

SHEET INDEX	
SHEET No.	DESCRIPTION
1	TITLE SHEET
2	STONECREST DRIVE PLAN & PROFILE
3	POPLAR CREEK COURT PLAN & PROFILE
4	STREET TREE GRADING & SEDIMENT CONTROL PLAN
5	DRAINAGE AREA MAP
6	STORM DRAIN PROFILES
7	STORM DRAIN PROFILES
8	SWM DETAILS, NOTES & SPECIFICATIONS
9	SWM DETAILS, NOTES & SPECIFICATIONS
10	SEDIMENT CONTROL, NOTES & SPECIFICATIONS
11	SEDIMENT CONTROL, NOTES & SPECIFICATIONS
12	LANDSCAPE PLAN
13	FOREST CONSERVATION PLAN
14	FOREST CONSERVATION PLAN

FINAL ROAD CONSTRUCTION, GRADING AND STORMWATER MANAGEMENT PLANS

STONE MANOR

SECTION ONE LOTS 1-31

(A RESUBDIVISION OF LOT 1, FEARING ESTATES - PLAT No. 10146 AND TAX PARCEL 2)

ZONING: R-20

TAX MAP No. 31, GRID 18, PARCELS No. 2 & 805

APPROVED: DEPARTMENT OF PUBLIC WORKS
Richard M. Sauer 6-12-01
 CHIEF, BUREAU OF HIGHWAYS
 DATE

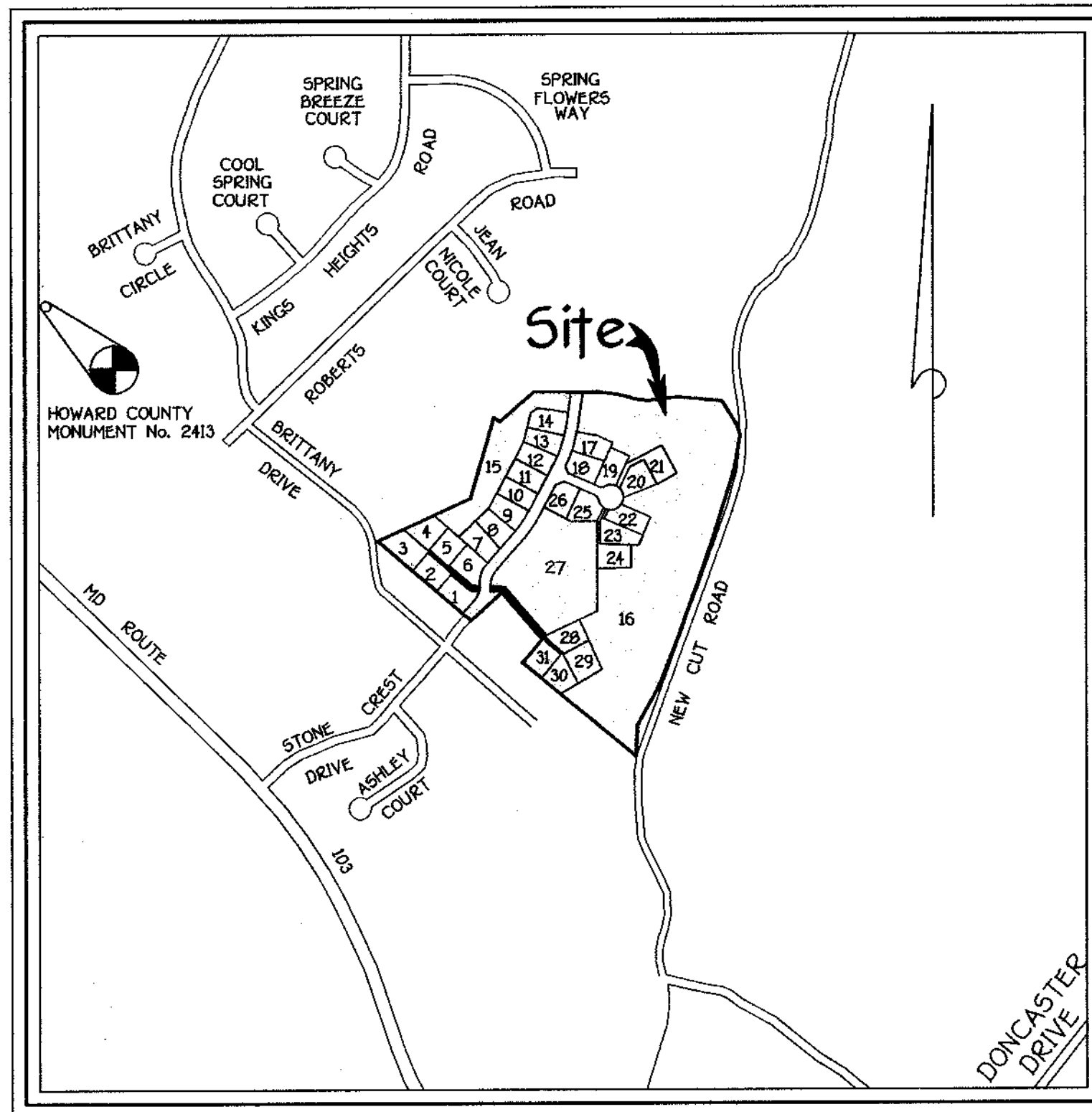
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cindy Hamilton 6/10/01
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE

William J. ... 6/14/01
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE

REVISIONS		
NO.	DESCRIPTION	DATE
1	Raised Profile Grade Lines of Stone Crest Dr & Poplar Creek Ct, site grading as req'd. Added 15" x 18" storm drainage system bet. 1-9 & 1-11; revised Drainage Area Map, & Pipe & Structure Schedules as req'd.	10-1-04

ROAD CLASSIFICATION		
ROAD NAME	CLASSIFICATION	R/W
STONECREST DRIVE	PUBLIC ACCESS STREET	50'
POPLAR CREEK COURT	PUBLIC ACCESS PLACE	40'

TRAFFIC CONTROL SIGNS				
STREET NAME	CL. STATION	OFFSET	POSTED SIGN	SIGN CODE
STONECREST DRIVE	0+50	15' R	SPEED LIMIT 25	R2-1
STONECREST DRIVE	1+32	17' L	STOP	R1-1
STONECREST DRIVE	1+63	17' R	STOP	R1-1
STONECREST DRIVE	4+40	16' L	SPEED LIMIT 25	R2-1
STONECREST DRIVE	5+40	12' R	ROAD NARROWS	W5-1
STONECREST DRIVE	6+10	12' L	ROAD NARROWS	W5-1
Poplar Creek Court	0+10	11.5' L	Stop	R1-1



VICINITY MAP

SCALE: 1" = 600'

SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- 2 FOOT CONTOUR TOPOGRAPHY AND EXISTING CONDITIONS BASED ON AERIAL TOPOGRAPHIC SURVEY PREPARED BY WINGS AERIAL MAPPING CO., INC., FLOWN IN JULY 1997 AND FIELD RUN DATA BY FISHER, COLLINS & CARTER, INC., OCTOBER 1997.
- THE COORDINATES SHOWN HEREON ARE BASED UPON HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM, HOWARD COUNTY MONUMENT Nos. 21E2 AND 21E3 WERE USED FOR THIS PROJECT.
 2411 N 577298.662 437.918' 2413 N 580648.910 404.518'
 E 1366075.175 E 1364974.459
- WATER IS PUBLIC BY CONT. No. 14-3895-D.
- SEWER IS PUBLIC BY PROPOSED NEW CUT ROAD SEWAGE PUMPING STATION AND CONT. No. 14-3899-D.
- THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY LEE CUNNINGHAM & ASSOCIATES, DATED JULY, 1997.
- BACKGROUND INFORMATION:
 A. SUBDIVISION NAME: STONE MANOR
 B. TAX MAP No.: 31, GRID: 1
 C. PARCEL No.: 2 & 805
 D. ZONING: R-20
 E. ELECTION DISTRICT: SECOND
 F. TOTAL TRACT AREA: 30.81 AC. +
 G. NO. OF BUILDABLE LOTS: 28
 H. NO. OF PRESERVATION PARCELS: 0
 I. NO. OF OPEN SPACE LOTS: 3
 J. PRELIMINARY PLAN APPROVAL DATE: MAY 14, 1999
 K. PREVIOUS FILE No.: SP-98-15
 L. TOTAL AREA OF OPEN SPACE REQUIRED: (30.81 AC. x 30%) = 9.24 AC. +
 M. TOTAL AREA OF OPEN SPACE PROVIDED: 14.824 AC. +
- REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE TO BE PROVIDED AT THE JUNCTION OF THE PIPE / FLAG STEM AND THE ROAD R/W AND NOT ONTO THE PIPE / FLAG STEM DRIVEWAY.
- NO CEMETERIES EXIST ON THE PROPERTY.
- ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 98% COMPACTION OF ASTM T-180.
- THE WETLAND AND FOREST STAND DELINEATION WAS PREPARED BY EXPLORATION RESEARCH, INC. AND APPROVED UNDER SP98-15.
- THE FOREST CONSERVATION EASEMENTS HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, EXCEPT AS SHOWN ON AN APPROVED ROAD CONSTRUCTION DRAWING OR SITE DEVELOPMENT PLAN. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
 THE FOREST CONSERVATION OBLIGATION WILL BE MET BY 10.815 ACRES OF RETENTION ON OPEN SPACE LOT 15 AND 16. THE SURETY AMOUNT WILL BE \$99,046.00 for the required 7.7 acres retention.
- STORMWATER MANAGEMENT FACILITY:
 TYPE - RETENTION FACILITY FOR QUANTITY AND QUALITY
 OWNER - PUBLIC
 MAINTENANCE - PUBLIC
- THIS PROJECT IS SUBJECT TO WP-98-121. THE REQUEST TO WAIVE SECTION 16.116.1 AND 16.116.2. TO ALLOW GRADING WITHIN WETLAND AND STREAM BUFFERS FOR THE PURPOSE OF UPGRADING AN EXISTING POND INTO A SWM POND THAT MEETS MD-37B SPECIFICATIONS WAS APPROVED ON JUNE 23, 1998. APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
 a) THIS APPROVAL APPLIES ONLY TO THE RECONSTRUCTION OF THE EXISTING POND FOR SWM.
 b) DISTURBANCE SHALL BE TO THE MINIMUM EXTENT NECESSARY AND SHALL BE SHOWN AS A LIMIT OF DISTURBANCE ON CONSTRUCTION DRAWINGS.
 c) PROVIDE COPIES OF ALL REQUIRED PERMITS PRIOR TO APPROVAL OF CONSTRUCTION PLANS.
- SOILS INFORMATION TAKEN FROM SOIL MAP No. 20, SOIL SURVEY, HOWARD COUNTY, MARYLAND, JULY, 1968 155UE.
- HISTORIC STRUCTURE HD-398 (BON AIR MANOR) IS TO REMAIN ON SITE AS PART OF THE PROPOSED LOT 28. OTHER ASSOCIATED HISTORIC STRUCTURES WILL REMAIN ON OPEN SPACE LOT 10. THIS INFORMATION IS PER THE HOWARD COUNTY HISTORIC INVENTORY LISTING.
- STREET LIGHTS WILL BE REQUIRED IN THIS DEVELOPMENT IN ACCORDANCE WITH THE DESIGN MANUAL. 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)". THE JUNE 1993 POLICY INCLUDES GUIDELINES FOR LATERAL AND LONGITUDINAL PLACEMENT. A MINIMUM SPACING SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- THIS PROJECT IS SUBJECT TO MDE PERMIT/TRACKING NUMBER 1999E1721 AND WMA No. 99-PO-2009.
- THE PERIMETER LANDSCAPING SURETY IN THE AMOUNT OF \$22,450.00 SHOWN ON SHEET 12 WILL BE PART OF THE DEVELOPER'S AGREEMENT.
- OPEN SPACE LOTS 15 AND 16 TO BE OWNED AND MAINTAINED BY THE HOWARD COUNTY DEPARTMENT OF RECREATION & PARKS.
- OPEN SPACE LOT 10 TO BE OWNED AND MAINTAINED BY THE STONE MANOR HOMEOWNERS ASSOCIATION FOR THE BENEFIT OF THE RESIDENTS OF STONE MANOR, SECTION ONE SUBDIVISION.

STREET LIGHT CHART				
DWG. No.	STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
2	STONECREST DRIVE	C.L. STA. 0+95	15' R	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
2	STONECREST DRIVE	C.L. STA. 2+67	15' L	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
2	STONECREST DRIVE	C.L. STA. 9+70	0' R	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
2	STONECREST DRIVE	C.L. STA. 7+25	18' R	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
2	STONECREST DRIVE	C.L. STA. 9+95	17' R	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
3	POPLAR CREEK COURT	C.L. STA. 2+45	3' L	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.

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

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL OFFICE: 10272 BALDWIN NATIONAL PIKE
 ELLETTTS CITY, MARYLAND 21043
 (410) 481-2955

OWNER
 Mrs. Helen Fearing Irwin
 805 River Road
 Sykesville, Md. 21784

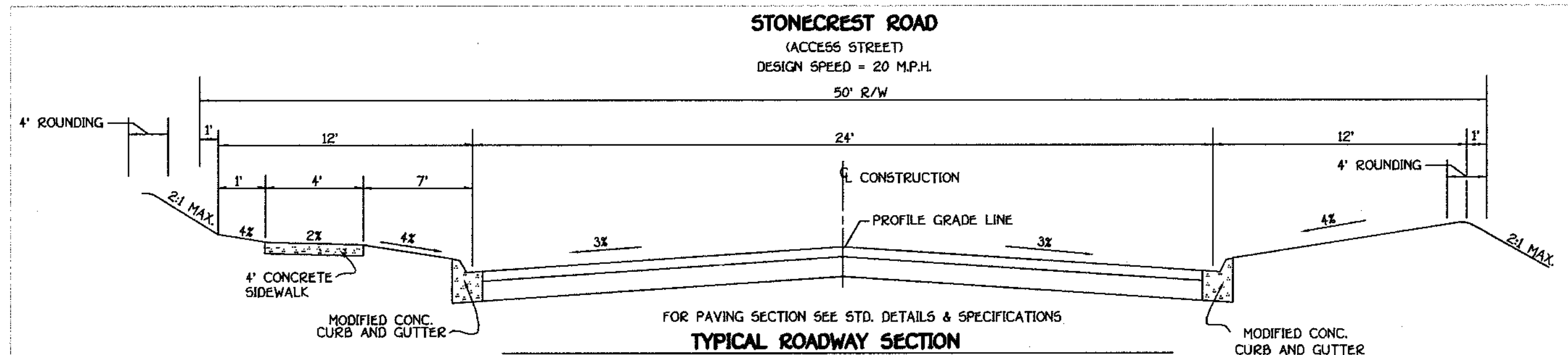
OWNER
 Mr. Harry Grant &
 Mrs. Betty Grant
 4445 Stonecrest Drive
 Ellicott City, Md. 21043

DEVELOPER
 Stonecrest Manor, LLC
 c/o Land Design And Development, Inc.
 8000 Main Street
 Ellicott City, Md. 21043
 (410) 860-9105



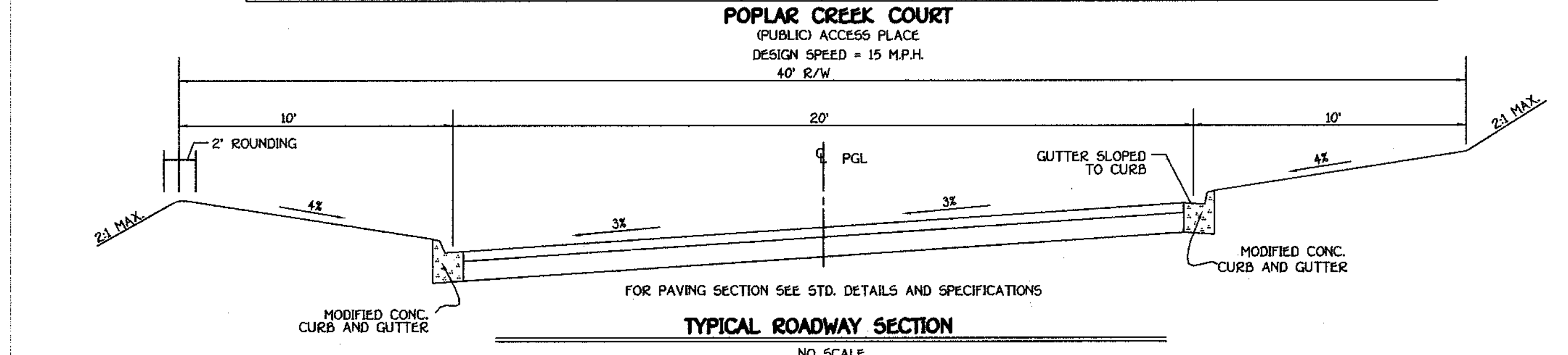
FINAL PLAN STONE MANOR SECTION ONE LOTS 1 THRU 31

(A RESUBDIVISION OF LOT 1, FEARING ESTATES - PLAT No. 10146 AND TAX PARCEL 2)
 TAX MAP 31, PARCELS No. 2 AND 805, GRID 1
 SECOND ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 DATE: MAY 21, 2001
 SHEET 1 OF 14



ROADWAY INFORMATION CHART
NO SCALE

ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	STATION LIMITS	A	B	C	D	R/W	PAVING SECTION
STONECREST ROAD	PUBLIC ACCESS STREET	25 M.P.H.	R-20	0+00 TO 10+37	24'	7'	4'	12'	50'	P-2



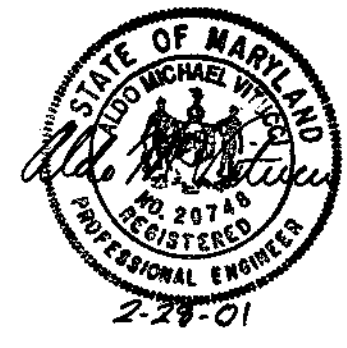
ROADWAY INFORMATION CHART
NO SCALE

ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	STATION LIMITS	A	D	R/W	PAVING SECTION
POPLAR CREEK COURT	PUBLIC ACCESS PLACE	15 M.P.H.	R-20	0+00 TO 1+96.09	20'	10'	40'	P-2

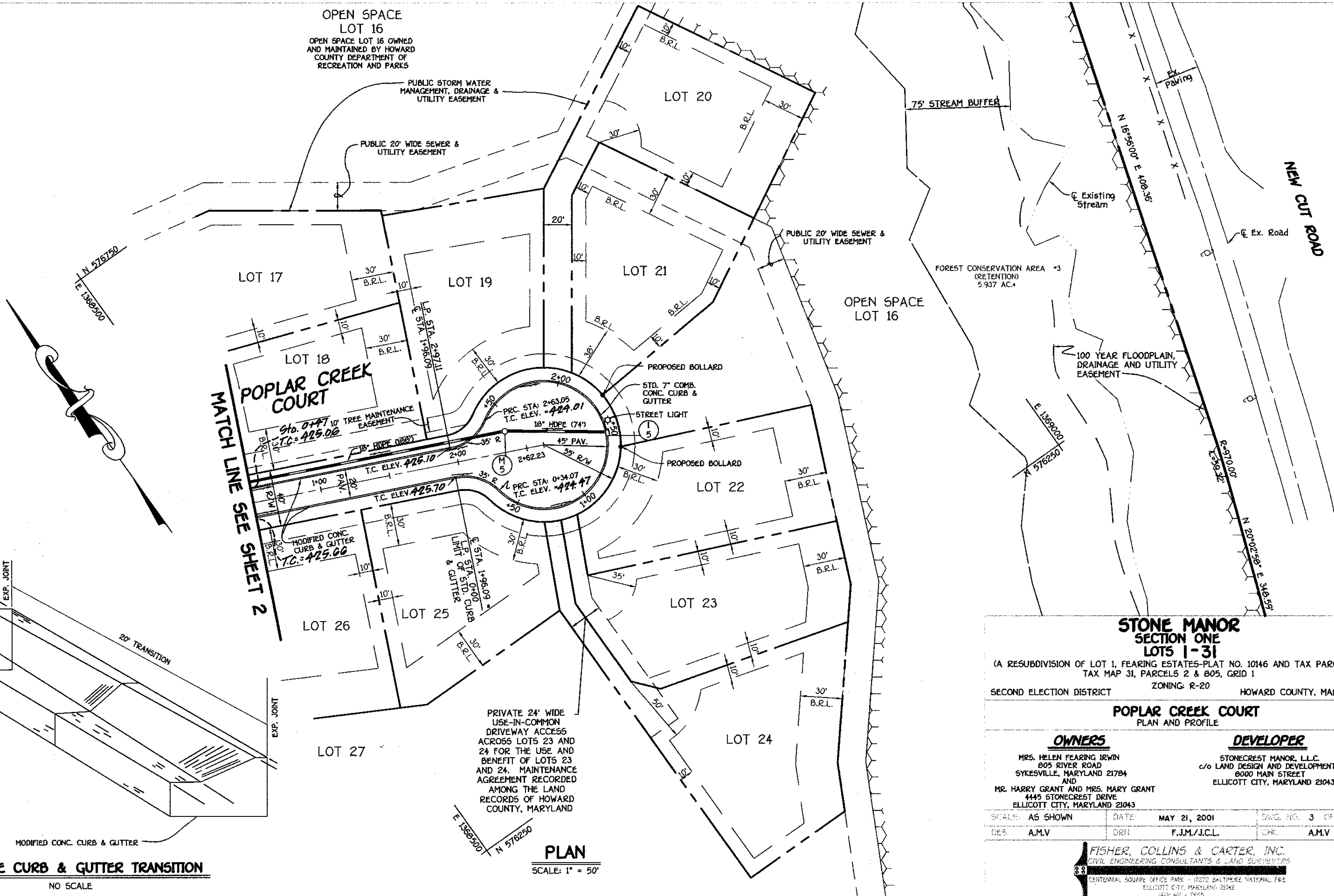
APPROVED
DEPARTMENT OF PLANNING AND ZONING
Cindy Hamaker 6/18/01
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED
DEPARTMENT OF PLANNING AND ZONING
Michael J. ... 6/14/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Danke 6-12-01
CHIEF, BUREAU OF HIGHWAY



No.	Revision	Date
1	Raised Profile Grade Lines for Poplar Creek Court	10-1-04



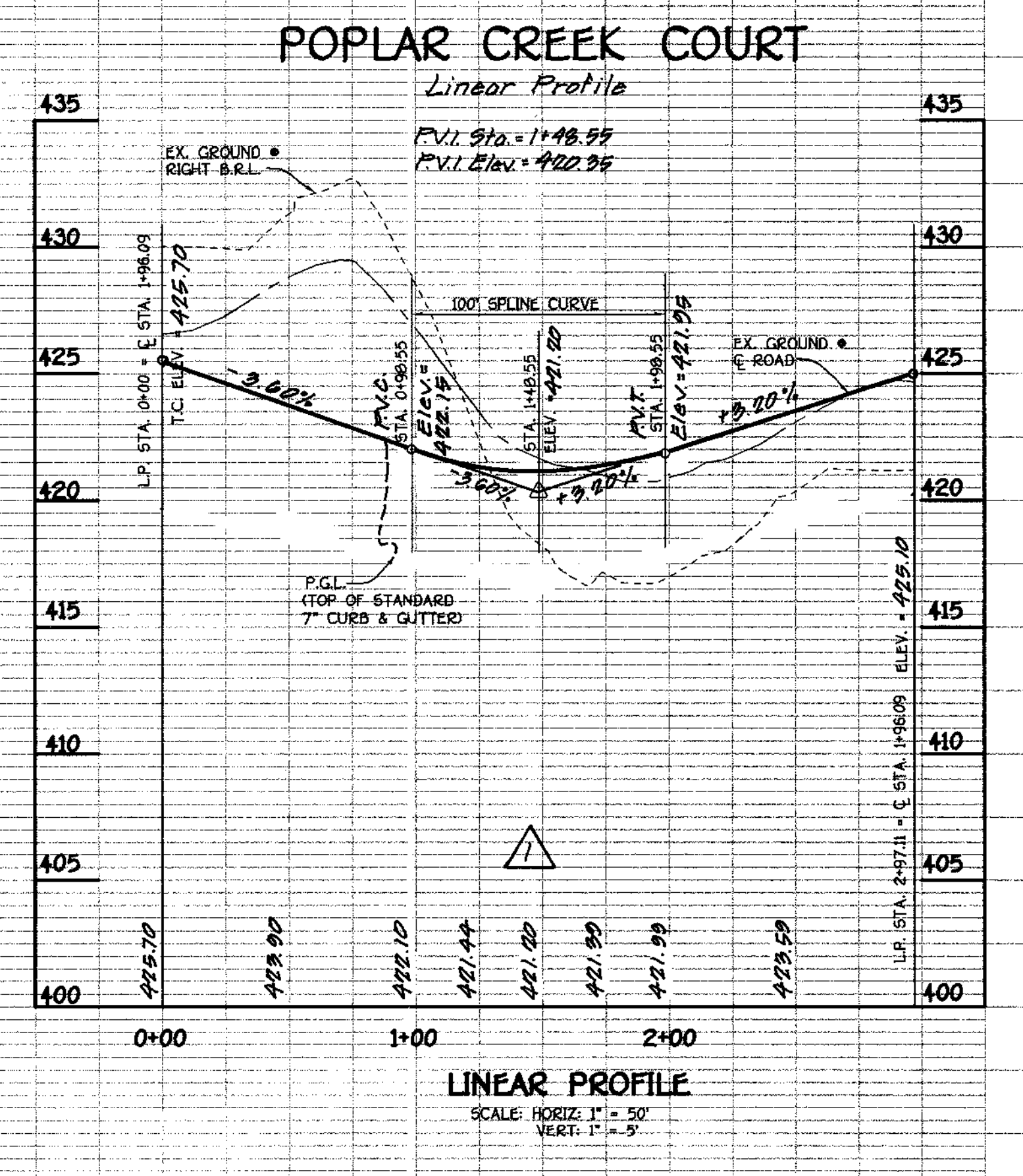
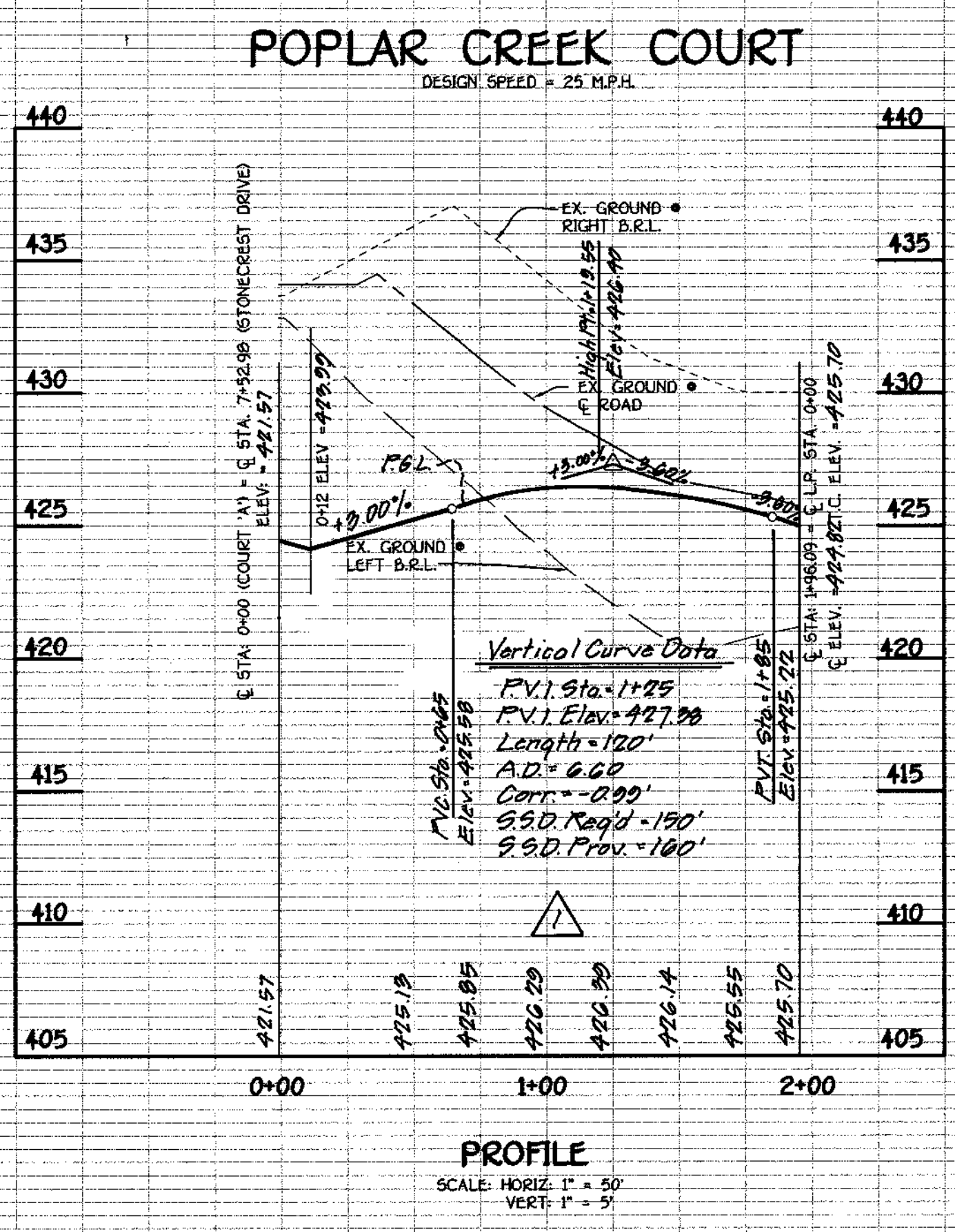
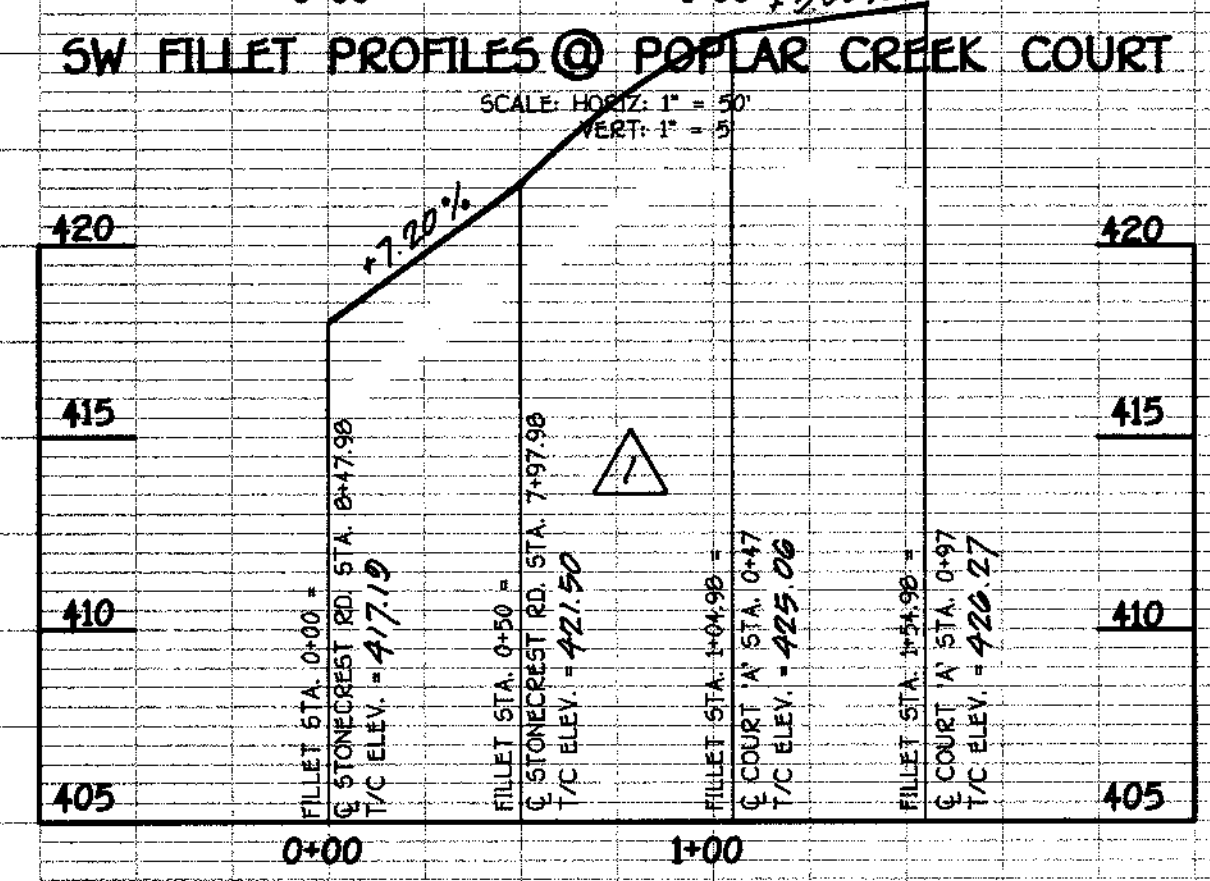
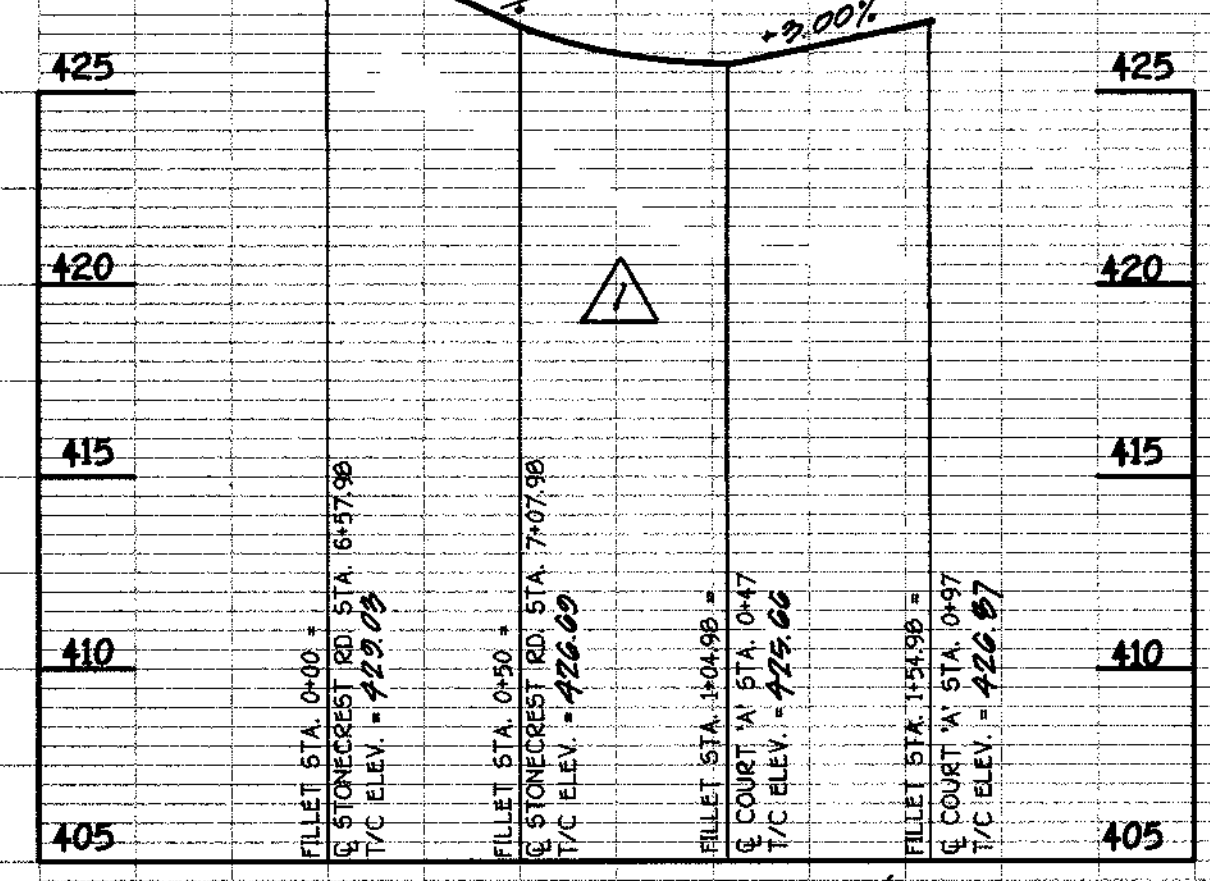
STONE MANOR SECTION ONE LOTS 1-31
(A RESUBDIVISION OF LOT 1, FEARING ESTATES-PLAT NO. 10146 AND TAX PARCEL 20 TAX MAP 31, PARCELS 2 & 805, GRID 1)
SECOND ELECTION DISTRICT ZONING R-20 HOWARD COUNTY, MARYLAND

OWNERS
MRS. HELEN FEARING IRWIN
805 RIVER ROAD
SYLVESVILLE, MARYLAND 21784
MR. HARRY GRANT AND MRS. MARY GRANT
1445 STONECREST DRIVE
ELLCOTT CITY, MARYLAND 21043

DEVELOPER
STONECREST MANOR, L.L.C.
c/o LAND DESIGN AND DEVELOPMENT, INC.
8000 MAIN STREET
ELLCOTT CITY, MARYLAND 21043

SCALE: AS SHOWN DATE: MAY 21, 2001 SHEET NO. 3 OF 14
DES: AMV DRN: F.J.M./J.C.L. CHK: AMV

FISHER COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK, 10270 BALTIMORE NATIONAL FREE
ELLCOTT CITY, MARYLAND 21043
410-582-3970



STREET TREE SCHEDULE				
SYMBOL	QUANTITY	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
○	46	ACER RUBRUM "OCTOBER GLORY" RED MAPLE	2 1/2"-3" CAL.	40' APART ON PUBLIC R/W
○	15	PLATANUS OCCIDENTALIS LONDON PLANETREE	2 1/2"-3" CAL.	40' APART ON PUBLIC R/W

NOTE: FINANCIAL SURETY FOR THE 61 REQUIRED STREET TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$18,300.00.

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 Heavily 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: *Bruce Taylor* Manager 10-2-00
 Date

Signature of Developer: *Bruce Taylor* Manager
 Printed Name of Developer

By The Engineer:
 I Certify That These Plans Represent A Final Construction, Erosion And Sediment Control Represents A Practical And Feasible Method To Control Erosion And Sediment. This Plan Was Prepared From My Personal Knowledge Of The Site Conditions. This Plan Meets The Requirements Of The Howard Soil Conservation District. I Have Noted All Requirements Of The Howard Soil Conservation District. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Heavily Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion.

Signature: *Alpo* 5-24-01
 Date

Signature: *Jim* 4/25/01
 Date

Signature: *John* 4/25/01
 Date

Signature: *Robert M. Dunder* 6-2-01
 Date

Signature: *Chris Hamilton* 6/10/01
 Date

Signature: *William* 6/14/01
 Date

AS-BUILT CERTIFICATION
 I Herby Certify That The Facility Shown On This Plan Was Constructed As Shown On The "As-Built" Plans And Meets The Approved Plans And Specifications.

Signature: _____ P.E. No. _____
 Date: _____

Certify Means To State Or Declare A Professional Opinion Based Upon On-site Inspections And Material Tests Which Are Conducted During Construction. The On-site Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not Mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Release Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

NOTE: EXISTING WET POND TO BE DEWATERED AND RECONSTRUCTED TO MEET MD-37B SPECIFICATIONS.

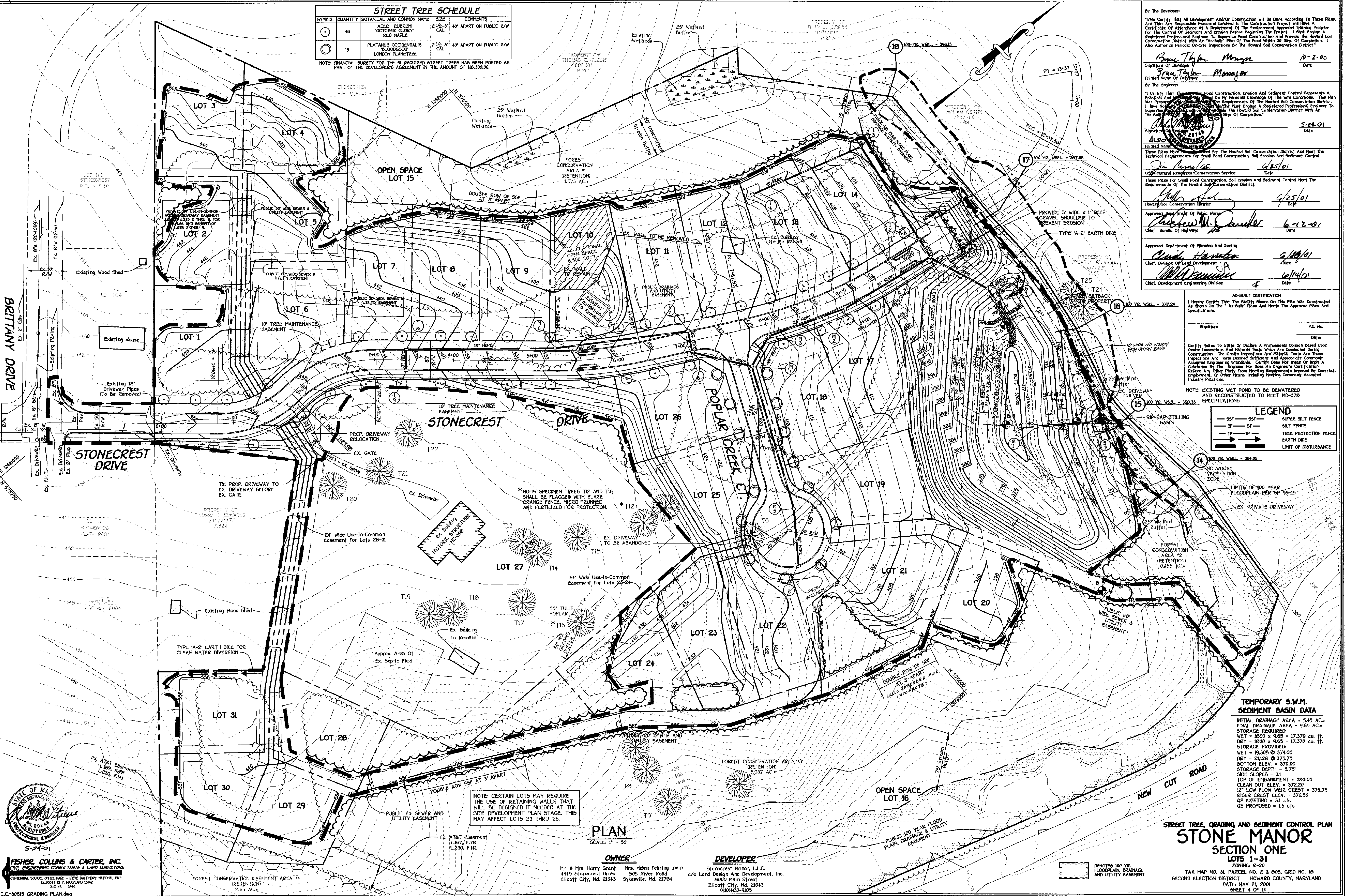
LEGEND

— SF — SF —	SUPER-SILT FENCE
— SF —	SILT FENCE
— TP — TP —	TREE PROTECTION FENCE
— E — E —	EARTH DIKE
— L — L —	LIMIT OF DISTURBANCE

TEMPORARY S.W.M. SEDIMENT BASIN DATA

INITIAL DRAINAGE AREA = 545 AC*
FINAL DRAINAGE AREA = 955 AC*
STORAGE REQUIRED:
WET = 1800 x 9.65 = 17,370 cu. ft.
DRY = 1800 x 9.65 = 17,370 cu. ft.
STORAGE PROVIDED:
WET = 19,305 @ 374.00
DRY = 21,128 @ 375.75
BOTTOM ELEV. = 370.00
STORAGE DEPTH = 5.75'
SIDE SLOPES = 3:1
TOP OF EMBANKMENT = 380.00
CLEAN-OUT ELEV. = 372.20
12" LOW FLOW WEIR CREST = 375.75
RISER CREST ELEV. = 376.50
Q2 EXISTING = 33 cfs
Q2 PROPOSED = 15 cfs

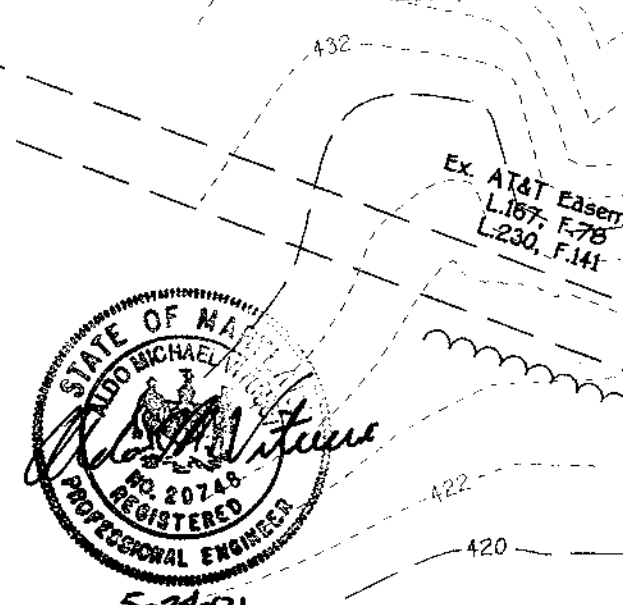
STREET TREE, GRADING AND SEDIMENT CONTROL PLAN
STONE MANOR
SECTION ONE
 LOTS 1-31
 ZONING R-20
 TAX MAP NO. 31, PARCEL NO. 2 & 805, GRID NO. 18
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: MAY 21, 2003
 SHEET 4 OF 14



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE: 1400 - 1402 BALDWIN NATIONAL PK.
 ELICOTT CITY, MARYLAND 21043
 (410) 661-2000
 F.C.C.-30615 GRADING PLAN.dwg

OWNER
 Mr. & Mrs. Harry Grant
 4445 Stonecrest Drive
 Ellicott City, Md. 21043

DEVELOPER
 Stonecrest Manor, L.L.C.
 c/o Land Design And Development, Inc.
 8000 Main Street
 Ellicott City, Md. 21043
 (410) 480-9102

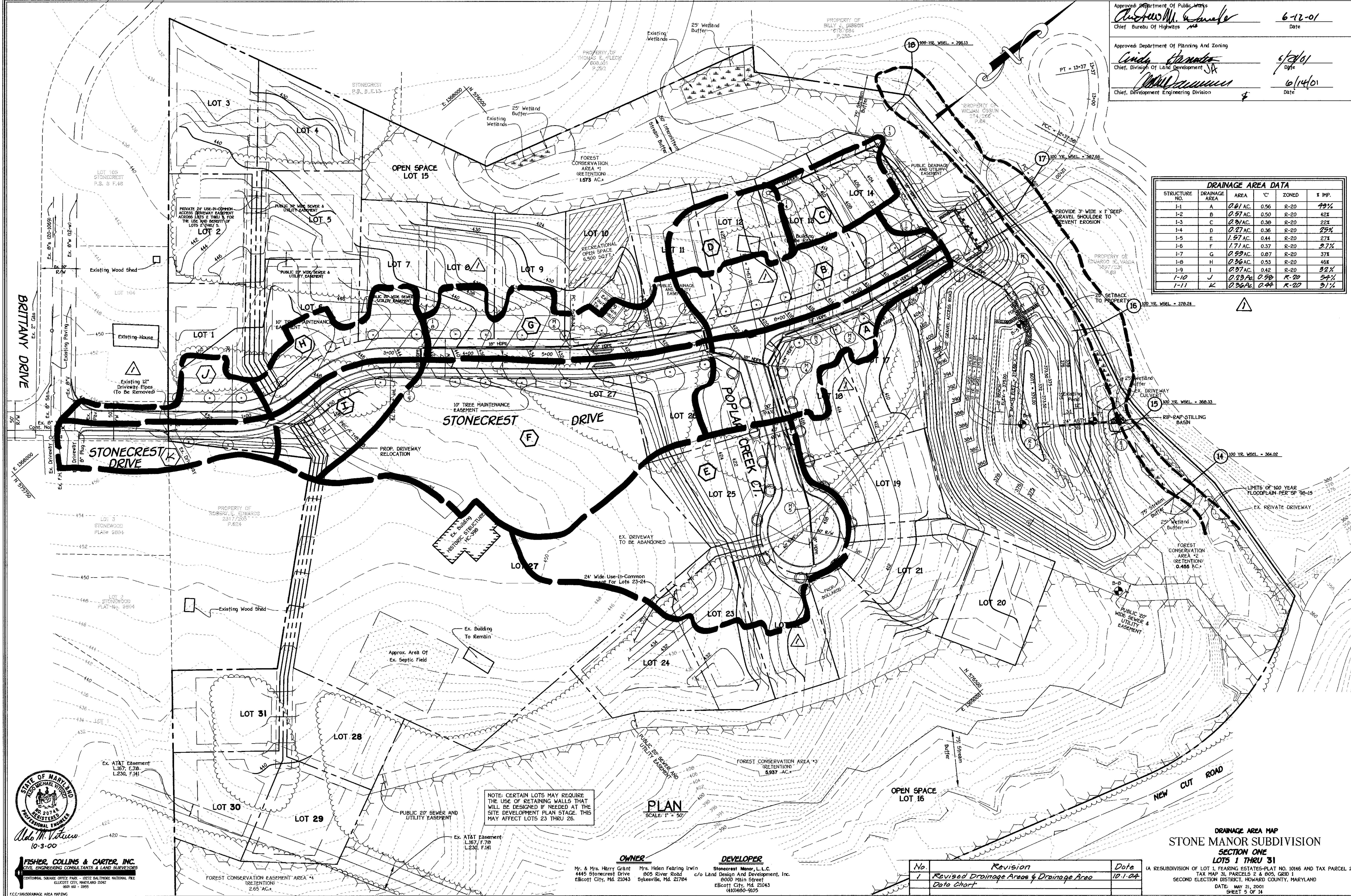


Approved: Department of Public Works
August M. Dwyer 6-12-01
 Chief, Bureau of Highways Date

Approved: Department of Planning and Zoning
Cindy Winters 6/28/01
 Chief, Division of Land Development Date

William J. ... 6/14/01
 Chief, Development Engineering Division Date

STRUCTURE NO.	DRAINAGE AREA	AREA	C	ZONED	% IMP.
1-1	A	0.61 AC.	0.56	R-20	99%
1-2	B	0.57 AC.	0.50	R-20	42%
1-3	C	0.51 AC.	0.38	R-20	22%
1-4	D	0.27 AC.	0.36	R-20	25%
1-5	E	1.57 AC.	0.44	R-20	27%
1-6	F	1.71 AC.	0.37	R-20	37%
1-7	G	0.59 AC.	0.87	R-20	37%
1-8	H	0.36 AC.	0.53	R-20	45%
1-9	I	0.37 AC.	0.42	R-20	32%
1-10	J	0.23 AC.	0.58	R-20	54%
1-11	K	0.36 AC.	0.44	R-20	31%



STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 No. 20748
 REGISTERED
Walter M. ...
 10-3-00

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 FEDERAL SQUARE, SUITE 702 - 1072 BALTIMORE NATIONAL FIRE
 ELLICOTT CITY, MARYLAND 21114
 410-461-2595

OWNER
 Mr. & Mrs. Harry Grant
 4445 Stonecrest Drive
 Ellicott City, Md. 21043

DEVELOPER
 Stonecrest Manor, L.L.C.
 c/o Land Design And Development, Inc.
 8000 Main Street
 Ellicott City, Md. 21043
 410-460-9105

No.	Revision	Date
1	Revised Drainage Areas & Drainage Area	10-1-04
	Date Chart	

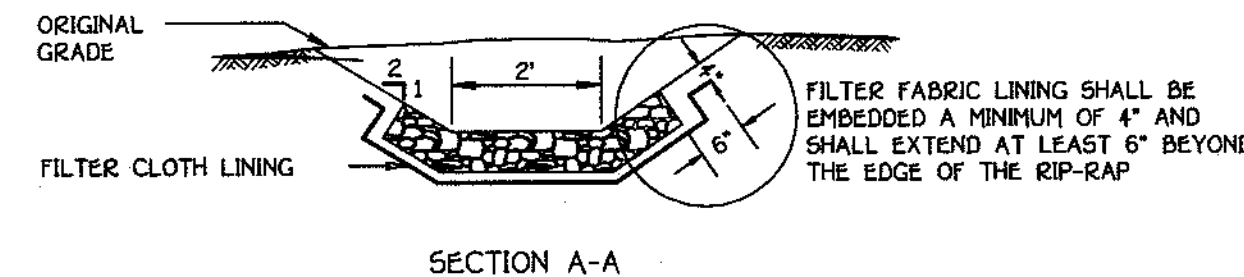
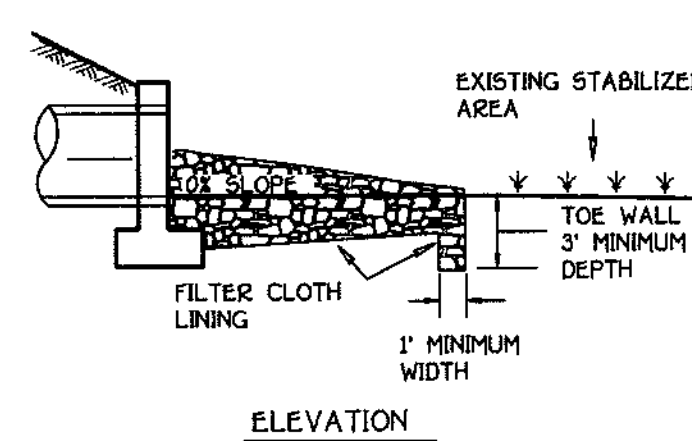
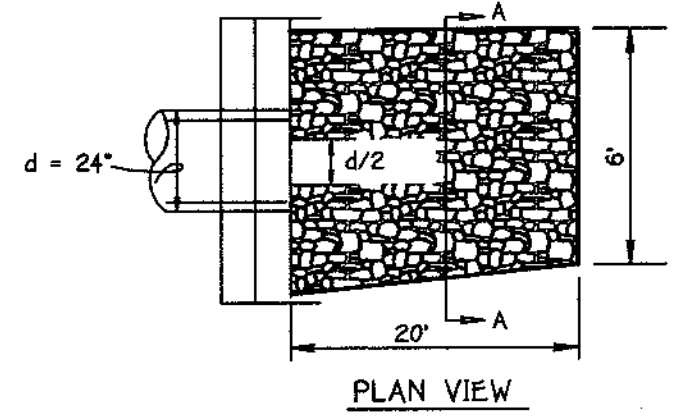
DRAINAGE AREA MAP
STONE MANOR SUBDIVISION
SECTION ONE
LOTS 1 THRU 31
 (A RESUBDIVISION OF LOT 1, FEASING ESTATES-PLAN NO. 10146 AND TAX PARCEL 23
 TAX MAP 31, PARCELS 2 & 805, GRID 1
 SECOND ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 DATE: MAY 21, 2001
 SHEET 5 OF 14

Approved: Department Of Planning And Zoning
 Chief, Division Of Land Development
 Approved: Howard County Department Of Public Works
 Chief, Bureau Of Highways

6/26/01
 6/14/01
 6-12-01

ROCK OUTLET PROTECTION III • 5-1

ROCK OUTLET PROTECTION



- Construction Specifications
- The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
 - The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
 - Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.
 - Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.
 - The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

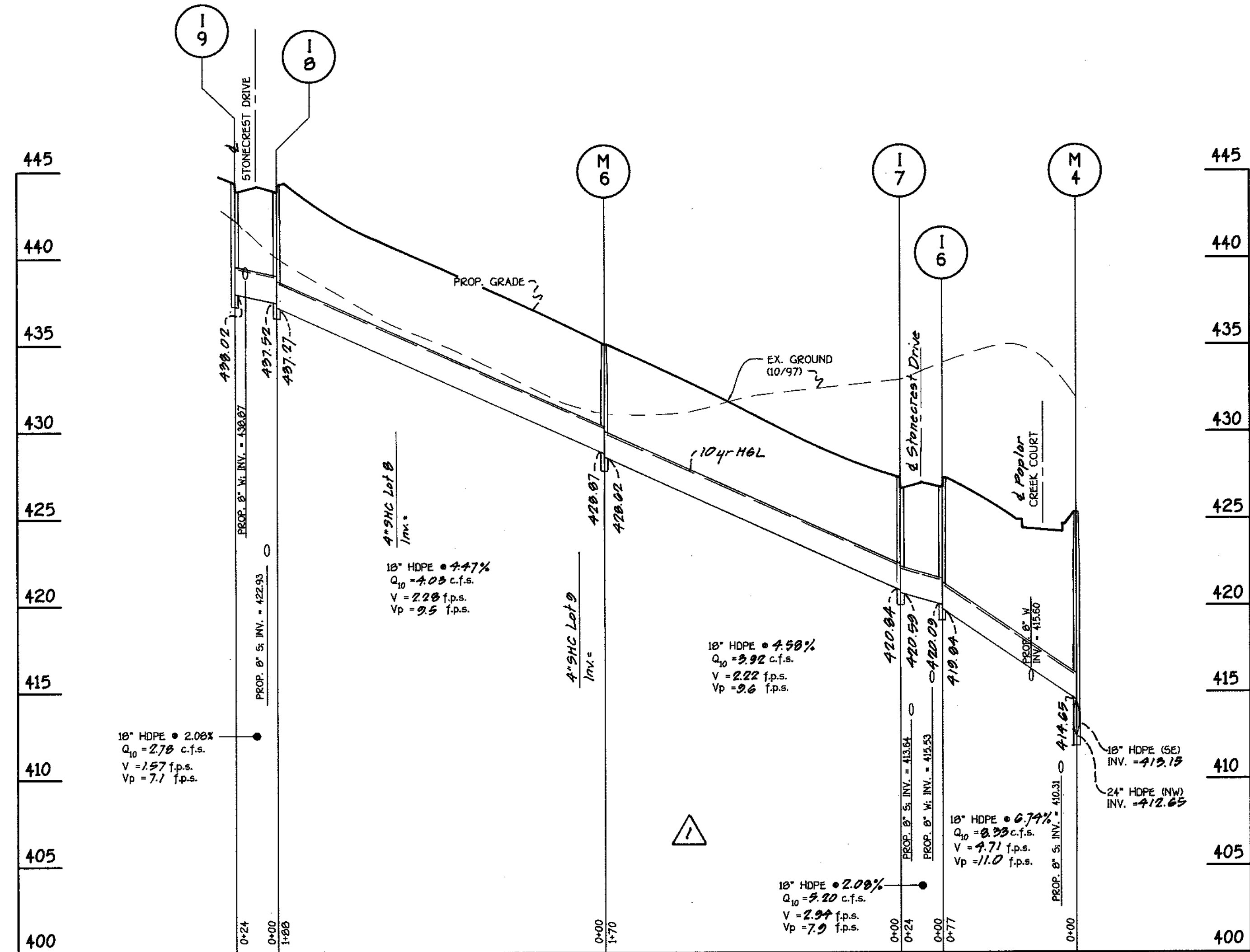
NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

STRUCTURE SCHEDULE

STRUCTURE NO.	TOP ELEVATION	INV. IN	INV. OUT	ROAD NAME	ROAD STA.	OFFSET	TYPE	W	REMARKS
I-1	405.15	393.00	391.50	STONECREST DRIVE	C.L. STA. 10+24.10	12' RT	A-5 INLET	2.5'	S.D. 4.40
I-2	405.15	392.11	391.86	STONECREST DRIVE	C.L. STA. 10+24.10	12' LT	A-5 INLET	2.5'	S.D. 4.40
I-3	399.00	394.43	394.18				'S' INLET		S.D. 4.22
I-4	416.00		411.50				'S' INLET		S.D. 4.22
I-5	421.20		418.02	POPLAR CREEK COURT	L.P. STA. 14+48.55		A-10 Inlet	2.5'	S.D. 4.41
I-6	427.24	420.09	418.84	STONECREST DRIVE	C.L. STA. 7+01.74	12' RT	A-5 INLET	2.5'	S.D. 4.40
I-7	427.24	420.84	420.89	STONECREST DRIVE	C.L. STA. 7+01.74	12' LT	A-5 INLET	2.5'	S.D. 4.40
I-8	444.50	437.52	437.27	STONECREST DRIVE	C.L. STA. 3+40.00	12' LT	A-5 INLET	2.5'	S.D. 4.40
I-9	444.50		438.02	STONECREST DRIVE	C.L. STA. 3+40.00	12' RT	A-5 INLET	2.5'	S.D. 4.40
M-1	382.50	377.00	376.75				STD. MANHOLE		G - 5.05
M-2	413.62	404.05	403.80	STONECREST DRIVE	C.L. STA. 8+99.96	16' RT	STD. MANHOLE		G - 5.05
M-3	421.58	410.68	410.43	STONECREST DRIVE	C.L. STA. 7+99.08	16' RT	STD. MANHOLE		G - 5.05
M-4	425.58	414.65	412.65	POPLAR CREEK COURT	C.L. STA. 0+48.87	15' LT	STD. MANHOLE		G - 5.05
M-5	429.06	418.28	415.09	POPLAR CREEK COURT	C.L. STA. 2+36.87	15' LT	STD. MANHOLE		G - 5.05
M-6	435.12	428.87	428.62	STONECREST DRIVE	C.L. STA. 5+28.34	16' L	STD. MANHOLE		G - 5.05
S-1	378.00		376.16				CONC. END SECT.		S.D. 5.51
M-7	451.11	442.67	442.42	Stonecrest Drive	C.L. Sta. 2+22.00	7' L	Std Manhole		8-5.05
M-8	442.90	443.86	443.61	"	C.L. Sta. 1+33.71	5' L	Std Manhole		8-5.05
I-10	422.74	424.76	424.51	"	C.L. Sta. 0+62.50	12' L	A-10 Inlet	2.5'	S.D. 4.41
I-11	422.74		423.00	"	C.L. Sta. 0+62.50	12' R	A-10 Inlet	2.5'	S.D. 4.41

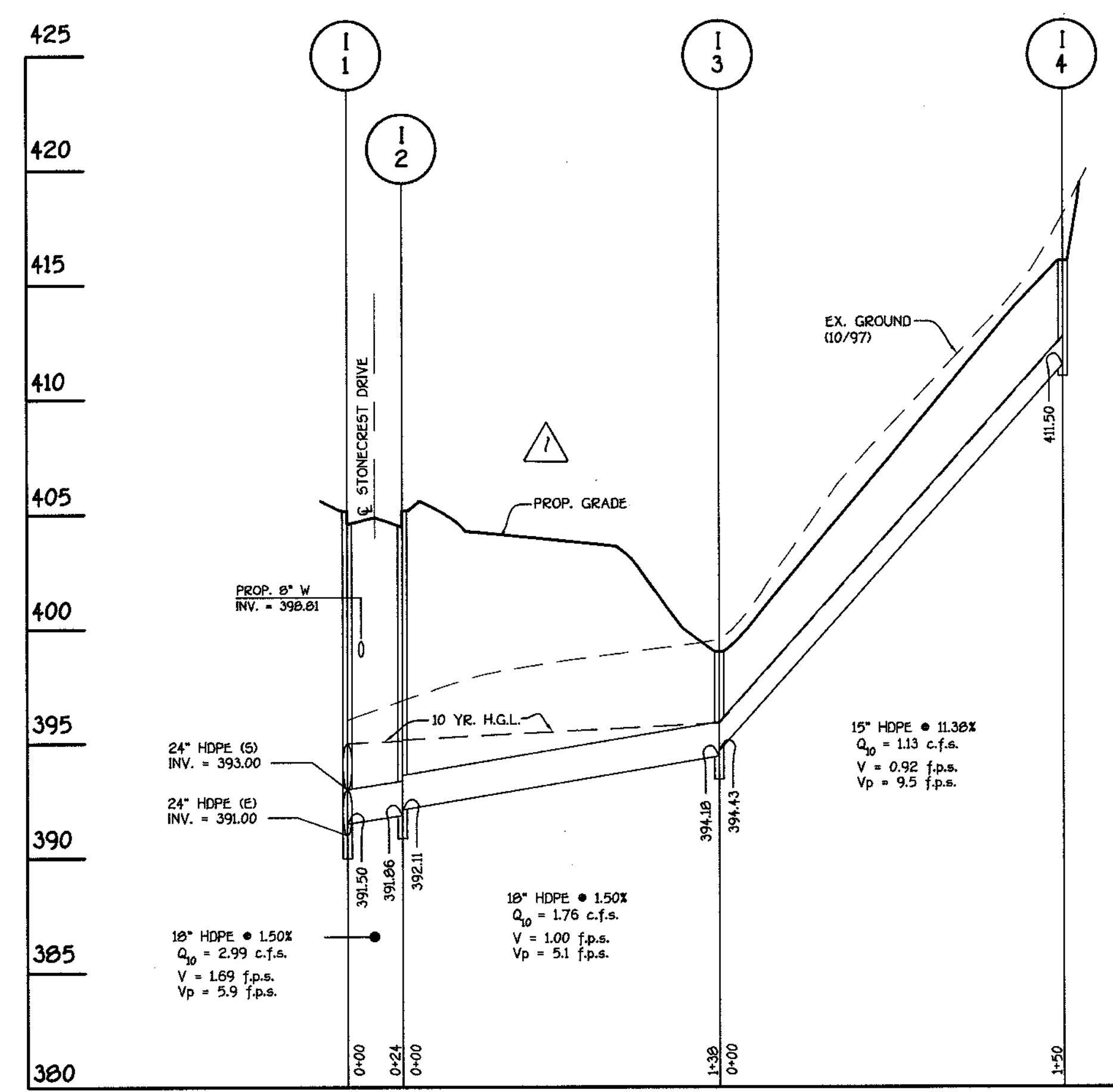
PIPE SCHEDULE

SIZE	MATERIAL	LENGTH
15"	HDPE	174'
18"	HDPE	1184'
24"	HDPE	380'



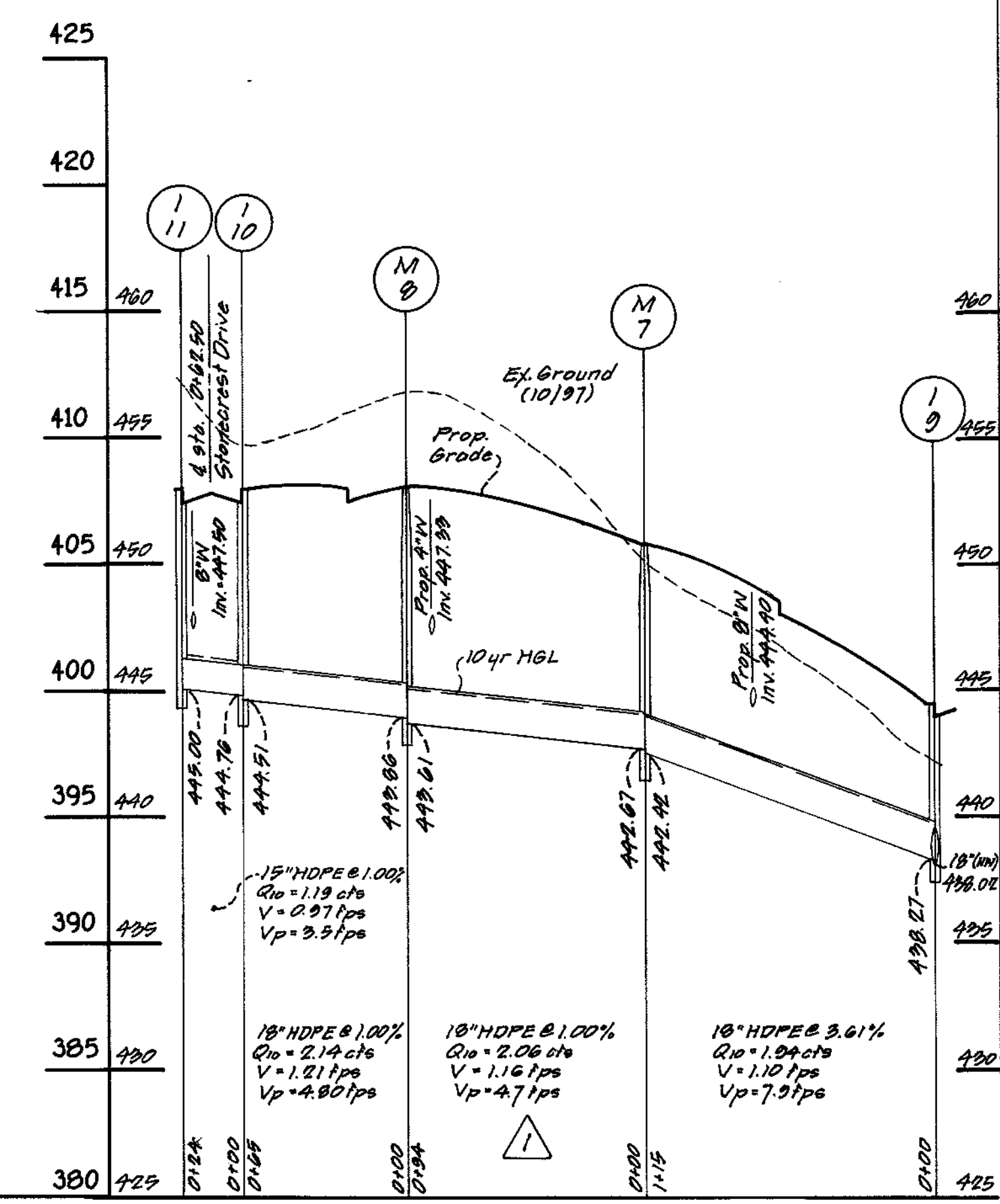
PROFILE

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



PROFILE

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



STORM DRAIN PROFILES
 STONE MANOR
 SECTION ONE

LOTS 1 THRU 31
 (A RESUBDIVISION OF LOT 1, FEARING ESTATES-PLAT NO. 10146 AND TAX PARCEL 2)
 TAX MAP 31, PARCELS 2 & 805, GRID 1
 SECOND ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 DATE: MAY 21, 2004
 SHEET 6 OF 14

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21114
 (410) 411-2999



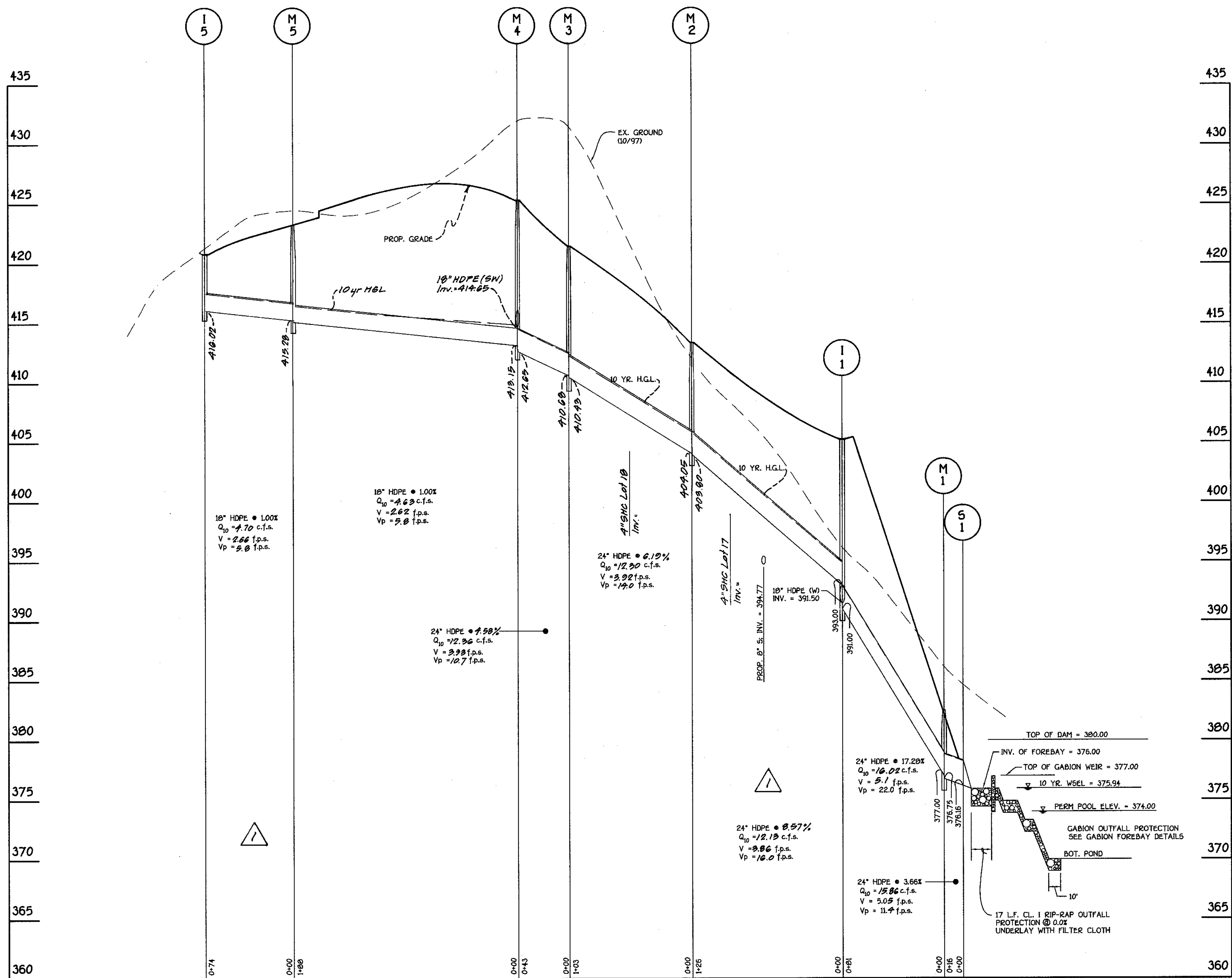
No.	Revision	Date
1	Raised proposed grade & storm drainage system between M-4 & I-3; raised proposed grade between I-1 & I-2; added storm drainage system between I-9 & I-11; revised structure & pipe schedules as required.	10-1-04

OWNERS
 MRS. HELEN FEARING IRWIN
 805 RIVER ROAD
 SYKESVILLE, MARYLAND 21784
 AND
 MR. HARRY GRANT AND MRS. MARY GRANT
 4445 STONECREST DRIVE
 ELLICOTT CITY, MARYLAND 21043

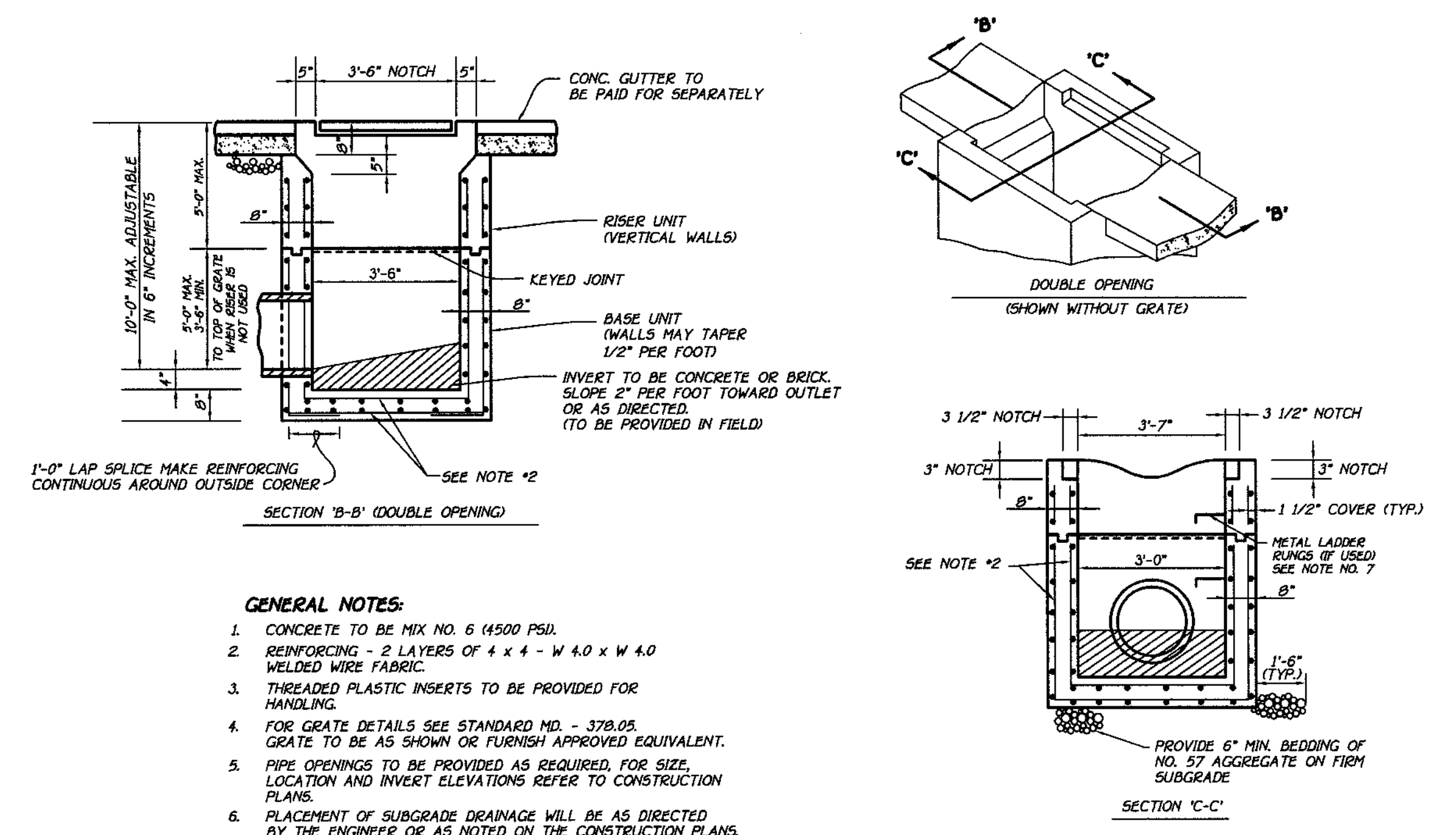
DEVELOPER
 STONECREST MANOR, L.L.C.
 c/o LAND DESIGN AND DEVELOPMENT, INC.
 8000 MAIN STREET
 ELLICOTT CITY, MARYLAND 21043

Approved: Department Of Planning And Zoning
 Chief, Division Of Land Development
 Chief, Development Engineering Division
 Approved: Howard County Department Of Public Works
 Chief, Bureau Of Highways

6/26/01
 6/14/01
 6-12-01



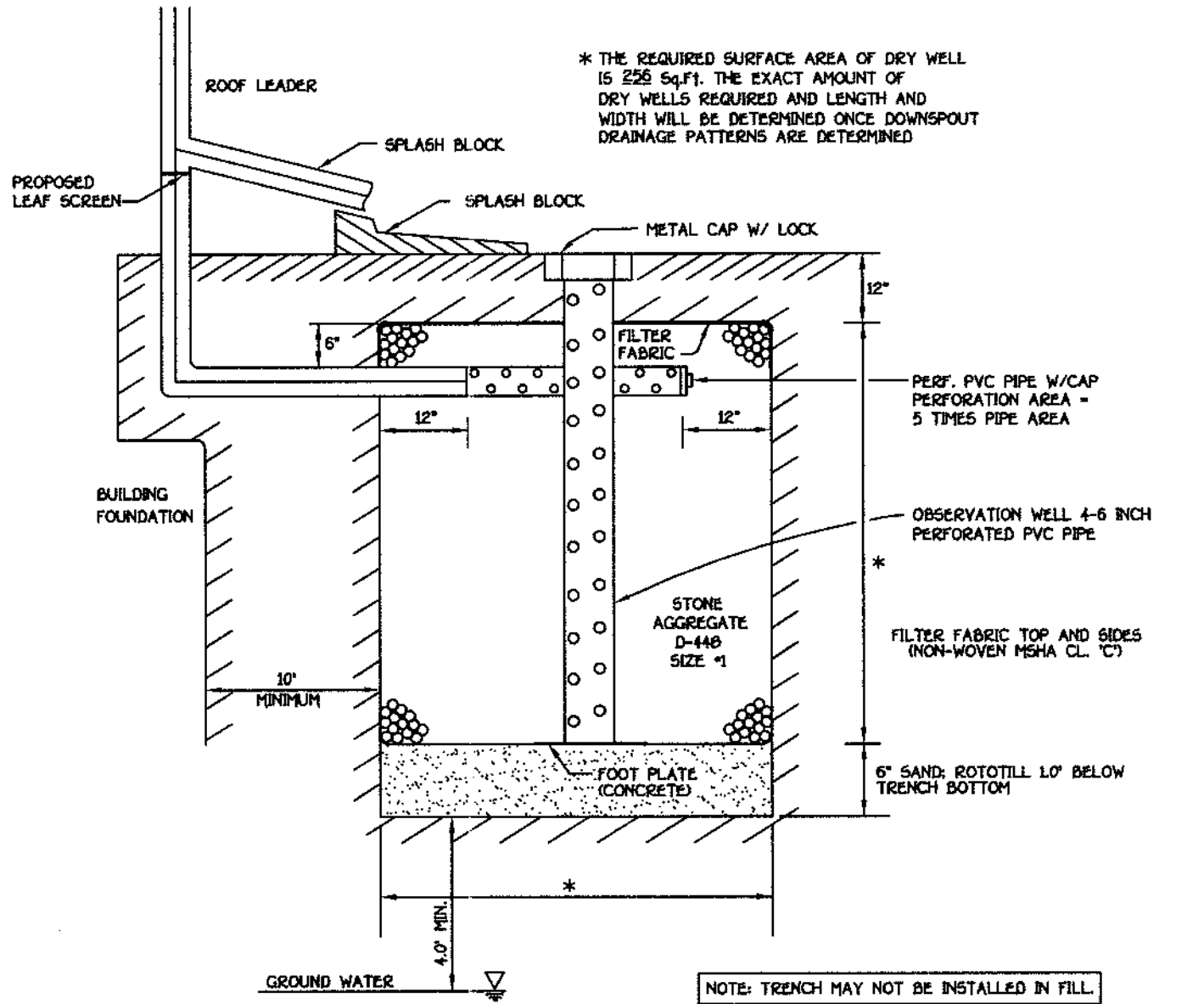
PROFILE
 SCALE: HORIZ. 1" = 50'
 VERT. 1" = 5'



- GENERAL NOTES:**
1. CONCRETE TO BE MIX NO. 6 (4500 PSI).
 2. REINFORCING - 2 LAYERS OF 4 x 4 - W 4.0 x W 4.0 WELDED WIRE FABRIC.
 3. THREADED PLASTIC INSERTS TO BE PROVIDED FOR HANDLING.
 4. FOR GRATE DETAILS SEE STANDARD MD - 378.05. GRATE TO BE AS SHOWN OR FURNISH APPROVED EQUIVALENT.
 5. PIPE OPENINGS TO BE PROVIDED AS REQUIRED, FOR SIZE, LOCATION AND INVERT ELEVATIONS REFER TO CONSTRUCTION PLANS.
 6. PLACEMENT OF SUBGRADE DRAINAGE WILL BE AS DIRECTED BY THE ENGINEER OR AS NOTED ON THE CONSTRUCTION PLANS.
 7. LADDER RINGS SHALL BE IN ACCORDANCE WITH STANDARD MD - 383.91, AS SHOWN OR AS DIRECTED BY THE ENGINEER.
 8. MINIMUM DEPTH PAYMENT PER EACH INLET INCLUDES DEPTHS UP TO 3'-6\"/>

MODIFIED OPEN END GRATE
 NOT TO SCALE

WATER QUALITY TREATMENT FOR LOTS 2-5, 7-9, 22-24 & 28-31
TYPICAL DRY WELL CROSS SECTION
INFILTRATION MANUAL



PROFILE
 NOT TO SCALE

STORM DRAIN PROFILES
STONE MANOR
SECTION ONE
LOTS 1 THRU 31

(A RESUBDIVISION OF LOT 1, FEARING ESTATES-PLAT NO. 10146 AND TAX PARCEL 2) (A RESUBDIVISION OF LOT 1, FEARING ESTATES-PLAT NO. 10146 AND TAX PARCEL 2) TAX MAP 31, PARCELS 2 & 805, GRID 1 SECOND ELECTION DISTRICT, HOWARD COUNTY, MARYLAND DATE: MAY 21, 2001 SHEET 7 OF 14



OWNERS
 MRS. HELEN FEARING IRWIN
 805 RIVER ROAD
 SYKESVILLE, MARYLAND 21784
 AND
 MR. HARRY GRANT AND MRS. MARY GRANT
 4445 STONECREST DRIVE
 ELLICOTT CITY, MARYLAND 21043

DEVELOPER
 STONECREST MANOR, L.L.C.
 c/o LAND DESIGN AND DEVELOPMENT, INC.
 8000 MAIN STREET
 ELLICOTT CITY, MARYLAND 21043

No.	Revision	Date
1	Raised proposed grade & storm drain system between I-1 & I-5	10.1.01

STORM WATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

SPECIFICATIONS

THESE SPECIFICATIONS ARE APPROPRIATE TO ALL PONDS WITHIN THE SCOPE OF THE STANDARD FOR PRACTICE MD-378. REFERENCES TO ASTM AND AASHTO SPECIFICATIONS APPLY TO THE MOST RECENT VERSION.

I. 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 POND OR RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCE, RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREE, BRUSH AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH GROUND SURFACE. FOR DRY STORM WATER 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 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.

II. EARTH FILL:

MATERIAL: THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREA OR AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, OVERSIZE STONES, 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 IF THE 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 SHALL BE PLACED IN 8-INCH MAXIMUM THICKNESS (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE 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 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 FORKED 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.

CUTOFF 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 BACK FILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

STRUCTURE BACK FILL: BACK FILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACK FILLING 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 PIPE UNLESS THERE IS A COMPACTED FILL OF TWENTY-FOUR INCHES OR GREATER OVER THE STRUCTURE OR PIPE.

STORMWATER MANAGEMENT POND MAINTENANCE SCHEDULE

(PUBLIC FACILITY)

A. PUBLIC ROUTINE MAINTENANCE

- Facility shall be inspected annually and after major storms. Inspections should be performed during wet weather to determine if the pond is functioning properly.
- Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes, the bottom of the pond, and maintenance access should be mowed as needed.
- Debris and litter next to the outlet structure shall be removed during regular mowing operations and as needed.
- Visible signs of erosion in the pond as well as rip-rap outlet area shall be repaired as soon as it is noticed.

B. PUBLIC NON-ROUTINE MAINTENANCE

- Structural components of the pond such as the dam, riser structure and the pipes shall be repaired upon the detection of any damage. The components should be inspected during maintenance operations.
- Sediment should be removed when its accumulation significantly reduces the design storage, interferes with the function of the riser, when deemed necessary for aesthetic reasons, or when deemed necessary by the Howard County's Department of Public Works.

III. PIPE CONDUITS: ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

REINFORCED CONCRETE PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE:

- MATERIALS - REINFORCED CONCRETE PIPE** SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM DESIGNATION C-301.
- 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.
- LAYING PIPE - BELL AND SPIGOT PIPE** SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH THE 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.
- BACK FILLING SHALL CONFORM TO "STRUCTURE BACK FILL".
- 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:

- MATERIALS - PVC PIPE** SHALL BE PVC-1120 OR PVC-1220 CONFORMING TO ASTM D-1795 OR ASTM D-2241.
- JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATERTIGHT.
- 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.
- BACK FILLING SHALL CONFORM TO "STRUCTURE BACK FILL".
- OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC) SHALL BE AS SHOWN ON THE DRAWINGS.

IV. 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.

V. ROCK RIP RAP SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 905.

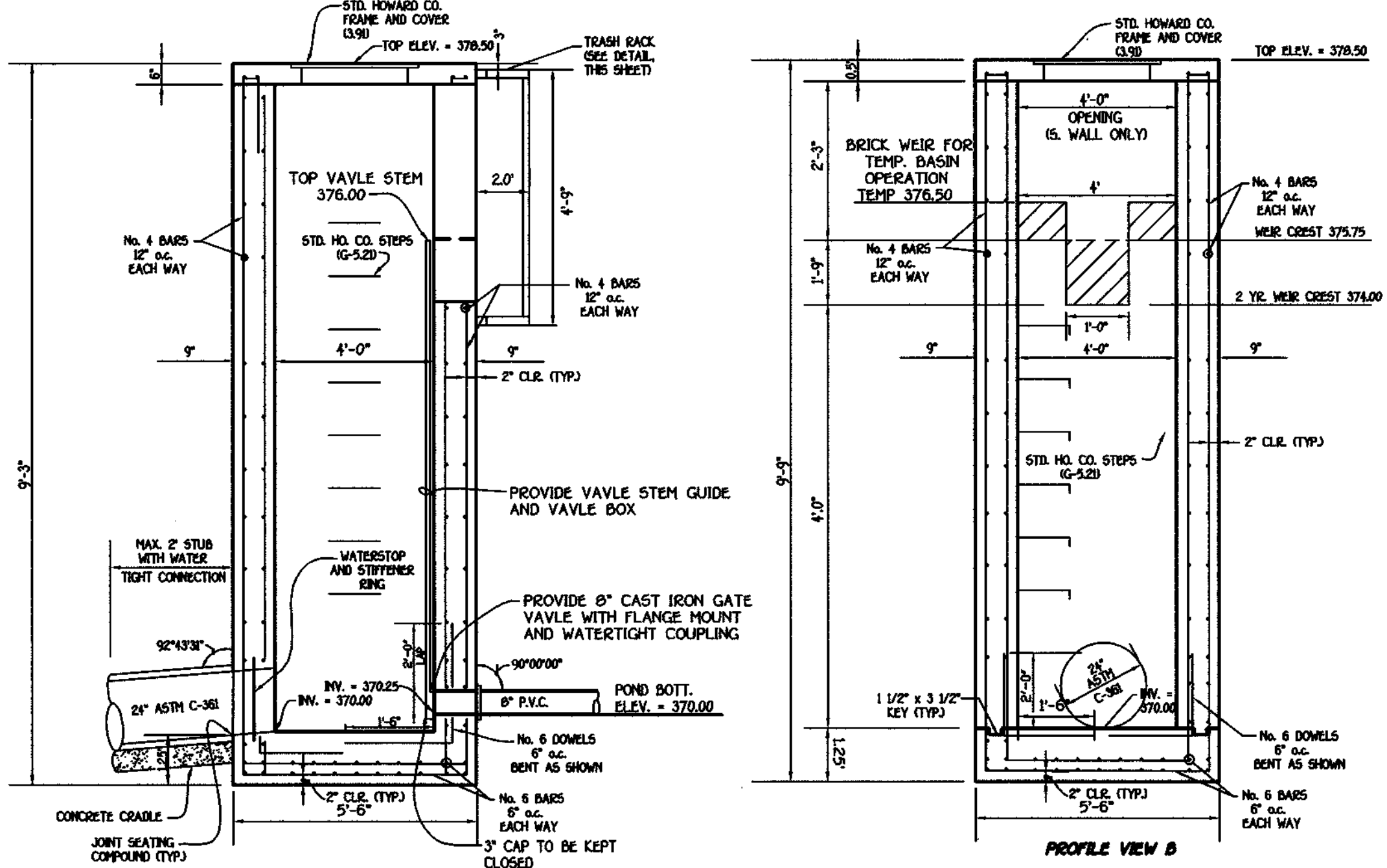
THE RIP RAP SHALL BE PLACED TO THE REQUIRED THICKNESS IN THE OPERATION. THE ROCK SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL INSURE THE RIP RAP IN PLACE SHALL BE REASONABLY HOMOGENEOUS WITH THE LARGER ROCKS UNIFORMLY DISTRIBUTED AND FIRMLY IN CONTACT ONE TO ANOTHER WITH THE SMALLER ROCKS FILLING THE VOIDS BETWEEN THE LARGER ROCKS. FILTER CLOTH SHALL BE PLACED UNDER ALL RIP RAP AND SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 912.

VI. 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 LEVELLED 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 REQUIRE DRAINING THE WATER TO SUMPS FROM WHICH THE WATER SHALL BE PUMPED.

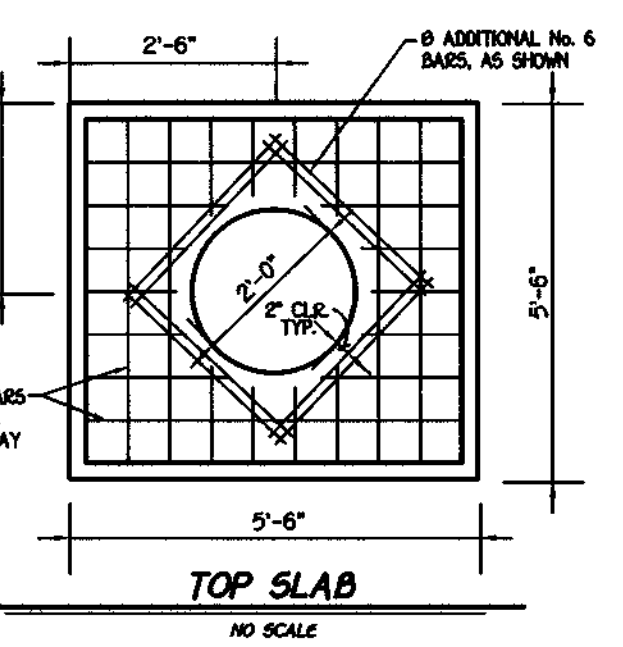
VII. STABILIZATION: ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPOIL AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING AS REQUIRED IN ACCORDANCE WITH THE MARYLAND AND FEDERAL SOIL CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANTING (MD-342) OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

VIII. EROSION & SEDIMENT CONTROL: CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED & WATER & AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES TO BE EMPLOYED DURING THE CONSTRUCTION PROCESS.

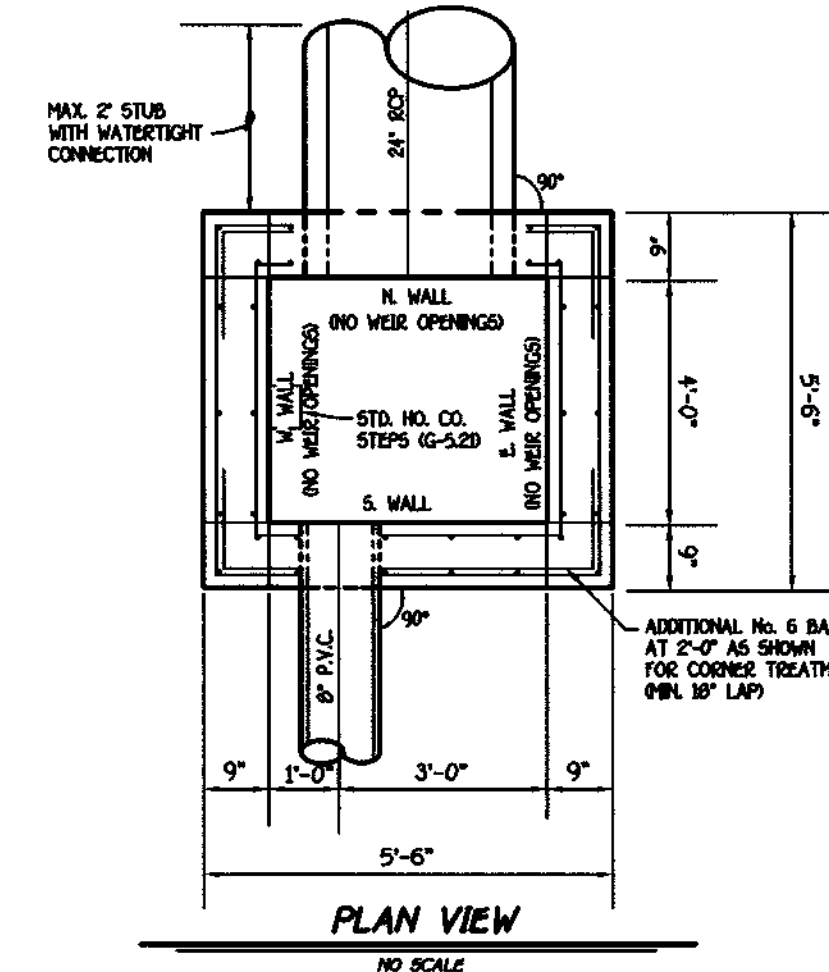


PROFILE VIEW A
CONCRETE RISER DETAIL
NO SCALE

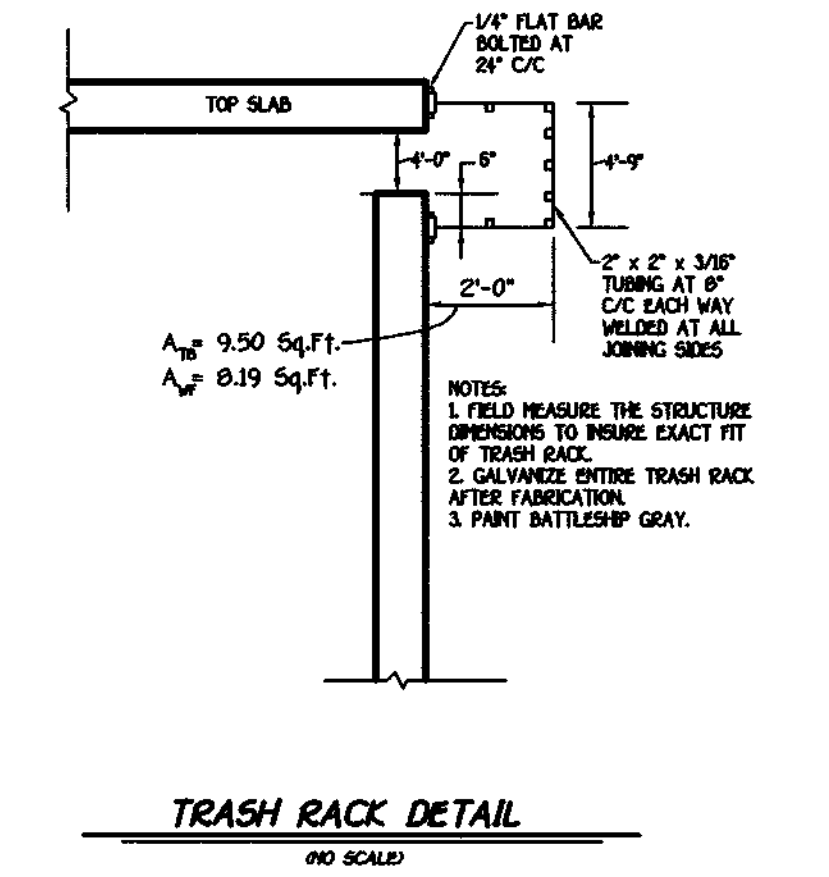
PROFILE VIEW B
CONCRETE RISER DETAIL
NO SCALE



TOP SLAB
NO SCALE



PLAN VIEW
NO SCALE



TRASH RACK DETAIL
NO SCALE

- REINFORCING NOTES:
- CONCRETE SHALL BE PERM MIX NO. 3 (C) 3500 P.S.I.
 - REINFORCING STEEL GRADE 60
 - FACE FORMS FOR WALLS OF OUTLET STRUCTURE SHALL UTILIZE L.H. SCORLED CO. 1-9995 FORM LINERS (RANDOM SPLIT-FACE) BOARDS (OPTIONAL)
 - PROVIDE SMOOTH BROOM FINISH ON TOP OF SLAB.
 - ANCHOR BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 607.01.09 OF THE PERM STANDARDS AND SPECS.
 - ALL EXPOSED METAL SURFACES SHALL BE PAINTED IN ACCORDANCE WITH SECTION 607.02.03 OF THE PERM STANDARDS AND SPECS.
 - ALL REINFORCING SPLICES SHALL BE LAP SPLICES OF 30 BAR DIA UNLESS OTHERWISE SHOWN.
 - ALL FILTER FABRIC SHALL BE POLY FILTER-X OR EQUAL.
 - ALL EXPOSED EDGES OF CONCRETE TO BE CHAMFERED 1/2" x 1/2".

DESCRIPTION OF MATERIALS	DEPTH	REMARKS
TOPSOIL	SURFACE	
BROWN AND GREEN, DRY TO MOIST, VERY LOOSE TO DENSE, SILTY FINE SAND WITH SOME ROCK FRAGMENTS (G#)	0.5'	6" TOPSOIL
GROUNDWATER ENCOUNTERED AT 15.0' WHILE DRILLING		
		CAVED IN AT 14.0' AT COMPLETION
BOTTOM OF HOLE AT 16.0'	16.0'	

DESCRIPTION OF MATERIALS	DEPTH	REMARKS
TOPSOIL	SURFACE	
BROWN MOIST TO WET, MICACEOUS SANDY SILT WITH WEATHERED ROCK FRAGMENTS (G#)	0.5'	6" TOPSOIL
GROUNDWATER ENCOUNTERED AT 1.5' WHILE DRILLING	2.5'	
GREEN, WET, FINE SANDY SILT WITH SOME MICA AND WEATHERED ROCK FRAGMENTS (G#)		
		* CAVED IN AT 4.5' AT COMPLETION
BOTTOM OF HOLE AT 8.0'	8.0'	

DESCRIPTION OF MATERIALS	DEPTH	REMARKS
TOPSOIL	SURFACE	
BROWN AND GREEN, DRY TO WET, MEDIUM DENSE TO VERY DENSE, SILTY SAND WITH ROCK FRAGMENTS (G#)	0.25'	3" TOPSOIL
GROUNDWATER ENCOUNTERED AT 7.5' WHILE DRILLING		
AUGERED VERY HARD AT 4.5' TO 6.0'		
BOTTOM OF HOLE AT 15'-3"	15'-3"	

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: Bruce Taylor, manager Date: 1-12-00
 Printed Name Of Developer: Bruce Taylor, manager

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 I Will 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: Aldo M. Vitucci Date: 4-20-00
 Printed Name Of Engineer: Aldo M. Vitucci

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: Jim Reynolds Date: 6/25/01
 USNR/Natural Resources Conservation Service

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

Signature: Andrew M. Daniels Date: 6-12-01
 Approved Department Of Public Works Chief, Bureau Of Highways

Signature: Cindy Hester Date: 6/26/01
 Approved Department Of Planning And Zoning Chief, Division Of Land Development

Signature: [Signature] Date: 6/14/01
 Chief, Development Engineering Division

AS-BUILT CERTIFICATION
 I Herby Certify That The Facility Shown On This Plan Was Constructed As Shown On The "As-Built" Plans And Meets The Approved Plans And Specifications.

Signature: _____ P.E. No. _____
 Date: _____

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not Mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

DESIGN STORM	ALLOWABLE RELEASE RATE	FACILITY INFLOW	FACILITY DISCHARGE	WATER SURFACE ELEVATION	STORAGE VOLUME (AC.FT.)
2 YEAR	5.6 c.f.s.	14.1 c.f.s.	3.6 c.f.s.	375.10	0.296
10 YEAR	21.1 c.f.s.	33.5 c.f.s.	10.5 c.f.s.	376.03	0.737
100 YEAR	N/A	57.0 c.f.s.	25.7 c.f.s.	376.05	1.174

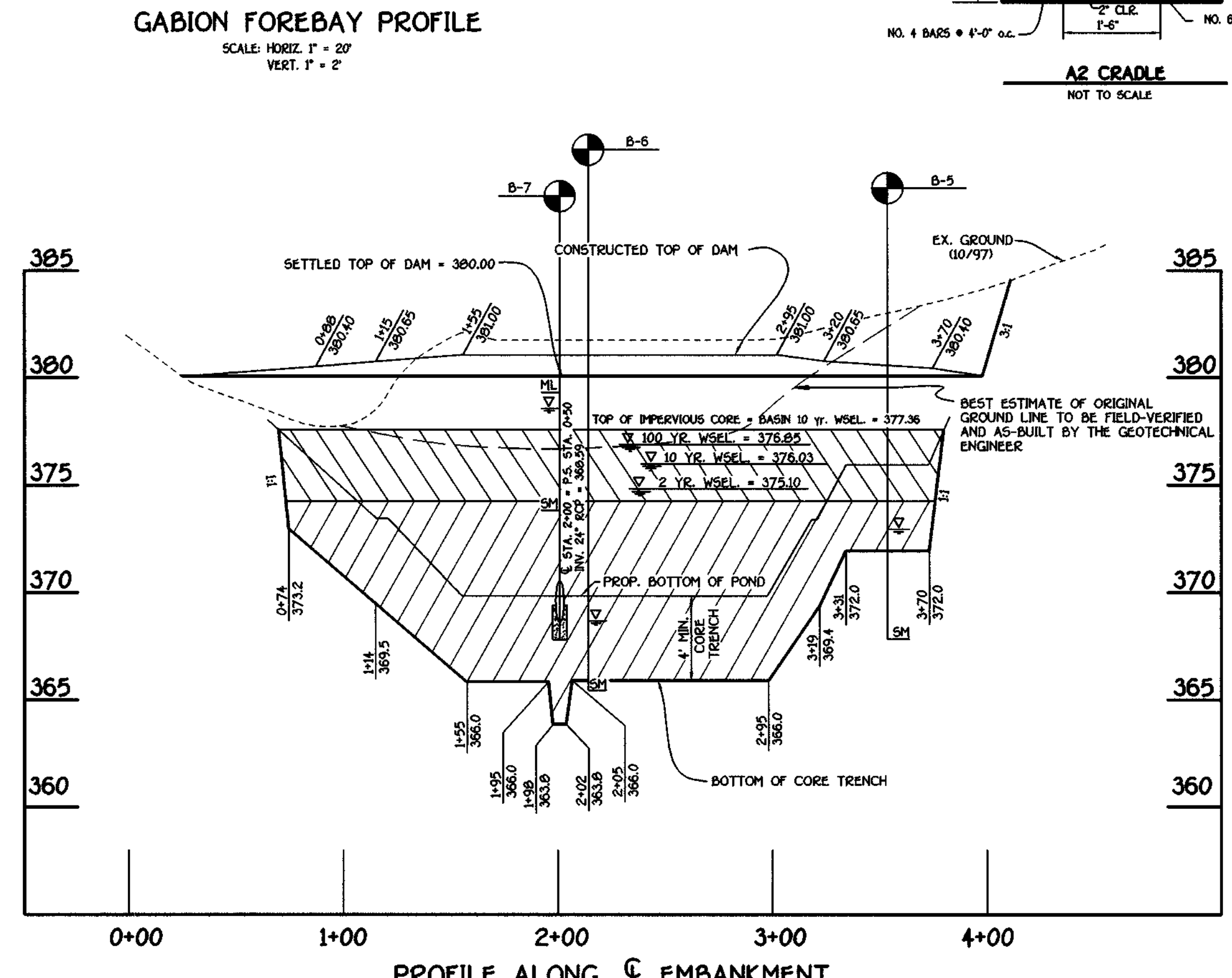
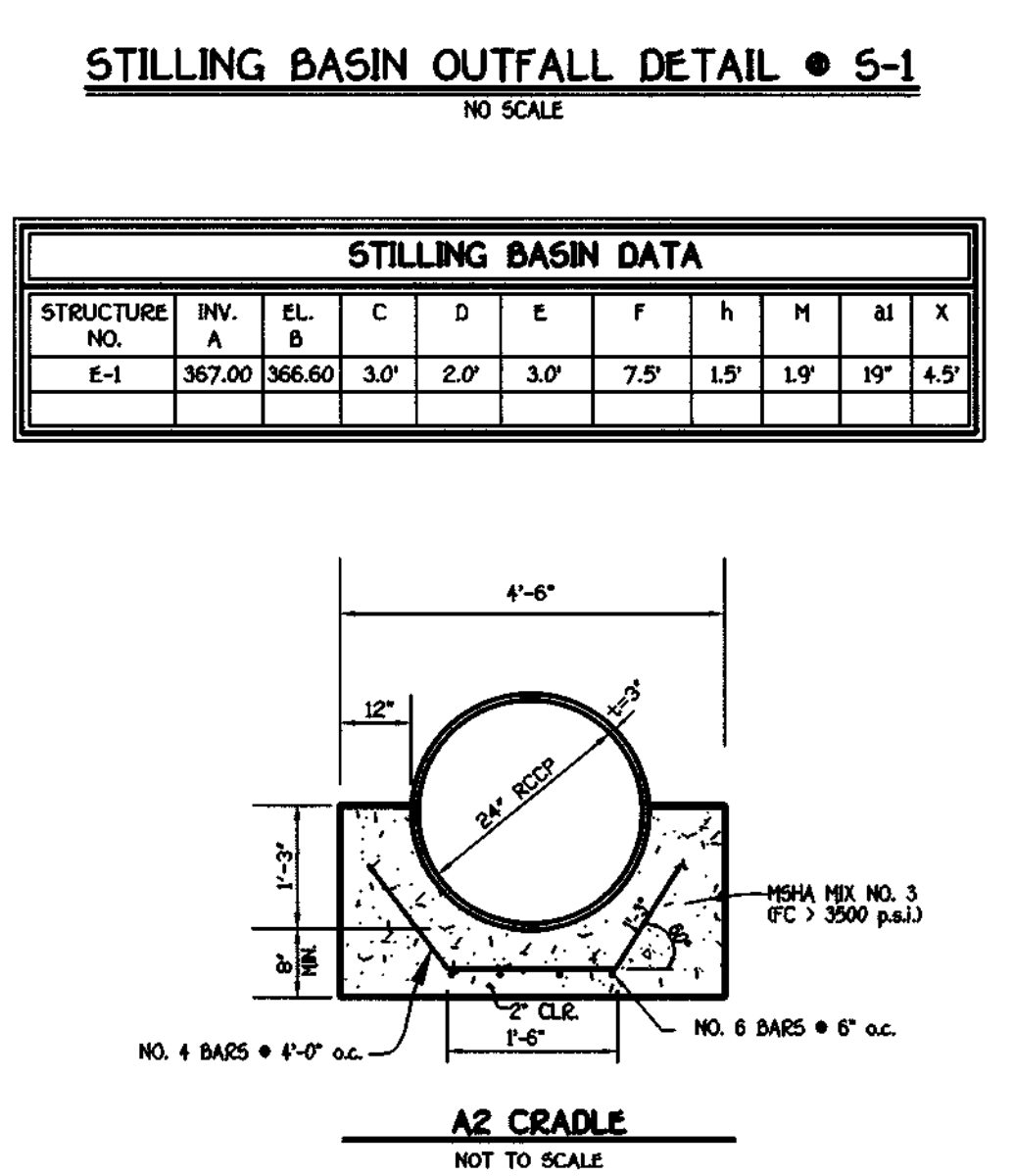
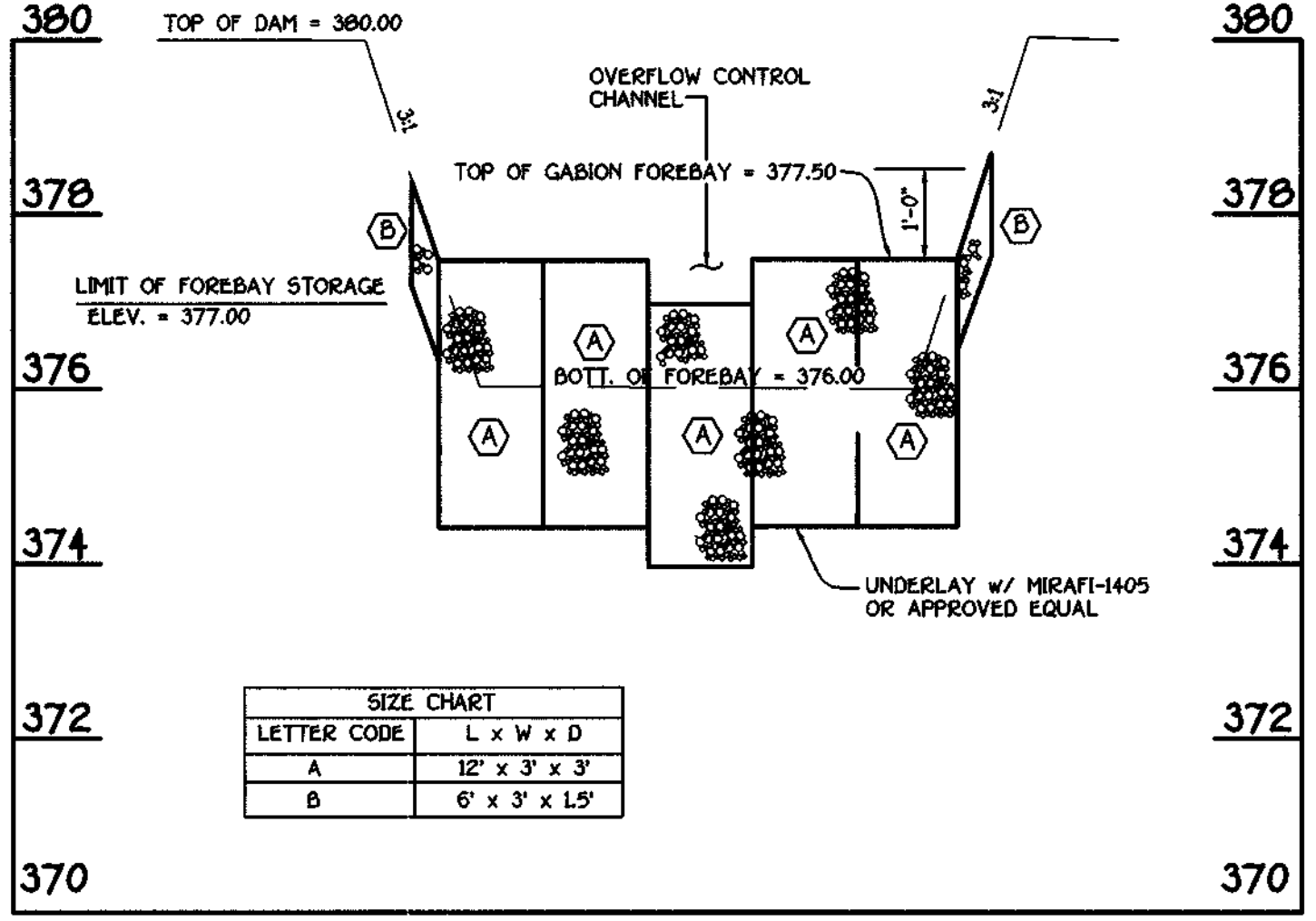
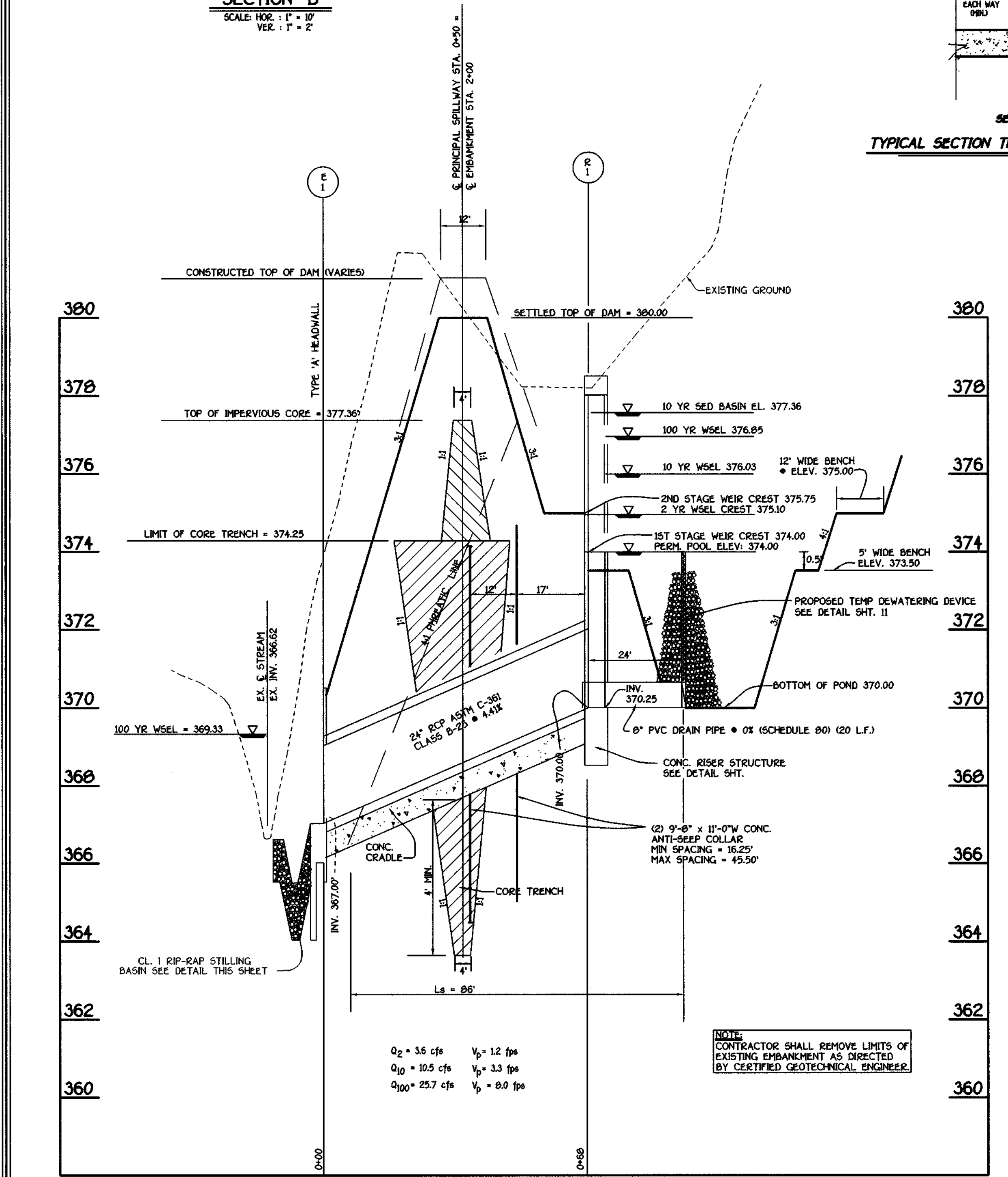
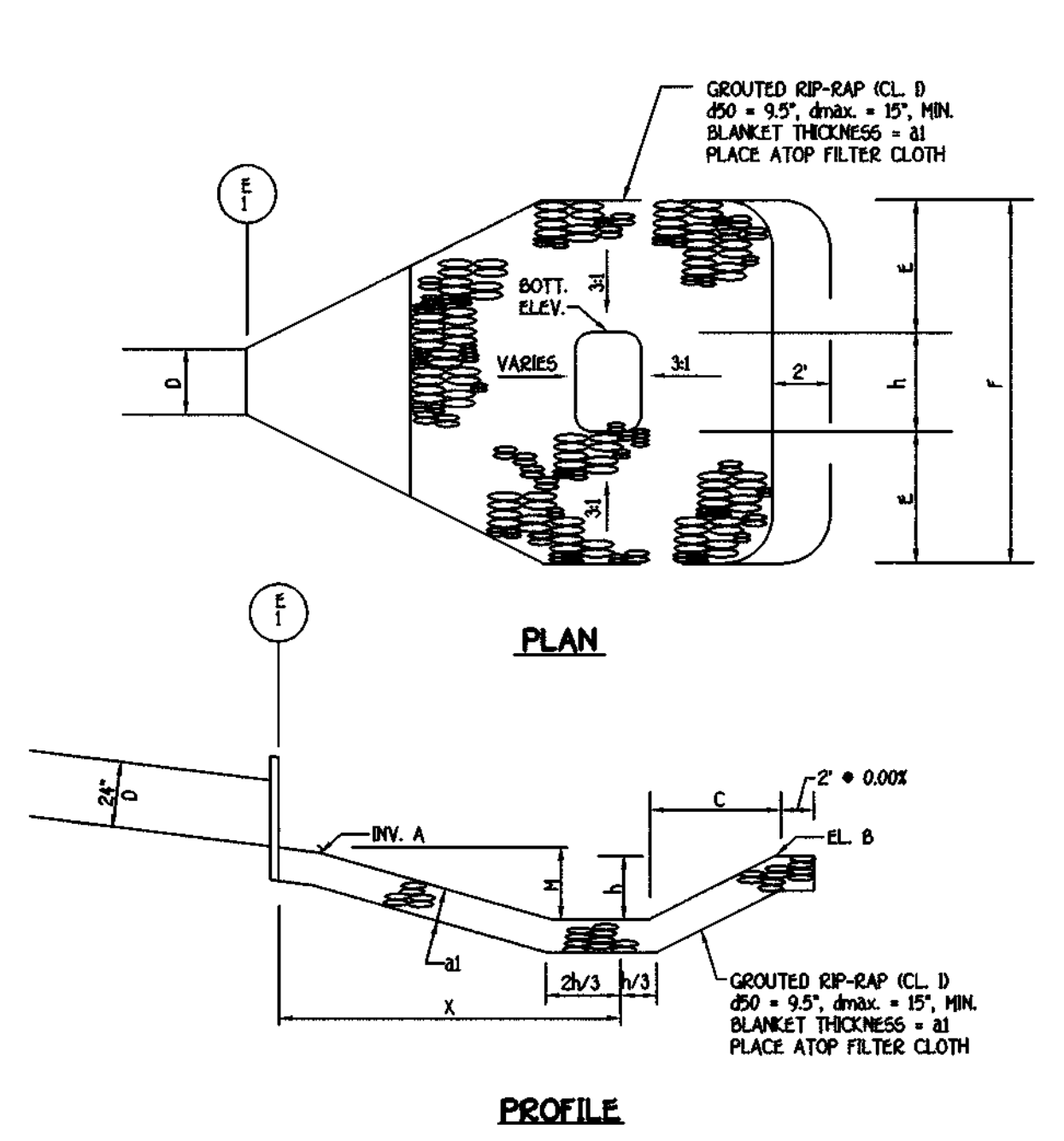
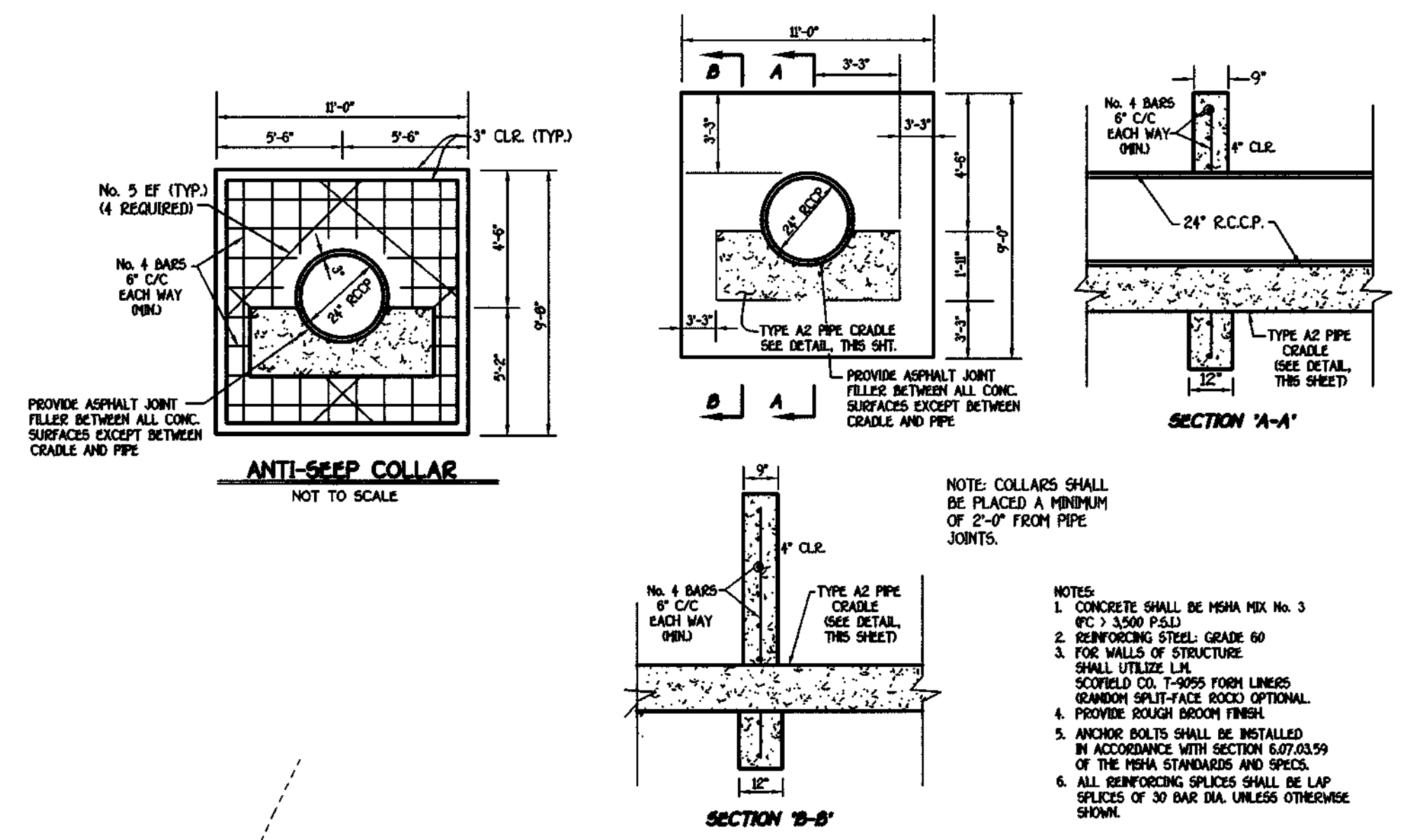
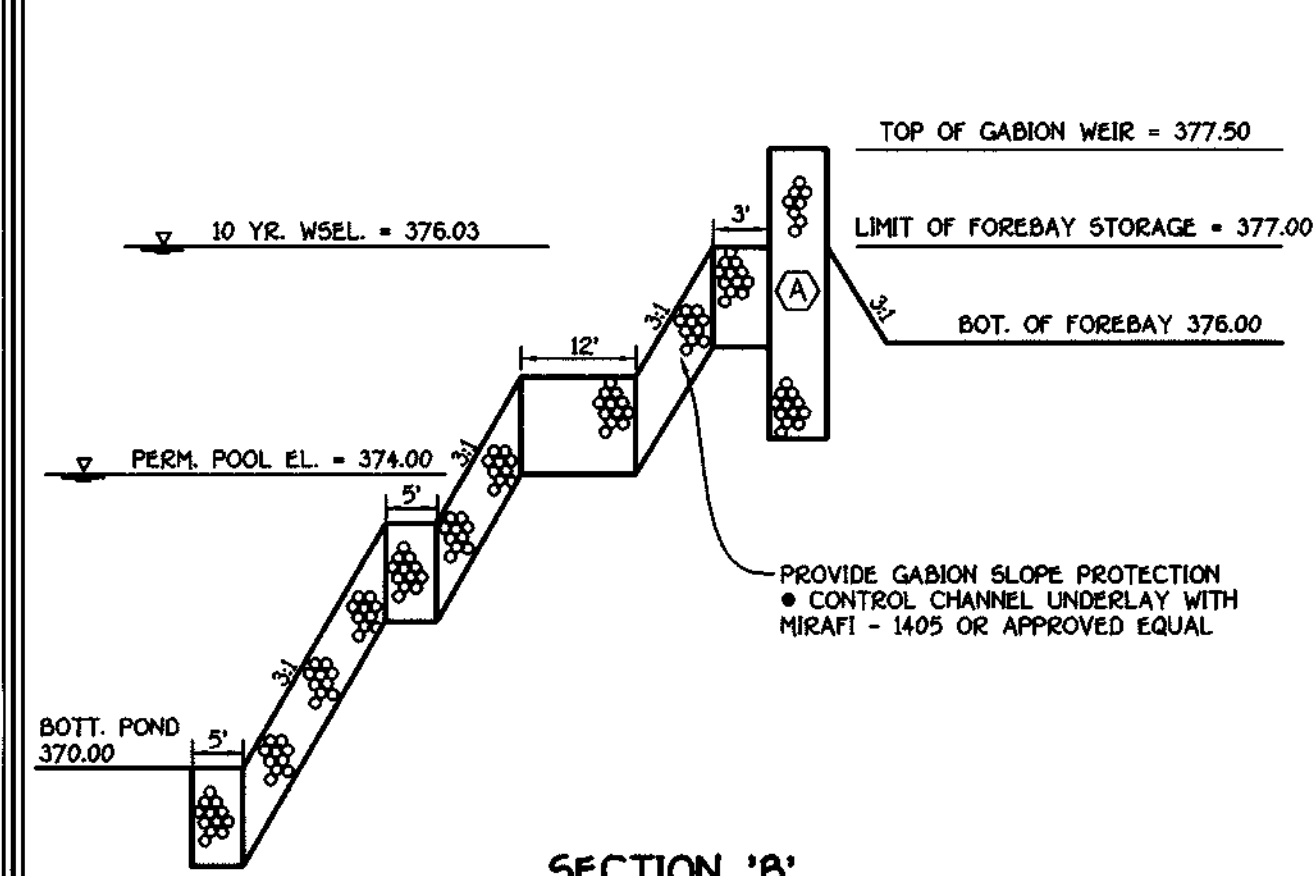
STRUCTURE CLASSIFICATION, LOW HAZARD, CLASS "A" POND
 STORAGE - HEIGHT PRODUCT 0.737 AC. FT. x 1000' = 737
 WATERSHED AREA TO FACILITY (ACRES) ULTIMATE 9.65 ACRES
 LEVEL OF MANAGEMENT PROVIDED BY FACILITY: TWO AND TEN YEAR STORMS

STORMWATER MANAGEMENT NOTES AND DETAILS
 STONE MANOR SUBDIVISION
 SECTION ONE
 LOTS 1 THRU 31
 (A RESUBDIVISION OF LOT 1, FEARING ESTATES-PLAT NO. 10146 AND TAX PARCEL 20
 TAX MAP 31, PARCELS 2 & 805, GRID 1
 SECOND ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 DATE: MAY 21, 2001
 SHEET 8 OF 14

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10772 SALTWATER NATIONAL PKWY.
 ELLICOTT CITY, MARYLAND 21117
 (410) 461-2395
 Aldo M. Vitucci 4-20-00

OWNERS
 MRS. HELEN FEARING IRWIN
 805 RIVER ROAD
 SYKESVILLE, MARYLAND 21784
 AND
 MR. HARRY GRANT AND MRS. MARY GRANT
 445 STONECREST DRIVE
 ELLICOTT CITY, MARYLAND 21043

DEVELOPER
 STONECREST MANOR, L.L.C.
 C/O LAND DESIGN AND DEVELOPMENT, INC.
 8000 MAIN STREET
 ELLICOTT CITY, MARYLAND 21043



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: Bruce Taylor, manager Date: 10/2/00
 Printed Name Of Developer: Bruce Taylor, manager
 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 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.

Signature Of Engineer: Alpo M. Vitucci Date: 1-20-00
 Printed Name Of Engineer: Alpo M. Vitucci
 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.

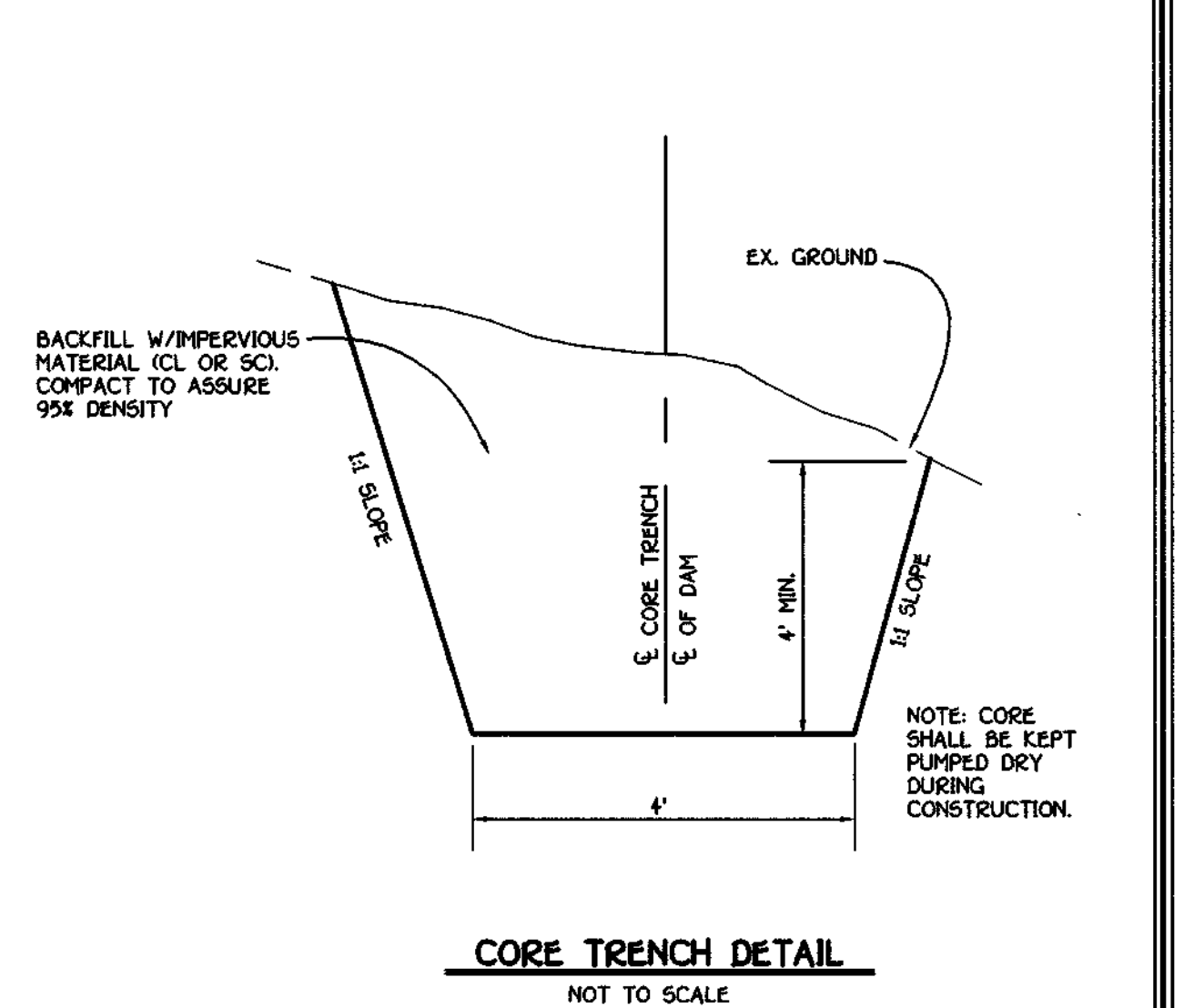
Signature: Jim Nguyen/CS Date: 6/25/01
 US Department of Agriculture Conservation Service
 These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

Signature: Chris Al... Date: 6/25/01
 Howard Soil Conservation District
 Approved Department Of Public Works
 Signature: Andrew M. Daniels Date: 6-12-01
 Chief, Bureau Of Highways
 Approved Department Of Planning And Zoning
 Signature: Chris... Date: 6/26/01
 Chief, Division Of Land Development
 Signature: ... Date: 6/6/01
 Chief, Development Engineering Division

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

Signature: _____ P.E. No. _____
 Date: _____

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FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK • 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21114
 (410) 461-2555

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 No. 21114
 Alpo M. Vitucci 4-20-00

OWNERS
 MRS. HELEN FEARING IRWIN
 805 RIVER ROAD
 SYKESVILLE, MARYLAND 21784
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DEVELOPER
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 c/o LAND DESIGN AND DEVELOPMENT, INC.
 8000 MAIN STREET
 ELLICOTT CITY, MARYLAND 21043

S.W.M. NOTES AND DETAILS
 STONE MANOR SUBDIVISION
 SECTION ONE
 LOTS 1 THRU 31
 (A RESUBDIVISION OF LOT 1, FEARING ESTATES-PLAT NO. 10146 AND TAX PARCEL 2)
 TAX MAP 31, PARCELS 2 & 805, GRID 1
 ZONED R-20
 SECOND ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 DATE: MAY 21, 2001
 SHEET 9 OF 14

STANDARDS AND SPECIFICATIONS FOR TOPSOIL

Definition

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose

To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies

- This practice is limited to areas having 2:1 or flatter slopes where:
 - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
 - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
 - The original soil to be vegetated contains material toxic to plant growth.
 - The soil is so acidic that treatment with limestone is not feasible.
- For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

Construction and Material Specifications

- Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experiment Station.
- Topsoil Specifications - Soil to be used as topsoil must meet the following:
 - Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.
 - Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnson grass, nutgrass, poison ivy, thistle, or others as specified.
 - Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
 - For sites having disturbed areas under 5 acres:
 - Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
 - For sites having disturbed areas over 5 acres:
 - On soil meeting topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
 - pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
 - Organic content of topsoil shall be not less than 1.5 percent by weight.
 - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
 - No soil or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.

Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

- Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
- Topsoil Application
 - When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
 - Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.
 - Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
 - Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

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

- Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall conform to the following requirements:
 - Composted sludge shall be applied, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
 - Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
 - Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
- Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet and 1/3 the normal lime application rate.

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

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 (0 to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary Soil Stockpiling 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

- Site Preparation
 - Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
 - Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
 - Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed areas over 5 acres.
- Soil Amendments (Fertilizer and Lime Specifications)
 - 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.
 - Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved machinery. Fertilizer 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 warranty of the producer.
 - Lime (either 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 90-100% will pass through a #20 mesh sieve.
 - Incorporate lime and fertilizer into the top 3-5" of soil by diking or other suitable means.

- Seedbed Preparation
 - Temporary Seeding
 - 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 ripper 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.
 - Apply fertilizer and lime as specified on the plans.
 - Incorporate lime and fertilizer into the top 3-5" of soil by diking or other suitable means.
 - Permanent Seeding
 - Soil conditions required for permanent vegetative establishment:
 - Soil pH shall be between 6.0 and 7.0.
 - Soluble salts shall be less than 500 parts per million (ppm).
 - 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 loess/grass or special leopards is to be planted, then a sandy soil (<50% silt plus clay) would be acceptable.
 - Soil shall contain 15% minimum organic matter by weight.
 - Soil must contain sufficient pore space to permit adequate root penetration.
 - If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
 - Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified 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 from sliding down a slope.
 - Apply soil amendments as per soil test or as included on the plans.
 - Mix soil amendments into the top 3-5" of topsoil by diking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the site for seeding. Where site cones 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 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.

- Seed Specifications
 - All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.
 - Notes: Seed tags shall be made available to the inspector to verify type and rate of seed used.
 - 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 label as directed on the 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.

- Methods of Seeding
 - Hydroseeding - Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer, broadcast or drop seeded).
 - 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 (2005 phosphorous) 200 lbs./acre, potassium 200 lbs./acre.
 - 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.
 - Seed and fertilizer shall be mixed on site and applied immediately and without interruption.
 - Dry Seeding - This includes use of conventional drop or broadcast spreaders.
 - Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 26 or 27. The seeded area shall then be smoothed and leveled to provide good seed to soil contact.
 - Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
 - Drill or Cultivator Seeding - Mechanized seeding.
 - Cultivator seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeded must be firm after planting.
 - Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

- Mulch Specifications (in order of preference)
 - Straw shall consist of threshed wheat, rice 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.
 - Wood Cellulose Fiber (WCFM)
 - WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
 - WCFM shall be dried green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
 - WCFM, including dye, shall contain no germination or growth inhibiting factors.
 - WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber which 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 bluish-grey ground cover, on the slope, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
 - WCFM material shall conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately .3 mm., pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.

- Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.
 - If grading is completed outside of the seeding season, mulch shall be applied as prescribed in this section at the seeding season return and seeding can be performed in accordance with these specifications.
 - When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface not exposed. If a such anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
 - Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. 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.

- Securing Straw 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:
 - A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface to a minimum of two (2) inches. It is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice may be used for the contour. If possible, the fiber binder shall be applied at a net dry weight of 250 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.
 - 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 applied uniform after binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-T70 Petrosel, Terr Tax II, Terra Tack AC or Terra Tack AC are approved and may be used at rates recommended by the manufacturer to anchor mulch.
 - Lightweight plastic netting may be applied over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' wide and 300 to 3,000 feet long.

- Incremental Stabilization - Cut Slopes
 - 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'.
 - Construction sequence (refer to Figure 3 below):
 - Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation.
 - Perform Phase 1 excavation, dress and stabilize.
 - Perform Phase 2 excavation, dress and stabilize. Overseed Phase 1 areas as necessary.
 - 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 of completing the operation out of the sequencing will necessitate the application of temporary stabilization.

- Incremental Stabilization of Embankments - Fill Slopes
 - Embankments shall be constructed in lifts as prescribed on the plans.
 - 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.
 - 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. Refer to Figure 4 (below).
 - Construction sequence: Refer to Figure 4 (below).
 - 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.
 - Place Phase 1 embankment, dress and stabilize.
 - Place Phase 2 embankment, dress and stabilize.
 - 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.

SECTION 2 - TEMPORARY SEEDING

Vegetation - annual grass or grain used to provide cover on disturbed areas for up to 12 months. For longer duration of vegetative cover, Permanent Seeding is required.

A. Seed mixtures - Temporary Seeding

- Select one or more of the species or mixtures listed in Table 26 for the appropriate Plant Hardness Zone (from Figure 5) and enter them in the Temporary Seeding Summary below, along with application rates, seeding dates and seeding depths. If this summary is not put on the plans and completed, then Table 26 must be put on the plans.
- For sites having soil tests performed, the rates shown on this table shall be deleted and the rates recommended by the testing agency shall be written in. Soil tests are not required for Temporary Seeding.

Seed Mixture (Hardness Zone - 6B -) From Table 26				Fertilizer Rate (00-10-10)	Lime Rate
No.	Species	Application Rate (lb/acre)	Seeding Dates	Seeding Depth	
1	BARLEY	122	1" - 2"		
	OATS	96	3/1 - 5/15,	1" - 2"	2 tons/acre
	RYE	140	8/15 - 10/15	1" - 2"	000 lb/1000sqft

SECTION 3 - PERMANENT SEEDING

Seeding grass and legumes to establish growing cover for a minimum of one year on disturbed areas generally receiving low maintenance.

A. Seed mixtures - Permanent Seeding

- Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardness Zone (from Figure 5) and enter them in the Permanent Seeding Summary below, along with application rates and seeding dates. Seeding depths can be estimated using Table 25. If this summary is not put on the construction plans and completed, then Table 25 must be put on the plans. Additional planting specifications for exceptional sites such as shorelines, streambanks, or dunes or for special purposes such as wildlife or reforestation, may be found in USDA-SCS Technical Field Office Guide, Section 342 - Critical Area Planting. For special lawn maintenance areas, see Sections IV Soil and V Turfgrass.
- For sites having disturbed area over 5 acres, the rates shown on this table shall be deleted and the rates recommended by the soil testing agency shall be written in.
- For areas receiving low maintenance, apply urea fertilizer (46-0-0) at 3 1/2 lbs/1000 sq. ft. (50 lbs/acre), in addition to the above soil amendments shown in the table below, to be performed at the time of seeding.

Seed Mixture (Hardness Zone - 6B -) From Table 25				Fertilizer Rate (00-20-20)			Lime Rate
No.	Species	Application Rate (lb/acre)	Seeding Dates	Seeding Depth	N	P205	K2O
3	TALL FESCUE (85%)	125	3/1 - 5/15,	1" - 2"	90 lb/acre	175 lb/acre	175 lb/acre
	PERENNIAL RYE GRASS (15%)	25	8/15 - 10/15	1" - 2"	120 lb/acre	14 lb/acre	14 lb/acre
	ENTRANCE BLUEGRASS (50%)	10			1000ppf	1000ppf	1000ppf
10	TALL FESCUE (80%)	120	3/1 - 5/15,	1" - 2"			
	HOAR FESCUE (20%)	20	8/15 - 10/15	1" - 2"			

SEQUENCE OF CONSTRUCTION

- OBTAIN A GRADING PERMIT.
- NOTIFY MISS UTILITY AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION AT 410-313-1330 24 HOURS BEFORE STARTING WORK.
- CLEAR AND GRUB FOR SEDIMENT CONTROL MEASURES ONLY. INSTALL STABILIZED CONSTRUCTION ENTRANCE AND TREE PROTECTION FENCES. (2 weeks)
- INSTALL REMAINING SEDIMENT CONTROL MEASURES: BERM, WATERWAY, EARTH DIKE, AND SILT FENCE AS INDICATED ON THE PLANS. NO BLASTING WILL BE PERMITTED FOR THE EXCAVATION OF THE PROPOSED POND. WHERE NECESSARY, RIPPING AND JACK HAMMERING SHOULD BE UTILIZED IN THE EXCAVATION OF EACH FACILITY. (2 weeks)
- OBTAIN PERMISSION OF THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEED.
- BEGIN PHASE 1 OF CONSTRUCTION.
 - CONSTRUCT THE STORM WATER MANAGEMENT FACILITY ALONG WITH THE ACCESS ROAD. ALSO CONSTRUCT PART OF THE STORM DRAIN SYSTEM FROM 5-1 TO 1-1. (6 weeks)
 - INSURE FULL PERMANENT STABILIZATION OF THE SWM FACILITY.
 - ONCE PHASE 1 WORK IS COMPLETE AND STABILIZED, OBTAIN PERMISSION FROM THE INSPECTOR TO PROCEED WITH THE REMAINING SITE WORK.
 - CLEAR AND GRUB FOR THE REMAINDER OF SITE. (1 week)
 - APPLY TACK COAT TO SUBGRADE AND INSTALL REMAINING STORM SYSTEM. STABILIZE ALL ROADWAY SLOPES IMMEDIATELY UPON COMPLETION OF GRADING AS SHOWN ON THESE PLANS. (4 weeks)
 - THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN ON THESE PLANS ON A DAILY BASIS. REMOVE SEDIMENTS FROM ALL TRAPS WHEN CLEAN OUT ELEVATIONS ARE REACHED. ALL SEDIMENTS MUST BE PLACED UPSTREAM OF AN APPROVED TRAP DEVICE (1 WEEK)
 - INSTALL BASE COURSE FOR THE PROPOSED ROADS. (1 week)
 - STABILIZE ALL DISTURBED AREAS AND OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR TO PROCEED.
 - APPLY TACK COAT TO SUBGRADE AND LAY SURFACE COURSE. (1 week)
 - WHEN ALL CONTRIBUTING AREAS TO THE SEDIMENT CONTROL DEVICES AND PONDS HAVE BEEN STABILIZED AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, THE DEVICE MAY BE REMOVED AND/OR BACK FILLED AND THE REMAINING AREAS BROUGHT TO FINAL GRADE.
 - STABILIZE ALL REMAINING AREAS WITH PERMANENT SEEDING NOTES. (2 weeks)
 - NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS FOR A FINAL INSPECTION OF THE COMPLETED PROJECT.

OWNERS

MRS. HELEN FEARING IRWIN
1005 RIVERS ROAD
SYKESVILLE, MARYLAND 21784
AND
MR. HARRY GRANT AND MRS. MARY GRANT
4445 STONECREST
ELLCOTT CITY, MARYLAND 21043

DEVELOPER

STONECREST MANOR, L.L.C.
c/o LAND DESIGN AND DEVELOPMENT, INC.
6000 HUNTERS LANE
ELLCOTT CITY, MARYLAND 21043

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 Employ 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: *Bruce Taylor* Date: *10/2/00*
Printed Name Of Developer: *Bruce Taylor*

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 I Shall Employ 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: *Ado M. Vitucci* Date: *4/20/00*
Printed Name Of Engineer: *Ado M. Vitucci*

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. USA/Natural Resources Conservation Service Date: *6/25/01*

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: *6/25/01*

Approved Department Of Public Works: *Andrew M. Danek* Date: *6-12-01*
Chief, Bureau Of Highways

Approved Department Of Planning And Zoning: *Cindy Hanata* Date: *6/26/01*
Chief, Division Of Land Development

Chief, Development Engineering Division: *Ado M. Vitucci* Date: *6/14/01*

AS-BUILT CERTIFICATION

I Herby Certify That The Facility Shown On This Plan Was Constructed As Shown On The "As-Built" Plans And Meets The Approved Plans And Specifications.

Signature: _____ P.E. No. _____
Date: _____

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not Mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1825).
- 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 THERE TO.
- 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.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 26 OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- 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), 500 (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.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:

TOTAL AREA OF SITE	30.81 ACRES
AREA DISTURBED	14.10 ACRES
AREA TO BE ROOFED OR PAVED	4.90 ACRES
AREA TO BE VEGETATIVELY STABILIZED	15.00 ACRES
TOTAL CUT	25,000 CU.YDS.
TOTAL FILL	25,000 CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION	----- CU.YDS.
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY CONSTRUCTION ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 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.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

SEDIMENT AND EROSION CONTROL DETAILS AND NOTES

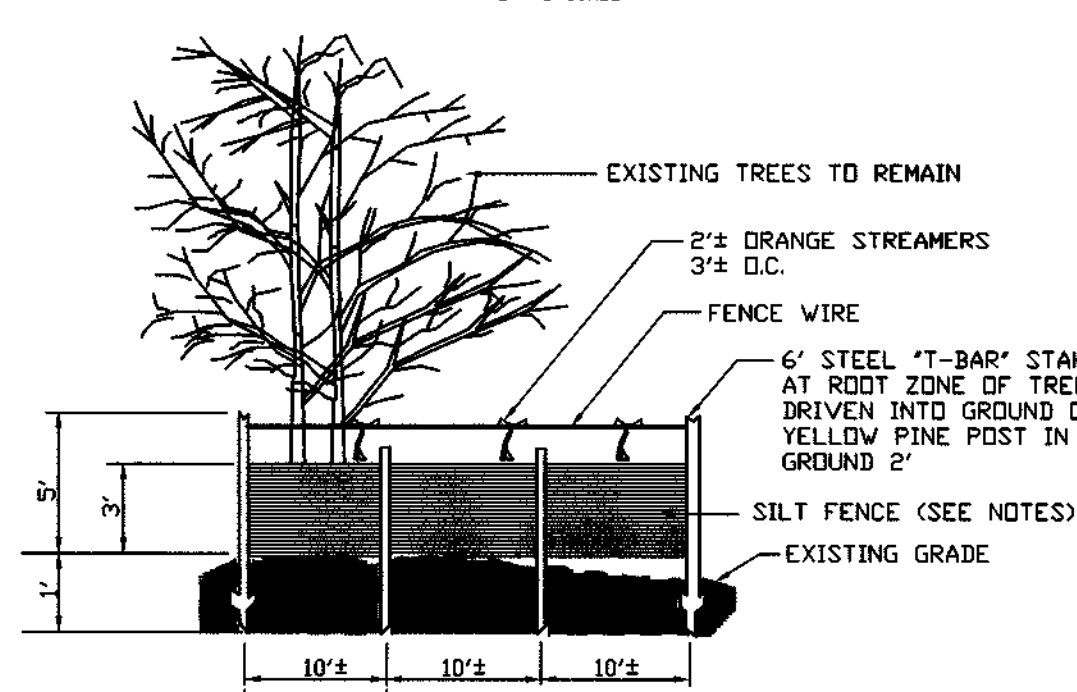
STONE MANOR SUBDIVISION

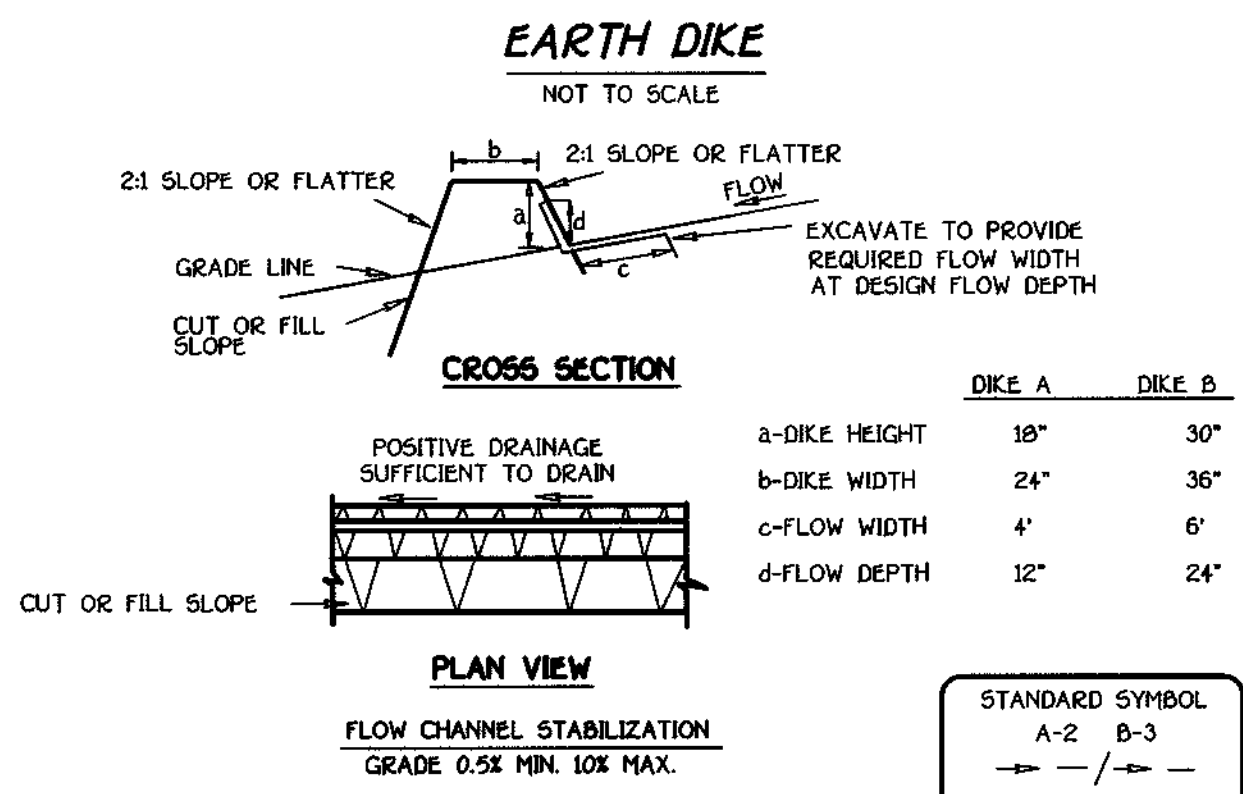
SECTION ONE

LOTS 1 THRU 31
(A RESUBDIVISION OF LOT 1, FEARING ESTATES-PLAT NO. 10146 AND TAX PARCEL 2)
TAX MAP 31, PARCELS 2 & 605, GRID 1
SECOND ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
DATE: _____ SHEET 10 OF 14

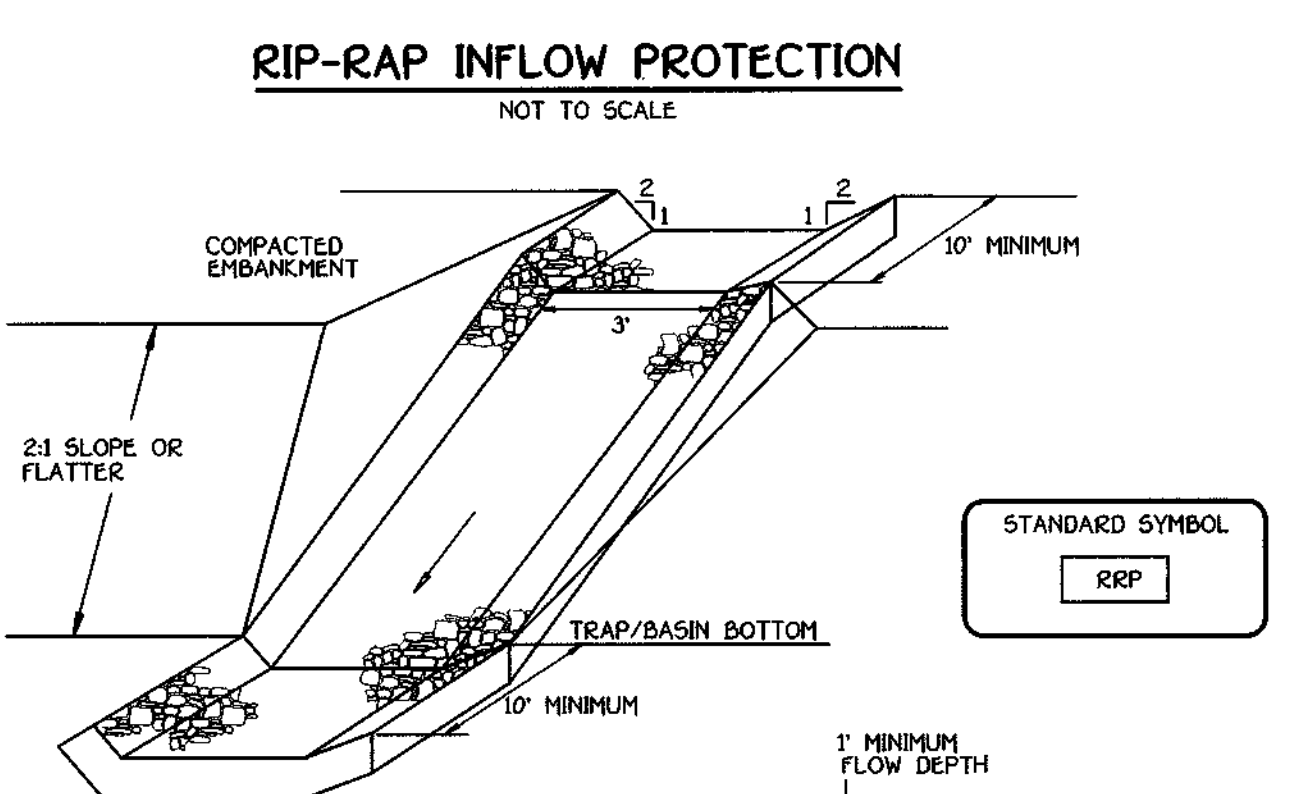
TREE PROTECTION FENCE

NOT TO SCALE

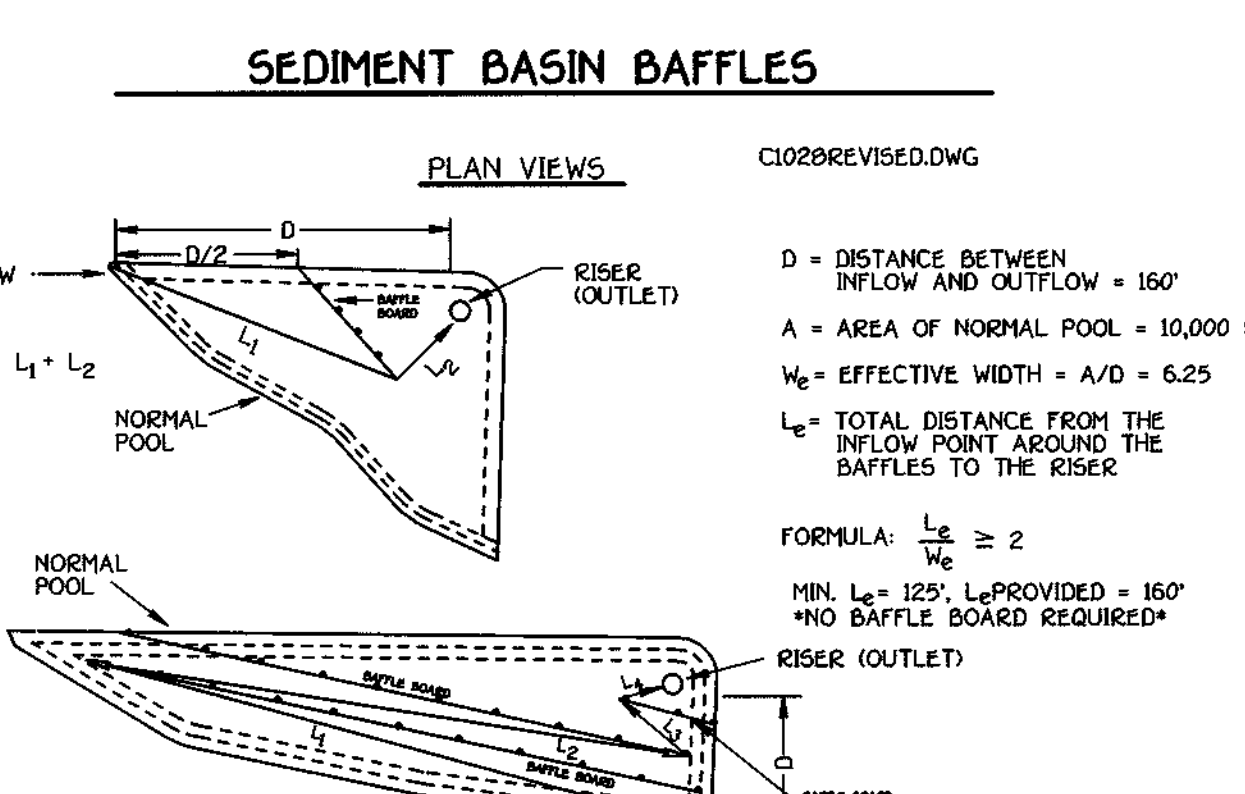




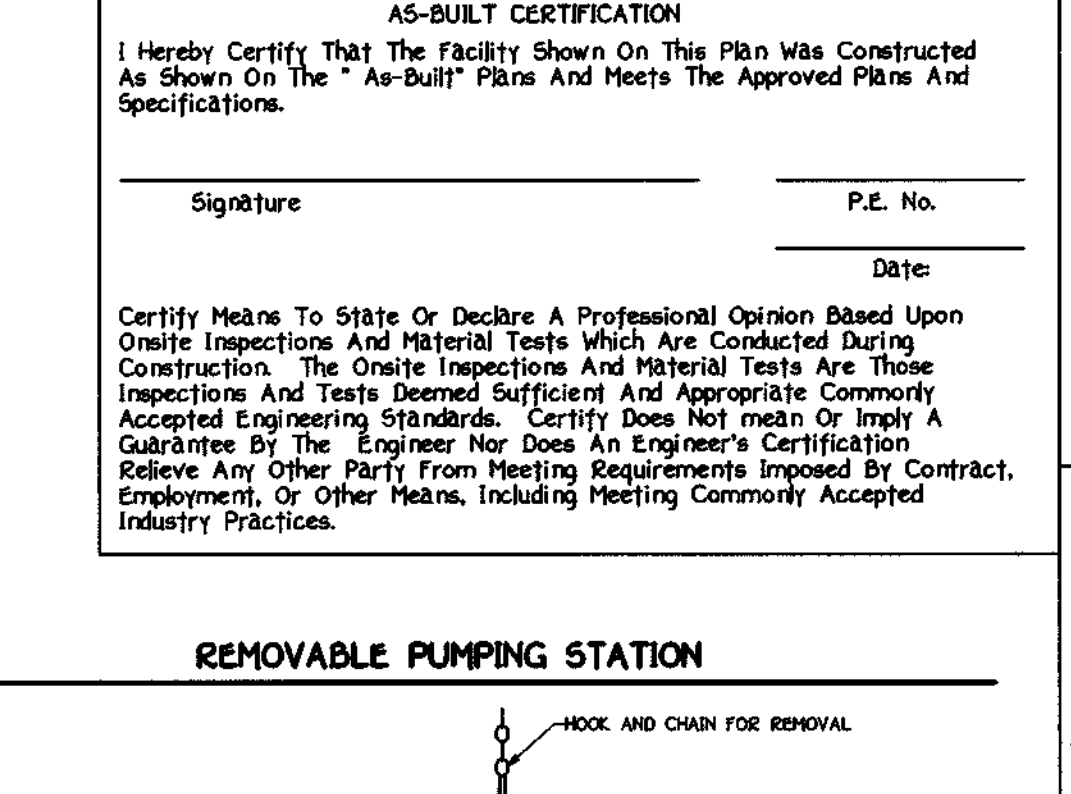
1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" - 7" stone or recycled concrete equivalent pressed into the soil 7" minimum
- Construction Specifications**
- All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot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



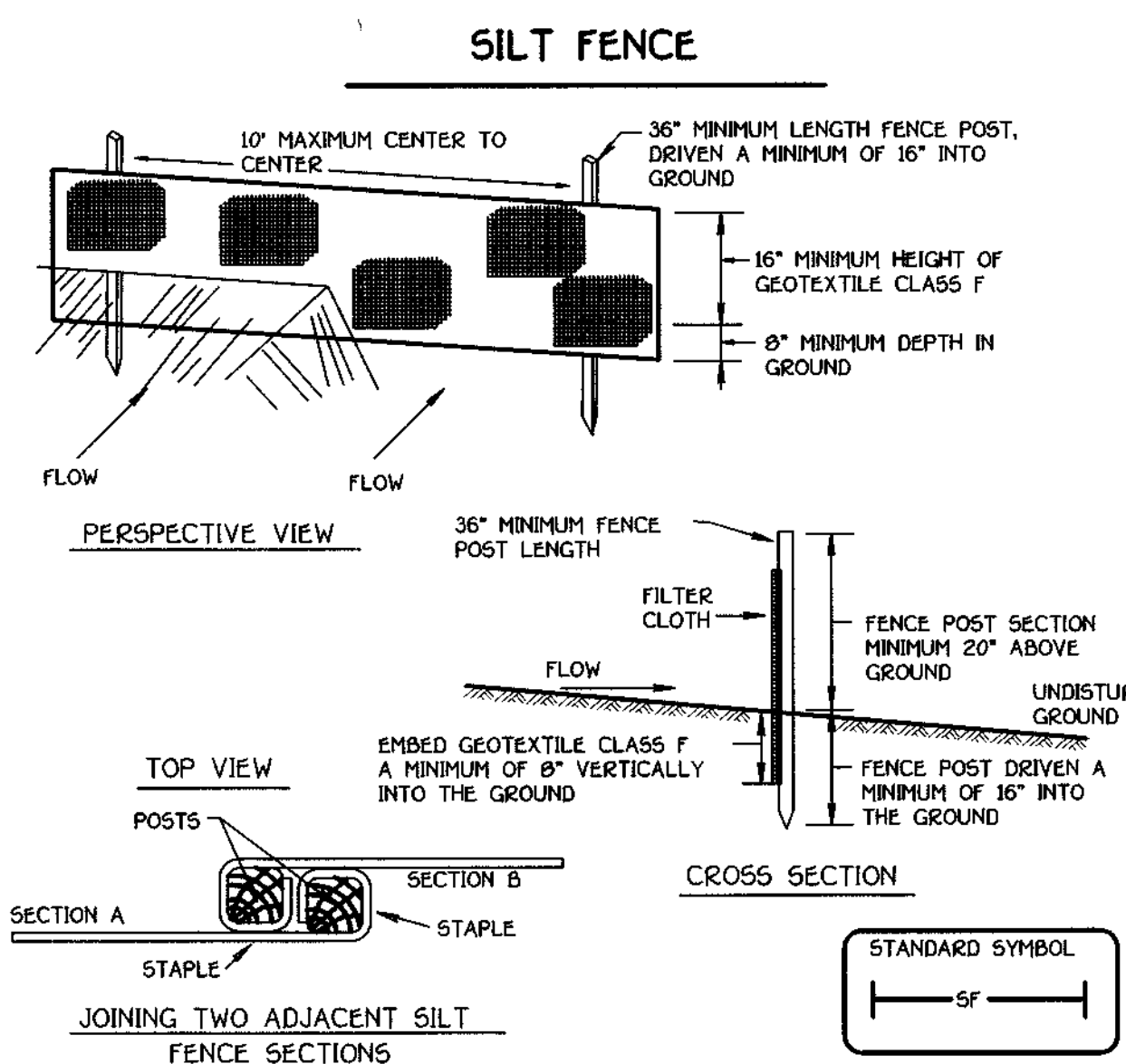
- Construction Specifications**
- Rip-rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3" (min) bottom width. The channel shall be lined with 4" to 12" rip-rap to a depth of 10".
 - Filter cloth shall be installed under all rip-rap.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



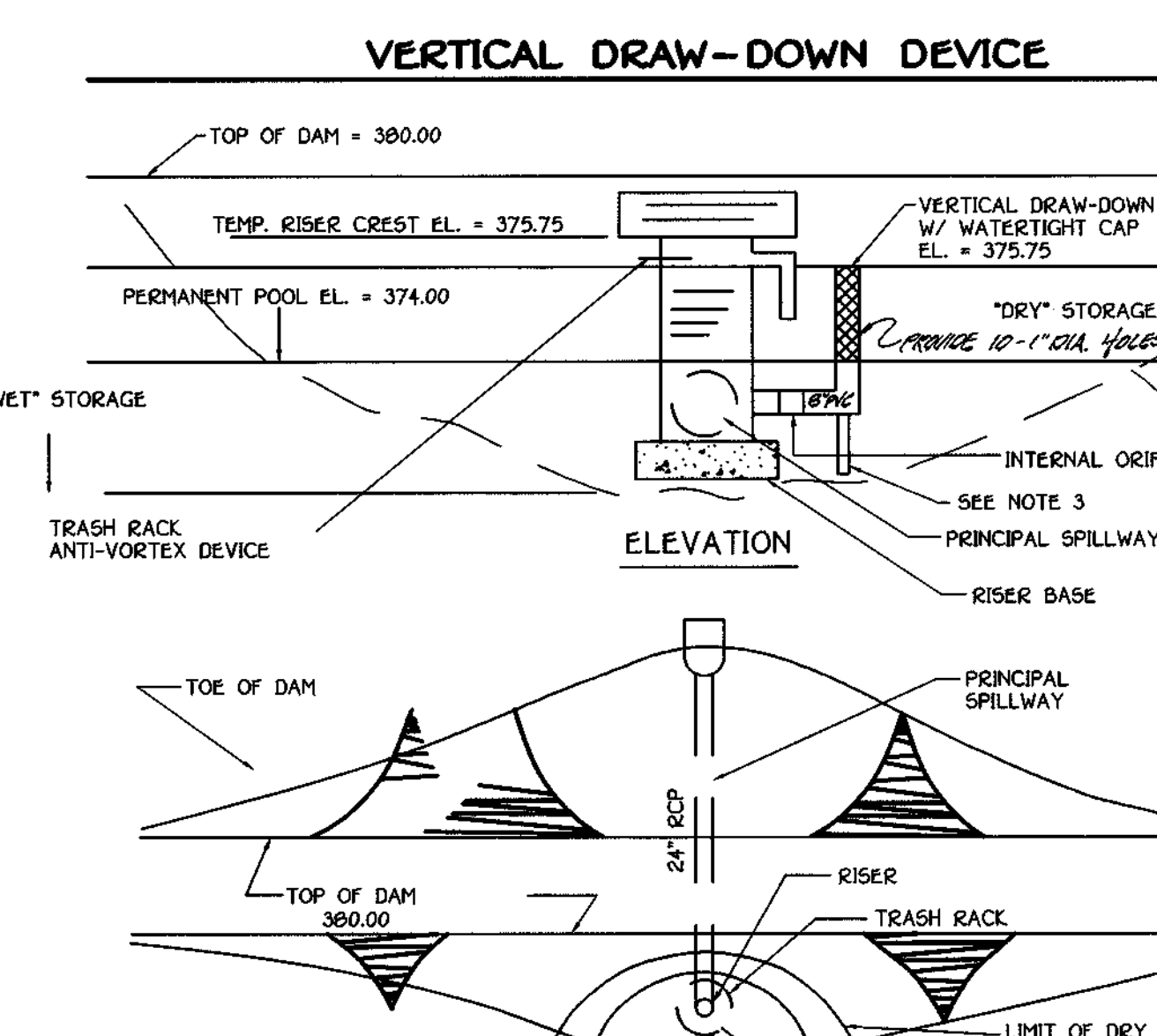
- AS-BUILT CERTIFICATION**
- I hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The "As-Built" Plans And Meets The Approved Plans And Specifications.
- Signature _____ P.E. No. _____
Date _____
- Formula: $L_e \geq 2$
MIN. $L_e = 125'$, L_e PROVIDED = 160'
NO BAFFLE BOARD REQUIRED
- Construction Specifications**
- The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations.
 - After installing the outer pipe, backfill around outer pipe with 2" aggregate.
 - The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" in diameter. The perforations shall be 1/2" x 6" slots or 1" diameter holes 6" on center. The center pipe shall be wrapped with 1/2" hardware cloth first, then wrapped again with Geotextile Class C.
 - The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.



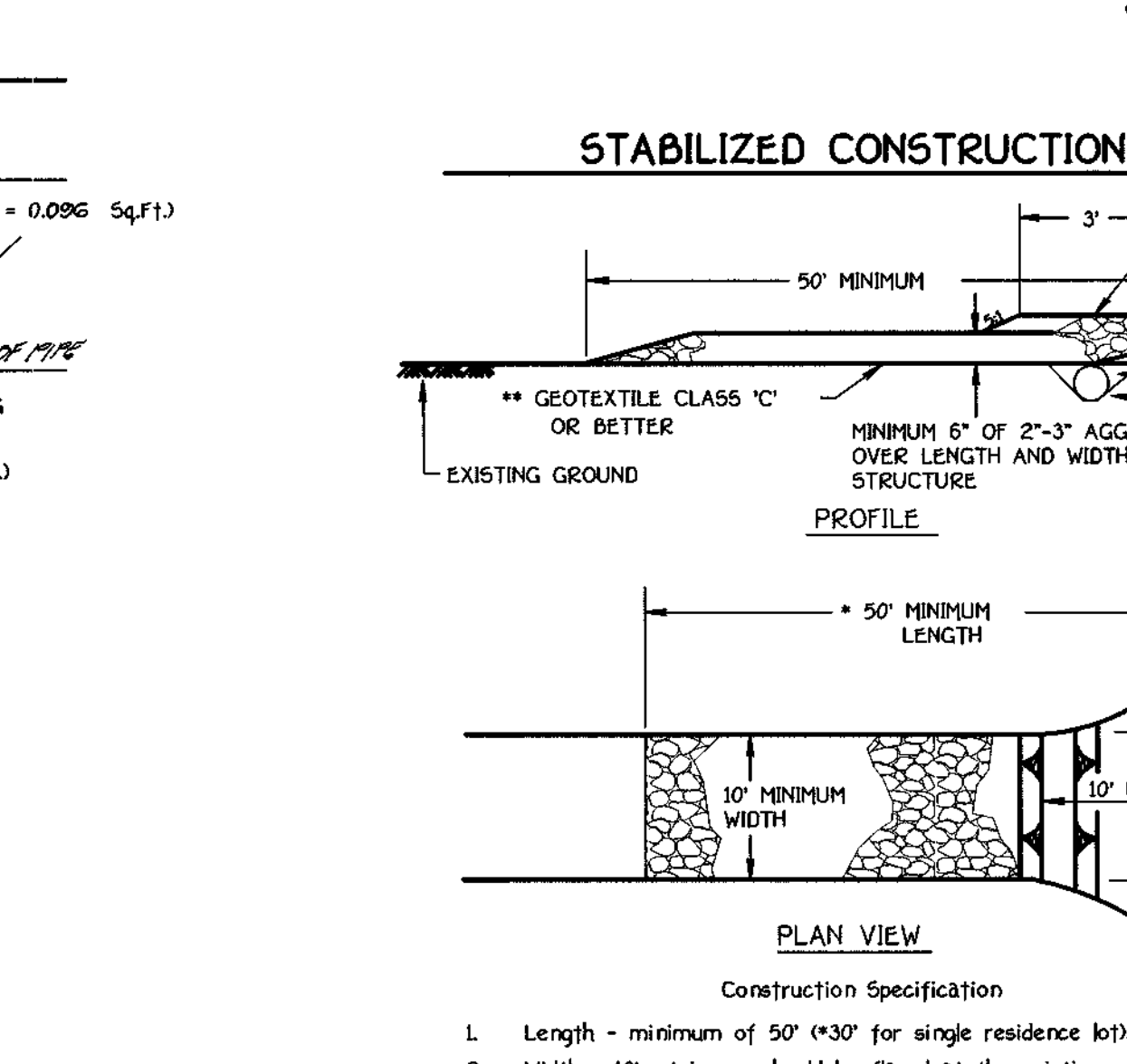
- Construction Specifications**
- The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations.
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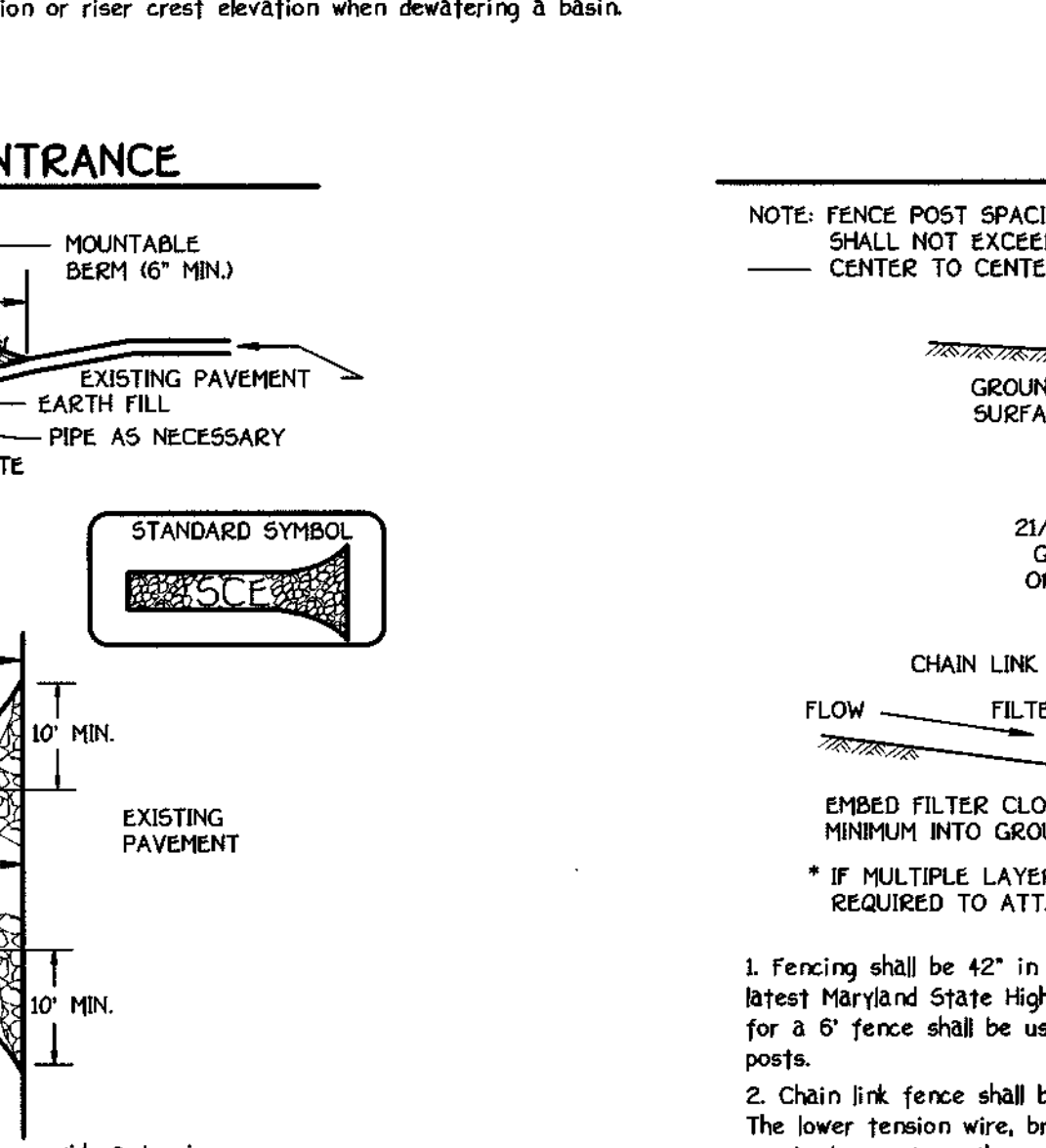
- Construction Specifications**
- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
 - 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 |
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
 - Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.



- Construction Specifications**
- PERFORATIONS IN THE DRAW-DOWN DEVICE MAY NOT EXTEND INTO THE WET STORAGE.
 - THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 2 TIMES THE AREA OF THE INTERNAL ORIFICE.
 - THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS E.
 - PROVIDE SUPPORT OF DRAW-DOWN DEVICE TO PREVENT SAGGING AND FLOATATION. AN ACCEPTABLE PREVENTATIVE MEASURE IS TO STAKE BOTH SIDES OF DRAW-DOWN DEVICE WITH 1" STEEL ANGLE, OR 1" BY 4" SQUARE OR 2" ROUND WOODEN POSTS SET 3" MINIMUM INTO THE GROUND THEN JOINING THEM TO THE DEVICE BY WRAPPING WITH 12 GAUGE MINIMUM WIRE.



- Construction Specifications**
- Length - minimum of 50' (*30' for single residence lot).
 - Width - 10' minimum, should be flared at the existing road to provide a turning radius.
 - 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.
 - 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.
 - 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.
 - 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.



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

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: *Bruce Taylor, Manager* Date: 4/2/00

Printed Name Of Developer: Bruce Taylor, Manager

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 And The Engineer Of The Howard Soil Conservation District 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: *Alfred M. Vitucci* Date: 4-20-00

Printed Name Of Engineer: Alfred M. Vitucci

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: *Jim Rogers* Date: 6/25/01

USDA Natural Resources Conservation Service

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

Signature: *John S. Saly* Date: 6/25/01

Howard Soil Conservation District

Approved: Department Of Public Works
Signature: *Andrew M. Dwyer* Date: 6-12-01
Chief, Bureau Of Highways

Approved: Department Of Planning And Zoning
Signature: *Carol R. Ranta* Date: 6/25/11
Chief, Division Of Land Development

Signature: *Alfred M. Vitucci* Date: 6/14/01
Chief, Development Engineering Division

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 3872 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
(410) 481-2295

STATE OF MARYLAND
ALFRED M. VITUCCI
REGISTERED PROFESSIONAL ENGINEER
No. 20748

Alfred M. Vitucci 4-20-00

OWNERS

MRS. HELEN FEARING IRWIN
805 OIVER ROAD
SYKESVILLE, MARYLAND 21784
AND
MR. HARRY GRANT AND MRS. MARY GRANT
4445 STONECREST DRIVE
ELICOTT CITY, MARYLAND 21043

DEVELOPER

STONECREST MANOR, L.L.C.
805 OIVER ROAD
C/O LAND DESIGN AND DEVELOPMENT, INC.
8000 MAIN STREET
ELICOTT CITY, MARYLAND 21043

SEDIMENT AND EROSION CONTROL DETAILS AND NOTES

STONE MANOR SUBDIVISION

SECTION ONE

LOTS 1 THRU 31

(A RESUBDIVISION OF LOT 1, FEARING ESTATES-PLAN NO. 10146 AND TAX PARCEL 2)
TAX MAP 31, PARCELS 2 & 805, GRID 1
SECOND ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
DATE: MAY 21, 2001
SHEET 11 OF 14

STREET TREE SCHEDULE				
SYMBOL	QUANTITY	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
⊙	46	ACER RUBRUM 'OCTOBER GLORY' RED MAPLE	2 1/2"-3" CAL.	40' APART ON PUBLIC R/W
⊙	15	PLATANUS OCCIDENTALIS 'BLOODGOOD' LONDON PLANETREE	2 1/2"-3" CAL.	40' APART ON PUBLIC R/W

NOTE: FINANCIAL SURETY FOR THE 61 REQUIRED STREET TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$18,300.00.

Approved: Department of Public Works
Richard M. Queller
 Chief, Bureau of Highways 6-12-01
 Date

Approved: Department of Planning and Zoning
David Hamilton
 Chief, Division of Land Development 6/14/01
 Date

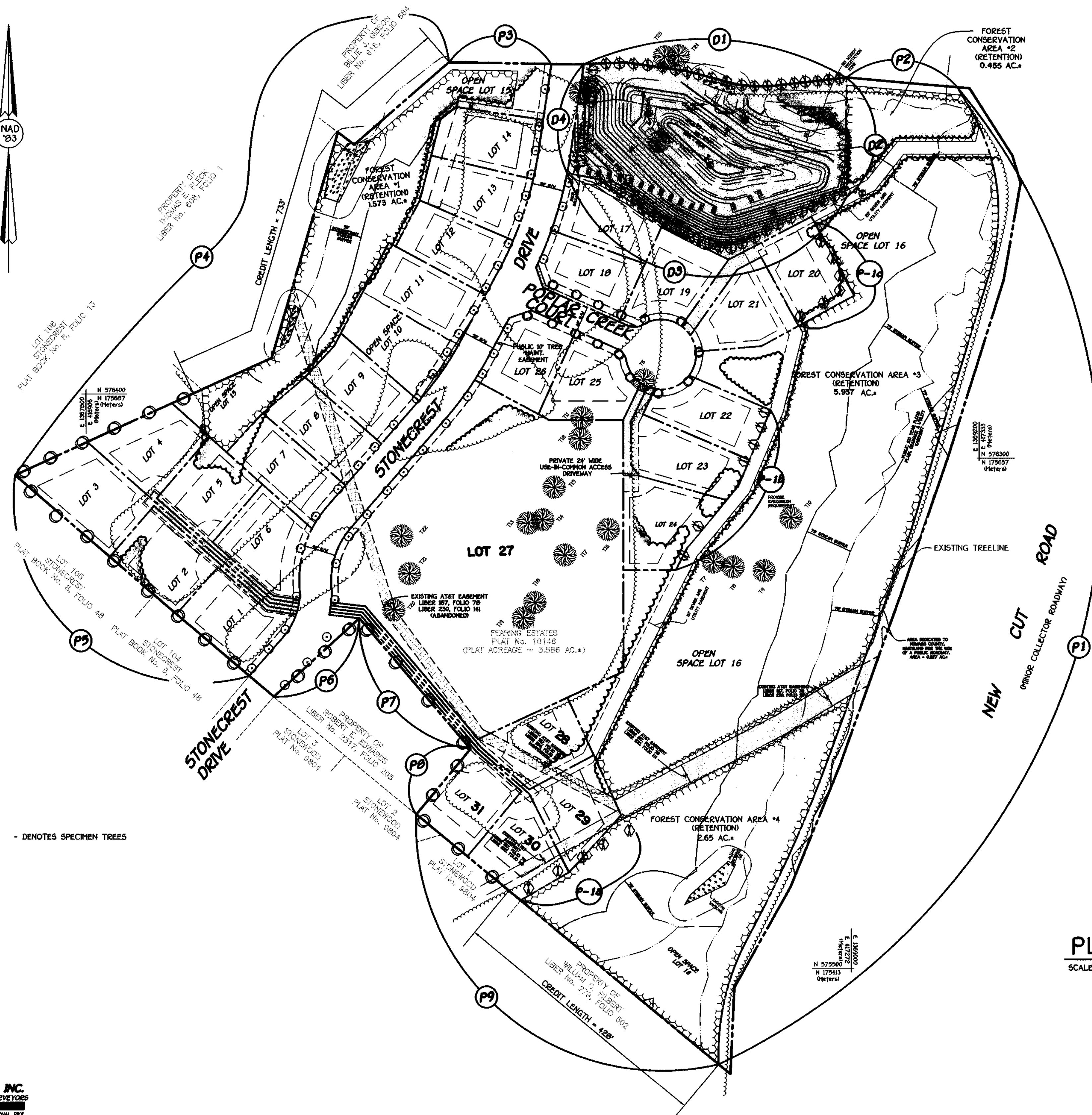
Michael Dammann
 Chief, Development Engineering Division 6/14/01
 Date

SCHEDULE A PERIMETER LANDSCAPE EDGE						
PERIMETER	CATEGORY (PROPERTIES/ROADWAYS)	LANDSCAPE TYPE	LINEAR FEET OF ROADWAY FRONTAGE PERIMETER	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NUMBER OF PLANTS REQUIRED AND PROVIDED SHADE TREES EVERGREEN TREES SHRUBS
P-1	ADJACENT TO ROADWAY	B	1610'	YES (8610')	NO	0 - -
P-2	ADJACENT TO PERIMETER	A	175'	YES (475')	NO	0 - -
P-3	ADJACENT TO PERIMETER	A	160'	YES (850')	NO	0 - -
P-4	ADJACENT TO PERIMETER	A	1040'	YES (733')	NO	6 - -
P-5	ADJACENT TO PERIMETER	A	484'	NO	NO	8 - -
P-6	ADJACENT TO PERIMETER	A	182'	NO	NO	3 - -
P-7	ADJACENT TO PERIMETER	A	269'	NO	NO	4 - -
P-8	ADJACENT TO PERIMETER	A	133'	NO	NO	2 - -
P-9	ADJACENT TO PERIMETER	A	615'	YES (428')	NO	3 - -
P-1a	ADJACENT TO ROAD	B	210'	YES (FOR SHADE)	NO	0 5 -
P-1b	ADJACENT TO ROAD	B	230'	YES (FOR SHADE)	NO	0 6 -
P-1c	ADJACENT TO ROAD	B	230'	YES (FOR SHADE)	NO	0 6 -

LANDSCAPE SCHEDULE				
QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
25	⊙	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	2 1/2"-3"
49	⊙	PINUS STROBUS	WHITE PINE	6'-8' HT.
26	⊙	PLATANUS OCCIDENTALIS 'BLOODGOOD'	LONDON PLANETREE	2 1/2"-3"

NOTE: THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 18.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 100 LANDSCAPING TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$22,650.00.

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING				
LINEAR FEET OF PERIMETER	D1: 417'	D2: 188'	D3: 503'	D4: 173'
NUMBER OF TREES REQUIRED:				
SHADE TREES	9	2	10	4
EVERGREEN TREES	11	3	13	5
CREDIT FOR EXISTING VEGETATION (NO, YES AND X)	NO	YES (87')	NO	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND X)	NO	NO	NO	NO
NUMBER OF TREES PROVIDED:				
SHADE TREES	9	2	10	4
EVERGREEN TREES	11	3	13	5
OTHER TREES (2:1 SUBSTITUTION)				



PLAN
SCALE: 1" = 100'

STATE OF MARYLAND
 PROFESSIONAL ENGINEERS
 No. 20716
 10-3-00
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
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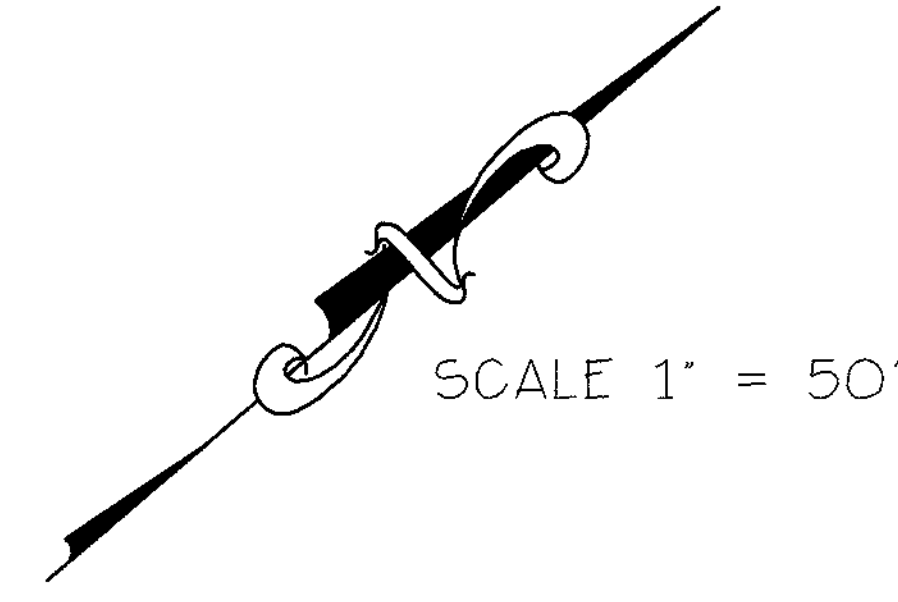
DEVELOPER
 STONECREST MANOR, L.L.C.
 c/o LAND DESIGN AND DEVELOPMENT, INC.
 8000 MAIN STREET
 ELICOTT CITY, MARYLAND 21043

LANDSCAPE PLAN
STONE MANOR
 SECTION ONE
 LOTS 1 THRU 31
 (A RESUBDIVISION OF LOT 1, FEARING ESTATES-PLAT NO. 10146 AND TAX PARCEL 2)
 TAX MAP 31, PARCELS 2 & 805, GRID 1
 SECOND ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 DATE: MAY 21, 2001
 SHEET 12 OF 14

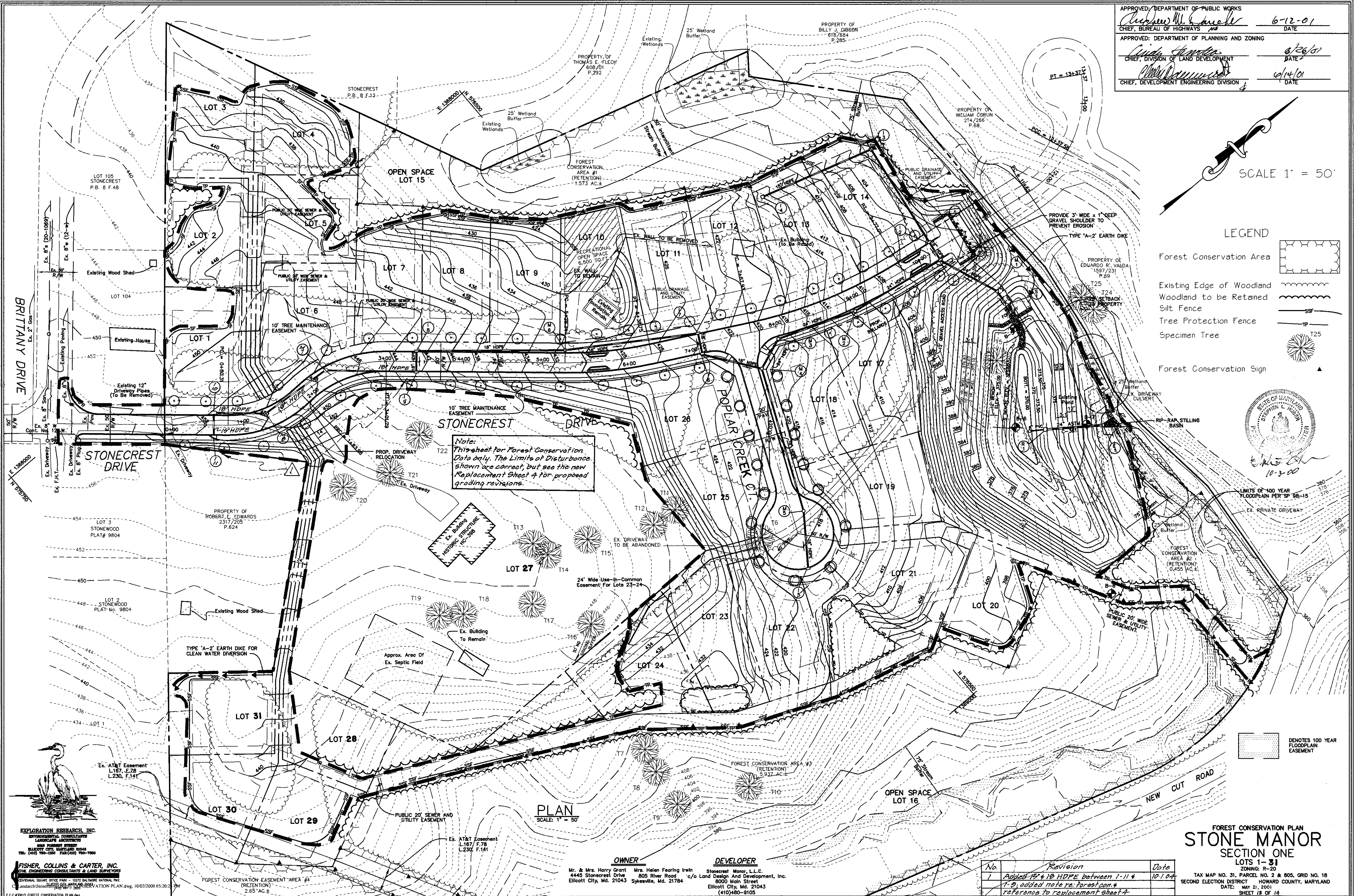
APPROVED: DEPARTMENT OF PUBLIC WORKS
Richard M. Carole 6-12-01
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Andy Hamilton 6/26/01
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Walter Drummond 6/14/01
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



- LEGEND**
- Forest Conservation Area
 - Existing Edge of Woodland
 - Woodland to be Retained
 - Silt Fence
 - Tree Protection Fence
 - Specimen Tree
 - Forest Conservation Sign



Note:
 This sheet for Forest Conservation Data only. The Limits of Disturbance shown are correct, but see the new Replacement Sheet 4 for proposed grading revisions.

PLAN
 SCALE: 1" = 50'

**FOREST CONSERVATION PLAN
 STONECREST MANOR
 SECTION ONE
 LOTS 1-31**

No.	Revision	Date
1	Added 18' & 18' HDPE between 1-11 & 1-9, added note re: forest con. & reference to replacement sheet 4	10-1-04

OWNER
 Mr. & Mrs. Harry Grant Mrs. Helen Fearing Irwin
 4445 Stonecrest Drive 805 River Road c/o Land Design And Development, Inc.
 Ellicott City, Md. 21043 Sykesville, Md. 21784 8000 Main Street
 Ellicott City, Md. 21043
 (410)480-9105

DEVELOPER
 Stonecrest Manor, L.L.C.
 8000 Main Street
 Ellicott City, Md. 21043
 (410)480-9105

ZONING: R-20
 TAX MAP NO. 31, PARCEL NO. 2 & 805, GRID NO. 18
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: MAY 21, 2001
 SHEET 13 OF 14

EXPLORATION RESEARCH, INC.
 ENVIRONMENTAL CONSULTANTS
 LANDSCAPE ARCHITECTS
 AND FORESTRY SPECIALISTS
 10000 WOODBURN ROAD
 BELLEVILLE, MD. 21038
 TEL: (410) 790-1500 FAX: (410) 790-1500

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 LANDSCAPE ARCHITECTS
 CENTRAL SQUARE OFFICE PARK # 10772 BALTIMORE NATIONAL PIKE
 BELLEVILLE, MD. 21038
 C:\landarch\stonecrest\forest\CONSERVATION PLAN.dwg, 10/02/2000 05:20:32 PM
 F.C.C. 00015 FOREST CONSERVATION PLAN.dwg

NARRATIVE

This Forest Conservation Plan has been developed in accordance with the Howard County Forest Conservation Manual and the 1991 Forest Conservation Act.

The existing site consists of 30.81 acres. Lot 28 which surrounds the existing historic dwelling is not included in the development parcel. Floodplain easement areas consisting of 3.38 acres are also excluded from net tract area. The site has 16.57 acres of existing forest within the net tract area. 8.80 acres of existing forest will be cleared. Retention areas have been prioritized to provide protection to steep slopes and highly erodible soils. 10.62 acres of woodland will be retained under easement in these areas. However only 7.77 acres is credited towards conservation requirements as the remaining 2.85 acres of easement area is located within the floodplain. The area retained is greater than the Break-Even point, so no reforestation is required.

FOREST CONSERVATION WORKSHEET

	Acres
Net Tract Area	(1/100 ac.)
A. Total Tract Area	30.814
B. Area Within 100 Year Floodplain	3.288
C. Other Deductions	0
D. Net Tract Area	27.526
Zoning Use Category: High Density Residential	
Land Use Category	
E. Afforestation Minimum (15% x D)	4.12
F. Conservation Threshold (20% x D)	5.51
Existing Forest Cover	
G. Existing Forest on Net Tract Area	16.57
H. Forest Area Above Afforestation Threshold	12.44
I. Forest Area Above Conservation Threshold	11.07
Break-even Point	
J. Forest Retention Above Threshold with no Mitigation	7.72
K. Clearing Permitted without Mitigation	8.85
Proposed Forest Clearing	
L. Forest Areas to be Cleared	8.80
M. Forest Areas to be Retained	7.77
Planting Requirements	
N. Reforestation for Clearing Above Threshold	2.20
P. Reforestation for Clearing Below the Threshold	0
Q. Credit for Retention Above Conservation Threshold	2.27
R. Total Reforestation Required	0
S. Total Afforestation Required	0
T. Total Reforestation and Afforestation Requirement	0

FOREST CONSERVATION AREA SUMMARY

Conservation Area #1	1.44 Ac.
Conservation Area #2	0.22 Ac.
Conservation Area #3	4.44 Ac.
Conservation Area #4	1.67 Ac.
Total Conservation Area	7.77 Ac.

*NOTE: These areas reflect the Easement area less the area within the floodplain.



MANAGEMENT NOTES FOR FOREST RETENTION AREAS

- All proposed activities shall adhere to the conditions, schedules and terms of an approved sediment control and erosion plan.
- After the boundaries of the retention area have been staked and flagged and before any disturbance has taken place on-site, a preconstruction meeting at the construction site shall take place. The developer, contractor or project manager, and appropriate County inspectors shall attend.
- Tree protection for all retained areas:
 - All retention areas within 50 feet of proposed construction activities shall be protected by highly visible, well anchored temporary protection devices (silt fence or blaze orange plastic mesh).
 - All protection devices shall be in place prior to any grading or land clearing.
 - All protection devices shall be properly maintained and shall remain in place until construction has ceased.
 - Attachment of signs, fencing or other objects to trees is prohibited.
 - No equipment, machinery, vehicles, materials or excessive pedestrian traffic shall be allowed within protected areas.

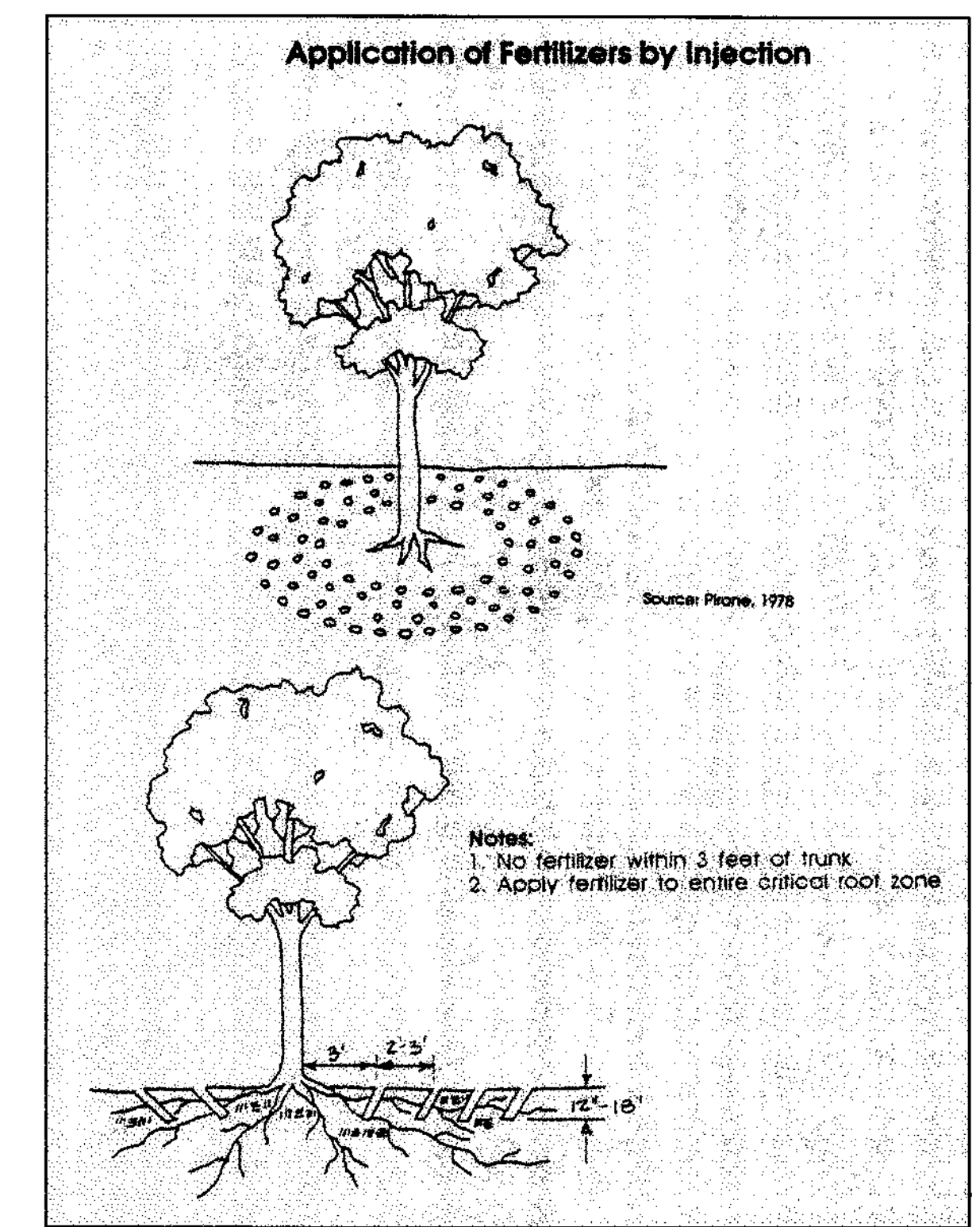
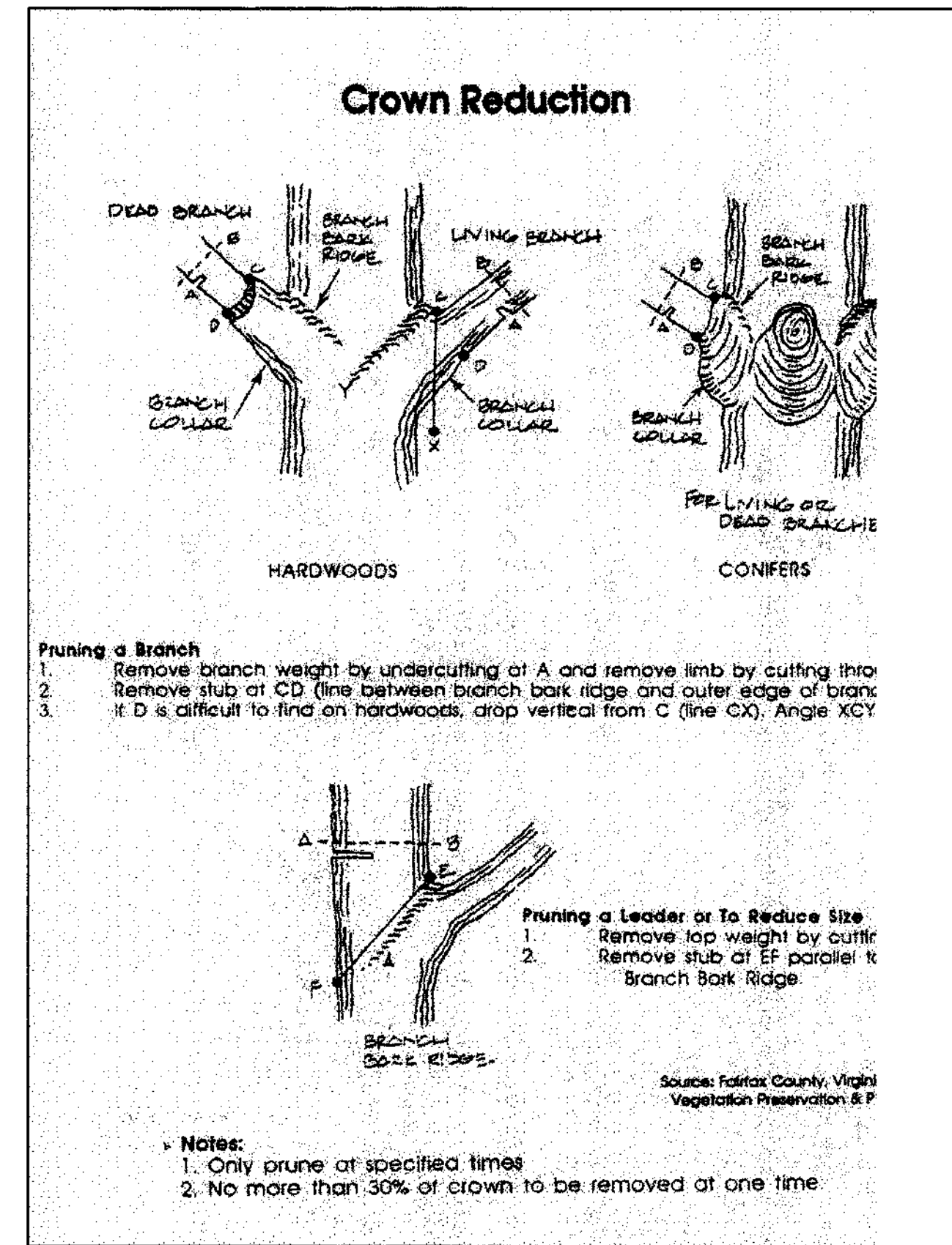
4. If the critical root zone (see detail) is affected by construction activities such as grade change, digging for foundations and roads or utility installation:

- Prune roots with a clean cut using proper pruning equipment (see root pruning detail)
- Water and fertilize as needed.

5. During construction phase, monitor and correct condition of retained trees for: soil compaction, root injury, flood conditions, drought conditions and other stress signs.

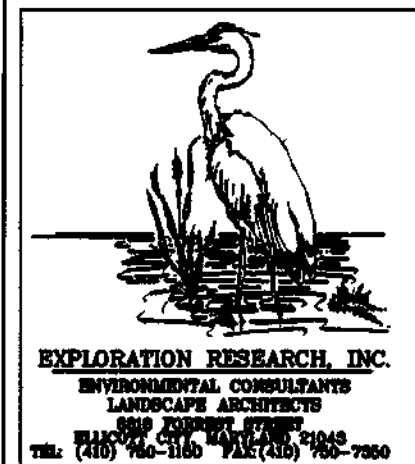
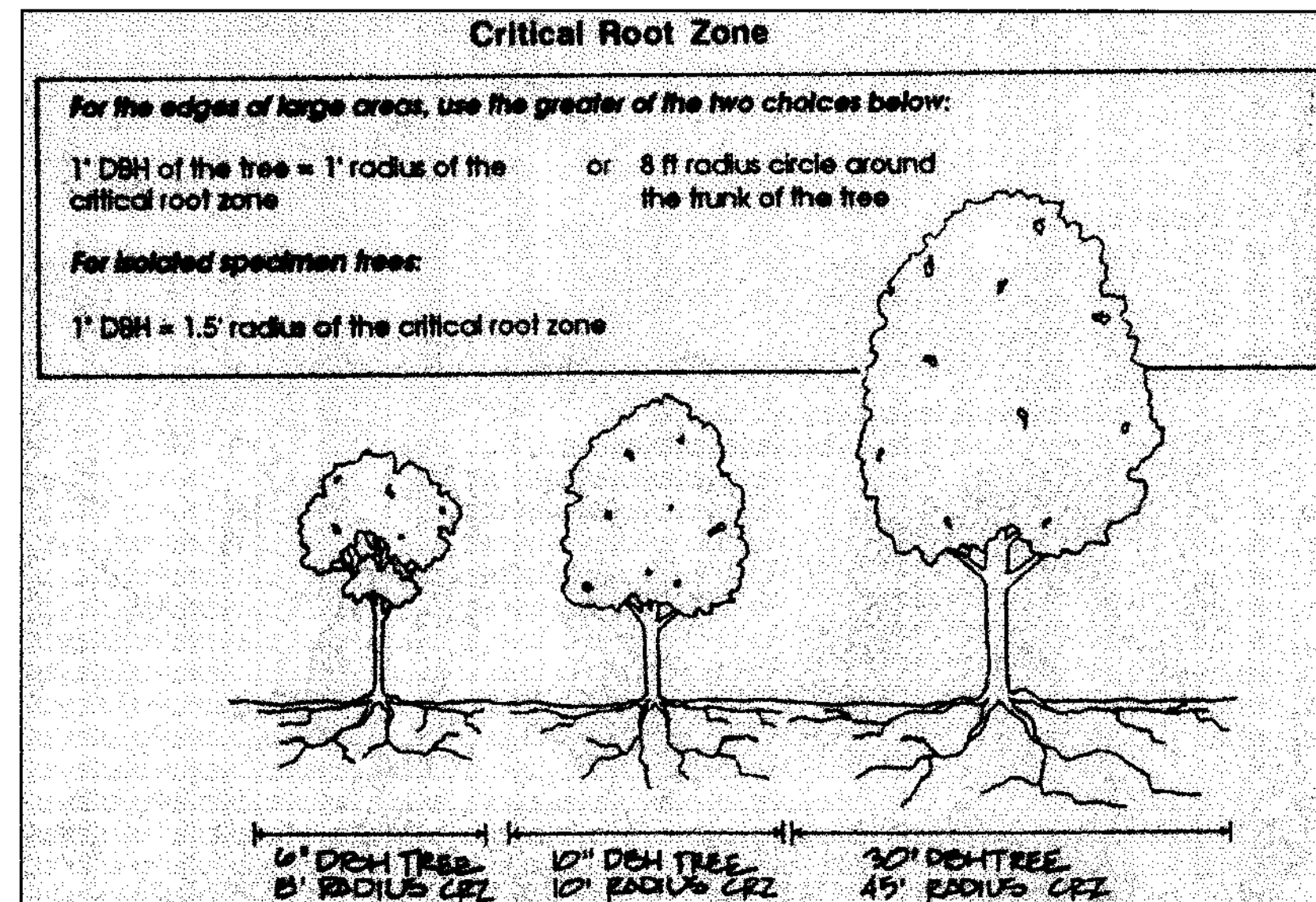
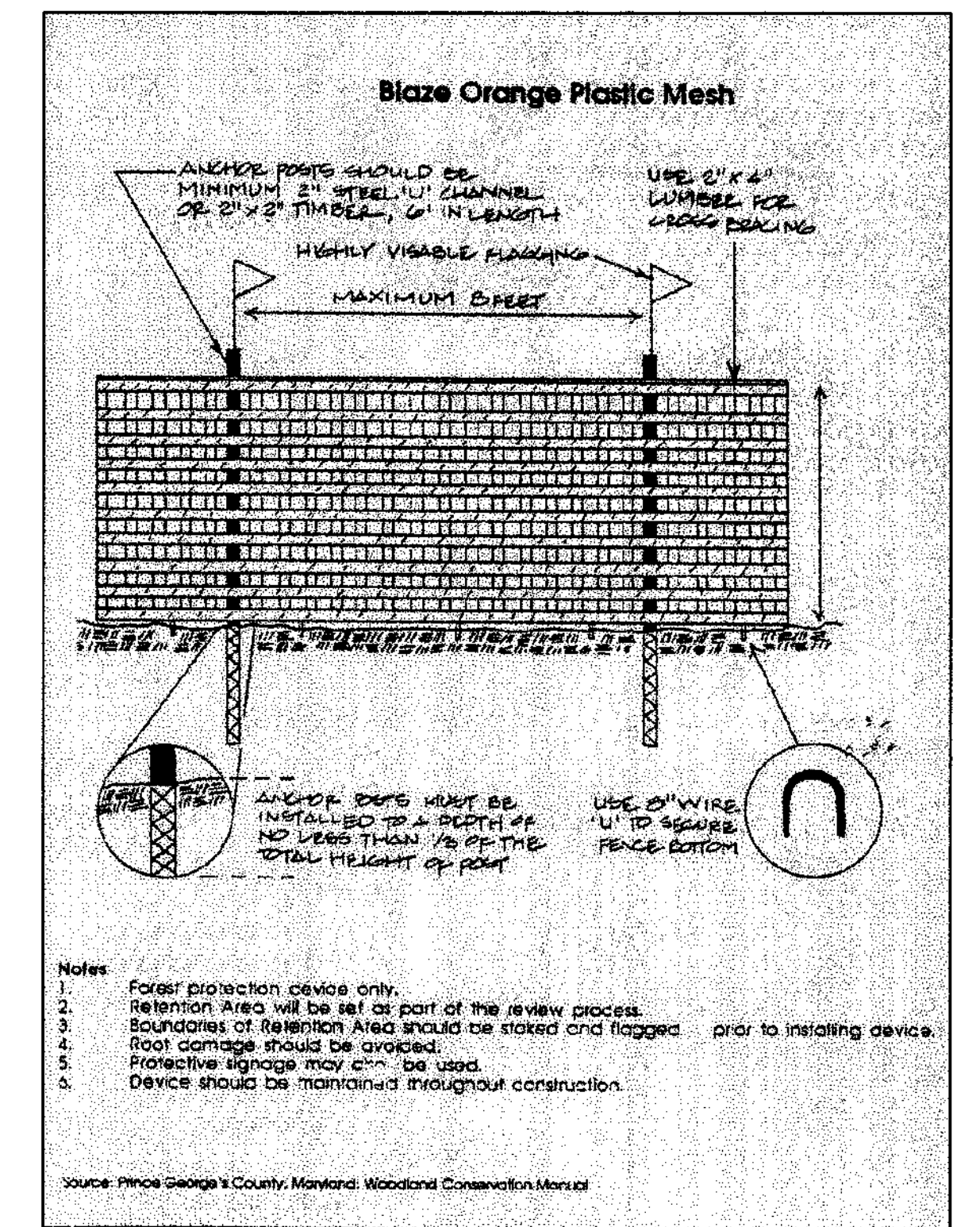
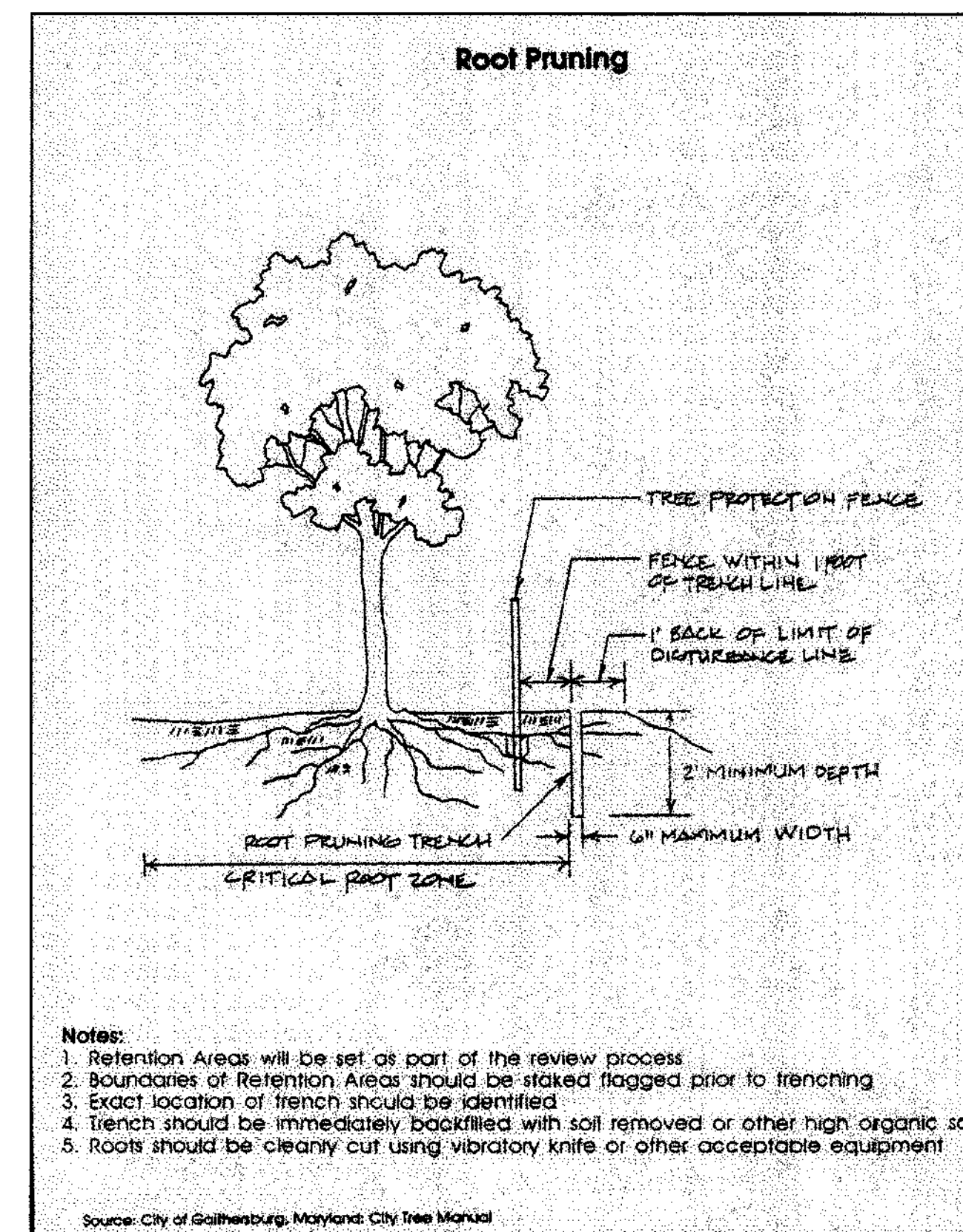
6. Post-Construction Phase

- Inspect existing trees around the perimeter of disturbed limits for evidence of soil compaction, root injury, limb injury, or other stress signs and correct with proper management techniques such as root or limb pruning, soil aeration, fertilization, crown reduction or watering. Inspection and evaluation shall be performed by a licensed arborist.
- Inspect for dead or dying trees or limbs which may pose safety hazard and remove.
- No burial of discarded materials will occur onsite within the conservation areas.
- No burning within 100 feet of wooded area.
- All temporary forest protection structures will be removed after construction.
- Following completion of construction, prior to use, the County inspector shall inspect the entire area.

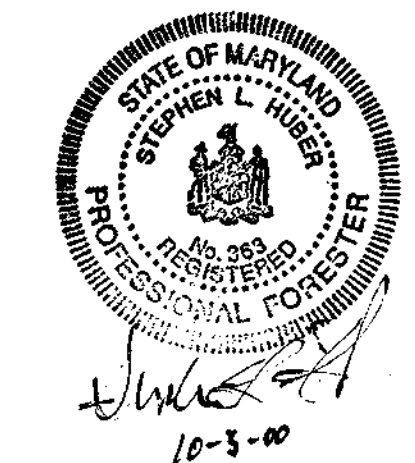


SPECIMEN TREE LIST

Tree#	DBH	Botanical Name	Common Name	Condition	Remarks
1	31	Liriodendron tulipifera	Tulip Poplar	Poor	Retain
2	42	Liriodendron tulipifera	Tulip Poplar	Poor	Retain
3	42	Liriodendron tulipifera	Tulip Poplar	Poor	Retain
4	35	Liriodendron tulipifera	Tulip Poplar	Poor	Retain
5	37	Quercus alba	White Oak	Poor	Remove
6	35	Quercus cocinea	Red Oak	Poor	Remove
7	34	Acer saccharinum	Red Maple	Poor	Retain
8	32	Liriodendron tulipifera	Tulip Poplar	Fair	Retain
9	31	Liriodendron tulipifera	Tulip Poplar	Fair	Retain
10	38	Liriodendron tulipifera	Tulip Poplar	Fair	Retain
11	32	Acer rubrum	Red Maple	Fair	Retain
12	31	Pinus strobus	White Pine	Fair	Offsite
13	34	Tilia americana	American Linden	Poor	Offsite
14	34	Tilia americana	American Linden	Fair	Offsite
15	34	Juglans nigra	Black walnut	Fair	Offsite
16	35	Liriodendron tulipifera	Tulip Poplar	Fair	Offsite
17	35	Juglans nigra	Black walnut	Fair	Offsite
18	35	Juglans nigra	Black walnut	Fair	Offsite
19	37	Tilia americana	American Linden	Fair	Offsite
20	30	Larix laricina	Larch	Fair	Offsite
21	35	Acer platanoides	Norway Maple	Poor	Offsite
22	37	Larix laricina	Larch	Fair	Offsite
23	38	Quercus alba	White Oak	Poor	Remove
24	34	Acer platanoides	Norway Maple	Fair	Offsite
25	35	Liriodendron tulipifera	Tulip Poplar	Fair	Offsite



APPROVED: DEPARTMENT OF PUBLIC WORKS		
<i>Andrew M. Dangle</i>	6-12-01	DATE
CHIEF, BUREAU OF HIGHWAYS		
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
<i>Andy Hamilton</i>	6/20/01	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT		
<i>William</i>	6/14/01	DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION		



FOREST CONSERVATION PLAN
STONE MANOR
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 LOTS 1-31
 ZONING: R-29
 TAX MAP NO. 31, PARCEL NO. 2 & 805, GRID NO. 18
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 SHEET 14 OF 14