

MY. ST AGGRECATE CROUT. SEMANT. AND ACT MECESSARY APPURTENANCE SHALL SE INCIDENTAL TO THE PRICE BIO.

Maryland Department of Transportation

48" DIAMETER PRECAST MANHOLE

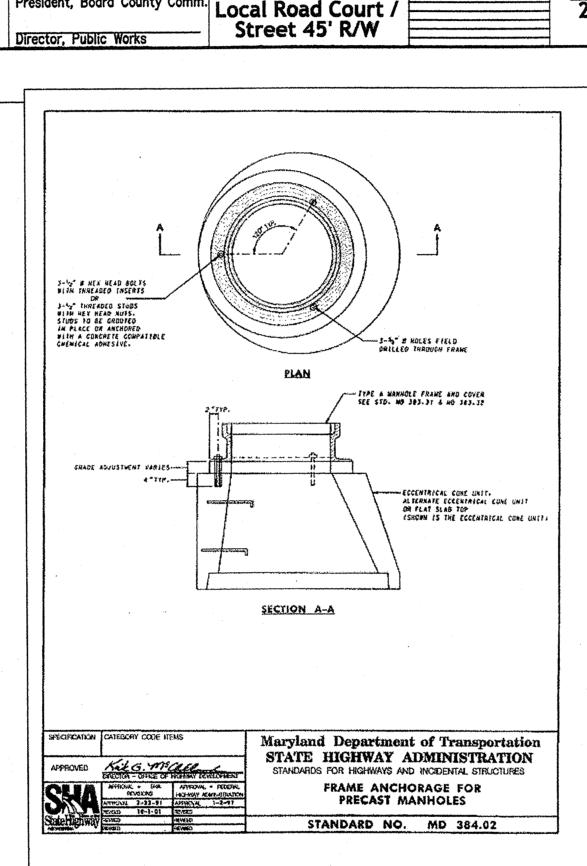
FOR 12" TO 24" PIPES

STANDARD NO. MD 384.01

STATE HIGHWAY ADMINISTRATION

EPECHICATION CATEGORY CODE ITEMS

APPROVED ALL G. YOU CHEEN CONDEN



Guard rail—With fills 15' or greater in height or fills of 8' or more with slopes

Typical easement—2" topsoil, seed and mulch or topsoil and sod.

9.5'

*M.S.H.A.

H2"Topsoil, seed and mulch

2"Topsoil and sod

steeper than 4:1.

22.5'(Min.)

—1" Bituminous Conc. Band SN

-2" Bituminous Conc. Band BF/BI

----9" Bank Run Gravel

2"Topsoil, seed and mulch on grades less than 5%, or 8" bank run gravel

2"Topsoil and sod on grades 5% or

6" Gravel base with double bituminous

surface treatment on grades of 5% or

Shoulder Slope 6% seed or sod or gravel

4% Bituminous

Typical Section

Rural Street

Lgreater.

2.5 ≤ V <40

H2"Topsoil, seed and mulch

42"Topsoil and sod

See plate $\frac{R}{1}$ for typical

te: Tack Coat required between paving

layers at a rate of 0.05-0.10 gal./s.y.

shoulder detail

St. Mary's County Department of Public Works

DOUBLE OPENING

Maryland Department of Transportation

STATE HIGHWAY ADMINISTRATION

STANDARD TYPE K INLET

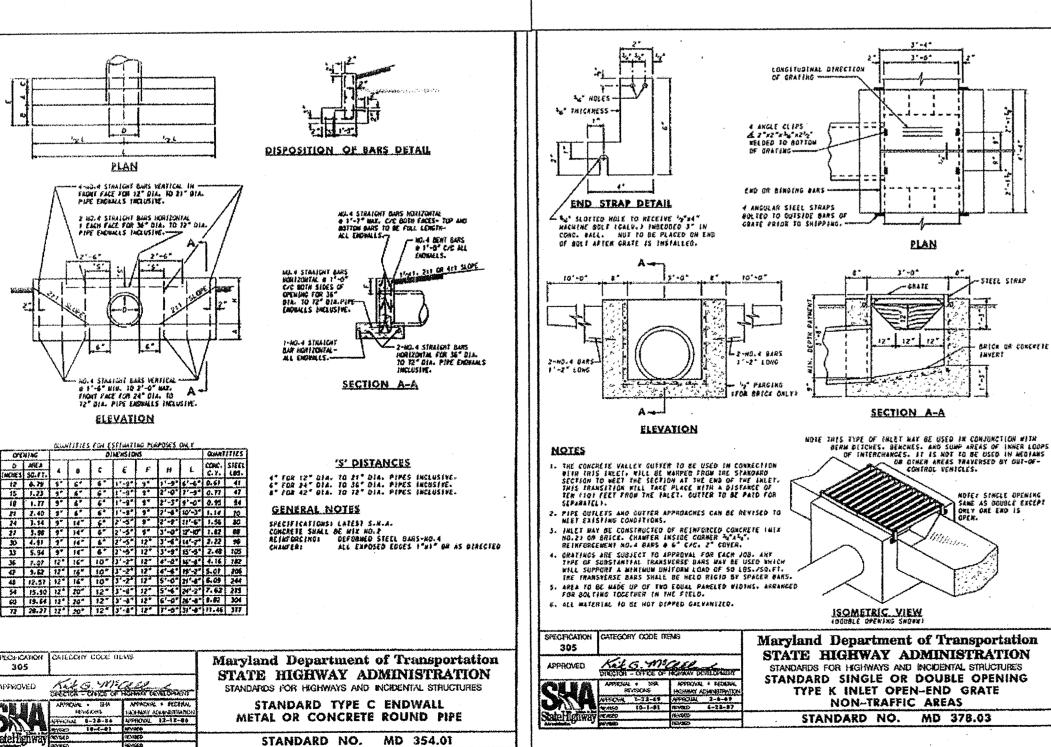
REPLACEMENT GRATE

STANDARD NO. MD 378.04

voatos for highways and incidental structures

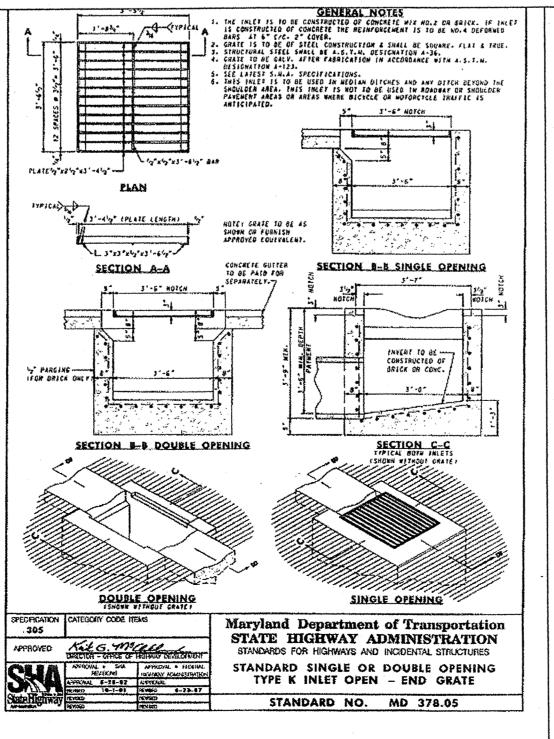
V ≥ 40

22.5'(Min.)



SINGLE OPENING

Kit G. MECHEL DRECTOR - CHICK OF HISHMY DEVELO

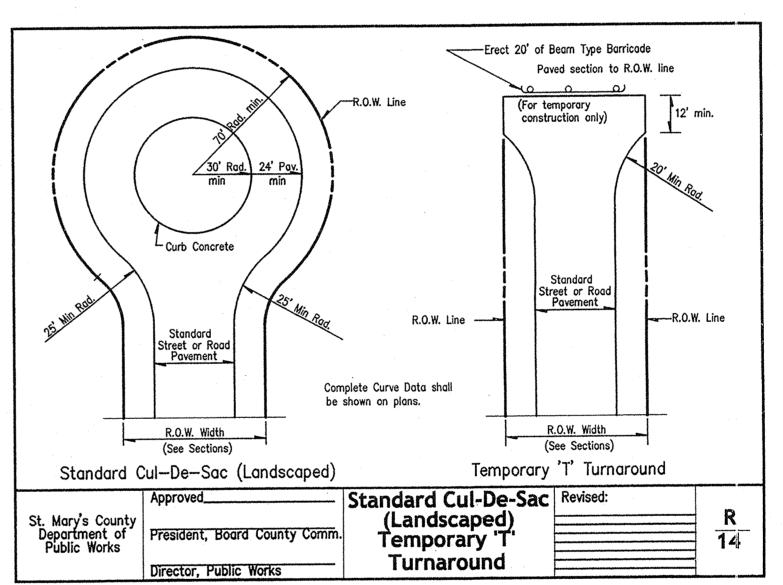


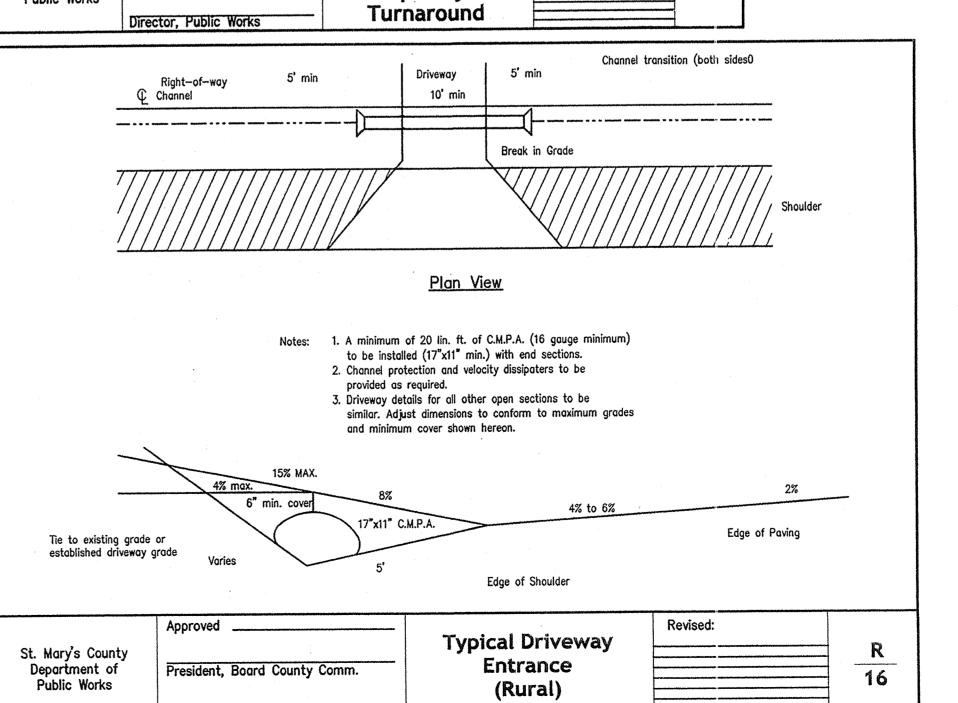
ROAD CONSTRUCTION NOTES

- . THE SPECIFICATIONS FOR THIS PROJECT SHALL BE THOSE OF THE MARYLAND STATE HIGHWAY ADMINISTRATION TITLED "STANDARD SPECIFICATIONS FOR CONSTRUCTION MATERIALS", JANUARY 2001 AS CURRENTLY AMENDED WITH THE FOLLOWING EXCEPTIONS: SN AND BF PAVEMENT MIX,
- USE 1982 SPECIFICATIONS; BF, SF AND SC PAVEMENT MIX, USE OCTOBER 1993 SPECIFICATIONS. 2. NO CONSTRUCTION (i.e. GRADING, ETC.) OR THE INSTALLATION OF UTILITIES WILL BE PERMITTED IN THE BED OF ANY PROPOSED STREET UNTIL THE STREET GRADE HAS BEEN OFFICIALLY ESTABLISHED, PLAT OF THE SAME APPROVED BY THE DEPT. OF PUBLIC WORKS AND TRANSPORTATION. 3. TRAFFIC CONTROL SIGNS AND STREET NAME SIGNS MUST BE INSTALLED UPON COMPLETION OF
- THE BASE ASPHALT COURSE. THE CONTRACTOR/DEVELOPER WILL BE RESPONSIBLE FOR MAINTENANCE SYSTEM. SHEETING SHALL BE "HIGH INTENSITY" UNLESS OTHERWISE NOTED. SIGN CONSTRUCTION AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" AS CURRENTLY AMENDED.
- 4. SAMPLING OF MATERIALS (BANK RUN GRAVEL, ETC.) SHALL BE DONE IN ACCORDANCE WITH THE ST. MARY'S COUNTY SUBDIVISION ROAD CONSTRUCTION AND INSPECTION PROCEDURES AS DIRECTED BY THE DEPT. OF PUBLIC WORKS AND TRANSPORTATION TO INSURE COMPLIANCE WITH THE CURRENT MARYLAND STATE HIGHWAY ADMINISTRATION SPECIFICATIONS.
- 5. STABILIZATION OF ALL DRAINAGE CHANNELS, ROAD SHOULDERS, SLOPES AND OTHER DISTURBED AREAS WILL BE COMPLETED PRIOR TO ACCEPTANCE OF THE ROAD INTO THE ST. MARY'S COUNTY HIGHWAY MAINTENANCE SYSTEM.
- 6. ALL CORRUGATED METAL PIPES WILL BE GALVANIZED, MINIMUM 14 GAUGE (ARCH TYPE RECOMMENDED) WITH STANDARD END SECTIONS (SHA STD. No. 370.01 AND 371.01). ALL REINFORCED CONCRETE PIPE SHALL BE MINIMUM CLASS IV. ALL REINFORCED PIPE END SECTIONS SHALL BE IN ACCORDANCE WITH SHA STD. No. 368.03 AND 368.04.
- 7. STONE OR RIPRAP SHALL BE CLASS I AS PER MARYLAND STATE HIGHWAY ADMINISTRATION SPECIFICATIONS, SECTION 901.02.01 AS CURRENTLY AMENDED. 8. ALL RIPRAP IS TO BE PLACED ON DRY FILTER CLOTH. FILTER CLOTH SHALL MEET THE
- REQUIREMENTS OF SECTION 921.09 OF THE MARYLAND SHA SPECIFICATIONS AS CURRENTLY
- 9. SOD OR SEED MIXTURES USED IN LINING DRAINAGE CHANNELS SHALL BE KENTUCKY 31 TALL FESCUE, UNLESS OTHERWISE DIRECTED BY THE DEPT. OF PUBLIC WORKS AND TRANSPORTATION, AND SHALL BE IN ACCORDANCE WITH MARYLAND STATE HIGHWAY ADMINISTRATION SPECIFICATIONS, SECTION 920.04.
- 10. GUARDRAIL IS TO BE PROVIDED ALONG ALL FILLS OF 15 FEET IN HEIGHT OR GREATER, WITH SLOPES STEEPER THAN 3:1, AND/OR AS OTHERWISE RECOMMENDED IN THE ROADSIDE DESIGN GUIDE. GUARDRAIL SHALL BE PLACED WHERE NOTED ON PLAN AND CONSTRUCTED IN ACCORDANCE WITH TRAFFIC BARRIER W-BEAM SHA STD. No. 660.01. END SECTIONS SHALL BE TYPE G UNLESS OTHERWISE NOTED. TYPE A AND C END TREATMENTS ARE ALSO PERMISSIBLE.
- 11. ROADWAY CENTER LINE AND EDGE MARKINGS SHALL BE PLACED ON ALL ROADS CLASSIFIED AS A MAJOR COLLECTOR OR HIGHER. TRANSVERSE MARKINGS, SYMBOLS, AND WORD MARKING SHALL BE THERMOPLASTIC. ALL STRIPING SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND ALL MATERIALS SHALL MEET THE REQUIREMENTS OF THE MARYLAND STATE HIGHWAY ADMINISTRATION SPECIFICATIONS.
- 12. SOILS FOUND TO BE UNSUITABLE FOR CONSTRUCTION SHALL BE EXCAVATED AND REMOVED AS ENCOUNTERED DURING CONSTRUCTION OF ROAD.
- 13. AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL CONTACT ST. MARY'S COUNTY DEPT. OF PUBLIC WORKS AND TRANSPORTATION AT 301-863-8400. 14. ATTENTION IS CALLED TO PUBLIC SERVICE COMMISSION ORDER No. 60838. CHAPTER 863, EFFECTIVE DATE AUGUST 1, 1974, AND SECTION 28A, ARTICLE 78 OF THE ANNOTATED CODE OF MARYLAND, 1994, REGARDING THE PROTECTION OF UNDERGROUND UTILITIES AND THE RESPONSIBILITY OF THE CONTRACTOR CONTAINED THEREIN. THE CONTRACTOR SHALL CONTACT OTHER UTILITY COMPANIES

WHICH OPERATE IN THE AREA AND NOT IN THE "MISS UTILITY" PROGRAM.

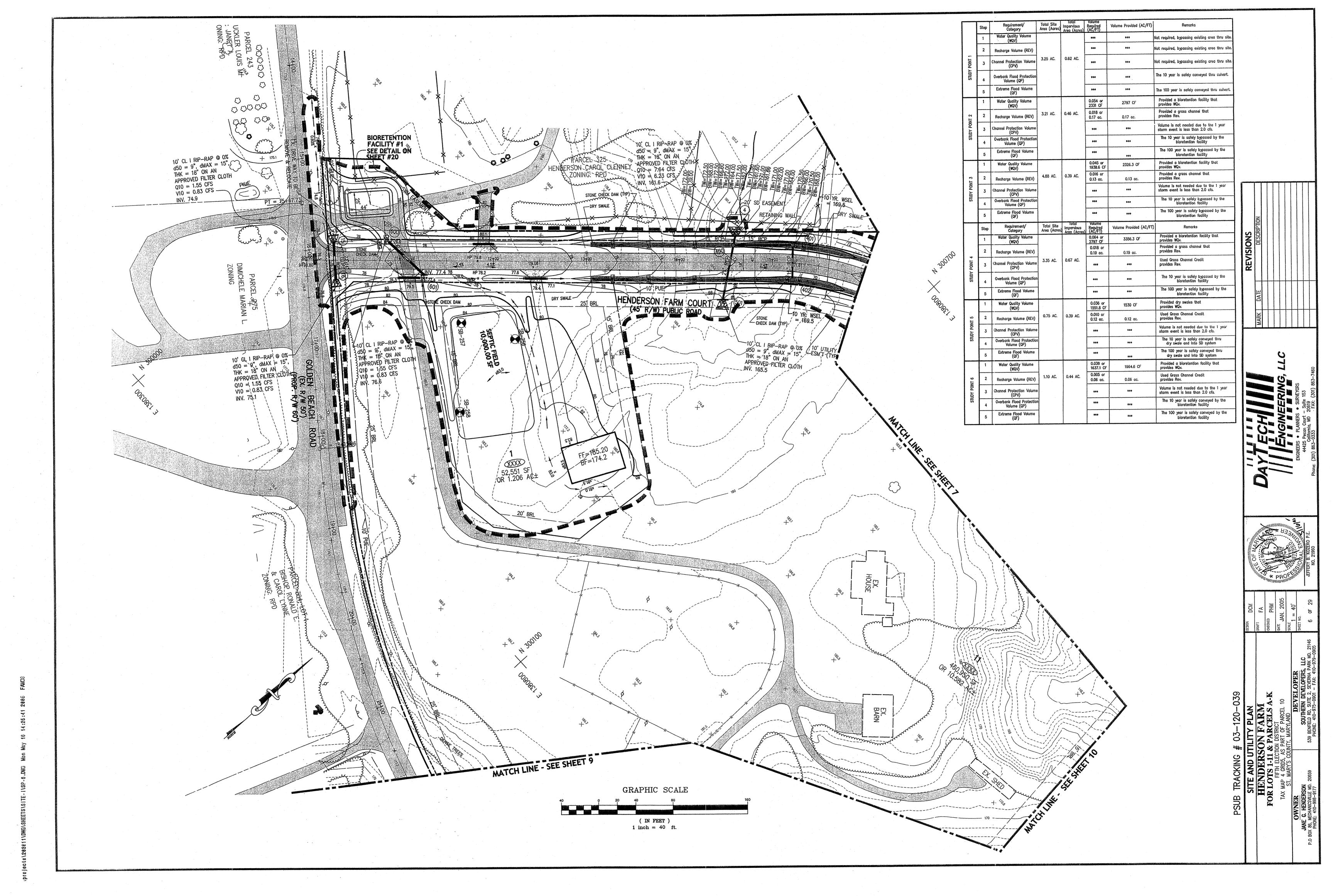
Director, Public Works

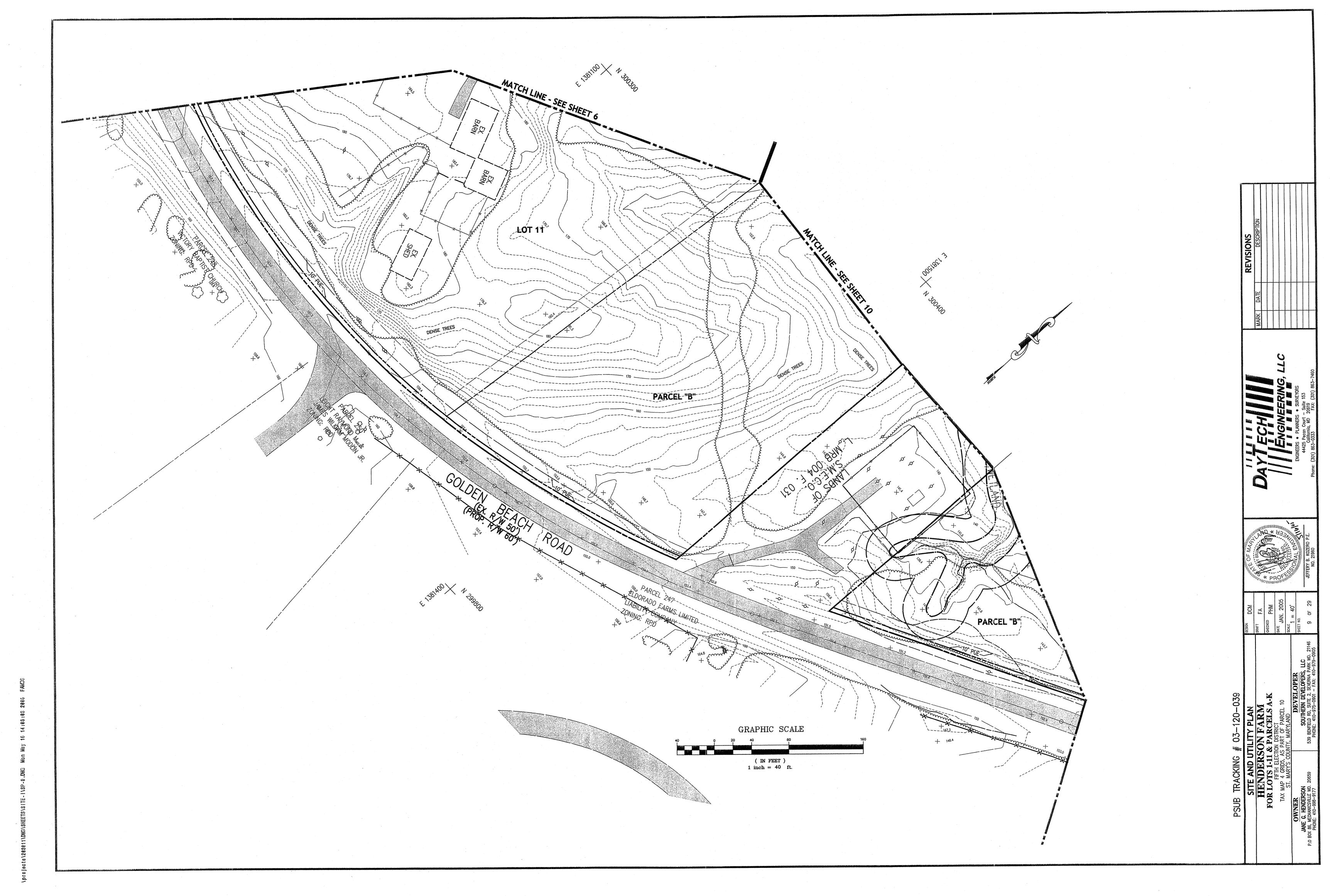


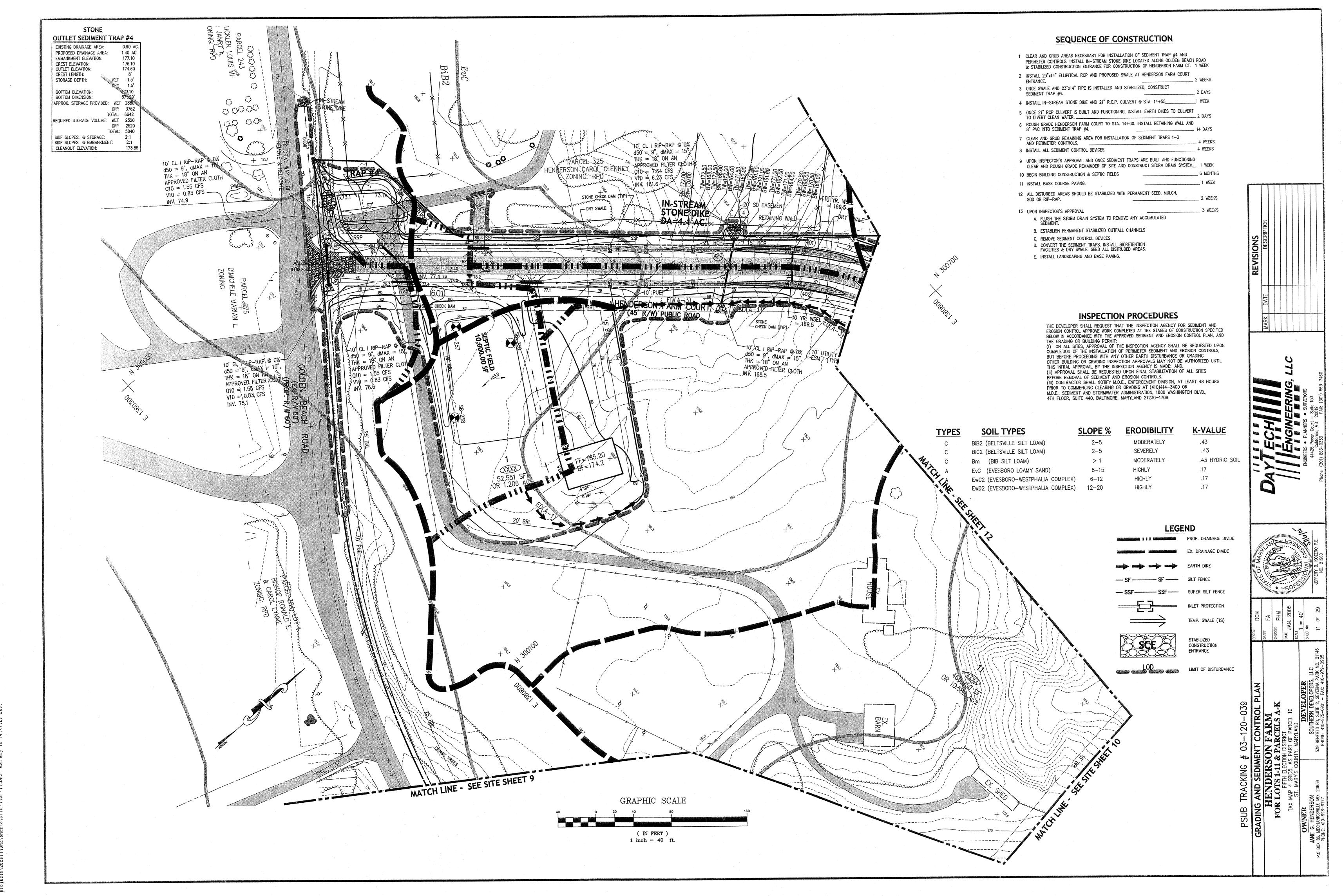




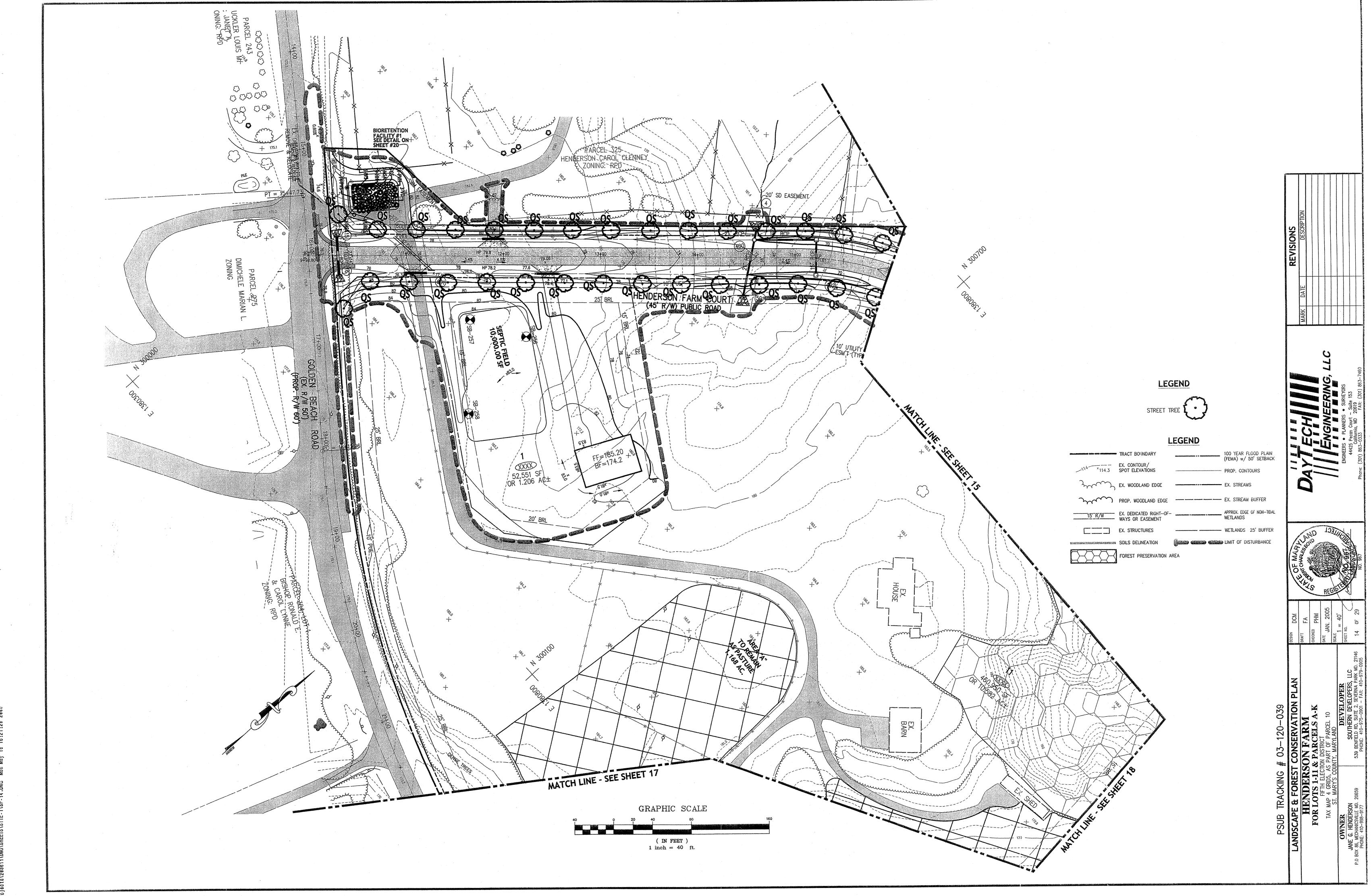
HENDERSON FARM
FOR LOTS 1-11 & PARCELS AFIFTH ELECTION DISTRICT
TAX MAP 4 GRID5, AS PART OF PARCEL 10







age activity at well and the the transfer and the state of the second



AND AND SHEETS STEELINGS AND WAY 18 18:01:00 0865

10-01-01-08-8131/NWS1SHEETS1S1TE-11SP-16 DWS Mon Nov 16 18:89:48 286

ots/208611/DWS/SHEETS/SITE-1/SP-17.DWS Mon May 16 14:54:36 206

projecte/2000/1/DMS/SHEETS/SITE-1/SP-16.DMS Mon May 10 16:00:54 20

- I. GENERAL NOTES:
- A. SCOPE: THE LANDSCAPE CONTRACTOR SHALL VERIFY ALL QUANTITIES OF PLANT MATERIAL SHOWN ON THE PLAN IN THE PLANT LIST, AND SHALL PROVIDE ALL MATERIALS, LABOR AND EQUIPMENT
- B. UTILITIES: THE LANDSCAPE CONTRACTOR SHALL NOTIFY MISS UTILITY (1-800-0257-7777) TO VERIFY THE LOCATION OF ALL MAIN UTILITIES AND SHALL ASK THE GENERAL CONTRACTOR TO LOCATE LIGHTING AND OTHER ON-SITE UTILITIES IN THE FIELD BEFORE PROCEEDING WITH THE INSTALLATION OF ANY PLANTING. IF CONDITIONS ARISE IN THE FIELD WHICH NECESSITATES THE SHIFTING OF A PLANT LOCATION MORE THAN 15', THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED PRIOR TO INSTALLATION.
- C. SUBSTITUTIONS: ANY CHANGE IN THE TYPE, SIZE AND QUANTITY OF PLANT MATERIAL BY THE LANDSCAPE CONTRACTOR MUST BE APPROVED BY THE LANDSCAPE / AND THE MNCP&PC
- URBAN DESIGN SECTION PRIOR TO INSTALLATION. D. STANDARDS: ALL PLANT MATERIAL MUST BE NURSERY GROWN AND MEET ALL OF THE QUALITATIVE CRITERIA ESTABLISHED BY THE CURRENT ISSUE OF THE AMERICAN STANDARD FOR NURSERY STOCK SPECIFICATIONS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
- E. DUG MATERIAL: ALL DUG PLANT MATERIAL SHALL HAVE BEEN DUG BEFORE BUD BREAK OR AFTER LEAF MATURATION. ANY PLANT MATERIAL EXHIBITING DROOPING NEW GROWTH WITHIN TWO (2) WEEKS OF BEING PLANTED WILL BE REJECTED AND MUST BE REMOVED FROM THE JOB.
- F. POOR DRAINAGE: NO PLANTS SHALL BE PLANTED IN SITUATIONS THAT SHOW OBVIOUS POOR DRAINAGE. SUCH SITUATIONS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT AND OWNER, AND IF THEY DEEM NECESSARY, THE PLANTS SHALL BE RELOCATED OR THE CONTRACT SHALL BE ADJUSTED TO ALLOW FOR DRAINAGE CORRECTION AT A NEGOTIATED COST. THIS NOTE DOES NOT APPLY TO THOSE PLANTS SPECIFIED AS WET CULTURE OR THOSE PLANTS INDICATED FOR WETLAND MITIGATION OR STORMWATER MANAGEMENT FACILITY PLANTINGS AND INDICATED AS SUCH ON THE
- G. SITE PREPARATION: IT SHALL BE THE GENERAL CONTRACTOR'S RESPONSIBILITY TO PRESENT "CLEAN" SOIL CONDITIONS TO THE LANDSCAPE CONTRACTOR PRIOR TO ANY LANDSCAPE INSTALLATION. "CLEAN" SOIL MAY INCLUDE ON-SITE SOIL BUT MUST BE FREE OF PAVEMENT MATERIALS, MUCK, ROOT SYSTEMS, PETROLEUM OR OTHER CHEMICAL SUBSTANCES, BLUE STONE, CONSTRUCTION DEBRIS AND OTHER MATERIALS LARGER THAN 4" IN DIAMETER. THE "CLEAN" SOIL SHALL EXTEND TO THE FOLLOWING MINIMUM DEPTHS: 18" WHERE TREES ARE PROPOSED, 12" WHERE SHRUBS ARE PROPOSED AND 4" WHERE LAWN IS PROPOSED. IF THE LANDSCAPE CONTRACTOR ENCOUNTERS ANY AREAS TO BE DEFICIENT REGARDING THESE "CLEAN" SOIL SPECIFICATIONS, HE SHALL REPORT THIS CONDITION TO THE LANDSCAPE ARCHITECT AND OWNER PRIOR TO PLANTING IN THOSE AREAS.
- WORKMANSHIP: DURING PLANTING, ALL AREAS SHALL BE KEPT NEAT AND CLEAN, AND ALL REASONABLE PRECAUTIONS SHALL BE TAKEN TO AVOID DAMAGE TO EXISTING PLANTS, TURF AND STRUCTURES. UPON COMPLETION, ALL DERRIS AND WASTER MATERIAL RESULTING FROM PLANTING OPERATIONS SHALL BE REMOVED FROM THE PROJECT AND THE AREA CLEANED UP. ANY DAMAGED AREAS SHALL BE RESTORED
- 1. WATER: IF AVAILABLE ON-SITE, THE OWNER SHALL SUPPLY WATER AT NO COST. IT WILL BE THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO SUPPLY WATER IF THERE IS NONE ON THE SITE.
- A. PLANTING BEDS: WITH THE EXCEPTION OF THOSE TREES SHOWN ON THE PLAN AS INDIVIDUALS, ALL PLANTS ARE TO BE PLANTED INTO PREPARED PLANTING BEDS. THE OUTLINE OF EACH BED SHALL BE SPADE DUG TO BE A SMOOTH, CONTINUOUS SHARP-CUT EDGE. THE ENTIRE AREA WITHIN THE OUTLINE OF THE BED SHALL BE THOROUGHLY LOOSENED TO A DEPTH OF 6-8" BY PICKING OR OTHER MEANS AND ALL MATERIALS UNSUITABLE FOR PLANT GROWTH AND ALL ROCKS AND DEBRIS GREATER THAN 4" DIAMETER AREA ARE TO BE REMOVED. TOPSOIL (THAT MEETS THE QUALITATIVE DESCRIPTION OF THE MARYLAND STATE HIGHWAY ADMINISTRATION'S MATERIALS SPECIFICATION 920.01.02 NATURAL TOPSOIL) SHALL BE APPLIED OVER THE ENTIRE BED AREA IN SUFFICIENT QUANTITY SO THAT THE ELEVATION OF THE PLANTING BED, AFTER LIGHT TAMPING, IS 6" ABOVE THE FINISHED GRADE OF THE AREA ADJACENT TO THE BED. (SEE PREPARED PLANTING BED DETAIL ON PLAN FOR AN ILLUSTRATION).
- 1. PREPARING TREE PIT: THE WALLS OF THE TREE PIT SHALL BE DUG SO THAT THEY ARE VERTICAL AND SCARIFIED. THE DIAMETER OF THE PIT SHALL BE A TOTAL OF 24" WIDER THAN THE BALL DIAMETER. CARE SHOULD BE TAKEN TO TO EXCAVATE THE TREE PIT BELOW A DEPTH THAT ALLOWS 1/8 OF THE BALL TO BE ABOVE THE FINISHED GRADE. IF THE PIT IS DUG TOO DEEP, THEN THE BOTTOM OF THE PIT MUST BE BACKFILLED AND FIRMLY TAMPED TO PREVENT SETTLEMENT.
- 2. PLACING TREE IN PIT: PLACE THE TREE IN THE PIT EITHER BY LIFTING AND CARRYING THE TREE BY ITS BALL (NEVER LIFT BY BRANCHES OR TRUNK) AND THEN LOWERING IT INTO THE PIT. SET THE TREES STRAIGHT AND IN THE CENTER OF THE PIT WITH THE MOST DESIRABLE SIDE OF THE TREE FACING TOWARD THE PROMINENT VIEW (SIDEWALK, BUILDING, STREET, ETC.).
- 3. BACKFILLING TREE PIT: BACKFILL THE TREE PIT WITH A MIXTURE OF 2/3 ORIGINAL EXCAVATED MATERIAL AMENDED WITH 1/3 TOPSOIL (AS SPECIFIED IN II—A ABOVE). THIS STEP WILL HAVE BEEN PARTIALLY COMPLETED IF THE TREE IS PLANTED INTO A PREPARED BED AS DESCRIBED ABOVE. BACKFILL SIDES OF TREE PIT HALFWAY WITH SOIL MIXTURE AND TAMP BEFORE ADDING MORE BACKFILL. CUT ROPE OR WIRE ON BALL OF TREE AND PULL BURLAP BACK TO THE EDGE OF THE TREE BALL. REMOVE ALL PLASTIC WRAPS AND TWINNING.
- FINISH BACKFILLING SIDES OF TREE PIT AND TAMP FIRMLY. NEVER COVER TOP OF ROOT BALL WITH SOIL FORM A SAUCER ABOVE EXISTING GRADE AND AROUND THE OUTER RIM OF THE TREE PIT. MULCH TOP OF ROOT BALL AND SAUCER WITHIN 48 HOURS TO A DEPTH OF 2" TO 3". WATER THOROUGHLY ON THE INTERIOR OF THE TREE SAUCER UNTIL IT IS FILLED EVEN IF IT IS RAINING. A SECOND WATERING MAY BE NECESSARY TO INSURE SATURATION OF THE ROOT BALL. PRUNE OUT
- 4. TREE BRACING: UNLESS OTHERWISE NOTED ON THE PLAN, ALL TREES MORE THAN 12' IN HEIGHT (GREATER THAN 2 1/2" CAL.) ARE TO BE BRACED WITH THREE (3) GUY WIRES AND GROUND STAKES SPACED AS EVENLY APART (120 APART) IN A CIRCLE AS POSSIBLE. TREES LESS THAN 12' HIGH ARE TO BE STAKED WITH TWO UPRIGHT HARDWOOD STAKES, GUYING SHALL BE COMPLETED WITHIN 48 HOURS
- PREPARING SHRUB PIT: THE WALLS OF THE SHRUB PIT SHALL BE DUG SO ARE THAT THEY ARE VERTICAL AND SCARIFIED. THE DIAMETER OF THE PIT SHALL BE A TOTAL OF 12" WIDER THAN THE BALL DIAMETER. THE DEPTH OF THE PIT SHALL BE AT AN ELEVATION THAT ALLOWS 1/8 OF THE BALL TO BE ABOVE THE FINISHED GRADE, AFTER THE BOTTOM OF THE PIT HAS BEEN FIRMLY
- 2. PLACING SHRUB IN PIT: PLACE THE SHRUB IN THE PIT EITHER BY LIFTING OR CARRYING THE SHRUB BY ITS BALL (NEVER LIFT BY BRANCHES) AND THEN LOWERING IT INTO THE PIT.
- 3. BACKFILLING SHRUB PIT: BACKFILL THE SHRUB PIT HALFWAY WITH SOIL MIXTURE AND TAMP BEFORE ADDING MORE BACKFILL. CUT ROPE OR WIRE ON BALL OF SHRUB AND PULL BURLAP BACK TO EDGE OF THE ROOT BALL. REMOVE ALL PLASTIC WRAPS AND TWINNING. FINISH BACKFILLING SIDES OF PIT AND TAMP FIRMLY. NEVER COVER TOP OF ROOT BALL WITH SOIL. FORM A SAUCER ABOVE EXISTING GRADE AND AROUND THE OUTER RIM OF THE SHRUB PIT.

WATER THOROUGHLY ON THE INTERIOR OF THE SHRUB SAUCER UNTIL IT IS FILLED EVEN IT IS RAINING. A SECOND WATERING MAY BE NECESSARY TO INSURE SATURATION OF ROOT BALL. PRUNE OUT ANY

- GROUND COVER BED: GROUND COVER SHALL BE PLANTED INTO PREPARED AND EDGED BEDS AS DESCRIBED IN II.A ABOVE. MULCH THE ENTIRE GROUND COVER BED TO A DEPTH OF 1" TO 2" PRIOR TO PLANTING THE GROUND COVER PLANTS.
- 2. PLANTING GROUND COVER: THE GROUND COVER PLANTING HOLES SHALL BE DUG THROUGH THE MULCH AND THE GROUND COVER (EITHER POTTED OR BARE ROOT) SHALL BE PLANTED SO THAT THE ROOTS OF THE PLANT ARE SURROUNDED BY SOIL BELOW THE MULCH. POTTED PLANTS SHALL BE SET SO THAT THE TOP OF THE POT IS EVEN WITH THE EXISTING GRADE. BARE ROOT PLANTS SHALL BE COVERED UP TO THE CROWN OF THE PLANT OR THE SOIL LEVEL.
- E. PREPARATION OF FLOWER BED:
- 1. PREPARING BED: FLOWER BEDS SHALL BE PREPARED AND EDGED AS DESCRIBED IN II.A ABOVE. BROADCAST 10-10-10 FERTILIZER AT A RATE OF TEN (10) POUNDS PER 1,000 SQUARE FEET EVENLY OVER THE BED; THEN INCORPORATE INTO THE SOIL.
- 2. PROCEDURE FOR PLANTING ANNUALS: ANNUALS PITS SHOULD BE DUG THROUGH THE MULCH INTO THE SOIL WITH ONE OF THE FOLLOWING: HAND TROWEL, SHOVEL, BULB PLANTER, OR HOE. PLANTING OF ANNUALS SHOULD OCCUR AROUND MAY 1ST UNLESS FREEZING WEATHER IS IN THE FORECAST.
- 3. MAINTENANCE OF ANNUALS PLANTING: ANNUAL BEDS SHOULD BE WEEDED ONCE EVERY TWO WEEKS. WATERING TO BE BY OWNER (UNLESS DIFFERENT ARRANGEMENTS ARE MADE) AND SHOULD OCCUR TWICE PER WEEK DURING DRY WEATHER CONDITIONS. PLANTS SHOULD BE THOROUGHLY SOAKED. PREFERABLY BY A SHOWER-HEAD TYPE HAND-HELD WATERING WAND. SPRAY FOR INSECTS AND DISEASE AS NECESSARY.
- III. SEEDING AND SODDING:
- ALL DISTURBED AREAS NOT COVERED BY BUILDINGS, PAVEMENTS AND PLANTING BEDS ARE TO BE ESTABLISHED IN A LAWN OF KENTUCKY-31 TALL FESCUE EITHER BY SEED OR SOD, OR COMBINATION, DEPENDING ON THE TIME OF YEAR, AVAILABILITY OF MATERIALS AND OWNER'S PREFERENCE.

WOODLAND CONSERVATION AREA MANAGEMENT NOTES REMOVAL OF HAZARDOUS TREES OR HAZARDOUS LIMBS BY DEVELOPERS OR BUILDERS

THE DEVELOPER AND/OR BUILDER IS RESPONSIBLE FOR THE COMPLETE PRESERVATION OF ALL FORESTED AREAS SHOWN ON THE APPROVED PLAN TO REMAIN UNDISTURBED. ONLY TREES OR PARTS THEREOF DESIGNATED BY THE DEPARTMENT OF ENVIRONMENTAL RESOURCES AS DEAD, DYING, OR HAZARDOUS MAY BE REMOVED. TO COMPLETE ALL LANDSCAPE WORK AS SHOWN ON THE PLANS AND SPECIFICATIONS.

- 1. A TREE IS CONSIDERED HAZARDOUS IF A CONDITION IS PRESENT WHICH LEADS TO A LICENSED ARBORIST OR A LICENSED TREE EXPERT TO BELIEVE THAT THE TREE OR A PORTION OF THE TREE HAS A POTENTIAL TO FALL AND STRIKE A STRUCTURE, PARKING AREA, OR OTHER HIGH USE AREA AND RESULT IN PERSONAL INJURY
- 2. IF A HAZARDOUS CONDITION MAY BE ALLEVIATED BY CORRECTIVE PRUNING, THE LICENSED ARBORIST OR A LICENSED TREE EXPERT MY PROCEED WITHOUT FURTHER AUTHORIZATION. THE PRUNING MUST BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE ANSI A-300 PRUNING STANDARDS ("TREE, SHRUB, AND OTHER WOODY PLANT MAINTENANCE - STANDARD PRACTICES"). 3. CORRECTIVE MEASURES REQUIRING THE REMOVAL OF THE HAZARDOUS TREE OR PORTIONS THEREOF SHALL REQUIRE AUTHORIZATION BY THE BUILDING OR GRADING INSPECTOR IF THERE IS A VALID GRADING OR BUILDING PERMIT FOR THE SUBJECT LOTS OR PARCELS ON WHICH THE TREES ARE LOCATED. ONLY AFTER
- APPROVAL OF THE APPROPRIATE INSPECTOR MAY THE TREE BE CUT BY A CHAINSAW TO NEAR THE EXISTING GROUND LEVEL. THE STUMP MAY NOT BE REMOVED OR COVERED WITH SOIL, MULCH OR OTHER MATERIALS THAT WOULD INHIBIT SPROUTING. 4. DEBRIS FROM THE TREE REMOVAL OR PRUNING THAT OCCURS WITHIN 35 FEET OF THE WOODLAND EDGE MAY BE REMOVED AND PROPERLY DISPOSED OF BY RECYCLING, CHIPPING OR OTHER ACCEPTABLE METHODS. ALL DEBRIS THAT IS MORE THAN 35 FEET FROM THE WOODLAND EDGE SHALL BE CUT UP TO

ALLOW CONTACT WITH THE GROUND, THUS ENCOURAGING DECOMPOSITION. THE SMALLER MATERIALS

SHALL BE PLACED INTO BRUSH PILES THAT WILL SERVE AS WILDLIFE HABITAT.

REMOVAL OF HAZARDOUS TREES, HAZARDOUS LIMBS, NOXIOUS PLANTS, INVASIVE PLANTS, OR NON-

- NATIVE PLANTS IN THE WOODLAND CONSERVATION ÁREAS OWNED BY INDIVIDUAL HOMEOWNERS 1. IF THE DEVELOPER OR BUILDER NO LONGER HAS AN INTEREST IN THE PROPERTY THE HOME OWNER SHALL OBTAIN A WRITTEN STATEMENT FROM THE LICENSED ARBORIST OR LICENSED TREE EXPERT IDENTIFYING THE HAZARDOUS CONDITION AND THE PROPOSED CORRECTIVE MEASURES PRIOR TO HAVING THE WORK CONDUCTED. THE TREE MAY THEN BE REMOVED BY THE ARBORIST OR TREE EXPERT. THE STUMP SHALL BE CUT AS CLOSE TO THE GROUND AS POSSIBLE AND LEFT IN PLACE. THE REMOVAL OR GRINDING OF THE
- STUMPS IN THE WOODLAND CONSERVATION AREA IS NOT PERMITTED. 2. THE REMOVAL OF NOXIOUS, INVASIVE, AND NON-NATIVES PLANT SPECIES FROM THE WOODLAND CONSERVATION AREAS MAY BE DONE WITH THE USE OF HAND-HELD EQUIPMENT ONLY SUCH AS PRUNERS OR A CHAIN SAW. THESE PLANTS MAY BE CUT NEAR THE GROUND AND THE MATERIAL LESS THAT TWO INCHES DIAMETER MAY BE REMOVED FROM THE AREA AND DISPOSED OF APPROPRIATELY. ALL MATERIAL FROM THESE NOXIOUS, INVASIVE, AND NON-NATIVE PLANTS GREATER THAN TWO (2) INCHES
- DIAMETER SHALL BE CUT TO ALLOW CONTACT WITH THE GROUND. THUS ENCOURAGING DECOMPOSITION. 3. THE USE OF BROADCAST SPRAYING OR HERBICIDES IS NOT PERMITTED. HOWEVER. THE USE OF HERBICIDES TO DISCOURAGE RE-SPROUTING OF INVASIVE, NOXIOUS, OR NON-NATIVE PLANTS IS PERMITTED IF DONE AS AN APPLICATION OF THE CHEMICAL DIRECTLY TO THE CUT STUMP IMMEDIATELY FOLLOWING THE CUTTING OF PLANT TOPS. THE USE OF ANY HERBICIDES SHALL BE DONE IN ACCORDANCE WITH THE LABEL INSTRUCTIONS.

NOTE: THE USE OF CHAINSAWS IS EXTREMELY DANGEROUS AND SHOULD NOT BE CONDUCTED WITH POORLY MAINTAINED EQUIPMENT, WITHOUT SAFETY EQUIPMENT, OR BY INDIVIDUALS NOT TRAINED IN THE USE OF THIS EQUIPMENT FOR THE PRUNING AND/OR CUTTING OF TREES.

PROTECTION OF REFORESTATION AND AFFORESTATION AREAS BY DEVELOPERS AND BUILDERS 1. REFORESTATION AND AFFORESTATION AREAS SHALL BE PLANTED PRIOR TO THE OCCUPANCY OF THE NEAREST

BUILDING OR RESIDENCE. IF PLANTING CANNOT OCCUR DUE TO PLANTING CONDITIONS, THE DEVELOPER OR PROPERTY OWNER SHALL INSTALL THE FENCING AND SIGNAGE IN ACCORDANCE WITH THE APPROVED TYPE II TREE CONSERVATION PLAN. PLANTING SHALL THEN BE ACCOMPLISHED DURING THE NEXT PLANTING SEASON. IF PLANTING IS DELAYED BEYOND THE TRANSFER OF THE PROPERTY TITLE, TO THE HOMEOWNER, THE DEVELOPER SHALL OBTAIN A SIGNED STATEMENT FROM THE PURCHASER INDICATING THAT THEY UNDERSTAND THAT THE REFORESTATION AREA IS LOCATED ON THEIR PROPERTY AND THAT REFORESTATION WILL OCCUR DURING THE NEXT PLANTING SEASON. A COPY OF THAT DOCUMENT SHALL BE PRESENTED TO THE GRADING INSPECTOR AND THE ENVIRONMENTAL PLANNING SECTION. 2. REFORESTATION AREAS SHALL NOT BE MOWED, HOWEVER, THE MANAGEMENT OF COMPETING VEGETATION AROUND INDIVIDUAL TREES IS ACCEPTABLE.

PROTECTION OF REFORESTATION AND AFFORESTATION AREAS BY INDIVIDUAL HOMEOWNERS

- 1. REFORESTATION FENCING AND SIGNAGE SHALL REMAIN IN PLACE IN ACCORDANCE WITH THE APPROVED TYPE II TREE CONSERVATION PLAN OR UNTIL THE TREES HAVE GROWN SUFFICIENTLY TO HAVE CROWN
- 2. REFORESTATION AREAS SHALL NOT BE MOWED, HOWEVER, THE MANAGEMENT OF COMPETING VEGETATION AROUND INDIVIDUAL TREES IS ACCEPTABLE.

WOODLAND AREAS NOT COUNTED AS PART OF THE WOODLAND CONSERVATION REQUIREMENTS

- 1. A REVISED TREE CONSERVATION PLAN IS REQUIRED PRIOR TO CLEARING ANY WOODLAND AREA WHICH IS NOT SPECIFICALLY IDENTIFIED TO BE CLEARED ON THE MOST RECENTLY APPROVED TYPE II TREE CONSERVATION (TCP). ADDITIONAL MITIGATION WILL BE REQUIRED FOR THE CLEARING OF ALL WOODLAND BEYOND THAT REFLECTED ON THE APPROVED PLAN. ALTHOUGH CLEARING MAY BE ALLOWED, IT MAY BE SUBJECT TO ADDITIONAL
- REPLACEMENT REQUIREMENTS, MITIGATION, AND FEES WHICH MUST BE REFLECTED ON TCP REVISIONS APPROVED BY THE M-NCP&PC ENVIRONMENTAL SECTION.
- 2. HOMEOWNERS OR PROPERTY OWNERS MAY REMOVE TREES LESS THAN TWO (2) INCHES DIAMETER, SHRUBS, AND VINES IN WOODLAND AREAS WHICH AREA SAVED BUT NOT PART OF THE WOODLAND CONSERVATION REQUIREMENTS AFTER ALL PERMITS HAVE BEEN RELEASED FOR THE SUBJECT PROPERTY. THIS AREA MAY NOT BE TILLED OR HAVE OTHER GROUND DISTURBANCES WHICH WOULD RESULT IN DAMAGE TO THE TREE ROOTS. RAKING THE LEAVES AND OVERSEEDING WITH NATIVE GRASSES, NATIVE FLOWERS OR NATIVE GROUND COVERS IS ACCEPTABLE. SEEDING WITH INVASIVE GRASSES INCLUDING ANY VARIETY OF KENTUCKY 31 FESCUE IS NOT ACCEPTABLE.

-2 SPLIT RAILS (SPRUCE)

- ANCHOR POSTS SHOULD BE

1. FOREST PROTECTION DEVICE ONLY.

4. ROOT DAMAGE SHOULD BE AVOIDED.

PROTECTIVE SIGNAGE MAY ALSO BE USED.

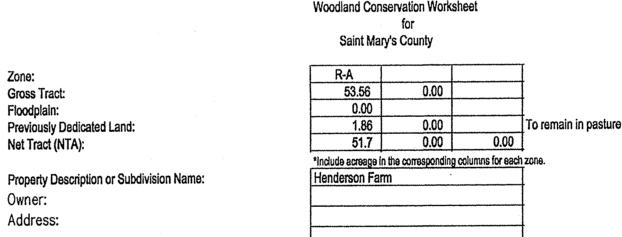
PRIOR TO INSTALLED DEVICE.

POST TYPICAL -

MINIMUM 2" STEEL 'U' CHANNEL

OR 2" x 2" TIMBER, 6' IN LENGTH

2 SPLIT RAIL (WOOD) FENCE / TCP TYPE II



Phone: Reforesation Requirement Reduction Questions Is this one (1) single family lot? (y,n) Υ Are there prior TCP approvals which include a combination of this lot and/or other lots. (y,n)

28.216 acres Break-even Point (preservation) = Clearing permitted w/o reforestion= Floodplain Impacts Woodland Conservation Calculations: (acres) 0.00 Existing Woodland 50.00% Woodland Conservation Threshold (NTA) = Smaller of a or b Woodland above WCT 0.00 Woodland cleared Smaller of d or e Clearing above WCT (0.25:1) replacement requirement Clearing below WCT (2:1 replacement requirement) 20.00% Afforestation Threshold (AFT) = Woodland Conservation Required Woodland Conservation Provided: 22.11 Woodland Preservation Reforestation / Replacement Afforestation Area approved for fee-in-lieu 10.44 Credits for Off-site Mitigation on another property

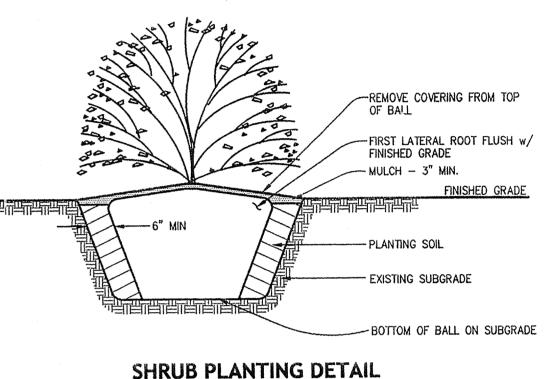
Area of woodland not cleared Woodland retained not part of requirements:

Off-site Mitigation provided on this property

Total Woodland Conservation Provided

FOREST FOREST CONSERVATION RETENTION AREA MACHINERY, DUMPING MACHINERY, DUMPING MIN.15" OR STORAGE OF MIN.15" OR STORAGE OF ANY MATERIALS IS ANY MATERIALS IS PROHIBITED PROHIBITED VIOLATORS ARE SUBJECT T MOLATORS ARE SUBJECT FINES AS IMPOSED BY THE FINES AS IMPOSED BY THE MARYLAND FOREST MARYLAND FOREST CONSERVATION ACT OF CONSERVATION ACT OF SIGNAGE DETAIL **NOT TO SCALE**

MIN. 11"



NOT TO SCALE

MIN. 11"

---- MIN. 11" -----

SPECIMEN

TREE

DO NOT REMOVE

MACHINERY, DUMPING

ANY MATERIALS IS

PROHIBITED

MOLATORS ARE SUBJECT TO

FINE'S AS IMPOSED BY THE

MARYLAND FOREST

CONSERVATION ACT OF

1991

OR STORAGE OF

USE 2"X4" LUMBER FOR

HIGHLY VISIBLE FLAGGING -

MAX. 8'

ANCHOR POSTS MUST

INSTALLED TO A DEPTH OF NO LESS THAN 1/3 OF THE

TOTAL HEIGHT OF POST.

2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.

6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED

BLAZE ORANGE PLASTIC MESH FENCING

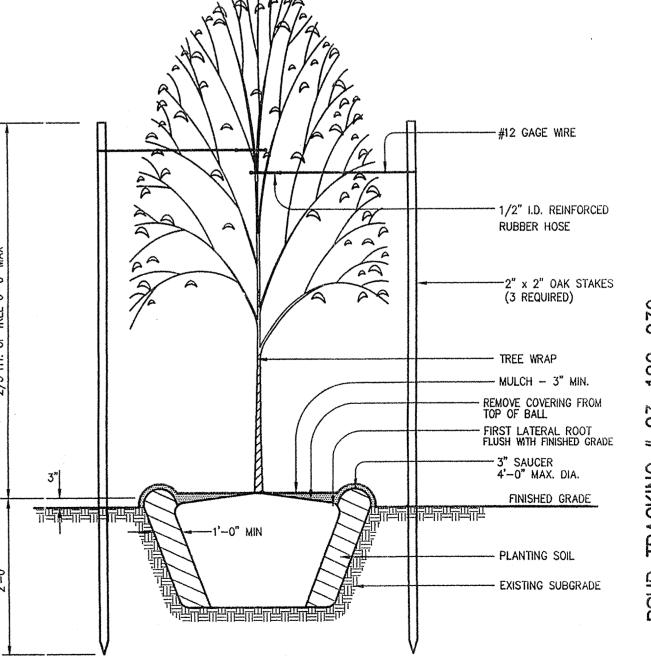
10' (POST TO POST)

CROSS BRACING -

USE 8" WIRE 'U' TO SECURE FENCE BOTTOM

THIN 1/3 OF INITIAL BRANCHING, RETAINING NATURAL FORM #12 GAGE WIRE 1/2" I.D. REINFORCED RUBBER HOSE - 2"X 2" OAK STAKES (3 REQUIRED) - MULCH - 3" MIN. - REMOVE COVERING FROM TOP OF BALL FIRST LATERAL ROOT FLUSH WITH FINISHED GRADE ---- FINISH GRADE - PLANTING SOIL EXISTING SUBGRADE

> EVERGREEN PLANTING DETAIL NOT TO SCALE



TREE PLANTING DETAIL - 2 1/2" - 3" CAL. NOT TO SCALE

PHONE NUMBER

LANDSCAPE PLAN.

ANY DEAD OR BROKEN BRANCHES.

OF PLANTING THE TREE. C. SHRUB PLANTING:

TAMPED (TO PREVENT SETTLEMENT).

MULCH TOP OF ROOT BALL AND SAUCER WITHIN 48 HOURS TO A DEPTH OF 2" TO 3".

DEAD BRANCHES. D. GROUND COVER PLANTING:

THE ENTIRE GROUND COVER BED SHALL BE THOROUGHLY WATERED

THE ANNUALS SHOULD BE PLANTED SO THAT THE ROOTS OF THE PLANTS ARE SURROUNDED BY SOIL BELOW THE MULCH.

NOTES TO INCLUDE WITH ALL PLANS:

PROPERTY OF ANY WOODLAND CONSERVATION AREAS.

UNTIL ALL REQUIRED ACTIVITIES HAVE BEEN SATISFIED.

BEGIN BEFORE FINAL APPROVAL OF TPD INSTALLATION.

STANDARD TYPE II TREE CONSERVATION PLAN NOTES

1. CUTTING OR CLEARING OF WOODLAND NOT IN CONFORMANCE WITH THIS PLAN OR WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE PLANNING DIRECTOR OR DESIGNEE SHALL BE SUBJECT TO A \$1.50 PER SQUARE FOOT MITIGATION FEE.

2. THE DEPARTMENT OF ENVIRONMENTAL RESOURCES (DER) MUST BE CONTACTED PRIOR TO THE START OF ANY WORK ON THE SITE TO ADDRESS IMPLEMENTATION OF TREE CONSERVATION MEASURES SHOWN ON THIS PLAN. 3. PROPERTY OWNERS SHALL BE NOTIFIED BY THE DEVELOPER OR CONTRACTOR OF ANY WOODLAND CONSERVATION AREAS (TREE SAVE AREAS, REFORESTATION AREAS, AFFORESTATION AREAS, OR SELECTIVE CLEARING AREAS) LOCATED ON THEIR LOT OR PARCEL OF LAND AND THE ASSOCIATED FINES FOR UNAUTHORIZED DISTURBANCES TO THESE AREAS. UPON THE SALE OF THE PROPERTY

THE OWNER / DEVELOPER OR OWNERS REPRESENTATIVES SHALL NOTIFY THE PURCHASER OF THE

NOTES TO INCLUDE ON PLANS WHEN APPROPRIATE: 5. THE LOCATION OF ALL TREE PROTECTIVE DEVICES (TPD'S) SHOWN ON THIS PLAN SHALL BE FLAGGED OR STAKED IN THE FIELD PRIOR TO THE PRE-CONSTRUCTION MEETING WITH THE SEDIMENT AND EROSION CONTROL INSPECTOR FROM DER. UPON APPROVAL OF THE FLAGGED OR STAKED TPD LOCATIONS BY THE INSPECTOR, INSTALLATION OF THE TPD'S MAY BEGIN. TPD INSTALLATION SHALL BE COMPLETED PRIOR TO INSTALLATION OF INITIAL SEDIMENT CONTROLS. NO CUTTING OR CLEARING OF TREES MAY

6. TREE PROTECTION DEVICES ARE NOT REQUIRED FOR THIS PLAN SINCE AN UNDISTURBED 100 FOOT

DISTURBANCE (LOD) AND THE TREE SAVE AREA. IF CHANGES TO THE LOD IMPACT THE

BUFFER OF OPEN LAND OR A 50 FOOT FORESTED BUFFER IS BEING MAINTAINED BETWEEN THE LIMIT OF

4. ALL APPROPRIATE BONDS AND/OR FEES SHALL BE POSTED WITH THE BUILDING OFFICIAL PRIOR TO THE

ISSUANCE OF ANY PERMITS. THESE BONDS WILL BE RETAINED AS SURETY BY THE BUILDING OFFICIAL

UNDISTURBED BUFFERS THE DER INSPECTOR SHALL BE CONTACTED TO EVALUATE THE CHANGE TO DETERMINE IF REVISIONS TO THE TREE CONSERVATION PLAN ARE NECESSARY OR IF INSTALLATION OF TPD'S WILL BE REQUIRED. 7. SINCE WORK ON THIS PROJECT WILL BE INITIATED IN SEVERAL PHASES ALL TPD'S REQUIRED FOR A GIVEN PHASE SHALL BE INSTALLED PRIOR TO ANY DISTURBANCE WITHIN THAT PHASE OF WORK. 8. WOODLAND CONSERVATION - TREE SAVE AREAS AND/OR REFORESTATION AREAS SHALL BE POSTED AS SHOWN AT THE SAME TIME AS TREE PROTECTIVE DEVICE INSTALLATION AND/OR START OF REFORESTATION ACTIVITIES. THESE SIGNS SHALL REMAIN IN PLACE IN PERPETUITY. 9. ALL TREE PLANTING FOR WOODLAND REPLACEMENT, REFORESTATION OR AFFORESTATION WILL BE COMPLETED PRIOR TO RELEASE OF GRADING BOND. FAILURE TO ESTABLISH THE WOODLAND REPLACEMENT, REFORESTATION OR AFFORESTATION WITHIN THE PRESCRIBED TIME FRAME WILL RESULT IN THE FORFEITURE

OF THE REFORESTATION BOND AND/OR A VIOLATION OF THIS PLAN INCLUDING THE ASSOCIATED \$1.50

10. THE DER INSPECTOR SHALL BE NOTIFIED PRIOR TO SOIL PREPARATION OR INITIATION OF ANY TREE

1. RESULTS OF SURVIVAL CHECKS FOR ALL TREE PLANTINGS SHALL BE REPORTED TO THE DER INSPECTOR FOR

PRIOR TO THE ISSUANCE ON ANY PERMITS THE CONTRACTOR RESPONSIBLE FOR SOIL PREPARATION, SITE

PER SQUARE FOOT PENALTY UNLESS A WRITTEN EXTENSION IS APPROVED BY THE DER INSPECTOR.

BUSINESS NAME

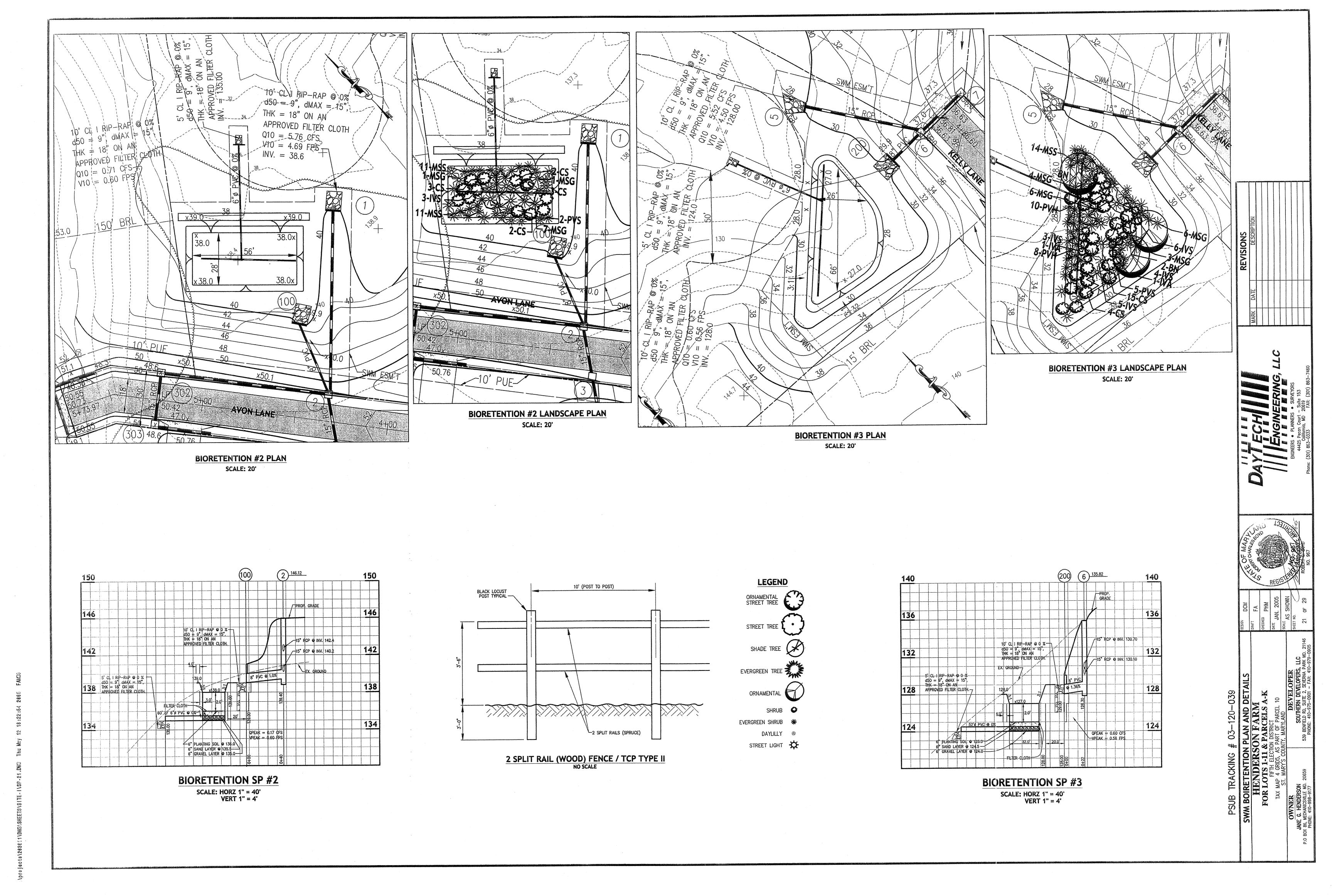
Preparation, tree planting and tree maintenance must be identified.

Date

32.55

22.11 acres

0 acres



- MATERIAL SPECIFICATIONS FROM MDE 2000 SWM DESIGN MANUAL THE ALLOWABLE MATERIALS TO BE USED IN BIORETENTION AREA ARE DETAILED IN
- PLANTING SOIL
 THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER
 SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE BIORETENTION AREA THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS,
- JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05. THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA: pH RANGE: 5.2-7.0

ORGANIC MATTER: 1.5-4% (BY WEIGHT) MAGNESIUM: 35 lb/ac PHOSPHORUS (PHOSPHATE $-P_20_5$): 75 lb/ac POTASSIUM (POTASH $-K_20$): 85 lb/ac SOLUBLE SALTS: NOT TO EXCEED 500 ppm

ALL BIORETENTION AREAS SHALL HAVE A MINIMUM OF ONE TEST. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, PHOSPHORUS, AND POTASSIUM AND ADDITIONAL TESTS OF ORGANIC MATTER, AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE STOCKPILED TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE TOPSOIL WAS EXCAVATED.

SINCE DIFFERENT LABS CALIBRATE THEIR TESTING EQUIPMENT DIFFERENTLY, ALL TESTING RESULTS SHALL COME FROM THE SAME TESTING FACILITY. SHOULD THE PH FALL OUT OF THE ACCEPTABLE RANGE, IT MAY BE MODIFIED (HIGHER) WITH LIME OR (LOWER) WITH IRON SULFATE PLUS SULFUR.

COMPACTION
IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF THE
BIORETENTION AREA AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF BIORETENTION AREAS ARE EXCAVATED USING A LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE. COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS A CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACTURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.

ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BACKFILLING THE OPTIONAL SAND FILTER LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTOTILLING) BASE.

WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE.

WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.

- RECOMMENDED PLANT MATERIAL FOR BIORETENTION AREAS CAN BE FOUND IN APPENDIX 1, SECTION A.2.3.
- PLANT INSTALLATION
 MULCH SHOULD BE PLACED TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE.

ROOT STOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/8" OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION.

TREES SHALL BE BRACED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE

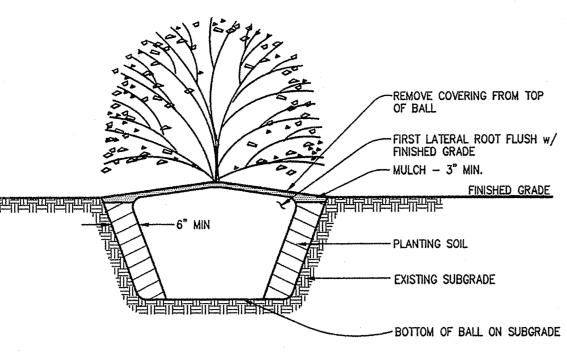
GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.

THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFEATS, OR AT MINIMUM, IMPEDES THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.

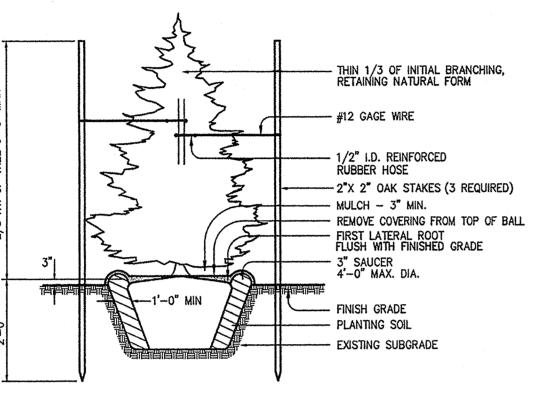
UNDERDRAINS ARE TO BE PLACED ON A 3'-0" WIDE SECTION OF FILTER CLOTH. PIPE IS PLACED NEXT, FOLLOWED BY THE GRAVEL BEDDING. THE ENDS OF UNDERDRAIN PIPES NOT TERMINATING IN AN OBSERVATION WELL SHALL BE CAPPED.

THE MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5% OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).

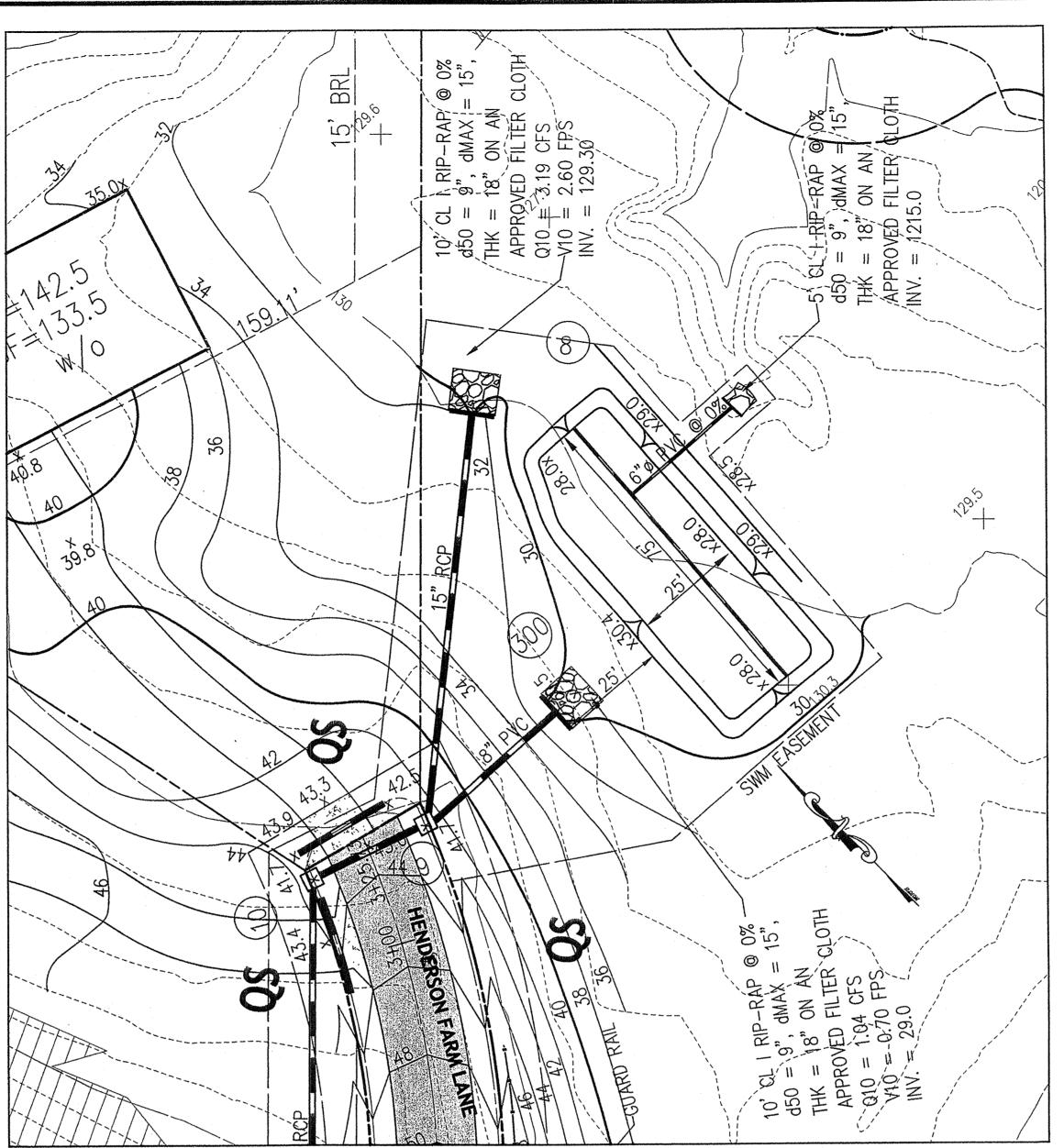
MISCELLANEOUS
THE BIORETENTION FACILITY MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.



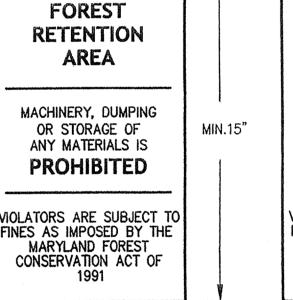
SHRUB PLANTING DETAIL **NOT TO SCALE**

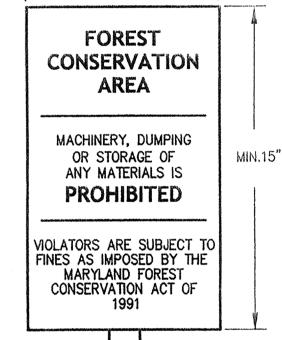


EVERGREEN PLANTING DETAIL NOT TO SCALE



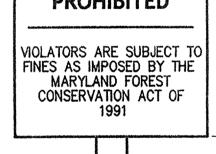
FOREST SPECIMEN RETENTION TREE AREA DO NOT REMOVE MACHINERY, DUMPING OR STORAGE OF MACHINERY, DUMPING ANY MATERIALS IS OR STORAGE OF **PROHIBITED** ANY MATERIALS IS **PROHIBITED** VIOLATORS ARE SUBJECT TO FINES AS IMPOSED BY THE MARYLAND FOREST CONSERVATION ACT OF VIOLATORS ARE SUBJECT TO FINES AS IMPOSED BY THE MARYLAND FOREST CONSERVATION ACT OF





BIORETENTION LANDSCAPE PLAN

SCALE: 20'



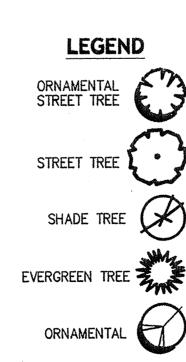
SIGNAGE DETAIL NOT TO SCALE

PLANT LIST

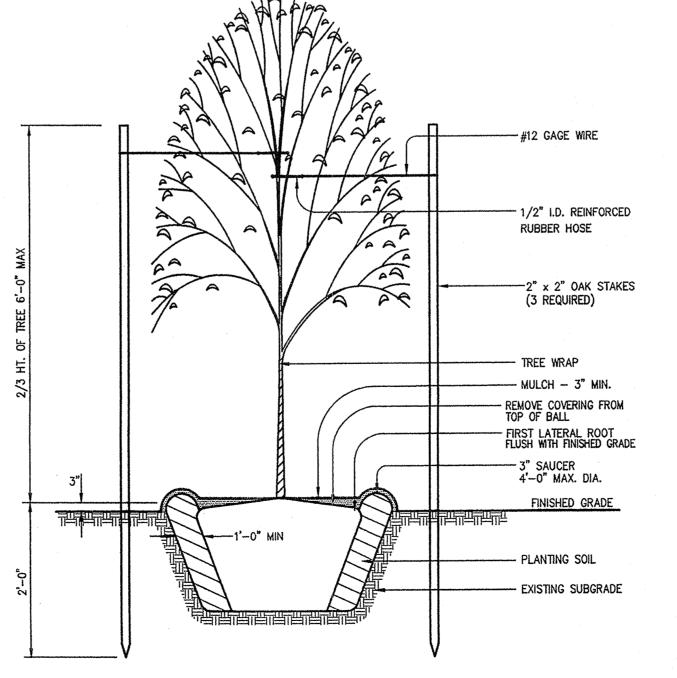
KEY	QUAN	BOTANICAL \ COMMON NAME DECIDIOUS TREES	SIZE	SPACING	ROOT
QP	30	Quercus phellos\Willow Oak	1 1/2-1 3/4" Cal	As Shown	B&B
QR	24	Quercus rubra\Red Oak	1 1/2-1 3/4" Cal	As Shown	B&B
QS	59	Quercus shumardi \ Shumard Oak	1 1/2-1 3/4 " Cal	As Shown	B&B
TOTAL	113				

HENDERSON FARM **BIORETENTION PLANTS - COST ESTIMATE**

KEY	QUAN	BOTANICAL \ COMMON NAME	ZONE	SIZE	SPACING ·	ROOT	UNIT COST	TOTAL PRICE
BN	3	Betula nigra 'Heritage'	(2,3),4	6-8'	AS SHOWN	B&B	\$100.00	\$300.00
CSB	39	Cornus sericea f. baileyi \ Bailey's Red Twig Dogwood	(2,3)	2-2 1/2' SP	8' o.c.	#3 CONT	\$30.00	\$1,170.00
HH	19	Hemerocallis 'Happy Retums' \ 'Happy Retums' Daylily	(3,4,5)	4" POT	18" o.c.		\$5.00	\$95.00
IVA	3	llex verticillata x 'Appollo'\'Appollo' Winterberry	(2,3)	2-2 1/2' SP	8' o.c.	#3 CONT	\$30.00	\$90.00
IVS	25	Ilex verticillata 'Sparkleberry'\'Sparkleberry' Winterberry	(2,3)	2-2 1/2' SP	8' o.c.	#3 CONT	\$30.00	\$750.00
MP	6	Myrica pennsylvanica\Northern Bayberry	(2,3)	2-2 1/2' SP	5' o.c.	#3 CONT	\$30.00	\$180.00
MSA	16	Miscanthus sinensis 'Adagio' \ Adagio Miscanthus	(3,4,5)	#1 CONT	4' o.c.		\$5.00	\$80.00
MSG	33	Miscanthus sinensis 'AGracillimus' \ Maiden Grass	(3,4,5)	#1 CONT	4º o.c.		\$5.00	\$165.00
MSS	53	Miscanthus sinensis 'Strictus' \ Porcupine Miscanthus	(3,4,5)	#1 CONT	4' o.c.		\$5.00	\$265.00
PVH	28	Panicum virgatum 'Heavy Metal' \ Heavy Metal Switchgrass	(2,3)	#1 CONT	3' o.c.		\$5.00	\$140.00
PVS	24	Panicum virgatum 'Shenandoah' \ Shenandoah Switchgrass	(2,3)	#1 CONT	3' o.c.		\$5.00	\$120.00
RFG	11	Rudebeckia fulgida speciosa 'Goldstrum' \ Black Eyed Susan	4,5,6	#1 CONT	24" o.c.		\$5.00	\$55.00
ΔΛ	5	Viburnum dentatum' \ Arrowood Viburnum	(2,3)	3-4' SP	5' o.c.	#3 CONT	\$30.00	\$150.00
	262	TOTAL						\$3,560.00



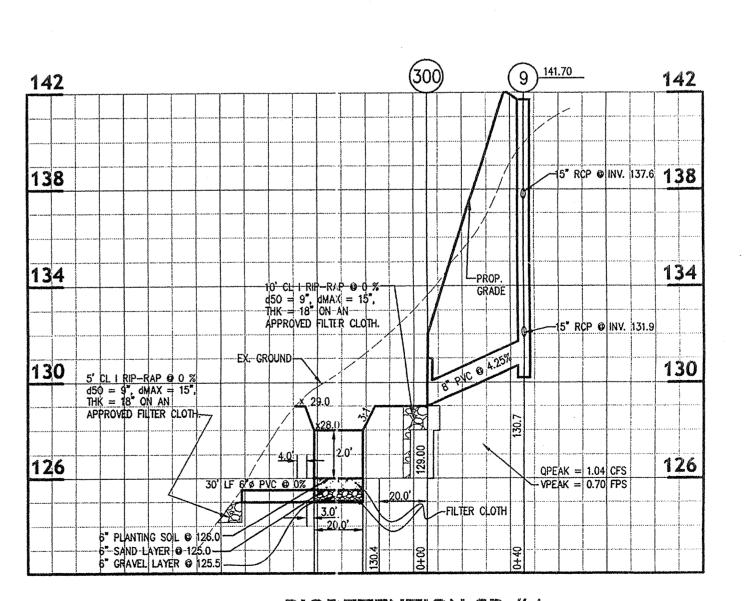
SHRUB EVERGREEN SHRUB * DAYLILLY * STREET LIGHT -



BIORETENTION PLAN

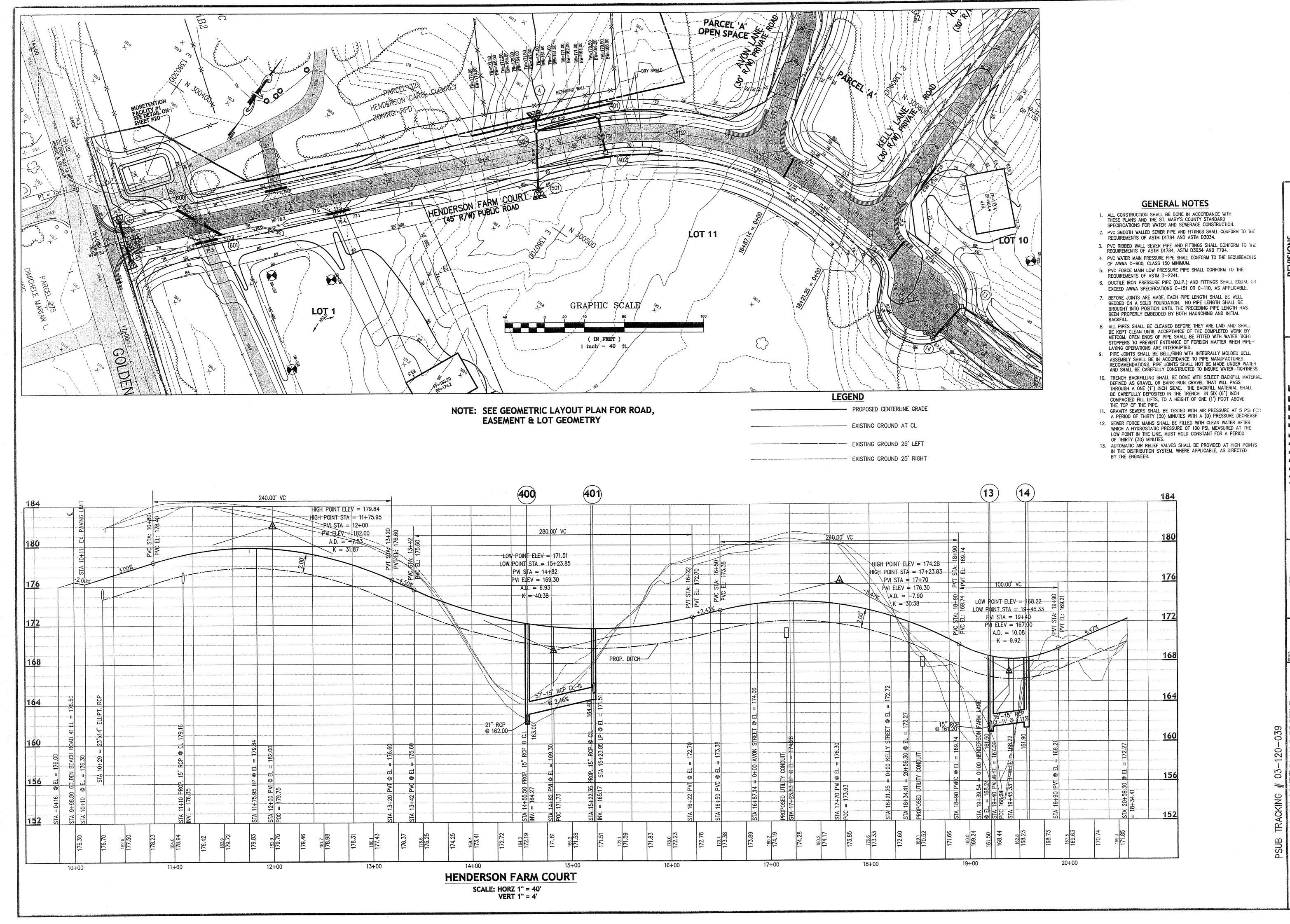
SCALE: 20'

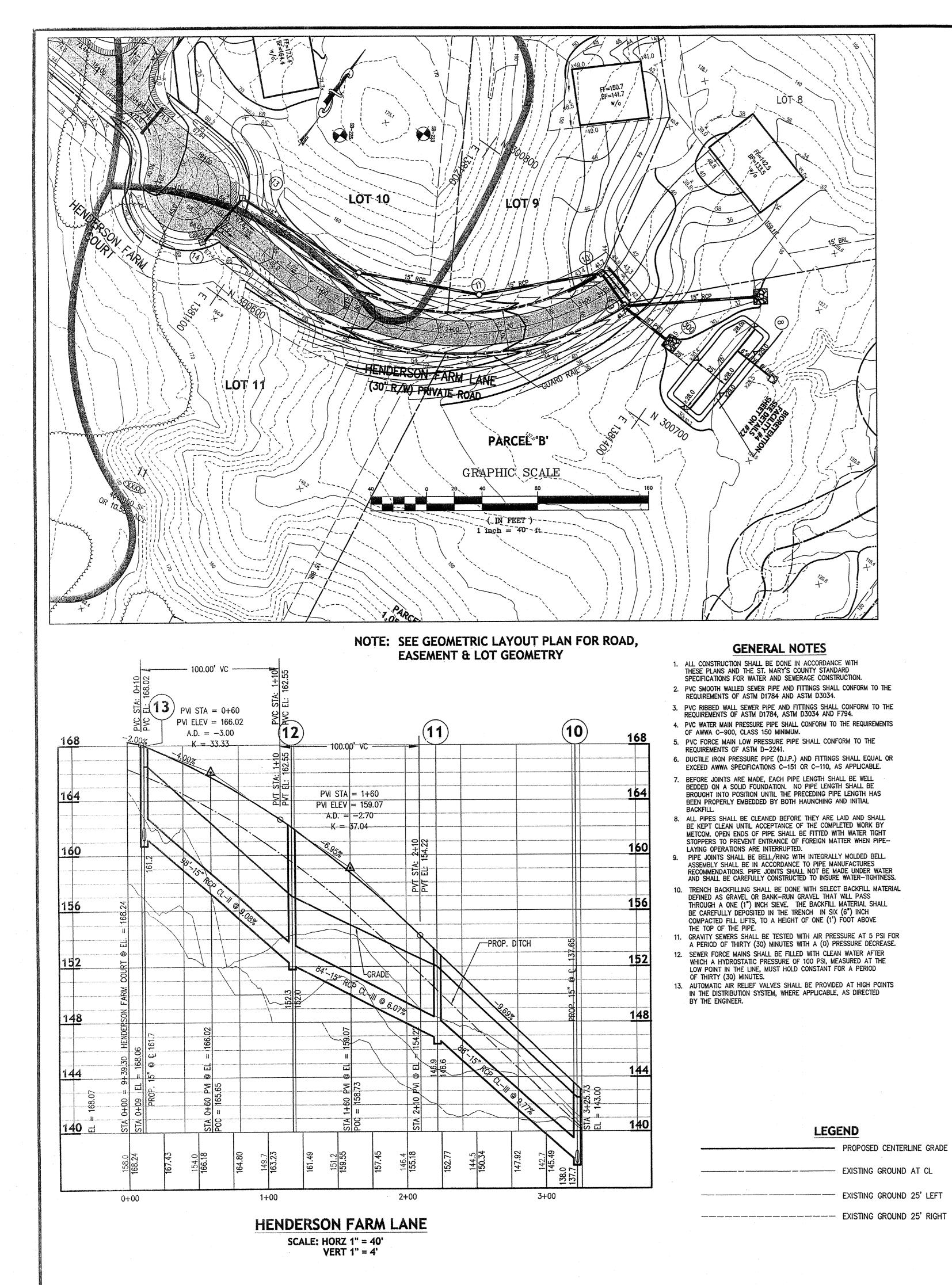
TREE PLANTING DETAIL - 2 1/2" - 3" CAL. NOT TO SCALE

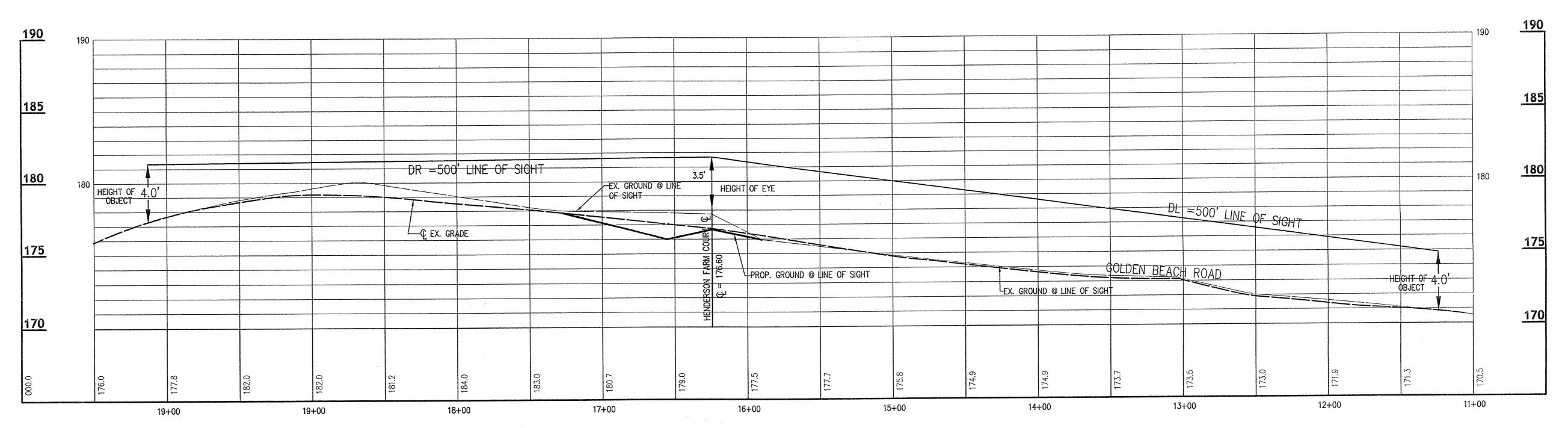


BIORETENTION SP #4 SCALE: HORZ 1" = 40'

VERT 1" = 4'







GOLDEN BEACH ROAD SCALE: HORZ 1" = 40' VERT 1" = 4'

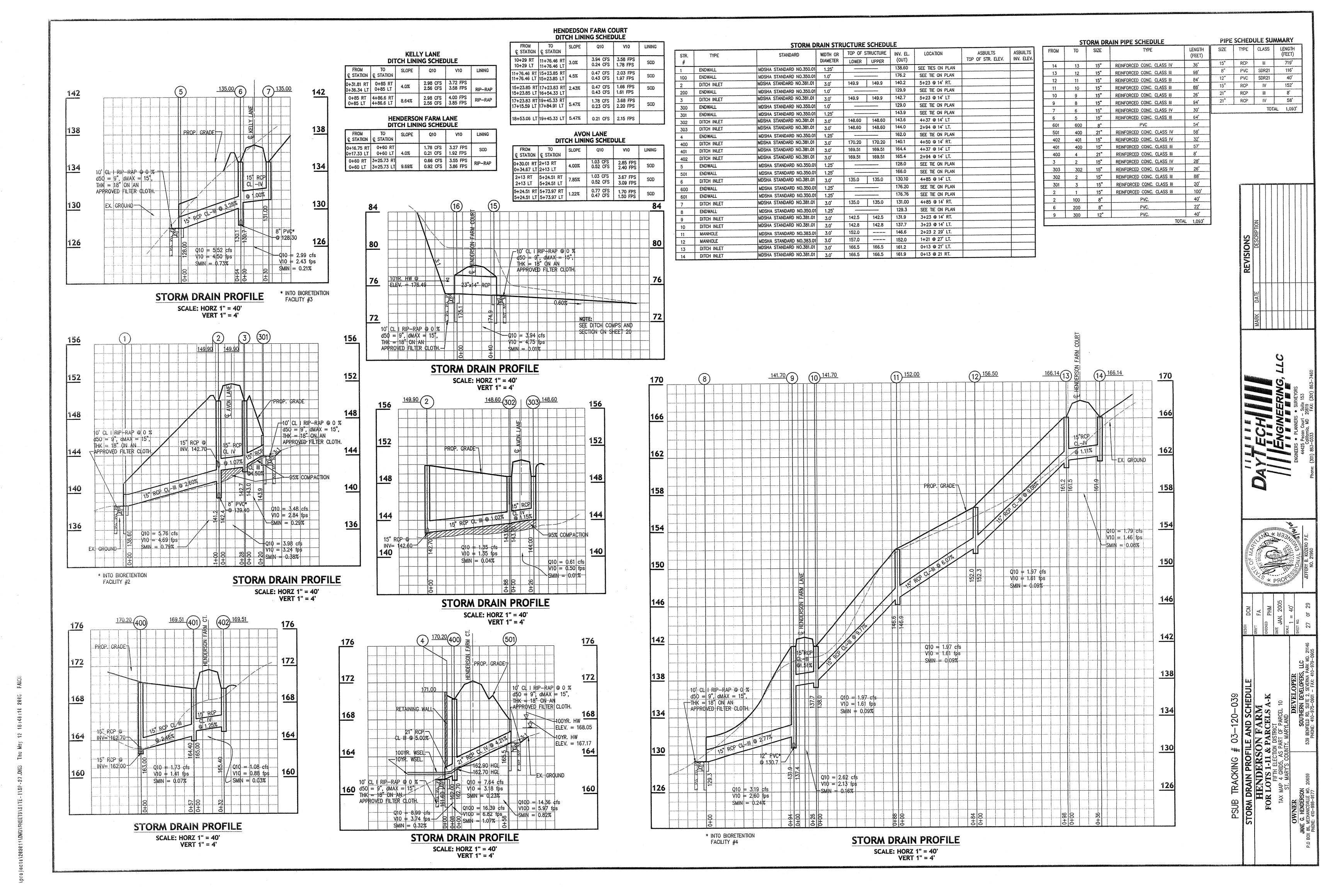
15' R/W EX. DEDICATED RIGHT-OF-WAYS OR EASEMENT TRACT BOUNDARY EX. STRUCTURES LOT OR PARCEL BOUNDARIES EX. CONTOUR/ SPOT ELEVATIONS PROP. STRUCTURES PROP. CONTOUR/
SPOT ELEVATIONS EX. WOODLAND EDGE PROP. WOODLAND EDGE >25% SLOPES w/ 25' BUFFER ----- EX. STREAM BANK PROP. CONCRETE/ ASPHALT PAVING APPROX. EDGE OF NON-TIDAL WETLANDS PERC HOLE APPROVED BY ST. MARY'S COUNTY HEALTH DEPT. EXISTING GUARD RAIL TRANSMISSION POLE

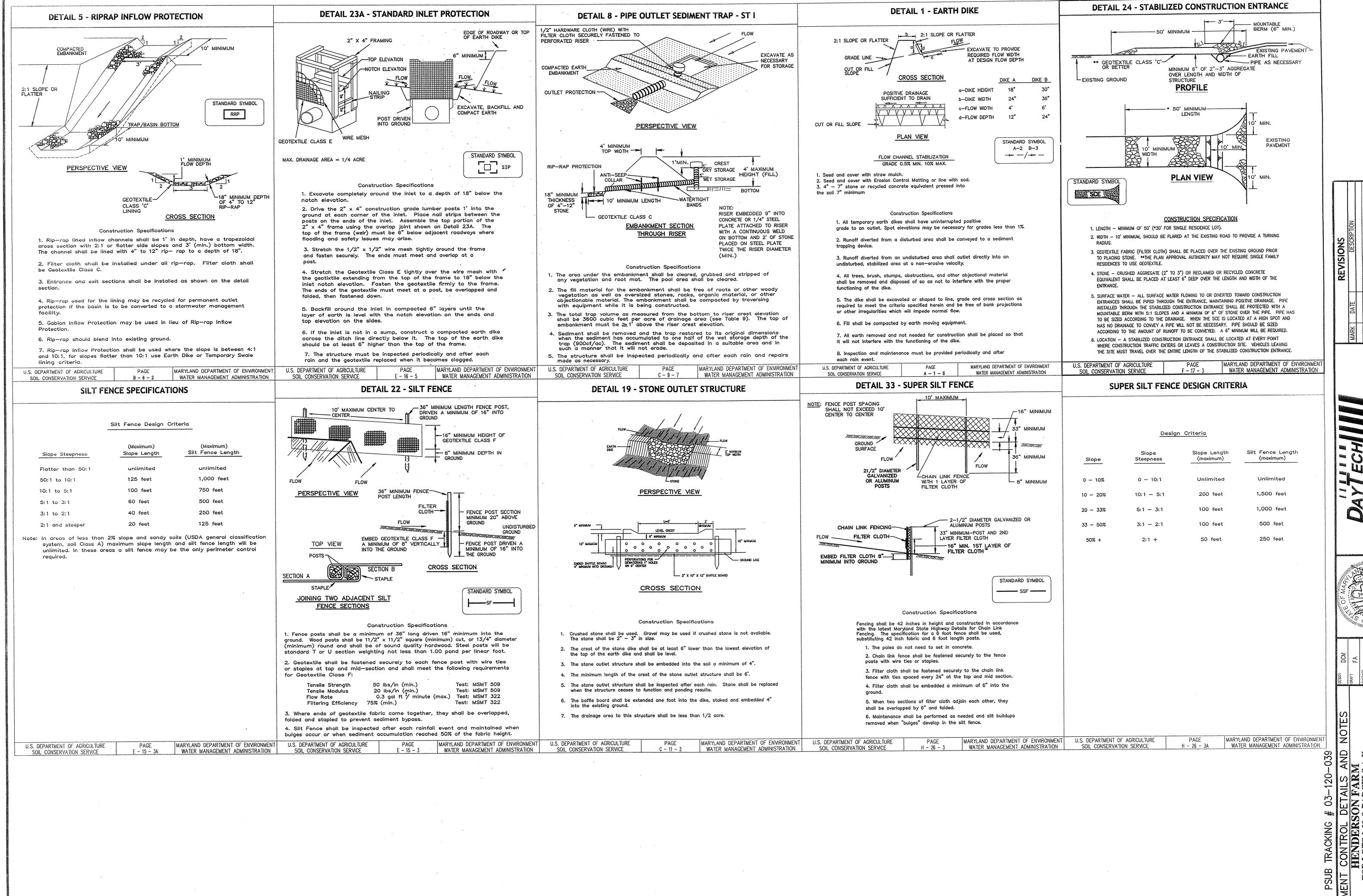
_____ STREAM BUFFER

**** EXISTING FENCE

LEGEND

CALL "MISS UTILITY" TELEPHONE: 1-800-257-7777 FOR UTILITY LOCATIONS AT LEAST 48 HOURS BEFORE BEGINNING CONSTRUCTION.





I. SITE PREPARATION

PERMANENT OR TEMPORARY VEGETATION SHALL BE ESTABLISHED WITHIN SEVEN (7) DAYS ON THE SURFACE OF ALL SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, BERMS, WATERWAYS, SEDIMENT CONTROL BASINS, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND WITHIN 14 DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. MULCHING MAY ONLY BE USED ON DISTURBED AREAS AS TEMPORARY COVER WHERE VEGETATION IS NOT FEASIBLE OR WHERE SEEDING CANNOT BE COMPLETED BECAUSE OF WEATHER.

I. SEEDBED PREPARATION AND SEEDING APPLICATION

LOOSEN THE TOP LAYER OF THE SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT SUCH AS DISC HARROWS, CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. INCORPORATE THE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF THE SOIL BY DISCING OR BY OTHER SUITABLE MEANS. ROUGH AREAS SHOULD NOT BE ROLLED OR DRAGGED SMOOTH, BUT LEFT IN A ROUGHENED CONDITION. STEEP SLOPES GREATER THAN 3:1 SHOULD BE TRACKED BY A DOZER, LEAVING THE SOIL IN AN IRREGULAR CODITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. THE TOP TO 3 INCHES OF SOIL SHOULD BE LOOSE AND FRIABLE. PERMANENT COVER MAY REQUIRE AN APPLICATION OF TOPSOIL. IF SO, IT MUST MEET THE REQUIREMENTS SET FORTH IN SECTION 21.0 STANDARDS AND SPECIFICATIONS FOR TOPSOIL FROM THE 1994 STANDARDS AND SPECIFICATIONS.

III. SOIL AMENDMENTS

SOIL TESTS SHALL BE MADE ON SITES OVER FIVE ACRES TO DETERMINE THE EXACT REQUIREMENTS FOR BOTH LIME AND FERTILIZER. FOR SITES UNDER 5 ACRES, IN LIEU OF A SOIL TEST, APPLY THE FOLLOWING:

FERTILIZER NITROGEN 1.5 LBS./SF (65 LBS./AC.)

P₂O₃ 3 LBS./SF (130 LBS./AC.) K₃0 100LBS./1000 SF (2 TONS/AC.)

FOR LOW MAINTENANCE AREAS APPLY 150 LBS./AC.

UREAFORM FERTILIZER (38-0-0) AT 3.5 LBS./1000 SF IN ADDITION TO THE ABOVE FERTILIZER AT THE TIME OF SEEDING.

GROUND LIMESTONE 2 TON/AC

IV. SEDIMENT CONTROL PRACTICE SEEDING

SELECT A SEEDING MIXTURE FROM TABLES 25 OR 26 IN SECTION C OF THE 1994 STANDARDS AND SPECIFICATIONS. DOCUMENT SEEDING ON THE EROSION AND SEDIMENT CONTROL PLAN USING APPROPRIATE CHART BELOW. NOTE: IF SEDIMENT CONTROL PRACTICES ARE IN FOR LONGER THAN 12 MONTHS, PERMANENT SEEDING IS REQUIRED.

V. TEMPORARY/PERMANENT SEEDING MIXTURE AND RATES

SELECT A SEEDING MIXTURE FROM APPROPRIATE TABLE 25 OR 26 IN SECTION C OF THE 1994 STANDARDS AND SPECIFICATIONS. DOCUMENT SEEDING ON THE EROSION AND SEDIMENT CONTROL PLAN USING APPROPRIATE CHART BELOW.

TEMPORARY SEEDING SUMMARY

SEED MIXTURE (HARDINESS ZONE) FROM TABLE 26					FERTILIZER RATE (10-10-10)	LIME RATE
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SPECIES DEPTHS		·
1	BARLEY	150	3/1 - 10/15	1	600 15 (10	FT071.1750
2	RYE PLUS FOXTAIL MILLET	150	3/1 - 11/15	1	600 LB/AC (15 LB/1000 SF)	FERTILIZER RATE

PERMANENT SEEDING SUMMARY

	SEED MIXTURE (HARDINESS ZONE) FROM TABLE 25				FERTILIZER RATE (10–20–20)			
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SPECIES DEPTHS	N	P205	K20	LIME RATE
1	TALL FESCUE 85% PERENNIAL RYE GRASS 10% KENTUCKEY BLUEGRASS 5%	1	3/1-5/15 8/15-10/15	1				
2	TALL FESCUE 83% WEEPING LOVEGRASS 2% SERECIA LESPEDEZA	110 3 20	3/1-5/15 5/16-8/14 8/15-10/15	1	90 LB/AC (2.0 LB/ 1000 SF)	175 LB/AC (4 LB/ 1000 SF)	175 LB/AC (4 LB/ 1000 SF)	2 TONS/AC (100 LB/ 1000 SF)
	,							

VI. TURFGRASS ESTABLISHMENTS

THIS INCLUDES LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE. AREAS TO RECEIVE SEED SHALL BE TILLED BY DISCING OR BY OTHER APPROVED METHODS TO A DEPTH OF 3 TO 5 INCHES, LEVELED AND RAKED TO PREPARE A PROPER SEEDBED. STONES AND DEBRIS OVER 14 INCHES IN DIAMETER SHALL BE REMOVED. THE RESULTING SEEDBED SHALL BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY. USE CERTIFIED MATERIAL AND CHOOSE A TURFGRASS MIXTURE FROM PAGE C-20 OF THE 1994 STANDARDS AND SPECIFICATIONS OR SELECT FROM THE LIST IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION. AGRONOMY MIMEO #77, TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND. SEE MIMEO AT END OF THIS SECTION.

VII. MULCHING

ALL SEEDINGS REQUIRE MULCHING. ALSO MULCH DURING NON-SEEDING DATES UNTIL SEEDING CAN BE DONE. MULCH SHALL BE UNROTTED, UNCHOPPED, SMALL GRAIN STRAW APPLIED AT A RATE OF 2 TONS/ACRE OR 90 LBS/1000 SF (2 BALES). IF A MULCH ANCHORING TOOL IS USED, APPLY 2.5 TONS/ACRE. MULCH MATERIALS SHALL BE RELATIVELY FREE OF ALL KINDS OF WEEDS AND SHALL BE COMPLETELY FREE OF PROHIBITED NOXIOUS WEEDS. SPREAD MULCH UNIFORMLY, MECHANICALLY OR BY HAND, TO A DEPTH OF 1-2 INCHES. MULCH ANCHORING SHALL BE ACCOMPANIED IMMEDIATELY AFTER MULCH PLACEMENT TO MIMIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY MULCH NETTINGS, MULCH ANCHORING TOOL, WOOD CELLULOSE FIBER OR LIQUID

APPLY WOOD CELLULOSE FIBER AT A DRY WEIGHT OF 1,500 LBS/ACRE. IF MIXED WITH WATER, USE 50 LBS. OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

LIQUID BINDER SHOULD BE APPLIED HEAVIER AT THE EDGE WHERE WIND CATCHES MULCH IN VALLEYS, AND ON CREST OF BANKS. THE REMAINDER OF THE AREA SHOULD APPEAR UNIFORM AFTER BINDER APPLICATION. APPLY RATES RECOMMENDED BY THE MANUFACTURER TO ANCHOR AND MULCH. STAPLE LIGHT WEIGHT, PLASTIC NETTING OVER THE MULCH ACCORDING TO MANUFACTURERDS RECOMMENDATIONS.

CLASS OF TURFGRASS SOD SHALL BE MARYLAND OR VIRGINIA STATE CERTIFIED. OR MARYLAND OR VIRGINIA STATE APPROVED SOD. SOD SHALL BE HARVESTED, DELIVERED AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD IS TO BE LAID WITH THE LONG EDGES PARALLEL TO THE CONTOUR USING STAGGERED JOINTS WITH ALL ENDS TIGHTLY ABUTTED AND NOT OVER LAPPING. SOD SHALL BE ROLLED AND THOROUGHLY WATERED AFTER INSTALLATION. DAILY WATERING TO MAINTAIN 4 INCH DEPTH OF MOISTURE FOR THE FIRST WEEK IS REQUIRED IN THE ABSENCE OF RAINFALL SOD IS NOT TO BE APPLIED ON FROZEN GROUND.

A. IRRIGATE - APPLY MINIMUM 1" OF WATER EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE, WHEN SOIL MOISTURE BECOMES DEFICIENT TO PREVENT LOSS OF STAND OF PROTECTIVE VEGETATION.

B. REPAIRS -- IF STAND PROVIDES BETWEEN 40% AND 94% GROUND COVERAGE, OVERSEED AND FERTILIZE USING HALF OF THE RATES ORIGINALLY APPLIED. IF STAND PROVIDES LESS THAN 40% COVERAGE, REESTABLISH STAND FOLLOWING ORIGINAL RATES AND PROCEDURES.

NOTE: USE OF THIS INFORMATION DOES NOT PRECLUDE MEETING ALL OF THE REQUIREMENTS OF THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL VEGETATIVE PRACTICES.

STANDARD AND SPECIFICATIONS FOR TOPSOIL

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

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 TEXTURE IS LIMITED TO AREA 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 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 SECTION IN THE SOIL SURVEY BY USDA-SCA IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.
- II. TOPSOIL SPECIFICATIONS SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
 - TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1' IN DIAMETER.
 - TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS,
- JOHNSONGRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED. III. WHERE THE TOPSOIL 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
- III. FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:
- PLACE TOPSOIL (IF REQUIRED) AND APPLY TO SOIL AMENDMENTS AS SPECIFIED IN 20.1 VEGETATIVE STABILIZATION - SECTION 1 - 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 TOPSOIL SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A PH OF LESS THAN 6.0.. SUFFICIENT LIME SHALL BE PRESCRIBED TO RAISE THE PH TO 6.5 OR
- 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
- 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 LAPSED (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 AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL. II. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I -VEGETATIVE STABILIZATION METHODS AND MATERIALS.

V. TOPSOIL APPLICATION

- WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURE, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT
- II. GRADE ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBEIT 4"-8" HIGHER IN ELEVATION.
- III. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4"- 8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SODDING O 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 SEEDED PREPARATION.
- VI. ALTERNATIVE FOR PERMANENT SEEDING INSTEAD OF APPLYING THE FULL AMOUNTS OF LIME AND COMMERCIAL FERTILIZER, COMPOSTED SLUDGE AND AMENDMENTS MAY BE APPLIED AS SPECIFIED BELOW: COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES SHALL BE TESTED TO PRESCRIBE AMENDMENTS AND FOR SITES HAVING DISTURBED AREAS
 - UNDER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS: A. COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS THAT ARE PERMITTED (AT THE TIME OF ACQUISITION OF THE COMPOST) BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UNDER COMAR 26.04.06.
 - B. COMPOSTED SLUDGE SHALL CONTAIN AT LEAST 1 PERCENT NITROGEN, 1.5 PERCENT PHOSPHORUS, AND 0.2 PERCENT POTASSIUM AND HAVE A PH OF 7.0 TO 8.0. IF COMPOST DOES NOT MEET THESE REQUIREMENTS, THE APPROPRIATE CONSTITUENTS MUST BE ADDED TO MEET THE REQUIREMENTS PRIOR TO USE.
 - C. COMPOSTED SLUDGE SHALL BE APPLIED AT THE RATE OF 1 TON/1,000 SQUARE FEET. 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 APPLICATION RATE.

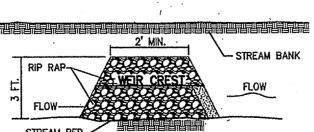
REFERENCES: GUIDELINE SPECIFICATIONS, SOIL PREPARATION AND SODDING. MD-V, PUB. #1, COOPERATIVE EXTENSION SERVICE, UNIVERSITY OF MARYLAND AND VIRGINIA POLYTECHNIC INSTITUTES. REVISED 1973

THE WORK ENCOMPASSES THE INSTALLATION OF AN IN-STREAM STONE DIKE TO BE USED AS A SEDIMENT FILTERING DEVICE FOR STREAMS THAT GENERALLY CARRY WET WEATHER FLOW.

II. MATERIAL SPECIFICATIONS 1. SMALL RIPRAP - 8-12 INCH WASHED STONE AND GRAVEL SHA

- 2. FILTER FABRIC THE FILTER CLOTH SHALL BE A WOVEN OR NON-WOVEN FABRIC CONSISTING ONLY OF CONTINUOUS CHAIN POLYMERIC FILAMENTS OR YARNS OF POLYESTER. THE FABRIC SHALL BE INERT TO COMMONLY ENCOUNTERED CHEMICALS, HYDROCARBONS, MILDEW, AND ROT RESISTANT. A ONE FOOT LAYER OF 2" WASHED STONE MAY BE USED INSTEAD OF
- GABION BASKETS CLASS I GABION BASKETS SHALL MEET THE REQUIREMENTS LISTED IN WPD3.2.

III. CONSTRUCTION REQUIREMENTS 1. STRUCTURE TO BE INSTALLED IN-STREAM AS FIRST ORDER OF BUSINESS TO TRAP SEDIMENT GENERATED DURING CONSTRUCTION



STREAM BED-SECTION B-B 2. THE TOP WIDTH OF THE DIKE IS TO BE FROM 2-4 FEET. THE DISTANCE BETWEEN THE DIKE AND THE DISTURBANCE IS TO BE DETERMINED BY FLOW RATE OF THE WATERWAY. . GABION BASKETS MAY BE USED IN LIEU OF SMALL RIPRAP AS INDICATED BY ALTERNATIVE SECTION.

 STRUCTURE IS TO REMAIN IN PLACE UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED IN ACCORDANCE WITH AN APPROVED SEDIMENT AND EROSION CONTROL PLAN. 6. ENTRAPPED SEDIMENT IS TO BE EXCAVATED PERIODICALLY AND HSPOSED OF IN A SCD APPROVED DISPOSED AREA OUTSIDE THE 00-YEAR FLOODPLAIN UNLESS OTHERWISE APPROVED ON THE 7. STRUCTURE CAN BE REMOVED ONCE APPROVED BY INSPECTING

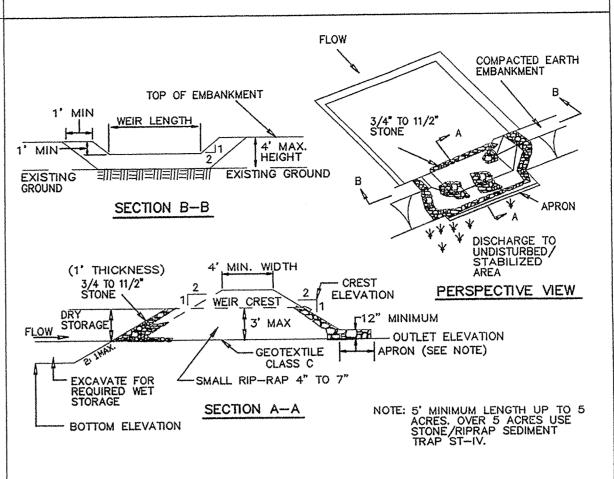
GABION BASKET ALTERNATIVE IN-STREAM STONE DIKE

NO SCALE

FILTER FABRI

DETAIL 9 - STONE OUTLET SEDIMENT TRAP - ST II

- 6. The structure shall be inspected periodically and after each rain and repairs made as needed.
- 7. Construction of traps shall be carried out in such a manner that sediment pollution is abated. Once constructed, the top and outside face of the embankment shall be stabilized with seed and mulch. Points of concentration inflow shall be protected in accordance with Grade Stabilization Structure criteria. The remainder of the interior slopes should be stabilized (one time) with seed and mulch upon trap completion and monitored and maintained erosion free during the life of the trap.
- 8. The structure shall be dewatered by approved methods, removed and the area stabilized when the drainage areas has been properly stabilized.
- 9. Refer to Section D for specifications concerning trap dewatering.
- 10. Minimum trap depth shall be measured from the weir elevation.
- 11. The elevation of the top of any dike directing water into the trap must equal or exceed the elevation of the trap embankment.
- 12. Geotextile Class C shall be placed over the bottom and sides of the outlet channel prior to the placement of stone. Sections of filter cloth must overlap at least 1' with the section nearest the entrance placed on top. The filter cloth shall be embedded at least 6" into existing ground at the entrance of the outlet channel.
- 13. Outlet An outlet shall be provided, including a means of conveying the discharge in an erosion free manner to an existing stable channel.



DETAIL 9 - STONE OUTLET SEDIMENT TRAP - ST II

Construction Specifications

1. Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.

2. The fill material for the embankment shall be free of roots and other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.

3. All cut and fill slopes shall be 2:1 or flatter.

4. The stone used in the outlet shall be small rip-rap 4" to 7" in size with a 1' thick layer of 3/4" to 1-1/2" washed aggregate placed on the upstream face of the outlet. Stone facing shall be as necessary to prevent clogging. Geotextile Class C may be substituted for the stone facing by placing it on the inside face of the stone outlet.

5. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to one half of the wet storage depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

DETAIL 28 - BENCHED SLOPES

		(
OF AGRICULTURE VATION SERVICE	PAGE C - 9 - 10A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C - 9 - 10	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
		·			

MATERIALS SPECIFICATIONS

TABLE 27 GEOTEXILE	FABRICS			
CLASS	APPARENT OPENING SIZE MM. MAX.	GRAB TENSILE STRENGTH LB. MIN.	BURST STRENGTH PSI. MIN.	
Α	0.30	250	500	
В	0.60	200	320	
С	0.30	200	320	
D	0.60	90	145	
C	0.70	00	145	

* US STD SIEVE CW-02215

TABL

U.S. DEPARTMEN

SOIL CONSER

F (SILT FENCE) 0.40-0.80*

U.S. DEPARTMENT

SOIL CONSERVA

E	28 STONE SIZE							
			SIZE RANGE	D50	D100	A		

	SIZE RANGE	טפע	D100	AASH10	WEIGHT
NUMBER 57*	3/8"-1 1/2"	1/2"	1 1/2"	M-43	N/A
NUMBER 1	2"-3"	2 1/2"	3"	M-43	N/A
RIP-RAP**	4"-7"	5 1/2"	7"	N/A	N/A
CLASS I	N/A	9.5"	15"	N/A	150 Ib MAX
CLASS II	N/A	16"	24"	N/A	700 Ib MAX
CLASS III	N/A	23"	34"	N/A	2000 lb MAX

190

* THIS CLASSIFICATION IS TO BE USED ON THE INSIDE FACE OF STONE OUTLETS AND CHECK DAMS. ** THIS CLASIFICATION IS TO BE USED WHEN EVER SMALL RIP-RAP IS REQUIRED. THE STATE HIGHWAY ADMINISTRATION DESIGNATION FOR THIS STONE IS STONE FOR GABIONS (905.01.04).

BASKET T	HICKNESS	SIZE OF INC	DIVIDUAL STONES
INCHES	мм	INCHES	ММ
6	150	3 - 5	75 - 125
9	225	4 - 7	100 - 175
12	300	4 - 7	100 - 175
18	460	4 - 7	100 - 175

4 - 12

NOTE: RECYCLED CONCRETE EQUIVALENT MAY BE SUBSTITUTED FOR ALL STONE CLASSIFICATIONS. RECYCLED CONCRETE EQUIVALENT SHALL BE CONCRETE BROKEN INTO THE SIZES MEETING THE

100 - 300

APPROPRIATE CLASSIFICATION, SHALL CONTAIN NO STEEL REINFORCEMENT, AND SHALL HAVE A DENSITY OF 150 POUNDS PER CUBIC FOOT.

ITCH OR DIVERSION TO DIVERT FLOW X: 1 Y (MAX) 20' 30'

Construction Specifications

6' MINIMUM----

exceed 8" in thickness.

1. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. Fill intended to support buildings, structures and conduits, etc., shall be compacted in accordance with local requirements

2. All fill shall be placed and compacted in layers not to

3. Except for approved landfills or nonstructural fills, fill material shall be free of brush, rubbish, rocks, logs, stumps, building debris and other objectionable materials that would interfere with or prevent construction of satisfactory fills.

4. Frozen material or soft, mucky or highly compressible materials shall not be incorporated into fill slopes or structural fills. Fill shall not be placed on a frozen foundation.

5. All benches shall be kept free of sediment during all phases of development.

6. Seeps or springs encountered during construction shall be handled in accordance with the Standard and Specification for Subsurface Drain or other approved methods.

7. All graded areas shall be permanently stabilized immediately following finished grading.

ENT OF AGRICULTURE ERVATION SERVICE	PAGE H - 24 - 1, 2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 19 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION