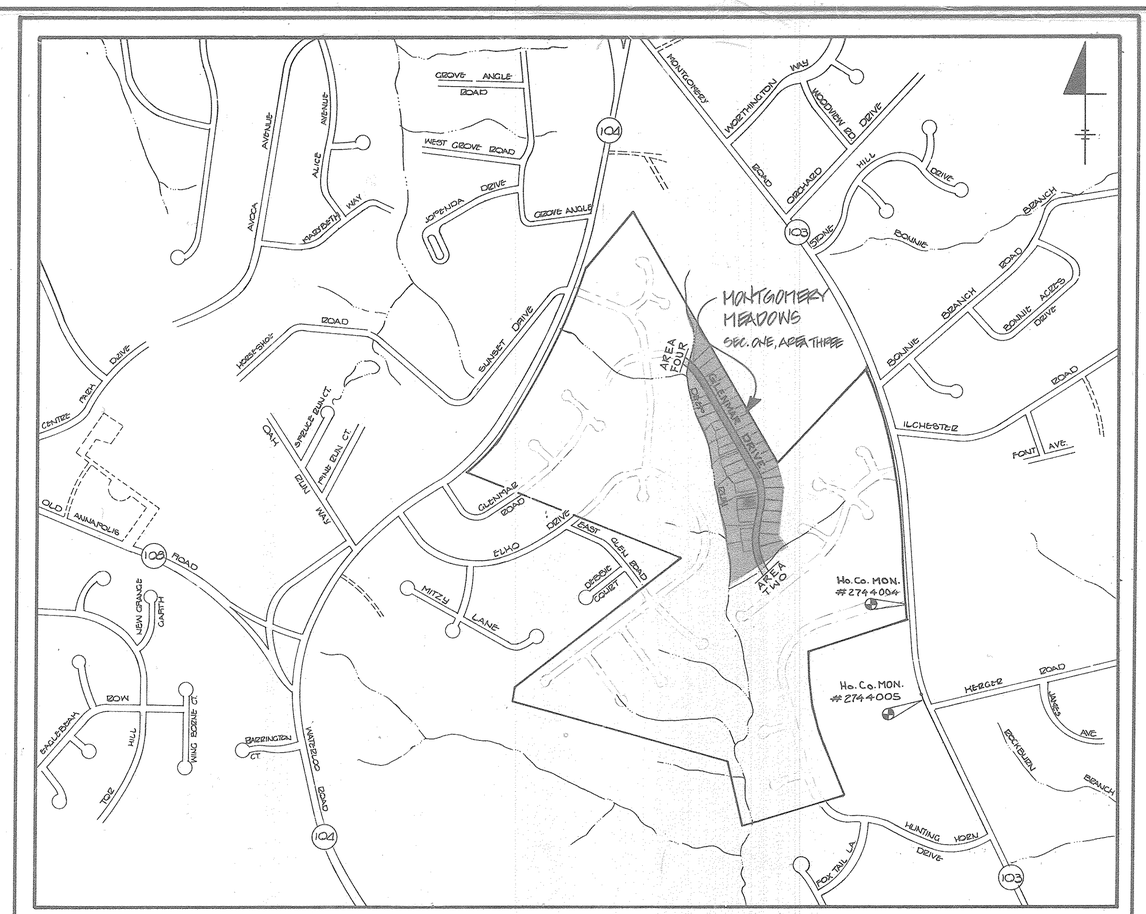
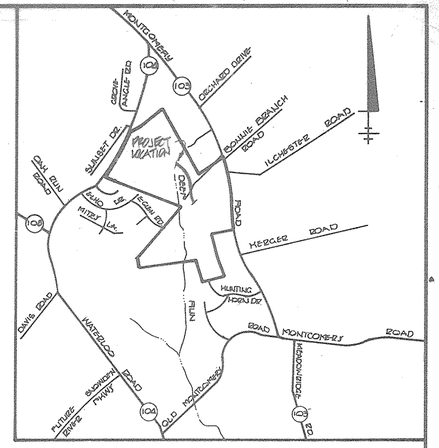
INDEX OF SHEETS



LOCATION MAP

SCALE: 1" = 600'



VICINITY MAP

SCALE: 1" = 2000'

GENERAL NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH HOWARD COUNTY STANDARDS, SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
2. ALL UTILITY COMPANIES MUST BE NOTIFIED 24HRS. IN ADVANCE OF ANY CONSTRUCTION.
3. STORM DRAINAGE TRENCHES WITHIN ROAD RIGHT-OF-WAYS SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH HOWARD COUNTY ROAD CODE.
4. ANY DAMAGE TO PUBLIC RIGHT-OF-WAYS PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTORS EXPENSE.
5. CONTRACTOR TO NOTIFY THE HOWARD COUNTY INSPECTION AND SURVEY DIVISION AT LEAST 3 DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS. TELEPHONE: 792-7272.
6. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTOR'S INFORMATION, CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE.
7. ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, 1984 REVISED EDITION.
8. STREET TREES TO BE PROVIDED AS REQUIRED BY SECTION 16.131 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
9. CLASS OF BEDDING FOR STORM DRAIN SYSTEMS TO BE CLASS "C" BEDDING.

"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 Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

Kenneth D. Mohn — 3/24/89
Signature of Developer — Date
Print name below signature

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

Thomas L. Wiley — 3/24/89
Signature of Engineer — Date
Print name below signature

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for ~~small pond construction~~, soil erosion and sediment control.

J. Helwig — 4/12/89
U.S. Soil Conservation Service — Date

These plans for ~~small pond construction~~, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Stephen L. Fisher — 4/10/89
Howard Soil Conservation District — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Ronald W. Lapp — 6/7/89
CHIEF, LAND DEVELOPMENT DIVISION — DATE

Granville W. Wellman — 6/7/89
CHIEF, BUREAU OF HIGHWAY — DATE

J. S. Adams — 6/8/89
CHIEF, BUREAU OF ENGINEERING — DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

Joseph J. Laughlin — 6/20/89
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE

STATE OF MARYLAND — THOMAS L. WILEY — No. 9273 — REGISTERED PROFESSIONAL ENGINEER

MONTGOMERY MEADOWS
SECTION ONE, AREA THREE
ROAD CONSTRUCTION DRAWINGS
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

PLAN REVISION NOTE: ON OR AROUND 4/20/2017 CAPITAL PROJECT D-1159, TITLED HEATHERLAND STREAM RESTORATION PROJECT, WAS CREATED TO RESTORE AN IMPAIRED SECTION OF STREAM CHANNEL, LOCATED APPROXIMATELY BETWEEN 8249 ELKO DRIVE AND 8505 HUNTING HORN DRIVE, ELLICOTT CITY, MD ILLUSTRATED WITHIN THE LIMITS OF THIS PLAN. AN ALTERNATIVE COMPLIANCE WAS PROCESSED THROUGH THE DEPARTMENT OF PLANNING AND ZONING UNDER WP-17-097, APPROVED ON 4/6/2017, TO WAIVER SECTIONS 16.155(A)(1)(ii) AND 16.1201(a) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS SUBJECT TO 7 CONDITIONS OF APPROVAL. FOR THE DETAILED CONDITIONS OF APPROVAL AND THE CURRENT SITE CONDITIONS WITHIN THE DISTURBED AREA PLEASE SEE THE CAPITAL PROJECT PLANS.

DESIGNED	MJP	4/88 date
DRAWN	RAG IV DJD/A MJ III	4/88 date
CHECKED	DJD/EC	4/88 date
APPROVED	DJD/EC	4/88 date

REVISIONS		
DATE	BY	DESCRIPTION
4/20/2017	HOCO	REFERENCE NOTE TO CAP. PROJ. D-1158

Dewberry & Davis
ENGINEERS — ARCHITECTS — PLANNERS — SURVEYORS
3300 N. RIDGE ROAD
SUITE 100
ELLICOTT CITY, MD. 21043
(301) 461-7478

STATE OF MARYLAND — THOMAS L. WILEY — No. 9273 — REGISTERED PROFESSIONAL ENGINEER — 3/24/89

OWNER / DEVELOPER

N V LAND, INC
6820 ELM STREET
McLEAN, VA 22101
(703) 734-9730

TITLE SHEET
MONTGOMERY MEADOWS
SECTION ONE AREA THREE.
LOT 138 THRU LOT 187
TAX MAP 31 PARCEL 423
2nd ELECTION DISTRICT HOWARD CO., MARYLAND

SCALE: AS SHOWN | PREVIOUS SUBMITTALS: S-87-61, F-87-71, F-88-32 | CONTRACT NO. F005 BC | FILE NO. | SHEET 1 OF 8

1443

F-88-243

ENGINEER'S CERTIFICATE

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

THOMAS L. WILEY, MD. REG. NO. 9973 — DATE 3/21/89

DEVELOPER'S CERTIFICATE

"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 Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

KENNETH B. MALM — DATE 3/22/89

CURVE DATA

STA. 18+68.42 TO 21+30.04
R=400.00
Δ=37°28'19"
A=261.62'
T=135.68'
CB=N48°35'53"W
C=256.98

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

U.S. Soil Conservation Service — Date 4/13/89

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

HOWARD SOIL CONSERVATION DISTRICT — DATE 4/10/89

APPROVED HOWARD COUNTY OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 6/20/89

APPROVED HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 6/7/89

CHIEF, BUREAU OF HIGHWAYS — DATE 6/7/89

CHIEF, BUREAU OF ENGINEERING — DATE 6/8/89

PLAN: SURVEYED, PLOTTED, ALIGNMENT CHECKED, NOTE BOOK, EX. OF MAT CHECKED, No., BY, DATE

PROFILE: SURVEYED, PLOTTED, GRADES CHECKED, NOTE BOOK, No., STRUCTURE NOTATIONS CHECKED, BY, DATE

STATE OF MARYLAND — THOMAS L. WILEY — No. 9973 — PROFESSIONAL ENGINEER

Seal by GLW pertains to revisions by GLW only.

CRYSTAL SPRINGS INC.
L. 1782 F 246

MARYLAND STATE GRID SYSTEM

NOTE: STREET TREES 2½" MIN. CALIPER PLANTED @ 40' O/C SEE PLANTING DETAIL SHEET 5 OF 8

LANDSCAPE TABULATION

SYMBOL	NO.	NAME	SIZE	REMARKS
✿	93	ACER SACCAHARUM (SUGAR MAPLE)	2½" CAL. (MIN.)	B & B

LIGHTING LEGEND
● TYPE 'B' 250 WATT MERCURY VAPOR LAMP PENDANT MOUNTED FIXTURES ON 25 FOOT GALVANIZED STEEL POLE.

REVISIONS

DATE	BY	DESCRIPTION
5/27/93	MCF	rev. inlet I-3A by GLW
SEPT 00	ERB	CHANGE STANDARD CURB & GUTTER TO MODIFIED CURB & GUTTER
7-25-08	KDH	REVISED SEDIMENT CONTROL

MONTGOMERY MEADOWS
SECTION ONE AREA THREE
LOT 138 THRU LOT 187
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

PLAN AND PROFILE
GLENMAR ROAD

OWNER / DEVELOPER
N.V. LAND, INC.
6820 ELM STREET
McLEAN, VIRGINIA 22101

SCALE AS SHOWN | DATE APRIL 88 | SHEET 2 OF 8
DESIGNED BY MJP | DRAWN BY KDH | CHECKED BY: GLW/E

DEWBERRY & DAVIS
ENGINEERS ARCHITECTS PLANNERS SURVEYORS
3300 NORTH RIDGE ROAD
ELLICOTT CITY, MARYLAND 21043
(301) 461-7478

MATCHLINE SEE SHEET 3 OF 8

PLAN
SCALE: 1"=50'

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

Plan View @ I-3A
Not to scale

Isometric View of Slab and Slab Support @ I-3A

1443

ENGINEER'S CERTIFICATE

"I certify that ~~this plan for pond construction~~, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

[signature] 3/21/89
THOMAS L. WILEY, MD. REG. NO. 9273 — DATE

DEVELOPER'S CERTIFICATE

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[signature] 3/22/89
KENNETH G. MALM — DATE

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements ~~for small pond construction~~, soil erosion and sediment control.

[signature] 4/12/89
U.S. Soil Conservation Service — Date

These plans for ~~small pond construction~~, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

[signature] 4/10/89
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED HOWARD COUNTY OFFICE OF PLANNING AND ZONING

[signature] 6/20/89
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE

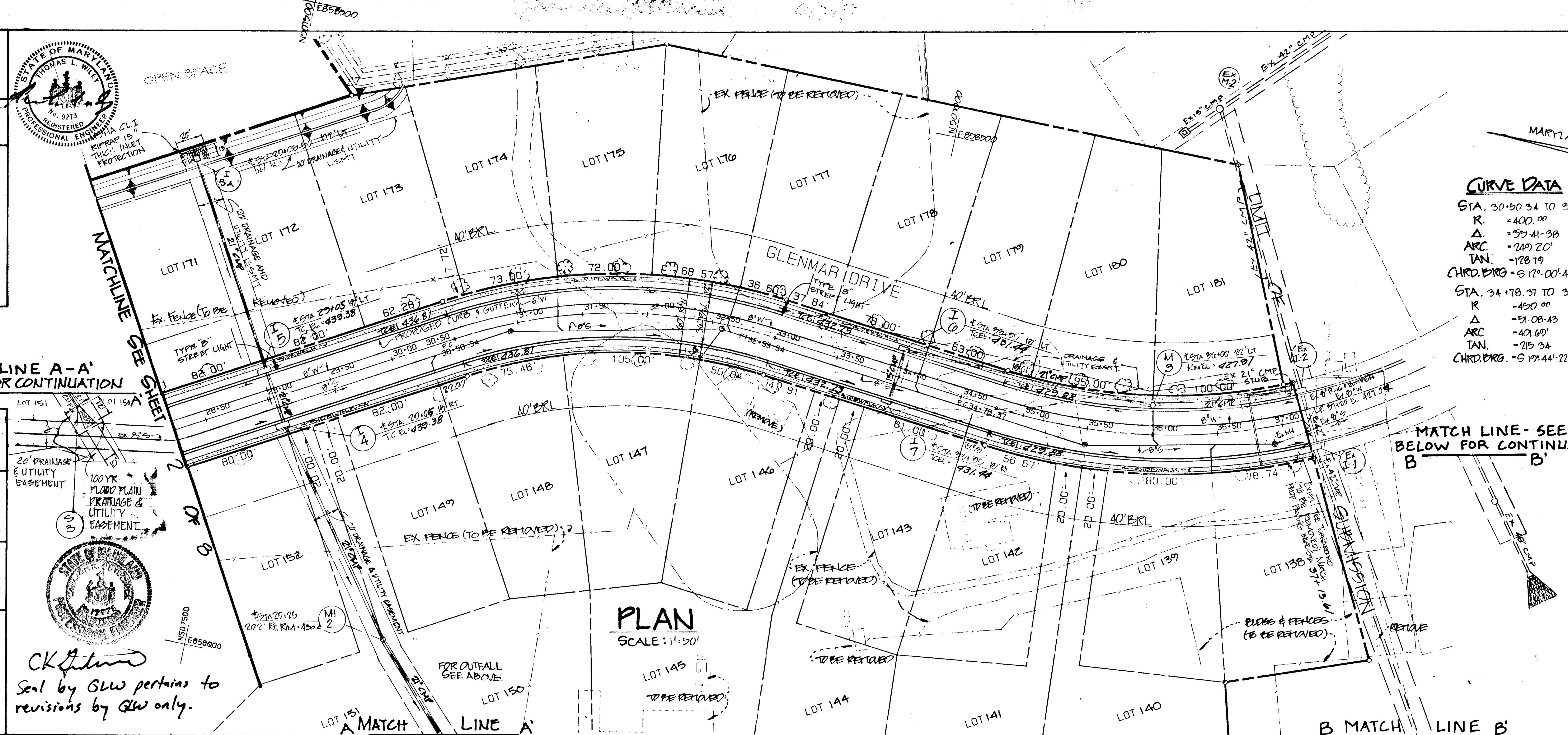
APPROVED HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[signature] 6/7/89
CHIEF, LAND DEVELOPMENT DIVISION — DATE

[signature] 6/7/89
CHIEF, BUREAU OF HIGHWAYS — DATE

[signature] 6/8/89
CHIEF, BUREAU OF ENGINEERING — DATE

PLAN — NOTE BOOK — No. — SURVEYED — PLOTTED — ALIGNMENT CHECKED — RT. OF WAY CHECKED



MARYLAND STATE GRID SYSTEM

CURVE DATA

STA. 30+50.34 TO 32+99.54
R. =400.00
Δ. =35-41-38
ARC. =249.20'
TAN. =128.79
CHRD. BRG =S 12°-00'-49" E 245.18'

STA. 34+78.37 TO 38+80.06
R =450.00
Δ =51-08-43
ARC =401.69'
TAN. =215.34
CHRD. BRG. =S 19°-44'-22"-E 388.49'

STREET TREES 2½" MIN. CALIPER PLANTED @ 40' O/C. SEE PLANTING DETAIL SHEET 9 OF 8

revisions		
date	by	description
5/27/93	MCF	change S-4 to I-5A by GLW

SECTION ONE AREA TWO
MONTGOMERY MEADOWS
2ND DISTRICT HOWARD CO, MD.

MONTGOMERY MEADOWS

SECTION ONE AREA THREE
LOT 138 THRU LOT 187
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

PLAN AND PROFILE

GLENMAR ROAD

OWNER / DEVELOPER
N.V. LAND, INC.
6820 ELM STREET
McLEAN, VIRGINIA 22101

SCALE AS SHOWN	DATE APRIL 88	SHEET 3 OF 8
DESIGNED BY MJP	DRAWN BY KDH	CHECKED BY D&D/E

DEWBERRY & DAVIS
ENGINEERS ARCHITECTS PLANNERS SURVEYORS
3300 NORTH RIDGE ROAD
ELLICOTT CITY, MARYLAND 21043
(301) 461-7478

PROFILE — NOTE BOOK — No. — SURVEYED — PLOTTED — GRADES CHECKED — B.M.'s NOTED — STRUCTURE NOTATIONS CHECKED

1443

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

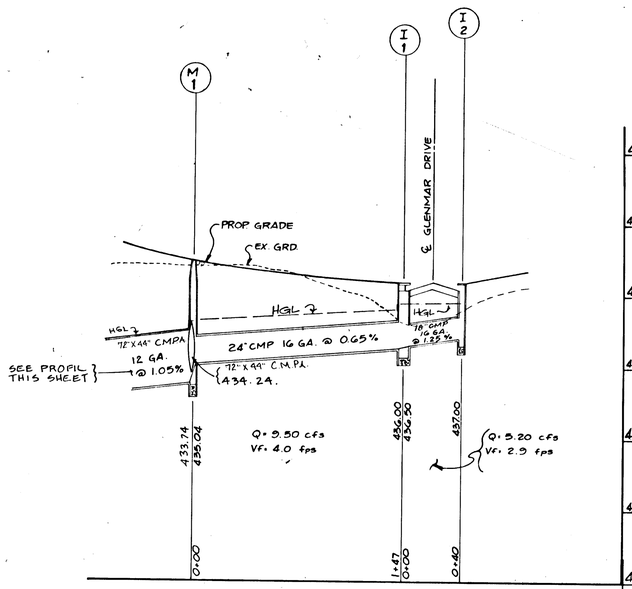
CHIEF, LAND DEVELOPMENT DIVISION — DATE: 6/7/89

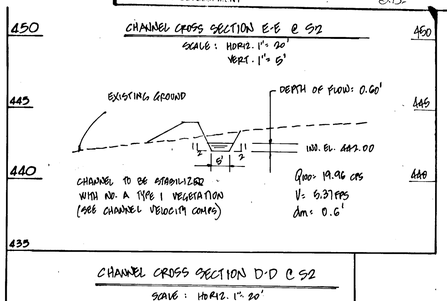
CHIEF, BUREAU OF HIGHWAY — DATE: 6/7/89

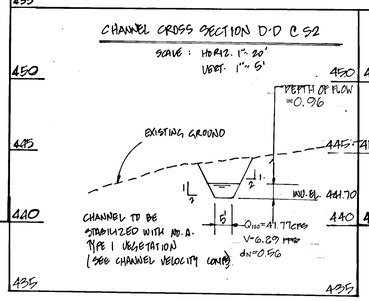
CHIEF, BUREAU OF ENGINEERING — DATE: 6/26/89

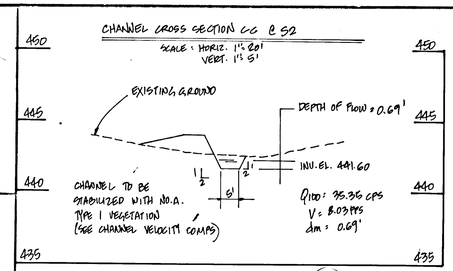
APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

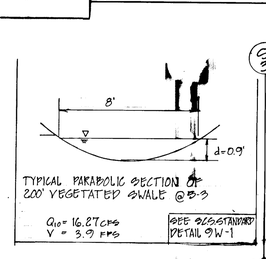
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE: 6/23/89

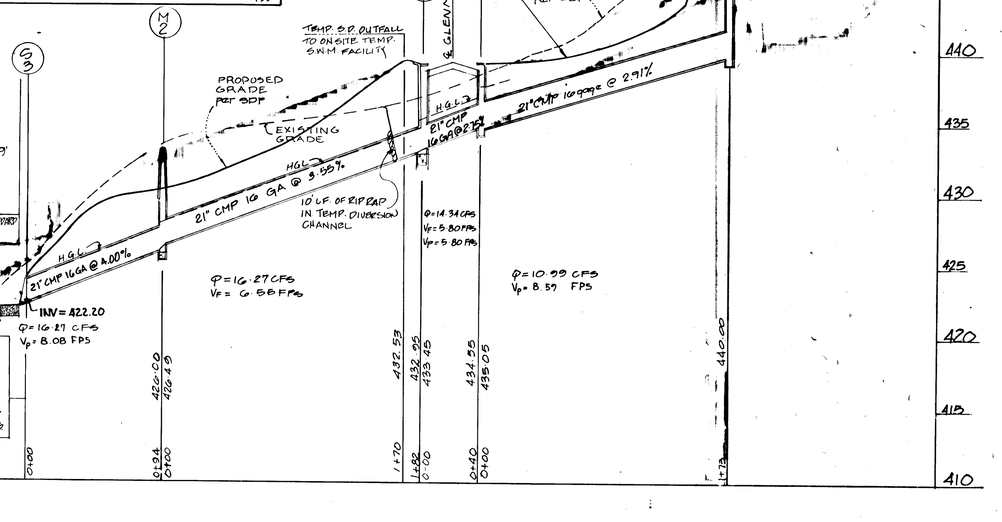


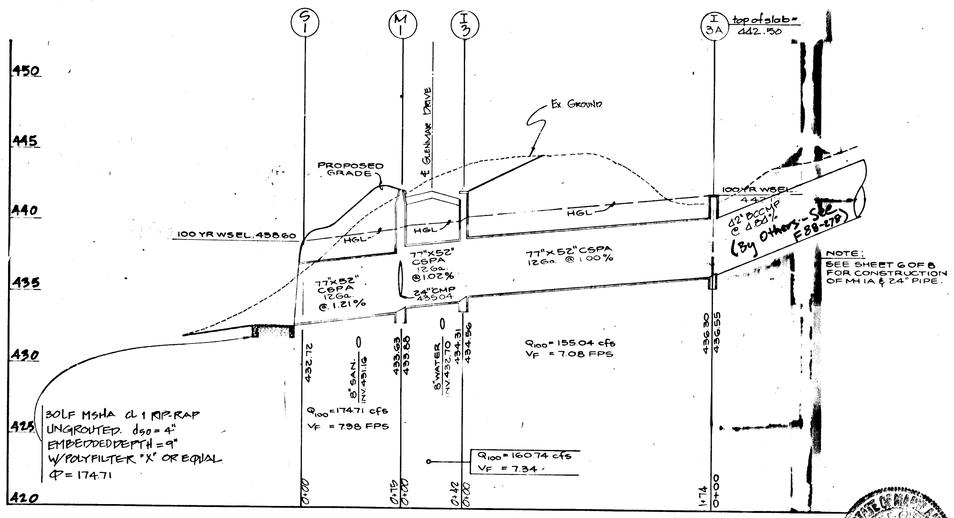


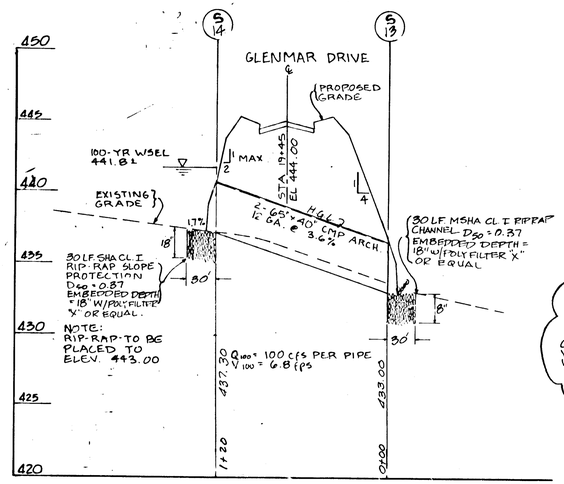


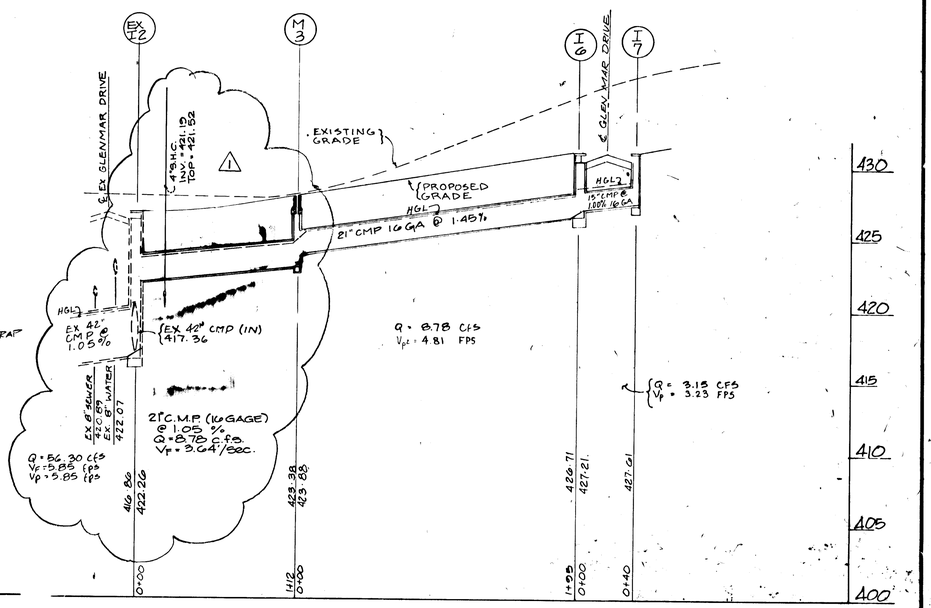












CULVERT PROFILE

SCALE HORIZONTAL : 1"=60'
VERTICAL : 1"=5'

STATE OF MARYLAND — CHARLES L. WELTY — No. 9319 — REGISTERED PROFESSIONAL ENGINEER

Seal by GLW pertains to Revisions by GLW only.

CK

DESIGNED	RAG	JULY 1988 date
DRAWN	MJIII, DAT	JULY 1988 date
CHECKED	TLW	date
APPROVED		date

REVISIONS

DATE	BY	DESCRIPTION
2-16-90	WAJ	PER HOWARD CO. COMMENTS DATED 12-14-89
7-19-90	WAJ	PER HOWARD CO. COMMENTS DATED 7-16-90
10-21-92	GAH	⚠1 Revise 21" CMP to avoid conflict W/ 4' SHC revise 8" CMP to 21" CMP, remove headwall @ S2 add I-5A - by GLW
7-1-93	MCF	

Dewberry & Davis

ENGINEERS — ARCHITECTS — PLANNERS — SURVEYORS

3300 N. RIDGE ROAD, SUITE 100
ELLICOTT CITY, MD. 21043
(301) 461-7478

OWNER / DEVELOPER

N V LAND, INC
6820 ELM STREET
McLEAN, VA 22101
(703) 734-9730

STORM DRAIN PROFILES

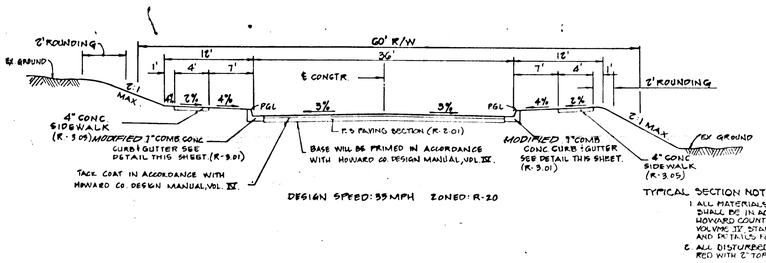
MONTGOMERY MEADOWS

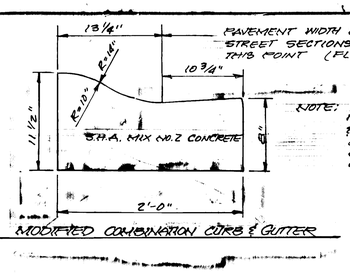
SECTION ONE AREA THREE
LOT 1 TO LOT 44
TAX MAP 31 - PARCEL 423
2 ND ELECTION DISTRICT HOWARD CO. MARYLAND
APRIL, 1988

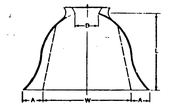
SCALE: AS SHOWN | CONTRACT NO. | FOOD-EC FILE NO. | SHEET 4 OF 8

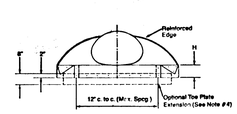
1443

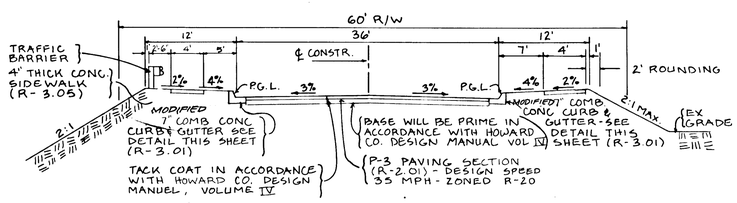
F-89-213

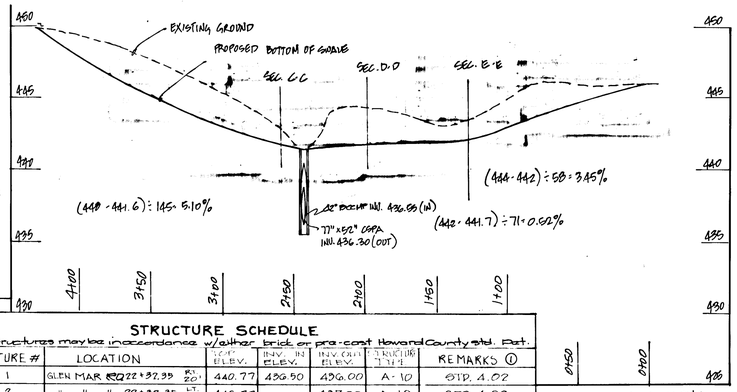


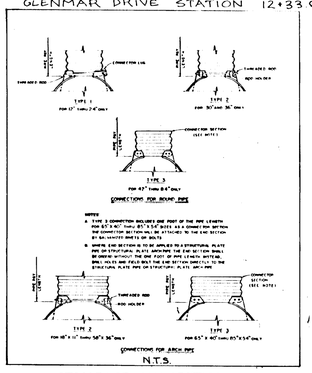


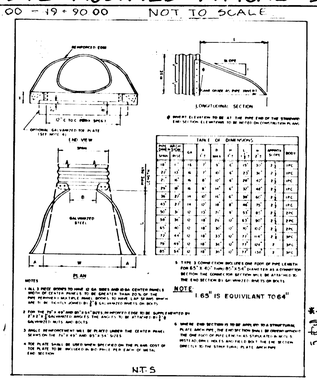


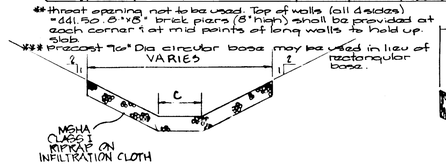


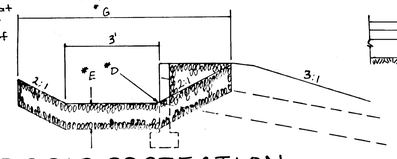


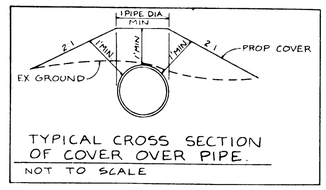


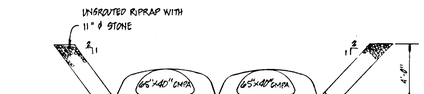


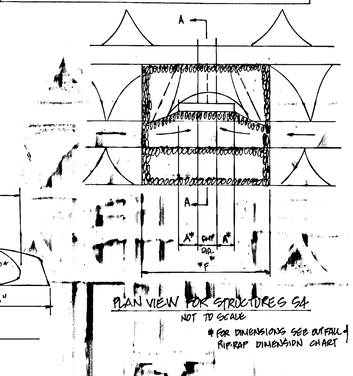












DESIGN SPEED: 35 MPH ZONED: R-20

TYPICAL SECTION NOTES:

1. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION.
2. ALL DISTURBED AREAS TO BE STABILIZED WITH 2" TOPSOIL SEED AND MULCH.

GLENMAR DRIVE STA 19+90 TO 37+20.11

TYPICAL SECTION

PAVEMENT WIDTH INDICATED ON TYPICAL STREET SECTIONS TO BE MEASURED TO THIS POINT (FLOW LINE)

NOTE: MODIFIED COMBINATION CURB & GUTTER TO BE USED ONLY ON CUL-DE-SAC STREETS, LOCAL ROADS OR MINOR COLLECTOR ROADS.

MODIFIED COMBINATION CURB & GUTTER

END SECTION FOR STRUCTURE # S1

MINOR COLLECTOR STREETS · MODIFIED TYPICAL SECTION

GLENMAR DRIVE STATION 12+33.00 - 19+90.00 NOT TO SCALE

SWALE PROFILE ALONG LOT 159 TO LOT 164

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

TYPICAL CROSS SECTION OF COVER OVER PIPE

NOT TO SCALE

RIPRAP PROTECTION FOR S-13 & S-14

NOT TO SCALE

STRUCTURE SCHEDULE

① All structures may be in accordance w/either brick or pre-cast Howard County std. Det.

	STRUCTURE #	LOCATION	TOP ELEV.	INV. IN ELEV.	INV. OUT ELEV.	STRUCTURE TYPE	REMARKS ①
	I 1	GLEN MAR RD 22+32.35 RT. 20'	440.77	436.50	436.00	A-10	STD. 4.02
	I 2	" " " 22+32.35 LT. 20'	440.77	—	437.00	A-10	STD. 4.02
	I 3	" " " 20+85.50 LT. 20'	442.24	434.56	434.31	A-10	STD. 4.02
	I 4	" " " 29+05.00 RT. 20'	439.17	433.45	432.95	A-10	STD. 4.02
	I 5	" " " 29+05.00 LT. 20'	439.17	435.05	434.55	A-10	STD. 4.02
	I 6	" " " 33+95.00 LT. 20'	431.23	427.21	426.71	A-10	STD. 4.02
	I 7	" " " 33+95.00 RT. 20'	431.23	—	427.61	A-10	STD. 4.02
	M 1	" " " 20+85.50 RT. 22'	442.40	435.04 433.88	433.63	MH	STD. G5.05 ***
	M 2	LOT 13 / LOT 14 SEE PLAN	430.40	426.49	426.00	MH	STD. G5.05
	M 3	GLEN MAR DR. 36+00.00 LT. 22'	428.20	423.88	423.38	MH	STD. G5.05
*	I 3A	" " " 20+20.00 RT. 72'	441.50	436.55	436.30	A-10 W=4'-0"	STD. SD 4.02 **
*	I 5A	See plan	444.07	—	440.00	D	Std. SD 4.39 w/3 open sides
	S 3	LOT 13 / LOT 14 " "	—	—	422.20	" "	STD. 5.61
	~~S 4~~	~~LOT 34 / LOT 35 " "~~		~~445.00~~		~~" "~~	~~MSHA 354.01~~
	S 13	GLEN MAR DRIVE 19+30.00 LT. 42'	—	433.00	—	END SEC.	MSHA 371.01
	S 14	" " " 19+77 RT. 61'	—	—	437.30	END SEC.	MSHA 371.01
	~~M1A~~	~~SEE PLAN FOR LOCATION~~	~~446.10~~		~~439.17~~	~~MH~~	~~STD G5.05~~
	S1	See plan	—	—	432.72	End sec.	MSHA 371.01

*top elev. shown is for throat invert.

** throat opening not to be used. Top of walls (all 4 sides) = 441.50. 8"x8" brick piers (8" high) shall be provided at each corner & at mid points of long walls to hold up slab.

*** Precast 96" Dia circular base may be used in lieu of rectangular base.

STANDARD CONNECTIONS

METAL END SECTIONS

STANDARD # MD 370.11

STANDARD METAL END SECTION # S

ARCH METAL PIPE

STANDARD # MD 371.01

PIPE SPACING DETAIL FOR TWIN 65" X 40" CMPA

NOT TO SCALE

PLAN VIEW FOR STRUCTURES S4

NOT TO SCALE

* FOR DIMENSIONS SEE OUTFALL & RIP-RAP DIMENSION CHART

RIP-RAP PROTECTION FOR S-1 & S-3

SCALE: 1"=5'

RIP-RAP PROTECTION FOR S-4

SCALE: 1"=5'

END SECTION FOR STRUCTURE S3

STANDARD # MD 370.01

TREE SUPPORT SCHEDULE

TREE SIZE	SUPPORT
12-14' 2½-3" CAL.	2' STAKE 3 REQUIRED, 12 GA. WIRE
14-16' 3-4" CAL.	2' STAKE 3 REQUIRED, 12 GA WIRE
16-20' 4-6" CAL.	2½' STAKE 3 REQUIRED, 12 GA WIRE
20+ 6"+ CAL.	DEADMAN 3 REQD, 3/16" CABLE & ⅜"x6" TURNBUCKLE

TREE STAKING DETAIL

EVERGREENS & TREES OVER 2 1/2" CAL. N.T.S.

STR #	S1		S3	~~S4~~	S13	S14
DIA.	77"x52"		21"	~~18"~~	65"x40"	65"x40"
A	18"		9"	~~—~~	18"	18"
B	36"		12"	~~—~~	30"	30"
C	77"		30"	~~—~~	190"	190"
D	432.72		422.20	~~445.00~~	433.00	437.30
E	9"		1'3"	~~1'3"~~	1'6"	1'6"
F	—		—	~~10'~~	—	—
G	—		—	~~13'~~	—	—
H	12"		6"	~~—~~	12"	12"
L	77"		36"	~~—~~	70"	70"
W	126"		42"	~~—~~	102"	102"

OUTFALL & RIP-RAP DIMENSION CHART

CK Gutman

Seal by GLW pertains only to revisions by GLW.

SWALE PROFILE ALONG LOT 158 TO LOT 174

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

DEVELOPER CERTIFICATE

"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 Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

Kenneth G. Malm 3/22/89
KENNETH G. MALM DATE

ENGINEER CERTIFICATE

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

4/6/89
MD. REG. NO. DATE

Jose H. Escalante No. 13265

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for ~~small pond construction,~~ soil erosion and sediment control.

J. Helmuth 4/12/89
U.S. Soil Conservation Service Date

These plans for ~~small pond construction,~~ soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Stephen L. Fuller 4/10/89
Howard Soil Conservation District Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Ronald O. Lepson 6/7/89
CHIEF, LAND DEVELOPMENT DIVISION DATE

Granville W. Wehland 6/7/89
CHIEF, BUREAU OF HIGHWAY DATE

William E. Riley 6/8/89
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED HOWARD COUNTY OFFICE OF PLANNING AND ZONING

Joseph W. Rutter Jr. 6/20/89
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT J.B. DATE

DESIGNED		date
DRAWN		date
CHECKED		date
APPROVED		date

REVISIONS

DATE	BY	DESCRIPTION
SEPT. 90	ERB	CHANGE STANDARD CURB & GUTTER TO MODIFIED CURB & GUTTER
DEC. 90	RW	PER DNR Comments
		Change Pipe Size Infor.
5/27/93	MCF	rev struct. & outfall schedules by GLW.

Dewberry & Davis

ENGINEERS — ARCHITECTS — PLANNERS — SURVEYORS
3300 N. RIDGE RD., SUITE 100, ELLICOTT CITY MD. 21043
8411 Arlington Boulevard, Fairfax, Virginia 22030
19201 Montgomery Village Ave., Gaithersburg, Md. 20760

Thomas L. Wiley No. 9773 3/21/89

OWNER / DEVELOPER

N V LAND, INC
6820 ELM STREET
McLEAN, VA 22101
(703) 734-9730

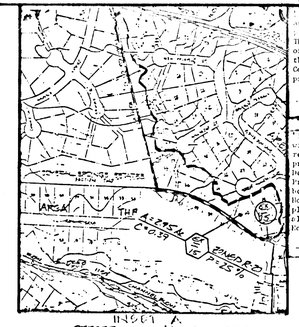
DETAILS

MONTGOMERY MEADOWS

SECTION ONE AREA THREE
LOT 1 THRU LOT 48
TAX MAP 31-PARCEL 423
2 ND ELECTION DISTRICT HOWARD CO., MARYLAND
APRIL, 1988

SCALE	CONTRACT NO.	FILE NO.	SHEET
AS SHOWN		F005-EC	5 OF 8

14H3



DESIGN DATA TRAP

1. DRAINAGE AREA TO TRAP: 2.16 AC ±
2. TYPE OF TRAP: STONE OUTLET SEDIMENT TRAP
3. VOLUME REQUIRED: 148 CY
4. VOLUME PROVIDED: 156 CY
5. TRAP SIZE (BOTTOM DIMENSION): 30'x70'
6. TRAP DEPTH: 2.0
7. BOTTOM ELEVATION: 418.00
8. CREST ELEVATION: 421.00
9. CLEANOUT ELEVATION: 419.00
10. OUTLET WIDTH: 6.0'
11. SIDE SLOPES: 2:1

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

Thos. L. Wiley 3/21/89
THOMAS L. WILEY, MD. REG. NO. 9273 DATE

"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 Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

Kenneth G. Malm 3/22/89
KENNETH G. MALM DATE

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for [redacted] soil erosion and sediment control.

J. Helm 4/12/89
U.S. Soil Conservation Service Date

These plans for [redacted] soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Stephen L. Kuhn 4/10/89
Howard Soil Conservation District Date

APPROVED: HOWARD COUNTY/ DEPARTMENT OF PUBLIC WORKS

Ronald O. Lepson 6/7/89
CHIEF, LAND DEVELOPMENT DIVISION DATE

Granville W. Wehland 6/7/89
CHIEF, BUREAU OF HIGHWAY DATE

William E. Riley 6/8/89
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED HOWARD COUNTY OFFICE OF PLANNING AND ZONING

6/20/89
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE
JB.

DESIGN DATA BASIN #2

1. DRAINAGE AREA TO TRAP: 34.57 Ac.±
2. TYPE OF TRAP: TEMP. STORMWATER MANAGEMENT BASIN
3. VOLUME REQUIRED: 2316 C.Y.
4. VOLUME PROVIDED: 2316 C.Y.
5. TRAP SIZE (BOTTOM DIMENSION) 60'± x245'±
6. TRAP DEPTH: 12.78'
7. 2YR. STORM ELEVATION: 413.40
8. 10YR. STORM ELEVATION: 417.14
9. 100YR. STORM ELEVATION: 417.78
10. BOTTOM ELEVATION: 406.00
11. CREST ELEVATION: 416.00
12. CLEANOUT ELEVATION: 408.82
13. OUTLET WIDTH: 10.0'
14. SIDE SLOPES: 2:1
15. TOP OF DAM ELEVATION: 417.78

DESIGN DATA FOR BASIN #3

1. DRAINAGE AREA TO TRAP: 6.88 AC.
2. TYPE OF TRAP: RIPRAP OUTLET SEDIMENT TRAP
3. VOLUME REQUIRED: 1549 C.Y.
4. VOLUME PROVIDED: 1582 C.Y.
5. TRAP SIZE: 50'x175'
6. TRAP DEPTH: 4'
7. BOTTOM ELEV.: 423.00
8. CREST ELEV.: 428.00
9. CLEANOUT ELEV.: 423.56
10. OUTLET WIDTH: 16'
11. SIDE SLOPE: 2:1

CKG
Seal by GLW pertains to revisions by GLW only.

1443

DESIGNED	G.F. RAG IV	6/27/88 date
DRAWN	S.A. DAT. MJIII	6/27/88 date
CHECKED	JFN, RAG	7-28-88 date
APPROVED		date

REVISIONS

DATE	BY	DESCRIPTION
2-16-90	WAJ	PER HOWARD CO. COMMENTS DATED 12-14-89
7-19-90	WAJ	PER HOWARD CO. COMMENTS DATED 7-16-90
10-21-92	GAH	⚠1 Revise location of 4" SHC. to MH by GLW
7/1/95	MCF	Revise S-4 to I-5A by GLW
7-25-88	RAG	REVISE SEDIMENT CONTROL

Dewberry & Davis
ENGINEERS — ARCHITECTS — PLANNERS — SURVEYORS
3300 N. RIDGE ROAD, SUITE 100
ELLICOTT CITY, MD. 21043
(301) 461-7478

THOMAS L. WILEY
No. 9273

OWNER / DEVELOPER

NV LAND INC.
6820 ELM STREET
McLEAN, VA. 22101
(703) 734-9730

DRAINAGE AREA, GRADING AND SEDIMENT CONTROL PLAN
MONTGOMERY MEADOWS
SECTION ONE AREA THREE
LOT 1 THRU LOT 48
TAX MAP: 31 PARCEL: 423 BLOCKS 9
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 50' JUNE 24, 1988

SCALE: AS SHOWN CONTRACT NO. ______ FILE NO. F005-EC SHEET 6 OF 8

F-89-243

...ore specifications are appropriate to ponds within the scope of the *Standard* ...or practice 378.

1. SITE PREPARATION

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

Areas to be covered by the pond or reservoir will be cleared, of all trees, brush, logs, fences, rubble and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface.

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

II. EARTH FILL

Material

The fill material shall be taken from approved designated borrow area or areas. It shall be free of roots, stumps, wood, rubbish, oversize stones, frozen or other objectionable materials. The embankment shall be constructed to an elevation which provides for anticipated settlement to the design elevation. The fill height all along the length of the embankment shall be increased above the design elevation (including freeboard) as shown on the plans.

Placement

Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in 6-inch maximum thickness (before compaction) layers which are to be continuous over the entire length of the fill. The fill or berm material shall be placed in the downstream portions of 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 obtained 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 can be obtained with the equipment used.

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Cutoff Trench

Where specified, a cutoff trench shall be excavated along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be as shown on the drawings, with the minimum width being four feet. The depth shall be at least four feet or as shown on the plans. The side slopes of the trench shall be 1:1 or flatter. The backfill material for the cutoff trench shall be the most impervious material available and shall be compacted with equipment or rollers to assure maximum density and minimum permeability.

III. STRUCTURAL BACKFILL

Backfill material 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 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 twenty-four inches or greater over the structure or pipe.

IV. PIPE CONDUITS

All pipes shall be circular in cross section.

A. Corrugated Metal Pipe

1. Materials - (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-36 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be restored with cold applied bituminous coating compound.

2. Materials - (Aluminized Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges.

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.

4. Backfilling shall conform to structural backfill as shown above.

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

B. Reinforced Concrete Pipe

1. Materials - Reinforced concrete pipe shall have a rubber gasket joint and shall equal or exceed ASTM Specification C-361. An approved equivalent is ASTM Specification C-301.

2. Bedding - All reinforced concrete pipe conduits shall be laid in a concrete bedding for the entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 1/5 of its outside diameter with a minimum of 3 inches.

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.

4. Backfilling shall conform to structural backfill as shown above.

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

C. For pipes of other materials, specific specifications shall be shown on the drawings.

V. CONCRETE

1. Materials

a. Cement - Normal Portland cement shall conform to the latest ASTM Specification C-150.

b. Water - The water used in concrete shall be clean, free from oil, acid, alkali, scale, organic matter or other objectionable substances.

c. Sand - The sand used in concrete shall be clean, hard, strong and durable, and shall be well graded with 100 percent passing a one-quarter inch sieve. Limestone sand shall not be used.

d. Coarse Aggregate - The coarse aggregate shall be clean, hard, strong and durable, and free from clay or dirt. It shall be well graded with maximum size of one and one-half (1-1/2) inches.

e. Reinforcing Steel - The reinforcing steel shall be deformed bars of intermediate grade billet steel or rail steel conforming to ASTM Specification A-615.

2. Design Mix - The concrete shall be mixed in the following proportions, measured by weight: The water-cement ratio shall be 5-1/2 to 6 U.S. Gallons of water per 94 pound bag of cement. The proportion of materials for the trial mix shall be 1:2:3-1/2. The combination of aggregates may be adjusted to produce a plastic and workable mix that will not promote harshness in placing or honeycombing in the structure.

3. Mixing - The concrete ingredients shall be mixed in batch mixers until the mixture is homogeneous and of uniform consistency. The mixing of each batch shall continue for not less than one and one-half minutes after all the ingredients, except the full amount of water, are in the mixer. The minimum mixing time is predicted on proper control of the speed of rotation of the mixer and of the introduction of the materials, including water, into the mixer. Water shall be added prior to, during, and following the mixing operation. Excessive overmixing requiring the addition of water to preserve the required concrete consistency shall not be permitted. Truck mixing will be allowed provided that the use of this method shall comply in addition of any applicable provisions of the specifications given here.

4. Forms - The forms shall have sufficient strength and rigidity to hold the concrete and to withstand the necessary pressure, tamping, and vibration without deflection from the prescribed lines. The shall be mortar-tight and constructed so that they can be removed without hammering or prying against the concrete.

The inside of forms shall be oiled with a non-staining mineral oil or thoroughly wetted before concrete is placed.

Forms may be removed 24 hours after the placement of concrete. All wire ties and other devices used shall be recessed from the surface of the concrete.

6. Consolidating - Concrete shall be consolidated with internal type mechanical vibrators. Vibration shall be supplemented by spading and tamping as necessary to insure smooth and dense concrete along form surfaces, in corners, and around embedded items.

7. Finishing - Defective concrete, honeycombed areas, voids left by the removal of tie rods, ridges on all concrete surfaces permanently exposed to view or exposed to water on the finished structure, shall be repaired immediately after the removal of forms. All voids shall be completely filled with dry-packing mortar.

8. Protection and Curing - Exposed surfaces of concrete shall be protected from the direct rays of the sun for at least the first three (3) days. All concrete shall be kept continually moist for at least ten (10) days after being placed. Moisture may be applied by spraying on sprinkling as necessary to prevent the concrete from drying. Concrete shall not be exposed to freezing during the curing period. Curing compounds may also be used.

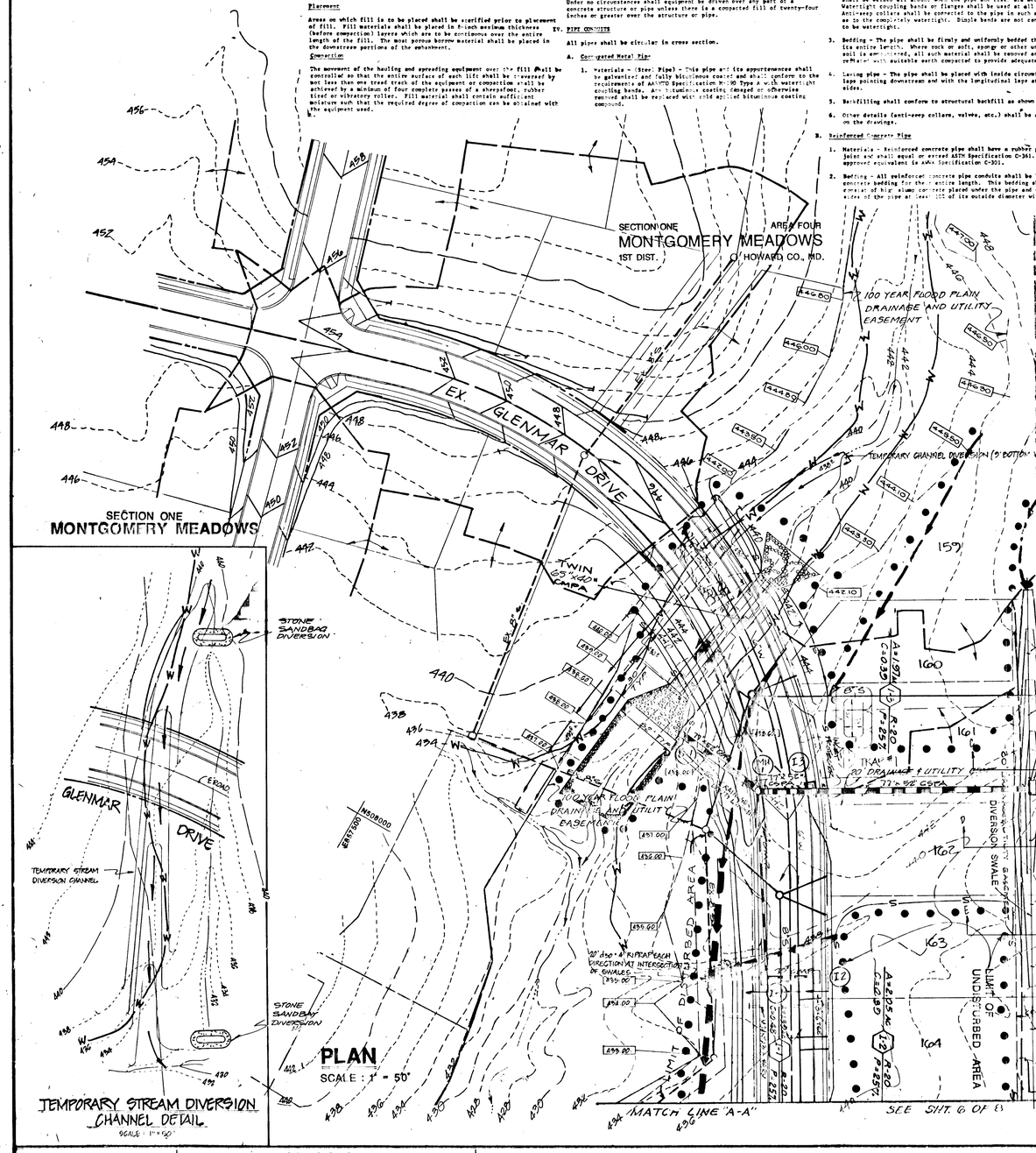
9. Placing Temperature - Concrete may not be placed at temperatures below 30° F with the temperature falling, or 36° with the temperature rising.

VI. STABILIZATION

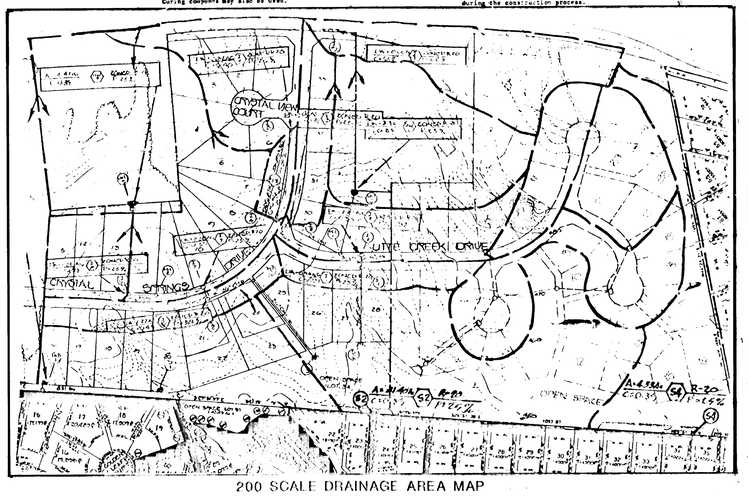
All borrow areas shall be graded to provide proper drainage and left in a slightly confliction. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berm shall be stabilized by seeding, sodding, fertilizing and mulching (if required) in accordance with the vegetative treatment specifications or as shown on the accompanying drawings.

VII. 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 abatement will be followed. Construction plans shall include erosion and sediment control measures to be employed during the construction process.



TEMPORARY STREAM DIVERSION CHANNEL DETAIL
SCALE : 1" = 50'



200 SCALE DRAINAGE AREA MAP
(DRAINAGE AREA UP STREAM OF SITE)

CULVERT DRAINAGE AREA MAP
SCALE: 1" = 200'

Seal By GLW Pertains only to revisions by GLW.

ENGINEER CERTIFICATE

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

THOMAS L. WILEY, MD. REG. NO. 9218 — 3/21/89 DATE

DEVELOPERS CERTIFICATE

"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 Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

KENNETH G. MALM — 3/22/89 DATE

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for [redacted], soil erosion and sediment control.

U.S. Soil Conservation Service — 4/12/89 Date

These plans for [redacted], soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Howard Soil Conservation District — 4/12/89 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — 6/7/89 DATE

CHIEF, BUREAU OF HIGHWAYS — 6/7/89 DATE

CHIEF, BUREAU OF ENGINEERING — 6/5/89 DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

DIRECTOR OF PLANNING AND LAND DEVELOPMENT — 6/20/89 DATE

1443

DESIGNED G.P. R.A.G.W. 6/87/88 date
DRAWN S.A. DAT, M.J.M. 6/87/88 date
CHECKED ____ date
APPROVED ____ date

REVISIONS		
DATE	BY	DESCRIPTION
DEC.90	R.W.	PER DNR Comments
		ADDED Stone SANDBAGE DIVERSION BY GLW
5/27/98	M.C.F.	rev. I-3A per crystal springs outfall

Dewberry & Davis
ENGINEERS — ARCHITECTS — PLANNERS — SURVEYORS
3300 N. RIDGE ROAD, SUITE 100
ELLICOTT CITY, MD. 21043
(301) 461-7478

STATE OF MARYLAND — THOMAS L. WILEY — REGISTERED PROFESSIONAL ENGINEER

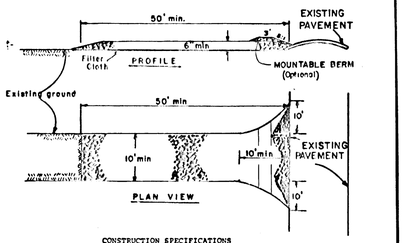
OWNER / DEVELOPER
NV LAND INC.
6820 ELM STREET
McLEAN, VA. 22101
(703) 734-9730

DRAINAGE AREA, GRADING AND SEDIMENT CONTROL PLAN
MONTGOMERY MEADOWS
SECTION ONE AREA THREE
LOT 1 THRU LOT 48
TAX MAP: 31 PARCEL: 423 BLOCKS:
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 50' JUNE 24, 1988
SCALE: AS SHOWN CONTRACT NO. F-89-88 LIC NO. SHEET 7 OF 8

F-88-88

STABILIZED CONSTRUCTION ENTRANCE
not to scale

STANDARD SYMBOL SCE

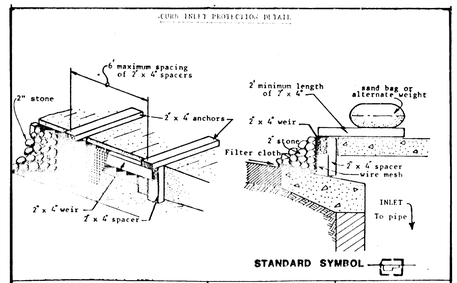


CONSTRUCTION SPECIFICATIONS

1. Stone Size – Use 2" stone, or reclaimed or recycled concrete equivalent.
2. Length – As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
3. Thickness – Not less than six (6) inches.
4. Width – Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
5. Filter Cloth – Will be placed over the entire area prior to placing of stone. Filter will not be required on a single family residence lot.
6. Surface Water – All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
7. Maintenance – The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
8. Washing – Wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
9. Periodic inspection and needed maintenance shall be provided after each rain.

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE College Park, Md.	STABILIZED CONSTRUCTION ENTRANCE	Standard Drawing SCE-1

CURB INLET PROTECTION DETAIL

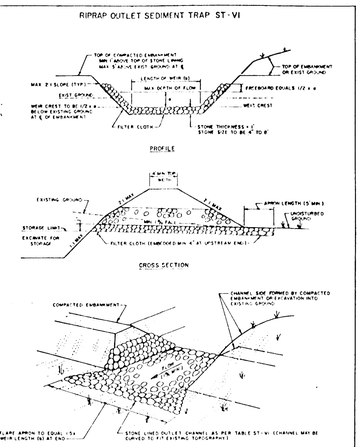


U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	INLET PROTECTION DETAIL	STANDARD DRAWING IPD-1

Curb Inlet Protection.

1. Attach a continuous piece of wire mesh (30" min. 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 piece of approved filter cloth (40-85 sieve) of the same dimensions as the wire mesh over the wire mesh and securely attach to the 2" x 4" weir.
3. Securely nail the 2" x 4" weir to 9" long vertical spacers to be located between the weir and inlet face (max. 6' 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.

RIPRAP OUTLET SEDIMENT TRAP ST-VI



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	RIPRAP OUTLET SEDIMENT TRAP	STANDARD DRAWING ST-VI

16-13

SILT FENCE

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN BULGES DEVELOP IN THE SILT FENCE.

POSTS: STEEL, EITHER T OR U TYPE OR 2" HARDWOOD

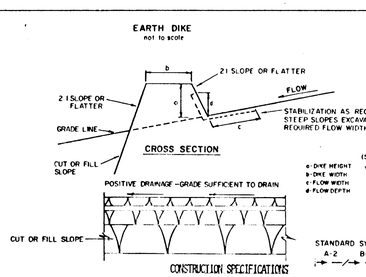
FENCE: WOVEN WIRE, 14½ GA. MIN. 6" MAX. MESH OPENING

FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL

PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.

U.S DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	SILT FENCE	STANDARD DRAWING SF-1

EARTH DIKE
not to scale



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

CONSTRUCTION SPECIFICATIONS

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

FLOW CHANNEL STABILIZATION

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

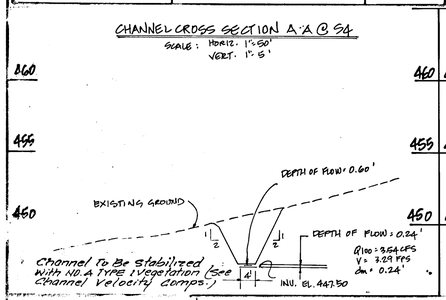
A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
B. RIP-RAP TO BE 4-8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.
C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.
7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

U.S DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	EARTH DIKE	STANDARD DRAWING ED-1

1003

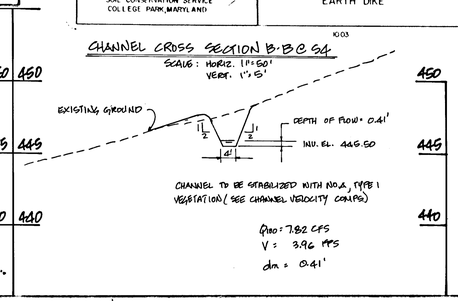
CHANNEL CROSS SECTION A-A @ SA

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



CHANNEL CROSS SECTION B-B @ SA

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



CONSTRUCTION SEQUENCE

1. OBTAIN A GRADING PERMIT.
2. INSTALL STABILIZED CONSTRUCTION ENTRANCE, EARTH DIKES, SILT FENCE, STRAW BALE DIKES, PERIMETER SWALE/DIKES, AND SEDIMENT TRAPS IN ACCORDANCE WITH SCS STANDARDS SCE-1, ED-1, SF-1, SDB-1, PSD-1, AND ST-VI RESPECTIVELY.
3. START CLEARING AND GRUBBING.
4. a) CONSTRUCT A TEMPORARY CHANNEL DIVERSION AT THE CULVERT CROSSING LEAVING FIVE(5) FEET UNEXCAVATED AT THE UP STREAM AND DOWNSTREAM ENDS WHERE THE CHANNEL DIVERSION MEETS THE EXISTING STREAM.
   b) STABILIZE THE CONSTRUCTION PORTION OF THE CHANNEL DIVERSION AS PER SCS STANDARD GW-3.
5. BUILD A DEWATERING BASIN AS NEEDED (WRA DETAIL WPD-2).
6. a. PLACE A SANDBAG DIKE DOWNSTREAM TO PREVENT THE STREAM FROM BACKWASHING INTO CONSTRUCTION AREA.
   b) EXCAVATE THE REMAINING FIVE(5) FEET OF THE TEMPORARY CHANNEL DIVERSION AT THE DOWNSTREAM END AND STABILIZE.
7. CONSTRUCT A SANDBAG DIVERSION UPSTREAM TO DIVERT WATER INTO THE TEMPORARY CHANNEL DIVERSION.
8. EXCAVATE THE REMAINING FIVE(5) FEET OF THE CHANNEL DIVERSION AT THE UPSTREAM END OF THE TEMPORARY CHANNEL DIVERSION AND STABILIZE BEFORE ALLOWING WATER TO PASS THROUGH THE CHANNEL DIVERSION.
9. BACKFILL TO SUBGRADE AND CONSTRUCT THE NEW ROADWAY.
10. a. INSTALL THE NEW CULVERT DEPRESSING IT ONE(1) FOOT BENEATH THE NATURAL STREAM INVERT TO ALLOW SILTATION FOR IMPROVED FISH PASSAGE.
    b. INSTALL UTILITIES.
11. STABILIZE THE DISTURBED SLOPES AND STREAM BED WITH APPROVED METHODS.
12. DEWATER THE AREA, THEN REMOVE THE TEMPORARY STREAM DIVERSION AND SILT FENCE FROM THE DOWNSTREAM DISTURBANCES.
13. SEED AND MULCH ANY REMAINING DISTURBANCES.
14. RESTORE THE DEWATERING BASIN TO THE ORIGINAL GRADE OF THE SURROUNDING AREA.
15. CLEAN UP THE CONSTRUCTION SITE.
16. SEED AND MULCH ALL THE DISTURBED AREAS.
17. GRADE THE PERMANENT DIVERSION DIKE SWALE ALONG THE EAST PROPERTY LINE.
18. ROUGH GRADE THE ROAD TO SUBGRADE AND INSTALL ALL UTILITIES.
19. FINE GRADE ROADS, INSTALL CURB & GUTTER, LAY ASPHALT BASE COURSE, AND STABILIZED ALL REMAINING DISTURBED AREAS.
20. REMOVE SEDIMENT TRAP/TEMPORARY SWM POND UPON APPROVAL OF INSPECTOR AND CONSTRUCT REMAINING STORMDRAIN.
21. LAY SURFACE COURSE PAVEMENT AND STABILIZE THE DISTURBED AREA FROM THE STORMDRAIN CONSTRUCTION.
22. AFTER EACH DAY, THE SEDIMENT CONTROL DEVICES ARE TO BE REPAIRED OR REPLACED IF THEY ARE DAMAGED DURING CONSTRUCTION OR RAINFALL.

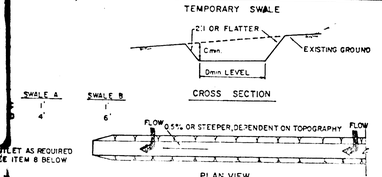
DETAILS AND SPECIFICATIONS FOR VEGETATIVE ESTABLISHMENT

SITE PREPARATION

1. TEMPORARY PERIMETER DIKES AND SILT TRAPS, ETC., ARE TO BE PROVIDED AS PER THIS PLAN PRIOR TO GRADING OPERATIONS WITH LOCATION ADJUSTMENTS TO BE MADE IN THE FIELD AS NECESSARY AND TO BE MAINTAINED AT THE END OF WORKING DAY. THE MINIMUM AREA PRACTICAL SHALL BE DISTURBED FOR THE MINIMUM AMOUNT OF TIME POSSIBLE.
2. PERMANENT SEEDING:
   A. SEEDBED PREPARATION: AREA TO BE SEEDED SHALL BE LOOSE AND FRIABLE TO A DEPTH OF AT LEAST 3". THE TOP LAYER SHALL BE LOOSENED BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING OCCURS. IN LIEU OF SOIL TEST RESULTS, APPLY 100 LBS. OF DOLOMITIC LIMESTONE AND 23 LBS. OF 10 - 10 - 10 FERTILIZER PER 1,000 SQUARE FEET. HARROW OR DISK LIME AND FERTILIZER INTO THE SOIL TO A DEPTH OF AT LEAST 3". ON SLOPES FLATTER THAN 3:1, NO ATTEMPT SHOULD BE MADE TO DRAG ANY DISKED AREA TO MAKE THE SOIL SURFACE SMOOTH AFTER DISKING.
   B. SEEDING: APPLY 5 - 6 LBS. PER 1,000 SQUARE FEET OF KENTUCKY 31 TALL FESCUE BETWEEN FEBRUARY 1 AND APRIL 30 OR BETWEEN AUGUST 15 AND OCTOBER 31. APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER OR HYDROSEEDER (SLURRY INCLUDES SEEDS AND FERTILIZER, RECOMMENDED ON STEEP SLOPES ONLY) ON A MOIST, FIRM SEEDBED. MAXIMUM SEED DEPTH SHOULD BE 1/4" IN CLAYEY SOILS AND 1/2" IN SANDY SOILS WHEN USING OTHER THAN THE HYDROSEEDER METHOD. IRRIGATE IF SOIL MOISTURE IS DEFICIENT TO SUPPORT ADEQUATE GROWTH, UNTIL VEGETATION IS FIRMLY ESTABLISHED.
   C. MULCHING: MULCH SHALL BE UNCHOPPED, UNROTTED, SMALL GRAIN STRAW APPLIED AT A RATE OF 70 TO 90 LBS. PER 1,000 SQUARE FEET. MULCH MATERIALS SHALL BE RELATIVELY FREE OF ALL KINDS OF WEEDS AND SHALL BE FREE OF PROHIBITED NOXIOUS WEEDS WHICH ARE: CANADA THISTLE, JOHNSONGRASS, AND QUACK-GRASS. SPREAD MULCH MECHANICALLY OR UNIFORMLY BY HAND. MULCH ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER MULCH PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY PEG AND TWINE METHOD, MULCH ANCHORING TOOL, NETTING OR LIQUID MULCH BINDERS.
3. TEMPORARY SEEDING:
   LIME 1100 LBS. OF DOLOMITIC LIMESTONE PER 1,000 SQUARE FEET
   FERTILIZER: 15 LBS. OF 10 - 10 - 10 PER 1,000 SQUARE FEET
   SEED: PERENNIAL RYE, ITALIAN RYE - 0.92 LBS. PER 1,000 SQUARE FEET (FEB. 1 THROUGH APRIL 30 OR AUG. 15 THROUGH NOV. 1)
   MILLET - 0.92 LBS. PER 1,000 SQUARE FEET (MAY 1 - AUGUST 15)
   MULCH: SAME AS ABOVE (NOV. 2 THROUGH JAN. 31, USE MULCH ONLY)
4. NO FILLS MAY BE PLACED ON FROZEN GROUND. ALL FILL TO BE PLACED IN APPROXIMATELY HORIZONTAL LAYERS, EACH LAYER HAVING A LOOSE THICKNESS OF NOT MORE THAN 8". ALL FILL IN ROADWAYS AND PARKING AREAS IS TO BE CLASSIFIED TYPE 2 AS PER ANNE ARUNDEL COUNTY GRADING ORDINANCE, SECTION 12-207, AND COMPACTED TO 90% DENSITY. COMPACTION TO BE DETERMINED BY ASTM D-1557 (MODIFIED PROCTOR). ANY FILL WITHIN BUILDING AREA TO BE COMPACTED TO A MINIMUM OF 95% AS DETERMINED BY METHODS PREVIOUSLY MENTIONED. ALL OTHER FILLS SHALL BE COMPACTED SUFFICIENTLY SO AS TO BE STABLE AND PREVENT EROSION AND SLIPPAGE.
5. PERMANENT SOD:
   PERMANENT SOD IS TO BE KENTUCKY 31 TALL FESCUE STATE APPROVED SOD. LIME AND FERTILIZER PER PERMANENT SEEDING SPECIFICATIONS AND LIGHTLY IRRIGATE SOIL PRIOR TO LAYING SOD. SOD IS TO BE LAID ON THE CONTOUR WITH ALL ENDS TIGHTLY ABUTTING. WATER AND ROLL OR TAMP SOD TO INSURE POSITIVE ROOT CONTACT WITH THE SOIL. ALL SLOPES GREATER THAN 3 TO 1, AS SHOWN, ARE TO BE PERMANENTLY SODDED. ADDITIONAL WATERING FOR ESTABLISHMENT MAY BE REQUIRED. SOD IS NOT TO BE APPLIED ON FROZEN GROUND.

NOTE: USE OF THIS INFORMATION DOES NOT PRECLUDE MEETING ALL OF THE REQUIREMENTS OF THE 'STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS'.

TEMPORARY SWALE



CONSTRUCTION SPECIFICATIONS

1. ALL TEMPORARY SWALES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
2. DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSIVE VELOCITY.
4. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE SWALE.
5. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
6. FILLS SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT.
7. ALL EARTH REMOVED AND NOT NEEDED ON CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE SWALE.
8. STABILIZATION SHALL BE AS PER THE CHART BELOW:

FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	A (5 AC OR LESS)	B (5 AC - 10 AC)
1	0.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE OR EXCELSTOR
3	5.1-8.0%	SEED WITH JUTE OR EXCELSIOR; SOD	LINED RIP-RAP 4-8" RECYCLED CONCRETE EQUIVALENT
4	8.1-20%	LINED 4-8" RIP RAP	ENGINEERED DESIGN

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

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	TEMPORARY SWALE	STANDARD DRAWING TS-1

SEDIMENT CONTROL NOTES:

1) A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (992-2437)
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 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
3) Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
4) All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chaper 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 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (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	17.9 Acres
Area Disturbed	6.7 Acres
Area to be roofed or paved	1.5.5 Acres
Area to be vegetatively stabilized	5.7 Acres
Total Cut	84556 Cu. yds
Total Fill	16662 Cu. yds
Offsite waste/borrow area location	

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 DPW 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.

ENGINEERS CERTIFICATE

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

THOMAS I. WILEY, MD REG. NO. 9223 — DATE 3/21/89

DEVELOPERS CERTIFICATE

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 Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

NAME: THOMAS I. WILEY — DATE 3/22/89

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for [redacted] soil erosion and sediment control.

U.S. Soil Conservation Service — DATE 4/17/89

These plans for [redacted] soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Howard Soil Conservation District — DATE 4/19/89

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 6/7/89

CHIEF, BUREAU OF HIGHWAY — DATE 6/7/89

CHIEF, BUREAU OF ENGINEERING — DATE 6/8/89

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 6/6/89 JB

REVISIONS		
DATE	BY	DESCRIPTION
DEC 90	R.W.	PER DNR COMMENTS (ADDED CONST. SEQUENCE NOTES)

DESIGNED G.P. 6/27/88 date
DRAWN S.A. 6/27/88 date
CHECKED ____ date
APPROVED ____ date

Dewberry & Davis
ENGINEERS — ARCHITECTS — PLANNERS — SURVEYORS
3300 N. RIDGE RD., SUITE 100, ELLICOTT CITY MD. 21043
8411 Arlington Boulevard, Fairfax, Virginia 22030
19201 Montgomery Village Ave., Gaithersburg, Md. 20760

STATE OF MARYLAND — THOMAS I. WILEY — No. 9223 — REGISTERED PROFESSIONAL ENGINEER

OWNER / DEVELOPER

N V LAND, INC
6820 ELM STREET
McLEAN, VA 22101
(703) 734-9730

DETAILS FOR

DRAINAGE AREA, GRADING AND SEDIMENT CONTROL PLAN
MONTGOMERY MEADOWS
SECTION ONE AREA THREE
LOT 1 THRU LOT 48

TAX MAP: 31 PARCEL: 423 BLOCKS:
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
JUNE 24, 1988

SCALE As SHOWN | CONTRACT NO | FILE NO. 8005-EC | SHEET 8 OF 8

1443