GATEWAY OFFICE PARK

PARCEL 'A'

HOWARD COUNTY, MARYLAND

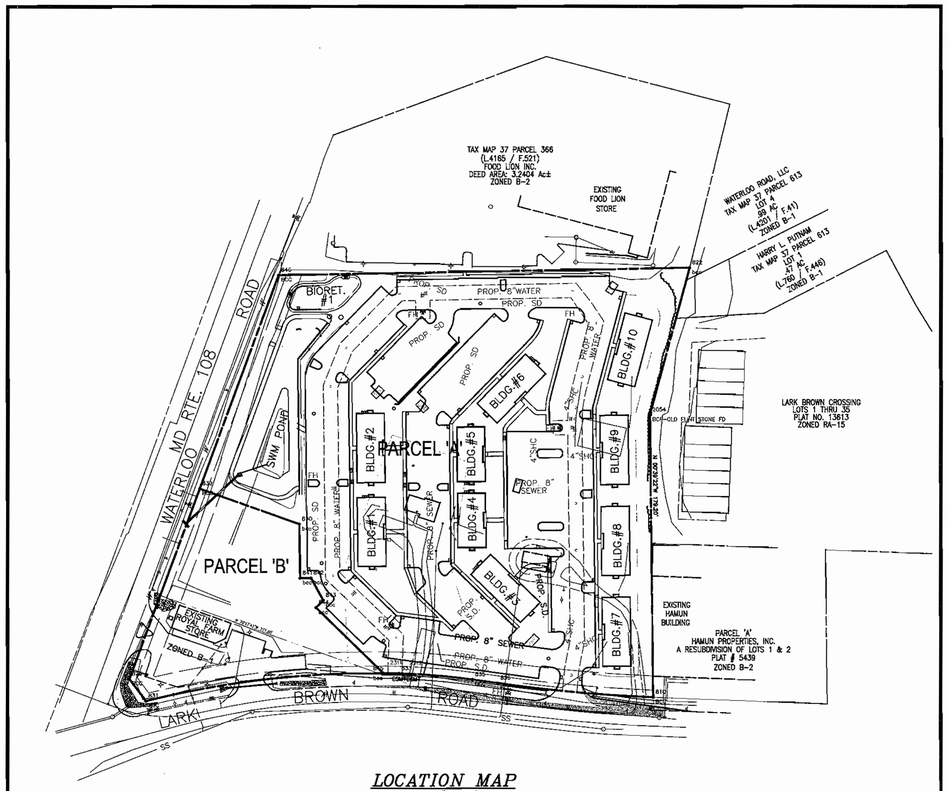
GENERAL NOTES

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:	(410) 754-6281
Howard County Bureau of Utilities:	(410) 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:
   PARCEL 'A': 7.00± AC
   Present zoning : B-1
   Use of structure : Offices
   Total building area : 98,000 sf
   Building coverage on site : 2.250 acs. or 29% of gross area (Includes future building)
   Paved parking lot/area : 2.28 Ac. or 29% of gross area
   There are no steep slopes on-site
5. Project background:
   Location : Ellicott City, Md.; Tax Map 37, Parcel 604.
   Zoning ; B-1
   Section/Area : N/A
   Site Area : 7.807 Acres
   DPZ references : F-78-37, WP-02-87, F-03-01

   Note: WP-02-87 pertains to the resubdivision of the Carrie Norman property (lots 1,2, and parcel 472), requesting an exemption from sketch and preliminary plan, and to proceed as an "originals only" final subdivision plat. Approval from DPZ was given April 30, 2002, under the condition that the petitioner and the owner of parcel 472 submit a final plan application showing the proposed parcels A & B, and the required road right-of-way dedication. The resubdivision plat will be recorded,"only after" both site developement plans (SDP-02-52 and SDP-02-89) are technically complete, or the access points and road improvements have been satisfactorily addressed.
6. The contractor or developer shall notify the Department of Public Works/Bureau of Engineering/ Construction Inspection Division at (410) 313-1880 at least 24 hours in advance of commencement 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. The coordinates shown hereon are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System. Howard County Monument Nos. 37GB and 43A1 were used for this project.
15. A noise study is not required for this project.
16. Existing topography is based on field run information performed by Frederick Ward & Associates, inc. in April, 2001.
17. See sheet 11 for paving section details. Paving section to be confirmed by geotechnical engineer in the field based on compaction testing.
18. All curb and gutter to be Howard County Standard concrete Detail R3.01 unless otherwise specified.
19. There are no wetlands, streams, floodplains, or their buffers located within the limit of disturbance.
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. Contractor to connect roof drains to storm drain system, as shown.
24. Contractor to sod all areas within 10' of proposed building. All other areas to be seeded and mulched.
25. Proposed Water Main to to be public.
26. Stormwater Management in accordance with 2000 Maryland Stormwater Management Manual. Cpv, is provided by a stormwater managment pond onsite. WQv provided partially by a wet extended detention SWM pond the remainder of the WQv and all of the Rev are provided by bioretention and infiltration areas.
27. All curbs fillets shall be 5' radii, unless otherwise noted on plans.
28. APFO Traffic Study performed by the Traffic Group on November 16, 2001.
29. All exterior lighting to comply with Section 134 of the Zoning Regulations. See sheet 3 for detail.
30. This plan shall comply with the Zoning Regulations as amended by Council Bill 50-2001.
31. There are no historic sites on the subject parcel.
32. The forest conservation obligation of 137214 s.f. will be fulfilled by fee-in-lieu of reforestation in the amount of $68,607.00.
33. Reference WP-02-87, approved April 30, 2002, to waive the requirement to submit a sketch and preliminary plan.



LOCATION MAP
SCALE: 1"= 100'

BENCHMARKS

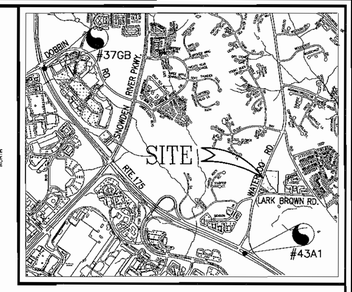
HOWARD COUNTY MONUMENT #37GB
N 553452.821 E 1368503.167
ELEV. 325.937
REBAR & CAP - 3.1' FROM NORTH SIDE OF RTE. 175, 6.9' FROM CORNER OF PKG LOT AND 44.9' SW OF INLET.

HOWARD COUNTY MONUMENT #43A1
N 552081.823 E 1370625.811
ELEV. 307.471
STD. CONC. MON- IN THE MEDIAN OFF RTE. 175, AT THE TURN AROUND LOCATED 0.25 MI. FROM THE TRAFFIC LIGHT AT RTE. 108.

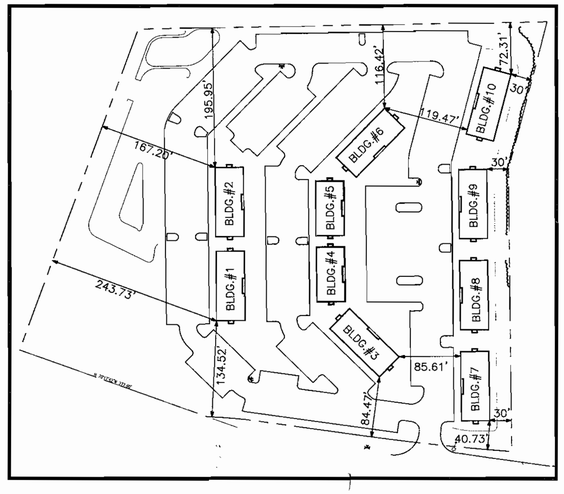
NOTE:
HORIZONTAL CONTROL IS IN NAD83.
VERTICAL CONTROL IS IN NGVD29.

LEGEND

Existing Contour	382
Proposed Contour	82
Spot Elevation	+82.53
Direction of Flow	



VICINITY MAP
SCALE: 1"=2000'

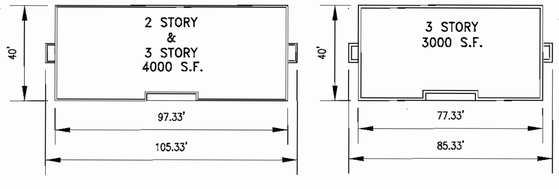


PARKING TABULATION

3.3 SPC. PER 1000 SF OFFICE AREA
98,000 TOTAL SF OFFICES@ 3.3 SPC/1000 SF= 324 SPCS.
PARKING PROVIDED: 404 SPCS
INCLUDING: 11 HANDICAP SPCS*
* ONE VAN-ACCESSIBLE SPACE

SHEET INDEX

MEAN HEIGHT TABULATION	
BUILDING #	BUILDING HEIGHT
1	39'-9"
2	39'-9"
3	39'-9"
4	39'-9"
5	39'-9"
6	39'-9"
7	29'-3"
8	29'-3"
9	29'-3"
10	29'-3"



ADDRESS CHART	
BUILDING #	STREET ADDRESS
1	8186 Lark Brown Road, Ellicott City, MD 21042
2	8188 Lark Brown Road, Ellicott City, MD 21042
3	8178 Lark Brown Road, Ellicott City, MD 21042
4	8180 Lark Brown Road, Ellicott City, MD 21042
5	8182 Lark Brown Road, Ellicott City, MD 21042
6	8184 Lark Brown Road, Ellicott City, MD 21042
7	8170 Lark Brown Road, Ellicott City, MD 21042
8	8172 Lark Brown Road, Ellicott City, MD 21042
9	8174 Lark Brown Road, Ellicott City, MD 21042
10	8176 Lark Brown Road, Ellicott City, MD 21042

SUBDIVISION NAME			SECTION/AREA		PARCEL NUMBER
Gateway Office Park			N/A		PARCEL 'A'
PLAT NO.	BLOCK NO.	ZONE	TAX/ZONE	ELECT. DIST.	CENSUS TR.
15520	20	B-1	37	6th	6067.03
WATER CODE: E08			SEWER CODE: 3450000		

OWNER/DEVELOPER

CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 10/8/02
CHIEF, DIVISION OF LAND DEVELOPMENT HB — DATE 10/15/02
DIRECTOR — DATE 10/16/02

NO.	REVISION	DATE

TITLE SHEET
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'
A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 PARCEL 604
6TH 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 — REGISTERED PROFESSIONAL ENGINEER — 10/8/02
ROBERT H. VOGEL, PE No.16193

DESIGN BY:	CLS
DRAWN BY:	JAJ/CLY
CHECKED BY:	RHV
DATE:	APR. 19, 2002
SCALE:	AS SHOWN
W.O. NO.:	2017165

SHEET 1 OF 26

SDP-02-52

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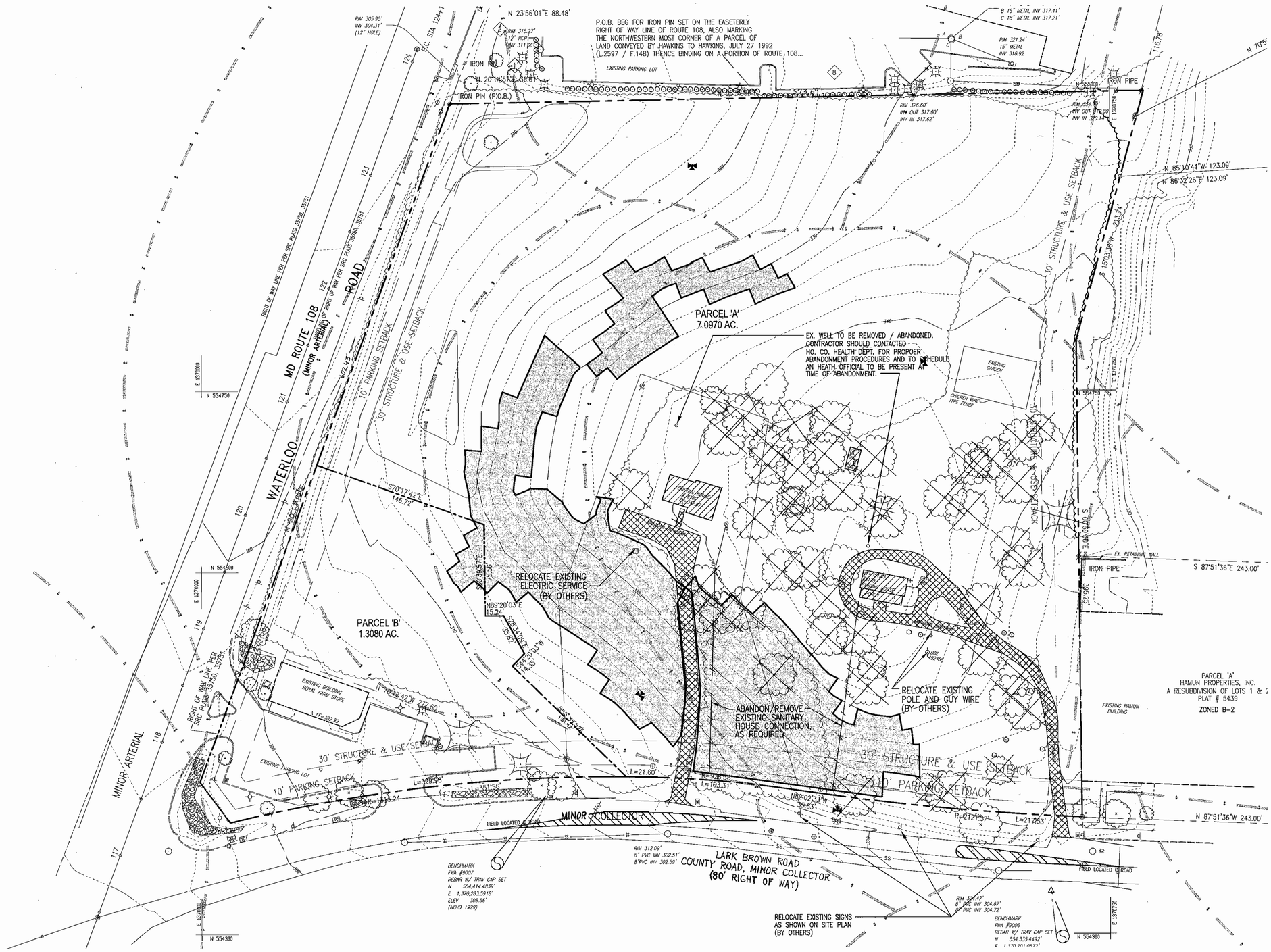

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/8/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/15/02

DIRECTOR — DATE 10/16/02

ENGINEERS CERTIFICATE

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

SIGNATURE OF ENGINEER — DATE 10/21/02

ROBERT H. VOGEL

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF DEVELOPER — DATE 9/27/02

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

USDA-NATURAL RESOURCES CONSERVATION SERVICE — DATE

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

HOWARD SCD — DATE

OWNER/DEVELOPER

CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

NO.	REVISION	DATE

EX CONDITIONS & DEMOLITION PLAN
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'

A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 — PARCEL 604
6TH 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 — REGISTERED PROFESSIONAL ENGINEER

ROBERT H. VOGEL, PE No.16193

DESIGN BY:	CLS
DRAWN BY:	JAJ
CHECKED BY:	RHV
DATE:	APR. 19, 2002
SCALE:	1"=40'
W.O. NO.:	2017165

SHEET 2 OF 26

SDP-02-52

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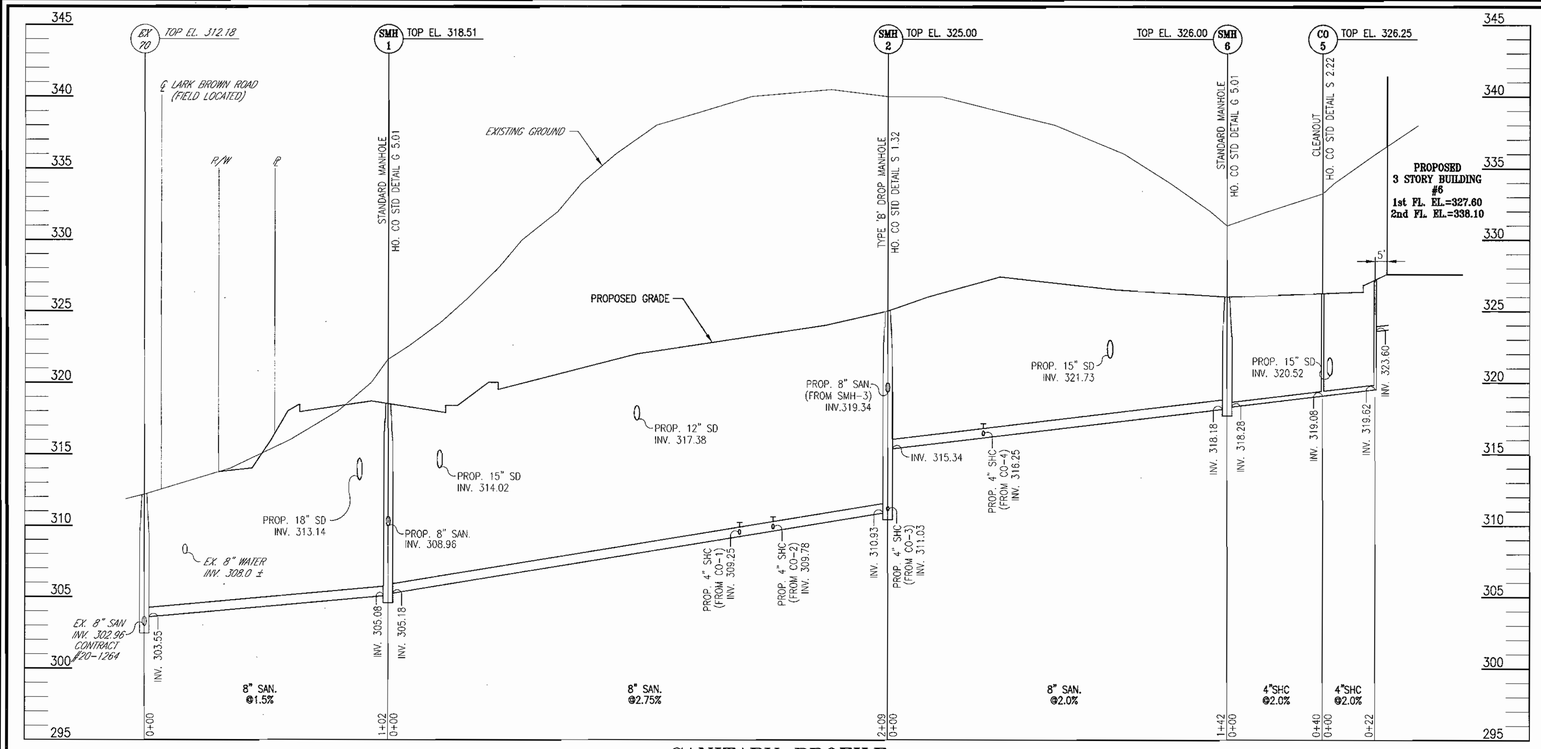

SANITARY PROFILE

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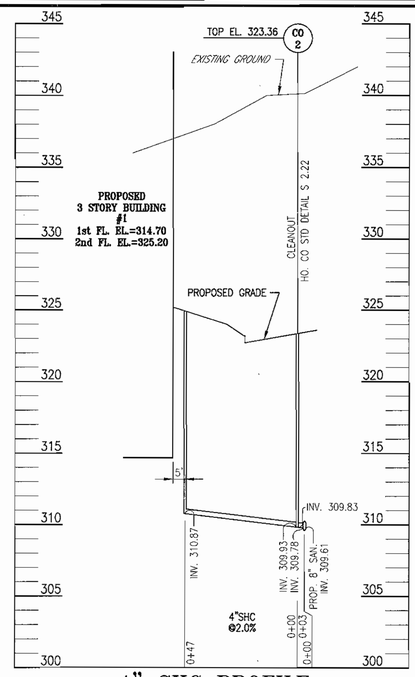

4" SHC PROFILE

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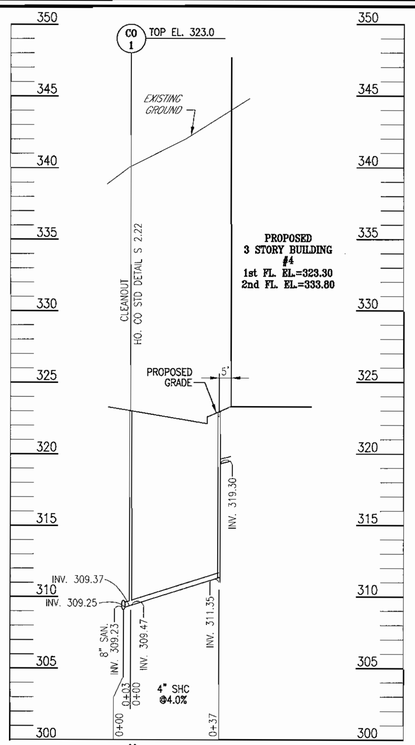

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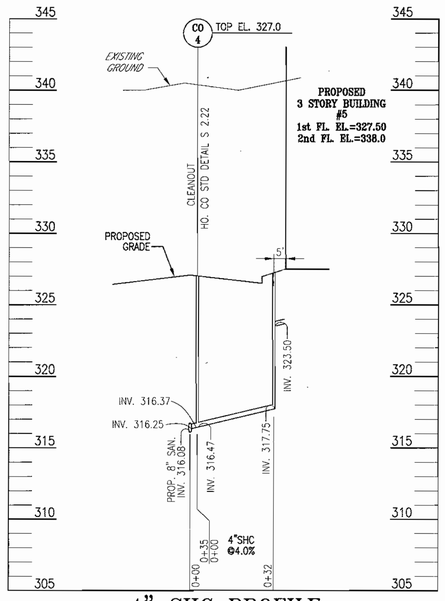

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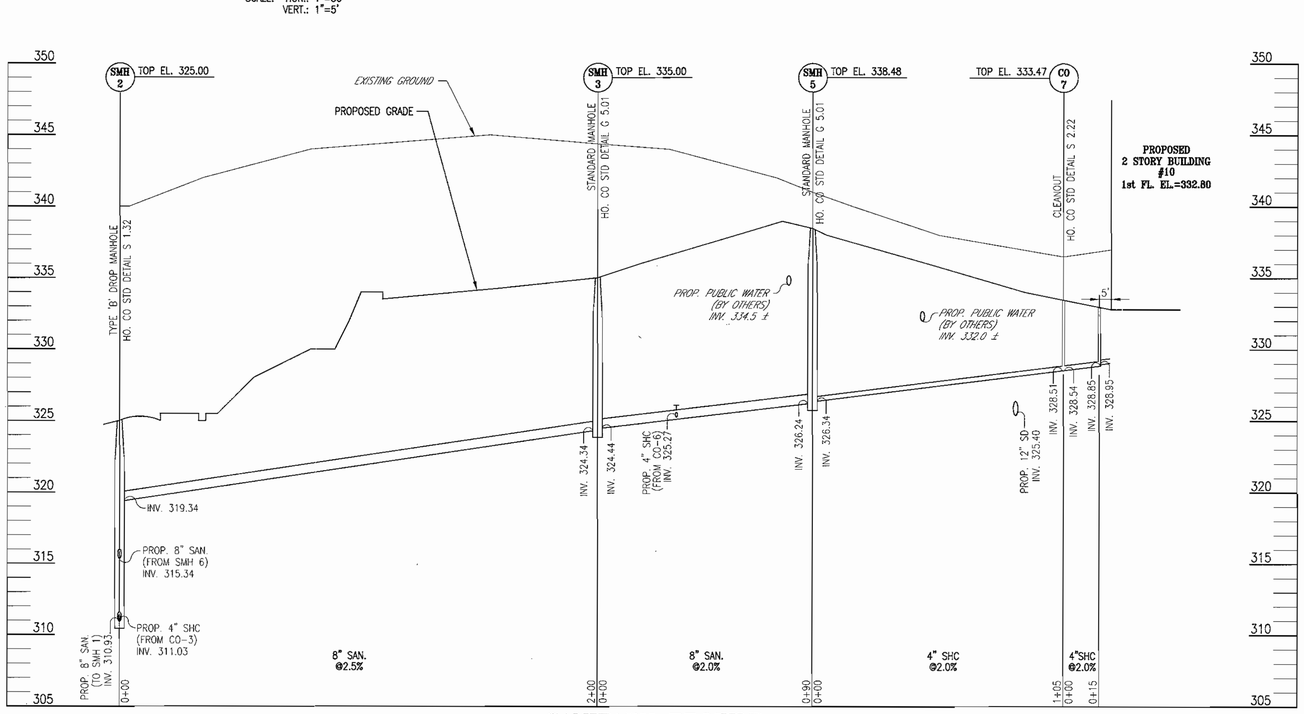

SANITARY PROFILE

SCALE: HOR.: 1"=30'
VERT.: 1"=5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE 10/8/02

CHIEF, DIVISION OF LAND DEVELOPMENT HO DATE 10/15/02

DIRECTOR DATE 10/16/02

NO.	REVISION	DATE

SEWER PROFILES
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'
A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 PARCEL 604
6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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

DESIGN BY: KO
DRAWN BY: KO
CHECKED BY: CLS
DATE: APR. 19, 2002
SCALE: AS SHOWN
W.O. NO.: 2017165

SHEET 9 OF 26

OWNER/DEVELOPER
CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

SDP-02-52

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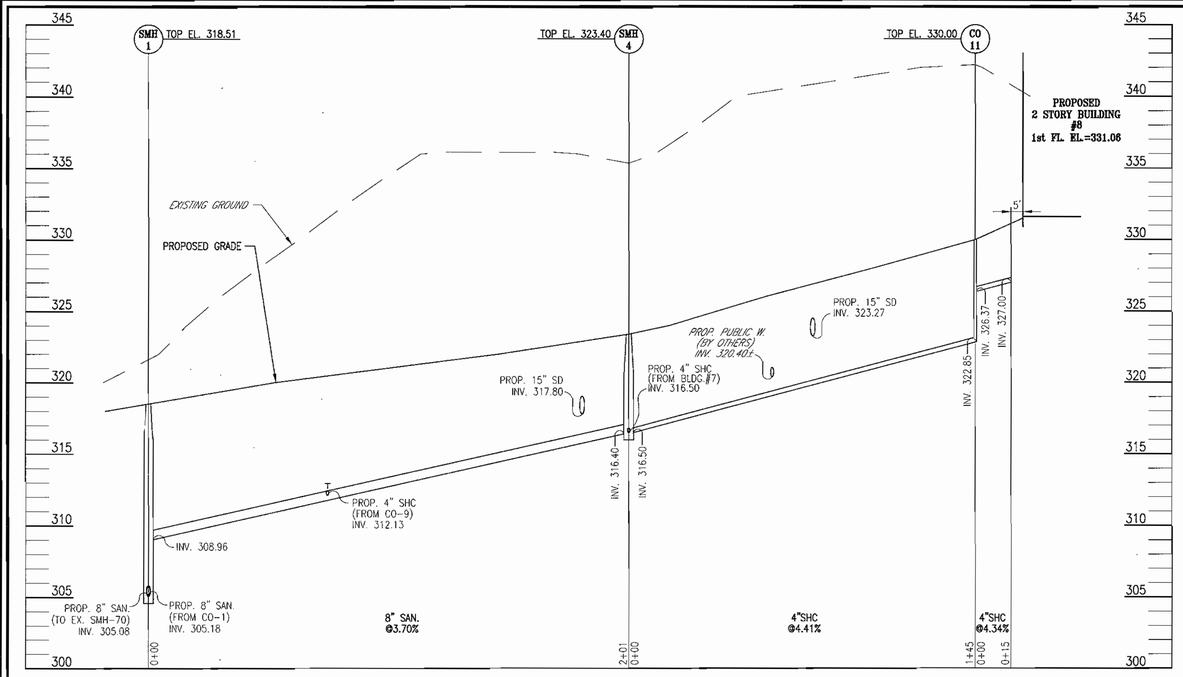

SANITARY PROFILE

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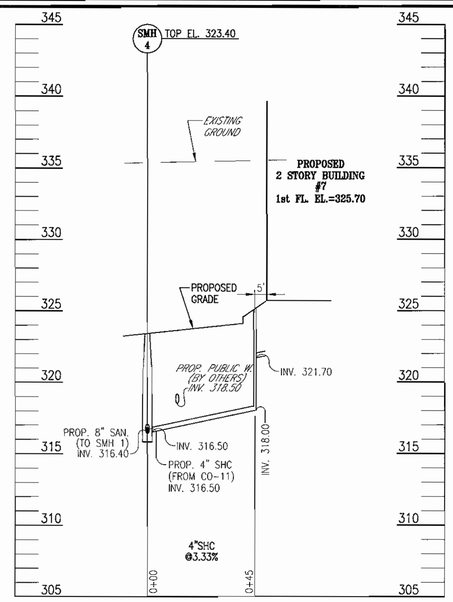

4" SHC PROFILE

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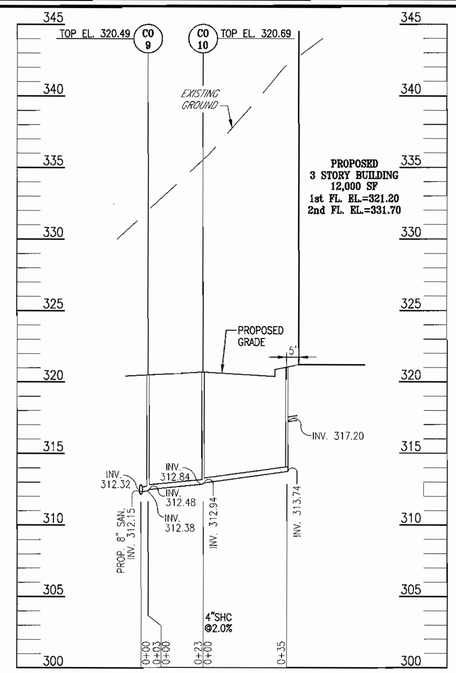

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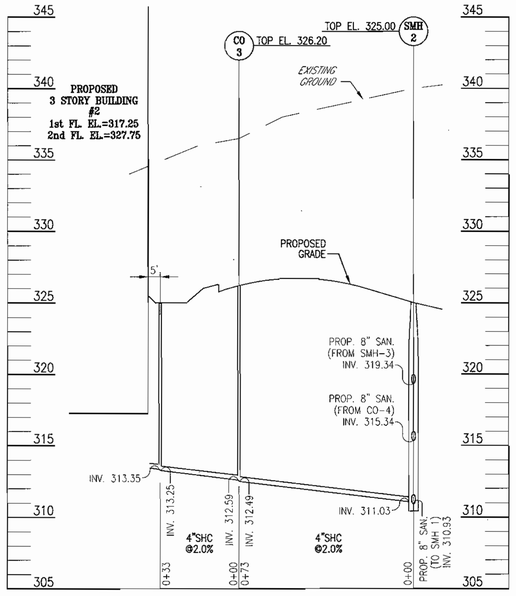

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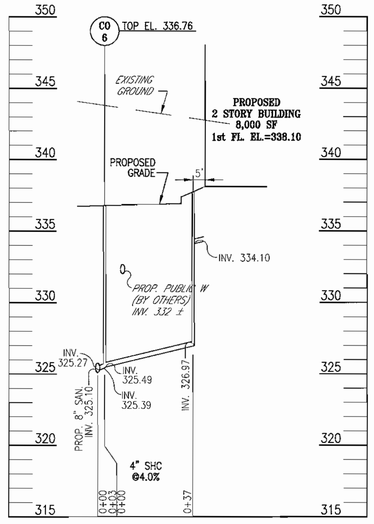

4" SHC PROFILE

SCALE: HOR.: 1"=30'
VERT.: 1"=5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/9/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/15/02

DIRECTOR — DATE 10/16/02

OWNER/DEVELOPER
CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
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Attn.: MR. JAMES JOST
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NO.	REVISION	DATE

SEWER PROFILES

SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'

A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 PARCEL 604
6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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ENGINEERS ARCHITECTS SURVEYORS
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STATE OF MARYLAND — ROBERT HARRIS VOGEL — No 16193 — REGISTERED PROFESSIONAL ENGINEER — 10/2/02
ROBERT H. VOGEL, PE No 16193

DESIGN BY: KO
DRAWN BY: KO
CHECKED BY: CLS
DATE: APR. 19, 2002
SCALE: AS SHOWN
W.O. NO.: 2017165

SHEET 10 OF 26

SDP-02-52

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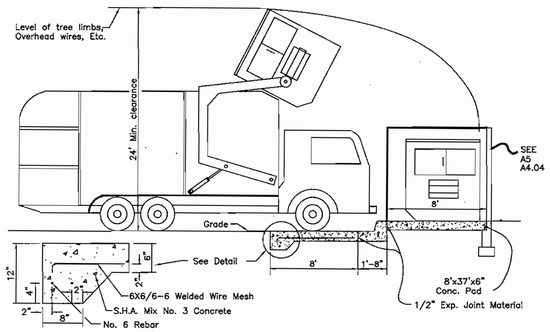
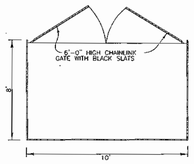


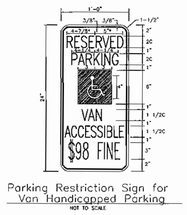
SOLID WASTE SERVICE PAD

HOWARD COUNTY STD. R 11.01
NOT TO SCALE

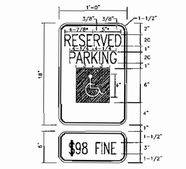


TRASH ENCLOSURE PLAN

NOT TO SCALE



Parking Restriction Sign for Van Handicapped Parking
NOT TO SCALE



Parking Restriction Sign for Handicapped Parking
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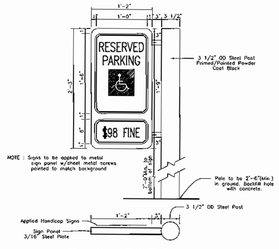

Mounting Detail for Parking Restriction Sign
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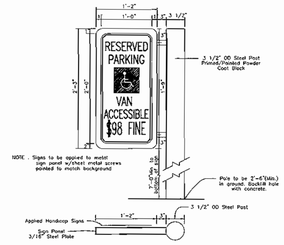
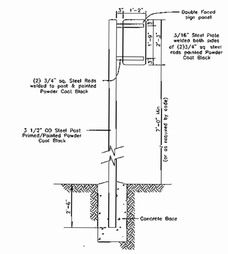


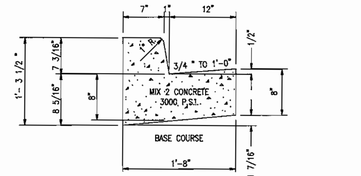
Mounting Detail for Parking Restriction Sign
NOT TO SCALE

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

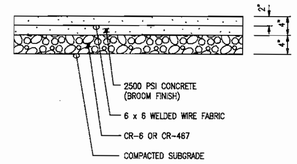
NOT TO SCALE





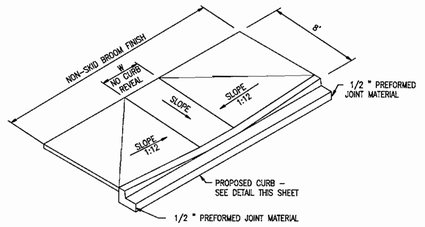
DETAIL - CURB AND GUTTER

HOWARD COUNTY STD DETAIL R-3.01
NOT TO SCALE



CONCRETE WALK SECTION

NOT TO SCALE

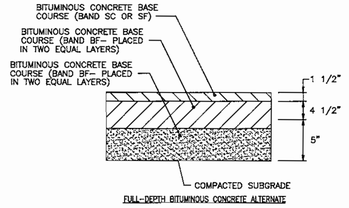


DETAIL - TYPE 2 SIDEWALK RAMP

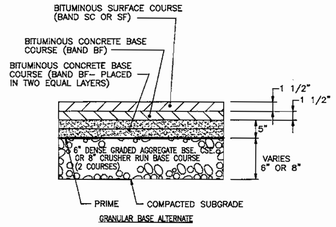
NOT TO SCALE

TEMPORARY CONSTRUCTION FENCE DETAIL

NOT TO SCALE



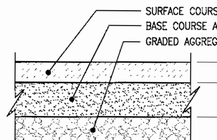
FULL-DEPTH BITUMINOUS CONCRETE ALTERNATE



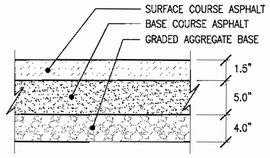
GRANULAR BASE ALTERNATE

LARK BROWN ROAD WIDENING PAVING SECTION (P5)

NOT TO SCALE



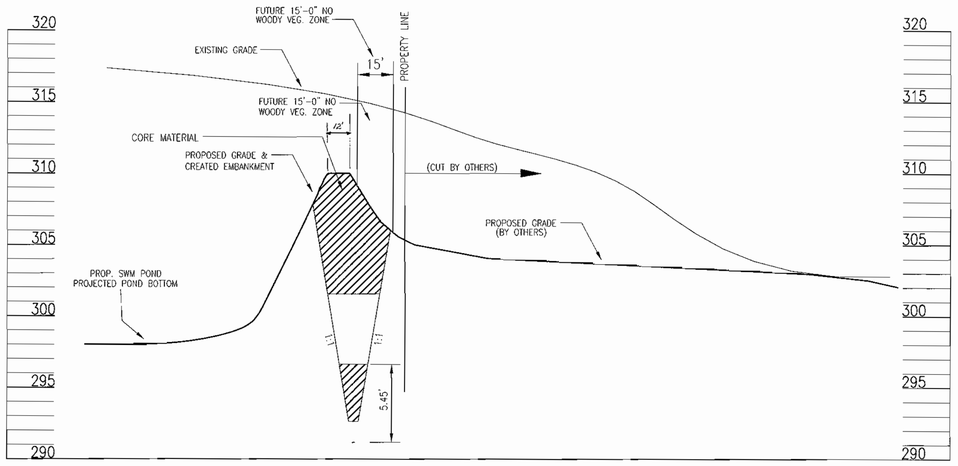
LIGHT DUTY PAVING SECTION



HEAVY DUTY PAVING SECTION

SITE PAVING SECTION

NOT TO SCALE



CREATED EMBANKMENT PROFILE

SCALE: (HOR.) 1:30
(VERT.) 1:5

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 10/2/02
ROBERT H. VOGEL

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 9/27/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/8/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/15/02
DIRECTOR — DATE 10/16/02

OWNER/DEVELOPER
CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

NO.	REVISION	DATE

SITE DETAILS
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'
A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 PARCEL 604
6TH 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 16193 REGISTERED PROFESSIONAL ENGINEER 10/2/02
ROBERT H. VOGEL, PE No.16193

DESIGN BY: CLS
DRAWN BY: JAJ
CHECKED BY: RHV
DATE: APR. 19, 2002
SCALE: AS SHOWN
W.O. NO.: 2017165

SHEET 11 OF 26

SDP-02-52

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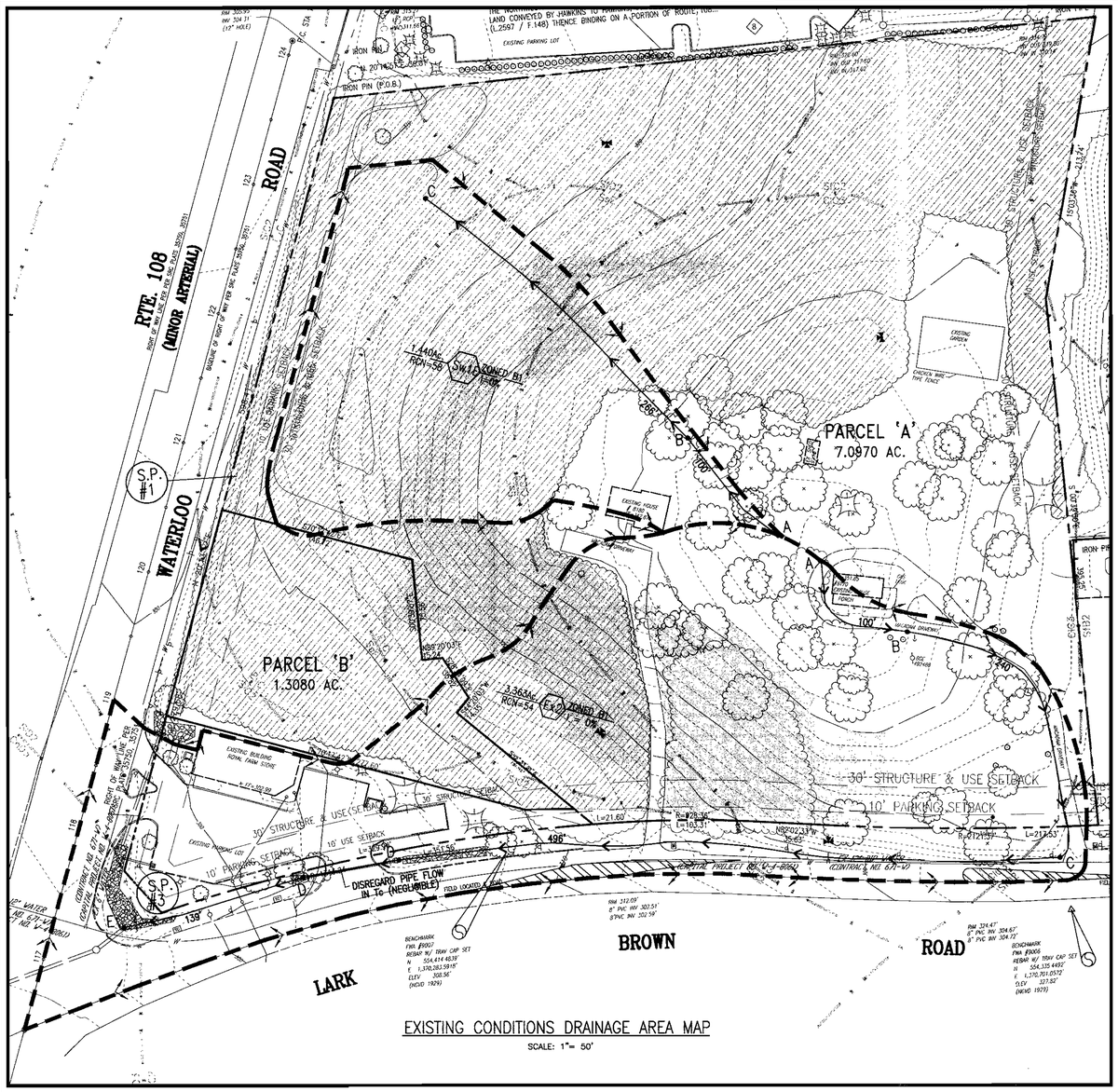

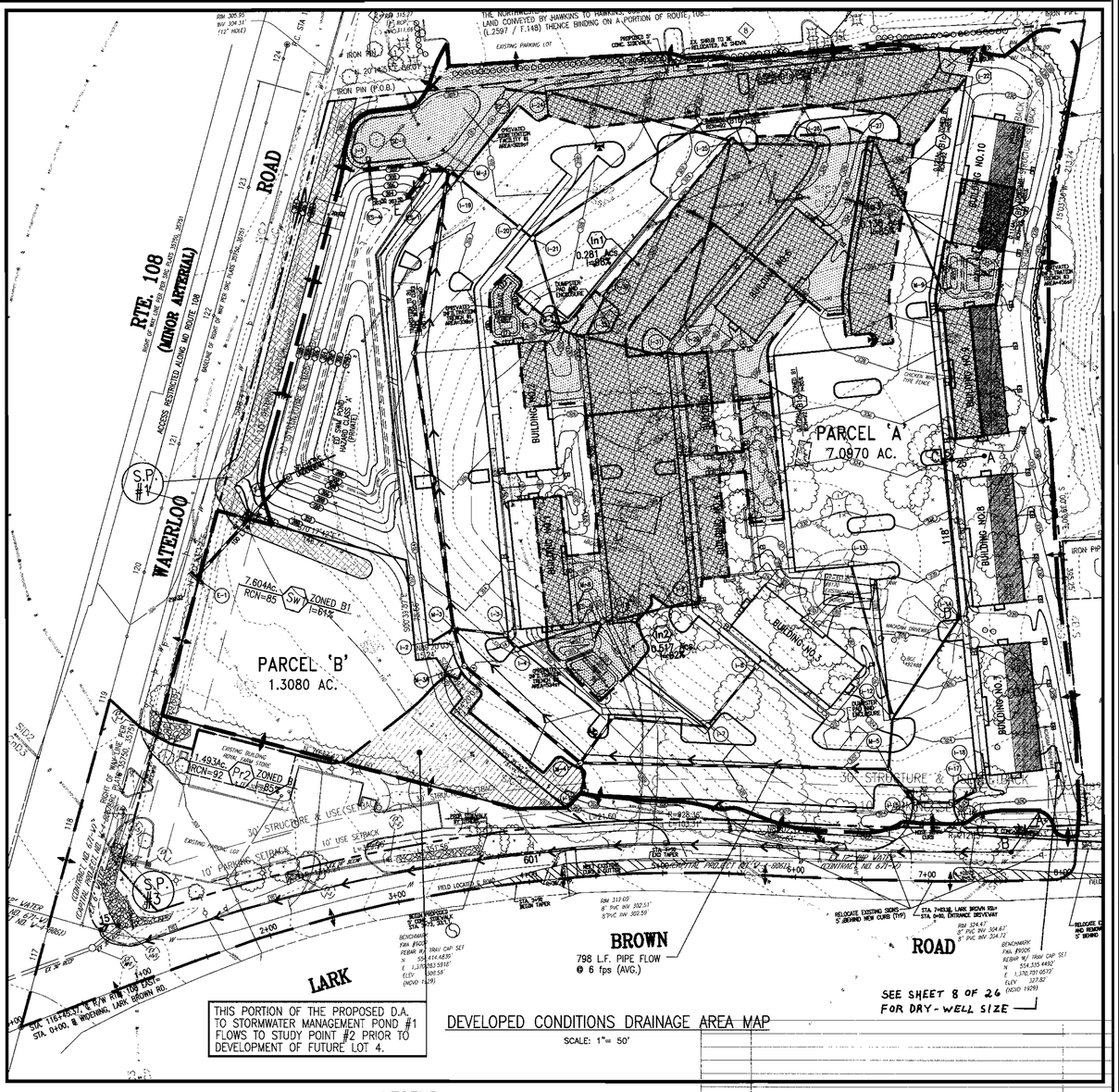

D.A. SW-1E: EXISTING CONDITIONS TC PATH INFORMATION
DRAINAGE AREA : 1.440 ACRES (TO SWM POND #1)
RCN : 58
TC : 0.18

A-B	B-C
SHEET FLOW	SHALLOW CONCENTRATED
100' @ 5.0%	226' @ 7%AVG

D.A. EX-2: EXISTING CONDITIONS TC PATH INFORMATION
DRAINAGE AREA : 3.363 ACRES (TO SWM #3)
RCN : 80
TC : 0.10

A-B	B-C	C-D
SHEET FLOW	SHALLOW CONCENTRATED	CHANNEL FLOW
100' @ 4.0%	240' @ 7.7%AVG	496' @ 4.6%AVG

D-E
CHANNEL FLOW
139' @ 0.60%AVG

D.A. SW-1: DEVELOPED CONDITIONS TC PATH INFORMATION
DRAINAGE AREA : 7.604 ACRES (TO SWM POND #1)
RCN : 85
TC : 0.12

A-B	B-C	C-D
SHEET FLOW	SHEET FLOW	CHANNEL (GUTTER) FLOW
25' @2.0% (GRASS)	5' @2.0% (PAVED)	118' @ 5.1% AVG.

D-E
CHANNEL (PIPE) FLOW
885' @6 fps AVG.

D.A. PR-2: DEVELOPED CONDITIONS TC PATH INFORMATION
DRAINAGE AREA : 1.493 ACRES (TO SWM #3)
RCN : 74
TC : 0.10

A-B	B-C	C-D
SHEET FLOW	CHANNEL (GUTTER) FLOW	SHEET FLOW
38' @ 2.0%	601' @ 4.4%AVG	15' @ 30%

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/8/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/15/02

DIRECTOR — DATE 10/16/02

OWNER/DEVELOPER
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SIGNATURE OF ENGINEER — DATE 10/2/02
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SIGNATURE OF DEVELOPER — DATE 9/27/02

STORMWATER MANAGEMENT POND #1 IS DESIGNED TO TREAT ONLY THE PROPOSED IMPERVIOUS SHOWN ON LOT 3. SWM IS PROVIDED FOR 85% IMPERV. COVER ON FUTURE LOT 4.

LEGEND

Existing Contour	382	Proposed Drainage Area Information	0.120Ac RCN=92 (B1) ZONED B1 I=85%
Proposed Contour	82	Soils Divide and Classification	
Spot Elevation	+82.53	Wooded Coverage	
Proposed Drainage Divide		Ex. Impervious Area	
Existing Drainage Divide		Prop. Impervious Area	
Tc Flow Path	A	Rooftop Disconnect Area	
Proposed Bioretention Drainage Area			
Proposed Impervious Bioretention Area			

STORMWATER MANAGEMENT SUMMARY TABLE

D.A. NO.	AREA (AC)	Rev REQ'D.	Rev PROV.	WQv REQ'D.	WQv PROV.	Cpv (Qo) REQ'D.	Cpv (Qo) PROVIDED
*WQv AREA	7.054	2725 CF	2776 CF BIORET. #1	14,344 CF	15,150 CF SWM POND & BIORET.		
**SWM AREA	7.604					0.29 CFS	0.12 CFS SWM ED POND

NOTE: * WATER QUALITY AND Rev FOR THE PARCEL TO BE SUBDIVIDED IS NOT INCLUDED IN THE BIORETENTION AND WET POND. THE WQv AREA IS THE TOTAL 7.807 Acs. LESS THE 0.753 Acs. OF THE PROPOSED PARCEL TO BE SUBDIVIDED.
** STORMWATER MANAGEMENT (CPv) FOR THE SITE AREA (INCLUDING THE 0.753 Acs TO BE SOLD) IS PROVIDED BY THE PROPOSED SWM POND. (SEE NOTE AT LEFT)

NO.	REVISION	DATE

EX DRAINAGE & PROP DRAINAGE AREA MAPS
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'
A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 PARCEL 604
6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

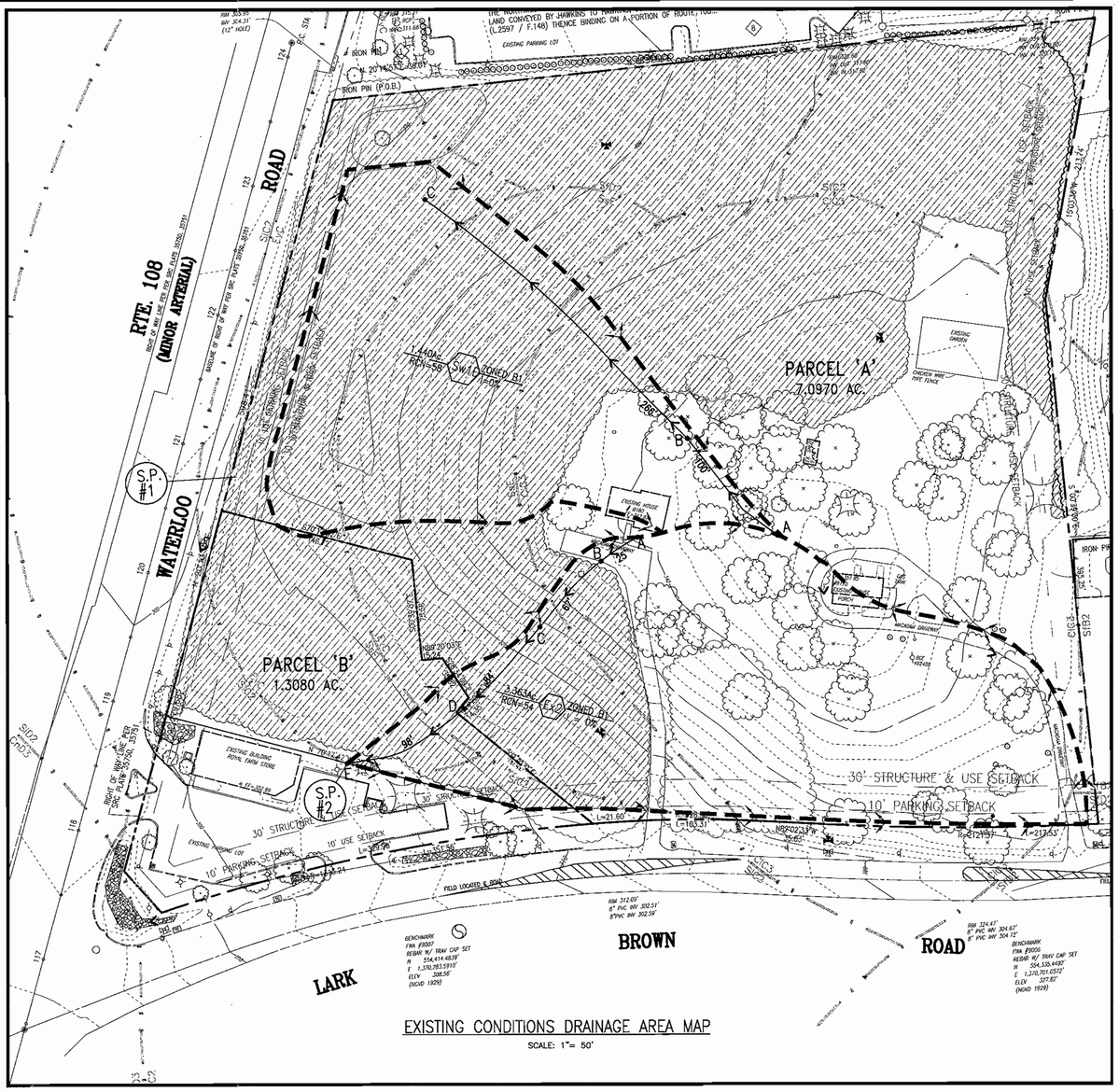
FREDERICK WARD ASSOCIATES, INC.
ENGINEERS 7125 Riverwood Drive Columbia, Maryland 21046-2354
ARCHITECTS Phone: 410-290-9550 Fax: 410-720-6226
SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

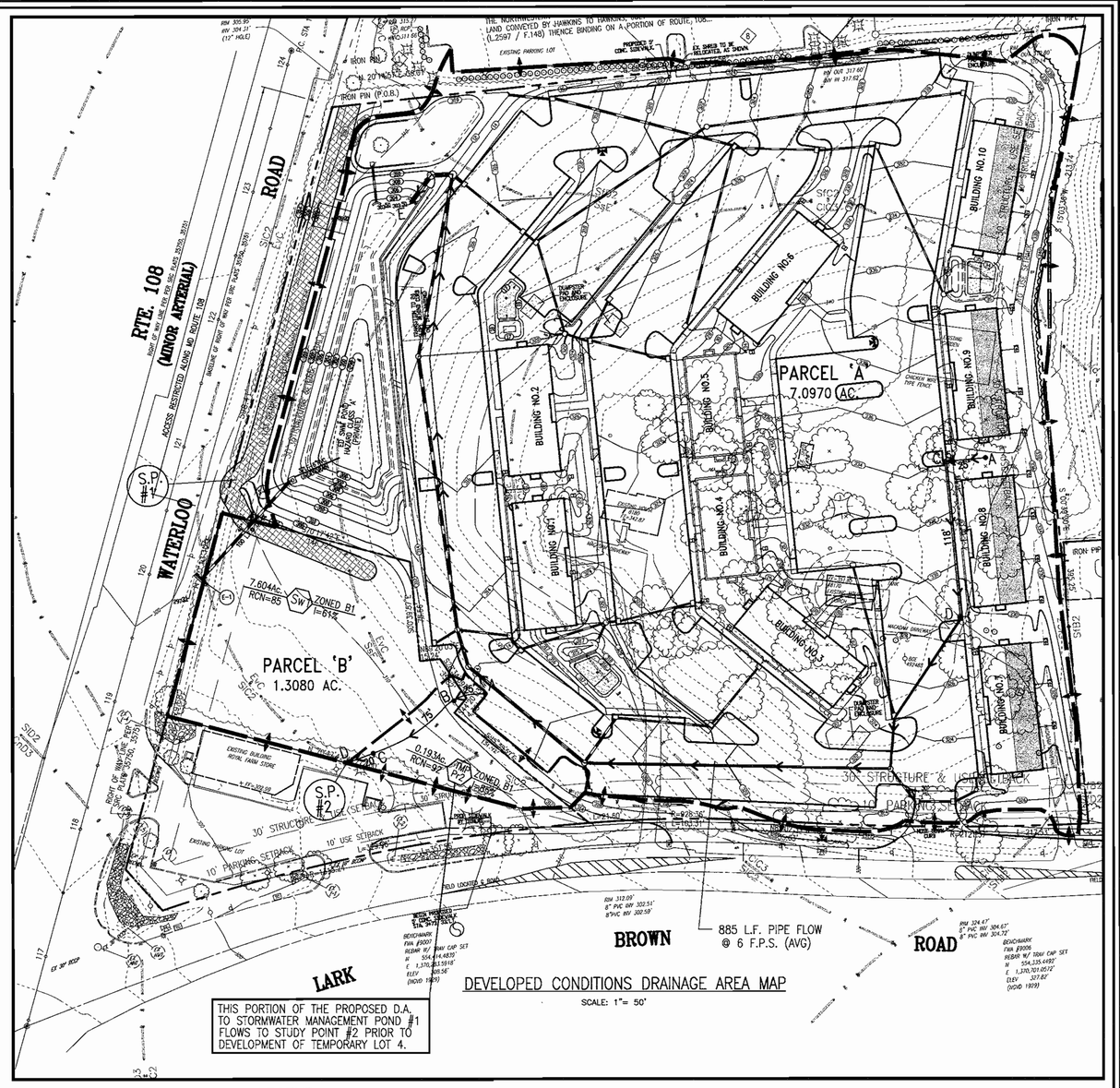
STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — REGISTERED PROFESSIONAL ENGINEER
ROBERT H. VOGEL, PE No.16193

DESIGN BY: CLS
DRAWN BY: JAJ
CHECKED BY: RHV
DATE: APR. 19, 2002
SCALE: 1" = 50'
W.O. NO.: 2017165

SHEET 13 OF 26

SDP-02-52





D.A. SW-1E: EXISTING CONDITIONS TC PATH INFORMATION
DRAINAGE AREA : 1.440 ACRES (TO SWM POND #1)
RCN : 58
TC : 0.18

A–B	B–C
SHEET FLOW	SHALLOW CONCENTRATED
100' @ 5.0%	226' @ 7% AVG

D.A. EX-2: EXISTING CONDITIONS TC PATH INFORMATION
DRAINAGE AREA : 3.363 ACRES (TO SP #2)
RCN : 54
TC : 0.10

A–B	B–C	C–D
SHEET FLOW	SHEET FLOW	SHALLOW CONCENTRATED
25' @ 12.5% (PAVED)	67' @ 16% AVG (UNPAVED)	84' @ 16% AVG (GRASS)

D–E
SHALLOW CONCENTRATED
98' @ 5.6% (GRASS)

D.A. SW-1: DEVELOPED CONDITIONS TC PATH INFORMATION
DRAINAGE AREA : 7.604 ACRES (TO SWM POND #1)
RCN : 85
TC : 0.12

A–B	B–C	C–D
SHEET FLOW	SHEET FLOW	CHANNEL (GUTTER) FLOW
25' @ 2.0%(GRASS)	5' @ 2%(PAVED)	118' @ 5.1% AVG

D–E
CHANNEL (PIPE) FLOW
885' @ 6fps AVG

D.A. TMP PR-2: TEMPORARY DEVELOPED COND. TC PATH INFO.
DRAINAGE AREA : 0.193 ACRES (TEMP. FLOW TO SP #2)
RCN : 92
TC : 0.14

A–B	B–C	C–D
SHEET FLOW	SHEET FLOW	SHALLOW CONCENTRATED
25' @ 3.3% (GRASS)	75' @ 18% AVG (GRASS)	20' @ 5.6% (GRASS)

STORMWATER MANAGEMENT POND #1 IS DESIGNED TO TREAT ONLY THE PROPOSED IMPERVIOUS SHOWN ON LOT 3. SWM IS PROVIDED FOR 85% IMPERVIOUS COVER ON LOT 4.

FILL SELECTION AND PLACEMENT:

Compacted fill will be required below the proposed buildings, parking areas, and as back fill in utility trenches. On-site soils were generally classified as SAND (SP), silty SAND (SP-SM), clayey SAND (SP-SC), and sandy SILT (ML), and are considered suitable for use as compacted fill. The lean CLAY (CL) is not recommended to be used as fill below footings or pavements. Cemented rock fragments larger than 6 inches in diameter should be crushed or removed from the fill soils.

The on-site soils were generally found to have moisture contents ranging from 2 to 13 percent, which is expected to be within 5 percent dry of the optimum moisture content for compaction to 10 percent wet. However, the moisture content of these soils may vary with the seasons and expect that the soils may require wetting or drying prior to compaction.

If imported fill is required at this site, the imported soils should consist of material classified as SM, SC, SW, SP, GC, and GM per ASTM D-2487. The imported soils should be free of deleterious material, debris, or fragments larger than 6-inches in diameter. The plasticity index of the soil should be less than 15 when tested in accordance with ASTM D_4318.

Earthwork should be conducted during the drier periods of the year, typically between June and October. Additional earthwork costs should be anticipated if earthwork operations occur during wetter seasons.

All structural fill and/or back fill should be placed in horizontal loose lifts not in excess of 8-inches thick and compacted to at least 95 percent of the maximum dry density as determined by the Standard Proctor (ASTM D-698). The top one foot of pavement subgrade should be compacted to 100 percent of the maximum dry density as determined by ASTM D-698. The moisture content of the fill should be maintained within 2% of the optimum moisture content as determined by ASTM D-698. All compacted fill in the building areas should extend at least 5 feet outside the proposed building footprint. All lift depths, compaction equipment, moisture levels, and compactive effort should be monitored and approved by the geotechnical engineer.

LEGEND

Existing Contour	382	Proposed Drainage Area Information	0.120Ac RCN=92 (B1) ZONED B1 I=85%
Proposed Contour	82	Soils Divide and Classification	SIC3 SID2
Spot Elevation	+82.53	Wooded Coverage	
Proposed Drainage Divide		Ex. Impervious Area	
Existing Drainage Divide		Prop. Impervious Area	
Tc Flow Path	A	Rooftop Disconnect Area	
Proposed Bioretention Drainage Area			
Proposed Impervious Bioretention Area			

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 10/2/02
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10/15/02
DIRECTOR	DATE 10/16/02

OWNER/DEVELOPER
CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
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TEMPORARY STORMWATER MANAGEMENT
EX DRAINAGE & PROP DRAINAGE AREA MAPS
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'
A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 PARCEL 604
6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FREDERICK WARD ASSOCIATES, INC.
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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 REGISTERED PROFESSIONAL ENGINEER 10/16/02
ROBERT H. VOGEL, PE No.16193

DESIGN BY:	CLS
DRAWN BY:	JAJ
CHECKED BY:	RHV
DATE:	APR. 19, 2002
SCALE:	1" = 50'
W.O. NO.:	2017165

SHEET 14 OF 26

SDP-02-52

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GENERAL NOTES

1. ALL STRUCTURES DETAILED ON THIS SHEET SHALL BE CAPABLE OF SUPPORTING AASHTO HS-20 LOADING, AND SHALL BE CONSTRUCTED IN FULL ACCORDANCE WITH ACI 318, LATEST EDITION.
2. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH $f'c$ = 3,500 psi.
3. ALL REINFORCING SHALL CONFORM TO ASTM A-615 GRADE 60.
4. CONTRACTOR SHALL PRE-CAST STRUCTURE IN WHOLE OR IN PART, SUBJECT TO THE PRIOR APPROVAL OF PRE-CAST SHOP DRAWING SUBMITTED TO HOWARD COUNTY BUREAU OF ENGINEERING PRIOR TO MANUFACTURING.
5. SILT AND DEBRIS SHALL NOT BE ALLOWED TO ENTER THE STRUCTURES UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN PERMENENTLY STABILIZED.
6. ALL OPENINGS TO THE STRUCTURE SHALL BE PROTECTED WITH THE APPROPRIATE SEDIMENT CONTROL MEASURES DURING CONSTRUCTION.

STORMWATER MANAGEMENT AND WATER QUALITY MAINTENANCE NOTES (PRIVATE OWNERSHIP AND MAINTENANCE)

1. INSPECT THE STORMCEPTOR ON A MONTHLY BASIS AND NOTE THE SEDIMENT AND OIL ACCUMULATIONS. MORE FREQUENT INSPECTIONS ARE APPROPRIATE WHERE OIL SPILLS OCCUR REGULARLY. STORMCEPTOR CANADA INC. CAN PROVIDE ADVICE ON SAMPLING EQUIPMENT.
2. SEDIMENT SHOULD BE REMOVED ANNUALLY, OR WHENEVER THE ACCUMULATION REACHES 50% OF THE OPERATING DEPTH, FROM BASE TO DRAIN INVERT. IN AREAS OF NEW CONSTRUCTION, OR WHERE VEGETATION HAS NOT YET BEEN ESTABLISHED, MORE FREQUENT REMOVAL MAY BE NECESSARY.
3. VACUUM TRUCKS ARE USED TO REMOVE THE SEDIMENT AND OIL FROM THE STORMCEPTOR TREATMENT CHAMBER. OIL LEVELS GREATER THAN 2.5 CM SHOULD BE REMOVED IMMEDIATELY BY A LICENSED WASTE MANAGEMENT FIRM, AND SIGNIFICANT SPILLS MUST BE REPORTED TO THE APPROPRIATE REGULATORY AGENCY.
4. THE PIPES AND STRUCTURAL PARTS SHALL BE CLEANED AND REPAIRED AS NEEDED.
5. ALL MAINTENANCE SHALL BE PERFORMED BY THE OWNER OR BY THE OWNER'S REPRESENTATIVE AT THE OWNER'S EXPENSE.
6. MINIMIZE SURFACE EROSION FROM PERVIOUS SURFACES AT ALL TIMES. MAINTAIN GRASS, SOD, AND/OR MULCH COVERAGE UPON LANDSCAPING.
7. REMOVE DEBRIS ON TOP OF INLET GRATES AFTER EVERY RAINFALL. REMOVE OILS, SILTS AND AGGREGATES, AND DEBRIS FROM ALL INLETS AND STRUCTURES.
8. THE DISPOSAL OF THE LIQUID AND SOLID MATTER SHOULD BE AS FOLLOWS:
   - A. ALL LIQUID MATERIAL IN THE SEPARATOR INLET SHALL BE PUMPED INTO A SUITABLE TANK TRUCK AND DISPOSED OF AT AN APPROVED SANITARY DISTRICT DISCHARGE MANHOLE OR BE TAKEN TO AN APPROVED SEWAGE TREATMENT PLANT FOR DISCHARGE.
   - B. THE SOLID MATERIAL SHALL BE LANDFILLED IN AN APPROVED SANITARY LANDFILL.

OPERATION AND MAINTENANCE SCHEDULE STORMCEPTOR WATER QUALITY DEVICE

A. THE STORMCEPTOR WATER QUALITY STRUCTURE SHALL BE PERIODICALLY INSPECTED AND CLEANED TO MAINTAIN OPERATION AND FUNCTION. THE OWNER SHALL INSPECT THE STORMCEPTOR UNIT YEARLY AT A MINIMUM, UTILIZING THE STORMCEPTOR INSPECTION/MONITORING FORM. INSPECTIONS SHALL BE DONE BY USING A CLEAR PLEXIGLAS TUBE ("SLUDGE JUDGE") TO EXTRACT A WATER COLUMN SAMPLE. WHEN THE SEDIMENTS DEPTHS EXCEED THE LEVEL SPECIFIED IN TABLE 6 OF THE STORMCEPTOR TECHNICAL MANUAL, THE UNIT MUST BE CLEANED.

B. THE STORMCEPTOR 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 STORMCEPTOR UNIT SHALL BE DONE USING A VACUUM TRUCK WHICH WILL REMOVE 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.

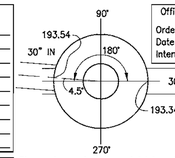
D. THE INLET AND OUTLET PIPES SHALL BE CHECKED FOR ANY OBSTRUCTIONS AT LEAST ONCE EVERY SIX MONTHS. IF OBSTRUCTIONS ARE FOUND THE OWNER SHALL HAVE THEM REMOVED. STRUCTURAL PARTS OF THE STORMCEPTOR UNIT SHALL BE REPAIRED AS NEEDED.

E. THE OWNER SHALL RETAIN AND MAKE THE STORMCEPTOR INSPECTION/MONITORING FORMS AVAILABLE TO THE HOWARD COUNTY OFFICIALS UPON THEIR REQUEST.

Stormceptor Order Request Form

Contractor Information

Name
Address
City
State
Zip Code
Contact
Phone
Fax



Office Use Only
Order# ____
Date ____
Internal Sale ____

Owner Information
Name COLUMBIA GATEWAY OFFICE PARK, L.L.C.
Phone
Fax

Please draw orientation of inlet and outlet pipes on diagram along with pipe inside diameter (in.) and invert elevation (ft.). clearly mark inlet pipes with an I and outlet pipes with an O and provide the inlet/outlet pipe angle in degrees.

Stormceptor® Model			
STA		STC-L	
900	☐	3600	☐
1200	☐	4800	☐
1800	☐	6000	■
2400	☐	7200	☐

Insert Size	
22"	☐
32"	☐
44"	■
Custom	____

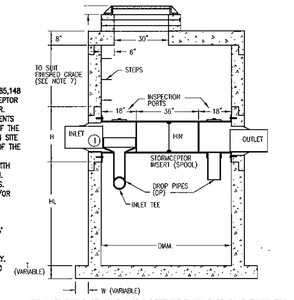
Manhole SC-1
Top Elevation (ft) 314.00
Inlet Pipe Invert (ft) 305.92
Outlet Pipe Invert (ft) 305.82
Pipe Type: CONCRETE (IN) – HDPE (OUT) 30" (IN), 30" (OUT)
Pipe Inside Diameter (in) [ID]
Pipe Outside Diameter (in) [OD]

Project Name GATEWAY OFFICE PARK
Approximate time frame until required delivery (weeks)
Delivery Address: Street
City State Zip Code
Designer Company FREDERICK WARD ASSOCIATES
Designer Contact MIKE RAZAVI Phone (410) 720-6900 Fax (410) 720-6226

Please fax this sheet back to Hydro Conduit/Virginia Precast at (804) 798-3426
Attn: Dave Brinser / Bryant Lowery (Phone: 1-800-999-2278)

For credit information/applications contact Carole Broadus at (804) 798-6068
For Technical Assistance Please Call Stormceptor Corporation at (301) 762-8361 or toll free at 1-800-762-4703

09/12/95



NOTES:
1. THE STORMCEPTOR IS PROTECTED BY U.S. PATENT NO. 4,985,148
2. CAST IRON FRAME & COVER TO BE APPROVED BY STORMCEPTOR CORPORATION, "STORMCEPTOR TO BE EMBOSSED ON COVER.
3. BEDDING, BACKFILL AND GENERAL INSTALLATION REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER AND A PROFESSIONAL ENGINEER BASED ON SITE SPECIFIC SOILS CONDITIONS, SUBJECT TO THE APPROVAL OF THE REGULATORY AGENCIES.
4. SIZING OF THE STORMCEPTOR SHALL BE IN ACCORDANCE WITH THE GUIDELINES PROVIDED BY STORMCEPTOR CORPORATION. SUBJECT TO THE APPROVAL OF THE REGULATORY AGENCIES.
5. THE STORMCEPTOR SHOULD BE MAINTAINED ANNUALLY AND/OR IMMEDIATELY FOLLOWING ANY KNOWN SPILLS.
6. THE STORMCEPTOR CONFORMS TO ASTM C 478 DESIGN SPECIFICATIONS / STANDARDS.
7. THE 72" DIAMETER SECTION SHOULD EXTEND A MIN. OF 5" ABOVE THE INSERT OR TO THE SURFACE FOR ACCESS TO THE INSPECTION PORTS.
8. A MINIMUM OF 1 STEP IS TO BE USED IN THE ACCESS WAY.
9. COVER TO BE OFFSET 6" FROM ACCESS WALL ADJACENT TO INLET INSPECTION PORT.
10. NON-SMOOTH WALL O.D. PIPE TO BE GROUTED IN PLACE
11. MAXIMUM OF 1" FALL FROM INLET TO OUTLET.
12. FURTHER TECHNICAL INFORMATION IS AVAILABLE FROM STORMCEPTOR CORPORATION 1(800) 762-4703

NOTE: VARIABLE BASE SLAB WIDTH DEPENDENT ON BASE SLAB THICKNESS

THE PRECAST CONCRETE STORMCEPTOR (STC)
SCALE: NOT TO SCALE

GENERAL NOTES FOR STORM DRAIN CONSTRUCTION

1. MANHOLE LIDS AND INLET GRATES SHALL BE TRAFFIC BEARING AND BICYCLE SAFE.
2. ALL MANHOLE LIDS, INLET GRATES, AND CLEANOUT TOPS TO BE ADJUSTED TO MATCH CROSS-PITCH AND SLOPE OF EXISTING AND PROPOSED GRADES.
3. ROOF DRAIN PIPE TO BE HDPE, OR PVC SCH. 40, UNLESS OTHERWISE NOTED.
4. ALL STORM DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE HOWARD COUNTY STANDARDS AND SPECIFICATIONS.
5. INFORMATION IS UNAVAILABLE REGARDING THE LOCATION OF ON-SITE TELEPHONE, GAS, AND ELECTRIC.

CONTRACTOR INSTALLATION INSTRUCTIONS: PRECAST CONCRETE STORMCEPTOR

1. STAKE-OUT THE LOCATION OF THE STORMCEPTOR AND EXCAVATE HOLE. EXCAVATE ADEQUATE SPACE TO CONNECT INLET AND OUTLET PIPES TO UNIT. INSTALL A 12" DEEP (OR AS REQUIRED) LAYER OF COMPACTED (95% STANDARD PROCTOR DENSITY OR LOCAL AND STATE REQUIREMENTS, AS DIRECTED BY THE INSPECTOR) AGGREGATE SUBBASE AT BOTTOM OF EXCAVATION. INSTALL MULE OR SHORING, AS NEEDED.
2. CHECK ELEVATION OF UNIT BY MEASURING ITS SECTIONS FROM BASE OF THE STORAGE CHAMBER (BOTTOM OF UNIT'S SLAB) TO THE INVERT OF STORMCEPTOR BYPASS CHAMBER INLET ELEVATION (FIBERGLASS INSERT). SUBTRACT THIS DISTANCE FROM DESIGN INVERT ELEVATION TO DETERMINE TOP OF SUBBASE ELEVATION. CHECK ELEVATION OF INSTALLED SUBBASE AND ADJUST AS NEEDED.
3. SECURE INSPECTOR APPROVAL OF SUBGRADE AND SUBBASE.
4. INSTALL STORAGE CHAMBER, INSTALL SCREW INSERTS INTO BASE OF STORAGE CHAMBER. ATTACH CABLES OR CHAINS TO ALL 3 LIFTING LUGS ON THE BASE SLAB. USING LARGE EQUIPMENT OR CRANE LIFT AND PLACE THE BASE SECTION OF THE STORAGE CHAMBER IN THE EXCAVATED HOLE ON THE SUBBASE. MAKE SURE THAT THE BASE IS LEVEL. SPECIFIC ALIGNMENT OF THIS PART IS NOT REQUIRED. INSTALL RUBBER GASKET ON BASE UNIT AND COAT WITH LUBRICATING GREASE (PROVIDED IN SHIPMENT). IF NOT PRELUBRICATED. INSTALL ADDITIONAL STORAGE CHAMBER SECTIONS, AS REQUIRED (PROCEDURE IS SAME AS STEP 8.).
5. INSTALL REDUCING SLAB. (STORMCEPTOR MODELS STC-2400, STC-3600, STC-4800, STC-6000 AND STC-7200) CHECK THAT SECTION IS SET FLUSH, LEVEL AND IS AT THE PROPER ELEVATION. INSTALL RUBBER GASKET ON THE TRANSITION SLAB SPIGOT AND COAT WITH LUBRICATING GREASE (PROVIDED IN SHIPMENT).
6. INSTALL BYPASS CHAMBER OF STORMCEPTOR WITH FACTORY INSTALLED STORMCEPTOR INSERT. LIFT BYPASS SECTION AND INSTALL, WHILE CHECKING ALIGNMENT AND GRADE OF INLET AND OUTLET DRAINAGE PIPES. CHECK TO MAKE SURE THE BYPASS CHAMBER IS SET FLUSH, LEVEL AND IS AT THE PROPER ELEVATION. THE BYPASS CHAMBER MUST BE ORIENTED SUCH THAT INLET PIPE DISCHARGES INTO THE V-SHAPED FIBERGLASS WEIRS (INSIDE INSERT). INSTALL RUBBER GASKET ON TOP OF BYPASS SECTION AND COAT WITH LUBRICATING GREASE, IF NOT PRELUBRICATED.
7. INSTALL STORMCEPTOR DROP PIPES ACCORDING TO STC PIPE INSTALLATION PROCEDURE.
8. INSTALL RISER SECTION. LIFT RISER SECTION AND INSTALL, WHILE CHECKING THAT SECTION IS SET FLUSH AND IS AT PROPER ELEVATION AND THAT IS LEVEL. SPECIFIC ALIGNMENT OF THIS PART IS REQUIRED IF STEP(S) ARE INCLUDED. ALIGN STEPS ABOVE INLET INSPECTION PORT. NOTE: FOR SHALLOW INSTALLATIONS THIS SECTION MAY NOT BE REQUIRED.
9. INSTALL TOP CAP WITH OPENING FOR STORMCEPTOR COVER. IF OPENING IS OFFSET (NOT CENTERED) THE TOP CAP OPENING SHOULD BE ORIENTED ABOVE THE STORMCEPTOR INLET INSPECTION PORT (PLUG).
10. BACKFILL STORMCEPTOR WITH APPROVED BACKFILL MATERIAL (NO ORGANIC OR TOPSOIL IS TO BE USED FOR BACKFILL). BACKFILL AND COMPACT IN 8 INCH LIFTS. BACKFILL SHOULD BE COMPACTED TO 95% OF STANDARD PROCTOR DENSITY, OR LOCAL AND STATE REQUIREMENTS, AS DIRECTED BY THE INSPECTOR.
11. INSTALL AND SET GRADE ADJUSTING RINGS, AS NEEDED.
12. INSTALL AND SET STORMCEPTOR FRAME AND COVER.
13. INSTALL INLET AND OUTLET STORM DRAIN PIPES. CONNECT INLET AND OUTLET STORM DRAIN PIPES WITH FLEXIBLE BOOTS (WHEN PROVIDED) AND NON-SHRINK GROUT WHEN NO FLEXIBLE BOOTS ARE PROVIDED. THE INVERT OF THE INLET AND OUTLET PIPE IS TO MATCH WITH THE INVERT OF THE STORMCEPTOR INSERT. FLEXIBLE BOOT INSTALLATION PROCEDURES : CENTER THE PIPE IN THE BOOT OPENING. LUBRICATE THE OUTSIDE OF THE PIPE AND/OR THE INSIDE OF THE BOOT IF THE PIPE OUTSIDE DIAMETER IS THE SAME AS THE INSIDE DIAMETER OF THE BOOT. POSITION THE PIPE CLAMP IN THE GROOVE OF THE BOOT WITH THE SCREW AT THE TOP. TIGHTEN THE PIPE CLAMP SCREW TO 60 INCH POUNDS. IF THE PIPE IS MUCH SMALLER THAN THE BOOT, LIFT THE BOOT SUCH THAT IT CONTACTS THE BOTTOM OF THE PIPE WHILE TIGHTENING THE CLAMP TO ENSURE EVEN CONTRACTION OF THE RUBBER. MOVE THE PIPE HORIZONTALLY AND/OR VERTICALLY TO BRING IT TO GRADE.
14. THE STORMCEPTOR SHOULD BE PUMPED OUT WHEN THE SEDIMENT CONTROL MEASURES ARE REMOVED (SITE PERMANENTLY STABILIZED).
15. FINAL INSPECTION.

DIMENSIONS*

MODEL	DIAM (ft)	DROP PIPE DIAM. (in) (DP)	HL (in)	↔ (in)	↕ (in)
STC 900	6	6	42	8	8
STC 1200	6	6	60	8	8
STC 1800	6	6	96	8	8
STC 2400	8	8	76	8	0
STC 3600	8	8	118	8	0
STC 4800	10	10	106	12	0
STC 6000	10	10	130	12	0
STC 7200	12	12	114	14	0

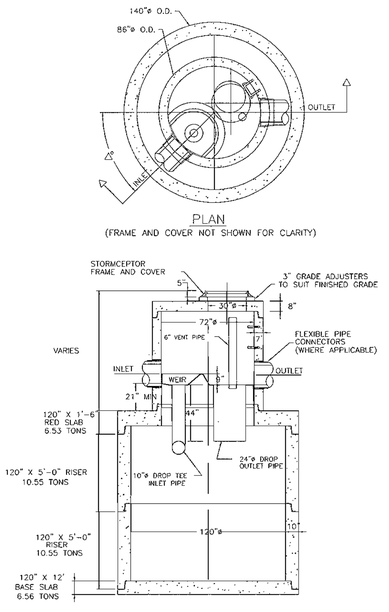
DIMENSIONS*

PIPE DIAMETER D (in)	PIPE MATERIAL	HIN (in)	H (in)	L (in)
10	PVC	22	36	8
10	CONC / PE RIB	22	36	7
12	PVC / PE RIB	22	36	9
12	CONCRETE	22	42	11
15	PVC / PE RIB	22	42	9.5
15	CONCRETE	22	48	11.5
18	PVC / PE RIB	22	48	10
18	CONCRETE	32	48	11
21	PVC / PE RIB	32	48	9.5
21	CONCRETE	32	54	11.5
24	PVC	32	48	9
24	PE RIBBED	32	54	10
24	CONCRETE	32	54	11
27	PVC	32	54	8.5
27	CONCRETE	44	60	11.5
30	CONCRETE	44	60	12
33	CONCRETE	44	60	12.5
36	CONCRETE	44	60	13

FLOWS AND CAPACITIES*

MODEL	MAX. TREATED FLOW RATE (gpm)**	SEDIMENT CAPACITY (U.S. gal.)	OIL CAPACITY (U.S. gal.)	TOTAL CAPACITY (U.S. gal.)
STC 900	285	70	280	910
STC 1200	285	110	280	1230
STC 1800	285	195	280	1860
STC 2400	475	210	560	2405
STC 3600	475	390	560	3720
STC 4800	800	515	675	5030
STC 6000	800	675	675	6205
STC 7200	1110	800	680	7510

* APPROXIMATE
** WITHOUT BY-PASSING



STC 6000 PRECAST CONCRETE STORMCEPTOR
SCALE: NOT TO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/9/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/15/02
DIRECTOR — DATE 10/16/02

OWNER/DEVELOPER
CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

NO.	REVISION	DATE

STORMCEPTOR DETAILS, NOTES AND SPECIFICATIONS
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'
A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 PARCEL 604
6TH 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 REGISTERED PROFESSIONAL ENGINEER
ROBERT H. VOGEL, PE No.16193

DESIGN BY: CLS
DRAWN BY: CLS
CHECKED BY: CLS
DATE: APR. 19, 2002
SCALE: AS SHOWN
W.O. NO.: 2017165

SHEET 16 OF 26

SDP-02-52

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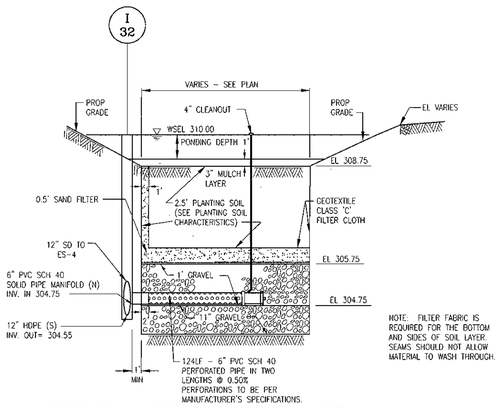


DETAIL – BIORETENTION AREA #1

NOT TO SCALE

Appendix B.3. Construction Specifications for Sand Filters, Bioretention and Open Channels

Specifications for Bioretention

1. Material Specifications

The allowable materials to be used in bioretention area are detailed in Table B.3.2.

2. Planting Soil

The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the bioretention area that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05.

The planting soil shall be tested and shall meet the following criteria:

pH range	5.2 – 7.0
organic matter	1.5 – % (by weight)
magnesium	35 lb./ac
phosphorus (phosphate – P 2O5)	75 lb./ac
potassium (potash – K 2O)	85 lb./ac
soluble salts	nit to exceed 500 ppm

All bioretention areas shall have a minimum of one test. Each test shall consist of both the standard soil test for pH, phosphorus, and potassium and additional test of organic matter, and soluble salts. A textural analysis shall be performed for each location where the top soil was excavated.

Since different lab calibrate their testing equipment differently, all testing results shall come from the same testing facility.

Should the pH fall out of the acceptable range, it may be modified (higher) with lime or (lower) with iron sulfate plus sulfur.

3. Compaction

It is very important to minimize compaction of both the base of the bioretention area and the required backfill. When possible, use hoes to remove original soil. If bioretention areas are excavated using loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tire. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design failure.

Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as chisel plow, ripper, or subsoiler. These tilling operations are to retracture the soil profile through the 12 inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment.

Rototill 2 to 3 inches of sand into the base of the bioretenion facility before backfilling the required sand layer. Pump any ponded water before preparing (rototilling) base.

When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade.

When backfilling the bioretention facility, place soil in lifts 12" to 18". Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grade bioretention materials with light equipment such as a compact loader or a dozer/loader with marsh tracks.

4. Plant Material

Refer to Plant List on sheet 23 of 26 for plant material in the bioretention areas.

5. Plant Installation

Mulch should be placed to a uniform thickness of 2" to 3". Shredded hardwood much is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

Root stock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted so 1/8th of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process.

Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.

Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications.

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers defeats, or at a minimum, impedes this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rototill urea fertilizer at a rate of 2 pounds of nitrogen per 1000 square feet.

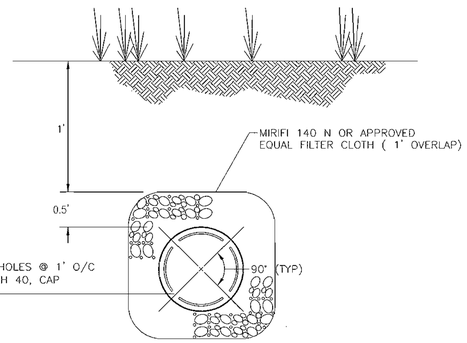
6. Underdrains

Underdrains are to be placed on a 3'-0" wide section filter cloth. Pipe is placed next, followed by the gravel bedding. The ends of underdrain pipes not terminating in an observation well shall be capped.

The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation well and/or clean-out pipes must be provided (one minimum per every 1000 square feet of surface area).

7. Miscellaneous

The bioretention facility may not be constructed until all contributing drainage area has been stabilized.



UNDERDRAIN DETAIL 6" P.V.C. SCH-40

NOT TO SCALE

OPERATION AND MAINTENANCE SCHEDULE FOR BIORETENTION AREAS

1. annual maintenance of plant material, mulch layer and soil Layer is required. maintenance of mulch and soil is limited To correcting areas of erosion or wash out. any mulch Replacement shall be done in the spring. plant material Shall be checked for disease and insect infestation and Maintenance will address dead material and pruning.

2. schedule of plant inspection will be twice a year in spring And fall. this inspection will include removal of dead and Diseased vegetation considered beyond treatment, treatment of All deficient stakes and wires.

3. mulch shall be inspected each spring. remove previous mulch Layer before applying new layer once every 2 to 3 years.

4. soil erosion to be addressed on an as needed basis, with a Minimum of once per month and after heavy storm events.

TABLE B.3.2 MATERIALS SPECIFICATIONS FOR BIORETENTION

MATERIAL	SPECIFICATION	SIZE	NOTES
PLANTINGS	SEE APPENDIX A, TABLE A.4	N/A	PLANTINGS ARE SITE-SPECIFIC
PLANTING SOIL [2.5' TO 4' DEEP]	SAND 35-60% SILT 30-55% CLAY 10-25%	N/A	USDA SOIL TYPES LOAMY SAND, SANDY LOAM OR LOAM
MULCH	SHREDDED HARDWOOD		AGED 6 MONTHS, MINIMUM
PEA GRAVEL DIAPHRAGM AND CURTAIN DRAIN	PEA GRAVEL: ASTM-D-448 ORNAMENTAL STONE: WASHED COBBLES	PEA GRAVEL: NO. 6 STONE: 2" TO 5"	
GEOTEXTILE	CLASS "C"- APPARENT OPENING SIZE (ASTM-D-4751), GRAB TENSILE STRENGTH (ASTM-D-4632), PUNCTURE RESISTANCE (ASTM-D-4833)	N/A	FOR USE AS NECESSARY BENEATH UNDERDRAINS ONLY
UNDERDRAIN GRAVEL	AASHTO M-43	0.375" TO 0.75"	
UNDERDRAIN PIPING	F 758, TYPE PS 28 OR AASHTO M-278	4" TO 6" RIGID SCHEDULE 40 PVC OR SDR35	3/8" PERF. @ 6" ON CENTER, 4 HOLES PER ROW; MINIMUM OF 3" OF GRAVEL OVER PIPES; NOT NECESSARY UNDERNEATH PIPES
POURED IN PLACE CONCRETE (IF REQUIRED)	MSHA MIX NO. 3; F'c=3500 PSI@ 28 DAYS, NORMAL WEIGHT, AIR-ENTRAINED, REINFORCING TO MEET ASTM-615-60	N/A	ON-SITE TESTING OF POURED-IN-PLACE CONCRETE REQUIRED: 28 DAY STRENGTH AND SLUMP TEST; ALL CONCRETE DESIGN (CAST-IN-PLACE OR PRE-CAST) NOT USING PREVIOUSLY APPROVED STATE OR LOCAL STANDARDS REQUIRES DESIGN DRAWINGS SEALED AND APPROVED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND – DESIGN TO INCLUDE MEETING ACI CODE 350.R/89; VERTICAL LOADING (H-10 OR H-20); ALLOWABLE HORIZONTAL LOADING (BASED ON SOIL PRESSURES); AND ANALYSIS OF POTENTIAL CRACKING
SAND [1' DEEP]	AASHTO-M-6 OR ASTM-C-33	0.02" TO 0.04"	SAND SUBSTITUTIONS SUCH AS DIABASE AND GRAYSTONE #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR DOLOMITIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO "ROCK DUST" CAN BE USED FOR SAND.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	MK	DATE 10/2/02
CHIEF, DIVISION OF LAND DEVELOPMENT		DATE 10/15/02
DIRECTOR		DATE 10/16/02

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

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 9/27/02

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 9/27/02

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 10/1/02

OWNER/DEVELOPER

CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

NO.	REVISION	DATE

BIORETENTION DETAILS & SPECIFICATIONS
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'
A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 PARCEL 604
6TH 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 REGISTERED PROFESSIONAL ENGINEER 10/2/02
ROBERT H. VOGEL, PE No.15193

DESIGN BY: CLS
DRAWN BY: JAJ
CHECKED BY: RHV
DATE: APR. 19, 2002
SCALE: AS SHOWN
W.O. NO.: 2017165

SHEET 19 OF 26

SDP-02-52

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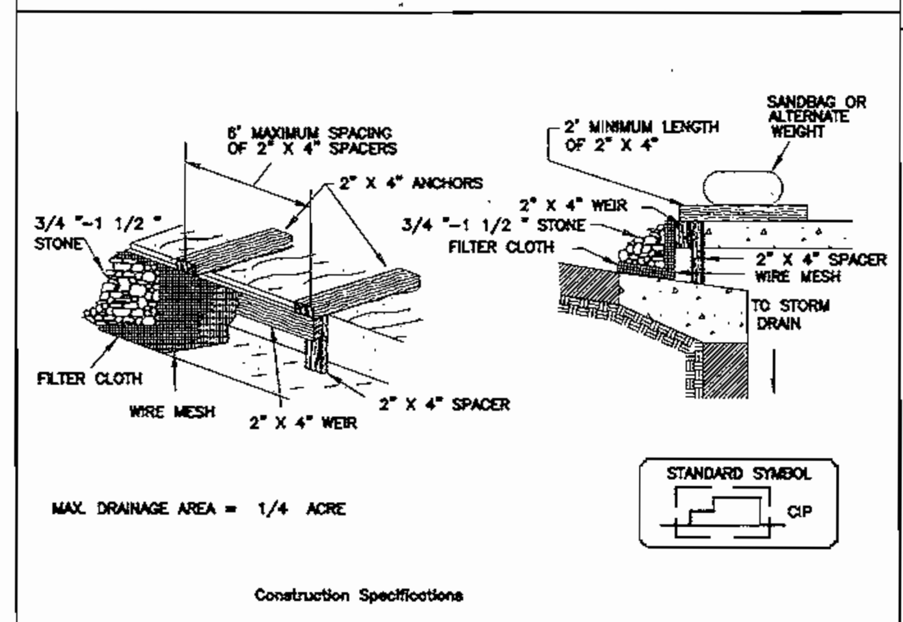
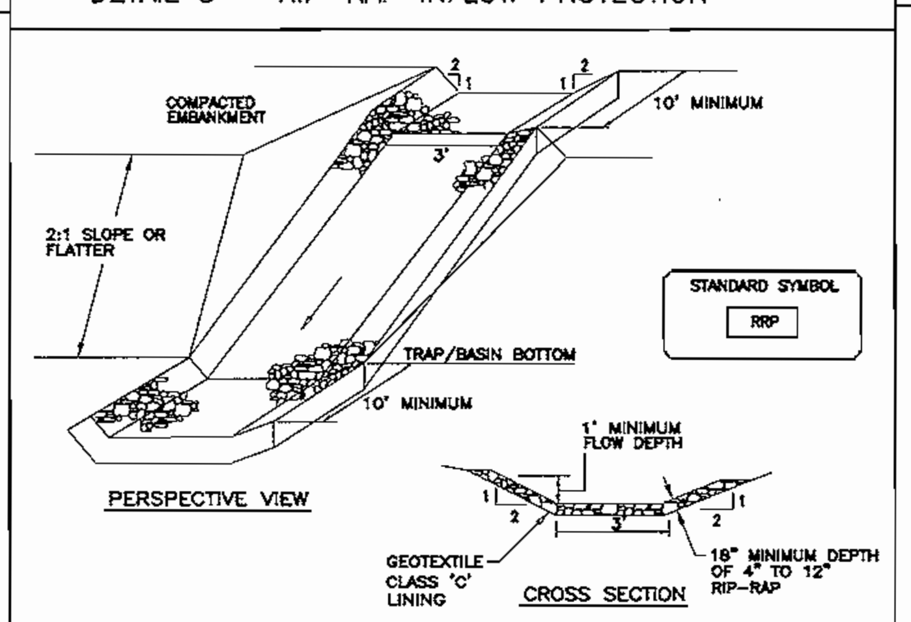
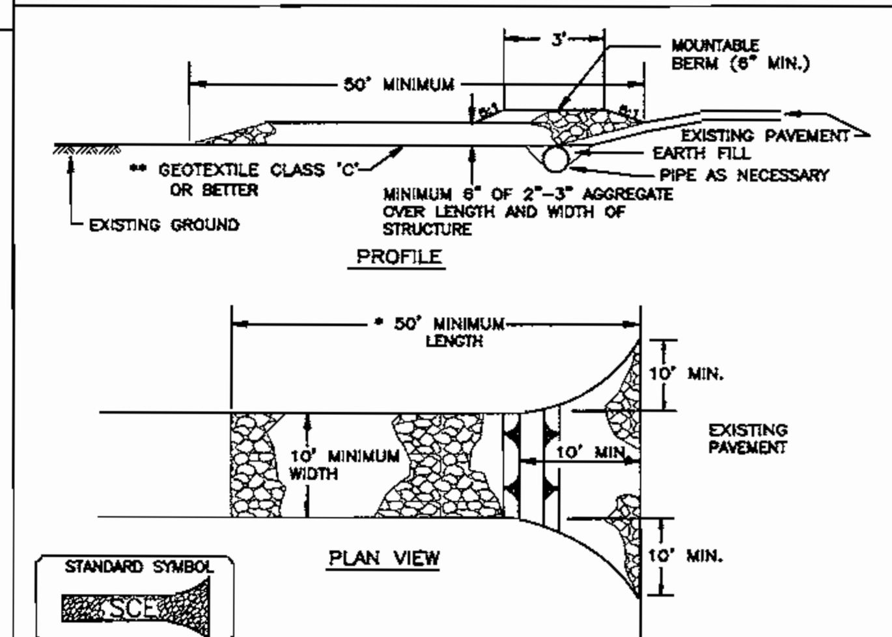
DETAIL 23C - CURB INLET PROTECTION (COG OR COS INLETS)



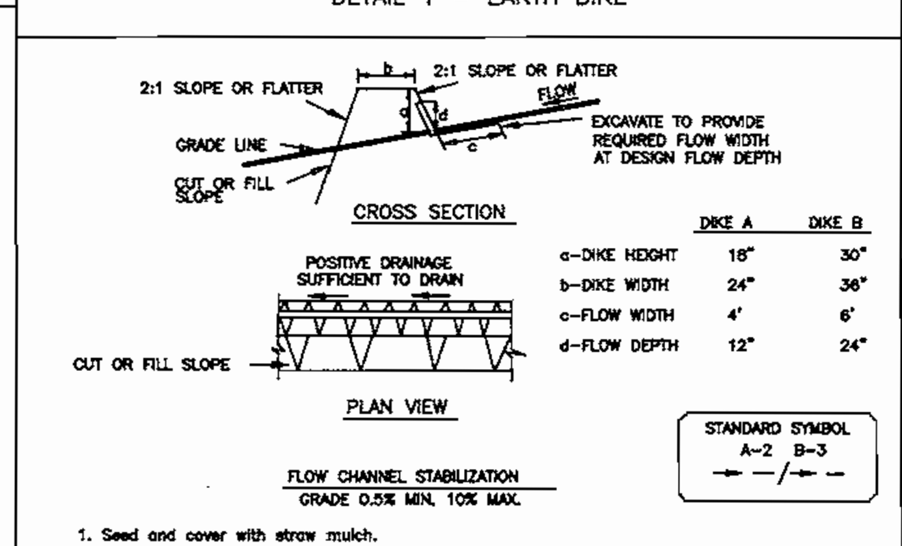
DETAIL 5 - RIP-RAP INFLOW PROTECTION



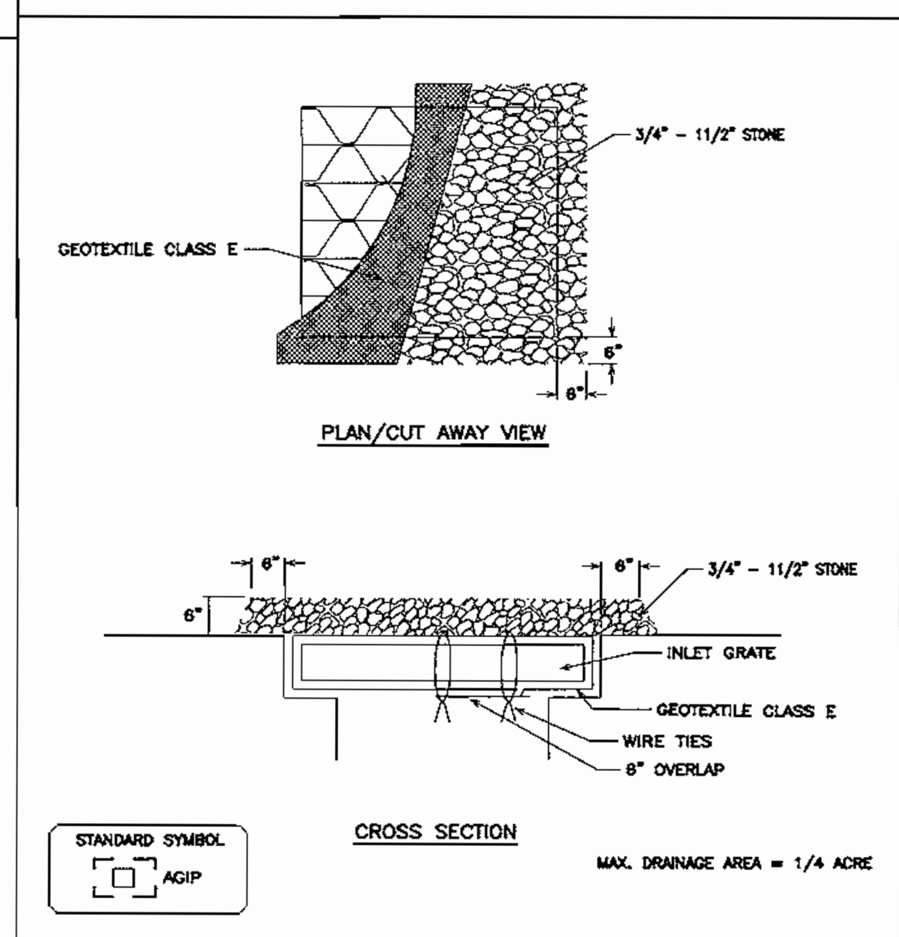
DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



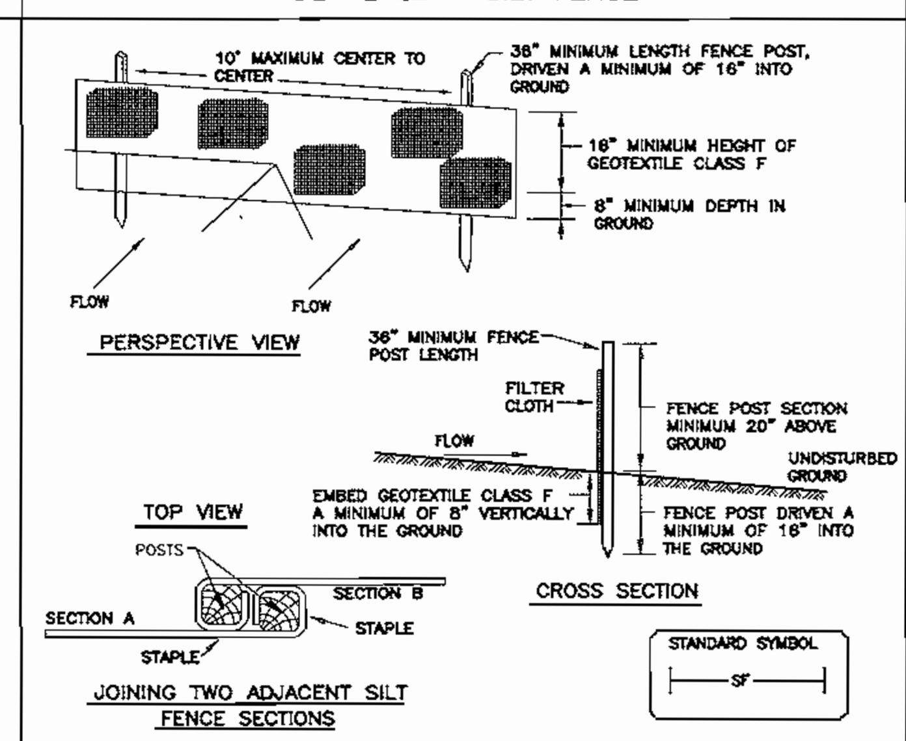
DETAIL 1 - EARTH DIKE



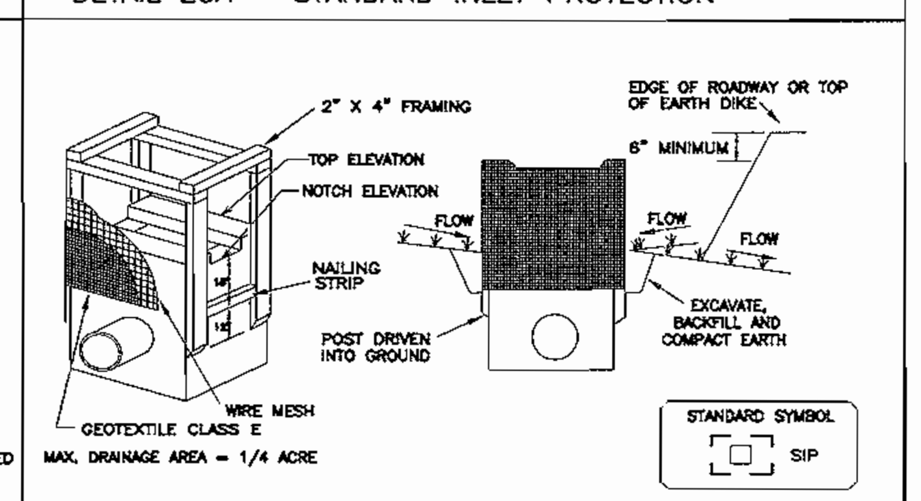
DETAIL 23B - AT GRADE INLET PROTECTION



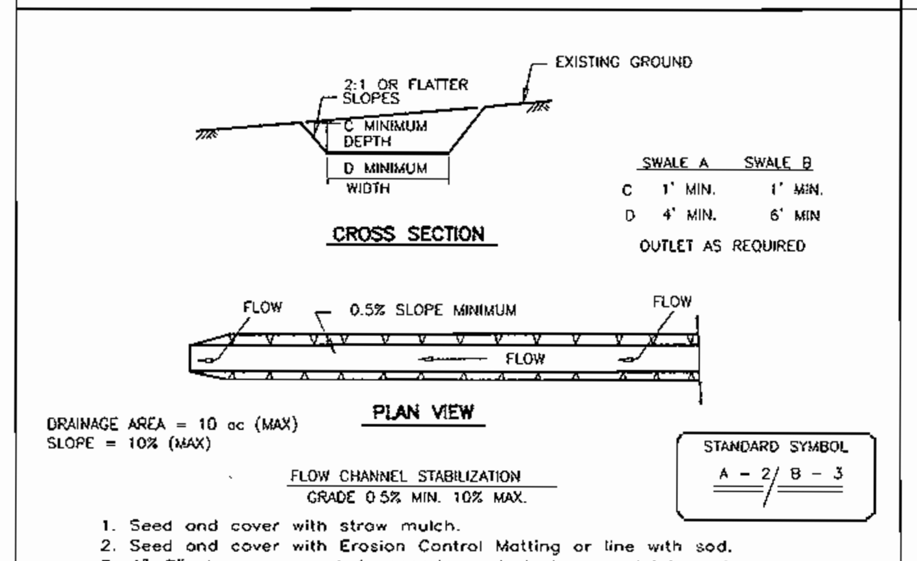
DETAIL 22 - SILT FENCE



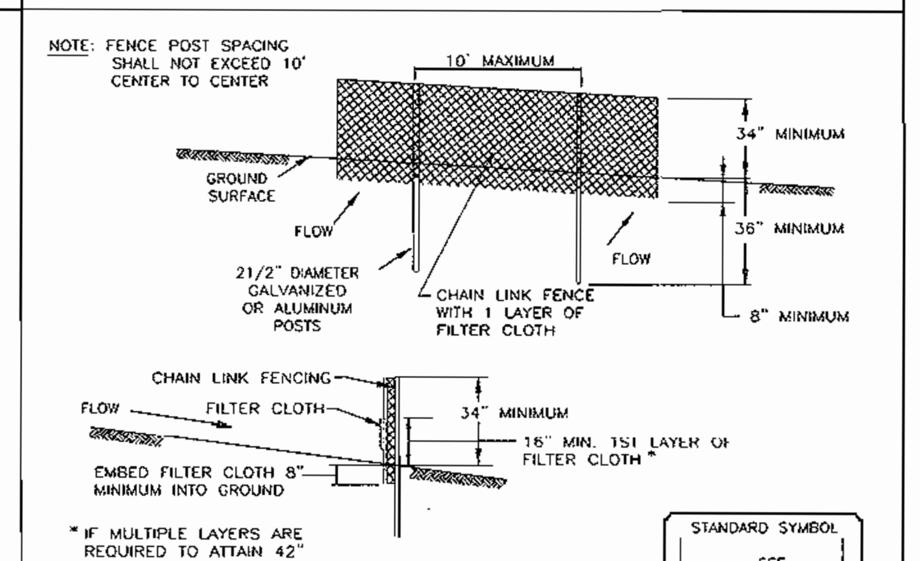
DETAIL 23A - STANDARD INLET PROTECTION



DETAIL 2 - TEMPORARY SWALE



DETAIL 33 - SUPER SILT FENCE



SEQUENCE OF CONSTRUCTION

1. Obtain grading permit.
2. Notify Howard County Bureau of Inspections and Permits at (410)313-1880 at least 24 hours before starting any work.
3. Install Stabilized Construction Entrance, Silt Fence Perimeter, Concrete Riser and Outfall, and Temporary Sediment Basin Dewatering Device. Stabilize disturbed areas immediately with Temporary Seeding. (5 days)
4. Upon the approval of the erosion and sediment control inspector, rough grade site. Install Earth Dike diversions to drain to basin. Install water, sewer, storm drains, and inlet protection. Immediately stabilize all disturbed areas with temporary seeding. (2 weeks)
6. Begin building construction. Construct dumpster pads and sidewalks. Stabilize all disturbed areas immediately with temporary seeding. (3 weeks)
7. Construct roadway widening along Lark Brown Road. Shift Earth Dike as shown on plan and as necessary in the field to intercept gutter flow along Lark Brown Road. Immediately stabilize pavement area with gravel base course. Concurrent with the roadway widening, install curb and gutter in the parking and driveway areas on-site. Immediately stabilize with gravel base course. Pave Lark Brown Road and the parking lots and driveways. (1 1/2 weeks)
8. Install any remaining proposed curb and gutter, pavement, curb stops and sidewalks. Permanently stabilize all disturbed areas. (4 days)
9. Upon stabilization of all disturbed site areas, and prior to removal of the basin dewatering device, install infiltration trenches, bioretention area, and site landscaping, as shown on as shown on the detail sheets. (2 weeks)
10. With permission of the Inspector, convert the Temporary Sediment Basin to the Permanent Stormwater Management Pond. Install all of the Stormwater Management area landscaping, shown in the details. (2 weeks)
11. With permission of the Inspector, remove all Sediment Controls from the site. Stabilize all disturbed areas immediately. (1 week)

NOTES

1. During grading and after each rainfall, contractor will inspect and provide necessary maintenance to the Sediment Control measures on this plan.
2. Following initial soil disturbances or redisturbance permanent or temporary stabilization shall be completed within :
   - A. 7 calendar days for all perimeter Sediment Control Structures, Dikes, Swales and all slopes greater than 3:1.
   - B. 14 calendar days for all other disturbed areas.

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 practice 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 composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

II. For sites having disturbed areas under 5 acres:

i. Place topsoil (if required) and apply soil amendments as specified in 20.0 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 20.0 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.

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 applying 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.

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/100 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.

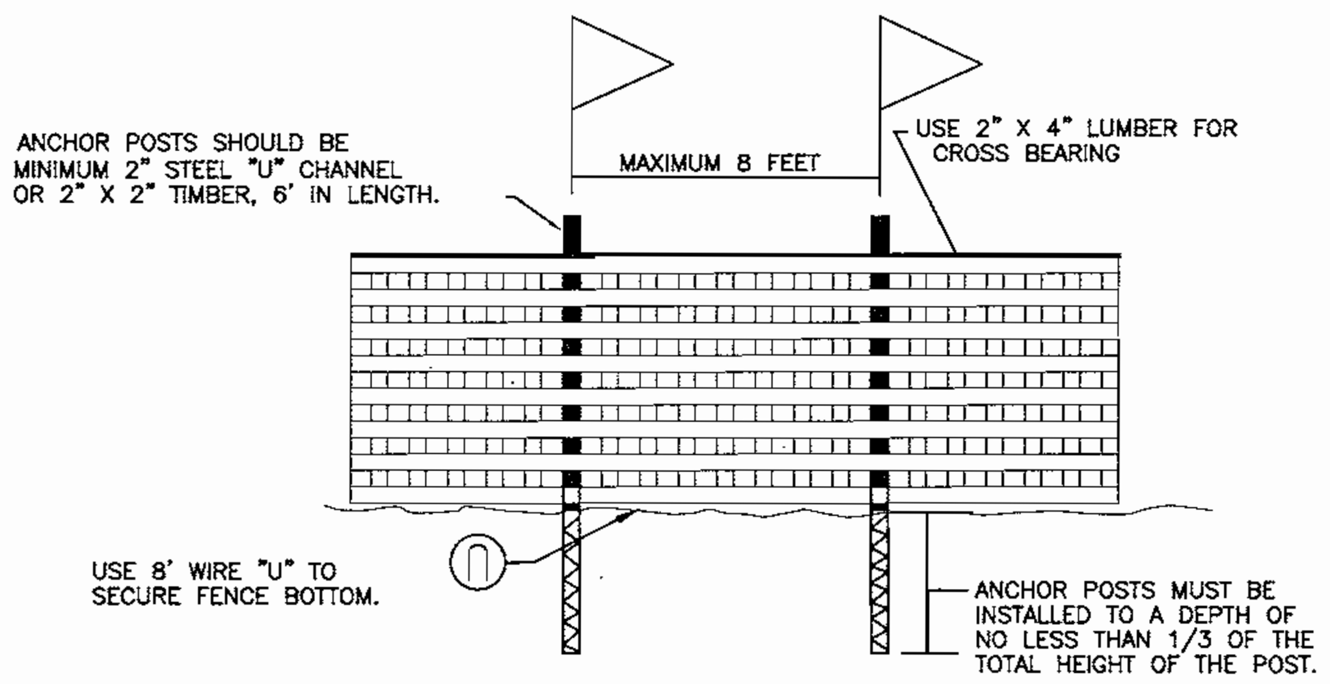
SEDIMENT CONTROL NOTES

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. 1, 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	7.807 Acres
Area Disturbed	7.646 Acres
Area to be roofed or paved	4.53 Acres
Area to be vegetatively stabilized	3.112 Acres
Total Cut	75,000 CY
Total Fill	9,000 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



NOTES:
1. Forest protection device only.
2. Retention area will be set as part of the review process.
3. Boundaries of retention area should be staked and flagged prior to installing device.
4. Roof damage should be avoided.
5. Protection signage should be used.
6. Device should be maintained throughout construction.

BLAZE ORANGE PLASTIC MESH
TYPICAL TREE PROTECTION FENCE DETAIL
NO SCALE

NO.	REVISION	DATE

EROSION & SEDIMENT CONTROL NOTES & DETAILS
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'
A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 — PARCEL 604
6TH 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 — REGISTERED PROFESSIONAL ENGINEER
ROBERT H. VOGEL, PE No.16193

DESIGN BY: CLS
DRAWN BY: JAJ/CLY
CHECKED BY: RHV
DATE: APR. 19, 2002
SCALE: AS SHOWN
W.O. NO.: 2017165

20 SHEET OF 26

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 10/8/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/15/02
DIRECTOR — DATE 10/16/02

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 10/7/02

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 10/7/02

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 9/27/02

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 10/2/02

OWNER/DEVELOPER
CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

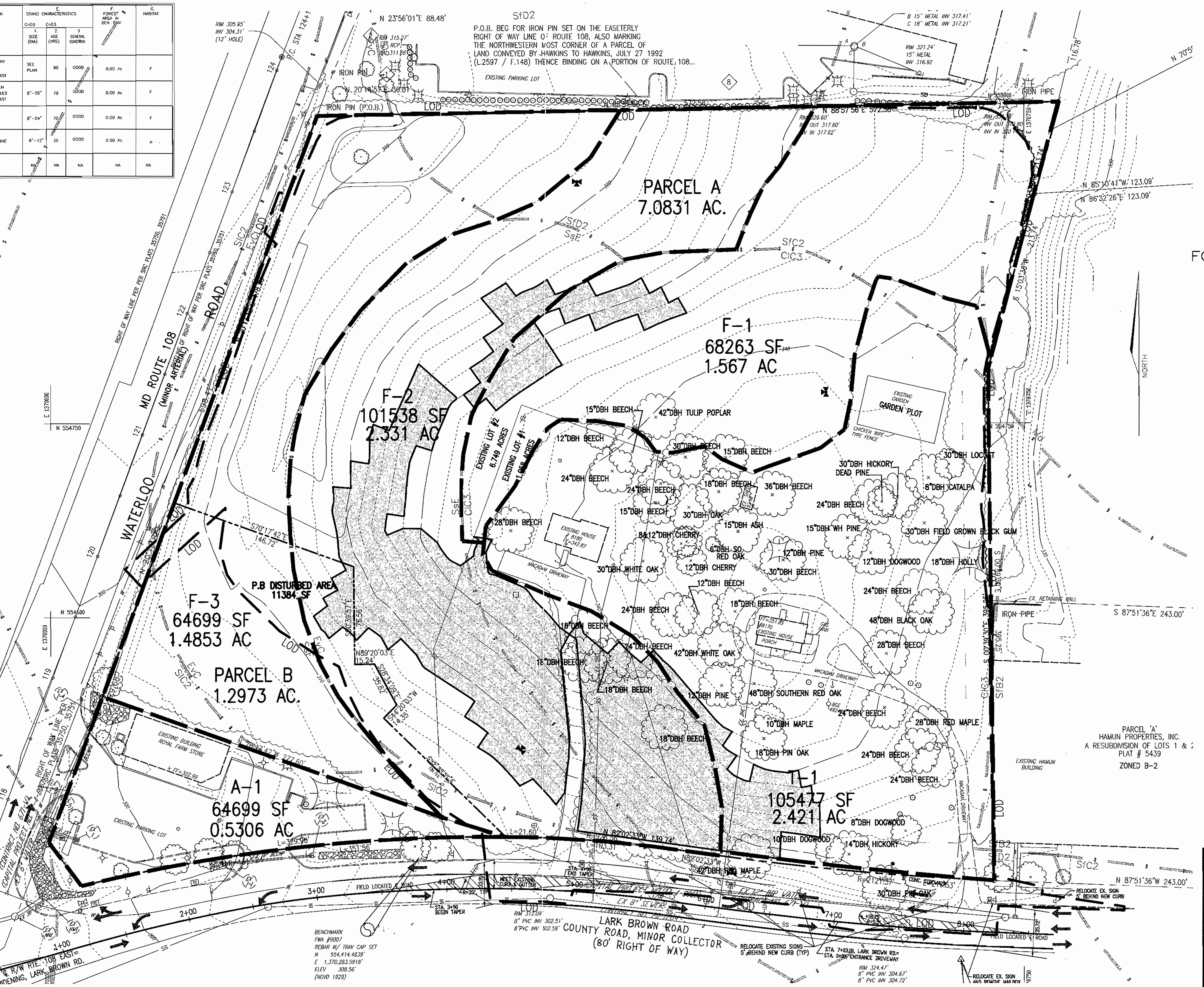
SDP-02-52

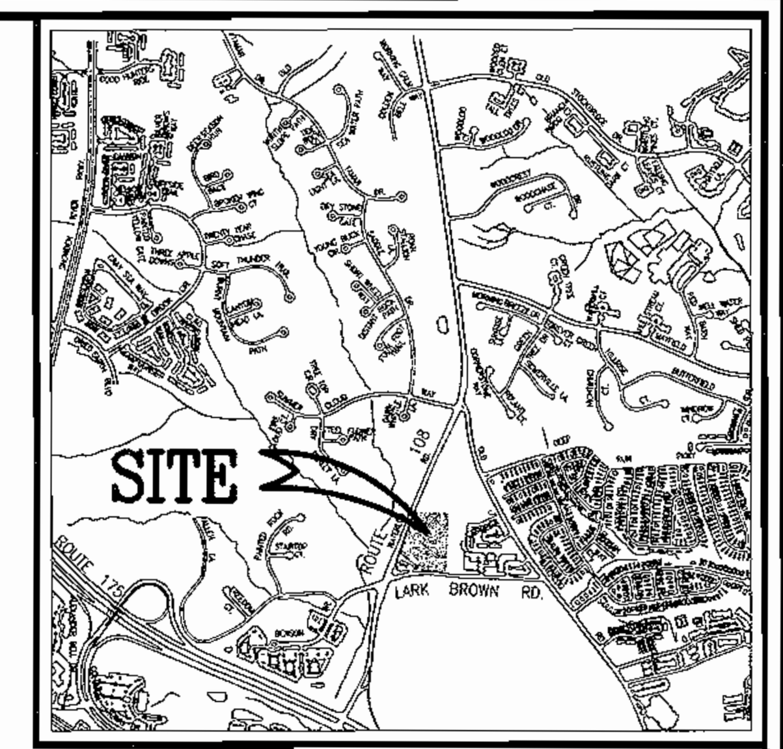
FOREST STAND ANALYSIS TABLE

KEY	A. TYPE OF COMMUNITY	B. AREA	C. SOILS INFORMATION: 1. SOILS TYPES	2. TYPICAL FOREST COVER FOR SOILS TYPE	3. WOODLAND SUITABILITY INDEX	D. EXISTING VEGETATION	E. STAND CHARACTERISTICS: 1. SIZE (DIA)	2. AGE (YRS)	3. GENERAL CONDITION	F. FOREST AREA IN SEN. ENV	G. HABITAT
T-1	RESIDENTIAL YARDS	2.4 AC.	ClC3 SfC2	OAKS AND OTHER UPLAND HARDWOODS	17 8	BEECH, OAKS, CHERRY MAPLES, DOGWOOD, PINES, BLACK GUM, ASH, HICKORY, CATALPA, LOCUST	SEE PLAN	90	GOOD	0.00 Ac	F
F-1	WOODED UPLAND	1.6 AC.	ClC3 SfC2 Md	OAKS AND OTHER UPLAND HARDWOODS	17 8 21	TULIP POPLAR, BEECH OAKS, CHERRY, MAPLES HICKORY, CATALPA, LOCUST	8"-28"	70	GOOD	0.00 Ac	F
F-2	WOODED SLOPE	2.3 AC.	ClC3 SfD2 SsE	MIXED UPL HARDWOODS MAINLY OAKS	17 8 9	BEECH, OAK, MAPLE, PINE	8"-24"	70	GOOD	0.00 Ac	F
F-3	WOODED SLOPE	1.5 AC.	SlC2 EvC SfD2	SCRUB HARDWOODS	8 5 8	RED MAPLE, WHITE PINE	6"-12"	35	GOOD	0.00 Ac	P
A-1	COMMERCIAL DEVELOPMENT	.5 AC	NA	NA	NA	NA	NA	NA	NA	NA	NA

LEGEND

- Existing Contour (382)
- Direction of Flow
- Existing Trees
- 100-Year Floodplain
- Wetlands
- Wetland Buffer
- Stream
- Stream Buffer
- Slopes 15% to 24.9%
- Soils Boundary (CnD3)
- Stand Delineation Line
- Property Line





VICINITY MAP
SCALE: 1"=2000'

PARCEL A AND PART OF PARCEL B ZONE: B-1

FOREST CONSERVATION WORKSHEET

NET TRACT AREA:

A. TOTAL TRACT AREA (7.0831 PLUS 0.2613)	7.3444 AC
B. AREA WITHIN 100 YEAR FLOODPLAIN	0.00 AC
C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION	0.00 AC
D. NET TRACT AREA	7.3444 AC

LAND USE CATEGORY (FROM TABLE 3.2.1, PAGE 40, MANUAL)

INPUT THE NUMBER "1" UNDER THE APPROPIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY.

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

E. AFFOREST THRESHOLD	15% X D = 1.10 AC
F. CONSERVATION THRESHOLD	15% X D = 1.10 AC

EXISTING FOREST COVER:

G. EXISTING FOREST COVER (EXCLUDING FLOODPLAIN) =	4.90 AC
H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD =	3.8 AC
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD =	3.8 AC

BREAK EVEN POINT: (0.2 X 3.8) + (1.10) = 1.86 AC

J. FOREST RETENTION WITH NO MITIGATION =	1.86 AC
K. CLEARING PERMITTED WITHOUT MITIGATION =	3.04 AC

PROPOSED FOREST CLEARING:

L. TOTAL AREA OF FOREST TO BE CLEARED =	4.90 AC
M. TOTAL AREA OF FOREST TO BE RETAINED =	0.0 AC

PLANTING REQUIREMENTS:

N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD =	0.95 AC
P. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD =	2.2 AC
Q. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD =	0.00 AC
R. TOTAL REFORESTATION REQUIRED =	3.15 AC
S. TOTAL AFFORESTATION REQUIRED =	0.00 AC
T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED =	3.15 AC (137,214 SqFt) FEE-IN-LIEU REQUEST

COST ESTIMATE: (For bonding purposes, only)

FEE IN LIEU OF REFORESTATION 137,214 SF X 0.50 = $68,607.00

SURETY NOTE

FEE-IN-LIEU OF REFORESTATION IN THE AMOUNT OF $68,607.00 WILL BE POSTED WITH THE FOREST CONSERVATION FUND WHEN THE ORIGINALS ARE SUBMITTED.

FOREST STAND TOTALS

AREA T-1	2.4 ACRES
STAND F-1	1.6 ACRES
STAND F-2	2.3 ACRES
STAND F-3	1.5 ACRES
AREA A-1	0.6 ACRES
TOTAL	8.4 ACRES

SUPPLEMENTAL INFORMATION

GROSS SITE AREA	8.4 ACRES
ZONED	B-1
PROPOSED USE	OFFICE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 10/8/02

CHIEF, DIVISION OF LAND DEVELOPMENT HB — DATE 10/15/02

DIRECTOR — DATE 10/16/02

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	K VALUE	SOIL GROUP
ClC3	CHILLUM GRAVELLY LOAM, 5-10 PERCENT SLOPES, SEVERELY ERODED	.24	B
CnD3	CHILLUM- FAIRFAX LOAM, 5 TO 15 PERCENT SLOPES, SEVERELY ERODED	.43	B
EvC	EVESBORO LOAMY SAND, 5-15 PERCENT SLOPES	.17	A
Md	MADE LAND	N/A	N/A
SfC2	SASSFRAS SANDY GRAVELLY LOAM, 5-10 PERCENT SLOPES, MODERATELY ERODED	.20	B
SfD2	SASSFRAS SANDY GRAVELLY LOAM, 10-15 PERCENT SLOPES, MODERATELY ERODED	.20	B
S1C2	SASSAFRAS LOAM, 5 TO 10 PERCENT SLOPES, MODERATELY ERODED	.28	B
S1D2	SASSAFRAS LOAM, 10 TO 15 PERCENT SLOPES, MODERATELY ERODED	.28	B
SsE	SASSAFRAS SOILS, 15 TO 40 PERCENT SLOPES	.28	B

NOTES

1. THE PROPERTY OUTLINE IS BASED ON FIELD RUN BOUNDARY PREPARED BY FREDERICK WARD ASSOCIATES.
2. THE EXISTING FEATURES AND CONTOURS SHOWN HEREON ARE BASED ON FIELD RUN TOPOGRAPHY PREPARED BY FREDERICK WARD ASSOCIATES.
3. THERE IS NO 100 YEAR FLOODPLAIN ON SITE.
4. THERE ARE NO WETLANDS ON SITE.
5. THERE ARE NO HISTORIC SITES ON THE SUBJECT PARCEL.

OWNER/DEVELOPER
CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

FOREST STAND DELINEATION
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'

A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 — PARCEL 604
6TH 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 — MARY HAMILTON MCKENNA — NO. 2039 — REGISTERED LANDSCAPE ARCHITECT
Mary H. McKenna, RLA No.2039 — 10-2-02

DESIGN BY:	MHM
DRAWN BY:	MHM
CHECKED BY:	RHV
DATE:	APR. 19, 2002
SCALE:	1"=40'
W.O. NO.:	2017165

SHEET 21 OF 26

SDP-02-52

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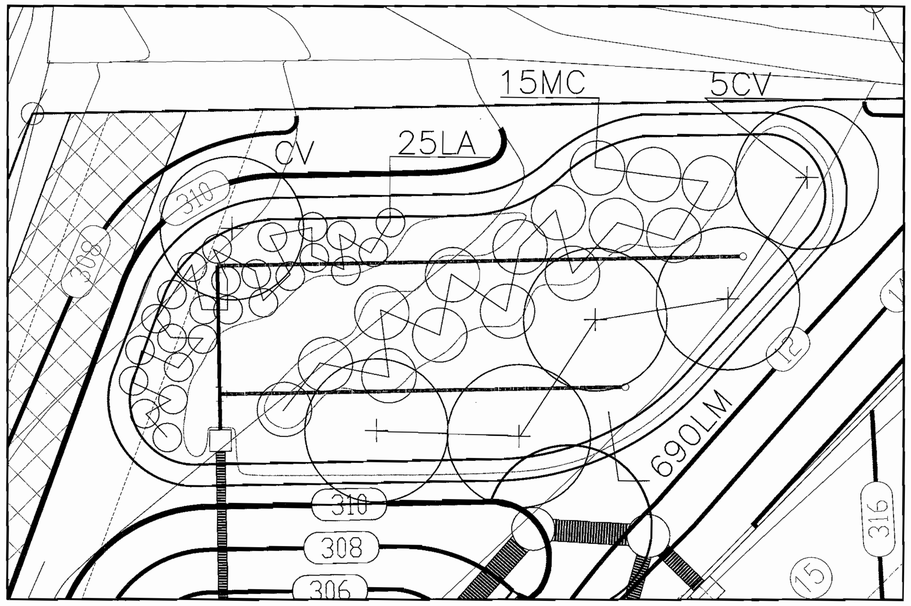
LEGEND

Existing Contour 382
Proposed Contour 82
Spot Elevation +82.53
Direction of Flow
Existing Trees to Remain
Light Poles — Parking Lot & Roadway / Pedestrian; Parking Lot (Twin Head)
Tree — CV
Tall Shrub — 3MC
Low Shrub — 6LA
Ground Cover — 25LM

PRIVATE BIORETENTION FACILITY #1



NORTH
1" = 10'

BIORETENTION LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	REMARKS
CV	6	Crataegus viridis 'Winter King' Winter King Hawthorne	1 1/2"-2" Cal.	B & B
LA	25	Leucothoe axillaris Coastal Leucothoe	18" HT.	B & B or Container
LM	690	Liriope muscari 'Big Blue' Big Blue Creeping Lily Turf	2" Pot or Plug	Container
MC	15	Myrica cerifera Wax-Myrtle	36" HT.	B & B or Container

NO.	REVISION	DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE 10/8/02

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 10/15/02

DIRECTOR DATE 10/16/02

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 9/29/02

OWNER/DEVELOPER

CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

BIORETENTION PLANTING DETAILS

SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'
A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 PARCEL 604
6TH 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 — MARY HAMILTON MCKENNA — No. 2039 — REGISTERED LANDSCAPE ARCHITECT — 10-2-02
Mary H.McKenna, RLA No. 2039

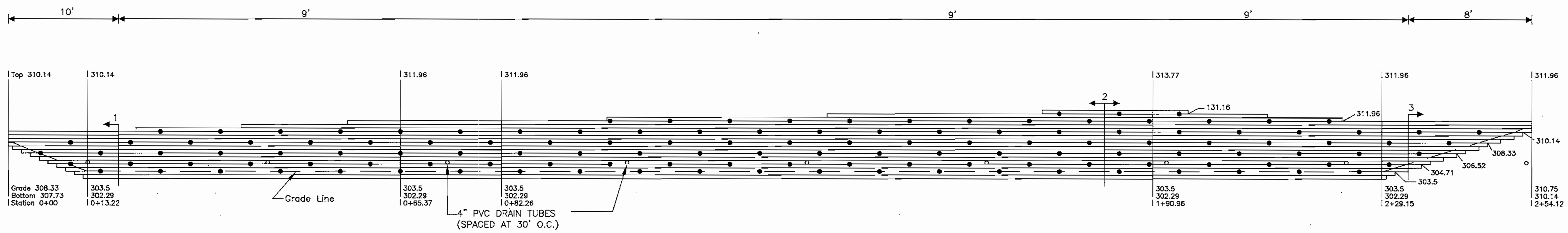
DESIGN BY: MHM
DRAWN BY: MHM
CHECKED BY: RHV
DATE: APR. 19, 2002
SCALE: 1"=10'
W.O. NO.: 2017165

SHEET 23 OF 26

SDP-02-52

M:\PROJECTS\2017165\ENGR\dwg\S2014323.dwg Wed Sep 25 11:19:59 2002 $-JJ-$

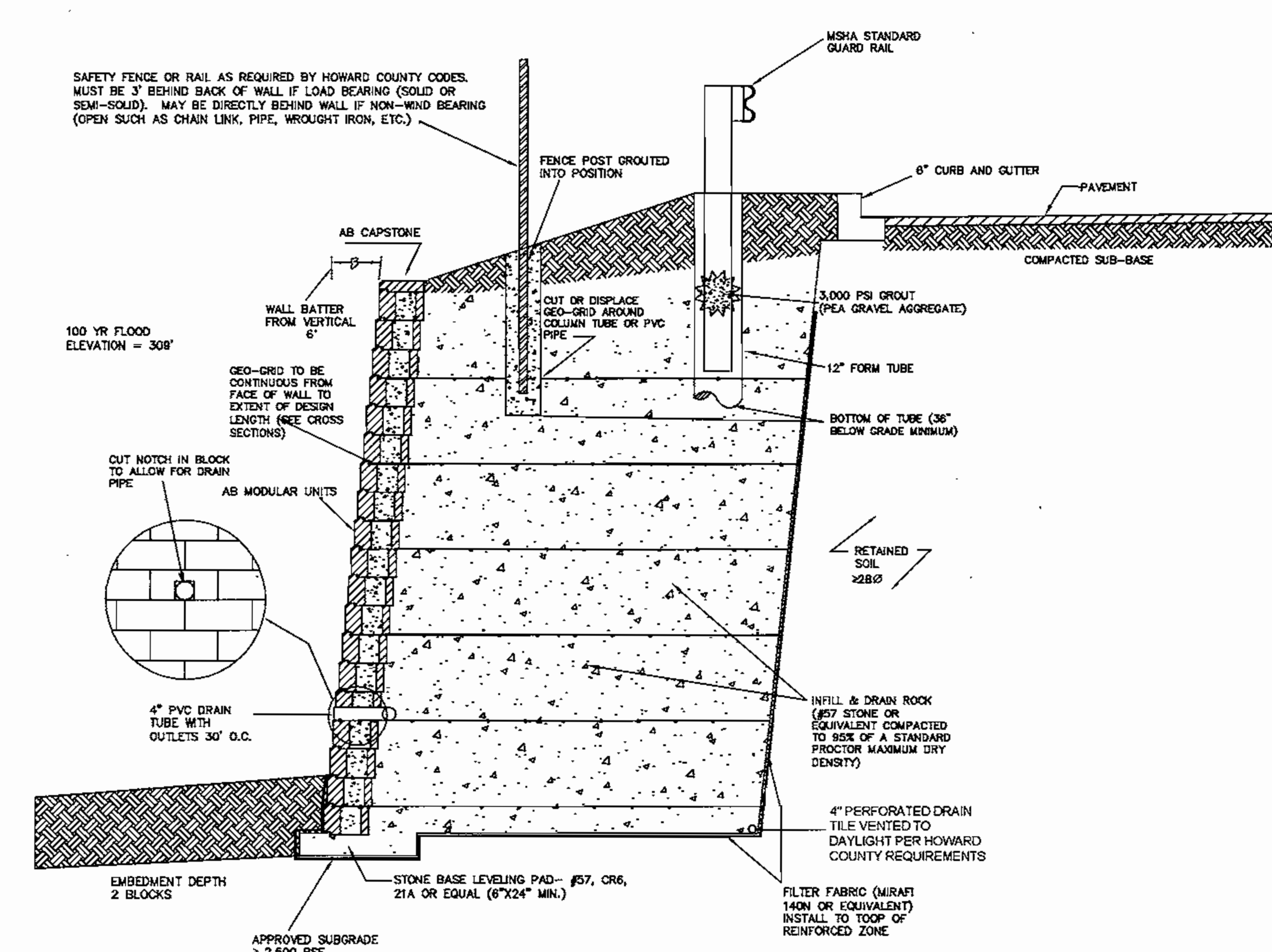
GRID LENGTHS



Section	1	2	3
Top	310.14	313.77	311.96
Grade	303.5	303.5	304.78
Bottom	302.29	302.29	303.5
Station	0+18.36	1+82.88	2+33.56

GRID KEY: MIRAFI 3XT •

TYPICAL WATER APPLICATION SECTION



N. T. S.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 10/8/02
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10/15/02
DIRECTOR	DATE 10/16/02

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

NO.	REVISION	DATE

GATEWAY OFFICE PARK
LOTS 1 & 2

TAX MAP 37
6TH ELECTION DISTRICT

PARCEL 265
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

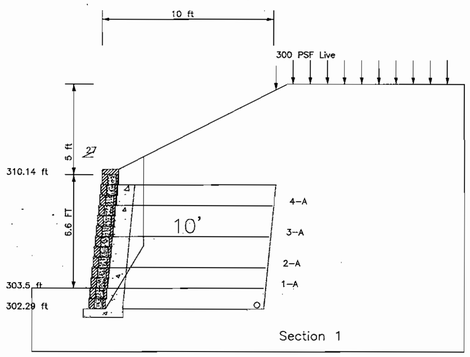
STATE OF MARYLAND WILLIAM KARL RYAN No. 21586 PROFESSIONAL ENGINEER
WILLIAM K. RYAN, PE No.21586

DESIGN BY: RSP
DRAWN BY: RSP
CHECKED BY: DKS
DATE: NOV 13, 2001
SCALE: AS SHOWN
W.O. NO.: 2018019

24 SHEET OF 26

SDP-02-52

PLOT DATE: 11130TVF RA PROJECT #3S211147



Section 1 Notes

BLOCK DIMENSIONS
Total Wall Height = 7.85' Block Height = .604'
Angle of Setback = 6° Depth of Block = .97'
Length of Block = 1.469'

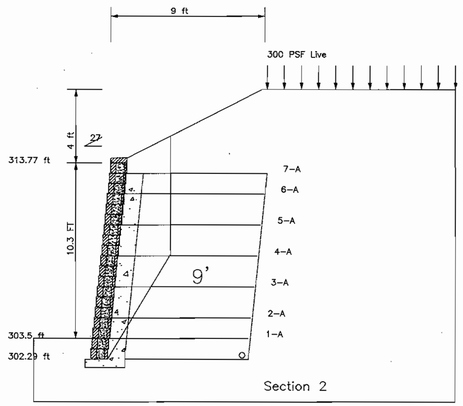
SOIL PARAMETERS
Infill: Friction Angle = 28° Unit Weight = 120 PCF
Retained: Friction Angle = 28° Unit weight = 120 PCF
Foundation: Friction Angle = 28° Unit Weight = 120 PCF

BEARING CAPACITY FACTOR OF SAFETY = 3.35

SAFETY FACTORS STATIC & SEISMIC
Minimum Sliding =1.5 Actual Sliding = 1.783
Minimum Overturning = 2.0 Actual Overturning = 4.956

GEOGRID LEGEND
A-Miragrid 3XT B-Miragrid 5XT C-Miragrid 7XT

MAXIMUM BEARING PRESSURE = 1,304 PSF



Section 2 Notes

BLOCK DIMENSIONS
Total Wall Height = 11.48' Block Height = .604'
Angle of Setback = 6° Depth of Block = .97'
Length of Block = 1.469'

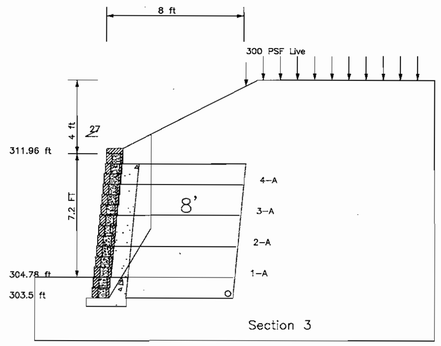
SOIL PARAMETERS
Infill: Friction Angle = 28° Unit Weight = 120 PCF
Retained: Friction Angle = 28° Unit weight = 120 PCF
Foundation: Friction Angle = 28° Unit Weight = 120 PCF

BEARING CAPACITY FACTOR OF SAFETY = 2.19

SAFETY FACTORS STATIC & SEISMIC
Minimum Sliding =1.5 Actual Sliding = 1.823
Minimum Overturning = 2.0 Actual Overturning = 3.921

GEOGRID LEGEND
A-Miragrid 3XT B-Miragrid 5XT C-Miragrid 7XT

MAXIMUM BEARING PRESSURE = 1,988 PSF



Section 4 Notes

BLOCK DIMENSIONS
Total Wall Height = 8.46' Block Height = .604'
Angle of Setback = 6° Depth of Block = .97'
Length of Block = 1.469'

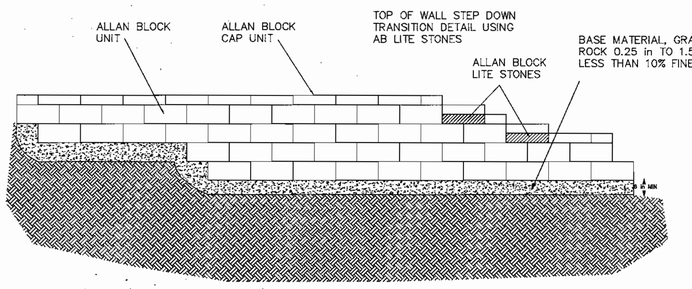
SOIL PARAMETERS
Infill: Friction Angle = 28° Unit Weight = 120 PCF
Retained: Friction Angle = 28° Unit weight = 120 PCF
Foundation: Friction Angle = 28° Unit Weight = 120 PCF

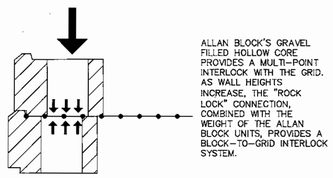
BEARING CAPACITY FACTOR OF SAFETY = 2.94
SAFETY FACTORS STATIC & SEISMIC
Minimum Sliding =1.5 Actual Sliding = 1.744
Minimum Overturning = 2.0 Actual Overturning = 4.114

GEOGRID LEGEND
A-Miragrid 3XT B-Miragrid 5XT C-Miragrid 7XT

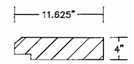
MAXIMUM BEARING PRESSURE = 1,485 PSF

ALLAN BLOCK STEP DOWN TYPICAL DETAIL

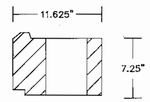




BLOCK-TO-GRID CONNECTION

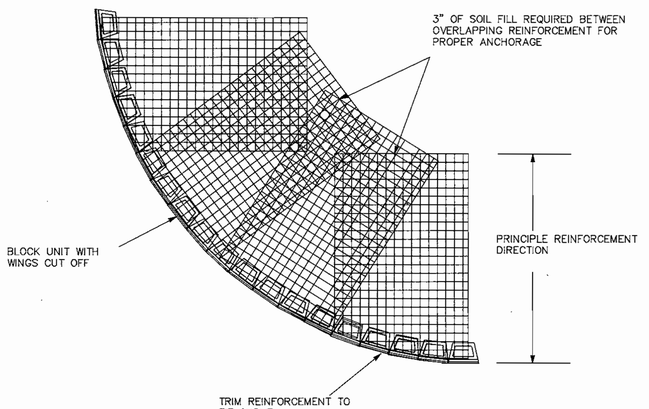


CAP DIMENSIONS



BLOCK DIMENSIONS

REINFORCEMENT PLACEMENT FOR OUTSIDE CURVES



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 10/24/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/15/02

DIRECTOR — DATE 10/16/02

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NO.	REVISION	DATE

GATEWAY OFFICE PARK
LOTS 1 & 2

TAX MAP 37
6TH ELECTION DISTRICT

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HOWARD COUNTY, MARYLAND

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Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

STATE OF MARYLAND — WILLIAM KARL RYAN — No. 21586 — PROFESSIONAL ENGINEER — 10/24/02
WILLIAM K. RYAN, PE No.21586

DESIGN BY: RSP
DRAWN BY: RSP
CHECKED BY: DKS
DATE: NOV 13, 2001
SCALE: AS SHOWN
W.O. NO.: 2018019

SHEET 25 OF 26

SDP-02-52

PLOT DATE: 11/30/17VF RA PROJECT #DS211147

SPECIFICATIONS FOR SEGMENTAL RETAINING WALL SYSTEMS

PART 1: GENERAL

1.01 Description

A. Work includes furnishing and installing segmental retaining wall (SRW) units to the lines and grades designated on the construction drawings. Also included is furnishing and installing appurtenant materials required for construction of the retaining wall as shown on the construction drawings.

1.02 Reference Standards

A. **ASTM C 140-** Sampling and Testing Concrete Masonry Units
B. **ASTM D 4595-** Tensile Properties of Geotextiles by the Wide-Width Strip Method.
C. **ASTM D 5262-** Test Method for Evaluating the Unconfined Creep Behavior of Geo- Grids
D. **GRI:GG1-** Single Rib Geogrid Tensile Strength
E. **GRI:GG5-** Geogrid Pullout
F. **ASTM D 698-** Moisture Density Relationship for Soils, Standard Method
G. **ASTM D 422-** Gradation of Soils
H. **ASTM 4318-** Atterberg Limits of Soil
I. **ASTM 3034-** Specification for Polyvinyl Chloride (PVC) Plastic Pipe
J. **ASTM D1248-** Specification for Corrugated Plastic Pipe

PART 2: MATERIALS

2.01 Segmental Retaining Wall Units

A. SRW units shall be machine formed, Portland Cement concrete blocks specifically designed for retaining wall applications. SRW unit currently approved for this project is:

Allan Block as manufactured by Nitterhouse Masonry Products

NOTE: Where Allan Block specifications and reference documents conflict with these specifications, these specifications hold precedence.

B. SRW units shall be capable of being erected with the horizontal gap between adjacent units not exceeding 1/8". The units shall be uniformly square and not trapezoidal in shape.

C. SRW units shall have a minimum 4" overlap of units on each successive course so that walls are interlocked and continuous.

D. SRW units shall be sound and free of cracks or other defects that would interfere with the proper placing of the unit or significantly impair the strength or permanence of the structure. Cracking or excessive chipping may be grounds for rejection. Units showing cracks longer than 1/2" shall not be used within the wall. Units showing chips visible at a distance of 30 feet from the wall shall not be used within the wall.

E. Concrete used to manufacture SRW units shall have a minimum 28 days compressive strength of 3,000 psi and a maximum moisture absorption rate, by weight, of 8% as determined in accordance with ASTM C 140. Compressive strength test specimens shall conform to the saw-cut coupon provisions of Section 5.2.4 of ASTM C140 with the following exception: Coupon shall be taken from the least dimension of the unit of a size and shape representing the geometry of the unit as a whole.

F. SRW units' molded dimensions shall not differ more than ± 1/8 inch from that specified, except height which shall be ± 1/16 inch as measured in accordance with ASTM C140.

2.02 Geosynthetic Reinforcement

A. Geosynthetic reinforcement shall consist of geogrids or geotextiles as indicated on the design plans. No grid substitutions shall be permitted without the approval of Ryan & Associates.

2.03 Leveling Pad

A. Unless otherwise noted on the cross sections, the leveling pad shall be 6" deep X 24" wide. Material for leveling pad shall consist of compacted sand, gravel, or a combination thereof. (Typical stone used for this pad is #57, CR6, 21A, etc.) The leveling pad should extend laterally at least a distance of 6 inches from the toe and heel of the lowermost SRW unit. In cases of poor bearing capacity or fill soils an enlarged, grid reinforced footer may be required. This typically consists of 1' deep X 4' wide with geo-grid under and within the stone. Lean, un-reinforced concrete with strength of 1500 PSI and 6" deep may also be used as for the leveling pad.

2.04 Drainage Aggregate

A. Drainage aggregate shall be angular, clean stone or granular fill consisting of #57 or approved equal (i.e.- median stone size ½" to 1 ½"). Rounded, pea gravel is not permissible.

2.05 Drainage Pipe

A. The drainage collection pipe shall be a 4" perforated or slotted PVC, or corrugated HDPE pipe.

B. Drain pipes are mandatory and shall be vented to daylight at the end(s) of the wall or at a central low point of the wall. If this is not possible, vent through the wall above finished grade at maximum intervals of 30' O.C. In no case shall a continuous pipe be run for more than 300' without an outlet to daylight.

2.06 Reinforced (Infill) Soil: the reinforced geo-grid zone

A. The soil used must meet or exceed the design friction angle noted on the design cross sections. The reinforced material shall be free of debris and organic material (i.e.- no trash, plants or root matter, top soil, etc.). Unless otherwise noted on the plans, the reinforced zone material shall **not** consist of CH (fat clay), MH (fat silt), or OH (organic) soils.

B. Rocks may be used as infill material as long as their diameter is 6" or less. NOTE: when all gravel is used as infill the LTDS of the geo-grid must be reduced to account for additional installation damage from the large particles. Recycled concrete is permissible for infill.

2.07 Retained Soil: the area beyond the infill soil and extending to a distance of twice the exposed wall height

A. The soil used must meet or exceed the design friction angle noted on the design cross sections. Unless otherwise noted on the plans, the retained material shall **not** consist of CH (fat clay), MH (fat silt), or OH (organic) soils.

PART 3: CONSTRUCTION

3.01 Inspection

A. The Owner or Owner's Representative is responsible for verifying that the contractor meets all the requirements of the specification. This includes all submittals for materials and design, qualifications, and proper installation of wall system.

B. Contractor's field construction supervisor shall have demonstrated experience and be qualified to direct all work at the site.

3.02 Excavation

A. Contractor shall excavate to the lines and grades shown on the project plans. Contractor shall take precautions to minimize over-excavation. Over-excavation shall be filled with compacted infill material or as directed by the site Geo-technical Engineer.

B. Contractor shall verify location of existing structures and utilities prior to excavation. Contractor shall ensure all surrounding structures are protected from the effects of wall excavation. Excavation support (shoring), if required, is the responsibility of the Contractor

3.03 Foundation Preparation

A. Following excavation, the foundation soil shall be examined by the Owner's Geotechnical Engineer to assure that the actual foundation soil strength meets or exceeds the allowable design bearing strength (this parameter can be found in the design's General Notes). Soils not meeting the required strength shall be removed and replaced with select structural fill compacted to 95% of a standard proctor for the full depth.

B. If large deposits of fill are encountered an enlarged, grid-reinforced footer may be required.

4.04 Leveling Pad Construction

A. Leveling pad shall be placed as shown on the construction drawings with a minimum thickness of 6" and a minimum width of 24". The leveling pad should at a minimum extend laterally at least a distance of 6 inches from the toe and heel of the lower most SRW Unit.

B. Soil leveling pad material shall be compacted with a vibratory plate compactor to provide a firm, level-bearing surface on which to place the first course of units. Compaction will be with mechanical plate compactors to achieve 95% of maximum standard proctor density (ASTM D 698). A thin layer (not to exceed ½") of well-graded sand or stone dust can be used to smooth the top of the leveling pad.

4.05 SRW Unit Installation

A. All SRW units shall be installed at the proper elevation and orientation as shown on the wall profiles and details on the construction plans. The SRW units shall be installed in general accordance with the manufacturer's recommendations. The design engineer of record (Ryan & Associates) specifications and drawings shall govern in any conflict between the two requirements.

B. First course of SRW units shall be placed on the leveling pad. The units shall be leveled side-to-side, front-to-rear and with adjacent units, and aligned to ensure intimate contact with the leveling pad. The first course is the most important to ensure accurate and acceptable results. No gaps shall be left between the front of adjacent units. Alignment may be done by means of a string line or offset from base line to the back of the units.

C. Clean all excess debris from top of units and install next course.

D. Lay out of curves and corners shall be installed in accordance with the plan details or in general accordance with SRW manufacturer's installation guidelines. Walls shall be interlocked by overlapping successive courses. Continuous vertical joints are not permitted unless glued. In general, all tangent angles shown on the civil drawings should be changed into curves to enhance the wall's strength and appearance. Inside and outside corners may be constructed without compromising the wall's integrity.

E. Repeat procedures to extent of wall height.

F. The wall face cant shall not differ more than ± 2 degrees from that specified.

G. Embedment shall follow the general rule of 1" buried for every 1' of wall exposed when the front slope is 4:1 or greater. For 3:1 front slopes a minimum of 21" shall be buried, and for 2:1 front slopes a minimum of 29" shall be buried.

4.06 Geosynthetic Reinforcement Placement

A. All geosynthetic reinforcement shall be installed at the proper elevation and orientation as shown on the wall profiles and details on the final construction plans. Partial grid coverage is not acceptable- no gaps shall be present between grid sections.

B. At the elevations shown on the plans, the geosynthetic reinforcement shall be laid horizontally on compacted infill and on top of the concrete SRW units. Embedment of the geosynthetic in the SRW units shall be consistent with SRW manufacturer's recommendations. Correct orientation of the geosynthetic reinforcement shall be verified by the Contractor to be in accordance with the geosynthetic manufacturer's recommendations. The highest strength direction of the geosynthetic must be perpendicular to the wall face.

C. Geosynthetic reinforcement layers shall be one continuous piece for their entire embedment length. Overlap of the geosynthetic in the design strength direction (perpendicular to the wall face) is not permitted.

D. Tracked construction equipment shall not be operated directly on the geosynthetic reinforcement. A minimum of 6 inches of backfill is required prior to operation of tracked vehicles over the geosynthetic. Turning should be kept to a minimum. Rubber-tired equipment may pass over the geosynthetic reinforcement at slow speeds (less than 5 mph).

E. The geosynthetic reinforcement shall be in tension and free of wrinkles prior to placement of soil fill. The nominal tension shall be applied to the reinforcement and secured in place with staples, stakes or by hand tensioning until reinforcement is covered by six inches of fill.

4.07 Drainage Materials

A. Drainage aggregate shall be installed to the line, grades, and sections shown on the final plans. Drainage fill shall be placed to the minimum thickness of 12" as shown on the construction plans behind units. Drainage fill shall also fill all voids between and within (if hollow) the units.

B. Drainage collection pipes shall be installed to maintain gravity flow of water outside the reinforced soil zone. The drainage collection pipe shall daylight into a storm sewer manhole or along a slope at an elevation lower than the lowest point of the pipe within the aggregate drain (see section 2.05).

C. All drainage zone aggregate, including the stone placed within the block cells shall be compacted with a vibratory plate compactor with a minimum of two passes.

4.08 Backfill Placement

A. The reinforced backfill shall be placed as shown in the construction plans in the maximum compacted lift thickness of 10 inches and shall be compacted to a minimum of 95% of standard proctor density (ASTM D 698) at a moisture content within 2% of optimum. The backfill shall be placed and spread in such a manner as to eliminate wrinkles or movement of the geosynthetic reinforcement and the SRW units. Compaction testing shall be done at 25%, 50%, 75%, and 100% of the wall height or as specified by the site geo-technical engineer.

B. Only a vibratory plate or small-scale vibratory smooth drum compactor equipment shall be allowed within 3 feet of the front of the wall face. Compaction within the 3 feet behind the wall face shall be achieved by at least three (3) passes of the lightweight mechanical plate compactor or roller. Heavy equipment (such as track hoes, ride on rollers, pans, etc.) must be kept back a minimum of 3' from the rear of the wall.

C. At the end of each day's operation, the Contractor shall slope the last level of backfill away from the wall facing to direct water runoff away from the wall face.

D. At completion of wall construction if final grading, paving, landscaping, and/or storm drainage installation adjacent to the wall is not placed immediately after wall completion, temporary grading shall be provided to ensure water runoff is not allowed to *collect or pond* behind the wall until final construction adjacent to the wall is completed.

E. Filter fabric is neither required nor recommended behind the drainage layer. Installation of filter fabric has proven to result in poor wall construction and its benefit has not been proven when used with clays, silts, and mixed soils. The exception is when all sand is used for infill material since it is non-cohesive and could potentially slough, clogging the drainage layer.

4.09 SRW Caps

A. SRW caps shall be properly aligned and glued to underlying units with a flexible, high-strength concrete adhesive (adhesive should be designed for "concrete to concrete" applications). Rigid adhesive or mortar is not acceptable.

4.10 Water Applications

A. When walls are installed in water applications (such as storm water ponds, streams, bulkheads, areas adjacent to flood plains, etc.) all granular material must be used as infill up to 1' above the 100 year flood elevation or the high water level. This material must be free draining and have less than 10% fines. The leveling pad and the reinforced zone (up to the extent of the stone infill) must be wrapped in filter fabric to prevent migration of fines. Rip rap stone is required in front of the bottom three course on walls installed in tidal waters. Rip rap may also be required to prevent scouring and erosion in front of walls installed in water sources prone to fluctuating water levels, and where pipes that frequently carry water exit through walls.

4.11 Rails, Fences, & Other Structures

A. Open rails and fences not subject to wind loads may be placed directly behind the wall as long as they are not subject to vehicular impact. Solid or semi-solid fences that are subject to wind loads must be kept back a minimum of 3' from the rear of the wall to prevent loading of the wall.

B. Guardrails subject to vehicular impact must be kept back a minimum of 3' to prevent loading of the wall. Guardrails may be placed closer than this 3' minimum only if a barrier (such as wheel stops, curbing, etc.) prevents impact.

C. Light posts and similar structures subject to wind loads must be kept back a minimum of 3' to prevent loading of the wall.

D. In cases where this 3' minimum cannot be met due to restraints on the site, additional analyses will need to be done to determine a method of stabilization. Ryan & Associates can be contracted to provide this design for an additional cost.

4.12 Storm Structures

A. RCP pipes may pass through the wall without compromising the design. The SRW units may be cut to fit around the pipe and the void filled with non-shrink grout or type "M" mortar. A concrete collar may be cast around the structure if desired. When a collar is cast, the top of the collar shall line up with an even block course to maintain proper alignment and neat workmanship. Corrugated steel pipes may not be able to support the wall's weight and may require a concrete beam. Check load capabilities with the pipe manufacturer.

B. When a pipe is located in or below the leveling pad a grade beam may be required. Ryan & Associates shall be consulted to determine the size, strength and reinforcing of the beam.

B. Concrete storm structures may be located behind a wall and within the reinforced zone as dictated by the project's civil drawings. If the structure(s) cannot be moved out of the reinforced zone and the grid installed to the full design length the following shall apply. On small structures (such as manholes, collection boxes, concrete pipes less than 20" O.D., etc.) it is acceptable to shorten the grid from the design length and meet the structure. The area between the wall and structure must be filled with #57 stone or equal- not the site soil. On large structures and in cases where pipes parallel the wall for long distances, Ryan & Associates shall be consulted to determine the impact on the wall before allowing this to be done.

4.13 Construction Adjacent to Completed Wall

A. The Owner or Owner's Representative is responsible for ensuring that construction adjacent to the wall by others does not disturb the wall or place temporary construction loads on the wall that exceed design loads, including loads such as water pressure, temporary grades, or equipment loading. Heavy paving or grading equipment shall be kept a minimum of three feet behind the back of the wall face. Equipment with wheel loads in excess of 150 psf live load shall not be operated with 10 feet of the face of the retaining wall during construction adjacent to the wall. Care should be taken by the General Contractor to ensure water runoff is directed away from the wall structure until final grading and surface drainage collection systems are completed.

B. Care must be taken when installing appurtenances (such as transformers, generators, etc.) within the reinforced zone of the wall. The compaction integrity of the reinforced zone must be maintained, both below and beside (around) the appurtenance. Neglecting to do so may cause hydrostatic pressure and wall failure.

END OF SECTION

Revised 01-02-01

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[illegible] 10/8/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

Cindy Hamilton 10/15/02
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[illegible] 10/16/02
DIRECTOR DATE

RYAN & ASSOCIATES
A Division of WKR Consulting, Inc.
RETAINING WALL DIVISION
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68 West King Street
Shippensburg, PA 17257

NO.	REVISION	DATE

GATEWAY OFFICE PARK
LOTS 1 & 2

TAX MAP 37 PARCEL 265
6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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ENGINEERS ARCHITECTS SURVEYORS
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Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

STATE OF MARYLAND WILLIAM KARL RYAN No. 21586 PROFESSIONAL ENGINEER
9/25/02
WILLIAM K. RYAN, PE No.21586

DESIGN BY: RSP
DRAWN BY: RSP
CHECKED BY: DKS
DATE: NOV 13, 2001
SCALE: AS SHOWN
W.O. NO.: 2018019

26 SHEET OF 26

PLOT DATE: 111301TVF RA PROJECT #DS211147

SDP-02-52

For Detailed Grading And Layout Around Buildings, See Sheet 12.

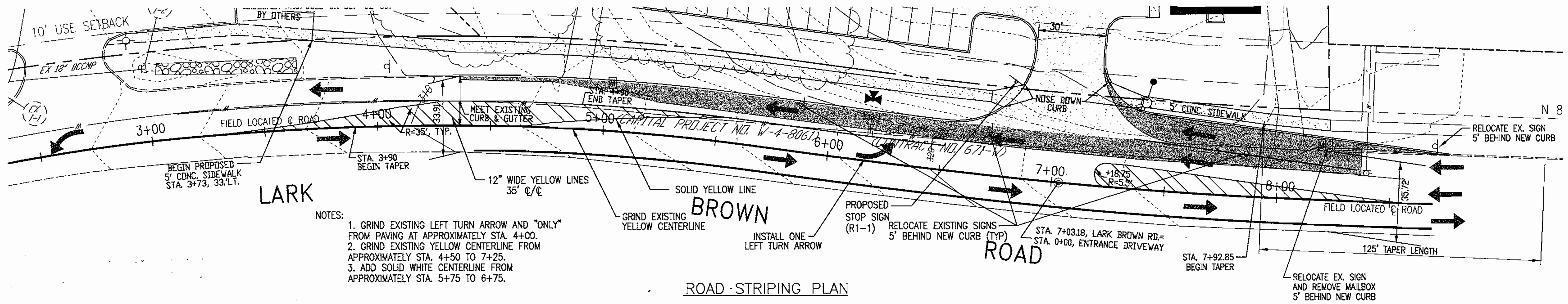
STREET LIGHT NOTES:

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:

1. REFER TO SHEET 1 OF 24 FOR SITE OFFSETS AND BUILDING DIMENSIONS.
2. REFER TO SHEET 2 OF 24 FOR STEEP SLOPES.



NOTES:

1. GRIND EXISTING LEFT TURN ARROW AND "ONLY" FROM PAVING AT APPROXIMATELY STA. 4+00.
2. GRIND EXISTING YELLOW CENTERLINE FROM APPROXIMATELY STA. 4+50 TO 7+25.
3. ADD SOLID WHITE CENTERLINE FROM APPROXIMATELY STA. 5+75 TO 6+75.

ROAD STRIPING PLAN

LEGEND

Existing Contour	318
Proposed Contour	320
Spot Elevation	+20.50
Direction of Flow	
Tree Protection Fence	
Existing Trees to Remain	
Light Poles	Post Top / Overhead / Bollard
Proposed Storm Drain	15" HDPE 55 L.F.
Proposed Water Line	
Proposed Fire Hydrant	
Proposed Sewer	Prop. 8" PVC Sewer
Rip-Rap Inflow Protection	RRP
Light Duty Paving	
Heavy Duty Paving	
Lark Brown Road Widening	

NO.	REVISION	DATE
1	Move Building 7, Add Side Entrances & Stairs, Add Sidewalk to Side-Front Doors, Regrade for Sidewalks, Regrade for buildings 7,8,9,10, Storm Drain Labels, Add yard inlet	12-18-02

SITE LAYOUT, SWM & UTILITY PLAN
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'
A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 PARCEL 604
6TH 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

DESIGN BY:	CLS
DRAWN BY:	JAJ
CHECKED BY:	RHV
DATE:	APR. 19, 2002
SCALE:	1" = 30'
W.O. NO.:	2017165

ROBERT H. VOGEL, PE No.16193

3 SHEET OF 26

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE 10/8/02
CHIEF, DIVISION OF LAND DEVELOPMENT HB DATE 10/15/02
DIRECTOR DATE 10/16/02

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 9/27/02 DATE

ENGINEERS CERTIFICATE

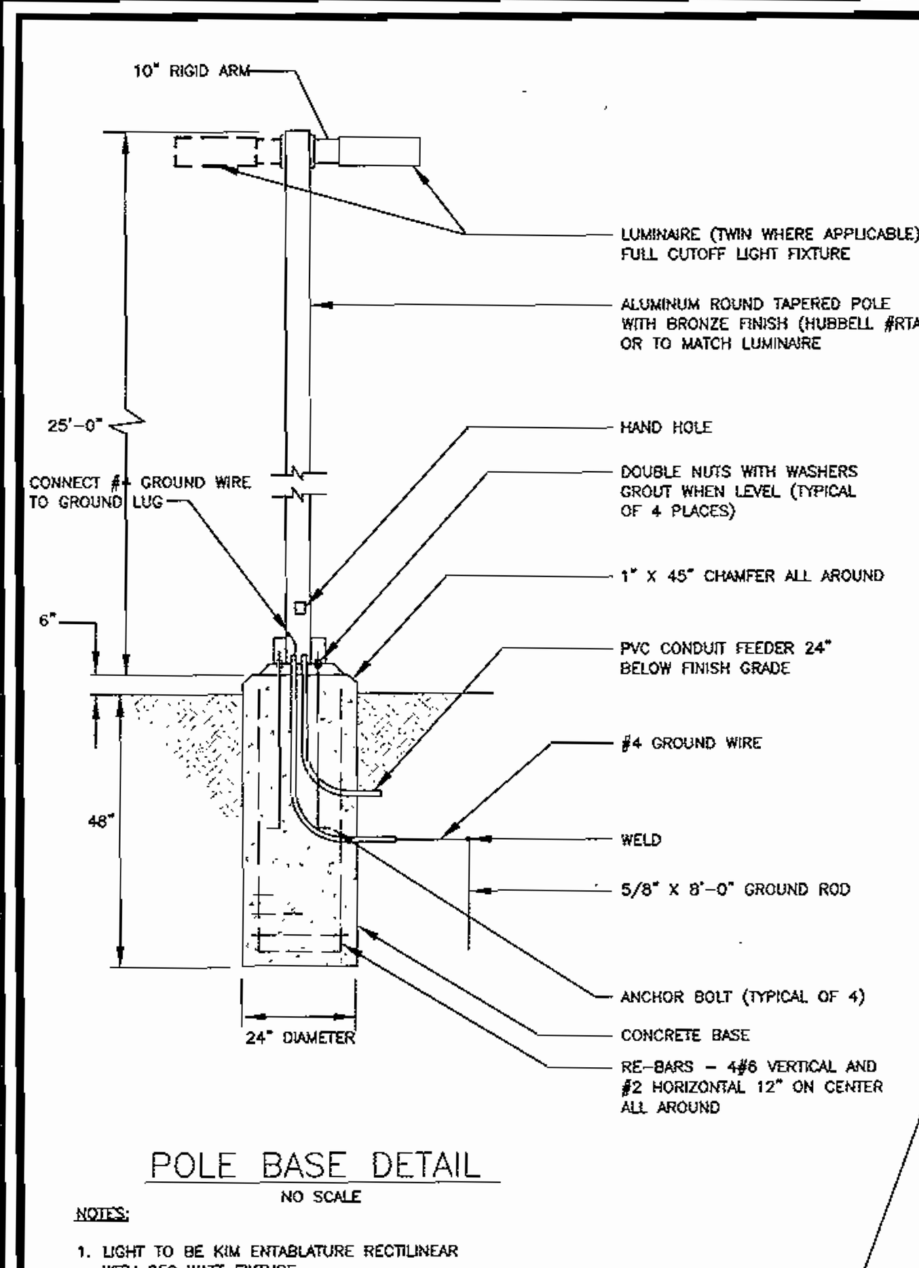
"I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE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

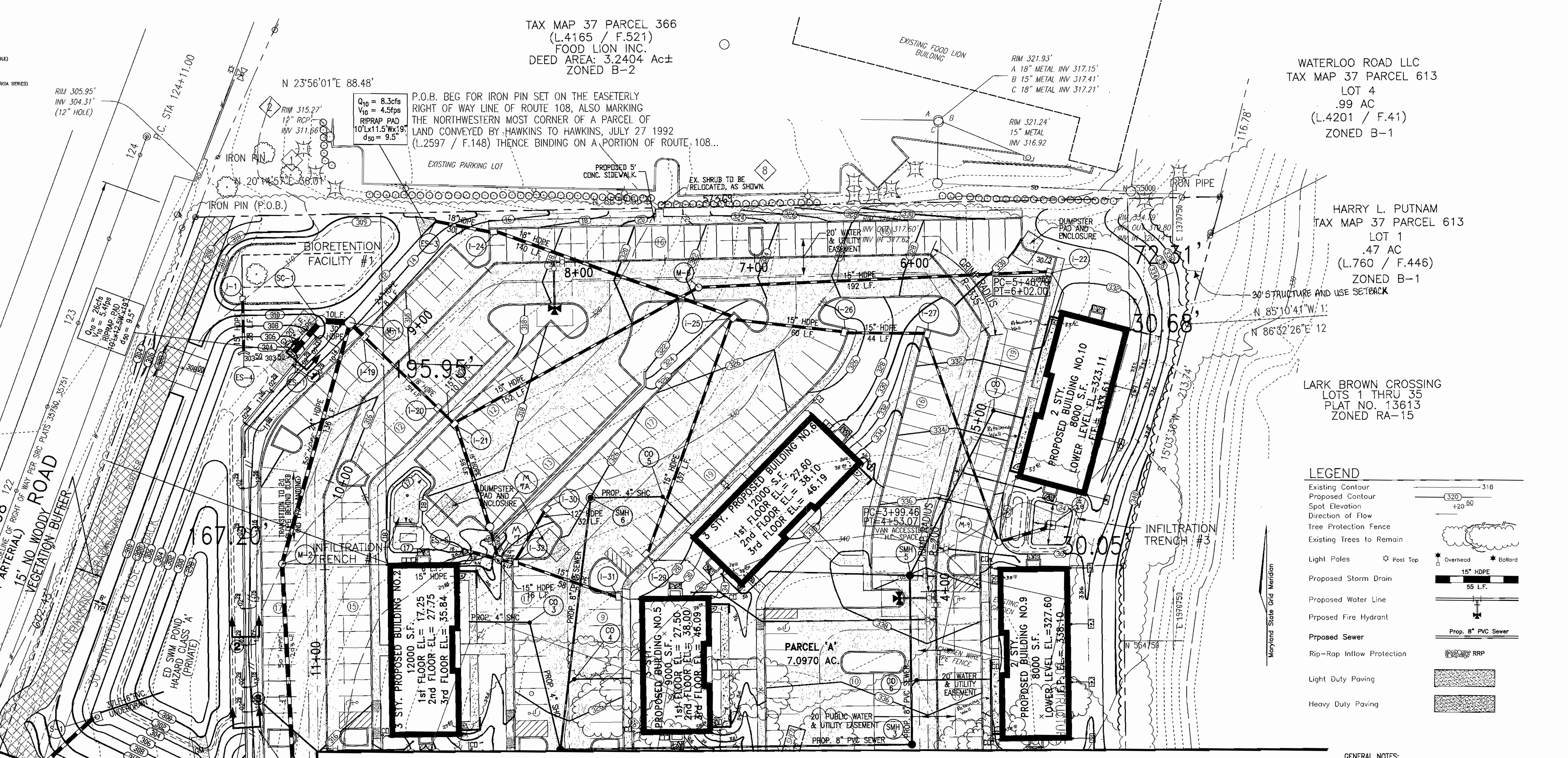
SIGNATURE OF ENGINEER ROBERT H. VOGEL 10/2/02 DATE

OWNER/DEVELOPER

CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

SDP-02-52



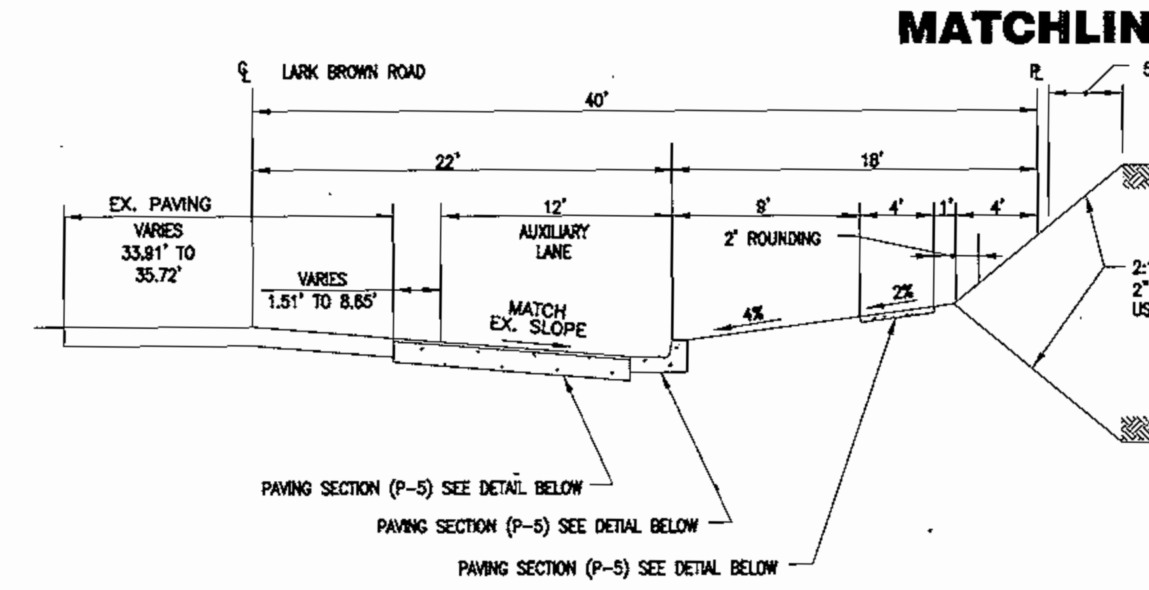

TAX MAP 37 PARCEL 366
(L.4165 / F.521)
FOOD LION INC.
DEED AREA: 3.2404 Ac±
ZONED B-2
WATERLOO ROAD LLC
TAX MAP 37 PARCEL 613
LOT 4
.99 AC
(L.4201 / F.41)
ZONED B-1
HARRY L. PUTNAM
TAX MAP 37 PARCEL 613
LOT 1
.47 AC
(L.760 / F.446)
ZONED B-1
LARK BROWN CROSSING
LOTS 1 THRU 35
PLAT NO. 13613
ZONED RA-15
P.O.B. BEG FOR IRON PIN SET ON THE EASETERLY RIGHT OF WAY LINE OF ROUTE 108, ALSO MARKING THE NORTHWESTERN MOST CORNER OF A PARCEL OF LAND CONVEYED BY HAWKINS TO HAWKINS, JULY 27 1992 (L.2597 / F.148) THENCE BINDING ON A PORTION OF ROUTE 108...
N 23°56'01"E 88.48'
WATERLOO MD ROUTE 108 (MINOR ARTERIAL) ROAD
ACCESS RESTRICTED ALONG MD ROUTE 108
15' NO WOODY VEGETATION BUFFER
BIORETENTION FACILITY #1
INFILTRATION TRENCH #1
INFILTRATION TRENCH #3
ED SWM POND HAZARD CLASS 'A' (PRIVATE)
3 STY. PROPOSED BUILDING NO.7 12000 S.F. 1st FLOOR EL.= 17.25 2nd FLOOR EL.= 27.75 3rd FLOOR EL.= 35.84
3 STY. PROPOSED BUILDING NO.6 12000 S.F. 1st FLOOR EL.= 27.60 2nd FLOOR EL.= 38.10 3rd FLOOR EL.= 46.19
3 STY. PROPOSED BUILDING NO.5 9000 S.F. 1st FLOOR EL.= 27.50 2nd FLOOR EL.= 38.00 3rd FLOOR EL.= 46.09
2 STY. PROPOSED BUILDING NO.9 8000 S.F. LOWER LEVEL EL.=327.60
2 STY. PROPOSED BUILDING NO.10 8000 S.F. LOWER LEVEL EL.=323.11
PARCEL 'A' 7.0970 AC.
MATCHLINE (SEE SHEET 3)
RETAINING WALL SECTIONS. SEE SHEETS 24 AND 25 OF 26 FOR DETAILS.
LEGEND
Existing Contour
Proposed Contour
Spot Elevation
Direction of Flow
Tree Protection Fence
Existing Trees to Remain
Light Poles
Proposed Storm Drain
Proposed Water Line
Proposed Fire Hydrant
Prposed Sewer
Rip-Rap Inflow Protection
Light Duty Paving
Heavy Duty Paving

GENERAL NOTES:

1. REFER TO SHEET 1 OF 24 FOR SITE OFFSETS AND BUILDING DIMENSIONS.

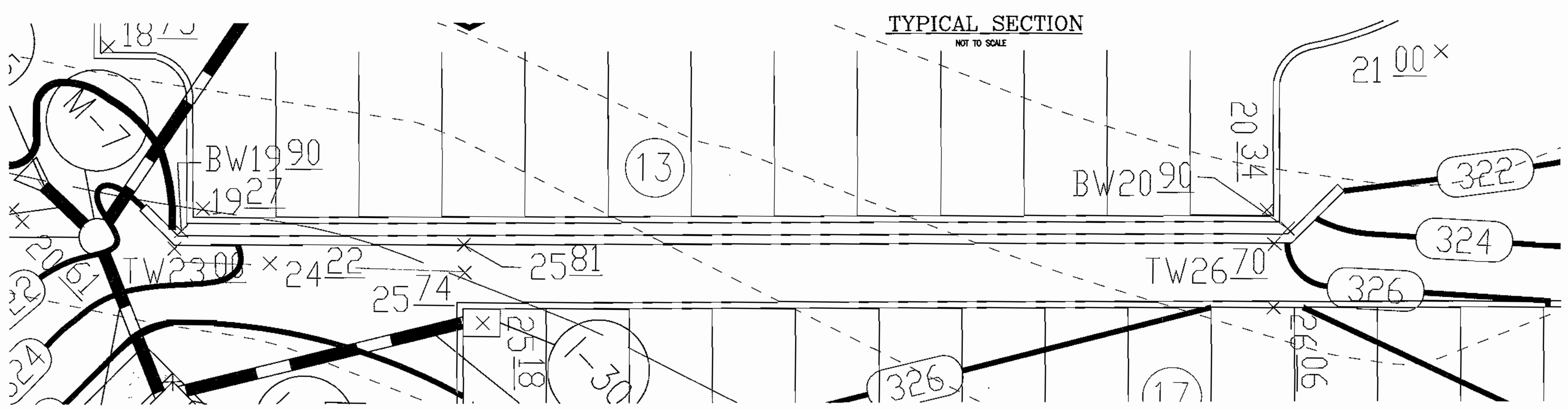
2. REFER TO SHEET 2 OF 24 FOR STEEP SLOPES.

For Detailed Grading And Layout Around Buildings, See Sheet 12.



TYPICAL SECTION

NOT TO SCALE



RETAINING WALL DETAIL

SCALE: 1" = 10'

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 — 10/2/02 DATE
ROBERT H. VOGEL

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."

James M. Jost — SIGNATURE OF DEVELOPER — 9/27/02 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 10/8/02

CHIEF, DIVISION OF LAND DEVELOPMENT HB — DATE 10/15/02

DIRECTOR — DATE 10/16/02

OWNER/DEVELOPER

CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

NO.	REVISION	DATE
1	Move Building #7, Add side entrances and ramps, add sidewalks to ~~Side Front doors, Regrade for sidewalks, Regrade buildings 7, 8, 9, 10,~~ Storm Drain labels and plan. Add yard inlet.	12-18-02

SITE LAYOUT, SWM & UTILITY PLAN

SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'

A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 — PARCEL 604
6TH 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

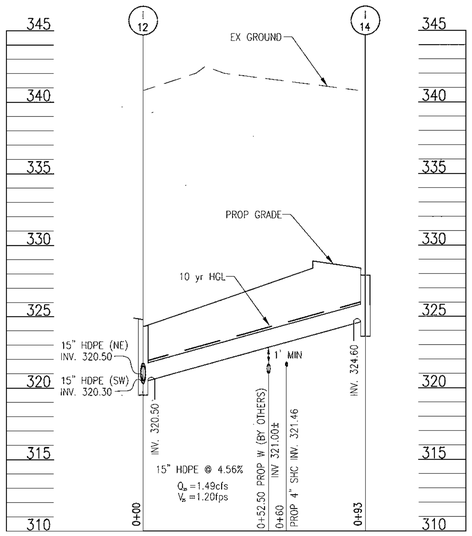
STATE OF MARYLAND — ROBERT HARRIS VOGEL — NO. 16193 — REGISTERED PROFESSIONAL ENGINEER — 10/2/02

ROBERT H. VOGEL, PE No.16193

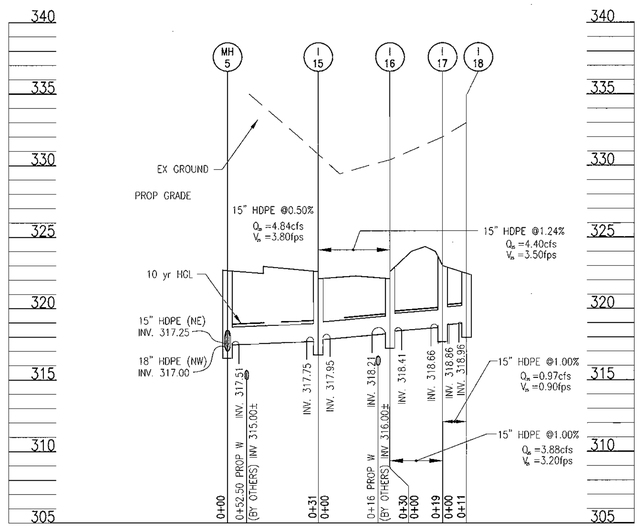
DESIGN BY: CLS
DRAWN BY: JAJ/CLY
CHECKED BY: RHV
DATE: APR. 19, 2002
SCALE: 1" = 30'
W.O. NO.: 2017165

SHEET 4 OF 26

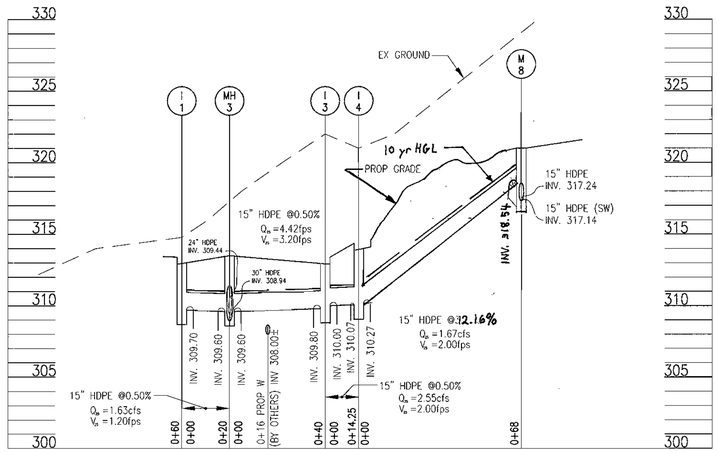
SDP-02-52



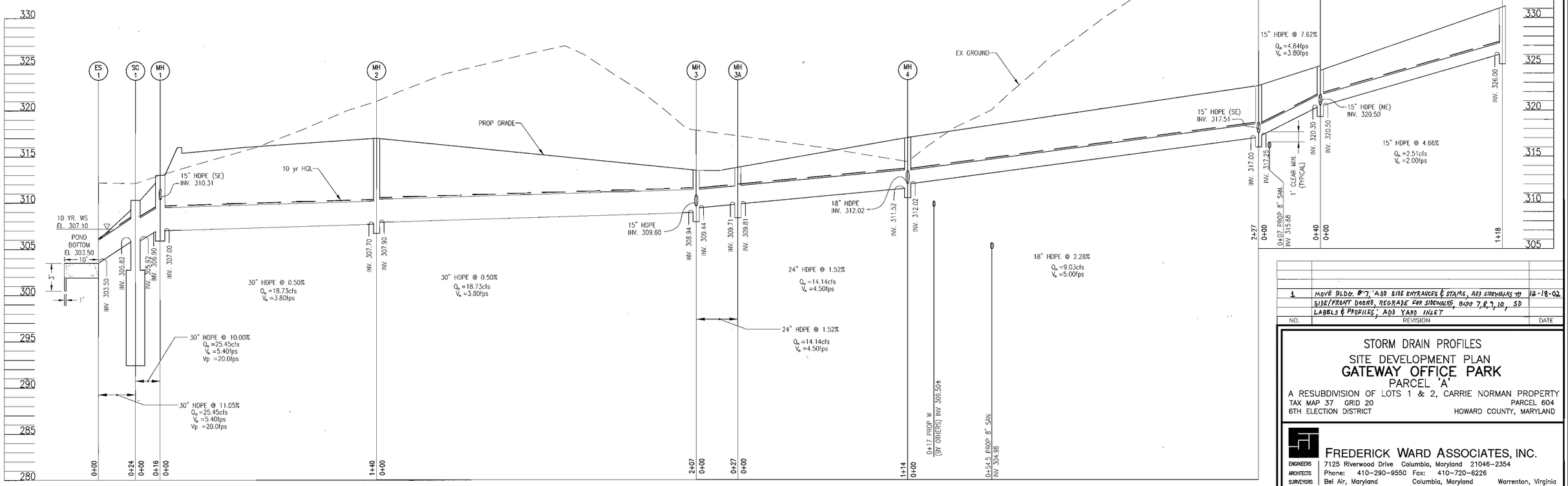
STORM DRAIN PROFILE
SCALE: HOR.: 1"=30'
VERT.: 1"=5'



STORM DRAIN PROFILE
SCALE: HOR.: 1"=30'
VERT.: 1"=5'



STORM DRAIN PROFILE
SCALE: HOR.: 1"=30'
VERT.: 1"=5'



STORM DRAIN PROFILE
SCALE: HOR.: 1"=30'
VERT.: 1"=5'

NO.	REVISION	DATE
1	MOVE BLDG. #7, ADD SIDE ENTRANCES & STAIRS, ADD SIDEWALKS TO SIDE/FRONT DOORS, REGRADE FOR SIDEWALKS, BLDG 7,8,9,10, SD LABELS & PROFILES; ADD YARD INLET	12-18-02

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/9/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/15/02

DIRECTOR — DATE 10/16/02

OWNER/DEVELOPER
CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

STORM DRAIN PROFILES
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'

A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 — PARCEL 604
6TH 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

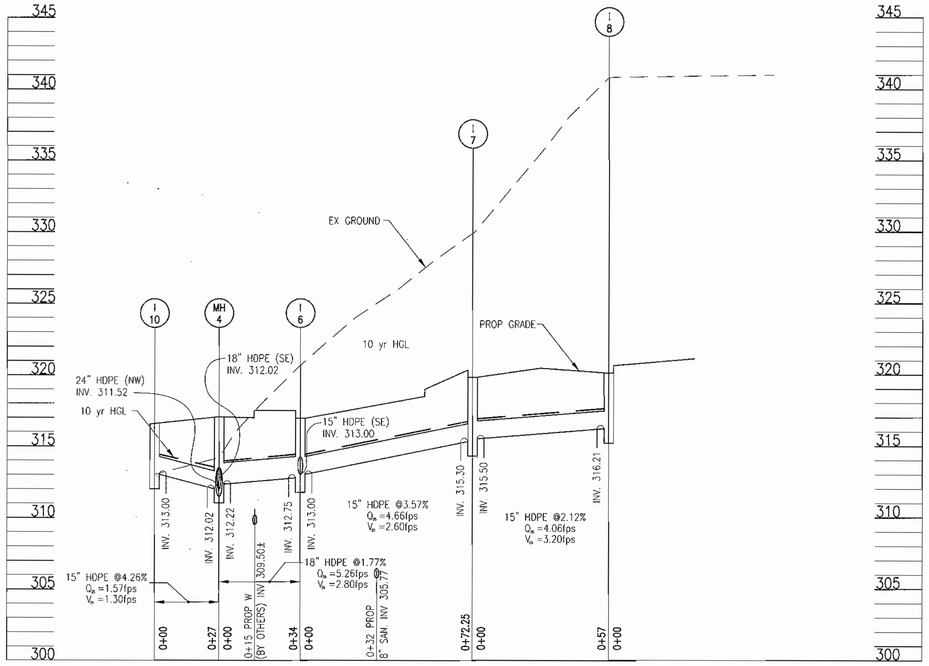
STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — REGISTERED PROFESSIONAL ENGINEER — 10/24/02
ROBERT H. VOGEL, PE No.16193

DESIGN BY: CLS
DRAWN BY: JAJ
CHECKED BY: RHV
DATE: APR. 19, 2002
SCALE: AS SHOWN
W.O. NO.: 2017165

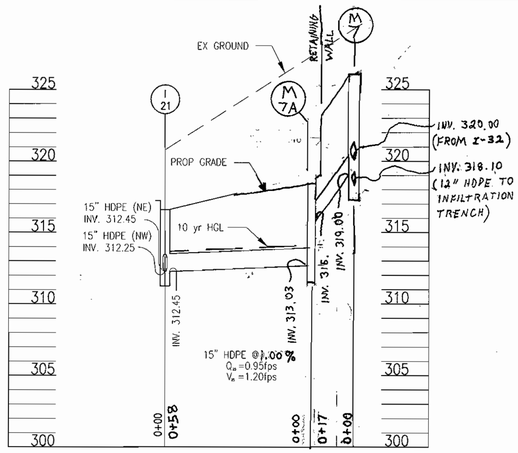
SHEET 5 OF 26

SDP-02-52

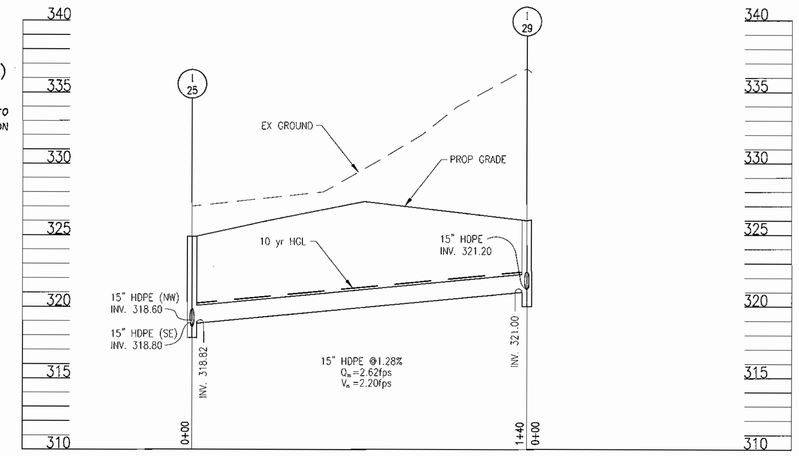
N:\PROJECTS\2017165\ENGR\dwg\S2021155.dwg Wed Sep 25 11:02:50 2002 $-JJ-$



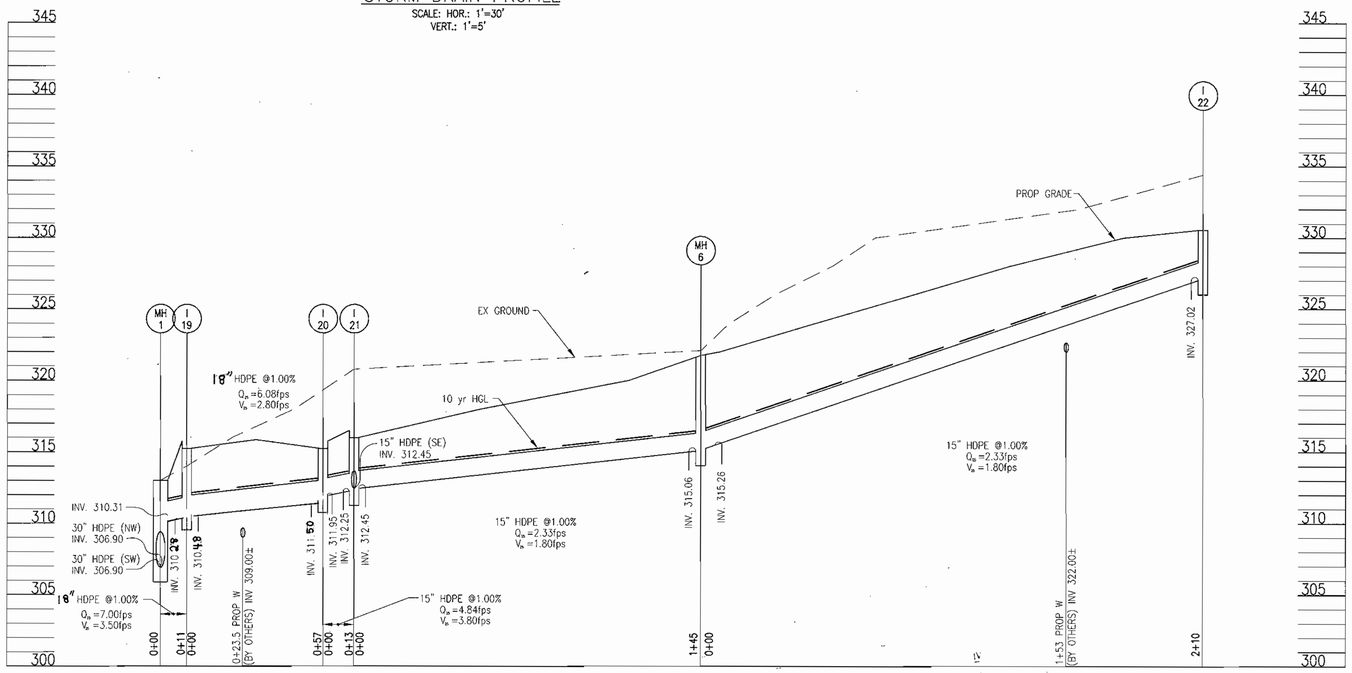
STORM DRAIN PROFILE
SCALE: HOR.: 1"=30'
VERT.: 1"=5'



STORM DRAIN PROFILE
SCALE: HOR.: 1"=30'
VERT.: 1"=5'



STORM DRAIN PROFILE
SCALE: HOR.: 1"=30'
VERT.: 1"=5'



STORM DRAIN PROFILE
SCALE: HOR.: 1"=30'
VERT.: 1"=5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/8/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/15/02

DIRECTOR — DATE 10/16/02

OWNER/DEVELOPER
CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

NO.	REVISION	DATE
1	MOVE BLDG # 7, ADD SIDE ENTRANCES & STAIRS, ADD SIDEWALKS TO SIDE/FRONT DOORS, REGRADE FOR SIDEWALKS, REGRADE FOR BLDG'S 7, 8, 9, 10; SD LABELS & PROFILES, ADD YARD INLET	12-18-02

STORM DRAIN PROFILES
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'
A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 PARCEL 604
6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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

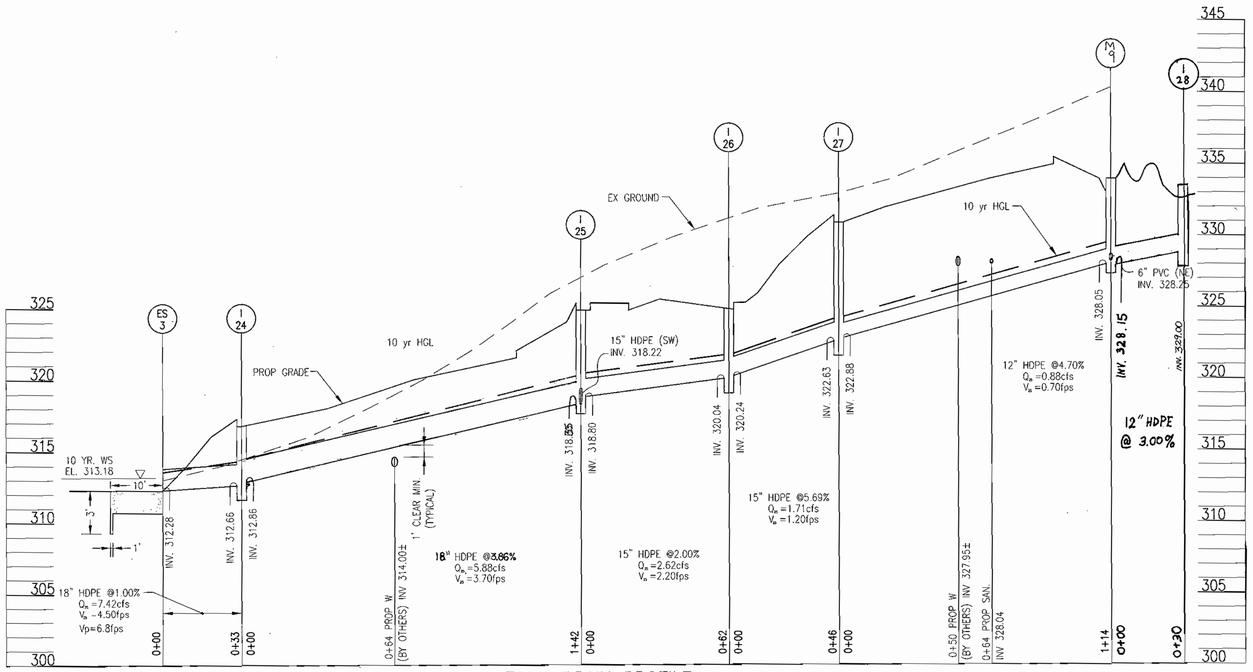
STATE OF MARYLAND — ROBERT HARRIS PAGE — No. 16193 — REGISTERED PROFESSIONAL ENGINEER — 10/28/02
ROBERT H. VOGEL, PE No.16193

DESIGN BY: CLS
DRAWN BY: JAJ
CHECKED BY: RHV
DATE: APR. 19, 2002
SCALE: AS SHOWN
W.O. NO.: 2017165

SHEET 6 OF 26

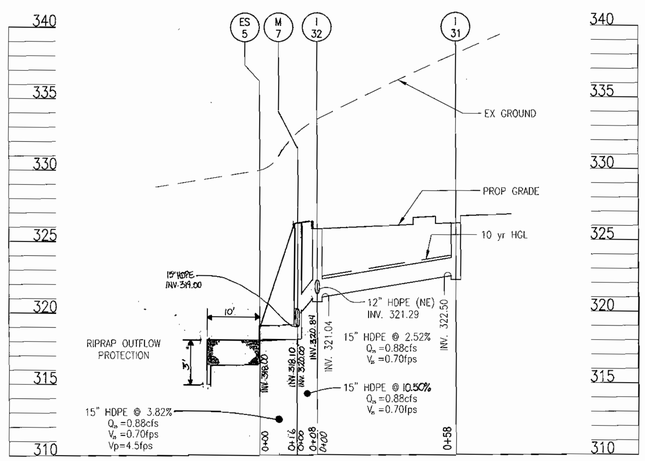
SDP-02-52

M:\PROJECTS\2017165\ENGR\dwg\S2002156.dwg Wed Sep 25 11:03:45 2002 $-JJ-$



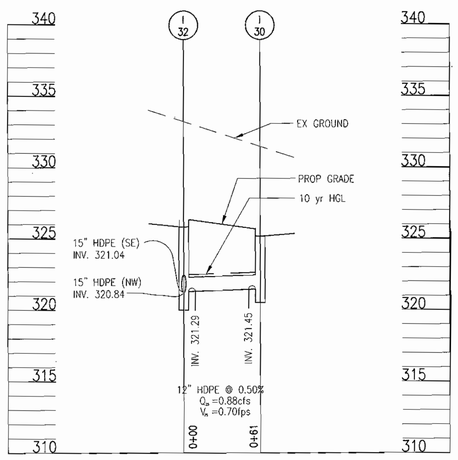
STORM DRAIN PROFILE

SCALE: HOR.: 1"=30'
VERT.: 1"=5'



STORM DRAIN PROFILE

SCALE: HOR.: 1"=30'
VERT.: 1"=5'



STORM DRAIN PROFILE

SCALE: HOR.: 1"=30'
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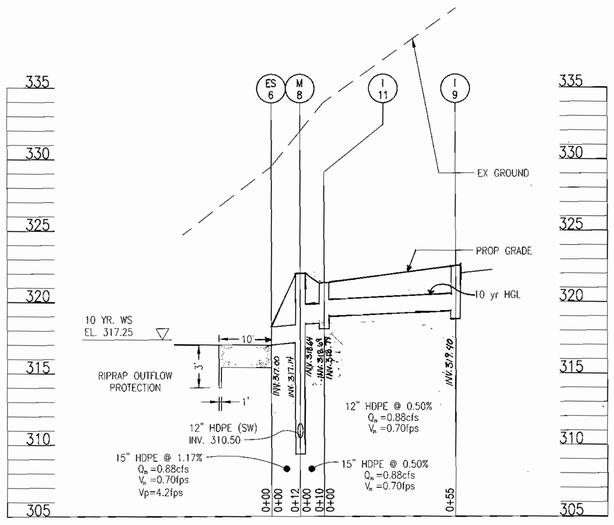

STORM DRAIN PROFILE

SCALE: HOR.: 1"=30'
VERT.: 1"=5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/9/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/15/02

DIRECTOR — DATE 10/16/02

NO.	REVISION	DATE
1	MOVE BLDG #7, ADD SIDE ENTRANCES & STAIRS, ADD SIDEWALKS TO SIDE/FRONT DOORS, REGRADE FOR SIDEWALKS, REGRADE FOR BLDG'S 7, 8, 9, 10; SD LABELS AND PROFILES, ADD YARD INLET	12-18-02

STORM DRAIN PROFILES
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'
A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 PARCEL 604
6TH 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 — REGISTERED PROFESSIONAL ENGINEER — 10/2/02

ROBERT H. VOGEL, PE No.16193

DESIGN BY: CLS
DRAWN BY: JAJ
CHECKED BY: RHV
DATE: APR. 19, 2002
SCALE: AS SHOWN
W.O. NO.: 2017165

SHEET 7 OF 26

OWNER/DEVELOPER
CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

SDP-02-52

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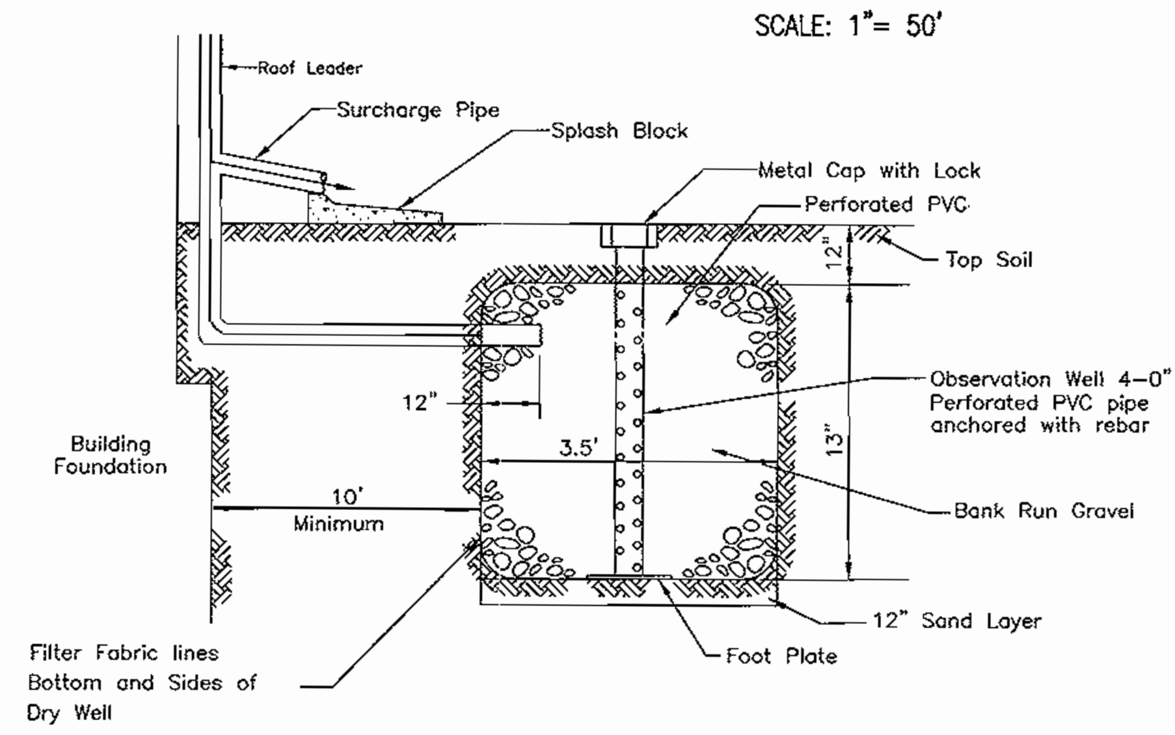
ROOF DRAINAGE AREA

AREA	REMARK
RL-1	3,000 s.f. TO I-1
RL-2	1,000 s.f. TO BIORETENTION #3
RL-3	2,000 s.f. TO I-3
RL-4	2,000 s.f. TO BIORETENTION #4
RL-5	1,000 s.f. TO I-22
RL-6	1,000 s.f. TO BIORETENTION #2
RL-7	1,000 s.f. TO BIORETENTION #2
RL-8	2,000 s.f. TO I-14
RL-9	1,000 s.f. TO I-14
RL-10	1,000 s.f. TO I-18
RL-11	1,000 s.f. TO I-18
RL-12	3,000 s.f. TO I-8
RL-13	3,000 s.f. TO I-8
RL-14	1,500 s.f. TO I-9
RL-15	750 s.f. TO I-9
RL-16	750 s.f. TO I-13
RL-17	750 s.f. TO I-31
RL-18	750 s.f. TO I-29
RL-19	4,000 s.f. TO I-29

PROPOSED STORM DRAIN DRAINAGE AREA MAP

SCALE: 1"= 50'



TYPICAL DRY WELL CROSS SECTION

NOT TO SCALE

DRY-WELL SIZE					
LOCATION	VOLUME REQUIRED	W	L	DEPTH	VOLUME PROVIDED
REAR BUILDINGS 7-10	12.5 C.F.	3.5'	3.5'	13"	13.3 C.F.

NOTE: EACH BUILDING HAS 4 DOWNSPOUTS WHICH COVER 500 S.F. OF ROOF AREA EACH. ALL DRYWELLS ARE SIZED EQUALLY.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[illegible] 10/8/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

Cindy Hamilton 10/15/02
CHIEF, DIVISION OF LAND DEVELOPMENT HB DATE

[illegible] 10/16/02
DIRECTOR DATE

STRUCTURE SCHEDULE

NO.	TYPE	LOCATION NORTH	LOCATION EAST	TOP ELEV.	INV. IN	INV. OUT	REMARKS
I-1	"D" INLET			309.90	304.75	304.55	SD-4.39 USE TWO THROATS. THROAT ELEVS.=309.0
I-2	SINGLE "WR" INLET			312.90	309.90	309.70	SD-4.37
I-3	SINGLE "WR" INLET			312.90	310.00	309.80	SD-4.37
I-4	SINGLE "WR" INLET			313.86	310.27	310.07	SD-4.37
I-5	YARD INLET			316.00	310.75	310.55	SD-4.14
I-6	SINGLE "WR" INLET			316.93	313.00	312.75	SD-4.37
I-7	"WR" INLET			319.83	315.50	315.30	SD-4.35
I-8	SINGLE "WR" INLET			320.15	316.41	316.21	SD-4.37
I-9	SINGLE "WR" INLET			321.10	---	319.40	SD-4.37
I-10	SINGLE "WR" INLET			316.56	---	313.00	SD-4.37
I-11	SINGLE "WR" INLET			321.37	318.79	318.69	SD-4.37
I-12	SINGLE "WR" INLET			324.28	320.50 320.50	320.30	SD-4.37
I-13	DOUBLE "WR" INLET			330.64	---	326.00	SD-4.37
I-14	SINGLE "WR" INLET			327.57	---	324.60	SD-4.37
I-15	SINGLE "WR" INLET			322.62	317.95	317.75	SD-4.37
I-16	SINGLE "WR" INLET			322.62	318.41	318.21	SD-4.37
I-17	YARD INLET			323.00	318.86	318.66	SD-4.14
I-18	SINGLE "WR" INLET			322.46	---	318.96	SD-4.37
I-19	SINGLE "WR" INLET			315.25	310.48	318.28	SD-4.37
I-20	SINGLE "WR" INLET			315.25	311.95	311.50	SD-4.37
I-21	DOUBLE "WR" INLET			316.60	312.45 312.45	312.25	
I-22	DOUBLE "WR" INLET			330.55	---	327.02	
I-24	SINGLE "WR" INLET			316.77	312.86	312.66	SD-4.37
I-25	SINGLE "WR" INLET			324.83	318.80 318.82	318.35	SD-4.37
I-26	SINGLE "WR" INLET			324.91	320.24	320.04	SD-4.37
I-27	SINGLE "WR" INLET			330.95	322.88	322.63	SD-4.37
I-28	YARD INLET			332.85	---	329.00	SD-4.14
I-29	SINGLE "WR" INLET			326.00	321.20 321.20	321.00	SD-4.37
I-30	SINGLE "WR" INLET			325.18	---	321.50	SD-4.37
I-31	SINGLE "WR" INLET			326.20	---	322.50	SD-4.37
I-32	SINGLE 'WR' INLET			325.91	---	320.84	SD-4.37
M-1	48" STD "A" MH			313.00	307.00 310.31	306.90	G-5.11
M-2	48" STD "A" MH			316.65	307.90	307.70	G-5.11
M-3	48" SHA LOW MH			313.51	309.44 309.60	308.94	G-5.12
M-4	48" STD "A" MH			317.05	312.02 311.00	311.52	G-5.11
M-5	48" STD "A" MH			322.65	317.25 317.51	317.00	G-5.11
M-6	48" STD "A" MH			321.60	315.26	315.06	G-5.11
M-7	48" STD "A" MH (FLOW SPLITTER)			326.00	320.00	319.00/318.10	G-5.11
M-8	48" STD "A" MH (FLOW SPLITTER)			321.60	318.64	317.14	G-5.11
M-9	48" STD "A" MH (FLOW SPLITTER)			321.60	---	---	G-5.11
SC-1	STORMCEPTOR			310.25	305.92	305.82	STC 6000
S-1	PRE-CAST STRUCTURE			310.00	299.50	299.17	SEE DTL SHT. 13
ES-1	30" CONCRETE END SECTION					303.50	STD END SECTION
ES-2	12" HDPE END SECTION					316.00	STD END SECTION
ES-3	18" HDPE END SECTION					312.28	STD END SECTION
ES-4	15" HDPE END SECTION					303.50	STD END SECTION
E-1	24" TYPE "C" ENDWALL				298.57	298.57	SD-5.21
M-7A	48" STD."A" MH			318.50	315.50	313.03	G.5.11

STORM DRAIN DRAINAGE AREA CHART

INLET NO.	DRAINAGE AREA DESIGNATION	AREA c	% IMPERVIOUS	C
I-1	HH	0.25	85	0.72
I-2	R	0.24	85	0.72
I-3	P	0.26	85	0.72
I-4	O	0.10	85	0.72
I-5	N	0.10	85	0.72
I-6	L	0.10	85	0.72
I-7	K	0.13	85	0.72
I-8	J	0.44	85	0.72
I-9	I	0.20	85	0.72
I-10	H	0.22	85	0.72
I-11	M	0.12	85	0.72
I-12	Y	0.14	85	0.72
I-13	F	0.37	85	0.72
I-14	E	0.22	85	0.72
I-15	D	0.10	85	0.72
I-16	Z	0.10	85	0.72
I-17	B	0.55	85	0.72
I-18	A	0.15	85	0.72
I-19	G	0.20	85	0.72
I-20	C	0.24	85	0.72
I-21	T	0.34	85	0.72
I-22	S	0.43	85	0.72
I-24	FF	0.25	85	0.72
I-25	GG	0.10	85	0.72
I-26	CC	0.18	85	0.72
I-27	BB	0.12	85	0.72
I-29	FF	0.16	85	0.72
I-30	EE	0.12	85	0.72
I-31	DD	0.12	85	0.72
I-32	I I	0.25	85	0.72

ZONING "B" SOIL
A_T = 6.14 Ac. ±

PIPE SCHEDULE

SIZE	TYPE	LENGTH (LINEAR FEET)
12"	HDPE	139.00
15"	HDPE	1718.50
18"	HDPE	294.00
24"	HDPE	37.00
30"	HDPE	387.00
24"	RCCP	60.00
42"	RCCP	100.00

NO.	REVISION	DATE
1	Move Building #7; Add side entrances and stairs; Add sidewalks to side and front doors; regrade for sidewalks; regrade for buildings 7, 8, 9, 10; SD labels and profiles; add yard inlet.	12-18-02

OWNER/DEVELOPER
CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

PROPOSED STORM DRAIN DRAINAGE AREA MAP
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'

A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 PARCEL 604
6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

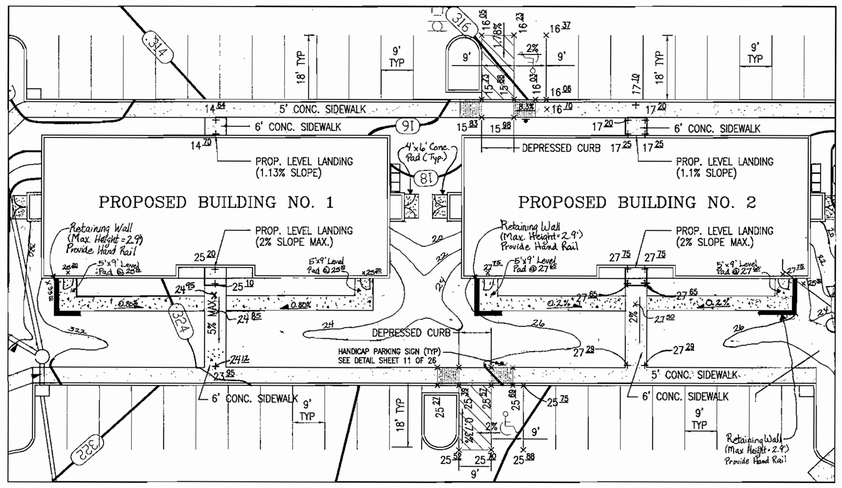
FREDERICK WARD ASSOCIATES, INC.
ENGINEERS ARCHITECTS SURVEYORS
7125 Riverwood Drive Columbia, Maryland 21046-2354
Phone: 410-290-9550 Fax: 410-720-6226
Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

STATE OF MARYLAND ROBERT HARRIS VOGEL No.16193 REGISTERED PROFESSIONAL ENGINEER 10/2/02
[illegible]
ROBERT H. VOGEL, PE No.16193

DESIGN BY: CLS
DRAWN BY: JAJ/CLY
CHECKED BY: RHV
DATE: APR. 19, 2002
SCALE: 1"=60'
W.O. NO.: 2017165

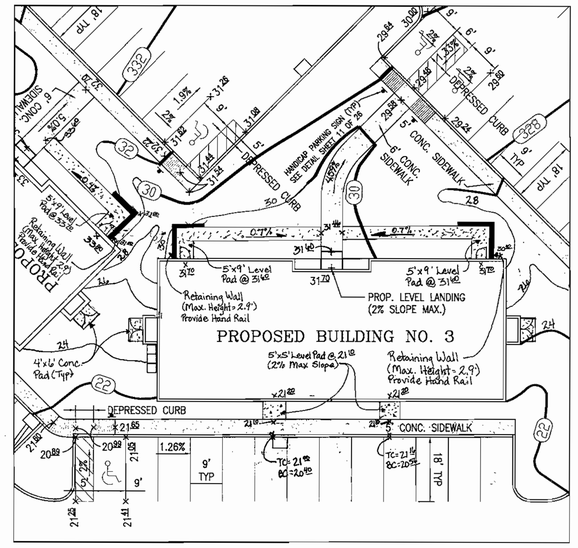
SDP-02-52

M:\PROJECTS\2017165\ENGR\dwg\S202158.dwg Wed Sep 25 11:05:05 2002 $-JJ-$



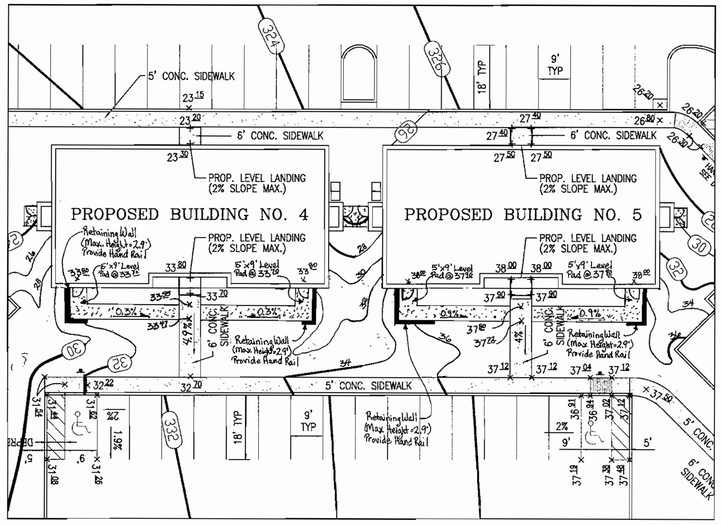
SITE DETAIL BUILDING NO. 1 & NO. 2

SCALE: 1" = 20'



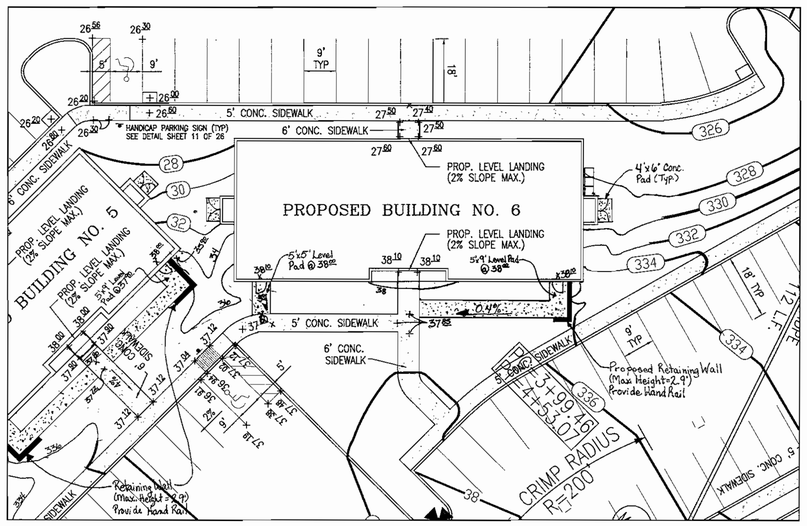
SITE DETAIL BUILDING NO. 3

SCALE: 1" = 20'



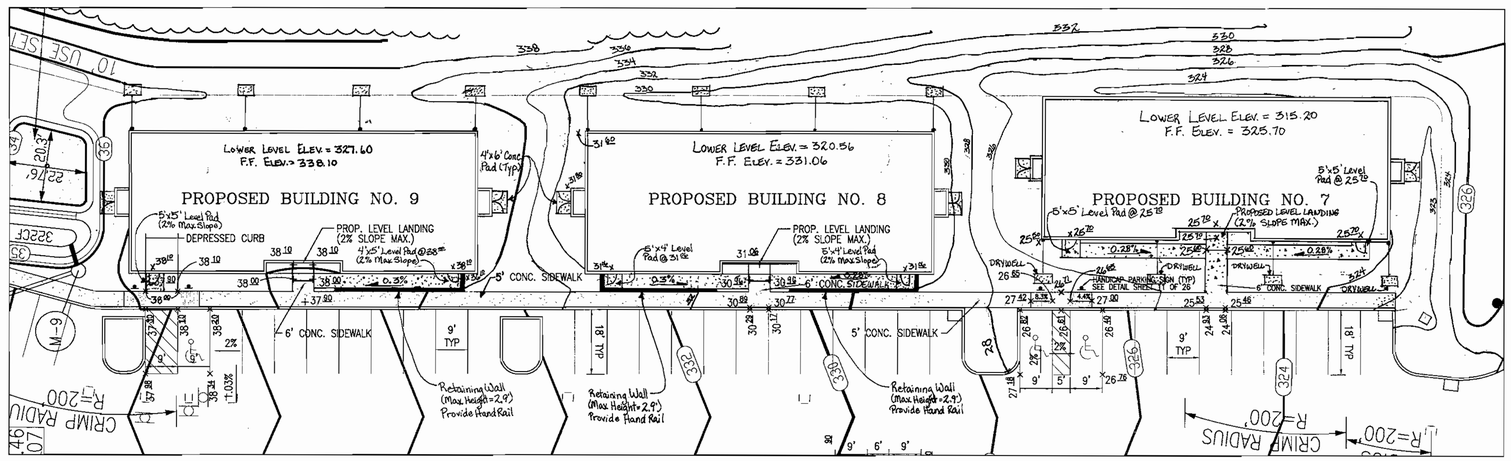
SITE DETAIL BUILDING NO. 4 & NO. 5

SCALE: 1" = 20'



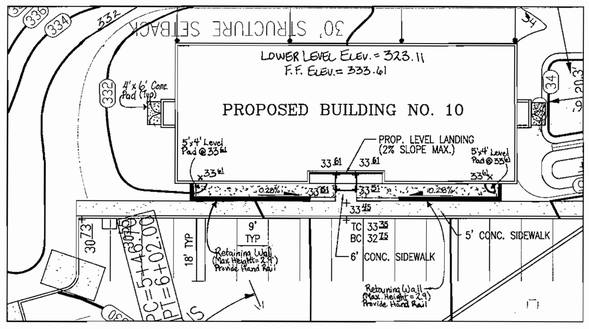
SITE DETAIL BUILDING NO. 6

SCALE: 1" = 20'



SITE DETAIL BUILDING NO. 7, NO.8 & NO. 9

SCALE: 1" = 20'



SITE DETAIL BUILDING NO. 10

SCALE: 1" = 20'

* NOTE:
CONTRACTOR TO PROVIDE SIDEWALK DRAINS AS NEEDED TO PREVENT PONDING.

NO.	REVISION	DATE
1	Move building #7, Add side entrances and stairs, Add sidewalks to side, and front doors; regrade for sidewalks, regrade for buildings 7,8,9,10; SD leads and profiles; add yard inlet.	12-18-02

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/8/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/15/02

DIRECTOR — DATE 10/16/02

OWNER/DEVELOPER
CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

SITE DETAILS
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'
A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 PARCEL 604
6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

STATE OF MARYLAND — ROBERT HARRIS VOGEL — NO. 16193 — REGISTERED PROFESSIONAL ENGINEER — 10/16/02
ROBERT H. VOGEL, PE No.16193

DESIGN BY: CLS
DRAWN BY: JAJ
CHECKED BY: RHV
DATE: APR. 19, 2002
SCALE: AS SHOWN
W.O. NO.: 2017165

SHEET 12 OF 26

SDP-02-52

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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 fill 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 side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure 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 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 coatings 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. Aluminimum 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 insulating materials at least 24 mils in thickness.

3. Connections – All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep 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 neoprene gasket, pre-punched to the flange bolt circle, sandwiched between adjacent flanges; a 12-inch wide standard lap type band with 12-inch wide by 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 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 internet caulking or a neoprene bead.

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

5. Backfilling shall conform to "Structure Backfill".

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

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

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

2. Bedding – Reinforced concrete pipe conduits shall be laid on 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 as 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, foundation, and other parts 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

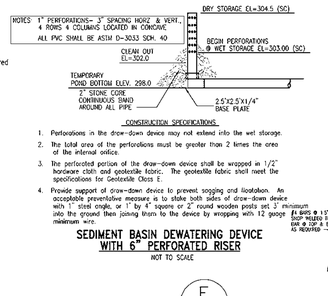
All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service 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 BOTTOM SOIL CONDITIONS

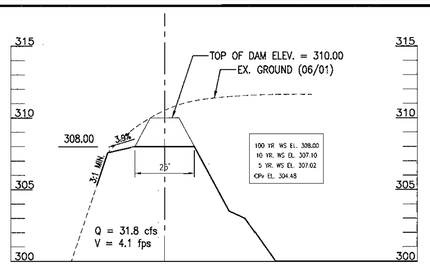
If broken rock fragments are encountered at finished pond bottom, under cut a minimum of 12" below basin grade and to a horizontal distance of at least 18" beyond each edge of the broken rock and backfill with fine-grained ML or CL soils compacted to a firm condition. This procedure should be performed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



CONSTRUCTION SPECIFICATIONS

1. Perforations in the draw-down device may not extend into the wet storage.
2. The total area of the perforations must be greater than 2 times the area of the internal orifice.
3. The perforated portion of the draw-down device shall be wrapped in 1/2" hardware cloth and geotextile fabric. The geotextile fabric shall meet the specifications for Geotextile Class E.
4. Provide support at draw-down device to prevent sagging and floatation. An acceptable preventative measure is to stake both sides of draw-down device with 1" steel angle, or 1" by 4" square or 2" round wooden posts set 3' minimum into the ground then joining them to the device by wrapping with 12 gauge minimum wire.

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

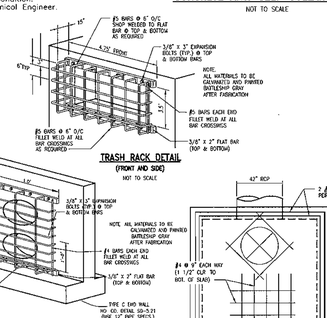


SECTION THROUGH EMERGENCY SPILLWAY
SCALE : HORIZONTAL – 1" = 30'
VERTICAL – 1" = 5'

SECTION A–A

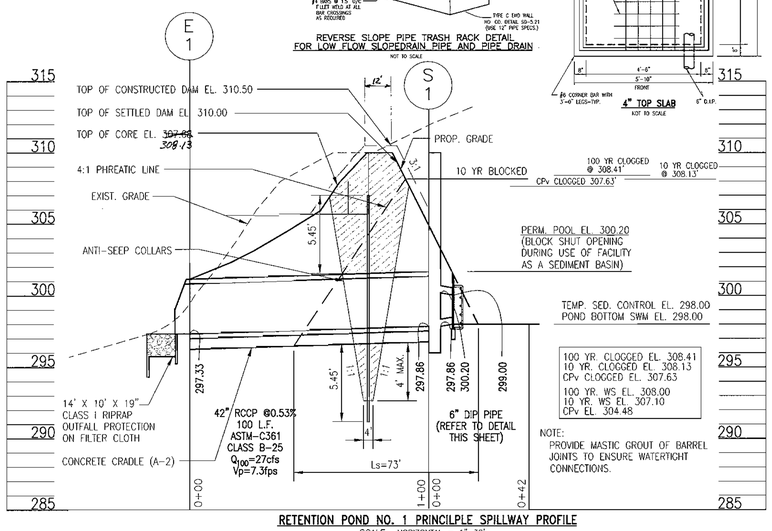
NOTES:
1. ANTI-SEEP COLLARS SHOULD BE PLACED WITHIN THE SATURATION ZONE.
2. ALL ANTI-SEEP COLLARS AND THEIR CONNECTIONS TO THE CONDUIT SHALL BE WATERTIGHT AND MADE OF COMPATIBLE WITH THE CONDUIT.
3. COLLARS DIMENSIONS SHALL EXTEND A MIN. OF 2' IN ALL DIRECTIONS AROUND THE PIPE.
4. ANTI-SEEP COLLARD SHALL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

CONCRETE ANTI-SEEP COLLAR DETAIL
NOT TO SCALE

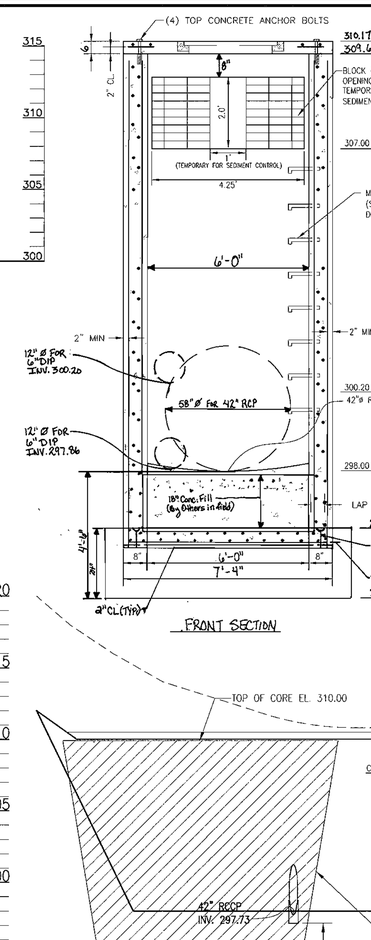


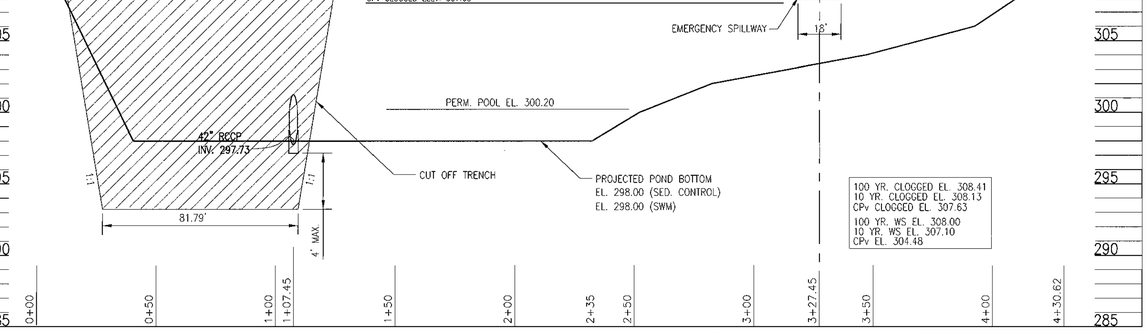
TRASH RACK DETAIL
(FRONT AND SIDE)
NOT TO SCALE

REVERSE SLOPE PIPE TRASH RACK DETAIL
FOR LOW FLOW SLOPEDRAIN PIPE AND PIPE DRAIN
NOT TO SCALE



RETENTION POND NO. 1 PRINCILPLE SPILLWAY PROFILE
SCALE: HORIZONTAL – 1"=30'
VERTICAL – 1"=5'



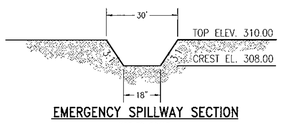


OPERATION, MAINTENANCE AND INSPECTION

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.

MAINTENANCE REQUIREMENTS FOR WET POND

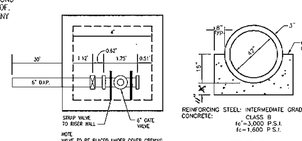
a. Removal of silt when accumulation exceeds six (6) inches in forebay.
b. Removal of accumulated paper, trash and debris as necessary.
c. Vegetation growing on the embankment top and faces of the forebay or basin is not allowed to exceed 18 inches in height at any time.
d. Annual inspection and repair of the structure.
e. Corrective maintenance's required any time a forebay does not drain within 60 hours (i.e., no standing water is allowed unless designed for).



EMERGENCY SPILLWAY SECTION
NOT TO SCALE

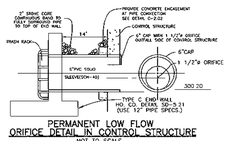
PROFILE OF EMBANKMENT

SCALE: HORIZONTAL – 1"=30'
VERTICAL – 1"=5'



POND DRAIN DETAIL
NOT TO SCALE

PIPE CRADLE DETAIL
NOT TO SCALE



PERMANENT LOW FLOW ORIFICE DETAIL IN CONTROL STRUCTURE
NOT TO SCALE

OWNER/DEVELOPER

CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

NO.	REVISION	DATE
1	PRECAST STRUCTURES	12-18-02

STORMWATER MANAGEMENT DETAILS AND SPECIFICATIONS

SITE DEVELOPMENT PLAN

GATEWAY OFFICE PARK

PARCEL 'A'

A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 PARCEL 604
6TH 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 REGISTERED PROFESSIONAL ENGINEER 10/2/02
ROBERT H. VOGEL, PE No.16193

DESIGN BY: CLS
DRAWN BY: CLY
CHECKED BY: RHV
DATE: APR. 19, 2002
SCALE: AS SHOWN
W.O. NO.: 2017165

SHEET 15 OF 26

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE 10/8/02

CHIEF, DIVISION OF LAND DEVELOPMENT MG DATE 10/15/02

DIRECTOR DATE 10/16/02

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 10/2/02

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 James M. Jost DATE 9/27/02

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

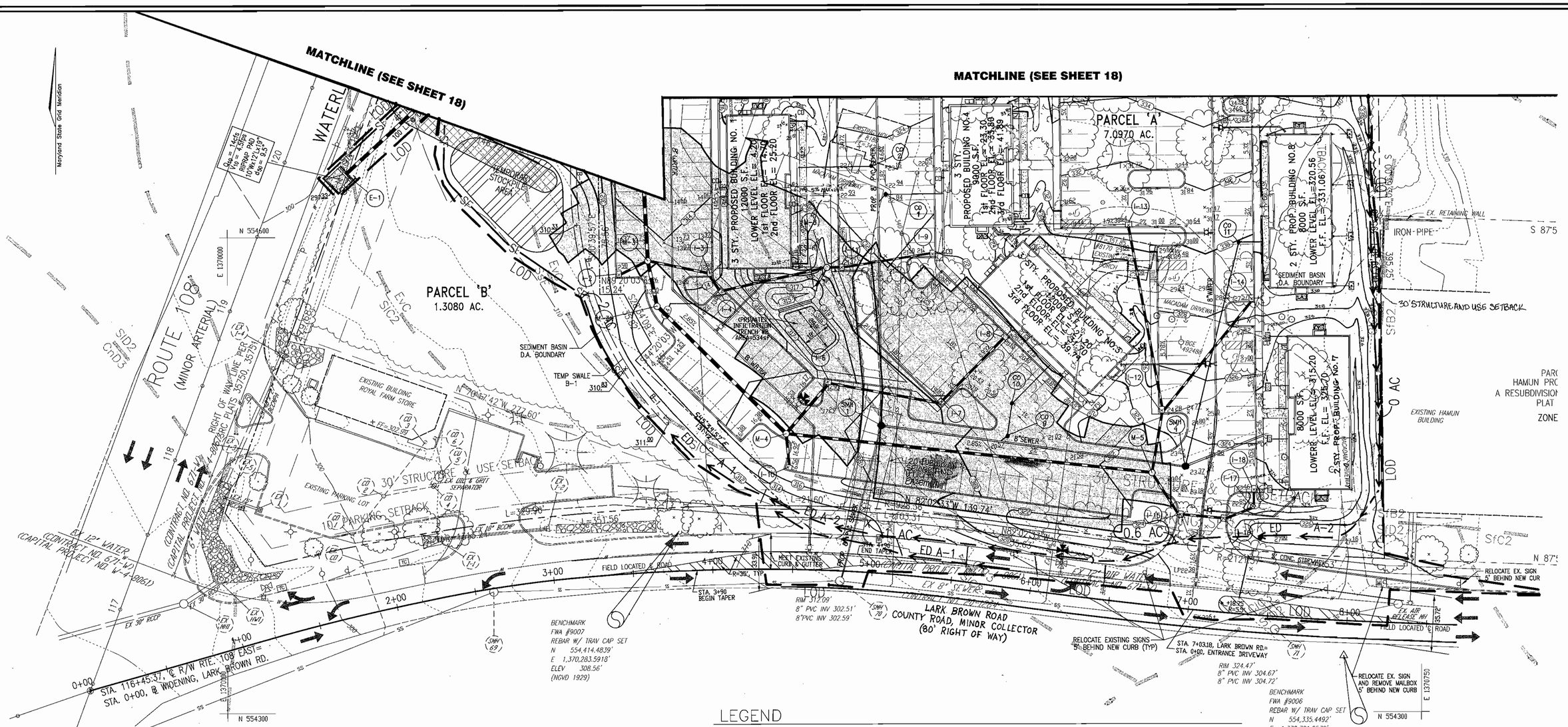
USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE 10/2/02

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

HOWARD SCD DATE 10/7/02

SDP-02-52

M:\PROJECTS\2017\65\ENGR\dwg\a2021s15.dwg Wed Sep 25 11:37:21 2002 $-JJ-$



For Detailed Grading And Layout Around Buildings, See Sheet 12.

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	SOIL GROUP
CIC3	CHILLUM GRAVELLY LOAM, 5-10 PERCENT SLOPES, SEVERELY ERODED	C
EvC	EVESBORO LOAMY SAND, 5-15 PERCENT SLOPES	A
SfC2	SASSAFRAS SANDY GRAVELLY LOAM, 5-10 PERCENT SLOPES, MODERATELY ERODED	B
SfD2	SASSAFRAS SANDY GRAVELLY LOAM, 10-15 PERCENT SLOPES, MODERATELY ERODED	B
SlC2	SASSAFRAS LOAM, 5 TO 10 PERCENT SLOPES, MODERATELY ERODED	B
SsE	SASSAFRAS SOILS, 15 TO 40 PERCENT SLOPES	B

LEGEND

- Existing Contour — 382
- Proposed Contour — (82)
- Spot Elevation — +82.53
- Direction of Flow
- Tree Protection Fence & Existing Trees to Remain
- Light Poles — Post Top, Overhead, Bollard
- Stabilized Construction Entrance — SCE
- Silt Fence — SF
- Super Silt Fence — SSF
- Earth Dike — ED, A-2
- Basin Drainage Area
- Temporary Swale — A-2 / B-3
- Limit of Disturbance — LOD
- Erosion Control Matting — ECM
- Rip-Rap Inflow Protection — RRP
- Gabion Inflow Protection — GM
- Removable Pumping Station — RPS
- Proposed Drainage Divide
- Existing Drainage Divide
- At Grade Inlet Protection — AGIP
- Standard Inlet Protection — SIP
- Curb Inlet Protection — CIP
- Sump Pit — SP
- SLOPES 15% - 24.9%

NOTE:
THERE ARE NO STEEP SLOPES

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/8/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/15/02

DIRECTOR — DATE 10/16/02

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 10/7/02

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 10/7/02

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 9/27/02

ENGINEERS CERTIFICATE

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SIGNATURE OF ENGINEER
ROBERT H. VOGEL — DATE 10/2/02

OWNER/DEVELOPER

CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

NO.	REVISION	DATE
1	Move Building #7, add side entrances and stairs, add sidewalks to side front doors, Regrade for sidewalks, Regrade for buildings 2, 8, 9, and 10, Storm Drains labels, add yard inlet	12-18-02

GRADING, STORMWATER MANAGEMENT, EROSION & SEDIMENT CONTROL PLAN
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'

TAX MAP 37 GRID 20 — PARCEL 604
6TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

FREDERICK WARD ASSOCIATES, INC.
ENGINEERS
ARCHITECTS
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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 — REGISTERED PROFESSIONAL ENGINEER — 10/2/02
ROBERT H. VOGEL, PE No.16193

DESIGN BY:	CLS
DRAWN BY:	JAJ
CHECKED BY:	RHV
DATE:	NOVEMBER, 2001
SCALE:	1" = 30'
W.O. NO.:	2017165

SHEET 17 OF 26

SDP-02-52

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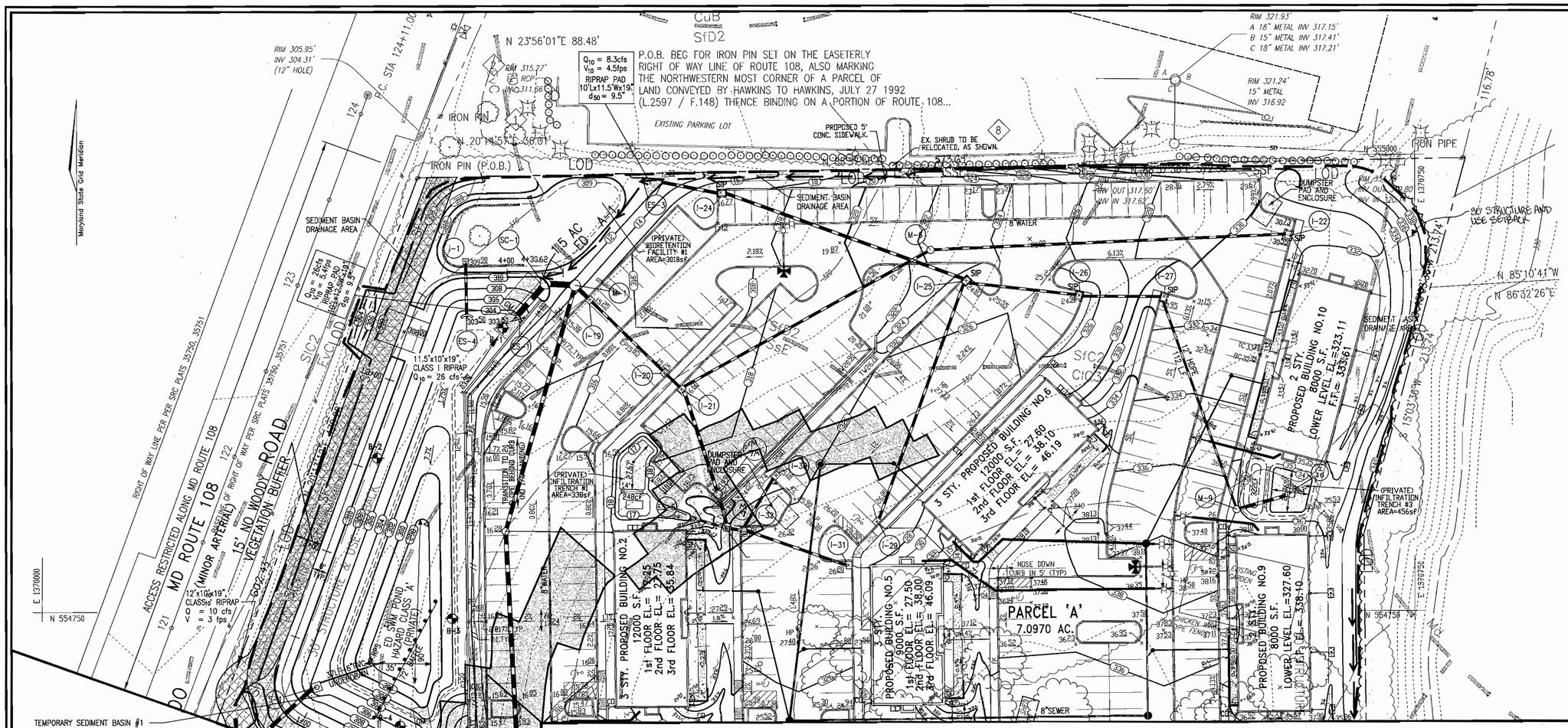
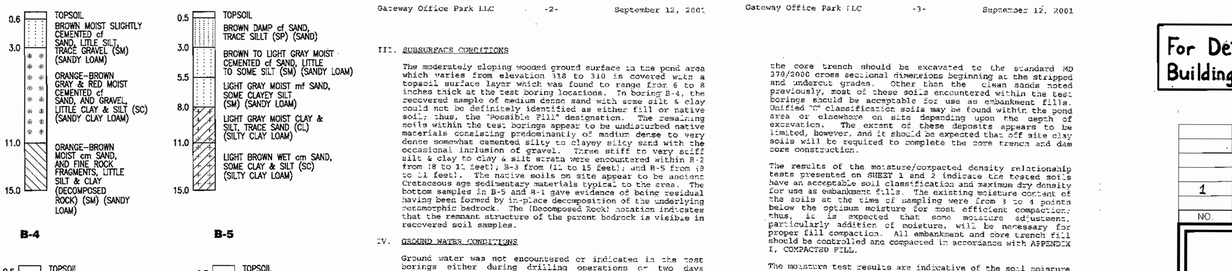


TEMPORARY SEDIMENT BASIN # 1	
ITEM	DATA
EX. DRANAGE AREA	7.50 Ac.
PROP. DRANAGE AREA	7.50 Ac.
STORAGE REQUIREMENT	27,000 CF
STORAGE PROVIDED	75,000 CF
WET STORAGE ELEV., VOL.	303.00, 15,300
DRY STORAGE ELEV., VOL.	304.50, 14,400
BOTTOM ELEV.	298.00
CLEANOUT ELEV.	302.00
RISER CREST ELEV.	307.00
TOP OF EMBANKMENT	310.00
BOTTOM DIMENSIONS	90'x35'
Q2 EXIST./ Q2 PROP	3cfs/3cfs

SOIL BORING DETAIL

NTS



LEGEND

Existing Contour
Proposed Contour
Spot Elevation
Direction of Flow
Tree Protection Fence & Existing Trees to Remain
Light Poles (Post Top, Overhead, Bollard)
Stabilized Construction Entrance (SCE)
Silt Fence (SF)
Super Silt Fence (SSF)
Earth Dike (ED, A-2)

Basin Drainage Area
Limit of Disturbance (LOD)
Erosion Control Matting (ECM)
Rip-Rap Inflow Protection (RRP)
Gabion Inflow Protection (GM)
Removable Pumping Station (RPS)
Proposed Drainage Divide
Existing Drainage Divide
At Grade Inlet Protection (AGIP)
Standard Inlet Protection (SIP)
Curb Inlet Protection (CIP)
Sump Pit (SP)

III. SUBSURFACE CONDITIONS

The moderately sloping wooded ground surface in the pond area which varies from elevation 318 to 310 is covered with a topsoil surface layer which was found to range from 6 to 8 inches thick at the test boring locations. In boring B-4, the recovered sample of medium dense sand with some silt & clay could not be definitely identified as either fill or native soil; thus, the "Possible Fill" designation. The remaining soils within the test borings appear to be undisturbed native materials consisting predominantly of medium dense to very dense somewhat cemented silty to clayey silty sand with the occasional inclusion of gravel. Three stiff to very stiff silt & clay to clay & silt strata were encountered within B-2 from (8 to 11 feet); B-3 from (11 to 15 feet); and B-5 from (8 to 11 feet). The native soils on site appear to be ancient Cretaceous age sediments typical to the area. The bottom samples in B-5 and B-1 gave evidence of being residual having been formed by in-place decomposition of the underlying metamorphic bedrock. The (Decomposed Rock) notation indicates that the remnant structure of the parent bedrock is visible in recovered soil samples.

IV. GROUND WATER CONDITIONS

Ground water was not encountered or indicated in the test borings either during drilling operations or two days following completion of the test borings. Although ground water levels can vary with seasons and precipitation, it does not appear that ground water will be a consideration in either design or construction of the storm water management facility within the depths penetrated by the test borings.

V. STORM WATER MANAGEMENT RECOMMENDATIONS

At the time of our study, the general area of the storm water management facility was defined. However, the details of configuration in site had not been established.

The area appears to be suitable for construction of the standard storm water management quantity control facility consisting of a cut basin, fill embankment and buried principal spillway. Prior to embankment fill construction, the entire embankment area should be stripped of vegetation and otherwise unsuitable materials to expose undisturbed clean existing fills or native soils. Clean sand soils as encountered in borings B-2 and B-3 to depths of approximate 3 feet should be removed from the embankment area. The resulting surface should be proof rolled and any soft yielding areas further undercut. Once a firm base is established, the core trench should be excavated to the standard MD 378/2000 cross sectional dimensions beginning at the stripped and undercut grades. Other than the clean sands noted previously, most of these soils encountered within the test borings should be acceptable for use as embankment fills. Unified CC classification soils may be found within the pond area or elsewhere on site depending upon the depth of excavation. The extent of these deposits appears to be limited, however, and it should be expected that off site clay soils will be required to complete the core trench and dam core construction.

The results of the moisture/compacted density relationship tests presented on SHEET 1 and 2 indicate the tested soils have an acceptable soil classification and maximum dry density for use as embankment fills. The existing moisture content of the soils at the time of sampling were from 4 to 4 points below the optimum moisture for most efficient compaction; thus, it is expected that some moisture adjustment, particularly addition of moisture, will be necessary for proper fill compaction. All embankment and core trench fill should be controlled and compacted in accordance with APPENDIX I, COMPACTED FILL.

The moisture test results are indicative of the soil moisture conditions at the time of sampling. Soil moistures at the time of construction may vary from those shown. During the cooler months of the year, moisture adjustments in the field can be difficult or impossible and exposed soils can become saturated requiring undercutting and replacement with more suitable materials. Construction during the normally warm dry construction season (late spring, summer and early fall) would generally result in the most efficient earthwork construction.

From review of the subsurface information, it appears that the native subsurface materials will provide adequate support for the principal spillway and riser structure providing that the applied bearing capacities do not exceed 2,500 PSF.

VI. INFILTRATION POTENTIAL

The MDE requires that soils considered for storm water disposal by infiltration have a minimum infiltration rate of 0.52 inches per hour and be at least 4 feet above the ground water table or rock (i.e. impervious materials). Also, infiltration cannot occur in existing fills.

The test borings indicate that some of the soils within the depths investigated would normally be suitable for infiltration having USDA classifications of Sandy Loam or Loamy Sand. However, in actuality, examination of the recovered soil samples shows these same materials to be slightly cemented. Also, the standard penetration values often indicate a dense in-place condition. Occasionally, soil types unsuitable for infiltration such as Silt Loam, Silty Clay Loam and Sandy Clay Loam were penetrated. These predominantly fine-grained clay soils have a stiff to very stiff consistency.

Based upon our visual examination of the recovered soil samples, as well as the standard penetration test values and the soil classifications, it is our opinion that reliable infiltration could not be achieved in the area of the storm water management facility to the depths penetrated.

VII. GEOTECHNICAL MONITORING

We recommend that Herbst/Benson & Associates be retained to provide the geotechnical monitoring and testing services during the construction phase of the work. This is to observe compliance with design concepts, specifications and recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated prior to the start of construction.

The earthwork construction including stripping, undercutting, proof rolling and controlled fill placement shall be inspected with in-place density tests taken to verify construction according to the specifications. Also, the principal spillway excavation shall be examined and the exposed soil conditions approved for the design bearing. We will provide the indicated geotechnical monitoring and testing services upon request.

APPENDIX I

COMPACTED FILL

A. Embankment shall be constructed of approved materials from the excavation or from other sources. The material shall be free from organic materials, trash, muck, roots, frost and other deleterious substances.

B. Before depositing fills, the ground surface shall be cleared of all refuse, brush, grass, roots, ice and frozen material. All organic matter and otherwise unsuitable soils shall be removed from the surface to be filled. The exposed surface shall be plowed or scarified if required to a depth of six inches. Soils so scarified, or which have been disturbed by grubbing and stripping operations, shall be compacted to undisturbed soil below by discing, leveling, rolling, and compacting at the moisture content and to the density specified below for compacted embankments.

C. Where fills are made on hillsides or slopes, the slope of the original ground upon which the fill is to be placed shall be plowed or scarified deeply, or where the slope ratio of the original ground is steeper than 5 horizontal to 1 vertical, the bank shall be stepped or benched, when considered necessary by the Engineer, to permit placement of the fill in horizontal layers.

D. Placing, Spreading and Compacting Fill Materials:

1. The fill materials shall be placed in layers which, before compaction shall not exceed 8 inches. Each layer shall be spread uniformly and evenly and shall be thoroughly blade mixed during the spreading to insure uniformity of materials in each layer.

2. After each layer has been placed, mixed and spread evenly, it shall be thoroughly compacted to not less than 95% of the maximum dry density as determined by ASTM D 698.

3. The moisture content of the fill shall be as required in order to attain the degree of compaction specified.

4. Compaction shall be by approved multiple-wheel pneumatic tired rollers, vibratory rollers or other types of acceptable rollers.

5. The filling operation shall be continued as specified above until the fill has been brought to the subgrade shown on the plans.

6. The fill shall be constructed in such a manner that the surface will be sloped to drain at all times, and all fill shall be deposited to prevent excessive moisture accumulation from rainwater.

7. When the work is interrupted by rain, filling shall not be resumed until tests indicate that the moisture content and density of the top 6 inches of fill conform to the above specification requirements.

For Detailed Grading And Layout Around Buildings, See Sheet 12.

NO.	REVISION	DATE
1	Move building #7, add side entrances + stairs, Add sidewalk to side-front doors, regrade for sidewalks, regrade for buildings 7,9,9, and 10, Storm Drain labels, Add yard inlet.	12-18-02

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/8/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/15/02
DIRECTOR — DATE 10/16/02

ENGINEERS CERTIFICATE

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SIGNATURE OF ENGINEER — ROBERT H. VOGEL — DATE 10/7/02

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 9/27/02

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 10/7/02

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 10/7/02

OWNER/DEVELOPER

CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

GRADING, STORMWATER MANAGEMENT, EROSION & SEDIMENT CONTROL PLAN
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'
A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 PARCEL 604
6TH 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 — REGISTERED PROFESSIONAL ENGINEER — 10/7/02
ROBERT H. VOGEL, PE No.16193

DESIGN BY:	CLS
DRAWN BY:	JAJ/CLY
CHECKED BY:	RHV
DATE:	APR. 19, 2002
SCALE:	1" = 30'
W.O. NO.:	2017165

SHEET 18 OF 26

SDP-02-52

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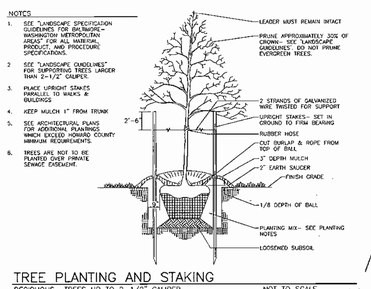
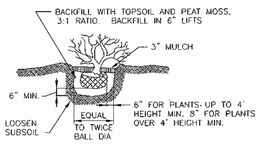
SCHEDULE A PERIMETER LANDSCAPE EDGE								
CATEGORY	ADJACENT TO ROADWAYS				ADJACENT TO PERIMETER PROPERTIES			
Perimeter/Frontage Designation Landscape Type	(1) E	(5) B	(6) E	(7) E	(2) A	(3) C	(4) A	
Linear Feet of Roadway Frontage/Perimeter	319	74	27	254	571	391	216	
Credit for Existing Vegetation (Yes, No, Linear Feet Describe below if needed)	No	No	No	No	No	No	No	
Credit for Wall, Fence or Berm (Yes, No, Linear Feet Describe below if needed)	No	No	No	No	No	No	No	
Number of Plants Required Shade Trees Evergreen Trees Shrubs	1:40 8 – 1:4 80	1:50 1 1:40 2 –	1:40 1 – 1:4 7	1:40 6 – 1:4 64	1:60 10 – –	1:40 10 1:20 20 –	1:60 4 – –	
Number of Plants Provided Shade Trees Evergreen Trees Other Trees (2:1 Substitution) Shrubs (10:1 Substitution) Describe Plant Substitution Credits Below if needed)	8 – – 80	1 2 – –	1 – – 7	6 – – 64	10 – – –	2 42 4 16	– 9 6 8	

GENERAL NOTES:

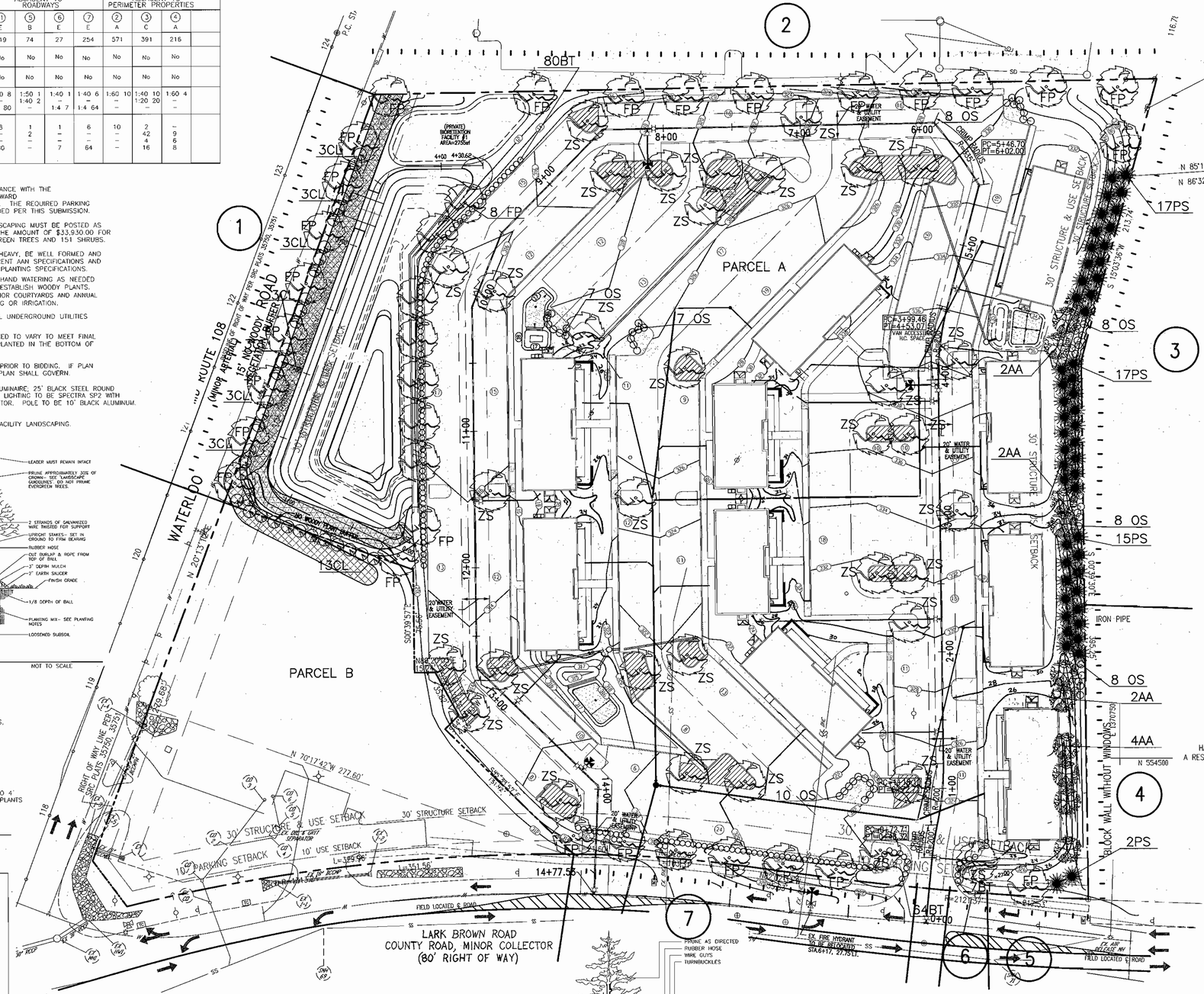
1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. THE REQUIRED PARKING AND PERIMETER LANDSCAPING WILL BE BONDED PER THIS SUBMISSION.
2. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING MUST BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $33,930.00 FOR THE REQUIRED 70 SHADE TREES, 56 EVERGREEN TREES AND 151 SHRUBS.
3. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH LCAMW PLANTING SPECIFICATIONS.
4. MAINTENANCE TO INCLUDE MONITORING AND HAND WATERING AS NEEDED FOR THE FIRST TWO GROWING SEASONS TO ESTABLISH WOODY PLANTS. SPECIALIZED PLANTING AREAS INCLUDING INTERIOR COURTYARDS AND ANNUAL BEDS MAY REQUIRE REGULAR HAND WATERING OR IRRIGATION.
5. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
6. FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
7. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.
8. DRIVE LIGHTING TO BE KIM ENTABLATURE ET LUMINAIRE, 25' BLACK STEEL ROUND POLES, 250 WATT METAL HALIDE. PEDESTRIAN LIGHTING TO BE SPECTRA SP2 WITH BLACK ANGLED HOOD AND GR3 GLASS REFRACTOR. POLE TO BE 10' BLACK ALUMINUM. LAMP TO BE 100 WATT METAL HALIDE.
9. SEE FOLLOWING SHEET FOR BIORETENTION FACILITY LANDSCAPING.



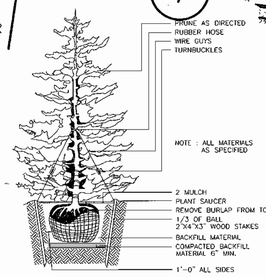
TREE PLANTING AND STAKING
DECIDUOUS TREES UP TO 2-1/2" CALIPER NOT TO SCALE



SHRUB PLANTING DETAIL
NOT TO SCALE



TYPICAL EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE



LEGEND

- Existing Contour — 382
- Proposed Contour — 82
- Spot Elevation — +82.23
- Direction of Flow
- Existing Trees to Remain
- Light Poles — Parking Lot & Roadway / Pedestrian; Parking Lot (Twin Head)
- Existing Adjacent Landscaping
- Shade Trees
- Evergreen Trees
- Shrubs/Hedge
- Flowering Trees
- Perimeter Landscape Edge (2)
- Required Internal Planting Island

SCHEDULE 'B': PARKING LOT INTERNAL LANDSCAPING	
Number of parking spaces	410
Number of trees and parking lot islands required (1:20)	21
Number of trees and parking lot islands provided Shade Trees Other Trees (2:1 Substitution)	 21 –

SCHEDULE D : STORMWATER MANAGEMENT AREA LANDSCAPING	
LINEAR FEET OF PERIMETER	673 LF
CREDIT FOR EXISTING VEGETATION (NO, YES AND LINEAR FEET)	N/A
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	YES, 8 Shade Trees on Perimeter 1
NUMBER OF TREES REQUIRED SHADE TREES EVERGREEN TREES	 9 SHADE TREES (17-8) 34 EVERGREEN TREES
NUMBER OF TREES PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION)	 9 SHADE TREES 34 EVERGREEN TREES 0 TREES (0 SUBSTITUTION TREES)

LANDSCAPING IS NOT REQUIRED AROUND THE BIORETENTION FACILITIES BECAUSE PLANTINGS WILL BE PLACED IN THE FACILITES. ALSO NO SURETY IS REQUIRED FOR BIORETENTION PLANTINGS BECAUSE THEY ARE PART OF THE ENGINEERING COST ESTIMATE.

LANDSCAPE SCHEDULE				
KEY	QUAN.	BOTANICAL NAME	SIZE	REMARKS
AA	10	Amelanchier'Autumn Brilliance' Tree Form Autumn Brilliance Shadblow	8'-10' HT.	B & B
BT	151	Prunus laurocerasus 'Otto Luyken' Otto Luyken Cherry Laurel	36" HT.	B & B or Container
FP	35	Fraxinus pennsylvanica 'Patmore' Patmore Ash	2 1/2"-3" cal.	B & B
OS	56	Osmanthus heterophyllus 'Gulf Tide' Gulftide Osmanthus	24"-30" Ht.	B & B or Container
PS	51	Pinus strobus White Pine	6'-8' HT.	B & B
ZS	33	Zelkova serrata 'Village Green' Village Green Japanese Zelkova	2 1/2"-3" cal.	B & B
CL	34	Cupressocyparis leylandii Leyland Cypress	6'-8' HT.	B & B

NO.	REVISION	DATE
1	Move building #7; Add side entrances and stairs; add sidewalks to side doors regrade for sidewalks; regrade buildings 7,8,9,10; SD labels and profiles; add yard inlet	12-18-02

PARCEL 'A'
HAMUN PROPERTIES, INC.
A RESUBDIVISION OF LOTS 1 & 2
PLAT # 5439
ZONED B-2

OWNER/DEVELOPER
CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/8/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/15/02
DIRECTOR — DATE 10/16/02

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 9/27/02

LANDSCAPE PLAN
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'
A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 PARCEL 604
6TH 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 MARY HAMILTON MCKENNA REGISTERED LANDSCAPE ARCHITECT NO. 2039 10-2-02
Mary H.McKenna, RLA No. 2039

DESIGN BY: MHM
DRAWN BY: MHM
CHECKED BY: RHV
DATE: APR. 19, 2002
SCALE: 1"=40'
W.O. NO.: 2017165

SHEET 22 OF 26

SDP-02-52

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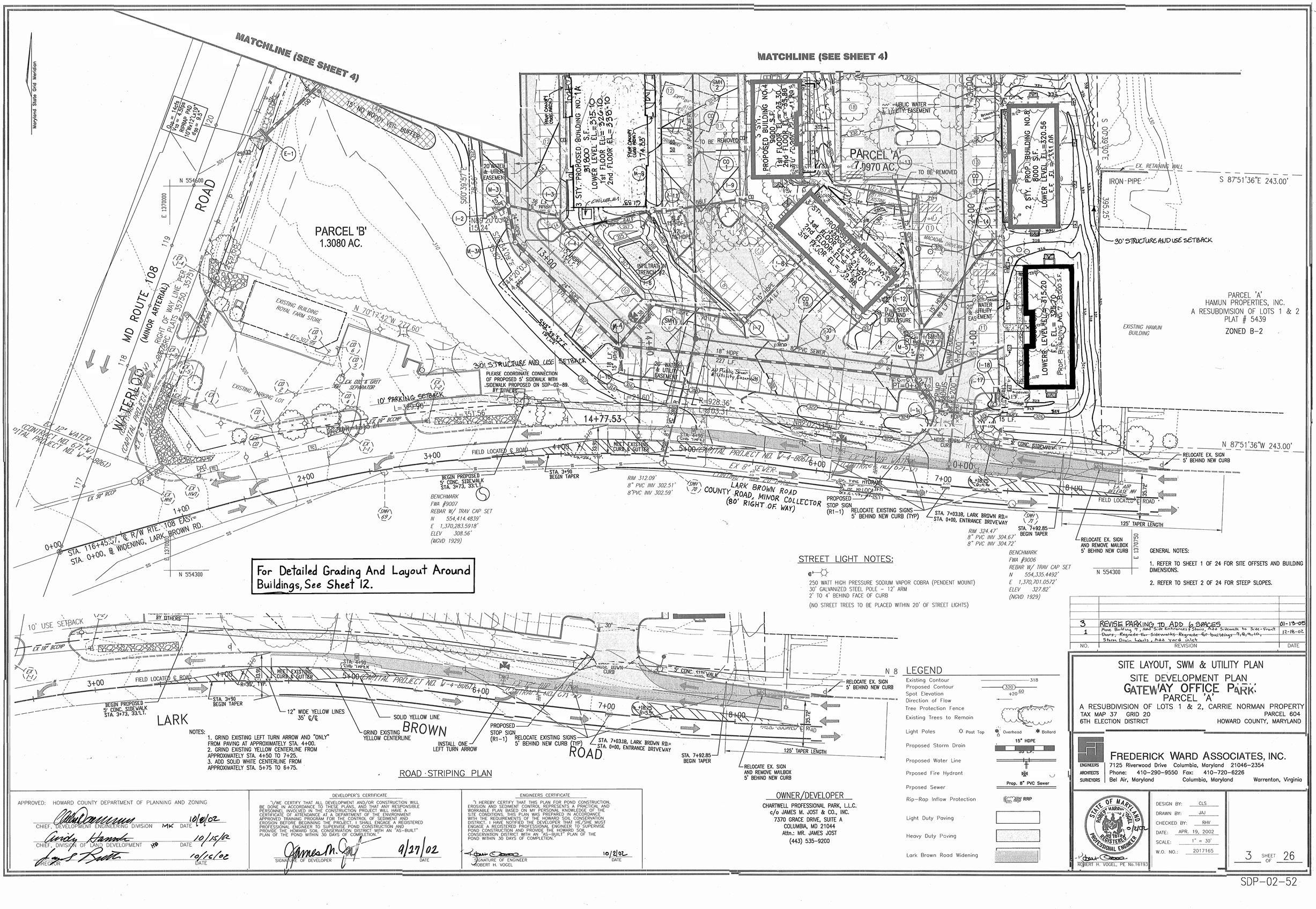


NOTES:
1. GRIND EXISTING LEFT TURN ARROW AND "ONLY" FROM PAVING AT APPROXIMATELY STA. 4+00.
2. GRIND EXISTING YELLOW CENTERLINE FROM APPROXIMATELY STA. 4+50 TO 7+25.
3. ADD SOLID WHITE CENTERLINE FROM APPROXIMATELY STA. 5+75 TO 6+75.

ROAD STRIPING PLAN

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)

LEGEND

Existing Contour	318
Proposed Contour	320
Spot Elevation	+20.60
Direction of Flow	
Tree Protection Fence	
Existing Trees to Remain	
Light Poles	Post Top, Overhead, Bollard
Proposed Storm Drain	15" HDPE, 55 L.F.
Proposed Water Line	
Proposed Fire Hydrant	
Proposed Sewer	Prop. 8" PVC Sewer
Rip-Rap Inflow Protection	RRP
Light Duty Paving	
Heavy Duty Paving	
Lark Brown Road Widening	

OWNER/DEVELOPER

CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

GENERAL NOTES:

1. REFER TO SHEET 1 OF 24 FOR SITE OFFSETS AND BUILDING DIMENSIONS.
2. REFER TO SHEET 2 OF 24 FOR STEEP SLOPES.

NO.	REVISION	DATE
3	REVISE PARKING TO ADD 6 SPACES Move Building 7, Add Side Entrances & Doors, Regrade for Sidewalks Regrade for Buildings 7,8,9,10, Storm Drain Labels, Add yard inlet	01-13-05
1		12-18-02

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/8/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/15/02
DIRECTOR — DATE 10/16/02

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 9/27/02

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 10/2/02

SITE LAYOUT, SWM & UTILITY PLAN
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'

A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 PARCEL 604
6TH 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

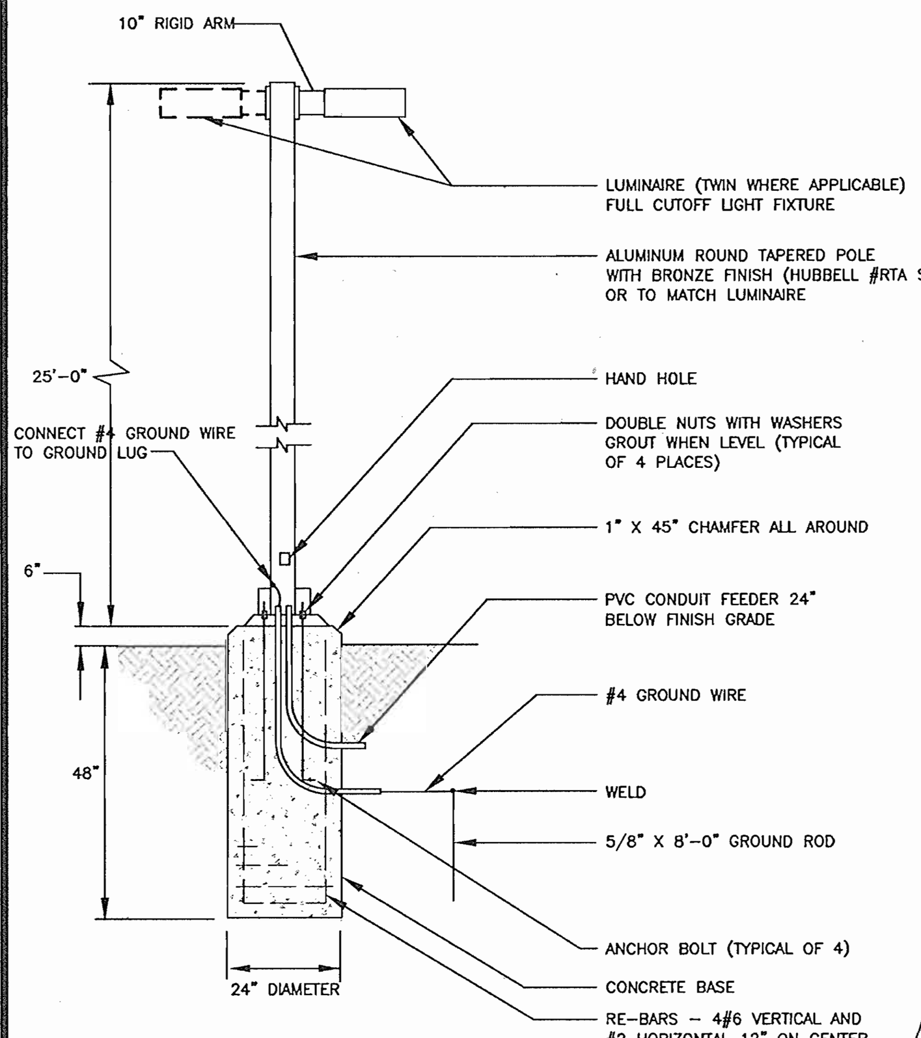
STATE OF MARYLAND ROBERT HARRIS VOGEL No. 16193 REGISTERED PROFESSIONAL ENGINEER
ROBERT H. VOGEL, PE No.16193

DESIGN BY: CLS
DRAWN BY: JAJ
CHECKED BY: RHV
DATE: APR. 19, 2002
SCALE: 1" = 30'
W.O. NO.: 2017165

SHEET 3 OF 26

SDP-02-52

M:\PROJECTS\2017165\ENGR\dwg\s2021s3.dwg Wed Sep 25 15:03:22 2002 $-JJ-$



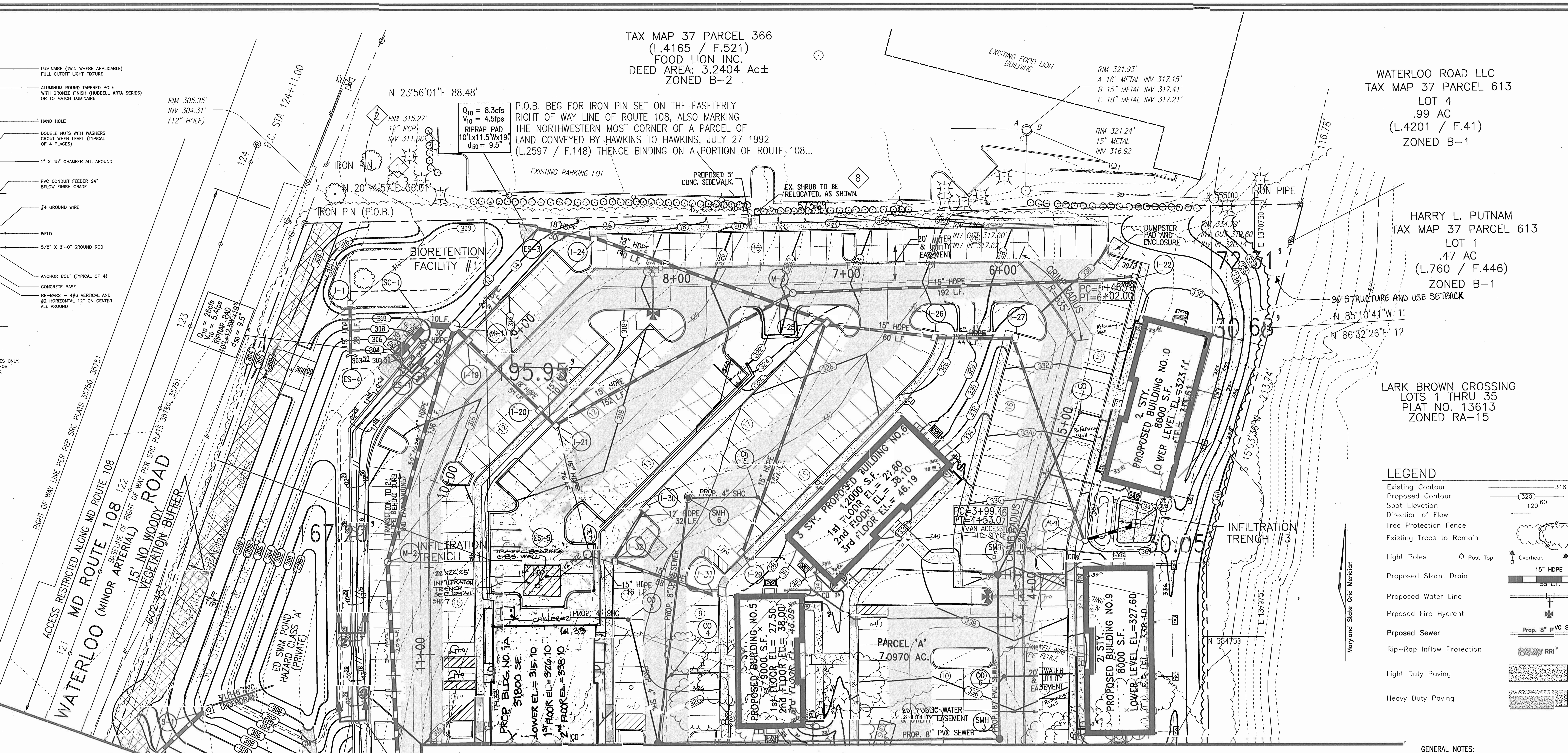
10" RIGID ARM
LUMINAIRE (TWIN WHERE APPLICABLE) FULL CUTOFF LIGHT FIXTURE
ALUMINUM ROUND TAPERED POLE WITH BRONZE FINISH (HUBBELL #RTA SERIES) OR TO MATCH LUMINAIRE
25'-0"
CONNECT #4 GROUND WIRE TO GROUND LUG
HAND HOLE
DOUBLE NUTS WITH WASHERS GROUT WHEN LEVEL (TYPICAL OF 4 PLACES)
1" X 45" CHAMFER ALL AROUND
6"
PVC CONDUIT FEEDER 24" BELOW FINISH GRADE
#4 GROUND WIRE
48"
WELD
5/8" X 8'-0" GROUND ROD
ANCHOR BOLT (TYPICAL OF 4)
CONCRETE BASE
RE-BARS – 4#6 VERTICAL AND #2 HORIZONTAL 12" ON CENTER ALL AROUND
24" DIAMETER

POLE BASE DETAIL

NO SCALE

NOTES:

1. LIGHT TO BE KIM ENTABLATURE RECTILINEAR WITH 250 WATT FIXTURE.
2. LIGHTING DETAIL FOR INFORMATIONAL PURPOSES ONLY. SEE ELECTRICAL AND ARCHITECTURAL PLANS FOR ACTUAL LIGHTING DETAILS AND SPECIFICATIONS.

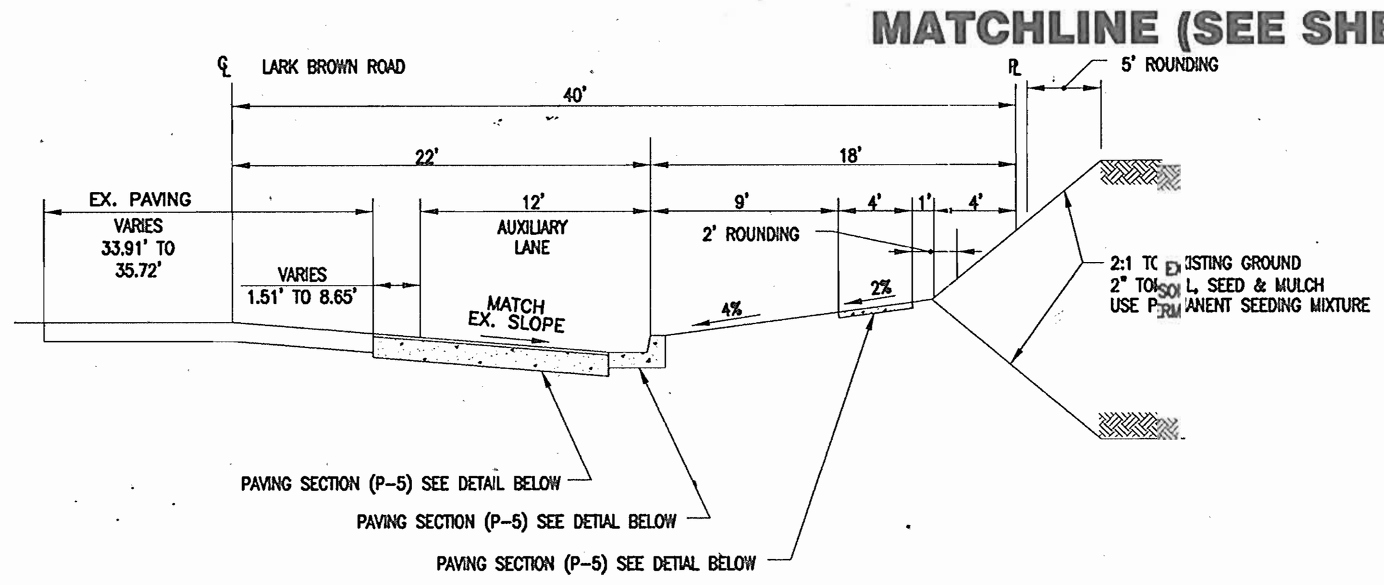


TAX MAP 37 PARCEL 366
(L.4165 / F.521)
FOOD LION INC.
DEED AREA: 3.2404 Ac±
ZONED B-2
EXISTING FOOD LION BUILDING
WATERLOO ROAD LLC
TAX MAP 37 PARCEL 613
LOT 4
.99 AC
(L.4201 / F.41)
ZONED B-1
HARRY L. PUTNAM
TAX MAP 37 PARCEL 613
LOT 1
.47 AC
(L.760 / F.446)
ZONED B-1
LARK BROWN CROSSING
LOTS 1 THRU 35
PLAT NO. 13613
ZONED RA-15
P.O.B. BEG FOR IRON PIN SET ON THE EASTERLY RIGHT OF WAY LINE OF ROUTE 108, ALSO MARKING THE NORTHWESTERN MOST CORNER OF A PARCEL OF LAND CONVEYED BY HAWKINS TO HAWKINS, JULY 27 1992 (L.2597 / F.148) THENCE BINDING ON A PORTION OF ROUTE 108...
N 23°56'01"E 88.48'
IRON PIN (P.O.B.)
EXISTING PARKING LOT
PROPOSED 5' CONC. SIDEWALK
EX. SHRUB TO BE RELOCATED, AS SHOWN.
DUMPSTER PAD AND ENCLOSURE
BIORETENTION FACILITY #1
INFILTRATION TRENCH #1
INFILTRATION TRENCH #3
30' STRUCTURE AND USE SETBACK
N 85°10'41"W
N 86°32'26"E
PROPOSED BUILDING NO. 6
PROPOSED BUILDING NO. 5
PROPOSED BUILDING NO. 9
PROPOSED BUILDING NO. 10
PROP. BLDG. NO. 1A
PARCEL 'A'
7.0970 AC.
20' PUBLIC WATER & UTILITY EASEMENT
PROP. 8" PVC SEWER
WATERLOO ROAD
MD ROUTE 108
(MINOR ARTERIAL)
ACCESS RESTRICTED ALONG MD ROUTE 108
RIGHT OF WAY LINE PER SRC PLATS 35750, 35751
15' NO WOODY VEGETATION BUFFER
30' STRUCTURE & USE SETBACK
MATCHLINE (SEE SHEET 3)
RETAINING WALL SECTIONS. SEE SHEETS 24 AND 25 OF 26 FOR DETAILS.
E 1370000
N 554750
LEGEND
Existing Contour
Proposed Contour
Spot Elevation
Direction of Flow
Tree Protection Fence
Existing Trees to Remain
Light Poles
Post Top
Overhead
Bollard
Proposed Storm Drain
Proposed Water Line
Proposed Fire Hydrant
Proposed Sewer
Rip-Rap Inflow Protection
Light Duty Paving
Heavy Duty Paving
Maryland State Grid Meridian

GENERAL NOTES:

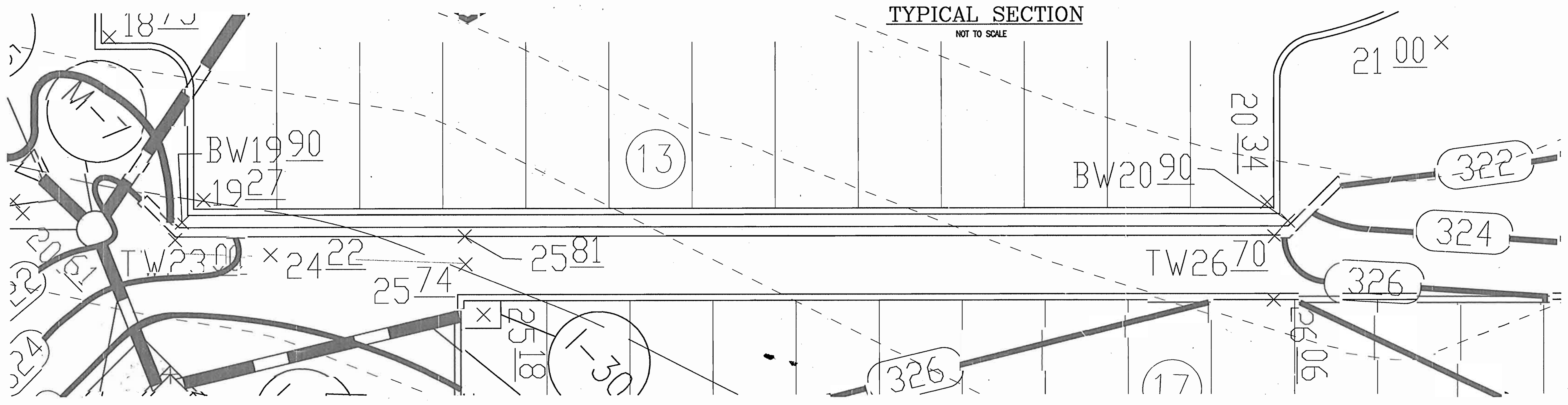
1. REFER TO SHEET 1 OF 24 FOR SITE OFFSETS AND BUILDING DIMENSIONS.
2. REFER TO SHEET 2 OF 24 FOR STEEP SLOPES.

For Detailed Grading And Layout Around Buildings, See Sheet 12.



TYPICAL SECTION

NOT TO SCALE



RETAINING WALL DETAIL

SCALE: 1" = 10'

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 — 10/2/02 DATE
ROBERT H. VOGEL

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."

James M. Jost — 9/27/02
SIGNATURE OF DEVELOPER — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 10/8/02

CHIEF, DIVISION OF LAND DEVELOPMENT HB — DATE 10/15/02

DIRECTOR — DATE 10/16/02

OWNER/DEVELOPER

CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

NO.	REVISION	DATE
3	REVISE PARKING TO ADD 6 SPACES	01-13-05
1	Move Building #7, Add side entrances and ramps, add sidewalks to Side-Front doors, Regrade for sidewalks, Regrade buildings 7, 8, 9, 10, Storm Drain labels and plan, Add yard inlet.	12-18-02

SITE LAYOUT, SWM & UTILITY PLAN

SITE DEVELOPMENT PLAN

GATEWAY OFFICE PARK

PARCEL 'A'

A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY

TAX MAP 37 GRID 20 — PARCEL 604

6TH 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

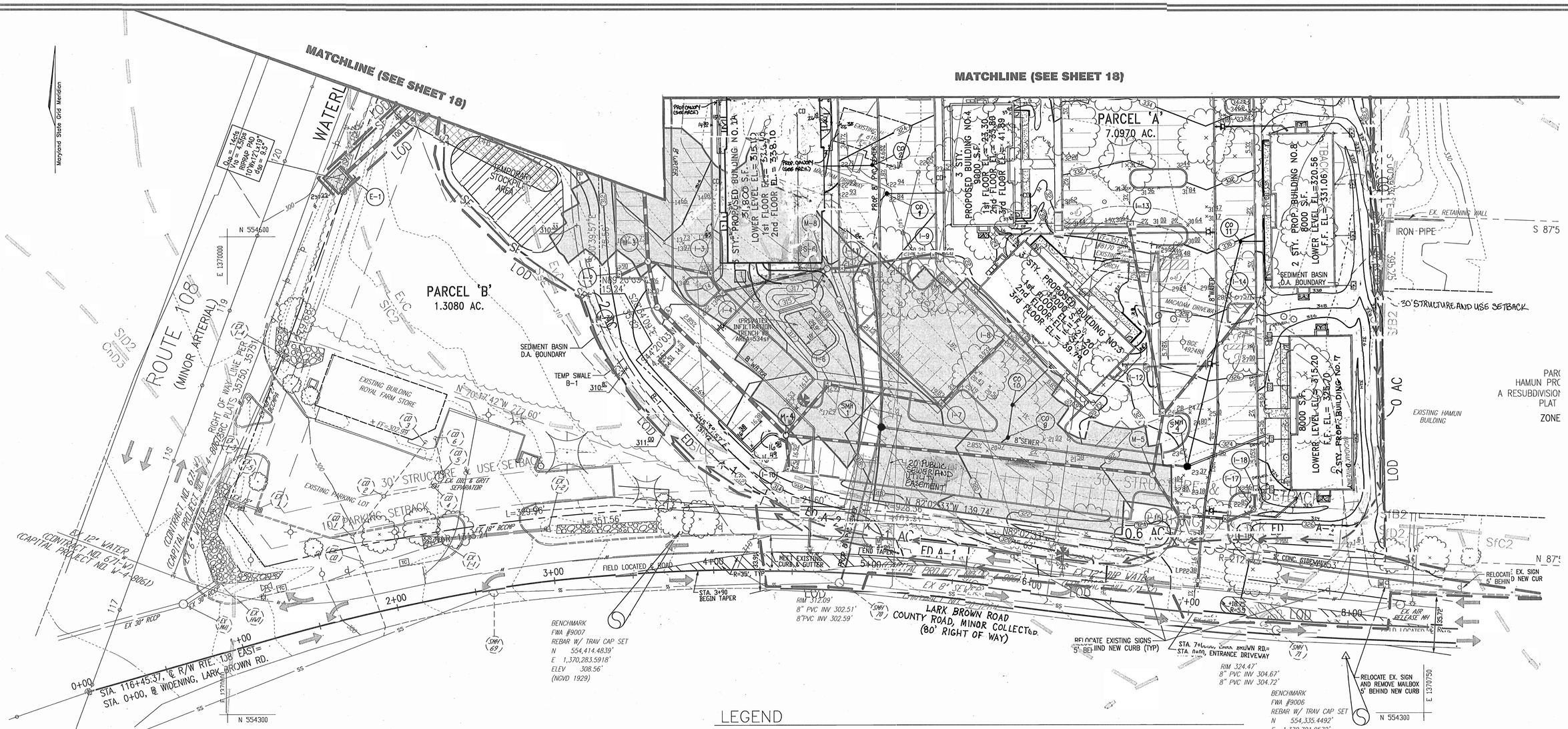
STATE OF MARYLAND — ROBERT HARRIS VOGEL — NO. 16193 — REGISTERED PROFESSIONAL ENGINEER — 10/2/02

ROBERT H. VOGEL, PE No.16193

DESIGN BY: CLS
DRAWN BY: JAJ/CLY
CHECKED BY: RHV
DATE: APR. 19, 2002
SCALE: 1" = 30'
W.O. NO.: 2017165

SHEET 4 OF 26

SDP-02-52



For Detailed Grading And Layout Around Buildings, See Sheet 12.

LEGEND

Existing Contour	382	Limit of Disturbance	LOD
Proposed Contour	382	Erosion Control Matting	ECM
Spot Elevation	+82.53	Rip-Rap Inflow Protection	RRP
Direction of Flow		Gabion Inflow Protection	GM
Tree Protection Fence & Existing Trees to Remain		Removable Pumping Station	RPS
Light Poles	Post Top, Overhead, Bollard	Proposed Drainage Divide	
Stabilized Construction Entrance	SCE	Existing Drainage Divide	
Silt Fence	SF SF	At Grade Inlet Protection	AGIP
Super Silt Fence	SSF SSF	Standard Inlet Protection	SIP
Earth Dike	ED A-2	Curb Inlet Protection	CIP
Basin Drainage Area		Sump Pit	SP
Temporary Swale	A-2 / B-3	SLOPES 15% - 24.9% NOTE: THERE ARE NO STEEP SLOPES	

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	SOIL GROUP
CIC3	CHILLUM GRAVELLY LOAM, 5-10 PERCENT SLOPES, SEVERELY ERODED	C
EvC	EVESBORO LOAMY SAND, 5-15 PERCENT SLOPES	A
SfC2	SASSFRAS SANDY GRAVELLY LOAM, 5-10 PERCENT SLOPES, MODERATELY ERODED	B
SfD2	SASSFRAS SANDY GRAVELLY LOAM, 10-15 PERCENT SLOPES, MODERATELY ERODED	B
S1C2	SASSAFRAS LOAM, 5 TO 10 PERCENT SLOPES, MODERATELY ERODED	B
SsE	SASSAFRAS SOILS, 15 TO 40 PERCENT SLOPES	B

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/8/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/15/02

DIRECTOR — DATE 10/16/02

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 10/7/02

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 10/7/02

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 9/27/02

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 10/2/02

OWNER/DEVELOPER

CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

NO.	REVISION	DATE
3	REVISE PARKING TO ADD 16 SPACES	01-13-03
1	Move Building #7, add side entrances and stairs, add sidewalks to side, Front doors, Regrade for sidewalks, Regrade for buildings 7, 8, 9, and 10, Storm Drains labels, add yard inlet	12-18-02

GRADING, STORMWATER MANAGEMENT, EROSION & SEDIMENT CONTROL PLAN
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'

TAX MAP 37 GRID 20 — PARCEL 604
6TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

FREDERICK WARD ASSOCIATES, INC.
ENGINEERS
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7125 Riverwood Drive Columbia, Maryland 21046-2354
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STATE OF MARYLAND — ROBERT HARRIS VOGEL — 16193 — REGISTERED PROFESSIONAL ENGINEER — 10/2/02
ROBERT H. VOGEL, PE No.16193

DESIGN BY: CLS
DRAWN BY: JAJ
CHECKED BY: RHV
DATE: NOVEMBER, 2001
SCALE: 1" = 30'
W.O. NO.: 2017165

SHEET 17 OF 26

SDP-02-52

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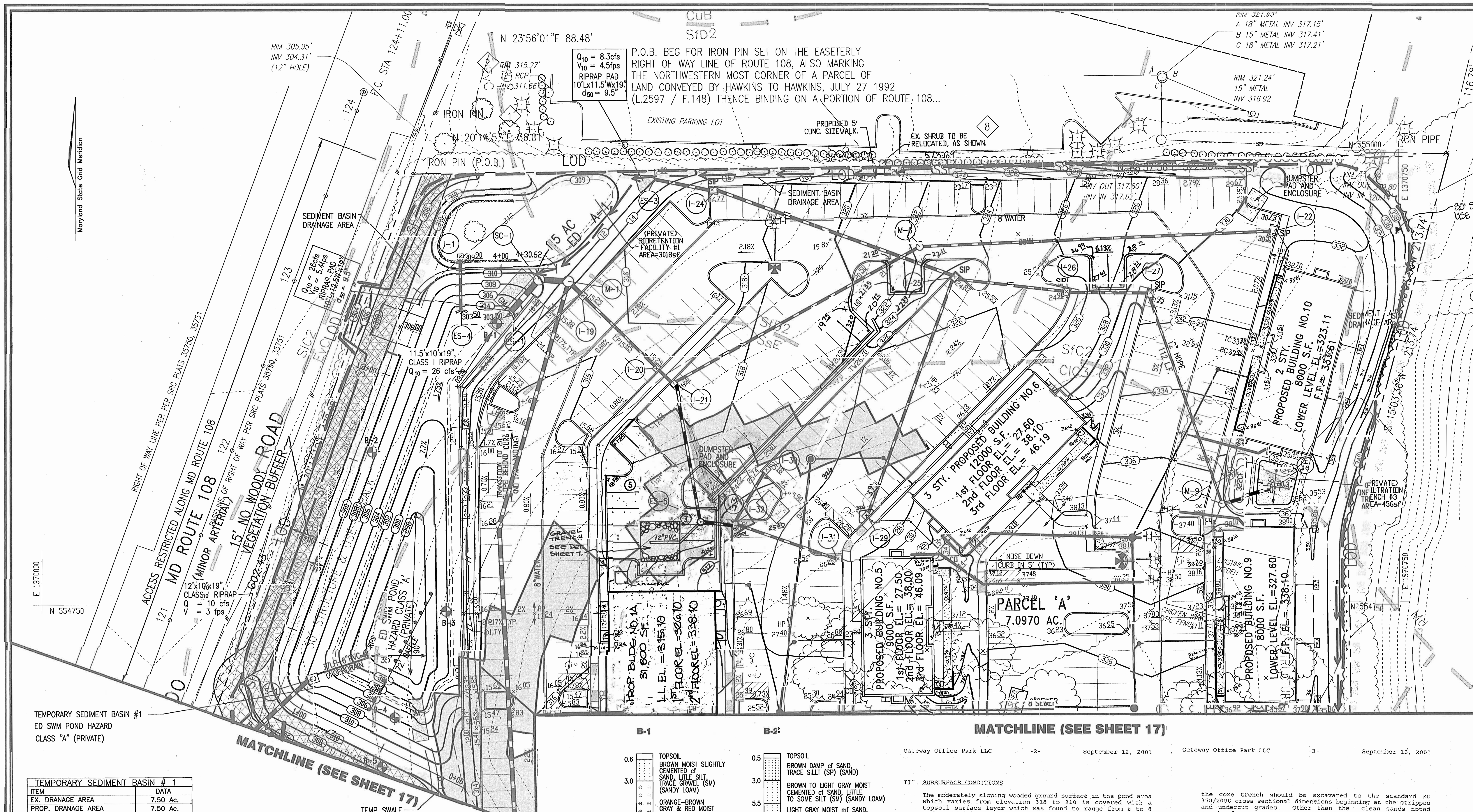


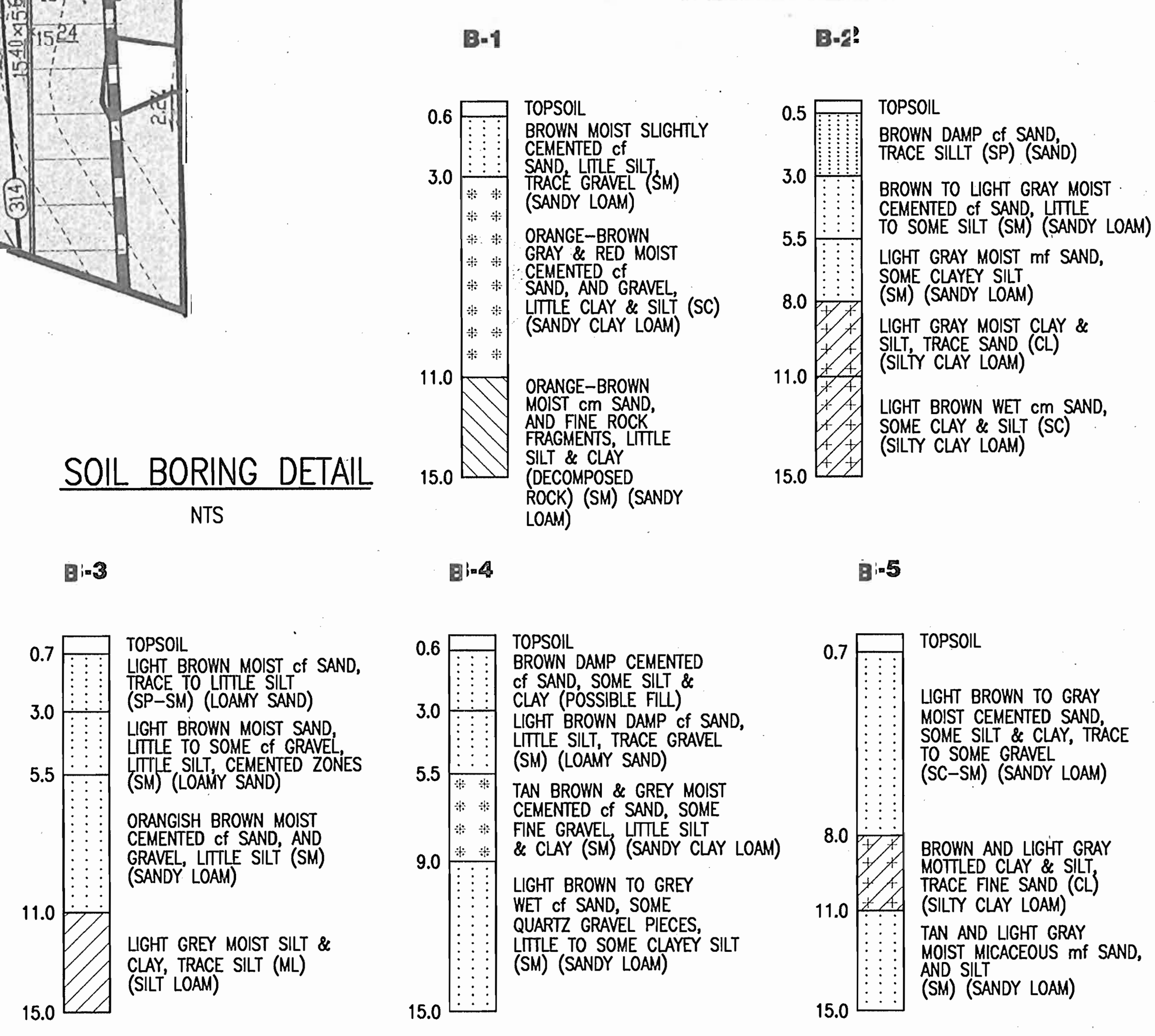
TEMPORARY SEDIMENT BASIN # 1	
ITEM	DATA
EX. DRANAGE AREA	7.50 Ac.
PROP. DRANAGE AREA	7.50 Ac.
STORAGE REQUIREMENT	27,000 CF
STORAGE PROVIDED	75,000 CF
WET STORAGE ELEV., VOL.	303.00, 15,300
DRY STORAGE ELEV., VOL.	304.50, 14,400
BOTTOM ELEV.	298.00
CLEANOUT ELEV.	302.00
RISER CREST ELEV.	307.00
TOP OF EMBANKMENT	310.00
BOTTOM DIMENSIONS	90'x35'
Q2 EXIST/ Q2 PROP	3cfs/3cfs

LEGEND

Existing Contour	- - - - - - 382	Basin Drainage Area	▨
Proposed Contour	—(82)—	Limit of Disturbance	LOD
Spot Elevation	+82 53	Erosion Control Matting	• • • ECM • •
Direction of Flow	←	Rip-Rap Inflow Protection	RRP
Tree Protection Fence & Existing Trees to Remain		Gabion Inflow Protection	GM
Light Poles	☼ Post Top, Overhead, ✲ Bollard	Removable Pumping Station	☒ RPS
Stabilized Construction Entrance	SCE	Proposed Drainage Divide	
Silt Fence	— SF — SF —	Existing Drainage Divide	
Super Silt Fence	— SSF — SSF —	At Grade Inlet Protection	AGIP
Earth Dike	— ED — A-2 →	Standard Inlet Protection	SIP
		Curb Inlet Protection	CIP
		Sump Pit	SP

SOIL BORING DETAIL

NTS



Gateway Office Park LLC -2- September 12, 2001

III. <u>SUBSURFACE CONDITIONS</u>

The moderately sloping wooded ground surface in the pond area which varies from elevation 318 to 310 is covered with a topsoil surface layer which was found to range from 6 to 8 inches thick at the test boring locations. In boring B-4, the recovered sample of medium dense sand with some silt & clay could not be definitely identified as either fill or native soil; thus, the "Possible Fill" designation. The remaining soils within the test borings appear to be undisturbed native materials consisting predominantly of medium dense to very dense somewhat cemented silty to clayey silty sand with the occasional inclusion of gravel. Three stiff to very stiff silt & clay to clay & silt strata were encountered within B-2 from (8 to 11 feet); B-3 from (11 to 15 feet); and B-5 from (8 to 11 feet). The native soils on site appear to be ancient Cretaceous age sedimentary materials typical to the area. The bottom samples in B-5 and B-1 gave evidence of being residual having been formed by in-place decomposition of the underlying metamorphic bedrock. The (Decomposed Rock) notation indicates that the remnant structure of the parent bedrock is visible in recovered soil samples.

IV. <u>GROUND WATER CONDITIONS</u>

Ground water was not encountered or indicated in the test borings either during drilling operations or two days following completion of the test borings. Although ground water levels can vary with seasons and precipitation, it does not appear that ground water will be a consideration in either design or construction of the storm water management facility within the depths penetrated by the test borings.

V. <u>STORM WATER MANAGEMENT RECOMMENDATIONS</u>

At the time of our study, the general area of the storm water management facility was defined. However, the details of configuration in size had not been established.

The area appears to be suitable for construction of the standard storm water management quantity control facility consisting of a cut basin, fill embankment and buried principal spillway. Prior to embankment fill construction, the entire embankment area should be stripped of vegetation and otherwise unsuitable materials to expose undisturbed clean existing fills or native soils. Clean sand soils as encountered in borings B-2 and B-3 to depths of approximate 3 feet should be removed from the embankment area. The resulting surface should be proof rolled and any soft yielding areas further undercut. Once a firm base is established,

Gateway Office Park LLC -3- September 12, 2001

the core trench should be excavated to the standard MD 378/2000 cross sectional dimensions beginning at the stripped and undercut grades. Other than the clean sands noted previously, most of these soils encountered within the test borings should be acceptable for use as embankment fills. Unified "C" classification soils may be found within the pond area or elsewhere on site depending upon the depth of excavation. The extent of these deposits appears to be limited, however, and it should be expected that off site clay soils will be required to complete the core trench and dam core construction.

The results of the moisture/compacted density relationship tests presented on SHEET 1 and 2 indicate the tested soils have an acceptable soil classification and maximum dry density for use as embankment fills. The existing moisture content of the soils at the time of sampling were from 3 to 4 points below the optimum moisture for most efficient compaction; thus, it is expected that some moisture adjustment, particularly addition of moisture, will be necessary for proper fill compaction. All embankment and core trench fill should be controlled and compacted in accordance with APPENDIX I, COMPACTED FILL.

The moisture test results are indicative of the soil moisture conditions at the time of sampling. Soil moistures at the time of construction may vary from those shown. During the cooler months of the year, moisture adjustments in the field can be difficult or impossible and exposed soils can become saturated requiring undercutting and replacement with more suitable materials. Construction during the normally warm dry construction season (late spring, summer and early fall) would generally result in the most efficient earthwork construction.

From review of the subsurface information, it appears that the native subsurface materials will provide adequate support for the principal spillway and riser structure providing that the applied bearing capacities do not exceed 2,500 PSF.

Gateway Office Park LLC -4- September 12, 2001

VI. <u>INFILTRATION POTENTIAL</u>

The MDE requires that soils considered for storm water disposal by infiltration have a minimum infiltration rate of 0.52 inches per hour and be at least 4 feet above the ground water table or rock (i.e. impervious materials). Also, infiltration cannot occur in existing fills.

The test borings indicate that some of the soils within the depths investigated would normally be suitable for infiltration having USDA classifications of Sandy Loam or Loamy Sand. However, in actuality, examination of the recovered soil samples shows these same materials to be slightly cemented. Also, the standard penetration values often indicate a dense in-place condition. Occasionally, soil types unsuitable for infiltration such as Silt Loam, Silty Clay Loam and Sandy Clay Loam were penetrated. These predominantly fine-grained clay soils have a stiff to very stiff consistency.

Based upon our visual examination of the recovered soil samples, as well as they standard penetration test values and the soil classifications, it is our opinion that reliable infiltration could not be achieved in the area of the storm water management facility to the depths penetrated.

VII. <u>GEOTECHNICAL MONITORING</u>

We recommend that Herbst/Benson & Associates be retained to provide the geotechnical monitoring and testing services during the construction phase of the work. This is to observe compliance with design concepts, specifications or recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated prior to the start of construction.

The earthwork construction including stripping, undercutting, proof rolling and controlled fill placement shall be inspected with in-place density tests taken to verify construction according to the specifications. Also, the principal spillway excavation shall be examined and the exposed soil conditions approved for the design bearing. We will provide the indicated geotechnical monitoring and testing services upon request.

APPENDIX I

COMPACTED FILL

A. Embankment shall be constructed of approved materials from the excavation or from other sources. The material shall be free from organic materials, trash, muck, roots, frost and other deleterious substances.

B. Before depositing fills, the ground surface shall be cleared of all refuse, brush, grass, roots, ice and frozen material. All organic matter and otherwise unsuitable soils shall be removed from the surface to be filled. The exposed surface shall be plowed or scarified if required to a depth of six inches. Soils so scarified, or which have been disturbed by grubbing and stripping operations, shall be compacted to undisturbed soil below by discing, leveling, rolling, and compacting at the moisture content and to the density specified below for compacted embankments.

C. Where fills are made on hillsides or slopes, the slope of the original ground upon which the fill is to be placed shall be plowed or scarified deeply, or where the slope ratio of the original ground is steeper than 5 horizontal to 1 vertical, the bank shall be stepped or benched, when considered necessary by the Engineer, to permit placement of the fill in horizontal layers.

D. Placing, Spreading and Compacting Fill Materials:

1. The fill materials shall be placed in layers which, before compaction shall not exceed 8 inches. Each layer shall be spread uniformly and evenly and shall be thoroughly blade mixed during the spreading to insure uniformity of materials in each layer.
2. After each layer has been placed, mixed and spread evenly, it shall be thoroughly compacted to not less than 95% of the maximum dry density as determined by ASTM D 698.
3. The moisture content of the fill shall be as required in order to attain the degree of compaction specified.
4. Compaction shall be by approved multiple-wheel pneumatic tired rollers, vibratory rollers or other types of acceptable rollers.
5. The filling operation shall be continued as specified above until the fill has been brought to the subgrade shown on the plans.
6. The fill shall be constructed in such a manner that the surface will be sloped to drain at all times, and all fill shall be deposited to prevent excessive moisture accumulation from rainwater.
7. When the work is interrupted by rain, filling shall not be resumed until tests indicate that the moisture content and density of the top 6 inches of fill conform to the above specification requirements.

For Detailed Grading And Layout Around Buildings, See Sheet 12.

NO.	REVISION	DATE
3	REVISE PARKING TO ADD 6 SPACES	01-13-05
1	Move building #7, add side entrances + stairs, Add sidewalk to side-front doors, regrade for sidewalks, regrade for buildings 7,8,9, and 10, Storm Drain labels, Add yard inlet.	12-18-02

GRADING, STORMWATER MANAGEMENT, EROSION & SEDIMENT CONTROL PLAN
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'
A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 PARCEL 604
6TH 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 REGISTERED PROFESSIONAL ENGINEER 10/2/02
[illegible]
ROBERT H. VOGEL, PE No.16193

DESIGN BY: CLS
DRAWN BY: JAJ/CLY
CHECKED BY: RHV
DATE: APR. 19, 2002
SCALE: 1" = 30'
W.O. NO.: 2017165

SHEET 18 OF 26

OWNER/DEVELOPER
CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[illegible] 10/8/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

Cindy Hamilton 10/15/02
CHIEF, DIVISION OF LAND DEVELOPMENT HB DATE

[illegible] 10/16/02
DIRECTOR DATE

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."

[illegible] 10/2/02
SIGNATURE OF ENGINEER DATE
ROBERT H. VOGEL

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."

James M. Jost 9/27/02
SIGNATURE OF DEVELOPER DATE

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

Jim Myers / CS. 10/2/02
USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

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

[illegible] 10/2/02
HOWARD SOIL CONSERVATION DISTRICT DATE

SDP-02-52

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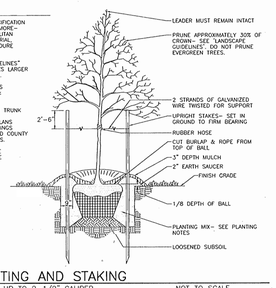
SCHEDULE A PERIMETER LANDSCAPE EDGE								
CATEGORY	ADJACENT TO ROADWAYS				ADJACENT TO PERIMETER PROPERTIES			
Perimeter/Frontage Designation Landscape Type	(1) E	(5) B	(6) E	(7) E	(2) A	(3) C	(4) A	
Linear Feet of Roadway Frontage/Perimeter	319	74	27	254	571	391	216	
Credit for Existing Vegetation (Yes, No, Linear Feet Describe below if needed)	No	No	No	No	No	No	No	
Credit for Wall, Fence or Berm (Yes, No, Linear Feet Describe below if needed)	No	No	No	No	No	No	No	
Number of Plants Required Shade Trees Evergreen Trees Shrubs	1:40 8 – 1:4 80	1:50 1 1:40 2 –	1:40 1 – 1:4 7	1:40 6 – 1:4 64	1:60 10 – –	1:40 10 1:20 20 –	1:60 4 – –	
Number of Plants Provided Shade Trees Evergreen Trees Other Trees (2:1 Substitution) Shrubs (10:1 Substitution) Describe Plant Substitution Credits Below if needed)	8 – – 80	1 2 – –	1 – – 7	6 – – 64	10 – – –	2 42 4 16	– 9 6 8	

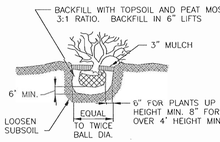
GENERAL NOTES:

1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. THE REQUIRED PARKING AND PERIMETER LANDSCAPING WILL BE BONDED PER THIS SUBMISSION.
2. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING MUST BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $33,930.00 FOR THE REQUIRED 70 SHADE TREES, 56 EVERGREEN TREES AND 151 SHRUBS.
3. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH LCAMW PLANTING SPECIFICATIONS.
4. MAINTENANCE TO INCLUDE MONITORING AND HAND WATERING AS NEEDED FOR THE FIRST TWO GROWING SEASONS TO ESTABLISH WOODY PLANTS. SPECIALIZED PLANTING AREAS INCLUDING INTERIOR COURTYARDS AND ANNUAL BEDS MAY REQUIRE REGULAR HAND WATERING OR IRRIGATION.
5. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
6. FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
7. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.
8. DRIVE LIGHTING TO BE KIM ENTABLATURE ET LUMINAIRE; 25' BLACK STEEL ROUND POLES; 250 WATT METAL HALIDE. PEDESTRIAN LIGHTING TO BE SPECTRA SP2 WITH BLACK ANGLED HOOD AND GR3 GLASS REFRACTOR. POLE TO BE 10' BLACK ALUMINUM. LAMP TO BE 100 WATT METAL HALIDE.
9. SEE FOLLOWING SHEET FOR BIORETENTION FACILITY LANDSCAPING.

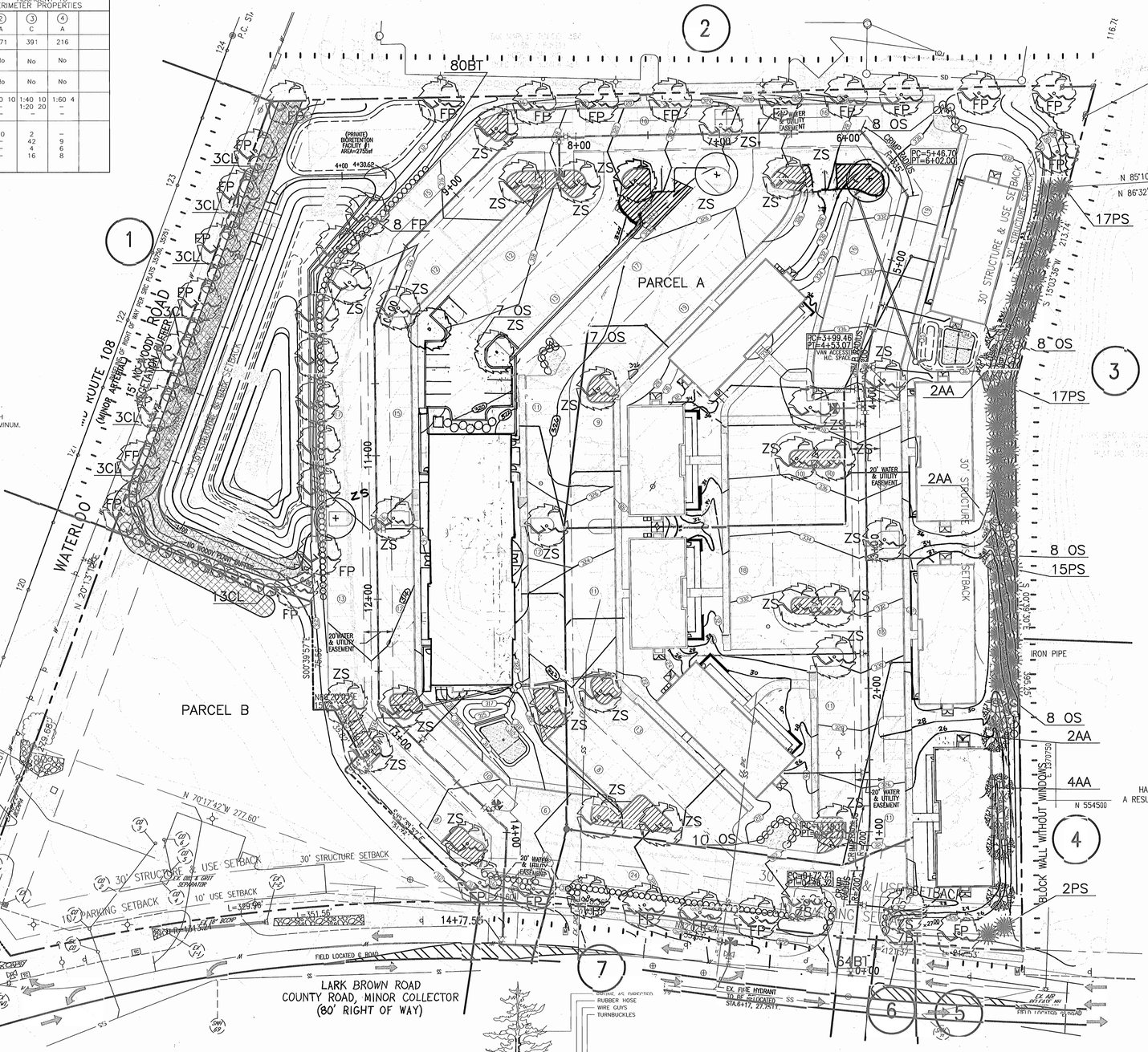
NOTES
1. SEE "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE–WASHINGTON METROPOLITAN AREAS" FOR ALL MATERIAL, PRODUCTS, AND PROCEDURE SPECIFICATIONS.
2. SEE "LANDSCAPE GUIDELINES" FOR SUPPORTING TREES LARGER THAN 2–1/2" CALIPER.
3. PLACE UPRIGHT STAKES PARALLEL TO WALKS & BUILDINGS.
4. KEEP MULCH 1" 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.

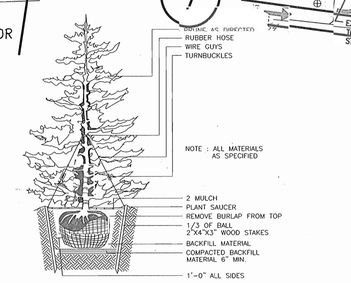


TREE PLANTING AND STAKING
DECIDUOUS TREES UP TO 2–1/2" CALIPER — NOT TO SCALE



SHRUB PLANTING DETAIL
NOT TO SCALE





TYPICAL EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE

LEGEND

Existing Contour 382
Proposed Contour 82
Spot Elevation +82.53
Direction of Flow
Existing Trees to Remain
Light Poles — Parking Lot & Roadway Pedestrian; Parking Lot (Twin Head)
Existing Adjacent Landscaping
Shade Trees
Evergreen Trees
Shrubs/Hedge
Flowering Trees
Perimeter Landscape Edge (2)
Required Internal Planting Island

SCHEDULE 'B': PARKING LOT INTERNAL LANDSCAPING	
Number of parking spaces	419
Number of trees and parking lot islands required (1:20)	21
Number of trees and parking lot islands provided Shade Trees Other Trees (2:1 Substitution)	 21 –

SCHEDULE D : STORMWATER MANAGEMENT AREA LANDSCAPING	
LINEAR FEET OF PERIMETER	673 LF
CREDIT FOR EXISTING VEGETATION (NO, YES AND LINEAR FEET)	N/A
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	YES, 8 Shade Trees on Perimeter 1
NUMBER OF TREES REQUIRED SHADE TREES EVERGREEN TREES	 9 SHADE TREES (17–8) 34 EVERGREEN TREES
NUMBER OF TREES PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION)	 9 SHADE TREES 34 EVERGREEN TREES 0 TREES (0 SUBSTITUTION TREES)

LANDSCAPING IS NOT REQUIRED AROUND THE BIORETENTION FACILITIES BECAUSE PLANTINGS WILL BE PLACED IN THE FACILITES. ALSO NO SURETY IS REQUIRED FOR BIORETENTION PLANTINGS BECAUSE THEY ARE PART OF THE ENGINEERING COST ESTIMATE.

LANDSCAPE SCHEDULE				
KEY	QUAN.	BOTANICAL NAME	SIZE	REMARKS
AA	10	Amelanchier'Autumn Brilliance' Tree Form Autumn Brilliance Shadblow	8'–10' HT.	B & B
BT	151	Prunus laurocerasus 'Otto Luyken' Otto Luyken Cherry Laurel	36" HT.	B & B or Container
FP	35	Fraxinus pennsylvanica 'Patmore' Patmore Ash	2 1/2"–3" cal.	B & B
OS	56	Osmanthus heterophyllus 'Gulf Tide' Guiftide Osmanthus	24"–30" Ht.	B & B or Container
PS	51	Pinus strobus White Pine	6'–8' HT.	B & B
ZS	33	Zelkova serrata 'Village Green' Village Green Japanese Zelkova	2 1/2"–3" cal.	B & B
CL	34	Cupressocyparis leylandii Leyland Cypress	6'–8' HT.	B & B

NO.	REVISION	DATE
1	Move building #7; Add side entrances and stairs; add sidewalks to side doors; regrade for sidewalks; regrade buildings 7,8,9,10; SD labels and profiles; add yard inlet	12-18-02
3	REVISE PARKING TO ADD 6 SPACES	01-13-05

PARCEL 'A'
HAMUN PROPERTIES, INC.
A RESUBDIVISION OF LOTS 1 & 2
PLAT # 5439
ZONED B-2

OWNER/DEVELOPER
CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535–9200

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/8/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/15/02
DIRECTOR — DATE 10/16/02

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 9/27/02

LANDSCAPE PLAN
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'

A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 PARCEL 604
6TH 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 — MARY HENDERSON MCKENNA — No. 2039 — REGISTERED LANDSCAPE ARCHITECT — 10-2-02
Mary H.McKenna, RLA No. 2039

DESIGN BY: MHM
DRAWN BY: MHM
CHECKED BY: RHV
DATE: APR. 19, 2002
SCALE: 1"=40'
W.O. NO.: 2017165

SHEET 22 OF 26

SDP–02–52

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GATEWAY OFFICE PARK

PARCEL 'A'

HOWARD COUNTY, MARYLAND

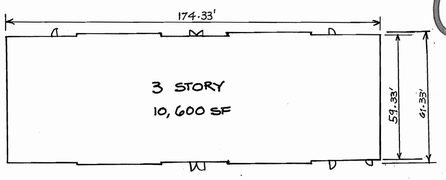
GENERAL NOTES

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:

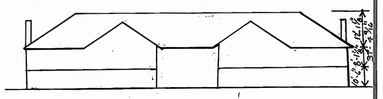
Miss Utility	1-800-257-7777
Verizon Telephone Company:	(410) 754-6281
Howard County Bureau of Utilities:	(410) 313-2366
AT&T Cable Location Division:	393-3553
B.G.E. Co. Contractor Services:	850-4620
B.G.E. Co. Underground Damage Control:	787-4620
State Highway Administration:	531-5533

4. Site analysis:
   PARCEL 'A': 7.00± AC
   Present zoning : B-1
   Use of structure : Offices
   Total building area : 98,000 sf
   Building coverage on site : 2.250 acs. or 29% of gross area (Includes future building)
   Paved parking lot/area : 2.28 Ac. or 29% of gross area
   There are no steep slopes on-site
5. Project background:
   Location : Ellicott City, Md.; Tax Map 37, Parcel 604.
   Zoning ; B-1
   Section/Area : N/A
   Site Area : 7.807 Acres
   DPZ references : F-78-37, WP-02-87, F-03-01

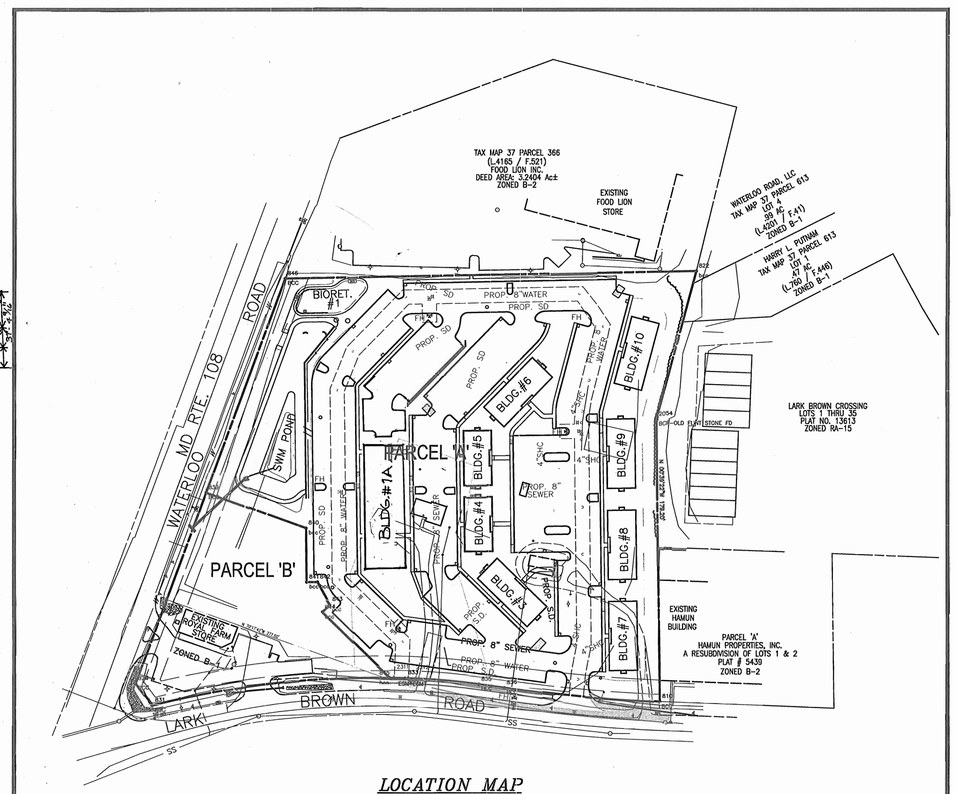
   Note: WP-02-87 pertains to the resubdivision of the Carrie Norman property (lots 1,2, and parcel 472), requesting an exemption from sketch and preliminary plan, and to proceed as an "originals only" final subdivision plat. Approval from DPZ was given April 30, 2002, under the condition that the petitioner and the owner of parcel 472 submit a final plan application showing the proposed parcels A & B, and the required road right-of-way dedication. The resubdivision plat will be recorded,"only after" both site developement plans (SDP-02-52 and SDP-02-89) are technically complete, or the access points and road improvements have been satisfactorily addressed.
6. The contractor or developer shall notify the Department of Public Works/Bureau of Engineering/ Construction Inspection Division at (410) 313-1880 at least 24 hours in advance of commencement 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. The coordinates shown hereon are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System. Howard County Monument Nos. 37GB and 43A1 were used for this project.
15. A noise study is not required for this project.
16. Existing topography is based on field run information performed by Frederick Ward & Associates, Inc. in April, 2001.
17. See sheet 11 for paving section details. Paving section to be confirmed by geotechnical engineer in the field based on compaction testing.
18. All curb and gutter to be Howard County Standard concrete Detail R3.01 unless otherwise specified.
19. There are no wetlands, streams, floodplains, or their buffers located within the limit of disturbance.
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. Contractor to connect roof drains to storm drain system, as shown.
24. Contractor to sod all areas within 10' of proposed building. All other areas to be seeded and mulched.
25. Proposed Water Main to to be public.
26. Stormwater Management in accordance with 2000 Maryland Stormwater Management Manual. Cpv, is provided by a stormwater managment pond onsite. WQv provided partially by a wet extended detention SWM pond the remainder of the WQv and all of the Rev are provided by bioretention and infiltration areas.
27. All curbs fillets shall be 5' radii, unless otherwise noted on plans.
28. APFO Traffic Study performed by the Traffic Group on November 16, 2001.
29. All exterior lighting to comply with Section 134 of the Zoning Regulations. See sheet 3 for detail.
30. This plan shall comply with the Zoning Regulations as amended by Council Bill 50-2001.
31. There are no historic sites on the subject parcel.
32. The forest conservation obligation of 137214 s.f. will be fulfilled by fee-in-lieu of reforestation in the amount of $68,607.00.
33. Reference WP-02-87, approved April 30, 2002, to waive the requirement to submit a sketch and preliminary plan.



PLAN VIEW - BUILDING 1A
N.T.S.



BUILDING 1A FRONT ELEVATION
3 STORY 10,600 SF



LOCATION MAP
SCALE: 1"= 100'

BENCHMARKS

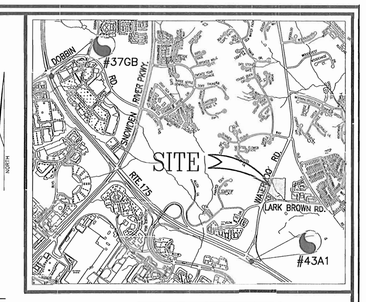
HOWARD COUNTY MONUMENT #37GB
N 553452.821 E 1368503.167
ELEV. 325.937
REBAR & CAP - 3.1' FROM NORTH SIDE OF RTE. 175, 6.7' FROM CORNER OF PKG LOT AND 44.9' SW OF INLET.

HOWARD COUNTY MONUMENT #43A1
N 552081.823 E 1370625.811
ELEV. 307.471
STD. CONC. MON- IN THE MEDIAN OFF RTE. 175, AT THE TURN AROUND LOCATED 0.25 MI. FROM THE TRAFFIC LIGHT AT RTE. 108.

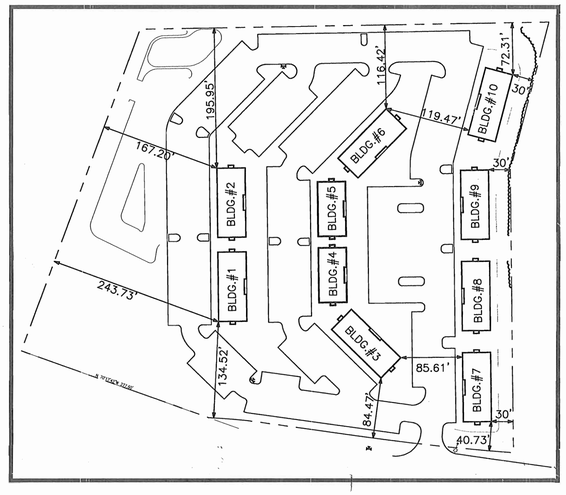
NOTE:
HORIZONTAL CONTROL IS IN NAD83.
VERTICAL CONTROL IS IN NGVD29.

LEGEND

Existing Contour	382
Proposed Contour	82
Spot Elevation	+82.53
Direction of Flow	



VICINITY MAP
SCALE: 1"=2000'



PARKING TABULATION

3.3 SPC. PER 1000 SF OFFICE AREA
105,800 TOTAL SF OFFICES @ 3.3 SPC/1000 SF = 349 SPCS.
PARKING PROVIDED: 419 SPCS
INCLUDING: 11 HANDICAP SPCS*

* ONE VAN-ACCESSIBLE SPACE

SHEET INDEX

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	MK	DATE 10/8/02
CHIEF, DIVISION OF LAND DEVELOPMENT	HB	DATE 10/9/02
DIRECTOR		DATE 10/16/02

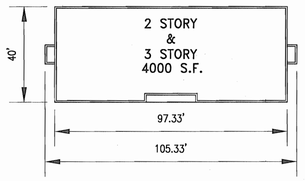
FRONT ELEVATION
3 STORY 3000 S.F.

FRONT ELEVATION
2 STORY 4000 S.F.

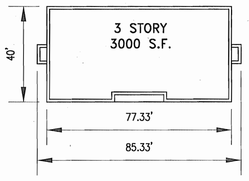
FRONT ELEVATION
3 STORY 4000 S.F.

RIGHT SIDE ELEVATION
3 STORY 4000 S.F.

MEAN HEIGHT TABULATION	
BUILDING #	BUILDING HEIGHT
1A	39'-9"
3	39'-9"
4	39'-9"
5	39'-9"
6	39'-9"
7	29'-3"
8	29'-3"
9	29'-3"
10	29'-3"



PLAN VIEW
N.T.S.



PLAN VIEW
N.T.S.

OWNER/DEVELOPER

CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

ADDRESS CHART	
BUILDING #	STREET ADDRESS
1A	8186 Lark Brown Road, Ellicott City, MD 21042
3	8178 Lark Brown Road, Ellicott City, MD 21042
4	8180 Lark Brown Road, Ellicott City, MD 21042
5	8182 Lark Brown Road, Ellicott City, MD 21042
6	8184 Lark Brown Road, Ellicott City, MD 21042
7	8170 Lark Brown Road, Ellicott City, MD 21042
8	8172 Lark Brown Road, Ellicott City, MD 21042
9	8174 Lark Brown Road, Ellicott City, MD 21042
10	8176 Lark Brown Road, Ellicott City, MD 21042

SUBDIVISION NAME			SECTION/AREA		PARCEL NUMBER
Gateway Office Park			N/A		PARCEL 'A'
PLAT NO.	BLOCK NO.	ZONE	TAX/ZONE	ELECT. DIST.	CENSUS TR.
15520	20	B-1	37	6th	6067.03
WATER CODE: E08			SEWER CODE: 3450000		

NO.	REVISION	DATE
3	REVISE PARKING TO ADD 6 SPACES	01-13-05
2	DELETE BLDGS 1+2, INCLUDE BLDG. 1A.	
1	REVISE BLDG. 7, UTILITIES + SIDEWALK.	

TITLE SHEET
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'

A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 PARCEL 604
6TH 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
REGISTERED
PROFESSIONAL ENGINEER
10/10/02

ROBERT H. VOGEL, PE No.16193

DESIGN BY:	CLS
DRAWN BY:	JAJ/CLY
CHECKED BY:	RHV
DATE:	APR. 19, 2002
SCALE:	AS SHOWN
W.O. NO.:	2017165

SHEET 1 OF 26

SDP-02-52

M:\PROJECTS\2017165\ENGR\dwg\S2021s1.dwg Wed Sep 25 10:56:08 2002 $-JJ-$

SCHEDULE A
PERIMETER LANDSCAPE EDGE

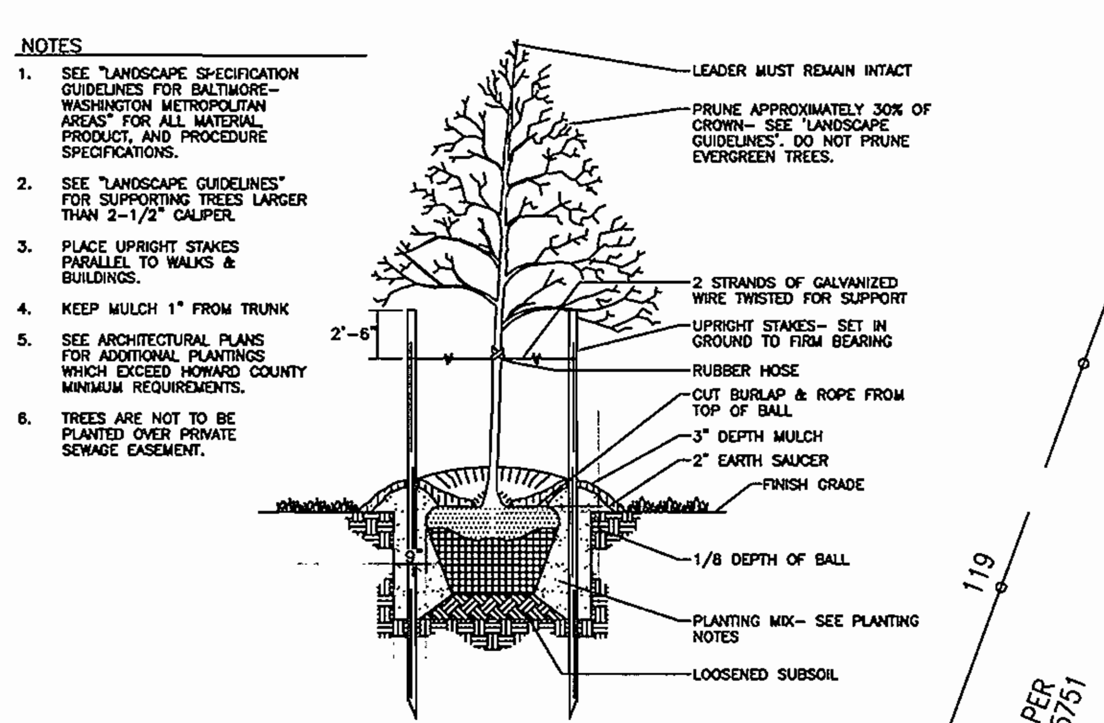
CATEGORY	ADJACENT TO ROADWAYS				ADJACENT TO PERIMETER PROPERTIES		
Perimeter/Frontage Designation Landscape Type	① E	⑤ B	⑥ E	⑦ E	② A	③ C	④ A
Linear Feet of Roadway Frontage/Perimeter	319	74	27	254	571	391	216
Credit for Existing Vegetation (Yes, No, Linear Feet Describe below if needed)	No	No	No	No	No	No	No
Credit for Wall, Fence or Berm (Yes, No, Linear Feet Describe below if needed)	No	22 LF	9 LF	31 LF	No	No	No
Number of Plants Required Shade Trees Evergreen Trees Shrubs	1:40 8 – 1:4 80	1:50 1 1:40 2 –	1:40 1 – 1:4 7	1:40 6 – 1:4 64	1:60 10 – –	1:40 10 1:20 20 –	1:60 4 – –
Number of Plants Provided Shade Trees Evergreen Trees Other Trees (2:1 Substitution) Shrubs (10:1 Substitution) Describe Plant Substitution Credits Below if needed)	8 – – 80	0 6 8 31	0 – – 27	7 6 3 108	10 14 6 8	0 42 12 16	– 22 6 13

GENERAL NOTES:

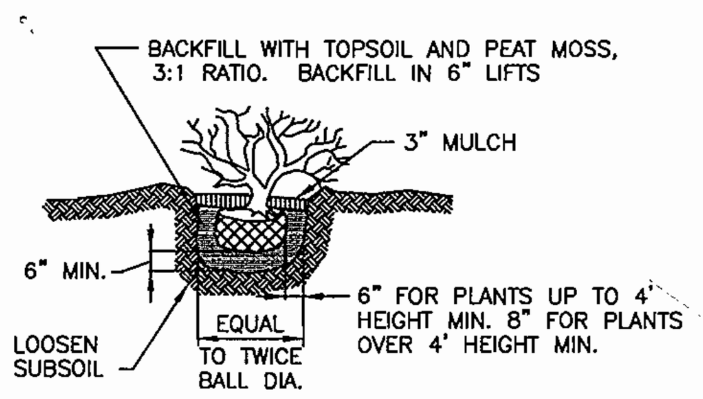
1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. THE REQUIRED PARKING AND PERIMETER LANDSCAPING WILL BE BONDED PER THIS SUBMISSION.
2. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING MUST BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $33,930.00 FOR THE REQUIRED 70 SHADE TREES, 56 EVERGREEN TREES AND 151 SHRUBS.
3. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH LCAMW PLANTING SPECIFICATIONS.
4. MAINTENANCE TO INCLUDE MONITORING AND HAND WATERING AS NEEDED FOR THE FIRST TWO GROWING SEASONS TO ESTABLISH WOODY PLANTS. SPECIALIZED PLANTING AREAS INCLUDING INTERIOR COURTYARDS AND ANNUAL BEDS MAY REQUIRE REGULAR HAND WATERING OR IRRIGATION.
5. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
6. FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
7. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.
8. DRIVE LIGHTING TO BE KIM ENTABLATURE ET LUMINAIRE; 25' BLACK STEEL ROUND POLES; 250 WATT METAL HALIDE. PEDESTRIAN LIGHTING TO BE SPECTRA SP2 WITH BLACK ANGLED HOOD AND GR3 GLASS REFRACTOR. POLE TO BE 10' BLACK ALUMINUM. LAMP TO BE 100 WATT METAL HALIDE.
9. SEE FOLLOWING SHEET FOR BIORETENTION FACILITY LANDSCAPING.

LANDSCAPING IS NOT REQUIRED AROUND THE BIORETENTION FACILITIES BECAUSE PLANTINGS WILL BE PLACED IN THE FACILITES. ALSO NO SURETY IS REQUIRED FOR BIORETENTION PLANTINGS BECAUSE THEY ARE PART OF THE ENGINEERING COST ESTIMATE.

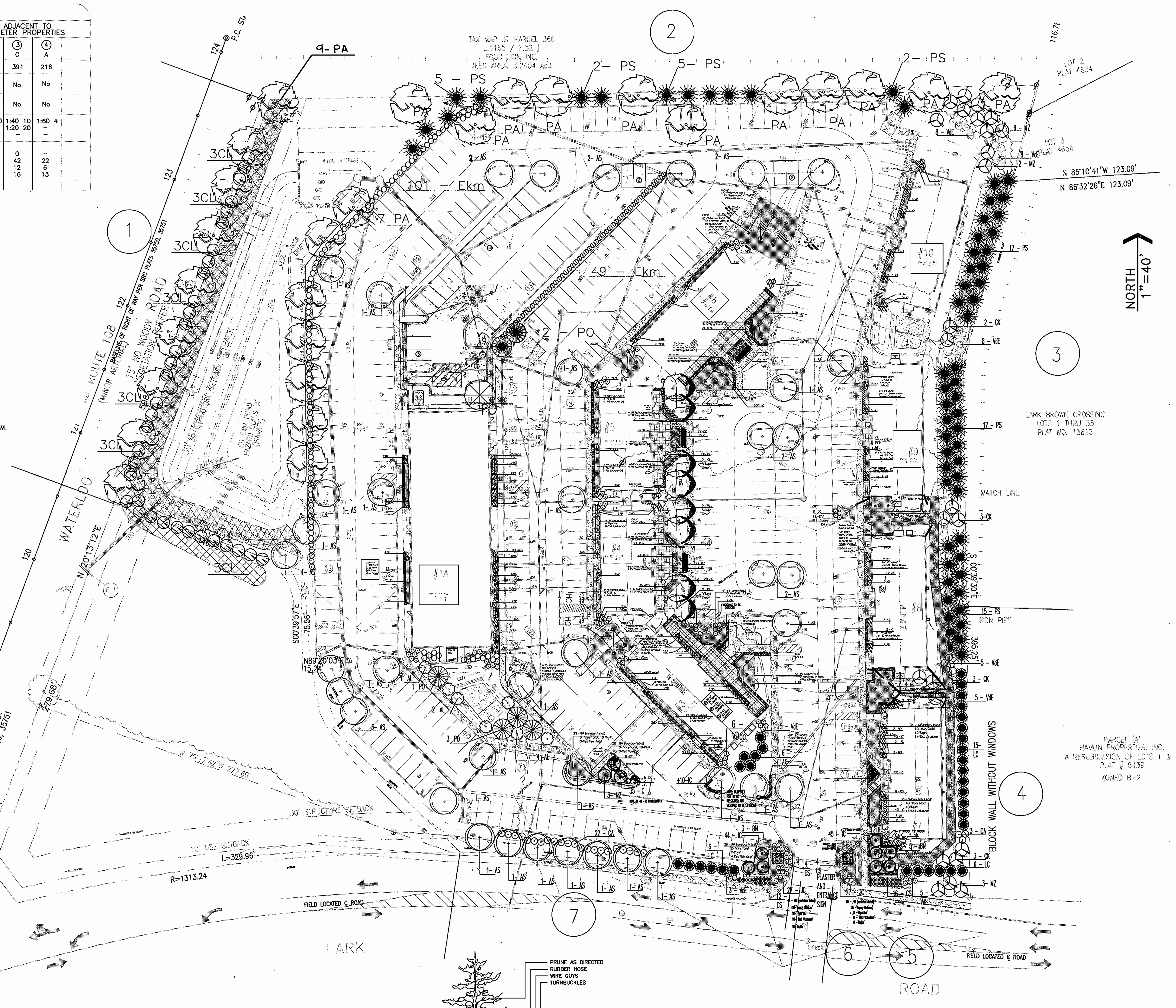
NOTES
1. SEE "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS" FOR ALL MATERIAL, PRODUCT, AND PROCEDURE SPECIFICATIONS.
2. SEE "LANDSCAPE GUIDELINES" FOR SUPPORTING TREES LARGER THAN 2-1/2" CALIPER.
3. PLACE UPRIGHT STAKES PARALLEL TO WALKS & BUILDINGS.
4. KEEP MULCH 1" 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.

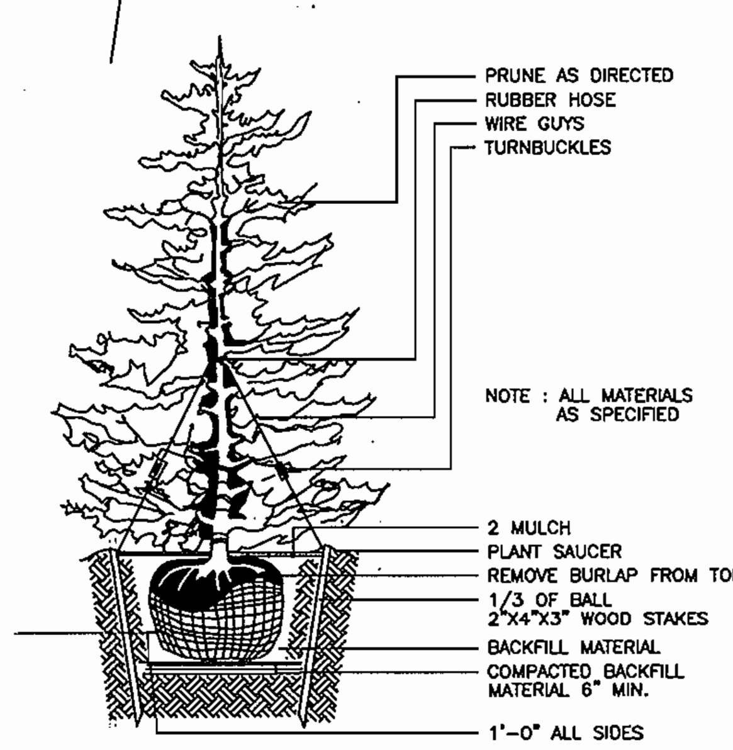


TREE PLANTING AND STAKING
DECIDUOUS TREES UP TO 2-1/2" CALIPER — NOT TO SCALE



SHRUB PLANTING DETAIL
NOT TO SCALE





TYPICAL EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE

LEGEND

- Existing Contour
- Proposed Contour
- Spot Elevation
- Direction of Flow
- Existing Trees to Remain
- Light Poles — Parking Lot & Roadway; Pedestrian; Parking Lot (Twin Head)
- Existing Adjacent Landscaping
- Shade Trees
- Evergreen Trees
- Shrubs/Hedge
- Flowering Trees
- Perimeter Landscape Edge
- Required Internal Planting Island

SCHEDULE 'B': PARKING LOT INTERNAL LANDSCAPING

Number of parking spaces	410
Number of trees and parking lot islands required (1:20)	21
Number of trees and parking lot islands provided Shade Trees Other Trees (2:1 Substitution)	 30 3

SCHEDULE D : STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF PERIMETER	673 LF
CREDIT FOR EXISTING VEGETATION (NO, YES AND LINEAR FEET)	N/A
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	YES, 8 Shade Trees on Perimeter 1
NUMBER OF TREES REQUIRED SHADE TREES EVERGREEN TREES	9 SHADE TREES (17–8) 34 EVERGREEN TREES
NUMBER OF TREES PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION)	9 SHADE TREES 34 EVERGREEN TREES 0 TREES (0 SUBSTITUTION TREES)

LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	REMARKS
AS	36	Acer saccharum 'Commemoration' 'Commemoration' Sugar Maple	2 1/2"–3" col.	B & B
AL	4	Amelanchier lamarckii Lamarck Serviceberry	3 to 5 stems 1" – 1 1/2"– col./stem	B & B
BN	37	Betula nigra "Heritage", "Heritage" River Birch	3 to 5 stems 1" – 1 1/2"– col./stem	B & B
CK	11	Craetgus viridia 'Winter King' Cockspur Hawthorne	2 1/2"–3" col.	B & B
CL	34	Cuppresocyparis leylandii Leyland Cypress	6'–8' HT.	B & B
MZ	17	Malus 'Zumi', 'Zumi' Crabapple	2" – 2 1/2" col.	B & B
PA	11	Plantanus x acerfolia London Planetree	2 1/2"–3" col.	B & B
PO	7	Picea omorika Serbian Spruce	6'–8' HT.	B & B
PS	51	Pinus strobus White Pine	6'–8' HT.	B & B
ZS	8	Zelkova serrata 'Village Green' Village Green Japanese Zelkova	2 1/2"–3" col.	B & B
CA	25	Cornus alba 'Elegantissima' Variegated Red Twig Dogwood	30–36"	cont.
CS	28	Cotoneaster salicifolius 'Repandens' Spreading Willowleaf Cotoneaster	18–24"	cont.
Ekm	192	Euonymous kiautschovicus 'Manhatton' Manhatten Euonymous	18–24"	cont.
IC	44	Ilex Crenata 'Soft Touch' 'Soft Touch' Helleri Holly	18–24"	cont.
JC	54	Juniperus Conferta 'Blue Pacifica' 'Blue Pacific' Shore Juniper	18–24"	cont.
Vde	42	Viburnum Dilatatum Viburnum	3'–4'	cont.

NO.	REVISION	DATE
1	MOVE BLDG 7, ADD ENTRANCES, SIDEWALKS TO SIDE DOORS REGRADE FOR WALKS REGRADE BLDGS 7, 8, 9, 10	12/18/02
3	REVISE PARKING ADD 9 SPACES – MEDICAL BLDG	1/03/05
4	SUBSTITUTE FOR ORIGINAL DRAWING 22 SHEET OF 26 DATED 4/19/2002	4/11/07

REVISED LANDSCAPE PLAN
SITE DEVELOPMENT PLAN
GATEWAY OFFICE PARK
PARCEL 'A'

A RESUBDIVISION OF LOTS 1 & 2, CARRIE NORMAN PROPERTY
TAX MAP 37 GRID 20 — PARCEL 604
6TH 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

PURPOSE STATEMENT
SITE PLAN REVISION IS BEING MADE TO REFLECT CHANGES MADE TO THE LANDSCAPE PLAN WHICH ADDRESSED PEDESTRIAN ACCESS FROM LARK BROWN ROAD, ACCESS TO BUILDINGS ON SITE, AND ENTRANCE SIGNAGE. THIS DRAWING TO BE SUBSTITUTED FOR ORIGINAL DRAWING.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/16/07
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/18/07
DIRECTOR — DATE 5/22/07

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 MAY 8, 2007

OWNER/DEVELOPER
CHARTWELL PROFESSIONAL PARK, L.L.C.
c/o JAMES M. JOST & CO., INC.
7370 GRACE DRIVE, SUITE A
COLUMBIA, MD 21044
Attn.: MR. JAMES JOST
(443) 535-9200

CROZIER ASSOCIATES
LANDSCAPE ARCHITECT/LAND PLANNING
8600 FOUNDRY ST., P.O. BOX 2066, SAVAGE, MD 20763
410.888.0500 phone 410.888.0501 fax

STATE OF MARYLAND REGISTERED LANDSCAPE ARCHITECT
Samuel G. Crozier RLA No. 70

DESIGN BY:	sgc
DRAWN BY:	vap
CHECKED BY:	vap
DATE:	APR. 19, 2002
SCALE:	1"=40'
W.O. NO.:	2017165

SHEET 22 OF 26

SDP-02-52