

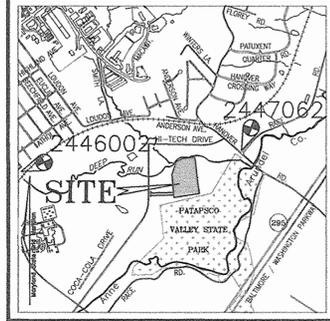
SHALLOW RUN MASS GRADING PLAN SITE DEVELOPMENT PLAN

GENERAL NOTES

- All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications, if applicable.
- The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work.
- The contractor is to notify the following utilities or agencies at least five days before starting work on these drawings:
 - Miss Utility 1-800-257-7777
 - Verizon 410-754-6281
 - Howard County Bureau of Utilities: 313-2366
 - AT&T Cable Location Division: 393-3553
 - B.G.&E. Co. Contractor Services: 850-4620
 - B.G.&E. Co. Underground Damage Control: 787-4620
 - State Highway Administration: 531-5533
- Site analysis:
 - Area of Parcel 287: 11.15 Ac.
 - Area of Non-Buildable Parcel H: 0.768 Ac.
 - Total Area: 11.918 Ac.
 - Present zoning: M2
 - Proposed use:
 - Mass Grading
 - Building area : 0 s.f.
 - Disturbed area : 7.53 Ac.
 - Building coverage on site : 0 Ac. or 0% of gross area
 - Paved parking lot/area : 0 Ac. or 0% of gross area
 - Area of landscape island : 0 Ac. = 0 sf
 - Steep Slopes= Moderate (15-24.9%) 65,940s.f. : Steep (>25%) 46,399s.f.
 - Cut: 24,000 CY Fill: 24,000 CY
- Project background:
 - Location : Jessup, Md.; Tax Map 38, Grid 20, Parcel 287 and Patapsco Valley Business Center, Non-Buildable Parcel H
 - Zoning : M2
 - Subdivision : Patapsco Valley Business Center
 - Section/Area : N/A
 - Site Area : 11.15 Acres±
 - DPZ references : F-94-24(PLATS 14623+14625), F-02-164(PLATS 15496+15498), WP-05-01.
- The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 313-1880 at least five (5) working days prior to start of work.
- Any damage to public right-of-ways, paving, or existing utilities will be corrected at the contractor's expense.
- Existing utilities located from Road Construction Plans, Field Surveys, Public Water and Sewer Extension Plans and available record drawings. Approximate location of existing utilities are shown for the contractor's information. Contractor shall locate existing utilities well in advance of construction activities and take all necessary precautions to protect the existing utilities and to maintain uninterrupted service. Any damage incurred due to contractor's operation shall be repaired immediately at the contractor's expense.
- All reinforced concrete for storm drain structures shall have a minimum of 28 days strength of 3,500 p.s.i.
- Estimates of earthwork quantities are provided solely for the purpose of calculating fees.
- Geotechnical report prepared by Herbst/Benson & Associates on June 26, 2003. Soil compaction specifications, requirements, methods and materials are to be in accordance with the recommendations of the project Geotechnical Engineer. Geotechnical Engineer to confirm acceptability of proposed paving section, based on soil test prior to construction.
- All storm drain pipe bedding shall be Class 'C'.
- The existing topography is taken from field run survey with two foot contour intervals prepared by Frederick Ward Associates dated 2-14-03. The coordinates shown hereon are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System.
- A noise study is not required for this project.
- Public Water available along Coca-Colo Drive. (Ex. 8" water stub, contract # 14-3342-D) Public Sewer available along Shallow Run Interceptor, contract # 181-S.
- Stormwater Management CPV and Wqy for ultimate site development provided within proposed pond. Rev to be provided at time of full scale development.
- An APFO Traffic study was prepared by the Traffic Group on June 17, 2003.
- The Wetlands shown on the plans were delineated by Eco-Science Professionals, dated July 29, 2003.
- Floodplain shown hereon is based on Deep Run Floodplain Study (Map #24-47).
- Pond is Structure Hazard Class 'A'.
- Requirement for landscaping to be provided with subsequent site development on a future site development plan.
- The Reforestation requirement of 4.82 acres has been satisfied through a fee-in-lieu payment of \$104,979.60 (206,039 SF X 0.50). The required fee-in-lieu payment was paid to the forest conservation fund.
- The purpose of this SDP is to provide mass grading of the parcel and for construction of a SWM pond that provides WqV and Cpv in preparation for a future building and parking lots.
- This plan is subject to the requirements of fifth edition of the subdivision regulations.
- The proposed SWM pond may required reconstruction should future runoff to pond exceed estimates under this plan.
- Flood plain limits shown on this Site Development Plan requires that all building structures are a minimum of 15 feet above 100 yr. WSEL.
- The proposed paving, curb and gutter, and landscaping to be provided with subsequent site development on a future site development plan.
- REF WP-05-01; JANUARY 6, 2005 THE PLANNING DIRECTOR APPROVED REQUEST TO WAIVE SECTION 16.156(K) TO REACTIVATE SDP-04-23 AND GRANT A 180 DAY EXTENSION TO COMPLETE THE DEVELOPER'S AGREEMENTS, POST ALL SURETIES, PAY ALL FEES AND SUBMIT THE SDP-04-23 PLAN ORIGINALS FOR SIGNATURE APPROVAL BY 1/31/05.

LEGEND

- Existing Contour
- Proposed Contour
- Existing Spot Elevation
- Proposed Spot Elevation
- Direction of Flow
- Existing Trees to Remain
- Light Poles Single Overhead Double Overhead
- Concrete



VICINITY MAP
SCALE: 1"=2,000'

BENCHMARKS
 HOWARD COUNTY BENCHMARK 2447062
 N 494,376.047 E 849,030.193 ELEV.: 46.266'
 HOWARD COUNTY BENCHMARK 2446002
 N 493,665.030 E 873,726.708 ELEV.: 107.588'



LOCATION MAP
SCALE: 1"=100'

SHEET INDEX	
DESCRIPTION	SHEET NO.
Cover Sheet	1 of 12
Site Layout, Sediment and Erosion Control Plan	2 of 12
Site Layout, Sediment and Erosion Control Plan	3 of 12
Site Layout, Sediment and Erosion Control Plan	4 of 12
Sediment & Erosion Control Notes and Details	5 of 12
Stormwater Management Notes and Details	6 of 12
Forest Stand Delineation	7 of 12
Forest Stand Delineation	8 of 12
Forest Stand Delineation	9 of 12
Forest Conservation Plan	10 of 12
Forest Conservation Plan	11 of 12
Forest Conservation Plan	12 of 12

AS-BUILT CERTIFICATION	
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.	
JOHN W. CLAPSADLE	#16956
	MD P.E. No.
SIGNATURE	DATE 4/28/07

NO.	REVISION	DATE

**SITE DEVELOPMENT PLAN
COVER SHEET**
**SHALLOW RUN
MASS GRADING PLAN**
 PARCEL 287 & PATAPSCO VALLEY BUSINESS CENTER, NON-BUILDABLE PARCEL H
 TAX MAP #38 BLOCK 20 1ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL
ENGINEERING, INC.**
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET TEL: 410.461.7666
 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

DESIGN BY: DZ
 DRAWN BY: DZ
 CHECKED BY: RHV
 DATE: FEBRUARY 2005
 SCALE: AS SHOWN
 W.O. NO.: 03-12

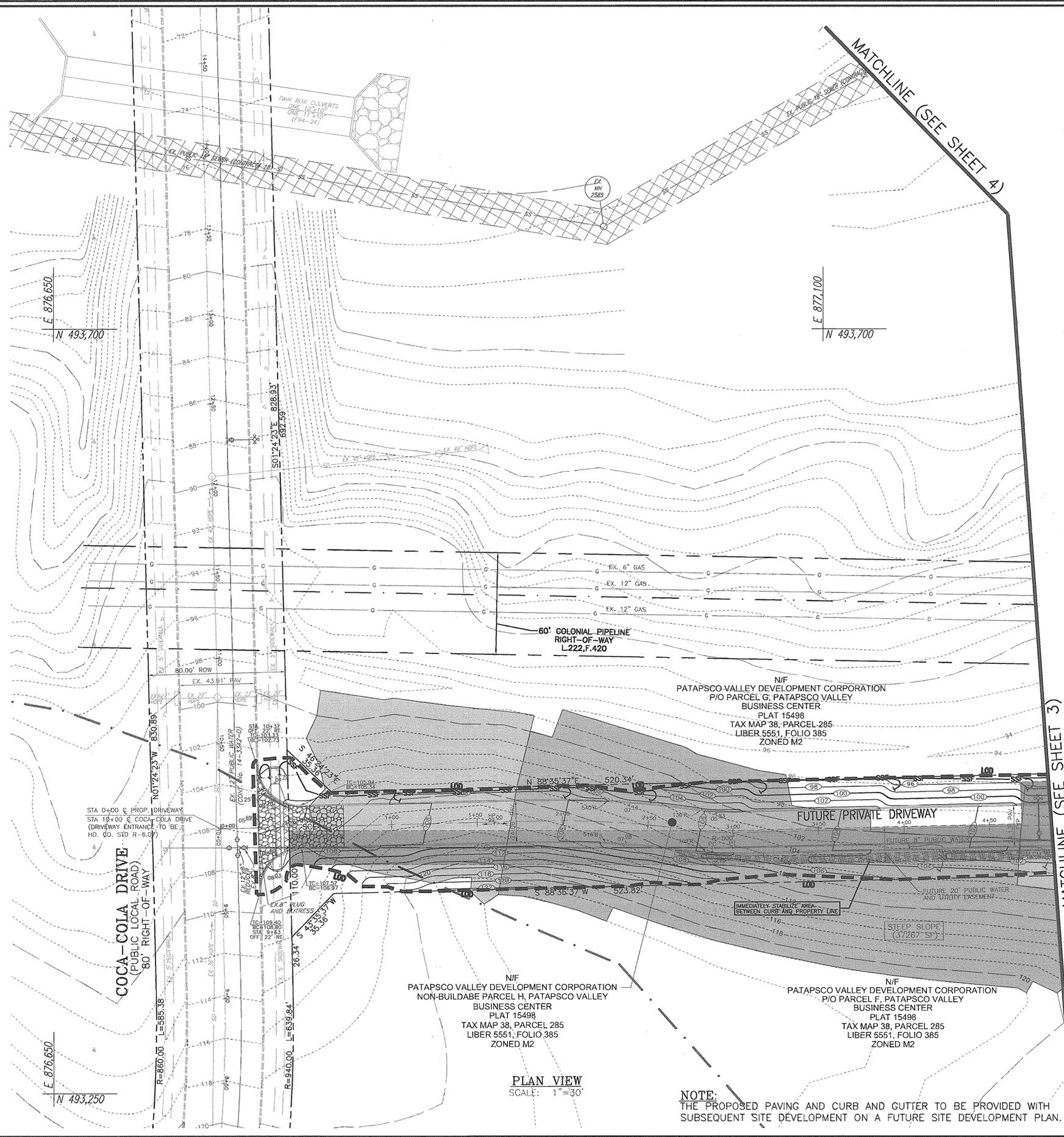
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

 CHIEF, DEVELOPMENT ENGINEERING DIVISION 3/16/05
 DATE

 CHIEF, DIVISION OF LAND DEVELOPMENT 3/16/05
 DATE

 DIRECTOR 3/31/05
 DATE

ADDRESS CHART					
LOT/PARCEL#	STREET ADDRESS				
Parcel 287 and Patapsco Valley Business Center, Non-buildable Parcel H	7400 Coca-Colo Drive				
PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	PARCEL NUMBER			
PATAPSCO VALLEY BUSINESS CENTER		287 AND NON-BUILDABLE PARCEL H			
DEED REF.	BLOCK NO.	ZONE	TAX/ZONE	ELECT. DIST.	CENSUS TR.
5526/205, 5551/385	20	M2	38	1st	6012.02
14623, 14625, 15496, 15498					
WATER CODE: A04			SEWER CODE: 2150501		



- LEGEND:**
- EXISTING CONTOUR
 - PROPOSED CONTOUR
 - PROPOSED SPOT ELEVATION
 - EXISTING SPOT ELEVATION
 - EXISTING CURB AND GUTTER
 - FUTURE CURB AND GUTTER
 - EXISTING GUY WIRE
 - EXISTING UTILITY POLE
 - EXISTING LIGHT POLE
 - EXISTING SIGN
 - EXISTING BOLLARD
 - EXISTING SANITARY MANHOLE
 - EXISTING CLEANOUT
 - EXISTING FIRE HYDRANT
 - EXISTING WATER LINE
 - EXISTING SD MANHOLE
 - EXISTING STORM DRAIN
 - EXISTING GASLINE
 - EXISTING TREES (FIELD LOCATED)
 - EXISTING TREELINE (FIELD LOCATED)
 - EXISTING FENCE
 - PROPERTY LINE
 - RIGHT-OF-WAY LINE
 - SOILS BOUNDARY
 - SILT FENCE
 - SUPER SILT FENCE
 - LIMIT OF DISTURBANCE
 - STABILIZED CONSTRUCTION ENTRANCE
 - EXISTING 20" PUBLIC SEWER AND UTILITY EASEMENT
 - EXISTING WETLANDS
 - STEEP SLOPES 25% OR GREATER
 - MODERATE SLOPES 15% - 24.99%
 - TOP OF STREAM BANK
 - BOTTOM OF STREAM BANK
 - FUTURE GUARDRAIL
 - PROP. TREE LINE
 - EROSION CONTROL MATING
 - PUBLIC 100 YR FLOODPLAIN DRAINAGE AND UTILITY EASEMENT
 - FUTURE 20" PUBLIC WATER AND UTILITY EASEMENT
 - RIPRAP
 - GABION INFLOW PROTECTION

OWNER/DEVELOPER
 BLUE RUN ENTERPRISES, LLC
 1401 WEST JOPPA ROAD
 TOWSON, MARYLAND 21204

BY THE ENGINEER:
 I HEREBY 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.

SIGNATURE OF ENGINEER: *Robert H. Vogel* DATE: 2/15/05
 ROBERT H. VOGEL, P.E.

BY THE DEVELOPER:
 I WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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.

SIGNATURE OF DEVELOPER: *John A. ...* DATE: 2-15-05

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

USDA-NATURAL RESOURCES CONSERVATION SERVICE
 DATE: 3/3/05

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 HOWARD S.C.D. DATE: 3/3/05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 DATE: 3/16/05
 DATE: 3/16/05
 DATE: 3/31/05

PLAN VIEW
 SCALE: 1"=30'

NOTE:
 THE PROPOSED PAVING AND CURB AND GUTTER TO BE PROVIDED WITH SUBSEQUENT SITE DEVELOPMENT ON A FUTURE SITE DEVELOPMENT PLAN.

NO.	REVISION	DATE

**SITE DEVELOPMENT PLAN
 SITE LAYOUT, SEDIMENT AND
 EROSION CONTROL PLAN
 SHALLOW RUN
 MASS GRADING PLAN**

PARCEL 287 & PATAPSCO VALLEY BUSINESS CENTER, NON-BUILDABLE PARCEL H
 HOWARD COUNTY, MARYLAND

TAX MAP #38 BLOCK 20
 1ST ELECTION DISTRICT

ROBERT H. VOGEL ENGINEERING, INC.
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 BLYCOTT CITY, MD 21043 FAX: 410.461.8956

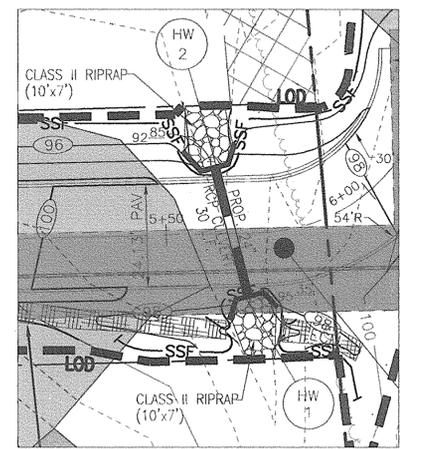
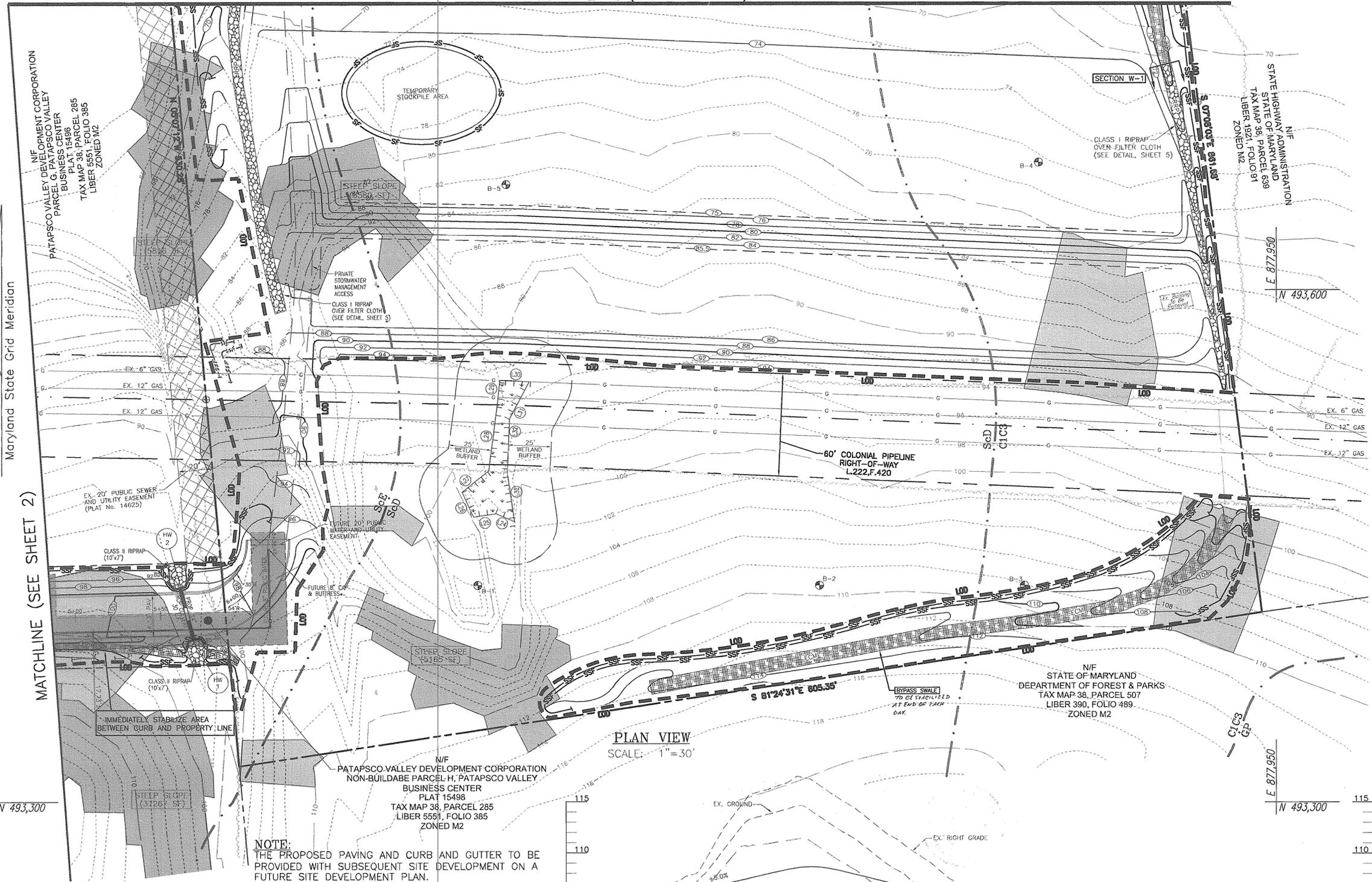
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 DRAWN BY: *DZ*
 CHECKED BY: *RHV*
 DATE: FEBRUARY 2005
 SCALE: 1"=30'
 W.O. NO.: 03-12

2 SHEET OF 12

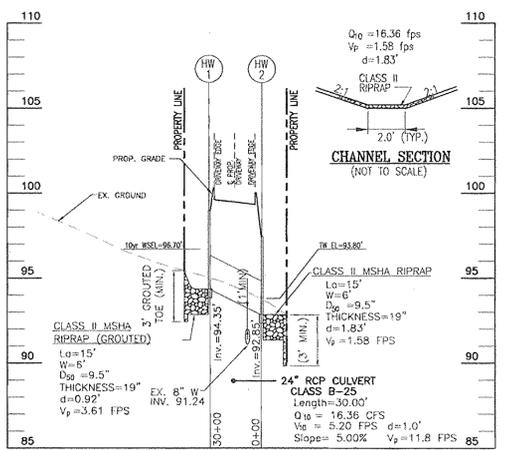
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MATCHLINE (SEE SHEET 4)

STORMWATER MANAGEMENT FACILITY TO BE PRIVATELY OWNED AND MAINTAINED



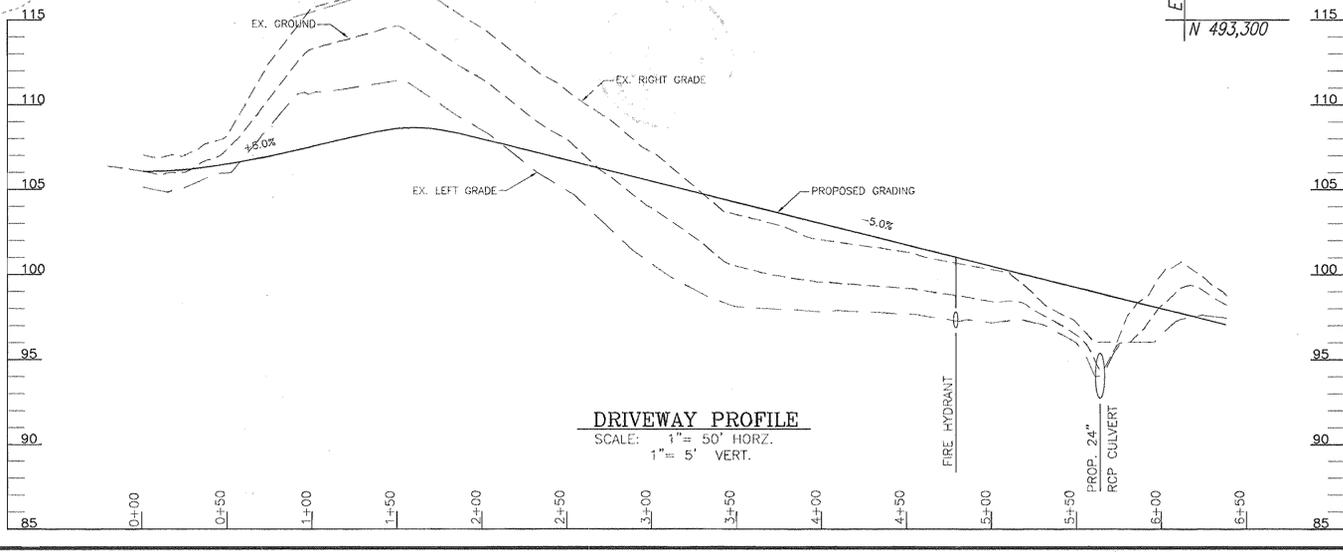
CULVERT INSET
SCALE: 1"=20'



CULVERT AT ENTRANCE PROFILE
SCALE: 1"=50' HORIZ.
1"=5' VERT.

OWNER/DEVELOPER
BLUE RUN ENTERPRISES, LLC
1401 WEST JOPPA ROAD
TOWSON, MARYLAND 21204

PLAN VIEW
SCALE: 1"=30'



DRIVEWAY PROFILE
SCALE: 1"=50' HORIZ.
1"=5' VERT.

NOTE:
THE PROPOSED PAVING AND CURB AND GUTTER TO BE PROVIDED WITH SUBSEQUENT SITE DEVELOPMENT ON A FUTURE SITE DEVELOPMENT PLAN.

BY THE DEVELOPER:
"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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."
SIGNATURE OF DEVELOPER: [Signature] DATE: 2-15-05

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
USDA-NATURAL RESOURCES CONSERVATION SERVICE
SIGNATURE: [Signature] DATE: 3/3/05
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD S.C.D. SIGNATURE: [Signature] DATE: 3/3/05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION: [Signature] DATE: 3/3/05
CHIEF, DIVISION OF LAND DEVELOPMENT: [Signature] DATE: 3/31/05
DIRECTOR: [Signature] DATE: 3/31/05

BY THE ENGINEER:
"I HEREBY 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."
SIGNATURE OF ENGINEER: [Signature] DATE: 2/15/05
ROBERT H. VOGEL, P.E.

NO.	REVISION	DATE

**SITE DEVELOPMENT PLAN
SITE LAYOUT, SEDIMENT AND
EROSION CONTROL PLAN
SHALLOW RUN
MASS GRADING PLAN**

TAX MAP #38 BLOCK 20
1ST ELECTION DISTRICT

PARCEL 287 & PATAPSCO VALLEY BUSINESS CENTER, NON-BUILDABLE PARCEL H
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLICOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8966

DESIGN BY: [Signature] DZ.
DRAWN BY: [Signature] DZ.
CHECKED BY: [Signature] RHV.
DATE: FEBRUARY, 2005
SCALE: AS SHOWN
W.O. NO.: 03-12

STATE OF MARYLAND
REGISTERED PROFESSIONAL ENGINEER
ROBERT H. VOGEL, PE No. 16193

3 SHEET OF 12

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MARYLAND 378
STORMWATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Earth Fill

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer. Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired, or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not be so wet that water can be squeezed out.

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within $\pm 2\%$ of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi; 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that minimum of 6" (measured perpendicular to the pipe) of the pipe of flowable fill shall be under (bedding) over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of the structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

Pipe Conduits

All pipes shall be circular in cross section.

Corrugated Metal Pipe

1. **Materials** - (Polymer Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-245 & M-246 with watertight coupling bands or flanges.

2. **Materials** - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Aluminum Coated Steel Pipe when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER PONDS (P-1 THROUGH P-5)

STORMWATER MANAGEMENT FACILITY

ROUTINE MAINTENANCE

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

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

3. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOVING OPERATION AS NEEDED.

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

NON-ROUTINE MAINTENANCE

5. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATION.

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

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

2. **Coupling, bands, anti-seep collars, and sections, etc.**, must be composed of the same material and coatings as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.

3. **Connections** - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collar shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled on adequate number of corrugations to accommodate the bandwidth. The following type connections are acceptable for pipes less than 24 inches diameter: flanges on both ends of the pipe with a circular 3/8 inch thick closed cell circular neoprene gasket; and a 12-inch wide hugger type band with o-ring gaskets having a minimum diameter of 1/2 inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a 24 inch long annular corrugated band using a minimum of 4 (four) rods and nuts, 2 on each connecting pipe. A 24-inch wide by 3/8-inch thick closed cell circular neoprene gasket will be installed with 12 inches on the end of each pipe. Flanged joints with 3/8-inch closed cell gaskets the full width of the flange is also acceptable.

Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.

4. **Bedding** - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

5. **Backfilling** shall conform to "Structure Backfill".

6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

1. **Materials** - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.

2. **Bedding** - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. The bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe to at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.

3. **Laying Pipe** - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.

4. **Backfilling** shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be shown on the drawings.

6. The following criteria shall apply for plastic pipe:

1. **Materials** - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4" - 10" inch pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type S.

2. **Joints and connections** to anti-seep collars shall be completely watertight.

3. **Bedding** - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

4. **Backfilling** shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be shown on the drawings.

6. When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

Concrete
 Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 3.

Rock Riprap
 Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction Materials, Section 311.

Geotextile shall be placed under all riprap and shall meet requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

Care of Water during Construction
 All work on permanent structures shall be carried out in areas free from water. The contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled or graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory performance of all construction operations. During the piling and compaction of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation so such locations which may require draining the water pumps from which the water shall be pumped.

Stabilization
 All borrow areas shall be graded to provide proper drainage and left 1 slightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

Erosion and Sediment Control
 Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.

STORMWATER MANAGEMENT FACILITY

ROUTINE MAINTENANCE

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

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

3. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOVING OPERATION AS NEEDED.

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

NON-ROUTINE MAINTENANCE

5. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATION.

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

OPERATION, MAINTENANCE AND INSPECTION

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

IF BROKEN ROCK FRAGMENTS ARE ENCOUNTERED AT FINISHED POND BOTTOM, UNDER CUT A MINIMUM OF 12" BELOW BASIN GRADE AND TO A HORIZONTAL DISTANCE OF AT LEAST 18" BEYOND EACH EDGE OF THE BROKEN ROCK AND BACKFILL WITH FINE-GRAINED ML OR CL SOILS COMPACTED TO A FIRM CONDITION. THIS PROCEDURE SHOULD BE PERFORMED UNDER THE SUPERVISION OF THE PROJECT GEOTECHNICAL ENGINEER.

STORMWATER MANAGEMENT FACILITY

ROUTINE MAINTENANCE

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

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

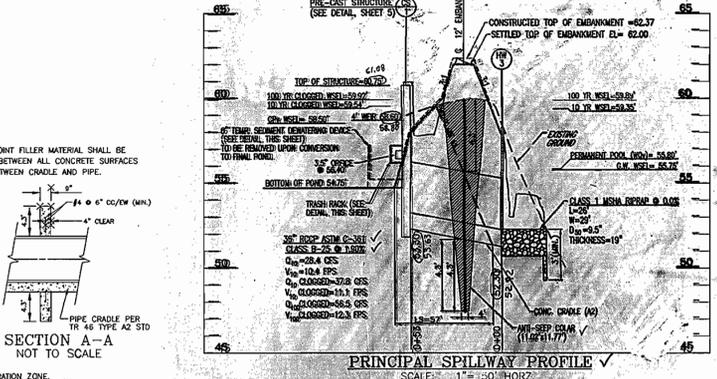
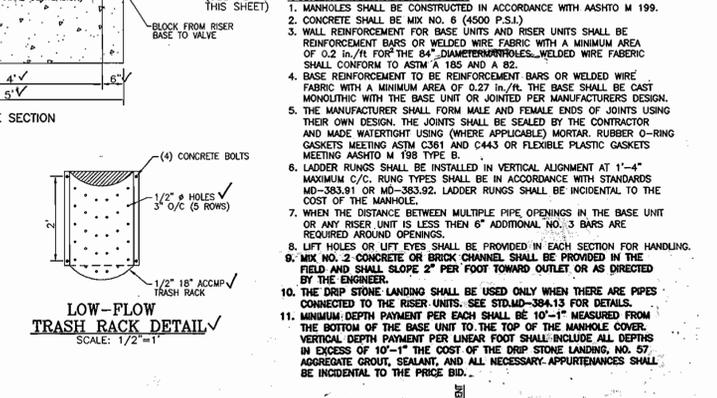
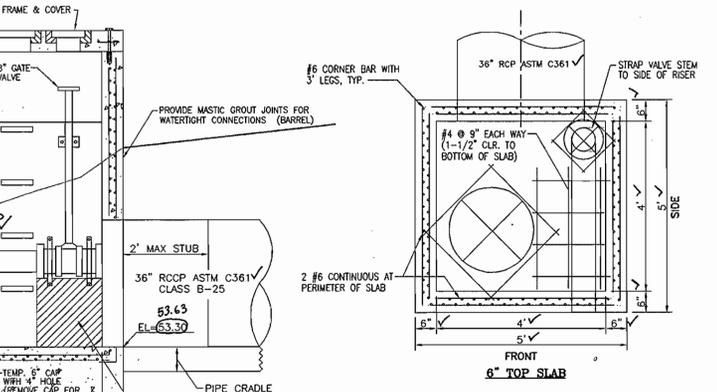
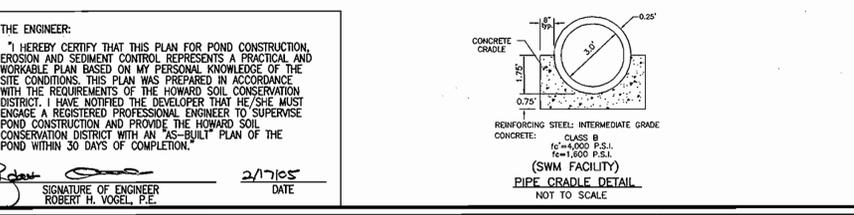
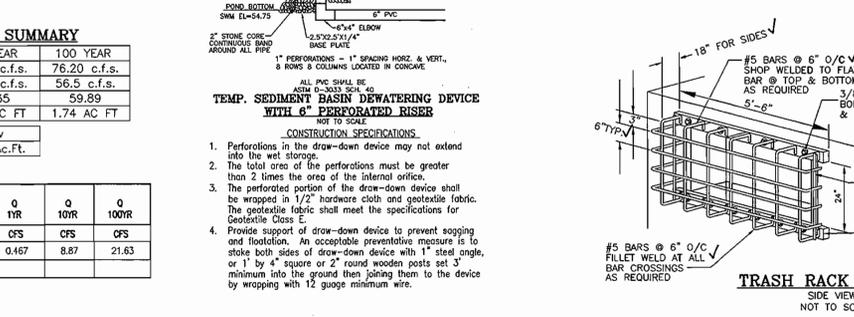
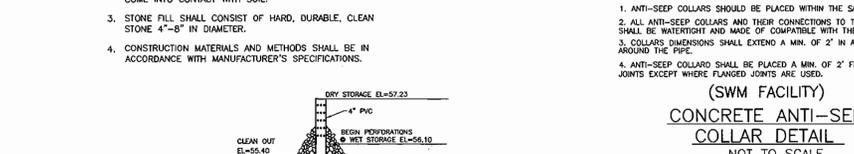
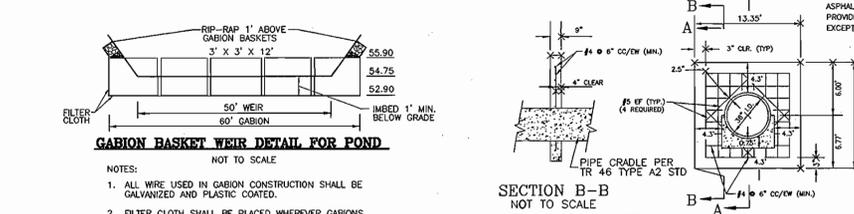
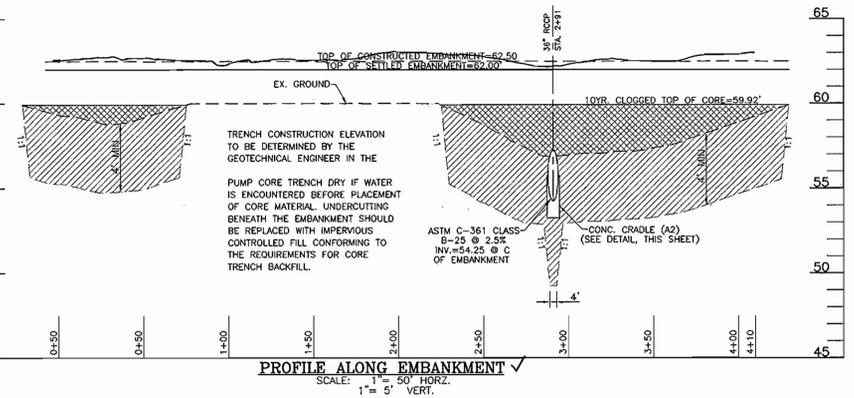
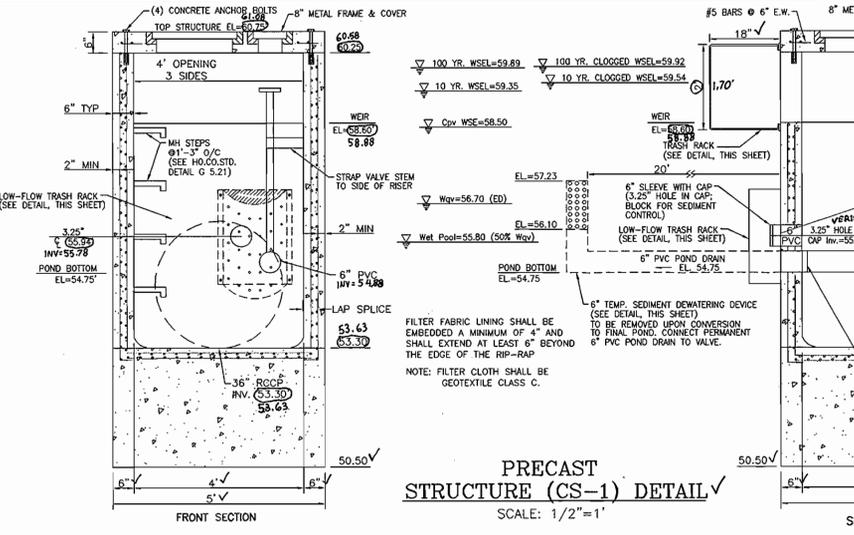
3. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOVING OPERATION AS NEEDED.

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

NON-ROUTINE MAINTENANCE

5. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATION.

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



AS-BUILT CERTIFICATION

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

JOHN W. CLAPSADLE
 16956
 MD P.E. No.
 415207
 DATE

STATE OF MARYLAND PROFESSIONAL ENGINEERS

SITE DEVELOPMENT PLAN
STORMWATER MANAGEMENT
NOTES AND DETAILS
SHALLOW RUN
MASS GRADING PLAN

TAX MAP #38 BLOCK 20
 1ST ELECTION DISTRICT

PARCEL 287 & PATAPSCO VALLEY BUSINESS CENTER, NOW UNBUILDABLE PARCEL 11
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

DESIGN BY: DZ
 DRAWN BY: DZ
 CHECKED BY: RHV
 DATE: FEBRUARY 2005
 SCALE: AS SHOWN
 W.O. NO.: 03-12

6 SHEET OF 12

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 3/1/05

CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 3/1/05

DIRECTOR
 DATE: 3/1/05

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

USDA-NATURAL RESOURCES CONSERVATION SERVICE
 DATE: 3/1/05

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

HOWARD S.C.D.
 DATE: 3/1/05

BY THE DEVELOPER:

I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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 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.

DATE: 2-15-05

BY THE ENGINEER:

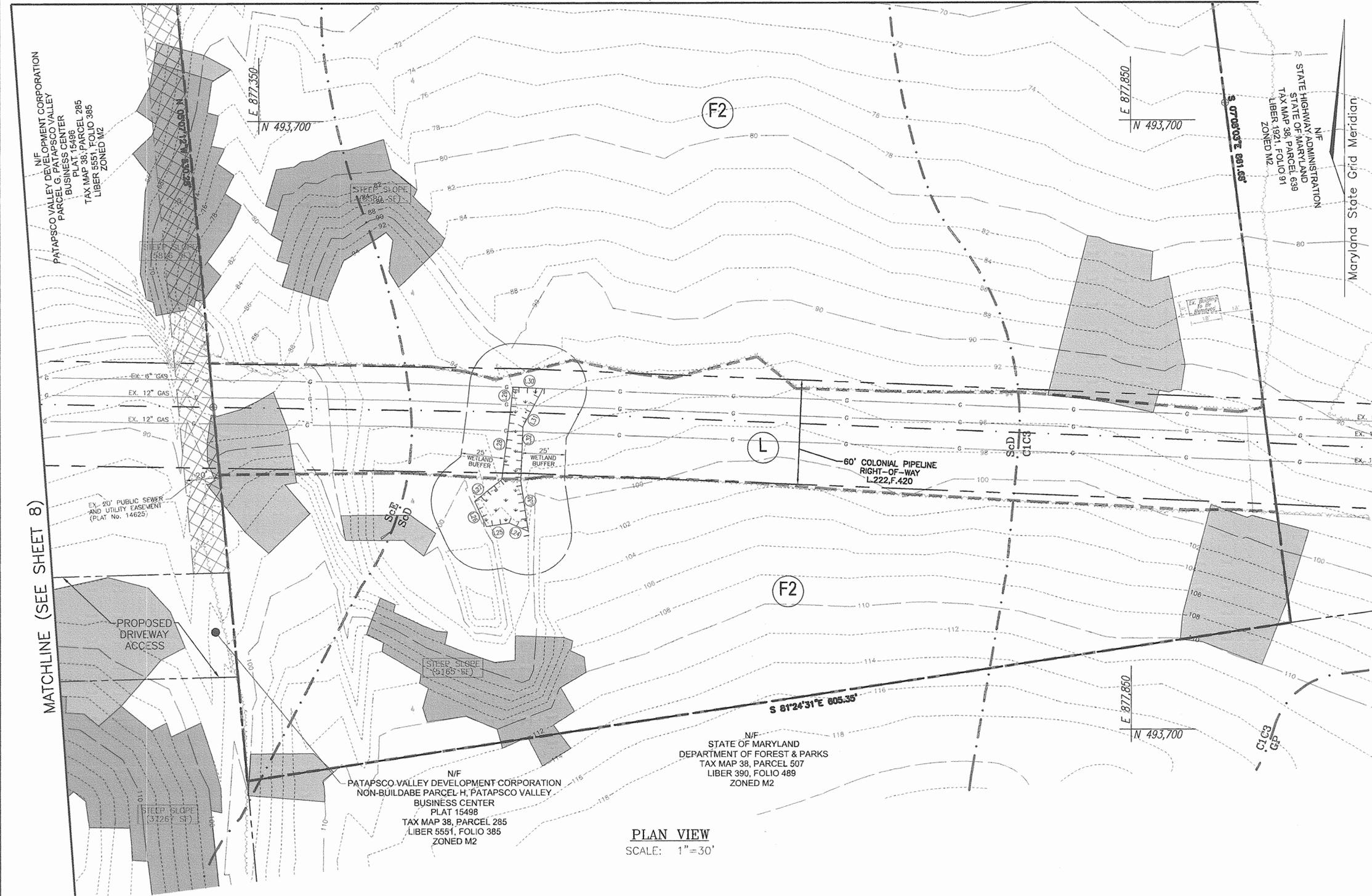
I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE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

DATE: 2/1/05

OWNER/DEVELOPER

BLUE RUN ENTERPRISES, LLC
 1401 WEST JOPPA ROAD
 TOWSON, MARYLAND 21204

MATCHLINE (SEE SHEET 10)



LEGEND:

	EXISTING CONTOUR
	EXISTING SPOT ELEVATION
	EXISTING CURB AND GUTTER
	EXISTING GUY WIRE
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	EXISTING SIGN
	EXISTING BOLLARD
	EXISTING SANITARY MANHOLE
	EXISTING SANITARY LINE
	EXISTING CLEANOUT
	EXISTING FIRE HYDRANT
	EXISTING WATER LINE
	EXISTING SD MANHOLE
	EXISTING STORM DRAIN
	EXISTING GASLINE
	EXISTING TREES (FIELD LOCATED)
	EXISTING TREE LINE (FIELD LOCATED)
	EXISTING FENCE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	SOILS BOUNDARY
	EXISTING 20' PUBLIC SEWER AND UTILITY EASEMENT
	EXISTING WETLANDS
	STEEP SLOPES 25% OR GREATER
	MODERATE SLOPES 15% - 24.99%
	TOP OF STREAM BANK
	BOTTOM OF STREAM BANK
	PUBLIC 100 YR FLOODPLAIN DRAINAGE AND UTILITY EASEMENT
	STANDS

- NOTES**
1. THE PROPERTY OUTLINE IS BASED ON A DEED PLOT.
 2. THE EXISTING FEATURES AND CONTOURS SHOWN HEREON ARE BASED ON FIELD RUN TOPOGRAPHY PERFORMED BY FREDERICK WARD ASSOCIATES, INC. ON FEBRUARY 14, 2003.
 3. THERE ARE NO HISTORIC STRUCTURES OR OTHER HISTORIC RESOURCES ON SITE.
 4. THE WETLAND SHOWN ON THE PLANS WERE DELINEATED BY ECO-SCIENCE PROFESSIONALS, DATED JULY 29, 2003.
 5. THE SITE CONTAINS NO SPECIMEN TREES.

OWNER/DEVELOPER
 BLUE RUN ENTERPRISES, LLC
 1401 WEST JOPPA ROAD
 TOWSON, MARYLAND 21204

MATCHLINE (SEE SHEET 8)

PLAN VIEW
 SCALE: 1"=30'

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	WATER TABLE	TYPE
C1C3	CHILLUM GRAVELLY LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODER	5+	B
Cs	COMUS SILT LOAM	4+	B
ScD	SANDY AND CLAYEY LAND, MODERATELY SLOPING	20+	B
ScE	SANDY AND CLAYEY LAND, MODERATELY STEEP	20+	B

NOTE: HOWARD SOIL SURVEY, MAP NUMBER 26 & 31

FOREST STAND ANALYSIS TABLE

KEY	A. TYPE OF COMMUNITY	B. AREA	C. SOILS INFORMATION			D. EXISTING VEGETATION	E. STAND CHARACTERISTICS			F. FOREST AREA IN SEN. ENV.	G. HABITAT
			1. SOILS TYPES	2. TYPICAL FOREST COVER FOR SOILS TYPE	3. WOODLAND SUITABILITY INDEX		1. SIZE (DIA)	2. AGE (YRS)	3. GENERAL CONDITION		
L-1	LAWN	0.85 Ac	ScD C1C3 ScE	MIXED UPLAND HARDWOODS MAINLY OAKS	45 46 47	VARIOUS FALLOW FIELD VEGETATION	N/A	N/A	GOOD	0.00 Ac	GOOD
F-1	FOREST	4.96 Ac	ScD C1C3 ScE	MIXED UPLAND HARDWOODS MAINLY OAKS	45 46 47	RED OAK, RED MAPLE, TULIP POPLAR, HICKORY	20"	20	GOOD	1.90 Ac	GOOD
F-2	FOREST	5.34 Ac	ScD C1C3 ScE	MIXED UPLAND HARDWOODS MAINLY OAKS	45 46 47	CATALPA, MULTIFLORA ROSE, BEECH, GROUND CEDAR, LOCUST, OAK SP, ETC.	20"	20	GOOD	0.00 Ac	GOOD

ENVIRONMENTAL AREAS - TOTALS

STAND L-1	0.85 ACRES
STAND F-1	4.96 ACRES
STAND F-2	5.34 ACRES
TOTAL	11.15 ACRES

SUPPLEMENTAL INFORMATION

GROSS SITE AREA	11.15 ACRES
ZONED	M-2
PROPOSED USE	HYBRID INDUSTRIAL/OFFICE SPACE
TOTAL SITE AREA	11.15 AC
100 YR FLOODPLAIN	1.90 AC
NET TRACT AREA	9.25 AC
TOTAL FORESTED AREA	10.30 AC
FORESTED AREA IN NTA	8.40 AC
REFORESTATION THRESHOLD	1.39 AC (15%)
AFFORESTATION THRESHOLD	1.39 AC (15%)

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 3/16/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 3/16/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 3/31/05
 DIRECTOR DATE

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN
FOREST STAND DELINEATION PLAN
SHALLOW RUN
MASS GRADING PLAN

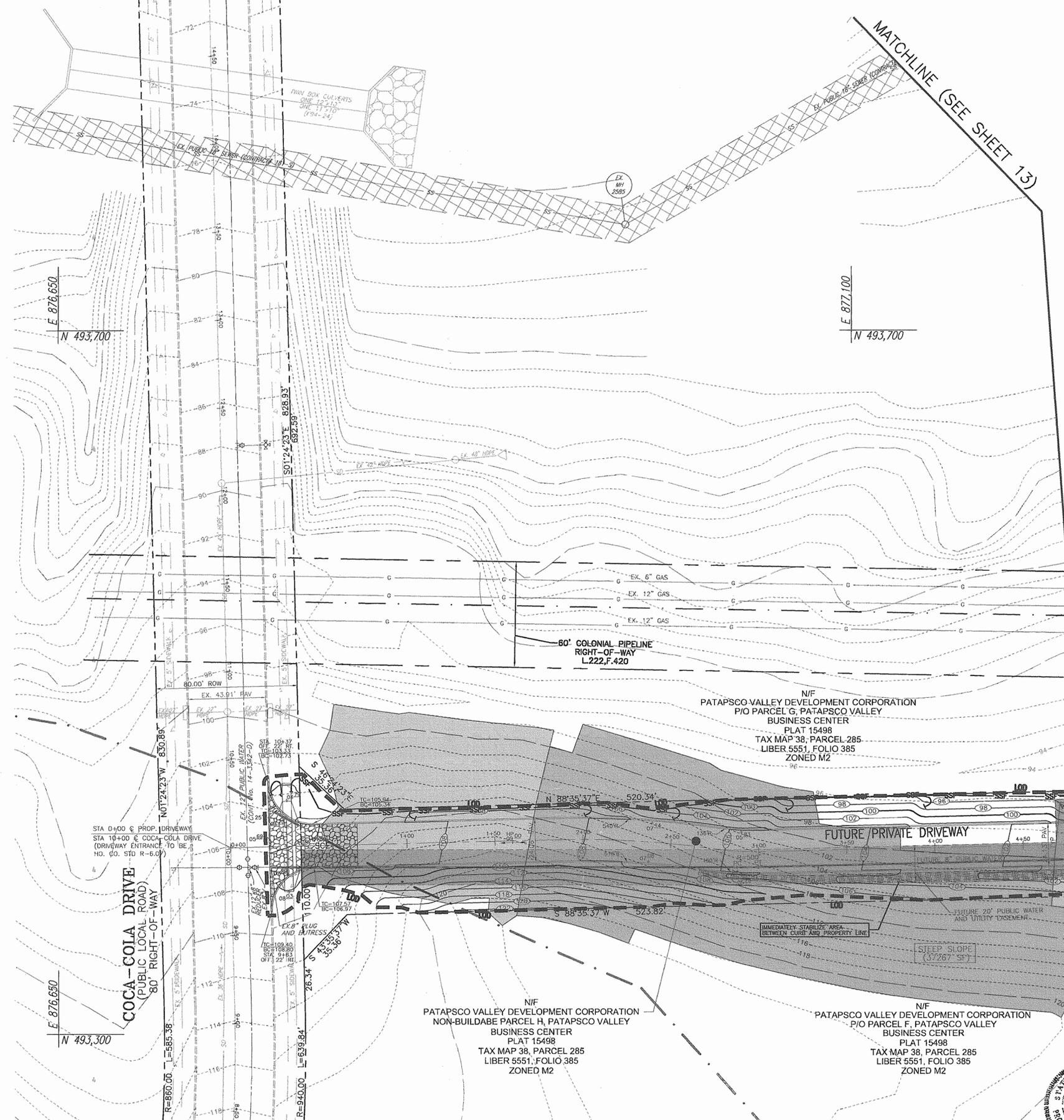
PARCEL 287 & PATAPSCO VALLEY BUSINESS CENTER, NON-BUILDABLE PARCEL H
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET TEL: 410.461.7666
 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

DESIGN BY: *[Signature]* DJ
 DRAWN BY: *[Signature]* DJ
 CHECKED BY: *[Signature]* LJT
 DATE: FEBRUARY 2005
 SCALE: 1"=30'
 W.O. NO.: 03-12

8 SHEET OF 12

R:\Projects\03_12\Eng\dwg\SDP\Title.dwg, 2/15/2005 01:11:53 AM



LEGEND:

	EXISTING CONTOUR
	PROPOSED CONTOUR
	PROPOSED SPOT ELEVATION
	EXISTING SPOT ELEVATION
	EXISTING CURB AND GUTTER
	FUTURE CURB AND GUTTER
	EXISTING GAS WIRE
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	EXISTING SIGN
	EXISTING BOLLARD
	EXISTING SANITARY MANHOLE
	EXISTING SANITARY LINE
	EXISTING CLEARCUT
	EXISTING FIRE HYDRANT
	EXISTING WATER LINE
	EXISTING SD MANHOLE
	EXISTING STORM DRAIN
	EXISTING GASLINE
	EXISTING TREES (FIELD LOCATED)
	EXISTING TREELESS (FIELD LOCATED)
	EXISTING FENCE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	SOILS BOUNDARY
	SILT FENCE
	SUPER SILT FENCE
	LIMIT OF DISTURBANCE
	STABILIZED CONSTRUCTION ENTRANCE
	EXISTING 20' PUBLIC SEWER AND UTILITY EASEMENT
	EXISTING WETLANDS
	STEEP SLOPES 25% or GREATER
	MODERATE SLOPES 15% - 24.99%
	TOP OF STREAM BANK
	BOTTOM OF STREAM BANK
	FUTURE GUARDRAIL
	PROP. TREE LINE
	EROSION CONTROL MATTING
	PUBLIC 100 YR FLOODPLAIN DRAINAGE AND UTILITY EASEMENT
	FUTURE 20' PUBLIC WATER AND UTILITY EASEMENT
	RIPPRAP
	GARRISON INFLOW PROTECTION

Maryland State Grid Meridian

MATCHLINE (SEE SHEET 12)

MATCHLINE (SEE SHEET 13)

OWNER/DEVELOPER
 BLUE RUN ENTERPRISES, LLC
 1401 WEST JOYDA ROAD
 TOWSON, MARYLAND 21204

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN
FOREST CONSERVATION PLAN
SHALLOW RUN
MASS GRADING PLAN
 PARCEL 287 & PATAPSCO VALLEY BUSINESS CENTER, NON-BUILDABLE PARCEL H
 TAX MAP #38 BLOCK 20 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET ELICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

DESIGN BY: DZ
 DRAWN BY: DZ
 CHECKED BY: LJT
 DATE: FEBRUARY 2005
 SCALE: 1"=30'
 W.O. NO.: 03-12

NOTE:
 THE PROPOSED PAVING AND CURB AND GUTTER TO BE PROVIDED WITH SUBSEQUENT SITE DEVELOPMENT ON A FUTURE SITE DEVELOPMENT PLAN.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

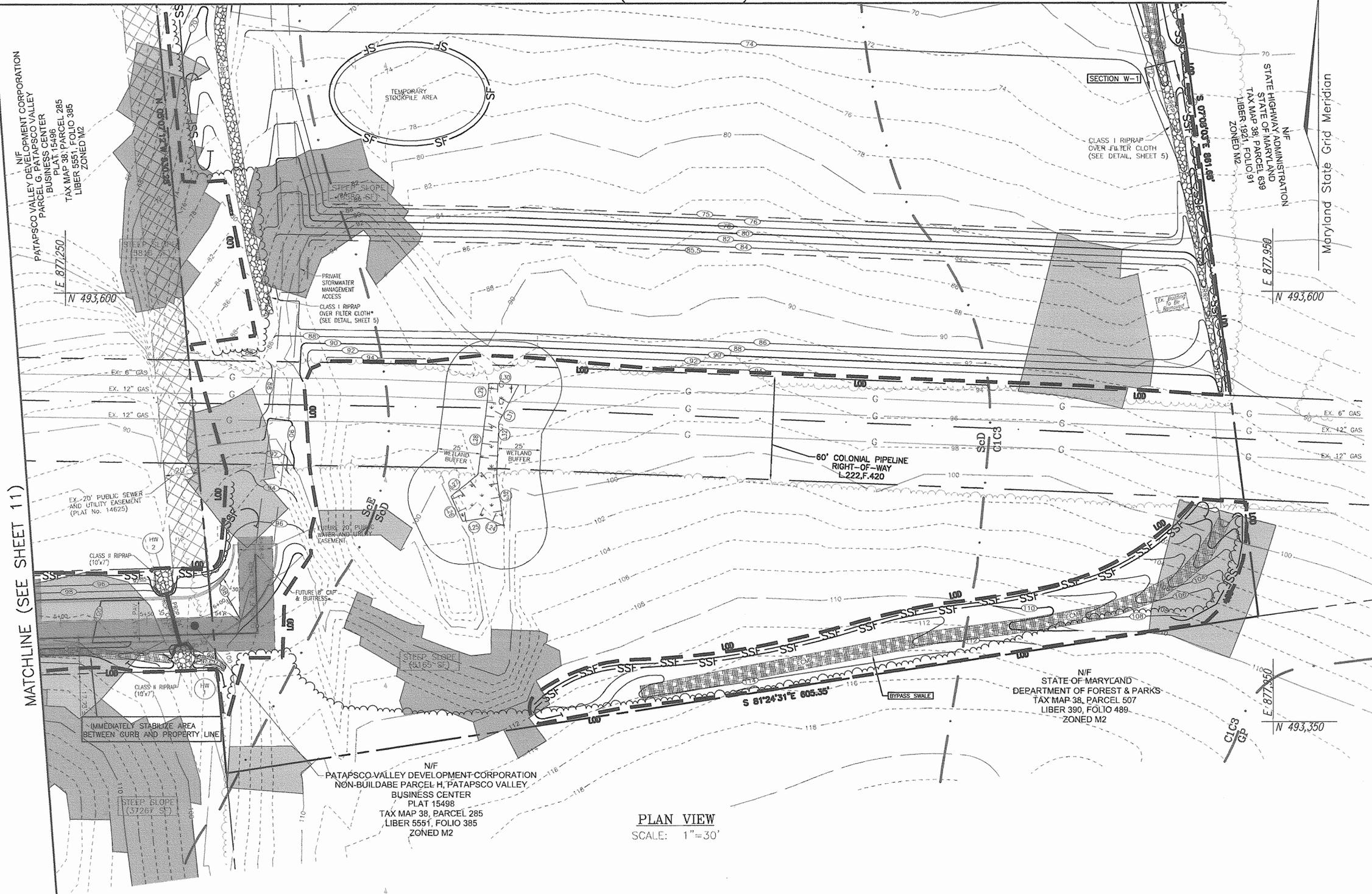
Stephen J. Leffler 2/23/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Cindy Krenzel 3/2/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Joseph Leffler 2/23/05
 DIRECTOR (ACTING) DATE

PLAN VIEW
 SCALE: 1"=30'





MATCHLINE (SEE SHEET 11)

FOREST CONSERVATION WORKSHEET

NET TRACT AREA:

A. TOTAL TRACT AREA	11.92 AC
B. AREA WITHIN 100 YEAR FLOODPLAIN	1.71 AC
C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION	0.00 AC
D. NET TRACT AREA	10.21 AC

LAND USE CATEGORY (FROM TABLE 3.2.1, PAGE 40, MANUAL)
 INPUT THE NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY.

ARA	MDR	IDA	HDR	MPD	CIA
0	0	0	0	0	1

E. AFFOREST THRESHOLD = 15% X D = 1.53 AC
 F. CONSERVATION THRESHOLD = 15% X D = 1.53 AC

EXISTING FOREST COVER:
 G. EXISTING FOREST COVER (EXCLUDING FLOODPLAIN) = 8.59 AC
 H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD = 7.08 AC
 I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD = 7.08 AC

BREAK EVEN POINT = 2.97
 J. FOREST RETENTION WITH NO MITIGATION REQUIRED = 2.94 AC
 K. CLEARING PERMITTED WITHOUT MITIGATION = 5.65 AC

PROPOSED FOREST CLEARING:
 L. TOTAL AREA OF FOREST TO BE CLEARED = 8.59 AC
 M. TOTAL AREA OF FOREST TO BE RETAINED = 0.00 AC

PLANTING REQUIREMENTS:
 N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD = 1.77 AC
 O. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD = 3.08 AC
 P. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD = 0.00 AC
 R. TOTAL REFORESTATION REQUIRED = 4.82 AC
 S. TOTAL AFFORESTATION REQUIRED = 0.00 AC
 T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED = 4.82 AC

NOTE:
 THE REFORESTATION REQUIREMENT OF 4.82 ACRES HAS BEEN SATISFIED THROUGH THE PAYMENT OF A FEE-IN-LIEU (206,039 SF X 0.50 = \$104,979.50). THE REQUIRED FEE-IN-LIEU PAYMENT WAS PAID TO THE FOREST CONSERVATION FUND.

OWNER/DEVELOPER
 BLUE RUN ENTERPRISES, LLC
 1401 WEST JOPPA ROAD
 TOWSON, MARYLAND 21204

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN
FOREST CONSERVATION PLAN
SHALLOW RUN
MASS GRADING PLAN
 PARCEL 287 & PATAPSCO VALLEY BUSINESS CENTER, NON-BUILDABLE PARCEL H
 TAX MAP #38 BLOCK 20 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET ELICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

DESIGN BY: DZ
 DRAWN BY: DZ
 CHECKED BY: LJT
 DATE: FEBRUARY 2005
 SCALE: 1"=30'
 W.O. NO.: 03-12

LARRY J. THOMPSON
 DNR QUALIFIED PROFESSIONAL

NOTE:
 THE PROPOSED PAVING AND CURB AND GUTTER TO BE PROVIDED WITH SUBSEQUENT SITE DEVELOPMENT ON A FUTURE SITE DEVELOPMENT PLAN.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 3/16/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 3/1/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 3/31/05
 DIRECTOR DATE

- NOTES**
1. THE PROPERTY OUTLINE IS BASED ON A DEED PLOT.
 2. THE EXISTING FEATURES AND CONTOURS SHOWN HEREON ARE BASED ON FIELD RUN TOPOGRAPHY PERFORMED BY FREDERICK WARD ASSOCIATES, INC. ON FEBRUARY 14, 2003.
 3. THERE ARE NO HISTORIC STRUCTURES OR OTHER HISTORIC RESOURCES ON SITE.
 4. THE WETLAND SHOWN ON THE PLANS WERE DELINEATED BY ECO-SCIENCE PROFESSIONALS, DATED JULY 29, 2003.
 5. THE SITE CONTAINS NO SPECIMEN TREES.





N/F
PATAPSCO VALLEY DEVELOPMENT CORPORATION
PARCEL G, PATAPSCO VALLEY
BUSINESS CENTER
PLAT 15496
TAX MAP 38, PARCEL 285
LIBER 5551, FOLIO 385
ZONED M2

N/F
STATE HIGHWAY ADMINISTRATION
STATE OF MARYLAND
TAX MAP 38, PARCEL 639
LIBER 1921, FOLIO 91
ZONED M2

OWNER/DEVELOPER
BLUE RUN ENTERPRISES, LLC
1401 WEST JOPPA ROAD
TOWSON, MARYLAND 21204

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN
FOREST CONSERVATION PLAN
SHALLOW RUN
MASS GRADING PLAN
PARCEL 287 & PATAPSCO VALLEY BUSINESS CENTER, NON-BUILDABLE PARCEL H
TAX MAP #38 BLOCK 20 1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET ELLICOTT CITY, MD 21043
TEL: 410.461.7666 FAX: 410.461.6961

DESIGN BY: _____ DZ
DRAWN BY: _____ DZ
CHECKED BY: _____ JLT
DATE: FEBRUARY 2005
SCALE: 1"=30'
W.O. NO.: 03-12

12 SHEET OF 12

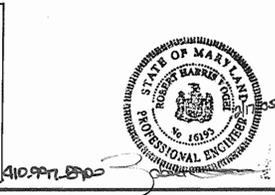
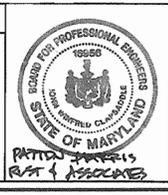
MATCHLINE (SEE SHEET 12)

MATCHLINE (SEE SHEET 11)

PLAN VIEW
SCALE: 1"=30'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature]
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 3/1/05
CHIEF, DIVISION OF LAND DEVELOPMENT
[Signature]
DATE: 3/31/05
DIRECTOR
[Signature]

AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
JOHN W. CLAPSADDLE # 16956
MD P.E. No. 4157207
DATE: 4/15/07
SIGNATURE: *[Signature]*



RS:\Projects\03 - 2" LINCOLN\dwg\SitePlan\Phase1 - Year 1.dwg, 2/15/2005 8:27:19 AM