

**GENERAL CONSTRUCTION NOTES**

- All construction shall be in accordance with the latest Standards and Specifications of Howard County, MSHA Standards and Specifications and the MDOT SHA Standard Sign Book.
- The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 313-1880 at least five (5) working days prior to the start of work.
- The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work being done.
- 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 sign shall be in place prior to the placement of any asphalt.
- All plan dimensions are to face of curb unless otherwise noted.
- The existing topography shown hereon is based on 2' contour interval aerial survey prepared by Photo Science, dated Feb. 12, 1994 and supplemental field run topography by KCW Engineering Technologies, Inc. in Jan. 2000.
- Horizontal and Vertical datum shown hereon is based on the following NAD'83 Howard County Control Stations.  
Monument Sta. 1012 N 601060.177, E 1345336.758, EL. 445.58  
Monument Sta. 16E1 N 593250.932, E 1340192.710, EL. 509.92
- Water is public. Howard County Contract 24-3850-D.
- Sewer is public. Howard County Contract 20-3692-D.
- Existing utilities shown on these plans are base upon observable field information, previous construction drawings for the site, the best available information from the utility companies and Howard County. The Owner, Developer and Engineer do not warrant or guarantee the completeness or the correctness of this existing utility information. The Contractor shall verify all such information to his own satisfaction.
- Contractor shall take all necessary precautions to support and protect all existing utilities when working adjacent to or crossing existing utilities. Any damage to existing facilities shall be repaired or replaced at Contractor's expense.
- "Full Trench Compaction" shall be used for all utility construction.
- Contractor shall adhere to all Federal, State and County health, safety, and environmental regulations.
- All excess excavation and other unsuitable material shall be removed from this site to an area with an approved Sediment Control plan and permit.
- No clearing, grading or construction is permitted within the required wetlands, stream or their buffers and forest conservation easement areas.
- Sediment Control: The sediment control devices placed during mass grading of this site under Grading Permit and Plan shall remain in place during this site development.
- Final grading shall be accomplished in accordance with the grades specified on Grading Plan C-103.
- Water Service: Prop. 8" water service from Warwick Way to fire hydrant tee shall be constructed in accordance with Contract #24-3850-D and approved plans. 6" detector check meter for fire service and 1-1/2" domestic meter shall be placed inside each building.
- Sanitary Service: Prop. 6" sanitary connection from existing sanitary main to limits of Ex. 20' utility easement shall be constructed in accordance with Contract #24-3850-D and approved plans.
- Stormwater management will be provided using a privately owned and maintained underground pipe storage facility and Stormceptors for water quality.
- There is no floodplain on this site.
- There are no wetlands on this site.
- The traffic study for this project was prepared by The Traffic Group, dated April 3, 2000 and was approved on May 2, 2000.
- The proposed construction of all retaining walls shall be performed under the observation of a Maryland Registered Professional Engineer. The foundation soil shall be examined by the soils engineer to assure that the actual foundation soil strength meets or exceeds design strength.
- The Developer will post a fee in the amount of \$60.00 in lieu of providing striping on Warwick Way.

**SITE ANALYSIS DATA CHART**

TOTAL PROJECT AREA	176,000S.F. / 4.04 AC.
AREA OF PLAN SUBMISSION	176,000S.F. / 4.04 AC.
LIMIT OF DISTURBED AREA	176,000S.F. / 4.04 AC.
PRESENT ZONING	PEC
PROPOSED USES FOR THE SITE AND STRUCTURES	OFFICE BUILDING
FLOOR SPACE ON EACH LEVEL OF BUILDING PER USE	BUILDING 1
	2nd FLOOR 12,200 S.F. OFFICE SPACE
	1st FLOOR 12,200 S.F. OFFICE SPACE
	24,400 S.F.
	BASEMENT 4,800 S.F. MECHANICAL AND STORAGE
	BUILDING 2
	3rd FLOOR 8,000 S.F. OFFICE SPACE
	2nd FLOOR 8,000 S.F. OFFICE SPACE
	1st FLOOR 8,000 S.F. OFFICE SPACE
	24,000 S.F.
MAXIMUM NUMBER OF EMPLOYEES	---
NUMBER OF PARKING SPACES REQUIRED BY H.C.Z.R.	140 PARKING SPACES
NUMBER OF PARKING SPACES PROVIDED ON SITE	186 PARKING SPACES (INCLUDING 4 H/C SPACES)
BUILDING COVERAGE OF SITE	20,000 S.F. (11.4%)
PARKING, DRIVES AND WALKS	80,200 S.F. (45.6%)
LANDSCAPE AREA	75,800 S.F. (43.1%)
APPLICABLE DPZ FILE REFERENCES	F-97-180 GP-00-142 F-87-82 F-00-133

# HARKINS OFFICE BUILDINGS

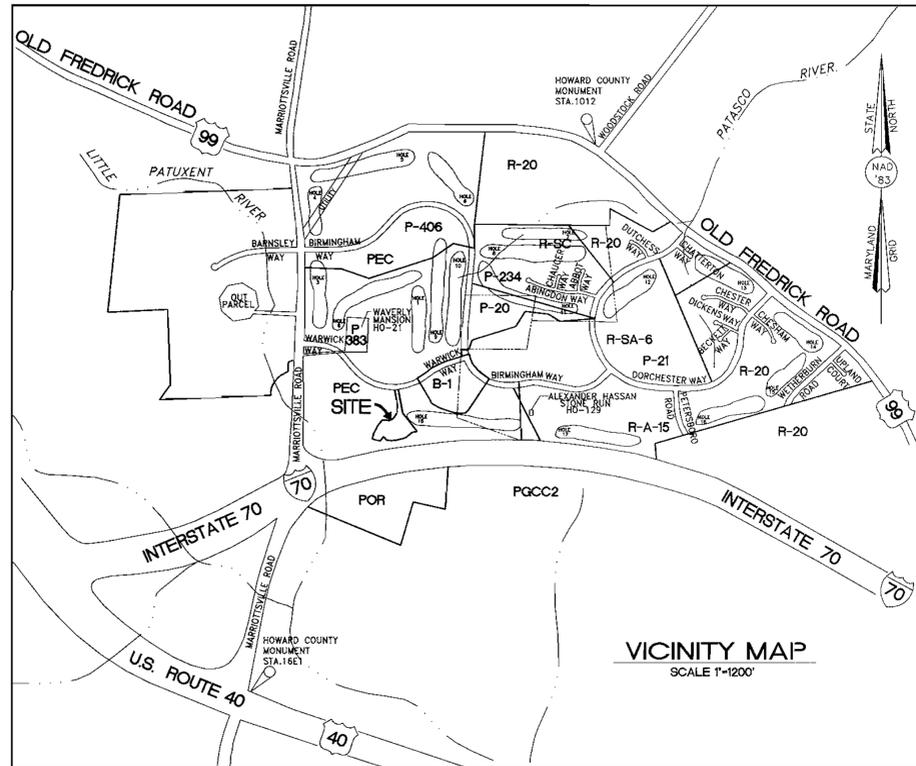
## "GTW's WAVERLY WOODS "

### SECTION 7, PARCEL 'C'

#### #2201 Warwick Way

## SITE DEVELOPMENT PLANS

# HOWARD COUNTY, MARYLAND



**LIST OF DRAWINGS**

- C-101 TITLE SHEET
- C-102 SITE DEVELOPMENT PLAN
- C-103 GRADING PLAN
- C-104 UTILITY PROFILES I
- C-105 UTILITY PROFILES II
- C-106 CONSTRUCTION DETAILS
- C-107 EX. CONDITIONS SWM D.A. MAPS
- C-108 DEV. CONDITIONS SWM & STORM DRAIN D.A. MAP
- C-109 STORMWATER MANAGEMENT DETAILS
- C-110 WATER QUALITY MANAGEMENT DETAILS
- C-III LANDSCAPE PLAN
- C-112 SEDIMENT CONTROL PLAN
- C-113 SEDIMENT CONTROL DETAILS

**UTILITY SCOPE OF WORK**

Contractor shall furnish all materials and labor necessary for abandonment, construction and modification to storm drains, water service and sanitary sewer. Utility contractor shall obtain all necessary permits from Howard County.

**SANITARY SEWER**

- P.V.C. (Poly-Vinyl Chloride) pipe SCH 40.
- Clean-out: P.V.C. per Building Code criteria

**WATER SERVICE**

- 6" and 8" diameter water pipe shall be Class 52 Ductile Iron Pipe (D.I.P.) and appurtenances in accordance with Howard County specifications.

**STORM DRAINS**

- 6" and 10" diameter drains and fittings shall be Poly-Vinyl Chloride (PVC) pipe, Schedule 40, and fittings with solvent-cement joints per ASTM D2665.
- 12", 15", 18", 24", 27" and 30" diameter storm drain pipes and fittings shall be high density polyethylene (H.D.P.E.) smooth wall interior pipe per ASTM D-3550 and A.A.S.H.T.O. M-294.
- 48" 16 Gauge Aluminized Steel Type 2 with 2-2/3 x 1/2 corrugations manufactured in accordance with AASHTO M-274 and M-36.
- Inlets: Types "D" Yard Inlet per Howard County detail SD-4.39  
Double "S" Combination Inlet per Howard County detail SD-4.34.  
Double "S" Inlet per detail sheet 5.  
Double "S" Combination Inlet per detail sheet 5.
- Manholes: Standard Precast Manhole per Howard County detail G-5.11.  
Standard Precast Manhole per Howard County detail G-5.12.  
8' Dia. Standard Precast Manhole per detail sheet 8.
- All storm drains shall be constructed per the profiles on sheet 4.

**CONTRACTOR:**  
Harkins Builders, Inc.  
12301 Old Columbia Pike  
Silver Spring, Maryland 20904  
Attn: Jason Cooke  
Tele: (410) 792-0862

**OWNER:**  
Waverly Woods Development Corporation  
c/o Land Design and Development, Inc.  
8000 Main Street  
Ellicott City, Maryland 21043

**REVISIONS**

NO.	DESCRIPTION	DATE

KCW J.O.: 991068  
SCALE: No Scale  
DESIGNED: K.C.A.  
DRAWN: K.C.A./K.M.W.  
CHECKED: D.L.K.  
DATE: MAY 4, 2000  
DRAWING NO.  
Shr. 1 of 13 C-101

**GENERAL NOTES**

- OWNER:** Waverly Woods Development Corporation  
c/o Land Design and Development, Inc.  
8000 Main Street  
Ellicott City, Maryland 21043
- DEVELOPER:** Harkins Builders, Inc.  
12301 Old Columbia Pike  
Silver Spring, Maryland 20904  
Attn: Jason Cooke
- PROPERTY LOCATION:** "GTW's WAVERLY WOODS "  
SECTION 7, PARCEL 'C'  
#2201 Warwick Way  
Howard County, Maryland
- TAX ACCOUNT NO.** 324393  
**ELECTION DISTRICT:** 03  
**DEED:** 4200-472  
**TAX MAP:** 16, Grid 10, Parcel 424  
**AREA:** 175,982 sf = 4.040 ac.
- ZONING:** PEC, per Zoning Map No. 16
- EXISTING LAND USE:** Vacant, Unimproved.
- PROPOSED LAND USE:** Office Buildings for Harkins Builders, Inc.
- BUILDING #1 AREA:** Office Use 12,200 s.f. X 2 = 24,400s.f.  
**BUILDING #1 HEIGHT:** 2-Stories = 38 ft.  
**BUILDING #2 AREA:** Office Use 8,000 s.f. X 3 = 24,000s.f.  
**BUILDING #2 HEIGHT:** 3-Stories = 49 ft.
- USE SETBACKS FROM PUBLIC STREET R/W:**  
Building Minimum 30 ft Proposed 500 ft  
Parking 30 ft 359 ft
- PARKING:** General Office 48,400sf x 3.3/1,000 = 160 p.s.  
Total Required = 160 p.s.  
Total Provided = 186 p.s.  
Parking shall be permanently striped as shown.
- UTILITIES:** Public utilities exist in Warwick Way and in Public Utility Easement through site.  
Sanitary Sewer Contr.No. 20-3692-D  
Water Main Contr.No. 24-3600-D  
Storm Drains Plan F-97-180  
Gas, Electric, Telephone
- STORMWATER MANAGEMENT:** SWM and WQM provided by underground private stormwater management system per these plans. The 10-year and 2-year design discharges of Stormwater from this development shall be no greater than that which would have occurred from the site prior to development.
- LANDSCAPING:** This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard County Code and the Landscape Manual. Financial surety for the required landscaping has been posted as part of the DPW Developer's Agreement in the amount of \$7,800.
- FOREST CONSERVATION:** This project complies with the requirements of Section 16.1200 of the Howard County Code for Forest Conservation by the fact that this Parcel C is an approved lot within the subdivision of GTW's Waverly Woods for which Forest Conservation has been approved.
- LIGHTING:** All exterior lighting shall conform to Zoning Regulations Section 13.4.
- ADEQUATE PUBLIC FACILITIES:** Proposed project shall comply with APF. This property is an approved lot within the subdivision of GTW's Waverly Woods for which a Traffic Report was approved in November 1993.
- THERE ARE NO KNOWN** historic buildings, archaeological sites, endangered species habitats, cemeteries, wells, or septic systems located on this property. There are no wetlands, streams, flood plains, or steep slopes located on this property. Stream buffer and wetland buffer shown hereon area based upon site analysis by Exploration Research, Inc., Robert C. Shumaker, Jr. dated December 1999.
- Stream buffer and wetland buffer shown hereon are based upon data prepared by Exploration Research, Inc., dated December 1999.

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

*Carol Simmons* 5/24/00  
U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE DATE

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

APPROVED: *John R. Robertson* 5/24/00  
HOWARD SOIL CONSERVATION DISTRICT

ADDRESS CHART	
Parcel #	#2201 Warwick Way
Street Address	Howard County, MD 21104
PERMIT INFORMATION CHART	
Subdivision Name	GTW's Waverly Woods
Block #	N/A
Zone	PEC
Water Code	H05
Section	7
Plat	13433 & 13434
Parcel #	424
Grid	10
Lot	4200/472
Tax Map	16
Election District	3rd
Census Tract	6030
Sewer Code	5992000

**TITLE SHEET**

**HARKINS OFFICE BUILDINGS**

**"GTW's WAVERLY WOODS "**

**SECTION 7, PARCEL 'C'**

**#2201 Warwick Way**

HOWARD COUNTY, MARYLAND ELECTION DISTRICT - 3

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Scott Batts* 6/8/00  
DIRECTOR DATE

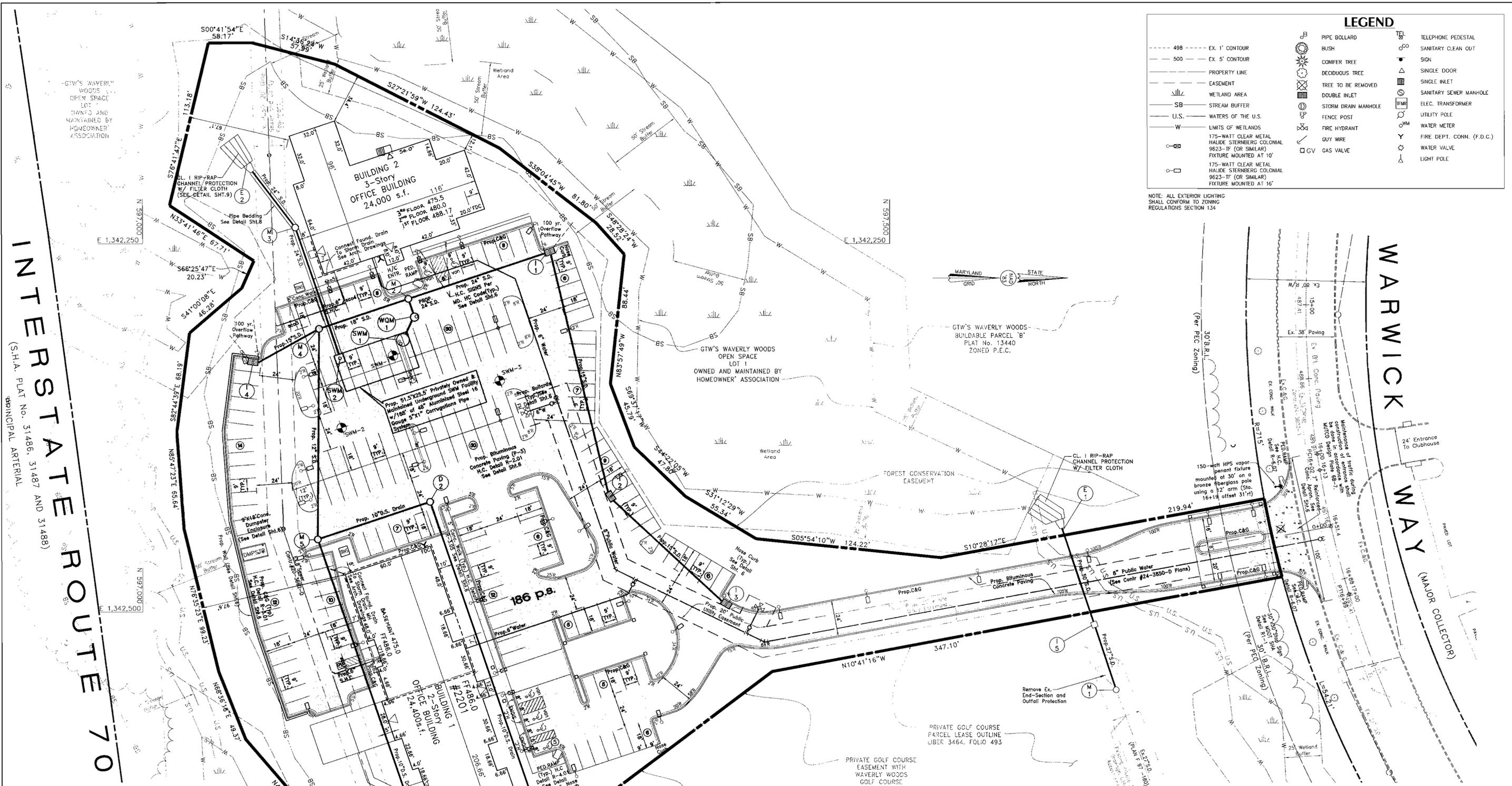
*Indy Hanada* 6/8/00  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*John DeWitt* 5/25/00  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**KCW**  
ENGINEERING TECHNOLOGIES

KCW Engineering Technologies, Inc.  
3104 Timanus Lane, Suite 101  
Baltimore, MD 21244  
(410) 281-0033  
Fax (410) 281-1065  
www.KCW-ET.com





**LEGEND**

--- 498 ---	EX. 1' CONTOUR	⊕	PIPE BOLLARD	⊕	TELEPHONE PEDESTAL
--- 500 ---	EX. 5' CONTOUR	⊕	BUSH	⊕	SANITARY CLEAN OUT
---	PROPERTY LINE	⊕	CONIFER TREE	⊕	SIGN
---	EASEMENT	⊕	DECIDUOUS TREE	⊕	SINGLE DOOR
---	WETLAND AREA	⊕	TREE TO BE REMOVED	⊕	SINGLE INLET
SB	STREAM BUFFER	⊕	DOUBLE INLET	⊕	SANITARY SEWER MANHOLE
---	U.S. WATERS OF THE U.S.	⊕	STORM DRAIN MANHOLE	⊕	ELEC. TRANSFORMER
W	LIMITS OF WETLANDS	⊕	FIRE HYDRANT	⊕	UTILITY POLE
	175-WATT CLEAR METAL HALIDE STERNBERG COLONIAL 9623-TF (OR SIMILAR) FIXTURE MOUNTED AT 10'	⊕	GUY WIRE	⊕	WATER METER
	175-WATT CLEAR METAL HALIDE STERNBERG COLONIAL 9623-TF (OR SIMILAR) FIXTURE MOUNTED AT 16'	⊕	CV	⊕	FIRE DEPT. CONN. (F.D.C.)
		⊕		⊕	WATER VALVE
		⊕		⊕	LIGHT POLE

NOTE: ALL EXTERIOR LIGHTING SHALL CONFORM TO ZONING REGULATIONS SECTION 134

INTERSTATE ROUTE 70  
 (S.H.A. PLAT No. 31486, 31487 AND 31488)  
 PRINCIPAL ARTERIAL

WARWICK WAY  
 (MAJOR COLLECTOR)

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

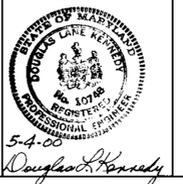
*Jason Cooke* 4/8/20  
 DIRECTOR DATE

*Cindy Hamilton* 6/5/20  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Michael Damann* 5/25/20  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

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 Silver Spring, Maryland 20904  
 Attn: Jason Cooke  
 Tele: (410) 792-0862

**OWNER:**  
 Waverly Woods Development Corporation  
 c/o Land Design and Development, Inc.  
 8000 Main Street  
 Ellicott City, Maryland 21043

**REVISIONS**

NO.	DESCRIPTION	DATE

KCW J.O.: 991068  
 SCALE: 1" = 30'  
 DESIGNED: D.L.K./K.C.A.  
 DRAWN: K.C.A.  
 CHECKED: D.L.K.  
 DATE: APRIL 24, 2000  
 DRAWING NO.  
 Sht. 2 of 13 C-102

**ADDRESS CHART**

Parcel #	Street Address	#2201 Warwick Way Howard County, MD 21104
Parcel 'C'		

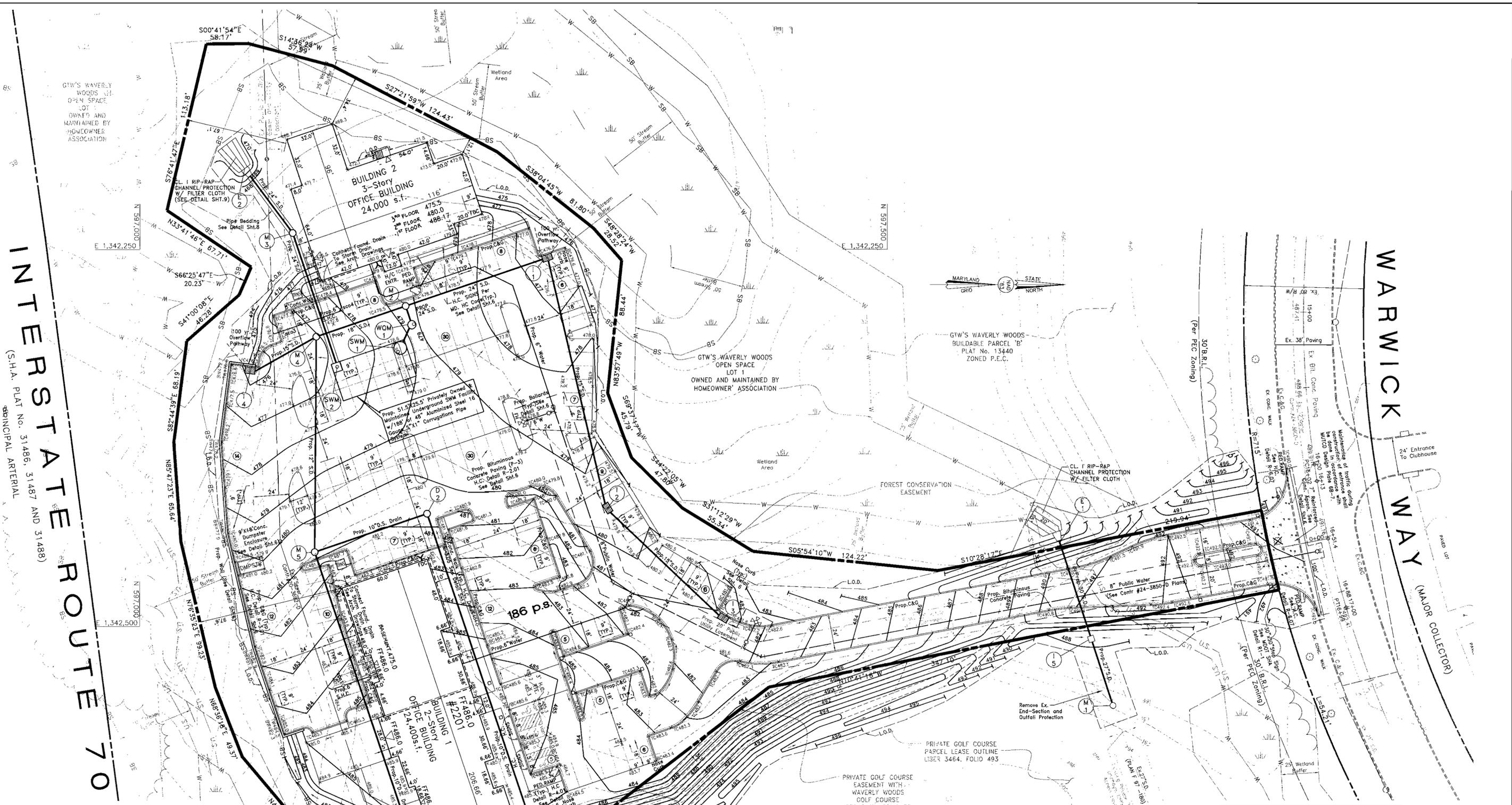
**PERMIT INFORMATION CHART**

Subdivision Name	GTW's Waverly Woods	Section	7	Plats	13433 & 13434	Parcel #	424	Grid	10
U/F	4200/472	Block #	N/A	Zoning	PEC	Tax Map	16	Election District	3rd
Water Code:	H05	Sewer Code:	5992000	Census Tract	6030				

**SITE DEVELOPMENT PLAN**

**HARKINS OFFICE BUILDINGS**  
**"GTW'S WAVERLY WOODS"**  
**SECTION 7, PARCEL 'C'**  
**#2201 WARWICK WAY**

HOWARD COUNTY, MARYLAND      ELECTION DISTRICT - 3



INTERSTATE ROUTE 70  
 (S.H.A. PLAT No. 31486, 31487 AND 31488)  
 PRINCIPAL ARTERIAL

WARWICK WAY  
 (MAJOR COLLECTOR)

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 6/18/20  
 DIRECTOR DATE  
 6/18/20  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
 5/15/20  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE


 KCW Engineering Technologies, Inc.  
 3104 Timanus Lane, Suite 101  
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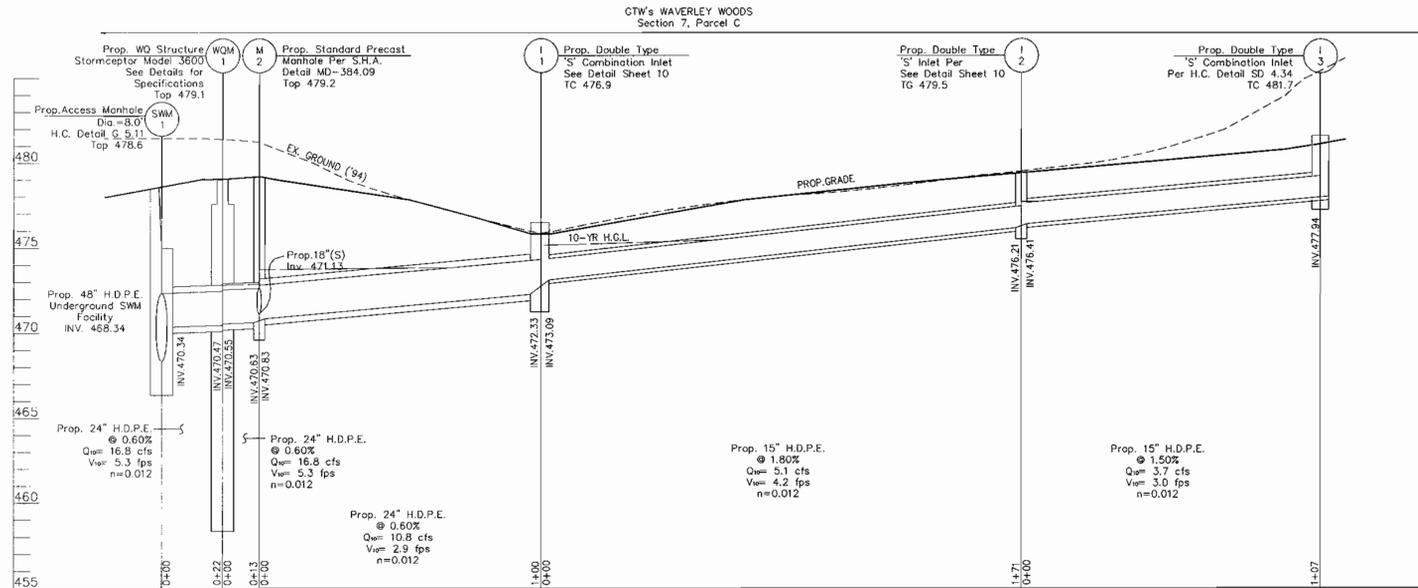
KCW J.O.: 991068  
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 DESIGNED: D.L.K.  
 DRAWN: K.M.W.  
 CHECKED: D.L.K.  
 DATE: MAY 4, 2000  
 DRAWING NO.  
**Shr. 3 of 13 C-103**

ADDRESS CHART			
Parcel #	Street Address	Section	Plots
Parcel 'C'	#2201 Warwick Way Howard County, MD 21104	7	13433 & 13434

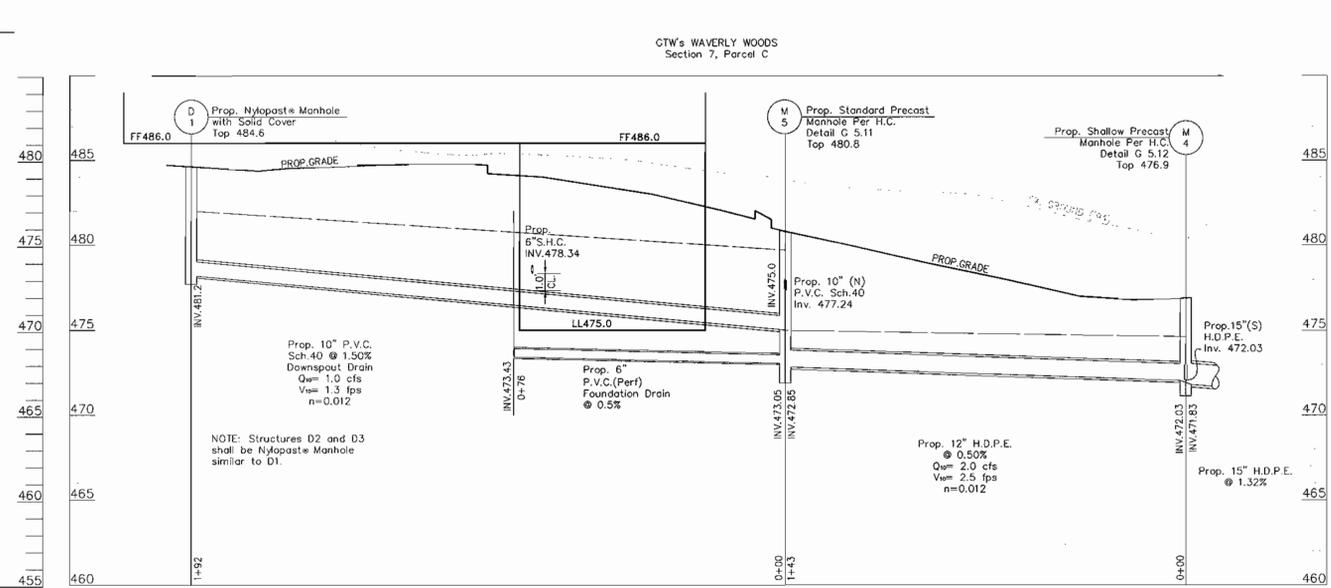
PERMIT INFORMATION CHART			
Subdivision Name	PCAT	Block #	Parcel #
GTW's Waverly Woods	142.71	7	424
U/F	4200/472	N/A	6030

Water Code	Sewer Code
H05	5992000

**GRADING PLAN**  
**HARKINS OFFICE BUILDINGS**  
**"GTW's WAVERLY WOODS"**  
**SECTION 7, PARCEL 'C'**  
**#2201 WARWICK WAY**  
 HOWARD COUNTY, MARYLAND ELECTION DISTRICT - 3  
 SDP 00-89



STORM DRAIN PROFILE Scale: 1"=30'H; 1"=5'V



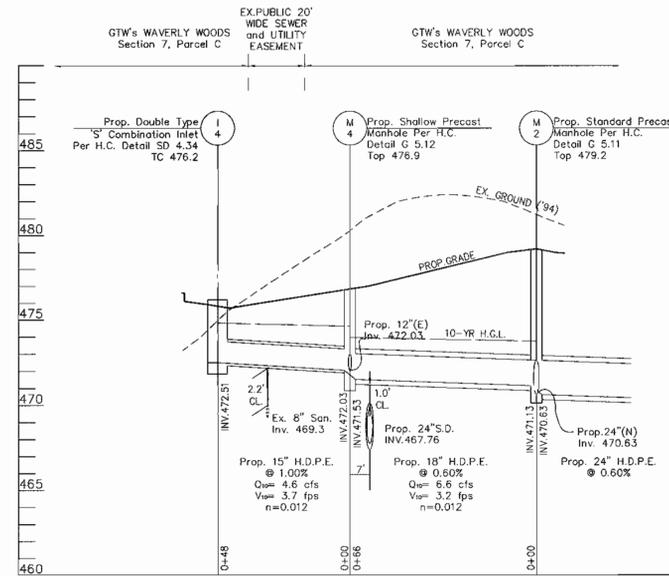
STORM DRAIN PROFILE Scale: 1"=30'H; 1"=5'V

STRUCTURE SCHEDULE

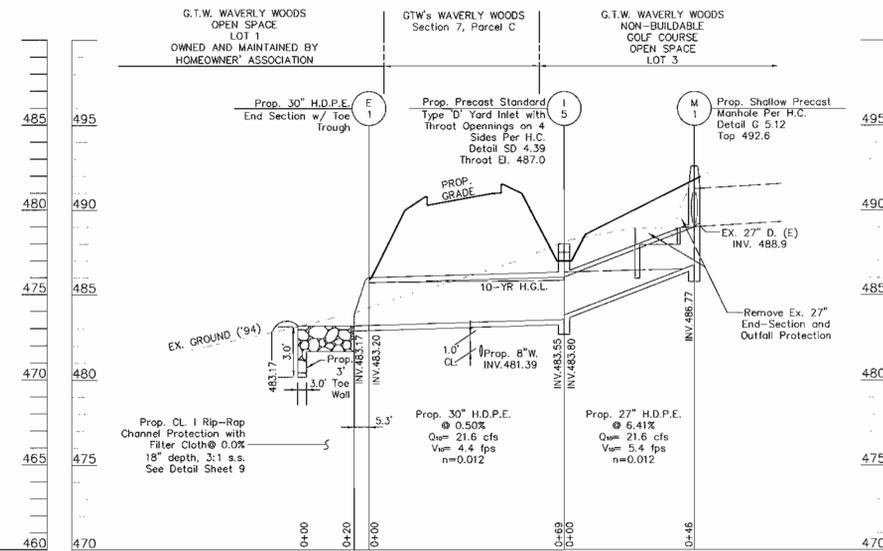
NO.	TYPE	TOP	INV. IN	INV. OUT	LOCATION	DETAIL	OWNERSHIP
I-1	DOUBLE "S" COMB.	TC 476.9	473.09	472.23	AS PER PLAN	SEE DETAIL SHEET 5	PRIVATE
I-2	DOUBLE "S"	TG 479.5	476.41	476.21	AS PER PLAN	SEE DETAIL SHEET 5	PRIVATE
I-3	DOUBLE "S" COMB.	TC 481.7	---	477.94	AS PER PLAN	SD 4.34	PRIVATE
I-4	DOUBLE "S" COMB.	TC 476.2	---	472.51	AS PER PLAN	SD 4.34	PRIVATE
I-5	TYPE "D" YARD	THROAT 487.0	483.80	483.55	AS PER PLAN	SD 4.39	PRIVATE
M-1	H.C. PRECAST	492.6	488.9	486.77	AS PER PLAN	G-5.12	PRIVATE
M-2	H.C. PRECAST	479.2	470.83	470.63	AS PER PLAN	G-5.11	PRIVATE
M-3	H.C. PRECAST	474.4	467.32	467.12	AS PER PLAN	G-5.11	PRIVATE
M-4	H.C. PRECAST	476.9	472.03	471.53	AS PER PLAN	G-5.12	PRIVATE
M-5	H.C. PRECAST	480.8	475.50	472.85	AS PER PLAN	G-5.11	PRIVATE
WQM-1	STC 3600	479.1	470.55	470.47	AS PER PLAN	SEE DETAIL SHEET 10	PRIVATE
SWM-1	ACCESS MANHOLE	478.6	470.34	468.34	AS PER PLAN	SEE DETAIL SHEET 8	PRIVATE
SWM-2	RISER	---	468.11	467.86	AS PER PLAN	SEE DETAIL SHEET 9	PRIVATE
D-1	DOWN SPOUT DRAIN	484.6	---	481.2	AS PER PLAN	NYLOPLAST OR APPROVED EQUAL	PRIVATE
D-2	DOWN SPOUT DRAIN	480.7	477.75	477.55	AS PER PLAN	NYLOPLAST OR APPROVED EQUAL	PRIVATE
D-3	DOWN SPOUT DRAIN	485.0	---	481.57	AS PER PLAN	NYLOPLAST OR APPROVED EQUAL	PRIVATE
E-1	END SECTION	---	483.20	483.17	AS PER PLAN	30" H.D.P.E.	PRIVATE
E-2	END SECTION	---	466.83	466.81	AS PER PLAN	24" H.D.P.E.	PRIVATE

PIPE SCHEDULE

PIPE MATERIAL	PIPE SIZE	PIPE LENGTH	OWERSHIP	REMARKS
POLYVINYL CHLORIDE (SCH 40)	6"	76 L.F.	PRIVATE	
POLYVINYL CHLORIDE (SCH 40)	10"	447 L.F.	PRIVATE	
H.D.P.E.	12"	143 L.F.	PRIVATE	
H.D.P.E.	15"	326 L.F.	PRIVATE	
H.D.P.E.	18"	66 L.F.	PRIVATE	
H.D.P.E.	24"	273 L.F.	PRIVATE	
H.D.P.E.	27"	46 L.F.	PRIVATE	
H.D.P.E.	30"	69 L.F.	PRIVATE	
ALUMINIZED STEEL	48"	221 L.F.	PRIVATE	SWM FACILITY



STORM DRAIN PROFILE Scale: 1"=30'H; 1"=5'V

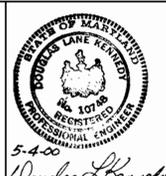


STORM DRAIN PROFILE Scale: 1"=30'H; 1"=5'V

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*John S. Smith* 6/16/00  
 DIRECTOR DATE  
*Cathy Harner* 6/16/00  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*William Damman* 5/25/00  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**KCW** Engineering Technologies, Inc.  
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NO.	DESCRIPTION	DATE

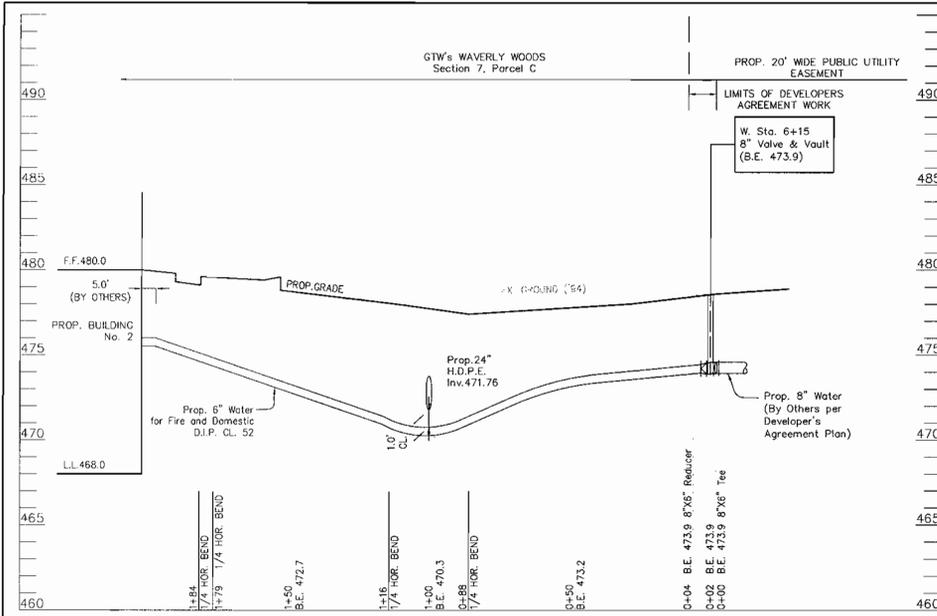
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 SCALE: 1" = 30'  
 DESIGNED: K.C.A.  
 DRAWN: K.C.A.  
 CHECKED: D.L.K.  
 DATE: MAY 4, 2000  
 DRAWING NO.  
**Sht. 4 of 13 C-104**

ADDRESS CHART			
Parcel #	Street Address	#2201 Warwick Way Howard County, MD 21104	
Parcel 'C'			
PERMIT INFORMATION CHART			
Subdivision Name	GTW's Waverly Woods	Plat #	1126 B TO 1127 I
L/T	4200/472	Block #	N/A
Water Code:	H05	Sever Code:	5992000

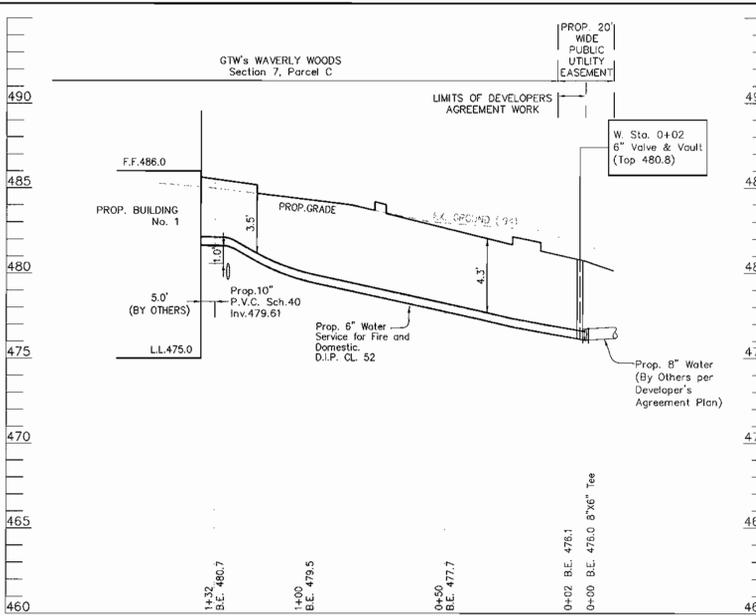
**UTILITY PROFILES I**

**HARKINS OFFICE BUILDINGS**  
**"GTW's WAVERLY WOODS"**  
**SECTION 7, PARCEL 'C'**  
**#2201 WARWICK WAY**

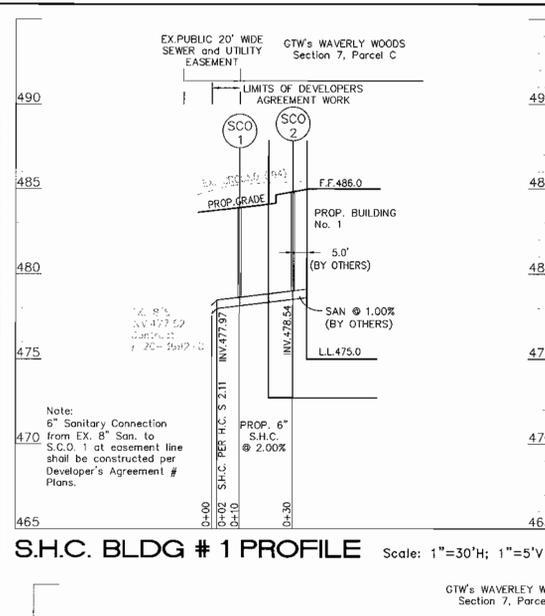
HOWARD COUNTY, MARYLAND ELECTION DISTRICT - 3



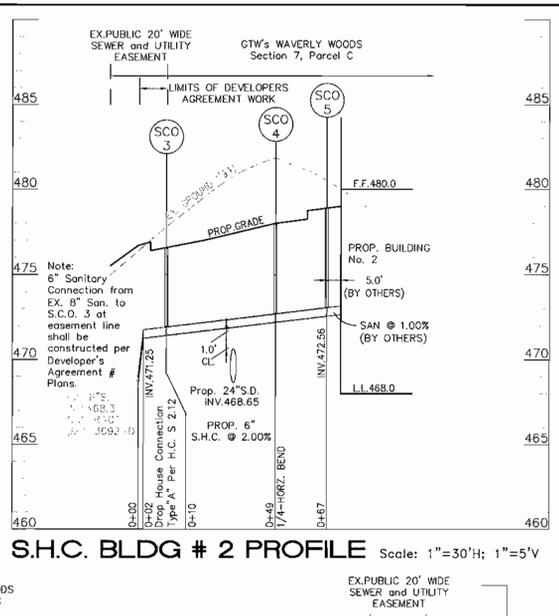
**WATER SERVICE BLDG # 2 - PROFILE** Scale: 1"=30'H; 1"=5'V



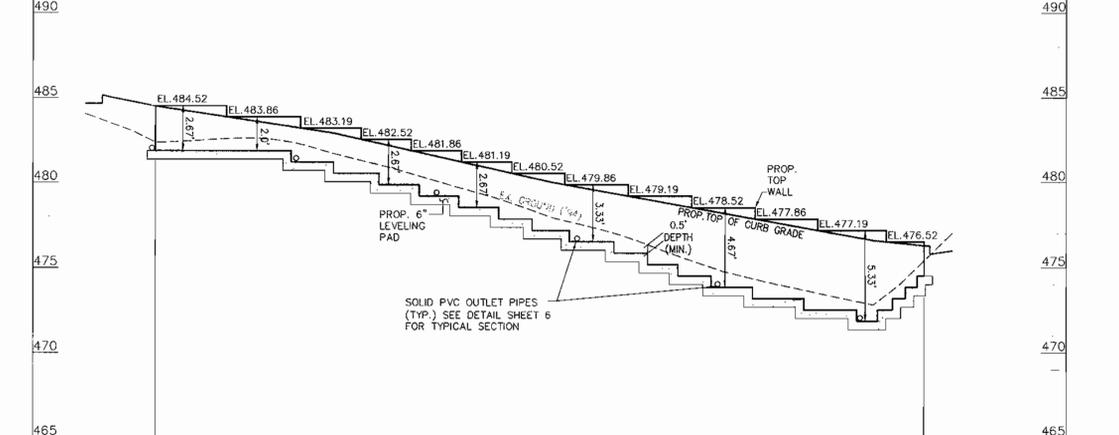
**WATER SERVICE to BLDG # 1 - PROFILE** Scale: 1"=30'H; 1"=5'V



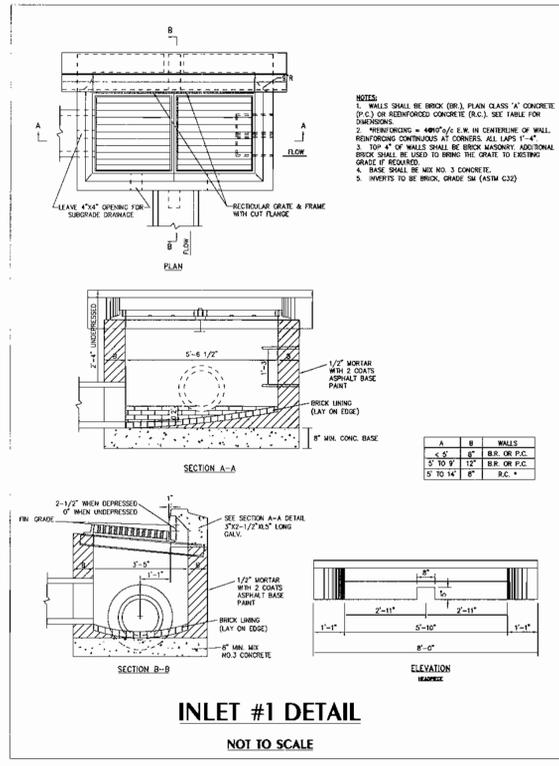
**S.H.C. BLDG # 1 PROFILE** Scale: 1"=30'H; 1"=5'V



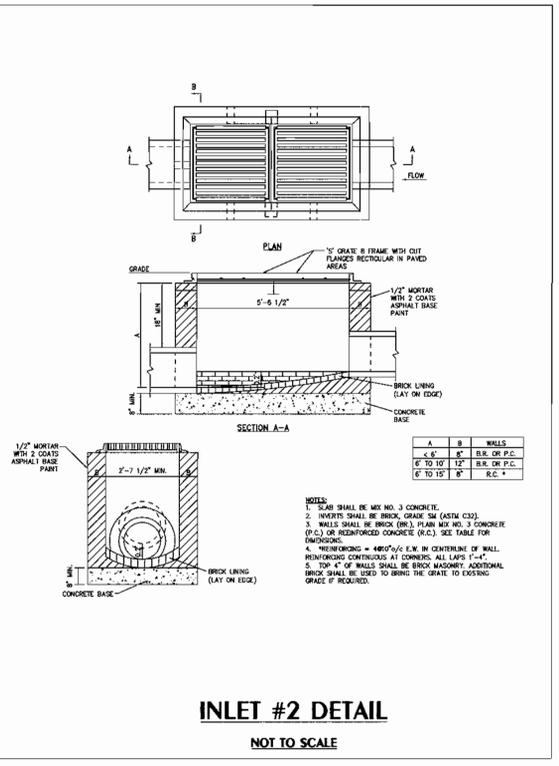
**S.H.C. BLDG # 2 PROFILE** Scale: 1"=30'H; 1"=5'V



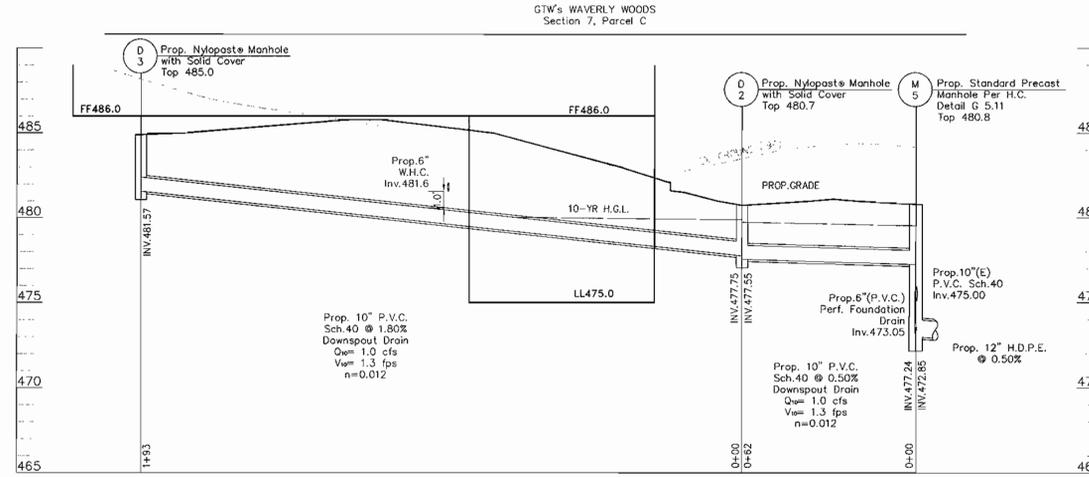
**"KEYSTONE" RETAINING WALL PROFILE** Scale: 1"=30'H; 1"=5'V



**INLET #1 DETAIL**  
NOT TO SCALE



**INLET #2 DETAIL**  
NOT TO SCALE



**STORM DRAIN PROFILE** Scale: 1"=30'H; 1"=5'V

ADDRESS CHART			
Parcel #	Street Address	#2201 Warwick Way Howard County, MD 21104	
Parcel 'C'			
PERMIT INFORMATION CHART			
Subdivision Name	Section	Plots	Parcel #
GTW's Waverly Woods	7	1,343.3 & 1,343.4	424
L/P	Block #	Zoning	Grid
4200/472	N/A	PEC	10
Water Code:	H05	Tax Map	16
		Election District	3rd
		Census Tract	6030
		Sewer Code:	5992000

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Howard County* 4/8/00 DATE

*Cindy Hamilton* 4/8/00 DATE  
CHIEF, DIVISION OF LAND DEVELOPMENT

*William Dammann* 5/25/00 DATE  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

**KCW Engineering Technologies, Inc.**  
3104 Timanus Lane, Suite 101  
Baltimore, MD 21244  
(410) 281-0033  
Fax (410) 281-1065  
www.KCW-ET.com

**REGISTERED PROFESSIONAL ENGINEER**  
No. 40108  
Professional Engineering  
5-4-00  
*Douglas L. Harkin*

**CONTRACTOR:**  
Harkins Builders, Inc.  
12301 Old Columbia Pike  
Silver Spring, Maryland 20904  
Attn: Jason Cooke  
Tele: (410) 792-0862

**OWNER:**  
Waverly Woods Development Corporation  
c/o Land Design and Development, Inc.  
8000 Main Street  
Ellicott City, Maryland 21043

REVISIONS		
NO.	DESCRIPTION	DATE

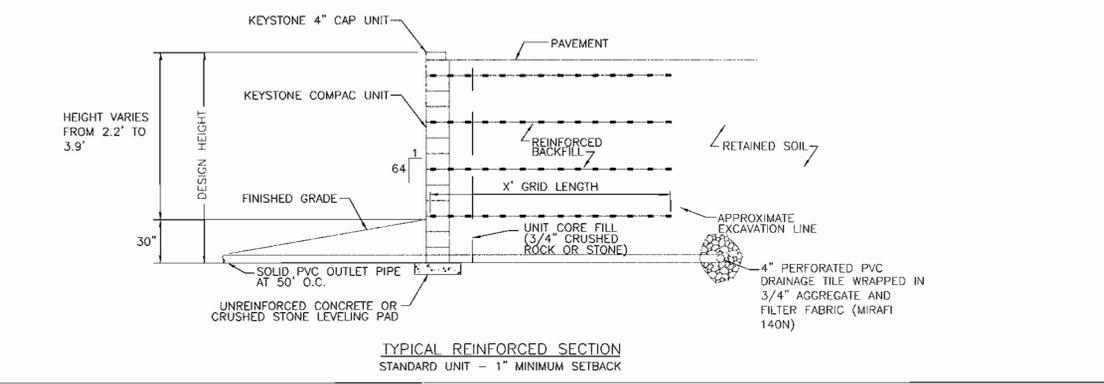
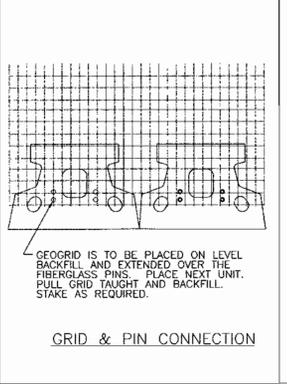
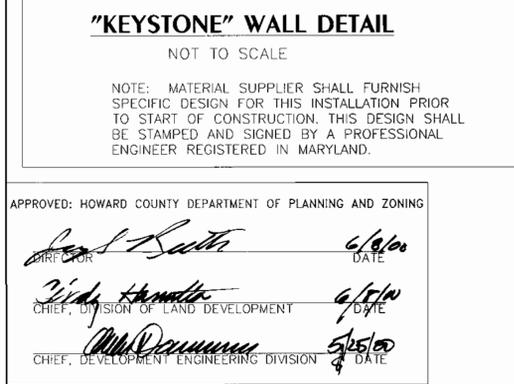
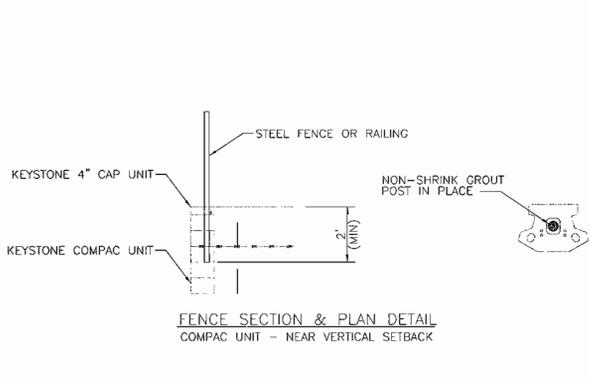
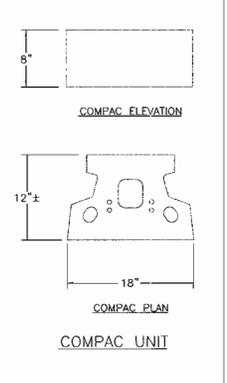
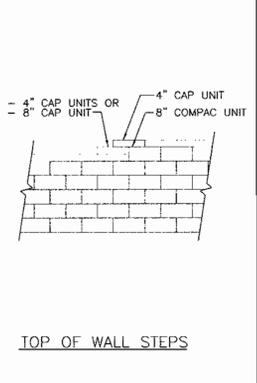
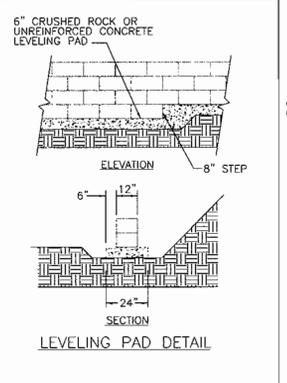
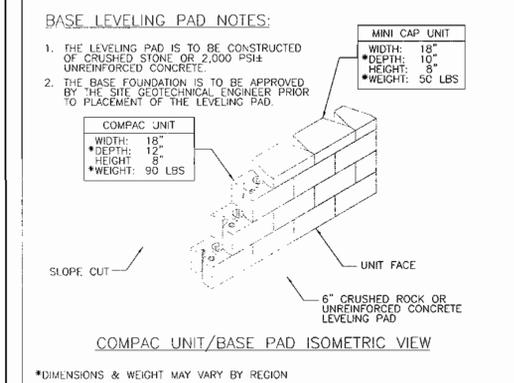
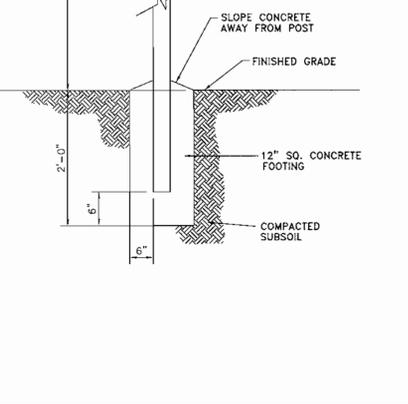
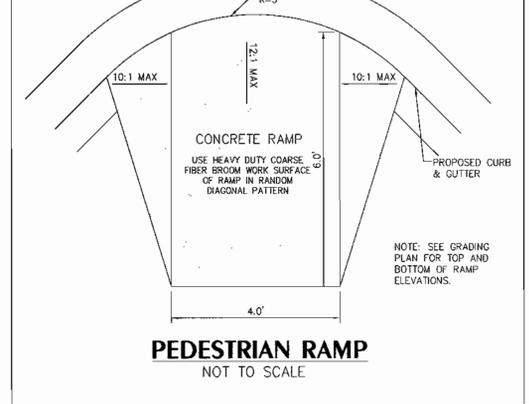
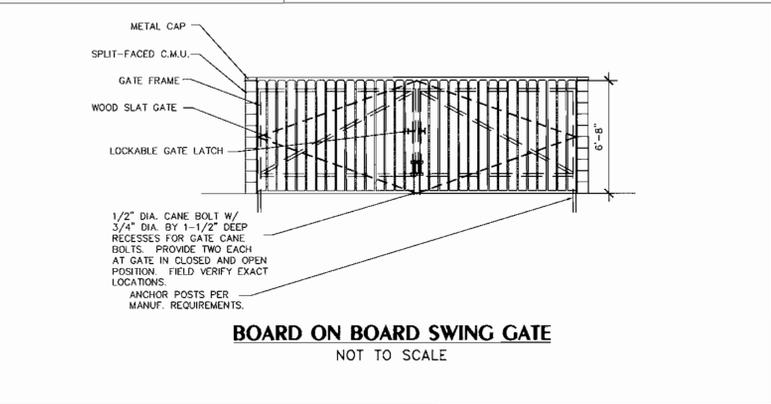
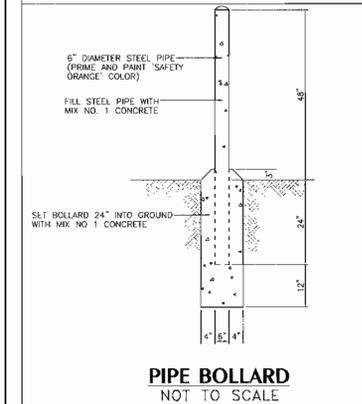
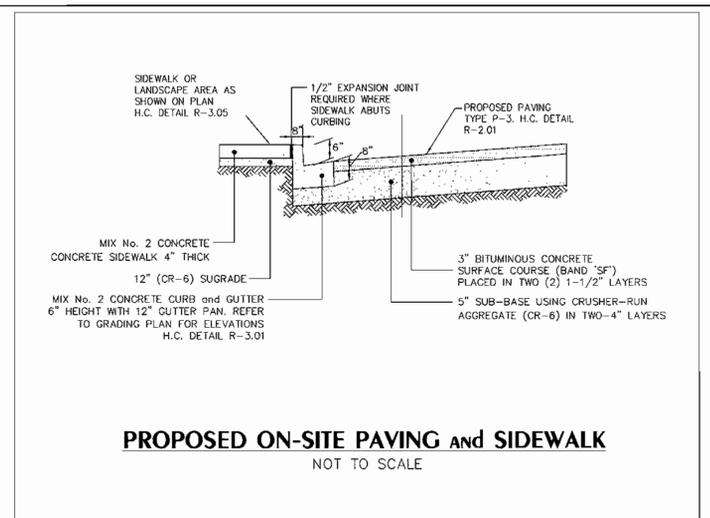
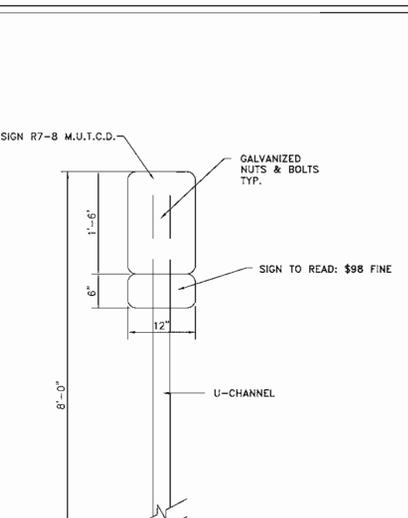
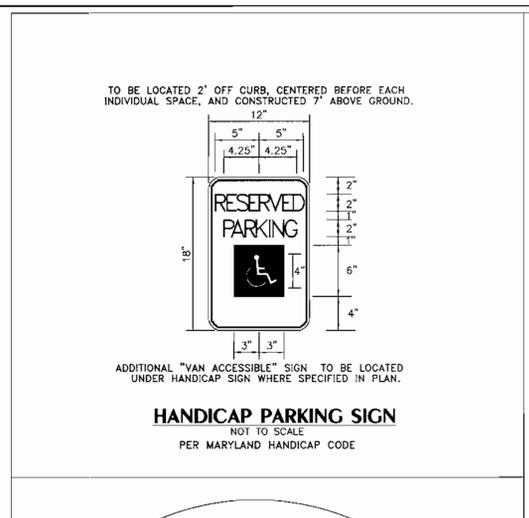
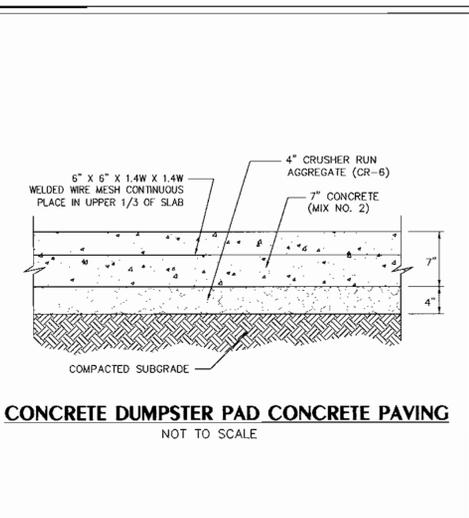
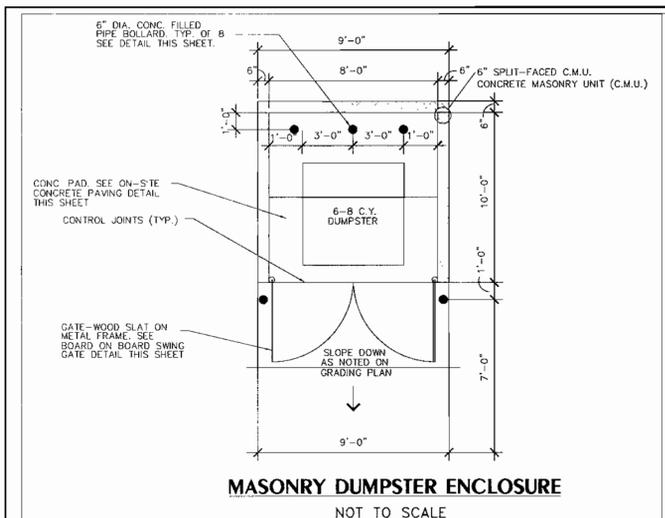
KCW J.O.: 991068  
SCALE: 1" = 30'  
DESIGNED: K.C.A.  
DRAWN: K.C.A.  
CHECKED: D.L.K.  
DATE: MAY 4, 2000  
DRAWING NO.  
**Shr. 5 of 13 C-105**

**UTILITY PROFILES II**

**HARKINS OFFICE BUILDINGS**  
"GTW'S WAVERLY WOODS"  
SECTION 7, PARCEL 'C'  
#2201 WARWICK WAY

HOWARD COUNTY, MARYLAND ELECTION DISTRICT - 3

SDP 00-89



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Paul Smith* 6/6/00 DATE  
DIRECTOR

*Vicki Hamble* 6/5/00 DATE  
CHIEF, DIVISION OF LAND DEVELOPMENT

*Mike Dorman* 5/25/00 DATE  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

ADDRESS CHART					
Parcel #	Street Address				
Parcel 'C'	#2201 Warwick Way Howard County, MD 21104				
PERMIT INFORMATION CHART					
Subdivision Name	Section	Plots	Parcel #	Grid	
GTW's Waverly Woods	7	13433 & 13434	424	10	
L/F	Block #	Zoning	Tax Map	Election District	Census Tract
4200/472	N/A	PEC	16	3rd	6030
Water Code:	H05	Sewer Code:	5992000		

**CONSTRUCTION DETAILS**

**HARKINS OFFICE BUILDINGS**  
"GTW's WAVERLY WOODS"  
SECTION 7, PARCEL 'C'  
#2201 Warwick Way

HOWARD COUNTY, MARYLAND ELECTION DISTRICT - 3

**KCW ENGINEERING TECHNOLOGIES**

KCW Engineering Technologies, Inc.  
3104 Timanus Lane, Suite 101  
Baltimore, MD 21244  
(410) 281-0033  
Fax (410) 281-1065  
www.KCW-ET.com

**DOUGLAS S. KENNEDY**  
REGISTERED PROFESSIONAL ENGINEER  
No. 10740

**CONTRACTOR:**  
Harkins Builders, Inc.  
12301 Old Columbia Pike  
Silver Spring, Maryland 20904  
Attn: Jason Cooke  
Tele: (410) 792-0862

**OWNER:**  
Waverly Woods Development Corporation  
c/o Land Design and Development, Inc.  
8000 Main Street  
Ellicott City, Maryland 21043

REVISIONS		
NO.	DESCRIPTION	DATE

KCW J.O.: 991068  
SCALE: 1" = 30'  
DESIGNED: K.M.W.  
DRAWN: K.M.W.  
CHECKED: D.L.K.  
DATE: APRIL 24, 2000  
DRAWING NO.  
Sht. 6 of 13 C-106

SOILS LEGEND		
SYMBOL	NAME/DESCRIPTION	SOIL GROUP
GnA	Glennville silt loam, 0-3% slopes	'B'
ChB2	Chester silt loam, 3-8% slopes, moderately eroded	'C'

HOWARD COUNTY SOIL SURVEY MAP No 9

D. W. KOZERA, INC. Baltimore, Maryland PROFESSIONAL ENGINEERS & GEOLOGISTS		TEST BORING LOG		Boring No.:	SWM-1				
Project: Harkins Office Buildings				Contract No.:	99202.D				
Location: Warwick Way Howard County, Maryland				Page:	1 of 1				
Groundwater Observations				Ground Surf. E. (ft):	481.0				
Date				Date Started:	1-21-00				
Time				Date Completed:	1-21-00				
Depth				Contractor:	GeoServices Corp.				
Encountered				Driller:	S. Winget				
Soil				Rig:	CME 5544				
Casing Pulled				Drill Method:	2 1/4" HSA				
Inspector:				Inspector:	W. Fung				
Depth (ft)	Surf. Elev. (ft)	Blow Counts	"N" Value	Water Level	Graphic USCS	Description	Formation	Stratum	Remarks
0	481.0					TOPSOIL = 0.8'			
1		1-2-3	5			Sandy SILT, moist - brown		A	
2		3-3-4	7						
3		3-4-4	8			ML Trace of quartz fragments			
4		3-3-4	9			Silty SAND, moist - brown			
5		7-10-11	9			SM Trace of quartz fragments			
9		3-4-6	10			ML Sandy SILT, moist - brown			



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 6/8/00 DATE  
DIRECTOR

*[Signature]* 6/7/00 DATE  
CHIEF, DIVISION OF LAND DEVELOPMENT

*[Signature]* 5/25/00 DATE  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

----- SWM OFFSITE DRAINAGE AREA BOUNDARY

(A) SWM DRAINAGE AREA HYDROLOGIC DATA

----- SWM EXISTING DRAINAGE AREA BOUNDARY

ADDRESS CHART	
Parcel #	Street Address
Parcel 'C'	#2201 Warwick Way Howard County, MD 21104
PERMIT INFORMATION CHART	
Subdivision Name	PLAT 142.68 TO
GTW's Waverly Woods # 142.71	Section 7 13433 & 13434 Parcel # 424 10
L/F 4200/472	Block # N/A Zoning PEC Tax Map 16 Election District 3rd Census Tract 6030
Water Code: H05	Sewer Code: 5992000

**EXISTING CONDITIONS SWM D.A. MAP & SPECIFICATIONS**

**HARKINS OFFICE BUILDINGS**  
**"GTW's WAVERLY WOODS"**  
**SECTION 7, PARCEL 'C'**  
**#2201 Warwick Way**

HOWARD COUNTY, MARYLAND ELECTION DISTRICT - 3

KCW Engineering Technologies, Inc.  
 3104 Timanus Lane, Suite 101  
 Baltimore, MD 21244  
 (410) 281-0033  
 Fax (410) 281-1065  
 www.KCW-ET.com

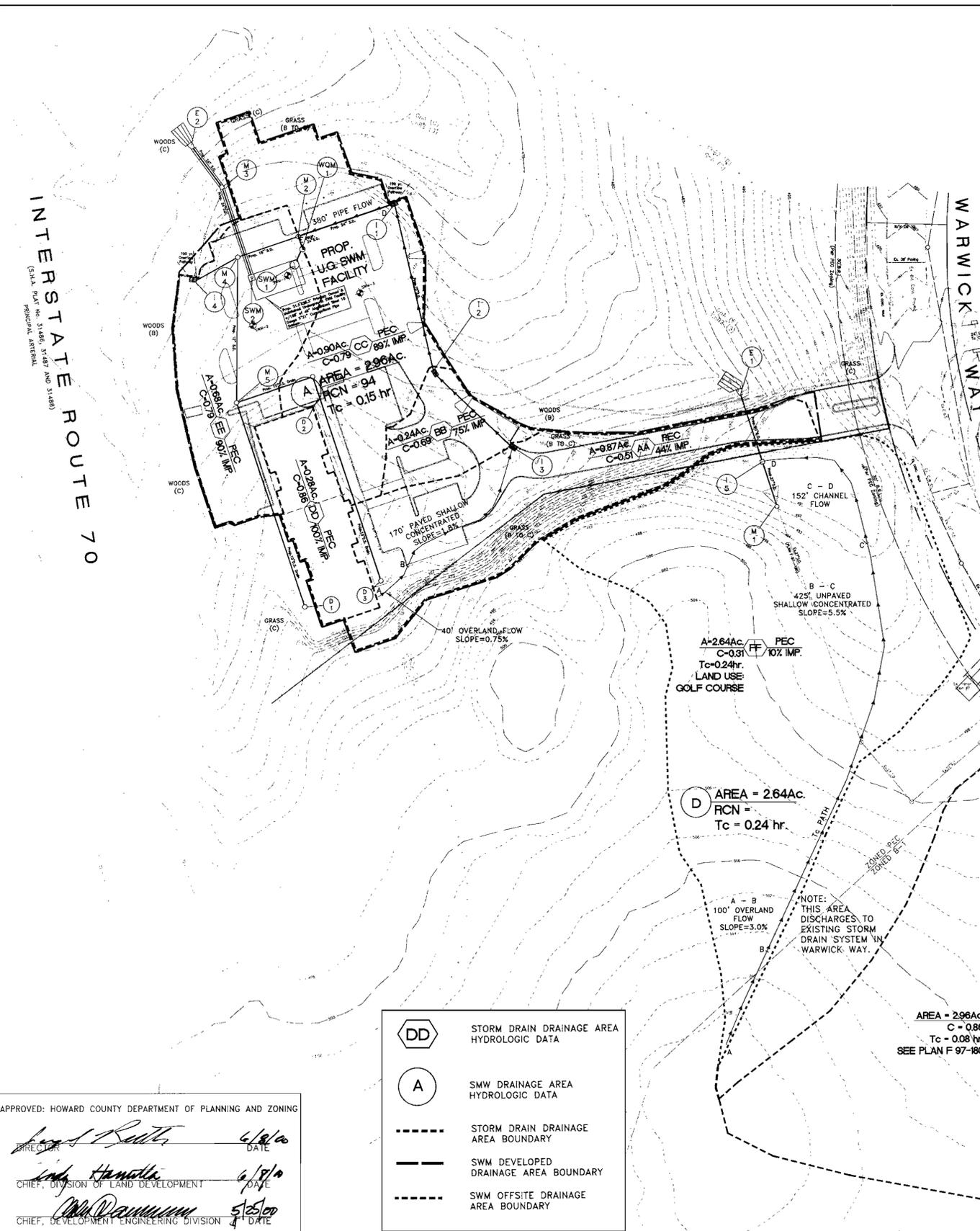
4-24-00  
*Douglas S. Kennedy*

**CONTRACTOR:**  
 Harkins Builders, Inc.  
 12301 Old Columbia Pike  
 Silver Spring, Maryland 20904  
 Attn: Jason Cooke  
 Tele: (410) 792-0862

**OWNER:**  
 Waverly Woods Development Corporation  
 c/o Land Design and Development, Inc.  
 8000 Main Street  
 Ellicott City, Maryland 21043

REVISIONS		
NO.	DESCRIPTION	DATE

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 DRAWN: K.M.W.  
 CHECKED: D.L.K.  
 DATE: APRIL 24, 2000  
 DRAWING NO.  
**Shr. 7 of 13 C-107**



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*James R. Butler* 6/18/10  
DIRECTOR

*Andy Hamilton* 6/18/10  
CHIEF, DIVISION OF LAND DEVELOPMENT

*Chris Damann* 5/25/10  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

- DD** STORM DRAIN DRAINAGE AREA HYDROLOGIC DATA
- A** SWM DRAINAGE AREA HYDROLOGIC DATA
- STORM DRAIN DRAINAGE AREA BOUNDARY
- - - SWM DEVELOPED DRAINAGE AREA BOUNDARY
- - - SWM OFFSITE DRAINAGE AREA BOUNDARY

KCW Engineering Technologies, Inc.  
3104 Timanus Lane, Suite 101  
Baltimore, MD 21244  
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Fax (410) 281-1065  
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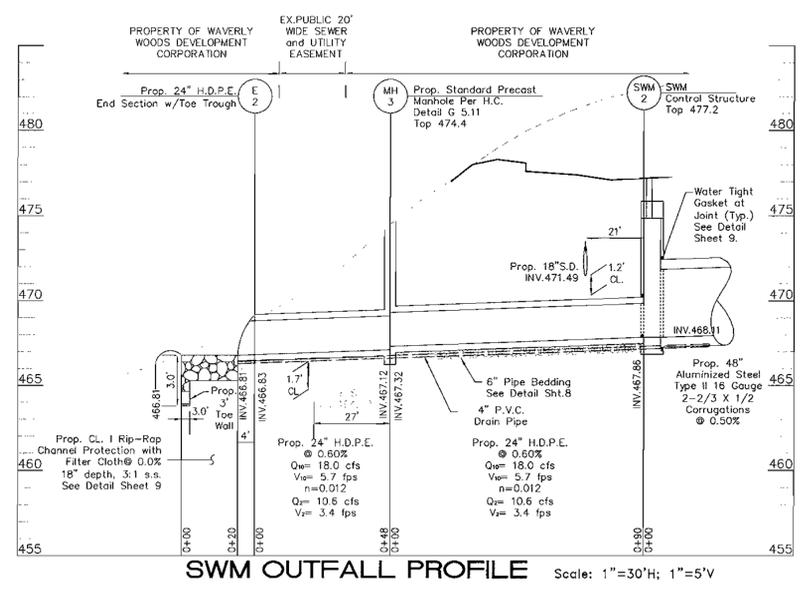
5-4-10  
*Douglas S. Kennedy*

**CONTRACTOR:**  
Harkins Builders, Inc.  
12301 Old Columbia Pike  
Silver Spring, Maryland 20904  
Attn: Jason Cooke  
Tele: (410) 792-0862

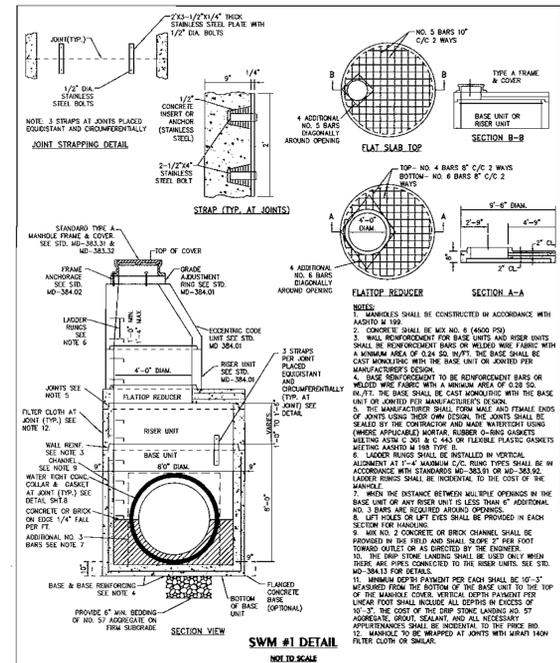
**OWNER:**  
Waverly Woods Development Corporation  
c/o Land Design and Development, Inc.  
8000 Main Street  
Ellicott City, Maryland 21043

REVISIONS		
NO.	DESCRIPTION	DATE

KCW J.O.: 991068  
SCALE: 1" = 60'  
DESIGNED: D.L.K.  
DRAWN: K.M.W.  
CHECKED: D.L.K.  
DATE: MAY 4, 2000  
DRAWING NO.  
**Sh. 8 of 13 C-108**

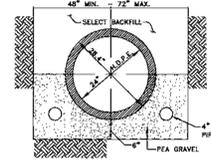


**SWM OUTFALL PROFILE** Scale: 1"=30'H; 1"=5'V



**CONSTRUCTION SPECIFICATIONS**

- I. STRUCTURAL BACKFILL**  
Backfill under from 1 ft. under pipe to centerline of pipe shall be #3 Stone conforming to MD State Highway Administration Specifications. Backfill above pipes or adjacent to 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 4 feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 2 feet or greater over the structure or pipe. Compaction 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 Soils Engineer at the time of construction. All compaction is to be determined by AASHTO Method 1-99.
- II. PIPE CONDUITS**  
All pipes shall be circular in cross section.  
**HIGH DENSITY POLYETHYLENE PIPE:** H.D.P.E. denotes high density polyethylene storm drain pipe. All pipe and pipe joints shall meet AASHTO M294, Type S or SP specifications. Applicable material specification shall be ASTM D 3350. Pipe shall be seamless with annular corrugations on the exterior and a smooth interior waterway.  
**ALUMINIZED TYPE 2 STEEL:** - All of the following criteria shall apply for aluminumized type 2 steel.  
1. Materials - All pipe and pipe joints shall meet AASHTO M-274. Applicable material specification shall be AASHTO M-274.  
2. Bedding - All aluminumized type 2 steel shall be laid in a pea gravel bedding for their entire length. This bedding shall be placed from a minimum 1' below the pipe up to the springline extending 1' minimum around the pipe.  
3. Backfilling shall conform to "Structural Backfill".  
4. Other details shall be as shown on the drawings.
- III. CONCRETE**  
Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration's Standard Specifications for Construction and Materials, Section 608, Mix No. 3 for structures.
- IV. REINFORCEMENT**  
Reinforcing steel must be ASTM A615, grade 60. Steel angles and anchor bars must be ASTM A36. MSHA, Section 610 - Reinforcement for Concrete Structures. MSHA Section 911 - Reinforcing Steel, Wire Rope and Wire Fabric.
- V. STONE**  
Stone for the Pipe Bedding shall be SRC #3 Stone, as specified in the Maryland State Highway Administration's "Standards and Specifications for Construction and Materials".  
Stone for Outfall Protection shall be Class '1' Stone Channel Protection (Rip-Rap) per M.S.H.A. Standards and Specifications.
- VI. FILTER CLOTH**  
Filter Cloth shall be "Mirafi 140N" or equivalent.
- VII. 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 maintain 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 as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom of required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to pumps from which the water shall be pumped.
- VIII. EROSION AND SEDIMENT CONTROL**  
Construction operations will be carried 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.



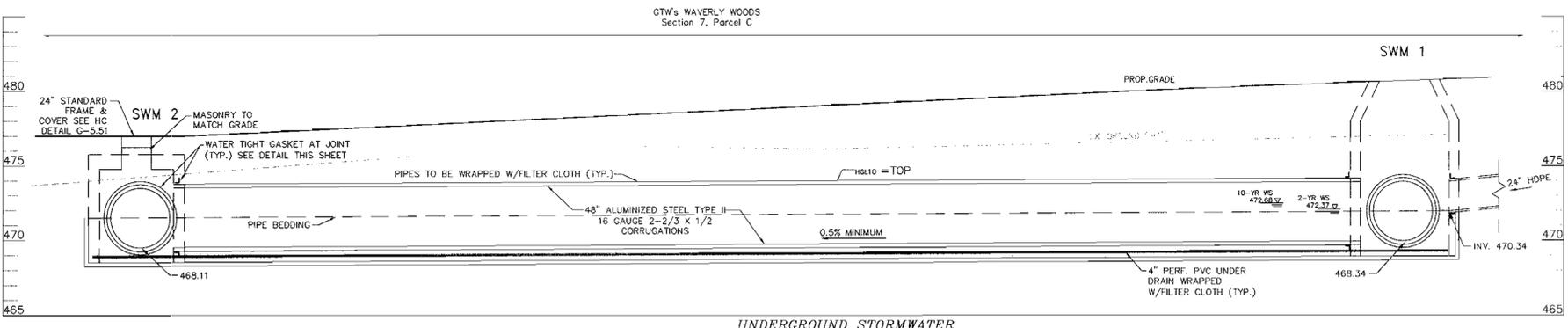
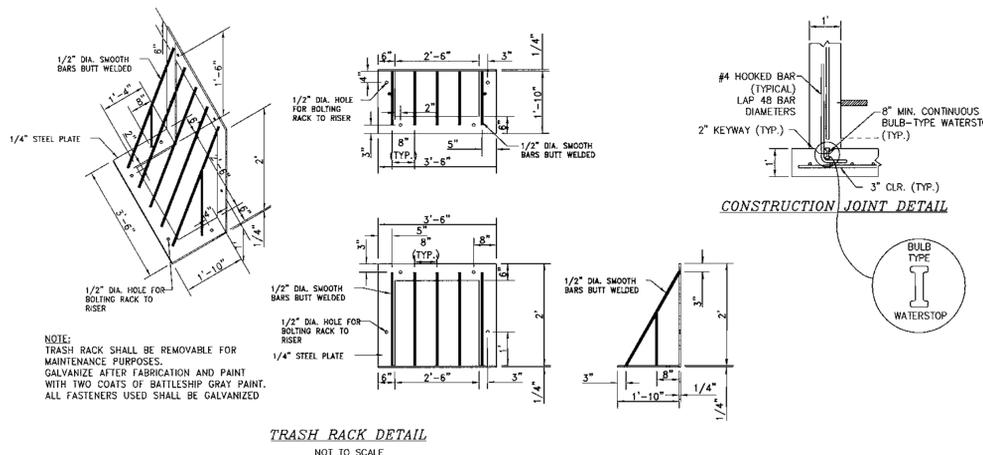
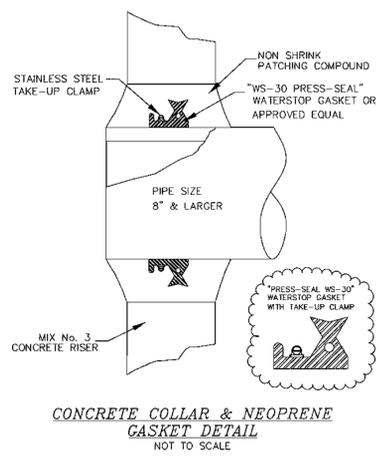
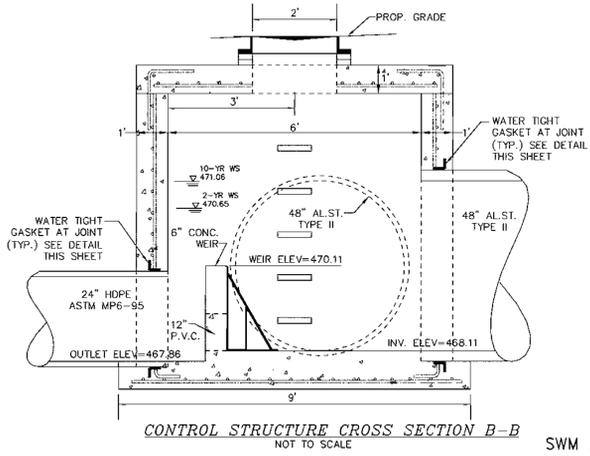
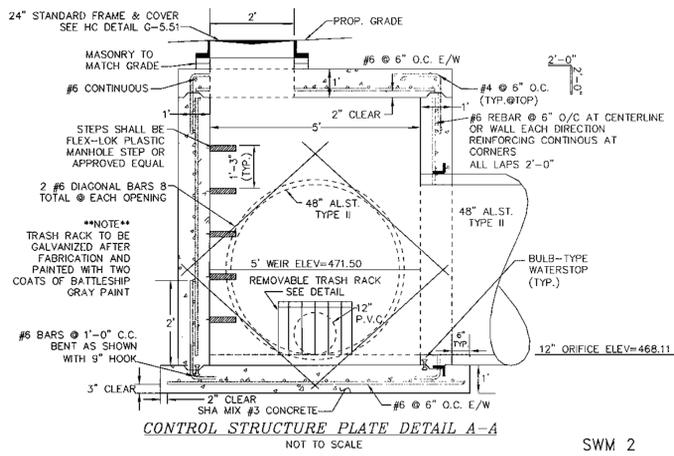
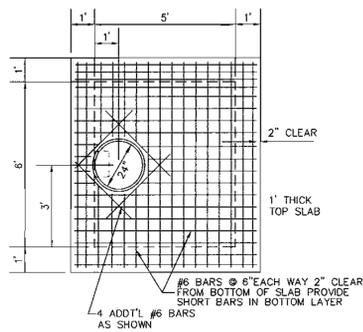
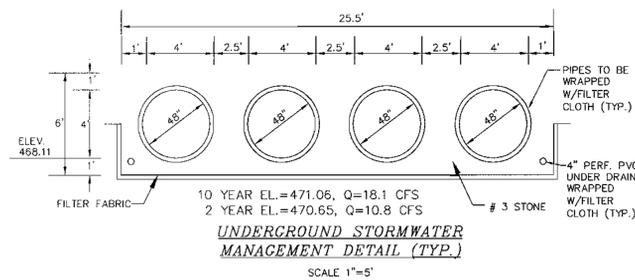
**PIPE BEDDING DETAIL**  
NOT TO SCALE

ADDRESS CHART	
Parcel #	Street Address
Parcel 'C'	#2201 Warwick Way Howard County, MD 21104

PERMIT INFORMATION CHART					
Subdivision Name	Parcel #	Section	Plot	Parcel #	Grid
GW's Waverly Woods	1416 B 70	7	134.53	424	10
L/F	4200/472	Block #	Zoning	Tax Map	Election District
		N/A	PEC	16	3rd
Water Code:	H05				Census Tract
					60.30
					Sewer Code:
					5992000

**DEVELOPED CONDITIONS SWM & STORM DRAIN D.A. MAP & SPECIFICATIONS**

**HARKINS OFFICE BUILDINGS**  
"GW'S WAVERLY WOODS"  
SECTION 7, PARCEL 'C'  
#2201 WARWICK WAY  
HOWARD COUNTY, MARYLAND ELECTION DISTRICT - 3



**SWM NOTES**

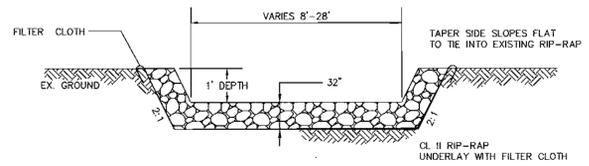
- This underground pipe storage stormwater management facility is private. Maintenance shall be the responsibility of the owner.
  - This underground pipe storage stormwater management facility does not fall under SCS MD-378 Standards. No Classification or Dam Safety certifications are required.
  - See Stormwater Management Report for Waverly Woods, Section 7, Parcel 1 and 3, Harkins Office Building, Howard County, Maryland, dated February 2000, prepared by Mildenberg, Boender and Associates, Inc.
- HAZARD CLASSIFICATION: n/a  
DRAINAGE AREA TO FACILITY: 3.0 ac.  
RCN = 94 Tc = 0.15 hrs.  
TYPE OF FACILITY: Detention for Quantity Control

**SWM DESIGN SUMMARY**

	STORMWATER MANAGEMENT	WATER QUALITY
FACILITY IDENTIFICATION:	SWM-2	WQM-1
FACILITY TYPE:	UNDERGROUND PIPE	"STORMCEPTOR"
DRAINAGE AREA:	3.0 ac.	3.0 ac.
INVERT ELEVATION:	468.11	470.47
WATER SURFACE ELEVATION: 2YR/10YR	470.65 / 471.06	---
STORAGE VOLUME: 2YR/10YR	0.42 / 0.45 ac-ft	3750 gal.
INFLOW 2YR/10YR:	11 / 18.3 cfs	---
OUTFLOW 2YR/10YR:	10.8 / 18.1 cfs	---
MAINTENANCE RESPONSIBILITY:	PRIVATE	PRIVATE

**OPERATION AND MAINTENANCE SCHEDULE FOR UNDERGROUND SWM FACILITY**

- The underground stormwater management facility is privately owned and it shall be responsibility of the owner to periodically inspect and clean the facility to maintain its operation and function.
- The underground stormwater management facility shall be inspected yearly at a minimum and after especially severe storms. When sediment accumulation of more than 2" is observed or any debris that might obstruct the outfall. The facility must be cleaned.
- Clean immediately after petroleum spills. The owner shall contact the appropriate regulatory agencies.
- The sediment debris shall be removed from the underground stormwater management facility by vacuum truck or other manual means. The owner must follow proper cleaning and disposal of the removed materials and liquid. The inlet and outlet pipes shall be checked for any obstructions at least once every six months. If obstructions are found the owner shall have them removed.



- 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.
- The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
- Geotextile Class C or better 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 fabric over the damaged part or by completely replacing the geotextile fabric. All overlaps whether for repairs or for joining two pieces of geotextile fabric shall be minimum of one foot.
- 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 fabric. Hand placement will be required to the extent necessary to prevent damage to the permanent works.
- The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high than the flow will be forced out of the channel and scour adjacent to the stone will occur.

**CONTRACTOR:**  
Harkins Builders, Inc.  
12301 Old Columbia Pike  
Silver Spring, Maryland 20904  
Attn: Jason Cooke  
Tele: (410) 792-0862

**OWNER:**  
Waverly Woods Development Corporation  
c/o Land Design and Development, Inc.  
8000 Main Street  
Ellicott City, Maryland 21043

REVISIONS		
NO.	DESCRIPTION	DATE

KCW J.O.: 991068  
SCALE: 1" = 30'  
DESIGNED: D.L.K.  
DRAWN: K.C.A.  
CHECKED: D.L.K.  
DATE: MAY 4, 2000  
DRAWING NO.  
Sht. 9 of 13 C-109

ADDRESS CHART			
Parcel #	Street Address	#2201 Warwick Way Howard County, MD 21104	
Parcel 'C'			
PERMIT INFORMATION CHART			
Subdivision Name	GTW's Waverly Woods	Plan #	424.71
L/P	4200/472	Block #	N/A
Water Code:	H05	Zoning	PEC
		Fax Map	16
		Election District	3rd
		Census Tract	6030
		Sewer Code:	5992000

**STORMWATER MANAGEMENT DETAILS**

**HARKINS OFFICE BUILDINGS**  
"GTW's WAVERLY WOODS"  
SECTION 7, PARCEL 'C'  
#2201 WARWICK WAY  
HOWARD COUNTY, MARYLAND ELECTION DISTRICT - 3

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Howard County* 6/18/00  
DIRECTOR DATE

*Cheryl Hamilton* 6/18/00  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*David Rammann* 5/25/00  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**KCW ENGINEERING TECHNOLOGIES**  
KCW Engineering Technologies, Inc.  
3104 Timanus Lane, Suite 101  
Baltimore, MD 21244  
(410) 281-0033  
Fax (410) 281-1065  
www.KCW-ET.com

**DOUGLAS L. KENNEDY**  
REGISTERED PROFESSIONAL ENGINEER  
No. 10198  
EXPIRES 12/31/05  
5-4-00

**GENERAL NOTES**

- SILT AND DEBRIS SHALL NOT BE ALLOWED TO ENTER THE STRUCTURES UNTIL CONTRIBUTING DRAINAGE AREAS HAVE BEEN PERMANENTLY STABILIZED.
- ALL OPENINGS TO STRUCTURES SHALL BE PROTECTED WITH THE APPROPRIATE SEDIMENT MEASURES DURING CONSTRUCTION.
- VARIOUS TYPES OF EQUIPMENT ARE AVAILABLE COMMERCIALY FOR THE CLEANOUT OF SYSTEMS. THE MOST COMMONLY USED EQUIPMENT AND TECHNIQUES USED FOR CLEANING SUBSURFACE SYSTEMS ARE VACUUM PUMP & WATERJET SPRAY. BOTH SYSTEMS ARE GENERALLY MOUNTED ON A SELF-CONTAINED VEHICLE AND CAN EFFECTIVELY REMOVE STONES, LEAVES, LITTER AND SEDIMENT DEPOSITS FROM SUMPS AND CHAMBERS.

**WATER QUALITY MAINTENANCE NOTES**

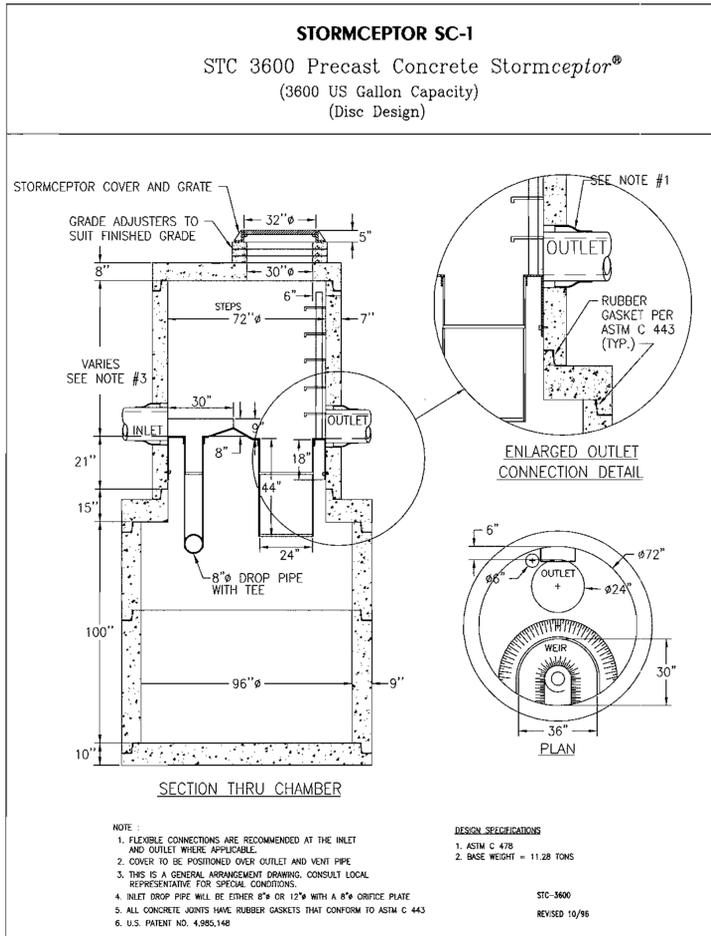
- INSPECT THE STORMCEPTOR ON A MONTHLY BASIS AND NOTE SEDIMENT AND OIL ACCUMULATIONS. MORE FREQUENT INSPECTIONS ARE APPROPRIATE WHERE OIL SPILLS OCCUR REGULARLY. STORMCEPTOR CANADA INC. CAN PROVIDE ADVICE ON SAMPLING EQUIPMENT.
- SEDIMENT SHOULD BE REMOVED ANNUALLY, OR WHENEVER THE ACCUMULATION REACHES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

**REQUIRED PROCEDURES AND INSPECTIONS FOR INGROUND WO FACILITY**

- THE FOLLOWING INSPECTIONS ARE REQUIRED DURING CONSTRUCTION. ADDITIONAL INSPECTIONS MAY BE REQUIRED AND NOTED BY THE INSPECTOR.
- PRECONSTRUCTION MEETING: AN OPPORTUNITY TO REVIEW SITE PLANS, DISCUSS THE PURPOSE OF THE FACILITY AND TO ANSWER QUESTIONS REGARDING CONSTRUCTION AND/OR INSPECTION PROCEDURES.
  - CONSTRUCTION: INSPECTION(S) WILL BE MADE DURING THE CONSTRUCTION OF THE FACILITY TO ENSURE ACCORDANCE WITH THE PLANS. SPECIFIC INSPECTION REQUIREMENTS WILL BE DETERMINED AT THE PRECONSTRUCTION MEETING.
  - FINAL INSPECTION: A FINAL CHECK WILL BE MADE TO CHECK DESIGN DIMENSIONS, IF CONSTRUCTION IS SATISFACTORY.

**CONTRACTOR INSTALLATION INSTRUCTIONS PRECAST CONCRETE STORMCEPTOR**

- STAKE-OUT THE LOCATION OF THE STORMCEPTOR AND EXCAVATE HOLE. EXCAVATE ADEQUATE SPACE TO CONNECT INLET AND OUTLET PIPES TO UNIT. INSTALL A 12" DEEP (OR AS REQUIRED) LAYER OF COMPACTED (95% STANDARD PROCTOR DENSITY) AGGREGATE SUBBASE AT BOTTOM OF EXCAVATION. INSTALL MULE OR SHORING, AS NEEDED.
- 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 NEEDED.
- SECURE INSPECTOR APPROVAL OF SUBGRADE SUBBASE.
- INSTALL STORAGE CHAMBER. INSTALL SCREW INVERTS INTO BASE OF STORAGE CHAMBER. ATTACH CABLES OR CHAINS TO ALL 3 LIFTING LUGS ON THE BASE SLAB. USING LARGE EQUIPMENT OR CRANE LIFT AND PLACE THE BASE SECTION OF THE STORAGE CHAMBER IN THE EXCAVATED HOLE ON THE SUBBASE. MAKE SURE THAT THE BASE IS PRELUBRICATED. INSTALL ADDITIONAL STORAGE CHAMBER SECTIONS, AS REQUIRED (PROCEDURE IS SAME AS STEP 4).
- INSTALL BYPASS CHAMBER OF STORMCEPTOR WITH FACTORY INSTALLED STORMCEPTOR INSERT. LIFT BYPASS SECTION AND INSTALL, WHILE CHECKING ALIGNMENT AND GRADE OF INLET AND OUTLET DRAINAGE PIPES. CHECK TO MAKE SURE THE BYPASS CHAMBER IS SET FLUSH LEVEL AND IS AT THE PROPER ELEVATION. THE BYPASS CHAMBER MUST BE ORIENTED SUCH THAT INLET PIPE DISCHARGES INTO THE Y-SHAPED FIBERGLASS WEIRS (INSIDE INSERT). INSTALL RUBBER GASKET ON TOP OF BYPASS SECTION AND COAT WITH LUBRICATING GREASE, IF NOT PRELUBRICATED.
- INSTALL STORMCEPTOR DROP PIPES ACCORDING TO STC PIPE INSTALLATION PROCEDURE ON REVERSE SIDE OF THESE INSTRUCTIONS.
- 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.
- INSTALL TOP CAP WITH OPENING FOR STORMCEPTOR COVER. IF OPENING IS OFFSET (NOT CENTERED) THE TOP CAP OPENING SHOULD BE ORIENTED ABOVE THE STORMCEPTOR INLET INSPECTION PORT (PLUG).
- BACKFILL STORMCEPTOR WITH APPROVED BACKFILL MATERIAL (NO ORGANIC OR TOPSOIL IS TO BE USED FOR BACKFILL). BACKFILL AND COMPACT IN 8 INCH LIFTS. BACKFILL SHOULD BE COMPACTED TO 95% OF STANDARD PROCTOR DENSITY.

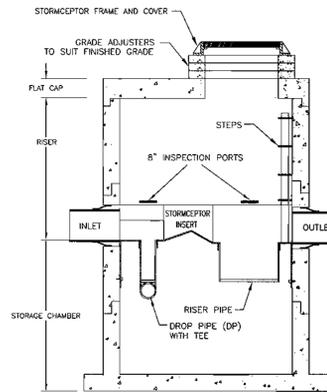


**STORMCEPTOR MODEL STC-3600**

MODEL	MAXIMUM TREATED FLOWRATE (gpm)	TOTAL CAPACITY (GALLONS)	OIL HOLDING CAPACITY (GALLONS)	SEDIMENT HOLDING CAPACITY (CU. FT)	DEPTH (FT)	TANK BODY (FT)
STC-3600	475	3750	880	345	12.2	8

- INSTALL AND SET GRAD ADJUSTING RINGS, AS NEEDED.
- INSTALL AND SET STORMCEPTOR FRAME AND COVER.
- 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 WITH THE INVERT OF THE STORMCEPTOR INSERT. FLEXIBLE BOOT INSTALLATION PROCEDURES: CENTER THE PIPE IN THE BOOT OPENING. LUBRICATE THE OUTSIDE OF THE PIPE AND/OR THE INSIDE OF THE BOOT IF THE PIPE OUTSIDE DIAMETER IS THE SAME AS THE INSIDE DIAMETER OF THE BOOT. POSITION THE PIPE CLAMP IN THE GROOVE OF THE BOOT WITH THE SCREW AT THE TOP. TIGHTEN THE PIPE CLAMP SCREW TO 60 INCH POUNDS. IF THE PIPE IS MUCH SMALLER THAN THE BOOT LIFT THE BOOT SUCH THAT IT CONTACTS THE BOTTOM OF THE PIPE WHILE TIGHTENING THE CLAMP TO ENSURE EVEN CONTRACTION OF THE RUBBER. MOVE THE PIPE HORIZONTALLY AND/OR VERTICALLY TO BRING IT TO GRADE.
- THE STORMCEPTOR SHOULD BE PUMPED OUT WHEN THE SEDIMENT CONTROL MEASURES ARE REMOVED (SITE PERMANENTLY STABILIZED).
- FINAL INSPECTION

**Stormceptor® Specifications STC PIPE INSTALLATION PROCEDURE**

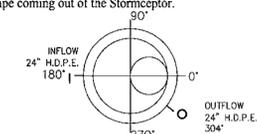


- NOTE: VARIABLE BASE SLAB WIDTH DEPENDENT ON BASE SLAB THICKNESS
- ENLARGED OUTLET DETAIL
- Drop pipes MUST NOT be attached to Stormceptor® nipples until the BY-PASS CHAMBER section has been connected to the installed STORAGE CHAMBER.
  - Install the drop pipe while inside the STORAGE CHAMBER. Enter the STORAGE CHAMBER via a ladder placed down the via a ladder placed down the Stormceptor® access hole.
  - The drop pipe with the T-section must be connected to the INLET nipple using the supplied PVC cement. Make certain that the orientation of the TEE is correct.
  - The riser pipe MUST be connected to the OUTLET nipple using the supplied PVC cement.

**Concrete Stormceptor Order Request Form\* WQM-1**

Official Use Only  
 Order # \_\_\_\_\_  
 Date \_\_\_\_\_  
 Internal Sale \_\_\_\_\_  
**Contractor Information**  
 Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_  
 State \_\_\_\_\_  
 Zip Code \_\_\_\_\_  
 Contact \_\_\_\_\_  
 Phone \_\_\_\_\_  
 Fax \_\_\_\_\_

You can specify the angle of the discharge pipe coming out of the Stormceptor.



**Owner Information**  
 Name HARKINS BUILDERS, INC.  
 Phone (410) 792-0862  
 Fax \_\_\_\_\_  
 ATTN: JASON COOKE

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

**Stormceptor Model Insert Size Data**

Manhole/Structure Number	WQM-1	Top Elevation (ft)	Inlet Pipe Invert (ft)	Outlet Pipe Invert (ft)	Pipe Type	H.D.P.E.
900	3600	22"	479.1	470.55		
1200	4800	32"		470.47		
1800	6000	44"				
2400	7200	Disc				
Custom						

Impervious Drainage Area (ac): 2.3 Pipe Outside Diameter (in) [OD] 29.8"

**Project Name** HARKINS OFFICE BUILDING @ "GTW's WAVERLY WOODS"  
 Approximate time frame until required delivery (weeks) \_\_\_\_\_  
 Exact Delivery Address: Street #2201 WARWICK WAY  
 City HOWARD COUNTY State MD Zip Code 21043

Designer Company KCW Engineering Technologies, Inc.  
 Designer Contact Douglas L. Kennedy Phone (410)281-0663 (410)281-1065

Please fax this sheet to Stormceptor Corporation at (301) 762-4190

For Technical Information Please Call Stormceptor Corporation at (301) 762-8361 or Toll Free at 1-800-762-4703

\*Form to be included on plan by Designer 4/23/96

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*David Smith* 4/8/00  
 DIRECTOR  
*Cindy Hamilton* 4/8/00  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
*Douglas L. Kennedy* 4/8/00  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

**KCW** Engineering Technologies, Inc.  
 3104 Timanus Lane, Suite 101  
 Baltimore, MD 21244  
 (410) 281-0033  
 Fax (410) 281-1065  
 www.KCW-ET.com

*Douglas L. Kennedy*  
 4-24-00

**CONTRACTOR:**  
 Harkins Builders, Inc.  
 12301 Old Columbia Pike  
 Silver Spring, Maryland 20904  
 Attn: Jason Cooke  
 Tele: (410) 792-0862

**OWNER:**  
 Waverly Woods Development Corporation  
 c/o Land Design and Development, Inc.  
 8000 Main Street  
 Ellicott City, Maryland 21043

REVISIONS		
NO.	DESCRIPTION	DATE

KCW J.O.: 991068  
 SCALE: 1" = 30'  
 DESIGNED: K.C.A.  
 DRAWN: K.C.A.  
 CHECKED: D.L.K.  
 DATE: APRIL 24, 2000  
 DRAWING NO. \_\_\_\_\_  
**Shr. 10 of 13 C-110**

**ADDRESS CHART**

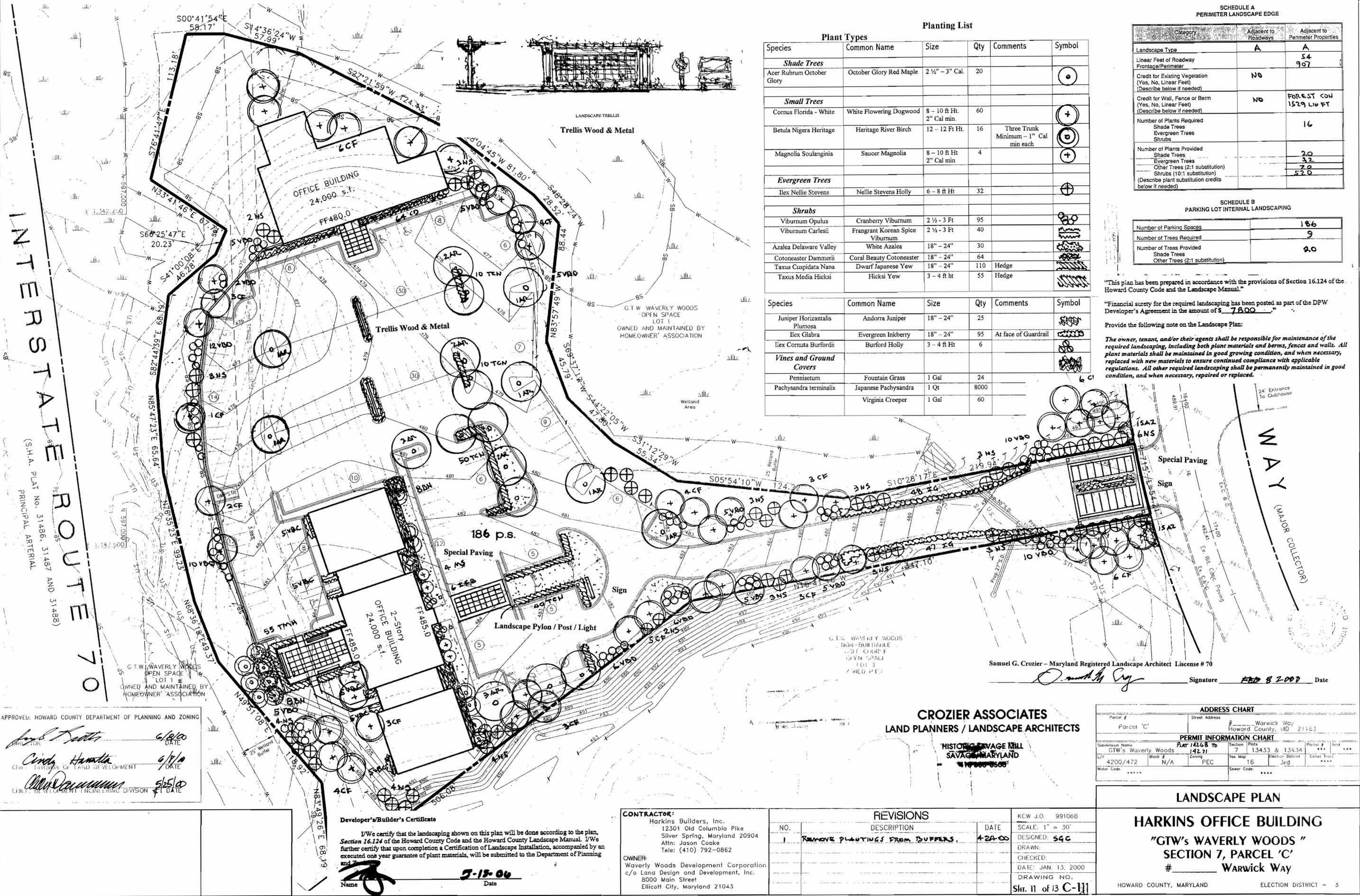
Parcel #	Street Address	#2201 Warwick Way
Parcel 'C'		Howard County, MD 21104

**PERMIT INFORMATION CHART**

Subdivision Name	Plat	Section	Block	Parcel #	Grid
GTW's Waverly Woods	142-B-7D	7	134.33 & 134.34	424	10
L/F	Block #	Zoning	Tax Map	Election District	Census Tract
4200/472	N/A	PEC	16	3rd	6030
Water Code:				Sewer Code:	
H05				5992000	

**WATER QUALITY MANAGEMENT DETAILS**

**HARKINS OFFICE BUILDINGS**  
**"GTW's WAVERLY WOODS"**  
**SECTION 7, PARCEL 'C'**  
**#2201 Warwick Way**  
 HOWARD COUNTY, MARYLAND ELECTION DISTRICT - 3



**INTERSTATE ROUTE 70**  
 (SHA PLAT NO. 31486, 31487 AND 31488)  
 PRINCIPAL ARTERIAL

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* 6/18/00  
 DATE  
*[Signature]* 6/18/00  
 DATE  
*[Signature]* 5/25/00  
 DATE

**Developer's/Builder's Certificate**  
 I/We certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Code and the Howard County Landscape Manual. I/We further certify that upon completion a Certification of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.  
*[Signature]*  
 Name  
 3-15-00  
 Date

**CONTRACTOR:**  
 Harkins Builders, Inc.  
 12301 Old Columbia Pike  
 Silver Spring, Maryland 20904  
 Attn: Jason Cooke  
 Tele: (410) 792-0862  
**OWNER:**  
 Waverly Woods Development Corporation  
 c/o Land Design and Development, Inc.  
 8000 Main Street  
 Ellicott City, Maryland 21043

REVISIONS		
NO.	DESCRIPTION	DATE
1	REMOVE PLANTINGS FROM BUFFERS	4-24-00

KCW J.O. 991068  
 SCALE: 1" = 30'  
 DESIGNED: SGC  
 DRAWN:  
 CHECKED:  
 DATE: JAN. 13, 2000  
 DRAWING NO.  
 Shr. 11 of 13 C-111

**CROZIER ASSOCIATES**  
 LAND PLANNERS / LANDSCAPE ARCHITECTS  
 HISTORIC SAVAGE MILL  
 SAVAGE, MARYLAND  
 410-666-0500

Samuel G. Crozier - Maryland Registered Landscape Architect License # 70  
*[Signature]*  
 Signature **FEB 8 2000** Date

**Planting List**

Species	Common Name	Size	Qty	Comments	Symbol
<b>Shade Trees</b>					
Acer Rubrum October Glory	October Glory Red Maple	2 1/2" - 3" Cal.	20		⊙
<b>Small Trees</b>					
Cornus Florida - White	White Flowering Dogwood	8 - 10 ft Ht. 2" Cal min.	60		⊕
Betula Nigera Heritage	Heritage River Birch	12 - 12 Ft Ht.	16	Three Trunk Minimum - 1" Cal min each	⊕
Magnolia Soulangiana	Saucer Magnolia	8 - 10 ft Ht 2" Cal min	4		⊕
<b>Evergreen Trees</b>					
Ilex Nellie Stevens	Nellie Stevens Holly	6 - 8 ft Ht	32		⊕
<b>Shrubs</b>					
Viburnum Opulus	Cranberry Viburnum	2 1/2 - 3 Ft	95		⊕
Viburnum Carlesii	Frangrant Korean Spice Viburnum	2 1/2 - 3 Ft	40		⊕
Azalea Delaware Valley	White Azalea	18" - 24"	30		⊕
Cotoneaster Dammerii	Coral Beauty Cotoneaster	18" - 24"	64		⊕
Taxus Cuspudata Nana	Dwarf Japanese Yew	18" - 24"	110	Hedge	⊕
Taxus Media Hicksi	Hicksi Yew	3 - 4 ft ht	55	Hedge	⊕
<b>Vines and Ground Covers</b>					
Pennisetum	Fountain Grass	1 Gal	24		⊕
Pachysandra terminalis	Japanese Pachysandra	1 Qt	8000		⊕
	Virginia Creeper	1 Gal	60		⊕

**SCHEDULE A PERIMETER LANDSCAPE EDGE**

Category	Adjacent to Roadways	Adjacent to Perimeter Properties
Landscape Type	A	A
Linear Feet of Roadway Frontage/Perimeter		54 907
Credit for Existing Vegetation (Yes, No, Linear Feet) (Describe below if needed)	NO	
Credit for Wall, Fence or Berm (Yes, No, Linear Feet) (Describe below if needed)	NO	FOREST CON 1529 LWF FT
Number of Plants Required Shade Trees Evergreen Trees Shrubs		16
Number of Plants Provided Shade Trees Evergreen Trees Other Trees (2:1 substitution) Shrubs (10:1 substitution)		20 32 70 520

**SCHEDULE B PARKING LOT INTERNAL LANDSCAPING**

Number of Parking Spaces	186
Number of Trees Required	9
Number of Trees Provided Shade Trees Other Trees (2:1 substitution)	20

"This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard County Code and the Landscape Manual."  
 "Financial surety for the required landscaping has been posted as part of the DPW Developer's Agreement in the amount of \$ 7,800."  
 Provide the following note on the Landscape Plan:  
 The owner, tenant, and/or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and berms, fences and walls. All plant materials shall be maintained in good growing condition, and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.

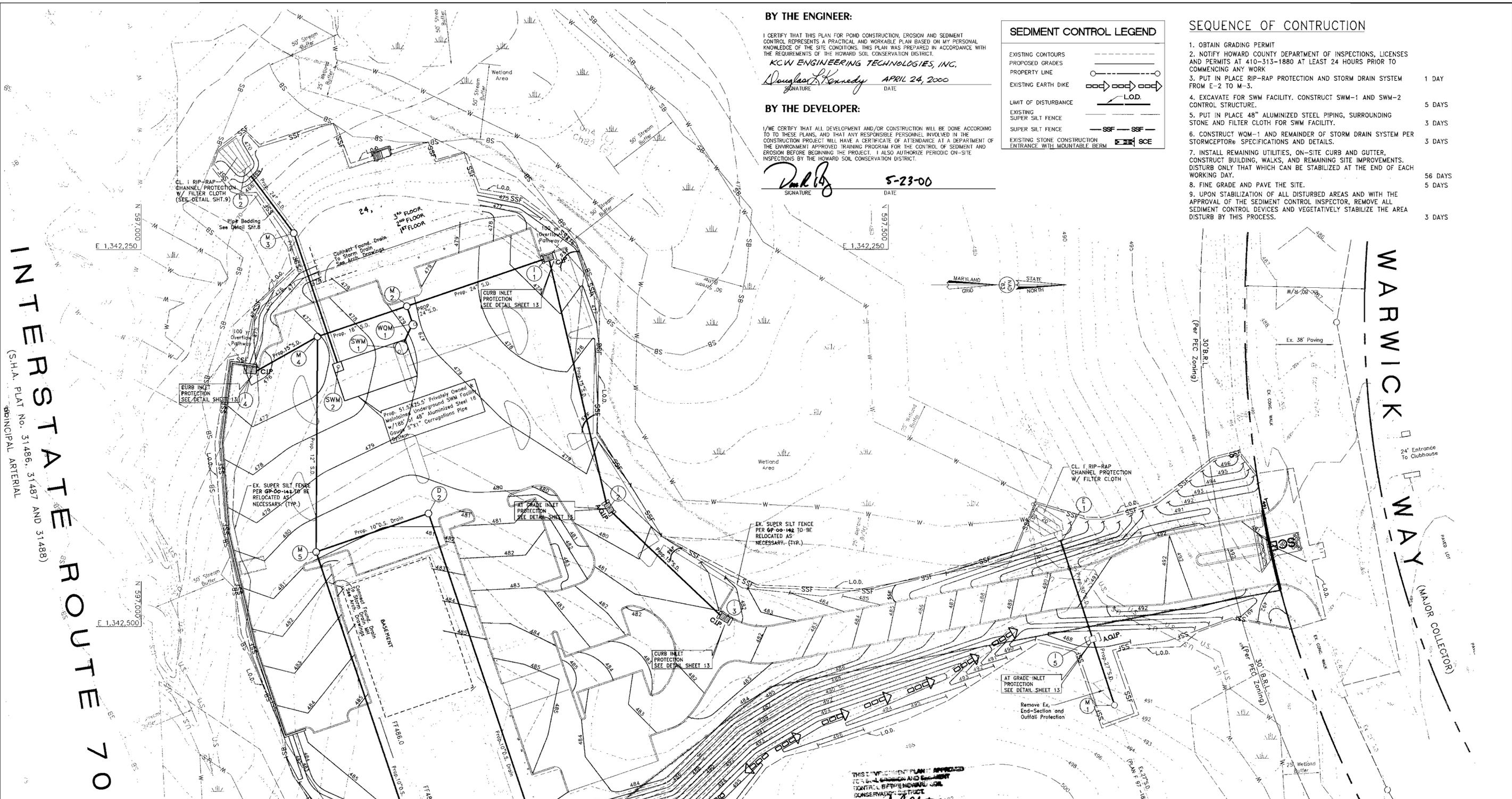
**ADDRESS CHART**

Parcel #	Street Address	Parcel #	Street Address
Parcel 'C'	Warwick Way	Parcel #	Street Address

**PERMIT INFORMATION CHART**

Subdivision Name	Block #	Section	Plats	Parcel #	Lot #
GTW's Waverly Woods	142.71	7	13453 & 13434	***	***
L/F	4200/472	Zoning	Tax Map	Election District	Consent Trust
	N/A	PEC	16	3rd	****
Water Code	****	Sewer Code	****		

**LANDSCAPE PLAN**  
**HARKINS OFFICE BUILDING**  
 "GTW'S WAVERLY WOODS"  
 SECTION 7, PARCEL 'C'  
 # \_\_\_\_\_ WARWICK WAY  
 HOWARD COUNTY, MARYLAND ELECTION DISTRICT - 3



**BY THE ENGINEER:**

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
**KCW ENGINEERING TECHNOLOGIES, INC.**  
*Douglas B. Kennedy* APRIL 24, 2000  
 SIGNATURE DATE

**BY THE DEVELOPER:**

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 ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.  
*Douglas B. Kennedy* 5-23-00  
 SIGNATURE DATE

**SEDIMENT CONTROL LEGEND**

- EXISTING CONTOURS
- PROPOSED GRADES
- PROPERTY LINE
- EXISTING EARTH DIKE
- LIMIT OF DISTURBANCE
- EXISTING SUPER SILT FENCE
- SUPER SILT FENCE
- EXISTING STONE CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM

**SEQUENCE OF CONSTRUCTION**

1. OBTAIN GRADING PERMIT 1 DAY
2. NOTIFY HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS AT 410-313-1880 AT LEAST 24 HOURS PRIOR TO COMMENCING ANY WORK
3. PUT IN PLACE RIP-RAP PROTECTION AND STORM DRAIN SYSTEM FROM E-2 TO M-3. 1 DAY
4. EXCAVATE FOR SWM-1 AND SWM-2 CONTROL STRUCTURE. 5 DAYS
5. PUT IN PLACE 48" ALUMINIZED STEEL PIPING, SURROUNDING STONE AND FILTER CLOTH FOR SWM FACILITY. 3 DAYS
6. CONSTRUCT WQM-1 AND REMAINDER OF STORM DRAIN SYSTEM PER STORMCEPTOR® SPECIFICATIONS AND DETAILS. 3 DAYS
7. INSTALL REMAINING UTILITIES, ON-SITE CURB AND GUTTER, CONSTRUCT BUILDING, WALKS, AND REMAINING SITE IMPROVEMENTS. DISTURB ONLY THAT WHICH CAN BE STABILIZED AT THE END OF EACH WORKING DAY. 56 DAYS
8. FINE GRADE AND PAVE THE SITE. 5 DAYS
9. UPON STABILIZATION OF ALL DISTURBED AREAS AND WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROL DEVICES AND VEGETATIVELY STABILIZE THE AREA DISTURB BY THIS PROCESS. 3 DAYS

**INTERSTATE ROUTE 70**  
 (S.H.A. PLAT No. 31486, 31487 AND 31488)  
 PRINCIPAL ARTERIAL

**WARWICK WAY**  
 (MAJOR COLLECTOR)

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 6/8/00 DATE  
 DIRECTOR

*[Signature]* 6/8/00 DATE  
 CHIEF, DIVISION OF LAND DEVELOPMENT

*[Signature]* 5/25/00 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

KCW Engineering Technologies, Inc.  
 3104 Timanus Lane, Suite 101  
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 Fax (410) 281-1065  
 www.KCW-ET.com

**CONTRACTOR:**  
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 12301 Old Columbia Pike  
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 Attn: Jason Cooke  
 Tele: (410) 792-0862

**OWNER:**  
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 c/o Land Design and Development, Inc.  
 8000 Main Street  
 Ellicott City, Maryland 21043

REVISIONS		
NO.	DESCRIPTION	DATE

KCW J.O.: 991068  
 SCALE: 1" = 30'  
 DESIGNED: D.L.K./K.M.W.  
 DRAWN: K.M.W.  
 CHECKED: D.L.K.  
 DATE: APRIL 24, 2000  
 DRAWING NO.  
**Shr. 12 of 17 C-112**

ADDRESS CHART			
Parcel #	Street Address	#2201 Warwick Way Howard County, MD 21104	
Parcel 'C'			
PERMIT INFORMATION CHART			
Subdivision Name	Plat	Section	Plots
GTW's Waverly Woods	142.6 B 7D	7	13433 & 13434
U/F	Block #	Zoning	Tax Map
4200/472	N/A	PEC	16
Water Code:	H05	Election District	3rd
		Census Tract	6030
		Sewer Code:	5992000

**SEDIMENT CONTROL PLAN**

**HARKINS OFFICE BUILDINGS**

**"GTW'S WAVERLY WOODS"**

**SECTION 7, PARCEL 'C'**

**#2201 WARWICK WAY**

HOWARD COUNTY, MARYLAND
ELECTION DISTRICT - 3

### VEGETATIVE STABILIZATION

**A. SITE PREPARATION**

- Install erosion and sediment control structures (either temporary or permanent) prior to any stabilization activities. Structures, berms, waterways, or sediment control basins.
- Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
- Schedule requires soil tests to determine soil amendment composition and application rates for sites having disturbed areas over 5 acres.

**B. SOIL AMENDMENTS (Fertilizer and Lime Specifications)**

- Soil test must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analysis.
- Fertilizers shall be uniform in composition, free flowing and suitable for accurate by approved equipment. Measure may be substituted for fertilizer with prior approval from the Soil Conservation District. Fertilizers shall not be delivered to the site fully loaded according to applicable State fertilizer laws and shall bear the name or trademark and warranties of the producer.
- Lime materials shall be of ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass thru a #100 and 98-100% will pass thru a #20 mesh sieve.
- Incorporate lime and fertilizer into the top 3"-5" of soil by discing or other suitable means.

**C. SEEDING PREPARATION**

- Temporary Seeding
  - Seeding preparation shall consist of loosening soil to a depth of 3" to 5" by approved equipment. Measure may be substituted for fertilizer with prior approval from the Soil Conservation District. Fertilizers shall not be delivered to the site fully loaded according to applicable State fertilizer laws and shall bear the name or trademark and warranties of the producer.
  - Seeds shall be applied to a depth of 3" to 5" by approved equipment. Measure may be substituted for fertilizer with prior approval from the Soil Conservation District. Fertilizers shall not be delivered to the site fully loaded according to applicable State fertilizer laws and shall bear the name or trademark and warranties of the producer.
- Permanent Seeding
  - Minimum soil conditions required for permanent vegetative establishment:
    - Soil pH shall be between 6.0 and 7.0
    - Soil shall contain less than 500 parts per million (ppm) of lead
    - The soil shall contain less than 40% clay but enough fine grained material (>30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if Lower or Series Latosols as to be planted, then a sandy soil (<30% silt plus clay) would be acceptable.
    - Soil shall contain a minimum of 1% organic matter by weight.
    - Soil must contain sufficient pore space to permit adequate root penetration.
    - If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Sect. 21 Standards and Specs. for Topsoil.
  - Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3"-5" to permit bonding of the topsoil to the surface area and to create horizontal seed beds to prevent topsoil from sliding down a slope.
  - Apply soil amendments on per soil test or as included on the plans.
  - Max soil amendments into the top 3"-5" of topsoil by discing or other suitable means. Lawn areas should be rated to amount the surface, remove large objects like stones and branches, and ready the area for seed application. Where site conditions will not permit normal seeded preparation, loosen surface soil by dragging with heavy chain or other equipment to roughen surface. Steep slopes (steeper than 3:1) should be trenched by a dozer leaving the soil in a regular corrugated pattern to prevent topsoil from sliding down the slope.

**D. SEED SPECIFICATIONS**

- All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested immediately preceding the date of sowing such material on this job. Note: Seed tags shall be made available to the Inspector to verify type and rate of seed used.
- Inoculant - The inoculant for treating legume seeds in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the particular crop. Inoculants shall not be sold unless they are labeled on the container. Add trace inoculant as directed on package. Use four times the recommended rate when hydroseeding. It is very important to keep inoculant cool as possible until used. Temperatures above 75-80 deg F. can weaken bacteria and make the inoculant less effective.

**E. METHODS OF SEEDING**

- Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeder, or a catpucker seeder.
  - If fertilizer is being applied at the time of seeding, the application rate amounts will not exceed the following:
    - Nitrogen: maximum of 100 lbs/acre total of soluble nitrogen (P220 (Phosphorus): 200 lbs/acre; and K2O (potassium): 200 lbs/acre.
  - Lime: use only ground agricultural limestone, (up to 3 tons / acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime.
  - Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
- Dry Seeding: This includes use of conventional drop or broadcast spreaders.
  - Seeding dry shall be incorporated into the subsoil of the areas prepared on the Temporary or Permanent Seeding Summaries (or Tables 25 or 26). The seeding rate shall be applied with a weighted rate to provide good seed to soil contact.
  - Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
  - Drill or Catpucker Seeding: Mechanized seeders that apply and cover seed with soil.
    - Catpucker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeded must be firm after planting.
    - Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

**F. MULCH SPECIFICATIONS (In Order of Preference)**

- Straw shall consist of naturally threshed wheat, rye or oat straw, reasonably bright in color, and shall not be rusty, moldy, coked, decayed, or excessively dry and shall be free of noxious weed seeds as specified in MD State Law.
- Wood Cellulose Fiber Mulch (WCFM)
  - WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
  - WCFM shall be dyed green or contain a green dye in the package that will that provides adequate color to facilitate visual inspection of the uniformly spread slurry.
  - WCFM, including dye, shall contain no germination or growth inhibiting factors.
  - WCFM materials shall be manufactured in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a broiler the ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
  - WCFM material shall contain no elements or compounds of chemical elements that will be phytotoxic.
  - WCFM must conform to the following physical requirements:
    - Fiber length to approximately 1.5 mm, diameter approx. 1 mm, pH range of 4.0 to 8.5, ash content of 1.6% max, and water holding capacity of 50% min.
    - Note: Only starter straw mulch should be used in areas where one species of grass is desired.

### VEGETATIVE STABILIZATION (continued)

**G. MULCHING SEEDED AREAS**

Mulch shall be applied to all seeded areas immediately after seeding.

- If grading is completed outside of the seeding season, mulch shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons / acre.
- Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs / acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs of wood cellulose fiber per 100 gallons of water.

**H. SECURING STRAW MULCH (Mulch Anchoring)**

Mulch anchoring shall be implemented following mulch application to minimize loss by wind or water erosion. This may be done by one of the following methods (listed by preference) depending upon size of area and erosion hazard:

- A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2". This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on steeper slopes, this practice should be used on the contour. If possible.
- Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 lbs / acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 lbs. shall contain a of wood cellulose fiber per 100 gallons of water.
- Application of liquid binders should be heavier at the edges where wind volatiles much, such as in the windward corner of a slope. The remainder of the area should receive uniform after binder application. Synthetic binders, such as Acrylic BLM (Aqua-Lock) (GSA-70), Polysulfate, Terra-Fix II, Terra-Tack-AM, or other approved equal, may be used at rates recommended by manufacturer to anchor mulch.
- Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4 feet to 10 feet wide and 300 feet to 1,000 feet long.

### SOD ESTABLISHMENT

To provide quick coverage on disturbed areas (2:1 grade or flatter).

**I. GENERAL SPECIFICATIONS**

- Class of turfgrass sod shall be Maryland or Virginia State certified or approved. Sod labels shall be made available to the job foreman and the Inspector.
- Sod shall be machine cut to a uniform soil thickness of 3/4", plus or minus 1/4" of the total cutting. Measurements for thickness shall exclude top growth and thatch. Individual pieces of sod shall be cut to the supplier's width and length. Max. objective deviation from standard width and length shall be 5%. Broken joints and torn or uneven ends will not be acceptable.
- Standard sod sections of sod shall be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grip on 10% of the section.
- Sod shall not be harvested, transported when moisture content (excessively wet or dry) may adversely affect its survival.
- Sod shall be harvested, delivered and installed within a period of 36 hours. Sod not transported within this period shall be approved by an agronomist or soil scientist prior to its installation.

**J. SOD INSTALLATION**

- During periods of excessively high temperature or in areas having dry subsoil, the subsoil shall be lightly irrigated immediately prior to laying the sod.
- The first row of sod shall be laid in a straight line with subsequent rows placed parallel to and slightly wedged against each other. Lateral joints shall be staggered to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
- Wherever possible, sod shall be laid with the long edges parallel to the contour and with staggering joints. Sod shall be rolled and tamped, pegged or otherwise secured to prevent slippage on slopes and to ensure solid contact between sod roots and the underlying soil surface.
- Soil shall be reworked and amended as necessary or tamped until the underside of the new sod and soil surface below the sod are thoroughly wet. The operations of laying, tamping and irrigating for any piece of sod shall be completed within 8 hours.

**K. SOD MAINTENANCE**

- In the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first week and in sufficient quantities to maintain moist soil to a depth of 4". Watering frequency should be done during the heat of the day to prevent wilting.
- After the first week, watering is required as necessary to maintain adequate moisture content.
- The first mowing of sod should not be attempted until the sod is firmly rooted. No more than 1/3 of the grass leaf shall be removed by the initial cutting or subsequent mowings. Grass height shall be maintained between 2" and 3", unless otherwise specified.

### COMPACTED FILL

- Embankment shall be constructed of approved materials from the excavation, or from other sources. The material shall be free of organic materials, trash, rock, roots, frost and other deleterious substances.
- Before depositing fill, the ground surface shall be cleared of all refuse, brush, grass, roots, ice and frozen material. All organic matter and otherwise unsuitable soils shall be removed from the surface to be filled. The exposed surface shall be plowed, discing, or scarified to a depth of 6 inches. Soils so scarified, or which have been disturbed by grubbing and stripping operations, shall be compacted to undisturbed soil below by discing, leveling, rolling and compacting of the moisture content and to the density specified below for compacted embankments.
- Where fills are to be made on hillsides or slopes, the slope of the original ground on which the fill to be placed shall be plowed or scarified deep, or where the slope ratio of the ground is steeper than 5 horizontal to 1 vertical (5:1), the bank shall be stepped or benched, as directed by the Soils Engineer prior to permit placement of the fill in horizontal layers.
- Placing, spreading and compacting fill materials:
  - The fill material shall be approved by the Soils Engineer and placed in layers which, before compaction, shall not exceed 8 inches. Each layer shall be spread uniformly and evenly, and shall be thoroughly blade mixed during the application to insure uniformity of materials in each layer.
  - After each layer has been placed, mixed and spread evenly, it shall be thoroughly compacted to not less than the percentage of maximum dry density as determined by ASTM D-1557, specified below:
    - 92% in areas under and within 10 feet of foundations.
    - 92% in areas to be paved.
    - 92% in areas to be vegetatively stabilized.
  - The moisture content of the fill shall be as required to obtain the degree of compaction specified.
  - Compaction shall be by approved multiple-wheel pneumatic tired rollers, vibratory rollers, or other types of acceptable rollers.
  - The filling operation shall be continued or stopped below until the fill has been brought to subgrade shown on the plans.
  - The fill shall be constructed in such a manner that the surface will be sloped to drain at all times, and fill shall be deposited to prevent excessive moisture accumulation. Run rainwater.
  - When the work is interrupted by rain, filling shall not be resumed until tests indicate that the moisture content and density of the top 6 inches of fill conform to the above specification requirements.

### PERMANENT SEEDING NOTES

REFERENCE: "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" PAGE 6-20-1 THRU 6-20-5.

APPLY TO GRADED OR CLEARED AREAS UNLESS OTHERWISE SPECIFIED.

**SEEDING PREPARATION:** LOOSEN UPPER THREE INCHES OF SOIL BY BARRING, BODING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING. IF NOT PREVIOUSLY LOOSENED, SEEDING SHALL BE DONE IN ONE OF THE FOLLOWING SEQUENCES:

- APPROVED: APPLY 2 TONS PER ACRE OF WOOD CELLULOSE FIBER (20 LBS/1000 SF) AND 800 LBS PER ACRE OF 10-10-10 FERTILIZER (14 LBS/1000 SF) BEFORE SEEDING. APPLY 2 TONS PER ACRE OF 10-10-10 FERTILIZER (14 LBS/1000 SF) AT THE TIME OF SEEDING. APPLY 400 LBS PER ACRE OF 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SF) BEFORE SEEDING.
- APPROVED: APPLY 1 1/2 TO 2 TONS PER ACRE OF WOOD CELLULOSE FIBER (20 LBS/1000 SF) AND 1000 LBS PER ACRE OF 10-10-10 FERTILIZER (14 LBS/1000 SF) BEFORE SEEDING. APPLY 2 TONS PER ACRE OF 10-10-10 FERTILIZER (14 LBS/1000 SF) AT THE TIME OF SEEDING. APPLY 400 LBS PER ACRE OF 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SF) BEFORE SEEDING.

**SEEDING:** APPLY 1 1/2 TO 2 TONS PER ACRE (TO 10 LBS/1000 SF) OF UNBROADCAST WOOD CELLULOSE FIBER (20 LBS/1000 SF) AND 800 LBS PER ACRE OF 10-10-10 FERTILIZER (14 LBS/1000 SF) BEFORE SEEDING. APPLY 2 TONS PER ACRE OF 10-10-10 FERTILIZER (14 LBS/1000 SF) AT THE TIME OF SEEDING. APPLY 400 LBS PER ACRE OF 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SF) BEFORE SEEDING.

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

### TEMPORARY SEEDING NOTES

REFERENCE: "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" PAGE 6-20-1 THRU 6-20-5.

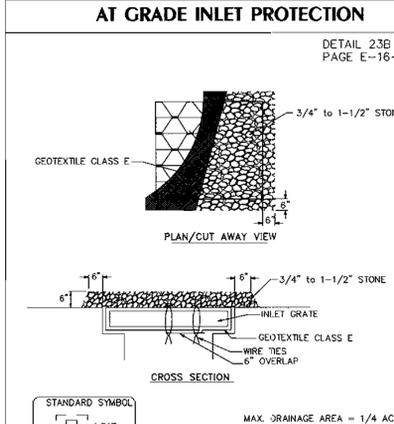
APPLY TO GRADED OR CLEARED AREAS UNLESS OTHERWISE SPECIFIED.

**SEEDING PREPARATION:** LOOSEN UPPER THREE INCHES OF SOIL BY BARRING, BODING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING. IF NOT PREVIOUSLY LOOSENED, SEEDING SHALL BE DONE IN ONE OF THE FOLLOWING SEQUENCES:

- APPROVED: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SF) BEFORE SEEDING. APPLY 1 1/2 TO 2 TONS PER ACRE (TO 10 LBS/1000 SF) OF UNBROADCAST WOOD CELLULOSE FIBER (20 LBS/1000 SF) AND 800 LBS PER ACRE OF 10-10-10 FERTILIZER (14 LBS/1000 SF) BEFORE SEEDING. APPLY 2 TONS PER ACRE OF 10-10-10 FERTILIZER (14 LBS/1000 SF) AT THE TIME OF SEEDING. APPLY 400 LBS PER ACRE OF 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SF) BEFORE SEEDING.

**SEEDING:** APPLY 1 1/2 TO 2 TONS PER ACRE (TO 10 LBS/1000 SF) OF UNBROADCAST WOOD CELLULOSE FIBER (20 LBS/1000 SF) AND 800 LBS PER ACRE OF 10-10-10 FERTILIZER (14 LBS/1000 SF) BEFORE SEEDING. APPLY 2 TONS PER ACRE OF 10-10-10 FERTILIZER (14 LBS/1000 SF) AT THE TIME OF SEEDING. APPLY 400 LBS PER ACRE OF 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SF) BEFORE SEEDING.

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



### GEOTEXTILE FABRICS

Page H-24-1

CLASS	APPEARANT OPENING SIZE (IN. MAX.)	GRAB TENSILE STRENGTH (LB. MIN.)	BURST STRENGTH (PSI. MIN.)
A	0.30	250	500
B	0.30	200	320
C	0.60	200	320
D	0.60	90	145
E	0.30	90	145
F (SILT FENCE)	0.40-0.80	90	190

\* U.S. STD. SIEVE CW-02215

The properties shall be determined in accordance with the following procedures:

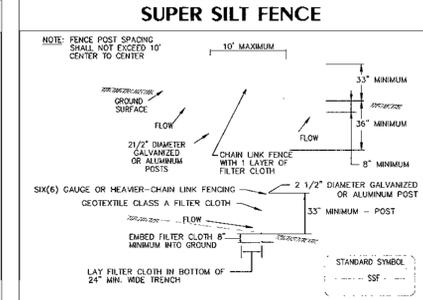
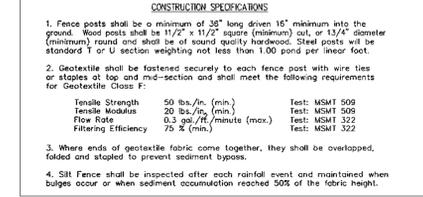
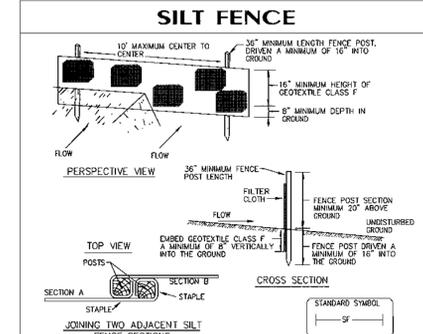
- Apparent Opening Size: MSMT 323
- Grab Tensile Strength: ASTM D 1882; 4" x 8" specimen, 1"x2" dim. strain rate in both principal directions of geotextile fabric.
- Burst Strength: ASTM D 3785

The fabric shall be inert to commonly encountered chemicals and hydrocarbons, and will be rot and mildew resistant. It shall be manufactured from fibers consisting of long chain synthetic polymers, and composed of a minimum of 85% by weight of polypropylene, polyester, or polyethylene. The geotextile fabric shall resist deterioration from ultraviolet exposure.

In addition, Classes A through E shall have a 0.01 cm/sec minimum permeability when tested in accordance with MSMT 301, and an apparent elongation of 20 percent (20%) when tested in accordance with the grab tensile strength requirements above.

**SILT FENCE:** Class F geotextile fabrics for silt fence shall have a 50 lb/ft minimum tensile strength and a 20 lb/ft minimum burst strength when tested in accordance with MSMT 309. The material shall also have a 0.3 to 0.8 mm (1/64 to 1/16 in.) maximum opening (75%) minimum filtering efficiency when tested in accordance with MSMT 322.

Geotextile fabrics used in the construction of "silt fence" shall resist deterioration from ultraviolet exposure. The fabric shall contain sufficient amounts of ultraviolet ray inhibitors and stabilizers to provide a minimum of 12 months of expected useful construction life at a temperature range of 0 to 120 F.



### BY THE ENGINEER:

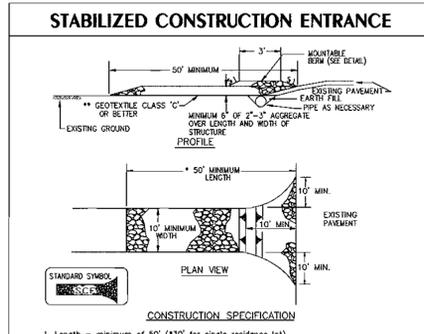
I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*Douglas S. Kennedy*  
SIGNATURE DATE: APRIL 24, 2000

### BY THE DEVELOPER:

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 ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

*[Signature]*  
SIGNATURE DATE: 5-25-00



### STABILIZED CONSTRUCTION ENTRANCE

1. Excavate completely around the inlet to a depth of 18" below the notch elevation.

2. Drive the 2" x 4" construction grade lumber posts 1" into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overlap joint shown on Detail 23A. The top of the frame (top rail) must be 6" below adjacent roadways where flooding and safety issues may arise.

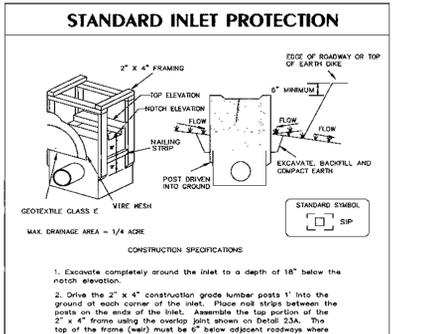
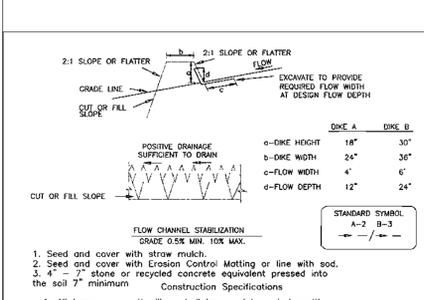
3. Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap a 6" post.

4. Stretch the Geotextile Class E tightly over the wire mesh with the geotextile extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.

5. Backfill around the inlet in compacted 6" layers until the layer of stone is level with the notch elevation on the ends and top elevation on the sides.

6. If the inlet is not in a slump, construct a compacted earth dike across the dike line directly below it. The top of the earth dike should be at least 18" higher than the top of the frame.

7. The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

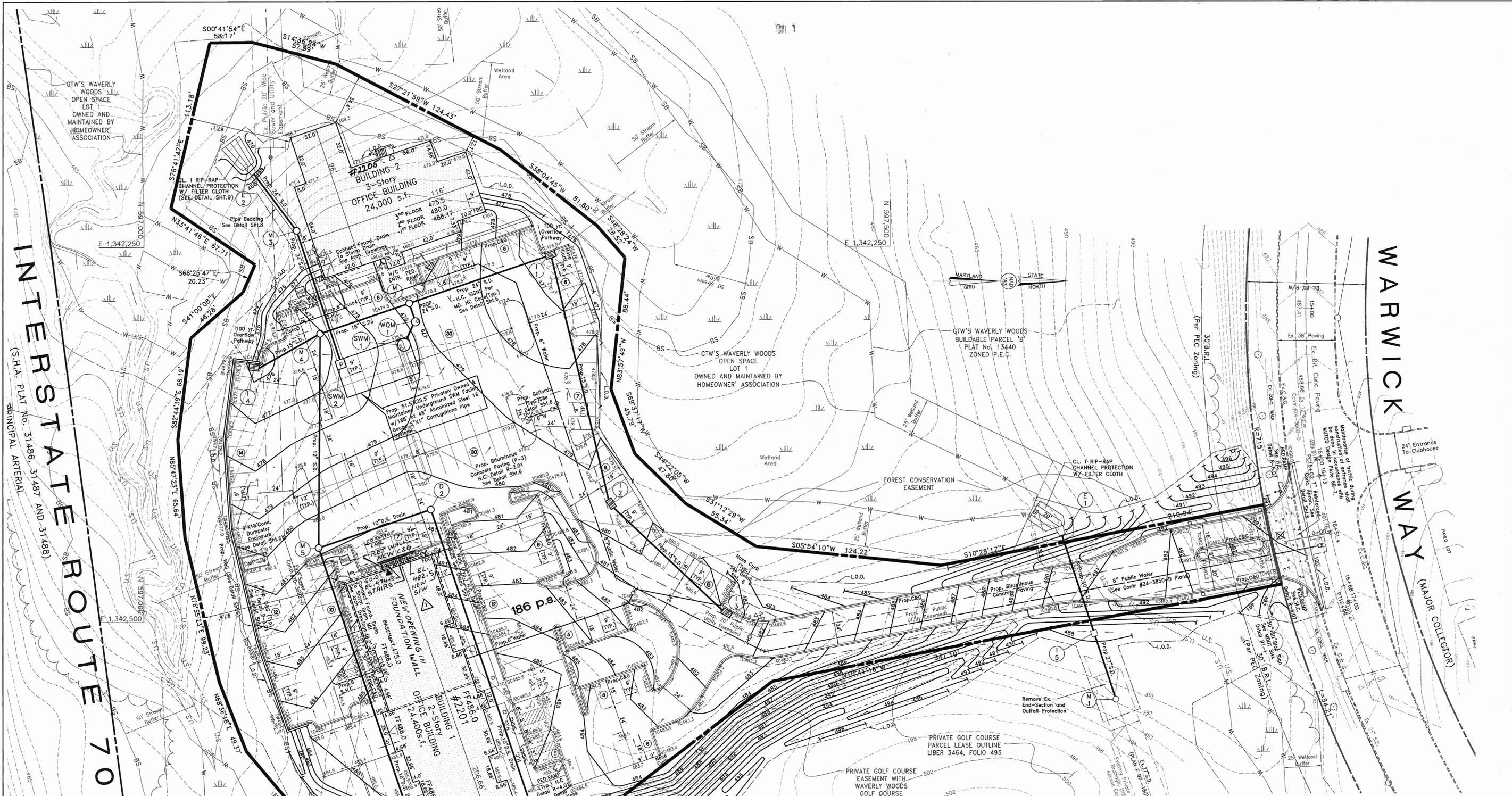


### SEDIMENT CONTROL NOTES

- A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY OFFICE OF INSPECTION AND PERMITS PRIOR TO THE START OF ANY CONSTRUCTION (410) 315-1855
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE SPECIFICATIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1984 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISION THERE TO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
  - A) 7 CALENDAR DAYS FOR ALL PERMITS SEDIMENT CONTROL STRUCTURES, DIKES, PERMITS AND SLOPES AND ALL SLOPES GREATER THAN 3:1
  - B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE. IN ACCORDANCE WITH THE 1984 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (SEC. 21) SOD (SEC. 24), TEMPORARY SEEDING (SEC. 20) AND MULCHING (SEC. 22). TEMPORARY STABILIZATION WITH MULCH SHALL BE DONE IMMEDIATELY AFTER SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- 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.
- SITE ANALYSIS:**

TOTAL AREA OF SITE	176,000 SQ.FT.	4.04 AC.
AREA TO BE FOOTED OR PAVED (NEW CONSTR.)	100,000 SQ.FT.	2.30 AC.
AREA TO BE VEGETATIVELY STABILIZED	75,000 SQ.FT.	1.74 AC.
TOTAL CUT	500 CU. YD.	N/A
OFFSITE WASTE/BORROW AREA LOCATION		
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY DDP-SEDMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUIRED UPON COMPLETION OF INSTALLATION OF PERMITS EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THE PIPE LENGTHS OR THAT WHICH SHALL BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH THIS SEDIMENT AND EROSION CONTROL PLAN, AND FURTHER AUTHORIZES THE PERMIT STAFF FOR PERIODIC ON-SITE EVALUATION BY THE HOWARD COUNTY INS





APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

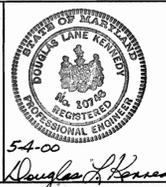
*Paul Smith* 6/18/00  
DIRECTOR DATE

*Cindy Hamilton* 6/18/00  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Mike Damann* 5/25/00  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**KCW**  
ENGINEERING TECHNOLOGIES

KCW Engineering Technologies, Inc.  
3104 Timanus Lane, Suite 101  
Baltimore, MD 21244  
(410) 281-0033  
Fax (410) 281-1065  
www.KCW-ET.com



**CONTRACTOR:**  
Harkins Builders, Inc.  
12301 Old Columbia Pike  
Silver Spring, Maryland 20904  
Attn: Jason Cooke  
Tele: (410) 792-0862

**OWNER:**  
Waverly Woods Development Corporation  
c/o Land Design and Development, Inc.  
8000 Main Street  
Ellicott City, Maryland 21043

REVISIONS		
NO.	DESCRIPTION	DATE
1	NEW EGRESS FROM BSMT BLDG #1, ADD OFFICE SPACE.	3-25-04

KCW J.O.: 991068  
SCALE: 1" = 30'  
DESIGNED: D.L.K.  
DRAWN: K.M.W.  
CHECKED: D.L.K.  
DATE: MAY 4, 2000  
DRAWING NO. Sht. 3 of 13 C-103

ADDRESS CHART			
Parcel #	Street Address	#2205 Warwick Way and #2206 Warwick Way and	
Parcel 'C'		#2201 Warwick Way Howard County, MD 21104	
PERMIT INFORMATION CHART			
Subdivision Name	PLAT 14268 TO 14271	Section	7
U/I	4200/472	Block #	N/A
Water Code:	H05	Zoning	PEC
		Tax Map	16
		Election District	3rd
		Census Tract	6030
		Sewer Code:	5992000

**GRADING PLAN**

**HARKINS OFFICE BUILDINGS**  
"GTW'S WAVERLY WOODS"  
SECTION 7, PARCEL 'C'  
#2201 WARWICK Way and  
#2205 Warwick Way  
HOWARD COUNTY, MARYLAND ELECTION DISTRICT - 3

