

SHEET INDEX	
SHEET No.	DESCRIPTION
1	TITLE SHEET
2	FOLKESTONE WAY PLAN & PROFILE, WADSWORTH ROAD PLAN AND BROMLEY COURT PLAN
3	DICKENS WAY PLAN & PROFILE AND BECKETT WAY PLAN & PROFILE
4	WADSWORTH ROAD PROFILE, BROMLEY COURT PROFILE AND TYPICAL ROADWAY SECTIONS
5	STREET TREE, GRADING AND SEDIMENT CONTROL PLAN
6	STREET TREE, GRADING AND SEDIMENT CONTROL PLAN
7	DRAINAGE AREA MAP AND LANDSCAPE PLAN
8	DRAINAGE AREA MAP AND LANDSCAPE PLAN
9	STORM DRAIN PROFILES
10	STORM DRAIN PROFILES
11	DETAIL SHEET
12	SEDIMENT CONTROL NOTES AND DETAILS
13-17	FOREST CONSERVATION PLANS AND DETAILS

FINAL ROAD CONSTRUCTION AND GRADING PLANS

GTW'S WAVERLY WOODS

SECTION 6

LOTS 1 THRU 97 AND PARCELS 'A' AND 'B'
(PROPERTY OF G.T.W. JOINT VENTURE, LIBER 2222, FOLIO 36)

ZONED: RSC AND R-SA-8
TAX MAP No. 16, PART OF PARCEL No. 21
THIRD ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

APPROVED: DEPARTMENT OF PUBLIC WORKS
Richard M. Dwyer 10-26-98
 CHIEF, BUREAU OF HIGHWAYS
 DATE

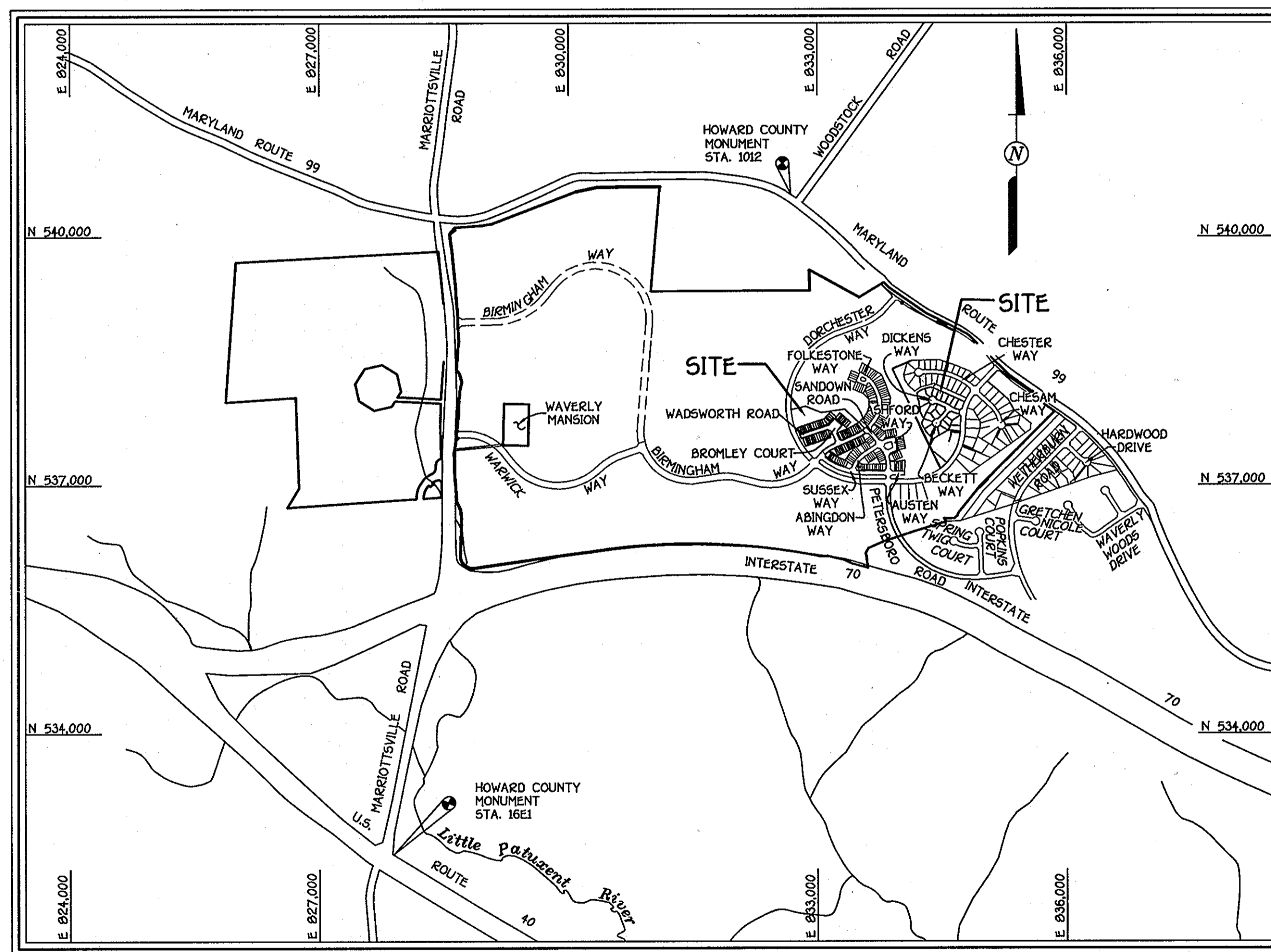
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Charles Hamilton 11/18/98
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE

William J. Crovo, Sr. 10/29/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE

TRAFFIC CONTROL SIGNS				
ROAD	C.L. STA.	OFFSET	POSTED SIGN	SIGN CODE
DICKENS WAY	0+43	16'L	STOP	R2-1
DICKENS WAY	1+00	16'R	SPEED LIMIT 25	R2-1
BECKETT WAY	0+39	16'L	STOP	R2-1
WADSWORTH ROAD	0+37	14'L	STOP	R2-1
WADSWORTH ROAD	0+75	14'R	SPEED LIMIT 30	R2-1
BROMLEY COURT	0+30	24'L	STOP	R2-1
BROMLEY COURT	2+50	15'R	STOP	R2-1
FOLKESTONE WAY	2+00	14'R	SPEED LIMIT 30	R2-1

ROAD CLASSIFICATION CHART		
ROAD	CLASSIFICATION	R/W WIDTH
DICKENS WAY	CUL-DE-SAC	50'
BECKETT WAY	CUL-DE-SAC	50'
FOLKESTONE WAY	LOCAL COLLECTOR	50'
WADSWORTH ROAD	LOCAL ROAD	50'
BROMLEY COURT	LOCAL ROAD	50'

STREET LIGHT CHART				
DWG. No.	STREET NAME	STATION	OFF-SET	FIXTURE/POLE TYPE
3	DICKENS WAY	L.P. STA. 0+97	3'L	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
3	BECKETT WAY	L.P. STA. 0+88	3'L	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
2	FOLKESTONE WAY	C.L. STA. 4+02	18'L	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
2	BROMLEY COURT	C.L. STA. 1+03	18'R	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
2	BROMLEY COURT	C.L. STA. 2+59	18'R	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
2	WADSWORTH ROAD	C.L. STA. 5+97.50	18'R	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
3	DICKENS WAY	C.L. STA. 2+44	20'L	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.



VICINITY MAP
 SCALE: 1" = 1200'

GENERAL NOTES

- UNLESS OTHERWISE NOTED, ALL CONSTRUCTION IS TO BE IN ACCORDANCE WITH THE FOLLOWING:
 - HOWARD COUNTY STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION VOLUME IV.
 - MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, AS AMENDED.
 - SOIL CONSERVATION SERVICE 1983 MARYLAND STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
 - SOIL CONSERVATION SERVICE 1993 MARYLAND STANDARD AND SPECIFICATION FOR POND CONSTRUCTION (CODE 378).
 - EXISTING UTILITIES ARE BASED ON FIELD RUN TOPOGRAPHY.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS, DIVISION OF CONSTRUCTION INSPECTION AT 410-313-1080 AT LEAST (5) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION.
- 2 FOOT CONTOUR TOPOGRAPHY AND EXISTING CONDITIONS BASED ON AERIAL TOPOGRAPHIC SURVEY PREPARED BY PHOTO-SCIENCE, INC. FLOWN ON FEBRUARY 2, 1989. TOPOGRAPHY ALSO REFLECTS SDP 96-35 APPROVED ON 6/14/96.
- STORMWATER MANAGEMENT FOR THIS DEVELOPMENT WAS PROVIDED UNDER SDP 96-35 AND APPROVED ON 6/14/96.
- HORIZONTAL AND VERTICAL DATUMS BASED ON HOWARD COUNTY CONTROL. COORDINATES BASED ON NAD 83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 1012 AND NO. 16E1.

HOWARD COUNTY MONUMENT 1012	N 601060.177	ELEV. = 445.577
	N 54538.7560	
HOWARD COUNTY MONUMENT 16E1	N 593250.9322	ELEV. = 509.924
	E 134092.710	
- NOISE STUDY WAS PROVIDED BY Wildman Environmental Services, Inc. AND APPROVED ON NOV. 1, 1994.
- FOREST DELINEATION WAS PROVIDED BY ENVIRONMENTAL SYSTEMS ANALYSIS, INC. AND APPROVED ON 11-30-93.
- THE 100 YR. FLOODPLAIN AS SHOWN ON THESE PLANS ARE BASED ON THE ENCLOSED FLOODPLAIN STUDY THAT WAS PROVIDED BY Hixterburg Associates, Inc. STUDY WAS APPROVED AT PRELIMINARY STAGE ON 3-3-95.
- THE WETLANDS STUDY WAS PREPARED BY Exploration Research, Inc. AND WAS COMPILED ON 9/25/91.
- THE TRAFFIC STUDY WAS PROVIDED BY THE Traffic Group AND APPROVED ON 7-11-94.
- THE SOILS INVESTIGATION REPORT WAS PREPARED BY L.T.E., Inc. ON JUNE 28, 1994.
- THIS PLAN IS SUBJECT TO WAIVER PETITION # WP-95-23 FROM SECTION 16.116.1 & SECTION 16.116.2 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS WHICH RESTRICTS GRADING AND REMOVAL OF VEGETATIVE COVER FROM WETLANDS AND STREAM BUFFER AND FROM SECTION 16.116.6, WHICH RESTRICTS GRADING OF STEEP SLOPES OF 25% OR GREATER AND SECTION 16.115.4, WHICH RESTRICTS DEVELOPMENT WITHIN THE 100 YEAR FLOODPLAIN. (SEE GENERAL NOTE NO. 23)
- THE SKETCH PLAN 5 94-07 WAS APPROVED ON 11/30/93. THE PRELIMINARY PLAN P 97-09 WAS APPROVED ON 7/29/97.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE, 1993)".
- A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- PUBLIC WATER AND PUBLIC SEWER WILL BE USED WITHIN THIS DEVELOPMENT. WATER MAIN EXTENSION FOR THIS SUBDIVISION IS UNDER CONTRACT NO. 24-3456-D, 24-3469-D & 24-3566-D. DRAINAGE AREA IS THE LITTLE PATUXENT.
- EXISTING UTILITIES ARE BASED ON CONTRACT NO. 44-3480 AND HOWARD COUNTY AS-BUILTS FOR THE REFERENCED CONTRACT.
- PERMITS APPLICABLE FOR THIS SUBDIVISION ARE AS FOLLOWS:
 WETLAND PERMIT AUTHORIZATION NO. - CENAB-OP-RP(G.T.W. PROPERTY) 91-0921-5
 MDE WATER QUALITY CERTIFICATION NO. - 91-WQ-0489 AND MDE WATER MANAGEMENT ADMINISTRATION LETTER OF RECEIPT TRACKING NO.'S - 199100921 AND 199191509 (91-WQ-0812).
- THIS PLAN IS SUBJECT TO MASS GRADING PLAN SDP 96-35 BOARD OF APPEALS CASE NO. 96-21V AND ZONING BOARD CASE NO. 28 929-M.
- THE FOREST CONSERVATION EASEMENT(S) HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, EXCEPT AS SHOWN ON AN APPROVED ROAD CONSTRUCTION DRAWING OR SITE DEVELOPMENT PLAN. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
- NUMBER OF PARKING SPACES PROVIDED:

ZONING	NUMBER OF PARKING SPACES REQUIRED	PROVIDED
R-SA-B (SECTION 4 AREA 1)	2 SPACES PER UNIT	25
R-SA-B (SECTION 5) PLAT NO. 1379	2 SPACES PER UNIT	205
R-SA-B (SECTION 6)	2 SPACES PER UNIT	137
TOTALS	404 SPACES	447 SPACES
- AREA TABULATION:

RSC ZONING		R-SA-B ZONING	
TOTAL NUMBER OF BUILDABLE LOTS TO BE RECORDED	27	TOTAL NUMBER OF BUILDABLE LOTS TO BE RECORDED	66
TOTAL NUMBER OF OPEN SPACE LOTS TO BE RECORDED	1	TOTAL NUMBER OF OPEN SPACE LOTS TO BE RECORDED	3
TOTAL NUMBER OF PARCELS TO BE RECORDED	1	TOTAL NUMBER OF PARCELS TO BE RECORDED	1
TOTAL NUMBER OF LOTS AND PARCELS TO BE RECORDED	28	TOTAL NUMBER OF LOTS AND PARCELS TO BE RECORDED	70
TOTAL AREA OF BUILDABLE LOTS TO BE RECORDED	2,456 AC.	TOTAL AREA OF BUILDABLE LOTS TO BE RECORDED	3,431 AC.
TOTAL AREA OF OPEN SPACE LOTS TO BE RECORDED	2,960 AC.	TOTAL AREA OF OPEN SPACE LOTS TO BE RECORDED	4,181 AC.
TOTAL AREA OF PARCELS TO BE RECORDED	1,695 AC.	TOTAL AREA OF PARCELS TO BE RECORDED	0,215 AC.
TOTAL AREA OF LOTS AND PARCELS TO BE RECORDED	10,011 AC.	TOTAL AREA OF LOTS AND PARCELS TO BE RECORDED	7,269 AC.
TOTAL AREA OF ROADWAY TO BE RECORDED	0,323 AC.	TOTAL AREA OF ROADWAY TO BE RECORDED	1,560 AC.
TOTAL AREA TO BE RECORDED	11,034 AC.	TOTAL AREA TO BE RECORDED	9,409 AC.
- NUMBER OF PARKING SPACES FOR R-SA-B ZONING:

ZONING	NUMBER OF PARKING SPACES REQUIRED	PROVIDED
R-SA-B	2 PER LOT	2 PER LOT
- NUMBER OF PARKING SPACES FOR R-SA-B ZONING:

REQUIRED	PROVIDED
GARAGE UNITS: 2 x 41 = 82 SPACES	82
COURT UNITS: 2 x 21 = 42 SPACES	55
- GARAGE UNITS FOR TOWNHOUSES ARE LOTS 6 - 33 AND LOTS 56 - 60 (41 UNITS)

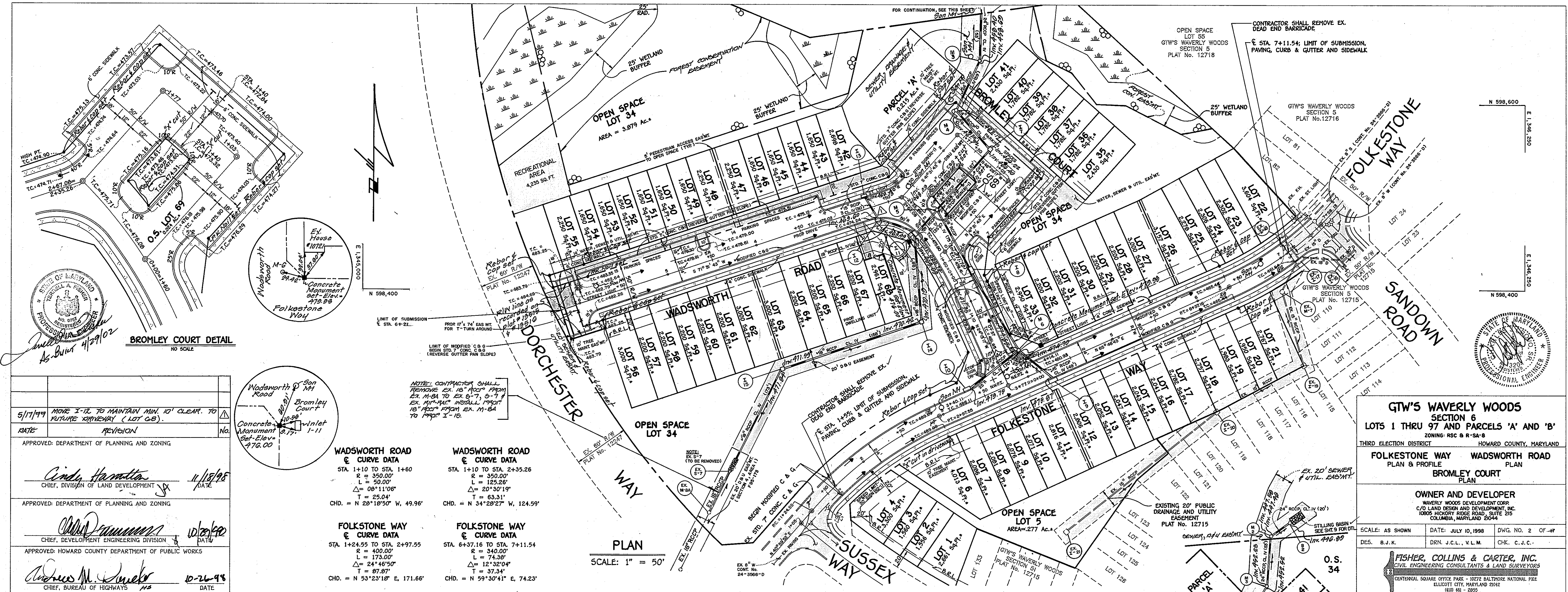
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 NATIONAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIZ
 ELKLOTT CITY, MARYLAND 21042
 (410) 401 - 2225

OWNER AND DEVELOPER
 WAVERLY WOODS DEVELOPMENT CORPORATION
 c/o LAND DESIGN AND DEVELOPMENT
 10905 ROCKCRY RIDGE ROAD
 COLUMBIA, MARYLAND 21044

As-Built 4-29-02

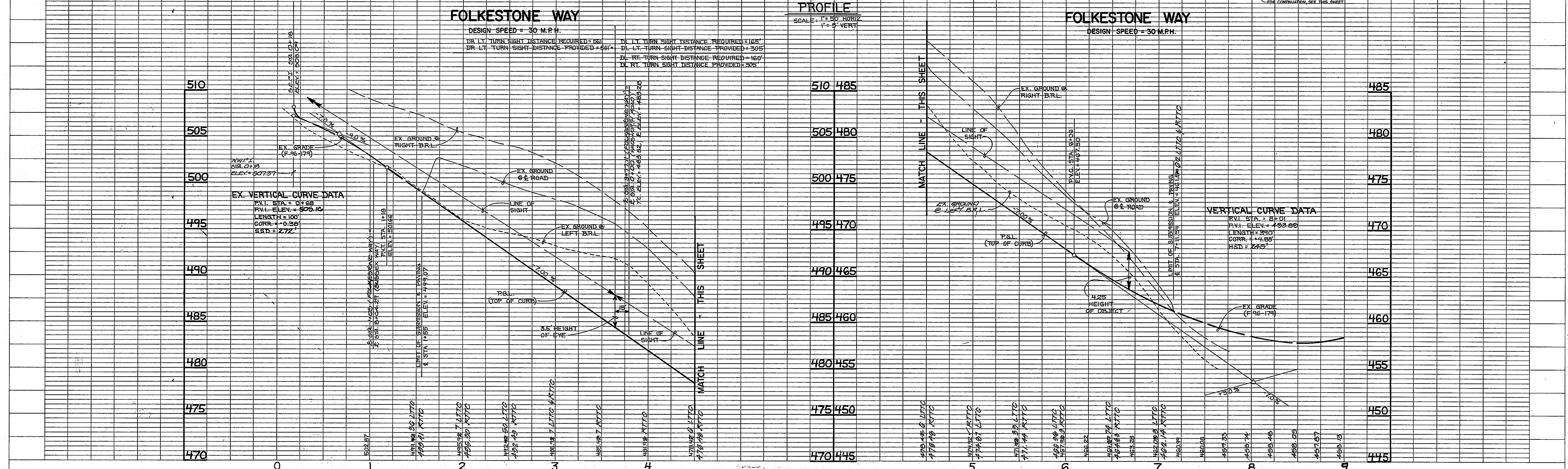


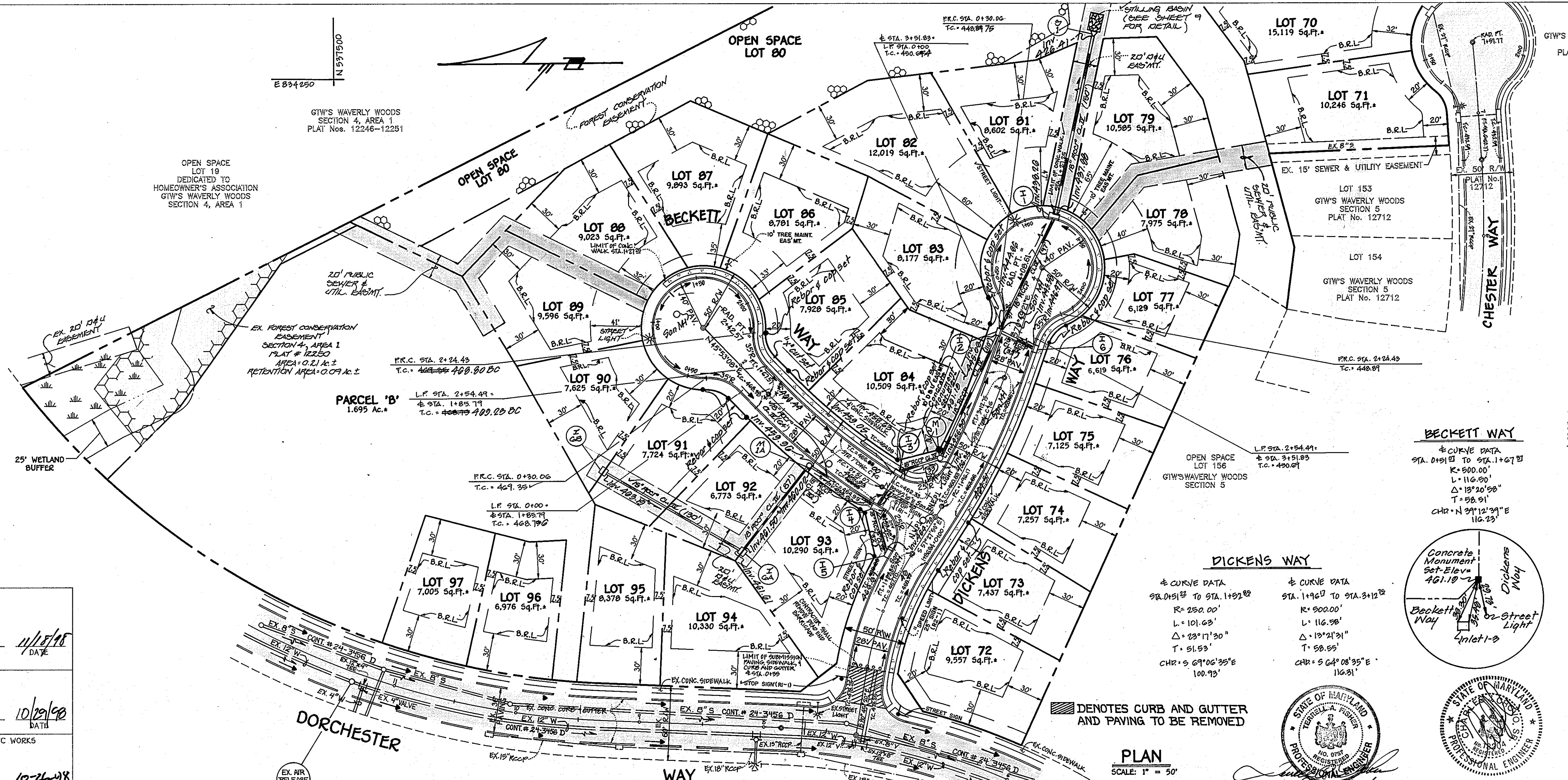
GTW'S WAVERLY WOODS
 SECTION 6
 LOTS 1 THRU 97 AND PARCELS A AND B
 (PROPERTY OF G.T.W. JOINT VENTURE, LIBER 2222, FOLIO 36)
 ZONING: RSC AND R-SA-8
 TAX MAP No. 16 PART OF PARCEL No. 21
 THIRD ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 DATE: JULY 10, 1998
 SHEET 1 OF 17



5/17/99	REVISION	NO.	1
APPROVED: DEPARTMENT OF PLANNING AND ZONING			
APPROVED: DEPARTMENT OF PLANNING AND ZONING			
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS			

GTW'S WAVERLY WOODS SECTION 6
 LOTS 1 THRU 97 AND PARCELS 'A' AND 'B'
 ZONING: RSC & R-SA-B
 HOWARD COUNTY, MARYLAND
FOLKESTONE WAY WADSWORTH ROAD
 PLAN & PROFILE
BROMLEY COURT
 PLAN
OWNER AND DEVELOPER
 WAVERLY WOODS DEVELOPMENT CORP.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 10805 HICKORY RIDGE ROAD, SUITE 215
 COLUMBIA, MARYLAND 21044
 SCALE: AS SHOWN DATE: JULY 10, 1998 DWG. NO. 2 OF 47
 DES. B.J.K. DRN. J.C.L., V.L.M. CHK. C.J.C.
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL Pkwy
 ELLICOTT CITY, MARYLAND 21112
 (410) 981-2855

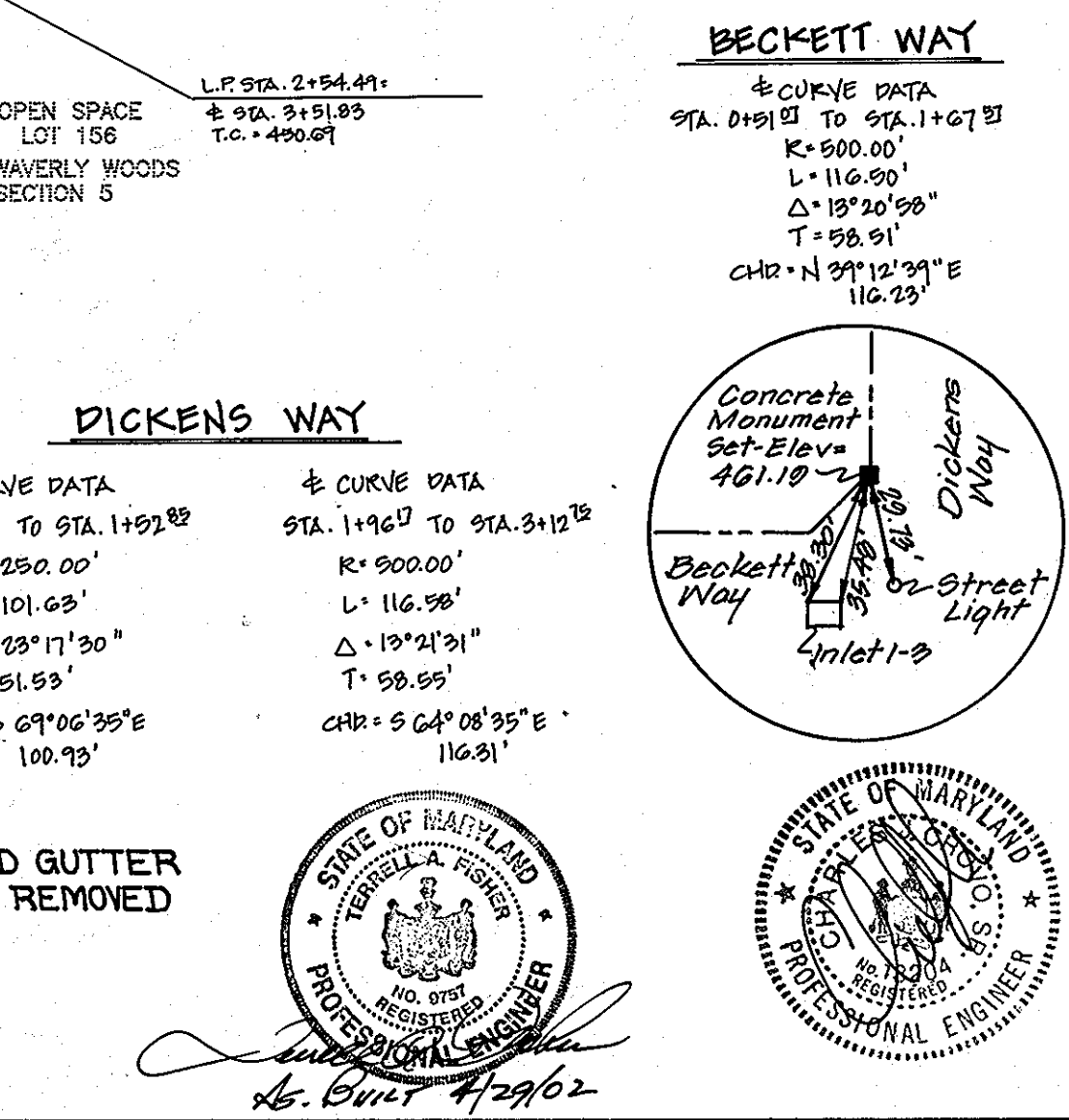




APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cindy Hammit 11/15/98
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
John DeWitt 10/29/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Stephen M. Ducker 10-26-98
 CHIEF, BUREAU OF HIGHWAYS DATE



GTW'S WAVERLY WOODS SECTION 6
 LOTS 1 THRU 97 AND PARCELS 'A' AND 'B'
 ZONING: RSC 6 R-5A-8
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

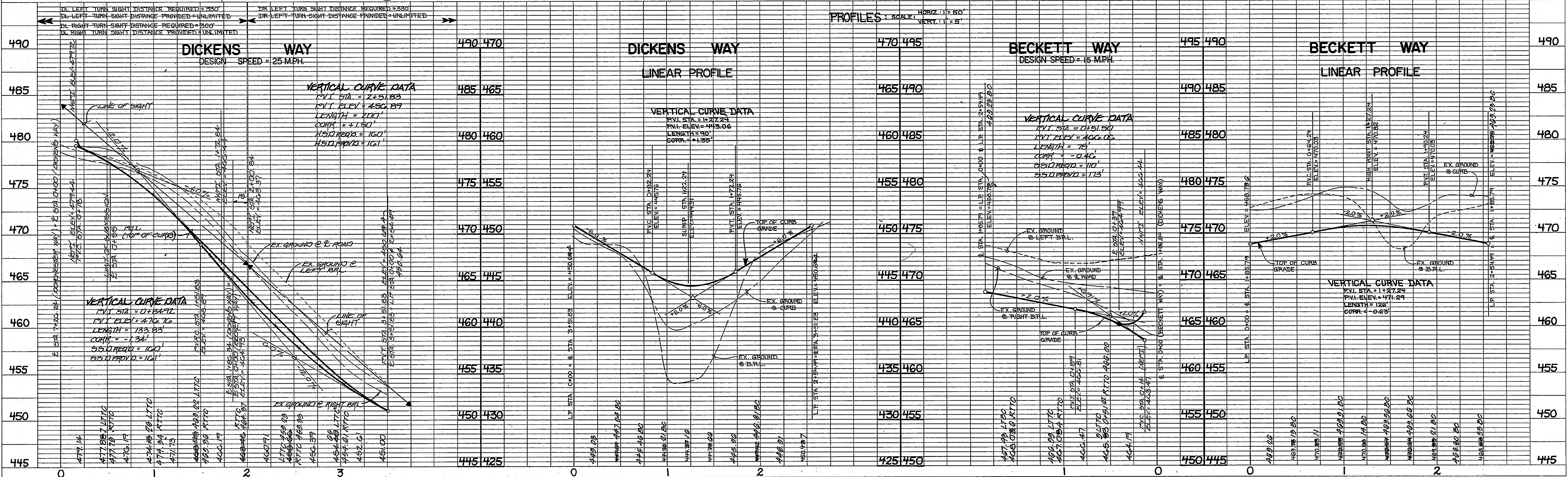
DICKENS WAY
 PLAN AND PROFILE

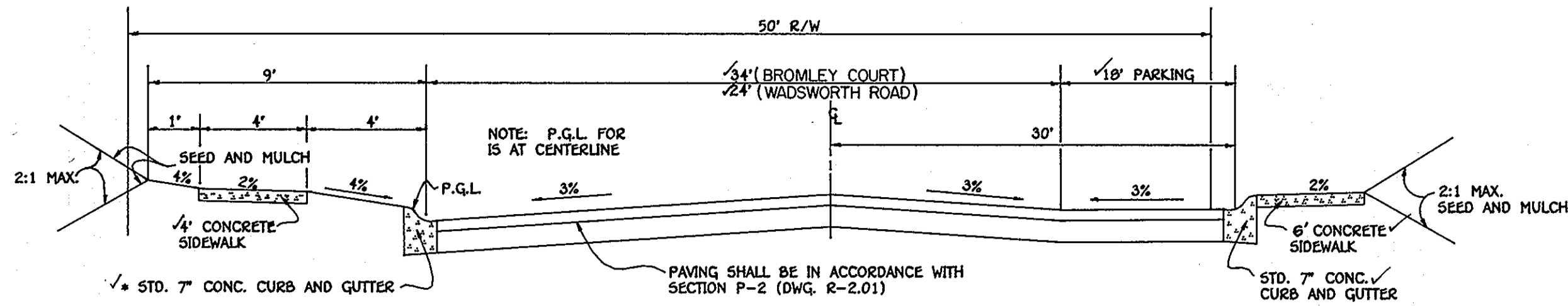
BECKETT WAY
 PLAN AND PROFILE

OWNER AND DEVELOPER
 WAVERLY WOODS DEVELOPMENT CORP.
 C/O LAND DESIGN AND DEVELOPMENT, INC.
 605 HICKORY RIDGE ROAD, SUITE 405
 COLUMBIA, MARYLAND 21044

SCALE: AS SHOWN DATE: JULY 10, 1998 DWG. NO. 3 OF 17
 DES. B.J.K. DRN. J.C.L., J.A.U. CHK. C.J.C.

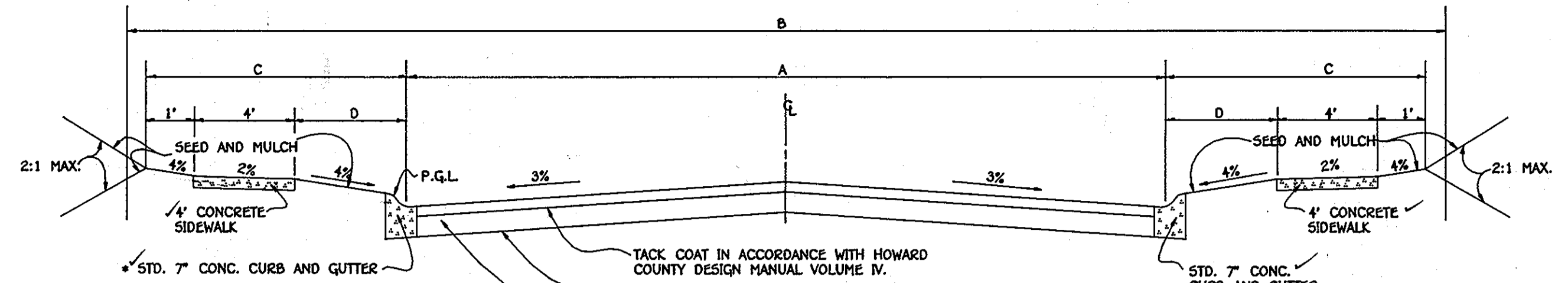
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 1872 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21117
 (410) 481-2855





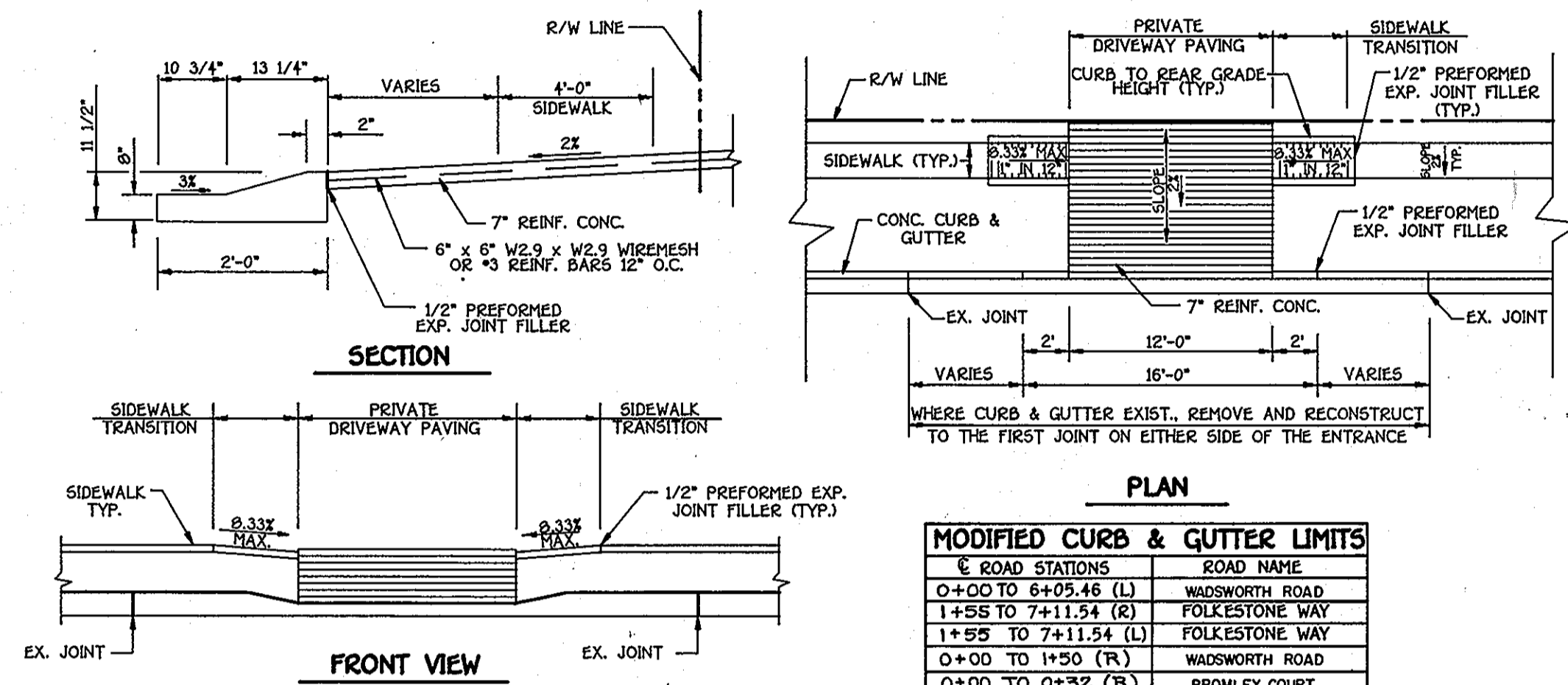
TYPICAL ROADWAY SECTION WITH OFF STREET PARKING
NO SCALE

ROADWAY INFORMATION CHART					
ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	STATION LIMITS	PAVING SECTION
WADSWORTH ROAD	LOCAL ROAD	30 M.P.H.	R-SA-B	3+12 TO 6+05.46	P-2
BROMLEY COURT	LOCAL ROAD	25 M.P.H.	R-SA-B	0+00 TO 2+47.08	P-2

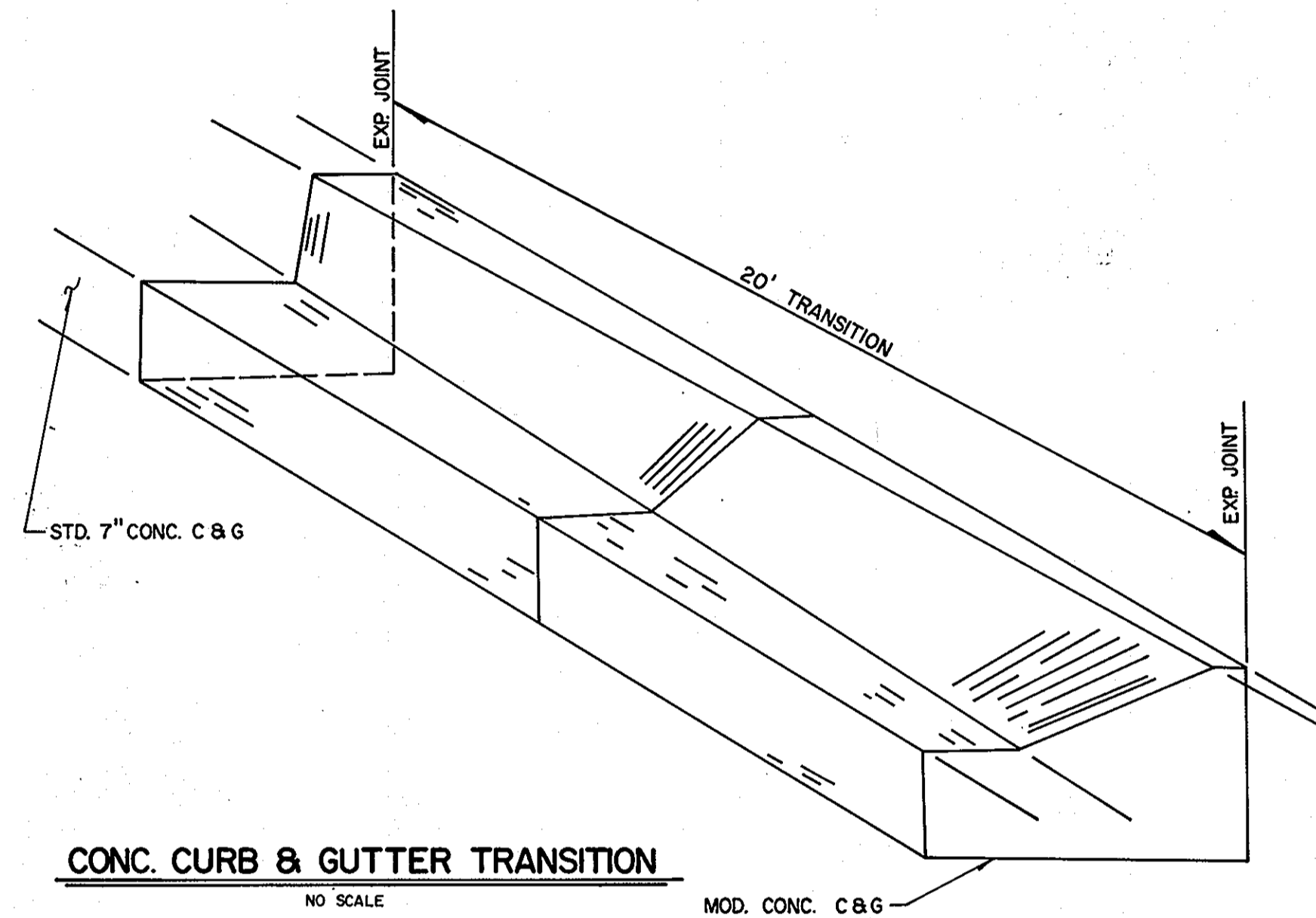


TYPICAL ROADWAY SECTION
NO SCALE

ROADWAY INFORMATION CHART									
ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	A	B	C	D	STATION LIMITS	PAVING SECTION
DICKENS WAY	CUL-DE-SAC	25 M.P.H.	RSC	28+00	9' 4"			0+55 TO 4+08.61	P-2
BECKETT WAY	CUL-DE-SAC	15 M.P.H.	RSC	28+00	9' 4"			0+00 TO 2+42.57	P-2
FOLKESTONE WAY	LOCAL COLLECTOR	30 M.P.H.	R-SA-B	24+50	9' 4"			1+55 TO 7+11.54	P-2
WADSWORTH ROAD	LOCAL ROAD	30 M.P.H.	R-SA-B	24+50	9' 4"			0+00 TO 3+12	P-2



RESIDENTIAL DRIVEWAY ENTRANCE
CLOSED SECTION WITH MODIFIED COMBINATION
CURB & GUTTER AND SIDEWALK
NO SCALE

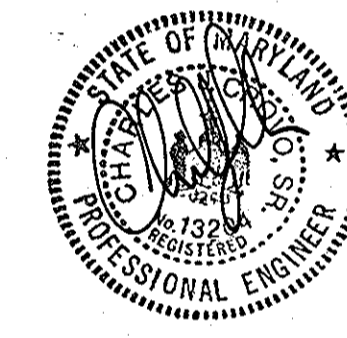


CONC. CURB & GUTTER TRANSITION
NO SCALE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cinda Hamitta 11/18/98
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Mark D. ... 10/27/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 10-26-98
CHIEF, BUREAU OF HIGHWAYS
DATE



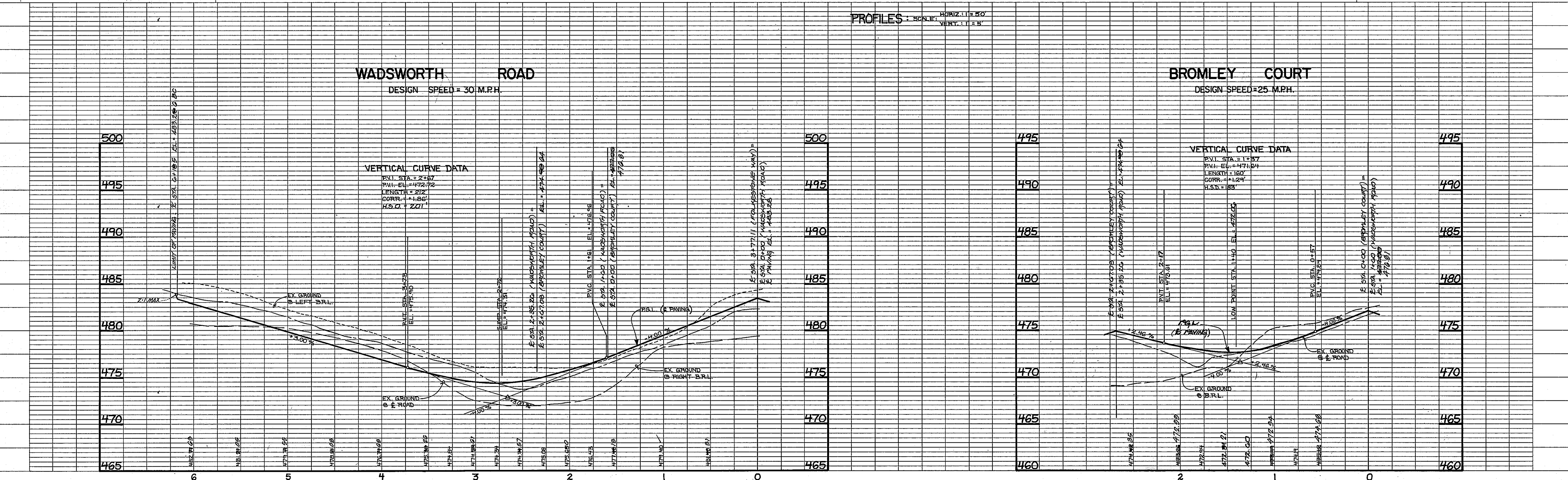
GTW'S WAVERLY WOODS SECTION 6
LOTS 1 THRU 97 AND PARCELS 'A' AND 'B'
ZONING: RSC & R-SA-B
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

WADSWORTH ROAD PROFILE
BROMLEY COURT PROFILE
TYPICAL ROADWAY SECTIONS

OWNER AND DEVELOPER
WAVERLY WOODS DEVELOPMENT CORP.
C/O LAND DESIGN AND DEVELOPMENT, INC.
10865 HIGHWAY RIDGE ROAD, SUITE 215
COLUMBIA, MARYLAND 21044

SCALE: AS SHOWN DATE: JULY 10, 1998 DWG. NO. 4 OF 17
DES. B. J. K. DRN. J. C. L., V. L. M. CHK. C. J. C.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLCOTT CITY, MARYLAND 21042
4109 461 - 2095



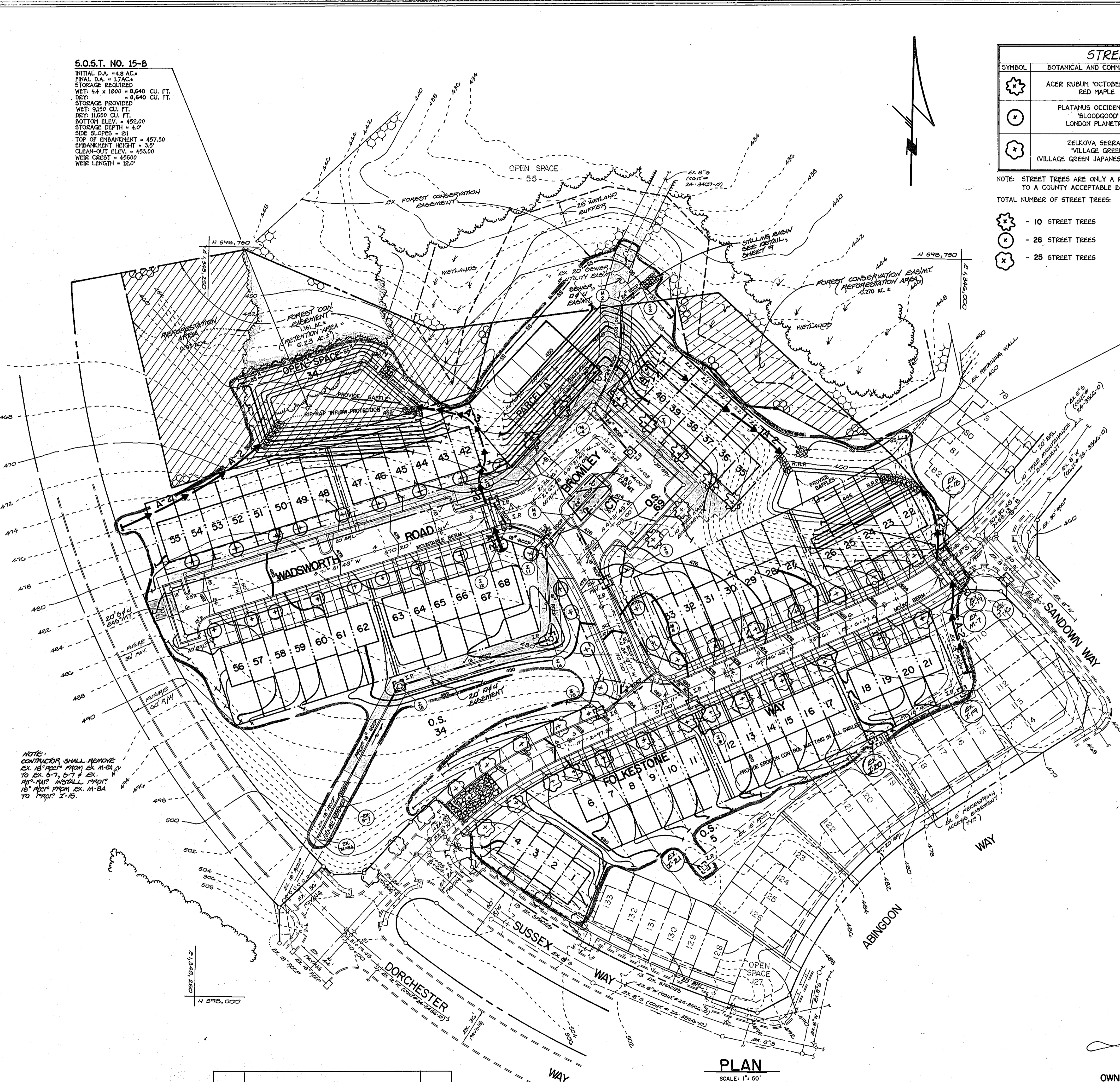
S.O.S.T. NO. 15-B
 INITIAL D.A. = 48 AC*
 FINAL D.A. = 17AC*
 STORAGE REQUIRED
 WET: 4.4 x 1800 = 8,640 CU. FT.
 DRY: STORAGE PROVIDED
 WET: 3,150 CU. FT.
 DRY: 11,500 CU. FT.
 BOTTOM ELEV. = 452.00
 STORAGE DEPTH = 4.0'
 SIDE SLOPES = 2:1
 TOP OF EMBANKMENT = 457.50
 EMBANKMENT HEIGHT = 3.5'
 CLEAN-OUT ELEV. = 453.00
 WEIR CREST = 456.00
 WEIR LENGTH = 12.0'

STREET TREE SCHEDULE			
SYMBOL	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
(*)	ACER RUBRUM 'OCTOBER GLORY' RED MAPLE	2 1/2" - 3" CALIPER	40' APART ON PUBLIC R/W
(*)	PLATANUS OCCIDENTALIS 'BLOODGOOD' LONDON PLANETREE	2 1/2" - 3" CALIPER	40' APART ON PUBLIC R/W
(*)	ZELKOVA SERRATA 'VILLAGE GREEN' (VILLAGE GREEN JAPANESE ZELKOVA)	2 1/2" - 3" CALIPER	40' APART ON PUBLIC R/W

NOTE: STREET TREES ARE ONLY A RECOMMENDATION. THIS MAY BE REVISED TO A COUNTY ACCEPTABLE EQUIVALENT.

- TOTAL NUMBER OF STREET TREES:
- (*) - 10 STREET TREES
 - (*) - 26 STREET TREES
 - (*) - 25 STREET TREES

R.O.S.T. NO. 15-A
 (MODIFIED FROM NO. 15 PER SDP 96-115)
 INITIAL D.A. = 3.9 AC* (PREVIOUSLY 10.4 AC)
 FINAL D.A. = 1.3 AC*
 STORAGE REQUIRED
 WET: 3.9 x 1800 = 7,020 CU. FT.
 DRY: STORAGE PROVIDED
 WET: 7,100 CU. FT.
 DRY: 8,500 CU. FT.
 BOTTOM ELEV. = 446.00 (HOLD EXISTING)
 STORAGE DEPTH = 4.0'
 SIDE SLOPES = 2:1
 TOP OF EMBANKMENT = 452.00 (HOLD EXISTING)
 EMBANKMENT HEIGHT = 2.0'
 CLEAN-OUT ELEV. = 447.00
 WEIR CREST = 450.00
 WEIR LENGTH = 12.0'



NOTE: CONTRACTOR SHALL REMOVE EX. 18" RIP-RAP FROM EX. 11-84 TO EX. 6-7, 5-7 & EX. RIP-RAP INSTALL PROP. 18" RPP FROM EX. 11-84 TO PROP. 1-15.

DEVELOPER'S CERTIFICATE
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND THAT ANY RESPONSIBLE PERSONNEL IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.
 SIGNATURE OF DEVELOPER: *[Signature]* DATE: 1/28/98

ENGINEER'S CERTIFICATE
 I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITION AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 SIGNATURE OF ENGINEER: *[Signature]* DATE: 1/28/98

REVIEW FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
 LISA D.A. NATURAL RESOURCES CONSERVATION SERVICE: *[Signature]* DATE: 10/6/98

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 APPROVED: *[Signature]* DATE: 10/6/98
 HOWARD SOIL CONSERVATION DISTRICT

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] DATE: 11/10/98
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] DATE: 10/27/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] DATE: 10-26-98
 CHIEF, BUREAU OF HIGHWAYS

LEGEND

—SS—SS—SS—	SUPER-SILT FENCE
—S—S—S—	SILT FENCE
—X—X—X—	TREE PROTECTION FENCE
□ I.P.	INLET PROTECTION
□ S.C.E.	STABILIZED CONSTRUCTION ENTRANCE
A-2 A-2	EARTH DIKE
—	LIMIT OF DISTURBANCE
□ R.P.P.	RIP-RAP INFLOW PROTECTION
—	MOUNTABLE BERM

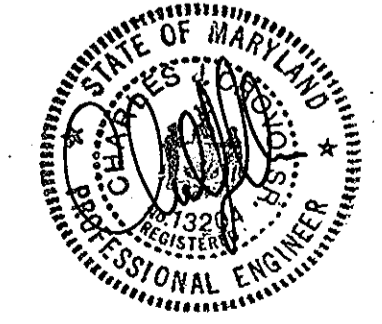
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL FIRE
 ELLICOTT CITY, MARYLAND 21114
 (410) 461-2955

DATE	REVISION	No.
6/17/97	MOVE I-12 TO MAINTAIN MIN. 10' CLEAR. TO FUTURE DRIVEWAY (LOT 68).	1

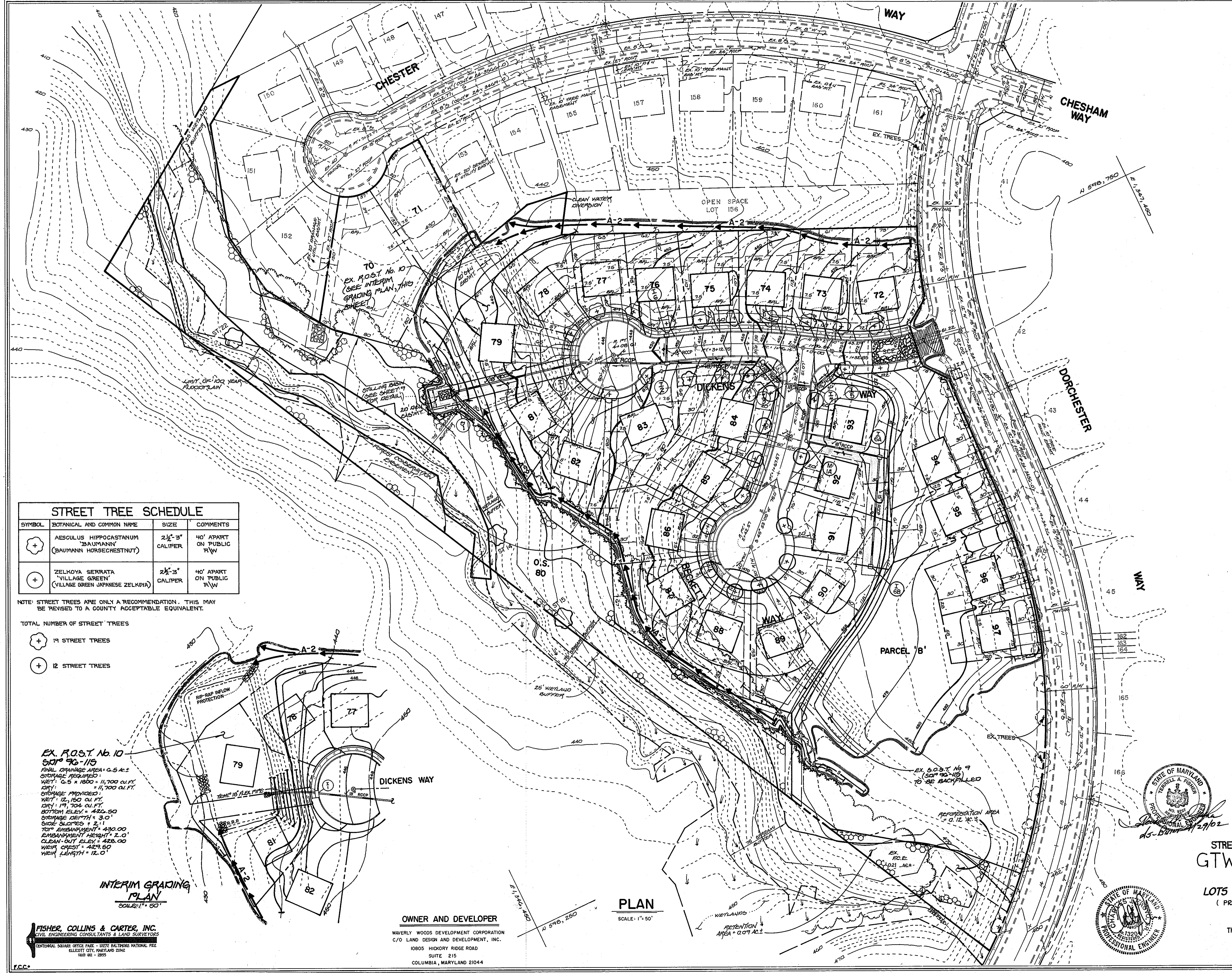
PLAN
 SCALE: 1" = 50'



OWNER AND DEVELOPER
 WAVERLY WOODS DEVELOPMENT CORPORATION
 C/O LAND DESIGN AND DEVELOPMENT, INC.
 10805 HICKORY RIDGE ROAD
 SUITE 215
 COLUMBIA, MARYLAND 21044



STREET TREE, GRADING & SEDIMENT CONTROL PLAN
GTW'S WAVERLY WOODS
SECTION 6
LOTS 1 THRU 97 AND PARCELS 'A' AND 'B'
 (PROPERTY OF GTW JOINT VENTURE, LIBER 2222, FOLIO 36)
 ZONING: RSC AND R-SA-B
 TAX MAP NO. 16 PARCEL NO. 21
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JULY 10, 1998
 SHEET 5 OF 17



STREET TREE SCHEDULE

SYMBOL	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
+	AESCULUS HIPPOCASTANUM "BAUMANN" (BAUMANN HORSECHESTNUT)	2 1/2" - 3" CALIPER	40' APART ON PUBLIC R/W
+	ZELKOYA SERRATA "VILLAGE GREEN" (VILLAGE GREEN JAPANESE ZELKOYA)	2 1/2" - 3" CALIPER	40' APART ON PUBLIC R/W

NOTE: STREET TREES ARE ONLY A RECOMMENDATION. THIS MAY BE REVISED TO A COUNTY ACCEPTABLE EQUIVALENT.

- TOTAL NUMBER OF STREET TREES
- 11 STREET TREES
 - 12 STREET TREES

EX. R.O.S.T. No. 10
 5107 90-115
 FINAL DRAINAGE AREA = 0.5 A.C.
 STORAGE REQUIRED
 WET: 0.5 x 1000 = 11,700 CU. FT.
 DRY: STORAGE PROVIDED:
 WET: 12,150 CU. FT.
 DRY: 17,704 CU. FT.
 BOTTOM ELEV. = 428.50
 STORAGE DEPTH = 3.0'
 SIDE SLOPES = 2:1
 TOP EMBANKMENT = 430.00
 EMBANKMENT HEIGHT = 2.0'
 CLEAN-OUT ELEV. = 428.00
 WET CREST = 429.50
 WET LENGTH = 12.0'

INTERIM GRADING PLAN
 SCALE: 1" = 50'

PLAN
 SCALE: 1" = 50'

OWNER AND DEVELOPER
 WAVERLY WOODS DEVELOPMENT CORPORATION
 C/O LAND DESIGN AND DEVELOPMENT, INC.
 10805 HICKORY RIDGE ROAD
 SUITE 215
 COLUMBIA, MARYLAND 21044

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE
 ELLETTT CITY, MARYLAND 21114
 (410) 461-2855

DEVELOPER'S CERTIFICATE

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

Signature of Developer: *[Signature]* DATE: 1-28-98

ENGINEER'S CERTIFICATE

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

Signature of Engineer: *[Signature]* DATE: 1/28/98

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

Signature: *[Signature]* DATE: 10/6/98
 HOWARD COUNTY DEPARTMENT OF NATURAL RESOURCES SERVICE

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

Signature: *[Signature]* DATE: 10/6/98
 HOWARD SOIL CONSERVATION DISTRICT

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Signature: *[Signature]* DATE: 11/19/95
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: DEPARTMENT OF PLANNING AND ZONING

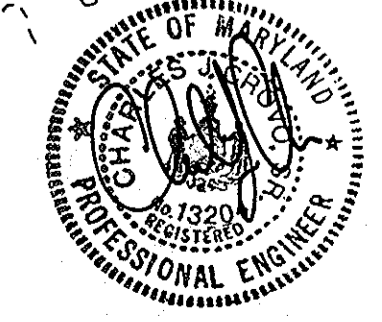
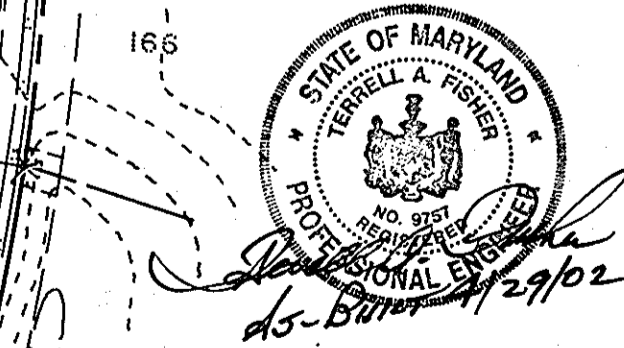
Signature: *[Signature]* DATE: 10/25/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Signature: *[Signature]* DATE: 10-26-98
 CHIEF, BUREAU OF HIGHWAYS

LEGEND

- - - - - SILT FENCE
- x - x - x - TREE PROTECTION FENCE
- [] INLET PROTECTION
- [] S.C.E. STABILIZED CONSTRUCTION ENTRANCE
- A-2, A-2 EARTH DIKE
- [] LIMIT OF DISTURBANCE
- [] PAVING TO BE REMOVED



STREET TREE, GRADING AND SEDIMENT CONTROL PLAN
GTW'S WAVERLY WOODS
 SECTION 6
 LOTS 1 THRU 97 AND PARCELS 'A' AND 'B'
 (PROPERTY OF GTW JOINT VENTURE, LIBER 2222, FOLIO 36.)
 ZONING: RSC AND R-SA-8
 TAX MAP NO. 16 PARCEL NO. 21
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JULY 10, 1998
 SHEET 6 OF 17



STREET TREE SCHEDULE

SYMBOL	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
	ACER RUBUM 'OCTOBER GLORY' RED MAPLE	2 1/2" - 3" CALIPER	40' APART ON PUBLIC R/W
	PLATANUS OCCIDENTALIS 'BLOODGOOD' LONDON PLANETREE	2 1/2" - 3" CALIPER	40' APART ON PUBLIC R/W
	ZELKOVA SERRATA 'VILLAGE GREEN' (VILLAGE GREEN JAPANESE ZELKOVA)	2 1/2" - 3" CALIPER	40' APART ON PUBLIC R/W

NOTE: STREET TREES ARE ONLY A RECOMMENDATION. THIS MAY BE REVISED TO A COUNTY ACCEPTABLE EQUIVALENT.

TOTAL NUMBER OF STREET TREES:

- 10 STREET TREES
- 26 STREET TREES
- 25 STREET TREES

DRAINAGE AREA DATA

STRUCTURE NO.	DRAINAGE AREA	AREA AC.	'C'	ZONED	X IMP.
EX. I-17	I-17	0.49	0.50	R-SA-8	44X
EX. I-18	I-18	0.46	0.55	R-SA-8	51X
EX. I-19	I-19	0.32	0.38	R-SA-8	26X
EX. I-20	I-20	0.70	0.34	R-SA-8	20X
EX. I-21	I-21	0.52	0.33	R-SA-8	19X
I-7	I-7	0.79	0.66	R-SA-8	72X
I-8	I-8	0.15	0.51	R-SA-8	50X
I-9	I-9	0.95	0.49	R-SA-8	43X
I-10	I-10	0.21	0.64	R-SA-8	66X
I-11	I-11	0.16	0.75	R-SA-8	85X
I-12	I-12	0.62	0.46	R-SA-8	42X
I-13	I-13	0.56	0.60	R-SA-8	63X
I-14	I-14	0.51	0.27	R-SA-8	9X
I-15	I-15	0.96	0.26	R-SA-8	8X

DEVELOPER'S CERTIFICATE

I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND THAT ANY RESPONSIBLE PERSONNEL IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

SIGNATURE OF DEVELOPER: _____ DATE: _____

ENGINEER'S CERTIFICATE

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

SIGNATURE OF ENGINEER: _____ DATE: _____

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

U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE DATE: _____

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

APPROVED: _____ DATE: _____

HOWARD SOIL CONSERVATION DISTRICT DATE: _____

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Cindy Hamstra 11/18/98
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

John Dammicus 10/29/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Stephen M. Danek 10-26-98
CHIEF, BUREAU OF HIGHWAYS DATE

LANDSCAPING PLANT LIST

QTY.	KEY	NAME	SIZE
28		ACER RUBUM 'OCTOBER GLORY' (OCTOBER RED MAPLE)	2 - 2 1/2" CALIPER FULL CROWN
54		PINUS STROBUS EASTERN WHITE PINE	8' - 8" HEIGHT

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 82 REQUIRED LANDSCAPE TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$16,200.00.

SCHEDULE A PERIMETER LANDSCAPE EDGE

PERIMETER PER PPT-09	CATEGORY (PROPERTIES/ROADWAYS)	LANDSCAPE TYPE	LINEAR FEET OF ROADWAY FRONTAGE PERIMETER	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NUMBER OF PLANTS REQUIRED			NUMBER OF PLANTS PROVIDED		
						SHADE TREES	EVERGREEN TREES	SHRUBS	SHADE TREES (21 SUBSTITUTION)	EVERGREEN TREES (21 SUBSTITUTION)	SHRUBS (21 SUBSTITUTION)
P-26	ADJACENT TO ROADWAY	C	265'	NO	NO	7	13	-	7	13	-
P-15	ADJACENT TO ROADWAY	C	50'	NO	NO	1	2	-	1	2	-
P-27	ADJACENT TO ROADWAY	C	100'	NO	NO	2	5	-	2	5	-
P-28	ADJACENT TO ROADWAY	C	320'	NO	NO	8	16	-	8	16	-
P-29	ADJACENT TO ROADWAY	C	93'	NO	NO	2	4	-	2	4	-
P-20	ADJACENT TO ROADWAY	C	170'	NO	NO	4	8	-	4	8	-
P-21	ADJACENT TO ROADWAY	C	90'	NO	NO	1	4	-	1	4	-
P-30	ADJACENT TO ROADWAY	C	57'	NO	NO	1	2	-	1	2	-
P-14	ADJACENT TO PERIMETER	A	113'	NO	NO	2	-	-	2	-	-
P-12	ADJACENT TO PERIMETER	A	92'	YES (99')	NO	0	-	-	0	-	-
P-5	ADJACENT TO PERIMETER	A	400'	YES (400')	NO	0	-	-	0	-	-
P-6	ADJACENT TO PERIMETER	A	114'	YES (114')	NO	0	-	-	0	-	-
P-7	ADJACENT TO PERIMETER	A	117'	YES (117')	NO	0	-	-	0	-	-

NOTE: THIS PLAN IS TO BE USED FOR P.A. INFO. AND LANDSCAPING ONLY.

PLAN
SCALE: 1" = 50'

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL FREE
ELICOTT CITY, MARYLAND 21042
(410) 461-2850

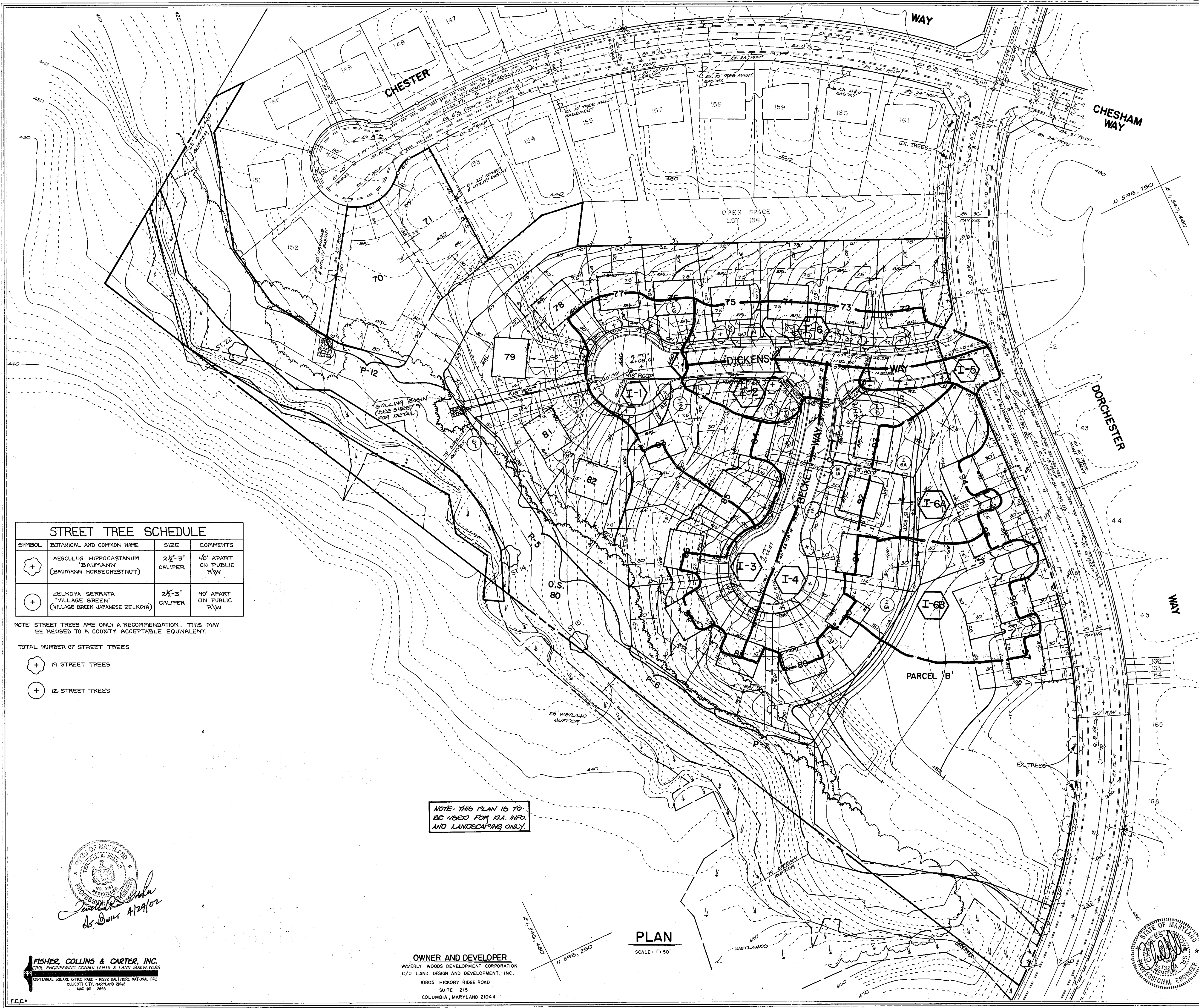
5/17/99	MOVE I-14 TO MAINTAIN MIN. 10' CLEAR. TO FUTURE KIRKENWAY (LOT 68).	
KATE	REVISION	No.

STATE OF MARYLAND
PROFESSIONAL ENGINEER
As-Built 4/29/02

OWNER AND DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION
C/O LAND DESIGN AND DEVELOPMENT, INC.
10805 HICKORY RIDGE ROAD
SUITE 215
COLUMBIA, MARYLAND 21044

STATE OF MARYLAND
PROFESSIONAL ENGINEER
As-Built 4/29/02

DRAINAGE AREA MAP & LANDSCAPE PLAN
GTW'S WAVERLY WOODS
SECTION 6
LOTS 1 THRU 97 AND PARCELS 'A' AND 'B'
(PROPERTY OF GTW JOINT VENTURE, LIBER 2222, FOLIO 36)
ZONING: RSC AND R-SA-8
TAX MAP NO. 16 PARCEL NO. 21
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JULY 10, 1998
SHEET 7 OF 17



DEVELOPER'S CERTIFICATE
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND THAT ANY RESPONSIBLE PERSONNEL IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

SIGNATURE OF DEVELOPER _____ DATE _____

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

SIGNATURE OF ENGINEER _____ DATE _____

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

U.S.O.A. NATURAL RESOURCES CONSERVATION SERVICE _____ DATE _____

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

HOWARD SOIL CONSERVATION DISTRICT _____ DATE _____

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Ande Hamilton 11/15/98
 CHIEF, DIVISION OF LAND DEVELOPMENT _____ DATE _____

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Mike Cummings 10/20/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION _____ DATE _____

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Dangle 10-26-98
 CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

STREET TREE SCHEDULE

SYMBOL	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
+	AESCULUS HIPPOCASTANUM "BAUMANN" (BAUMANN HORSECHESTNUT)	2 1/2" - 3" CALIPER	40' APART ON PUBLIC R/W
+	ZELKOYA SERRATA "VILLAGE GREEN" (VILLAGE GREEN JAPANESE ZELKOYA)	2 1/2" - 3" CALIPER	40' APART ON PUBLIC R/W

NOTE: STREET TREES ARE ONLY A RECOMMENDATION. THIS MAY BE REVISED TO A COUNTY ACCEPTABLE EQUIVALENT.

- TOTAL NUMBER OF STREET TREES
- +
 19 STREET TREES
- +
 12 STREET TREES

Signature
 4/29/02

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL FREE
 ELLICOTT CITY, MARYLAND 21114
 410 461 - 2955

OWNER AND DEVELOPER
 WAVERLY WOODS DEVELOPMENT CORPORATION
 C/O LAND DESIGN AND DEVELOPMENT, INC.
 10805 HICKORY RIDGE ROAD
 SUITE 215
 COLUMBIA, MARYLAND 21044

PLAN
 SCALE: 1" = 50'

NOTE: THIS PLAN IS TO BE USED FOR D.A. INFO AND LANDSCAPING ONLY.

DRAINAGE AREA DATA

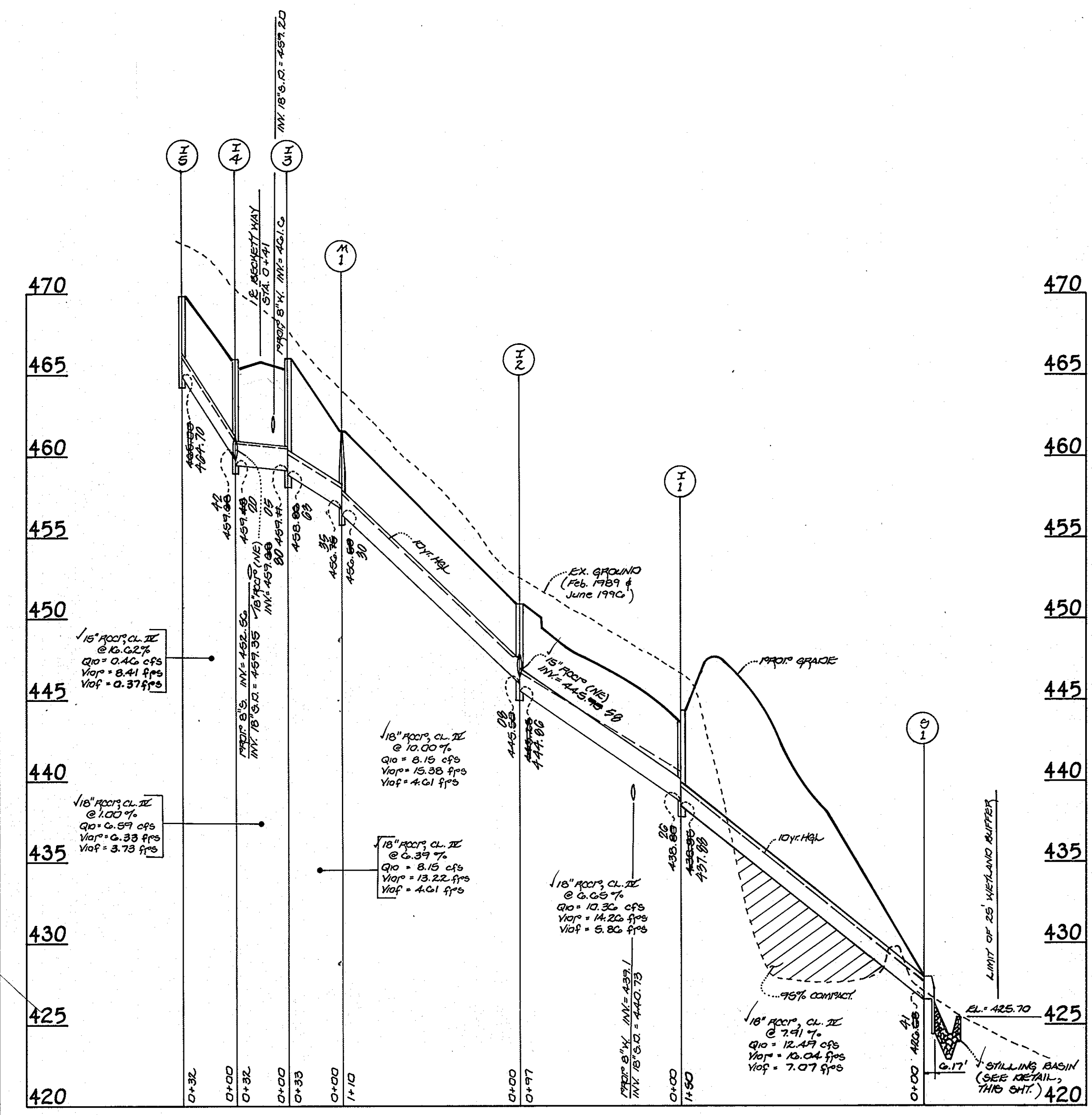
STRUCTURE NO.	DRAINAGE AREA	AREA A.C.	C'	ZONED	# IMP.
I-1	I-1	0.64	0.58	R5C	45X
I-2	I-2	0.20	0.53	R5C	35X
I-3	I-3	0.38	0.61	R5C	65X
I-4	I-4	0.65	0.62	R5C	92X
I-5	I-5	0.10	0.66	R5C	61X
I-6	I-6	0.45	0.66	R5C	60X
I-6A	I-6A	0.43	0.51	R5C	38X
I-6B	I-6B	0.59	0.51	R5C	36X

DRAINAGE AREA MAP & LANDSCAPE PLAN
GTW'S WAVERLY WOODS
 SECTION 6
 LOTS 1 THRU 97 AND PARCELS 'A' AND 'B'
 (PROPERTY OF GTW JOINT VENTURE, LIBER 2222, FOLIO 36)
 ZONING: R5C AND R-SA-8
 TAX MAP NO. 16 PARCEL NO. 21
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JULY 10, 1998
 SHEET 8 OF 17

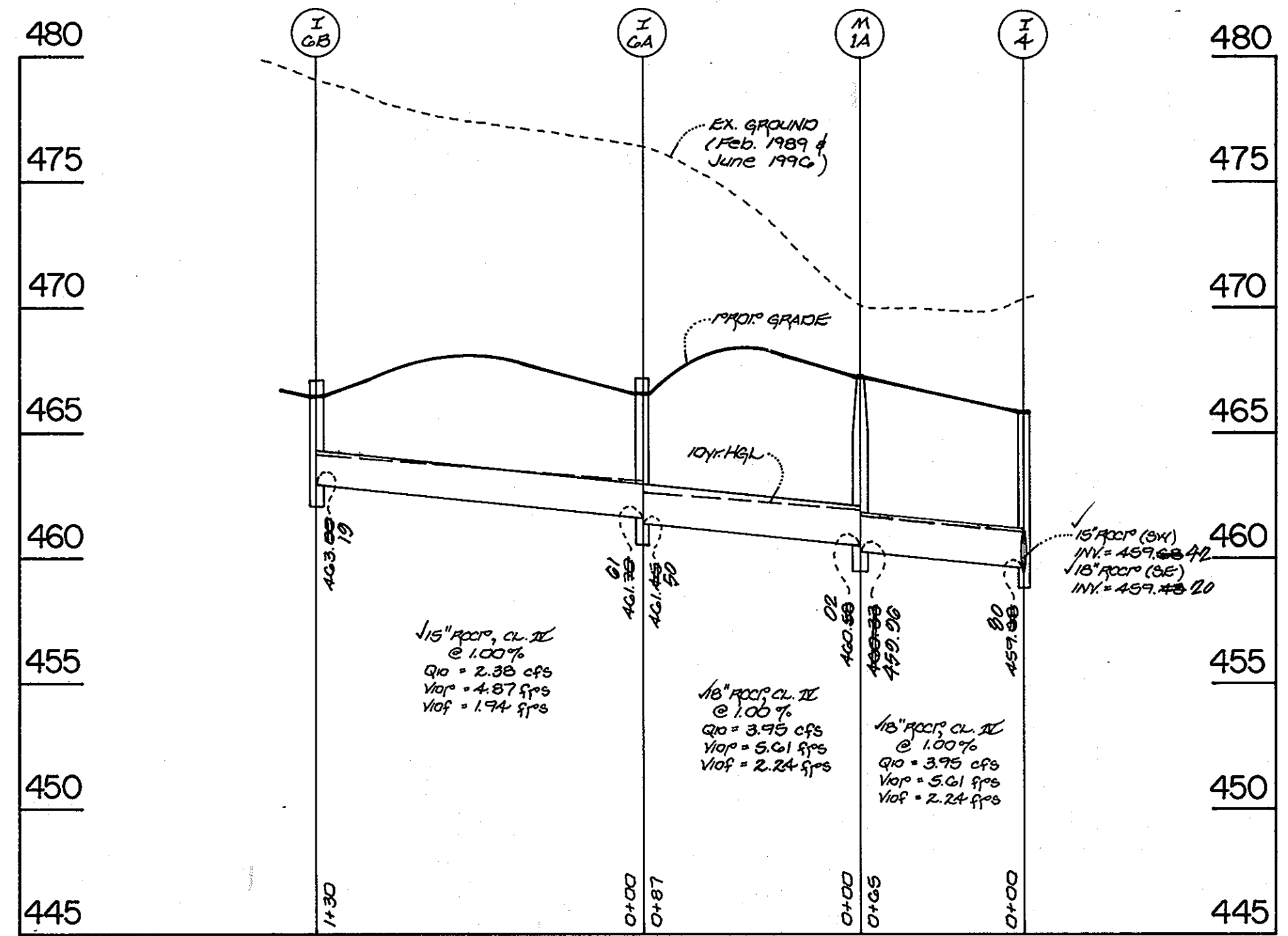
Cindy Penetta 11/18/98
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Mike Damiano 10/29/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

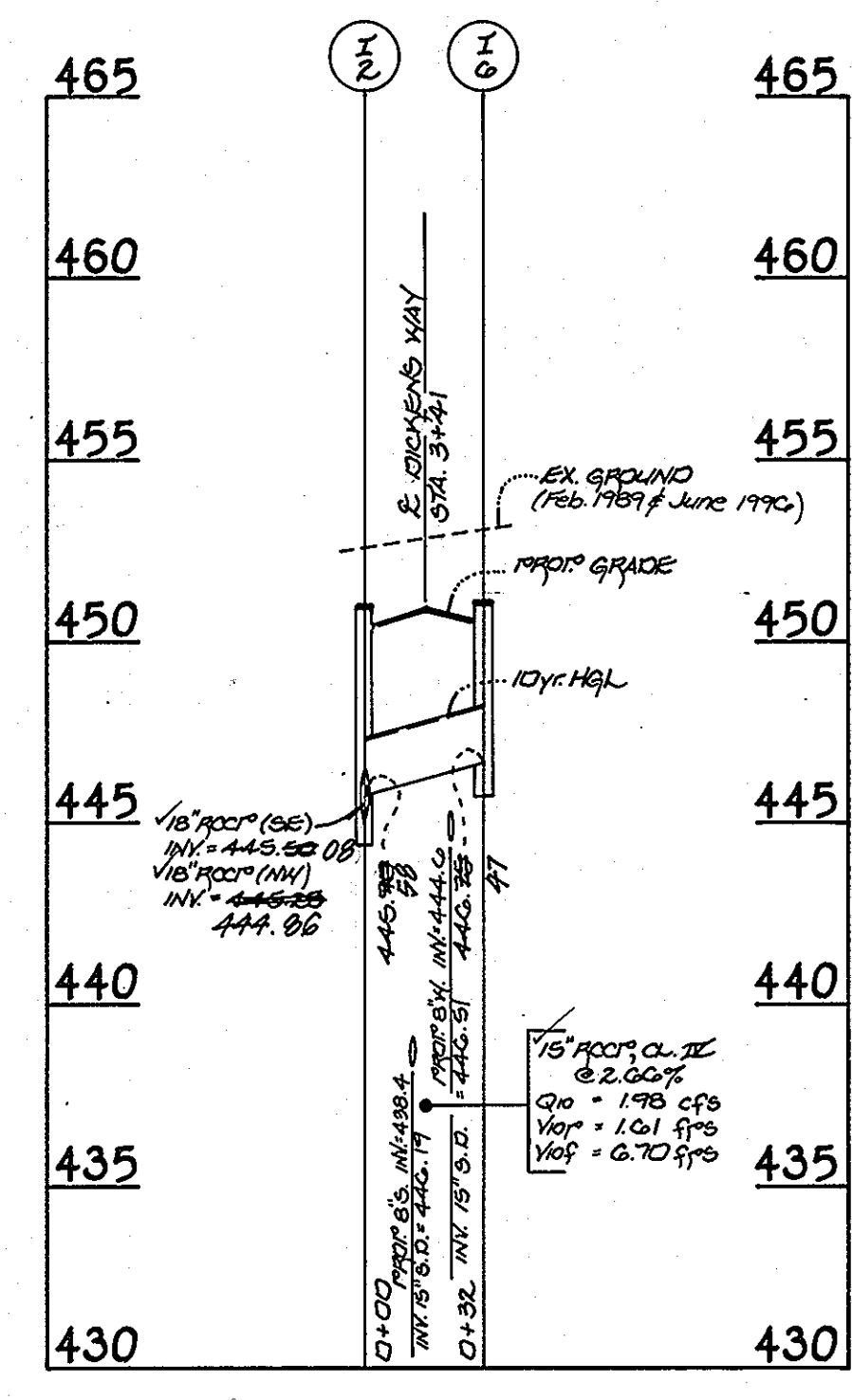
Richard M. Davis 10-26-98
 CHIEF, BUREAU OF HIGHWAYS DATE



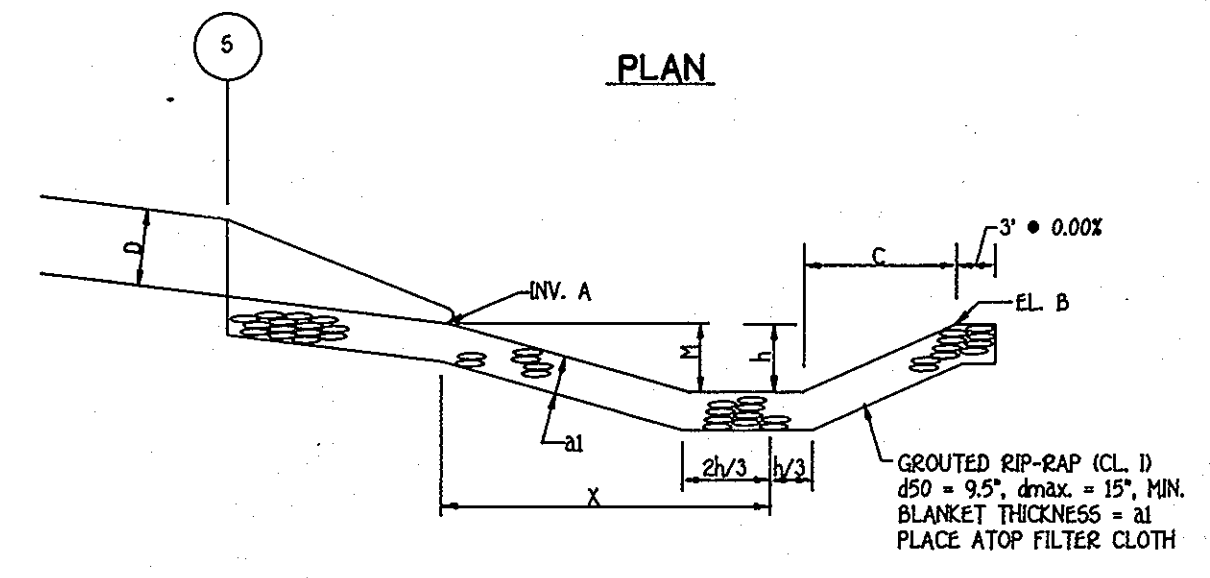
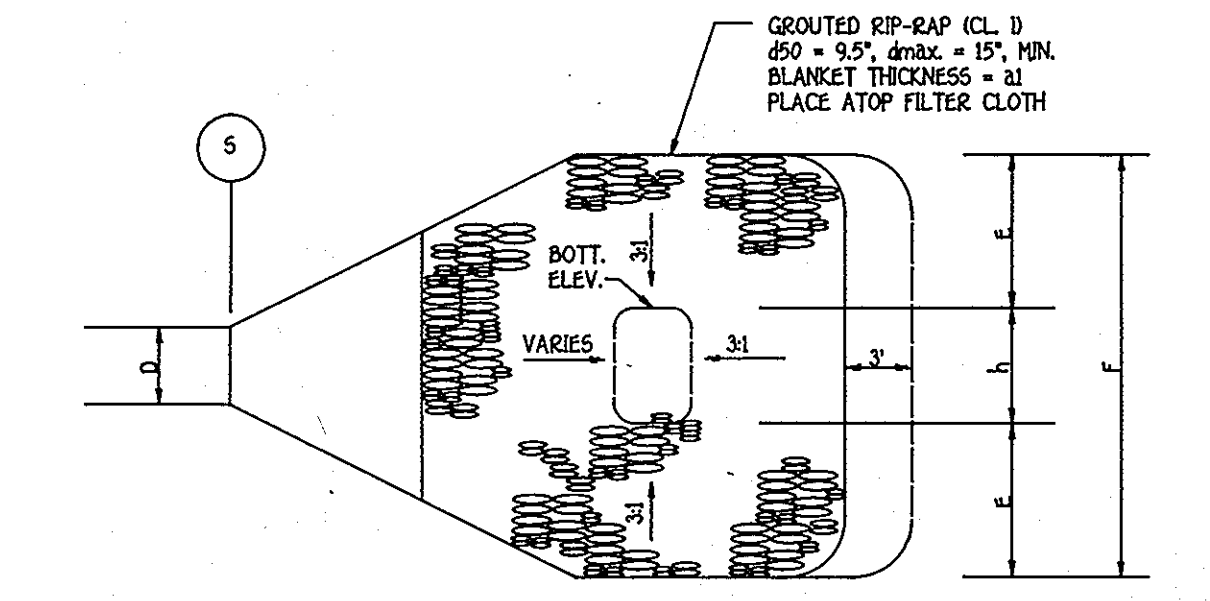
PROFILE
 SCALE: HORIZ. : 1" = 50'
 VERT. : 1" = 5'



PROFILE
 SCALE: HORIZ. : 1" = 50'
 VERT. : 1" = 5'

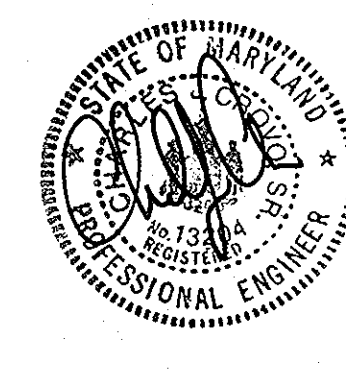
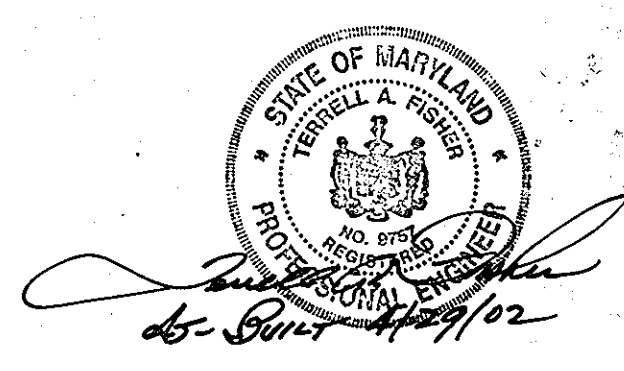


PROFILE
 SCALE: HORIZ. : 1" = 50'
 VERT. : 1" = 5'



TYP. STILLING BASIN OUTFALL DETAIL
 NO SCALE

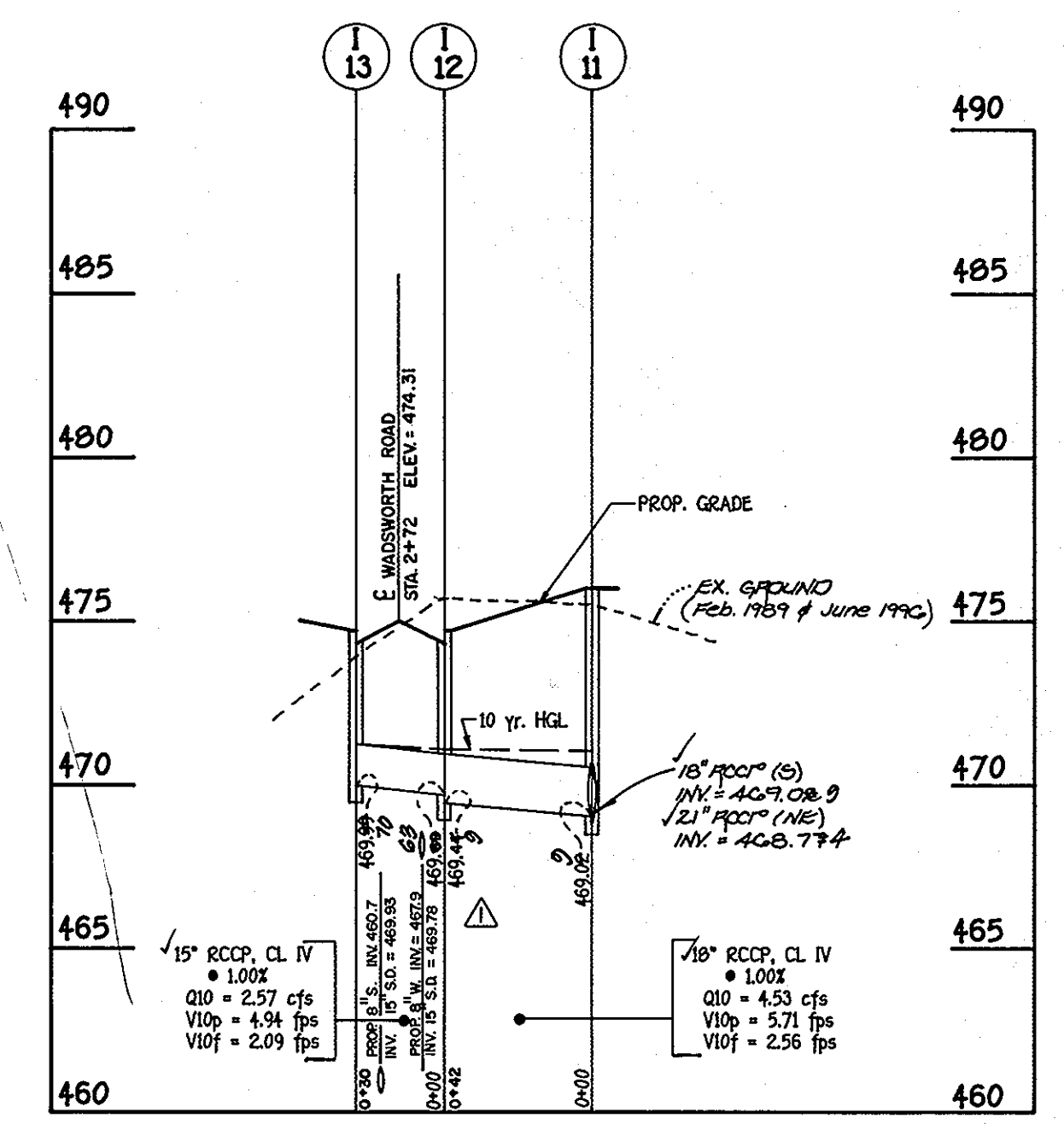
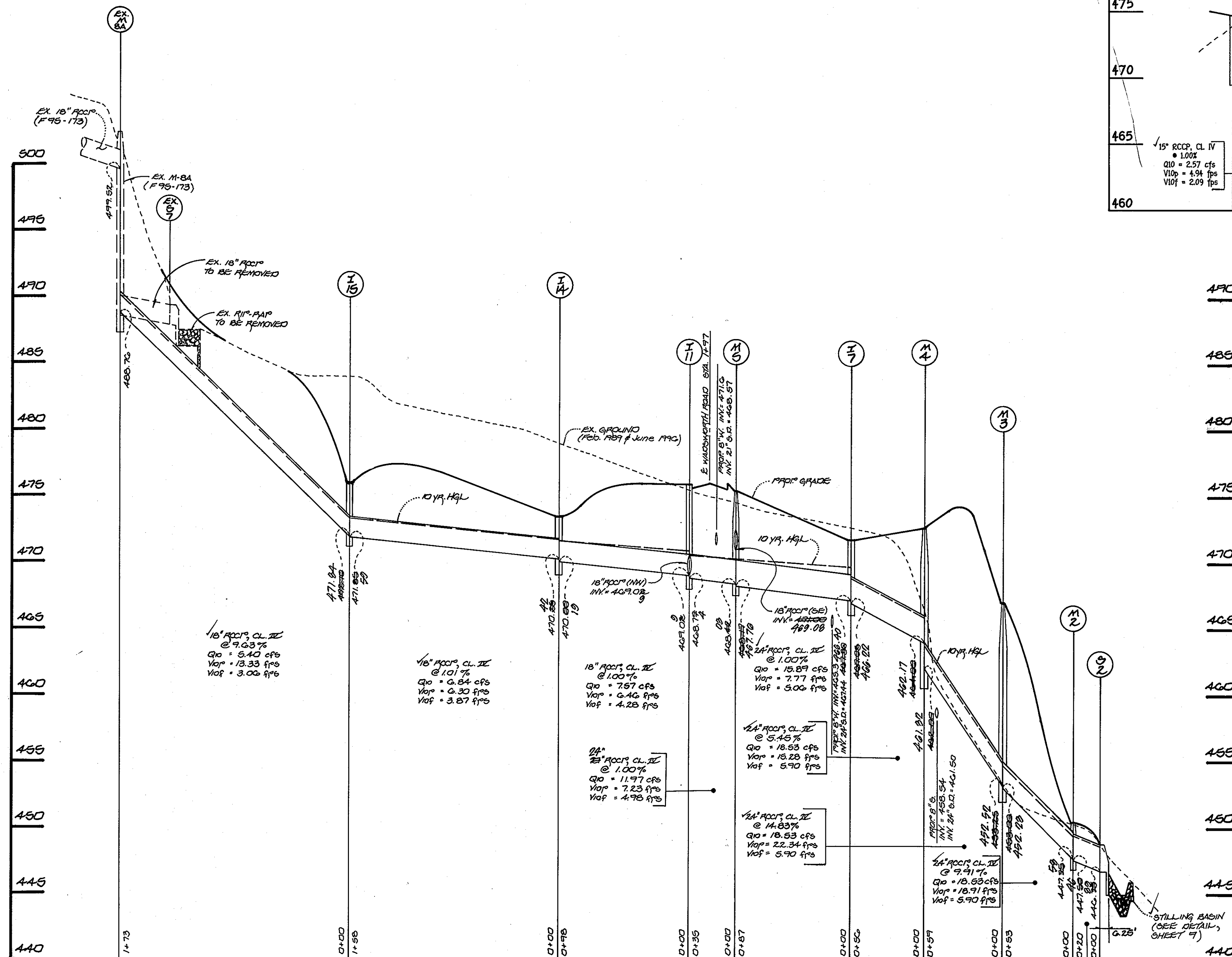
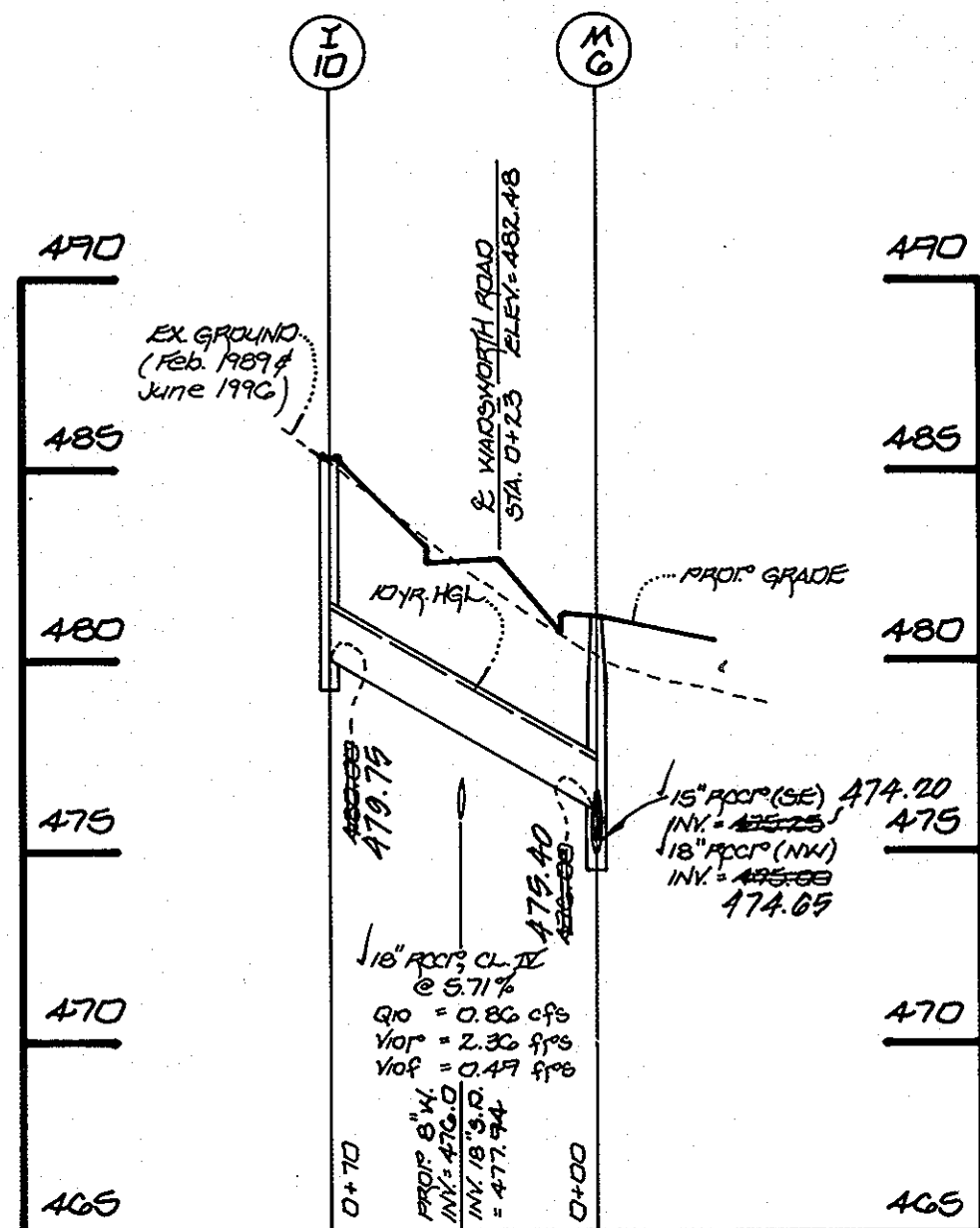
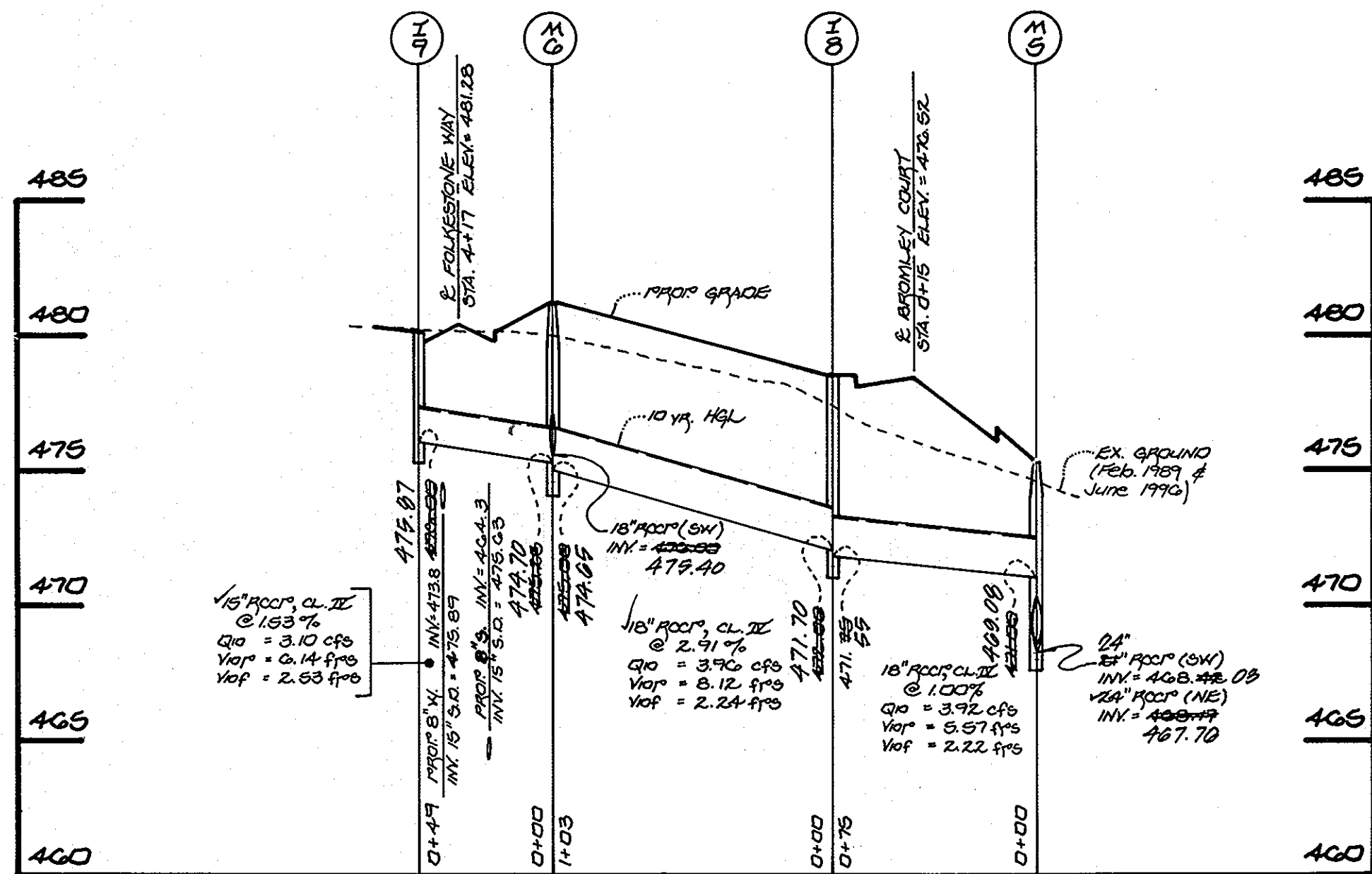
STILLING BASIN DATA										
STRUCTURE NO.	INV. A	EL. B	C	D	E	F	h	M	al	X
S-1	426.68	425.70	3.0'	1.5'	3.0'	7.0'	1.0'	1.50'	2.0'	8.0'
S-2	446.74	446.00	3.0'	1.5'	3.0'	7.0'	1.0'	1.50'	2.0'	9.0'



APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cindy Hamilton 11/18/98
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE

Mike Damman 10/29/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Stephen M. Dwyer 10/26/98
 CHIEF, BUREAU OF HIGHWAYS
 DATE



PROFILES
 SCALE: HORIZ. : 1" = 50'
 VERT. : 1" = 5'

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10725 BALTIMORE NATIONAL FREE
 ELLICOTT CITY, MARYLAND 21114
 F.C.C. • 300255STORMDRAINS

DATE	REVISION	No.
6/17/99	MOVE I-18 TO MAINTAIN MIN. 10' CLEAR. TO FUTURE DRIVEWAY (LOT G8).	1

OWNER AND DEVELOPER
 WAVERLY WOODS DEVELOPMENT CORPORATION
 c/o LAND DESIGN AND DEVELOPMENT, INC.
 10805 HICKORY RIDGE ROAD
 SUITE 215
 COLUMBIA, MARYLAND 21044

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
James M. Dwyer
 No. 00114
 15. JULY 4/29/02

STORM DRAIN PROFILES
GTW'S WAVERLY WOODS
 SECTION 6
 LOTS 1 THRU 97 AND PARCELS 'A' & 'B'
 (PROPERTY OF GTW JOINT VENTURE, LIBER 2222, FOLIO 36)
 ZONING: RSC AND R-S4-S
 TAX MAP NO. 16, PARCEL NO. 21
 THIRD ELECTION DISTRICT: HOWARD COUNTY, MARYLAND
 DATE: JULY 10, 1998
 SHEET 10 OF 17

ENGINEER'S CERTIFICATE

I hereby certify that this Plan For Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Condition And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

Signature of Engineer Date 1/27/98

DEVELOPER'S CERTIFICATE

I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project.

Signature of Developer Date 1/27/98

Reviewed For Howard County Soil Conservation District And Meets Technical Requirements

Signature of Reviewer Date 1/16/98

Approved This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.

Signature of District Director Date 1/16/98

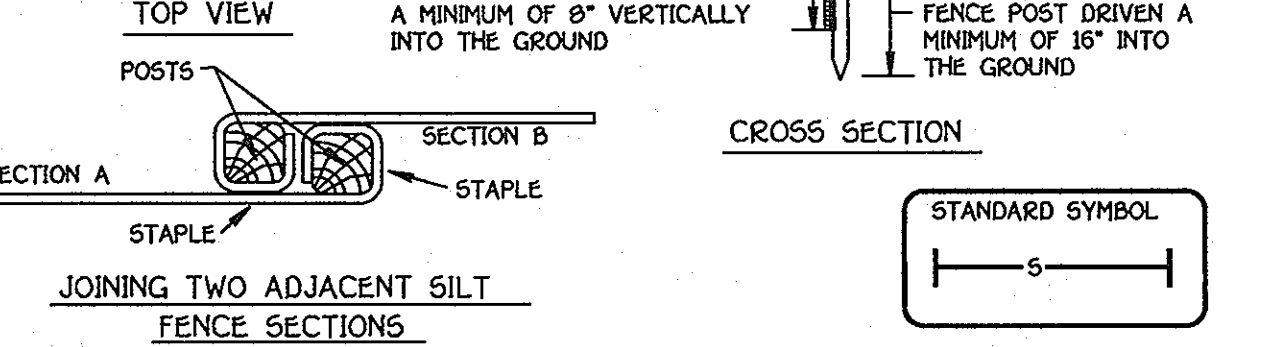
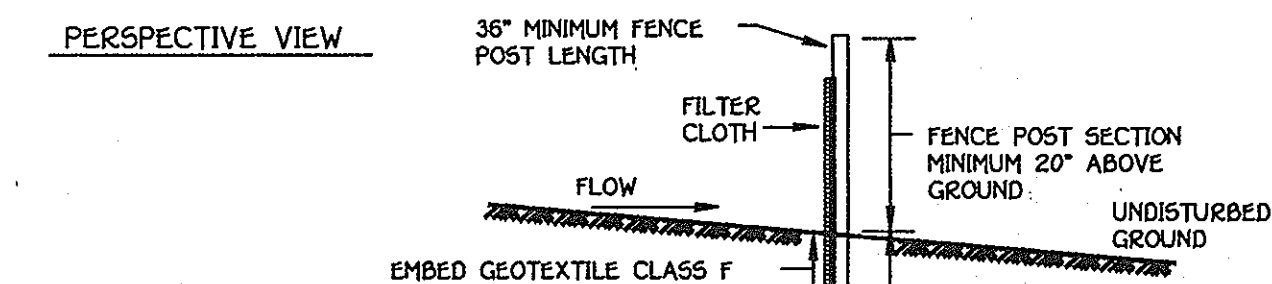
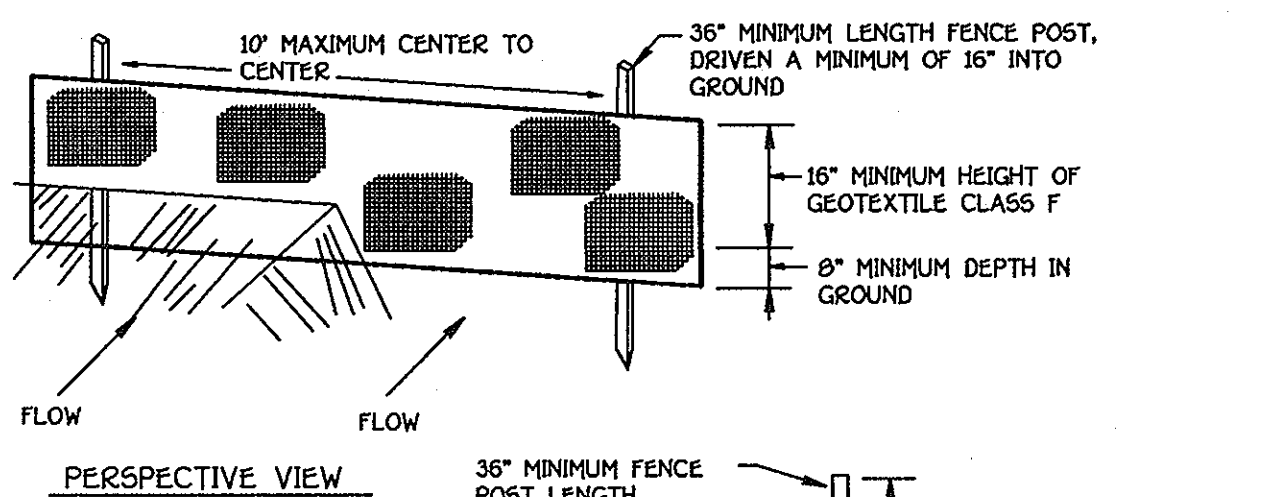
Approved Department Of Planning And Zoning

Signature of Planning Director Date 1/19/98

Approved Howard County Department Of Public Works

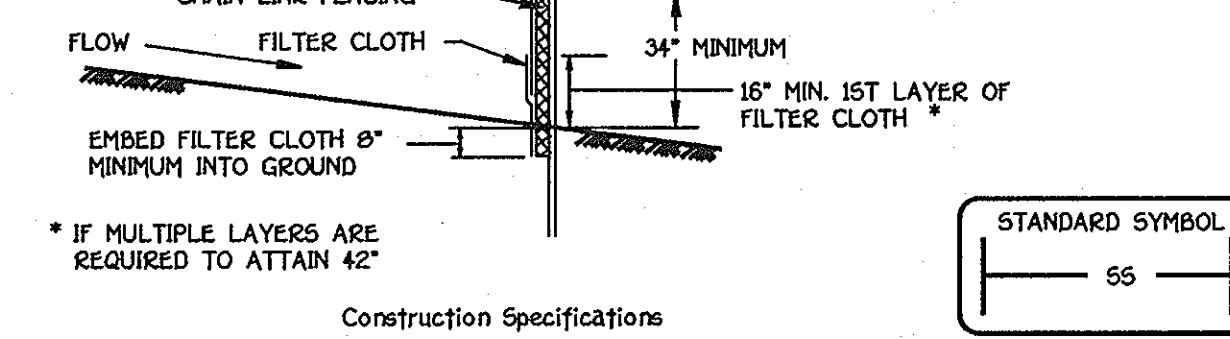
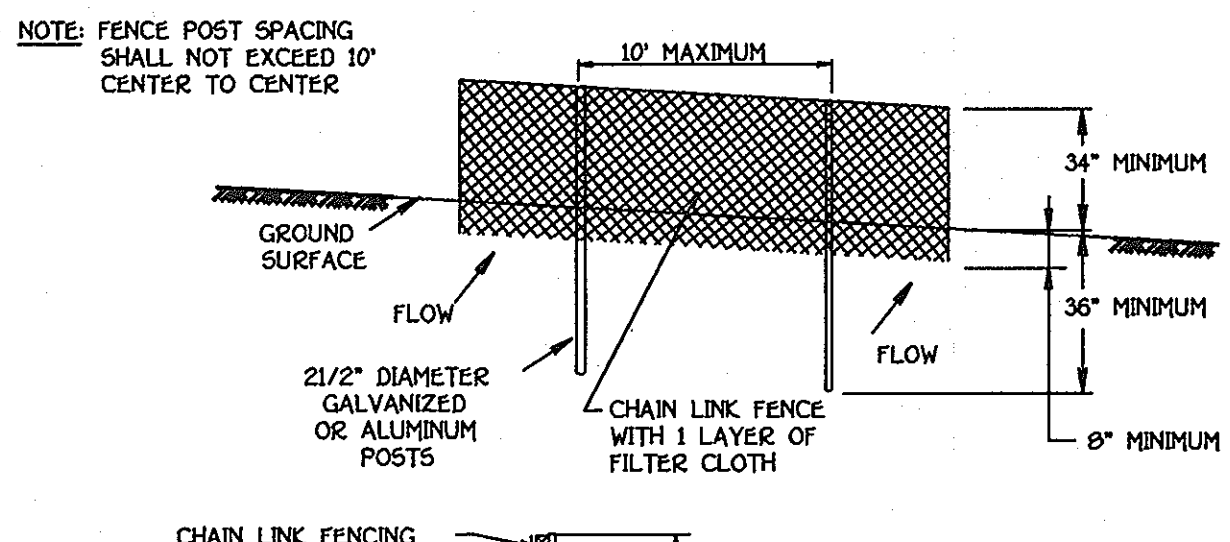
Signature of Public Works Director Date 10-26-98

DETAIL 22 - SILT FENCE



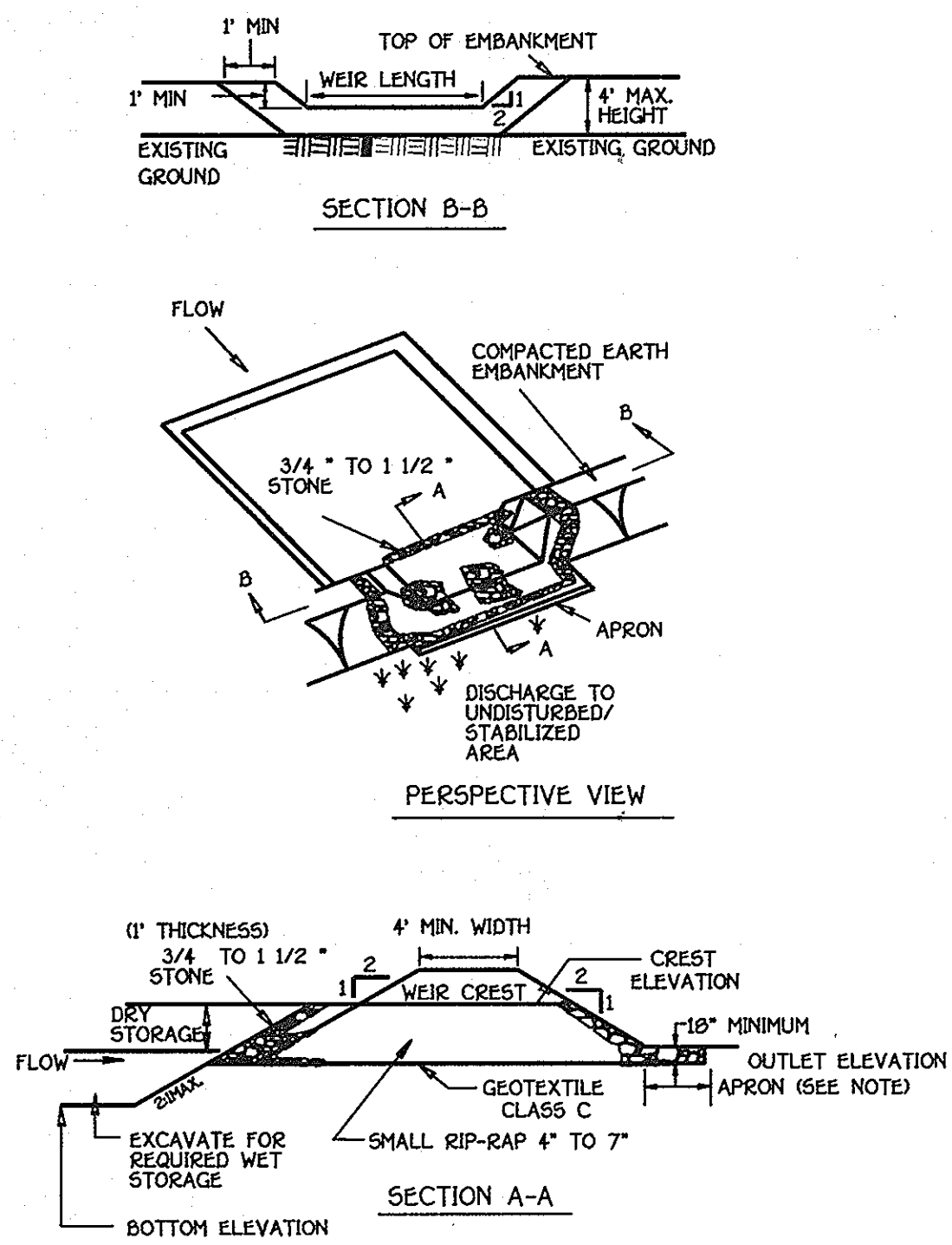
- 1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:
Tensile Strength 50 lbs/in (min) Test: MSMT 509
Tensile Modulus 20 lbs/in (min) Test: MSMT 509
Flow Rate 0.3 gal/ft / minute (max) Test: MSMT 322
Filtering Efficiency 75% (min) Test: MSMT 322
3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

DETAIL 33 - SUPER SILT FENCE



- 1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6" fence shall be used, substituting 42" fabric and 6" length posts.
2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.
3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
4. Filter cloth shall be embedded a minimum of 8" into the ground.
5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height.
7. Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:
Tensile Strength 50 lbs/in (min) Test: MSMT 509
Tensile Modulus 20 lbs/in (min) Test: MSMT 509
Flow Rate 0.3 gal/ft / minute (max) Test: MSMT 322
Filtering Efficiency 75% (min) Test: MSMT 322

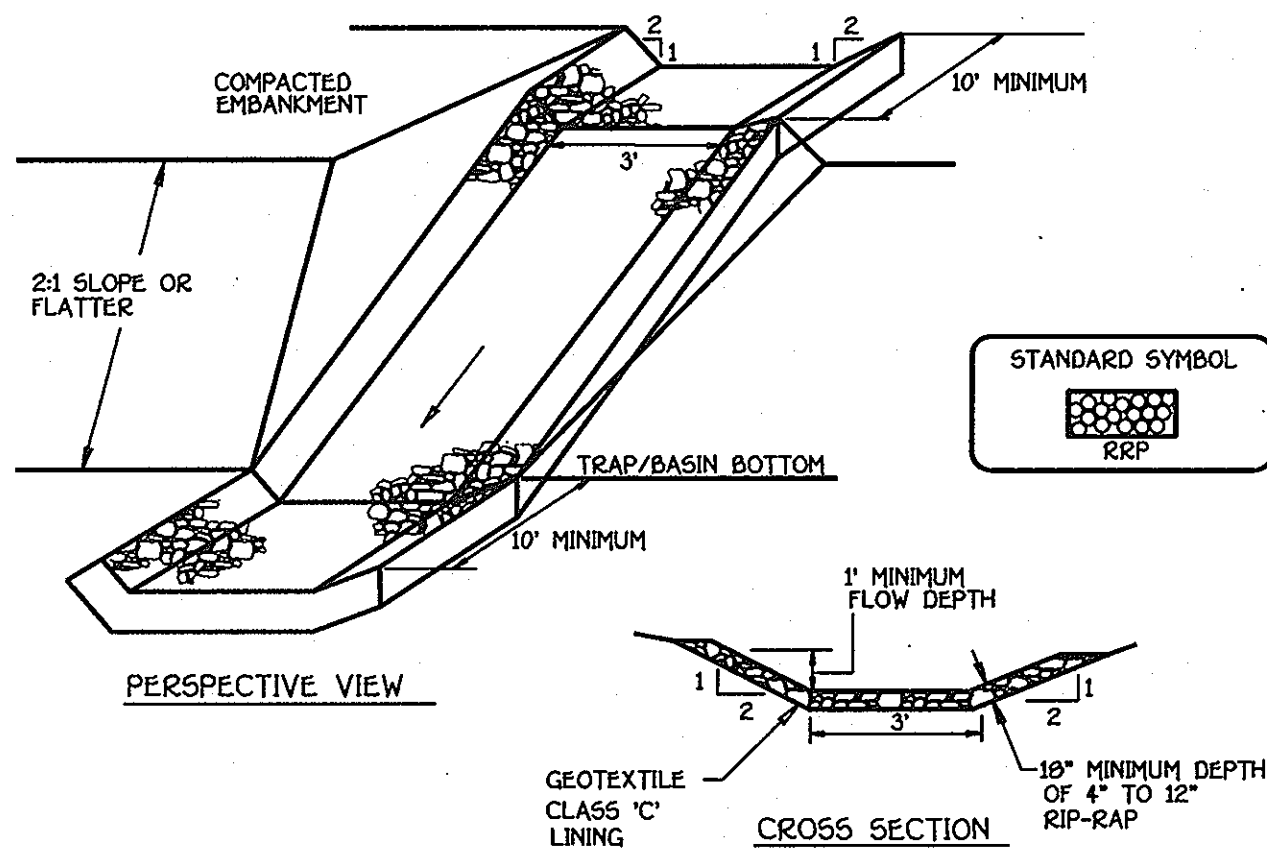
DETAIL 10A - STONE / RIP-RAP OUTLET SEDIMENT TRAP - ST IV



- 1. The area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
2. The fill material for the embankment shall be free of roots or other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed. Maximum height of embankment shall be 4', measured at centerline of embankment.
3. All cut and fill slopes shall be 2:1 or flatter.
4. Elevation of the top of any dike directing water into trap must equal or exceed the height of trap embankment.
5. Storage area provided shall be figured by computing the volume measured from top of excavation. (For storage requirements see Table 9).
6. Geotextile Class C shall be placed over the bottom and sides of the outlet channel prior to placement of stone. Section of fabric must overlap at least 1' with section nearest the entrance placed on top. Fabric shall be embedded at least 6" into existing ground at entrance of outlet channel.
7. 4" - 7" stone shall be used to construct the weir and 4" - 12" or Class 1 rip-rap shall be used to construct the outlet channel.
8. Outlet - An outlet shall include a means of conveying the discharge in an erosion free manner to an existing stable channel. Protection against scour at the discharge point shall be provided as necessary.
9. Outlet channel must have positive drainage from the trap.
10. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 of the wet storage depth of the trap (900 cf/ac). Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
11. The structure shall be inspected periodically after each rain and repaired as needed.
12. Construction of traps shall be carried out in such a manner that sediment pollution is abated. Once constructed, the top and outside face of the embankment shall be stabilized with seed and mulch. Points of concentrated inflow shall be protected in accordance with Grade Stabilization Structure criteria. The remainder of the interior slopes should be stabilized (one time) with seed and mulch upon trap completion and monitored and maintained erosion free during the life of the trap.
13. The structure shall be dewatered by approved methods, removed and the area stabilized when the drainage area has been properly stabilized.

NOTE: 5' MIN LENGTH UP TO 5 ACRES, OVER 5 ACRES USE 10' MIN

RIP-RAP INFLOW PROTECTION



- 1. Rip-rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3" (min) bottom width. The channel shall be lined with 4" to 12" rip-rap to a depth of 10".
2. Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.
3. Entrance and exit sections shall be installed as shown on the detail section.
4. Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.
5. Gabion Inflow Protection may be used in lieu of Rip-rap Inflow Protection.
6. Rip-rap should blend into existing ground.
7. Rip-rap Inflow Protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1 use Earth Dike or Temporary Swale lining criteria.

STRUCTURE SCHEDULE

Table with columns: STRUCTURE NO., TOP ELEVATION, INV.IN, INV.OUT, ROAD NAME, ROAD STA., OFFSET, TYPE, REMARKS, W'. Lists structures I-1 through M-6 and S-1 through S-2 with associated elevations and road information.

SEQUENCE OF CONSTRUCTION

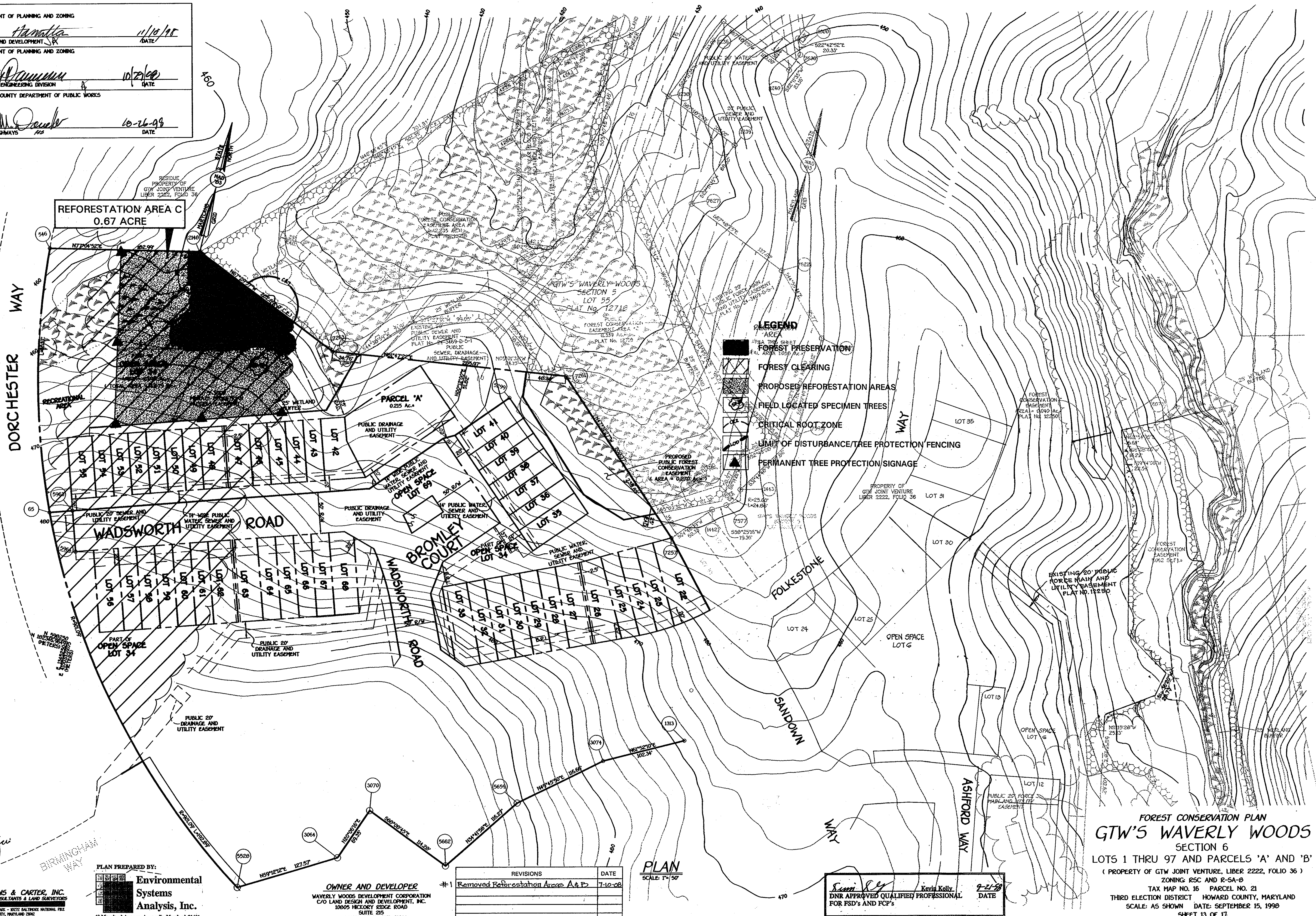
- 1. Obtain all required grading permits, approvals and licenses from appropriate agencies.
2. Notify Howard County Office of Construction/Inspection Division (410-313-1870) at least five (5) working days prior to starting work on these plans. Notify "Miss Utility" 48 hours before beginning any work at (1-800-257-7777).
3. Install all tree protection fence for trees to be undisturbed as indicated on the plans. (1 DAY)
4. Clear and grub for sediment control measures only. Install stabilized construction entrance. (3 DAYS)
5. Install sediment control measures necessary to construct the storm drain system from proposed S-2 to existing M-8a. (5 DAYS)
6. Construct storm drain from S-2 to M-8a and install inlet protection as shown on the plans. (10 DAYS)
7. Install remaining sediment control measures, sediment traps, earth dikes and silt fence as indicated on the plans for the initial grading phase. No blasting will be permitted for the excavation of the proposed trap. Where necessary, ripping and backfilling should be utilized in the excavation of the facility. (10 DAYS)
8. Clear and grub the remainder of both sites. (5 DAYS)
9. Grade both sites to the proposed subgrade and install the remaining storm drain systems. Stabilize all slopes immediately upon completion of grading. (4 WEEKS)
10. The contractor shall inspect and provide necessary maintenance on all sediment and erosion control structures shown hereon after each rainfall and on a daily basis. Remove sediments from all traps when cleanup elevations are reached. All sediments must be placed upstream of an approved trapping device.
11. Construct curb and gutter and road base course. (10 DAYS)
12. Stabilize all disturbed areas and obtain permission from the sediment control inspectors to proceed.
13. When all contributing areas to the sediment control devices and traps for the initial grading phase have been stabilized and with the permission of the sediment control inspector, the device may be removed and/or backfilled and the remaining areas brought to final design grade on both sites. Remove temporary storm drain outfall from I-1 prior to backfilling of the existing trap. Stabilize all remaining areas in accordance with permanent seeding notes. (10 DAYS)
14. Notify Howard County Office of Inspections and Permits for final inspection of the completed project.

Revision table with columns: DATE, REVISION, No. Contains one revision entry dated 5/17/99.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Andy Hamatta 11/10/98
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Mike Dammann 10/27/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Roger M. Daulton 10-26-98
 CHIEF, BUREAU OF HIGHWAYS DATE



REFORESTATION AREA C
 0.67 ACRE

- LEGEND**
- FOREST PRESERVATION
 - FOREST CLEARING
 - PROPOSED REFORESTATION AREAS
 - FIELD LOCATED SPECIMEN TREES
 - CRITICAL ROOT ZONE
 - LIMIT OF DISTURBANCE/TREE PROTECTION FENCING
 - PERMANENT TREE PROTECTION SIGNAGE

REVISIONS	DATE
#1 Removed Reforestation Areas A & B	7-10-98

Kevin Kelly
 DNR APPROVED QUALIFIED PROFESSIONAL
 FOR FSD's AND FCP's
 DATE 9-21-98

FOREST CONSERVATION PLAN
GTW'S WAVERLY WOODS
 SECTION 6
 LOTS 1 THRU 97 AND PARCELS 'A' AND 'B'
 (PROPERTY OF GTW JOINT VENTURE, LIBER 2222, FOLIO 36)
 ZONING: R5C AND R-5A-B
 TAX MAP NO. 16 PARCEL NO. 21
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: SEPTEMBER 15, 1998
 SHEET 13 OF 17

STATE OF MARYLAND
 MICHAEL B. BAKER
 PROFESSIONAL ENGINEER

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10722 BALTIMORE NATIONAL FREE
 GAITHERSBURG CITY, MARYLAND 20878
 (410) 481-2825 Fax: (410) 267-0496

PLAN PREPARED BY:
Environmental Systems Analysis, Inc.
 48 Maryland Avenue, Annapolis, Maryland 21401
 (410) 267-0495 Fax: (410) 267-0496

OWNER AND DEVELOPER
 WAVERLY WOODS DEVELOPMENT CORPORATION
 C/O LAND DESIGN AND DEVELOPMENT, INC.
 10925 HICKORY RIDGE ROAD
 SUITE 215
 COLUMBIA, MARYLAND 21044

PLAN
 SCALE: 1" = 50'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Cindy Hamilton 11/16/95
CHIEF, DIVISION OF LAND DEVELOPMENT / DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Michael J. ... 10/29/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION / DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Christopher M. ... 10-26-98
CHIEF, BUREAU OF HIGHWAYS / DATE



LEGEND
[Hatched Box] PROPOSED REFORESTATION AREAS--
[Triangle] PERMANENT TREE PROTECTION SIGNAGE

PLAN
SCALE: 1" = 50'

REVISIONS	DATE
#1 Remove Reforestation Areas D,E,F & G	7-9-02

Kevin Kelly
DNR APPROVED QUALIFIED PROFESSIONAL
FOR FSD'S AND FCP'S
9-21-98
DATE

FOREST CONSERVATION PLAN
GTW'S WAVERLY WOODS
SECTION 6
LOTS 1 THRU 97 AND PARCELS 'A' AND 'B'
(PROPERTY OF GTW JOINT VENTURE, LIBER 2222, FOLIO 36)
ZONING: RSC AND R-SA-0
TAX MAP NO. 16 PARCEL NO. 21
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: SEPTEMBER 15, 1998
SHEET 14 OF 17



FENNER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
571 BALTIMORE NATIONAL PKWY. SUITE 300
ELKROTT CITY, MARYLAND 21032
410-481-2925

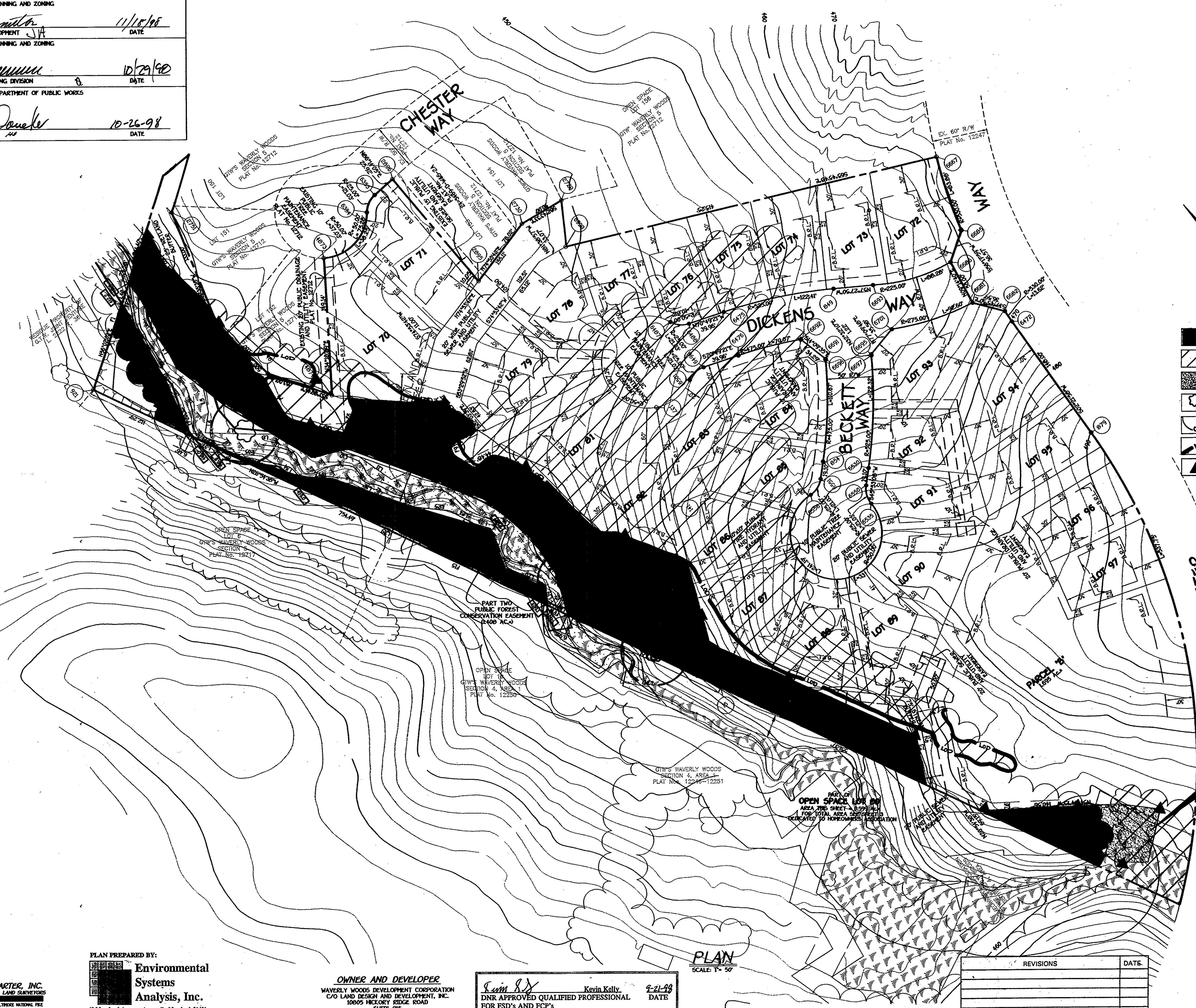
PLAN PREPARED BY:
Environmental Systems Analysis, Inc.
48 Maryland Avenue, Annapolis, Maryland 21401
(410) 267-0485 Fax: (410) 267-0496

OWNER AND DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION
C/O LAND DESIGN AND DEVELOPMENT, INC.
10805 HICKORY RIDGE ROAD
SUITE 215
COLUMBIA, MARYLAND 21044

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Condy Hamilton 11/15/98
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Mr. [Signature] 10/29/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Stephen M. [Signature] 10-26-98
 CHIEF, BUREAU OF HIGHWAYS DATE

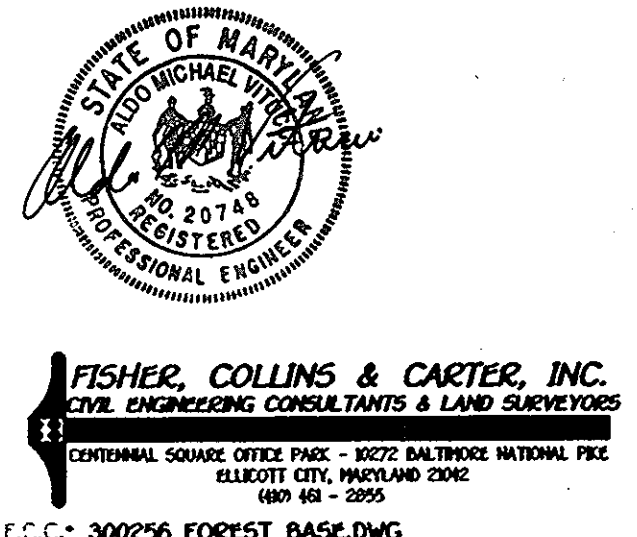


- LEGEND**
- FOREST PRESERVATION
 - FOREST CLEARING
 - PROPOSED REFORESTATION AREAS
 - FIELD LOCATED SPECIMEN TREES
 - CRITICAL ROOT ZONE
 - LIMIT OF DISTURBANCE/TREE PROTECTION FENCING
 - PERMANENT TREE PROTECTION SIGNAGE

REFORESTATION AREA A-1
 0.08 ACRE

FOREST CONSERVATION PLAN
GTW'S WAVERLY WOODS
 SECTION 6
 LOTS 1 THRU 97 AND PARCELS 'A' AND 'B'
 (PROPERTY OF GTW JOINT VENTURE, LIBER 2222, FOLIO 36)
 ZONING R5C AND R-5A-B
 TAX MAP NO. 16 PARCEL NO. 21
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: SEPTEMBER 16, 1998
 SHEET 15 OF 17

REVISIONS	DATE



PLAN PREPARED BY:
Environmental Systems Analysis, Inc.
 48 Maryland Avenue, Annapolis, Maryland 21401
 (410) 267-0495 Fax: (410) 267-0496

OWNER AND DEVELOPER
 WAVERLY WOODS DEVELOPMENT CORPORATION
 C/O LAND DESIGN AND DEVELOPMENT, INC.
 10005 HICKORY RIDGE ROAD
 SUITE 215
 COLUMBIA, MARYLAND 21044

Kevin Kelly
 Kevin Kelly
 DNR APPROVED QUALIFIED PROFESSIONAL
 FOR FSD'S AND FCP'S
 9-21-98
 DATE

PLAN
 SCALE 1" = 50'

NARRATIVE

The Waverly Woods Property is a 682 acre tract which contains a combination of commercially and residentially zoned property. The site is to be slowly developed in a series of phases. A Preliminary Forest Conservation Plan was prepared for the property in August of 1993. This Forest Conservation Plan has been prepared for Waverly Woods Section 6 residential development. The reforestation requirement for Section 6 development has been calculated on a percentage basis based on the total site clearing and the total reforestation requirement for Waverly Woods residentially zoned property (see "Section 6 Forest Conservation Calculations" on this sheet). Note that the Forest Conservation Worksheet is being adjusted with each subsequent phase to reflect forest clearing and preservation changes between the Preliminary FCP (revised and approved February 1995) and the subject phase. To meet the reforestation requirements for Section 6, on-site reforestation is proposed. Reforestation areas were selected to buffer adjacent wetlands and to preserve and enhance large contiguous forest stands.

GENERAL NOTES

- This forest conservation plan has been prepared in accordance with the requirements set forth by the Forest Conservation Act of Howard County. The preparation of this plan, the notes and details were prepared using the guidelines of the Howard County Forest Conservation Manual.
- Base sheet information was provided by Fisher, Collins and Carter, Inc.
- All appropriate bonds shall be posted prior to the issuance of any permits per Howard County Forest Conservation Act. These bonds will be retained as surety until all required activities have been satisfied.
- All tree protection devices shall be installed prior to any disturbance.
- Reforestation planting and related work must be performed by a contractor who is knowledgeable and experienced in reforestation planting techniques and proper plant handling.

FOREST PROTECTION MEASURES

- After the limits of disturbance (LOD) and the location of all Tree Protection Devices (TPD's) have been staked and/or flagged in the field, an on-site pre-construction meeting shall be held. During this meeting, the limits of clearing specified on the approved plan shall be field-verified and authorization shall be given for the installation of TPD's with any necessary adjustments. This meeting shall include the owner or their representative, the on-site foreman in charge of land disturbance, ESA, Inc., and the appropriate county inspectors. Upon approval of the flagged or staked locations by Howard County, installation may begin. TPD installation shall be completed prior to installation of initial Sediment Controls. No cutting or clearing of trees may begin before final approval of TPD installation.
- The SPECIMEN TREE STRESS REDUCTION MEASURES shall be installed where applicable as specified below.
- Filter cloth on wire mesh shall be the short-term forest protection device and will be located along the limit of clearing as identified on these plans. Refer to this plan set for the appropriate details and installation notes.
- Permanent signs shall be installed along the limit of clearing immediately after the short-term forest protection device has been installed. These devices shall not, in any way, be anchored or attached to the trees to be saved.
- Short-term forest protection devices and permanent signs shall be installed prior to any land clearing or grading and shall be maintained during the entire construction phase including fine grading and final seeding.
- Equipment, machinery, vehicles, materials, or debris shall not be allowed within the forest protection areas.
- After construction activities have been completed, an on-site inspection by Howard County will be conducted to evaluate the remaining trees for damage or impacts which may have occurred during the construction process. If trees along the forest perimeter are found to be damaged or dead as a direct result of the construction process, corrective action must be taken. The measures may include the following and must be carried out by a qualified tree professional:
 - Removal of dead or dying trees located within 20 feet of the limits of disturbance which are potentially hazardous. Dead or dying trees which are not potentially hazardous shall be left to provide wildlife habitat. Removal should be authorized by Howard County.
 - Pruning of dead or declining limbs
 - Soil aeration
 - Fertilizing
 - Watering
 - Wound repair
 - Clean-up retention areas
- Prior to removing the temporary forest protection devices, authorization from Howard County shall first be given.
- When removing the temporary tree protection devices, care shall be taken to not disturb or clear additional area within the limit of disturbance. Hand removal of vines, excessive dead material and trash is permitted. The burial of discarded materials is not permitted on the site. Clearing for the purpose of sodding or planting grass is not permitted within the forest conservation area.
- It is the responsibility of the present Owner to educate the occupants/owners of the new development about the proper use of the forest preservation areas, about the need for the Owner/Developer to carry out the post-construction management program, and the eventual transfer of long-term responsibilities to the new owners or occupants.
- A total of 1.99 acres of forest preservation and 4.70 acres of reforestation is proposed for long-term forest restoration and will be subject to a recorded Conservation Easement. The forest conservation boundary is shown on this Forest Conservation Plan (including reforestation areas for Section 5 development performed within Section 6), and the forest conservation easement shall be depicted on the Final Plat and the Site Development Plan. These areas of forest preservation shall be permanently protected and recorded at record plat as non-developable open space.
- A signed agreement detailing these post-construction activities shall be submitted for approval as part of the developers agreements for the project. The agreement shall also include bonding covering all costs of the necessary protection and management activities required by the post-construction program.

SPECIMEN TREE STRESS REDUCTION MEASURES

Specimen trees 14, 15, 20, 21, and 22 have been identified on these plans due to their large size, appealing features and location within Section 6 development. Specimen Tree #22 can not be saved due to its location within the required sediment trap for Section 6 development. The remaining trees require no stress reduction measures due to their distance from the limits of disturbance (LOD).

REFORESTATION

Quality Assurance

- Names of plant material listed conform with names accepted by the nursery trade. The contractor is to provide stock true to botanical name. Varieties will not be accepted unless specified or approved by Environmental Systems Analysis, Inc.
- Plant stock shall meet or exceed the selection, sizing, transportation, and protection requirements of the American Standard for Nursery Stock published by the American Association of Nurserymen.
- All plant material shall be nursery grown and obtained within a 200 mile radius of the planting site.
- Container stock shall meet the following standards:
 - 3' to 4' Container Stock - 1/2" to 3/4" caliper with a top length of at least 36". Diameter of the root collar shall be at least 5/8". Roots shall be well-developed and completely fill container, but shall not encircle the plant.
 - 12" Container Stock (Seedlings) - 1/4" to 1/2" caliper with a top length of at least 12". Diameter of root collar shall be at least 3/8". Roots shall be well-developed and completely fill container, but shall not encircle the plant.

- If leafed-out, all plant stock shall appear healthy with no foliage spots, discoloration, wilting or other evidence of the presence of disease or insects.
- If any specified material can not be located or is unavailable, requests for the substitution of equivalent plant material must be submitted in writing to Environmental Systems Analysis, Inc. for evaluation and approval. Substitutions must be native to the Maryland Piedmont region.
- Source Quality Control - plant materials are subject to inspection and approval upon delivery for conformity to specification requirements (i.e., size, quality, and variety). Such approval shall not impair the right of inspection during the progress of work or the right of rejection due to damage suffered in handling or transportation. Rejected plants shall be removed immediately from the site and replaced with acceptable plant material.

Product Specifications

Fertilizer:
Fertilizer shall also be applied by the contractor in the Fall after the first growing season if plant conditions indicate the need. A complete fertilizer in granular, packet or pellet form shall be used with a minimum analysis of 10% nitrogen, 6% phosphorus and 4% potassium. 35% to 80% of the total nitrogen shall be in a slow release form.

Organic Matter:
Leaf Compost - thoroughly shredded, well-composted leaf material, free of trash
Peat Moss - Type 1 sphagnum peat moss, finely divided with a pH of 3.1 to 5.0
Composted Sewage Sludge - approved, screened, polymer-dewatered sewage sludge with a pH of 6.2 - 7.2

Backfill Mixture:
Backfill for all stock shall be 3/4 existing soil mixed with 1/4 organic material. If any other additives are found to be needed at the time of planting, the landscape contractor shall notify the Owner or Owner's representative for approval.

Mulch:
Material shall be well aged, fine shredded hardwood, dark brown in color, or approved equal. Material shall be matching grade, uniform in size and free of foreign matter.

Pre-Planting Specifications

- Allow six (6) weeks in advance to order materials and plants.
- Ideal planting weather is cloudy and cool. The recommended planting period is September 15th to November 15th. Planting may also be undertaken from March 15th to June 15th, however, the risk of drought stress is greater on woody plants installed in this spring window.
- Planting shall not take place in sub-freezing temperatures, when the soil is too wet or too dry, or under any environmental constraints generally accepted by the Landscape Contractor's Association (Maryland, District of Columbia, and Virginia) as unsuitable for planting.
- All planting areas shall be stabilized prior to planting to minimize soil erosion. While soil stabilization and seeding are not part of these plan documents, the use of Tall Fescue (*Festuca arundinacea*) to stabilize reforestation areas shall be strictly forbidden.
- Planting areas shall be free of noxious weeds prior to planting. If noxious weeds are present, they should be removed or treated with a herbicide (e.g., "Roundup") according to the manufacturer's specifications.
- The landscape contractor shall notify ESA, Inc., (410) 267-0495, 48 hours prior to the start of construction to arrange a pre-planting meeting.
- Planting should occur within 24 hours of plant material delivery to the site. Plant materials left unplanted for more than 24 hours shall be protected from direct sun and weather and kept moist. Nursery stock shall not be left unplanted for more than 2 weeks.
- When conditions detrimental to plant growth are encountered (e.g., rubble fill, poor drainage, obstructions), the landscape contractor shall notify the Owner's representative before planting.
- The landscape contractor is responsible for the location of all existing underground utilities. Repair of utilities during planting shall be at the landscape contractor's expense.

Planting Specifications

- Planting shall be conducted according to the latest edition of the Landscape Specification Guidelines published by the Landscape Contractors Association (Maryland, District of Columbia, and Virginia) along with the specifications contained in this plan set.
- Container stock shall planted in a random pattern over the entire planting area. "Random" refers to both the plant species and the spacing between plants. Planting areas featuring a grid pattern with uniform spacing will be rejected.
- Excavation for the planting of all container stock shall be accomplished using manual methods or equipment such as shovels, planting bars, dibble bars, or mattocks.
- Backfill shall be firmly tamped and thoroughly watered until the soil is saturated to eliminate any air pockets. Watering shall be performed even if it is raining.
- If considered necessary by the Owner's representative, container stock shall be sprayed with a suitable animal repellent mixture in the fall. A second application will be made in mid-winter if necessary.
- All tags, labels, strings, and wire shall be removed from the trees.
- Permanent signs identifying the reforestation areas (see detail on this sheet) shall be installed along the appropriate boundary lines of the forest conservation easements. These devices shall not be anchored or attached to existing or planted trees.

Guarantee and Replacement

- All plant material shall be guaranteed by the planting contractor to remain alive and in a healthy, vigorous condition for a period of one year following planting.
- At the end of the warranty period, inspection of the plant material will be made by the Owner's representative. Plant material which is dead or in an unhealthy condition shall be removed from the site and replaced at the expense of the planting contractor.
- A tree shall be considered dead when the main leader has died back, or 25% of the crown is dead.
- Plant material replacements shall be of the same type, size and variety as specified in the plant legend or as accepted in writing as substitutes before original planting. Plants shall be furnished, planted and mulched as specified herein and at the expense of the planting contractor.

FOREST MANAGEMENT PROGRAM

Two Year Post-Construction Management Plan

- The required two year management of the reforestation areas is the responsibility of the Owner. Management may include the following: watering, fertilizing, pruning, removal of dead material and the control of pests and competing vegetation.
- Inspect the reforestation areas for a period of two years per the Howard County Forest Conservation Manual, to monitor the health and vigor of the plantings and specify actions needed to correct existing problems. The following inspection schedule shall be carried out:

Year 1 & 2: Two Inspections per year - inspect at the beginning of the growing season (May or June) and the end of the growing season (September or October).

At the end of the second year the survival rate shall be a minimum of 75% of the total number of trees planted under the approved Forest Conservation Plan. If the survival rate is below 75% of the total trees planted, plant material will be needed to guarantee the required survival rate.

A signed agreement detailing these post-construction activities shall be submitted for approval as part of the developers agreements for the project. The agreement shall also include bonding covering all costs of the necessary protection and management activities required by the post-construction program.

At the end of the management period the Owner or Owner's representative shall convey to the administrator of the Howard County Forest Conservation Program certification that the required afforestation survival rate has been achieved.

Long Term Management Plan

- All reforestation areas shall be protected by conservation easements which will be recorded at record plat (refer to the latest edition of the Howard County Forest Conservation Manual for activities permitted within the forest conservation easement).
- The periodic removal of vines and other invasive and non-native vegetation along the perimeter of the forest conservation area may be conducted to control the intrusion and development of such vegetation and maintain forest productivity.
- Woody vegetation located within 20' from the forest perimeter susceptible to windthrow and dead or diseased trees along the forest perimeter shall be selectively thinned if potentially hazardous.

WAVERLY WOODS SECTION 6 SPECIMEN TREE LIST				
No.	Botanical Name	Common Name	DBH	CRZ
ST14	<i>Liriodendron tulipifera</i>	Tulip Poplar	31.4"	31.4"
ST15	<i>Acer rubrum</i>	Red Maple	38.3"	38.3"
ST20	<i>Liriodendron tulipifera</i>	Tulip Poplar	36.9"	36.9"
ST21	<i>Liriodendron tulipifera</i>	Tulip Poplar (hollow)	35.5"	35.5"
ST22	<i>Quercus falcata</i>	Southern Red Oak	37.5"	37.5"

**Waverly Woods (Residential)
Forest Conservation Worksheet**

Input Parameter:	Preliminary FCP	Revised Per Section 4	Revised Per Section 5	Revised Per Section 6
Tract Area	291.9	291.9	291.9	291.9
100-Year Floodplain Area	4.1	4.68	4.81	4.81
Other ROW/Easements to be Excluded from Net Tract Area	2.04	2.04	2.09	2.09
Disturbance within Floodplain to be added to Net Tract Area	0	2.32	2.32	2.32
Existing Forest Area within Net Tract Area	103	103	103	103
Afforestation Threshold Percentage	0.15	0.15	0.15	0.15
Conservation Threshold Percentage	0.2	0.2	0.2	0.2
Total Area of Forest to be Cleared	65.55	66.83	68.23	69.17
Calculated Parameters:				
Net Tract Area	285.76	287.5	287.32	287.32
Afforestation Threshold	42.864	43.125	43.098	43.098
Conservation Threshold	57.152	57.5	57.464	57.464
Area of Forest Above Afforestation Threshold	60.136	59.875	59.902	59.902
Area of Forest Above Conservation Threshold	45.848	45.5	45.536	45.536
Break Even Point	66.3216	66.6	66.5712	66.5712
Clearing Permitted with no Mitigation	36.6784	36.4	36.4288	36.4288
Total Area of Forest to be Retained	37.45	36.17	34.77	33.83
Reforestation for Clearing Above Conservation Threshold	11.462	11.375	11.384	11.384
Reforestation for Clearing Below the Conservation Threshold	39.404	42.66	45.388	47.268
Credit for Retention Above the Conservation Threshold	0	0	0	0
Total Reforestation Required	50.866	54.035	56.772	58.652
Total Afforestation Required	0	0	0	0
TOTAL Afforestation/Reforestation Required	50.866	54.035	56.772	58.652

SECTION 6 FOREST CONSERVATION CALCULATIONS

Forest Preservation in Section 6 Development 2.01
Forest Clearing in Section 6 Development 5.62
Total Forest Clearing within Residentially Zoned Areas of Waverly Woods 69.17
Percentage of Forest Clearing Within Section 6 Development 8.12%
Total Reforestation Required for Waverly Woods Residential Development 58.652
Reforestation for Section 6 Development 4.77

Calculation Notes

- The columns presented in the "Forest Conservation Worksheet" contain the forest conservation calculations for all proposed development on residentially zoned property at Waverly Woods. The "Preliminary FCP" column contains the residential development forest conservation worksheet numbers from the Preliminary Forest Conservation Plan dated August 9, 1993 and revised on February 26, 1996. The subsequent columns contain "clearing" and "net tract area" changes resulting from differences between the Preliminary and Final residential development plans. Approximately 12 residential development sections are anticipated.
- Section 6 accounts for 8.12% or 4.77 acres of the 58.65 acres of reforestation now required for residential development on the Waverly Woods property. This requirement will be satisfied by reforesting a total of 4.78 acres on the Waverly Woods property as detailed in this Forest Conservation Plan. A total of 9.33 acres of reforestation is to be performed for Waverly Woods Sections 4, 5, and 6, leaving a balance of 49.32 acres to be performed in subsequent phases.
- The forest conservation calculations on these plans do not include the Waverly Woods Golf Course easement areas except where clearing is performed for residential development (e.g., storm water management facilities). A separate Forest Conservation Plan will be prepared for the golf course and a column will be added to the Waverly Woods Residential Forest Conservation Worksheet at a later date to account for those golf course areas lying within residentially zoned portions of the site.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cindy Hamilton 11/10/98
CHIEF, DIVISION OF LAND DEVELOPMENT
JA DATE

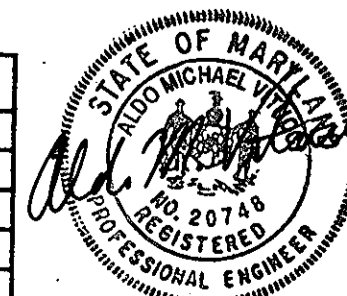
APPROVED: DEPARTMENT OF PLANNING AND ZONING
William C. Williams 10/27/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION
9 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Danek 10-26-98
CHIEF, BUREAU OF HIGHWAYS
HS DATE

PLAN PREPARED BY:
Environmental Systems Analysis, Inc.
48 Maryland Avenue, Annapolis, Maryland 21401
(410) 267 - 0495 Fax: (410) 267 - 0496

Kevin Kelly Kevin Kelly 2-21-98
DNR APPROVED QUALIFIED PROFESSIONAL 2-21-98
FOR FSD's AND FCP's DATE

REVISIONS	DATE



**FOREST CONSERVATION PLAN
GTW'S WAVERLY WOODS
SECTION 6
LOTS 1 THRU 97 AND PARCELS 'A' AND 'B'
(PROPERTY OF GTW JOINT VENTURE, LIBER 2222, FOLIO 36)
ZONING: R5C AND R-5A-B
TAX MAP NO. 16 PARCEL NO. 21
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: SEPTEMBER 15, 1998
SHEET 16 OF 17**

WAVERLY WOODS SECTION 6 REFORESTATION MASTER PLANTING SCHEDULE				
Qty	Botanical Name	Common Name	Size	Condition
3-4" TREE STOCK				
190	<i>Acer rubrum</i>	Red Maple	3-4'	Cont.
166	<i>Acer saccharinum</i>	Silver Maple	3-4'	Cont.
65	<i>Carpinus caroliniana</i>	American Hornbeam	3-4'	Cont.
50	<i>Nyssa sylvatica</i>	Black Gum	3-4'	Cont.
165	<i>Platanus occidentalis</i>	Sycamore	3-4'	Cont.
165	<i>Quercus palustris</i>	Pin Oak	3-4'	Cont.
180	<i>Salix nigra</i>	Black Willow	3-4'	Cont.
6-12" TREE STOCK				
110	<i>Acer rubrum</i>	Red Maple	6-12"	Cont.
30	<i>Acer saccharinum</i>	Silver Maple	6-12"	Cont.
20	<i>Carpinus caroliniana</i>	American Hornbeam	6-12"	Cont.
40	<i>Cercis canadensis</i>	Redbud	6-12"	Cont.
40	<i>Diospyros virginiana</i>	Persimmon	6-12"	Cont.
150	<i>Liriodendron tulipifera</i>	Tulip Poplar	6-12"	Cont.
60	<i>Platanus occidentalis</i>	Sycamore	6-12"	Cont.
65	<i>Quercus alba</i>	White Oak	6-12"	Cont.
85	<i>Quercus palustris</i>	Pin Oak	6-12"	Cont.
15	<i>Quercus rubra</i>	Red Oak	6-12"	Cont.
50	<i>Salix nigra</i>	Black Willow	6-12"	Cont.

REFORESTATION AREA C (0.67 AC)				
Qty	Botanical Name	Common Name	Size	Spacing
30	<i>Acer rubrum</i>	Red Maple	6-12"	11' RAN
30	<i>Acer saccharinum</i>	Silver Maple	6-12"	11' RAN
20	<i>Carpinus caroliniana</i>	American Hornbeam	6-12"	11' RAN
30	<i>Liriodendron tulipifera</i>	Tulip Poplar	6-12"	11' RAN
50	<i>Platanus occidentalis</i>	American Sycamore	6-12"	11' RAN
35	<i>Quercus palustris</i>	Pin Oak	6-12"	11' RAN
40	<i>Salix nigra</i>	Black Willow	6-12"	11' RAN

REFORESTATION AREA D (0.58 AC)				
Qty	Botanical Name	Common Name	Size	Spacing
50	<i>Acer rubrum</i>	Red Maple	3-4'	11' RAN
20	<i>Acer saccharinum</i>	Silver Maple	3-4'	11' RAN
10	<i>Carpinus caroliniana</i>	American Hornbeam	3-4'	11' RAN
10	<i>Nyssa sylvatica</i>	Black Gum	3-4'	11' RAN
30	<i>Platanus occidentalis</i>	American Sycamore	3-4'	11' RAN
40	<i>Quercus palustris</i>	Pin Oak	3-4'	11' RAN
20	<i>Salix nigra</i>	Black Willow	3-4'	11' RAN

REFORESTATION AREA E (0.61 AC)				
Qty	Botanical Name	Common Name	Size	Spacing
45	<i>Acer rubrum</i>	Red Maple	3-4'	11' RAN
30	<i>Acer saccharinum</i>	Silver Maple	3-4'	11' RAN
15	<i>Carpinus caroliniana</i>	American Hornbeam	3-4'	11' RAN
15	<i>Nyssa sylvatica</i>	Black Gum	3-4'	11' RAN
35	<i>Platanus occidentalis</i>	American Sycamore	3-4'	11' RAN
35	<i>Quercus palustris</i>	Pin Oak	3-4'	11' RAN
20	<i>Salix nigra</i>	Black Willow	3-4'	11' RAN

REFORESTATION AREA F (1.46 AC)				
Qty	Botanical Name	Common Name	Size	Spacing
80	<i>Acer rubrum</i>	Red Maple	3-4'	11' RAN
100	<i>Acer saccharinum</i>	Silver Maple	3-4'	11' RAN
30	<i>Carpinus caroliniana</i>	American Hornbeam	3-4'	11' RAN
25	<i>Nyssa sylvatica</i>	Black Gum	3-4'	11' RAN
80	<i>Platanus occidentalis</i>	American Sycamore	3-4'	11' RAN
80	<i>Quercus palustris</i>	Pin Oak	3-4'	11' RAN
25	<i>Salix nigra</i>	Black Willow	3-4'	11' RAN

REFORESTATION AREA G (0.28 AC)				
Qty	Botanical Name	Common Name	Size	Spacing
15	<i>Acer rubrum</i>	Red Maple	3-4'	11' RAN
16	<i>Acer saccharinum</i>	Silver Maple	3-4'	11' RAN
10	<i>Carpinus caroliniana</i>	American Hornbeam	3-4'	11' RAN
20	<i>Platanus occidentalis</i>	American Sycamore	3-4'	11' RAN
10	<i>Quercus palustris</i>	Pin Oak	3-4'	11' RAN
20	<i>Salix nigra</i>	Black Willow	3-4'	11' RAN

REFORESTATION AREA A-1 (0.08 AC)				
Qty	Botanical Name	Common Name	Size	Spacing
10	<i>Acer rubrum</i>	Red Maple	6-12"	11' RAN
10	<i>Platanus occidentalis</i>	American Sycamore	6-12"	11' RAN
10	<i>Salix nigra</i>	Black Willow	6-12"	11' RAN

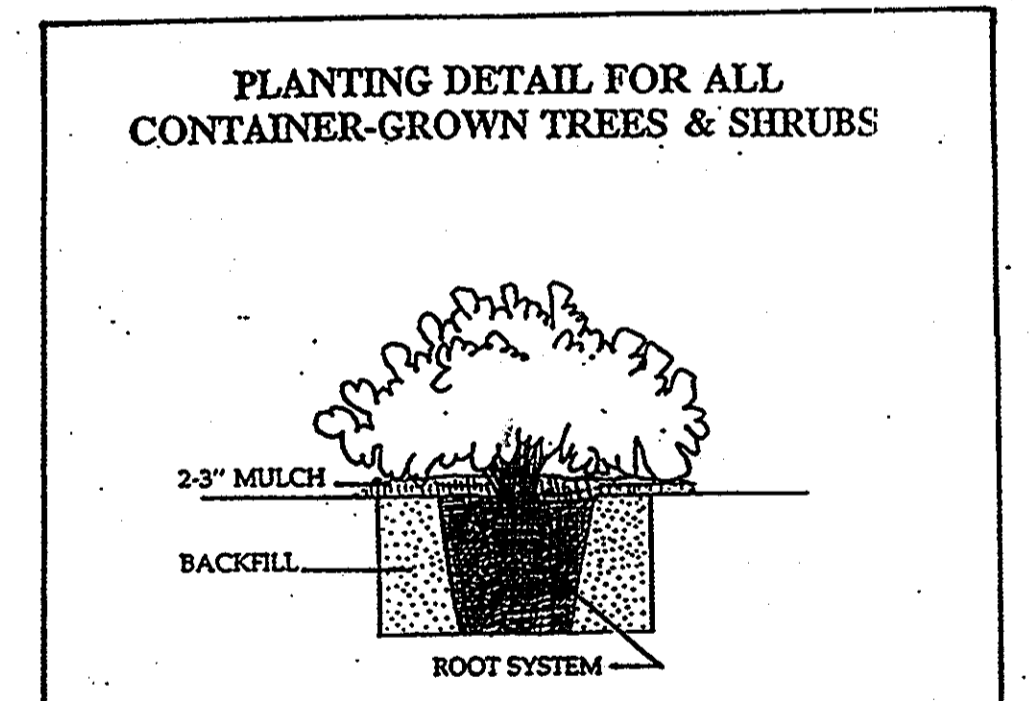
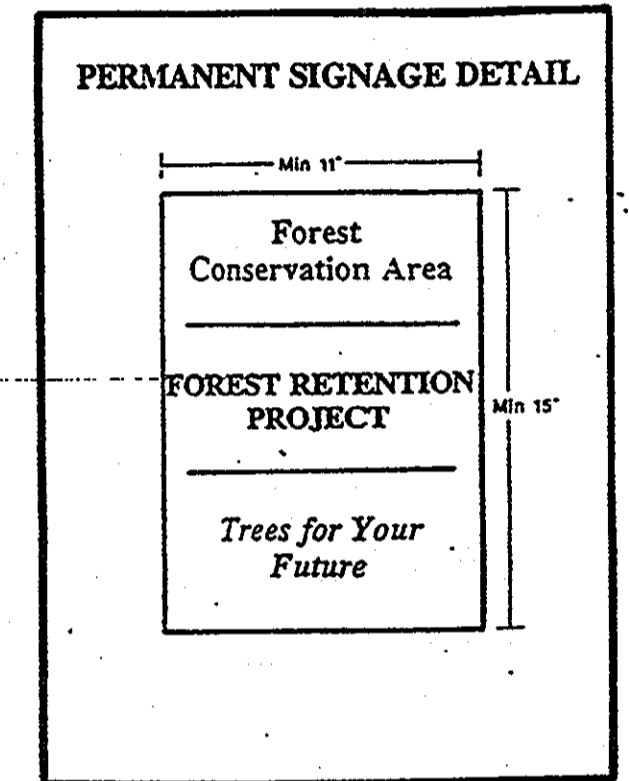
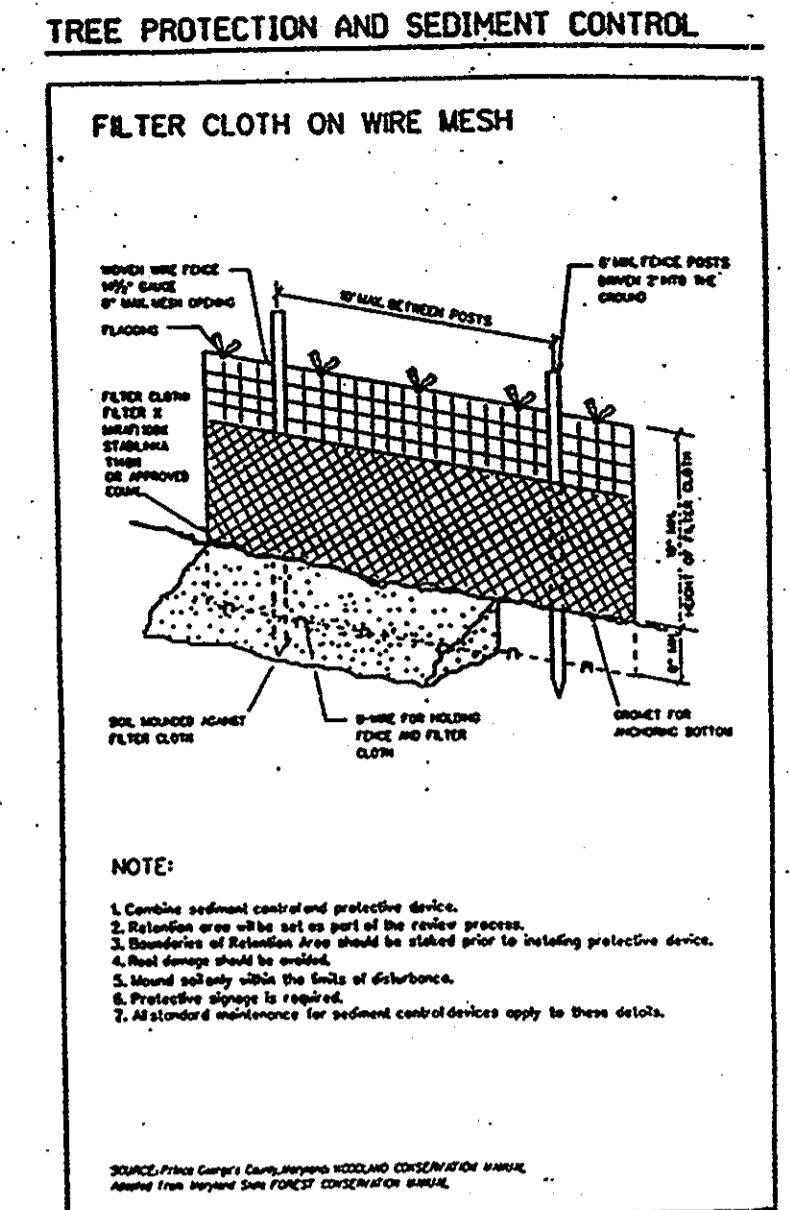
REFORESTATION AREA A (0.84 AC)				
Qty	Botanical Name	Common Name	Size	Spacing
50	<i>Acer rubrum</i>	Red Maple	6-12"	11' RAN
30	<i>Cercis canadensis</i>	Redbud	6-12"	11' RAN
30	<i>Diospyros virginiana</i>	Persimmon	6-12"	11' RAN
90	<i>Liriodendron tulipifera</i>	Tulip Poplar	6-12"	11' RAN
50	<i>Quercus alba</i>	White Oak	6-12"	11' RAN
20	<i>Quercus palustris</i>	Pin Oak	6-12"	11' RAN

REFORESTATION AREA B (0.268 AC)				
Qty	Botanical Name	Common Name	Size	Spacing
20	<i>Acer rubrum</i>	Red Maple	6-12"	11' RAN
10	<i>Cercis canadensis</i>	Redbud	6-12"	11' RAN
10	<i>Diospyros virginiana</i>	Persimmon	6-12"	11' RAN
30	<i>Liriodendron tulipifera</i>	Tulip Poplar	6-12"	11' RAN
15	<i>Quercus alba</i>	White Oak	6-12"	11' RAN
25	<i>Quercus rubra</i>	Red Oak	6-12"	11' RAN

DEVELOPER'S CERTIFICATE
 "I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND THAT ANY RESPONSIBLE PERSONNEL IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZED PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY."
 Signature of Developer: *[Signature]* DATE: 1/27/98

ENGINEER'S CERTIFICATE
 "I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITION AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."
 Signature of Engineer: *[Signature]* DATE: 4/2/98

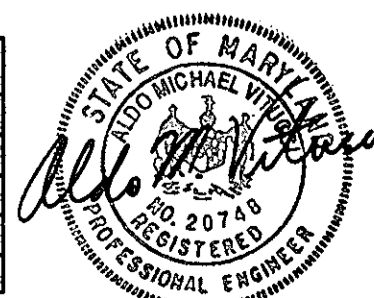
DESIGN FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
 U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE DATE:
 THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 APPROVED: *[Signature]* DATE: 11/14/98
 HOWARD SOIL CONSERVATION DISTRICT
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] DATE: 10/29/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] DATE: 10-26-98
 CHIEF, BUREAU OF HIGHWAYS



PLAN PREPARED BY:
Environmental Systems Analysis, Inc.
 48 Maryland Avenue, Annapolis, Maryland 21401
 (410) 267-0495 Fax: (410) 267-0496

[Signature] Kevin Kelly
 DNR APPROVED QUALIFIED PROFESSIONAL FOR PSD'S AND FCP'S
 DATE: 7-21-98

REVISIONS	DATE
*1 Remove Reforestation Area Charts A (0.84 Ac), B (0.28 Ac)	7-8-02
*2 Remove Reforestation Area Charts D (0.88 Ac), E (0.61 Ac), F (1.46 Ac), and Area G (0.28 Ac)	7-8-02



FOREST CONSERVATION PLAN
GTW'S WAVERLY WOODS
 SECTION 6
 LOTS 1 THRU 97 AND PARCELS 'A' AND 'B'
 (PROPERTY OF GTW JOINT VENTURE, LIBER 2222, FOLIO 36)
 ZONING: RSC AND R-5A-B
 TAX MAP NO. 16 PARCEL NO. 21
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
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 SHEET 17 OF 17

AS-BUILT 4-29-02 F-98-88