SHEET INDEX	
SHEET No.	SHEET
1	TITLE SHEET
2	HOLLAND COURT-PLAN & PROFILES
3	NORWAY COURT & OSLO COURT PLAN & PROFILE
4	STREET TREE, GRADING & SEDIMENT CONTROL PLAN
5	DRAINAGE AREA & LANDSCAPE PLAN
6 & 7	STORM DRAIN PROFILES
8	STORMWATER MANAGEMENT PLAN & DETAILS
9	SEDIMENT CONTROL NOTES & DETAILS

FINAL ROAD CONSTRUCTION, STORM DRAINAGE AND STORMWATER MANAGEMENT PLANS FOR LOTS 1 THRU 36

CEDAR ACRES

A RESUBDIVISION OF LOTS 3, 4 AND 5

HOWARD COUNTY, MARYLAND

ZONED R-SC

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Cindy Hamilton TC — CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9/2/97

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/3/97

APPROVED: DEPARTMENT OF PUBLIC WORKS

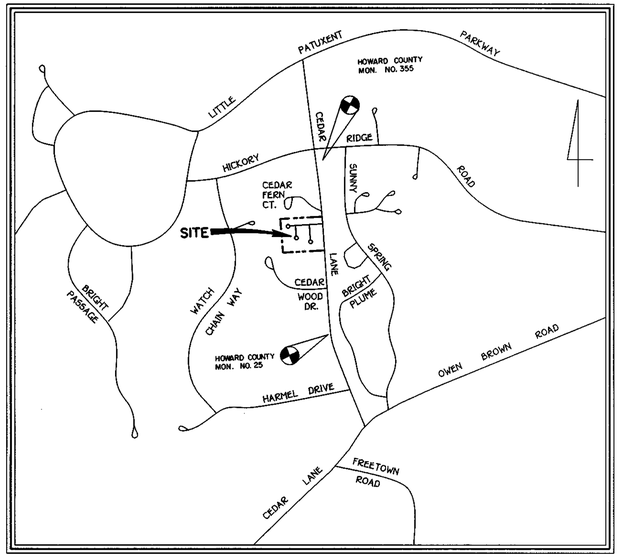
Andrew M. Daneker AS — CHIEF, BUREAU OF HIGHWAYS — DATE 8-26-97

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING	
LINEAR FEET OF PERIMETER	1128
NUMBER OF TREES REQUIRED: SHADE TREES EVERGREEN TREES	 19 24
CREDIT FOR EXISTING VEGETATION (NO, YES AND ID)	YES 160'
CREDIT FOR OTHER LANDSCAPING (NO, YES AND ID)	NO
NUMBER OF TREES PROVIDED: SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION)	 19 24 ---

ROAD CLASSIFICATION CHART		
ROAD	CLASSIFICATION	R/W WIDTH
HOLLAND COURT	LOCAL ROAD	50'
NORWAY COURT	LOCAL ROAD	50'
OSLO COURT	LOCAL ROAD	50'

TRAFFIC CONTROL SIGNS				
STREET NAME	STATION	OFFSET	POSTED SIGN	SIGN CODE
HOLLAND COURT	0+60	15'L	STOP	R1-1
NORWAY COURT	0+40	15'L	STOP	R1-1
OSLO COURT	0+40	15'L	STOP	R1-1

STREET LIGHT CHART				
DWG. No.	STREET NAME	STATION	OFF-SET	FIXTURE/POLE TYPE
2	HOLLAND COURT	0+38	26'R	150-WATT HPS VAPOR PENDANT FIXTURE (CUT-OFF) MOUNTED ON A 30 FOOT BRONZE FIBERGLASS POLE USING A 12' ARM
2	HOLLAND COURT	3+60 5+78	19'R 21'L	100-WATT "TRADITIONAIRE" H.P.S.VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
3	NORWAY COURT	L.P. STA. 1+58	3'	100-WATT "TRADITIONAIRE" H.P.S.VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
3	OSLO COURT	L.P. STA. 1+65	3'	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

1. UNLESS OTHERWISE NOTED, ALL CONSTRUCTION IS TO BE IN ACCORDANCE WITH THE FOLLOWING:
   a. HOWARD COUNTY STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION VOLUME IV.
   b. MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, AS AMENDED.
   c. SOIL CONSERVATION SERVICE 1983 MARYLAND STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
   d. SOIL CONSERVATION SERVICE 1993 MARYLAND STANDARDS AND SPECIFICATION FOR POND CONSTRUCTION (CODE 378)
   e. EXISTING UTILITIES ARE BASED ON FIELD RUN TOPOGRAPHY.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF 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. SITE DATA:
   LOCATION: TAX MAP-35 PARCEL NO.:38 ZONING:R-SC
   ELECTION DISTRICT NO.:5 TOTAL TRACT AREA:8.54 ACS.
   TOTAL NO. OF SINGLE FAMILY LOTS:33
5. TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ASPHALT.
6. THIS HORIZONTAL AND VERTICAL DATUM SHOWN ARE BASED ON THE FOLLOWING NAD'83 HOWARD COUNTY CONTROL STATIONS:
   HOWARD COUNTY MONUMENT 25 — N 559255.3513, E 1344883.9511, ELEV. = 411.069
   HOWARD COUNTY MONUMENT 355 — N 562140.4423, E 1344554.5028, ELEV. = 452.339
7. TOPOGRAPHIC SURVEY BY FISHER, COLLINS AND CARTER INC., APRIL, 1996, 2 FOOT CONTOUR INTERVAL.
8. WATER AND SEWER SYSTEMS ARE PUBLIC AND THEY ARE LOCATED IN THE PATAPSCO DRAINAGE AREA.
9. STORMWATER MANAGEMENT IS PROVIDED VIA A DETENTION POND AND EXTENDED DETENTION FOR WATER QUALITY. IT IS A PUBLIC FACILITY TO BE MAINTAINED BY HOME OWNERS ASSOCIATION.
10. WETLANDS AND FOREST STAND DELINEATIONS BY ECO-SCIENCE PROFESSIONALS, INC, COMPILED ON 3/8/1996.
11. TRAFFIC STUDY WAS PREPARED BY TRAFFIC GROUP AND APPROVED ON APRIL 8, 1996.
12. NOISE STUDY BY THE WILSON T. BALLARD CO. ON APRIL 18, 1996.
13. GEOTECHNICAL REPORT PREPARED BY I.T.E., INC. ON APRIL 12, 1996.
14. EXISTING UTILITIES WERE LOCATED BY ACTUAL FIELD MEASUREMENT WHERE POSSIBLE SUPPLEMENT BY INFORMATION OBTAINED FROM THE VARIOUS AGENCIES INVOLVED. WE CANNOT GUARANTEE THE ACCURACY OR THE COMPLETENESS OF THE INFORMATION RECEIVED. THE CONTRACTOR MUST VERIFY ALL SUCH INFORMATION TO THEIR OWN SATISFACTION PRIOR TO THE START OF THE CONSTRUCTION.
15. ANY MATERIAL OR EARTHWORK QUANTITIES SHOWN HEREON ARE PROVIDED FOR THE APPROVING AUTHORITIES USE ONLY.
16. PREVIOUS FILE NUMBERS:S-95-14 AND P-96-23.
17. STREET LIGHT PLACEMENT AND THE 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." A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.

SCHEDULE A PERIMETER LANDSCAPE EDGE									
PERIMETER	P-1	P-2	P-3	P-4	P-5	P-6	P-7	P-8	P-9
CATEGORY	Adjacent to Roadway	Adjacent to Perimeter Properties	Adjacent to Perimeter Properties	Adjacent to Perimeter Properties	Adjacent to Roadway	SIDE YARD	SIDE YARD	SIDE YARD	SIDE YARD
LANDSCAPE TYPE	B	A	A	A	B	B	B	B	B
LINEAR FEET OF PERIMETER	64.6'	652.7'	572.6'	655'	403'	39'	60'	60'	67'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	YES 10'	NO	NO	NO	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE IF NEEDED)	NO	NO	NO	NO	NO	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED									
SHADE TREES	1	10	10	10	8	1	1	1	1
EVERGREEN TREES	2	-	-	-	10	1	1	1	1
SHRUBS	-	-	-	-	-	-	-	-	-

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
BENJAMIN E. BASSLER AND ELSIE MAE BASSLER
10739 MARYLAND ROUTE 99
WOODSTOCK, MD. 21163

DEVELOPER
CHADSWORTH HOMES INC.
P.O. BOX 6661
McLEAN, VIRGINIA 22106-6661

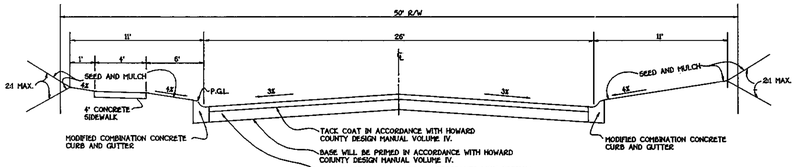
STATE OF MARYLAND — JAYESH V. PANCHOLI — No. 21124 — REGISTERED PROFESSIONAL ENGINEER

Jayesh Panchali — JAYESH V. PANCHOLI — 4-24-97 DATE

TITLE SHEET
LOTS 1 THRU 36
CEDAR ACRES
A RESUBDIVISON OF LOTS 3, 4 AND 5
ZONING: R5C
TAX MAP No. 35 PARCEL 38
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: APRIL 22, 1997
SHEET 1 OF 9

30538TTL.DWG

F-97-115



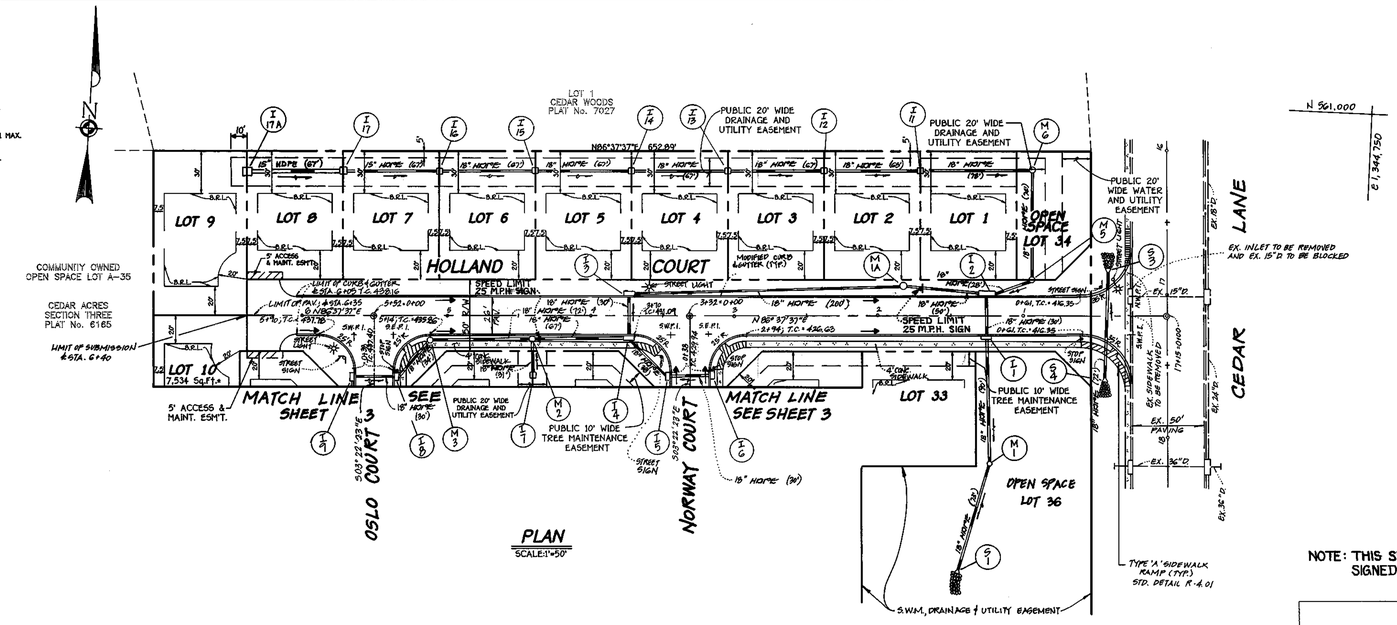
TYPICAL ROADWAY SECTION

NO SCALE

ROADWAY INFORMATION CHART

ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	℄ STATION LIMITS
HOLLAND COURT	LOCAL ROAD	30 M.P.H.	R5C	0+00 TO 6+35
NORWAY COURT	CUL-DE-SAC	25 M.P.H.	R5C	0+00 TO 3+17.67
OSLO COURT	CUL-DE-SAC	25 M.P.H.	R5C	0+00 TO 2+55.47

E 1343750
N 560750



PLAN

SCALE: 1"=50'

NOTE: THIS SHEET SUPERSEDES THE PREVIOUSLY SIGNED ORIGINAL DRAWING.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Cindy Hamilton — CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — 7/22/98 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 7/22/98 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — 7-17-98 DATE

CEDAR ACRES
SECTION 3, LOTS 1-36
A RESUBDIVISION OF LOTS 3,4 & 5

FIFTH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

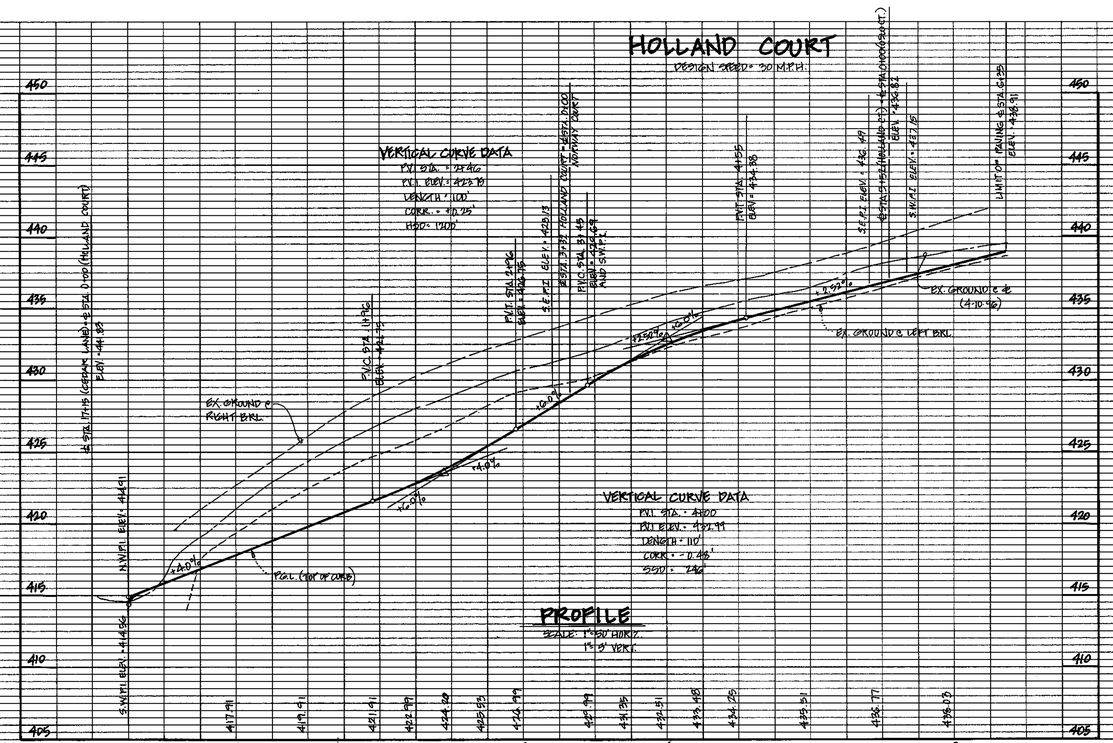
HOLLAND COURT
PLAN AND PROFILE

OWNER
BENJAMIN K. BASSLER AND ELSIE MAE BASSLER
10739 ROUTE 99
WOODSTOCK, MARYLAND 21163

DEVELOPER
CHADSWORTH HOMES, INC.
P.O. BOX 6641
McLEAN, VIRGINIA 22106-6641

SCALE: AS SHOWN	DATE: JANUARY, 1998	DWG. NO. 2 OF 9
DES. JAYESH PANCHOLI	DRN. J.A.U.	CHK. C.J.C.

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



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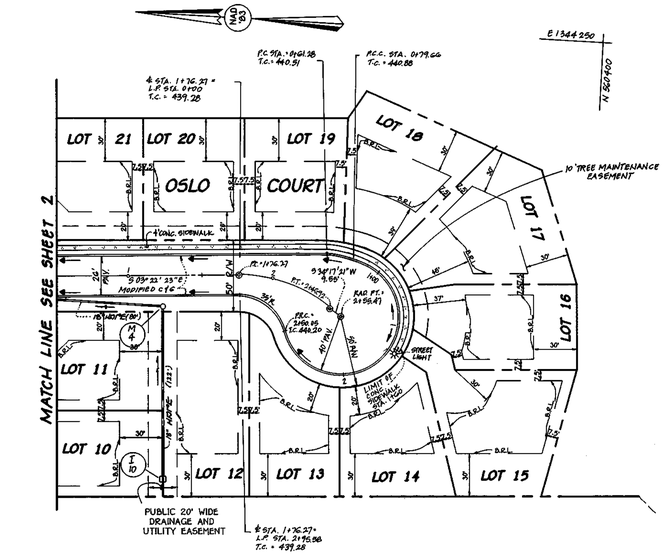
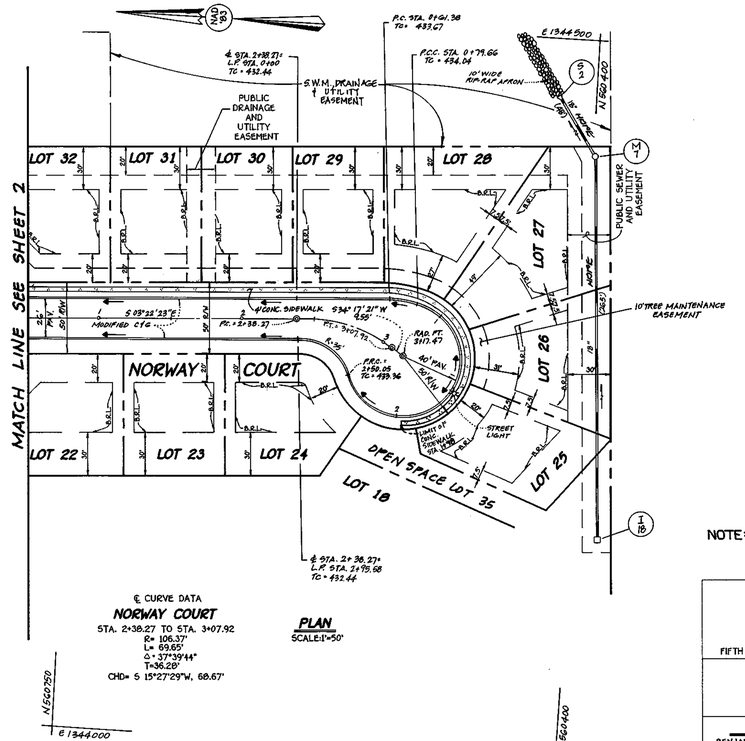


℄ CURVE DATA

OSLO COURT

STA. 1+76.27 TO STA. 2+45.92
R= 106.37'
L= 69.65'
Δ= 37°30'44"
T=36.28'
CHD= S 15°27'29"W, 68.67'

PLAN
SCALE: 1"=50'



℄ CURVE DATA

NORWAY COURT

STA. 2+38.27 TO STA. 3+07.92
R= 106.37'
L= 69.65'
Δ= 37°30'44"
T=36.28'
CHD= S 15°27'29"W, 68.67'

PLAN
SCALE: 1"=50'

NOTE: THIS SHEET SUPERSEDES THE PREVIOUSLY SIGNED ORIGINAL DRAWING

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT (OLD RESEARCH) — DATE 7/23/98

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/22/98

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 7-17-98

CEDAR ACRES
LOTS 1-36
A RESUBDIVISION OF LOTS 3,4 & 5

FIFTH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

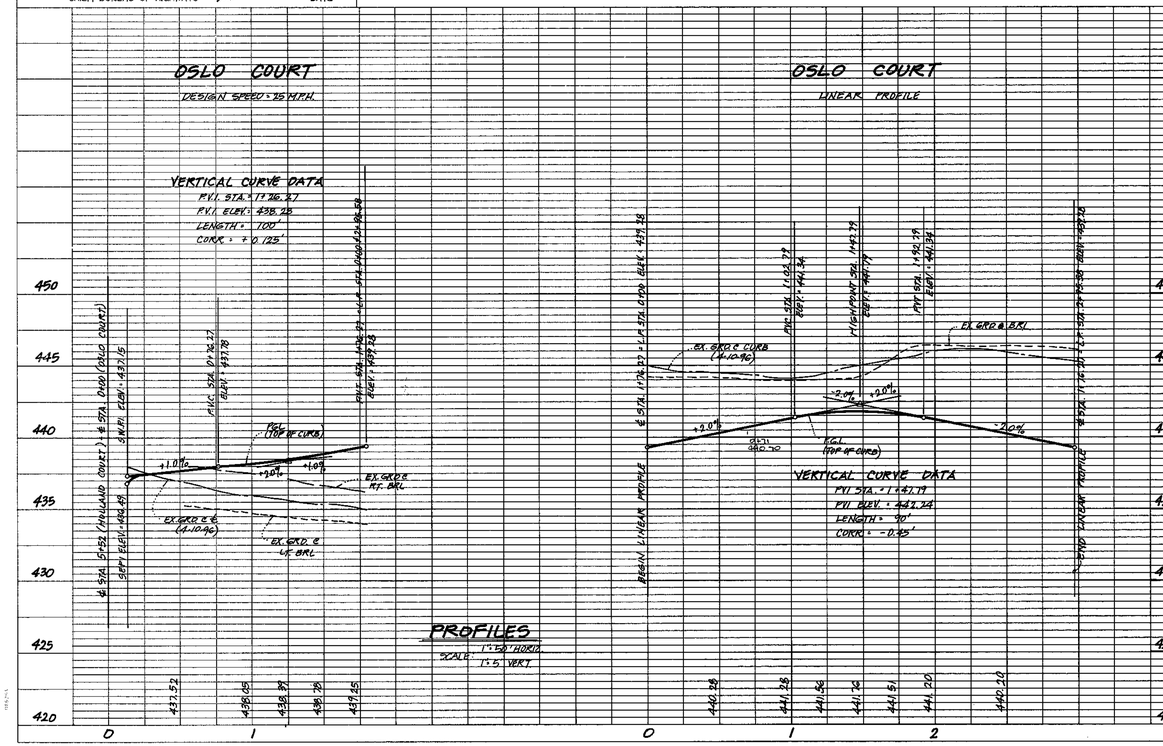
OSLO COURT & NORWAY COURT
PLAN AND PROFILE

OWNER — OWNER AND DEVELOPER
BENJAMIN K. BASSLER AND
ELSIE MAE BASSLER
10739 ROUTE 99
WOODSTOCK, MARYLAND 21163

DEVELOPER
CHADSWORTH HOMES, INC.
P.O. BOX 6641
McLEAN, VIRGINIA 22106-6641

SCALE: AS SHOWN	DATE: JAN. 1998	DWG. NO. 3	OF 9
DES. JAYESH PANCHOLI	DRN. J.A.U.	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



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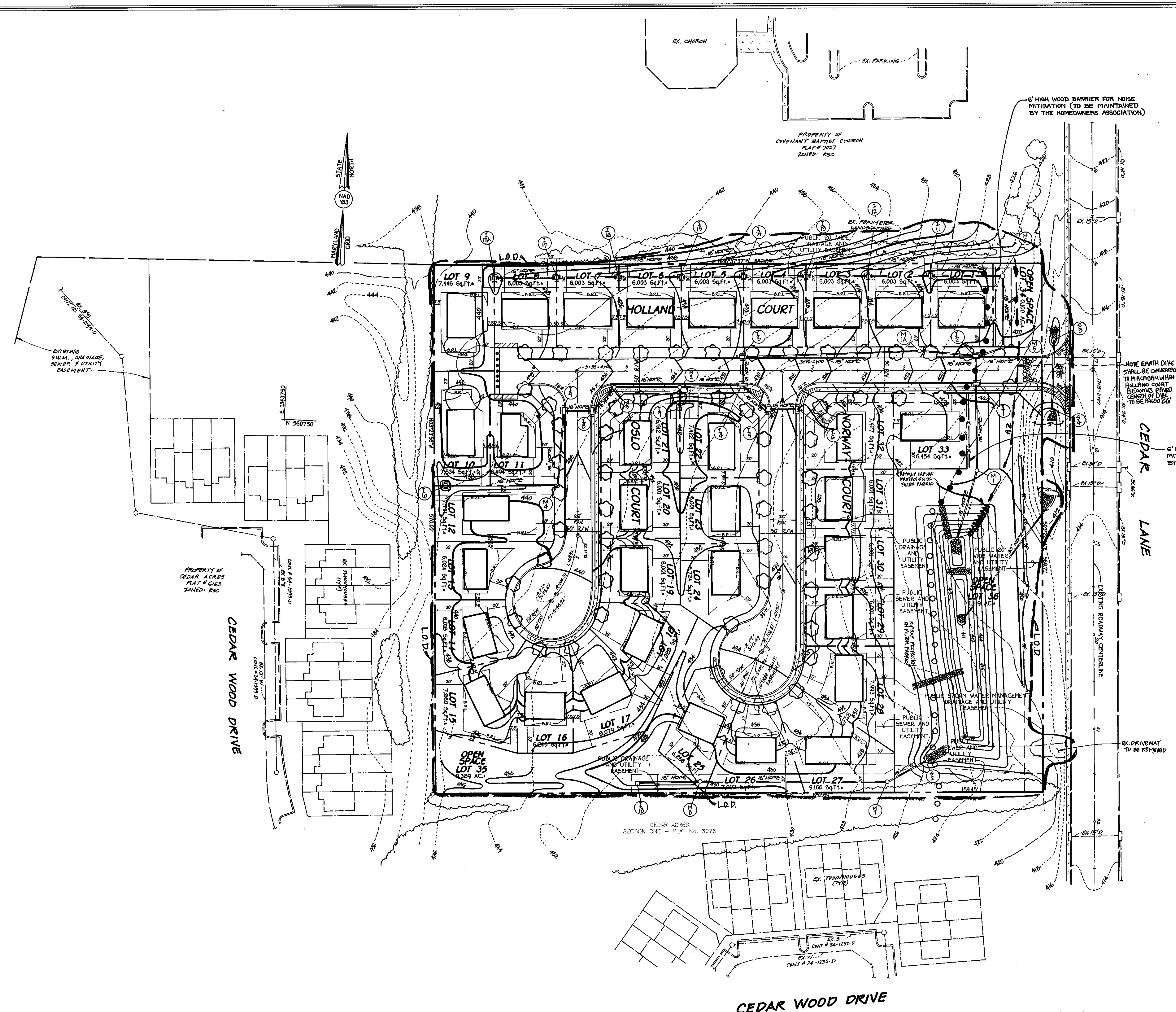


By The Developer:

"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

[signature] 6/29/98
Signature Of Developer — Date

ALTIERI HOMES
Printed Name Of Developer

By The Engineer:

"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

[signature] 3/28/98
Signature Of Engineer — Date

CHARLES J. CROWE SR.
Printed Name Of Engineer

These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control.

Cheryl Simmons 7/14/98
USDA-Natural Resources Conservation Service — Date

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

John R Robertson 7/14/98
Howard Soil Conservation District — Date

Approved: Department Of Public Works

[signature] 7-17-98
Chief Bureau Of Highways — Date

Approved: Department Of Planning And Zoning

Cindy Hamilton 7/23/98
Chief, Division Of Land Development — Date

[signature] 7/22/98
Chief, Development Engineering Division — Date

LEGEND

Symbol	Description
- - - - - - -	Existing Contour 2' Interval
—— ——	Existing Contour 10' Interval
————	Proposed Contour 2' Interval
━━━━	Proposed Contour 10' Interval
-SF—SF-	Silt Fence
○○○○○	Unmitigated 65 dBa Noise Line
●●●●●	Mitigated 65 dBa Noise Line
— — — —	Earth Dike
-X —X -	Tree Protection
⌒⌒⌒⌒	Existing Tree Line
L.O.D.	Limit Of Disturbance
(x)	Existing Street Tree
[symbol]	Stabilized Construction Entrance

STREET TREE SCHEDULE

SYMBOL	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
[tree symbol]	ACER RUBRUM OCTOBER GLORY/ RED MAPLE	2-1/2"-3"	40' APART ON PUBLIC R/W

NOTE: STREET TREES ARE ONLY A RECOMMENDATION. THIS MAY BE REVISED TO A COUNTY ACCEPTABLE EQUIVALENT. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN TREE AND STREET LIGHT.

TOTAL NUMBER OF STREET TREES

58 STREET TREES

NOTE: THIS SHEET SUPERSEDES THE PREVIOUSLY SIGNED ORIGINAL DRAWING

STATE OF MARYLAND — CHARLES J. CROWE — No. 10204 — REGISTERED PROFESSIONAL ENGINEER

STREET TREE, GRADING & SEDIMENT CONTROL PLAN

CEDAR ACRES

LOTS 1 THRU 36

(A RESUBDIVISION OF LOTS 3, 4 AND 5, BLOCK 'A' AS SHOWN ON A PLAT ENTITLED "CEDAR ACRES" AND RECORDED IN PLAT BOOK 4 AT FOLIO 11)

ZONED: RSC

TAX MAP No. 35 PARCEL No. 38 GRID No. 11
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE: 1"=50' DATE: AUGUST 22, 1997

SHEET 4 OF 9

OWNER
BENJAMIN K. BASSLER AND
ELSIE MAE BASSLER
10739 ROUTE 99
WOODSTOCK, MARYLAND 21163

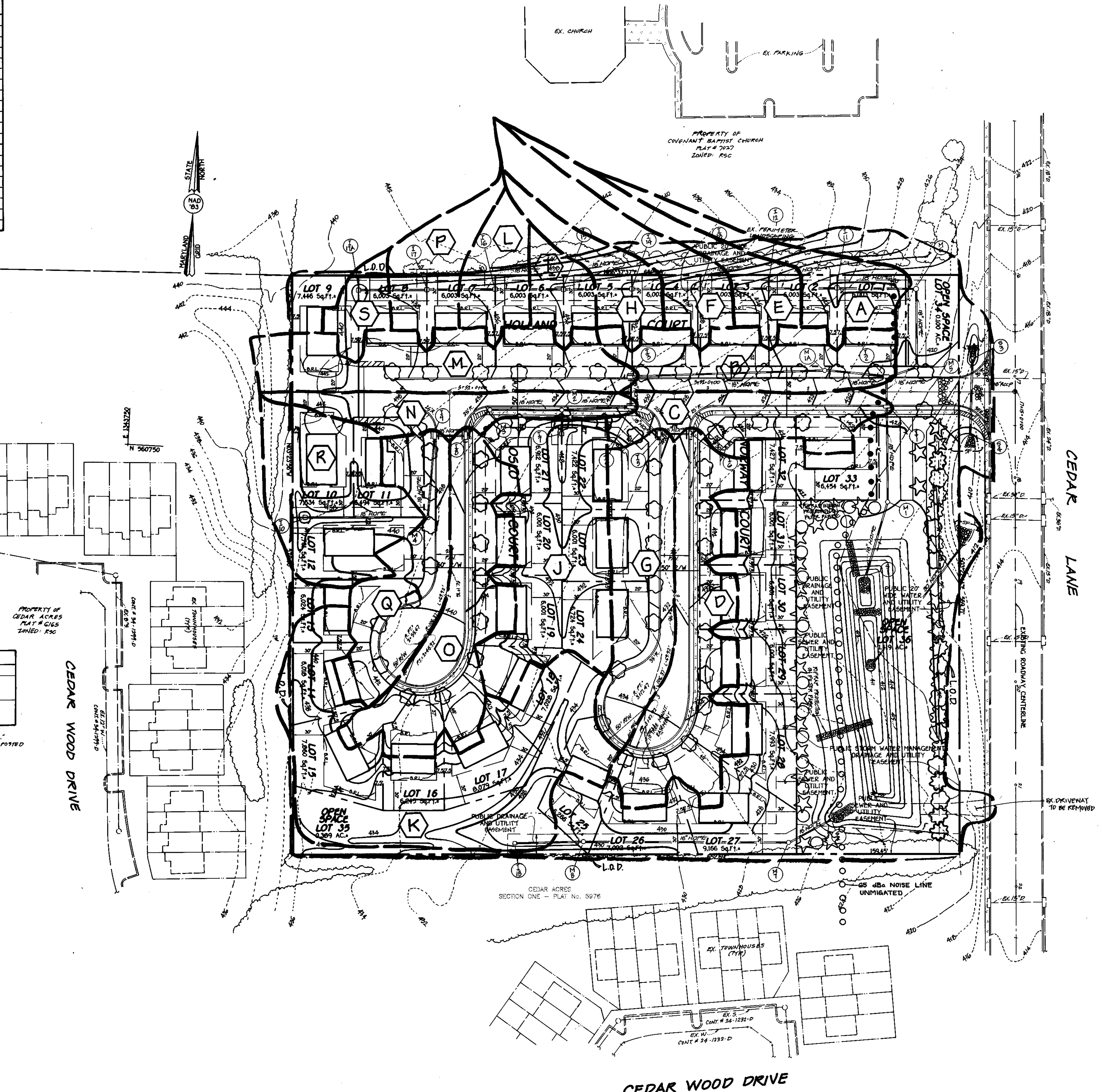
DEVELOPER
CHADSWORTH HOMES, INC.
P.O. BOX 6641
McLEAN, VIRGINIA 22106-6641

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855
30538Supplemental grading plan.dwg

F97-115

DRAINAGE AREA DATA

STRUCTURE	DRAIN. AREA	AREA	"C"	ZONING	% IMP.
I-1	C	0.30 Ac.±	0.49	RSC	34 %
I-2	B	0.35 Ac.±	0.55	RSC	43 %
I-3	M	0.46 Ac.±	0.44	RSC	28 %
I-4	N	0.26 Ac.±	0.49	RSC	35 %
I-5	G	0.40 Ac.±	0.51	RSC	37 %
I-6	D	0.57 Ac.±	0.54	RSC	41 %
I-7	J	0.64 Ac.±	0.37	RSC	17 %
I-8	O	0.49 Ac.±	0.54	RSC	42 %
I-9	Q	0.36 Ac.±	0.53	RSC	40 %
I-10	R	0.47 Ac.±	0.41	RSC	24 %
I-11	A	0.22 Ac.±	0.33	RSC	12 %
I-12	E	0.21 Ac.±	0.31	RSC	8 %
I-13	F	0.28 Ac.±	0.33	RSC	12 %
I-14	H	0.18 Ac.±	0.31	RSC	9 %
I-15	I	0.12 Ac.±	0.35	RSC	14 %
I-16	L	0.17 Ac.±	0.32	RSC	10 %
I-17	P	0.31 Ac.±	0.33	RSC	11 %
I-18	K	1.04 Ac.±	0.33	RSC	11 %
I-17A	S	0.08 Ac.±	0.33	RSC	11 %



CEDAR WOOD DRIVE

PLANT LIST

SYMBOLS	BOTANICAL & COMMON NAME	SIZE	QTY.
(shade tree) ; (circle)	QUERCUS PALUSTRIS "SOVEREIGN" SOVEREIGN PIN OAK	2 1/2" - 3" CALIPER	62
(evergreen) ; (star)	PINUS NIGRA "AUSTRIAN PINE"	6'-8' HIGH	40

"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 77 REQUIRED LANDSCAPE TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $ 10,200.00.

NOTE: A MIN. SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.

NOTE: FOR S.W.M. AREA LANDSCAPING CHART, SEE SHEET 1 SCHEDULE D

- SHADE TREE (19 TREES)
- EVERGREEN TREE (24 TREES)

} S.W.M. LANDSCAPING TREES

FOR PERIMETER LANDSCAPING CHART, SEE SHEET 1 SCHEDULE A

- SHADE TREE (43 TREES)
- EVERGREEN TREE (16 TREES)

} PERIMETER LANDSCAPING TREES

By The Developer:

"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

[signature] 6/29/98
Signature Of Developer — Date

ALDEN HOMES
Printed Name Of Developer

By The Engineer:

"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

[signature] 3/28/98
Signature Of Engineer — Date

CHARLES J. CROVO SR.
Printed Name Of Engineer

These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control.

Cheryl Simmons 7/14/98
USDA-Natural Resources Conservation Service — Date

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

Robert W. Zirkin 7/14/98
Howard Soil Conservation District — Date

Approved: Department Of Public Works

[signature] 7-17-98
Chief Bureau Of Highways — Date

Approved: Department Of Planning And Zoning

Cindy Hamilton 7/23/98
Chief, Division Of Land Development — Date

[signature] 7/22/98
Chief, Development Engineering Division — Date

LEGEND

Symbol	Description
- - - - - - -	Existing Contour 2' Interval
—— ——	Existing Contour 10' Interval
————	Proposed Contour 2' Interval
━━━━	Proposed Contour 10' Interval
-SF—SF-	Silt Fence
○○○○○	Unmitigated 65 dBa Noise Line
●●●●●	Mitigated 65 dBa Noise Line
— — — —	Earth Dike
-X —X -	Tree Protection
(tree line)	Existing Tree Line
L.O.D.	Limit Of Disturbance
(x)	Existing Street Tree
(entrance)	Stabilized Construction Entrance

STREET TREE SCHEDULE

SYMBOL	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
(tree)	ACER RUBRUM OCTOBER GLORY/ RED MAPLE	2-1/2"-3"	40' APART ON PUBLIC R/W

NOTE: STREET TREES ARE ONLY A RECOMMENDATION. THIS MAY BE REVISED TO A COUNTY ACCEPTABLE EQUIVALENT. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN TREE AND STREET LIGHT.

TOTAL NUMBER OF STREET TREES

58 STREET TREES

NOTE: THIS SHEET SUPERSEDES THE PREVIOUSLY SIGNED ORIGINAL DRAWING

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855
30538supplemental grading plan.dwg

OWNER
BENJAMIN K. BASSLER AND
ELSIE MAE BASSLER
10739 ROUTE 99
WOODSTOCK, MARYLAND 21163

DEVELOPER
CHADSWORTH HOMES, INC.
P.O. BOX 6641
McLEAN, VIRGINIA 22106-6641

DRAINAGE AREA MAP AND LANDSCAPE PLAN

CEDAR ACRES
LOTS 1 THRU 36

(A RESUBDIVISION OF LOTS 3, 4 AND 5, BLOCK 'A' AS SHOWN ON A PLAT ENTITLED "CEDAR ACRES" AND RECORDED IN PLAT BOOK 4 AT FOLIO 11)

ZONED: RSC

TAX MAP No. 35 PARCEL No. 38 GRID No. 11
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE: 1"=50' DATE: AUGUST 22, 1997

F97-115

SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 50 foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Earth Fill

Material-The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the eritire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble yet not be so wet that water can be squeezed out.

Where a minimum required density is specified, it shall not be less than 95% of maximum dry density with a moisture content within +2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99.

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown
on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers or hand tampers to assure maximum density and minimum permeability.

Structure Backfill

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

Pipe Conduits

All pipes shall be circular in cross section.

Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:

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

Materials - (Aluminum Coated Steel Pipe) - This pipe and its appunertenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

2. Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in triickness.

3. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the band width. The following type connections are acceptable for pipes less than 24" in diameter. Flanges on both ends of the pipe, a 12" wide standard lap type band with 12" wide by 3/8" thick closed cell circular neoprene gasket: and a 12" wide hugger type band with 0-ring gaskets having a minimum diameter of 1/2" greater than the corrugation depth. Pipes 24" in diameter and larger shall be connected by a 24" long annular corrugated band using rods and lugs. A 12" wide by 3/8" thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24".

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

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

5. Backfilling shall conform to "Structure Backfill".

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

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

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

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

3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance wfth recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 2 feet from the riser.

4. Backfilling shall conform to "Structure Backfill".

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

Polyvinyl Chloride (PVC) Pipe - All of the following criteria shall apply for polyvinyl chloride (PVC) pipe:

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

2. Joints and connections to anti-seep collars shall be completely watertight.

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

4. Backfilling shall conform to "Structure Backfill".

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

Concrete

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

Rock Riprap

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

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

Care of Water during Construction

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish , install, operate, and maintain all necessary pumping and other equipment required for removal of water from the various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom of required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to sumps from which the water shall be pumped.

Stabilization

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

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

SUMMARY OF TEST PITS

Date: April 13, 1995
Field Inspector: C.S. Bakhshi

TEST PIT	DEPTH	SOIL DESCRIPTION	REMARKS
B-1	0.0-6.0	Yellowish Red fine SAND, trace clay, mica. USC: SM USDA: Sandy Loam	Groundsurface: wooded Top Soil : 2.0" Rock fragments below 8.0 feet depth.
	6.0-8.0	Yellowish Sand with olive green clay lenses, trace mica. USC: SM USDA: Sandy Loam	Groundwater not encountered during excavation.

Backhoe refusal at 8.0 feet depth.
Test Pit backfilled on completion of observations.
Test Pit terminated at 8.0 feet depth.

SUMMARY OF TEST PITS

Date: April 13, 1995
Field Inspector: C.S. Bakhshi

TEST PIT	DEPTH	SOIL DESCRIPTION	REMARKS
B-2	0.0-4.0	Olive Brown Sand with dark red lenses of clay, trace mica. USC: SM USDA: Sandy Loam	Groundsurface: wooded with Top Soil : 2.0"
	4.0-11.0	Strong brown to yellow fine SAND, trace mica USC: SM USDA: Sandy Sand	Groundwater not encountered during excavation.

Backhoe refusal at 11.0 feet depth.
Test Pit backfilled on completion of observations.
Test Pit terminated at 11.0 feet depth.

SUMMARY OF TEST PITS

Date: April 13, 1995
Field Inspector: C.S. Bakhshi

TEST PIT	DEPTH	SOIL DESCRIPTION	REMARKS
B-3	1.0-5.0	Yellowish Red clayey SAND, trace mica. USC: SM USDA: Sandy Loam	Groundsurface: open grassy field Top Soil : 12.0"
	5.0-11.0	Yellowish Brown fine SAND, trace mica USC: SM USDA: Loamy Sand	Groundwater not encountered during excavation.

Test Pit backfilled on completion of observations.
Test Pit terminated at 11.0 feet depth.

STRUCTURE SCHEDULE

STRUCTURE NO.	TOP ELEVATION	INV.IN	INV.OUT	ROAD NAME	ROAD STA.	OFFSET	TYPE	REMARKS
I-1	418.91	413.13	412.88	HOLLAND COURT	C.L. STA. 1+25	13.43' LT*	A-5 INLET	S.D. 4.40
I-2	418.91	413.68	413.43	HOLLAND COURT	C.L. STA. 1+25	13.43' RT*	A-10 INLET	S.D. 4.41
I-3	431.37	421.53	421.28	HOLLAND COURT	C.L. STA. 3+75.50	13.43' RT*	A-10 INLET	S.D. 4.41
I-4	431.37	424.72 / 422.08	421.83	HOLLAND COURT	C.L. STA. 3+75.50	13.43' LT*	A-10 INLET	S.D. 4.41
I-5	429.98	425.35	425.10	HOLLAND COURT	C.L. STA. 0+41	13.43' LT*	A-5 INLET	S.D. 4.40
I-6	429.98	———	423.31	HOLLAND COURT	C.L. STA. 0+41	13.43' RT*	A-5 INLET	S.D. 4.40
I-7	427.33	———	427.20	HOLLAND COURT	C.L. STA. 4+42	47' LT*	'D INLET	S.D. 4.39
I-8	437.44	430.56	430.31	OSLO COURT	C.L. STA. 0+41	15' LT*	A-5 INLET	S.D. 4.40
I-9	437.44	431.11	430.86	OSLO COURT	C.L. STA. 0+41	15' RT*	A-5 INLET	S.D. 4.40
I-10	436.73	———	433.38	———	———	N 560687.985 E 1343926.320	'D' INLET	S.D. 4.39
I-11	420.24	416.23	415.98	———	———	N 560941.669 E 1344436.278	'D' INLET	S.D. 4.39
I-12	422.91	417.38	416.88	———	———	N 560937.727 E 1344369.394	'D' INLET	S.D. 4.39
I-13	427.48	422.80	422.55	———	———	N 560933.785 E 1344302.510	'D' INLET	S.D. 4.39
I-14	430.85	425.72	423.47	———	———	N 560929.843 E 1344235.626	'D' INLET	S.D. 4.39
I-15	433.95	428.64	426.39	———	———	N 560925.901 E 1344168.742	'D' INLET	S.D. 4.39
I-16	435.16	429.56	429.31	———	———	N 560921.959 E 1344101.858	'D' INLET	S.D. 4.39
I-17	436.85	430.48	430.23	———	———	N 560918.016 E 1344034.974	'D' INLET	S.D. 4.39
I-18	427.43	———	423.41	———	———	N 560382.762 E 1344155.196	'D' INLET	S.D. 4.39
I-17A	438.36	———	431.15	———	———	N 560914.074 E 1343968.090	'D' INLET	S.D. 4.39
M-1	420.00	411.98	411.73	———	———	N 560739.916 E 1365796.390	PRECAST MANHOLE	G. 5.12
M-2	434.15	429.00 / 422.99	422.75	HOLLAND COURT	C.L. STA. 4+42	16.5' LT	PRECAST MANHOLE	G. 5.12
M-3	435.96	429.97	429.72	HOLLAND COURT	C.L. STA. 5+12	16.5' LT	PRECAST MANHOLE	G. 5.12
M-4	438.69	432.16	431.91	OSLO COURT	C.L. STA. 1+23.64	21' RT	PRECAST MANHOLE	G. 5.12
M-5	419.50	414.21	413.96	HOLLAND COURT	C.L. STA. 0+97	25' RT	PRECAST MANHOLE	G. 5.12
M-6	421.50	415.20	414.95	HOLLAND COURT		N 560946.199 E 1344513.144	PRECAST MANHOLE	G. 5.12
M-7	426.00	419.70	419.45	———	———	N 560394.978 E 1344419.915	PRECAST MANHOLE	G. 5.12
M-1A	421.49	417.19	416.94		C.L. STA. 1+84	18.5' RT	PRECAST MANHOLE	G. 5.12
S-1	412.50	411.00	———	———	———	N 560668.609 E 1344480.921	CONC. END SECTION	S.D. 5.51
S-2	420.47	418.97	———	———	———	N 560422.363 E 1344459.336	CONC. END SECTION	S.D. 5.51
S-3	412.50	411.00	———	———	———	N 560879.452 E 1344572.072	CONC. END SECTION	S.D. 5.51
S-4	411.50	———	410.00	———	———	N 560807.463 E 1344573.317	CONC. END SECTION	S.D. 5.51

* DENOTES OFFSET TO FLOWLINE AT INLET

APPROVED: DEPARTMERNT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 7-17-98

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/23/98

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/22/98

GEOTECHNICAL RECOMMENDATIONS

1. The stormwater management pond facility on the site should be constructed as an extended detention pond.
2. At locations where removal of vegetation and objectionable material results in an opening greater than 12 inches in depth, they should be backfilled with soil compacted to a minimum of 95% of the maximum dry density as determined by the Standard Moisture Density Relationship Test (ASTM D-698).
3. Soil material meeting the classification requirements for GC, SC, CH, or CL as classified in accordance with the Unified Soil Classification System and recommended by Soil Conservation Service Maryland Standards and Specifications, November 1992 should be used for the construction of the center of the embankment and the cut-off trench. The fill material should be approved by the geotechnical engineer prior to being used. It should be free from roots, stumps, woods, rubbish, stone greater than six (6) inches, frozen soil or other deleterious material.
4. Additionally, we recommend a minimum 4.0 feet thick compacted layer of relatively impermeable soil material, as specified in item three (3) above should be used below the foundation of the principal spillway structure and below the pipeline at the location of the cut-off trench.
5. The depth of the core trench should be extended a minimum of four (4) feet below the invert of the pond at the principal spillway.
6. The impervious core shall extend from the cut-off trench up to the 10 year water surface elevation throughout the embankment.
7. Core and dike embankment fill and backfill soils should be compacted to a minimum of 95% of the maximum dry density (ASTM D-698).
8. The unpaved access road to the pond should be designed and constructed to support the contact tire pressure and axle load exerted by the service traffis anticipated. We recommend subgrade soil with sufficient shear strength to support contact pressure of 80 psi and 8 kip axle load. The subgrade in the access road area should be constructed with on-site sandy soils compacted to a minimum of 95% of the maximum dry density (ASTM D-698) and with a minimum soaked California Bearing Ratio (CBR) of 5.0.
9. The principal spillway structure should be founded on subgrade soil with an allowable soil pressure of no less than 2000 pounds per square foot and should be verified during foundation construction.
10. We recommend the contractor provide the geotechnical engineer and the design engineer with a plan for dewatering prior to beginning excavation on the site. The plan should include a written description of the dewatering system, a schedule and sketches. The dewatering system should be approved by the design engineer, installed and functioning effectively prior to excavation below the wtaer level.

By The Developer:

"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

Signature Of Developer — Date 6/29/98

Printed Name Of Developer

By The Engineer:

"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

Signature Of Engineer — Date

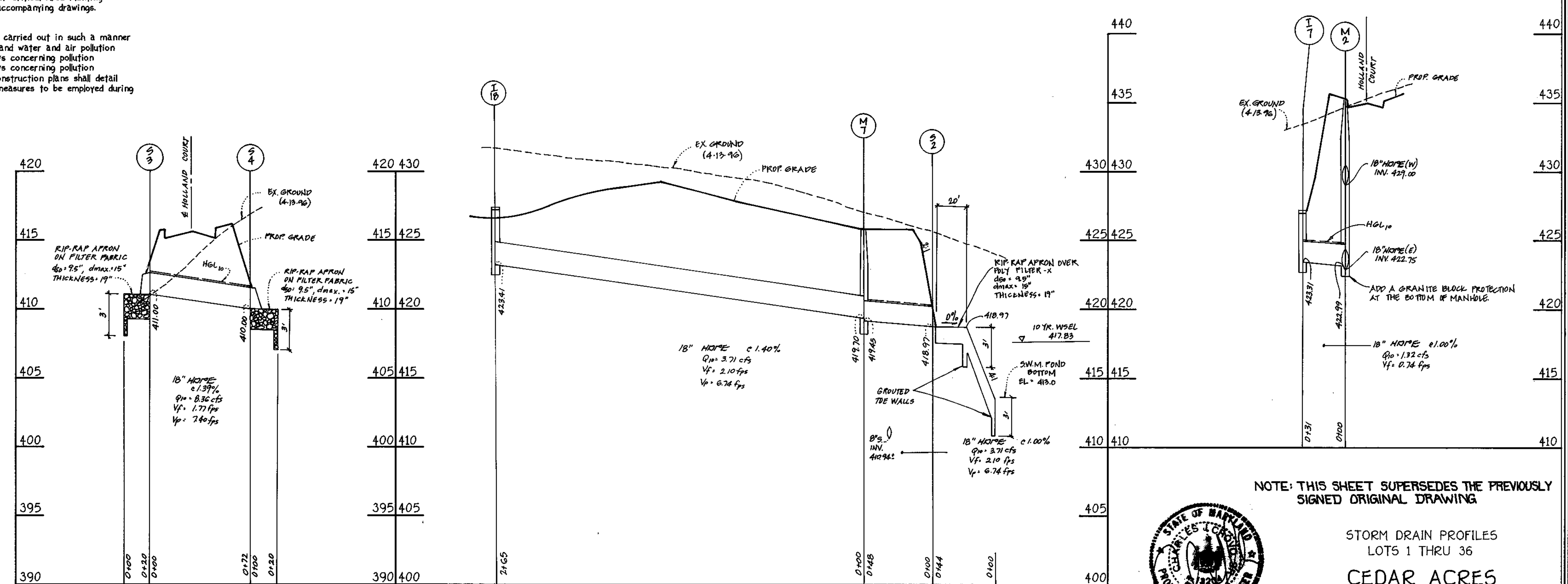
CHARLES J. CROWSER
Printed Name Of Engineer

These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control.

USDA-Natural Resources Conservation Service — Date 7/14/98

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

Howard Soil Conservation District — Date 7/14/98



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

NOTE: THIS SHEET SUPERSEDES THE PREVIOUSLY SIGNED ORIGINAL DRAWING

STORM DRAIN PROFILES
LOTS 1 THRU 36

CEDAR ACRES

A RESUBDIVISION OF LOTS 3,4 AND 5
ZONED: RSC
TAX MAP NO. 35 PARCEL 38
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SHEET 6 OF 9

FISHER, COLLINS & CARTER, INC.
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30538FP6.DWG

F97-115

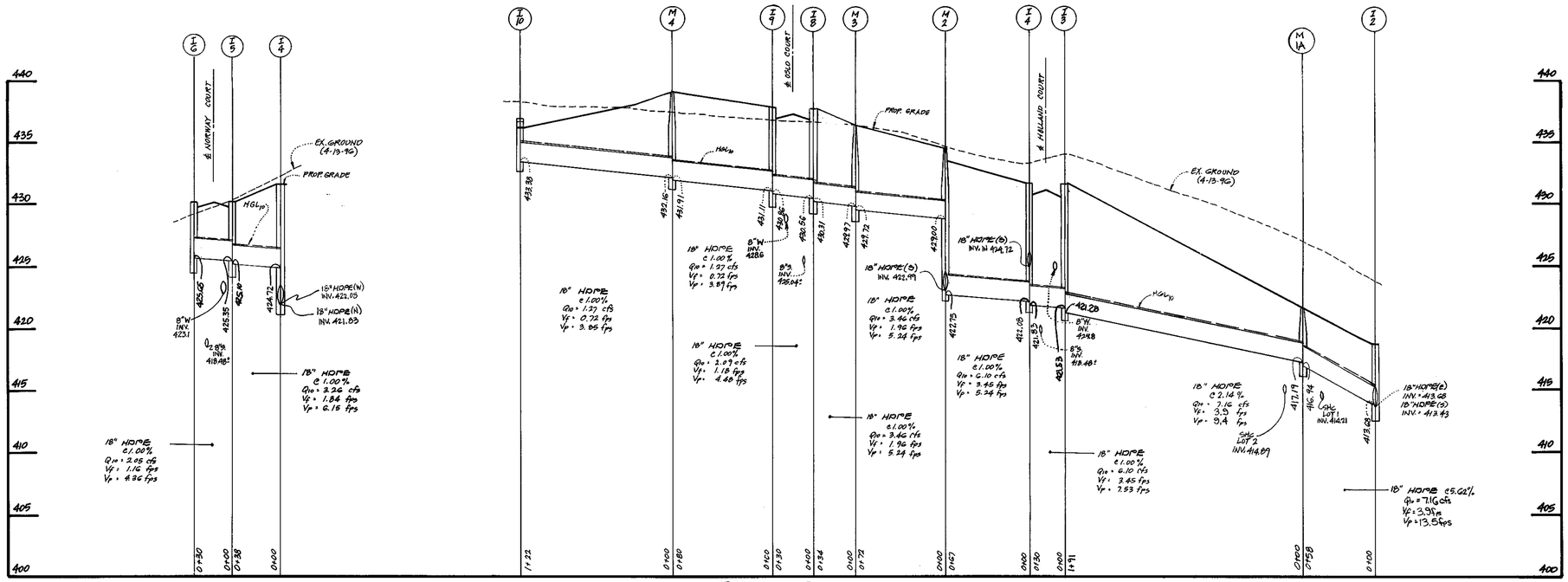
APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 7-17-98

APPROVED: DEPARTMENT OF PLANNING AND ZONING

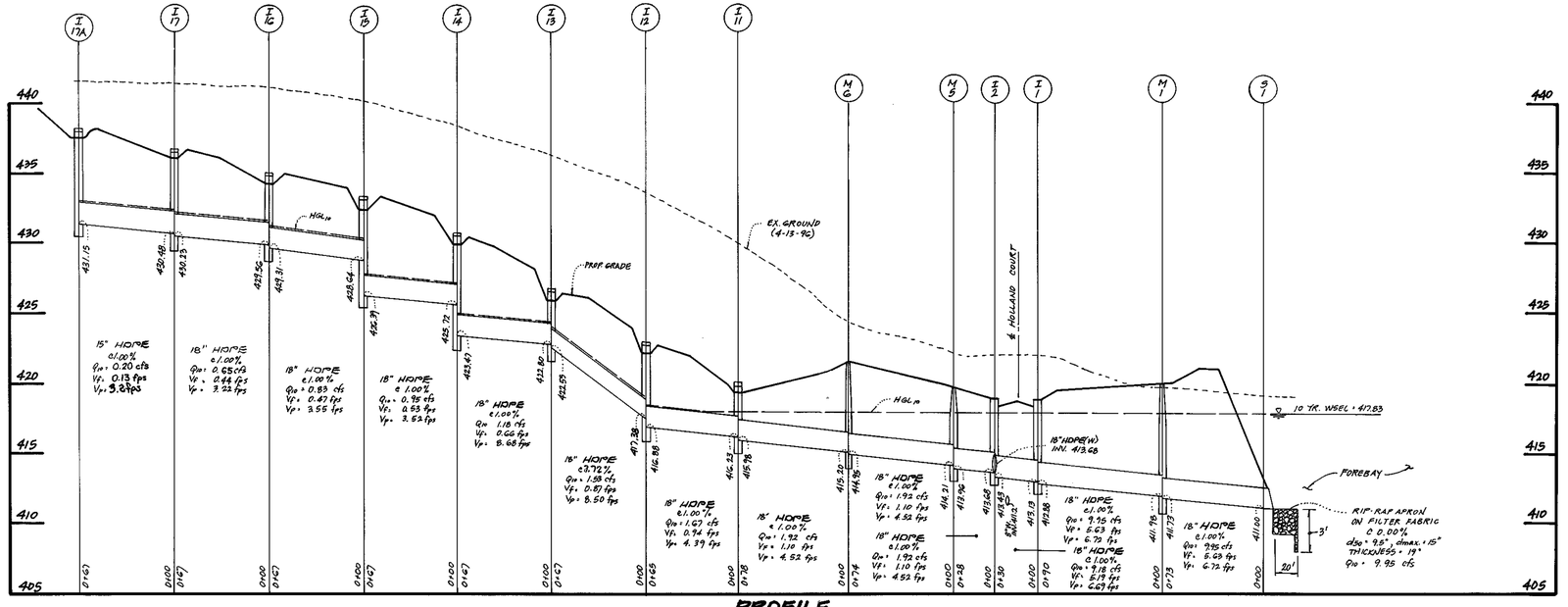
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/23/98

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/22/98



PROFILES

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



PROFILE

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

NOTE: THIS SHEET SUPERSEDES THE PREVIOUSLY SIGNED ORIGINAL DRAWING.

STORM DRAIN PROFILES
LOTS 1 THRU 36

CEDAR ACRES

A RESUBDIVISION OF LOTS 3,4 AND 5

ZONED: RSC

TAX MAP NO. 35 PARCEL 38

FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SHEET 7 OF 9

FISHER, COLLINS & CARTER, INC.
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30538FP6A.DWG

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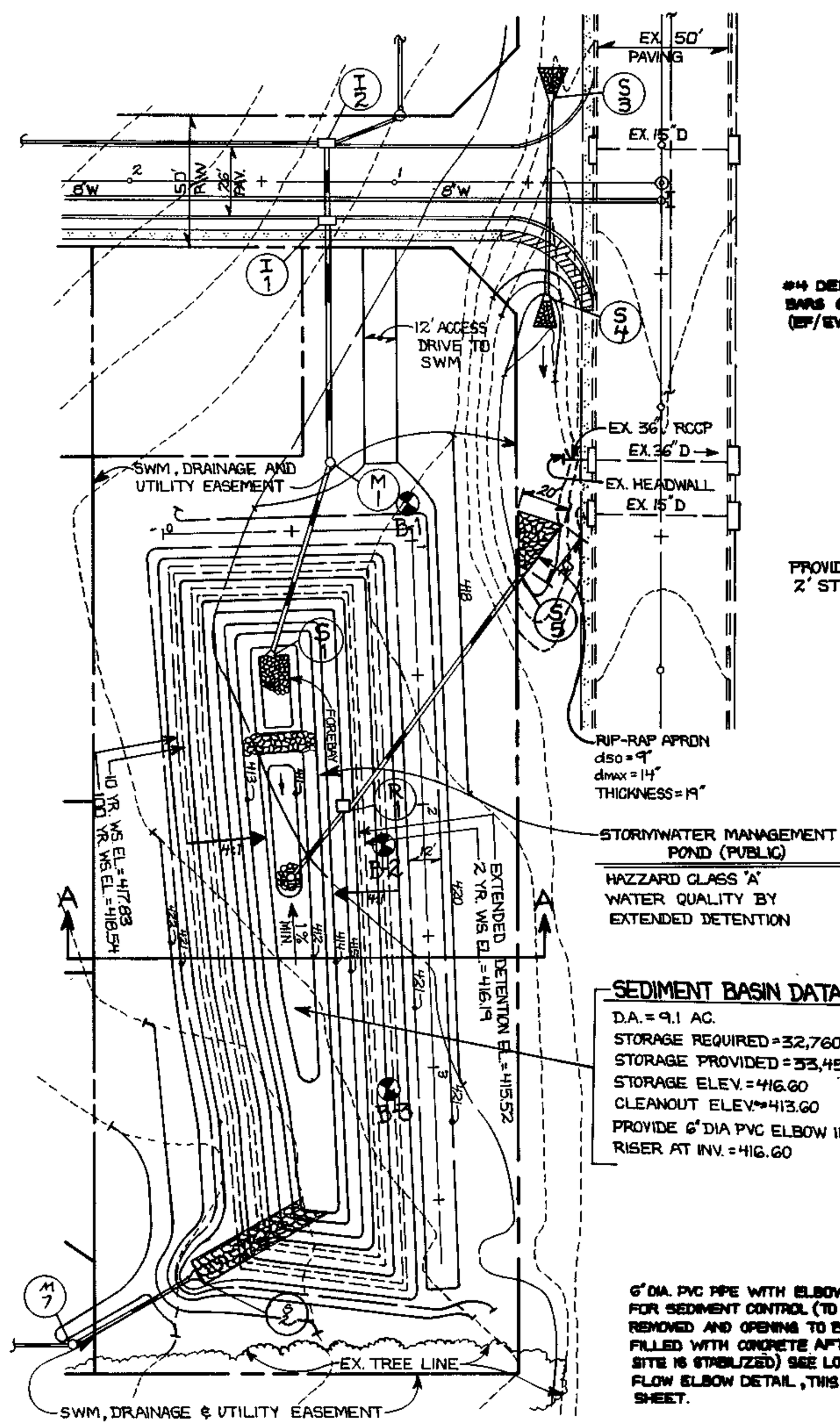


PLAN

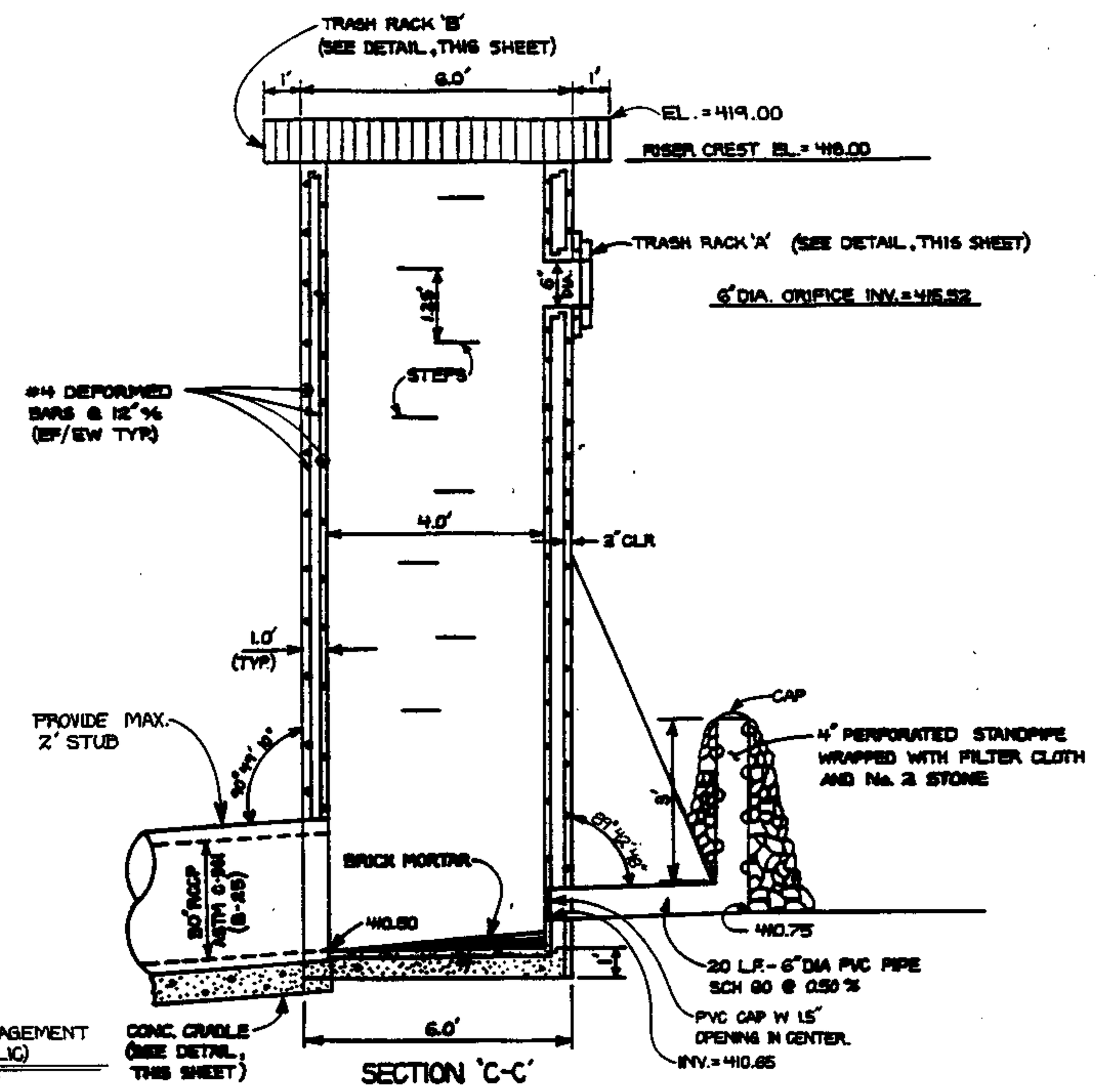
SCALE: 1"=50'

SEDIMENT BASIN DATA

D.A. = 9.1 AC.
STORAGE REQUIRED = 32,760
STORAGE PROVIDED = 53,450
STORAGE ELEV. = 416.60
CLEANOUT ELEV. = 413.60
PROVIDE 6" DIA PVC ELBOW IN RISER AT INV. = 416.60

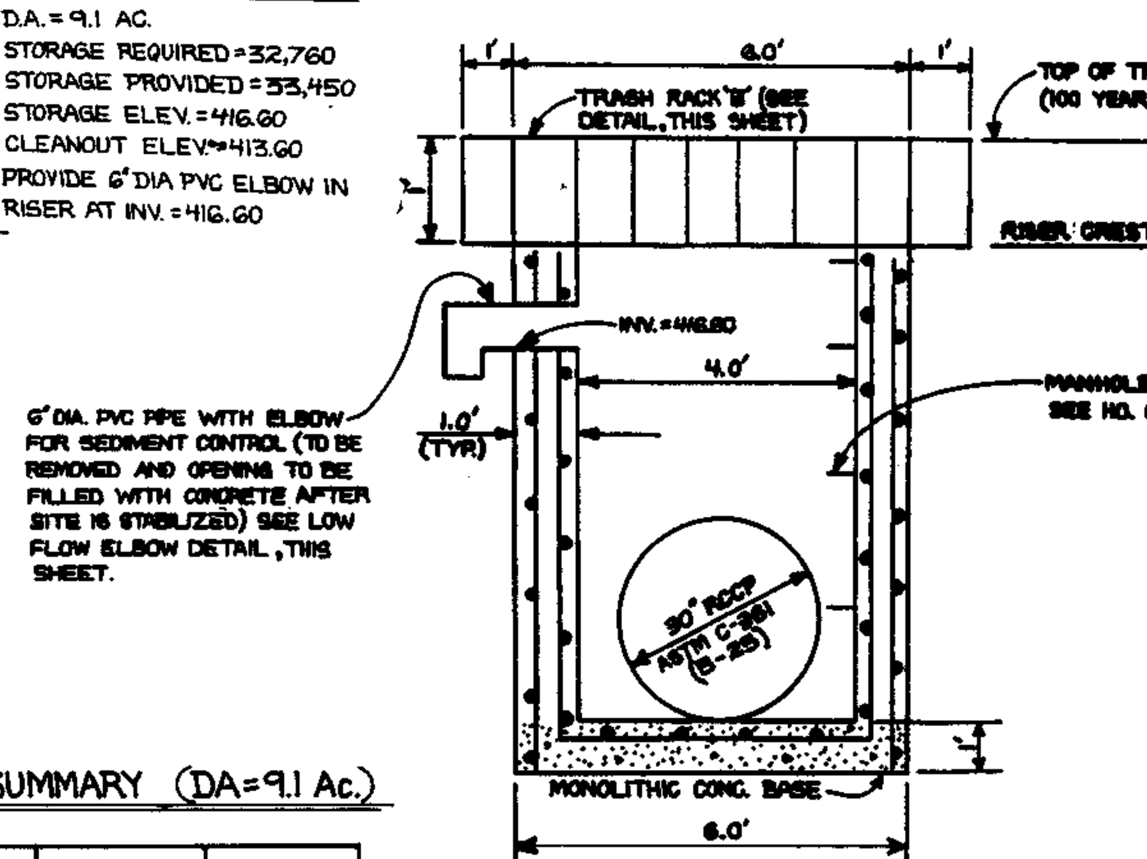
STORMWATER MANAGEMENT POND SUMMARY (DA=9.1 Ac.)

STORM EVENT	EXISTING CONDITION DISCHARGE (CFS)	DEVELOPED CONDITION DISCHARGE (CFS)	ALLOWABLE RELEASE (CFS)	ACTUAL RELEASE (CFS)	STORAGE ELEVATION (FT)	STORAGE (CF)
2 YEAR	1.86	11.04	1.86	0.33	416.19	27,474
10 YEAR	10.72	25.61	10.72	1.54	417.83	51,385
100 YEAR	24.08	43.09	N/A	21.28	418.54	64,540



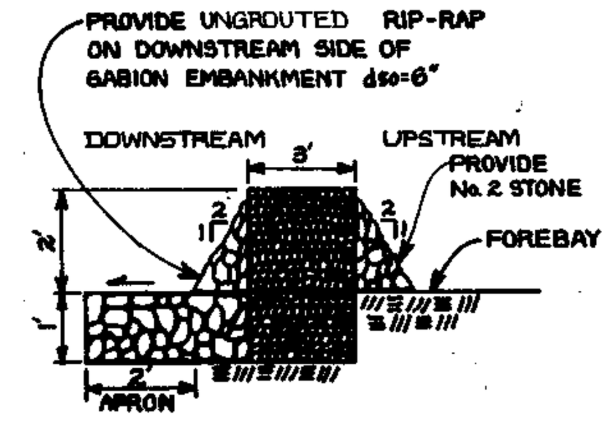
RISER DETAIL

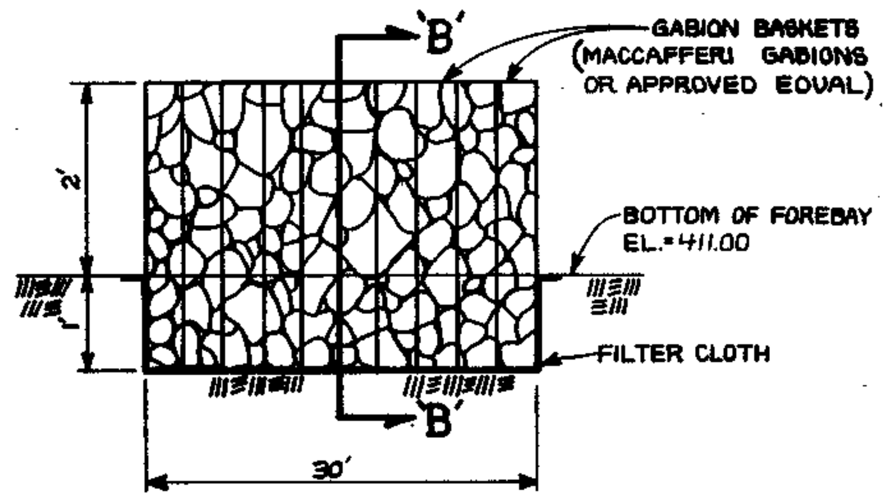
(NO SCALE)



RISER DETAIL

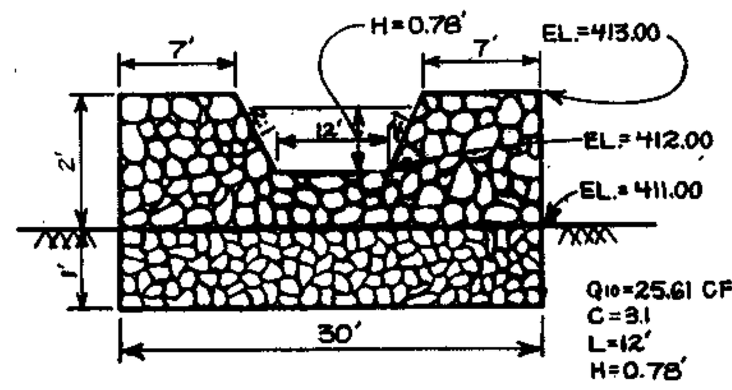
(NO SCALE)





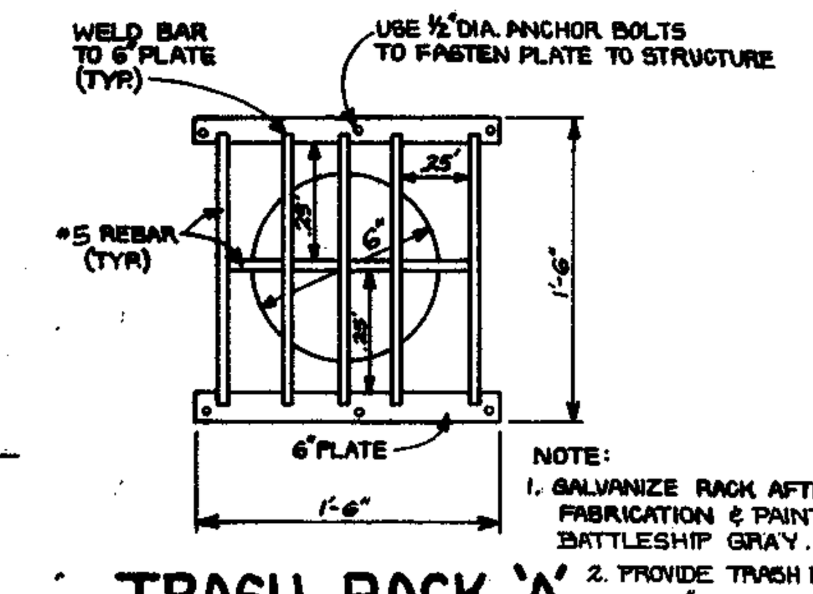
GABION FILTER AT FOREBAY

(NO SCALE)



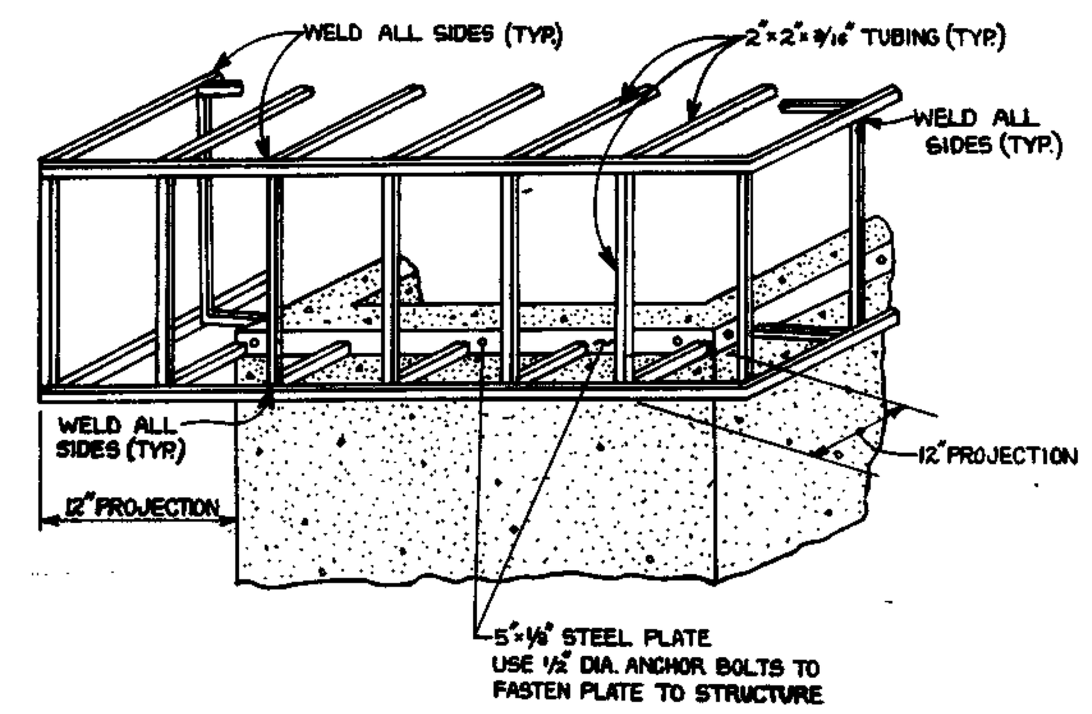
WEIR SECTION AT FOREBAY

(NO SCALE)



TRASH RACK 'A'

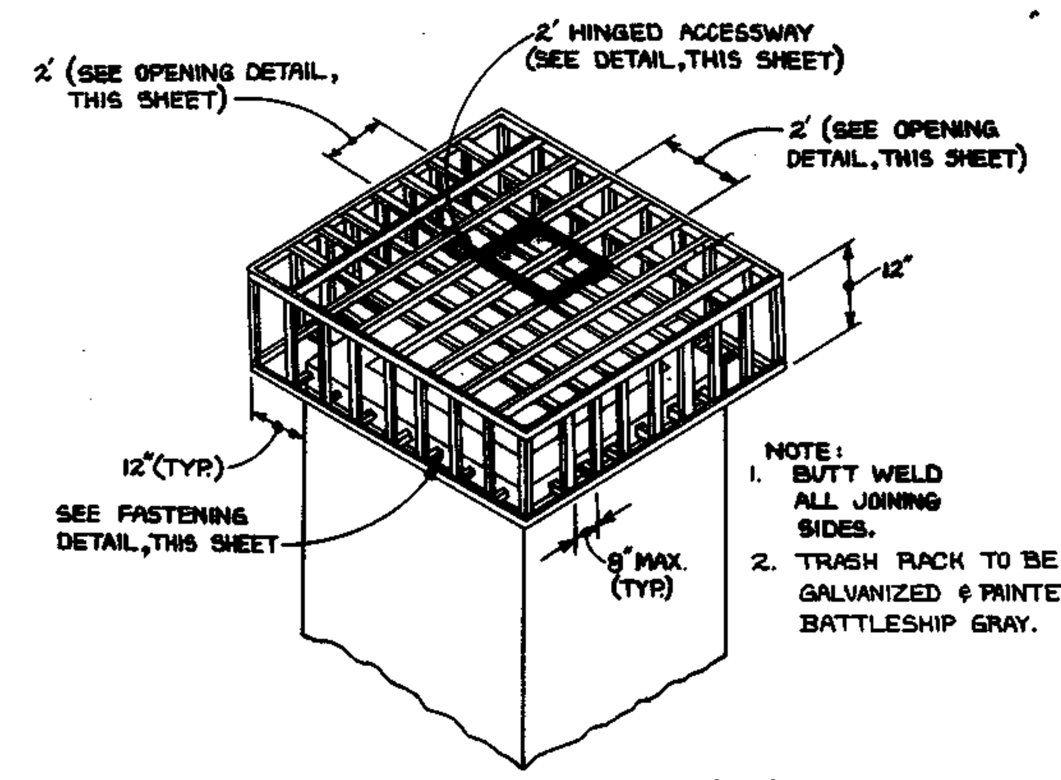
(NO SCALE)



FASTENING DETAIL

(NO SCALE)

NOTE: (CONTRACTOR SHALL)
1. FIELD MEASURE THE STRUCTURE DIMENSIONS FOR EXACT FITTING OF TRASH RACK.
2. GALVANIZE ENTIRE TRASH RACK.
3. ALL NUTS AND BOLTS SHALL BE GALVANIZED.



TRASH RACK 'B'

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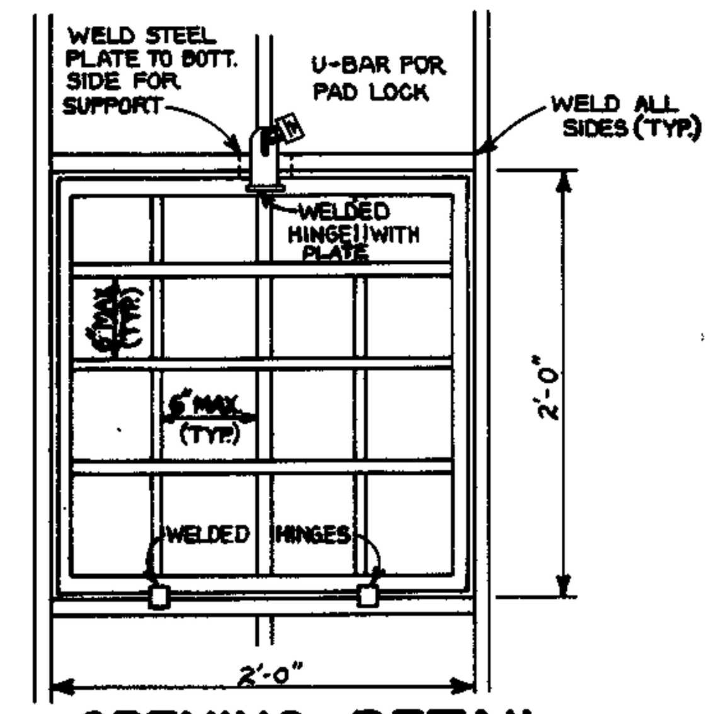

OPENING DETAIL

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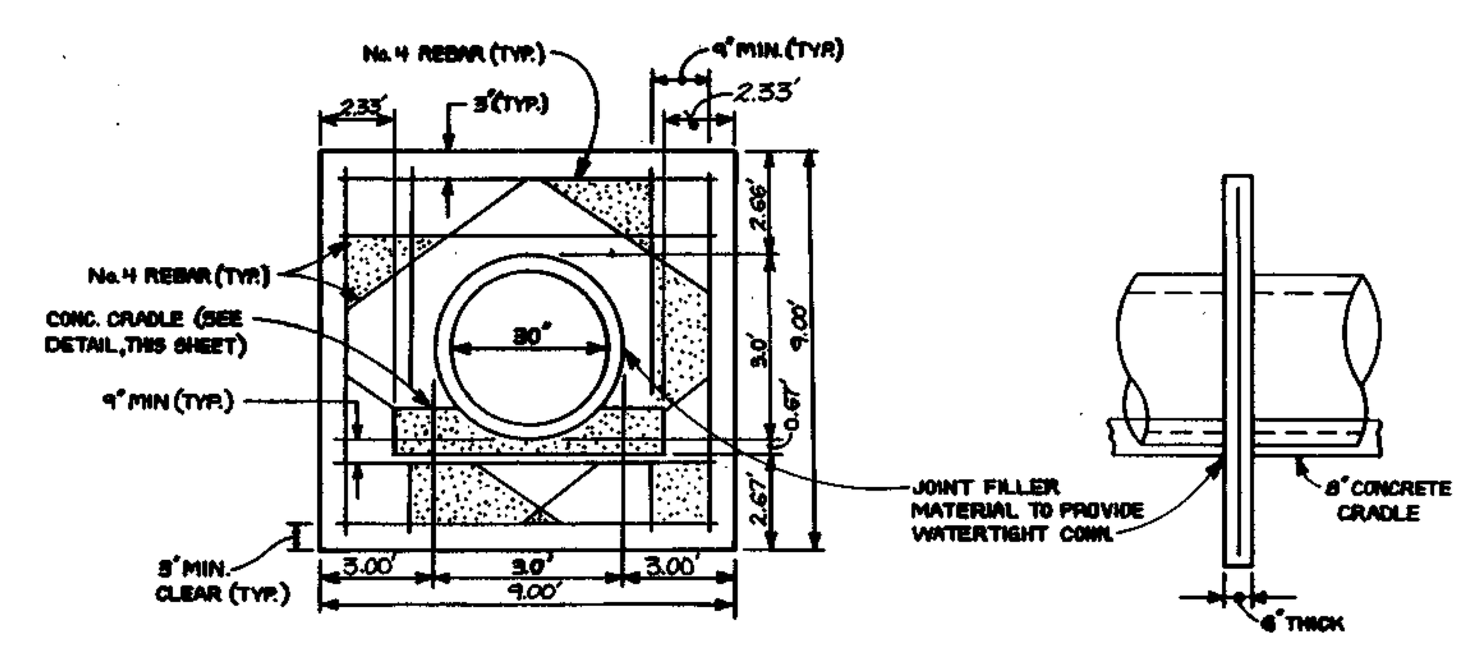
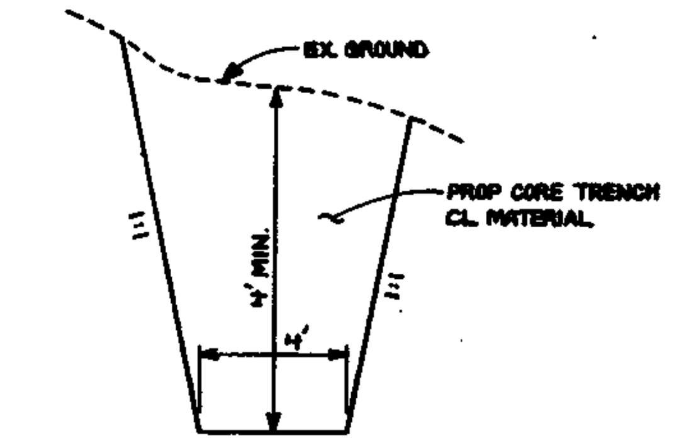


ANTI-SEEP COLLAR DETAIL

(NO SCALE)



CUT-OFF TRENCH DETAIL

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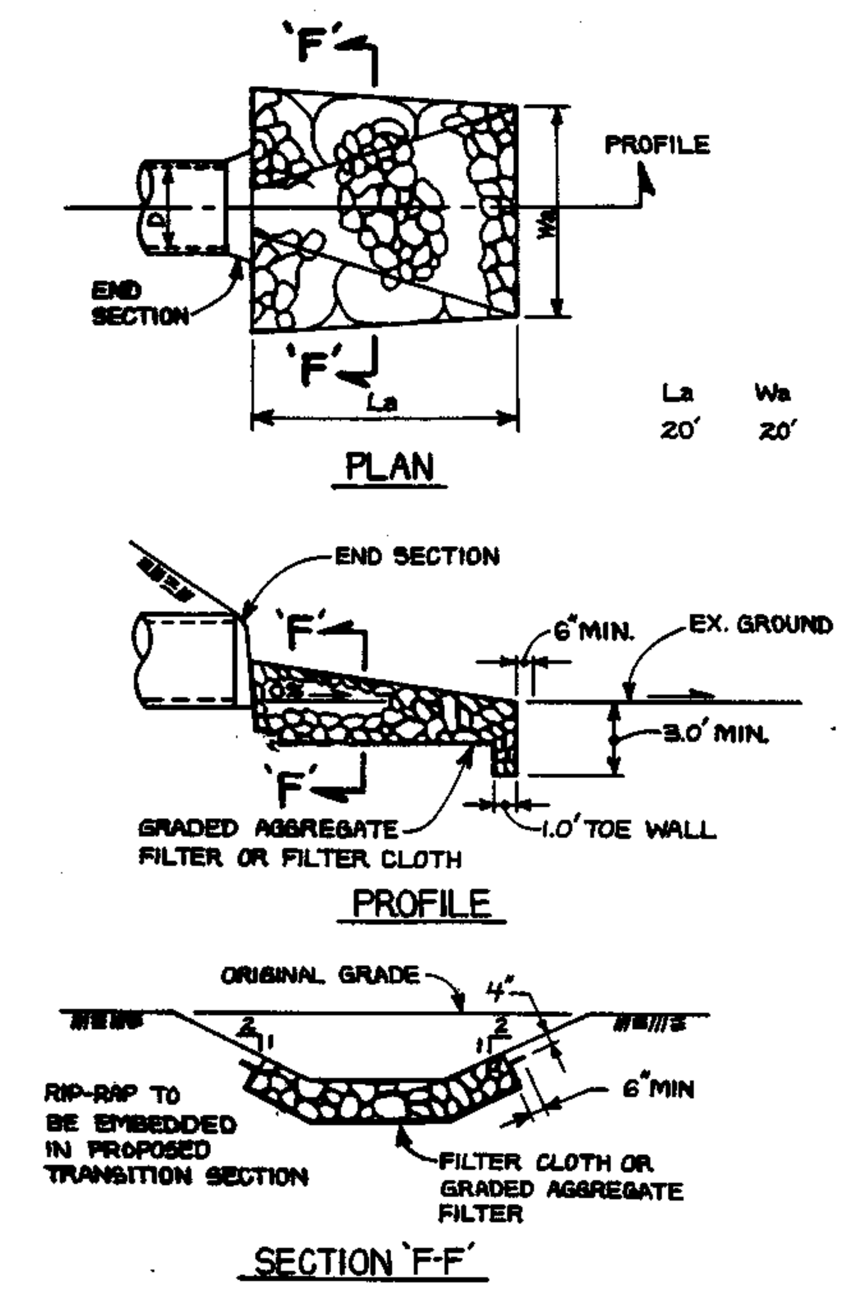
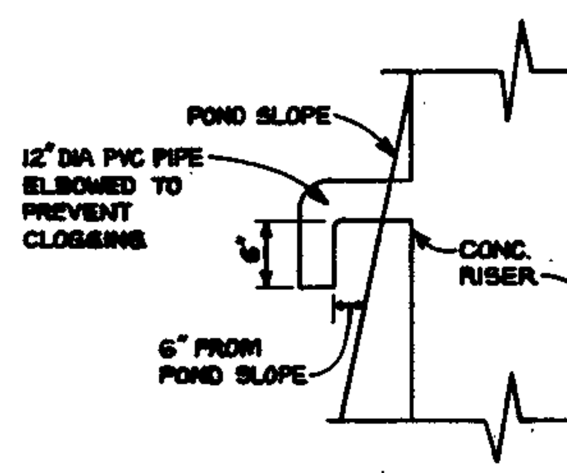


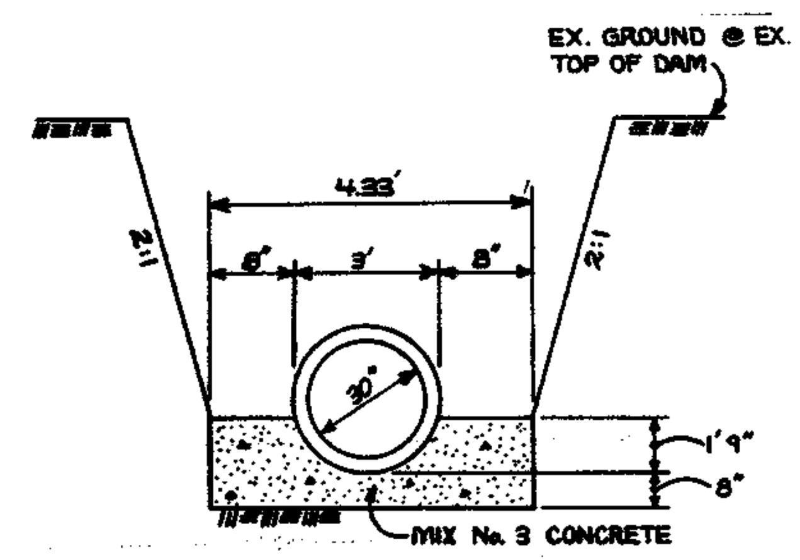
RIP-RAP OUTLET DETAIL

(NO SCALE)



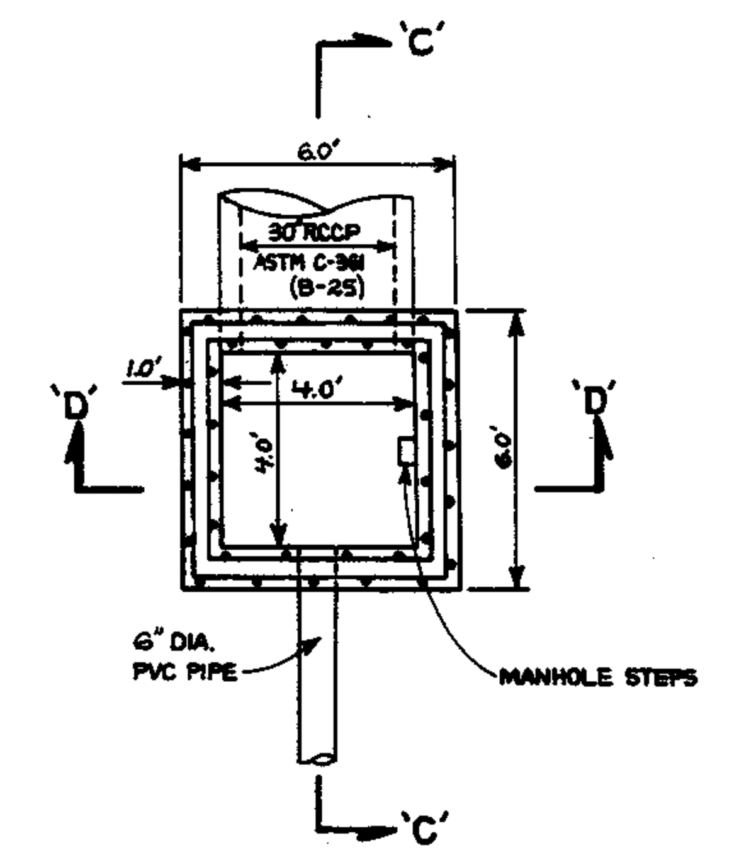
LOW FLOW ELBOW DETAIL

(NO SCALE)



CONCRETE CRADLE DETAIL

(NO SCALE)



RISER DETAIL

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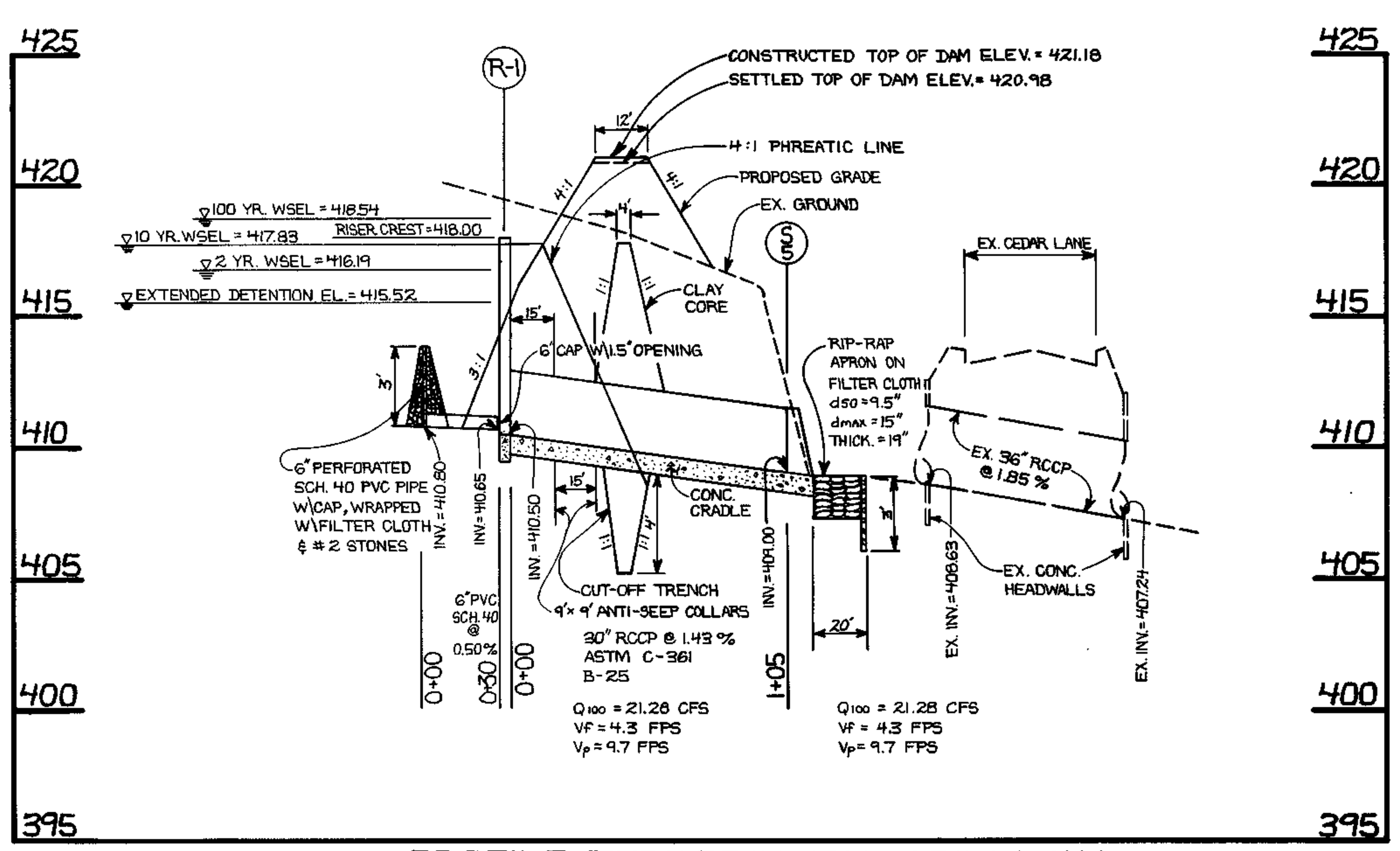
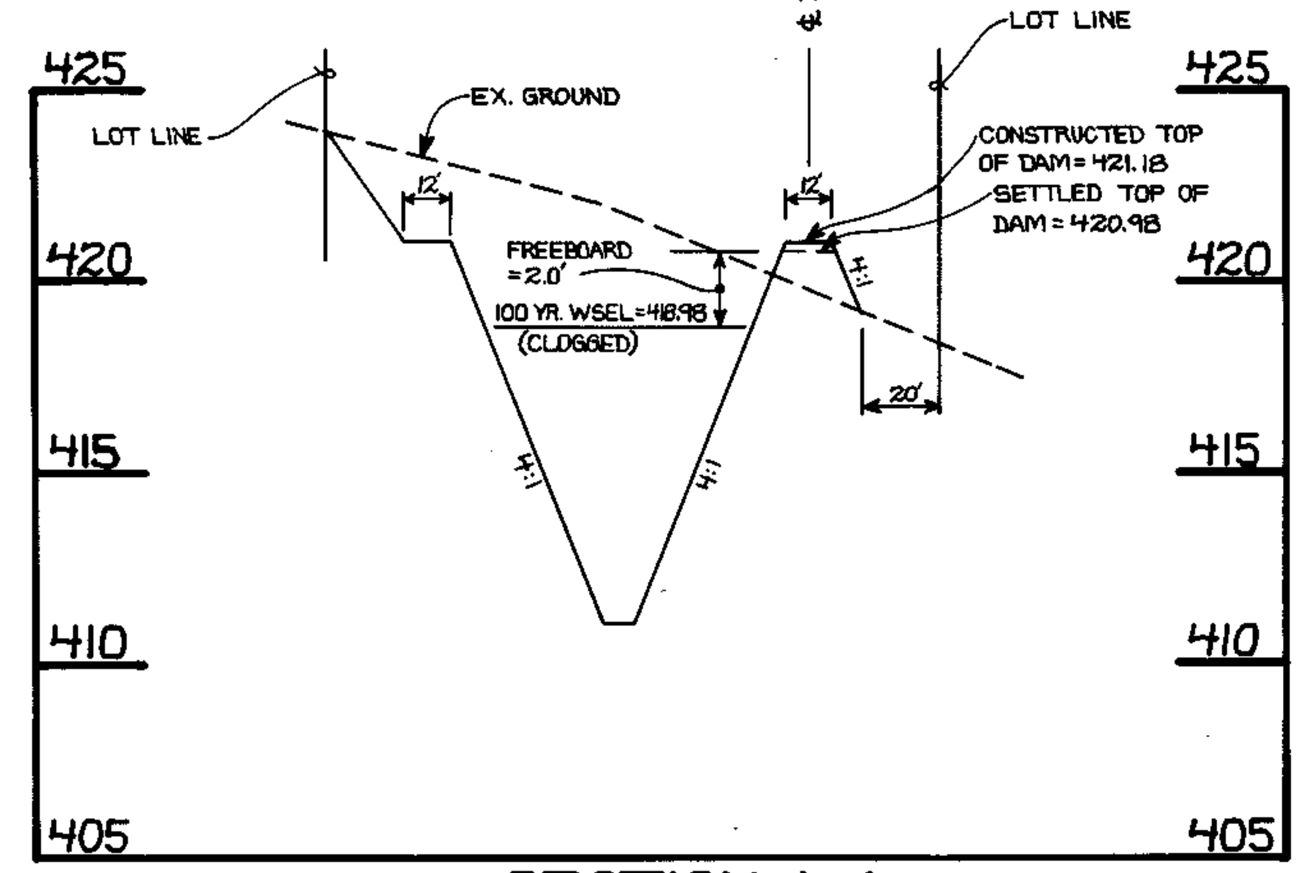


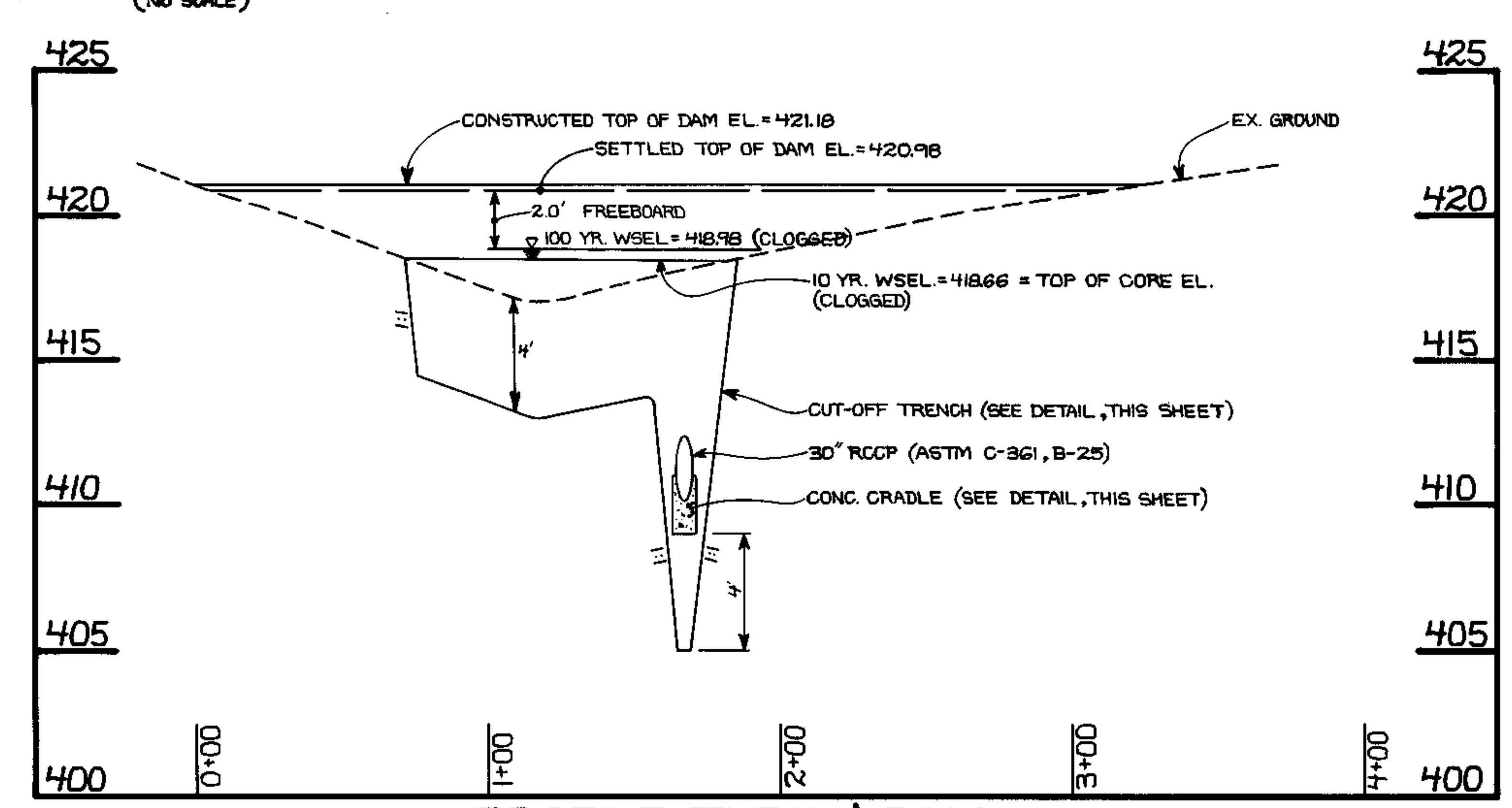
PROFILE THRU PRINCIPAL SPILLWAY

SCALE: 1"=50' HORZ.
1"=5' VERT.



SECTION A-A

SCALE: 1"=50' HORZ.
1"=5' VERT.



PROFILE THRU ℄ DAM

SCALE: 1"=50' HORZ.
1"=5' VERT.

By The Developer:

"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

[signature] 4/23/97
Signature Of Developer — Date

PAT BYRNE
Printed Name Of Developer

By The Engineer:

"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

Jayesh Pancholi 4-24-97
Signature Of Engineer — Date

JAYESH V. PANCHOLI
Printed Name Of Engineer

These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control.

Cheryl Simmons 8/12/97
USDA-Natural Resources Conservation Service — Date

OWNER AND MAINTENANCE SCHEDULE OF HOME OWNERS ASSOCIATION OWNED AND MAINTAINED STORMWATER MANAGEMENT FACILITY WET POND.

HOMEOWNERS ASSOCIATION'S MAINTENANCE RESPONSIBILITIES:

1. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MIN. OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES, AND MAINTENANCE ACCESS SHOULD BE MOWED, AS NEEDED.
2. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
3. WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, SEDIMENT SHOULD BE REMOVED FROM THE POND. APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS IS NEEDED.

OPERATION AND MAINTENANCE SPECIFICATIONS

I HEREBY CERTIFY THAT I WILL OPERATE AND MAINTAIN THE COMPLETED POND IN ACCORDANCE WITH THE FOLLOWING:

1. PERIODIC INSPECTIONS OF THE FACILITY WILL BE MADE TO IDENTIFY POTENTIAL PROBLEMS THAT MAY AFFECT ITS SAFETY. THESE INSPECTIONS WILL BE MADE AFTER PERIODS OF HEAVY RAINFALL AND AT LEAST TWICE ANNUALLY. INSPECTION REPORTS SHALL BE KEPT UNTIL THE NEXT SUBSEQUENT INSPECTION. INSPECTION ITEMS TO BE LOOKED AT INCLUDE:
   - A) SPILLWAY AND OUTLET WORKS;
   - B) RIP-RAP;
   - C) VEGETATIVE COVER;
   - D) CRACKS IN THE FILL;
   - E) SLOPE FAILURES; AND
   - F) SEEPAGE AND OTHER SIGNS OF DISTRESS.
2. PROBLEMS IDENTIFIED DURING INSPECTIONS WILL BE PROMPTLY CORRECTED. MAJOR PROBLEMS WILL BE BROUGHT TO THE ATTENTION OF THE SOIL CONSERVATION DISTRICT AND THE DAM SAFETY DIVISION OF THE MARYLAND WATER RESOURCES ADMINISTRATION. AS A VERY MINIMUM, GRASSY VEGETATION WILL BE MAINTAINED IN A DENSE AND HEALTHY STATE, AND WOODY VEGETATION WILL NOT BE PERMITTED TO GROW ON THE EMBANKMENT.

NOTES :

1. CONCRETE SHALL CONFORM TO THE MARYLAND D.O.T. S.H.A. STANDARD SPEC'S FOR CONSTRUCTION AND MATERIALS, 1987 MIX NO. 6, EXCEPT THAT TY. III CEMENT AND A.S.T.M. C 33 NO. 8 COARSE AGG. SHALL BE USED.
2. WELDED WIRE FABRIC SHALL CONFORM TO A.S.T.M. A-185, LAP SPLICES SHALL BE A MIN. OF 1 1/2 TRANSVERSE WIRE SPACES. WIRE CAGES SHALL BE TACK WELDED TO PRODUCE A RIGID UNIT.
3. ALL PIPES CONNECTING TO RISER SHALL HAVE WATER-TIGHT CONNECTIONS.
4. RISER SHALL BE CONSTRUCTED IN ONE PIECE.

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

Robert W. [signature] 8/12/97
Howard Soil Conservation District — Date

Approved: Department Of Public Works

[signature] 8-26-97
Chief Bureau Of Highways — Date

Approved: Department Of Planning And Zoning

Cindy Hamilton 9/12/97
Chief, Division Of Land Development — Date

[signature] 9/3/97
Chief, Development Engineering Division — Date

STORMWATER MANAGEMENT PLAN
NOTES & DETAILS

CEDAR ACRES

LOTS 1 THRU 36
A RESUBDIVISION OF LOTS 3, 4 AND 5

ZONED: RSC
TAX MAP No. 35 — PARCEL 38
FIFTH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND
SCALE: 1 = 50 — DATE: APRIL 22, 1997
SHEET: 8 OF 9

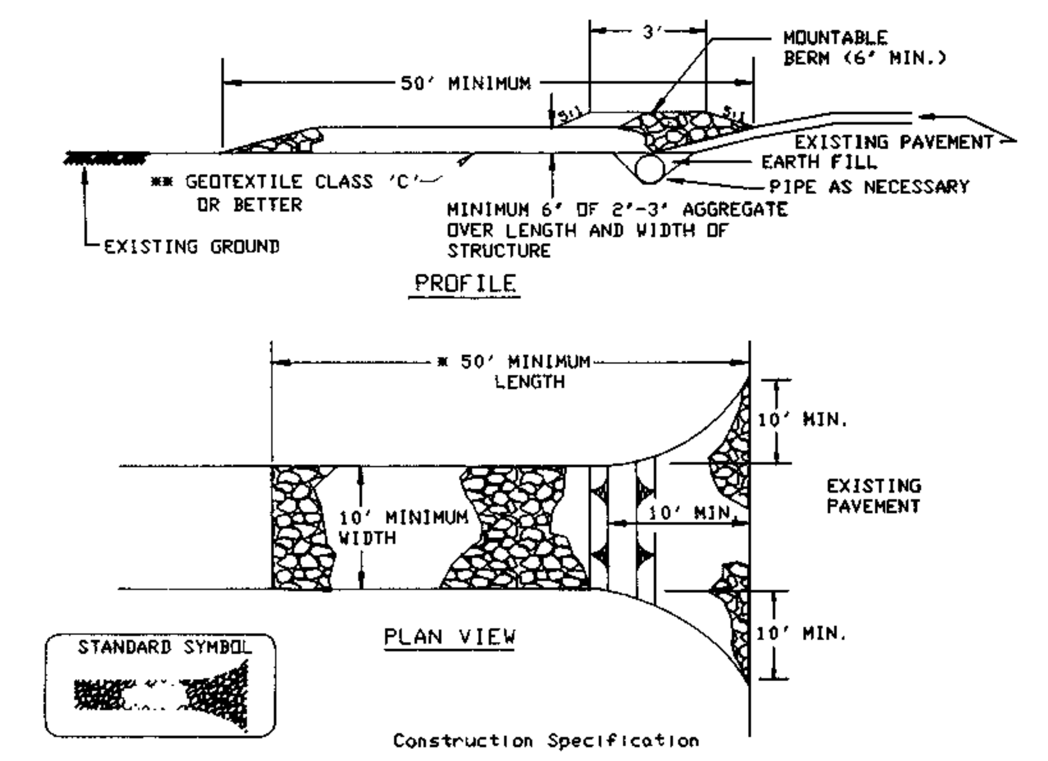
FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

STATE OF MARYLAND — JAYESH VITTHALBHAI PANCHOLI — No. 21147 — REGISTERED PROFESSIONAL ENGINEER

OWNER
BENJAMIN K. & ELSIE MAE BASSLER
10739 MARYLAND RTE. 99
WOODSTOCK, MARYLAND 21163

DEVELOPER
CHADSWORTH HOMES INC.
P.O. BOX 6641
McLEAN, VIRGINIA 22106-6641

F-97-115



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.

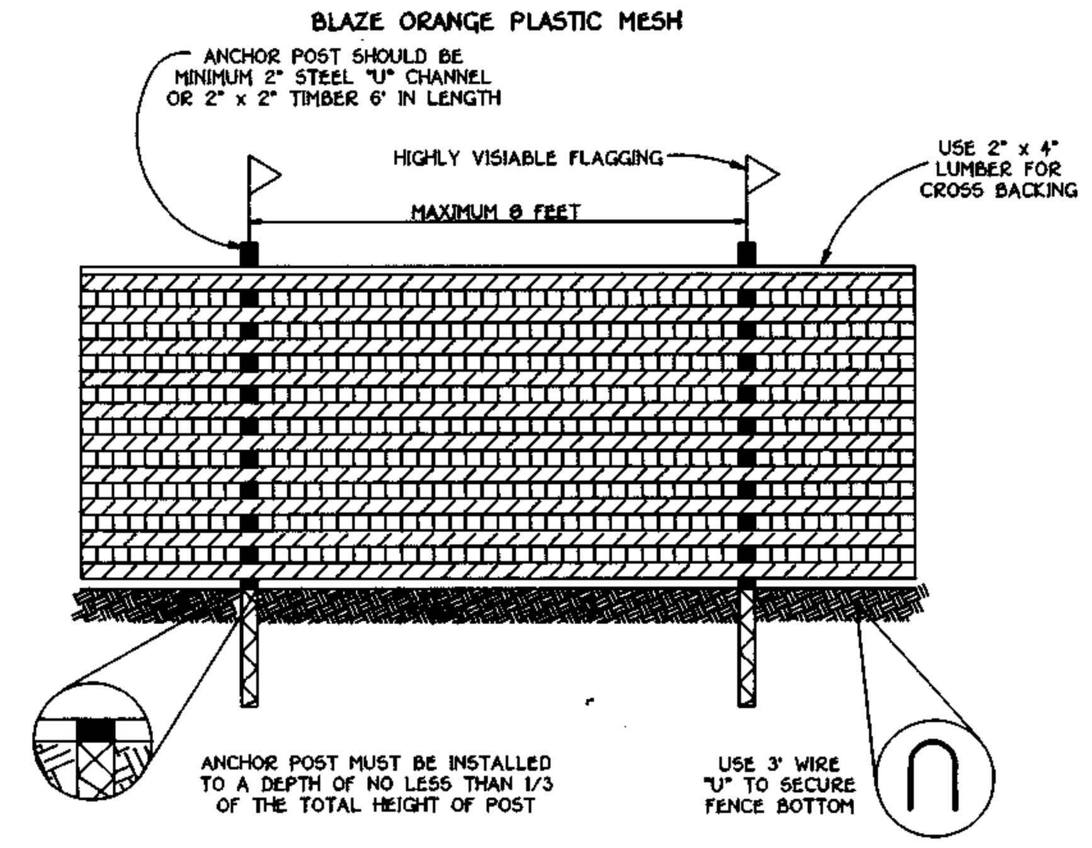
4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6' deep over the length and width of the entrance.

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.

STABILIZED CONSTRUCTION ENTRANCE - 2

NOT TO SCALE

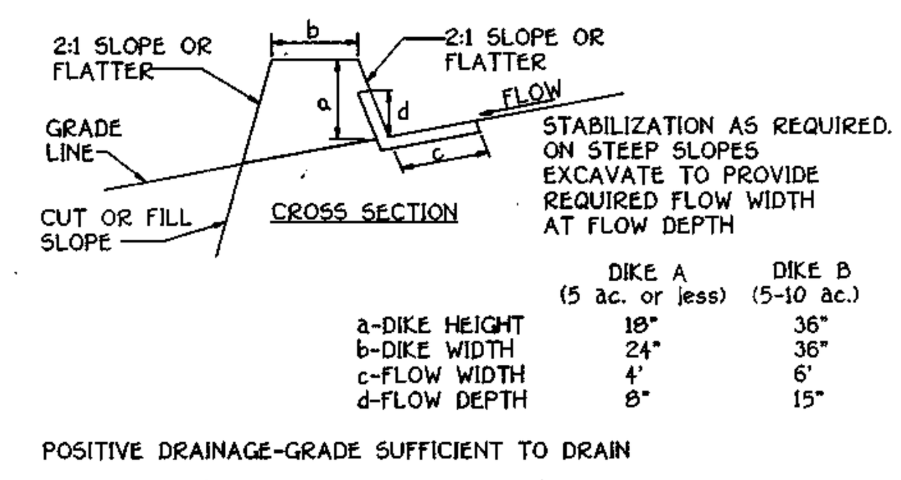


NOTES:

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.

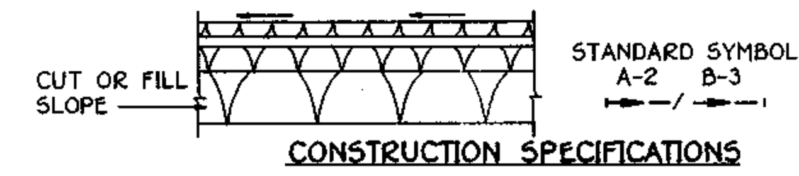
TREE PROTECTION DETAIL

NOT TO SCALE



	DIKE A (5 ac. or less)	DIKE B (5-10 ac.)
a-DIKE HEIGHT	18"	36"
b-DIKE WIDTH	24"	36"
c-FLOW WIDTH	4'	6'
d-FLOW DEPTH	8"	15"

POSITIVE DRAINAGE-GRADE SUFFICIENT TO DRAIN



CONSTRUCTION SPECIFICATIONS

1. ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
5. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. RUNOFF SHALL BE CONVEYED TO A SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT ADEQUATELY STABILIZED.
6. STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART BELOW.

FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1	.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE, OR EXCELSIOR; SOD; 2" STONE
3	5.1-8.0%	SEED WITH JUTE, OR SOD; 2" STONE	LINED RIP-RAP 4"-8"
4	8.1-20%	LINED RIP-RAP 4"-8"	ENGINEERING DESIGN

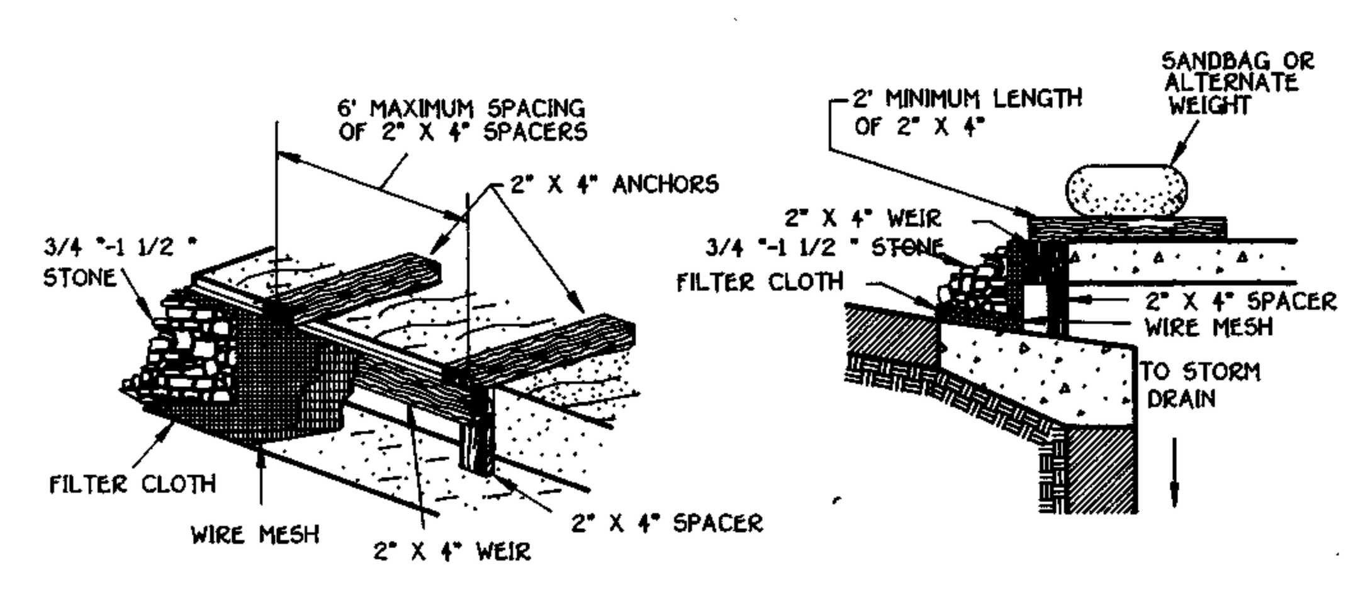
A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
B. RIP-RAP TO BE 4-8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.
C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.

7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

EARTH DIKE

NOT TO SCALE

DETAIL 23C - 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.

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] 4/23/97
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.

Jayesh Panchali 4-24-97
SIGNATURE OF ENGINEER DATE

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

Cheryl Simmons 8/12/97
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: Robert W. Ziehm 8/12/97
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

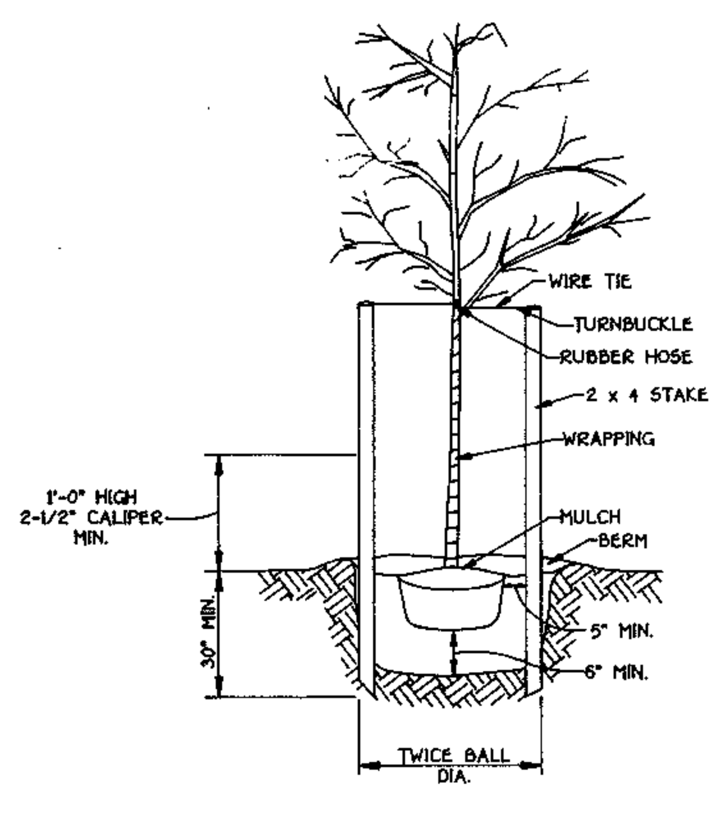
Cindy Hamilton 9/12/97
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[signature] 9/3/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Andrew M. [signature] 8-26-97
CHIEF, BUREAU OF HIGHWAYS DATE



NOTE: REMOVE BURLAP FROM TOP 1/3 OF BALL

TREE PLANTING

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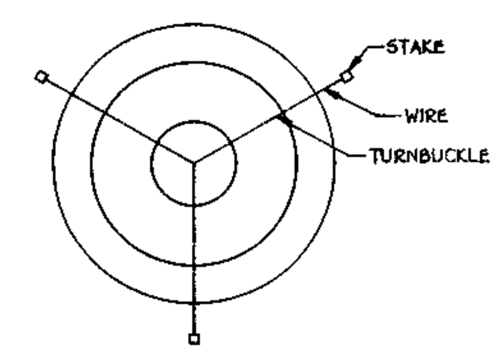

STAKING DETAIL

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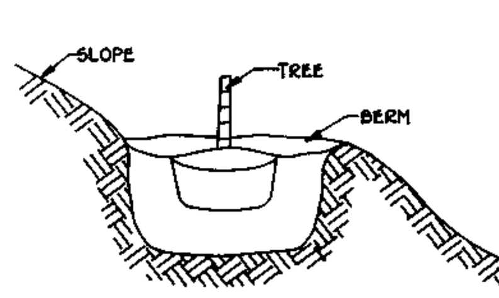


GRADING FOR PLANTING ON SLOPES

NOT TO SCALE

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.
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	8.54	ACRES
AREA DISTURBED	7.50	ACRES
AREA TO BE ROOFED OR PAVED	2.10	ACRES
AREA TO BE VEGETATIVELY STABILIZED	5.40	ACRES
TOTAL CUT	10,000	CU.YDS.
TOTAL FILL	10,000	CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION		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.

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.

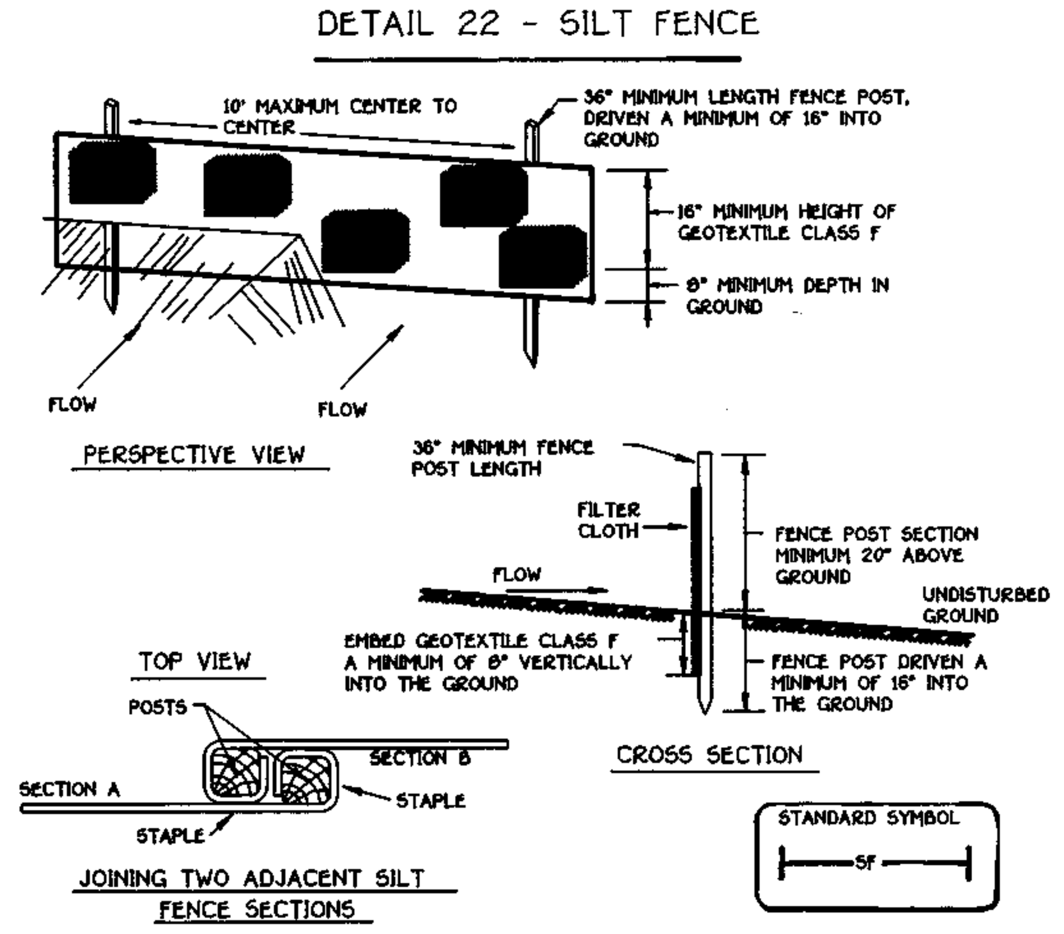
   Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.
   ii. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than 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; P205 (phosphorous); 200 lbs/ac; K20 (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 in the operation or 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 grading and placement of topsoil (if required) 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.

DETAIL 22 - SILT FENCE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" 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.

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT (1 DAY).
2. NOTIFY "MISS UTILITY" 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION DIVISION (410) 313-1870, 24 HOURS BEFORE STARING ANY WORK.
3. INSTALL ALL TREE PROTECTION FENCE FOR TREES TO BE UNDISTURBED (1 DAY).
4. INSTALL SEDIMENT CONTROL MEASURES, STONE CONSTRUCTION ENTRANCE, EARTH DIKES, SILT FENCE, INLET PROTECTIONS AND SEDIMENT BASIN.
5. GRADE SITE TO SUBGRADE, STABILIZE AND INSTALL STORM DRAINS (4 WEEKS).
6. 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.
7. SEDIMENT SHALL BE REMOVED FROM THE SEDIMENT BASIN, ONCE THE CLEANOUT ELEVATIONS HAVE BEEN REACHED. SEDIMENT MUST BE PLACED UPHILL FROM THE POND AREA.
8. INSTALL CURB AND GUTTER AND ROAD BASE COURSE (7 DAYS).
9. STABILIZE ALL DISTURBED AREAS AND OBTAIN PERMISSION FROM SEDIMENT CONTROL INSPECTORS TO PROCEED (2 DAYS).
10. CONVERT SEDIMENT BASIN TO THE PERMANENT STORMWATER MANAGEMENT POND (2 DAYS).
11. UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROL MEASURES NOT NEEDED AND FLUSH STORM DRAIN SYSTEM TO REMOVE TRAPPED SEDIMENT (2 DAYS).
12. ALL AREAS DISTURBED DUE TO THE REMOVAL OF SEDIMENT CONTROL; MEASURES SHALL BE GRADED AND STABILIZED BY PERMANENT SEEDING (2 DAYS).

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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10739 MARYLAND ROUTE 99
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DEVELOPER
CHADSWORTH HOMES, INC.
P.O. BOX 6641
MCLEAN, VIRGINIA 22106-6641

SEDIMENT CONTROL NOTES AND DETAILS
LOTS 1 THRU 36

CEDAR ACRES

A RESUBDIVISION OF LOTS 3,4 AND 5

ZONED: RSC
TAX MAP No. 35 PARCEL 38
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: APRIL 22, 1997
SHEET 9 OF 9

F-97-115

FINAL ROAD CONSTRUCTION, STORM DRAINAGE AND STORMWATER MANAGEMENT PLANS FOR LOTS 1 THRU 36

CEDAR ACRES

A RESUBDIVISION OF LOTS 3, 4 AND 5

HOWARD COUNTY, MARYLAND

ZONED R-SC

SHEET INDEX	
SHEET No.	SHEET
1	TITLE SHEET
2	HOLLAND COURT-PLAN & PROFILES
3	NORWAY COURT & OSLO COURT PLAN & PROFILE
4	STREET TREE, GRADING & SEDIMENT CONTROL PLAN
5	DRAINAGE AREA & LANDSCAPE PLAN
6 & 7	STORM DRAIN PROFILES
8	STORMWATER MANAGEMENT PLAN & DETAILS
9	SEDIMENT CONTROL NOTES & DETAILS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Cindy Hamilton TC — 9/12/97
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[signature] — 9/3/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE Ag

APPROVED: DEPARTMENT OF PUBLIC WORKS

Andrew M. Dancker HS — 8-26-97
CHIEF, BUREAU OF HIGHWAYS — DATE

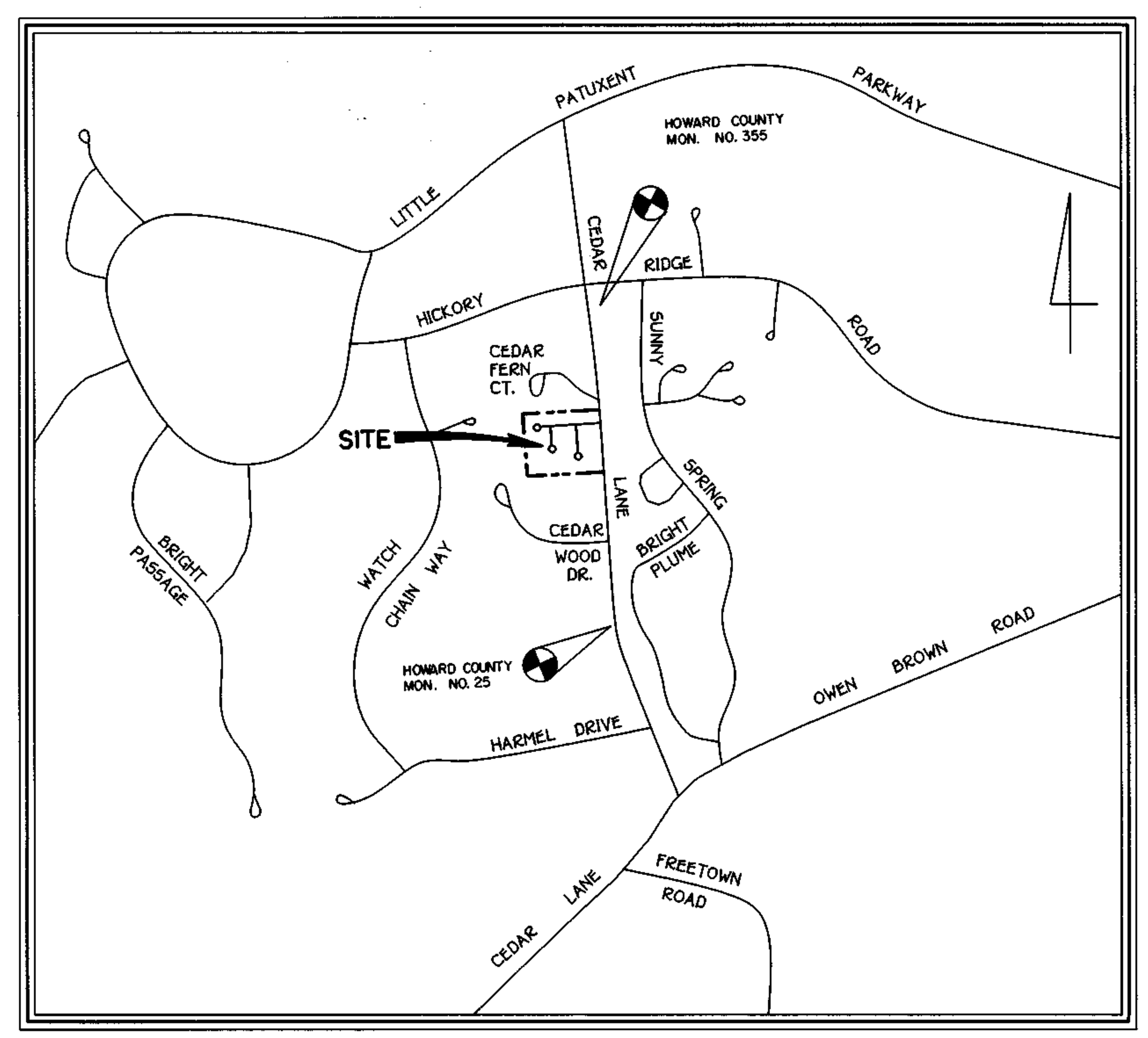
SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING	
LINEAR FEET OF PERIMETER	1128
NUMBER OF TREES REQUIRED: SHADE TREES EVERGREEN TREES	 19 24
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	YES 160'
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO
NUMBER OF TREES PROVIDED: SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION)	 19 24 -----

ROAD CLASSIFICATION CHART

ROAD	CLASSIFICATION	R/W WIDTH
HOLLAND COURT	LOCAL ROAD	50'
NORWAY COURT	LOCAL ROAD	50'
OSLO COURT	LOCAL ROAD	50'

TRAFFIC CONTROL SIGNS

STREET NAME	STATION	OFFSET	POSTED SIGN	SIGN CODE
HOLLAND COURT	0+60	15'L	STOP	R1-1
NORWAY COURT	0+40	15'L	STOP	R1-1
OSLO COURT	0+40	15'L	STOP	R1-1



VICINITY MAP
SCALE: 1"=1200'

GENERAL NOTES

1. UNLESS OTHERWISE NOTED, ALL CONSTRUCTION IS TO BE IN ACCORDANCE WITH THE FOLLOWING:
   a. HOWARD COUNTY STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION VOLUME IV.
   b. MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, AS AMENDED.
   c. SOIL CONSERVATION SERVICE 1983 MARYLAND STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
   d. SOIL CONSERVATION SERVICE 1993 MARYLAND STANDARDS AND SPECIFICATION FOR POND CONSTRUCTION (CODE 378)
   e. EXISTING UTILITIES ARE BASED ON FIELD RUN TOPOGRAPHY.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF 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. SITE DATA:
   LOCATION: TAX MAP:35 PARCEL NO.:38 ZONING:R-SC
   ELECTION DISTRICT NO.:5 TOTAL TRACT AREA:8.54 ACS.
   TOTAL NO. OF SINGLE FAMILY LOTS:33
5. TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ASPHALT.
6. THIS HORIZONTAL AND VERTICAL DATUM SHOWN ARE BASED ON THE FOLLOWING NAD'83 HOWARD COUNTY CONTROL STATIONS:
   HOWARD COUNTY MONUMENT 25 — N 559255.3513, E 1344683.9511 — ELEV. = 411.069
   HOWARD COUNTY MONUMENT 355 — N 562148.4423, E 1344554.5028 — ELEV. = 452.339
7. TOPOGRAPHIC SURVEY BY FISHER, COLLINS AND CARTER INC., APRIL, 1996, 2 FOOT CONTOUR INTERVAL.
8. WATER AND SEWER SYSTEMS ARE PUBLIC AND THEY ARE LOCATED IN THE PATAPSCO DRAINAGE AREA.
9. STORMWATER MANAGEMENT IS PROVIDED VIA A DETENTION POND AND EXTENDED DETENTION FOR WATER QUALITY. IT IS A PUBLIC FACILITY TO BE MAINTAINED BY HOME OWNERS ASSOCIATION.
10. WETLANDS AND FOREST STAND DELINEATIONS BY ECO-SCIENCE PROFESSIONALS, INC, COMPILED ON 3/8/1996.
11. TRAFFIC STUDY WAS PREPARED BY TRAFFIC GROUP AND APPROVED ON APRIL 8, 1996.
12. NOISE STUDY BY THE WILSON T. BALLARD CO. ON APRIL 18, 1996.
13. GEOTECHNICAL REPORT PREPARED BY I.T.E., INC. ON APRIL 12, 1996.
14. EXISTING UTILITIES WERE LOCATED BY ACTUAL FIELD MEASUREMENT WHERE POSSIBLE SUPPLEMENT BY INFORMATION OBTAINED FROM THE VARIOUS AGENCIES INVOLVED. WE CANNOT GUARANTEE THE ACCURACY OR THE COMPLETENESS OF THE INFORMATION RECEIVED. THE CONTRACTOR MUST VERIFY ALL SUCH INFORMATION TO THEIR OWN SATISFACTION PRIOR TO THE START OF THE CONSTRUCTION.
15. ANY MATERIAL OR EARTHWORK QUANTITIES SHOWN HEREON ARE PROVIDED FOR THE APPROVING AUTHORITIES USE ONLY.
16. PREVIOUS FILE NUMBERS:S-96-14 AND P-96-23.
17. STREET LIGHT PLACEMENT AND THE 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." A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.

STREET LIGHT CHART

DWG. No.	STREET NAME	STATION	OFF-SET	FIXTURE/POLE TYPE
2	HOLLAND COURT	0+38	26'R	150-WATT HPS VAPOR PENDANT FIXTURE (CUT-OFF) MOUNTED ON A 30 FOOT BRONZE FIBERGLASS POLE USING A 12' ARM
2	HOLLAND COURT	3+60 5+78	19'R 21'L	100-WATT "TRADITIONAIRE" H.P.S.VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
3	NORWAY COURT	L.P. STA. 1+58	3'	100-WATT "TRADITIONAIRE" H.P.S.VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
3	OSLO COURT	L.P. STA. 1+65	3'	100-WATT "TRADITIONAIRE" H.P.S.VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.

SCHEDULE A PERIMETER LANDSCAPE EDGE

PERIMETER	P-1	P-2	P-3	P-4	P-5	P-6	P-7	P-8	P-9
CATEGORY	Adjacent to Roadway	Adjacent to Perimeter Properties	Adjacent to Perimeter Properties	Adjacent to Perimeter Properties	Adjacent to Roadway	SIDE YARD	SIDE YARD	SIDE YARD	SIDE YARD
LANDSCAPE TYPE	B	A	A	A	B	B	B	B	B
LINEAR FEET OF PERIMETER	64.6'	652.7'	572.6'	655'	403'	39'	60'	60'	67'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	YES 10'	NO	NO	NO	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE IF NEEDED)	NO	NO	NO	NO	NO	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED									
SHADE TREES EVERGREEN TREES SHRUBS	1 2 -	10 - -	10 - -	10 - -	8 10 -	1 1 -	1 1 -	1 1 -	1 1 -

STATE OF MARYLAND — JAYESH VITTHALBHAI PANCHOLI — No. 21147 — REGISTERED PROFESSIONAL ENGINEER

Jayesh Pancholi — 4-24-97
JAYESH V. PANCHOLI — DATE

STATE OF MARYLAND — CHARLES J. CROVO, JR. — REGISTERED PROFESSIONAL ENGINEER

ASBUILT 2/28/01

TITLE SHEET
LOTS 1 THRU 36
CEDAR ACRES
A RESUBDIVISON OF LOTS 3, 4 AND 5
ZONING: RSC
TAX MAP No. 35 PARCEL 38
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: APRIL 22, 1997
SHEET 1 OF 9

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
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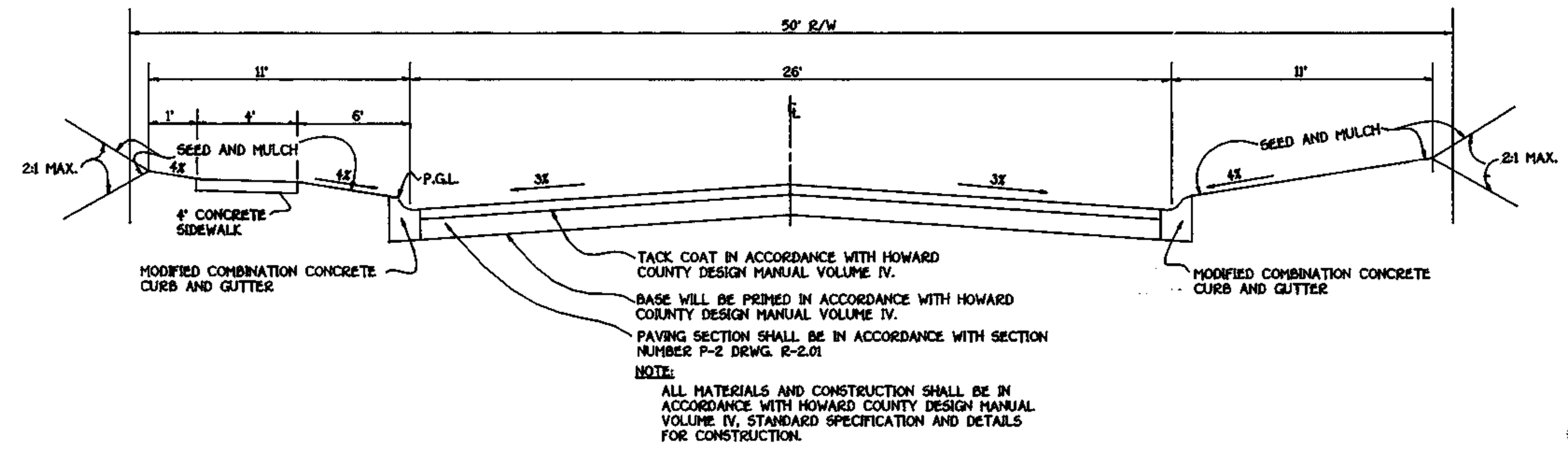
WOODSTOCK , MD. 21163

DEVELOPER
CHADSWORTH HOMES INC.
P.O. BOX 6641
McLEAN , VIRGINA 22106-6641

30538TTL.DWG

ASBUILT F-97-115

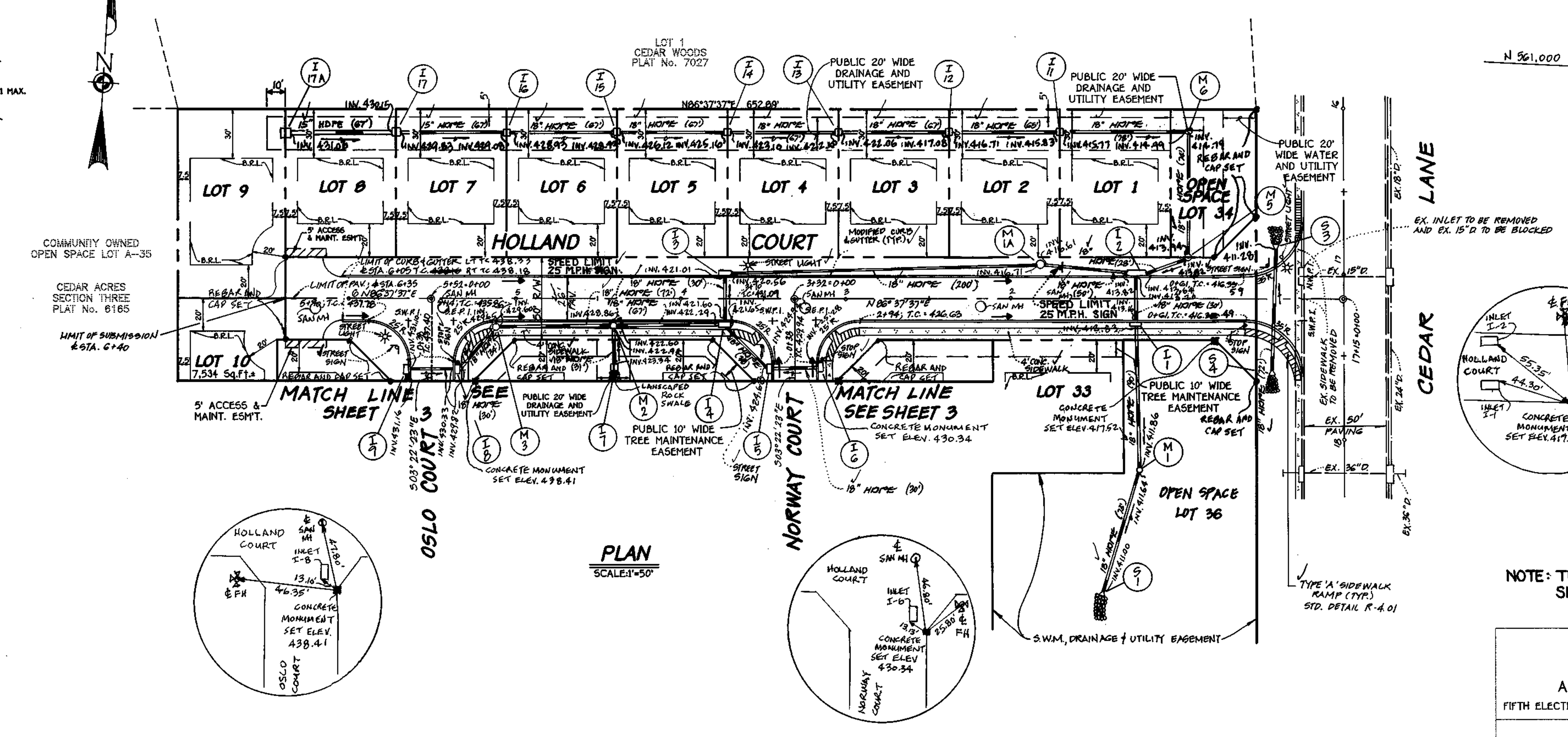


TYPICAL ROADWAY SECTION

NO SCALE

ROADWAY INFORMATION CHART

ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	℄ STATION LIMITS
HOLLAND COURT	LOCAL ROAD	30 M.P.H.	RSC	0+00 TO 6+35
NORWAY COURT	CUL-DE-SAC	25 M.P.H.	RSC	0+00 TO 3+17.47
OSLO COURT	CUL-DE-SAC	25 M.P.H.	RSC	0+00 TO 2+55.47



NOTE: THIS SHEET SUPERSEDES THE PREVIOUSLY SIGNED ORIGINAL DRAWING

CEDAR ACRES
SECTION 3, LOTS 1–36
A RESUBDIVISION OF LOTS 3,4 & 5
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

HOLLAND COURT
PLAN AND PROFILE

OWNER	DEVELOPER
BENJAMIN K. BASSLER AND ELSIE MAE BASSLER 10739 ROUTE 99 WOODSTOCK, MARYLAND 21163	CHADSWORTH HOMES, INC. P.O. BOX 6641 McLEAN, VIRGINIA 22106-6641

SCALE: AS SHOWN	DATE: JANUARY, 1998	DWG. NO. 2 OF 9
DES. JAYESH PANCHOLI	DRN. J.A.U.	CHK. C.J.C.

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

APPROVED: DEPARTMENT OF PLANNING AND ZONING

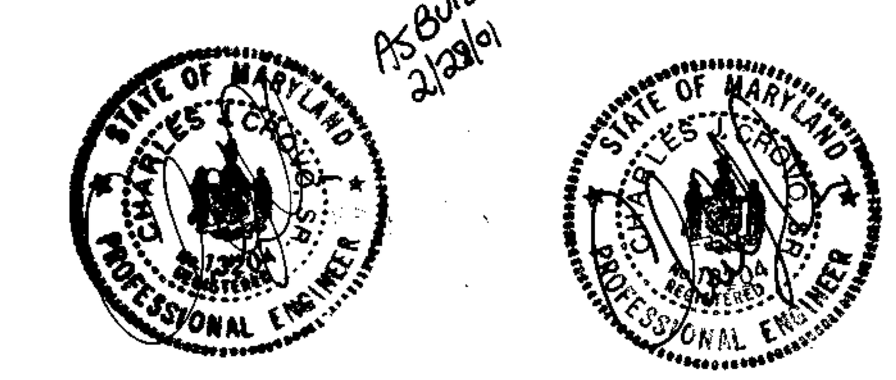
Cindy Hamilton 7/23/98
CHIEF, DIVISION OF LAND DEVELOPMENT ~~AND RESEARCH~~ DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

7/22/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

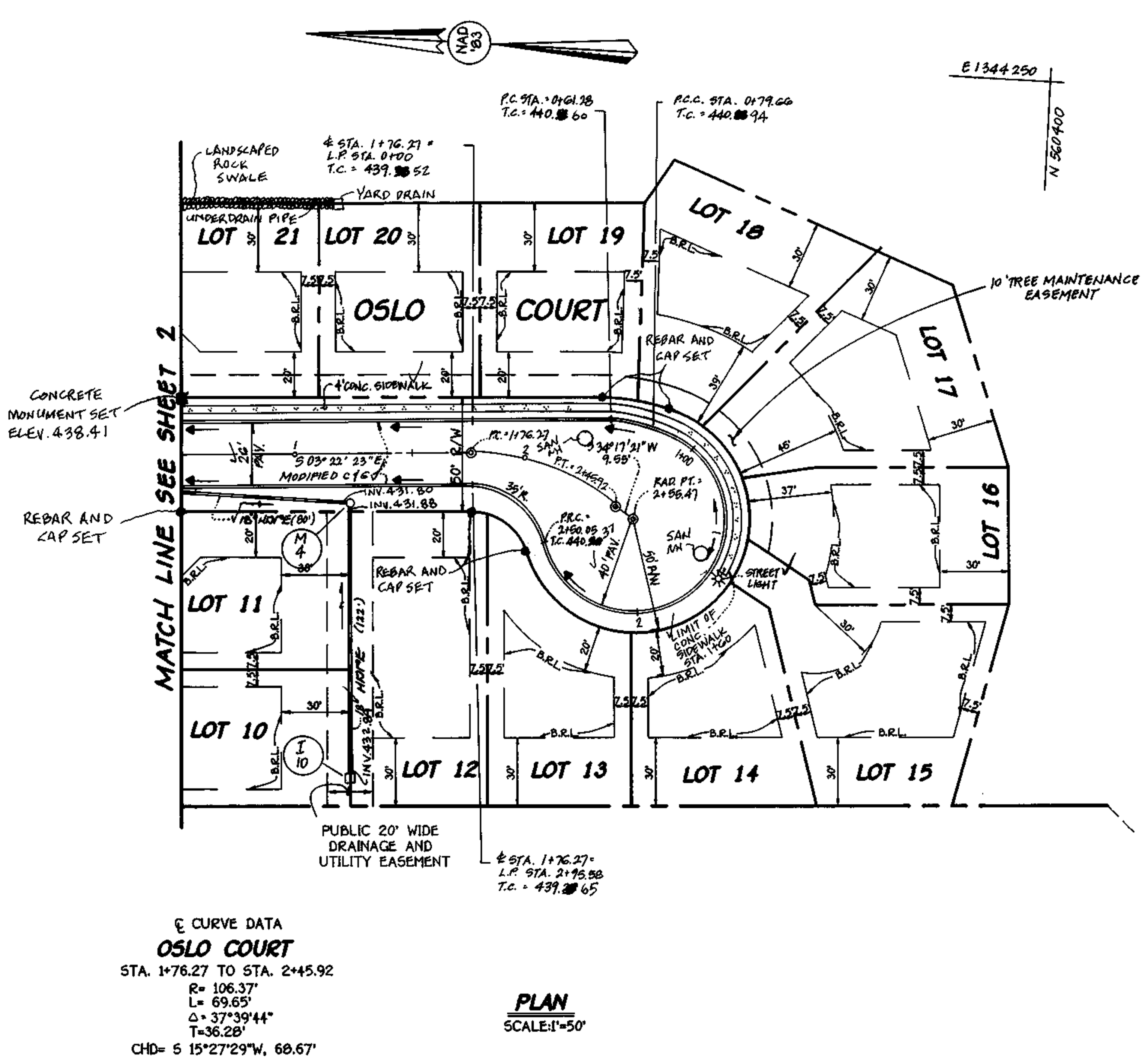
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

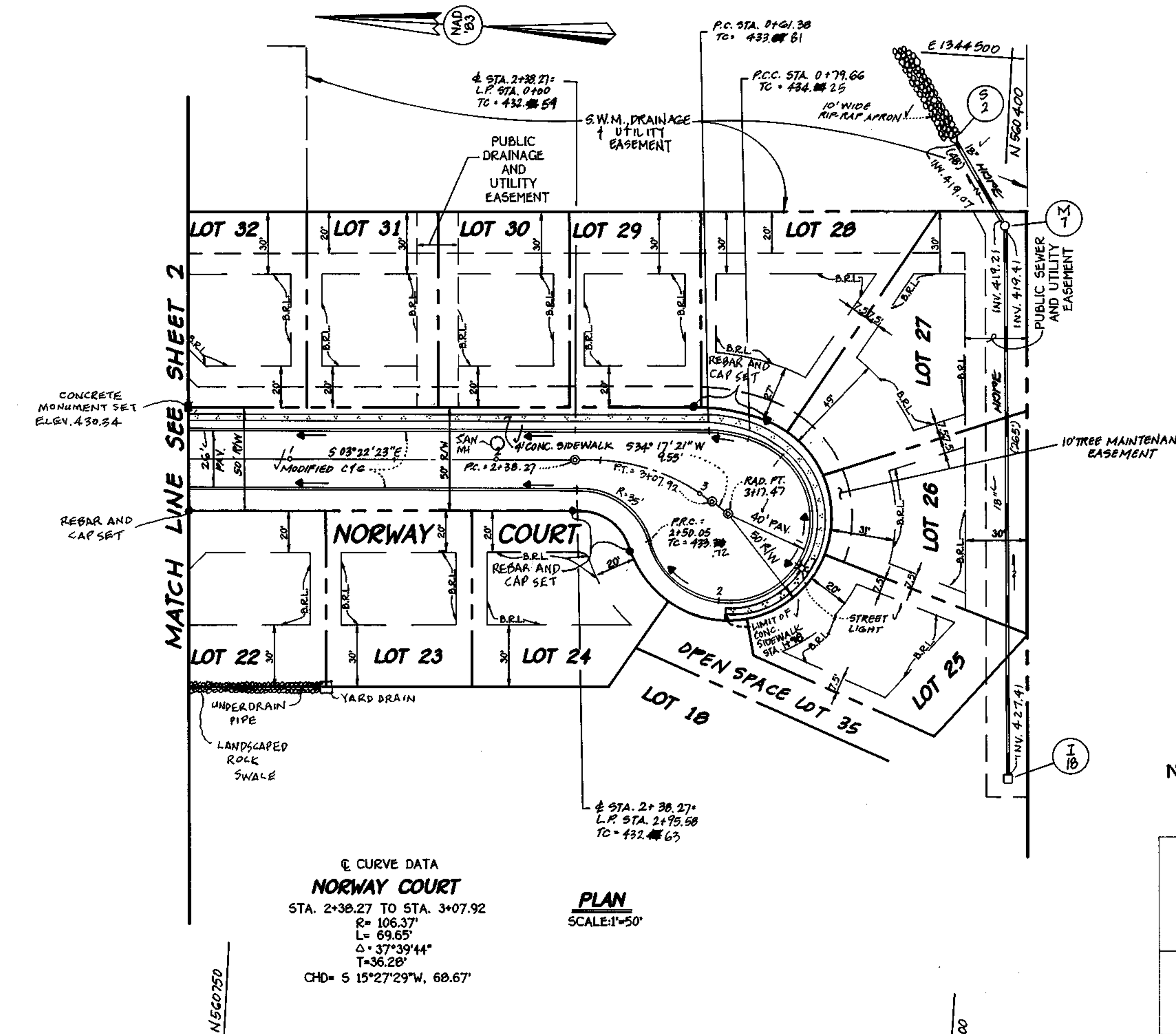
7-17-98
CHIEF, BUREAU OF HIGHWAYS DATE



AS BUILT 2/28/01

ASBUILT F97-115





NOTE: THIS SHEET SUPERSEDES THE PREVIOUSLY SIGNED ORIGINAL DRAWING

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/23/98

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/22/98

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 7-17-98

CEDAR ACRES
LOTS 1-36
A RESUBDIVISION OF LOTS 3,4 & 5

FIFTH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

OSLO COURT & NORWAY COURT
PLAN AND PROFILE

OWNER AND DEVELOPER

OWNER	DEVELOPER
BENJAMIN K. BASSLER AND ELSIE MAE BASSLER, 10739 ROUTE 99, WOODSTOCK, MARYLAND 21163	CHADSWORTH HOMES, INC., P.O. BOX 6641, McLEAN, VIRGINIA 22106-6641

SCALE: AS SHOWN	DATE: JAN. 1998	DWG. NO. 3 OF 9
DES. JAYESH PANCHOLI	DRN. J.A.U.	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 2/28/01

AS BUILT F97-115

By The Developer:

"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

Signature Of Developer — Date: 6/29/98

ALTON HOMES
Printed Name Of Developer

By The Engineer:

"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

Signature Of Engineer — Date: 3/25/98

CHARLES J. CROSS
Printed Name Of Engineer

These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control.

USDA-Natural Resources Conservation Service — Date: 7/14/98

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

John R Robertson
Howard Soil Conservation District — Date: 7/14/98

Approved: Department Of Public Works

Chief Bureau Of Highways — Date: 7-17-98

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 7/22/98

Chief, Development Engineering Division — Date: 7/22/98

LEGEND	
Symbol	Description
-------	Existing Contour 2' Interval
———	Existing Contour 10' Interval
———	Proposed Contour 2' Interval
———	Proposed Contour 10' Interval
-SF—SF-	Silt Fence
OOOOO	Unmitigated 65 dBa Noise Line
●●●●●	Mitigated 65 dBa Noise Line
- - - - -	Earth Dike
-X—X-	Tree Protection
	Existing Tree Line
L.O.D.	Limit Of Disturbance
(S)	Existing Street Tree
	Stabilized Construction Entrance

STREET TREE SCHEDULE

SYMBOL	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
⬠	ACER RUBRUM OCTOBER GLORY/ RED MAPLE	2-1/2"-3"	40' APART ON PUBLIC R/W

NOTE: STREET TREES ARE ONLY A RECOMMENDATION. THIS MAY BE REVISED TO A COUNTY ACCEPTABLE EQUIVALENT. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN TREE AND STREET LIGHT.

TOTAL NUMBER OF STREET TREES

⬠ 58 STREET TREES

NOTE: THIS SHEET SUPERSEDES THE PREVIOUSLY SIGNED ORIGINAL DRAWING

STREET TREE, GRADING & SEDIMENT CONTROL PLAN

CEDAR ACRES
LOTS 1 THRU 36

(A RESUBDIVISION OF LOTS 3, 4 AND 5, BLOCK 'A' AS SHOWN ON A PLAT ENTITLED "CEDAR ACRES" AND RECORDED IN PLAT BOOK 4 AT FOLIO 10 .

ZONED: RSC

TAX MAP No. 35 PARCEL No. 38 GRID No. 11
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE: 1"=50' DATE: AUGUST 22, 1997

SHEET 4 OF 9

As Built 2/28/01

STATE OF MARYLAND — CHARLES J. CROSS — No. 13396 — REGISTERED PROFESSIONAL ENGINEER

STATE OF MARYLAND — CHARLES J. CROSS — No. 13396 — REGISTERED PROFESSIONAL ENGINEER

OWNER
BENJAMIN K. BASSLER AND
ELSIE MAE BASSLER
10739 ROUTE 99
WOODSTOCK, MARYLAND 21163

DEVELOPER
CHADSWORTH HOMES, INC.
P.O. BOX 6641
McLEAN, VIRGINIA 22106-6641

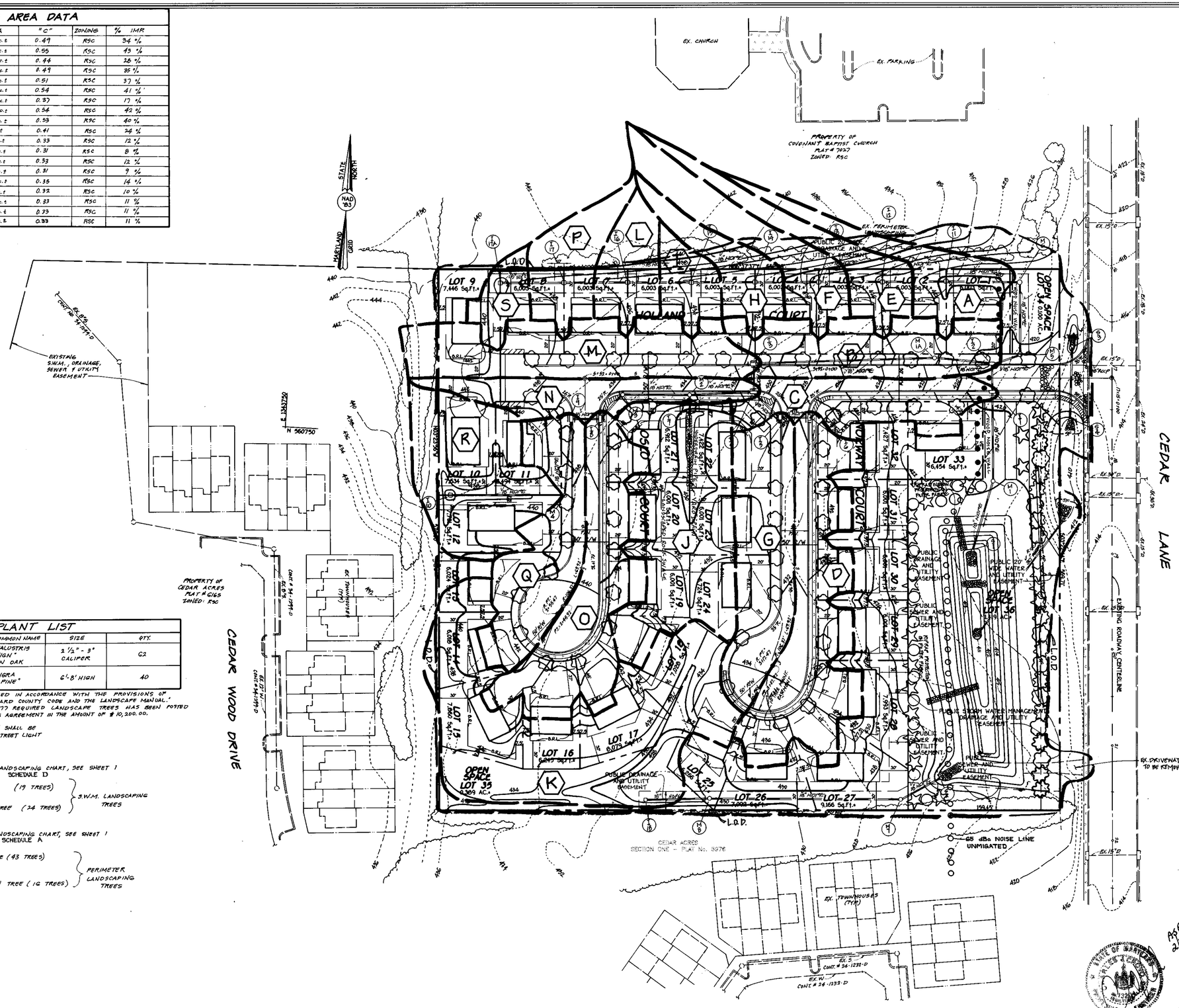
FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

305386supplemental grading plan.dwg

ASBUILT F97-115

DRAINAGE AREA DATA

STRUCTURE	DRAIN. AREA	AREA	"C"	ZONING	% IMP.
I-1	C	0.30 Ac.±	0.49	RSC	34 %
I-2	B	0.35 Ac.±	0.55	RSC	43 %
I-3	M	0.46 Ac.±	0.44	RSC	28 %
I-4	N	0.26 Ac.±	0.49	RSC	35 %
I-5	G	0.40 Ac.±	0.51	RSC	37 %
I-6	D	0.57 Ac.±	0.54	RSC	41 %
I-7	J	0.64 Ac.±	0.37	RSC	17 %
I-8	O	0.49 Ac.±	0.56	RSC	42 %
I-9	Q	0.36 Ac.±	0.53	RSC	40 %
I-10	K	0.47 Ac.±	0.41	RSC	24 %
I-11	A	0.22 Ac.±	0.33	RSC	12 %
I-12	E	0.21 Ac.±	0.31	RSC	8 %
I-13	F	0.28 Ac.±	0.53	RSC	12 %
I-14	H	0.18 Ac.±	0.31	RSC	9 %
I-15	I	0.12 Ac.±	0.35	RSC	14 %
I-16	L	0.17 Ac.±	0.32	RSC	10 %
I-17	P	0.31 Ac.±	0.33	RSC	11 %
I-18	K	1.04 Ac.±	0.33	RSC	11 %
I-17A	S	0.08 Ac.±	0.33	RSC	11 %



PLANT LIST

SYMBOLS	BOTANICAL & COMMON NAME	SIZE	QTY.
;	QUERCUS PALUSTRIS "SOVEREIGN" SOVEREIGN PIN OAK	2 ½" - 3" CALIPER	62
;	PINUS NIGRA "AUSTRIAN PINE"	6'-8' HIGH	40

"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 77 REQUIRED LANDSCAPE TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $ 10,200.00.

NOTE: A MIN. SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.

NOTE: FOR S.W.M. AREA LANDSCAPING CHART, SEE SHEET 1
SCHEDULE D

- SHADE TREE (19 TREES)
- EVERGREEN TREE (24 TREES)

} S.W.M. LANDSCAPING TREES

FOR PERIMETER LANDSCAPING CHART, SEE SHEET 1
SCHEDULE A

- SHADE TREE (43 TREES)
- EVERGREEN TREE (16 TREES)

} PERIMETER LANDSCAPING TREES

By The Developer:

"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

Signature Of Developer — Date 6/29/98

Printed Name Of Developer: ANDRU HUNG

By The Engineer:

"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

Signature Of Engineer — Date 3/27/98

Printed Name Of Engineer: CHARLES J. CROSS SR.

These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control.

USDA-Natural Resources Conservation Service — Date 7/14/98

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

Howard Soil Conservation District — Date 7/14/98

Approved Department Of Public Works

Chief Bureau Of Highways — Date 7-17-98

Approved Department Of Planning And Zoning

Chief, Division Of Land Development — Date 7/21/98

Chief, Development Engineering Division — Date 7/22/98

LEGEND

Symbol	Description
--------	Existing Contour 2' Interval
———	Existing Contour 10' Interval
———	Proposed Contour 2' Interval
———	Proposed Contour 10' Interval
-SF—SF-	Silt Fence
○○○○○	Unmitigated 65 dBA Noise Line
●●●●●	Mitigated 65 dBA Noise Line
- - - - -	Earth Dike
-X—X-	Tree Protection
	Existing Tree Line
L.O.D.	Limit Of Disturbance
S	Existing Street Tree
	Stabilized Construction Entrance

STREET TREE SCHEDULE

SYMBOL	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
	ACER RUBRUM OCTOBER GLORY/ RED MAPLE	2-1/2"-3"	40' APART ON PUBLIC R/W

NOTE: STREET TREES ARE ONLY A RECOMMENDATION. THIS MAY BE REVISED TO A COUNTY ACCEPTABLE EQUIVALENT. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN TREE AND STREET LIGHT.

TOTAL NUMBER OF STREET TREES

58 STREET TREES

AS BUILT 2/28/01

NOTE: THIS SHEET SUPERSEDES THE PREVIOUSLY SIGNED ORIGINAL DRAWING.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855
305365supplemental grading plan.dwg

OWNER
BENJAMIN K. BASSLER AND ELSIE MAE BASSLER
10739 ROUTE 99
WOODSTOCK, MARYLAND 21163

DEVELOPER
CHADSWORTH HOMES, INC.
P.O. BOX 6641
McLEAN, VIRGINIA 22106-6641

DRAINAGE AREA MAP AND LANDSCAPE PLAN

CEDAR ACRES
LOTS 1 THRU 36

(A RESUBDIVISION OF LOTS 3, 4 AND 5, BLOCK 'A' AS SHOWN ON A PLAT ENTITLED "CEDAR ACRES" AND RECORDED IN PLAT BOOK 4 AT FOLIO 111)

ZONED: RSC

TAX MAP No. 35 PARCEL No. 38 GRID No. 11
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE: 1"=50' DATE: AUGUST 22, 1997

SHEET 5 OF 9

AS BUILT F97-115

SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 50 foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Earth Fill

Material-The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the eritire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble yet not be so wet that water can be squeezed out.

Where a minimum required density is specified, it shall not be less than 95% of maximum dry density with a moisture content within +2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99.

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown
on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers or hand tampers to assure maximum density and minimum permeability.

Structure Backfill

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

Pipe Conduits

All pipes shall be circular in cross section.

Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:

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

Materials - (Aluminum Coated Steel Pipe) - This pipe and its appunertenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

2. Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in triickness.

3. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the band width. The following type connections are acceptable for pipes less than 24" in diameter. Flanges on both ends of the pipe, a 12" wide standard lap type band with 12" wide by 3/8" thick closed cell circular neoprene gasket: and a 12" wide hugger type band with 0-ring gaskets having a minimum diameter of 1/2" greater than the corrugation depth. Pipes 24" in diameter and larger shall be connected by a 24" long annular corrugated band using rods and lugs. A 12" wide by 3/8" thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24".

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

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

5. Backfilling shall conform to "Structure Backfill".

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

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

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

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

3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance wfth recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 2 feet from the riser.

4. Backfilling shall conform to "Structure Backfill".

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

Polyvinyl Chloride (PVC) Pipe - All of the following criteria shall apply for polyvinyl chloride (PVC) pipe:

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

2. Joints and connections to anti-seep collars shall be completely watertight.

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

4. Backfilling shall conform to "Structure Backfill".

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

Concrete

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

Rock Riprap

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

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

Care of Water during Construction

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish , install, operate, and maintain all necessary pumping and other equipment required for removal of water from the various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom of required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to sumps from which the water shall be pumped.

Stabilization

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

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

SUMMARY OF TEST PITS

Date: April 13, 1995
Field Inspector: C.S. Bakhshi

TEST PIT	DEPTH	SOIL DESCRIPTION	REMARKS
B-1	0.0-6.0	Yellowish Red fine SAND, trace clay, mica. USC: SM USDA: Sandy Loam	Groundsurface: wooded. Top Soil : 2.0". Rock fragments below 8.0 feet depth.
	6.0-8.0	Yellowish Sand with olive green clay lenses, trace mica. USC: SM USDA: Sandy Loam	Groundwater not encountered during excavation.

Backhoe refusal at 8.0 feet depth.
Test Pit backfilled on completion of observations.
Test Pit terminated at 8.0 feet depth.

SUMMARY OF TEST PITS

Date: April 13, 1995
Field Inspector: C.S. Bakhshi

TEST PIT	DEPTH	SOIL DESCRIPTION	REMARKS
B-2	0.0-4.0	Olive Brown Sand with dark red lenses of clay, trace mica. USC: SM USDA: Sandy Loam	Groundsurface: wooded with. Top Soil : 2.0"
	4.0-11.0	Strong brown to yellow fine SAND, trace mica. USC: SM USDA: Sandy Sand	Groundwater not encountered during excavation.

Backhoe refusal at 11.0 feet depth.
Test Pit backfilled on completion of observations.
Test Pit terminated at 11.0 feet depth.

SUMMARY OF TEST PITS

Date: April 13, 1995
Field Inspector: C.S. Bakhshi

TEST PIT	DEPTH	SOIL DESCRIPTION	REMARKS
B-3	1.0-5.0	Yellowish Red clayey SAND, trace mica. USC: SM USDA: Sandy Loam	Groundsurface: open grassy field. Top Soil : 12.0"
	5.0-11.0	Yellowish Brown fine SAND, trace mica. USC: SM USDA: Loamy Sand	Groundwater not encountered during excavation.

Test Pit backfilled on completion of observations.
Test Pit terminated at 11.0 feet depth.

STRUCTURE SCHEDULE

STRUCTURE NO.	TOP ELEVATION	INV.IN	INV.OUT	ROAD NAME	ROAD STA.	OFFSET	TYPE	REMARKS
I-1	419.13 ~~418.91~~	413.16 ~~413.13~~	~~412.88~~	HOLLAND COURT ✓	C.L. STA. ~~1+25~~ 1+22	13.43' LT* ✓	A-5 INLET ✓	S.D. 4.40
I-2	419.12 ~~418.91~~	413.64 ~~413.60~~ 413.82	~~413.43~~	HOLLAND COURT ✓	C.L. STA. ~~1+25~~ 1+22	13.43' RT* ✓	A-10 INLET ✓	S.D. 4.41
I-3	431.61 ~~431.37~~	421.01 ~~421.53~~	~~421.28~~	HOLLAND COURT ✓	C.L. STA. ~~3+75.50~~ 3+73	13.43' RT* ✓	A-10 INLET ✓	S.D. 4.41
I-4	431.88 ~~431.37~~	~~424.72~~ 421.65 422.29 ~~422.08~~	~~421.83~~	HOLLAND COURT ✓	C.L. STA. ~~3+75.50~~ 3+73	13.43' LT* ✓	A-10 INLET ✓	S.D. 4.41
I-5	430.21 ~~429.98~~	424.94 ~~425.35~~	~~425.10~~	NORWAY ~~HOLLAND~~ COURT	C.L. STA. ~~0+41~~ 0+40	13.43' LT* ✓	A-5 INLET ✓	S.D. 4.40
I-6	430.16 ~~429.98~~	——	~~423.31~~	NORWAY ~~HOLLAND~~ COURT	C.L. STA. ~~0+41~~ 0+40	13.43' RT* ✓	A-5 INLET ✓	S.D. 4.40
I-7	428.39 ~~427.33~~	——	~~427.20~~	HOLLAND COURT ✓	C.L. STA. 4+42 ✓	47' LT* ✓	'D INLET ✓	S.D. 4.39
I-8	437.98 ~~437.44~~	430.33 ~~430.56~~	~~430.31~~	OSLO COURT ✓	C.L. STA. 0+41 ✓	13' ~~15'~~ LT*	A-5 INLET ✓	S.D. 4.40
I-9	437.89 ~~437.44~~	431.16 ~~431.11~~	~~430.86~~	OSLO COURT ✓	C.L. STA. 0+41 ✓	13' ~~15'~~ RT*	A-5 INLET ✓	S.D. 4.40
I-10	436.44 ~~436.73~~	——	~~433.38~~	——	N 560688.190 E 1343927.795	~~N 560687.985 E 1343926.320~~	'D' INLET ✓	S.D. 4.39
I-11	420.17 ~~420.24~~	415.83 ~~416.23~~	~~415.98~~	——	N 560941.684 E 1344437.105	~~N 560941.659 E 1344436.270~~	'D' INLET ✓	S.D. 4.39
I-12	423.40 ~~422.91~~	417.08 ~~417.38~~	~~416.88~~	——	N 560938.073 E 1344369.119	~~N 560937.727 E 1344369.391~~	'D' INLET ✓	S.D. 4.39
I-13	427.63 ~~427.48~~	422.10 ~~422.80~~	~~422.55~~	——	N 560933.685 E 1344302.085	~~N 560933.785 E 1344302.510~~	'D' INLET ✓	S.D. 4.39
I-14	430.83 ~~430.85~~	425.16 ~~425.72~~	~~423.47~~	——	N 560929.451 E 1344235.322	~~N 560929.840 E 1344235.625~~	'D' INLET ✓	S.D. 4.39
I-15	433.85 ~~433.95~~	428.43 ~~428.64~~	~~426.39~~	——	N 560926.188 E 1344169.403	~~N 560925.901 E 1344168.742~~	'D' INLET ✓	S.D. 4.39
I-16	436.18 ~~435.16~~	429.08 ~~429.56~~	~~429.31~~	——	N 560922.341 E 1344101.768	~~N 560921.959 E 1344101.658~~	'D' INLET ✓	S.D. 4.39
I-17	436.65 ~~436.85~~	430.15 ~~430.48~~	~~430.23~~	——	N 560917.547 E 1344035.381	~~N 560918.016 E 1344034.974~~	'D' INLET ✓	S.D. 4.39
I-18	427.41 ~~427.43~~	——	423.41 ✓	——	N 560381.694 E 1344155.781	~~N 560382.752 E 1344155.196~~	'D' INLET ✓	S.D. 4.39
I-17A	438.48 ~~438.36~~	——	~~431.15~~	——	N 560914.034 E 1343968.559	~~N 560914.074 E 1343968.090~~	'D' INLET ✓	S.D. 4.39
M-1	419.85 ~~420.00~~	411.86 ~~411.98~~	~~411.73~~	——	N 560737.735 E 1344497.014	~~N 560739.916 E 1344496.390~~	PRECAST MANHOLE ✓	G. 5.12
M-2	434.20 ~~434.15~~	~~429.00~~ 428.86 422.64 ~~422.99~~	~~422.75~~	HOLLAND COURT ✓	C.L. STA. 4+42 ✓	16.5' LT ✓	PRECAST MANHOLE ✓	G. 5.12
M-3	435.87 ~~435.96~~	429.65 ~~429.97~~	~~429.72~~	HOLLAND COURT ✓	C.L. STA. 5+12 ✓	16.5' LT ✓	PRECAST MANHOLE ✓	G. 5.12
M-4	438.98 ~~438.69~~	431.88 ~~432.16~~	~~431.91~~	OSLO COURT ✓	C.L. STA. 1+23.64 ✓	21' RT ✓	PRECAST MANHOLE ✓	G. 5.12
M-5	419.46 ~~419.50~~	413.94 ~~414.21~~	~~413.96~~	HOLLAND COURT ✓	C.L. STA. 0+97 ✓	25' RT ✓	PRECAST MANHOLE ✓	G. 5.12
M-6	421.15 ~~421.50~~	414.99 ~~415.20~~	~~414.95~~	HOLLAND COURT ✓	N 560946.215 E 1344513.885	~~N 560946.199 E 1344513.144~~	PRECAST MANHOLE ✓	G. 5.12
M-7	426.04 ~~426.00~~	419.41 ~~419.70~~	~~419.45~~	——	N 560393.938 E 1344419.596	~~N 560394.978 E 1344419.915~~	PRECAST MANHOLE ✓	G. 5.12
M-1A	421.31 ~~421.49~~	416.71 ~~417.19~~	~~416.94~~	——	C.L. STA. ~~1+84~~ 1+88	18.5' RT ✓	PRECAST MANHOLE ✓	G. 5.12
S-1	412.50 ✓	411.00 ✓	——	——	N 560671.914 E 1344481.517	~~N 560658.609 E 1344480.921~~	~~CONC.~~ PLASTIC END SECTION	S.D. 5.51
S-2	420.57 ~~420.47~~	419.07 ~~418.97~~	——	——	N 560421.720 E 1344459.141	~~N 560422.363 E 1344159.336~~	~~CONC.~~ PLASTIC END SECTION	S.D. 5.51
S-3	412.78 ~~412.50~~	411.28 ~~411.00~~	——	——	N 560878.438 E 1344569.416	~~N 560879.450 E 1344572.072~~	~~CONC.~~ PLASTIC END SECTION	S.D. 5.51
S-4	411.53 ~~411.50~~	——	~~410.00~~	——	N 560805.277 E 1344573.315	~~N 560807.163 E 1344573.317~~	~~CONC.~~ PLASTIC END SECTION	S.D. 5.51

* DENOTES OFFSET TO FLOWLINE AT INLET

APPROVED: DEPARTMERNT OF PUBLIC WORKS

[signature] 7-17-98
CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[signature] 7/23/98
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[signature] 7/22/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

GEOTECHNICAL RECOMMENDATIONS

1. The stormwater management pond facility on the site should be constructed as an extended detention pond.
2. At locations where removal of vegetation and objectionable material results in an opening greater than 12 inches in depth, they should be backfilled with soil compacted to a minimum of 95% of the maximum dry density as determined by the Standard Moisture Density Relationship Test (ASTM D-698).
3. Soil material meeting the classification requirements for GC, SC, CH, or CL as classified in accordance with the Unified Soil Classification System and recommended by Soil Conservation Service Maryland Standards and Specifications, November 1992 should be used for the construction of the center of the embankment and the cut-off trench. The fill material should be approved by the geotechnical engineer prior to being used. It should be free from roots, stumps, woods, rubbish, stone greater than six (6) inches, frozen soil or other deleterious material.
4. Additionally, we recommend a minimum 4.0 feet thick compacted layer of relatively impermeable soil material, as specified in item three (3) above should be used below the foundation of the principal spillway structure and below the pipeline at the location of the cut-off trench.
5. The depth of the core trench should be extended a minimum of four (4) feet below the invert of the pond at the principal spillway.
6. The impervious core shall extend from the cut-off trench up to the 10 year water surface elevation throughout the embankment.
7. Core and dike embankment fill and backfill soils should be compacted to a minimum of 95% of the maximum dry density (ASTM D-698).
8. The unpaved access road to the pond should be designed and constructed to support the contact tire pressure and axle load exerted by the service traffis anticipated. We recommend subgrade soil with sufficient shear strength to support contact pressure of 80 psi and 8 kip axle load. The subgrade in the access road area should be constructed with on-site sandy soils compacted to a minimum of 95% of the maximum dry density (ASTM D-698) and with a minimum soaked California Bearing Ratio (CBR) of 5.0.
9. The principal spillway structure should be founded on subgrade soil with an allowable soil pressure of no less than 2000 pounds per square foot and should be verified during foundation construction.
10. We recommend the contractor provide the geotechnical engineer and the design engineer with a plan for dewatering prior to beginning excavation on the site. The plan should include a written description of the dewatering system, a schedule and sketches. The dewatering system should be approved by the design engineer, installed and functioning effectively prior to excavation below the wtaer level.

By The Developer:

"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

[signature] 6/29/98
Signature Of Developer — Date
ALTIERI HOMES
Printed Name Of Developer

By The Engineer:

"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

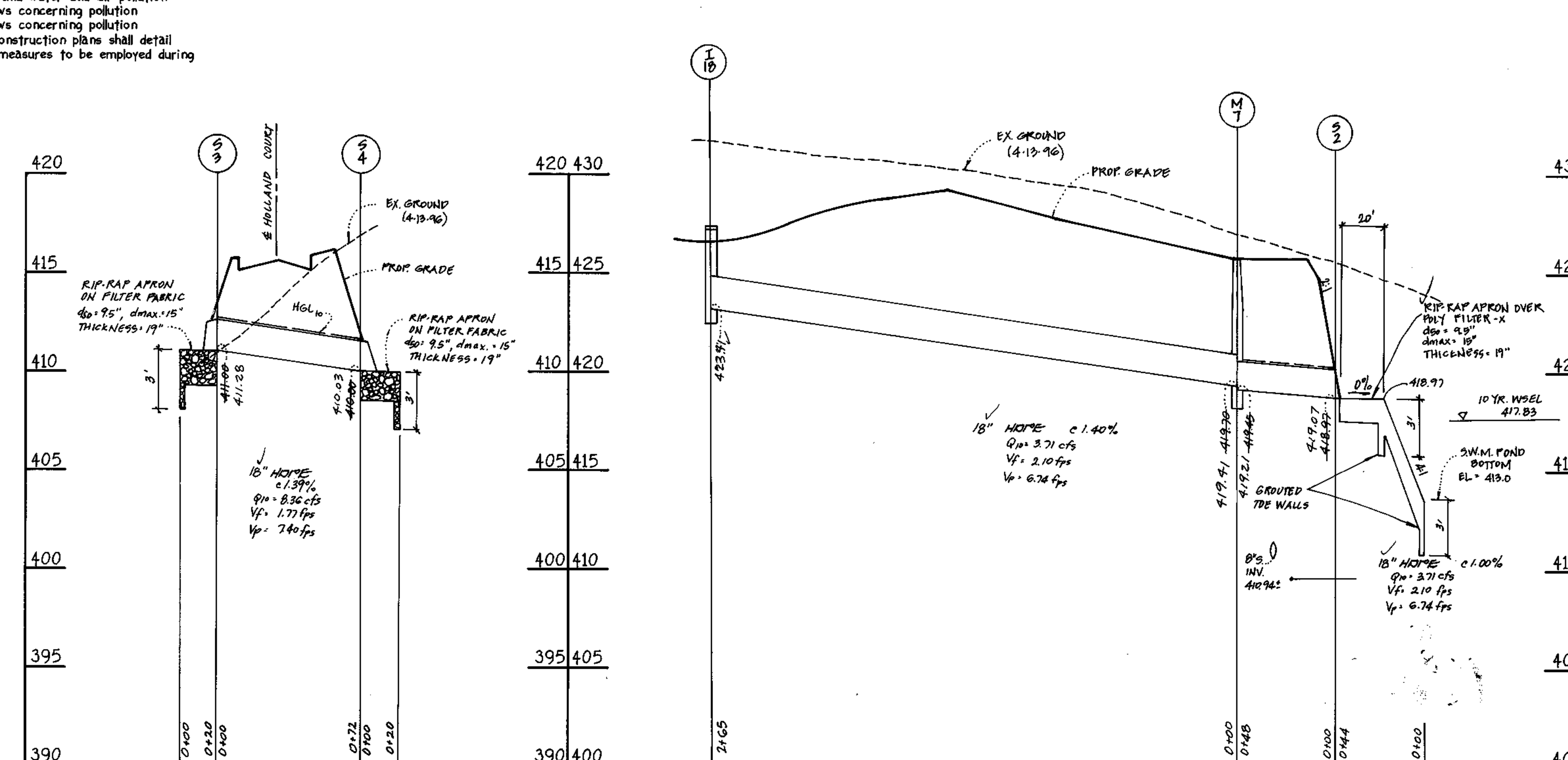
[signature] 6/29/98
Signature Of Engineer — Date
CHARLES J. CROKER
Printed Name Of Engineer

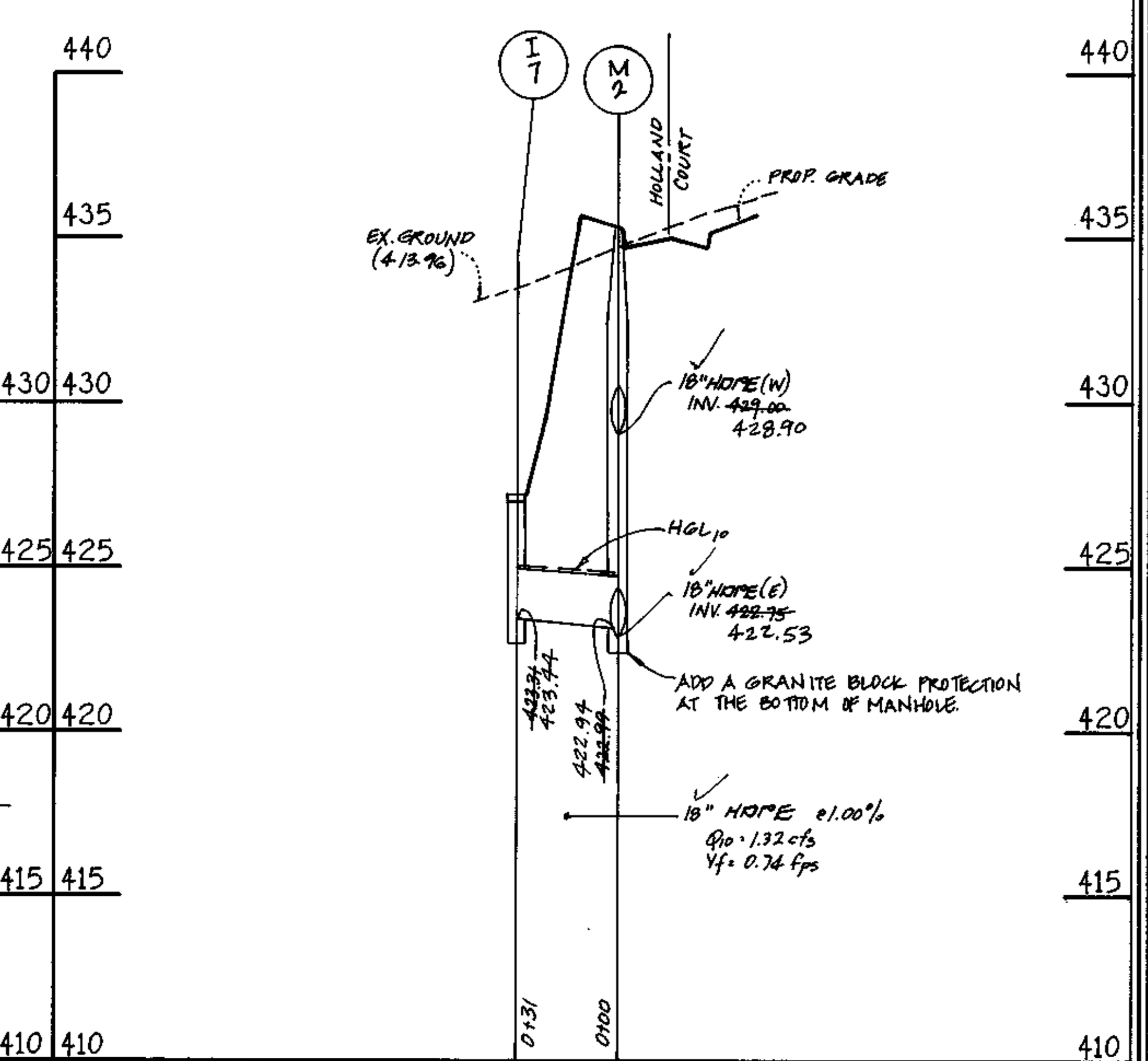
These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control.

[signature] 7/14/98
USDA-Natural Resources Conservation Service — Date

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

[signature] 7/14/98
Howard Soil Conservation District — Date





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

NOTE: THIS SHEET SUPERSEDES THE PREVIOUSLY SIGNED ORIGINAL DRAWING

STORM DRAIN PROFILES
LOTS 1 THRU 36

CEDAR ACRES

A RESUBDIVISION OF LOTS 3,4 AND 5
ZONED: RSC

TAX MAP NO. 35 PARCEL 38

FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SHEET 6 OF 9

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

OWNER
BENJAMIN K. BASSLER
AND ELSIE MAE BASSLER
10739 MARYLAND ROUTE 99
WOODSTOCK, MARYLAND 21163

DEVELOPER
CHADSWORTH HOMES, INC.
P.O. BOX 6641
MCLEAN, VIRGINIA 22106-6641

30538FP6.DWG

AS BUILT

F97-115

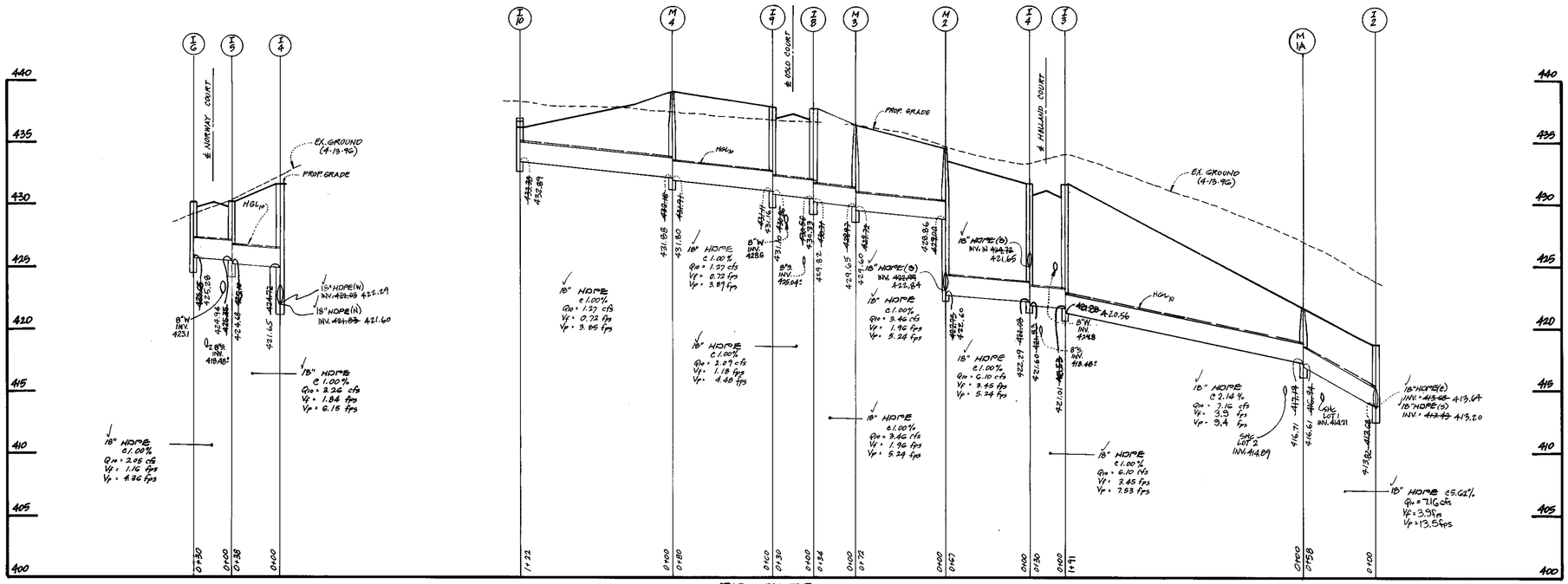
APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 7-7-98

APPROVED: DEPARTMENT OF PLANNING AND ZONING

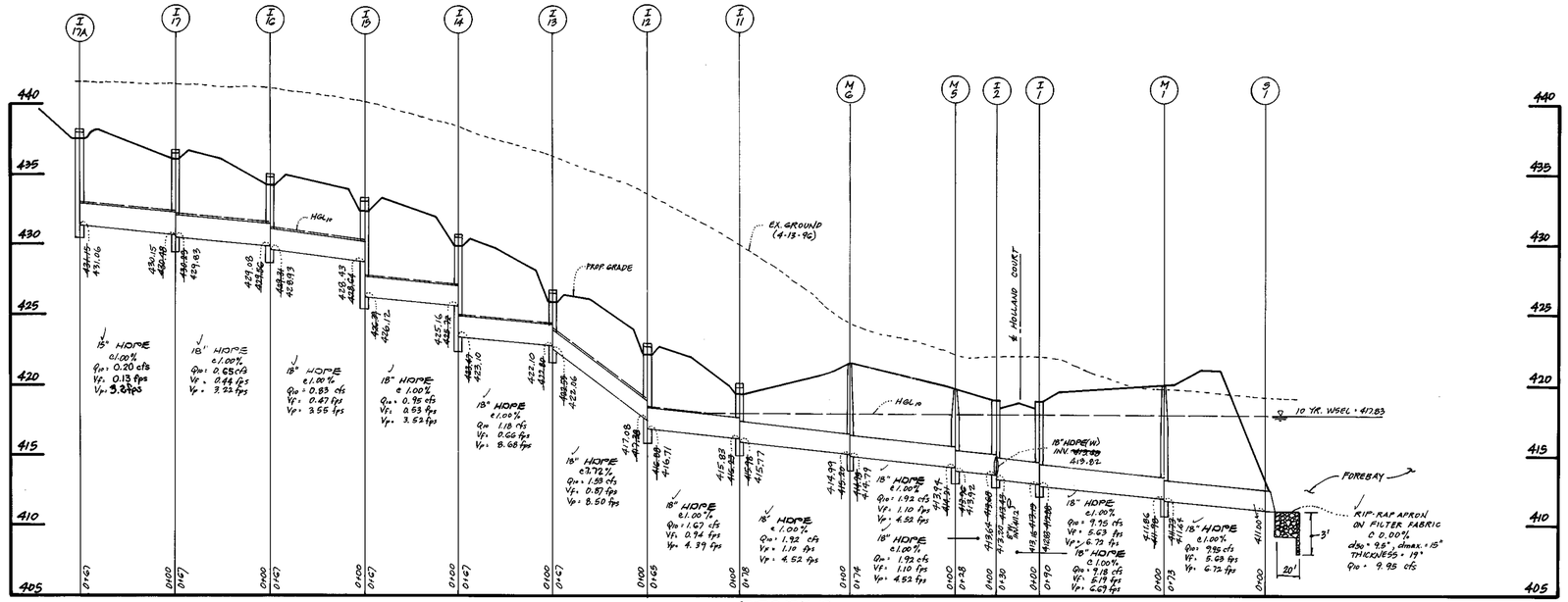
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/23/98

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/22/98



PROFILES

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



PROFILE

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

AS BUILT 8/28/01

NOTE: THIS SHEET SUPERSEDES THE PREVIOUSLY SIGNED ORIGINAL DRAWING.

STORM DRAIN PROFILES
LOTS 1 THRU 36

CEDAR ACRES

A RESUBDIVISION OF LOTS 3,4 AND 5

ZONED: RSC

TAX MAP NO. 35 PARCEL 38

FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SHEET 7 OF 9

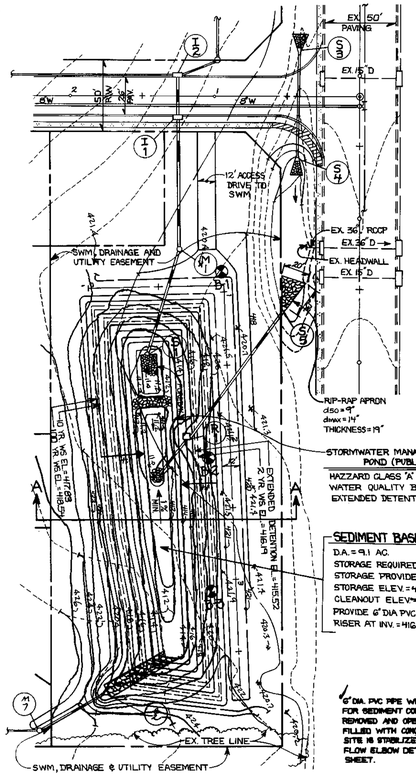
FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

OWNER
BENJAMIN K. BASSLER
AND ELSIE MAE BASSLER
10739 MARYLAND ROUTE '99
WOODSTOCK, MARYLAND 21163

DEVELOPER
CHADSWORTH HOMES, INC.
P.O. BOX 6641
MCLEAN, VIRGINIA 22106-6641

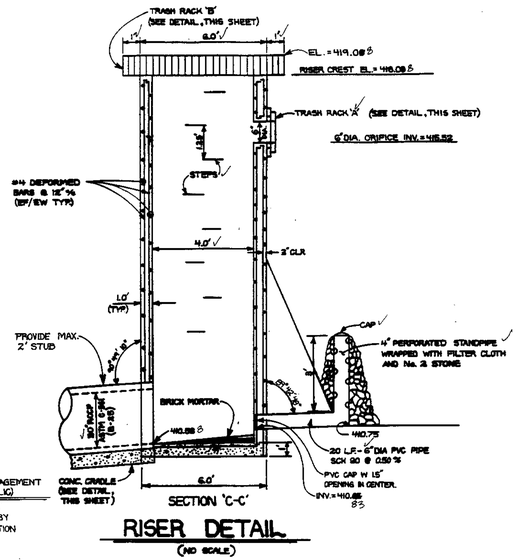
30538FP6A.DWG

AS BUILT F97-115



PLAN

SCALE : 1" = 50'



SECTION 'C-C'

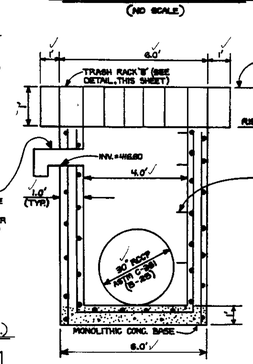
RISER DETAIL

(NO SCALE)

SEDIMENT BASIN DATA

D.A. = 9.1 AC.
STORAGE REQUIRED = 32,760
STORAGE PROVIDED = 35,450
STORAGE ELEV. = 416.60
CLEANOUT ELEV. = 413.00
PROVIDE 6" DIA PVC ELBOW IN RISER AT INV. = 412.60

6" DIA. PVC PIPE WITH ELBOW FOR SEDIMENT CONTROL (TO BE REMOVED AND OPENING TO BE FILLED WITH CONCRETE AFTER SITE IS STABILIZED) SEE LOW FLOW ELBOW DETAIL, THIS SHEET.



SECTION 'D-D'

RISER DETAIL

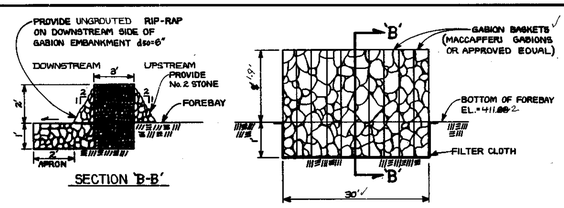
(NO SCALE)

STORMWATER MANAGEMENT POND SUMMARY (DA = 9.1 Ac.)

STORM EVENT	EXISTING CONDITION DISCHARGE (CFS)	DEVELOPED CONDITION DISCHARGE (CFS)	ALLOWABLE RELEASE (CFS)	ACTUAL RELEASE (CFS)	STORAGE ELEVATION (FT)	STORAGE (CF)
2 YEAR	1.86	11.04	1.86	0.33	416.19	27,474
10 YEAR	10.72	25.61	10.72	1.54	417.83	51,385
100 YEAR	24.08	43.09	N/A	21.28	418.54	64,540

PROFILE THRU PRINCIPAL SPILLWAY

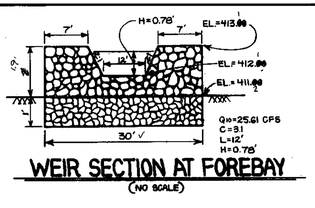
SCALE : 1" = 50' HORZ.
1" = 5' VERT.



SECTION 'B-B'

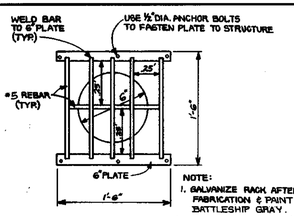
GABION FILTER AT FOREBAY

(NO SCALE)



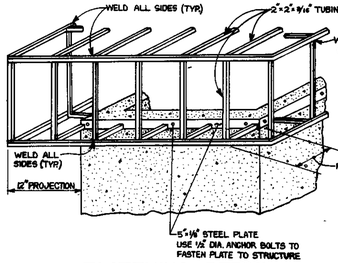
WEIR SECTION AT FOREBAY

(NO SCALE)



TRASH RACK 'A'

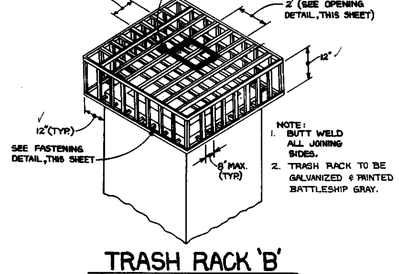
(NO SCALE)



FASTENING DETAIL

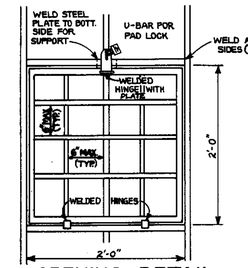
(NO SCALE)

NOTE : (CONTRACTOR SHALL)
1. FIELD MEASURE THE STRUCTURE DIMENSIONS FOR EXACT FITTING OF TRASH RACK.
2. GALVANIZE ENTIRE TRASH RACK.
3. ALL NUTS AND BOLTS SHALL BE GALVANIZED.



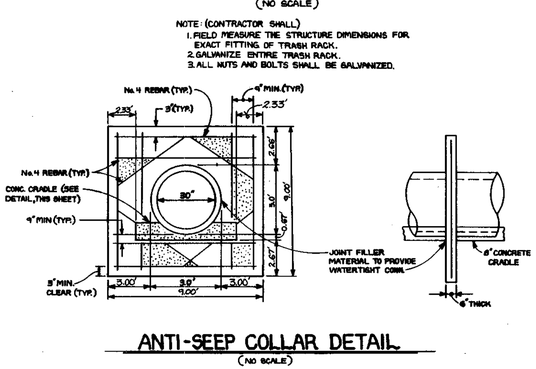
TRASH RACK 'B'

(NO SCALE)



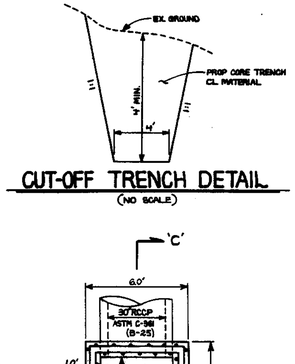
OPENING DETAIL

(NO SCALE)



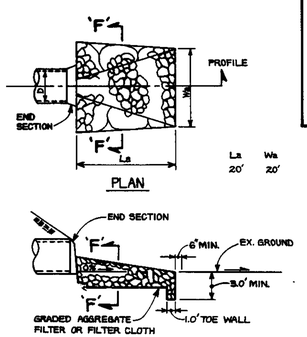
ANTI-SEEP COLLAR DETAIL

(NO SCALE)



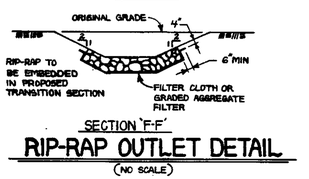
CUT-OFF TRENCH DETAIL

(NO SCALE)



PLAN

PROFILE

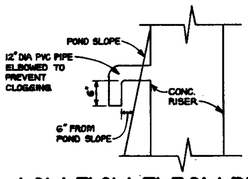


SECTION 'F-F'

RIP-RAP OUTLET DETAIL

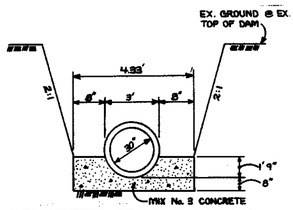
(NO SCALE)

NOTES :
1. CONCRETE SHALL CONFORM TO THE MARYLAND D.O.T. S.H.A. STANDARD SPEC'S FOR CONSTRUCTION AND MATERIALS, 1993 EDITION PG. 5, EXCEPT THAT TY. III CEMENT AND A.S.T.M. C 33 NO. 8 COARSE AGG. SHALL BE USED.
2. WELDED WIRE FABRIC SHALL CONFORM TO A.S.T.M. A-185, LAP SPLICES SHALL BE A MIN. OF 1 1/2 TRANSVERSE WIRE SPACES. WIRE ENDS SHALL BE TACK WELDED TO PRODUCE A RIGID UNIT.
3. ALL PIPES CONNECTING TO RISER SHALL HAVE WATER-TIGHT CONNECTIONS.
4. RISER SHALL BE CONSTRUCTED IN ONE PIECE.



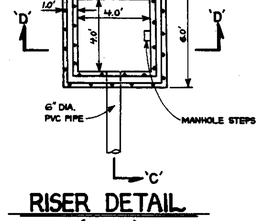
LOW FLOW ELBOW DETAIL

(NO SCALE)



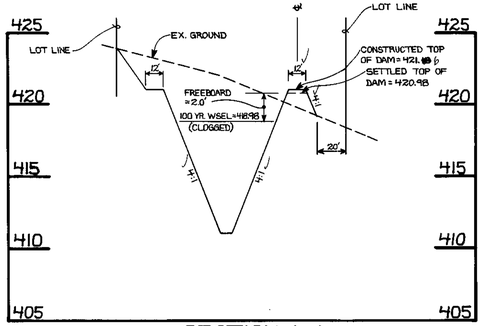
CONCRETE CRADLE DETAIL

(NO SCALE)



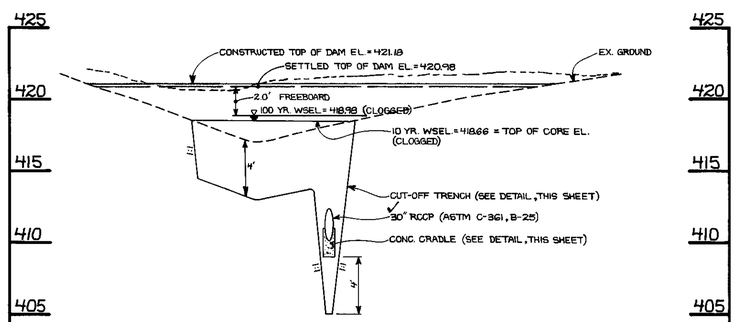
RISER DETAIL

(NO SCALE)



SECTION A-A

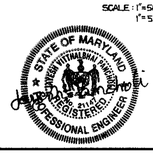
SCALE : 1" = 50' HORZ.
1" = 5' VERT.



PROFILE THRU ℄ DAM

SCALE : 1" = 50' HORZ.
1" = 5' VERT.

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
BENJAMIN K & ELSIE PAE BAESSLER
10739 MARYLAND RTE. 99
WOODSTOCK, MARYLAND 21163

DEVELOPER
CRADDOCKWORTH HOMES INC.
P.O. BOX 8641
McLEAN, VIRGINIA 22106-8641

By The Developer:

"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

Signature Of Developer — Date 4/28/97

PAT RYANE
Printed Name Of Developer

By The Engineer:

"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

Signature Of Engineer — Date 4.24.97

JAVESH V. PANCHOLI
Printed Name Of Engineer

These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control.

USDA-Natural Resources Conservation Service — Date 8/12/97

OWNER AND MAINTENANCE SCHEDULE OF HOME OWNERS ASSOCIATION OWNED AND MAINTAINED STORMWATER MANAGEMENT FACILITY WET POND.

HOMEOWNERS ASSOCIATION'S MAINTENANCE RESPONSIBILITIES:

1. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MIN. OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES, AND MAINTENANCE ACCESS SHOULD BE MOWED, AS NEEDED.
2. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
3. WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, SEDIMENT SHOULD BE REMOVED FROM THE POND. APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS IS NEEDED.

OPERATION AND MAINTENANCE SPECIFICATIONS

I HEREBY CERTIFY THAT I WILL OPERATE AND MAINTAIN THE COMPLETED POND IN ACCORDANCE WITH THE FOLLOWING:

1. PERIODIC INSPECTIONS OF THE FACILITY WILL BE MADE TO IDENTIFY POTENTIAL PROBLEMS THAT MAY AFFECT ITS SAFETY. THESE INSPECTIONS WILL BE MADE AFTER PERIODS OF HEAVY RAINFALL AND AT LEAST TWICE ANNUALLY. INSPECTION REPORTS SHALL BE KEPT UNTIL THE NEXT SUBSEQUENT INSPECTION. INSPECTION ITEMS TO BE LOOKED AT INCLUDE:
   - A) SPILLWAY AND OUTLET WORKS;
   - B) RIP-RAP;
   - C) VEGETATIVE COVER;
   - D) CRACKS IN THE FILL;
   - E) SLOPE FAILURES; AND
   - F) SEEPAGE AND OTHER SIGNS OF DISTRESS.
2. PROBLEMS IDENTIFIED DURING INSPECTIONS WILL BE PROMPTLY CORRECTED. MAJOR PROBLEMS WILL BE BROUGHT TO THE ATTENTION OF THE SOIL CONSERVATION DISTRICT AND THE DAM SAFETY DIVISION OF THE MARYLAND WATER RESOURCES ADMINISTRATION. AS A VERY MINIMUM, GRASSY VEGETATION WILL BE MAINTAINED IN A DENSE AND HEALTHY STATE, AND WOODY VEGETATION WILL NOT BE PERMITTED TO GROW ON THE EMBANKMENT.

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

Howard Soil Conservation District — Date 8/12/97

Approved: Department Of Public Works

Chief Bureau Of Highways — Date 8-26-97

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 9/12/97

Chief, Development Engineering Division — Date 9/2/97 AM

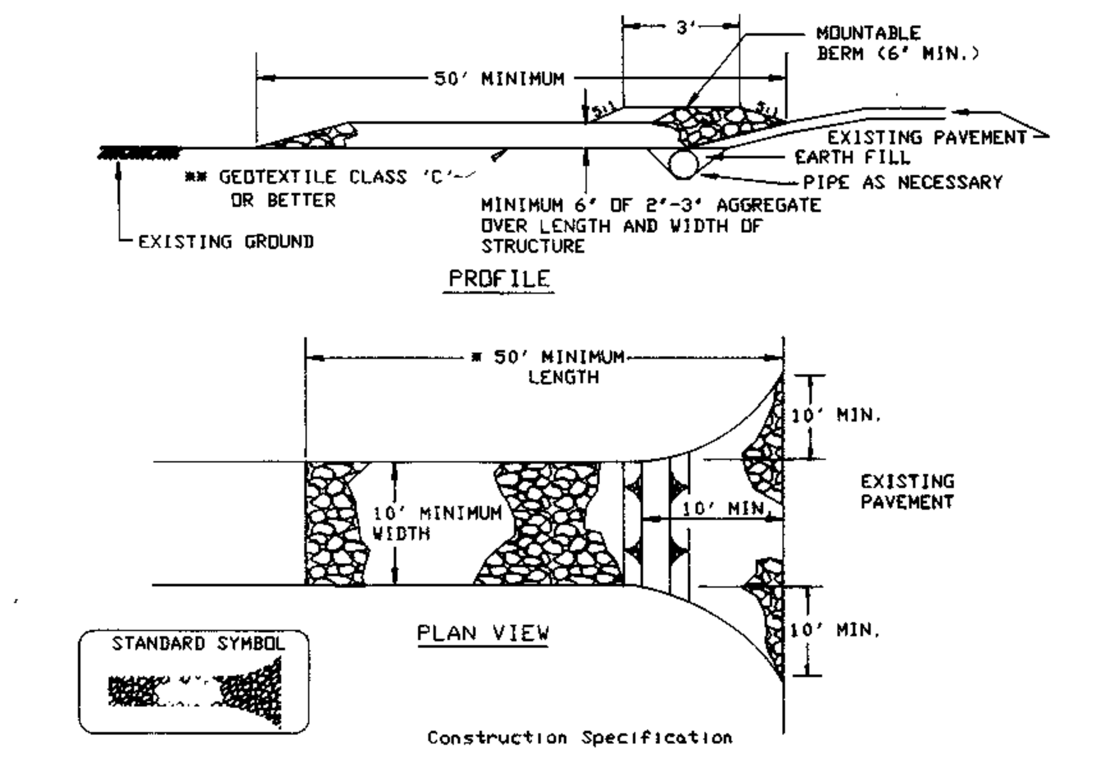
AS BUILT 8/28/01

STORMWATER MANAGEMENT PLAN
NOTES & DETAILS

CEDAR ACRES
LOTS 1 THRU 36
A RESUBDIVISION OF LOTS 3,4 AND 5

ZONED: RSC
TAX MAP No. 35 PARCEL 38
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 50 DATE: APRIL 22, 1997
SHEET 8 OF 9

AS BUILT F-97-115



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.

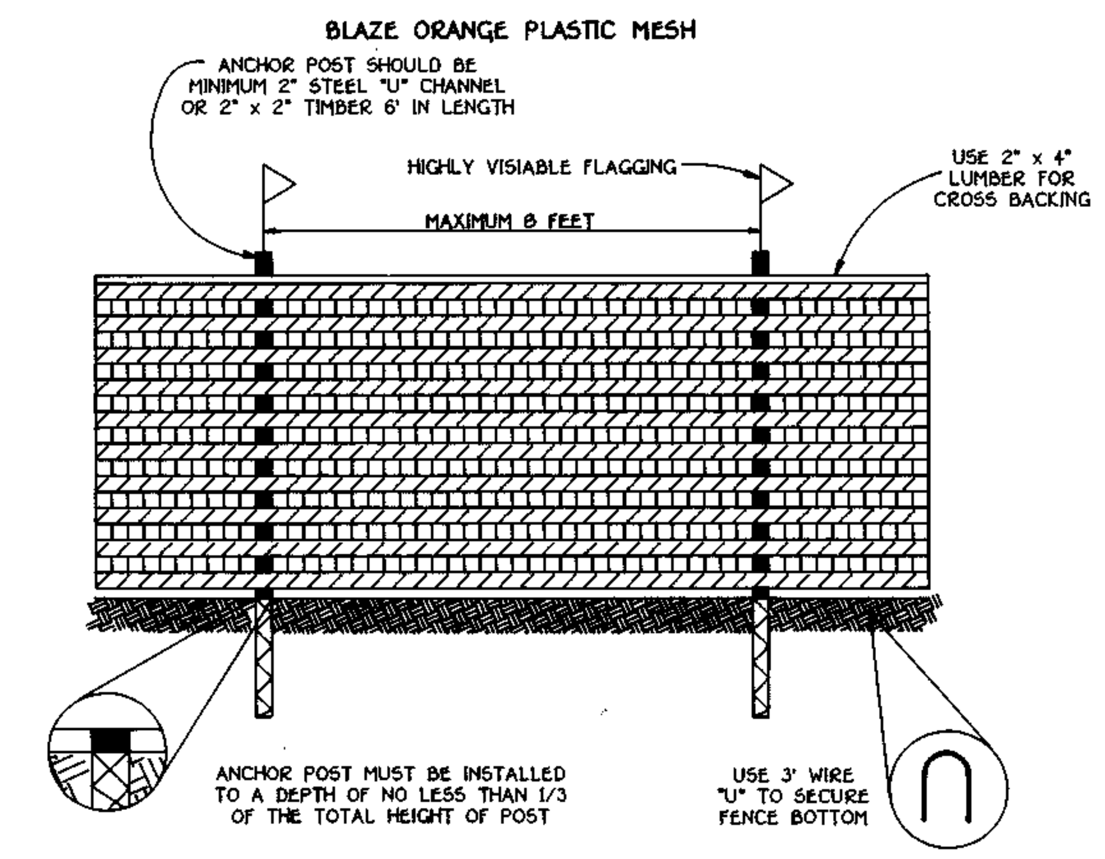
4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

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.

STABILIZED CONSTRUCTION ENTRANCE - 2

NOT TO SCALE

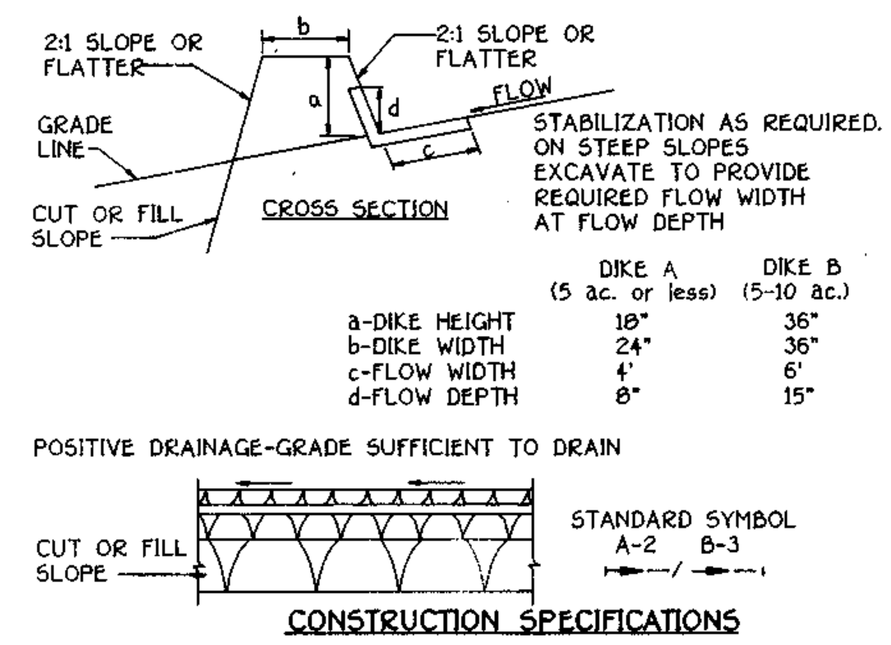


NOTES:

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



CONSTRUCTION SPECIFICATIONS

1. ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
5. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. RUNOFF SHALL BE CONVEYED TO A SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT ADEQUATELY STABILIZED.
6. STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART BELOW.

FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1	.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE, OR EXCELSIOR; SOD; 2" STONE
3	5.1-8.0%	SEED WITH JUTE, OR SOD; 2" STONE	LINED RIP-RAP 4"-8"
4	8.1-20%	LINED RIP-RAP 4"-8"	ENGINEERING DESIGN

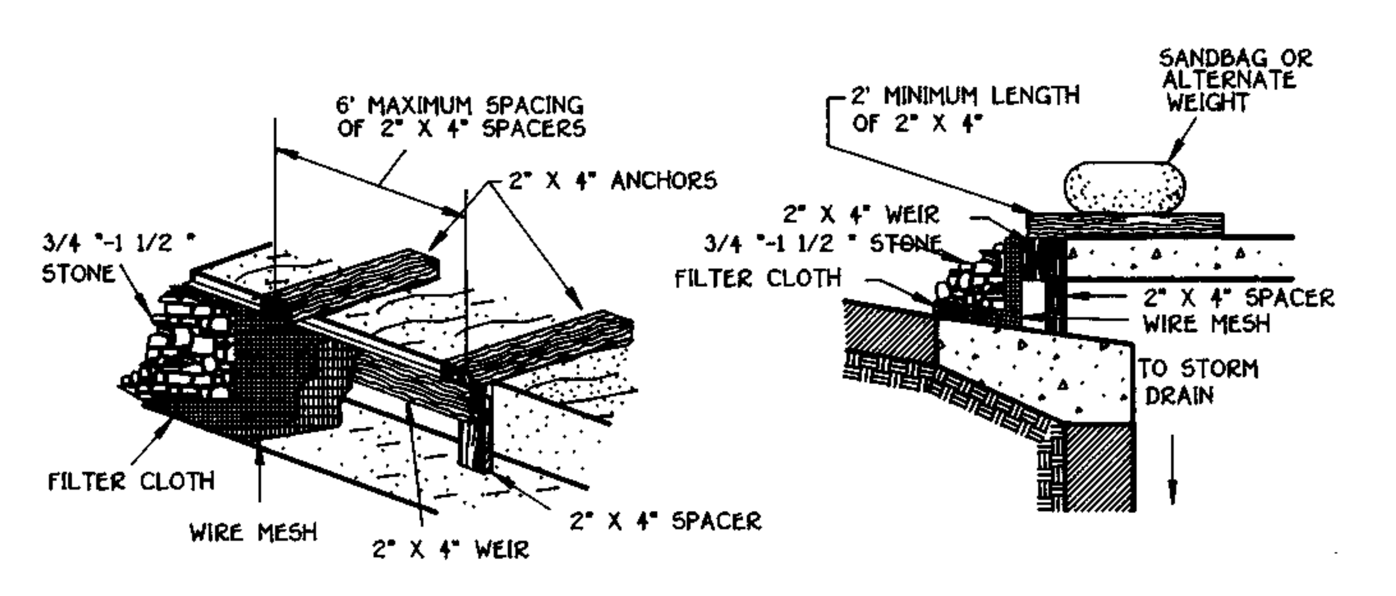
A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
B. RIP-RAP TO BE 4-8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.
C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.

7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

EARTH DIKE

NOT TO SCALE

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



MAX. DRAINAGE AREA = 1/4 ACRE

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.

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 4/23/97

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 4-24-97

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

U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE — DATE 8/12/97

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 8/12/97

APPROVED: DEPARTMENT OF PLANNING AND ZONING

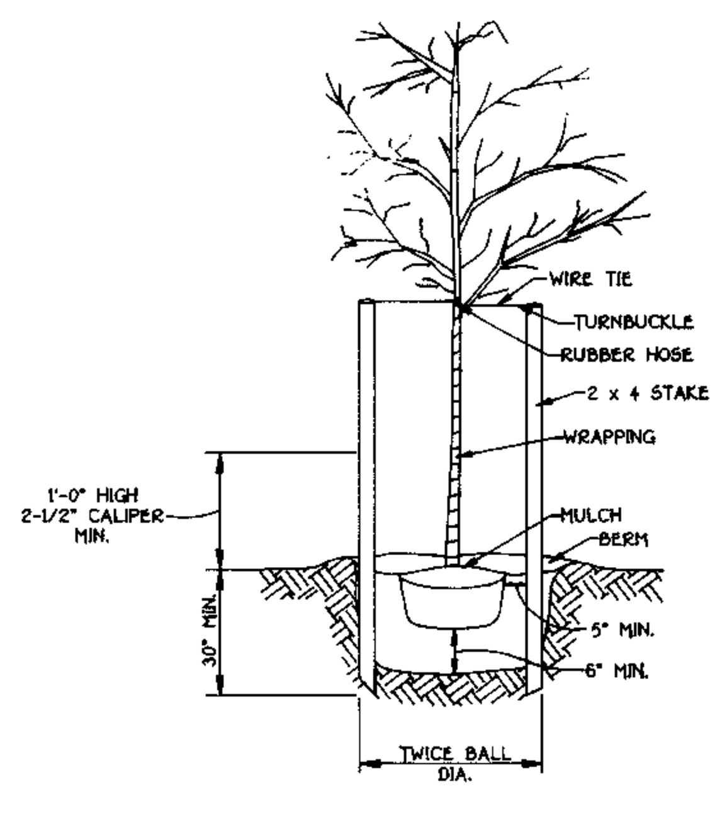
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9/12/97

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/3/97

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

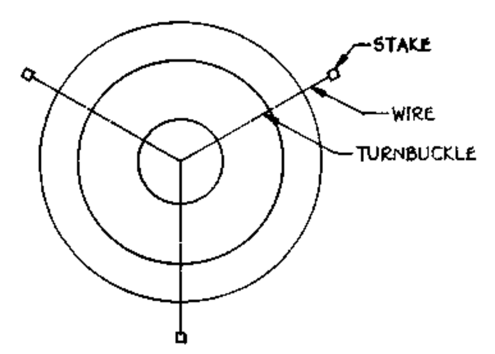
CHIEF, BUREAU OF HIGHWAYS — DATE 8-26-97



NOTE: REMOVE BURLAP FROM TOP 1/3 OF BALL

TREE PLANTING

NOT TO SCALE



STAKING DETAIL

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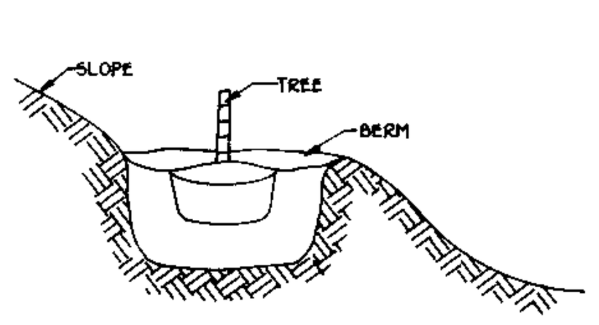


GRADING FOR PLANTING ON SLOPES

NOT TO SCALE

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.
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	8.54	ACRES
AREA DISTURBED	7.50	ACRES
AREA TO BE ROOFED OR PAVED	2.10	ACRES
AREA TO BE VEGETATIVELY STABILIZED	5.40	ACRES
TOTAL CUT	10,000	CU.YDS.
TOTAL FILL	10,000	CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION		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.

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; P205 (phosphorous): 200 lbs/ac; K20 (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.

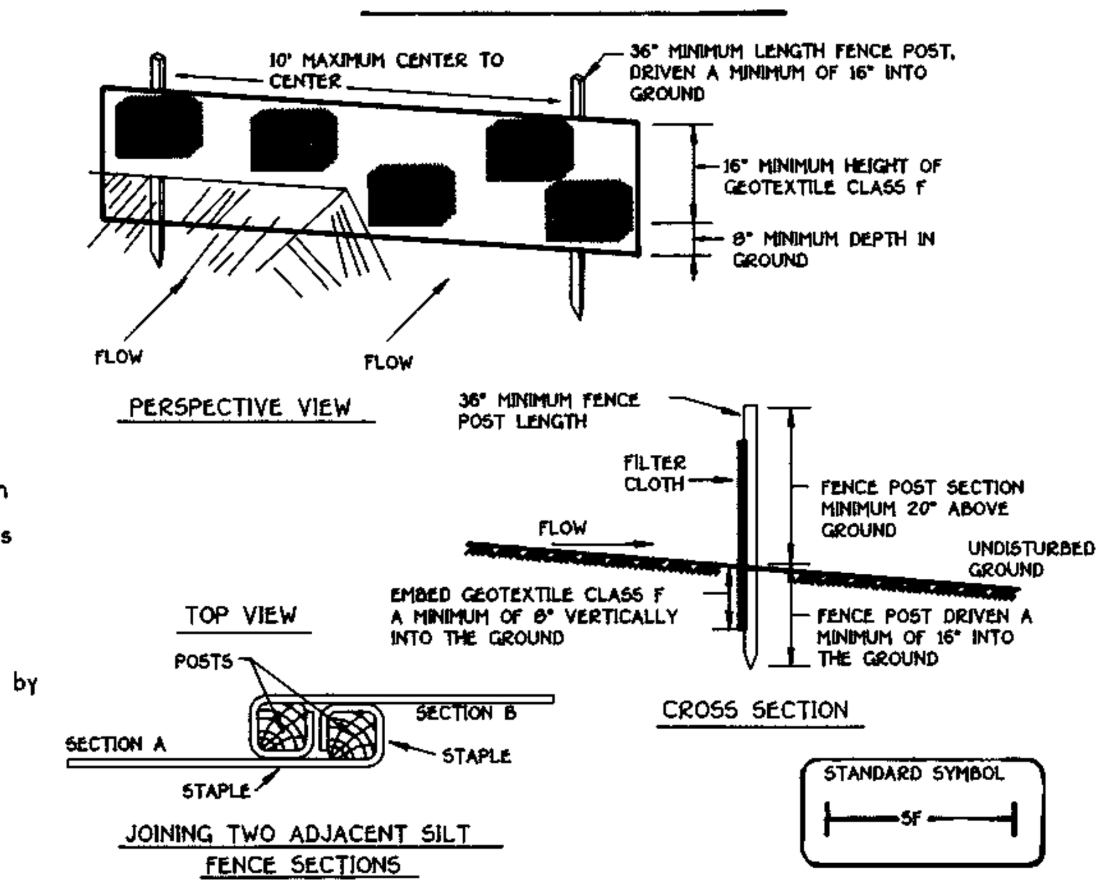
I Incremental Stabilization - Cut Slopes
   i. All cuts slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.
   ii. Construction sequence (Refer to Figure 3 below):
      a. Excavate and stabilize 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 grading and placement of topsoil (if required) 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.

DETAIL 22 - SILT FENCE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 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.

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT (1 DAY).
2. NOTIFY "MISS UTILITY" 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION DIVISION (410) 313-1870, 24 HOURS BEFORE STARING ANY WORK.
3. INSTALL ALL TREE PROTECTION FENCE FOR TREES TO BE UNDISTURBED (1 DAY).
4. INSTALL SEDIMENT CONTROL MEASURES, STONE CONSTRUCTION ENTRANCE, EARTH DIKES, SILT FENCE, INLET PROTECTIONS AND SEDIMENT BASIN.
5. GRADE SITE TO SUBGRADE, STABILIZE AND INSTALL STORM DRAINS (4 WEEKS).
6. 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.
7. SEDIMENT SHALL BE REMOVED FROM THE SEDIMENT BASIN, ONCE THE CLEANOUT ELEVATIONS HAVE BEEN REACHED. SEDIMENT MUST BE PLACED UPHILL FROM THE POND AREA.
8. INSTALL CURB AND GUTTER AND ROAD BASE COURSE (7 DAYS).
9. STABILIZE ALL DISTURBED AREAS AND OBTAIN PERMISSION FROM SEDIMENT CONTROL INSPECTORS TO PROCEED (2 DAYS).
10. CONVERT SEDIMENT BASIN TO THE PERMANENT STORMWATER MANAGEMENT POND (2 DAYS).
11. UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROL MEASURES NOT NEEDED AND FLUSH STORM DRAIN SYSTEM TO REMOVE TRAPPED SEDIMENT (2 DAYS).
12. ALL AREAS DISTURBED DUE TO THE REMOVAL OF SEDIMENT CONTROL; MEASURES SHALL BE GRADED AND STABILIZED BY PERMANENT SEEDING (2 DAYS).

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
BENJAMIN E. BASSLER
AND ELSIE MAE BASSLER
10739 MARYLAND ROUTE 99
WOODSTOCK, MD. 21163

DEVELOPER
CHADSWORTH HOMES, INC.
P.O. BOX 6641
MCLEAN, VIRGINIA 22106-6641

SEDIMENT CONTROL NOTES AND DETAILS
LOTS 1 THRU 36

CEDAR ACRES

A RESUBDIVISION OF LOTS 3,4 AND 5

ZONED: RSC
TAX MAP No. 35 PARCEL 38
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: APRIL 22, 1997

ASBUILT F-97-115