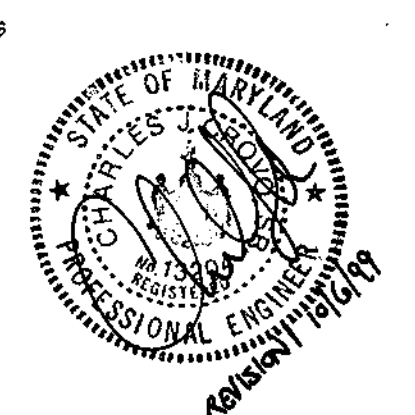
Richard M. Daniels 1-20-97
 CHIEF, BUREAU OF HIGHWAYS HS DATE

PLAN
 SCALE: 1"=50'

NOTE: ALL R.C.C.P. STORM DRAIN PIPES ARE TO BE CLASS III.

NO.	DESCRIPTION	DATE
1	ADDED I-13, I-14 & I-15	10-6-99

REVISIONS



1848

DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND THAT ANY RESPONSIBLE PERSONNEL IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES 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 OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

Joseph W. Simon July 22, 1996
 SIGNATURE OF DEVELOPER DATE

ENGINEER'S CERTIFICATE

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

Joseph R. Bunch 7-22-96
 SIGNATURE OF ENGINEER DATE

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

Joseph Simon 1/15/97
 S.E.A. NATURAL RESOURCES CONSERVATION SERVICE DATE

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

APPROVED: *Robert W. Fisher* 1/15/97
 HOWARD SOIL CONSERVATION DISTRICT DATE

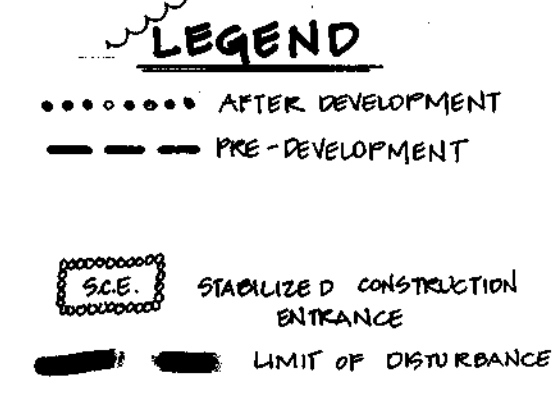
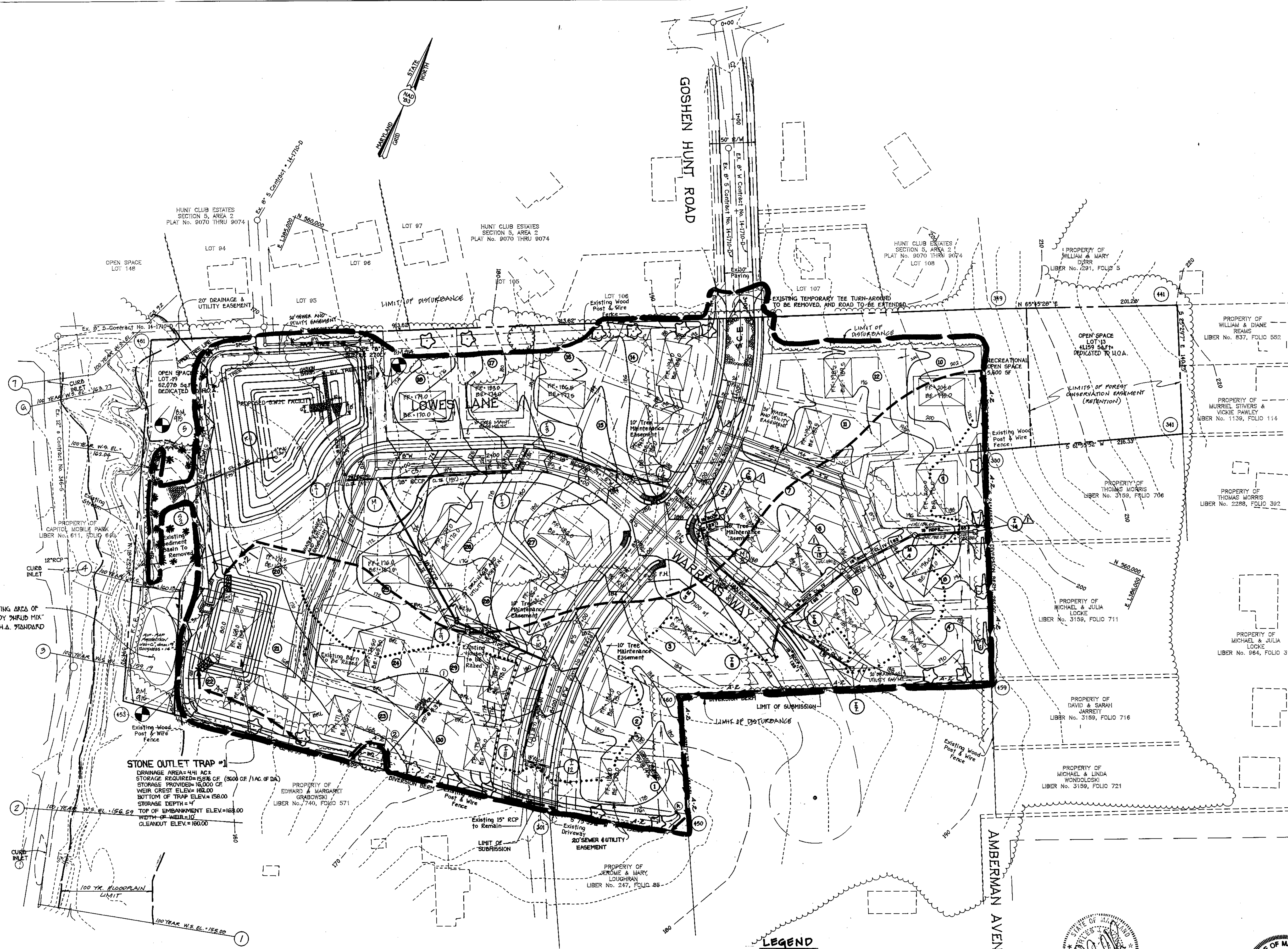
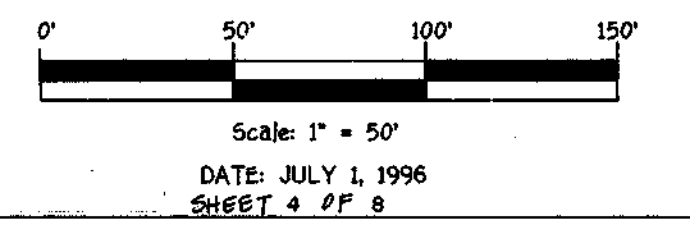
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Richard Blood 1/7/97
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Charles Simon 2/3/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Joseph M. Pender 1-20-97
 CHIEF, BUREAU OF HIGHWAYS DATE

HUNT CLUB ROAD

SEDIMENT AND EROSION CONTROL AND GRADING PLAN
GOSHEN ESTATES
 LOTS 1 - 30
 TAX MAP No. 38, PARCEL #60
 FIRST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND



NO.	DESCRIPTION	DATE
1	ADDED I-13, I-14 & I-15	10-6-99
REVISIONS		



STONE OUTLET TRAP #1
 DRAINAGE AREA=441 AC±
 STORAGE REQUIRED=15,876 CF (3600 CF/1 AC OF DA)
 STORAGE PROVIDED=16,000 CF
 WEIR CREST ELEV=162.00
 BOTTOM OF TRAP ELEV=158.00
 STORAGE DEPTH=4'
 TOP OF EMBANKMENT ELEV=163.00
 WIDTH OF WEIR=10'
 CLEANOUT ELEV.=160.00

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21114
 (410) 481-2855

OWNER
 GEORGE CARR
 3729 GUELDRIVE
 ELLICOTT CITY, MARYLAND 21104

DEVELOPER
 LANDMARK DEVELOPMENT SERVICES, INC.
 14031 SAPPING WAY
 GLENELG, MARYLAND 21737

OWNER
 WARREN LOWE
 6696 WASHINGTON BLVD.
 ELK RIDGE, MARYLAND 21227

9481

SCHEDULE D	
LINEAR FEET OF PERIMETER	840 LF.
NUMBER OF TREES REQUIRED	640/80=12 SHADE 640/40=16 EVERGREEN (BASED ON 640')
CREDIT FOR EXISTING VEGETATION (YES, NO, AND %)	YES, 200'
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET)	NO
NUMBER OF PLANTS REQUIRED	12 SHADE TREES 16 EVERGREEN TREES

LEGEND

- (A) DRAINAGE AREA'S
- (I-1) INLET NUMBER
- DRAINAGE AREA LINE
- (ST-1) SPECIMEN TREE
- WELL TREE PROTECTION

DRAINAGE AREA DATA					
STRUCTURE NO.	DRAINAGE AREA	AREA	C	ZONED	I.F.P.*
I-1	A	0.63 AC.	0.29	R-12	0.35
I-2	B	0.18 AC.	0.29	R-12	0.35
I-3	C	0.56 AC.	0.29	R-12	0.35
I-4	D	0.21 AC.	0.29	R-12	0.35
I-5	E	1.30 AC.	0.29	R-12	0.35
I-15	F	0.12 AC.	0.29	R-12	0.35
I-7	G	0.06 AC.	0.29	R-12	0.35
I-8	H	0.16 AC.	0.29	R-12	0.35
I-9	I	0.42 AC.	0.29	R-12	0.35
I-10	J	0.18 AC.	0.29	R-12	0.35
I-11	K	0.13 AC.	0.29	R-12	0.35
I-12	L	0.44 AC.	0.29	R-12	0.35
I-6	M	0.24 AC.	0.29	R-12	0.35
I-13	N	0.62 AC.	0.29	R-12	0.35
I-14	O	0.08 AC.	0.29	R-12	0.35

* PER HOWARD COUNTY MANUAL (TABLE 3.0 (4))
RATIONAL FORMULA RUNOFF COEFFICIENTS.

DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND THAT ANY RESPONSIBLE PERSONNEL IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES 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 OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

Signature: *George W. Low* DATE: July 22 1996

ENGINEER'S CERTIFICATE

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

Signature: *Jessie Panchak* DATE: 7-22-96

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

Signature: *Richard Simmons* DATE: 11/2/97

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

Signature: *Robert W. Ziehm* DATE: 1/19/97

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Signature: *Richard Blood* DATE: 2/1/97

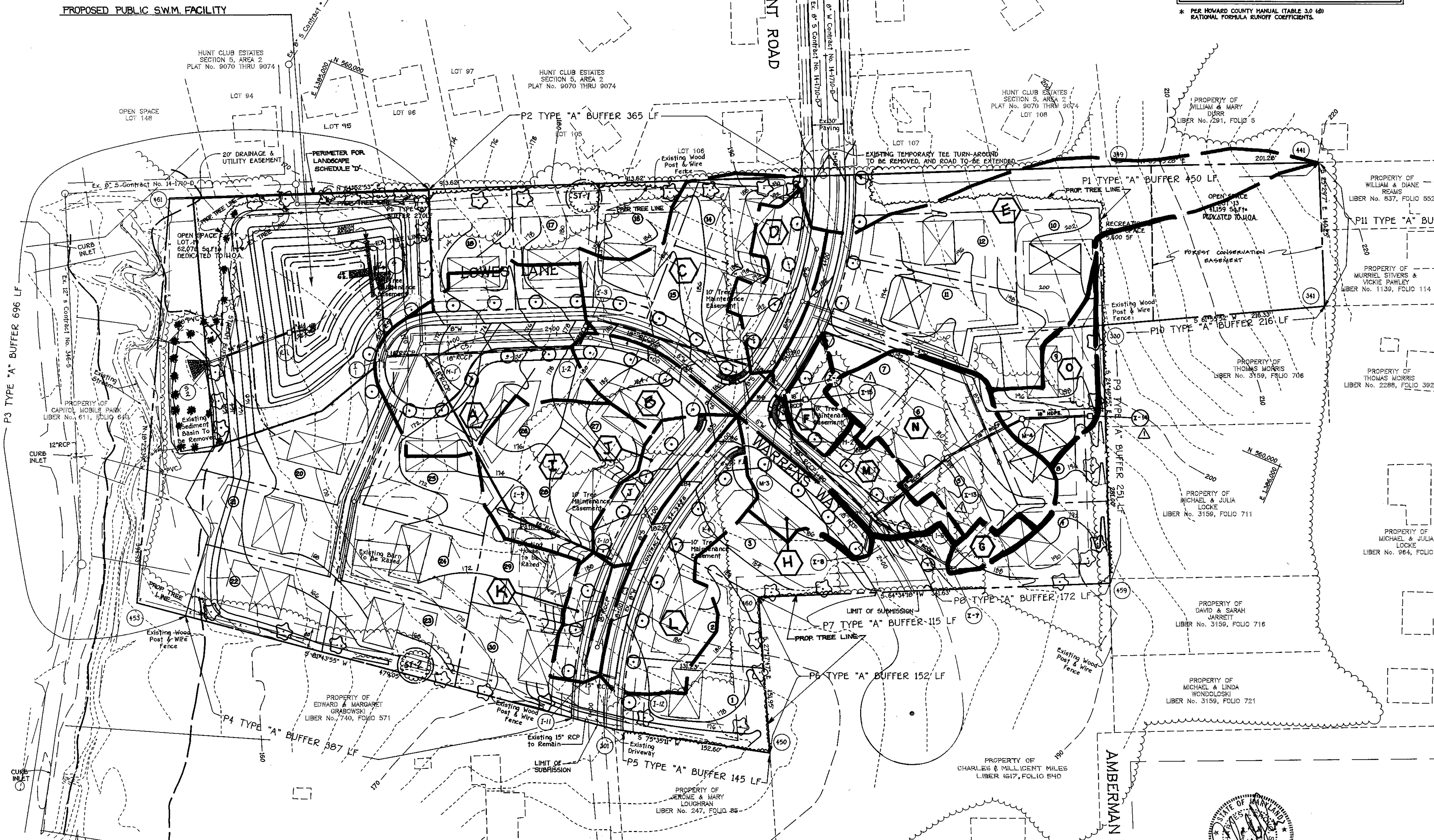
APPROVED: DEPARTMENT OF PLANNING AND ZONING

Signature: *William M. DeWitt* DATE: 2/1/97

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Signature: *Richard M. Panchak* DATE: 1-20-97

CHIEF, BUREAU OF HIGHWAYS



HUNT CLUB ROAD

PLANT LIST			
QTY	KEY	NAME	SIZE
20	*	PINUS STROBUS EASTERN WHITE PINE (EVERGREEN)	6'-8' HEIGHT
36	*	ACER RUBRUM RED SUNSET RED MAPLE	2 1/2"-3" CAL.

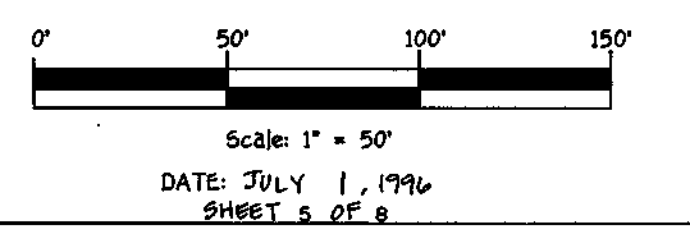
STREET TREE SCHEDULE

SYMBOL	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
○	ACER RUBRUM 'OCTOBER GLORY' RED MAPLE	2 1/2" - 3" CAL.	40' APERT ON PUBLIC-RIGHT-OF-WAY.

NOTE: STREET TREES ARE ONLY A RECOMMENDATION, THIS MAY BE REVISED TO A COUNTY ACCEPTABLE EQUIVALENT.
TOTAL NUMBER OF STREET TREES: 56



LANDSCAPE PLAN & DRAINAGE AREA MAP
GOSHEN ESTATES
LOTS 1 - 30
TAX MAP No. 36, PARCEL #60
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND



SPECIMEN TREES

NO.	NAME	CONDITION
ST-1	36" MOCKERNUT HICKORY	EXCELLENT
ST-2	31" PIN OAK	EXCELLENT

NO.	DESCRIPTION	DATE
1	ADDED I-13, I-14 & I-15	10-6-99

OWNER: GEORGE CARR, 9728 GUELDRIVE, ELLICOTT CITY, MARYLAND 21042
DEVELOPER: LANDMARK DEVELOPMENT SERVICES, INC., 1431 SHELBY WAY, GLENELG, MARYLAND 21737
OWNER: WARREN LOWE, 6696 WASHINGTON BLVD., ELK RIDGE, MARYLAND 21027

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10722 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
4100 461 - 2095

NOTE: THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 12.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY REQUIRED 52 LANDSCAPE TREES, IN THE AMOUNT OF \$ 5,200.00, IS PART OF THE DEVELOPER'S AGREEMENT.

NO.	DESCRIPTION	DATE
1	ADDED I-11, I-14 & I-15 AND ADJUSTED STORMDRAIN INVERTS ACCORDINGLY	10-6-99

STRUCTURE SCHEDULE									
STRUCTURE NO.	TOP ELEVATION	INVERT	INVERT	ROAD NAME	ROAD STA.	OFFSET	TYPE	REMARKS	
I-1	169.9175	164.8362	164.962	LOWES LANE	LP STA. 172.66		A-10	S.D. 4.41	
I-2	170.447	174.893.62	174.893.64	LOWES LANE	CL STA. 179.25		A-5	S.D. 4.40	
I-3	173.25	174.865.16	174.865.16	LOWES LANE	CL STA. 166.50		A-5	S.D. 4.40	
I-4	180.447	176.792	176.83	GOSHEN HUNT ROAD	CL STA. 53.95		A-5	S.D. 4.40	
I-5	180.6077	177.8724	177.8724	GOSHEN HUNT ROAD	CL STA. 53.95		A-10	S.D. 4.41	
I-6	195.342	179.9182.82	179.9182.82	WARREN'S WAY	CL STA. 146.6		A-5	S.D. 4.40	
I-7	184.425	181.21.95	181.21.95	WARREN'S WAY	CL STA. 146.6		A-5	S.D. 4.41	
I-8	184.425	181.21.95	181.21.95	WARREN'S WAY	CL STA. 146.6		A-5	S.D. 4.40	
I-9	171.00	167.40.8	167.40.17				A-5	S.D. 4.41	
I-10	180.36	171.40.94	171.5	GOSHEN HUNT ROAD	CL STA. 174.50		A-5	S.D. 4.40	
I-11	177.449.64	172.35	172.544	GOSHEN HUNT ROAD	CL STA. 84.69		A-5	S.D. 4.40	
I-12	177.449.64	172.35	172.544	GOSHEN HUNT ROAD	CL STA. 84.69		A-5	S.D. 4.40	
I-13	184.425	180.68.21	180.68.21				A-5	S.D. 4.41	
I-14	176.604.40	176.604.40	176.604.40				A-5	S.D. 4.41	
I-15	186.672.22	176.604.40	176.604.40	GOSHEN HUNT ROAD	CL STA. 57.3		A-5	S.D. 4.41	
M-1	171.8677	165.33	165.33	LOWES LANE	CL STA. 172.66		STD. MANHOLE	G-5.13	
M-2	186.40.54	170.37.8	170.37.8	WARREN'S WAY	CL STA. 146.6		STD. MANHOLE	G-5.13	
M-3	187.44.2	172.82	177.33	GOSHEN HUNT ROAD	CL STA. 54.0		STD. MANHOLE	G-5.13	
M-4	198.44.7	198.65.2.28	186.60.2	GOSHEN HUNT ROAD	CL STA. 54.0		STD. MANHOLE	G-5.13	
S-1	163.60.43	168.17.29	168.60.1.88				CONC. END SECTION	S.D. 5.51	

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS

ENGINEER'S CERTIFICATE
 I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD COUNTY CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Signature 7-22-96
 DATE

DEVELOPER'S CERTIFICATE
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND ALL APPLICABLE REGULATIONS 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 BECOMING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD COUNTY CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD COUNTY CONSERVATION DISTRICT.

Signature 7-22-96
 DATE

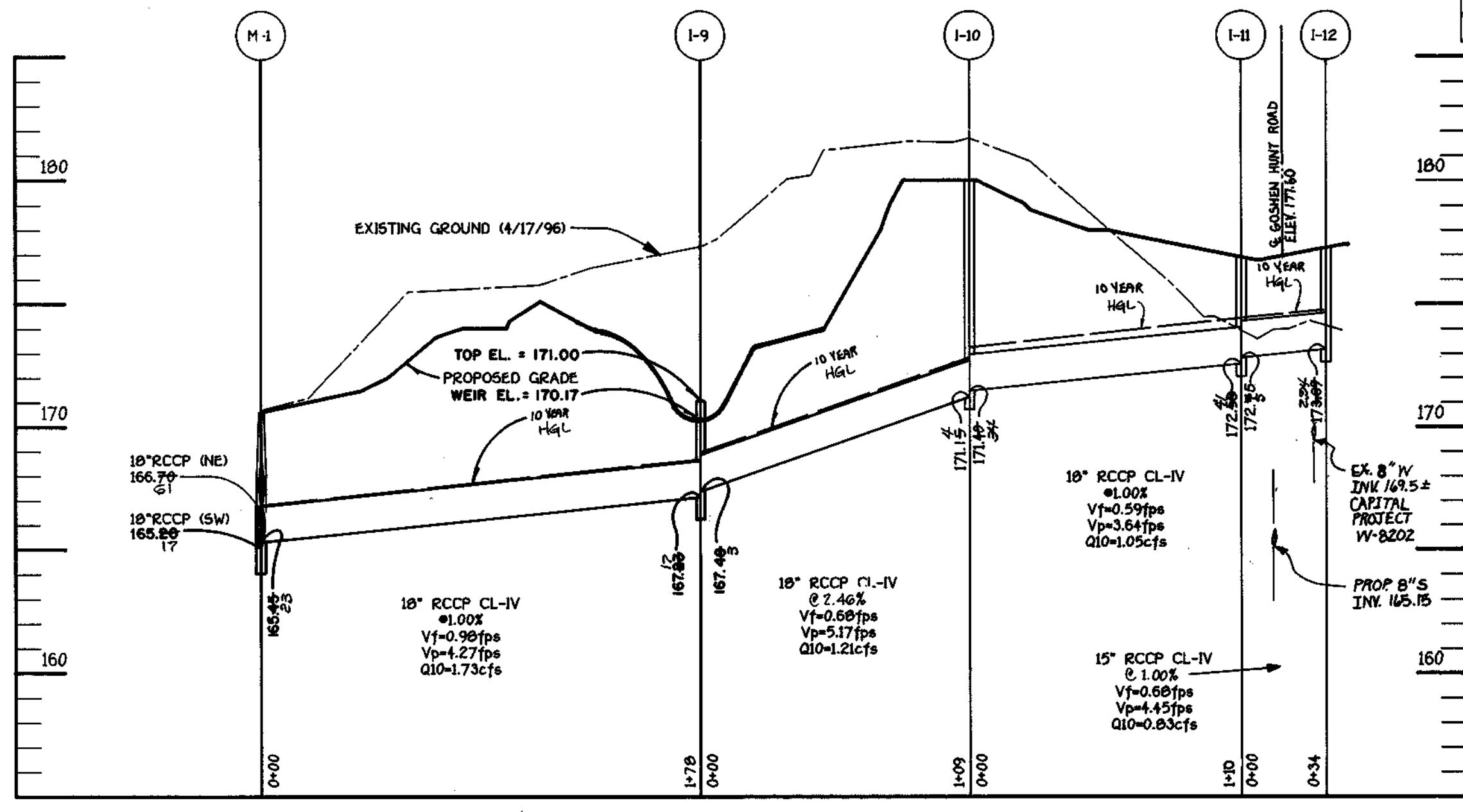
REVIEWED: HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS: *Signature* 11/5/97
 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT
 APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS

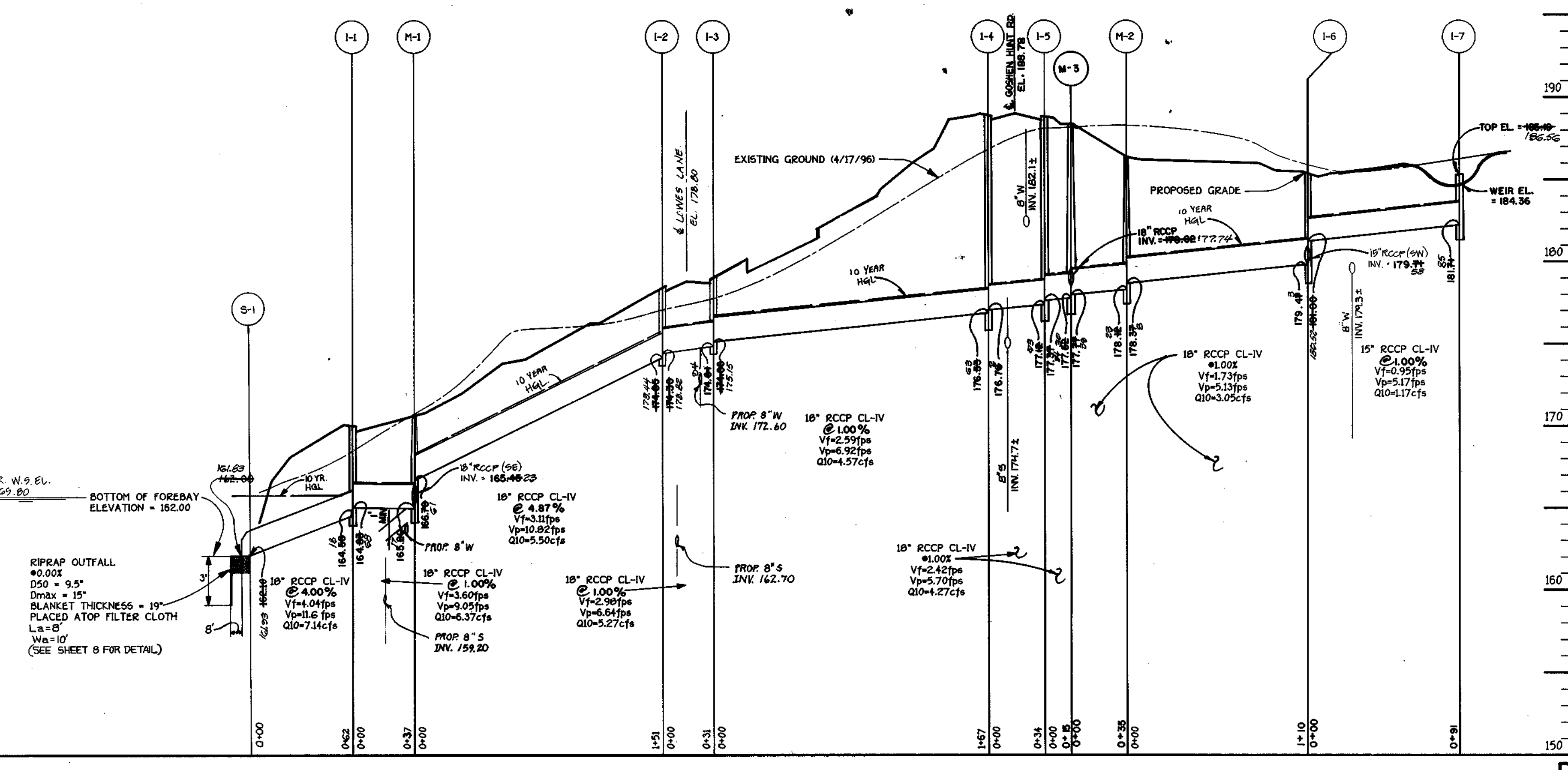
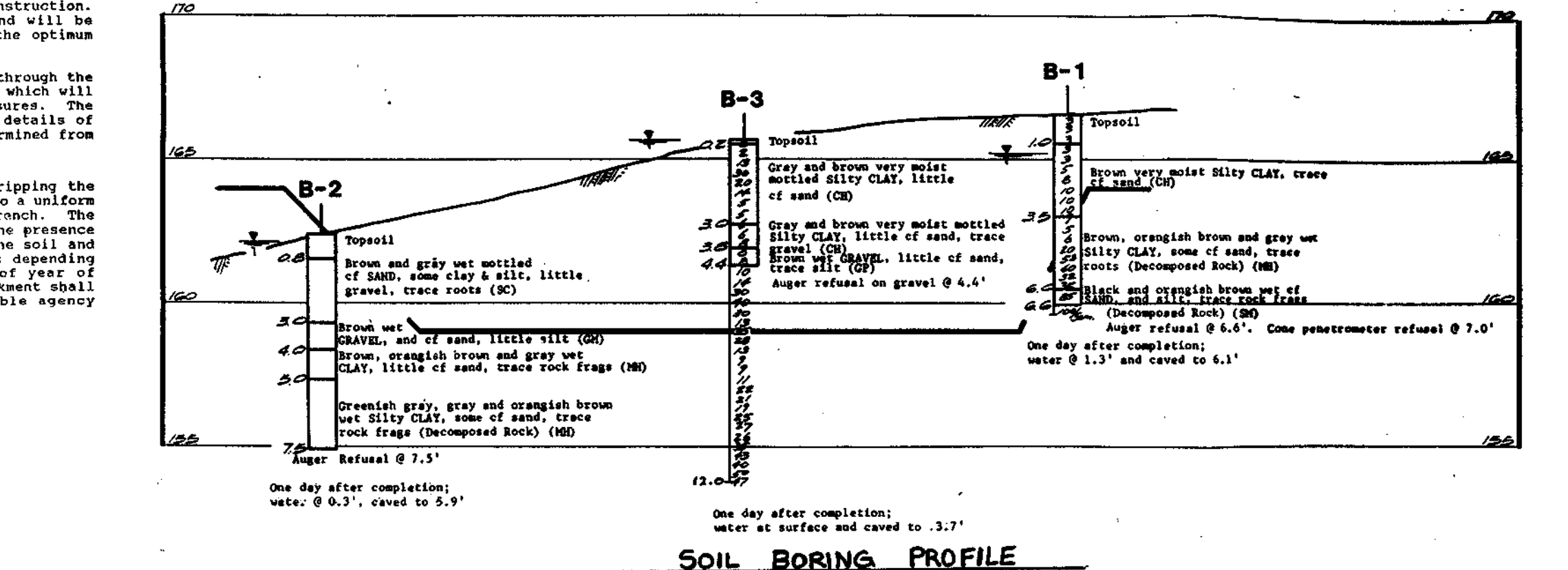
SEQUENCE OF CONSTRUCTION
 OBTAIN GRADING PERMIT (1 DAY).
 NOTIFY "MISS UTILITY" 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY HOWARD COUNTY OFFICE OF CONSTRUCTION INSPECTION DIVISION (410) 313-1970, 24 HOURS BEFORE STARTING ANY WORK.
 INSTALL ALL TREE PROTECTION FENCE FOR TREES TO BE UNDISTURBED (1 DAY).
 INSTALL SEDIMENT CONTROL MEASURES, STONE CONSTRUCTION ENTRANCE, EARTH DICES AND SILT FENCE. STORMWATER MANAGEMENT PONDS ARE TO BE BUILT. UTILIZE FOR SEDIMENT CONTROL CONTRACTOR IS TO INSTALL SWALES/CHANNELS WITH TEMPORARY SEEDING AND SILENT MATTING GET PERMISSON FROM SEDIMENT CONTROL INSPECTORS TO PROCEED.
 GRADE SITE TO SUBGRADE, STABILIZE AND INSTALL STORM DRAINS (4 WEEKS).
 THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON AFTER EACH RAINFALL AND ON A DAILY BASIS.
 SEDIMENT SHALL BE REMOVED FROM THE STORMWATER MANAGEMENT POND. ONCE THE CLEANOUT ELEVATIONS HAVE BEEN REACHED, SEDIMENT MUST BE PLACED UPHILL FROM THE POND AREA.
 INSTALL CURB AND GUTTER AND ROAD BASE COURSE (7 DAYS).
 STABILIZE ALL DISTURBED AREAS AND OBTAIN PERMISSION FROM SEDIMENT CONTROL INSPECTORS TO PROCEED (2 DAYS).
 CONVERT STORMWATER MANAGEMENT PONDS FROM SEDIMENT BASIN TO THE PERMANENT STORMWATER MANAGEMENT POND (2 DAYS).
 UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROL MEASURES NOT NEEDED AND FLUSH STORM DRAIN SYSTEM TO REMOVE TRAPPED SEDIMENT (2 DAYS).
 ALL AREAS DISTURBED DUE TO THE REMOVAL OF SEDIMENT CONTROL MEASURES SHALL BE GRADED AND STABILIZED BY PERMANENT SEEDING (2 DAYS).

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 REVISION 10/6/99

GOSHEN ESTATES
 LOTS 1-30
 TAX MAP NO. 36 FIRST ELECTION DISTRICT
 PARCEL NUMBER 60 HOWARD COUNTY, MARYLAND
 OWNER: GEORGE CARR 9728 CLEGG DRIVE ELLICOTT CITY, MARYLAND 21042
 OWNER: WARREN LOWE 6556 WASHINGTON BLVD. ELLICOTT CITY, MARYLAND 21042
 DEVELOPER: LANDMARK DEVELOPMENT SERVICES, INC. 1831 SARLING WAY GLENELG, MARYLAND 21737
 SCALE: AS SHOWN DATE: 7/1/96 DWG. NO. 6 OF 8
 DES. H.A.K. DEN. H.A.K. CH. B.J.K.
 FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS CENTRAL SQUARE OFFICE PARK - 18772 BALTIMORE NATIONAL FREE ELLICOTT CITY, MARYLAND 21042 (410) 461-2955



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



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

ADDITIONAL POND SPECIFICATIONS
 GEOTECHNICAL CONCLUSIONS AND RECOMMENDATIONS

With water indicated at the existing surface in the study area, ground water should be anticipated in the pond excavation which will require control for construction. Also, the excavated materials from the pond will be saturated with natural moisture far above the optimum values for most efficient compaction.

After excavation of the pond, water seepage through the cut slopes may cause some unstable conditions which will have to be corrected by drains or other measures. The need for these corrections, if any, and the details of the corrective measures will have to be determined from field observations during construction.

In the area to receive embankment, after stripping the topsoil, the exposed surface shall be rolled to a uniform condition prior to excavation of the core trench. The surface is expected to be sensitive due to the presence of high ground water and the plasticity of the soil and may require undercutting to varying degrees depending upon the weather conditions and the time of year of construction. The core trench and dam embankment shall be constructed in accordance with applicable agency specifications.

Areas designated for borrow areas, embankment, and structure work shall be cleared, graded and topped off. All trees, vegetation, rocks and other obstructions shall be removed. Channel banks and sharp angles shall be sloped to no steeper than 1:1.

Where a minimum required density is specified, it shall not be less than 95% of maximum dry density with a moisture content within 2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99.

Where a maximum required density is specified, it shall not be less than 95% of maximum dry density with a moisture content within 2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99.

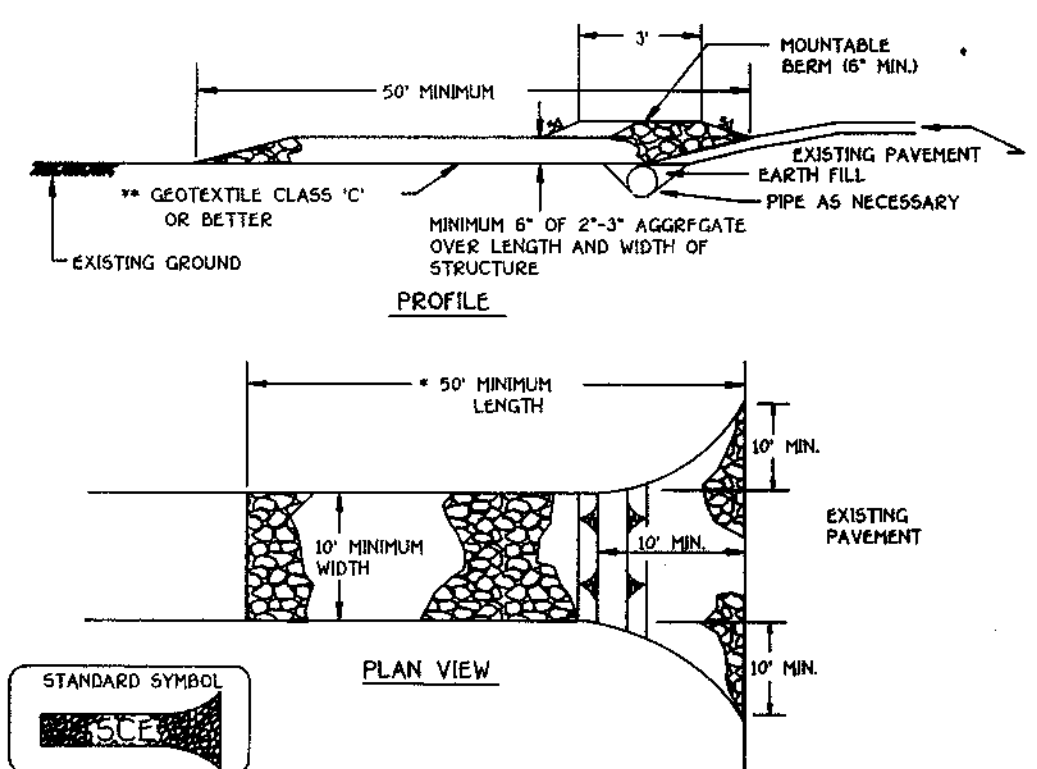
Areas to be covered by the reservoir will be cleared of all trees, brush, logs, stumps, rocks and other obstructions. All trees, brush and stumps shall be cut and removed. All trees to be removed shall be cut and removed. All trees to be removed shall be cut and removed.

Backfill adjacent to pipes of structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in natural layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. All joints during the backfilling operation shall be measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted 18" or greater over the structure or pipe.

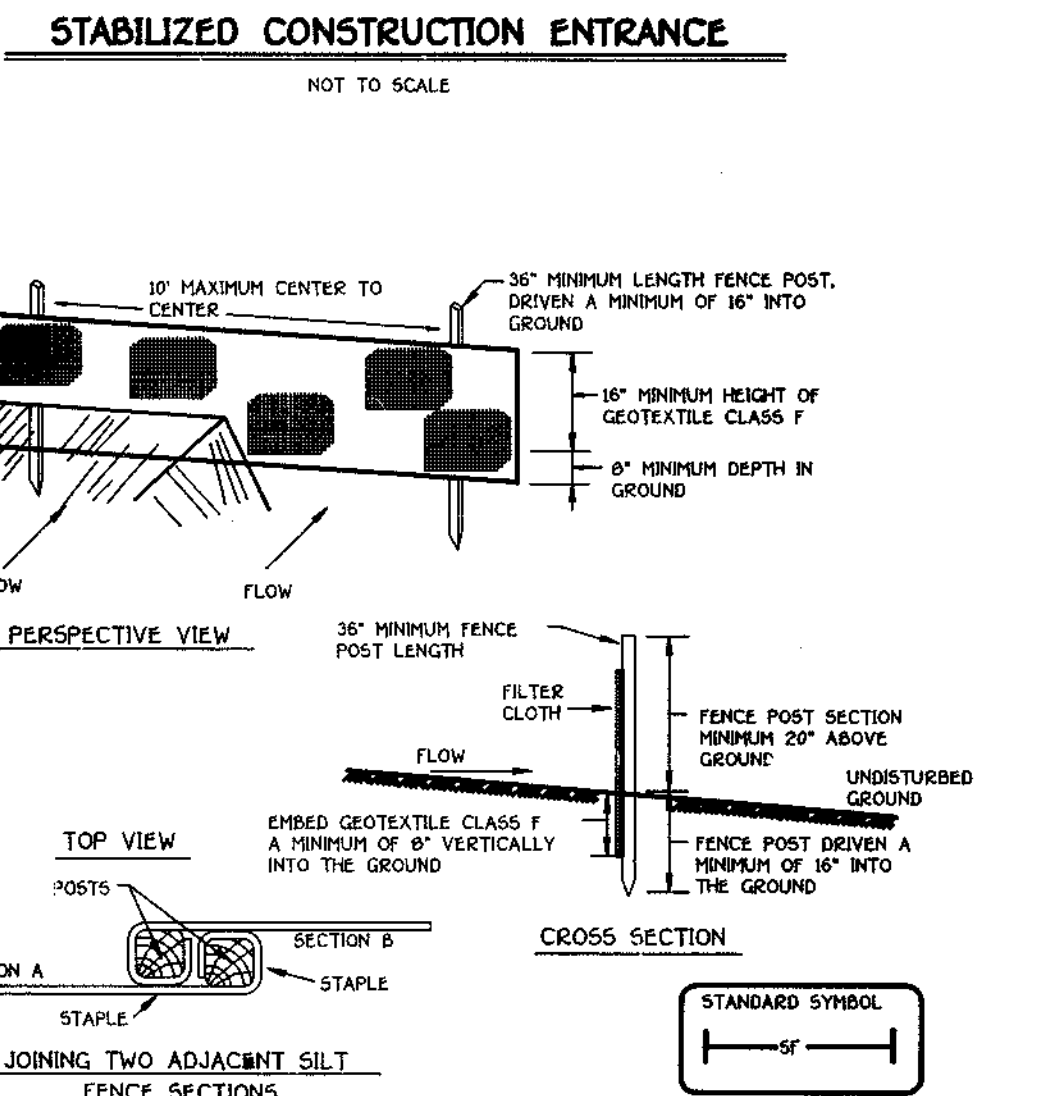
Connections: All connections with pipe must be completely watertight. The drain pipe or barrel connection to the rear shall be welded all around when the pipe and rear see meet. All joints shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first pipe shall be located within 2 feet from the rear.

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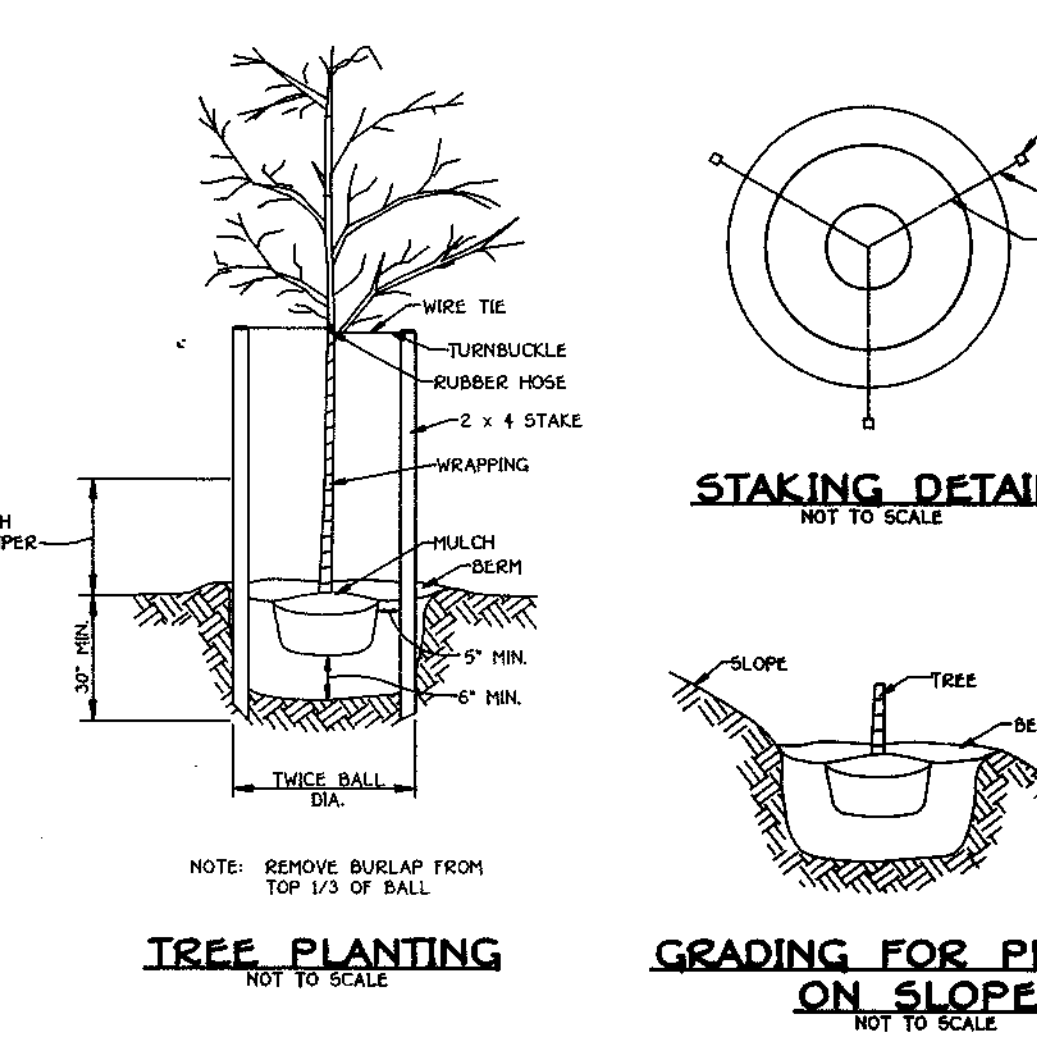
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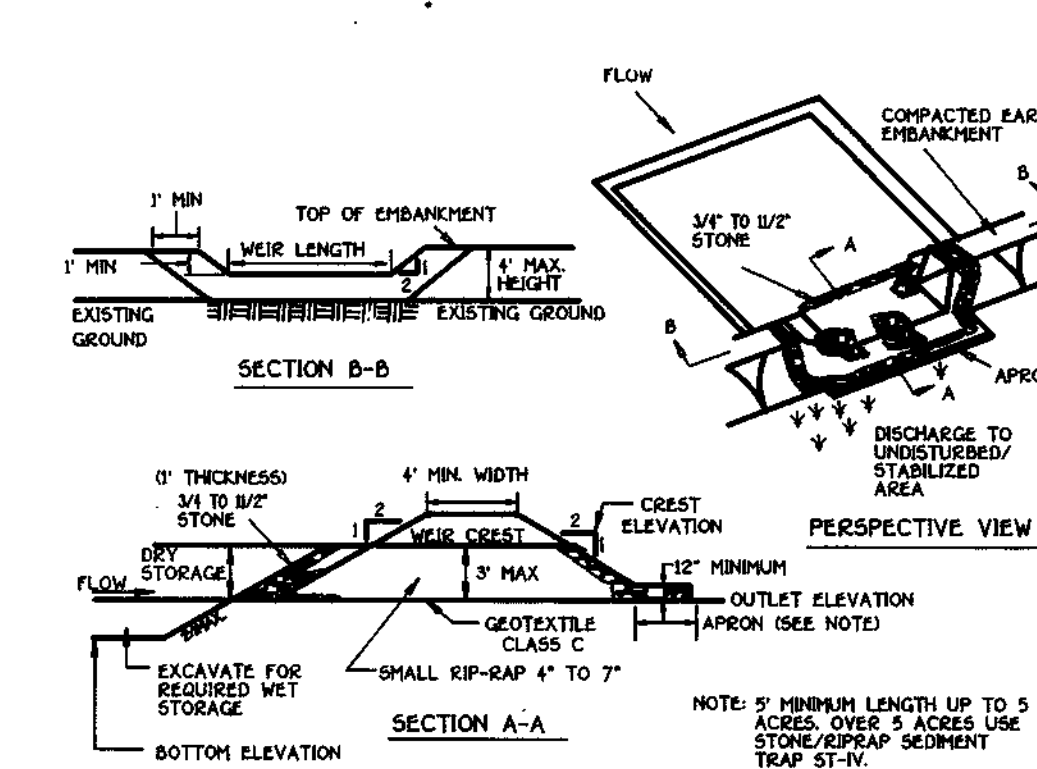
- STABILIZED CONSTRUCTION ENTRANCE**
NOT TO SCALE
- Length - minimum of 50' (30' for single residence lot).
 - Width - 10' minimum, should be flared at the existing road to provide a turning radius.
 - Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. The plan approval authority may not require single family residences to use geotextile.
 - Stone - crushed aggregate 1/2" to 3/4" or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
 - Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 2:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
 - Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.



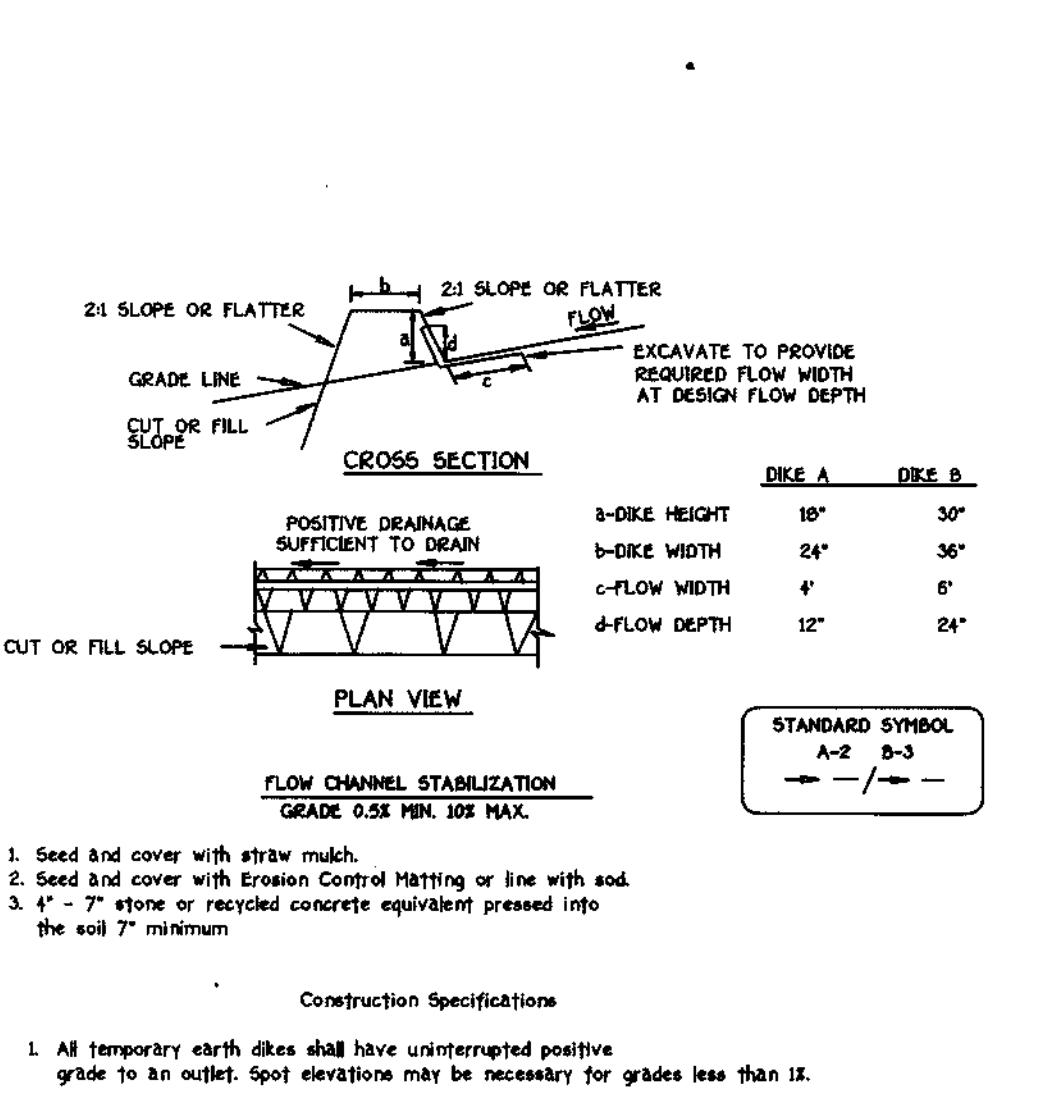
- STONE OUTLET SEDIMENT TRAP - ST II**
NOT TO SCALE
- Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
 - The fill material for the embankment shall be free of roots or other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed. Maximum height of embankment shall be 4' measured at centerline of embankment.
 - All cut and fill slopes shall be 2:1 or flatter.
 - Elevation of the top of any dike directing water into trap must equal or exceed the height of trap embankment.
 - Storage area provided shall be figured by computing the volume measured from top of excavation. (For storage requirements see Table 10).
 - Filter cloth shall be placed over the bottom and sides of the outlet channel prior to placement of stone. Section of fabric must overlap at least 1" with section nearest the entrance placed on top. Fabric shall be embedded at least 6" into existing ground at entrance of outlet channel.
 - Stone used in the outlet channel shall be 4" - 7" placed 10" thick.
 - Outlet - An outlet shall be provided, which includes a means of conveying the discharge in an erosion free manner to an existing stable channel. Protection against scour at the discharge end shall be provided as necessary.
 - Outlet channel must have positive drainage from the trap.
 - Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/4 of the wet storage depth of the trap (50% of total). Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
 - The structure shall be inspected periodically after each rain and repaired as needed.
 - Construction of traps shall be carried out in such a manner that sediment pollution is limited. Once constructed, the top and outside floor of the embankment shall be stabilized with seed and mulch. Points of concentrated inflow shall be protected in accordance with Grade Stabilization Structure criteria. The remainder of the interior slopes should be stabilized one time with seed and mulch upon trap completion and monitored and maintained erosion free during the life of the trap.
 - The structure shall be developed by approved methods, removed and the area stabilized when the drainage area has been properly established.



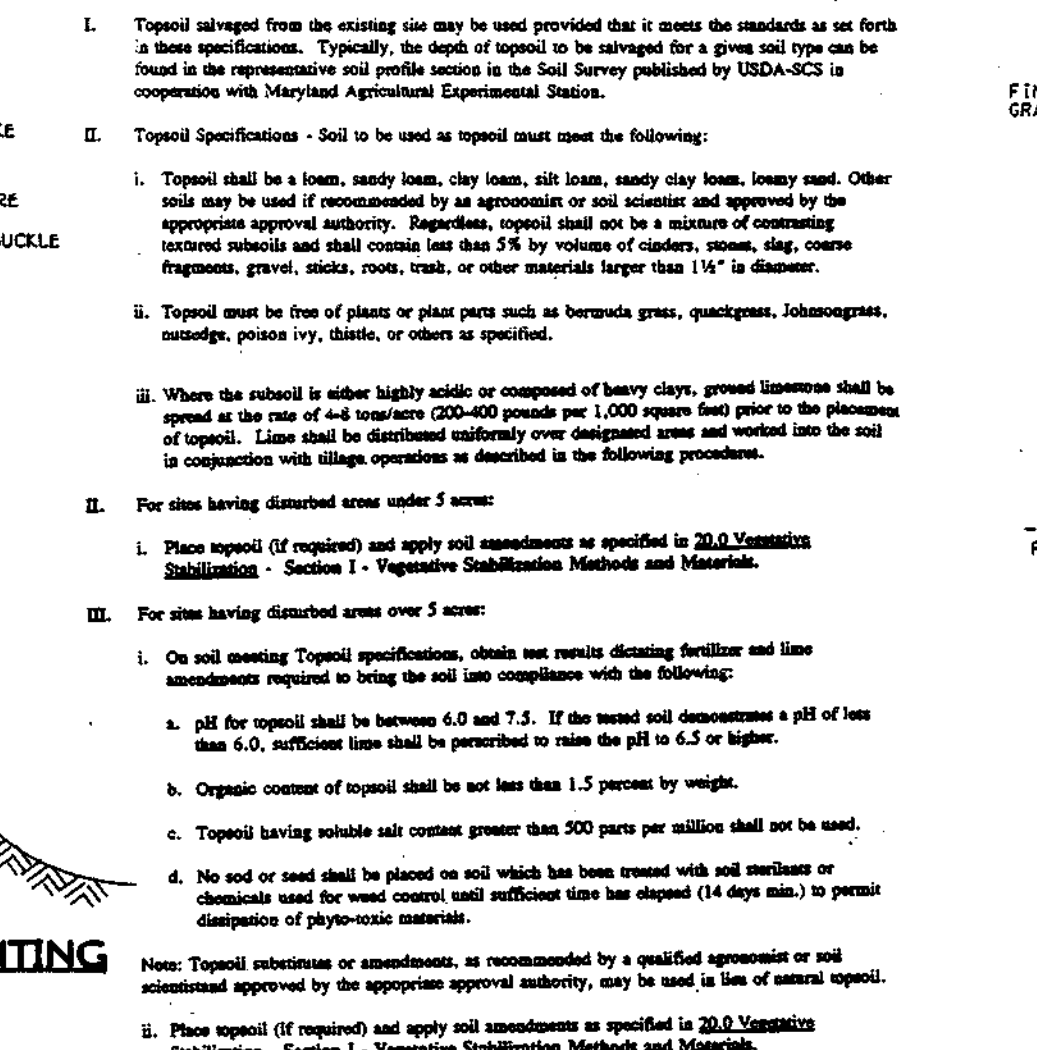
- TREE PROTECTION DETAIL**
NO SCALE
1. Temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1:1.
 2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
 3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.
 4. All trees, brush, stumps, obstructions, and other objectionable material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.
 5. The dike shall be excavated or shaped to fit, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.
 6. Fill shall be compacted by earth moving equipment.
 7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.
 8. Inspection and maintenance must be provided periodically and after each rain event.



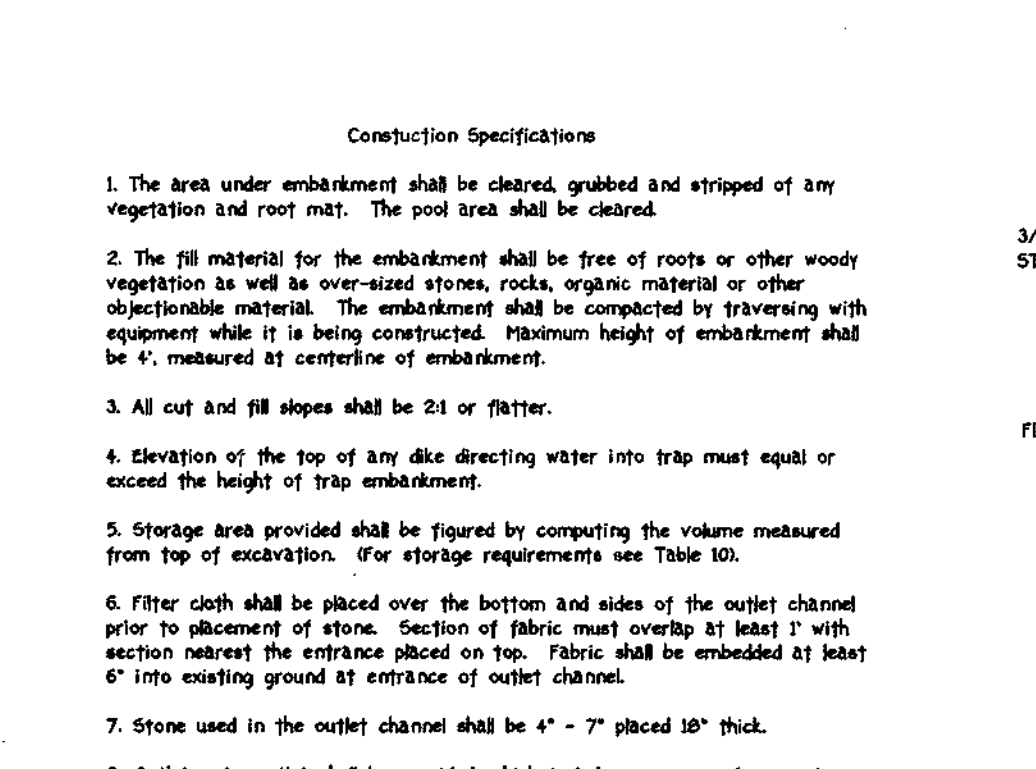
- CURB INLET PROTECTION**
NOT TO SCALE
- Excavate completely around the inlet to a depth of 6" below the notch elevation.
 - Drive the 2" x 4" construction grade lumber spacers 1" into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overall width shown on DETAIL 22A. The top of the frame (weir) must be 6" below adjacent roadway where flooding and safety issues may arise.
 - Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.
 - Stretch the Geotextile Class E tightly over the wire mesh with the geotextile extending from the top of the frame to 6" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and backed, then fastened.
 - Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.
 - If the inlet is not in a slope, construct a compacted earth dike across the ditch line directly below it. The top of the earth dike should be at least 6" higher than the top of the frame.
 - The structure must be inspected periodically and after each rainfall and the geotextile replaced when it becomes clogged.



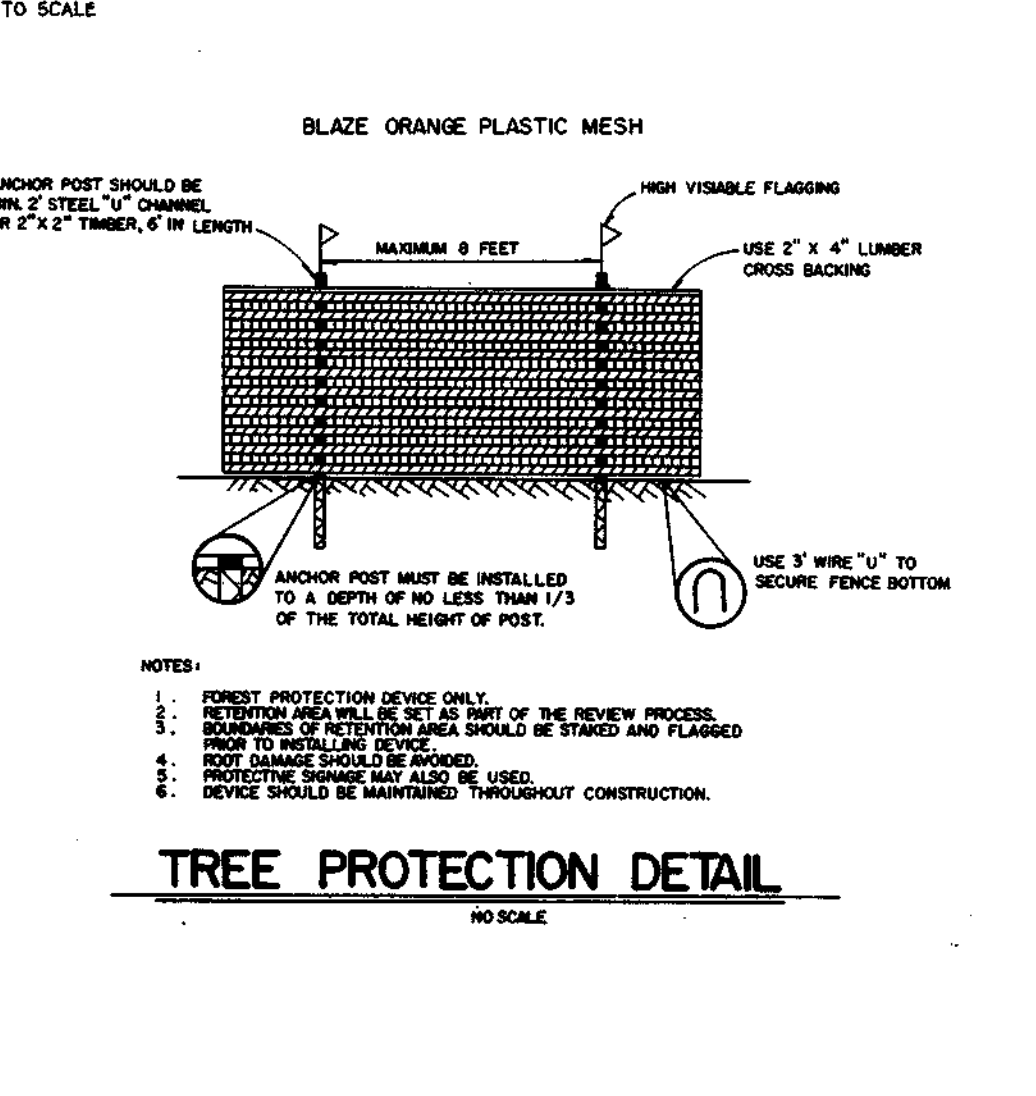
- TREE PROTECTION DETAIL**
NO SCALE
1. Forest Protection Device Only - THE FOREST PROTECTION DEVICE SHOULD BE STAVED AND FLAGGED FROM THE ROAD TO THE TREE. THE DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.
 2. Protective Fencing - Protective fencing may also be used.
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 4. Device should be maintained throughout construction.



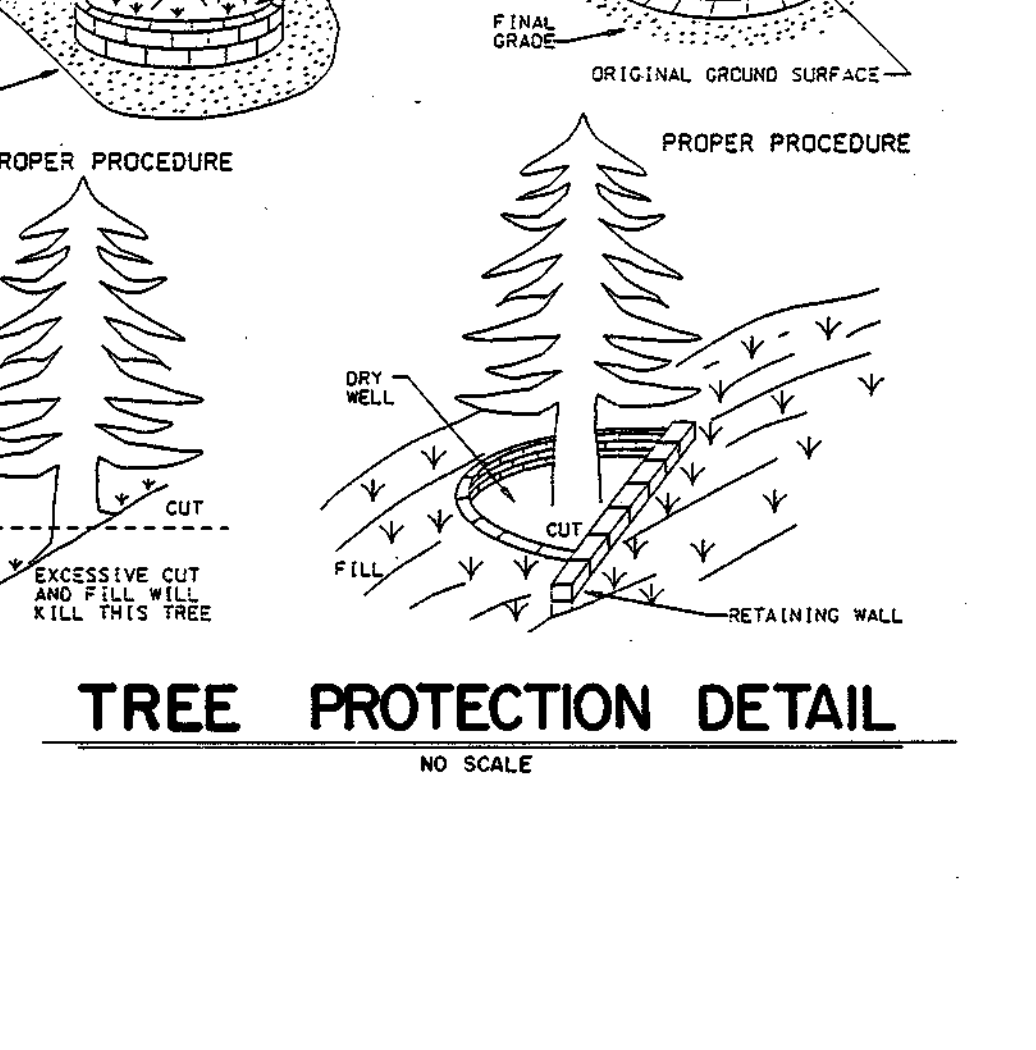
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1. Minimum soil conditions required for permanent vegetative establishment:
 - Soil pH shall be between 6.0 and 7.5.
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 - Soil shall contain 15% minimum organic matter by weight.
 - Soil must contain sufficient pore space to permit adequate root penetration.
 - If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standards and Specifications for Topsoil.
 2. Areas previously graded with the following shall be maintained in a tree and area grade, then scarified or otherwise loosened to a depth of 3" to 4" before seeding the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
 - Apply fertilizers as per soil test or as included on the plan.
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 - Apply soil amendments to the top 3" of topsoil by disk or other suitable means. Large areas should be related to smooth the surface, remove large objects like stones and branches, and create the area for seed and application. Where site conditions will not permit normal seeded preparation, surface shall be drilled with a heavy chain or other equipment to roughen the surface. Slope shall be less than 3:1 and shall be backfilled with the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 3" of soil should be loose and friable. Seeded broadcast may not be necessary on newly disturbed areas.
 3. 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 seed on this job.
 - Note: Seed lots shall be made available to the inspector to verify type and rates of seed used.
 - Inoculant - The inoculant for treating legume seed in the seed mixture shall be a pure culture of rhizobium 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.
 4. Method of Seeding
 - Hydroseeding Apply seed uniformly with hydroseeder (carry includes seed and fertilizer, broadcast or drop seed, or a callpacker seeder).
 - If fertilizer is being applied at the time of seeding, the application rate amounts will not exceed the following nitrogen maximum of 100 lbs. per acre total of soluble nitrogen (50% slow-release, 50% fast-release, 100 lbs. per acre total).
 - Line - use only ground agricultural limestone, 0 to 3 tons per acre may be applied by hydroseeding. Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
 - Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.



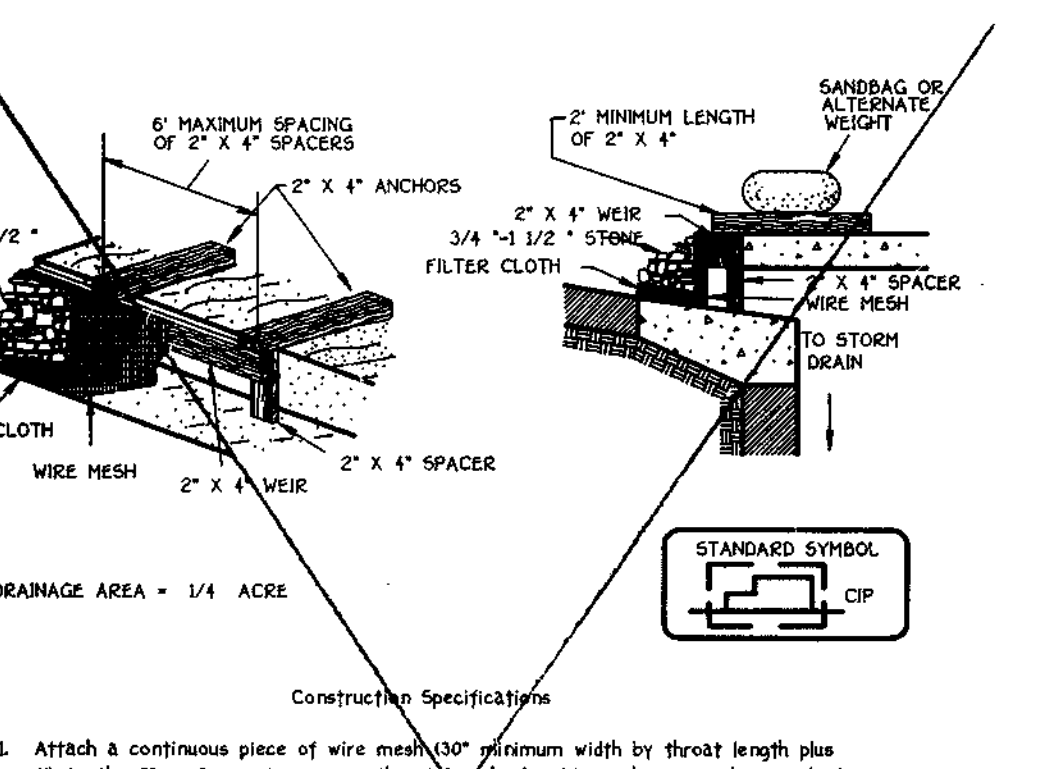
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NOT TO SCALE
- Excavate completely around the inlet to a depth of 6" below the notch elevation.
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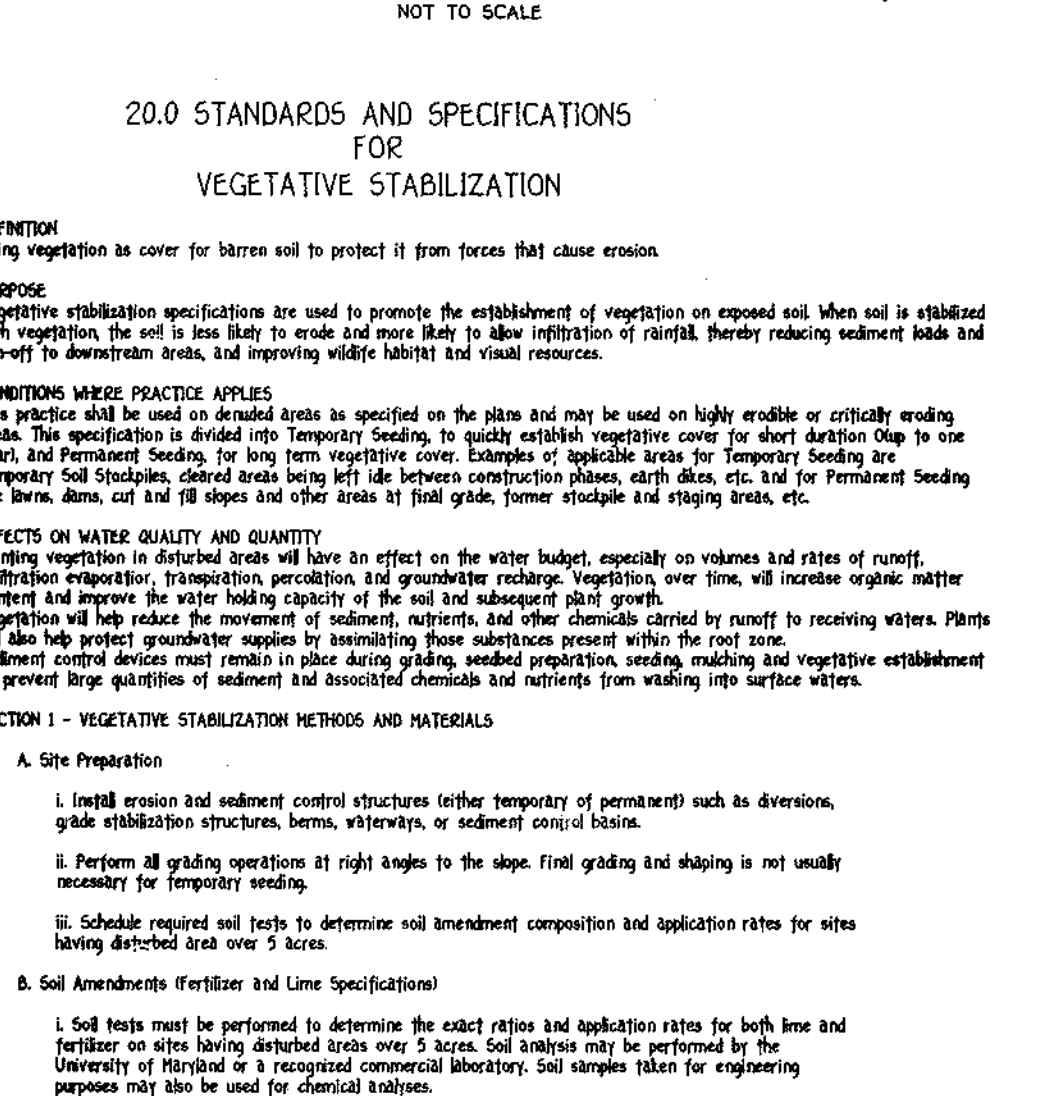
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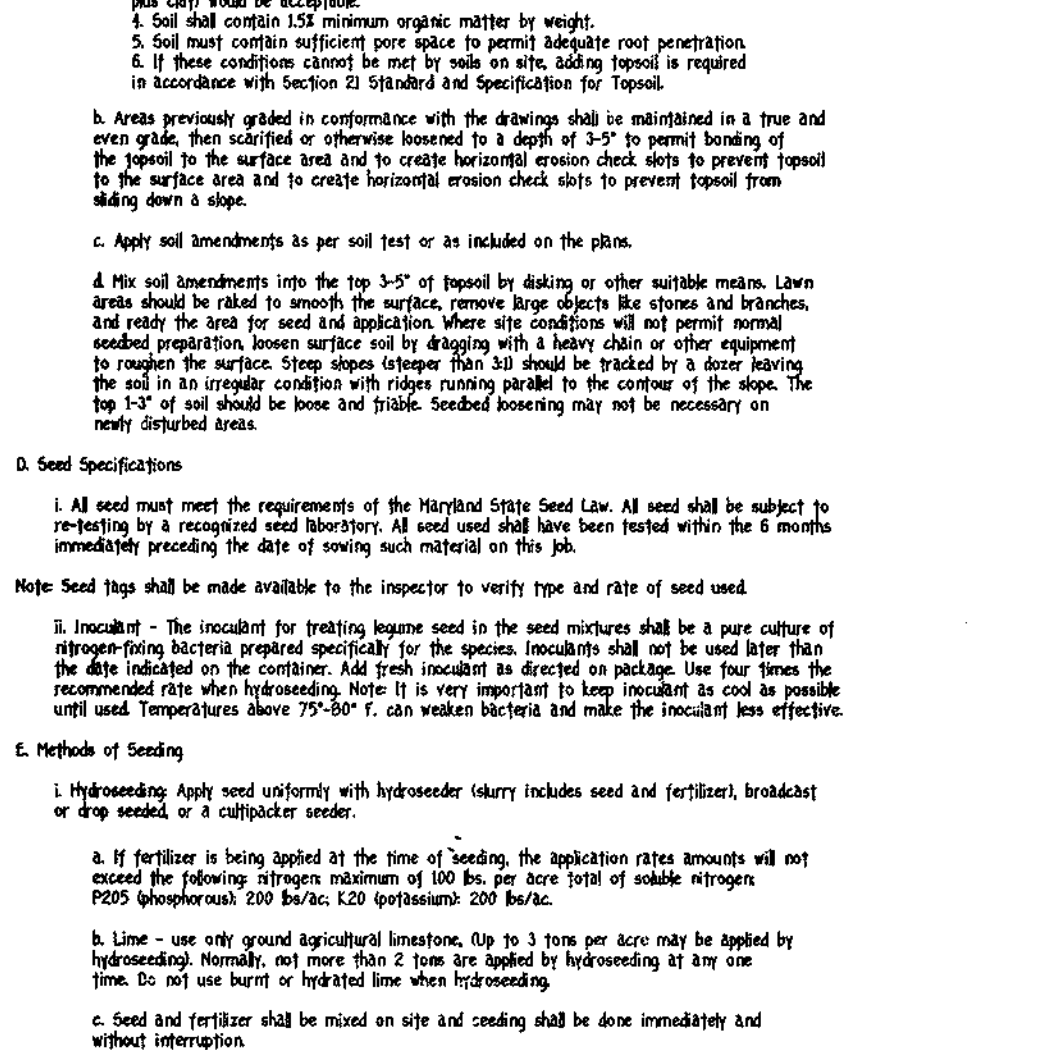
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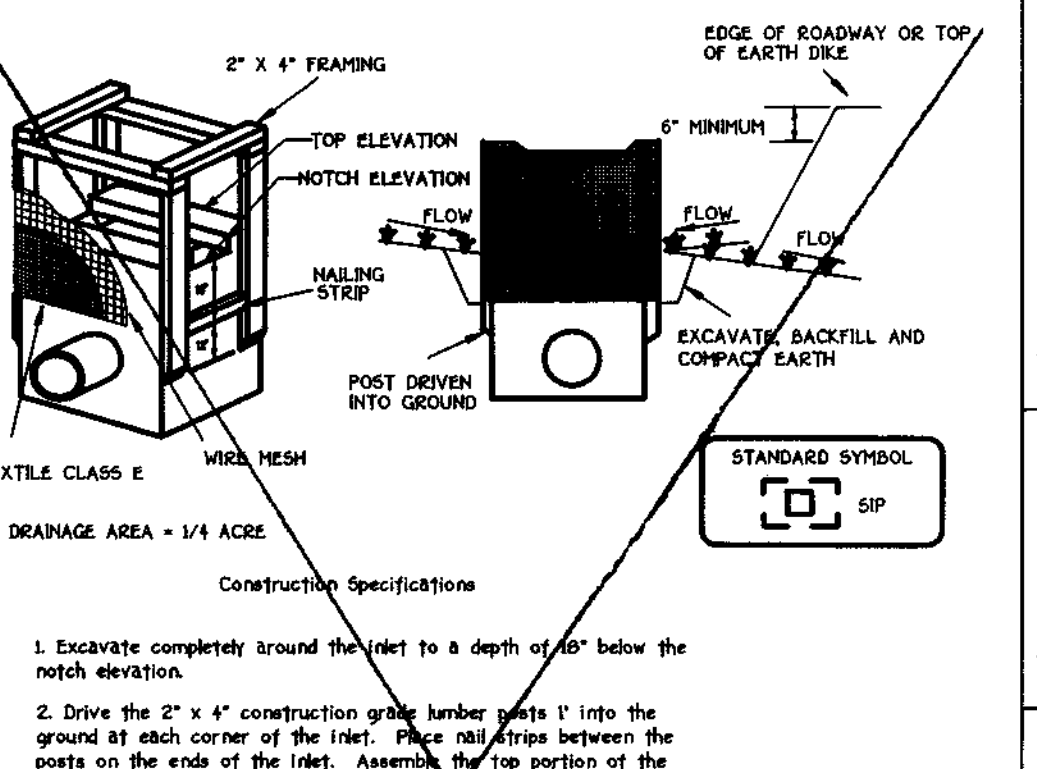
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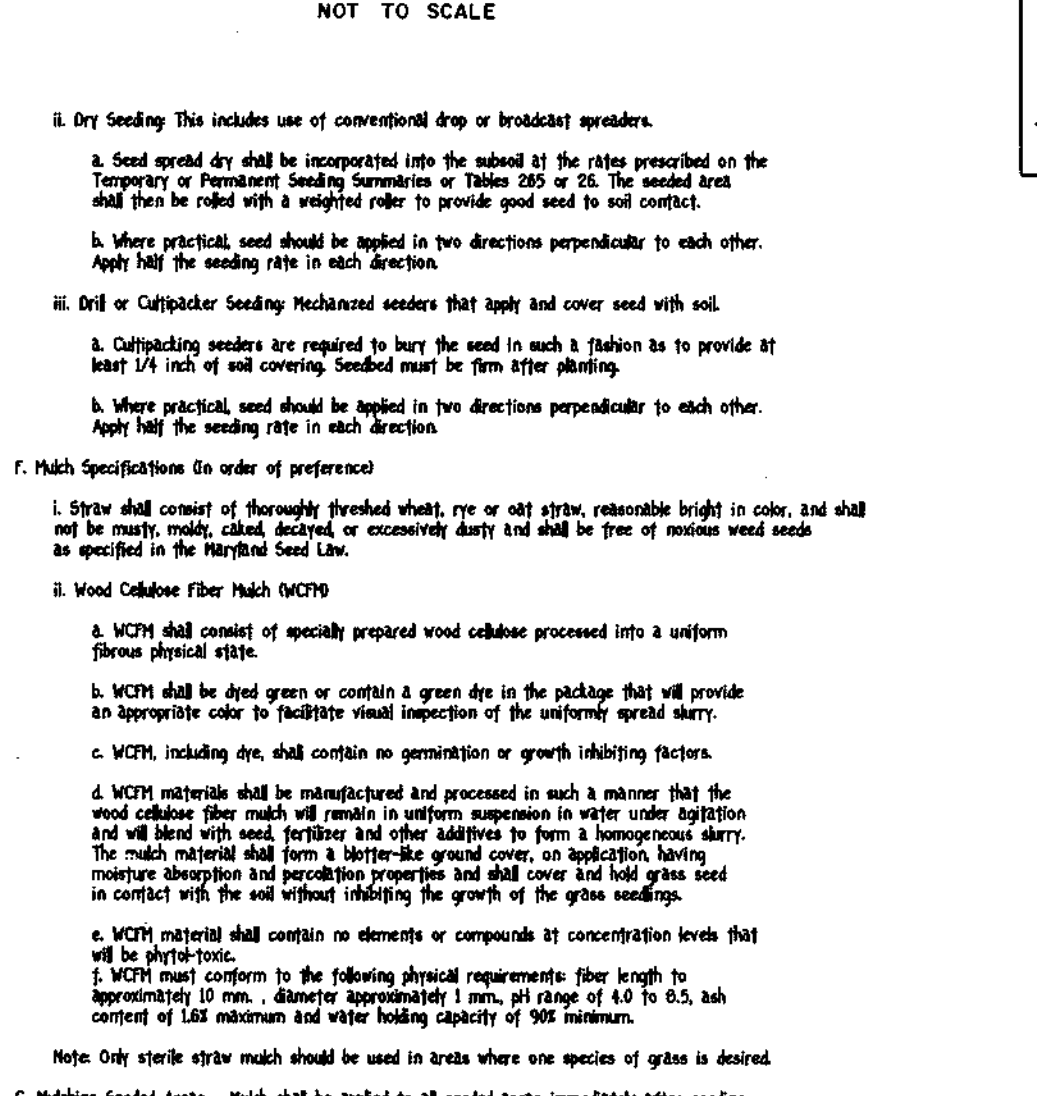
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 - Soil must contain sufficient pore space to permit adequate root penetration.
 - If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standards and Specifications for Topsoil.
 2. Areas previously graded with the following shall be maintained in a tree and area grade, then scarified or otherwise loosened to a depth of 3" to 4" before seeding the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
 - Apply fertilizers as per soil test or as included on the plan.
 - Apply soil amendments to per soil test or as included on the plan.
 - Apply soil amendments to the top 3" of topsoil by disk or other suitable means. Large areas should be related to smooth the surface, remove large objects like stones and branches, and create the area for seed and application. Where site conditions will not permit normal seeded preparation, surface shall be drilled with a heavy chain or other equipment to roughen the surface. Slope shall be less than 3:1 and shall be backfilled with the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 3" of soil should be loose and friable. Seeded broadcast may not be necessary on newly disturbed areas.



- 20.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION**
- DEFINITION
Using vegetation to cover (barren soil) to protect it from forces that cause erosion.
- PURPOSE
Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil when soil is stabilized with vegetation, the soil is less likely to erode and more likely to show vegetation of rainfall thereby reducing sediment loads and runoff to downstream areas and improving wildlife habitat and stream resources.
- CONDITIONS WHERE PRACTICE APPLIES
This practice shall be used on disturbed areas as specified on the plan and may be used on highly erodible or critically eroding areas. This specification is intended to stabilize exposed soil and prevent erosion. It is not intended to be used on areas with permanent vegetation. This practice shall be used on areas where the soil is exposed for a period of 30 days or longer. This practice shall be used on areas where the soil is exposed for a period of 30 days or longer. This practice shall be used on areas where the soil is exposed for a period of 30 days or longer.
- EFFECTS ON WATER QUALITY AND QUANTITY
Planting vegetation in disturbed areas will have an effect on the water budget, especially on volume and rates of runoff. Vegetation will reduce runoff volume and peak discharge. Vegetation will increase infiltration over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the erosion of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help improve water quality by absorbing these substances present within the soil. Sediment control devices must remain in place during grading, seeding, mulching and vegetative establishment to prevent large quantities of sediment and nutrients from washing into surface waters.
- SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS
- A. Site Preparation
 1. Landfill erosion and sediment control structures (temporary permanent) such as diversions, grade stabilization structures, berms, silt fences, or sediment control dikes, shall be constructed in accordance with the appropriate approved authority. Fertilizers shall be delivered to the site only labeled according to the applicable state fertilizer laws and shall bear the name, trade name and percentage of the producer.
 2. Fertilizers shall be applied in combination, free flowing and suitable for accurate application by approved equipment. Mixtures may be substituted for fertilizers with prior approval from the appropriate approved authority. Fertilizers shall be delivered to the site only labeled according to the applicable state fertilizer laws and shall bear the name, trade name and percentage of the producer.
- B. Soil Amendments (Fertilizer and Lime Specifications)
 1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed soils over 3 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.
 2. Fertilizers shall be applied in combination, free flowing and suitable for accurate application by approved equipment. Mixtures may be substituted for fertilizers with prior approval from the appropriate approved authority. Fertilizers shall be delivered to the site only labeled according to the applicable state fertilizer laws and shall bear the name, trade name and percentage of the producer.
- C. Seeded Preparation
 1. Temporary Seeding
 1. Seeded preparation shall consist of loosening soil to a depth of 3" to 4" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or compacted. The soil should be kept in the required condition until the seed is applied. The soil should be kept in the required condition until the seed is applied. The soil should be kept in the required condition until the seed is applied.
 2. Areas previously graded with the following shall be maintained in a tree and area grade, then scarified or otherwise loosened to a depth of 3" to 4" before seeding the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.

