

# GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/CONSTRUCTION INSPECTIONS DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) DAYS PRIOR TO ANY EXCAVATION WORK:
  - MISS UTILITY 1-800-257-7777
  - C&P TELEPHONE COMPANY (410) 725-9976
  - HOWARD COUNTY BUREAU OF UTILITIES (410) 313-4900
  - AT&T CABLE LOCATION DIVISION (410) 383-3533
  - BALTIMORE GAS & ELECTRIC (410) 885-0123
  - STATE HIGHWAY ADMINISTRATION (410) 531-5533
  - HOWARD COUNTY DEPT. OF PUBLIC WORKS/ CONSTRUCTION INSPECTION DIVISION (410) 313-1880
- PROJECT BACKGROUND:
  - LOCATION: SIXTH ELECTION DISTRICT - TAX MAP 46 - PARCEL 230 - BLOCK 15
  - DEED REFERENCE: 5106/0078.
  - ZONING: R-20
  - TOTAL TRACT AREA: 14.59 ACRES ± (15.46 ACRES INCLUDING PREVIOUS ROW DEDICATION)
  - NUMBER OF PROPOSED LOTS: 30 (28 BUILDABLE)
  - ACREAGE OF PROPOSED BUILDABLE LOTS: 10.46 ACRES ±
  - OPEN SPACE REQUIRED: 3.09 ACRES ± (20%)
  - OPEN SPACE PROVIDED: 3.09 ACRES
  - RECREATIONAL OPEN SPACE REQUIRED (28 UNITS X 200 SQ. FT.): 5,600 SQ. FT. (0.13 ACRES)
  - RECREATIONAL OPEN SPACE PROVIDED: 5,800 SQ. FT. (0.13 ACRES)
  - PROPOSED ROAD DEDICATION: 1.04 ACRES ±
  - AREA OF STEEP SLOPES: N/A
  - AREA OF 100 YEAR FLOODPLAIN: N/A
  - DPZ REFERENCE #: SP-01-01; F-00-169; WP-01-65.
- TWO FOOT CONTOUR TOPOGRAPHY AND EXISTING CONDITIONS BASED ON FIELD RUN TOPOGRAPHIC SURVEY BY MILDENBERG, BOENDER & ASSOCIATES, INC. IN APRIL 2000. BOUNDARY SHOWN HEREON BASED ON FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED ON OR ABOUT MAY 2000 BY MILDENBERG, BOENDER & ASSOCIATES, INC.
- COORDINATES BASED ON NAD '83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 46EA & 46EB.
 

STA. No. 46EA	N 536,185.423	ELEV. 415.10
	E 1,338,091.710	
STA. No. 46EB	N 534,750.221	ELEV. 413.24
	E 1,337,742.800	
- 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.
- WATER AND SEWER ARE PUBLIC, CONTRACT #24-3904-D & 24-3905-D.
- STORMWATER MANAGEMENT CONTROL WILL BE PROVIDED BY THE METHOD OF EXTENDED DETENTION. STORMWATER MANAGEMENT FACILITY WILL BE PRIVATELY OWNED AND PRIVATELY OPERATED AND MAINTAINED.
- GEOTECHNICAL REPORT PREPARED BY GEO-TECHNOLOGY ASSOCIATES, INC. ON JULY 11, 2000.
- 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.
- HOUSES NOT CONTROLLED BY THE SWM POND (LOTS B THRU 20) WILL HAVE DRY WELLS OR OTHER APPROVED WATER QUALITY TREATMENT AT SDP STAGE.
- COMPACTION IN FILL AREAS TO BE 95% AS DETERMINED PER AASHTO T-180.
- CONTRACTOR TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES ON SITE PRIOR TO COMMENCING CONSTRUCTION.
- FOREST CONSERVATION EASEMENT(S) HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1202 OF THE HOWARD COUNTY FOREST CONSERVATION ACT. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, EXCEPT AS SHOWN ON AN APPROVED ROAD CONSTRUCTION DRAWING OR SITE DEVELOPMENT PLAN. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OR CONSERVATION EASEMENT ARE ALLOWED.
- FOREST CONSERVATION OBLIGATIONS IN ACCORDANCE WITH SECTION 16.1202 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION HAS BEEN FULFILLED BY THE PLACEMENT OF 1.48 ACRES OF AFFORESTATION IN A FOREST CONSERVATION EASEMENT AND VIA PAYMENT OF A FEE-IN-LIEU OF 0.67 ACRES (29,185.2 SQ. FT.) OF AFFORESTATION IN THE AMOUNT OF \$8,755.56. SURETY FOR THE ON-SITE AFFORESTATION IN THE AMOUNT OF \$19,340.64 HAS BEEN POSTED AS PART OF DEVELOPERS AGREEMENT.
- PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
- OPEN SPACE LOTS WILL BE CONVEYED TO HOMEOWNERS ASSOCIATION.
- THERE ARE NO EXISTING STRUCTURES ON-SITE.
- ALL STORM DRAIN PIPES TO BE HDPE PIPE UNLESS OTHERWISE NOTED.
- NO HISTORIC STRUCTURES OR BURIAL GROUNDS EXIST ON-SITE PER THE HOWARD COUNTY HISTORIC SITES LIST DATED DECEMBER 1994 AND THE HOWARD COUNTY CEMETERIES AND GRAVESITES INVENTORY, RESOLUTION # 47-1994. TO THE BEST OF THE KNOWLEDGE OF THE CURRENT OWNER, NO GRAVES EXIST ON-SITE.
- NO WETLANDS, STREAMS, FLOODPLAIN, OR STEEP SLOPES EXIST ON-SITE PER FIELD INVESTIGATION BY KELLY SPALDING, MILDENBERG, BOENDER & ASSOCIATES, INC. ON MAY 31, 2000.
- THIS PROJECT IS EXEMPT FROM APFO ROAD TEST REQUIREMENTS BASED ON THE FACT THAT NO AT GRADE INTERSECTIONS OF MAJOR - MAJOR COLLECTOR OR HIGHER CLASSIFICATION ROADS EXISTS WITHIN A MILE AND HALF OF THE SITE.
- NO FOREST STANDS EXIST ON-SITE PER FIELD INVESTIGATION BY MILDENBERG, BOENDER & ASSOCIATES, INC. IN MAY 2000. THE FOREST CONSERVATION REQUIREMENT WILL BE SATISFIED VIA ON-SITE AFFORESTATION.
- NOISE STUDY APPROVED UNDER F-00-169, JAMESTOWN LANDING, LOT 1 AND NON-BUILDABLE BULK PARCEL 'A'.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
  - WIDTH - 12 FEET (14 FEET SERVING MORE THAN ONE RESIDENT)
  - SURFACE - 6 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING.
  - GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM OF 45-FOOT RADIUS.
  - STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING).
  - DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE.
  - STRUCTURE CLEARANCES - MINIMUM 12 FEET
  - MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE.
- THE STREET LIGHT LOCATIONS AND TYPES OF LIGHTS SHOWN ON SHEETS 2 & 3 ARE AS FOLLOWS:
  - 150-WATT HPS VAPOR PENDANT FIXTURE (CUTOFF) MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING A 12' ARM ANGLED RADIAL TO THE FILLET AT JAMESTOWN COURT, STATION 0+24, 20.37' RIGHT.
  - 100-WATT "TRADITIONARE" HPS VAPOR POST TOP FIXTURE ON A 14' BLACK FIBERGLASS POLE AT JAMESTOWN COURT, STATION 4+71, 15' RIGHT, STATION 7+70, 14' LEFT, LP STATION 1+79, 3' LEFT.
- IF MATERIAL IS WITHIN 8% OF OPTIMUM MOISTURE, WORKING THE MATERIAL UNTIL REQUIRED COMPACTION IS ACHIEVED IS CONTRACTOR'S RESPONSIBILITY.
- WAIVER TO DESIGN MANUAL, VOLUME I, SECTION 5.2.4.G, TO REDUCE THE 20 FOOT NO WOODY VEGETATION SETBACK FROM TOE OF FILL OF A POND EMBANKMENT TO 15 FEET, APPROVED ON OCTOBER 25, 2000.
- THIS PROJECT IS SUBJECT TO WP-01-65, APPROVED ON FEBRUARY 9, 2001, WAIVING SECTION 16.144(q)(6) TO ALLOW THE REACTIVATION THE FINAL RECORD PLAT, F-00-169, TO ALLOW THE SUBMISSION OF THE ORIGINAL RECORD PLAT MYLARS FOR SIGNATURE. THE CONDITION OF THE WAIVER REQUIRES THE SUBMISSION OF THE PLAT ORIGINALS WITHIN 180 DAYS OF APPROVAL OF THIS WAIVER, 8/8/01.
- SIDEWALKS SHALL MEET CURRENT ADA REQUIREMENTS. HANDICAP RAMPS AT THE ENTRANCE SHALL BE PROVIDED IN ACCORDANCE WITH HO. CO. STD. DTL. R-4.01.

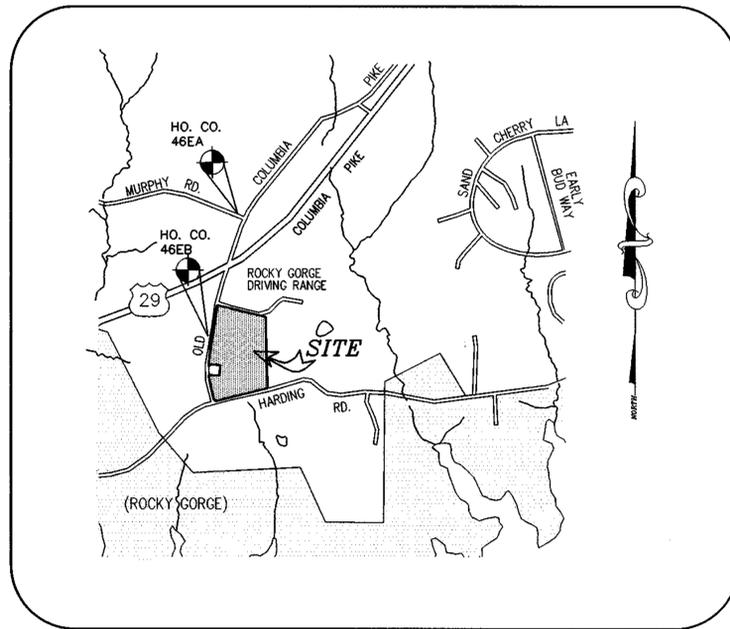
# ROAD CONSTRUCTION PLANS

## JAMESTOWN LANDING

### LOTS 2 THRU 31

## SIXTH ELECTION DISTRICT

## HOWARD COUNTY, MARYLAND



### VICINITY MAP

SCALE: 1"=1000'

### DEVELOPER

TANTERRA, LC  
6820 ELM STREET, SUITE 200  
McLEAN, VIRGINIA 22101  
(703) 734-9730

no.	description	revisions	date
1	COVER SHEET		
2	ROAD PLAN AND PROFILES		
3	FINAL GRADING PLAN		
4	EROSION & SEDIMENT CONTROL PLAN		
5	EROSION & SEDIMENT CONTROL NOTES AND DETAILS		
6	STORM DRAIN PROFILES		
7	SWM NOTES & SPECIFICATIONS AND TRAFFIC CONTROL PLAN		
8	STORMWATER MANAGEMENT DETAILS		
9	SEDIMENT CONTROL & SWM DETAILS AND FILLET PROFILES		
10	DRAINAGE AREA MAP		
11	LANDSCAPE PLAN		
12	FOREST CONSERVATION PLAN		

AS-BUILT CERTIFICATION	
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.	
SIGNATURE	P.E. NO.: DATE:
CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.	
BY THE ENGINEER:	
I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTICED THE OPERATOR THAT HE/SHE MUST BRING A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.	
SIGNATURE	DATE
BY THE DEVELOPER:	
I HAVE 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.	
SIGNATURE OF DEVELOPER	DATE
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.	
SIGNATURE	DATE
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.	
SIGNATURE	DATE
APPROVED: DEPARTMENT OF PUBLIC WORKS	
SIGNATURE	DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
SIGNATURE	DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
SIGNATURE	DATE

project	2000-020	date	MAR 2001
illustration		engineering	
scale		SD	
NTS		approval	

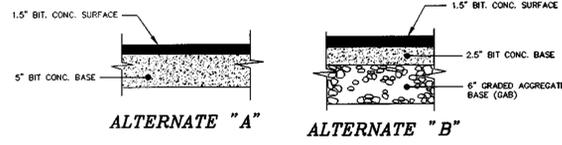
no.	description	revisions	date
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JAMESTOWN LANDING, LOTS 2 THRU 31  
A RESUBDIVISION OF JAMESTOWN LANDING, NON-BUILDABLE BULK PARCEL 'A'  
TAX MAP 46 - P/O PARCEL 230 - GRID 15 & 16  
SIXTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
COVER SHEET

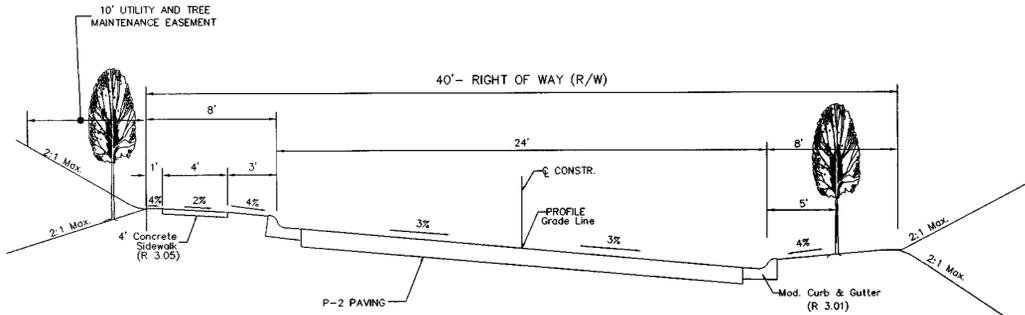
MILDENBERG, BOENDER & ASSOC., INC.  
Engineers Planners Surveyors  
5072 Dorsy Hall Drive, Suite 202, Ellicott City, Maryland 21042  
(410) 897-0296 Balt. (301) 621-5521 Wash. (410) 897-0298 Fax

00-020(DWG)FINAL-2 020-cov.dwg 3-15-01 7:45:10 am EST

CURVE DATA					
CURVE	RADIUS	LENGTH	TANGENT	DELTA	CHORD
C1	150.00'	252.95'	168.41'	96°37'06"	N47°01'18"E 224.02'
C2	150.00'	153.93'	84.51'	58°47'45"	N30°41'08"W 147.26'
C3	106.37'	69.92'	36.28'	37°39'46"	N78°54'53"W 68.67'



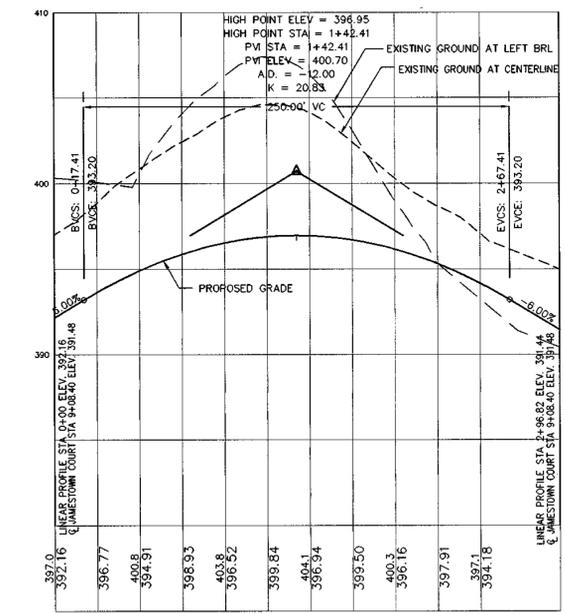
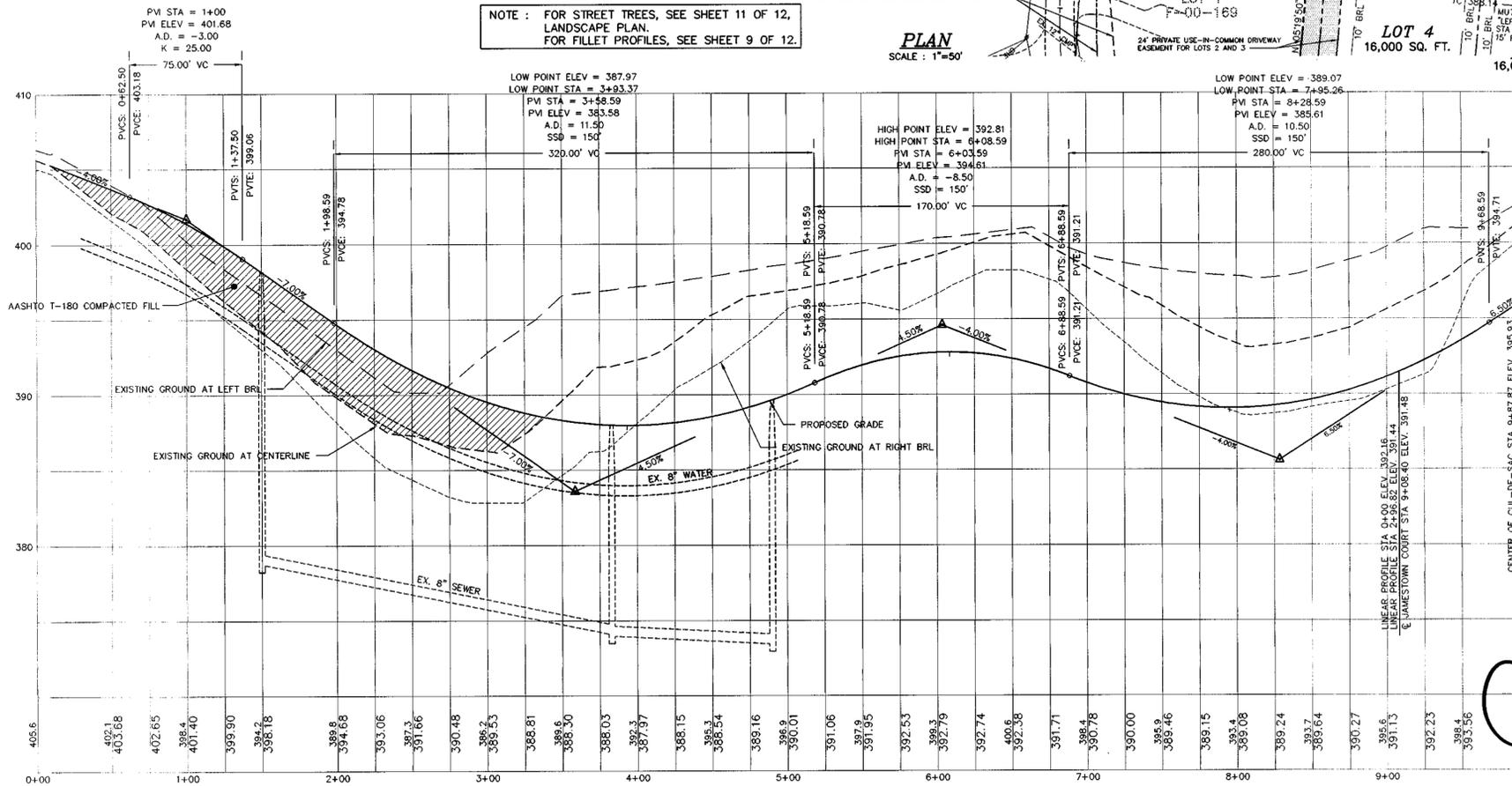
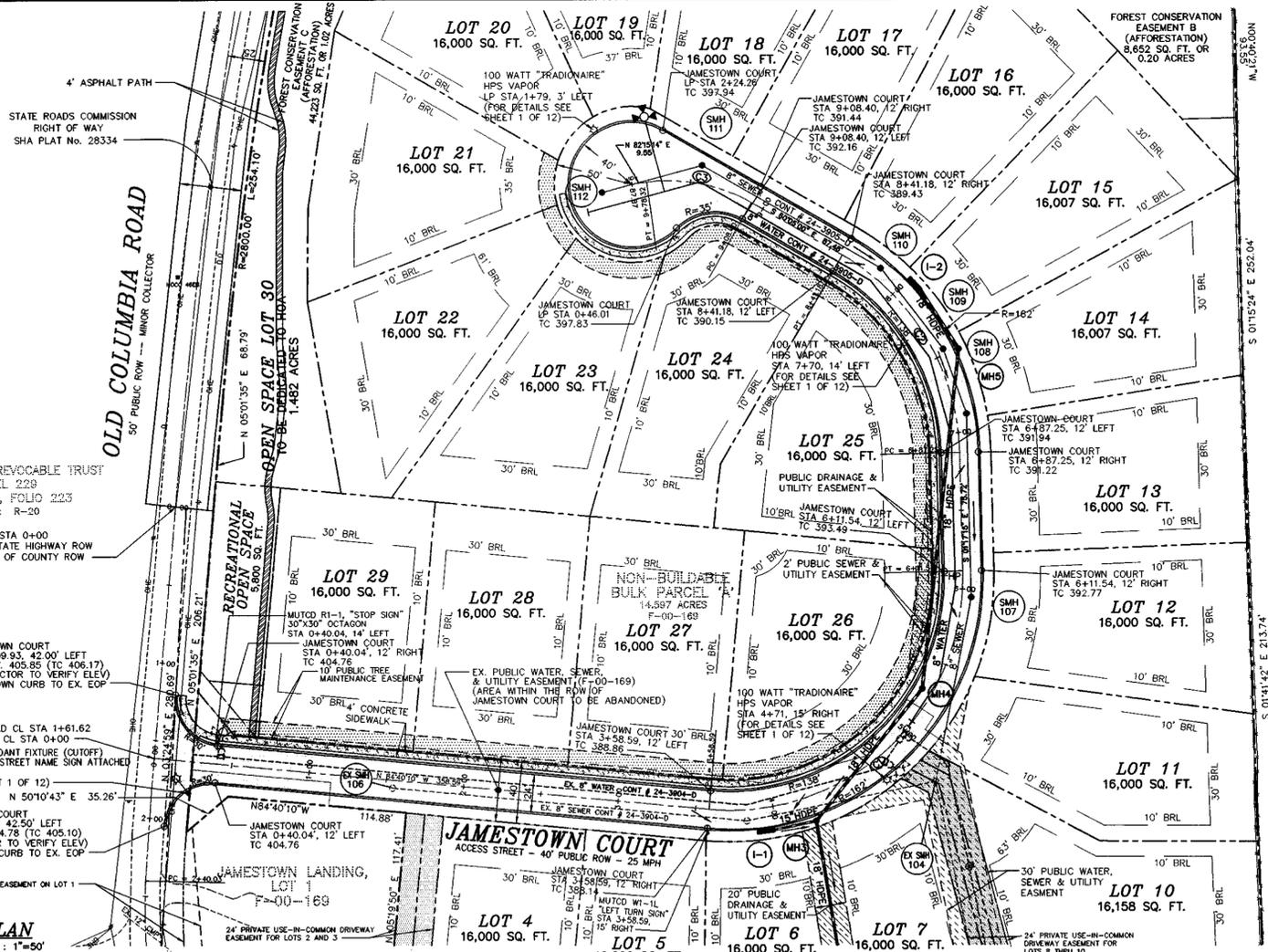
PAVING SECTION P-2  
N.T.S.



TYPICAL ROADWAY SECTION  
CLASSIFICATION: ACCESS STREET  
DESIGN SPEED: 25 MPH  
JAMESTOWN COURT  
SECTION NOT TO SCALE

NOTE: FOR STREET TREES, SEE SHEET 11 OF 12, LANDSCAPE PLAN.  
FOR FILLET PROFILES, SEE SHEET 9 OF 12.

PLAN  
SCALE: 1" = 50'



LINEAR PROFILE OF JAMESTOWN COURT

HORIZONTAL SCALE: 1" = 50'  
VERTICAL SCALE: 1" = 5'

OWNER/DEVELOPER  
TANTERRA, L.C.  
6820 ELM STREET, SUITE 200  
MCLEAN, VIRGINIA 22101  
(703) 734-9730

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Richard M. Powell* 4-4-01  
CHIEF BUREAU OF HIGHWAYS  
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Chris Hamilton* 3/9/01  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE

*John D. ...* 4/4/01  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE

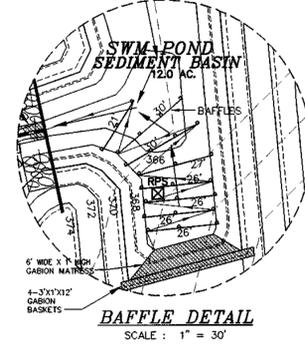
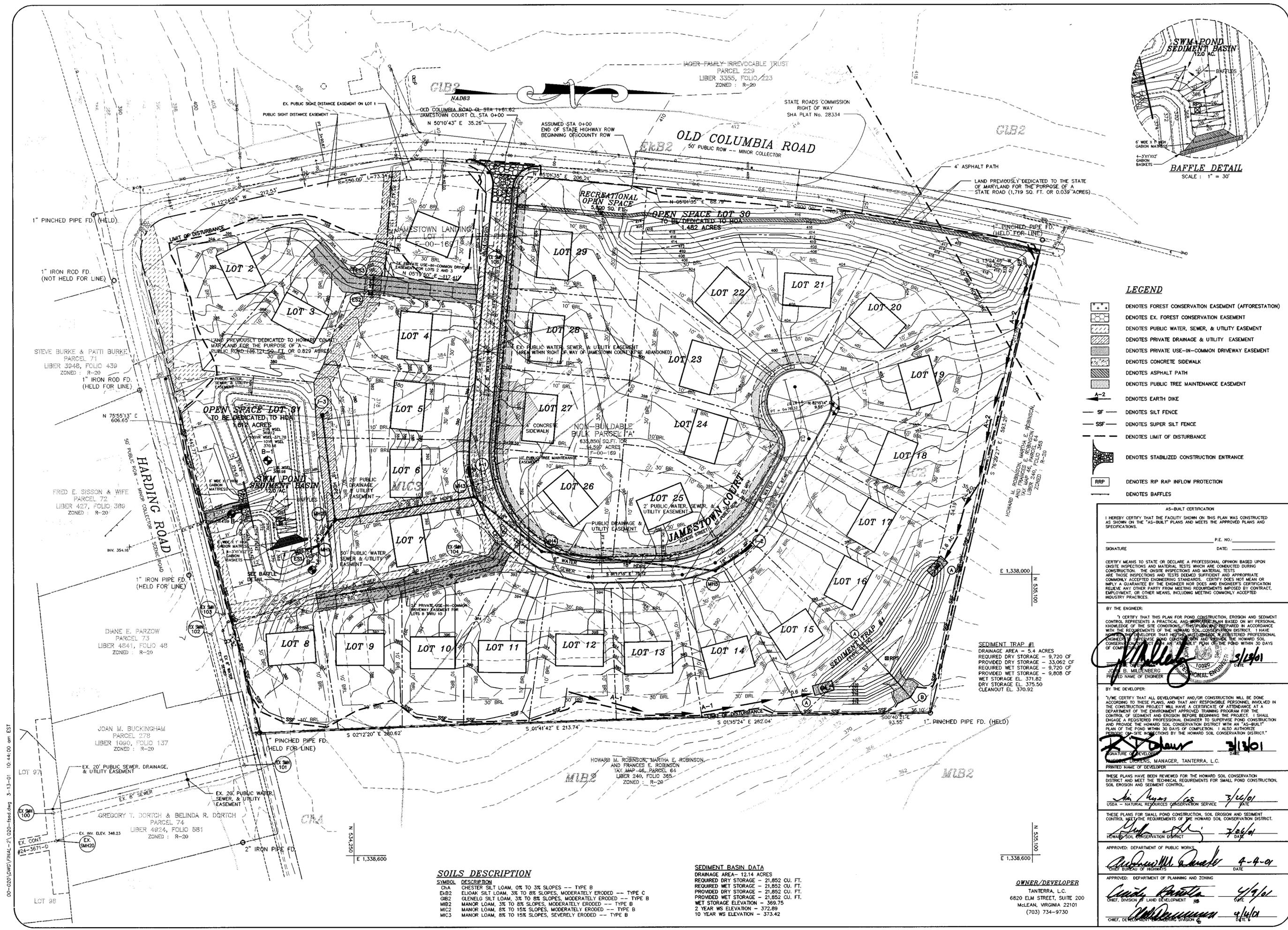
Project	2000-020	date	MAR 2001
Illustration	SID	engineering	
scale	SID	approval	
AS SHOWN			

no.	description	revisions	date

JAMESTOWN LANDING, LOTS 2 THRU 31  
A RESUBDIVISION OF JAMESTOWN LANDING, NON-BUILDABLE BULK PARCEL 'A'  
TAX MAP 46 - P/O PARCEL 230 - GRID 15 & 16  
HOWARD COUNTY, MARYLAND  
SIXTH ELECTION DISTRICT

MILDENBERG, BOENDER & ASSOC., INC.  
Engineers Planners Surveyors  
5072 Doresey Hall Drive, Suite 202, Ellicott City, Maryland 21042  
(410) 997-0286 Fax (301) 621-5527 Wash. (301) 997-0288 Fax





- LEGEND**
- DENOTES FOREST CONSERVATION EASEMENT (AFFORESTATION)
  - DENOTES EX. FOREST CONSERVATION EASEMENT
  - DENOTES PUBLIC WATER, SEWER, & UTILITY EASEMENT
  - DENOTES PRIVATE DRAINAGE & UTILITY EASEMENT
  - DENOTES PRIVATE USE-IN-COMMON DRIVEWAY EASEMENT
  - DENOTES CONCRETE SIDEWALK
  - DENOTES ASPHALT PATH
  - DENOTES PUBLIC TREE MAINTENANCE EASEMENT
  - DENOTES EARTH DIKE
  - DENOTES SILT FENCE
  - DENOTES SUPER SILT FENCE
  - DENOTES LIMIT OF DISTURBANCE
  - DENOTES STABILIZED CONSTRUCTION ENTRANCE
  - DENOTES RIP RAP INFLOW PROTECTION
  - DENOTES BAFFLES

**AS-BUILT CERTIFICATION**

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

SIGNATURE: \_\_\_\_\_ P.E. NO.: \_\_\_\_\_  
 DATE: \_\_\_\_\_

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES THE ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE ENGINEER:

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HIS SHEET MUST BE A REGISTERED PROFESSIONAL ENGINEER SUPERVISE POND CONSTRUCTION AND OBTAIN THE HOWARD SOIL CONSERVATION DISTRICT AND HOWARD COUNTY TAX MAPS, PARCELS, FOLIO 386, 64, ZONED: R-20.

*[Signature]* 3/13/01  
 JOHN B. MILDBERG  
 PRINTED NAME OF ENGINEER

BY THE DEVELOPER:

I HAVE CERTIFIED 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 SHALL EMPLOY A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZED THE FOLLOWING ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

*[Signature]* 3/13/01  
 MICHAEL DICKENS, MANAGER, TANTERRA, L.C.  
 PRINTED NAME OF DEVELOPER

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

*[Signature]* 3/16/01  
 USDA - NATURAL RESOURCES CONSERVATION SERVICE  
 DATE

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

*[Signature]* 7/26/01  
 HOWARD SOIL CONSERVATION DISTRICT  
 DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 4-4-01  
 CHIEF BUREAU OF HIGHWAYS  
 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* 4/19/01  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE

*[Signature]* 4/19/01  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE

**SEDIMENT TRAP #1**  
 DRAINAGE AREA - 5.4 ACRES  
 REQUIRED DRY STORAGE - 9,720 CF  
 PROVIDED DRY STORAGE - 33,062 CF  
 REQUIRED WET STORAGE - 9,720 CF  
 PROVIDED WET STORAGE - 9,808 CF  
 WET STORAGE EL. 371.82  
 DRY STORAGE EL. 375.50  
 CLEAVOUP EL. 370.92

**SOILS DESCRIPTION**

SYMBOL	DESCRIPTION
CHA	CHESTER SILT LOAM, 0% TO 3% SLOPES -- TYPE B
EB2	ELIOAK SILT LOAM, 3% TO 8% SLOPES, MODERATELY ERODED -- TYPE C
GB2	GLENGLE SILT LOAM, 3% TO 8% SLOPES, MODERATELY ERODED -- TYPE B
MB2	MANOR LOAM, 3% TO 8% SLOPES, MODERATELY ERODED -- TYPE B
MC2	MANOR LOAM, 8% TO 15% SLOPES, MODERATELY ERODED -- TYPE B
MC3	MANOR LOAM, 8% TO 15% SLOPES, SEVERELY ERODED -- TYPE B

**SEDIMENT BASIN DATA**  
 DRAINAGE AREA - 12.14 ACRES  
 REQUIRED DRY STORAGE - 21,852 CU. FT.  
 PROVIDED DRY STORAGE - 21,852 CU. FT.  
 REQUIRED WET STORAGE - 21,852 CU. FT.  
 PROVIDED WET STORAGE - 21,852 CU. FT.  
 WET STORAGE ELEVATION - 369.75  
 2 YEAR WS ELEVATION - 372.89  
 10 YEAR WS ELEVATION - 373.42

**OWNER/DEVELOPER**  
 TANTERRA, L.C.  
 6820 ELM STREET, SUITE 200  
 MCLEAN, VIRGINIA 22101  
 (703) 734-9730

<p>project: 2000-020</p> <p>date: MAR 2001</p> <p>illustration: SID/KR</p> <p>scale: 1"=50'</p>	<p>date: _____</p> <p>description: _____</p> <p>revisions: _____</p>	<p><b>MILDENBERG, BOENDER &amp; ASSOC., INC.</b></p> <p>Engineers Planners Surveyors</p> <p>5072 Dimesy Hill Drive, Suite 202, Beltsville City, Maryland, 21042        (410) 997-0286, Fax: (301) 621-5521, Wash. (410) 997-0288 Fax.</p>
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**JAMESTOWN LANDING, LOTS 2 THRU 31**  
 A RESUBDIVISION OF JAMESTOWN LANDING, NON-BUILDABLE BULK PARCEL 'A'  
 TAX MAP 46 - P/O PARCEL 230 - GRID 15 & 16  
 HOWARD COUNTY, MARYLAND  
 SIXTH ELECTION DISTRICT  
**EROSION & SEDIMENT CONTROL PLAN**

4 OF 12  
 F-01-88

# HOWARD SOIL CONSERVATION DISTRICT

## PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-TERM 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 ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ.FT.) AND 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR 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 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 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 14 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 LBS. 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 SOO. 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

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

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, 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 IN THE SPRING, OR USE SOO.

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ.FT.) OF UNROTTED 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.

## 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 ANY 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 1981 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC.51), SOE (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 THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7) SITE ANALYSIS:
TOTAL AREA OF SITE: 13.97 ACRES
AREA DISTURBED: 13.97 ACRES
AREA TO BE ROOFED OR PAVED: 2.52 ACRES
AREA TO BE VEGETATIVELY STABILIZED: 11.45 ACRES
TOTAL CUT: 35,500 CU. YDS.
TOTAL FILL: 35,500 CU. YDS.
TOTAL WASTE/BORROW AREA LOCATION: N/A

THESE QUANTITIES ARE FOR PERMIT PURPOSES ONLY. CONTRACTOR IS REQUIRED TO PROVIDE HIS OWN QUANTITIES MEASUREMENTS.

- 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 CONTROL. BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE, 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.

## 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.

### CONSTRUCTION AND MATERIAL SPECIFICATIONS

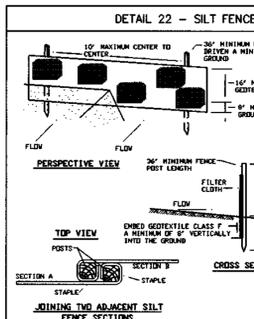
- I. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.
II. TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
1. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND, OR OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING 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.
2. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSON-SOON GRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
3. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, ORGANIC LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.
III. FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:
1. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 2.0 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.
II. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 2.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.
III. TOPSOIL APPLICATION
1. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.
2. GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBERT 4" - 8" HIGHER IN ELEVATION.
3. 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 ASPHALT PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
IV. TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
V. ALTERNATIVE FOR PERMANENT SEEDING - INSTEAD OF APPLYING THE FULL AMOUNTS OF LIME AND COMMERCIAL FERTILIZER, COMPOSTED SLUDGE AND AMENDMENTS MAY BE APPLIED AS SPECIFIED BELOW:
1. COMPOSTED SLUDGE MATERIAL 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 LEAST 1 PERCENT NITROGEN, 1.5 PERCENT PHOSPHOROUS, AND 0.2 PERCENT POTASSIUM AND HAVE A PH OF 7.0 TO 8.0. IF COMPOST DOES NOT MEET THESE REQUIREMENTS, THE APPROPRIATE CONSTITUENTS MUST BE ADDED TO MEET THE REQUIREMENTS PRIOR TO USE.
c. COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF 1 TON/1,000 SQUARE FEET.
2. COMPOSTED SLUDGE SHALL BE AMENDED WITH A POTASSIUM FERTILIZER APPLIED AT THE RATE OF 4 LB/1,000 SQUARE FEET, AND 1/3 THE NORMAL LIME APPLICATION RATE.

REFERENCES: GUIDELINE SPECIFICATIONS, SOIL PREPARATION AND SODDING, MD-VA, PUB. #1, COOPERATIVE EXTENSION SERVICE, UNIVERSITY OF MARYLAND AND VIRGINIA POLYTECHNIC INSTITUTE, REVISED 1973.

\* FOR REMOVABLE PUMP STATION DETAIL AND SPECIFICATIONS, BAFFLE DETAIL, AND BASIN DRAW DOWN SCHEMATIC HORIZONTAL DRAWN DOWN DEVICE, SEE SHEET 9 OF 12.



Construction Specifications for Silt Fence. Includes requirements for fence post spacing, geotextile fabric, and materials. Includes a table for Tensile Strength, Tear Strength, and Flow Rate.

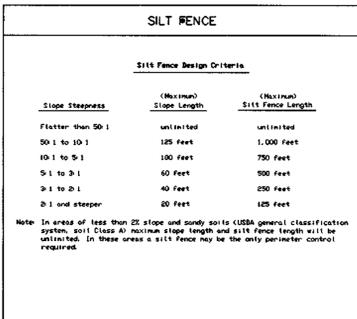
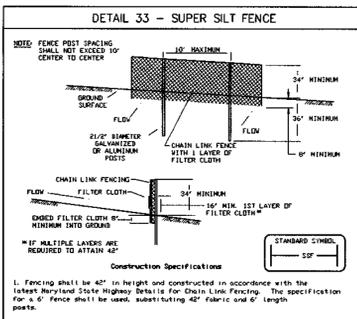


Table for Silt Fence Design Criteria. Columns: Slope Steepness, (Maximum) Silt Fence Length, (Maximum) Silt Fence Length.



Construction Specifications for Super Silt Fence. Includes requirements for fence post spacing, chain link fence, and geotextile fabric. Includes a table for Tensile Strength, Tear Strength, and Flow Rate.

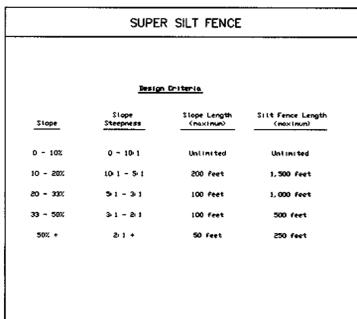


Table for Super Silt Fence Design Criteria. Columns: Slope Steepness, Slope Length (Maximum), Silt Fence Length (Maximum).

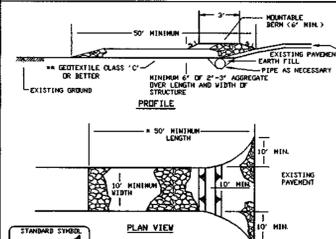
## SEQUENCE OF CONSTRUCTION

- 1. OBTAIN GRADING PERMIT. (1 DAY)
2. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE (1 DAY)
3. CONSTRUCT SEDIMENT TRAP NO. 1 AND SEDIMENT BASIN NO. 1. SEDIMENT BASIN NO. 1 IS TO INCLUDE TEMPORARY LOW FLOW ORIFICE (6" DIAMETER) AND 12" PVC PIPE AND RISER WITH PERFORATIONS AS SHOWN ON DETAILS. SOO OUTFALL TO EXISTING 24" CMP. (4 DAYS)
4. CONSTRUCT DIVERSION DIKES AND SILT FENCES. (3 DAYS)
5. RECEIVE PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR TO PROCEED.
6. BRING SITE TO DESIGN GRADES, CONSTRUCT SITE PER APPROVED DRAWINGS. (25 DAYS)
7. WHEN DISTURBED AREA TO SEDIMENT TRAP NO. 1 HAS BEEN STABILIZED, AND WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE TRAP AND CONSTRUCT PER FINAL GRADING PLAN. (3 DAYS)
8. WHEN ALL CONTRIBUTING AREAS TO SEDIMENT AND EROSION CONTROL DEVICES HAVE BEEN STABILIZED, AND WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT AND EROSION CONTROL DEVICES AND STABILIZE REMAINING DISTURBED AREAS. (15 DAYS)
9. WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR, RECONSTRUCT SEDIMENT BASIN TO PERMANENT DESIGN CONTOURS, REMOVE TEMPORARY DEWATERING STANDPIPE, REPLACE TEMPORARY LOW FLOW PLATE (6" ORIFICE) WITH PERMANENT LOW FLOW PLATE (1.7" ORIFICE) AND ATTACH HALF SHELL TRAP RACK. (3 DAYS)
10. PLANT AFFORESTATION AREA PER PLANS. (5 DAYS)
11. STABILIZE REMAINING DISTURBED AREAS. (2 DAYS)

## EROSION AND SEDIMENT CONTROL NOTES

- 1. ALL SEDIMENT CONTROL OPERATIONS ARE TO BE DONE IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY VOLUME IV DESIGN MANUAL AND THE STANDARDS AND SPECIFICATIONS FOR SEDIMENT CONTROL IN DEVELOPING AREAS.
2. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AS THE FIRST ORDER OF BUSINESS.
3. ALL EXCAVATED MATERIALS SHALL BE STOCKPILED ON THE UPGRADE SIDE OF THE MAIN TRENCH.
4. EXCAVATION AND BACKFILL SHALL BE LIMITED TO THAT WHICH CAN BE STABILIZED WITHIN ONE WORKING DAY.
5. IMMEDIATELY FOLLOWING BACKFILL OF THE SEWER TRENCH, ALL DISTURBED AREAS ARE TO BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION AND SEEDING NOTES SHOWN ON THIS SHEET.
6. THROUGHOUT THE PROJECT, THE CONTRACTOR SHALL REGULARLY INSPECT ALL SEDIMENT CONTROL DEVICES AND PROVIDE ALL NECESSARY MAINTENANCE TO INSURE THAT ALL DEVICES ARE IN OPERATIVE CONDITION.
7. ALL SEDIMENT CONTROL FACILITIES SHALL REMAIN IN PLACE UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

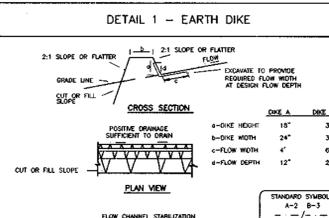
### DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



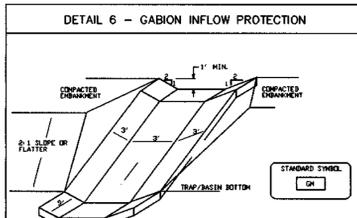
- 1. Length - minimum of 50' x 30' for single entrance lot.
2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.
3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. No pre approval authority may require single family residence to use geotextile.
4. Stone - crushed aggregate (2" to 3") or recycled 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 installation and construction shall be in accordance with the standards and specifications for storm sewer pipe. The pipe shall be protected with a manhole box with 5 1/2" diameter and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the flow rate. When the size of pipe 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 4" minimum diameter pipe is 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 entrance over the entrance.

AS-BUILT CERTIFICATION table with columns for Signature, Date, and P.E. No.

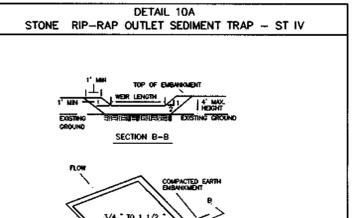
CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH WERE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS... I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE 'AS-BUILT' PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.



- 1. All temporary earth dikes shall have unimpacted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
2. Runoff from a disturbed area shall be conveyed to a sediment trap/basin.
3. Runoff from an undisturbed area shall collect directly into an undisturbed, stabilized area at a non-erosive velocity.
4. All trees, shrubs, saplings, and other vegetation shall be removed and replaced as far as not to interfere with the proper functioning of the dike.
5. The dike shall be constructed or placed on firm, grade and cross section as required to meet the criteria specified in this detail. The top and outside face of the dike shall be compacted and shall be smooth.
6. Fill shall be compacted by hand using equipment.
7. All earth removal 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.



- 1. Gabion inflow protection shall be constructed of 9" x 2" x 9" gabion baskets forming a trapezoidal cross section 1' deep, with 4:1 side slopes, and a 2' bottom width.
2. Geotextile Class C shall be installed under all gabion baskets.
3. The stone used to fill the gabion baskets shall be 4" - 7".
4. Gabions shall be installed in accordance with manufacturer's recommendations.
5. Gabion inflow protection shall be used where concentrated flow is present on slopes steeper than 4:1.



- 1. The area under embankment shall be cleared, grubbed and stripped of any vegetation and rock. The post area shall be cleared.
2. The fill material for the embankment shall be free of roots or other woody vegetation as well as non-oxidized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by kneading with equipment while it is being constructed. Maximum height of embankment shall be 4' measured at outside of embankment.
3. All cut and fill slopes shall be 2:1 or flatter.
4. Gradient of the top of the dike discharging water into trap must equal or exceed the height of lip embankment.
5. Storage area provided shall be figured by computing the volume measured from top of embankment. (For storage requirements see Table of Embankment Class C) shall be placed over the bottom and outside face of the outlet chamber for placement of stone. Section of fabric must overlap at least 1' with section nearest the entrance placed on top. Fabric shall be embedded at least 6" into existing ground at entrance of outlet chamber.
7. 4" - 7" stone shall be used to construct the wall and 4" - 12" or Class I rip-rap shall be used to construct the outlet channel.
8. Outlet channel must have positive drainage from the trap.
9. Outlet - An outlet shall include a means of conveying the discharge to or remove flow runner to an existing stone channel. Protection against water at the discharge point shall be provided as necessary.
10. Sediment shall be removed and trap returned to its original dimensions when the sediment has accumulated to 1/2" of the net storage depth of the trap (500' +/-). Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
11. The structure shall be inspected periodically after each rain and repaired as needed.
12. Construction of traps shall be confined to such a manner that sediment will be stored in the trap. Once constructed, the top and outside face of the embankment shall be stabilized with seed and mulch. Plants of concentrated type shall be used for stabilization with Great Plains prairie grass. The remainder of the interior slopes shall be stabilized (see note).
13. Seed and mulch shall be applied to the interior slopes to prevent water erosion from during the life of the trap.
14. The structure shall be inspected by approved methods, removed and the area stabilized when the drainage area has been properly stabilized.

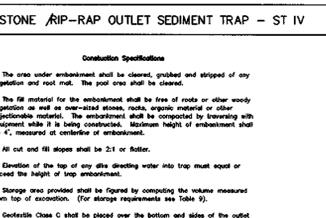
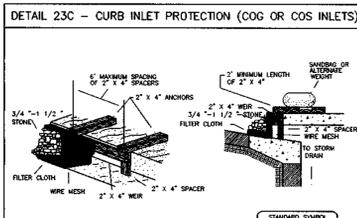
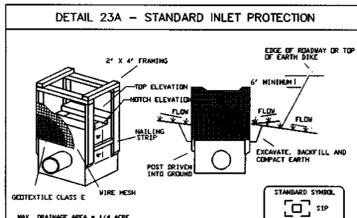


Table for Stone Rip-Rap Outlet Sediment Trap - ST IV. Columns: U.S. DEPARTMENT OF AGRICULTURE, MARYLAND DEPARTMENT OF ENVIRONMENT.



- 1. Match a continuous piece of wire mesh 50" minimum width by throat length plus 4" to the 2" x 4" wire (bearing throat length plus 2") as shown on the standard drawing.
2. Place a continuous piece of Geotextile Class C of the same dimensions as the wire mesh over the wire mesh and secure with 2" x 4" anchors.
3. Secure the 2" x 4" wire to a 9" long vertical spacer to be located between the wire and the silt face (max. 4" apart).
4. Place the assembly against the silt throat and not (minimum 2" lengths of 2" x 4" to the top of the silt at silt location). These 2" x 4" anchors shall extend across the silt face and be laid in place by hand or alternate method.
5. The assembly shall be placed so that the top and spacers are a minimum 1" beyond both ends of throat opening.
6. From the 1/2" x 1/2" wire mesh and the geotextile fabric to the concrete gutter and around the face of the curb on both sides of the curb. Place clean 3/4" x 1/2" stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet or around the geotextile.
7. This type of protection must be inspected frequently and the fabric curb and stone replaced when clogged with debris.
8. Assure that storm flow does not bypass the curb by installing a temporary curb or apron able to divert the flow to the curb.

Table for Detail 23C. Columns: U.S. DEPARTMENT OF AGRICULTURE, MARYLAND DEPARTMENT OF ENVIRONMENT.



- 1. Excavate completely under the inlet to a depth of 18" below the inlet elevation.
2. Drive the 2" x 4" construction grade lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overlap joint shown on Detail 23A. The top of the frame (curb) must be 6" below adjacent roadway where flooding and safety issues may arise.
3. Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.
4. Stretch the Geotextile Class C tightly over the wire mesh with the geotextile extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The top of the frame (curb) must meet at a post, be overlapped and folded, then fastened down.
5. Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.
6. If the inlet is not in a sump, construct a topsoil earth dike across the ditch line directly below it. The top of the earth dike should be at least 6" higher than the top of the frame.
7. The structure must be inspected periodically and after each rain and the geotextile be replaced when it becomes clogged.

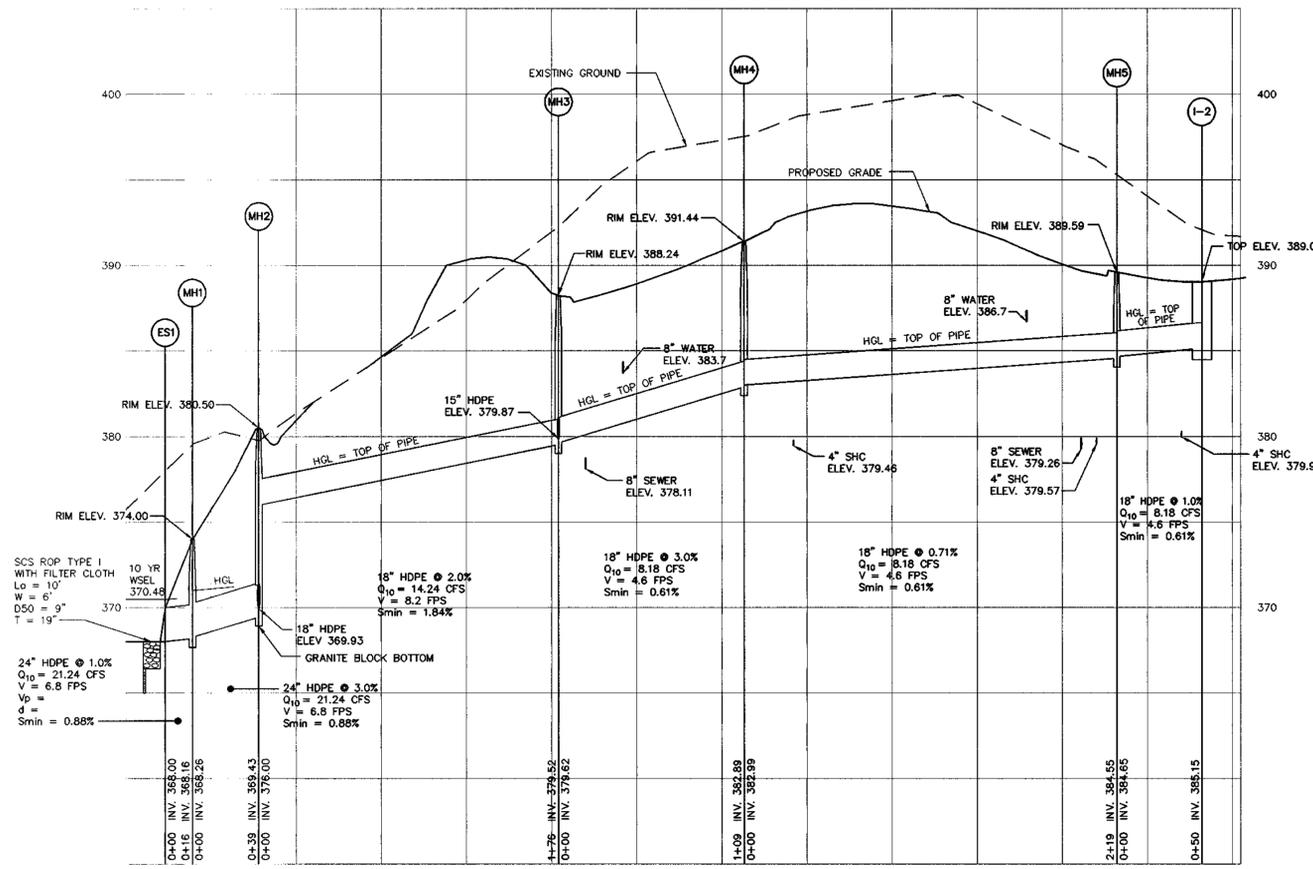
Table for Detail 23A. Columns: U.S. DEPARTMENT OF AGRICULTURE, MARYLAND DEPARTMENT OF ENVIRONMENT.

Approval table with columns for Project, Date, Illustration, Scale, and NTS.

JAMESTOWN LANDING, LOTS 2 THRU 31. A RESUBDIVISION OF JAMESTOWN LANDING, NON-BUILDABLE BULK PARCEL. TAX MAP 46 - P/O PARCEL 230 - GRID 15 & 16. SIXTH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND. EROSION & SEDIMENT CONTROL NOTES AND DETAILS.

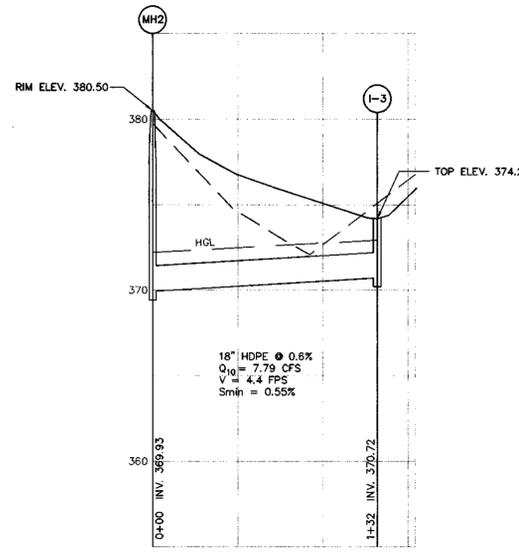
MILDENBERG, BOENDER & ASSOC., INC. Engineers, Planners, Surveyors. 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland, 21042. (410) 997-0296. FAX: (410) 997-0298.

00-020\DWG\FINAL-2\020-std-profiles.dwg 3-13-01 8:00:33 am EST



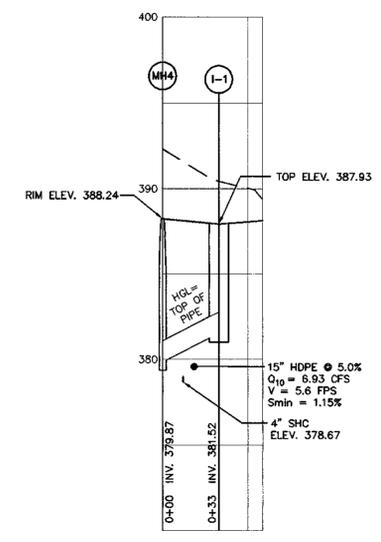
**STORM DRAIN PROFILE FROM ES1 TO I-2**

HORIZONTAL SCALE : 1" = 50'  
VERTICAL SCALE : 1" = 5'



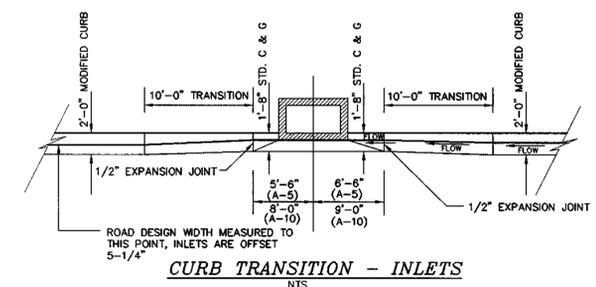
**STORM DRAIN PROFILE FROM MH2 TO I-3**

HORIZONTAL SCALE : 1" = 50'  
VERTICAL SCALE : 1" = 5'

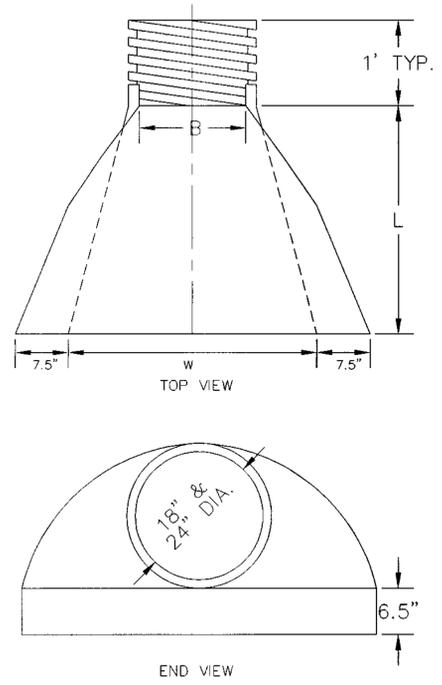


**STORM DRAIN PROFILE FROM MH3 TO I-1**

HORIZONTAL SCALE : 1" = 50'  
VERTICAL SCALE : 1" = 5'

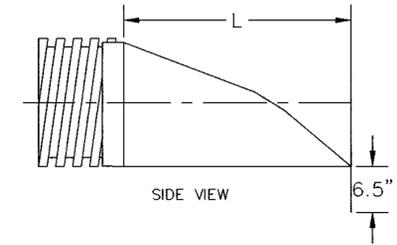


**CURB TRANSITION - INLETS**



**HDPE END SECTIONS**  
(PART NO. 1810NP & 2410 NP)

NOT TO SCALE



**PIPE SCHEDULE**

QUANTITY	PIPE SIZE
33'	15" HDPE
710'	18" HDPE
55'	24" HDPE

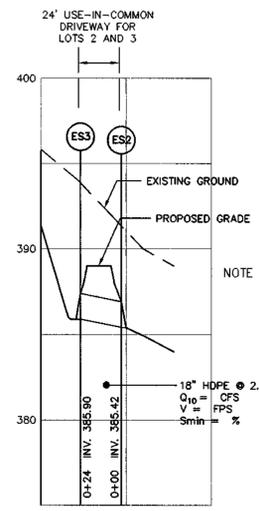
**STRUCTURE SCHEDULE**

NO.	LOCATION*	TOP**	INV. IN	INV. OUT	COMMENTS
I-1	JAMESTOWN COURT, STA 3+93.37, 12.33' RIGHT	387.93	-----	381.52	INLET TYPE A-10 (HO. CO. STD SD 4.02) - SUMP
I-2	JAMESTOWN COURT, STA 7+95.26, 12.33' RIGHT	389.03	-----	385.15	INLET TYPE A-10 (HO. CO. STD SD 4.02) - SUMP
I-3	JAMESTOWN COURT, STA 3+44.19, 199.31' RIGHT	374.20	-----	370.72	INLET TYPE K WITH GRATE (HO. CO. STD SD-4.12 & SD-4.13) - SUMP
MH1	JAMESTOWN COURT, STA 4+20.41, 221.18' RIGHT	374.00	368.26	368.16	MH (HO. CO. STD G 5.01)
MH2	JAMESTOWN COURT, STA 4+09.96, 191.25' RIGHT	380.50	376.90 369.93	369.43	MH (HO. CO. STD G 5.01)
MH3	JAMESTOWN COURT, STA 4+23.33, 16.10' RIGHT	388.24	379.62 379.87	379.52	MH (HO. CO. STD G 5.01)
MH4	JAMESTOWN COURT, STA 5+29.10, 7.00' LEFT	391.44	382.99	382.89	MH (HO. CO. STD G 5.01)
MH5	JAMESTOWN COURT, STA 7+49.52, 15.00' RIGHT	389.59	384.65	384.55	MH (HO. CO. STD G 5.01)
ES-1	JAMESTOWN COURT, STA 4+20.19, 237.48' RIGHT	-----	-----	368.00	24" # HDPE END SECTION
ES-2	JAMESTOWN COURT, STA 1+90.12, 150.82' RIGHT	-----	-----	385.42	18" # HDPE END SECTION
ES-3	JAMESTOWN COURT, STA 1+66.12, 150.82' RIGHT	-----	-----	385.90	18" # HDPE END SECTION

\* STATIONS GIVEN TO CENTERLINE FACE OF INLET AT TOP OF CURB FOR INLETS LOCATED WITHIN THE ROAD RIGHT-OF-WAY. STATIONS FOR "K" INLETS TO CL OF INLET. LOCATION OF MANHOLES IS TO CL OF MANHOLE COVER. END SECTION GIVEN TO THE CENTERLINE OF PIPE AT THE CONNECTION OF THE STORM DRAIN PIPE TO THE END SECTION.

\*\* ELEVATIONS MEASURED TO CENTER OF ALL INLETS.

*[Handwritten signature]*  
DATE: 4/14/01



**18" CULVERT - USE-IN-COMMON DRIVEWAY FOR LOTS 2 & 3**

HORIZONTAL SCALE : 1" = 50'  
VERTICAL SCALE : 1" = 5'

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 4-4-01  
DATE

APPROVED: BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* 4/9/01  
DATE

APPROVED: CHIEF, DIVISION OF LAND DEVELOPMENT  
*[Signature]* 4/14/01  
DATE

APPROVED: CHIEF, DIVISION OF ENGINEERING  
*[Signature]* 4/14/01  
DATE

project: 2000-020  
date: MAR 2001  
illustration: SID  
scale: SID  
approval: AS SHOWN

description: STORM DRAIN PROFILES  
revisions:

JAMESTOWN LANDING, LOTS 2 THRU 31  
A RESUBDIVISION OF JAMESTOWN LANDING, NON-BUILDABLE BULK PARCEL 'A'  
TAX MAP 46 - P/O PARCEL 230 - GRID 15 & 16  
SIXTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
STORM DRAIN PROFILES

**MILDENBERG, BOENDER & ASSOC., INC.**  
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MD-378 POND SPECIFICATIONS (JANUARY 2000)

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, GROUBED AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBSTRUCTIONAL MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1. ALL TREES SHALL BE CLEARED AND GROUBED 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 OBSTRUCTIONAL 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 GROUBED 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 SATURABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

EARTH FILL

MATERIAL - THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN FROZEN OR OTHER OBSTRUCTIONAL 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 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 9 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 ADDING FILL MATERIAL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO BE 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 SLOPE 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:

1. MATERIALS - (POLYMER COATED STEEL PIPE) - STEEL PIPES WITH POLYMERIC COATINGS SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (4 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 WATER TIGHT 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 WATER TIGHT 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. ALL ALUMINUM COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLORED 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 WATER TIGHT 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 WATER TIGHT. 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 WATER TIGHT. DIMPLE BANDS ARE NOT CONSIDERED TO BE WATER TIGHT.

ALL CONNECTIONS SHALL USE A RUBBER OR NEOPRENE GASKET WHEN JOINING PIPE SECTIONS. THE END OF EACH PIPE SHALL BE REINFORCED WITH AN ADEQUATE NUMBER OF CORROSION RESISTANT BARS. 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 1/2 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 1/2 INCH GREATER THAN THE CORROSION DEPTH. PIPES 24 INCHES IN DIAMETER AND LARGER SHALL BE CONNECTED BY 24 INCH LONG ANNUULAR 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 WILL BE 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-301.

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 STRENGTH 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 JOINTS SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER. THE MATERIAL AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LENGTH, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT 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 M254 TYPE S.

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

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 G.

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 BEDMS 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, MAINTENANCE AND INSPECTION

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SOCS STANDARDS AND SPECIFICATIONS FOR POND(S) (MD-378). THE POND OWNER(S) AND THE HEIR(S), 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 INDICATORS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

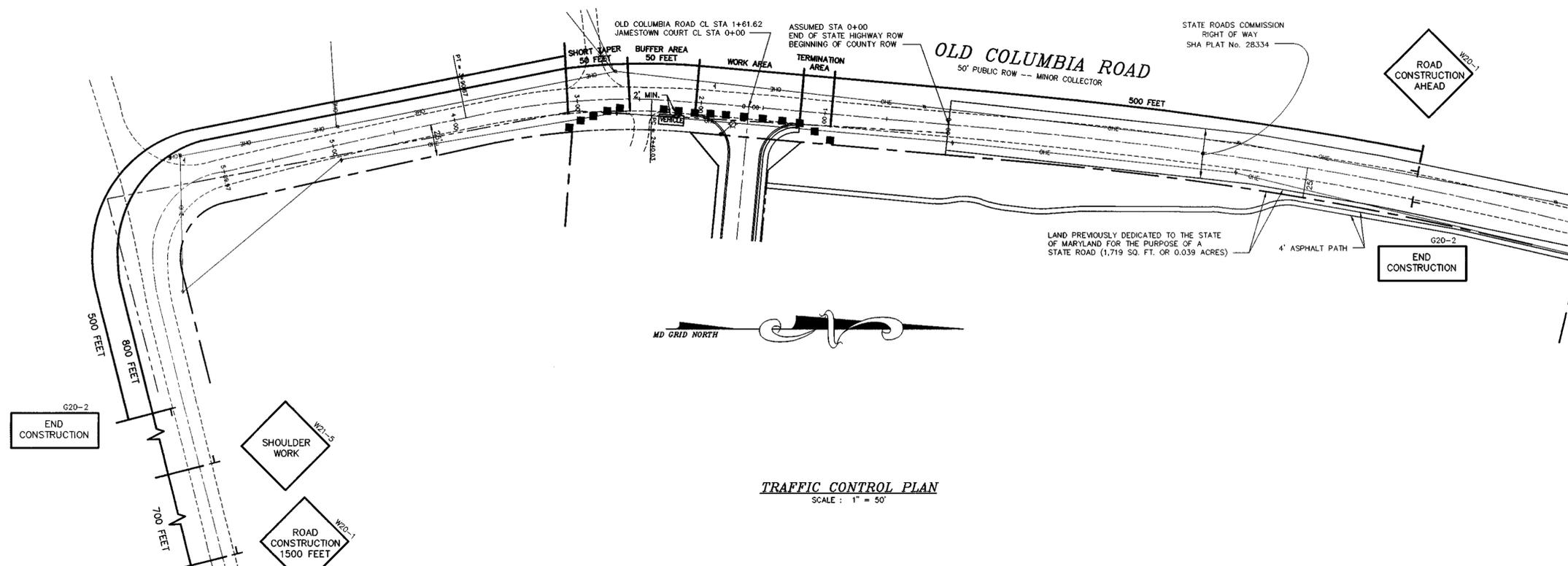
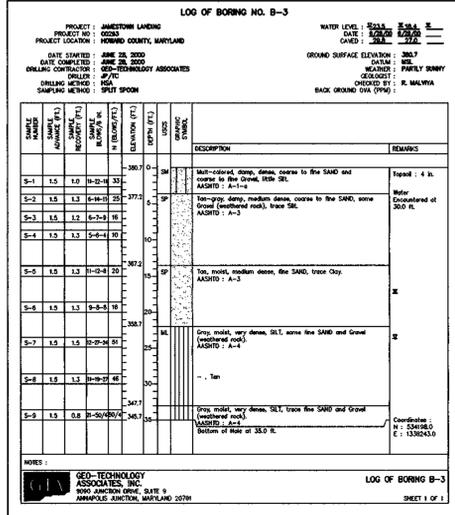
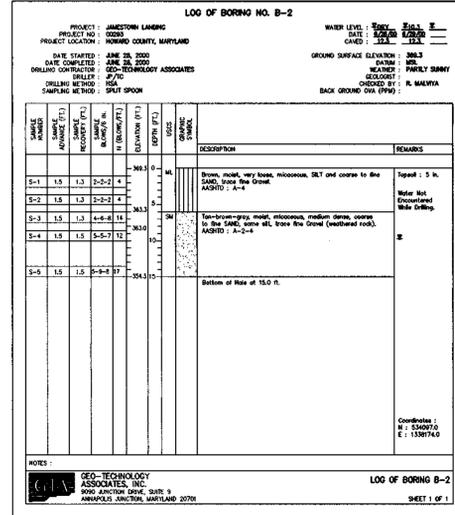
OPERATION, MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED EXTENDED DETENTION POND

ROUTINE MAINTENANCE:

- 1. FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.
2. TOP AND SIDE SLOPES OF EMBANKMENT SHALL BE MOVED A MINIMUM TWO (2) TIMES PER YEAR. ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOVED AS NEEDED.
3. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
4. VISIBLE 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.

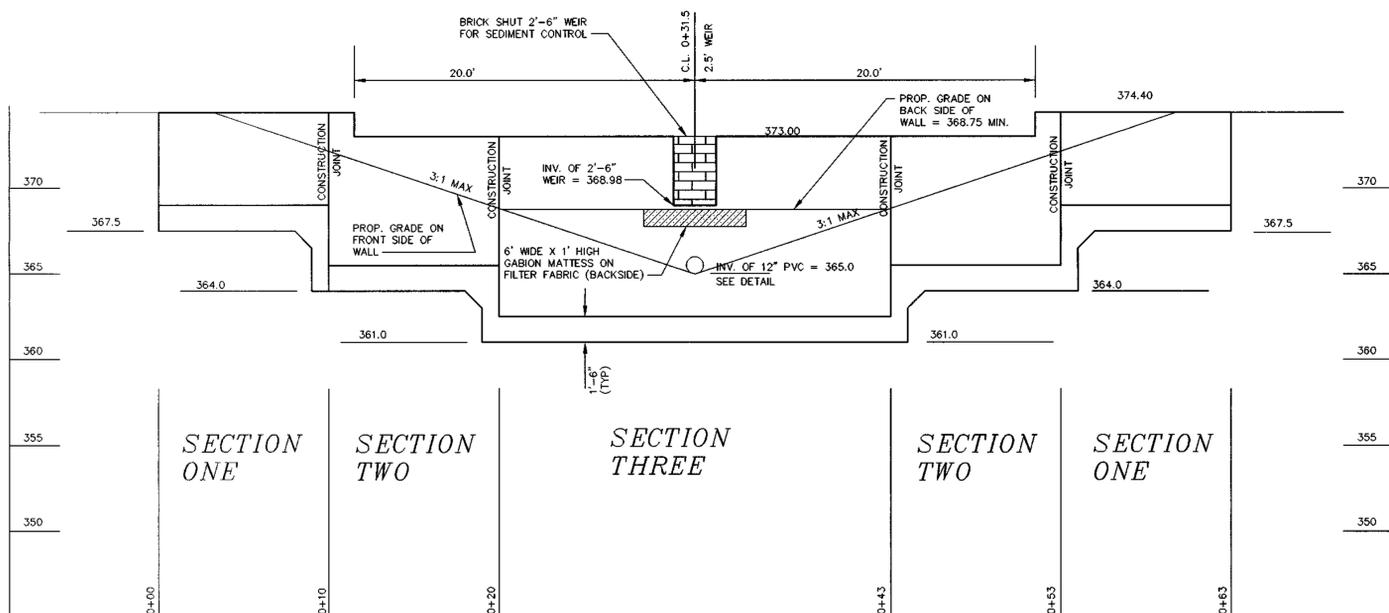
NON-ROUTINE MAINTENANCE:

- 1. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, 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 POND, AND FOREBAY, NO LATER THAN THE CAPACITY OF THE POND, OR FOREBAY, IS HALF FULL OF SEDIMENT, OR WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.



AS-BUILT CERTIFICATION. A section containing professional engineer signatures and dates for the project, including the engineer's name, title, and the date of certification.

MILDENBERG, BOENDER & ASSOC., INC. A RESUBDIVISION OF JAMESTOWN LANDING, LOTS 2 THRU 31. A RESUBDIVISION OF JAMESTOWN LANDING, NON-BUILDABLE BULK PARCEL 'A'. TAX MAP 46 - P/O PARCEL 290 - GRID 15 & 16. SIXTH ELECTION DISTRICT. HOWARD COUNTY, MARYLAND. SWM NOTES & SPECIFICATIONS AND TRAFFIC CONTROL PLAN. 7 OF 12. F-01-88.



**SWM SUMMARY**

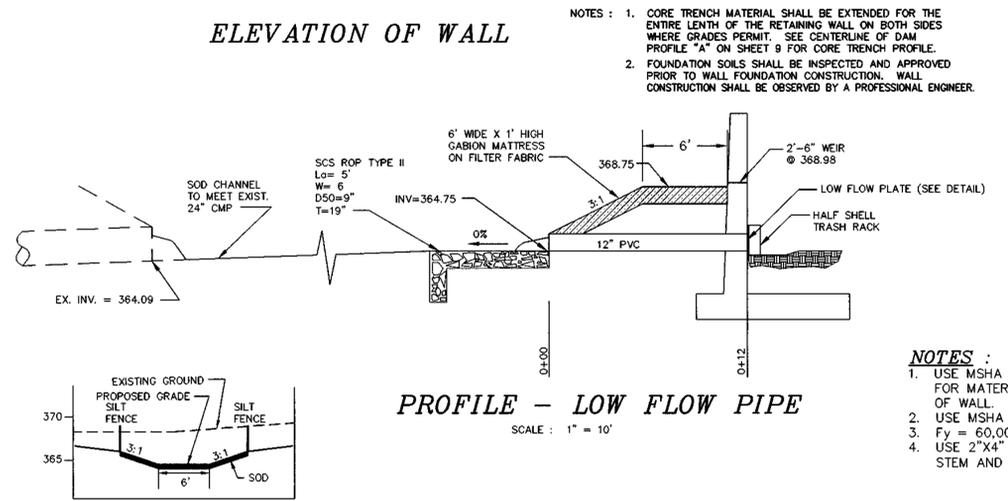
	2 YR.	10 YR.	100 YR.
Q EXISTING	6.0	21.3	N/A
Q DEVELOPED	2.6	19.7	N/A
Q FROM SWMF	1.2	16.1	37.3
WSEL	369.12	370.48	371.78

**TEMPORARY SWM**

	2 YR.	10 YR.
Q EXISTING	6.0	N/A
Q DEVELOPED	2.6	55.2
WSEL	372.89	373.42

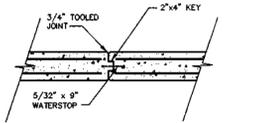
**SEDIMENT BASIN**

EXIST. DRAINAGE AREA	12.14 AC
PROP. DRAINAGE AREA	12.14 AC
REQ'D STORAGE	43,704 CU. FT.
STORAGE PROVIDED	43,704 CU. FT.
ORIFICE SIZE	6"
EMBANKMENT ELEV.	374.42
WEIR CREST ELEV.	373.0
OUTLET ELEV. (WET STORAGE ELEV.)	369.75
BOTTOM ELEV.	365.0
Q2 EXIST.	6.0
Q2 PROP.	2.6



**DRAW-DOWN DEVICE CONSTRUCTION SPECIFICATIONS**

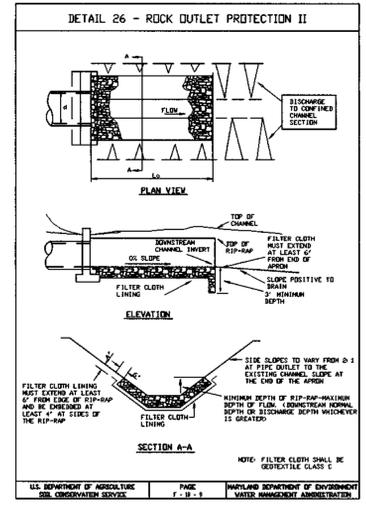
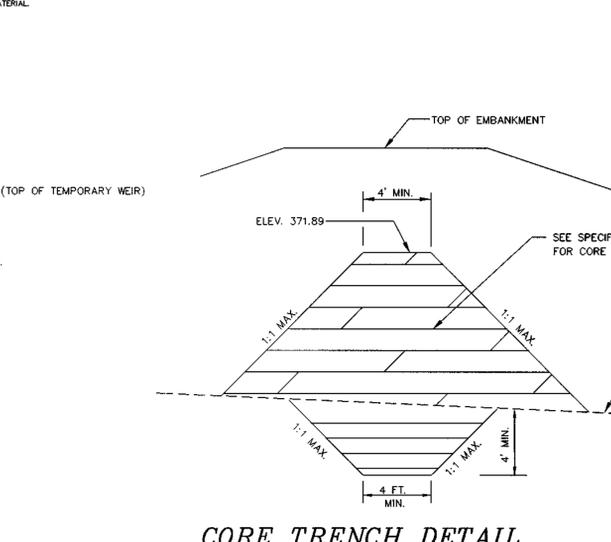
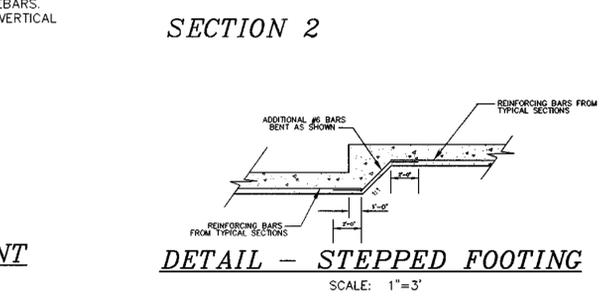
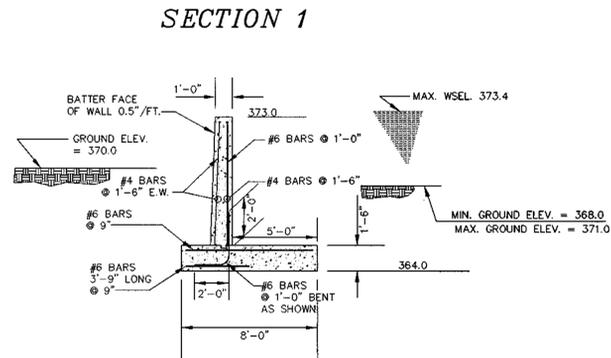
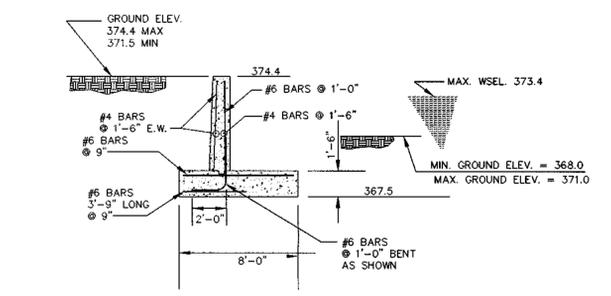
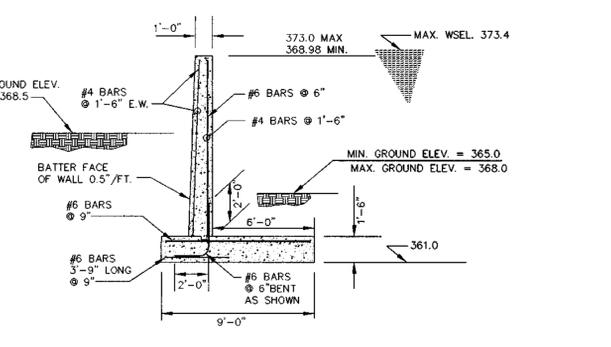
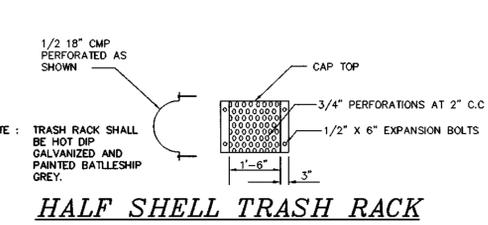
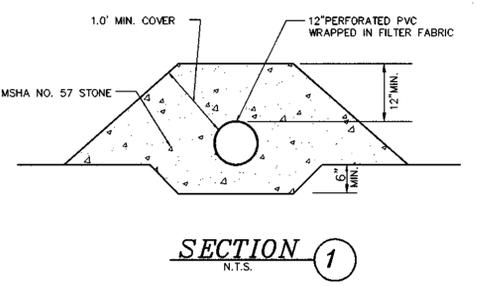
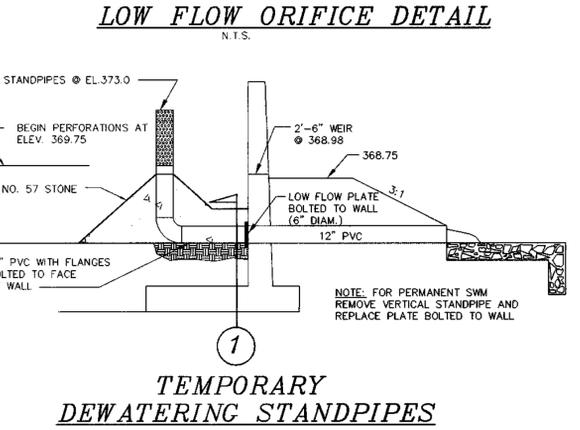
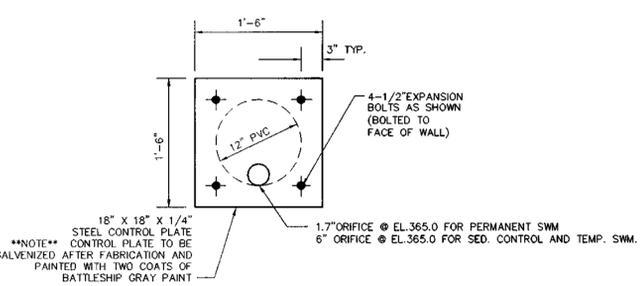
- PERFORATIONS IN THE DRAW-DOWN DEVICE MAY NOT EXCEED INTO THE WET STORAGE.
- THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 4 TIMES THE AREA OF THE INTERNAL ORIFICE.
- THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS E.
- PROVIDE SUPPORT OF DRAW-DOWN DEVICE TO PREVENT SAGGING AND FLUTING. 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 GAUGE MINIMUM WIRE.



**DETAIL - STEPPED FOOTING**

SCALE: 1" = 3"

- NOTE:
- CONSTRUCTION JOINTS TO BE PLACED AT 30' INTERVALS
  - WATERSTOP IS ELASTOMERIC OR OTHER APPROVED MATERIAL



**ROCK OUTLET PROTECTION III**

CONSTRUCTION SPECIFICATIONS

- The subgrade for the filter, riprap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
- The rock or gravel shall conform to the specified grading limits when installed respectively in the riprap or filter.
- Gabion(s) shall be protected from punching, cutting, or tearing. Any damage other than occasional small hole shall be repaired by placing another layer of gabion material. The stone for riprap or gabion outlets shall be delivered and placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.
- Stone for the riprap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid placement of underlying materials. The stone for riprap or gabion outlets shall be delivered and placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.
- The stone shall be placed so that it fits in with the existing ground. If the stone is placed too high then the filter will be forced out of the channel and scour adjacent to the stone will occur.

US DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

US DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

**AS-BUILT CERTIFICATION**

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

BY THE ENGINEER:

JOHN B. MILDBERG

PRINTED NAME OF ENGINEER

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

SIGNATURE OF DEVELOPER: \_\_\_\_\_ DATE: 3/13/01

JOHN B. MILDBERG

PRINTED NAME OF 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF DEVELOPER: \_\_\_\_\_ DATE: 3/26/01

RUSSELL DICKENS, MANAGER, TANTRERA, L.C.

PRINTED NAME OF DEVELOPER

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

USDA - NATURAL RESOURCES CONSERVATION SERVICE

DATE: 3/26/01

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

HOWARD SOIL CONSERVATION DISTRICT

APPROVED: DEPARTMENT OF PUBLIC WORKS

DATE: 4-4-01

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DATE: 4/9/01

DATE: 4/4/01

Project: 2000-020

date: MAR 2001

engineering: [signature]

illustration: [signature]

SID: [signature]

SID: [signature]

scale: NTS

approval: [signature]

description: [signature]

revisions: [signature]

no.: [signature]

JAMESTOWN LANDING, LOTS 2 THRU 31

A RESUBDIVISION OF JAMESTOWN LANDING, NON-BUILDABLE BULK PARCEL 'A'

TAX MAP 46 - P/O PARCEL 230 - GRID 15 & 16

SIXTH ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

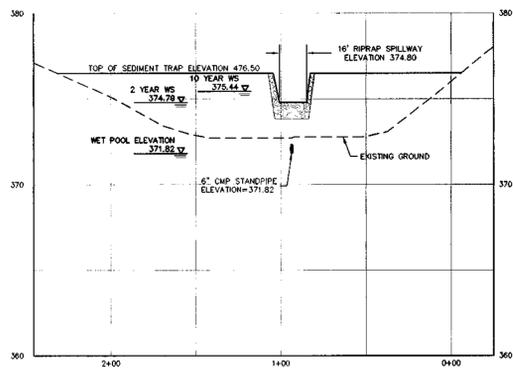
STORMWATER MANAGEMENT DETAILS

**MILDBERG, BOENDER & ASSOC., INC.**

Engineers Planners Surveyors

5072 Jersey Hall Drive, Suite 202, Ellicott City, Maryland 21042

(410) 987-0286 Bldg. (301) 621-5521 Wash. (410) 987-0288 Fax.

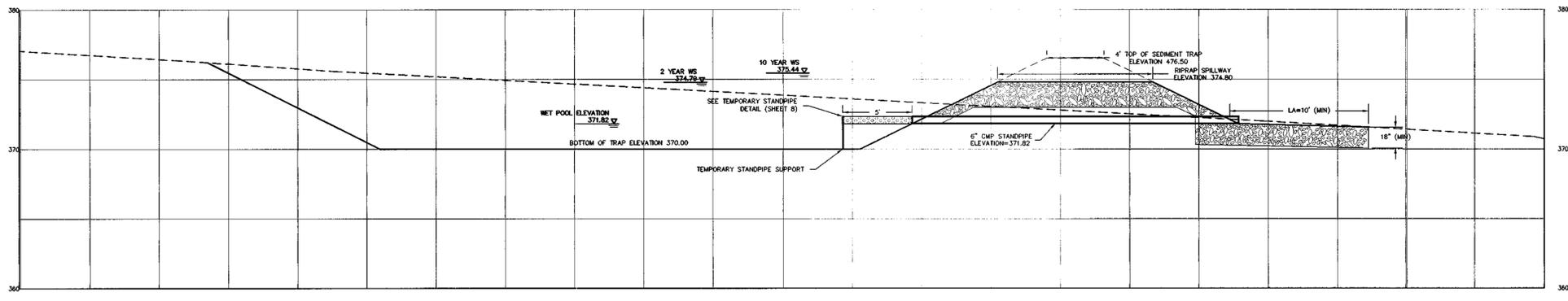


**SEDIMENT TRAP #1 DAM PROFILE (A-A)**

SCALE: 1" = 50' HORIZONTAL  
1" = 5' VERTICAL

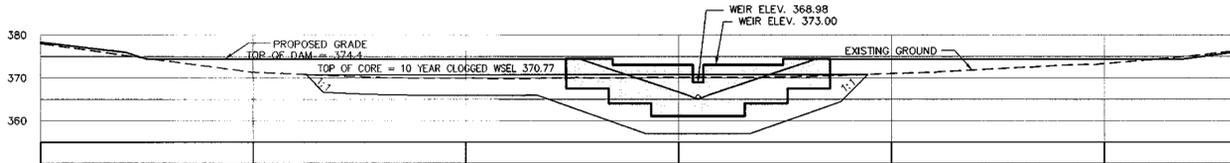
**SEDIMENT TRAP #1**  
DRAINAGE AREA - 5.4 ACRES  
REQUIRED DRY STORAGE - 9,720 CF  
PROVIDED DRY STORAGE - 33,062 CF  
REQUIRED WET STORAGE - 9,720 CF  
PROVIDED WET STORAGE - 9,808 CF  
WET STORAGE EL. 371.82  
DRY STORAGE EL. 370.92  
CLEANOUT EL. 370.92

**TEMPORARY STORMWATER MANAGEMENT**  
DRAINAGE AREA - 5.4 ACRES  
PROPOSED RCN - 91  
PROPOSED TC - 0.10 HR  
WET POOL ELEVATION - 371.82  
2 YEAR STORM POOL ELEVATION - 372.89, QOUT=2.6 CFS, QEX=6.0 CFS  
10 YEAR STORM POOL ELEVATION - 373.40, QOUT=55.2 CFS



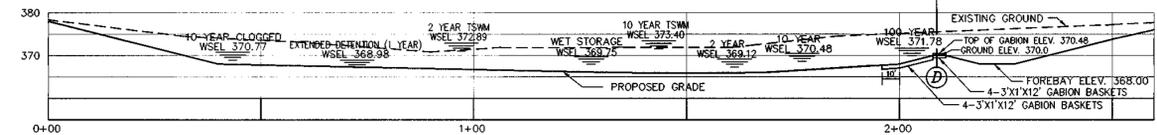
**SEDIMENT TRAP #1 SPILLWAY CROSS SECTION (A-A)**

SCALE: 1" = 50' HORIZONTAL  
1" = 5' VERTICAL



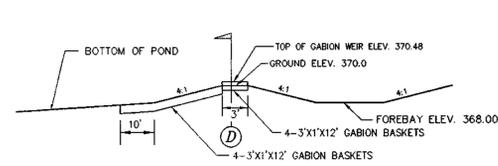
**A CENTERLINE OF DAM PROFILE**

SCALE: 1" = 20'



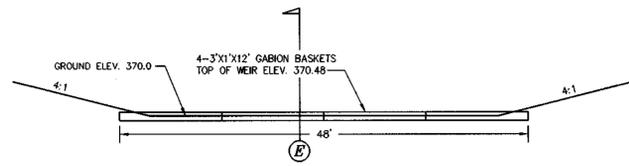
**B PROFILE THROUGH POND**

SCALE: 1" = 20'



**E SECTION THROUGH FOREBAY**

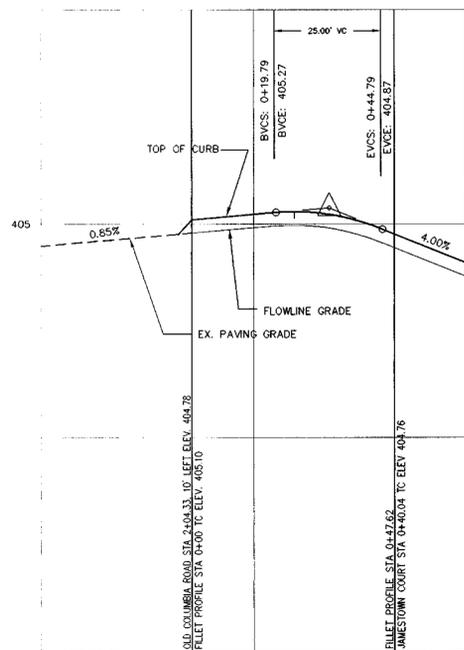
SCALE: 1" = 10'



**D SECTION ALONG GABION WALL**

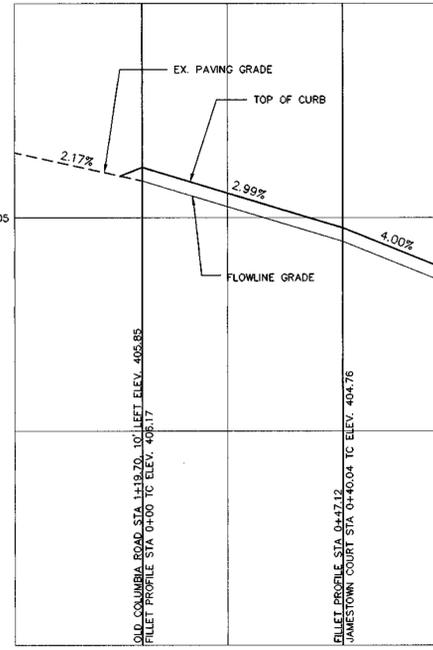
SCALE: 1" = 10'

HIGH POINT ELEV = 405.29  
HIGH POINT STA = 0+24.12  
PVI STA = 0+32.29  
PVI ELEV = 405.37  
A.D. = -4.85  
K = 5.15



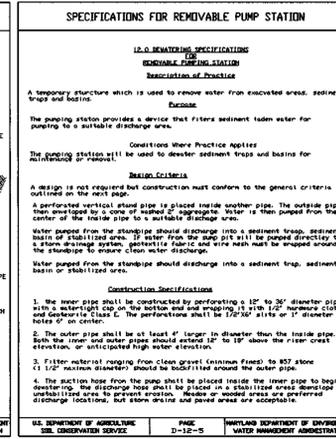
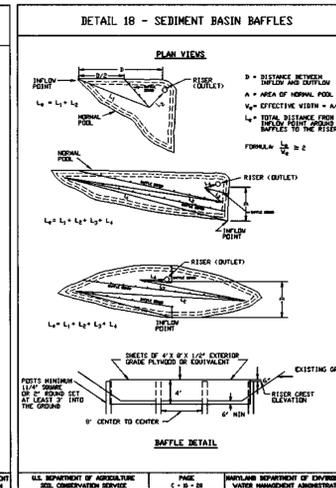
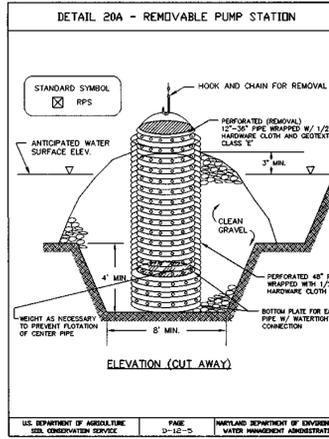
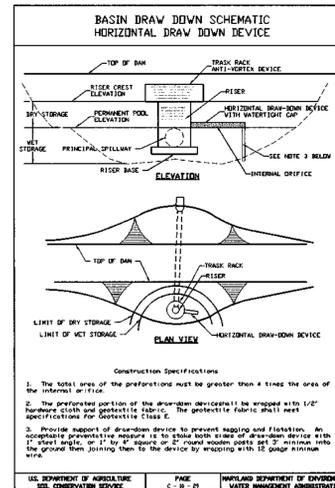
**RIGHT TURN FROM OLD COLUMBIA ROAD ONTO JAMESTOWN COURT**

HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 2'



**LEFT TURN FROM OLD COLUMBIA ROAD ONTO JAMESTOWN COURT**

HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 2'



**AS-BUILT CERTIFICATION**

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

SIGNATURE: \_\_\_\_\_ P.E. NO.: \_\_\_\_\_  
DATE: \_\_\_\_\_

**BY THE ENGINEER:**

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THE INFORMATION PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTICED THE DEVELOPER THAT A REGISTERED PROFESSIONAL ENGINEER, JOHN MILDENBERG, IS SUPERVISING POND CONSTRUCTION AND I WILL BE PRESENT TO SUPERVISE POND CONSTRUCTION WITHIN 30 DAYS OF COMPLETION.

DATE: 3/13/01

**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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND I WILL BE PRESENT TO SUPERVISE POND CONSTRUCTION WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE: \_\_\_\_\_ DATE: 3/17/01

**APPROVED: DEPARTMENT OF PUBLIC WORKS**

DATE: 4-4-01

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

DATE: 4/4/01

DATE: 4/16/01

Project: 2000-020 MAR 2001  
Illustration: KR/SID  
Scale: KR/SID  
AS SHOWN

date: \_\_\_\_\_  
description: \_\_\_\_\_  
revisions: \_\_\_\_\_

JAMESTOWN LANDING, LOTS 2 THRU 31  
A RESUBDIVISION OF JAMESTOWN LANDING, NON-BUILDABLE BULK PARCEL 'A'  
P/O PARCEL 230 GRID 15 & 16  
HOWARD COUNTY, MARYLAND  
SIXTH ELECTION DISTRICT  
SEDIMENT CONTROL & SWM DETAILS AND FILLET PROFILES

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

9 OF 12  
F-01-88

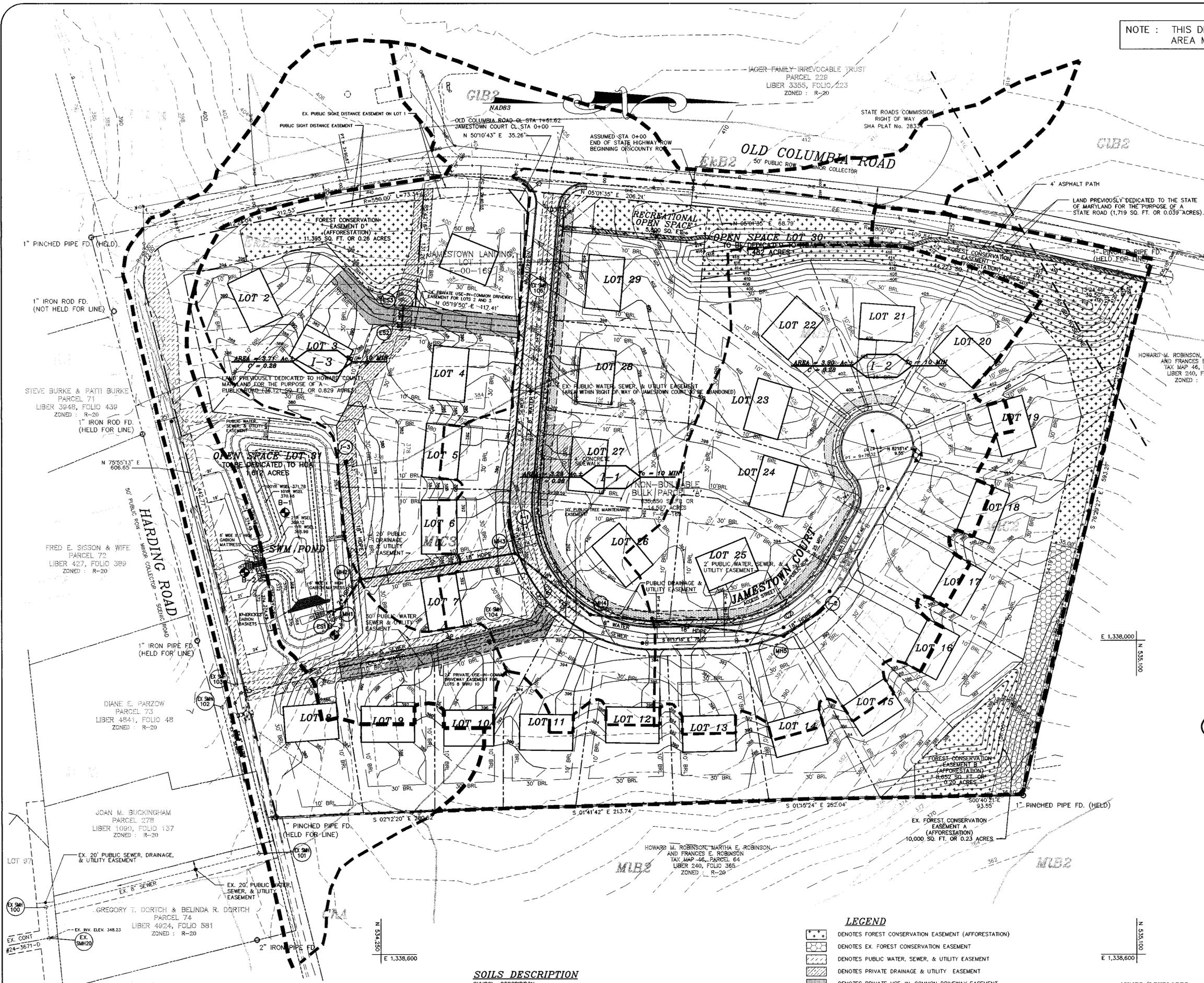
NOTE : THIS DRAWING IS TO BE USED FOR DRAINAGE AREA MAP PURPOSES ONLY.

Project	2000-020	Date	MAR 2001
Illustration	SID	Engineering	SID
Scale	1"=50'	Approval	SID

No.	description	date

JAMESTOWN LANDING, LOTS 2 THRU 31  
 A RESUBDIVISION OF JAMESTOWN LANDING, NON-BUILDABLE BULK PARCEL 'A'  
 TAX MAP 46 - P/O PARCEL 230 - GRID 15 & 16  
 HOWARD COUNTY, MARYLAND  
 SIXTH ELECTION DISTRICT  
 DRAINAGE AREA MAP

**MILDENBERG, BOENDER & ASSOC., INC.**  
 Engineers Planners Surveyors  
 5077 Dorsey Hall Drive, Suite 202, Elkton City, Maryland 21042  
 (410) 397-0286 Fax: (301) 621-5521 Wash. (410) 397-0288 Fax



**DETENTION POND DATA**  
 HAZARD CLASSIFICATION - A  
 DRAINAGE AREA - 12.14 ACRES  
 PROPOSED RCN - 70  
 PROPOSED TO - 0.22 HR.  
 WATER QUALITY TYPE - EXTENDED DETENTION  
 1 YEAR EXT. DET. WS ELEVATION - 368.98  
 2 YEAR WS ELEVATION - 369.12  
 10 YEAR WS ELEVATION - 370.48  
 CLOGGED 10 YEAR WS ELEVATION - 370.77  
 100 YEAR WS ELEVATION - 371.78  
 QOUT=37.3 CFS, QIN=58.0 CFS  
 OWNERSHIP - PRIVATE  
 MAINTENANCE - PRIVATE

**AS-BUILT CERTIFICATION**  
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.  
 SIGNATURE: \_\_\_\_\_ P.E. NO.: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.  
 BY THE ENGINEER:  
 I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE ADVISED THE DEVELOPER THAT HE/SHOULD PROVIDE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH 30 DAYS OF COMPLETION.  
 SIGNATURE OF ENGINEER: *J. B. Mildenberg* DATE: 3/14/01  
 JOY B. MILDENBERG  
 PRINTED NAME OF ENGINEER  
 BY THE DEVELOPER:  
 I HEREBY 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 SIGNATURE OF DEVELOPER: *Joseph M. Dicksen* DATE: 3/14/01  
 JOSEPH M. DICKSEN, MANAGER, TANTERRA, L.C.  
 PRINTED NAME OF DEVELOPER  
 THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.  
 USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE: 3/26/01  
 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: 3/26/01  
 APPROVED: DEPARTMENT OF PUBLIC WORKS DATE: 4-4-01  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING DATE: 4/14/01

- LEGEND**
- DENOTES FOREST CONSERVATION EASEMENT (AFFORESTATION)
  - DENOTES EX. FOREST CONSERVATION EASEMENT
  - DENOTES PUBLIC WATER, SEWER, & UTILITY EASEMENT
  - DENOTES PRIVATE DRAINAGE & UTILITY EASEMENT
  - DENOTES PRIVATE USE-IN-COMMON DRIVEWAY EASEMENT
  - DENOTES CONCRETE SIDEWALK
  - DENOTES ASPHALT PATH
  - DENOTES PUBLIC TREE MAINTENANCE EASEMENT

**SOILS DESCRIPTION**

SYMBOL	DESCRIPTION
CHA	CHESTER SILT LOAM, 0% TO 3% SLOPES -- TYPE B
EH2	ELIOLAK SILT LOAM, 3% TO 8% SLOPES, MODERATELY ERODED -- TYPE C
GIB2	GLENELO SILT LOAM, 3% TO 8% SLOPES, MODERATELY ERODED -- TYPE B
MIB2	MANOR LOAM, 3% TO 8% SLOPES, MODERATELY ERODED -- TYPE B
MIC2	MANOR LOAM, 8% TO 15% SLOPES, MODERATELY ERODED -- TYPE B
MIC3	MANOR LOAM, 8% TO 15% SLOPES, SEVERELY ERODED -- TYPE B

**OWNER/DEVELOPER**  
 TANTERRA, L.C.  
 6820 ELM STREET, SUITE 200  
 MCGLEAN, VIRGINIA 22101  
 (703) 734-9730

00-020(DWG)FINAL-2) 020-in-in-dm.dwg 3-13-01 8:17:51 am EST

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 (65 SHADE TREES & 51 EVERGREENS) IN THE AMOUNT OF \$27,150.00.
  3. SINCE THE PROPOSED STREET TREES ALONG OLD COLUMBIA AND HARDING ROAD ARE LOCATED IN THE SAME VICINITY AS THE OVERHEAD POWER LINES, SMALL STREET TREES ARE BEING PROPOSED.

**LEGEND**

[Symbol]	Denotes Forest Conservation Easement (Afforestation)
[Symbol]	Denotes Ex. Forest Conservation Easement
[Symbol]	Denotes Public Water, Sewer, & Utility Easement
[Symbol]	Denotes Private Drainage & Utility Easement
[Symbol]	Denotes Private Use-In-Common Driveway Easement
[Symbol]	Denotes Concrete Sidewalk
[Symbol]	Denotes Asphalt Path
[Symbol]	Denotes Public Tree Maintenance Easement

SWM PERIMETER	EDGE TYPE
SWM PERIMETER A - 260 LF 1 SHADE TREE / 50 LF 1 EVERGREEN / 40 LF	B
SWM PERIMETER B - 130 LF 1 SHADE TREE / 50 LF 1 EVERGREEN / 40 LF	B
SWM PERIMETER C - 215 LF 1 SHADE TREE / 50 LF 1 EVERGREEN / 40 LF	B
SWM PERIMETER D - 80 LF 1 SHADE TREE / 50 LF 1 EVERGREEN / 40 LF	B
<b>TOTAL PLANTING OBLIGATION</b>	
SHADE TREES	14
EVERGREEN TREES	17
SHRUBS	0

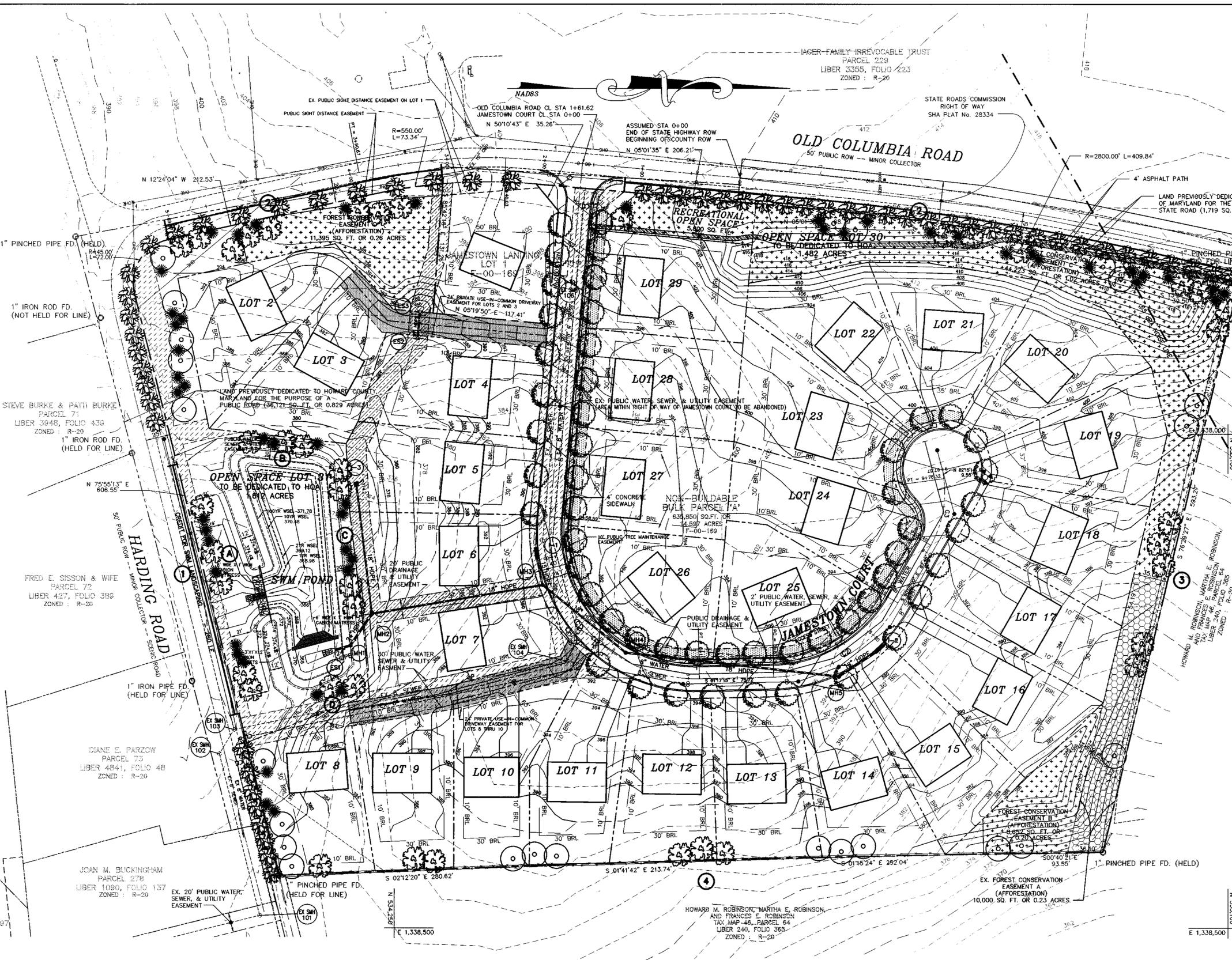
**SCHEDULE D : STORMWATER MANAGEMENT AREA LANDSCAPING**

LINEAR FEET OF PERIMETER	685 LF
CREDIT FOR EXISTING VEGETATION (NO, YES AND LINEAR FEET)	N/A
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	N/A
NUMBER OF TREES REQUIRED	14 SHADE TREES 17 EVERGREEN TREES

PERIMETER	EDGE TYPE
PERIMETER 1 SWM TO ROAD - 260 LF CREDIT FOR SWM LANDSCAPING	B
SFD SIDE/REAR TO ROAD - 418.55 LF 1 SHADE TREE / 50 LF 1 EVERGREEN / 40 LF	B
PERIMETER 2 SFD SIDE/REAR TO ROAD - 920.21 LF 1 SHADE TREE / 50 LF 1 EVERGREEN / 40 LF	B
PERIMETER 3 SFD TO NON-RES - 593.27 LF 1 SHADE TREE / 60 LF	A
PERIMETER 4 SFD TO SFD - 839.95 LF 1 SHADE TREE / 60 LF	A
<b>TOTAL PLANTING OBLIGATION</b>	
SHADE TREES	51
EVERGREEN TREES	34
SHRUBS	0

**PERIMETER PLANTING SCHEDULE**

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
41	○	ACER RUBRUM	RED MAPLE	2 1/2" - 3" CAL.
51	●	PINUS STROBUS	WHITE PINE	6' - 8' HT.
24	●	QUERCUS RUBRA	RED OAK	2 1/2" - 3" CAL.
<b>TOTAL</b>				<b>116 TREES (65 SHADE TREES, 51 EVERGREEN TREES)</b>



**STREET TREE CALCULATIONS**

OLD COLUMBIA ROAD / HARDING ROAD - 1889 / 30 = 56  
 JAMESTOWN COURT - 2113 / 40 = 53

TOTAL TREES REQUIRED = 53 LARGE TREES, 56 SMALL TREES  
 TOTAL TREES PROVIDED = 53 LARGE TREES, 56 SMALL TREES

**STREET TREE PLANTING SCHEDULE**

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
53	○	PYRUS CALLERYANA 'REDSPIRE'	REDSPIRE PEAR	2 1/2" - 3" CAL.
56	●	PRUNUS CERASIFERA ATROPURPUREA 'THUNDERCLOUD'	THUNDERCLOUD PURPLELEAF PEAR	2 1/2" - 3" CAL.
<b>TOTAL</b>				<b>109 TREES (53 LARGE STREET TREES, 56 SMALL STREET TREES)</b>

**SCHEDULE A : PERIMETER LANDSCAPED EDGE**

CATEGORY	ADJACENT TO ROADWAYS	ADJACENT TO PERIMETER PROPERTIES
LANDSCAPE TYPE	B (PERIMETERS 1 & 2)	A (PERIMETERS 3 & 4)
LINEAR FEET OF PERIMETER	1598.76 LF	1433.22 LF
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)	YES, 260 LF OF SWM LANDSCAPING	NO
CREDIT FOR WALL, FENCE, OR BERM (YES, NO, LINEAR FEET)	NO	NO
NUMBER OF PLANTS REQUIRED	27 SHADE TREES 34 EVERGREEN TREES 0 SHRUBS	24 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 ACCORDANCE 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: *[Signature]*  
 DATE: 3/13/01

*[Signature]*  
 3/13/01

**OWNER/DEVELOPER**  
 TANTERRA, L.C.  
 6820 ELM STREET, SUITE 200  
 MCLEAN, VIRGINIA 22101  
 (703) 734-9730

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 4-4-01  
 CHIEF BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* 4/4/01  
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: DEPARTMENT OF ENGINEERING  
*[Signature]* 4/4/01  
 CHIEF, DEPARTMENT OF ENGINEERING DIVISION

Project	2000-020	date	MAR 2001
Illustration	SID	engineering	
SID	SID	approval	
scale	1"=50'		

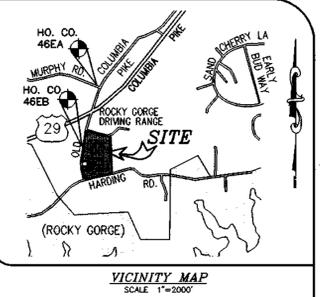
description	revisions
no.	date

JAMESTOWN LANDING, LOTS 2 THRU 31  
 A RESUBDIVISION OF JAMESTOWN LANDING, NON-BUILDABLE BULK PARCEL 'A'  
 TAX MAP 46 - P/O PARCEL 230 - GRID 15 & 16  
 HOWARD COUNTY, MARYLAND  
 SIXTH ELECTION DISTRICT  
 LANDSCAPE PLAN

**MILDENBERG, BOENDER & ASSOC., INC.**  
 Engineers Planners Surveyors  
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042  
 (410) 997-0286 Balt. (301) 621-5521 Wash.

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

- NOTES:
- NO FOREST STANDS EXIST ON-SITE PER FIELD INVESTIGATION BY MILDBERG, BOENDER & ASSOCIATES, INC. IN MAY 2000.
  - FOREST CONSERVATION OBLIGATIONS IN ACCORDANCE WITH SECTION 16.1202 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION HAS BEEN FULFILLED BY THE PLACEMENT OF 1.48 ACRES OF AFFORESTATION IN A FOREST CONSERVATION EASEMENT AND VIA PAYMENT OF A FEE-IN-LIEU OF 0.67 ACRES (29,185.2 SQ. FT.) OF AFFORESTATION IN THE AMOUNT OF \$8,755.56. SURETY FOR THE ON-SITE AFFORESTATION IN THE AMOUNT OF \$19,340.64 HAS BEEN POSTED AS PART OF DEVELOPERS AGREEMENT.
  - THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1202 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.



PLANTING SPECIFICATIONS AND NOTES

- SITE PREPARATION AND SOILS**
- PROTECTION FENCING IS TO BE INSTALLED AS A FIRST ORDER OF BUSINESS. SEE PLAN FOR LOCATIONS.
  - DISTURBANCE OF SOILS SHOULD BE LIMITED TO THE PLANTING FIELD FOR EACH PLANT. AS SHOWN ON THE DETAIL VIEW, A PLANTING FIELD OF RADIUS = 5' X DIAMETER OF THE ROOT BALL OR CONTAINER IS RECOMMENDED.
  - SOIL MIX FOR ALL PLANTS EXCEPT ERICACEOUS MATERIAL. SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME OF COMPOSTED SLUDGE.
  - SOIL MIX FOR ERICACEOUS MATERIAL. SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME PEAT MOSS.
  - ALL MIXING IN 3 AND 4 SHALL BE LIMITED TO CONTAINER GROWN OR BALL AND BURLAP STOCK ONLY AND CONFINED TO THE PLANTING FIELD AND IMMEDIATE ADJACENT SOIL SURFACE AREA AND SHALL BE DONE TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

- PLANT STORAGE AND INSPECTION**
- FOR CONTAINER GROWN NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN 2 WEEKS AFTER DELIVERY TO THE SITE.
  - FOR BALL AND BURLAP NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN THREE DAYS AFTER DELIVERY TO THE SITE.
  - PLANTING STOCK SHOULD BE INSPECTED PRIOR TO PLANTING. PLANTS NOT CONFORMING TO STANDARD NURSERYMAN SPECIFICATIONS FOR SIZE, FORM, VIGOR, ROOTS, TRUNK WOUNDS, INSECTS AND DISEASE SHOULD BE REPLACED.
  - PLANTED, ALL PLANT STOCK SHALL BE KEPT IN A SHADED, COOL, AND MOISTENED ENVIRONMENT.

- PLANT INSTALLATION**
- THE PLANTING FIELD SHOULD BE PREPARED AS SPECIFIED (SEE DETAIL). NATIVE TOPSOIL SHOULD BE USED FOR SOIL MIX AND BACKFILL FOR PLANTING FIELD. AFTER PLANT INSTALLATION, BACKFILL SOILS EVENLY OVER THE PLANTING FIELD AND COVER WITH AT LEAST 4 INCHES OF MULCH. WATER, GENEROUSLY, TO SETTLE SOIL BACKFILLED AROUND TREES.
  - PLANTING FIELD DIAMETERS SHOULD BE REDUCED OR PLANTING FIELD MOVED IF IT APPEARS THAT EXCESSIVE EXISTING ROOT DAMAGE MAY OCCUR DURING DIGGING OPERATION NEAR EXISTING FOREST TREES.
  - CARE SHALL BE TAKEN WHEN DIGGING PLANTING FIELDS NOT TO CHOP THROUGH LARGER EXISTING ROOTS FROM EXISTING MATURE TREES. ROOTS GREATER THAN 1 1/2 INCH ARE ENCOUNTERED PLEASE TRY TO DIG AROUND THEM AS MUCH AS POSSIBLE TO MINIMIZE IMPACT TO EXISTING TREES. THEY WERE HERE FIRST.
  - CONTAINER GROWN STOCK SHOULD BE REMOVED FROM THE CONTAINER AND ROOTS GENTLY LOOSENED FROM THE SOIL. IF THE ROOTS ENIRCLE THE ROOT BALL, SUBSTITUTION IS STRONGLY RECOMMENDED. J-SHAPED OR KINKED ROOT SYSTEMS SHOULD ALSO BE NOTED. ROOTS MAY NOT BE TRIMMED ON SITE, DUE TO THE INCREASED CHANCES OF DISEASES.
  - FOR BALL AND BURLAP STOCK, PLACE TREE IN PREPARED PLANTING FIELD AND REMOVE WIRE AND STRING FROM ROOT BALL THEN PEEL BACK BURLAP TO BASE OF ROOT BALL AND COVER ENTIRE ROOT BALL WITH TOPSOIL MIXTURE INDICATED ABOVE AND WATER GENEROUSLY.
  - FOR BALL AND BURLAP STOCK, PLANTS SHOULD BE PLANTED IN A STRAIGHT GRID PATTERN. TREES SHALL BE PLANTED ON AN AVERAGE SPACING AS INDICATED ON PLANT LISTS TO OBTAIN A MORE NATURAL APPEARANCE.
  - NEWLY PLANTED TREES MAY NEED WATERING AS MUCH AS ONCE A WEEK FOR THE ENTIRE GROWING SEASON, DUE TO THE VERY DEEP, WELL-DRAINED NATURE OF THE NATIVE SOILS FOUND ON THIS SITE COMPARED WITH THE LOOSENESS OF THE BACKFILLED AREA WITHIN THE PLANTING FIELD. THE NEXT TWO YEARS MAY REQUIRE WATERING ONLY A FEW TIMES A YEAR DURING SUMMER AND DRY MONTHS. AFTER THAT PERIOD, TREES SHOULD ONLY NEED WATER IN SEVERE DROUGHTS. ANY WATERING PLAN SHOULD COMPENSATE FOR RECENT RAINFALL PATTERNS.

- FERTILIZING**
- DO NOT FERTILIZE NEWLY PLANTED TREES WITHIN THE FIRST GROWING SEASON AFTER PLANTING. DOING SO MAY CAUSE A SPURT OF CANOPY GROWTH WHICH THE ROOTS CANNOT SUPPORT AND ADD ADDITIONAL SHOCK TO THE ALREADY DISTURBED PLANT.
  - IF AND WHEN IT IS TIME TO FERTILIZE, ORGANIC FERTILIZERS ARE PREFERRED TO SYNTHETIC FERTILIZERS. BONE MEAL OR SEAWEED BASED PRODUCTS ARE AVAILABLE COMMERCIALY AND ARE RECOMMENDED. THEY HAVE THE ABILITY TO SUPPLY NUTRIENTS TO THE PLANT AS NEEDED WHILE MINIMIZING THE RISK OF EXCESS NUTRIENTS ENTERING THE FOREST SYSTEM AND WATER SUPPLY.

- MAINTENANCE SCHEDULE**
- ANNUAL MAINTENANCE DURING THE GROWING SEASON, FOR A THREE YEAR PERIOD.
  - ASSESS TREE MORTALITY OF PLANTING STOCK, REMOVE AND REPLACE ANY DEAD OR DISEASED PLANTINGS.
  - VOLUNTARY SEEDING OF NATIVE, LOCAL AND ENDEMIC VEGETATION IS TO BE EXPECTED. DO NOT DISCOURAGE THIS EFFORT UNLESS IT IS NEGATIVELY EFFECTING THE PLANTED STOCK.
  - REMOVE THROUGH MANUAL MEANS (GRUBBING, PULLING, CUTTING) AGGRESSIVE, NODDIOUS, INVASIVE SPECIES AND ALL HERBACEOUS VEGETATION WITHIN A 5-FOOT RADIUS SURROUNDING THE PLANTED WOODY NURSERY STOCK.
  - REMOVE AND DISPOSE OF MAN-MADE TRASH, INCLUDING ITEMS CONTAINED WITHIN ENTIRE PLANTING AREA. DO NOT REMOVE DOWN AND DEAD MATERIAL NATURALLY OCCURRING OR ACCUMULATING, UNLESS IT IS SMOTHERING PLANTING STOCK.
  - A 75 PERCENT SURVIVAL OF PLANTED STOCK MUST BE ACHIEVED AT THE END OF THE 24 MONTH MANAGEMENT PERIOD. IF NOT, ADDITIONAL PLANTINGS MAY BE REQUIRED TO ACHIEVE THIS GOAL.

- SUPERVISION**
- ALL FOREST CONSERVATION ACTIVITIES SHALL BE DONE UNDER THE DIRECT SUPERVISION OF SOMEONE FROM THE DESIGN TEAM OR OTHER "QUALIFIED PROFESSIONAL" AS DETERMINED BY THE REQUIREMENTS OF COMAR 08.19.06.01 AND THE MARYLAND DEPARTMENT OF NATURAL RESOURCES, PUBLIC LANDS AND FORESTRY DIVISION.

SOILS DESCRIPTION

SYMBOL	DESCRIPTION
CHA	CHESTER SILT LOAM, 0% TO 3% SLOPES -- TYPE B
EMB2	ELIJAH SILT LOAM, 3% TO 8% SLOPES, MODERATELY ERODED -- TYPE C
QIB2	CLENDEN SILT LOAM, 3% TO 8% SLOPES, MODERATELY ERODED -- TYPE B
MB2	MANOR LOAM, 3% TO 8% SLOPES, MODERATELY ERODED -- TYPE B
MIC2	MANOR LOAM, 8% TO 15% SLOPES, MODERATELY ERODED -- TYPE B
MIC3	MANOR LOAM, 8% TO 15% SLOPES, SEVERELY ERODED -- TYPE B

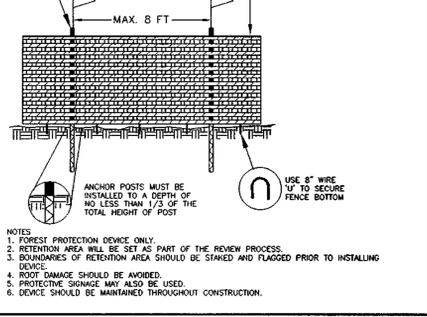
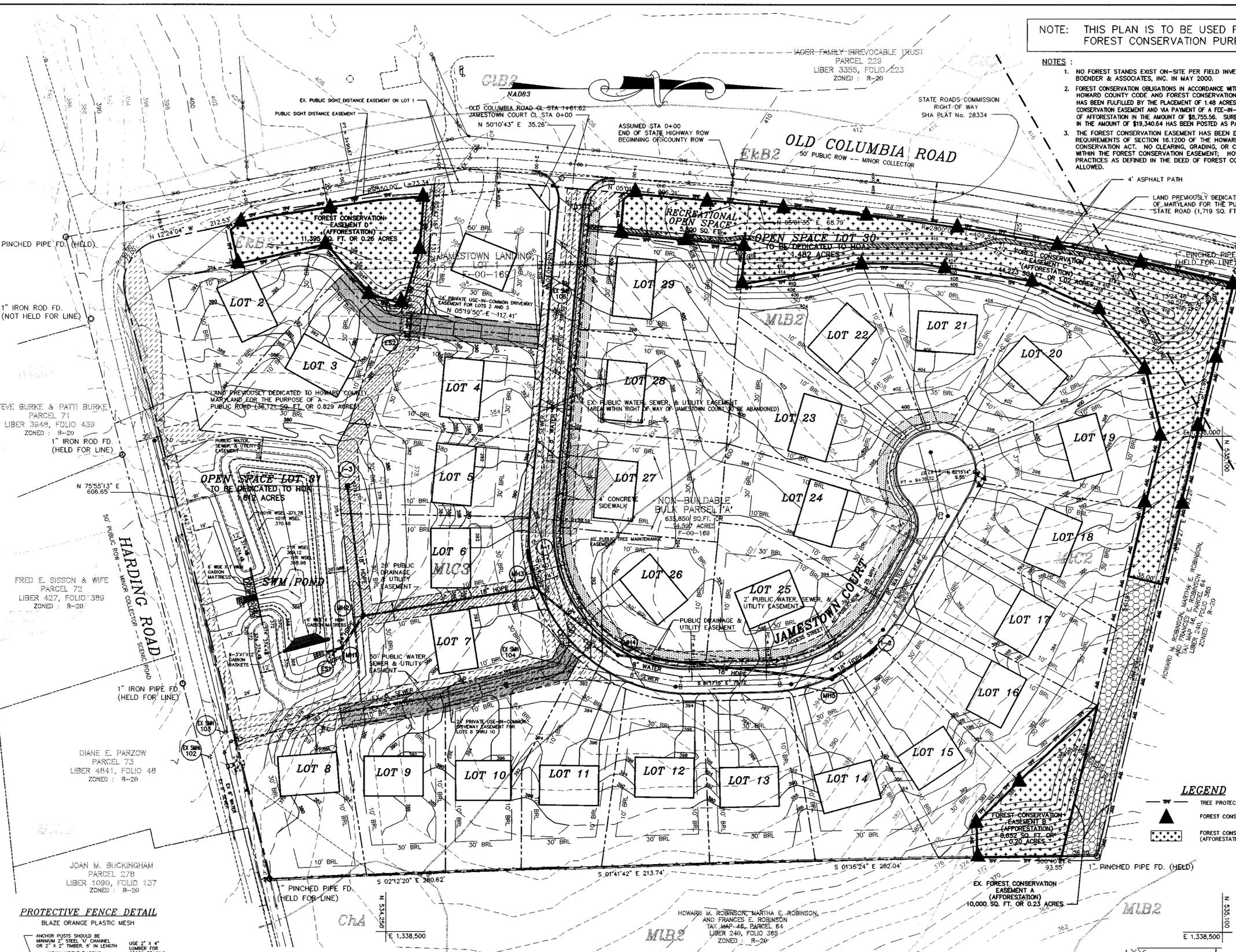
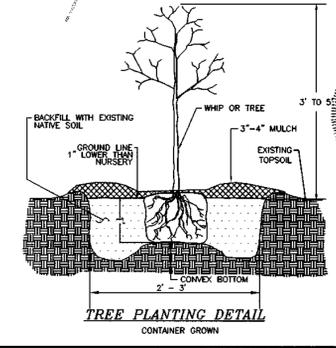
OWNER/DEVELOPER

TANTRERA, L.C.  
6820 ELM STREET, SUITE 200  
MCLEAN, VIRGINIA 22101  
(703) 734-9730

APPROVED: DEPARTMENT OF PUBLIC WORKS  
  
 CHIEF BUREAU OF HIGHWAYS  
 DATE: 4-4-01

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 4/4/01

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 4/4/01



**FOREST CONSERVATION DATA**

DESCRIPTION	ACRES
I. BASIC SITE DATA	
GROSS SITE AREA	15.47
AREA WITHIN 100 YEAR FLOODPLAIN	0.00
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL	0.00
NET TRACT AREA	15.47
LAND USE CATEGORY	RESIDENTIAL-SUBURBAN
II. FOREST CONSERVATION WORKSHEET DATA SUMMARY	
B. REFORESTATION THRESHOLD (20%)	3.09
C. AFFORESTATION MINIMUM (15%)	2.32
D. EXISTING FOREST ON NET TRACT AREA	0.00
E. FOREST AREAS TO BE CLEARED	0.00
F. FOREST AREAS TO BE RETAINED	0.00
V. AFFORESTATION CALCULATIONS	
AFFORESTATION REQUIRED	2.32
CREDIT FOR ADDITIONAL EASEMENT AREA PROVIDED UNDER F-00-169	0.17
TOTAL AFFORESTATION REQUIRED	2.15
TOTAL AFFORESTATION PROVIDED	1.48
TOTAL FEE-IN-LIEU OF AFFORESTATION REQUESTED	0.67

**AFFORESTATION PLANT LISTS**

QTY.	SPECIES	SHADE TOL.	MOIST. REGIME	WET. STATUS	MIN.O.C.	SIZE & SPACING	REMARKS
45	Acer rubrum Red Maple	VT	D-W	FAC	11"	CONT/B & B	1" CALIPER
58	Cornus florida Flowering Dogwood	VT	D-M	FACU	11"	CONT/B & B	3"-5" HEIGHT
45	Fagus grandifolia American Beech	VT	M	FACU	11"	CONT/B & B	1" CALIPER
45	Nyssa sylvatica Black Gum	T	M-W	FAC	11"	CONT/B & B	1" CALIPER
58	Prunus serotina Wild Black Cherry	I	M	FACU	11"	CONT/B & B	3"-5" HEIGHT
45	Quercus rubra Red Oak	MT	D-M	UPL	11"	CONT/B & B	1" CALIPER
TOTAL	296						

NOTES: WHIPS OR SEEDLINGS MAY BE SUBSTITUTED FOR THE 1" CALIPER OR 3"-5" TREES. IF WHIPS OR SEEDLINGS ARE TO BE USED, MULTIPLY THE QUANTITIES BY 3.5 TO DETERMINE THE NUMBER OF TREES REQUIRED.

**SIGNAGE DETAIL**  
NOT TO SCALE

NOTES: 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).

DATE: MAR 2001  
 PROJECT: 2000-020  
 ILLUSTRATION: SID  
 SCALE: 1"=50'  
 APPROVAL: SID

DATE: MAR 2001  
 PROJECT: 2000-020  
 ILLUSTRATION: SID  
 SCALE: 1"=50'  
 APPROVAL: SID

JAMESTOWN LANDING, LOTS 2 THRU 31  
 A RESUBDIVISION OF JAMESTOWN LANDING, NON-BUILDABLE BULK PARCEL 'A'  
 TAX MAP 46 - P/O PARCEL 230 - GRID 15 & 16  
 HOWARD COUNTY, MARYLAND  
 SIXTH ELECTION DISTRICT  
 FOREST CONSERVATION PLAN

MILDBERG, BOENDER & ASSOC., INC.  
 Surveyors  
 Engineers Planners  
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042  
 (410) 987-0296 Fax (301) 621-5521 Wash. (410) 997-0298 Fax

12 OF 12  
 F-01-88