SITE DEVELOPMENT PLAN

GLENWOOD STATION

SHEET INDEX

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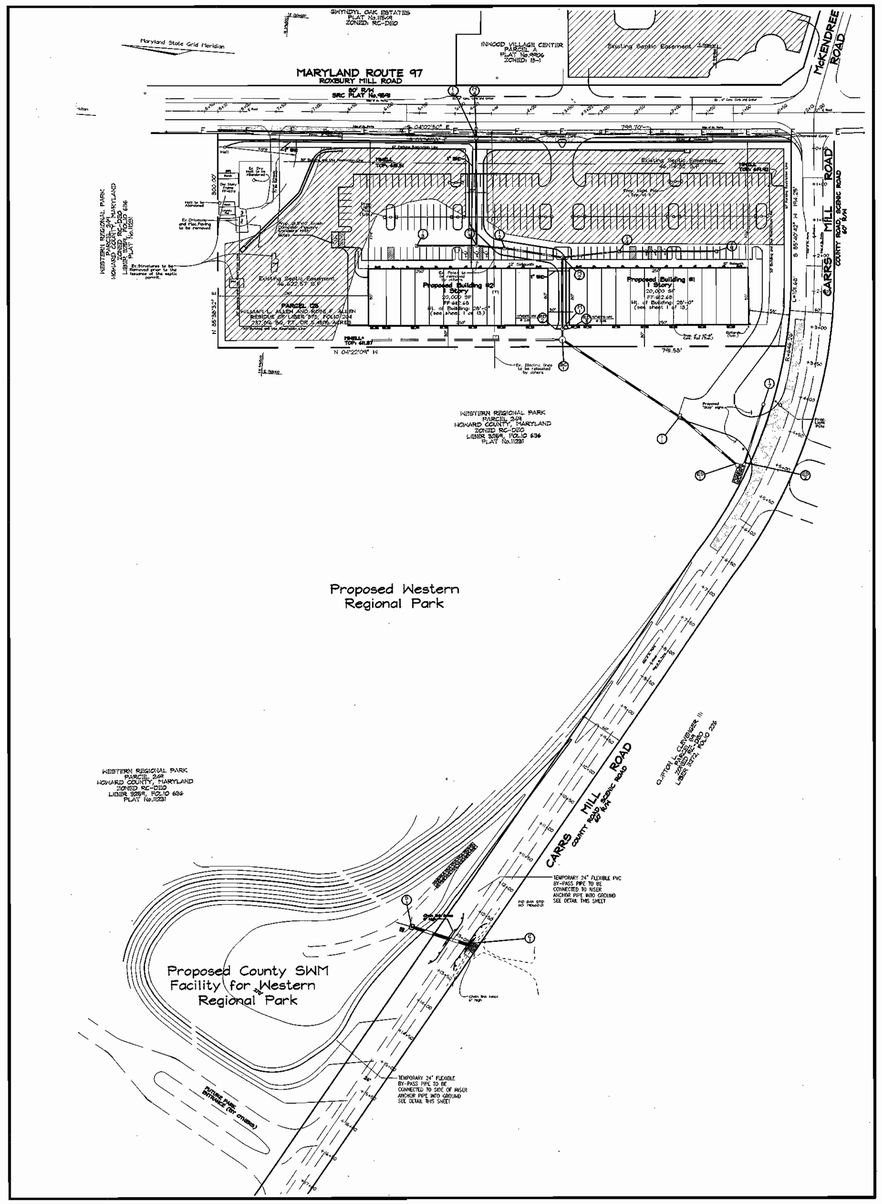
Developed Conditions Drainage Area Map	14 of 14

GENERAL NOTES

1. All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications, if applicable.
2. The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work.
3. 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 Telephone Company:	1-410-954-6281
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

4. Site analysis:
   Area of parcel 125: 5.4595
   Area of parcel 249 : 181.08 Acres ±
   Area of Disturbance : 7.95 Acres
   Present zoning : B-2
   Use of structure : Retail **and Vehicle Service Establishment**
   Building area : 1=20,000sf; 2=20,000sf; **+ CANOPIES= 5,000 SF + PUMPHOUSE = 144 SF= TOTAL = 45,144 SF**
   Building coverage on site : **1.04 AC. OR 19% OF GROSS AREA**
   Paved parking lot/area : **1.68 AC. OR 31% OF GROSS AREA**
   Area of landscape island : 0.05 Ac. = 2,000sf
   There are no steep slopes on-site
5. Project background:
   Location : Glenwood, Md.; Tax Map 14, Parcel 125
   Zoning : B-2
   Section/Area : N/A
   Site Area : 5.4595 Acres
   DPZ references : ZB Case No. 951-M, WP-01-136
   This project is grandfathered to the Fourth Edition of the Howard County Sub-division and Land Development Regulations.
6. 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.
7. Any damage to public right-of-ways, paving, or existing utilities will be corrected at the contractor's expense.
8. Existing utilities located from Field Surveys and available record drawings. Approximate location of existing utilities are shown for the contractors 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.
9. All reinforced concrete for storm drain structures shall have a minimum of 28 days strength of 3,500 p.s.i.
10. 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.
11. Estimates of earthwork quantities are provided soley for the purpose of calculating fees.
12. 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.
13. All storm drain pipe bedding shall be Class 'C'.
14. Coordinates and elevations are based on Howard County Right-of-Way Monuments.
15. A noise study is not required for this project.
16. Existing topography is based on field run information performed by The RBA Group, Inc. in May 1998 and by Vogel & Associates, Inc. in September 2000.
17. See sheet 2 for paving section details.
18. All curb and gutter to be Howard County Standard concrete Detail 3.01 unless otherwise specified.
19. Contractor responsible to construct all handicap parking and handicap access in accordance with current ADA requirements.
20. Where drainage flows away from curb, contractor to reverse the gutter pan
21. All elevations are to flowline/bottom of curb unless otherwise noted.
22. All dimensions are to face of curb unless otherwise noted.
23. Private Water to be provided by on-site wells as approved by MDE under Ground Water Appropriation Permit (**GWAP**) #H0200IG0091(01). Private septic systems to be provided on-site. Septic fields are based on application #A50944 whose locations are based on perc testing dating 2.22.95 and 4.24.95 and approved on April 26, 2000.
24. Stormwater Management is provided by Extended Detention Pond constructed by Glenwood, LLC per SDP-01-108, but owned and maintained by Howard County. Water Quality is provided by on-site Stormcepter to be privately owned and maintained.
25. All exterior lighting shall conform to Zoning Regulations Section 134.
26. Buildings to have Inside Water Meter settings.
27. APFO traffic test was provided by The RBA Group, Inc. on July 07, 2000.
28. This site is conditionally exempt from the Forest Conservation requirements with the filing of a DOI for a single lot clearing less then 40,000 sq. ft. of forest in accordance with Section 16.1202 (b)(2)(i) of the Howard County Code. The second parcel is owned by Howard County and the work proposed is the construction of the regional facility for the Western Regional Park, constructed for the County by Glennwood, LLC.
29. Existing storm drain structures/pipe elevations are in accordance with SDP-91-060. Adjustment may be necessary to meet as-built vertical locations of storm drain stubs and structures.
30. Contractor to connect all roof drains to storm drain system, see Architectural plans for details.
31. Contractor to sod all areas adjacent to building, parking lot islands and area adjacent to entrance drive aisle. All other areas to be seeded and mulched.
32. Landscape Surety in the amount of $23,250.00 will be included in the Developer's Agreement. This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard County Code and Landscape Manual.
33. The available septic capacity will be allocated as each building permit is processed for the individual uses of each tenant. If total actual discharge from each building exceeds 1,500GPD, (3,000GPD total) then a ground water mounding study is required. For total flow in excess of 5,000GPD, a Ground Water Discharge Permit is required. Microseptec Enviroserver (410.750.7375) units are proposed for septic pre-treatment.
34. There are no floodplains or wetlands in the area of the proposed improvements.
35. The subject property is zoned 'B-2' (Business General) in accordance with the ZB Case No. 951-M, dated September 1, 1994.
36. The proposed driveway entrance on MD Route 97 was approved of Waiver Petition WP-01-136 by Howard County on July 19, 2001. The requirements of the Subdivision and Land Development Regulations, Sections 16.119(f)(1) and 16.120(a)(2), which call for a lower classification road access, have been waived by approval.
37. The contractor will contact the owner/developer prior to installation of septic system to determine if septic system has been revised.
38. A fee-in-lieu of stormwater management pond landscaping **was** paid by the developer in the amount of **$14,**100.00.
39. Total Limit of Disturbance : 7.95 Acres



LOCATION MAP
SCALE: 1"=100'

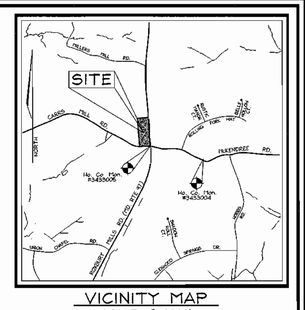
LEGEND

Existing Contour	----------382
Proposed Contour	382
Spot Elevation	+82.53
Direction of Flow	←
Light Poles	Overhead

BENCHMARKS

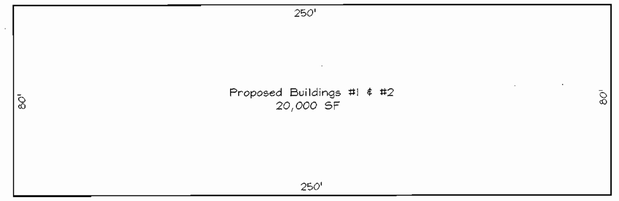
Howard County Monument #3433004; Elev.: 597.33
N 534,653.438 E 795,420.537

Howard County Monument #3433005; Elev.: 620.07
N 534,974.172 E 794,062.901



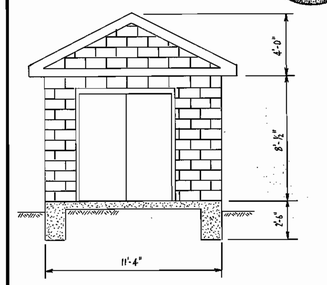
VICINITY MAP
SCALE: 1"=2000'

BUILDINGS #1 & #2 ELEVATION
SCALE: 1"=30'



BUILDING PLAN VIEW
SCALE: 1"=50'

REVISIONS TO MYLARS PREPARED BY:
LEON A. PODOLAK & ASSOCIATES, LLC
69 E. MAIN ST. P.O. BOX 266
WESTMINSTER, MARYLAND 21157
PHONE: (410) 876-1226



PROPOSED WATER PUMPHOUSE DETAIL
NOT TO SCALE

NO.	REVISION	DATE
	REVISE POND OUTFALL APRON & PERMANENT POOL ELEV.	7-30-03
	PER HOWARD CO. DEVELOPMENT ENGINEERING DIVISION COMMENTS	4-25-03
	SEPTIC SYSTEM REDESIGN & ADDITIONAL PAVT. ON NORTH SIDE OF BLDG.#2 (SEE SHTS. 2,4,5&9 #8)	3-21-03
	REVISE PUMP HOUSE LOCATION, SHOW STORAGE TANK, WATERLINE, AND CANOPY	
	(SEE SHEETS 2, 4, 5, & 9)	8-26-02

ADDRESS CHART

BUILDING #	STREET ADDRESS
1	2490 MD Rte. 97 (Roxbury Mill Rd.), Cooksville, Maryland
2	2480 MD Rte. 97 (Roxbury Mill Rd.), Cooksville, Maryland

PROJECT NAME	SECTION/AREA	PARCEL NUMBER
Glenwood Station	N/A	125

DEED REF.	BLOCK NO.	ZONE	TAX/MAP	ELECT. DIST.	CENSUS TR.
373/204	10	B-2	14	4th	6040

WATER CODE: SEWER CODE:

COVER SHEET

GLENWOOD STATION
"RETAIL CENTER"
ALLEN PROPERTY

TAX MAP #14 GRID #10 — PARCEL 125
4TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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

OWNER/DEVELOPER
GLENWOOD, LLC.
751 Frederick Street
Hanover, PA 17331
717.632.5300

PARKING TABULATION (PER SECTION 133 (D)(4)(N)

	REQUIRED	PROPOSED
SHOPPING CENTERS: 40,000 S.F. X 5.0 SPACES/1,000 S.F. =	200 spaces	201 spaces
Handicap Spaces=	6 spaces Including 1 Van	6 spaces Including 1 Van

ROBERT H. VOGEL, PE No.16193

DESIGN BY: PS
DRAWN BY: PS/KO
CHECKED BY: RHV
DATE: JAN. 9, 2002
SCALE: AS SHOWN
W.O. NO.: 2019107.00

SHEET 1 OF 14

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/6/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/5/02
DIRECTOR — DATE 6/6/02

APPROVED : FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE 5/30/02

M:\PROJECTS\2019107\ENGR\dwg\800951.dwg Tue Apr 09 16:29:35 2002 JAJ

SDP-01-108

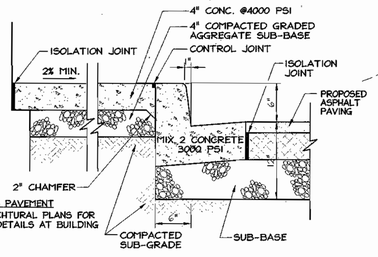
DEMOLITION NOTES:

1. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE SITE AND VERIFY EXISTING SITE CONDITIONS TO HIS SATISFACTION.
2. CONTRACTOR TO MEET WITH DEVELOPER ON JOB SITE TO IDENTIFY EQUIPMENT, SIGNS AND ITEMS TO BE REMOVED OR RETAINED PRIOR TO THE START OF CONSTRUCTION.
3. CONTRACTOR MUST ADHERE TO ALL SAFETY REGULATIONS GIVEN BY O.S.H.A. AND HOWARD COUNTY.
4. ALL DEMOLISHED MATERIALS TO BE REMOVED TO AN APPROVED LOCATION.
5. ALL UTILITIES AND STRUCTURES WITHIN PUBLIC RIGHTS OF WAY SHALL REMAIN.
6. ALL UTILITIES DAMAGED DURING DEMOLITION AND CONSTRUCTION SHALL BE REPAIRED AND/OR REPLACED IN KIND BY THE CONTRACTOR AT HIS OWN EXPENSE.
7. TOPOGRAPHIC BOUNDRY SURVEY INFORMATION SHOWN ON THIS PLAN IS FROM A SURVEY PREPARED BY FREDERICK WARD ASSOC., INC. DATED MARCH 2001.
8. REFER TO DRAWING SHEET 2 OF 14 FOR GENERAL NOTES PERTAINING TO UTILITIES.
9. REFER TO SHEETS 3, 4, 5 AND 6 OF 14 FOR ALL REQUIRED SEDIMENT CONTROL MEASURES.

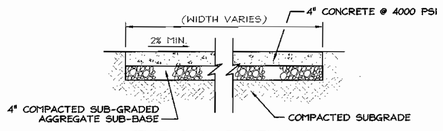
UTILITY NOTES:

UTILITIES AND OTHER OBSTRUCTIONS AS SHOWN HEREON HAVE BEEN LOCATED BY ACTUAL FIELD MEASUREMENT, SUPPLEMENTED BY INFORMATION OBTAINED FROM THE VARIOUS AGENCIES INVOLVED. HOWEVER, WE DO NOT GUARANTEE THE ACCURACY NOR THE COMPLETENESS OF THE INFORMATION RECEIVED. IF CONSTRUCTION ON THIS SITE TAKES PLACE, THE CONTRACTOR MUST VERIFY ALL SUCH INFORMATION TO HIS OWN SATISFACTION AND MUST NOTIFY THE COMPANIES INVOLVED PRIOR TO THE START OF CONSTRUCTION.

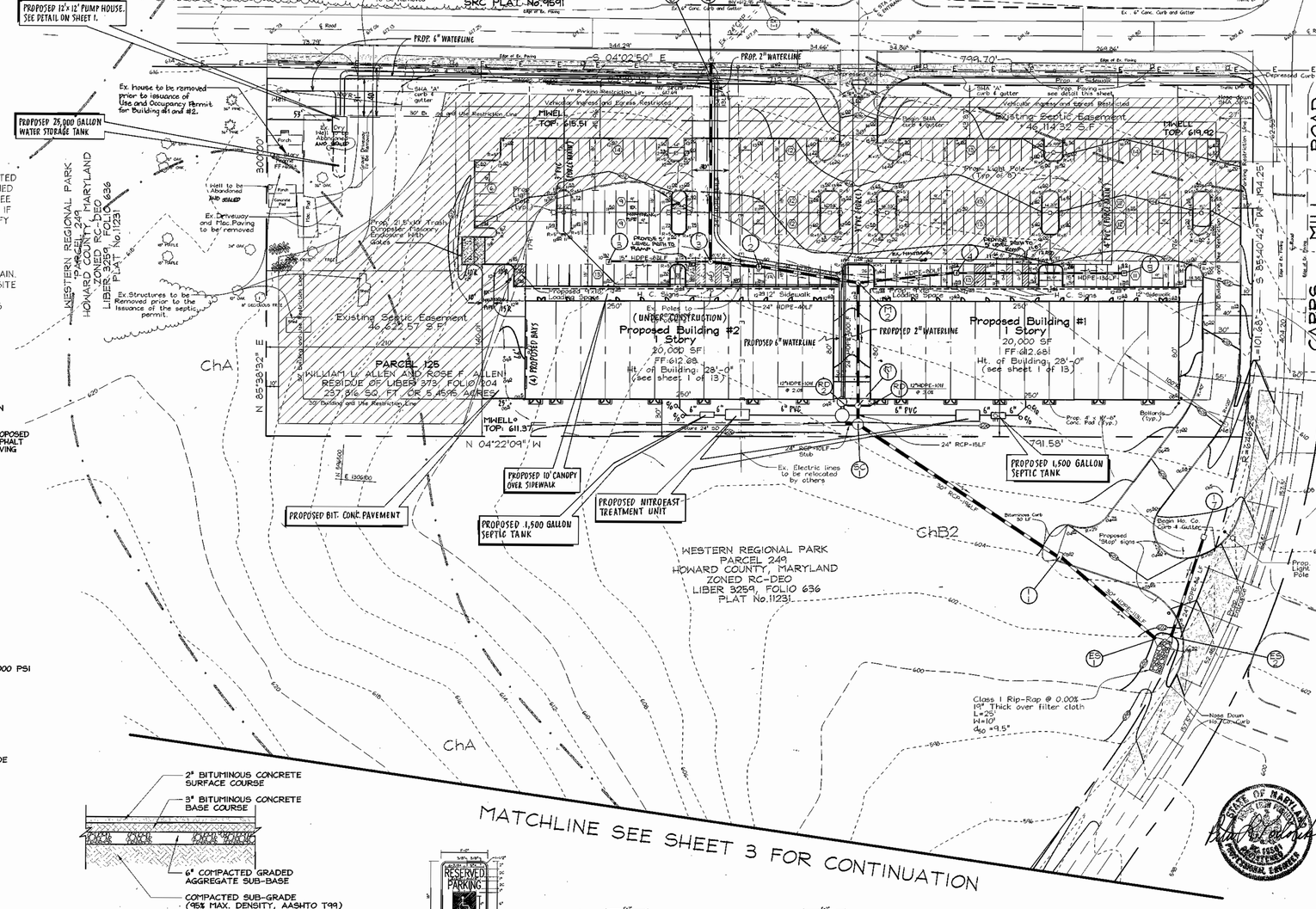
LOCATIONS OF INDIVIDUAL ELECTRIC, TELEPHONE, GAS, WATER AND SANITARY SEWER SERVICE CONNECTIONS, AS SHOWN HEREON, ARE UNCERTAIN. THE LOCATIONS OF SAID CONNECTIONS SHOWN ARE BASED ON PROPOSED SITE PLANS OR AN ESTIMATION OF POSSIBLE LOCATION. SHOULD EXCAVATION BECOME NECESSARY FOR MAINTENANCE OR REPAIR OF THESE LINES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCURATELY DETERMINE THE LOCATION OF THESE LINES BEFORE COMMENCING WORK.

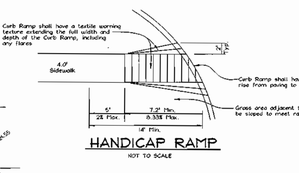


TYPICAL SIDEWALK AT BUILDING DETAIL
(N.T.S.)

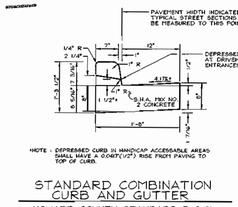


TYPICAL SIDEWALK DETAIL
(N.T.S.)





HANDICAP RAMP
NOT TO SCALE



NOTE - DEPRESSED CURB IS HANDICAP ACCESSABLE AREAS SHALL HAVE A 0.04FT(1/2") RISE FROM PAVING TO TOP OF CURB.

STANDARD COMBINATION CURB AND GUTTER
HOWARD COUNTY STANDARD R-3.01
NOT TO SCALE

SEE SHEET 5 FOR SEPTIC SYSTEM TRENCH LINE LAYOUT AND SYSTEM DETAILS.

NOTE:
EX WELLS TO BE REMOVED AFTER NEW MONITORING WELLS ARE ARE CONSTRUCTED AND FUNCTIONING PROPERLY.

STREET LIGHT NOTES:

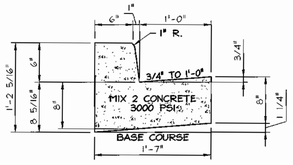
250 WATT HIGH PRESSURE SODIUM VAPOR COBRA (PENDENT MOUNT)
30' GALVANIZED STEEL POLE - 12' ARM
2' TO 4' BEHIND FACE OF CURB

(NO STREET TREES TO BE PLACED WITHIN 20' OF STREET LIGHTS)

GENERAL NOTES FOR GRADING:

1. COMPACTION IN BUILDING AND PAVEMENT AREAS TO BE AT 95% AND COMPACTION IN LANDSCAPING AREAS TO BE AT 90%, TO MEET ASTM D-1557 REQUIREMENTS.
2. IT IS RECOMMENDED THAT A GEOTECHNICAL ENGINEER BE RETAINED TO MONITOR EARTHWORK ACTIVITIES TO MAKE APPROPRIATE RECOMMENDATIONS AS NECESSARY.

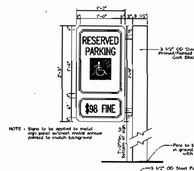
TYPICAL BITUMINOUS PAVEMENT SECTION
(ON-SITE PARKING LOT PAVEMENT)
(N.T.S.)



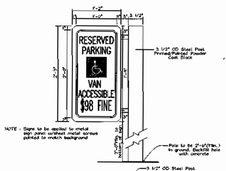
ON SITE CURB AND GUTTER DETAIL
(N.T.S.)

Parking Restriction Sign for Handicapped Parking
NOT TO SCALE

Parking Restriction Sign for Van Handicapped Parking
NOT TO SCALE

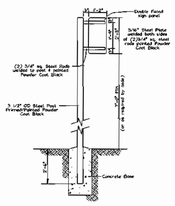


Mounting Detail for Parking Restriction Sign
NOT TO SCALE



Mounting Detail for Parking Restriction Sign
NOT TO SCALE

Note:
Bottom edge of free standing handicapped parking signs shall be a minimum of 7'-6", placement of the additional sign designating the fine can be no lower than 7'-0"



HANDICAP PARKING SIGNS
NOT TO SCALE

NOTE
Sign shapes to be determined by Howard County Association. Contact Howard County Department of Inspections and Permits.
* Reduce Spacing 50%
COLORS:
Legend and Border = Green
Background = White
Reflective Sheeting = White Background = White

APPROVED : FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE 5/30/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/6/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/5/02
DIRECTOR — DATE 6/10/02

OWNER/DEVELOPER

GLENWOOD, LLC.
751 Frederick Street
Hanover, PA 17331
717.632.5300

NO.	REVISION	DATE
	PER HOWARD CO. DEVELOPMENT ENGINEERING DIVISION COMMENTS	4-25-09
	SEPTIC SYSTEM REDESIGN and ADDITIONAL PAVEMENT ON NORTH	
	SIDE OF BUILDING #2	3-21-03
	REVISE PUMP HOUSE LOCATION, SHOW STORAGE TANK, WATERLINE, AND CANOPY	8-26-02

SITE DEVELOPMENT PLAN
GLENWOOD STATION
"RETAIL CENTER"
ALLEN PROPERTY

TAX MAP #14 GRID #10 — PARCEL 125
4TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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

STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — PROFESSIONAL ENGINEER
ROBERT H. VOGEL PE No.16193 — DATE 6/10/02

DESIGN BY: PS
DRAWN BY: PS/KG
CHECKED BY: RHV
DATE: JAN. 9, 2002
SCALE: 1"=50'
W.O. NO.: 2019107.00

SHEET 2 OF 14

SDP-01-108

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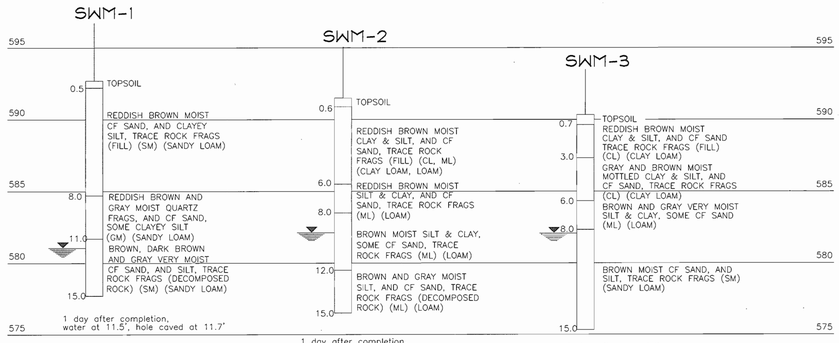
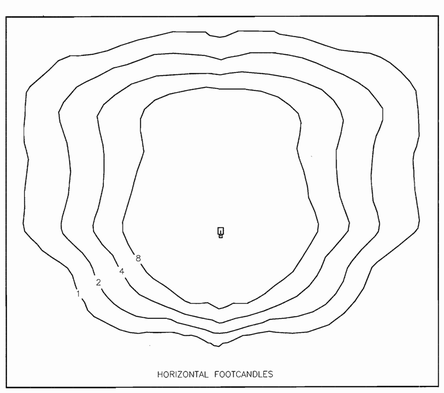


SWM BORING PROFILES

NOT TO SCALE

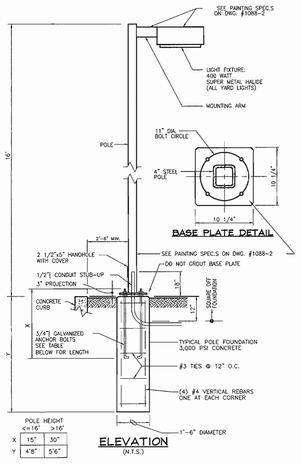
NOTES:

1. ALL EXCAVATED MATERIAL SHALL BE DEPOSITED OFFSITE AT AN APPROVED LOCATION.
2. S.W.M. FACILITY IS TO BE CLEANED OF ALL SEDIMENT AND STABILIZED PRIOR TO CONVERSION TO FINAL STORMWATER MANAGEMENT CONFIGURATION.



STANDARD YARD LIGHT ON 22' POLE CITATION III BY WHITEWAY

SCALE : 1" = 20'

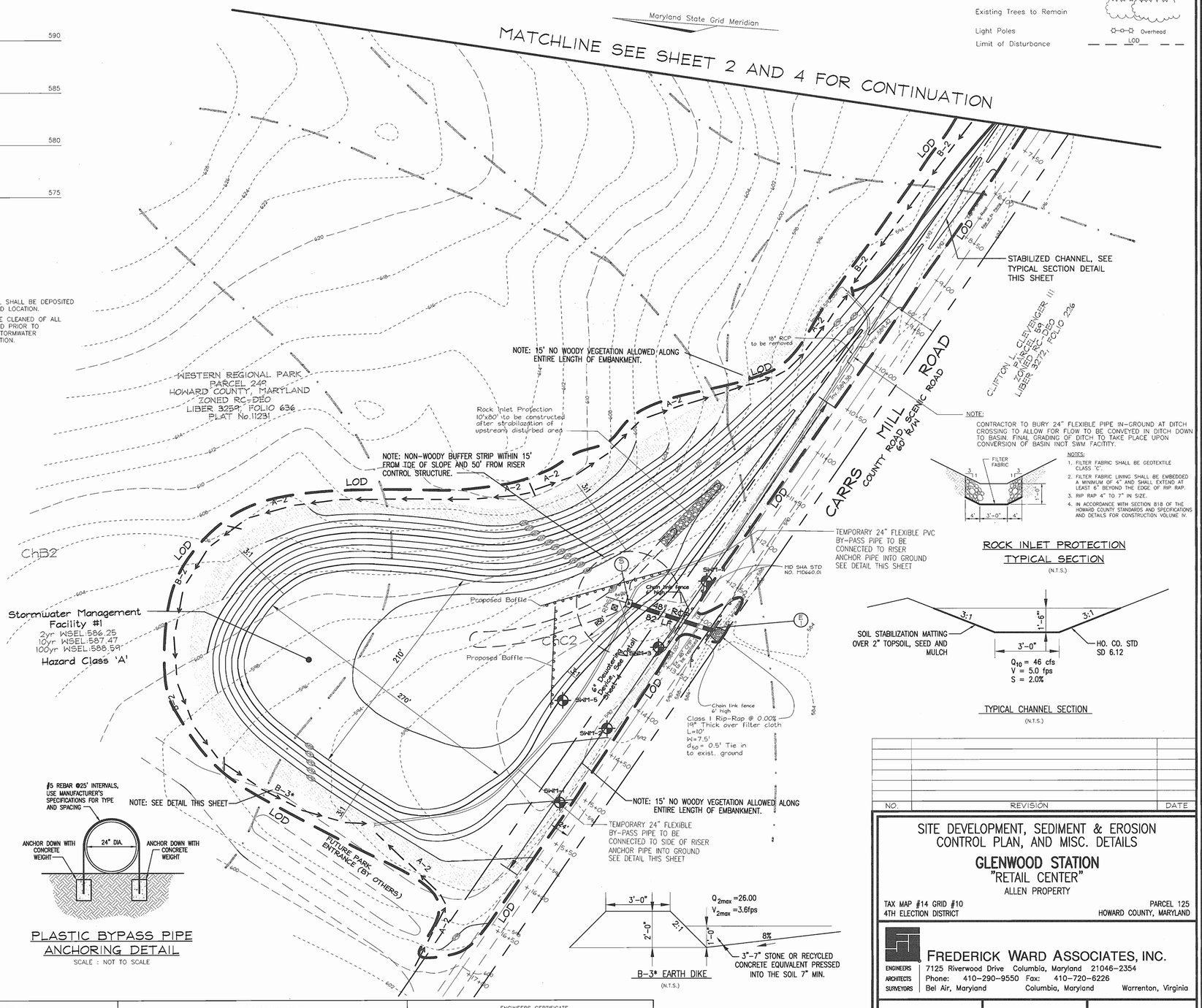


TYPICAL YARD LIGHT DETAIL LeSABRE III BY WHITEWAY

FURNISHED BY OWNER, INSTALLED BY G.C.: LIGHT FIXTURE, MOUNTING ARM, POLE, ANCHOR BOLTS, NUTS, AND WASHERS BY OWNER, ALL OTHER MATERIALS FURNISHED AND INSTALLED BY G.C.

PLASTIC BYPASS PIPE ANCHORING DETAIL

SCALE : NOT TO SCALE



NOTES:

1. FILTER FABRIC SHALL BE GEOTEXTILE CLASS 'C'.
2. FILTER FABRIC LINING SHALL BE EMBEDDED A MINIMUM OF 4" AND SHALL EXTEND AT LEAST 6" BEYOND THE EDGE OF RIP RAP.
3. RIP RAP 4" TO 7" IN SIZE.
4. IN ACCORDANCE WITH SECTION 818 OF THE HOWARD COUNTY STANDARDS AND SPECIFICATIONS AND DETAILS FOR CONSTRUCTION VOLUME IV.

ROCK INLET PROTECTION TYPICAL SECTION

(N.T.S.)

TYPICAL CHANNEL SECTION

(N.T.S.)

B-3* EARTH DIKE

(N.T.S.)

NO.	REVISION	DATE

APPROVED : FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE 5/30/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MAJ — DATE 5/3/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/5/02
DIRECTOR — DATE 6/10/02

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 4/29/02

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 4/29/02

DEVELOPER'S CERTIFICATE

"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 TO PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

SIGNATURE OF DEVELOPER — DATE 4-10-02

ENGINEERS CERTIFICATE

"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 — DATE 4/11/02
ROBERT H. VOGEL

OWNER/DEVELOPER
GLENWOOD, LLC.
751 Frederick Street
Hanover, PA 17331
717.632.5300

SITE DEVELOPMENT, SEDIMENT & EROSION CONTROL PLAN, AND MISC. DETAILS

GLENWOOD STATION

"RETAIL CENTER"

ALLEN PROPERTY

TAX MAP #14 GRID #10 — PARCEL 125
4TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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

STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 15193 — PROFESSIONAL ENGINEER
ROBERT H. VOGEL, PE No.16193

DESIGN BY: CM
DRAWN BY: PS/KO
CHECKED BY: RHV
DATE: JAN. 9, 2002
SCALE: 1"=50'
W.O. NO.: 2019107.00

SHEET 3 OF 14

SDP-01-108

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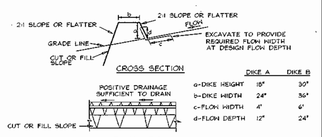
DETAIL 1 - EARTH DIKE



CROSS SECTION

	DIKE A	DIKE B
POSITIVE DRAINAGE SUFFICIENT TO DRAIN		
a-DIKE HEIGHT	18"	30"
b-DIKE WIDTH	24"	36"
c-FLOW WIDTH	4'	6'
d-FLOW DEPTH	12"	24"

PLAN VIEW

STANDARD SYMBOL: A-2 B-3

FLOW CHANNEL STABILIZATION
GRADE 0.5% MIN. 10% MAX.

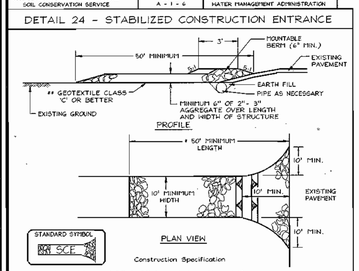
1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" - 7" stone or recycled concrete equivalent pressed into the soil 7" minimum

Construction Specifications

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.
4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.
5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.
6. Fill shall be compacted by earth moving equipment.
7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.
8. Inspection and maintenance must be provided periodically and after each rain event.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE A - 1 - c	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



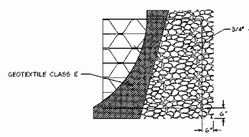
STANDARD SYMBOL: SCE

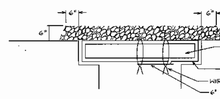
Construction Specification

1. Length - minimum of 50' (* 30' for a 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. ** The 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 or diverted 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 berm 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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 17 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 23B - AT GRADE INLET PROTECTION





CROSS SECTION

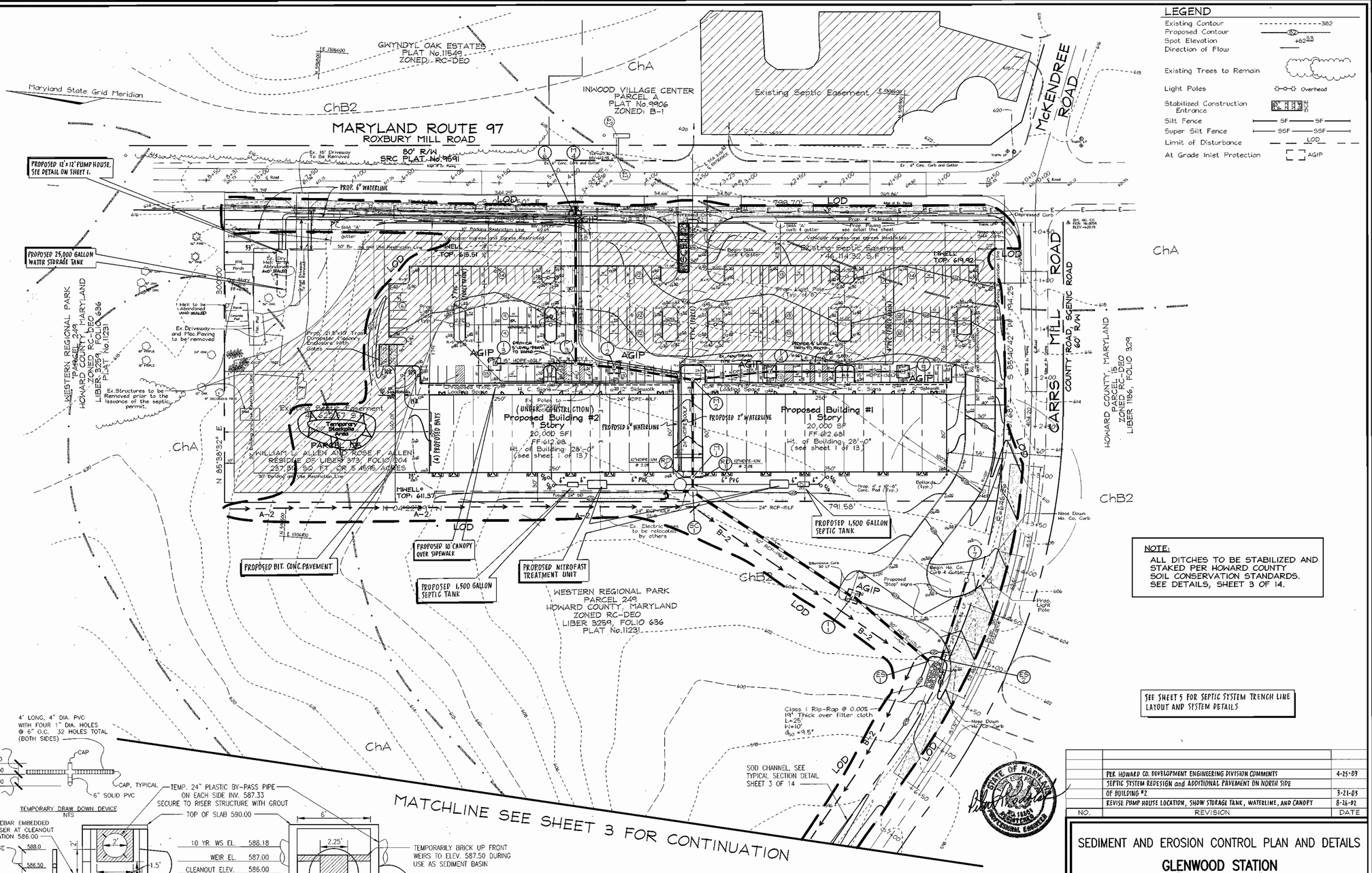
STANDARD SYMBOL: AGIP

MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 9 - 5A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

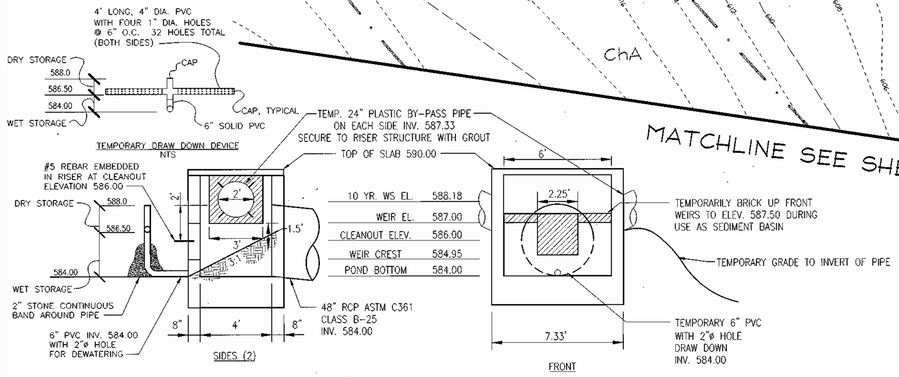


LEGEND

Existing Contour	-382
Proposed Contour	382
Spot Elevation	+82.53
Direction of Flow	
Existing Trees to Remain	
Light Poles	Overhead
Stabilized Construction Entrance	SCE
Silt Fence	SF SF
Super Silt Fence	SSF SSF
Limit of Disturbance	LOD
At Grade Inlet Protection	AGIP

NOTE:
ALL DITCHES TO BE STABILIZED AND STAKED PER HOWARD COUNTY SOIL CONSERVATION STANDARDS. SEE DETAILS, SHEET 3 OF 14.

SEE SHEET 5 FOR SEPTIC SYSTEM TRENCH LINE LAYOUT AND SYSTEM DETAILS



SEDIMENT CONTROL FOR S-1
SCALE 1"=4'

NO.	REVISION	DATE
	PER HOWARD CO. DEVELOPMENT ENGINEERING DIVISION COMMENTS	4-25-09
	SEPTIC SYSTEM REDESIGN and ADDITIONAL PAVEMENT ON NORTH SIDE	
	OF BUILDING #2	3-21-03
	REVISE PUMP HOUSE LOCATION, SHOW STORAGE TANK, WATERLINE, AND CANOPY	8-26-02

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/6/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/5/02
DIRECTOR — DATE 6/6/02

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 4/29/02

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 4/29/02

DEVELOPER'S CERTIFICATE

"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 — DATE 4-10-02

APPROVED : FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE 5/30/02

ENGINEERS CERTIFICATE

"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 4/11/02

OWNER/DEVELOPER
GLENWOOD, LLC.
751 Frederick Street
Hanover, PA 17331
717.632.5300

SEDIMENT AND EROSION CONTROL PLAN AND DETAILS

GLENWOOD STATION
"RETAIL CENTER"
ALLEN PROPERTY

TAX MAP #14 GRID #10 — PARCEL 125
4TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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

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

DESIGN BY: PS
DRAWN BY: PS/KO
CHECKED BY: RHV
DATE: JAN. 9, 2002
SCALE: 1"=50'
W.O. NO.: 2019107.00

SHEET 4 OF 14

SDP-01-108

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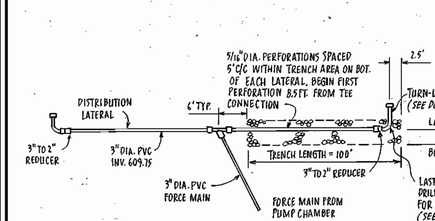
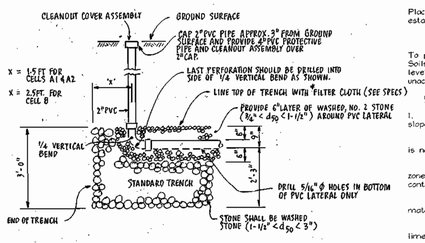


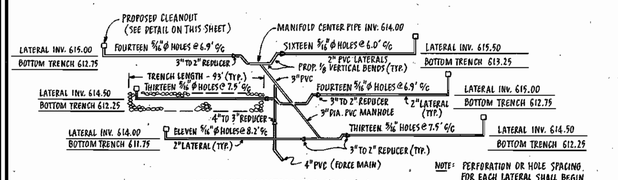
DETAIL OF MANIFOLD FOR CELL B
NOT TO SCALE

NOTE: 1) ALL PVC PIPE & FITTINGS SHALL BE SCHEDULE 40.
2) ALL BUSHES AND FILINGS SHALL BE REMOVED FROM ALL DRILLED ORIFICES PRIOR TO ASSEMBLY OF LATERALS.
3) ORIFICES SHALL BE ALIGNED SO THAT DISCHARGE OCCURS OUT THE BOTTOM OF THE PIPE.



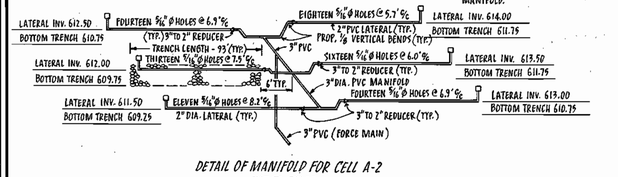
LATERAL AND TRENCH DETAIL
NOT TO SCALE

*FILTER CLOTH SPECIFICATIONS
FILTER CLOTH SHALL MEET OR EXCEED THE FOLLOWING PHYSICAL PROPERTIES
A) PERMITTIVITY (ASTM D4491B5) = 0.1 SEC.-1(MIN.)
B) OPENING SIZE (ASTM D4571-87) = 60 U.S. SERIE SIZE (MAX.)
C) FLOWRATE (ASTM D4451-85) = 10gpm/ft. (MIN.)
D) MULLEN BURST (ASTM D3786) = 200 PSI (MIN.)



DETAIL OF MANIFOLD FOR CELL A-1
NOT TO SCALE

NOTE: PERFORATION OR HOLE SPACING FOR EACH LATERAL SHALL BEGIN WITH (4) 5/16" DIA. HOLES IN THE SIDE OF THE 1/8 VERTICAL BEND FOR THE CLEANOUT AND END APPROX. 7.5 FEET FROM THE MANIFOLD.



DETAIL OF MANIFOLD FOR CELL A-2
NOT TO SCALE

21.0 STANDARDS AND SPECIFICATIONS FOR TOPSOIL

Definition

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose

To provide a suitable soil medium for vegetable growth. Soils of concern have low moisture content,, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies

I. This practic is limited to areas having 2:1 or flatter slopes where:

a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.

b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.

c. The original soil to be vegetated contains material toxic to plant growth.

d. The soil is so acidic that treatment with limestone is not feasible.

II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

Construction and Material Specifications

I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.

II. Topsoil Specifications - Soil to be used as topsoil must meet the following:

i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or a soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger that 1 and 1/2" in diameter.

ii. Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.

iii. Where the subsoil is either highly acidic or comprised 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. ...ime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

II. For sites having disturbed areas under 5 acres:

i. Place topsoil (if required) and apply soil amendments as specified in 22.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

iii. For sites having disturbed areas over 5 acres:

i. On soil meeting topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:

a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
b. Organic content of topsoil shall be not less than 1.5 percent by weight.
c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
d. No sod or seed shall be placed on soil soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

NOTE: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

ii. Place topsoil (if required) and apply soil ammendments specified in 22.0 Vegetative Stabilization-Section I-Vegetative Stabilization Methods and Materials.

V. Topsoil Application

i. When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.

ii. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.

iii. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.

iv. Topsoil shall not be place while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

SECTION IV-500: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER)

A. General Specifications
i. Class of turf grass sod shall be Maryland or Virginia State Certified or Approved. Sod labels shall be made available to the job forman and inspector.
ii. Sod shall be machine cut at a uniform soil thickness of 3/4", plus or minus 1/4", at the time of cutting. Measurement for thickness shall exclude top growth and thatch. 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 and uneven ends will not be acceptable.
iii. Standard size sections of sod shall be strong 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.
iv. Sod shall not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
v. Sod shall be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period shall be approved by an agronomist or soil scientist prior to installation.
B. Sod Installation
i. During periods of excessively high temperature or in areas having dry subsoil, the subsoil shall be lightly irrigated immediately prior to laying the sod.
ii. The first row of sod shall be laid in a straight line with subsequent rows placed parallel to and tightly wedged against each other. Lateral joints shall be staggered to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause of drying of the roots.
iii. Wherever possible, sod shall be laid with the long edges parallel to the contour and with staggering joints. Sod shall be rolled and tamped, pegged or otherwise secured to prevent slippage on slopes and to ensure solid contact between sod roots and the underlying soil surface.
iv. Sod shall be watered immediately following rolling or tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. The operations of laying, tampling and irrigating for any piece of sod shall be completed within eight hours.
C. Sod Maintenance
i. In the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first week and in sufficient quantities to maintain moist soil to a depth of 4". Watering should be done during the heat of the day to prevent wilting.
ii. After the first week, sod watering is required as necessary to maintain adequate moisture content.
iii. The first mowing of sod should not be attempted until the sod is firmly rooted. No more than 1/3 of the grass leaf shall be removed by the initial cutting or subsequent cutting. Grass height shall be maintained between 2" and 3" unless otherwise specified.

PERMANENT SEEDING NOTES

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

SEEDBED PREPARATION: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.

SOIL AMENDMENTS: In lieu of soil test recommendations, use one of the following schedules:

1) Preferred-Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq.ft.) and 600 lbs per acre 10-10-10 fertilizer (14 lbs./1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil. At the time of seeding, apply 400 lbs. per acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq.ft.)
2) Acceptable-Apply 2 tons per acre dolomatic limestone (92 lbs/1000 sq.ft.) and apply 1000 lbs. per acre 10-10-10- fertilizer (23 lbs./1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil.

SEEDING: For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs/1000 sq.ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (.05 lbs./1000 sq.ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by Option (1) 2 tons per acre well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use sod. Option (3) Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

MULCHING: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq.ft.) for anchoring.

MAINTENANCE: Inspect all seeded areas and make needed repairs, replacements and reseedings.

TEMPORARY SEEDING NOTES

SEEDBED PREPARATION: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.

SOIL AMENDMENTS: Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq.ft.)

SEEDING: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2 1/2 bushel per acre of annual rye (3.2 lbs./1000 sq.ft.) For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (.07 lbs./1000 sq.ft.). For the period November 1 thru February 28, protect site by using 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

MULCHING: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq.ft.) for anchoring.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

TRENCH CONSTRUCTION NOTES

1. Conduct a pre-construction meeting with the Howard County Health Department.
2. Trenches shall be excavated using a backhoe. Front-end loaders or bulldozers should not be used for trench excavations.
3. Excavated materials from the trenches shall be placed at a sufficient distance downslope of the trenches to avoid migration of soils backfilled into the trench.
4. Work shall be scheduled such that the trenches can be covered in one day to prevent windblown or waterborne sediment from entering the trench. Health department to be notified for inspection prior to stone placement in trench.
5. The field engineer shall verify the constructed elevations of the trenches to ensure a minimum 4" cover is provided below pavement base grade.
6. Upon completion of the trench excavation and prior to placement of paving, heavy construction equipment traffic shall be permanently diverted from the trenches and adjacent area.

NOTE : The proposed elevations shown herein to be strictly enforced during grading and site development. Disturbance to ground below proposed elevations will result in loss of private sewage easement.

SEDIMENT CONTROL NOTES

1. A minimum of 48 hours notice must be given to the Howard County Department of Inspection, License and Permits Sediment Control Division prior to the start of any construction (313-1855).
2. All vegetation and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto.
3. Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within: (a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes, and all slopes greater than 3:1, (b) 14 days as to all other disturbed or graded areas on the project site.
4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. I, Chapter 7, HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding, sod, temporary seeding, and mulching (Sec. G). Temporary stabilization with mulch alone shall be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7. Site Analysis :

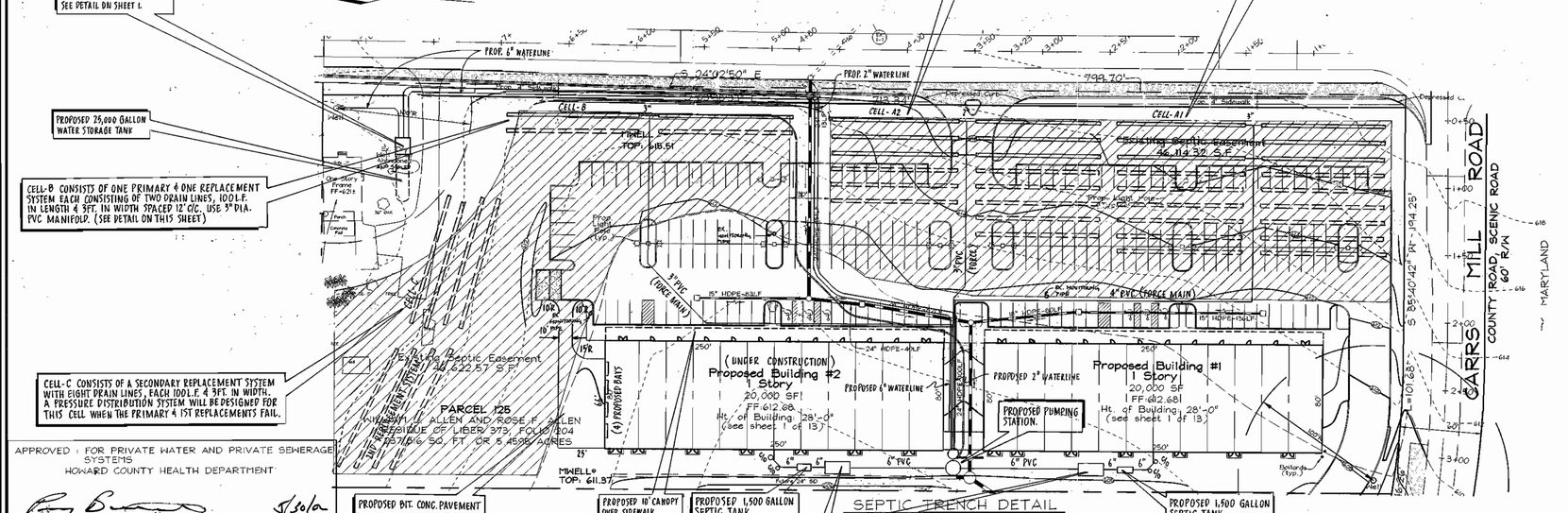
Total Area	5.46 Acres
Area Disturbed	7.95 Acres
Area to be roofed or paved	3.00 Acres
Area to be vegetatively stabilized	4.95 Acres
Total Cut	4,872 CY
Total Fill	12,954 CY
Offsite waste/borrow area location	*

8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
9. Additional sediment controls must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
11. Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized within one working day, whichever is shorter.

* To be determined by contractor, with pre-approval of the Sediment Control Inspector with an approved and active grading permit

SEQUENCE OF CONSTRUCTION

1. Obtain Howard County Grading Permit. (Week 1)
2. The contactor or developer shall contact the Construction Inspection Division 24 hours in advance of commencement of work at (410) 313-1880. (Week 1)
3. Conduct a pre-construction meeting with the Sediment Control Inspector prior to any land disturbance. (Week 1)
4. Install stabilized construction entrance with mountable berm. (Week 2)
5. Install silt fence and super silt fence as indicated on plans. (Week 2)
6. Install earth-dike diversion for clean water and temporary by-pass pipes. When riser is installed, attach temporary pipes to riser. (Week 3)
7. Install the riser/barrel embankment with dewatering device. Construct stormwater management pond. (Week 3)
8. Construct storm drain from ES-1 to M-4. Install inlet protections. Construct permanent swale to SWM facility. (Week 4)
9. With permission from the Sediment Control Inspector, rough grade site. (Week 5)
10. Stockpile topsoil. Stabilize stockpile with seed and mulch. (Week 5)
11. Complete installation of storm drain system and remaining on-site utilities. SWM storage pipes shall be blocked to prevent sediment from entering the system. (Weeks 6-7)
12. Begin building construction. (Week 6)
13. Complete building construction. (Week 30)
14. Install curb and gutter. (Week 31)
15. Install paving base course. Remove inlet protection per the Sediment Control Inspector as work progresses. (Week 32)
16. Install paving surface course. (Week 33)
17. Fine grade and stabilize remaining site. Install landscaping. (Week 34)
18. Clean and flush out storm drain system. Dispose of sediment laden material cleaned out of storm drain in a manner approved by the Sediment Control Inspector. Remove storage pipes blockade. (Week 35)
19. Remove all sediment control measures after receiving approval from the Sediment Control Inspector. (Week 36)



NOTE:
STICK-UP PORTIONS OF MONITORING WELLS TO BE CUT AND CAPPED TO ACCOMODATE FINISHED GRADE.

APPROVED : FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE 5/30/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/30/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/5/02
DIRECTOR — DATE 6/10/02

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 4/29/02

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 4/29/02

DEVELOPER'S CERTIFICATE

"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 — DATE 4/10-02

ENGINEERS CERTIFICATE

"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 4/11/02

OWNER/DEVELOPER
GLENWOOD, LLC.
751 Frederick Street
Hanover, PA 17331
717.632.5300

NO.	REVISION	DATE
	PER HOWARD CO. DEVELOPMENT ENGINEERING DIVISION COMMENTS	4-25-03
	SEPTIC SYSTEM REDESIGN and ADDITIONAL PAVEMENT ON NORTH SIDE OF BUILDING #2	3-21-03
	REVISE PUMP HOUSE LOCATION, SHOW STORAGE TANK, WATERLINE, AND CANOPY	8-24-02

STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — REGISTERED PROFESSIONAL ENGINEER

SEDIMENT AND EROSION CONTROL DETAILS AND SEPTIC PLAN
GLENWOOD STATION
"RETAIL CENTER"
ALLEN PROPERTY

TAX MAP #14 GRID #10 — PARCEL 125
4TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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

STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — PROFESSIONAL ENGINEER — 4/11/02
ROBERT H. VOGEL, PE No.16193

DESIGN BY: PS
DRAWN BY: PS/KO
CHECKED BY: RHV
DATE: JAN. 9, 2002
SCALE: 1"=50'
W.O. NO.: 2019107.00

SHEET 5 OF 14

SDP-01-108

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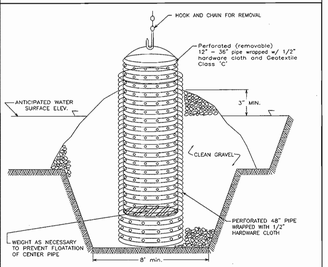
DETAIL 20A – REMOVABLE PUMPING STATION



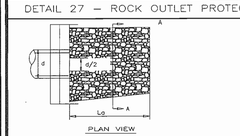
ELEVATION

Construction Specifications

1. The outer pipe should be 48" dia. or shall, in any case, be at least 'A' greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations.
2. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.
3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" in diameter. The perforations shall be 1/2" x 6" slits or 1" diameter holes 8" on center. The center pipe shall be wrapped with 1/2" hardware cloth first, then wrapped again with Geotextile Class C.
4. The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE D - 12 - 4	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 27 – ROCK OUTLET PROTECTION III

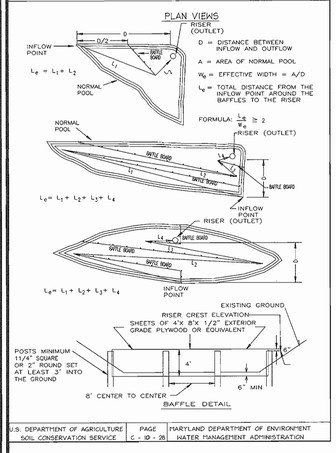


FILTER FABRIC LINING SHALL BE EMBEDDED A MINIMUM OF 4" AND SHALL EXTEND AT LEAST 6" BEYOND THE EDGE OF THE RIP-RAP

NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 18 - 10	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 18 – SEDIMENT BASIN BAFFLES



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C - 10 - 26	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

APPROVED : FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

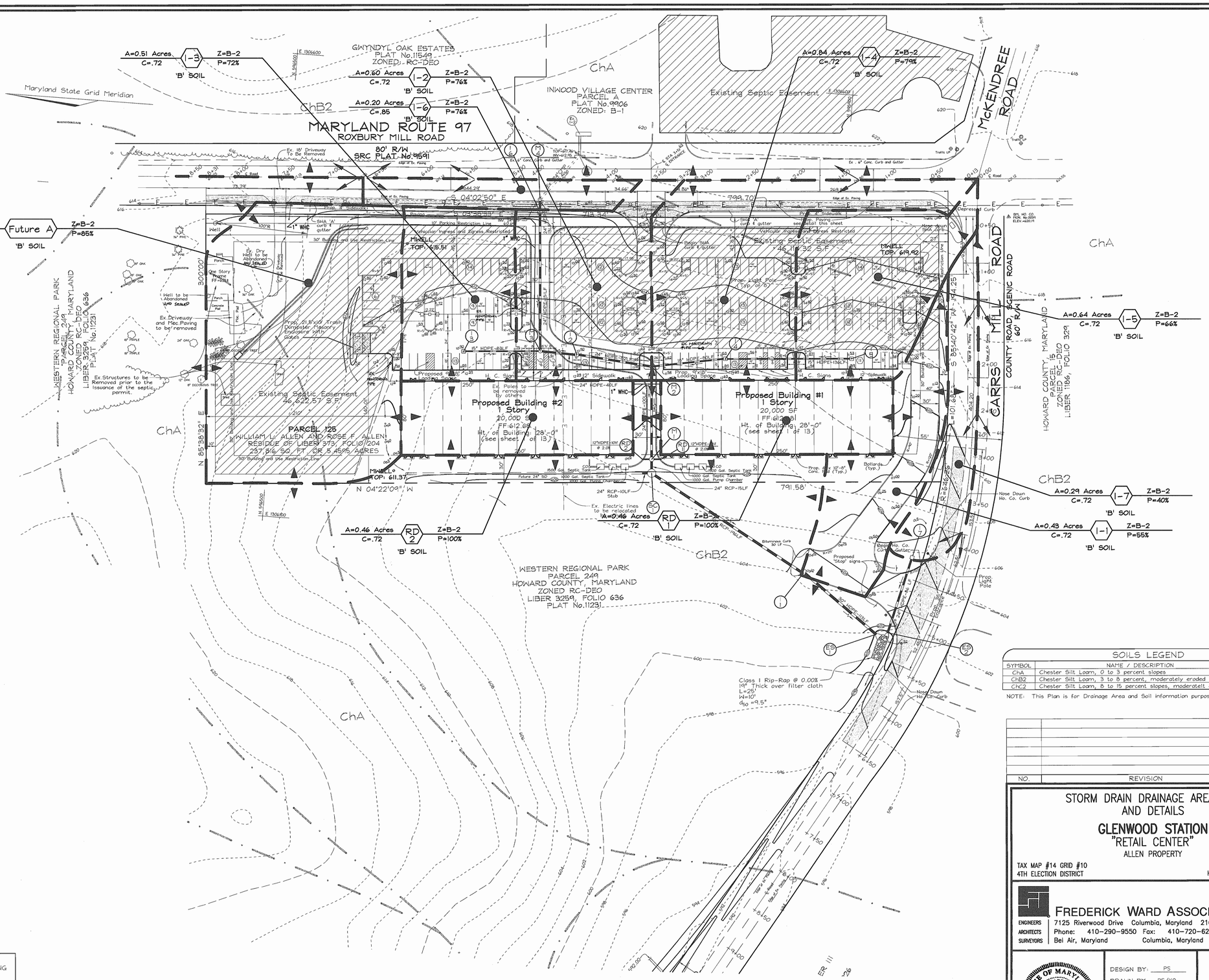
COUNTY HEALTH OFFICER — DATE 5/30/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MAJ — DATE 5/6/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/6/02

DIRECTOR — DATE 6/10/02



SOILS LEGEND		
SYMBOL	NAME / DESCRIPTION	SOIL GROUP
ChA	Chester Silt Loam, 0 to 3 percent slopes	B
ChB2	Chester Silt Loam, 3 to 8 percent, moderately eroded	B
ChC2	Chester Silt Loam, 8 to 15 percent slopes, moderately eroded	B

NOTE: This Plan is for Drainage Area and Soil information purposes only.

NO.	REVISION	DATE

OWNER/DEVELOPER
GLENWOOD, LLC.
751 Frederick Street
Hanover, PA 17331
717.632.5300

STORM DRAIN DRAINAGE AREA MAP AND DETAILS

GLENWOOD STATION
"RETAIL CENTER"
ALLEN PROPERTY

TAX MAP #14 GRID #10 — PARCEL 125
4TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

FREDERICK WARD ASSOCIATES, INC.
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STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — PROFESSIONAL ENGINEER
ROBERT H. VOGEL, PE. No.16193

DESIGN BY: PS
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SHEET 6 OF 14

SDP-01-108

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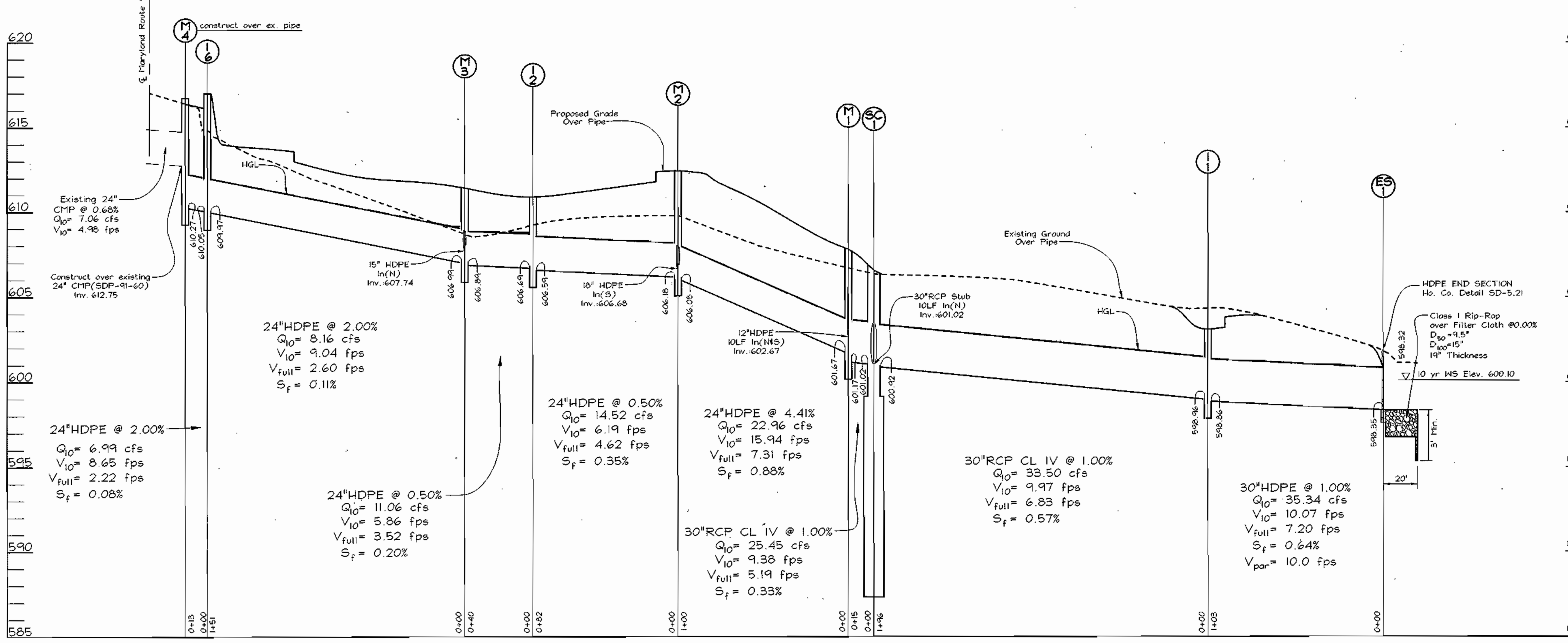
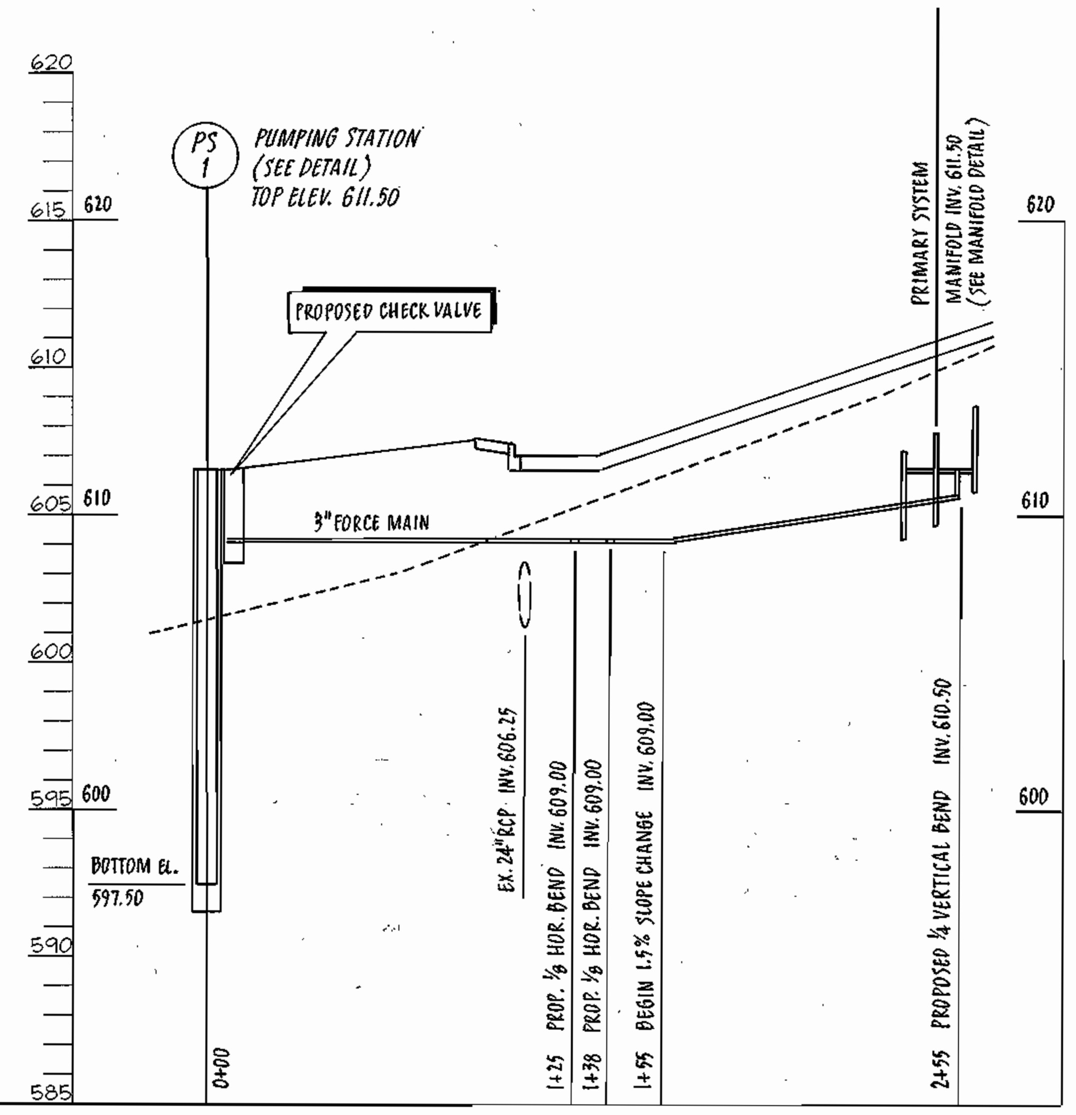


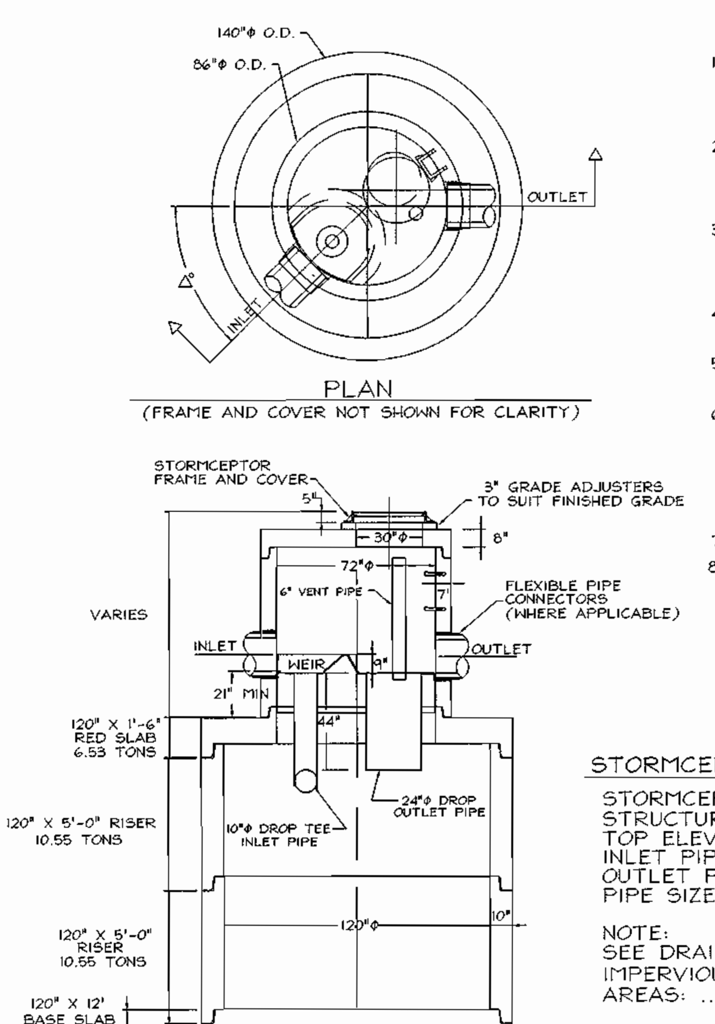
STORM DRAIN PROFILE

SCALE : HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



PROFILE OF FORCE MAIN TO CELL A-2
SCALE: HOR. 1"=50'
VERT. 1"=5'

STC 6000
PRECAST CONCRETE STORMCEPTOR



GENERAL NOTES

1. STORMCEPTOR SECTIONS SHALL CONFORM TO ASTM C 478, PROFILE GASKETED JOINTS CONFORMING TO ASTM C 443.
2. MANHOLE STEPS PROVIDED ABOVE INSERT @ 12" O.C. AND SHALL BE COPOLYMER POLYPROPYLENE PLASTIC ENCAPSULATED GR. 60 STEEL.
3. MINIMUM CONCRETE STRENGTH f'c= 4,000 PSI
MINIMUM STEEL STRENGTH fy= 60,000 PSI
4. REINFORCEMENT DESIGN SHALL MEET ASTM C 478.
5. FLEXIBLE PIPE CONNECTORS SHALL MEET ASTM C 923.
6. HANDLING:
A. ALL RISERS SHALL HAVE 2 EA. 1 1/2"Φ HOLES FOR LIFTING @ 1/3 WAY DOWN FROM SPIGOT.
B. ALL LG. DIAM. BASE SECTIONS FLATTOPS, AND REDUCERS TO HAVE LIFT HOOKS.
7. DESIGNED FOR AASHTO H-20 LOADING.
8. FIBERGLASS STORMCEPTOR INSERT REFERENCE DRAWING # CA-0225-01

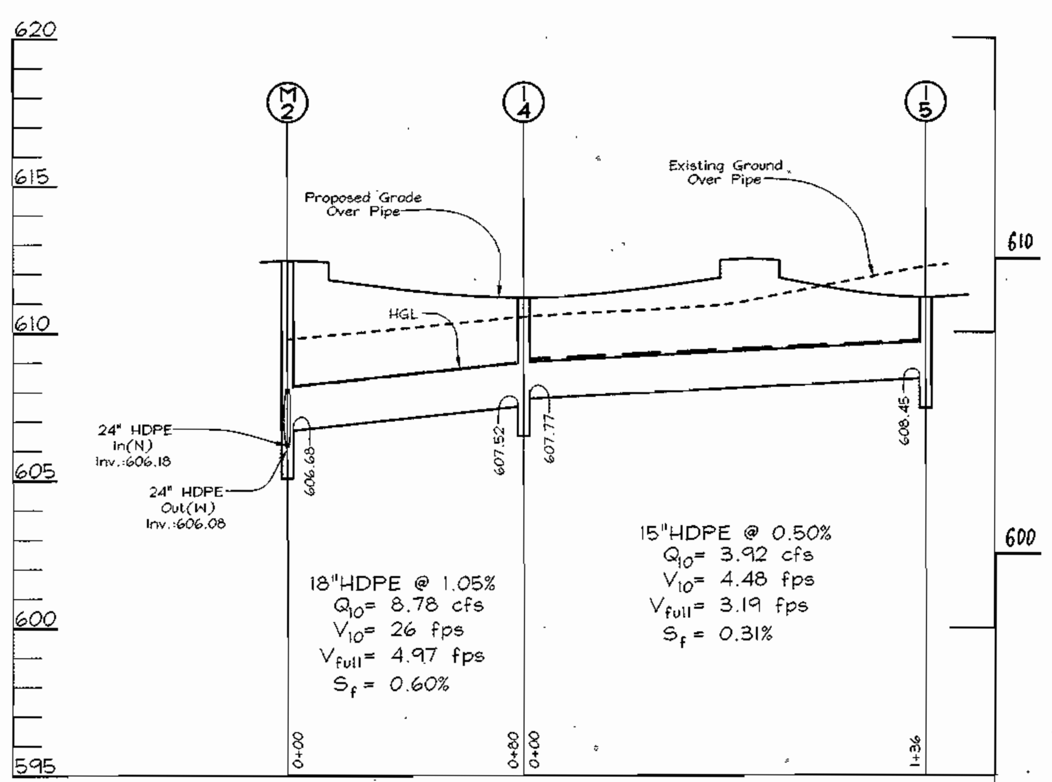
STORMCEPTOR ORDER INFORMATION

STORMCEPTOR MODEL:..................3600
STRUCTURE:..................................SC-1
TOP ELEVATION:.............................348.10
INLET PIPE INVERT:........................338.46
OUTLET PIPE INVERT:.....................338.36
PIPE SIZE:.....................................24" RCP

NOTE:
SEE DRAINAGE AREA MAP FOR CONTRIBUTING IMPERVIOUS AREA TO STORMCEPTOR.
AREAS: .... 2.33 Acres

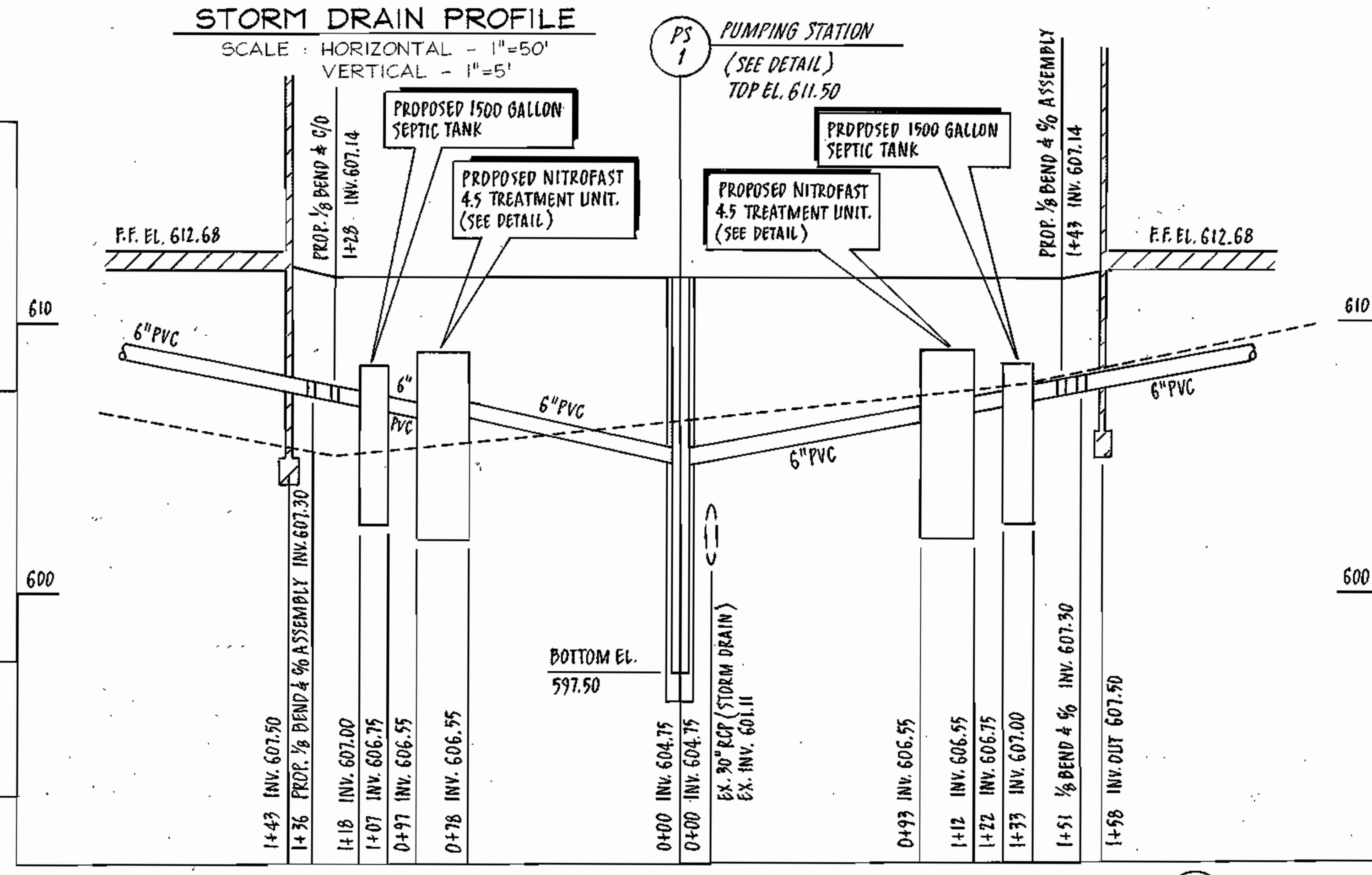
OPERATION AND MAINTENANCE SCHEDULE FOR STORMCEPTOR WATER QUALITY STRUCTURE

A. The Stormcepter Water Quality structure shall be periodically inspected and cleaned to maintain operation and function. The owner shall inspect the Stormcepter unit yearly at a minimum, utilizing the Stormcepter inspection/monitoring form. Inspections shall be done by using a clear Plexiglass tube ("sludge/judge") to extract a water column sample. When the sediment depths exceed the level specified in table 6 of the Stormcepter Technical Manual, the unit must be cleaned.
B. The Stormcepter water quality structure shall be checked and cleaned immediately after petroleum spills. The owner shall contact the appropriate regulatory agencies.
C. The maintenance of the Stormcepter unit shall be done using a vacuum truck which will remove the the water, sediment, debris, floating hydrocarbons and other materials in the unit. Proper cleaning and disposal of the removed materials and liquid must be followed by the owner.
D. The inlet and outlet pipes shall be checked for any obstructions at least once ever six months. If obstructions are found the owner shall have them removed. Structural parts of the Stormcepter unit shall be repaired as needed.
E. The owner shall retain and make the Stormcepter Inspection/Monitoring Forms available to the Howard County officials upon their request.

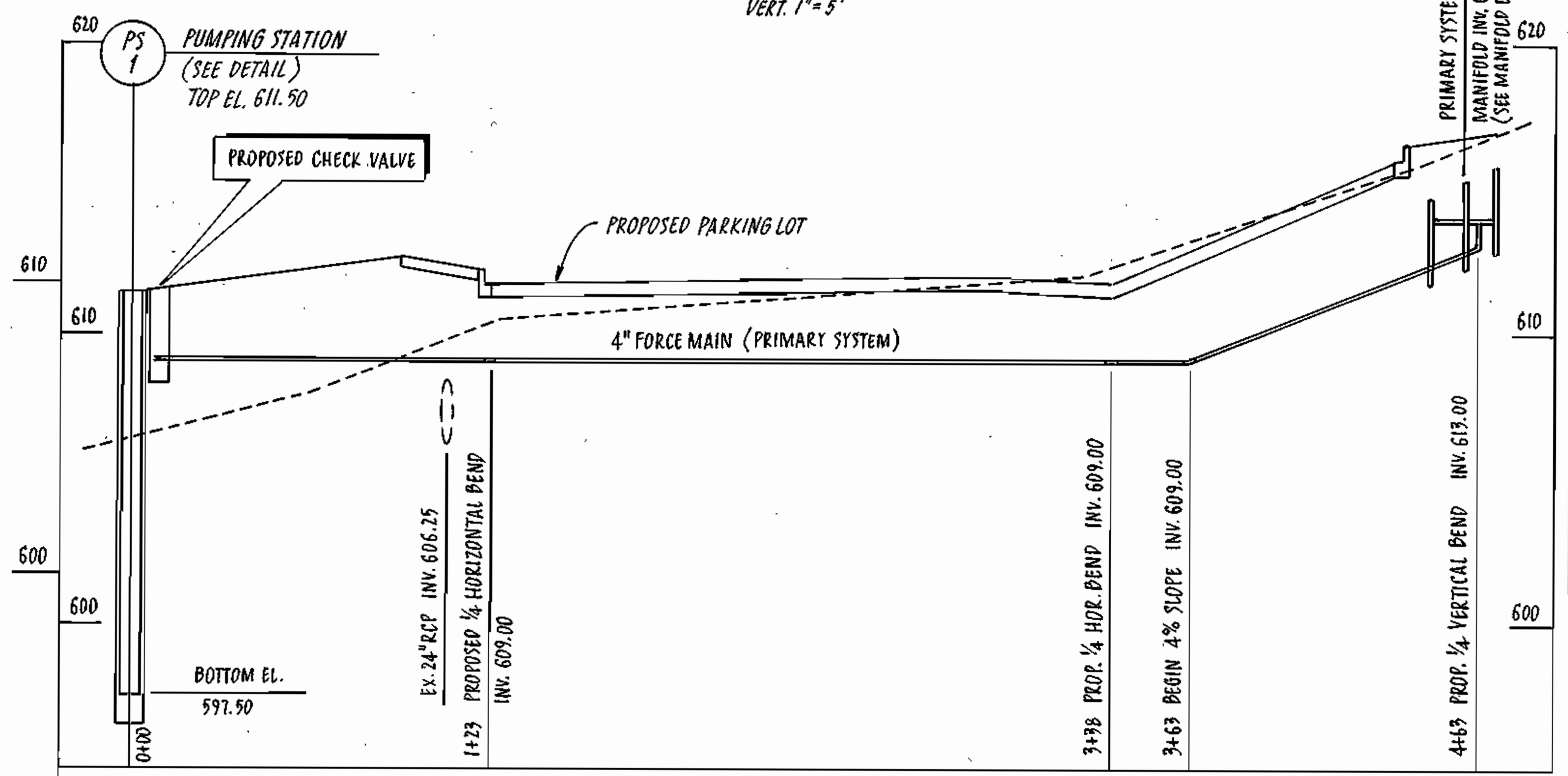


STORM DRAIN PROFILE

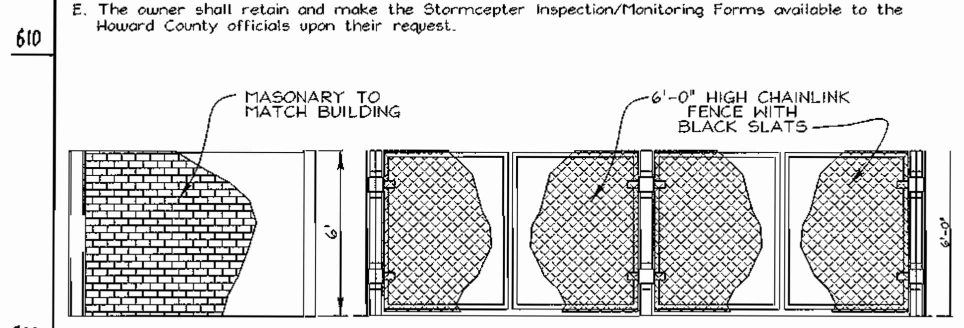
SCALE : HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



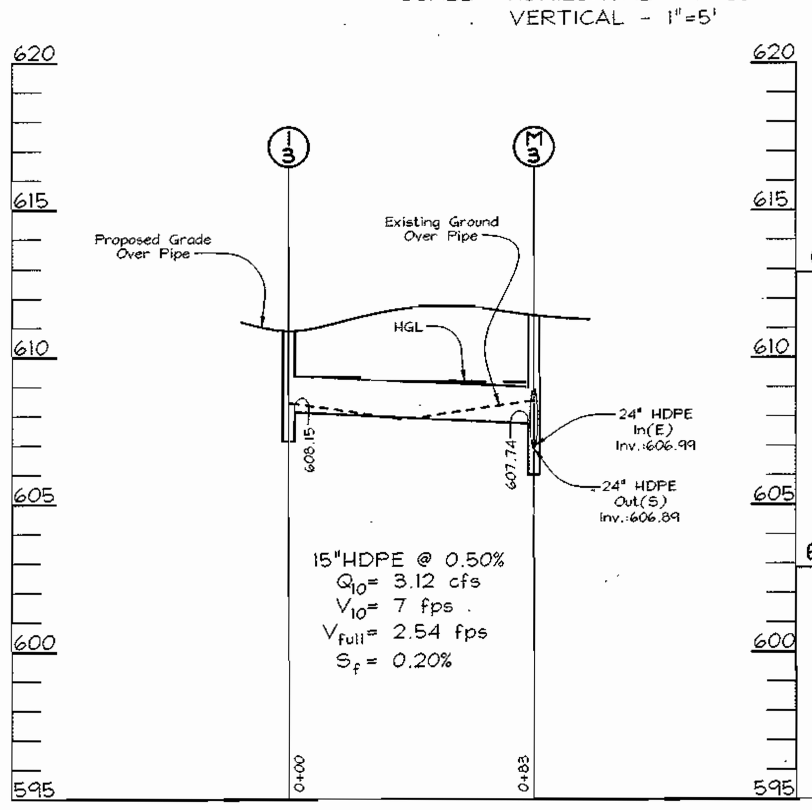
PROFILE OF SEWAGE COLLECTION SYSTEM
SCALE: HOR. 1"=50'
VERT. 1"=5'



PROFILE OF FORCE MAIN TO CELL A-1
SCALE: HOR. 1"=50'
VERT. 1"=5'

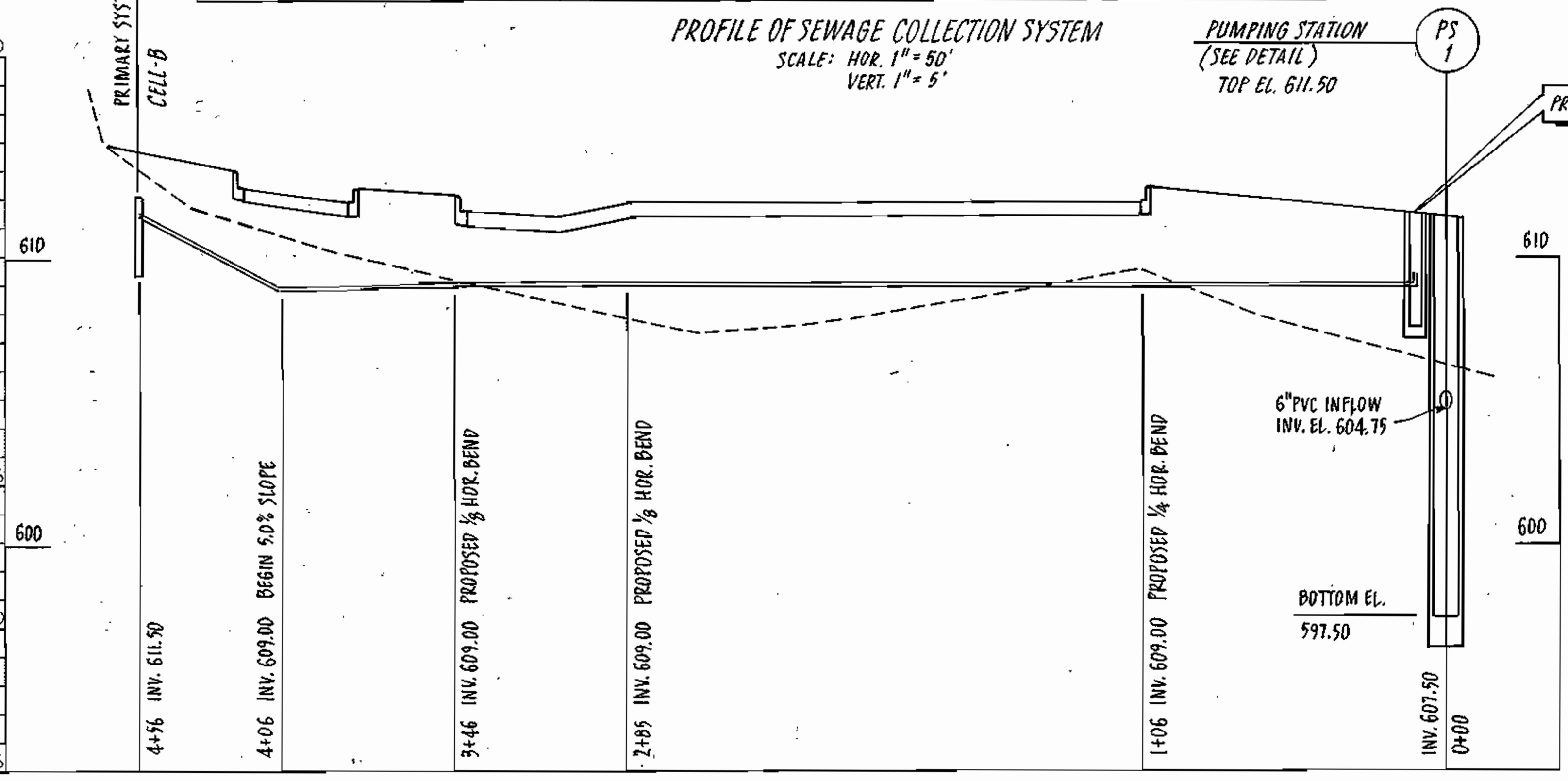


TRASH ENCLOSURE ELEVATION
NOT TO SCALE
*SEE ARCHITECTURAL DRAWINGS FOR CONSTRUCTION DETAILS

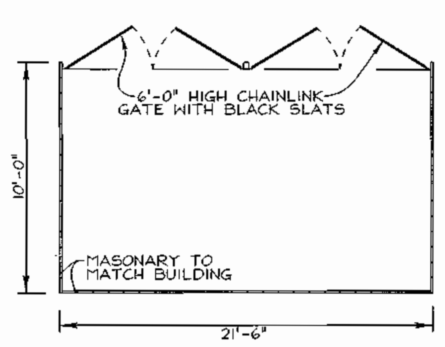


STORM DRAIN PROFILE

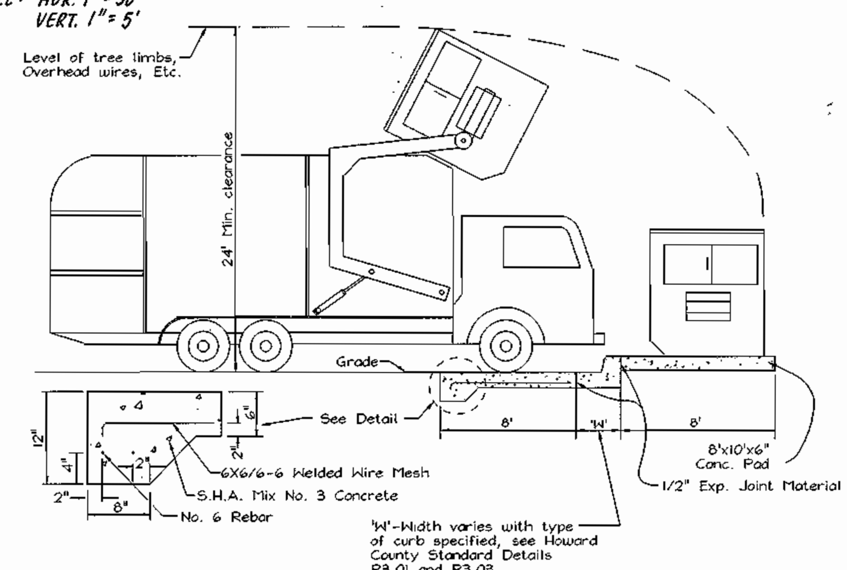
SCALE : HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



PROFILE OF FORCE MAIN TO CELL-B
SCALE: HOR. 1"=50'
VERT. 1"=5'



TRASH ENCLOSURE PLAN
NOT TO SCALE
*SEE ARCHITECTURAL DRAWINGS FOR CONSTRUCTION DETAILS



SOLID WASTE SERVICE PAD
HOWARD COUNTY STD. R 11.01
NOT TO SCALE

STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	TOP ELEV.	INV. IN	INV. OUT	REMARKS
I-1	Double Type 'S' Combination Inlet	N 595,914 E 1,306,082	603.70	598.96	598.86	SD 4.33
I-2	Type 'S' Inlet	N 596,176 E 1,306,299	610.90	606.69	606.59	SD 4.22
I-3	Type 'S' Inlet	N 596,297 E 1,306,293	610.90	-	608.15	SD 4.22
I-4	Type 'S' Inlet	N 596,016 E 1,306,306	611.20	607.77	607.52	SD 4.22
I-5	Type 'S' Inlet	N 595,880 E 1,306,316	611.20	-	608.45	SD 4.22
I-6	5' COS Curb Inlet	N 596,226 E 1,306,450	617.01	610.05	609.97	MD 374.61
I-7	Type 'K' Inlet	N 595,798 E 1,306,107	604.90	-	601.65	SD 4.12
M-1	Precast Manhole (4')	N 596,087 E 1,306,192	607.80	12" 602.67 24" 601.67	601.17	G 5.12
M-2	Precast Manhole (4')	N 596,094 E 1,306,292	612.45	18" 606.68 24" 606.18	606.08	G 5.12
M-3	Precast Manhole (4')	N 596,215 E 1,306,300	611.43	15" 607.74 24" 606.99	606.89	G 5.12
M-4	Precast Manhole (4')	N 596,228 E 1,306,463	616.73	612.75	610.27	G 5.12
M-5	Precast Manhole (6')	N 596,187 E 1,305,330	590.50	583.55	578.00	MD-384.05
SC-1	Stormcepter	N 596,086 E 1,306,177	606.60	30" 601.02 30" 601.02	600.92	STC 6000
ES-1	END SECTION	N 595,823 E 1,306,016	601.85	598.30	598.30	STD HDPE
E-1	Type 'C' Headwall	N 596,144 E 1,305,320	586.40	587.00	-	MD 354.01
ES-2	END SECTION	N 595,819 E 1,306,024	601.82	-	598.32	STD HDPE

NOTE : 1. Top elevations are to the center of the structure at top of curb for Double Type 'S' Comb. Inlets, center top of grate for Type 'S' Inlet and top of Manhole cover for Precast Manholes.
2. For top slab slopes see grading plan.
3. See Architectural plans for roof drain details.
4. See SDP-91-060 for existing storm drain information.

PIPE SCHEDULE

SIZE	TYPE	LENGTH
15"	HDPE	219 LF
18"	HDPE	80 LF
24"	HDPE	472 LF
30"	RCP CL IV	211 LF
30"	HDPE	103 LF
48"	RCP B-25	85 LF

OWNER/DEVELOPER
GLENWOOD, LLC.
751 Frederick Street
Hanover, PA 17331
717.632.5300

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[signature] 5/6/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION MAJ — DATE

[signature] 6/5/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[signature] 6/10/02
DIRECTOR — DATE

APPROVED : FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

[signature] 5/30/02
COUNTY HEALTH OFFICER — DATE

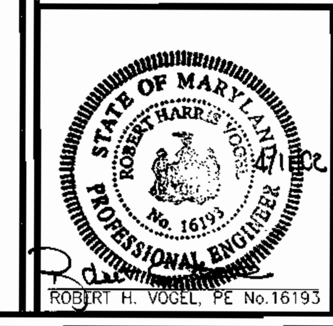
NO.	REVISION	DATE
	REVISE SANITARY SEWER FORCE MAIN PROFILES	4-25-03

STORM DRAIN PROFILES
AND MISCELLANEOUS DETAILS

GLENWOOD STATION
"RETAIL CENTER"
ALLEN PROPERTY

TAX MAP #14 GRID #10 — PARCEL 125
4TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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



ROBERT H. VOGEL, PE No.16193

DESIGN BY: PS
DRAWN BY: PS/KO
CHECKED BY: RHV
DATE: JAN. 9, 2002
SCALE: 1"=50'
W.O. NO.: 2019107.00

7 SHEET OF 14

SDP-01-108

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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 +\-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 trench 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 operated 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 outside 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 - All of the following criteria shall apply for corrugated metal pipe:

1. Materials - (Polymer Coated steel pipe)- Steel pipes with polymeric coating shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight 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 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.

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, end 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 insetating 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 collars 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 an 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 lugs, 2 on each connecting pipe end. 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\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. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe 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.

Plastic Pipe- 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 as shown on the drawings.

Drainage Diaphragms - 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, foundations, 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 and 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 placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water sumps from which the water shall be pumped.

Stabilization

All borrow areas shall be graded to provide proper drainage and left in a sightly 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.

POND #1 SUMMARY

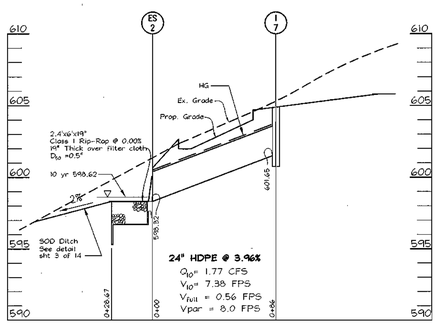
	2 YEAR	10 YEAR	100 YEAR
FLOW INTO POND	29 c.f.s.	84 c.f.s.	158 c.f.s.
FLOW OUT OF POND	11 c.f.s.	31 c.f.s.	70 c.f.s.
W.S. ELEVATION	586.25	587.47	588.59
STORAGE VOLUME	0.80 AC FT	2.30 AC FT	3.00 AC FT

OPERATION, MAINTENANCE AND INSPECTION

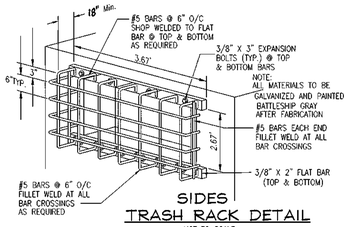
INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE 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.

POND BOTTOM SOIL CONDITIONS

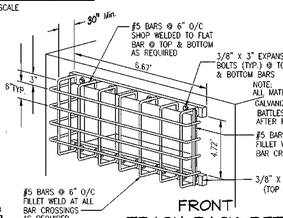
If broken rock fragments are encountered at finished pond bottom, under cut a minimum of 12" below basin grade and to a horizontal distance of at least 18" beyond each edge of the broken rock and backfill with fine-grained ML or CL soils compacted to a firm condition. This procedure should be performed under the supervision of the project Geotechnical Engineer.



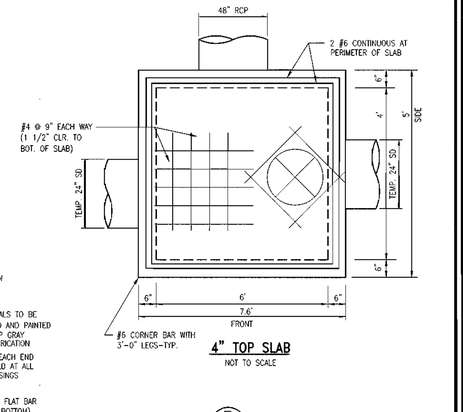
CULVERT PROFILE
SCALE - HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



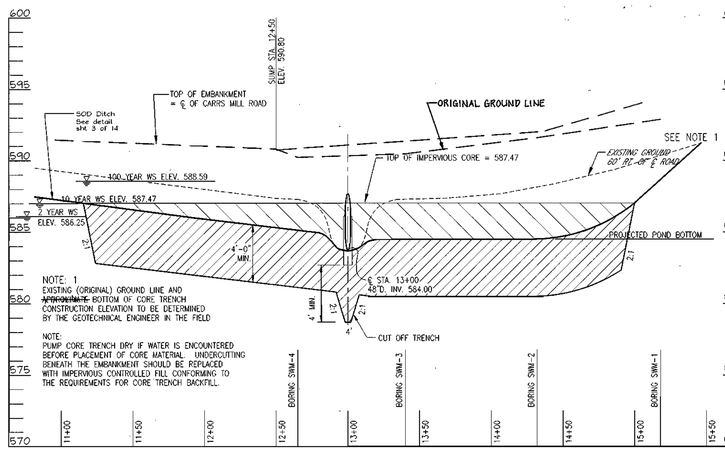
SIDES TRASH RACK DETAIL
NOT TO SCALE



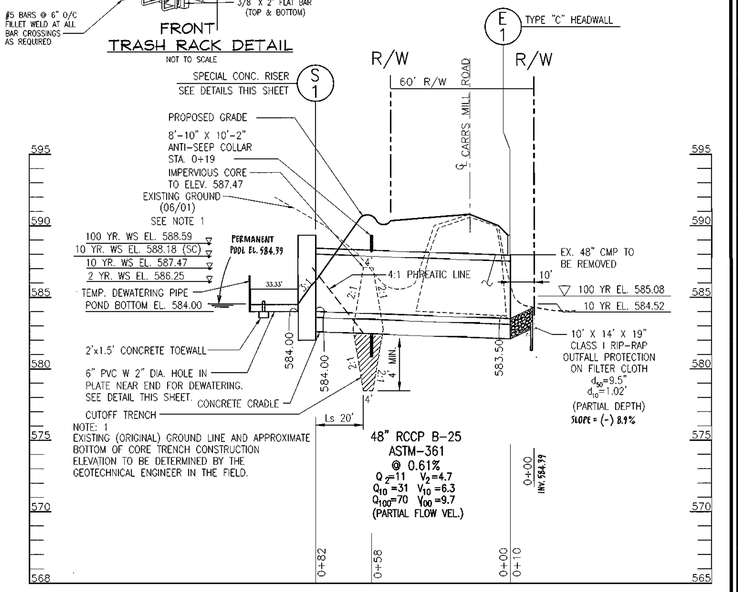
FRONT TRASH RACK DETAIL
NOT TO SCALE



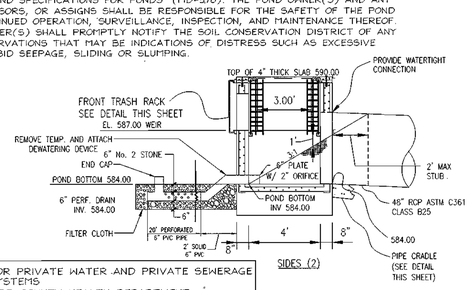
4" TOP SLAB
NOT TO SCALE

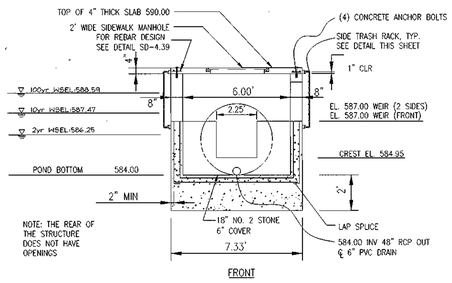


PROFILE ALONG CENTERLINE EMBANKMENT
SCALE : HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

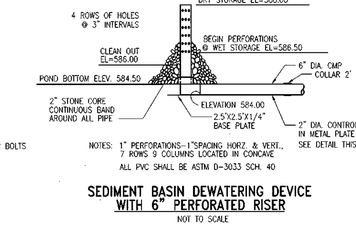


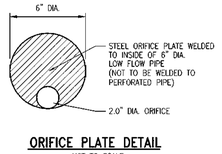
SECTION THROUGH PRINCIPAL SPILLWAY
SCALE : HORIZONTAL - 1"=30'
VERTICAL - 1"=5'





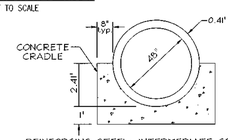
PRECAST STRUCTURE S-1 DETAIL
SCALE: 1"=4'





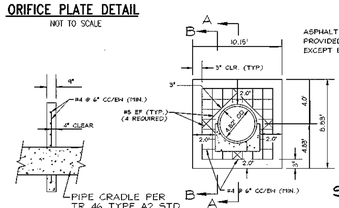
ORIFICE PLATE DETAIL
NOT TO SCALE

SEDIMENT BASIN DEWATERING DEVICE WITH 6" PERFORATED RISER
NOT TO SCALE



REINFORCING STEEL: INTERMEDIATE GRADE
CONCRETE: CLASS B f'c=3,500 P.S.I. fc=1,600 P.S.I.
(REF. TR-46)

PIPE CRADLE DETAIL
NOT TO SCALE



SECTION B-B
NOT TO SCALE

ASPHALT JOINT FILLER MATERIAL SHALL BE PROVIDED BETWEEN ALL CONCRETE SURFACES EXCEPT BETWEEN CRADLE AND PIPE.

SECTION A-A
NOT TO SCALE

NOTES:
1. ANTI-SEEP COLLARS SHOULD BE PLACED WITHIN THE SATURATION ZONE.
2. ALL ANTI-SEEP COLLARS AND THEIR CONNECTIONS TO THE CONDUIT SHALL BE WATERTIGHT AND MADE OF COMPATIBLE MATERIAL WITH THE CONDUIT.
3. COLLARS DIMENSIONS SHALL EXTEND A MIN. OF 2" IN ALL DIRECTIONS AROUND THE PIPE.
4. ANTI-SEEP COLLARS SHALL BE PLACED A MIN. OF 2' FROM PIPE JOINTS EXCEPT WHERE FLANGED JOINTS ARE USED.

CONCRETE ANTI-SEEP COLLAR DETAIL
NOT TO SCALE

NO.	REVISION	DATE

STORMWATER MANAGEMENT PROFILES AND DETAILS
GLENWOOD STATION
"RETAIL CENTER"
ALLEN PROPERTY

TAX MAP #14 GRID #10 — PARCEL 125
4TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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

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

DESIGN BY: CM
DRAWN BY: CO/KO
CHECKED BY: RHV
DATE: JAN. 9, 2002
SCALE: AS SHOWN
W.O. NO.: 2019107.00

SHEET 8 OF 14

APPROVED : FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE 5/30/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MB3 — DATE 5/6/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/5/02
DIRECTOR — DATE 4/10/02

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 4/29/02

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 4/29/02

DEVELOPER'S CERTIFICATE

"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 — DATE 4-10-02

ENGINEERS CERTIFICATE

"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 4/11/02

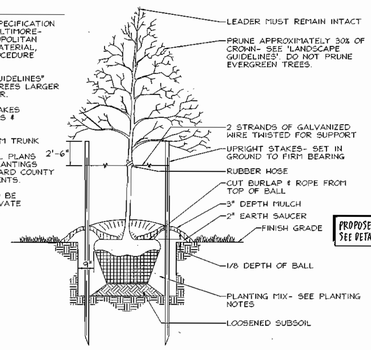
OWNER/DEVELOPER
GLENWOOD, LLC.
751 Frederick Street
Hanover, PA 17331
717.632.5300

M:\PROJECTS\2019107\ENGR\dwg\8024598.dwg Tue Apr 09 18:04:50 2002 MHN

SDP-01-108

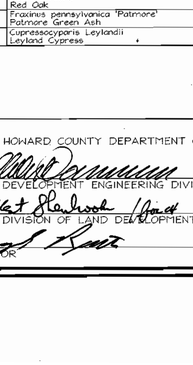
NOTES

1. SEE "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS" FOR ALL MATERIAL, PRODUCT, AND PROCEDURE SPECIFICATIONS.
2. SEE "LANDSCAPE GUIDELINES" FOR SUPPORTING TREES LARGER THAN 2-1/2" CALIPER.
3. PLACE UPRIGHT STAKES PARALLEL TO WALKS & BUILDINGS.
4. KEEP MULCH 1" FROM TRUNK.
5. SEE ARCHITECTURAL PLANS FOR ADDITIONAL PLANTINGS WHICH EXCEED HOWARD COUNTY MINIMUM REQUIREMENTS.
6. TREES ARE NOT TO BE PLANTED OVER PRIVATE SEWAGE EASEMENT.



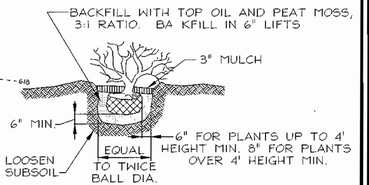
TREE PLANTING AND STAKING

DECIDUOUS TREES UP TO 2-1/2" CALIPER — NOT TO SCALE



TYPICAL EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE



SHRUB PLANTING DETAIL

NOT TO SCALE

SCHEDULE A
PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAYS						ADJACENT TO PER. PROPERTIES		
Perimeter/Frontage Designation	1 B	2 E	3 E	4 E	4a B	5 B	6 D	7 A	8 A
Linear Feet of Roadway Frontage/Perimeter	195	265	294	121	44	120	15	772	300
Credit for Existing Vegetation (Yes, No, Linear Feet Describe below if needed)	No	No	No	No	No	No	No	No	Yes* 60lf
Credit for Wall, Fence or Berm (Yes, No, Linear Feet Describe below if needed)	No	No	No	No	No	No	No	No	No
Number of Plants Required									
Shade Trees	1:50 4	1:40 7	1:40 8	1:40 3	1:50 1	1:50 3	1:60 1	1:60 13	1:60 5
Evergreen Trees	1:40 5	-	-	-	1:40 1	1:40 3	1:10 2	-	-
Shrubs	-	1:4 66	1:4 74	1:4 30	-	-	-	-	-
Number of Plants Provided									
Shade Trees	4	7	8	3	1	3	1	13	4
Evergreen Trees	5	-	-	-	1	3	2	-	-
Other Trees (2:1 Substitution)	-	-	-	-	-	-	-	-	-
Shrubs (10:1 Substitution)	-	66	74	37	-	-	12	-	-
Describe Plant Substitution Credits Below if needed)									

* Existing 36" Oak to Remain

GENERAL NOTES

1. Financial Surety for the required landscaping must be posted as part of the Developer's Agreement in the amount of $23,250.00 for 55 shade trees, 11 evergreen trees, and 170 shrubs.
2. This plan has been prepared in accordance with provisions of Section 16.124 of the Howard County Code and the Landscape Manual.

LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	REM
AG	173	Abelia x grandiflora 'Glossy Abelia'	30"-36" Ht.	B & B
PF	46	Photinia x fraseri Fraseri Photinia	3' - 3.5' Ht.	B & B
TC	13	Tilia cordata 'Greenspire' Greenspire Little Leaf Linden	2 1/2"-3" Cal.	B & B
QR	4	Quercus rubra Red Oak	2 1/2"-3" Cal.	B & B
FP	39	Fraxinus pennsylvanica 'Patmore' Patmore Green Ash	2 1/2"-3" Cal.	B & B
CL	67	Cupressocyparis Leylandii Leyland Cypress	5'-6' Ht.	Cont.

NOTE:

1. The landscape contractor shall be advised not to plant the shrubs immediately adjacent to the parking spaces so as to leave enough space for the two (2) feet bumper overhang of parked cars.
2. At the time of plant installation, all shrubs and trees as listed and approved herewith, shall be of the proper height requirement in accordance with the Howard County Landscape Manual. In addition, no substitutions or relocations of the required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviation from the approved Landscape Plan may result in denial or delay in the release of landscape surety until such time as all required materials are planted and/or revisions are made to the applicable plans and certifications.
3. To obtain approval for substitutions, the contractor shall request written authorization from the Department of Planning and Zoning, prior to installation of plant materials.

SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING

Number of parking spaces	201
Number of trees and islands required	10
Number of trees and islands provided	
Shade Trees	12
Other Trees (2:1 Substitution)	-

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/6/02

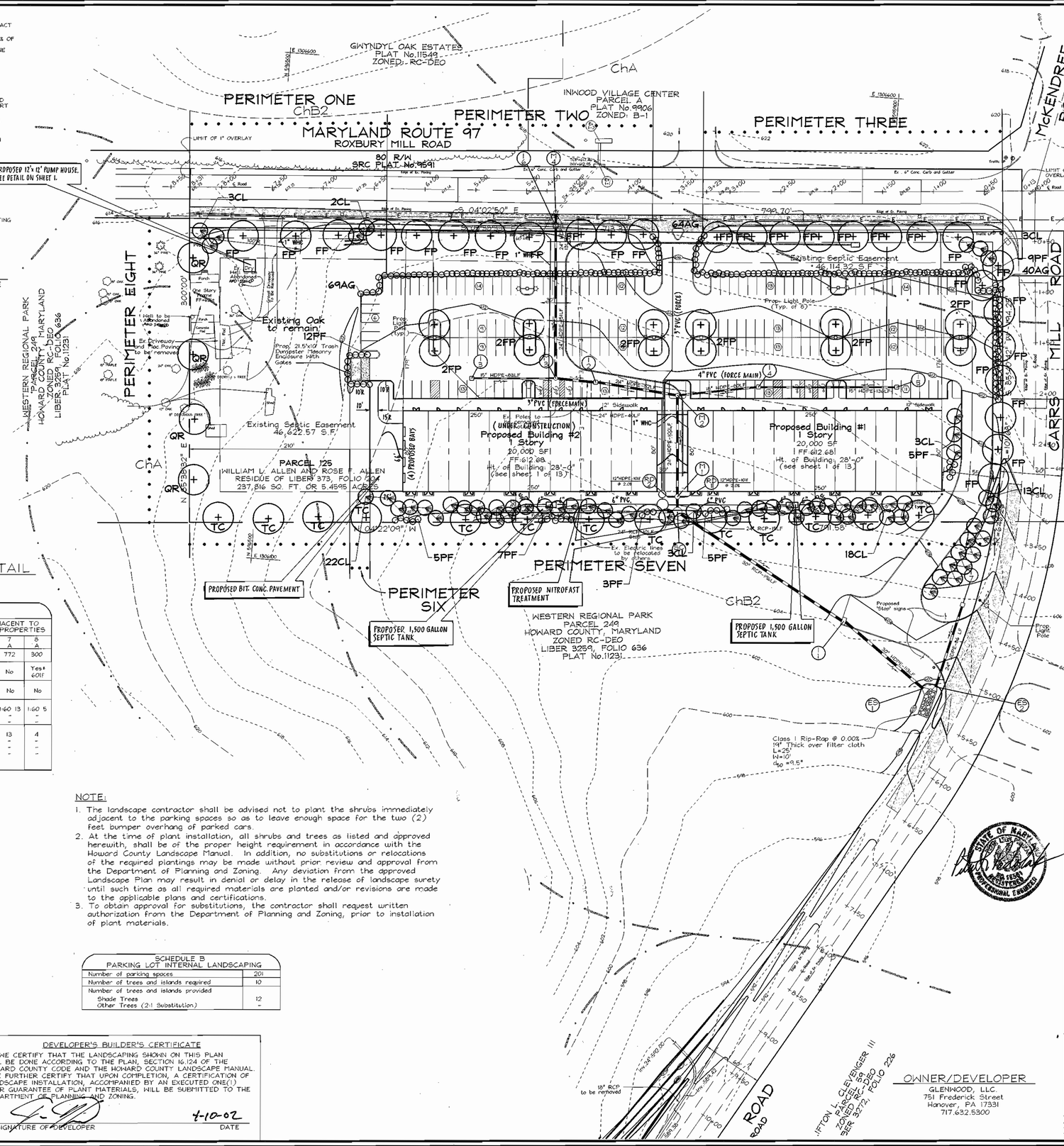
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/5/02

DIRECTOR — DATE 6/6/02

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() YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

SIGNATURE OF DEVELOPER — DATE 4-10-02



LEGEND

- Existing Contour — 382
- Proposed Contour — 382
- Spot Elevation — +82.53
- Direction of Flow
- Existing Trees to Remain
- Light Poles — Post Top, Overhead, Bollard
- Shade Trees — FP, TC, QR
- Evergreen Trees — 2CL
- Shrubs — 5AG, 5PF
- Perimeter Landscape Edge

OWNER/DEVELOPER

GLENWOOD, LLC.
751 Frederick Street
Hanover, PA 17331
717.632.5300

NO.	REVISION	DATE
	PER HOWARD CO. DEVELOPMENT ENGINEERING DIVISION COMMENTS	4-25-03
	SEPTIC SYSTEM REDESIGN and ADDITIONAL PAVEMENT ON NORTH SIDE OF BUILDING #2	3-21-03
	PUMP HOUSE LOCATION	8-26-02

LANDSCAPE PLAN

GLENWOOD STATION
"RETAIL CENTER"
ALLEN PROPERTY

TAX MAP #14 GRID #10 — PARCEL 125
4TH 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

STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — PROFESSIONAL ENGINEER

ROBERT H. VOGEL, PE No.16193

DESIGN BY: MHM
DRAWN BY: PS/KO
CHECKED BY: RHV
DATE: JAN. 9, 2002
SCALE: 1"=50'
W.O. NO.: 2019107.00

SHEET 9 OF 14

SDP-01-108

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SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	SOIL GROUP
ChA	Chester Silt Loam, 0 to 3 percent slopes	B
ChB2	Chester Silt Loam, 3 to 8 percent, moderately eroded	B
ChC2	Chester Silt Loam, 8 to 15 percent slopes, moderatelt eroded	B

NOTE: This Plan is for Drainage Area and Soil information purposes only.

LEGEND

Existing Contour 382
Proposed Contour 82
Spot Elevation 382.56
Direction of Flow
Existing Trees
Soils Divide KeB2 NeB2
Existing Drainage Divide

STORM WATER MANAGEMENT (TR-20 INPUT)
TC PATH INFORMATION

		ONSITE		OFFSITE		
DRAINAGE AREA 'A' Area : 20.6 Acres RCN : 69 TC : 0.21 HRS	=	COMMERCIAL 6.6 AC. 88	+	MEADOW 13.1 AC. 58	+	ROAD 0.9 AC. 98
				14 AC.		61

A-B	B-C	C-D	D-E	E-F
Sheet Flow 75' @ 5.0%	45' Shallow Concentrated In Paved @ 5.0%	120' Shallow Concentrated In Paved @ 1.3%	700' Channel (Pipe) 9.0 fps (avg.)	750' Open Channel 6.0 fps

DRAINAGE AREA 'B'
Area : 18.5 Acres
RCN : 62
TC : 0.27

A-B	B-C
Sheet Flow 75' @ 3.0%	Shallow Concentrated 1030' @ 4.1%

SEDIMENT CONTROL DATA

AREA 'A' NOT ROUTED
DA = 8.1 AC.±
RCN = 58
Tc = 0.20 HR.

AREA 'B' NOT ROUTED
DA = 15 AC.±
RCN = 58
Tc = 0.30 HR.

AREA 'A/B' ROUTED
DA = 3.84/12.16 AC.±
RCN = 65/81
Tc = 0.30/0.15 HR.

SEDIMENT BASIN DATA	
BASIN	**1**
Proposed drainage area (Ac.)	16.0
Ex. drainage (Ac.)	16.0
Total storage required (cf)	57,600
Total storage provided (cf)	57,600
Bottom dimensions	270'x210'
Bottom elevation	584.00
Riser crest elevation	587.50
Pipe length	85'
Wet storage elevation	586.50
Dry storage elevation	587.60
Total storage depth	2.5'
Top of embankment	590.80'
Cleanout elevation	586.00'
Side slopes	3:1
Q2 (Ex.) (cfs)	13.2
Q2 (Prop.) (cfs)	3.0
Design High Water (10 Yr.)	588.18

POND HAZARD CLASS A
OWNED & MAINTAINED BY HOWARD COUNTY
2 YR. WSE = 587.70
10 YR. WSE = 588.18
Q_{10} =10 cfs

Maryland State Grid Meridian

MARYLAND ROUTE 97
ROXBURY MILL ROAD
80' R/W
SHC PLAT 14626

CARRS MILL ROAD
60' R/W
COUNTY ROAD MAP

TACKENDREE ROAD

PARCEL 125
ALLEN LAND RCRDS / ALLEN
RESIDUE OF LIBER 979, FOLIO 504
227,856 SQ. FT. OR 5.409 ACRES

Proposed Building #2
30,000 SF
FF=602.00
No. of Buildings = 1
(see sheet 1 of 2)

Proposed Building #1
15,000 SF
FF=602.00
No. of Buildings = 1
(see sheet 1 of 2)

WESTERN REGIONAL PARK
PARCEL 218
HOWARD COUNTY, MARYLAND
SUBDIVISION NO. 5256
LIBER 3206, FOLIO 636
PLAT No.17251

WESTERN REGIONAL PARK
PARCEL 218
HOWARD COUNTY, MARYLAND
SUBDIVISION NO. 5256
LIBER 3206, FOLIO 636
PLAT No.17251

HOWARD COUNTY, MARYLAND
LIBER 1184, FOLIO 391

A 20.6 Acres±
B 18.5 Acres±

TC Path

Class I Rip-Rap @ 0.00% 19" Thick over Filter cloth L=25' W=10' d_{avg}=1.5'

5.0 AC±
6.6 AC±
1.5 AC±
5.0 AC±
10.0 AC±
14.0 AC±
1.0 AC±

Rock Inlet Protection 10'x80' to be constructed after stabilization of upstream disturbed area

SUB AREA DRAINAGE DIVISION LINES (TYP.)

Stormwater Management Facility #1
2yr WSEL 586.25
10yr WSEL 587.47
100yr WSEL 588.58
Hazard Class 'A'

TEMPORARY 24" FLEXIBLE PVC BY-PASS PIPE TO BE CONNECTED TO RISER ANCHOR PIPE INTO GROUND SEE DETAIL THIS SHEET

Class I Rip-Rap @ 0.00% 19" Thick over Filter cloth L=10' W=7.5' d_{avg}= 0.5' Tie in to exist. ground

TEMPORARY 24" FLEXIBLE BY-PASS PIPE TO BE CONNECTED TO SIDE OF RISER ANCHOR PIPE INTO GROUND SEE DETAIL THIS SHEET

Forested Buffer

AP 611.00

APPROVED : FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE 5/30/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MAJ — DATE 5/6/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/5/02
DIRECTOR — DATE 6/10/02

OWNER/DEVELOPER
GLENWOOD, LLC.
751 Frederick Street
Hanover, PA 17331
717.632.5300

NO.	REVISION	DATE

STORMWATER MANAGEMENT DRAINAGE AREA MAP
DEVELOPED SEDIMENT CONTROL CONDITIONS
GLENWOOD STATION
"RETAIL CENTER"
ALLEN PROPERTY

TAX MAP #14 GRID #10 — PARCEL 125
4TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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

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

DESIGN BY: CM
DRAWN BY: PS/KO
CHECKED BY: RHV
DATE: JAN. 9, 2002
SCALE: 1"=100'
W.O. NO.: 2019107.00

14 SHEET OF 14

SDP-01-108

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SOILS LEGEND		
SYMBOL	NAME / DESCRIPTION	SOIL GROUP
ChA	Chester Silt Loam, 0 to 3 percent slopes	B
ChB2	Chester Silt Loam, 3 to 8 percent, moderately eroded	B
ChC2	Chester Silt Loam, 8 to 15 percent slopes, moderatelt eroded	B

NOTE: This Plan is for Drainage Area and Soil information purposes only.

LEGEND

Existing Contour 382
Proposed Contour —(82)—
Spot Elevation 382.56
Direction of Flow
Existing Trees
Soils Divide KeB2 NeB2
Existing Drainage Divide

TC PATH INFORMATION

DRAINAGE AREA 'A'
Area : 20.6 Acres
RCN : 61
TC : 0.26

A–B	B–C	C–D
Sheet Flow	Shallow Concentrated	Channel side ditch
75' @ 3.5%	840' @ 2.9%	500'

DRAINAGE AREA 'B'
Area : 18.5 Acres
RCN : 59
TC : 0.25

A–B	B–C
Sheet Flow	Shallow Concentrated
75' @ 3.0%	1030' @ 4.1%

APPROVED : FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE 5/30/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MAJ — DATE 5/6/02
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DIRECTOR — DATE 6/10/02

OWNER/DEVELOPER
GLENWOOD, LLC.
751 Frederick Street
Hanover, PA 17331
717.632.5300

NO.	REVISION	DATE

STORMWATER MANAGEMENT DRAINAGE AREA MAP
EXISTING CONDITIONS
GLENWOOD STATION
"RETAIL CENTER"
ALLEN PROPERTY

TAX MAP #14 GRID #10 — PARCEL 125
4TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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W.O. NO.: 2019107.00

SHEET 13 OF 14

SDP-01-108

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CARRS MILL ROAD WIDENING PLAN

SCALE: 1" = 50'

ELEVATION
(N.T.S.)

SECTION
(N.T.S.)

NOTES:

1. FOR COMBINATION CONCRETE CURB AND GUTTER TYPES 'A', 'B' AND 'C' SEE STD. NO. 620.02. FOR SIDEWALK EXPANSION JOINTS SEE STD. NO. 655.01.
2. WHEN AN EXISTING ENTRANCE IS LESS THAN 20' N WIDTH, A UNIFORM TAPER SHALL BE CONSTRUCTED TO TIE INTO THE EXISTING ENTRANCE AS DIRECTED BY THE ENGINEER.
3. WHEN SIDEWALK IS USED IN SOME CASES, THE BACK EDGE OF THE SIDEWALK MAY HAVE TO BE DEPRESSED SO THAT THE ENTRANCE APRON GRADE WILL NOT EXCEED 12:1 (8.33%) WITHIN THE SIDEWALK AREA.

DEPRESSED COMBINATION CONCRETE CURB AND GUTTER DETAILS

TYPE 'A' CURB AND GUTTER DETAIL
(N.T.S.)

MD ROUTE 97 (ROXBURY MILL RD) SECTION

STA. 0+13 TO 8+31

CARRS MILL ROAD SECTION

STA 3+80 TO STA 5+53±

CARRS MILL ROAD SECTION

STA 2+90 TO STA 3+80 ±
STA 5+53± TO STA 6+45 ±

PAVING SECTION
(MD RTE. 97 WIDENING SECTION)
(N.T.S.)

Standard EAPD Paving Sections for Routine Site Access Improvements

Functional Classification: Collector or Lower ADT: 10,000 or less	
A	1 1/2" Hot Mix Asphalt Superpave 9.5 mm - PG 64-22, Low ESAL's 6" Hot Mix Asphalt Superpave 19.0 mm for Base - PG 64-22, Low ESAL's (2-3" lifts) 6" Base Course Using Graded Aggregate
B	1 1/2" Hot Mix Asphalt Superpave 9.5 mm - PG 64-22, Low ESAL's 8" Hot Mix Asphalt Superpave 19.0 mm for Base - PG 64-22, Low ESAL's (1-3" lift and 2-2.5" lifts) *Note: Use of this option is limited to entrances proper and where well-drained, sandy soils are present.*
C	1 1/2" Hot Mix Asphalt Superpave 9.5 mm - PG 64-22, Low ESAL's 6" Hot Mix Asphalt Superpave 19.0 mm for Base - PG 64-22, Low ESAL's (2-3" lifts) 12" Capping Borrow

APPROVED : FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — 5/30/02 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MAJ — 5/6/02 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 6/5/02 DATE

DIRECTOR — 6/10/02 DATE

OWNER/DEVELOPER
GLENWOOD, LLC.
751 Frederick Street
Hanover, PA 17331
717.632.5300

NO.	REVISION	DATE

SHA, WZTC PLAN AND MISCELLANEOUS DETAILS
GLENWOOD STATION
"RETAIL CENTER"
ALLEN PROPERTY

TAX MAP #14 GRID #10 — PARCEL 125
4TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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

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

DESIGN BY: CM
DRAWN BY: PS/KO
CHECKED BY: RHV
DATE: JAN. 9, 2002
SCALE: 1"=50'
W.O. NO.: 2019107.00

12 SHEET OF 14

SDP-01-108

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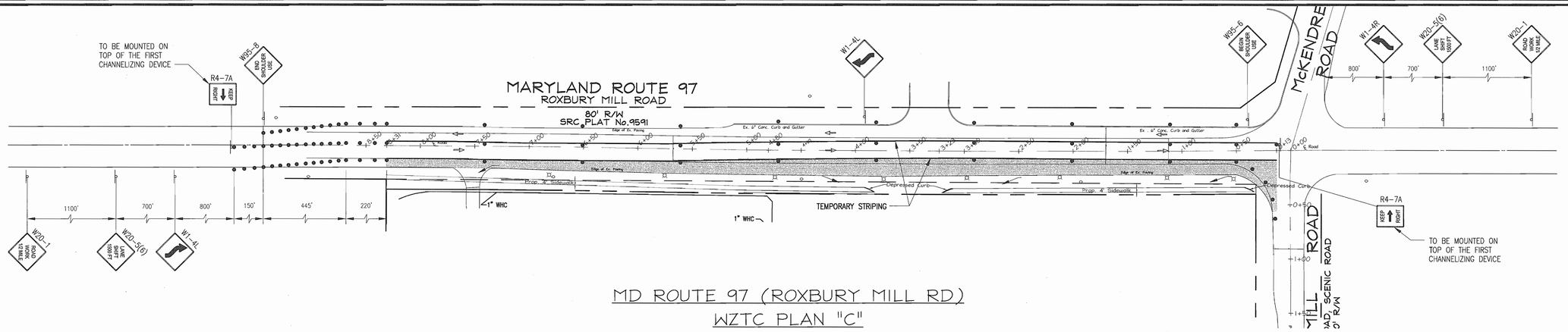
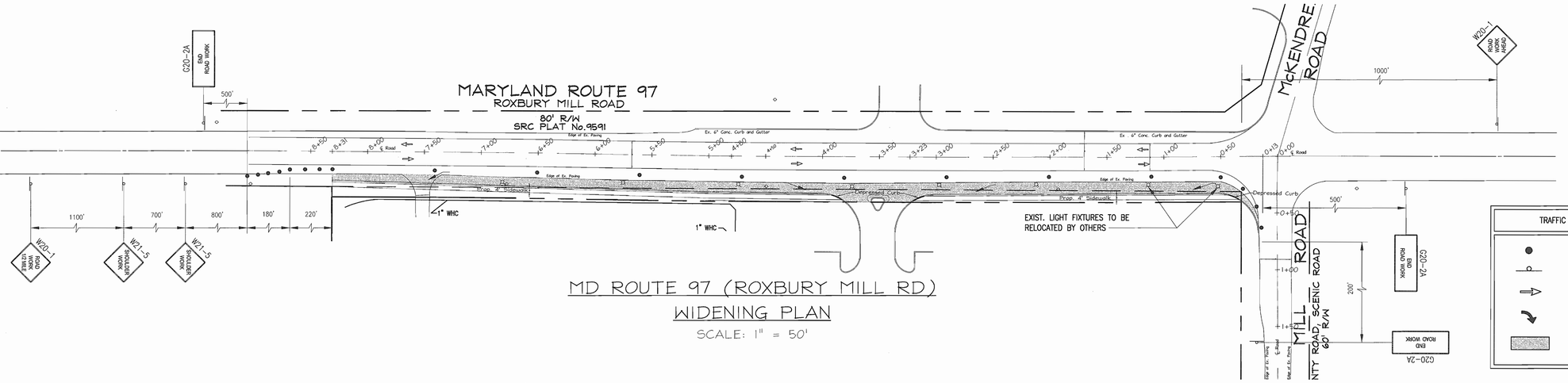
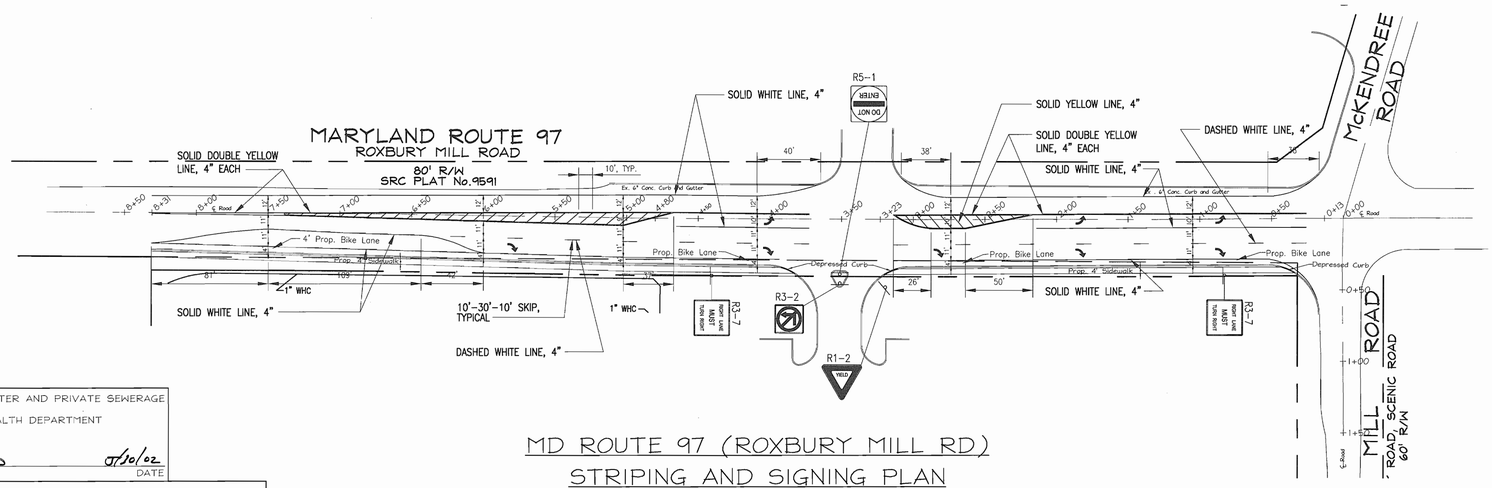


MD ROUTE 97 (ROXBURY MILL RD)
WZTC PLAN "C"
SCALE: 1" = 50'



MD ROUTE 97 (ROXBURY MILL RD)
WIDENING PLAN
SCALE: 1" = 50'



MD ROUTE 97 (ROXBURY MILL RD)
STRIPING AND SIGNING PLAN
SCALE: 1" = 50'

APPROVED : FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE 7/30/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/16/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/5/02

DIRECTOR — DATE 6/10/02

OWNER/DEVELOPER
GLENWOOD, LLC.
751 Frederick Street
Hanover, PA 17331
717.632.5300

NO.	REVISION	DATE

SHA, WZTC PLAN AND MISCELLANEOUS DETAILS

GLENWOOD STATION
"RETAIL CENTER"
ALLEN PROPERTY

TAX MAP #14 GRID #10 — PARCEL 125
4TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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

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

DESIGN BY: CM
DRAWN BY: PS/KO
CHECKED BY: RHV
DATE: JAN. 9, 2002
SCALE: 1"=50'
W.O. NO.: 2019107.00

SHEET 11 OF 14

SDP-01-108

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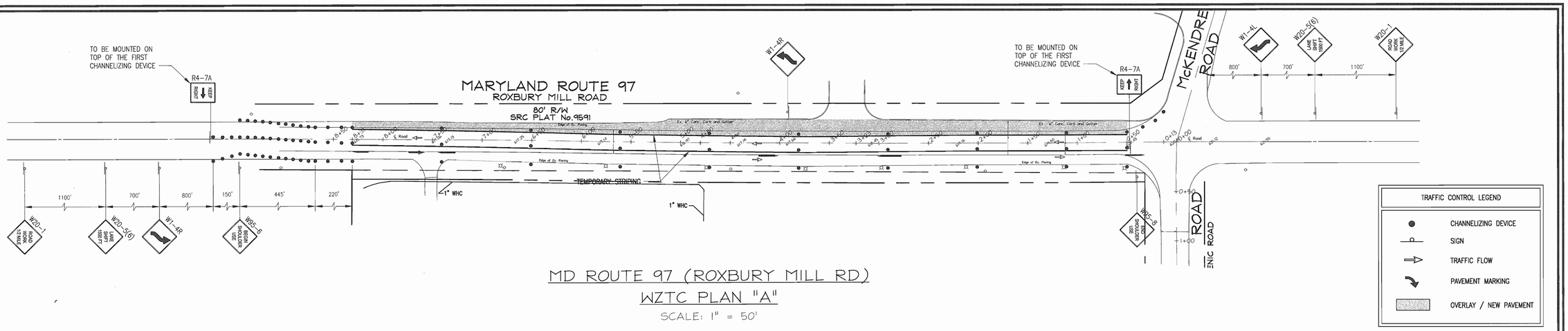
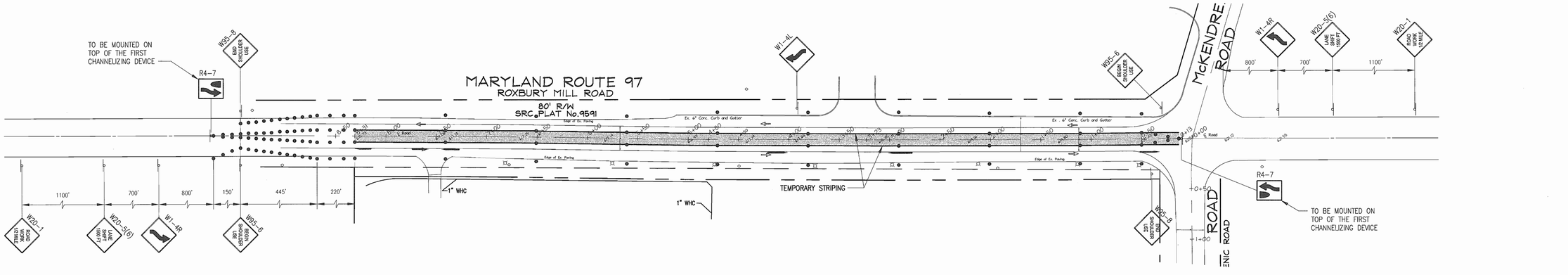


MD ROUTE 97 (ROXBURY MILL RD)

WZTC PLAN "A"

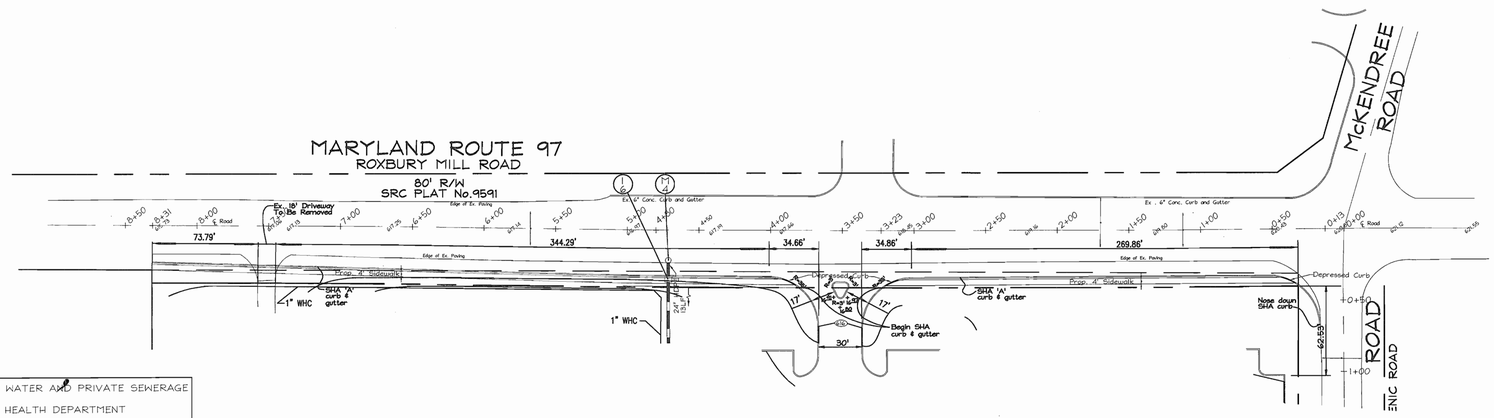
SCALE: 1" = 50'



MD ROUTE 97 (ROXBURY MILL RD)

WZTC PLAN "B"

SCALE: 1" = 50'



MD ROUTE 97 (ROXBURY MILL RD)

SHA ROAD PLAN

SCALE: 1" = 50'

APPROVED : FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE 4/30/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/6/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/5/02

DIRECTOR — DATE 6/10/02

OWNER/DEVELOPER

GLENWOOD, LLC.
751 Frederick Street
Hanover, PA 17331
717.632.5300

NO.	REVISION	DATE

SHA PLAN AND WZTC PLANS

GLENWOOD STATION
"RETAIL CENTER"
ALLEN PROPERTY

TAX MAP #14 GRID #10 — PARCEL 125
4TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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

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

DESIGN BY: CM
DRAWN BY: PS/KO
CHECKED BY: RHV
DATE: JAN. 9, 2002
SCALE: AS SHOWN
W.O. NO.: 2019107.00

SHEET 10 OF 14

SDP-01-108

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SITE DEVELOPMENT PLAN
GLENWOOD STATION

SHEET INDEX

DESCRIPTION	SHEET NO.
Cover Sheet	1 of 14
Site Development Plan	2 of 14
Site Development, Sediment & Erosion Control Plan, & Misc. Details	3 of 14
Sediment and Erosion Control Plan and Details	4 of 14
Sediment and Erosion Control Details and Septic Notes	5 of 14
Storm Drain Drainage Area Map	6 of 14
Storm Drain Profiles and Miscellaneous Details	7 of 14
Stormwater Management Profiles and Details	8 of 14
Landscape Plan	9 of 14
SHA and WZTC Plan	10 of 14
WZTC Plan and Miscellaneous Details	11 of 14
WZTC Plan and Miscellaneous Details	12 of 14
Existing Conditions Drainage Area Map	13 of 14
Developed Conditions Drainage Area Map	14 of 14

GENERAL NOTES

1. All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications, if applicable.
2. The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work.
3. 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 Telephone Company:	1-410-954-6281
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

4. Site analysis:
   Area of parcel 125: 5.4595
   Area of parcel 249 : 181.08 Acres ±
   Area of Disturbance : 7.95 Acres
   Present zoning : B-2
   Use of structure : Retail and Vehicle Service Establishment, MINIATURE GOLF COURSE
   Building area : 1=20,000sf; 2=20,000sf; + CANOPIES= 5,000 SF + PUMPHOUSE= 144 SF= TOTAL= 45,144 SF
   Building coverage on site : 1.04 AC. OR 19% OF GROSS AREA
   Paved parking lot/area : 1.68 AC. OR 31% OF GROSS AREA
   Area of landscape island : 0.05 Ac. = 2,000sf
   There are no steep slopes on-site
5. Project background:
   Location : Glenwood, Md.; Tax Map 14, Parcel 125
   Zoning : B-2
   Section/Area : N/A
   Site Area : 5.4595 Acres
   DPZ references : ZB Case No. 951-M, WP-01-136
   This project is grandfathered to the Fourth Edition of the Howard County Sub-division and Land Development Regulations.
6. 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.
7. Any damage to public right-of-ways, paving, or existing utilities will be corrected at the contractor's expense.
8. Existing utilities located from Field Surveys and available record drawings. Approximate location of existing utilities are shown for the contractors 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.
9. All reinforced concrete for storm drain structures shall have a minimum of 28 days strength of 3,500 p.s.i.
10. 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.
11. Estimates of earthwork quantities are provided soley for the purpose of calculating fees.
12. 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.
13. All storm drain pipe bedding shall be Class 'C' .
14. Coordinates and elevations are based on Howard County Right-of-Way Monuments.
15. A noise study is not required for this project.
16. Existing topography is based on field run information performed by The RBA Group, Inc. in May 1998 and by Vogel & Associates, Inc. in September 2000.
17. See sheet 2 for paving section details.
18. All curb and gutter to be Howard County Standard concrete Detail 3.01 unless otherwise specified.
19. Contractor responsible to construct all handicap parking and handicap access in accordance with current ADA requirements.
20. Where drainage flows away from curb, contractor to reverse the gutter pan.
21. All elevations are to flowline/bottom of curb unless otherwise noted.
22. All dimensions are to face of curb unless otherwise noted.
23. Private Water to be provided by on-site wells as approved by MDE under Ground Water Appropriation Permit (GWAP) #H02001G009(01). Private septic systems to be provided on-site. Septic fields are based on application #A50344 whose locations are based on perc testing dating 2.22.95 and 4.24.95 and approved on April 28, 2000.
24. Stormwater Management is provided by Extended Detention Pond constructed by Glenwood, LLC per SDP-01-108, but owned and maintained by Howard County. Water Quality is provided by on-site Stormcepter to be privately owned and maintained.
25. All exterior lighting shall conform to Zoning Regulations Section 134.
26. Buildings to have Inside Water Meter settings.
27. APFO traffic test was provided by The RBA Group, Inc. on July 07, 2000.
28. This site is conditionally exempt from the Forest Conservation requirements with the filing of a DOI for a single lot clearing less then 40,000 sq. ft. of forest in accordance with Section 16.1202 (b)(2)(i) of the Howard County Code. The second parcel is owned by Howard County and the work proposed is the construction of the regional facility for the Western Regional Park, constructed for the County by Glennwood, LLC.
29. Existing storm drain structures/pipe elevations are in accordance with SDP-91-060. Adjustment may be necessary to meet as-built vertical locations of storm drain stubs and structures.
30. Contractor to connect all roof drains to storm drain system, see Architectural plans for details.
31. Contractor to sod all areas adjacent to building, parking lot islands and area adjacent to entrance drive aisle. All other areas to be seeded and mulched.
32. Landscape Surety in the amount of $23,250.00 will be included in the Developer's Agreement. This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard County Code and Landscape Manual.
33. The available septic capacity will be allocated as each building permit is processed for the individual uses of each tenant. If total actual discharge from each building exceeds 1,500GPD, (3,000GPD total) then a ground water mounding study is required. For total flow in excess of 5,000GPD, a Ground Water Discharge Permit is required. Microseptec Enviroserver (410.750.7373) units are proposed for septic pre-treatment.
34. There are no floodplains or wetlands in the area of the proposed improvements.
35. The subject property is zoned 'B-2' (Business General) in accordance with the ZB Case No. 951-M, dated September 1, 1994.
36. The proposed driveway entrance on MD Route 97 was approved of Waiver Petition WP-01-136 by Howard County on July 19, 2001. The requirements of the Subdivision and Land Development Regulations, Sections 16.119(f)(1) and 16.120(a)(2), which call for a lower classification road access, have been waived by approval.
37. The contractor will contact the owner/developer prior to installation of septic system to determine if septic system has been revised.
38. A fee-in-lieu of stormwater management pond landscaping was paid by the developer in the amount of $14,100.00.
39. Total Limit of Disturbance : 7.95 Acres
40. THE BUILDING 2 PARKING TABULATION IS BASED ON APRIL 2007 DATA. PARKING REQUIREMENTS OF SDP-01-108 WERE ESTABLISHED USING THE GENERAL RETAIL RATE OF 5 SPACES PER 1,000SQ FT. THE PROPERTY OWNER HAS BEEN ADVISED BY DEPARTMENT OF PLANNING AND ZONING TO CONSIDER ADEQUACY OF PARKING WHEN NEGOTIATING FUTURE BUILDING USES.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MAJ — DATE 5/6/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/5/02

DIRECTOR — DATE 6/10/02

APPROVED : FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE 5/30/02

LOCATION PLAN
SCALE 1" = 100'

PARKING TABULATION CONTINUED

BUILDING 2-	REQUIRED	PROPOSED
VEHICLE SERVICE (5,000 SF) 3BAYS	12	12
PERSONAL SERVICE (8,000 SF)	27	27
RETAIL GENERAL (4,000 SF)	20	20
DAY CARE (3,000 SF)	9	9
OUTDOOR-		
MINIATURE GOLF COURSE (18 HOLES)	27	27

PARKING TABULATION (PER SECTION 133 (D)(4)(N)

BUILDING 1-		REQUIRED	PROPOSED
SHOPPING CENTERS: 20,000 S.F. X 5.0 SPACES/1,000 S.F.	=	100 spaces	105 spaces
TOTAL PARKING	=	195 SPACES	200 SPACES
HANDICAP	=	6 SPACES (1 VAN)	6 SPACES (1 VAN)

LEGEND

Existing Contour	- - - - - 382
Proposed Contour	—(82)—
Spot Elevation	+82.53
Direction of Flow	←—
Light Poles	Overhead

BENCHMARKS

Howard County Monument #3433004; Elev.: 597.33
N 534,653.438 E 795,420.537

Howard County Monument #3433005; Elev.: 620.07
N 534,974.172 E 794,062.901

VICINITY MAP
SCALE: 1"=2000'

BUILDINGS #1 & #2 ELEVATION
SCALE: 1"=30'

BUILDING PLAN VIEW
SCALE: 1"=50'

REVISIONS TO MYLARS PREPARED BY:
LEON A. PODOLAK & ASSOCIATES, LLC
63 E. MAIN ST. P.O. BOX 266
WESTMINSTER, MARYLAND 21157
PHONE: (410) 876-1226

NO.	REVISION	DATE
	REVISE POND OUTFALL APRON & PERMANENT POOL ELEV.	7-30-03
4	ADDITION OF PREFABRICATED MINIATURE GOLF COURSE AND KIOSK	6-1-07
	PER HOWARD CO. DEVELOPMENT ENGINEERING DIVISION COMMENTS	4-25-03
	SEPTIC SYSTEM REDESIGN & ADDITIONAL PAV'T. ON NORTH SIDE OF BLDG. #2 (SEE SH'TS. 2,4,5,9 & 13)	3-21-03
	REVISE PUMP HOUSE LOCATION, SHOW STORAGE TANK, WATERLINE, AND CANOPY (SEE SHEETS 2,4,5, & 9)	8-26-02

ADDRESS CHART

BUILDING #	STREET ADDRESS
1	2490 MD Rte. 97 (Roxbury Mill Rd.), Cooksville, Maryland
2	2480 MD Rte. 97 (Roxbury Mill Rd.), Cooksville, Maryland

PROJECT NAME	SECTION/AREA	PARCEL NUMBER
Glenwood Station	N/A	125

DEED REF.	BLOCK NO.	ZONE	TAX/MAP	ELECT. DIST.	CENSUS TR.
373/204	10	B-2	14	4th	6040

WATER CODE: SEWER CODE:

PROPOSED WATER PUMPHOUSE DETAIL
NOT TO SCALE

OWNER/DEVELOPER
GLENWOOD, LLC.
751 Frederick Street
Hanover, PA 17331
717.632.5300

COVER SHEET
GLENWOOD STATION
"RETAIL CENTER"
ALLEN PROPERTY

TAX MAP #14 GRID #10 — PARCEL 125
4TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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

ROBERT H. VOGEL, PE No.16193

DESIGN BY: PS
DRAWN BY: PS/KO
CHECKED BY: RHV
DATE: JAN. 9, 2002
SCALE: AS SHOWN
W.O. NO.: 2019107.00

SHEET 1 OF 14

SDP-01-108

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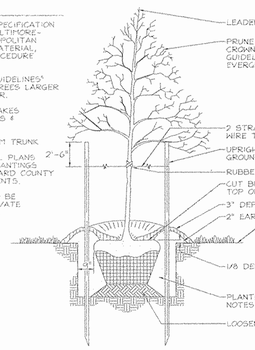
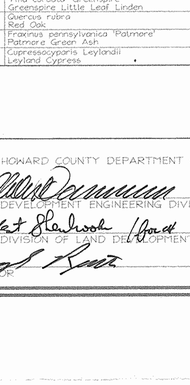
NOTES

1. SEE "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS" FOR ALL MATERIAL, PRODUCT, AND PROCEDURE SPECIFICATIONS.
2. SEE "LANDSCAPE GUIDELINES" FOR SUPPORTING TREES LARGER THAN 2-1/2" CALIPER.
3. PLACE UPRIGHT STAKES PARALLEL TO WALKS & BUILDINGS.
4. KEEP MULCH 1" FROM TRUNK.
5. SEE ARCHITECTURAL PLANS FOR ADDITIONAL PLANTINGS WHICH EXCEED HOWARD COUNTY MINIMUM REQUIREMENTS.
6. TREES ARE NOT TO BE PLANTED OVER PRIVATE SEWAGE EASEMENT.



TREE PLANTING AND STAKING

DECIDUOUS TREES UP TO 2-1/2" CALIPER — NOT TO SCALE



TYPICAL EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE

SCHEDULE A
PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAYS						ADJACENT TO PER. PROPERTIES		
Perimeter/Frontage Designation	1	2	3	4	4a	5	6	7	8
Landscape Type	B	E	E	E	B	B	D	A	A
Linear Feet of Roadway Frontage/Perimeter	195	265	294	121	44	120	15	772	300
Credit for Existing Vegetation (Yes, No, Linear Feet Describe below if needed)	No	No	No	No	No	No	No	No	Yes# 60#
Credit for Wall, Fence or Berm (Yes, No, Linear Feet Describe below if needed)	No	No	No	No	No	No	No	No	No
Number of Plants Required									
Shade Trees	1:50 4	1:40 7	1:40 8	1:40 3	1:50 1	1:50 3	1:60 1	1:60 13	1:60 5
Evergreen Trees	1:40 5	-	-	-	1:40 1	1:40 3	1:60 2	-	-
Shrubs	-	1:4 66	1:4 74	1:4 30	-	-	-	-	-
Number of Plants Provided									
Shade Trees	4	7	8	3	1	3	1	13	4
Evergreen Trees	5	-	-	-	1	3	2	-	-
Other Trees (2:1 Substitution)	-	-	-	-	-	-	-	-	-
Shrubs (10:1 Substitution)	-	66	74	37	-	-	12	-	-
Describe Plant Substitution Credits Below if needed)									

Existing 36" Oak to Remain

GENERAL NOTES

1. Financial Surety for the required landscaping must be posted as part of the Developer's Agreement in the amount of $23,250.00 for 55 shade trees, 11 evergreen trees, and 170 shrubs.
2. This plan has been prepared in accordance with provisions of Section 16.124 of the Howard County Code and the Landscape Manual.

LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	REM
AG	173	Abelia x grandiflora Glossy Abelia	30"-36" Ht.	B & B
FP	46	Photinia x fraseri Frasers Photinia	3' - 3.5' Ht.	B & B
TC	13	Tilia cordata 'Greenspire' Greenspire Little Leaf Linden	2 1/2"-3" Cal.	B & B
OR	4	Quercus rubra Red Oak	2 1/2"-3" Cal.	B & B
FP	39	Fraxinus pennsylvanica 'Patmore' Patmore Green Ash	2 1/2"-3" Cal.	B & B
CL	67	Cupressocyparis Leylandii Leyland Cypress	5'-6' Ht.	Cont.

NOTE:

1. The landscape contractor shall be advised not to plant the shrubs immediately adjacent to the parking spaces so as to leave enough space for the two (2) feet bumper overhang of parked cars.
2. At the time of plant installation, all shrubs and trees as listed and approved herewith, shall be of the proper height requirement in accordance with the Howard County Landscape Manual. In addition, no substitutions or relocations of the required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviation from the approved Landscape Plan may result in denial or delay in the release of landscape surety until such time as all required materials are planted and/or revisions are made to the applicable plans and certifications.
3. To obtain approval for substitutions, the contractor shall request written authorization from the Department of Planning and Zoning, prior to installation of plant materials.

SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING

Number of parking spaces	201
Number of trees and islands required	10
Number of trees and islands provided	
Shade Trees	12
Other Trees (2:1 Substitution)	-

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/6/02

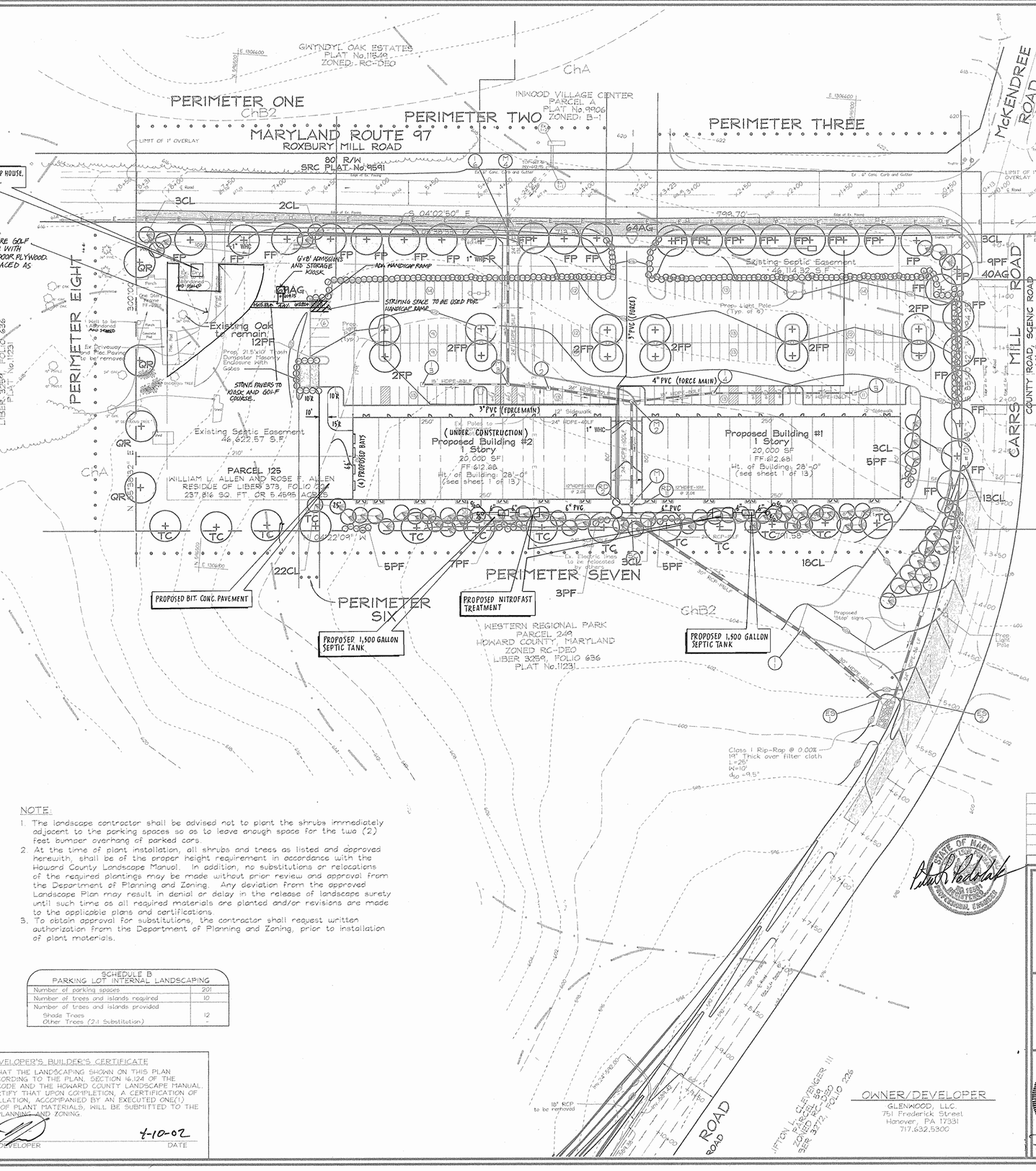
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/5/02

DIRECTOR — DATE 5/16/02

DEVELOPER'S BUILDER'S CERTIFICATE

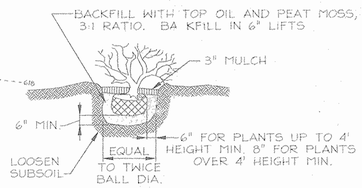
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE(1) YEAR GUARANTEE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

SIGNATURE OF DEVELOPER — DATE 4-10-02



SHRUB PLANTING DETAIL

NOT TO SCALE



LEGEND

- Existing Contour — 302
- Proposed Contour — 302
- Spot Elevation — +82.53
- Direction of Flow
- Existing Trees to Remain
- Light Poles — Post Top, Overhead, Bollard
- Shade Trees — FP, TC, QR
- Evergreen Trees — 2CL
- Shrubs — 5AG, 5PF
- Perimeter Landscape Edge

NO.	REVISION	DATE
	PER HOWARD CO. DEVELOPMENT ENGINEERING DIVISION COMMENTS	4-25-03
	SEPTIC SYSTEM REDESIGN and ADDITIONAL PAVEMENT ON NORTH SIDE OF BUILDING #2	3-21-03
	PUMP HOUSE LOCATION	8-26-02
4	ADDITION OF PREFABRICATED MINIATURE GOLF COURSE AND KIOSK	6-1-07

LANDSCAPE PLAN

GLENWOOD STATION
"RETAIL CENTER"

ALLEN PROPERTY

TAX MAP #14 GRID #10 — PARCEL 125
4TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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

STATE OF MARYLAND — ROBERT HARRIS TOGNOLI — No. 16194 — PROFESSIONAL ENGINEER — 5/1/02

ROBERT H. TOGNOLI, PE No. 16193

DESIGN BY: MHM
DRAWN BY: PS/KO
CHECKED BY: RHV
DATE: JAN. 9, 2002
SCALE: 1"=50'
W.O. NO.: 20191107.00

SHEET 9 OF 14

SDP-01-108

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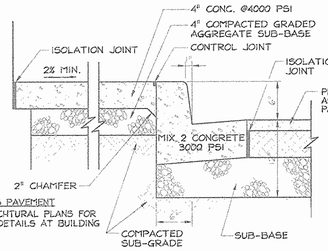
DEMOLITION NOTES:

1. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE SITE AND VERIFY EXISTING SITE CONDITIONS TO HIS SATISFACTION.
2. CONTRACTOR TO MEET WITH DEVELOPER ON JOB SITE TO IDENTIFY EQUIPMENT, SIGNS AND ITEMS TO BE REMOVED OR RETAINED PRIOR TO THE START OF CONSTRUCTION.
3. CONTRACTOR MUST ADHERE TO ALL SAFETY REGULATIONS GIVEN BY O.S.H.A. AND HOWARD COUNTY.
4. ALL DEMOLISHED MATERIALS TO BE REMOVED TO AN APPROVED LOCATION.
5. ALL UTILITIES AND STRUCTURES WITHIN PUBLIC RIGHTS OF WAY SHALL REMAIN.
6. ALL UTILITIES DAMAGED DURING DEMOLITION AND CONSTRUCTION SHALL BE REPAIRED AND/OR REPLACED IN KIND BY THE CONTRACTOR AT HIS OWN EXPENSE.
7. TOPOGRAPHIC BOUNDRY SURVEY INFORMATION SHOWN ON THIS PLAN IS FROM A SURVEY PREPARED BY FREDERICK WARD ASSOC., INC. DATED MARCH 2001.
8. REFER TO DRAWING SHEET 2 OF 14 FOR GENERAL NOTES PERTAINING TO UTILITIES.
9. REFER TO SHEETS 3, 4, 5 AND 6 OF 14 FOR ALL REQUIRED SEDIMENT CONTROL MEASURES.

UTILITY NOTES:

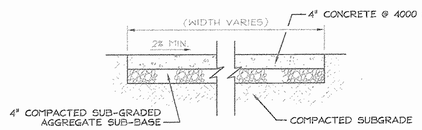
UTILITIES AND OTHER OBSTRUCTIONS AS SHOWN HEREON HAVE BEEN LOCATED BY ACTUAL FIELD MEASUREMENT, SUPPLEMENTED BY INFORMATION OBTAINED FROM THE VARIOUS AGENCIES INVOLVED. HOWEVER, WE DO NOT GUARANTEE THE ACCURACY NOR THE COMPLETENESS OF THE INFORMATION RECEIVED. IF CONSTRUCTION ON THIS SITE TAKES PLACE, THE CONTRACTOR MUST VERIFY ALL SUCH INFORMATION TO HIS OWN SATISFACTION AND MUST NOTIFY THE COMPANIES INVOLVED PRIOR TO THE START OF CONSTRUCTION.

LOCATIONS OF INDIVIDUAL ELECTRIC, TELEPHONE, GAS, WATER AND SANITARY SEWER SERVICE CONNECTIONS, AS SHOWN HEREON, ARE UNCERTAIN. THE LOCATIONS OF SAID CONNECTIONS SHOWN ARE BASED ON PROPOSED SITE PLANS OR AN ESTIMATION OF POSSIBLE LOCATION. SHOULD EXCAVATION BECOME NECESSARY FOR MAINTENANCE OR REPAIR OF THESE LINES, IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCURATELY DETERMINE THE LOCATION OF THESE LINES BEFORE COMMENCING WORK.



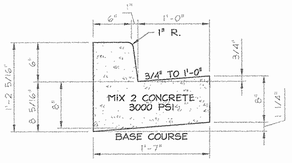
FOR BITUMINOUS PAVEMENT
SEE ARCHITECHTURAL PLANS FOR CONNECTION DETAILS AT BUILDING

TYPICAL SIDEWALK AT BUILDING DETAIL
(N.T.S.)



TYPICAL SIDEWALK DETAIL
(N.T.S.)

TYPICAL BITUMINOUS PAVEMENT SECTION (ON-SITE PARKING LOT PAVEMENT)
(N.T.S.)



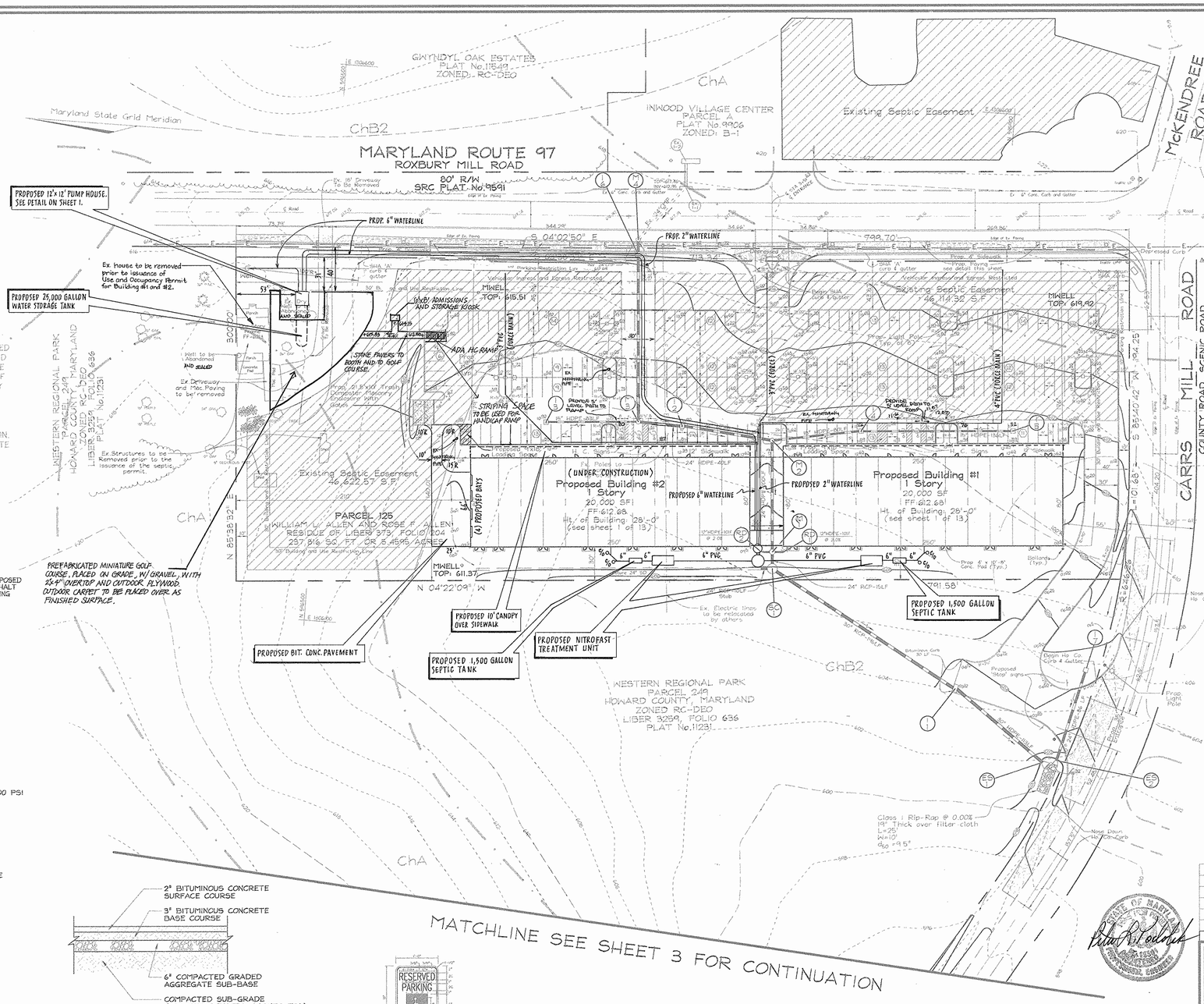
ON SITE CURB AND GUTTER DETAIL
(N.T.S.)

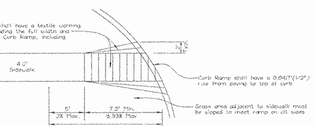
APPROVED : FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE 5/30/02

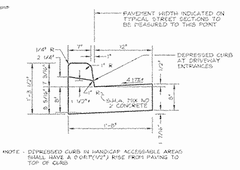
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/6/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/5/02
DIRECTOR — DATE 6/10/02





HANDICAP RAMP
NOT TO SCALE



NOTE - DEPRESSED CURB IN HANDICAP ACCESSIBLE AREAS SHALL HAVE A GUTTER'S RISE FROM PAVING TO TOP OF CURB

STANDARD COMBINATION CURB AND GUTTER
HOWARD COUNTY STANDARD R-3.01
NOT TO SCALE

SEE SHEET 5 FOR SEPTIC SYSTEM TRENCH LINE LAYOUT AND SYSTEM DETAILS.

NOTE:
FX WELLS TO BE REMOVED AFTER NEW MONITORING WELLS ARE ARE CONSTRUCTED AND FUNCTIONING PROPERLY.

STREET LIGHT NOTES:

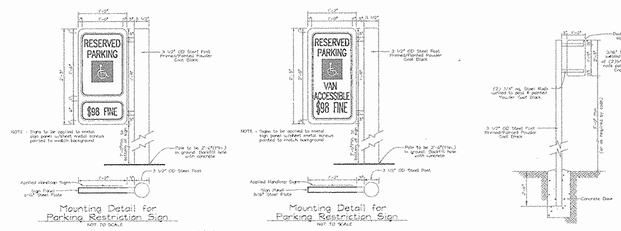
250 WATT HIGH PRESSURE SODIUM VAPOR COBRA (PENDENT MOUNT)
30' GALVANIZED STEEL POLE - 12' ARM
2' TO 4' BEHIND FACE OF CURB
(NO STREET TREES TO BE PLACED WITHIN 20' OF STREET LIGHTS)

GENERAL NOTES FOR GRADING:

1. COMPACTION IN BUILDING AND PAVEMENT AREAS TO BE AT 95% AND COMPACTION IN LANDSCAPING AREAS TO BE AT 90%, TO MEET ASTM D-1557 REQUIREMENTS.
2. IT IS RECOMMENDED THAT A GEOTECHNICAL ENGINEER BE RETAINED TO MONITOR EARTHWORK ACTIVITIES TO MAKE APPROPRIATE RECOMMENDATIONS AS NECESSARY.

Parking Restriction Sign for Handicapped Parking
NOT TO SCALE

Parking Restriction Sign for Van Handicapped Parking
NOT TO SCALE



Mounting Detail for Parking Restriction Sign
NOT TO SCALE

Mounting Detail for Parking Restriction Sign
NOT TO SCALE

Note:
Bottom edge of free standing handicapped parking signs shall be a minimum of 7'-6", placement of the additional sign designating the fine can be no lower than 7'-0"

HANDICAP PARKING SIGNS
NOT TO SCALE

NO.	REVISION	DATE
4	ADDITION OF PREFABRICATED MINIATURE GOLF COURSE AND KIOSK.	6-1-07
	PER HOWARD CO. DEVELOPMENT ENGINEERING DIVISION COMMENTS	4-25-03
	SEPTIC SYSTEM REDESIGN and ADDITIONAL PAVEMENT ON NORTH SIDE OF BUILDING #2	3-21-03
	REVISE PUMP HOUSE LOCATION, SHOW STORAGE TANK, WATERLINE, AND CANOPY	8-26-02

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

SITE DEVELOPMENT PLAN

GLENWOOD STATION
"RETAIL CENTER"
ALLEN PROPERTY

TAX MAP #14 GRID #10 — PARCEL 125
4TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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

OWNER/DEVELOPER
GLENWOOD, LLC.
751 Frederick Street
Hanover, PA 17331
717.632.5500

DESIGN BY: PS
DRAWN BY: PS/KO
CHECKED BY: RHV
DATE: JAN. 9, 2002
SCALE: 1"=50'
W.O. NO.: 2019107.00

SHEET 2 OF 14

SDP-01-108

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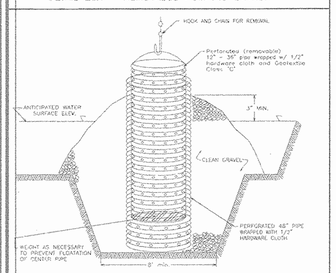
DETAIL 20A - REMOVABLE PUMPING STATION



ELEVATION

Construction Specifications

1. The outer pipe should be 48" dia. or larger, be at least 3' greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations.

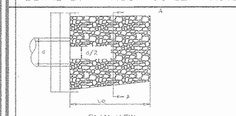
2. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.

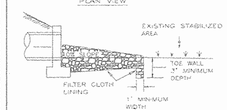
3. The inside stand pipe (center pipe) should be constructed by perforating a 12" to 36" dia. pipe with 1" holes 6" c-c vertically and 3" c-c horizontally (or 1"x3" x 6" slots at 1" diameter burrs 6" on center). The center pipe shall be wrapped with 1/2" hardware cloth first, then wrapped again with Geotextile Class C

4. The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 9 - 0	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 27 - ROCK OUTLET PROTECTION III





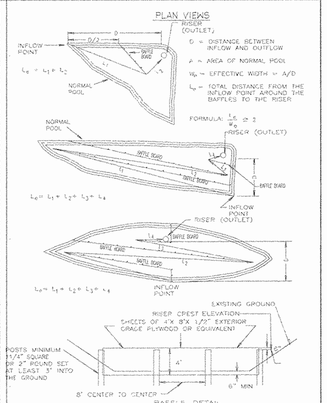
ELEVATION

SECTION A-A FILTER FABRIC LINING SHALL BE EMBEDDED A MINIMUM OF 4" AND SHALL EXTEND AT LEAST 6" BEYOND THE EDGE OF THE RIP-RAP.

NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 9 - 0	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 18 - SEDIMENT BASIN BAFFLES



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C - 9 - 26	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

APPROVED : FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

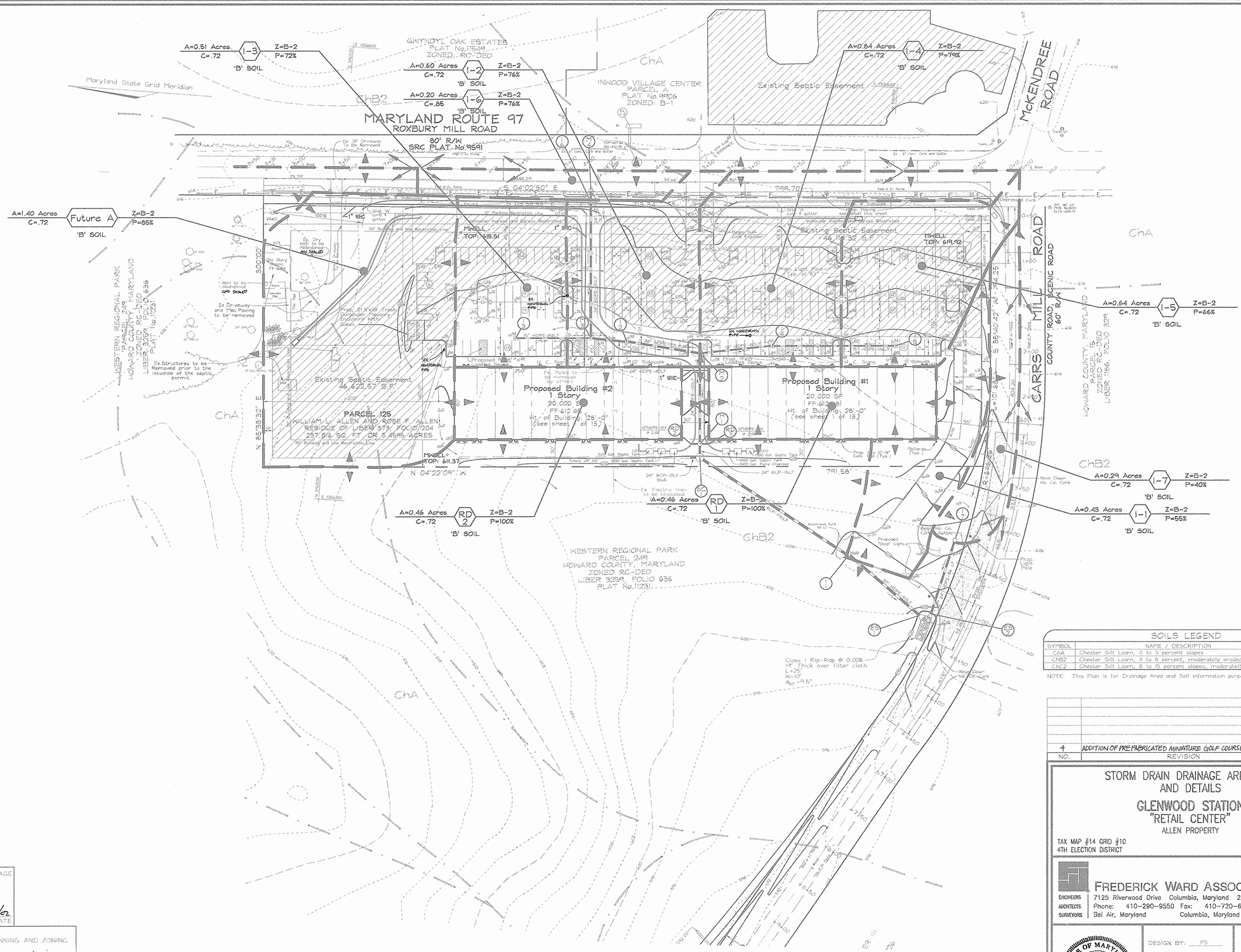
COUNTY HEALTH OFFICER — DATE 7/30/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/6/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/5/02

DIRECTOR — DATE 6/10/02



SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	SOIL GROUP
ChA	Chester Silt Loam, 0 to 3 percent slopes	B
ChB2	Chester Silt Loam, 3 to 8 percent, moderately eroded	B
ChC2	Chester Silt Loam, 8 to 15 percent slopes, moderately eroded	B

NOTE: This Plan is for Drainage Area and Soil information purposes only.

NO.	REVISION	DATE
4	ADDITION OF PREFABRICATED MINIATURE GOLF COURSE AND KIOSK	6-1-07

STORM DRAIN DRAINAGE AREA MAP AND DETAILS

GLENWOOD STATION "RETAIL CENTER"

ALLEN PROPERTY

TAX MAP #14 GRID #10 — PARCEL 125
4TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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

STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — PROFESSIONAL ENGINEER

ROBERT H. VOGEL, PE No.16193

DESIGN BY: PS
DRAWN BY: PS/KD
CHECKED BY: RHV
DATE: JAN. 9, 2002
SCALE: 1"=50'
W.O. NO.: 2019107.00

SHEET 6 OF 14

SDP-01-108

M:\PROJECTS\2019107\ENGR\dwg\SDP5x6.dwg Tue Apr 09 16:41:26 2002 JAJ