SHEET INDEX	
SHEET No.	DESCRIPTION
1	TITLE SHEET
2	OLD FREDERICK ROAD PLAN AND PROFILE
3	HOLLY SPRINGS COURT PLAN AND PROFILE
4	STREET TREE, GRADING AND SEDIMENT CONTROL PLAN
5	LANDSCAPE & FOREST CONSERVATION PLAN
6	STORM DRAIN PROFILES
7	DRAINAGE AREA MAP
8	SEDIMENT CONTROL NOTES AND DETAILS
9	TRAFFIC CONTROL PLAN AND DETAIL SHEET
10	S.W.M. NOTES AND DETAILS
11	OFF-SITE FORESTATION PLAN - REINHARDT PROPERTY

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 12/8/00

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12/5/00

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 12/12/00

FINAL ROAD CONSTRUCTION, GRADING, STORMDRAINS AND STORMWATER MANAGEMENT PLANS

REINHARDT PROPERTY

LOTS 1 THRU 20

ZONING "R-20"

TAX MAP NO. 18 PARCEL NO. 9 GRID NO. 7

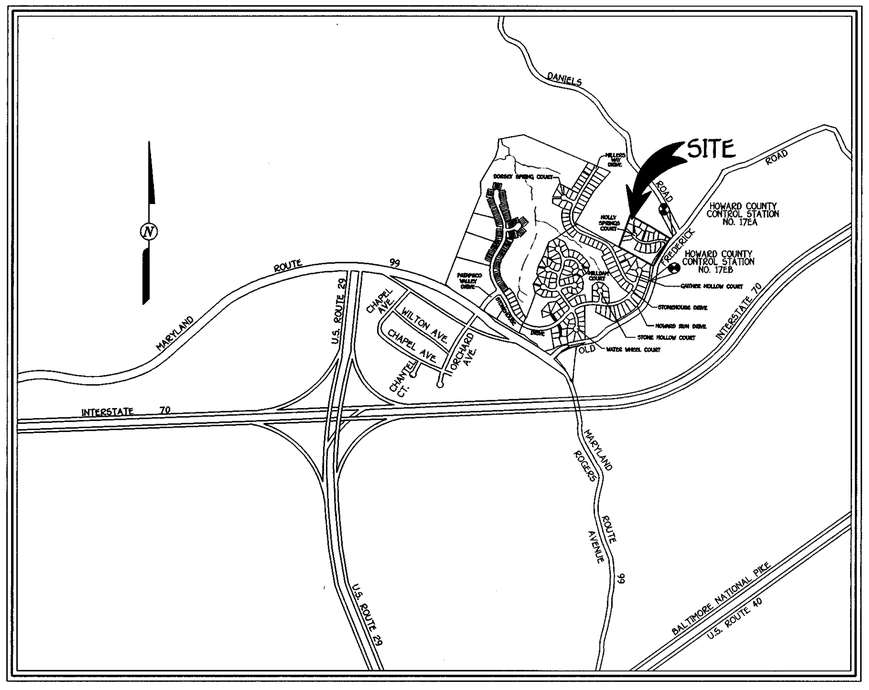
SECOND ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

ROAD CLASSIFICATION CHART		
ROAD NAME	CLASSIFICATION	R/W WIDTH
HOLLY SPRINGS COURT	PUBLIC ACCESS PLACE	40'

TRAFFIC CONTROL SIGNS				
STREET NAME	C.L. STATION	OFFSET	POSTED SIGN	SIGN CODE
HOLLY SPRINGS COURT	0+33	26'L	STOP	R1-1
HOLLY SPRINGS COURT	1+00	12'R	SPEED LIMIT 25	R2-1
HOLLY SPRINGS COURT	1+35	12'R	ROAD NARROWS	W5-1
HOLLY SPRINGS COURT	1+95	12'L	ROAD NARROWS	W5-1
HOLLY SPRINGS COURT	3+20	12'R	ROAD NARROWS	W5-1
HOLLY SPRINGS COURT	3+90	12'L	ROAD NARROWS	W5-1
HOLLY SPRINGS COURT	4+82	12'R	ROAD NARROWS	W5-1
HOLLY SPRINGS COURT	5+55	12'L	ROAD NARROWS	W5-1
OLD FREDERICK ROAD	2+50	12'L	SIDE ROAD	W2-2
OLD FREDERICK ROAD	-2+50	12'R	SIDE ROAD	W2-2
HOLLY SPRINGS COURT	1+55 3+40 5+15	8'R	"OM-3R" OBJECT MARKER	
HOLLY SPRINGS COURT	1+75 3+60 5+35	8'L	"OM-3R" OBJECT MARKER	
HOLLY SPRINGS COURT	1+55 3+40 5+15	8'L	"OM-3L" OBJECT MARKER	
HOLLY SPRINGS COURT	1+75 3+60 5+35	8'R	"OM-3L" OBJECT MARKER	

STREET LIGHT CHART				
DWG. No.	STREET NAME	STATION	OFF-SET	FIXTURE/POLE TYPE
3	HOLLY SPRINGS COURT	0+30	30'R	150-WATT H.P.S. VAPOR PENDANT (CUT-OFF) MOUNTED AT 30' ON BRONZE FIBERGLASS POLE USING A 12' ARM
3	HOLLY SPRINGS COURT	1+65	9'R	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
		3+50	9'R	
		5+25	9'R	
3	HOLLY SPRINGS COURT	L.P. STA. 0+55 = ℄ STA. 6+50	2' BEHIND CURB	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.



VICINITY MAP

SCALE 1" = 1200'

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
2. 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.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
4. 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.
5. 2 FOOT CONTOUR TOPOGRAPHY AND EXISTING CONDITIONS BASED ON FIELD RUN SURVEY PREPARED BY FISHER, COLLINS & CARTER, INC. ON OR ABOUT AUGUST 1998.
6. COORDINATES BASED ON NAD '83, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 17EA AND NO. 17EB.
   17EA N 181160.5724 (METERS)
   E 413772.7247 (METERS)
   17EB N 180994.8448 (METERS)
   E 413227.8979 (METERS)
7. PUBLIC WATER AND SEWER WILL BE USED WITHIN THE PROJECT, CONTRACT NO. 14-3824-D AND LOCATED IN THE PATAPSCO DRAINAGE AREA.
8. THE TRAFFIC STUDY WAS PREPARED BY THE TRAFFIC GROUP AND APPROVED BY HOWARD COUNTY UNDER S 98-08.
9. BACKGROUND INFORMATION:
   A. SUBDIVISION NAME: REINHARDT PROPERTY
   B. TAX MAP NO.: 18
   C. PARCEL NO.: 9
   D. ZONING: R-20
   E. ELECTION DISTRICT: SECOND
   F. TOTAL TRACT AREA: 10.311 AC. ±
   G. NO. OF BUILDABLE LOTS: 18
   H. NO. OF PARCELS: 0
   I. NO. OF OPEN SPACE LOTS: 2
   J. PRELIMINARY PLAN APPROVAL DATE: JUNE 4, 1999
   K. PREVIOUS FILE Nos. : S98-08 AND P99-11
   L. TOTAL AREA OF OPEN SPACE REQUIRED: (10.311 x 30%) = 3.093
   M. TOTAL AREA OF OPEN SPACE PROVIDED: 3.099 AC.±
11. 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.
12. NO CEMETERIES EXIST ON THE PROPERTY.
13. ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T-180.
14. THE FOREST WAS DELINEATED BY ECO-SCIENCE PROFESSIONALS, INC. AND APPROVED UNDER S 98-08.
16. THE FOREST CONSERVATION EASEMENT(S) HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, EXCEPT AS SHOWN ON AN APPROVED ROAD CONSTRUCTION DRAWING OR SITE DEVELOPMENT PLAN. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
17. STORMWATER MANAGEMENT FACILITY:
    TYPE - RETENTION S.W.M. POND (WATER QUANTITY AND WATER QUALITY BY RETENTION)
    OWNER - PRIVATE HOMEOWNERS ASSOCIATION
    MAINTENANCE - PRIVATE HOMEOWNERS ASSOCIATION
18. STREET LIGHTS WILL BE REQUIRED IN THE 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 OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
19. THE STORMWATER MANAGEMENT MARYLAND DAM SAFETY DIVISION PERMIT NO. IS 99-PO-2127.
20. UPON CONSTRUCTION OF HOLLY SPRINGS COURT, THE DRIVEWAY TO THE EXISTING HOUSE ON LOT 4 WILL BE REMOVED FROM OPEN SPACE LOT 14.

Aldo M. Vitucci 11-1-00

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

30607Title Sheet.dwg

OWNER

MR.& MRS. ROBERT REINHARDT, SR.
8524 OLD FREDERICK ROAD
ELLICOTT CITY, MD. 21043

DEVELOPER

REINHARDT PROPERTY II, LLC
10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD. 21042

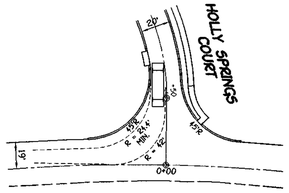
STATE OF MARYLAND — ALDO MICHAEL VITUCCI — No. 21427

ALDO M. VITUCCI, P.E. — DATE 11-30-00

REINHARDT PROPERTY
LOTS 1 THRU 20
ZONED: R-20
TAX MAP NO. 18 PARCEL NO. 9 GRID NO. 7
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: SEPTEMBER 1, 2000
SHEET 1 OF 11

F 00-48

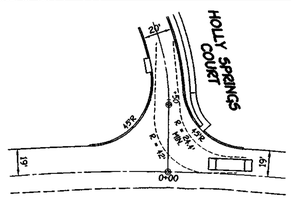
K:\Drawings 3\30607 Reinhardt\FINAL S\30607TITLE SHEET.dwg



OLD FREDERICK ROAD

TURNING MOVEMENT ANALYSIS FOR SU-30 VEHICLE

SCALE: 1" = 50'



OLD FREDERICK ROAD

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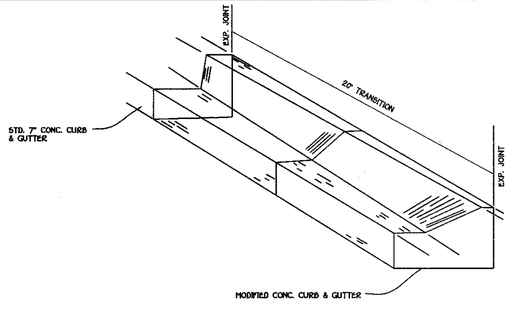
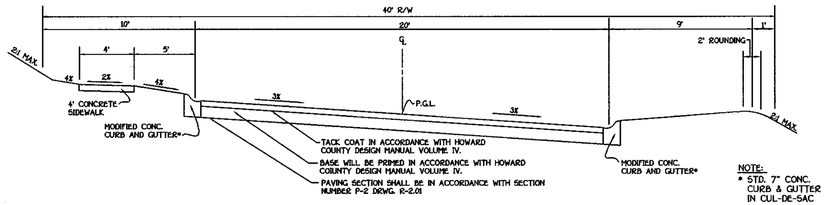
SCALE: 1" = 50'



CONCRETE CURB & GUTTER TRANSITION

NO SCALE



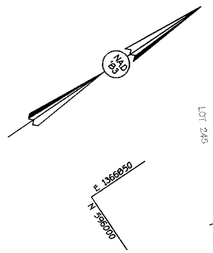
NOTE:
* STD. 7" CONC. CURB & GUTTER IN CUL-DE-SAC

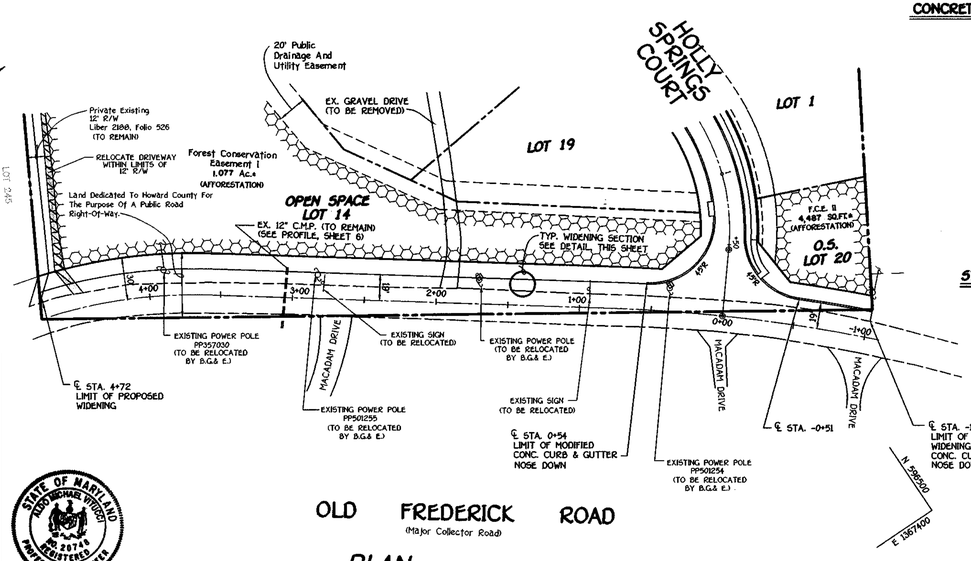
TYPICAL ROADWAY SECTION

NO SCALE

ROADWAY INFORMATION CHART

ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	℄ STATION LIMITS	R/W	PAVING SECTION
HOLLY SPRINGS COURT	PUBLIC ACCESS PLACE	20 M.P.H.	R-20	0+00 TO 6+88.09	40'	P-2



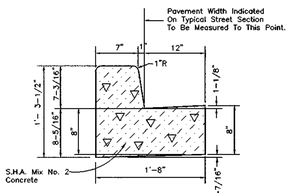


OLD FREDERICK ROAD

(Major Collector Road)

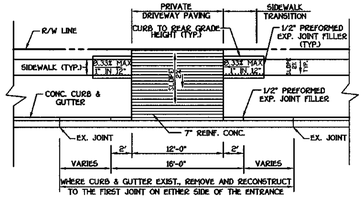
PLAN

SCALE: 1" = 50'

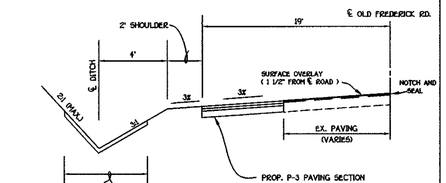


STANDARD 7" COMB. CONC. CURB AND GUTTER

NO SCALE



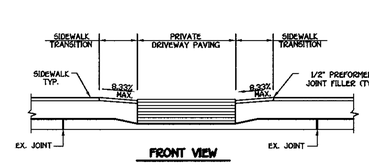
PLAN



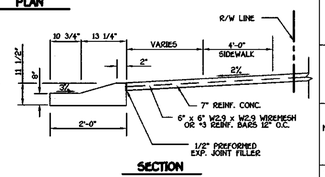
TYPICAL ROADWAY SECTION FOR OLD FREDERICK ROAD w/ DITCH

NO SCALE

NOTES:
1. OVERLAY & IMPROVEMENTS SHALL COMPLY WITH DETAIL R-10.01 DMV-IV.
2. WHEN EXISTING TRAVEL LANE IS LESS THAN THE REQUIRED 12' LANE, CONTRACTOR SHALL REMOVE ENOUGH OF THE EXISTING ROAD BED TO PROVIDE A MINIMUM BASE WIDENING OF 4'.
3. THE SURFACE OVERLAY SHALL BE CARRIED TO THE ℄ OF THE ROAD AND NOTCHED & SEALED.
4. SURFACE OVERLAY COURSE TO BE EQUAL TO SURFACE COURSE OF TYPICAL PAVING SECTION.
5. ℄ OF ROAD TO BE MILLED AT DEPTH OF 1 1/2" x 1' USING A MILLING MACHINE.



FRONT VIEW



SECTION

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

NO SCALE

APPROVED
DEPARTMENT OF PLANNING AND ZONING
Cindy Hamelin 10/15/10
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

APPROVED
DEPARTMENT OF PLANNING AND ZONING
12/12/00
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

APPROVED
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Howard Stiltz for 12/8/00
CHIEF, BUREAU OF HIGHWAYS — DATE

STATE OF MARYLAND
ALDO MICHAEL VITUCCI
No. 20748
REGISTERED
PROFESSIONAL ENGINEER

Aldo M. Vitucci 8-3-00

REINHARDT PROPERTY

Lots 1 thru 20

Zoned: R-20

Tax Map No. 18 Parcel No. 9 Grid No. 7

Second Election District Howard County, Maryland

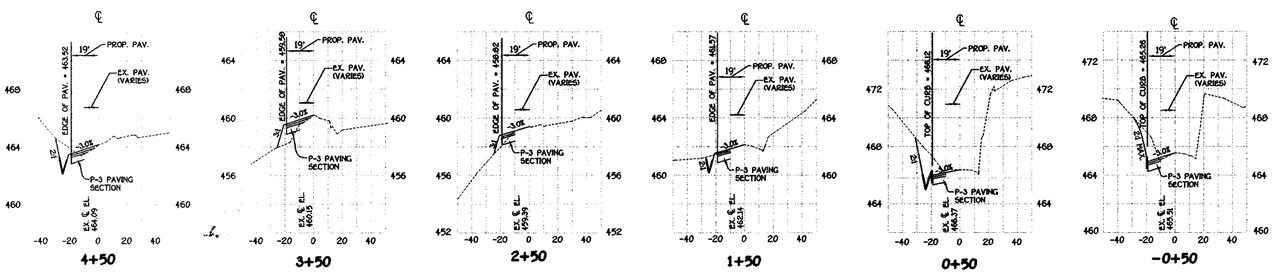
OLD FREDERICK ROAD

PLAN AND PROFILE

OWNER	DEVELOPER
MR.& MRS. ROBERT REINHARDT, SR. 8524 OLD FREDERICK ROAD ELLICOTT CITY, MD. 21043	REINHARDT PROPERTY II, LLC 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MD. 21042

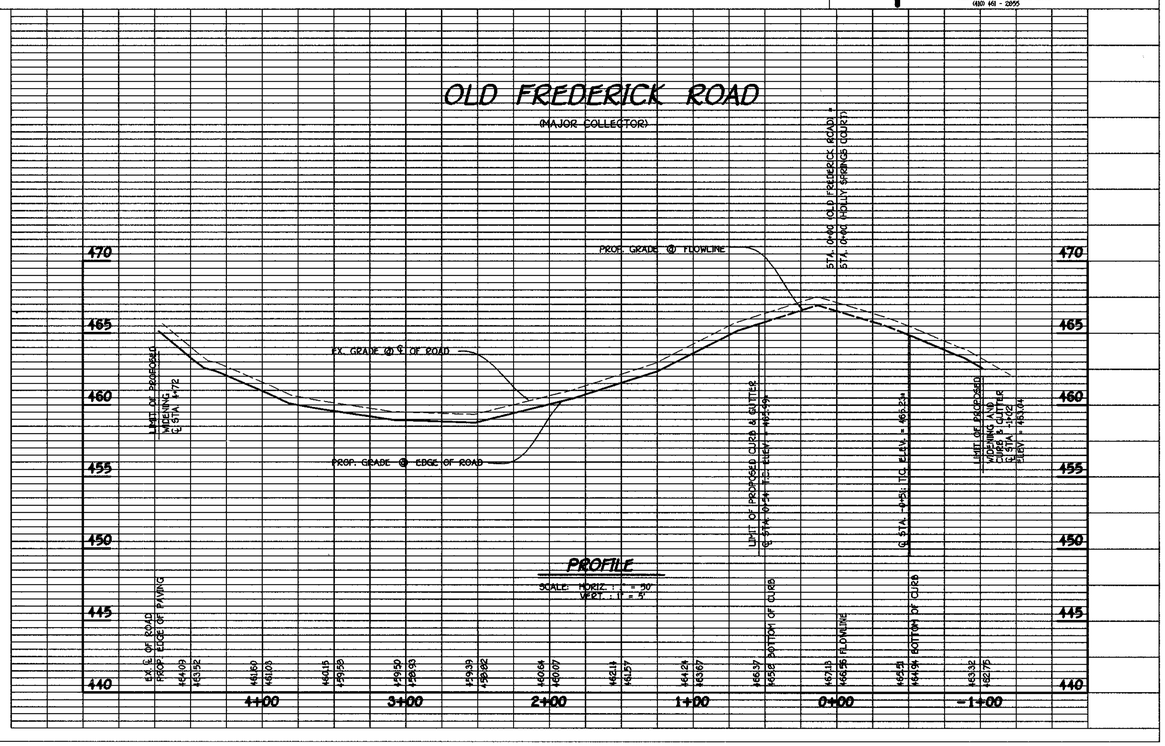
SCALE: AS SHOWN	DATE: SEPT. 1, 2000	DWG. NO. 2 OF 11
DES. A.M.V.	DRN. J.C.L.	CHK. A.M.V.

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



CROSS-SECTIONS

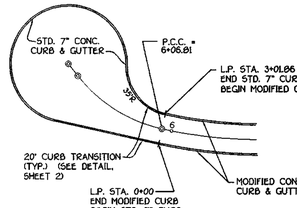
SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 5'



PROFILE

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

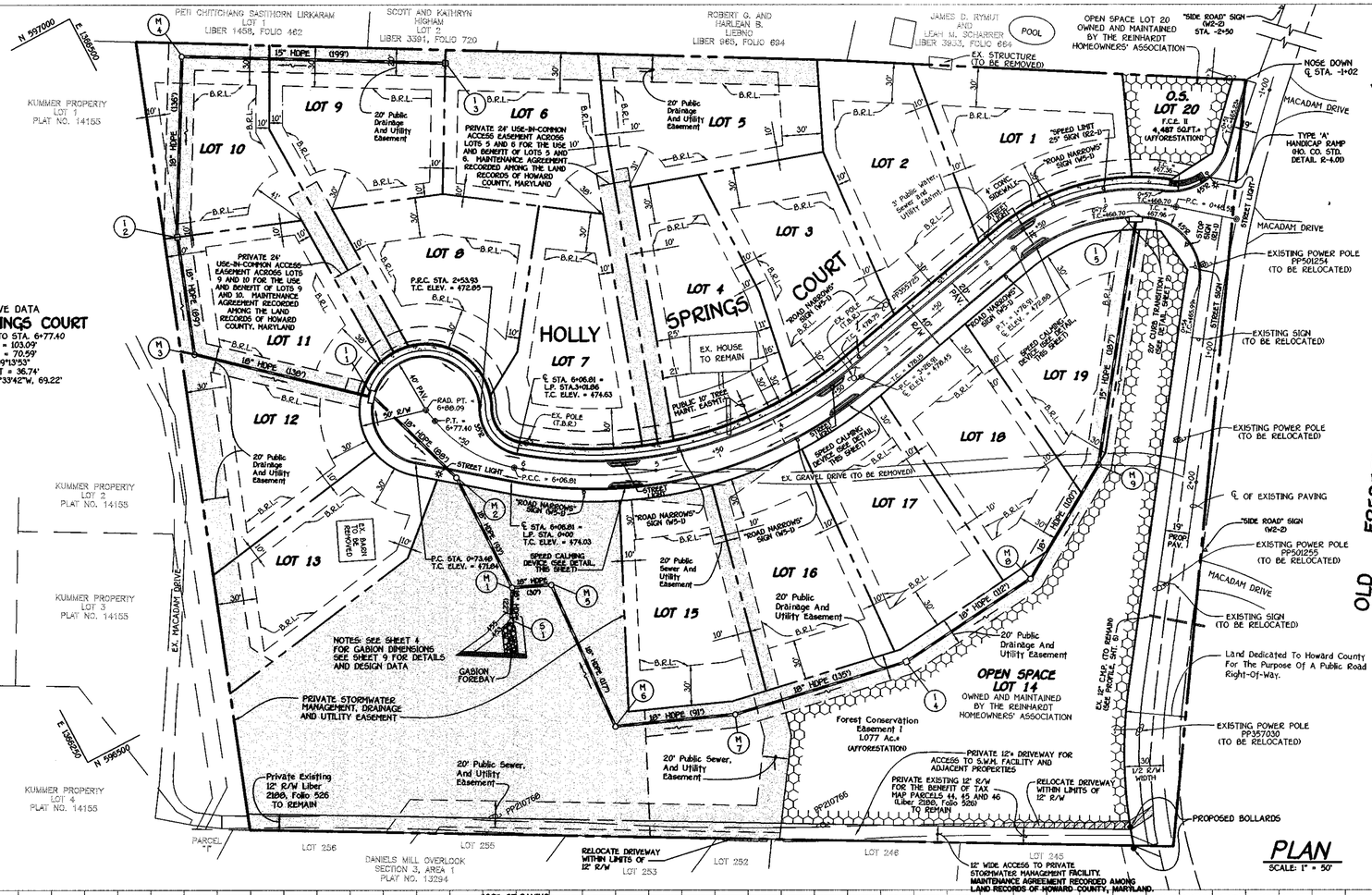
F 00 - 48



CURB LIMITS DETAIL

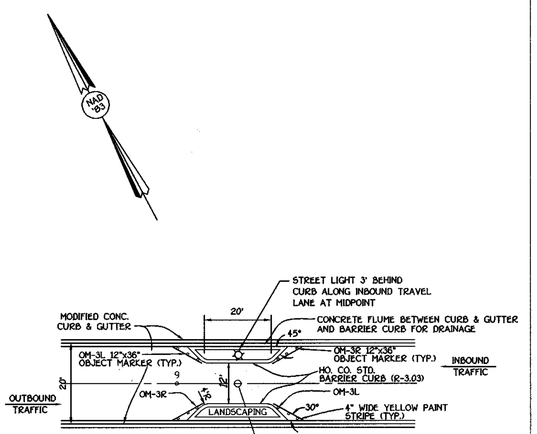
NO SCALE

℄ CURVE DATA
HOLLY SPRINGS COURT
STA. 6+06.81 TO STA. 6+77.40
RADIUS = 103.09'
LENGTH = 70.59'
Δ = 39°13'53"
TANGENT = 36.74'
CHORD. = N31°33'42"W, 69.22'



℄ CURVE DATA
HOLLY SPRINGS COURT
STA. 0+46.51 TO STA. 1+76.51
RADIUS = 145.00'
LENGTH = 130.40'
Δ = 51°31'31"
TANGENT = 69.98'
CHORD. = N76°19'31"W, 126.05'

℄ CURVE DATA
HOLLY SPRINGS COURT
STA. 3+25.91 TO STA. 6+06.81
RADIUS = 315.00'
LENGTH = 279.90'
Δ = 50°54'36"
TANGENT = 149.95'
CHORD. = N76°37'56"W, 270.78'



SPEED CONTROL DEVICE

N.T.S.

APPROVED
DEPARTMENT OF PLANNING AND ZONING
Cindy Hamata 12/5/00
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DEPARTMENT OF PLANNING AND ZONING
APPROVED Mark Dammann 12/12/00
DIRECTOR — DATE

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Howard S. Lehr for 12/8/00
CHIEF, BUREAU OF HIGHWAYS — DATE

REINHARDT PROPERTY
Lots 1 thru 20

Zoned: R-20
Tax Map No. 18 Parcel No. 9 Grid No. 7
Second Election District Howard County, Maryland

HOLLY SPRINGS COURT
PLAN AND PROFILE

OWNER	DEVELOPER
MR.& MRS. ROBERT REINHARDT, SR. 8524 OLD FREDERICK ROAD ELLICOTT CITY, MD. 21043	REINHARDT PROPERTY II, LLC 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MD. 21042

SCALE: AS SHOWN	DATE: SEPT. 1, 2000	DWG. NO. 3 OF 11
DES. A.M.V.	DRN. J.C.L.	CHK. A.M.V.

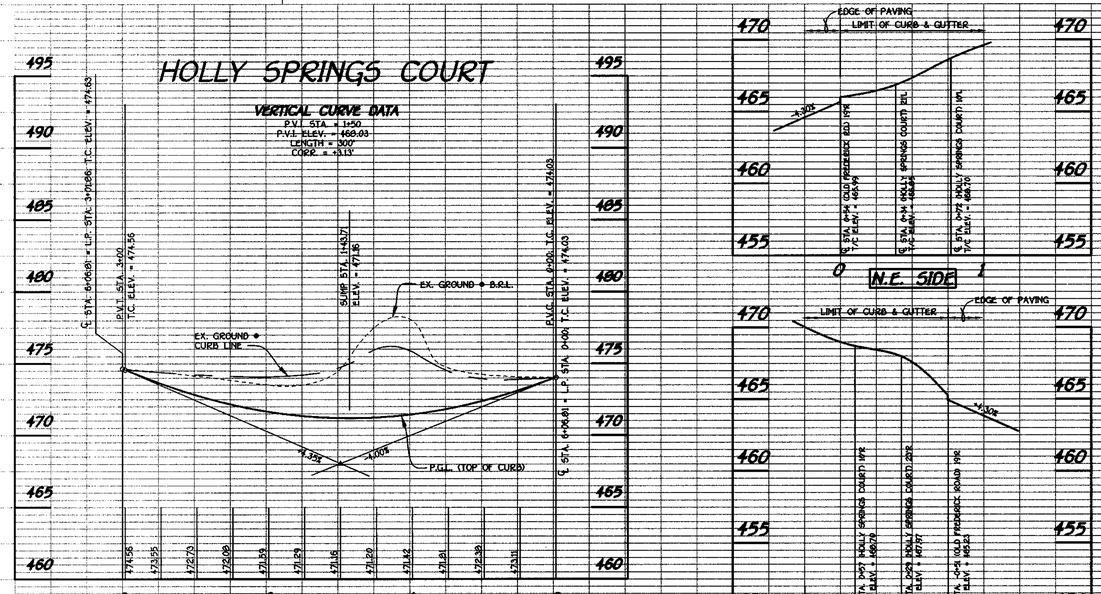
STATE OF MARYLAND — ALDO MICHAEL VITUCCI — NO. 20748 — REGISTERED PROFESSIONAL ENGINEER
Ald M. Vitucci 8-31-00

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

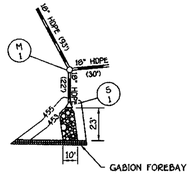
(C) 2000 FCC

PLAN

SCALE: 1" = 50'

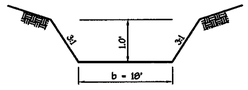


F 00-48



OUTFALL DETAIL

SCALE: 1" = 50'



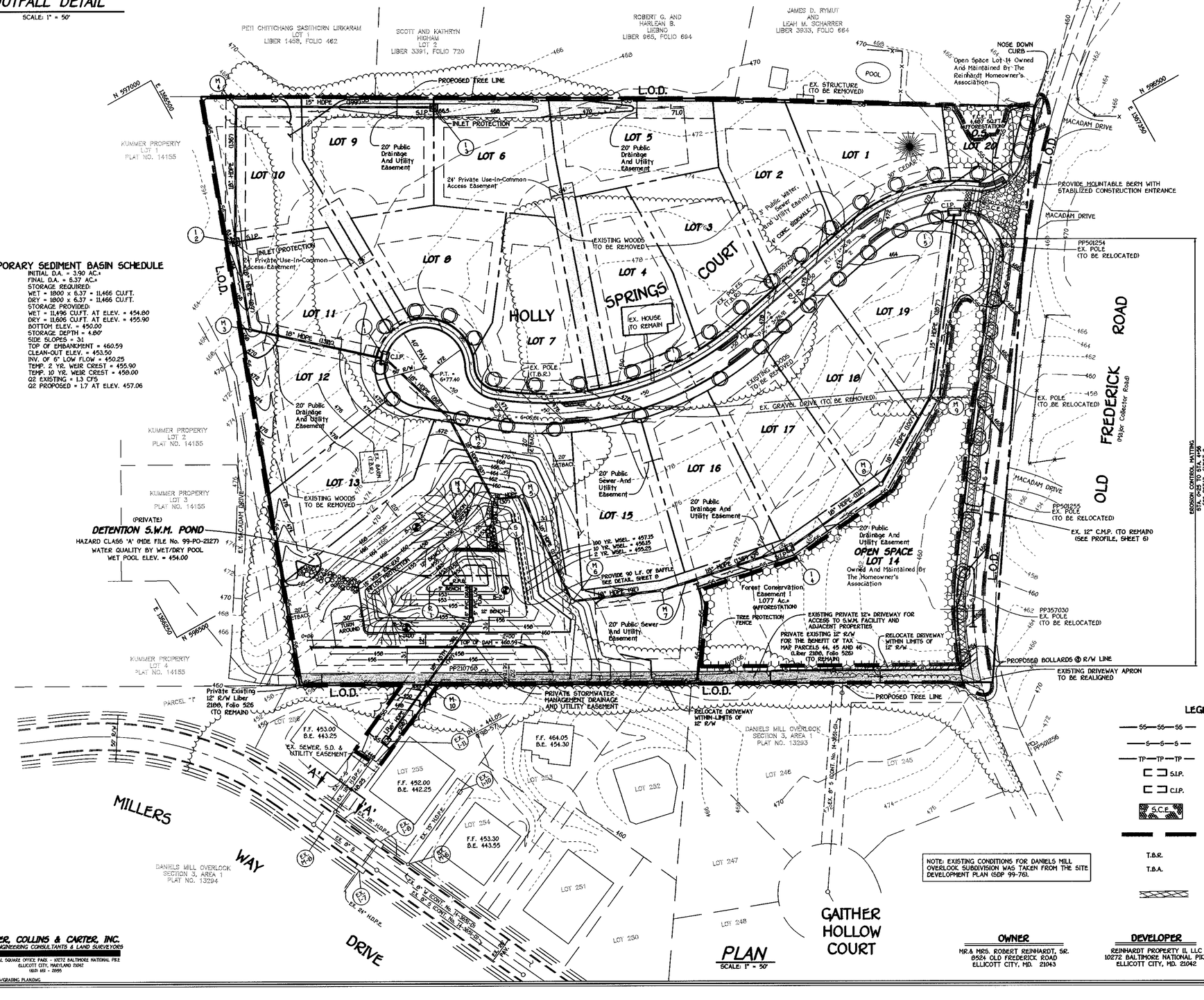
BREACH CHANNEL SECTION 'A-A'

NO SCALE

STREET TREE SCHEDULE

SYMBOL	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
○	PLATANUS OCCIDENTALIS 'BLOODGOOD' LONDON PLANETREE	2½" - 3" CAL.	40' APART ON PUBLIC R/W

NOTE: STREET TREE TYPE IS ONLY A RECOMMENDATION AND MAY BE REVISED TO AN ACCEPTABLE COUNTY EQUIVALENT FROM THE HOWARD COUNTY LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 45 STREET TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $13,500.00.


DANIELS ROAD
FREDERICK ROAD (Major Collector Road)
OLD
MILLERS WAY
GAITHER HOLLOW COURT
HOLLY SPRINGS COURT
DRIVE
PETI CHITTICHANG SASITHORN LIRKARAM LOT 1 LIBER 1458, FOLIO 462
SCOTT AND KATHRYN HIGHAM LOT 2 LIBER 3391, FOLIO 720
ROBERT G. AND HARLEAN B. LIEBNO LIBER 965, FOLIO 694
JAMES D. RYMUT AND LEAH M. SCHARRER LIBER 3933, FOLIO 664
KUMMER PROPERTY LOT 1 PLAT NO. 14155
KUMMER PROPERTY LOT 2 PLAT NO. 14155
KUMMER PROPERTY LOT 3 PLAT NO. 14155
KUMMER PROPERTY LOT 4 PLAT NO. 14155
DANIELS MILL OVERLOOK SECTION 3, AREA 1 PLAT NO. 13294
DANIELS MILL OVERLOOK SECTION 3, AREA 1 PLAT NO. 13293
PROPOSED TREE LINE
L.O.D.
EX. STRUCTURE (TO BE REMOVED)
POOL
NOSE DOWN CURB
Open Space Lot 14 Owned And Maintained By The Reinhardt Homeowner's Association
INLET PROTECTION
20' Public Drainage And Utility Easement
24' Private Use-in-Common Access Easement
3' Public Water, Sewer And Utility Easement
EXISTING WOODS TO BE REMOVED
EX. HOUSE TO REMAIN
EX. POLE (T.B.R.)
EX. GRAVEL DRIVE (TO BE REMOVED)
EX. BARN (T.B.R.)
EX. SHED (T.B.R.)
EX. GAZEBO (T.B.R.)
EX. GARAGE (T.B.R.)
EX. POOL (T.B.R.)
EX. POLE (TO BE RELOCATED)
EX. 12" C.M.P. (TO REMAIN) (SEE PROFILE, SHEET 6)
PROVIDE MOUNTABLE BERM WITH STABILIZED CONSTRUCTION ENTRANCE
MACADAM DRIVE
EX. 12" C.M.P. (TO BE REMOVED)
PROPOSED BOLLARDS @ R/W LINE
EXISTING DRIVEWAY APRON TO BE REALIGNED
PROPOSED TREE LINE
EXISTING DRIVEWAY WITHIN LIMITS OF 12' R/W
RELOCATE DRIVEWAY WITHIN LIMITS OF 12' R/W
PRIVATE STORMWATER MANAGEMENT DRAINAGE AND UTILITY EASEMENT
Private Existing 12' R/W Liber 2188, Folio 526 (TO REMAIN)
EX. SEWER, S.D. & UTILITY EASEMENT
EX. 24" H.D.P.E.
EX. 8" W.SCH. 40
EX. 8" S.SCH. 40
EX. 15" HDPE
EX. 18" HDPE
EX. 6" W.SCH. 40
EX. 6" S.SCH. 40
EX. 8" W.SCH. 40
EX. 8" S.SCH. 40
EX. 24" H.D.P.E.

LANDSCAPE SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
59	◯	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	2 1/2"-3" MIN.
39	⊗	PINUS STROBUS	WHITE PINE	6'-8' HT.

NOTE: THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 98 LANDSCAPING TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $ 23,550.00.

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF TYPE 'B' PERIMETER	D1: 231 L.F.	D2: 100 L.F.	D3: 302 L.F.	D4: 250 L.F.	D5: 138 L.F.
NUMBER OF TREES REQUIRED: SHADE TREES / EVERGREEN TREES	5 / 6	2 / 3	6 / 8	5 / 6	3 / 3
CREDIT FOR EXISTING VEGETATION (NO, YES AND ID)	NO	NO	NO	NO	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND ID)	NO	NO	NO	NO	NO
NUMBER OF TREES PROVIDED: SHADE TREES / EVERGREEN TREES / OTHER TREES (2:1 SUBSTITUTION)	5 / 6	2 / 3	6 / 8	5 / 6	3 / 3

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 PERIMETER	A	830 L.F.	NO	NO	14	-	-
P-2	ADJACENT TO PERIMETER	A	495 L.F.	NO	NO	8	-	-
P-3	ADJACENT TO PERIMETER	A	364 L.F.	YES (100')	NO	5	-	-
P-4	ADJACENT TO ROADWAY	B	435 L.F.	NO	NO	9	11	-
P-5	ADJACENT TO ROADWAY	B	60 L.F.	NO	NO	2	2	-

Approved: Department Of Public Works

Chief, Bureau Of Highways — Date 12/13/00

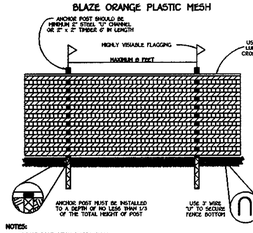
Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 12/13/00

Chief, Development Engineering Division — Date 12/12/00

TOTAL NUMBER OF STREET TREES SHOWN FOR THIS SUBDIVISION = 45 TREES, SEE SHEET 4 FOR SURETY AMOUNT.

BLAZE ORANGE PLASTIC MESH



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

TREE PROTECTION DETAIL
NOT TO SCALE

FOREST CONSERVATION WORKSHEET

NET TRACT AREA:

A. TOTAL TRACT AREA:	10.3
B. AREA WITHIN 100 YEAR FLOODPLAIN:	0.00
C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION:	0.00
D. NET TRACT AREA:	10.30

LAND USE CATEGORY: (from table 8.2.1, page 40, manual)

INPUT THE NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY.

ARA	MDR	IDA	HDR	MPD	CIA
0	0	0	1	0	0

E. AFFORESTATION THRESHOLD: (15% x D = 1.55)	
F. CONSERVATION THRESHOLD: (20% x D = 2.06)	

EXISTING FOREST COVER:

G. EXISTING FOREST COVER (excluding floodplain):	1.40
H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD:	0.00
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD:	0.00

BREAK EVEN POINT:

J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION:	0.00
K. CLEARING PERMITTED WITHOUT MITIGATION:	0.00

PROPOSED FOREST CLEARING:

L. TOTAL AREA OF FOREST TO BE CLEARED:	1.40 (cannot exceed existing forest cover)
M. TOTAL AREA OF FOREST TO BE RETAINED:	0.00

PLANTING REQUIREMENTS:

N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD:	0.00		
P. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD:	2.80	1.00	1.00
Q. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD:	0.00		
R. TOTAL REFORESTATION REQUIRED:	2.80	1.00	1.00
S. TOTAL AFFORESTATION REQUIRED:	0.15		
T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED:	2.95		

PLANTING SCHEDULE

PLANTING AREA NO. 1 (0.93 AC.)

QTY.	SPECIES	SIZE	SPACING
54	ACER RUBRUM - RED MAPLE	2½" - 3" CAL.	**
35	CORNUS FLORIDA - FLOWERING DOGWOOD	8' - 10' HT.	**
55	FRAXINUS AMERICANA - WHITE ASH	2½" - 3" CAL.	**
60	LIRIODENDRON TULIPIFERA - POPLAR	2½" - 3" CAL.	**
54	QUERCUS ALBA - WHITE OAK	2½" - 3" CAL.	**
25	ROBINIA PSEUDO - ACACIA	2½" - 3" CAL.	**
30	VIBURNUM PRUNIFOLIUM - BLACKHAW	30" - 36" B.T.	**

PLANTING AREA NO. 2 (0.125 AC.)

QTY.	SPECIES	SIZE	SPACING
7	ACER RUBRUM - RED MAPLE	2½" - 3" CAL.	**
6	QUERCUS ALBA - WHITE OAK	2½" - 3" CAL.	**
21	CORNUS AMOMUM - SILKY DOGWOOD	30" - 36" B.T.	SHRUB MASS IN GROUPS OF 3 PLANTS RANDOMLY LOCATED IN PLANTING AREA

PLANTING AREA NO. 3 (0.1 AC.)

QTY.	SPECIES	SIZE	SPACING
5	ACER RUBRUM - RED MAPLE	2½" - 3" CAL.	**
5	QUERCUS ALBA - WHITE OAK	2½" - 3" CAL.	**
21	CORNUS AMOMUM - SILKY DOGWOOD	30" - 36" B.T.	SHRUB MASS IN GROUPS OF 3 PLANTS RANDOMLY LOCATED IN PLANTING AREA

KEY:
CONT. - CONTAINER GROWN B.T. - BRANCHED TRANSPLANT

** - TREES AND SHRUBS SHALL BE PLANTED, ON AVERAGE, AT A SPACING OF 20 FEET ON CENTER, NOT IN A GRID PATTERN

NOTE:
TURF GRASS IS NOT PERMITTED TO REMAIN IN PLANTING AREAS 2 AND 3. MULCH OR APPROPRIATE GROUNDCOVER SHALL BE USED IN THESE AREAS/ PLANTING AREA 1 SHALL BE ALLOWED TO DEVELOP A NATURAL HERBACEOUS COMMUNITY.

NOTE:
SEE SHEET 8 FOR TREE PLANTING DETAIL.

PROPOSED SIGNAGE

FOREST CONSERVATION AREA
REFORESTATION PROJECT
TREES FOR YOUR FUTURE
FORESTRY DESIGN BY:
Eco-Science Professionals, Inc.
P.O. Box 5006
Glen Arm, Maryland 21057
(410) 592-6752

15" MINIMUM
11" MINIMUM

■ DENOTES SIGN LOCATION

FOREST CONSERVATION SURETY NOTE:
THE FOREST OBLIGATION OF 2.95 ACRES WILL BE MET BY PROVIDING 1.18 ACRES OF ON-SITE AFFORESTATION. THE REMAINING FOREST CONSERVATION REQUIREMENTS OF 1.77 ACRES WILL BE PROVIDED BY PLANTING OFF-SITE IN THE GAITHER HUNT SUBDIVISION, SECTION ONE, AREA ONE (F98-241), TAX MAP NO. 29, PARCEL NO. 21, GRID NO. 11, AS SHOWN ON AMENDED PLAT ..... THE FINANCIAL SURETY AMOUNT FOR THIS SUBDIVISION IS $38,550.60.

NOTE: EXISTING CONDITIONS FOR DANIELS MILL OVERLOOK SUBDIVISION WAS TAKEN FROM THE SITE DEVELOPMENT PLAN (SDP 99-76).

NOTE:
SEE SHEET 11 FOR THE REQUIRED OFF-SITE FOREST CONSERVATION PLANTING PLAN.

OWNER
MR.& MRS. ROBERT REINHARDT, SR.
8524 OLD FREDERICK ROAD
ELLICOTT CITY, MD. 21043

DEVELOPER
REINHARDT PROPERTY II, LLC
10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD. 21042

Landscape and Forest Conservation Plan
REINHARDT PROPERTY
Lots 1 thru 20
Zoned: R-20
Tax Map No. 18, Parcel No. 9, Grid No. 7
Second Election District Howard County, Maryland
Date: SEPTEMBER 1, 2000
Sheet 5 of 11

F 00-48

PLAN
SCALE: 1" = 50'

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855
F.C.C.-00007 LANDSCAPE PLAN

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

MD DNR Qualified Professional
USACOE Wetland Delineator
Certification # WCP5980080800446
JOHN P. CANOLES

11-18-00

STRUCTURE SCHEDULE

STRUCTURE NO.	TOP ELEVATION	INV.IN	INV.OUT	ROAD NAME	ROAD STA.	OFFSET	TYPE	REMARKS
I-1	471.42	456.73	456.48	HOLLY SPRINGS CT.	L.P. STA. 1+43.71	-------	A-10	S.D. 4.41 (WIDTH = 4')
I-2	** 463.50	459.50	459.25	----------	N 598,807.12 E 1,366,695.08	-------	OPEN END GRATE	S.D. 4.36
I-3	** 466.50	------	463.00	----------	N 598,837.80 E 1,365,734.50	-------	OPEN END GRATE	S.D. 4.36
I-4	** 466.50	460.16	459.91	----------	N 598,277.19 E 1,366,830.49	-------	OPEN END GRATE	S.D. 4.36
I-5	469.20	------	465.00	HOLLY SPRINGS CT.	C.L. STA. 0+78	* 10.43' L	A-10	S.D. 4.41 (WIDTH = 4')
M-1	458.00	453.53, 453.53	453.28	----------	N 598,468.08 E 1,366,594.08	-------	STD. MANHOLE	G - 5.12
M-2	472.90	455.60	455.35	HOLLY SPRINGS CT.	L.P. STA. 0+41	5.5'	STD. MANHOLE	G - 5.12 & G - 5.15
M-3	467.50	458.36	458.11	----------	N 598,733.24 E 1,366,465.02	-------	STD. MANHOLE	G - 5.12
M-4	466.50	461.11	460.86	----------	N 598,935.48 E 1,366,561.58	-------	STD. MANHOLE	G - 5.12
M-5	461.00	455.25	455.00	----------	N 598,494.09 E 1,366,681.12	-------	STD. MANHOLE	G - 5.12
M-6	466.00	457.97	457.72	----------	N 598,337.36 E 1,366,613.91	-------	STD. MANHOLE	G - 5.12
M-7	473.50	459.90	459.65	----------	N 598,308.94 E 1,366,698.04	-------	STD. MANHOLE	G - 5.12 & G - 5.15
M-8	465.00	461.25	461.00	----------	N 598,258.21 E 1,366,942.86	-------	STD. MANHOLE	G - 5.12
M-9	466.00	462.25	462.00	----------	N 598,160.63 E 1,367,027.89	-------	STD. MANHOLE	G - 5.12
S-1	454.52	453.02	453.02	----------	N 598,444.34 E 1,366,581.70	-------	HDPE END SECTION	*** A.D.S. FLARED END SECTION
R-1	458.00	454.00, 454.25	450.00	----------	N 598,370.91 E 1,366,580.33	-------	CONC. RISER	

* DENOTES CENTERLINE OF ROAD TO FACE OF INLET

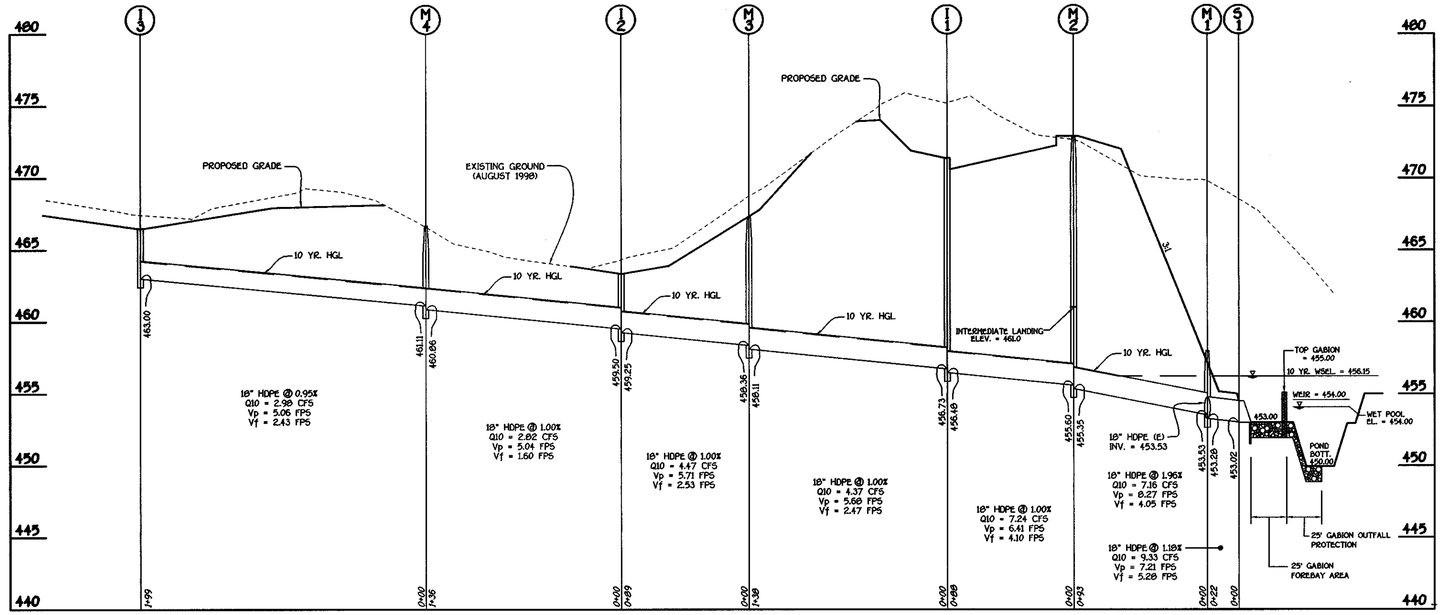
** DENOTES TOP OF GRATE

*** - A.D.S. - ADVANCED DRAINAGE SYSTEMS
LONDON, OHIO
1-800-733-9554

PIPE SCHEDULE

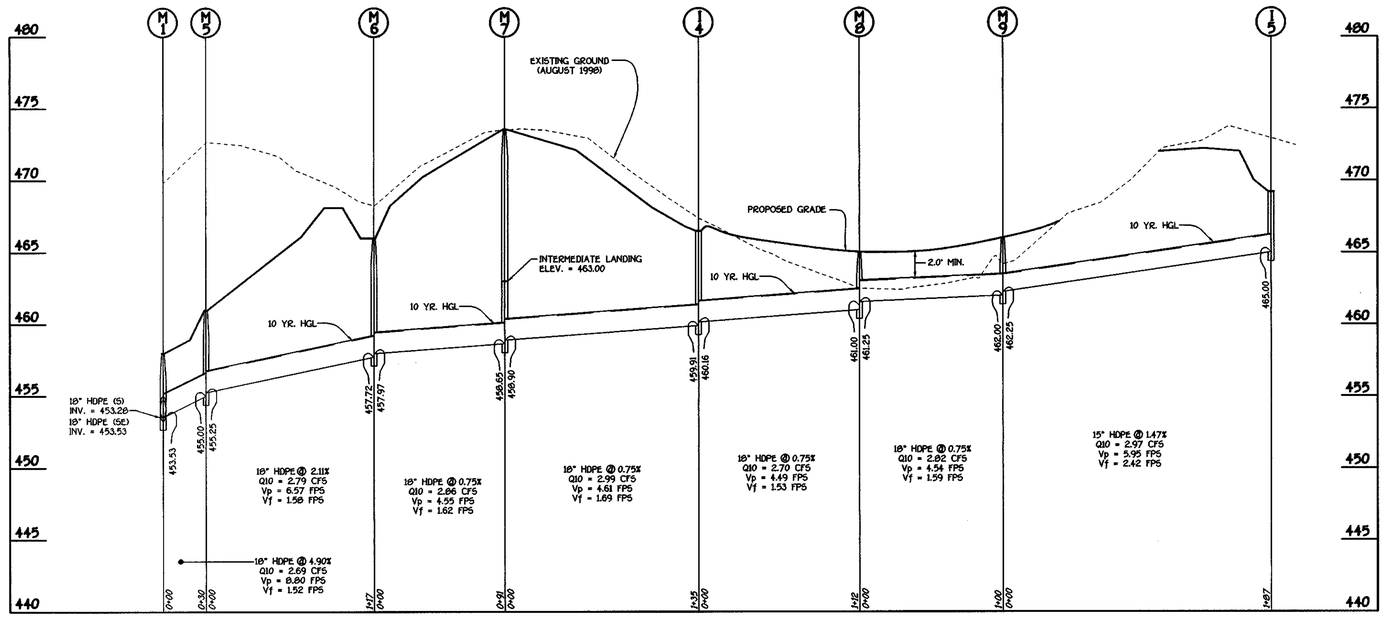
SIZE	MATERIAL	LENGTH
15"	HDPE	386'
18"	HDPE	1219'
18"	ASTM C-361, C-25	75'

NOTE: FOR STORM DRAIN RUN R-1 TO EX. I-11, SEE SHEET 10.



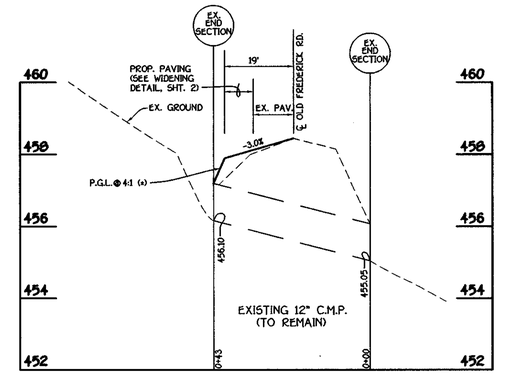
PROFILE

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



PROFILE

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



PROFILE

SCALE: HORIZ. : 1" = 20'
VERT. : 1" = 2'

Approved: Department Of Public Works
Chief, Bureau Of Highways — Date: 12/8/00

Approved: Department Of Planning And Zoning
Chief, Division Of Land Development — Date: 12/15/00
Chief, Development Engineering Division — Date: 12/12/00

OWNER
MR.& MRS. ROBERT REINHARDT, SR.
8524 OLD FREDERICK ROAD
ELLICOTT CITY, MD. 21043

DEVELOPER
REINHARDT PROPERTY II, LLC
10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD. 21042

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — NO. 20749 — REGISTERED PROFESSIONAL ENGINEER
Aldo M. Vitucci 8-3-00

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

F:CC\10507 STORMDRAIN PROFILES.DWG

Stormdrain Profiles

REINHARDT PROPERTY

Lots 1 thru 20
Zoned: R-20
Tax Map No. 18 Parcel No. 9 Grid No. 7
Second Election District Howard County, Maryland
Date: September 1, 2000
Sheet 6 of 11

F 00 - 48

Approved: Department Of Public Works

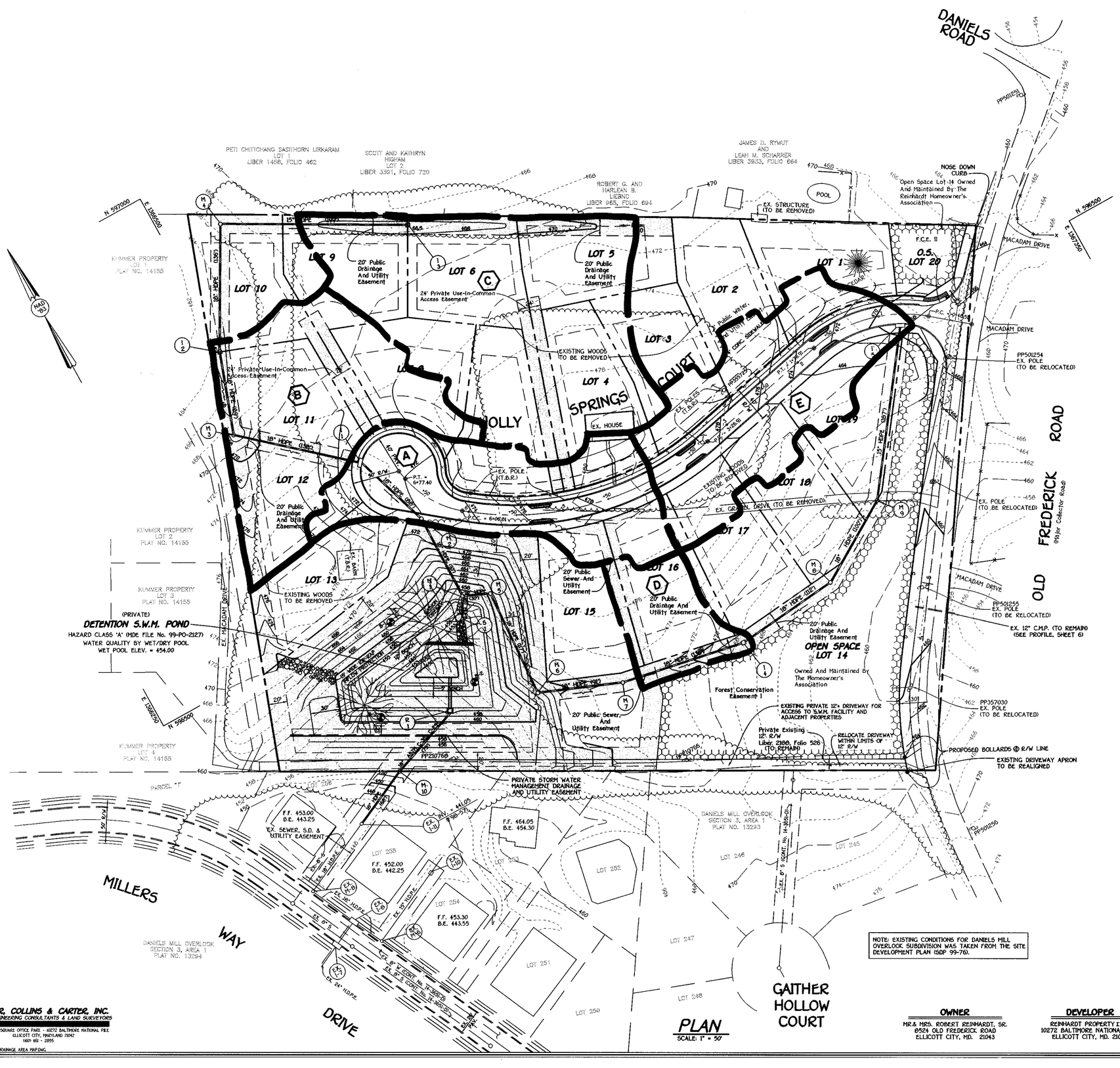
Chief Bureau Of Highways — Date 12/8/00

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 12/5/00

Chief, Development Engineering Division — Date 12/07/00

4



NOTE: EXISTING CONDITIONS FOR DANIELS MILL OVERLOOK SUBDIVISION WAS TAKEN FROM THE SITE DEVELOPMENT PLAN (SDP 99-76).

DRAINAGE AREA DATA

STRUCTURE NO.	DRAINAGE AREA	AREA	'C'	ZONED	% IMP.
I-1	A	0.83 AC.	0.56	R-20	53%
I-2	B	0.96 AC.	0.32	R-20	67%
I-3	C	1.53 AC.	0.29	R-20	13%
I-4	D	0.29 AC.	0.25	R-20	6%
I-5	E	0.92 AC.	0.49	R-20	42%

OWNER
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DEVELOPER
REINHARDT PROPERTY II,LLC
10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD. 21042

STATE OF MARYLAND — TODD MICHAEL VITUCCI — NO. 20748 — REGISTERED PROFESSIONAL ENGINEER
8-3-00

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

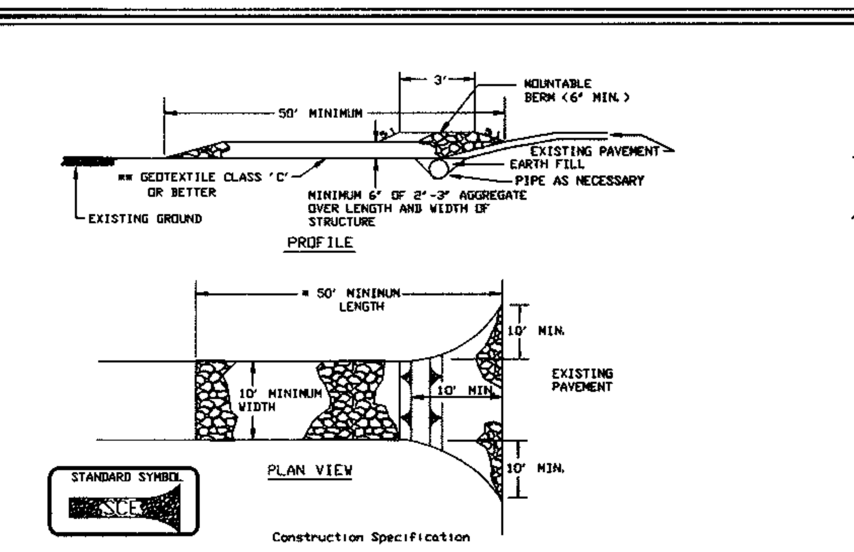
F:\FCC-2000\FINALS\DRAINAGE AREA MAP.DWG

Storm Drain Drainage Area Map

REINHARDT PROPERTY

Lots 1 thru 20
Zoned: R-20
Tax Map No. 18, Parcel No. 9, Grid No. 7
Second Election District Howard County, Maryland
Date: September 1, 2000
Sheet 7 of 11

F00-48



Construction Specification

1. Length - minimum of 50' (*30' for single residence lot).

2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.

3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.

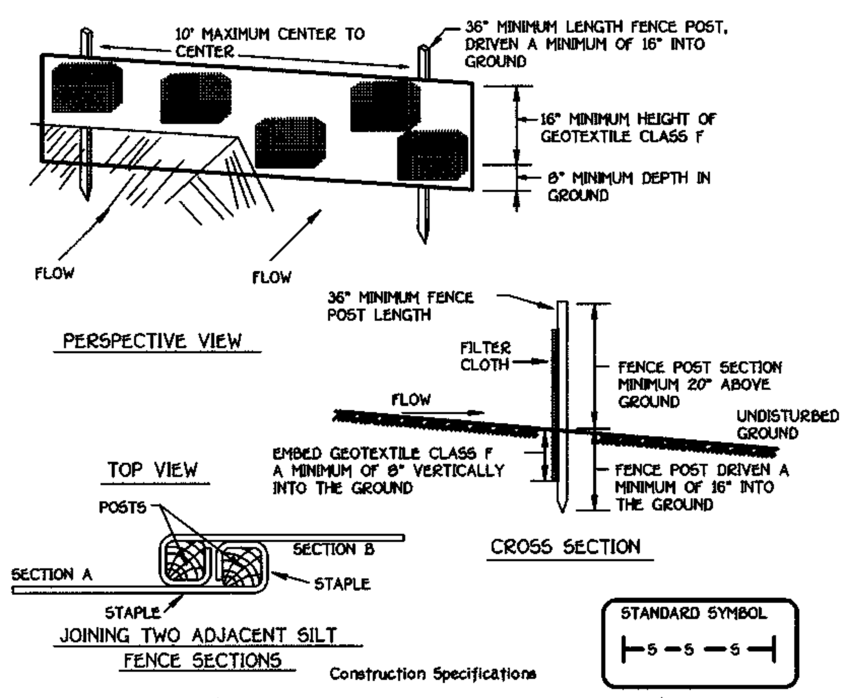
4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.

6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

STABILIZED CONSTRUCTION ENTRANCE - 2

NOT TO SCALE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear foot.

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

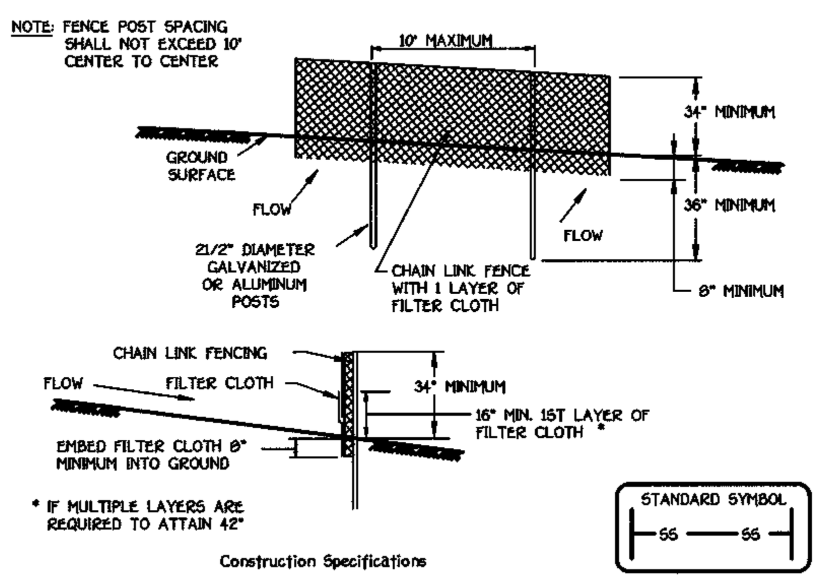
Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft / minute (max.)^2	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

DETAIL 22 - SILT FENCE

NOT TO SCALE



Construction Specifications

1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.

2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.

3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.

4. Filter cloth shall be embedded a minimum of 8" into the ground.

5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.

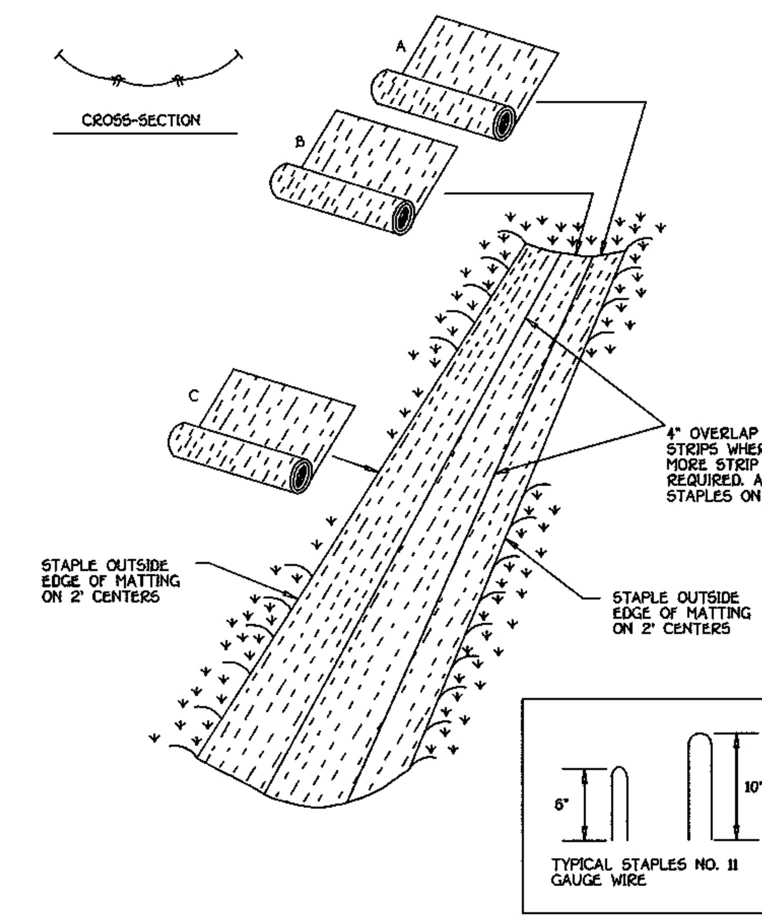
6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height

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

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft^2 /minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

DETAIL 33 - SUPER SILT FENCE

NOT TO SCALE



Construction Specifications

1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".

2. Staple the 4" overlap in the channel center using an 18" spacing between staples.

3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.

4. Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.

5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.

6. The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

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

EROSION CONTROL MATTING

NOT TO SCALE

DEVELOPER'S CERTIFICATE

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

11-20-00

SIGNATURE OF DEVELOPER — DATE

ENGINEER'S CERTIFICATE

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

Aldo M. Vitti — 11-18-00

SIGNATURE OF ENGINEER — DATE

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

11/28/00

U.S.D.A.-NATURAL RESOURCES CONSERVATION SERVICE — DATE

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

APPROVED:

11/28/00

HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

12/15/00

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

12/12/00

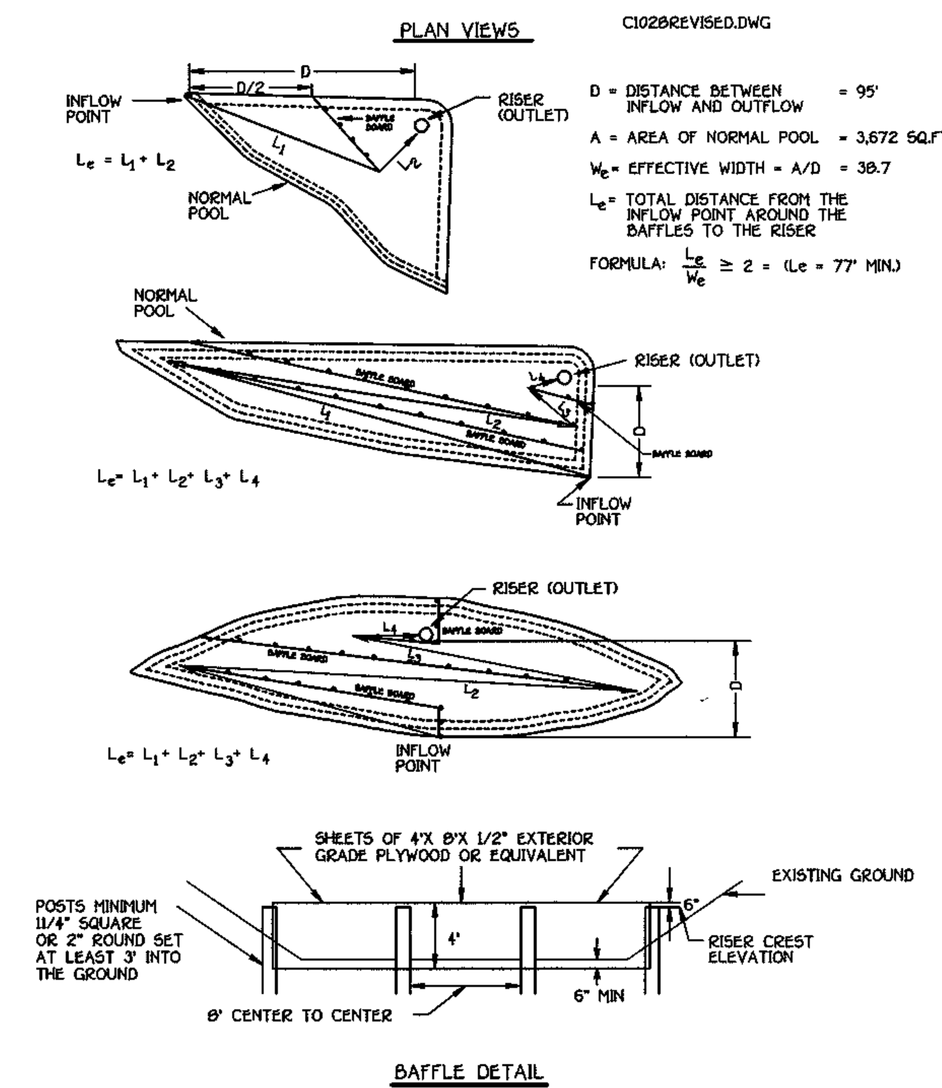
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

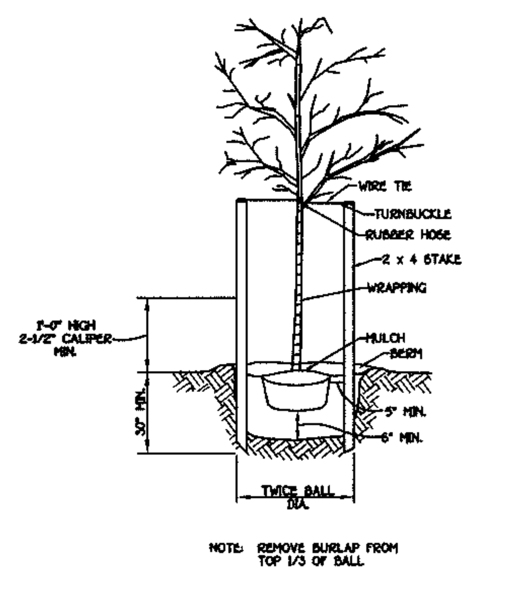
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

for 12/8/00

CHIEF, BUREAU OF HIGHWAYS — DATE

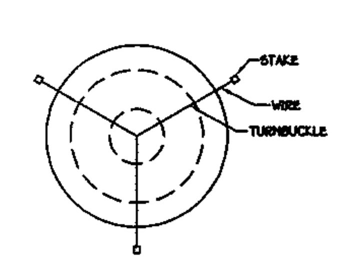
SEDIMENT BASIN BAFFLES





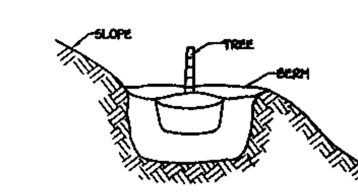
TREE PLANTING

NOT TO SCALE



STAKING DETAIL

NOT TO SCALE



GRADING FOR PLANTING ON SLOPES

NOT TO SCALE

SEDIMENT CONTROL NOTES

1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LISCENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3) FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. GRADING NECESSARY TO INSTALL STORM DRAINS, SEDIMENT TRAP AND EARTH DIKES TO BE PERFORMED FIRST. REMAINDER OF THE GRADING TO BE PERFORMED AFTER STORM DRAINS, SEDIMENT TRAP AND EARTH DIKES ARE INSTALLED.
4) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7) SITE ANALYSIS:

TOTAL AREA OF SITE	10.31	ACRES
AREA DISTURBED	7.21	ACRES
AREA TO BE ROOFED OR PAVED	0.58	ACRES
AREA TO BE VEGETATIVELY STABILIZED	6.63	ACRES
TOTAL CUT	3,750	CU.YDS.
TOTAL FILL	3,750	CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION	N/A	CU.YDS.

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

20.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION

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

PURPOSE

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

CONDITIONS WHERE PRACTICE APPLIES

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

EFFECTS ON WATER QUALITY AND QUANTITY

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

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. Site Preparation
  i. Install erosion and sediment control structures (either temporary of permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
  ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
  iii. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.
B. Soil Amendments (Fertilizer and Lime Specifications)
  i. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
  ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the producer.
  iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98-100% will pass through a #20 mesh sieve.
  iv. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
C. Seedbed Preparation
  i. Temporary Seeding
    a. Seedbed preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
    b. Apply fertilizer and lime as prescribed on the plans.
    c. In corporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
  ii. Permanent Seeding
    a. Minimum soil conditions required for permanent vegetative establishment:
      1. Soil pH shall be between 6.0 and 7.0.
      2. Soluble salts shall be less than 500 parts per million (ppm).
      3. The soil shall contain less than 40% clay, but enough fine grained material (>30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or serecia lespedezas is to be planted, then a sandy soil (<30% silt plus clay) would be acceptable.
      4. Soil shall contain 1.5% minimum organic matter by weight.
      5. Soil must contain sufficient pore space to permit adequate root penetration.
      6. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
    b. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
    c. Apply soil amendments as per soil test or as included on the plans.
    d. Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seedbed loosening may not be necessary on newly disturbed areas.
D. Seed Specifications
  i. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.
  Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.
  ii. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective.
E. Methods of Seeding
  i. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cultipacker seeder.
    a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen: maximum of 100 lbs. per acre total of soluble nitrogen; P205 (phosphorous): 200 lbs/ac; K20 (potassium): 200 lbs/ac.
    b. Lime - use only ground agricultural limestone, (Up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
    c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
  ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
    a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 265 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
    b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
  iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
    a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
    b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
F. Mulch Specifications (In order of preference)
  i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
  ii. Wood Cellulose Fiber Mulch (WCFM)
    a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
    b. WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
    c. WCFM, including dye, shall contain no germination or growth inhibiting factors.
    d. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
    e. WCFM material shall contain no elements or compounds at concentration levels that will be phytol-toxic.
    f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.
  Note: Only sterile straw mulch should be used in areas where one species of grass is desired.
G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.
  i. If grading is completed outside of the seeding season, mulch along shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
  ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
  iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
H. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:
  i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.
  ii. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
  iii. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and crest of banks. The remainder of area should be appear uniform after binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-70 Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
  iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.
I. Incremental Stabilization - Cut Slopes
  i. All cuts slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.
  ii. Construction sequence (Refer to Figure 3 below):
    a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation.
    b. Perform Phase 1 excavation, dress, and stabilize.
    c. Perform Phase 2 excavation, dress and stabilize. Overseed Phase 1 areas as necessary.
    d. Perform final phase excavation, dress and stabilize. Overseed previously seeded areas as necessary.

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

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

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

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

  i. Select one or more of the species or mixtures listed in Table 26 for the appropriate Plant Hardiness 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.

  ii. 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 (Hardiness Zone 6b) From Table 26					Fertilizer Rate (10-10-10)	Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
1	BARLEY OATS RYE	122 96 140	3/1 - 5/15, 8/15 - 10/15	1" - 2" 1" - 2" 1" - 2"	600 lb/ac (15 lb/1000sf)	2 tons/ac (100 lb/1000sf)

SECTION 3 - PERMANENT SEEDING

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

A. Seed mixtures - Permanent Seeding

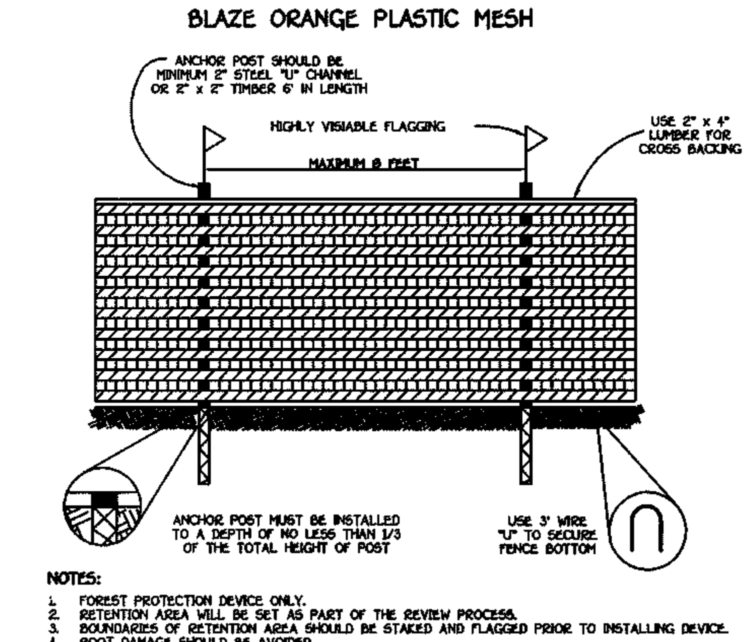
  i. Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Permanent Seeding Summary below, along with application rates and seeding dates. Seeding depths can be estimated using Table 26. If this summary is not put 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 aesthetic treatment may be found in USDA-SCS Techinical Field Office Guide, Section 342 - Critical Area Planting. For special lawn maintenance areas, see Sections IV Sod and V Turfgrass.

  ii. For sites having disturbed area over 5 areas, the rates shown on this table shall be deleted and the rates recommended by the soil testing agency shall be written in.

  iii. For areas receiving low maintenance, apply ureaform fertilizer (46-0-0) at 3 1/2 lbs/1000 sq. ft. (150 lbs/ac), in addition to the above soil amendments shown in the table below, to be performed at the time of seeding.

Seed Mixture (Hardiness Zone 6b) From Table 25					Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P205	K20	
3	TALL FESCUE (85%) PERENNIAL RYE GRASS (10%) KENTUCKY BLUEGRASS (5%)	125 15 10	3/1 - 5/15, 8/15 - 10/15	1" - 2"	90 lb/ac (2.0 lb/1000sf)	175 lb/ac (4 lb/1000sf)	175 lb/ac (4 lb/1000sf)	2 tons/ac (100 lb/1000sf)
10	TALL FESCUE (80%) HARD FESCUE (20%)	120 30	3/1 - 5/15, 8/15 - 10/15	1" - 2"				

BLAZE ORANGE PLASTIC MESH



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

TREE PROTECTION DETAIL

NOT TO SCALE

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

F.C.C.# 30607SEDIMENT CONTROL DETAILS.DWG

OWNER

MR.& MRS. ROBERT REINHARDT, SR.
8524 OLD FREDERICK ROAD
ELLICOTT CITY, MD. 21043

DEVELOPER

REINHARDT PROPERTY II, LLC
10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD. 21042

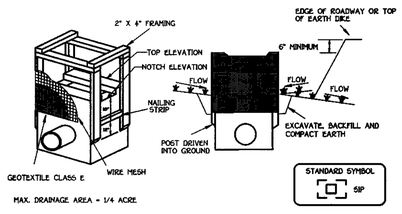
Sediment Control Notes and Details

REINHARDT PROPERTY

Lots 1 thru 20

Zoned: R-20
Tax Map No. 18, Parcel No. 9, Grid No. 7
Second Election District Howard County, Maryland
Date: September 1, 2000
Sheet 8 of 11

STANDARD INLET PROTECTION

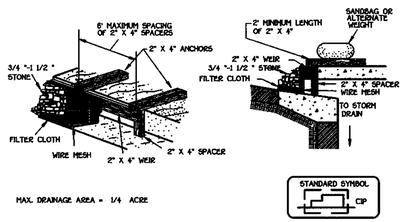


MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

1. Excavate completely around the inlet to a depth of 18" below the notch elevation.
2. Drive the 2" x 4" construction grade lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overlap joint shown on Detail 23A. The top of the frame (weir) must be 6" below adjacent roadways where flooding and safety issues may arise.
3. Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.
4. Stretch the Geotextile Class E tightly over the wire mesh with the geotextile extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.
5. Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.
6. If the inlet is not in a sump, construct a compacted earth dike across the ditch line directly below it. The top of the earth dike should be at least 6" higher than the top of the frame.
7. The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

CURB INLET PROTECTION (COG OR COS INLETS)



MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

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

MAINTENANCE OF TRAFFIC SPECIAL PROVISIONS

GENERAL

1. THE PURPOSE OF THIS PORTION OF THE SPECIAL PROVISION IS TO SET FOR THE TRAFFIC CONTROL REQUIREMENTS NECESSARY FOR THE SAFE AND EFFICIENT MAINTENANCE TO TRAFFIC WITHIN WORK AREAS, AND TO MINIMIZE ANY INCONVENIENCES TO THE TRAVELING PUBLIC AND THE CONTRACTOR AND/OR PERMITTEE.
2. PROPERTY TRAFFIC CONTROL THROUGH WORK AREAS IS ESSENTIAL FOR INSURING THE SAFETY AND THAT OF HIGHWAY WORKERS HAS THE HIGHEST PRIORITY OF ALL TASKS WITHIN THIS PROJECT. THE PROPERTY APPLICATION OF THE APPROVED TRAFFIC CONTROL PLAN (TCP) WILL PROVIDE THE DESIRED LEVEL OF SAFETY.
3. THROUGHOUT THESE SPECIAL PROVISIONS, ANY MENTION OF THE TCP SHALL BE IMPLIED TO INCLUDE ANY COMBINATION OF TYPICAL TRAFFIC CONTROL STANDARDS WHICH FORM THE OVERALL TCP FOR THIS PROJECT WHICH HAS BEEN APPROVED BY THE APPROPRIATE SHA TRAFFIC ENGINEER.
4. THE CONTRACTOR AND/OR PERMITTEE SHALL BE REQUIRED TO ADHERE TO THE PROVISIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 1988 EDITION, ESPECIALLY PART VI, AND TO SECTION 104 OF THE MARYLAND DOT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS (JANUARY, 1982) INCLUDING ALL REVISIONS AND SUPPLEMENTS TO EACH.
5. THE CONTRACTOR AND/OR PERMITTEE SHALL BE REQUIRED TO ADHERE TO THE REQUIREMENTS SET FOR IN THE TCP AND THESE SPECIAL PROVISIONS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ANY REQUESTS TO MAKE MINOR CHANGES TO THE TCP OR THE SPECIAL PROVISIONS WITH REGARD TO THE TRAFFIC CONTROL ITEMS SHALL BE MADE IN WRITING TO THE ENGINEER A MINIMUM OF THREE(3) WORKING DAYS PRIOR TO THE PROPOSED SCHEDULING CHANGE. THE CONTRACTOR AND/OR PERMITTEE SHALL HAVE WRITTEN APPROVAL OF THE ENGINEER PRIOR TO THE IMPLEMENTATION OF ANY CHANGE.
6. NO WORK SHALL BEGIN ON ANY WORK ACTIVITY OR WORK PHASE UNTIL ALL REQUIRED TRAFFIC CONTROL PATTERNS AND DEVICES INDICATED ON THE TCP FOR THAT ACTIVITY OR PHASE ARE COMPLETELY AND CORRECTLY IN PLACE TO HAVE BEEN CHECKED FOR APPROVED USAGE.
7. GENERAL AND SPECIFIC WARNING SIGNS SHALL ONLY BE IN PLACE WHEN SPECIFIC WORK TASKS AND ACTIVITIES ARE ACTUALLY UNDERWAY OR CONDITIONS EXIST THAT POSE A POTENTIAL HAZARD TO THE PUBLIC, AND ANY ADDITIONAL SIGNING HAS BEEN APPROVED BY THE APPROPRIATE SHA TRAFFIC ENGINEER. NOTE: THE PRACTICE OF PLACING SIGNING AND OTHER TRAFFIC CONTROL DEVICES IN ADDITION TO THOSE INDICATED ON THE APPROVED TCP IS NOT PERMITTED.
8. THE CONTRACTOR AND/OR PERMITTEE SHALL PROVIDE, MAINTAIN IN NEW CONDITION, AND MOVE WHEN NECESSARY, OR AS DIRECTED BY THE ENGINEER, ALL TRAFFIC CONTROL DEVICES USED FOR THE GUIDANCE AND PROTECTION OF MOTORISTS, PEDESTRIANS, AND WORKERS.
9. ALL TRAFFIC CONTROL DEVICES REQUIRED BY THE TCP SHALL BE KEPT IN GOOD CONDITION, FULLY PERFORMING AS SET FORTH IN THE TCP, THE MUTCD, AND/OR SECTION 104 OF THE SPECIFICATIONS. FOR REFLECTIVE DEVICES, A PARTICULAR DEVICE IS ASSUMED TO HAVE FAILED TO MEET MINIMUM OPERATIONAL STANDARDS WHEN THE DEVICE NO LONGER HAS RETRO-REFLECTANCE CAPABILITY OF AT LEAST 50% OF THE SPECIFIED MINIMUM VALUE OVER AT LEAST 90% OF THE VISIBLE REFLECTIVE SURFACE.
10. ALL TRAFFIC CONTROL DEVICES NOT REQUIRED FOR THE SAFE CONDUCT OF TRAFFIC SHALL BE PROMPTLY REMOVED, COMPLETELY COVERED, TURNED AWAY FROM TRAFFIC, OR OTHERWISE TAKEN OUT OF SERVICE. IT IS INTENDED THAT NO TRAFFIC CONTROL DEVICE IS TO BE IN SERVICE WHEN THERE IS NO CLEAR CUT REASON FOR THE DEVICE.
11. THROUGHOUT THE PERIOD(S) OF WORK ACTIVITIES, TRAFFIC SHALL BE MAINTAINED BY IMPLEMENTING THE APPROVED TCP. IN LIEU OF THE TCP PREPARED FOR THIS PROJECT, AND/OR INDIVIDUAL TYPICAL TRAFFIC CONTROL STANDARDS, THE CONTRACTOR AND/OR PERMITTEE HAS THE OPTION OF PREPARING AND SUBMITTING A TCP, WHOLLY OR IN PART, OF HIS OWN DESIGN, FOLLOWING GUIDELINES SET FORTH IN THE MUTCD AND PRESCRIBED BY THE ADMINISTRATION. A TCP DEVELOPED BY THE CONTRACTOR AND/OR PERMITTEE SHALL NOT BE IMPLEMENTED UNTIL ADVANCE WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER. TCP'S MAY BE IMPLEMENTED WITHIN A SINGLE PROJECT OR JOINTLY BETWEEN TWO OR MORE PROJECTS. IN SITUATIONS WHERE TCP'S JOINTLY IMPLEMENTED, CARE SHALL BE EXERCISED TO PRESENT CORRECT AND NON-CONFLICTING GUIDANCE TO THE TRAVELING PUBLIC.
12. THROUGHOUT THESE SPECIAL PROVISIONS, WHERE SPEED OF TRAFFIC IS NOTED, THIS MEANS THE POSTED SPEED OR PREVAILING TRAVEL SPEED, WHICHEVER IS HIGHER, UNLESS OTHERWISE NOTED.
13. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES THROUGHOUT THE ENTIRE LENGTH OF THE PROJECT, UNLESS OTHERWISE NOTED. NO TRAVEL LANE(S) OTHER THAN THOSE DESIGNATED FOR POSSIBLE CLOSURE IN THE TCP SHALL BE CLOSED WITHOUT OBTAINING PRIOR APPROVAL FORM THE ENGINEER. ALL INGRESS AND EGRESS TO THE WORK AREA BY THE CONTRACTOR AND/OR PERMITTEE SHALL BE PERFORMED WITH THE FLOW OF TRAFFIC.

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

I. This practice is limited to areas having 2:1 or flatter slopes where:
   a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
   b. 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.
   c. The original soil to be vegetated contains material toxic to plant growth.
   d. The soil is so acidic that treatment with limestone is not feasible.

II. 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

I. 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 Experimental Station.

II. Topsoil Specifications - Soil to be used as topsoil must meet the following:
   i. 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.
   ii. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnson grass, nutsedge, poison ivy, thistle, or others as specified.
   iii. 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.

II. For sites having, disturbed areas under 5 acres:
   i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

III For sites having disturbed areas over 5 acres:
   i. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
      a. 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.
      b. Organic content of topsoil shall be not less than 1.5 percent by weight.
      c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
      d. No sod 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 phyto-toxic materials.

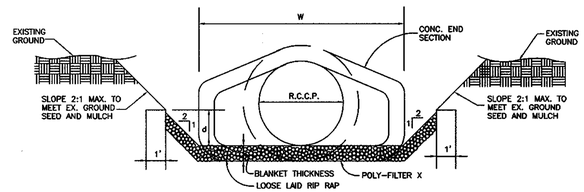
   Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

   ii. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

V. Topsoil Application
   i. When top soiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
   ii. Grades on the areas to be top soiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.
   iii. 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 top soiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
   iv. 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.

VI. 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:
   i. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
      a. Composted sludge shall be supplied by, 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.
      b. 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.
      c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
   iv. 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. of, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.



RIP RAP CHANNEL DETAIL

NO SCALE

RIP-RAP CHANNEL DESIGN DATA

STRUCTURE	AREA	WETTED PERIMETER	R	R 2/3	S	S 1/2	W	d	N	V (F.P.S.)	Q (C.F.S.)	RIP-RAP SIZE d_{50}	RIP-RAP SIZE d_{MAX}	BLANKET THICKNESS	DIA.
S-1	2.38	4.52'	0.526	0.650	0.005	0.0707	4.0'	0.48'	0.035	7.21	9.33	9.5"	15"	19"	18"

CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

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

ENGINEER'S CERTIFICATE

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

Signature Of Engineer — 8-3-00 Date

DEVELOPER'S CERTIFICATE

"I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Or Their Authorized Agents, As Are Deemed Necessary."

Signature Of Developer — 11/20/00 Date

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

U.S.D.A. - Natural Resources Conservation Service — 11/28/00 Date

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

District Howard Soil Conservation Dist. — 11/28/00 Date

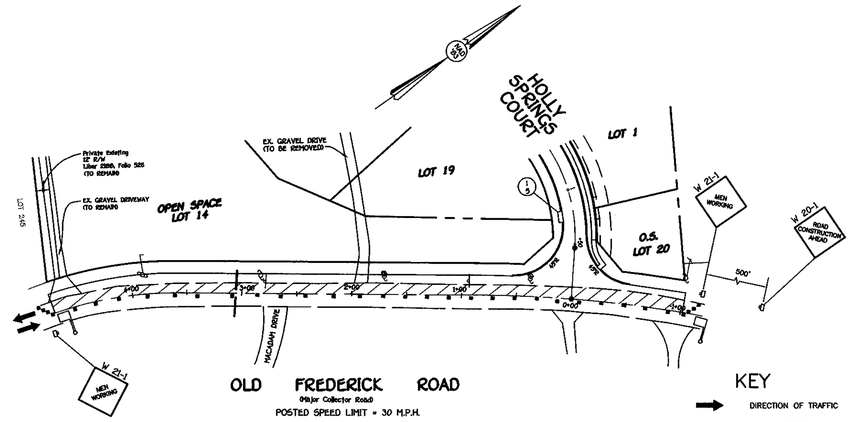
Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 12/5/00 Date

Chief, Development Engineering Division — 12/12/00 Date

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — 12/5/00 Date



(STANDARD NO. MD 104.04-02)

TEMPORARY TRAFFIC CONTROL PLAN

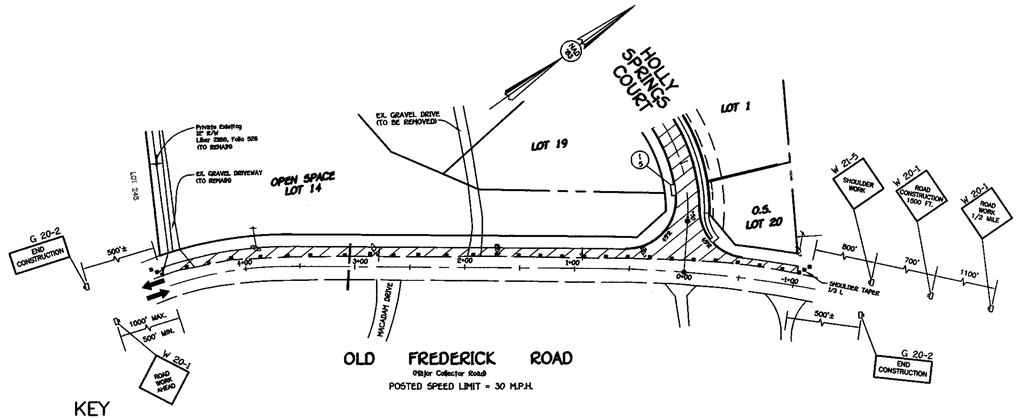
NO SCALE

KEY

- DIRECTION OF TRAFFIC
- SIGN SUPPORT
- FACE OF SIGN
- CHANNELIZING DEVICES
- WORK SITE
- FLAGGER

SEQUENCE OF CONSTRUCTION

1. OBTAIN A GRADING PERMIT.
2. 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 STRATING WORK.
3. RELOCATE POLES ALONG OLD FREDERICK ROAD. (1 week)
4. CLEAR AND GRUB FOR SEDIMENT CONTROL MEASURES. INSTALL STABILIZED CONSTRUCTION ENTRANCE. (1 week)
5. INSTALL SUPER-SILT FENCE AND SILT FENCE. (3 days)
6. OBTAIN PERMISSION OF THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEED.
7. GRADE ROADS TO PROPOSED SUBGRADE AND INSTALL STORM DRAIN SYSTEM AND S.W.M. POND. TIE POND OUTFALL TO EXISTING STORMDRAIN ON ADJACENT PROPERTY AT EXISTING I-11. STABILIZE ALL DISTURBED AREAS IMMEDIATELY UPON COMPLETION OF GRADING AS SHOWN ON THESE PLANS. (4 weeks)
8. THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON AFTER EACH RAINFALL AND ON A DAILY BASIS.
9. INSTALL BASE COURSE FOR THE PROPOSED ROAD AND WIDENING ALONG OLD FREDERICK ROAD. (1 week)
10. STABILIZE ALL DISTURBED AREAS AND OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTORS TO PROCEED.
11. APPLY TACK COAT TO SUB-BASE AND LAY SURFACE COURSE. (1 week)
12. WHEN ALL CONTRIBUTING AREAS TO THE SEDIMENT CONTROL DEVICES HAVE BEEN STABILIZED AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, THE DEVICES MAY BE REMOVED AND THE REMAINING AREAS BROUGHT TO FINAL GRADE. STABILIZE ALL REMAINING AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 weeks)
13. NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS FOR A FINAL INSPECTION OF THE COMPLETED PROJECT.



KEY

- DIRECTION OF TRAFFIC
- SIGN SUPPORT
- FACE OF SIGN
- CHANNELIZING DEVICES
- WORK SITE

(STANDARD NO. MD 104.04-01)

TEMPORARY TRAFFIC CONTROL PLAN

NO SCALE

OWNER

MR.& MRS. ROBERT REINHARDT, SR.
8524 OLD FREDERICK ROAD
ELLICOTT CITY, MD. 21043

DEVELOPER

REINHARDT PROPERTY II, LLC
10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD. 21042

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

F:\CC-99607\FINALS\DETAIL SHEET.DWG

Traffic Control Plan and Detail Sheet

REINHARDT PROPERTY

Lots 1 thru 20

Zoned: R-20
Tax Map No. 18, Parcel No. 9, Grid No. 7
Second Election District Howard County, Maryland
Date: September 1, 2000
Sheet 9 of 11

BORING B-1

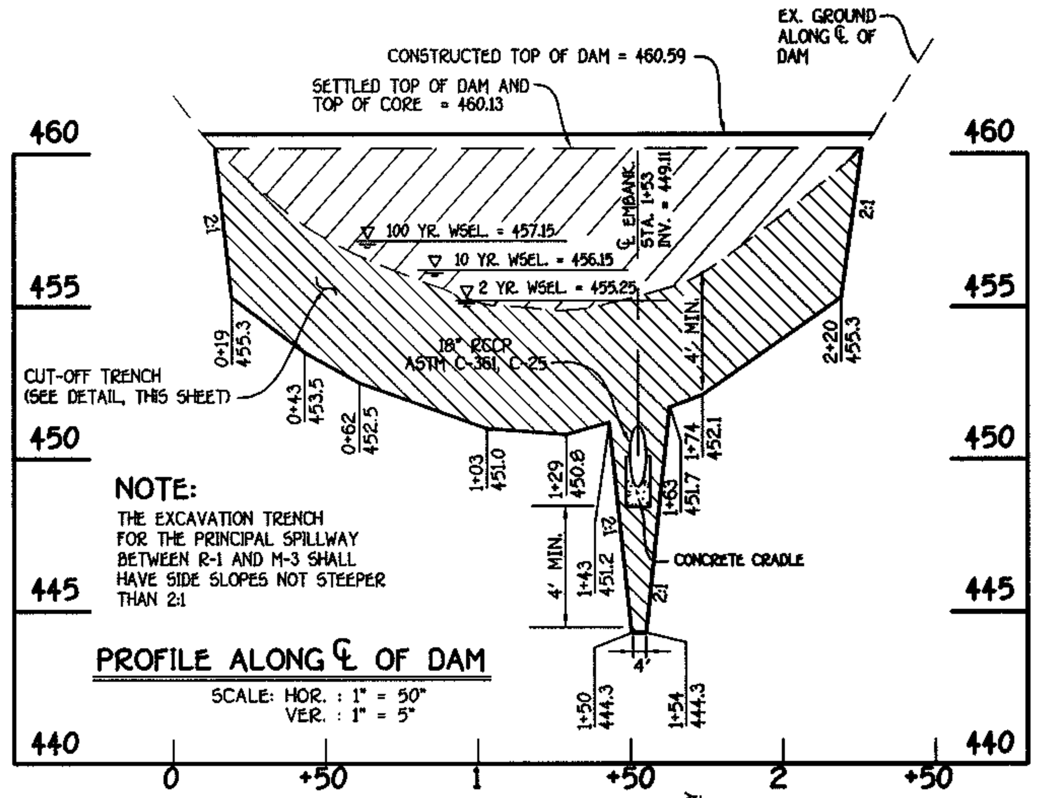
DESCRIPTION OF MATERIALS	DEPTH	REMARKS
	SURFACE	
TOPSOIL	0.4	
BROWN TO REDDISH BROWN, MOIST, SILT AND CLAY, AND CF SAND, LITTLE ROCK FRAGS, TRACE MICA (SM)	3.0	AT COMPLETION, HOLE DRY AND CAVED AT 13.8'
BROWN, PINKISH TAN, AND GRAY MOIST, MICACEOUS CF SAND, SOME SILT, LITTLE ROCK FRAGS (DECOMPOSED ROCK) (SM)	12.0	1 DAY AFTER COMPLETION, HOLE DRY AND CAVED AT 13.5'
BROWN-GRAY, MOIST, CF SAND, AND SILT, TRACE ROCK FRAGS, TRACE MICA (DECOMPOSED ROCK) (SM)	15.0	
BOTTOM OF HOLE AT 15.0'		

BORING B-2

DESCRIPTION OF MATERIALS	DEPTH	REMARKS
	SURFACE	
TOPSOIL	0.4	
BROWN TO REDDISH BROWN, MOIST, SILT AND CLAY, AND CF SAND, LITTLE ROCK FRAGS, TRACE MICA (ML)	2.5	AT COMPLETION, HOLE DRY AND CAVED AT 14.8'
REDDISH BROWN, MOIST, CLAYEY SILT, AND CF SAND, LITTLE ROCK FRAGS (DECOMPOSED ROCK) (SM)	7.0	1 DAY AFTER COMPLETION, HOLE DRY AND CAVED AT 14.6'
BROWN, TAN AND GRAY, MOIST, MICACEOUS CF SAND, AND SOME SILT, TRACE ROCK FRAGS (DECOMPOSED ROCK) (SM)	15.0	
BOTTOM OF HOLE AT 15.0'		

BORING B-3

DESCRIPTION OF MATERIALS	DEPTH	REMARKS
	SURFACE	
TOPSOIL	0.4	
BROWN - GRAY, MOIST, CLAYEY SILT, AND CF SAND, TRACE ROCK FRAGS, TRACE MICA (ML)	3.0	AT COMPLETION, HOLE DRY AND CAVED AT 14.1'
BROWN, MOIST, SILT AND CLAY, SOME CF SAND, SOME ROCK FRAGS, TRACE MICA (DECOMPOSED ROCK) (SM)	7.0	
BROWN, TAN AND GRAY, MOIST CF SAND, SOME SILT, TRACE ROCK FRAGS, TRACE MICA (DECOMPOSED ROCK) (SM)	12.0	1 DAY AFTER COMPLETION, HOLE DRY AND CAVED AT 14.0'
REDDISH BROWN AND GRAY, MOIST MICACEOUS CF SAND, AND SILT (DECOMPOSED ROCK) (SM)	15.0	
BOTTOM OF HOLE AT 15.0'		



PROFILE ALONG ℄ OF DAM

SCALE: HOR. : 1" = 50"
VER. : 1" = 5"

378 - 12 Pond
SPECIFICATIONS

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

Site Preparation

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

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

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

Earth Fill

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

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the 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 of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble yet not be so wet that water can be squeezed out.

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

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

Structure Backfill

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

Pipe Conduits

All pipes shall be circular in cross section.

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

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

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

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

4. Backfilling shall conform to "Structure Backfill".

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

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

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

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

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

4. Backfilling shall conform to "Structure Backfill".

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

Concrete

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

Rock Riprap

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

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

Care of Water during Construction

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

Stabilization

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

Erosion and Sediment Control

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

OPERATION AND MAINTENANCE SCHEDULE OF HOME OWNERS ASSOCIATION OWNED AND MAINTAINED STORMWATER MANAGEMENT FACILITY

HOME OWNERS ASSOCIATION'S MAINTENANCE RESPONSIBILITIES:

1. 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 and maintenance access should be mowed as needed.
2. Debris and litter next to the outlet structure shall be removed during regular mowing operations and as needed.
3. When deemed necessary for aesthetic reasons, sediment should be removed from the pond. Approval of the Department of Public Works is required.

OPERATION AND MAINTENANCE SPECIFICATIONS

I hereby certify that I will operate and maintain the completed pond in accordance with the following:

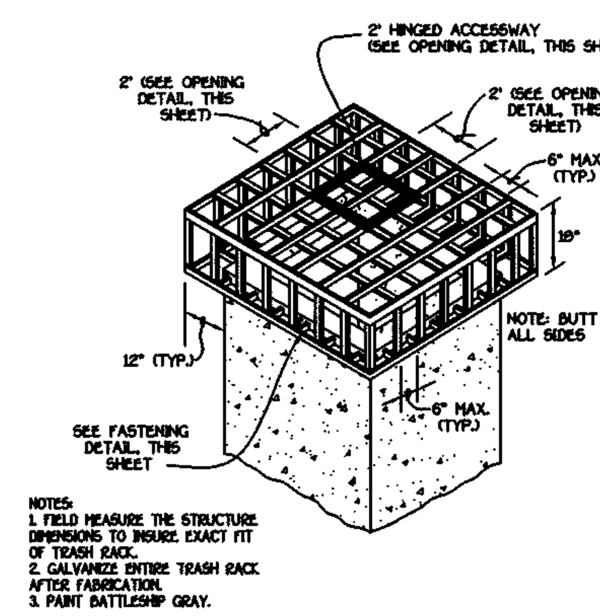
1) Periodic inspections of the facility will be made to identify potential problems that may affect its safety. These inspections will be made after periods of heavy rainfall and at least twice annually. Inspection reports shall be kept until the next subsequent inspection. Inspection items to be looked at include:

A. Spillway and outlet works
B. Rip-rap
C. Vegetative cover
D. Cracks in the fill
E. Slope failures; and
F Seepage and other signs of distress.

2) Problems identified during inspections will be promptly corrected. Major problems will be brought to the attention of the soil conservation district and the dam safety division of the Maryland Water Resources Administration. As a very minimum, grassy vegetation will be maintained in a dense and healthy state, and woody vegetation will not be permitted to grow on the embankment.

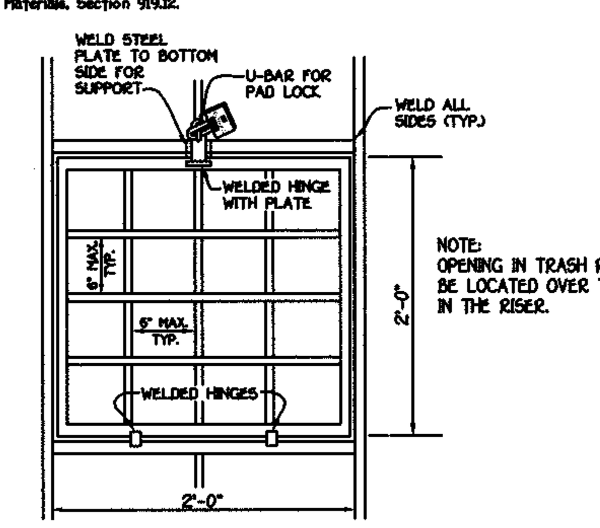
NOTES

1. Concrete shall conform to the Maryland D.O.T.S.H.A. Standard Spec's for construction and materials, 1982 Mix No. 6, except that TY. III Cement and A.S.T.M. C 33 No. 8 coarse AGG. Shall be used.



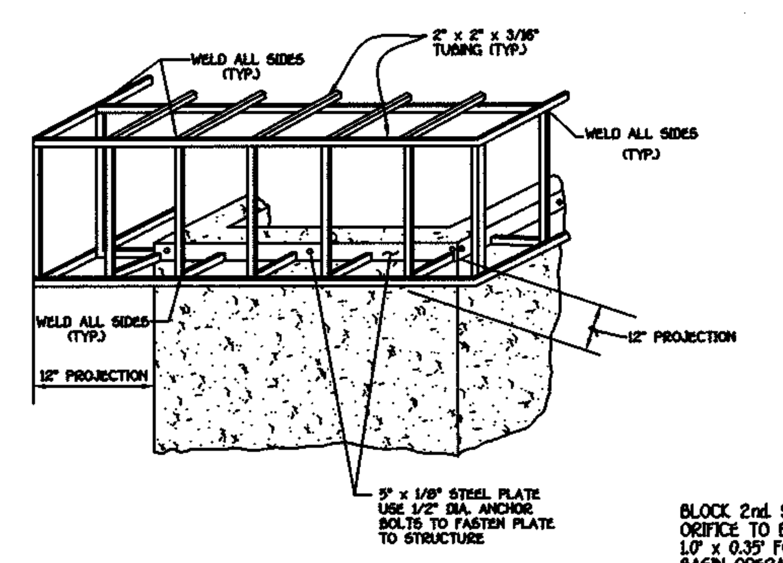
TRASH RACK 'A' DETAIL

NO SCALE



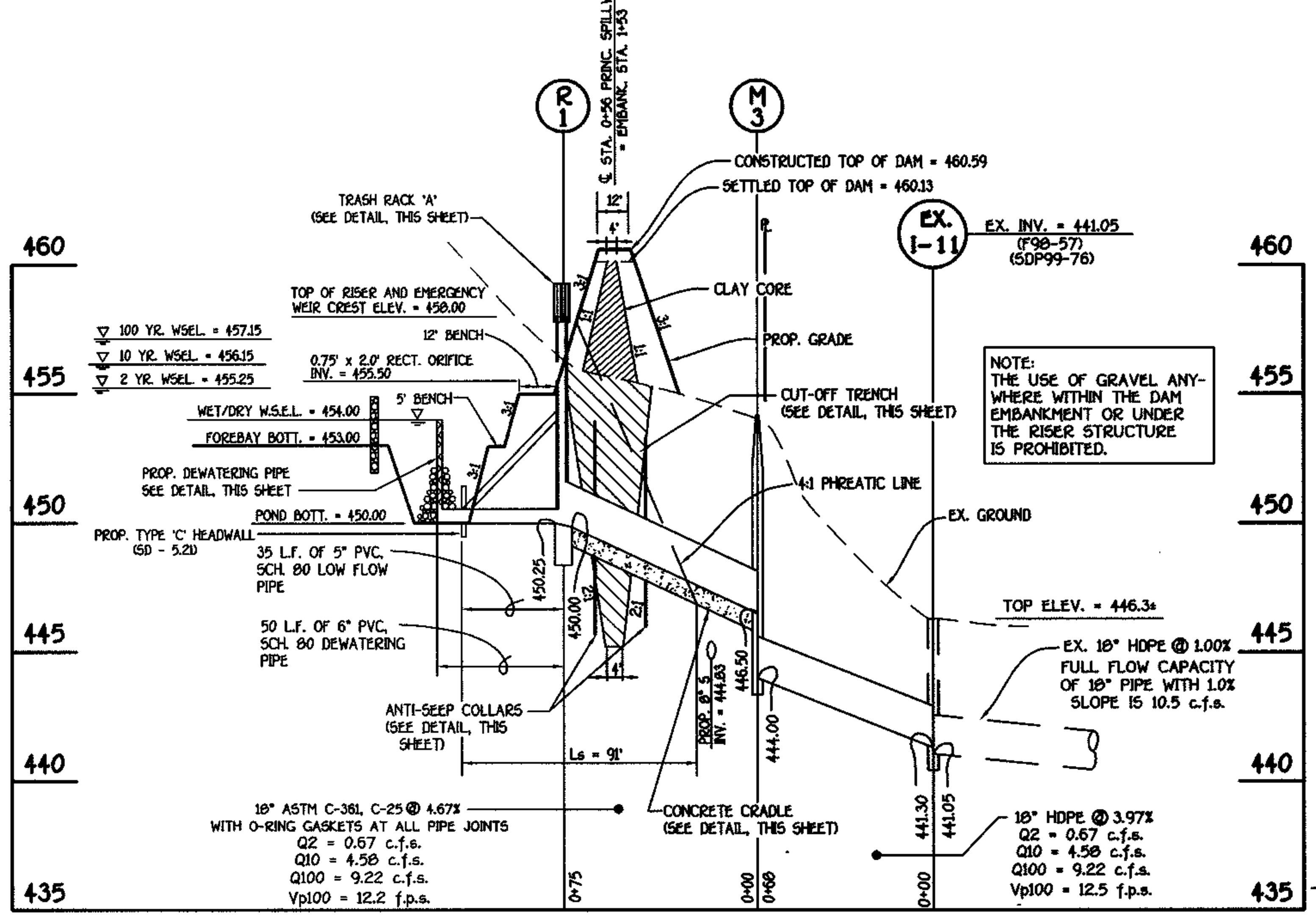
OPENING DETAIL

NO SCALE



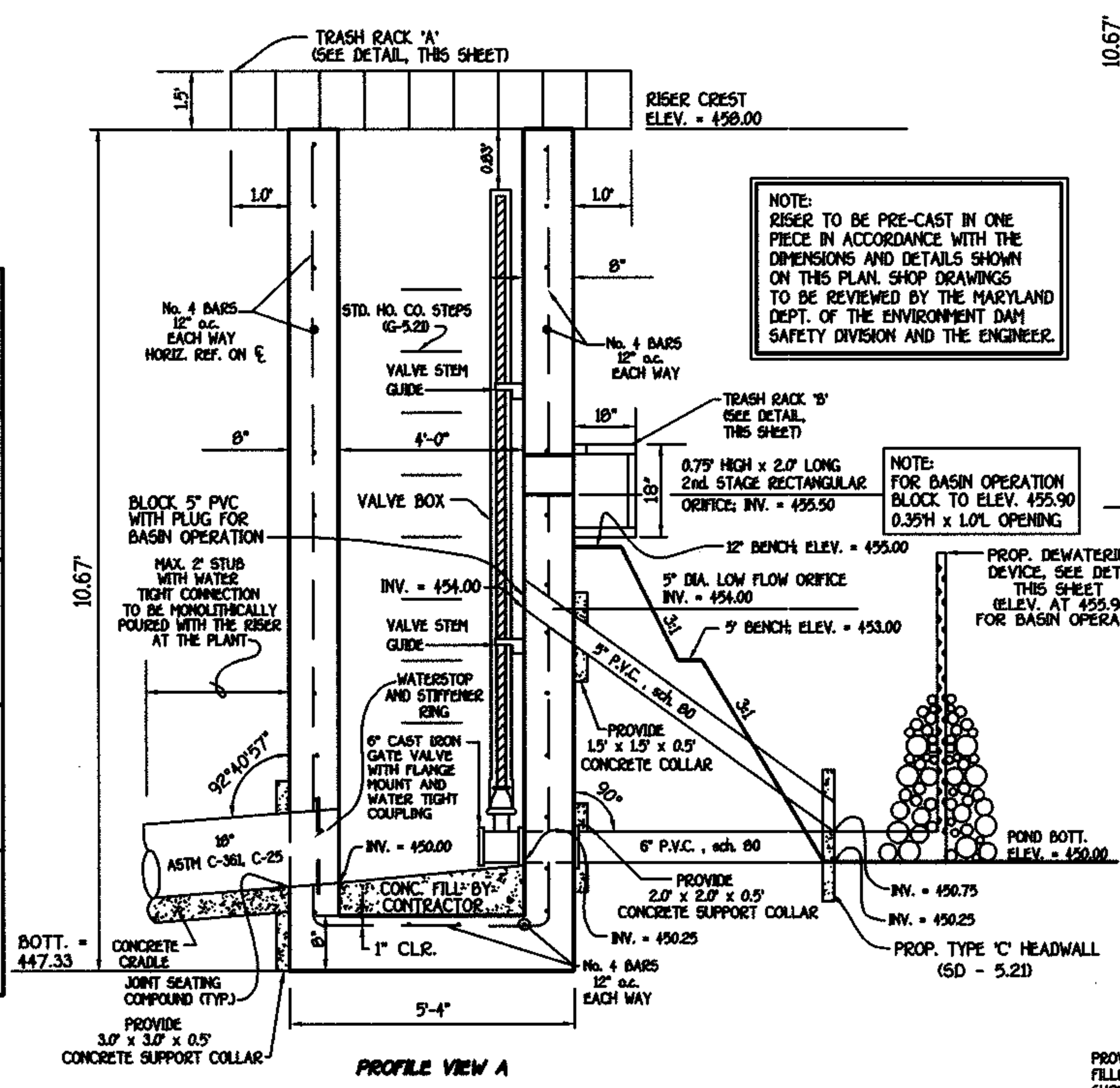
FASTENING DETAIL

NO SCALE



PRINCIPAL SPILLWAY PROFILE

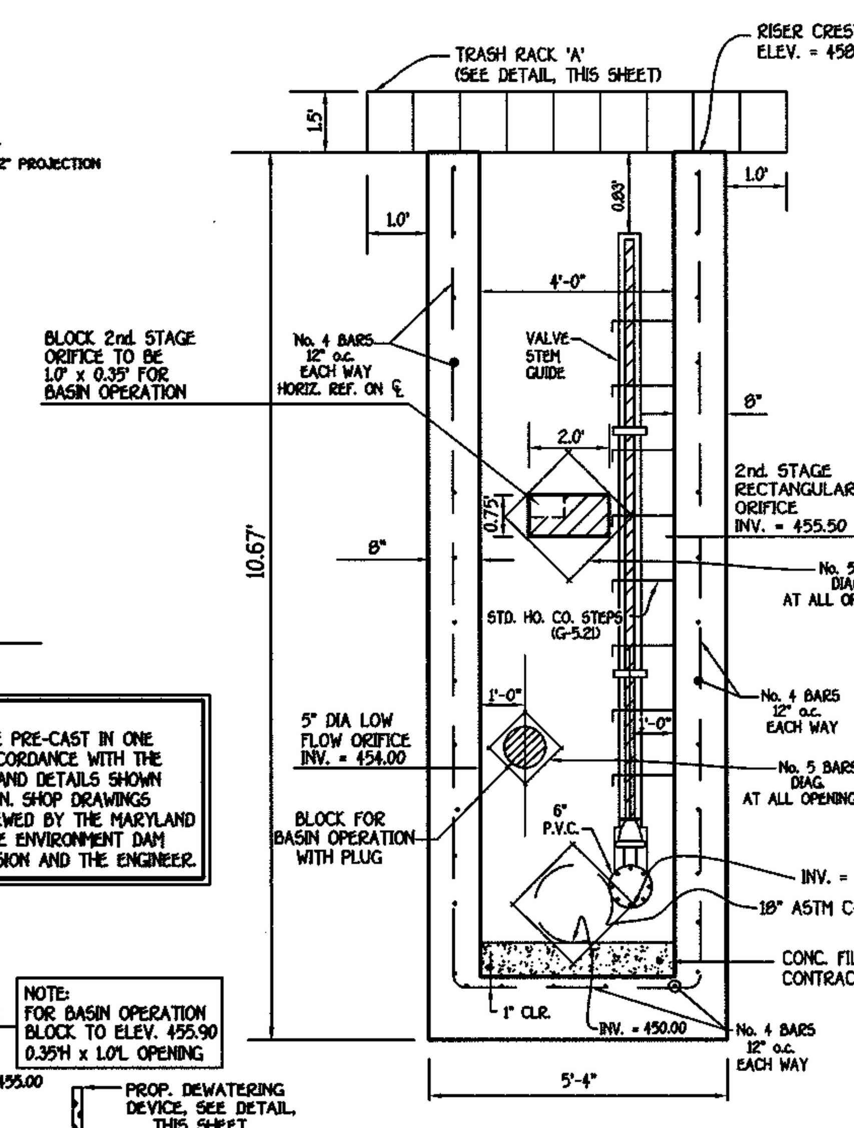
SCALE: HOR. : 1" = 50"
VER. : 1" = 5"



PROFILE VIEW A

CONCRETE RISER DETAIL

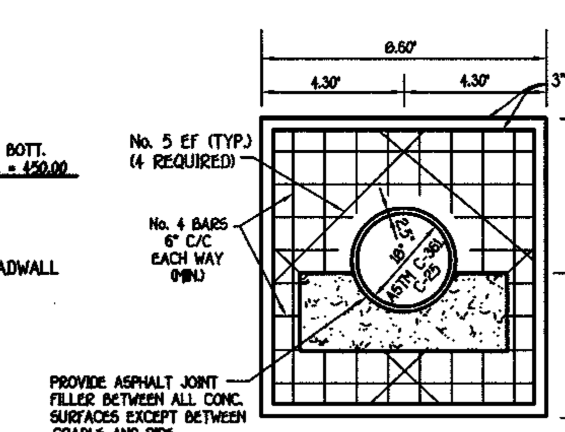
(NO SCALE)



PROFILE VIEW B

CONCRETE RISER DETAIL

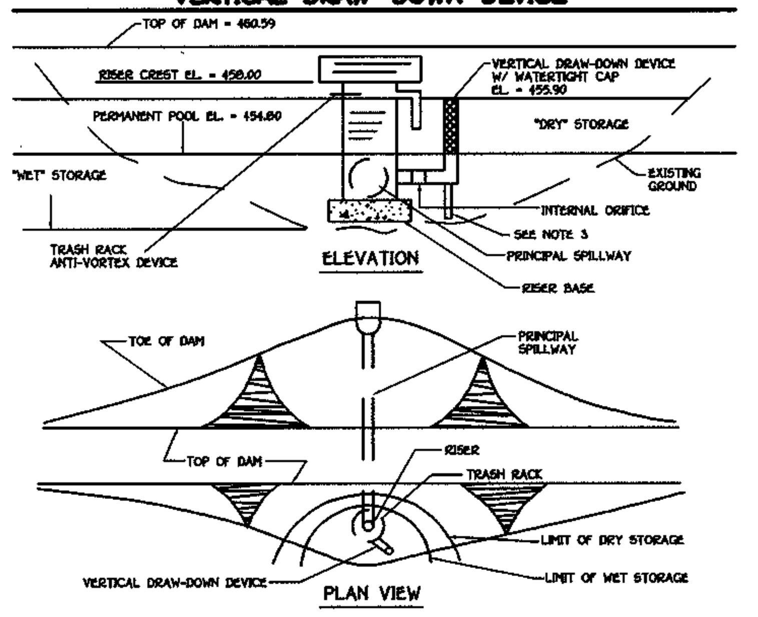
(NO SCALE)



ANTI-SEEP COLLAR

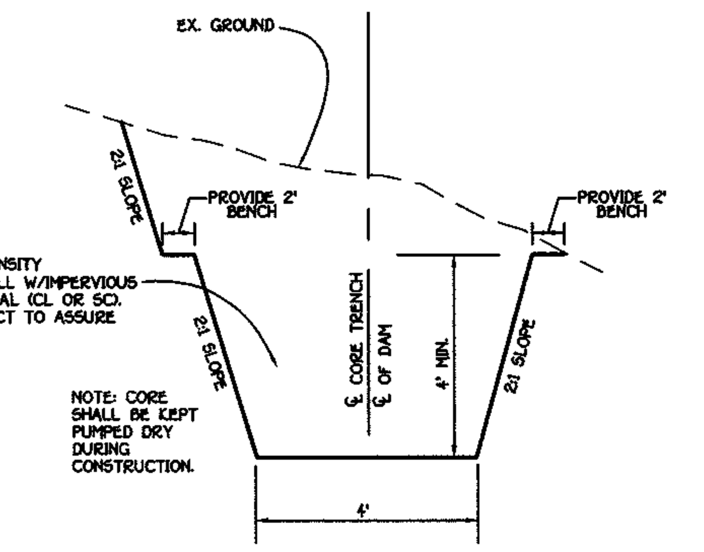
NOT TO SCALE

VERTICAL DRAW-DOWN DEVICE



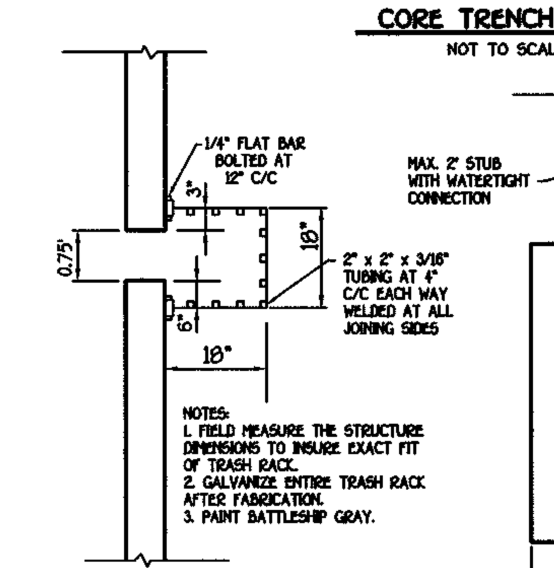
CONSTRUCTION SPECIFICATIONS

1. PERFORATIONS IN THE DRAW-DOWN DEVICE MAY NOT EXTEND INTO THE WET STORAGE.
2. THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 2 TIMES THE AREA OF THE INTERNAL ORIFICE.
3. 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.
4. 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.



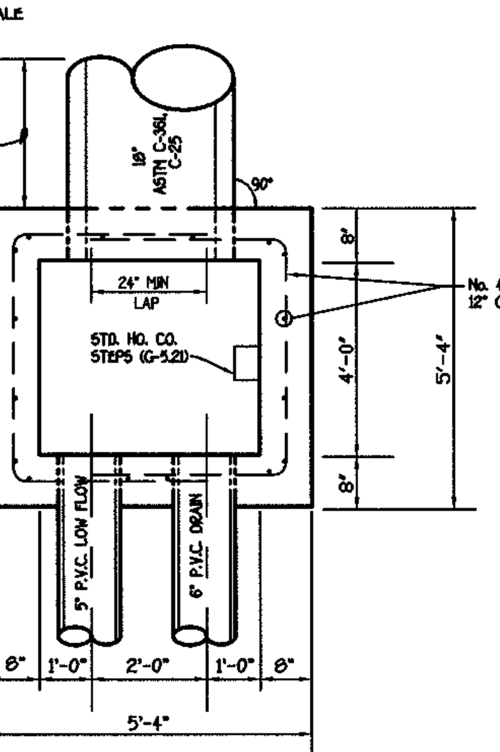
CORE TRENCH DETAIL

NOT TO SCALE



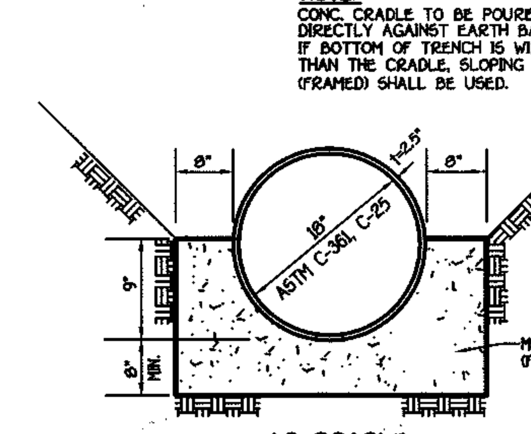
TRASH RACK 'B' DETAIL

(NO SCALE)



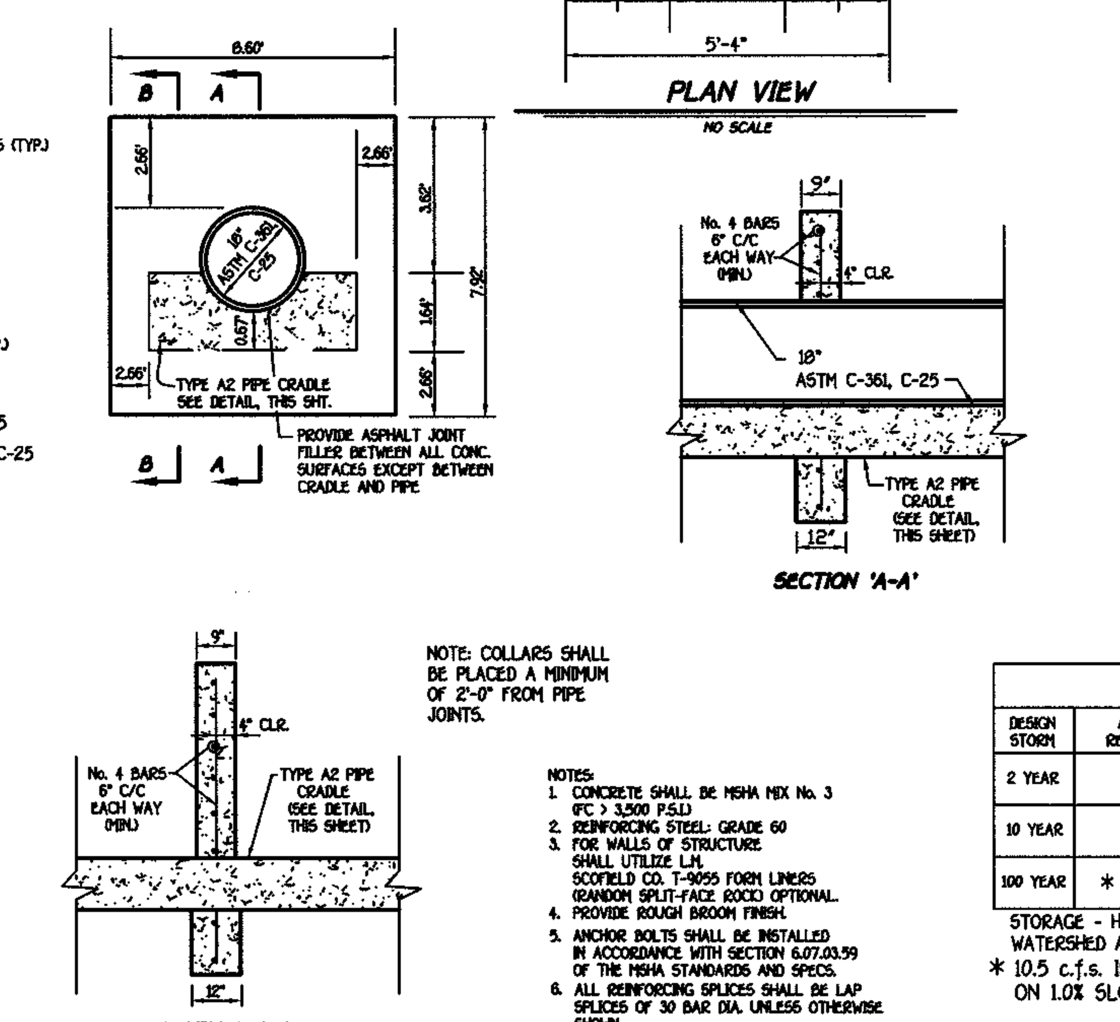
PLAN VIEW

NO SCALE



A2 CRADLE

NOT TO SCALE



NOTES:
1. CONCRETE SHALL BE MSHA MIX No. 3 (FC > 3,500 P.S.I.)
2. REINFORCING STEEL: GRADE 60
3. FOR WALLS OF STRUCTURE SHALL UTILIZE L.H. SCOFIELD CO. T-9055 FORM LINERS (RANDOM SPLIT-FACE ROCK) OPTIONAL.
4. PROVIDE ROUGH BROOM FINISH.
5. ANCHOR BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 6.07.03.59 OF THE MSHA STANDARDS AND SPECS.
6. ALL REINFORCING SPLICES SHALL BE LAP SPLICES OF 30 BAR DIA. UNLESS OTHERWISE SHOWN.

TYPICAL SECTION THROUGH BARREL, CRADLE AND ANTI-SEEP COLLAR

(NO SCALE)

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 Maryland Dept. of the Environment With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Maryland Dept. of the Environment."

Signature Of Developer — Date 12-20-00

Printed Name Of Developer

By The Engineer:

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

Signature Of Engineer — Date 11-18-00

ALDO M. VITUCCI
Printed Name Of Engineer

Approved: Department Of Public Works

Chief Bureau Of Highways — Date

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 12/15/00

Chief, Development Engineering Division — Date 12/12/00

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:

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.

OPERATION, MAINTENANCE AND INSPECTION

Inspection of the pond(s) shown hereon shall be performed at least annually, in accordance with the checklist and requirements contained within USDA, SCS "Standards And Specifications For Ponds" (MD-378). The pond owner(s) and any heirs, successors, or assigns shall be responsible for the safety of the pond and the continued operation, surveillance, inspection, and maintenance thereof. The pond owner(s) shall promptly notify the Soil Conservation District of any unusual observations that may be indications of distress such as excessive seepage, turbid seepage, sliding or slumping.

GEOTECHNICAL RECOMMENDATIONS FOR EMBANKMENT AND CUT-OFF TRENCH CONSTRUCTION

THE SITE SHOULD BE STRIPPED OF TOPSOIL AND ANY OTHER UNSUITABLE MATERIALS FROM THE EMBANKMENT OR STRUCTURE AREA IN ACCORDANCE WITH SOIL CONSERVATION GUIDELINES. AFTER STRIPPING OPERATIONS HAVE BEEN COMPLETED, THE EXPOSED SUBGRADE MATERIALS SHOULD BE PROOFROLLED WITH A LOADED DUMP TRUCK OR SIMILAR EQUIPMENT IN THE PRESENCE OF A GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE. FOR AREAS THAT ARE NOT ACCESSIBLE TO A DUMP TRUCK, THE EXPOSED MATERIALS SHOULD BE OBSERVED AND TESTED BY A GEOTECHICAL ENGINEER OR HIS REPRESENTATIVE UTILIZING A DYNAMIC CONE PENETROMETER. ANY EXCESSIVELY SOFT OR LOOSE MATERIALS IDENTIFIED BY PROOFROLLING OR PENETROMETER TESTING SHOULD BE EXCAVATED TO SUITABLE FIRM SOIL, AND THEN GRADES RE-ESTABLISHED BY BACKFILLING WITH SUITABLE SOIL.

A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHOULD BE PRESENT TO MONITOR PLACEMENT AND COMPACTION OF FILL FOR THE EMBANKMENT AND CUT-OFF TRENCH IN ACCORDANCE WITH MARYLAND SOIL CONSERVATION SPECIFICATION 378 SOILS CONSIDERED SUITABLE FOR THE CENTER OF EMBANKMENT AND CUT-OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH OR CL. ALL FILL MATERIALS MUST BE PLACED AND COMPACTED IN ACCORDANCE WITH MD SCS 378 SPECIFICATIONS.

DESIGN SUMMARY

DESIGN STORM	ALLOWABLE RELEASE RATE	FACILITY INFLOW	FACILITY DISCHARGE	WATER SURFACE ELEVATION	STORAGE VOLUME (AC.FT.)
2 YEAR	0.85 c.f.s.	6.75 c.f.s.	0.67 c.f.s.	455.25	0.17
10 YEAR	6.10 c.f.s.	17.81 c.f.s.	4.58 c.f.s.	456.15	0.43
100 YEAR	* 10.5 c.f.s.	31.32 c.f.s.	9.22 c.f.s.	457.15	0.77

STORAGE - HEIGHT PRODUCT = 5.5
WATERSHED AREA TO FACILITY (ACRES): 6.37
* 10.5 c.f.s. IS THE FLOW THAT THE EXISTING 18" DIA. PIPE ON 1.0% SLOPE AT EXISTING I-11 CAN RECEIVE FROM THE POND

OWNER
MR.& MRS. ROBERT REINHARDT, SR.
8524 OLD FREDERICK ROAD
ELLICOTT CITY, MD. 21043

DEVELOPER
REINHARDT PROPERTY II, LLC
10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD. 21042

STORMWATER MANAGEMENT NOTES AND DETAILS

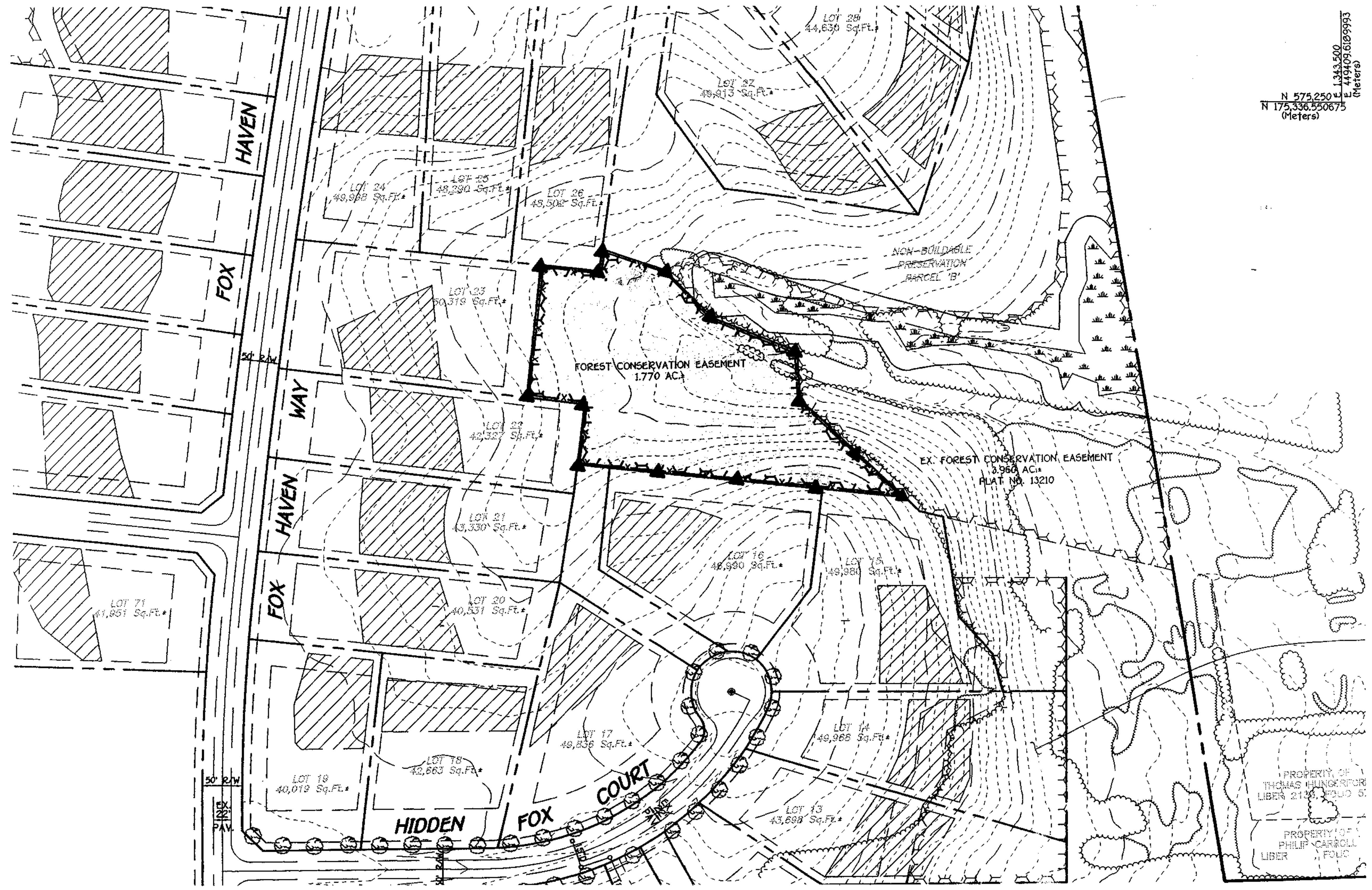
REINHARDT PROPERTY

Lots 1 thru 20
Zoned: R-20
Tax Map No. 18, Parcel No. 9, Grid No. 7
Second Election District Howard County, Maryland
Date: September 1, 2000
Sheet 10 of 11

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

F.C.C.#30607 SWM DETAILS.DWG

F00-48



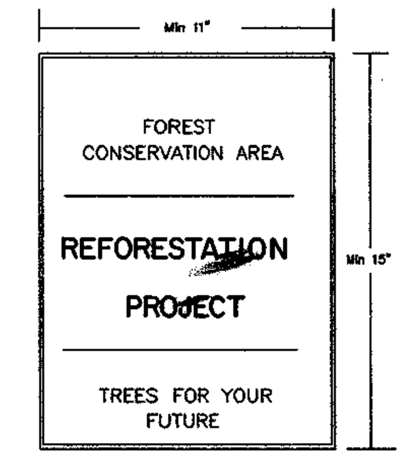
PLANTING SPECIFICATIONS AND NOTES

SITE PREPARATION AND SOILS

1. PROTECTION FENCING AND SILT FENCES FOR SEDIMENT AND EROSION CONTROL ARE TO BE INSTALLED AS A FIRST ORDER OF BUSINESS. SEE PLAN FOR LOCATIONS.
2. DISTURBANCE OF SOILS SHOULD BE LIMITED TO THE PLANTING FIELD FOR EACH PLANT. AS SHOWN ON THE DETAIL VIEW, A PLANTING FIELD OF RADIUS = 5 X DIAMETER OF THE ROOT BALL OR CONTAINER IS RECOMMENDED.
3. SOIL MIX FOR ALL PLANTS EXCEPT ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME OF COMPOSTED SLUDGE.
4. SOIL MIX FOR ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME PEAT MOSS.
5. ALL MIXING IN 3 AND 4 SHALL BE LIMITED TO CONTAINER GROWN OR BALL AND BURLAP STOCK ONLY AND CONFINED TO THE PLANTING FIELD AND IMMEDIATE ADJACENT SOIL SURFACE AREA AND SHALL BE DONE TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

PLANT STORAGE AND INSPECTION

1. FOR CONTAINER GROWN NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN 2 WEEKS AFTER DELIVERY TO THE SITE.
2. FOR BALL AND BURLAP NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN THREE DAYS AFTER DELIVERY TO THE SITE.
3. PLANTING STOCK SHOULD BE INSPECTED PRIOR TO PLANTING. PLANTS NOT CONFORMING TO STANDARD NURSERYMAN SPECIFICATIONS FOR SIZE, FORM, VIGOR, ROOTS, TRUNK WOUNDS, INSECTS AND DISEASE SHOULD BE REPLACED.
4. UNTIL PLANTED, ALL PLANT STOCK SHALL BE KEPT IN A SHADED, COOL, AND MOISTENED ENVIRONMENT .



SIGNAGE DETAIL

NOT TO SCALE

PLANT INSTALLATION

1. THE PLANTING FIELD SHOULD BE PREPARED AS SPECIFIED (SEE DETAIL). NATIVE STOCKPILED SOILS SHOULD BE USED FOR SOIL MIX AND BACKFILL FOR PLANTING FIELD. AFTER PLANT INSTALLATION, RAKE SOILS EVENLY OVER THE PLANTING FIELD AND COVER WITH AT LEAST 4 INCHES OF MULCH. WATER, GENEROUSLY, TO SETTLE SOIL BACKFILLED AROUND TREES.
2. PLANTING FIELD DIAMETERS SHOULD BE REDUCED OR PLANTING FIELD MOVED IF IT APPEARS THAT EXCESSIVE EXISTING ROOT DAMAGE MAY OCCUR DURING DIGGING OPERATION NEAR EXISTING FOREST.
3. CARE SHALL BE TAKEN WHEN DIGGING PLANTING FIELDS NOT TO CHOP THRU LARGER EXISTING ROOTS FROM EXISTING MATURE TREES. IF ROOTS GREATER THAN 1/2 INCH ARE ENCOUNTERED PLEASE TRY TO DIG AROUND THEM AS MUCH AS POSSIBLE TO MINIMIZE IMPACT TO EXISTING TREES. THEY WERE HERE FIRST.
4. CONTAINER GROWN STOCK SHOULD BE REMOVED FROM THE CONTAINER AND ROOTS GENTLY LOOSENED FROM THE SOIL. IF THE ROOTS ENCIRCLE THE ROOT BALL, SUBSTITUTION IS STRONGLY RECOMMENDED. J-SHAPED OR KINKED ROOT SYSTEMS SHOULD ALSO BE NOTED. ROOTS MAY NOT BE TRIMMED ON SITE, DUE TO THE INCREASED CHANCES OF SOIL BORNE DISEASES.
5. FOR BALL AND BURLAP STOCK, PLACE TREE IN PREPARED PLANTING FIELD AND REMOVE WIRE AND/OR STRING FROM ROOT BALL. THEN PEEL BACK BURLAP TO BASE OF ROOT BALL AND COVER ENTIRE ROOT BALL WITH TOPSOIL MIXTURE INDICATED ABOVE AND WATER GENEROUSLY.
6. FOR TREES PLANTED IN THE AFFORESTATION AREA, CONTRACTOR SHALL EVENLY DISPERSE SPECIES IN GROUPS OF TWO (2) TO FOUR (4), PER SPECIES, OVER THE ENTIRE DESIGNATED AREA TO BE PLANTED WHILE MAINTAINING AN AVERAGE RANDOM SPACING OF INDIVIDUAL TREES AT PROPER SPACING INDICATED ON PLANT LIST.
7. AVOID PLANTING IN A STRAIGHT GRID PATTERN. TREES SHALL BE PLANTED ON AN AVERAGE SPACING AS INDICATED ON PLANT LISTS TO OBTAIN A MORE NATURAL APPEARANCE.
8. NEWLY PLANTED TREES MAY NEED WATERING AS MUCH AS ONCE A WEEK FOR THE ENTIRE GROWING SEASON, DUE TO THE WELL DRAINED NATIVE SOILS FOUND ON THIS SITE COMBINED WITH THE LOOSENESS OF THE BACKFILLED AREA WITHIN THE PLANTING FIELD. THE NEXT TWO YEARS MAY REQUIRE WATERING ONLY A FEW TIMES A YEAR DURING SUMMER AND DRY MONTHS. AFTER THAT PERIOD, TREES SHOULD ONLY NEED WATER IN SEVERE DROUGHTS. ANY WATERING PLAN SHOULD COMPENSATE FOR RECENT RAINFALL PATTERNS.

FERTILIZING

1. DO NOT FERTILIZE NEWLY PLANTED TREES WITHIN THE FIRST GROWING SEASON AFTER PLANTING. DOING SO MAY CAUSE A SPURT OF CANOPY GROWTH WHICH THE ROOTS CANNOT SUPPORT AND ADD ADDITIONAL SHOCK TO THE ALREADY DISTURBED PLANT.
2. NOTHING SHOULD BE ADDED TO THE SOIL WITHOUT TESTING IT FIRST TO DETERMINE ITS NEEDS.
3. IF AND WHEN IT IS TIME TO FERTILIZE, ORGANIC FERTILIZERS ARE PREFERRED TO SYNTHETIC FERTILIZERS. BONE MEAL OR SEAWEED BASED PRODUCTS ARE AVAILABLE COMMERCIALLY AND ARE RECOMMENDED. THEY HAVE THE ABILITY TO SUPPLY NUTRIENTS TO THE PLANT AS NEEDED WHILE MINIMIZING THE RISK OF EXCESS NUTRIENTS ENTERING THE FOREST SYSTEM AND WATER SUPPLY.

MAINTENANCE SCHEDULE

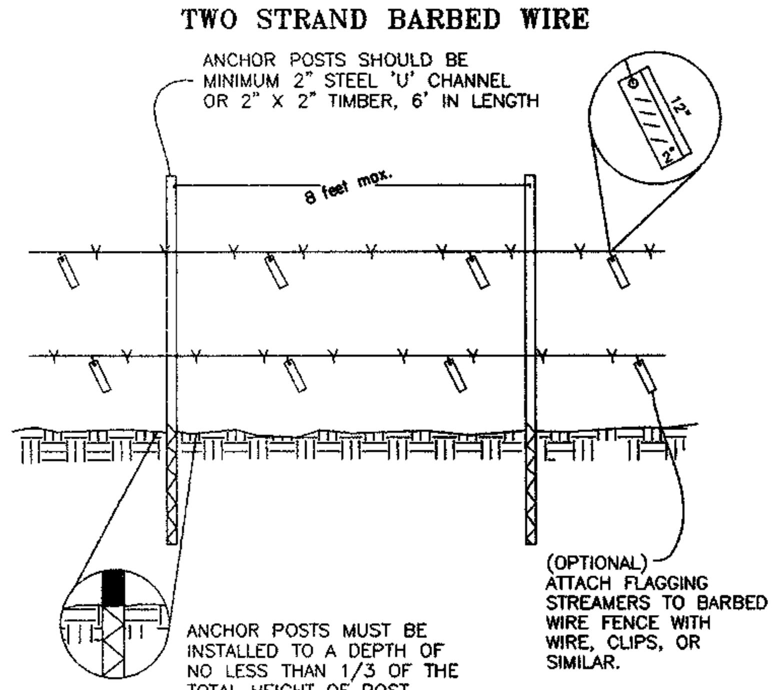
1. ANNUAL MAINTENANCE DURING THE GROWING SEASON, FOR A THREE YEAR PERIOD.
2. ASSESS TREE MORTALITY OF PLANTING STOCK, REMOVE AND REPLACE ANY DEAD OR DISEASED PLANTINGS.
3. VOLUNTEER SEEDING OF NATIVE, LOCAL AND ENDEMIC VEGETATION IS TO BE EXPECTED. DO NOT DISCOURAGE THIS EFFORT UNLESS IT IS NEGATIVELY EFFECTING THE PLANTED STOCK.
4. REMOVE THROUGH MANUAL MEANS (GRUBBING, PULLING, CUTTING) AGGRESSIVE, NOXIOUS, INVASIVE SPECIES AND ALL HERBACEOUS VEGETATION WITHIN A 3-FOOT RADIUS SURROUNDING THE PLANTED WOODY NURSERY STOCK.
5. REMOVE AND DISPOSE OF MAN-MADE TRASH, INCLUDING ITEMS CONTAINED WITHIN ENTIRE PLANTING AREA. DO NOT REMOVE DOWN AND DEAD MATERIAL NATURALLY OCCURRING OR ACCUMULATING, UNLESS IT IS SMOTHERING PLANTING STOCK.
6. A 75 PERCENT SURVIVAL OF PLANTED STOCK MUST BE ACHIEVED AT THE END OF THE 24 MONTH MANAGEMENT PERIOD. IF NOT, ADDITIONAL PLANTINGS MAY BE REQUIRED TO ACHIEVE THIS GOAL.

SUPERVISION

1. ALL FOREST CONSERVATION ACTIVITIES SHALL BY DONE UNDER THE DIRECT SUPERVISION OF SOMEONE FROM THE DESIGN TEAM OR OTHER "QUALIFIED PROFESSIONAL" AS DETERMINED BY THE REQUIREMENTS OF COMAR 08.19.06.01 AND THE MARYLAND DEPARTMENT OF NATURAL RESOURCES, PUBLIC LANDS AND FORESTRY DIVISION.

PROTECTIVE FENCE DETAIL

TWO STRAND BARBED WIRE



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

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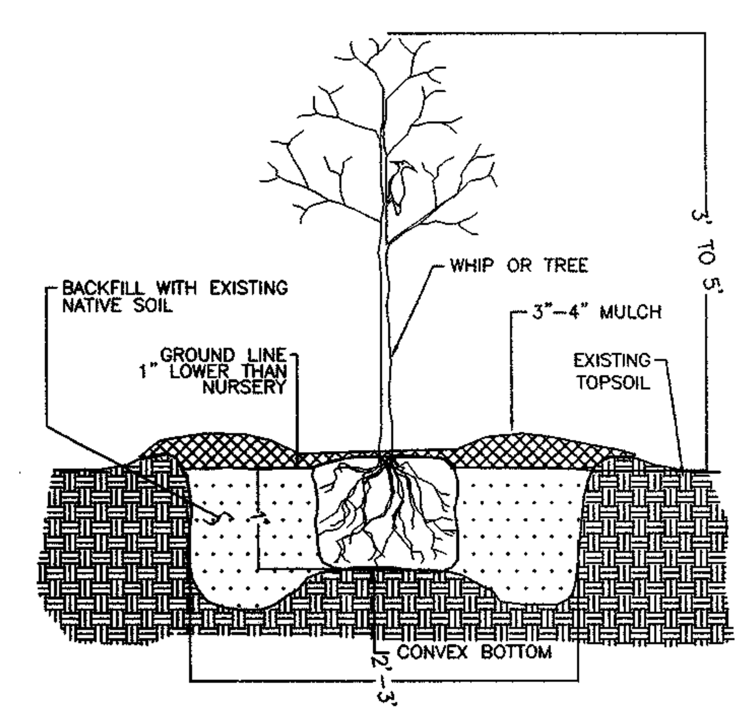
REFORESTATION PLANT LISTS

QTY.	SPECIES	SHADE TOL.	MOIST. REGIME	WET. STATUS	MIN.O.C. SPACING	SIZE & REMARKS
65	Prunus serotina Wild Black Cherry	I	M	FACU	11'	CONT/BROOT 3'-5' HEIGHT
65	Robinia pseudoacacia Black Locust	VI	D-M	FACU-	11'	CONT/BROOT 3'-5' HEIGHT
65	Quercus prinus Chestnut Oak	MT	D-M	FACU-	11'	CONT/BROOT 3'-5' HEIGHT
65	Quercus rubra Red Oak	MT	D-M	UPL	11'	CONT/BROOT 3'-5' HEIGHT
65	Fraxinus americana White Ash	MT	D-M	FACU	11'	CONT/BROOT 3'-5' HEIGHT
65	Nyssa sylvatica Black Gum	T	M-W	FAC	11'	CONT/BROOT 3'-5' HEIGHT
65	Juglans nigra Black Walnut	VT	M	FACU	11'	CONT/BROOT 3'-5' HEIGHT
65	Acer rubrum Red Maple	VT	D-W	FAC	11'	CONT/BROOT 3'-5' HEIGHT
65	Cercis canadensis Eastern Redbud	T	M	UPL	11'	CONT/BROOT 3'-5' HEIGHT
65	Diospyros virginiana Persimmon	I	D-M	UPL	11'	CONT/BROOT 3'-5' HEIGHT

Quantities Of Individual Species And Species Composition May Change Depending On Availability At Time Of Planting. Total Quantity Of Trees For Entire Easement Area Will Not Change.



TREE PLANTING DETAIL

CONTAINER GROWN

MD. DNR QUALIFIED PROFESSIONAL

Ronald B. Wildman Oct 20,00

RONALD B. WILDMAN DATE

General Notes

1) The Forest Conservation Easement Has Been Established As An Offsite Forest Mitigation Area, Per Section 16.1216 Of The Howard County Forest Conservation Act. No Clearing, Grading Or Construction Is Permitted Within The Forest Conservation Easement; However, Forest Management Practices As Defined In The Deed Of Forest Conservation easement Are Allowed.

2) Denotes Forest Conservation Easement.

3) ▲ Denotes Forest Conservation Sign (see detail, this sheet)

4) —X—X— Denotes Protective Fence (see detail, this sheet)

DEVELOPER

REINHARDT PROPERTY II, LLC
10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD. 21042

OWNER

MR.& MRS. ROBERT REINHARDT, SR.
8524 OLD FREDERICK ROAD
ELLICOTT CITY, MD. 21043

THIS PLAN IS FOR
FOREST CONSERVATION EASEMENT
PLANTING PURPOSES ONLY

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Cindy Hamilton 12/15/a
Chief, Division of Land Development Date

12/12/00
Chief, Development Engineering Division Date

APPROVED: DEPARTMENT OF PUBLIC WORKS

Howard ... for 12/18/00
Chief, Bureau of Highways Date

PROJECT:
REINHARDT PROPERTY
LOTS 1 THRU 20
ZONED: R-20
TAX MAP NO. 18 PARCEL NO. 9 GRID NO. 7
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 100' DATE: OCTOBER 9, 2000

TITLE:
OFF-SITE REFORESTATION PLAN

AREA: PLANTING WITHIN NON-BUILDABLE PRESERVATION PARCEL 'B', GAITHER HUNT, SECTION ONE, AREA ONE

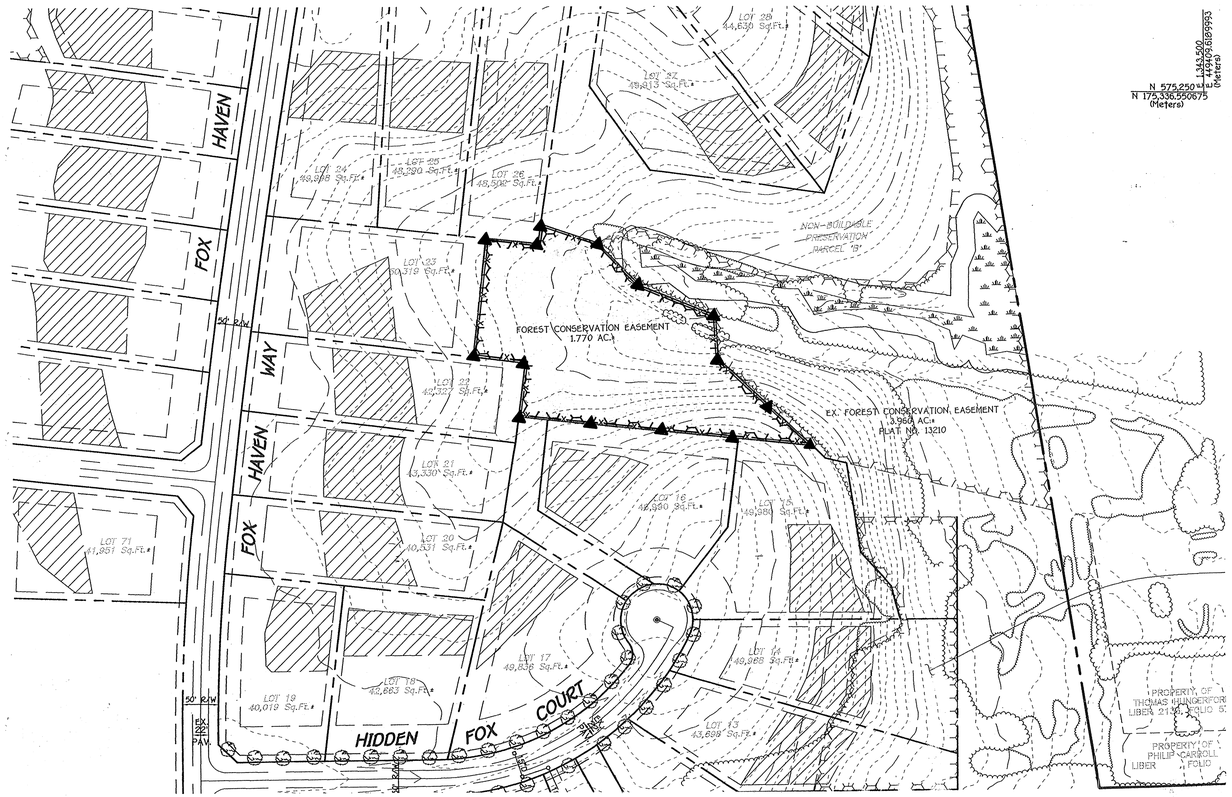
TITLE:
REFORESTATION PLANTING PLAN
DETAILS AND SPECIFICATIONS

WILDMAN
ENVIRONMENTAL SERVICES
4747 BONNIE BRANCH RD.
ELLICOTT CITY, MD. 21043
PHONE: (410) 313-9999
FAX: (410) 313-9099

Ronald B. Wildman Oct 20,00

DESIGNED BY: R.B.W.
DRAWN BY:
PROJECT NO.
DATE: 10/24/2000
SCALE: 1"= 100'
SHEET NO. 11 OF 11

F00-48



PLANTING SPECIFICATIONS AND NOTES

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2. DISTURBANCE OF SOILS SHOULD BE LIMITED TO THE PLANTING FIELD FOR EACH PLANT. AS SHOWN ON THE DETAIL VIEW, A PLANTING FIELD RADIUS = 5 X DIAMETER OF THE ROOT BALL OR CONTAINER IS RECOMMENDED.
3. SOIL MIX FOR ALL PLANTS EXCEPT ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME OF COMPOSTED SLUDGE.
4. SOIL MIX FOR ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME PEAT MOSS.
5. ALL MIXING IN 3 AND 4 SHALL BE LIMITED TO CONTAINER GROWN OR BALL AND BURLAP STOCK ONLY AND CONFINED TO THE PLANTING FIELD AND IMMEDIATE ADJACENT SOIL SURFACE AREA AND SHALL BE DONE TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

PLANT STORAGE AND INSPECTION

1. FOR CONTAINER GROWN NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN 2 WEEKS AFTER DELIVERY TO THE SITE.
2. FOR BALL AND BURLAP NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN THREE DAYS AFTER DELIVERY TO THE SITE.
3. PLANTING STOCK SHOULD BE INSPECTED PRIOR TO PLANTING. PLANTS NOT CONFORMING TO STANDARD NURSERYMAN SPECIFICATIONS FOR SIZE, FORM, VIGOR, ROOTS, TRUNK WOUNDS, INSECTS AND DISEASE SHOULD BE REPLACED.
4. UNTIL PLANTED, ALL PLANT STOCK SHALL BE KEPT IN A SHADED, COOL, AND MOISTENED ENVIRONMENT .

PLANT INSTALLATION

1. THE PLANTING FIELD SHOULD BE PREPARED AS SPECIFIED (SEE DETAIL). NATIVE STOCKPILED SOILS SHOULD BE USED FOR SOIL MIX AND BACKFILL FOR PLANTING FIELD. AFTER PLANT INSTALLATION, RAKE SOILS EVENLY OVER THE PLANTING FIELD AND COVER WITH AT LEAST 4 INCHES OF MULCH. WATER, GENEROUSLY, TO SETTLE SOIL BACKFILLED AROUND TREES.
2. PLANTING FIELD DIAMETERS SHOULD BE REDUCED OR PLANTING FIELD MOVED IF IT APPEARS THAT EXCESSIVE EXISTING ROOT DAMAGE MAY OCCUR DURING DIGGING OPERATION NEAR EXISTING FOREST.
3. CARE SHALL BE TAKEN WHEN DIGGING PLANTING FIELDS NOT TO CHOP THRU LARGER EXISTING ROOTS FROM EXISTING MATURE TREES. IF ROOTS GREATER THAN 1/2 INCH ARE ENCOUNTERED PLEASE TRY TO DIG AROUND THEM AS MUCH AS POSSIBLE TO MINIMIZE IMPACT TO EXISTING TREES. THEY WERE HERE FIRST.
4. CONTAINER GROWN STOCK SHOULD BE REMOVED FROM THE CONTAINER AND ROOTS GENTLY LOOSENED FROM THE SOIL. IF THE ROOTS ENCIRCLE THE ROOT BALL, SUBSTITUTION IS STRONGLY RECOMMENDED. J-SHAPED OR KINKED ROOT SYSTEMS SHOULD ALSO BE NOTED. ROOTS MAY NOT BE TRIMMED ON SITE, DUE TO THE INCREASED CHANCES OF SOIL BORNE DISEASES.
5. FOR BALL AND BURLAP STOCK, PLACE TREE IN PREPARED PLANTING FIELD AND REMOVE WIRE AND/OR STRING FROM ROOT BALL. THEN PEEL BACK BURLAP TO BASE OF ROOT BALL AND COVER ENTIRE ROOT BALL WITH TOPSOIL MIXTURE INDICATED ABOVE AND WATER GENEROUSLY.
6. FOR TREES PLANTED IN THE AFFORESTATION AREA, CONTRACTOR SHALL EVENLY DISPERSE SPECIES IN GROUPS OF TWO (2) TO FOUR (4), PER SPECIES, OVER THE ENTIRE DESIGNATED AREA TO BE PLANTED WHILE MAINTAINING AN AVERAGE RANDOM SPACING OF INDIVIDUAL TREES AT PROPER SPACING INDICATED ON PLANT LIST.
7. AVOID PLANTING IN A STRAIGHT GRID PATTERN. TREES SHALL BE PLANTED ON AN AVERAGE SPACING AS INDICATED ON PLANT LISTS TO OBTAIN A MORE NATURAL APPEARANCE.
8. NEWLY PLANTED TREES MAY NEED WATERING AS MUCH AS ONCE A WEEK FOR THE ENTIRE GROWING SEASON, DUE TO THE WELL DRAINED NATIVE SOILS FOUND ON THIS SITE COMBINED WITH THE LOOSENESS OF THE BACKFILLED AREA WITHIN THE PLANTING FIELD. THE NEXT TWO YEARS MAY REQUIRE WATERING ONLY A FEW TIMES A YEAR DURING SUMMER AND DRY MONTHS. AFTER THAT PERIOD, TREES SHOULD ONLY NEED WATER IN SEVERE DROUGHTS. ANY WATERING PLAN SHOULD COMPENSATE FOR RECENT RAINFALL PATTERNS.

FERTILIZING

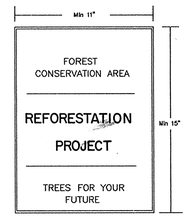
1. DO NOT FERTILIZE NEWLY PLANTED TREES WITHIN THE FIRST GROWING SEASON AFTER PLANTING. DOING SO MAY CAUSE A SPURT OF CANOPY GROWTH WHICH THE ROOTS CANNOT SUPPORT AND ADD ADDITIONAL SHOCK TO THE ALREADY DISTURBED PLANT.
2. NOTHING SHOULD BE ADDED TO THE SOIL WITHOUT TESTING IT FIRST TO DETERMINE ITS NEEDS.
3. IF AND WHEN IT IS TIME TO FERTILIZE, ORGANIC FERTILIZERS ARE PREFERRED TO SYNTHETIC FERTILIZERS. BONE MEAL OR SEAWEED BASED PRODUCTS ARE AVAILABLE COMMERCIALLY AND ARE RECOMMENDED. THEY HAVE THE ABILITY TO SUPPLY NUTRIENTS TO THE PLANT AS NEEDED WHILE MINIMIZING THE RISK OF EXCESS NUTRIENTS ENTERING THE FOREST SYSTEM AND WATER SUPPLY.

MAINTENANCE SCHEDULE

1. ANNUAL MAINTENANCE DURING THE GROWING SEASON, FOR A THREE YEAR PERIOD.
2. ASSESS TREE MORTALITY OF PLANTING STOCK, REMOVE AND REPLACE ANY DEAD OR DISEASED PLANTINGS.
3. VOLUNTEER SEEDING OF NATIVE, LOCAL AND ENDEMIC VEGETATION IS TO BE EXPECTED. DO NOT DISCOURAGE THIS EFFORT UNLESS IT IS NEGATIVELY EFFECTING THE PLANTED STOCK.
4. REMOVE THROUGH MANUAL MEANS (GRUBBING, PULLING, CUTTING) AGGRESSIVE, NOXIOUS, INVASIVE SPECIES AND ALL HERBACEOUS VEGETATION WITHIN A 3-FOOT RADIUS SURROUNDING THE PLANTED WOODY NURSERY STOCK.
5. REMOVE AND DISPOSE OF MAN-MADE TRASH, INCLUDING ITEMS CONTAINED WITHIN ENTIRE PLANTING AREA. DO NOT REMOVE DOWN AND DEAD MATERIAL NATURALLY OCCURRING OR ACCUMULATING, UNLESS IT IS SMOTHERING PLANTING STOCK.
6. A 75 PERCENT SURVIVAL OF PLANTED STOCK MUST BE ACHIEVED AT THE END OF THE 24 MONTH MANAGEMENT PERIOD. IF NOT, ADDITIONAL PLANTINGS MAY BE REQUIRED TO ACHIEVE THIS GOAL.

SUPERVISION

1. ALL FOREST CONSERVATION ACTIVITIES SHALL BY DONE UNDER THE DIRECT SUPERVISION OF SOMEONE FROM THE DESIGN TEAM OR OTHER "QUALIFIED PROFESSIONAL" AS DETERMINED BY THE REQUIREMENTS OF COMAR 08.19.06.01 AND THE MARYLAND DEPARTMENT OF NATURAL RESOURCES, PUBLIC LANDS AND FORESTRY DIVISION.



SIGNAGE DETAIL

NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — Date 12/15/00

Chief, Development Engineering Division — Date 12/12/00

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 12/15/00

PROJECT:

REINHARDT PROPERTY

LOTS 1 THRU 20

ZONED: R-20

TAX MAP NO. 18 PARCEL NO. 9 GRID NO. 7

2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: 1" = 100' DATE: OCTOBER 9, 2000

TITLE:

OFF-SITE REFORESTATION PLAN

AREA: PLANTING WITHIN NON-BUILDABLE PRESERVATION PARCEL 'B', GAITHER HUNT, SECTION ONE , AREA ONE

TITLE:

REFORESTATION PLANTING PLAN

DETAILS AND SPECIFICATIONS

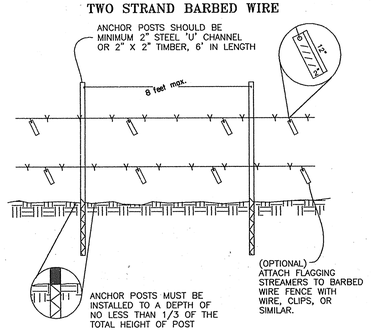
WILDMAN
ENVIRONMENTAL SERVICES
4747 BONNIE BRANCH RD.
ELLICOTT CITY, MD. 21043
PHONE: (410) 313-9999
FAX: (410) 313-9939

Ronald B. Wildman 10/24/00

DESIGNED BY:	R.B.W.
DRAWN BY:	
PROJECT NO.	
DATE:	10/24/2000
SCALE:	1"= 100'
SHEET NO.	11 OF 11

PROTECTIVE FENCE DETAIL

TWO STRAND BARBED WIRE

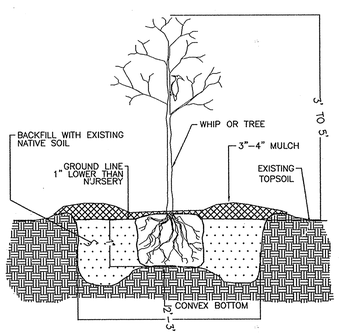


1. FOREST PROTECTION DEVICE ONLY.
2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
4. ROOT DAMAGE SHOULD BE AVOIDED.
5. PROTECTIVE SIGNAGE MAY ALSO BE USED.
6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.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

REFORESTATION PLANT LISTS

QTY.	SPECIES	SHADE TOL.	MOIST. REGIME	WET. STATUS	MIN.O.C. SPACING	SIZE & REMARKS
65	Prunus serotina Wild Black Cherry	I	M	FACU	11'	CONT/BROOT 3'-5' HEIGHT
65	Robinia pseudoacacia Black Locust	VI	D-M	FACU-	11'	CONT/BROOT 3'-5' HEIGHT
65	Quercus prinus Chestnut Oak	MT	D-M	FACU-	11'	CONT/BROOT 3'-5' HEIGHT
65	Quercus rubra Red Oak	MT	D-M	UPL	11'	CONT/BROOT 3'-5' HEIGHT
65	Fraxinus americana White Ash	MT	D-M	FACU	11'	CONT/BROOT 3'-5' HEIGHT
65	Nyssa sylvatica Black Gum	T	M-W	FAC	11'	CONT/BROOT 3'-5' HEIGHT
65	Juglans nigra Black Walnut	VT	M	FACU	11'	CONT/BROOT 3'-5' HEIGHT
65	Acer rubrum Red Maple	VT	D-W	FAC	11'	CONT/BROOT 3'-5' HEIGHT
65	Cercis canadensis Eastern Redbud	T	M	UPL	11'	CONT/BROOT 3'-5' HEIGHT
65	Diospyros virginiana Persimmon	I	D-M	UPL	11'	CONT/BROOT 3'-5' HEIGHT

Quantities Of Individual Species And Species Composition May Change Depending On Availability At Time Of Planting. Total Quantity Of Trees For Entire Easement Area Will Not Change.



TREE PLANTING DETAIL

CONTAINER GROWN

General Notes

1) The Forest Conservation Easement Has Been Established As An Offsite Forest Mitigation Area, Per Section 16.1216 Of The Howard County Forest Conservation Act. No Clearing, Grading Or Construction Is Permitted Within The Forest Conservation Easement; However, Forest Management Practices As Defined In The Deed Of Forest Conservation easement Are Allowed.
2) Denotes Forest Conservation Easement.
3) Denotes Forest Conservation Sign (see detail, this sheet)
4) —X—X— Denotes Protective Fence (see detail, this sheet)

DEVELOPER

REINHARDT PROPERTY II, LLC
10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD. 21042

OWNER

MR.& MRS. ROBERT REINHARDT, SR.
8524 OLD FREDERICK ROAD
ELLICOTT CITY, MD. 21043

THIS PLAN IS FOR
FOREST CONSERVATION EASEMENT
PLANTING PURPOSES ONLY

MD. DNR QUALIFIED PROFESSIONAL

Ronald B. Wildman 10/24/00

RONALD B. WILDMAN — DATE

AUTOCAD FILE NAME C:\DRAWINGS\Romiti Property\Mobberly\MOBREF2.dwg

AS-BUILT 3-5-04 F00-48

BORING B-1

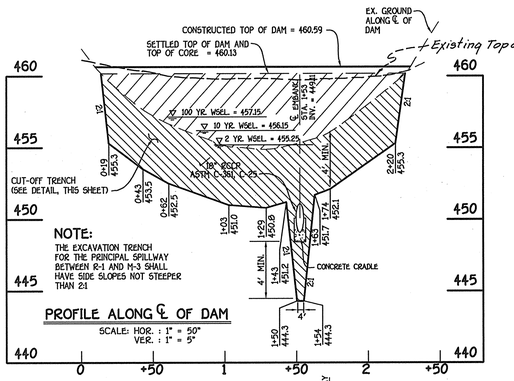
DESCRIPTION OF MATERIALS	DEPTH	REMARKS
TOPSOIL	SURFACE	
	0.4	
BROWN TO REDDISH BROWN, MOIST, SILT AND CLAY, AND CF SAND, LITTLE ROCK FRAGS, TRACE MICA (SM)		AT COMPLETION, HOLE DRY AND CAVED AT 13.8'
	3.0	
BROWN, PINKISH TAN, AND GRAY MOIST, MICACEOUS CF SAND, SOME SILT, LITTLE ROCK FRAGS (DECOMPOSED ROCK) (SM)		1 DAY AFTER COMPLETION, HOLE DRY AND CAVED AT 13.5'
	12.0	
BROWN-GRAY, MOIST, CF SAND, AND SILT, TRACE ROCK FRAGS, TRACE MICA (DECOMPOSED ROCK) (SM)		
	15.0	
BOTTOM OF HOLE AT 15.0'		

BORING B-2

DESCRIPTION OF MATERIALS	DEPTH	REMARKS
TOPSOIL	SURFACE	
	0.4	
BROWN TO REDDISH BROWN, MOIST, SILT AND CLAY, AND CF SAND, LITTLE ROCK FRAGS, TRACE MICA (ML)		AT COMPLETION, HOLE DRY AND CAVED AT 14.8'
	2.5	
REDDISH BROWN, MOIST, CLAYEY SILT, AND CF SAND, LITTLE ROCK FRAGS (DECOMPOSED ROCK) (SM)		1 DAY AFTER COMPLETION, HOLE DRY AND CAVED AT 14.6'
	7.0	
BROWN, TAN AND GRAY, MOIST, MICACEOUS CF SAND, AND SOME SILT, TRACE ROCK FRAGS (DECOMPOSED ROCK) (SM)		
	15.0	
BOTTOM OF HOLE AT 15.0'		

BORING B-3

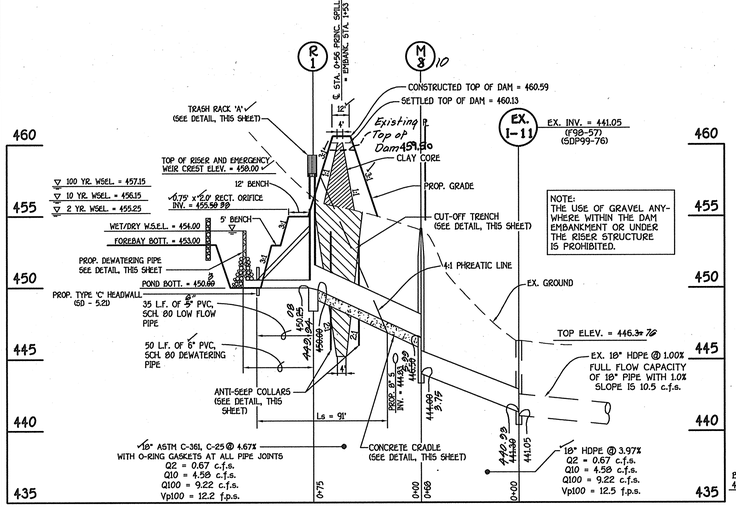
DESCRIPTION OF MATERIALS	DEPTH	REMARKS
TOPSOIL	SURFACE	
BROWN - GRAY, MOIST, CLAYEY SILT, AND CF SAND, TRACE ROCK FRAGS, TRACE MICA (ML)	0.4	AT COMPLETION, HOLE DRY AND CAVED AT 14.1'
	3.0	
BROWN, MOIST, SILT AND CLAY, SOME CF SAND, SOME ROCK FRAGS, TRACE MICA (DECOMPOSED ROCK) (SM)		
	7.0	1 DAY AFTER COMPLETION, HOLE DRY AND CAVED AT 14.0'
BROWN, TAN AND GRAY, MOIST CF SAND, SOME SILT, TRACE ROCK FRAGS, TRACE MICA (DECOMPOSED ROCK) (SM)		
	12.0	
REDDISH BROWN AND GRAY, MOIST MICACEOUS CF SAND, AND SILT (DECOMPOSED ROCK) (SM)		
	15.0	
BOTTOM OF HOLE AT 15.0'		



NOTE:
THE EXCAVATION TRENCH FOR THE PRINCIPAL SPILLWAY BETWEEN 0+1 AND 1+3 SHALL HAVE SIDE SLOPES NOT STEEPER THAN 2:1

PROFILE ALONG ℄ OF DAM

SCALE: HOR. : 1" = 50'
VER. : 1" = 5'



PRINCIPAL SPILLWAY PROFILE

SCALE: HOR. : 1" = 50'
VER. : 1" = 5'

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855
F.C.C.\30607 SWM DETAILS.DWG

378 - 12 Pond SPECIFICATIONS

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

Site Preparation

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

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

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

Earth Fill

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

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the 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 of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble yet not be so wet that water can be squeezed out.

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

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

Structure Backfill

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

Pipe Conduits

All pipes shall be circular in cross section

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

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-361.
2. Bedding - All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its outside diameter with a minimum thickness of 3 inches, or as shown on the drawings.
3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 2 feet from the riser.
4. Backfilling shall conform to "Structure Backfill".
5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

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

1. Materials-PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241.
2. Joints and connections to anti-seep collars shall be completely watertight.
3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
4. Backfilling shall conform to "Structure Backfill".
5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

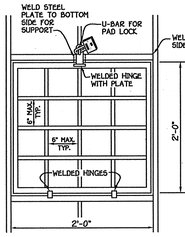
Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 600, Mix No. 3.

Rock Riprap

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

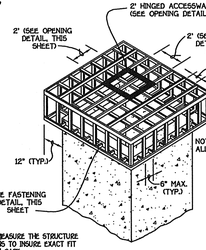
The riprap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the riprap in place shall reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the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



NOTE:
OPENING IN TRASH RACK SHALL BE LOCATED OVER THE STEPS IN THE RISER.

OPENING DETAIL

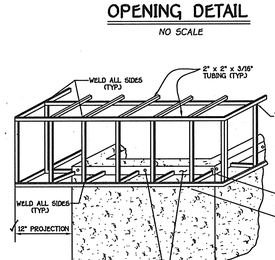
NO SCALE



NOTES:
1. FIELD MEASURE THE STRUCTURE DIMENSIONS TO INSURE EXACT FIT OF TRASH RACK.
2. GALVANIZE ENTIRE TRASH RACK AFTER FABRICATION.
3. PAINT BATTLESHIP GRAY.

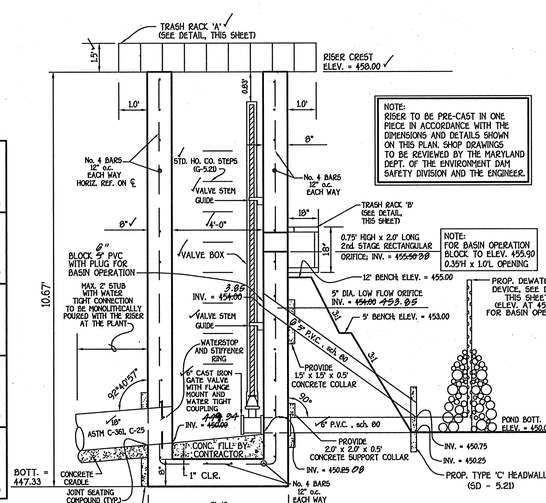
TRASH RACK 'A' DETAIL

NO SCALE



FASTENING DETAIL

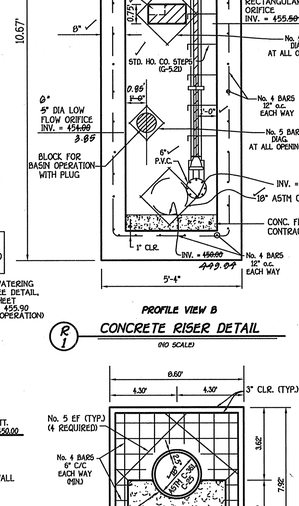
NO SCALE



PROFILE VIEW A

R-1 CONCRETE RISER DETAIL

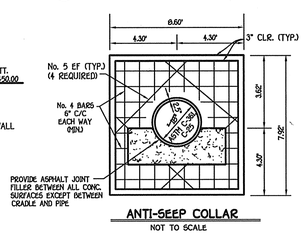
NO SCALE



PROFILE VIEW B

R-1 CONCRETE RISER DETAIL

NO SCALE



ANTI-SEEP COLLAR

NOT TO SCALE

Care of Water during Construction

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

Stabilization

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

Erosion and Sediment Control

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution shall be complied with. 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.

OPERATION AND MAINTENANCE SCHEDULE OF HOME OWNERS ASSOCIATION OWNED AND MAINTAINED STORMWATER MANAGEMENT FACILITY

HOME OWNERS ASSOCIATION'S MAINTENANCE RESPONSIBILITIES:

1. 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 and maintenance access should be mowed as needed.
2. Debris and litter next to the outlet structure shall be removed during regular mowing operations and as needed.
3. When deemed necessary for aesthetic reasons, sediment should be removed from the pond. Approval of the Department of Public Works is required.

OPERATION AND MAINTENANCE SPECIFICATIONS

I hereby certify that I will operate and maintain the completed pond in accordance with the following:

1) Periodic inspections of the facility will be made to identify potential problems that may affect its safety. These inspections will be made after periods of heavy rainfall and at least twice annually. Inspection reports shall be kept until the next subsequent inspection. Inspection items to be looked at include:

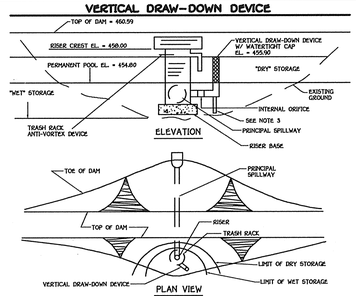
A. Spillway and outlet works
B. Rip-rap
C. Vegetative cover
D. Cracks in the fill
E. Slope failures; and
F Seepage and other signs of distress.

2) Problems identified during inspections will be promptly corrected. Major problems will be brought to the attention of the soil conservation district and the dam safety division of the Maryland Water Resources Administration. As a very minimum, grassy vegetation will be maintained in a dense and healthy state, and woody vegetation will not be permitted to grow on the embankment.

NOTES

1. Concrete shall conform to the Maryland D.O.T.S.H.A. Standard Spec's for construction and materials, 1982 Mix No. 6, except that TY. III Cement and A.S.T.M. C 33 No. 8 coarse AGG. Shall be used.

VERTICAL DRAW-DOWN DEVICE

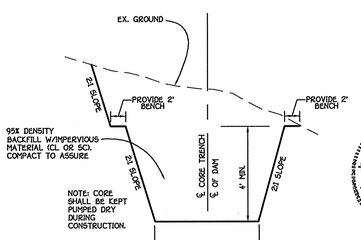


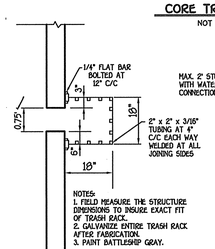
CONSTRUCTION SPECIFICATIONS

1. PERFORATIONS IN THE DRAW-DOWN DEVICE MAY NOT EXTEND INTO THE WET STORAGE.
2. THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 2 TIMES THE AREA OF THE INTERNAL ORIFICE.
3. 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 C.
4. 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 2" 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.

CORE TRENCH DETAIL

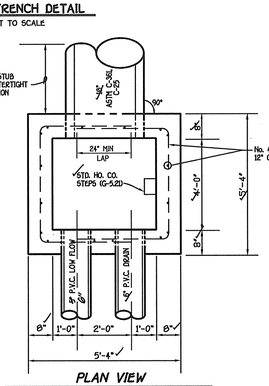
NOT TO SCALE





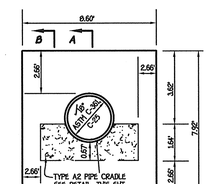
TRASH RACK 'B' DETAIL

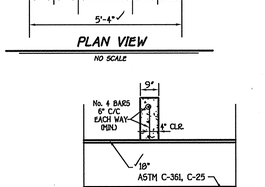
NO SCALE



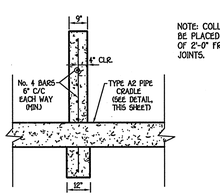
PLAN VIEW

NO SCALE





SECTION 'A-A'



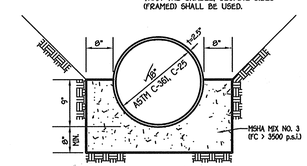
SECTION 'B-B'

NOTE: COLLARS SHALL BE PLACED A MINIMUM OF 2'-0" FROM PIPE JOINTS.

TYPICAL SECTION THROUGH BARREL, CRADLE AND ANTI-SEEP COLLAR

NO SCALE

NOTES:
1. CONCRETE SHALL BE MSHA MIX No. 3 (f'c > 3,500 P.S.I)
2. REINFORCING STEEL: GRADE 60
3. FOR WALLS OF STRUCTURE SHALL UTILIZE 1.H. SCOFIELD CO. T-9556 FORM LINERS (RANDOM SPLIT-FACE ROCK) OPTIONAL.
4. PROVIDE ROUGH BROOM FINISH.
5. ANCHOR BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 6.07.03.59 OF THE MSHA STANDARDS AND SPECS.
6. ALL REINFORCING SPLICES SHALL BE LAP SPLICES OF 30 BAR DIA. UNLESS OTHERWISE SHOWN.



A2 CRADLE

NOT TO SCALE

NOTE:
CONC. CRADLE TO BE POURED DIRECTLY AGAINST EARTH BANKS. IF BOTTOM OF TRENCH IS WIDER THAN THE CRADLE, SLOPING SIDES (FORMED) SHALL BE USED.

GEOTECHNICAL RECOMMENDATIONS FOR EMBANKMENT AND CUT-OFF TRENCH CONSTRUCTION

THE SITE SHOULD BE STRIPPED OF TOPSOIL AND ANY OTHER UNSUITABLE MATERIALS FROM THE EMBANKMENT OR STRUCTURE AREA IN ACCORDANCE WITH SOIL CONSERVATION GUIDELINES. AFTER STRIPPING OPERATIONS HAVE BEEN COMPLETED, THE EXPOSED SUBGRADE MATERIALS SHOULD BE PROOFROLLED WITH A LOADED DUMP TRUCK OR SIMILAR EQUIPMENT IN THE PRESENCE OF A GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE. FOR AREAS THAT ARE NOT ACCESSIBLE TO A DUMP TRUCK, THE EXPOSED MATERIALS SHOULD BE OBSERVED AND TESTED BY A GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE UTILIZING A DYNAMIC CONE PENETROMETER. ANY EXCESSIVELY SOFT OR LOOSE MATERIALS IDENTIFIED BY PROOFROLLING OR PENETROMETER TESTING SHOULD BE EXCAVATED TO SUITABLE FROM SOIL, AND THEN GRADED RE-ESTABLISHED BY BACKFILLING WITH SUITABLE SOIL.

A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHOULD BE PRESENT TO MONITOR PLACEMENT AND COMPACTION OF FILL FOR THE EMBANKMENT AND CUT-OFF TRENCH IN ACCORDANCE WITH MARYLAND SOIL CONSERVATION SPECIFICATION 378 SOILS CONSIDERED SUITABLE FOR THE CENTER OF EMBANKMENT AND CUT-OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH OR CL. ALL FILL MATERIALS MUST BE PLACED AND COMPACTED IN ACCORDANCE WITH MD SCS 378 SPECIFICATIONS.

DESIGN SUMMARY

DESIGN STORM	ALLOWABLE RELEASE RATE	FACILITY INFLOW	FACILITY DISCHARGE	WATER SURFACE ELEVATION	STORAGE VOLUME (AC./FT.)
2 YEAR	0.85 c.f.s.	6.75 c.f.s.	0.67 c.f.s.	455.25	0.17
10 YEAR	6.10 c.f.s.	17.81 c.f.s.	4.58 c.f.s.	456.15	0.43
100 YEAR	* 10.5 c.f.s.	31.32 c.f.s.	9.22 c.f.s.	457.15	0.77

STORAGE - HEIGHT PRODUCT = 5.5
WATERSHED AREA TO FACILITY (ACRES): 6.37
* 10.5 c.f.s. IS THE FLOW THAT THE EXISTING 18" DIA. PIPE ON 1.0% SLOPE AT EXISTING I-11 CAN RECEIVE FROM THE POND

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 Maryland Dept. of The Environment With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Maryland Dept. of the Environment."

Signature Of Developer — Date: 12-20-00

Printed Name Of Developer

By The Engineer:

"I Certify That This Plan For Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He Must Engage A Registered Professional Engineer To Supervise Construction."

Signature Of Engineer — Date: 11-18-00

ALDO M. VITUCCI

Printed Name Of Engineer

Approved: Department Of Public Works

Chief, Bureau Of Highways — Date: 12/7/00

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 12/15/00

Chief, Development Engineering Division — Date: 12/12/00

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. 21616 — Date: 3/5/04

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.

OPERATION, MAINTENANCE AND INSPECTION

Inspection of the pond(s) shown hereon shall be performed at least annually, in accordance with the checklist and requirements contained within USDA, SCS "Standards And Specifications For Ponds" (MD-378). The pond owner(s) and any heirs, successors, or assigns shall be responsible for the safety of the pond and the continued operation, surveillance, inspection, and maintenance thereof. The pond owner(s) shall promptly notify the Soil Conservation District of any unusual observations that may be indications of distress such as excessive seepage, turbid seepage, sliding or slumping.

OWNER

MR.& MRS. ROBERT REINHARDT, SR.
9524 OLD FREDERICK ROAD
ELLICOTT CITY, MD. 21043

DEVELOPER

REINHARDT PROPERTY II, LLC
10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD. 21042

STORMWATER MANAGEMENT NOTES AND DETAILS

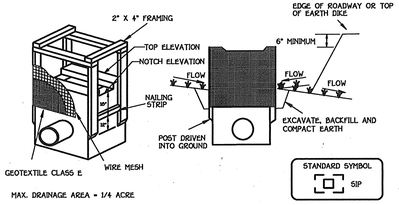
REINHARDT PROPERTY

Lots 1 thru 20

Zoned: R-20
Tax Map No. 18, Parcel No. 9, Grid No. 7
Second Election District Howard County, Maryland
Date: September 1, 2000
Sheet 10 of 11

AS-BUILT 3-5-04 F00-48

STANDARD INLET PROTECTION

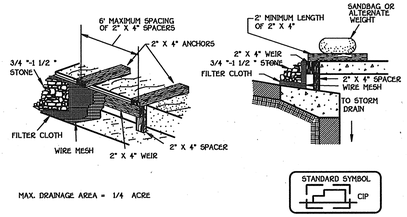


MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

1. Excavate completely around the inlet to a depth of 18" below the notch elevation.
2. Drive the 2" x 4" construction grade lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overlap joint shown on Detail 23A. The top of the frame (weir) must be 6" below adjacent roadways where flooding and safety issues may arise.
3. Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.
4. Stretch the Geotextile Class E tightly over the wire mesh with the geotextile extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.
5. Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.
6. If the inlet is not in a sump, construct a compacted earth dike across the ditch line directly below it. The top of the earth dike should be at least 6" higher than the top of the frame.
7. The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

CURB INLET PROTECTION (COG OR COS INLETS)



MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

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

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

I. This practice is limited to areas having 2:1 or flatter slopes where:
   a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
   b. 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.
   c. The original soil to be vegetated contains material toxic to plant growth.
   d. The soil is so acidic that treatment with limestone is not feasible.

II. 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

I. 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 Experimental Station.

II. Topsoil Specifications – Soil to be used as topsoil must meet the following:
   i. 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 11/2" in diameter.
   ii. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnson grass, nutsedge, poison ivy, thistle, or others as specified.
   iii. 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.

II. For sites having, disturbed areas under 5 acres:
   i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization – Section I – Vegetative Stabilization Methods and Materials.

III For sites having disturbed areas over 5 acres:
   i. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
      a. 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.
      b. Organic content of topsoil shall be not less than 1.5 percent by weight.
      c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
      d. No sod 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 phyto-toxic materials.

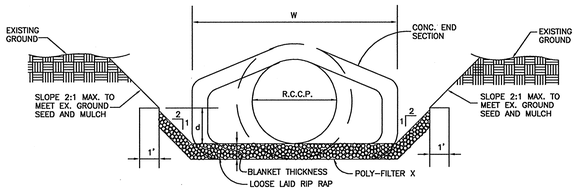
   Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

   ii. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization – Section I – Vegetative Stabilization Methods and Materials.

V. Topsoil Application
   i. When top soiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
   ii. Grades on the areas to be top soiled, which have been previously established, shall be maintained, albeit 4" – 8" higher in elevation.
   iii. 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 top soiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
   iv. 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.

VI. 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:
   i. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
      a. Composted sludge shall be supplied by, 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.
      b. 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.
      c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
   iv. 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 Soddding.. MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.



RIP RAP CHANNEL DETAIL

NO SCALE

RIP-RAP CHANNEL DESIGN DATA

STRUCTURE	AREA	WETTED PERIMETER	R	R 2/3	S	S 1/2	W	d	N	V (F.P.S.)	Q (C.F.S.)	RIP-RAP SIZE d_{50}	RIP-RAP SIZE d_{MAX}	BLANKET THICKNESS	DIA.
S-1	2.38	4.52'	0.526	0.650	0.005	0.0707	4.0'	0.48'	0.035	7.21	9.33	9.5"	15"	19"	18"

CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

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

ENGINEER'S CERTIFICATE

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

Signature Of Engineer — Date: 8-3-00

DEVELOPER'S CERTIFICATE

"I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Or Their Authorized Agents, As Are Deemed Necessary."

Signature Of Developer — Date: 11/20/00

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

U.S.D.A. – Natural Resources Conservation Service — Date: 11/28/00

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

District Howard Soil Conservation Dist. — Date: 11/28/00

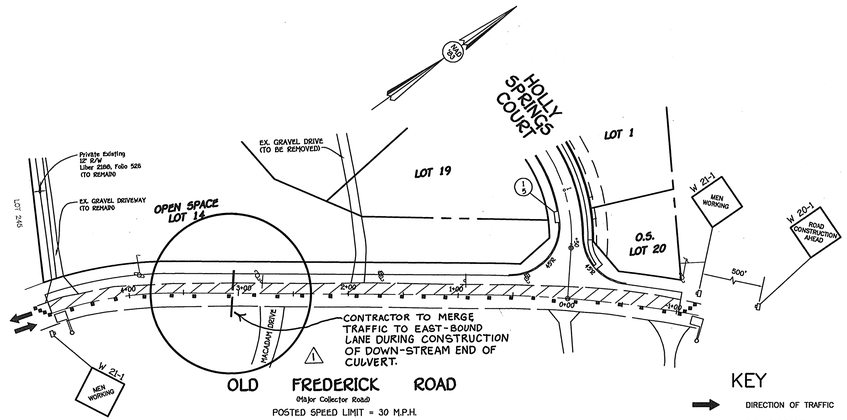
Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 12/15/00

Chief, Development Engineering Division — Date: 12/12/00

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date: 12/5/00



(STANDARD NO. MD 104.04–02)

TEMPORARY TRAFFIC CONTROL PLAN

NO SCALE

KEY
- DIRECTION OF TRAFFIC
- SIGN SUPPORT
- FACE OF SIGN
- CHANNELIZING DEVICES
- WORK SITE
- FLAGGER

SEQUENCE OF CONSTRUCTION

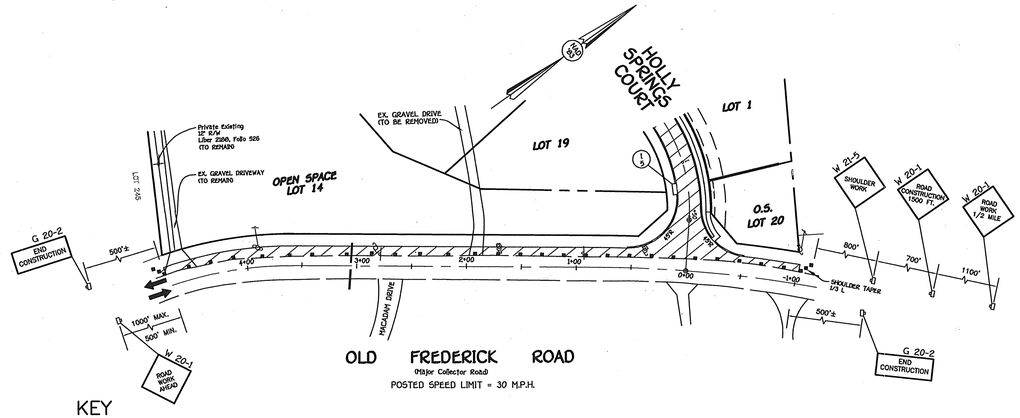
1. OBTAIN A GRADING PERMIT.
2. NOTIFY "MISS UTILITY" AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION AT 410-313-1330 24 HOURS BEFORE STRATING WORK.
3. RELOCATE POLES ALONG OLD FREDERICK ROAD. (1 week)
4. CLEAR AND GRUB FOR SEDIMENT CONTROL MEASURES. INSTALL STABILIZED CONSTRUCTION ENTRANCE. (1 week)
5. INSTALL SUPER-SILT FENCE AND SILT FENCE. (3 days)
6. OBTAIN PERMISSION OF THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEED.
7. GRADE ROADS TO PROPOSED SUBGRADE AND INSTALL STORM DRAIN SYSTEM AND S.W.M. POND. TIE POND OUTFALL TO EXISTING STORMDRAIN ON ADJACENT PROPERTY AT EXISTING I-11. STABILIZE ALL DISTURBED AREAS IMMEDIATELY UPON COMPLETION OF GRADING AS SHOWN ON THESE PLANS. (4 weeks)
8. THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON AFTER EACH RAINFALL AND ON A DAILY BASIS.
9. INSTALL BASE COURSE FOR THE PROPOSED ROAD AND WIDENING ALONG OLD FREDERICK ROAD. (1 week)
10. STABILIZE ALL DISTURBED AREAS AND OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTORS TO PROCEED.
11. APPLY TACK COAT TO SUB-BASE AND LAY SURFACE COURSE. (1 week)
12. WHEN ALL CONTRIBUTING AREAS TO THE SEDIMENT CONTROL DEVICES HAVE BEEN STABILIZED AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, THE DEVICES MAY BE REMOVED AND THE REMAINING AREAS BROUGHT TO FINAL GRADE. STABILIZE ALL REMAINING AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 weeks)
13. NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS FOR A FINAL INSPECTION OF THE COMPLETED PROJECT.

No.	DATE	REVISIONS
1	8-6-03	ADD NOTE

MAINTENANCE OF TRAFFIC SPECIAL PROVISIONS

GENERAL

1. THE PURPOSE OF THIS PORTION OF THE SPECIAL PROVISION IS TO SET FOR THE TRAFFIC CONTROL REQUIREMENTS NECESSARY FOR THE SAFE AND EFFICIENT MAINTENANCE TO TRAFFIC WITHIN WORK AREAS, AND TO MINIMIZE ANY INCONVENIENCES TO THE TRAVELING PUBLIC AND THE CONTRACTOR AND/OR PERMITTEE.
2. PROPERTY TRAFFIC CONTROL THROUGH WORK AREAS IS ESSENTIAL FOR INSURING THE SAFETY AND THAT OF HIGHWAY WORKERS HAS THE HIGHEST PRIORITY OF ALL TASKS WITHIN THIS PROJECT. THE PROPERTY APPLICATION OF THE APPROVED TRAFFIC CONTROL PLAN (TCP) WILL PROVIDE THE DESIRED LEVEL OF SAFETY.
3. THROUGHOUT THESE SPECIAL PROVISIONS, ANY MENTION OF THE TCP SHALL BE IMPLIED TO INCLUDE ANY COMBINATION OF TYPICAL TRAFFIC CONTROL STANDARDS WHICH FORM THE OVERALL TCP FOR THIS PROJECT WHICH HAS BEEN APPROVED BY THE APPROPRIATE SHA TRAFFIC ENGINEER.
4. THE CONTRACTOR AND/OR PERMITTEE SHALL BE REQUIRED TO ADHERE TO THE PROVISIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 1988 EDITION, ESPECIALLY PART VI, AND TO SECTION 104 OF THE MARYLAND DOT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS (JANUARY, 1982) INCLUDING ALL REVISIONS AND SUPPLEMENTS TO EACH.
5. THE CONTRACTOR AND/OR PERMITTEE SHALL BE REQUIRED TO ADHERE TO THE REQUIREMENTS SET FOR IN THE TCP AND THESE SPECIAL PROVISIONS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ANY REQUESTS TO MAKE MINOR CHANGES TO THE TCP OR THE SPECIAL PROVISIONS WITH REGARD TO THE TRAFFIC CONTROL ITEMS SHALL BE MADE IN WRITING TO THE ENGINEER A MINIMUM OF THREE(3) WORKING DAYS PRIOR TO THE PROPOSED SCHEDULING CHANGE. THE CONTRACTOR AND/OR PERMITTEE SHALL HAVE WRITTEN APPROVAL OF THE ENGINEER PRIOR TO THE IMPLEMENTATION OF ANY CHANGE.
6. NO WORK SHALL BEGIN ON ANY WORK ACTIVITY OR WORK PHASE UNTIL ALL REQUIRED TRAFFIC CONTROL PATTERNS AND DEVICES INDICATED ON THE TCP FOR THAT ACTIVITY OR PHASE ARE COMPLETELY AND CORRECTLY IN PLACE TO HAVE BEEN CHECKED FOR APPROVED USAGE.
7. GENERAL AND SPECIFIC WARNING SIGNS SHALL ONLY BE IN PLACE WHEN SPECIFIC WORK TASKS AND ACTIVITIES ARE ACTUALLY UNDERWAY OR CONDITIONS EXIST THAT POSE A POTENTIAL HAZARD TO THE PUBLIC, AND ANY ADDITIONAL SIGNING HAS BEEN APPROVED BY THE APPROPRIATE SHA TRAFFIC ENGINEER. NOTE: THE PRACTICE OF PLACING SIGNING AND OTHER TRAFFIC CONTROL DEVICES IN ADDITION TO THOSE INDICATED ON THE APPROVED TCP IS NOT PERMITTED.
8. THE CONTRACTOR AND/OR PERMITTEE SHALL PROVIDE, MAINTAIN IN NEW CONDITION, AND MOVE WHEN NECESSARY, OR AS DIRECTED BY THE ENGINEER, ALL TRAFFIC CONTROL DEVICES USED FOR THE GUIDANCE AND PROTECTION OF MOTORISTS, PEDESTRIANS, AND WORKERS.
9. ALL TRAFFIC CONTROL DEVICES REQUIRED BY THE TCP SHALL BE KEPT IN GOOD CONDITION, FULLY PERFORMING AS SET FORTH IN THE TCP, THE MUTCD, AND/OR SECTION 104 OF THE SPECIFICATIONS. FOR REFLECTIVE DEVICES, A PARTICULAR DEVICE IS ASSUMED TO HAVE FAILED TO MEET MINIMUM OPERATIONAL STANDARDS WHEN THE DEVICE NO LONGER HAS RETRO-REFLECTANCE CAPABILITY OF AT LEAST 60% OF THE SPECIFIED MINIMUM VALUE OVER AT LEAST 90% OF THE VISIBLE REFLECTIVE SURFACE.
10. ALL TRAFFIC CONTROL DEVICES NOT REQUIRED FOR THE SAFE CONDUCT OF TRAFFIC SHALL BE PROMPTLY REMOVED, COMPLETELY COVERED, TURNED AWAY FROM TRAFFIC, OR OTHERWISE TAKEN OUT OF SERVICE. IT IS INTENDED THAT NO TRAFFIC CONTROL DEVICE IS TO BE IN SERVICE WHEN THERE IS NO CLEAR CUT REASON FOR THE DEVICE.
11. THROUGHOUT THE PERIODS OF WORK ACTIVITIES, TRAFFIC SHALL BE MAINTAINED BY IMPLEMENTING THE APPROVED TCP. IN LIEU OF THE TCP PREPARED FOR THIS PROJECT, AND/OR INDIVIDUAL TYPICAL TRAFFIC CONTROL STANDARDS, THE CONTRACTOR AND/OR PERMITTEE HAS THE OPTION OR PREPARING AND SUBMITTING A TCP, WHOLLY OR IN PART, OF HIS OWN DESIGN, FOLLOWING GUIDELINES SET FORTH IN THE MUTCD AND PRESCRIBED BY THE ADMINISTRATION. A TCP DEVELOPED BY THE CONTRACTOR AND/OR PERMITTEE SHALL NOT BE IMPLEMENTED UNTIL ADVANCE WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER. TCP'S MAY BE IMPLEMENTED WITHIN A SINGLE PROJECT OR JOINTLY BETWEEN TWO OR MORE PROJECTS. IN SITUATIONS WHERE TCP'S JOINTLY IMPLEMENTED, CARE SHALL BE EXERCISED TO PRESENT CORRECT AND NON-CONFLICTING GUIDANCE TO THE TRAVELING PUBLIC.
12. THROUGHOUT THESE SPECIAL PROVISIONS, WHERE SPEED OF TRAFFIC IS NOTED, THIS MEANS THE POSTED SPEED OR PREVAILING TRAVEL SPEED, WHICHEVER IS HIGHER, UNLESS OTHERWISE NOTED.
13. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES THROUGHOUT THE ENTIRE LENGTH OF THE PROJECT, UNLESS OTHERWISE NOTED. NO TRAVEL LANE(S) OTHER THAN THOSE DESIGNATED FOR POSSIBLE CLOSURE IN THE TCP SHALL BE CLOSED WITHOUT OBTAINING PRIOR APPROVAL FORM THE ENGINEER. ALL INGRESS AND EGRESS TO THE WORK AREA BY THE CONTRACTOR AND/OR PERMITTEE SHALL BE PERFORMED WITH THE FLOW OF TRAFFIC.



KEY
- DIRECTION OF TRAFFIC
- SIGN SUPPORT
- FACE OF SIGN
- CHANNELIZING DEVICES
- WORK SITE

(STANDARD NO. MD 104.04–01)

TEMPORARY TRAFFIC CONTROL PLAN

NO SCALE

OWNER

MR.& MRS. ROBERT REINHARDT, SR.
8524 OLD FREDERICK ROAD
ELLICOTT CITY, MD. 21043

DEVELOPER

REINHARDT PROPERTY II, LLC
10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD. 21042

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

F.C.C.*30607/FINALS/DETAIL SHEET.DWG

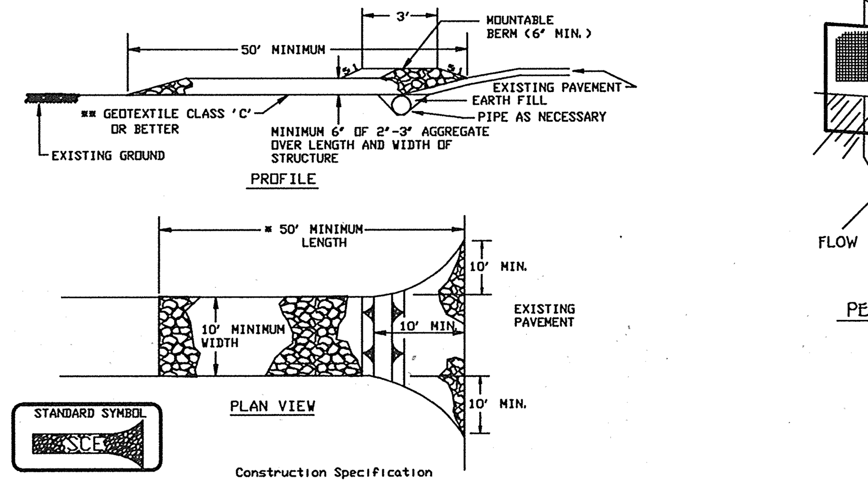
Traffic Control Plan and Detail Sheet

REINHARDT PROPERTY

Lots 1 thru 20

Zoned: R-20
Tax Map No. 18, Parcel No. 9, Grid No. 7
Second Election District Howard County, Maryland
Date: **September 1, 2000**
Sheet 9 of 11

AS-BUILT 3-5-04 **F00-48**



Construction Specification

1. Length - minimum of 50' (*30' for single residence lot).

2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.

3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.

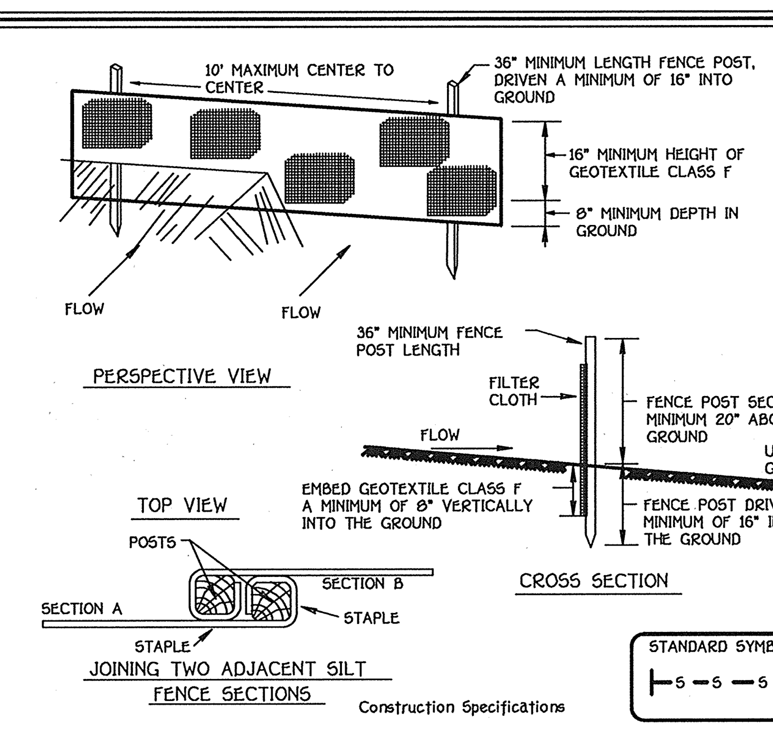
4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.

6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

STABILIZED CONSTRUCTION ENTRANCE - 2

NOT TO SCALE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear foot.

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

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft / minute (max.)^2	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

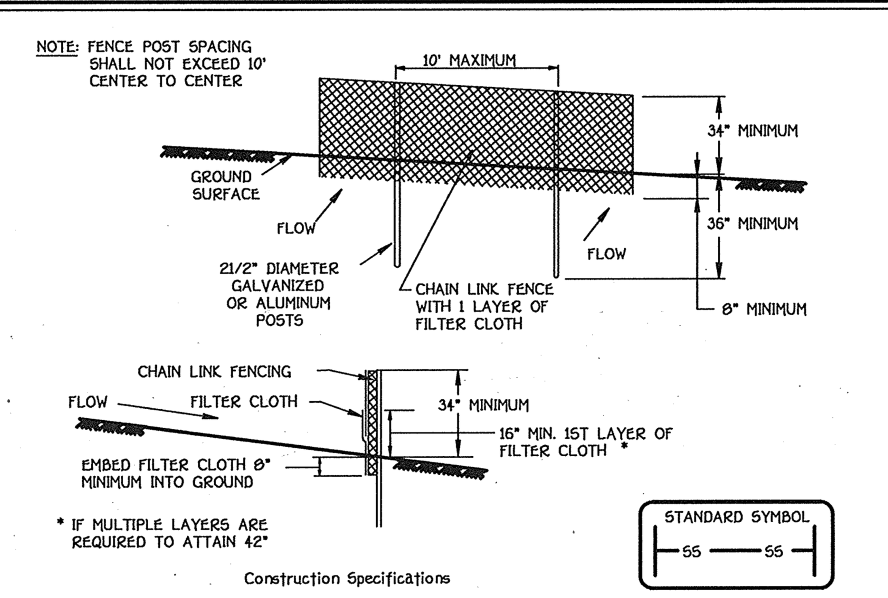
3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

DETAIL 22 - SILT FENCE

NOT TO SCALE

NOTE: FENCE POST SPACING SHALL NOT EXCEED 10' CENTER TO CENTER



Construction Specifications

1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.

2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.

3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.

4. Filter cloth shall be embedded a minimum of 8" into the ground.

5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.

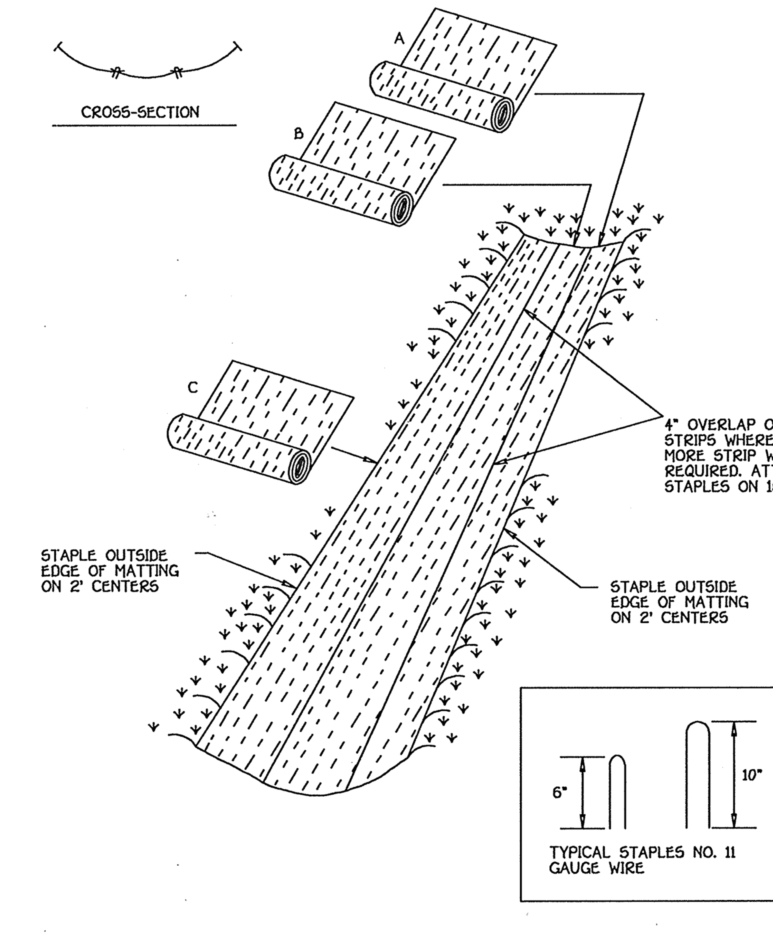
6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height

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

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft /minute^2 (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

DETAIL 33 - SUPER SILT FENCE

NOT TO SCALE



EROSION CONTROL MATTING

NOT TO SCALE

Construction Specifications

1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".

2. Staple the 4" overlap in the channel center using an 18" spacing between staples.

3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.

4. Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.

5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.

6. The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

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

DEVELOPER'S CERTIFICATE

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

11-20-00

SIGNATURE OF DEVELOPER — DATE

ENGINEER'S CERTIFICATE

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

Aldo M. Vitucci — 11-18-00

SIGNATURE OF ENGINEER — DATE

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

11/28/00

U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE — DATE

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

11/28/00

HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Cindy Hamilton — 12/15/00

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

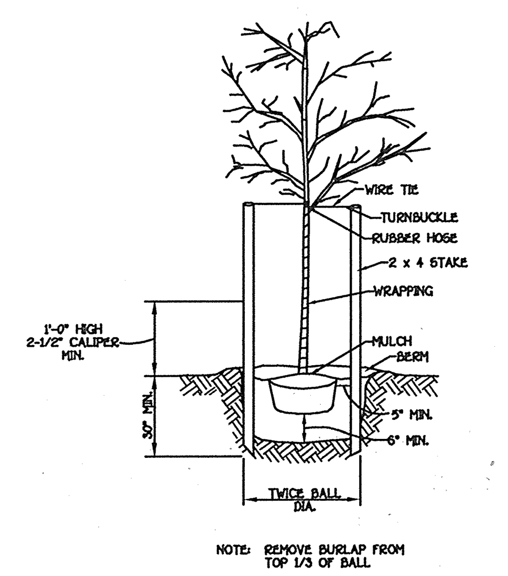
12/12/00

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

for 10/8/00

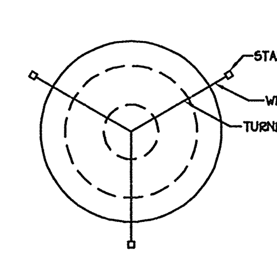
CHIEF, BUREAU OF HIGHWAYS — DATE



NOTE: REMOVE BURLAP FROM TOP 1/3 OF BALL

TREE PLANTING

NOT TO SCALE



STAKING DETAIL

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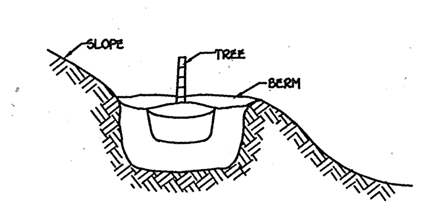


GRADING FOR PLANTING ON SLOPES

NOT TO SCALE

SEDIMENT CONTROL NOTES

1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LISCENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3) FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. GRADING NECESSARY TO INSTALL STORM DRAINS, SEDIMENT TRAP AND EARTH DIKES TO BE PERFORMED FIRST. REMAINDER OF THE GRADING TO BE PERFORMED AFTER STORM DRAINS, SEDIMENT TRAP AND EARTH DIKES ARE INSTALLED.
4) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7) SITE ANALYSIS:

TOTAL AREA OF SITE	10.31	ACRES
AREA DISTURBED	7.21	ACRES
AREA TO BE ROOFED OR PAVED	0.58	ACRES
AREA TO BE VEGETATIVELY STABILIZED	6.63	ACRES
TOTAL CUT	3,750	CU.YDS.
TOTAL FILL	3,750	CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION	N/A	CU.YDS.

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

20.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION

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

PURPOSE

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

CONDITIONS WHERE PRACTICE APPLIES

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

EFFECTS ON WATER QUALITY AND QUANTITY

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

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. Site Preparation
   i. Install erosion and sediment control structures (either temporary of permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
   ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
   iii. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.
B. Soil Amendments (Fertilizer and Lime Specifications)
   i. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
   ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the producer.
   iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98-100% will pass through a #20 mesh sieve.
   iv. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
C. Seedbed Preparation
   i. Temporary Seeding
      a. Seedbed preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
      b. Apply fertilizer and lime as prescribed on the plans.
      c. In corporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
   ii. Permanent Seeding
      a. Minimum soil conditions required for permanent vegetative establishment:
         1. Soil pH shall be between 6.0 and 7.0.
         2. Soluble salts shall be less than 500 parts per million (ppm).
         3. The soil shall contain less than 40% clay, but enough fine grained material (>30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or serecia lespedezas is to be planted, then a sandy soil (<30% silt plus clay) would be acceptable.
         4. Soil shall contain 1.5% minimum organic matter by weight.
         5. Soil must contain sufficient pore space to permit adequate root penetration.
         6. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
      b. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
      c. Apply soil amendments as per soil test or as included on the plans.
      d. Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seedbed loosening may not be necessary on newly disturbed areas.
D. Seed Specifications
   i. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.
   Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.
   ii. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective.
E. Methods of Seeding
   i. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cultipacker seeder.
      a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen; maximum of 100 lbs. per acre total of soluble nitrogen; P205 (phosphorous): 200 lbs/ac; K20 (potassium): 200 lbs/ac.
      b. Lime - use only ground agricultural limestone, (Up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
      c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
   ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
      a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 265 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
      b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
   iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
      a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
      b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
F. Mulch Specifications (In order of preference)
   i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
   ii. Wood Cellulose Fiber Mulch (WCFM)
      a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
      b. WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
      c. WCFM, including dye, shall contain no germination or growth inhibiting factors.
      d. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
      e. WCFM material shall contain no elements or compounds at concentration levels that will be phytol-toxic.
      f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.
   Note: Only sterile straw mulch should be used in areas where one species of grass is desired.
G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.
   i. If grading is completed outside of the seeding season, mulch along shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
   ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
   iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
H. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:
   i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.
   ii. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
   iii. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and crest of banks. The remainder of area should be appear uniform after binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-70 Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
   iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.
I. Incremental Stabilization - Cut Slopes
   i. All cuts slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.
   ii. Construction sequence (Refer to Figure 3 below):
      a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation.
      b. Perform Phase 1 excavation, dress, and stabilize.
      c. Perform Phase 2 excavation, dress and stabilize. Overseed Phase 1 areas as necessary.
      d. Perform final phase excavation, dress and stabilize. Overseed previously seeded areas as necessary.
Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions int he operation of completing the operation out of the seeding season will necessitate the application of temporary stabilization.
J. Incremental Stabilization of Embankments - Fill Slopes
   i. Embankments shall be constructed in lifts as prescribed on the plans.
   ii. Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches 15", or when the grading operation ceases as prescribed in the plans.
   iii. At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to a sediment trapping device.
   iv. Construction sequence: Refer to Figure 4 (below).
      a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct slope silt fence on low side of fill as shown in Figure 5, unless other methods shown on the plans address this area.
      b. Place Phase 1 embankment, dress and stabilize.
      c. Place Phase 2 embankment, dress and stabilize.
      d. Place final phase embankment, dress and stabilize. Overseed previously seeded areas as necessary.
Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of and placement of topsoil (if required) grading and permanent seed and mulch. any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

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

i. Select one or more of the species or mixtures listed in Table 26 for the appropriate Plant Hardiness 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.

ii. 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 (Hardiness Zone __6b__) From Table 26					Fertilizer Rate (10-10-10)	Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
1	BARLEY OATS RYE	122 96 140	3/1 - 5/15, 8/15 - 10/15	1" - 2" 1" - 2" 1" - 2"	600 lb/ac (15 lb/1000sf)	2 tons/ac (100 lb/1000sf)

SECTION 3 - PERMANENT SEEDING

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

A. Seed mixtures - Permanent Seeding

i. Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardiness 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 26. 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 aesthetic treatment may be found in USDA-SCS Techinical Field Office Guide, Section 342 - Critical Area Planting. For special lawn maintenance areas, see Sections IV Sod and V Turfgrass.

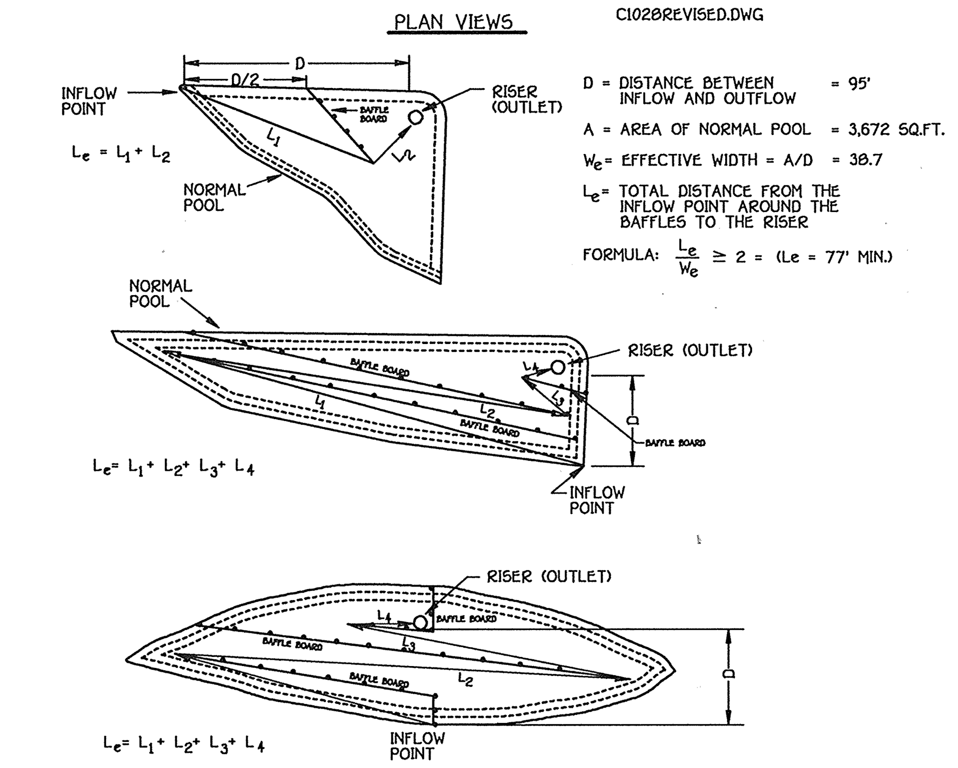
ii. For sites having disturbed area over 5 areas, the rates shown on this table shall be deleted and the rates recommended by the soil testing agency shall be written in.

iii. For areas receiving low maintenance, apply ureaform fertilizer (46-0-0) at 3 1/2 lbs/1000 sq. ft. (150 lbs/ac), in addition to the above soil amendments shown in the table below, to be performed at the time of seeding.

Seed Mixture (Hardiness Zone __6b__) From Table 25					Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P205	K20	
3	TALL FESCUE (85%) PERENNIAL RYE GRASS (10%) KENTUCKY BLUEGRASS (5%)	125 15 10	3/1 - 5/15, 8/15 - 10/15	1" - 2"	90 lb/ac (2.0 lb/ 1000sf)	175 lb/ac (4 lb/ 1000sf)	175 lb/ac (4 lb/ 1000sf)	2 tons/ac (100 lb/ 1000sf)
10	TALL FESCUE (80%) HARD FESCUE (20%)	120 30	3/1 - 5/15, 8/15 - 10/15	1" - 2"				

SEDIMENT BASIN BAFFLES

PLAN VIEWS — C1028REVISED.DWG



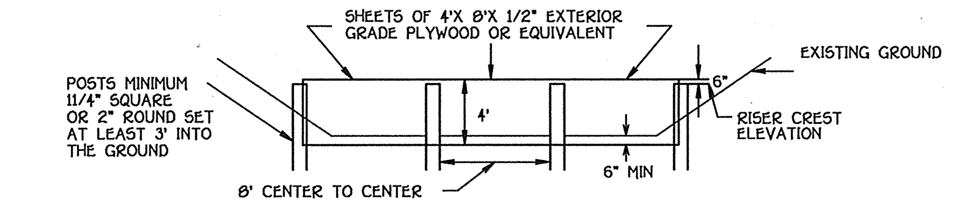
D = DISTANCE BETWEEN INFLOW AND OUTFLOW = 95'

A = AREA OF NORMAL POOL = 3,672 SQ.FT.

W_e = EFFECTIVE WIDTH = A/D = 38.7

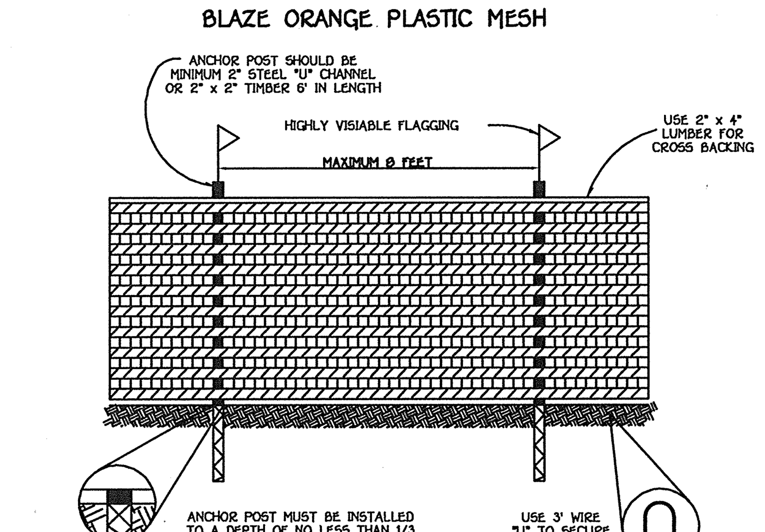
L_e = TOTAL DISTANCE FROM THE INFLOW POINT AROUND THE BAFFLES TO THE RISER

FORMULA: $\frac{L_e}{W_e} \geq 2$ = (Le = 77' MIN.)



BAFFLE DETAIL

BLAZE ORANGE PLASTIC MESH



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

TREE PROTECTION DETAIL

NOT TO SCALE

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

F.C.C.# 306075EDIMENT CONTROL DETAILS.DWG

OWNER

MR.& MRS. ROBERT REINHARDT, SR.
8524 OLD FREDERICK ROAD
ELLICOTT CITY, MD. 21043

DEVELOPER

REINHARDT PROPERTY II, LLC
10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD. 21042

Sediment Control Notes and Details

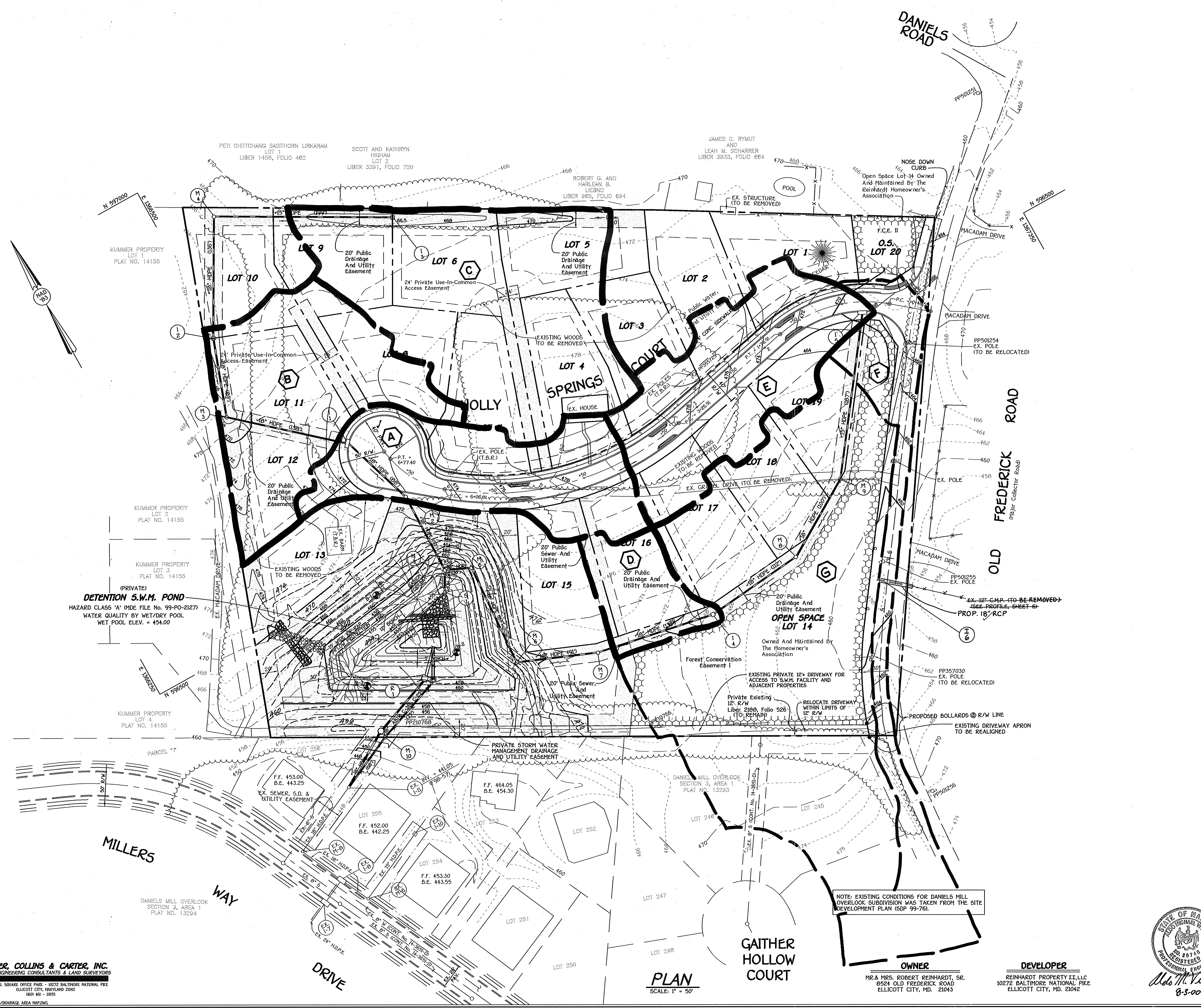
REINHARDT PROPERTY

Lots 1 thru 20

Zoned: R-20
Tax Map No. 18, Parcel No. 9, Grid No. 7
Second Election District Howard County, Maryland
Date: September 1, 2000
Sheet 8 of 11

AS-BUILT 3-5-04 F00-48

Approved: Department Of Public Works	
Chief Bureau Of Highways [signature] for	Date 12/8/00
Approved: Department Of Planning And Zoning	
Chief, Division Of Land Development [signature]	Date 12/15/00
Chief, Development Engineering Division [signature]	Date 12/02/00



DRAINAGE AREA DATA					
STRUCTURE NO.	DRAINAGE AREA	AREA	'C'	ZONED	% IMP.
I-1	A	0.83 AC.	0.56	R-20	53%
I-2	B	0.96 AC.	0.32	R-20	67%
I-3	C	1.53 AC.	0.29	R-20	13%
I-4	D	0.29 AC.	0.25	R-20	6%
I-5	E	0.92 AC.	0.49	R-20	42%
I-6	F	0.58 AC.	0.69	R-20	76%

1	8-6-03	

AS BUILT 5/3/04

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

F.C.C.#30607/FINALS/DRAINAGE AREA MAP.DWG

OWNER
MR.& MRS. ROBERT REINHARDT, SR.
8524 OLD FREDERICK ROAD
ELLICOTT CITY, MD. 21043

DEVELOPER
REINHARDT PROPERTY II, LLC
10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD. 21042

STATE OF MARYLAND ALDO MICHAEL VITUCCI NO. 20740 REGISTERED PROFESSIONAL ENGINEER
Aldo M. Vitucci 8-3-00

Storm Drain Drainage Area Map
REINHARDT PROPERTY
Lots 1 thru 20
Zoned: R-20
Tax Map No. 18, Parcel No. 9, Grid No. 7
Second Election District Howard County, Maryland
Date: September 1, 2000
Sheet 7 of 11

AS-BUILT 3-5-04 F00-48

STRUCTURE SCHEDULE

STRUCTURE NO.	TOP ELEVATION	INV.IN	INV.OUT	ROAD NAME	ROAD STA.	OFFSET	TYPE	REMARKS
I-1	471.42 07	456.73 37	456.48 29	HOLLY SPRINGS CT.	L.P. STA. 1+43.71	2.00	A-10 ✓	S.D. 4.41 (WIDTH = 4')
I-2	** 463.50 02	459.50 02	459.25 05	----------	N 596,817.32 E. 997.78 E 1,366,415.66 7.35 48	----	OPEN END GRATE ✓	S.D. 4.36
I-3	** 466.50 30	-----	463.00 2.91	----------	N 596,837.50 E 1,171.71 E 1,366,734.62 2.59 78	----	OPEN END GRATE ✓	S.D. 4.36
I-4	** 466.50 03	460.16 53 03	459.91 68	----------	N 596,377.19 E 919 E 1,366,030.49 28 34 72	----	OPEN END GRATE ✓	S.D. 4.36
I-5	469.20 15	------	465.00 4.55	HOLLY SPRINGS CT.	C.L. STA. 0+70.00	8 10.43'-C	A-10 ✓	S.D. 4.41 (WIDTH = 4')
I-6	458.40 9	50' 30" 31	454.80 6.28	OLD FREDERICK RD	C.L. STA. 3+05.50	15-R 14.5'-R	A-10 ✓	S.D. 4.02
M-1	458.00 7	453.58 453.50	453.28 19	----------	N 596,650.06 712.38 E 1,366,536.66 3.8325	----	STD. MANHOLE ✓	G - 5.12
M-2	472.90 7	455.60 17	455.35 12	HOLLY SPRINGS CT.	L.P. STA. 0+41.30	5.9 A.O.L.	STD. MANHOLE ✓	G - 5.12 & G - 5.15
M-3	467.50 33	458.36 11	458.11 06	----------	N 596,733.84 - 8.0 93 E 1,366,465.66 3.7 154	----	STD. MANHOLE ✓	G - 5.12
M-4	466.50 49	461.11 83	460.86 79	----------	N 596,535.48 9.1754 E 1,366,362.50 8.5 8005	----	STD. MANHOLE ✓	G - 5.12
M-5	461.00 27	455.25 7.76	455.00 4.65	----------	N 596,153.00 - 9.1210 E 1,366,021.12 - 8.1 28	----	STD. MANHOLE ✓	G - 5.12
M-6	466.00 5.79	457.97 24	457.72 21	----------	N 596,337.26 6.7225 E 1,365,613.94 2.5 8 25	----	STD. MANHOLE ✓	G - 5.12
M-7	473.50 62	458.90 32	458.65 22	----------	N 596,302.94 5.9372 E 1,365,098.98 7.3 1.92	----	STD. MANHOLE ✓	G - 5.12 & G - 5.15
M-8	465.00 4.61	461.25 11	461.00 7	----------	N 596,208.88 7.7072 E 1,366,985.85 0.1 1.85	----	STD. MANHOLE ✓	G - 5.12
M-9	466.00 5.49	462.25 9	462.00 8	----------	N 596,340.43 3.8 10 5.42 E 1,367,057.85 - 7.1 2.12	----	STD. MANHOLE ✓	G - 5.12
M-10	456.91	445.09	443.75		N 595,395.098 E 1,366,493.807		STD MANHOLE ✓	G - 5.12
S-1	454.50 0%	453.02 2.96	453.02 2.96	----------	N 596,444.39 2.9 198 E 1,366,506.90 0.1 269	----	HDPE END SECTION ✓	*** A.D.S. FLARED END SECTION
		3.85 08						
R-1	458.00 ✓	454.00 450.25	450.00 79 34	----------	N 596,376.91 2.0 152 E 1,366,516.65 5.76 42	----	CONC. RISER ✓	

* DENOTES CENTERLINE OF ROAD TO FACE OF INLET

** DENOTES TOP OF GRATE

*** - A.D.S. - ADVANCED DRAINAGE SYSTEMS
LONDON, OHIO
1-800-733-9554

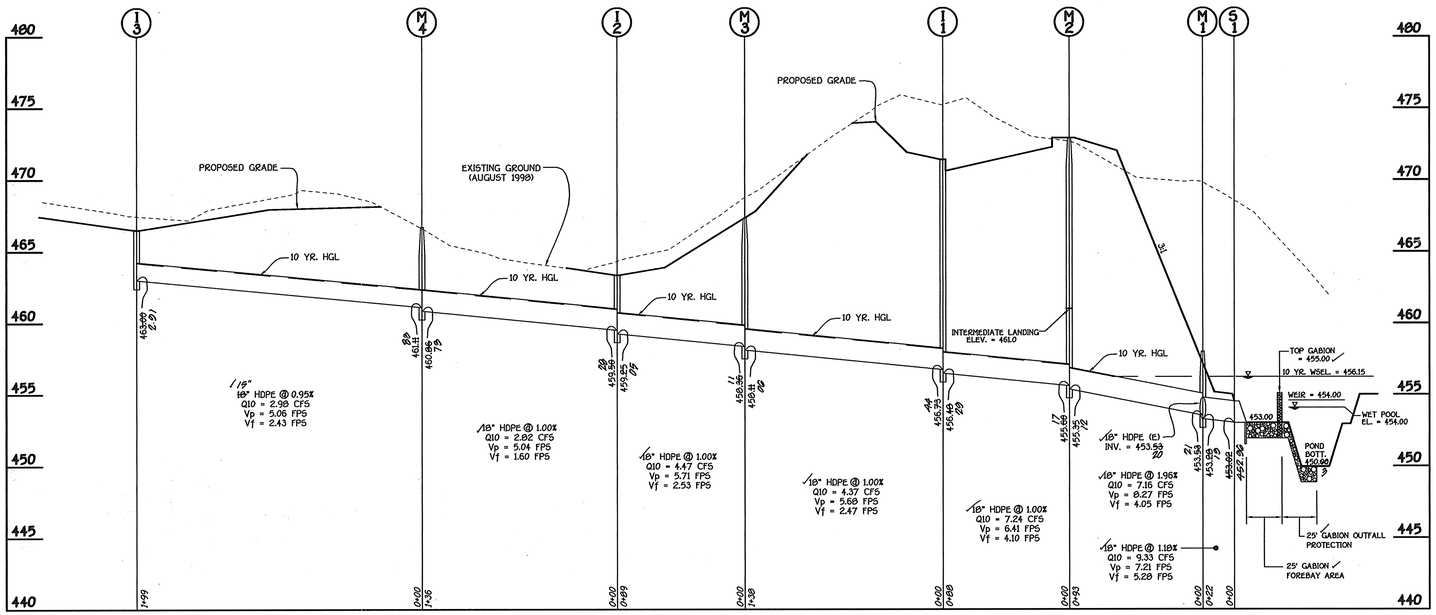
PIPE SCHEDULE

SIZE	MATERIAL	LENGTH
15"	HDPE	386'
18"	HDPE	1219'
18"	ASTM C-361, C-25	75'
18"	RCP CL. 4	36'3.50'

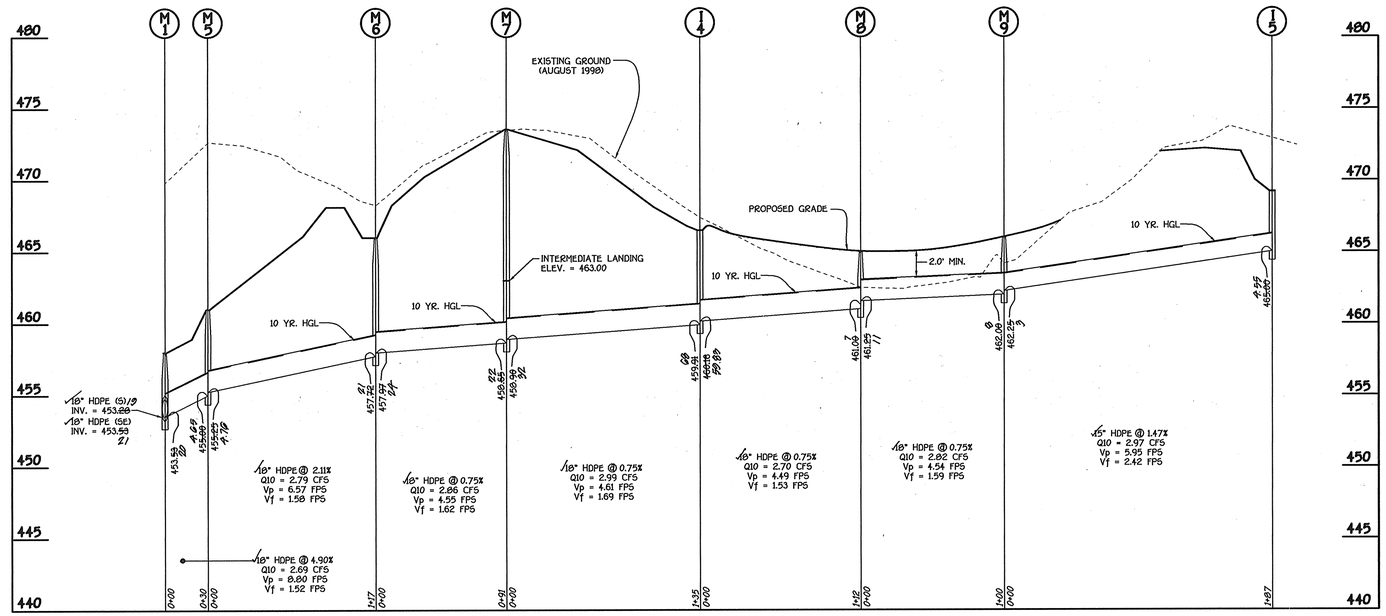
NOTE: FOR STORM DRAIN RUN R-1 TO EX. I-11, SEE SHEET 10.

Approved: Department Of Public Works
Chief, Bureau Of Highways — Date 12/8/00

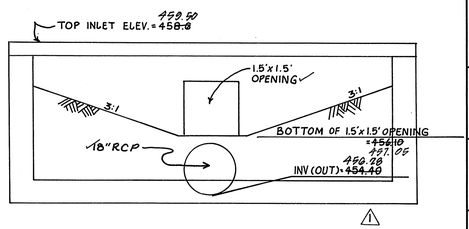
Approved: Department Of Planning And Zoning
Chief, Division Of Land Development — Date 12/5/00
Chief, Development Engineering Division — Date 12/12/00



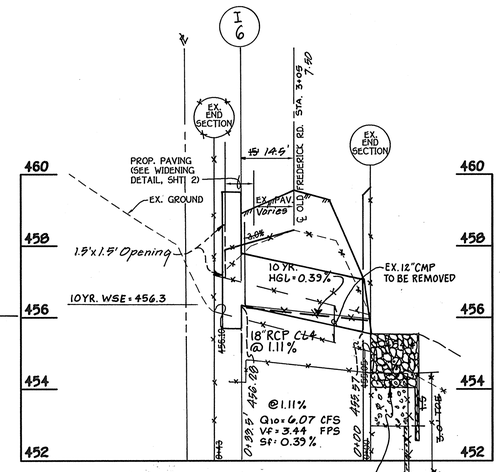
PROFILE
SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 5'



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



DETAIL
INLET I-6
SCALE: 1" = 2' Not to Scale



PROFILE
SCALE: HORIZ. : 1" = 20'
VERT. : 1" = 2'

No.	DATE	DESCRIPTION
1	8-6-03	ADD DETAIL INLET I-6 REVISE PROFILE
		REVISIONS

STATE OF MARYLAND — RICHARD MICHAEL VITUCCI — NO. 19201 — REGISTERED PROFESSIONAL ENGINEER — AS BUILT 3/5/04

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — NO. 20740 — REGISTERED PROFESSIONAL ENGINEER
Aldo M. Vitucci 8-3-00

OWNER
MR.& MRS. ROBERT REINHARDT, SR.
8524 OLD FREDERICK ROAD
ELLICOTT CITY, MD. 21043

DEVELOPER
REINHARDT PROPERTY II, LLC
10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD. 21042

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

F.C.C.-30607 STORMDRAIN PROFILES.DWG

Stormdrain Profiles
REINHARDT PROPERTY
Lots 1 thru 20

Zoned: R-20
Tax Map No. 18 Parcel No. 9 Grid No. 7
Second Election District Howard County, Maryland
Date: September 1, 2000
Sheet 6 of 11

AS-BUILT 3-5-04

F 00 - 48

LANDSCAPE SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
59	◎	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	2 1/2"-3" MIN.
39	⟨X⟩	PINUS STROBUS	WHITE PINE	6'-8' HT.

NOTE: THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 98 LANDSCAPING TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $ 23,550.00.

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF TYPE 'B' PERIMETER	D1: 231 L.F.	D2: 100 L.F.	D3: 302 L.F.	D4: 250 L.F.	D5: 138 L.F.
NUMBER OF TREES REQUIRED: SHADE TREES EVERGREEN TREES	5 6	2 3	6 8	5 6	3 3
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	NO	NO	NO	NO	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO	NO	NO	NO	NO
NUMBER OF TREES PROVIDED: SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION)	5 6 -----	2 3 -----	6 8 -----	5 6 -----	3 3 -----

SCHEDULE A PERIMETER LANDSCAPE EDGE

PERIMETER	CATEGORY (PROPERTIES/ ROADWAYS)	LANDSCAPE TYPE	LINEAR FEET OF 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 PERIMETER	A	830 L.F.	NO	NO	14	-	-
P-2	ADJACENT TO PERIMETER	A	495 L.F.	NO	NO	8	-	-
P-3	ADJACENT TO PERIMETER	A	364 L.F.	YES (100')	NO	5	-	-
P-4	ADJACENT TO ROADWAY	B	435 L.F.	NO	NO	9	11	-
P-5	ADJACENT TO ROADWAY	B	60 L.F.	NO	NO	2	2	-

Approved: Department Of Public Works

[signature] for — 12/8/00

Chief Bureau Of Highways — Date

Approved: Department Of Planning And Zoning

[signature] — 12/13/00

Chief, Division Of Land Development — Date

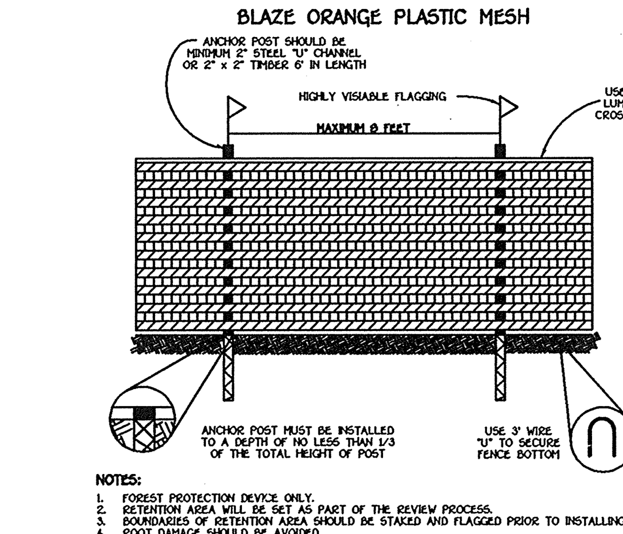
[signature] — 12/12/00

Chief, Development Engineering Division — Date

No.	DATE	DESCRIPTION
⚠	8-6-03	EXISTING CURB ON OLD FREDERICK ROAD. ADD PROPOSE 18" PIPE.

REVISIONS

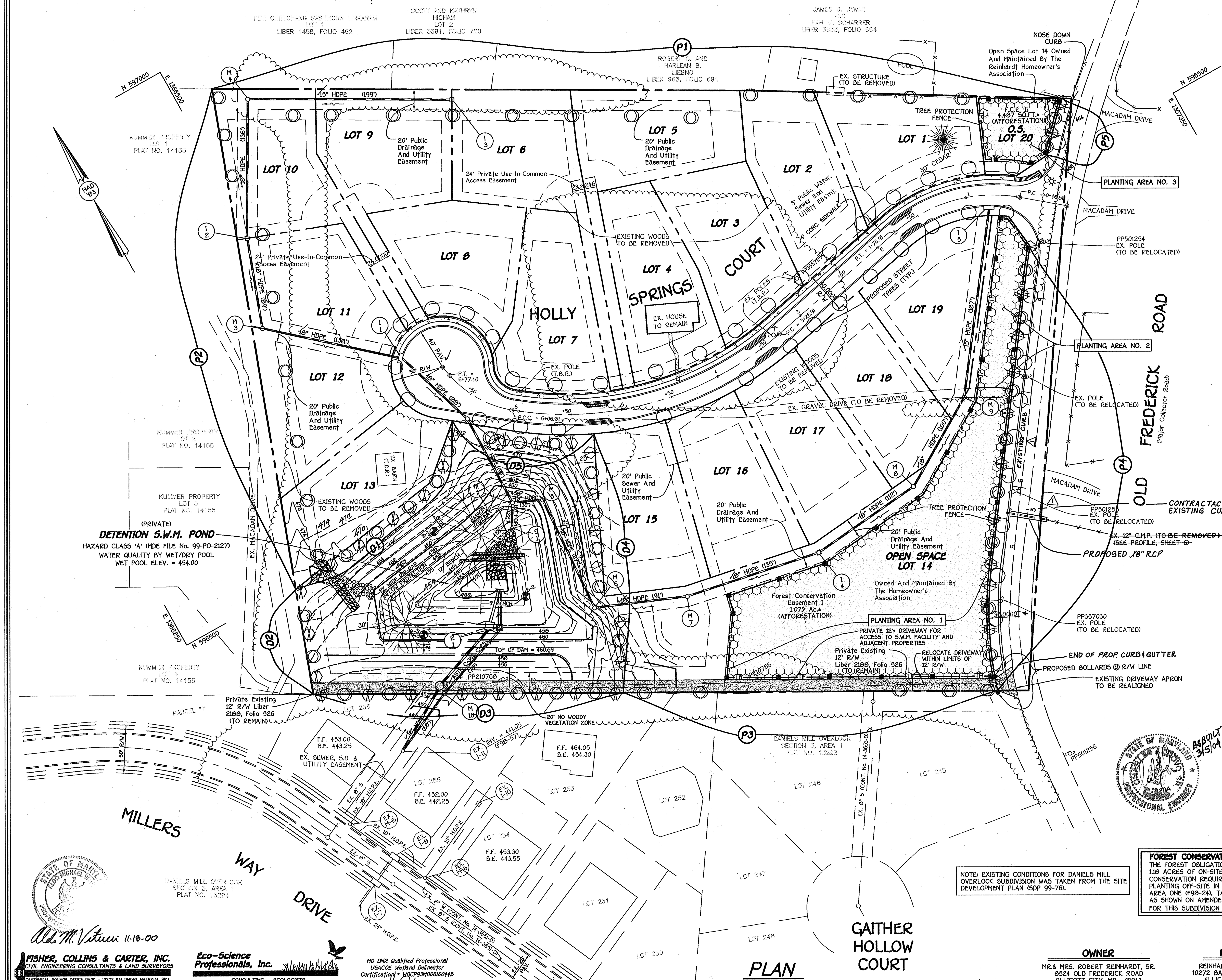
TOTAL NUMBER OF STREET TREES SHOWN FOR THIS SUBDIVISION = 45 TREES, SEE SHEET 4 FOR SURETY AMOUNT.



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

TREE PROTECTION DETAIL

NOT TO SCALE



PLAN

SCALE: 1" = 50'

PROPOSED SIGNAGE

FOREST CONSERVATION AREA

REFORESTATION PROJECT

TREES FOR YOUR FUTURE

FORESTRY DESIGN BY:
Eco-Science Professionals, Inc.
P.O. Box 5006
Glen Arm, Maryland 21057
(410) 592-6752

15" MINIMUM — 11" MINIMUM

■ DENOTES SIGN LOCATION

FOREST CONSERVATION WORKSHEET

NET TRACT AREA:

A. TOTAL TRACT AREA: =	10.3
B. AREA WITHIN 100 YEAR FLOODPLAIN: =	0.00
C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION: =	0.00
D. NET TRACT AREA: =	10.30

LAND USE CATEGORY: (from table 8.2.1, page 40, manual)

INPUT THE NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY.

ARA	MDR	IDA	HDR	MPD	CIA
0	0	0	1	0	0

E. AFFORESTATION THRESHOLD: =	15% x D = 1.55		
F. CONSERVATION THRESHOLD: =	20% x D = 2.06		
EXISTING FOREST COVER:			
G. EXISTING FOREST COVER (excluding floodplain): =	1.40		
H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD: =	0.00		
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD: =	0.00		
BREAK EVEN POINT:			
J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION: =	0.00		
K. CLEARING PERMITTED WITHOUT MITIGATION: =	0.00		
PROPOSED FOREST CLEARING:			
L. TOTAL AREA OF FOREST TO BE CLEARED: =	1.40 (cannot exceed existing forest cover)		
M. TOTAL AREA OF FOREST TO BE RETAINED: =	0.00		
PLANTING REQUIREMENTS:			
N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD: =	0.00		
P. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD: =	2.80	1.00	1.00
Q. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD: =	0.00		
R. TOTAL REFORESTATION REQUIRED: =	2.80	1.00	1.00
S. TOTAL AFFORESTATION REQUIRED: =	0.15		
T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED: =	2.95		

PLANTING SCHEDULE

PLANTING AREA NO. 1 (0.95 AC.)

QTY.	SPECIES	SIZE	SPACING
54	ACER RUBRUM - RED MAPLE	2½" - 3" CAL.	**
35	CORNUS FLORIDA - FLOWERING DOGWOOD	8' - 10' HT.	**
55	FRAXINUS AMERICANA - WHITE ASH	2½" - 3" CAL.	**
60	LIRIODENDRON TULIPIFERA - POPLAR	2½" - 3" CAL.	**
54	QUERCUS ALBA - WHITE OAK	2½" - 3" CAL.	**
25	ROBINIA PSEUDO - ACACIA	2½" - 3" CAL.	**
30	VIBURNUM PRUNIFOLIUM - BLACKHAW	30" - 36" B.T.	**

PLANTING AREA NO. 2 (0.125 AC.)

QTY.	SPECIES	SIZE	SPACING
7	ACER RUBRUM - RED MAPLE	2½" - 3" CAL.	**
6	QUERCUS ALBA - WHITE OAK	2½" - 3" CAL.	**
21	CORNUS AMOMUM - SILKY DOGWOOD	30" - 36" B.T.	SHRUB MASS IN GROUPS OF 3 PLANTS RANDOMLY LOCATED IN PLANTING AREA

PLANTING AREA NO. 3 (0.1 AC.)

QTY.	SPECIES	SIZE	SPACING
5	ACER RUBRUM - RED MAPLE	2½" - 3" CAL.	**
5	QUERCUS ALBA - WHITE OAK	2½" - 3" CAL.	**
21	CORNUS AMOMUM - SILKY DOGWOOD	30" - 36" B.T.	SHRUB MASS IN GROUPS OF 3 PLANTS RANDOMLY LOCATED IN PLANTING AREA

KEY:
CONT. - CONTAINER GROWN B.T. - BRANCHED TRANSPLANT

** - TREES AND SHRUBS SHALL BE PLANTED, ON AVERAGE, AT A SPACING OF 20 FEET ON CENTER, NOT IN A GRID PATTERN

NOTE:
TURF GRASS IS NOT PERMITTED TO REMAIN IN PLANTING AREAS 2 AND 3. MULCH OR APPROPRIATE GROUNDCOVER SHALL BE USED IN THESE AREAS/ PLANTING AREA 1 SHALL BE ALLOWED TO DEVELOP A NATURAL HERBACEOUS COMMUNITY.

NOTE: SEE SHEET 8 FOR TREE PLANTING DETAIL.

NOTE: EXISTING CONDITIONS FOR DANIELS MILL OVERLOOK SUBDIVISION WAS TAKEN FROM THE SITE DEVELOPMENT PLAN (SDP 99-76).

FOREST CONSERVATION SURETY NOTE:
THE FOREST OBLIGATION OF 2.95 ACRES WILL BE MET BY PROVIDING 1.18 ACRES OF ON-SITE AFFORESTATION. THE REMAINING FOREST CONSERVATION REQUIREMENTS OF 1.77 ACRES WILL BE PROVIDED BY PLANTING OFF-SITE IN THE GAITHER HUNT SUBDIVISION, SECTION ONE, AREA ONE (F98-24), TAX MAP NO. 29, PARCEL NO. 21, GRID NO. 11, AS SHOWN ON AMENDED PLAT ... THE FINANCIAL SURETY AMOUNT FOR THIS SUBDIVISION IS $38,550.60.

NOTE: SEE SHEET 11 FOR THE REQUIRED OFF-SITE FOREST CONSERVATION PLANTING PLAN.

STATE OF MARYLAND — CHARLES T. CROVO, JR. — 19204 — PROFESSIONAL ENGINEER

ASBUILT 3/5/04

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — PROFESSIONAL LAND SURVEYOR

[signature] 11-18-00

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

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

MD DNR Qualified Professional
USACOE Wetland Delineator
Certification # WDCP93MD0610044B
[signature]
JOHN P. CANOLES

F.C.C.#30607 LANDSCAPE PLAN

OWNER
MR.& MRS. ROBERT REINHARDT, SR.
8524 OLD FREDERICK ROAD
ELLICOTT CITY, MD. 21043

DEVELOPER
REINHARDT PROPERTY II, LLC
10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD. 21042

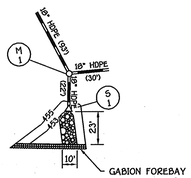
Landscape and Forest Conservation Plan

REINHARDT PROPERTY

Lots 1 thru 20

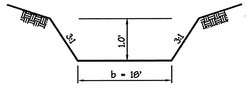
Zoned: R-20
Tax Map No. 18, Parcel No. 9, Grid No. 7
Second Election District Howard County, Maryland
Date: SEPTEMBER 1, 2000
Sheet 5 of 11

AS-BUILT 3-5-04 F00-48



OUTFALL DETAIL

SCALE: 1" = 50'



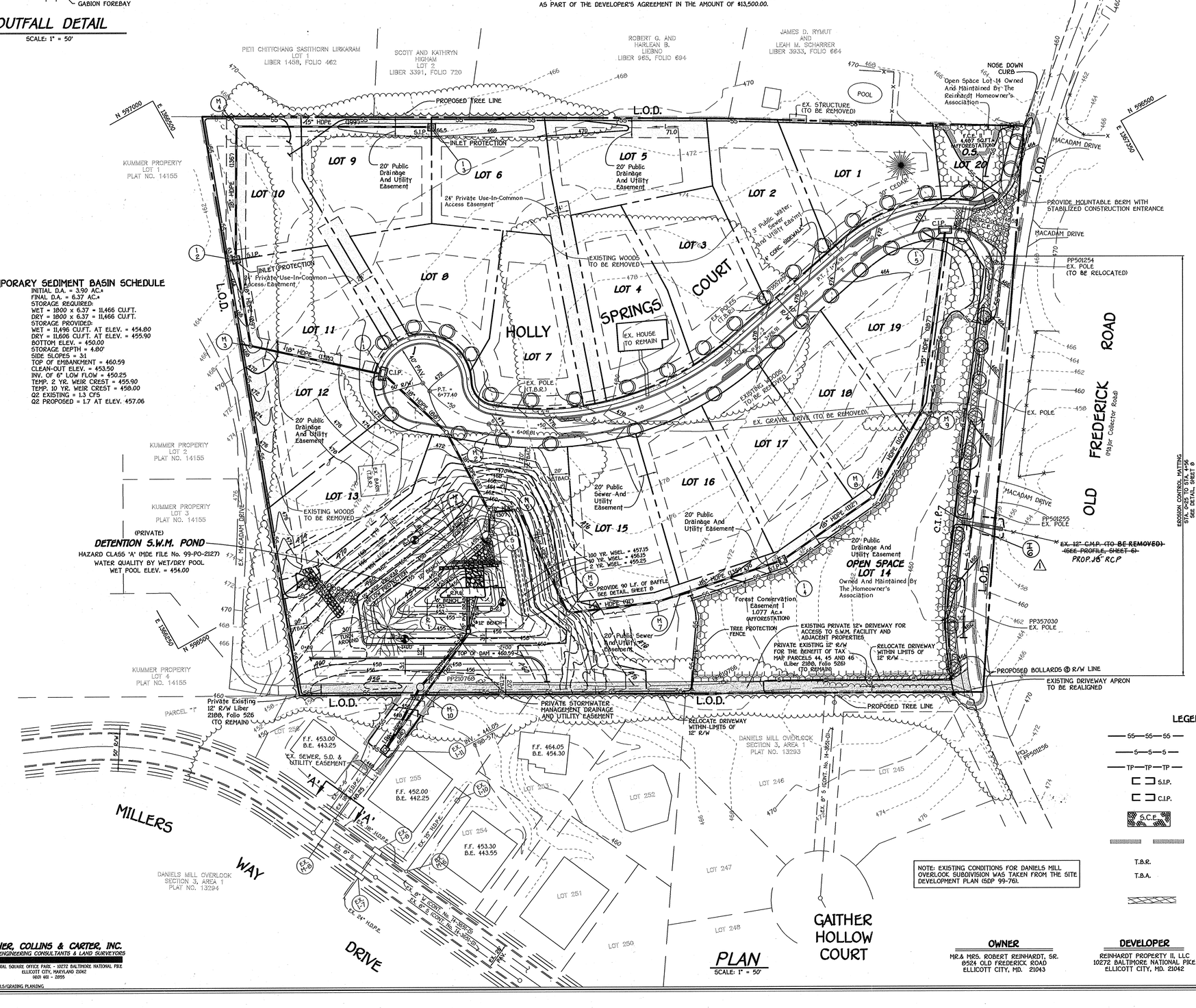
BREACH CHANNEL SECTION 'A-A'

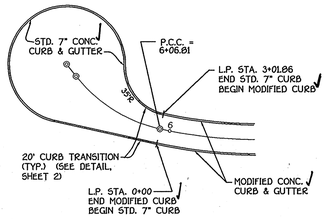
NO SCALE

STREET TREE SCHEDULE

SYMBOL	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
◯	PLATANUS OCCIDENTALIS 'BLOODGOOD' LONDON PLANETREE	2½" - 3" CAL.	40' APART ON PUBLIC R/W

NOTE: STREET TREE TYPE IS ONLY A RECOMMENDATION AND MAY BE REVISED TO AN ACCEPTABLE COUNTY EQUIVALENT FROM THE HOWARD COUNTY LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 45 STREET TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $13,500.00.

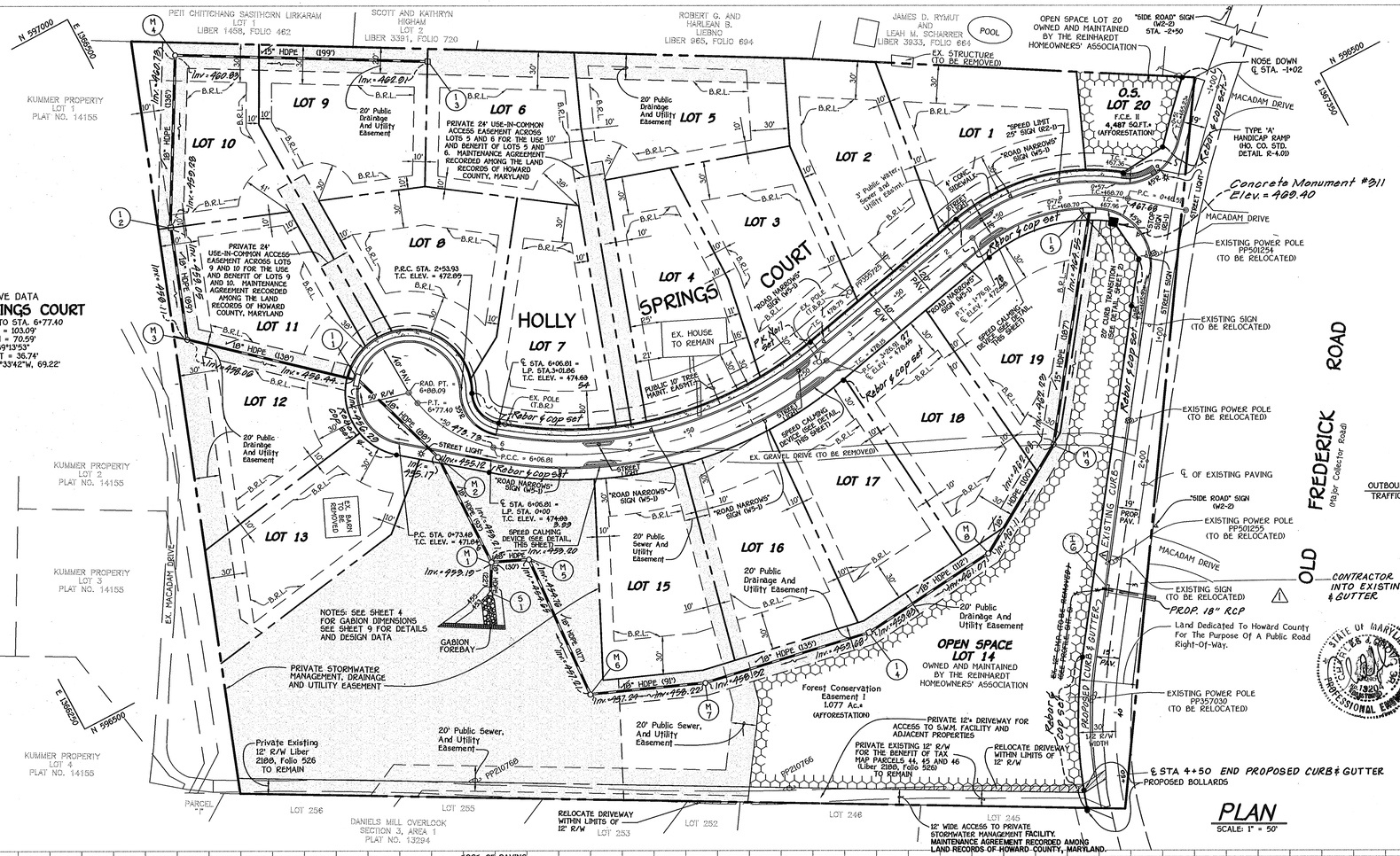

PETI CHITTICHANG SASITHORN LIRKARAM LOT 1 LIBER 1458, FOLIO 462
SCOTT AND KATHRYN HIGHAM LOT 2 LIBER 3391, FOLIO 720
ROBERT G. AND HARLEAN B. LIEBNO LIBER 985, FOLIO 694
JAMES D. RYMUT AND LEAH M. SCHARRER LIBER 3933, FOLIO 664
DANIELS ROAD
MD 99
PROPOSED TREE LINE
L.O.D.
EX. STRUCTURE (TO BE REMOVED)
POOL
NOSE DOWN CURB
Open Space Lot 14 Owned And Maintained By The Reinhardt Homeowner's Association
N 597000
E 1366600
N 598000
E 1367350
KUMMER PROPERTY LOT 1 PLAT NO. 14155
KUMMER PROPERTY LOT 2 PLAT NO. 14155
KUMMER PROPERTY LOT 3 PLAT NO. 14155
KUMMER PROPERTY LOT 4 PLAT NO. 14155
15" HDPE (199')
18" HDPE (130')
18" HDPE (130')
S.I.P.
INLET PROTECTION
LOT 9
LOT 10
LOT 11
LOT 12
LOT 13
LOT 6
LOT 8
LOT 5
LOT 2
LOT 3
LOT 4
LOT 1
LOT 20
LOT 19
LOT 18
LOT 17
LOT 16
LOT 15
LOT 14
20' Public Drainage And Utility Easement
24' Private Use-In-Common Access Easement
HOLLY SPRINGS COURT
EX. HOUSE TO REMAIN
EXISTING WOODS TO BE REMOVED
EX. GRAVEL DRIVE (TO BE REMOVED)
EX. POLE (T.B.R.)
EX. POLE (TO BE RELOCATED)
C.I.P.
P.T. = 6+77.40
EX. = 6+06.01
10' PAVING
10' WIDE BERM
20' SETBACK
30' TURN AROUND
TOP OF DAM = 460.59
EMERGENCY SPILLWAY
100 YR. WSEL = 457.15
10 YR. WSEL = 456.15
2 YR. WSEL = 455.25
PROVIDE 90 L.F. OF BAFFLE SEE DETAIL SHEET 8
Forest Conservation Easement 1 1.077 Ac.± (AFFORESTATION)
TREE PROTECTION FENCE
EXISTING PRIVATE 12'± DRIVEWAY FOR ACCESS TO S.W.M. FACILITY AND ADJACENT PROPERTIES
PRIVATE EXISTING 12' R/W FOR THE BENEFIT OF TAX MAP PARCELS 44, 45 AND 46 (Liber 2188, Folio 526) TO REMAIN
RELOCATE DRIVEWAY WITHIN LIMITS OF 12' R/W
PROPOSED BOLLARDS @ R/W LINE
EXISTING DRIVEWAY APRON TO BE REALIGNED
PROVIDE MOUNTABLE BERM WITH STABILIZED CONSTRUCTION ENTRANCE
MACADAM DRIVE
EX. 12" C.M.P. (TO BE REMOVED) (SEE PROFILE, SHEET 6) PROP. 18" RCP
EX. 18" RCP
EX. 24" RCP
EX. 30" RCP
EX. 36" RCP
EX. 8" W
EX. 6" S
EX. 8" S (CONT. No. H-1851-D)
EX. 8" S (CONT. No. H-1851-D)
EX. 8" S (CONT. No. H-1851-D)
EX. 8" S (CONT. No. H-1851-D)
EX. 8" W (CONT. No. H-1851-D)
EX. 8" W (CONT. No. H-1851-D)
EX. 8" W



CURB LIMITS DETAIL

NO SCALE

℄ CURVE DATA
HOLLY SPRINGS COURT
STA. 6+06.81 TO STA. 6+77.40
RADIUS = 103.09'
LENGTH = 70.59'
Δ = 39°13'53"
TANGENT = 36.74'
CHORD. = N31°33'42"W, 69.22'

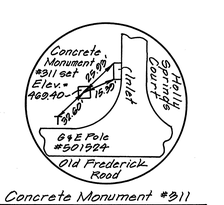


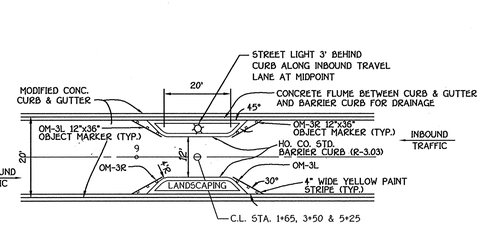
PLAN

SCALE: 1" = 50'

℄ CURVE DATA
HOLLY SPRINGS COURT
STA. 0+46.51 TO STA. 1+76.51
RADIUS = 145.00'
LENGTH = 130.40'
Δ = 51°31'31"
TANGENT = 69.98'
CHORD. = N76°19'31"W, 126.05'

℄ CURVE DATA
HOLLY SPRINGS COURT
STA. 3+26.91 TO STA. 6+06.81
RADIUS = 315.00'
LENGTH = 279.90'
Δ = 50°54'38"
TANGENT = 149.95'
CHORD. = N76°37'58"W, 270.78'





SPEED CONTROL DEVICE

N.T.S.

No.	DATE	DESCRIPTION
1	8-6-03	EXISTING CURB ON OLD FREDERICK ROAD. ADD PROPOSE 18" PIPE

REVISIONS

APPROVED
DEPARTMENT OF PLANNING AND ZONING
APPROVED Cindy Hamilton 12/15/00
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DEPARTMENT OF PLANNING AND ZONING
APPROVED Alan Dammann 12/12/00
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Howard S. Sliwa for 12/8/00
CHIEF, BUREAU OF HIGHWAYS DATE

REINHARDT PROPERTY
Lots 1 thru 20

Zoned: R-20
Tax Map No. 18 Parcel No. 9 Grid No. 7
Second Election District Howard County, Maryland

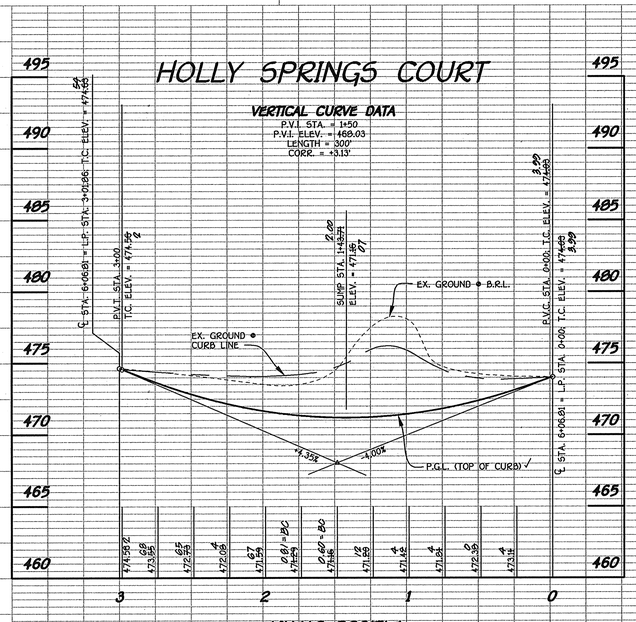
HOLLY SPRINGS COURT
PLAN AND PROFILE

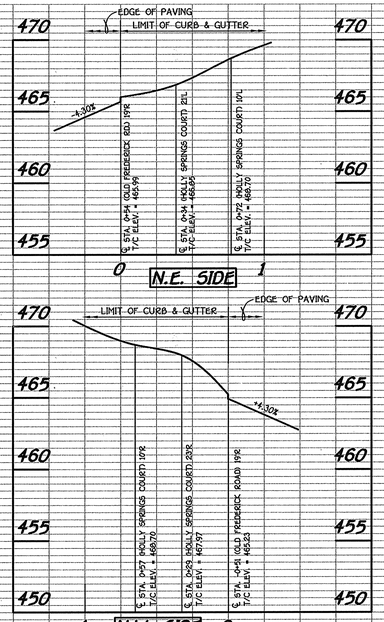
OWNER	DEVELOPER
MR.& MRS. ROBERT REINHARDT, SR. 8524 OLD FREDERICK ROAD ELLICOTT CITY, MD. 21043	REINHARDT PROPERTY II, LLC 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MD. 21042

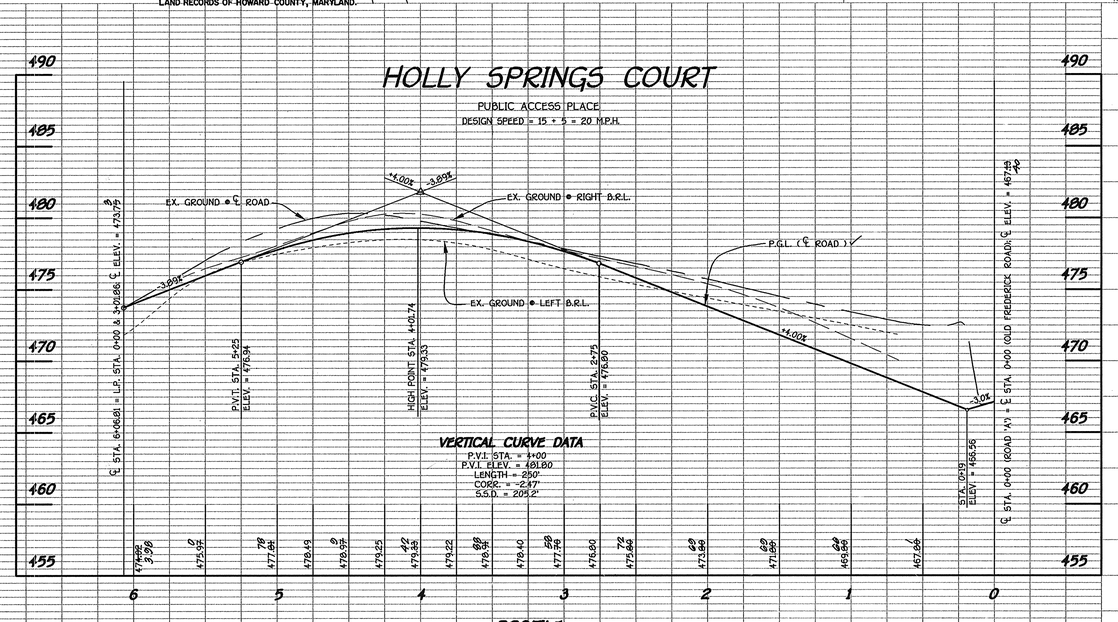
SCALE: AS SHOWN	DATE: SEPT. 1, 2000	DWG. NO. 3 OF 11
DES. A.M.V.	DRN. J.C.L.	CHK. A.M.V.

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — NO. 20749 — REGISTERED PROFESSIONAL ENGINEER — 8-31-00

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855
FCC #30677 8/24/01 WS

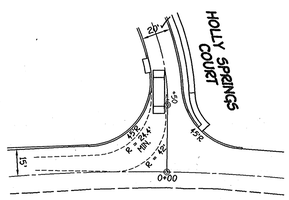






AS-BUILT 3-5-04

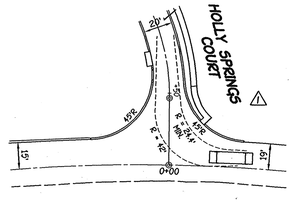
F00-48



OLD FREDERICK ROAD

TURNING MOVEMENT ANALYSIS FOR SU-30 VEHICLE

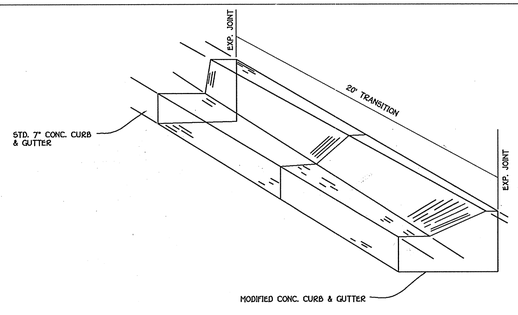
SCALE: 1" = 50'



OLD FREDERICK ROAD

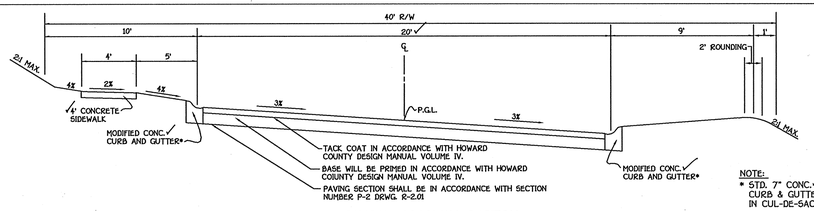
TURNING MOVEMENT ANALYSIS FOR SU-30 VEHICLE

SCALE: 1" = 50'



CONCRETE CURB & GUTTER TRANSITION

NO SCALE



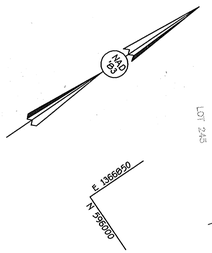
NOTE:
* STD. 7" CONC. CURB & GUTTER IN CUL-DE-SAC

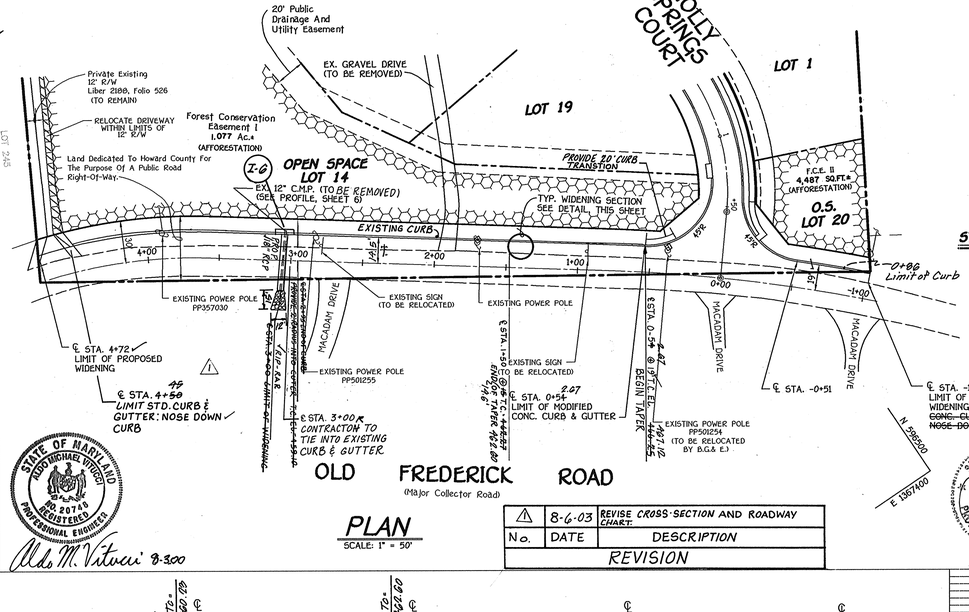
TYPICAL ROADWAY SECTION

NO SCALE

ROADWAY INFORMATION CHART

ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	℄ STATION LIMITS	R/W	PAVING SECTION
HOLLY SPRINGS COURT	PUBLIC ACCESS PLACE	20 M.P.H.	R-20	0+00 TO 6+88.09 ✓	40'	P-2



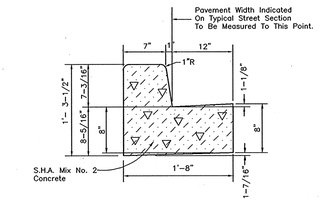


OLD FREDERICK ROAD

(Major Collector Road)

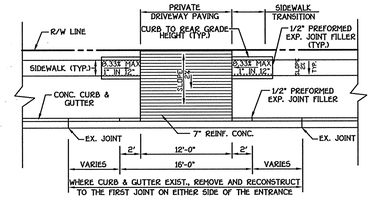
PLAN

SCALE: 1" = 50'

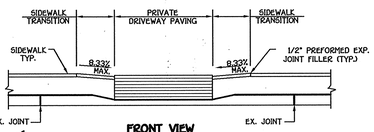


STANDARD 7" COMB. CONC. CURB AND GUTTER

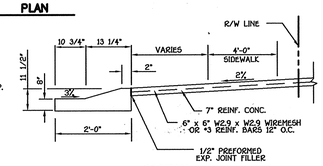
NO SCALE



PLAN



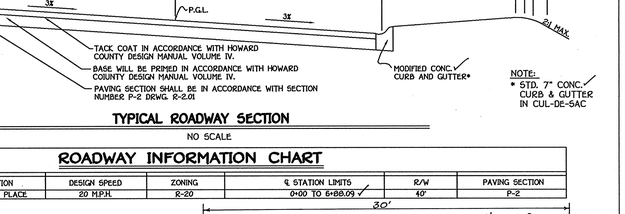
FRONT VIEW



SECTION

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

NO SCALE



TYPICAL ROADWAY SECTION FOR OLD FREDERICK ROAD

NO SCALE

NOTES:
1. OVERLAY & IMPROVEMENTS SHALL COMPLY WITH DETAIL R-10.01 DMV-IV.
2. WHEN EXISTING TRAVEL LANE IS LESS THAN THE REQUIRED 12' LANE, CONTRACTOR SHALL REMOVE ENOUGH OF THE EXISTING ROAD BED TO PROVIDE A MINIMUM BASE WIDENING OF 4'.
3. THE SURFACE OVERLAY SHALL BE CARRIED TO THE ℄ OF THE ROAD AND NOTCHED & SEALED.
4. SURFACE OVERLAY COURSE TO BE EQUAL TO SURFACE COURSE OF TYPICAL PAVING SECTION.
5. ℄ OF ROAD TO BE MILLED AT DEPTH OF 1 1/2" x 1' USING A MILLING MACHINE.

APPROVED
DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12/15/00

APPROVED
DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 12/12/00

APPROVED
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 12/18/00

STATE OF MARYLAND — ADO MICHAEL VITUCCI — NO. 21748 — REGISTERED PROFESSIONAL ENGINEER

Ado M. Vitucci 8-3-00

No.	DATE	DESCRIPTION
1	8-6-03	REVISE CROSS-SECTION AND ROADWAY CHART.
REVISION		

STATE OF MARYLAND — CHRISTOPHER J. FISHER — NO. 18204 — PROFESSIONAL ENGINEER — AS BUILT 3-5-04

REINHARDT PROPERTY

Lots 1 thru 20

Zoned: R-20

Tax Map No. 18 Parcel No. 9 Grid No. 7

Second Election District Howard County, Maryland

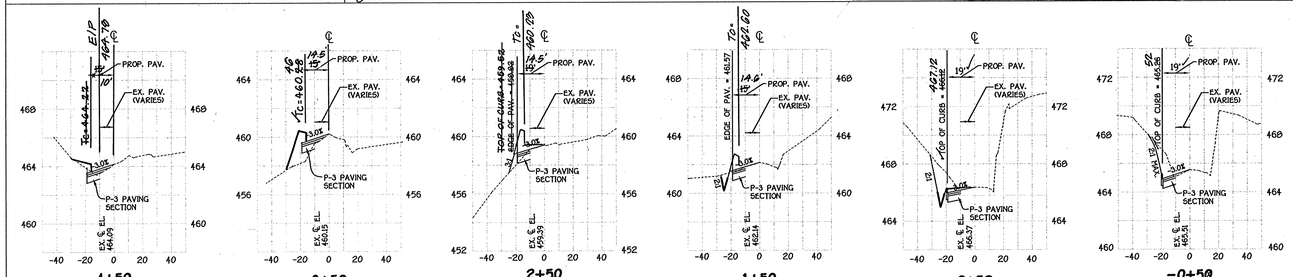
OLD FREDERICK ROAD

PLAN AND PROFILE

OWNER	DEVELOPER
MR.& MRS. ROBERT REINHARDT, SR. 8524 OLD FREDERICK ROAD ELLICOTT CITY, MD. 21043	REINHARDT PROPERTY II, LLC 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MD. 21042

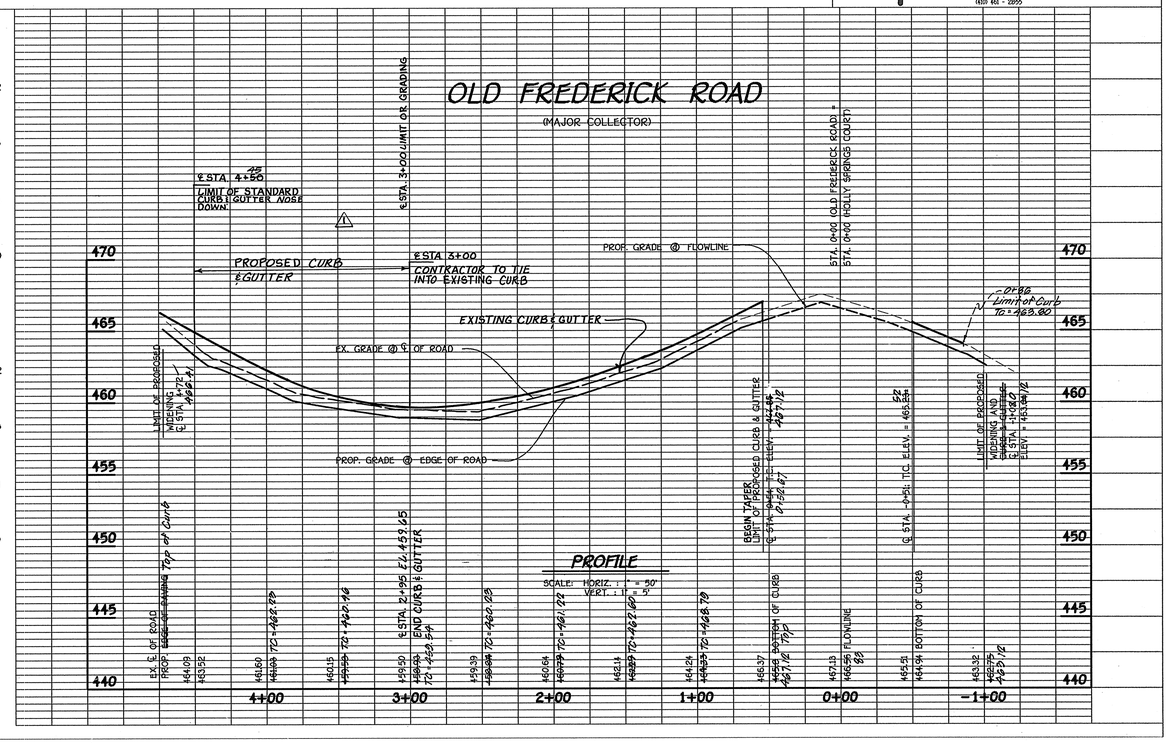
SCALE: AS SHOWN	DATE: SEPT. 1, 2000	DWG. NO. 2 OF 11
DES. A.M.V.	DRN. J.C.L.	CHK. A.M.V.

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



CROSS-SECTIONS

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



AS-BUILT 3-5-04 F 00-48

SHEET INDEX	
SHEET No.	DESCRIPTION
1	TITLE SHEET
2	OLD FREDERICK ROAD PLAN AND PROFILE
3	HOLLY SPRINGS COURT PLAN AND PROFILE
4	STREET TREE, GRADING AND SEDIMENT CONTROL PLAN
5	LANDSCAPE & FOREST CONSERVATION PLAN
6	STORM DRAIN PROFILES
7	DRAINAGE AREA MAP
8	SEDIMENT CONTROL NOTES AND DETAILS
9	TRAFFIC CONTROL PLAN AND DETAIL SHEET
10	S.W.M. NOTES AND DETAILS
11	OFF-SITE FORESTATION PLAN - REINHARDT PROPERTY

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 12/8/00

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 12/5/00

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 12/12/00

FINAL ROAD CONSTRUCTION, GRADING, STORMDRAINS AND STORMWATER MANAGEMENT PLANS

REINHARDT PROPERTY

LOTS 1 THRU 20

ZONING "R-20"

TAX MAP NO. 18 PARCEL NO. 9 GRID NO. 7

SECOND ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

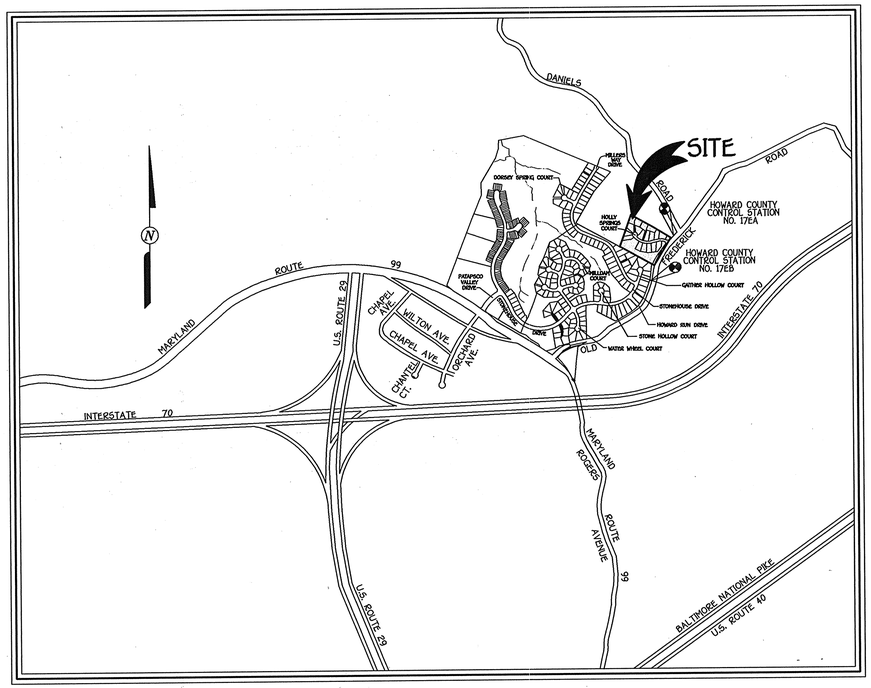
ROAD CLASSIFICATION CHART		
ROAD NAME	CLASSIFICATION	R/W WIDTH
HOLLY SPRINGS COURT	PUBLIC ACCESS PLACE	40'

TRAFFIC CONTROL SIGNS

STREET NAME	C.L. STATION	OFFSET	POSTED SIGN	SIGN CODE
HOLLY SPRINGS COURT	0+33	26'L	STOP	R1-1
HOLLY SPRINGS COURT	1+00	12'R	SPEED LIMIT 25	R2-1
HOLLY SPRINGS COURT	1+35	12'R	ROAD NARROWS	W5-1
HOLLY SPRINGS COURT	1+95	12'L	ROAD NARROWS	W5-1
HOLLY SPRINGS COURT	3+20	12'R	ROAD NARROWS	W5-1
HOLLY SPRINGS COURT	3+90	12'L	ROAD NARROWS	W5-1
HOLLY SPRINGS COURT	4+02	12'R	ROAD NARROWS	W5-1
HOLLY SPRINGS COURT	5+55	12'L	ROAD NARROWS	W5-1
OLD FREDERICK ROAD	2+50	12'L	SIDE ROAD	W2-2
OLD FREDERICK ROAD	-2+50	12'R	SIDE ROAD	W2-2
HOLLY SPRINGS COURT	1+55 3+40 5+15	8'R	"OM-3R" OBJECT MARKER	
HOLLY SPRINGS COURT	1+75 3+60 5+35	8'L	"OM-3R" OBJECT MARKER	
HOLLY SPRINGS COURT	1+55 3+40 5+15	8'L	"OM-3L" OBJECT MARKER	
HOLLY SPRINGS COURT	1+75 3+60 5+35	8'R	"OM-3L" OBJECT MARKER	

STREET LIGHT CHART

DWG. No.	STREET NAME	STATION	OFF-SET	FIXTURE/POLE TYPE
3	HOLLY SPRINGS COURT	0+30	30'R	150-WATT H.P.S. VAPOR PENDANT (CUT-OFF) MOUNTED AT 30' ON BRONZE FIBERGLASS POLE USING A 12' ARM
3	HOLLY SPRINGS COURT	1+65	9'R	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
		3+50	9'R	
		5+25	9'R	
3	HOLLY SPRINGS COURT	L.P. STA. 0+55 = ℄ STA. 6+50	2' BEHIND CURB	100-WATT "TRADITIONAIRE" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.



VICINITY MAP

SCALE 1" = 1200'

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
2. 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.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
4. 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.
5. 2 FOOT CONTOUR TOPOGRAPHY AND EXISTING CONDITIONS BASED ON FIELD RUN SURVEY PREPARED BY FISHER, COLLINS & CARTER, INC. ON OR ABOUT AUGUST 1998.
6. COORDINATES BASED ON NAD '83, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 17EA AND NO. 17EB.
   17EA N 181160.5724 (METERS)
   E 413772.7247 (METERS)
   17EB N 180994.8448 (METERS)
   E 413227.8979 (METERS)
7. PUBLIC WATER AND SEWER WILL BE USED WITHIN THE PROJECT, CONTRACT NO. 14-3824-D AND LOCATED IN THE PATAPSCO DRAINAGE AREA.
8. THE TRAFFIC STUDY WAS PREPARED BY THE TRAFFIC GROUP AND APPROVED BY HOWARD COUNTY UNDER S 98-08.
9. BACKGROUND INFORMATION:
   A. SUBDIVISION NAME: REINHARDT PROPERTY
   B. TAX MAP NO.: 18
   C. PARCEL NO.: 9
   D. ZONING: R-20
   E. ELECTION DISTRICT: SECOND
   F. TOTAL TRACT AREA: 10.311 AC. ±
   G. NO. OF BUILDABLE LOTS: 18
   H. NO. OF PARCELS: 0
   I. NO. OF OPEN SPACE LOTS: 2
   J. PRELIMINARY PLAN APPROVAL DATE: JUNE 4, 1999
   K. PREVIOUS FILE Nos. : S98-08 AND P99-11
   L. TOTAL AREA OF OPEN SPACE REQUIRED: (10.311 x 30%) = 3.093
   M. TOTAL AREA OF OPEN SPACE PROVIDED: 3.099 AC.±
11. 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.
12. NO CEMETERIES EXIST ON THE PROPERTY.
13. ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T-180.
14. THE FOREST WAS DELINEATED BY ECO-SCIENCE PROFESSIONALS, INC. AND APPROVED UNDER S 98-08.
16. THE FOREST CONSERVATION EASEMENT(S) HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, EXCEPT AS SHOWN ON AN APPROVED ROAD CONSTRUCTION DRAWING OR SITE DEVELOPMENT PLAN. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
17. STORMWATER MANAGEMENT FACILITY:
    TYPE - RETENTION S.W.M. POND (WATER QUANTITY AND WATER QUALITY BY RETENTION)
    OWNER - PRIVATE HOMEOWNER'S ASSOCIATION
    MAINTENANCE - PRIVATE HOMEOWNERS ASSOCIATION
18. STREET LIGHTS WILL BE REQUIRED IN THE 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 OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
19. THE STORMWATER MANAGEMENT MARYLAND DAM SAFETY DIVISION PERMIT NO. IS 99-PO-2127.
20. UPON CONSTRUCTION OF HOLLY SPRINGS COURT, THE DRIVEWAY TO THE EXISTING HOUSE ON LOT 4 WILL BE REMOVED FROM OPEN SPACE LOT 14.

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — No. 21043 — PROFESSIONAL ENGINEER — AS-BUILT 3/5/04

Aldo M. Vitucci 11-1-00

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

30607Title Sheet.dwg

OWNER

MR.& MRS. ROBERT REINHARDT, SR.
8524 OLD FREDERICK ROAD
ELLICOTT CITY, MD. 21043

DEVELOPER

REINHARDT PROPERTY II, LLC
10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD. 21042

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — No. 21043 — PROFESSIONAL ENGINEER

ALDO M. VITUCCI, P.E. — 11-20-00 DATE

REINHARDT PROPERTY
LOTS 1 THRU 20
ZONED: R-20
TAX MAP NO. 18 PARCEL NO. 9 GRID NO. 7
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: SEPTEMBER 1, 2000
SHEET 1 OF 11

AS-BUILT 3-5-04 F 00-48

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