

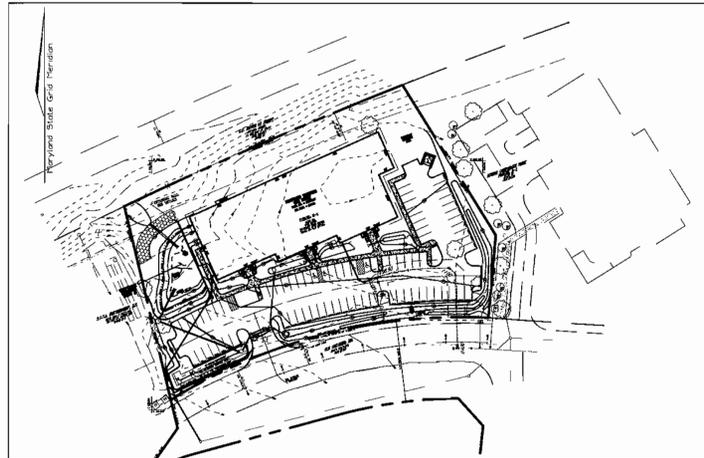
**GENERAL NOTES**

- 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: 531-5553
- Site analysis:
  - Area of parcel: 2.330 Ac.
  - Present zoning: New Town Employment Center Industrial, FDP-184-A-III
  - Use of structure: Office building and School/Day Care Facility.
  - Building area: 22,336.67 sf
  - Building coverage on site: 0.51 Ac. or 22 % of gross area
  - Paved parking lot/area: 0.65 Ac. or 28.1 % of gross area
  - Area of landscape island: 0.024 Ac. = 1059.4 sf
  - There are no steep slopes on site
  - Cut: 5,000 CY Fill: 5,000 CY
- Project background:
  - Location: Columbia, Md.; Tax Map 41, Block 6, Parcel 5-1
  - Zoning: New Town Employment Center Industrial
  - Subdivision: Rivers Corporate Park
  - Section/Area: I/1
  - Site Area: 2.330 Acres
  - DPZ references: Plat #5919, #9604, #15213; and DPZ file: F-91-20, S-81-166, P-81-256, F-85-10, **F-02-90**
- 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.
- Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
- Estimates of earthwork quantities are provided solely for the purpose of calculating fees.
- 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, Inc. dated 5/22/01, and topographic survey prepared by others. 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.
- All paving to be P-2 paving per Howard county.
- All curb and gutter to be Howard County Standard concrete Detail 3.01 unless otherwise specified.
- Contractor responsible to construct all handicap parking and handicap access in accordance with current ADA requirements.
- Where drainage flows away from curb, contractor to reverse the gutter pan.
- All elevations are to finished/bottom of curb unless otherwise noted.
- All dimensions are to face of curb unless otherwise noted.
- Public Water available along Old Columbia Road (12" Water) Contract #24-1025-D-7; Public Sewer available along Old Columbia Road (8" Sewer) Contract #24-1990-D.
- Stormwater Management: The Cpv requirement is provided by a detention basin and quality control (WQv and req.) is provided by grassed channel credits, WQv channels and a Stormceptor. The facility is hazard class 'A' and is privately owned and maintained.
- All exterior lighting shall conform to Zoning Regulations Section 134.
- Building to have Inside Water Meter setting.
- Traffic Impact Study prepared by The Traffic Group, dated October, 2001.
- Geotechnical report prepared by D. W. Kozera, Inc., dated August, 2001.
- Lighting details provided for informational purposes only. See electrical and architectural plans for actual lighting details and specifications.
- There are no wetlands on-site.
- Department of Planning and Zoning related DPZ file: F-91-20, S-81-166, P-81-256, F-85-10; Plat #5919, #9604, #15213
- This site is exempt from forest conservation requirements because it is located in a NT (New Town) zone.
- There will be no mezzanine levels permitted unless adequate parking has been provided and approved by the Department of Planning and Zoning.
- Any increase in impervious area, more than the allowed 1.13 acres, will require a new stormwater management design. The new design will be done in accordance with the current requirements at that time.
- This plan is subject to a Howard County design vol I, section 5.2.4.1 approved February 8, 2002 to relocate the bioretention and perimeter swale less than 25' from the public road right of way and to have the outfall rip-rap from the facility to be located 22' from the adjacent property line subject to:
  - The perimeter swale and the bioretention facilities are shallow in depth and will not create adverse safety issues
  - The proposed reduction of 3ft. from the out fall rip-rap to the property will not have an impact to the down stream property.
  - The proposed facilities are privately owned and maintained.

# SITE DEVELOPMENT PLAN

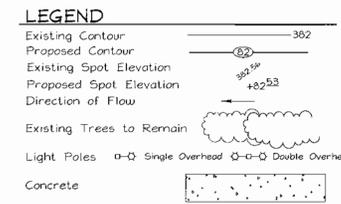
## RIVERS CORPORATE PARK

### PARCEL S-1

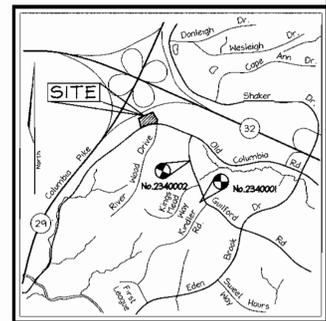


LOCATION MAP  
SCALE: 1"=100'

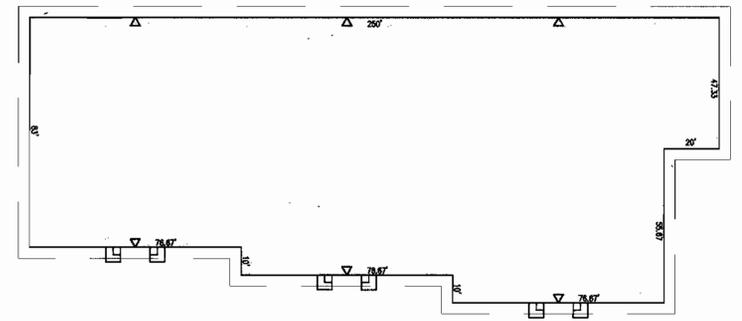
DESCRIPTION	SHEET NO.
Cover Sheet	1 of 11
Site Layout and Grading Plan	2 of 11
Sediment and Erosion Control Plan	3 of 11
Sediment and Erosion Control and Lighting Details	4 of 11
Drainage Area Maps and Site Details	5 of 11
Storm Drain, Water and Sewer Profiles and Site Details	6 of 11
Site Landscape Plan	7 of 11
Stormwater Management Details and Old Columbia Road Detail	8 of 11
Retaining Wall Details	9 of 11
Retaining Wall Details	10 of 11
Retaining Wall Details	11 of 11



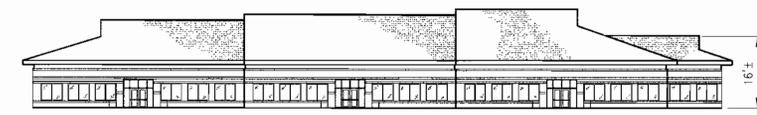
**BENCHMARKS**  
 HOWARD COUNTY CONTROL TRAVERSE NO. 2340001-R  
 N 487985.351 E 837074.791 ELEV. 391.541  
 R.B. 1 1/2 SW OF W EDGE OF ROAD, 0.5' BELOW SURFACE  
 HOWARD COUNTY CONTROL TRAVERSE NO. 2340002-R  
 N 488839.019 E 836802.563 ELEV. 362.611  
 R.B. 1.5 1/2 W OF W EDGE OF ROAD, 0.7' BELOW SURFACE



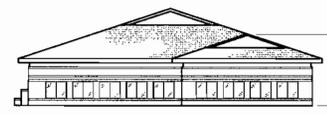
VICINITY MAP  
SCALE: 1"=2000'



BUILDING PLAN  
SCALE: 1"=30'



FRONT ELEVATION  
SCALE: 1"=30'



SIDE ELEVATION  
SCALE: 1"=30'

**APPROVED**  
 PLANNING BOARD  
 OF HOWARD COUNTY  
 DATE: 1/23/02

TEST BORING LOG		Boring No.: SWM-1	Contract No.: 01028.D
Depth (ft)	300.0	300.0	300.0
Blow Count	16	16	16
Soil Description	...	...	...
Remarks	...	...	...

TEST BORING LOG		Boring No.: SWM-2	Contract No.: 01028.D
Depth (ft)	300.0	300.0	300.0
Blow Count	7	7	7
Soil Description	...	...	...
Remarks	...	...	...

TEST BORING LOG		Boring No.: SWM-3	Contract No.: 01028.D
Depth (ft)	300.0	300.0	300.0
Blow Count	11	11	11
Soil Description	...	...	...
Remarks	...	...	...

TEST BORING LOG		Boring No.: SWM-4	Contract No.: 01028.D
Depth (ft)	300.0	300.0	300.0
Blow Count	17	17	17
Soil Description	...	...	...
Remarks	...	...	...

PARKING TABULATION	
REQUIRED	PROPOSED
Net Leasable Area: 22,336.67 s.f.	3,76 spaces/1000 s.f. = 84
Parking spaces: 4 spaces/1 Van	4 spaces/1 Van
Handicap spaces: 45* spaces	84* spaces
Total spaces: 49* spaces	

ADDRESS CHART			
STREET ADDRESS			
10380 Old Columbia Road			
SUBDIVISION NAME	SECTION/AREA	PARCEL NUMBER	
Columbia Rivers Corporate Park	I/1	S-1	
PLAT NO	BLOCK NO	ZONE	TAX/ZONE ELECT. DIST. CENSUS TR.
15213	6	NT	41 6th 606B.01
WATER CODE: E13		SEWER CODE: 5200000	

**COVER SHEET**  
**RIVERS CORPORATE PARK**  
**PARCEL S-1**

TAX MAP #41 GRID #6  
 6TH ELECTION DISTRICT

PARCEL S-1  
 HOWARD COUNTY, MARYLAND

**FREDERICK WARD ASSOCIATES, INC.**  
 ENGINEERS 7125 Riverwood Drive Columbia, Maryland 21046-2354  
 ARCHITECTS Phone: 410-290-9550 Fax: 410-720-6226  
 SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: RHW/KO  
 DRAWN BY: KO  
 CHECKED BY: RHW  
 DATE: JAN. 22, 2001  
 SCALE: (AS SHOWN)  
 W.O. NO.: 2017152.00

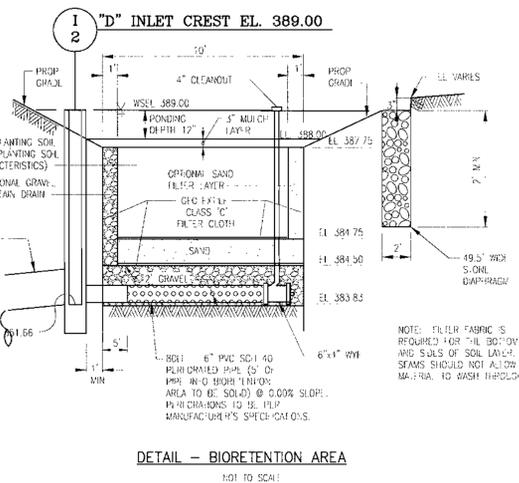
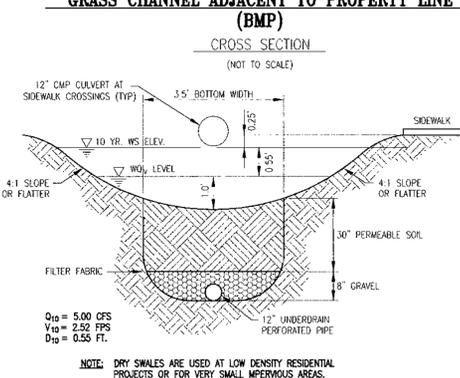
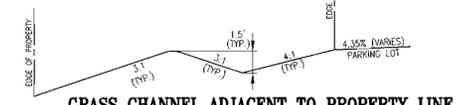
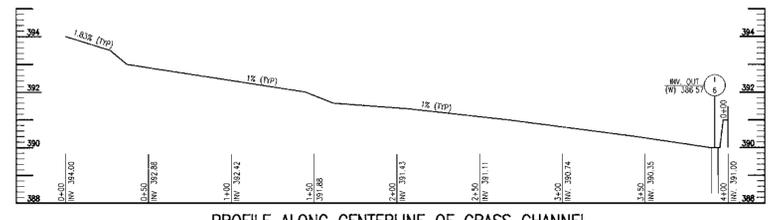
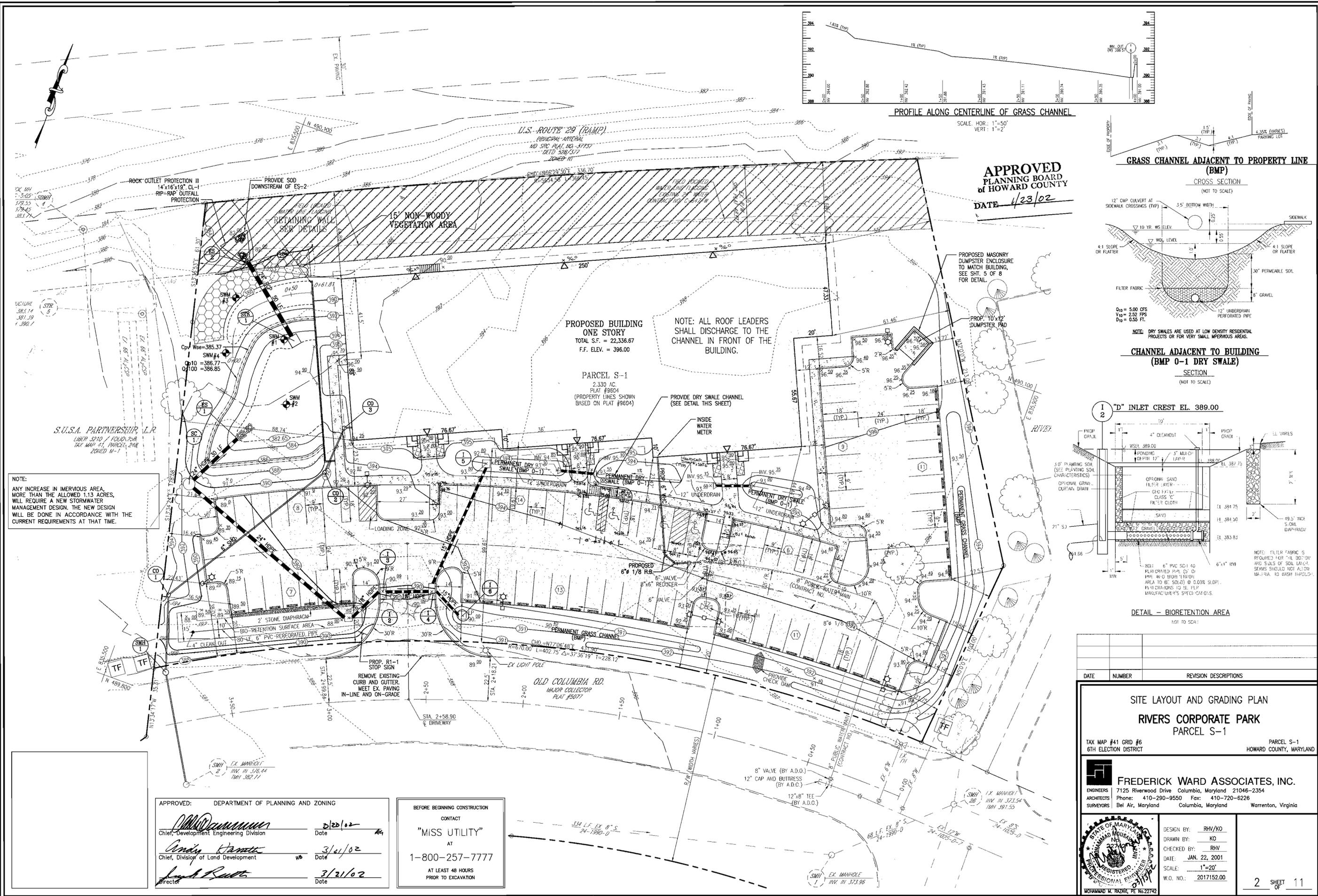
1 SHEET OF 11

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* DIRECTOR DATE: 3/21/02

*[Signature]* CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 3/21/02

*[Signature]* CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 3/21/02



APPROVED  
PLANNING BOARD  
of HOWARD COUNTY  
DATE 4/23/02

PROPOSED BUILDING  
ONE STORY  
TOTAL S.F. = 22,336.67  
F.F. ELEV. = 396.00

PARCEL S-1  
2.330 AC.  
PLAT #9604  
(PROPERTY LINES SHOWN  
BASED ON PLAT #9604)

NOTE: ALL ROOF LEADERS  
SHALL DISCHARGE TO THE  
CHANNEL IN FRONT OF THE  
BUILDING.

NOTE:  
ANY INCREASE IN IMERVIOUS AREA,  
MORE THAN THE ALLOWED 1.13 ACRES,  
WILL REQUIRE A NEW STORMWATER  
MANAGEMENT DESIGN. THE NEW DESIGN  
WILL BE DONE IN ACCORDANCE WITH THE  
CURRENT REQUIREMENTS AT THAT TIME.

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Chief, Development Engineering Division 3/20/02  
 Chief, Division of Land Development 3/21/02  
 Director 3/21/02

BEFORE BEGINNING CONSTRUCTION  
 CONTACT  
 "MISS UTILITY"  
 AT  
 1-800-257-7777  
 AT LEAST 48 HOURS  
 PRIOR TO EXCAVATION

DATE	NUMBER	REVISION DESCRIPTIONS

**SITE LAYOUT AND GRADING PLAN**  
**RIVERS CORPORATE PARK**  
**PARCEL S-1**

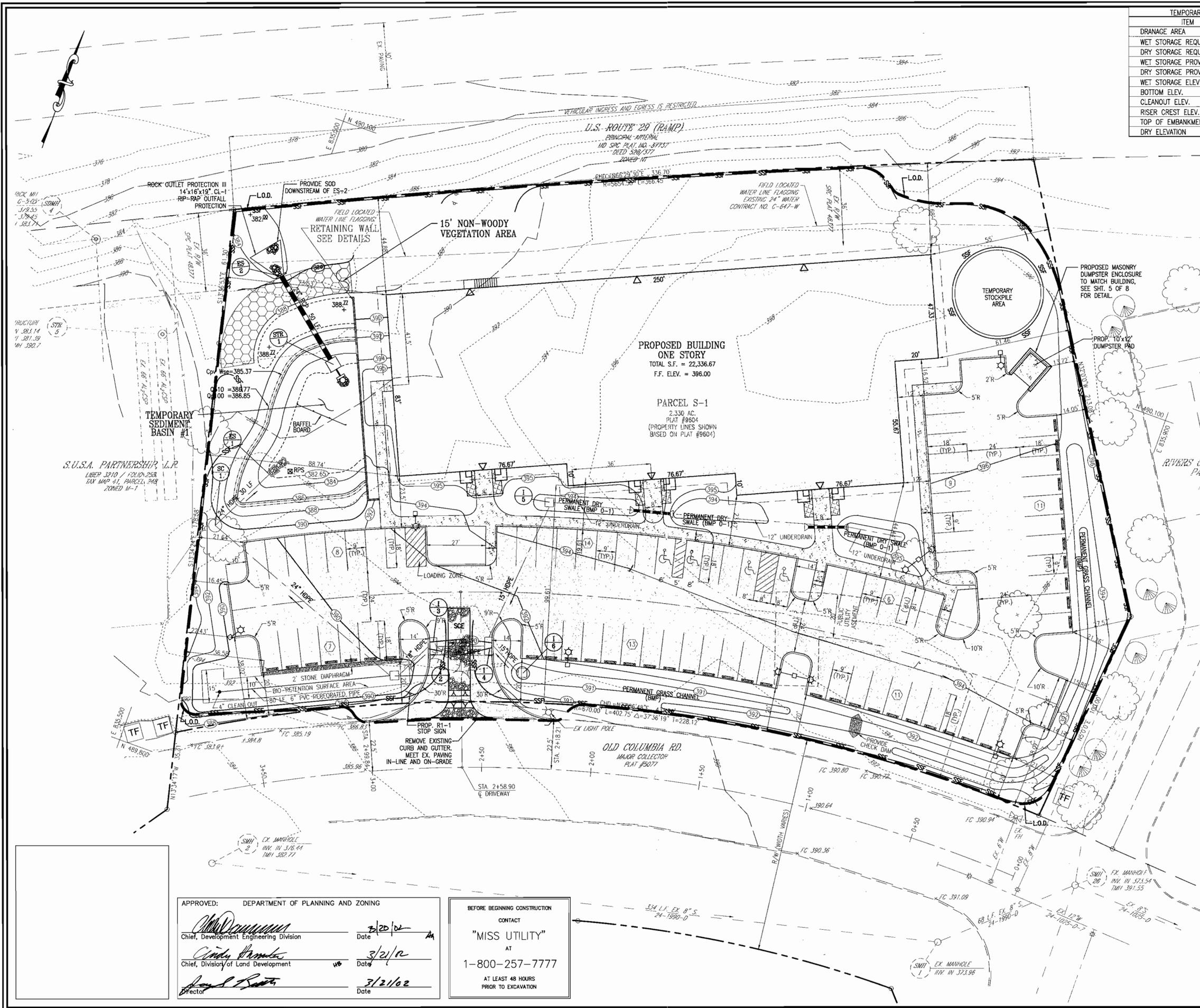
TAX MAP #41 GRID #6  
 6TH ELECTION DISTRICT

PARCEL S-1  
 HOWARD COUNTY, MARYLAND

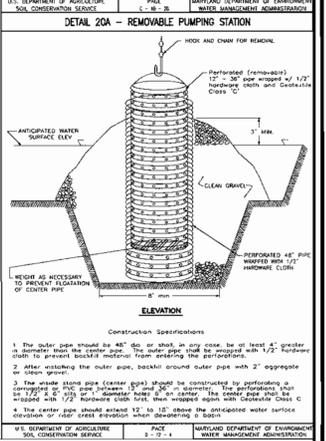
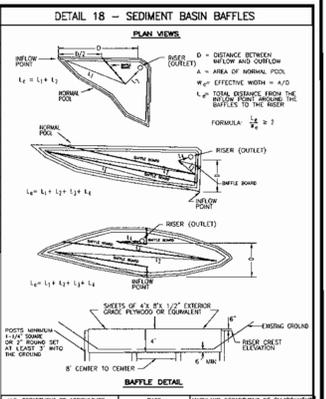
**FREDERICK WARD ASSOCIATES, INC.**  
 ENGINEERS 7125 Riverwood Drive Columbia, Maryland 21046-2354  
 ARCHITECTS Phone: 410-290-9550 Fax: 410-720-6226  
 SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: RHW/KO  
 DRAWN BY: KO  
 CHECKED BY: RHW  
 DATE: JAN. 22, 2001  
 SCALE: 1"=20'  
 W.O. NO.: 2017152.00

2 SHEET OF 11



TEMPORARY SEDIMENT BASIN # 1	
ITEM	DATA
DRAINAGE AREA	1.80 AC.
WET STORAGE REQUIRED	3,240 CF
DRY STORAGE REQUIRED	3,240 CF
WET STORAGE PROVIDED	3,240 CF
DRY STORAGE PROVIDED	3,240 CF
WET STORAGE ELEV.	384.32
BOTTOM ELEV.	382.65
CLEANOUT ELEV.	383.49
RISER CREST ELEV.	385.45
TOP OF EMBANKMENT	388.00
DRY ELEVATION	385.45



**APPROVED**  
PLANNING BOARD  
of HOWARD COUNTY  
DATE 1/23/02

**ENGINEER'S CERTIFICATE**  
I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
Signature: M. M. Kazavi DATE: 03/13/02  
MOHAMMAD M. KAZAVI

**DEVELOPER'S CERTIFICATE**  
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL AND THAT ALL 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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.  
Signature: Glenn DATE: 03/13/02  
SIGNATURE OF DEVELOPER

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS  
USDA - NATURAL RESOURCES CONSERVATION SERVICE  
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
Signature: John Selig DATE: 3/19/02  
HOWARD SCD

DATE	NUMBER	REVISION DESCRIPTIONS

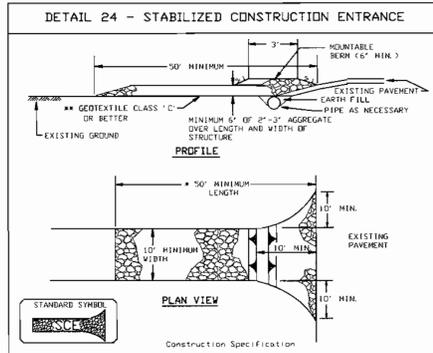
**SEDIMENT AND EROSION CONTROL PLAN**  
**RIVERS CORPORATE PARK**  
PARCEL S-1  
TAX MAP #41 GRID #6  
6TH ELECTION DISTRICT  
PARCEL S-1  
HOWARD COUNTY, MARYLAND

**FREDERICK WARD ASSOCIATES, INC.**  
ENGINEERS 7125 Riverwood Drive Columbia, Maryland 21046-2354  
ARCHITECTS Phone: 410-290-9550 Fax: 410-720-6226  
SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: RHV/KO  
DRAWN BY: KO  
CHECKED BY: RHV  
DATE: JAN. 22, 2001  
SCALE: 1"=20'  
W.O. NO.: 2017152.00  
3 SHEET OF 11

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Signature: Cheryl Williams DATE: 3/20/02  
Chief, Development Engineering Division  
Signature: Cindy Williams DATE: 3/21/02  
Chief, Division of Land Development  
Signature: David L. Smith DATE: 3/21/02  
Director

BEFORE BEGINNING CONSTRUCTION  
CONTACT  
"MISS UTILITY"  
AT  
1-800-257-7777  
AT LEAST 48 HOURS  
PRIOR TO EXCAVATION



**DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE**

1. Length - minimum of 50' (x30' for single residence lot).

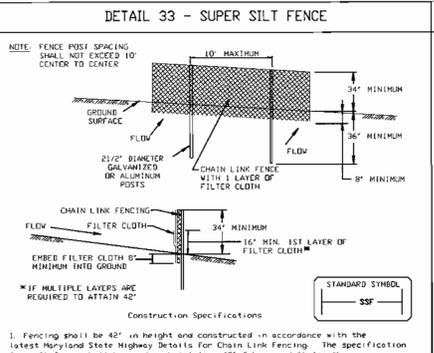
2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.

3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. \*After plan approval authority may not require single family residences to use geotextile.

4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

5. Surface Water - all surface water flowing to an elevated toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable curb with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.

6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.



**DETAIL 33 - SUPER SILT FENCE**

1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.

2. Chain link fence shall be fastened securely to the fence posts with wire ties. The loose tension wire, brace and stress rods, drive anchors and post caps are not required except on the ends of the fence.

3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.

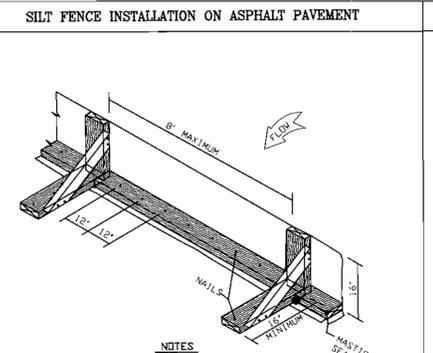
4. Filter cloth shall be embedded a minimum of 8" into the ground.

5. When two sections of filter cloth abut each other, they shall be overlapped by 6" and folded.

6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height.

7. Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft <sup>2</sup> /minute (max)	Test: MSMT 302
Filtering Efficiency	75% (min.)	Test: MSMT 302



**SILT FENCE INSTALLATION ON ASPHALT PAVEMENT**

1. All finished lumber shall be 2" x 4" minimum.

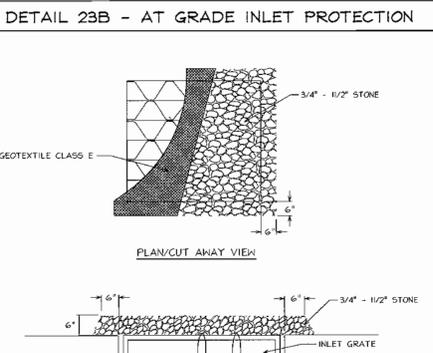
2. A mastic seal shall be provided, as shown, to prevent sediment from escaping untreated beneath silt fence installation.

3. Silt fence fabric shall be taut and securely stapled to face of upright supports.

4. Nails used to secure boards to prevent shall be 20d x 4" minimum length.

5. Application design and materials criteria shall be as stated in the Maryland Standards and Specifications for Soil Erosion and Sediment Control.

6. Use SF/AP to designate on sediment control plan.



**DETAIL 23B - AT GRADE INLET PROTECTION**

1. Lift grate and wrap with Geotextile Class E to completely cover all openings, then set grate back in place.

2. Place 3/4" to 1 1/2" stone, 4"-6" thick on the grate to secure the fabric and provide additional filtration.

MAX DRAINAGE AREA = 1/4 ACRE

### MAGNUDISC™ II DS/DM SERIES

**ROUND CUTOFF SPECIFICATION GRADE**

**ROUND CUTOFF ARCHITECTURAL SHAPES**

Magnudisc™ II Round Cutoff Luminaires have been designed to meet the complex lighting needs of leading corporate office parks, retailers and restaurants. With ranges from 70 to 400 watts, the Magnudisc series offers efficient, low maintenance high pressure sodium and metal halide systems. Tubular carefully engineered members of this impressive family for superb optical performance when used in the most demanding conditions. The Magnudisc series offers a variety of standard and optional color selections and a diverse array of mounting options allowing tremendous flexibility in creating signature lighting effects.

**Housing** - Span aluminum two piece, flat or dome style which totally encloses electrical and optical assemblies. Rigid design with galvanized steel POWER-PANEL™ and stainless steel lens band for permanent beauty.

**Luminaires Top Option** - DS Series. Both flat and dome shapes are available in a minimum of .10 mil white acrylic top. Above visibility of fixture shape at night - maintains aesthetic clarity.

**Optics** - Six optical assemblies allow maximum utilization of beam lumens. Assemblies have multi-faceted segmental lenses and are recessed in a motorized rotatable reflector housing. DS units have medium base sockets; DM units have POMG mogul base sockets.

**Mounting** - Units are available in arm, ceiling, vertical spoke (post top), single and double horizontal spoke and wall mount. The arms are extruded aluminum with adjustable steel support rods. Spoke mounts are 1/2" dia. steel, two spokes per side, welded to pole feet and secured to Hubbell adjustable "ear" nuts. All DS products should be ordered with RAC-4-DS or RSP-4-DS poles for interior night capability. DM Spoke units mount on 2 1/2" O.D. tennons.

**Ballasts** - Units are HPS Quad-Tape (120, 200, 240, 277 watt or 480 watt) For 70-700 (120, 277, 240 watt) compact fluorescent ballasts are available in 70, 100, 175, 250, 400 watt and start to 400W. HPS units are available in 70, 100, 150, 250, 400 watt and start to 400W. All ballast components are mounted on a galvanized POWER-PANEL™ which installs without tools for fast installation. POWER-PANEL™ is shipped in separate cartons to prevent shipping damage to housing. Fluorescent and photoelectric optics are available. 50 Hz ballasts available, consult factory.

**Lighting** - All units are UL Listed 1572 for wet locations. CSA certified for indoor/outdoor locations.

Lighting, Inc.

### DS SERIES CATALOG LOGIC

16 inch diameter small socket, with and without luminous top. Use Hubbell RAC4 and RSP4 poles with DS decorative base cover.

Model	DS-100	DS-150	DS-250	DS-400
Wattage	100	150	250	400
Ballast	100	150	250	400
Optics	100	150	250	400
Mounting	100	150	250	400

### DM SERIES CATALOG LOGIC

24 inch diameter large socket. All have solid tops. Use Hubbell R1A and R1S poles with M10 ball base covers.

Model	DM-100	DM-150	DM-250	DM-400
Wattage	100	150	250	400
Ballast	100	150	250	400
Optics	100	150	250	400
Mounting	100	150	250	400

### TOPSOIL 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 PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.

TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:

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

TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON IVY, HIBISCUS, OR OTHERS AS SPECIFIED.

WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.

FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES

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

TOPSOIL APPLICATION

WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRASS STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.

GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBERT 4" - 8" HIGHER IN ELEVATION.

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 SOILING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.

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 SEEDING PREPARATION.

THESE TOPSOIL SPECIFICATIONS HAVE BEEN EDITED FROM THE 1994 EROSION AND SEDIMENT CONTROL STANDARDS TO FIT THIS PROJECT IT IS STILL THE INTENTION TO FOLLOW THE REFERENCED 1994 EROSION AND SEDIMENT CONTROL STANDARDS IN THEIR ENTIRETY.

### TEMPORARY SEEDING NOTES

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

SEEDING PREPARATION: LOOSEN UPPER 3 INCHES OF SOIL BY RACKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING (UNLESS PREVIOUSLY LOOSENED).

SOILS AMENDMENTS: APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ FT)

SEEDING: FOR PERIODS MARCH 1ST THROUGH APRIL 30TH AND FROM AUGUST 15TH THROUGH NOVEMBER 15TH, SEED WITH 1 1/2 BU. PER ACRE OF ANNUAL RYE (3.2 LBS./1000 SQ FT). FOR THE PERIOD MAY 1ST THROUGH AUGUST 14TH, SEED WITH 3 LBS. PER ACRE OF WHEATGRASS (07 LBS./1000 SQ FT) FOR THE PERIOD NOVEMBER 15TH THROUGH FEBRUARY 28TH, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70-90 LBS./1000 SQ FT) OF UNROTATED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GALS./1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES, 8 FT OR HIGHER, USE 348 GALS. PER ACRE (8 GALS./1000 SQ FT) FOR ANCHORING.

### PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREA NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDING PREPARATION: LOOSEN UPPER 3 INCHES OF SOIL BY RACKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING (UNLESS PREVIOUSLY LOOSENED).

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES.

1. PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ FT) AND 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL AT TIME OF SEEDING. APPLY 400 LBS. PER ACRE 3-0-0 UREAFORM FERTILIZER (9 LBS./1000 SQ FT)

2. ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ FT) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.

SEEDING: FOR PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 60 LBS. PER ACRE (1.4 LBS./1000 SQ FT) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THROUGH JULY 31, SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (0.5 LBS./1000 SQ FT) OF WHEATGRASS. DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY OPTION (1) 2 TONS PER ACRE OF WELL-ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOIL. OPTION (3) SEED WITH 60 LBS. PER ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ FT) OF UNROTATED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GALS./1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GALS./1000 SQ FT) FOR ANCHORING.

MAINTENANCE: INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS. REPLACEMENTS AND RESEEDINGS.

### STANDARDS AND SPECIFICATIONS FOR STABILIZATION WITH SOD

1. CLASS OF TURFGRASS SOD SHALL BE MARYLAND OR VIRGINIA STATE CERTIFIED, OR MARYLAND OR VIRGINIA STATE APPROVED SOD.

2. SOD SHALL BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF INCH, PLUS OR MINUS 25/64 INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS SHALL EXCLUDE TOP GROWTH AND THATCH.

3. STANDARD SIZE SECTIONS OF SOD SHALL BE SUFFICIENT ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.

4. INDIVIDUAL PIECES OF SOD SHALL BE CUT TO THE SUPPLIERS WIDTH AND LENGTH, MAXIMUM ALLOWABLE DEVIATION FROM STANDARD WIDTHS AND LENGTHS SHALL BE 5 PERCENT. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.

5. SOD SHALL BE HARVESTED OR TRANSPORTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.

6. SOD SHALL BE HARVESTED, DELIVERED AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPORTED WITHIN THIS PERIOD SHALL BE INSPECTED AND APPROVED PRIOR TO ITS INSTALLATION.

SITE PREPARATION

FERTILIZER AND LIME APPLICATION RATES SHALL BE DETERMINED BY SOIL TEST. UNDER USUAL CIRCUMSTANCES WHERE THERE IS INSUFFICIENT TIME FOR A COMPLETE SOIL TEST, FERTILIZER AND LIME MATERIALS WILL BE APPLIED IN AMOUNTS SHOWN UNDER B. BELOW.

A. PRIOR TO SOILING, THE SURFACE SHALL BE CLEARED OF ALL TRASH, DEBRIS, AND OF ALL ROOTS, BRUSH, WIRE, GRADE STAKES AND OTHER OBJECTS THAT WOULD INTERFERE WITH PLANTING, FERTILIZING OR MAINTENANCE OPERATIONS. B. WHERE THE SOIL IS ACID OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 2 TONS/ACRE OR 100 POUNDS PER 1,000 SQUARE FEET IN ALL SOILS. 100 POUNDS PER ACRE OR 25 POUNDS PER 1,000 SQUARE FEET OF 10-10-10 FERTILIZER OR EQUIVALENT SHALL BE UNIFORMLY APPLIED AND MIXED INTO THE TOP 3 INCHES OF SOIL WITH THE REQUIRED LIME.

C. ALL AREAS RECEIVING SOD SHALL BE UNIFORMLY FINE GRADED, HARD-PACKED EARTH SHALL BE SCARIFIED PRIOR TO PLACEMENT OF SOD.

SOD INSTALLATION

A. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE THE SOIL SHALL BE LIGHTLY IRRIGATED IMMEDIATELY PRIOR TO LAYING THE SOD.

B. THE FIRST ROW OF SOD SHALL BE Laid IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND TIGHTLY NESTED AGAINST EACH OTHER. LATERAL JOINTS SHALL BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. INSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUDED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR-DRYING OF THE ROOTS.

C. ON SLOPING AREAS WHERE EROSION MAY BE A PROBLEM, SOD SHALL BE Laid WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERED JOINTS. SECURE THE SOD BY TAMING OR PRESSING OR OTHER APPROVED METHODS.

D. AS SOILING IS COMPLETED IN ANY ONE SECTION, THE ENTIRE AREA SHALL BE ROLLED OR TAMPED TO INSURE CONTACT OF ROOTS WITH THE SOIL SURFACE. SOD SHALL BE WATERED IMMEDIATELY AFTER ROLLING OR TAMMING. UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. THE OPERATIONS OF LAYING, TAMING AND IRRIGATING FOR ANY PIECE OF SOD SHALL BE COMPLETED WITHIN EIGHT HOURS.

SOD MAINTENANCE

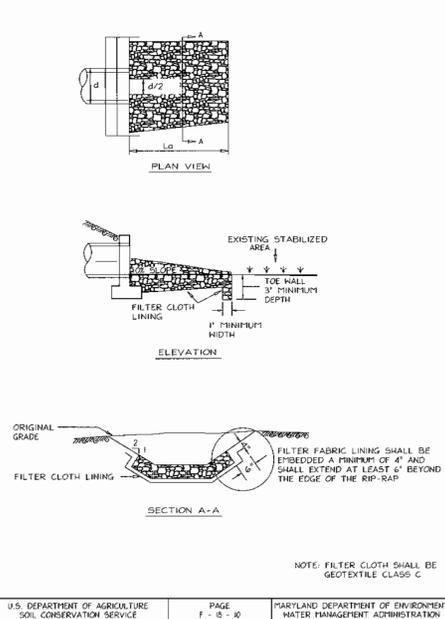
A. IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHALL BE PERFORMED DAILY OR AS OFTEN AS NECESSARY DURING THE FIRST WEEK IN SUFFICIENT QUANTITIES TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATERING SHOULD BE DONE DURING THE HEAT OF THE DAY TO PREVENT WILTING.

B. AFTER THE FIRST WEEK, SOD SHALL BE WATERED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE AND INSURE ESTABLISHMENT.

C. FIRST MOWING SHOULD NOT BE ATTEMPTED UNTIL SOD IS FIRMLY ROOTED NO MORE THAN 1/3 OF THE GRASS LEAF SHALL BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED.

D. MAINTENANCE OF ESTABLISHED SOD SHOULD FOLLOW SPECIFICATIONS OUTLINED IN TABLE 54-1.

### DETAIL 27 - ROCK OUTLET PROTECTION III



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 7-8-80 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### ROCK OUTLET PROTECTION III

**Construction Specifications**

1. The purpose for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.

2. The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.

3. Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.

4. Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blankets or geotextiles. Stone placement will be required to the extent necessary to prevent damage to the permanent works.

5. The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 7-8-80 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### SEQUENCE OF CONSTRUCTION

- Obtain grading permit.
- Notify Howard County Department of Inspections, Licenses, and Permits at (410)313-1880 at least 24 hours before starting any work.
- Install Stabilized Construction Entrance and Super Silt Fence (2 days)
- Construct Stormwater Management Facility and retaining wall. (5 days)
- After receiving permission from the sediment control inspector, rough grade site. (5 days)
- Install storm drain system, stormceptor, water, and sewer. (15 days)
- Construct building. (6 months)
- Final grade site. (5 days)
- Install curb and gutter and paving and sidewalks. (10 days)
- Install landscaping. (1 week)
- Permanently stabilize all remaining areas. (1 day)
- When the contributing drainage area is stabilized, flush the storm drain system and stormceptor.
- With permission of the inspector, remove the temporary draw-down device, install the low flow headwall, and remove the baffles.
- With permission of the inspector, remove all Sediment Controls from the site. Stabilize all disturbed areas immediately. (1 week)
- During grading and after each rainfall, contractor will inspect and provide necessary maintenance to the Sediment Control measures on this plan.
- Following initial soil disturbances or redistribution permanent or temporary stabilization shall be completed within:
  - 7 calendar days for all perimeter Sediment Control Structures, Dikes, Swales and all slopes greater than 3:1.
  - 14 calendar days for all other disturbed areas.

**APPROVED PLANNING BOARD OF HOWARD COUNTY**

DATE: 1/23/02

BY THE ENGINEER:

M. M. Kazane, 03/13/02

MOHAMMAD M. KAZANE

BY THE DEVELOPER:

G. J. Goy, March 13, 2002

G. J. GOY

REVIEWED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS.

Jim Myers, 3/18/02

JIM MYERS

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

Guthrie, 3/18/02

GUTHRIE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division, 3/26/02

Chief, Division of Land Development, 3/21/02

3/21/02

BEFORE BEGINNING CONSTRUCTION CONTACT

"MISS UTILITY"

AT

1-800-257-7777

AT LEAST 48 HOURS PRIOR TO EXCAVATION

SEDIMENT AND EROSION CONTROL AND LIGHTING DETAILS

RIVERS CORPORATE PARK PARCEL S-1

TAX MAP #41 GRID #6 PARCEL S-1

6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FREDERICK WARD ASSOCIATES, INC.

7125 Riverwood Drive, Columbia, Maryland 21046-2354

Phone: 410-290-9550 Fax: 410-720-8226

Bel Air, Maryland, Columbia, Maryland, Warrenton, Virginia

DESIGN BY: RHW/KO

DRAWN BY: KO

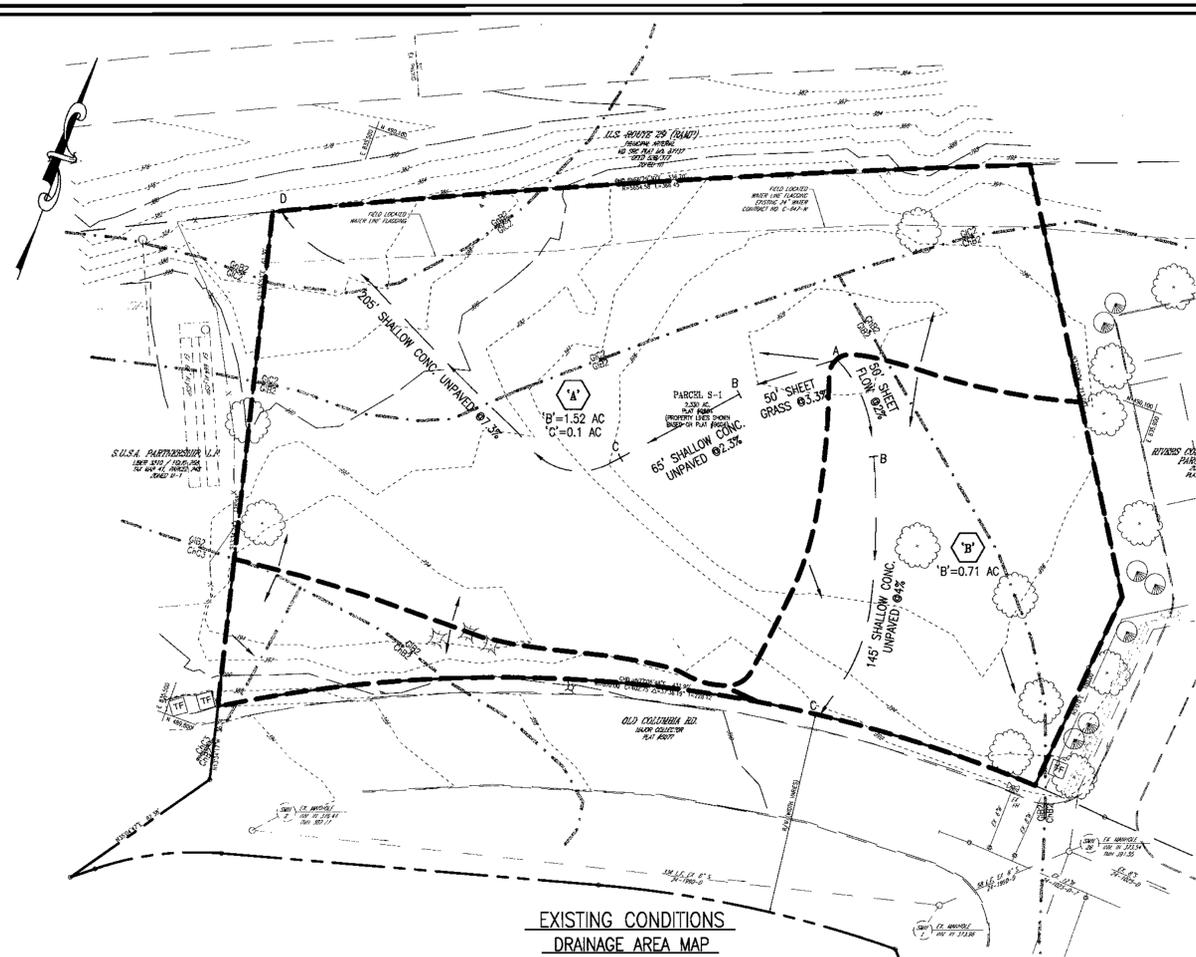
CHECKED BY: RHW

DATE: JAN. 22, 2001

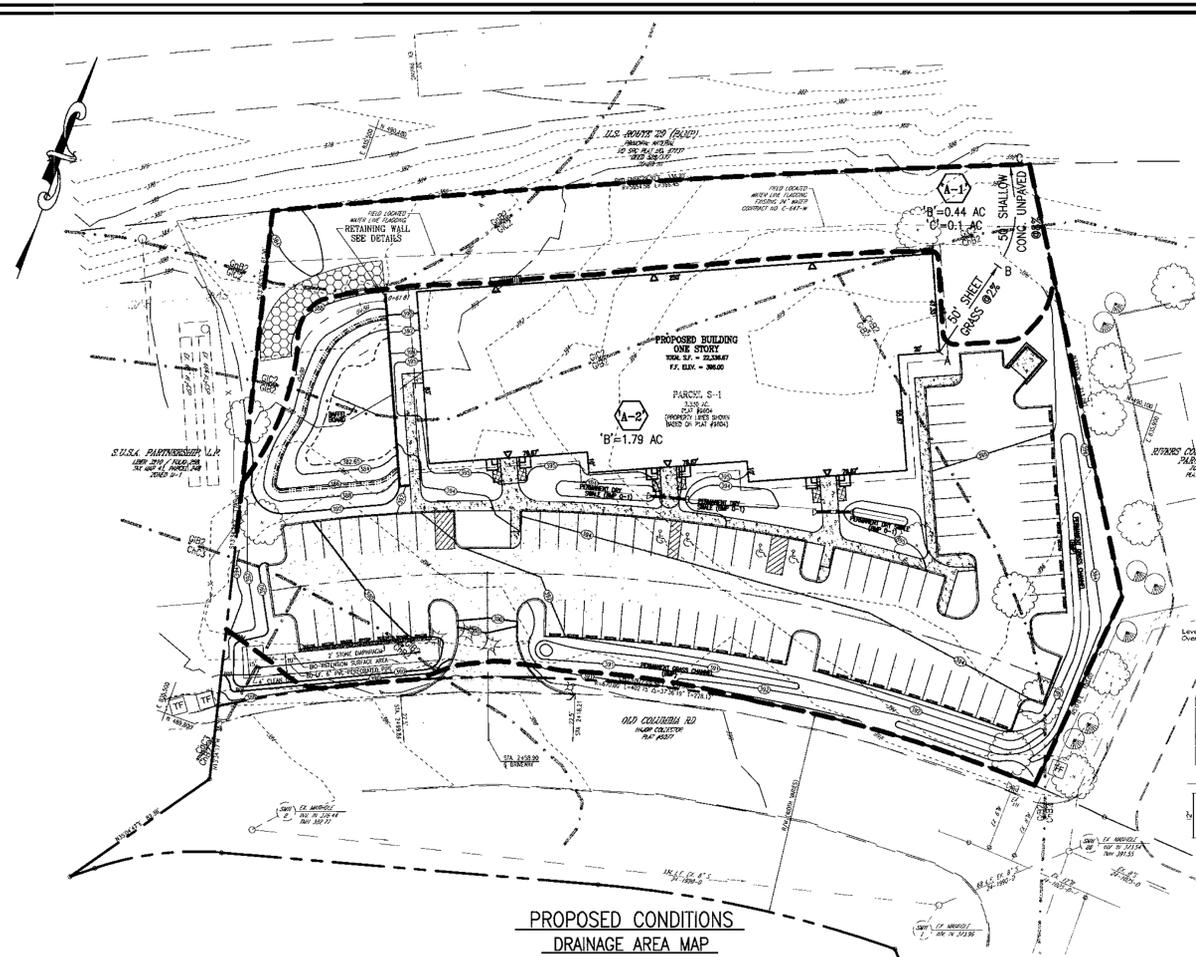
SCALE: As Shown

W.O. NO.: 2017152.00

4 SHEET OF 11



**EXISTING CONDITIONS  
DRAINAGE AREA MAP**  
SCALE: 1"=40'



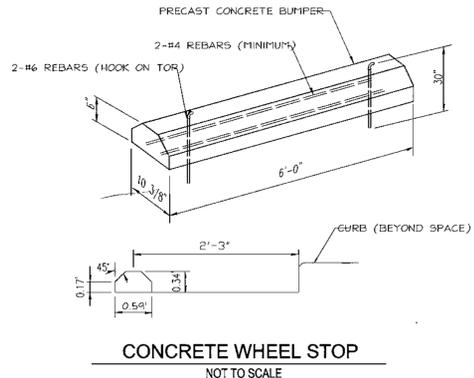
**PROPOSED CONDITIONS  
DRAINAGE AREA MAP**  
SCALE: 1"=40'

**APPROVED  
PLANNING BOARD  
of HOWARD COUNTY**  
DATE 1/23/02

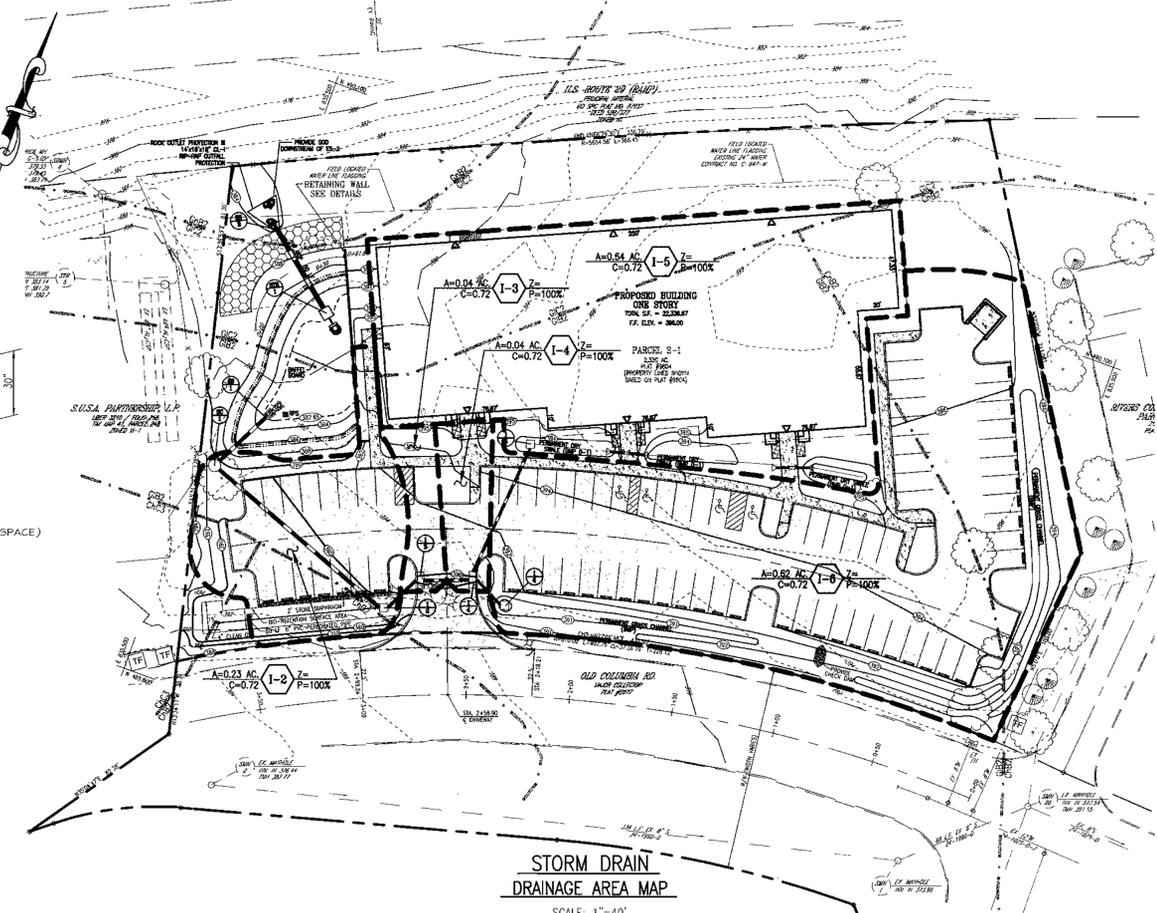


**SUMMARY TABLE**

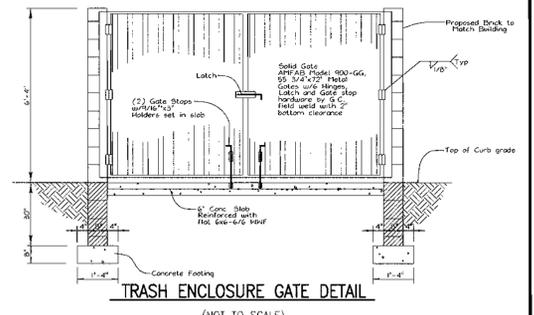
STEP	REQUIREMENT	VOLUME REQUIREMENT	NOTES
1	WATER QUALITY VOLUME WQV	0.11 AC. FT 4,792 CU. FT	WATER QUALITY VOLUME PROVIDED IN PROPOSED DRY SWALES, BIO-RETENTION, AND THROUGH CREDITS
2	RECHARGE VOLUME REV	0.34 AC.	PROVIDED THROUGH CREDITS
3	CHANNEL PROTECTION VOLUME CPV	6,272 CU. FT 0.114 AC. FT	CPV WILL BE PROVIDED IN PROPOSED EXTENDED DETENTION POND
4	OVERHEAD FLOOD PROTECTION, Q10p	N/A	N/A
5	EXTREME FLOOD VOLUME, Q100p	N/A	N/A
		2591 FT <sup>3</sup>	UTILITY STORMCEPTOR STC1800 PRE-TREATMENT



**CONCRETE WHEEL STOP**  
NOT TO SCALE



**STORM DRAIN  
DRAINAGE AREA MAP**  
SCALE: 1"=40'



**TRASH ENCLOSURE GATE DETAIL**  
NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Mr. [Signature]* 3/20/02  
 Chief, Development Engineering Division Date  
*Ms. [Signature]* 3/21/02  
 Chief, Division of Land Development Date  
*Director [Signature]* 3/21/02  
 Date

BEFORE BEGINNING CONSTRUCTION  
 CONTACT  
 "MISS UTILITY"  
 AT  
 1-800-257-7777  
 AT LEAST 48 HOURS  
 PRIOR TO EXCAVATION

DATE	NUMBER	REVISION DESCRIPTIONS

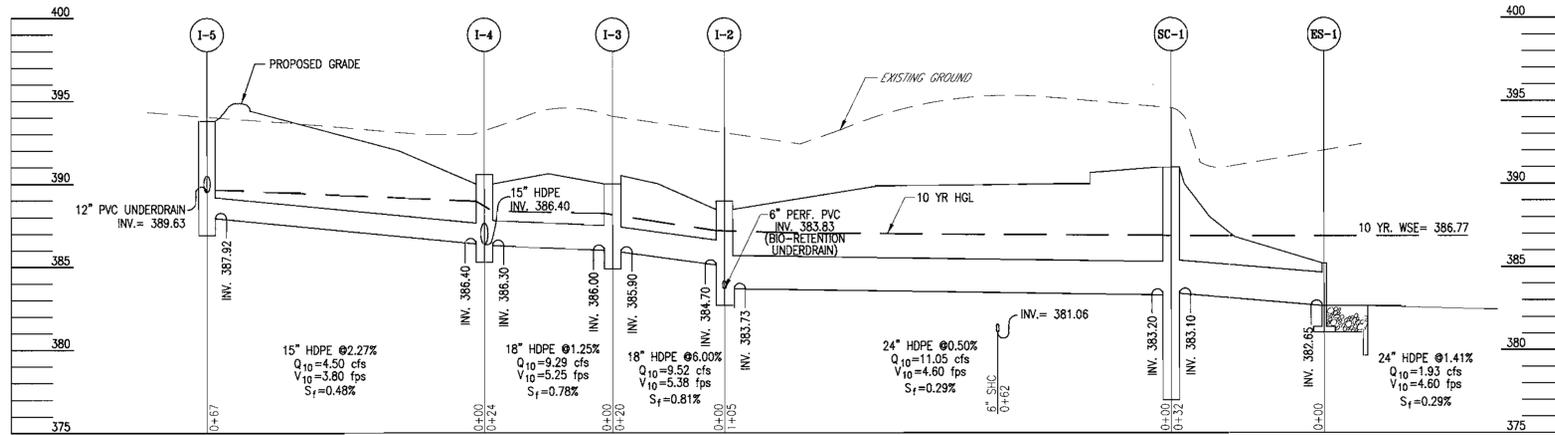
**DRAINAGE AREA MAPS  
AND SITE DETAILS**  
**RIVERS CORPORATE PARK  
PARCEL S-1**

TAX MAP #41 GRID #6 6TH ELECTION DISTRICT PARCEL S-1 HOWARD COUNTY, MARYLAND

**FREDERICK WARD ASSOCIATES, INC.**  
 ENGINEERS 7125 Riverwood Drive Columbia, Maryland 21046-2354  
 ARCHITECTS Phone: 410-290-9550 Fax: 410-720-6226  
 SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

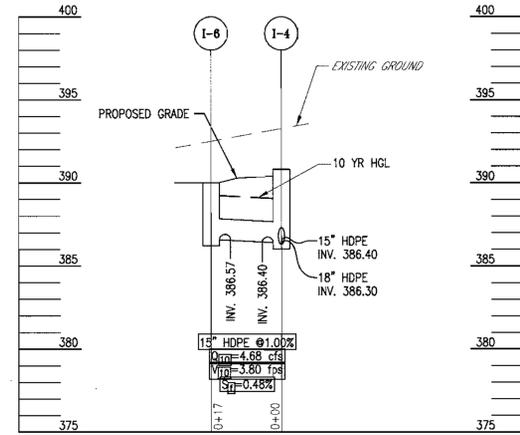
DESIGN BY: RHW/KO  
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 W.O. NO.: 2017152.00

5 SHEET OF 11



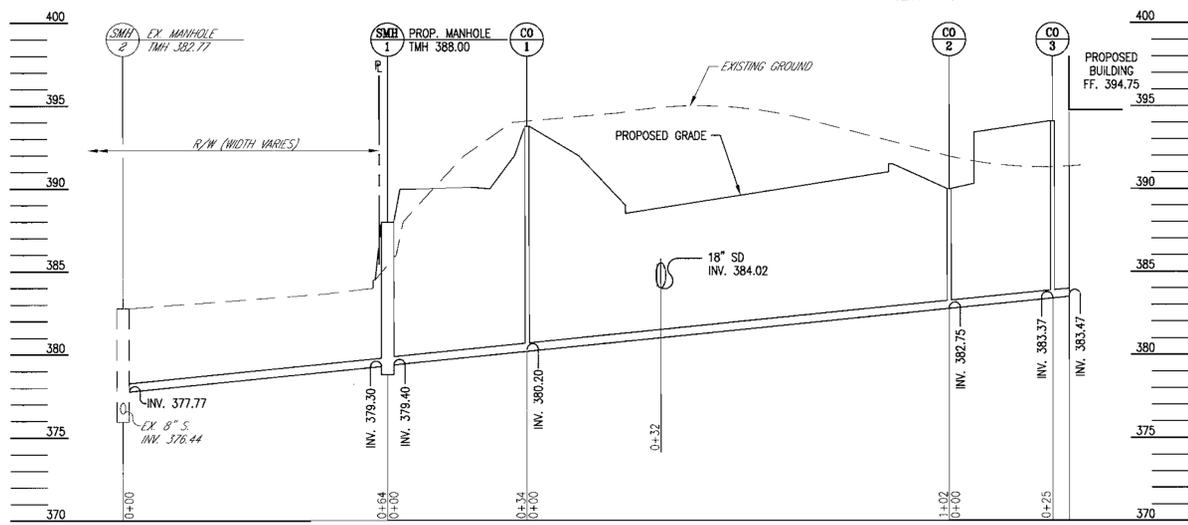
**STORM DRAIN PROFILE**

SCALE: HOR.: 1"=20'  
VERT.: 1"=5'



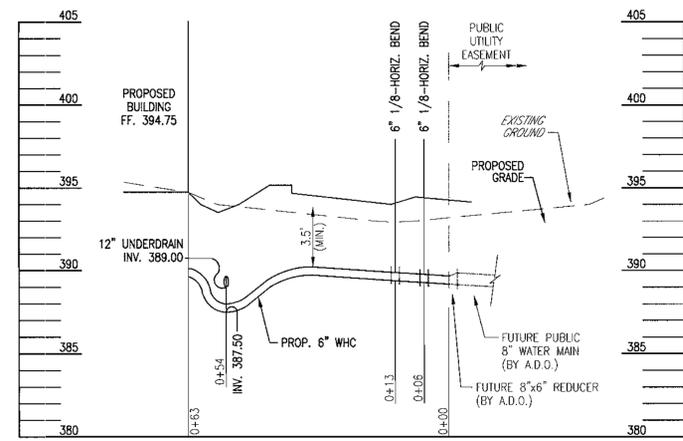
**STORM DRAIN PROFILE**

SCALE: HOR.: 1"=20'  
VERT.: 1"=5'



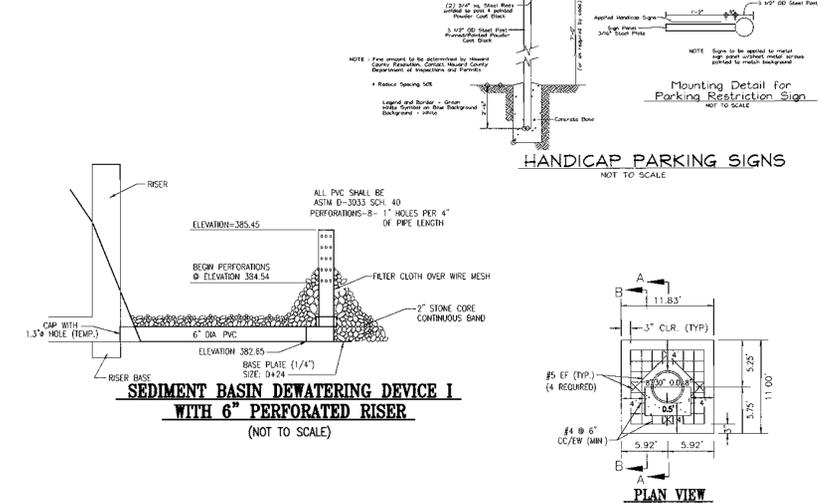
**6\"/>**

SCALE: HOR.: 1"=20'  
VERT.: 1"=5'



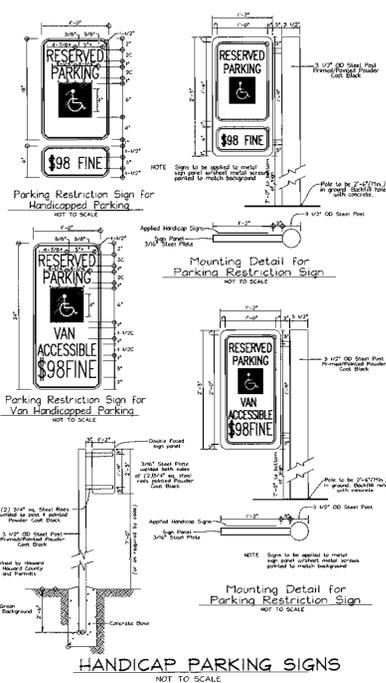
**6\"/>**

SCALE: HOR.: 1"=20'  
VERT.: 1"=5'



**SEDIMENT BASIN DEWATERING DEVICE I WITH 6\"/>**

(NOT TO SCALE)

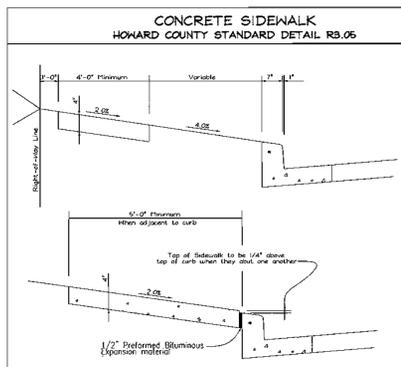


**HANDICAP PARKING SIGNS**

NOT TO SCALE

STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	TOP ELEV.	INV. IN	INV. OUT	REMARKS
I-2	PRECAST D-INLET	N 489934.62 E 835834.46	389.00	383.83	383.73	SD - 4.11 (2 FT OPENING 2 SIDES)
I-3	DOUBLE S COMBINATION	N 489918.98 E 835723.05	390.40	386.00	385.90	SD - 4.34
I-4	DOUBLE S COMBINATION	N 489954.49 E 835537.28	390.40	386.40	386.30	SD - 4.34
I-5	PRECAST D-INLET	N 489923.01 E 835535.99	393.80	-	387.92	SD - 4.11 (2 FT OPENING 2 SIDES)
I-6	PRECAST D-INLET	N 489955.01 E 835536.30	390.00	-	386.57	SD - 4.11 (2 FT OPENING 2 SIDES)
SC-1	STORMCEPTOR	N 489923.01 E 835535.99	391.80	(I-2) 383.20	383.10	STC 1800
ES-1	HEADWALL	N 489955.01 E 835536.30	386.15	382.65	382.65	SD - 5.11
ES-2	HEADWALL	N 489854.49 E 835537.28	385.00	382.00	382.00	SD - 5.21

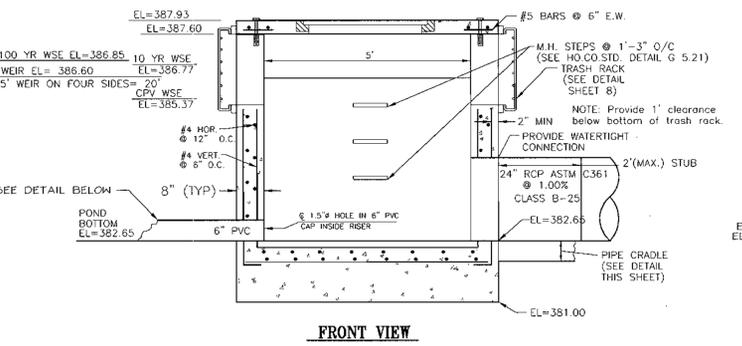
PIPE SCHEDULE		
SIZE	TYPE	LENGTH
6"	PVC (BIO-RETENTION)	80 LF
12"	PVC (UNDERDRAINS)	170 LF
15"	HDPE	84 LF
18"	HDPE	44 LF
24"	RCP/ASTM C-361	50 LF
12"	CMP (DRAINWAY CULVERTS)	34 LF
24"	HDPE	137 LF



**CONCRETE SIDEWALK**

HOWARD COUNTY STANDARD DETAIL R3.06

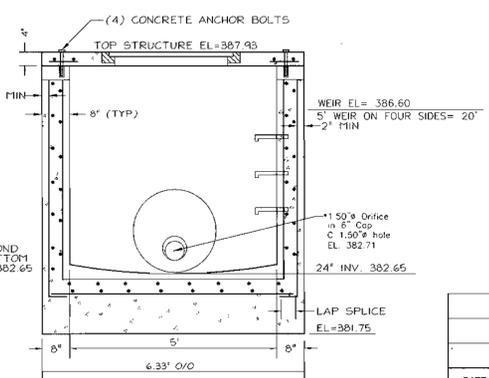
- Sidewalk to be scribed in 5'-0" maximum squares.
- Expansion joints across the sidewalk not to be more than 15' apart.
- 1/2" Performed Bituminous Expansion material in expansion joints to be kept 1/4" below surface of sidewalk.
- Concrete to be min number 2.
- Where sidewalk abuts curb, sidewalk shall be 1/4" above curb with 1/2" Performed Bituminous Expansion material between sidewalk and curb.
- On longitudinal sidewalk grades of 5% or greater, a concrete header, 6" thick and 5' deep below the normal sidewalk, shall be constructed for the full width of the sidewalk at intervals of 48 feet. The headers shall be placed at expansion joint locations and shall be monolithic with the curb.
- Sidewalk width adjacent to curb shall be 5'-0" minimum except sidewalk adjacent to curb in cut-in-top curb may be 4'-0" wide.
- Sidewalk located 2' or more from curb may be 4'-0" in width with a 5'x5' paved section placed 2'-0" apart.



**FRONT VIEW**

**PRECAST STRUCTURE CS-1 DETAIL**

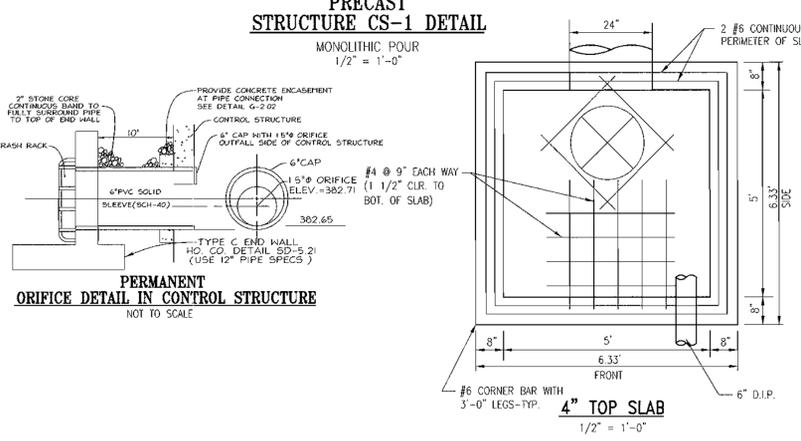
MONOLITHIC POUR  
1/2" = 1'-0"



**SIDE VIEW**

**PRECAST STRUCTURE CS-1 DETAIL**

MONOLITHIC POUR  
1/2" = 1'-0"



**PERMANENT ORIFICE DETAIL IN CONTROL STRUCTURE**

NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 3/20/02  
Chief, Development Engineering Division

*[Signature]* 3/21/02  
Chief, Division of Land Development

*[Signature]* 3/21/02  
Director

BEFORE BEGINNING CONSTRUCTION

CONTACT  
"MISS UTILITY"  
AT  
1-800-257-7777  
AT LEAST 48 HOURS  
PRIOR TO EXCAVATION

APPROVED  
PLANNING BOARD  
OF HOWARD COUNTY  
DATE 1/23/02

DATE	NUMBER	REVISION DESCRIPTIONS

STORM DRAIN, WATER AND SEWER PROFILES AND SITE DETAILS  
RIVERS CORPORATE PARK  
PARCEL S-1

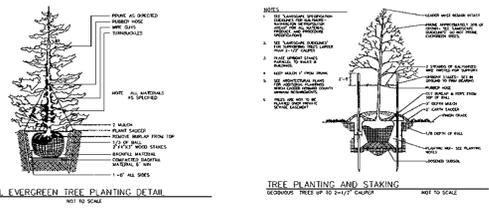
TAX MAP #41 GRID #6  
6TH ELECTION DISTRICT

PARCEL S-1  
HOWARD COUNTY, MARYLAND

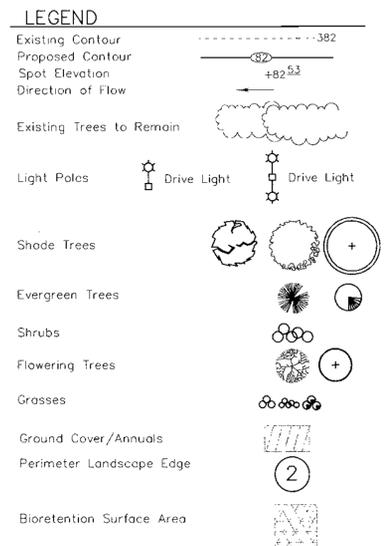
**FREDERICK WARD ASSOCIATES, INC.**  
ENGINEERS 7125 Riverwood Drive Columbia, Maryland 21046-2354  
ARCHITECTS Phone: 410-290-9550 Fax: 410-720-6226  
SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: RHW/KO  
DRAWN BY: KO  
CHECKED BY: RHW  
DATE: JAN. 22, 2001  
SCALE: (AS SHOWN)  
W.O. NO.: 2017152.00

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SCHEDULE B PARKING LOT INTERNAL LANDSCAPING	
Number of parking spaces	79
Number of trees and islands required	4
Number of trees and islands provided	4
Shade Trees Other Trees (2:1 Substitution)	



- GENERAL NOTES**
- This plan has been prepared in accordance with the New Town alternative compliance provisions of Section 16.124 of the Howard County Code and the Landscape Manual. The required parking, swmf, and perimeter landscaping will be bonded per this submission.
  - Financial Surety for the required landscaping has been posted as part of the Developer's Agreement in the amount of \$16,440.00 for 32 shade trees, 28 evergreen trees and 88 shrubs.
  - Drive and parking lights to be Hubbel Magnudisc DMF series luminaire with type III optics, horizontal 400 watt metal halide lamp, bronze housing; pole to be 25' round tapered aluminum with bronze finish.
  - Light details are on Sheet 4. Planter wall detail is on Sheet 6.

SCHEDULE D : STORMWATER MANAGEMENT AREA LANDSCAPING	
LINEAR FEET OF PERIMETER	320 LF
CREDIT FOR EXISTING VEGETATION (NO, YES AND LINEAR FEET)	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO
NUMBER OF TREES REQUIRED SHADE TREES EVERGREEN TREES	6 SHADE TREES 8 EVERGREEN TREES
NUMBER OF TREES PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION)	3 SHADE TREES 12 EVERGREEN TREES 3 ORNAMENTAL TREES 33 SHRUBS

**DEVELOPER'S BUILDER'S CERTIFICATE**  
 I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE(1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Signature: *G. Jay* DATE: 03/13/02

**APPROVED  
PLANNING BOARD  
OF HOWARD COUNTY**  
 DATE: 1/23/02

- LANDSCAPE SCHEDULE NOTES**
- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FIRMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HRD PLANTING SPECIFICATIONS.
  - MAINTENANCE TO INCLUDE MONITORING AND HAND WATERING AS NEEDED FOR THE FIRST TWO GROWING SEASONS TO ESTABLISH WOODY PLANTS. SPECIALIZED PLANTING AREAS INCLUDING FOUNDATION PLANTING AND ANNUAL BEDS MAY REQUIRE REGULAR HAND WATERING OR IRRIGATION.
  - CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
  - FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
  - CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

KEY	QJUAN	BOTANICAL NAME	SIZE	REM.
AC	10	Acer compositre Hedge Maple	2 1/2" Cal.	B & B
AG	22	Acer griseum Paperbark Maple	1 1/2"-2" Cal.	B & B
CL	3	Cupressocyparis leylandii Leyland Cypress Single Leader Form	6"-8" HT	Cont.
EA	32	Euonymus alatus 'Compacta' Dwarf Winged Euonymus	3"HT.	B & B or cont.
FG	190	Festuca glauca 'Blau Silber' Blue Silver Fescue with short bulbs/annuals	Quart Cont.	12" oc
FP	13	Fraxinus p. 'Newport' Newport Green Ash	2 1/2"-3" Cal.	B & B
HQ	7	Hydrangea quercifolia 'Snow Queen'	3-4' HT.	#10 can
HS	20	Helictotrichon sempervirens 'Saphiresprundel' Sapphire Fountain Blue Oat Grass w bulbs/annuals	Gallon Cont.	18" oc
IC	25	Imperata cylindrica 'Rubra' Red Baron Japanese Bloodgrass	Quart Cont.	12" oc
MS	6	Miscanthus sinensis 'Zabrinus' Zebra Grass	Gallon Cont.	18" oc
OH	68	Osmunda heterophyllus 'Gullfide' Gullfide Hollyleaf Osmundus	3" HT.	B & B or cont.
PA	9	Platanus x acerifolia 'Bloodgood' Bloodgood London Planetree	2 1/2"-3" Cal.	B & B
PH	46	Pennisetum alopecuroides 'Hamel' Hameln Fountain Grass	Gallon Cont.	2" oc
PL	134	Pinus t. 'Otto Luyken' Otto Luyken Laurel	3" HT.	B & B or cont.
PS	24	Pinus strobus White Pine	6-8" HT.	B & B
700		Liriodendron 'Majestic' Majestic Lily-Turf interplanted with bulbs	Plant Cont.	18" oc

CATEGORY	SCHEDULE A PERIMETER LANDSCAPE EDGE			
	ADJACENT TO ROADWAYS/PER PROPERTY			
	1	2	3**	4
Perimeter/Frontage Designation	C	E	D	A
Linear Feet of Roadway	367	350	20	240
Frontage/Perimeter				
Credit for Existing Vegetation (Yes, No, Linear Feet Describe below if needed)	No	No	No	No
Credit for Wall, Fence or Berm (Yes, No, Linear Feet Describe below if needed)	No	No	No	No
Number of Plants Required				
Shade Trees	1:40	9	1:40	9
Evergreen Trees	1:20	18	1:10	2
Shrubs			1:04	88
Number of Plants Provided				
Shade Trees	10	8	-	3
Evergreen Trees	18	-	-	7
Other Trees (2:1 Substitution)			3	5
Shrubs (10:1 Substitution)			89	12
Describe Plant Substitution Credits Below if needed)				25

\*\* This property is on an internal parcel within an existing subdivision. P-3 is for dumpster enclosure only. This plan prepared per New Town Alternative Compliance method. Substitutions per HRD.

**APPROVED:** DEPARTMENT OF PLANNING AND ZONING

*John C. ...* 3/20/02  
 Chief, Development Engineering Division

*Cinda ...* 3/21/02  
 Chief, Division of Land Development

*Joseph ...* 3/21/02  
 Director

**BEFORE BEGINNING CONSTRUCTION**

CONTACT  
 "MISS UTILITY"  
 AT  
 1-800-257-7777

AT LEAST 48 HOURS  
 PRIOR TO EXCAVATION

**SITE LANDSCAPE PLAN**  
**RIVERS CORPORATE PARK**  
**PARCEL S-1**

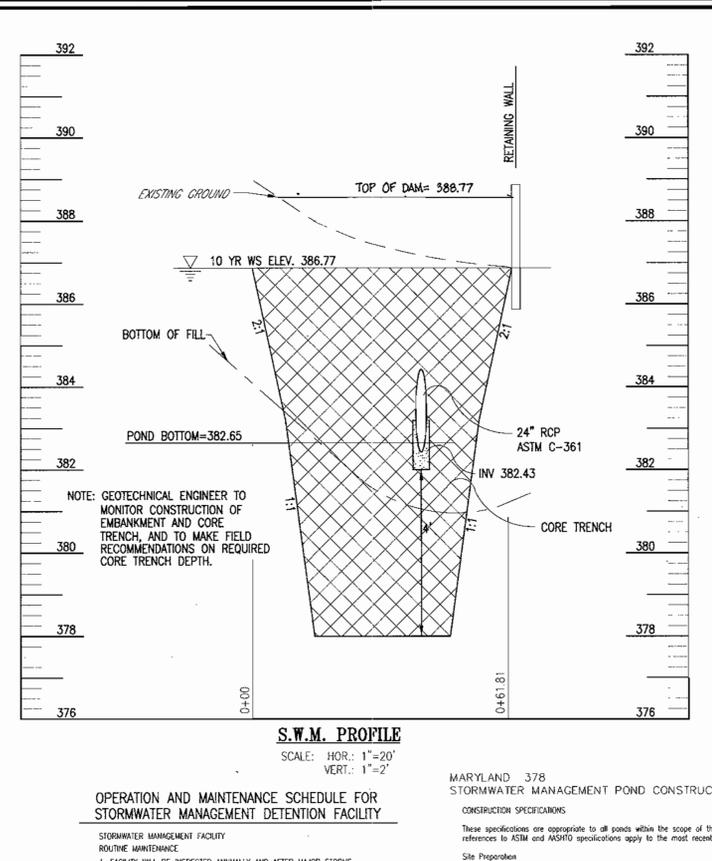
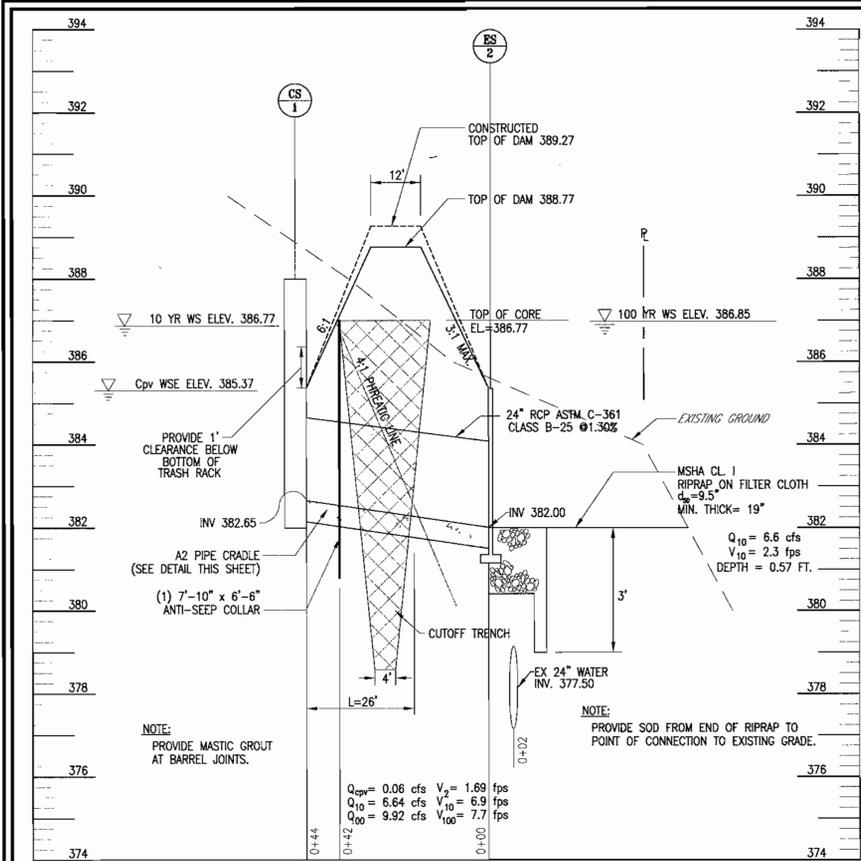
TAX MAP #41 GRID #6  
 6TH ELECTION DISTRICT

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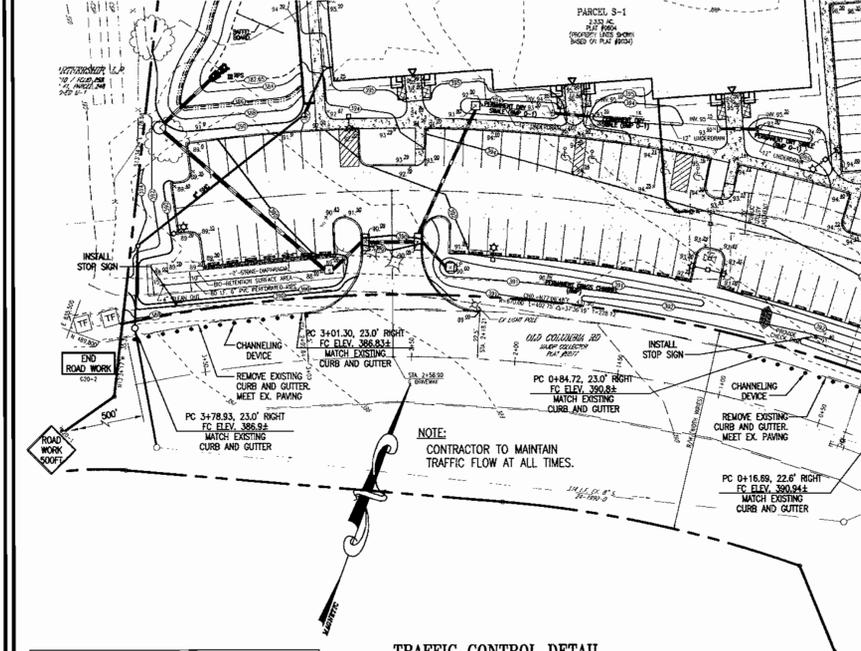
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**S.W.M. PROFILE**  
SCALE: HOR: 1"=20'  
VERT: 1"=2'

$Q_{Cpv} = 0.06$ cfs	$V_{10} = 1.69$ fps
$Q_{10} = 6.64$ cfs	$V_{10} = 6.9$ fps
$Q_{100} = 9.92$ cfs	$V_{100} = 7.7$ fps



**APPROVED PLANNING BOARD OF HOWARD COUNTY**  
DATE: 1/23/02

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Chief, Development Engineering Division: 3/20/02  
Chief, Division of Land Development: 3/2/02  
Director: 3/2/02

**POND SUMMARY**

Cpv	10 YEAR	100 YEAR	
FLOW INTO POND	3.72 c.f.s.	8.98 c.f.s.	13.36 c.f.s.
FLOW OUT OF POND	0.06 c.f.s.	6.64 c.f.s.	9.92 c.f.s.
W.S. ELEVATION	385.37	386.77	386.85
STORAGE VOLUME	0.20 AC FT	0.57 AC FT	0.80 AC FT

**OPERATION, MAINTENANCE AND INSPECTION**  
INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY...  
CONTRACTOR TO MAINTAIN TRAFFIC FLOW AT ALL TIMES.

**OPERATION AND MAINTENANCE SCHEDULE FOR STORMWATER MANAGEMENT DETENTION FACILITY**  
ROUTINE MAINTENANCE  
1. FACILITY WILL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS...  
2. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR...  
3. DEBRIS AND LITTER NEAR TO THE OUTLET STRUCTURE SHALL BE REMOVED...  
4. VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREAS SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

**OPERATION AND MAINTENANCE SCHEDULE FOR OPEN CHANNEL**  
Open channel systems and gross filter strips should be mowed as required during the growing season to maintain grass height in the 4 to 6 inch range...  
2. schedule of plant inspection will be twice a year in spring and fall...  
3. Each spill should be inspected each spring, remove previous mulch layer before applying new layer once every 2 to 3 years.

**OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS**  
1. annual maintenance of plant material, mulch layer and soil layer...  
2. schedule of plant inspection will be twice a year in spring and fall...  
3. Each spill should be inspected each spring, remove previous mulch layer before applying new layer once every 2 to 3 years.

**TRASH RACK DETAIL**  
NOT TO SCALE  
REINFORCING STEEL INTERMEDIATE GRADE CONCRETE: CLASS B fc=3,500 P.S.I. ft=1,600 P.S.I.

**A2 PIPE CRADLE DETAIL**  
NOT TO SCALE

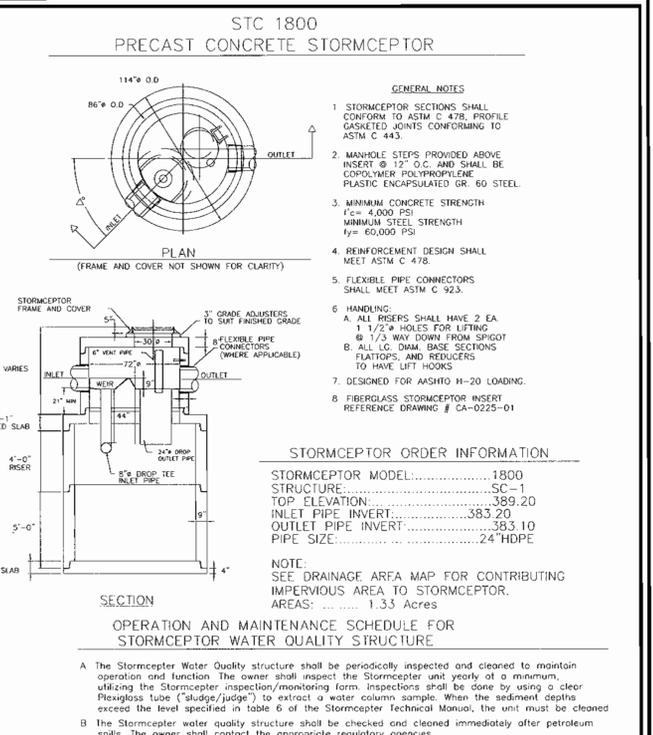
**Stormceptor Order Request Form**

**CONTRACTOR INFORMATION**  
Name: \_\_\_\_\_ Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Contact: \_\_\_\_\_ Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

**OWNER INFORMATION**  
Name: Parker, Cole & Lange, Inc. Phone: (410) 987-7770

**Stormceptor Model**  
SIC: 900, 1200, 1800, 2400  
Inlet Pipe Invert (ft): 383.20, 383.23  
Outlet Pipe Invert (ft): 383.23, 383.23  
Pipe Type: RCP  
Inlet Pipe Inside Diameter (in): 24  
Outlet Pipe Inside Diameter (in): 24  
Outlet Pipe Outside Diameter (in): 24

**PLEASE FILL OUT COMPLETELY AND FAX TO: CSR Hydro Conduit**  
ATTN: ED O'MALLEY FAX: (703)922-3659, PHONE: (703)515-6399  
FOR TECHNICAL ASSISTANCE PLEASE CALL MIKE BARG, PHONE (703)515-6399



**CONSTRUCTION SPECIFICATIONS**  
These specifications are applicable to all units 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 work shall be cleared, grubbed and stumped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and slope breaks shall be staked to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the line 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.

**CONSTRUCTION SPECIFICATIONS**  
Earth Fill  
Material - The fill material shall be taken from approved designated borrow areas. It shall be free of rocks, stumps, wood, rubbish, stones greater than 12\"/>

**CONSTRUCTION SPECIFICATIONS**  
Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:  
1. Materials - Reinforced concrete pipe shall have ball 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. This bedding/cradle shall consist of high strength concrete placed under the pipe and up the sides of the pipe to a minimum 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flexible fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.  
3. Laying Pipe - Ball and spigot pipe shall be placed with the ball end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are set 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 shall be located within 4 feet from the rise.  
4. Backfilling shall conform to AASHTO Method 1-99.  
5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

**CONSTRUCTION SPECIFICATIONS**  
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 fit completely all spaces under and adjacent to the pipe. All voids shall be filled with a minimum of 1 to 1.5 in. of material. The backfill shall be compacted within four feet from the structure. Under no circumstances shall 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\"/>

**CONSTRUCTION SPECIFICATIONS**  
Pipe Conduits  
All pipes shall be circular in cross section.  
Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:  
1. Materials - (Polymer Coated Steel Pipe) - Steel pipes with polymer coating shall have a minimum coating thickness of 0.017 in. (10 mil) on both sides of the pipe. The pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with waterlight coupling bands or flanges.  
Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with waterlight coupling bands or flanges. Aluminum Coated Steel Pipe, when used with flexible 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-193 Type A. Any aluminum coating designed to be in contact with concrete shall be protected with one coat of zinc chromate primer or two coats of asphalt.

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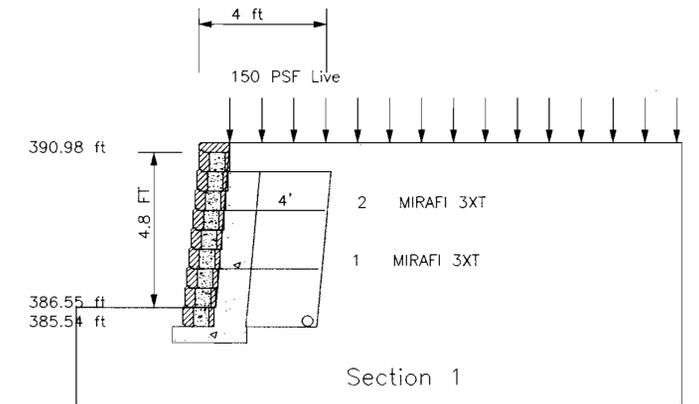
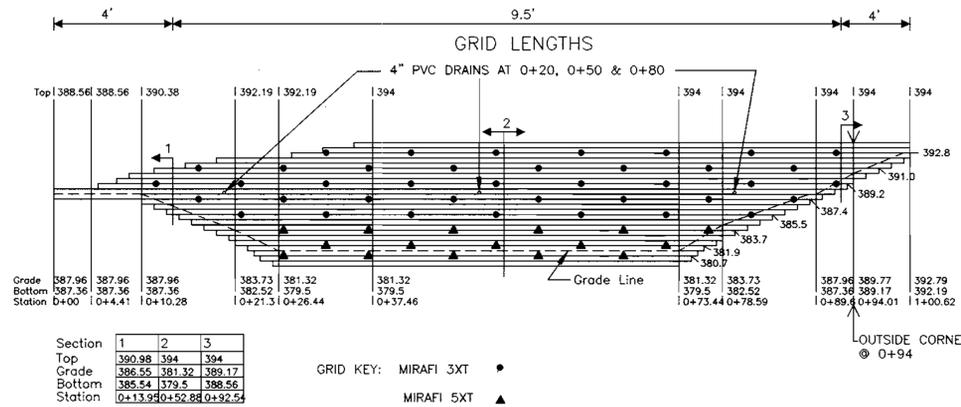
# SECTION 1

## ALLAN BLOCK

### RETAINING WALL ELEVATION

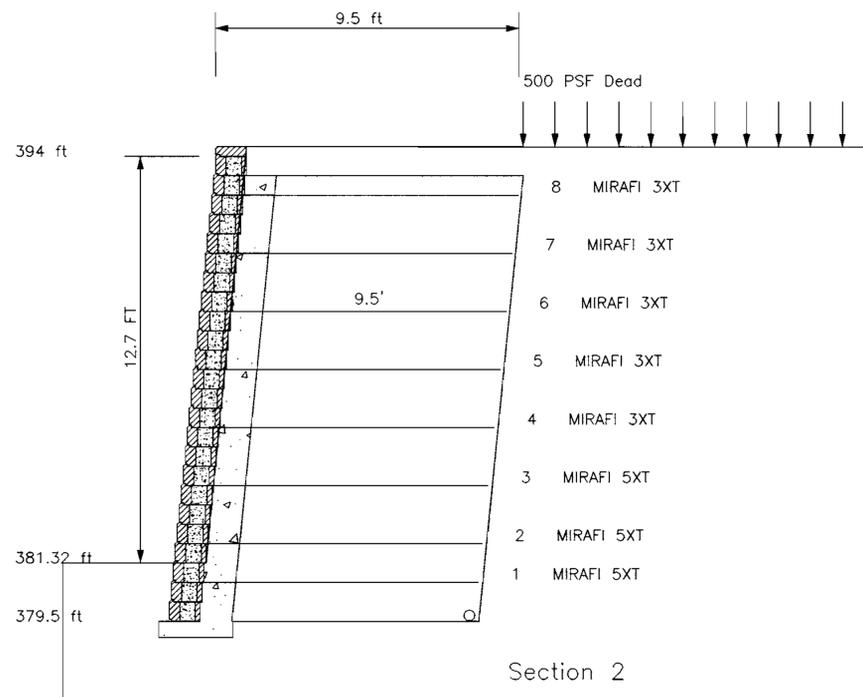
Horizontal Scale: 1"=10' Vertical Scale: 1"=10'

At Parking Lot by SWM Pond



Section 1 Notes

# SECTION 2



Section 2 Notes

#### BLOCK DIMENSIONS

Total Wall Height = 14.5' Block Height = .604'  
 Angle of Setback = 6° Depth of Block = .97'  
 Length of Block = 1.469'

#### SOIL PARAMETERS

Infill: Friction Angle = 35° Unit Weight = 130 PCF  
 Retained: Friction Angle = 28° Unit weight = 120 PCF  
 Foundation: Friction Angle = 28° Unit Weight = 120 PCF

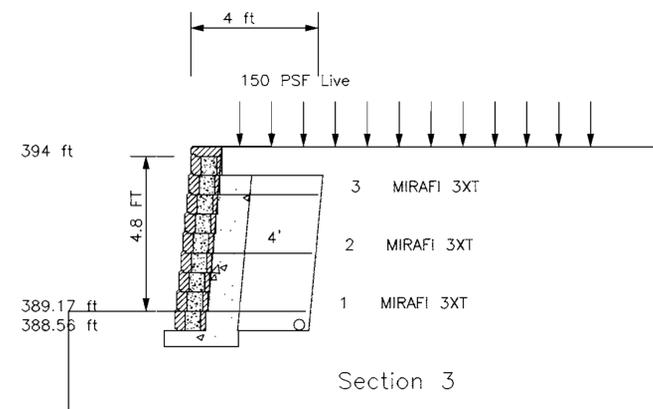
BEARING CAPACITY FACTOR OF SAFETY = 2.17

#### SAFETY FACTORS STATIC & SEISMIC

Minimum Sliding = 1.5 Actual Sliding = 2.647  
 Minimum Overturning = 2.0 Actual Overturning = 3.966

MAXIMUM BEARING PRESSURE = 2,502 PSF

# SECTION 3



Section 3 Notes

#### BLOCK DIMENSIONS

Total Wall Height = 5.44' Block Height = .604'  
 Angle of Setback = 6° Depth of Block = .97'  
 Length of Block = 1.469'

#### SOIL PARAMETERS

Infill: Friction Angle = 35° Unit Weight = 130 PCF  
 Retained: Friction Angle = 28° Unit weight = 120 PCF  
 Foundation: Friction Angle = 28° Unit Weight = 120 PCF

BEARING CAPACITY FACTOR OF SAFETY = 3.95

#### SAFETY FACTORS STATIC & SEISMIC

Minimum Sliding = 1.5 Actual Sliding = 3.14  
 Minimum Overturning = 2.0 Actual Overturning = 5.25

MAXIMUM BEARING PRESSURE = 834 PSF

#### BLOCK DIMENSIONS

Total Wall Height = 5.44' Block Height = .604'  
 Angle of Setback = 6° Depth of Block = .97'  
 Length of Block = 1.469'

#### SOIL PARAMETERS

Infill: Friction Angle = 35° Unit Weight = 130 PCF  
 Retained: Friction Angle = 28° Unit weight = 120 PCF  
 Foundation: Friction Angle = 28° Unit Weight = 120 PCF

BEARING CAPACITY FACTOR OF SAFETY = 3.95

#### SAFETY FACTORS STATIC & SEISMIC

Minimum Sliding = 1.5 Actual Sliding = 3.14  
 Minimum Overturning = 2.0 Actual Overturning = 5.25

MAXIMUM BEARING PRESSURE = 834 PSF

APPROVED  
 PLANNING BOARD  
 of HOWARD COUNTY  
 DATE 1/23/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 3/2/02  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 [Signature] 3/2/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 [Signature] 3/2/02  
 DIRECTOR

RYAN & ASSOCIATES  
 A Division of WKR Consulting, Inc.  
 RETAINING WALL DIVISION  
 717-477-8400 fax 717-477-8410  
 68 West King Street  
 Shippensburg, PA 17257

RIVERS CORPORATE PARK  
 PARCEL S-1

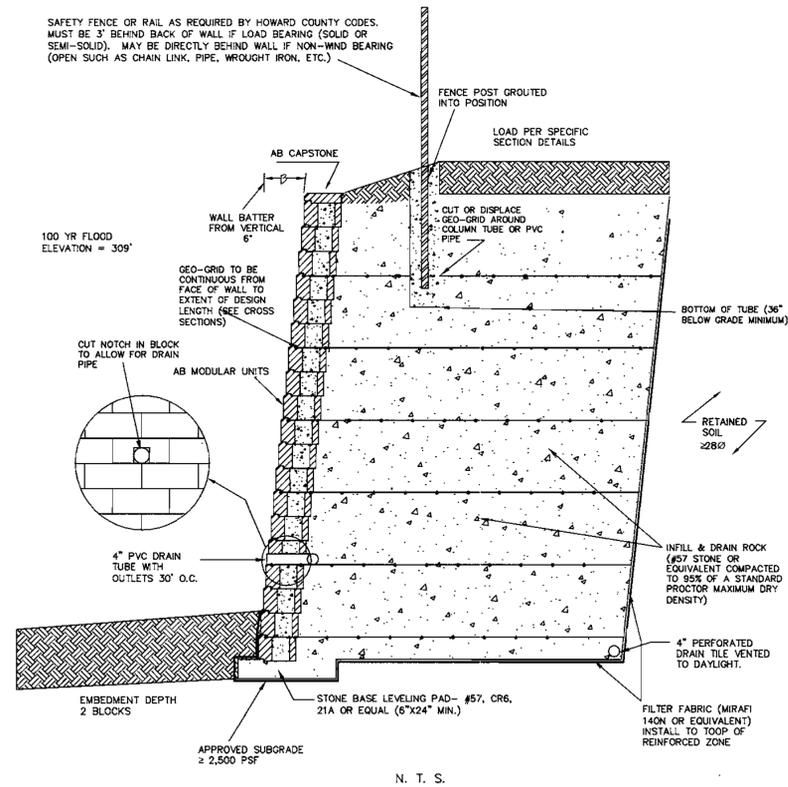
TAX MAP #41 GRID #6  
 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FREDERICK WARD ASSOCIATES, INC.  
 7125 Riverwood Drive Columbia, Maryland 21046-2354  
 Phone: 410-290-9550 Fax: 410-720-6226  
 Bel Air, Maryland Columbia, Maryland Worrenton, Virginia

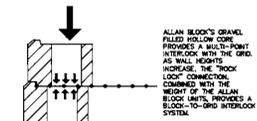
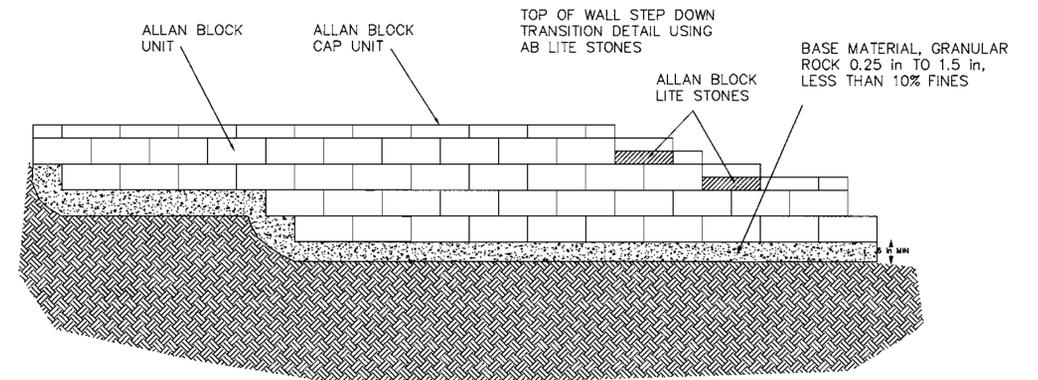
DESIGN BY: RSP  
 DRAWN BY: RSP  
 CHECKED BY: DKS  
 DATE: OCT. 20, 2001  
 SCALE: AS SHOWN  
 W.O. NO.: 2017152.00

9 SHEET OF 11

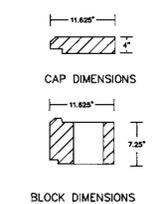
# TYPICAL WATER APPLICATION SECTION



# ALLAN BLOCK STEP DOWN TYPICAL DETAIL

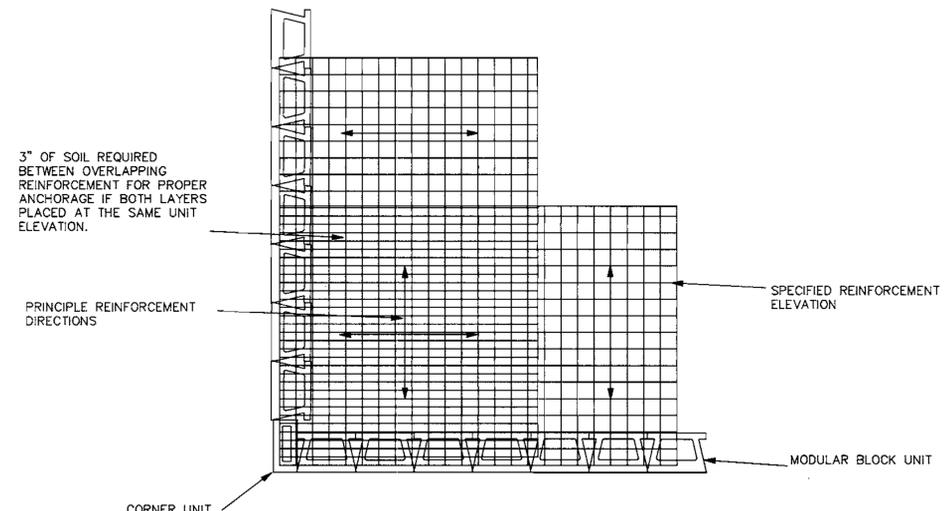


BLOCK-TO-GRID CONNECTION



**APPROVED**  
PLANNING BOARD  
of HOWARD COUNTY  
DATE: 1/23/02

# REINFORCEMENT PLACEMENT FOR OUTSIDE 90° CORNERS



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*John Deane* 3/21/02  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Cindy Hunter* 3/21/02  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*John Root* 3/21/02  
DIRECTOR DATE

**RYAN & ASSOCIATES**  
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RETAINING WALL DIVISION  
717-477-8400 fax 717-477-8410  
68 West King Street  
Shippensburg, PA 17257

**RIVERS CORPORATE PARK  
PARCEL S-1**

TAX MAP #41 GRID #6  
8TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**FREDERICK WARD ASSOCIATES, INC.**  
ENGINEERS 7125 Riverwood Drive Columbia, Maryland 21046-2354  
ARCHITECTS Phone: 410-290-9550 Fax: 410-720-6226  
SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: RSP  
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10 SHEET OF 11

