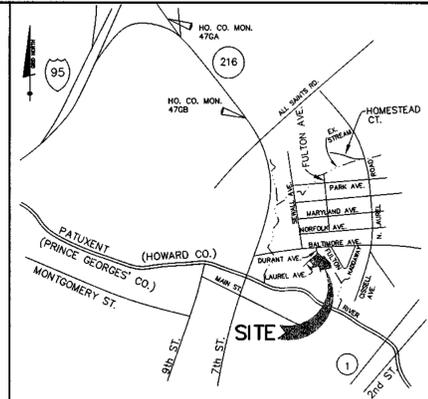


# NORTH LAUREL PARK DURANT AVENUE

## 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

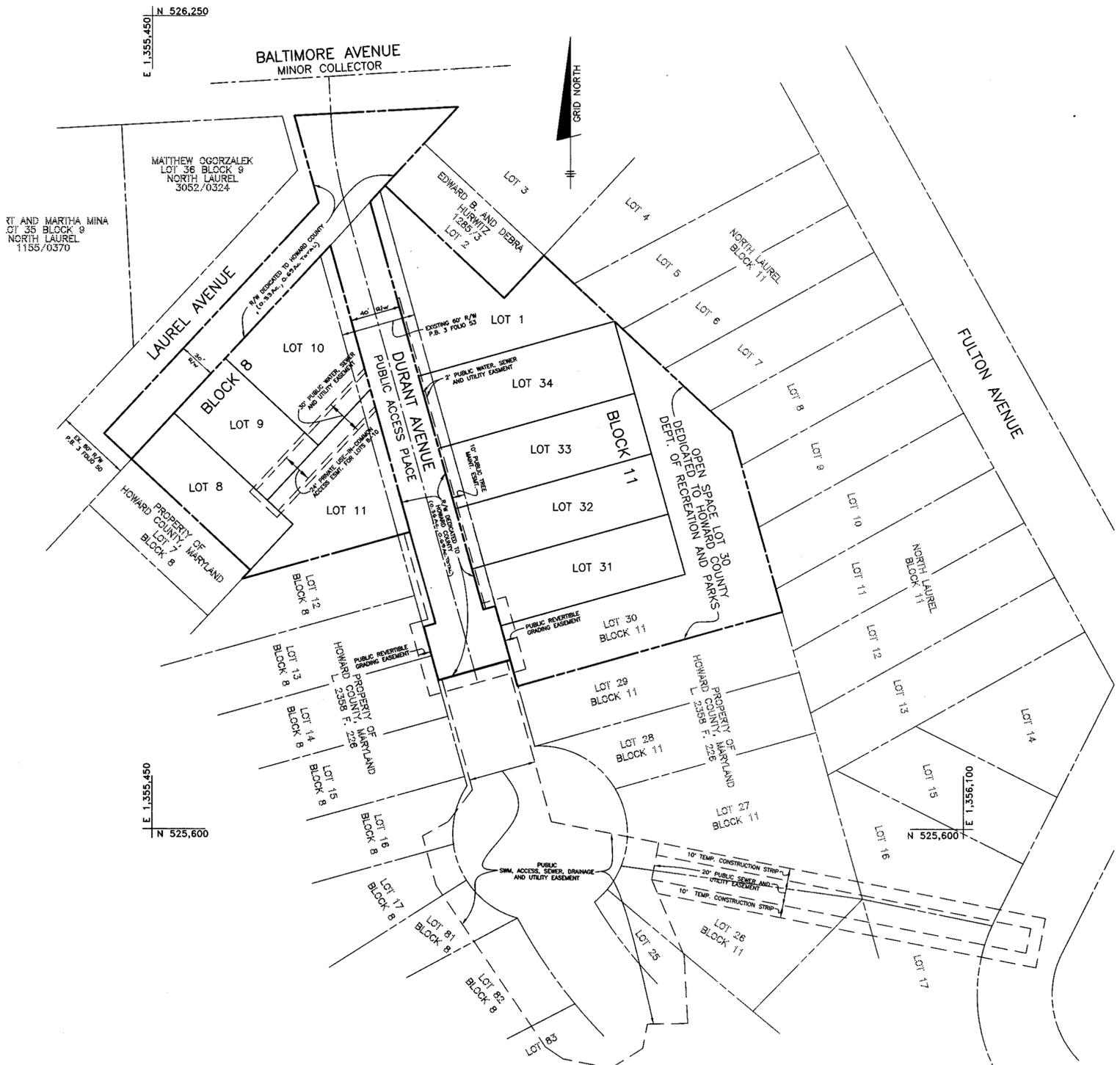
### ROAD AND STORMWATER MANAGEMENT CONSTRUCTION PLANS



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 5 (five) 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 Maps 50 - Block 3 - Parcel 425  
Zoning: R-SC  
Total Tract Area: 2.96 Ac±  
Number of Existing Lots: 9\*  
\*Plat was recorded in approximately 1893 in Plat Book No. 3, Folio 53. Lots have been reconfigured through deed conveyance prior to recordation of this plat.
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. The contours shown hereon have been taken from field run topographic survey at 2' interval. The topography was prepared Charles P. Johnson & Associates, Inc. dated July 25, 1997 and May 27, 2000.
7. The coordinates shown hereon are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System. Howard County Monuments Nos. 47GA and 47GB were used for this project.
8. Water and Sewer for this subdivision is public. Sewer & water Contract No. is # 24-3723-D and its drainage area is the Patuxent watershed.
9. Stormwater Management Quantity Control will be provided by detention. Quality Control to be provided by vegetative swale/micro-pool combination. The facility is to be owned and maintained by Howard County.
10. There are no wetlands, wetland buffers or 100 year floodplain within this project.
11. Forest Conservation is not required for this project since the property was recorded prior to the Forest Conservation Bill and no additional lots are being created.
12. A Traffic Study is not required for this property.
13. Geotechnical Report compiled by Hillis-Cornes Engineering Associates, Inc. dated July, 2000.
14. Existing utilities were located by record drawings and field locations. Contractor shall verify location of utilities prior to construction.
15. Unless noted as "private" all easements are public.
16. There are no existing buildings on the site.
17. There are no previous Department of Planning and Zoning reference numbers.
18. Contractor shall adjust all utilities and rim elevations as needed to match this plan.
19. Street lights will be required in this development in accordance with the Design Manual. Street light placement and the type of fixture and pole selected shall be in accordance with the latest Howard County Design Manual, Volume III (1993) and as modified by "Guidelines Street Lights in Residential Developments (June, 1993)." The June 1993 policy includes guidelines for lateral and longitudinal placement. A minimum spacing of 20' shall be maintained between street lights and any tree. Street lights for this subdivision shall be "Colonial" HPS post top fixtures on black fiberglass poles located as shown on this plan.
20. This plan is exempt from perimeter landscaping since no new lots are being created. Street trees for Durant Avenue as shown on these plans shall be provided by the developer in accordance with Section 16.124 of the Howard County Code and Landscape Manual. Financial surety for the required street trees shall be made part of the Developer's Agreement in the amount of \$4,400.00. Landscaping of the stormwater management facility is fulfilled through alternative compliance, see schedule 'D', sheet no. 2. Perimeter landscaping is not required.
21. All handicap ramps shall be in accordance with Howard County Std. Detail R-4.01 and all current ADA requirements.
22. A Use-in-Common Driveway Maintenance Agreement for lots 8 - 10 block "8" will be recorded by the developer in the Land Records Office of Howard County.
23. All plan dimensions are to face of curb unless otherwise noted.
24. Driveway access to existing house located on lot 2, block 11 shall be provided throughout construction operation.
25. No disturbance is permitted within the stream buffer except for work related to the utility crossing as shown on these plans (see sheet no. 5).
26. A letter of exemption from the Maryland Department of the Environment and a Maryland Special Permit, Category III, from the U.S. Army Corp. of Engineers for grading in the stream channel to install the utility line was applied for on December 7, 1999. The permit will be obtained prior to issuance of the grading permit. Application tracking no. 99-NT-0616/200061200.



LOCATION MAP  
SCALE: 1" = 50'

BENCH MARKS (NAD83)	
HO. CO. No. 47GB	
STAMPED DISC SET ON TOP OF CONC. MONUMENT BEING 0.2 MILES WEST OF WHISKEY BOTTOM ROAD ON ROUTE 216. LOCATED IN A TRAFFIC ISLAND AND 8' FROM THE EDGE OF THE EAST BOUND LANE, 21' FROM THE EDGE OF THE WEST BOUND LANE AND 48.8' SOUTH EAST OF A GRATE INLET.	
N 529,917.139'	E 1,353,526.704' ELEV. 259.239
HO. CO. No. 47GA	
STAMPED DISC SET ON TOP OF CONC. MONUMENT BEING NEAR THE INTERSECTION OF INTERSTATE 95 AND ROUTE 216. LOCATED IN A MEDIAN STRIP AND 8' FROM THE EDGE OF THE EAST BOUND LANE, 195'± SOUTH OF THE BRIDGE ABUTMENT FOR EAST BOUND ROUTE 216 AND 150'± NORTH OF THE RAMP FROM EAST BOUND 216 TO NORTH BOUND INTERSTATE 95.	
N 532,404.179'	E 1,351,627.363' ELEV. 350.468

SHEET INDEX	
NO.	DESCRIPTION
1	TITLE SHEET
2	ROAD AND LANDSCAPE PLAN
3	ROAD PROFILES AND DETAILS
4	DRAINAGE AREA MAP
5	GRADING, SEDIMENT AND EROSION CONTROL PLAN
6	SEDIMENT AND EROSION CONTROL NOTES AND DETAILS
7	STORMWATER MANAGEMENT NOTES AND DETAILS

NO.	DATE	REVISION

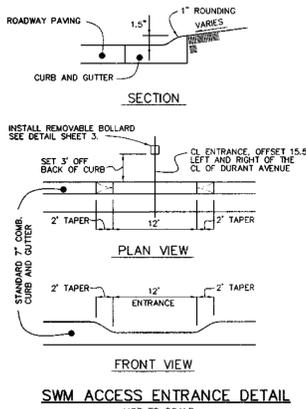
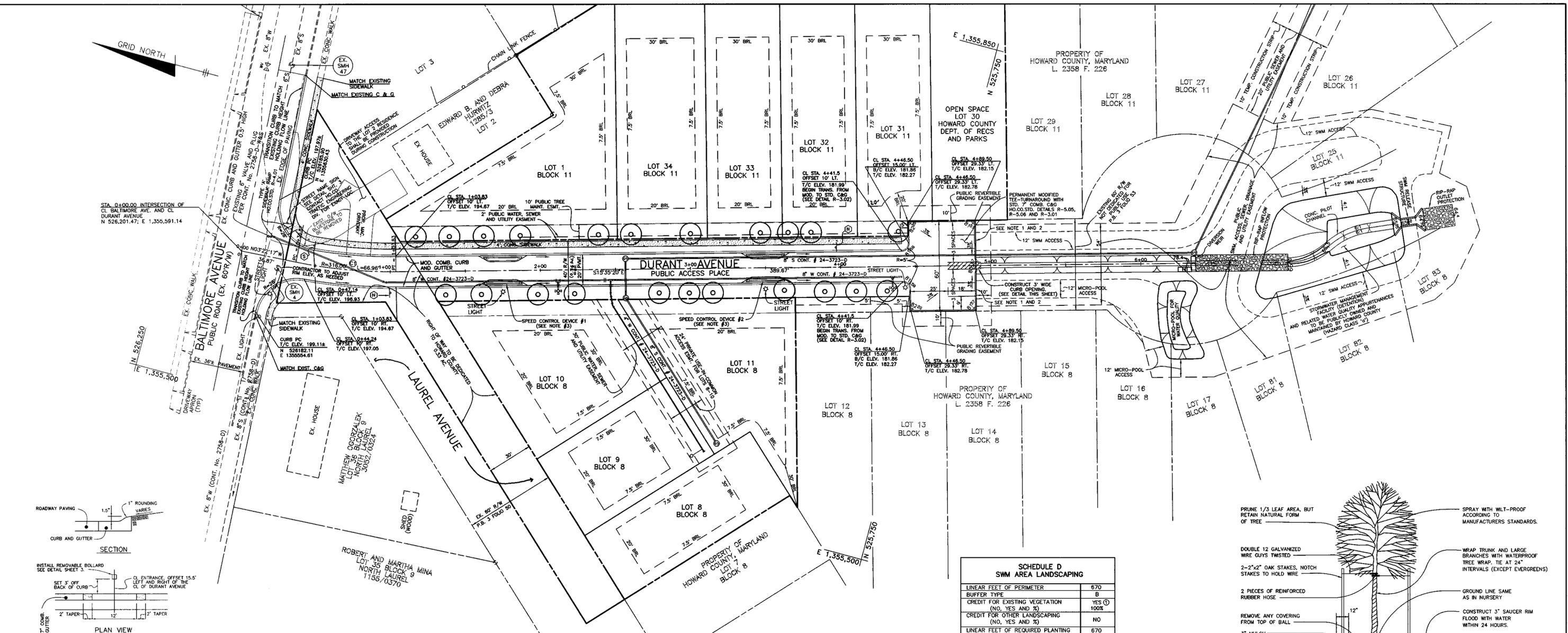
**BENCHMARK ENGINEERING, INC.**  
ENGINEERS • LAND SURVEYORS • PLANNERS

8480 BALTIMORE NATIONAL PIKE • SUITE 418  
ELLCOTT CITY, MARYLAND 21043  
PHONE: 410-465-6105 FAX: 410-465-6644

12/19/00

<p>OWNER/DEVELOPER:</p> <p style="text-align: center;">CORNERSTONE HOLDINGS, L.L.C. 9691 NORFOLK AVENUE LAUREL, MARYLAND 20723 410-792-2565</p>	<p>PROJECT: <b>NORTH LAUREL PARK DURANT AVENUE</b></p> <p>BLOCK "8" LOTS 8-11; BLOCK "11" LOT 1, OPEN SPACE LOT 30 AND LOTS 31-34; PUBLIC STORMWATER MANAGEMENT FACILITY; TREE MAINTENANCE EASEMENT AND WATER, SEWER, DRAINAGE AND UTILITY EASEMENTS</p> <p>LOCATION: TAX MAP: 50, GRID: 3 PARCEL: 425 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND</p> <p>TITLE: TITLE SHEET</p> <p>DATE: JULY 27, 2000 PROJECT NO. 1025 DECEMBER 18, 2000</p> <p>DES: GWF/JMC DRAFT: YSL/DBT CHECK: GWF SCALE: AS SHOWN SHEET 1 OF 7</p>
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<p>APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS</p> <p>1-29-01 DATE</p> <p>APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING</p> <p>1/24/01 DATE</p> <p>1/25/01 DATE</p>	<p>1-29-01 DATE</p> <p>1/24/01 DATE</p> <p>1/25/01 DATE</p>
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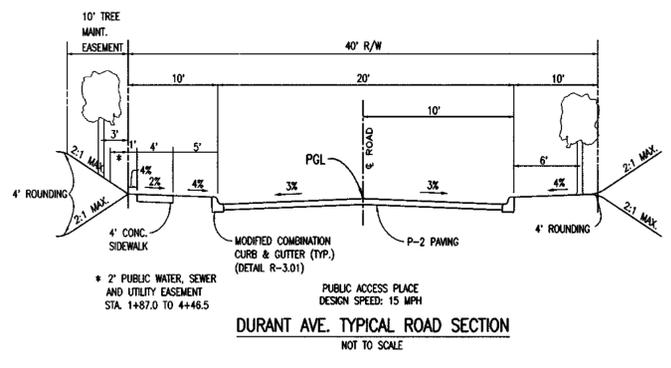


TRAFFIC SIGN SCHEDULE			
SYMBOL	SIGN TYPE	LOCATION	DESCRIPTION
(S)	R1-1	STA. 0+47 OFFS. 13' LT.	'STOP SIGN' 30"x30" OCTAGON
(N)	W20-4	STA. 1+00 OFFS. 14' RT.	'ONE LANE ROAD' 48"x48" DIAMOND
(N)	W20-4	STA. 3+97 OFFS. 13' LT.	'ONE LANE ROAD' 48"x48" DIAMOND

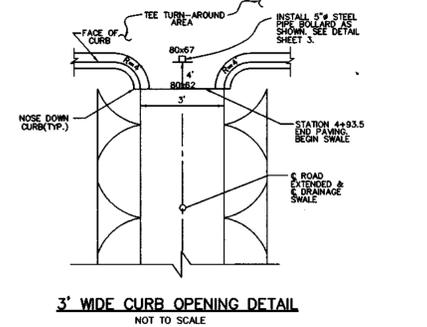
FOR SIGNAGE RELATED TO SPEED CONTROL DEVICES, SEE SHEET 3.

CURVE DATA TABLE					
CURVE	RADIUS	ARC	DELTA	TANGENT	CHORD
C-1	316.00'	66.96'	12°08'27"	33.61'	N09°28'30"W 66.83'

CENTERLINE CONTROL DATA				
ROAD	STATION	NORTH	EAST	
DURANT AVENUE	0+00.00	526201.4673	1355591.1372	
	PC 0+36.87	526164.6855	1355593.3547	
	PT 1+03.83	526098.7519	1355604.4068	



- NOTES:**
- PROVIDE ENTRANCE IN STD. 7" COMB. CURB AND GUTTER FOR MAINTENANCE ACCESS. REFER TO DETAIL, THIS SHEET.
  - INSTALL REMOVABLE BOLLARD AS SHOWN ON ENTRANCE DETAIL, THIS SHEET.
  - FOR SPEED CONTROL DEVICE DETAILS, SEE SHEET 3.



STREET LIGHT SCHEDULE			
STREET NAME	CL STATION	OFFSET	NOTES
DURANT AVE.	0+24	24' RT	100 WATT HPS VAPOR 'COLONIAL' POST TOP FIXTURES MOUNTED ON 14' BLACK FIBERGLASS POLE
	1+75	14' RT	
	3+50	14' RT	
	4+43	14' RT	

SCHEDULE D SWM AREA LANDSCAPING	
LINEAR FEET OF PERIMETER	670
BUFFER TYPE	B
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	YES (1) 100%
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO
LINEAR FEET OF REQUIRED PLANTING	670
NUMBER OF TREES REQUIRED	13
SHADE TREES	17
EVERGREEN TREES	0
NUMBER OF TREES PROVIDED	0
SHADE TREES	0
EVERGREEN TREES	0
OTHER TREES (2:1 SUBSTITUTE)	0

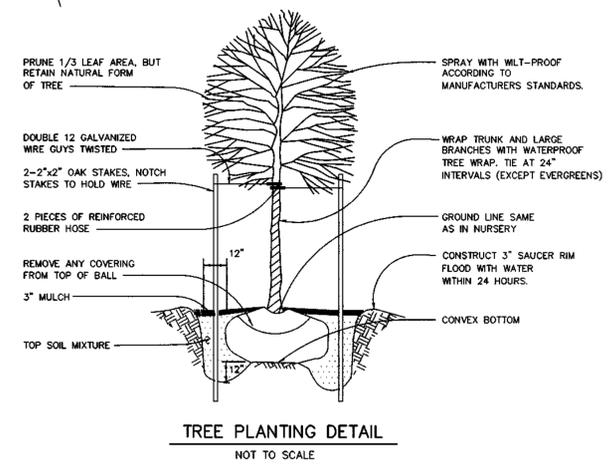
- ① THE STORMWATER MANAGEMENT FACILITY IS LOCATED ON AND SURROUNDED BY LAND OWNED BY HOWARD COUNTY AND IS INCLUDED IN PROJECT OPEN SPACE. THE LOCATION DOES NOT ABUT ANY RESIDENTIAL LOTS OR STRUCTURES AND IS BUFFERED BY EXISTING VEGETATION GREATER THAN 20 FEET IN WIDTH. BASED ON CRITERIA PRESENTED IN THE HOWARD COUNTY LANDSCAPE MANUAL, NO LANDSCAPING IS REQUIRED.

PLANTING LIST			
SYMBOL	QUANTITY	NAME	REMARKS
(O)	22+	TILIA AMERICANA, 'REDMOND'	2 1/2" MIN. CAL. REDMOND LITTLELEAF LINDEN B&B FULL HEAD

\* PROVIDED BY THE DEVELOPER

STREET TREE REQUIREMENTS	
STREET TREES REQUIRED (896 LF ÷ 40)	22 TREES
CREDIT FOR PRESERVATION OF EXISTING VEGETATION	NO
STREET TREES PROVIDED	22 TREES

- PLANTING NOTES:**
- 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.
  - A MINIMUM DISTANCE OF 20 FEET MUST BE MAINTAINED BETWEEN ANY TREES LOCATED ALONG THE CURB LINE AND ANY STREET LIGHTS.
  - TREE MUST BE PLANTED A MINIMUM OF 5 FEET FROM AN OPEN SPACE ACCESS STRIP AND 10 FEET FROM A DRIVEWAY.
  - THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 22 STREET TREES SHALL BE PART OF THE DEVELOPERS AGREEMENT, IN THE AMOUNT OF \$4,400.00. NO LANDSCAPING IS REQUIRED ALONG THE PERIMETER OF THE STORMWATER MANAGEMENT FACILITY (REFER TO SCHEDULE 'D').



NO.	DATE	REVISION

**BENCHMARK ENGINEERING, INC.**  
 ENGINEERS • LAND SURVEYORS • PLANNERS  
 8480 BALTIMORE NATIONAL PIKE • SUITE 418  
 ELLICOTT CITY, MARYLAND 21043  
 PHONE: 410-465-6105 FAX: 410-465-6644

*Donald M. Mason*

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Daniels* 1-24-01  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Chris Hamilton* 1/30/01  
 CHIEF, DIVISION OF LAND DEVELOPMENT

*Chris Hamilton* 1/25/01  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

OWNER/DEVELOPER: CORNERSTONE HOLDINGS, L.L.C.  
 9691 NORFOLK AVENUE  
 LAUREL, MARYLAND 20723  
 410-792-2565

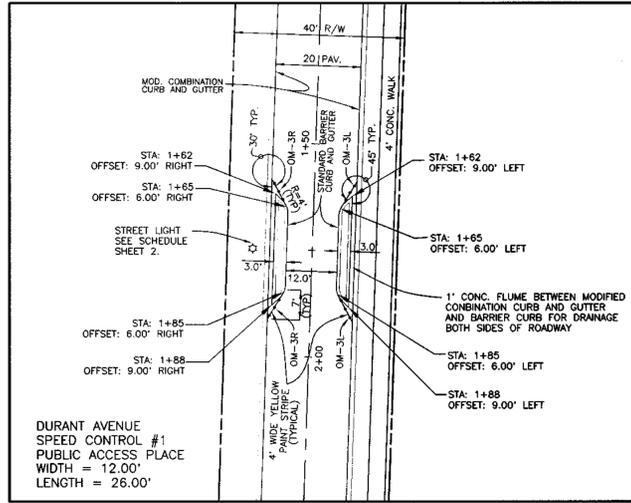
PROJECT: NORTH LAUREL PARK DURANT AVENUE  
 BLOCK 'B' LOTS 8-11; BLOCK '11' LOT 1, OPEN SPACE LOT 30 AND LOTS 31-34; PUBLIC STORMWATER MANAGEMENT FACILITY; TREE MAINTENANCE EASEMENT AND WATER, SEWER, DRAINAGE AND UTILITY EASEMENTS

LOCATION: TAX MAP: 50, GRID: 3  
 PARCEL: 425  
 6th ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

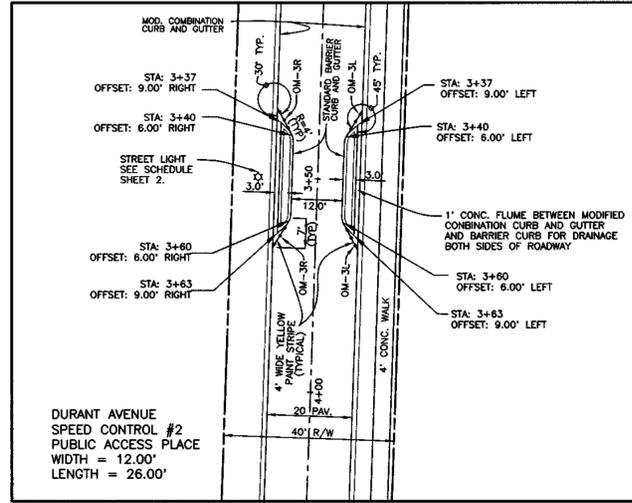
TITLE: ROAD AND LANDSCAPE PLAN

DATE: JULY 27, 2000 PROJECT NO. 1025  
 DECEMBER 18, 2000

DES: GWF/JMC DRAFT: YSL/DBT CHECK: GWF SCALE: AS SHOWN SHEET 2 OF 7

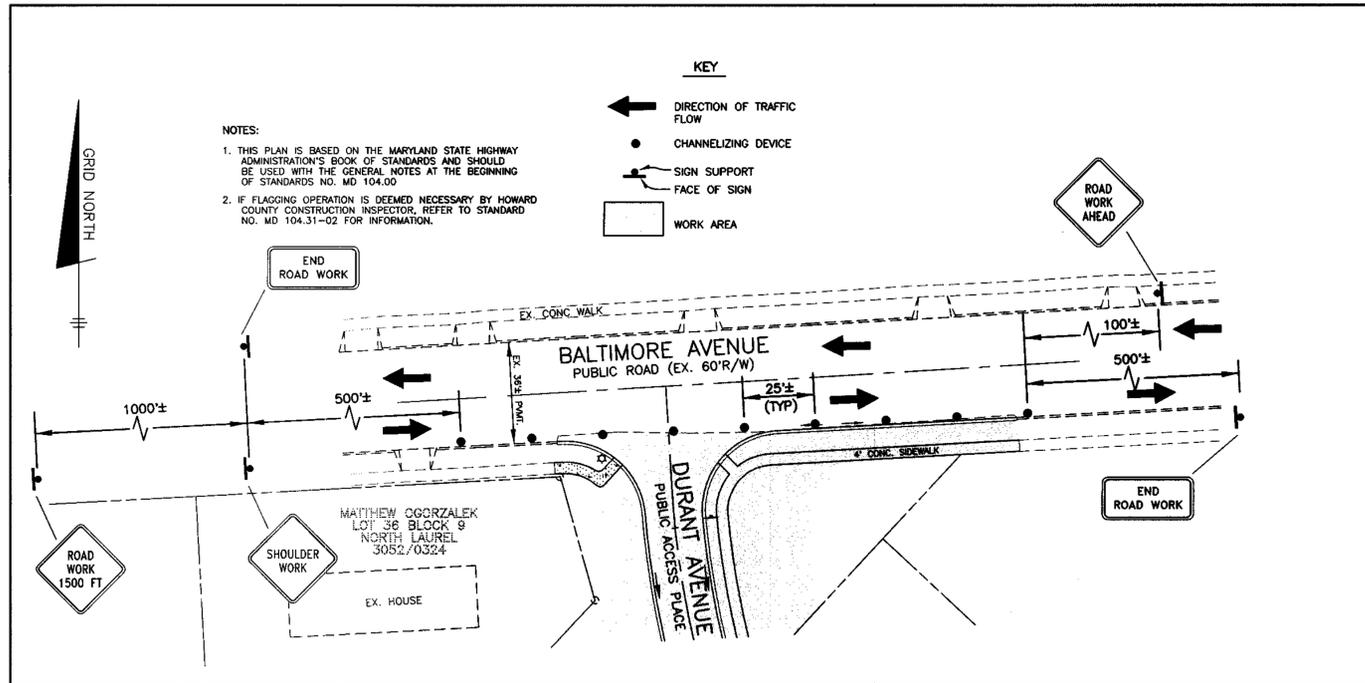
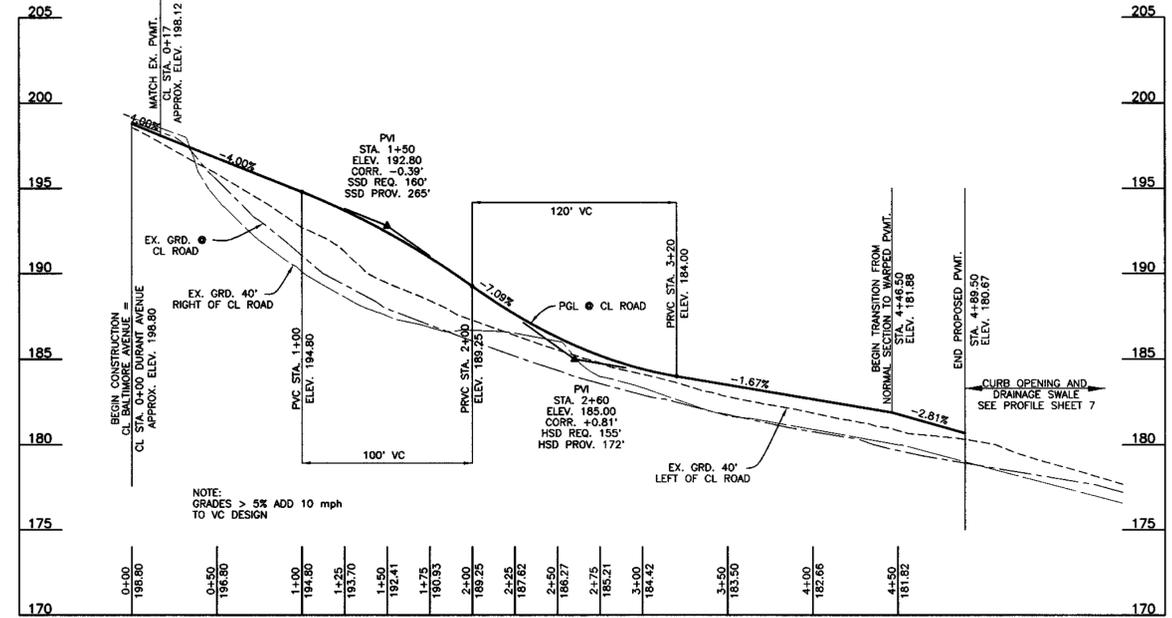


**SPEED CONTROL DEVICE #1**  
SCALE: 1" = 20'

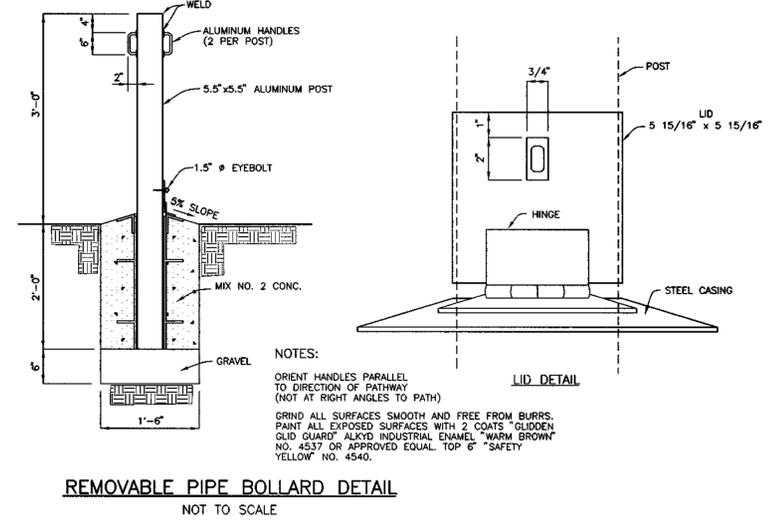
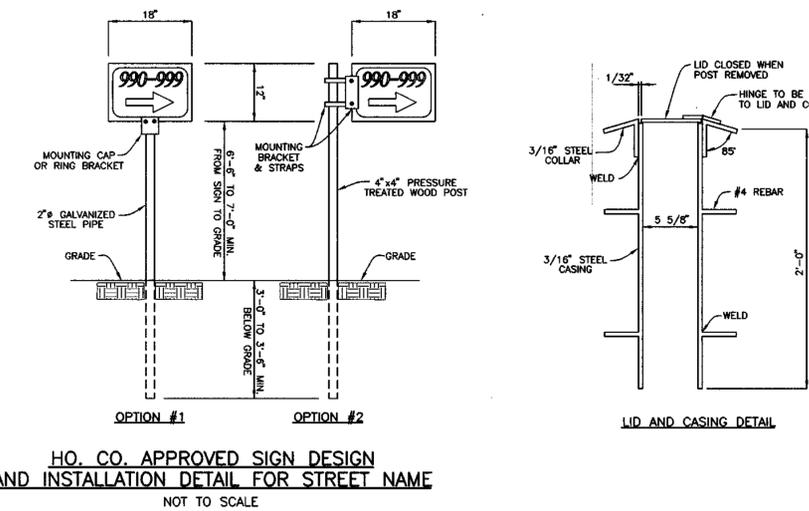
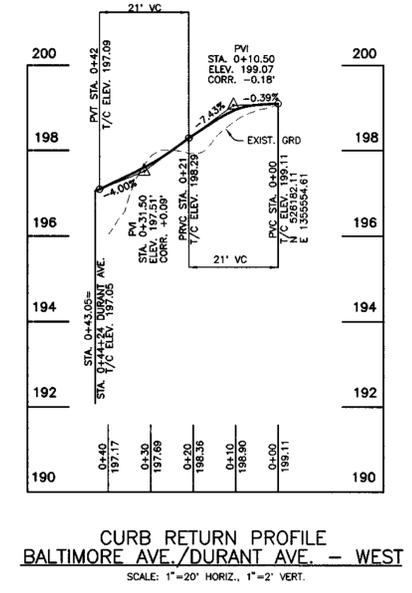
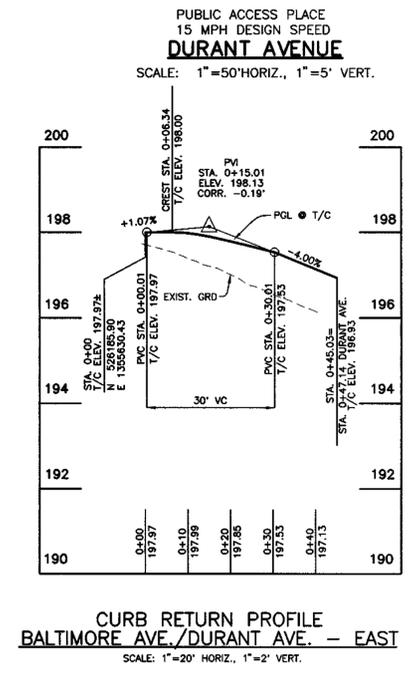
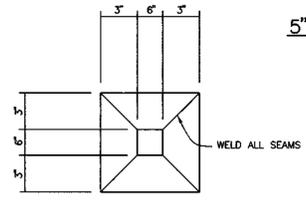
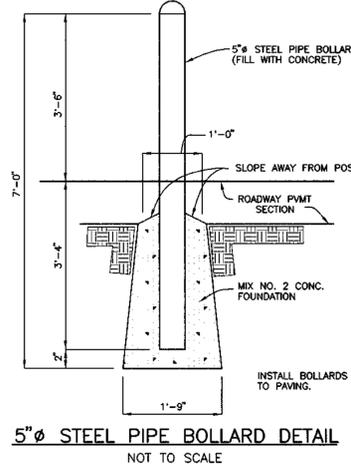


**SPEED CONTROL DEVICE #2**  
SCALE: 1" = 20'

TYPE	LOCATION	DESCRIPTION
OM-3R	STA. 1+59.81 OFFS. 9' RIGHT	
OM-3R	STA. 1+61.54 OFFS. 8' RIGHT	
OM-3R	STA. 1+63.27 OFFS. 7' RIGHT	
OM-3L	STA. 1+59.81 OFFS. 9' LEFT	
OM-3L	STA. 1+61.54 OFFS. 8' LEFT	
OM-3L	STA. 1+63.27 OFFS. 7' LEFT	
OM-3R	STA. 1+86.73 OFFS. 7' RIGHT	
OM-3R	STA. 1+88.46 OFFS. 8' RIGHT	
OM-3R	STA. 1+90.19 OFFS. 9' RIGHT	
OM-3L	STA. 1+86.73 OFFS. 7' LEFT	
OM-3L	STA. 1+88.46 OFFS. 8' LEFT	
OM-3L	STA. 1+90.19 OFFS. 9' LEFT	
OM-3R	STA. 3+34.81 OFFS. 9' RIGHT	
OM-3R	STA. 3+36.54 OFFS. 8' RIGHT	
OM-3R	STA. 3+38.27 OFFS. 7' RIGHT	
OM-3L	STA. 3+34.81 OFFS. 9' LEFT	
OM-3L	STA. 3+36.54 OFFS. 8' LEFT	
OM-3L	STA. 3+38.27 OFFS. 7' LEFT	
OM-3R	STA. 3+61.73 OFFS. 7' RIGHT	
OM-3R	STA. 3+63.46 OFFS. 8' RIGHT	
OM-3L	STA. 3+61.73 OFFS. 7' LEFT	
OM-3L	STA. 3+63.46 OFFS. 8' LEFT	
OM-3L	STA. 3+65.19 OFFS. 9' LEFT	

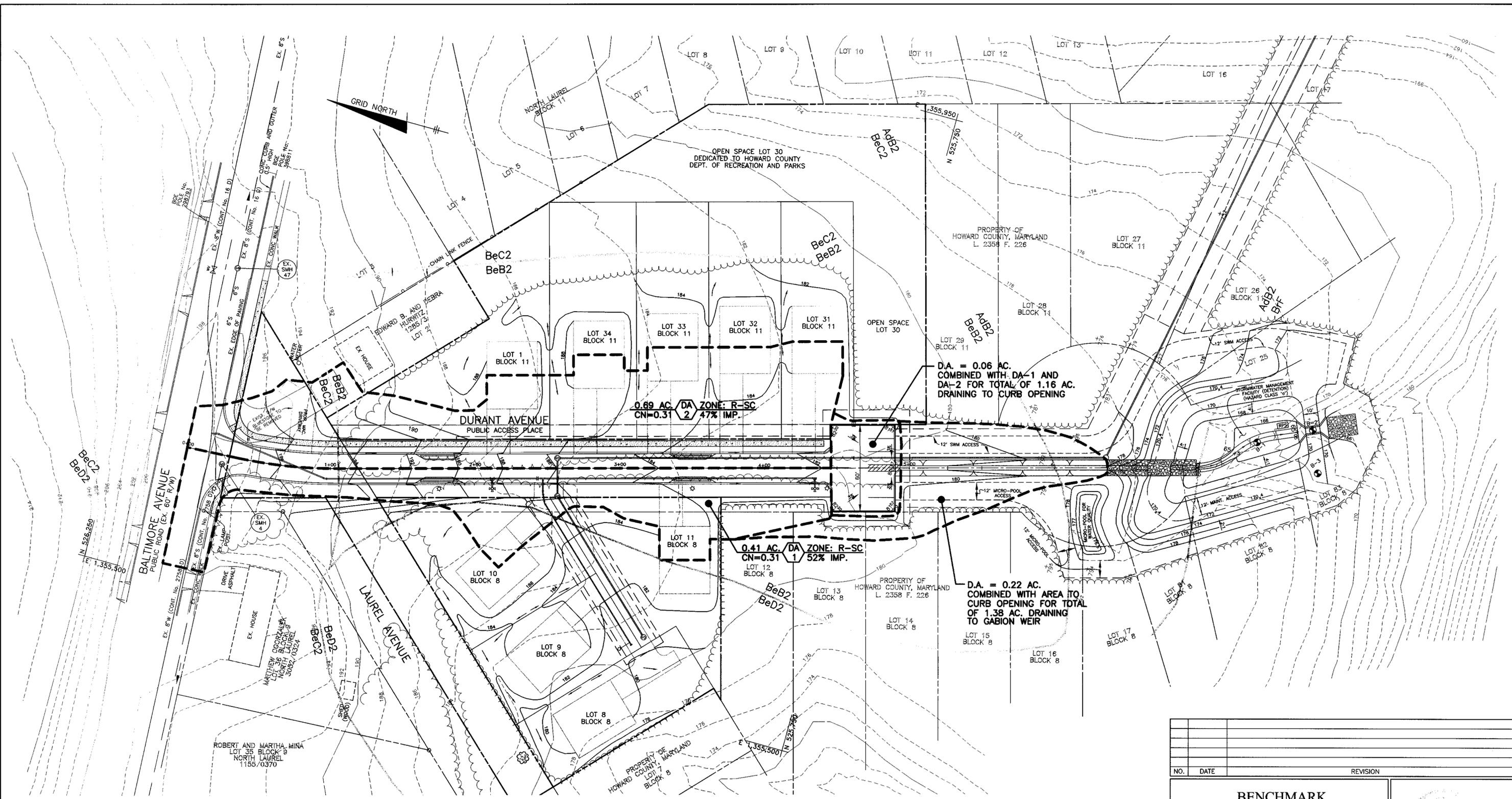


**TRAFFIC CONTROL PLAN**  
SCALE: 1" = 30'



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Richard M. Daniels* 1/29/01  
 CHIEF, BUREAU OF HIGHWAYS  
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Conita Hamilton* 1/30/01  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
*Chris Dammann* 1/25/01  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

<b>BENCHMARK ENGINEERING, INC.</b> ENGINEERS • LAND SURVEYORS • PLANNERS 8480 BALTIMORE NATIONAL PIKE • SUITE 418 ELLICOTT CITY, MARYLAND 21043 PHONE: 410-485-6105 FAX: 410-485-6644		
OWNER/DEVELOPER: CORNERSTONE HOLDINGS, L.L.C. 9691 NORFOLK AVENUE LAUREL, MARYLAND 20723 410-792-2565	PROJECT: <b>NORTH LAUREL PARK DURANT AVENUE</b> BLOCK 'B' LOTS 8-11; BLOCK '11' LOT 1, OPEN SPACE LOT 30 AND LOTS 31-34; PUBLIC STORMWATER MANAGEMENT FACILITY; TREE MAINTENANCE EASEMENT AND WATER, SEWER, DRAINAGE AND UTILITY EASEMENTS	
LOCATION: TAX MAP: 50, GRID: 3 PARCEL: 425 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND		TITLE: <b>ROAD PROFILES AND DETAILS</b>
DATE: JULY 27, 2000 DECEMBER 18, 2000	PROJECT NO.: 1025	
DES: GWF/JMC DRAFT: YSL/DBT CHECK: GWF	SCALE: AS SHOWN	SHEET 3 OF 7



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Richard M. Dandeker* 1-24-01  
 CHIEF, BUREAU OF HIGHWAYS DATE

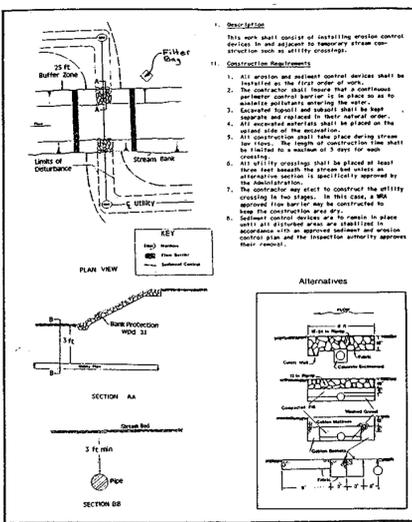
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Conita Hamilton* 1/30/01  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Michael J. ...* 1/25/01  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

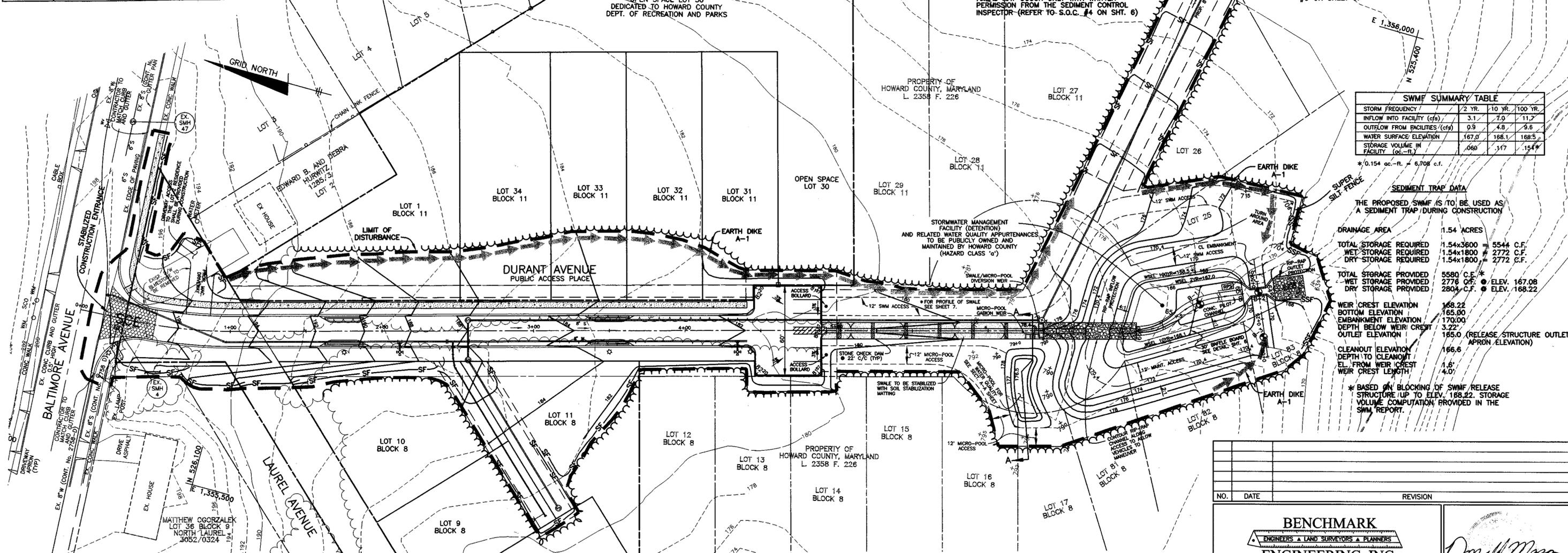
SOILS LEGEND		
MAP SYMBOL	SOIL GROUP	SOIL TYPE
AdB2	C *	ALDINO SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
BeB2	C *	BELTSVILLE SILT LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED
BeC2	C *	BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES, MODERATELY ERODED
BeD2	C *	BELTSVILLE SILT LOAM, 10 TO 15 PERCENT SLOPES, MODERATELY ERODED
Bf	C	BRANDYWINE LOAM, 25 TO 60 PERCENT SLOPES

\* INDICATES HYDRIC SOILS  
 TAKEN FROM SOIL SURVEY HOWARD COUNTY, MARYLAND MAP NO. 31

NO.		DATE		REVISION	
<b>BENCHMARK</b> ENGINEERS • LAND SURVEYORS • PLANNERS <b>ENGINEERING, INC.</b> 8480 BALTIMORE NATIONAL PIKE & SUITE 418 ELLICOTT CITY, MARYLAND 21043 PHONE: 410-465-6105 FAX: 410-465-6644					
OWNER/DEVELOPER:			PROJECT:		
CORNERSTONE HOLDINGS, L.L.C. 9691 NORFOLK AVENUE LAUREL, MARYLAND 20723 410-792-2565			<b>NORTH LAUREL PARK</b> <b>DURANT AVENUE</b> BLOCK 'B' LOTS 8-11; BLOCK '11' LOT 1, OPEN SPACE LOT 30 AND LOTS 31-34; PUBLIC STORMWATER MANAGEMENT FACILITY; TREE MAINTENANCE EASEMENT AND WATER, SEWER, DRAINAGE AND UTILITY EASEMENTS		
LOCATION:			TAX MAP: 50, GRID: 3		
TITLE:			PARCEL: 425		
DRAINAGE AREA MAP			6th ELECTION DISTRICT		
DATE:			HOWARD COUNTY, MARYLAND		
JULY 27, 2000			PROJECT NO. 1025		
DECEMBER 18, 2000			SHEET 4 OF 7		
DES: GWF/JMC		DRAFT: YSL/DBT		CHECK: GWF	
SCALE: 1" = 30'					



WATER RESOURCES ADMINISTRATION Utility Crossing Approved: [Signature] WPD 5.1 Chief Waterway Permits



CONTRACTOR SHALL LIMIT DISTURBANCE SO THAT IT REMAINS WITHIN 10' OF THE PROP. 8' SEWER DISTURBANCE UP TO 20' FROM THE PROP. 8' SEWER IN CERTAIN AREAS MAY OCCUR ONLY WITH WRITTEN PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR (REFER TO S.O.C. #4 ON SHT. 6)

DURING CONSTRUCTION OF SEWER LINE, CONTRACTOR SHALL REMOVE THE SILT FENCE IN THE VICINITY OF CONSTRUCTION AND REPLACE IMMEDIATELY AFTER BACKFILL AND IT SHALL REMAIN UNTIL THE DISTURBED AREA IS STABILIZED. SEE SEQUENCE OF CONSTRUCTION #5 ON SHEET 6.

STORM FREQUENCY	2 YR.	10 YR.	100 YR.
INFLOW INTO FACILITY (cfs)	3.1	7.0	11.7
OUTFLOW FROM FACILITIES (cfs)	0.9	4.8	9.6
WATER SURFACE ELEVATION	167.0	168.1	168.5
STORAGE VOLUME IN FACILITY (cc-ft)	.060	.147	.154*

\* 0.154 cc.-ft. = 6,708 c.f.

THE PROPOSED SWMF IS TO BE USED AS A SEDIMENT TRAP DURING CONSTRUCTION	
DRAINAGE AREA	1.54 ACRES
TOTAL STORAGE REQUIRED	1.54x3600 = 5544 C.F.
WET STORAGE REQUIRED	1.54x1800 = 2772 C.F.
DRY STORAGE PROVIDED	1.54x1800 = 2772 C.F.
TOTAL STORAGE PROVIDED	5580 C.F. * ELEV. 167.08
WET STORAGE PROVIDED	2776 C.F. * ELEV. 168.22
DRY STORAGE PROVIDED	2804 C.F. * ELEV. 168.22
WEIR CREST ELEVATION	168.22
BOTTOM ELEVATION	170.00
DEPTH BELOW WEIR CREST	3.22'
OUTLET ELEVATION	165.0 (RELEASE STRUCTURE OUTLET APRON ELEVATION)
CLEANOUT ELEVATION	166.6
DEPTH TO CLEANOUT EL. FROM WEIR CREST	1.6'
WEIR CREST LENGTH	4.0'

\* BASED ON BLOCKING OF SWMF RELEASE STRUCTURE UP TO ELEV. 168.22. STORAGE VOLUME COMPUTATION PROVIDED IN THE SWMF REPORT.

NO.	DATE	REVISION

**BENCHMARK ENGINEERING, INC.**  
 ENGINEERS & LAND SURVEYORS & PLANNERS  
 8480 BALTIMORE NATIONAL PIKE & SUITE 418  
 ELLICOTT CITY, MARYLAND 21043  
 PHONE: 410-465-6105 FAX: 410-465-6844

*Donald Mason*  
12/19/00

OWNER/DEVELOPER: CORNERSTONE HOLDINGS, L.L.C.  
 9691 NORFOLK AVENUE  
 LAUREL, MARYLAND 20723  
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PROJECT: NORTH LAUREL PARK DURANT AVENUE  
 BLOCK '8' LOTS 8-11; BLOCK '11' LOT 1, OPEN SPACE LOT 30 AND LOTS 31-34; PUBLIC STORMWATER MANAGEMENT FACILITY; TREE MAINTENANCE EASEMENT AND WATER, SEWER, DRAINAGE AND UTILITY EASEMENTS

LOCATION: TAX MAP: 50, GRID: 3  
 PARCEL: 425  
 6th ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

TITLE: GRADING, SEDIMENT AND EROSION CONTROL PLAN AND DETAILS

DATE: JULY 27, 2000 PROJECT NO. 1025  
 DECEMBER 18, 2000

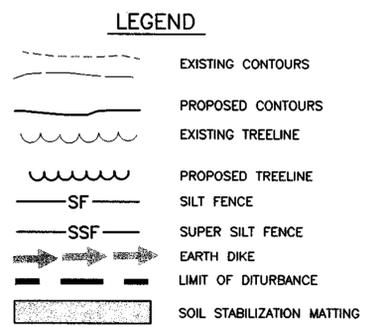
DES: GWF/JMC DRAFT: YSL/DBT CHECK: GWF SCALE: 1" = 30' SHEET 5 OF 7

**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 CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*Donald Mason* 12/19/00  
 ENGINEER DATE

**DEVELOPER'S CERTIFICATE**  
 I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH THIS PLAN OF DEVELOPMENT AND SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION OF THIS 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/WE ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS DEEMED NECESSARY.

*B. D. By* 12/18/00  
 DEVELOPER DATE



- OPERATION AND MAINTENANCE SCHEDULE FOR STORMWATER MANAGEMENT FACILITY**
- ROUTINE MAINTENANCE**
- FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.
  - TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHOULD BE MOWED AS NEEDED.
  - DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
  - VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
- NON-ROUTINE MAINTENANCE**
- STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
  - SEDIMENT SHOULD BE REMOVED FROM THE POND NO LATER THAN WHEN THE CAPACITY OF THE POND IS HALF FULL OF SEDIMENT, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY HOWARD COUNTY'S DEPARTMENT OF PUBLIC WORKS.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 1-24-01  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* 1/30/01  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* 1/25/01  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.  
*[Signature]* 1/18/01  
 NATIONAL RESOURCES CONSERVATION SERVICE DATE

APPROVED: THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
*[Signature]* 1/18/01  
 HOWARD SOIL CONSERVATION DISTRICT DATE

SEDIMENT CONTROL NOTES

- 1. A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION. (313-1850).
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 MOST CURRENT MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL. 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 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (SEC. 51) SOI (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH 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 PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:
TOTAL AREA OF SITE 2.96± ACRES
AREA DISTURBED 2.22± ACRES
AREA TO BE ROOFED OR PAVED 0.29± ACRES
AREA TO BE VEGETATIVELY STABILIZED 1.84± ACRES
TOTAL CUT 3567 CY
TOTAL FILL 2889 CY
OFFSITE WASTE AREA LOCATION SITE WITH APPROVED SED. CONTROL PLAN
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 CONTROL 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 BEFORE COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

TEMPORARY SEEDBED PREPARATIONS

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 SOI.

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL GRASS 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 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

PERMANENT SEEDBED PREPARATIONS

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

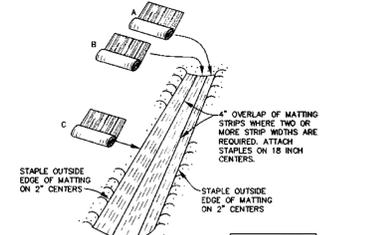
SOIL AMENDMENTS: IN LIEU OF SOI, TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

- 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 30-0-0-0 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 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (.05 LBS/1000 SQ FT) OF 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 SOI. 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 GRASS 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 HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING.

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



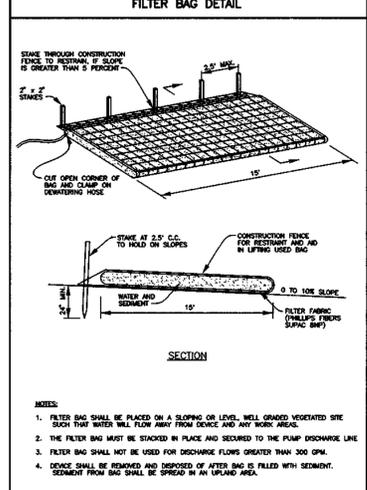
- 1. KEY-IN THE MATTING BY FLAGGING THE TOP ENDS OF THE MATTING IN A NARROW TRENCH, 6" IN DEPTH, BACKFILL THE TRENCH AND TAMP FIRM TO CONFORM TO THE CHANNEL CROSS-SECTION. SECURE WITH A ROW OF STAPLES ABOUT 4" DOWN SLOPE FROM THE TRENCH SPACING BETWEEN STAPLES IS 6".
2. STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES.
3. BEFORE STAPLING THE OUTER EDGES OF THE MATTING, MAKE SURE THE MATTING IS SMOOTH AND IN FIRM CONTACT WITH THE SOIL.
4. STAPLES SHALL BE PLACED 2' APART WITH 4 ROWS FOR EACH STRIP, 2 OUTER ROWS, AND 2 ALTERNATING ROWS DOWN THE CENTER.
5. WHERE ONE ROLL OF MATTING ENDS AND ANOTHER BEGINS, THE END OF THE TOP STRIP SHALL OVERLAP THE UPPER END OF THE LOWER STRIP BY 4". STAPLE PARTNER REINFORCE THE OVERLAP WITH A DOUBLE ROW OF STAPLES SPACED 6" APART IN A STAGGERED PATTERN ON EITHER SIDE.
6. THE DISCHARGE END OF THE MATTING LAYER SHOULD BE SIMILARLY SECURED WITH 2 DOUBLE ROWS OF STAPLES.
NOTE: IF FLOW WILL ENTER FROM THE EDGE OF THE MATTING THEN THE AREA EFFECTED BY THE FLOW MUST BE KEYED-IN.

SOIL STABILIZATION MATTING

TOPSOIL SPECIFICATIONS

- 1. Topsoil salvaged from the existing site may be used provided that it meets that standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile sections in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experiment Station.
2. Topsoil Specifications - Soil to be used as topsoil must meet the following:
i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Recommended topsoil shall not be a mixture of contrasting texture subsoils and shall contain less than 5% by volume of cinders, stones, sticks, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1-1/2" in diameter.
ii. Topsoil must be free of plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nutgrass, poison ivy, bitrite, or others as specified.
iii. Where the subsoil is either highly acidic or composed of heavy clay, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
iii. For sites having disturbed areas under 5 acres:
1. Place topsoil (if required) and apply soil amendments as specified in 2.0.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
2. Place topsoil (if required) and apply soil amendments as specified in 2.0.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
iii. For sites having disturbed areas over 5 acres:
1. On soil meeting topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
a. pH for topsoil shall be between 6.0 and 7.5, if the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
b. Organic content or topsoil shall be not less than 1.5 percent by weight.
c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.
2. For sites having disturbed areas over 5 acres:
a. pH for topsoil shall be between 6.0 and 7.5, if the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
b. Organic content or topsoil shall be not less than 1.5 percent by weight.
c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.
3. FILTER BAG SHALL NOT BE USED FOR DISCHARGE FLOWS GREATER THAN 300 GPM.
4. DEGREE SHALL BE REMOVED AND DEPOSITED AFTER BAG IS FILLED WITH SEDIMENT. SEDIMENT FROM BAG SHALL BE SPREAD IN UPLAND AREA.
Notes: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
iii. Place topsoil (if required) and apply soil amendments as specified in 2.0.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
V. Topsoil Application
1. When topsoiling, maintain needed erosion and sediment control practices such as diversion, grade stabilization structures, earth dikes, slope silt fence and sediment traps and basins.
2. Grades on the area to be topsoiled, which have previously established, shall be maintained, about 4" - 6" higher in elevation.
iii. Topsoil shall be uniformly distributed in a 4" - 6" layer and slightly compacted to a minimum thickness of 4". Seeding shall be performed in such a manner that seeding or sodding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
iv. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.
V. Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below.
1. Composted Sludge Material to Use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
iv. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.
References: Guidelines Specifications, Soil Preparation and Sodding, MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institute, Revised 1975.

FILTER BAG DETAIL



- 1. FILTER BAG SHALL BE PLACED IN A SLOPE OR LEVEL, WELL GRADED VEGETATED SITE SUCH THAT FLOW WILL FLOW AWAY FROM DEVICE AND ANY SOIL.
2. THE FILTER BAG MUST BE STAPLED IN PLACE AND SECURED TO THE PUMP DISCHARGE LINE.
3. FILTER BAG SHALL NOT BE USED FOR DISCHARGE FLOWS GREATER THAN 300 GPM.
4. DEGREE SHALL BE REMOVED AND DEPOSITED AFTER BAG IS FILLED WITH SEDIMENT. SEDIMENT FROM BAG SHALL BE SPREAD IN UPLAND AREA.

HILLIS-CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Table with columns: ELEV., SOIL DESCRIPTION, STRATA, DEPTH, SAMPLE NO., BORING & NOTES. Includes data for borings 1 through 5 with soil descriptions like 'Brown silty clay with sand' and 'Dark brown silty clay with sand'.

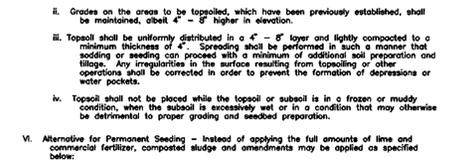
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HILLIS-CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

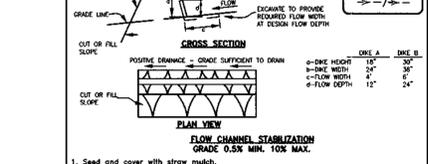
Table with columns: ELEV., SOIL DESCRIPTION, STRATA, DEPTH, SAMPLE NO., BORING & NOTES. Includes data for borings 1 through 5 with soil descriptions like 'Brown silty clay with sand' and 'Dark brown silty clay with sand'.

DETAIL 1 - EARTH DIKE



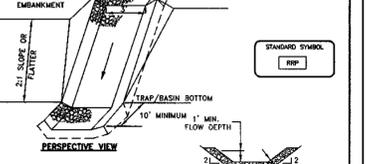
- 1. Earth dike shall be constructed of compacted earth to a minimum thickness of 4". Seeding shall be performed in such a manner that seeding or sodding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
2. Earth dike shall be constructed of compacted earth to a minimum thickness of 4". Seeding shall be performed in such a manner that seeding or sodding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
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4. Earth dike shall be constructed of compacted earth to a minimum thickness of 4". Seeding shall be performed in such a manner that seeding or sodding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
5. Earth dike shall be constructed of compacted earth to a minimum thickness of 4". Seeding shall be performed in such a manner that seeding or sodding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
6. Earth dike shall be constructed of compacted earth to a minimum thickness of 4". Seeding shall be performed in such a manner that seeding or sodding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
7. Earth dike shall be constructed of compacted earth to a minimum thickness of 4". Seeding shall be performed in such a manner that seeding or sodding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
8. Earth dike shall be constructed of compacted earth to a minimum thickness of 4". Seeding shall be performed in such a manner that seeding or sodding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.

DETAIL 5 - RIP-RAP INFLOW PROTECTION



- 1. All lined inflow channels shall be 1' in depth, have a trapezoidal cross section with a 4:1 to 12:1 slope ratio to a depth of 18".
2. Rip-rap shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.
3. Entrances and exit sections shall be installed as shown on the detail section.
4. Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.
5. Geotextile should be used in lieu of Rip-rap Inflow Protection.
6. Rip-rap should blend into existing ground.
7. Rip-rap Inflow Protection shall be used where the slope is between 4:1 and 10:1. For slopes flatter than 10:1 use Earth Dike or Temporary Slope lining criteria.
8. Inspection and maintenance must be provided periodically and after each rain event.

DETAIL 7 - STONE CHECK DAM

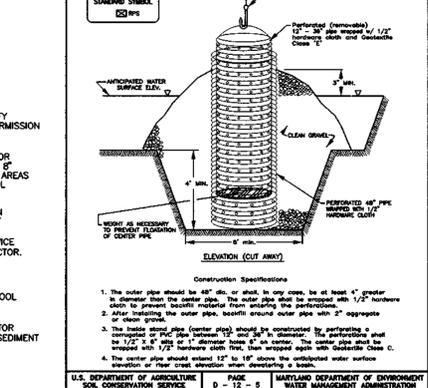


- 1. Spikes and ditches shall be prepared in accordance with the construction specifications in Section 1.0.0.
2. The check dam shall be constructed of 4"-7" stone. The stone shall be placed so that it completely covers the width of the channel and is placed on the channel floor.
3. The top of the check dam shall be constructed so the center is approximately 4" lower than the outer edges. Provide a weep notch in the center of the check dam.
4. The maximum height of the check dam at the center shall not exceed 2'.
5. The upstream ditched check dam shall be lined with approximately 1' of 3/4" to 1 1/2" crushed aggregate.

SEQUENCE OF CONSTRUCTION

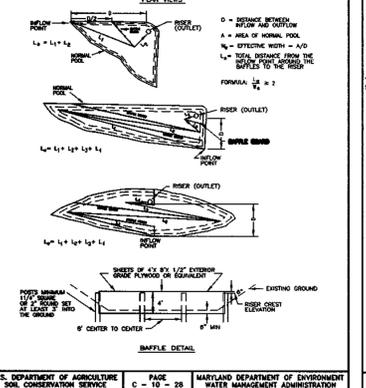
- DAY 1 1. OBTAIN GRADING PERMIT.
DAY 2-7 2. CLEAR AND GRUB AS REQUIRED TO INSTALL SEDIMENT CONTROL DEVICES AND INSTALL THE DEVICES.
DAY 8-20 3. CONSTRUCT STORMWATER MANAGEMENT FACILITY/SEDIMENT TRAP AND MODIFY EXISTING STRUCTURE WORK FOR SEDIMENT CONTROL PURPOSES. OBTAIN PERMITS FROM SEDIMENT CONTROL INSPECTOR TO PROCEED WITH CONSTRUCTION.
DAY 21-27 4. CLEAR AND GRUB REMAINDER OF SITE AND ROUGH GRADE. THE CONTRACTOR SHALL LIMIT DISTURBANCE SO THAT IT REMAINS WITHIN 10' OF THE PROP. SEWER DISTURBANCE UP TO 20' FROM THE PROP. SEWER IN CERTAIN AREAS MAY OCCUR ONLY WITH WRITTEN PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR. STABILIZE AS REQUIRED.
DAY 28-35 5. CONSTRUCT WATER AND SEWER MAINS. NOTE THAT THE SOIL CONSERVATION SERVICE REQUIRES THAT NO DISTURBANCE MAY OCCUR WITHIN 10 FEET OF THE STREAM CHANNEL FOR SEWER MAIN CONSTRUCTION UNTIL A 5 DAY CLEAR WEATHER FORECAST IS ANTICIPATED BY THE NATIONAL WEATHER SERVICE (NWS) AND PERMISSION IS GRANTED FROM THE SEDIMENT CONTROL INSPECTOR.
DAY 36-42 6. CONSTRUCT ROADWAY SECTION.
DAY 43-49 7. FINE GRADE REMAINING AREAS. CONSTRUCT DRAINAGE SWALE AND MICRO-POOL AND PERMANENTLY STABILIZE ALL DISTURBED AREAS.
DAY 50-55 8. WITH THE APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR CONVERT SWM/SEDIMENT TRAP TO PERMANENT USE. REMOVE REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE ALL REMAINING DISTURBED AREAS WITH PERMANENT STABILIZATION.

DETAIL 20A - REMOVABLE PUMPING STATION



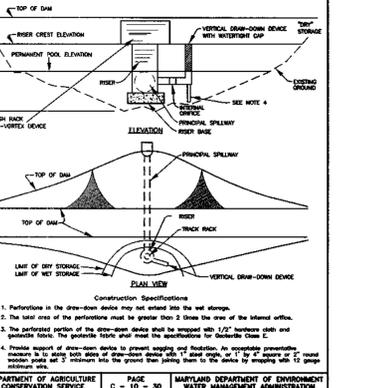
- 1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the inner pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent bacteria material from entering the infiltration chamber.
2. All piping to the outer pipe, beneath the outer pipe with 2" aggregate.
3. The inside sand pipe (center pipe) shall be constructed by perforating a 1/2" x 6" pipe at 1" intervals along its length. The center pipe shall be at least 1/2" x 6" pipe at 1" intervals along its length. The center pipe shall be at least 1/2" x 6" pipe at 1" intervals along its length.
4. The center pipe shall extend 12" to 18" above the undisturbed water surface elevation at the crest elevation when constructed in place.

DETAIL 18 - SEDIMENT BASIN BAFFLES



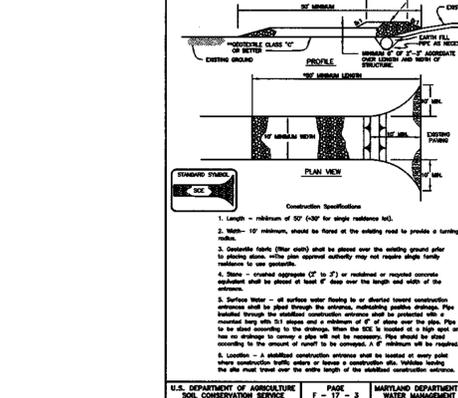
- 1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for 6" fence shall be used, including 42" chain link posts.
2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, braces and traps rods, drive anchors and post caps are not required on the ends of the fence.
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 overlap, they shall be overlapped by 6" and folded.
6. Maintenance shall be performed on needed and all buildings removed when "bulges" develop in the silt fence, or when all reaches 50% of fence height.
7. Filter cloth shall be fastened securely to each fence post with wire ties or staples of top and mid section and shall meet the following requirements for Geotextile Class F:

BASIN DRAW-DOWN SCHEMATIC VERTICAL DRAW-DOWN DEVICE



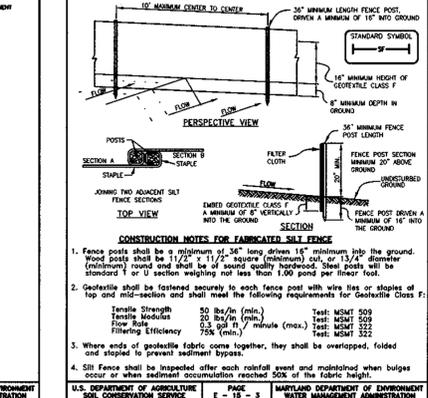
- 1. Partitions in the draw-down device may not extend into the wet storage.
2. The used area of the partition shall be greater than 2 times the area of the inlet or outlet.
3. The perforated portion of the draw-down device shall be wrapped with 1/2" hardware cloth and geotextile fabric. The geotextile fabric shall be embedded a minimum of 8" into the ground.
4. Provide support of draw-down device to prevent sagging or flotation. An acceptable construction method is to use 2x4s or 2x6s spaced every 4 feet along the length of the device.
5. The draw-down device shall be installed in a trench 6" wide and 12" deep on each side of the device.
6. Maintenance shall be performed on needed and all buildings removed when "bulges" develop in the silt fence, or when all reaches 50% of fence height.
7. Filter cloth shall be fastened securely to each fence post with wire ties or staples of top and mid section and shall meet the following requirements for Geotextile Class F:

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



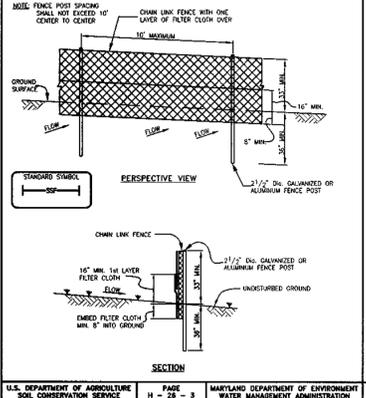
- 1. Length - minimum of 10' (30' for single entrance).
2. Width - 18" minimum, should be flared at the entry end to provide a turning radius.
3. Openable fabric (filter cloth) shall be placed over the existing ground prior to placing matting. The openable fabric shall be secured to the existing ground by one method:
a. Stakes - spaced approx. 12" x 24" or 24" x 24" or required number.
b. Staples - spaced approx. 12" x 24" or 24" x 24" or required number.
4. The fabric shall be secured to the existing ground by one method:
a. Stakes - spaced approx. 12" x 24" or 24" x 24" or required number.
b. Staples - spaced approx. 12" x 24" or 24" x 24" or required number.
5. Location - A stabilized construction entrance shall be located at every entry where construction traffic enters or leaves a construction site, including the site main road on the north side of the stabilized construction entrance.

DETAIL 22 - SILT FENCE



- 1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for 6" fence shall be used, including 42" chain link posts.
2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, braces and traps rods, drive anchors and post caps are not required on the ends of the fence.
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 overlap, they shall be overlapped by 6" and folded.
6. Maintenance shall be performed on needed and all buildings removed when "bulges" develop in the silt fence, or when all reaches 50% of fence height.
7. Filter cloth shall be fastened securely to each fence post with wire ties or staples of top and mid section and shall meet the following requirements for Geotextile Class F:

DETAIL 33 - SUPER SILT FENCE



- 1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for 6" fence shall be used, including 42" chain link posts.
2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, braces and traps rods, drive anchors and post caps are not required on the ends of the fence.
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 overlap, they shall be overlapped by 6" and folded.
6. Maintenance shall be performed on needed and all buildings removed when "bulges" develop in the silt fence, or when all reaches 50% of fence height.
7. Filter cloth shall be fastened securely to each fence post with wire ties or staples of top and mid section and shall meet the following requirements for Geotextile Class F:

SUPER SILT FENCE CONSTRUCTION SPECIFICATIONS

- 1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for 6" fence shall be used, including 42" chain link posts.
2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, braces and traps rods, drive anchors and post caps are not required on the ends of the fence.
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 overlap, they shall be overlapped by 6" and folded.
6. Maintenance shall be performed on needed and all buildings removed when "bulges" develop in the silt fence, or when all reaches 50% of fence height.
7. Filter cloth shall be fastened securely to each fence post with wire ties or staples of top and mid section and shall meet the following requirements for Geotextile Class F:

Table with columns: NO., DATE, REVISION. Includes a table for construction specifications for Super Silt Fence with columns for Slope, Slope Steadiness, Slope Length, and Silt Fence Length.

ENGINEER'S CERTIFICATE section with signature of Donald Mason, dated 12/19/00, certifying the plan for erosion and sediment control.

DEVELOPER'S CERTIFICATE section with signature of B. D. By, dated 12/18/00, certifying that all development and construction will be done in accordance with the plan.

APPROVED section with signatures of J. G. Weyfield/CS, Howard County Department of Public Works, and Howard County Department of Planning and Zoning.

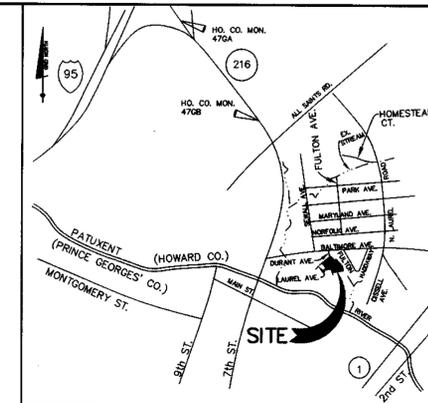
BENCHMARK ENGINEERING, INC. section including company name, address (8480 Baltimore National Pike), phone/fax numbers, and project information for North Laurel Park Durant Avenue.



# NORTH LAUREL PARK DURANT AVENUE

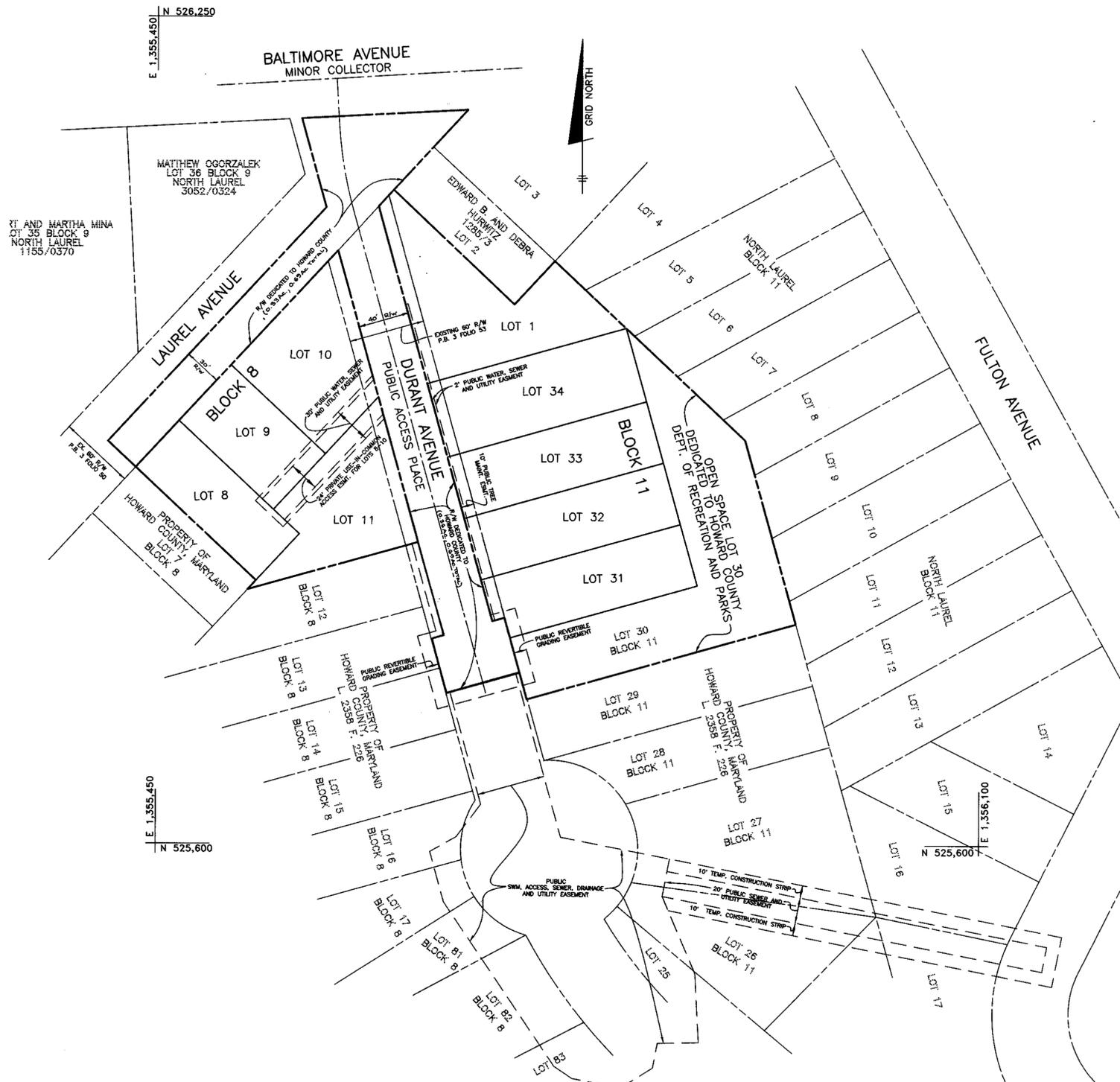
## 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

### ROAD AND STORMWATER MANAGEMENT CONSTRUCTION PLANS



VICINITY MAP  
SCALE: 1" = 2000'

BENCH MARKS (NAD83)	
HO. CO. No. 4708	STAMPED DISC SET ON TOP OF CONC. MONUMENT BEING 0.2 MILES WEST OF WHISKEY BOTTOM ROAD ON ROUTE 216. LOCATED IN A TRAFFIC ISLAND AND 8' FROM THE EDGE OF THE EAST BOUND LANE, 21' FROM THE EDGE OF THE WEST BOUND LANE AND 48.8' SOUTH EAST OF A GRATE INLET.
N 529,917.139' E 1,353,526.704' ELEV. 259.239	
HO. CO. No. 470A	STAMPED DISC SET ON TOP OF CONC. MONUMENT BEING NEAR THE INTERSECTION OF INTERSTATE 95 AND ROUTE 216. LOCATED IN A MEDIAN STRIP AND 8' FROM THE EDGE OF THE EAST BOUND LANE, 195'± SOUTH OF THE BRIDGE ABUTMENT FOR EAST BOUND ROUTE 216 AND 150'± NORTH OF THE RAMP FROM EAST BOUND 216 TO NORTH BOUND INTERSTATE 95.
N 532,404.179' E 1,351,627.363' ELEV. 350.468	



LOCATION MAP  
SCALE: 1" = 50'

SHEET INDEX	
NO.	DESCRIPTION
1	TITLE SHEET
2	ROAD AND LANDSCAPE PLAN
3	ROAD PROFILES AND DETAILS
4	DRAINAGE AREA MAP
5	GRADING, SEDIMENT AND EROSION CONTROL PLAN
6	SEDIMENT AND EROSION CONTROL NOTES AND DETAILS
7	STORMWATER MANAGEMENT NOTES AND DETAILS

NO.	DATE	REVISION

**BENCHMARK**  
ENGINEERS & LAND SURVEYORS & PLANNERS  
**ENGINEERING, INC.**

8480 BALTIMORE NATIONAL PIKE SUITE 418  
ELLICOTT CITY, MARYLAND 21043  
PHONE: 410-465-8105 FAX: 410-465-6644

12/19/00

OWNER/DEVELOPER:	PROJECT:
CORNERSTONE HOLDINGS, L.L.C. 9691 NORFOLK AVENUE LAUREL, MARYLAND 20723 410-792-2565	<b>NORTH LAUREL PARK DURANT AVENUE</b> BLOCK '8' LOTS 8-11; BLOCK '11' LOT 1, OPEN SPACE LOT 30 AND LOTS 31-34; PUBLIC STORMWATER MANAGEMENT FACILITY; TREE MAINTENANCE EASEMENT AND WATER, SEWER, DRAINAGE AND UTILITY EASEMENTS
TITLE:	TITLE SHEET
DATE:	PROJECT NO. 1025
DES: GWF/JMC DRAFT: YSL/DBT CHECK: GWF	SCALE: AS SHOWN SHEET 1 OF 7

**GENERAL NOTES**

- All construction shall be in accordance with the latest standards and specifications of Howard County, plus MSHA standards and specifications, if applicable.
- The contractor shall notify the Department of Public Works Construction Inspection Division at (410) 313-1880 at least 5 (five) working days prior to the start of work.
- The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work.
- Project Background:  
Location: Tax Maps 50 - Block 3 - Parcel 425  
Zoning: R-SC  
Total Tract Area: 2.96 Ac.±  
Number of Existing Lots: 9\*  
\*Plat was recorded in approximately 1893 in Plat Book No. 3, Folio 53. Lots have been reconfigured through deed conveyance prior to recordation of this plat.
- 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.
- The contours shown hereon have been taken from field run topographic survey at 2' interval. The topography was prepared Charles P. Johnson & Associates, Inc. dated July 25, 1997 and May 27, 2000.
- The coordinates shown hereon are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System. Howard County Monuments Nos. 47GA and 47GB were used for this project.
- Water and Sewer for this subdivision is public. Sewer & water Contract No. is # 24-3723-D and its drainage area is the Patuxent watershed.
- Stormwater Management Quantity Control will be provided by detention. Quality Control to be provided by vegetative swale/micro-pool combination. The facility is to be owned and maintained by Howard County.
- There are no wetlands, wetland buffers or 100 year floodplain within this project.
- Forest Conservation is not required for this project since the property was recorded prior to the Forest Conservation Bill and no additional lots are being created.
- A Traffic Study is not required for this property.
- Geotechnical Report compiled by Hillis-Carnes Engineering Associates, Inc. dated July, 2000.
- Existing utilities were located by record drawings and field locations. Contractor shall verify location of utilities prior to construction.
- Unless noted as "private" all easements are public.
- There are no existing buildings on the site.
- There are no previous Department of Planning and Zoning reference numbers.
- Contractor shall adjust all utilities and rim elevations as needed to match this plan.
- Street lights will be required in this development in accordance with the Design Manual. Street light placement and the type of fixture and pole selected shall be in accordance with the latest Howard County Design Manual, Volume III (1993) and as modified by "Guidelines Street Lights in Residential Developments (June, 1993)." The June 1993 policy includes guidelines for lateral and longitudinal placement. A minimum spacing of 20' shall be maintained between street lights and any tree. Street lights for this subdivision shall be "Colonial" HPS post top fixtures on black fiberglass poles located as shown on this plan.
- This plan is exempt from perimeter landscaping since no new lots are being created. Street trees for Durant Avenue as shown on these plans shall be provided by the developer in accordance with Section 16.124 of the Howard County Code and Landscape Manual. Financial surety for the required street trees shall be made part of the Developer's Agreement in the amount of \$4,400.00. Landscaping of the stormwater management facility is fulfilled through alternative compliance, see schedule "D", sheet no. 2. Perimeter landscaping is not required.
- All handicap ramps shall be in accordance with Howard County Std. Detail R-4.01 and all current ADA requirements.
- A Use-In-Common Driveway Maintenance Agreement for lots 8 - 10 block "8" will be recorded by the developer in the Land Records Office of Howard County.
- All plan dimensions are to face of curb unless otherwise noted.
- Driveway access to existing house located on lot 2, block 11 shall be provided throughout construction operation.
- No disturbance is permitted within the stream buffer except for work related to the utility crossing as shown on these plans (see sheet no. 5).
- A letter of exemption from the Maryland Department of the Environment and a Maryland Special Permit, Category III, from the U.S. Army Corp. of Engineers for grading in the stream channel to install the utility line was applied for on December 7, 1999. The permit will be obtained prior to issuance of the grading permit. Application tracking no. 99-NT-0616/200002100.

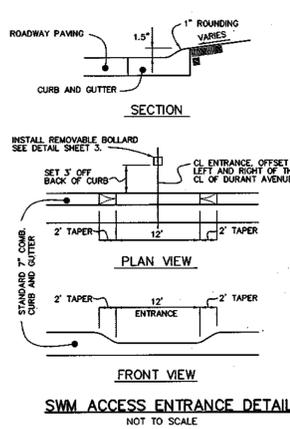
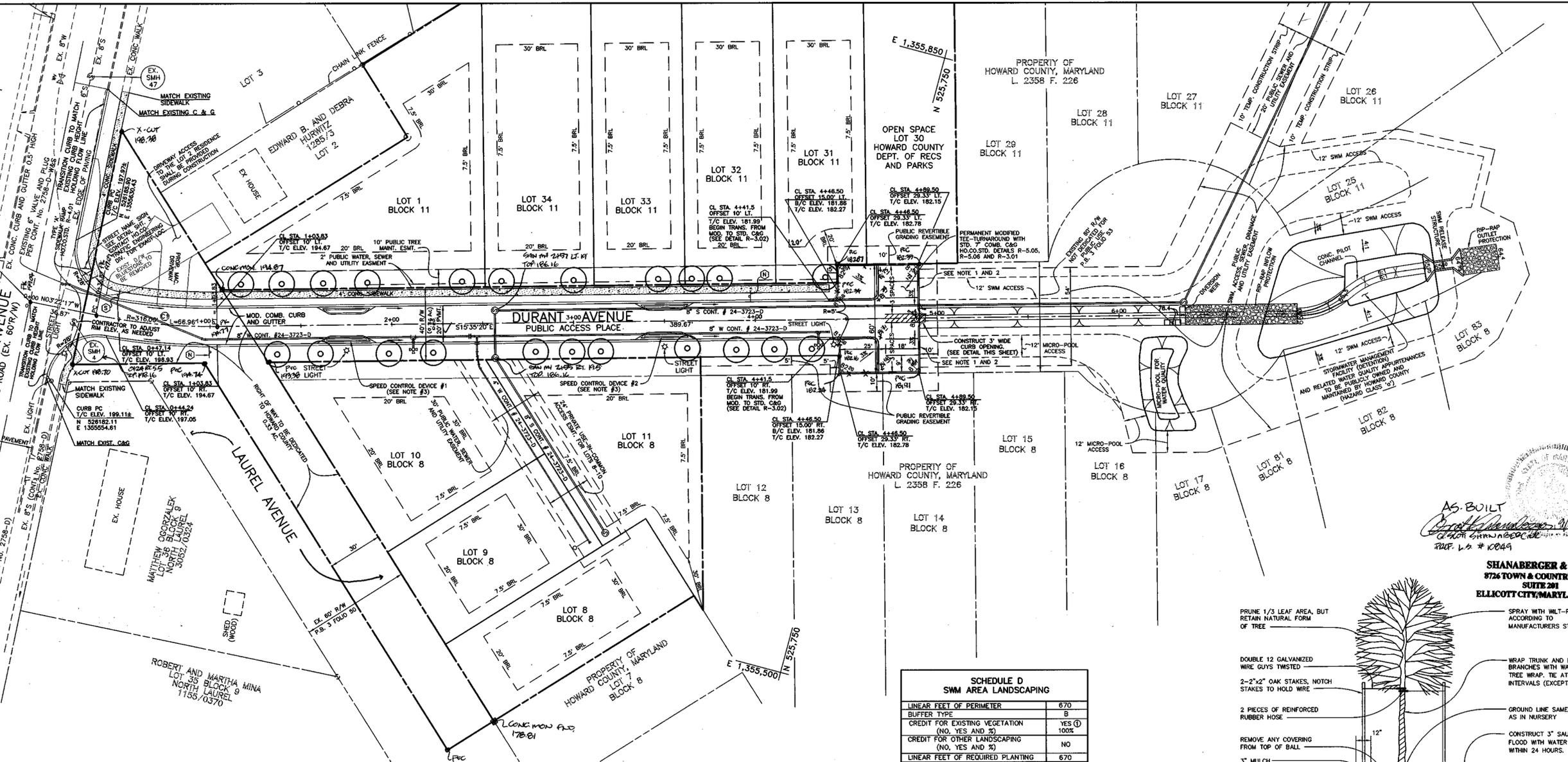
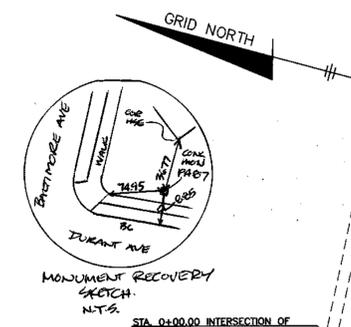
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*Robert M. Daniels* 1-29-01  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Cindy Stumpe* 1/24/01  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*William J. ...* 1/25/01  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



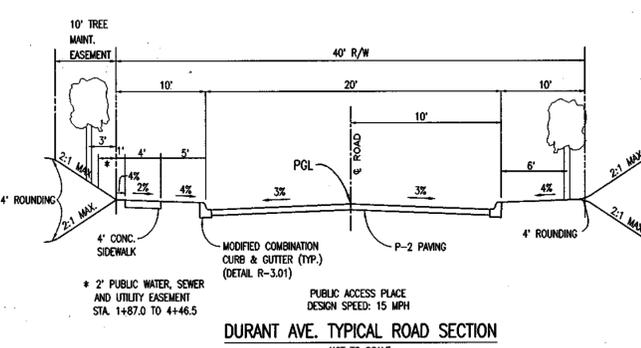
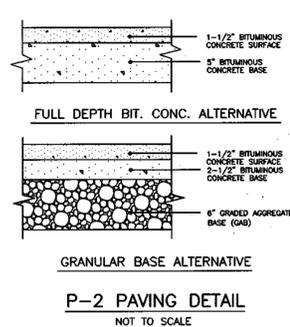
TRAFFIC SIGN SCHEDULE			
SYMBOL	SIGN TYPE	LOCATION	DESCRIPTION
(S)	R1-1	STA. 0+47 OFFS. 13' LT.	'STOP SIGN' 30"x30" OCTAGON
(N)	W20-4	STA. 1+00 OFFS. 14' RT.	'ONE LANE ROAD' 48"x48" DIAMOND
(N)	W20-4	STA. 3+97 OFFS. 13' LT.	'ONE LANE ROAD' 48"x48" DIAMOND

FOR SIGNAGE RELATED TO SPEED CONTROL DEVICES, SEE SHEET 3.

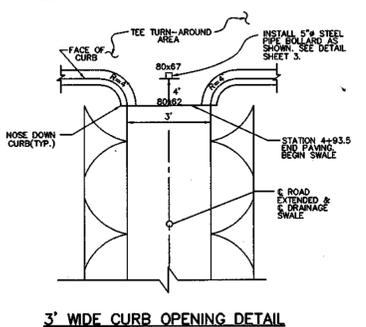
CURVE DATA TABLE					
CURVE	RADIUS	ARC	DELTA	TANGENT	CHORD
C-1	316.00'	66.96'	12°08'27"	33.61'	N09°26'30"W 66.83'

CENTERLINE CONTROL DATA				
ROAD	STATION	NORTH	EAST	
DURANT AVENUE	0+00.00	526201.4673	1355591.1372	
	PC 0+36.87	526164.6655	1355593.3547	
	PT 1+03.83	526098.7519	1355604.4068	



- NOTES:
- PROVIDE ENTRANCE IN STD. 7" COMB. CURB AND GUTTER FOR MAINTENANCE ACCESS. REFER TO DETAIL, THIS SHEET.
  - INSTALL REMOVABLE BOLLARD AS SHOWN ON ENTRANCE DETAIL, THIS SHEET.
  - FOR SPEED CONTROL DEVICE DETAILS, SEE SHEET 3.



STREET LIGHT SCHEDULE			
STREET NAME	CL STATION	OFFSET	NOTES
DURANT AVE.	0+24	24' RT	100 WATT HPS VAPOR 'COLONIAL' POST TOP FIXTURES MOUNTED ON 14' BLACK FIBERGLASS POLE
	1+75	14' RT	
	3+50	14' RT	
	4+43	14' RT	

SCHEDULE D SWM AREA LANDSCAPING	
LINEAR FEET OF PERIMETER	670
BUFFER TYPE	B
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	YES (0)
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO
LINEAR FEET OF REQUIRED PLANTING	670
NUMBER OF TREES REQUIRED	13
EVERGREEN TREES	17
NUMBER OF TREES PROVIDED	0
SHADE TREES	0
EVERGREEN TREES	0
OTHER TREES (2:1 SUBSTITUTE)	0

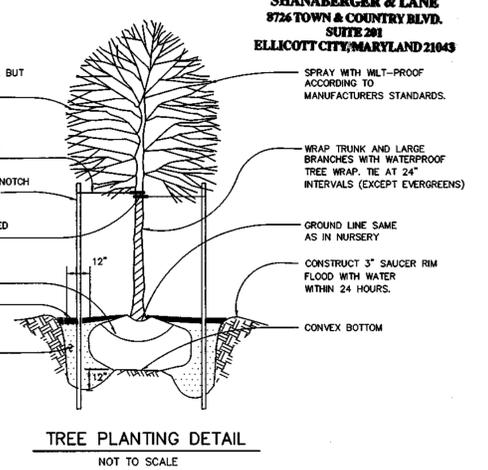
- ① THE STORMWATER MANAGEMENT FACILITY IS LOCATED ON AND SURROUNDED BY LAND OWNED BY HOWARD COUNTY AND IS INCLUDED IN PROJECT OPEN SPACE. THE LOCATION DOES NOT ABUT ANY RESIDENTIAL LOTS OR STRUCTURES AND IS BUFFERED BY EXISTING VEGETATION GREATER THAN 20 FEET IN WIDTH, BASED ON CRITERIA PRESENTED IN THE HOWARD COUNTY LANDSCAPE MANUAL, NO LANDSCAPING IS REQUIRED.

PLANTING LIST			
SYMBOL	QUANTITY	NAME	REMARKS
(O)	22*	TILIA AMERICANA, 'REDMOND'	2 1/2" MIN. CAL. REDMOND LITTLELEAF LINDEN B&B FULL HEAD

\* PROVIDED BY THE DEVELOPER

STREET TREE REQUIREMENTS	
STREET TREES REQUIRED (896 LF ÷ 40)	22 TREES
CREDIT FOR PRESERVATION OF EXISTING VEGETATION	NO
STREET TREES PROVIDED	22 TREES

- PLANTING NOTES:
- 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.
  - A MINIMUM DISTANCE OF 20 FEET MUST BE MAINTAINED BETWEEN ANY TREES LOCATED ALONG THE CURB LINE AND ANY STREET LIGHTS.
  - TREE MUST BE PLANTED A MINIMUM OF 5 FEET FROM AN OPEN SPACE ACCESS STRIP AND 10 FEET FROM A DRIVEWAY.
  - THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 22 STREET TREES SHALL BE PART OF THE DEVELOPER'S AGREEMENT, IN THE AMOUNT OF \$4,400.00. NO LANDSCAPING IS REQUIRED ALONG THE PERIMETER OF THE STORMWATER MANAGEMENT FACILITY (REFER TO SCHEDULE 'D').



AS-BUILT  
Shanaberger & Lane  
DATE: 12/19/00

SHANABERGER & LANE  
8726 TOWN & COUNTRY BLVD.  
SUITE 201  
ELLICOTT CITY, MARYLAND 21043

NO.	DATE	REVISION

**BENCHMARK**  
ENGINEERS & LAND SURVEYORS & PLANNERS  
**ENGINEERING, INC.**

6480 BALTIMORE NATIONAL PIKE & SUITE 418  
ELLICOTT CITY, MARYLAND 21043  
PHONE: 410-465-8105 FAX: 410-465-6644

12/19/00

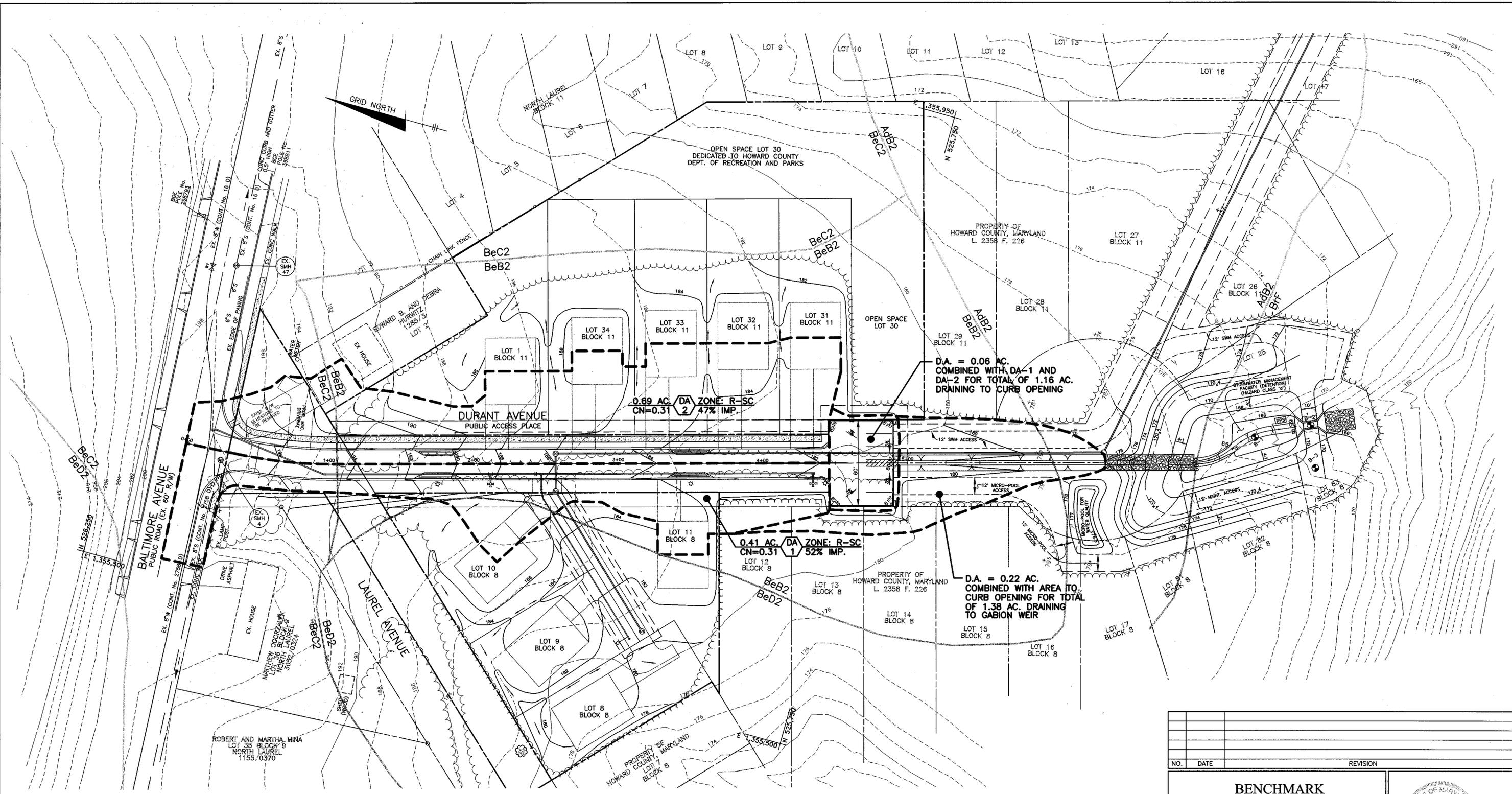
OWNER/DEVELOPER:	PROJECT: <b>NORTH LAUREL PARK DURANT AVENUE</b>
CORNERSTONE HOLDINGS, L.L.C. 9691 NORFOLK AVENUE LAUREL, MARYLAND 20723 410-792-2585	LOCATION: TAX MAP: 50, GRID: 3 PARCEL: 425 63D ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE: <b>ROAD AND LANDSCAPE PLAN</b>	DATE: JULY 27, 2000 DECEMBER 18, 2000
DES: GWF/JMC DRAFT: YSL/DBT CHECK: GWF	PROJECT NO. 1025 SCALE: AS SHOWN SHEET 2 OF 7

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Dworkin*  
1-24-01  
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Chris Hamble*  
1/30/01  
DATE

APPROVED: CHIEF, DEVELOPMENT ENGINEERING DIVISION  
*Chris Hamble*  
1/25/01  
DATE





APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Adrian M. Sanchez* 1-24-01  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Cinda Hamilton* 1/30/01  
 CHIEF, DIVISION OF LAND DEVELOPMENT

*John Pannunzio* 1/25/01  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

SOILS LEGEND		
MAP SYMBOL	SOIL GROUP	SOIL TYPE
AdB2	C *	ALDING SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
BeB2	C *	BELTSVILLE SILT LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED
BeC2	C *	BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES, MODERATELY ERODED
BdC2	C *	BELTSVILLE SILT LOAM, 10 TO 15 PERCENT SLOPES, MODERATELY ERODED
BhF	C	BRANDYWINE LOAM, 25 TO 60 PERCENT SLOPES
* INDICATES HYDRIC SOILS		
* TAKEN FROM SOIL SURVEY HOWARD COUNTY, MARYLAND MAP NO. 31		

NO. DATE REVISION	
<b>BENCHMARK</b> ENGINEERS & LAND SURVEYORS & PLANNERS <b>ENGINEERING, INC.</b> 8480 BALTIMORE NATIONAL PIKE & SUITE 418 ELLICOTT CITY, MARYLAND 21043 PHONE: 410-465-6105 FAX: 410-465-6644	
OWNER/DEVELOPER:	PROJECT: <b>NORTH LAUREL PARK DURANT AVENUE</b>
CORNERSTONE HOLDINGS, L.L.C. 9631 NORFOLK AVENUE LAUREL, MARYLAND 20723 410-792-2565	LOCATION: TAX MAP: 50, GRID: 3 PARCEL: 425 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE:	<b>DRAINAGE AREA MAP</b>
DATE: JULY 27, 2000 DECEMBER 18, 2000	PROJECT NO. 1025
DES: GWF/JMC DRAFT: YSL/DBT CHECK: GWF	SCALE: 1" = 30' SHEET 4 OF 7



SEDIMENT CONTROL NOTES

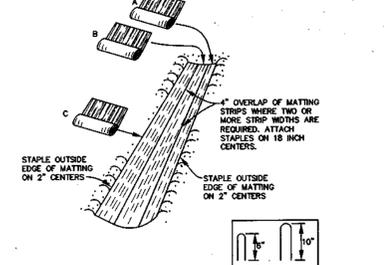
- 1. A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION...
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL, REVISIONS THERE TO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN A 7 CALENDAR DAYS FOR ALL PERMITS EXCEPT PERMANENT 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 17, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEDIMENTS (SEC. 51) SOO (SEC. 54), TEMPORARY SEEDING (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 PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:
TOTAL AREA OF SITE 2.96± ACRES
AREA DISTURBED 3.04± ACRES
AREA TO BE ROOFED OR PAVED 0.29± ACRES
AREA TO BE VEGETATIVELY STABILIZED 2.66± ACRES
TOTAL CUT 3567 CY
TOTAL FILL 2889 CY
OFFSITE WASTE AREA LOCATION SITE WITH APPROVED SED. CONTROL PLAN
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 CONTROL 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 IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

TEMPORARY SEEDBED PREPARATIONS

- 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 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 LOVERGRASS (0.7 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 SOO.
MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL GRASS 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 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

PERMANENT SEEDBED PREPARATIONS

- 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 ONE 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. NARROW 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. NARROW 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 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (0.5 LBS/1000 SQ FT) OF WEEPING LOVERGRASS 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) 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 GRASS 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 HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING.
MAINTENANCE: INSPECT ALL SEEDBED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.



- CONSTRUCTION SPECIFICATIONS:
1. KEY-IN THE MATTING BY PLACING TO THE TOP ENDS OF THE MATTING IN A NARROW TRENCH 6" IN DEPTH. BACKFILL THE TRENCH AND TAMP FIRMLY TO CONFORM TO THE CHANNEL CROSS-SECTION. SECURE WITH A ROW OF 3" x 4" STAPLES ON 4' DOWN SLOPE FROM THE TRENCH SPACING BETWEEN STAPLES 6' APART IN A STRAIGHTENED PATTERN ON EITHER SIDE.
2. STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES.
3. BEFORE STAPLING THE OUTER EDGES OF THE MATTING, MAKE SURE THE MATTING IS SMOOTH AND IN FIRM CONTACT WITH THE SOIL.
4. STAPLES SHALL BE PLACED 2' APART WITH 4 ROWS FOR EACH STRIP, 2 OUTER ROWS AND 2 ALTERNATING ROWS DOWN THE CENTER.
5. WHERE ONE ROW OF MATTING ENDS AND ANOTHER BEGINS, THE END OF THE TOP STRIP SHALL OVERLAP THE UPPER END OF THE LOWER STRIP BY 4". STAPLE FIRM. REINFORCE THE OVERLAP WITH A DOUBLE ROW OF STAPLES SPACED 6" APART IN A STRAIGHTENED PATTERN ON EITHER SIDE.
6. THE DISCHARGE END OF THE MATTING LNER SHOULD BE SIMILARLY SECURED WITH TWO DOUBLE ROWS OF STAPLES.
NOTE: IF FLOW WILL ENTER FROM THE EDGE OF THE MATTING THEN THE AREA EFFECTED BY THE FLOW MUST BE KEPT-DRY.

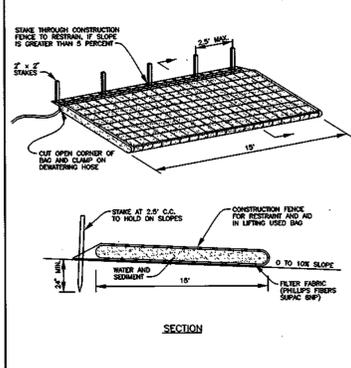
SOIL STABILIZATION MATTING

NOT TO SCALE

TOPSOIL SPECIFICATIONS

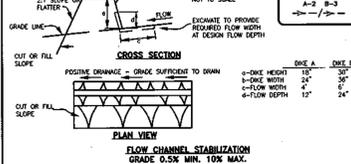
- 1. Topsoil salvaged from the existing site may be used provided that it meets that standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by the U.S. Department of Agriculture in cooperation with Maryland Department of Agriculture.
2. Topsoil Specifications - Soil to be used as topsoil must meet the following:
I. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand, or other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textures, subsoils and shall contain less than 2% volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1/2" in diameter.
II. Topsoil must be free of plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nutgrass, poison ivy, thistle, or others as specified.
III. Where the subsoil is either highly acidic or composed of heavy clay, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedure.
III. For sites having disturbed areas under 5 acres:
1. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
2. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
3. No soil or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.
NOTE: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
III. For sites having disturbed areas over 5 acres:
1. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be sufficient to raise the pH to 6.5 or higher.
b. Organic content or topsoil shall be not less than 1.5 percent by weight.
c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
d. No soil or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.
NOTE: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
II. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
V. Topsoil Application
1. When topsoiling, maintain needed erosion and sediment control practices such as diversions, grade stabilization structures, earth dikes, slope silt fence and sediment traps and basins.
2. Grades on the area to be topsoiled, which have been previously established, shall be maintained, obtain 4" - 8" higher in elevation.
3. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or sodding operations shall be corrected in order to prevent the formation of depressions or water pockets.
4. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.
VI. Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:
1. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 28.04.06.
b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
2. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.
References: Guidelines Specifications, Soil Preparation and Sodding, MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institute, Revised 1975.

FILTER BAG DETAIL



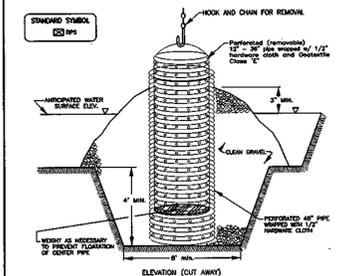
- NOTE:
1. FILTER BAG SHALL BE PLACED ON A SLOPING OR LEVEL, WELL GRADED VEGETATED SITE SUCH THAT WATER WILL FLOW AWAY FROM DITCH AND ANY HOLES AREAS.
2. THE FILTER BAG MUST BE STAPLED IN PLACE AND SECURED TO THE PUMP DISCHARGE LINE.
3. FILTER BAG SHALL NOT BE USED FOR DISCHARGE FLOWS GREATER THAN 300 GPM.
4. SEEDING SHALL BE REMOVED AND DEPOSITED BY FILTER BAG IS FILLED WITH SEDIMENT. SEDIMENT FROM BAG SHALL BE DEPOSITED IN AN UPLAND AREA.

DETAIL 1 - EARTH DIKE



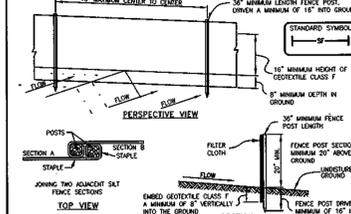
- 1. All temporary earth dikes shall have unimpaired positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
2. Spill diverted from a disturbed area shall be conveyed to a sediment trapping device.
3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area of 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 constructed or placed 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 road 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.
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 1-6 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 20A - REMOVABLE PUMPING STATION



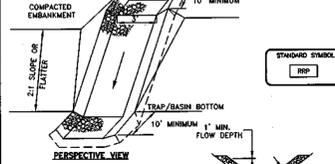
- 1. The outer pipe shall be 4" in diameter, in any case, be at least 4" greater in diameter than the inner pipe. The outer pipe shall be wrapped with 1/2" barbed wire to prevent benefit theft.
2. After backfilling the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.
3. The inner pipe shall be 4" in diameter, in any case, be at least 4" greater in diameter than the outer pipe. The inner pipe shall be wrapped with 1/2" barbed wire to prevent benefit theft.
4. The outer pipe shall be 4" in diameter, in any case, be at least 4" greater in diameter than the inner pipe. The outer pipe shall be wrapped with 1/2" barbed wire to prevent benefit theft.
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 12-12 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 22 - SILT FENCE



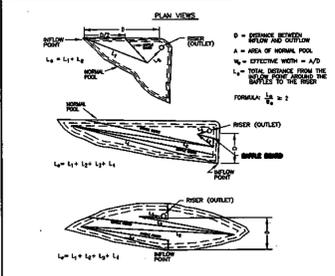
- CONSTRUCTION NOTES FOR FABRICATED SILT FENCE:
1. Fence posts shall be a minimum of 3/4" long driven 16" minimum into the ground. Round posts shall be 1 1/2" x 1 1/2" square (minimum) and 1 1/2" x 1 1/2" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard 2" x 4" section weighing not less than 1.00 pound per linear foot.
2. Geotextile shall be fastened securely to each fence post with wire ties or staples of top and mid-section and shall meet the following requirements for Geotextile Class F:
Tensile Strength 50 lb/in (min.) Test: MSMT 509
Tear Strength 20 lb/in (min.) Test: MSMT 520
Flow Rate 0.3 gal/in (min.) Test: MSMT 522
Filtering Efficiency 75% (min.) Test: MSMT 522
3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges or other sediment accumulation reaches 50% of the fabric height.
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 15-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 5 - RIP-RAP INFLOW PROTECTION



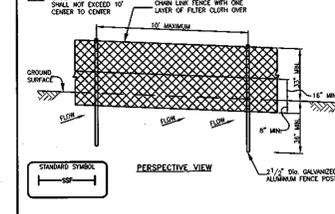
- 1. All lined inflow channels shall be 1' in depth, have a longitudinal cross section with a bottom to be converted to a distalward management facility.
2. Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.
3. Entrance and exit sections shall be installed as shown on the detail section.
4. Rip-Rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a distalward management facility.
5. Gabion Inflow Protection may be used in lieu of Rip-Rap Inflow Protection.
6. Rip-Rap should blend into existing ground.
7. Rip-Rap Inflow Protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1 use Earth Cloth or Temporary Seals lining outlet.
8. Inspection and maintenance must be provided periodically and after each rain event.
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 6-2 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 18 - SEDIMENT BASIN BAFFLES



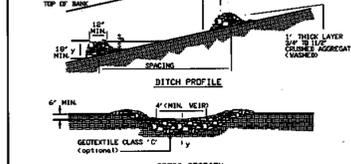
- 1. The outer pipe shall be 4" in diameter, in any case, be at least 4" greater in diameter than the inner pipe. The outer pipe shall be wrapped with 1/2" barbed wire to prevent benefit theft.
2. After backfilling the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.
3. The inner pipe shall be 4" in diameter, in any case, be at least 4" greater in diameter than the outer pipe. The inner pipe shall be wrapped with 1/2" barbed wire to prevent benefit theft.
4. The outer pipe shall be 4" in diameter, in any case, be at least 4" greater in diameter than the inner pipe. The outer pipe shall be wrapped with 1/2" barbed wire to prevent benefit theft.
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE C-10-28 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 33 - SUPER SILT FENCE



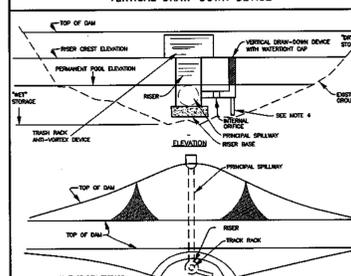
- CONSTRUCTION SPECIFICATIONS:
1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Design for Chain Link Fencing. The specification for a 42" fence shall be used, substituting 42" fabric and 6" length posts.
2. Chain link shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and trash rods, drive anchors and post caps are not required except on the ends of the fence.
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 8" and folded.
6. Maintenance shall be performed as needed and all bulges removed when "bulges" develop in the soil fabric, or when soil reaches 50% of fence height.
7. Filter cloth shall be fastened securely to each fence post with wire ties or staples of top and mid section and shall meet the following requirements for Geotextile Class F:
Tensile Strength 50 lb/in (min.) Test: MSMT 509
Tear Strength 20 lb/in (min.) Test: MSMT 520
Flow Rate 0.3 gal/in (min.) Test: MSMT 522
Filtering Efficiency 75% (min.) Test: MSMT 522
SUPER SILT FENCE DESIGN CRITERIA:
Slope Steadiness Slope Length (Maximum) Silt Fence Length (Maximum)
0 - 10% 0 - 10:1 Unlimited Unlimited
10 - 20% 10:1 - 5:1 200 feet 1,500 feet
20 - 33% 3:1 - 3:1 100 feet 1,000 feet
33 - 50% 3:1 - 2:1 100 feet 500 feet
50% + 2:1 + 50 feet 250 feet
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 18-28-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 7 - STONE CHECK DAM



- 1. Ditches and drains shall be constructed in accordance with the construction specifications specified in Section A-2, Standards and Specifications for Construction Specifications.
2. The check dam shall be constructed of 4"-12" stone. The stone shall be laid in the channel banks.
3. The check dam shall be constructed so the center is wider than the outer, forming a air trap.
4. The maximum height of the check dam at the center shall not exceed 2'.
5. The upstream ground the check dam shall be lined with approximately 1" of 3/4" to 1 1/2" crushed aggregate.
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 3-5 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

BASIN DRAWDOWN SCHEMATIC



- 1. Perturbations in the cross-section shall not extend into the wet storage.
2. The total area of the perturbation must be greater than 2 times the area of the internal outlet.
3. The total area of the perturbation must be greater than 2 times the area of the internal outlet.
4. Perturbations in the cross-section shall not extend into the wet storage.
5. The total area of the perturbation must be greater than 2 times the area of the internal outlet.
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE C-10-30 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Table with columns: Station, Hammer No., L.S.D., Sampler, Hole Diameter, Form, Date Collected, Datum, Hammer Drop, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, Soil Description, STRA, DEPTH, SAMPLE, BODIES & SAMPING, NOTES.

Table with columns: Station, Hammer No., L.S.D., Sampler, Hole Diameter, Form, Date Collected, Datum, Hammer Drop, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, Soil Description, STRA, DEPTH, SAMPLE, BODIES & SAMPING, NOTES.

Table with columns: Station, Hammer No., L.S.D., Sampler, Hole Diameter, Form, Date Collected, Datum, Hammer Drop, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, Soil Description, STRA, DEPTH, SAMPLE, BODIES & SAMPING, NOTES.

ENGINEER'S CERTIFICATE

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

Donald Mason 12/19/00
ENGINEER

B. D. Boy 12/18/00
DEVELOPER

APPROVED: REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

J.C. Wayfield / C.S. 1/8/01
NATURAL RESOURCES CONSERVATION SERVICE

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

Howard Conservation District 1/8/01
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Robert M. Sankle 1-24-01
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chris Hamilton 1/30/01
CHIEF, DIVISION OF LAND DEVELOPMENT

David D. ... 1/25/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION

BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS
8480 BALTIMORE NATIONAL PIKE A SUITE 418
ELLICOTT CITY, MARYLAND 21143
PHONE: 410-465-6105 FAX: 410-465-6644

OWNER/DEVELOPER: CORNERSTONE HOLDINGS, L.L.C.
PROJECT: NORTH LAUREL PARK DURANT AVENUE
BLOCK 'B' LOTS 8-11; BLOCK '11' LOT 1, OPEN SPACE LOT 30 AND LOTS 31-34; PUBLIC STORMWATER MANAGEMENT FACILITY; TREE MAINTENANCE, EASEMENT AND WATER, SEWER, DRAINAGE AND UTILITY EASEMENTS
LOCATION: TAX MAP: 50, GRID: 3
PARCELS: 425
630 ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
TITLE: SEDIMENT AND EROSION CONTROL NOTES AND DETAILS AND SOIL BORINGS
DATE: JULY 27, 2000 PROJECT NO. 1025
DECEMBER 18, 2000
DES: GWF/JMC DRAFT: YSL/DBT CHECK: GWF SCALE: AS SHOWN SHEET 6 OF 7

