ROAD CONSTRUCTION PLANS

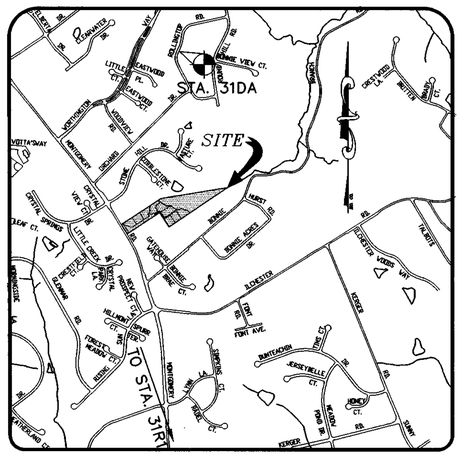
ZANTI PROPERTY

LOTS 4–11
AND OPEN SPACE LOTS 12 & 13

A RESUBDIVISION OF
ZANTI PROPERTY
LOTS 1 THRU 3

SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

No.	SHEET TITLE
1	COVER SHEET
2	ROAD PLAN, PROFILES AND SECTIONS
3	FILLET PROFILES
4	GRADING, EROSION AND SEDIMENT CONTROL PLAN
5	EROSION & SEDIMENT CONTROL NOTES AND DETAILS
6	STORM DRAIN PROFILES AND DETAILS
7	DRAINAGE AREA MAP
8	STORMWATER MANAGEMENT POND PROFILES & DETAILS
9	STORMWATER MANAGEMENT POND DETAILS & NOTES
10	STORMWATER MANAGEMENT POND SPECIFICATIONS & BORING LOGS
11	SHA TRAFFIC CONTROL PLAN
12	LANDSCAPE PLAN
13	FOREST CONSERVATION PLAN



VICINITY MAP

SCALE: 1"=1000'

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 FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) DAYS PRIOR TO ANY EXCAVATION WORK:

MISS UTILITY	(800) 257–7777
VERIZON TELEPHONE COMPANY	(410) 725–9976
HOWARD COUNTY BUREAU OF UTILITIES	(410) 313–4900
AT&T CABLE LOCATION DIVISION	(410) 393–3533
BALTIMORE GAS & ELECTRIC	(410) 685–0123
STATE HIGHWAY ADMINISTRATION	(410) 531–5533
HOWARD COUNTY DEPT. OF PUBLIC WORKS/ CONSTRUCTION INSPECTION DIVISION	(410) 313–1880

3. PROJECT BACKGROUND:
   LOCATION: SECOND ELECTION DISTRICT – TAX MAP 31 – PARCELS 106
   PREVIOUS DPZ REFERENCES: F–86–184, WP–00–107, SP–00–04
   TAX MAP 31 ; GRID 14, PARCEL 106 ; LOTS 1, 2 & 3
   ZONING: R–20
   DEED REFERENCE: 4946/0230
   GROSS AREA: 6.69 ACRES±
   100 YEAR FLOOD PLAIN AREA: 0.52 ACRE±
   AREA OF PROPOSED BUILDABLE LOTS: 2.71 ACRES±
   No. OF BUILDABLE LOTS: 8
   AREA OF OPEN SPACE REQUIRED: 6.69 X 30%=2.01 ACRES
   AREA OF PROPOSED OPEN SPACE LOT: 3.46 ACRES±
   No. OF PROPOSED OPEN SPACE LOTS: 2
   AREA OF PROPOSED PUBLIC ROAD DEDICATION: 0.52 ACRES±
4. TOPOGRAPHY SHOWN HEREON IS FIELD RUN BY MILDENBERG, BOENDER & ASSOCIATES, INC. FOR ONSITE ON OR ABOUT OCTOBER , 1999.
5. HORIZONTAL AND VERTICAL DATUMS BASED ON (NAD'83) MARYLAND STATE COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS.

STA No. 31R1	N 565,303.465 E 1,372,517.678	EL.= 401.678
STA No. 31DA	N 571,982.645 E 1,372,144.970	EL.= 482.359

6. 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 FOR 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 ANY STREET LIGHT AND ANY TREE.
7. PUBLIC WATER AND SEWER WILL BE AVAILABLE UNDER CONTRACT #14–3827–D.
8. STORMWATER MANAGEMENT QUANTITY CONTROL WILL BE PROVIDED VIA THE DETENTION POND FOR BOTH ZANTI PROPERTY AND JOHN T. BOWEN & WIFE'S PROPERTY. WATER QUALITY WILL BE VIA PRIVATELY OWNED AND MAINTAINED STORMCEPTOR FOR CONTRIBUTING DRAINAGE AREA FROM ZANTI PROPERTY AND JOHN T. BOWEN & WIFE'S PROPERTY. SWM IS PRIVETLY OWNED AND MAINTAINED.
9. WATER QUALITY FOR LOTS 9 THRU 11 WILL BE VIA DRYWELL.
10. EXISTING STRUCTURE ON LOT 8 IS TO REMAIN.
11. FLOODPLAIN STUDY IS BY MILDENBERG, BOENDER & ASSOCIATES, INC. IN FEBRUARY, 2000.
12. WETLAND STUDY WAS COMPLETED BY WILDMAN ENVIRONMENTAL SERVICES IN OCTOBER, 1999.
13. TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
14. COMPACTION IN FILL AREAS TO BE 95% AS DETERMINED PER AASHTO T–180.
15. CONTRACTOR TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES ON SITE PRIOR TO COMMENCING CONSTRUCTION.
16. THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1202 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION HAS BEEN FULFILLED BY RETENTION OF EXISTING FOREST IN THE AMOUNT OF 1.41 ACRES REQUIRED WITH 1.41 ACRES OF CREDITED EASEMENT AND 0.17 ACRES OF NON–CREDITED (FLOODPLAIN) EASEMENT FOR A TOTAL FOREST CONSERVATION EASEMENT AREA OF 1.58 ACRES.
17. PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
18. OPEN SPACE LOT 12 WILL BE CONVEYED TO THE HOME OWNER'S ASSOCIATION, OPEN SPACE LOT 13 WILL BE CONVEYED TO HOWARD COUNTY, MARYLAND (DEPARTMENT OF RECREATION AND PARKS)
19. NO STEEP SLOPES EXISTS ON SITE.
20. A MINIMUM OF TWO (2) PARKING SPACES ARE PROVIDED FOR EACH LOT.
21. CONTRACTOR MUST NOTIFY MR. SAM PORTS, PERMIT INSPECTOR, STATE HIGHWAY ADMINISTRATION, DAYTON MARYLAND (PHONE: 301 624–8119) 48 HOURS BEFORE THE COMMENCEMENT OF WORK WITHIN MONTGOMERY ROAD (MD. RTE. 103), AND PRIOR TO EACH SUCCESSIVE STAGE OF WORK.
22. ● DENOTES BOLLARD.
    (TOTAL OF 8 TO BE INSTALLED AT CORNERS OF THE 30' OPEN SPACE INGRESS & EGRESS ACCESS EASEMENT)
23. THE PROPOSED SUBDIVISION DESIGN IS SUBJECT TO WAIVER WP–00–107 (APPROVED ON JUNE 14, 2000), A WAIVER TO THE MINIMUM PUBLIC ROAD FRONTAGE REQUIREMENT FROM 40 FEET TO 0 FEET FOR OPEN SPACE LOTS 12 & 13.
24. THE PROPOSED DISTURBANCE TO INSTALL THE 8" SEWER LINE, SWM OUTFALL PIPE, RIP–RAP AND APRON LOCATED WITHIN THE STREAM BUFFER AND THE 100 YR FLOODPLAIN ARE CONSIDERED AS NECESSARY DISTURBANCE BY THE DEPARTMENT OF PLANNING AND ZONING AND HOWARD SOIL CONSERVATION DISTRICT IN ACCORDANCE WITH SECTION 16.116(c) OF THE SUBDIVISION REGULATIONS.
25. THE TRAFFIC STUDY FOR THIS DEVELOPMENT WAS DONE BY LEE CUNNINGHAM & ASSOC. ON NOV. 1999. AND WAS APPROVED ON SEP. 20,2000
26. THE TRAFFIC NOISE STUDY FOR THIS DEVELOPMENT WAS DONE BY WILDMAN ENVIRONMENTAL SERVICES ON NOV. 1999. AND WAS APPROVED ON SEP. 20,2000
27. THE STREET LIGHT LOCATIONS AND TYPES OF LIGHTS ARE AS FOLLOWS :

STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
WOOD POINT PLACE	0+35	18' R	150–watt HPS VAPOR PENDANT FIXTURE (CUTOFF) MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING A 12' ARM.
WOOD POINT PLACE	0+78	14' L	100 watt HPS VAPOR "TRADITIONAIRE" POST TOP FIXTURE MOUNTED ON A 14' BLACK FIBERGLASS POLE
WOOD POINT PLACE	1+20	14' R	
WOOD POINT PLACE	3+35	10' R	

28. JOINT PERMIT TRACKING NUMBER: 200163868 APPROVED ON JUNE 25, 2001

BY THE DEVELOPER:

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

SIGNATURE OF DEVELOPER — DATE 7-24-01
Don Renuer
PRINTED NAME OF DEVELOPER

BY THE ENGINEER:

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

SIGNATURE OF ENGINEER — DATE 7/23/01
R. JACOB HIKMAT
PRINTED NAME OF ENGINEER

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

USDA – NATURAL RESOURCE CONSERVATION SERVICE — DATE 7/27/01

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/27/01

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF BUREAU OF HIGHWAYS — DATE 8/1/01

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/7/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/6/01

STATE OF MARYLAND — R. JACOB HIKMAT — 17942 — PROFESSIONAL ENGINEER

OWNER/DEVELOPER
ELLICOTT CITY LAND HOLDING CO.
8000 MAIN STREET
ELLICOTT CITY MARYLAND 21043
PHONE No. (410) 740–2100

99026\DWG\FINAL\026-COVER.DWG

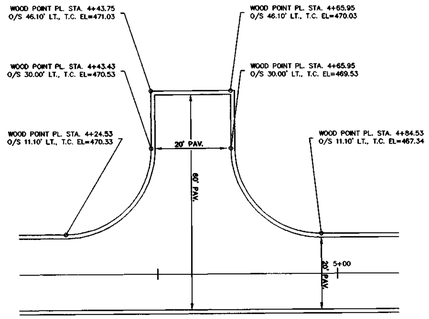
project	date
99026	JULY 2001
illustration	engineering
SAA	SAA
scale	approval
AS SHWN	RJH

no.	description	date
	revisions	

ZANTI PROPERTY
LOTS 4–11 AND OPEN SPACE LOTS 12 & 13
TAX MAP 31 - GRID 14 - PARCEL 106
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
COVER SHEET

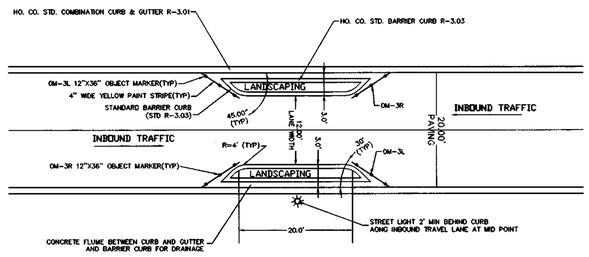
MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997–0296 Balt. (301) 621–5521 Wash. (410) 997–0298 Fax.

F–01–98



T TURN AROUND DETAIL

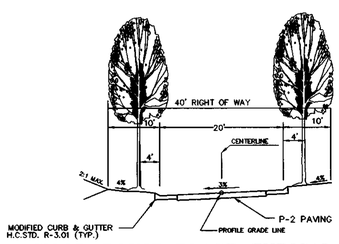
SCALE: 1" = 20'



NOTE
FOUR (4) 12" X 36" OBJECT MARKERS (STD OM-3R) SHALL BE PROVIDED

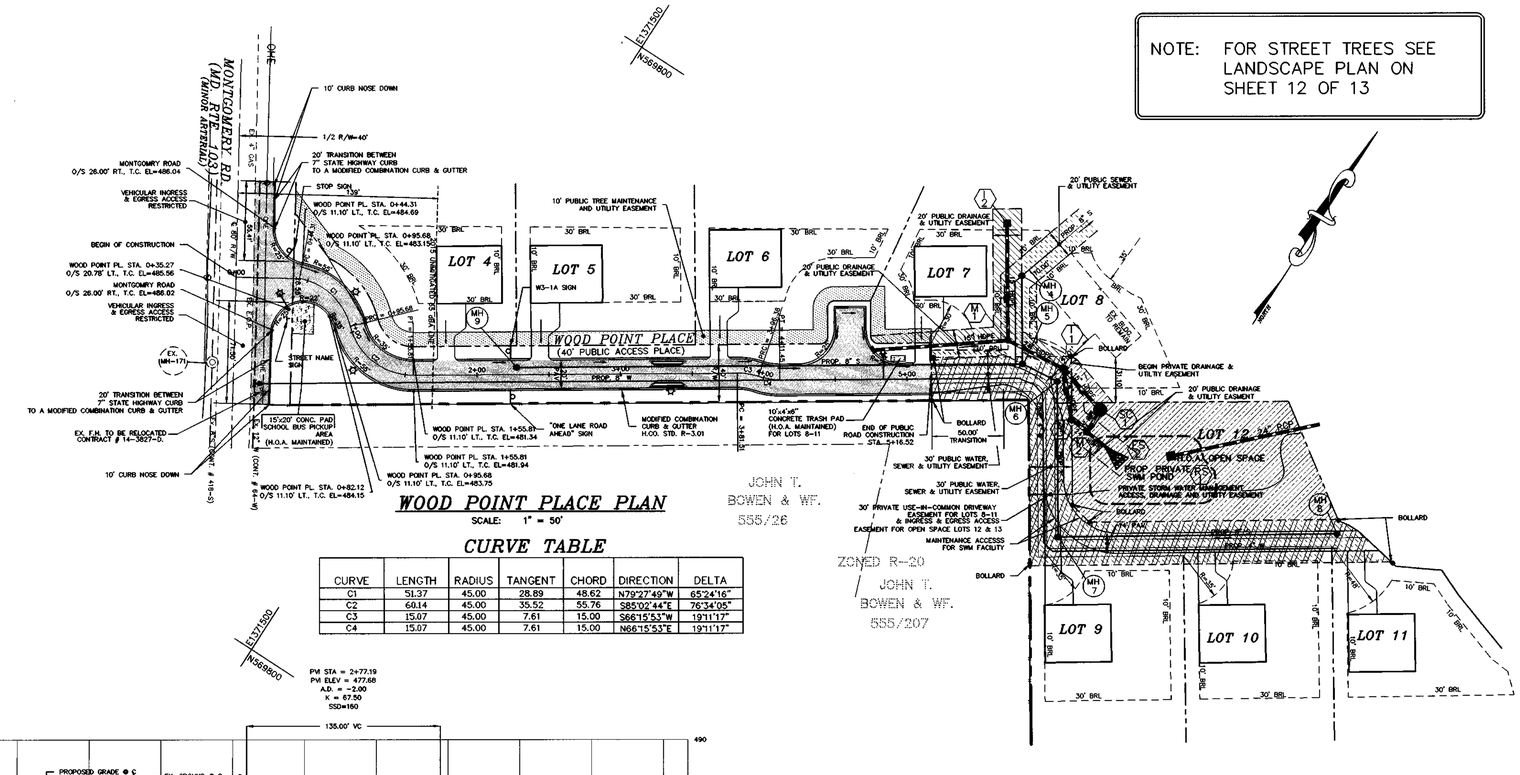
SPEED CALMING DEVICE DETAIL

STA. 3+12.90 – STA. 3+57.57



WOOD POINT PLACE TYPICAL SECTION

NOT TO SCALE



NOTE: FOR STREET TREES SEE LANDSCAPE PLAN ON SHEET 12 OF 13

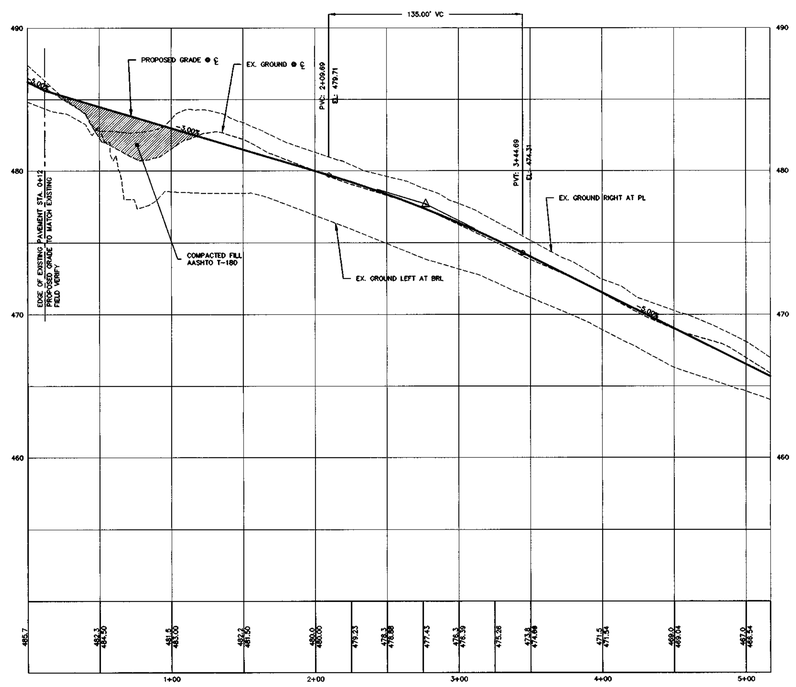
WOOD POINT PLACE PLAN

SCALE: 1" = 50'

CURVE TABLE

CURVE	LENGTH	RADIUS	TANGENT	CHORD	DIRECTION	DELTA
C1	51.37	45.00	28.89	48.62	N79°27'49"W	65°24'16"
C2	60.14	45.00	35.52	55.76	S85°02'44"E	76°34'05"
C3	15.07	45.00	7.61	15.00	S66°15'53"W	19°11'17"
C4	15.07	45.00	7.61	15.00	N66°15'53"E	19°11'17"

PVI STA = 2+73.19
PVI ELEV = 477.68
A.D. = -2.00
K = 67.50
SSD=150

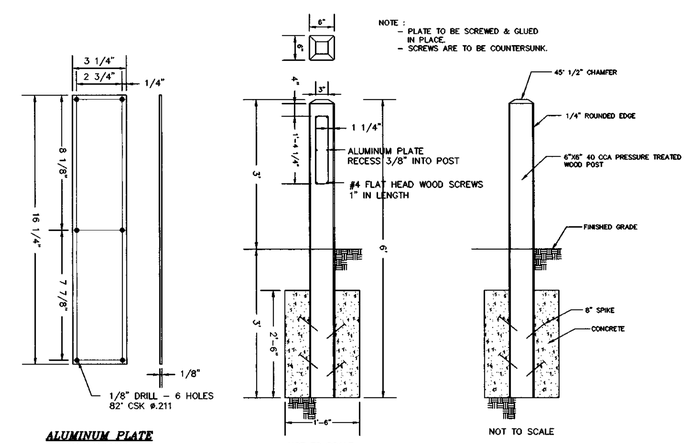


WOOD POINT PLACE PROFILE

(PUBLIC ACCESS PLACE)

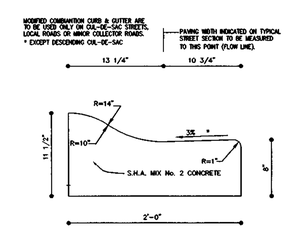
SCALE: HOR: 1" = 50'
VER: 1" = 5'

DESIGN SPEED 15 MPH (HOR.)
DESIGN SPEED 25 MPH (VER.)



NOTE :
- BOLLARDS WILL BE PLACED AT THE FOUR CORNERS OF THE OPEN SPACE ACCESS STRIP.
- THE ALUMINUM PLATE WILL ONLY BE REQUIRED ON THE FRONT RIGHT BOLLARD DIRECTLY FACING THE ROAD.

BOLLARD DETAIL



MODIFIED 7" COMBINATION CURB AND GUTTER

NOT TO SCALE

APPROVED: DEPARTMENT OF PUBLIC WORKS		
CHIEF BUREAU OF HIGHWAYS	for	8/1/01 DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONNING		
CHIEF, DIVISION OF LAND DEVELOPMENT		8/7/01 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	MRJ	8/6/01 DATE

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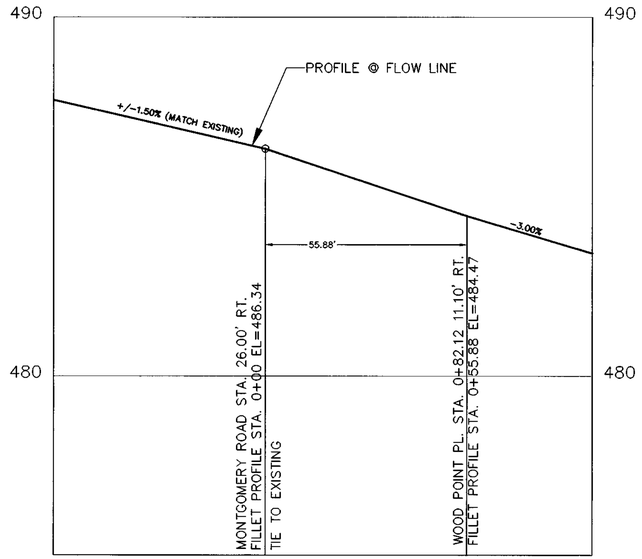
project	date
99026	JULY 2001
engineering	
Illustration	SAA
SAA	approval
scale	RJH
AS SHWN	

no.	description	date
	revisions	

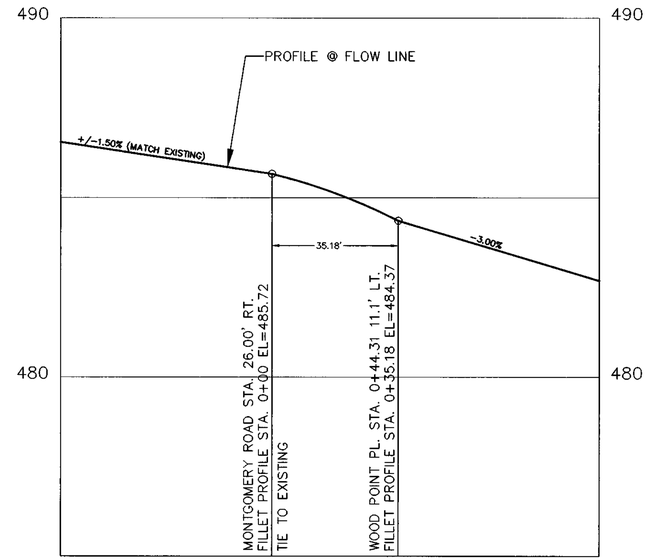
ZANTI PROPERTY
LOTS 4-11 AND OPEN SPACE LOTS 12 & 13
TAX MAP 31 – PARCEL 106 – GRID 14
HOWARD COUNTY, MARYLAND
SECOND ELECTION DISTRICT
ROAD PLAN, PROFILES AND SECTIONS

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 987-0296 Balt. (301) 621-5521 Wash. (410) 987-0298 Fax.



MONTGOMERY ROAD RIGHT TURN TO WOOD POINT PL.

SCALE: HOR. 1" = 20', VER 1" = 2'



MONTGOMERY ROAD LEFT TURN TO WOOD POINT PL.

SCALE: HOR. 1" = 20', VER 1" = 2'

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF BUREAU OF HIGHWAYS — DATE 8/1/01

APPROVED: DEPARTMENT OF PLANNING AND ZONNING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/2/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/6/01

99026\DWG\FINAL\026-FILLET.DWG

project 99026 | date JULY 2001
illustration SAA | engineering SAA
scale AS SHWN. | approval RJH

no.	description	date
	revisions	

ZANTI PROPERTY
LOTS 4-11 AND OPEN SPACE LOTS 12 & 13
TAX MAP 31 - PARCEL 106 - GRID 14
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FILLET PROFILES

MILDENBERG, BOENDER & ASSOC., INC.
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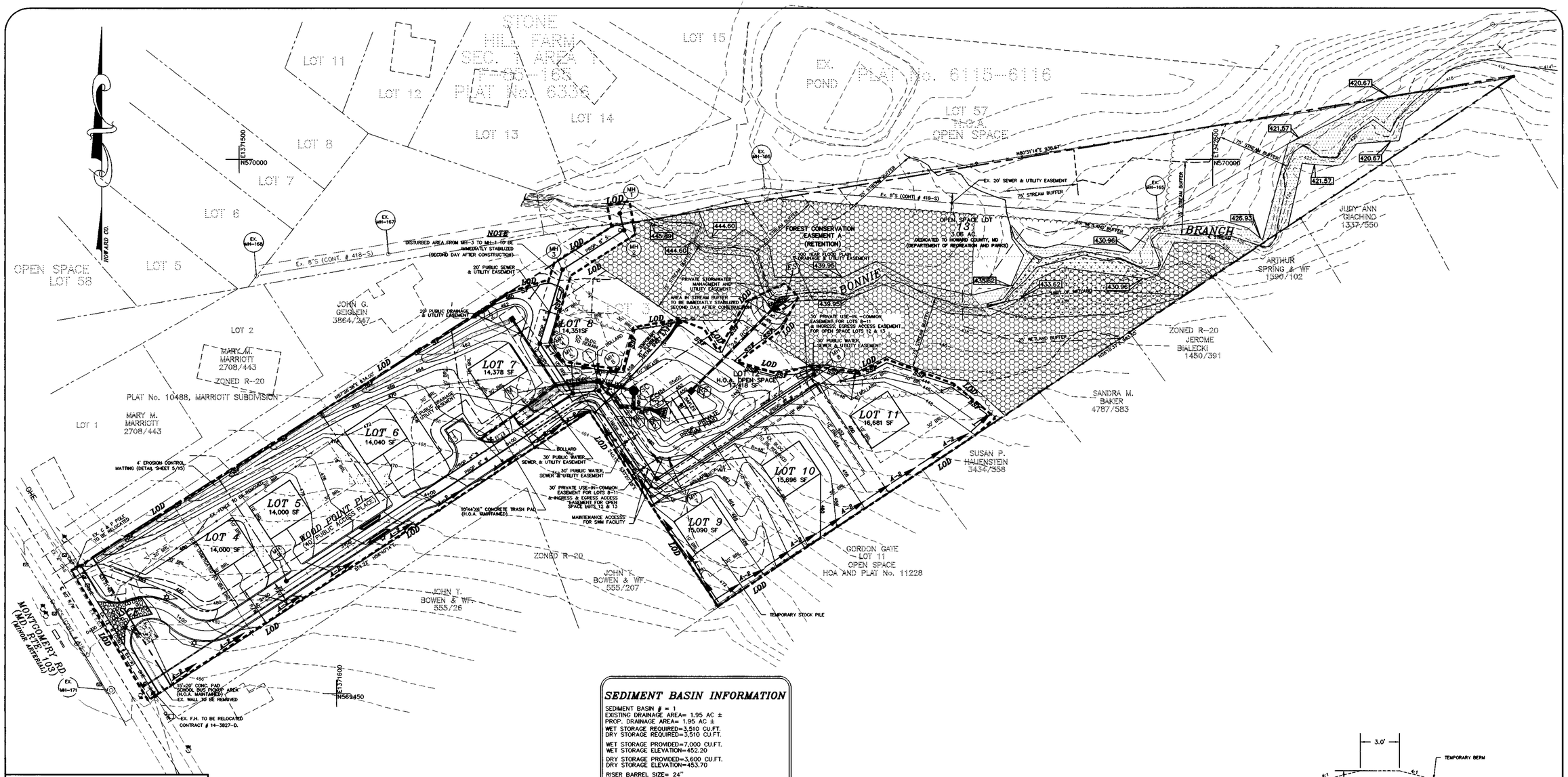
(410) 997-0296 Balt. (301) 621-5321 Wash. (410) 997-0298 Fax.

F-01-98



SEDIMENT BASIN INFORMATION

SEDIMENT BASIN # = 1
EXISTING DRAINAGE AREA= 1.95 AC ±
PROP. DRAINAGE AREA= 1.95 AC ±
WET STORAGE REQUIRED=3,510 CU.FT.
DRY STORAGE REQUIRED=3,510 CU.FT.

WET STORAGE PROVIDED=7,000 CU.FT.
WET STORAGE ELEVATION=452.20

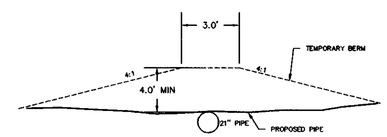
DRY STORAGE PROVIDED=3,600 CU.FT.
DRY STORAGE ELEVATION=453.70

RISER BARREL SIZE= 24"
OUTLET WATER SURFACE EL.= 441.62
TOP OF EMBANKMENT EL.= 456.20
WEIR CREST EL.=453.70
OUTLET ELEVATION=449.00
CLEAT OUT ELE.=450.27
CLEAT OUT ELE.=450.27
BOTTOM EL.=449.0
BOTTOM DIM.=40'X25'

LEGEND:

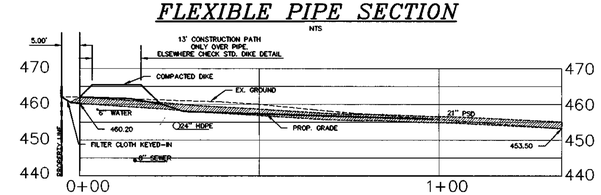
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- SF — SILT FENCE
- SSF — SUPER SILT FENCE
- A-1 — EARTH DIKE
- WETLANDS
- FLOODPLAIN
- FOREST CONSERVATION EASEMENT
- LOD — LIMIT OF DISTURBANCE

THIS PLAN IS FOR GRADING, EROSION & SEDIMENT CONTROL PURPOSES ONLY



FLEXIBLE PIPE SECTION

NTS



FLEXIBLE PIPE PROFILE

POST-GRADING POSITION

SCALE H. 1"=50'
V. 1"=5'

NOTE:
PIPE TO BE CONSTRUCTED PER STANDARD B-5-4 SHEET 5

BY THE DEVELOPER:

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

SIGNATURE OF DEVELOPER — DATE 7-24-01
Don Reuwer
PRINTED NAME OF DEVELOPER

BY THE ENGINEER:

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

SIGNATURE OF ENGINEER — DATE 7/23/01
R. JACOB HIKMAT
PRINTED NAME OF ENGINEER

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

USDA - NATURAL RESOURCE CONSERVATION SERVICE — DATE 7/27/01
G.S.

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/27/01

APPROVED: DEPARTMENT OF PUBLIC WORKS
for
CHIEF, BUREAU OF HIGHWAYS — DATE 8/1/01

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/2/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION (MA) — DATE 8/6/01

99026\DWG\FINAL\026-GRADE-REV2.DWG

project	date
99026	JULY 2001
illustration	engineering
SAA	SAA
scale	approval
1" = 50'	RJH

no.	description	date
	revisions	

ZANTI PROPERTY
LOTS 4-11 AND OPEN SPACE LOTS 12 & 13
TAX MAP 31 - PARCEL 106 - GRID 14
SECOND ELECTION DISTRICT — HOWARD COUNTY, MARYLAND
GRADING, EROSION AND SEDIMENT CONTROL PLAN

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5321 Wash. (410) 997-0298 Fax.

F-01-98

HOWARD SOIL CONSERVATION DISTRICT
PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING , DISKING 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 ACRES 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 DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING , APPLY 400 LBS. PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS./1000 SQ.FT.).
2) ACCEPTABLE – APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ.FT.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

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

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

MAINTENANCE – INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

TEMPORARY SEEDING NOTES

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

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

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS./1000 SQ.FT.) FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (.07 LBS./1000 SQ.FT.). FOR THE PERIOD NOVEMBER 16 THRU NOVEMBER 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED. IN THE SPRING, OR USE SOD.

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

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

GEOTECHNICAL RECOMMENDATIONS

1. WEATHERED ROCK MATERIALS WERE ENCOUNTERED IN SEVERAL BORINGS. IT IS LIKELY THAT THIS MATERIAL ABOVE 11 FEET CAN BE RIPPED. BLASTING IS NOT RECOMMENDED TO EXCAVATE ROCK IN SWM PONDS.
2. CONSTRUCTION DEWATERING SHOULD BE IMPLEMENTED TO FACILITATE EXCAVATION OF POND BOTTOMS AND CUT OFF TRENCH, AS REQUIRED.
3. WHEN DRAINING EXISTING POND, EXCAVATE POND BOTTOM TO STABLE MATERIAL. IF EXISTING FILLS ARE ENCOUNTERED IN THIS AREA, THEY SHOULD BE CAREFULLY REVIEWED TO IDENTIFY AND REMOVE EXISTING FILLS PLACED DURING EMBANKMENT CONSTRUCTION.
4. FILLS FOR CUTOFF TRENCH AND EMBANKMENT CONSTRUCTION SHOULD BE CONSTRUCTED IN EIGHT INCH AND COMPACTED TO 95%, ASTM D-698.
5. FILLS AROUND OUTFALL WORKS; THE OUTFALL PIPE AND ANTI-SEEP COLLARS SHOULD BE PLACED IN 4-INCH LIFTS AND COMPACTED TO THE SAME STANDARD WITH HAND EQUIPMENT.
6. REFER TO GEOTECHNICAL REPORT FOR FURTHER RECOMMENDATIONS AND INFORMATION.

STANDARD AND SPECIFICATIONS FOR TOPSOIL

DEFINITION

PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW pH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITIONS WHERE PRACTICE APPLIES

I. THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
   a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
   b. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
   c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
   d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

II. FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.

BY THE DEVELOPER:

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

[signature] 7-24-01 ~~March 20, 2000~~

SIGNATURE OF DEVELOPER — DATE

Don Reuwer

PRINTED NAME OF DEVELOPER

BY THE ENGINEER:

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

[signature] 7/23/01

SIGNATURE OF ENGINEER — DATE

R. JACOB HIKMAT

PRINTED NAME OF ENGINEER

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

Jim Myers /cs. 7/27/01

USDA – NATURAL RESOURCE CONSERVATION SERVICE — DATE

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

[signature] 7/27/01

HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

[signature] for 8/1/01

CHIEF BUREAU OF HIGHWAYS — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONNING

[signature] 8/7/01

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[signature] 8/6/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION MAJ — DATE

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CONSTRUCTION AND MATERIAL SPECIFICATIONS

I. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATION. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.

II. TOPSOIL SPECIFICATIONS – SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
   i. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2" IN DIAMETER.
   ii. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSON-SON GRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
   iii. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.

III. FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:
   i. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION – SECTION i – VEGETATIVE STABILIZATION METHODS AND MATERIALS.

IV. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:
   i. 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 TOPSOILS 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 OF 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 PHYTO-TOXIC 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 I – VEGETATIVE STABILIZATION METHODS AND MATERIALS.

V. TOPSOIL APPLICATION
   i. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.
   ii. GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBEIT 4" – 8" HIGHER IN ELEVATION.
   iii. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" TO 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 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.

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:
   i. 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 AREAS UNDER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
      a. COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS WHO 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 LEASE 1 PERCENT NITROGEN, 1.5 PERCENT PHOSPHOURUS, 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: GUIDELINE SPECIFICATIONS, SOIL PREPARATION AND SODDING. MD-VA, PUB. #1, COOPERATIVE EXTENSION SERVICE, UNIVERSITY OF MARYLAND AND VIRGINIA POLYTECHNIC INSTITUTES. REVISED 1973.

HOWARD SOIL CONSERVATION DISTRICT
STANDARD SEDIMENT CONTROL NOTES

1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF NAY CONSTRUCTION, (313-1855).
2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", AND REVISIONS THERETO.
3) FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1991 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC.51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC.52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7) SITE ANALYSIS:

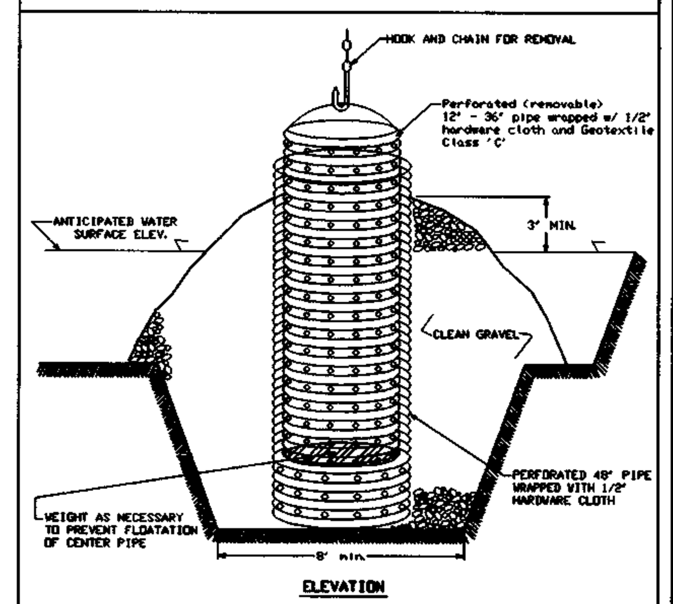
TOTAL AREA OF SITE:	6.69	ACRES
AREA DISTURBED:	3.82±	ACRES
AREA TO BE ROOFED OR PAVED	0.55±	ACRES
AREA TO BE VEGITATIVELY STABILIZED	3.27±	ACRES
TOTAL CUT	12,000±	CU. YDS.
TOTAL FILL	12,000±	CU. YDS.
TOTAL WASTE/BORROW AREA LOCATION	----------	

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.

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT. (1 DAY)
2. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM. (1 DAY)
3. CONSTRUCT SUPER SILT FENCE, SILT FENCE, TREE PROTECTIVE FENCES, EARTH DIKES(SEE SHEET 5 OF 13 FOR TREE PROTECTIVE FENCES)
4. GRADE PATH OF FLEXIBLE PIPE ACCORDING TO GRADING PLAN AND THE PROFILE OF THE PIPE (SHEET 4) CONSTRUCT THE FLEXIBLE PIPE.(3 DAYS), CONSTRUCT BERM ON PIPE AS SHWON ON SECTION ON SHEET 4 TO MAINTAIN FREE CONSTRUCTION TRAFFIC.
5. CONSTRUCT PROPOSED STORM WATER MANAGEMENT POND AND SEDIMENT BASIN (8 DAYS)
6. CONSTRUCT PROPOSED STORM DRAIN SYSTEM (10 DAYS)
7. AFTER PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR BRING SITE TO PROPOSED GRADE. (15 DAYS)
8. CONSTRUCT UTILITIES
9. ANY SEDIMENT CONTROL DEVICES DISTURBED BY THE INSTALLATION OF UTILITIES ARE TO BE REPAIRED IMMEDIATELY.
10. CONSTRUCT THE ROAD (5 DAYS)
11. UPON STABILIZATION OF THE SITE AND WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES, THE FLEXIBLE PIPE BERM AND RESTORE CURB AT CURB CUTS AND STABILIZE REMAINING DISTURBED AREAS. (5 DAYS)

DETAIL 20A – REMOVABLE PUMPING STATION

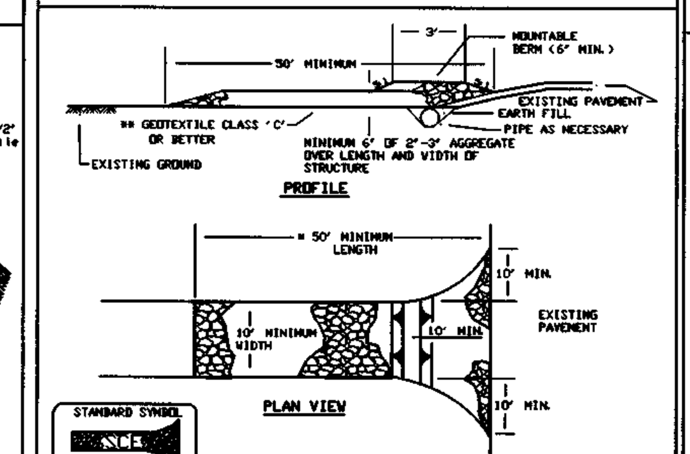


Construction Specifications

1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations.
2. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.
3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" in diameter. The perforations shall be 1/2" X 6" slits or 1" diameter holes 6" on center. The center pipe shall be wrapped with 1/2" hardware cloth first, then wrapped again with Geotextile Class C.
4. The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE I - 12 - 4	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 24 – STABILIZED CONSTRUCTION ENTRANCE

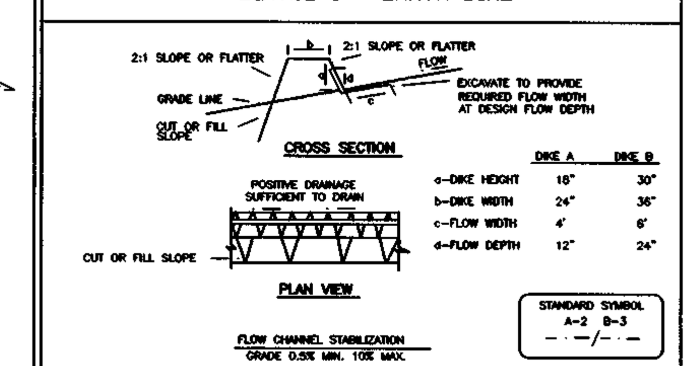


Construction Specification

1. Length – minimum of 50' (*30' for single residence lot).
2. Width – 10' minimum, should be flared at the existing road to provide a turning radius.
3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water – all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location – A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 17 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 1 – EARTH DIKE



	DIKE A	DIKE B
a–DIKE HEIGHT	18"	30"
b–DIKE WIDTH	24"	36"
c–FLOW WIDTH	4'	6'
d–FLOW DEPTH	12"	24"

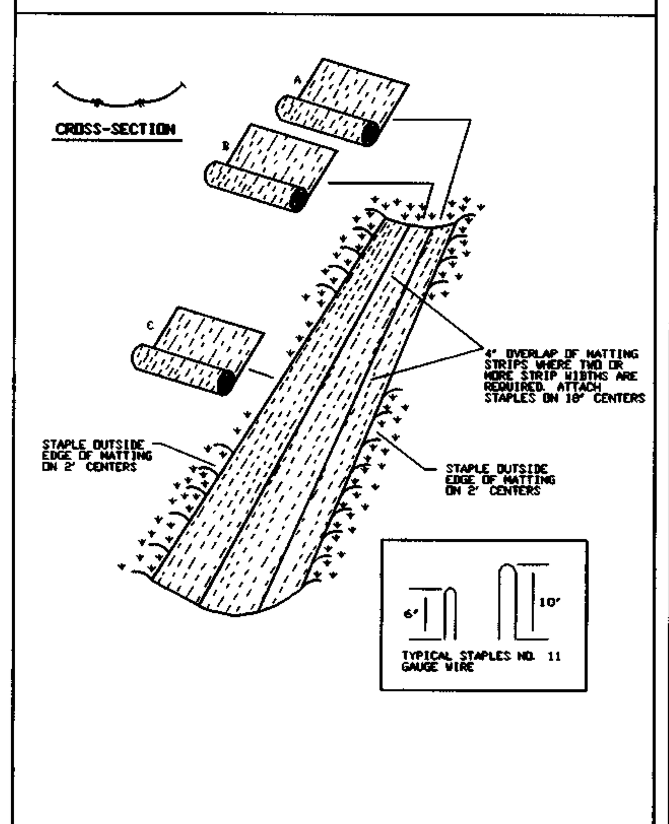
1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" – 7" stone or recycled concrete equivalent pressed into the soil 7" minimum

Construction Specifications

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.
4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.
5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.
6. Fill shall be compacted by earth moving equipment.
7. All earth removed and not needed 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.

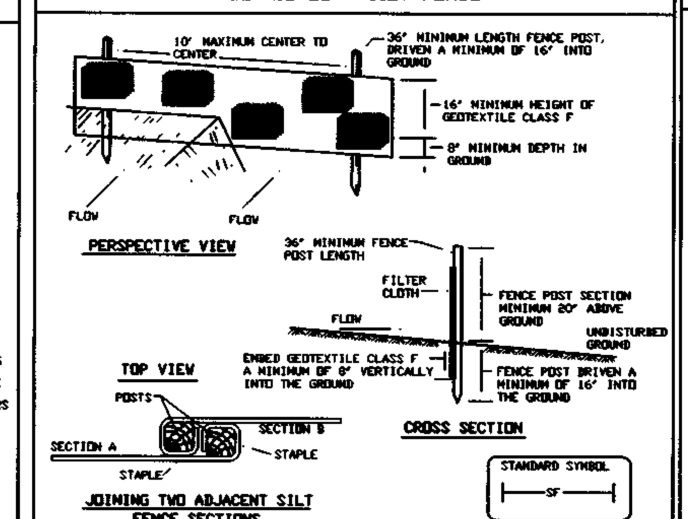
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE A - 1 - 6	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 30 – EROSION CONTROL MATTING



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE G - 22 - 2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 22 – SILT FENCE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear foot.
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft²/ minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

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 occur or when sediment accumulation reached 50% of the fabric height.

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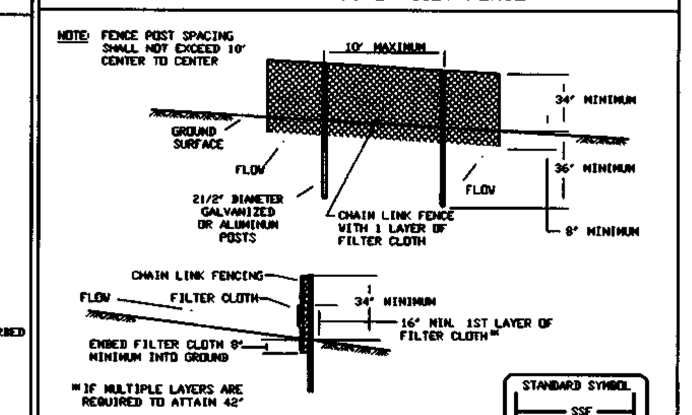
DETAIL 33 – SUPER SILT FENCE



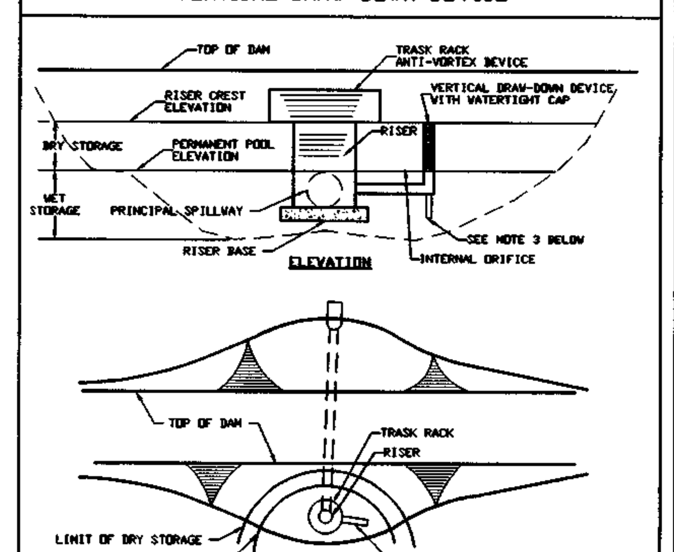
Construction Specifications

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 a 6' fence shall be used, substituting 42" fabric and 6' length posts.
2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss 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 6" and folded.
6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height
7. Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft²/minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H - 26 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

BASIN DRAW DOWN SCHEMATIC VERTICAL DRAW DOWN DEVICE

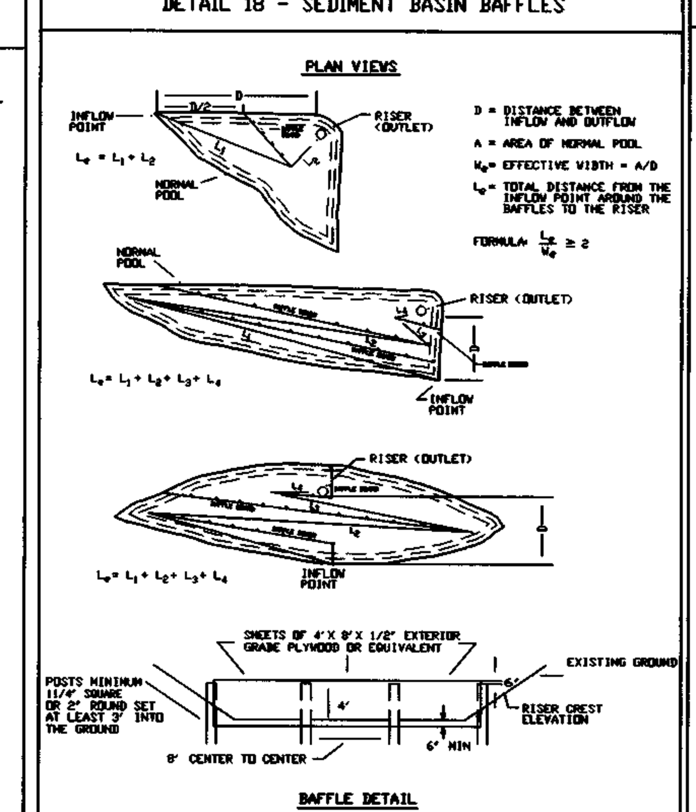


Construction Specifications

1. PERFORATIONS IN THE DRAW-DOWN DEVICE MAY NOT EXTEND INTO THE WET STORAGE.
2. The total area of the perforations must be greater than 4 times the area of the internal orifice.
3. The perforated portion of the draw-down device shall be wrapped with 1/2" hardware cloth and geotextile fabric. The geotextile fabric shall meet specifications for Geotextile Class E.
4. Provide support of draw-down device to prevent sagging and flotation. An acceptable preventative measure is to stake both sides of draw-down device with 1" steel angle, or 1" by 4" square or 2" round wooden posts set 3' minimum into the ground then joining them to the device by wrapping with 12 guage minimum wire.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C - 18 - 30	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 18 – SEDIMENT BASIN BAFFLES



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C - 18 - 28	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 4 – PIPE SLOPE DRAIN

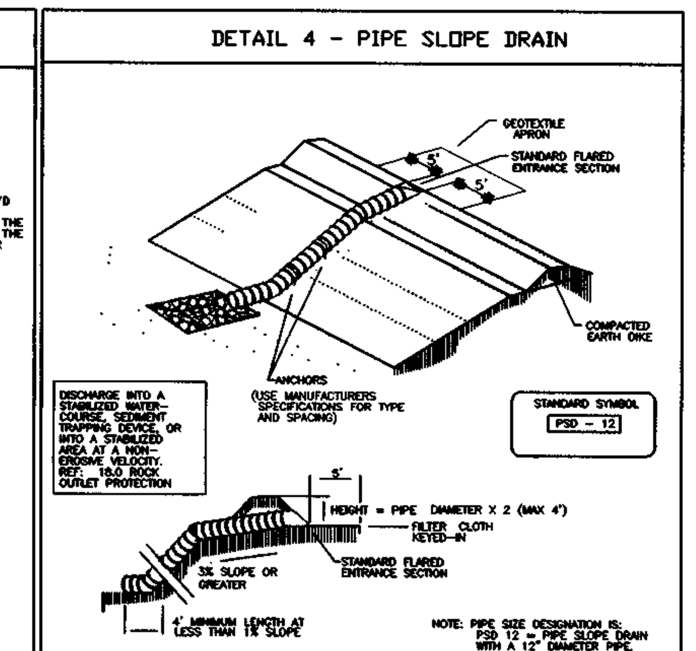


Table 6 Design Criteria for Pipe Slope Drain

Size	Pipe/Tubing Diameter (D) in	Maximum Drainage Area (Acres)
PSD-12	12	0.5
PSD-18	18	1.5
PSD-21	21	2.5
PSD-24	24	3.5
PSD-24 (2)	24	5.0

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE B - 5 - 4	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

project	date
99026	JULY 2001
illustration	engineering
SAA	SAA
scale	approval
NTS	RJH

no.	description revisions	date

ZANTI PROPERTY

LOTS 4-11 AND OPEN SPACE LOTS 12 & 13

TAX MAP 31 – GRID 14 – PARCEL 106

SECOND ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

EROSION & SEDIMENT CONTROL NOTES AND DETAILS

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

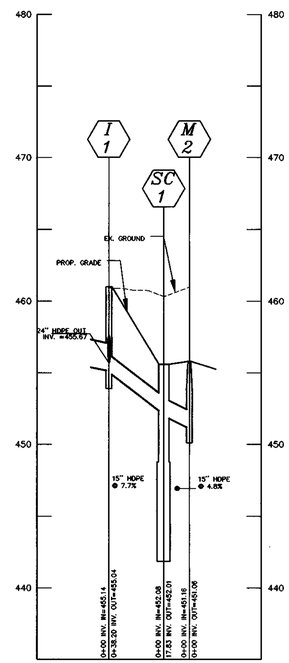
F-01-98

STRUCTURE SCHEDULE

NO.	LOCATION		TOP	INV. IN	INV. OUT	COMMENTS	
I-1	N 569771.617	E 1371868.465	461.00	455.14	455.04/455.67	INLET TYPE S (HO. CO. STD SD 4.23) – SUMP	(PUBLIC)
I-2	N 569835.534	E 1371780.234	460.00	----	457.19	INLET TYPE K (HO. CO. STD SD 4.12) – SUMP	(PUBLIC)
I-3	WOOD POINT PL. STA. 4+75.27 O/S 19.91' LT		468.23	----	465.39	INLET TYPE A-5 (HO. CO. STD SD 4.01)	(PUBLIC)
M1	N 569767.219	E 1371825.159	462.40	456.79/456.79	456.04	MH (HO. CO. STD G 5.12)	(PUBLIC)
M2	N 569743.588	E 1371905.707	455.50	451.16/451.16	451.06	MH (HO. CO. STD G 5.12)	(PUBLIC)
M3	N 569744.909	E 1371892.101	459.00	452.25	452.15	MH (HO. CO. STD G 5.12)	(PUBLIC)
STC1	N 569761.413	E 1371905.279	455.60	452.08	452.01	STC-2400	(PRIVATE)
ES1	N 569741.728	E 1371921.342	----	----	----	24" ø ADS END SECTION (PART No. 1810 NP)	(PRIVATE)
ES2	N 569739.069	E 1371926.248	----	450.29	450.00	24" ø CONCRETE END SECTION	(PUBLIC)
RS1	N 569752.493	E 1371997.053	455.62	----	----	RELEASE STRUCTURE	(PRIVATE)

PIPE SCHEDULE

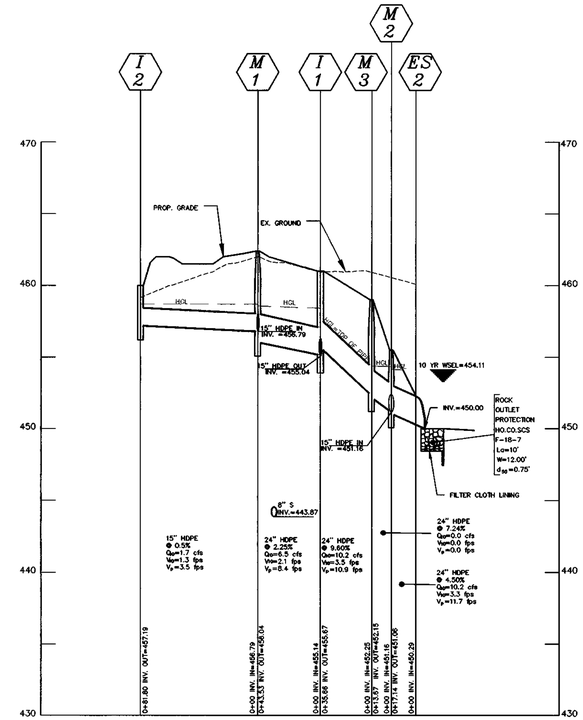
SIZE	LENGTH
15" HDPE (PUBLIC)	210'
15" HDPE (PRIVATE)	64'
24" HDPE (PUBLIC)	132'



STORM DRAIN PROFILE I-1 TO M-2

SCALE: HOR: 1"=50'
VER: 1"=5'

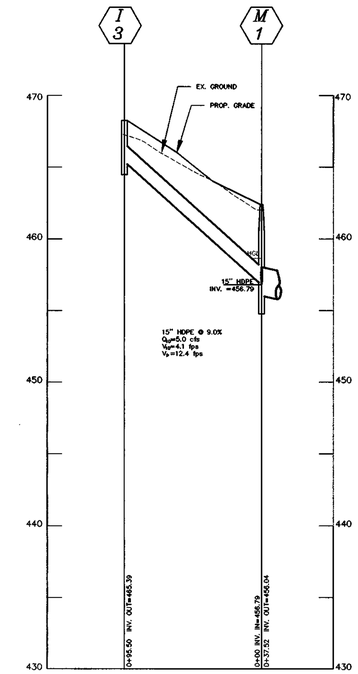
NOTE:
1. WATER QUALITY BYPASS. FOR HGL SEE I-2 TO ES-2 PROFILE.



STORM DRAIN PROFILE I-2 TO ES-2

SCALE: HOR: 1"=50'
VER: 1"=5'

NOTE:
1. HGL ON TOP OF PIPE UNLESS SHOWN OTHERWISE



STORM DRAIN PROFILE I-3 TO M-1

SCALE: HOR: 1"=50'
VER: 1"=5'

NOTE:
1. HGL ON TOP OF PIPE UNLESS SHOWN OTHERWISE

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF BUREAU OF HIGHWAYS — DATE 8/1/01

APPROVED: DEPARTMENT OF PLANNING AND ZONNING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/7/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION MAJ — DATE 8/6/01

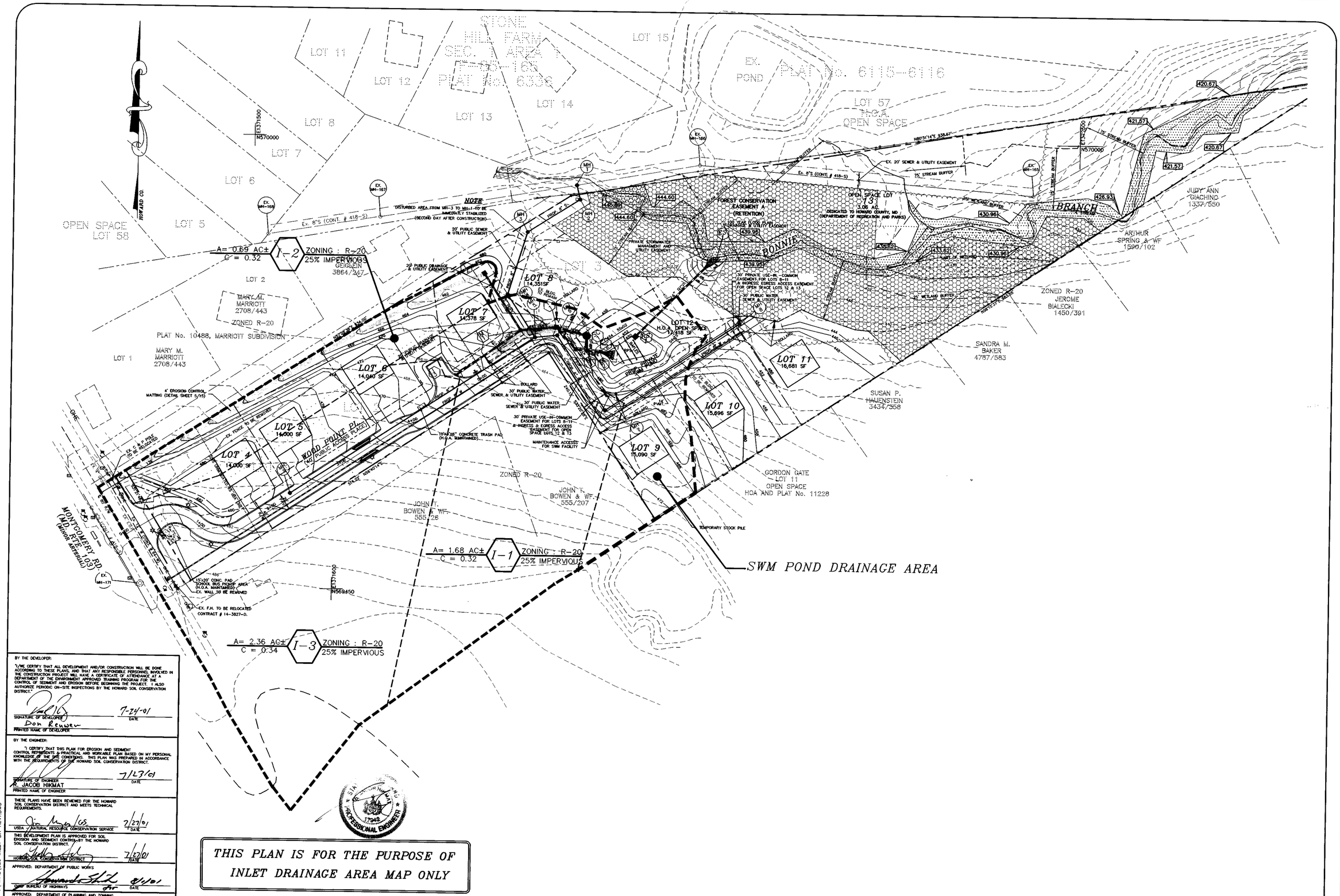
99026\DWG\FINAL\026-SD-PROFILES.DWG

project	date
99026	JULY 2001
illustration	engineering
SAA	SAA
scale	approval
AS SHWN	RJH

no.	description	date
	revisions	

ZANTI PROPERTY
LOTS 4-11 AND OPEN SPACE LOTS 12 & 13
TAX MAP 31 - PARCEL 106 - GRID 14
HOWARD COUNTY, MARYLAND
SECOND ELECTION DISTRICT
STORM DRAIN PROFILES AND DETAILS

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5321 Wash. (410) 997-0298 Fax.



BY THE DEVELOPER:

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

SIGNATURE OF DEVELOPER — DATE 7-14-01

Don Reuwer
PRINTED NAME OF DEVELOPER

BY THE ENGINEER:

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

SIGNATURE OF ENGINEER — DATE 7/23/01

R. JACOB HIKMAT
PRINTED NAME OF ENGINEER

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

USDA - NATURAL RESOURCE CONSERVATION SERVICE — DATE 7/27/01

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/27/01

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 8/1/01

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/7/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION MAJ — DATE 8/6/01

THIS PLAN IS FOR THE PURPOSE OF INLET DRAINAGE AREA MAP ONLY

99026\DWG\FINAL\026-INLET-DA-REV1.DWG

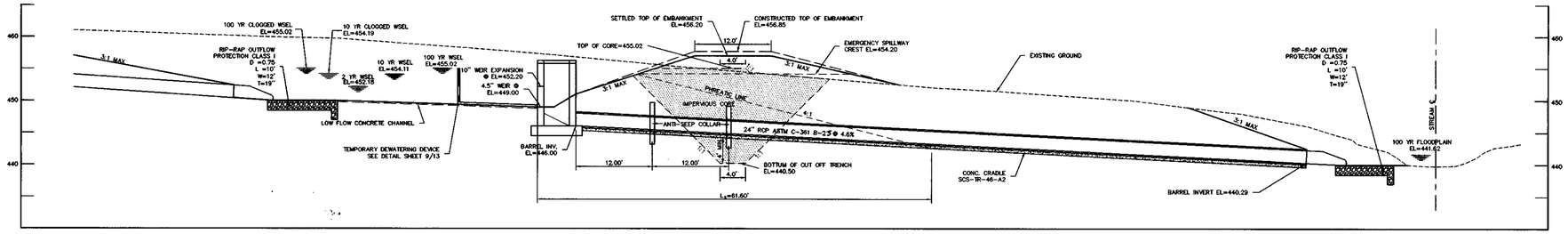
project	date
99026	JULY 2001
illustration	engineering
SAA	SAA
scale	approval
1" = 60'	RJH

no.	description	date
	revisions	

ZANTI PROPERTY
LOTS 4-11 AND OPEN SPACE LOTS 12 & 13
TAX MAP 31 - PARCEL 106 - GRID 14
SECOND ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

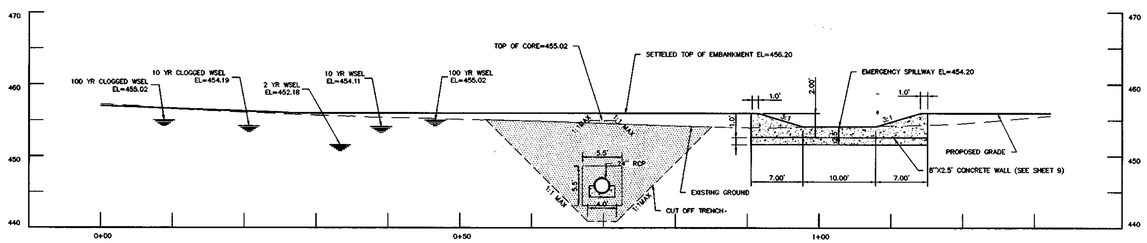
DRAINAGE AREA MAP

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5321 Wash. (410) 997-0298 Fax.



PRINCIPLE SPILLWAY PROFILE

SCALE: 1"=10'



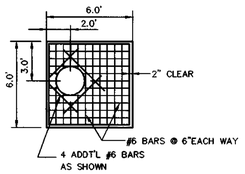
CENTERLINE DAM PROFILE (A-A)

SCALE: 1"=10'

SWM POND SUMMARY			
	2 YR.	10 YR.	100 YR.
Q DEVELOPED	7.0	27.0	N/A
WSEL	452.18	454.11	455.02

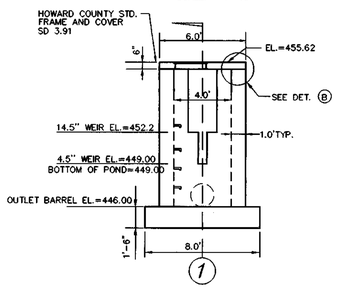
PRIVATE STORMWATER MANAGEMENT FACILITY

1. MD378 DETENTION POND
   BOTTOM EL. 449.00
   TOP EMBANKMENT EL. 456.20
   4.5" WEIR CREST EL. 449.00
   10" WEIR EXPANSION CREST EL. 452.20
   10.0' EMERGENCY SPILLWAY CREST EL. 454.20
2. STORMCEPTOR STA 2400
   IMPERVIOUS DRAINAGE AREA TO STORM CEPTOR=1.75 AC±
3. THE SWM FACILITY WILL BE PRIVATLEY OWNED AND MANTAINED
4. HAZARD CLASSIFICATION IS "a"



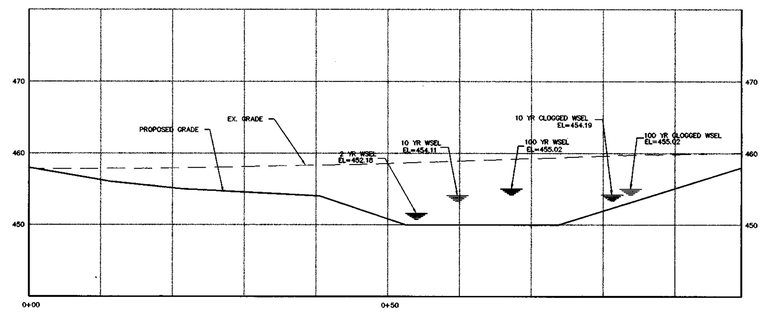
TOP SLAB DETAIL

N.T.S.



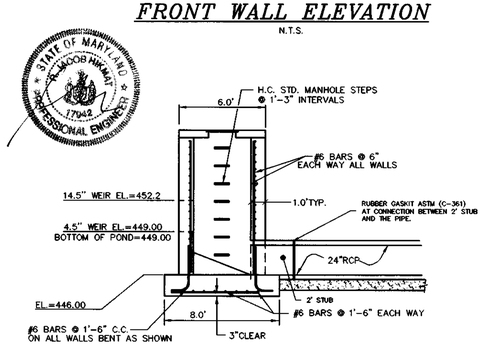
FRONT WALL ELEVATION

N.T.S.



SECTION ACROSS POND (B-B)

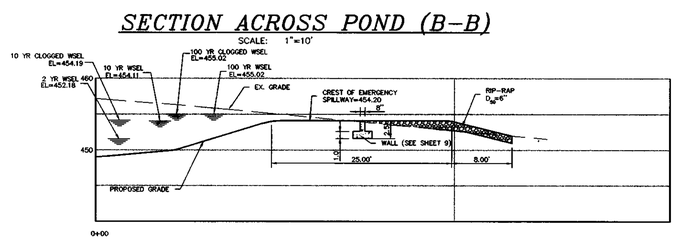
SCALE: 1"=10'



SECTION 1

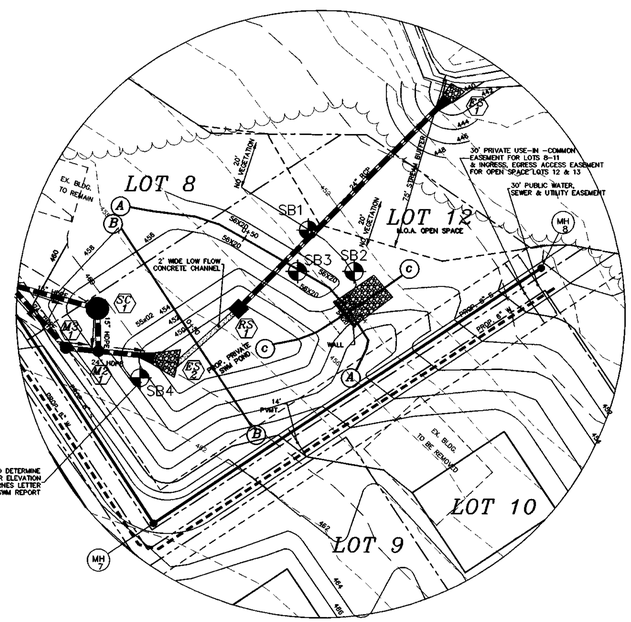
N.T.S.

NOTE:
TYPICAL REINFORCEMENT TO CONTINUE AROUND WEIR AND 24" PIPE. ADD EXTRA # 6 BARS DIAGONAL SEE REINFORCEMENT DETAIL.



EMERGENCY SPILLWAY PROFILE (C-C)

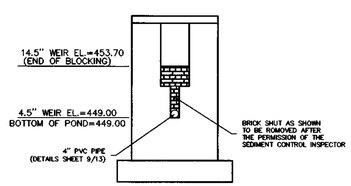
SCALE: 1"=10'



THE PURPOSE OF SB # 4 IS TO DETERMINE THE ELEVATION OF GROUND WATER ELEVATION PLEASE REFERE TO HILLS CARNES LETTER DATED AUG. 25,2000 ATTACHED TO THE SWM REPORT

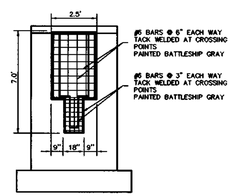
STORMWATER MANGMENT POND

SCALE: 1"=30'



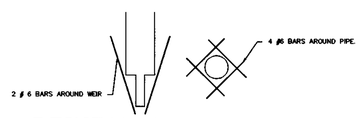
TEMPORARY BLOCKING FOR SEDIMENT CONTROL

N.T.S.



ELEVATION OF TRASH RACK

N.T.S.



REINFORCEMENT DETAIL

STATE OF MARLAND — R. JACOB HIKMAT — 17042 — PROFESSIONAL ENGINEER

BY THE DEVELOPER:

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

SIGNATURE OF DEVELOPER — DATE
Dan Zanti
PRINTED NAME OF DEVELOPER

BY THE ENGINEER:

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

7/23/01
SIGNATURE OF ENGINEER — DATE
R. JACOB HIKMAT
PRINTED NAME OF ENGINEER

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

USDA / NATURAL RESOURCE CONSERVATION SERVICE — 7/23/01 DATE

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

HOWARD SOIL CONSERVATION DISTRICT — 7/23/01 DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

BUREAU OF HIGHWAYS — 8/1/01 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — 8/7/01 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION MAJ — 8/6/01 DATE

99026\DWG\FINAL\026-SWM-DET2.DWG

project	date
99026	JULY 2001
illustration	engineering
SAA	SAA
scale	approval
AS SHWN	RJH

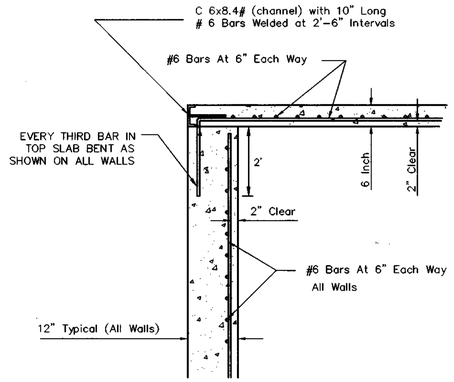
no.	description	date
	revisions	

ZANTI PROPERTY
LOTS 4-11 AND OPEN SPACE LOTS 12 & 13
TAX MAP 31 - PARCEL 106 - GRID 14
SECOND ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

STORMWATER MANAGEMENT POND PROFILES & DETAILS

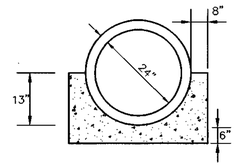
MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

F-01-98



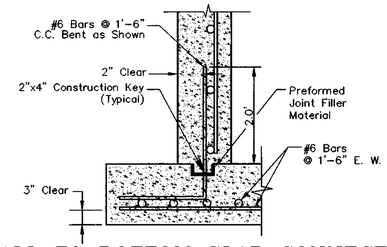
WALL TO TOP SLAB CONNECTION DETAIL

N.T.S.



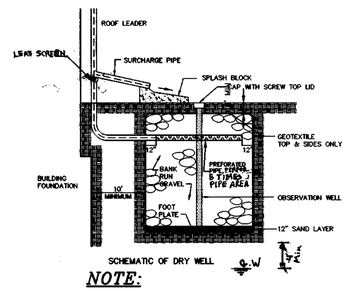
DETAIL OF CONCRETE CRADLE

N.T.S.

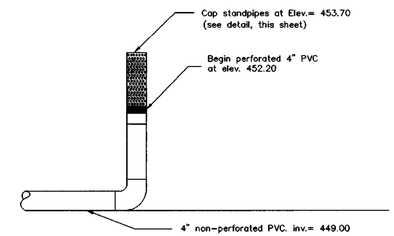


WALL TO BOTTOM SLAB CONNECTION DETAIL

N.T.S.



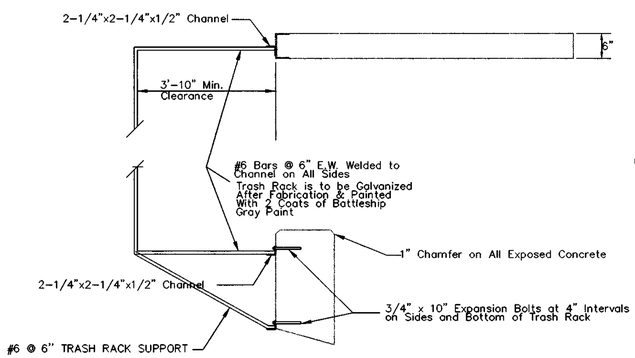
NOTE:
PRIVIDE DRYWELLS FOR LOTS 9 THRU 11



TEMPORARY DEWATERING STANDPIPES

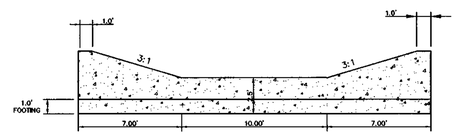
NTS

NOTE:
FOR NOTES AND SPECIFICATIONS SEE DETAIL C-10-30 SHEET 5



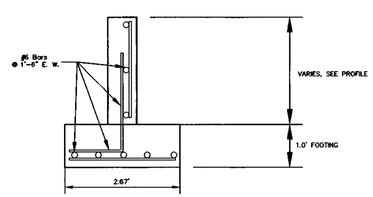
TRASH RACK CONNECTION DETAIL

N.T.S.



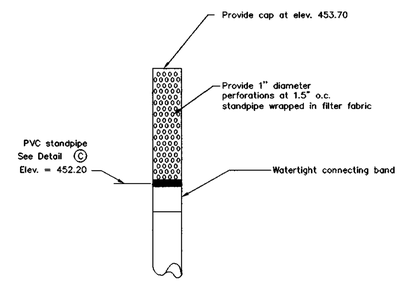
WALL PROFILE

SCALE 1"=25'



WALL SECTION

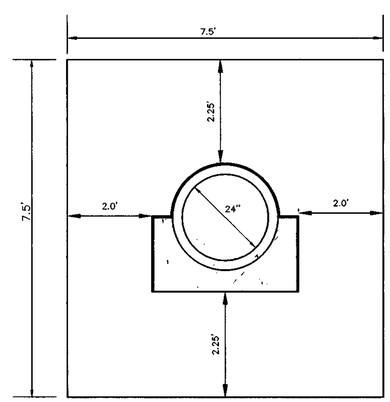
SCALE 1"=1'



TEMPORARY STANDPIPE DETAIL

NTS

NOTE:
FOR NOTES AND SPECIFICATIONS SEE DETAIL C-10-30 SHEET 5



ANTI-SEEP COLLAR DETAIL

N.T.S.

Precast Concrete Order Request Form

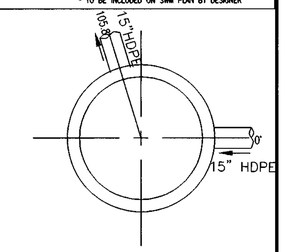
* TO BE INCLUDED ON SWM PLAN BY DESIGNER

CONTRACTOR INFORMATION

Name
Address
City
State
Zip Code
Contact
Phone
Fax

OWNER INFORMATION

Name Zanti LLC
Phone (410) 480-9105
Fax



Please draw orientation of inlet and outlet pipes on diagram along with the pipe inside diameter (in). and invert elevation (ft). Clearly mark inlet pipes with an "I" and oulet pipes with an "O". Please provide the inlet/outlet pipe angle in degrees.

IMPERVIOUS DRAINAGE AREA FOR THIS UNIT 1.75 AC.

Stormceptor® Model			
STC			
900	☐	3600	☐
1200	☐	4800	☐
1800	☐	6000	☐
2400	■	7200	☐

Insert Size	
DISC	■
22"	☐
32"	☐
44"	☐
CUSTOM	

Manhole Number	SC-1
Top Elevation (ft)	455.60
Inlet Pipe Invert (ft)	452.08
Outlet Pipe Invert (ft)	452.01
Pipe Type	HDPE
Inlet Pipe Inside Diameter (ID)	15"
Inlet Pipe Outside Diameter (OD)	—
Outlet Pipe Inside Diameter (ID)	15"
Outlet Pipe Outside Diameter (OD)	—

Project Name Zanti Property
Approximate time frame of delivery (weeks)
Delivery Address: Street
City: State: Zip Code
Designer Company MILDENBERG, BOENDER & ASSOC., INC.
Designer Contact SAMER ALOMAR Phone 410-997-0296 Fax 410-997-0298

PLEASE FILL OUT COMPLETELY AND FAX TO:

ATTN: ED O'MALLEY FAX: (703)922-3659, PHONE: (703)971-1900
FOR TECHNICAL ASSISTANCE PLEASE CALL MIKE BARG, PHONE (703)971-1900

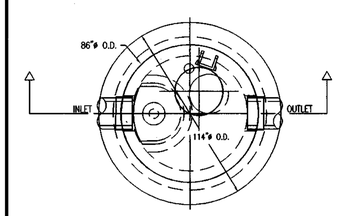
CSR™

Hydro Conduit
6800 Loisdale Road, Springfield, VA 22150 (703) 971-1900

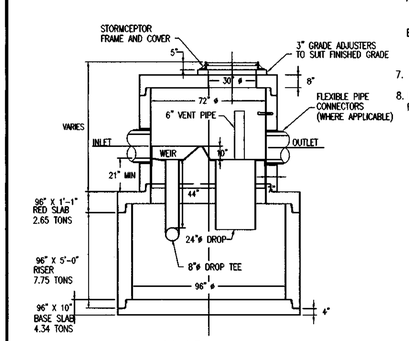
STC 2400

PRECAST CONCRETE STORMCEPTOR

DR. BY:	EPOM
CK. BY:	RCH
DATE:	12-17-96
SCALE:	NTS
DWG.#	CA-0225-05



PLAN
(FRAME AND COVER NOT SHOWN FOR CLARITY)



SECTION

GENERAL NOTES

1. STORMCEPTOR SECTIONS SHALL CONFORM TO ASTM C 478, PROFILE GASKETED JOINTS CONFORMING TO ASTM C 443.
2. MANHOLE STEPS PROVIDED ABOVE INSERT @ 16" O.C. AND SHALL BE COPOLYMER POLYPROPYLENE PLASTIC ENCAPSULATED GR. 60 STEEL.
3. MINIMUM CONCRETE STRENGTH f'c= 4,000 PSI MINIMUM STEEL STRENGTH fy= 60,000 PSI
4. REINFORCEMENT DESIGN SHALL MEET ASTM C 478.
5. FLEXIBLE PIPE CONNECTORS SHALL MEET ASTM C 923.
6. HANDLING:
   A. ALL RISERS SHALL HAVE 2 EA. 1 1/2"ø HOLES FOR LIFTING @ 1/3 WAY DOWN FROM SPIGOT.
   B. ALL LG. DIAM. BASE SECTIONS FLATTOPS, AND REDUCERS TO HAVE LIFT HOOKS.
7. DESIGNED FOR AASHTO H-20 LOADING.
8. FIBERGLASS STORMCEPTOR INSERT REFERENCE DRAWING # CA-0225-01

REV.	DESCRIPTION	BY:	DATE

BY THE DEVELOPER:

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

SIGNATURE OF DEVELOPER DATE 7-24-01
Don Rowner
PRINTED NAME OF DEVELOPER

BY THE ENGINEER:

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

SIGNATURE OF ENGINEER DATE 7/23/01
R. JACOB HIKMAT
PRINTED NAME OF ENGINEER

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

USDA - NATURAL RESOURCE CONSERVATION SERVICE DATE 7/27/01

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

HOWARD SOIL CONSERVATION DISTRICT DATE 7/27/01

APPROVED: DEPARTMENT OF PUBLIC WORKS

BUREAU OF HIGHWAYS DATE 8/1/01

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 8/6/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 8/6/01

STATE OF MARYLAND R. JACOB HIKMAT PROFESSIONAL ENGINEER

OPERATION AND MAINTENANCE SCHEDULE FOR STORMCEPTOR WATER QUALITY DEVICE

1. THE STORMCEPTOR WATER QUALITY STRUCTURE SHALL BE PERIODICALLY INSPECTED AND CLEANED TO MAINTAIN OPERATION AND FUNCTION. THE OWNER SHALL INSPECT THE STORMCEPTOR UNIT YEARLY AT A MINIMUM, UTILIZING THE STORMCEPTOR INSPECTION/MONITORING FORM. INSPECTIONS SHALL BE DONE BY USING A CLEAR PLEXIGLASS TUBE ("SLUDGE JUDGE") TO EXTRACT A WATER COLUMN SAMPLE. WHEN THE SEDIMENT DEPTHS EXCEED THE LEVEL SPECIFIED IN TABLE 6 OF THE STORMCEPTOR TECHNICAL MANUAL, THE UNIT MUST BE CLEANED.
2. THE STORMCEPTOR WATER QUALITY STRUCTURE SHALL BE CHECKED AND CLEANED IMMEDIATELY AFTER PETROLEUM SPILLS. THE OWNER SHALL CONTACT THE APPROPRIATE REGULATORY AGENCIES.
3. THE MAINTENANCE OF THE STORMCEPTOR UNIT SHALL BE DONE USING A VACUUM TRUCK WHICH WILL REMOVE THE WATER, SEDIMENT, DEBRIS, FLOATING HYDROCARBONS AND OTHER MATERIALS IN THE UNIT. PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIALS AND LIQUID MUST BE FOLLOWED BY THE OWNER.
4. THE INLET AND OUTLET PIPES SHALL BE CHECKED FOR ANY OBSTRUCTIONS AT LEAST ONCE EVERY SIX MONTHS. IF OBSTRUCTIONS ARE FOUND THE OWNER SHALL HAVE THEM REMOVED. STRUCTURAL PARTS OF THE STORMCEPTOR UNIT SHALL BE REPAIRED AS NEEDED.
5. THE OWNER SHALL RETAIN AND MAKE THE STORMCEPTOR INSPECTION/MONITORING FORMS AVAILABLE TO THE HOWARD COUNTY OFFICIALS UPON THEIR REQUEST.

99026\DWG\FINAL\90FT1-SWM-DETI.DWG

project	date
99026	JULY 2001
illustration	engineering
SAA	SAA
scale	approval
NTS	RJH

no.	description revisions	date

ZANTI PROPERTY
LOTS 4-11 AND OPEN SPACE LOTS 12 & 13
TAX MAP 31 - PARCEL 106 - GRID 14
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
STORMWATER MANAGEMENT POND DETAILS & NOTES

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

F-01-98

MD-378 POND SPECIFICATIONS (JANUARY 2000)

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DETENTION POND

ROUTINE MAINTENANCE

1. FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETARMINE IS THE POND IS FUNCTIONING PROPERLY.

2. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOWED AS NEEDED.

3. DEBRIS AND LETTER SHALL BE REMOVED DURING REGULAR MOWEING OPERATIONS AND AS NEEDED.

4. VISUAL SIGNS OF EROSION IN THE POND AS WELL AS THE RIP-RAP OR GABION OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE

1. 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 SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.

2. SEDIMENT SHALL BE REMOVED FROM THE BOND, AND FOREBAY, NO LATER THAN WHEN THE CAPACITY OF THE POND, AND FOREBAY, IS HALF FULL WITH SEDIMENT, OR, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.

OPERATION, MAINTENANCE AND INSPECTION

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BY PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA. SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378), THE POND OWNER(S) AND THE HEIRS SUCCESSORS OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

BY THE DEVELOPER:

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

SIGNATURE OF DEVELOPER — 7-24-01 — DATE

Don Reuwer
PRINTED NAME OF DEVELOPER

BY THE ENGINEER:

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

SIGNATURE OF ENGINEER — 7/23/01 — DATE

R. JACOB HIKMAT
PRINTED NAME OF ENGINEER

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

USDA – NATURAL RESOURCE CONSERVATION SERVICE — 7/27/01 — DATE

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

HOWARD SOIL CONSERVATION DISTRICT — 7/22/01 — DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF BUREAU OF HIGHWAYS — 8/1/01 — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — 8/7/01 — DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION MAJ — 8/6/01 — DATE

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CONSTRUCTION SPECIFICATIONS

THESE SPECIFICATIONS ARE APPROPRIATE TO ALL PONDS WITHIN THE SCOPE OF THE STANDARD FOR PRACTICE MD-378. ALL REFERENCES TO ASTM AND AASHTO SPECIFICATIONS APPLY TO THE MOST RECENT VERSION.

SITE PREPARATION

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1. ALL TREES SHALL BE CLEARED AND GRUBBED WITHIN 15 FEET OF THE TOE OF THE EMBANKMENT.

AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH, AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORM WATER MANAGEMENT PONDS, A MINIMUM OF A 25-FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE DRAIN AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. WHEN SPECIFIED, A SUFFICIENT QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

MATERIAL – THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6", FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT AND CUT OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION CC, SC, CH, OR CL AND MUST HAVE AT LEAST 30% PASSING THE #200 SIEVE. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGNED BY A GEOTECHNICAL ENGINEER. SUCH SPECIAL DESIGNS MUST HAVE CONSTRUCTION SUPERVISED BY A GEOTECHNICAL ENGINEER. MATERIALS USED IN THE OUTER SHELL OF THE EMBANKMENT MUST HAVE THE CAPABILITY TO SUPPORT VEGETATION OF THE QUALITY REQUIRED TO PREVENT EROSION OF THE EMBANKMENT.

PLACEMENT – AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN MAXIMUM 8 INCH THICK (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST PERMEABLE BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT. THE PRINCIPAL SPILLWAY MUST BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED INTO THE EMBANKMENT.

COMPACTION – THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF HEAVY EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TIRED OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION WILL BE OBTAINED WITH THE EQUIPMENT USED. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED INTO A BALL IT WILL NOT CRUMBLE, YET NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT. WHEN REQUIRED BY THE REVIEWING AGENCY THE MINIMUM REQUIRED DENSITY SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN 2% OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99 (STANDARD PROCTOR).

CUT OFF TRENCH – THE CUTOFF TRENCH SHALL BE EXCAVATED INTO IMPERVIOUS MATERIAL ALONG OR PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE BOTTOM WIDTH OF THE TRENCH SHALL BE GOVERNED BY THE EQUIPMENT USED FOR EXCAVATION, WITH THE MINIMUM WIDTH BEING FOUR FEET. THE DEPTH SHALL BE AT LEAST FOUR FEET BELOW EXISTING GRADE OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE 1 TO 1 OR FLATTER. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

EMBANKMENT CORE – THE CORE SHALL BE PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE TOP WIDTH OF THE CORE SHALL BE A MINIMUM OF FOUR FEET. THE HEIGHT SHALL EXTEND UP TO AT LEAST THE 10 YEAR WATER ELEVATION OR AS SHOWN ON THE PLANS. THE SIDE SLOPES SHALL BE 1 TO 1 OR FLATTER. THE CORE SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY. IN ADDITION, THE CORE SHALL BE PLACED CONCURRENTLY WITH THE OUTER SHELL OF THE EMBANKMENT.

STRUCTURAL BACKFILL

BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A CONCRETE STRUCTURE OR PIPE, UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE STRUCTURE BACKFILL MAY BE FLOWABLE FILL MEETING THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 313 AS MODIFIED. THE MIXTURE SHALL HAVE A 100-200 PSI; 28 DAY UNCONFINED COMPRESSIVE STRENGTH. THE FLOWABLE FILL SHALL HAVE A MINIMUM PH OF 4.0 AND A MINIMUM RESISTIVITY OF 2,000 OHM-CM. MATERIAL SHALL BE PLACED SUCH THAT A MINIMUM OF 6" (MEASURED PERPENDICULAR TO THE OUTSIDE OF THE PIPE) OF FLOWABLE FILL SHALL BE UNDER (BEDDING), OVER AND, ON THE SIDES OF THE PIPE. IT ONLY NEEDS TO EXTEND UP TO THE SPRING LINE FOR RIGID CONDUITS. AVERAGE SLUMP OF THE FILL SHALL BE 7". TO ASSURE FLOWABILITY OF THE MATERIAL, ADEQUATE MEASURES SHALL BE TAKEN (SAND BAGS, ETC.). TO PREVENT FLOATING THE PIPE. WHEN USING FLOWABLE FILL, ALL METAL PIPE SHALL BE BITUMINOUS COATED. ANY ADJOINING SOIL FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPER OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL SHALL COMPLETELY FILL ALL VOIDS ADJACENT TO THE FLOWABLE FILL ZONE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A STRUCTURE OR PIPE UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE. BACKFILL MATERIAL OUTSIDE THE STRUCTURAL BACKFILL (FLOWABLE FILL) ZONE SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE CORE OF THE EMBANKMENT OR OTHER EMBANKMENT MATERIALS.

PIPE CONDUIT

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

CORRUGATED METAL PIPE – ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR CORRUGATED METAL PIPE:

I. MATERIALS – (POLYMER COATED STEEL PIPE) – STEEL PIPES WITH POLYMERIC COATINGS SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (10 MIL) ON BOTH SIDES OF THE PIPE. THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATIONS M-245 & M-246 WITH WATERTIGHT COUPLING BANDS OR FLANGES.

MATERIALS – (ALUMINUM COATED STEEL PIPE) – THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-274 WITH WATERTIGHT COUPLING BANDS OR FLANGES. ALUMINUM COATED STEEL PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT THE NEED FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A. ANY ALUMINUM COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT.

MATERIALS – (ALUMINUM PIPE) – THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-196 OR M-21 L WITH WATERTIGHT COUPLING BANDS OR FLANGES. ALUMINUM PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT. HOT DIP GALVANIZED BOLTS MAY BE USED FOR CONNECTIONS. THE PH OF THE SURROUNDING SOILS SHALL BE BETWEEN 4 AND 9.

2. COUPLING BANDS, ANTI-SEEP COLLARS, END SECTIONS, ETC., MUST BE COMPOSED OF THE SAME MATERIAL AND COATINGS AS THE PIPE. METALS MUST BE INSULATED FROM DISSIMILAR MATERIALS WITH USE OF RUBBER OR PLASTIC INSULATING MATERIALS AT LEAST 24 MILS IN THICKNESS.

3. CONNECTIONS – ALL CONNECTIONS WITH PIPES MUST BE COMPLETELY WATERTIGHT. THE DRAIN PIPE OR BARREL CONNECTION TO THE RISER SHALL BE WELDED ALL AROUND WHEN THE PIPE AND RISER ARE METAL. ANTI-SEEP COLLARS SHALL BE CONNECTED TO THE PIPE IN SUCH A MANNER AS TO BE COMPLETELY WATERTIGHT. DIMPLE BANDS ARE NOT CONSIDERED TO BE WATERTIGHT.

ALL CONNECTIONS SHALL USE A RUBBER OR NEOPRENE GASKET WHEN JOINING PIPE SECTIONS. THE END OF EACH PIPE SHALL BE RE-ROLLED AN ADEQUATE NUMBER OF CORRUGATIONS TO ACCOMMODATE THE BANDWIDTH. THE FOLLOWING TYPE CONNECTIONS ARE ACCEPTABLE FOR PIPES LESS THAN 24 INCHES IN DIAMETER: FLANGES ON BOTH ENDS OF THE PIPE WITH A CIRCULAR 3/8 INCH CLOSED CELL NEOPRENE GASKET, PRE-PUNCHED TO THE FLANGE BOLT CIRCLE, SANDWICHED BETWEEN ADJACENT FLANGES; A 12-INCH WIDE STANDARD LAP TYPE BAND WITH 12-INCH WIDE BY 3/8-INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET; AND A 12-INCH WIDE HUGGER TYPE BAND WITH O-RING GASKETS HAVING A MINIMUM DIAMETER OF ½ INCH GREATER THAN THE CORRUGATION DEPTH. PIPES 24 INCHES IN DIAMETER AND LARGER SHALL BE CONNECTED BY A 24 INCH LONG ANNULAR CORRUGATED BAND USING A MINIMUM OF 4 (FOUR) RODS AND LUGS, 2 ON EACH CONNECTING PIPE END. A 24-INCH WIDE BY 3/8-INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET WILL BE INSTALLED WITH 12 INCHES ON THE END OF EACH PIPE. FLANGED JOINTS WITH 3/8 INCH CLOSED CELL GASKETS THE FULL WIDTH OF THE FLANGE IS ALSO ACCEPTABLE.

HELICALLY CORRUGATED PIPE SHALL HAVE EITHER CONTINUOUSLY WELDED SEAMS OR HAVE LOCK SEARNS WITH INTERNAL CAULKING OR A NEOPRENE BEAD.

4. BEDDING – THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

5. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL."

6. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

REINFORCED CONCRETE PIPE – ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE:

1. MATERIALS – REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM C-361.

2. BEDDING – REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING/CRADLE FOR THEIR ENTIRE LENGTH. THIS BEDDING/CRADLE SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 50% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 6 INCHES. WHERE A CONCRETE CRADLE IS NOT NEEDED FOR STRUCTURAL REASONS, FLOWABLE FILL MAY BE USED AS DESCRIBED IN THE "STRUCTURE BACKFILL" SECTION OF THIS STANDARD. GRAVEL BEDDING IS NOT PERMITTED.

3. LAYING PIPE – BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 4 FEET FROM THE RISER.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL."

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

PLASTIC PIPE – THE FOLLOWING CRITERIA SHALL APPLY FOR PLASTIC PIPE:

1. MATERIALS – PVC PIPE SHALL BE PVC-1120 OR PVC-1220 CONFORMING TO ASTM D1785 OR ASTM D-2241 CORRUGATED HIGH DENSITY POLYETHYLENE (HDPE) PIPE, COUPLINGS AND FITTINGS SHALL CONFORM TO THE FOLLOWING: 4" – 10" INCH PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M252 TYPE S, AND 12" THROUGH 24" INCH SHALL MEET THE REQUIREMENTS OF AASHTO M294 TYPE S.

2. JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATERTIGHT.

3. BEDDING –THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

4. BACKFILL SHALL CONFORM TO "STRUCTURE BACKFILL."

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

DRAINAGE DIAPHRAGMS – WHEN A DRAINAGE DIAPHRAGM IS USED, A REGISTERED PROFESSIONAL ENGINEER WILL SUPERVISE THE DESIGN AND CONSTRUCTION INSPECTION.

CONCRETE

CONCRETE SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 414, MIX NO. 3.

ROCK RIPRAP

ROCK RIPRAP SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 311.

GEOTEXTILE SHALL BE PLACED UNDER ALL RIPRAP AND SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 921.09, CLASS C.

CARE OF WATER DURING CONSTRUCTION

ALL WORK ON PERMANENT STRUCTURES SHALL BE CARRIED OUT IN AREAS FREE FROM WATER. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL TEMPORARY DIKES, LEVEES, COFFERDAMS, DRAINAGE CHANNELS, AND STREAM DIVERSIONS NECESSARY TO PROTECT THE AREAS TO BE OCCUPIED BY THE PERMANENT WORKS. THE CONTRACTOR SHALL ALSO FURNISH, INSTALL, OPERATE, AND MAINTAIN ALL NECESSARY PUMPING AND OTHER EQUIPMENT REQUIRED FOR REMOVAL OF WATER FROM VARIOUS PARTS OF THE WORK AND FOR MAINTAINING THE EXCAVATIONS, FOUNDATION, AND OTHER PARTS OF THE WORK FREE FROM WATER AS REQUIRED OR DIRECTED BY THE ENGINEER FOR CONSTRUCTING EACH PART OF THE WORK. AFTER HAVING SERVED THEIR PURPOSE, ALL TEMPORARY PROTECTIVE WORKS SHALL BE REMOVED OR LEVELED AND GRADED TO THE EXTENT REQUIRED TO PREVENT OBSTRUCTION IN ANY DEGREE WHATSOEVER OF THE FLOW OF WATER TO THE SPILLWAY OR OUTLET WORKS AND SO AS NOT TO INTERFERE IN ANY WAY WITH THE OPERATION OR MAINTENANCE OF THE STRUCTURE. STREAM DIVERSIONS SHALL BE MAINTAINED UNTIL THE FULL FLOW CAN BE PASSED THROUGH THE PERMANENT WORKS. THE REMOVAL OF WATER FROM THE REQUIRED EXCAVATION AND THE FOUNDATION SHALL BE ACCOMPLISHED IN A MANNER AND TO THE EXTENT THAT WILL MAINTAIN STABILITY OF THE EXCAVATED SLOPES AND BOTTOM REQUIRED EXCAVATIONS AND WILL ALLOW SATISFACTORY PERFORMANCE OF ALL CONSTRUCTION OPERATIONS. DURING THE PLACING AND COMPACTING OF MATERIAL IN REQUIRED EXCAVATIONS, THE WATER LEVEL AT THE LOCATIONS BEING REFILLED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER SUMPS FROM WHICH THE WATER SHALL BE PUMPED.

STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SIGHTLY CONDITION ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH THE NATURAL RESOURCES CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANTING (MD-342) OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

EROSION AND SEDIMENT CONTROL

CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES.

OPERATION AND MAINTENANCE

CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES.

HILLIS – CARNES
ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

PROJECT NAME: ZANTI PROPERTY SWM — BORING # SB-1
LOCATION: COLUMBIA, MARYLAND — JOB # 99354C

DATUM ____ HAMMER WT. 140 LBS. HOLE DIAMETER 8" FOREMAN Glen Sstonesifer
SURF. ELEV. ____ HAMMER DROP 30 INCHES ROCK CORE DIA. ____ INSPECTOR
DATE STARTED 04-26-00 PIPE SIZE 2.0 INCHES OD BORING METHOD HSA DATE COMPLETE 04-26-00

ELEV.	SOIL DESCRIPTION (COLOR, MOISTURE, DENSITY, SIZE, PROPORTION)	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC	BORING & SAMPLING NOTES
	SURFACE	—	0.0					
	BROWN, MOIST, LOOSE, SILTY, FINE SAND, TRACE CLAY, TRACE ROCK FRAGMENTS (SM)	2.0		I	4-3-4-3	1	13"	5" TOP SOIL
	BROWN TO GRAY, MOIST VERY DENSE, CLEY, COARSE SAND, TRACE ROCK FRAGMENTS (SM)	5.0	5	I/D	18-29-30-32	2	24"	GROUNDWATER ENCOUNTERED AT 4.0' WHILE DRILLING
	BROWN, WET MEDIUM DENSE TO DENSE, SILTY, FINE SAND (SM)			I	15-6-8-8	3	12"	CAVED IN AT 4'2" AT COMPLETION
				I	18-13-20-18	4	12"	CAVED IN AT 5' AFTER 24 HOURS
			10	I	6-8-8-11	5	12"	
	BOTTOM OF TEST HOLE AT 12.0'	12.0	15					
			20					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. PT-PRESSED SHELBY TUBE CA-CONTINUOUS FLIGHT AUGER RC-ROCK CORE
SAMPLER CONDITIONS: D-DISINTEGRATED I-INTACT U-UNDISTURBED L-LOST
GROUND WATER DEPTH: AT COMPLETION WET BOTTOM AFTER 24 hours 4.0' AFTER ____ FT.
BORING METHOD: HSA-HOLLOW STEM AUGERS CFA-CONT. FLIGHT AUGERS DC-DRIVING CASING MD-MUD DRILLING

STANDARD PENETRATION TEST–DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

HILLIS – CARNES
ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

PROJECT NAME: ZANTI PROPERTY SWM — BORING # SB-2
LOCATION: COLUMBIA, MARYLAND — JOB # 99354C

DATUM ____ HAMMER WT. 140 LBS. HOLE DIAMETER 8" FOREMAN Glen Sstonesifer
SURF. ELEV. ____ HAMMER DROP 30 INCHES ROCK CORE DIA. ____ INSPECTOR
DATE STARTED 04-26-00 PIPE SIZE 2.0 INCHES OD BORING METHOD HSA DATE COMPLETE 04-26-00

ELEV.	SOIL DESCRIPTION (COLOR, MOISTURE, DENSITY, SIZE, PROPORTION)	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC	BORING & SAMPLING NOTES
	SURFACE	—	0.0					
	BROWN TO ORANGE, MOIST LOOSE, MEDIUM SAND, TRACE SILT, TRACE GRAVEL (SP)	2.5		O	4-4-4-4	1	8"	5" TOP SOIL
	GRAY, MOIST, DENSE, CLAYEY, MEDIUM TO FINE SAND	5.0	5	I/D	28-30-14-9	2	12"	GROUNDWATER ENCOUNTERED AT 5.0' WHILE DRILLING
	ORANGE TO GRAY, WET, LOOSE TO MEDIUM DENSE, SILTY, FINE SAND			I/D	3-5-7-9	3	13"	CAVED IN AT 3'4" AT COMPLETION
				I/D	5-7-8-6	4	11"	CAVED IN AT 5' AFTER 24 HOURS
			10	I/D	4-5-5-7	5	16"	
	BOTTOM OF TEST HOLE AT 12.0'	12.0	15					
			20					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. PT-PRESSED SHELBY TUBE CA-CONTINUOUS FLIGHT AUGER RC-ROCK CORE
SAMPLER CONDITIONS: D-DISINTEGRATED I-INTACT U-UNDISTURBED L-LOST
GROUND WATER DEPTH: AT COMPLETION WET BOTTOM AFTER 24 hours 4.2' AFTER ____ FT.
BORING METHOD: HSA-HOLLOW STEM AUGERS CFA-CONT. FLIGHT AUGERS DC-DRIVING CASING MD-MUD DRILLING

STANDARD PENETRATION TEST–DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

HILLIS – CARNES
ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

PROJECT NAME: ZANTI PROPERTY SWM — BORING # SB-3
LOCATION: COLUMBIA, MARYLAND — JOB # 99354C

DATUM ____ HAMMER WT. 140 LBS. HOLE DIAMETER 8" FOREMAN Glen Sstonesifer
SURF. ELEV. ____ HAMMER DROP 30 INCHES ROCK CORE DIA. ____ INSPECTOR
DATE STARTED 04-26-00 PIPE SIZE 2.0 INCHES OD BORING METHOD HSA DATE COMPLETE 04-26-00

ELEV.	SOIL DESCRIPTION (COLOR, MOISTURE, DENSITY, SIZE, PROPORTION)	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC	BORING & SAMPLING NOTES
	SURFACE	—	0.0					
	BROWN, MOIST, MEDIUM DENSE, SAND SILT (ML)	2.0		D	3-3-3-5	1	13"	6" TOP SOIL
	ORANGE, MOIST, VERY STIFF SILT, TRACE FINE SAND, TRACE CLAY, TRACE ROCK FRAGMENTS (ML)	5.0	5	I	7-9-14-14	2	24"	GROUNDWATER ENCOUNTERED AT 5.0' WHILE DRILLING
	GRAY, MOIST, DENSE FINE TO MEDIUM SAND, TRACE ROCK FRAGMENTS (SP)	7.5		I	14-26-11-5	3	12"	CAVED IN AT 5'4" AT COMPLETION
	ORANGE, WET VERY LOOSE TO LOOSE SILTY, FINE SAND, TRACE CLAY, TRACE ROCK (SM)			D	2-2-2-2	4	12"	CAVED IN AT 5' AFTER 24 HOURS
			10	D	2-3-4-4	5	12"	
	BOTTOM OF TEST HOLE AT 12.0'	12.0	15					
			20					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. PT-PRESSED SHELBY TUBE CA-CONTINUOUS FLIGHT AUGER RC-ROCK CORE
SAMPLER CONDITIONS: D-DISINTEGRATED I-INTACT U-UNDISTURBED L-LOST
GROUND WATER DEPTH: AT COMPLETION 5'2" AFTER 24 hours 3'9" AFTER ____ FT.
BORING METHOD: HSA-HOLLOW STEM AUGERS CFA-CONT. FLIGHT AUGERS DC-DRIVING CASING MD-MUD DRILLING

STANDARD PENETRATION TEST–DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

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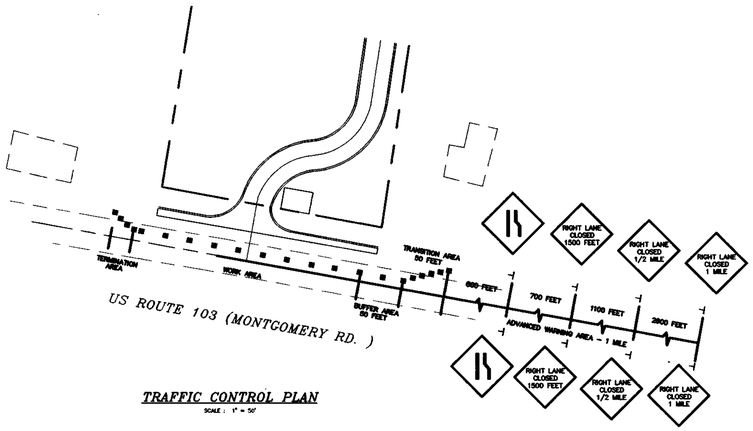
project	date	illustration	engineering	scale	approval
99026	JULY 2001	SAA	SAA	NTS	RJH

no.	description	date
	revisions	

ZANTI PROPERTY
LOTS 4-11 AND OPEN SPACE LOTS 12 & 13
TAX MAP 31 – PARCEL 106 – GRID 14
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
STORMWATER MANAGEMENT POND SPECIFICATION & BORING LOGS

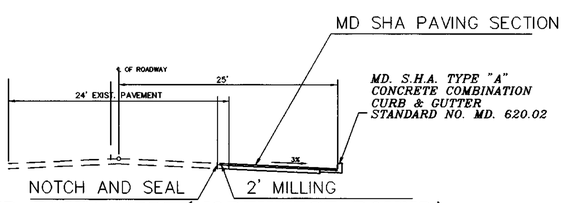
MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

F-01-98



TRAFFIC CONTROL PLAN

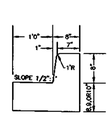
SCALE : 1" = 50'



MD ROUTE 103 (NORTHWEST BOUND)
TYPICAL SECTION

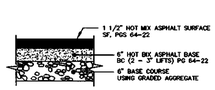
N.T.S.

LT. 67' - RT. 89'



MD. S.H.A. TYPE "A" CONCRETE COMBINATION CURB & GUTTER STANDARD NO. MD. 620.02

NOT TO SCALE



MD. S.H.A. PAVING SECTION

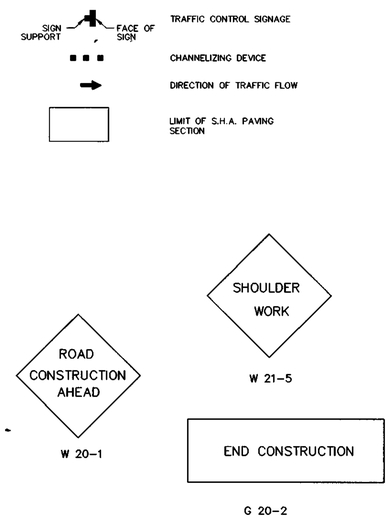
NOT TO SCALE

MAINTENANCE OF TRAFFIC SPECIAL PROVISIONS

GENERAL

1. THE PURPOSE OF THIS PORTION OF THE SPECIAL PROVISIONS IS TO SET FORTH THE TRAFFIC CONTROL REQUIREMENTS NECESSARY FOR THE SAFE AND EFFICIENT MAINTENANCE TO TRAFFIC WITHIN WORK AREAS, AND TO MINIMIZE ANY INCONVENIENCES TO THE TRAVELING PUBLIC AND THE CONTRACTOR AND/OR PERMITTEE.
2. PROPERTY TRAFFIC CONTROL THROUGH WORK AREAS IS ESSENTIAL FOR INSURING THE SAFETY AND THAT OF HIGHWAY WORKERS HAS THE HIGHEST PRIORITY OF ALL TASKS WITHIN THIS PROJECT. THE PROPER APPLICATION OF THE APPROVED TRAFFIC CONTROL PLAN (TCP) WILL PROVIDE THE DESIRED LEVEL OF SAFETY.
3. THROUGHOUT THESE SPECIAL PROVISIONS, ANY MENTION OF THE TCP SHALL BE IMPLIED TO INCLUDE ANY COMBINATION OF TYPICAL TRAFFIC CONTROL STANDARDS WHICH FORM THE OVERALL TCP FOR THIS PROJECT WHICH HAS BEEN APPROVED BY THE APPROPRIATE SHA TRAFFIC ENGINEER.
4. THE CONTRACTOR AND/OR PERMITTEE SHALL BE REQUIRED TO ADHERE TO THE PROVISIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 1988 EDITION, ESPECIALLY PART VI, AND TO SECTION 814 OF THE MARYLAND DOT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS (JANUARY, 1982); INCLUDING ALL REVISIONS AND SUPPLEMENTS TO EACH.
5. THE CONTRACT AND/OR PERMITTEE SHALL BE REQUIRED TO ADHERE TO THE REQUIREMENTS SET FORTH IN THE TCP AND THESE SPECIAL PROVISIONS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ANY REQUESTS TO MAKE MINOR CHANGES TO THE TCP OR THE SPECIAL PROVISIONS WITH REGARD TO THE TRAFFIC CONTROL ITEMS SHALL BE MADE IN WRITING TO THE ENGINEER A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO THE PROPOSED SCHEDULING CHANGE. THE CONTRACTOR AND/OR PERMITTEE SHALL HAVE WRITTEN APPROVAL OF THE ENGINEER PRIOR TO THE IMPLEMENTATION OF ANY CHANGE.
6. NO WORK SHALL BEGIN ON ANY WORK ACTIVITY OR WORK PHASE UNTIL ALL REQUIRED TRAFFIC CONTROL PATTERNS AND DEVICES INDICATED ON THE TCP FOR THAT ACTIVITY OR PHASE ARE COMPLETELY AND CORRECTLY IN PLACE AND HAVE BEEN CHECKED FOR APPROVED USAGE.
7. GENERAL AND SPECIFIC WARNING SIGNS SHALL ONLY BE IN PLACE WHEN SPECIFIC WORK TASKS AND ACTIVITIES ARE ACTUALLY UNDERWAY OR CONDITIONS EXIST THAT POSE A POTENTIAL HAZARD TO THE PUBLIC, AND ANY ADDITIONAL SIGNING HAS BEEN APPROVED BY THE APPROPRIATE SHA TRAFFIC ENGINEER. NOTE: THE PRACTICE IF PLACING SIGNING AND OTHER TRAFFIC CONTROL DEVICES IN ADDITION TO THOSE INDICATED ON THE APPROVED TCP IS NOT PERMITTED.
8. THE CONTRACTOR AND/OR PERMITTEE SHALL PROVIDE, MAINTAIN IN NEW CONDITION, AND MOVE WHEN NECESSARY, OR AS DIRECTED BY THE ENGINEER, ALL TRAFFIC CONTROL DEVICES USED FOR THE GUIDANCE AND PROTECTION OF MOTORISTS, PEDESTRIANS, AND WORKERS.
9. ALL TRAFFIC CONTROL DEVICES REQUIRED BY THE TCP SHALL BE KEPT IN GOOD CONDITION, FULLY PERFORMING AS SET FORTH IN THE TCP, THE MUTCD, AND/OR SECTION 814 OF THE SPECIFICATIONS. FOR REFLECTIVE DEVICES, A PARTICULAR DEVICE IS ASSUMED TO HAVE FAILED TO MEET MINIMUM OPERATIONAL STANDARDS WHEN THE DEVICE NO LONGER HAS RETRO-REFLECTANCE CAPABILITY OF AT LEAST 60% OF THE SPECIFIED MINIMUM VALUE OVER AT LEAST 90% OF THE VISIBLE REFLECTIVE SURFACE.
10. ALL TRAFFIC CONTROL DEVICES NOT REQUIRED FOR THE SAFE CONDUCT OF TRAFFIC SHALL BE PROMPTLY REMOVED, COMPLETELY COVERED, TURNED AWAY FROM TRAFFIC, OR OTHERWISE TAKEN OUT OF SERVICE. IT IS INTENDED THAT NO TRAFFIC CONTROL DEVICE IS TO BE IN SERVICE WHEN THERE IS NO CLEAR CUT REASON FOR THE DEVICE.
11. THROUGHOUT THE PERIOD(S) OF WORK ACTIVITIES, TRAFFIC SHALL BE MAINTAINED BY IMPLEMENTING THE APPROVED TCP. IN LIEU OF THE TCP PREPARED FOR THIS PROJECT, AND/OR INDIVIDUAL TYPICAL TRAFFIC CONTROL STANDARDS, THE CONTRACTOR AND/OR PERMITTEE HAS THE OPTION OF PREPARING AND SUBMITTING A TCP, WHOLLY OR IN PART, OF HIS WON DESIGN, FOLLOWING GUIDELINES SET FORTH IN THE MUTCD AND PRESCRIBED BY THE ADMINISTRATION. A TCP DEVELOPED BY THE CONTRACTOR AND/OR PERMITTEE SHALL NOT BE IMPLEMENTED UNTIL ADVANCE WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER. TCP'S MAY BE IMPLEMENTED WITHIN A SINGLE PROJECT OR JOINTLY BETWEEN TWO OR MORE PROJECTS. IN SITUATIONS WHERE TCP'S ARE JOINTLY IMPLEMENTED, CARE SHALL BE EXERCISED TO PRESENT CORRECT AND NON-CONFLICTING GUIDANCE TO THE TRAVELING PUBLIC.
12. THROUGHOUT THESE SPECIAL PROVISIONS, WHERE SPEED OF TRAFFIC IS NOTED, THIS MEANS THE POSTED SPEED OR PREVAILING TRAVEL SPEED, WHICHEVER IS HIGHER, UNLESS OTHERWISE NOTED.
13. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES THROUGHOUT THE ENTIRE LENGTH OF THE PROJECT, UNLESS OTHERWISE NOTED. NO TRAVEL LANE(S) OTHER THAN THOSE DESIGNATED FOR POSSIBLE ENCLOSURE IN THE TCP SHALL BE CLOSED WITHOUT OBTAINING PRIOR APPROVAL FROM THE ENGINEER. ALL INGRESS AND EGRESS TO THE WORK AREA BY THE CONTRACTOR AND/OR PERMITTEE SHALL BE PERFORMED WITH THE FLOW OF TRAFFIC.
14. ALL PAINT MARKINGS TO BE INSTALLED PER THE LATEST VERSION OF "MARYLAND SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" ISSUED BY MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION.
15. ALL PUPPY TRACKS ARE 3' SKIPS WITH 9' GAPS.

LEGEND



TRAFFIC CONTROL SIGNAGE

N.T.S.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/7/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION MAJ — DATE 8/6/01

99026\DWG\FINAL\26-SHA.DWG

project	date
99026	JULY 2001
illustration	engineering
SAA	SAA
scale	approval
NTS	RJH

no.	description	date
	revisions	

ZANTI PROPERTY
LOTS 4-11 AND OPEN SPACE LOTS 12 & 13
TAX MAP 31 - PARCEL 106 - GRID 14
SECOND ELECTION DISTRICT — HOWARD COUNTY, MARYLAND
SHA TRAFFIC CONTROL PLAN

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

F-01-98

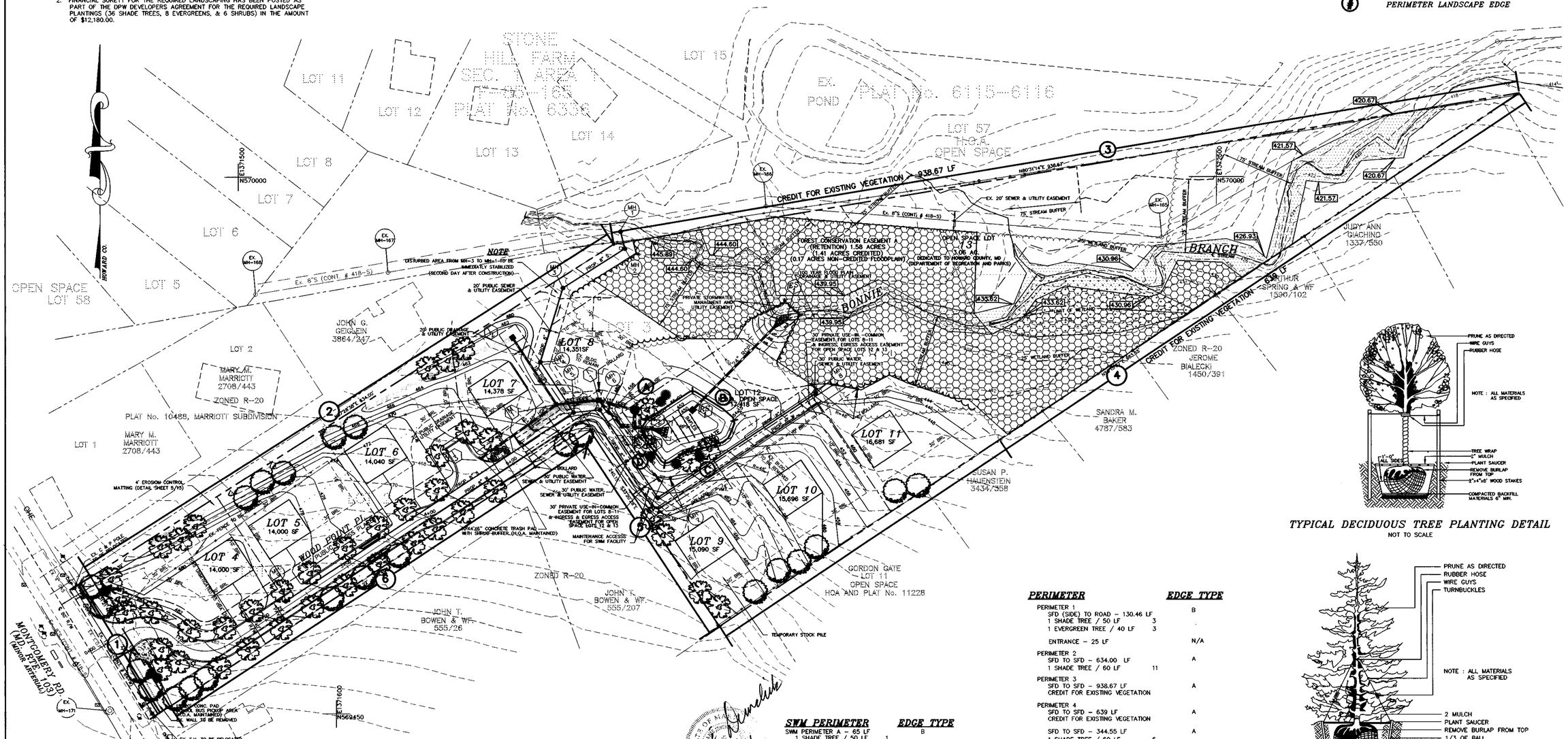
NOTE: THIS DRAWING IS TO BE USED FOR LANDSCAPE PLAN PURPOSES ONLY.

NOTES:

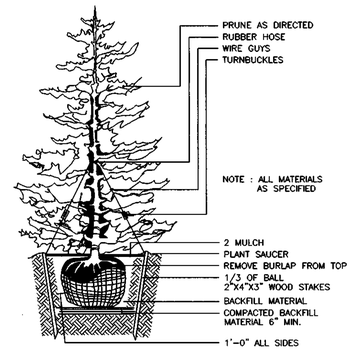
1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
2. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT FOR THE REQUIRED LANDSCAPE PLANTINGS (36 SHADE TREES, 8 EVERGREENS, & 6 SHRUBS) IN THE AMOUNT OF $12,180.00.

LEGEND:

- WETLANDS
- FLOODPLAIN
- FOREST CONSERVATION EASEMENT
- PERIMETER LANDSCAPE EDGE



TYPICAL DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE



TYPICAL EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE

PERIMETER	EDGE TYPE
PERIMETER 1	
SFD (SIDE) TO ROAD – 130.46 LF	B
1 SHADE TREE / 50 LF 3	
1 EVERGREEN TREE / 40 LF 3	
ENTRANCE – 25 LF	N/A
PERIMETER 2	
SFD TO SFD – 634.00 LF	A
1 SHADE TREE / 60 LF 11	
PERIMETER 3	
SFD TO SFD – 938.67 LF	A
CREDIT FOR EXISTING VEGETATION	
PERIMETER 4	
SFD TO SFD – 639 LF	A
CREDIT FOR EXISTING VEGETATION	
SFD TO SFD – 344.55 LF	A
1 SHADE TREE / 60 LF 6	
PERIMETER 5	
SFD TO SFD – 240.15 LF	A
1 SHADE TREE / 60 LF 4	
PERIMETER 6	
SFD TO SFD – 514.22 LF	A
1 SHADE TREE / 60 LF 8	
TOTAL PLANTING OBLIGATION	
SHADE TREES 32	
EVERGREEN TREES 3	

SWM PERIMETER	EDGE TYPE
SWM PERIMETER A – 65 LF	B
1 SHADE TREE / 50 LF 1	
1 EVERGREEN / 40 LF 2	
SWM PERIMETER B – 60 LF	B
EXISTING TREES TO REMAIN	
SWM PERIMETER C – 80 LF	B
1 SHADE TREE / 50 LF 2	
1 EVERGREEN / 40 LF 2	
SWM PERIMETER D – 50 LF	B
1 SHADE TREE / 50 LF 1	
1 EVERGREEN / 40 LF 1	
TOTAL PLANTING OBLIGATION	
SHADE TREES 4	
EVERGREEN TREES 5	
SHRUBS 0	

STREET TREE CALCULATIONS

STREET NAME	LENGTH OF ROADSIDE	TREE SPACING	NUMBER OF TREES
PUBLIC ACCESS PLACE	1,028 LF	40 LF	26
MONTGOMERY ROAD	130 LF	40 LF	4
	TOTAL		30 STREET TREES

LANDSCAPE REQUIREMENT PLANTING SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
17		ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	2 1/2" – 3" CAL.
19		ACER SACCHARUM 'GREEN MOUNTAIN'	GREEN MOUNTAIN SUGAR MAPLE	2 1/2" – 3" CAL.
8		PINUS STROBUS	WHITE PINE	6' – 8' HT.
6		TAXUS MEDIA 'HICKSII'	HICKS YEW	2 1/2' – 3' HT.

TOTAL
50 TREES & SHRUBS (36 SHADE TREES, 8 EVERGREENS, 6 SHRUBS)

STREET TREE REQUIREMENT PLANTING SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
26		ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	2 1/2" – 3" CAL.
4		ACER SACCHARUM 'GREEN MOUNTAIN'	GREEN MOUNTAIN SUGAR MAPLE	2 1/2" – 3" CAL.

TOTAL
30 SHADE TREES

SCHEDULE D : STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF PERIMETER	255 LF
CREDIT FOR EXISTING VEGETATION (NO, YES AND LINEAR FEET)	YES, 60 LF
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	N/A
NUMBER OF TREES REQUIRED SHADE TREES EVERGREEN TREES	 4 SHADE TREES 5 EVERGREEN TREES
NUMBER OF TREES PROVIDED SHADE TREES EVERGREEN TREES	 4 SHADE TREES 5 EVERGREEN TREES

SCHEDULE A : PERIMETER LANDSCAPED EDGE

CATEGORY	ADJ. TO PERIMETER PROPERTIES	
LANDSCAPE TYPE	B (PERIMETER 1)	A (PERIMETERS 2 THRU 6)
LINEAR FEET OF PERIMETER	130.46 LF	3,310.59 LF
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)	NO	YES, 1,577.67 LF (1,732.92 LF REMAINING TO BE LANDSCAPED)
CREDIT FOR WALL, FENCE, OR BERM (YES, NO, LINEAR FEET)	NO	NO
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SHRUBS	 3 SHADE TREES 3 EVERGREEN TREES 0 SHRUBS	 29 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES SHRUBS	 3 SHADE TREES 3 EVERGREEN TREES 0 SHRUBS	 29 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS

DEVELOPER'S/OWNER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE IN ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE, AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

NAME — DATE 7-24-01

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 8/1/01
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/7/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/6/01

project	date
99026	JULY 2001
illustration	engineering
SJD	SJD
scale	approval
1" = 50'	SJD

no.	description	date
	revisions	

ZANTI PROPERTY
LOTS 4-11 AND OPEN SPACE LOTS 12 & 13
TAX MAP 31 - PARCEL 106 - GRID 14
SECOND ELECTION DISTRICT — HOWARD COUNTY, MARYLAND
LANDSCAPE PLAN

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

OWNER
ELLICOTT CITY LAND HOLDING CO.
8000 MAIN STREET
ELLICOTT CITY MARYLAND 21043
PHONE No. (410) 740-2100

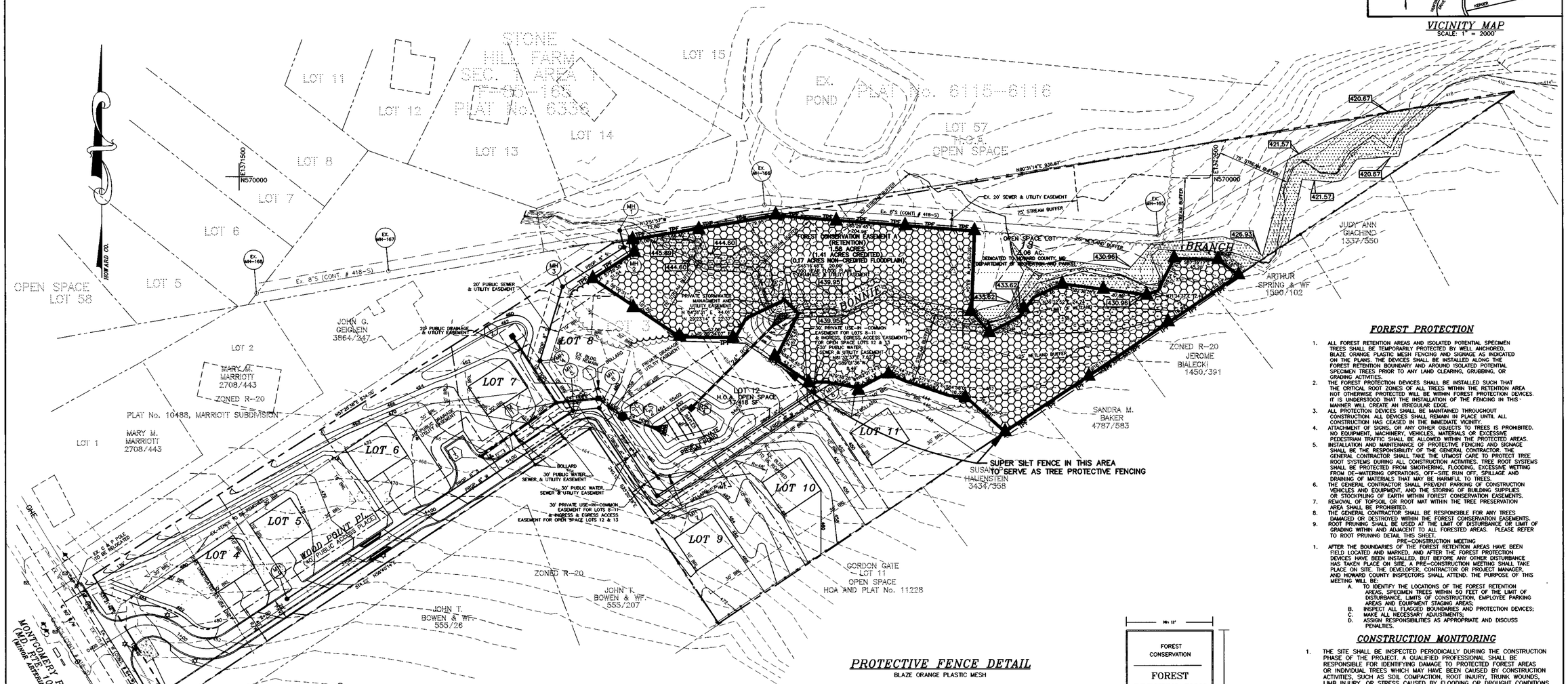
DEVELOPER
LAND DESIGN AND DEVELOPMENT, INC.
8000 MAIN STREET
ELLICOTT CITY MARYLAND 21043
PHONE No. (410) 740-2100

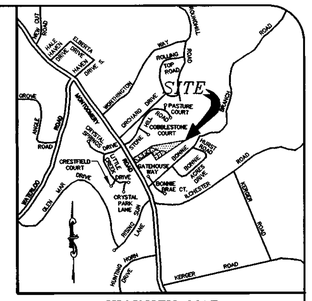
NOTE: THIS PLAN IS TO BE USED FOR FOREST CONSERVATION PURPOSES ONLY.

NOTES :

1. THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1202 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION HAS BEEN FULFILLED BY RETENTION OF EXISTING FOREST IN THE AMOUNT OF 1.41 ACRES REQUIRED WITH 1.41 ACRES OF CREDITED EASEMENT AND 0.17 ACRES OF NON-CREDITED (FLOODPLAIN) EASEMENT FOR A TOTAL FOREST CONSERVATION EASEMENT AREA OF 1.58 ACRES.

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





VICINITY MAP
SCALE: 1" = 2000'

FOREST PROTECTION

1. ALL FOREST RETENTION AREAS AND ISOLATED POTENTIAL SPECIMEN TREES SHALL BE TEMPORARILY PROTECTED BY WELL ANCHORED, BLAZE ORANGE PLASTIC MESH FENCING AND SIGNAGE AS INDICATED ON THE PLANS. THE DEVICES SHALL BE INSTALLED ALONG THE FOREST RETENTION BOUNDARY AND AROUND ISOLATED POTENTIAL SPECIMEN TREES PRIOR TO ANY LAND CLEARING, GRUBBING, OR GRADING ACTIVITIES.
2. THE FOREST PROTECTION DEVICES SHALL BE INSTALLED SUCH THAT THE CRITICAL ROOT ZONES OF ALL TREES WITHIN THE RETENTION AREA NOT OTHERWISE PROTECTED WILL BE WITHIN FOREST PROTECTION DEVICES. IT IS UNDERSTOOD THAT THE INSTALLATION OF THE FENCING IN THIS MANNER WILL CREATE AN IRREGULAR EDGE.
3. ALL PROTECTION DEVICES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. ALL DEVICES SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION HAS CEASED IN THE IMMEDIATE VICINITY.
4. ATTACHMENT OF SIGNS, OR ANY OTHER OBJECTS TO TREES IS PROHIBITED. NO EQUIPMENT, MACHINERY, VEHICLES, MATERIALS OR EXCESSIVE PEDESTRIAN TRAFFIC SHALL BE ALLOWED WITHIN THE PROTECTED AREAS.
5. INSTALLATION AND MAINTENANCE OF PROTECTIVE FENCING AND SIGNAGE SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL TAKE THE UTMOST CARE TO PROTECT TREE ROOT SYSTEMS DURING ALL CONSTRUCTION ACTIVITIES. TREE ROOT SYSTEMS SHALL BE PROTECTED FROM SMOTHERING, FLOODING, EXCESSIVE WETTING FROM DE-WATERING OPERATIONS, OFF-SITE RUN OFF, SPILLAGE AND DRAINING OF MATERIALS THAT MAY BE HARMFUL TO TREES.
6. THE GENERAL CONTRACTOR SHALL PREVENT PARKING OF CONSTRUCTION VEHICLES AND EQUIPMENT, AND THE STORING OF BUILDING SUPPLIES OR STOCKPILING OF EARTH WITHIN FOREST CONSERVATION EASEMENTS.
7. REMOVAL OF TOPSOIL OR ROOT MAT WITHIN THE TREE PRESERVATION AREA SHALL BE PROHIBITED.
8. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY TREES DAMAGED OR DESTROYED WITHIN THE FOREST CONSERVATION EASEMENTS.
9. ROOT PRUNING SHALL BE USED AT THE LIMIT OF DISTURBANCE OR LIMIT OF GRADING WITHIN AND ADJACENT TO ALL FORESTED AREAS. PLEASE REFER TO ROOT PRUNING DETAIL THIS SHEET.

PRE-CONSTRUCTION MEETING

1. AFTER THE BOUNDARIES OF THE FOREST RETENTION AREAS HAVE BEEN FIELD LOCATED AND MARKED, AND AFTER THE FOREST PROTECTION DEVICES HAVE BEEN INSTALLED, BUT BEFORE ANY OTHER DISTURBANCE HAS TAKEN PLACE ON SITE, A PRE-CONSTRUCTION MEETING SHALL TAKE PLACE ON SITE. THE DEVELOPER, CONTRACTOR OR PROJECT MANAGER, AND HOWARD COUNTY INSPECTORS SHALL ATTEND. THE PURPOSE OF THIS MEETING WILL BE:
   - A. TO IDENTIFY THE LOCATIONS OF THE FOREST RETENTION AREAS, SPECIMEN TREES WITHIN 50 FEET OF THE LIMIT OF DISTURBANCE, LIMITS OF CONSTRUCTION, EMPLOYEE PARKING AREAS AND EQUIPMENT STAGING AREAS;
   - B. INSPECT ALL FLAGGED BOUNDARIES AND PROTECTION DEVICES;
   - C. MAKE ALL NECESSARY ADJUSTMENTS;
   - D. ASSIGN RESPONSIBILITIES AS APPROPRIATE AND DISCUSS PENALTIES.

CONSTRUCTION MONITORING

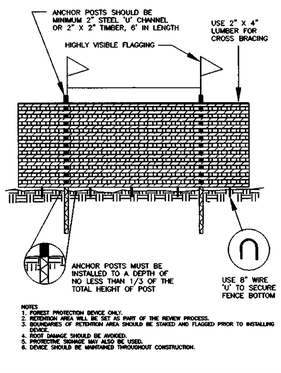
1. THE SITE SHALL BE INSPECTED PERIODICALLY DURING THE CONSTRUCTION PHASE OF THE PROJECT. A QUALIFIED PROFESSIONAL SHALL BE RESPONSIBLE FOR IDENTIFYING DAMAGE TO PROTECTED FOREST AREAS OR INDIVIDUAL TREES WHICH MAY HAVE BEEN CAUSED BY CONSTRUCTION ACTIVITIES, SUCH AS SOIL COMPACTION, ROOT INJURY, TRUNK WOUNDS, LIMB INJURY, OR STRESS CAUSED BY FLOODING OR DROUGHT CONDITIONS.
2. ANY SUCH DAMAGE THAT MAY OCCUR SHALL BE REMEDIED IMMEDIATELY USING APPROPRIATE MEASURES. SEVERE PROBLEMS MAY REQUIRE CONSULTATION WITH A PROFESSIONAL ARBORIST.
3. THE CONSTRUCTION PROCEDURE SHALL NOT DAMAGE AREAS OUTSIDE OF THE LIMITS OF DISTURBANCE AS DESIGNATED ON THE PLANS. ANY DAMAGE SHALL BE RESTORED BY THE CONTRACTOR AT HIS EXPENSE AND TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.
4. REMOVAL OF HAZARDOUS TREES (THOSE SUBJECT TO WINDTHROW AND FALLEN TREES DUE TO CONSTRUCTION ACTIVITIES), WILL BE ALLOWED ALONG THE EDGES OF THE FOREST RETENTION AREAS AS WELL AS WITHIN NON-CREDITED TREE SAVE AREAS. ALL SUCH REMOVALS ALONG THE EDGE OF THE FOREST RETENTION AREAS SHOULD BE NOTED AS PART OF THE SITE DEVELOPMENT PLAN OR FINAL PLAN CONSTRUCTION DRAWINGS.

NOTE :

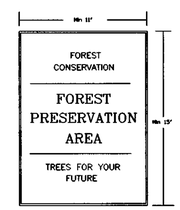
THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENTS EXCEPT AS PERMITTED BY THE HOWARD COUNTY FOREST CONSERVATION PROGRAM.

PROTECTIVE FENCE DETAIL

BLAZE ORANGE PLASTIC MESH



NOTES
1. FOREST PROTECTION DEVICE ONLY.
2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
4. ROOT DAMAGE SHOULD BE AVOIDED.
5. PROTECTIVE SIGNAGE MAY ALSO BE USED.
6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.



NOTE : SIGNS ARE PERMANENT AND TO BE MOUNTED ON DURABLE POSTS OR POLES (4"X4" PRESSURE TREATED LUMBER OR 2 1/2" DIAMETER GALVANIZED OR ALUMINUM POST, OR EQUIVALENT).

SIGNAGE DETAIL

NOT TO SCALE

FOREST CONSERVATION DATA

SITE DATA	ACRES
A. TOTAL TRACT AREA	6.69
B. AREA WITHIN 100 YEAR FLOODPLAIN	0.52
C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION	0.00
D. NET TRACT AREA	6.17
LAND USE CATEGORY	HDR
E. AFFORESTATION THRESHOLD (15%)	0.93
F. CONSERVATION THRESHOLD (20%)	1.23
EXISTING FOREST COVER	
G. EXISTING FOREST COVER	2.10
H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD	1.17
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD	0.87
BREAK EVEN POINT	
J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION	1.41
K. CLEARING PERMITTED WITHOUT MITIGATION	0.69
PROPOSED FOREST CLEARING	
L. TOTAL AREA OF FOREST TO BE CLEARED	0.68
M. TOTAL AREA OF FOREST TO BE RETAINED	1.41
PLANTING REQUIREMENTS	
N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD.	0.17
P. REFORESTATION FOR CLEARING BELOW THRESHOLD	0.00
O. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD	0.18
R. TOTAL REFORESTATION REQUIRED	0.00
S. TOTAL AFFORESTATION REQUIRED	0.00
T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED	0.00

LEGEND

- 100 YEAR FLOOD PLAIN
- FOREST CONSERVATION EASEMENT (RETENTION)
- WETLANDS
- —TPF— FOREST PROTECTION FENCE
- ▲ FOREST CONSERVATION SIGNAGE

APPROVED: DEPARTMENT OF PUBLIC WORKS		
CHIEF, BUREAU OF HIGHWAYS	DATE	8/1/01
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE	8/7/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION (MAJ)	DATE	8/1/01

MD DNR QUALIFIED PROFESSIONAL

Stephanie Demchik 7/26/01

STEPHANIE DEMCHIK

STATE OF MARYLAND — STEPHANIE JEANNE DEMCHIK — LANDSCAPE ARCHITECT

OWNER

ELLICOTT CITY LAND HOLDING CO.
8000 MAIN STREET
ELLICOTT CITY MARYLAND 21043
PHONE No. (410) 740-2100

DEVELOPER

LAND DESIGN AND DEVELOPMENT, INC.
8000 MAIN STREET
ELLICOTT CITY MARYLAND 21043
PHONE No. (410) 740-2100

project	date
99026	JULY 2001
illustration	engineering
SJD	SJD
scale	approval
1" = 50'	SJD

no.	description	date
	revisions	

ZANTI PROPERTY
LOTS 4-11 AND OPEN SPACE LOTS 12 & 13
TAX MAP 31 - PARCEL 106 - GRID 14
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
FOREST CONSERVATION PLAN

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296, Balt. (301) 621-5321 Wash. (410) 997-0298 Fax.

F-01-98

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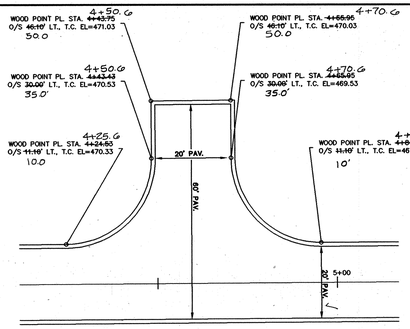
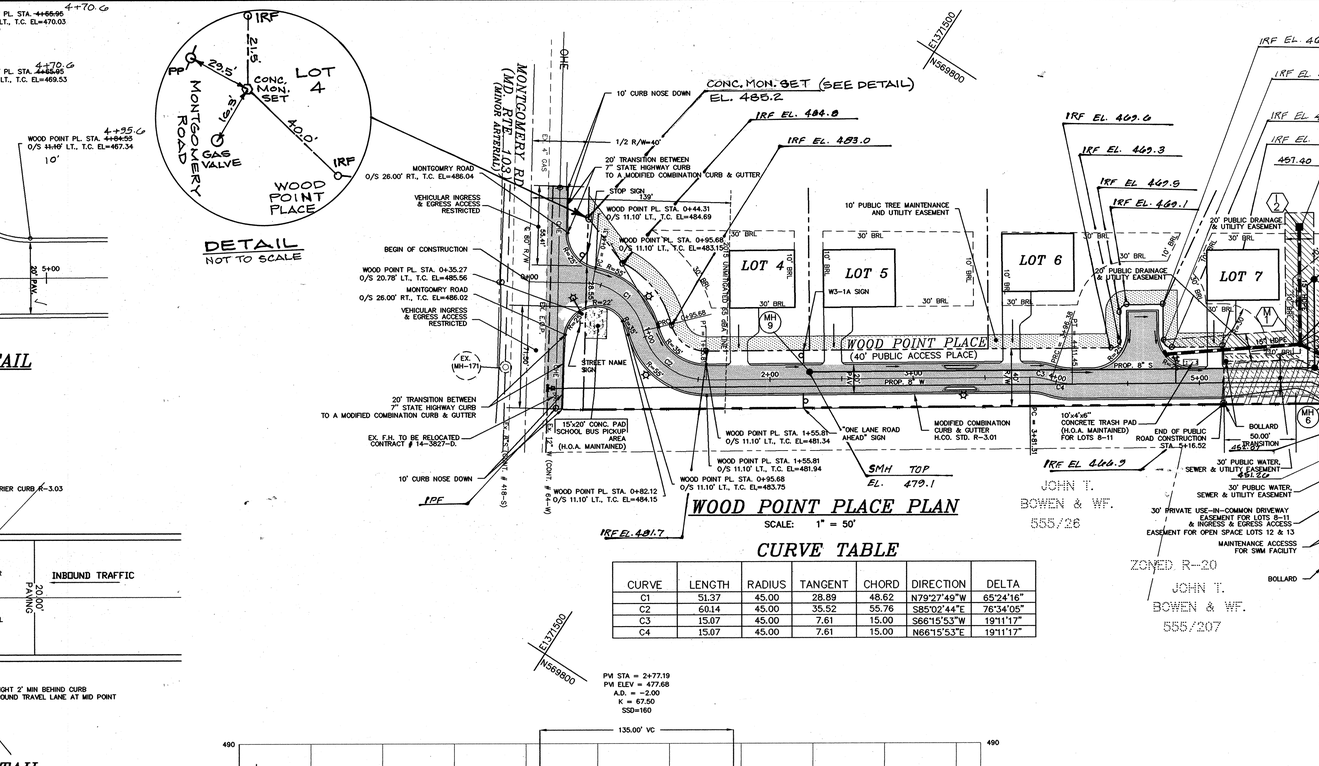


T TURN AROUND DETAIL

SCALE: 1" = 20'

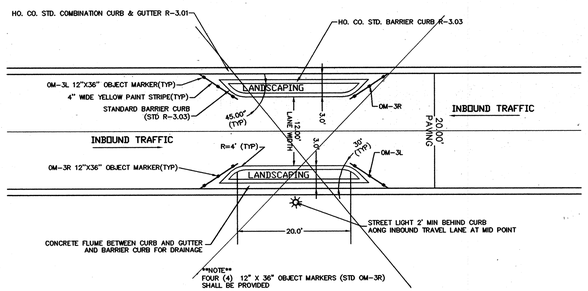
DETAIL
NOT TO SCALE



NOTE: FOR STREET TREES SEE LANDSCAPE PLAN ON SHEET 12 OF 13

WOOD POINT PLACE PLAN

SCALE: 1" = 50'

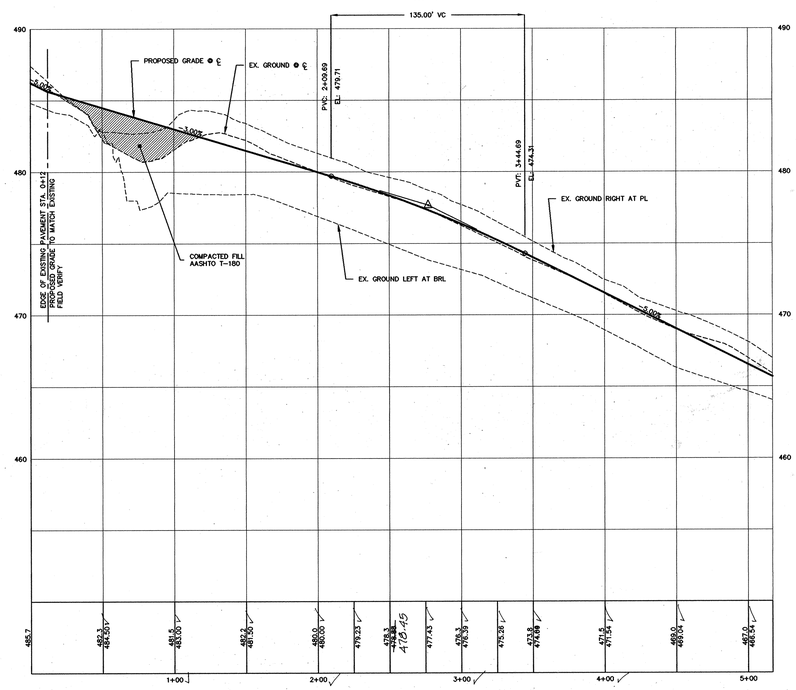


SPEED CALMING DEVICE DETAIL

STA. 3+12.90 – STA. 3+57.57

CURVE TABLE

CURVE	LENGTH	RADIUS	TANGENT	CHORD	DIRECTION	DELTA
C1	51.37	45.00	28.89	48.62	N79°27'49"W	65°24'16"
C2	60.14	45.00	35.52	55.76	S85°02'44"E	76°34'05"
C3	15.07	45.00	7.61	15.00	S66°15'53"W	19°11'17"
C4	15.07	45.00	7.61	15.00	N66°15'53"E	19°11'17"

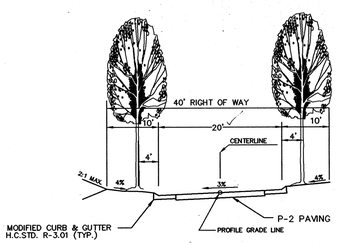


WOOD POINT PLACE PROFILE

(PUBLIC ACCESS PLACE)

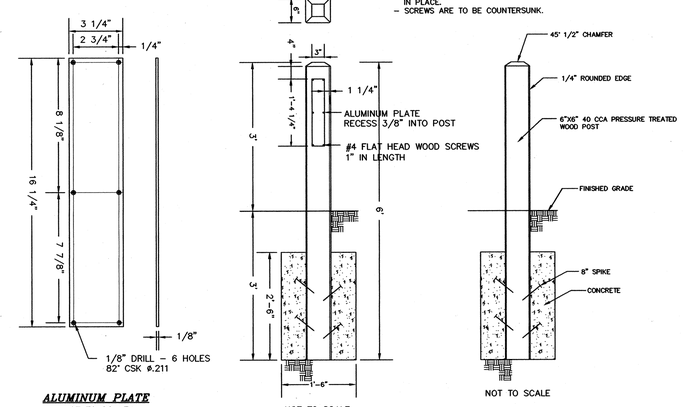
SCALE: HOR: 1" = 50'
VER: 1" = 5'

DESIGN SPEED 15 MPH (HOR.)
DESIGN SPEED 25 MPH (VER.)



WOOD POINT PLACE TYPICAL SECTION

NOT TO SCALE



NOTE :
- PLATE TO BE SCREWED & GLUED IN PLACE.
- SCREWS ARE TO BE COUNTERSUNK.

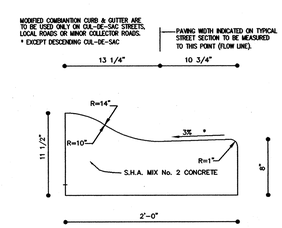
ALUMINUM PLATE
NOT TO SCALE

NOT TO SCALE

NOT TO SCALE

NOTE :
- BOLLARDS WILL BE PLACED AT THE FOUR CORNERS OF THE OPEN SPACE ACCESS STRIP.
- THE ALUMINUM PLATE WILL ONLY BE REQUIRED ON THE FRONT RIGHT BOLLARD DIRECTLY FACING THE ROAD.

BOLLARD DETAIL



MODIFIED 7" COMBINATION CURB AND GUTTER

NOT TO SCALE

STATE OF MARYLAND
R. JACOB HIKARI
17942
PROFESSIONAL ENGINEER
7/23/01

APPROVED: DEPARTMENT OF PUBLIC WORKS		
CHIEF BUREAU OF HIGHWAYS	for	8/1/01 DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
CHIEF, DIVISION OF LAND DEVELOPMENT		8/7/01 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION MAJ		8/6/01 DATE

99026\DWG\FINAL\026-ROAD-REV1.DWG

project	date
99026	JULY 2001
illustration	engineering
SAA	SAA
scale	approval
AS SHWN	RJH

no.	description	date
1	ADDED CONC. MON. SKETCH	8/8/03

revisions

ZANTI PROPERTY
LOTS 4-11 AND OPEN SPACE LOTS 12 & 13
TAX MAP 31 – GRID 14
PARCEL 106 – HOWARD COUNTY, MARYLAND
SECOND ELECTION DISTRICT
ROAD PLAN, PROFILES AND SECTIONS

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