

PLANTING SPECIFICATIONS AND NOTES

SITE PREPARATION AND SOILS

- PROTECTION FENCING, IF NECESSARY, IS TO BE INSTALLED AS A FIRST ORDER OF BUSINESS. SEE PLAN FOR DETAILS.
- 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 CONTINUED 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.
- UNTIL 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 STOCKPILED SOILS SHOULD BE USED FOR SOIL MIX AND BACKFILL FOR PLANTING FIELD. AFTER PLANT INSTALLATION, RAKE 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.
- CARE SHALL BE TAKEN WHEN DIGGING PLANTING FIELDS NOT TO CHOP THROUGH LARGER EXISTING ROOTS FROM EXISTING MATURE TREES. IF ROOTS GREATER THAN 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.
- FOR BALL AND BURLAP STOCK, PLACE TREE IN PREPARED PLANTING FIELD AND REMOVE WIRE AND/OR 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 TREES PLANTED IN THE AFFORESTATION AREA, CONTRACTOR SHALL EVENLY DISPERSE SPECIES IN GROUPS OF TWO (2) TO FIVE (5), PER SPECIES, OVER THE ENTIRE DESIGNATED AREA TO BE PLANTED WHILE MAINTAINING AN AVERAGE SPACING OF INDIVIDUAL TREES AT PROPER SPACING INDICATED ON PLANT LIST.

- AVOID PLANTING 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 COMBINED WITH THE LOOSENESS OF THE BACKFILLED AREA WITHIN THE PLANTING FIELD. THE NEXT TWO YEARS MAY REQUIRE WATERING ONLY ONE TIME 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 SPIRIT OF CANOPY GROWTH WHICH THE ROOTS CANNOT SUPPORT AND ADD ADDITIONAL SHOCK TO THE ALREADY DISTURBED PLANT.
- NOTHING SHOULD BE ADDED TO THE SOIL WITHOUT TESTING IT FIRST TO DETERMINE ITS NEEDS.
- 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.
- VOLUNTEER 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, NOXIOUS, INVASIVE SPECIES AND ALL HERBACEOUS VEGETATION WITHIN A 3-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.

FOREST CONSERVATION DATA

I. BASIC SITE DATA	ACRES
GROSS SITE AREA	2.41
AREA WITHIN 100 YEAR FLOODPLAIN	0.00
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL	0.00
NET TRACT AREA	2.41
LAND USE CATEGORY	RESIDENTIAL - SUBURBAN
II. FOREST CONSERVATION WORKSHEET DATA SUMMARY	
B. AFFORESTATION THRESHOLD (20%)	0.48
C. AFFORESTATION MINIMUM (15%)	0.36
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	
TOTAL AFFORESTATION REQUIRED	0.36
TOTAL AFFORESTATION PROVIDED	0.36

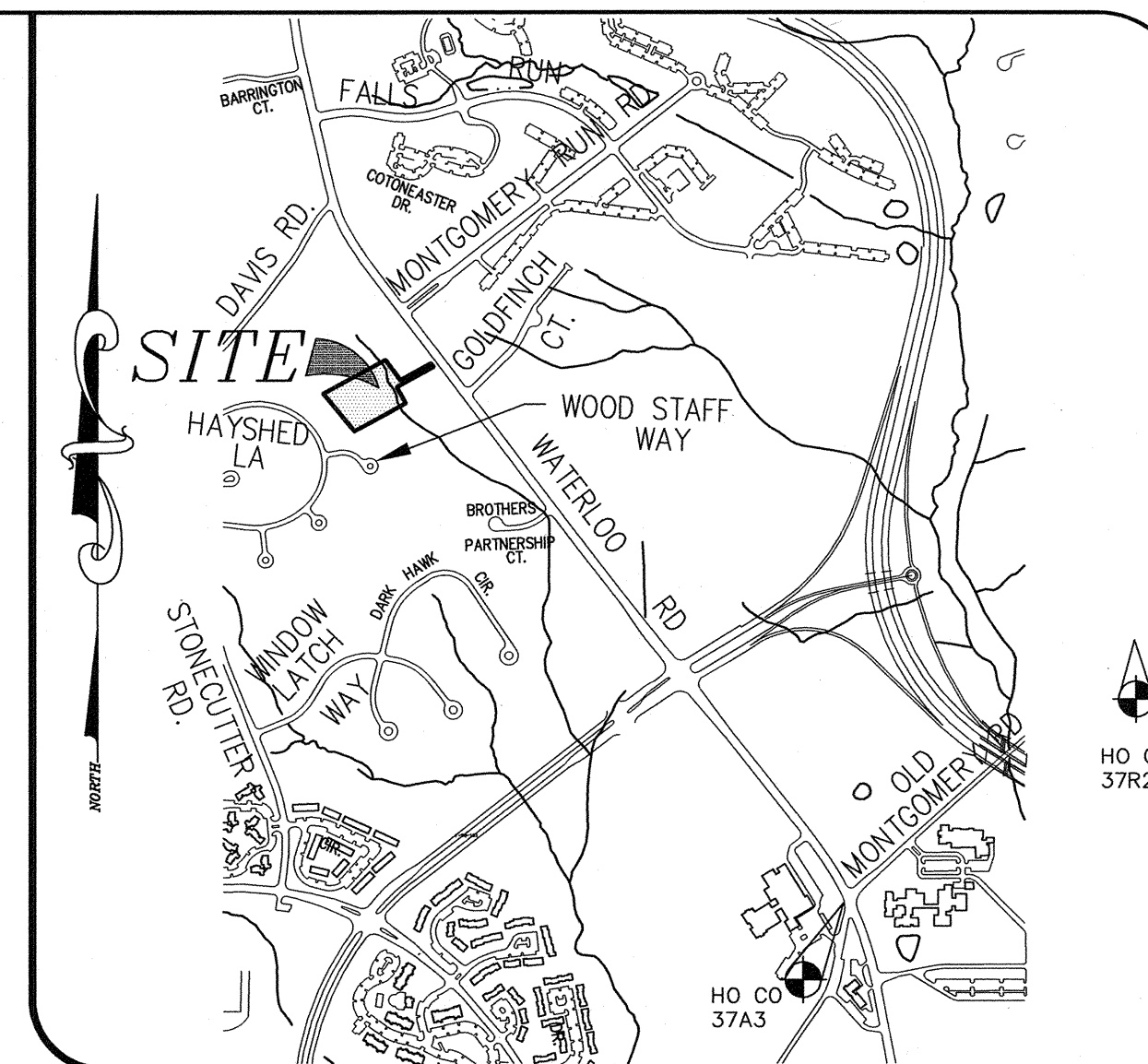
AFFORESTATION PLANT LISTS

QTY.	SPECIES	SHADE	MOIST.	WET.	MIN.O.C.	SIZE & SPACING	REMARKS
8	Acer rubrum Red Maple	VT	D-W	FAC	11'	CONT/B & B 1" CALIPER	
12	Cornus florida Flowering Dogwood	VT	D-M	FACU	11'	CONT/B & B 3"-5" HEIGHT	
12	Viburnum dentatum Southern Arrowwood	T	M	FACW	6'	CONT/B & B 18"-24" HEIGHT	
8	Nyssa sylvatica Black Gum	T	M-W	FAC	11'	CONT/B & B 1" CALIPER	
12	Prunus serotina Wild Black Cherry	I	M	FACU	11'	CONT/B & B 3"-5" HEIGHT	
8	Quercus palustris Pin Oak	I	M-W	FACW	11'	CONT/B & B 1" CALIPER	
TOTAL							
72 TREES							

NOTE: 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.

SOILS DESCRIPTION

SYMBOL	DESCRIPTION
BeB2	Beltville silt loam, 1% to 5% slopes, moderately eroded --- Type C
BeC2	Beltville silt loam, 5% to 10% slopes, moderately eroded --- Type C
SfC2	Sassafras gravelly sandy loam, 5% to 10% slopes, moderately eroded --- Type B
SD2	Sassafras gravelly sandy loam, 10% to 15% slopes, moderately eroded --- Type B
WaA	Watchung silt loam, 0% to 3% slopes --- Type D



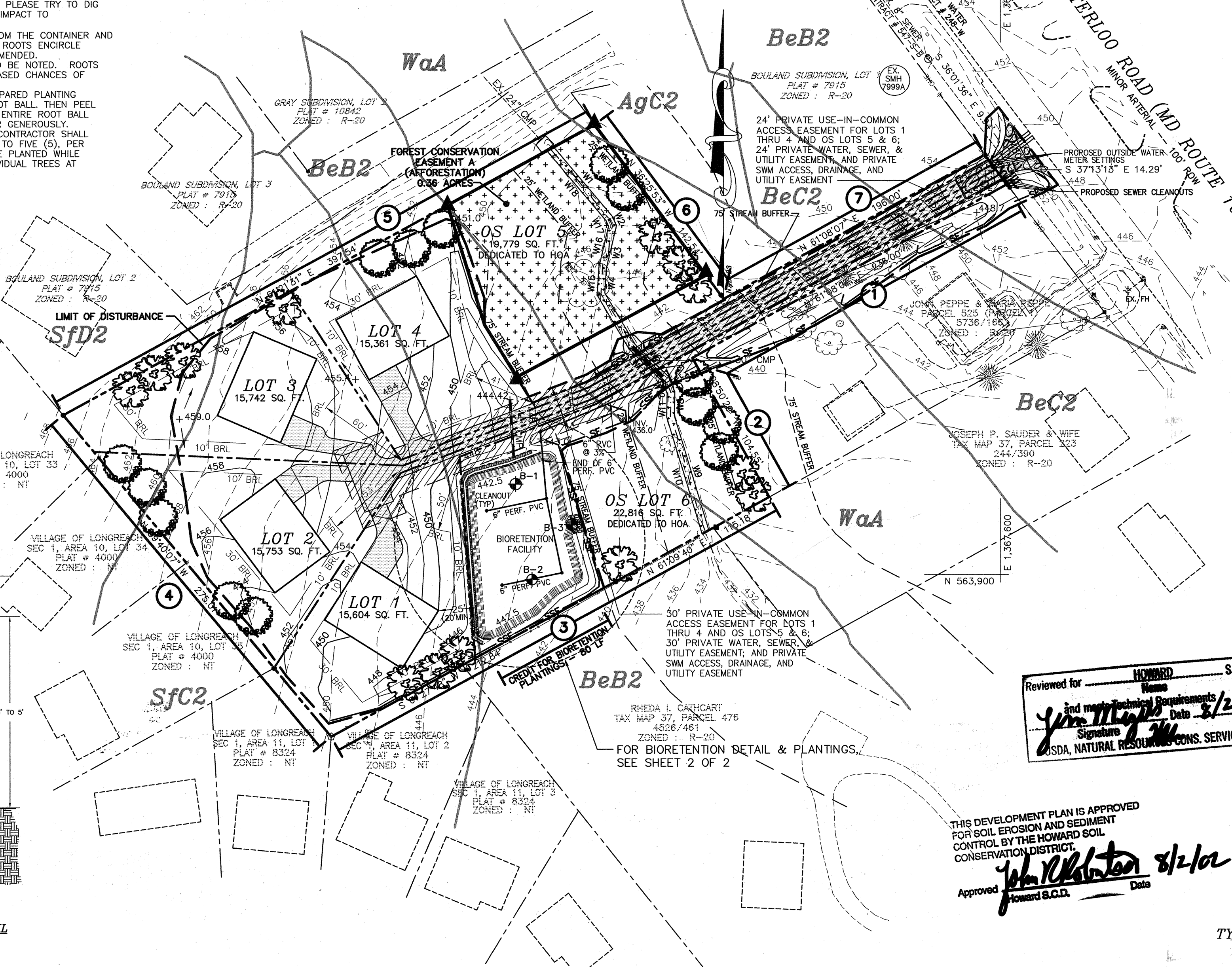
GENERAL NOTES

- TAX MAP 37 - PARCEL 525 (PARCEL 2), BLOCK 1.
- SUBJECT PROPERTY ZONED R-20 PER THE 10/18/03 COMPREHENSIVE ZONING PLAN.
- THIS PLAN IS BASED ON A FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED MARCH 2001 BY MILDENBERG, BOENDER & ASSOC., INC.
- COORDINATES BASED ON NAD '83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 37R2 & 37A3.
- STA. NO. 37R2 N 562,611.457 ELEV. 400.40
STA. NO. 37A3 N 561,544.484 ELEV. 385.63
N 1,371,544.484 E 1,369,913.218
- DENOTES AN IRON PIN OR IRON PIPE FOUND.
- DENOTES AN ANGULAR CHANGE IN BEARING OF BOUNDARY OR RIGHT-OF-WAY.
- BR DENOTES A BUILDING RESTRICTION LINE.
- ALL AREAS ARE MORE OR LESS AS SHOWN.
- THIS SUBDIVISION IS IN THE METROPOLITAN DISTRICT.
- NO BURIAL GROUNDS OR CEMETERIES EXIST ON-SITE.
- NO STEEP SLOPES, 15% TO 25% SLOPES, OR FLOODPLAIN EXIST ON-SITE.
- WETLAND DELINEATION PREPARED BY WILDMAN ENVIRONMENTAL SERVICES, INC. IN JULY 2001.
- THE FOREST CONSERVATION OBLIGATION WILL BE MET BY THE PLACEMENT OF 0.36 ACRES (15,681.6 SQ. FT.) OF AFFORESTATION IN A FOREST CONSERVATION EASEMENT AREA PER THE REQUIREMENTS OF SECTION 18.122 OF THE HOWARD COUNTY CODE AND 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. FINANCIAL SURETY FOR THE 0.36 ACRES (15,681.6 SQ. FT.) OF AFFORESTATION HAS BEEN POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT IN THE AMOUNT OF \$7,840.00.
- NO HISTORIC DISTRICTS ARE ADJACENT TO THIS SITE. SITE IS NOT ADJACENT TO A DESIGNATED SCENIC ROAD.
- DENOTES A PRIVATE USE-IN-COMMON DRIVEWAY EASEMENT AND PRIVATE WATER, SEWER, & UTILITY EASEMENT.
- DENOTES WETLANDS.
- DENOTES A FOREST CONSERVATION EASEMENT (AFFORESTATION).
- THERE ARE NO EXISTING DWELLINGS ON-SITE.
- AREA OF SUBDIVISION = 2.41 AC.
- AREA OF THE SMALLEST LOT = 15,361 SQ. FT. (14,000 SQ. FT. MINIMUM LOT) OPEN SPACE REQUIRED = 30% OF 2.41 ACRES = 0.72 ACRES. OPEN SPACE PROVIDED (CREDITED) = 0.94 ACRES. OPEN SPACE PROVIDED (TOTAL) = 0.98 ACRES.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO ENSURE SAFE ACCESS FOR PASSENGER VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 - WIDTH - 12 FEET (14 FEET SERVING MORE THAN ONE RESIDENT).
 - SURFACE - 6 INCHES COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING.
 - GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM OF 45-FOOT TURNING 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.
- FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND ROAD RIGHT-OF-WAY LINE AND NOT TO THE PIPESTEM LOT DRIVEWAY.
- STORMWATER MANAGEMENT REQUIREMENTS WILL BE SATISFIED VIA ON-SITE BEST MANAGEMENT PRACTICES. THE STORMWATER MANAGEMENT FACILITY LOCATED ON OPEN SPACE LOT 6 WILL BE REQUIRED IN ACCORDANCE WITH THE CURRENT MDE AND HOWARD COUNTY DESIGN MANUALS.
- WATER AND SEWER SERVICE TO THESE LOTS WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 18.122.B OF THE HOWARD COUNTY CODE.
- SURFACE 6 INCHES COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING. LANDSCAPING FOR LOTS 1 THRU 4 HAS BEEN PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING (27 SHADE TREES) HAS BEEN POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT IN THE AMOUNT OF \$8,100.00 (3 SHADE TREES ON LOT 1 IN THE AMOUNT OF \$900.00, 5 SHADE TREES ON LOT 2 IN THE AMOUNT OF \$1,500.00, 4 SHADE TREES ON LOT 3 IN THE AMOUNT OF \$1,200.00, AND 3 SHADE TREES ON LOT 4 IN THE AMOUNT OF \$900.00).
- DEVELOPER RESERVES UNTO ITSELF, ITS SUCCESSORS AND ASSIGNS, ALL EASEMENTS SHOWN ON THIS PLAN FOR WATER, SEWER, DRAINAGE, AND OTHER PUBLIC UTILITIES AND FOREST CONSERVATION (DESIGNATED AS "FOREST CONSERVATION EASEMENT"), LOCATED IN, ON, OVER AND THROUGH LOTS 1 THRU 6, ANY CONVEYANCE OF AFFORESTED LOTS SHALL BE SUBJECT TO THE EASEMENT HEREIN RESERVED, WHETHER OR NOT EXPRESSLY STATED IN THE DEED(S) CONVEYING SAID LOTS. DEVELOPER SHALL EXECUTE AND DELIVER DEEDS FOR THE EASEMENTS HEREIN RESERVED TO HOWARD COUNTY WITH A METES AND BOUNDS DESCRIPTION OF THE FOREST CONSERVATION EASEMENT. UPON COMPLETION OF THE PUBLIC UTILITIES AND THEIR ACCEPTANCE BY HOWARD COUNTY, AND IN THE CASE OF THE FOREST CONSERVATION EASEMENT, UPON COMPLETION OF THE DEVELOPER'S OBLIGATIONS UNDER THE FOREST CONSERVATION INSTALLATION AND MAINTENANCE AGREEMENT EXECUTED BY THE DEVELOPER AND THE COUNTY, AND THE RELEASE OF THE DEVELOPER'S SURETY POSTED WITH SAID AGREEMENT, THE COUNTY SHALL ACCEPT THE EASEMENTS AND RECORD THE DEED(S) OF THE EASEMENT IN THE LAND RECORDS OF HOWARD COUNTY.
- NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE WETLANDS, STREAMS, OR THEIR BUFFERS EXCEPT AS DETERMINED TO BE ESSENTIAL BY THE DEPARTMENT OF PLANNING AND ZONING.
- NO GRAVITY SEWER SERVICE WILL BE PROVIDED FOR LOTS 1 THRU 4. SEWER SERVICE WILL BE PROVIDED BY PRIVATE LOW PRESSURE SEWER AND ON-SITE PUMPS. OUTSIDE METER SETTINGS IN ACCORDANCE WITH STANDARD DETAIL W-3.34 WILL BE UTILIZED FOR THE INDIVIDUAL WHCS.
- APPLICATION WAS APPROVED ON FEBRUARY 26, 2002, BY THE MDE NON-TIDAL WETLANDS & WATERWAYS DIVISION FOR THE DRIVEWAY CROSSING OF THE WETLANDS, STREAM, AND THEIR BUFFERS FOR THE INSTALLATION OF A 30" CMP UNDER BRACKEN DRIVE.
- OPEN SPACE LOTS 5 AND 6 WILL BE CONVEYED TO THE HOMEOWNERS ASSOCIATION.
- THIS PLAN IS IN CONFORMANCE WITH THE 4TH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- A SITE DEVELOPMENT PLAN WILL BE REQUIRED FOR LOTS 1 TO 4.
- THIS PROJECT IS SUBJECT TO MP-02-73, APPROVED ON MARCH 26, 2002, WAVING SECTION 16.124(1)(I) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS TO ALLOW THE CREATION OF TWO OPEN SPACE LOTS WITH A REDUCED ROAD FRONTAGE OF 4.03 FEET & 4.04 FEET ON A STATE ROAD RIGHT-OF-WAY. THE FOLLOWING CONDITIONS APPLY:
 - OS LOTS 5 & 6 SHALL HAVE MINIMUM PIPESTEM WIDTH OF 4' WHICH SHALL ACCESS ONTO WATERLOO ROAD.
 - ACCESS TO OS LOTS 5 & 6 SHALL BE PROVIDED BY THE 24' WIDE USE-IN-COMMON ACCESS EASEMENT AND SHALL BE INCLUDED IN THE MAINTENANCE AGREEMENT.
 - A STATE HIGHWAY ACCESS PERMIT MUST BE OBTAINED FROM MSHA.
- THIS PROJECT IS SUBJECT TO A REQUEST FOR ALTERNATIVE COMPLIANCE TO DESIGN MANUAL VOLUME 1, SECTION 16.124(1)(I), APPROVED ON MAY 17, 2002, TO ALLOW THE REDUCTION OF THE 25-FOOT SETBACK FOR THE SWM FACILITY TO 1.8 FEET BETWEEN THE TOE OF EMBANKMENT AND THE PROPERTY LINE.

PROJECT	01-006	DATE	JUNE 2002
ENGINEERING	01-006	DATE	JUNE 2002
ILLUSTRATION	01-006	DATE	JUNE 2002
SCALE	1"=50'	DATE	JUNE 2002
APPROVAL		DATE	JUNE 2002
REVISIONS		DATE	JUNE 2002

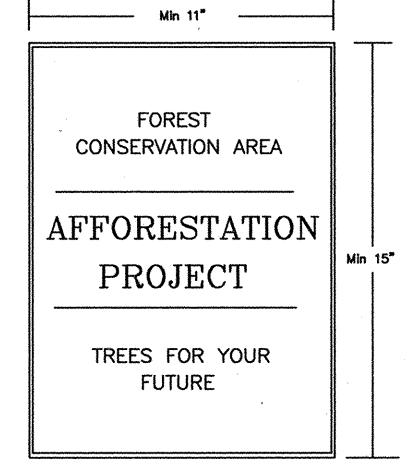
WATERLOO ROAD PROPERTY, LOTS 1 THRU 4 AND OPEN SPACE LOTS 5 & 6
TAX MAP 37 - PARCEL 525 (PARCEL 2) - GRID 1
SIXTH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND
LANDSCAPE, FOREST CONSERVATION, & SWM PLAN

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland, 21042
(410) 997-0266 Fax: (301) 621-5621 Wash. (410) 997-0298 Pbx.

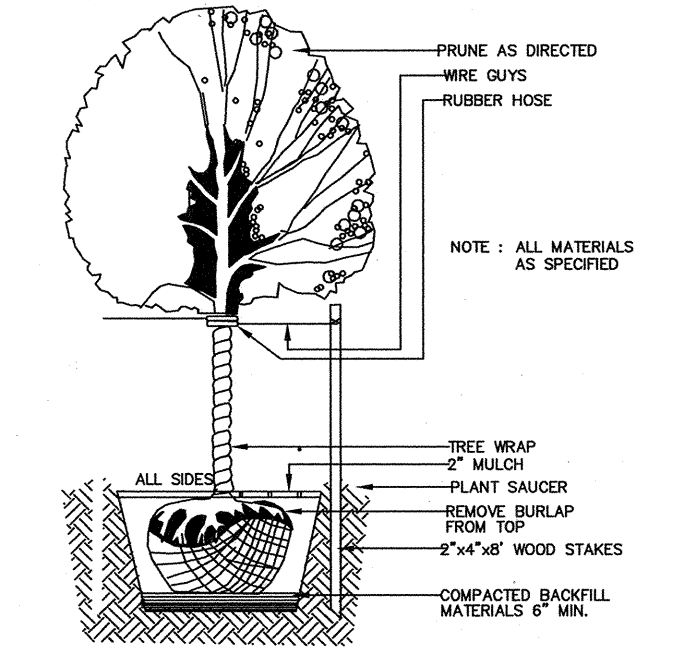


LEGEND

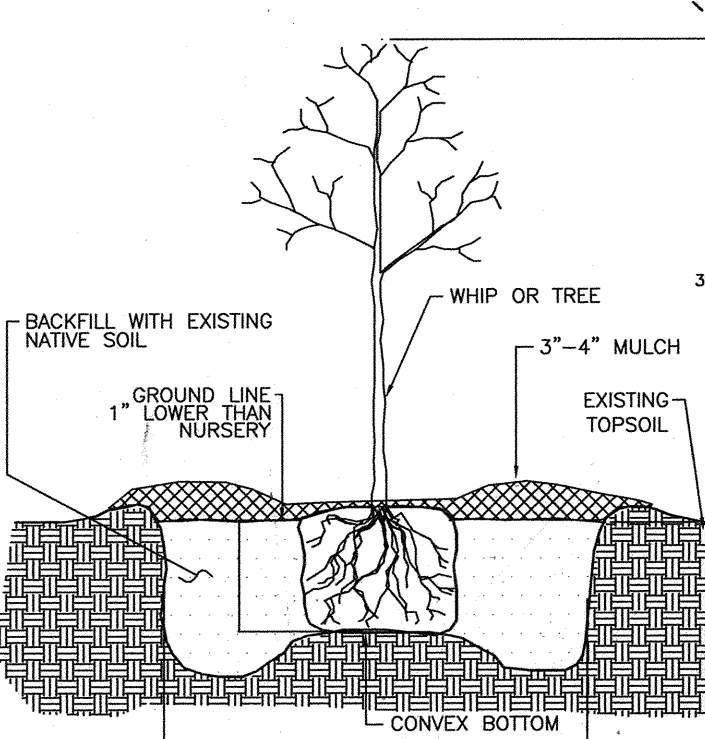
- ▲ DENOTES FOREST CONSERVATION SIGNAGE
- ▨ DENOTES A PRIVATE USE-IN-COMMON DRIVEWAY EASEMENT AND PRIVATE WATER, SEWER, & UTILITY EASEMENT
- ▤ DENOTES WETLANDS
- DENOTES A FOREST CONSERVATION EASEMENT (AFFORESTATION)
- ▧ STABILIZED CONSTRUCTION ENTRANCE



SIGNAGE DETAIL
NOT TO SCALE



TYPICAL LANDSCAPE TREE PLANTING DETAIL
NOT TO SCALE



AFFORESTATION TREE PLANTING DETAIL

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, COMPLETED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

NAME: CREIG Northrop, Managing Member? DATE: 6/24/02

APPROVED: Cindy Hamata DATE: 7/1/02
CHIEF, DIVISION OF DEVELOPMENT

APPROVED: [Signature] DATE: 7/1/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION

SHEET INDEX

SHEET NO.	DESCRIPTION
1	LANDSCAPE, FOREST CONSERVATION, & SWM PLAN
2	SWM & DRIVEWAY NOTES & DETAILS
3	EROSION & SEDIMENT CONTROL NOTES & DETAILS

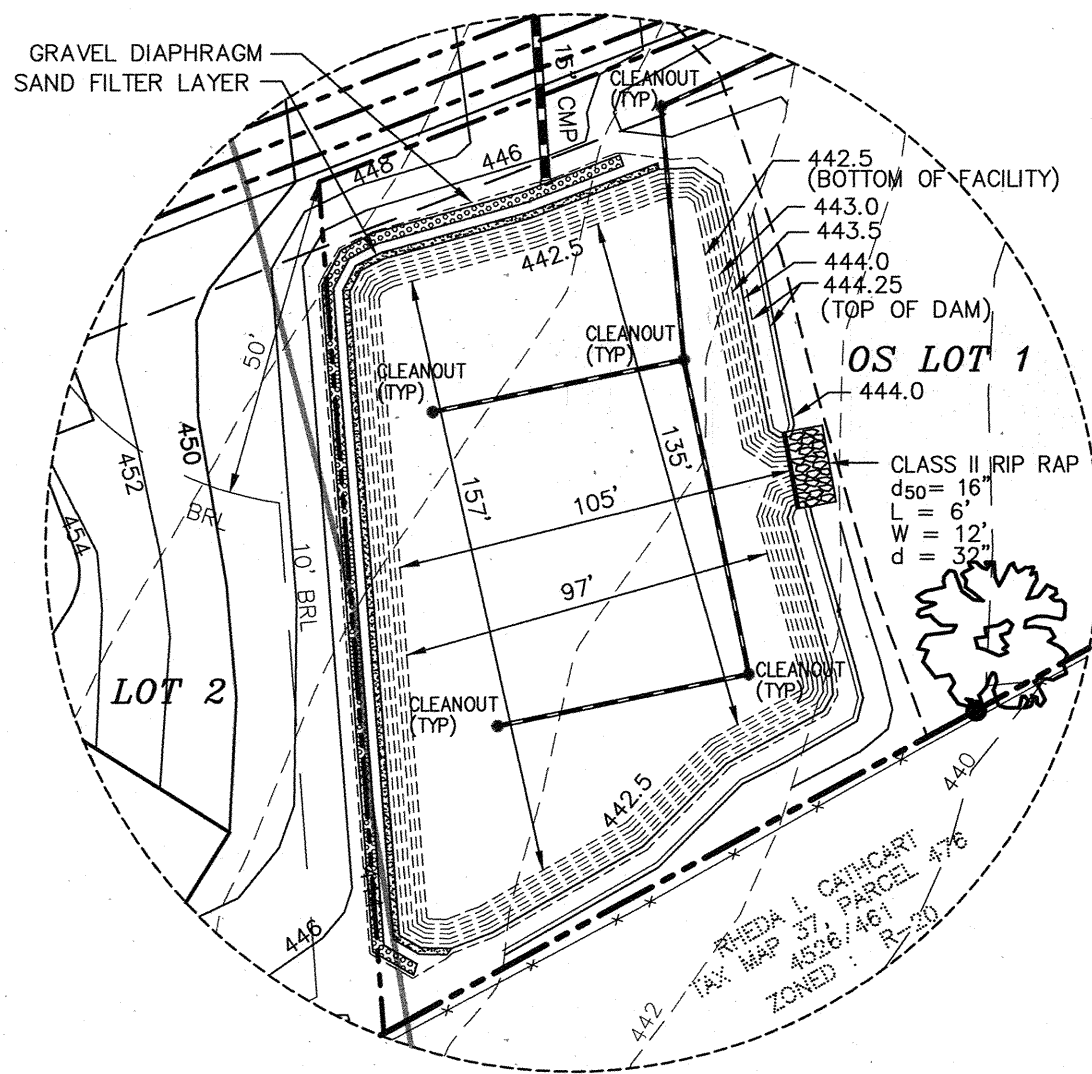
LANDSCAPE REQUIREMENT PLANTING SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
13	●	ACER RUBRUM 'RED SUNSET' OR EQUIVALENT	RED SUNSET RED MAPLE	2 1/2" - 3" CAL.
14	○	TILIA CORDATA 'GREENSPIRE' OR EQUIVALENT	GREENSPIRE LITTLELEAF LINDEN	2 1/2" - 3" CAL.
TOTAL 27 SHADE TREES				

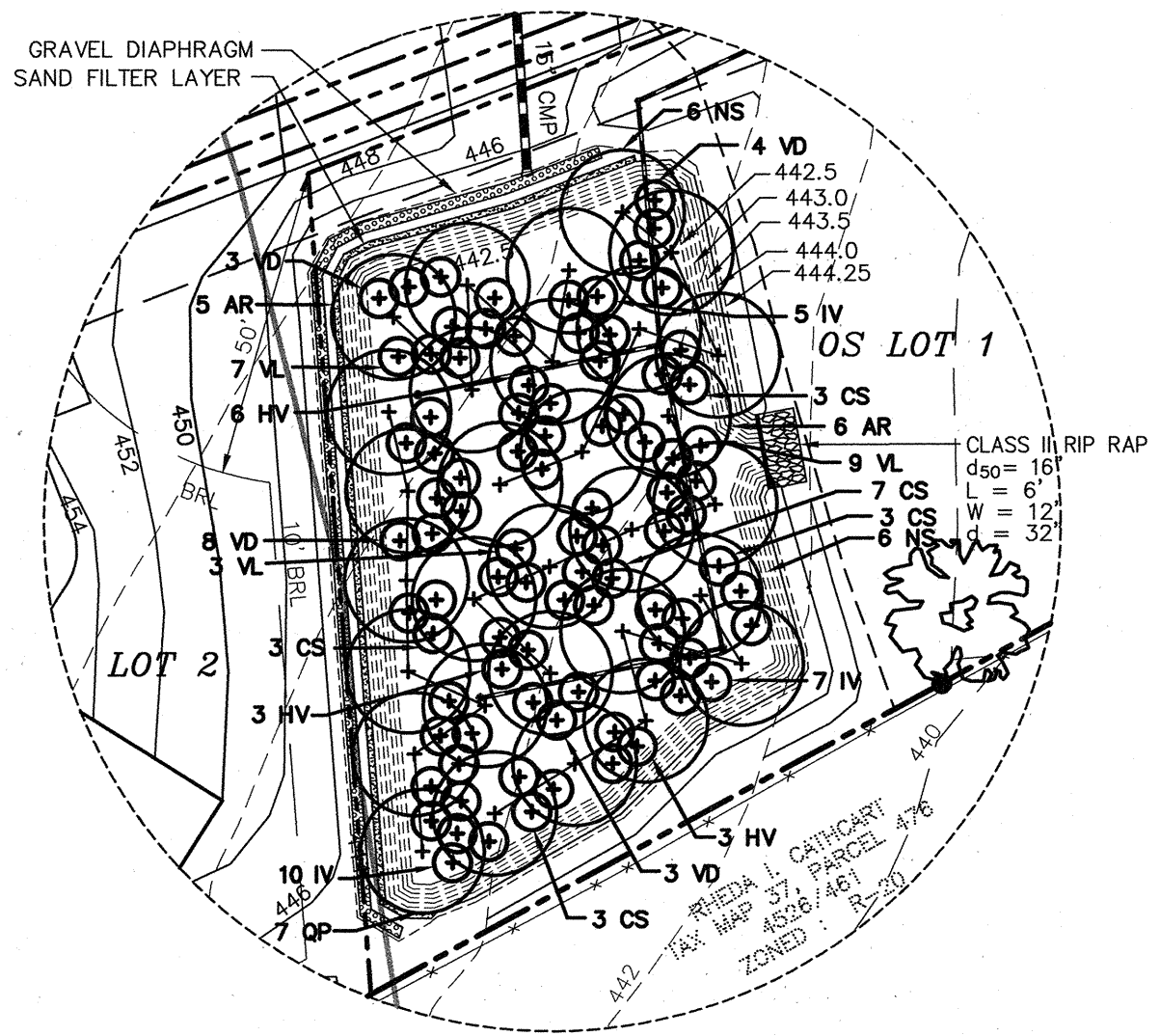
SCHEDULE A : PERIMETER LANDSCAPED EDGE

CATEGORY	ADJACENT TO PERIMETER PROPERTIES							TOTAL
	A (PERIMETER 1)	A (PERIMETER 2)	A (PERIMETER 3)	A (PERIMETER 4)	A (PERIMETER 5)	A (PERIMETER 6)	A (PERIMETER 7)	
LANDSCAPE TYPE	236.00 LF	104.55 LF	328.02 LF	275.01 LF	397.54 LF	142.54 LF	196.00 LF	
LINEAR FEET OF PERIMETER								
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)	NO	NO	NO	NO	NO	NO	NO	NO
CREDIT FOR WALL, FENCE, OR BERM (YES, NO, LINEAR FEET)	NO	NO	YES, 80 LF OF BIOTENTION PLANTINGS	NO	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED	4 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	2 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	4 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	5 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	7 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	2 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	3 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	27 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS
NUMBER OF PLANTS PROVIDED	4 SHADE TREES 0 EVERGREEN TREES 0 OTHER TREES (2:1 SUBSTITUTION) 0 SHRUBS (10:1 SUBSTITUTION)	2 SHADE TREES 0 EVERGREEN TREES 0 SUBSTITUTION TREES 0 SHRUBS	4 SHADE TREES 0 EVERGREEN TREES 0 SUBSTITUTION TREES 0 SHRUBS	5 SHADE TREES 0 EVERGREEN TREES 0 SUBSTITUTION TREES 0 SHRUBS	7 SHADE TREES 0 EVERGREEN TREES 0 SUBSTITUTION TREES 0 SHRUBS	2 SHADE TREES 0 EVERGREEN TREES 0 SUBSTITUTION TREES 0 SHRUBS	3 SHADE TREES 0 EVERGREEN TREES 0 SUBSTITUTION TREES 0 SHRUBS	27 SHADE TREES 0 EVERGREEN TREES 0 SUBSTITUTION TREES 0 SHRUBS

* THE FOUR REQUIRED PERIMETER 1 LANDSCAPE TREES HAVE BEEN RELOCATED TO PERIMETER 2, AND THE THREE REQUIRED PERIMETER 7 LANDSCAPE TREES HAVE BEEN RELOCATED ALONG PERIMETER 6.



BIORETENTION DETAIL
SCALE: 1" = 30'



BIORETENTION PLANTING DETAIL
SCALE: 1" = 30'

BIORETENTION AREA PLANTING SCHEDULE

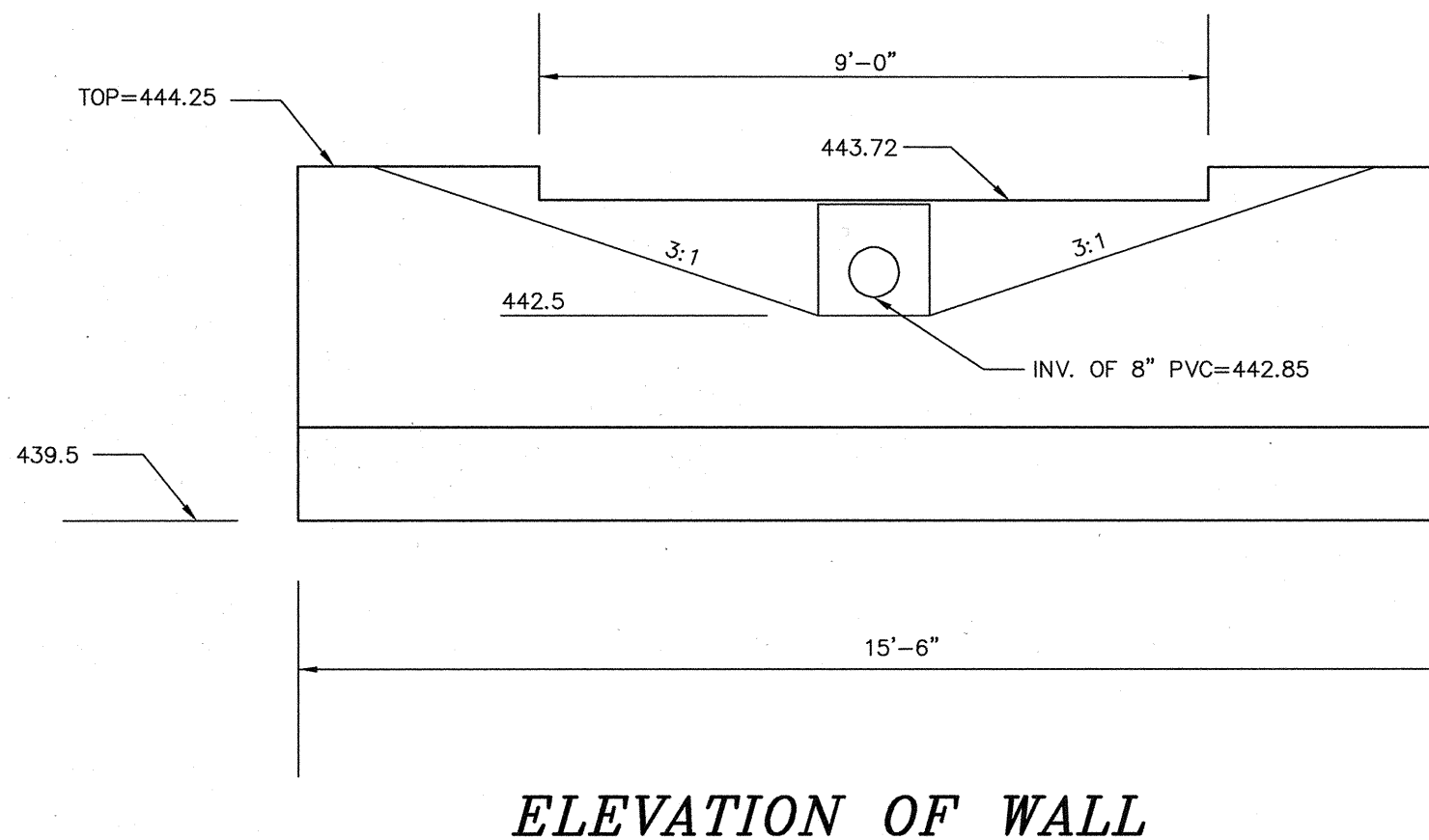
TREES					
QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	
11	AR	ACER RUBRUM RED SUNSET	RED SUNSET RED MAPLE	2-1/2" - 3" CAL.	
12	NS	NYSSA SYLVATICA	BLACK GUM	2-1/2" - 3" CAL.	
7	QP	QUERCUS PALUSTRIS	PIN OAK	2-1/2" - 3" CAL.	
TOTAL: 30 TREES					

SHRUBS					
QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	
19	CS	CORNUS STOLONIFERA	RED OSIER DOGWOOD	2.5 - 3' HT.	
22	IV	ILEX VERTICILLATA	WINTERBERRY	2.5 - 3' HT.	
12	HV	HERMAMELIS VIRGINIANA	WITCH HAZEL	2.5 - 3' HT.	
18	VD	VIORNUM DENTATUM	ARROWWOOD	2.5' - 3' HT.	
19	VL	VIORNUM LENTAGO	NANNYBERRY	2.5' - 3' HT.	
TOTAL: 90 SHRUBS					

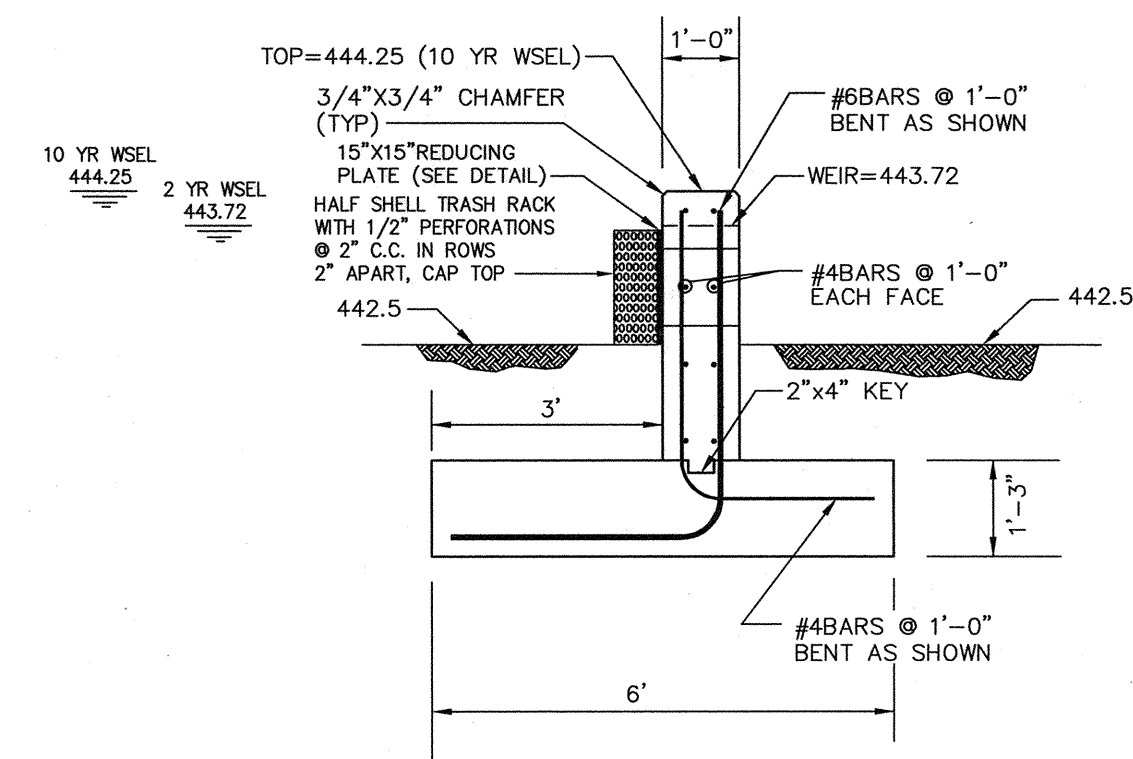
OPERATION AND MAINTENANCE SCHEDULE FOR BIORETENTION AREAS (TO BE PRIVATELY MAINTAINED)

- ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER, AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.
- SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
- MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
- SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

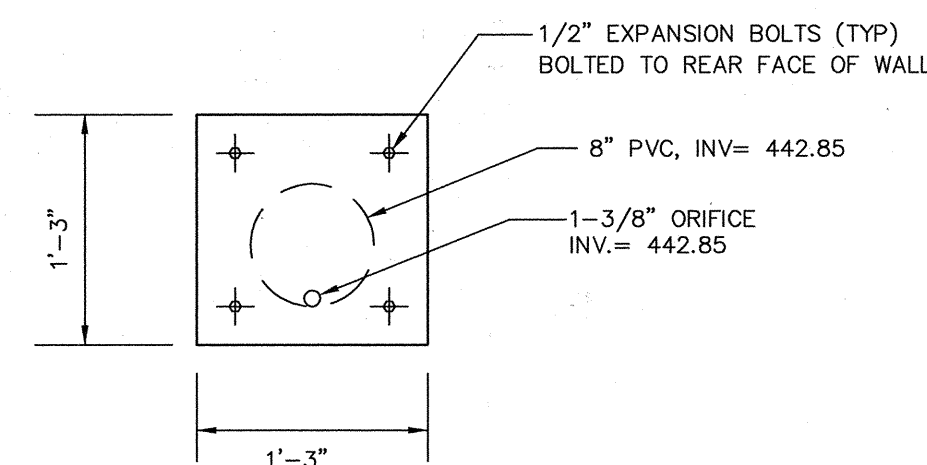
MAINTENANCE SCHEDULE FOR BIORETENTION AREA			
Note: SWM Facility will be privately maintained.			
DESCRIPTION	METHOD	FREQUENCY	TIME OF YEAR
SOIL			
INSPECT AND REPAIR EROSION	VISUAL	MONTHLY	MONTHLY
ORGANIC LAYER			
REMULCH ANY VOID AREAS	BY HAND	WHENEVER NEEDED	WHENEVER NEEDED
REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER (OPTIONAL)	BY HAND	ONCE EVERY TWO TO THREE YEARS	SPRING
ANY ADDITIONAL MULCH ADDED (OPTIONAL)	BY HAND	ONCE A YEAR	SPRING
PLANTS			
REMOVAL AND REPLACEMENT OF ALL DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT	SEE PLANTING SPECIFICATIONS	TWICE A YEAR	3/15 TO 4/30 AND 10/1 TO 11/30
TREAT ALL DISEASED TREES AND SHRUBS	MECHANICAL OR BY HAND	N/A	VARIES, DEPENDS ON INSECT OR DISEASE INFESTATION
WATERING OF PLANT MATERIAL SHALL TAKE PLACE AT THE END OF EACH DAY FOR FOURTEEN CONSECUTIVE DAYS AFTER PLANTING HAS BEEN COMPLETED	BY HAND	IMMEDIATELY AFTER COMPLETION OF PROJECT	N/A
REPLACE STAKES AFTER ONE YEAR	BY HAND	ONCE A YEAR	ONLY REMOVE STAKES IN THE SPRING
REPLACE ANY DEFICIENT STAKES OR WIRES.	BY HAND	N/A	WHENEVER NEEDED



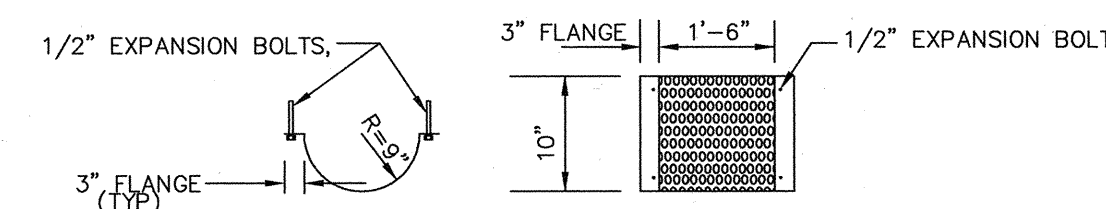
ELEVATION OF WALL



TYPICAL SECTION OF WALL



REDUCING PLATE DETAIL



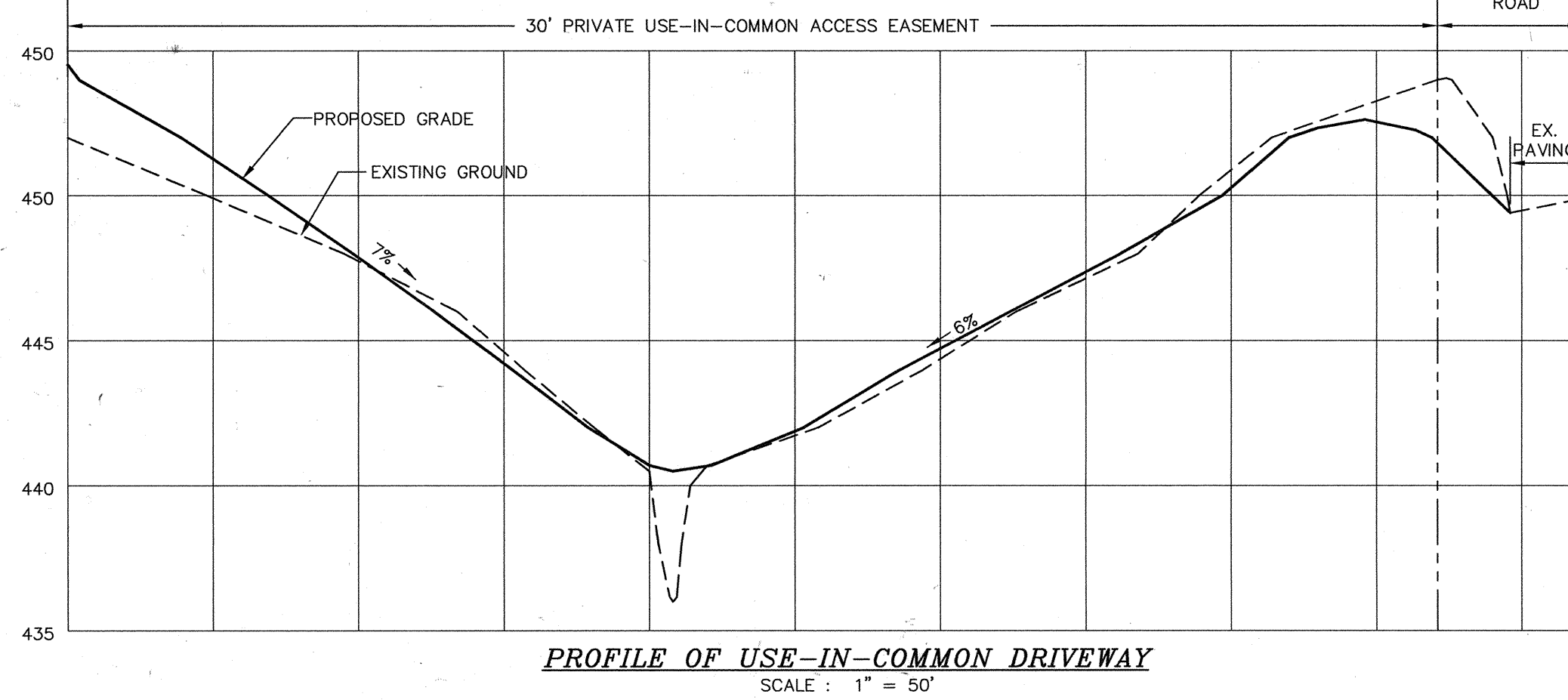
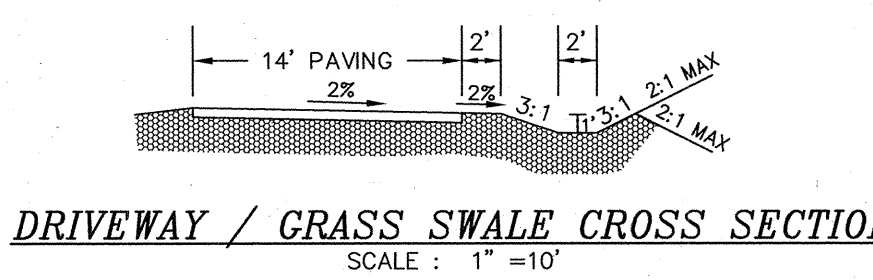
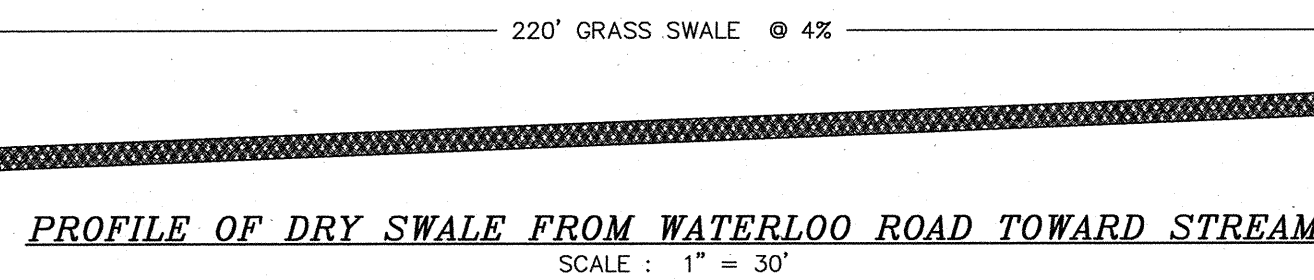
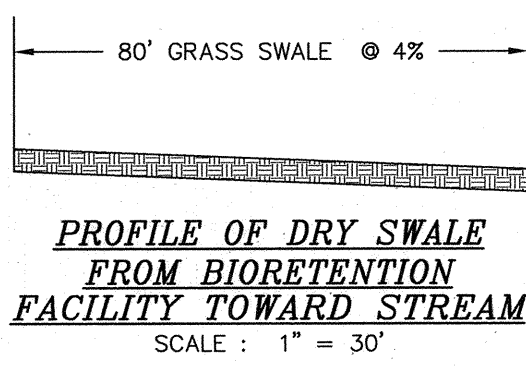
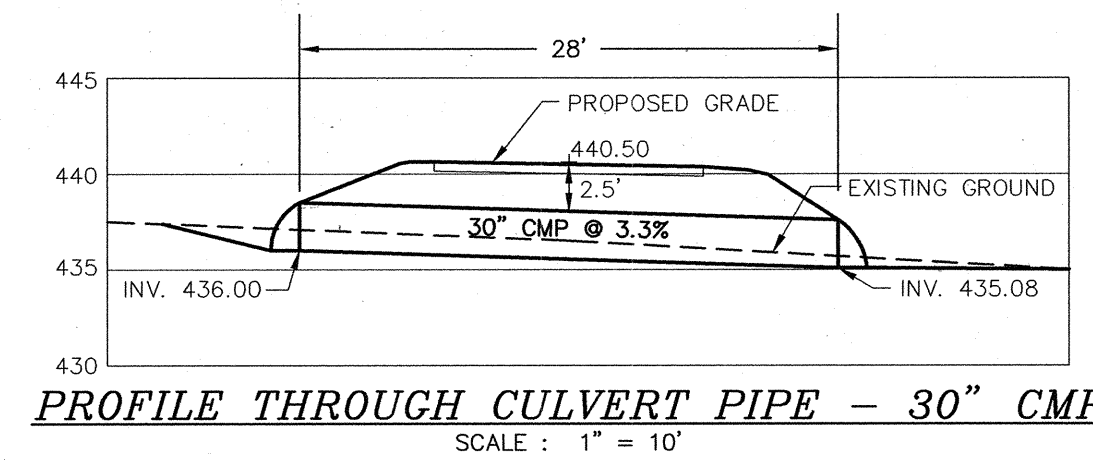
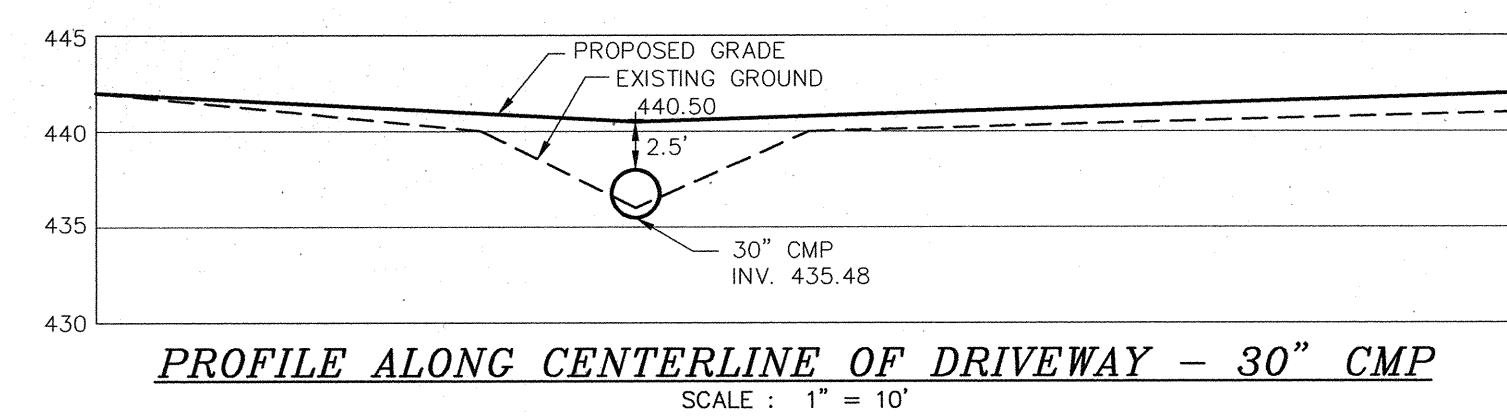
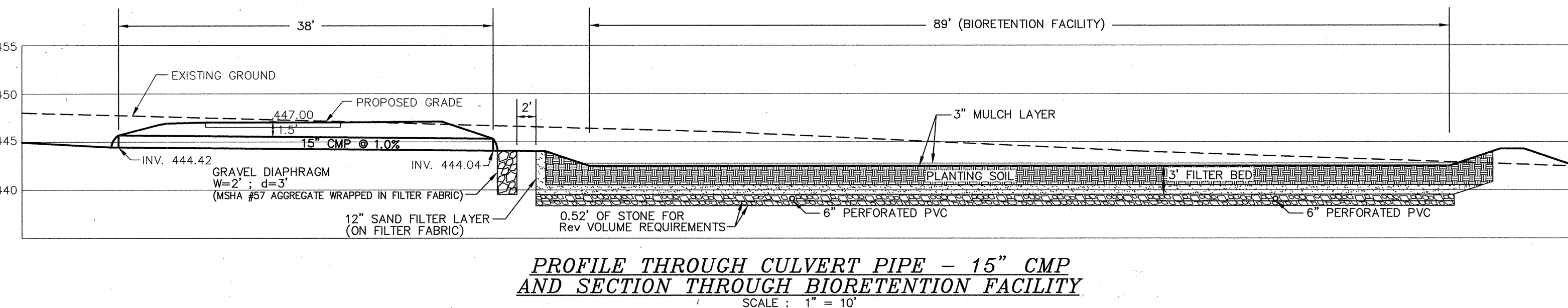
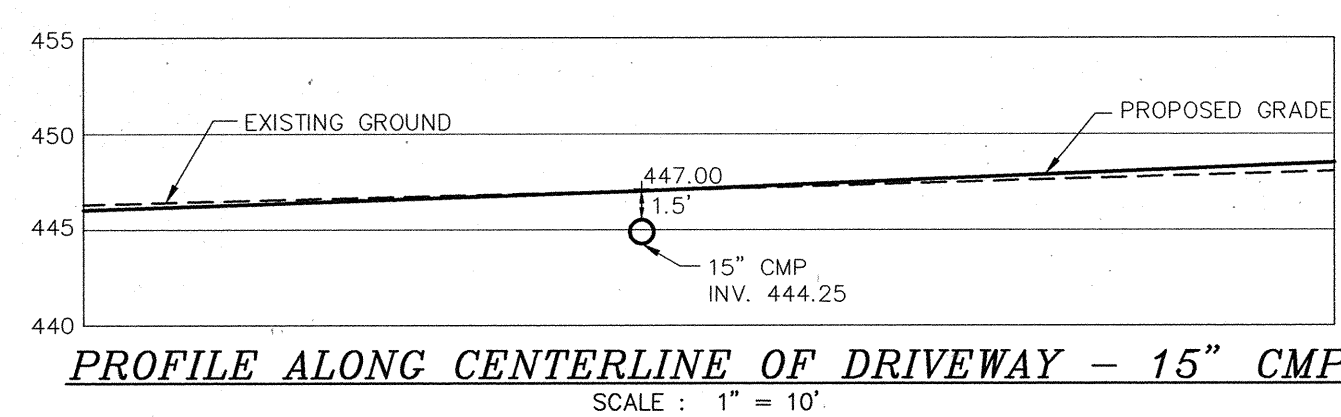
HALF SHELL TRASH RACK

GENERAL NOTES:

- CONCRETE SHALL BE MSHA MIX NO. 3 (f'c = 3,500 PSI)
- REINFORCING SHALL BE Fy = 60,000 PSI, EPOXY COATED
- ALL WORK SHALL CONFORM TO THE LATEST STANDARDS AND SPECIFICATIONS OF MSHA
- ALL FILL UNDER FOOTERS OF PROPOSED STRUCTURE SHALL BE COMPACTED TO 95% OF AASHTO T-99, AS CERTIFIED BY AN ON-SITE GEO-TECHNICAL ENGINEER
- MINIMUM ALLOWABLE BEARING PRESSURE OF 1,500 PSF SHALL BE VERIFIED BY ON-SITE GEO-TECHNICAL ENGINEER
- ALL RE-BAR SPICES SHALL BE 24 INCH LAP SPICES OR EQUIVALENT
- PROVIDE ELASTOMERIC BRIT FACE ROCK, NO. 159 OR EQUIVALENT FORM LINERS ON ALL EXPOSED FACES OF CONCRETE WALL
- EXPANSION AND CONTRACTION JOINTS SHALL CONFORM TO TO STANDARDS AND DETAILS OF THE MSHA.

PLANTING SOIL:

PROVIDE A MINIMUM OF 2.5 FEET OF PLANTING SOIL WITH A 1.0 FEET GRAVEL LAYER BENEATH. PLANTING SOIL SHALL BE SANDY LOAM, LOAMY SAND, OR LOAM TEXTURE AND SHALL HAVE A COMPOSITION OF AT LEAST 10 TO 25 PERCENT CLAY. LOAMY SOILS MAY BE UTILIZED BUT MUST CONSIST OF 55% SAND. SOIL SHALL BE OF UNIFORM COMPOSITION, FREE OF STONES, STUMPS, ROOTS OR SIMILAR OBJECTS LARGER THAN ONE INCH, BRUSH, OR ANY OTHER MATERIAL OR SUBSTANCE WHICH MAY BE HARMFUL TO PLANT GROWTH. PLANTING SOIL SHALL BE FREE OF PLANTS OR PLANT PARTS OF BERBERIS, QUACK GRASS, JOHNSON GRASS, MUGWORT, NUTSEDGE, POISON IVY, CANADIAN THISTLE, OR OTHER SUCH NUISANCE MATERIAL. SOILS SHALL HAVE AN INFILTRATION RATE IN EXCESS OF 0.5 IN/HR. AND A SOIL ACIDITY (PH) BETWEEN 5.5 AND 6.5. PERFORATED PVC UNDERDRAIN IS TO BE SET IN THE CENTER GRAVEL LAYER BENEATH THE PLANTING SOIL.



BY THE ENGINEER:
I, **Eric Milberger**, 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 DEVELOPER THAT HE HAS AND CONSIDERED THE PROFESSIONAL ENGINEER SURVEY POND CONSTRUCTION AND EROSION CONTROL PLAN AND SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DATE: 6/24/02
SIGNATURE OF DEVELOPER: *Eric Milberger*
PRINTED NAME OF DEVELOPER: **Eric Milberger Managing Member**

BY THE DEVELOPER:
I, **Jim Meyer**, 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.

DATE: 8/2/02
SIGNATURE OF DEVELOPER: *Jim Meyer*
PRINTED NAME OF DEVELOPER: **Jim Meyer**

DATE: 8/2/02
SIGNATURE OF DEVELOPER: *John Hillman*
PRINTED NAME OF DEVELOPER: **John Hillman**

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF BUREAU OF HIGHWAYS
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 7/12/02
DATE: 7/9/02

Project	01-006	date	JUNE 2002
Illustration	SJD	engineering	RDH
Scale	1" = 60'	approval	

description	revisions	date

WATERLOO ROAD PROPERTY,
LOTS 1 THRU 4 AND OPEN SPACE LOTS 5 & 6
TAX MAP 37 - PARCEL 525 (PARCEL 2) - GRID 1
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SWM & DRIVEWAY NOTES & DETAILS

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.

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 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

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

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ.FT.) OF UNROTTED WEED FREE SMALL GRAIN STRAW IMMEDIATELY AFTER APPLICATION. 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 THERE TO.

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), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC.52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.

6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

Table with 3 columns: SITE ANALYSIS, TOTAL AREA OF SITE, ACRES, AREA DISTURBED, ACRES, AREA TO BE ROOFED OR PAVED, ACRES, AREA TO BE VEGETATIVELY STABILIZED, ACRES, TOTAL CUT, CU. YDS., TOTAL FILL, 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.

Professional engineering stamps and signatures for the engineer (Mildenberg & Assoc., Inc.), developer (Crest Northrop), and various officials from the Howard County Department of Inspections, Licenses and Permits.

10) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

11) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

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:
I. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND, OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTAMINATED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2" IN DIAMETER.

II. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONSON GRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
III. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.

III. FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:

I. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.

IV. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:

I. ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING:
a. pH FOR TOPSOILS SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A pH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PERSORBED TO RAISE THE pH TO 6.5 OR HIGHER.
b. ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT.
c. TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED.
d. NO SOD OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

NOTE: TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
II. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.

III. TOPSOIL APPLICATION
I. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.
II. GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBERT 4" - 8" HIGHER IN ELEVATION.

III. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" TO 8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.

IV. TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

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:

I. COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES SHALL BE TESTED TO PRESCRIBE AMENDMENTS AND FOR SITES HAVING AREAS UNDER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
a. COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM: A PERSON OR PERSONS WHO ARE PERMITTED (AT THE TIME OF ACQUISITION OF THE COMPOST) BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UNDER COMAR 26.04.06.
b. COMPOSTED SLUDGE SHALL CONTAIN AT 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.

II. 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.

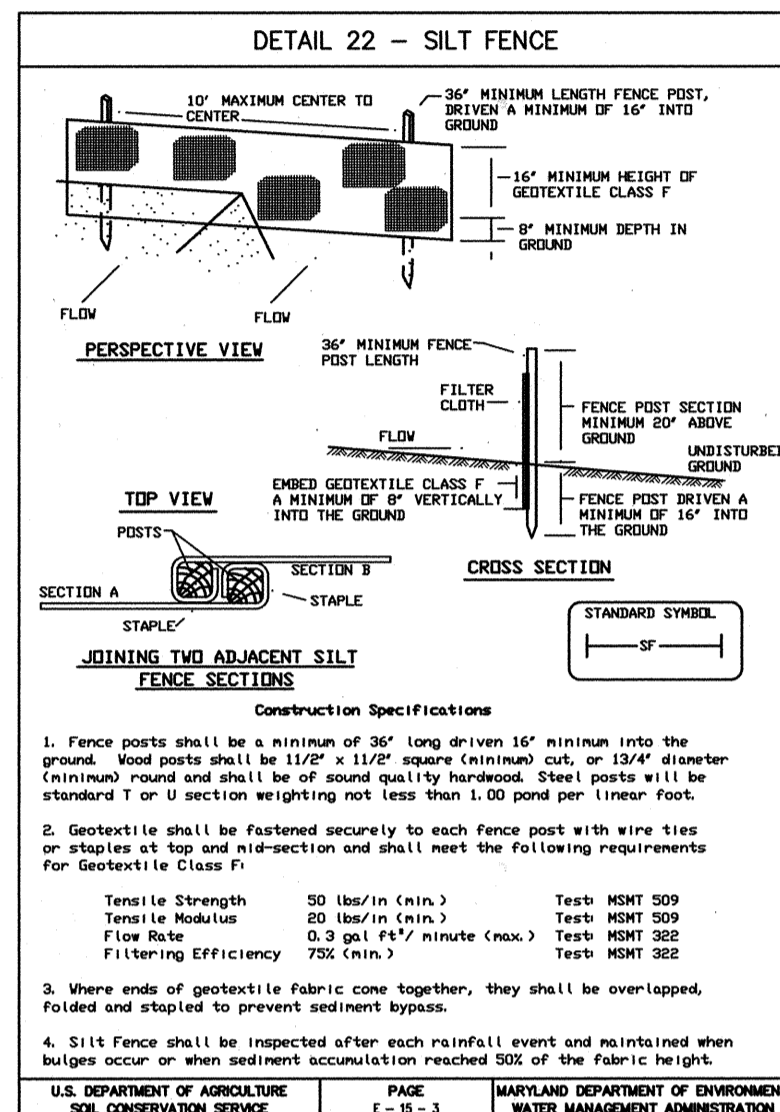
REFERENCES: GUIDELINE SPECIFICATIONS, SOIL PREPARATION AND SODDING, MD-VIA, PUB. #1, COOPERATIVE EXTENSION SERVICE, UNIVERSITY OF MARYLAND AND VIRGINIA POLYTECHNIC INSTITUTES. REVISED 1973.

EROSION AND SEDIMENT CONTROL NOTES

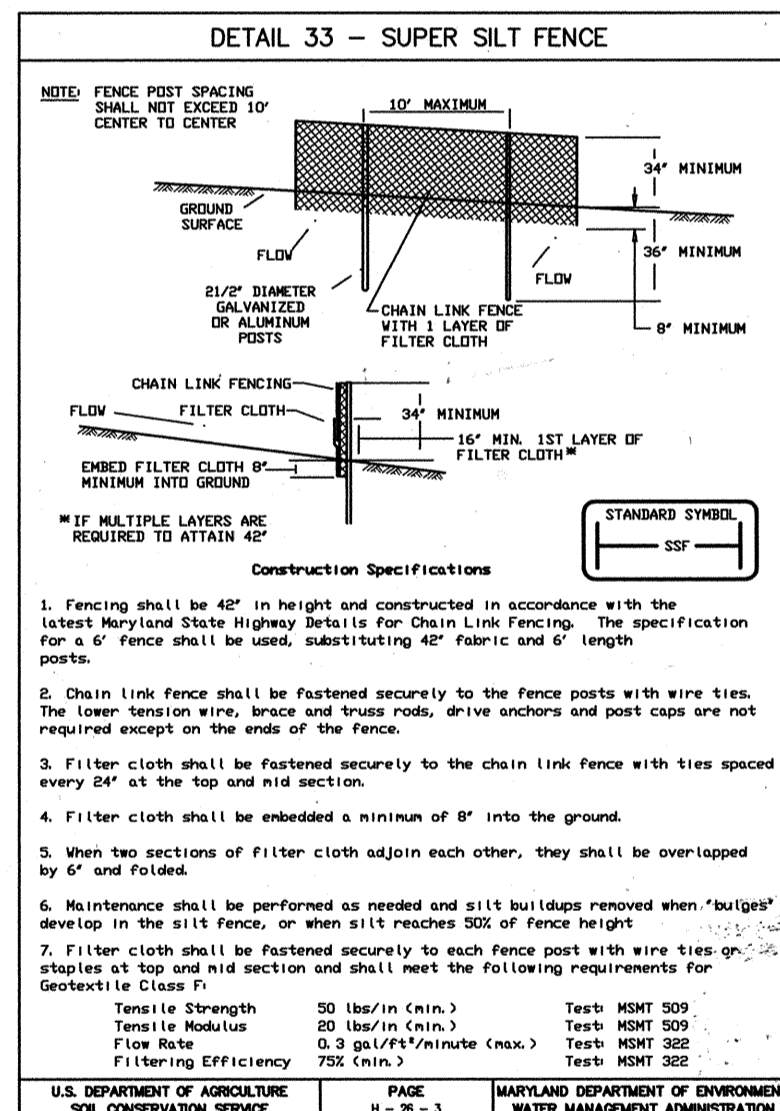
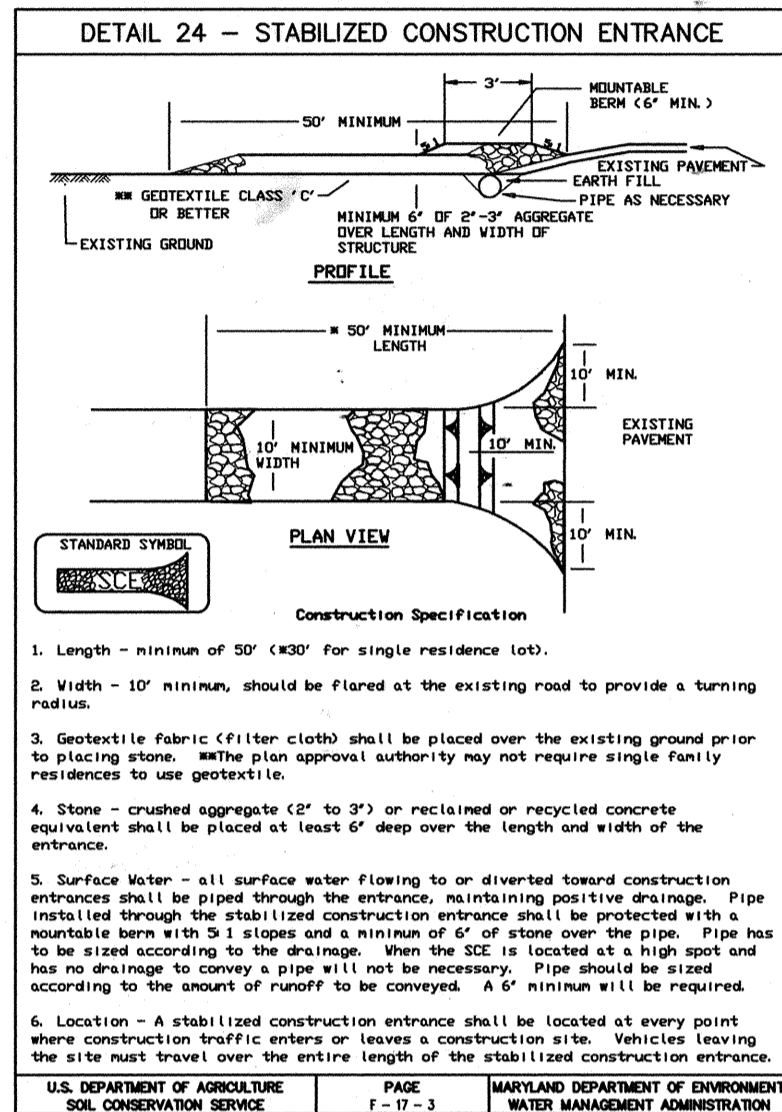
- 1. ALL SEDIMENT CONTROL OPERATIONS ARE TO BE DONE IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY VOLUME IV DESIGN MANUAL AND THE STANDARDS AND SPECIFICATIONS FOR SEDIMENT CONTROL IN DEVELOPING AREAS.
2. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AS THE FIRST ORDER OF BUSINESS.
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.

SEQUENCE OF CONSTRUCTION

- 1. OBTAIN GRADING PERMIT. (1 DAY)
2. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE (1 DAY)
3. CONSTRUCT SILT FENCE AND SUPER SILT FENCE. (1 DAY)
4. CONSTRUCT STREAM DIVERSION. (1 DAY)
A. SANDBAG STREAM AT UPSTREAM AND DOWNSTREAM LIMITS OF CULVERT CONSTRUCTION AREA.
B. PROVIDE PORTABLE PUMP TO DIVERT STREAM AROUND CULVERT CONSTRUCTION AREA.
C. CONSTRUCT CULVERT AS SHOWN ON PLANS.
D. STABILIZE DISTURBED AREAS PER PLAN.
E. REMOVE DOWNSTREAM SANDBAGS.
F. REMOVE UPSTREAM SANDBAGS.
5. RECEIVE PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR TO PROCEED.
6. BRING SITE TO DESIGN GRADES, CONSTRUCT SITE PER APPROVED DRAWINGS. (3 DAYS)
7. STABILIZE DISTURBED AREAS. (1 DAY)
8. CONSTRUCT 15' CMP AND BIOTRETMENT FACILITY. (2 DAYS)
9. WHEN ALL CONTRIBUTING AREAS TO SEDIMENT AND EROSION CONTROL DEVICES HAVE BEEN STABILIZED, AND WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT AND EROSION CONTROL DEVICES AND STABILIZE REMAINING DISTURBED AREAS. (3 DAYS)
10. PLANT BIOTRETMENT FACILITY AND AFForestation AREA PER PLANS. (6 DAYS)
11. STABILIZE REMAINING DISTURBED AREAS. (2 DAYS)



SILT FENCE. Silt Fence Design Criteria table with columns for Slope Steepness, Slope Length (Maximum), and Silt Fence Length (Maximum). Includes construction specifications and a table of U.S. Department of Agriculture and Maryland Department of Environment standards.



SUPER SILT FENCE. Design Criteria table with columns for Slope, Slope Steepness, Slope Length (Maximum), and Silt Fence Length (Maximum). Includes construction specifications and a table of U.S. Department of Agriculture and Maryland Department of Environment standards.

Maryland's Guidelines to Waterway Construction DETAIL 1.2 : PUMP-AROUND PRACTICE. Includes a diagram of a pump-around structure and detailed construction instructions.

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Project information table with columns for date, project, illustration, scale, and approval.

Revision table with columns for date, description, and revision number.

WATERLOO ROAD PROPERTY, LOTS 1 THRU 4 AND OPEN SPACE LOTS 5 & 6. TAX MAP 37 - PARCEL 525 (PARCEL 2) - GRID 1. SIXTH ELECTION DISTRICT. HOWARD COUNTY, MARYLAND. EROSION & SEDIMENT CONTROL NOTES & DETAILS.

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