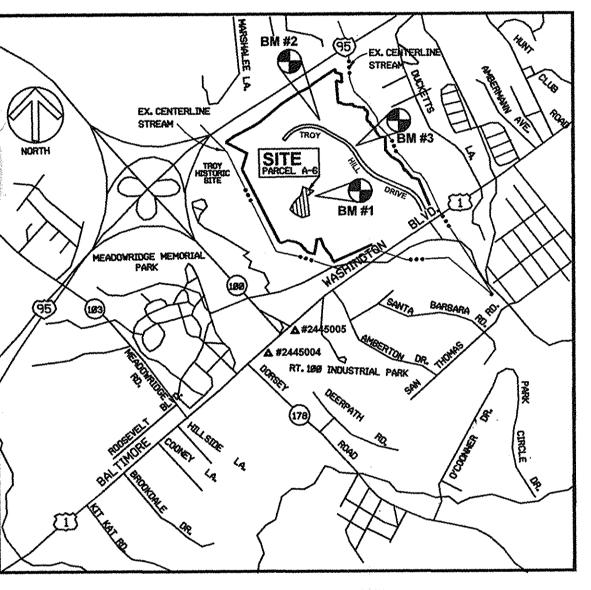
TROY HILL CORPORATE CENTER

PHASEI F 98 - 103

SHEET INDEX

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STORMWATER MANAGEMENT PROFILES AND DETAILS	5 OF 9



VICINITY MAP SCALE: 1" = 2000'

(COORDINATES BASED ON N.A.D. 27, AS PROJECTED BY HOWARD COUNTY GEOMETRIC CONTROL STATIONS #2445004 AND #2445005.)

BENCHMARK #1

IRON PIN @ TRAVERSE #1066 N 496501.3597 E 869134.4576 **ELEV. = 175.92**

BENCHMARK #2

IRON PIN @ TRAVERSE #1061 N 498036.6945 E 868791.1502 ELEV. = 242.49

BENCHMARK #3

IRON PIN @ TRAVERSE #1034 N 497636.7437 E 869835.6586 **ELEV. = 214.85**

OWNER / APPLICANT

TROY HILL BUSINESS PARK PARTNERSHIP C/O MANEKIN CORP. 7165 COLUMBIA GATEWAY DRIVE **COLUMBIA, MARYLAND 21046** (410) 290-1400 **ATTN: COLE SCHNORF**

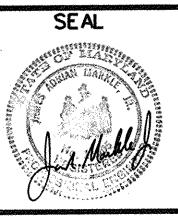
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND TAX MAP NO. 37



GEORGE W. STEPHENS, JR. AND ASSOCIATES, INC.

Civil Engineers and Land Surveyors

658 Kenilworth Drive, Suite 100 Towson Maryland 21204 (410) 825-8120 203 East Broadway Bel Air, Maryland 21014 (410) 838-3800



DESIGNED : PRC

DRAFTED : KE

CHECKED : PRC

COVER SHEET

SCALE : AS SHOWN

TROY HILL CORPORATE CENTER

PHASE I PARCEL A-6

HOWARD COUNTY, MARYLAND **ELECTION DISTRICT *1**

MARCH 02, 1998

3. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE

COUNTY DESIGN MANUAL VOLUME IV, DETAILS AND SPECIFICATIONS FOR

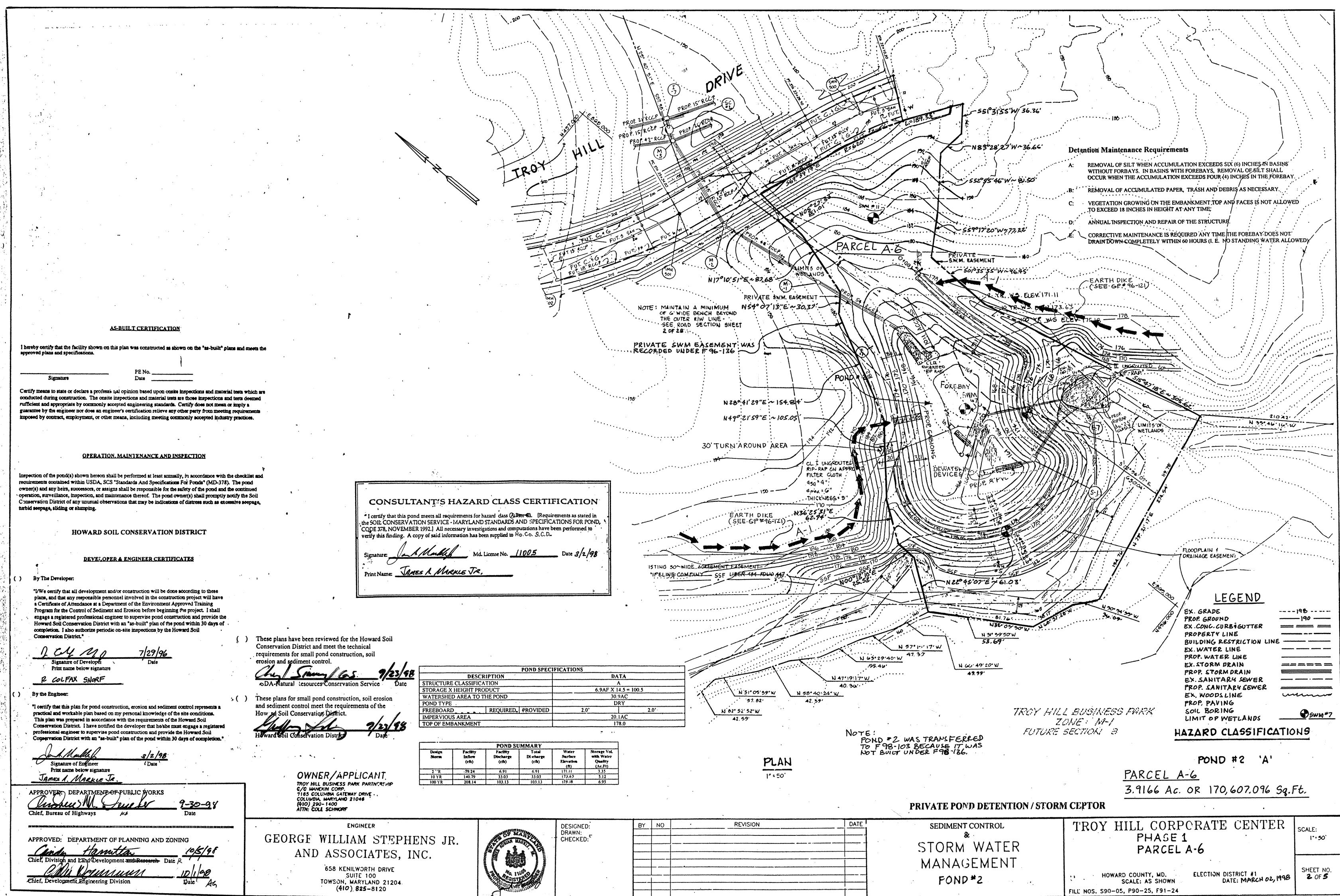
GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH HOWARD

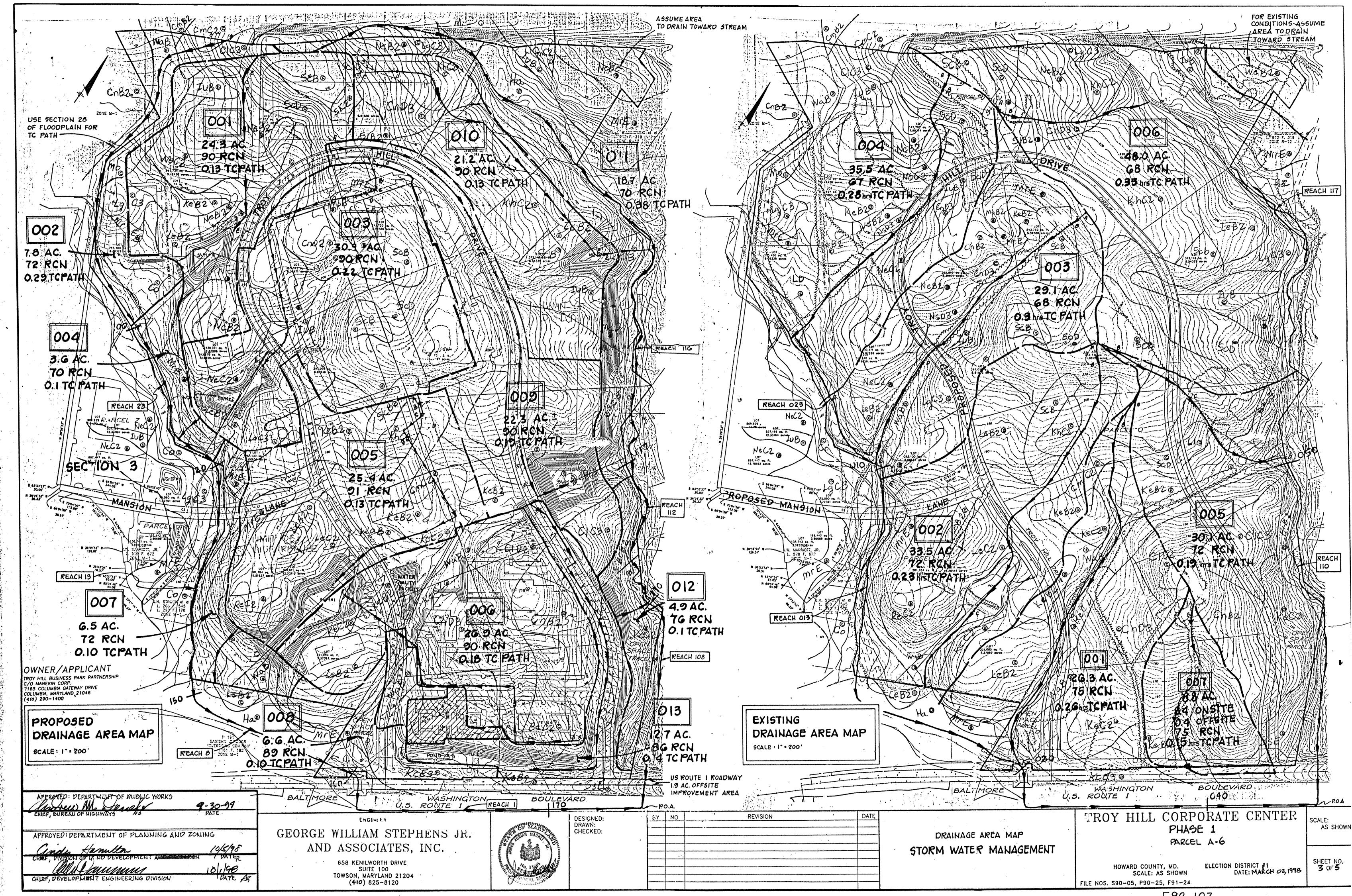
- THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. 4. THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES WHERE SHOWN OR
- NEEDED AS APPROVED BY THE ENGINEER, A MINIMUM OF TWO WEEKS IN ADVANCE OF ANY CONSTRUCTION. 5. CONTRACTOR TO NOTIFY THE HOWARD COUNTY DEPARTMENT OF PUBLIC
- 3 DAYS PRIOR TO STARTING WORK SHOWN ON THESE DRAWINGS. (TELEPHONE NO. (410) 313-1880) 6. DISTURBED SLOPE AREA TO BE STABILIZED AS SOON AS GRADING IS
- HAVE A MINIMUM 28 DAY STRENGTH OF 3500 P.S.I. 8. ALL SWALES AND SLOPES SHALL BE PERMANENTLY SEEDED. SEE THE
- SEED SPECIFICATIONS ON SHEET 9. TRAFFIC CONTROL DEVICES AND THEIR INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL
- DEVICES, 1988 REVISED EDITION. 10. PLOY-FILTER-X OR EQUAL SHALL BE PLACED UNDER ALL STONE RIP-RAP
- (FULL WIDTH AND LENGTH OFSTONE). 11. STONE FOR RIP-RAP SHALL BE AS SPECIFIED ON THESE DRAWINGS. ALL
- RIP-RAP SHALL BE NON-GROUTED UNLESS OTHERWISE NOTED. 12. STUBS FOR 6" PVC UNDERDRAIN PIPE TO BE INSTALLED AT CENTER OF
- EACH WALL OF EVERY INLET. 13. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT
- LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON STATE HIGHWAY ADMINISTRATION: 531-5533
- BALTIMORE GAS & ELECTRIC COMPANY / CONTRACTOR SERVICES 850-
- BALTIMORE GAS & ELECTRIC COMPANY / UNDERGROUND DAMAGE CONTROL: 787-9068 BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
- : 313-4900. **COLONIAL PIPELINE: 795-1390** MISS UTILITY: 1-800-257-7777.
- 14. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE FOR AND SUBMIT SHOP DRAWINGS THAT INDICATE ALL REQUIRED STIFFENING, BRACING AND SUPPORTS AT ALL FACTORY OR FABRICATED METAL PIPE CONNECTIONS AND APPURTENANCES.
- 15. THE CONTRACTOR IS COMPLETELY RESPONSIBLE TO INSURE THAT ALL CONDITIONS OF CORPS OF ENGINEER, MDE AND DNR WETLAND AND CONSTRUCTION MEETING IS TO BE ARRANGED BY THE CONTRACTOR BETWEEN ALL SUB-CONTRACTORS, THE OWNER, THE ENVIROMENTAL CONSULTANT AND COUNTY OFFICIALS TO VERIFY COMPLIANCE. A FAILURE TO COMPLY WITH FEDERAL AND STATE PERMIT REGULATIONS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 16. PROPOSED EXTENTION STORMWATER MANAGEMENT PONDS AREPRIVATELY OWNED AND MAINTAINED.

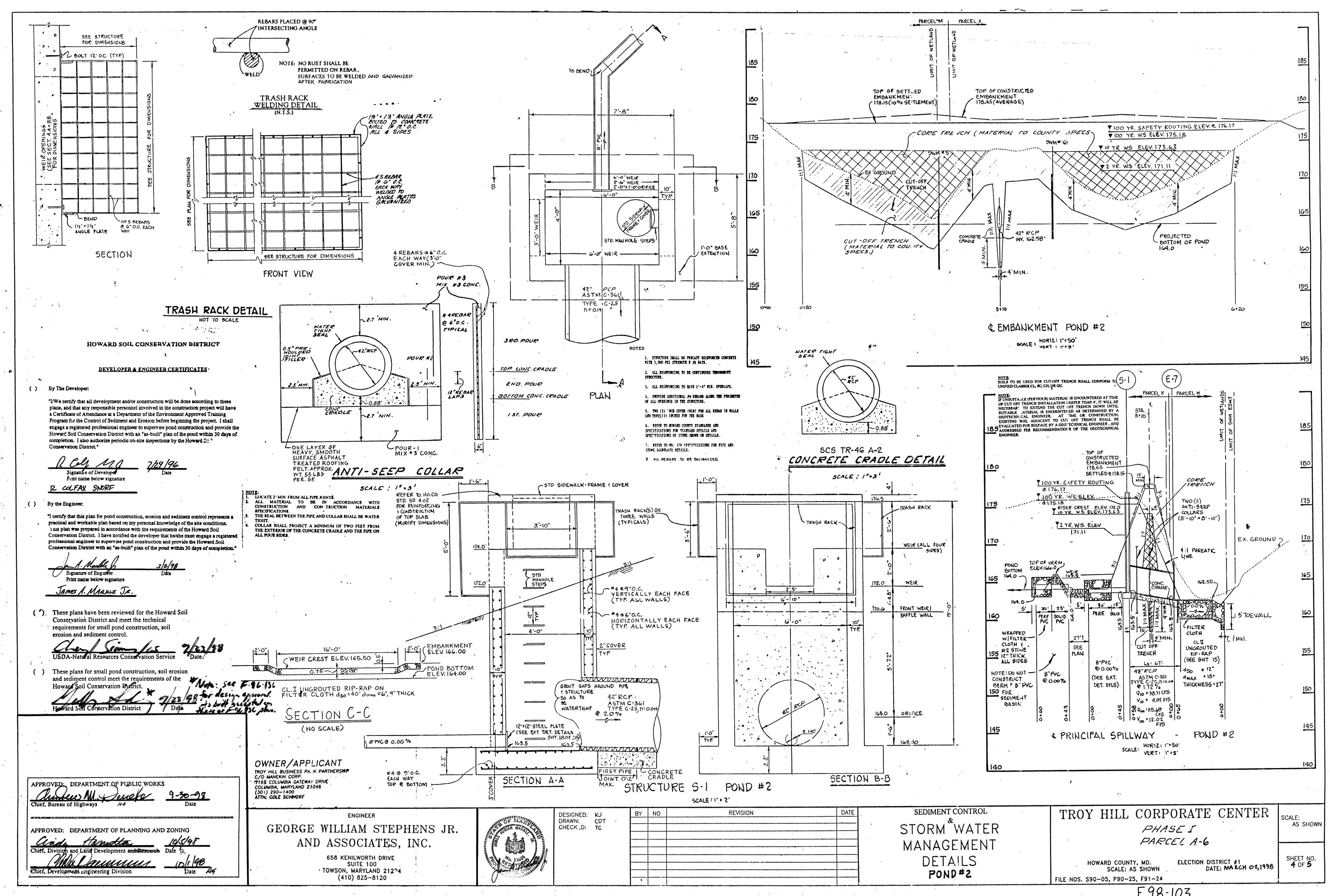
THIS PLAT IS BASED ON A FIELD RUN SURVEY PERFORMEDD ON MARCH 2,1988 BY CHARLES A. IRISH, JR. PROFESSIONAL LAND SURVEYOR (MARYLAND NO. 10708) OF VIKA INCORPORATED AND A FIELD RUN SURVEY PERFORMED ON JANUARY 8, 1990 BY ROBERT P. HENRY, PROFESSIONAL LAND SURVEYOR (MARYLAND NO. 10856) OF GEORGE WILLIAM STEPHENS, JR. AND ASSOCIATES, INC.

- OF THE ENVIRONMENT WATER QUALITY CERTIFICATE 91-WQC-0326 MARYLAND WATER RESOURCES ADMINISTRATION WATERWAYS CONSTRUCTION PERMIT 90-WC-0647 AND HOWARD COUNTY WAIVER PETITION FILE# WP 91-189. EXPIRATION DATE NOVEMBER 6, 1997 3. PRELIMINARY P-90-23 APPROVED AUGUST 9, 1991.
- 4. WORK IN U.S. ROUTE #1 PERFORMED UNDER S.H.A. PERMIT NO. B-HO-5914-96 F91-24 WATERMAIN CROSSING IN U.S. ROUTE #1 PERFORMED UNDER CONTRACT NO.
- 5. MASS GRADING TO BE ACCOMPLISHED UNDER GP 96-121.
- 6. WAIVER PETITION FILE #WP 96-91 TO PERMIT PROCESSING A MASS GRADING PLAN WITHOUT AN APPROVED SITE DEVELOPMENT PLAN.



F 98-103





APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division

THESE SPECIFICATIONS ARE APPROPRIATE TO ALL PONDS WITHIN

THE SCOPE OF THE STANDARD FOR PRACTICE MD-378. ALL

ALL TREES, BRURH, LOOK, FENCES, RUBBISH AND OTHER

STORMWATER MANAGEMENT PONDS, A MINIMUM OF A 50 POOT

ALL CLEARLD AND GRUBBED MATERIAL SHALL BE DISPOSED OF

OUTSIDE AND BELOW THE LIMITS OF THE DAM AND RESERVOIR

AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. WHEN

SPECIFIED, A SUFFICIENT QUANTITY OF TOPSON, WILL BE

STOCRPILED IN A SUITABLE LOCATION FOR USE ON THE

MATERIAL - THE FILL MATERIAL SHALL BE TAKEN FROM

APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF

ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6".

FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL.

FOR THE CENTER OF THE EMBANKMENT AND CUT OFF TRENCH

SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION OC, SC, CH OR

CI. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER

MATERIALS IN THE EMBANKMENT IF DESIGN AND CONSTRUCTION ARE SUPERVISED BY A GEOTECHNICAL

PLACEMENT - AREAS ON WHICH FILL IS TO BE PLACED SHALL BE

SCARIFIED PRIOR TO PLACEMENT OF FILL FILL MATERIALS

SHALL BE PLACED IN MAXIMUM & INCH THICK (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER

BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM

PORTIONS OF THE EMBANKMENT. THE PRINCIPAL SPILLWAY

MINT BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT

COMPACTION - THE MOVEMENT OF THE HAULING AND SPREADING EQUI-MENT OVER THE FILL SHALL BE CONTROLLED

SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE

TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF THE

EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A

AND NOT EXCAVATED INTO THE EMBANKMENT.

THE ENTIRE LENGTH OF THE FILL. THE MOST PERMEABLE

EMBANKMENT AND OTHER DESIGNATED AREAS.

RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

THE MOST RECENT VERSION.

Site Preparation

Earth Fill

REFERENCES TO ASTM AND AMINTO SPECIFICATIONS APPLY TO

DEVELOPER & ENGINEER CERTIFICATES

() By The Developer:

POND

STRUCTURE

POND #244

5.3" × 5.3"

OPENING

INY. 1635

POND #8

MV. 179.5 '

6.0" ≠ opening or

4.0" A OPENING OR 3.6" SQUARE

-12"x 12" MIN. STEEL

PLATE BOLTED TO RELEASE STRUCTURE

OUTFALL PIPE

///×/-12.×12.

STEEL PLATE

EMBANKMENT

I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

Print name below signature R. COLFAX SNORF

() By the Engineer:

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must 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.

Print name below signature JAMES A. MARKLE JR.

I. STRUCTURE SHALL BE CAST-IN-PLACE REINFORCED CONCRETE WITH 3,500 PSI (MIN) STRENGTH @ 28 DAYS. 1 ALL REINPORCING TO BE CONTINUOUS THROUGHOUT ALL REINPORCING TO HAVE 1'-6" MIN. OVERLAPS. PROVIDE ADDITIONAL #4 REBARS ALONG THE PERIMETER OF ALL OPENINOS WITH THE AREA OF STEEL, EQUAL TO OR OREATER THAN AREA OF STEEL 'REMOVED' DUE TO 5. TWO (2) INCH COVER MIN. POR ALL REBARS IN WALLS AND 6. UNLESS OTHERWISE NOTED STRUCTURE SHALL BE BUILT IN " ACCORDANCE TO BALTIMORE COUNTY, STANDARD, DETAIL PLATE D-216. STRUCTURE SHALL NOT BE BRICK. SHOP DRAWINGS POR PRE-CAST CONCRETE RISERS (SEALED

BY A MD REGISTERED ENGINEER AND MEETING ASTM REQUIREMENTS FOR PRE-CAST STRUCTURES) MUST BE SUBMITTED TO THE ENGINEER, AND THE APPROVING AGE SCY (D.R.P.R.M.) FOR APPROVAL PRIOR TO FABRICATION. IF ... AY STRUCTURE DIMENSIONS VARY FROM WHAT WAS COMMINALLY SEVEREWEINAPPROVED, THIS THE HYDRAULES AND/OR FLOTATION OF THE STRUCTURE WILL HAVE TO BE

NOTE:
NO TREES, SHRUBS, OR OTHER WOODY VEGETATION WILL BE ALLOWED WITHIN 33' OF THE INLET STRUCTURE IN THE POOL AREA, AND NOT ALLOWED WITHIN 15' OF CENTERLINE OF THE

THE CONSTRUCTION MAY REQUIRE A PERMIT FROM THE ARMY CORPS OF ENGINEERS, THE WATER RESOURCES ADMINISTRATION ANTYOR BALTIMORE COUNTY, IT IS THE RESPONSIBILITY OF THE LANDOWNER TO CONTACT THESE THREE AGENCIES ETERMINE IF THE PROJECT REQUIRES A PERMIT U.S. ARMY CORPS OF ENGINEERS (410) 962-3620 WRA NON-TIDAL WETLANDS AND WATERWAYS BALTIMORE COUNTY (410) \$27-3990

IF REQUIRED BY THE SEDIMENT CONTROL INSPECTOR FENCING SHALL BE INSTALLED TO PREVENT ACCESS TO THE RASIN BY

NOTE:
THIS STORM JATER MANAGEMENT FACILITY IS DESIGNED TO MEET OR EXCEED ALL APPLICABLE REQUIREMNTS OF THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS AND THE SOIL CONSERVATION DISTRICT. MAINTENANCE OF THIS FACILITY (THE SWM FACILITY IS PRIVATE)

GENERAL NOTES: UNLESS OTHERWISE NOTED, ALL CONSTRUCTION AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION 1976, ERRATA AND ADDENDA.

HOWARD

AS-BUILT PLANS AND CERTIFICATION ARE REQUIRED FOR THIS

STORMWATER MANAGEMENT FACILITY. THESE MUST BE

PREPARED AND SEALED BY A REGISTERED PROFESSIONAL

ENGINEER HOWARD COUNTY WILL NOT PERFORM THE

INSPECTION OR PREPARE THE AS-BUILT PLANS OF CERTIFICATION, THE STORMWATER MANAGEMENT PERMIT SECURITY WILL NOT BE RELEASED UNTIL THE AS-BUILT PLANS ind certification are approved by Howar p county.

IN ORDER TO PREPARE THE REQUIRED ASSIBULT PLANS AND

CERTIFICATION, THIS STORMWATER MANAGEMENT FACILITY

MUST BE INSPECTED BY THE ENGINEER AT THE SPECIFIC STACES DEPEND CONSTRUCTION AS RECEIPED BY THE CORRENT

HOWAR D COUNTY STURMWATER MANAGEMENT POLICY AND DESIGN MANUAL. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST FIVE (3) WORKING DAYS PRIOR TO STARTING

ANY AREA NEEDED FOR TEMPORARY STOCKPILL WILL BE

LOCATED WITHIN THE LIMITS OF DISTURBANCE, AND UPGIREAM

FROM A SEDIMENT CONTROL MEASURE, BUT LOCATED SUCH AS

CLASS I - MARCH I THROUGH JUNE 13 - INCLUSIVE.

ANY WORK SHOWN ON THESE PLANS.

NOT TO IMPEDE UPON THE MEASURE.

APPLICABLE STREAM CLOSURE DATE:

MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER SOIL CONSERVATION SERVICE MARYLAND STANDARDS AND TIRED OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MUISTURE SUCH THAT THE REQUIRED DEGREE OF SPECIFICATIONS FOND CODE 378 NOVEMBER, 1992. MARYLAND DEPARTMENT OF TRANSPORTATION STATE COMPACTION WILL BE OBTAINED WITH THE EQUIPMENT USED. HIGHWAY ADMINISTRATION, JANUARY, 1982, STANDARD THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOSTURE SO THAT IF FORMED INTO A BALL IT WILL NOT CRUMBLE YET NOT SPECIFICATIONS FOR CONSTRUCTION AND MATERIAL. BE SO WET THAT WATER CAN BE SQUEEZED OUT. STORMWATER MANAGEMENT APPROVED UNDER BILL 103-84.

> MINDMUM REQUIRED DENSITY SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN ±2% OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE ENGINEER AT THE TIME O CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METROD 1-99.

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

AREAS DESKINATED FOR BORROW AREAS, EMBANIOWENT, AND STRUCTURAL WORKS SHALL BE CLEARED, ORUBBED AND STRIPPED OF TOPSOIL, ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. DENSITY AND MINIMUM PERMEABILITY. IF UNSUITABLE (PERVIOUS) MATERIAL IS ENCOUNTERED AT TIME OF CUT OFF CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO TRENCH INSTALLATION DEEPER THAN 4', IT WILL BE NECESSAR'S TO EXTEND THE CUIT-OFF TRENCH DOWN UNTIL SUITABLE MATERIAL IS ENCOUNTERED AS DETERMINED BY AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF GEOTECHNICAL ENVINEER, SOILS TO BE USED FOR CUT-OFF TRENCH/IMPERVIOUS CORE SHALL CONFORM TO UNIFIED OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON CLASSES CL. SC. CH. OR OC. THE FLANS. TREES, BRUSH AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE OROUND SURFACE. FOR DRY

IMPERVIOUS CORE - THE CORE SHALL BE FILLED ALONG OR PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE TOP WIDTH OF THE FILL SHALL BE COVERNED BY THE FOILIPMENT LINED WITH MINIMUM WIDTH BEING POUR FEET. THE TOP WIDTH SHALL BE SHOWN ON THE PLAN. THE SIDE SLOPES OF THE FILL SHALL BE 1 TO 1 0 PLATTER. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS OR HAND TAMPERS TO

ASSURE MAXIMUM DENSITY AND AIRMUM PERMEABILITY.

Structure Backfill

BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF 'HE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FUL SHALL BE PLACED IT HORIZONTAL LAYERS NOT TO EXCEED POUR INCHES THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACEN TO THE SEP. AT NO THE DURING THE BACKETI I ING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSE THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE UNDER NO CIRCUMSTANCES SHALL EQUIPMENT DE DRIVEN OVER ANY PART OF A CONCRETE STRUCTURE OR PIPE. UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER

Pipe Conduits

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION. REINPORCED CONCRETE PIPE - ALL OF THE POLLOWING CRITERIA SHALL APPLY POR REINPORCED CONCRETE PIPE:

MATERIALS - REINFORCED CONCRETE FIFE SHALL HAVE BELL AND SPICKYT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ABOUT DESIGNATION C-361.

BEDDING - ALL REINPORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING FOR THEIR ENTIRE LENGTH THIS BEDDING SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 10% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 3 INCHES, OR AS SHOWN ON THE

LAYING PIPE - BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM, JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE IANUFACTURER OF THE MATERIAL. AFTER THE KNINTS ARE SPALED FOR THE ENTIRE LINE THE BEDDONG SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. PARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE CHIEFINAL LINE AND CHAIN UP THE HIP. THE FIRST JOINT MUST BE LOCATED WITHIN 2 PEET FROM THE

4. BACKFILLING SHALL CONFORM TO "TTRUCAL'RE BACKFILL". OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

Concrete

CONCRETE SHALL MEET THE REQUIREMENTS OF MARILAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 608, MIX NO. 3.

Reinforcing Steel in the Concrete Structures

REINFORCING STEEL MUST BE ASTM A 615, GRADE 60. STEEL ANGLES AND ANCHOR BARS MUST BE ASTM A 36.

ROCK RIPRAP SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 903.

THE RIPRAP SHALL BE PLACED TO THE REQUIRED THICKNESS IN ONE OPERATION. THE ROCK SHALL BE DELIVERED AND PLACED. IN A MANNER THAT WILL ENSURE THE RIPRAP IN PLACE SHALL BE REASONABLY HOMOGENEOUS WITH THE LARGER ROCKS UNIPORMLY DISTRIBUTED AND FIRMLY IN CONTACT ONE TO ANOTHER WITH THE SMALLER ROCKS FILLING THE VOID BETWEEN THE LARGER ROCKS. FILTER CLOTH SHALL BE PLACED UNDER ALL RIP RAP AND SHALL MEET THE REQUIREMENTS O MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 919.12.

ALL WORK ON PERMANENT STRUCTURES SHALL BE CARRIED OUT

Care Of Water During Construction

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

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

STORMWATER MANAGEMENT FACILITY WILL BE STABILIZED WITH PERMANENT SLOPE SEEDING AS POLLOWS:

SEEDBED PREPARATION - LOOSEN UPPER 3 INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS

 SOIL AMENDMENTS - APPLY 2 TONS PER ACRE DOLOMITK LIMESTUNE (92 LBS_/1000 SQ. FT.), 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 BQ, I/T.) AND 400 LBS, PER ACRE OF 30-0-0 UREAPORM FERTILIZER (9.2 LDS/1000 BC) FT.) HARROY OR DISC LIME AND FERTILIZER INTO UPPER 3 INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. (9.1 LBS. /1000 SQ.FT.) OF 30-0-0 UREAFORM FERTILIZER AND 500 LBS. PER ACRE (11.3 LBS/1000 SQ. FT.) OF 10-10-10 FERTILIZER.

SEEDING - POR THE PERIOD MARCH I THROUGH APRIL 3 SEED WITH 40 LBS. PER ACRE KENTUCKY 31 TALL FESCUE AND IS LESS PER ACRE INOCULATED CROWNVETCH. POR THE PERIOD OF MAY I THROUGH JULY 31 SEED WITH 60 LIKE PER ACRE RENTUCKY 31 TALL PERCUE AND 2 LIBS. PER ACRE INOCULATED WEEPING LOVEGRARS. FOR THE PERIOD OF AUGUST 1 THROUGH OCTOBER 13 SEED WITH 40 LBS, PER ACRE KENTUCKY 31 TALL FESCUE AND 20 LBS. PER ACRE INOCULATED INTERSTATE SERICA LESPEDEZA. DURINO THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW. FOR THE PERIOD OF MAY I THROUGH FEBRUARY INOCULATED CROWNVETCH SHALL BE APPLIED DURING THE UBSEQUENT PERIOD OF MARCH I THROUGH APRIL 30 AT THE RATE OF 15 LBS. FER ACRE.

MULCHING - APPLY 1.5 TO 2 TONS PER ACRE OF UNROTTED SMALL GRAIN STRAW DIOMEDIATELY AFTER SEEDING ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING 218 GALLONS PER ACRE OF EMULSIFIED ASPHALT. ON FLAT AREAS OF SLOPE & FEET OF HIGHER, USE 348 GALLONS PER

MAINTENANCE - INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESERVING

Erosion And Sediment Control

CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SIXTH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND ur pollution minimized. State and local laws CONCERNING POLLUTION ABATEMENT WILL BE POLLOWED, THI APPROVED SEDIMENT CONTROL PLANS SHALL BE POLLOWED AT ALL TIMES DURING THE CONSTRUCTION PROCESS.

Filter Cloth

FILTER CLOTH SHALL MEET THE REQUIREMENTS OF MARTILAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 921,09, DURABLE FILTER PARTICE FOR DRAINAGE PURPOSES INCLUDE BUT ARE NOT LIMITED TO MIRAN 403, DUPONT TYPAC No. 3341 @ 3401.

PHITER CLOTH SHALL BE PROTECTED PROMPLING OR TEARING, ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE REPAIRED BY PLACING ANOTHER SMALL PIEC OF FILTER CLOTH OVER THE DAMAGED AREA OR BY REPLACING THE CLOTH SECTION... ALL OVERLAPS SHALL BE A MINIMUM OF

GABIONS SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 312.

Outfall Protection

SUPPORADE FOR RIPRAP OR GARION OUTFALLS SHALL RE PREPARED TO THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A density of approximately that of the surrounding UNDISTURBED MATERIAL ALL ROCK OR GRAVEL SHALL CONPORM TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED IN THE RIPRAP OR GABION. ALL STONE SHALL BE DELIVERED. AND PLACED IN A MANNER THAT WILL INSURE THE STONE IN PLACE SHALL BE REASONABLY HOMOGENEOUS WITH THE LARGER ROCKS, UNIPORMLY DISTRIBUTED AND FIRMLY IN CONTACT ONE TO ANOTHER, WITH THE SMALLER ROCKS FILLING THE VOIDS BETWEEN THE LARGER ROCKS, STONE FOR OUTFALL MAY BE PLACED BY EQUIPMENT. RIPRAP OR GABION OUTLETS SHALL BE CONSTRUCTED TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID ANY DISPLACEMENT OF UNDERLYING MATERIALS. THE CONTRACTOR SHALL AVOID DAMAGE TO THE FILTER BLANKET OR CLOTH DURING PLACEMENT OF RIPRAP. HAND PLACEMENT SHALL BE REQUIRED AS NEEDED TO PREVENT DAMAGE TO THE PERMANENT works. Filter cloth shall be placed under all riprap

CONSTRUCT FENCING IN ACCORDANCE WITH THE STATE HIGHWAY ADMINISTRATION STANDARD DETAILS 690.01 AND 690.02. USE SPECIFICATIONS FOR A 6' FENCE, SUBSTITUTING 42' FABRIC AND 6' 8" LINE POSTS. CONSTRUCT THE GATE IN ACCORDANCE WITH THE S.H.A. STANDARD DETAIL 690.01 WITH 42" FABRIC THE FABRIC USED FOR THE FENCE AND GATE MUST CONFORM TO AASHTO DESIGNATION M-181-74 DARK VINYS COATING IS REQUIRED FOR THE FENCE POSTS AND WIRE FABRIC IN ACCORDANCE WITH THE LANDSCAPE MANUAL ADOPTED BY RESOLUTION 56-90, OCTOBER 1, 1990.

. * 3 SPLIT RAIL (WOOD) FENCE IS OPTIONAL

STORMWATER MANAGEMENT POND #2

loose to very dense, sandy SILT with rock fragments, clay USC: (CL) PROP POND BOTTOM P.6 INV. EL. 176.07 Gray green, moist, loose to dense, sandy SILT with clay, 6" topsoil at surface 1HV. EL 169,60 1 170.62 tock fragments, layers of silty fine sand 1 6 tupsoil at surface very dense, sandy SILT with PROP POND BOTTOM Buttom of hole at 15.0" USC: CL USDA: LOAM some rock fragments, layers of silty fine sand Decomposed rock textures AT COMPLETION DRY Yellow brown, moist, moderately plastic, medium stiff to stiff, in Sample 3 AFTER 24 HRS DRY 6° topsoil at surface silty CLAY with sand Difficult augering below 5.0" INV. EL 102.15 USC: (C.) USDA: (CLAY LOAM) Rock fragments in Bottom of hole at 8.5" Gray green, moist, dease to very dense, sandy SILT with rock fragments, gravel / USC: (ML)
USDA; (LOAM) INV. EL. 158.342 No water encountered Cave depth 6.5" Bottom of hole at 15.0" Reck fragments in AT COMPLETION DRY AFTER REMARKS 10'8" ATC: MPLETION DRY SOIL BORING LOGS Gr und Water Depth AT HARLETION DRY

OWNER/APPLICANT TROY HILL BUSINESS PARK PARTNERSHIP C/O MANEKIN CORP. 7165 COLUMBIA GATEWAY DRIVE OLUMBIA, MARYLAND 21046 (410) 290-1400 ATTN: COLE SCHNORF

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservatior Disc

ENGINEER GEORGE WILLIAM STEPHENS JR. AND ASSOCIATES, INC.

> 658 KENILWORTH DRIVE SUITE 100 TOWSON, MARYLAND 21204 (410) 825-8120



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DRAWN:	KJ CDT TC	,	BY	NO	REVISION	DATE	
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				*			

SEDIMENT CONTROL STORM WATER MANAGEMENT DETAILS POND#2

TROY HILL CORPORATE CENTER PHASE I PARCEL A-6

ELECTION DISTRICT #1
DATE: MARCH 07,1998 HOWARD COUNTY, MD. SCALE: AS SHOWN FILE NOS. S90-05, P90-25, F91-24

SHEET NO. 5 OF 5

AS SHOWN

F 98-103