SHEET INDEX

SHEET No.	SHEET
1	TITLE SHEET
2	HOUNSLOW DRIVE PLAN AND PROFILE, ABBOT WAY PLAN & CHAUCER WAY PLAN
3	ABBOT WAY & CHAUCER WAY PROFILES AND ROADWAY DETAILS
4	FILLET PROFILES & ROADWAY DETAILS
5	STREET TREE, GRADING AND SEDIMENT CONTROL PLAN
6	LANDSCAPE PLAN
7	STORM DRAIN PROFILES
8	STORM DRAIN DRAINAGE AREA MAP
9	SEDIMENT CONTROL NOTES AND DETAILS
10	SEDIMENT CONTROL NOTES AND DETAILS
11	FOREST CONSERVATION PLAN
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FINAL ROAD CONSTRUCTION, GRADING AND SEDIMENT CONTROL PLANS

GTW'S WAVERLY WOODS

SECTION 11, AREA 4

LOTS 22 THRU 80

(A SUBDIVISION OF THE PROPERTY OF WAVERLY WOODS DEVELOPMENT CORPORATION, LIBER 2222, FOLIO 36)

ZONED: RSC

TAX MAP No. 16, PART OF PARCEL No. 20

APPROVED: DEPARTMENT OF PUBLIC WORKS	
CHIEF, BUREAU OF HIGHWAYS	DATE 7-6-01
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 7/19/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 7/10/01

ROAD CLASSIFICATION CHART

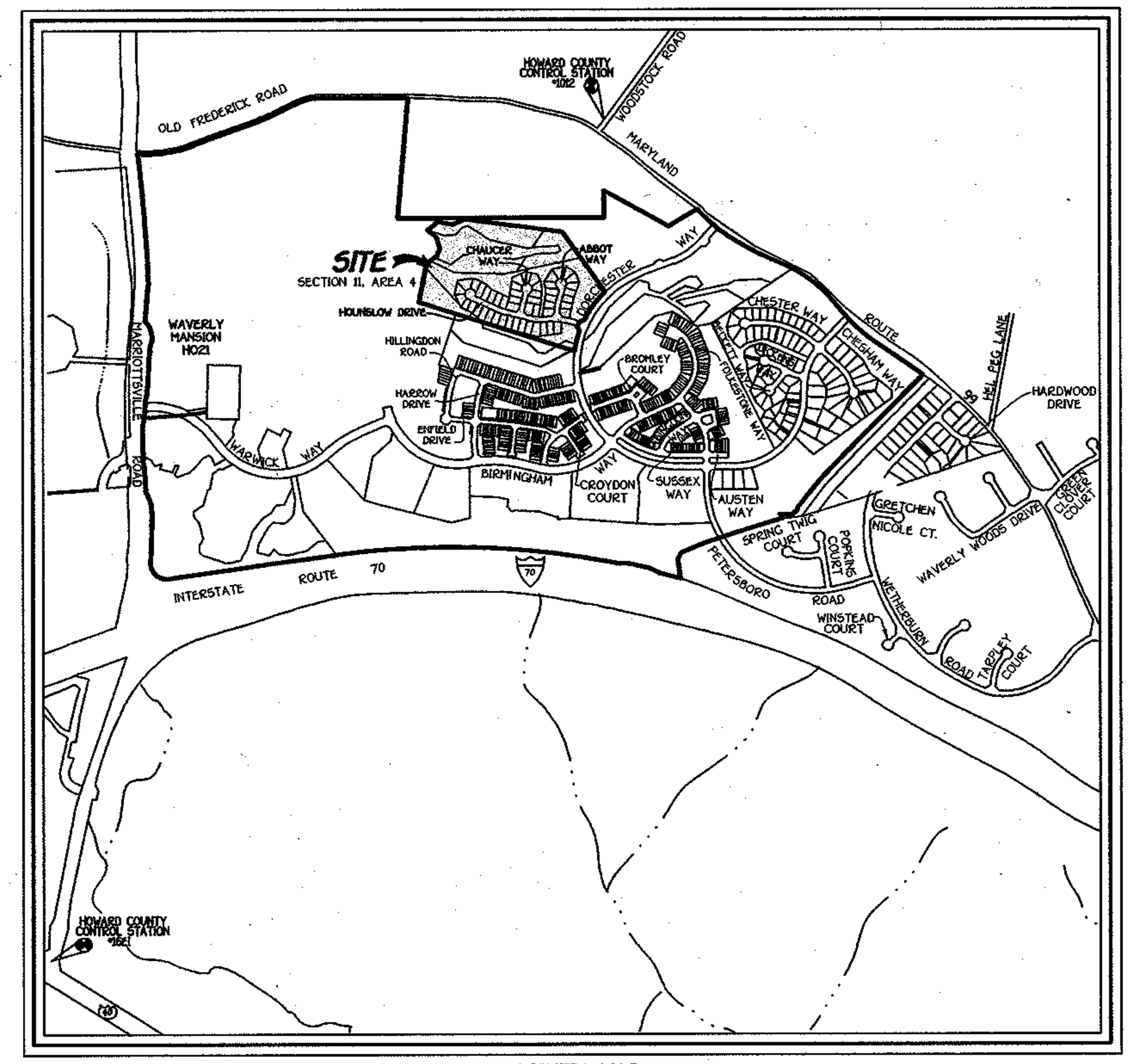
ROAD	CLASSIFICATION	R/W WIDTH
HOUNSLOW DRIVE	PUBLIC ACCESS STREET	50'
ABBOT WAY	PUBLIC ACCESS PLACE	50'
CHAUCER WAY	PUBLIC ACCESS PLACE	50'

TRAFFIC CONTROL SIGNS

STREET NAME	C.L. STATION	OFFSET	POSTED SIGN	SIGN CODE
HOUNSLOW DRIVE	0+42	16'L	STOP	R1-1
HOUNSLOW DRIVE	1+00	16'R	SPEED LIMIT 25	R2-1
HOUNSLOW DRIVE	2+50	16'L	STOP AHEAD	W3-1
ABBOT WAY	0+34	16'L	STOP	R1-1
CHAUCER WAY	0+34	16'L	STOP	R1-1

STREET LIGHT CHART

DWG. No.	STREET NAME	STATION	OFF-SET	FIXTURE/POLE TYPE
2	HOUNSLOW DRIVE	C.L. STA. 2+95	20' R	100-WATT HPS VAPOR "COLONIAL" POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
2	HOUNSLOW DRIVE	C.L. STA. 5+85	19' R	100-WATT HPS VAPOR "COLONIAL" POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
2	ABBOTT WAY	L.P. STA. 1+43	3' BEHIND CURB	100-WATT HPS VAPOR "COLONIAL" POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
2	CHAUCER WAY	L.P. STA. 1+28	6' BEHIND CURB	100-WATT HPS VAPOR "COLONIAL" POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
2	HOUNSLOW DRIVE	L.P. STA. 1+00	3' BEHIND CURB	100-WATT HPS VAPOR "COLONIAL" POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.



VICINITY MAP
SCALE: 1" = 1200'

THIRD ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

GENERAL NOTES

1. ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS ARE APPROVED.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS, DIVISION OF CONSTRUCTION INSPECTION AT 410-313-1880 AT LEAST (5) WORKING DAYS. PRIOR TO THE START OF CONSTRUCTION.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION.
4. LOCATION: SOUTHSIDE OF OLD FREDERICK ROAD (MARYLAND ROUTE 99) AND EASTSIDE OF DORCHESTER WAY. TAX MAP: #16, PART OF PARCEL 20.
5. THIS PLAN IS SUBJECT TO ZONING BOARD CASE No. ZB929-M WHICH APPROVED ON MARCH 22, 1993, A REQUEST TO REZONE 682.18 ACRES OF RURAL LAND INTO THE MIXED USE AREAS.
6. TOPOGRAPHY SHOWN HEREON IS FROM AERIAL MAPS FLOWN WITH 2 FOOT CONTOUR INTERVALS PREPARED BY HARFORD AERIAL SURVEYS DATED NOVEMBER 1998.
7. PROPERTY IS LOCATED WITHIN METROPOLITAN DISTRICT.
8. PUBLIC WATER AND SEWER ARE TO BE UTILIZED FOR THIS SITE AND WILL BE EXTENDED FROM THE LIMITS OF CONTRACT Nos. 24-3469-D AND 24-3566-D.
9. STORMWATER MANAGEMENT FOR THIS DEVELOPMENT WILL BE DONE BY THE RETENTION METHOD PROVIDED UNDER EX. POND 1 (F 95-174). THE S.W.M. REPORT IS PROVIDED BY MILDENBURG ASSOCIATES, INC. (APPROVED 3/26/96).
10. THIS HORIZONTAL AND VERTICAL DATUM SHOWN ARE BASED ON THE FOLLOWING NAD '83 HOWARD COUNTY CONTROL STATIONS:

HOWARD COUNTY MONUMENT 1012	N 601060.177 E 1345336.7580	ELEV. = 445.577
HOWARD COUNTY MONUMENT 16E1	N 593250.9322 E 1340192.7110	ELEV. = 509.924

11. AREA TABULATION:

SECTION 11, AREA 4

a. TOTAL NUMBER OF BUILDABLE LOTS TO BE RECORDED	51
b. TOTAL NUMBER OF HOA OPEN SPACE LOTS TO BE RECORDED	5
c. TOTAL NUMBER OF GOLF COURSE OPEN SPACE LOTS TO BE RECORDED	3
d. TOTAL AREA OF BUILDABLE LOTS TO BE RECORDED	9.282 AC.±
e. TOTAL AREA OF HOA OPEN SPACE LOTS TO BE RECORDED	12.067 AC.±
f. TOTAL AREA OF GOLF COURSE OPEN SPACE LOTS TO BE RECORDED	10.112 AC.±
g. TOTAL AREA OF LOTS/PARCELS TO BE RECORDED	31.461 AC.±
h. TOTAL AREA OF ROADWAY TO BE RECORDED	2.150 AC.±
i. TOTAL AREA TO BE RECORDED	33.611 AC.±

12. THE NOISE STUDY FOR GTW'S WAVERLY WOODS WAS PROVIDED BY WILDMAN ENVIRONMENTAL SERVICES, INC. ON NOVEMBER 1, 1994.
13. THE FOREST CONSERVATION OBLIGATION FOR THIS SECTION HAS BEEN MET WITH 4.07 ACRES OF ONSITE FOREST RETENTION AND 10.52 ACRES OF OFFSITE FOREST RETENTION, LOCATED ON A PORTION OF THE G.T.W. WAVERLY WOODS PROPERTY, WEST OF MARRIOTTSVILLE ROAD. THE SURETY OBLIGATION FOR THIS AREA = $ 63,554.00.

13A. LANDSCAPE SURETY IN THE AMOUNT OF $15,390.00 IS INCLUDED AS PART OF THE DEVELOPERS AGREEMENT.

14. THERE IS A PUBLIC 100 YEAR FLOODPLAIN WITHIN SECTION 11.
15. THE WETLANDS STUDY FOR GTW'S WAVERLY WOODS WAS PREPARED BY EXPLORATION RESEARCH, INC. AND WAS COMPILED ON 9/5/91.
16. THE TRAFFIC STUDY FOR GTW'S WAVERLY WOODS WAS PREPARED BY THE TRAFFIC GROUP AND APPROVED ON JULY 14, 1994.
17. THE SOILS INVESTIGATION REPORT WAS PREPARED BY I.T.E., INC. ON JUNE 28, 1994.
18. THE SKETCH PLAN No. S 94-07 WAS APPROVED ON 11/30/93. THE PRELIMINARY PLAN P 00-18 WAS APPROVED ON 9/6/00. THE PRELIMINARY PLAN COINCIDES WITH THE PHASING PLAN FOR THE YEAR OF 2002 AS SHOWN UNDER THE SKETCH PLAN AND MODIFIED PHASING PLAN FOR PHASING 2002 THRU 2010 APPROVED BY THE PLANNING DIRECTOR ON JUNE 21, 1999.
19. STREET LIGHTS WILL BE REQUIRED IN THIS DEVELOPMENT IN ACCORDANCE WITH THE DESIGN MANUAL. STREET LIGHT PLACEMENT AND TYPE OF FIXTURE AND POLE SELECTED SHALL BE IN ACCORDANCE WITH THE LATEST HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)." THE JUNE 1993 POLICY INCLUDES GUIDELINES FOR LATERAL AND LONGITUDINAL PLACEMENT. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN AND STREET LIGHT AND ANY TREE.
20. ALL HANDICAP RAMPS SHALL MEET CURRENT ADA REQUIREMENTS.

STATE OF MARYLAND — PROFESSIONAL ENGINEER

AS BUILT 4/20/04

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

OWNER / DEVELOPER

WAVERLY WOODS DEVELOPMENT CORPORATION
c/o LAND DESIGN AND DEVELOPMENT, LLC
8000 MAIN STREET
ELLICOTT CITY, MARYLAND 21042

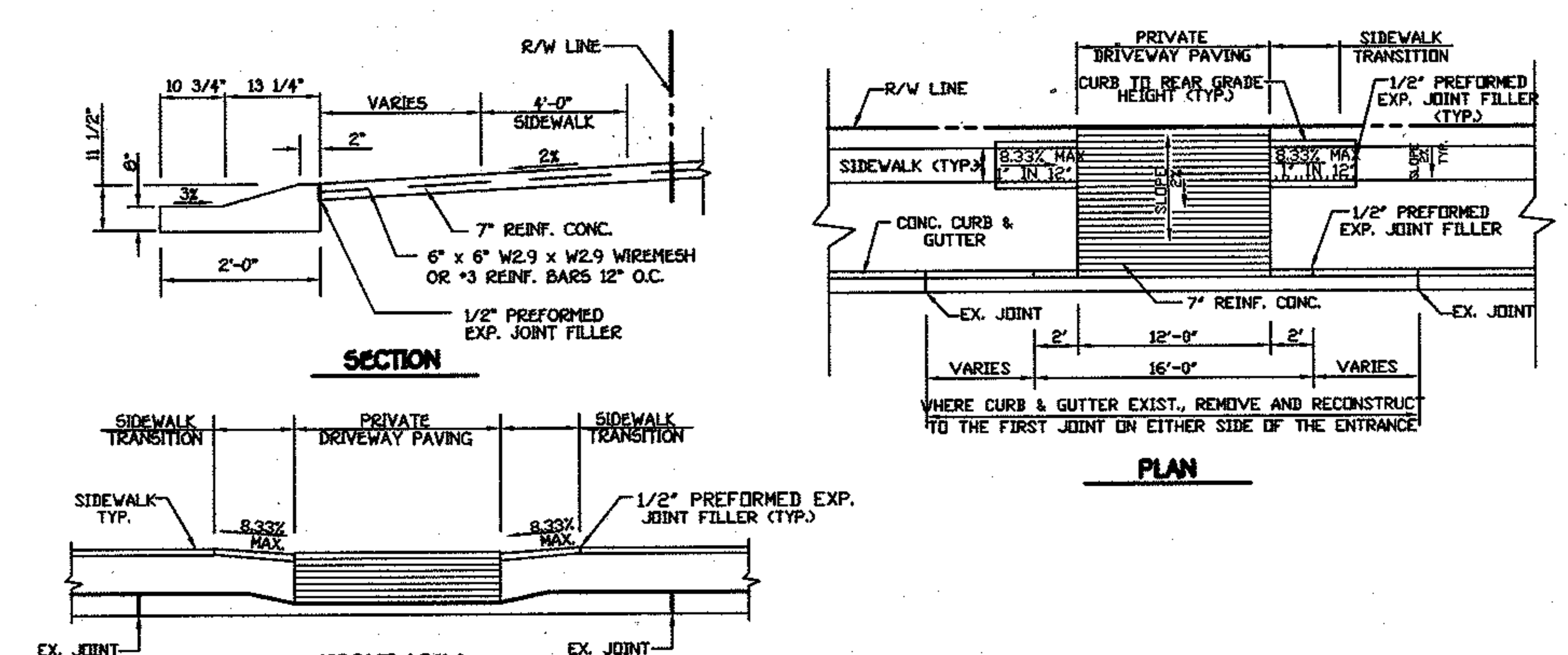
STATE OF MARYLAND — ALDO MICHAEL VITUCCI — No. 20746 — REGISTERED PROFESSIONAL ENGINEER

ALDO M. VITUCCI, P.E. — 6-11-01 DATE

GTW'S WAVERLY WOODS
SECTION 11, AREA 4
LOTS 22 THRU 80
(A SUBDIVISION OF THE PROPERTY OF WAVERLY WOODS DEVELOPMENT CORPORATION, LIBER 2222, FOLIO 36)
ZONING: RSC
TAX MAP NO. 16 PART OF PARCEL NO. 20
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 4, 2001

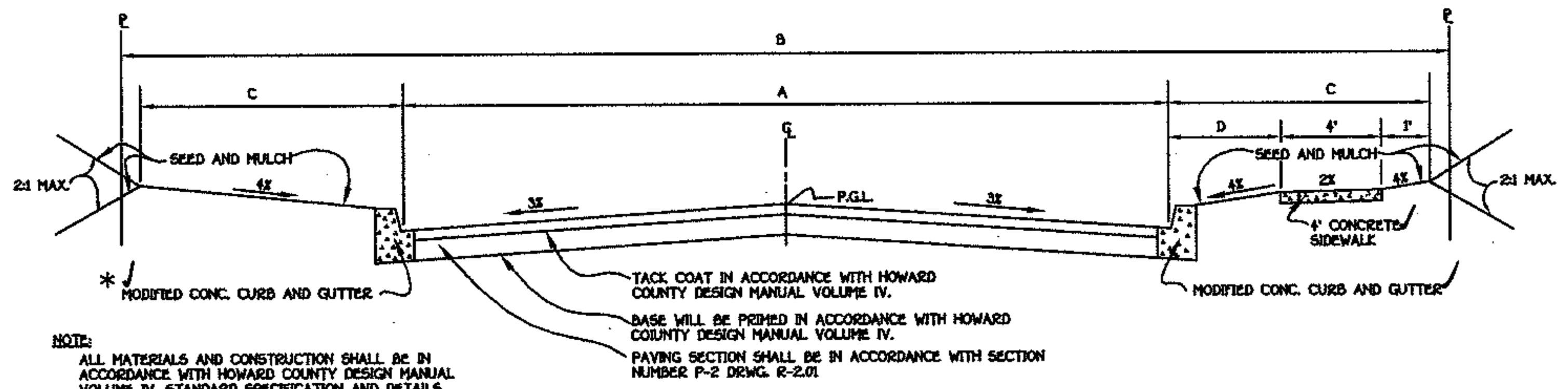
F01-93 AS BUILT

F01-93 AS BUILT



RESIDENTIAL DRIVEWAY ENTRANCE CLOSED SECTION WITH MODIFIED COMBINATION CURB & GUTTER AND SIDEWALK

NO SCALE



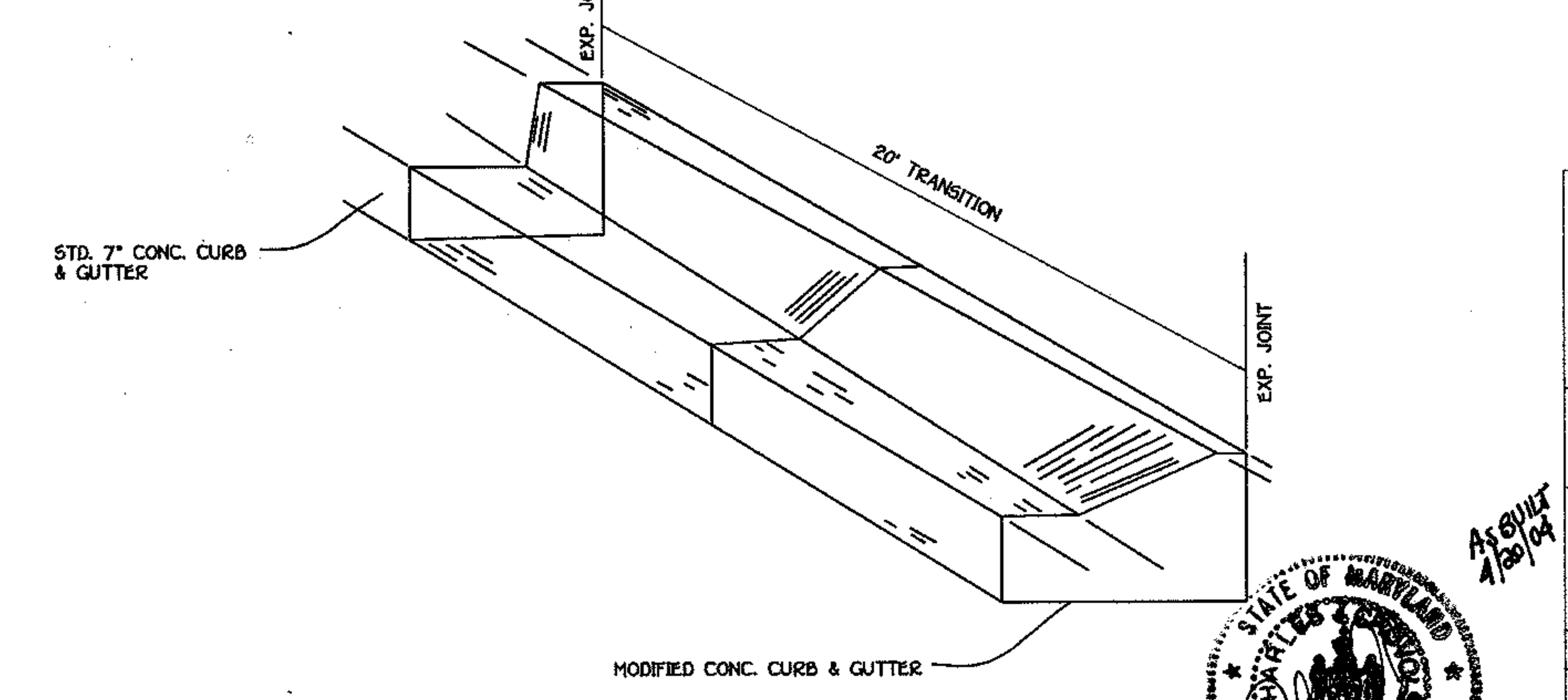
NOTE:
ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION.

TYPICAL ROADWAY SECTION

NO SCALE

ROAD NAME	CLASSIFICATION	C.L. STA. TO C.L. STA.	A	B	C	D	PAVING SECTION	DESIGN SPEED
HOUNSLOW DRIVE	PUBLIC ACCESS STREET	0+70 TO 10+79.82 ✓	28' ✓	50'	9'	4'	P-2	25 M.P.H.
ABBOT WAY	PUBLIC ACCESS PLACE	0+00 TO 3+36.91 ✓	28' ✓	50'	9'	4'	P-2	25 M.P.H.
CHAUCER WAY	PUBLIC ACCESS PLACE	0+00 TO 2+25.00 ✓	28' ✓	50'	9'	4'	P-2	25 M.P.H.

* STD. 7" CONC. CURB AND GUTTER TO BE USED IN ALL LINEAR PROFILES IN ROADWAY CUL-DE-SACS.



CONCRETE CURB & GUTTER TRANSITION

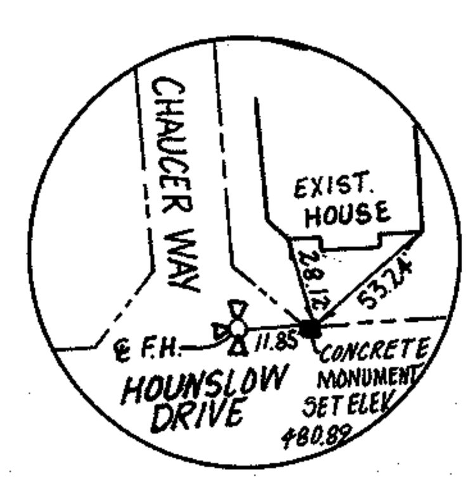
NO SCALE

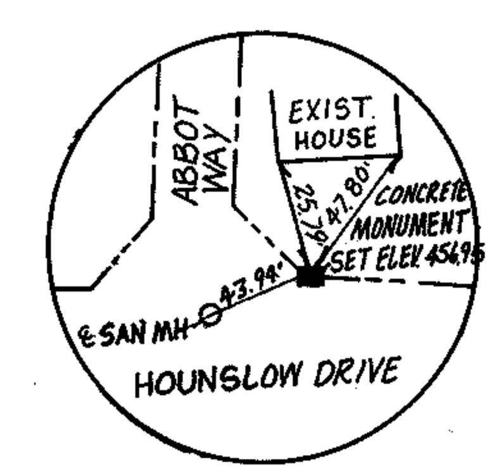
APPROVED
DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/19/01

APPROVED
DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/01

APPROVED
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 7-6-01

6-11-01





As Built 4/20/04

GTW'S WAVERLY WOODS
SECTION 11, AREA 4
LOTS 22 THRU 80

(A SUBDIVISION OF PROPERTY OF WAVERLY WOODS DEVELOPMENT CORPORATION, LIBER 2222, FOLIO 36)
TAX MAP NO. 16 PART OF PARCEL NO. 20
ZONING: R5C
THIRD ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

CHAUCER WAY PROFILE — **ABBOT WAY** PROFILE

ROADWAY DETAILS

OWNER / DEVELOPER

WAVERLY WOODS DEVELOPMENT CORPORATION
c/o LAND DESIGN AND DEVELOPMENT, LLC
8000 MAIN STREET
ELLICOTT CITY, MARYLAND 21042

SCALE: AS SHOWN	DATE: JUNE 4, 2001	DWG. NO. 3 OF 13
DES. J.M.Z.	DRN. J.C.L.	CHK. A.M.V.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

AS BUILT F 01-93

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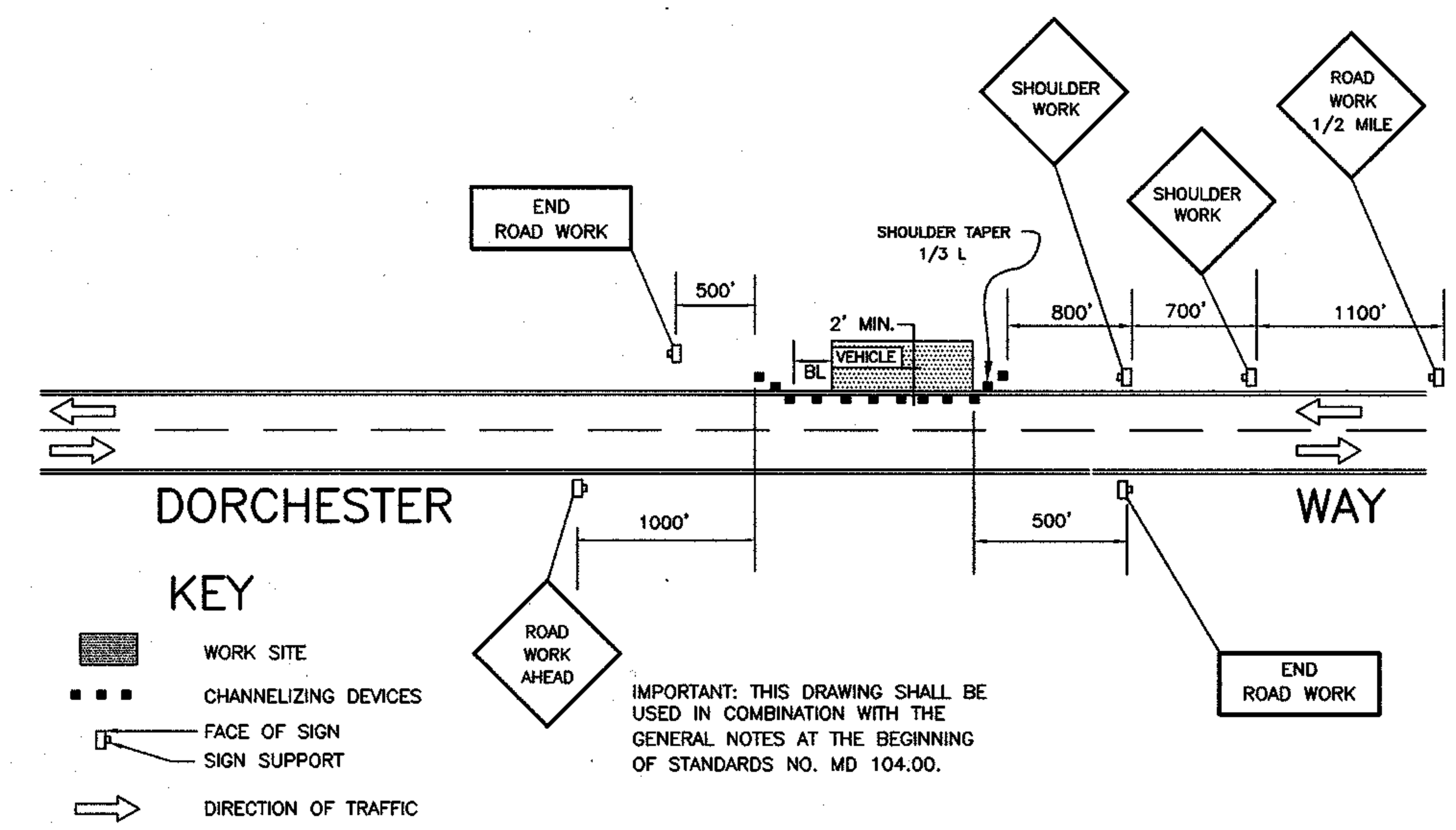

(STANDARD NO. MD 104.04-01)

TEMPORARY TRAFFIC CONTROL PLAN

NO SCALE

MAINTENANCE OF TRAFFIC SPECIAL PROVISIONS

GENERAL

1. THE PURPOSE OF THIS PORTION OF THE SPECIAL PROVISION IS TO SET FOR THE TRAFFIC CONTROL REQUIREMENTS NECESSARY FOR THE SAFE AND EFFICIENT MAINTENANCE TO TRAFFIC WITHIN WORK AREAS, AND TO MINIMIZE ANY INCONVENIENCES TO THE TRAVELING PUBLIC AND THE CONTRACTOR AND/OR PERMITTEE.
2. PROPERTY TRAFFIC CONTROL THROUGH WORK AREAS IS ESSENTIAL FOR INSURING THE SAFETY AND THAT OF HIGHWAY WORKERS HAS THE HIGHEST PRIORITY OF ALL TASKS WITHIN THIS PROJECT. THE PROPERTY APPLICATION OF THE APPROVED TRAFFIC CONTROL PLAN (TCP) WILL PROVIDE THE DESIRED LEVEL OF SAFETY.
3. THROUGHOUT THESE SPECIAL PROVISIONS, ANY MENTION OF THE TCP SHALL BE IMPLIED TO INCLUDE ANY COMBINATION OF TYPICAL TRAFFIC CONTROL STANDARDS WHICH FORM THE OVERALL TCP FOR THIS PROJECT WHICH HAS BEEN APPROVED BY THE APPROPRIATE SHA TRAFFIC ENGINEER.
4. THE CONTRACTOR AND/OR PERMITTEE SHALL BE REQUIRED TO ADHERE TO THE PROVISIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 1988 EDITION, ESPECIALLY PART VI, AND TO SECTION 814 OF THE MARYLAND DOT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS (JANUARY, 1982; INCLUDING ALL REVISIONS AND SUPPLEMENTS TO EACH.
5. THE CONTRACTOR AND/OR PERMITTEE SHALL BE REQUIRED TO ADHERE TO THE REQUIREMENTS SET FOR IN THE TCP AND THESE SPECIAL PROVISIONS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ANY REQUESTS TO MAKE MINOR CHANGES TO THE TCP OR THE SPECIAL PROVISIONS WITH REGARD TO THE TRAFFIC CONTROL ITEMS SHALL BE MADE IN WRITING TO THE ENGINEER A MINIMUM OF THREE(3) WORKING DAYS PRIOR TO THE PROPOSED SCHEDULING CHANGE. THE CONTRACTOR AND/OR PERMITTEE SHALL HAVE WRITTEN APPROVAL OF THE ENGINEER PRIOR TO THE IMPLEMENTATION OF ANY CHANGE.
6. NO WORK SHALL BEGIN ON ANY WORK ACTIVITY OR WORK PHASE UNTIL ALL REQUIRED TRAFFIC CONTROL PATTERNS AND DEVICES INDICATED ON THE TCP FOR THAT ACTIVITY OR PHASE ARE COMPLETELY AND CORRECTLY IN PLACE TO HAVE BEEN CHECKED FOR APPROVED USAGE.
7. GENERAL AND SPECIFIC WARNING SIGNS SHALL ONLY BE IN PLACE WHEN SPECIFIC WORK TASKS AND ACTIVITIES ARE ACTUALLY UNDERWAY OR CONDITIONS EXIST THAT POSE A POTENTIAL HAZARD TO THE PUBLIC, AND ANY ADDITIONAL SIGNING HAS BEEN APPROVED BY THE APPROPRIATE SHA TRAFFIC ENGINEER. NOTE: THE PRACTICE OF PLACING SIGNING AND OTHER TRAFFIC CONTROL DEVICES IN ADDITION TO THOSE INDICATED ON THE APPROVED TCP IS NOT PERMITTED.
8. THE CONTRACTOR AND/OR PERMITTEE SHALL PROVIDE, MAINTAIN IN NEW CONDITION, AND MOVE WHEN NECESSARY, OR AS DIRECTED BY THE ENGINEER, ALL TRAFFIC CONTROL DEVICES USED FOR THE GUIDANCE AND PROTECTION OF MOTORISTS, PEDESTRIANS, AND WORKERS.
9. ALL TRAFFIC CONTROL DEVICES REQUIRED BY THE TCP SHALL BE KEPT IN GOOD CONDITION, FULLY PERFORMING AS SET FORTH IN THE TCP, THE MUTCD, AND/OR SECTION 814 OF THE SPECIFICATIONS. FOR REFLECTIVE DEVICES, A PARTICULAR DEVICE IS ASSUMED TO HAVE FAILED TO MEET MINIMUM OPERATIONAL STANDARDS WHEN THE DEVICE NO LONGER HAS RETRO-REFLECTANCE CAPABILITY OF AT LEAST 60% OF THE SPECIFIED MINIMUM VALUE OVER AT LEAST 90% OF THE VISIBLE REFLECTIVE SURFACE.
10. ALL TRAFFIC CONTROL DEVICES NOT REQUIRED FOR THE SAFE CONDUCT OF TRAFFIC SHALL BE PROMPTLY REMOVED, COMPLETELY COVERED, TURNED AWAY FROM TRAFFIC, OR OTHERWISE TAKEN OUT OF SERVICE. IT IS INTENDED THAT NO TRAFFIC CONTROL DEVICE IS TO BE IN SERVICE WHEN THERE IS NO CLEAR CUT REASON FOR THE DEVICE.
11. THROUGHOUT THE PERIOD(S) OF WORK ACTIVITIES, TRAFFIC SHALL BE MAINTAINED BY IMPLEMENTING THE APPROVED TCP. IN LIEU OF THE TCP PREPARED FOR THIS PROJECT, AND/OR INDIVIDUAL TYPICAL TRAFFIC CONTROL STANDARDS, THE CONTRACTOR AND/OR PERMITTEE HAS THE OPTION OR PREPARING AND SUBMITTING A TCP, WHOLLY OR IN PART, OF HIS OWN DESIGN, FOLLOWING GUIDELINES SET FORTH IN THE MUTCD AND PRESCRIBED BY THE ADMINISTRATION. A TCP DEVELOPED BY THE CONTRACTOR AND/OR PERMITTEE SHALL NOT BE IMPLEMENTED UNTIL ADVANCE WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER. TCP'S MAY BE IMPLEMENTED WITHIN A SINGLE PROJECT OR JOINTLY BETWEEN TWO OR MORE PROJECTS. IN SITUATIONS WHERE TCP'S JOINTLY IMPLEMENTED, CARE SHALL BE EXERCISED TO PRESENT CORRECT AND NON-CONFLICTING GUIDANCE TO THE TRAVELING PUBLIC.
12. THROUGHOUT THESE SPECIAL PROVISIONS, WHERE SPEED OF TRAFFIC IS NOTED, THIS MEANS THE POSTED SPEED OR PREVAILING TRAVEL SPEED, WHICHEVER IS HIGHER, UNLESS OTHERWISE NOTED.
13. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES THROUGHOUT THE ENTIRE LENGTH OF THE PROJECT, UNLESS OTHERWISE NOTED. NO TRAVEL LANE(S) OTHER THAN THOSE DESIGNATED FOR POSSIBLE CLOSURE IN THE TCP SHALL BE CLOSED WITHOUT OBTAINING PRIOR APPROVAL FORM THE ENGINEER. ALL INGRESS AND EGRESS TO THE WORK AREA BY THE CONTRACTOR AND/OR PERMITTEE SHALL BE PERFORMED WITH THE FLOW OF TRAFFIC.

APPROVED
DEPARTMENT OF PLANNING AND ZONING
7/19/01
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

APPROVED
DEPARTMENT OF PLANNING AND ZONING
7/10/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

APPROVED
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
7-6-01
CHIEF, BUREAU OF HIGHWAYS — DATE

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER
6-11-01

STATE OF MARYLAND — PROFESSIONAL ENGINEER
AS BUILT 4/20/04

GTW'S WAVERLY WOODS
SECTION 11, AREA 4
LOTS 22 THRU 80

(A SUBDIVISION OF PROPERTY OF WAVERLY WOODS DEVELOPMENT CORPORATION, LIBER 2222, FOLIO 36)
TAX MAP NO. 16 PART OF PARCEL NO. 20
ZONING: RSC
THIRD ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

FILLET PROFILES — ROADWAY DETAILS

OWNER / DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION
c/o LAND DESIGN AND DEVELOPMENT, LLC
8000 MAIN STREET
ELLICOTT CITY, MARYLAND 21042

SCALE: AS SHOWN	DATE: JUNE 4, 2001	DWG. NO. 4 OF 13
DES. J.M.Z.	DRN. J.C.L.	CHK. A.M.V.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
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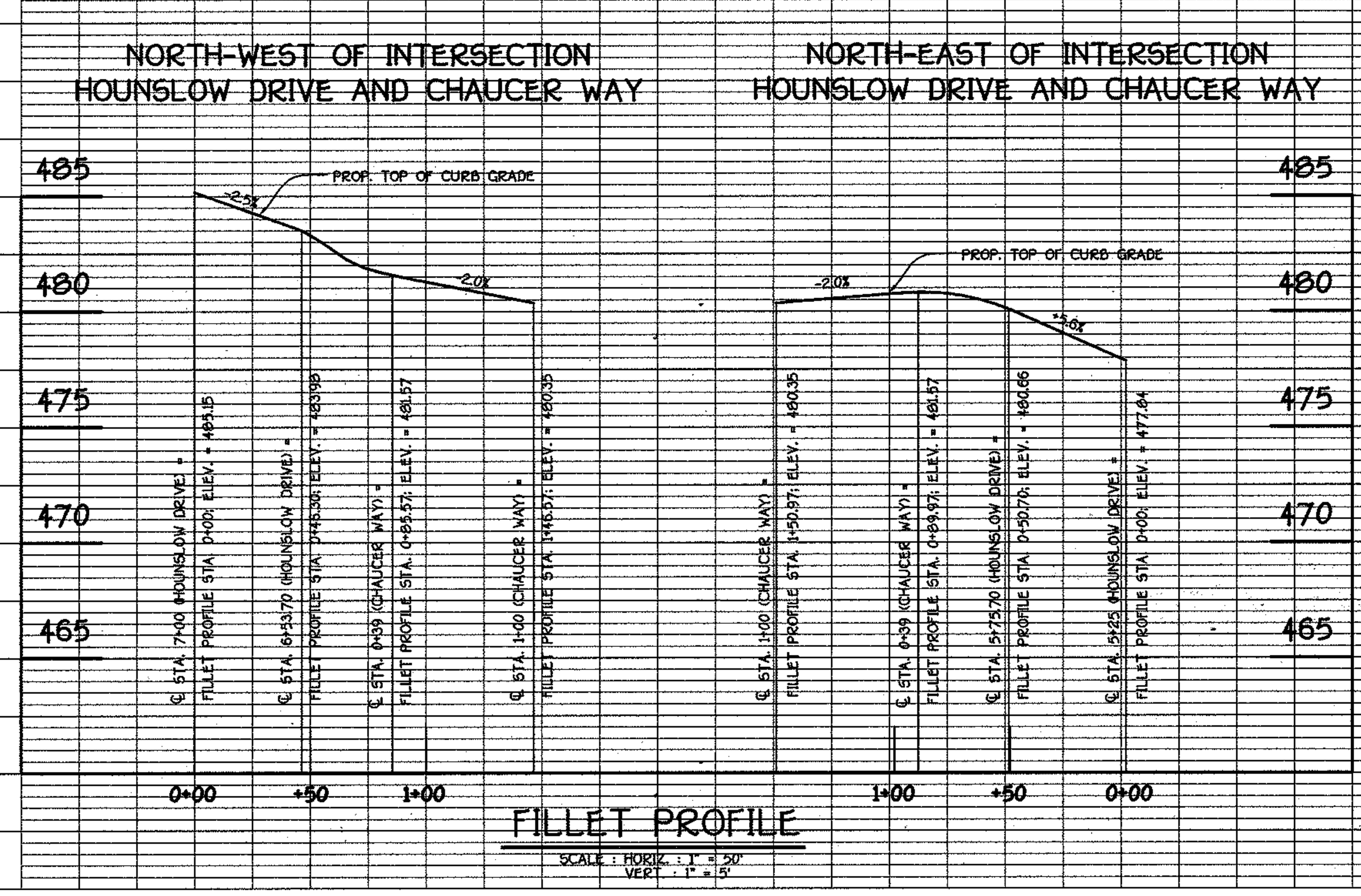
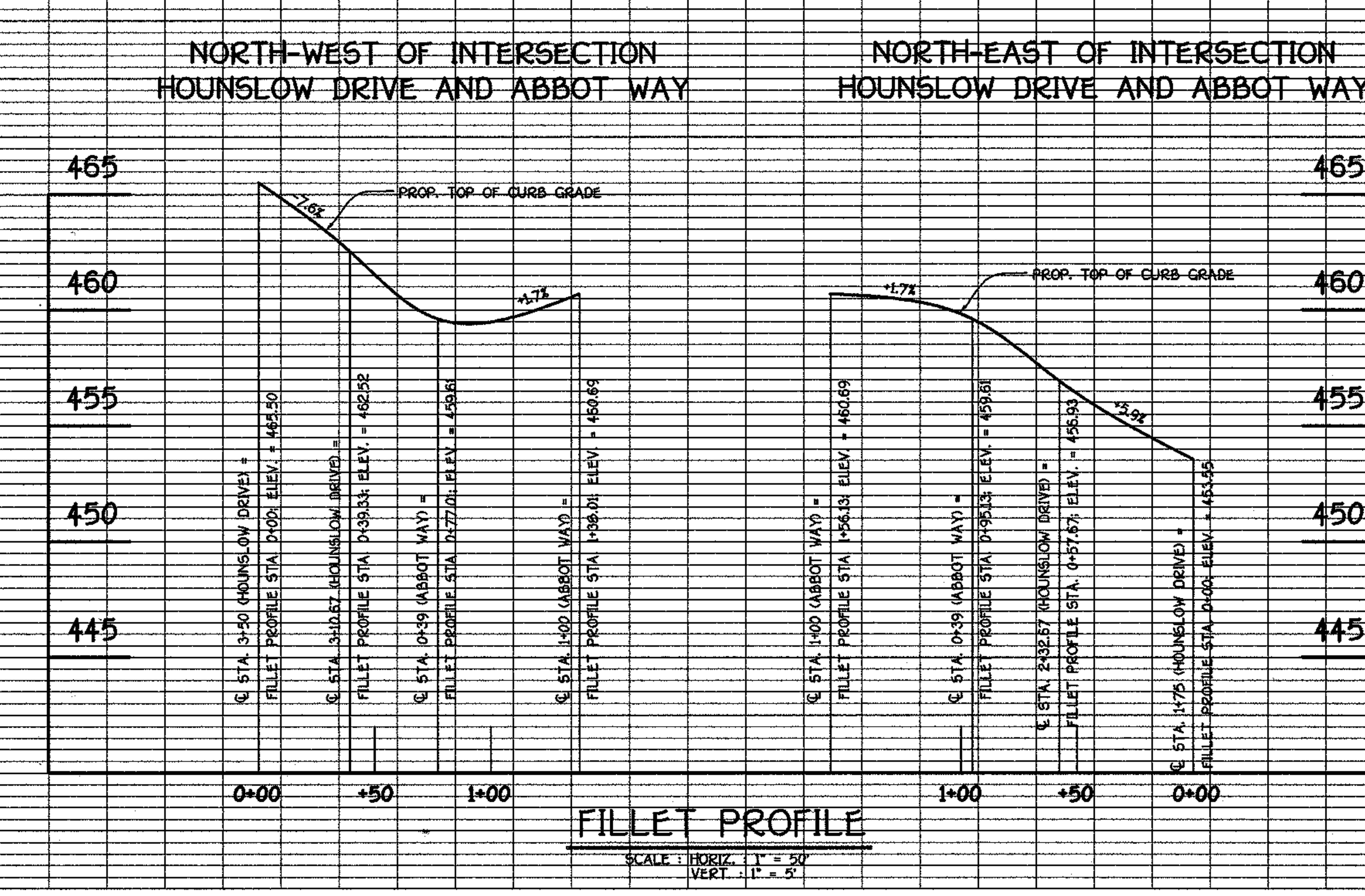


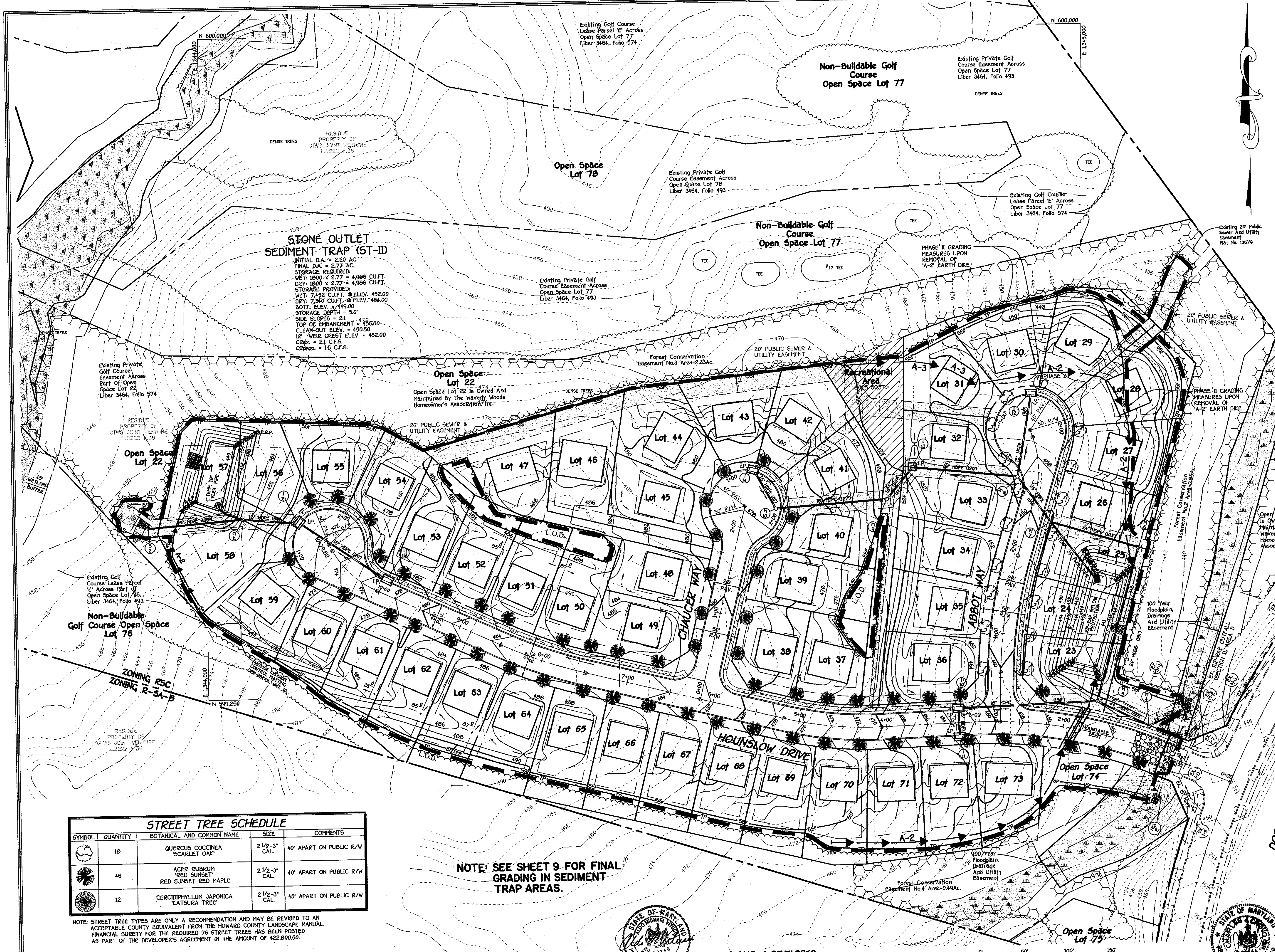


FILLET PROFILE
SCALE : HORIZ. : 1" = 50' VERT. : 1" = 5'

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

K:\Drawings 3\30686 GTW Section 11\FINALS\AREA 4\30686 S11 AREA 4 Road DETAILS.dwg

AS BUILT F01-93



STONE OUTLET SEDIMENT TRAP (ST-II)

INITIAL D.A. = 2.20 AC.
FINAL D.A. = 2.77 AC.
STORAGE REQUIRED:
WET: 1800 x 2.77 = 4,986 CU.FT.
DRY: 1800 x 2.77 = 4,986 CU.FT.
STORAGE PROVIDED:
WET: 7,452 CU.FT. @ ELEV. 452.00
DRY: 7,340 CU.FT. @ ELEV. 454.00
BOTT. ELEV. = 449.00
STORAGE DEPTH = 5.0'
SIDE SLOPES = 2:1
TOP OF EMBANKMENT = 456.00
CLEAN-OUT ELEV. = 450.50
12' WEIR CREST ELEV. = 452.00
Q2ex. = 2.1 C.F.S.
Q2prop. = 1.5 C.F.S.

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 — 6-11-01 Date

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. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Or Their Authorized Agents, As Are Deemed Necessary."

Signature Of Developer — 6-11-01 Date

Reviewed For Howard County Soil Conservation District And Meets Technical Requirements.

U.S.D.A. - Natural Resources Conservation Service — 7/2/01 Date

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

District Howard Soil Conservation Dist. — 7/2/01 Date

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 7/9/01 Date

Chief, Development Engineering Division — 7/10/01 Date

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — 7-6-01 Date

STONE/RIP-RAP OUTLET SEDIMENT TRAP (ST-IV)

INITIAL D.A. = 1.50 AC.
FINAL D.A. = 5.60 AC.
STORAGE REQUIRED:
WET: 1800 x 5.60 = 10,080 CU.FT.
DRY: 1800 x 5.60 = 10,080 CU.FT.
STORAGE PROVIDED:
WET: 10,323 CU.FT. @ ELEV. 444.00
DRY: 10,092 CU.FT. @ ELEV. 446.00
BOTT. ELEV. = 441.00
STORAGE DEPTH = 5.0'
SIDE SLOPES = 2:1
TOP OF EMBANKMENT = 448.00
CLEAN-OUT ELEV. = 442.50
21' WEIR CREST ELEV. = 446.00
Q2ex. = 1.8 C.F.S.
Q2prop. = 1.7 C.F.S.

LEGEND

Symbol	Description
—SSF— SSF — SSF —	SUPER-SILT FENCE
—SF—SF—SF —	SILT FENCE
—TP—TP—TP—	TREE PROTECTION FENCE
I.P.	INLET PROTECTION
S.C.E.	STABILIZED CONSTRUCTION ENTRANCE
A-2 →	EARTH DIKE
▬ ▬	LIMIT OF DISTURBANCE
R.R.P.	RIP-RAP INFLOW PROTECTION
	EROSION CONTROL MATTING

STREET TREE SCHEDULE

SYMBOL	QUANTITY	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
	18	QUERCUS COCCINEA 'SCARLET OAK'	2 1/2-3" CAL.	40' APART ON PUBLIC R/W
	46	ACER RUBRUM 'RED SUNSET' RED SUNSET RED MAPLE	2 1/2-3" CAL.	40' APART ON PUBLIC R/W
	12	CERCIDIPHYLLUM JAPONICA 'KATSURA TREE'	2 1/2-3" CAL.	40' APART ON PUBLIC R/W

NOTE: STREET TREE TYPES ARE ONLY A RECOMMENDATION AND MAY BE REVISED TO AN ACCEPTABLE COUNTY EQUIVALENT FROM THE HOWARD COUNTY LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 76 STREET TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $22,800.00.

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

NO.	DESCRIPTION	DATE
	REVISIONS	

6-11-01

OWNER / DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION
c/o LAND DESIGN AND DEVELOPMENT, LLC
8000 MAIN STREET
ELLICOTT CITY, MARYLAND 21042

Scale: 1" = 50'

As Built 4/20/04

STREET TREE, GRADING AND SEDIMENT CONTROL PLAN
GTW'S WAVERLY WOODS
SECTION 11, AREA 4
LOTS 22 THRU 80

(A SUBDIVISION OF THE PROPERTY OF WAVERLY WOODS DEVELOPMENT CORPORATION, LIBER 2222, FOLIO 36)
ZONING: RSC
TAX MAP NO. 16 PART OF PARCEL NO. 20
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 4, 2001
SHEET 5 OF 13

F 01-93 AS BUILT

APPROVED: DEPARTMENT OF PUBLIC WORKS		
CHIEF, BUREAU OF HIGHWAYS	7-6-01	DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
CHIEF, DIVISION OF LAND DEVELOPMENT	7/19/01	DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	7/10/01	DATE

REVISIONS		
NO.	DESCRIPTION	DATE

SCHEDULE A PERIMETER LANDSCAPE EDGE

PERIMETER	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: SHADE TREES	EVERGREEN TREES	SHRUBS
P-1	ADJACENT TO ROADWAY	B	410'	NO	NO	9	11	-
P-2	ADJACENT TO PERIMETER	A	120'	NO	NO	2	-	-
P-3	ADJACENT TO PERIMETER	A	1046'	NO	NO	18	-	-
P-4	ADJACENT TO PERIMETER	A	216'	NO	NO	4	-	-
P-5	ADJACENT TO PERIMETER	A	987'	YES (454')	NO	9	-	-
P-6	ADJACENT TO ROADWAY	B	88'	NO	NO	2	3	-

"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 58 REQUIRED LANDSCAPE TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $15,300.00.

LANDSCAPING PLANT LIST

QTY.	KEY	NAME	SIZE
44		QUERCUS PHELLOS 'WILLOW OAK'	2 1/2" - 3" CALIPER FULL CROWN, B&B
14		CEDRUS DEODORA 'DEODAR CEDAR'	6' - 8' HT.

NOTE: STREET TREE AND PERIMETER LANDSCAPING TREE TYPES ARE ONLY A RECOMMENDATION. THESE MAY BE REVISED TO AN ACCEPTABLE EQUIVALENT FROM THE HOWARD COUNTY LANDSCAPE MANUAL.

TOTAL NUMBER OF PROPOSED STREET TREES THIS SHEET: 76 TREES

- DENOTES QUERCUS COCCINEA 'SCARLET OAK' PLANTED 40' O.C. TOTAL: 18 TREES
- DENOTES ACER RUBRUM 'RED SUNSET' RED SUNSET RED MAPLE PLANTED 40' O.C. TOTAL: 46 TREES
- DENOTES CERCIDIPHYLLUM JAPONICA 'KATSURA TREE' PLANTED 40' O.C. TOTAL: 12 TREES

OWNER / DEVELOPER

WAVERLY WOODS DEVELOPMENT CORPORATION
c/o LAND DESIGN AND DEVELOPMENT, LLC
8000 MAIN STREET
ELLICOTT CITY, MARYLAND 21042

0' 50' 100' 150'
Scale: 1" = 50'

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

STATE OF MARYLAND ... PROFESSIONAL ENGINEER
6-11-01

AS BUILT 4/20/04

LANDSCAPE PLAN
GTW'S WAVERLY WOODS
SECTION 11, AREA 4
LOTS 22 THRU 80

(A SUBDIVISION OF THE PROPERTY OF WAVERLY WOODS DEVELOPMENT CORPORATION, LIBER 2222, FOLIO 36)
ZONING: R5C
TAX MAP NO. 16 PART OF PARCEL NO. 20
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 4, 2001
SHEET 6 OF 13

F 01-93 AS BUILT

K:\Drawings 3\30686 GTW Section 11\FINALS\AREA 4\30686 LANDSCAPE PLAN.dwg

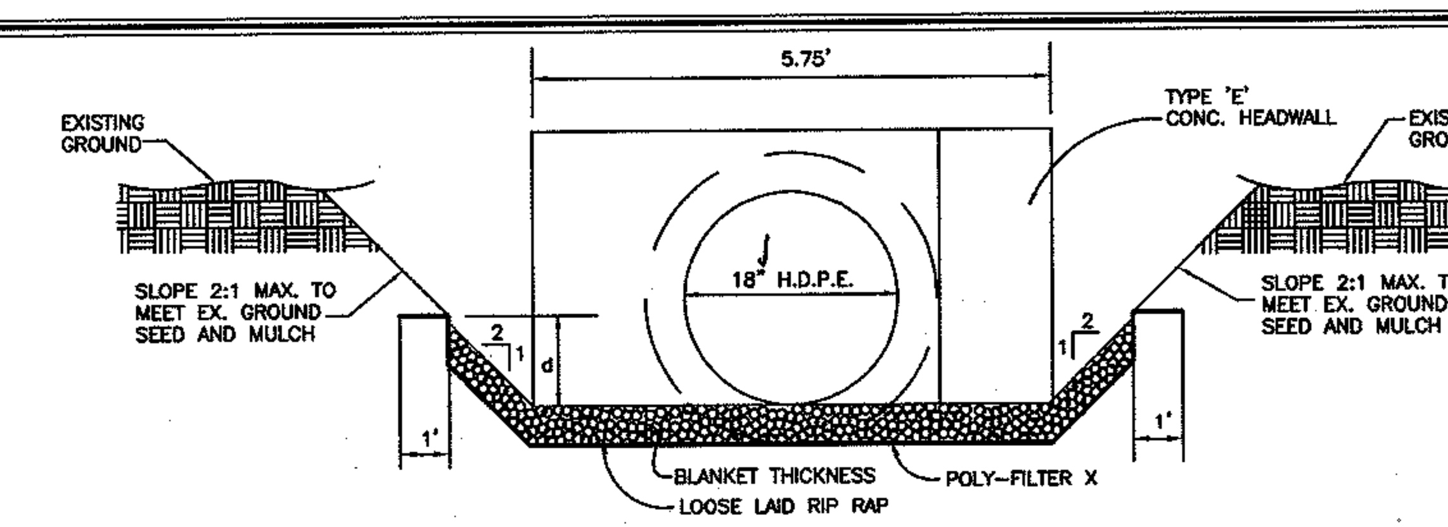
STRUCTURE SCHEDULE

STRUCTURE NO.	TOP ELEVATION	INV.IN	INV.OUT	ROAD NAME	ROAD STA.	OFFSET	TYPE	W	REMARKS
I-10	463.~~09~~ 33	454.7X3	453.~~27~~ 04	HOUNSLOW DRIVE	C.L. STA. 3+18.~~23~~00	*14.43'R ✓	A-10 ✓	2.5'	S.D. - 4.41
I-11	463.~~09~~ 41	-----	455.~~10~~ 32	HOUNSLOW DRIVE	C.L. STA. 3+18.~~23~~00	*14.43'L ✓	A-10 ✓	2.5'	S.D. - 4.41
I-12	~~456.35~~ 455.92	-----	452.~~54~~ 44	ABBOT WAY	L.P. STA. 1+~~45.74~~ 4.86	---------	A-10 ✓	2.5'	S.D. - 4.41
I-13	461.50 ✓	~~459.02~~ 458.04	~~458.52~~ 457.86	---------	N 599,~~500.03~~ 497.80 E 1,344,801.33 6	---------	'S' INLET ✓	—	S.D. - 4.22
I-14	476.91 ~~477.25~~	-----	473.~~44~~ 24	CHAUCER WAY	L.P. STA. 1+27.~~25~~ 04	---------	A-10 ✓	2.5'	S.D. - 4.41
I-15	470.~~50~~ 36	464.~~60~~ 43	~~464.18~~ 463.78	HOUNSLOW DRIVE	L.P. STA. 1+~~42.73~~ 9.34	---------	A-10 ✓	2.5'	S.D. - 4.41
I-16	477.~~07~~ 36	-----	472.~~00~~ 45	HOUNSLOW DRIVE	C.L. STA. 9+9X8	*14.43'R ✓	A-10 ✓	2.5'	S.D. - 4.41
M-4	450.~~70~~ 61	436.~~72~~ 32	436.~~20~~ 16	HOUNSLOW DRIVE	C.L. STA. 1+0~~8~~5.67	25'R ✓	STD MH ✓	—	G. - 5.11
M-5	453.27 ~~452.00~~	445.25 ~~440.10~~, 441.~~80~~ 23	~~441.30~~ 440.94	HOUNSLOW DRIVE	C.L. STA. 1+6~~8~~6.74	35.7'R ✓	STD MH ✓	—	G. - 5.11
M-6	447.5~~8~~ 5	~~443.21~~ 442.44	442.~~71~~ 32	---------	N 599,405.2~~1~~ 11 E 1,345,05~~5.35~~ 6.42	---------	STD MH ✓	—	G. - 5.11
M-7	460.5~~0~~ 1	449.~~90~~ 41	449.~~40~~ 13	ABBOT WAY	C.L. STA. 2+3~~7.00~~ 8.13	25'R ✓	STD MH ✓	—	G. - 5.11
M-8	459.~~33~~ 29	452.90 453.74, 451.59 ~~452.00~~	451.~~00~~ 55	ABBOT WAY	C.L. STA. 2+~~81~~ 79.05	23.5'L ✓	STD MH ✓	—	G. - 5.11
M-9	469.01 ~~467.50~~	461.~~03~~ 43	461.~~33~~ 01	---------	N 599,46~~4.45~~ 3.59 E 1,344,~~771.70~~ 801.36	---------	STD MH ✓	—	G. - 5.11
M-10	477.5~~0~~ 6	~~472.13~~ 471.83	471.~~93~~ 62	CHAUCER WAY	L.P. STA. 1+~~84.82~~ 07	5'R ✓	STD MH ✓	—	G. - 5.11
M-11	467.99 ~~468.00~~	457.~~78~~ 17	~~457.28~~ 456.98	---------	N 599,45~~1.30~~ 3.83 E 1,344,0~~41.32~~ 39.89	---------	STD MH ✓	—	G. - 5.11
EX. HW-1 (F01-91)	439.89 ~~440.00~~	435.~~50~~ 41, 435.~~50~~ 39, 435.~~50~~ 73	435.~~50~~ 73	HOUNSLOW DRIVE	C.L. STA. 0+77 ✓	54'R ✓	EXISTING ✓ TYPE 'A' HEADWALL	—	
S-2	456.~~55~~ 73	454.~~30~~ 14	454.~~30~~ 14	---------	N 599,4~~45.84~~ 50.51 E 1,343,93~~4.60~~ 5.71	---------	TYPE 'E' HEADWALL ✓	—	S.D. - 5.31

* - DENOTES DISTANCE FROM CENTERLINE TO FACE OF INLET

PIPE SCHEDULE

SIZE	TYPE	LENGTH
15"	HDPE	299'
18"	HDPE	623'
24"	HDPE	456'



RIP RAP CHANNEL DETAIL
NO SCALE

RIP-RAP CHANNEL DESIGN DATA

STRUCTURE	AREA	WETTED PERIMETER	R	R 2/3	S	S 1/2	W	d	N	V (F.P.S.)	Q (C.F.S.)	RIP-RAP SIZE d_{50}	RIP-RAP SIZE d_{MAX}	BLANKET THICKNESS	DIA.
S-2	2.59	6.97'	0.3716	0.5169	0.005	0.0707	5.0'	0.44'	0.04	1.36	3.51	9.5"	15"	19"	18"

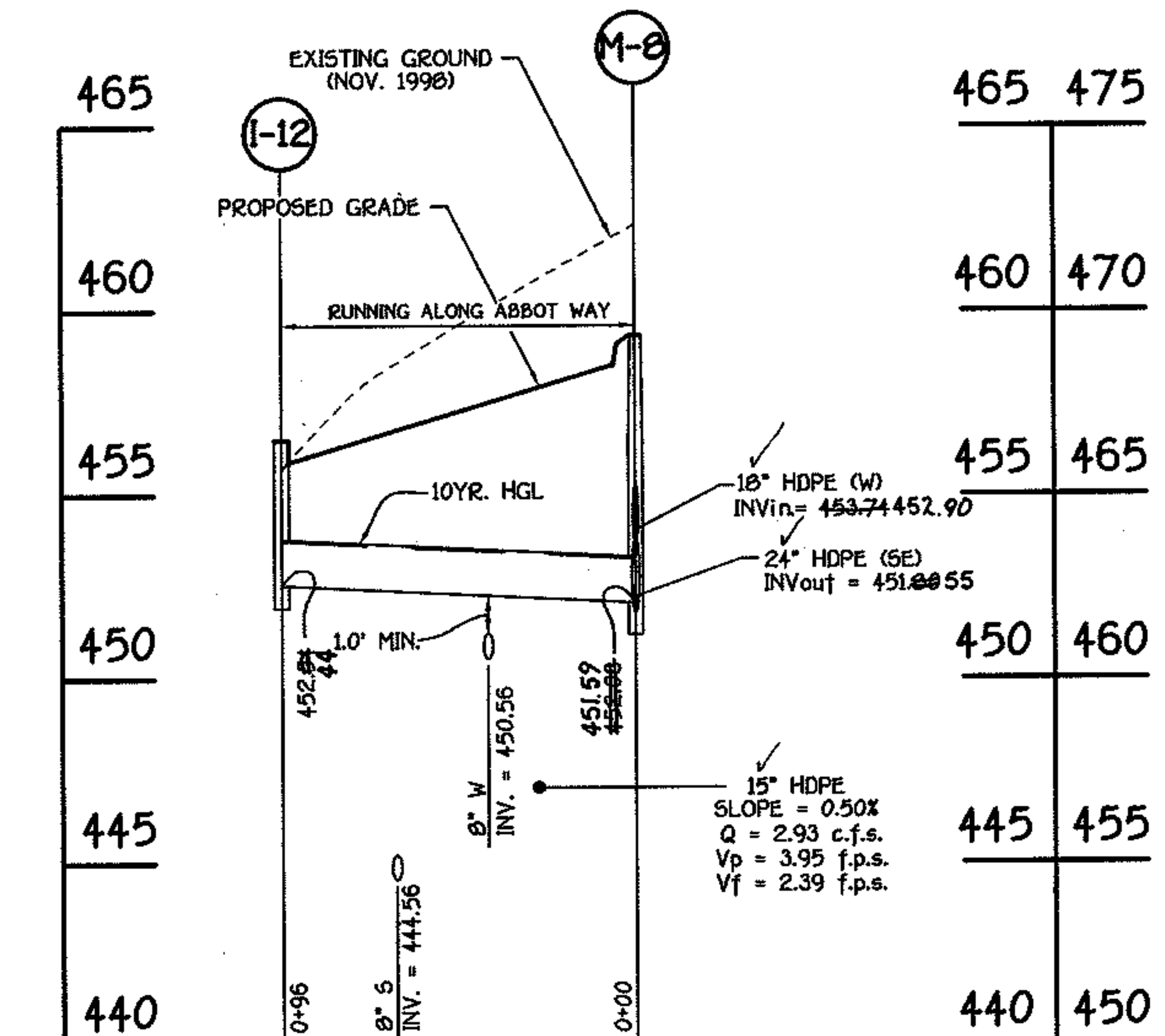
CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

1. The subgrade for the filter, riprap or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
2. The rock or gravel shall conform to the specified grading limits when installed respectively in the riprap or filter.
3. Filter cloth shall be protected from punching, cutting or tearing. Any damage other than an occasional shall hole shall be repaired by placing another piece of cloth over the damaged part or by completely replacing the cloth. All overlaps whether for repairs or for joining two pieces of cloth shall be a minimum of one foot.
4. Stone for the riprap or gabion outlets may be placed by equipment. Both shall each 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 riprap or gabion outlets shall be delivered and placed in a manner that will insure that it is reasonably homogenous with the smaller stones and spalls filling the voids between the larger stones. Riprap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Hand placement will be required to the extent necessary to prevent damage to the permanent works.

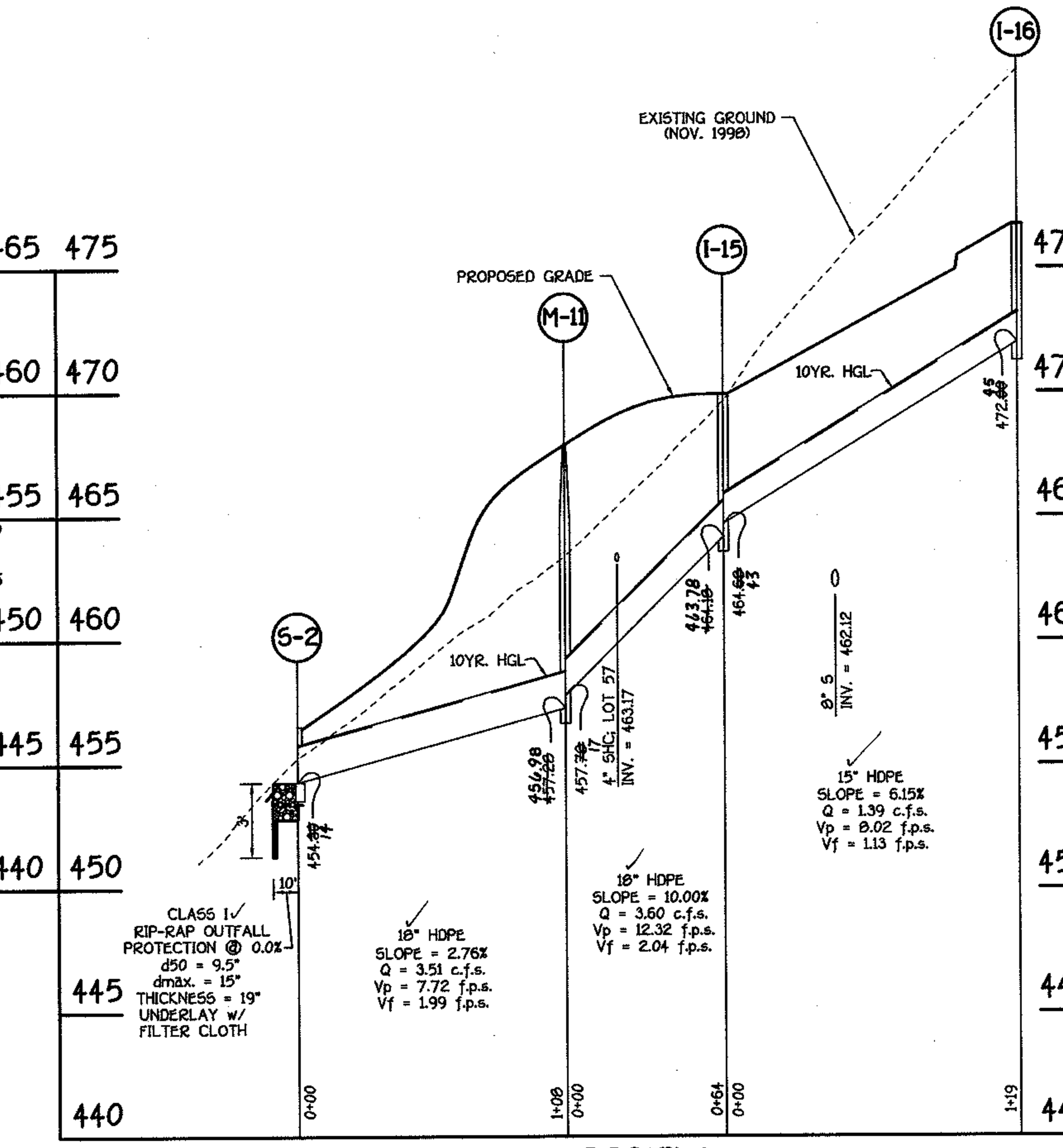
REVISIONS		
NO.	DESCRIPTION	DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — 7-6-01 DATE

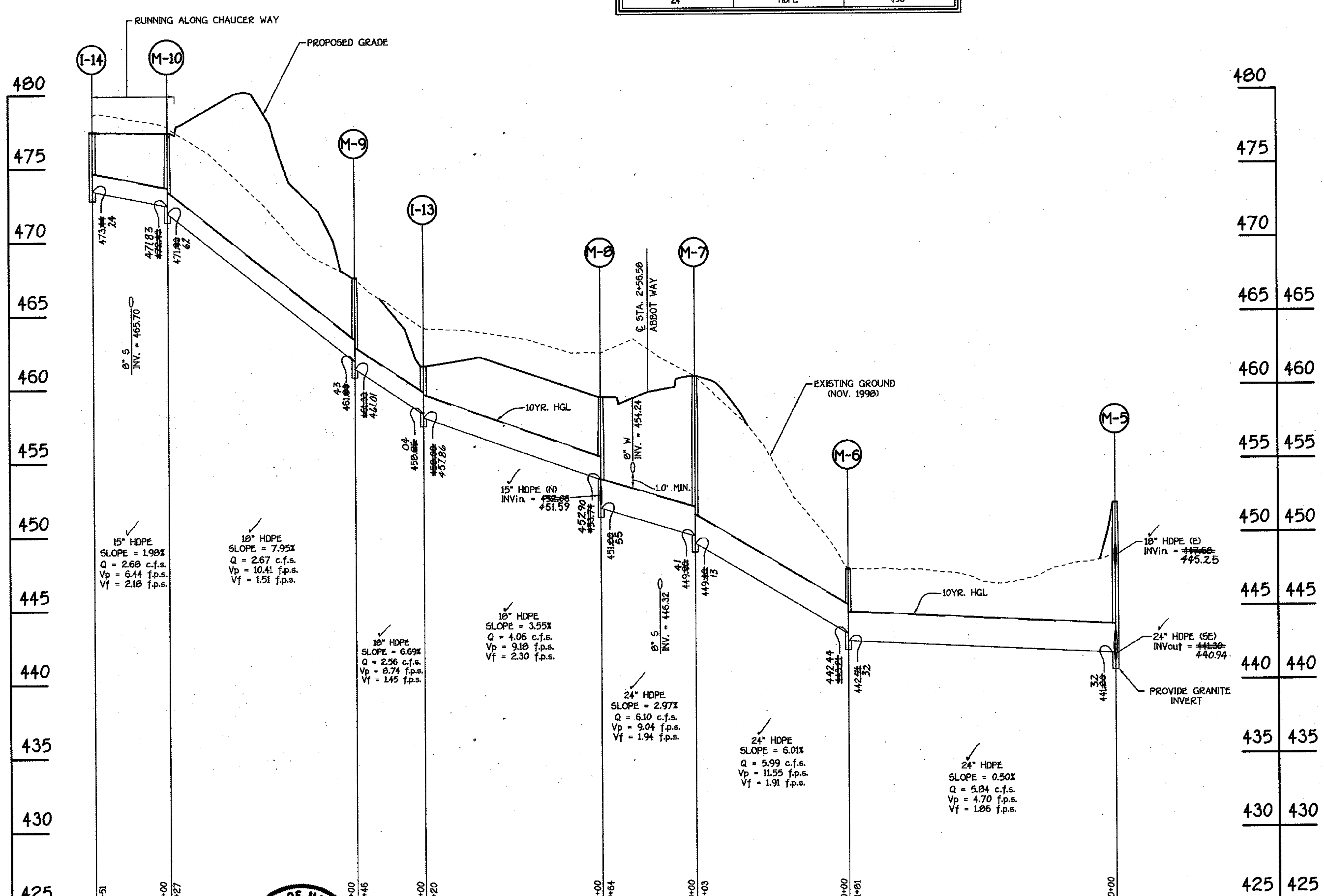
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — 7/19/01 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION — 7/10/01 DATE



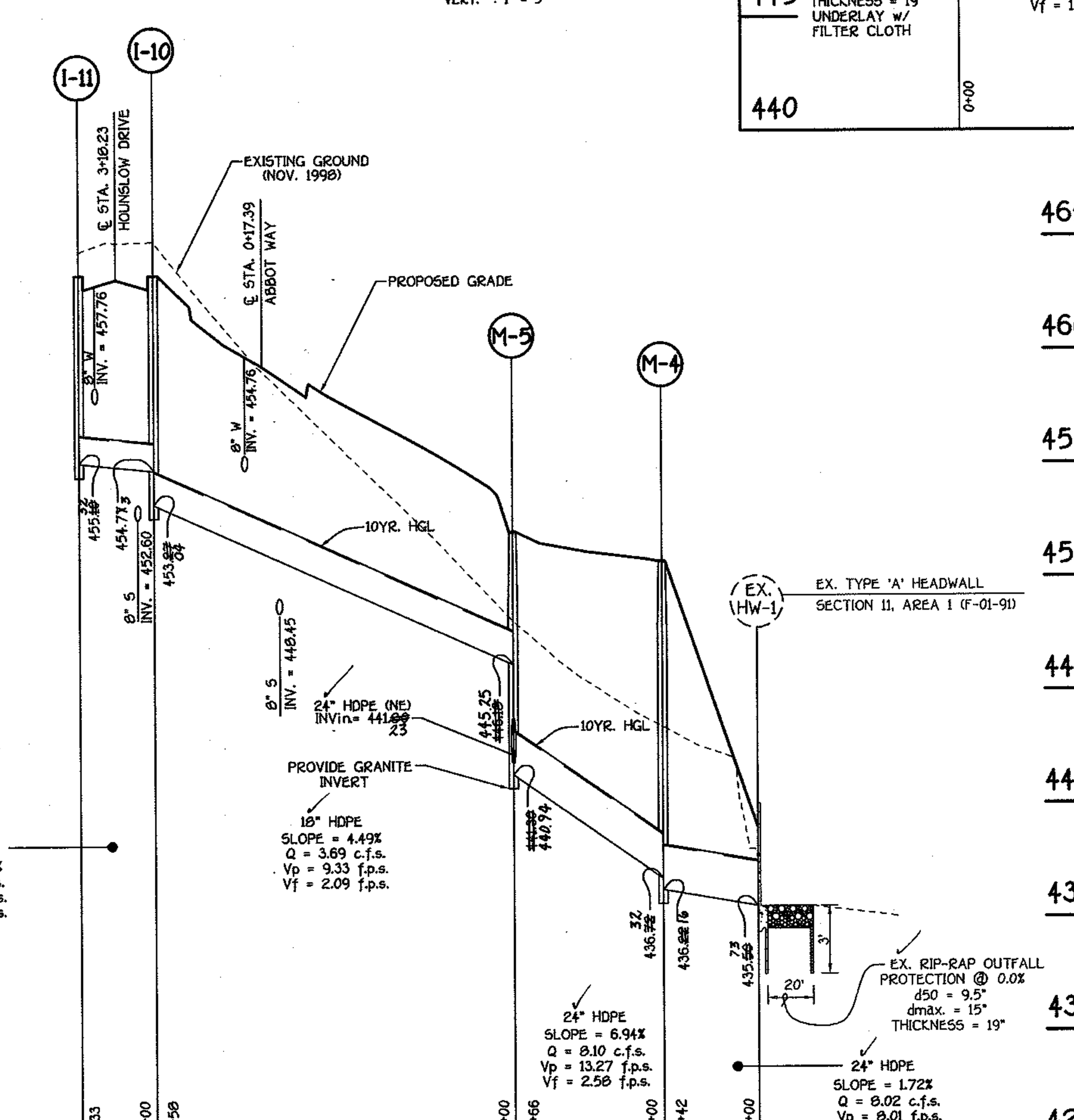
PROFILE
SCALE: HORIZ. : 1" = 50' VERT. : 1" = 5'



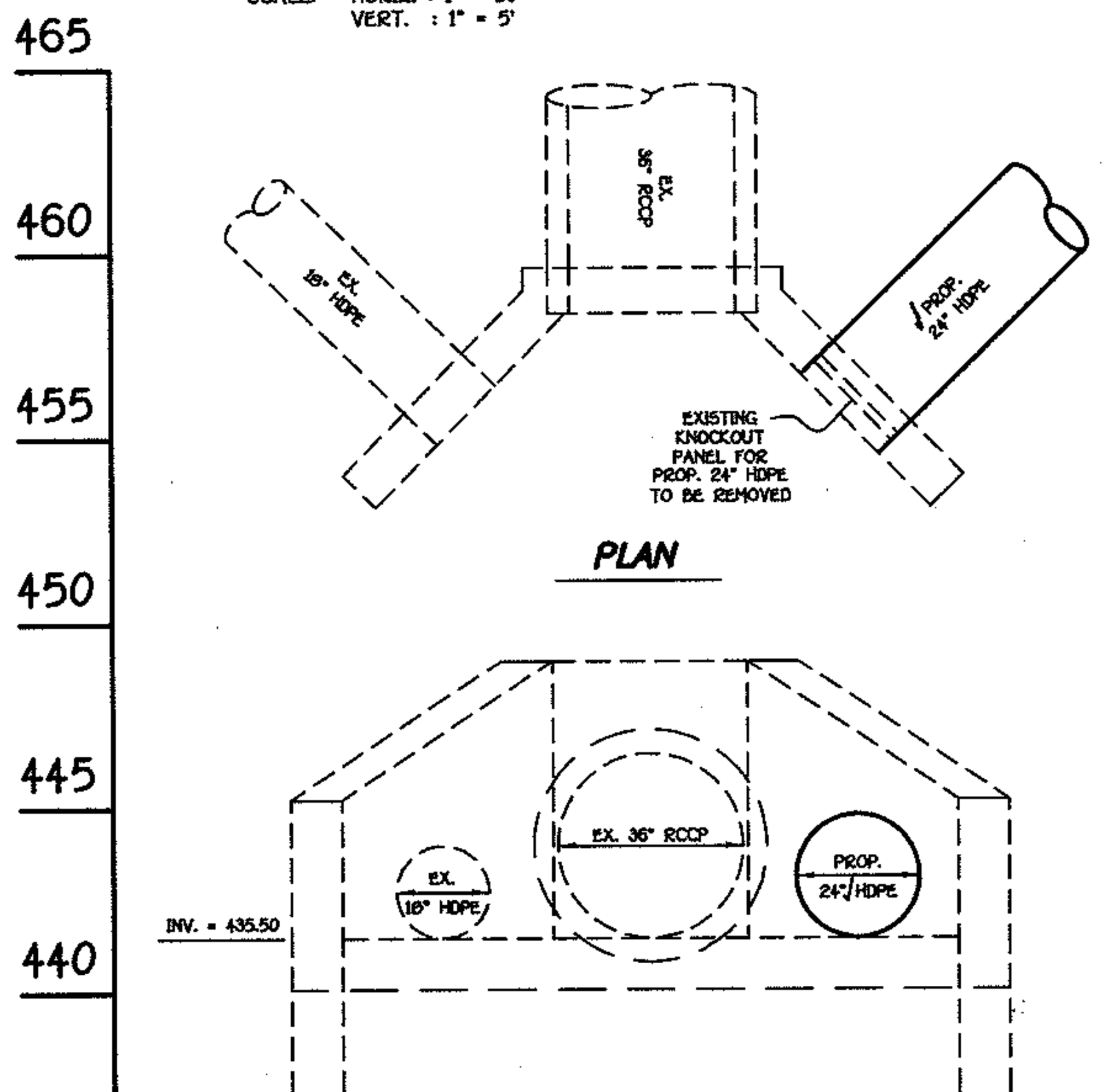
PROFILE
SCALE: HORIZ. : 1" = 50' VERT. : 1" = 5'



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



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



(SECTION 11, AREA 1) (F-01-91)
MODIFIED TYPE "A" HEADWALL (EX. HW-1)
NOT TO SCALE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — NO. 20746 — REGISTERED PROFESSIONAL ENGINEER
6-11-01

OWNER / DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION
c/o LAND DESIGN AND DEVELOPMENT, LLC
8000 MAIN STREET
ELLICOTT CITY, MARYLAND 21042

STATE OF MARYLAND — PROFESSIONAL ENGINEER — No. 13904 REGISTERED

ASBUILT 4/20/04

STORM DRAIN PROFILES
GTW'S WAVERLY WOODS
SECTION 11, AREA 4
LOTS 22 THRU 80

(A SUBDIVISION OF THE PROPERTY OF WAVERLY WOODS DEVELOPMENT CORPORATION, LIBER 2222, FOLIO 36)
ZONING: RSC
TAX MAP NO. 16 PART OF PARCEL NO. 20
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 4, 2001
SHEET 7 OF 13

F01-93 **AS BUILT**

K:\Drawings 3\30686 GTW Section 11\FINALS\AREA 4\30686 STORM DRAIN PROFILES.dwg

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 7-6-01

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT JA — DATE 7/19/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/01

REVISIONS

NO.	DESCRIPTION	DATE

DRAINAGE AREA DATA

STRUCTURE NO.	DRAINAGE AREA	AREA	'C'	ZONED	Tc
EX. I-7	G	0.63 AC.	0.51	RSC	10.0 MIN.
EX. I-8	H	0.24 AC.	0.53	RSC	10.0 MIN.
I-10	J	0.32 AC.	0.58	RSC	10.0 MIN.
I-11	K	0.62 AC.	0.61	RSC	10.0 MIN.
I-12	L	0.78 AC.	0.65	RSC	10.0 MIN.
I-13	M	0.96 AC.	0.33	RSC	10.0 MIN.
I-14	N	1.21 AC.	0.49	RSC	16.2 MIN.
I-15	O	0.77 AC.	0.56	RSC	10.0 MIN.
I-16	P	0.33 AC.	0.64	RSC	10.0 MIN.

6-11-01

AS BUILT 1/20/04

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
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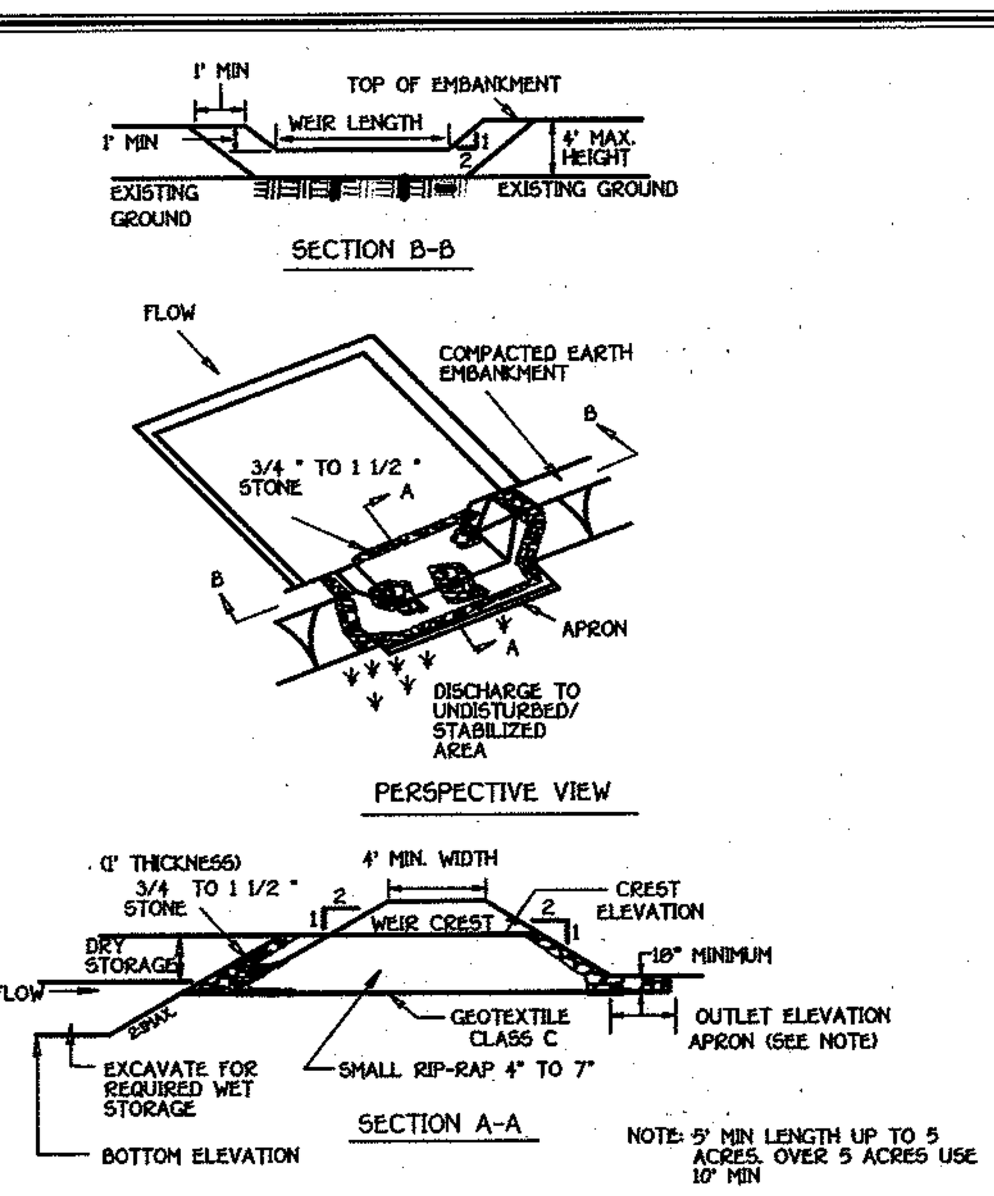
OWNER / DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION
c/o LAND DESIGN AND DEVELOPMENT, LLC
8000 MAIN STREET
ELLICOTT CITY, MARYLAND 21042

Scale: 1" = 50'

STORM DRAIN DRAINAGE AREA MAP
GTW'S WAVERLY WOODS
SECTION 11, AREA 4
LOTS 22 THRU 80

(A SUBDIVISION OF THE PROPERTY OF WAVERLY WOODS DEVELOPMENT CORPORATION, LIBER 2222, FOLIO 36)
ZONING: RSC
TAX MAP NO. 16 PART OF PARCEL NO. 20
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 4, 2001
SHEET 8 OF 13

F01-93 AS BUILT



Constuction Specifications

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 channelprior 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 I 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.

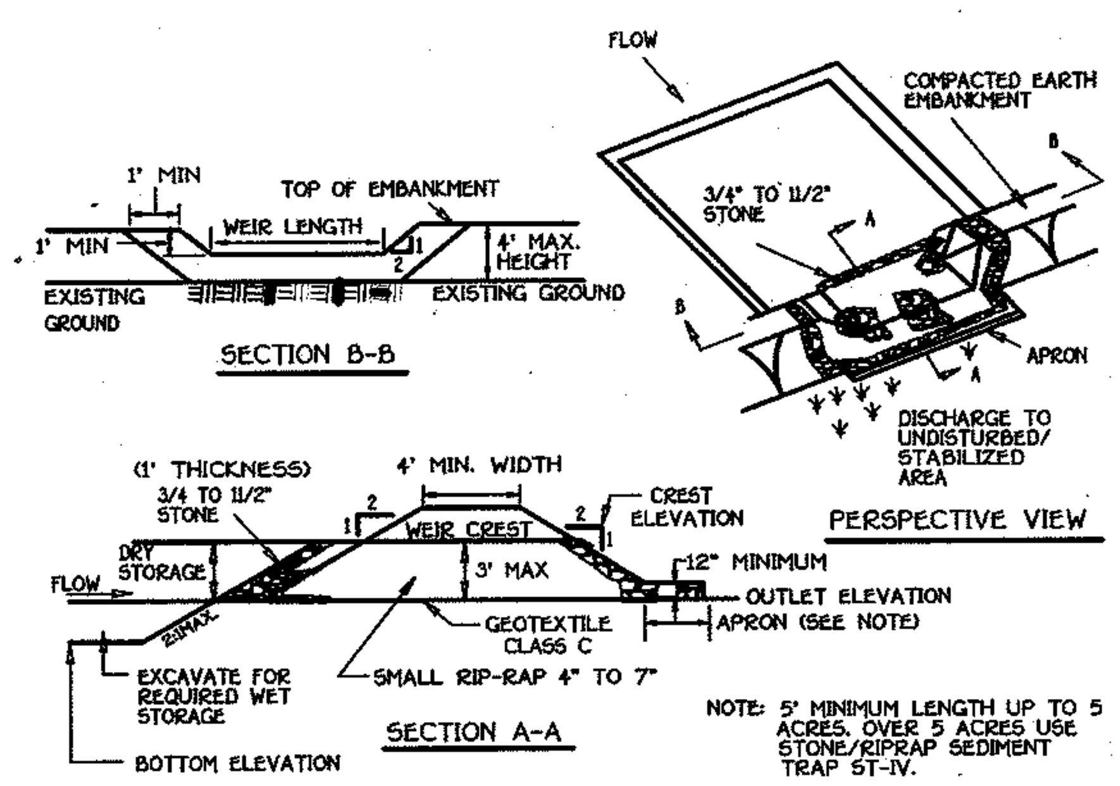
11. The structure shall be inspected periodically after each rain and repaired as needed.

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.

STONE RIP-RAP OUTLET SEDIMENT TRAP - ST IV

NOT TO SCALE



Construction Specifications

1. 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 and 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.

3. All cut and fill slopes shall be 2:1 or flatter.

4. The stone used in the outlet shall be small rip-rap 4" to 7" in size with a 1' thick layer of 3/4" to 11/2" washed aggregate placed on the upstream face of the outlet. Stone facing shall be as necessary to prevent clogging. Geotextile Class C may be substituted for the stone facing by placing it on the inside face of the stone outlet.

5. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to one half of the wet storage depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

6. The structure shall be inspected periodically and after each rain and repairs made as needed.

7. 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 concentration 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 much upon trap completion and monitored and maintained erosion free during the life of the trap.

8. The structure shall be dewatered by approved methods, removed and the area stabilized when the drainage area has been properly stabilized.

9. Refer to Section D for specifications concerning trap dewatering.

10. Minimum trap depth shall be measured from the weir elevation.

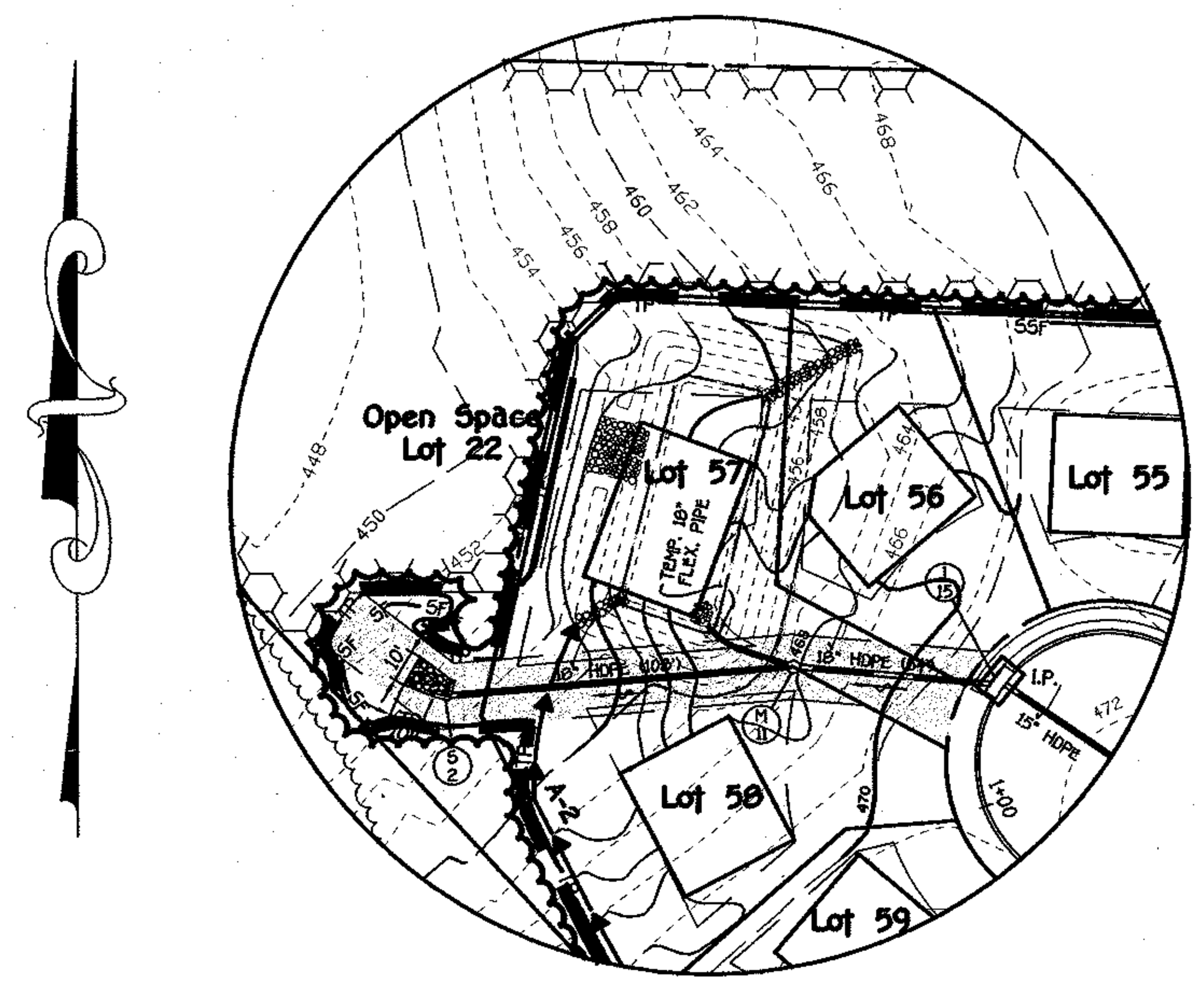
11. The elevation of the top of any dike directing water into the trap must equal or exceed the elevation of the trap embankment.

12. Geotextile Class C shall be placed over the bottom and sides of the outlet channel prior to the placement of stone. Sections of filter cloth must overlap at least 1' with the section nearest the entrance placed on top. The filter cloth shall be embedded at least 6" into existing ground at the entrance of the outlet channel.

13. Outlet - An outlet shall be provided, including a means of conveying the discharge in an erosion free manner to an existing stable channel.

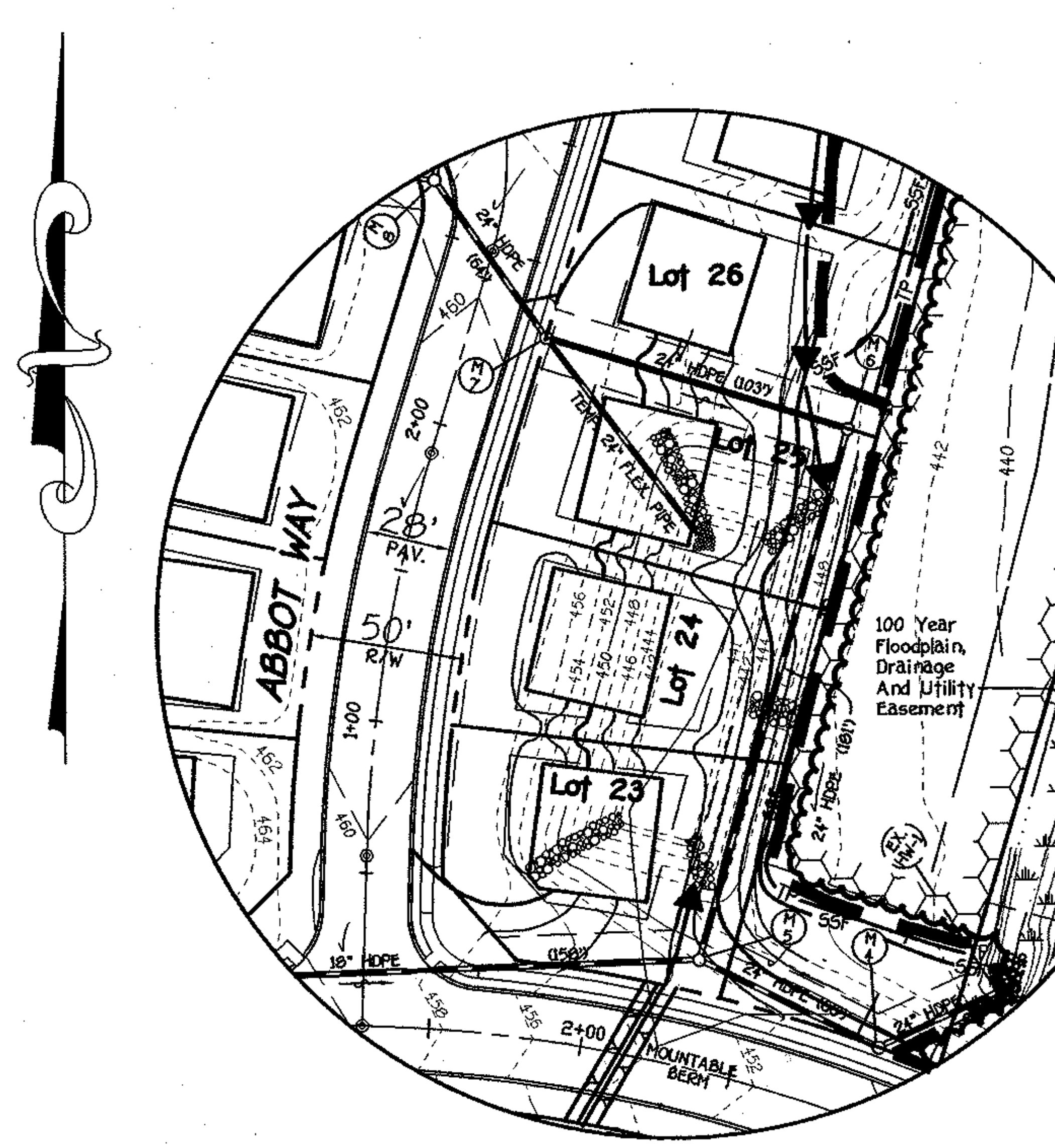
STONE OUTLET SEDIMENT TRAP - ST II

NOT TO SCALE



FINAL GRADING AT STONE OUTLET SEDIMENT TRAP (ST-II)

SCALE: 1" = 50'



FINAL GRADING AT STONE/RIP-RAP OUTLET SEDIMENT TRAP (ST-IV)

SCALE: 1" = 50'

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 6-11-01

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 6-11-01

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

U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE — DATE 7/2/01

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/2/01

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT JA — DATE 7/19/01

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/01

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 7-6-01

REVISIONS

NO.	DESCRIPTION	DATE

SEQUENCE OF CONSTRUCTION

1. OBTAIN THE REQUIRED GRADING PERMIT. (1 DAY)

2. NOTIFY 'MISS UTILITY' AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK (1-800-257-7777). NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION 24 HOURS BEFORE STARTING ANY WORK (410-313-1870). (1 DAY)

3. CLEAR AND GRUB FOR SEDIMENT CONTROL MEASURES ONLY. INSTALL STABILIZED CONSTRUCTION ENTRANCE. (1 WEEK)

4. INSTALL THE REQUIRED SEDIMENT AND EROSION CONTROL DEVICES AS INDICATED ON THE PLAN SHEETS. NO BLASTING WILL BE PERMITTED FOR THE EXCAVATION OF THE PROPOSED TRAPS OR BASINS. WHERE NECESSARY, RIPPING AND JACK HAMMERING SHOULD BE UTILIZED IN THE EXCAVATION OF EACH FACILITY. (2 WEEKS)

5. OBTAIN PERMISSION OF THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEEDING.

6. CLEAR AND GRUB FOR THE REMAINDER OF THE SITE. (2 WEEKS)

7. GRADE SITE TO THE PROPOSED SUBGRADE. INSTALL THE WATER AND SEWER MAINS AND THE STORM DRAIN SYSTEM. BRICK SHUT THE STORM DRAIN PIPE RUNS FROM M-7 TO M-6 AND M-11 TO S-2 AT STRUCTURES M-7 AND M-11. INSTALL INLET PROTECTION AND TEMPORARY FLEX PIPES AS INDICATED ON THE PLAN SHEETS. (4 WEEKS)

8. 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 CLEANOUT ELEVATIONS ARE REACHED. ALL SEDIMENTS MUST BE PLACED UPSTREAM OF AN APPROVED TRAP DEVICE.

9. INSTALL CURB AND GUTTER PLUS ROAD BASE COURSE. (1 WEEK)

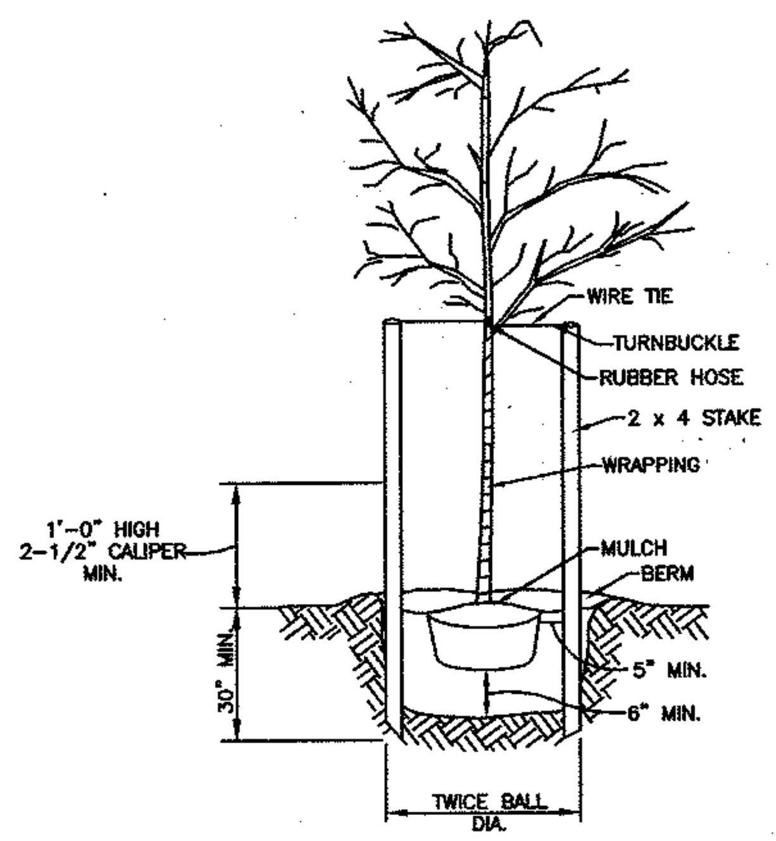
10. STABILIZE ALL DISTURBED AREAS AND OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR TO PROCEED. (2 DAYS)

11. APPLY TACK COAT TO SUB-BASE AND LAY SURFACE COURSE. (1 WEEK)

12. FOLLOWING SUCCESSFUL STABILIZATION OF ALL DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES, AND AFTER PERMISSION HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, ALL EROSION AND SEDIMENT CONTROL DEVICES MAY BE REMOVED AND/OR BACKFILLED AND THE REMAINING AREAS BROUGHT TO FINAL GRADE AFTER THE STORM DRAIN SYSTEM HAS BEEN FLUSHED TO REMOVE TRAPPED SEDIMENT. THIS WOULD ALSO INCLUDE THE REMOVAL OF TEMPORARY STORM DRAIN FLEX PIPES AT THE STORM DRAIN RUN CONNECTIONS. (2 WEEKS)

13. NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS FOR A FINAL INSPECTION OF THE COMPLETED PROJECT.

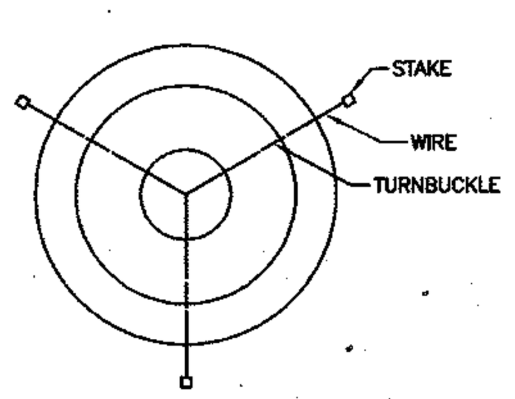
14. CONTRACTOR SHALL DELAY CONSTRUCTION ON LOTS 23 THRU 31 UNTIL SUCH TIME AS THE SEDIMENT TRAP ST-IV AND RELATED 'A-2' EARTH DIKE IS REMOVED.



NOTE: REMOVE BURLAP FROM TOP 1/3 OF BALL

TREE PLANTING

NOT TO SCALE



STAKING DETAIL

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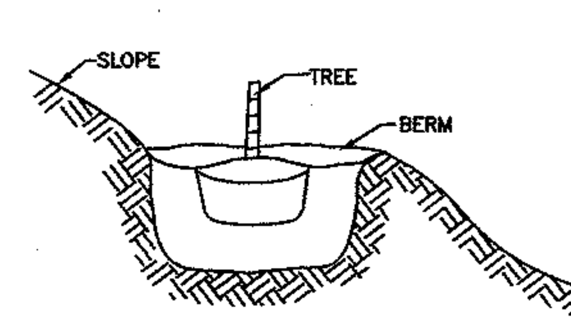
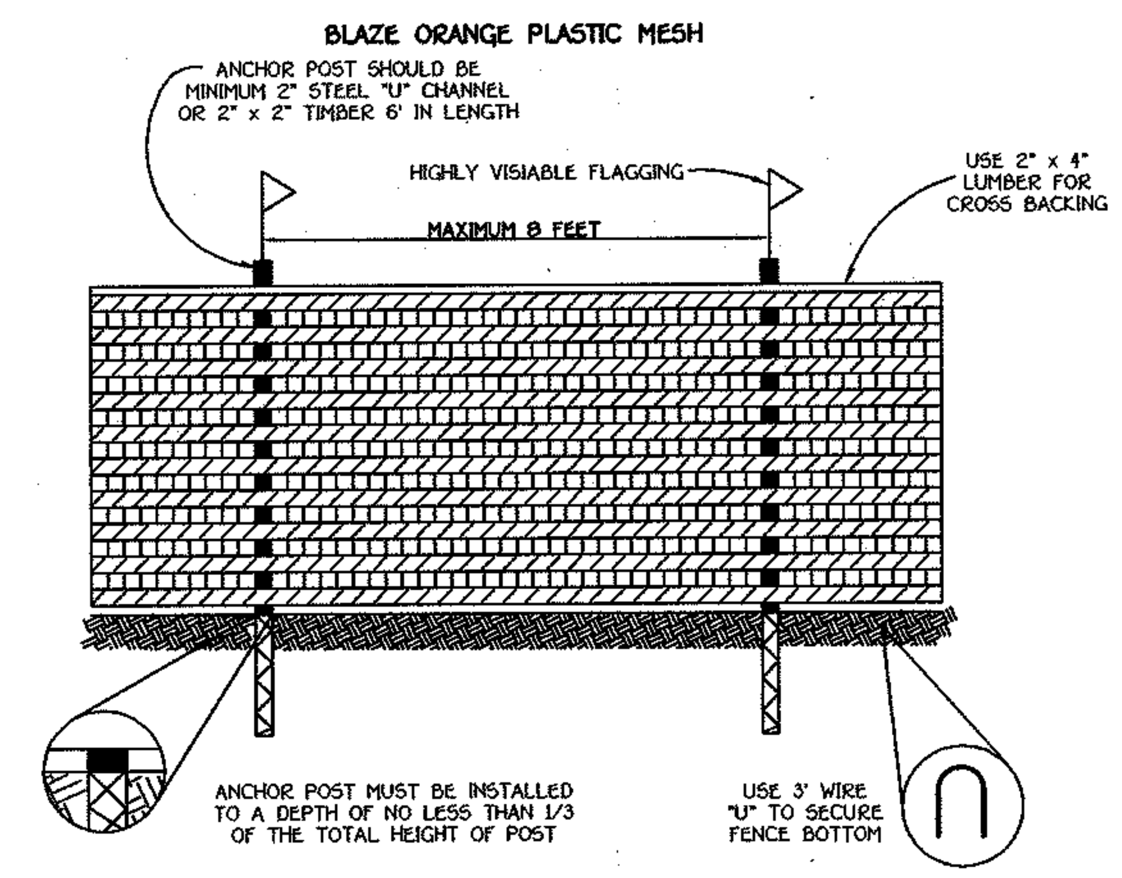


GRADING FOR PLANTING ON SLOPES

NOT TO SCALE



NOTES:
1. FOREST PROTECTION DEVICE ONLY.
2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
4. ROOT DAMAGE SHOULD BE AVOIDED.
5. PROTECTIVE SIGNAGE MAY ALSO BE USED.
6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION DETAIL

NOT TO SCALE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — NO. 20748 — REGISTERED PROFESSIONAL ENGINEER
6-11-01

OWNER / DEVELOPER

WAVERLY WOODS DEVELOPMENT CORPORATION
c/o LAND DESIGN AND DEVELOPMENT, LLC
8000 MAIN STREET
ELLICOTT CITY, MARYLAND 21042

AS BUILT 4/20/04

SEDIMENT CONTROL NOTES AND DETAILS

GTW'S WAVERLY WOODS

SECTION 11, AREA 4
Lots 22 Thru 80
(A SUBDIVISION OF THE PROPERTY OF WAVERLY WOODS DEVELOPMENT CORPORATION, LIBER 2222, FOLIO 36)
ZONING: RSC
TAX MAP NO. 16 PART OF PARCEL NO. 20
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 4, 2001
SHEET 9 OF 13

F01-93 AS BUILT

K:\Drawings 3\30686 GTW Section 11\FINALS\AREA 4\30686 DETAIL SHEET.dwg

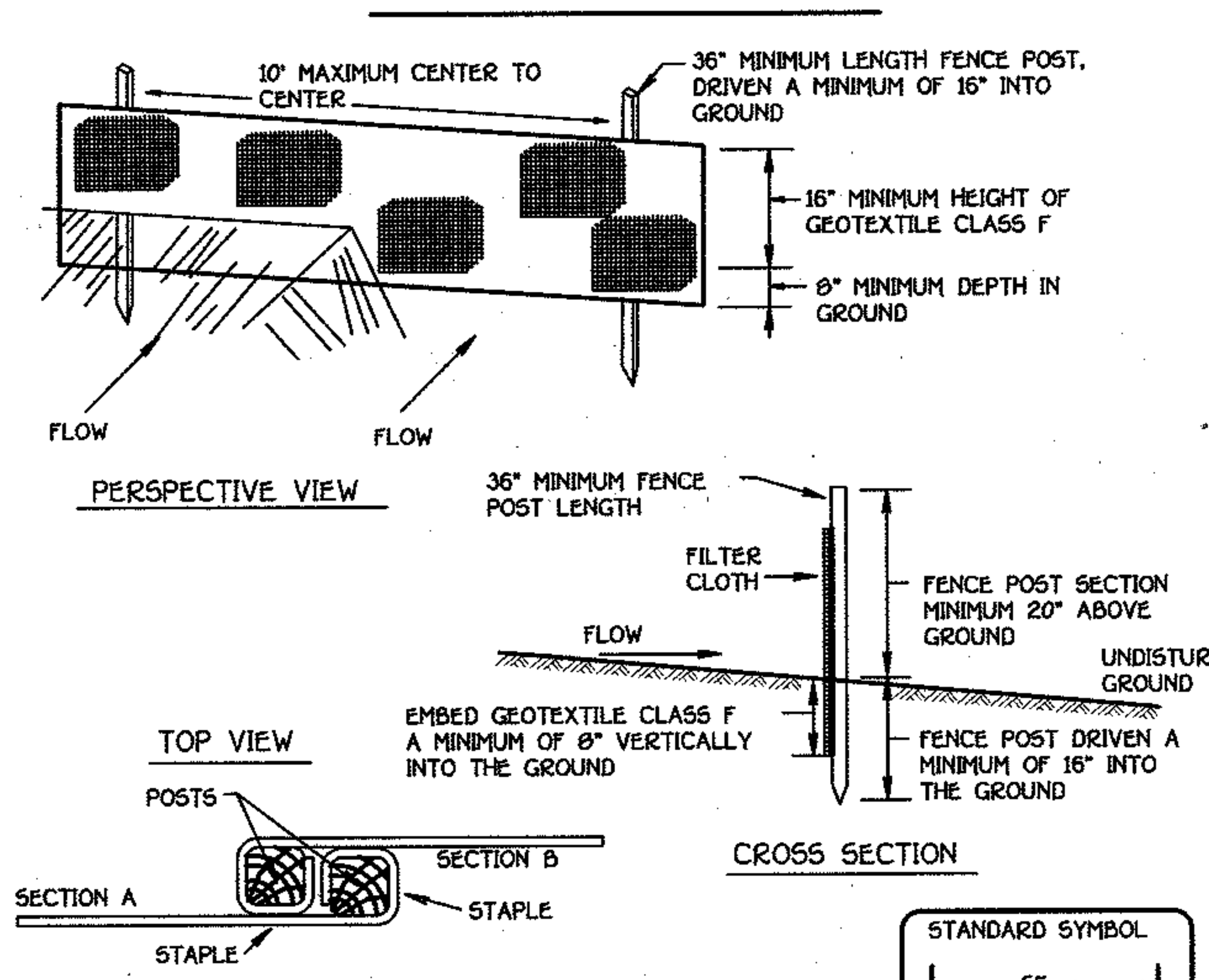
SEDIMENT CONTROL NOTES

1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LISCENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3) FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. GRADING NECESSARY TO INSTALL STORM DRAINS, SEDIMENT TRAP AND EARTH DIKES TO BE PERFORMED FIRST. REMAINDER OF THE GRADING TO BE PERFORMED AFTER STORM DRAINS, SEDIMENT TRAP AND EARTH DIKES ARE INSTALLED.
4) 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.
5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7) SITE ANALYSIS:

TOTAL AREA OF SITE	33.611	ACRES
AREA DISTURBED	11.61	ACRES
AREA TO BE ROOFED OR PAVED	3.49	ACRES
AREA TO BE VEGETATIVELY STABILIZED	8.12	ACRES
TOTAL CUT	3000	CU.YDS.
TOTAL FILL	3000	CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION	N/A	CU.YDS.

8) ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9) ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGHTS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

SILT FENCE



Construction Specifications

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 pond per linear foot.

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

Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

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STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER

6-11-01

20.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION

Using vegetation as cover for barren soil to protect it from forces that cause erosion.

PURPOSE

Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and run-off to downstream areas, and improving wildlife habitat and visual resources.

CONDITIONS WHERE PRACTICE APPLIES

This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration (up to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary Soil Stockpiles, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dams, cut and fill slopes and other areas at final grade, former stockpile and staging areas, etc.

EFFECTS ON WATER QUALITY AND QUANTITY

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration evaporation, transpiration, percolation, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.
Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.
Sediment control devices must remain in place during grading, seedbed preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

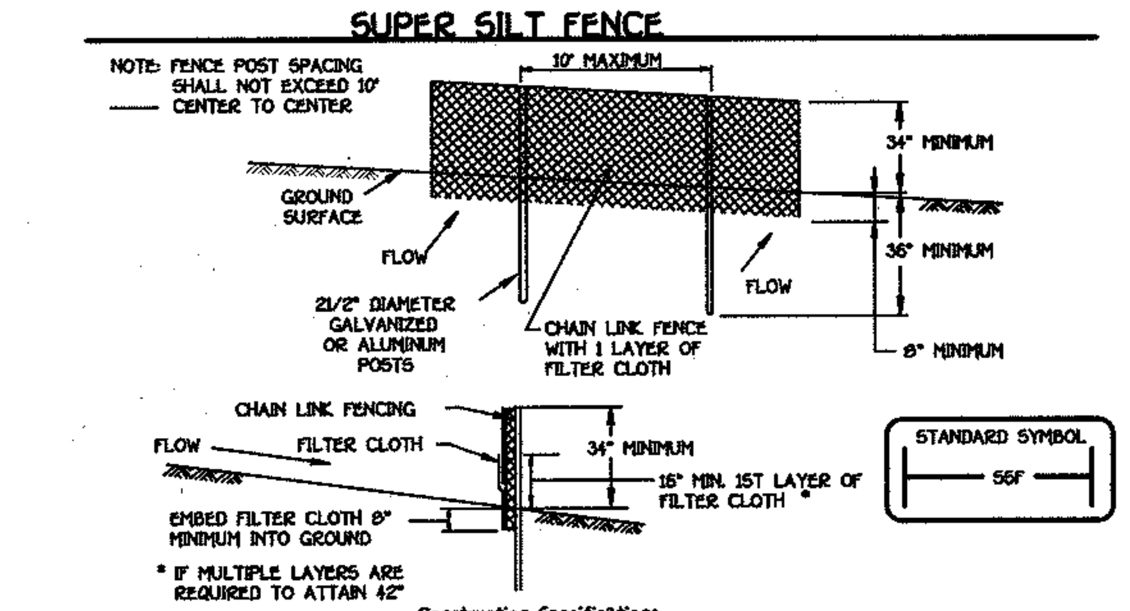
A. Site Preparation
   i. Install erosion and sediment control structures (either temporary of permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
   ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
   iii. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.
B. Soil Amendments (Fertilizer and Lime Specifications)
   i. Soil tests 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 analyses.
   ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the producer.
   iii. Lime materials shall be 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 through a #100 mesh sieve and 98-100% will pass through a #20 mesh sieve.
   iv. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
C. Seedbed Preparation
   i. Temporary Seeding
      a. Seedbed preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
      b. Apply fertilizer and lime as prescribed on the plans.
      c. In corporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
   ii. Permanent Seeding
      a. Minimum soil conditions required for permanent vegetative establishment:
         1. Soil pH shall be between 6.0 and 7.0.
         2. Soluble salts shall be less than 500 parts per million (ppm).
         3. 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 lovegrass or serecia lespedezas is to be planted, then a sandy soil (<30% silt plus clay) would be acceptable.
         4. Soil shall contain 1.5% minimum organic matter by weight.
         5. Soil must contain sufficient pore space to permit adequate root penetration.
         6. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
      b. 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 erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
      c. Apply soil amendments as per soil test or as included on the plans.
      d. Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seedbed loosening may not be necessary on newly disturbed areas.
D. Seed Specifications
   i. 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 within the 6 months 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.
   ii. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective.
E. Methods of Seeding
   i. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cultipacker seeder.
      a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen; maximum of 100 lbs. per acre total of soluble nitrogen; P2O5 (phosphorous): 200 lbs/ac; K2O (potassium): 200 lbs/ac.
      b. Lime - use only ground agricultural limestone, (Up to 3 tons per 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 when hydroseeding.
      c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
   ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
      a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 265 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
      b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
   iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
      a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
      b. 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)
   i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
   ii. Wood Cellulose Fiber Mulch (WCFM)
      a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
      b. WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
      c. WCFM, including dye, shall contain no germination or growth inhibiting factors.
      d. WCFM materials shall be manufactured and processed 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 blotter-like 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.
      e. WCFM material shall contain no elements or compounds at concentration levels that will be phytol-toxic.
      f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.
   Note: Only sterile straw mulch should be used in areas where one species of grass is desired.
G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.
   i. If grading is completed outside of the seeding season, mulch along 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.
   ii. 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.
   iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per 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 performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:
   i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.
   ii. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
   iii. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and crest of banks. The remainder of area should be appear uniform after binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-70 Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
   iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.
I. Incremental Stabilization - Cut Slopes
   i. All cuts slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.
   ii. Construction sequence (Refer to Figure 3 below):
      a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation.
      b. Perform Phase 1 excavation, dress, and stabilize.
      c. Perform Phase 2 excavation, dress and stabilize. Overseed Phase 1 areas as necessary.
      d. Perform final phase excavation, dress and stabilize. Overseed previously seeded areas as necessary.

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions int he operation of completing the operation out of the seeding season will necessitate the application of temporary stabilization.

J. Incremental Stabilization of Embankments - Fill Slopes
   i. Embankments shall be constructed in lifts as prescribed on the plans.
   ii. Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches 15', or when the grading operation ceases as prescribed in the plans.
   iii. At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to a sediment trapping device.
   iv. Construction sequence: Refer to Figure 4 (below).
      a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct slope silt fence on low side of fill as shown in Figure 5, unless other methods shown on the plans address this area.
      b. Place Phase 1 embankment, dress and stabilize.
      c. Place Phase 2 embankment, dress and stabilize.
      d. Place final phase embankment, dress and stabilize. Overseed previously seeded areas as necessary.

Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of and placement of topsoil (if required) grading and permanent seed and mulch. any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

SUPER SILT FENCE



Construction Specifications

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.

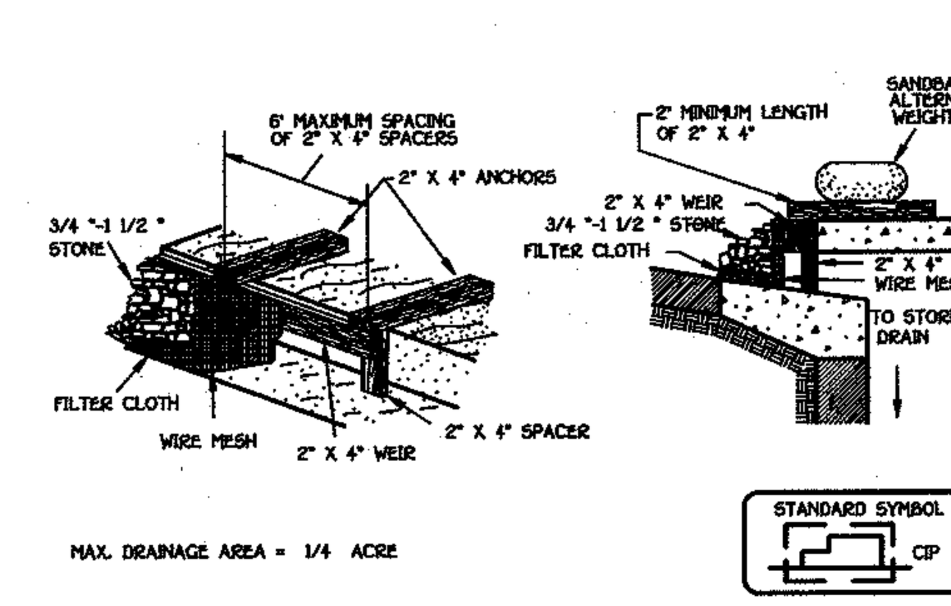
7. Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

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

Design Criteria

Slope	Slope Steepness	Slope Length (maximum)	Silt Fence Length (maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	100 feet	1,000 feet
33 - 50%	3:1 - 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

CURB INLET PROTECTION (COG OR COS INLETS)



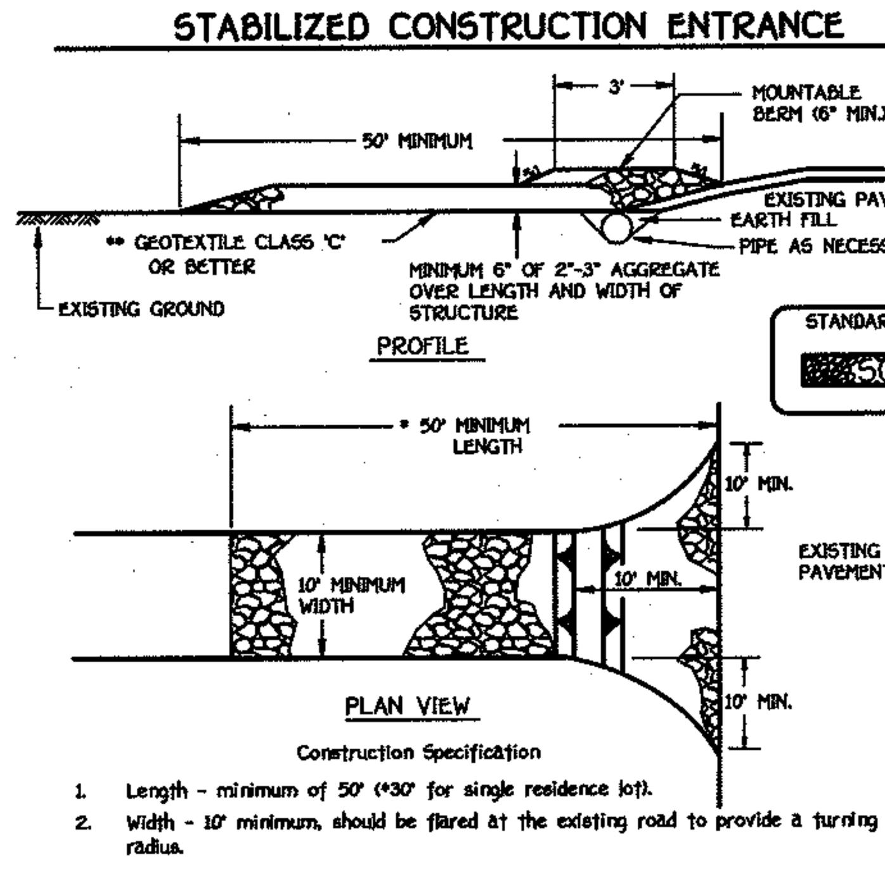
MAX. DRAINAGE AREA = 1/4 ACRE

STANDARD SYMBOL CIP

Construction Specifications

1. Attach a continuous piece of wire mesh (30" minimum width by throat length plus 4') to the 2" x 4" weir (measuring throat length plus 2') as shown on the standard drawing.
2. Place a continuous piece of Geotextile Class E the same dimensions as the wire mesh over the wire mesh and securely attach it to the 2" x 4" weir.
3. Securely nail the 2" X 4" weir to a 9" long vertical spacer to be located between the weir and the inlet face (max. 4' apart).
4. Place the assembly against the inlet throat and nail (minimum 2' lengths of 2" x 4" to the top of the weir at spacer locations). These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.
5. The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.
6. Form the 1/2 " x 1/2 " wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean 3/4 " x 1 1/2 " stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.
7. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.
8. Assure that storm flow does not bypass the inlet by installing a temporary earth or asphalt dike to direct the flow to the inlet.

STABILIZED CONSTRUCTION ENTRANCE

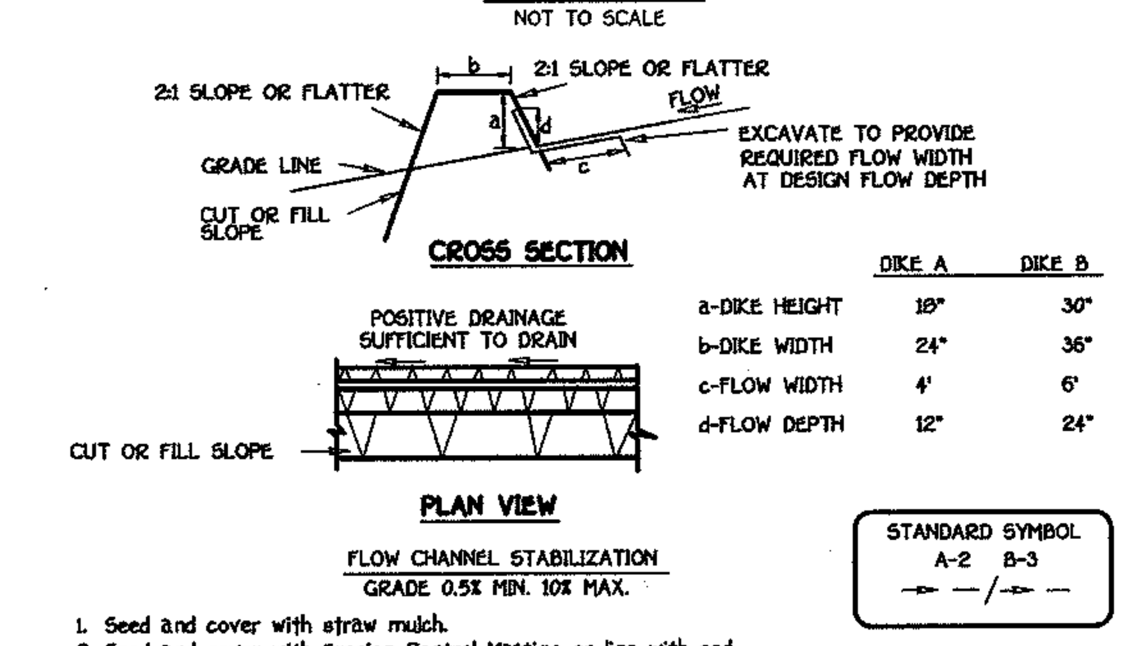


Construction Specification

1. Length - minimum of 50' (*30' for single residence lot).
2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.
3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.
4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

EARTH DIKE

NOT TO SCALE



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

STANDARD SYMBOL A-2 B-3

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

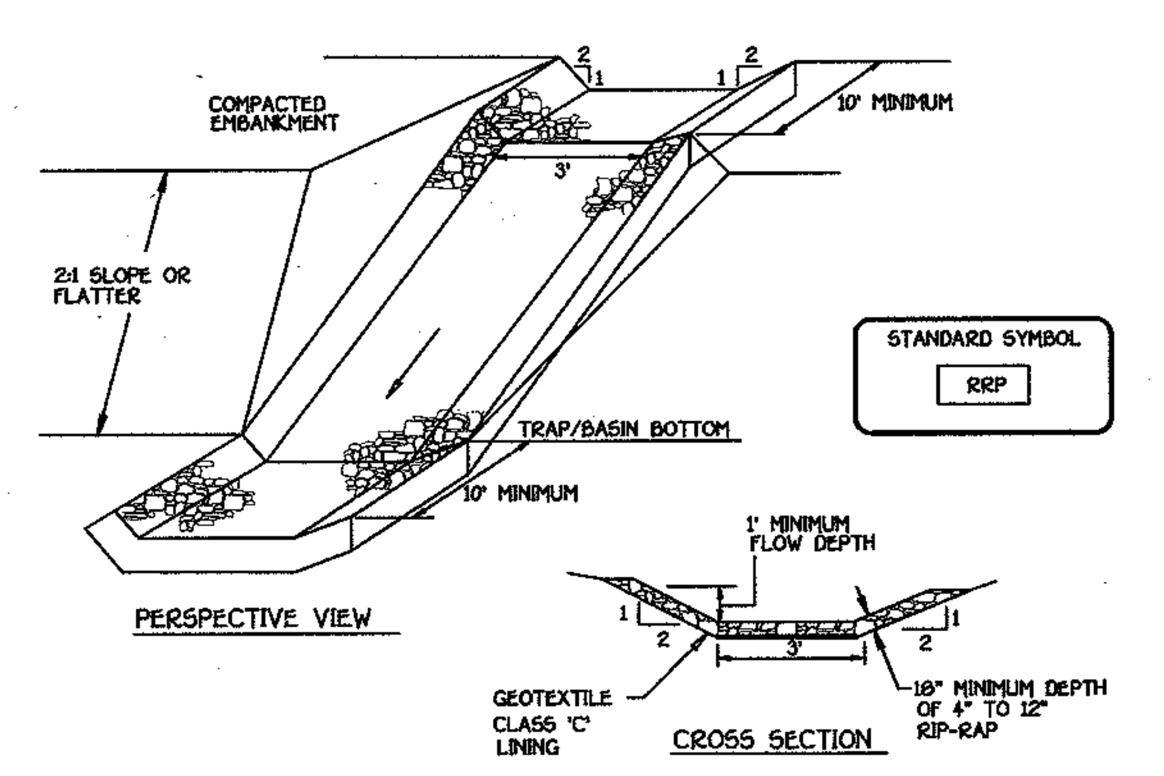
1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" - 7" stone or recycled concrete equivalent pressed into the soil 7" minimum

Construction Specifications

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

RIP-RAP INFLOW PROTECTION

NOT TO SCALE



Construction Specifications

1. Rip-rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3' (min.) bottom width. The channel shall be lined with 4" to 12" rip- rap to a depth of 18".
2. Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.
3. Entrance and exit sections shall be installed as shown on the detail section.
4. Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.
5. Gabion Inflow Protection may be used in lieu of Rip-rap Inflow Protection.
6. Rip-rap should blend into existing ground.
7. Rip-rap Inflow Protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1 use Earth Dike or Temporary Swale lining criteria.

OWNER / DEVELOPER

WAVERLY WOODS DEVELOPMENT CORPORATION
c/o LAND DESIGN AND DEVELOPMENT, LLC
8000 MAIN STREET
ELLICOTT CITY, MARYLAND 21042

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 6-11-01

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 6-11-01

REVIEW FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS
U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE — DATE 7/2/01

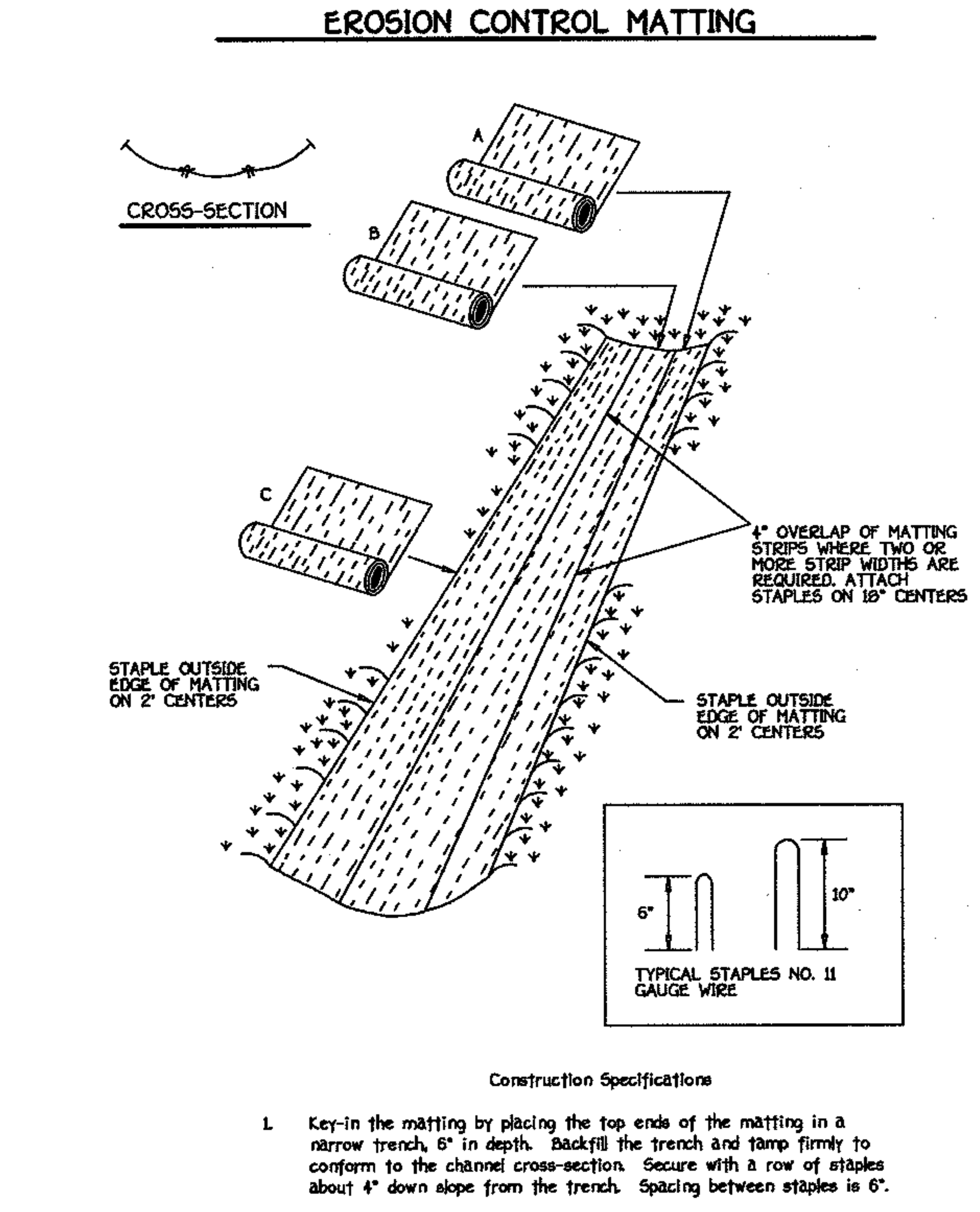
THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
APPROVED:
HOWARD SOIL CONSERVATION DISTRICT — DATE 7/2/01

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/19/01

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/01

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 7-6-01

EROSION CONTROL MATTING



Construction Specifications

1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".
2. Staple the 4" overlap in the channel center using an 18" spacing between staples.
3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
4. Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.
5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.
6. The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

Note: If flow will enter from the edge of the matting then the area effected by the flow must be keyed-in.

SEDIMENT CONTROL NOTES AND DETAILS

GTW'S WAVERLY WOODS

SECTION 11, AREA 4
Lots 22 Thru 80

(A SUBDIVISION OF THE PROPERTY OF WAVERLY WOODS DEVELOPMENT CORPORATION, LIBER 2222, FOLIO 36)
ZONING: RSC
TAX MAP NO. 16 PART OF PARCEL NO. 20
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 4, 2001

AS BUILT F 01-93

K:\Drawings 3\30686 GTW Section 11\FINALS\AREA 4\30686 Sed Con Details Sht1.dwg

Approved: Department Of Planning And Zoning

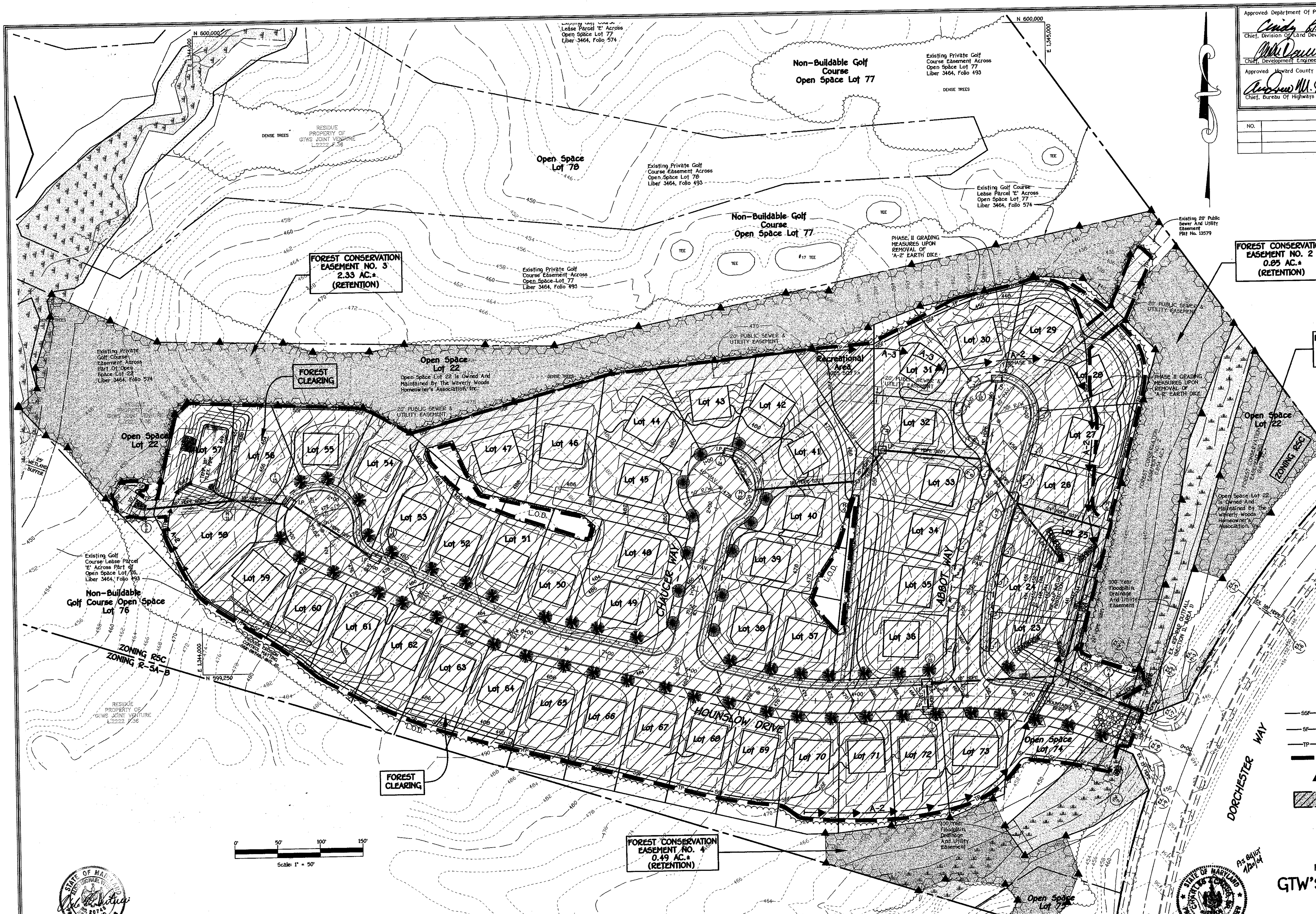
Chief, Division Of Land Development — Date: 7/9/01

Chief, Development Engineering Division — Date: 7/10/01

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date: 7-6-01

REVISIONS		
NO.	DESCRIPTION	DATE



LEGEND

- SSF — SSF — SSF — SUPER-SILT FENCE
- SF — SF — SF — SILT FENCE
- TP — TP — TP — TREE PROTECTION FENCE
- LIMIT OF DISTURBANCE
- PERMANENT TREE PROTECTION SIGNS
- FOREST CLEARING LIMITS

6-11-01

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

MD DNR Qualified Professional
USACOE Wetland Delineator
Certification # WDCP93MD0610044B
JOHN P. CANOLES 6/4/01

OWNER / DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION
c/o LAND DESIGN AND DEVELOPMENT, LLC
8000 MAIN STREET
ELLICOTT CITY, MARYLAND 21042

As Built 1/20/04

FOREST CONSERVATION PLAN
GTW'S WAVERLY WOODS
SECTION 11, AREA 4
LOTS 22 THRU 80

(A SUBDIVISION OF THE PROPERTY OF WAVERLY WOODS DEVELOPMENT CORPORATION, LIBER 2222, FOLIO 36)
ZONING: RSC
TAX MAP NO. 16 PART OF PARCEL NO. 20
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 5, 2001
SHEET 11 OF 13

F-01-93 AS BUILT

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APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 7-6-01

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/19/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/01

LEGEND	
(stippled)	EXISTING FOREST RETENTION AREA
(hatched)	ADDITIONAL FOREST RETENTION

LEGEND

- DENOTES 15.00% TO 24.99% SLOPES
- DENOTES 25.00% AND GREATER SLOPES
- ST64 — DENOTES SPECIMEN TREE #1 SEE TITLE SHEET FOR DESCRIPTION
- DENOTES WETLAND LIMITS
- DENOTES 100 YEAR FLOODPLAIN LIMITS

PLAN

SCALE: 1" = 100'

6-11-01

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
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OWNER / DEVELOPER

WAVERLY WOODS DEVELOPMENT CORPORATION
c/o LAND DESIGN AND DEVELOPMENT, LLC
8000 MAIN STREET
ELLICOTT CITY, MARYLAND 21042

OFF-SITE FOREST CONSERVATION PLAN

GTW'S WAVERLY WOODS

SECTION 11, AREA 4

(A SUBDIVISION OF THE PROPERTY OF WAVERLY WOODS DEVELOPMENT CORPORATION, LIBER 2222, FOLIO 36)

ZONING: RSC

TAX MAP NO. 16 PART OF PARCEL NO. 20

THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DATE: JUNE 4, 2001

F01-93 AS BUILT

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — 7-6-01 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — 7/9/01 DATE

CHIEF, DEVELOPMENT ENGINEERING DEPARTMENT — JA 7/10/01 DATE

Forest Conservation Calculations for Waverly Woods Section 11 Area 4

	Acres
Forest Preservation in Section 11, Area 4 Development	4.1
Forest Clearing in Section 11, Area 4 Development	12.2
Total Forest Clearing within Residentially Zoned Areas of Waverly Woods	69.9
Percentage of Forest Clearing Within Section 11 Area 4 Development	17.5
Total Reforestation Required for Waverly Woods Residential Development	60.16
Reforestation for Section 11, Area 4 Development	10.52

FCA Calculation Notes:

1. All information relative to the FCP calculations has been developed from the Forest Conservation Plan prepared by Environmental Systems Analysis (ESA), Inc. The Forest Conservation requirements have been established by guidelines outlined in the February 1996 Forest Conservation Plan as prepared by ESA, Inc.

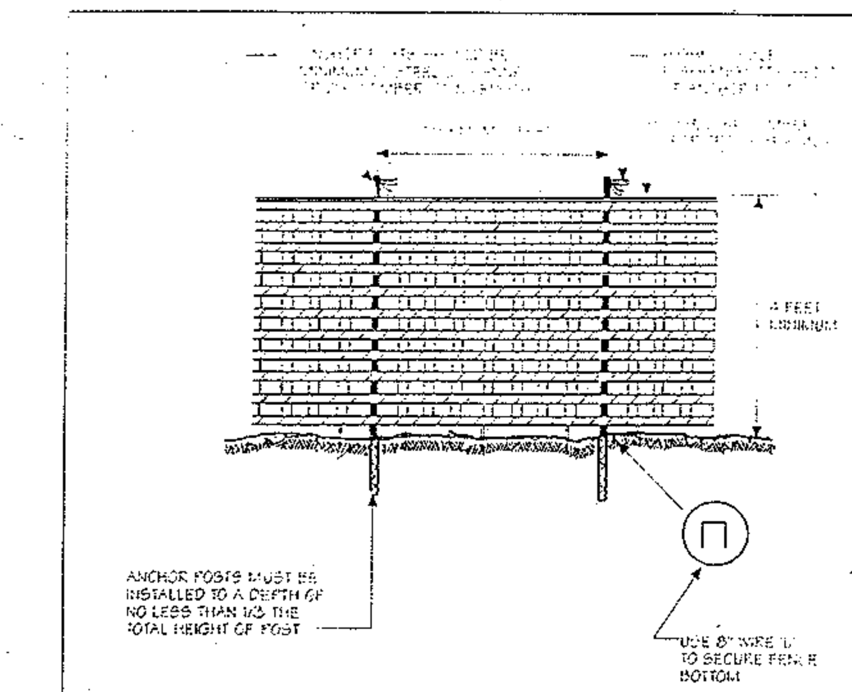
2. The Forest Conservation Worksheet above includes the Preliminary Forest Conservation calculation (from the PFCP revised on February 26, 1996) and the latest forest conservation calculations (thru section 11, Area 4) for residentially zoned development at Waverly Woods. Forest Retention and clearing differences in the two worksheets reflect minor changes from preliminary to final plan. With the exception of the Golf Course, Section 11 will be the final residentially zoned portion of Waverly Woods.

3. Like the previous sections of Waverly Woods, reforestation for Section 11, Area 4 has been calculated on a percentage basis. Section 11, Area 4 accounts for 17.5% of the Waverly Woods residentially zoned forest clearing at Waverly Woods. Therefore, 17.5% of the Waverly Woods residential reforestation obligation (as revised by the updated FCA worksheet) will be provided for Section 11 Area 4. This requirement will be met by dedicating 10.52 acres of forest retention surplus on Waverly Woods commercially zoned property to Section 11, Area 4.

4. Including Section 11, Area 4 a total of 9.05 acres of onsite reforestation, 11.8 acres of additional onsite retention and 8.13 acres of offsite reforestation (see January 1996 Final FCP for Waverly Woods Section 4, Areas 1 and 2) has been planned for the Waverly Woods residentially zoned property to date. This leaves a balance of 31.18 acres of reforestation to be performed for the remaining areas of Section 11 and the Golf Course. THE 8.13 ACRES OF OFF-SITE IS LOCATED ON WEST FRIENDSHIP ESTATES, SECTION ONE, KNOWN AS PLAT Nos. 11433 AND 11434 (F-96-173).

Waverly Woods Residential - Forest Conservation Worksheet

Input Parameter:	Preliminary FCP	Thru Section 11/ Area 4
Tract Area	291.90	291.91
100 Year Floodplain	4.10	4.81
Other ROW/Easements to be excluded from NTA	2.04	2.09
Disturbance within Floodplain to be added to NTA	0.00	2.47
Existing Forest Area (NTA)	103.00	103.00
Afforestation Threshold	15%	15%
Conservation Threshold	20%	20%
Total Area forest Cleared	65.55	69.90
Total Area Forest Retained	37.45	33.10
Calculated Parameters:		
Net Tract Area	285.76	287.47
Afforestation Threshold	42.86	43.12
Conservation Threshold	57.15	57.49
Forest Above Conservation Threshold	45.85	45.51
Reforestation for Clearing above Conservation Threshold	11.46	11.38
Reforestation for Clearing Below Conservation Threshold	39.40	48.78
Expected Total Project Reforestation Obligation	50.87	60.16

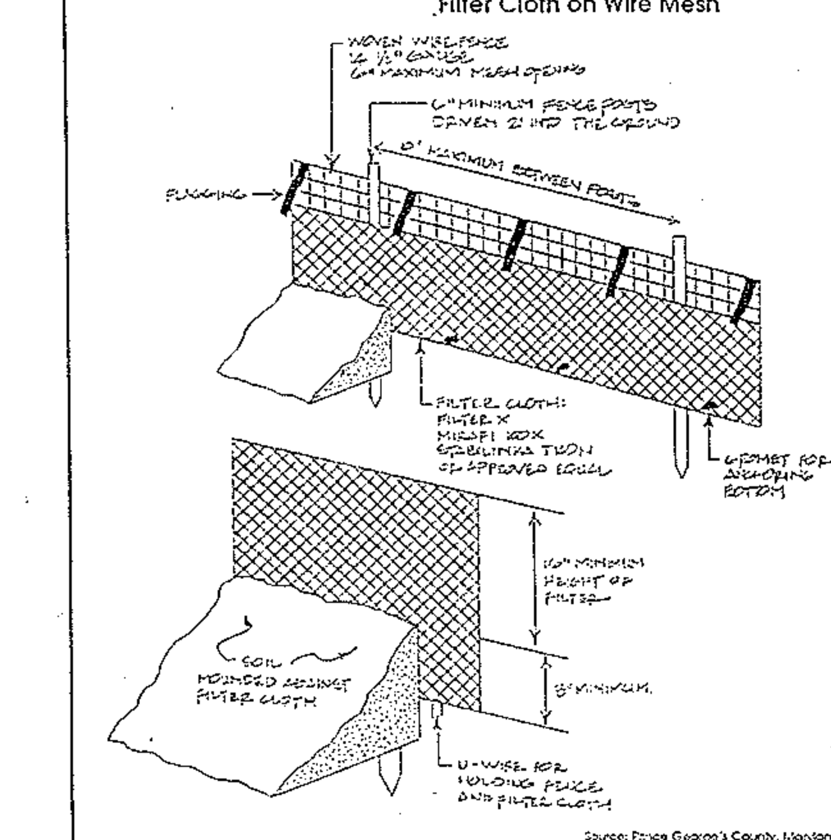


Notes:
1. Blaze orange or blue plastic mesh fence for forest protection device, only.
2. Boundaries of Retention Area will be established as part of the forest conservation plan review process.
3. Boundaries of Retention Area should be staked and flagged prior to installing device.
4. Avoid damage to critical root zone. Do not damage or sever large roots when installing posts.
5. Protection signs are required. See Figure C-4.
6. Device should be maintained throughout construction.

Source: Adapted from Prince George's County, Maryland: Woodland Conservation Manual and Forest Conservation Manual, 1991

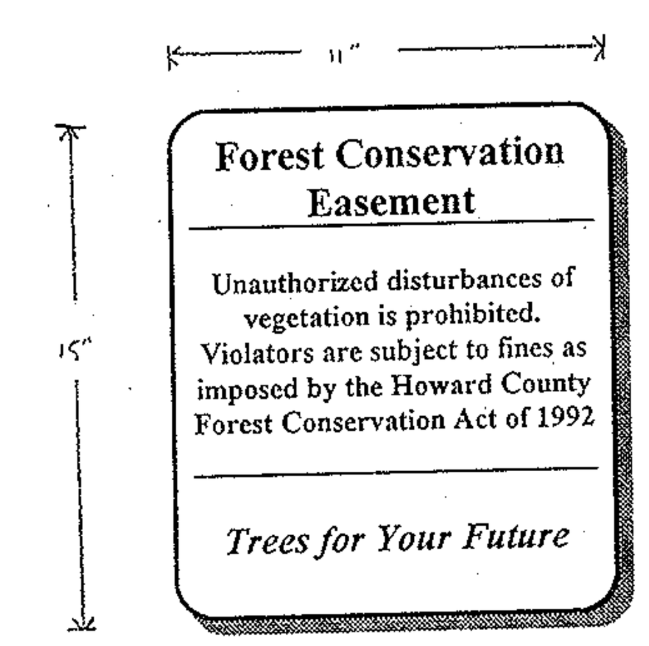
Plastic Mesh Tree Protection Fence — Figure C-5

Filter Cloth on Wire Mesh



Source: Prince George's County, Maryland Woodland Conservation Manual

Notes:
1. Combination sediment control and protective device
2. Retention area will be set as part of the review process
3. Boundaries of Retention Area should be staked prior to installing protective device
4. Root damage should be avoided
5. Mound soil only within the limits of disturbance
6. Protective signage is also recommended
7. All standard maintenance for sediment control devices apply to these details



FCP NOTES

1. Any Forest Conservation Easement (FCE) area shown hereon is subject to protective covenants which may be found in the Land Records of Howard County which restrict the disturbance and use of these areas.

2. The forest Conservation Easements have been established to fulfill the requirements of Section 16.1200 of the Howard County Code, Forest Conservation Act. No clearing, grading, or construction is permitted within the Forest Conservation Easements; however, forest management practices as defines in the Deed of Forest Conservation Easement are allowed.

3. Limits of disturbance shall be restricted to areas outside the limit of temporary fencing or the FCE boundary, whichever is greater.

4. There shall be no clearing, grading, construction or disturbance of vegetation in the Forest Conservation Easement, except as permitted by Howard County DPZ.

5. No stockpiles, parking areas, equipment cleaning areas, etc. shall occur within areas designated as Forest Conservation Easements.

6. Temporary fencing shall be used to protect forest resources during construction. The fencing shall be placed along all FCE boundaries which occur within 15 feet of the proposed limits of disturbance.

7. Permanent signage shall be placed 50-100' apart along the boundaries of all areas included in Forest Conservation Easements.

8. The reforestation obligation shown hereon shall be met through the retention of existing forest on a commercially zoned section of Waverly Woods.

Eco-Science Professionals, Inc.

CONSULTING ECOLOGISTS

P.O. Box 5006 Glen Arm, MD 21057 (410) 592-6752

MD DNR Qualified Professional
USACOE Wetland Delineator
Certification # WDCP93MD0610044B2
John P. Canales

DETAIL SHEET

GTW'S WAVERLY WOODS

SECTION 11, AREA 4

(A SUBDIVISION OF THE PROPERTY OF WAVERLY WOODS DEVELOPMENT CORPORATION, LIBER 2222, FOLIO 361)

ZONING: RSC

TAX MAP NO. 16 PART OF PARCEL NO. 20

THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DATE: APRIL 23, 2001

SHEET 13 OF 13

AS BUILT F-01-93