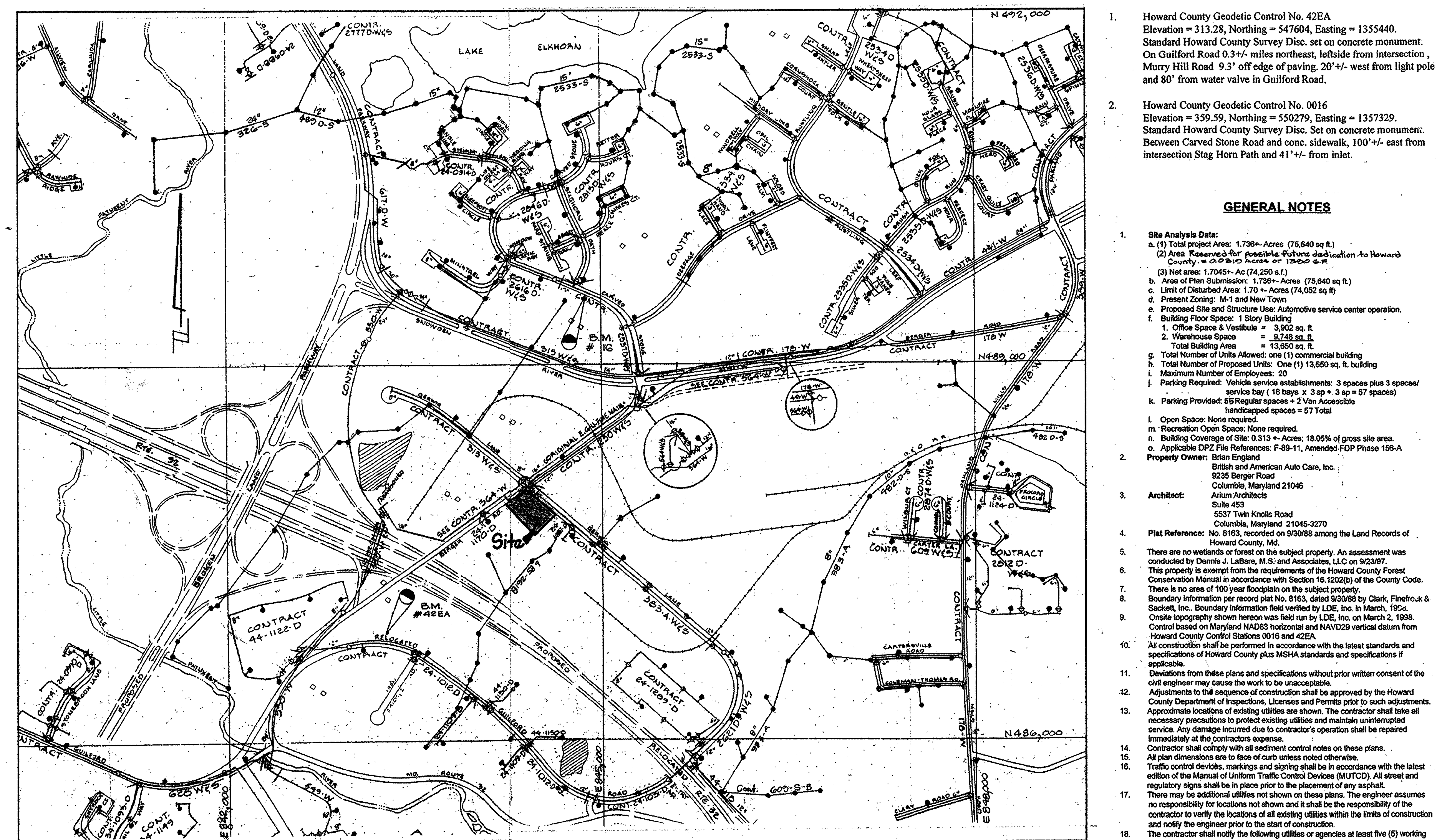
Sheet Index	
No.	Title
1	Title Sheet
2	Site Development Plan
3	Grading Sediment Control Plan
4	Drainage Area And Soils Plan
5	Sediment Control, Construction Notes & Details
6	Stormwater Management Detail Plan
7	Quality Stormwater Managament Notes & Details
8	Existing Features Plan
9	Landscape Plan

LEGEND

- BENCH MARK
- USE RESTRICTION LINE —— URL ——
- FLOW DIRECTION
- SLOPES BETWEEN 15% - 24.9%
- SLOPES GREATER THEN 25%
- SILT FENCE —— SF ——
- EARTH DIKE ED (A-1)
- LIMIT OF DISTURBANCE
- DRAINAGE DIVIDE
- EXISTING CONTOUR - - - 764 - - -
- PROPOSED CONTOUR —— 764 ——
- STABILIZED CONSTRUCTION ENTRANCE SCE
- SUPER SILT FENCE —— SSF ——



Location Map
Scale: 1" = 600'

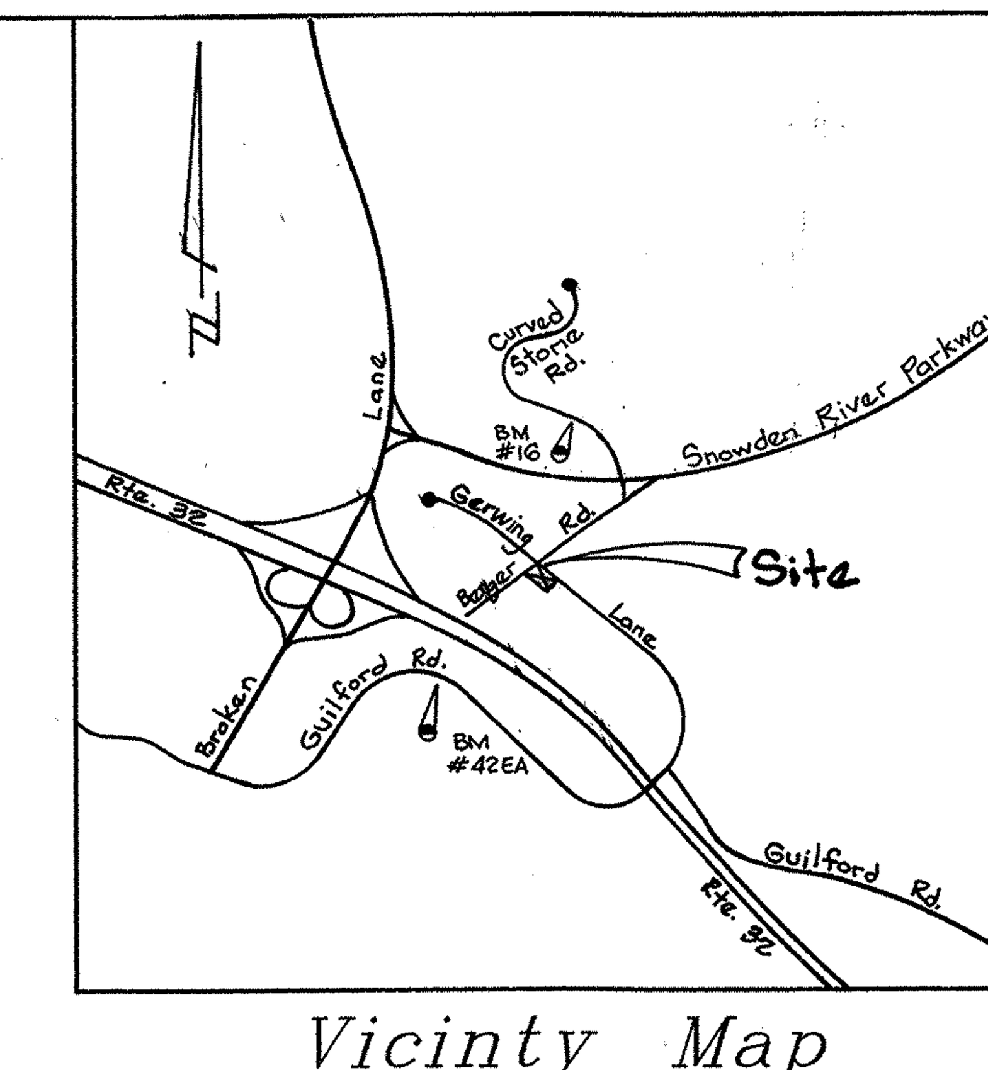
BENCH MARKS

1. Howard County Geodetic Control No. 42EA
Elevation = 313.28, Northing = 547604, Easting = 1355440.
Standard Howard County Survey Disc. set on concrete monument.
On Guilford Road 0.3+/- miles northeast, leftside from intersection, Murry Hill Road 9.3' off edge of paving. 20'+/- west from light pole and 80' from water valve in Guilford Road.

2. Howard County Geodetic Control No. 0016
Elevation = 359.59, Northing = 550279, Easting = 1357329.
Standard Howard County Survey Disc. Set on concrete monument. Between Carved Stone Road and conc. sidewalk, 100'+/- east from intersection Stag Horn Path and 41'+/- from inlet.

GENERAL NOTES

1. Site Analysis Data:
   a. (1) Total project Area: 1.736+- Acres (75,640 sq ft.)
   (2) Area Reserved for possible future dedication to Howard County = 0.0310 Acres or 1350 S.F.
   (3) Net area: 1.7045+- Ac (74,250 s.f.)
   b. Area of Plan Submission: 1.736+- Acres (75,640 sq ft.)
   c. Limit of Disturbed Area: 1.70 +- Acres (74,052 sq ft)
   d. Present Zoning: M-1 and New Town
   e. Proposed Site and Structure Use: Automotive service center operation.
   f. Building Floor Space: 1 Story Building
   1. Office Space & Vestibule = 3,902 sq. ft.
   2. Warehouse Space = 9,748 sq. ft.
   Total Building Area = 13,650 sq. ft.
   g. Total Number of Units Allowed: one (1) commercial building
   h. Total Number of Proposed Units: One (1) 13,650 sq. ft. building
   i. Maximum Number of Employees: 20
   j. Parking Required: Vehicle service establishments: 3 spaces plus 3 spaces/ service bay (18 bays x 3 sp + 3 sp = 57 spaces)
   k. Parking Provided: 55 Regular spaces + 2 Van Accessible handicapped spaces = 57 Total
   l. Open Space: None required.
   m. Recreation Open Space: None required.
   n. Building Coverage of Site: 0.313 +- Acres; 18.05% of gross site area.
   o. Applicable DPZ File References: F-89-11, Amended FDP Phase 156-A
2. Property Owner: Brian England
   British and American Auto Care, Inc.
   9235 Berger Road
   Columbia, Maryland 21046
3. Architect: Arium Architects
   Suite 453
   5537 Twin Knolls Road
   Columbia, Maryland 21045-3270
4. Plat Reference: No. 8163, recorded on 9/30/88 among the Land Records of Howard County, Md.
5. There are no wetlands or forest on the subject property. An assessment was conducted by Dennis J. LaBare, M.S. and Associates, LLC on 9/23/97.
6. This property is exempt from the requirements of the Howard County Forest Conservation Manual in accordance with Section 16.1202(b) of the County Code.
7. There is no area of 100 year floodplain on the subject property.
8. Boundary information per record plat No. 8163, dated 9/30/88 by Clark, Finefrock & Sackett, Inc.. Boundary information field verified by LDE, Inc. in March, 1998.
9. Onsite topography shown hereon was field run by LDE, Inc. on March 2, 1998. Control based on Maryland NAD83 horizontal and NAVD29 vertical datum from Howard County Control Stations 0016 and 42EA.
10. All construction shall be performed in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications if applicable.
11. Deviations from these plans and specifications without prior written consent of the civil engineer may cause the work to be unacceptable.
12. Adjustments to the sequence of construction shall be approved by the Howard County Department of Inspections, Licenses and Permits prior to such adjustments.
13. Approximate locations of existing utilities are shown. The contractor shall take all necessary precautions to protect existing utilities and maintain uninterrupted service. Any damage incurred due to contractor's operation shall be repaired immediately at the contractors expense.
14. Contractor shall comply with all sediment control notes on these plans.
15. All plan dimensions are to face of curb unless noted otherwise.
16. Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
17. There may be additional utilities not shown on these plans. The engineer assumes no responsibility for locations not shown and it shall be the responsibility of the contractor to verify the locations of all existing utilities within the limits of construction and notify the engineer prior to the start of construction.
18. The contractor shall notify the following utilities or agencies at least five (5) working days before beginning construction:
   a) "Miss Utility" at 1-800-257-7777
   b) "BGE" at (410) 234-5691
   c) "Bell Atlantic at (410) 393-3648



Vicinty Map
Scale: 1" = 2000'

19. It shall be distinctly understood that failure to mention specifically any work which would normally be required to complete this project shall not relieve the contractor from his responsibility to perform such work.
20. The contractor shall obtain all necessary permits prior to beginning work, including a grading permit from Howard County.
21. The contractor shall repair and maintain all existing sediment control devices until all areas are stabilized. Once all areas are fully stabilized all sediment control devices shall be completely removed and those areas stabilized.
22. The contractor shall contact the Howard County Department of Public Works Construction Inspection Division 24 hours prior to beginning construction at (410) 313-1880.
23. Public water service is available for this site under W & S Contract No. 315 and public sewer is available under W & S Contract No. 250.
24. Prior to the start of construction, contractor shall stakeout all construction and verify all offsets, setbacks and existing utility locations.
25. The developer must request that The Department of Inspections, Licenses and Permits approve work completed in accordance with the approved Erosion and Sediment Control Plan, Grading permit and the Ordinance.
26. Stormwater quantity management for this site is provided by an onsite retention pond. Water quality management provided by two (2) Stormceptors.
27. Any damage to County Rights-of-Way or paved public roads shall be repaired immediately at the contractors expense in accordance with the Howard County Standards and Specifications.
28. All fill shall be rolled to a minimum degree of compaction of 95% of the dry unit weight as determined by AASHTO T-180.
29. The dimensioned distances shall govern if scaled and dimensioned distances on this plan are found to be in disagreement.
30. See architectural plans for exact building dimensions.
31. The applicant will request a parking setback reduction from 25 feet to 10' in the New Town zoned portion of this property as part of the Planning Board approval process in accordance with amended FDP Phase 156-A. (see note #39).
32. The existing dwelling, paved driveway and picnic area shall be removed prior to commencement of site grading.
33. The proposed shallow retention pond shall be privately owned and maintained by the property owner.
34. The owner/ developer shall request permission from the Department of Public Works, Bureau of Utilities Division to use the "Advanced Purchase Order" procedure to bond and construct the proposed 6 inch public watermain and fire hydrant under this site development plan.
35. The Howard County Department of Planning & Zoning-Development Engineering Division, by letter dated 5/26/98, granted a waiver to Design manual Volume IV, Detail R-3.01 to allow an onsite standard Ho. Co. curb and gutter height of 4".
36. Existing septic and water house connection (undocumented connection-meter No. none) shall be property abandoned in accordance with Ho. Co. Department of Environmental Health standards and inspections. Location and schedule shall be submitted prior to SDP signature approval.
37. A demolition permit is required from the Howard County Department of Inspections, Licenses and Permits for the removal of the existing onsite structures.
38. The Planning Director denied WP-99-04 to waive Section 16.116(a)(2)(ii) prohibiting grading or removal of vegetative cover within 50' of a perennial stream in a non-residential district on 8/27/98.
39. The Planning Board approved this site plan on 1-27-99 and granted a parking setback reduction from 25' to 10' for parking & travelway adjacent to the northernmost property corner.
40. The Stormceptor water quality structures specified on these plans are a trademark of Stormceptor Corporation. Structural design by Stormceptor Corporation. LDE, Inc. is responsible for choosing the appropriate standard structure size and sizing inflow & outflow pipe sizes only.

APPROVED
PLANNING BOARD
of HOWARD COUNTY
DATE 1/27/99

Schnabel Engineering Associates, Inc.
Consulting Geotechnical Engineers
Test Pit Log

Contract No.: 984059.OD
Test Pit No.: SWM-1
Project: British and American Automotive
Location: SWM Pond
Date Started: 4/23/98
Date Ended: 4/23/98
Surface Elev.: 310
SEA Rep: J. Cooper
Water Elev.: 305
Excavation Equip.: Backhoe

Depth	Elev.	Description	Depth	Blows	Remarks
1		Topsoil=6 inches	1		Residual
2		Poorly Graded SAND (SP), with silt and rock fragments, moist, light brown	2	46	Difficult to excavate below 2.0', Rock Fragments up to 6" in length below 2'. MC=8.2% @ 2'
4			4	23+32	
5	305	Backhoe Refusal at 5.0'	5	120	Water encountered at bottom of pit at 5.0'
8		Note: Water level reading on 4/25/98: 4.8'	8		

Schnabel Engineering Associates, Inc.
Consulting Geotechnical Engineers
Test Pit Log

Contract No.: 984059.OD
Test Pit No.: SWM-2
Project: British and American Automotive
Location: SWM Pond
Date Started: 4/23/98
Date Ended: 4/23/98
Surface Elev.: 312.5
SEA Rep: J. Cooper
Water Elev.: 307.5
Excavation Equip.: Backhoe

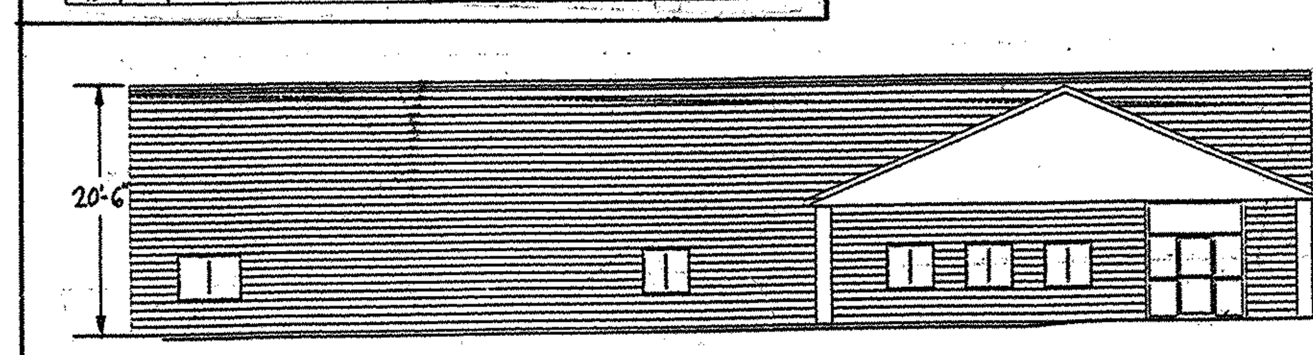
Depth	Elev.	Description	Depth	Blows	Remarks
1		Topsoil=5 inches	1		Residual
2		Poorly Graded SAND (SP), with silt and rock fragments, moist, light brown	2		West end of pit difficult to excavate below 2'
3			3	60/1/4"	MC= 8.2% @ 2'
4			4	21+30	Backhoe refusal at 3' at east end of pit
5		Backhoe Refusal at 3 to 5 feet	5	60/1/2"	Water encountered at bottom of test pit
8		Note: Water level reading on 4/25/98: Dry to 5.0'	8		

Schnabel Engineering Associates, Inc.
Consulting Geotechnical Engineers
Test Pit Log

Contract No.: 984059.OD
Test Pit No.: SWM-3
Project: British and American Automotive
Location: SWM Pond
Date Started: 4/23/98
Date Ended: 4/23/98
Surface Elev.: 311
SEA Rep: J. Cooper
Groundwater Elev.: Dry
Excavation Equip.: Backhoe

Depth	Elev.	Description	Depth	Blows	Remarks
1		Topsoil=6 inches	1		Residual
2		Poorly Graded SAND (SP), trace silt and rock fragments	2		MC= 10.3% @ 2'
4	307	Backhoe refusal at 4.0'	4	60/3/4"	
8		Note: Water level reading on 4/25/98: Dry to 4.0'	8		

Site Development Plan
British And American Auto Care Inc.
Columbia
E.G.U. Subdivsion
Parcel "C"
A Resubdivision of Lot 3
6th Election District Howard County, Maryland



BUILDING PROFILE-FRONT FACING BERGER ROAD
N.T.S.

SUBDIVISION NAME		SECTION/AREA		PARCEL/NO.	
E.G.U. Subdivsion		2/8		C	
PLAT NO.	BLOCK NO.	ZONE	TAX MAP NO.	ELECTION DISTRICT	CENSUS TRACT
8163	9	M-1&NT	42	6	6067.03
WATER CODE	E06		SEWER CODE	5241000	

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/5/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/8/99

DIRECTOR — DATE 3/11/99

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

NATURAL RESOURCE CONSERVATION SERVICE — DATE 3/3/99

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/3/99

ENGINEER'S CERTIFICATE

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

Bruce D. Barton — SIGNATURE OF ENGINEER — DATE 2/24/99

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ONSITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY."

SIGNATURE OF DEVELOPER — DATE 2/23/99

STATE OF MARYLAND — BRUCE DAVID BARTON — No. 19184 — REGISTERED PROFESSIONAL ENGINEER
Bruce Barton 2/24/99

ADDRESS CHART	
Lot Number	Street Address
Parcel 'C'	9577 Berger Road

REVISIONS			
No.	Date:	By	Description:
1	4-28-99	SMC	Revised H.C. Parking and Associated grading in front of Building for revised canopy column locations. Added (1) Parking space on east of building, and revised exterior bollard locations.

LDE, INC.
9250 Rumsey Road, Suite 106, Columbia, MD. 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED	Title Sheet	SCALE
SDH	British And American Auto/Care Inc. Columbia E.G.U. Subdivsion Parcel "C" A Resubdivision of Lot 3 Tax Map 42, P/O Parcel 386, Grid 9 6th Election District Howard County, Maryland	1"=600'
DRAWN		DRAWING
SMC		1 OF 9
CHECKED		JOB NO.
B.D.B.		98-010
DATE Rev. 7/98 4/98 Rev 10/9/98	Owner/Developer: Brian England, British And American Auto/Care Inc., 9235 Berger Road, Columbia, Maryland 21046, (410) 381-2700	FILE NO. SDP-98-132

SDP98-132

/users/land/JOHN /BRITAM1.S70

SUBDIVISION NAME E.G.U. Subdivsion			SECTION/AREA 2/8		PARCEL/NO. C
PLAT NO. 8163	BLOCK NO. 9	ZONE M-1&NT	TAX MAP NO. 42	ELECTION DISTRICT 6	CENSUS TRACT 6067.03
WATER CODE E06			SEWER CODE 5241000		

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 3/5/99 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 3/8/99 DATE

DIRECTOR — 3/11/99 DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

NATURAL RESOURCE CONSERVATION SERVICE — 3/3/99 DATE

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HOWARD SOIL CONSERVATION DISTRICT — 3/3/99 DATE

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SIGNATURE OF ENGINEER — 2/24/99 DATE

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SIGNATURE OF DEVELOPER — 2/23/99 DATE

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER — 2/24/99

APPROVED
PLANNING BOARD
of HOWARD COUNTY
DATE 1/27/99

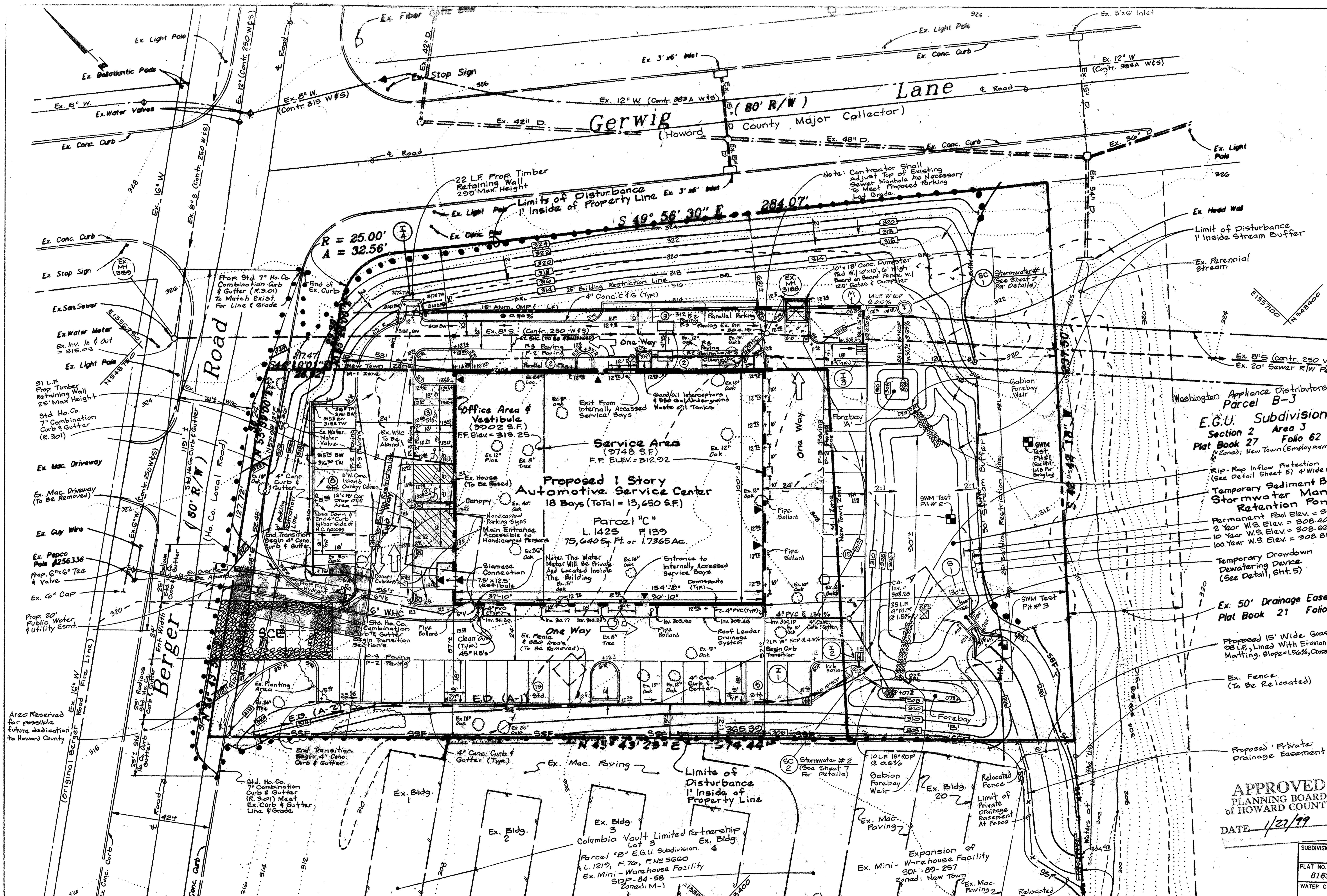
REVISIONS

No.	Date:	By	Description
1	4-28-99	SMC	Revised H.C. parking and associated grading in front of building for revised canopy column locations, added (1) parking space on east of building, and revised exterior bollard locations.

LDE, INC.
9250 Rumsey Road, Suite 106, Columbia, MD. 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED SDH	Site Development Plan British And American Auto Care, Inc. Columbia E.G.U. Subdivision Parcel "C"	SCALE 1' = 20"
DRAWN SMC		DRAWING 2 of 9
CHECKED B.D.B.	Tax Map 42, P/O Parcel 386, Grid 9 6th Election District Howard County, Maryland	JOB NO. 98-010
DATE Rev. 7/98 4/98 Rev 10/98	Owner/Developer: Brian England, British And American Auto/Care Inc., 9235 Berger Road, Columbia, Maryland 21046, (410) 381-2700	FILE NO. SDP-98-132

SDP98-132



SEQUENCE OF CONSTRUCTION

1.) Obtain grading permit. 1 DAY

2.) Notify the Howard County Department of Public Works, Construction Inspection Division at least 48 hours prior to beginning construction at (410) 313-1880. 1 DAY

3.) Install sediment control devices, including stabilized construction entrance, sediment basin w/ dewatering device and RPS, earth dikes, temporary rip-rap inflow protection and silt fence. Insure that weir # 1 on S-1 is blocked (see SD-7.00 detail, sht 6). Do not install pond forebays. Obtain inspectors permission to proceed. 10 DAYS

4.) Grade site in accordance with the approved grading plan. Stabilize site in accordance with the temporary seeding notes. 10 DAYS

5.) Construct Building and install roof drainage system. 3 MONTHS

6.) Install utilities, including storm drainage system, water and sewer. 10 DAYS

7.) Fine grade for parking lot and travelways. Install retaining walls. 4 DAYS

8.) Install gravel base for parking lot. 3 DAYS

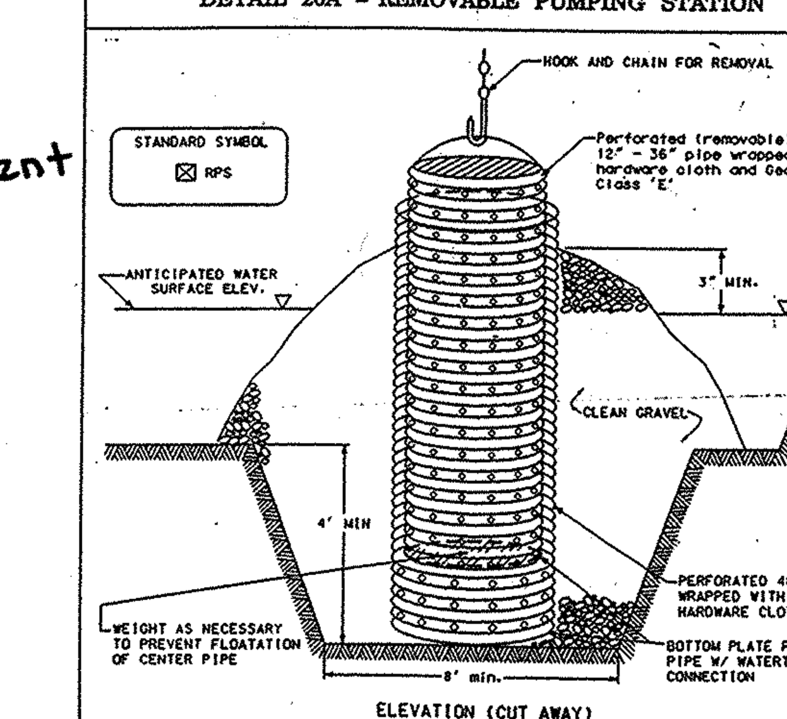
9.) Install base and surface paving. 5 DAYS

10.) Stabilize all remaining disturbed areas in accordance with the permanent seeding notes. 2 DAYS

11.) With permission from the Sediment Control Inspector, remove all remaining sediment control devices, including stabilized construction entrance, silt fence, earth dikes and temporary rip-rap inflow protection at the end of the earth dike. Convert the sediment trap into permanent stormwater management pond per approved grading plan and SWM construction detail sheet. Install forebays 'A' and 'B'. Stabilize all remaining disturbed areas in accordance with the permanent seeding notes. 10 DAYS

TOTAL TIME: 146 DAYS

DETAIL 20A - REMOVABLE PUMPING STATION



ELEVATION (CUT AWAY)

Construction Specifications

1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations.

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

3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" in diameter. The perforations shall be 1/2" X 6" slits or 1" diameter holes 6" on center. The center pipe shall be wrapped with 1/2" hardware cloth first, then wrapped again with Geotextile Class E.

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

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE D - 13 - 6 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SUMMARY TABLE

SHALLOW RETENTION POND
Hazard Classification "A"
Drainage Area = 1.68 Acres

	2 YEAR	10 YEAR	100 YEAR
Allowable Pond Release:	2.87 cfs	6.31 cfs	-
Computed Inflow:	5.51 cfs	9.17 cfs	13.15 cfs
Facility Discharge:	2.87 cfs	5.68 cfs	8.40 cfs
Elevation at Discharge:	308.40	308.66	308.85
Storage at Elevation(ac ft):	0.126	0.152	0.1760
Top of Embank. Elevation:		309.00	

APPROVED
PLANNING BOARD
of HOWARD COUNTY
DATE 1/27/99

SUBDIVISION NAME	SECTION/AREA	PARCEL/NO.
E.G.U. Subdivsion	2/8	C

PLAT NO.	BLOCK NO.	ZONE	TAX MAP NO.	ELECTION DISTRICT	CENSUS TRACT
8163	9	M-1&NT	42	6	6067.03

WATER CODE	SEWER CODE
E06	5241000

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[signature] 3/5/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Cindy Hamilton 3/8/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[signature] 3/11/99
DIRECTOR DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

[signature] 3/3/99
NATURAL RESOURCE CONSERVATION SERVICE DATE

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

[signature] 3/3/99
HOWARD SOIL CONSERVATION DISTRICT DATE

ENGINEER'S CERTIFICATE

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

Bruce D Burton 2/24/99
SIGNATURE OF ENGINEER DATE

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[signature] 2/23/99
SIGNATURE OF DEVELOPER DATE

[Seal: State of Maryland Professional Engineer] Bruce D Burton 2/24/99

Sediment Basin Schedule

Basin No.	Max. D.A. Acres	Dry Stor. Req'D ft^3	Wet Stor. Req'D ft^3	Dry Stor. Prov'D ft^3	Wet Stor. Prov'D ft^3	Stor. Depth ft.	Dry Stor. Elev.	Wet Stor. Elev.	Weir Length ft.	Bottom Elev.	Clean. Elev.	Weir Depth	Top Elev. **	Basin Size	Type
1	1.68	3024	3024	3024	3024	1.9	307.9	307.1	***	306	306.6	1.1	309	see plan	Basin

** Top of embankment elevation.
*** Concrete outlet structure consists of a .55' weir, Inv.=307.9 and a 4.0' weir, Inv.=308.38.

REVISIONS

No.	Date:	By:	Description
1	4-28-99	SMC	Revised H.C. Parking and Associated grading in front of building for revised canopy column locations added (1) parking space on east of building, and revised exterior bollard locations.

LDE, INC.

9250 Rumsey Road, Suite 106, Columbia, MD. 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED SDH	Grading And Sediment Control Plan	SCALE 1' = 20"
DRAWN SMC	British And American Auto Care, Inc. Columbia E.G.U. Subdivision Parcel "C"	DRAWING 3 of 9
CHECKED B.D.B.	Tax Map 42, P/O Parcel 386, Grid 9 · 6th Election District · Howard County, Maryland	JOB NO. 98-010
DATE Rev. 7/98 4/98 Rev 10/98	Owner/Developer: Brian England, British And American Auto/Care Inc., 9235 Berger Road, Columbia, Maryland 21046, (410) 381-2700	FILE NO. SDP 98-132

SDP 98-132

SOILS LEGEND

MAP SYMBOL	DESCRIPTION	HYDROLOGIC SOIL TYPE
*AdB2	Aldino silt loam, 3%-8% slopes, moderately eroded	D
BrC3	Brandywine loam, 8%-15%, severely eroded	C
MIC2	Manor loam, 8%-15% slopes, moderately eroded	B
**WaB	Watchung silt loam, 0%-3% slopes	D

* Watchung inclusions listed as hydric on the Howard County Hydric Soils List.
** Entire map unit listed as hydric on the Howard County Hydric Soils List.

SUBDIVISION NAME		SECTION/AREA	PARCEL/NO.		
E.G.U. Subdivsion		2/8	C		
PLAT NO.	BLOCK NO.	ZONE	TAX MAP NO.	ELECTION DISTRICT	CENSUS TRACT
8163	9	M-1&NT	42	6	6067.03
WATER CODE	E06	SEWER CODE	5241000		

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/5/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/8/99

DIRECTOR — DATE 3/11/99

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

NATURAL RESOURCE CONSERVATION SERVICE — DATE 3/3/99

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/3/99

ENGINEER'S CERTIFICATE

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

SIGNATURE OF ENGINEER — Bruce D. Burton — DATE 2/24/99

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ONSITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY."

SIGNATURE OF DEVELOPER — DATE 2/23/99

State of Maryland — Bruce David Burton — Registered Professional Engineer No. 19184 — 2/24/99

Proposed 15' Wide Grass Channel, 98 L.F., Lined With Erosion Control Matting.
Slope = 1.56%
Cross Slope = 0.0%
2 Yr. Q = 2.87 cfs
2 Yr. V = 1.51 fps
2 Yr. D = 0.12 ft.
10 Yr. Q = 5.68 cfs
10 Yr. V = 1.96 fps
10 Yr. D = 0.19 ft.
100 Yr. Q = 8.40 cfs
100 Yr. V = 2.28 fps
100 Yr. D = 0.23 ft.

APPROVED
PLANNING BOARD
of HOWARD COUNTY
DATE 1/27/99

REVISIONS

No.	Date:	By:	Description:
1	4-28-99	SMC	Added Note See Sht 2 of 9 for H.C parking, Configation & Grades

LDE, INC.
9250 Rumsey Road, Suite 106, Columbia, MD. 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED: SDH
DRAWN: SMC
CHECKED: B.D.B.
DATE: Rev. 7/98, 4/98, Rev 10/98

Drainage Area And Soils Map
British And American Auto Care, Inc.
Columbia
E.G.U. Subdivision
Parcel "C"

Tax Map 42, P/O Parcel 386, Grid 9
6th Election District
Howard County, Maryland

Owner/Developer: Brian England, British And American Auto/Care Inc., 9235 Berger Road, Columbia, Maryland 21046, (410) 381-2700

SCALE: 1' = 20"
DRAWING: 4 of 9
JOB NO. 98-010
FILE NO. SDP-98-132

SDP98-132

4.0 Installation Procedures

The installation of the concrete **Storm***ceptor*® should conform in general to state highway or local specifications for the construction of manholes. Selected sections of a general specification that are applicable are summarized in the following sections.

Excavation

Excavation for the installation of the **Storm***ceptor*® should conform to state highway or local specifications. Topsoil that is removed during the excavation for the **Storm***ceptor*® should be stockpiled in designated areas and should not be mixed with subsoil or other materials. Topsoil stockpiles, and the general site preparation for the installation of the **Storm***ceptor*® should conform to state highway or local specifications.

The **Storm***ceptor*® should not be installed on frozen ground. Excavation should extend a minimum of 12 inches from the precast concrete surfaces plus an allowance for shoring and bracing where required. If the bottom of the excavation provides an unsuitable foundation additional excavation may be required.

In areas with a high water table, continuous dewatering should be provided to ensure that the excavation is stable and free of water.

Leveling

A 6 to 12 inch layer of granular material (conforming to local or state highway backfill specifications) should be installed, compacted, and leveled at the bottom of the excavation to the proper elevation for the installation of the interceptor base.

Backfilling

Backfill material should conform to state highway or local specifications. Generally, backfill material should be placed in uniform layers not exceeding 12 inches in depth. Each layer should be compacted to the density required by local/state guidelines. Backfill is not to contain topsoil.

Stormceptor® Construction Sequence

The concrete **Storm***ceptor*® is installed in sections in the following sequence :

1. aggregate base
2. base slab
3. treatment chamber section(s)
4. transition slab (if required)
5. by-pass section with insert
6. connect inlet and outlet pipes
7. riser section and/or transition slab (if required)
8. maintenance riser section(s) (if required)
9. top slab oriented with clear access to vent and 24" opening
10. frame and access cover

The precast base should be placed level at the specified grade. The entire base should be in contact with the underlying compacted granular material. Subsequent sections, complete with joint seals, should be installed in accordance with the precast concrete manufacturer's recommendations.

Adjustment of the **Storm***ceptor*® can be performed by lifting the upper sections free of the excavated area, re-leveling the base, and re-installing the sections. Damaged sections and gaskets should be repaired or replaced as necessary. Once the **Storm***ceptor*® has been constructed, the lift holes should be plugged and mortared inside and outside.

Down Pipe and Riser Pipe

Once the by-pass section has been attached to the lower treatment chamber, the inlet down pipe, and outlet riser pipe can be attached. To install the inlet down pipe a worker enters the lower treatment chamber through the outlet riser pipe opening (24 inch diameter) in the by-pass section.

The inlet drop pipe is installed by coating the outside of the pipe with glue and pushing the pipe into the coupling. Chemrex 948 caulking should be applied to the connection once the inlet drop pipe is securely in place. The tee at the end of the inlet drop pipe must be oriented such that water which enters the treatment chamber is directed tangentially around the inside walls of the chamber.

The outlet riser pipe (24 inch diameter) should be installed from the top of the fiberglass disc by sliding the pipe that is provided into the existing 24" sleeve from above. The 24" diameter pipe is manufactured with a flange on the end. Chemrex 948 caulking should be applied underneath the flange to act as a permanent seal before the pipe is secured in place. Pressure should be carefully applied to the top of the flange to ensure that the pipe is fully extended into the lower chamber (i.e. the top elevation of the flange is level with the surrounding fiberglass disc) and that the caulking evenly seals the pipe in place.

Inlet and Outlet Pipes

Inlet and outlet pipes should be securely set into the by-pass chamber using grout or approved pipe seals so that the structure is watertight. Flexible rubber boots are normally used and installed at the precast concrete plant prior to shipping. The flexible boots are applicable for pipes with an outside diameter up to 42 inches. The local **Storm***ceptor* affiliate should be notified if the pipe is to be grouted in the field at the time of ordering since the boots are generally included in the price quotations.

Installation of the flexible boots should follow the manufacturer's recommendations. As previously mentioned, the boots will already be attached to the **Storm***ceptor*® at the manufacture's plant.

Top Slab and Access Opening Installation

The final concrete piece to be installed is the top slab with the 30 inch access opening. Proper positioning of the top slab is **extremely important** to the proper operation and maintenance of the Stormceptor. The 30 inch opening must be positioned so the 6" vent pipe and the 24" discharge opening are both accessible from the surface opening (see drawing after page 25).

Frame and Cover Installation

Stormceptor provides a standard cast iron frame and cover with the name Stormceptor clearly embossed on it. Precast concrete adjustment units should be installed to set the frame and cover at the required elevation. The adjustment units should be laid in a full bed of mortar with successive units being joined using sealant recommended by the manufacturer. Frames for the cover should be set in a full bed of mortar at the elevation specified.

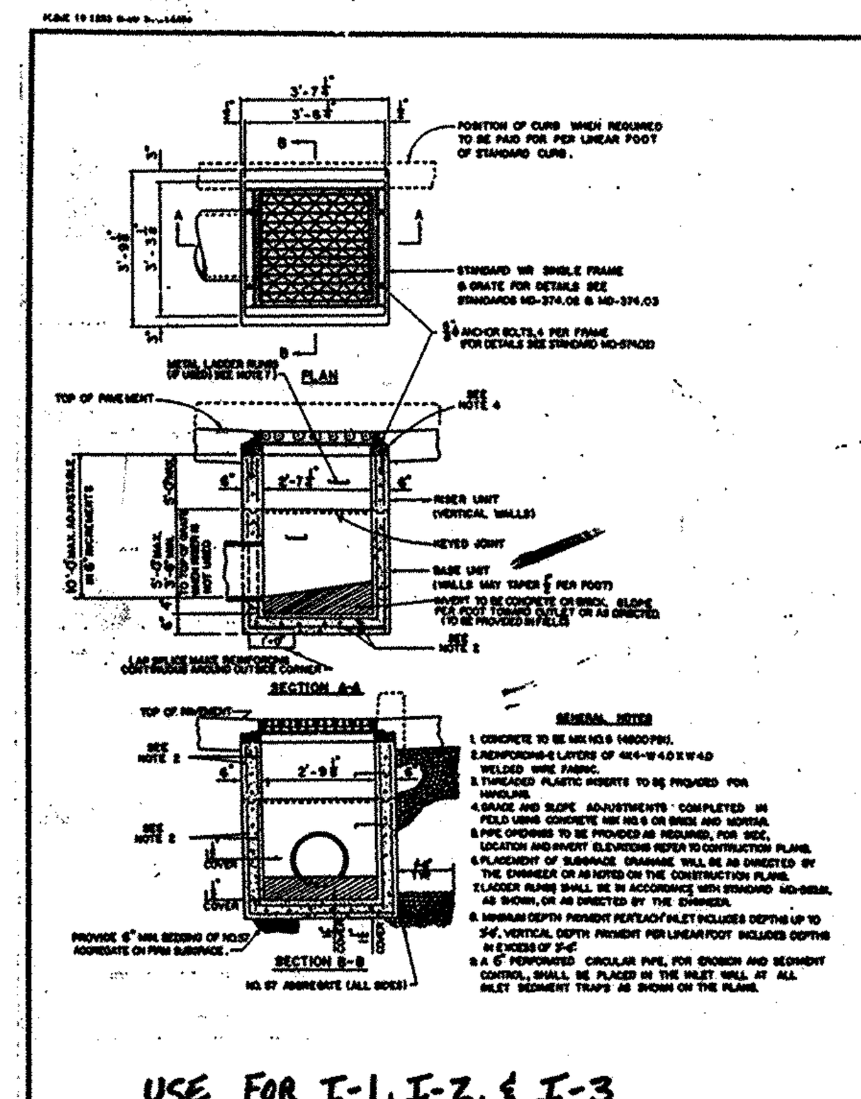
CONTRACTOR INSTALLATION INSTRUCTIONS: PRECAST CONCRETE STORMCEPTOR

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 AGGREGATE SUBBASE AT THE BOTTOM OF THE EXCAVATION. INSTALL TRENCH BOX 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. ALL LIFTING APPARATUS IS TO BE PROVIDED BY THE INSTALLATION CONTRACTOR.
4. INSTALL STORAGE CHAMBER. (INSTALL SCREW LIFTING PINS INTO BASE OF STORAGE CHAMBER.) ATTACH CABLES OR CHAINS TO ALL 3 LIFT 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).

   (FOR STORMCEPTOR MODELS STC-900, STC-1200 AND STC-1800 SKIP STEP 5 AND GO TO STEP 6)
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 SECTION 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 SECTION 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 ON REVERSE SIDE OF THESE INSTRUCTIONS.
8. INSTALL RISER SECTION. LIFT RISER SECTION AND INSTALL, WHILE CHECKING THAT SECTION IS SET FLUSH AND IS AT PROPER ELEVATION AND THAT UNIT 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 SLAB WITH OPENING FOR STORMCEPTOR FRAME AND COVER. IF OPENING IS OFFSET (NOT CENTERED) THE TOP SLAB 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 LOCAL/STATE REQUIREMENTS.
11. INSTALL AND SET GRADE ADJUSTING RINGS, AS NEEDED. PLUG ALL LIFT HOLES WITH TAPERED FLEXIBLE PLUG AND KNOCK IN TO PLACE. PLUGS IN STORAGE CHAMBER MUST BE GROUTED INSIDE AND OUTSIDE WITH GROUT.
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 WITH NON-SHRINK GROUT WHEN NO FLEXIBLE BOOTS ARE PROVIDED. THE INVERT OF THE INLET AND OUTLET PIPE IS TO MATCH UP WITH THE INVERT OF THE STORMCEPTOR INSERT. FLEXIBLE BOOT INSTALLATION PROCEDURES: CENTER THE PIPE IN 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 PIPE HORIZONTALLY AND/OR VERTICALLY TO BRING TO GRADE.
14. THE STORMCEPTOR SHOULD BE PUMPED OUT WHEN THE SEDIMENT CONTROL MEASURES ARE REMOVED (SITE PERMANENTLY STABILIZED).
15. FINAL INSPECTION.

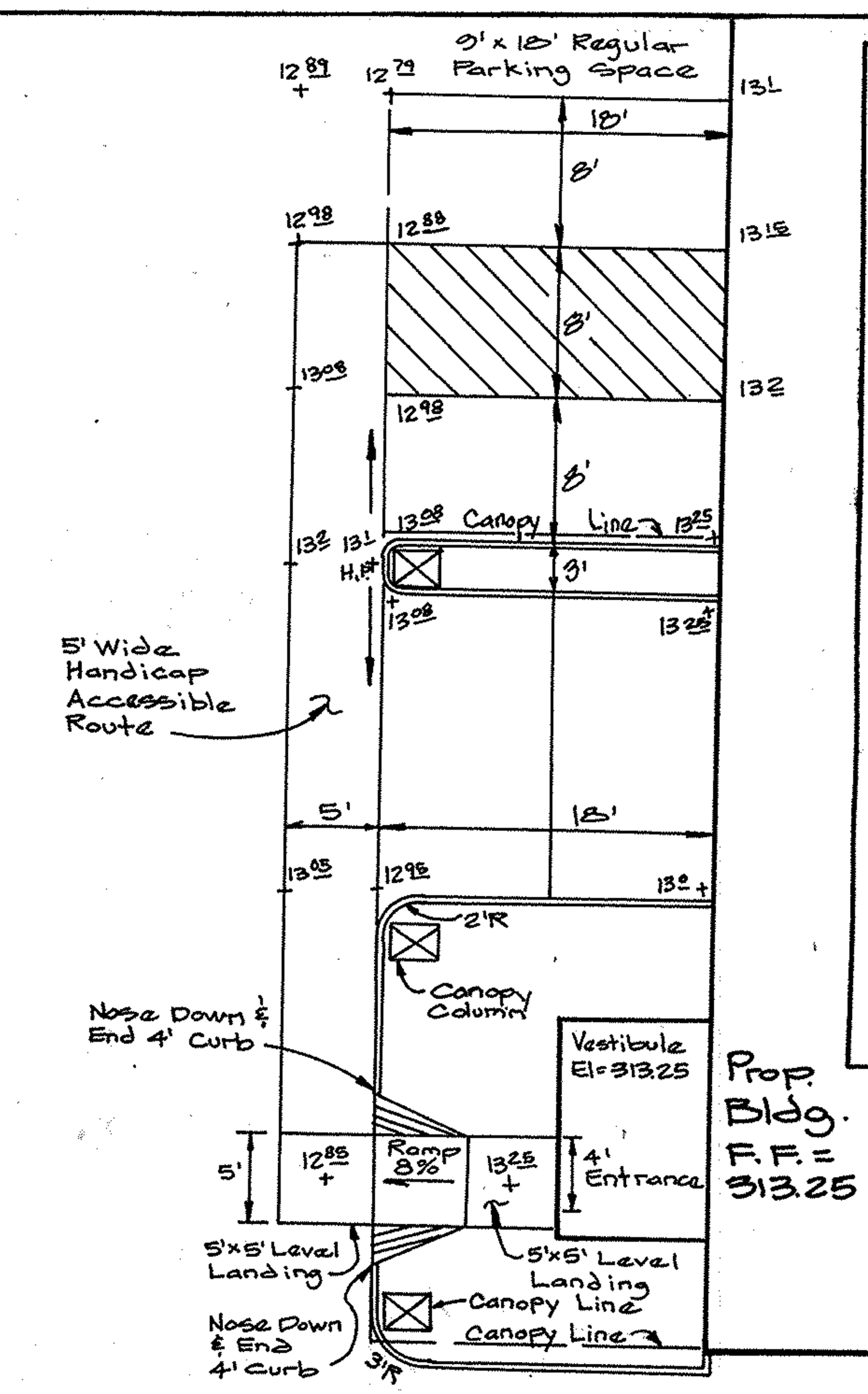
7/3/96

FOR TECHNICAL INFORMATION CALL STORMCEPTOR CORPORATION AT 1-800-762-4703

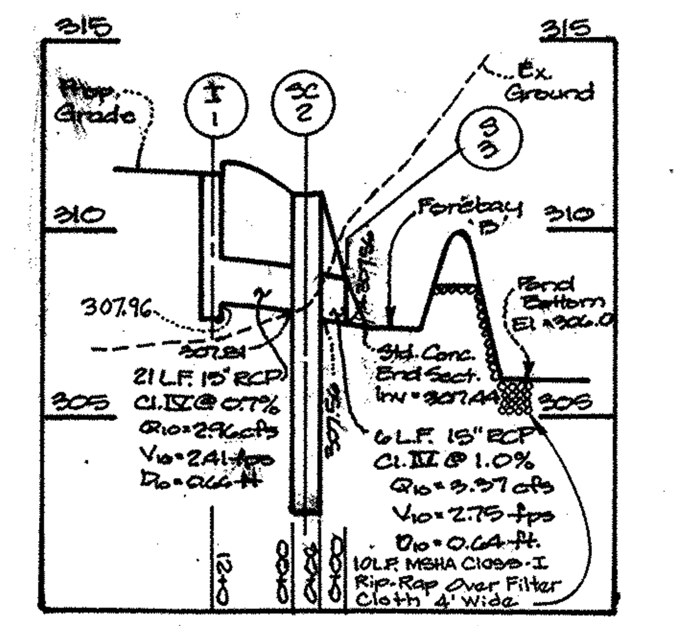


USE FOR I-1, I-2, & I-3

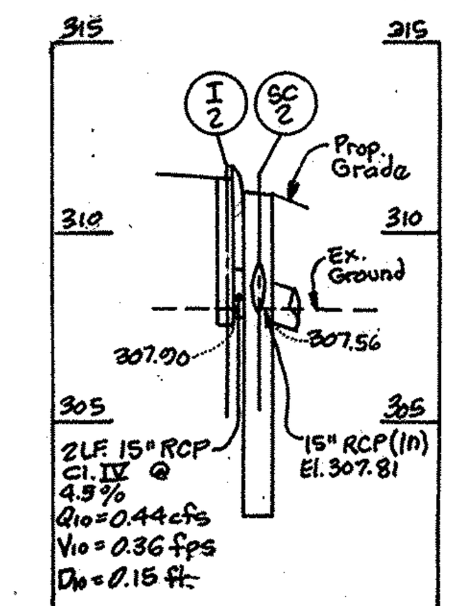
HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS Approved ______ Chief - Bureau of Engineering	PRECAST SINGLE WR INLET	DRAWN BY: W.H. CHECKED BY: W.H. SCALE: NONE SD 4.37



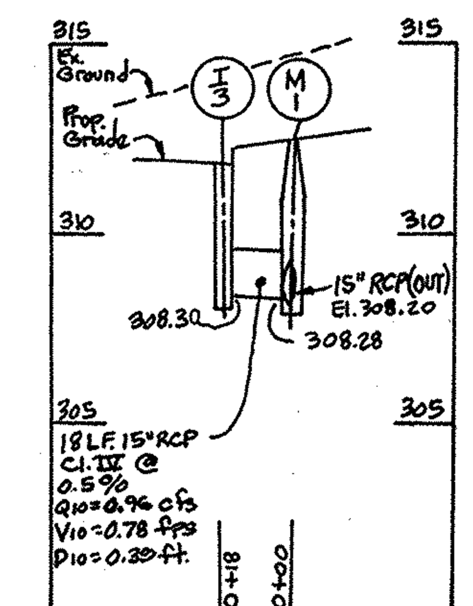
Handicap Parking & Access Route Detail
Scale: 1"=10'



PRIVATE STORM DRAIN PROFILE
I-1 to S-3
Scale: Hor. 1"=50' Vert. 1"=5'

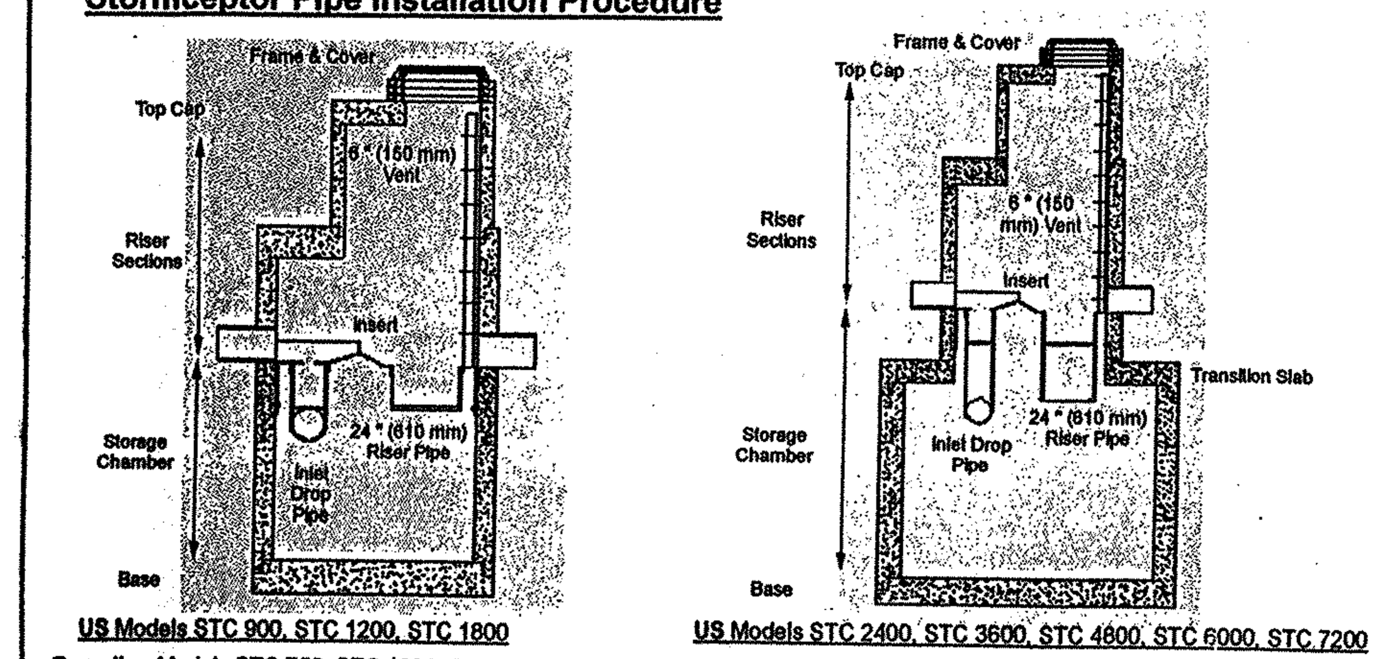


PRIVATE STORM DRAIN PROFILE
I-2 to SC-2
Scale: Hor. 1"=50' Vert. 1"=5'



PRIVATE STORM DRAIN PROFILE
I-3 to MH-1
Scale: Hor. 1"=50' Vert. 1"=5'

Stormceptor Pipe Installation Procedure



US Models STC 900, STC 1200, STC 1800
Canadian Models STC 750, STC 1000, STC 1500

US Models STC 2400, STC 3600, STC 4800, STC 6000, STC 7200
Canadian Models STC 2000, STC 3000, STC 4000, STC 5000, STC 6000

1. Drop Pipes are to be installed once the riser section containing the insert has been installed on the storage chamber.
2. Enter the Storage Chamber and install the Inlet Drop Pipe from underneath the insert. The Inlet Drop pipe is easily identifiable by the T-section fitting. The tee is oriented such that it is perpendicular to the direction of flow in the upstream storm sewer. For the smaller models (< 2000) the Inlet Drop Pipe is cemented into the coupling that is provided using the supplied PVC cement. For the larger models (>=2000) the Inlet Drop Pipe is connected into a gasketed coupling using the supplied pipe lubricant. Once the Inlet Drop Pipe has been installed, the connection should also be caulked using the supplied (Chemrex 948 or Bulldog Premium PL) sealant to ensure an oil/water tight connection.
3. The large 24" (610 mm) Riser Pipe is inserted into the provided outlet sleeve from above while standing on the insert. A flange is provided on the Outlet Riser Pipe to prevent it from falling into the Storage Chamber. The underside of the flange must be caulked with the provided Chemrex 948 sealant to ensure an oil/water tight connection.
4. A 6" (150 mm) coupling is provided on the insert for the 6" (150 mm) supplied PVC Vent Pipe. The Vent Pipe should be attached to the coupling using the supplied PVC cement. Once the cement has set, the connection should also be caulked using the supplied Chemrex 948 sealant to ensure an oil/water tight connection.

Storm*ceptor*® GASKET INSTALLATION INSTRUCTIONS

GUIDELINES FOR ASSEMBLING PROFILE GASKETS ON A SINGLE STEP Storm*ceptor*® JOINT

(1) The Storm*ceptor*® section should be handled with care to avoid any chipping of the bell or spigot.

(2) Carefully clean all dirt and debris from the spigot, including the step seating area of the gasket. Clean the inside area of the bell.

(3) Place the profile gasket in the step of the "dry" spigot. Verify that the pointed end of the gasket is directed towards the shoulder of the spigot. (See Figure 1)

(4) Insert a smooth, round rod, such as a screwdriver, between the gasket and the spigot. Be careful not to cut or lacerate the gasket. Equalize the gasket stretch by running the rod around the entire circumference several times.

(5) Apply joint lubricant to the inner surface of the bell including the leading edge. Lubricate the spigot and gasket.

(6) Align the Storm*ceptor*® sections (spigot with the bell). Verify that the gasket touches the lead-in taper around the entire circumference.

(7) Gently push the joint home. Note that every Storm*ceptor* section will not home exactly the same. (See Figure 2)

If jointing problems arise, do not force the Storm*ceptor*® sections together (cracking may occur). Contact CSR Hydro Conduit immediately.

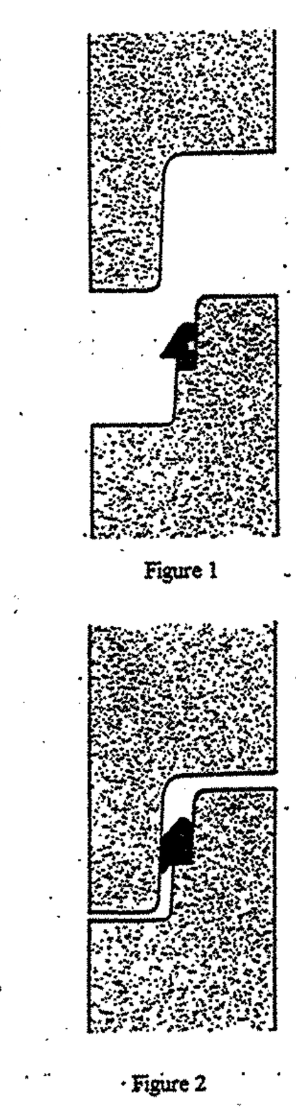


Figure 1

Figure 2

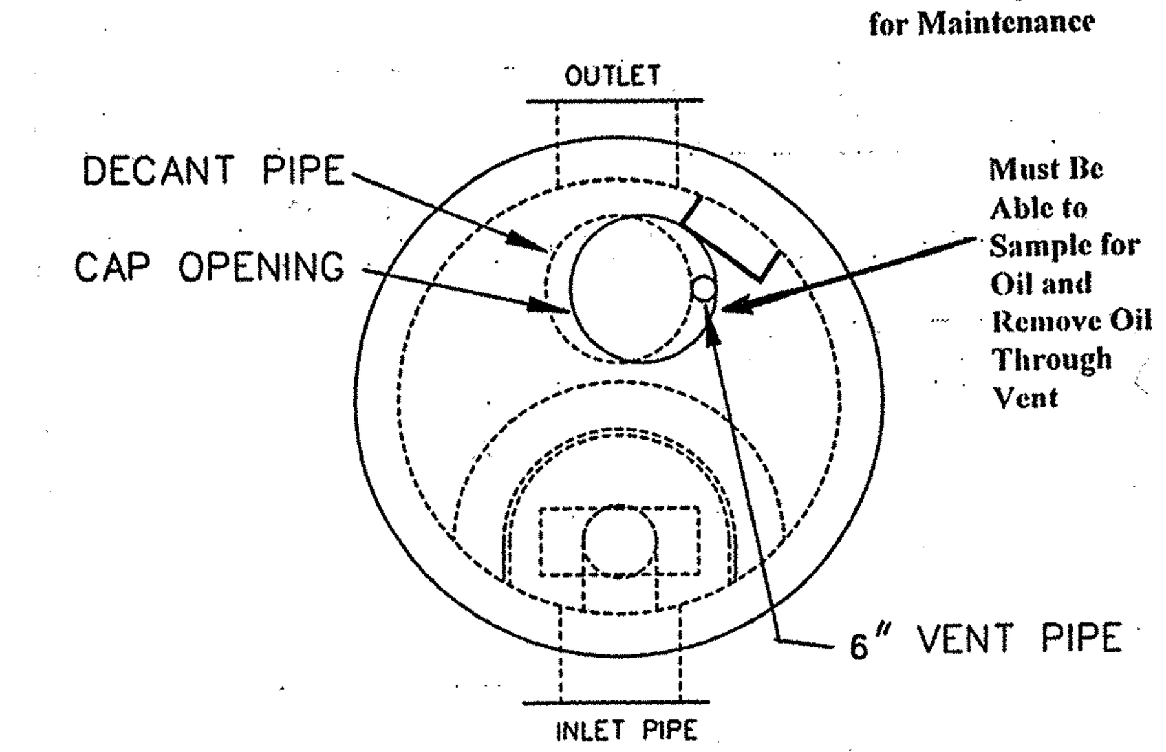
OPERATION AND MAINTENANCE SCHEDULE FOR STORMCEPTORS

Owner's Maintenance Responsibilities:

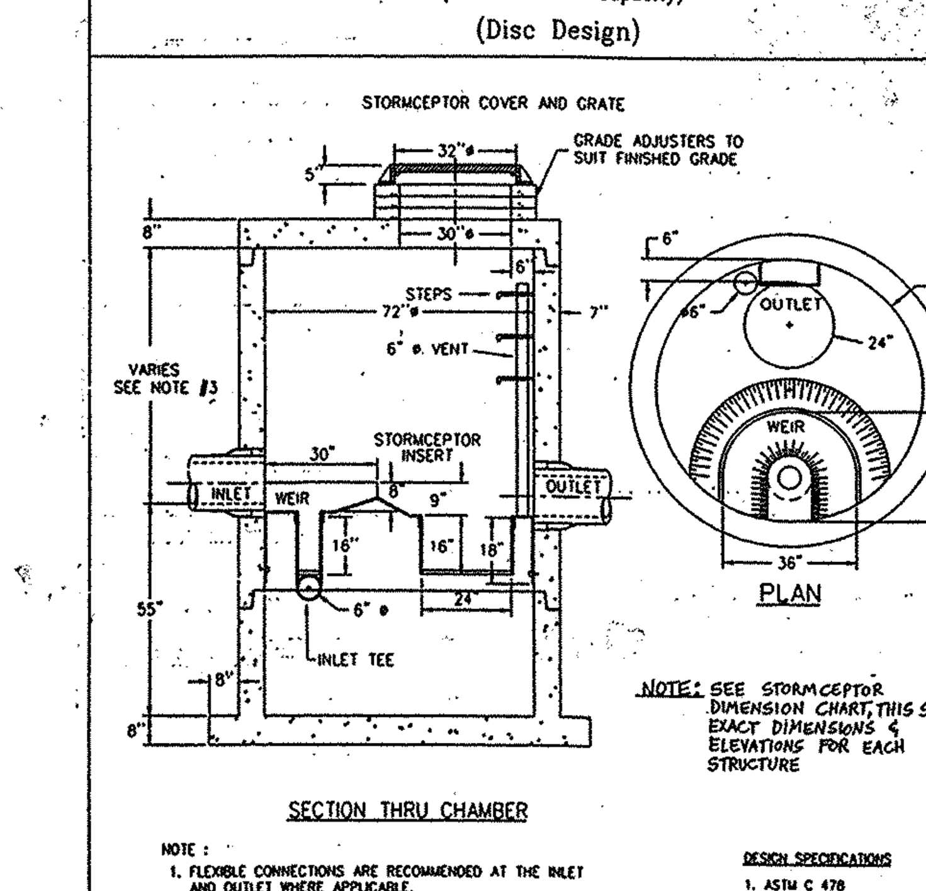
1. Both Stormceptors shall be inspected annually for sediment and oil build up and inlet or outlet pipe obstructions.
2. When the sediment depth in the bottom of the structure exceeds 6 inches or excessive oil is observed in the structure, maintenance is required.
3. Maintenance of the structures is performed using a vacuum truck. Maintenance is required at least once annually or as indicated by visual inspection. (No entry into the structure itself is required)
4. Oil shall be removed through the 6 inch vents. Sediment shall be removed through the 24 inch diameter outlet riser pipes.
5. In the event of an oil spill the Stormceptors shall be cleaned immediately by a licensed liquid waste hauler. Additionally, the Maryland Department of the Environment as well as local regulatory agencies should be notified.
6. Based on visual inspection of the structures during the initial year of operation the Owner shall determine if maintenance is required more than once annually.

APPROVED
PLANNING BOARD
of HOWARD COUNTY
DATE 1/27/99

Orientation of Frame & Cover Important for Maintenance



STC 900 Precast Concrete Storm*ceptor*®
(900 US Gallon Capacity)
(Disc Design)



NOTE :
1. FLEXIBLE CONNECTIONS ARE RECOMMENDED AT THE INLET AND OUTLET WHERE APPLICABLE.
2. COVER TO BE POSITIONED OVER OUTLET AND VENT PIPE
3. THIS IS A GENERAL ARRANGEMENT DRAWING. CONSULT LOCAL REPRESENTATIVE FOR SPECIAL CONDITIONS.
4. INLET DROP PIPE WILL BE EITHER 6"ø OR 12"ø WITH A 6"ø ORIFICE PLATE
5. ALL CONCRETE JOINTS HAVE RUBBER GASKETS THAT CONFORM TO ASTM C 443
6. U.S. PATENT NO. 4,985,148

DESIGN SPECIFICATIONS
1. ASTM C 478
2. BASE WEIGHT = 6.46 TONS

STC-900
REVISED 8/96

SC-1 Concrete Storm*ceptor*® Order Request Form *

Contractor Information
Name
Address
City
State
Zip Code
Contact
Phone
Fax

Office Use Only: Order # ___ Date ___ Internal Sale ___

outlet inlet 15" RCP 90° 15" RCP 180° 0° 270°

Please draw orientation (angle) of inlet pipes (max 2) and outlet pipe (1) on diagram along with pipe inside diameter (in.) and invert elevation (ft). Clearly mark inlet pipes with an I and outlet pipe with an O and provide the inlet/outlet pipe angle in degrees.

Owner Information
Name: Brian England
Phone: 410-381-2700
Fax: 410-381-6491

Storm*ceptor*® Model: 900 [X] 3600 [ ] 1200 [ ] 4800 [ ] 1800 [ ] 6000 [ ] 2400 [ ] 7200 [ ]
IMPERV. D. AREA= 0.21 Ac.

Insert Size: DISC [X] 22" [ ] 32" [ ] 44" [ ] Custom ___

Manhole Number	SC-1
Finish Top Elevation (ft)	312.10
Top Slab Elevation (ft)	311.68
Inlet Pipe Invert (ft)	308.13
Outlet Pipe Invert (ft)	308.05
Pipe Type:	15" RCP, CLASS IV
Pipe Inside Diam. (in) [ID]	15"
Pipe Outside Diam. (in) [OD]	19.5"

Project Name: British & American AutoCare
Approximate time frame until required delivery (weeks): 20 Weeks
Delivery Address: Street 9577 Berger Road
City: Columbia State: Maryland Zip Code: 21046
Designer Company: LDE, Inc.
Designer Contact: Steve Heiss Phone: 410-715-1070 Fax: 410-715-9540

Please fax this order to Stormceptor at (301) 762-4190
For Technical Assistance Please Call Stormceptor Corporation at (301) 762-8361 or toll free at 1 (800) 762-4703

ALL LIFTING APPARATUS TO BE PROVIDED BY THE INSTALLATION CONTRACTOR

* TO BE INCLUDED ON DESIGN PLAN BY DESIGNER 3/14/97

SC-2 Concrete Storm*ceptor*® Order Request Form *

Contractor Information
Name
Address
City
State
Zip Code
Contact
Phone
Fax

Office Use Only: Order # ___ Date ___ Internal Sale ___

outlet inlet 90° 15" RCP 30° 180° 15" RCP 0° 15" RCP 270°

Please draw orientation (angle) of inlet pipes (max 2) and outlet pipe (1) on diagram along with pipe inside diameter (in.) and invert elevation (ft). Clearly mark inlet pipes with an I and outlet pipe with an O and provide the inlet/outlet pipe angle in degrees.

Owner Information
Name: Brian England
Phone: 410-381-2700
Fax: 410-381-6491

Storm*ceptor*® Model: 900 [X] 3600 [ ] 1200 [ ] 4800 [ ] 1800 [ ] 6000 [ ] 2400 [ ] 7200 [ ]
IMPERV. D. AREA= 0.49 Ac.

Insert Size: DISC [X] 22" [ ] 32" [ ] 44" [ ] Custom ___

Manhole Number	SC-2
Finish Top Elevation (ft)	311.00
Top Slab Elevation (ft)	310.58
Inlet Pipe Invert (ft)(2 PIPES)	307.81
Outlet Pipe Invert (ft)	307.56
Pipe Type:	15" RCP, CLASS IV
Pipe Inside Diam. (in) [ID]	15"
Pipe Outside Diam. (in) [OD]	19.5"

Project Name: British & American AutoCare
Approximate time frame until required delivery (weeks): 20 Weeks
Delivery Address: Street 9577 Berger Road
City: Columbia State: Maryland Zip Code: 21046
Designer Company: LDE, Inc.
Designer Contact: Steve Heiss Phone: 410-715-1070 Fax: 410-715-9540

Please fax this order to Stormceptor at (301) 762-4190
For Technical Assistance Please Call Stormceptor Corporation at (301) 762-8361 or toll free at 1 (800) 762-4703

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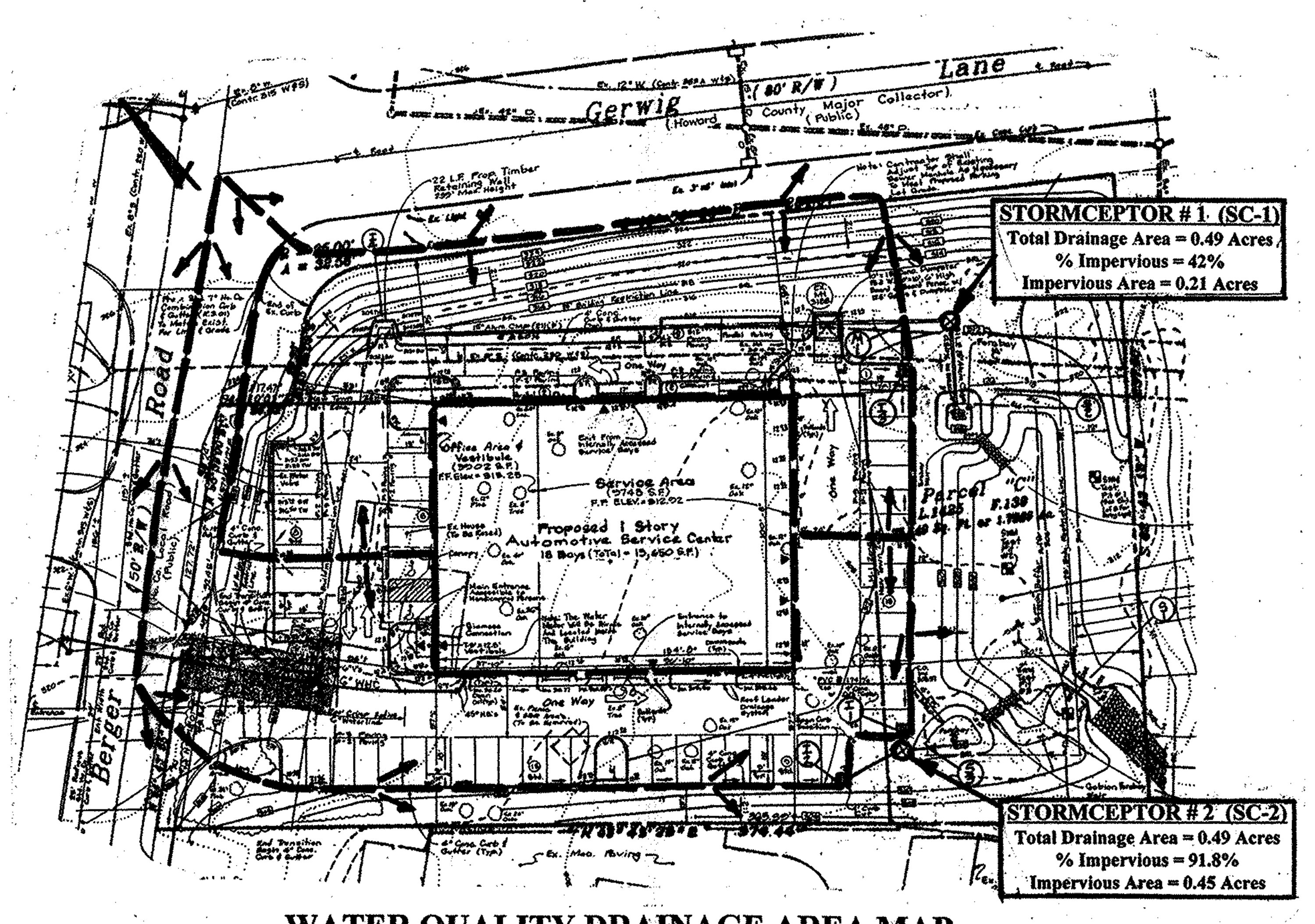
* TO BE INCLUDED ON DESIGN PLAN BY DESIGNER 3/14/97



WATER QUALITY DRAINAGE AREA MAP
SCALE: 1"= 50'

NOTE: The Stormceptor water quality structors specified on these plans are a trademark of Stormceptor Corporation. Structural design by Stormceptor Corporation. LDE, Inc. is responsible for choosing the appropriate standard structure size and sizing inflow and outflow pipe sizes only.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/5/99

CHIEF, DIVISION OF LAND DEVELOPMENT ~~AND RESEARCH~~ — DATE 3/8/99

DIRECTOR — DATE 3/11/99

~~THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.~~

~~NATURAL RESOURCE CONSERVATION SERVICE — DATE~~

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

~~HOWARD SOIL CONSERVATION DISTRICT — DATE~~

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SIGNATURE OF ENGINEER — DATE 2/24/99

DEVELOPER'S CERTIFICATE

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SIGNATURE OF DEVELOPER — DATE 2/23/99

STATE OF MARYLAND — BRUCE DAVID BURTON — No. 19194 — REGISTERED PROFESSIONAL ENGINEER — 2/24/99

REVISIONS

No.	Date:	By:	Description:
1	4-28-99	SMC	Cross out old H.C. Parking Detail & Added New H.C. Parking Detail

STORMCEPTOR DIMENSIONS

NO.	TYPE	TOP ELEV. (FINISH GRADE)	BOT. SLAB ELEV.	TOP SLAB ELEV.	INV. IN # 1	INV. IN # 2	INV. OUT
SC-1	STC-900	312.10	302.88	311.68	308.13	-	308.05
SC-2	STC-900	311.00	302.56	310.58	307.81	307.81	307.56

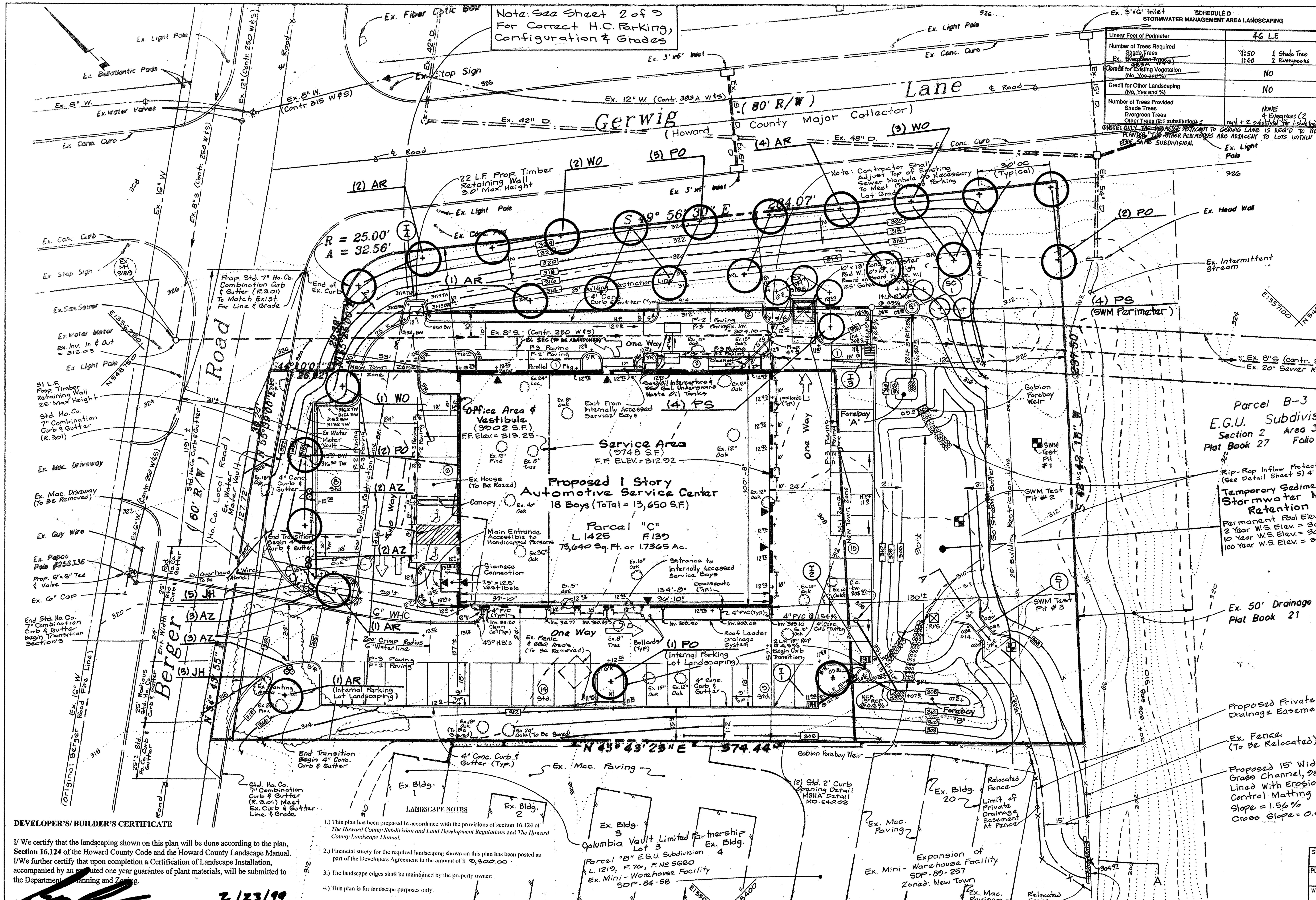
NOTE: FOR TECIINICAL INFORMATION CONTACT VINCE BERG OF STORMCEPTOR CORPORATION AT 301-762-8361.

LDE, INC.
9250 Rumsey Road, Suite 106, Columbia, MD. 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED SDH	Quality Stormwater Management Notes & Details	SCALE As Shown
DRAWN SMC	British And American Auto Care, Inc. Columbia E.G.U. Subdivision Parcel "C"	DRAWING 7 OF 9
CHECKED B.D.B.	Tax Map 42, P/O Parcel 386, Grid 9 6th Election District Howard County, Maryland	JOB NO. 98-010
DATE 7 / 98	Owner/Developer: Brian England, British And American Auto/Care Inc., 9235 Berger Road, Columbia, Maryland 21046, (410) 381-2700	FILE NO. SDP-98-132

/users/land/JOHN/BRITAMDET.S70

SDP98-132



SCHEDULE D
STORMWATER MANAGEMENT AREA LANDSCAPING

Linear Feet of Perimeter	46 L.F.
Number of Trees Required Shade Trees Evergreen Trees	1:50 1 Shade Tree 1:40 2 Evergreens
Credit for Existing Vegetation (No, Yes and %)	NO
Credit for Other Landscaping (No, Yes and %)	NO
Number of Trees Provided Shade Trees Evergreen Trees Other Trees (2:1 substitution)	NONE 4 Evergreens (2 req'd + 2 substituted for 1 shade tree)

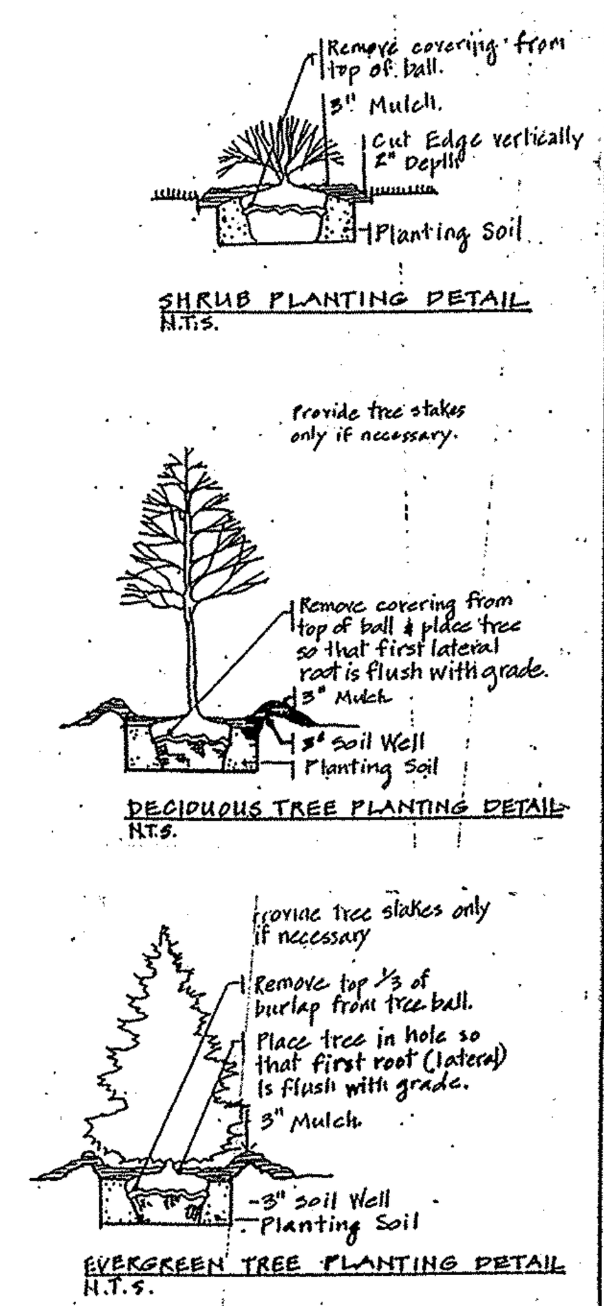
NOTE: ONLY THE PERIMETER ADJACENT TO GERWIG LANE IS REQ'D TO BE PLANTED. THE OTHER PERIMETERS ARE ADJACENT TO LOTS WITHIN THE SAME SUBDIVISION.

SCHEDULE A
PERIMETER LANDSCAPE EDGE

Category	Adjacent to Roadways	Adjacent to Perimeter Properties
Landscape Type	E	C
Linear Feet of Roadway Frontage/Perimeter	504 L.F. - 24 L.F. (Entrance Width) = 480	*612 L.F.
Credit for Existing Vegetation (Yes, No, Linear Feet) (Describe below if needed)	NO	NO
Credit for Wall, Fence or Berm (Yes, No, Linear Feet) (Describe below if needed)	NO	NO
Number of Plants Required Shade Trees Evergreen Trees Shrubs	1:40 / 12 Trees 1:4 / 120 Shrubs	None
Number of Plants Provided Shade Trees Evergreen Trees Other Trees (2:1 substitution) Shrubs (10:1 substitution) (Describe plant substitution credits below if needed)	22 Shade trees 20 Shrubs (10 Shade trees substituted for 100 shrubs)	None

Comments * Perimeter landscape edges are not required between subject Parcel 'C' and adjacent Parcels 'B' and 'B-3' since all are within the same subdivision (ie. E.G.U. Subdivision)

Note: Complex projects may require expansion of the schedule to accommodate multiple land uses on-site or on adjacent properties.



PLANTING SCHEDULE

NO.	KEY	BOTANICAL / COMMON NAME	SIZE	COMMENT	REMARKS
Deciduous Trees					
10	AR	Acer rubrum Red Maple	21/2" - 3" cal.	B&B	
9	PO	Quercus palustris Pin Oak	21/2" - 3" cal.	B&B	
6	WO	Quercus phellos Willow Oak	21/2" - 3" cal.	B&B	
25	TOTAL				
Evergreens					
8	PS	Pinus strobus White Pine	6'-8'	B & B	Plant 10' OC
8	TOTAL				
Shrubs					
10	JH	juniperus horizontalis 'bluerug' Bluerug juniper	15"-18"	Container	Plant 18" OC
10	AZ	Azalea 'Exbury'/Exbury Azalea	18"-24"	Container	Plant 18" OC
20	TOTAL				

DEVELOPER'S/ BUILDER'S CERTIFICATE

I/ We certify that the landscaping shown on this plan will be done according to the plan, **Section 16.124** of the Howard County Code and the Howard County Landscape Manual. I/We further certify that upon completion a Certification of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

Name [signature] Date 2/23/99

LANDSCAPE NOTES

1.) This plan has been prepared in accordance with the provisions of section 16.124 of *The Howard County Subdivision and Land Development Regulations* and *The Howard County Landscape Manual.*

2.) Financial surety for the required landscaping shown on this plan has been posted as part of the Developers Agreement in the amount of $ 9,300.00

3.) The landscape edges shall be maintained by the property owner.

4.) This plan is for landscape purposes only.

5.) Seeding per notes on sheet 5 of 8.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[signature] 2/2/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

[signature] 3/8/99
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[signature] 3/11/99
DIRECTOR — DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

NATURAL RESOURCE CONSERVATION SERVICE — DATE

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

HOWARD SOIL CONSERVATION DISTRICT — DATE

ENGINEER'S CERTIFICATE

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

[signature] 2/24/99
SIGNATURE OF ENGINEER — DATE

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ONSITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS DEEMED NECESSARY."

[signature] 2/23/99
SIGNATURE OF DEVELOPER — DATE

STATE OF MARYLAND — BRUCE D. BURTON — No. 19104 — REGISTERED PROFESSIONAL ENGINEER
[signature] 2/24/99

SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING

Number of Parking Spaces	57
Number of Trees Required	1 Shade Tree: 20 Spaces = 3
Number of Trees Provided Shade Trees Other Trees (2:1 substitution)	3 Shade Trees

NOTE: THE AMENDED *LANDSCAPE MANUAL*, DATED MARCH 2, 1998 STATES THAT SWM PERIMETER LANDSCAPING IS REQUIRED IN ALL ZONING DISTRICTS EXCEPT M-1 AND M-2. THIS SITE IS ZONED BOTH M-1 AND NEW TOWN-EMPLOYMENT CENTER. THE INTENT IS TO DEVELOP THE ENTIRE SITE AS AN AUTOMOTIVE SERVICE FACILITY, AN M-1 TYPE USE. THE CHARACTER OF THE EXISTING AREA IS ENTIRELY COMMERCIAL/ INDUSTRIAL. THEREFORE IT WOULD NOT BE IN KEEPING WITH THE CHARACTER OF THE AREA TO PROVIDE STORMWATER MANAGEMENT PERIMETER LANDSCAPING. THEREFORE, STORMWATER MANAGEMENT PERIMETER PLANTINGS HAVE NOT BEEN PROVIDED.

APPROVED
PLANNING BOARD
of HOWARD COUNTY
DATE 1/27/99

REVISIONS			
No.	Date	By	Description
1	4-28	SMC	Added Note: See Sht 2 of 9 for Correct H.C. Parking, Configuration & Grades.

SUBDIVISION NAME			SECTION/AREA		PARCEL/NO.
E.G.U. Subdivsion			2/8		C
PLAT NO. 8163	BLOCK NO. 9	ZONE M-1&NT	TAX MAP NO. 42	ELECTION DISTRICT 6	CENSUS TRACT 6067.03
WATER CODE E06			SEWER CODE 5241000		

LDE, INC.
9250 Rumsey Road, Suite 106, Columbia, MD 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED SDH	Landscape Plan British And American Auto Care, Inc. Columbia E.G.U. Subdivision Parcel "C"	SCALE 1" = 20'
DRAWN SMC		DRAWING 9 of 9
CHECKED B.D.B.	Tax Map 42, P/O Parcel 386, Grid 9 6th Election District Howard County, Maryland	JOB NO. 98-010
DATE Rev. 7/98 4/98 Rev 10/98	Owner/Developer: Brian England, British And American Auto Care, Inc, 9235 Berger Road, Columbia, Maryland, (410) 381-2700	FILE NO. SDP-98-132

SDP98-132

Site Development Plan "AS-BUILT"

British And American Auto Care Inc. Columbia E.G.U. Subdivsion Parcel "C" A Resubdivision of Lot 3

6th Election District — Howard County, Maryland

Sheet Index

LEGEND

BENCH MARK

USE RESTRICTION LINE — URL —

FLOW DIRECTION

SLOPES BETWEEN 15% - 24.9%

SLOPES GREATER THEN 25%

SILT FENCE — SF —

EARTH DIKE — ED (A-1) —

LIMIT OF DISTURBANCE

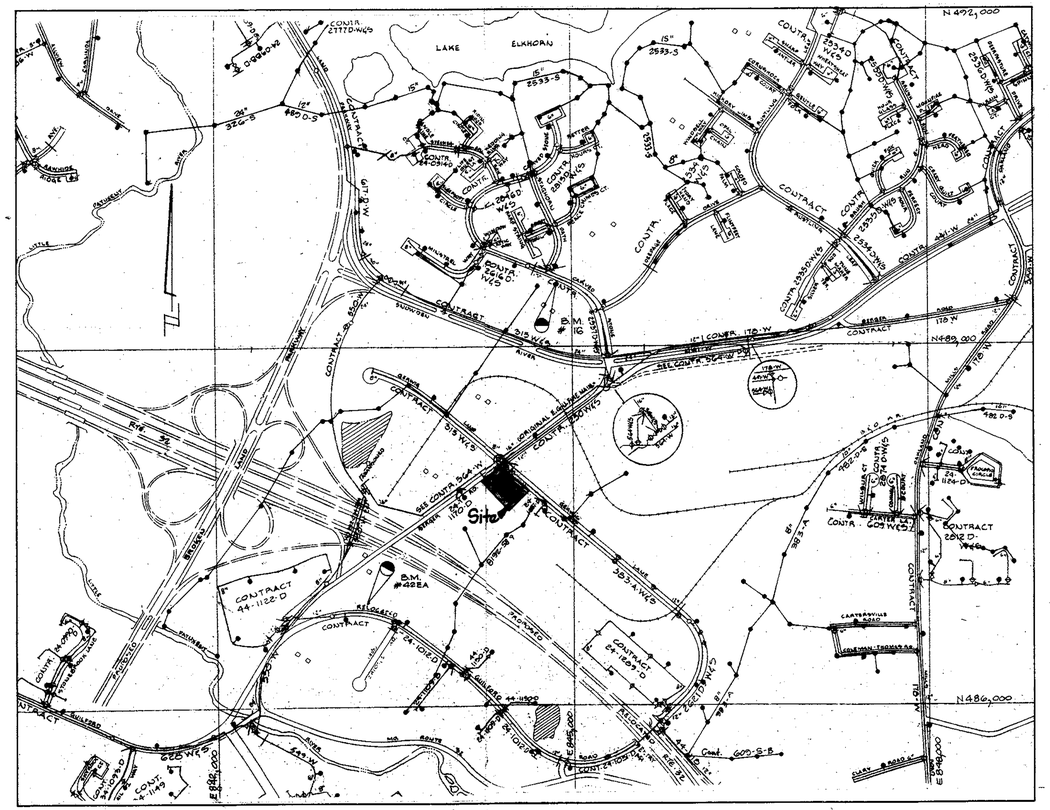
DRAINAGE DIVIDE

EXISTING CONTOUR ---764---

PROPOSED CONTOUR ——764——

STABILIZED CONSTRUCTION ENTRANCE — SCE —

SUPER SILT FENCE — SSF —



Location Map
Scale: 1" = 600'

BENCH MARKS

1. Howard County Geodetic Control No. 42EA
Elevation = 313.28, Northing = 547604, Easting = 1355440.
Standard Howard County Survey Disc. set on concrete monument.
On Guilford Road 0.3+/- miles northeast, leftside from intersection, Murry Hill Road 9.3' off edge of paving. 20'+/- west from light pole and 80' from water valve in Guilford Road.

2. Howard County Geodetic Control No. 0016
Elevation = 359.59, Northing = 550279, Easting = 1357329.
Standard Howard County Survey Disc. Set on concrete monument. Between Carved Stone Road and conc. sidewalk, 100'+/- east from intersection Stag Horn Path and 41'+/- from inlet.

GENERAL NOTES

1. **Site Analysis Data:**
a. (1) Total project Area: 1.736+- Acres (75,640 sq ft.)
(2) Area Reserved for possible future dedication to Howard County = 0.066+0 Acres or 1850 sq ft
(3) Net area: 1.7045+- Ac (74,250 s.f.)
b. Area of Plan Submission: 1.736+- Acres (75,640 sq ft.)
c. Limit of Disturbed Area: 1.70 +- Acres (74,052 sq ft)
d. Present Zoning: M-1 and New Town
e. Proposed Site and Structure Use: Automotive service center operation.
f. Building Floor Space: 1 Story Building
1. Office Space & Vestibule = 3,902 sq. ft.
2. Warehouse Space = 9,748 sq. ft.
Total Building Area = 13,650 sq. ft.
g. Total Number of Units Allowed: one (1) commercial building
h. Total Number of Proposed Units: One (1) 13,650 sq. ft. building
i. Maximum Number of Employees: 20
j. Parking Required: Vehicle service establishments: 3 spaces plus 3 spaces/service bay (18 bays x 3 sp + 3 sp = 57 spaces)
k. Parking Provided: 55 Regular spaces + 2 Van Accessible handicapped spaces = 57 Total
l. Open Space: None required.
m. Recreation Open Space: None required.
n. Building Coverage of Site: 0.313 +- Acres; 18.05% of gross site area.
o. Applicable DPZ File References: F-89-11, Amended FDP Phase 156-A

2. **Property Owner:** Brian England
British and American Auto Care, Inc.
9235 Berger Road
Columbia, Maryland 21046

3. **Architect:** Arium Architects
Suite 453
5537 Twin Knolls Road
Columbia, Maryland 21045-3270

4. **Plat Reference:** No. 8163, recorded on 9/30/88 among the Land Records of Howard County, Md.

5. There are no wetlands or forest on the subject property. An assessment was conducted by Dennis J. LaMarr, M.S. and Associates, LLC on 9/23/97.

6. This property is exempt from the requirements of the Howard County Forest Conservation Manual in accordance with Section 16.1202(b) of the County Code.

7. There is no area of 100 year floodplain on the subject property.

8. Boundary information per record plat No. 8163, dated 9/30/88 by Clark, Finefrock & Sackett, Inc.. Boundary information field verified by LDE, Inc. in March, 1998.

9. Onsite topography shown hereon was field run by LDE, Inc. on March 2, 1998. Control based on Maryland NAD83 horizontal and NAVD29 vertical datum from Howard County Control Stations 0016 and 42EA.

10. All construction shall be performed in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications if applicable.

11. Deviations from these plans and specifications without prior written consent of the civil engineer may cause the work to be unacceptable.

12. Adjustments to the sequence of construction shall be approved by the Howard County Departmentt of Inspections, Licenses and Permits prior to such adjustments.

13. Approximate locations of existing utilities are shown. The contractor shall take all necessary precautions to protect existing utilities and maintain uninterrupted service. Any damage incurred due to contractor's operation shall be repaired immediately at the contractors expense.

14. Contractor shall comply with all sediment control notes on these plans.

15. All plan dimensions are to face of curb unless noted otherwise.

16. Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.

17. There may be additional utilities not shown on these plans. The engineer assumes no responsibility for locations not shown and it shall be the responsibility of the contractor to verify the locations of all existing utilities within the limits of construction and notify the engineer prior to the start of construction.

18. The contractor shall notify the following utilities or agencies at least five (5) working days before beginning construction:
a) "Miss Utility" at 1-800-257-7777
b) "BGE" at (410) 234-5691
c) "Bell Atlantic at (410) 393-8000

19. It shall be distinctly understood that failure to mention specifically any work which would normally be required to complete this project shall not relieve the contractor from his responsibility to perform such work.

20. The contractor shall obtain all necessary permits prior to beginning work, including a grading permit from Howard County.

21. The contractor shall repair and maintain all existing sediment control devices until all areas are stabilized. Once all areas are fully stabilized all sediment control devices shall be completely removed and those areas stabilized.

22. The contractor shall contact the Howard County Department of Public Works Construction Inspection Division 24 hours prior to beginning construction at (410) 313-1880.

23. Public water service is available for this site under W & S Contract No. 315 and public sewer is available under W & S Contract No. 250.

24. Prior to the start of construction, contractor shall stakeout all construction and verify all offsets, setbacks and existing utility locations.

25. The developer must request that The Department of Inspections, Licenses and Permits approve work completed in accordance with the approved Erosion and Sediment Control Plan, Grading permit and the Ordinance.

26. Stormwater quantity management for this site is provided by an onsite retention pond. Water quality management provided by two (2) Stormceptors.

27. Any damage to County Rights-of-Way or paved public roads shall be repaired immediately at the contractors expense in accordance with the Howard County Standards and Specifications.

28. All fill shall be rolled to a minimum degree of compaction of 95% of the dry unit weight as determined by AASHTO T-180.

29. The dimensioned distances shall govern if scaled and dimensioned distances on this plan are found to be in disagreement.

30. See architectural plans for exact building dimensions.

31. The applicant will request a parking setback reduction from 25 feet to 10' in the New Town zoned portion of this property as part of the Planning Board approval process in accordance with amended FDP Phase 156-A. (See note #39).

32. The existing dwelling, paved driveway and picnic area shall be removed prior to commencement of site grading.

33. The proposed shallow retention pond shall be privately owned and maintained by the property owner.

34. The owner/ developer shall request permission from the Department of Public Works, Bureau of Utilities Division to use the "Advanced Purchase Order" procedure to bond and construct the proposed 6 inch public watermain and fire hydrant under this site development plan.

35. The Howard County Department of Planning & Zoning-Development Engineering Division, by letter dated 5/26/98, granted a waiver to Design manual Volume IV, Detail R-3.01 to allow an onsite standard Ho. Co. curb and gutter height of 4".

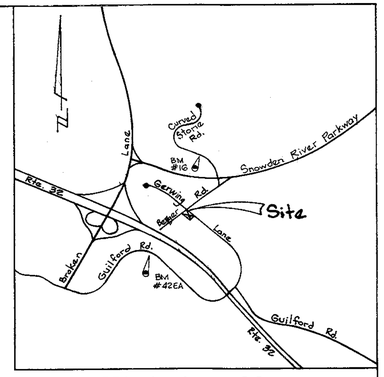
36. Existing septic and water house connection (undocumented connection-meter No. none) shall be properly abandoned in accordance with Ho. Co. Department of Environmental Health standards and inspections. Location and schedule shall be submitted prior to SDP signature approval.

37. A demolition permit is required from the Howard County Department of Inspections, Licenses and Permits for the removal of the existing onsite structures.

38. The Planning Director denied WP-99-04 to waive Section 16.116(a)(2)(ii) prohibiting grading or removal of vegetative cover within 50' of a perennial stream in a non-residential district on 8/27/98.

39. The Planning Board approved this site plan on 1-27-99 and granted a parking setback reduction from 25' to 10' for parking & travelway adjacent to the northernmost property.

40. The Stormceptor water quality structures specified on these plans are a trademark of Stormceptor Corporation. Structural design by Stormceptor Corporation. LDE, Inc. is responsible for choosing the appropriate standard structure size and sizing inflow & outflow pipe sizes only.



Vicinty Map
Scale: 1" = 2000'

Schnabel Engineering Associates, Inc.
Consulting Geotechnical Engineers
Test Pit Log

Contract No.: 98405 OD
Test Pit No.: S706-S
Project: British and American Automotive
Location: S706 Pond

Date Started: 4/23/98
Date Ended: 4/23/98

Surface Elev.: 310
SEA Rep: J. Cooper

Water Elev.: 305
Excavation Equip.: Backhoe

Depth	No.	Type and Inches	Blows	Recovery	Remarks
0		Topsoil=9 Inches			
1		Poorly Graded SAND (SP), with silt and rock fragments, moist, light brown	49		Difficult to excavate below 2.0'. Rock Fragments up to 9" in length below 2'.
2					MC= 9.2% @ 2'
3			25/12		
4	305	Backhoe Refusal at 3.9	100		Water encountered at bottom of pit at 6.0'
5					
6		Note: Water level reading on 4/25/98: 4.0'			

Schnabel Engineering Associates, Inc.
Consulting Geotechnical Engineers
Test Pit Log

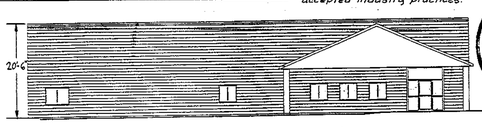
Contract No.: 98405 OD
Test Pit No.: S706-S
Project: British and American Automotive
Location: S706 Pond

Date Started: 4/23/98
Date Ended: 4/23/98

Surface Elev.: 310
SEA Rep: J. Cooper

Water Elev.: Dry
Excavation Equip.: Backhoe

Depth	No.	Type and Inches	Blows	Recovery	Remarks
0		Topsoil=9 Inches			
1		Poorly Graded SAND (SP), with silt and rock fragments	307		MC= 10.5% @ 2'
2					
3		Backhoe refusal at 4.0'		100%	
4					
5		Note: Water level reading on 4/25/98: Dry to 4.0'			
6					



BUILDING PROFILE-FRONT FACING BERGER ROAD
N.T.S.

"AS-BUILT" CERTIFICATION

I hereby certify that the facility shown on this plan was constructed as shown on the "As-Built" plans and meets the approved plans and specifications.

Samuel W Corrice — 12433 — 12-14-00
Signature — P.E. No. — Date

Certify means to state or declare a professional opinion based upon onsite inspections and material tests which are conducted during construction. The onsite inspections and material tests are those inspections and tests deemed sufficient and appropriate by commonly accepted engineering standards. Certify does not mean or imply a guarantee by the Engineer nor does an Engineer's certification relieve any other party from meeting requirements imposed by contract, employment, or means, including meeting commonly accepted industry practices.

STATE OF MARYLAND — SAMUEL W. CORRICE — No. 12433 — REGISTERED PROFESSIONAL ENGINEER

1/27/99

Samuel W Corrice

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 3/5/99 DATE AC

CHIEF, DIVISION OF LAND DEVELOPMENT HB — 3/8/99 DATE

DIRECTOR — 3/11/99 DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

NATURAL RESOURCE CONSERVATION SERVICE — 3/3/99 DATE

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

HOWARD SOIL CONSERVATION DISTRICT — 3/3/99 DATE

ENGINEER'S CERTIFICATE

"I HEREBY CERTIFY THAT THIS GRADING, SEDIMENT AND SEDIMENT 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."

Bruce D. Bradshaw — 12/22/99
SIGNATURE OF ENGINEER — DATE

STATE OF MARYLAND — BRUCE DAVID BRADSHAW — NO. 19188 — REGISTERED PROFESSIONAL ENGINEER

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ONSITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS ARE DEEMED NECESSARY."

SIGNATURE OF DEVELOPER — 2/23/99 DATE

STATE OF MARYLAND — BRUCE DAVID BRADSHAW — NO. 19188 — REGISTERED PROFESSIONAL ENGINEER

3/24/99

Schnabel Engineering Associates, Inc.
Consulting Geotechnical Engineers
Test Pit Log

Contract No.: 98405 OD
Test Pit No.: S706-S
Project: British and American Automotive
Location: S706 Pond

Date Started: 4/23/98
Date Ended: 4/23/98

Surface Elev.: 312.5
SEA Rep: J. Cooper

Water Elev.: 307.5
Excavation Equip.: Backhoe

Depth	No.	Type and Inches	Blows	Recovery	Remarks
0		Topsoil=9 Inches			
1		Poorly Graded SAND (SP), with silt and rock fragments, moist, light brown			West end of pit drills to excavate below 2'
2			60/5/6"		MC= 8.2% @ 2'
3			21+30		Backhoe refusal at 3' at east end of pit
4			60/5/2"		
5		Backhoe Refusal at 5 to 5 feet			Water encountered at bottom of test pit
6					
7		Note: Water level reading on 4/25/98: Dry to 5.0'			

SUBDIVISION NAME: E.G.U. Subdivsion			SECTION/AREA: 2/8		PARCEL/NO.: C
PLAT NO.: 8163	BLOCK NO.: 9	ZONE: M-1&NT	TAX MAP NO.: 42	ELECTION DISTRICT: 6	CENSUS TRACT: 6067.03
WATER CODE: E06			SEWER CODE: 5241000		

ADDRESS CHART

Lot Number	Street Address
Parcel 'C'	2577 Berger Road

REVISIONS

No.	Date:	By	Description:
1	4-28-99	SMC	Revised H.C. Parking and Associates grading in front of Building for revised canopy column locations. Added (1) Parking space on east of building, and revised exterior bollard locations.

LDE, INC.
9250 Rumsey Road, Suite 106, Columbia, MD. 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED: SDH	Title Sheet: British And American Auto/Care Inc. Columbia E.G.U. Subdivsion Parcel "C" A Resubdivision of Lot 3 Tax Map 42, P/O Parcel 386, Grid 9 6th Election District Howard County, Maryland
DRAWN: SMC	SCALE: 1"=600'
CHECKED: B.D.B.	DRAWING: 1 OF 9
DATE: Rev. 7/98 4/98 Rev 10/9/98	JOB NO.: 98-010
Owner/Developer: Brian England, British and American Auto/Care Inc., 9235 Berger Road, Columbia, Maryland 21046, (410) 381-2700	FILE NO.: SDP-98-132

As-Built 12-14-00

SDP98-132

/users/land/JOHN_/BRITAM1.S70

SUBDIVISION NAME			SECTION/AREA		PARCEL/NO.
E.G.U. Subdivsion			2/8		C
PLAT NO. 8163	BLOCK NO. 9	ZONE M-1&NT	TAX MAP NO. 42	ELECTION DISTRICT 6	CENSUS TRACT 6067.03
WATER CODE E06			SEWER CODE 5241000		

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 3/5/99 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 3/8/99 DATE

DIRECTOR — 3/11/99 DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

NATURAL RESOURCE CONSERVATION SERVICE — 3/3/99 DATE

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

HOWARD SOIL CONSERVATION DISTRICT — 3/3/99 DATE

ENGINEER'S CERTIFICATE

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

SIGNATURE OF ENGINEER — 2/24/99 DATE

DEVELOPER'S CERTIFICATE

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SIGNATURE OF DEVELOPER — 2/23/99 DATE

2/24/99

APPROVED PLANNING BOARD of HOWARD COUNTY

DATE 1/27/99

12-14-00

REVISIONS

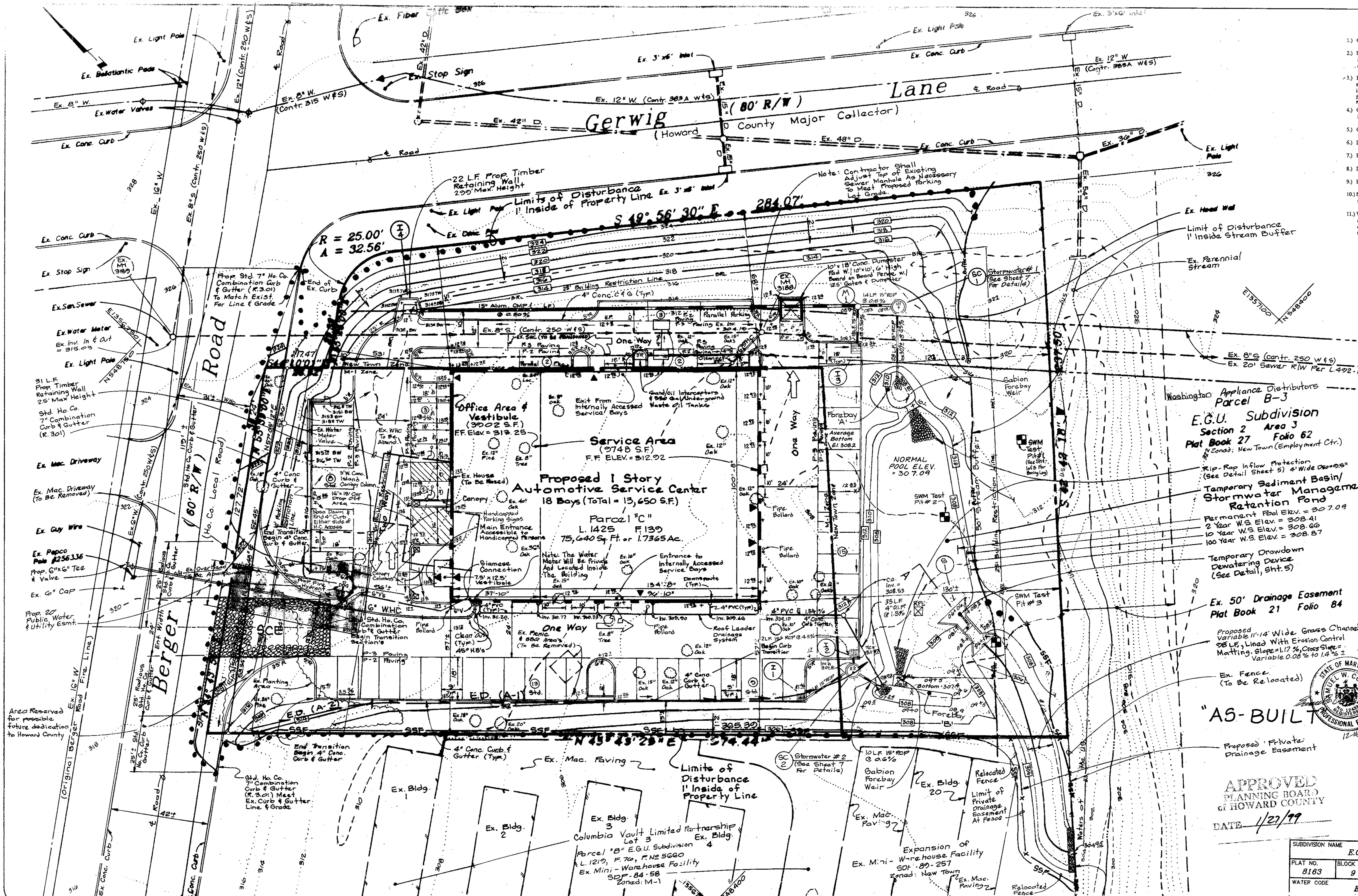
No.	Date:	By	Description
1	4-28-99	SMC	Revised H.C. parking and associated grading in front of building for revised canopy column locations, added (1) parking space on east of building, and revised exterior bollard locations.

LDE, INC.

9250 Rumsey Road, Suite 106, Columbia, MD. 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED SDH	Site Development Plan British And American Auto Care, Inc. Columbia E.G.U. Subdivision Parcel "C"	SCALE 1' = 20"
DRAWN SMC		DRAWING 2 of 9.
CHECKED B.D.B.	Tax Map 42, P/O Parcel 386, Grid 9 6th Election District Howard County, Maryland	JOB NO. 98-010
DATE Rev. 7/98 4 / 98 Rev 10/98	Owner/Developer: Brian England, British And American Auto/Care Inc., 9235 Berger Road, Columbia, Maryland 21046, (410) 381-2700	FILE NO. SDP-98-132

SDP98-132



SEQUENCE OF CONSTRUCTION

1.) Obtain grading permit. — 1 DAY

2.) Notify the Howard County Department of Public Works, Construction Inspection Division at least 48 hours prior to beginning construction at (410) 313-1880. — 1 DAY

3.) Install sediment control devices, including stabilized construction entrance, sediment basin w/ dewatering device and RPS, earth dikes, temporary rip-rap inflow protection and silt fence. Insure that weir # 1 on S-1 is blocked (see SD-7.00 detail, sht 6). Do not install pond forebays. Obtain inspectors permission to proceed. — 10 DAYS

4.) Grade site in accordance with the approved grading plan. Stabilize site in accordance with the temporary seeding notes. — 10 DAYS

5.) Construct Building and install roof drainage system. — 3 MONTHS

6.) Install utilities, including storm drainage system, water and sewer. — 10 DAYS

7.) Fine grade for parking lot and travelways. Install retaining walls. — 4 DAYS

8.) Install gravel base for parking lot. — 3 DAYS

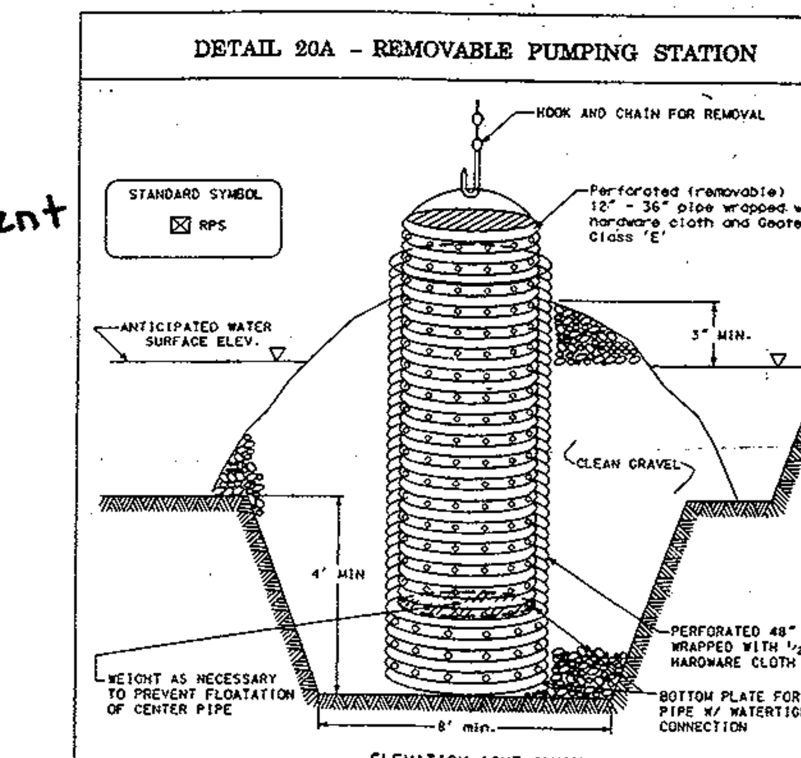
9.) Install base and surface paving. — 5 DAYS

10.) Stabilize all remaining disturbed areas in accordance with the permanent seeding notes. — 2 DAYS

11.) With permission from the Sediment Control Inspector, remove all remaining sediment control devices, including stabilized construction entrance, silt fence, earth dikes and temporary rip-rap inflow protection at the end of the earth dike. Convert the sediment trap into permanent stormwater management pond per approved grading plan and SWM construction detail sheet. Install forebays 'A' and 'B'. Stabilize all remaining disturbed areas in accordance with the permanent seeding notes. — 10 DAYS

TOTAL TIME: 146 DAYS

DETAIL 20A - REMOVABLE PUMPING STATION



ELEVATION (CUT AWAY)

Construction Specifications

1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations.

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

3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" in diameter. The perforations shall be 1/2" X 6" slits or 1" diameter holes 6" on center. The center pipe shall be wrapped with 1/2" hardware cloth first, then wrapped again with Geotextile Class E.

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

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SUMMARY TABLE

SHALLOW RETENTION POND
Hazard Classification "A"
Drainage Area = 1.68 Acres

	2 YEAR	10 YEAR	100 YEAR
Allowable Pond Release:	2.87 cfs	6.31 cfs	-
Computed Inflow:	5.51 cfs	9.17 cfs	13.15 cfs
Facility Discharge:	2.96 cfs	5.67 cfs	8.66 cfs
Elevation at Discharge:	308.41	308.66	308.87
Storage at Elevation(ac ft):	0.126	0.152	0.1760
Top of Embank. Elevation:		309.00	

STATE OF MARYLAND — SAMUEL W. CORRICK — No. 12433 REGISTERED — PROFESSIONAL ENGINEER — 12-14-00

APPROVED PLANNING BOARD of HOWARD COUNTY
DATE 1/27/99

SUBDIVISION NAME			SECTION/AREA		PARCEL/NO.
E.G.U. Subdivsion			2/8		C
PLAT NO.	BLOCK NO.	ZONE	TAX MAP NO.	ELECTION DISTRICT	CENSUS TRACT
8163	9	M-1&NT	42	6	6067.03
WATER CODE			SEWER CODE		
E06			5241000		

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/5/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/8/99

DIRECTOR — DATE 3/11/99

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

NATURAL RESOURCE CONSERVATION SERVICE — DATE 3/3/99

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/3/99

ENGINEER'S CERTIFICATE

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

SIGNATURE OF ENGINEER — DATE 2/24/99

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ONSITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY."

SIGNATURE OF DEVELOPER — DATE 2/23/99

STATE OF MARYLAND — PROFESSIONAL ENGINEER — 2/24/99

Sediment Basin Schedule

Basin No.	Max. D.A. Acres	Dry Stor. Req'D ft^3	Wet Stor. Req'D ft^3	Dry Stor. Prov'D ft^3	Wet Stor. Prov'D ft^3	Stor. Depth ft.	Dry Stor. Elev.	Wet Stor. Elev.	Weir Length ft.	Bottom Elev.	Clean. Elev.	Weir Depth	Top Elev. **	Basin Size	Type
1	1.68	3024	3024	3024	3024	1.9	307.9	307.1	***	306	306.6	1.1	309	see plan	Basin

** Top of embankment elevation.
*** Concrete outlet structure consists of a .55' weir, Inv.=307.9 and a 4.0' weir, Inv.=308.38.

REVISIONS

No.	Date:	By:	Description
1	4-28-99	SMC	Revised H.C. Parking and Associated grading in front of building for revised canopy column locations added (1) parking space on east of building, and revised exterior bollard locations.

LDE, INC.

9250 Rumsey Road, Suite 106, Columbia, MD. 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED SDH	Grading And Sediment Control Plan	SCALE 1' = 20"
DRAWN SMC	British And American Auto Care, Inc. Columbia E.G.U. Subdivision Parcel "C"	DRAWING 3 of 9
CHECKED B.D.B.	Tax Map 42, P/O Parcel 386, Grid 9 6th Election District Howard County, Maryland	JOB NO. 98-010
DATE Rev. 7/98 4 / 98 Rev 10/98	Owner/Developer: Brian England, British And American Auto/Care Inc., 9235 Berger Road, Columbia, Maryland 21046, (410) 381-2700	FILE NO. SDP 98-132

SDP 98-132

SOILS LEGEND

MAP SYMBOL	DESCRIPTION	HYDROLOGIC SOIL TYPE
*AdB2	Aldino silt loam, 3%-8% slopes, moderately eroded	D
BrC3	Brandywine loam, 8%-15%, severely eroded	C
MIC2	Manor loam, 8%-15% slopes, moderately eroded	B
**WaB	Watchung silt loam, 0%-3% slopes	D

* Watchung inclusions listed as hydric on the Howard County Hydric Soils List.
** Entire map unit listed as hydric on the Howard County Hydric Soils List.

"AS-BUILT"

SUBDIVISION NAME		SECTION/AREA		PARCEL/NO.
E.G.U. Subdivsion		2/8		C

PLAT NO.	BLOCK NO.	ZONE	TAX MAP NO.	ELECTION DISTRICT	CENSUS TRACT
8163	9	M-1&NT	42	6	6067.03

WATER CODE	SEWER CODE
E06	5241000

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/5/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/8/99

DIRECTOR — DATE 3/11/99

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

NATURAL RESOURCE CONSERVATION SERVICE — DATE 3/3/99

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/3/99

ENGINEER'S CERTIFICATE

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

SIGNATURE OF ENGINEER — DATE 2/24/99

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SIGNATURE OF DEVELOPER — DATE 2/23/99

2/24/99

APPROVED
PLANNING BOARD
of HOWARD COUNTY
DATE 1/27/99

REVISIONS

No.	Date:	By:	Description:
1	4-28-99	SMC	Added Note See Sht 2 of 9 for H.C parking, Configation & Grades

LDE, INC.

9250 Rumsey Road, Suite 106, Columbia, MD. 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED SDH	Drainage Area And Soils Map British And American Auto Care, Inc. Columbia E.G.U. Subdivision Parcel "C"	SCALE 1' = 20"
DRAWN SMC		DRAWING 4 of 9
CHECKED B.D.B.	Tax Map 42, P/O Parcel 386, Grid 9 6th Election District Howard County, Maryland	JOB NO. 98-010
DATE Rev. 7/98 4/98 Rev 10/98	Owner/Developer: Brian England, British And American Auto/Care Inc., 9235 Berger Road, Columbia, Maryland 21046, (410) 381-2700	FILE NO. SDP-98-132

SDP98-132

HOWARD SOIL CONSERVATION DISTRICT
STANDARD SEDIMENT CONTROL NOTES

1. A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction. (313-1855).
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current "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, of the 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 (Section 0) for permanent seeding, sod, temporary seeding, and mulching. Temporary stabilization with mulch alone can only 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 of Site	1.14 Acres
Area Disturbed	1.51 Acres
Area to be roofed or paved	0.41 Acres
Area to be vegetatively stabilized	0.42 Acres
Total Cut	4615 C.Y. Yds.
Total Fill	4615 C.Y. Yds.
Offsite waste/borrow area location	TO BE DETERMINED

8. Any sediment control structure disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
9. Additional sediment control measures may be 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 sediment controls and before proceeding with any other earth disturbance or grading. Only building or grading inspection approvals may be authorized until this approval by the inspection agency is made.
11. Trenches for the construction of utilities is limited to three pipe lengths or that which can be back filled and stabilized within one working day, whichever is shorter.

APPROVED
LOCATION MAP AN ACTIVE GRADING PERMIT

HOWARD SOIL CONSERVATION DISTRICT
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, disking, 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 acres dolomitic limestone (92 lbs/1000sq. ft.) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000sq. ft.). Work soil to a depth of three inches. If soil cannot be worked to three inches it should be limed thoroughly, apply 400 lbs per acre 20-20-20 or equivalent fertilizer (9 lbs/1000sq. ft.).
2) ACCEPTABLE — Apply 2 tons per acres dolomitic limestone (92 lbs/1000sq. ft.) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq. ft.) before seeding. Harrow or disk 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/1000sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs per acre (1.4 lbs/1000sq. ft.) of Kentucky 31 Tall Fescue and 2 lbs. per acre (.05 lbs/1000sq. ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) — 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) — Use sod. Option (3) — Seed with 60 lbs.per acre Kentucky 31 Tall Fescue and mulch 2 tons / acre well anchored straw.

MULCHING — Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000sq. 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/1000sq. ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000sq. ft.) for anchoring.

MAINTENANCE — Inspect all seeding areas and make needed repairs, replacements and reseedings.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redisturbed where a short-term vegetative cover is needed.

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

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

SEEDING — For periods March 1 thru April 30, and from August 15 thru October 15 seed with 2-1/2 bushels per acre of annual rye (3.2 lbs/1000sq. ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (.07 lbs/1000sq. ft.). For the period November 16 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/1000sq. 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/1000sq. ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000sq. ft.) for anchoring.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for additional rates and methods not covered.

21.0 STANDARD 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 vegetative 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 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 than 1½" 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.

III. 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.

IV. 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 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 amendments as 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 Stil 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 placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

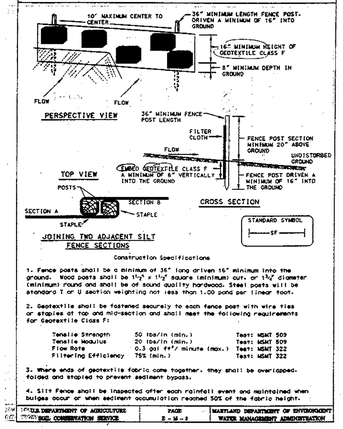
VI. Alternative for Permanent Seeding — Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

i. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.

ii. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb./1,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Seeding, MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

DETAIL 22 – SILT FENCE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1½"x 1½" square (minimum) cut, or 1¾" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighing not less than 1.00 pond per linear foot.

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

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft²/ minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

4. Silt fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

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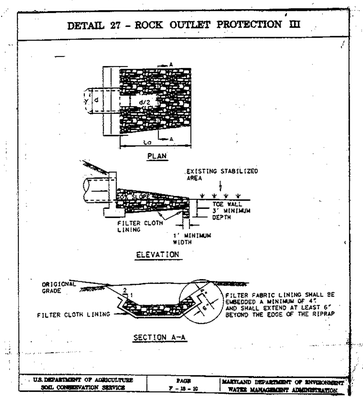
DETAIL 27 – ROCK OUTLET PROTECTION III



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ROCK OUTLET PROTECTION III

Construction Specifications

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

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

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

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

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

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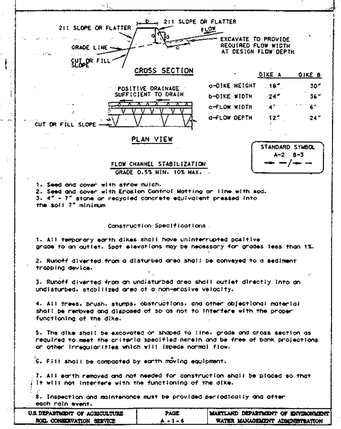
DETAIL 1 – EARTH DIKE



	DIKE A	DIKE B
a-DIKE HEIGHT	16"	30"
b-DIKE WIDTH	24"	36"
c-FLOW WIDTH	4'	4'
d-FLOW DEPTH	12"	24"

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

Construction Specifications

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.

2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.

3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.

4. All trees, brush, stumps, obstructions, and other objectionable material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.

5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.

6. Fill shall be compacted by earth moving equipment.

7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.

8. Inspection and maintenance must be provided periodically and after each rain event.

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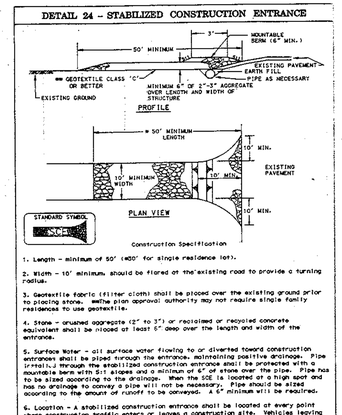
DETAIL 24 – STABILIZED CONSTRUCTION ENTRANCE



1. Length – minimum of 50' (*50' for single residence lot).

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

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

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

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

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

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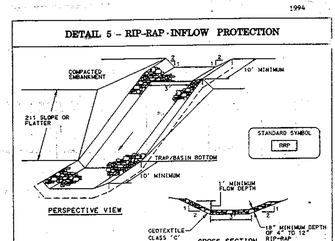
DETAIL 5 – RIP-RAP INFLOW PROTECTION



Construction Specifications

1. Rip-rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3' (min.) bottom width. The channel shall be lined with 4" to 12" rip- rap to a depth of 18".

2. Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.

3. Entrance and exit sections shall be installed as shown on the detail section.

4. Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.

5. Gabion Inflow Protection may be used in lieu of Rip-rap Inflow Protection.

6. Rip-rap should blend into existing ground.

7. Rip-rap Inflow Protection shall be used when the slope is between 4:1 and 10:1. For slopes flatter than 10:1 use Earth Dike or Temporary Swale lining criteria.

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21.0 STANDARD 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 vegetative 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 Stations.

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 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 than 1½" 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.

III. 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.

IV. 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 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 scientistand approved by the appopiate approval authority, may be used in lieu of natural topsoil.

ii. Place topsoil (if required) and apply soil amendments as 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 Sili 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 placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

G-21-2

VI. Alternative for Permanent Seeding – Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

i. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:

a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.

b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.

c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.

ii. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Seedding. MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virgiala Polytechnic Institutes. Revised 1973.

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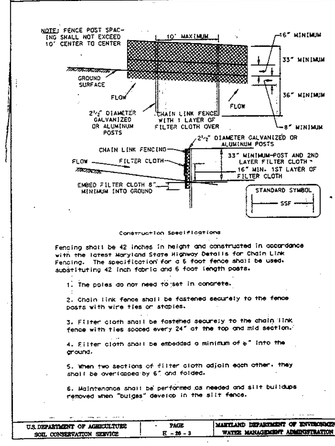
DETAIL 33 – SUPER SILT FENCE



Construction Specifications

Fencing shall be 42 inches in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6 foot fence shall be used, substituting 42 inch fabric and 8 foot length posts.

1. The poles do nor need to set in concrete.

2. Chain link fence shall be fastened securely to the fence posts with wire ties or staples.

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

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

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

6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence.

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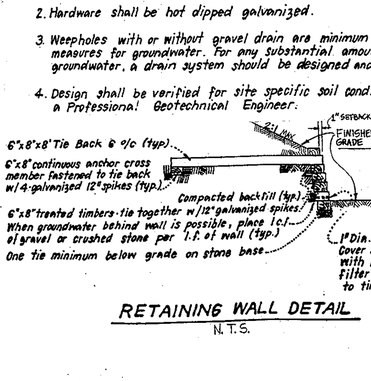
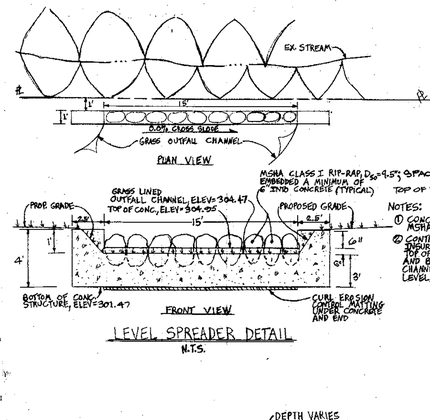
NOTE:
1. Timbers shall be either:
a) Creasote treated railroad ties.
b) CCA treated landscaping timbers (.40 lb/ct retention)
2. Hardware shall be hot dipped galvanized.
3. Weepholes with or without gravel drain are minimum measures for groundwater. For any substantial amount of groundwater, a drain system should be designed and utilized.
4. Design shall be verified for site specific soil condition by a Professional Geotechnical Engineer.

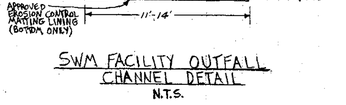


RETAINING WALL DETAIL
N.T.S.



NOTES:
① CONCRETE TO BE MSHA MIX NO.3.
② ENSURE THAT BOTH TOP OF CONC. STRUCTURE AND BOTTOM OF GRASS CHANNEL ARE COMPLETELY LEVEL.

LEVEL SPREADER DETAIL
N.T.S.



SWM FACILITY OUTFALL CHANNEL DETAIL
N.T.S.

APPROVED
PLANNING BOARD
of HOWARD COUNTY
DATE 1/27/99

"AS-BUILT"

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/5/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/10/99

DIRECTOR — DATE 3/11/99

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

NATURAL RESOURCE CONSERVATION SERVICE — DATE 3/3/99

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/3/99

ENGINEER'S CERTIFICATE

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

SIGNATURE OF ENGINEER — DATE 2/24/99

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ONSITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS ARE DEEMED NECESSARY."

SIGNATURE OF DEVELOPER — DATE 2/23/99

BRUCE E. BASTIAN, P.E. No. 19788, STATE OF MARYLAND, PROFESSIONAL ENGINEER — 2/24/99

LDE, INC.
9250 Rumsey Road, Suite 106, Columbia, MD. 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED SDH	Sediment Control, Construction Notes & Details	SCALE AS SHOWN
DRAWN SMC	British And American Auto Care, Inc. Columbia E.G.U. Subdivision Parcel "C"	DRAWING 5 of 9
CHECKED B.D.B.	Tax Map 42, P/O Parcel 386, Grid 9 6th Election District Howard County, Maryland	JOB NO. 98-010
DATE Rev. 7/98 4 98 Rev 10/98	Developer: Brian England, British And American Auto/ Care Inc. 9235 Berger Road Columbia, Maryland 21046 (410) 381-2700	FILE NO. SDP 98-132

SDP98-132

POND 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.

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 to the ground surface. For dry stormwater management ponds, a minimum of a 50 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 CC, SC, CH, or CL. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

Placement – Areas on which fill is to be placed shall be scarified prior to the 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 fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

Compaction – The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the 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.

Where a minimum required density is specified, it 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.

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 original 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.

STRUCTURAL BACKFILL

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

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 – (Steel Pipe) – This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Steel pipes with polymeric coatings have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coating or an approved equal may be used: Nexon, Plasti-Cote, Blac-Klad, and Beth -Cu-Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

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. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

Materials – (Aluminum Pipe) – This pipe and appurtenances shall conform to the requirements of AASHTO Specifications M-196 or M-211 with watertight coupling bands or flanges. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. 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 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 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 band width. The following type connections are acceptable for pipes less than 24" in diameter: flanges on both ends of the pipe, a 12 inch wide standard lap type band with 12" wide by 3/8" thick closed cell circular neoprene gasket; and a 12 inch wide hugger type band w/ an O-ring gaskets having a minimum diameter of 1/2 inch greater than the corrugated depth. Pipes 24" in diameter and larger shall be connected by a 24" long annular corrugated band using rods and lugs. A 12" wide by 3/8" thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24".

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

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

5. Backfilling shall conform to "Structure Backfill."

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

REINFORCED CONCRETE PIPE – All of the following criteria shall apply for reinforced concrete pipe:

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

2. Bedding – All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10 % of its outside diameter with a minimum thickness of 3 inches, or as shown on the drawings.

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 2 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.

POLYVINYL CHLORIDE (PVC) PIPE – All of the following criteria shall apply for polyvinyl chloride (PVC) pipe:

1. Materials – PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241.

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.

CONCRETE

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 608, Mix No. 3.

ROCK RIPRAP

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 905.

The riprap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the riprap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. Filter cloth shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 919.12.

CARE OF WATER DURING CONSTRUCTION

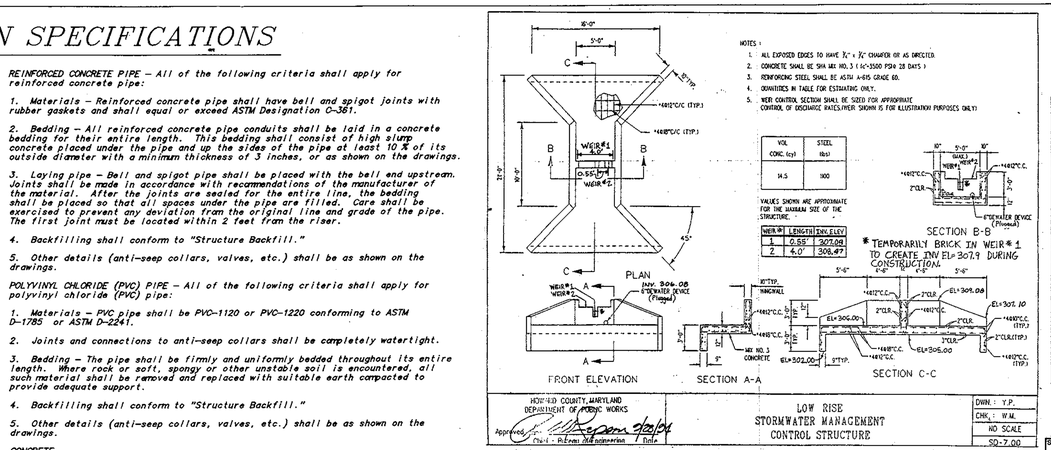
All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate and maintain all necessary pumping and other equipment required for removal of water from the 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 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 required draining the water to sumps from which the water shall be pumped.

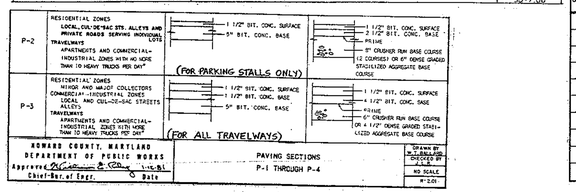
STABILIZATION

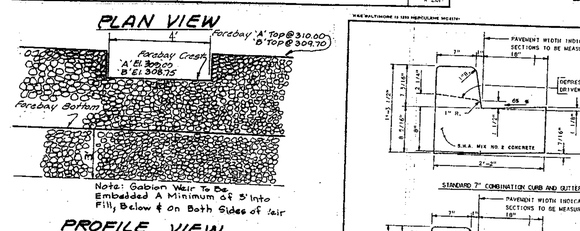
All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, cuts, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Maryland Soil Conservation Service Standards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

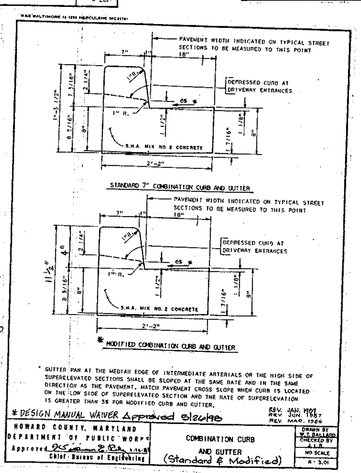
EROSION AND SEDIMENT CONTROL

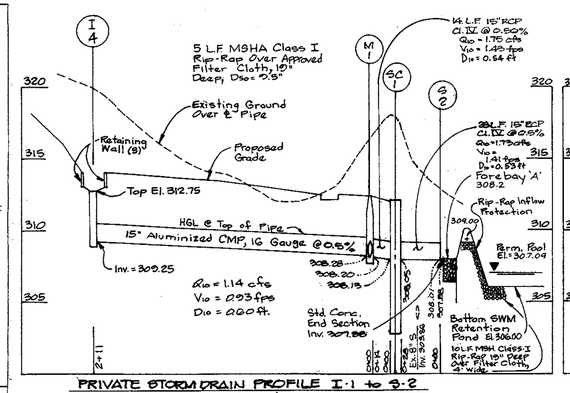
Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.







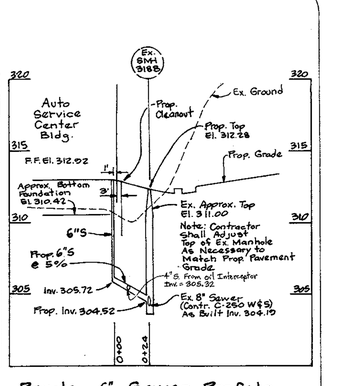




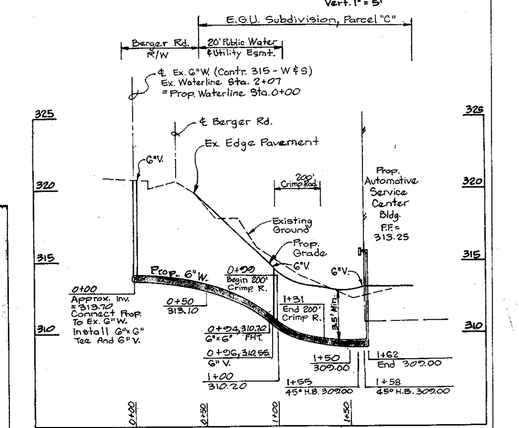
PRIVATE STORM DRAIN PROFILE I-1 to S-2
SCALE: 1"=5' Vert.
1"=50' Hor.

STRUCTURE SCHEDULE

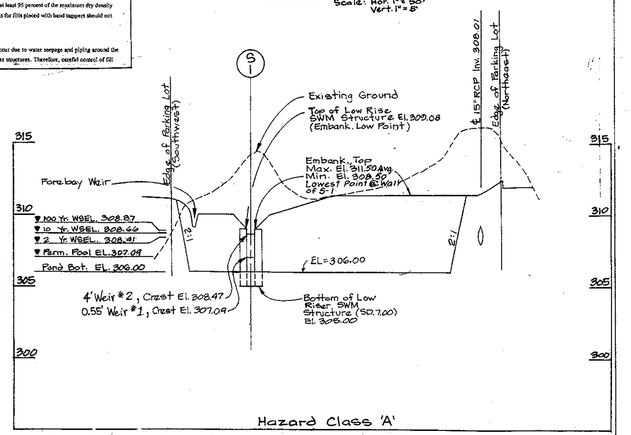
STRUCTURE NO.	TYPE	INVERT IN	INVERT OUT	TOP ELEV.	REMARKS
I-1	SINGLE VAN INLET	———	307.90	311.48	SEE HOWARD COUNTY STD DETAIL SD-4.37
I-2	SINGLE VAN INLET	———	307.90	311.40	SEE HOWARD COUNTY STD DETAIL SD-4.37
I-3	SINGLE VAN INLET	———	308.35	311.80	SEE HOWARD COUNTY STD DETAIL SD-4.37
I-4	STD. A-5 INLET	———	309.25	312.75	SEE HOWARD COUNTY STD DETAIL SD-4.01
SC-1	STC 900 STORMCEPTOR	308.13	308.05	312.10	STC 900 STORMCEPTOR SEE DETAILS SHEET 7
SC-2	STC 900 STORMCEPTOR	307.81 307.66	307.56	311.00	STC 900 STORMCEPTOR SEE DETAILS SHEET 7
M-1	STD SHALLOW MANHOLE	308.28	308.20	312.50	SEE HOWARD COUNTY STD DETAIL G-3.12
S-1	LOW RISE SWM STRUCT.	See detail sheet 8	309.00	See detail sheet 8	SEE HOWARD COUNTY STD DETAIL SD-7.00
S-2	STD. CONCRETE END SECTION	308.01	307.88	309.21	SEE HOWARD COUNTY STD DETAIL SD-5.01
S-3	STD. CONCRETE END SECTION	307.24	307.44	308.77	SEE HOWARD COUNTY STD DETAIL SD-5.01



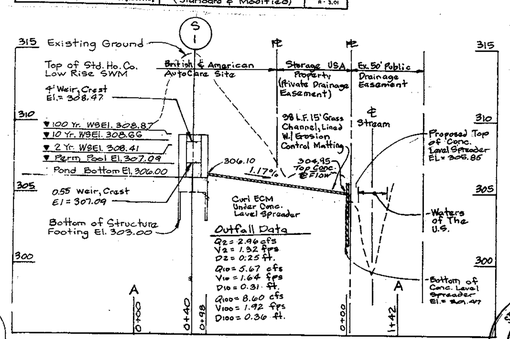
Private 6" Sewer Profile
Scale: Hor. 1"=50'
Vert. 1"=5'



Private 6" Waterline Profile
Scale: Hor. 1"=50'
Vert. 1"=5'



Private Shallow Stormwater Management Retention Pond Profile Along Centerline of Embankment "AS-BUILT"
Scale: Hor. 1"=50'
Vert. 1"=5'



Private Shallow Stormwater Management Retention Pond · Section A-A · Profile Through Centerline of Principal Spillway
Scale: Hor. 1"=50'
Vert. 1"=5'

POND CONSTRUCTION RECOMMENDATIONS (CONT)

The plans indicate that unsuitable fills will be required for the pond. Following removal of the surface topsoil, the embankment subgrades should be proofrolled under our observation with a loaded dump truck or pan. Unsuitable soils are generally not expected, however, localized areas that are loose or soft may be present. Extremely soft zones are not suitable for embankment support as they may lead to excessive settlement of the embankment, difficulty achieving fill compaction, unstable slopes, or seepage zones through the embankment. These unsuitable soils should be removed to firm soils and replaced with compacted fill.

The amount of subgrade undercutting will be largely dependent on the control of water in the pond area and the time of year of construction. During the excavation of the pond basin and cutoff trench, water infiltration into the excavation resulting from groundwater, precipitation, or surface run-off should be controlled. Heavy construction traffic on the subgrades should be minimized to reduce the amount of pumping and subgrade disturbance. We recommend that the pond construction be performed during the drier summer months to reduce the difficulties associated with subgrade preparation and dewatering.

The completed fill should be free of organics, roots, debris, and rock larger than 4-inches in diameter. An unexposed fill for embankment or structure support should consist of material classified CL, ML, SC, SM, SP, SW, GC, or GM in accordance with ASTM D-2487. The suitability of the fill soils should be determined by our representative during construction. The compacted fill should be placed in loose, level lifts not exceeding 8-inches in thickness, and compacted to at least 95 percent of the maximum dry density per ASTM D-698, Standard Proctor. Lifts for fills placed with hand tampers should not exceed 4 inches.

Embankment failures most frequently occur due to water seepage and piping around the principal spillway pipes, weirs, and other structures. Therefore, careful control of fill

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/5/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/5/99

DIRECTOR — DATE 3/11/99

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

NATURAL RESOURCE CONSERVATION SERVICE — DATE 3/3/99

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/3/99

ENGINEER'S CERTIFICATE

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

SIGNATURE OF ENGINEER — DATE 2/24/99

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ONSITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS ARE DEEMED NECESSARY."

SIGNATURE OF DEVELOPER — DATE 2/23/99

STATE OF MARYLAND — DONALD R. BRITAM — No. 19194 — REGISTERED PROFESSIONAL ENGINEER — 2/24/99

STATE OF MARYLAND — SAMUEL W. CORRICK — No. 12506 — PROFESSIONAL ENGINEER — 12-14-00

APPROVED
PLANNING BOARD
of HOWARD COUNTY
DATE 1/27/99

LDE, INC.
9250 Rumsey Road, Suite 106, Columbia, MD. 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED S.D.H.	Stormwater Management, Storm Drain, Water & Sewer Construction Notes And Details	SCALE AS SHOWN
DRAWN S.M.C.	British And American Auto Care, Inc. Columbia E.G.U. Subdivision Parcel "C"	DRAWING 6 of 9
CHECKED B.D.B.	Tax Map 42, P/O Parcel 386, Grid 9 6th Election District Howard County, Maryland	JOB NO. 98-010
DATE Rev. 7/98 4/98 REV 10/98	Developer: Brian England, British And American Auto/Care Inc., 8230 Berger Road, Columbia, Maryland 21046, (410) 381-2700	FILE NO. SDP-98-132

/users/land/JOHN/BRITAM378

SDP98-132

4.0 Installation Procedures

The installation of the concrete Stormceptor® should conform in general to state highway or local specifications for the construction of manholes. Selected sections of a general specification that are applicable are summarized in the following sections.

Excavation

Excavation for the installation of the Stormceptor® should conform to state highway or local specifications. Topsoil that is removed during the excavation for the Stormceptor® should be stockpiled in designated areas and should not be mixed with subsoil or other materials. Topsoil stockpiles, and the general site preparation for the installation of the Stormceptor® should conform to state highway or local specifications.

The Stormceptor® should not be installed on frozen ground. Excavation should extend a minimum of 12 inches from the precast concrete surfaces plus an allowance for shoring and bracing where required. If the bottom of the excavation provides an unsuitable foundation additional excavation may be required.

In areas with a high water table, continuous dewatering should be provided to ensure that the excavation is stable and free of water.

Leveling

A 6 to 12 inch layer of granular material (conforming to local or state highway backfill specifications) should be installed, compacted, and leveled at the bottom of the excavation to the proper elevation for the installation of the interceptor base.

Backfilling

Backfill material should conform to state highway or local specifications. Generally, backfill material should be placed in uniform layers not exceeding 12 inches in depth. Each layer should be compacted to the density required by local/state guidelines. Backfill is not to contain topsoil.

Stormceptor® Construction Sequence

The concrete Stormceptor® is installed in sections in the following sequence :

1. aggregate base
2. base slab
3. treatment chamber section(s)
4. transition slab (if required)
5. by-pass section with insert
6. connect inlet and outlet pipes
7. riser section and/or transition slab (if required)
8. maintenance riser section(s) (if required)
9. top slab oriented with clear access to vent and 24" opening
10. frame and access cover

The precast base should be placed level at the specified grade. The entire base should be in contact with the underlying compacted granular material. Subsequent sections, complete with joint seals, should be installed in accordance with the precast concrete manufacturer's recommendations.

Adjustment of the Stormceptor® can be performed by lifting the upper sections free of the excavated area, re-leveling the base, and re-installing the sections. Damaged sections and gaskets should be repaired or replaced as necessary. Once the Stormceptor® has been constructed, the lift holes should be plugged and mortared inside and outside.

Down Pipe and Riser Pipe

Once the by-pass section has been attached to the lower treatment chamber, the inlet down pipe, and outlet riser pipe can be attached. To install the inlet down pipe a worker enters the lower treatment chamber through the outlet riser pipe opening (24 inch diameter) in the by-pass section.

The inlet drop pipe is installed by coating the outside of the pipe with glue and pushing the pipe into the coupling. Chemrex 948 caulking should be applied to the connection once the inlet drop pipe is securely in place. The tee at the end of the inlet drop pipe must be oriented such that water which enters the treatment chamber is directed tangentially around the inside walls of the chamber.

The outlet riser pipe (24 inch diameter) should be installed from the top of the fiberglass disc by sliding the pipe that is provided into the existing 24" sleeve from above. The 24" diameter pipe is manufactured with a flange on the end. Chemrex 948 caulking should be applied underneath the flange to act as a permanent seal before the pipe is secured in place. Pressure should be carefully applied to the top of the flange to ensure that the pipe is fully extended into the lower chamber (i.e. the top elevation of the flange is level with the surrounding fiberglass disc) and that the caulking evenly seals the pipe in place.

Inlet and Outlet Pipes

Inlet and outlet pipes should be securely set into the by-pass chamber using grout or approved pipe seals so that the structure is watertight. Flexible rubber boots are normally used and installed at the precast concrete plant prior to shipping. The flexible boots are applicable for pipes with an outside diameter up to 42 inches. The local Stormceptor affiliate should be notified if the pipe is to be grouted in the field at the time of ordering since the boots are generally included in the price quotations.

Installation of the flexible boots should follow the manufacturer's recommendations. As previously mentioned, the boots will already be attached to the Stormceptor® at the manufacture's plant.

Top Slab and Access Opening Installation

The final concrete piece to be installed is the top slab with the 30 inch access opening. Proper positioning of the top slab is **extremely important** to the proper operation and maintenance of the Stormceptor. The 30 inch opening must be positioned so the 6" vent pipe and the 24" discharge opening are both accessible from the surface opening (see drawing after page 25).

Frame and Cover Installation

Stormceptor provides a standard cast iron frame and cover with the name Stormceptor clearly embossed on it. Precast concrete adjustment units should be installed to set the frame and cover at the required elevation. The adjustment units should be laid in a full bed of mortar with excessive units being joined using sealant recommended by the manufacturer. Frames for the cover should be set in a full bed of mortar at the elevation specified.

CONTRACTOR INSTALLATION INSTRUCTIONS: PRECAST CONCRETE STORMCEPTOR

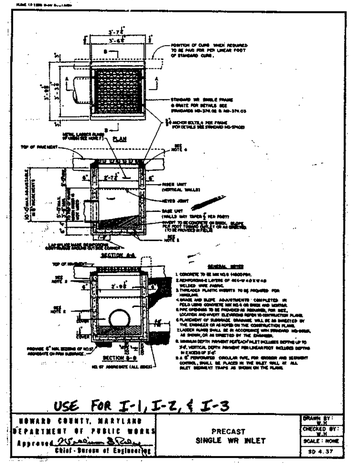
1. STAKE-OUT THE LOCATION OF THE STORMCEPTOR AND EXCAVATE HOLE. EXCAVATE ADEQUATE SPACE TO CONNECT INLET AND OUTLET PIPES TO UNIT. INSTALL A 12' DEEP (OR AS REQUIRED) LAYER OF COMPACTED AGGREGATE/SUBBASE AT THE BOTTOM OF THE EXCAVATION. INSTALL TRENCH BOX OR SHORING AS NEEDED.
2. CHECK ELEVATION OF UNIT 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. ALL LIFTING APPARATUS IS TO BE PROVIDED BY THE INSTALLATION CONTRACTOR.
4. INSTALL STORAGE CHAMBER. (INSTALL SIX(6) LIFTING PINS INTO BASE OF STORAGE CHAMBER.) ATTACH CABLES OR CHAINS TO ALL 3 LIFT 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 4).

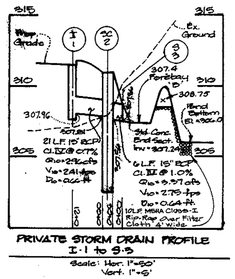
(FOR STORMCEPTOR MODELS STC-900, STC-1200 AND STC-1800 SKIP STEP 5 AND GO TO STEP 6)

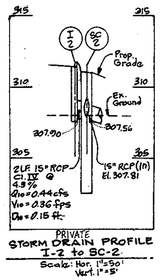
5. INSTALL REINFORCING SLAB. (STORMCEPTOR MODELS STC-2400, STC-3600, STC-4800, STC-6000 AND STC-7200) CHECK THAT SECTION IS SET FLUSH, LEVEL AND IS AT THE PROPER ELEVATION. INSTALL RUBBER GASKET ON THE TRANSITION SLAB SPIGOT AND COAT WITH LUBRICATING GREASE (PROVIDED IN SHIPMENT).
6. INSTALL BYPASS SECTION OF STORMCEPTOR WITH FACTORY INSTALLED STORMCEPTOR INSERT. LIFT BYPASS SECTION AND INSTALL, WHILE CHECKING ALIGNMENT AND GRADE OF INLET AND OUTLET DOWN PIPES. CHECK TO MAKE SURE THE BYPASS CHAMBER IS SET FLUSH, LEVEL AND IS AT THE PROPER ELEVATION. THE BYPASS SECTION 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 ON REVERSE SIDE OF THESE INSTRUCTIONS.
8. INSTALL RISER SECTION. LIFT RISER SECTION AND INSTALL, WHILE CHECKING THAT SECTION IS SET FLUSH AND IS AT PROPER ELEVATION AND THAT UNIT IS LEVEL. SPECIFIC ALIGNMENT OF THIS PART IS REQUIRED, IF STEPS ARE INCLUDED. ALIGN STEPS ABOVE INLET INSPECTION PORT. NOTE, FOR SHALLOW INSTALLATIONS THIS SECTION MAY NOT BE REQUIRED.
9. INSTALL TOP SLAB WITH OPENING FOR STORMCEPTOR FRAME AND COVER. IF OPENING IS OFFSET (NOT CENTERED) THE TOP SLAB 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 LOCAL/STATE REQUIREMENTS.
11. INSTALL AND SET GRADE ADJUSTING RINGS, AS NEEDED. PLUG ALL LIFT HOLES WITH TAPERED FLEXIBLE PLUG AND KNOCK IN TO PLACE. PLUGS IN STORAGE CHAMBER MUST BE GROUTED INSIDE AND OUTSIDE WITH GROUT.
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 WITH NON-SHRINK GROUT WHEN NO FLEXIBLE BOOTS ARE PROVIDED. THE INVERT OF THE INLET AND OUTLET PIPE IS TO MATCH UP WITH THE INVERT OF THE STORMCEPTOR INSERT. FLEXIBLE BOOT INSTALLATION PROCEDURES: CENTER THE PIPE IN 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 THIS PIPE CLAMP SCREW TO 40 INCH POUNDS. IF THE PIPE IS MUCH SMALLER THAN THE BOOT, LIFT THE BOOT SUCH THAT IT COMPRESSES THE BOTTOM OF THE PIPE WHILE TIGHTENING THE CLAMP TO ENSURE EVEN CONTRACTION OF THE RUBBER. MOVE PIPE HORIZONTALLY AND/OR VERTICALLY TO ALIGN TO GRADE.
14. THE STORMCEPTOR SHOULD BE PUMPED OUT WHEN THE SEDIMENT CONTROL MEASURES ARE REMOVED (SITE PERMANENTLY STABILIZED).
15. FINAL INSPECTION.

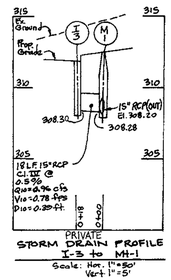
7/1/96

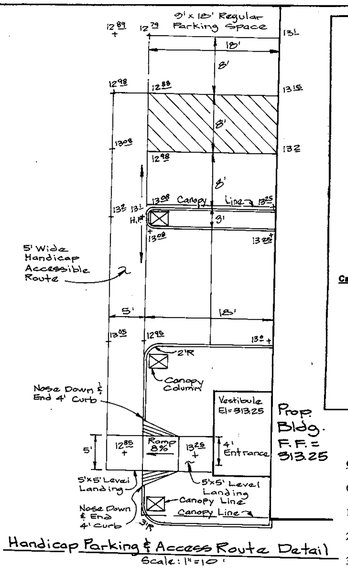
FOR TECHNICAL INFORMATION CALL STORMCEPTOR CORPORATION AT 1-800-762-4703



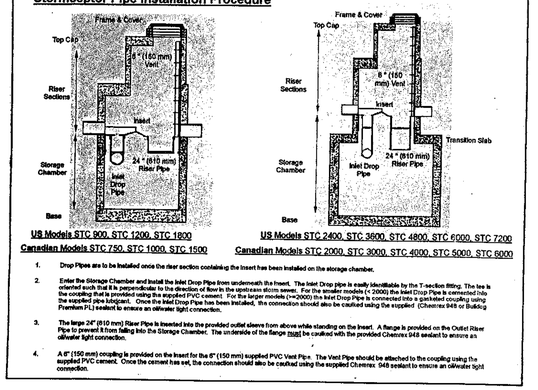








Stormceptor Pipe Installation Procedure



1. Drop Pipes are to be installed once the riser section containing the insert has been installed on the storage chamber.
2. Enter the Storage Chamber and install the Inlet Drop Pipe from underneath the insert. The Inlet Drop pipe is easily identifiable by the T-section fitting. The tee is oriented such that it is perpendicular to the direction of flow in the upstream storm sewer. For the smaller models (< 2000) the Inlet Drop Pipe is connected into the coupling that is provided using the supplied PVC cement. For the larger models (>=2000) the Inlet Drop Pipe is connected into a gasketed coupling using Premium PL) sealant to ensure an oil/water tight connection. This connection should also be caulked using the supplied (Chemrex 948 or Building
3. The large 24" (610 mm) Riser Pipe is inserted into the provided outlet sleeve from above while standing on the insert. A flange is provided on the Outlet Riser Pipe to prevent it from falling into the Storage Chamber. The underside of the flange must be caulked with the provided Chemrex 948 sealant to ensure an oil/water tight connection.
4. A 6" (150 mm) coupling is provided on the insert for the 6" (150 mm) supplied PVC Vent Pipe. The Vent Pipe should be attached to the coupling using the supplied PVC cement. Once the cement has set, the connection should also be caulked using the supplied Chemrex 948 sealant to ensure an oil/water tight connection.

OPERATION AND MAINTENANCE SCHEDULE FOR STORMCEPTORS

Owner's Maintenance Responsibilities:

1. Both Stormceptors shall be inspected annually for sediment and oil build up and inlet or outlet pipe obstructions.
2. When the sediment depth in the bottom of the structure exceeds 6 inches or excessive oil is observed in the structure, maintenance is required.
3. Maintenance of the structures is performed using a vacuum truck. Maintenance is required at least once annually or as indicated by visual inspection. (No entry into the structure itself is required)
4. Oil shall be removed through the 6 inch vents. Sediment shall be removed through the 24 inch diameter outlet riser pipes.
5. In the event of an oil spill the Stormceptors shall be cleaned immediately by a licensed liquid waste hauler. Additionally, the Maryland Department of the Environment as well as local regulatory agencies should be notified.
6. Based on visual inspection of the structures during the initial year of operation the Owner shall determine if maintenance is required more than once annually.

APPROVED
PLANNING BOARD
of HOWARD COUNTY
DATE 11/27/99

Stormceptor® GASKET INSTALLATION INSTRUCTIONS

GUIDELINES FOR ASSEMBLING PROFILE GASKETS ON A SINGLE STEP Stormceptor® JOINT

(1) The Stormceptor® section should be handled with care to avoid any chipping of the bell or spigot.

(2) Carefully clean all dirt and debris from the spigot, including the step seating area of the gasket. Clean the inside area of the bell.

(3) Place the profile gasket in the step of the "dry" spigot. Verify that the pointed end of the gasket is directed towards the shoulder of the spigot. (See Figure 1)

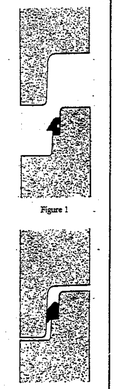
(4) Insert a smooth, round rod, such as a screwdriver, between the gasket and the spigot. Be careful not to cut or lacerate the gasket. Equalize the gasket stretch by running the rod around the entire circumference several times.

(5) Apply joint lubricant to the inner surface of the bell including the leading edge. Lubricate the spigot and gasket.

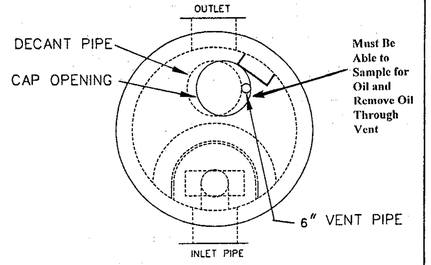
(6) Align the Stormceptor® sections (spigot with the bell). Verify that the gasket touches the lead-in taper around the entire circumference.

(7) Gently push the joint home. Note that every Stormceptor section will not home exactly the same. (See Figure 2)

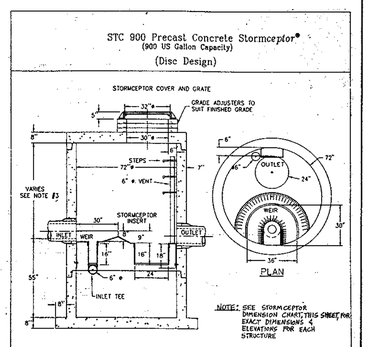
If jointing problems arise, do not force the Stormceptor® sections together (cracking may occur). Contact CSR Hydro Conduit immediately.



Orientation of Frame & Cover Important for Maintenance



STC 900 Precast Concrete Stormceptor® (900 US Gallon Capacity) (Disc Design)



NOTE :
1. FLEXIBLE CONNECTIONS ARE RECOMMENDED AT THE INLET AND OUTLET WHERE APPLICABLE.
2. COVER TO BE POSITIONED OVER OUTLET AND VENT PIPE
3. THIS IS A GENERAL ARRANGEMENT DRAWING CONSULT LOCAL REPRESENTATIVE FOR SPECIAL CONDITIONS.
4. INLET DROP PIPE WILL BE EITHER 6"ø OR 12"ø WITH A 6"ø ORIFICE PLATE
5. ALL CONCRETE JOINTS HAVE RUBBER GASKETS THAT CONFORM TO ASTM C 443
6. U.S. PATENT NO. 4,985,148

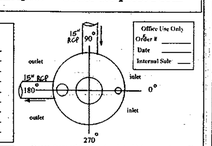
DESIGN SPECIFICATIONS
1. ASTM C 478
2. BASE WEIGHT = 6.45 TONS

STC-900
REVISED 8/98

SC-1 Concrete Stormceptor® Order Request Form *

Contractor Information
Name
Address
City
State
Zip Code
Contact
Phone
Fax

Office Use Only: Order #, Date, Internal Sale



Please draw orientation (angle) of inlet pipes (max 2) and outlet pipe (1) on diagram along with pipe inside diameter (in.) and invert elevation (ft). Clearly mark inlet pipes with an I and outlet pipe with an O and provide the inlet/outlet pipe angle in degrees.

Owner Information
Name: Brian England
Phone: 410- 381-2700
Fax: 410- 381-6491

Stormceptor® Model: 900 [X], 1200 [ ], 1800 [ ], 2400 [ ], 3600 [ ], 4800 [ ], 6000 [ ], 7200 [ ], Custom [ ]
IMPERV. D. AREA= 0.21 Ac.

Insert Size: DISC [X], 22" [ ], 32" [ ], 44" [ ], Custom [ ]

Manhole Number	SC-1
Finish Top Elevation (ft)	312.10
Top Slab Elevation (ft)	311.45
Inlet Pipe Invert (ft)	308.13
Outlet Pipe Invert (ft)	308.08
Pipe Type:	15" RCP, CLASS IV
Pipe Inside Diam. (in) [ID]	15"
Pipe Outside Diam. (in) [OD]	19.5"

Project Name: British & American AutoCare
Approximate time frame until required delivery (weeks): 20 Weeks
Delivery Address: Street 9571 Berger Road
City Columbia State Maryland Zip Code 21046
Designer Company LDE, Inc.
Designer Contact Steve Heise Phone 410-715-1070 Fax 410-715-9640

Please fax this order to Stormceptor at (301) 762-4190
For Technical Assistance Please Call Stormceptor Corporation at (301) 762-8361 or toll free at 1 (800) 762-4703

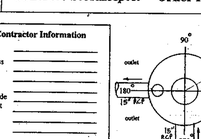
ALL LIFTING APPARATUS TO BE PROVIDED BY THE INSTALLATION CONTRACTOR

* TO BE INCLUDED ON DESIGN PLAN BY DESIGNER 3/1497

SC-2 Concrete Stormceptor® Order Request Form *

Contractor Information
Name
Address
City
State
Zip Code
Contact
Phone
Fax

Office Use Only: Order #, Date, Internal Sale



Please draw orientation (angle) of inlet pipes (max. 2) and outlet pipe (1) on diagram along with pipe inside diameter (in.) and invert elevation (ft). Clearly mark inlet pipes with an I and outlet pipe with an O and provide the inlet/outlet pipe angle in degrees.

Owner Information
Name: Brian England
Phone: 410 - 381-2700
Fax: 410 - 381-6491

Stormceptor® Model: 900 [X], 1200 [ ], 1800 [ ], 2400 [ ], 3600 [ ], 4800 [ ], 6000 [ ], 7200 [ ], Custom [ ]
IMPERV. D. AREA= 0.49 Ac.

Insert Size: DISC [X], 22" [ ], 32" [ ], 44" [ ], Custom [ ]

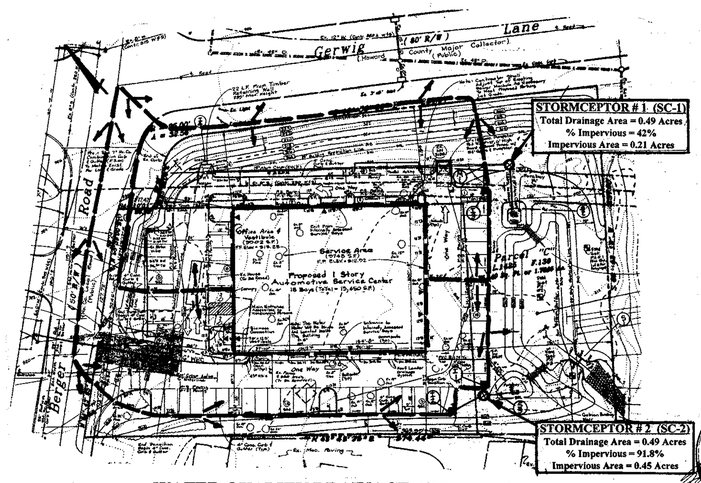
Manhole Number	SC-2
Finish Top Elevation (ft)	311.00
Top Slab Elevation (ft)	310.56
Inlet Pipe Invert (ft)(2. PIPES)	307.81
Outlet Pipe Invert (ft)	307.56
Pipe Type:	15" RCP, CLASS IV
Pipe Inside Diam. (in) [ID]	15"
Pipe Outside Diam. (in) [OD]	19.5"

Project Name: British & American AutoCare
Approximate time frame until required delivery (weeks): 20 Weeks
Delivery Address: Street 9571 Berger Road
City Columbia State Maryland Zip Code 21046
Designer Company LDE, Inc.
Designer Contact Steve Heise Phone 410-715-1070 Fax 410-715-9640

Please fax this order to Stormceptor at (301) 762-4190
For Technical Assistance Please Call Stormceptor Corporation at (301) 762-8361 or toll free at 1 (800) 762-4703

ALL LIFTING APPARATUS TO BE PROVIDED BY THE INSTALLATION CONTRACTOR

* TO BE INCLUDED ON DESIGN PLAN BY DESIGNER 3/1497



WATER QUALITY DRAINAGE AREA MAP
SCALE: 1"= 50'

STATE OF MARYLAND SAMUEL W. CORNISH No. 19161 REGISTERED PROFESSIONAL ENGINEER 12-16-00

NOTE: The Stormceptor water quality structors specified on these plans are a trademark of Stormceptor Corporation. Structural design by Stormceptor Corporation. LDE, Inc. is responsible for choosing the appropriate standard structure size and sizing inflow and outflow pipe sizes only.

"AS-BUILT"

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/5/00

Cindy Hanretta
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 3/6/99

DIRECTOR — DATE 3/11/99

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

NATURAL RESOURCE CONSERVATION SERVICE — DATE

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

HOWARD SOIL CONSERVATION DISTRICT — DATE

ENGINEER'S CERTIFICATE

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

STATE OF MARYLAND BRUCE D. BERG No. 19161 REGISTERED PROFESSIONAL ENGINEER

SIGNATURE OF ENGINEER — 2/22/99 DATE

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ONSITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS ARE DEEMED NECESSARY."

SIGNATURE OF DEVELOPER — 2/22/99 DATE

STATE OF MARYLAND BRUCE D. BERG No. 19161 REGISTERED PROFESSIONAL ENGINEER 2/22/99

REVISIONS

No.	Date:	By:	Description:
1	4-28-00	SMC	Cross out old H.C. Parking Detail & Added New H.C Parking Detail

STORMCEPTOR DIMENSIONS

NO.	TYPE	TOP ELEV. (FINISH GRADE	BOT. SLAB ELEV.	TOP SLAB ELEV.	INV. IN # 1	INV. IN # 2	INV. OUT
SC-1	STC-900	312.10	302.88	311.68	308.13	-	308.05
SC-2	STC-900	311.00	302.56	310.58	307.81	307.81	307.56

NOTE: FOR TECHNICAL INFORMATION CONTACT VINCE BERG OF STORMCEPTOR CORPORATION AT 301-762-8361.

LDE, INC.
9250 Rumsey Road, Suite 106, Columbia, MD. 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED SDH	Quality Stormwater Management Notes & Details	SCALE As Shown
DRAWN SMC	British And American Auto Care, Inc. Columbia E.G.U. Subdivision Parcel "C"	DRAWING 7 OF 9
CHECKED B.D.B.	Tax Map 42, P/O Parcel 386, Grid 9 6th Election District Howard County, Maryland	JOB NO. 98-010
DATE 7 / 98	Owner/Developer: Brian England, British And American Auto/Care Inc., 9235 Berger Road, Columbia, Maryland 21046, (410) 381-2700	FILE NO. SDP-98-132

SDP98-132

/users/land/JOHN/BRITAMDET.S70

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/1/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/8/99

DIRECTOR — DATE 3/11/99

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

NATURAL RESOURCE CONSERVATION SERVICE — DATE

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

HOWARD SOIL CONSERVATION DISTRICT — DATE

ENGINEER'S CERTIFICATE

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

Barry L. Hobbs — STATE OF MARYLAND — No. 19984 REGISTERED PROFESSIONAL ENGINEER

SIGNATURE OF ENGINEER — DATE 2/24/99

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BECOMING THE PROJECT. I ALSO AUTHORIZE PERIODIC ONSITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS ARE DEEMED NECESSARY."

SIGNATURE OF DEVELOPER — DATE 2/23/99

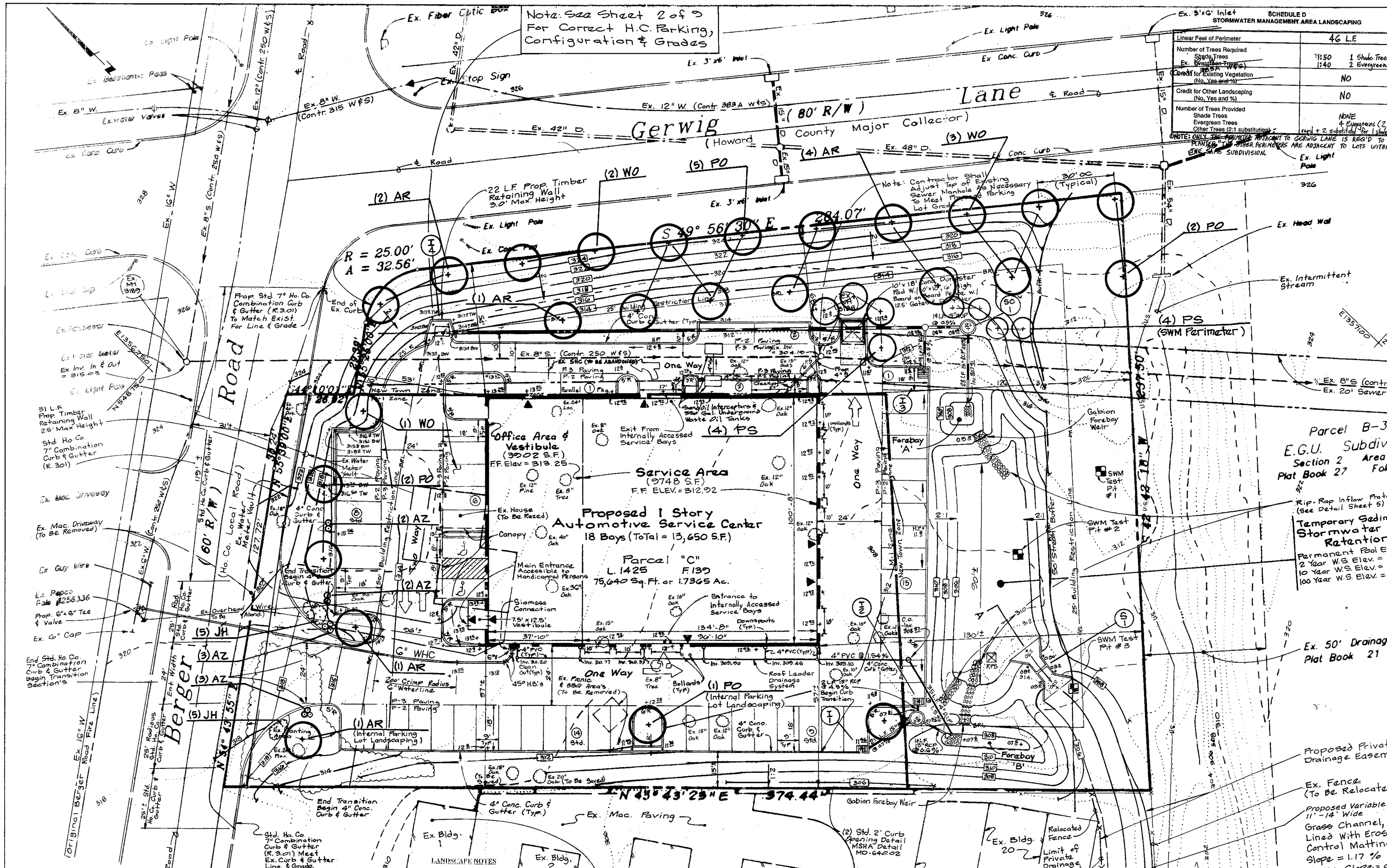
Barry L. Hobbs — STATE OF MARYLAND — No. 19984 REGISTERED PROFESSIONAL ENGINEER — 2/24/99

APPROVED
PLANNING BOARD
of HOWARD COUNTY
DATE 1/27/99

LDE, INC.
9250 Rumsey Road, Suite 106, Columbia, MD. 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED SDH	Existing Features Plan British And American Auto Care, Inc. Columbia E.G.U. Subdivision Parcel "C"	SCALE 1" = 20"
DRAWN SMC		DRAWING 8 of 9
CHECKED B.D.B.	Tax Map 42, P/O Parcel 386, Grid 9 6th Election District Howard County, Maryland	JOB NO. 98-010
DATE Rev. 7/98 4/98	Owner/Developer: Brian England, British And American Auto/Care Inc., 9235 Berger Road, Columbia, Maryland 21046, (410) 381-2700	FILE NO. SDP-98-132

SDP98-132



SCHEDULE D
STORMWATER MANAGEMENT AREA LANDSCAPING

Linear Feet of Perimeter	46 L.F.
Number of Trees Required Shade Trees Evergreen Trees	1:50 1 Shade Tree 1:40 2 Evergreens
Credit for Existing Vegetation (No, Yes and %)	NO
Credit for Other Landscaping (No, Yes and %)	NO
Number of Trees Provided Shade Trees Evergreen Trees Other Trees (2:1 substitution)	NONE 4 Evergreens (2 req'd + 2 substituted for 1 shade tree)

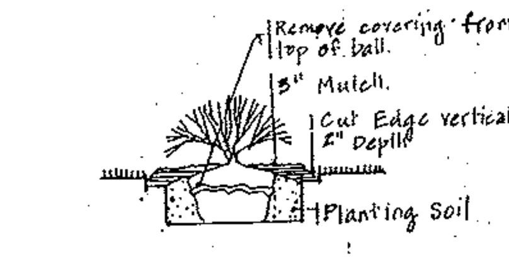
NOTE: ONLY THE PERIMETER ADJACENT TO GERWIG LANE IS REQ'D TO BE PLANTED. THE OTHER PERIMETERS ARE ADJACENT TO LOTS WITHIN THE SAME SUBDIVISION.

SCHEDULE A
PERIMETER LANDSCAPE EDGE

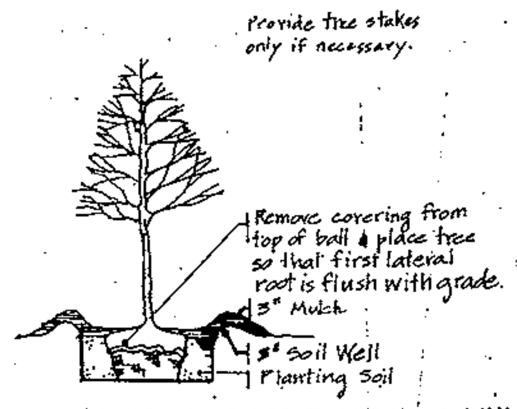
Category	Adjacent to Roadways	Adjacent to Perimeter Properties
Landscape Type	E	C
Linear Feet of Roadway Frontage/Perimeter	504 L.F. - 24 L.F. (Entrance Width) = 480	*612 L.F.
Credit for Existing Vegetation (Yes, No, Linear Feet) (Describe below if needed)	NO	NO
Credit for Wall, Fence or Berm (Yes, No, Linear Feet) (Describe below if needed)	NO	NO
Number of Plants Required Shade Trees Evergreen Trees Shrubs	1:40 / 12 Trees 1:4 / 120 Shrubs	None
Number of Plants Provided Shade Trees Evergreen Trees Other Trees (2:1 substitution) Shrubs (10:1 substitution) (Describe plant substitution credits below if needed)	22 Shade trees 20 Shrubs (10 Shade trees substituted for 100 shrubs)	None

Comments * Perimeter landscape edges are not required between subject Parcel 'C' and adjacent Parcels 'B' and 'B-3' since all are within the same subdivision (ie E.G.U. Subdivision)

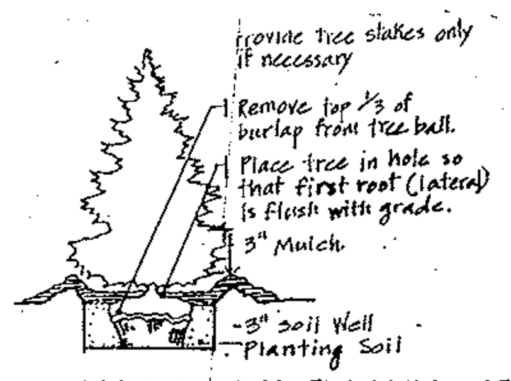
Note: Complex projects may require expansion of the schedule to accommodate multiple land uses on-site or on adjacent properties.



SHRUB PLANTING DETAIL
N.T.S.



DECIDUOUS TREE PLANTING DETAIL
N.T.S.



EVERGREEN TREE PLANTING DETAIL
N.T.S.

PLANTING SCHEDULE

NO.	KEY	BOTANICAL / COMMON NAME	SIZE	COMMENT	REMARKS
Deciduous Trees					
10	AR	Acer rubrum Red Maple	21/2" - 3" cal.	B&B	
9	PO	Quercus palustris Pin Oak	21/2" - 3" cal.	B&B	
6	WO	Quercus phellos Willow Oak	21/2" - 3" cal.	B&B	
25	TOTAL				
Evergreens					
8	PS	Pinus strobus White Pine	6'-8'	B & B	Plant 10' OC
8	TOTAL				
Shrubs					
10	JH	juniperus horizontalis 'bluerug' Bluerug juniper	15"-18"	Container	Plant 18" OC
10	AZ	Azalea 'Exbury'/Exbury Azalea	18"-24"	Container	Plant 18" OC
20	TOTAL				

DEVELOPER'S/ BUILDER'S CERTIFICATE

I/ We certify that the landscaping shown on this plan will be done according to the plan, **Section 16.124** of the Howard County Code and the Howard County Landscape Manual. I/We further certify that upon completion a Certification of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

Name: [signature] Date: 2/23/99

LANDSCAPE NOTES

1.) This plan has been prepared in accordance with the provisions of section 16.124 of *The Howard County Subdivision and Land Development Regulations* and *The Howard County Landscape Manual.*

2.) Financial surety for the required landscaping shown on this plan has been posted as part of the Developers Agreement in the amount of $ 9,300.00

3.) The landscape edges shall be maintained by the property owner.

4.) This plan is for landscape purposes only.

5.) Seeding per notes on sheet 5 of 8.

SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING

Number of Parking Spaces	57
Number of Trees Required	1 Shade Tree : 20 Spaces = 3
Number of Trees Provided Shade Trees Other Trees (2:1 substitution)	3 Shade Trees

NOTE: THE AMENDED *LANDSCAPE MANUAL*, DATED MARCH 2, 1998 STATES THAT SWM PERIMETER LANDSCAPING IS REQUIRED IN ALL ZONING DISTRICTS EXCEPT M-1 AND M-2. THIS SITE IS ZONED BOTH M-1 AND NEW TOWN-EMPLOYMENT CENTER. THE INTENT IS TO DEVELOP THE ENTIRE SITE AS AN AUTOMOTIVE SERVICE FACILITY, AN M-1 TYPE USE. THE CHARACTER OF THE EXISTING AREA IS ENTIRELY COMMERCIAL/ INDUSTRIAL. THEREFORE IT WOULD NOT BE IN KEEPING WITH THE CHARACTER OF THE AREA TO PROVIDE STORMWATER MANAGEMENT PERIMETER LANDSCAPING. THEREFORE, STORMWATER MANAGEMENT PERIMETER PLANTINGS HAVE NOT BEEN PROVIDED.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 2/2/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/8/99

DIRECTOR — DATE 3/11/99

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

NATURAL RESOURCE CONSERVATION SERVICE — DATE

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

HOWARD SOIL CONSERVATION DISTRICT — DATE

ENGINEER'S CERTIFICATE

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

SIGNATURE OF ENGINEER — DATE 2/24/99

DEVELOPER'S CERTIFICATE

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SIGNATURE OF DEVELOPER — DATE 2/23/99

STATE OF MARYLAND — BRUCE DAVID BURTON — No. 19184 — REGISTERED PROFESSIONAL ENGINEER — 2/24/99

"AS-BUILT" 12-14-00

STATE OF MARYLAND — SAMUEL W. CORRIE — No. 12433 — REGISTERED PROFESSIONAL ENGINEER

APPROVED
PLANNING BOARD
of HOWARD COUNTY
DATE 1/27/99

SUBDIVISION NAME			SECTION/AREA		PARCEL/NO.
E.G.U. Subdivsion			2/8		C
PLAT NO.	BLOCK NO.	ZONE	TAX MAP NO.	ELECTION DISTRICT	CENSUS TRACT
8163	9	M-1&NT	42	6	6067.03
WATER CODE			SEWER CODE		
E06			5241000		

REVISIONS			
No.	Date	By	Description
1	4-28	SMC	Added Note: See Sht 2of9 For Correct H.C. Parking, Configuration & Grades.

LDE, INC.
9250 Rumsey Road, Suite 106, Columbia, MD 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED SDH	Landscape Plan British And American Auto Care, Inc. Columbia E.G.U. Subdivision Parcel "C"	SCALE 1" = 20'
DRAWN SMC		DRAWING 9 of 9
CHECKED B.D.B.	Tax Map 42, P/O Parcel 386, Grid 9 6th Election District Howard County, Maryland	JOB NO. 98-010
DATE Rev. 7/98 4/98 Rev 10/98	Owner/Developer: Brian England, British And American Auto Care, Inc, 9235 Berger Road, Columbia, Maryland, (410) 381-2700	FILE NO. SDP-98-132

SDP98-132

Sheet Index

LEGEND

BENCH MARK

USE RESTRICTION LINE — URL —

FLOW DIRECTION

SLOPES BETWEEN 15% - 24.9%

SLOPES GREATER THEN 25%

SILT FENCE — SF —

EARTH DIKE — ED (A-1) —

LIMIT OF DISTURBANCE

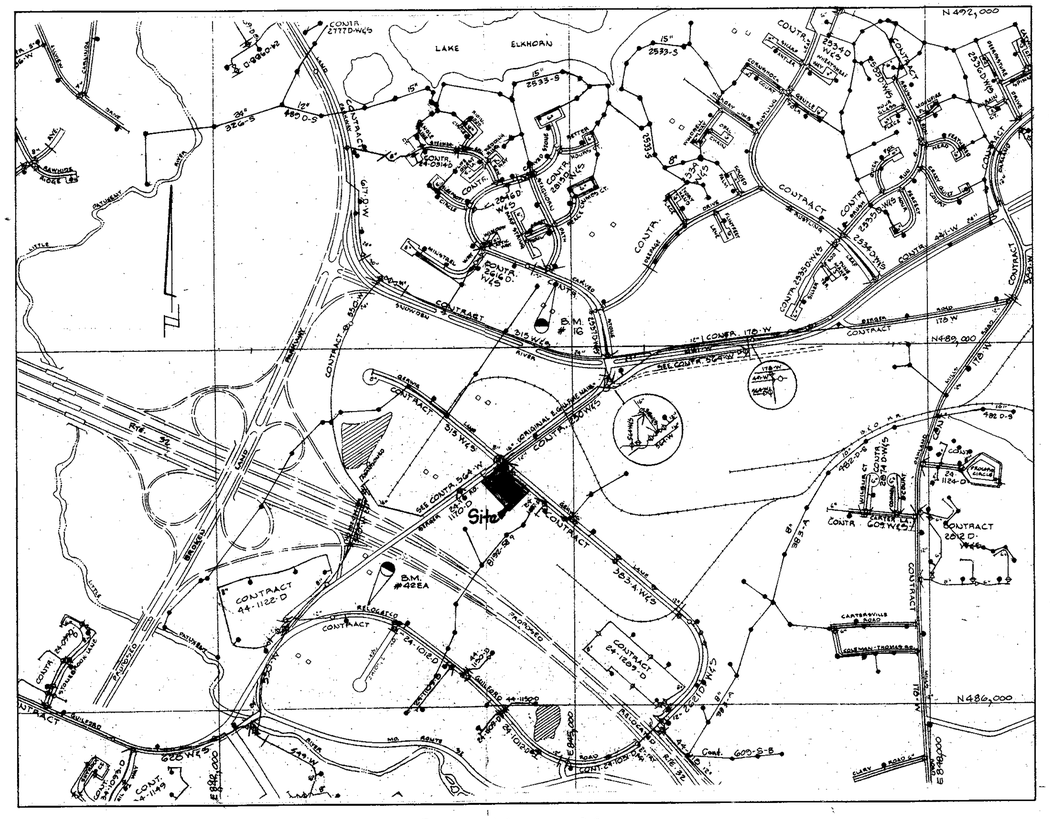
DRAINAGE DIVIDE

EXISTING CONTOUR — 764 —

PROPOSED CONTOUR — 764 —

STABILIZED CONSTRUCTION ENTRANCE — SCE —

SUPER SILT FENCE — SSF —



Location Map
Scale: 1" = 600'

BENCH MARKS

1. Howard County Geodetic Control No. 42EA
Elevation = 313.28, Northing = 547604, Easting = 1355440.
Standard Howard County Survey Disc. set on concrete monument.
On Guilford Road 0.3+/- miles northeast, leftside from intersection, Murry Hill Road 9.3' off edge of paving. 20'+/- west from light pole and 80' from water valve in Guilford Road.

2. Howard County Geodetic Control No. 0016
Elevation = 359.59, Northing = 550279, Easting = 1357329.
Standard Howard County Survey Disc. Set on concrete monument. Between Carved Stone Road and conc. sidewalk, 100'+/- east from intersection Stag Horn Path and 41'+/- from inlet.

GENERAL NOTES

1. **Site Analysis Data:**
a. (1) Total project Area: 1.736+ Acres (75,640 sq ft.)
(2) Area Reserved for possible future dedication to Howard County. = 0.0310 Acres or 1350 sq ft
(3) Net area: 1.7045+- Ac (74,250 s.f.)
b. Area of Plan Submission: 1.736+- Acres (75,640 sq ft.)
c. Limit of Disturbed Area: 1.70 +- Acres (74,052 sq ft)
d. Present Zoning: M-1 and New Town
e. Proposed Site and Structure Use: Automotive service center operation.
f. Building Floor Space: 1 Story Building
1. Office Space & Vestibule = 3,902 sq. ft
2. Warehouse Space = 9,748 sq. ft.
Total Building Area = 13,650 sq. ft
g. Total Number of Units Allowed: one (1) commercial building
h. Total Number of Proposed Units: One (1) 13,650 sq. ft. building
i. Maximum Number of Employees: 20
j. Parking Required: Vehicle service establishments: 3 spaces plus 3 spaces/service bay (18 bays x 3 sp + 3 sp = 57 spaces)
k. Parking Provided: 54 Regular spaces + 2 Van Accessible handicapped spaces = 56 Total
l. Open Space: None required.
m. Recreation Open Space: None required.
n. Building Coverage of Site: 0.313 +- Acres; 18.05% of gross site area.
o. Applicable DPZ File References: F-89-11, Amended FDP Phase 156-A
2. **Property Owner:** Brian England
British and American Auto Care, Inc.
9235 Berger Road
Columbia, Maryland 21046
3. **Architect:** Arium Architects
Suite 453
5537 Twin Knolls Road
Columbia, Maryland 21045-3270
4. **Plat Reference:** No. 8163, recorded on 9/30/88 among the Land Records of Howard County, Md.
5. There are no wetlands or forest on the subject property. An assessment was conducted by Dennis J. LeBlanc, M.S. and Associates, LLC on 9/23/97.
6. This property is exempt from the requirements of the Howard County Forest Conservation Manual in accordance with Section 16.1202(b) of the County Code.
7.

SUBDIVISION NAME			SECTION/AREA		PARCEL/NO.
E.G.U. Subdivsion			2/8		C
PLAT NO. 8163	BLOCK NO. 9	ZONE M-1&NT	TAX MAP NO. 42	ELECTION DISTRICT 6	CENSUS TRACT 6067.03
WATER CODE E06			SEWER CODE 5241000		

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/5/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/8/99

DIRECTOR — DATE 3/11/99

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

NATURAL RESOURCE CONSERVATION SERVICE — DATE 3/3/99

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/3/99

ENGINEER'S CERTIFICATE

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SIGNATURE OF ENGINEER — DATE 2/24/99

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SIGNATURE OF DEVELOPER — DATE 2/23/99

2/24/99

APPROVED PLANNING BOARD of HOWARD COUNTY DATE 1/27/99

12-14-00

REVISIONS

No.	Date:	By	Description
1	4-28-99	SMC	Revised H.C. parking and associated grading in front of building for revised canopy column locations, added (1) parking space on east of building, and revised exterior bollard locations.
2	2/01	LDE	Removed parking lot island, south side of building.

LDE, INC.

9250 Rumsey Road, Suite 106, Columbia, MD. 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

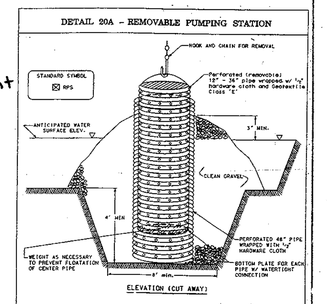
DESIGNED SDH	Site Development Plan	SCALE 1' = 20"
DRAWN SMC	British And American Auto Care, Inc. Columbia E.G.U. Subdivision Parcel "C"	DRAWING 2 of 9.
CHECKED B.D.B.	Tax Map 42, P/O Parcel 386, Grid 9 6th Election District Howard County, Maryland	JOB NO. 98-010
DATE Rev. 7/98 4 / 98 Rev 10/98	Owner/Developer Brian England British And American Auto/Care Inc. 9235 Berger Road Columbia, Maryland 21046 (410) 381-2700	FILE NO. SDP-98-132

SDP98-132

SEQUENCE OF CONSTRUCTION

1.)	Obtain grading permit.	1 DAY
2.)	Notify the Howard County Department of Public Works, Construction Inspection Division at least 48 hours prior to beginning construction at (410) 313-1880.	1 DAY
3.)	Install sediment control devices, including stabilized construction entrance, sediment basin w/ dewatering device and RPS, earth dikes, temporary rip-rap inflow protection and silt fence. Insure that weir # 1 on S-1 is blocked (see SD-7.00 detail, sht 6). Do not install pond forebays. Obtain inspectors permission to proceed.	10 DAYS
4.)	Grade site in accordance with the approved grading plan. Stabilize site in accordance with the temporary seeding notes.	10 DAYS
5.)	Construct Building and install roof drainage system.	3 MONTHS
6.)	Install utilities, including storm drainage system, water and sewer.	10 DAYS
7.)	Fine grade for parking lot and travelways. Install retaining walls.	4 DAYS
8.)	Install gravel base for parking lot.	3 DAYS
9.)	Install base and surface paving.	5 DAYS
10.)	Stabilize all remaining disturbed areas in accordance with the permanent seeding notes.	2 DAYS
11.)	With permission from the Sediment Control Inspector, remove all remaining sediment control devices, including stabilized construction entrance, silt fence , earth dikes and temporary rip-rap inflow protection at the end of the earth dike. Convert the sediment trap into permanent stormwater management pond per approved grading plan and SWM construction detail sheet. Install forebays 'A' and 'B'. Stabilize all remaining disturbed areas in accordance with the permanent seeding notes.	10 DAYS
	TOTAL TIME:	146 DAYS

DETAIL 20A - REMOVABLE PUMPING STATION



Construction Specifications

1. The outer pipe should be 48" dia. or shall have max. holes no larger than 4" diameter in diameter and the center pipe shall be perforated with 1" diameter holes at 6" centers beginning 1ft. above the perforated outlet.
2. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.
3. The inside stand pipe (center pipe) should be constructed by perforating corrugated or PVC pipe between 1" dia. to diameter. The perforations shall be 1/2" dia. holes or 1" diameter holes 6" on center. The center pipe shall be wrapped with 1/2" hardware cloth with Geotextile Class E.
4. The center pipe should extend 12" to 18" above the anticipated water surface elevation or 1'-0" above elevation when dewatering is active.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE — PSDE D-18.6 — MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SUMMARY TABLE

SHALLOW RETENTION POND
Hazard Classification "A"
Drainage Area = 1.68 Acres

	2 YEAR	10 YEAR	100 YEAR
Allowable Pond Release:	2.87 cfs	6.31 cfs	-
Computed Inflow:	5.51 cfs	9.17 cfs	13.15 cfs
Facility Discharge:	2.96 cfs	5.67 cfs	8.66 cfs
Elevation at Discharge:	308.41	308.66	308.87
Storage at Elevation(ac ft):	0.126	0.152	0.1780
Top of Embank. Elevation:		309.00	

STATE OF MARYLAND — SAMUEL W. CORRICK — PROFESSIONAL ENGINEER — 12-4-00

"AS-BUILT"

APPROVED
PLANNING BOARD
of HOWARD COUNTY
DATE 1/27/99

SUBDIVISION NAME: E.G.U. Subdivision			SECTION/AREA: 2/8		PARCEL/NO.: C
PLAT NO.: 8163	BLOCK NO.: 9	ZONE: M-1&NT	TAX MAP NO.: 42	ELECTION DISTRICT: 6	CENSUS TRACT: 6067.03
WATER CODE: E06			SEWER CODE: 5241000		

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/1/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/9/99

DIRECTOR — DATE 3/11/99

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

NATURAL RESOURCE CONSERVATION SERVICE — DATE 3/3/99

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/2/99

ENGINEER'S CERTIFICATE

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

SIGNATURE OF ENGINEER — DATE 2/24/99

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ONSITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY."

BY DEVELOPER — DATE 2/23/99

STATE OF MARYLAND — BRIAN D. BRITTON — PROFESSIONAL ENGINEER

3/24/99

Sediment Basin Schedule

Basin No.	Max. D.A. Acres	Dry Stor. Req'd ft^3	Wet Stor. Req'd ft^3	Dry Stor. Prov'd ft^3	Wet Stor. Prov'd ft^3	Stor. Depth ft.	Dry Stor. Elev.	Wet Stor. Elev.	Weir Length ft.	Bottom Elev.	Clean. Elev.	Weir Depth	Top Elev. **	Basin Size	Type
1	1.68	3024	3024	3024	3024	1.9	307.9	307.1	***	306	306.6	1.1	309	see plan	Basin

** Top of embankment elevation.
*** Concrete outlet structure consists of a .55' weir, Inv.=307.9 and a 4.0' weir, Inv.=308.38.

REVISIONS

No.	Date:	By:	Description
1	4-28-99	SMC	Revised H.C. Parking and Associated grading in front of building for revised canopy column locations added (1) parking space on east of building, and revised exterior bollard locations.
2	2/01	LDE	Removed parking lot island, south side of building.

DESIGNED	SDH
DRAWN	SMC
CHECKED	B.D.B.
DATE	REV. 7/98 4/98 Rev 10/98

LDE, INC.
9250 Rumsey Road, Suite 106, Columbia, MD. 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

Grading And Sediment Control Plan
British And American Auto Care, Inc.
Columbia
E.G.U. Subdivision
Parcel "C"
Tax Map 42, P/O Parcel 386, Grid 9
6th Election District
Howard County, Maryland

Owner/Developer: Brian England, British And American Auto/Care Inc., 9235 Rte. 108, Columbia, Maryland 21046, (410) 381-2700

SCALE	1" = 20'
DRAWING	3 of 9
JOB NO.	98-010
FILE NO.	SDP 98-132

SDP 98-132

SOILS LEGEND

MAP SYMBOL	DESCRIPTION	HYDROLOGIC SOIL TYPE
*AdB2	Aldino silt loam, 3%-8% slopes, moderately eroded	D
BrC3	Brandywine loam, 8%-15%, severely eroded	C
MIC2	Manor loam, 8%-15% slopes, moderately eroded	B
**WaB	Watchung silt loam, 0%-3% slopes	D

* Watchung inclusions listed as hydric on the Howard County Hydric Soils List.
** Entire map unit listed as hydric on the Howard County Hydric Soils List.

SUBDIVISION NAME		SECTION/AREA	PARCEL/NO.
E.G.U. Subdivsion		2/8	C

PLAT NO.	BLOCK NO.	ZONE	TAX MAP NO.	ELECTION DISTRICT	CENSUS TRACT
8163	9	M-1&NT	42	6	6067.03

WATER CODE	SEWER CODE
E06	5241000

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/5/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/8/99

DIRECTOR — DATE 3/11/99

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

NATURAL RESOURCE CONSERVATION SERVICE — DATE 3/3/99

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/3/99

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SIGNATURE OF ENGINEER — DATE 2/24/99

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SIGNATURE OF DEVELOPER — DATE 2/23/99

Proposed Variable 11'-14' Wide Grass Channel, 98 L.F., Lined With Erosion Control Matting.
Slope = 1.17 %
Cross Slope = 0.08% to 1.4% ±
2 Yr. Q = 2.96 cfs
2 Yr. V = 1.32 fps
2 Yr. D = 0.25 ft.
10 Yr. Q = 5.67 cfs
10 Yr. V = 1.64 fps
10 Yr. D = 0.31 ft.
100 Yr. Q = 8.60 cfs
100 Yr. V = 1.92 fps
100 Yr. D = 0.36 ft.

APPROVED
PLANNING BOARD
of HOWARD COUNTY
DATE 1/27/99

No.	Date:	By:	Description:
2	2/01	LDE	Removed parking lot island, south side of building.
1	4-28-99	SMC	Added Note See Sht 2 of 9 for H.C parking, Configation & Grades

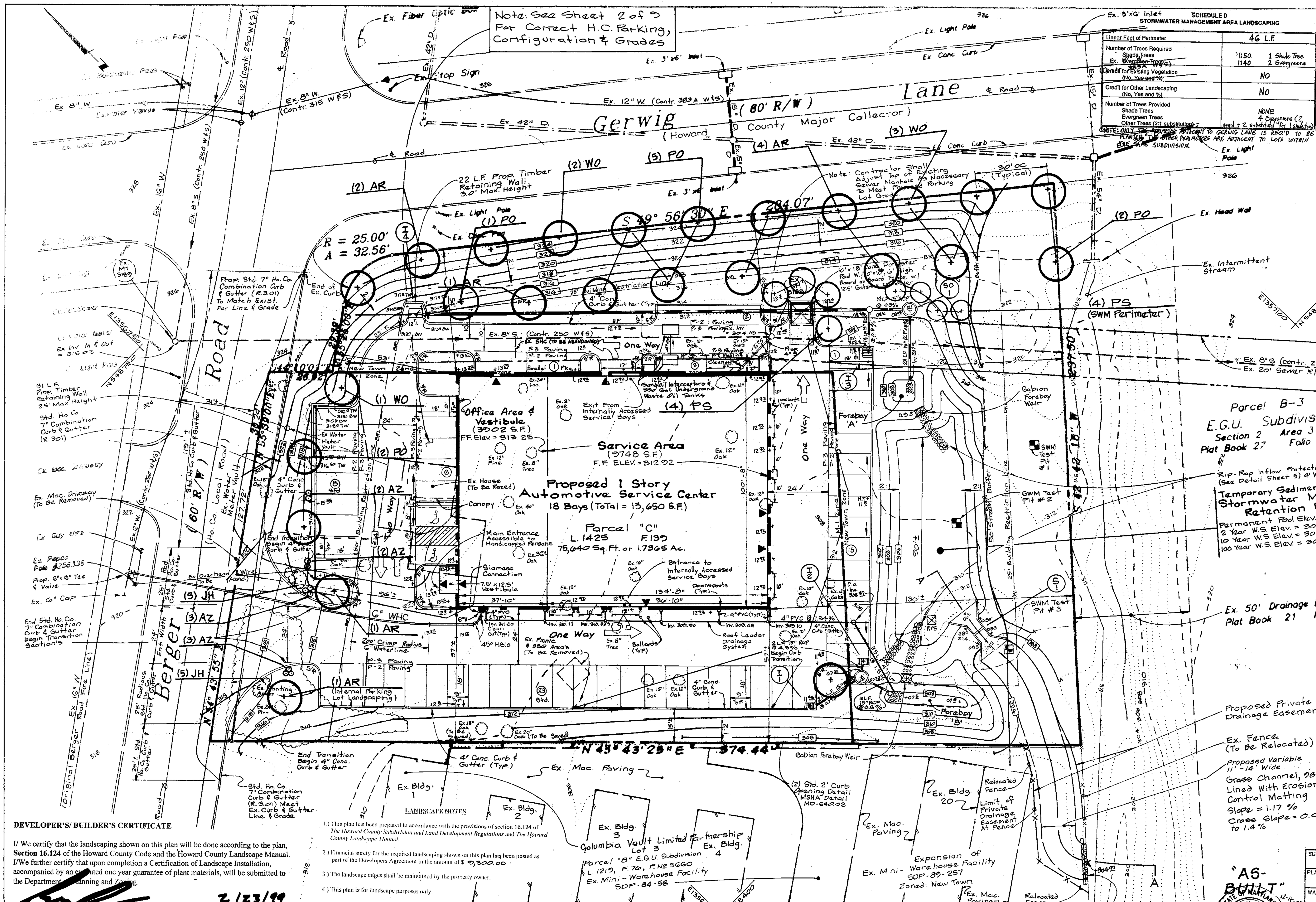
REVISIONS

LDE, INC.

9250 Rumsey Road, Suite 106, Columbia, MD. 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED SDH	Drainage Area And Soils Map British And American Auto Care, Inc. Columbia E.G.U. Subdivision Parcel "C"	SCALE 1' = 20"
DRAWN SMC		DRAWING 4 of 9
CHECKED B.D.B.	Tax Map 42, P/O Parcel 386, Grid 9 6th Election District Howard County, Maryland	JOB NO. 98-010
DATE Rev. 7/98 4/98 Rev 10/98	Owner/Developer: Brian England, British And American Auto/Care Inc., 9235 Berger Road, Columbia, Maryland 21046, (410) 381-2700	FILE NO. SDP-98-132

SDP98-132



SCHEDULE D
STORMWATER MANAGEMENT AREA LANDSCAPING

Linear Feet of Perimeter	46 L.F.
Number of Trees Required Shade Trees Evergreen Trees	1:50 1 Shade Tree 1:40 2 Evergreens
Credit for Existing Vegetation (No, Yes and %)	NO
Credit for Other Landscaping (No, Yes and %)	NO
Number of Trees Provided Shade Trees Evergreen Trees Other Trees (2:1 substitution)	NONE 4 Evergreens (2 req'd + 2 substituted for 1 shade tree)

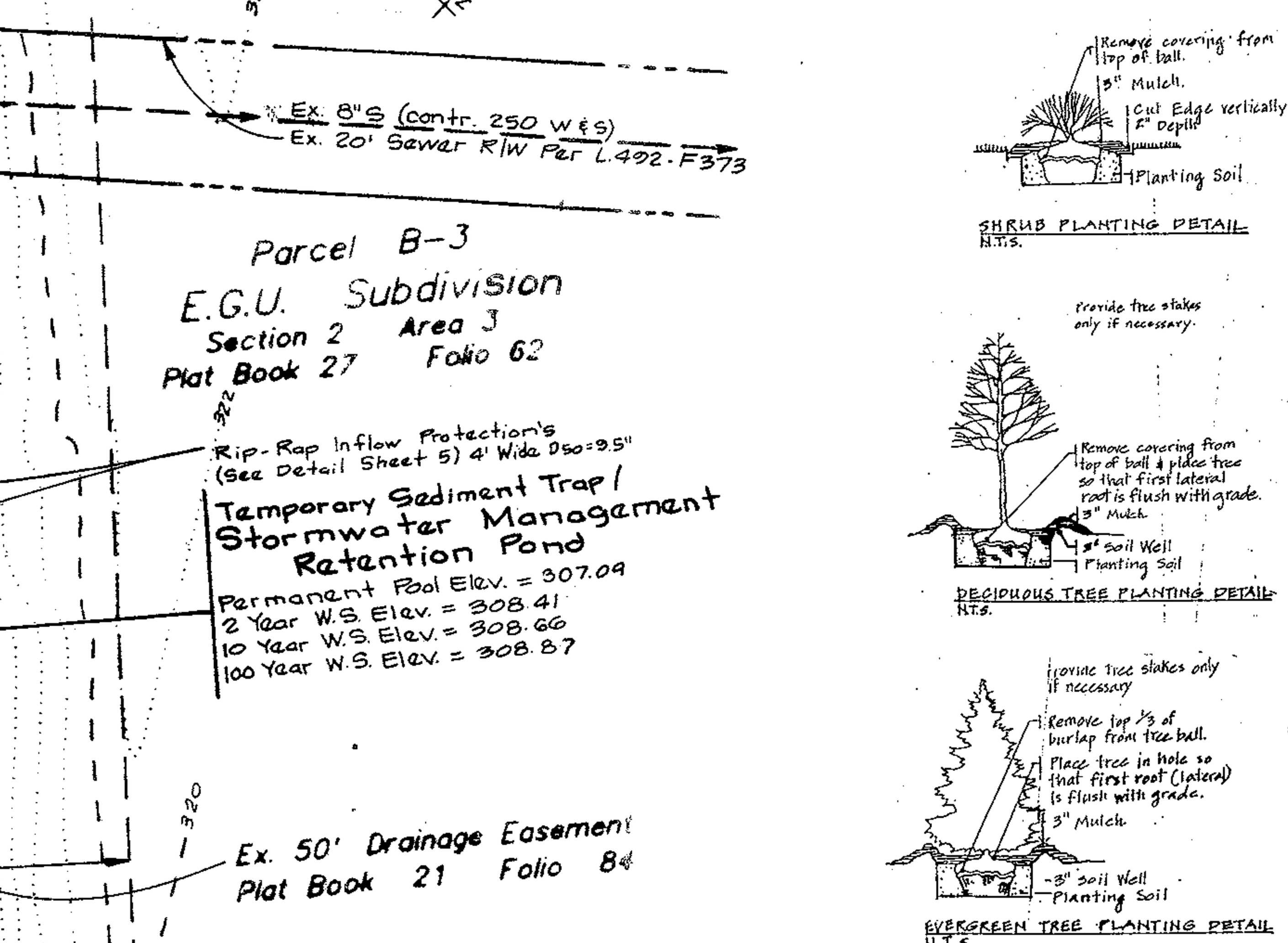
NOTE: ONLY THE PERIMETER ADJACENT TO GERWIG LANE IS REQ'D TO BE PLANTED. THE OTHER PERIMETERS ARE ADJACENT TO LOTS WITHIN THE SAME SUBDIVISION.

SCHEDULE A
PERIMETER LANDSCAPE EDGE

Category	Adjacent to Roadways	Adjacent to Perimeter Properties
Landscape Type	E	C
Linear Feet of Roadway Frontage/Perimeter	504 L.F. - 24 L.F. (Entrance Width) = 480	*612 L.F.
Credit for Existing Vegetation (Yes, No, Linear Feet) (Describe below if needed)	NO	NO
Credit for Wall, Fence or Berm (Yes, No, Linear Feet) (Describe below if needed)	NO	NO
Number of Plants Required Shade Trees Evergreen Trees Shrubs	1:40 / 12 Trees 1:4 / 120 Shrubs	None
Number of Plants Provided Shade Trees Evergreen Trees Other Trees (2:1 substitution) Shrubs (10:1 substitution) (Describe plant substitution credits below if needed)	22 Shade trees 20 Shrubs (10 Shade trees substituted for 100 shrubs)	None

Comments * Perimeter landscape edges are not required between subject Parcel 'C' and adjacent Parcels 'B' and 'B-3' since all are within the same subdivision (ie E.G.U. Subdivision)

Note: Complex projects may require expansion of the schedule to accommodate multiple land uses on-site or on adjacent properties.



PLANTING SCHEDULE

NO.	KEY	BOTANICAL / COMMON NAME	SIZE	COMMENT	REMARKS
Deciduous Trees					
10	AR	Acer rubrum Red Maple	21/2" - 3" cal.	B&B	
9	PO	Quercus palustris Pin Oak	21/2" - 3" cal.	B&B	
6	WO	Quercus phellos Willow Oak	21/2" - 3" cal.	B&B	
25	TOTAL				
Evergreens					
8	PS	Pinus strobus White Pine	6'-8'	B & B	Plant 10' OC
8	TOTAL				
Shrubs					
10	JH	juniperus horizontalis 'bluerug' Bluerug juniper	15"-18"	Container	Plant 18" OC
10	AZ	Azalea 'Exbury'/Exbury Azalea	18"-24"	Container	Plant 18" OC
20	TOTAL				

DEVELOPER'S/ BUILDER'S CERTIFICATE

I/ We certify that the landscaping shown on this plan will be done according to the plan, **Section 16.124** of the Howard County Code and the Howard County Landscape Manual. I/We further certify that upon completion a Certification of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

Name [signature] Date 2/23/99

LANDSCAPE NOTES

1.) This plan has been prepared in accordance with the provisions of section 16.124 of *The Howard County Subdivision and Land Development Regulations* and *The Howard County Landscape Manual.*

2.) Financial surety for the required landscaping shown on this plan has been posted as part of the Developers Agreement in the amount of $ 9,300.00

3.) The landscape edges shall be maintained by the property owner.

4.) This plan is for landscape purposes only.

5.) Seeding per notes on sheet 5 of 8.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[signature] CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/5/99

[signature] CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/8/99

[signature] DIRECTOR — DATE 3/11/99

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

NATURAL RESOURCE CONSERVATION SERVICE — DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROISION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATIN DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE

ENGINEER'S CERTIFICATE

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[signature] SIGNATURE OF ENGINEER — DATE 2/24/99

DEVELOPER'S CERTIFICATE

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[signature] SIGNATURE OF DEVELOPER — DATE 2/23/99

STATE OF MARYLAND — BRUCE D. BURTON — No. 19184 — REGISTERED PROFESSIONAL ENGINEER — 2/24/99

SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING

Number of Parking Spaces	58
Number of Trees Required	1 Shade Tree : 20 Spaces = 3
Number of Trees Provided Shade Trees Other Trees (2:1 substitution)	3 Shade Trees

NOTE: THE AMENDED *LANDSCAPE MANUAL*, DATED MARCH 2, 1998 STATES THAT SWM PERIMETER LANDSCAPING IS REQUIRED IN ALL ZONING DISTRICTS EXCEPT M-1 AND M-2. THIS SITE IS ZONED BOTH M-1 AND NEW TOWN-EMPLOYMENT CENTER. THE INTENT IS TO DEVELOP THE ENTIRE SITE AS AN AUTOMOTIVE SERVICE FACILITY, AN M-1 TYPE USE. THE CHARACTER OF THE EXISTING AREA IS ENTIRELY COMMERCIAL/ INDUSTRIAL. THEREFORE IT WOULD NOT BE IN KEEPING WITH THE CHARACTER OF THE AREA TO PROVIDE STORMWATER MANAGEMENT PERIMETER LANDSCAPING. THEREFORE, STORMWATER MANAGEMENT PERIMETER PLANTINGS HAVE NOT BEEN PROVIDED.

APPROVED
PLANNING BOARD
of HOWARD COUNTY

DATE 1/27/99

REVISIONS

No.	Date	By	Description
1	4-28	SMC	Added Note: See Sht 2of9 For Correct H.C. Parking, Configuration & Grades
2	2/01		Amended parking lot island, relocated (1) PO to near I-4.

SUBDIVISION NAME		SECTION/AREA		PARCEL/NO.	
E.G.U. Subdivsion		2/8		C	
PLAT NO.	BLOCK NO.	ZONE	TAX MAP NO.	ELECTION DISTRICT	CENSUS TRACT
8163	9	M-1&NT	42	6	6067.03
WATER CODE			SEWER CODE		
E06			5241000		

"AS-BUILT" 12-14-00

STATE OF MARYLAND — SAMUEL W. CORRIE — No. 12433 — REGISTERED PROFESSIONAL ENGINEER

LDE, INC.
9250 Rumsey Road, Suite 106, Columbia, MD 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED SDH	Landscape Plan British And American Auto Care, Inc. Columbia E.G.U. Subdivision Parcel "C"	SCALE 1" = 20'
DRAWN SMC		DRAWING 9 of 9
CHECKED B.D.B.	Tax Map 42, P/O Parcel 386, Grid 9 6th Election District Howard County, Maryland	JOB NO. 98-010
DATE Rev. 7/98 4/98 Rev 10/98	Owner/Developer: Brian England, British And American Auto Care, Inc, 9235 Berger Road, Columbia, Maryland, (410) 381-2700	FILE NO. SDP-98-132

SDP98-132