SHEET INDEX		
NO.	DESCRIPTION	
1	PLAN AND PROFILE OF STARLING ROAD	
2	DRAINAGE AREA MAP AND STORM DRAIN PROFILES	
3	GRADING AND SEDIMENT CONTROL PLAN	
4	STORMWATER MANAGEMENT AND SEDIMENT CONTROL NOTES AND DETAILS	
5	STORMWATER MANAGEMENT NOTES AND DETAILS	
6	LANDSCAPE PLAN AND DETAILS	

BENCH MARKS (NAD 83)

HO.CO. #17EA
CONC. MONUMENT IN GRASS ISLAND INFRONT OF MT. HEBRON HIGH SCHOOL 33.7' SOUTH OF FLAG POLE

N 594357.726361(FT) E 1357519.37415(FT)
N 181160.5975(M) E 413772.7332(M)

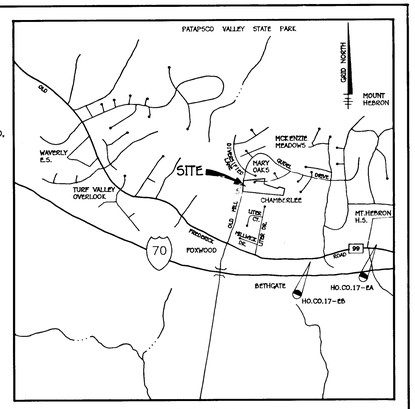
HO.CO. #17EB
CONC. MONUMENT, 0.1' BELOW SURFACE ON THE SOUTH SIDE OLD FREDERICK ROAD, 19' FROM CL OF ROAD, 224' WEST CL DRIVE BETHANY LANE FIRE STATION

N 593814.005336(FT) E 1355731.88459(FT)
N 180994.8710(M) E 413227.9053(M)

CENTERLINE CURVE DATA – STARLING ROAD						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
1	630.00'	16.48'	8.24'	16.48'	N83°16'50"W	01°29'55"
2	375.00'	36.62	18.32'	36.60'	N85°19'43"W	05°35'41"
3	93.00'	75.24'	39.81'	73.20'	S68°41'52"W	46°21'09"

CENTERLINE CONTROL DATA – STARLING ROAD			
STATION	NORTH	EAST
LIMIT OF EXIST. PAVING STA 8+81.07	595850.5057	1354142.9870
LIMIT OF SUBMISSION 8+87.12	595849.8547	1354142.8581
PT 9+03.60	595851.7828	1354126.4931
PC 10+03.60	595864.7816	1354027.3415
PCC 10+40.22	595867.7626	1353990.8600
PT 11+15.46	595841.1693	1353922.6591
END 11+24.50	595834.7954	1353916.2511

NOTE: THE SWM FACILITY SHOWN ON THESE PLANS WILL BE OWNED BY HOWARD COUNTY BUT GENERAL MAINTENANCE SUCH AS MOWING WILL BE PROVIDED BY THE HOMEOWNERS ASSOC.



VICINITY MAP

SCALE : 1"=2000'

GENERAL NOTES

1. All construction shall be in accordance with the latest standards and specifications of Howard County, plus MSHA standards and specifications, if applicable.
2. The contractor shall notify the Department of Public Works Construction Inspection Division at (410) 313–1880 at least (five) 5 working days prior to the start of work.
3. The contractor shall notify "Miss Utility" at 1–800–257–7777 at least 48 hours prior to any excavation work.
4. Project Background:
   Location: Tax Map 17 – Parcel 202
   Zoning: R–20
   Total Tract Area: 7.809 Ac.
   Number of Proposed Lots: 12
   Date Preliminary Plan Approved: February 18, 1994
   DPZ Reference #: SP 93–18, WP 94–35
5. Traffic control devices, markings and signing shall be in accordance with the most current edition of the Manual on Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
6. Topography taken from field run survey performed by TSA Group Inc., dated: February, 1993, supplemented by 200' scale county topographic maps. Contour interval is 2 feet.
7. Howard County monuments 17EA and 17EB used for horizontal and vertical datum.
8. Light poles and fixtures for street lights shall be in accordance with the latest Howard County Design Manual, Volume III, Road and Bridges.
9. Water and Sewer for this subdivision is public. Drainage area is Little Patuxent. Contract No. 24–3362–D
10. Stormwater Management for this subdivision is provided by an extended detention facility (class 'a' structure) with water quality by extended detention
11. Floodplain Study not required for this project.
12. Wetland Delineation compiled by J.H. Cook, R.P.F. April 1993.
13. Traffic Study compiled by Lee Cunningham & Associates, Inc. April 1993, and approved with Preliminary Plan on 2/18/94
14. Noise Study not required for this project.
15. Geotechnical Report compiled by Atec Associates, Inc. April 1993.
16. Existing utilities were located by record drawings and field run survey by TSA Group, Inc. dated February 1993.
17. Unless noted as "private" all easements are public.
18. No clearing, grading or construction is permitted within wetland buffers, wetlands, streams buffers or forest conservation easement except as approved by WP 94–35; see note A.
19. This project conforms with current ADA standards.
20. All trees planted must be located a minimum of 20' from new street light.

STORMWATER MANAGEMENT OPERATION AND MAINTENANCE SCHEDULE

1) TOP AND SIDESLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES, THE BOTTOM OF THE POND, AND MAINTENANCE ACCESS SHOULD BE MOWED AS NEEDED.
2) DEBRIS AND LITTER NEXT TO THE OUTLET STRUCTURE SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
3) WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, SEDIMENT SHOULD BE REMOVED FROM THE POND. APPROVAL OF THE DEPARTMENT OF PUBLIC WORKS IS REQUIRED.

LEGEND

- CONCRETE SIDWALK
- PROPOSED STORM DRAIN
- PROPOSED CURB AND GUTTER
- EXISTING SEWER MAIN
- EXISTING WATER MAIN
- STREET LIGHT
- OPEN SPACE ACCESS BOLLARD
- EXISTING STORM DRAIN

NOTES:

A) A REQUEST TO WAIVE SECTIONS 16.116(a)(1), 16.116(a)(2) AND 16.116(b)(1) TO PERMIT THE REMOVAL OF VEGETATIVE COVER WITHIN THE 25' WETLAND BUFFER 75' PERENNIAL STREAM BUFFER AND ON LAND WITH EXISTING 25% OR GREATER STEEP SLOPES FOR THE INSTALLATION OF A SWM OUTFALL ONLY WAS APPROVED ON JANUARY 18, 1994. WP–94–35

B) A REQUEST TO PAY A FEE IN LIEU OF ROAD IMPROVEMENTS ALONG OLD MILL ROAD WAS SUBMITTED TO HOWARD COUNTY ON OCTOBER 19, 1993 AND WAS APPROVED AND WILL BE ASSESSED AT THE FINAL PLAN STAGE.

C) A REQUEST TO WAIVE SECTION 2.86 OF THE DESIGN MANUAL VOLUME III, WHICH PERTAINS TO PROVIDING ADEQUATE SIGHT DISTANCE, FOR LOTS 1,2 AND 3 WAS MADE ON OCTOBER 19, 1993 AND WAS APPROVED SUBJECT TO LOCATING THE DRIVEWAYS ON THE SOUTH SIDE OF THE LOTS.

D) THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE; FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

E) THE MINCHEW PROPERTY AND BARTH PROPERTY GAVE 30' FOR ½ ULTIMATE R/W IN CONJUNCTION WITH THE OLD MILL SUBDIVISION TO THE SOUTH, (F–85–228) PLAT NO. 8289 IN ORDER TO CONNECT OLD MILL ROAD. THE ULTIMATE R/W AND PAVING ALONG OLD MILL ROAD IS INTENDED TO BE PROVIDED WHEN THE PROPERTIES TO THE WEST DEVELOP.

NO	DATE	REVISION

TSA GROUP, INC.
planning • architecture • engineering • surveying
8480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410–465–6105)

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 3/22/95
CHIEF, BUREAU OF HIGHWAYS — DATE 3-20-95
CHIEF, BUREAU OF ENGINEERING — DATE 3/23/95

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 3/24/95

OWNER/DEVELOPER:

5 D C GROUP INC.
P.O. BOX 417
ELLICOTT CITY, MARYLAND 21041
(410) 465–42441

PROJECT: WINTER OAKS
LOTS 1 – 16

LOCATION: TAX MAP 17 PARCEL 202
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: ROAD PLAN AND PROFILE

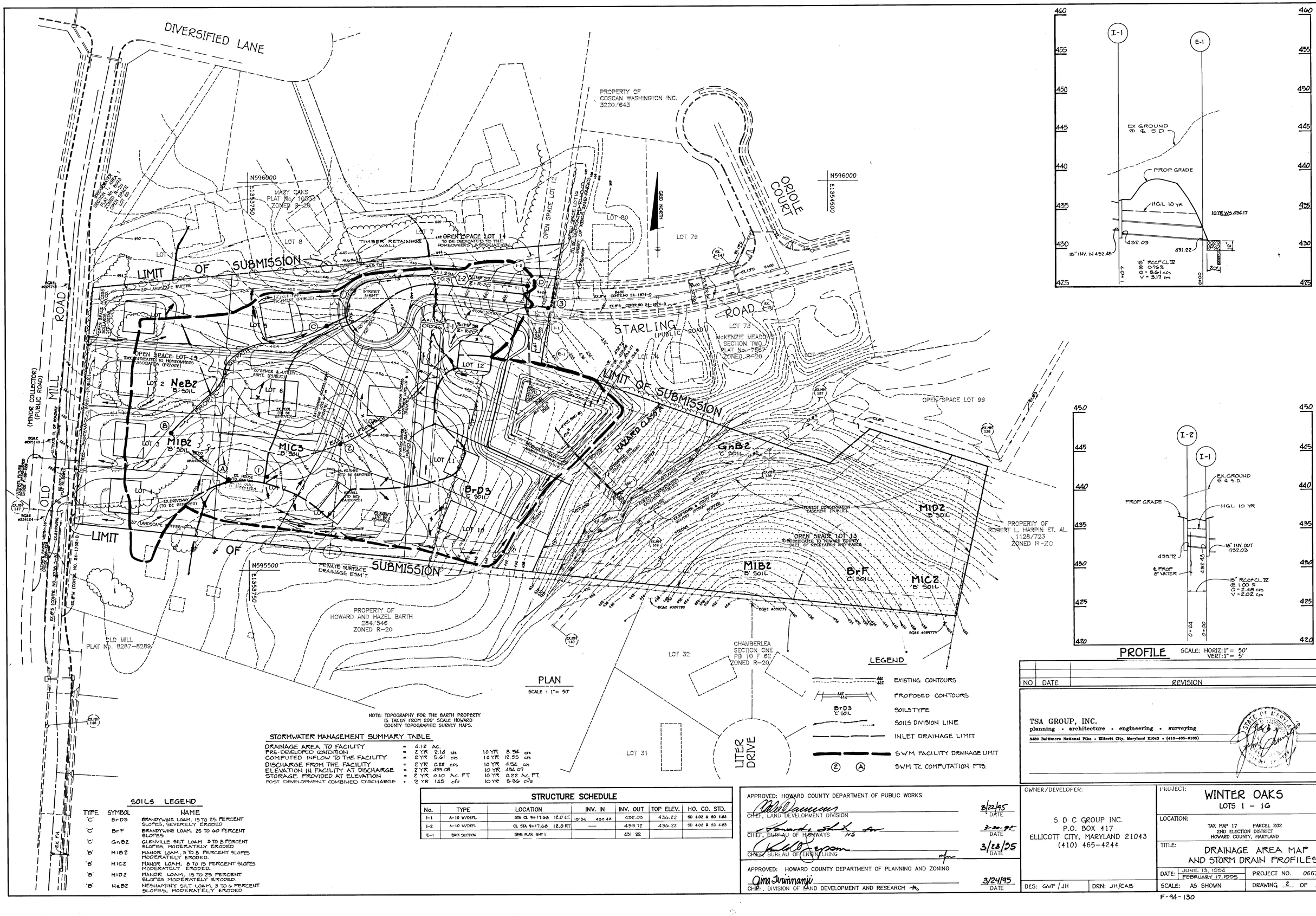
SP 93–18, WP 94–35

DATE: JUNE 13, 1994 / FEBRUARY 17, 1995
PROJECT NO. 0667
SCALE: AS SHOWN
DRAWING 1 OF 6

DES: JH DRN: JH/SHS

F-94-130

1727



STORMWATER MANAGEMENT SUMMARY TABLE

DRAINAGE AREA TO FACILITY	=	4.18 AC.		
PRE-DEVELOPED CONDITION	=	2 YR 2.14 cfs	10 YR 8.54 cfs	
COMPUTED INFLOW TO THE FACILITY	=	2 YR 5.61 cfs	10 YR 12.55 cfs	
DISCHARGE FROM THE FACILITY	=	2 YR 0.88 cfs	10 YR 4.54 cfs	
ELEVATION IN FACILITY AT DISCHARGE	=	2 YR 433.08	10 YR 434.07	
STORAGE PROVIDED AT ELEVATION	=	2 YR 0.10 AC. FT.	10 YR 0.22 AC. FT.	
POST DEVELOPMENT COMBINED DISCHARGE	=	2 YR 1.45 cfs	10 YR 5.36 cfs	

SOILS LEGEND

TYPE	SYMBOL	NAME
'C'	BrD3	BRANDYWINE LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED
'C'	BrF	BRANDYWINE LOAM, 25 TO 60 PERCENT SLOPES
'C'	GnB2	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
'B'	MIB2	MANOR LOAM, 3 TO 8 PERCENT SLOPES MODERATELY ERODED.
'B'	MIC2	MANOR LOAM, 8 TO 15 PERCENT SLOPES MODERATELY ERODED.
'B'	MID2	MANOR LOAM, 15 TO 25 PERCENT SLOPES MODERATELY ERODED
'B'	NeB2	NESHAMINY SILT LOAM, 3 TO 6 PERCENT SLOPES, MODERATELY ERODED

STRUCTURE SCHEDULE

No.	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEV.	HO. CO. STD.
I-1	A-10 W/DEFL.	STA 0+17.68 12.0 LT.	15"(N) 432.46	432.03	436.22	SD 4.02 & SD 4.03
I-2	A-10 W/DEFL.	CL STA 0+17.68 12.0 RT.	——	435.72	436.22	SD 4.02 & SD 4.03
E-1	END SECTION	SEE PLAN SHT 1		431.22		

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- SOILS TYPE
- SOILS DIVISION LINE
- INLET DRAINAGE LIMIT
- SWM FACILITY DRAINAGE LIMIT
- SWM TC COMPUTATION PTS.

NO	DATE	REVISION

TSA GROUP, INC.
planning • architecture • engineering • surveying
5480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410-465-8105)

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 3/22/95

CHIEF, BUREAU OF HIGHWAYS — DATE 3-20-95

CHIEF, BUREAU OF ENGINEERING — DATE 3/28/95

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 3/24/95

OWNER/DEVELOPER:

S D C GROUP INC.
P.O. BOX 417
ELLICOTT CITY, MARYLAND 21043
(410) 465-4244

DES: GWF / JH | DRN: JH/CAB

PROJECT: WINTER OAKS
LOTS 1 - 16

LOCATION:
TAX MAP 17 PARCEL 202
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

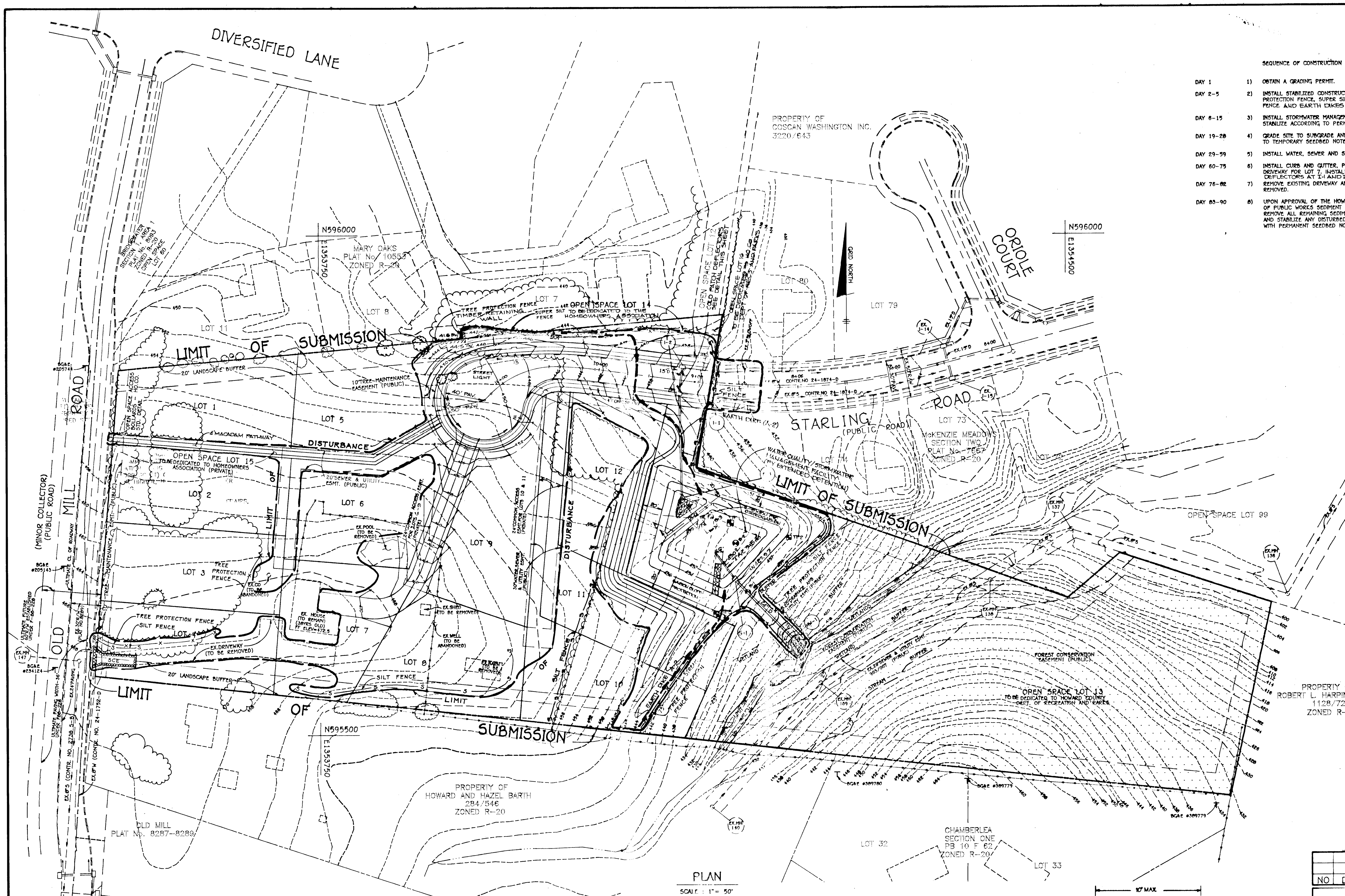
TITLE: DRAINAGE AREA MAP AND STORM DRAIN PROFILES

DATE: JUNE 13, 1994 / FEBRUARY 17, 1995 | PROJECT NO. 0667

SCALE: AS SHOWN | DRAWING 2 OF 6

F-94-130

1727



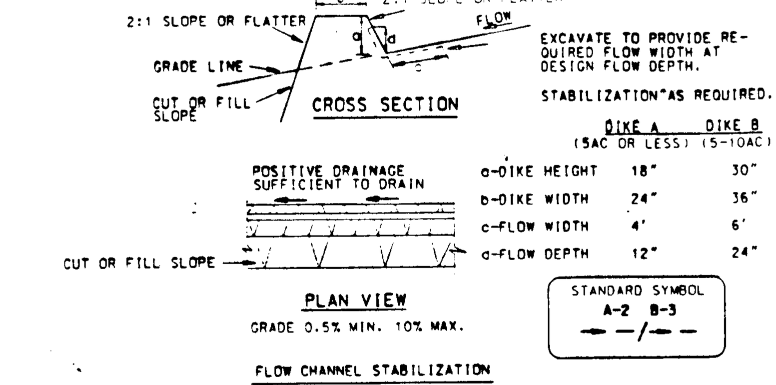
PLAN

SCALE : 1" = 50'

NOTE: TOPOGRAPHY FOR THE BARTH PROPERTY IS TAKEN FROM 200' SCALE HOWARD COUNTY TOPOGRAPHIC SURVEY MAPS.

SEQUENCE OF CONSTRUCTION

DAY 1	1)	OBTAIN A GRADING PERMIT.
DAY 2-5	2)	INSTALL STABILIZED CONSTRUCTION ENTRANCE, TREE PROTECTION FENCE, SUPER SILT FENCE, SILT FENCE AND EARTH DIKES.
DAY 6-15	3)	INSTALL STORMWATER MANAGEMENT FACILITY AND STABILIZE ACCORDING TO PERMANENT SEEDBED NOTES.
DAY 19-28	4)	GRADE SITE TO SUBGRADE AND STABILIZE ACCORDING TO TEMPORARY SEEDBED NOTES.
DAY 29-59	5)	INSTALL WATER, SEWER AND STORM DRAINS.
DAY 60-75	6)	INSTALL CURB AND GUTTER, PAVING, SIDEWALK AND DRIVEWAY FOR LOT 7. INSTALL TEMP. COLD PATCH DEFLECTORS AT I-1 AND I-2.
DAY 76-82	7)	REMOVE EXISTING DRIVEWAY AND BUILDINGS TO BE REMOVED.
DAY 83-90	8)	UPON APPROVAL OF THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS SEDIMENT CONTROL INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE ANY DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDBED NOTES.



	DIKE A (5AC OR LESS)	DIKE B (5-10AC)
a-DIKE HEIGHT	18"	30"
b-DIKE WIDTH	24"	36"
c-FLOW WIDTH	4'	6'
d-FLOW DEPTH	12"	24"

STANDARD SYMBOL
A-2 B-3

FLOW CHANNEL STABILIZATION

1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. Line with geotextile Class C and Class I rip-rap or recycled concrete equivalent.
4. (Type B only) Line with geotextile Class C and Class II rip-rap.

CONSTRUCTION SPECIFICATIONS

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.

2. Runoff diverted from an 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 objectional 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 line, 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 on 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.

EARTH DIKE

NO SCALE

"I hereby certify that the facility shown on this plan was constructed as shown on the "AS-BUILT" plans and meets the approved plans and specifications.

JOHN M. ELORRIAGA Date:

Certify means to state or declare a professional opinion based upon onsite inspections and materials tests which are conducted during construction. The onsite inspections and materials tests are those inspections and tests deemed sufficient and appropriate by commonly accepted engineering standards. Certify does not mean or imply a guarantee by the Engineer nor does an Engineer's certification relieve any other party from meeting requirements imposed by contract, employment or other means, including meeting commonly accepted industry practices.

By the Developer:

"I/We certify that all development and/or construction will by done according to these 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 before beginning the project. 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."

James R. Moxley Jr. 3-2-95
JAMES R. MOXLEY Date
DEVELOPER: SDC GROUP INC

By the Engineer:

"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/she 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."

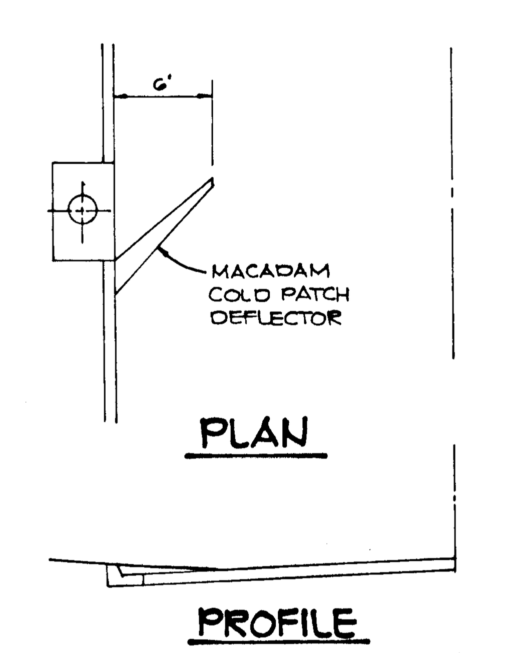
John M. Elorriaga 3/2/95
JOHN M. ELORRIAGA, P.E. #16891 Date
ENGINEER:

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

Patricia Engle 3/14/95
U.S. Soil Conservation Service Date

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Robert Zieler 3/14/95
Howard Soil Conservation District Date



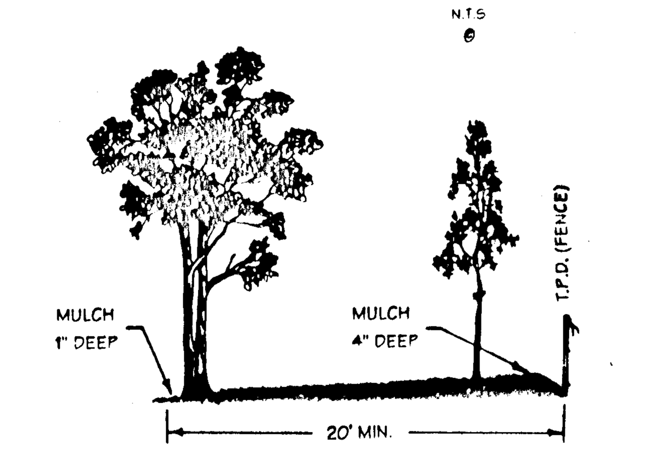
PLAN

PROFILE

COLD PATCH DEFLECTOR

NO SCALE

TYPICAL MULCHING DETAIL :
EXISTING FOREST EDGES
N.T.S



TREE PROTECTIVE DEVICE GENERAL NOTES

1. Trees along the edge of areas to be cleared (ie., location of Limits of Disturbance) will have mulch applied as shown in "Mulching Detail Existing Forest Edges" on this Plan. Mulch may be shredded hardwood bark, chipped pine bark, or composted leaves applied by hand or blower.

2. Tree Protective Devices (TPDs) will be installed following mulching, and before any clearing, grading, or other work on the site. TPD locations will correspond to the locations of the Limits of Disturbance and/or where shown on this Plan.

3. TPD posts will be at least 1-3/4" x 1" steel U-channel or 2" x 2" lumber, not more than 10' apart, installed at least 2' into firm soil and with a minimum of 4' exposed above grade.

4. Fence fabric will be 48" wide orange plastic (polyethylene, polyvinyl, or similar) mesh installed either with malleable wire wrapped at least one complete turn around each post or with heavy duty industrial staples, at least within 2" of the top and of the bottom of the mesh, and will hang straight and be securely attached to the posts.

5. TPD posts may also be used to support silt fence, provided TPD mesh is properly installed. Silt fence will not substitute for TPD fencing. Sediment and erosion control measures will comply with the County-approved Sediment Control Plan.

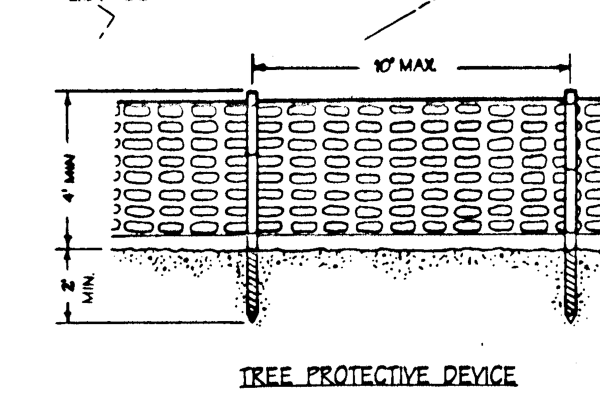
6. Forest Conservation Area (FCA) signs will be posted at the top of at least every third post. Signs will meet criteria of the applicable Howard County regulations.

7. No machinery, dumping, or storage of any material will be tolerated within the Forest Conservation Areas. Areas designated for afforestation/reforestation will not be used for machinery operation, dumping, or storage of any material following final grading or other site preparation but prior to planting. Only activities that do not adversely impact desirable trees and vegetation will be allowed within the FCAs.

8. All TPDs and signs will be maintained in satisfactory condition. All TPDs and Forest Conservation Area signs will be removed when construction on the site is complete.

9. Trees in FCAs approved by the County are permanently protected by law from clearing, cutting, or damage without a County-approved Forest Harvesting Plan approved in advance. Other restrictions may also exist. Consult the Final Plat for this property.

10. This FCP was prepared from the best information available to us and is based on the professional education and experience of the preparer. JHC shall not be liable for damages or losses of any kind incurred through the use of this FCP.



TREE PROTECTIVE DEVICE

ORANGE PLASTIC MESH N.T.S.

NO	DATE	REVISION

TSA GROUP, INC.
planning • architecture • engineering • surveying
8480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410-465-6105)

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — 3/22/95 DATE

CHIEF, BUREAU OF HIGHWAYS — for HS — 3-20-95 DATE

CHIEF, BUREAU OF ENGINEERING — 3/23/95 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Gina Tirinnanzi
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — 3/24/95 DATE

OWNER/DEVELOPER:
S D C GROUP INC.
P.O. BOX 417
ELLICOTT CITY, MARYLAND 21041
(410) 465-4244

DES: JH	DRN: JH/SHS

PROJECT: WINTER OAKS
LOTS 1 - 16

LOCATION:
TAX MAP 17 PARCEL 202
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: GRADING AND SEDIMENT CONTROL PLAN

SP-93-18, WP 94-35

DATE: JUNE 13, 1994 / FEBRUARY 17, 1995	PROJECT NO. 0667
SCALE: AS SHOWN	DRAWING 3 OF 6

F-94-130

1727

TEMPORARY SEEDBED PREPARATION

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT).

SEEDING: FOR PERIOD MARCH 1 THROUGH APRIL 30 AND FROM AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 2-1/2 BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ FT). FOR THE PERIOD MAY 1 THROUGH AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 SQ FT). FOR THE PERIOD NOVEMBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES, 8 FT. OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING.

REFER TO THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

PERMANENT SEEDBED PREPARATION

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ON OF THE FOLLOWING SCHEDULES:

1. PREFERRED – APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE 30-0-0- UREAFORM FERTILIZER (9 LBS/1000 SQ FT).
2. ACCEPTABLE – APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.

SEEDING: FOR THE PERIODS MARCH 1 THROUGH APRIL 30 AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 LBS/1000 SQ FT) OF KENTUCKY 3[illegible] FESCUE PER ACRE AND 2 LBS PER ACRE (.05 LBS/1000 SQ F[illegible] [illegible] WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY: OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS PER ACRE OF KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS PER ACRE OF WELL ANCHORED STRAW.

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR [illegible] USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING.

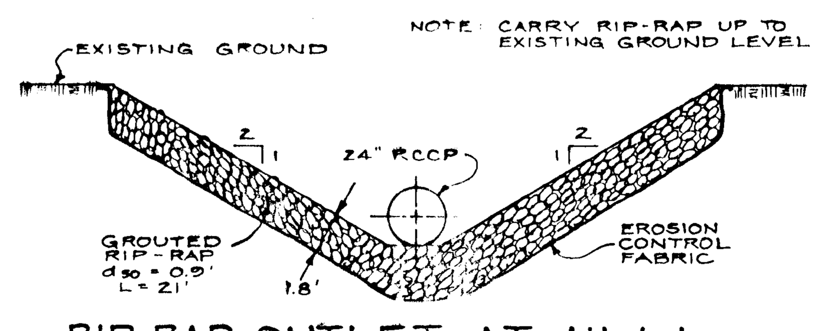
MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

SEDIMENT CONTROL NOTES

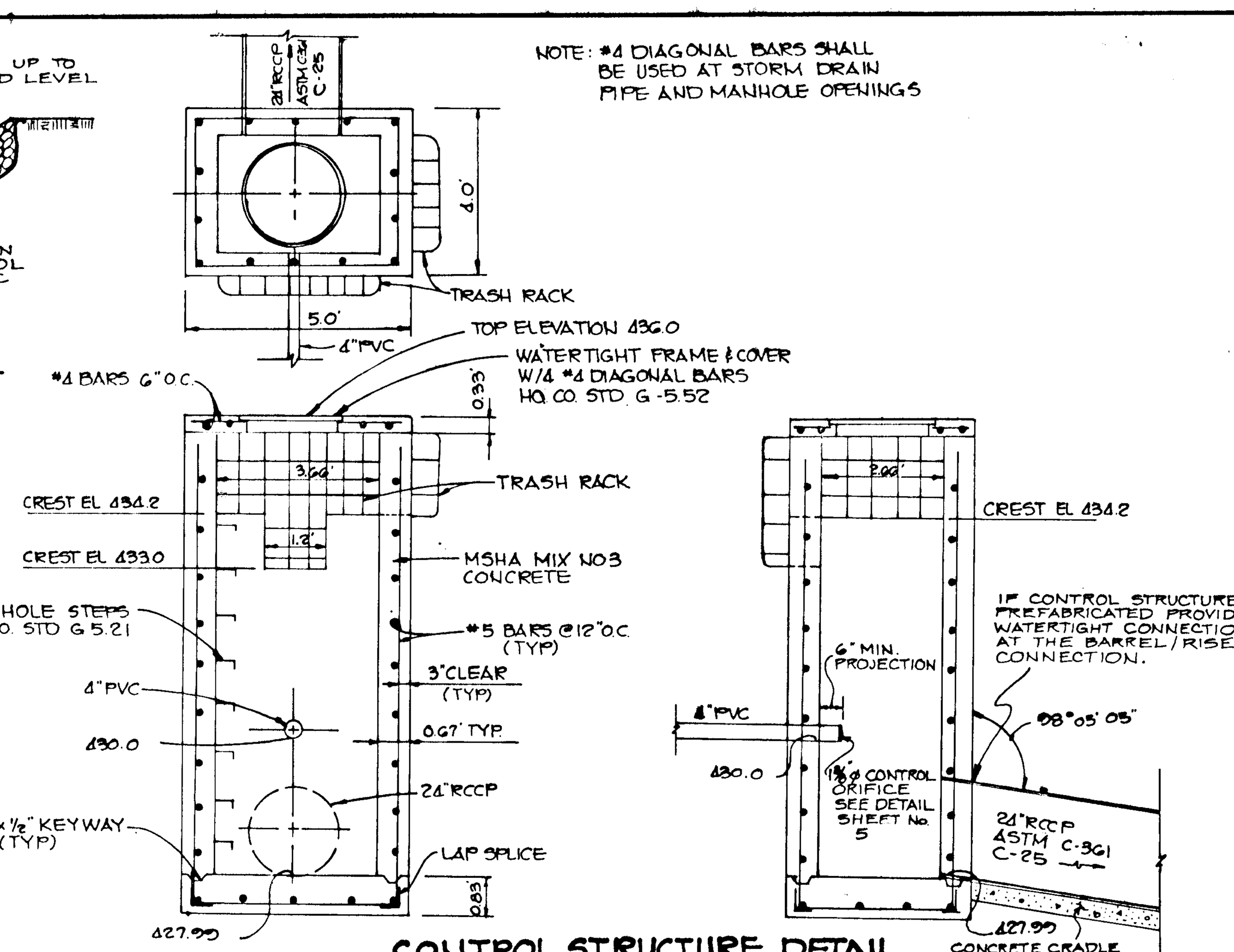
1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS AND PERMITS SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION.
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (SEC. 51) SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:

TOTAL AREA OF SITE	7.81	ACRES
AREA DISTURBED	3.50	ACRES
AREA TO BE ROOFED OR PAVED	0.34	ACRES
AREA TO BE VEGETATIVELY STABILIZED	3.16	ACRES
TOTAL CUT	7421	CU YDS
TOTAL FILL	351	CU YDS
OFFSITE WASTE/BORROW AREA LOCATION	HO. CO. LANDFILL	

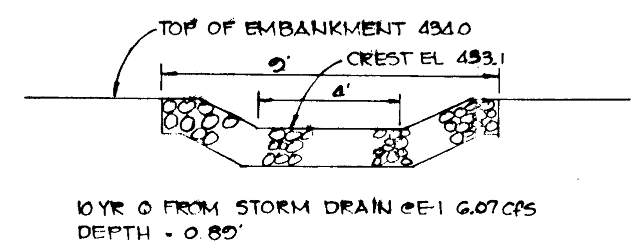
8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES ARE LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.



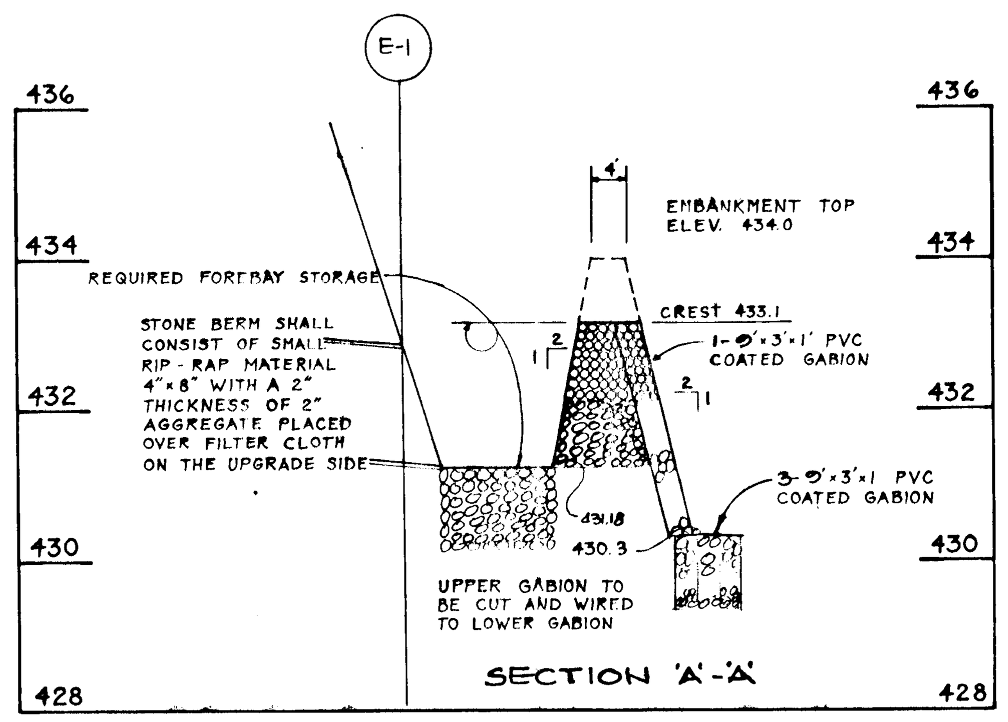
RIP-RAP OUTLET AT HW-1
NO SCALE



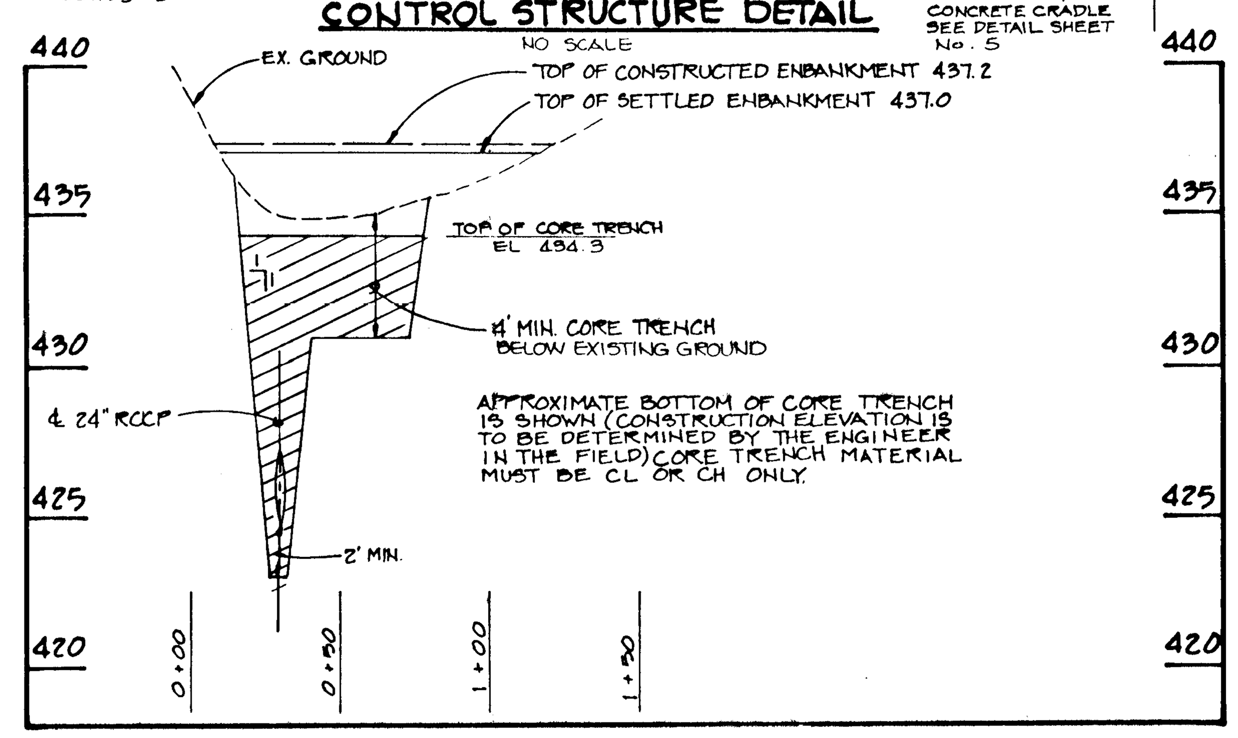
CONTROL STRUCTURE DETAIL
NO SCALE



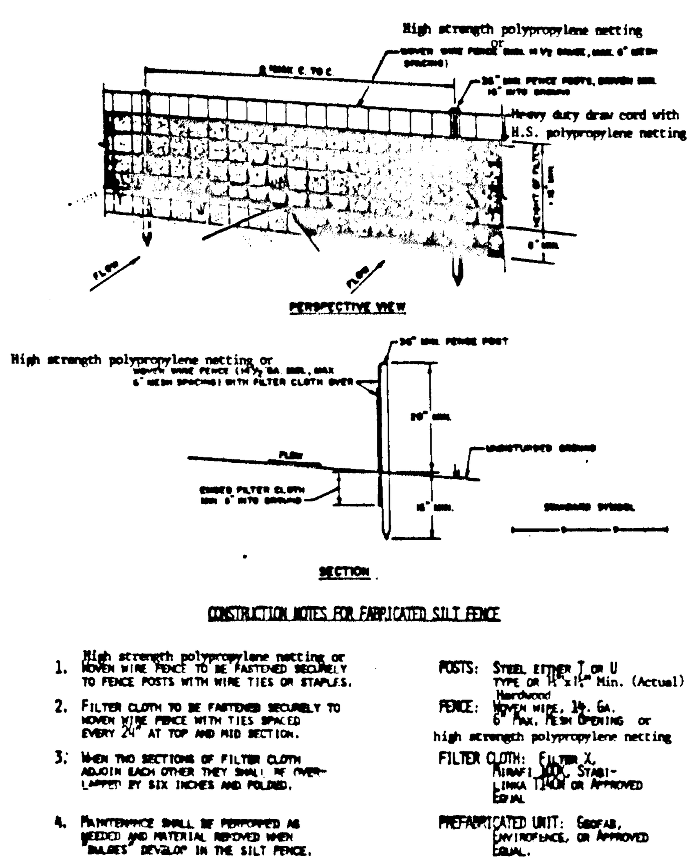
PROFILE THROUGH FOREBAY STONE WEIR
SCALE 1"=4



SECTION THROUGH FOREBAY STONE BERM
SCALE: HORIZ. 1"=20' VERT. 1"=2'



SECTION THROUGH EMBANKMENT
SCALE: HORTZ. 1" = 50' VERT. 1" = 5'



CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. High strength polypropylene netting or woven wire fence to be fastened securely to fence posts with wire ties or staples.
2. Filter cloth to be fastened securely to woven wire fence with ties spaced every 24" at top and mid section.
3. When two sections of filter cloth adjoin each other they shall be overlapped by six inches and folded.
4. Maintenance shall be performed as needed and material removed when "bulges" develop in the silt fence.

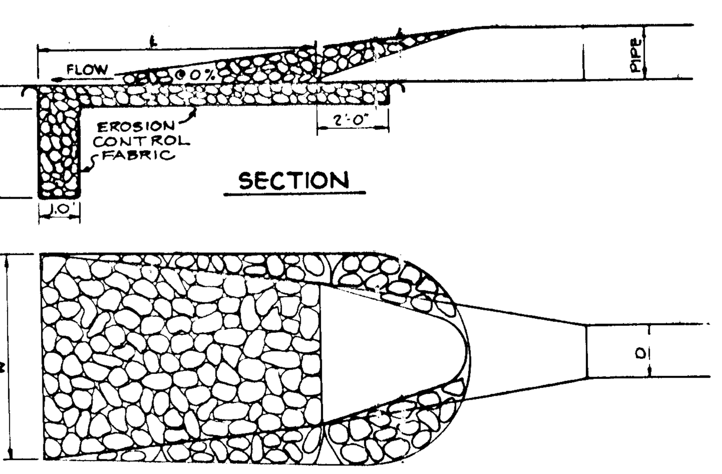
POSTS: Steel either T or U type or 1½"x1½" Min. (Actual) Hardwood

FENCE: Woven wire, 14 Ga. 6" Max. Mesh Opening or high strength polypropylene netting

FILTER CLOTH: Filter X, Mirafi 100X, Stabilinka T140N or Approved Equal

PREFABRICATED UNIT: Geofab, Envirofence, or Approved Equal.

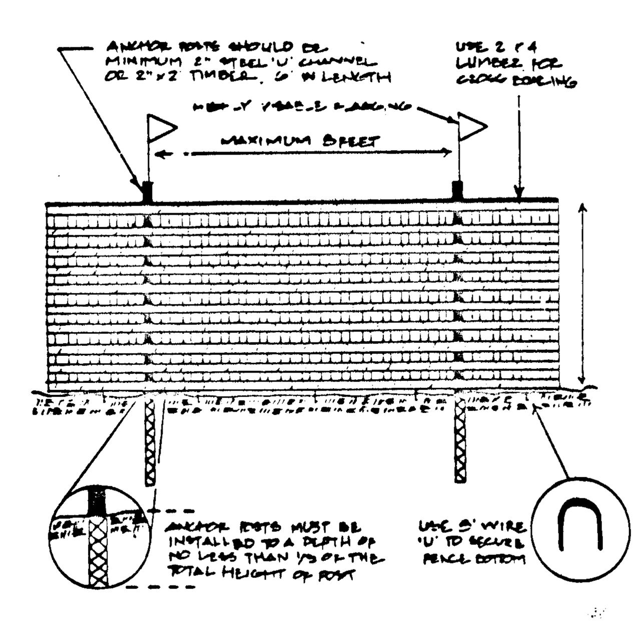
SILT FENCE
NO SCALE



STRUCTURE	d - 50	LENGTH (L)	WIDTH (W)	THICKNESS (T)
E - 1	0.5'	20'	17'	1.0'

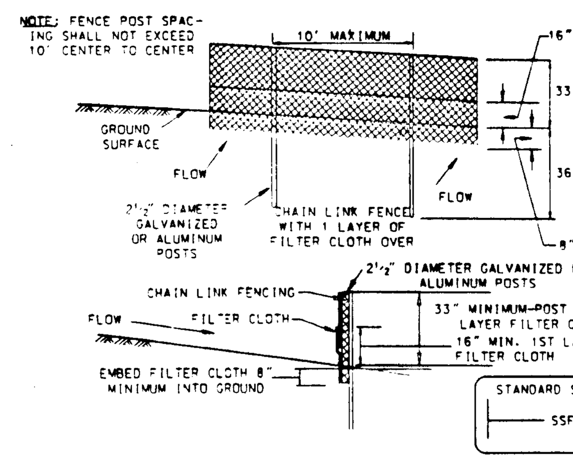
OUTLET PROTECTION DETAIL
NO SCALE

Blaze Orange Plastic Mesh



Notes
1. Forest protection device only.
2. Retention Area will be set as part of the review process
3. Boundaries of Retention Area should be staked and flagged prior to installing device
4. Root damage should be avoided.
5. Protective signage may also be used.
6. Device should be maintained throughout construction.

TEMPORARY TREE PROTECTION FENCE
NO SCALE

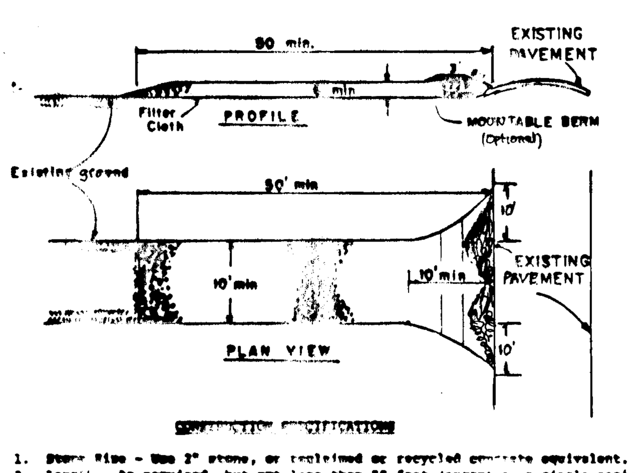


Construction Specifications

Fencing shall be 42 inches in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6 foot fence shall be used, substituting 42 inch fabric and 6 foot length posts.

1. The poles do not need to set in concrete.
2. Chain link fence shall be fastened securely to the fence posts with wire ties or staples.
3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
4. Filter cloth shall be embedded a minimum of 8" into the ground.
5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence.

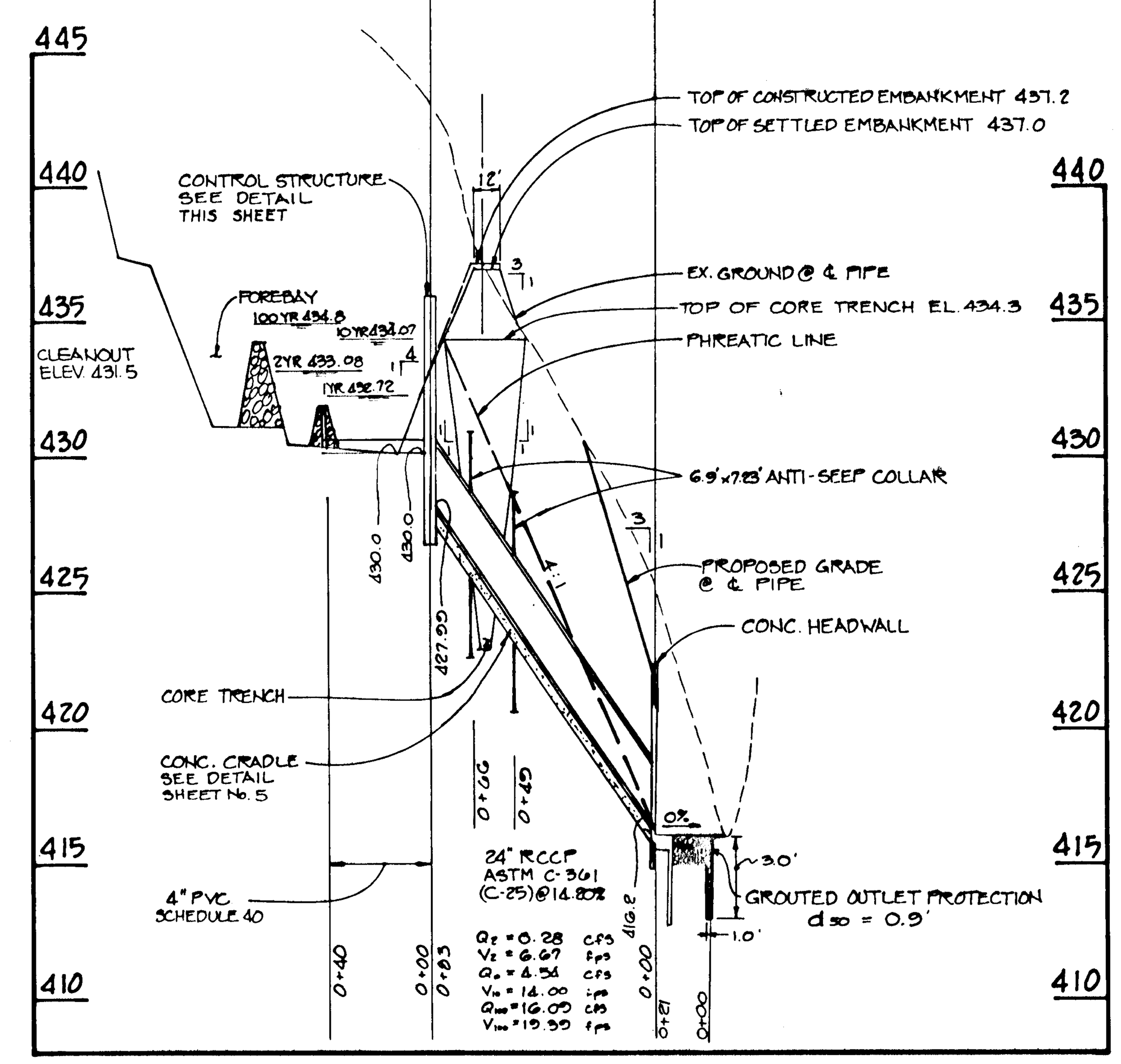
SUPER SILT FENCE
NO SCALE



CONSTRUCTION SPECIFICATIONS

1. Stone Size – Use 2" stone, or reclaimed or recycled concrete equivalent.
2. Length – As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
3. Thickness – Not less than six (6) inches.
4. Width – Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
5. Filter Cloth – Will be placed over the entire area prior to placing of stone. Filter will not be required on a single family residence lot.
6. Surface Water – All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
7. Maintenance – The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
8. Washing – Wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
9. Periodic inspection and needed maintenance shall be provided after each rain.

STABILIZED CONSTRUCTION ENTRANCE
NO SCALE



PRINCIPAL SPILLWAY PROFILE
SCALE: HORTZ. 1" = 50' VERT. 1" = 5'

1727

AS-BUILT CERTIFICATION

I hereby certify that the facility shown on this plan was constructed as shown on the "as-built" plans and meets the approved plans and specifications.

__________ Signature   PE No. __________ Date __________

Certify means to state or declare a professional opinion based upon onsite inspections and material tests which are conducted during construction. The onsite inspections and material tests are those inspections and tests deemed sufficient and appropriate by commonly accepted engineering standards. Certify does not mean or imply a guarantee by the engineer nor does an engineer's certification relieve any other party from meeting requirements imposed by contract, employment, or other means, including meeting commonly accepted industry practices.

OPERATION, MAINTENANCE AND INSPECTION

Inspection of the pond(s) shown hereon shall be performed at least annually, in accordance with the checklist and requirements contained within USDA, SCS "Standards And Specifications For Ponds" (MD-378). The pond owner(s) and any heirs, successors, or assigns shall be responsible for the safety of the pond and the continued operation, surveillance, inspection, and maintenance thereof. The pond owner(s) shall promptly notify the Soil Conservation District of any unusual observations that may be indications of distress such as excessive seepage, turbid seepage, sliding or slumping.

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. 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."

James R Moxley [signature] — DEVELOPER: — 3-2-95 DATE

BY THE ENGINEER:

"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/SHE 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.

[signature] ENGINEER: JOHN M. ELORRIAGA, P.E. # 16891 — 3/2/95 DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

[signature] U.S. SOIL CONSERVATION SERVICE — 3/14/95 DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Robert W. Ziehm [signature] HOWARD S.C.D. — 3/14/95 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[signature] CHIEF, LAND DEVELOPMENT DIVISION — 3/22/95 DATE

[signature] for CHIEF, BUREAU OF HIGHWAYS HS — 3-20-95 DATE

[signature] CHIEF, BUREAU OF ENGINEERING — 3/23/95 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[signature] CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH. — 3/24/95 DATE

NO	DATE	REVISION

TSA GROUP, INC.
planning • architecture • engineering • surveying
8480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410-465-6105)

OWNER/DEVELOPER:	PROJECT: WINTER OAKS LOTS 1 - 16	
S D C GROUP INC. P.O. BOX 417 ELLICOTT CITY, MARYLAND 21043 (410) 465-4244	LOCATION: TAX MAP 17 PARCEL 202 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
	TITLE: STORMWATER MANAGEMENT AND SEDIMENT CONTROL NOTES AND DETAILS SP 93-18, WP 94-35	
	DATE: JUNE 13, 1994 FEBRUARY 17, 1994	PROJECT NO. 0667
DES: JH/DAM DRN: CAB/SHS	SCALE: AS SHOWN	DRAWING 4 OF 6

F-94-130

Site Preparation

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

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, 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 inlet 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

Material – The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

Placement – Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (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 fill 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 tread 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 such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble yet not be so wet that water can be squeezed out.

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.

Cut Off Trench – The cutoff trench shall be excavated into impervious material along or parallel to the centerline 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 backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal 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 no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, 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 fill of 24" or greater over the structure or pipe.

Pipe Conduits

All pipes shall be circular in cross section.

Corrugated Metal Pipe – All of the following criteria shall apply for corrugated metal pipe:

1. Materials – (Steel Pipe) – This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings or an approved equal may be used: Nexon, Plasti-Cote, Blac-Klad, and Beth-Cu-Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

   Materials – (Aluminum Coated Pipe) – This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

   Materials – (Aluminum Pipe) – This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight 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 pH of the surrounding soils shall be between 4 and 9.

2. Coupling bands, anti-seep collars, and sections, etc., must be composed of the same material as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.

3. Connections – All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

   All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the band width. The following type connections are acceptable for pipes less than 48" in diameter: flanges on both ends of the pipe, a 12" wide standard lap type band with 12" wide by 3/8" thick closed cell circular neoprene gasket; and a 12" wide hugger type band with O-ring gaskets having a minimum diameter of 1/2" greater than the corrugation depth. Pipes 48" in diameter and larger shall be connected by a 24" long annular corrugated band using rods and lugs. A 12" wide by 3/8" thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24". Helically corrugated pipe shall have either continuously welded seams or have lock seams.

4. Bedding – The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

5. Backfilling shall conform to "Structure Backfill."

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

Reinforced Concrete Pipe – All of the following criteria shall apply for reinforced concrete pipe:

1. Materials – Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-361. An approved equivalent is AWWA Specification C-302.

2. Bedding – All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its outside diameter with a minimum thickness of 3 inches, or as shown on the drawings.

3. Laying pipe – Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding 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 joint must be located within 2 feet from the riser.

4. Backfilling shall conform to "Structure Backfill".

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

Polyvinyl Chloride (PVC) Pipe – All of the following criteria shall apply for polyvinyl chloride (PVC) pipe:

1. Materials – PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241.

2. Joints and connections to anti-seep collars shall be completely watertight.

3. Bedding – The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

4. Backfilling shall conform to "Structure Backfill."

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

Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 608, Mix No. 3.

Rock Riprap

All rock shall be dense, sound, and free from cracks, seams, and other defects conducive to accelerated weathering. The rock fragments shall be angular to subrounded in shape. The least dimension of an individual rock fragment shall be not less than one third the greatest dimension of the fragment.

The rock shall have the following properties:

1. Bulk specific gravity (saturated surface-dry basis) not less than 2.5.

2. Absorption not more than three percent.

3. Soundness: Weight loss in five cycles not more than 20 percent when sodium sulfate is used.

Bulk specific gravity and absorption shall be determined according to ASTM C 127. The test for soundness shall be performed according to ASTM C 88.

The riprap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the riprap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. Filter cloth shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 919.12.

Care of Water during Construction

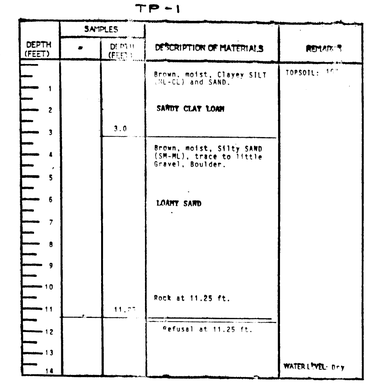
All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from the various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom of required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to sumps from which the water shall be pumped.

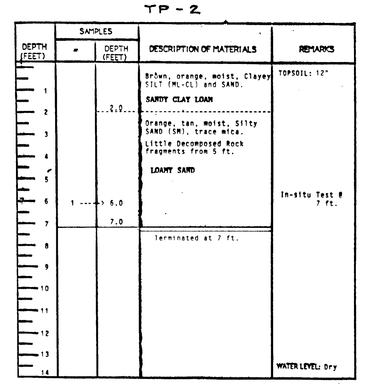
Stabilization

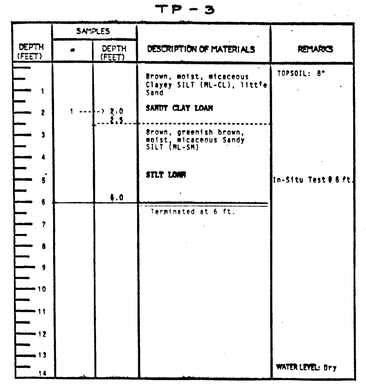
All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Maryland Soil Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

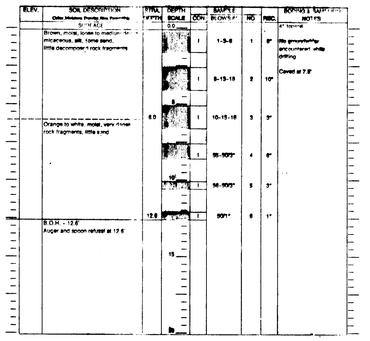
Erosion and Sediment Control

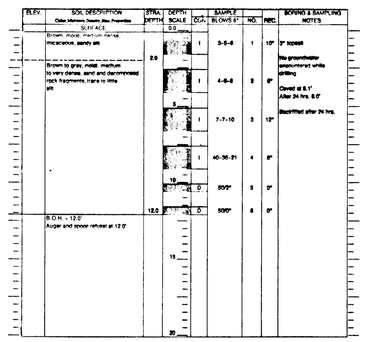
Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.

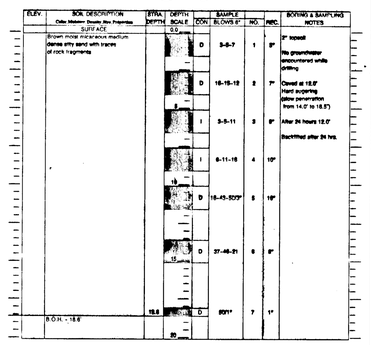


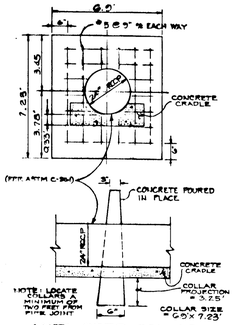




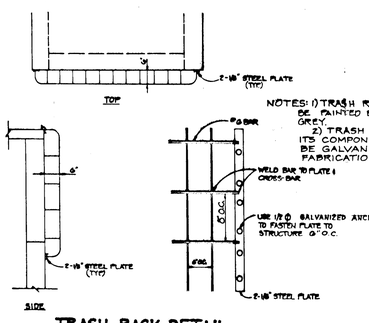








ANTI-SEEP COLLAR
NO SCALE



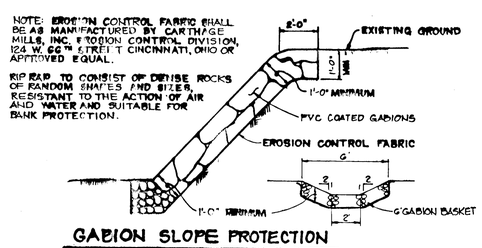
TRASH RACK DETAIL
NO SCALE

NOTE: POUR CONCRETE TO UNDISTURBED EARTH. REMOVE SHEETING BEFORE POURING CONCRETE OR LEAVE LOWER PORTION OF SHEETING IN PLACE.

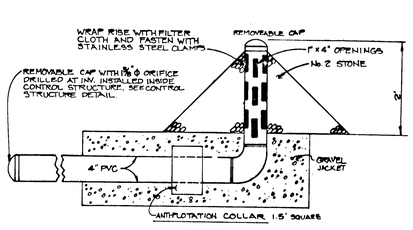
CONCRETE CRADLE
NO SCALE

NOTE: EROSION CONTROL FABRIC SHALL BE AS MANUFACTURED BY CARTHAGE MILLS, INC. EROSION CONTROL DIVISION, 124 W. 66TH STREET CINCINNATI, OHIO OR APPROVED EQUAL.

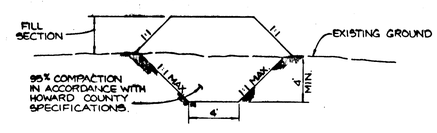
RIP RAP TO CONSIST OF DENSE ROCKS OF RANDOM SHAPES AND SIZES, RESISTANT TO THE ACTION OF AIR AND WATER AND SUITABLE FOR BANK PROTECTION.



GABION SLOPE PROTECTION
NO SCALE



LOW FLOW ORIFICE DETAIL
NO SCALE



CORE TRENCH SECTION
NO SCALE

NOTE: 1) IF WATER IS ENCOUNTERED DURING THE CONSTRUCTION OF THE CORE TRENCH, IT IS TO BE REMOVED BY PUMPING.
2) CORE TRENCH SHALL CONSIST OF IMPERVIOUS MATERIAL (CL, CH) AS DETERMINED BY A GEOTECHNICAL ENGINEER ON SITE, AND MAY REQUIRE TO BE HAULED FROM AN OFFSITE LOCATION.

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. 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."

James R. Mathews Jr. — 3-2-95
DEVELOPER: — DATE

BY THE ENGINEER:

"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/SHE 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.

ENGINEER: JOHN M. ELORRIAGA, P.E. # 16891 — 3/2/95 DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

U.S. SOIL CONSERVATION SERVICE — 3/14/95 DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Robert W. Zielke
HOWARD S.C.D. — 3/14/95 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — 3/22/95 DATE
CHIEF, BUREAU OF HIGHWAYS — 3-20-95 DATE
CHIEF, BUREAU OF ENGINEERING — 3/23/95 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH. — 3/24/95 DATE

NO.	DATE	REVISION

TSA GROUP, INC.
planning • architecture • engineering • surveying
8480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410-465-6105)

OWNER/DEVELOPER:
S D C GROUP INC.
P.O. BOX 417
ELLICOTT CITY, MARYLAND 21041
(410) 465-4244

PROJECT: WINTER OAKS
LOTS 1 - 10

LOCATION: TAX MAP 17 PARCEL 202
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

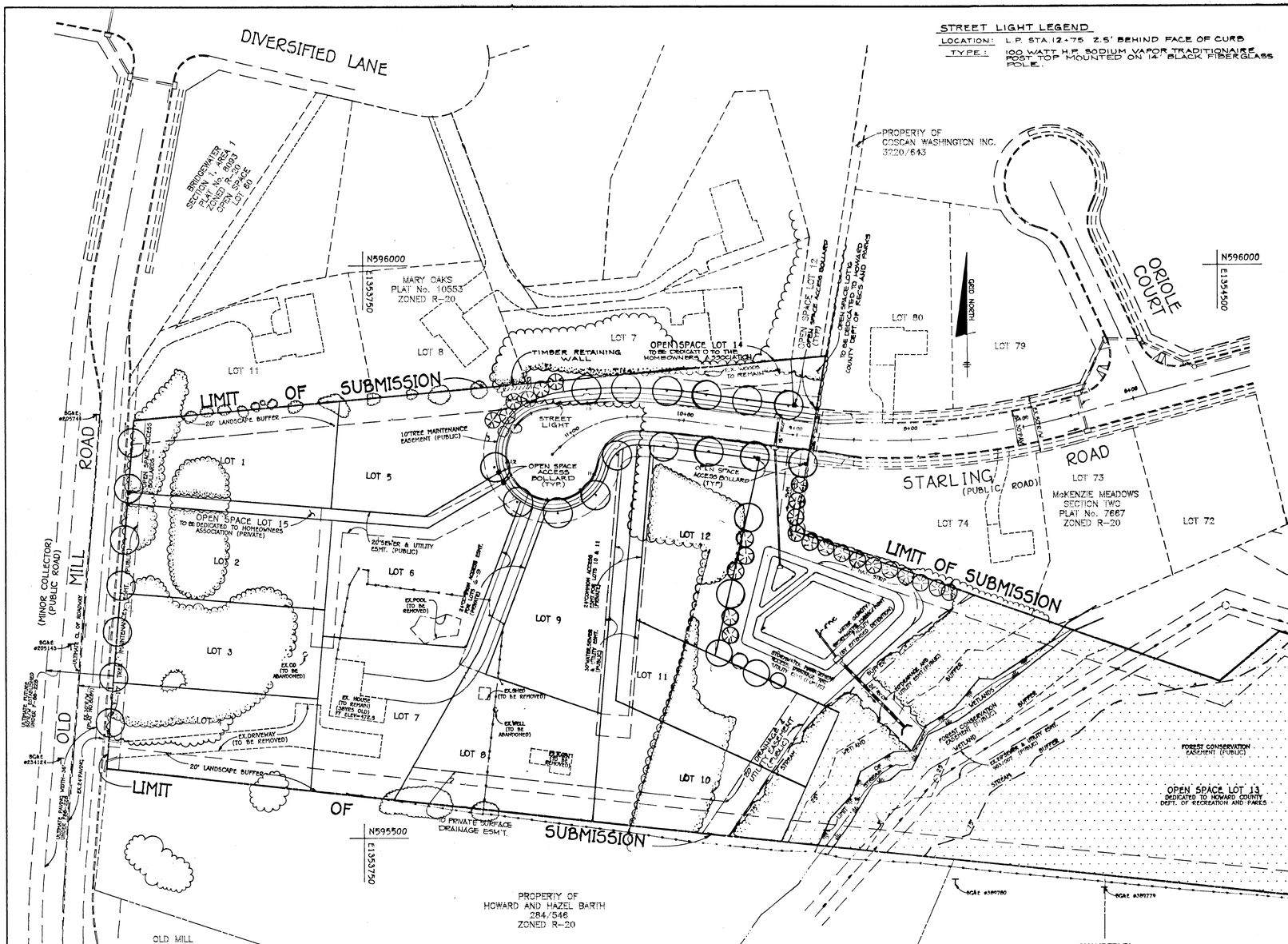
TITLE: STORMWATER MANAGEMENT NOTES AND DETAILS

SP 93-18, WP 94-55
DATE: JUNE 13, 1994 / FEBRUARY 17, 1995
PROJECT NO. 0667

DES: DAM | DRN: CAB | SCALE: 1"= 50' | DRAWING 5 OF 6

1127

F-94-130



PLAN
SCALE : 1"= 50'

STREET LIGHT LEGEND

LOCATION: L.P. STA 12+75 2.5' BEHIND FACE OF CURB
TYPE: 100 WATT H.P. SODIUM VAPOR TRADITIONAIRE POST TOP MOUNTED ON 14' BLACK FIBERGLASS POLE.

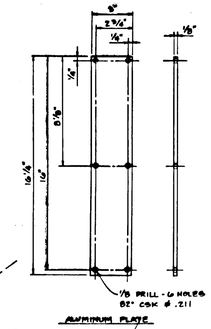
SCHEDULE D
STORMWATER MANAGEMENT AREA LANDSCAPING

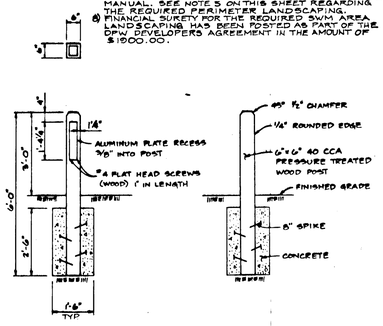
LINEAR FEET OF PERIMETER	440 LF (TYPE 'B')
NUMBER OF TREES REQUIRED SHADE TREES 1:50' EVERGREEN TREES 1:40'	 440 ÷ 50 = 8.8 440 ÷ 40 = 11
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO
NUMBER OF TREES PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION)	 4 21

PLANTING LIST

SYMBOL	QUANTITY	NAME	REMARKS
⊙	26	ACER RUNDRUM (Red Maple)	2 1/2" MIN. CAL. B & B FULL HEAD
⊛	27	PINUS STROBUS (Eastern White Pine)	5'- 6' HT. UNSHEARED

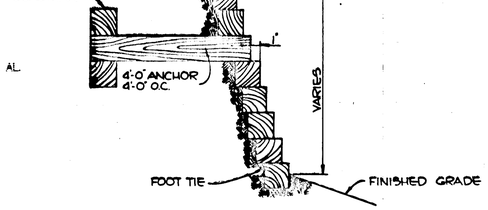
NOTE:
1) TREES MUST BE PLANTED A MINIMUM OF 4 FEET FROM THE CURB OR SIDEWALK AND MUST BE A MINIMUM OF 5 FEET FROM ANY STORM DRAIN.
2) A MINIMUM DISTANCE OF 20 FEET SHALL BE MAINTAINED BETWEEN ANY TREES LOCATED ALONG THE CURB LINE AND ANY STREET LIGHTS.
3) TREES MUST BE PLANTED A MINIMUM OF 5 FEET FROM AN OPEN SPACE ACCESS STRIP AND 10 FEET FROM A DRIVEWAY
4) SEE TREE PLANTING DETAIL - THIS SHEET.
5) PERIMETER LANDSCAPED EDGES SHALL BE PROPOSED UNDER FUTURE SITE DEVELOPMENT PLAN FOR THIS PROJECT AS INDICATED ON APPROVED PRELIMINARY SKETCH EQUIVALENT PLAN SP-93-18 DATED 2/18/94.
6) SUBSTITUTION OF EVERGREEN TREES IN LIEU OF SHADE TREES ALONG THE NORTH SIDE OF THE STORMWATER MANAGEMENT FACILITY HAS BEEN USED TO PROVIDE AN EVERGREEN SCREEN ALONG EXISTING LOT 74.
7) THIS PLAN FOR THE REQUIRED STORMWATER MANAGEMENT (SWM) AREA LANDSCAPING ONLY HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. SEE NOTE 5 ON THIS SHEET REGARDING THE REQUIRED PERIMETER LANDSCAPING.
8) FINANCIAL SURETY FOR THE REQUIRED SWM AREA LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT IN THE AMOUNT OF $1900.00.



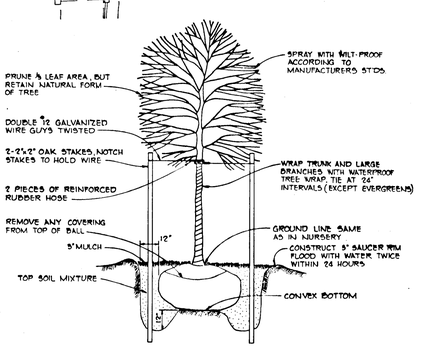


1. BOLLARDS WILL BE PLACED AT THE FOUR CORNERS OF THE OPEN SPACE ACCESS STRIP.
2. THE ALUMINUM PLATE WILL ONLY BE REQUIRED ON THE FRONT RIGHT BOLLARD DIRECTLY FACING THE ROAD.
3. PLATE TO BE SCREWED AND GLUED INTO PLACE.
4. SCREWS ARE TO BE COUNTERSUNK.

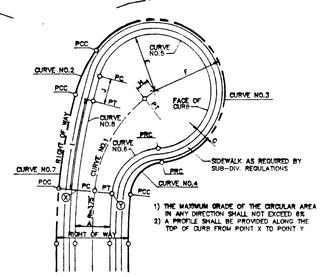
OPEN SPACE BOLLARD DETAIL
NO SCALE



TIMBER RETAINING WALL
NO SCALE



TREE PLANTING DETAIL
NO SCALE

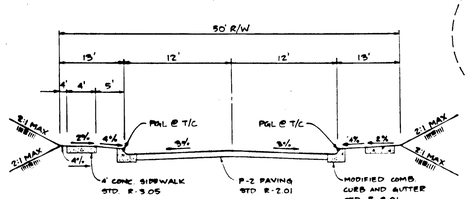


CURVE DATA					
CURVE	RADIUS	LENGTH	TAN	CHORD	DELTA
1	93.00'	75.24'	39.81'	73.20'	46°21'09"
2	100.00'	34.46'	17.40'	34.29'	19°44'43"
3	50.00'	200.36'	108.22'	90.78'	229°35'31"
4	25.00'	34.37'	20.53'	31.73'	78°46'45"
5	40.00'	175.84'	55.19'	64.78'	251°52'02"
6	35.00'	49.60'	30.00'	45.55'	81°11'59"
7	400.00'	65.88'	33.01'	65.81'	09°26'12"

R-20 ZONING	
LINE	DISTANCE
A	24'*
E	40'
F	50'
G	10'
H	9.04'
I	L=63.03'

* SEE STD.NO. R-1.01

REVISED OFFSET CUL-DE-SAC DETAIL - R-5.03



STARLING ROAD CUL-DE-SAC
DESIGN SPEED: 30 MPH
TYPICAL SECTION
NO SCALE

BITUMINOUS CONCRETE SURFACE	1.5"
BITUMINOUS CONCRETE BASE	2.5"
* 8" CRUSHER RUN BASE COURSE (2 COURSES) OR 6" DENSE GRADED STABILIZED AGGREGATE BASE COURSE	8"
(ALTERNATE)	
BITUMINOUS CONCRETE SURFACE	1.5"
BITUMINOUS CONCRETE BASE	6"

HOWARD COUNTY DESIGN MANUAL VOLUME IV STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-7.01)

6½" PAVING, P-2

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 3/22/95
CHIEF, BUREAU OF HIGHWAYS — DATE 3-20-95
CHIEF, BUREAU OF ENGINEERING — DATE 3/23/95

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 3/24/95

NO	DATE	REVISION

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OWNER/DEVELOPER:
S D C GROUP INC.
P.O. BOX 417
ELLICOTT CITY, MARYLAND 21041
(410) 465-4244

PROJECT: WINTER OAKS
LOTS 1 - 16

LOCATION:
TAX MAP 17 PARCEL 202
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: LANDSCAPE PLAN AND DETAILS

SP 93-18, WP 94-35

DATE: JUNE 15, 1994
REVISED FEBRUARY 17, 1995

PROJECT NO. 0667

DES: JH | DRN: JH/CAB | SCALE: AS SHOWN | DRAWING 6 OF 6

F-94-130

L27