

# FINAL PLAN VILLAGE CREST

## PARCELS C-1, D-1 AND E-1

### A RESUBDIVISION OF WORTHINGTON FIELDS NON BUILDABLE PARCEL A-3 AND SUBDIVISION OF P/O PARCEL 98

# HOWARD COUNTY, MARYLAND

#### SITE ANALYSIS

EXISTING ZONING: P.O.R.  
 COUNTY REFERENCE: S-98-18, S-00-05, P-01-20, F-02-112  
 GROSS AREA OF TRACT: 73.84 AC. (INCLUDING RECORDED PARCELS A-1, A-2, AND A-3, VILLAGE CREST, F-02-112, AND THE RECORDED SECTION OF THE HILLSBOROUGH ROAD PUBLIC ROAD R/W, F-01-60)  
 AREA OF FLOODPLAIN: 10966.18 SQ. FT. (0.2517 AC.)  
 AREA OF STEEP SLOPES: 0.99AC.  
 NET AREA OF TRACT: 72.73 AC.  
 AREA OF PROPOSED PARCELS: 68.41 AC.  
 AREA OF PROPOSED ROADS: 5.43 AC.  
 NUMBER OF PROPOSED PARCELS: 5  
 OPEN SPACE REQUIRED: N/A

#### GENERAL NOTES

- ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- DEED REFERENCES: LIBER 370, FOLIO 376
- PROJECT BACKGROUND:  
 LOCATION: TAX MAP 25, GRID 20  
 2ND ELECTION DISTRICT  
 ZONING: POR
- THE PROJECT BOUNDARY IS BASED ON A BOUNDARY SURVEY PERFORMED BY FISHER COLLINS & CARTER, INC. DATED SEPTEMBER 21, 1998.
- THE TOPOGRAPHY SHOWN HEREON IS BASED ON AERIAL PHOTOGRAMETRIC SURVEY PERFORMED BY WINGS AERIAL MAPPING COMPANY DATED MARCH, 1995.
- THE LIMITS OF PUBLIC STORM DRAIN OWNERSHIP AND MAINTENANCE ENDS AT THE PUBLIC RIGHT-OF-WAY.
- WATER AND SEWER FOR THIS PROJECT WILL BE PUBLIC. WATER IS EXTENDED FROM HILLSBOROUGH ROAD AND COLLEGE AVE. SEWER IS TO DRAIN TO PLANNED PUMPING STATION. WATER & SEWER CONTRACT #14-4034-D. THESE PLANS SHALL BE COORDINATED WITH REVISIONS TO THE PUBLIC SEWER PLANS.
- COORDINATE DATUM IS BASED ON THE MARYLAND COORDINATE SYSTEM (NAD '83) AS PROJECTED
- STORMWATER MANAGEMENT (C<sub>pv</sub>, W<sub>qv</sub>) TO BE PROVIDED FOR ULTIMATE DEVELOPED CONDITIONS OF SUBDIVISION  
 WATER QUALITY TO BE PROVIDED BY WET POND, (POND #1)  
 WQ<sub>v</sub>=0.92 AF  
 CP<sub>v</sub>=1.09 AF  
 REV=0.04 AF  
 EXTENDED DETENTION MICROPOUND POND (POND#2).  
 WQ<sub>v</sub>=0.21 AF  
 CP<sub>v</sub>=0.26 AF  
 REV=0.01 AF
- THE FACILITIES WILL BE HAZARD CLASS 'A'. ALL STORM WATER MANAGEMENT PONDS WILL BE PRIVATELY OWNED AND MAINTAINED BY THE H.O.A. STORMWATER MANAGEMENT IS IN ACCORDANCE WITH THE 2000 MARYLAND STORMWATER DESIGN MANUAL W/01 FOR COLLEGE AVE WIDENING IS PROVIDED BY A GRASS SWALE STORMWATER MANAGEMENT SOIL BORINGS FOR THIS SITE ARE BASED ON A GEOTECHNICAL ANALYSIS PROVIDED BY HILLIS-CARNES DATED 09/18/00.
- WETLANDS DELINEATED BY EXPLORATION RESEARCH, INC. DATED DECEMBER, 1999.
- AREA OF SLOPES 25% OR GREATER CONTIGUOUS OF 20,000 SF OR MORE: 42,644.72 SF (0.99 AC.)
- THE FLOODPLAIN STUDY IS PERFORMED BY FREDERICK WARD & ASSOCIATES, INC. DATED APRIL 2001.
- FOREST STAND DELINEATION PLAN PREPARED BY EXPLORATION RESEARCH, INC. DATED JANUARY, 2000. THE FOREST CONSERVATION EASEMENTS HAVE 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.
- THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY FOREST CONSERVATION ACT. TOTAL FOREST CONSERVATION OBLIGATION IS 18.45 ACRES. AREA OF RETENTION EASEMENTS WILL BE 3.47 ACRES AND 11.49 ACRES WILL BE PLANTED IN RESTORATION EASEMENTS. A FEE-IN-LIEU PAYMENT FOR THE REMAINING 5.50 ACRES HAS BEEN PAID IN THE AMOUNT OF \$119,790.00 (\$21,958.00 SFX .50). BOND FOR THE 14.96 ACRES HAS BEEN PAID IN THE AMOUNT OF \$287,539.56 (RETENTION - 12.7, 0.30 SFX .20 = \$25,524.16 + REFORESTATION - 5.24, 0.26 SFX .50 = \$262,015.40).
- FOREST CONSERVATION PROVIDED AND RECORDED PLAT NO. 16101 TO 16101A

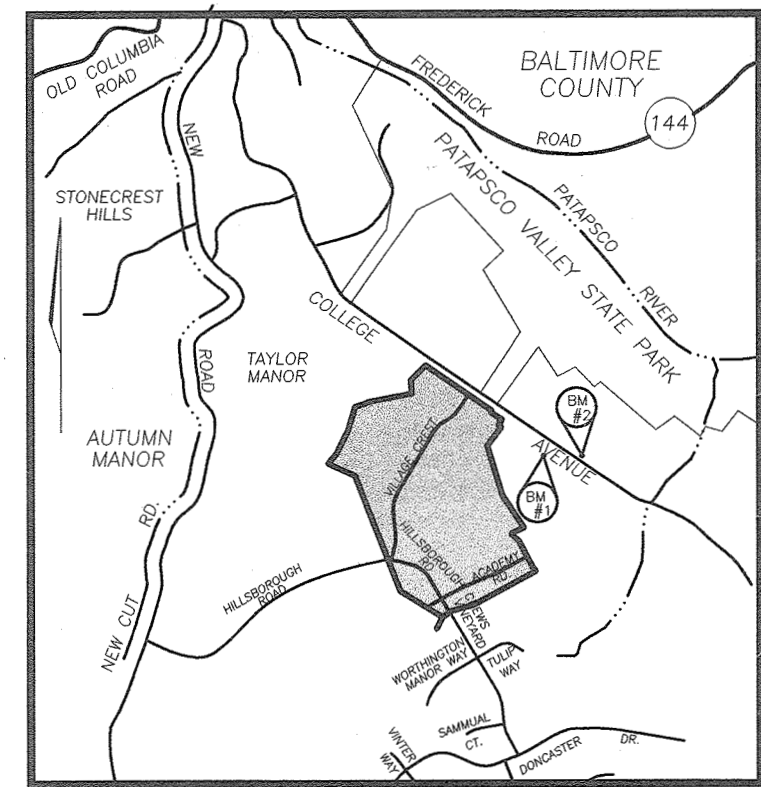
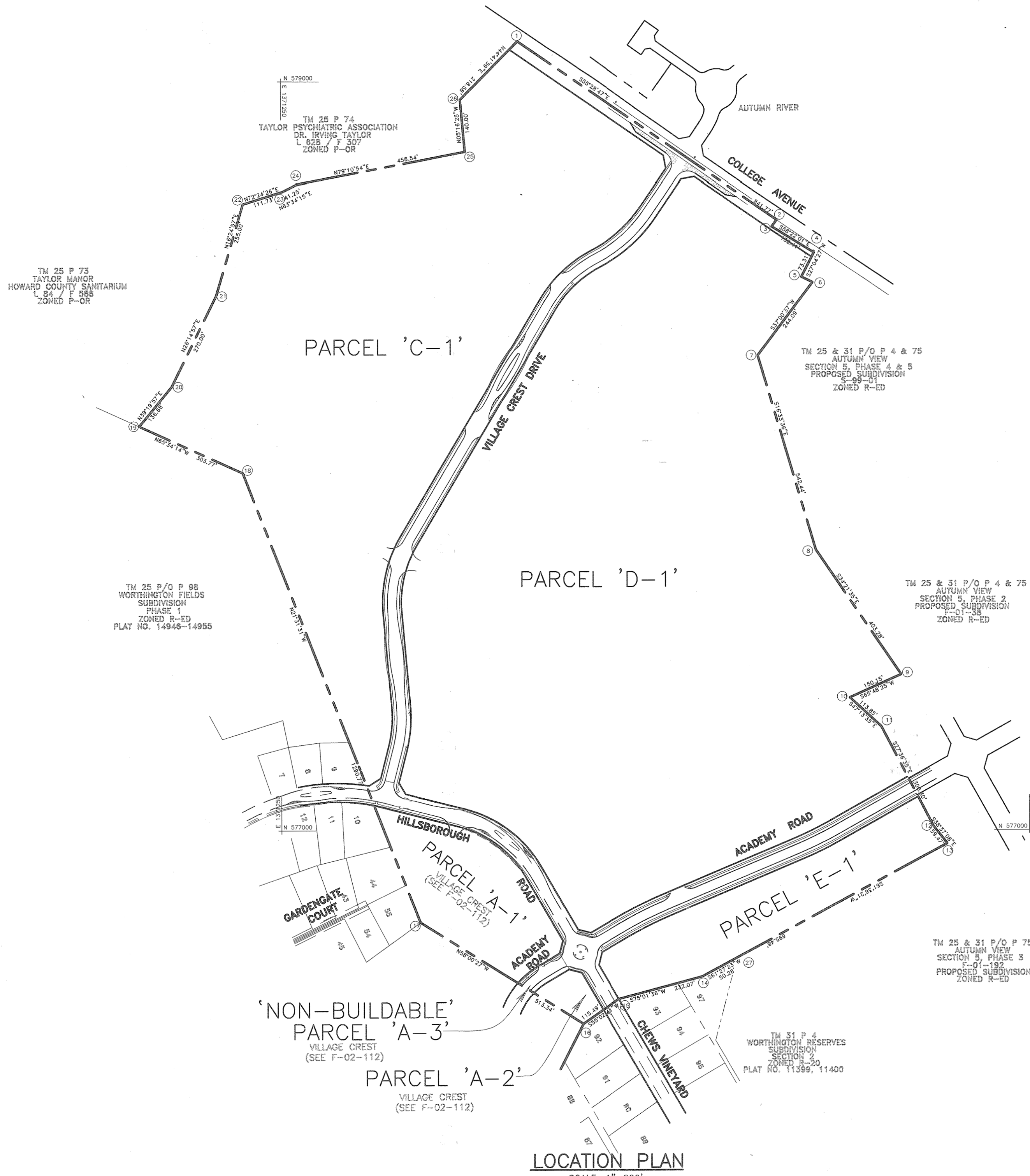
FOREST CONSERVATION EASEMENT	AREA OF RETENTION	AREA OF REFORESTATION	TOTAL
A	1.37 AC	6.49 AC	7.86 AC
B	0.00	0.18 AC	0.18 AC
C	0.00	0.14 AC	0.14 AC
D	0.00 AC	1.01 AC	1.01 AC
E	0.00 AC	0.35 AC	0.35 AC
F	0.17 AC	0.30 AC	0.47 AC
G	1.25 AC	0.92 AC	2.17 AC
H	0.00 AC	0.39 AC	0.39 AC
I	0.14 AC	0.36 AC	0.50 AC
<b>TOTAL</b>	<b>2.93 AC</b>	<b>12.02 AC</b>	<b>14.95 AC</b>

#### SHEET INDEX

1	COVER SHEET
2	FINAL ROAD CONSTRUCTION PLANS & PROFILES
3	FINAL ROAD CONSTRUCTION PLANS & PROFILES
4	FINAL ROAD CONSTRUCTION PLANS & PROFILES
5	GRADING, SEDIMENT & EROSION CONTROL PLAN
6	GRADING, SEDIMENT & EROSION CONTROL PLAN
7	GRADING, SEDIMENT & EROSION CONTROL PLAN
8	SEDIMENT AND EROSION CONTROL DETAILS
9	DRAINAGE AREA MAP FOR STORM DRAINAGE
10	STORM DRAIN PROFILES
11	STORM DRAIN PROFILES
12	PROFILES AND DETAILS - SWM POND #1
13	PROFILES AND DETAILS - SWM POND #2
14	PROFILES AND DETAILS - SWM
15	LANDSCAPE PLAN
16	FOREST CONSERVATION PLAN
17	FOREST CONSERVATION DETAILS

#### COORDINATE CHART

1	Northing = 579106.5923	Eastings = 1371883.1598
2	Northing = 578629.5611	Eastings = 1372576.7191
3	Northing = 578611.6558	Eastings = 1372563.4601
4	Northing = 578542.2114	Eastings = 1372676.1945
5	Northing = 578476.933	Eastings = 1372642.8268
6	Northing = 578462.8543	Eastings = 1372672.5524
7	Northing = 578267.9392	Eastings = 1372525.6189
8	Northing = 577748.0006	Eastings = 1372680.2236
9	Northing = 577415.0901	Eastings = 1372907.8277
10	Northing = 577353.557	Eastings = 1372770.8653
11	Northing = 577276.2409	Eastings = 1372854.4359
12	Northing = 577010.1373	Eastings = 1372993.6082
13	Northing = 576963.6725	Eastings = 1373030.7258
14	Northing = 576608.9202	Eastings = 1372374.739
15	Northing = 576548.9594	Eastings = 1372150.5447
16	Northing = 576482.7909	Eastings = 1372055.8891
17	Northing = 576754.76	Eastings = 1371620.52
18	Northing = 577955.51	Eastings = 1371146.92
19	Northing = 578018.1422	Eastings = 1370892.3442
20	Northing = 578186.8578	Eastings = 1370956.9716
21	Northing = 578429.0152	Eastings = 1371076.3861
22	Northing = 578673.6204	Eastings = 1371148.4507
23	Northing = 578707.391	Eastings = 1371254.9555
24	Northing = 578725.751	Eastings = 1371291.8943
25	Northing = 578811.8163	Eastings = 1371742.2798
26	Northing = 578951.2237	Eastings = 1371729.4118
27	Northing = 576632.9466	Eastings = 1372418.9097



#### VICINITY MAP

SCALE: 1" = 2000'

#### BENCHMARKS

BENCHMARK NO. 11, COUNTY CONTROL #3044005R  
 3/4" REBAR 0.8' BELOW SURFACE  
 N. 578233.92, E. 1373142.33  
 ELEV. = 374.389  
 ELEV. = 382.575

BENCHMARK NO. 2, COUNTY CONTROL #3044004R  
 3/4" REBAR 0.6' BELOW SURFACE  
 N. 578128.03, E. 1373460.71

REVISION #3 ONLY  
 STATE OF MARYLAND  
 ROBERT HARRIS YOGEL  
 PROFESSIONAL ENGINEER  
 No. 18193  
 5/14/20

#### VILLAGE CREST

TOTAL NUMBER OF PARCELS TO BE RECORDED	3
TOTAL AREA OF PARCELS TO BE RECORDED	65.5467 AC.
TOTAL AREA OF NON-BUILDABLE PARCEL TO BE RECORDED(ZONED POR)	0
TOTAL AREA OF ROAD INCLUDING WIDENING STRIPS TO BE RECORDED	4.0215 AC
TOTAL AREA OF SUBDIVISION TO BE RECORDED	69.5682 AC
AREA OF HILLSBOROUGH ROAD R/W RECORDED ON F-01-60.	1.1732 AC

**OWNER / DEVELOPER**  
**DR. IRVING AND EDITH TAYLOR**  
**C/O LAND DESIGN & DEVELOPMENT, INC.**  
 8000 MAIN STREET  
 ELLICOTT CITY, MD 21043  
 ATTN: MR. DONALD R. REUWER  
 PHONE: (410) 480-9105

NO.	REVISION	DATE
1.	ADDING GRADING SEDIMENT CONTROL AND LIMIT OF DISTURBANCE	06-19-03
2.	SEQUENCE OF CONSTRUCTION AND REFLECTING CHANGES OF FC EASEMENTS.	1-31-06
3.	REVISE THE PLAN TO ADD TRAIL HANDICAP CONTIGUOUS TO VILLAGE CREST DRIVE AND SHOW THE EXISTING CONDITIONS	1-25-18

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Daneker* 5-01-03  
 Chief, Bureau of Highways Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Cecily Hamilton* 5/9/03  
 Chief, Division of Land Development Date

*Chris Deane* 5/2/03  
 Chief, Development Engineering Division Date

COVER SHEET  
 FINAL ROAD CONSTRUCTION  
 PLANS & PROFILES  
 VILLAGE CREST  
 PARCELS C-1, D-1 AND E-1

TAX MAP #25 BLOCK 20  
 2ND ELECTION DISTRICT

PARCEL P/O 98  
 HOWARD COUNTY, MARYLAND

**FREDERICK WARD ASSOCIATES, INC.**  
 7125 Riverwood Drive Columbia, Maryland 21046-2354  
 Phone: 410-290-9550 Fax: 410-720-6226  
 Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: RJ  
 DRAWN BY: RJ  
 CHECKED BY: RHV  
 DATE: FEBRUARY, 2003  
 SCALE: AS SHOWN  
 W.O. NO.: 2018121.00

1 SHEET OF 17



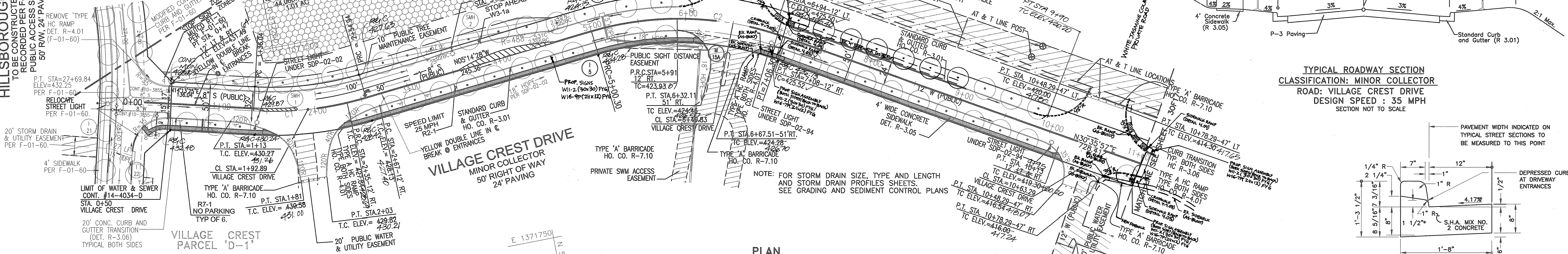
HILLSBOROUGH RD  
TO BE CONSTRUCTED AND  
RECORDED PER F-01-60.  
PUBLIC ACCESS STREET  
50' R/W, 24' PAVING

WORTHINGTON FIELD  
P-00-07  
ZONED R-ED

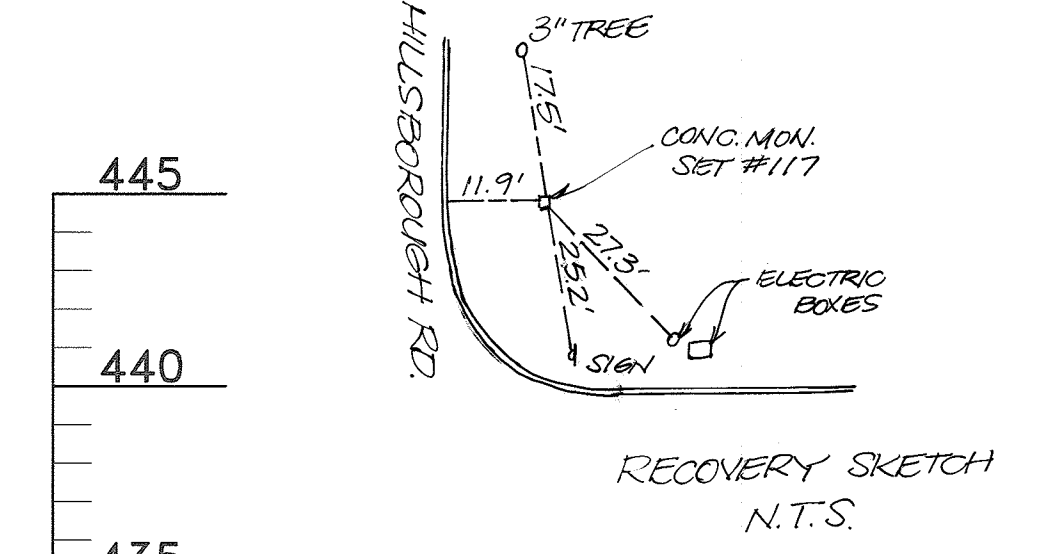
VILLAGE CREST  
PARCEL D-1

VILLAGE CREST DRIVE  
MINOR COLLECTOR  
50' RIGHT OF WAY  
24' PAVING

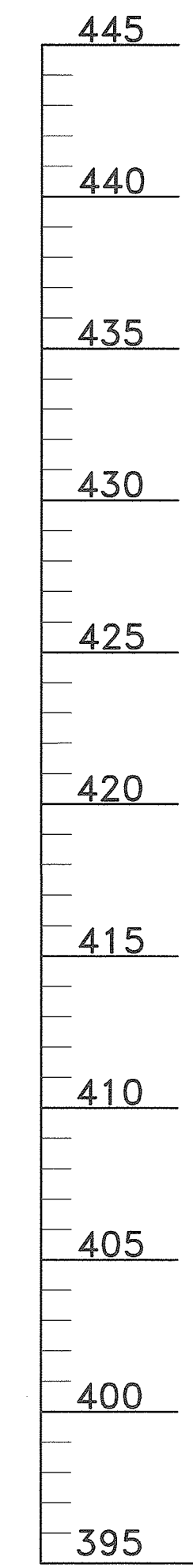
CROSSING SIGN NOTE:  
THE CROSSWALK AND SIGN LOCATIONS SHALL  
BE MARKED BY HOWARD COUNTY TRAFFIC



PLAN  
SCALE: 1" = 50'

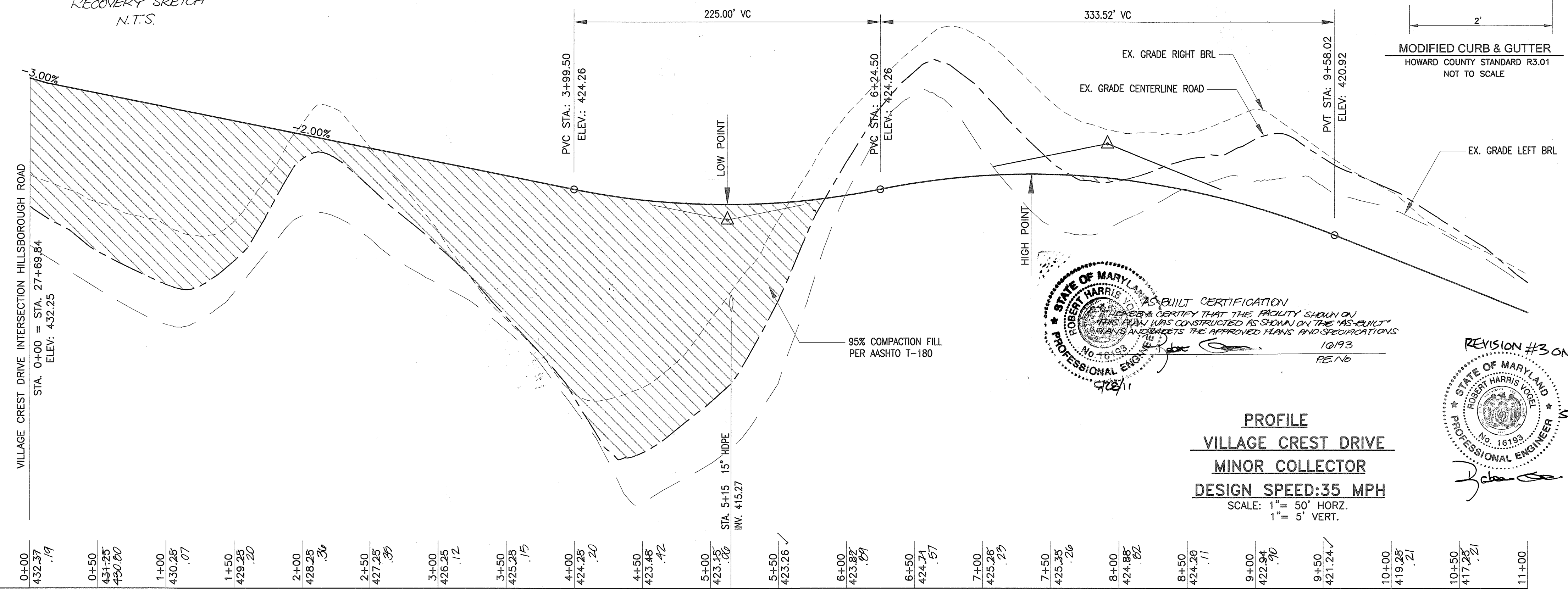


RECOVERY SKETCH  
N.T.S.

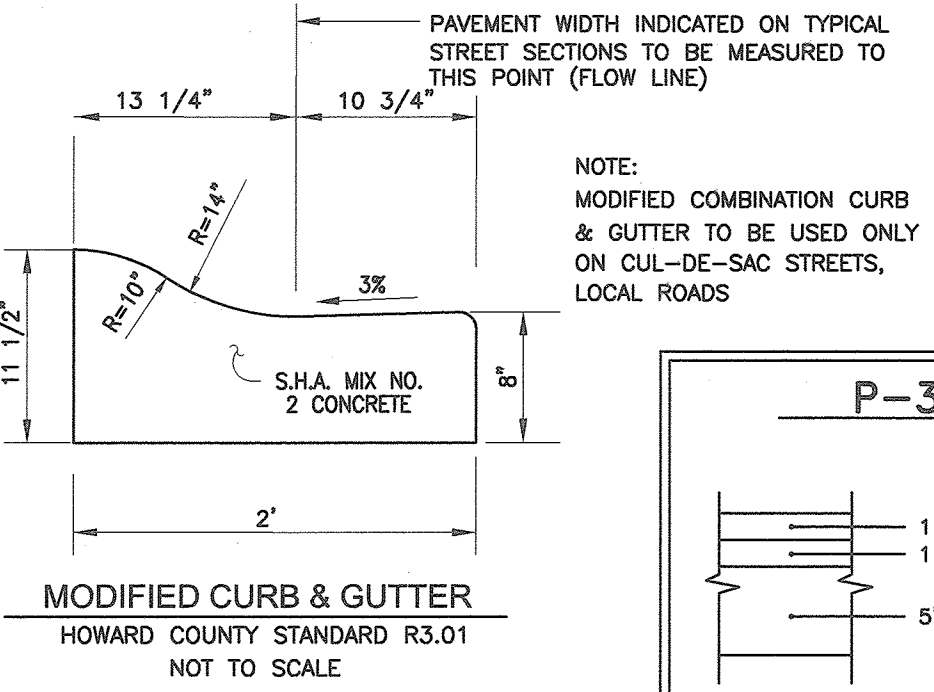


LOW POINT STA = 5+12  
PVI STA = 5+12  
PVI ELEV = 422.01  
LOW POINT ELEV = 423.13  
SSD=250

HIGH POINT STA = 7+35.67  
PVI STA = 7+91.26  
PVI ELEV = 427.60  
HIGH POINT ELEV = 425.37  
SSD=250

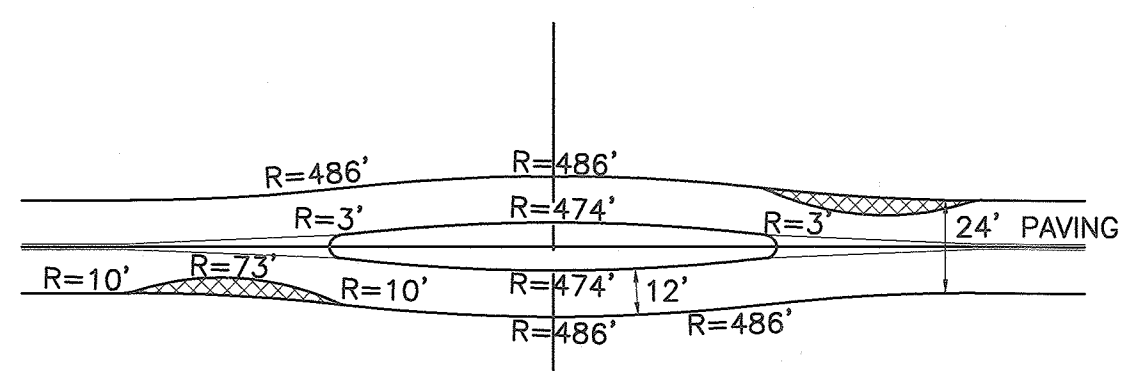
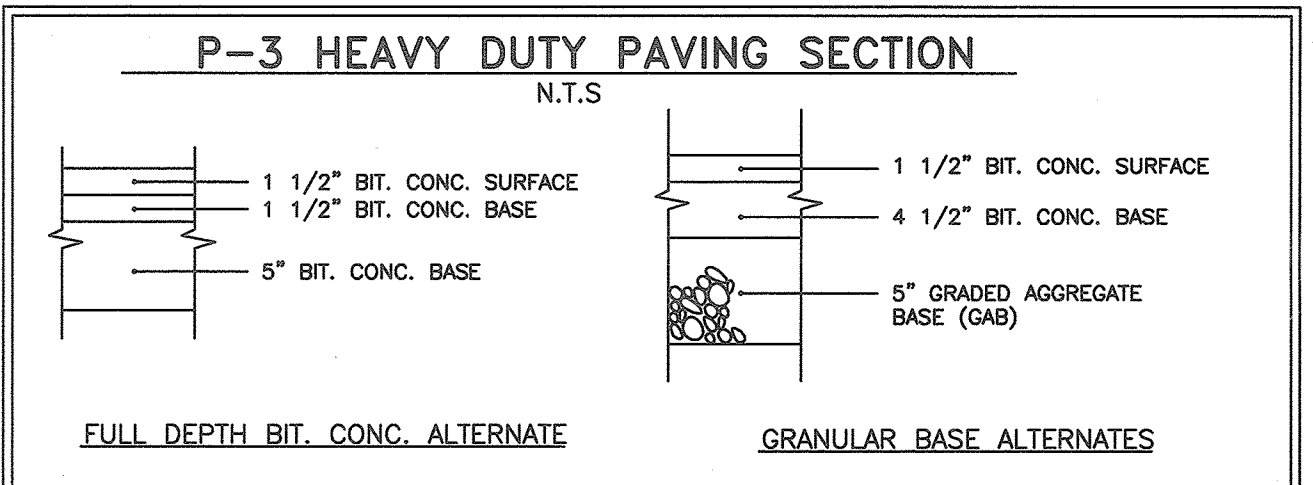


PROFILE  
VILLAGE CREST DRIVE  
MINOR COLLECTOR  
DESIGN SPEED: 35 MPH  
SCALE: 1" = 50' HORIZ.  
1" = 5' VERT.



NOTE: DEPRESSED CURB IN HANDICAP ACCESSIBLE AREAS SHALL HAVE A 0.0417(1/24) RISE FROM PAVING TO TOP OF CURB.

STANDARD COMBINATION  
CURB AND GUTTER  
HOWARD COUNTY STANDARD R-3.01  
NOT TO SCALE



MINOR COLLECTOR  
TRAFFIC CONTROL DEVICE DETAIL  
NOT TO SCALE

STREET LIGHT LOCATION CHART					
DWG. NO.	STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE	COMMENTS
2 OF 17	VILLAGE CREST DRIVE	3+53	25' LT.	150 WATT HPS VAPOR PENDANT FIXTURE (60" OFF) MOUNTED AT 30' ON A BRANZE FIBERGLASS POLE USING A 12" ARM.	ANGLE AS SHOWN ON PLANS
2 OF 17	VILLAGE CREST DRIVE	6+07	16' LT.	150 WATT HPS VAPOR PENDANT FIXTURE (60" OFF) MOUNTED AT 30' ON A BRANZE FIBERGLASS POLE USING A 12" ARM.	ANGLE AS SHOWN ON PLANS

STREET TREE CALCULATIONS			
STREET NAME	LINEAR FEET	REQUIRED TREES	PROVIDED TREES
VILLAGE CREST DRIVE	1,981	50 EACH SIDE	50 EACH SIDE

CURVE TABLE						
CURVE	LENGTH	RADIUS	DELTA ANGLE	TANGENT	CHORD DIRECTION	CHORD LENGTH
C1	118.90'	350.00'	19°27'53"	60.03'	N04°29'29"E	118.33'
C2	206.00'	329.32'	35°50'25"	106.49'	S12°55'19"W	202.66'

OWNER / DEVELOPER  
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8000 MAIN STREET  
ELLIOTT CITY, MD 21043  
ATTN: MR. DONALD R. REUWER  
PHONE: (410) 480-9105

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Richard M. Doner* 5-01-03  
Chief, Bureau of Highways Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Cindy Harman* 5/9/03  
Chief, Division of Land Development Date

*John D. ...* 5/14/03  
Chief, Development Engineering Division Date

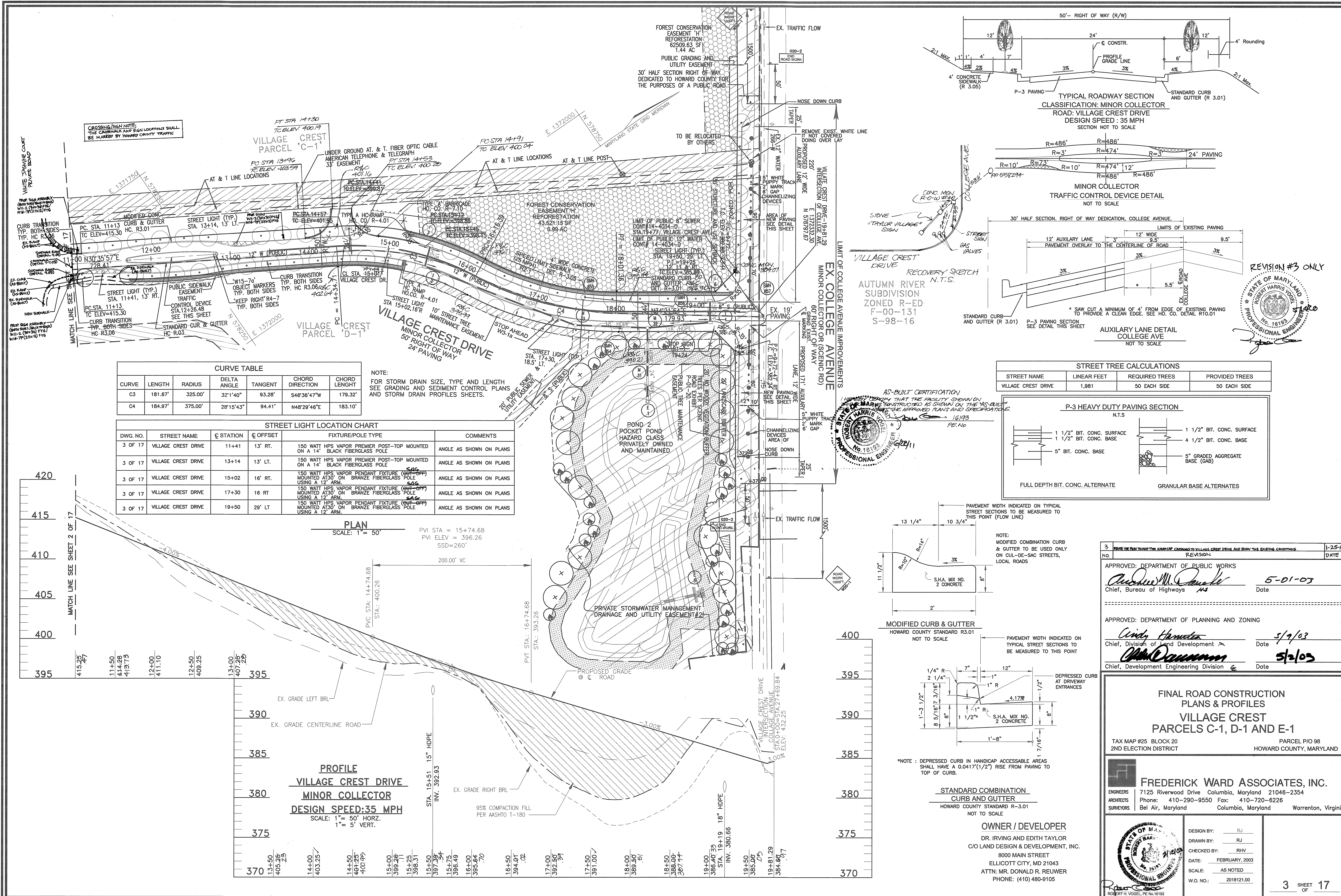
FINAL ROAD CONSTRUCTION  
PLANS & PROFILES  
VILLAGE CREST  
PARCELS C-1, D-1 AND E-1  
TAX MAP #25 BLOCK 20 PARCEL P/O 98  
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**FREDERICK WARD ASSOCIATES, INC.**  
ENGINEERS 7125 Riverwood Drive Columbia, Maryland 21046-2354  
ARCHITECTS Phone: 410-290-9550 Fax: 410-720-6226  
SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: RJ  
DRAWN BY: RJ  
CHECKED BY: RHV  
DATE: FEBRUARY, 2003  
SCALE: AS SHOWN  
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2 SHEET OF 17



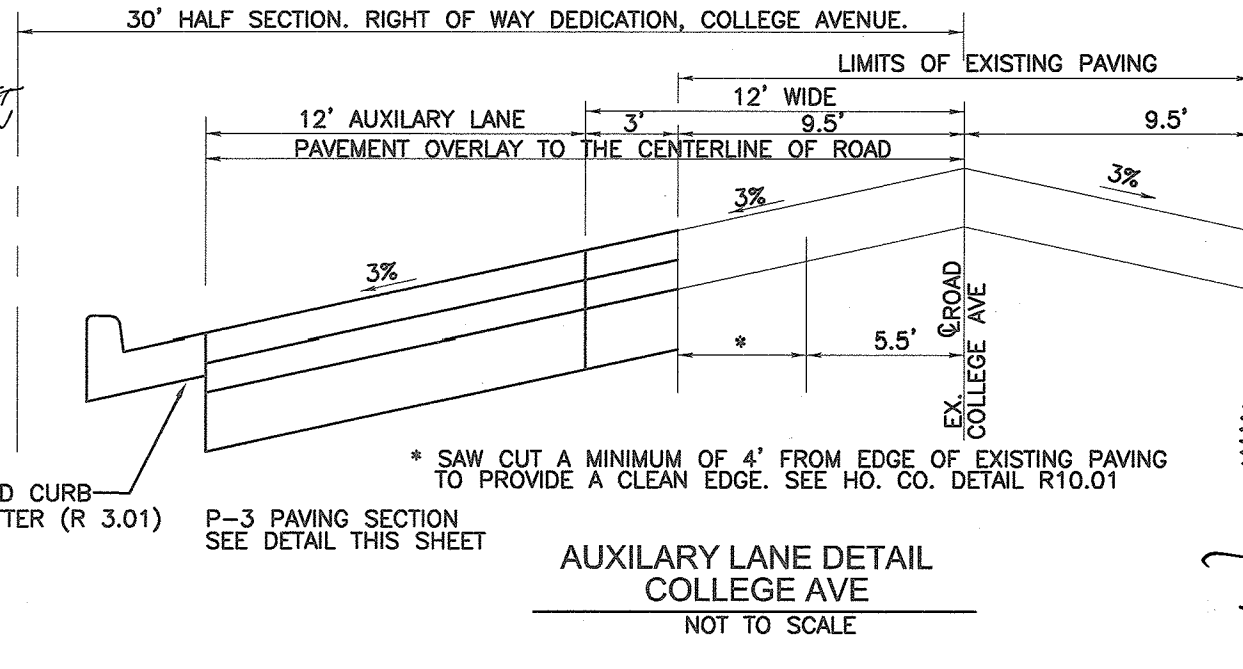
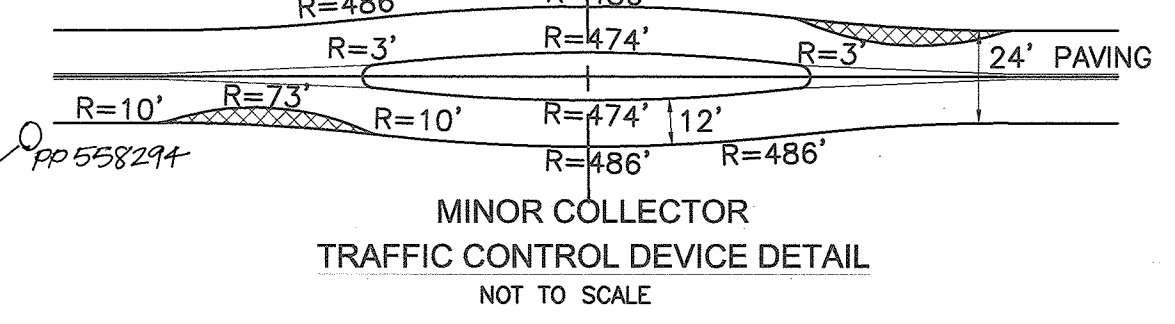
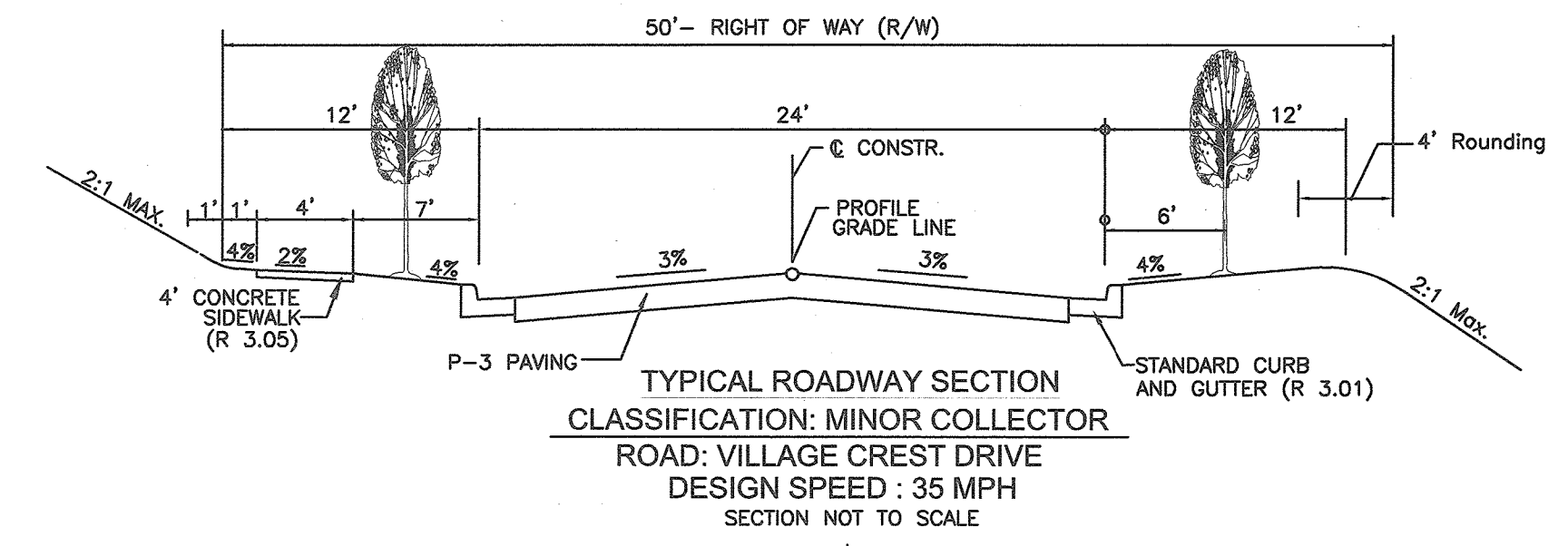
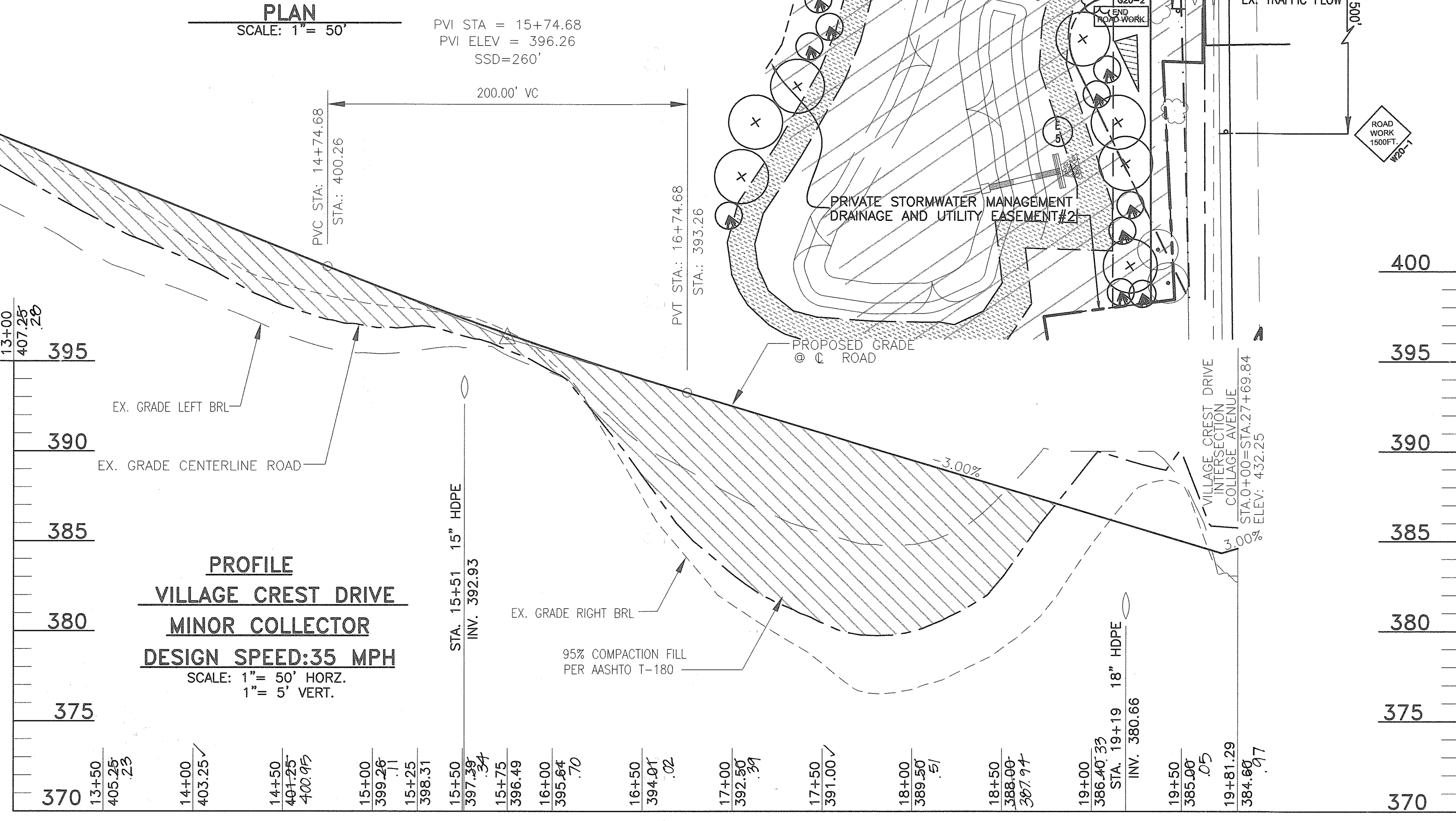


CROSSING SIGN NOTES:  
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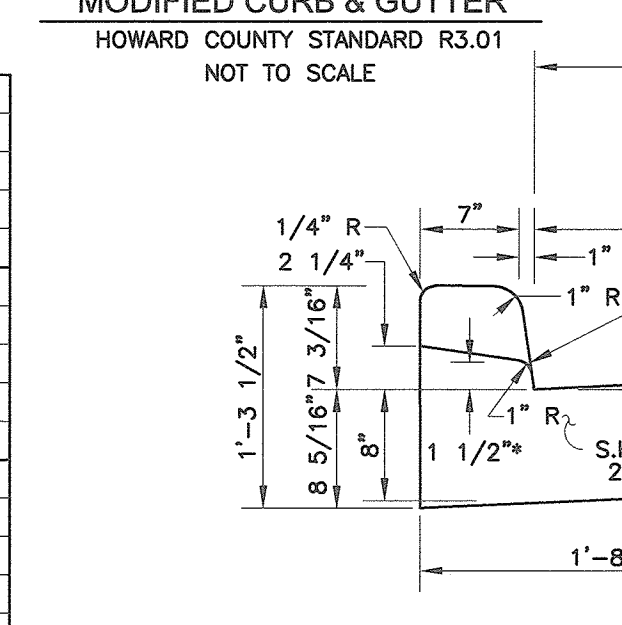
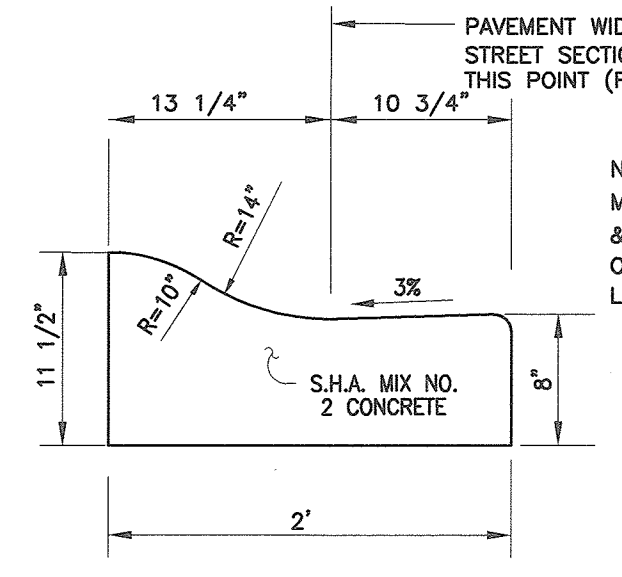
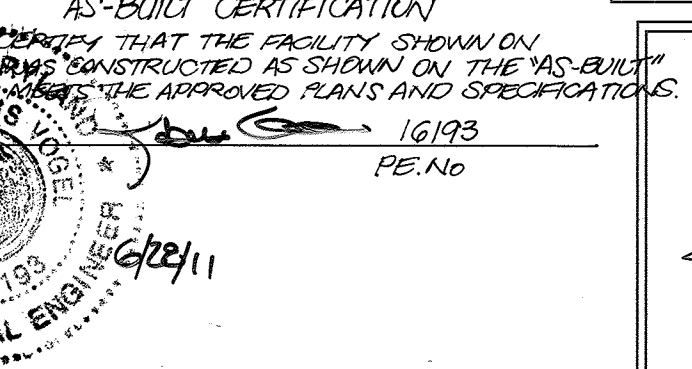
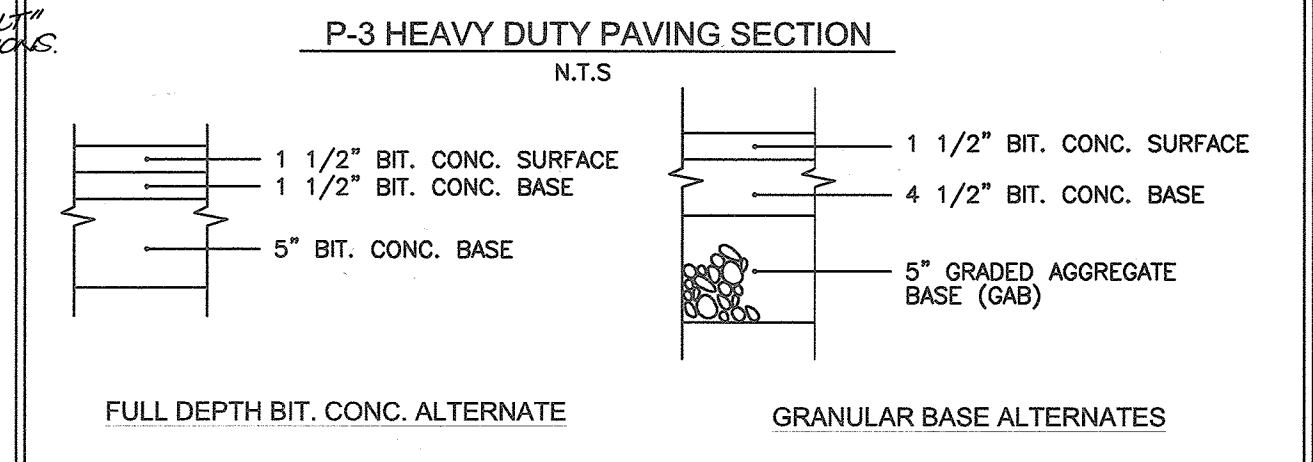
CURVE TABLE						
CURVE	LENGTH	RADIUS	DELTA ANGLE	TANGENT	CHORD DIRECTION	CHORD LENGTH
C3	181.67'	325.00'	32°1'40"	93.28'	S46°36'47"W	179.32'
C4	184.97'	375.00'	28°15'43"	94.41'	N48°29'46"E	183.10'

NOTE:  
FOR STORM DRAIN SIZE, TYPE AND LENGTH  
SEE GRADING AND SEDIMENT CONTROL PLANS  
AND STORM DRAIN PROFILES SHEETS.

STREET LIGHT LOCATION CHART						
DWG. NO.	STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE	COMMENTS	
3 OF 17	VILLAGE CREST DRIVE	11+41	13' RT.	150 WATT HPS VAPOR PREMIER POST-TOP MOUNTED ON A 14' BLACK FIBERGLASS POLE	ANGLE AS SHOWN ON PLANS	
3 OF 17	VILLAGE CREST DRIVE	13+14	13' LT.	150 WATT HPS VAPOR PREMIER POST-TOP MOUNTED ON A 14' BLACK FIBERGLASS POLE	ANGLE AS SHOWN ON PLANS	
3 OF 17	VILLAGE CREST DRIVE	15+02	16' RT.	150 WATT HPS VAPOR PENDANT FIXTURE (SHUT-OFF) MOUNTED AT 30' ON BRANZE FIBERGLASS POLE USING A 12' ARM	ANGLE AS SHOWN ON PLANS	
3 OF 17	VILLAGE CREST DRIVE	17+30	16' RT.	150 WATT HPS VAPOR PENDANT FIXTURE (SHUT-OFF) MOUNTED AT 30' ON BRANZE FIBERGLASS POLE USING A 12' ARM	ANGLE AS SHOWN ON PLANS	
3 OF 17	VILLAGE CREST DRIVE	19+50	29' LT.	150 WATT HPS VAPOR PENDANT FIXTURE (SHUT-OFF) MOUNTED AT 30' ON BRANZE FIBERGLASS POLE USING A 12' ARM	ANGLE AS SHOWN ON PLANS	



STREET TREE CALCULATIONS			
STREET NAME	LINEAR FEET	REQUIRED TREES	PROVIDED TREES
VILLAGE CREST DRIVE	1,981	50 EACH SIDE	50 EACH SIDE



APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Daniels* 5-01-03  
 Chief, Bureau of Highways

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Cindy Hamilton* 5/9/03  
 Chief, Division of Land Development

APPROVED: *John D. ...* 5/2/03  
 Chief, Development Engineering Division

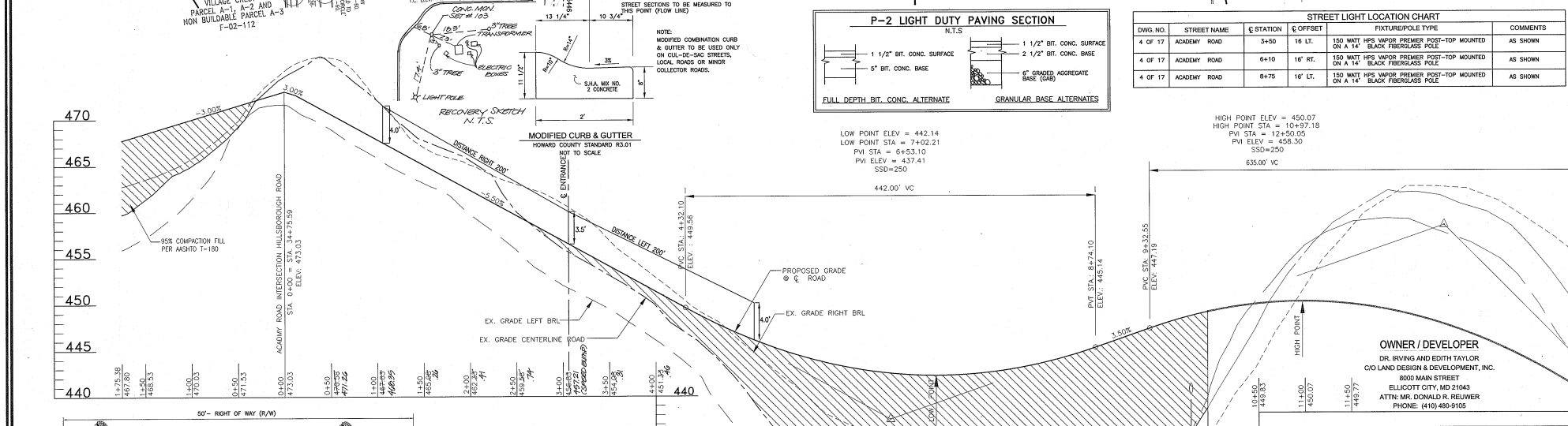
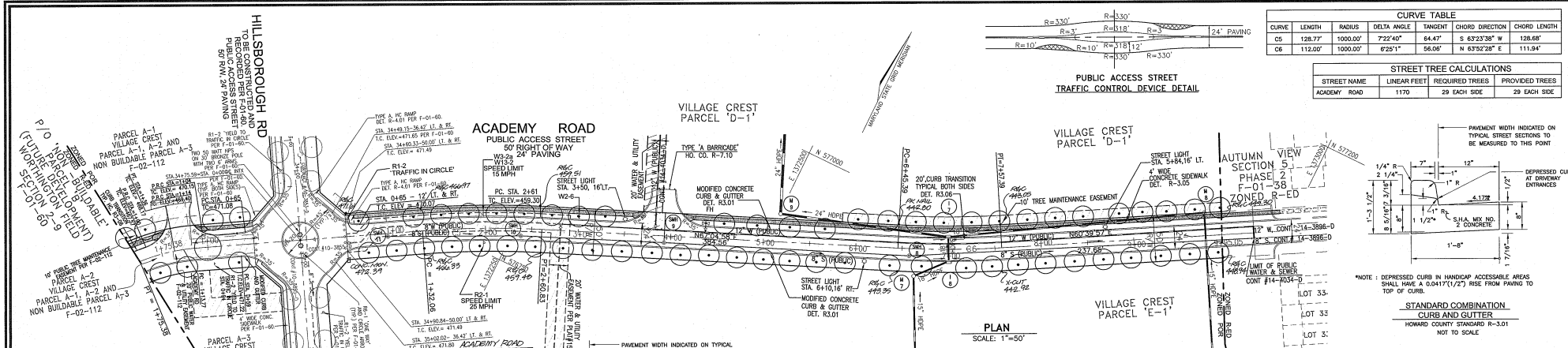
**FINAL ROAD CONSTRUCTION PLANS & PROFILES**  
**VILLAGE CREST PARCELS C-1, D-1 AND E-1**  
 TAX MAP #25 BLOCK 20 PARCEL P/O 98  
 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**FREDERICK WARD ASSOCIATES, INC.**  
 ENGINEERS 7125 Riverwood Drive Columbia, Maryland 21046-2354  
 ARCHITECTS Phone: 410-290-9550 Fax: 410-720-6226  
 SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: RJ  
 DRAWN BY: RJ  
 CHECKED BY: RHV  
 DATE: FEBRUARY, 2003  
 SCALE: AS NOTED  
 W.O. NO.: 2018121.00

3 SHEET OF 17





**OWNER / DEVELOPER**  
DR. IRVING AND EDITH TAYLOR  
C/O LAND DESIGN & DEVELOPMENT, INC.  
8000 MARY STREET  
ELLSWORTH CITY, MD 21043  
ATTN: MR. DONALD R. REULVER  
PHONE: (410) 480-9105

**FINAL ROAD CONSTRUCTION PLANS & PROFILES**  
VILLAGE CREST PARCELS C-1, D-1 AND E-1

TAX MAP #25 BLOCK 20 PARCEL PIO 98  
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**FREDERICK WARD ASSOCIATES, INC.**  
OWNERS: 7125 Riverwood Drive, Columbia, Maryland 21046-2354  
PHONES: 410-290-9550 Fax: 410-720-6226  
SURVEYORS: Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: RJ  
DRAWN BY: RJ  
CHECKED BY: BHV  
DATE: FEBRUARY, 2003  
SCALE: AS SHOWN  
W.D. NO.: 2019121.00

4 SHEET OF 17

N:\PROJECTS\2003\02\FINAL\DWG\PLAN.DWG Plot File: 18-11-03-01-2003-1000A





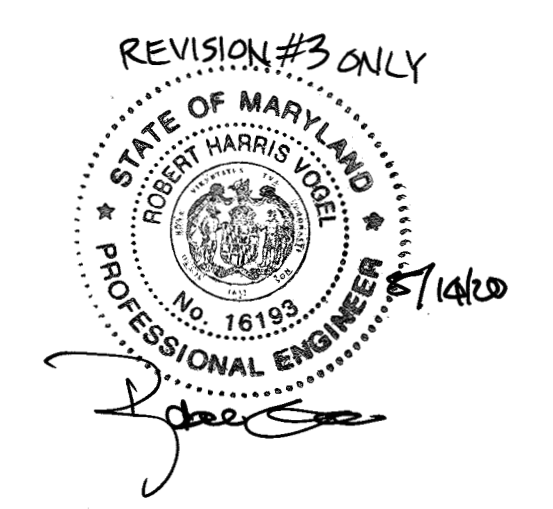
**BASIN NO. 3**

Trap type: BASIN  
 Drainage area : 3.40 Ac.  
 Total storage required : 12,240 Cf  
 Total storage provided : 27124 Cf  
 Bottom elevation: 395.00  
 Crest elevation: 400.60  
 Wet storage elevation: 395.0-398.40(3.41)  
 Dry storage elevation: 398.0-400.60(2.2')  
 Total storage depth: 5.6'  
 Constructed  
 Top of embankment: 403.4  
 Settled  
 Top of embankment: 403.0  
 Cleanout Elevation: 396.7  
 Side slopes: 3:1  
 Q2(Ex): 1.3 CFS  
 Q2(TSWM): 1.3 CFS

**LEGEND**

- Existing Contour
- Proposed Contour
- Existing Trees to Remain
- Light Poles
- 15%-24.99% STEEP SLOPE AREA
- 25% OR GREATER STEEP SLOPE AREA
- NO WOODY VEGETATION BUFFER
- WETLAND AREA
- 100 YR FLOOD PLAIN
- FOREST CONSERVATION EASEMENT
- EROSION CONTROL MATTING
- EARTH DIKE
- SOIL BORING
- STABILIZED CONSTRUCTION ENTRANCE
- TPF TREE PROTECTION FENCE
- SF SILT FENCE
- SSF SUPER SILT FENCE
- LOD LIMIT OF DISTURBANCE
- RIP-RAP INFLOW PROTECTION

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



**SOILS LEGEND**

SYMBOL	SOIL NAME	CLASS
AdC2	ALDINO SILT LOAM	C
BrB2	BRANDYWINE LOAM	C
BrC2	BRANDYWINE LOAM	C
BrC3	BRANDYWINE LOAM	C
AdB2	ALDINO SILT LOAM	C
BrD3	BRANDYWINE LOAM	C
BrF	BRANDYWINE LOAM	C
BwD	BRANDYWINE	C
NeB2	NESHAMINY SILT LOAM	B
GnB2	GLENVILLE SILT LOAM	C
GIB2	GLENELG LOAM	B
GIC2	GLENELG LOAM	B
MgC3	MANOR GRAVELLY LOAM	B
MIB2	MANOR LOAM	B
MID2	MANOR LOAM	B
MpC2	MONTALTO SILT LOAM	C
MpB2	MONTALTO SILT LOAM	C
MqC3	MONTALTO SILTY CLAY LOAM	C
MrE	MONTALTO AND RELAY SOILS	C
MsD	MONTALTO AND RELAY VERY STONY SILT LOAMS	C
Msf	MONTALTO AND RELAY VERY STONY SILT LOAMS	C
ReC2	RELAY SILT LOAM	B
WgB	WATCHUNG SANDY LOAM	D

NOTE: HOWARD SOILS SURVEY MAP NO. 20.

**PLAN**  
 SCALE: 1"=50'

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Daniels* 5-01-03  
 Chief, Bureau of Highways Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Andri Hammit* 5/9/03  
 Chief, Division of Land Development Date

*John Dammann* 5/10/03  
 Chief, Development Engineering Division Date

**ENGINEERS CERTIFICATE**

I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

*Robert H. Vogel* 4/11/03  
 SIGNATURE OF ENGINEER DATE  
 ROBERT H. VOGEL

**DEVELOPER'S CERTIFICATE**

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

*Donald R. Reuwer* 4/11/03  
 SIGNATURE OF DEVELOPER DATE  
 DONALD R. REUWER

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

USDA-NATURAL RESOURCES CONSERVATION SERVICE 4/21/03  
 DATE

THESE PLANS FOR SMALL POND CONSTRUCTION SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*Robert H. Vogel* 4/21/03  
 HOWARD SOIL CONSERVATION DISTRICT DATE

**OWNER / DEVELOPER**  
 DR. IRVING AND EDITH TAYLOR  
 C/O LAND DESIGN & DEVELOPMENT, INC.  
 8000 MAIN STREET  
 ELLICOTT CITY, MD 21043  
 ATTN: MR. DONALD R. REUWER  
 PHONE: (410) 480-9105

**FINAL GRADING, SEDIMENT & EROSION CONTROL PLAN**  
**VILLAGE CREST PARCELS C-1, D-1 AND E-1**

TAX MAP #25 BLOCK 20 PARCEL P/O 98  
 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

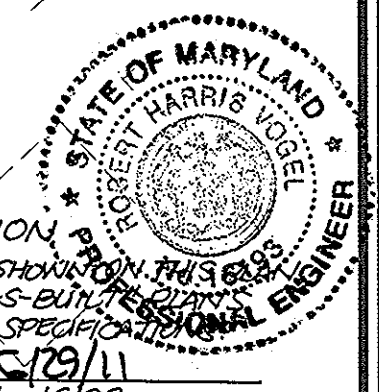
**FREDERICK WARD ASSOCIATES, INC.**  
 ENGINEERS 7125 Riverwood Drive Columbia, Maryland 21046-2354  
 ARCHITECTS Phone: 410-290-9550 Fax: 410-720-6226  
 SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: RJ/JCO  
 DRAWN BY: RJ  
 CHECKED BY: RHV  
 DATE: FEBRUARY, 2003  
 SCALE: AS SHOWN  
 W.O. NO.: 2018121.00

5 SHEET OF 17



NO	REVISION	DATE
1	ADDITIONAL GRADING OF DIMENSIONAL CONTROL AND LIMIT OF DISTURBANCE	06/17/03
2	REVISE STORM DRAIN SIZES	10/9/03
3	SEQUENCE OF CONSTRUCTION AND REFLECTING CHANGES OF FC EASEMENTS	11/31/02



AS-BUILT CERTIFICATION  
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED SHOWN ON THE AS-BUILT PLAN AND MEETS THE APPROVED PERMITS AND SPECIFICATIONS.  
 ROBERT H. VOGEL, P.E.  
 No. 16193

**LEGEND**

- Existing Contour
- Proposed Contour
- Existing Trees to Remain
- Light Poles
- 15%-24.99% STEEP SLOPE AREA
- 25% OR GREATER STEEP SLOPE AREA
- NO WOODY VEGETATION BUFFER
- WETLAND AREA
- 100 YR FLOOD PLAIN
- FOREST CONSERVATION EASEMENT
- EROSION CONTROL MATTING
- EARTH DIKE
- SOIL BORING
- STABILIZED CONSTRUCTION ENTRANCE
- SILT FENCE
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- TREE PROTECTION FENCE
- REMOVABLE PUMPING STATION
- RIP-RAP INFLOW PROTECTION

**BASIN NO. 1**  
 Trap type: BASIN  
 Drainage area: 106,344 Cf  
 Total storage provided: 137,181 Cf  
 Bottom elevation: 392.50  
 Crest elevation: 397.00  
 Wet storage elevation: 392.50-394.96 (2.46')  
 Dry storage elevation: 394.96-397.00 (2.04')  
 Total storage depth: 4.5'  
 Top of embankment: 399.21  
 Cleanout Elevation: 393.73  
 Side slopes: 3:1  
 Spillway Elevation: 398.00  
 Q2(Ex.): 3.21 CFS  
 Q2(TSWM): 0.44 CFS

**POND NO.1**  
 WET POND HAZARD CLASS A  
 PRIVATELY OWNED & MAINTAINED  
 WQ WSE = 394.60 WQV = 0.92 Ac.Ft.  
 2 YR WSE = 396.53 Cp = 1.09 Ac.Ft.  
 10 YR WSE = 397.46 Rev = 0.04 Ac.Ft.  
 100 YR WSE = 397.97  
 Q, EX = 4.5 CFS  
 Q, WSWM = 1.9 CFS

Q = 59.91 CFS  
 V = 6.6 FPS  
 d = 1.27'  
 S = 4.0%  
 n = 0.033

SECTION BELOW POND 1  
 NOT TO SCALE

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



**PLAN**  
 SCALE: 1"=50'

TM 25 & 31 P/O P 4 & 75  
 SECTION 5, PHASE 2  
 PROPOSED SUBDIVISION  
 ZONED R-ED

**OWNER / DEVELOPER**  
 DR. IRVING AND EDITH TAYLOR  
 C/O LAND DESIGN & DEVELOPMENT, INC.  
 8000 MAIN STREET  
 ELLICOTT CITY, MD 21043  
 ATTN: MR. DONALD R. REUWER  
 PHONE: (410) 480-9105

**FINAL GRADING, SEDIMENT & EROSION CONTROL PLAN**  
**VILLAGE CREST PARCELS C-1, D-1 AND E-1**  
 TAX MAP #25 BLOCK 20 PARCEL P/O 98  
 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**FREDERICK WARD ASSOCIATES, INC.**  
 7125 Riverwood Drive Columbia, Maryland 21046-2354  
 Phone: 410-290-9550 Fax: 410-720-6226  
 Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Danek* 5-01-03  
 Chief, Bureau of Highways Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Craig Harritt* 5/9/03  
 Chief, Division of Land Development Date

*Alan Dammann* 5/26/03  
 Chief, Development Engineering Division Date

ENGINEERS CERTIFICATE  
 I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

*Robert H. Vogel* 4/14/03  
 SIGNATURE OF ENGINEER DATE  
 ROBERT H. VOGEL

DEVELOPER'S CERTIFICATE  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

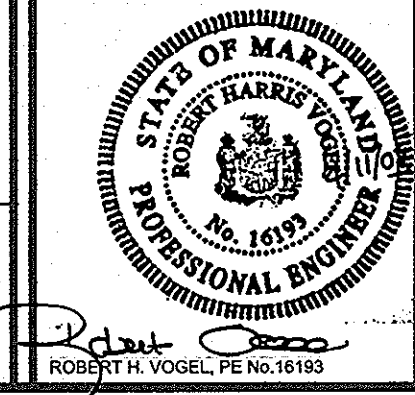
*Donald R. Reuwer, Jr.* 4/14/03  
 SIGNATURE OF DEVELOPER DATE  
 DONALD R. REUWER, JR.

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

*Jim Magnus* 4/21/03  
 USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*Robert H. Vogel* 4/21/03  
 HOWARD SOIL CONSERVATION DISTRICT DATE



DESIGN BY: RJ/CJO  
 DRAWN BY: RJ  
 CHECKED BY: RHV  
 DATE: FEBRUARY, 2003  
 SCALE: AS SHOWN  
 W.O. NO.: 2018121.00



21.0 STANDARDS AND SPECIFICATIONS FOR TOP SOIL

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

**Purpose**  
To provide a suitable soil medium for vegetation 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 plan.

**Construction and Material Specifications**  
I. Topsoil salvaged from the existing site may be used provided that it meets the standards set forth in these specifications. Topsoil of a different type than that salvaged for a given site can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS in cooperation with Maryland Agricultural Experiment Station.  
II. Topsoil Specifications - Soil to be used on topsoil must meet the following:  
1. Topsoil shall be a loam, sandy loam, clay loam, silt loam, silty clay loam, loamy sand. Other soils may be used if recommended by an agronomist or a soil scientist approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textures and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 and 1/2" in diameter.  
II. Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, johnsongrass, nutgrass, poison ivy, thistle, or others as specified.

**TEMPORARY SEEDING NOTES**

SEEDBED PREPARATION: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.  
SOIL AMENDMENTS: Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq.ft.)  
SEEDING: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2 1/2 bushels per acre of annual ryegrass (2 lbs./1000 sq.ft.) For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (0.7 lbs./1000 sq.ft.) For the period November 1 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.  
MULCHING: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq.ft.) of untreated small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq.ft.) of emulsified asphalt.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.  
**PERMANENT SEEDING NOTES**  
I. Where the subsoil is either highly acidic or composed of heavy clay, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 sq. feet) prior to the placement of topsoil. Lime shall be distributed uniformly over disturbed 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:  
1. Place topsoil (if required) and apply soil amendments as specified in 21.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.  
III. For sites having disturbed areas over 5 acres:  
1. 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 200 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 allow dissipation of phytotoxic materials.  
NOTE: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.  
II. Place topsoil (if required) and apply soil amendments specified in 21.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.  
SEEDBED PREPARATION: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.  
SOIL AMENDMENTS: In lieu of soil test recommendations, use one of the following schedules:  
1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs./1000 sq.ft.) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil. At the time of seeding, apply 400 lbs. per acre 30-0-0 uniform fertilizer (8 lbs./1000 sq.ft.).  
2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs./1000 sq.ft.) and apply 1000 lbs. per acre 10-10-10 fertilizer (23 lbs./1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil.  
SEEDING: For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs./1000 sq.ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 50 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (0.5 lbs./1000 sq.ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by Option (1) 2 tons per acre well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use sod. Option (3) Seed with 60 lbs./acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.  
MULCHING: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq.ft.) of untreated small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq.ft.) of emulsified asphalt for anchoring.  
MAINTENANCE: Inspect all seeded areas and make needed repairs, replacements and reseedings.

**LEGEND**  
Existing Contour  
Proposed Contour  
Existing Trees to Remain  
Light Poles  
15%-24.99% STEEP SLOPE AREA  
25% OR GREATER STEEP SLOPE AREA  
NO WOODY VEGETATION BUFFER  
WETLAND AREA  
100 YR FLOOD PLAIN  
FOREST CONSERVATION EASEMENT  
EARTH DIKE  
SOIL BORING  
EROSION CONTROL MATTING  
MOUNTABLE BERM  
STABILIZED CONSTRUCTION ENTRANCE  
TP TREE PROTECTION FENCE  
SF SILT FENCE  
SSF SUPER SILT FENCE  
LOD LIMIT OF DISTURBANCE  
RIP-RAP INFLOW PROTECTION  
RIP-RAP INFLOW PROTECTION  
GABION INFLOW PROTECTION

NOTES:  
1. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.  
2. TEMPORARY STOCKPILE AREAS IS PROVIDED. SEE SHEETS 5,6 OF 17

REVISION #3 ONLY  
STATE OF MARYLAND  
ROBERT H. VOGEL, P.E.  
PROFESSIONAL ENGINEER  
No. 18193

REVISION  
NO. REVISION  
DATE  
APPROVED: DEPARTMENT OF PUBLIC WORKS  
Chief, Bureau of Highways  
5-01-03  
APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Chief, Division of Land Development  
5/9/03  
Chief, Development Engineering Division  
5/2/03

**ENGINEERS CERTIFICATE**  
I, HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.  
SIGNATURE OF ENGINEER  
ROBERT H. VOGEL  
DATE  
4/11/03

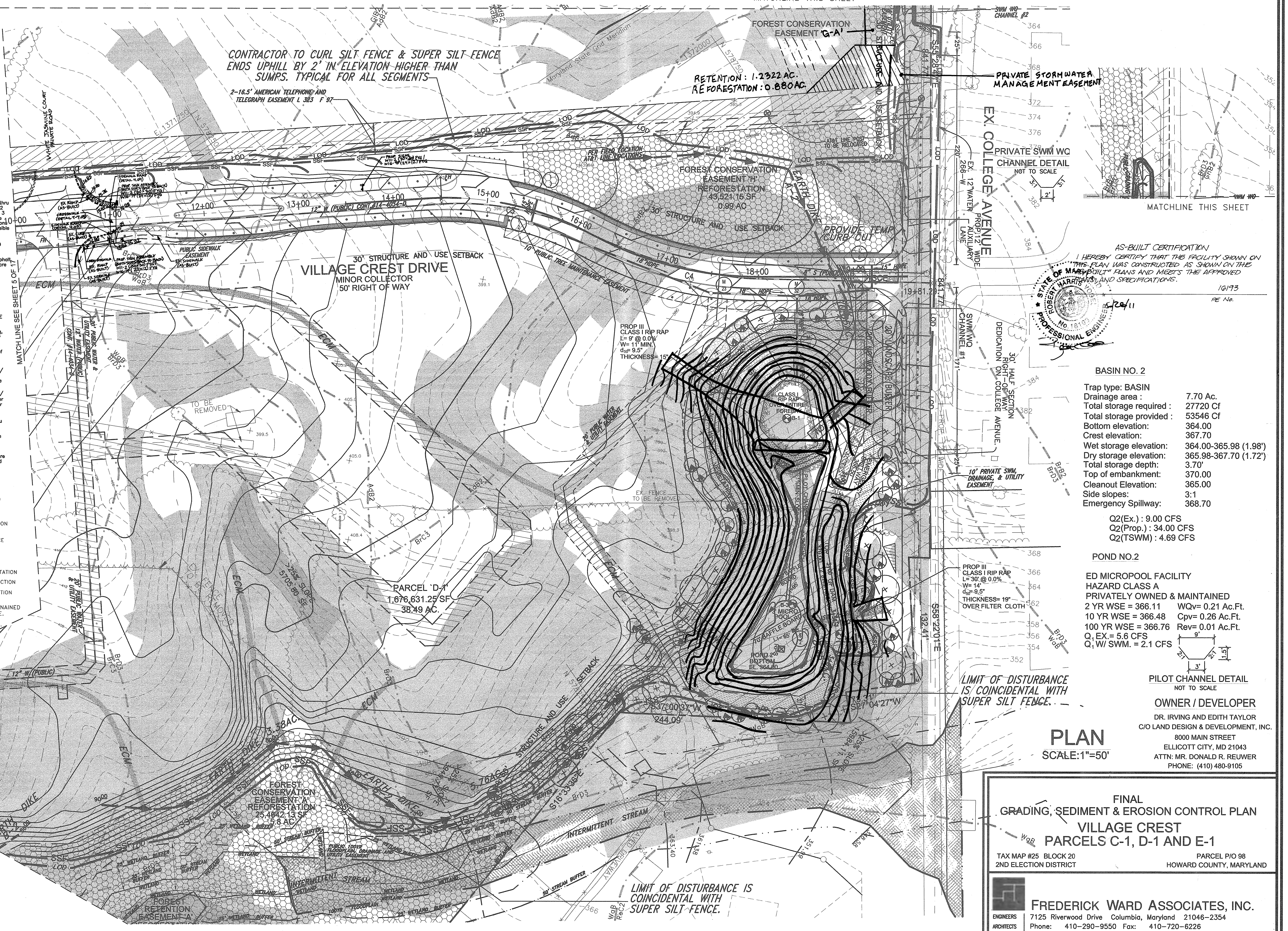
**DEVELOPER'S CERTIFICATE**  
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.  
SIGNATURE OF DEVELOPER  
DONALD R. REUWER  
DATE  
4/11/03

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.  
USDA-NATURAL RESOURCES CONSERVATION SERVICE  
DATE  
4/21/03  
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  
4/21/03

**PLAN**  
SCALE: 1"=50'  
OWNER / DEVELOPER  
DR. IRVING AND EDITH TAYLOR  
C/O LAND DESIGN & DEVELOPMENT, INC.  
8000 MAIN STREET  
ELLCOTT CITY, MD 21043  
ATTN: MR. DONALD R. REUWER  
PHONE: (410) 480-9105

**FINAL GRADING, SEDIMENT & EROSION CONTROL PLAN**  
VILLAGE CREST  
PARCELS C-1, D-1 AND E-1  
TAX MAP #25 BLOCK 20 PARCEL P/O 98  
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
FREDERICK WARD ASSOCIATES, INC.  
ENGINEERS 7125 Riverwood Drive Columbia, Maryland 21046-2354  
ARCHITECTS Phone: 410-290-9550 Fax: 410-720-6226  
SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: RJU/CO  
DRAWN BY: RJU  
CHECKED BY: RHV  
DATE: FEBRUARY, 2003  
SCALE: AS SHOWN  
W.O. NO.: 2018121.00  
7 SHEET OF 17



**AS-BUILT CERTIFICATION**  
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE ORIGINAL PLAN AND MEETS THE APPROVED STANDARDS AND SPECIFICATIONS.  
16193  
PE No.  
STATE OF MARYLAND  
ROBERT H. VOGEL, P.E.  
PROFESSIONAL ENGINEER  
No. 18193

**BASIN NO. 2**  
Trap type: BASIN  
Drainage area: 7.70 Ac.  
Total storage required: 27720 Cf  
Total storage provided: 53546 Cf  
Bottom elevation: 364.00  
Crest elevation: 367.70  
Wet storage elevation: 364.00-365.98 (1.98')  
Dry storage elevation: 365.98-367.70 (1.72')  
Total storage depth: 3.70'  
Top of embankment: 370.00  
Cleanout Elevation: 365.00  
Side slopes: 3:1  
Emergency Spillway: 368.70  
Q2(Ex.): 9.00 CFS  
Q2(Prop.): 34.00 CFS  
Q2(TSWM): 4.69 CFS

**POND NO.2**  
ED MICROPOL FACILITY  
HAZARD CLASS A  
PRIVATELY OWNED & MAINTAINED  
2 YR WSE = 366.11 WQV= 0.21 Ac.Ft.  
10 YR WSE = 366.48 Cpv= 0.26 Ac.Ft.  
100 YR WSE = 366.76 Rev= 0.01 Ac.Ft.  
Q, EX = 5.6 CFS  
Q, W/ SWM = 2.1 CFS  
PILOT CHANNEL DETAIL  
NOT TO SCALE

**LEGEND**  
Existing Contour  
Proposed Contour  
Existing Trees to Remain  
Light Poles  
15%-24.99% STEEP SLOPE AREA  
25% OR GREATER STEEP SLOPE AREA  
NO WOODY VEGETATION BUFFER  
WETLAND AREA  
100 YR FLOOD PLAIN  
FOREST CONSERVATION EASEMENT  
EARTH DIKE  
SOIL BORING  
EROSION CONTROL MATTING  
MOUNTABLE BERM  
STABILIZED CONSTRUCTION ENTRANCE  
TP TREE PROTECTION FENCE  
SF SILT FENCE  
SSF SUPER SILT FENCE  
LOD LIMIT OF DISTURBANCE  
RIP-RAP INFLOW PROTECTION  
RIP-RAP INFLOW PROTECTION  
GABION INFLOW PROTECTION

NOTES:  
1. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.  
2. TEMPORARY STOCKPILE AREAS IS PROVIDED. SEE SHEETS 5,6 OF 17

REVISION #3 ONLY  
STATE OF MARYLAND  
ROBERT H. VOGEL, P.E.  
PROFESSIONAL ENGINEER  
No. 18193

3 REVISION #3 ONLY  
NO. REVISION  
DATE  
APPROVED: DEPARTMENT OF PUBLIC WORKS  
Chief, Bureau of Highways  
5-01-03  
APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Chief, Division of Land Development  
5/9/03  
Chief, Development Engineering Division  
5/2/03

APPROVED: DEPARTMENT OF PUBLIC WORKS  
Chief, Bureau of Highways  
5-01-03  
APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Chief, Division of Land Development  
5/9/03  
Chief, Development Engineering Division  
5/2/03

**ENGINEERS CERTIFICATE**  
I, HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.  
SIGNATURE OF ENGINEER  
ROBERT H. VOGEL  
DATE  
4/11/03

**DEVELOPER'S CERTIFICATE**  
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.  
SIGNATURE OF DEVELOPER  
DONALD R. REUWER  
DATE  
4/11/03

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.  
USDA-NATURAL RESOURCES CONSERVATION SERVICE  
DATE  
4/21/03  
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  
4/21/03

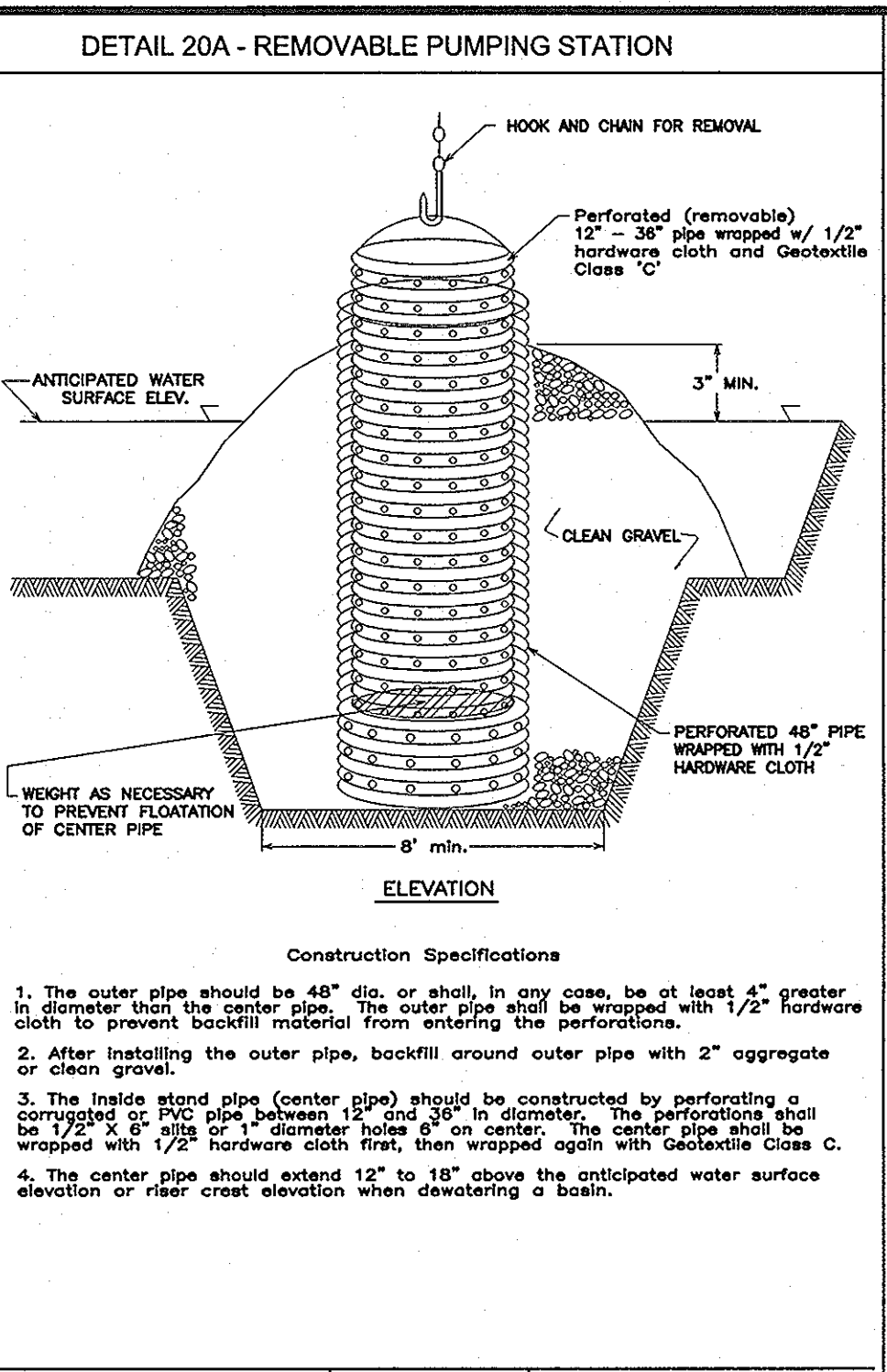
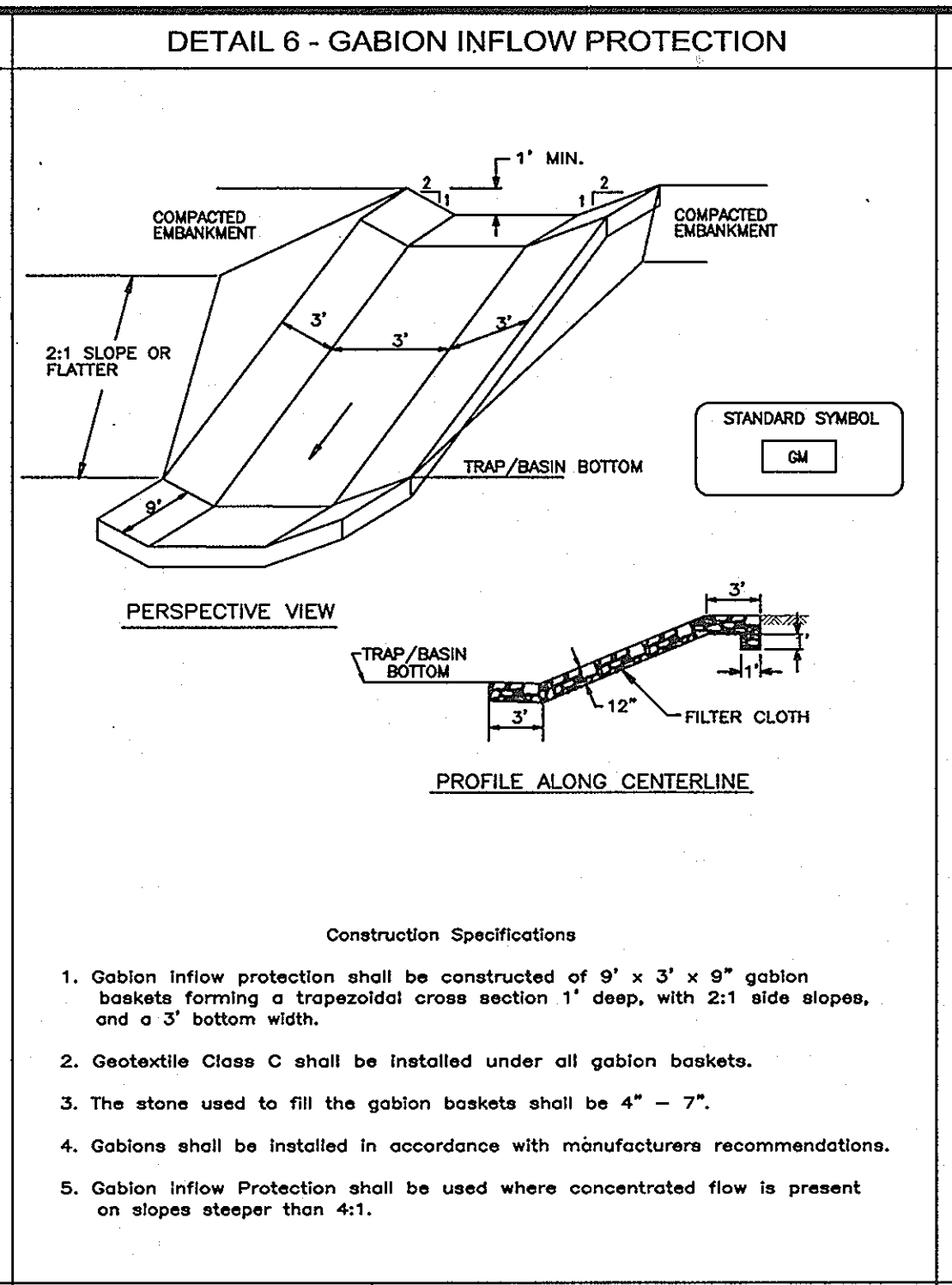
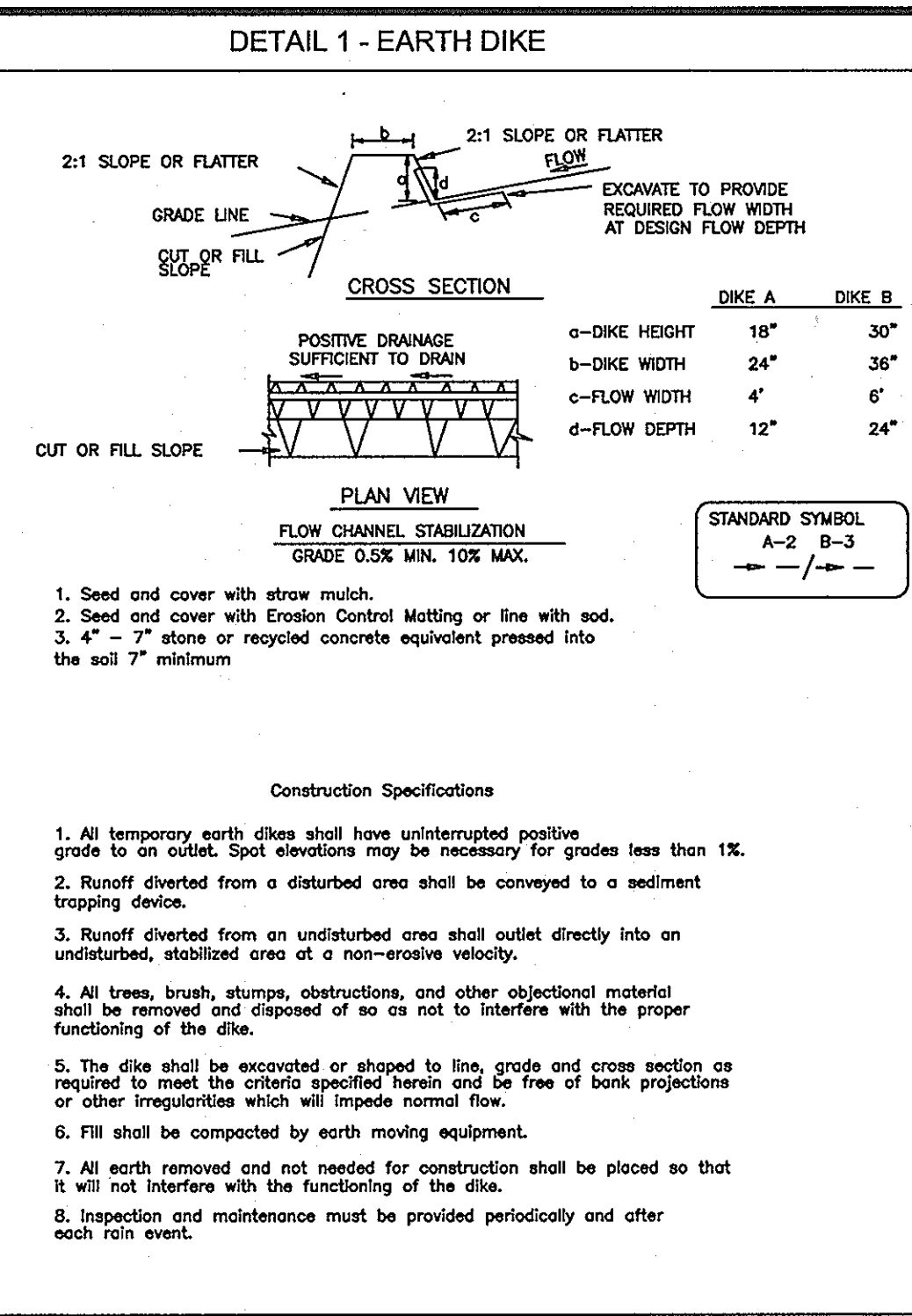
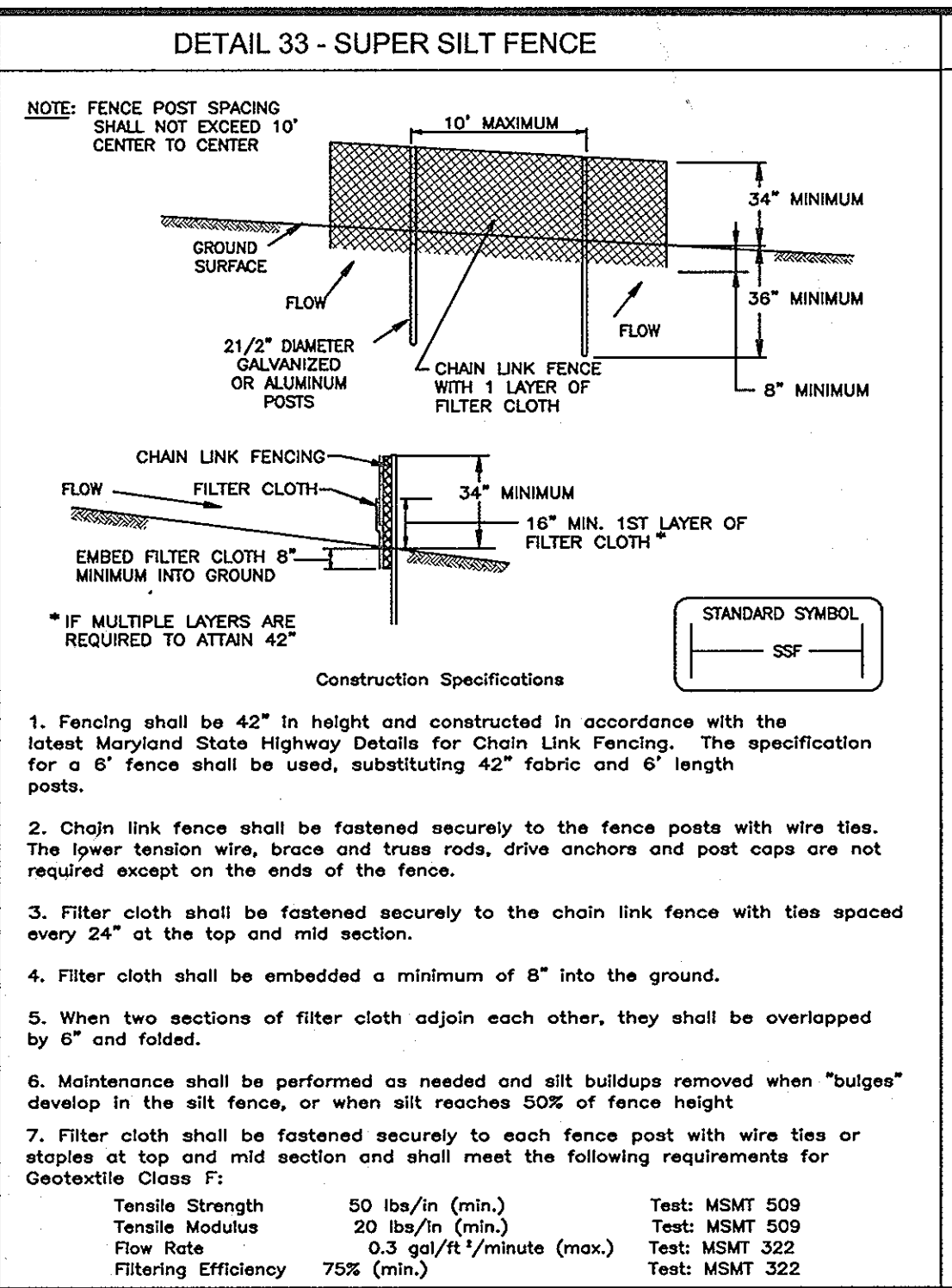
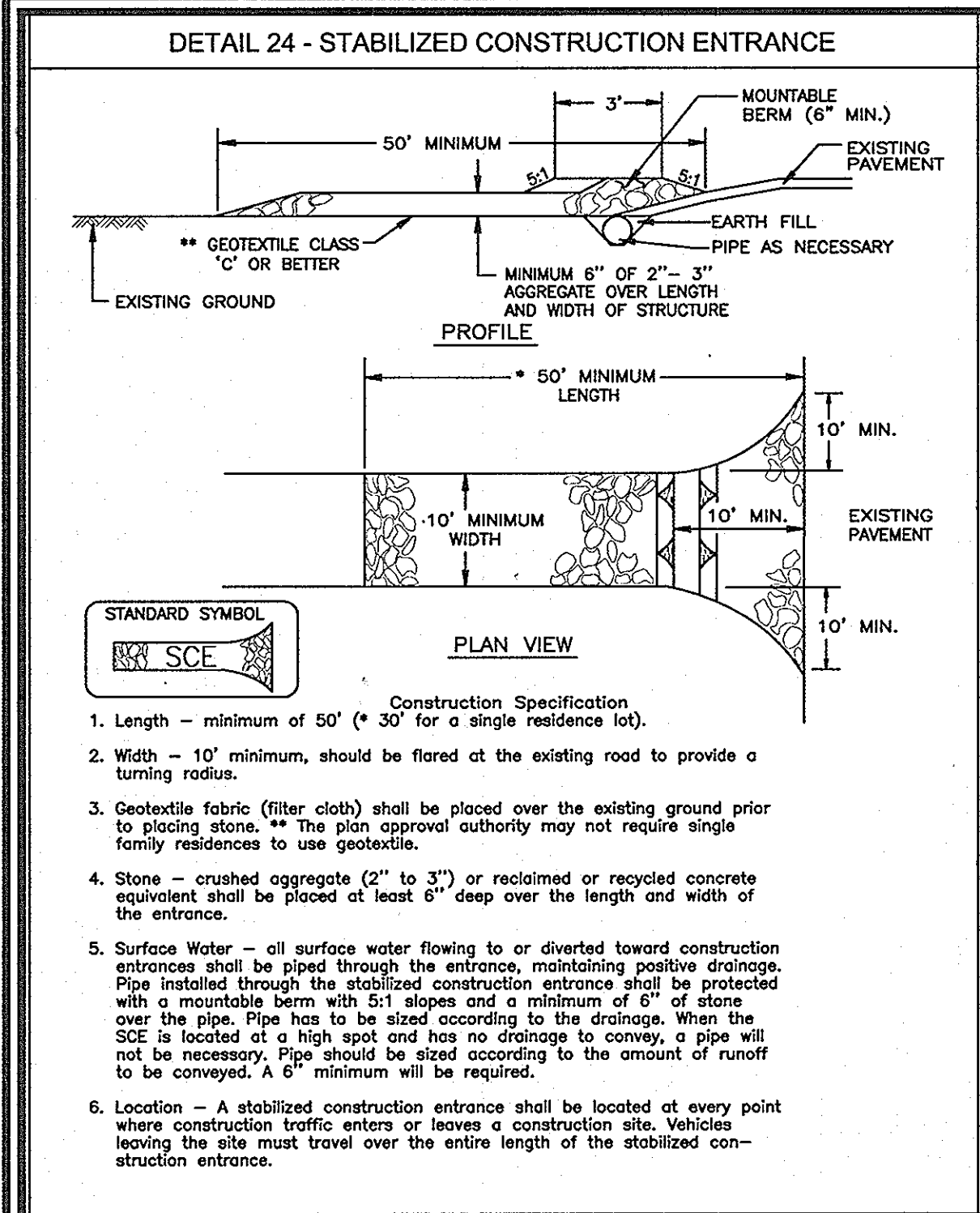
**FINAL GRADING, SEDIMENT & EROSION CONTROL PLAN**  
VILLAGE CREST  
PARCELS C-1, D-1 AND E-1  
TAX MAP #25 BLOCK 20 PARCEL P/O 98  
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
FREDERICK WARD ASSOCIATES, INC.  
ENGINEERS 7125 Riverwood Drive Columbia, Maryland 21046-2354  
ARCHITECTS Phone: 410-290-9550 Fax: 410-720-6226  
SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: RJU/CO  
DRAWN BY: RJU  
CHECKED BY: RHV  
DATE: FEBRUARY, 2003  
SCALE: AS SHOWN  
W.O. NO.: 2018121.00  
7 SHEET OF 17

REVISION #3 ONLY  
STATE OF MARYLAND  
ROBERT H. VOGEL, P.E.  
PROFESSIONAL ENGINEER  
No. 18193

APPROVED: DEPARTMENT OF PUBLIC WORKS  
Chief, Bureau of Highways  
5-01-03  
APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Chief, Division of Land Development  
5/9/03  
Chief, Development Engineering Division  
5/2/03

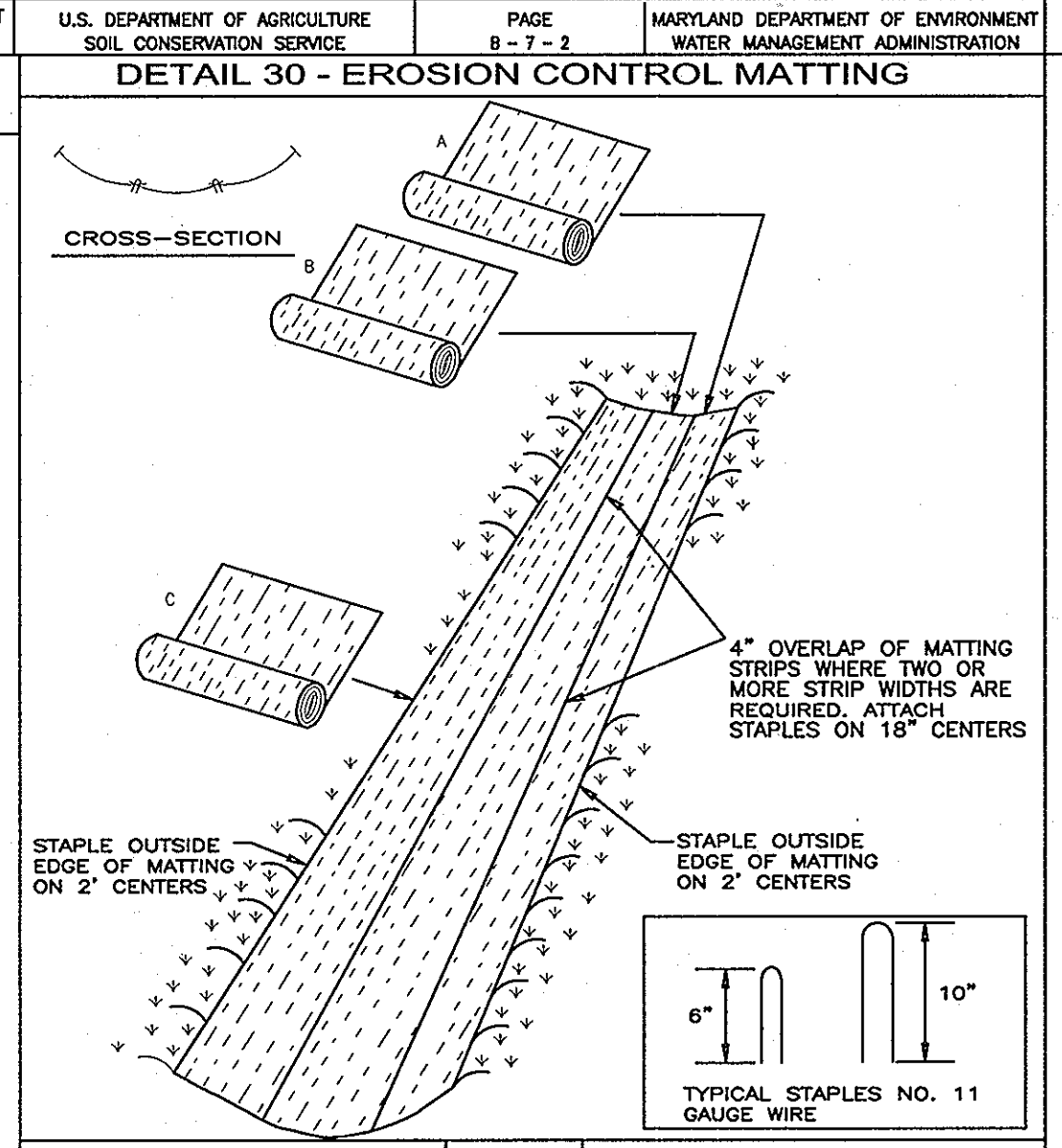
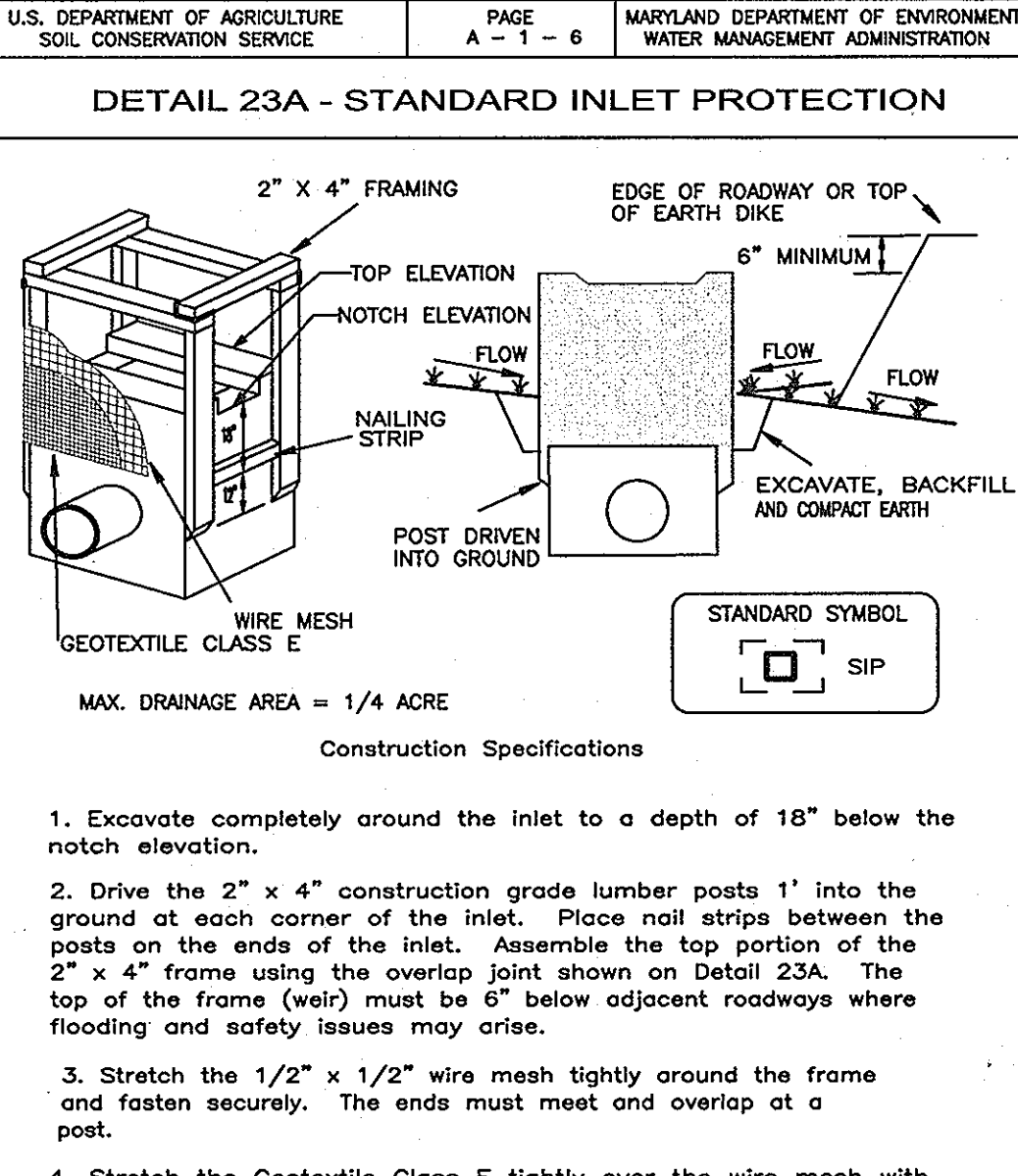
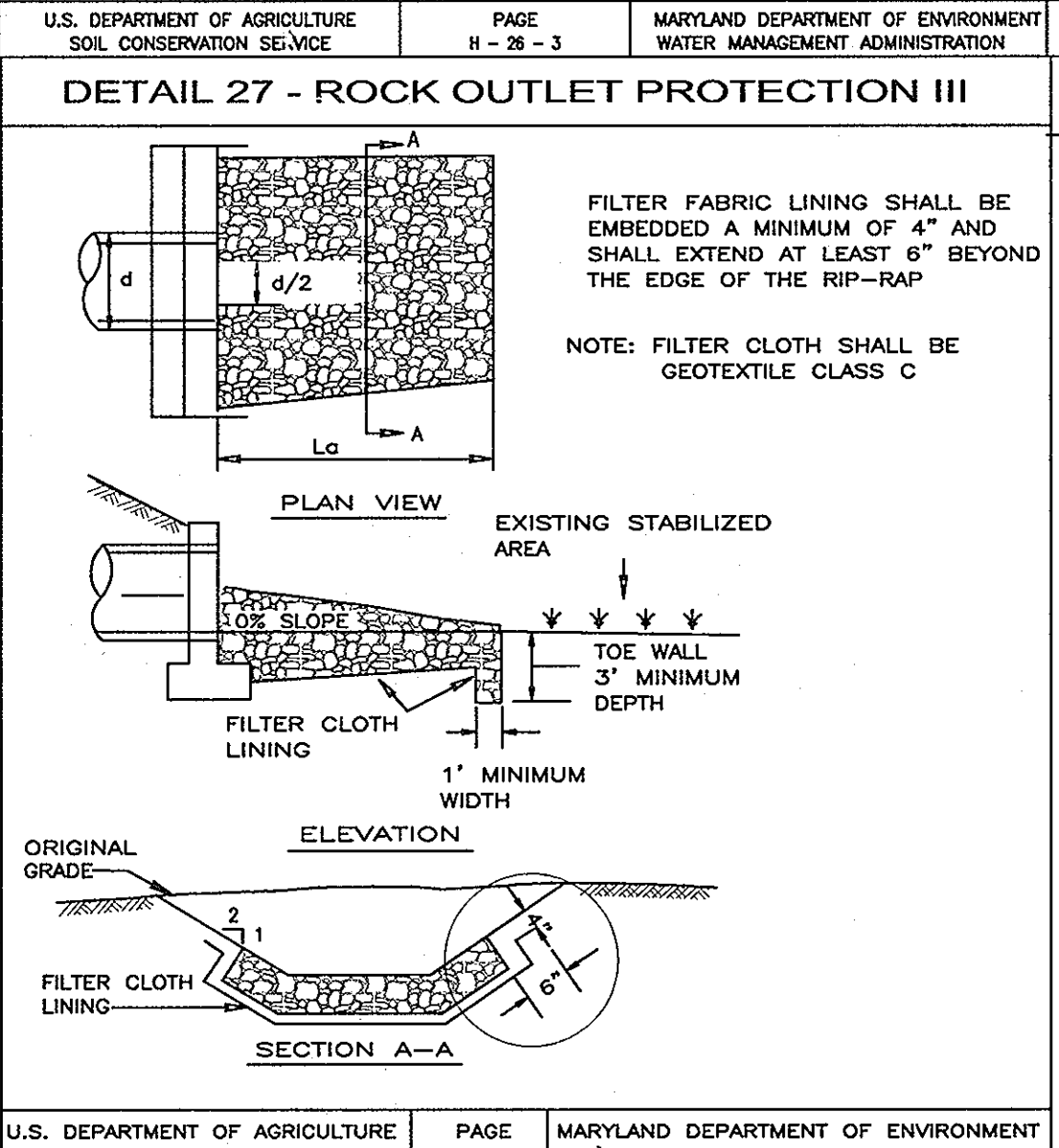
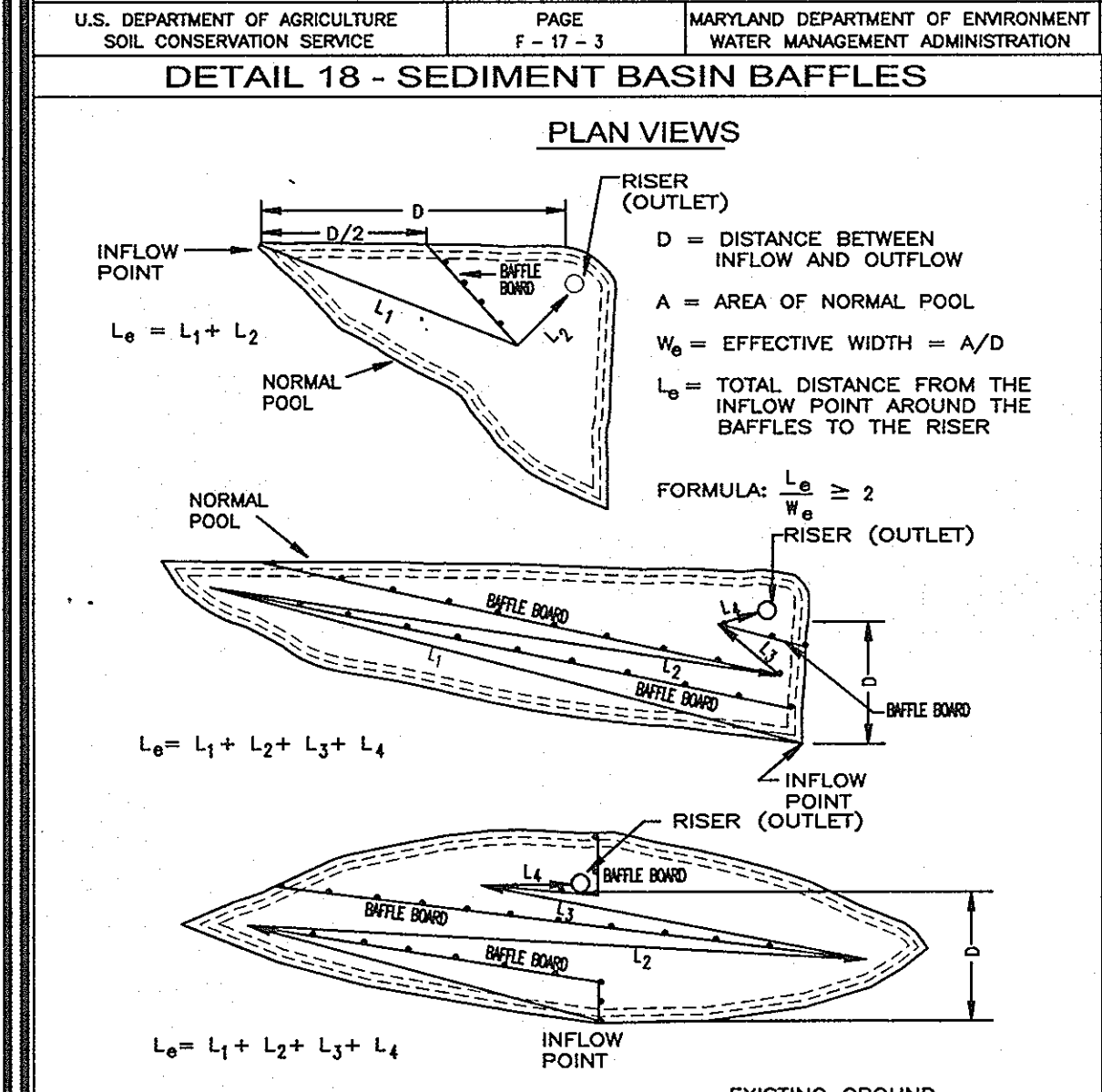




### SEDIMENT CONTROL NOTES

- A minimum of 48 hours notice must be given to the Howard County Department of Inspection, License and Permits Sediment Control Division prior to the start of any construction (313-1855).
- All vegetation and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto.
- Following initial soil disturbance or redistribution, 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.
- All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 7, HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding, sod, temporary seeding, and mulching (Sec. G). Temporary stabilization with mulch alone shall be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:
 

Total Area	SUBDIVISION	17.01 ACRES
Area Disturbed		36.94 ACRES
Area to be roofed or paved		1.18 ACRES
Area to be vegetatively stabilized		54.61 ACRES
Total		100.74 ACRES
Total Fill		1.18 ACRES
- Offsite waste/borrow area location: #4-AUTUMN LAKE, 5 PAGES
- Any sediment control practice which is disturbed by grading activity for disturbance, installation of utilities must be repaired on the same day of disturbance.
- Additional sediment controls must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
- On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
- Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized within one working day, whichever is shorter.
- To be determined by contractor, with pre-approval of the Sediment Control Inspector with an approved and active grading permit.



### DEWATERING

Dewatering refers to the act of removing and discharging water from excavated areas on construction sites or from sediment traps or basins on construction sites. Standards and specifications for dewatering practices follow:

These standards apply to removal and discharge of water from any excavated area or sediment trap or basin at any construction site. Given the unique conditions of any particular construction site, any or all of the practices may apply. Regardless of the applicability of the practices listed herein, operators are required to use acceptable procedures for maintenance and dewatering. In all cases, every effort shall be made to eliminate sediment pollution associated with dewatering.

Designers shall specify the preferred procedures for dewatering on plans. In particular, designers should identify procedures for dewatering sediment traps and basins prior to elimination of the last sediment control facility on the site or prior to conversion of sediment control facilities to stormwater management facilities. Recommended procedures shall be consistent with these standards. Atypical site conditions may require innovative dewatering designs. Dewatering measures not referenced in this standard may be used with the consent of the approval authority.

**Approved Practices for Dewatering of Excavated Areas**

- Pumping of water to an existing sediment basin or trap in which the entire volume of water from the area to be dewatered can be contained without discharging to receiving waters.
- Pumping of water to an existing sediment basin or trap such that the entire volume of water from the area to be dewatered can be managed without exceeding the design outflow from the sediment control structure.
- Removable Pumping Station Standards and specifications for Removable Pumping Station are on Detail 20A.
- Use of a Sump Pit Standards and specifications for a sump pit are on Detail 20B.
- Sediment Tank Standards and specifications for a sump pit are on Detail 21.

**Dewatering of Sediment Traps and Basins**

Designers shall specify on plans, and in sequences of construction included on plans, the practices for dewatering of excavated areas. Plan reviewers shall check to see that procedures for dewatering are included on plans. In all cases, water removed from traps and basins shall be discharged so that it passes through a sediment control device prior to entering receiving waters. Sediment control devices include sediment traps and basins, in addition to the practices in this section.

**Approved Practices for Dewatering of Traps and Basins**

- Removable pumping station.
- Use of a Sump Pit.
- Use of a floating suction hose to pump the clearer water from the top of the pond. As the clearer water is pumped, the suction hose will lower and eventually encounter sediment laden water. When this happens the pumping operation will cease. Provisions shall be made to filter water.

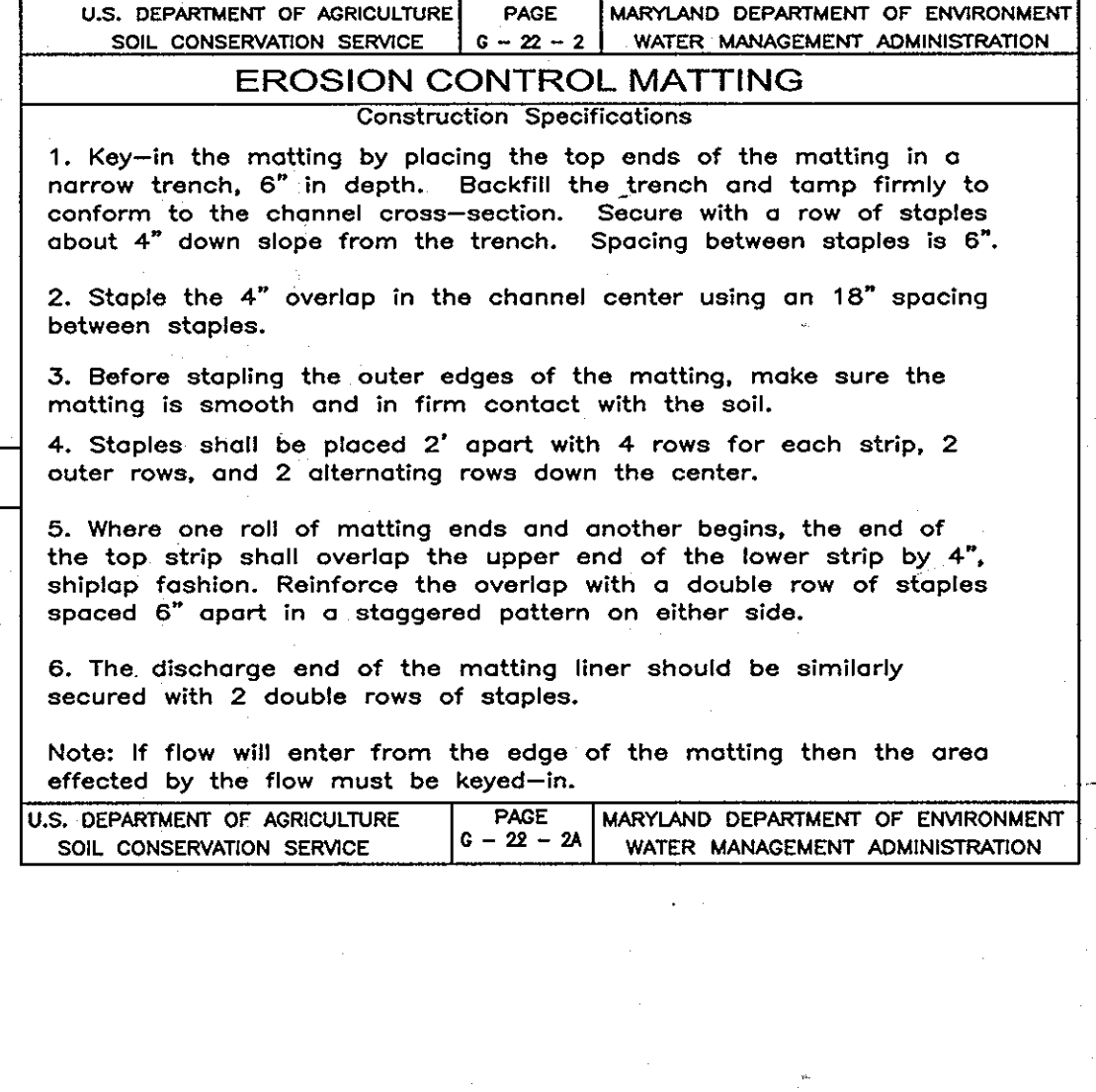
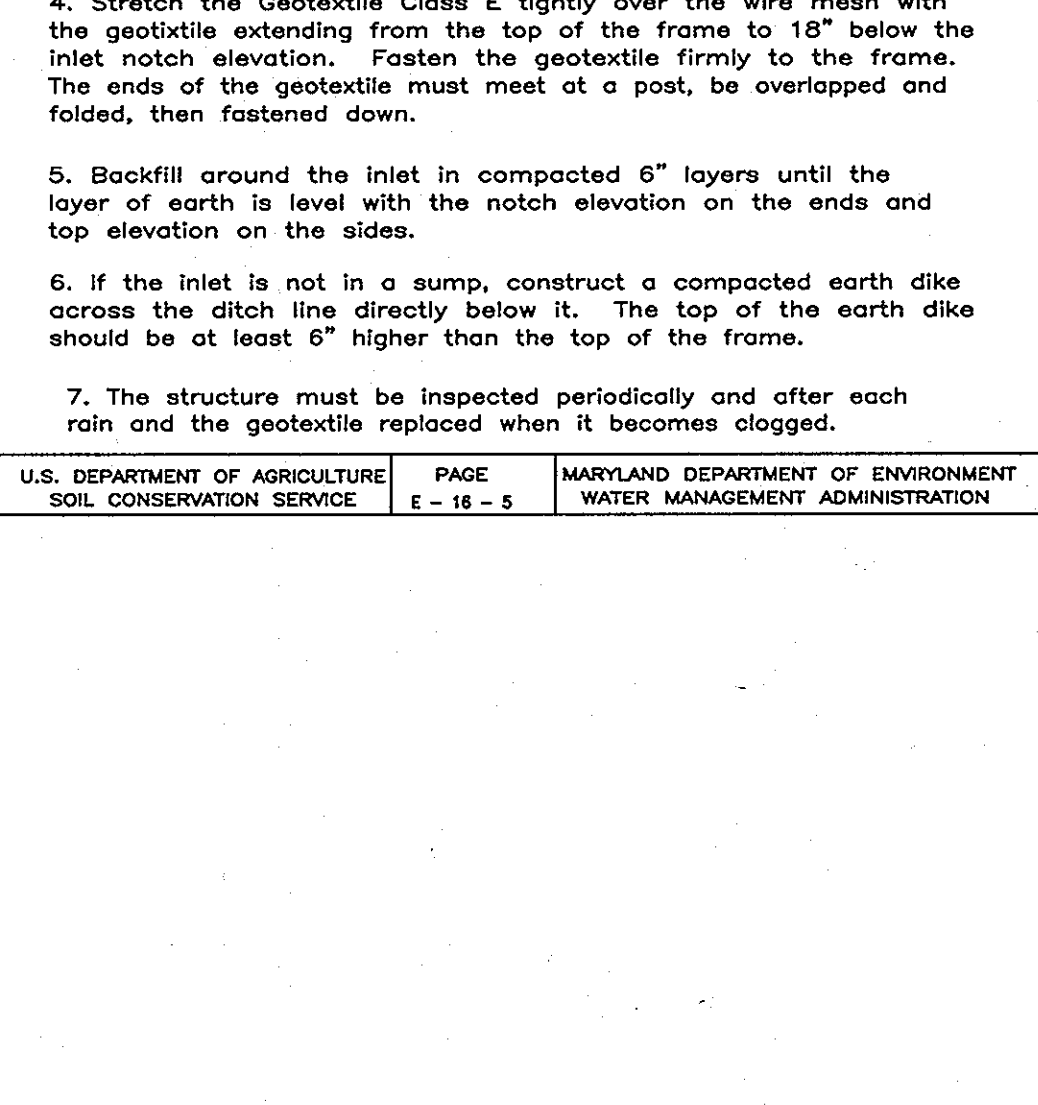
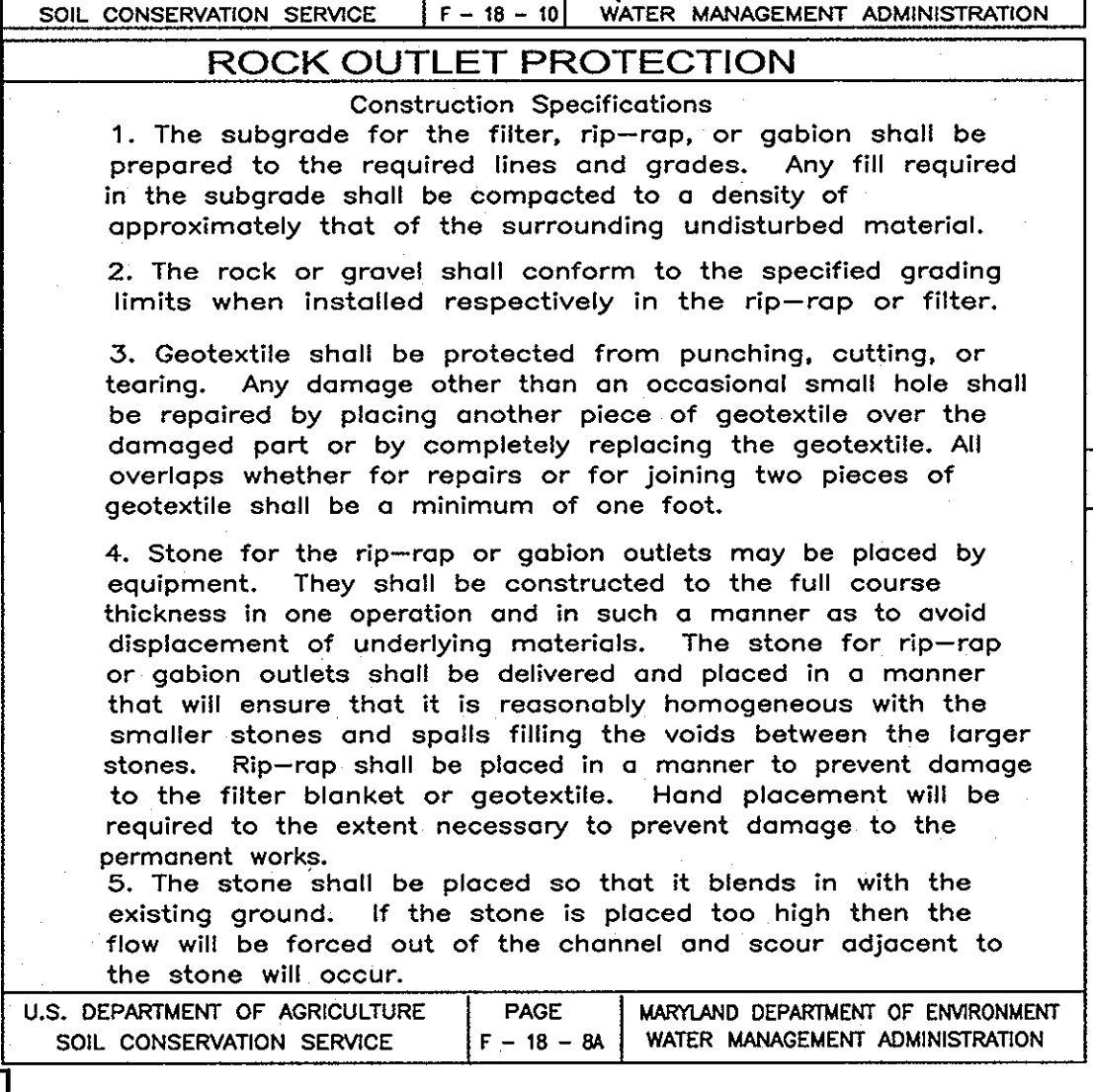
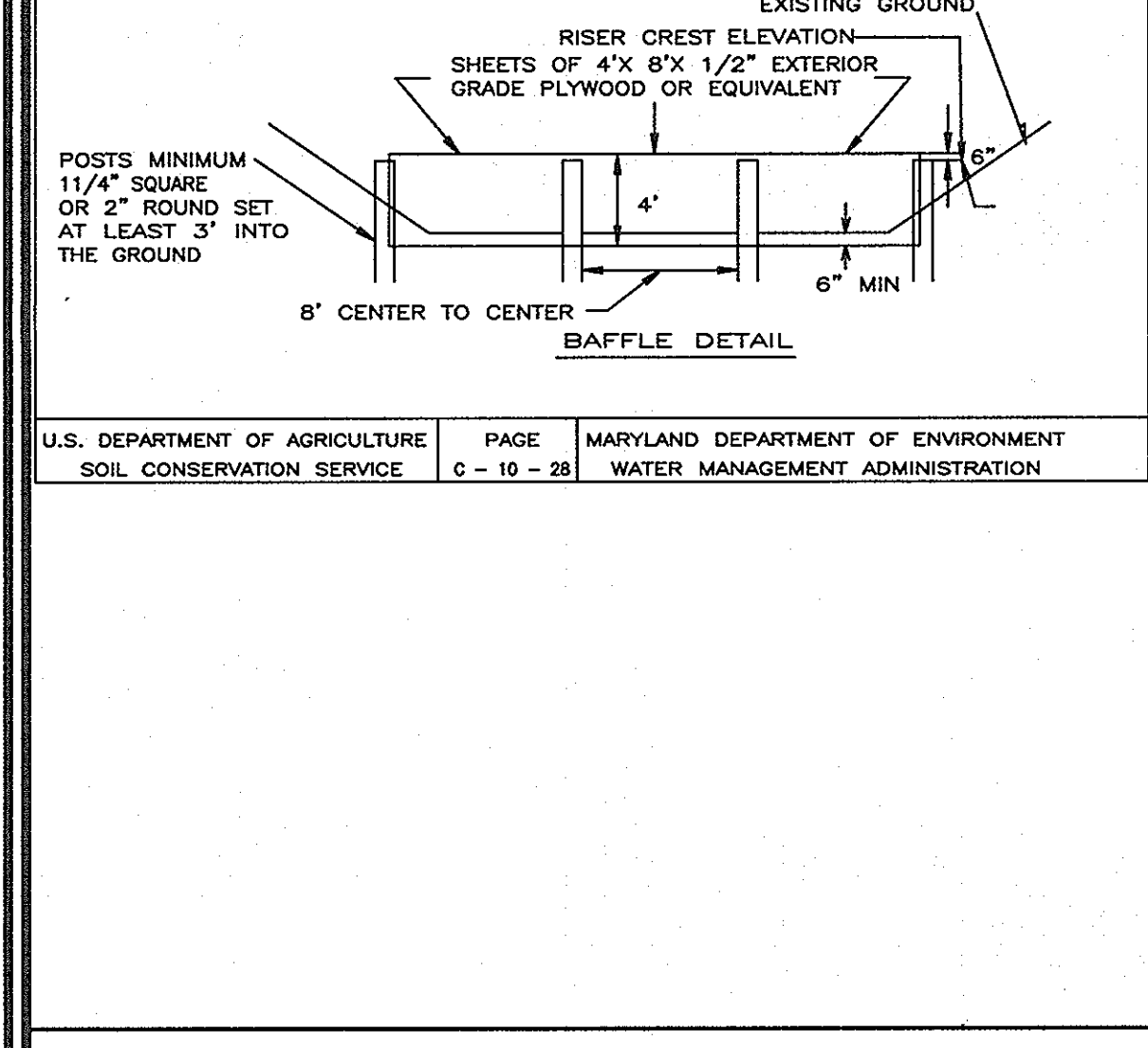
### SEQUENCE OF CONSTRUCTION

ACTIVITY	DURATION
1. Obtain grading permit.	
2. Notify Howard County Bureau of Inspections and Permits (313-1855) at least 24 hours before starting any work.	
3. Construct Stabilized Construction Entrance and install tree protection devices.	3 DAYS
4. Install perimeter silt fence and all remaining tree protection devices.	4 DAYS
5. Construct stormwater management facilities (sediment basins).	2 WEEKS
6. Will inspect a geotechnical engineer and grub site and begin mass grading.	1 WEEK
7. With grading in process maintain flow to basins and begin grading of Village Crest Drive.	2 WEEK
8. Grade remaining road to sub-base as site is graded. Install storm drain systems, water and sewer as roads are graded.	3 WEEK
9. With Village Crest Drive graded to sub-base and inlets are in place begin installation of curbs and gutter and begin grading Academy Road and install storm drain, water and sewer.	3 WEEKS
10. Begin paving Village Crest Drive and install sidewalks and street trees.	3 WEEKS
11. With Academy Road graded to sub-base and inlets are in place begin installation of curbs and gutter.	2 WEEKS
12. Begin paving Academy Road and install sidewalks and street trees.	2 WEEKS
13. Basins 1 and 2 are to remain for development of parcels D-1 and E-1 to be dewatered with inspector's approval and roof paving complete and contributing drainage areas stabilized, convert sediment basins to final stormwater management by removing dewatering device from pond 1 & 2 and install 8" pond drain, and install 6" pond drain. Convert dewatering device in pond 2 to permanent water quality extended detention pipe per detail.	1 WEEK
14. As stormwater management pond is stabilized, install pond landscaping as shown in Schedule 12 and perimeter landscaping as shown in Schedule 'A'. See sheet 15 for Schedule tables.	1 WEEK
15. With permission of the inspector, flush storm drain system and remove all sediment controls from the site. Stabilized all disturbed areas immediately.	1 WEEK

**NOTES:**

- BASED ON REMAINING DEVELOPMENT OF PARCELS C-1, D-1, D-2, E-1 & E-2 AS SHOWN ON ATTACHED AREA PER 509-05-4H.
- During grading and after each rainfall, the contractor shall inspect and provide the necessary maintenance on the sediment and erosion control measures shown herein.

Following initial soil disturbance or redistribution permanent or temporary stabilization shall be completed within: A. 7 calendar days for all perimeter sediment control structures, dikes, silt fences, ditch perimeter slopes and all slopes greater than 3:1. B. 14 calendar days for all other disturbed areas.



### NO. REVISION DATE

1	ADDITIONAL GRADING	06/19/03
2	SEDIMENT CONTROL AND LIMIT OF DISTURBANCE	
2	SEQUENCE OF CONSTRUCTION	1/31/06
	REFLECTING CHANGES OF FC EASEMENT	

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 Chief, Bureau of Highways  
 Date: 5-01-03

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Chief, Division of Land Development  
 Date: 5/9/03

Chief, Development Engineering Division  
 Date: 5/2/03

**ENGINEER'S CERTIFICATE**

I HEREBY 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 COUNTY DEPARTMENT OF INSPECTION, LICENSE AND PERMITS FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Signature of Engineer: ROBERT H. VOGEL  
 Date: 4/10/03

**DEVELOPER'S CERTIFICATE**

I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Signature of Developer: DONALD E. REUWER  
 Date: 2/11/03

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

USDA-NATURAL RESOURCES CONSERVATION SERVICE  
 Signature: Jim Myers  
 Date: 2/26/03

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: Jeff Sh...  
 Date: 4/2/03

### OWNER / DEVELOPER

DR. IRVING AND EDITH TAYLOR  
 C/O LAND DESIGN & DEVELOPMENT, INC.  
 8000 MAIN STREET  
 ELLICOTT CITY, MD 21043  
 ATTN: MR. DONALD R. REUWER  
 PHONE: (410) 480-9105

### FINAL SEDIMENT AND EROSION CONTROL DETAILS I

#### VILLAGE CREST PARCELS C-1, D-1 AND E-1

TAX MAP #25 BLOCK 20  
 2ND ELECTION DISTRICT

PARCEL P/O 98  
 HOWARD COUNTY, MARYLAND

### FREDERICK WARD ASSOCIATES, INC.

ENGINEERS: 7125 Riverwood Drive Columbia, Maryland 21046-2354  
 ARCHITECTS: Phone: 410-290-9550 Fax: 410-720-6226  
 SURVEYORS: Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: RJ  
 DRAWN BY: RHV  
 CHECKED BY: RHV  
 DATE: FEBRUARY, 2003  
 SCALE: NOT TO SCALE  
 W.O. NO.: 2018121.00

8 SHEET OF 17

AS-BUILT 6/28/2011 F-02-47



**LEGEND**

- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING TREES TO REMAIN
- LIGHT POLES
- 15%-24.99% STEEP SLOPE AREA
- 25% OR GREATER STEEP SLOPE AREA
- WETLAND AREA
- FOREST RETENTION EASEMENT
- REFORESTATION EASEMENT
- DRAINAGE DIVIDE

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

**DRAINAGE AREA TABULATIONS**

No.	Area	'C'	% Imp.	Soil Types	Zone
I-1	0.47 Ac.	0.34	22	C	POR
I-2	0.83 Ac.	0.35	26	B and C	POR
I-3	0.62 Ac.	0.41	33	B AND C	POR
I-4	0.48 Ac.	0.51	49	B, C and D	POR
I-5	0.45 Ac.	0.51	47	B AND C	POR
I-6	0.22 Ac.	0.49	45	C	POR
I-7	1.95 Ac.	0.38	16	B, C and D	POR
I-8	2.03 Ac.	0.18	16	B, C and D	POR
I-9	1.71 Ac.	0.30	-	B	POR
I-10	2.07 Ac.	0.30	-	B	POR
Stub-1	3.38 Ac.	0.33	-	C	POR
Stub-2	4.05 Ac.	0.32	-	B and C	POR
Stub-3	6.43 Ac.	0.22	-	B AND C	POR
Stub-4	1.67 Ac.	0.31	-	B AND C	POR

**SOILS LEGEND**

SYMBOL	SOIL NAME	CLASS
A4c2	ALDING SILT LOAM	C
BrB2	BRANDYWINE LOAM	C
BrC2	BRANDYWINE LOAM	C
BrC3	BRANDYWINE LOAM	C
A4B2	ALDING SILT LOAM	C
BrD3	BRANDYWINE LOAM	C
BrF	BRANDYWINE LOAM	C
BrW	BRANDYWINE	C
NeB2	NESHAMINY SILT LOAM	B
GnB2	GLENVILLE SILT LOAM	C
GIB2	GLENELG LOAM	B
GIC2	GLENELG LOAM	B
MgC3	MANOR GRAVELLY LOAM	B
MB2	MANOR LOAM	B
MID2	MANOR LOAM	B
MpC2	MONTALTO SILT LOAM	C
MpB2	MONTALTO SILT LOAM	C
MqC3	MONTALTO SILTY CLAY LOAM	C
MrE	MONTALTO AND RELAY SOILS	C
MsD	MONTALTO AND RELAY VERY STONY SILT LOAMS	C
MsF	MONTALTO AND RELAY VERY STONY SILT LOAMS	C
ReC2	RELAY SILT LOAM	B
WoB	WATCHUNG SANDY LOAM	D

NOTE: HOWARD SOILS SURVEY MAP NO. 20.

**OWNER / DEVELOPER**

DR. IRVING AND EDITH TAYLOR  
C/O LAND DESIGN & DEVELOPMENT, INC.  
8000 MAIN STREET  
ELLCOTT, MARYLAND 21043  
ATTN: MR. DONALD R. REUWER  
PHONE: (410) 480-9105

**DRAINAGE AREA MAP FOR STORM DRAINAGE**  
**VILLAGE CREST PARCELS C-1, D-1 AND E-1**

TAX MAP #25 BLOCK 20 PARCEL P/O 98  
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**FREDERICK WARD ASSOCIATES, INC.**  
7125 Riverwood Drive Columbia, Maryland 21046-2354  
Phone: 410-290-9550 Fax: 410-720-6226  
Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: JCO  
DRAWN BY: RJ  
CHECKED BY: RHV  
DATE: FEBRUARY, 2003  
SCALE: AS NOTED  
W.O. NO.: 201812100



NO.	REVISION	DATE
3	SEQUENCE OF CONSTRUCTION AND REFLECTING CHANGES OF FD EASEMENTS	1/31/2006
2	REVISE STORM DRAIN SIZES	10/9/03
1	NO	DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Jankov* 5-01-03  
Chief, Bureau of Highways Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Andy Hamet* 5/9/03  
Chief, Division of Land Development Date  
*Robert M. Vokell* 5/10/03  
Chief, Development Engineering Division Date

PLAN  
SCALE: 1"=100'



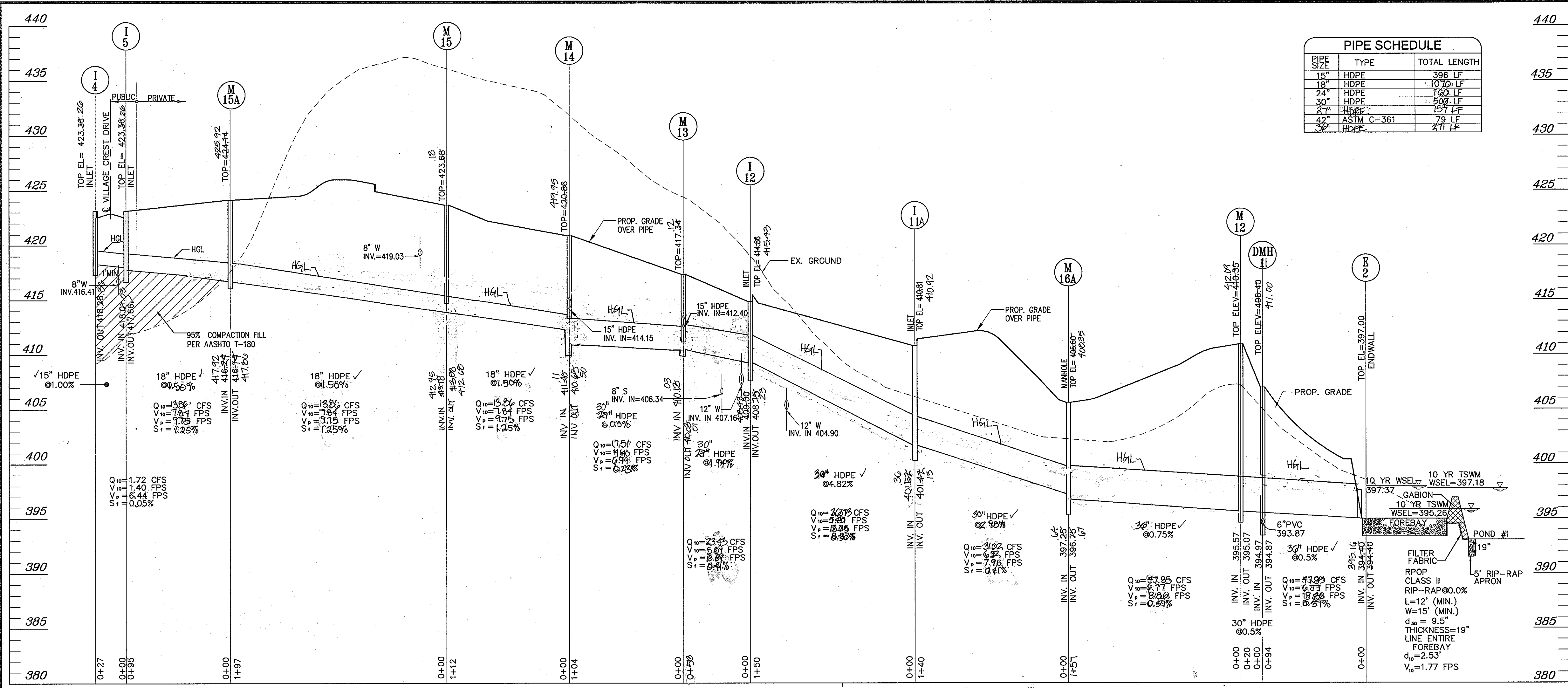
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TAYLOR PSYCHIATRIC ASSOCIATION  
DR. IRVING TAYLOR  
L 62B / F 507  
ZONED P-O8

TM 25 P 73  
TAYLOR MANOR  
HOWARD COUNTY SANITARIUM  
L 84 / F 588  
ZONED P-O8

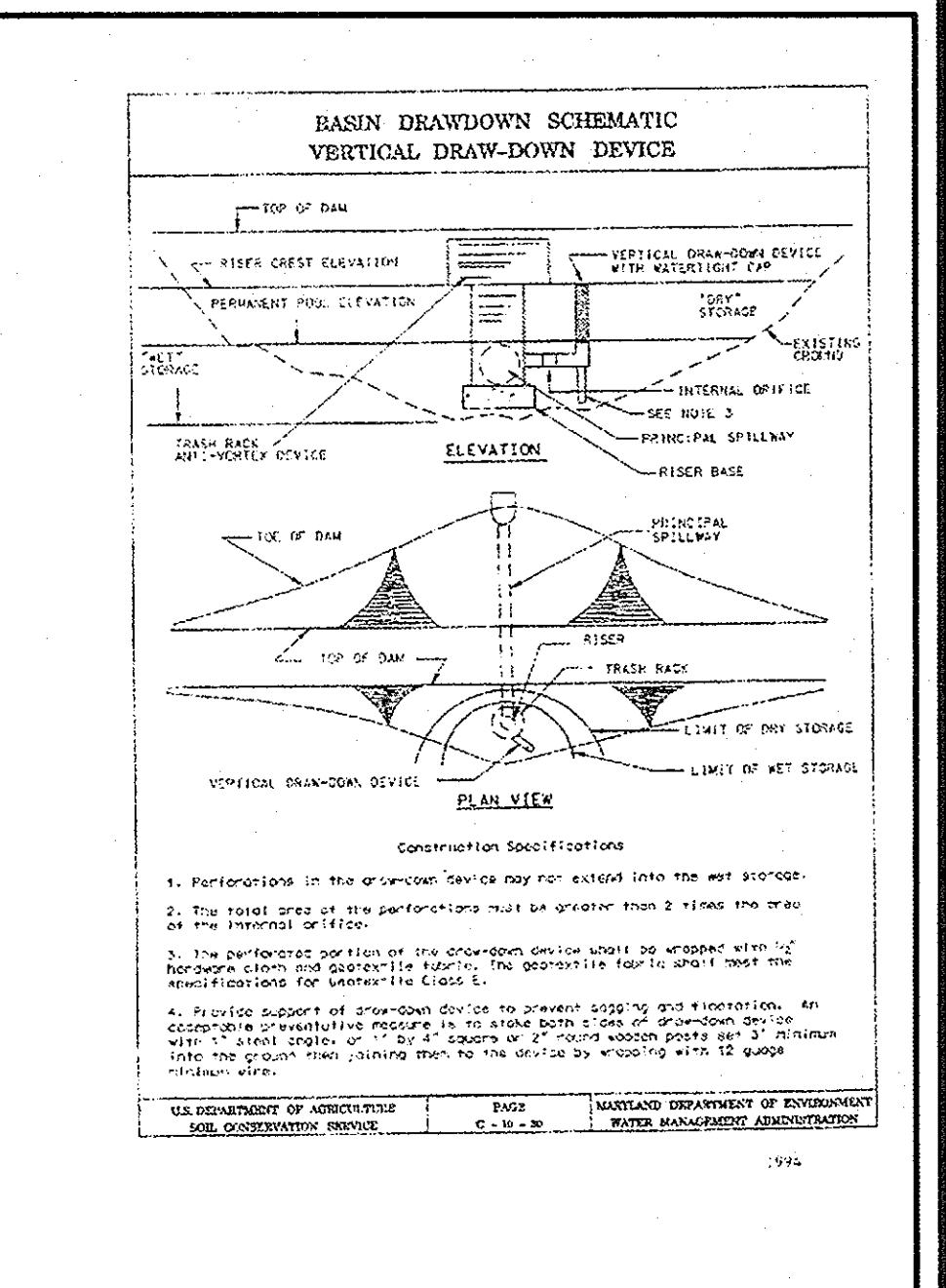
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WORTHINGTON RESERVS  
SUBDIVISION  
PHASE 1  
ZONED R-20  
PLAT NO. 14946-14955

TM 81 P 4  
WORTHINGTON RESERVES  
SUBDIVISION  
SECTION 2  
ZONED R-20  
PLAT NO. 13399, 1400

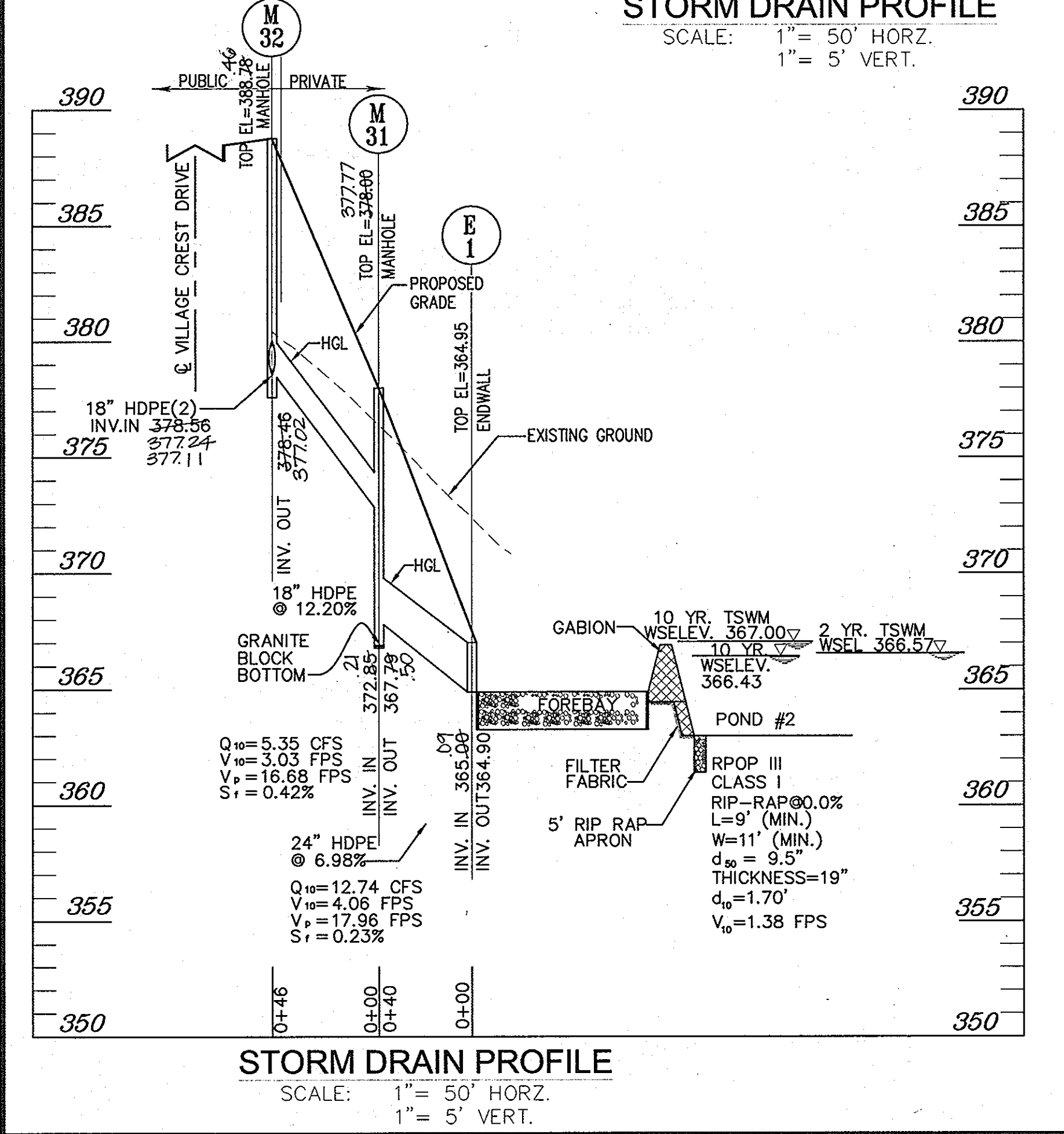




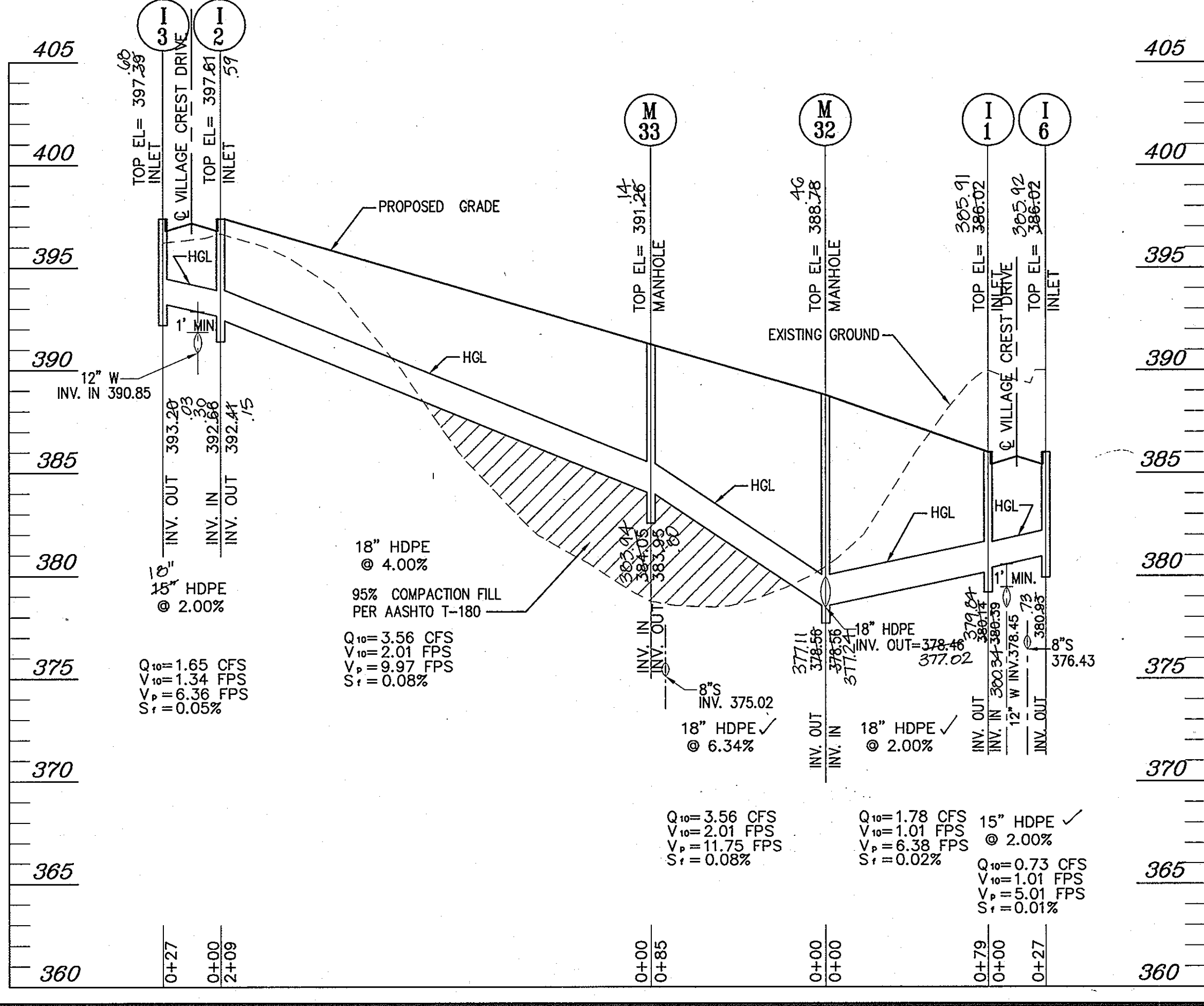
PIPE SIZE	TYPE	TOTAL LENGTH
15"	HDPE	396 LF
18"	HDPE	1070 LF
24"	HDPE	100 LF
30"	HDPE	500 LF
42"	HDPE	78 LF
36"	ASTM C-361	21 LF



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



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



AS-BUILT CERTIFICATION  
I CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN  
WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND  
THE APPROVED PLANS AND SPECIFICATIONS.  
10/19/03  
REND.  
6/22/11

NO	REVISION	DATE
2	REVISE STORM DRAIN SIZE	10/1/03

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Robert M. Shuster* 5-01-03  
Chief, Bureau of Highways Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Cecilia Hamstra* 5/9/03  
Chief, Division of Land Development Date

*John P. ...* 5/2/03  
Chief, Development Engineering Division Date

OWNER / DEVELOPER  
DR. IRVING AND EDITH TAYLOR  
C/O LAND DESIGN & DEVELOPMENT, INC.  
8000 MAIN STREET  
ELLCOTT CITY, MD 21043  
ATTN: MR. DONALD R. REUWER  
PHONE: (410) 480-9105

**FINAL STORM DRAIN PROFILES**  
**VILLAGE CREST PARCELS C-1, D-1 AND E-1**

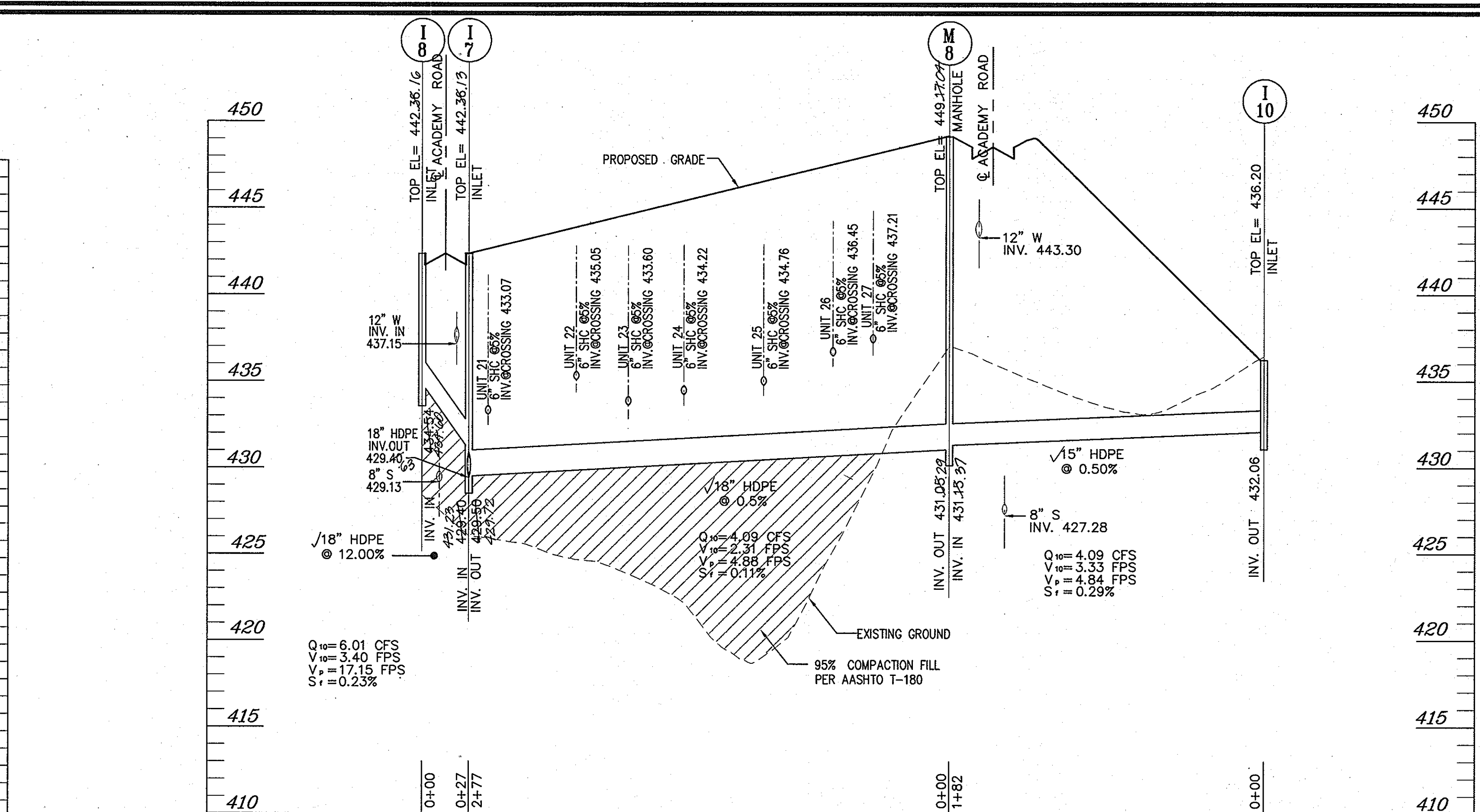
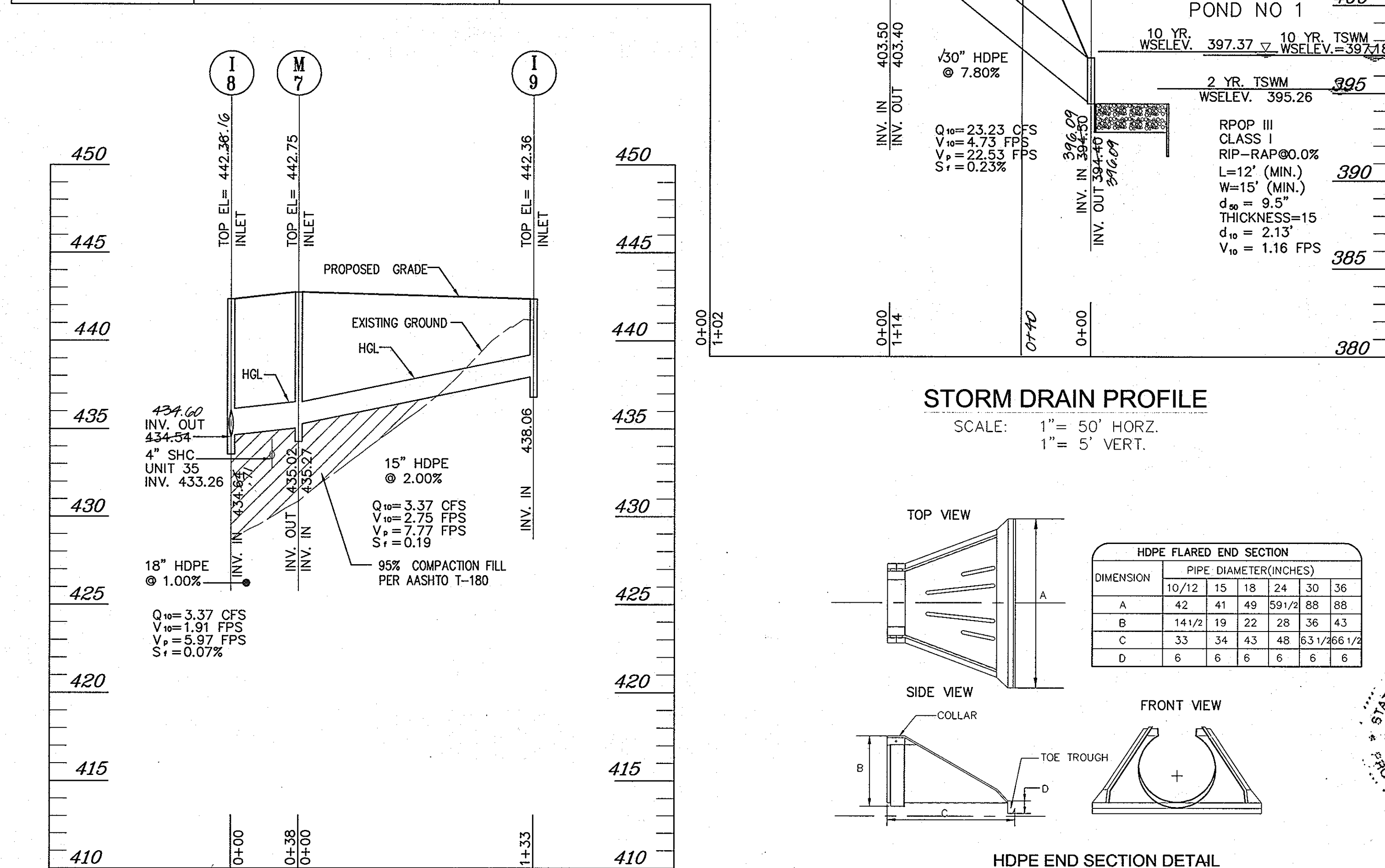
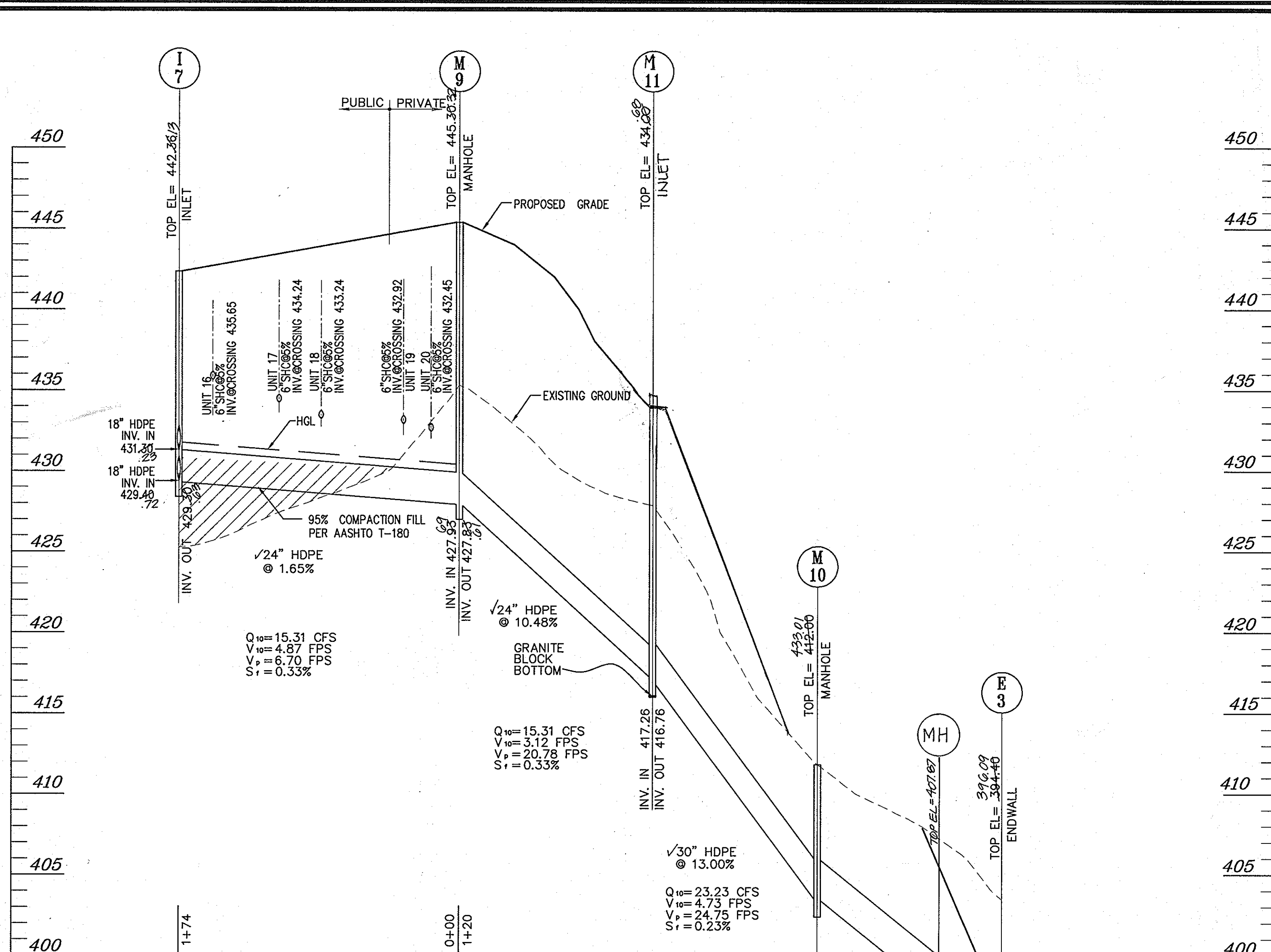
TAX MAP #25 BLOCK 20 PARCEL P/O 98  
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**FREDERICK WARD ASSOCIATES, INC.**  
ENGINEERS 7125 Riverwood Drive Columbia, Maryland 21046-2354  
ARCHITECTS Phone: 410-290-9550 Fax: 410-720-6226  
SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: RJ  
DRAWN BY: RJ  
CHECKED BY: RHV  
DATE: FEBRUARY, 2003  
SCALE: AS NOTED  
W.O. NO.: 2018121.00

10 SHEET OF 17



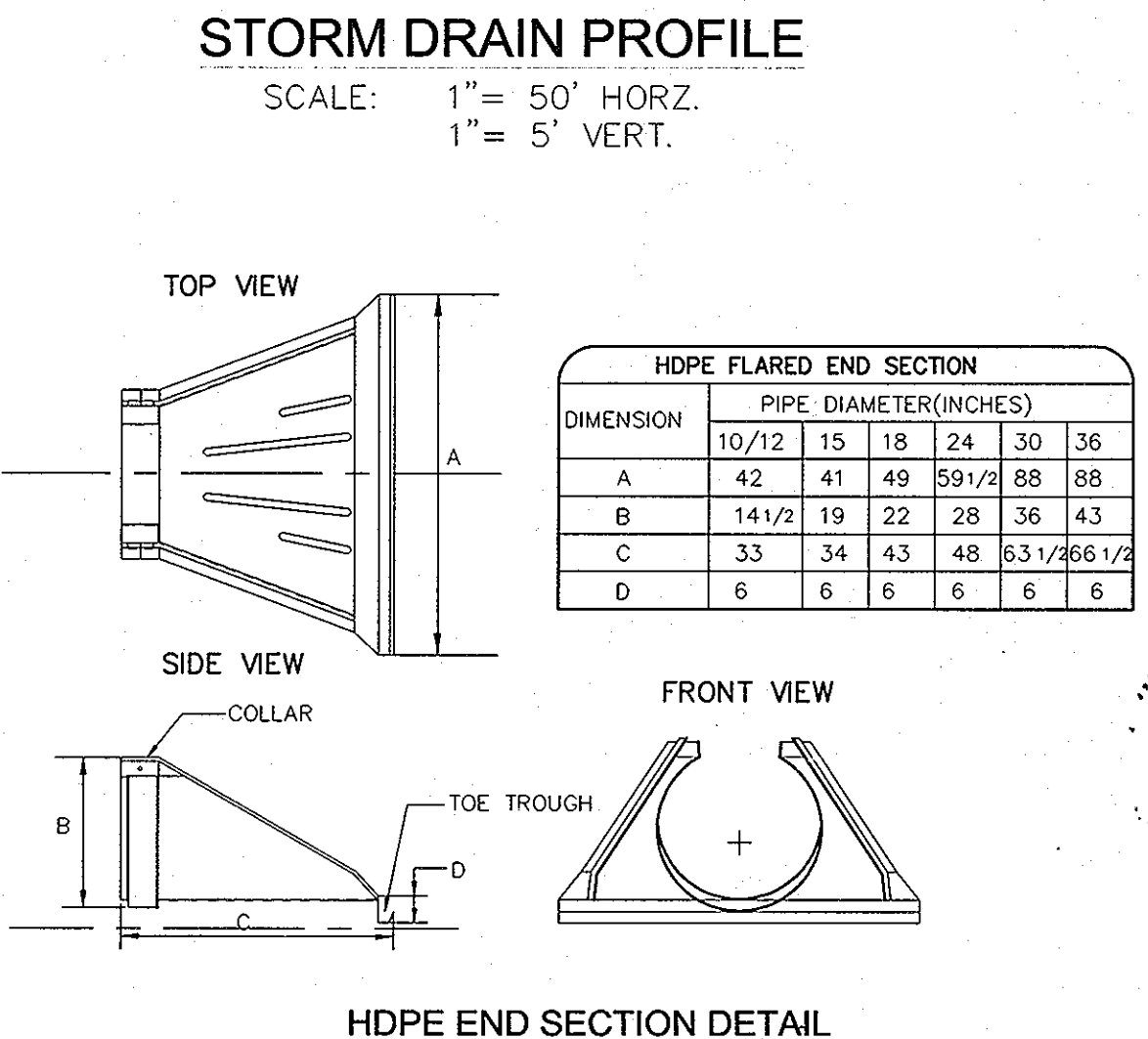


### STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	TOP ELEV.	INV IN	INV OUT	REMARKS
E-1	24" HDPE END SECTION	N 578611.74 E 1372354.63	367.51	365.00	364.90	SEE DETAIL
M-31	STANDARD 4' MANHOLE	N 578669.92 E 1372269.71	377.77	372.80	372.80	G-5.12
M-32	STANDARD 4' MANHOLE	CL STA. 15+51, 12' RT. VILLAGE CREST DRIVE	388.76	384.00	384.00	G-5.12
M-33	STANDARD 4' MANHOLE	CL STA. 17+51, 19.75' RT. VILLAGE CREST	391.28	384.00	383.98	G-5.12
I-2	A-5 INLET	CL STA. 15+51, 12' RT. VILLAGE CREST DRIVE	397.61	392.66	392.41	SD-4.40
I-3	A-5 INLET	CL STA. 15+51, 12' LT. VILLAGE CREST DRIVE	397.39	392.66	393.20	SD-4.40
I-6	A-5 INLET	CL STA. 19+19, 12' LT. VILLAGE CREST DRIVE	385.28	380.93	380.93	SD-4.40
I-1	A-5 INLET	CL STA. 19+19, 12' RT. VILLAGE CREST DRIVE	385.28	380.93	380.93	SD-4.40
I-4	A-5 INLET	CL STA. 5+15, 12' LT. VILLAGE CREST DRIVE	423.36	418.00	418.00	SD-4.40
I-5	A-5 INLET	CL STA. 5+15, 12' RT. VILLAGE CREST DRIVE	423.36	418.00	418.00	SD-4.40
M-15A	STANDARD 4' MANHOLE	N 577688.54 E 1371585.74	425.92	416.00	416.00	G-5.12
M-15	STANDARD 4' MANHOLE	N 577645.28 E 1371760.13	423.88	418.00	418.00	G-5.12
M-14	STANDARD 4' MANHOLE	N 577590.97 E 1371852.04	419.99	410.00	410.00	G-5.12
M-13	STANDARD 4' MANHOLE	N 577532.24 E 1371951.44	417.34	410.00	410.00	G-5.12
I-12	DOUBLE TYPE 'S' COMBINATION INLET	N 577534.20 E 1372012.21	415.43	408.00	408.00	SD-4.39
I-11	DOUBLE TYPE 'S' COMBINATION INLET	N 577662.43 E 1372087.46	410.87	401.50	401.50	SD-4.39
M-16A	STANDARD 4' MANHOLE	N 577598.50 E 1372212.44	400.95	396.00	396.00	G-5.12
M-12	STANDARD 4' MANHOLE	N 577460.23 E 1372137.59	412.09	398.00	398.00	G-5.12
E-2	30" HDPE END SECTION	N 577407.79 E 1372259.36	411.00	394.40	394.40	SEE DETAIL
MH	STD. 4' MANHOLE	N 577197.03 E 1372470.79	407.67	390.97	390.97	SEE DETAIL
E-3	30" HDPE END SECTION	N 577242.60 E 1372489.01	396.09	394.40	394.40	SEE DETAIL
M-10	STANDARD 4' MANHOLE	N 577130.14 E 1372469.48	433.01	406.00	406.00	G-5.13
M-11	TYPE D INLET	N 577029.51 E 1372452.01	434.00	414.00	414.00	G-5.13
M-9	STANDARD 4' MANHOLE	CL STA. 5+28, 26' LT. ACADEMY ROAD	445.33	420.68	420.68	G-5.12
I-9	TYPE D INLET	N 576814.72 E 1372718.26	442.36	438.05	438.05	SD-4.39
M-7	STANDARD 4' MANHOLE	CL STA. 6+63, 29.66' RT. ACADEMY ROAD	442.75	430.08	429.83	G-5.12
I-8	A-5 INLET	CL STA. 7+00, 12' RT. ACADEMY ROAD	442.36	426.75	426.75	SD-4.40
I-10	TYPE D INLET	N 576969.88 E 1373000.15	438.00	433.69	433.69	SD-4.39
M-8	STANDARD 4' MANHOLE	CL STA. 9+77, 25' LT. ACADEMY ROAD	449.17	430.05	429.80	G-5.12
I-7	A-5 INLET	CL STA. 7+00, 12' LT. ACADEMY ROAD	442.36	424.26	424.26	SD-4.40
E-5	42" CONCRETE TYPE 'C' ENDWALL	N 578535.51 E 1372583.16	363.44	359.99	359.60	SD-5.21
E-4	42" CONCRETE TYPE 'C' ENDWALL	N 577435.68 E 1372404.30	393.50	390.00	389.69	SD-5.21

NOTE: TOP ELEVATION ARE TO THE CENTER OF THE STRUCTURE AT TOP OF CURB FOR A-5 INLETS, THE CENTER TOP OF GRATE FOR DOUBLE TYPE 'S' COMBINATION INLETS AND ELEVATION AT THE THROAT OPENING FOR TYPE D INLET, TOP OF MANHOLE COVER FOR PRECAST MANHOLES.

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



AS-BUILT CERTIFICATION  
I CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND ALL NECESSARY PERMITS AND SPECIFICATIONS.  
10/19/03  
PE No

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Chief, Bureau of Highways* Date: 5-01-03

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Chief, Division of Land Development* Date: 5/9/03

APPROVED: DEPARTMENT OF ENGINEERING  
*Chief, Development Engineering Division* Date: 5/10/03

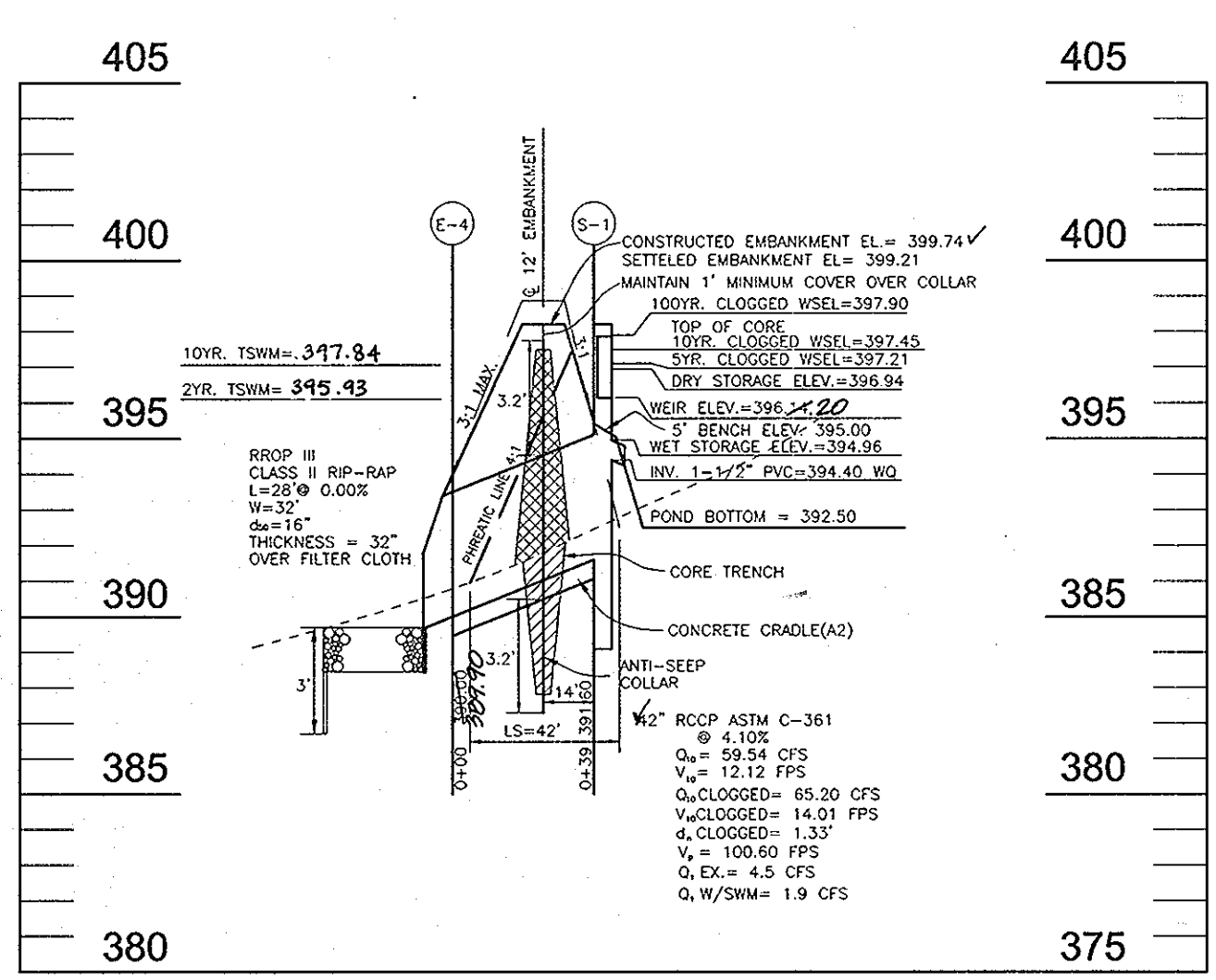
OWNER / DEVELOPER  
DR. IRVING AND EDITH TAYLOR  
C/O LAND DESIGN & DEVELOPMENT, INC.  
8000 MAIN STREET  
ELLICOTT CITY, MD 21043  
ATTN: MR. DONALD R. REUVER  
PHONE: (410) 480-9105

**FINAL STORM DRAIN PROFILES**  
VILLAGE CREST PARCELS C-1, D-1 AND E-1  
TAX MAP #25 BLOCK 20 PARCEL P/O 98  
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

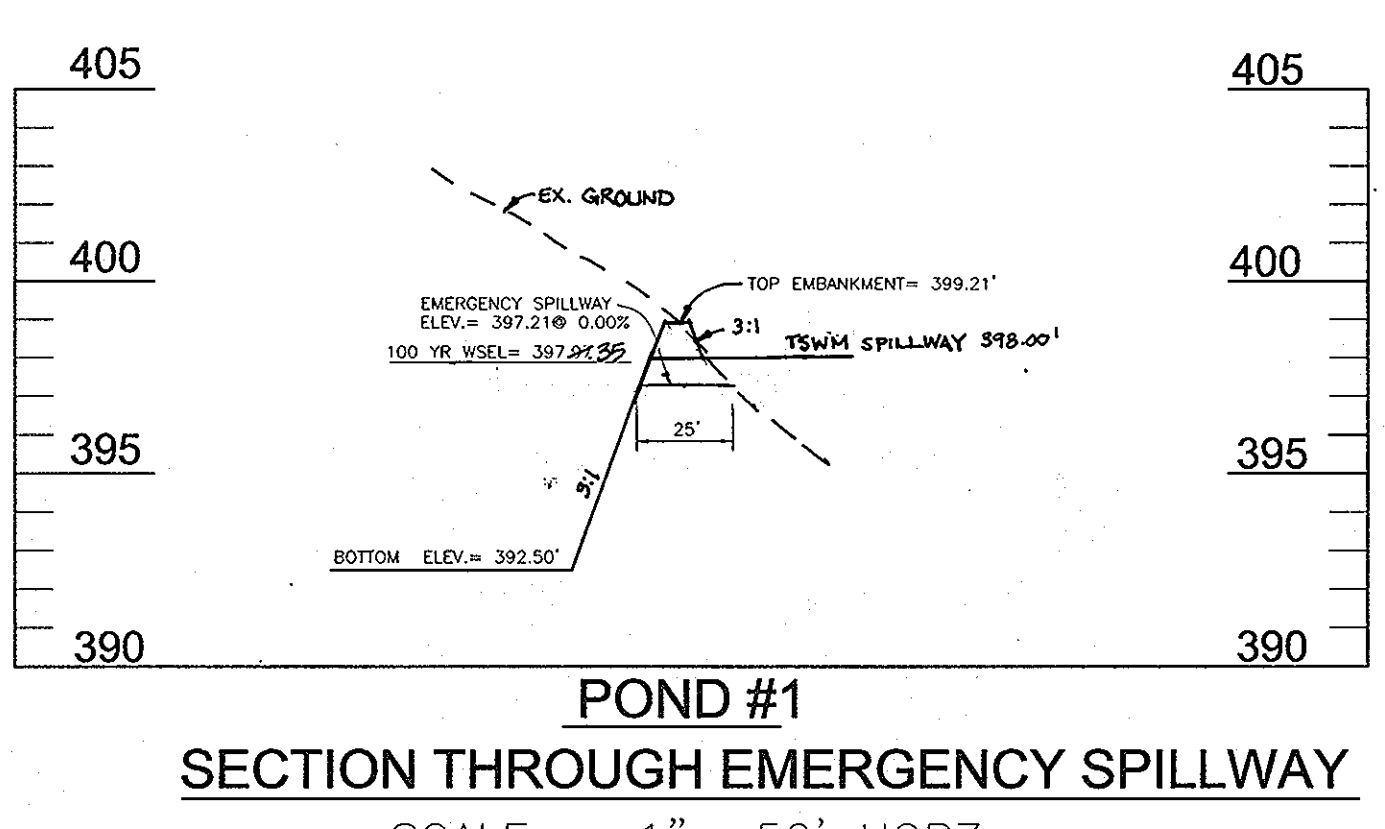
**FREDERICK WARD ASSOCIATES, INC.**  
7125 Riverwood Drive Columbia, Maryland 21046-2354  
Phone: 410-290-9550 Fax: 410-720-6226  
Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: JCO/RJ  
DRAWN BY: RJ  
CHECKED BY: RHV  
DATE: FEBRUARY, 2003  
SCALE: AS NOTED  
W.O. NO.: 2018121.00





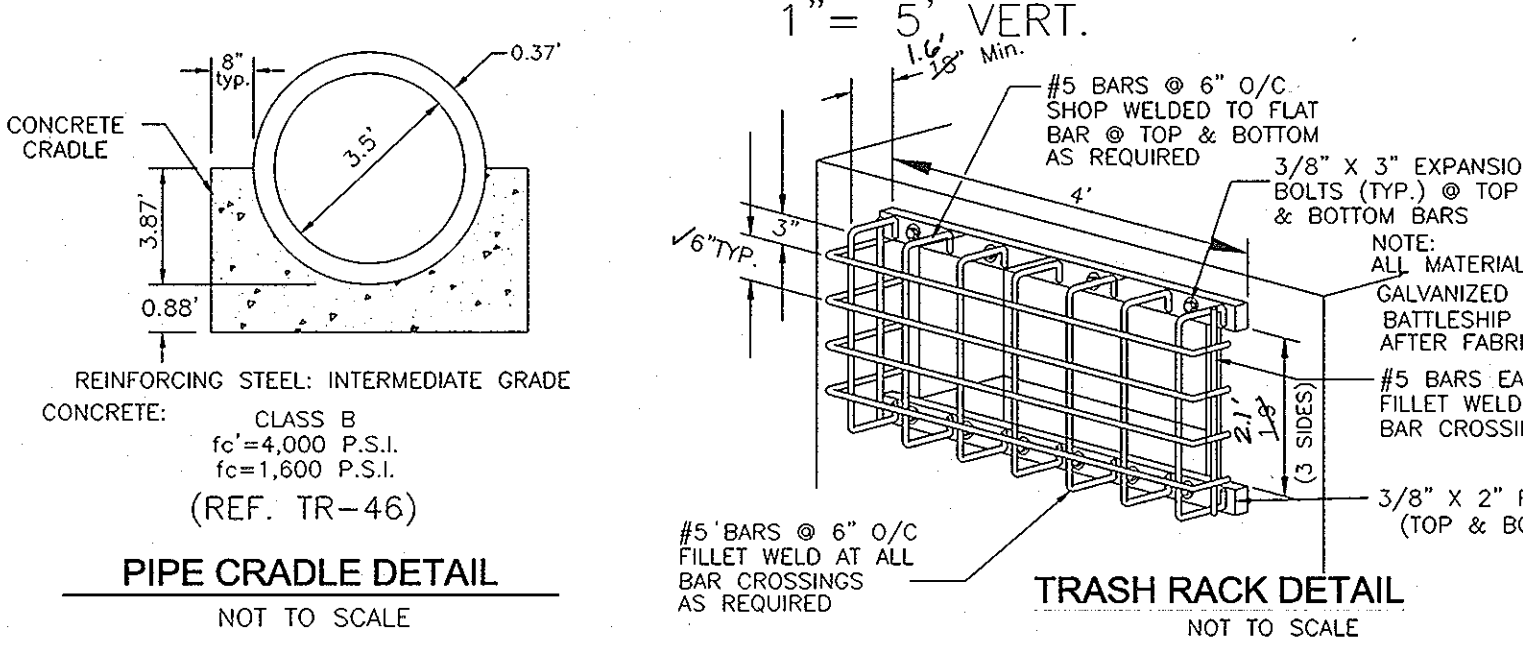
**RETENTION POND #1  
PRINCIPLE SPILLWAY PROFILE**  
SCALE: 1" = 50' HORZ.  
1" = 5' VERT.



**POND #1  
SECTION THROUGH EMERGENCY SPILLWAY**  
SCALE: 1" = 50' HORZ.  
1" = 5' VERT.

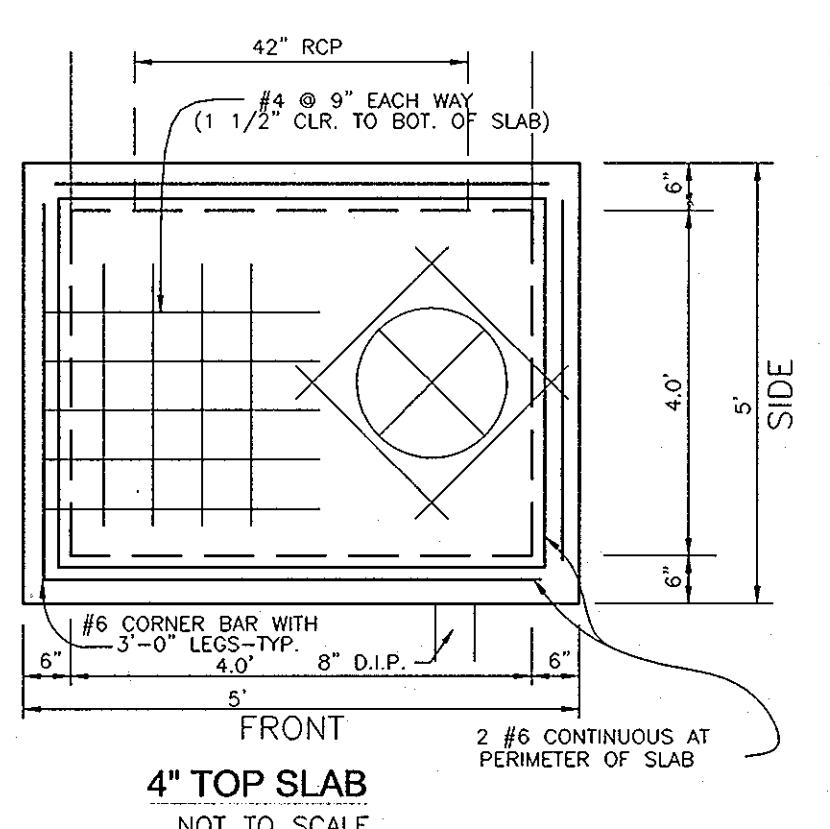
**OPERATION AND MAINTENANCE SCHEDULE FOR  
STORMWATER MANAGEMENT RETENTION FACILITY**

- ROUTINE MAINTENANCE**
- FACILITY WILL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IS FUNCTIONING PROPERLY.
  - TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHOULD BE MOWED AS NEEDED.
  - DEBRIS AND LITTER NEXT TO THE OUTLET STRUCTURE SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
  - VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREAS SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
- NON-ROUTINE MAINTENANCE**
- STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
  - SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE. INTERFERES WITH THE FUNCTION OF THE RISER, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

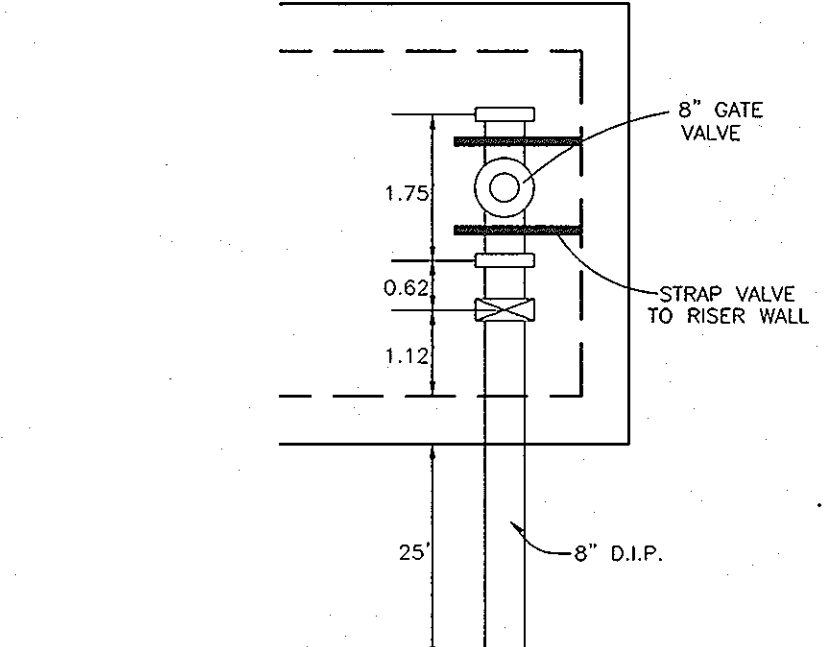


**PIPE CRADLE DETAIL**  
NOT TO SCALE

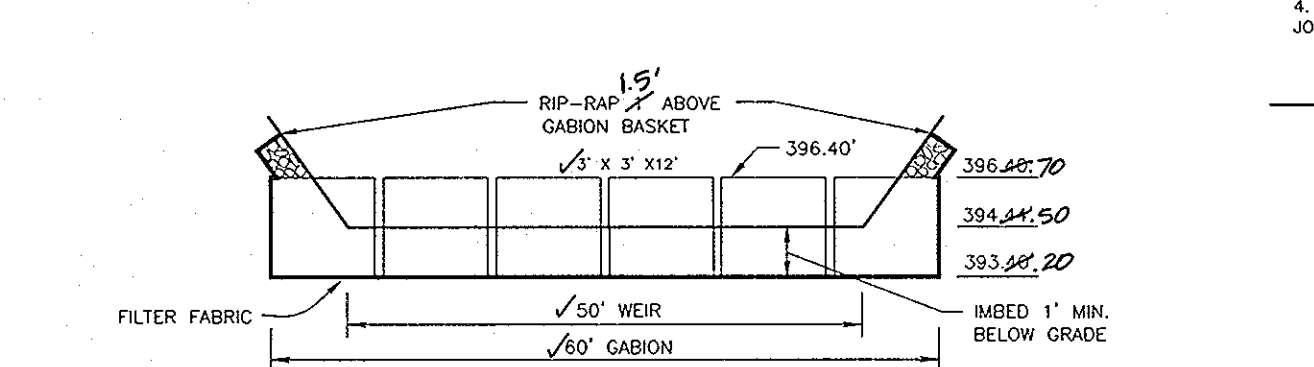
**TRASH RACK DETAIL**  
NOT TO SCALE



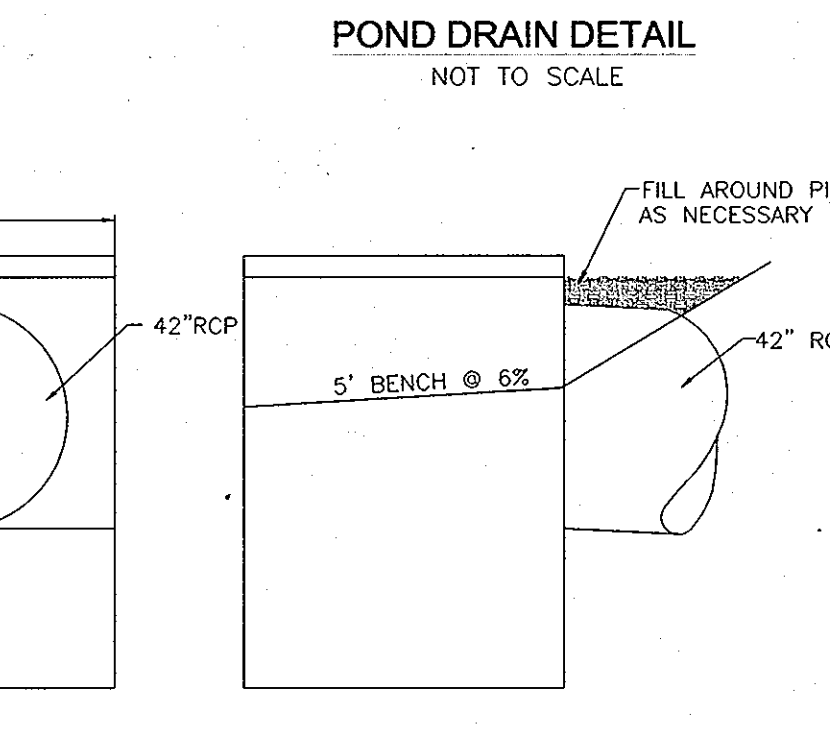
**4\"/>**



**POND DRAIN DETAIL**  
NOT TO SCALE

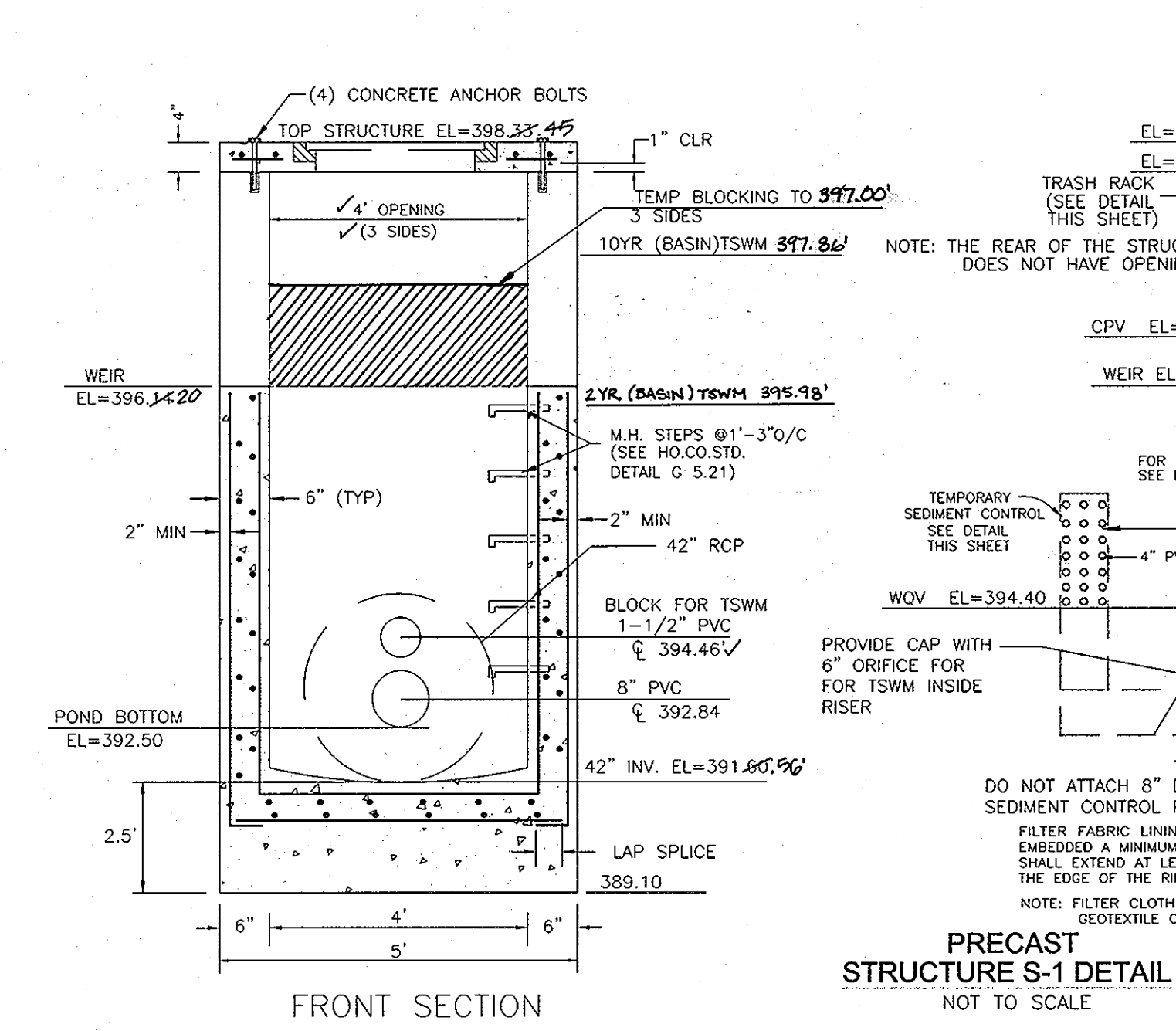
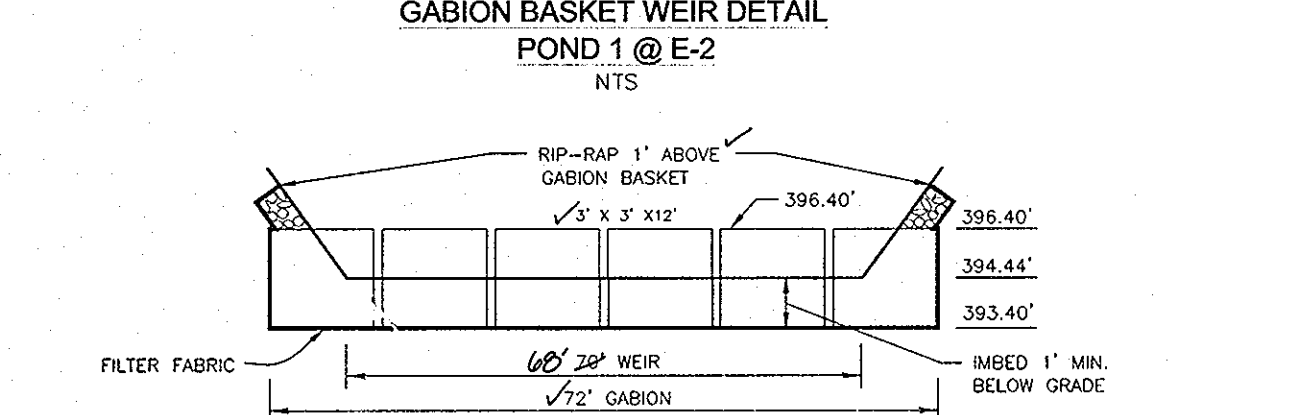


**CONCRETE ANTI-SEEP COLLAR DETAIL**  
NOT TO SCALE



**BASIN #1 (POND #1)  
FRONT SECTION**

**SIDE SECTION**



**PRECAST STRUCTURE S-1  
FRONT SECTION**

**SIDE SECTION**

**MARYLAND 378  
STORMWATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS**

**CONSTRUCTION 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 berms shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

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 25-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 spotted, 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\"/>

**Composition** - 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 truck of heavy equipment or composition shall be achieved by a minimum of four complete passes of a steelplow, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required density 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 will be so wet that water can be squeezed out.

When required by the reviewing agency the minimum density shall not be less than 95% of maximum dry density with a moisture content within  $\pm 2\%$  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 (Standard Proctor).

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

**Embankment Core** - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the outer shell of the embankment.

**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 connected 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 to the 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\"/>

**Structure Backfill**

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The structure shall have a 100-200 psi dry unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that minimum of 6\"/>

**Pipe Cradles**

All pipes shall be circular in cross section.

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

- Materials - (Polymer Coated Steel Pipe) - Steel pipes with polymeric coating shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bands or flanges.

**Materials** - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully biluminous coated per requirements of AASHTO Specification M-190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied biluminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

**POND #1 SUMMARY**

	2 YEAR	10 YEAR	100 YEAR
FLOW INTO POND	31.23 c.f.s.	75.31 c.f.s.	128.91 c.f.s.
FLOW OUT OF POND	8.91 c.f.s.	58.54 c.f.s.	110.00 c.f.s.
W.S. ELEVATION	396.53	397.46	397.97
STORAGE VOLUME	2.12 AC FT	2.72 AC FT	3.07 AC FT
	WQv	Cpv	Rev
	0.92 AC Ft.	1.09 AC Ft.	0.04 AC Ft

**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 INDICATORS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

**MAINTENANCE REQUIREMENTS FOR WET POND**

- Removal of silt when accumulation exceeds six (6) inches in forebay.
- Removal of accumulated paper, trash and debris as necessary.
- Vegetation growing on the embankment top and faces of the forebay or basin is not allowed to exceed 18 inches in height at any time.
- Annual inspection and repair of the structure.
- Corrective maintenance is required any time a forebay does not drain within 60 hours (i.e., no standing water is allowed unless designed for).

**OWNER / DEVELOPER**  
DR. IRVING AND EDITH TAYLOR  
C/O LAND DESIGN & DEVELOPMENT, INC.  
8000 MAIN STREET  
ELICOTT CITY, MD 21043  
ATTN: MR. DONALD R. REUWER  
PHONE: (410) 480-9105

**Materials** - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-195 or M-211 with watertight coupling bands or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully biluminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt to be watertight. The pH of the surrounding soils shall be between 4 and 9.

- Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material and coatings as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.
- Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe and riser with a minimum of two (2) coats of epoxy. Flange bands are not considered to be watertight.

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled on adequate number of corrugations to accommodate the bandwidth. The following type connections are acceptable for pipes less than 24 inches diameter. Flanges on both ends of the pipe with a circular 3/8 inch thick closed cell neoprene gasket and a 12-inch wide hanger type band with a minimum diameter of 1/2 inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a 24 inch long annular corrugated band using a minimum of 4 (four) rods and lugs, 2 on each connecting pipe end. A 24-inch wide by 3/8-inch thick closed cell circular neoprene gasket will be installed with 12 inches on the end of each pipe. Flanged joints with 3/8 inch closed cell gaskets the full width of the flange is also acceptable.

Electrically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene band.

- 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.
- Backfilling shall conform to AASHTO Backfill '86.
- Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

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

- Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.
- Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and on the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Crown bedding is not permitted.
- 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 4 feet from the riser.
- Backfilling shall conform to AASHTO Backfill '86.
- Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

**Plastic Pipe** - The following criteria shall apply for plastic pipe:

- Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4\"/>

**Drainage Diaphragms** - When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

**Concrete**

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 3.

**Rock Riprap**

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction Materials, Section 311.

**Geotextile** shall be placed under all riprap and shall meet requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

**Core 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 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 various parts of the work for maintaining the excavations, foundations, 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 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 required excavations and will allow satisfactory performance of all construction operations. During the placing and the placing and the placing 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 sumps from which the water shall be pumped.

**Stabilization**

All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spill and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources 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 abatement will be followed. Construction plans shall detail erosion and sediment control measures.

**POND BOTTOM SOIL CONDITIONS**

If broken rock fragments are encountered at finished pond bottom, under cut a minimum of 12\"/>

**FINAL  
STORM WATER MANAGEMENT DETAILS  
POND #1  
VILLAGE CREST  
PARCELS C-1, D-1 AND E-1**

TAX MAP #25 BLOCK 20  
2ND ELECTION DISTRICT

PARCEL P/O 98  
HOWARD COUNTY, MARYLAND

**FREDERICK WARD ASSOCIATES, INC.**

ENGINEERS 7125 Riverwood Drive Columbia, Maryland 21046-2354  
ARCHITECTS Phone: 410-290-9550 Fax: 410-720-6226  
SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: JCO  
DRAWN BY: RJ  
CHECKED BY: RHV  
DATE: FEBRUARY, 2003  
SCALE: AS NOTED  
W.O. NO.: 2018121.00

12 SHEET OF 17

APPROVED: DEPARTMENT OF PUBLIC WORKS  
Chief, Bureau of Highways  
Date: 5-01-03

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Chief, Division of Land Development  
Date: 5/4/03

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Chief, Development Engineering Division  
Date: 5/2/03

**ENGINEERS CERTIFICATE**

I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL, REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

SIGNATURE OF ENGINEER  
ROBERT H. VOGEL  
DATE: 4/11/03

**DEVELOPER'S CERTIFICATE**

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I/SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

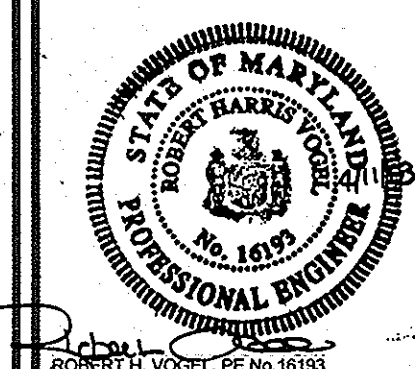
SIGNATURE OF DEVELOPER  
DONALD R. REUWER, JR.  
DATE: 4/11/03

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

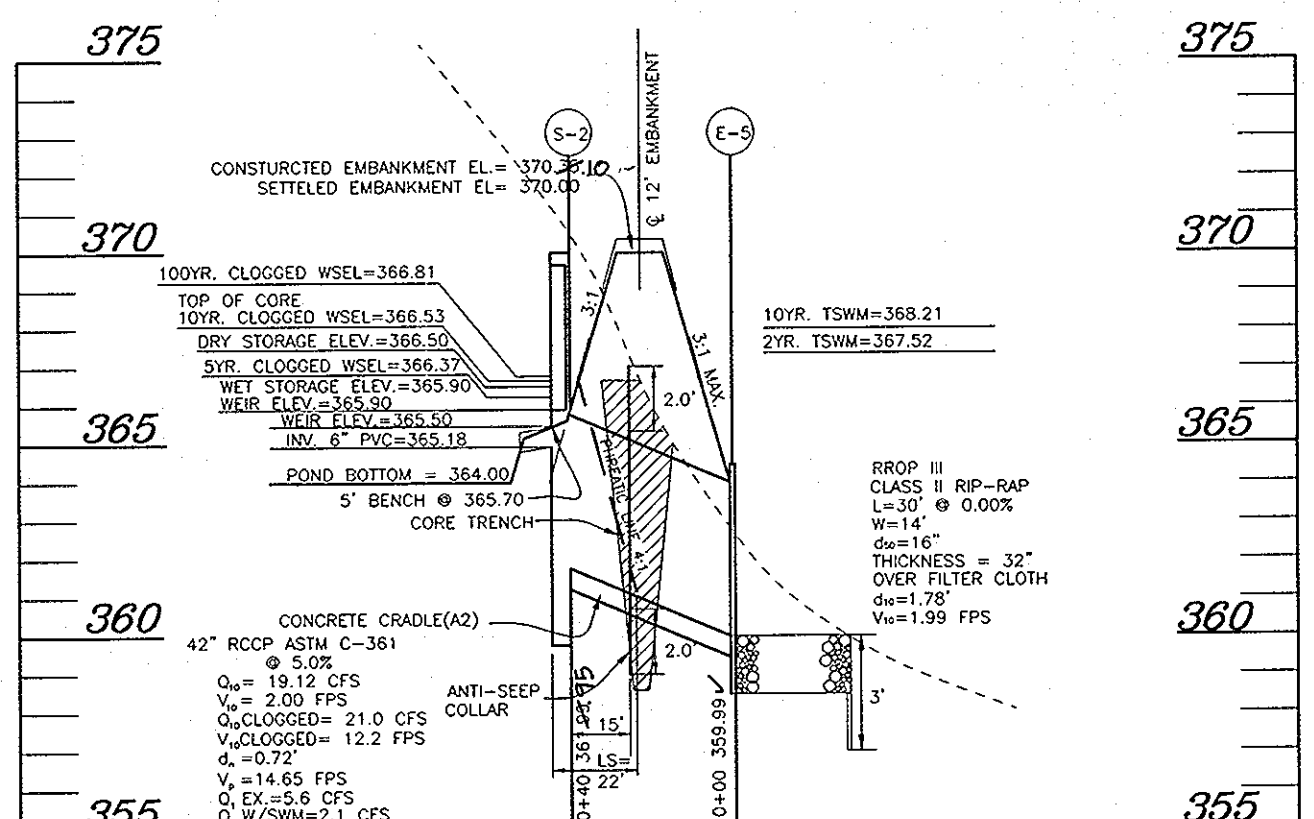
USDA - NATURAL RESOURCES CONSERVATION SERVICE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

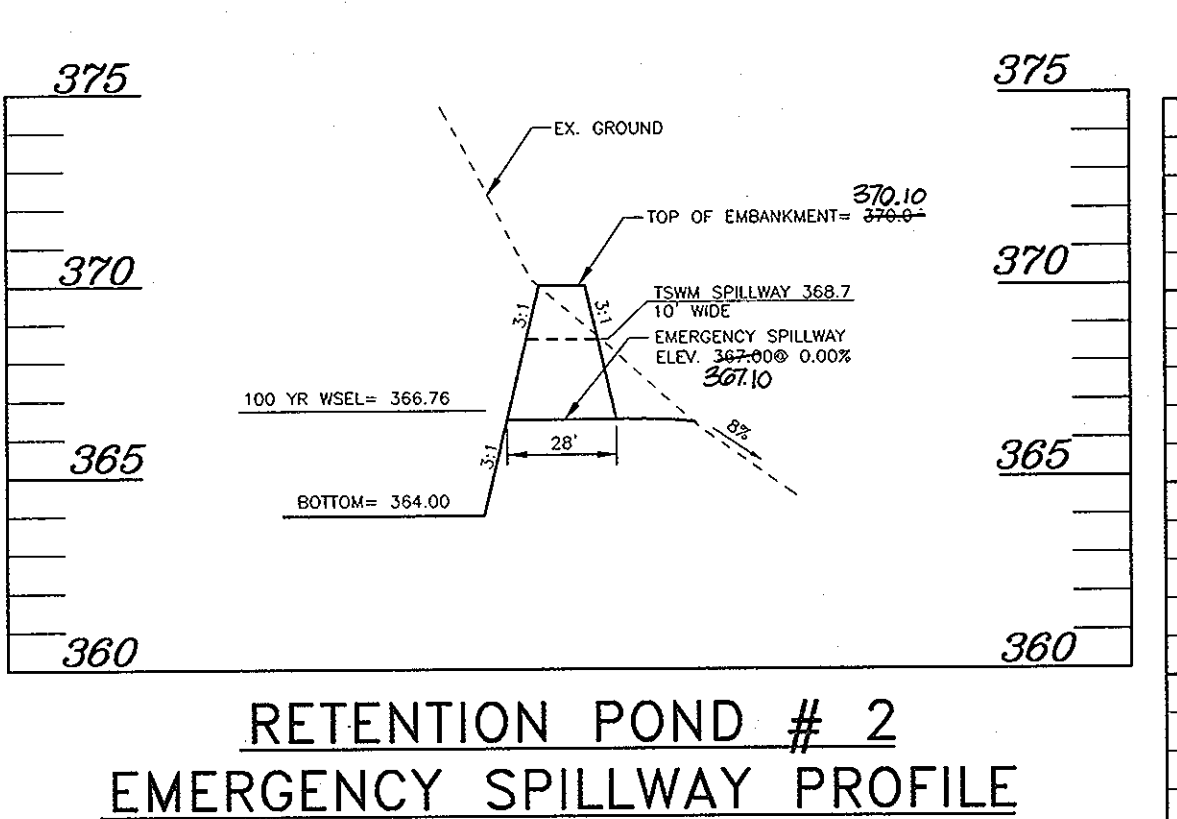
SIGNATURE OF HOWARD SOIL CONSERVATION DISTRICT  
DATE: 4/21/03



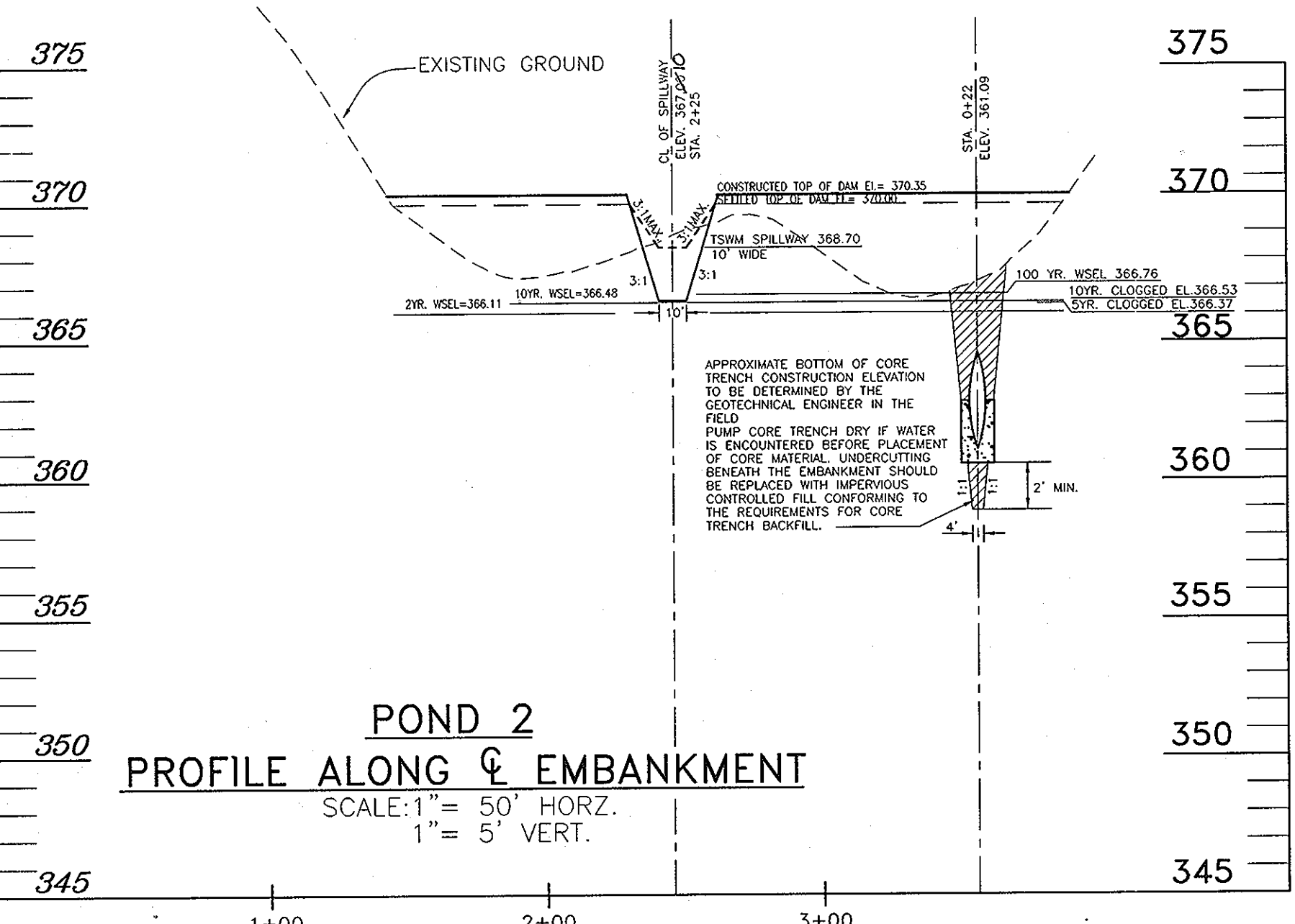




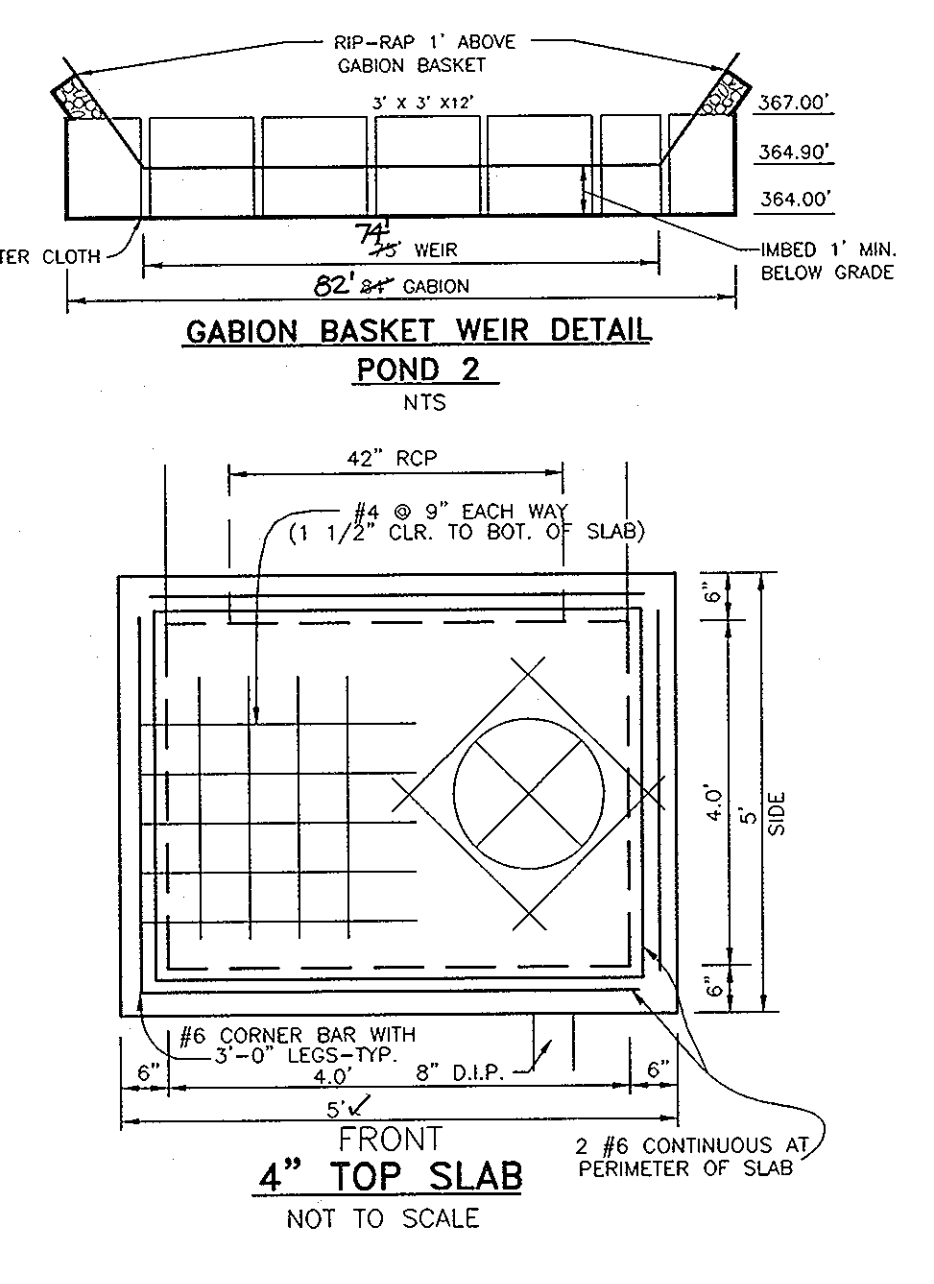
**RETENTION POND # 2  
PRINCIPLE SPILLWAY PROFILE**  
SCALE: 1" = 50' HORZ.  
1" = 5' VERT.



**RETENTION POND # 2  
EMERGENCY SPILLWAY PROFILE**  
SCALE: 1" = 50' HORZ.  
1" = 5' VERT.



**POND 2  
PROFILE ALONG CENTERLINE OF EMBANKMENT**  
SCALE: 1" = 50' HORZ.  
1" = 5' VERT.



**GABION BASKET WEIR DETAIL**  
**POND 2**  
**4\"/>**

**OPERATION AND MAINTENANCE SCHEDULE FOR STORMWATER MANAGEMENT DETENTION FACILITY**  
STORMWATER MANAGEMENT FACILITY  
ROUTINE MAINTENANCE  
1. FACILITY WILL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF FUNCTIONING PROPERLY.  
2. 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.  
3. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHOULD BE MOWED AS NEEDED.  
4. DEBRIS AND LITTER NEXT TO THE OUTLET STRUCTURE SHALL BE REMOVED DURING REGULAR MAINTENANCE OPERATIONS AND AS NEEDED.  
5. VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREAS SHALL BE REPAIRED AS SOON AS IT IS NOTICED.  
NON-ROUTINE MAINTENANCE  
1. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.  
2. SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE, INTERFERE WITH THE FUNCTION OF THE POND RISER, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

**POND #2 SUMMARY**

	2 YEAR	10 YEAR	100 YEAR
FLOW INTO POND	13.59 c.f.s.	26.88 c.f.s.	46.56 c.f.s.
FLOW OUT OF POND	6.83 c.f.s.	19.12 c.f.s.	34.46 c.f.s.
W.S. ELEVATION	366.05	366.43	366.73
STORAGE VOLUME	0.45 AC FT	0.47 AC FT	0.49 AC FT

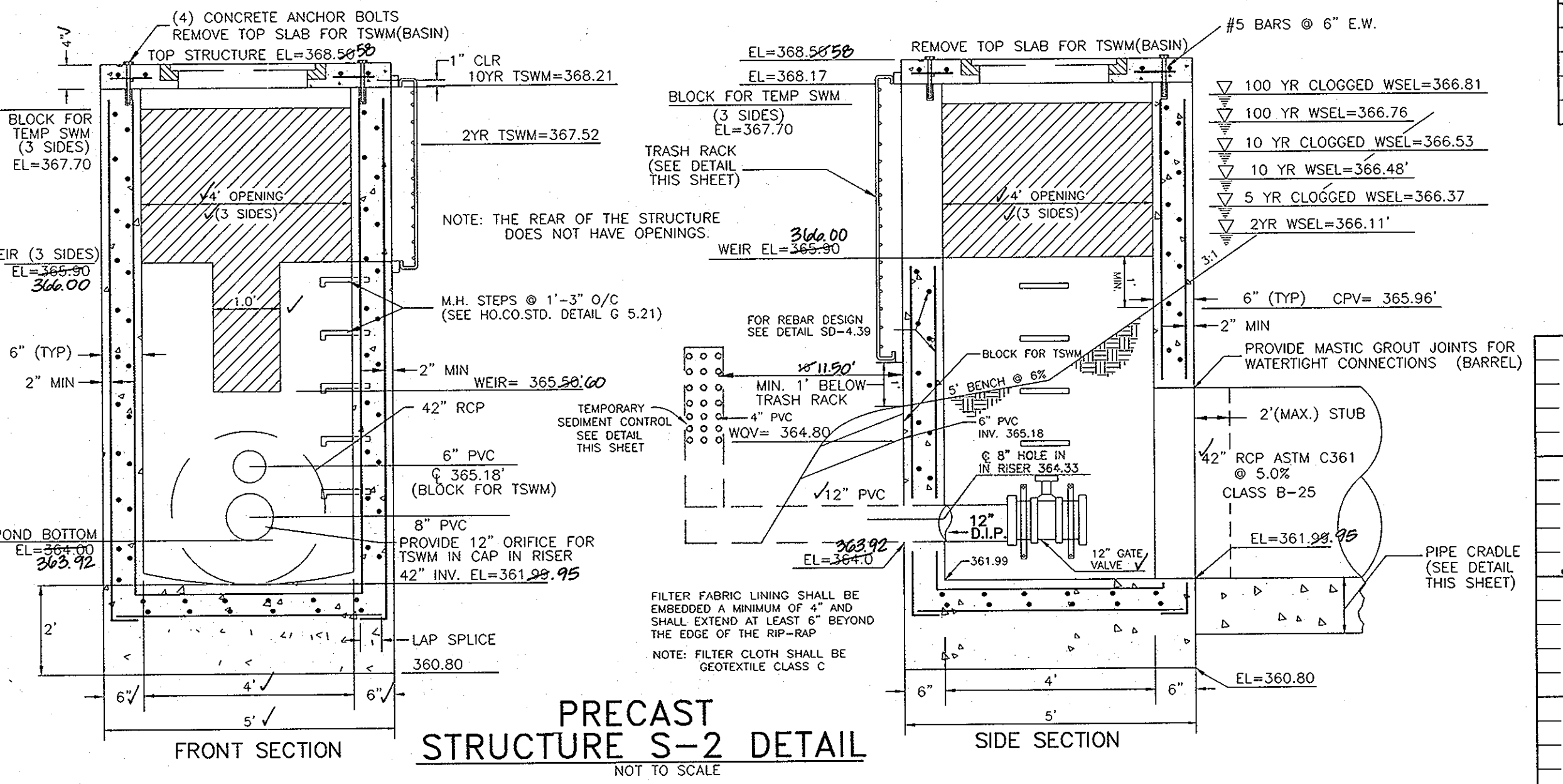
  

	WQv	Cpv	Rev
	0.21 Ac.Ft.	0.26 Ac.Ft.	0.01 Ac.Ft.

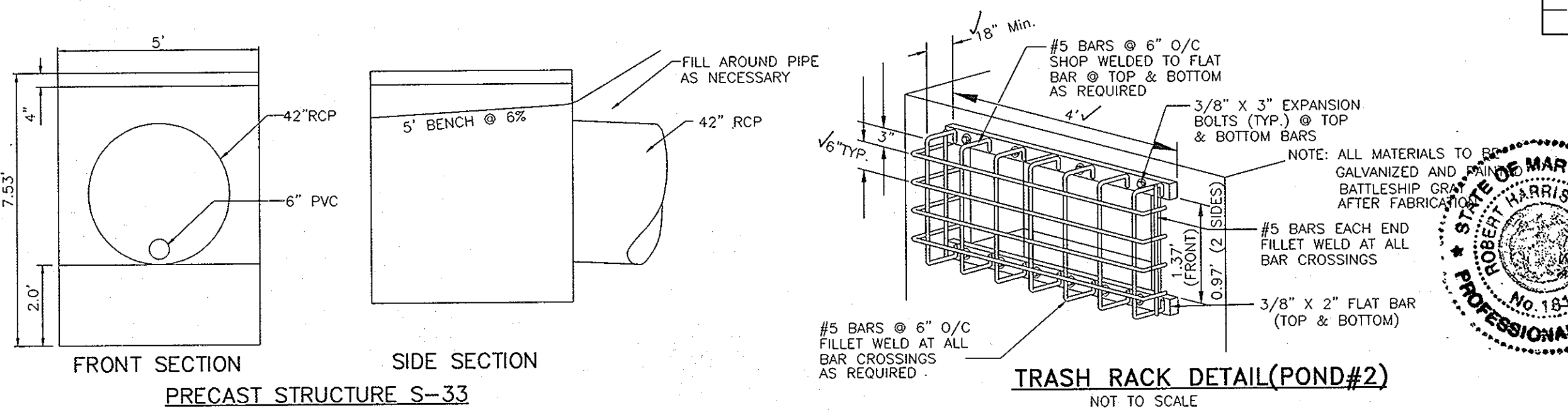
**OPERATION, MAINTENANCE AND INSPECTION**  
INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS 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.

**MAINTENANCE REQUIREMENTS FOR WET POND**

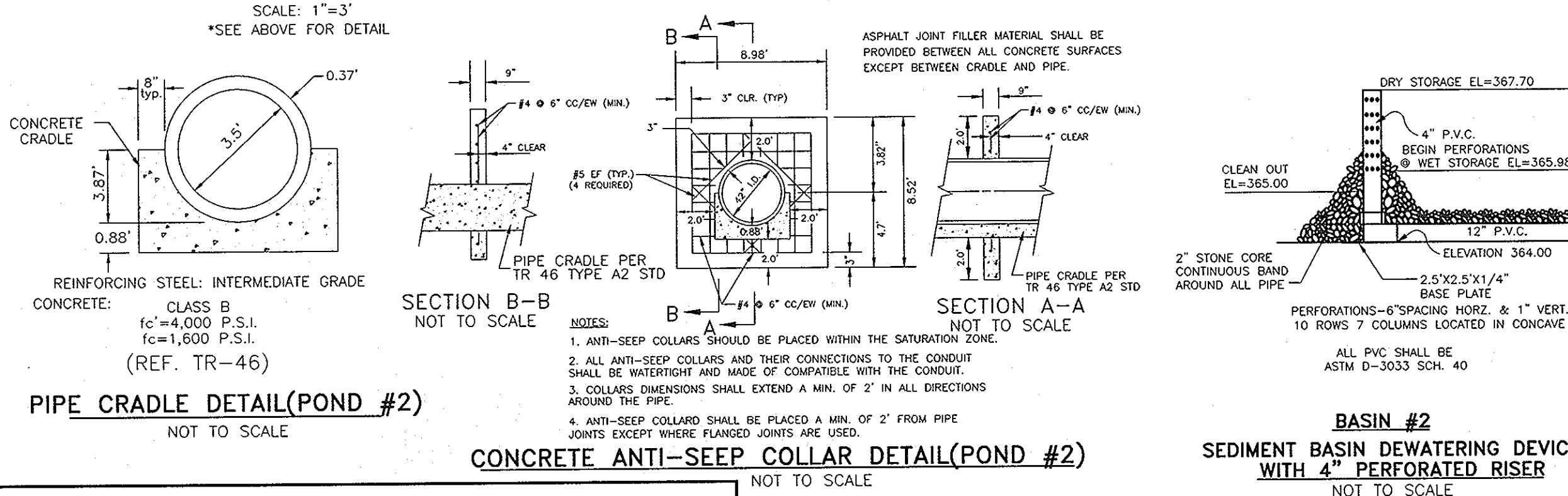
- Removal of silt when accumulation exceeds six (6) inches in forebay.
- Removal of accumulated paper, trash and debris as necessary.
- Vegetation growing on the embankment top and faces of the forebay or basin is not allowed to exceed 18 inches in height at any time.
- Annual inspection and repair of the structure.
- Emergency maintenance's required any time a forebay does not drain within 60 hours (i.e., no standing water is allowed unless designed for).



**PRECAST STRUCTURE S-2 DETAIL**  
NOT TO SCALE



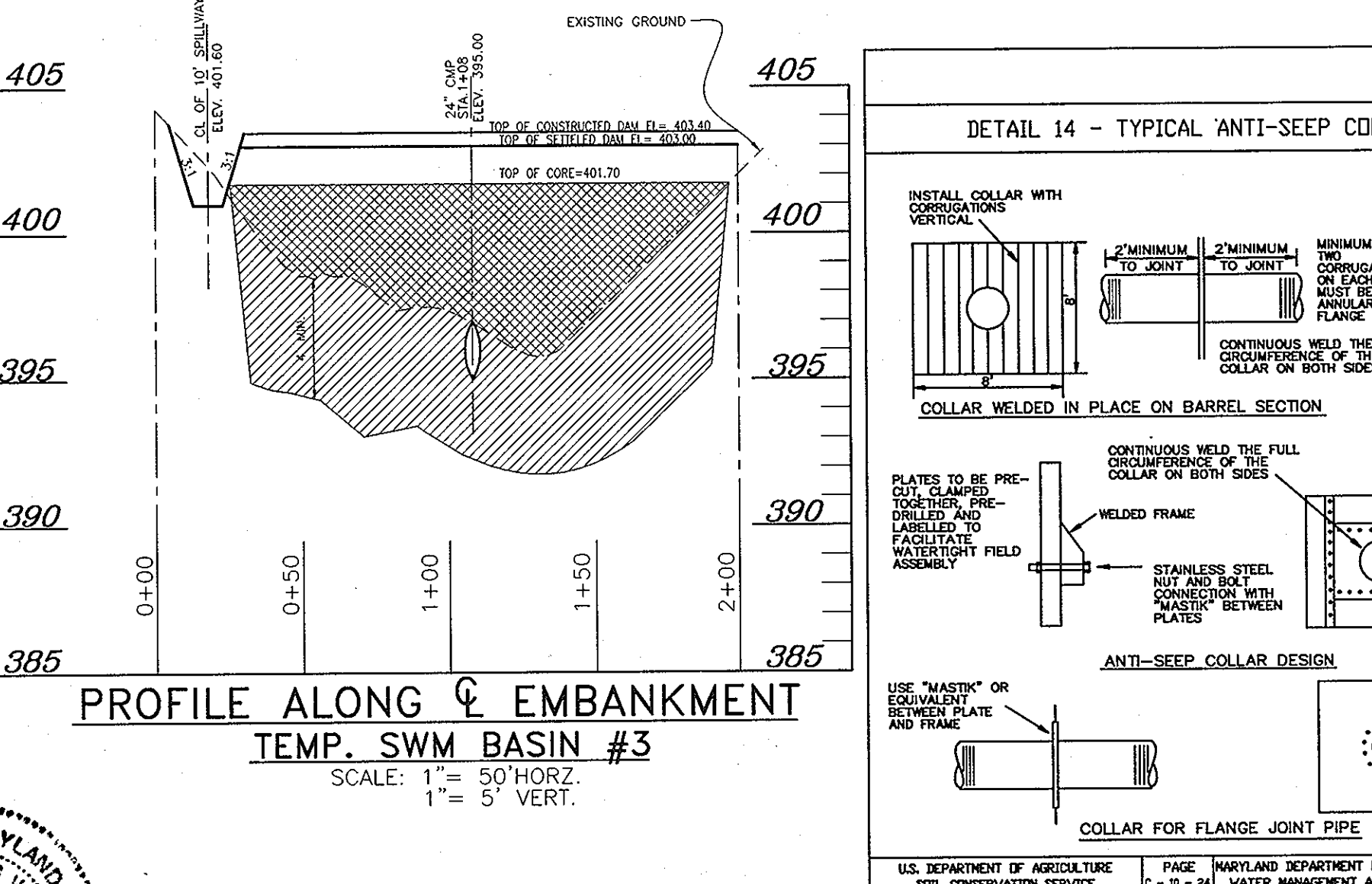
**TEMP. SWM BASIN #3  
PROFILE ALONG CENTERLINE OF EMBANKMENT**  
SCALE: 1" = 50' HORZ.  
1" = 5' VERT.



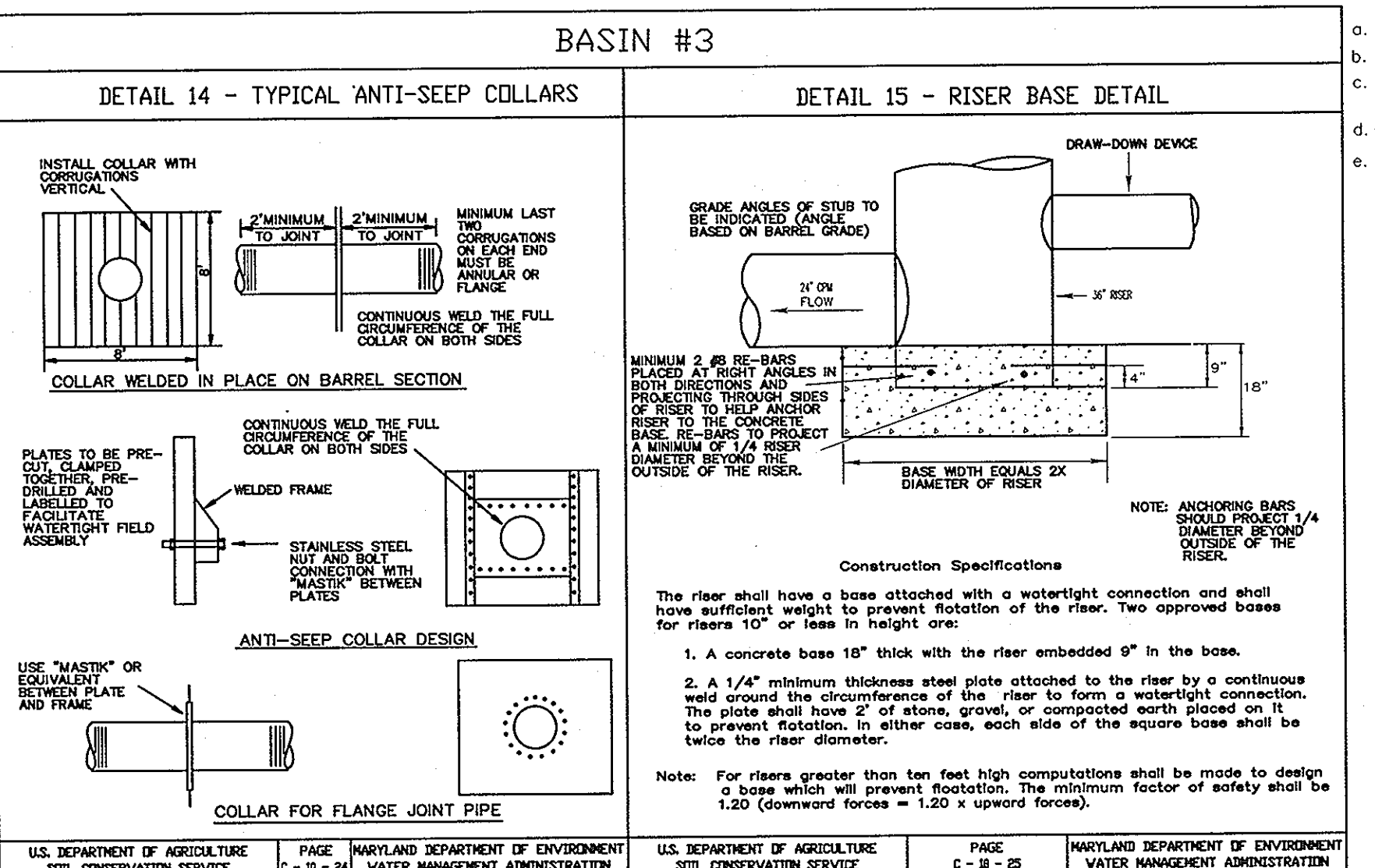
**PIPE CRADLE DETAIL (POND #2)**  
NOT TO SCALE

**CONCRETE ANTI-SEEP COLLAR DETAIL (POND #2)**  
NOT TO SCALE

**TRASH RACK DETAIL (POND #2)**  
NOT TO SCALE



**BASIN #3  
PROFILE ALONG CENTERLINE OF EMBANKMENT**  
SCALE: 1" = 50' HORZ.  
1" = 5' VERT.



**DETAIL 14 - TYPICAL ANTI-SEEP COLLARS**

**DETAIL 15 - RISER BASE DETAIL**

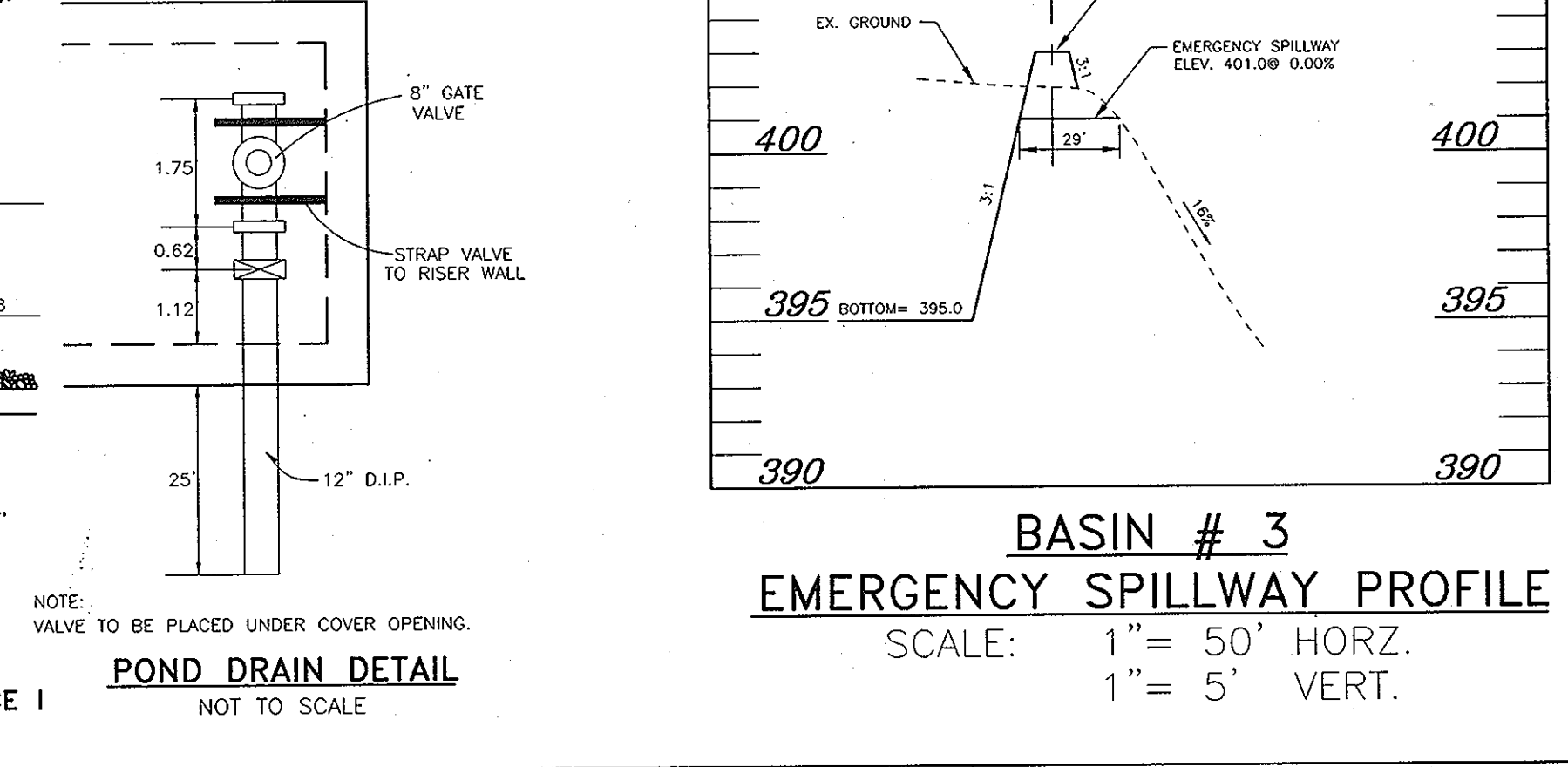
U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, PAGE: C-2-24, WATER MANAGEMENT ADMINISTRATION  
U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, PAGE: C-2-25, WATER MANAGEMENT ADMINISTRATION

**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.  
10/19/03  
PE No. [Signature]

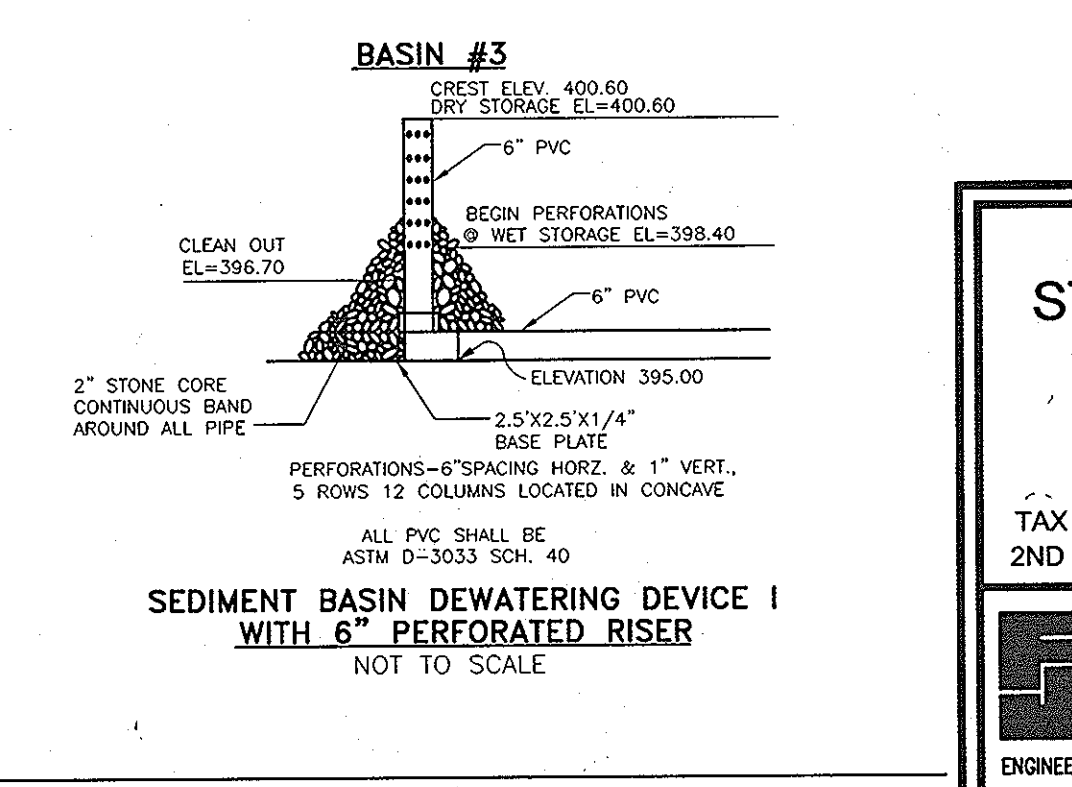
**APPROVED: DEPARTMENT OF PUBLIC WORKS**  
[Signature] 5-01-03  
Chief, Bureau of Highways

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**  
[Signature] 5/2/03  
Chief, Division of Land Development

**ENGINEERS CERTIFICATE**  
I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.  
[Signature] 4/10/03  
SIGNATURE OF ENGINEER  
ROBERT H. VOGEL



**BASIN #3  
EMERGENCY SPILLWAY PROFILE**  
SCALE: 1" = 50' HORZ.  
1" = 5' VERT.

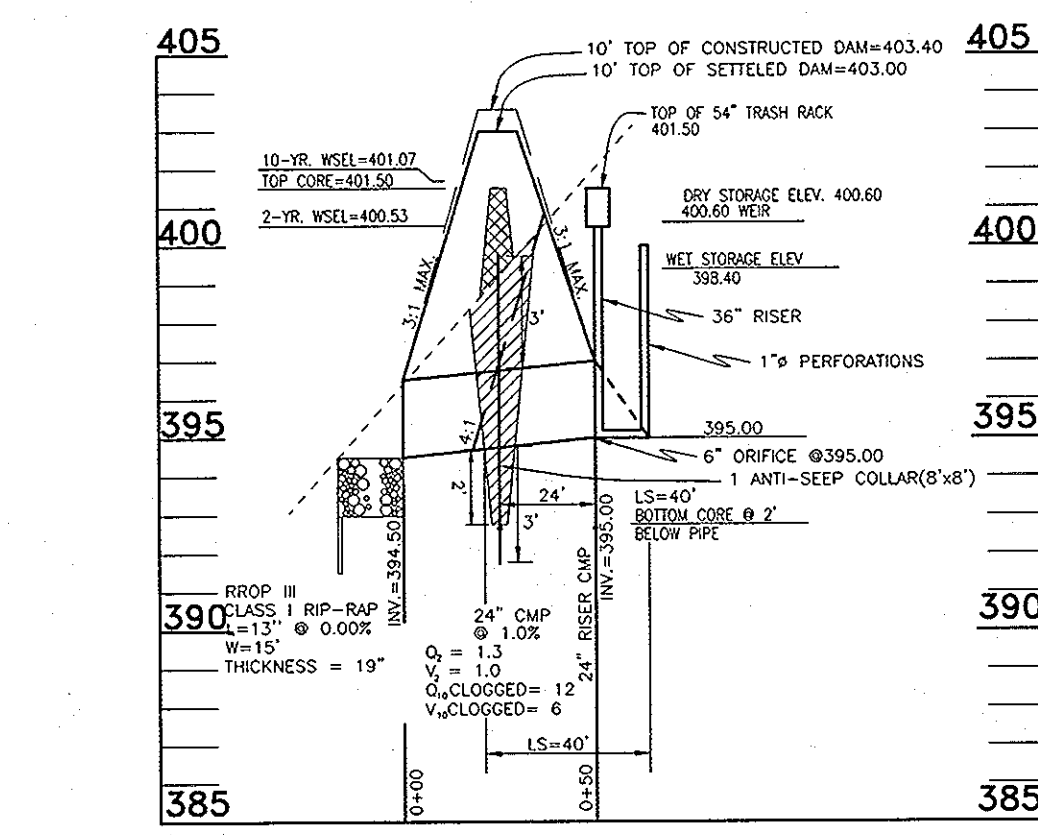


**BASIN #3  
SEDIMENT BASIN Dewatering Device I  
WITH 6\"/>**

**DEVELOPER'S CERTIFICATE**  
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.  
[Signature] 2/10/03  
SIGNATURE OF DEVELOPER  
DONALD R. REAUER, JR.

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.  
[Signature] 4/21/03  
USDA-NATURAL RESOURCES CONSERVATION SERVICE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
[Signature] 4/21/03  
HOWARD SOIL CONSERVATION DISTRICT



**TEMP. SWM BASIN #3**  
SCALE: 1" = 50' HORZ.  
1" = 5' VERT.

**OWNER / DEVELOPER**  
DR. IRVING AND EDITH TAYLOR  
C/O LAND DESIGN & DEVELOPMENT, INC.  
8000 MAIN STREET  
ELLICOTT CITY, MD 21043  
ATTN: MR. DONALD R. REAUER  
PHONE: (410) 480-9105

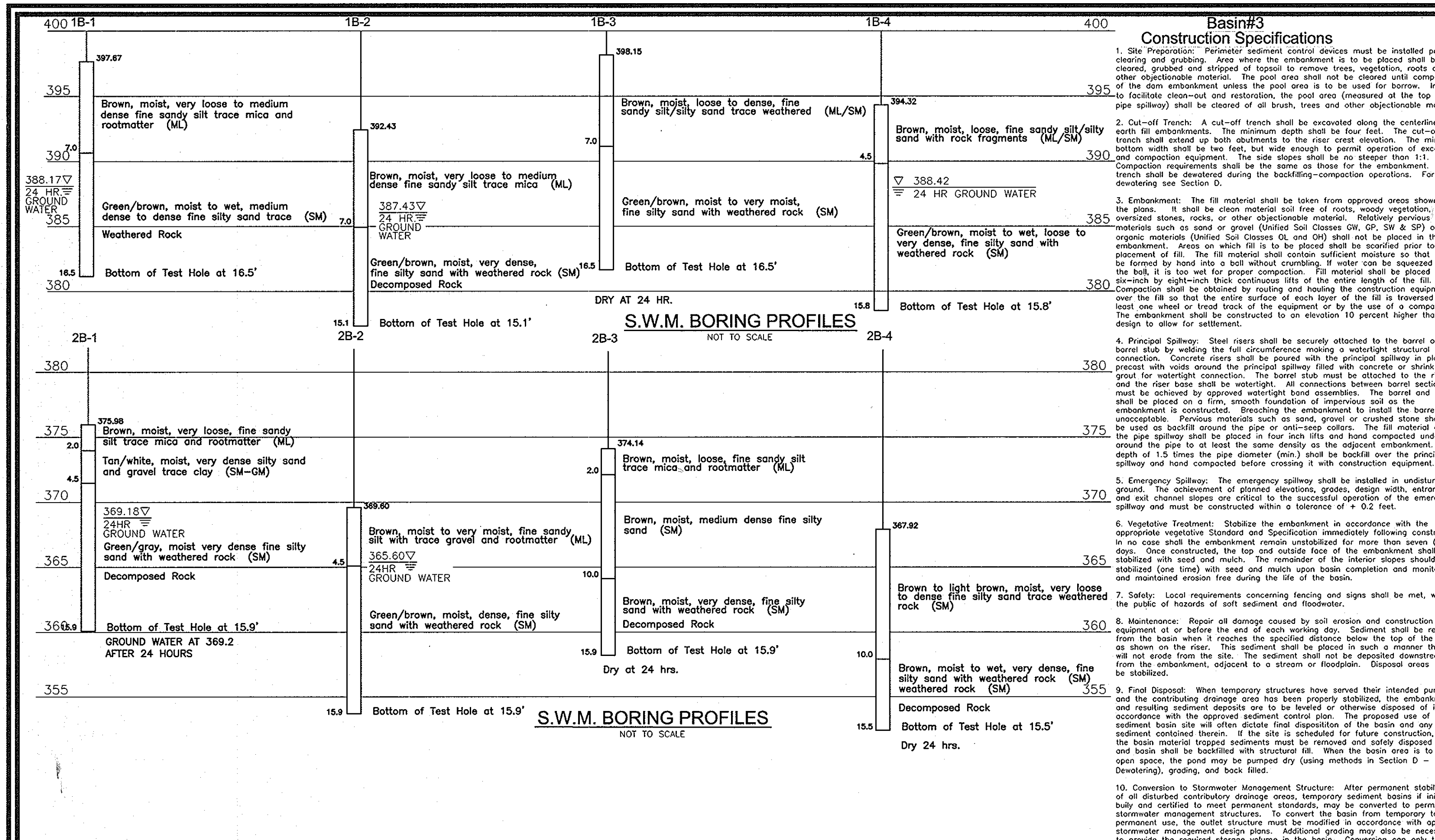
**FINAL STORM WATER MANAGEMENT DETAILS POND #2 VILLAGE CREST PARCELS C-1, D-1 AND E-1**  
TAX MAP #25 BLOCK 20 2ND ELECTION DISTRICT  
PARCEL P/O 98 HOWARD COUNTY, MARYLAND

**FREDERICK WARD ASSOCIATES, INC.**  
ENGINEERS 7125 Riverwood Drive Columbia, Maryland 21046-2354  
ARCHITECTS Phone: 410-290-9550 Fax: 410-720-6226  
SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: JCO  
DRAWN BY: RJJ  
CHECKED BY: RHV  
DATE: FEBRUARY, 2003  
SCALE: AS NOTED  
W.O. NO.: 2018121.00

13 SHEET OF 17  
AS-BUILT 6/28/2011 F-02-47





**POND 2**

9" DEEP STORMWATER POND HERBACEOUS LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	REMARKS
AP	109	Alisma plantago-aquatica Water Plantain	plug	2' oc
AC	126	Acorus calomus Sweet Flag	plug	2' oc
CE	227	Cyperus esculentus Yellow Nut Sedge	plug	2' oc
EE	68	Eleocharis equisetoides Knotted Spike Rush	rhizome	2' oc
IP	67	Iris pseudacoris Yellow Water Iris	plug	1.5' oc
IV	47	Iris versicolor Blue Flag (wear gloves)	plug	1.5' oc
SV	46	Scirpus validus Soft Stem Bulrush	rhizome	4' oc

**POND 1**

2' DEEP STORMWATER POND HERBACEOUS LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	REMARKS
VA	606	Vallisneria americana Wild Celery	plug	2' oc
JP	39	Iris pseudacoris Yellow Water Iris	plug	1.5' oc
IV	37	Iris versicolor Blue Flag (wear gloves)	plug	1.5' oc
SL	80	Sagittaria latifolia Duck Potato (do not plant tubers)	plug	4' oc
CE	133	Cyperus esculentus Yellow Nut Sedge	plug	2' oc
NL	945	Nuphar luteum Spatterdock	plug	1.5' oc
CL	133	Carex lacustris Lake Sedge	plug	2' oc

REMOVE BAFFLE BOARDS PRIOR TO INSTALLATION OF PLANT MATERIALS. ADD THREE INCHES OF TOPSOIL TO PLANTING AREA. STABILIZE WITH 40 POUNDS PER ACRE OF A HYDROSEED MIX (WET MIX AND MEADOW MIX) FROM SYLVIA NATIVE NURSERY OR EQUAL. ALL PLANT MATERIALS TO CONFORM TO THE MOST CURRENT AAN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH LCAMW SPECIFICATIONS. CONTRACTOR TO AVOID STEPPING IN MICROPOL DURING INSTALLATION.

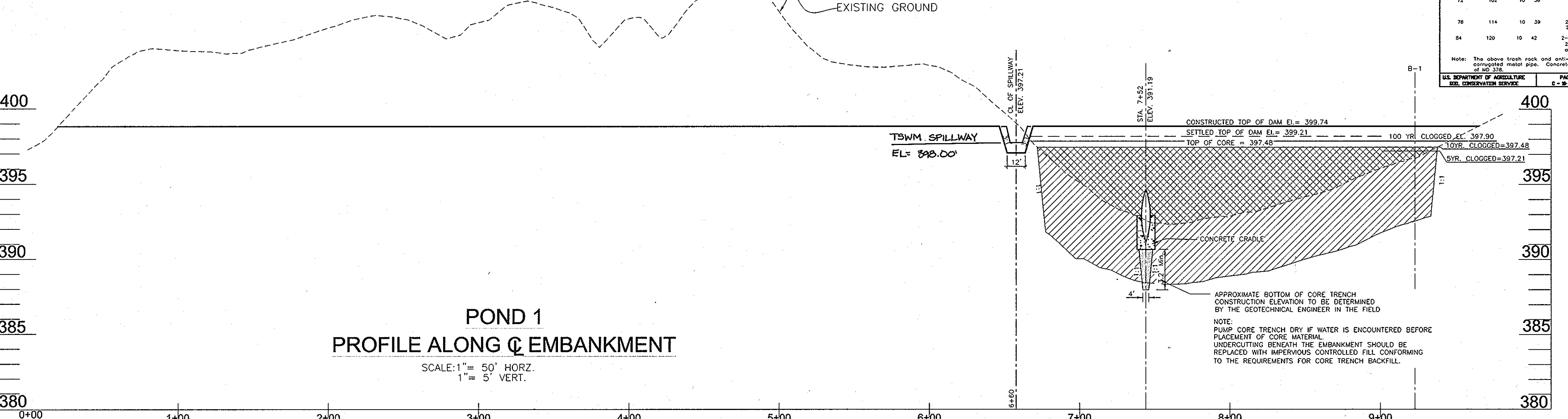
REMOVE BAFFLE BOARDS PRIOR TO INSTALLATION OF PLANT MATERIALS. ADD THREE INCHES OF TOPSOIL TO PLANTING AREA. STABILIZE WITH 40 POUNDS PER ACRE OF A HYDROSEED MIX (WET MIX AND MEADOW MIX) FROM SYLVIA NATIVE NURSERY OR EQUAL. ALL PLANT MATERIALS TO CONFORM TO THE MOST CURRENT AAN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH LCAMW SPECIFICATIONS.

**Embankment and Cut-Off Trench Construction**

The areas of the proposed SWM ponds 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 profiled 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 proffiling 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.

It is our professional opinion that in addition to the soil materials described above a fine grained soil, including Silt (ML) with a plasticity index of 10 or more can be utilized for the center of the embankment & core trench. Exploration with test pits and laboratory testing can be conducted prior to construction to identify and quantify potential borrow areas for core trench material. All fill materials must be placed and compacted in accordance with MD SCS 378 specifications.



APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Daniels*  
 Chief, Bureau of Highways  
 Date: 5-01-03

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Cynthia Hamstra*  
 Chief, Division of Land Development  
 Date: 5/19/03

*Chad DeWitt*  
 Chief, Development Engineering Division  
 Date: 5/19/03

ENGINEERS CERTIFICATE  
 I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

*Robert H. Vogel*  
 SIGNATURE OF ENGINEER  
 ROBERT H. VOGEL  
 DATE: 2/18/03

DEVELOPER'S CERTIFICATE  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

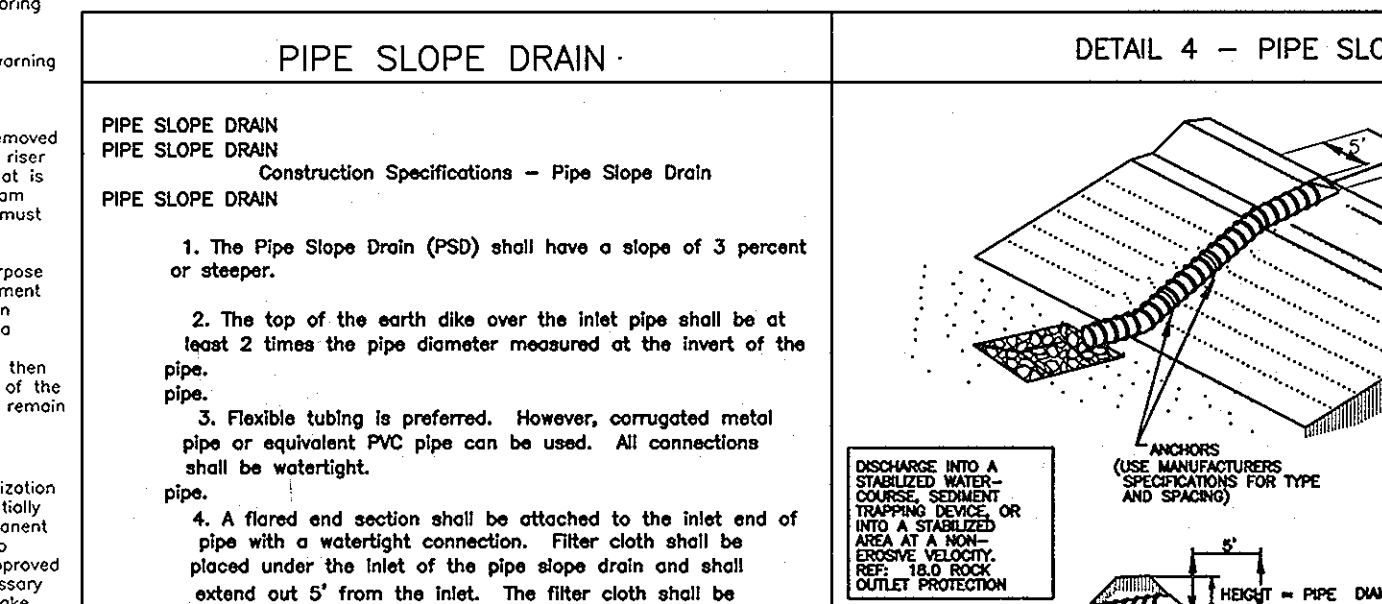
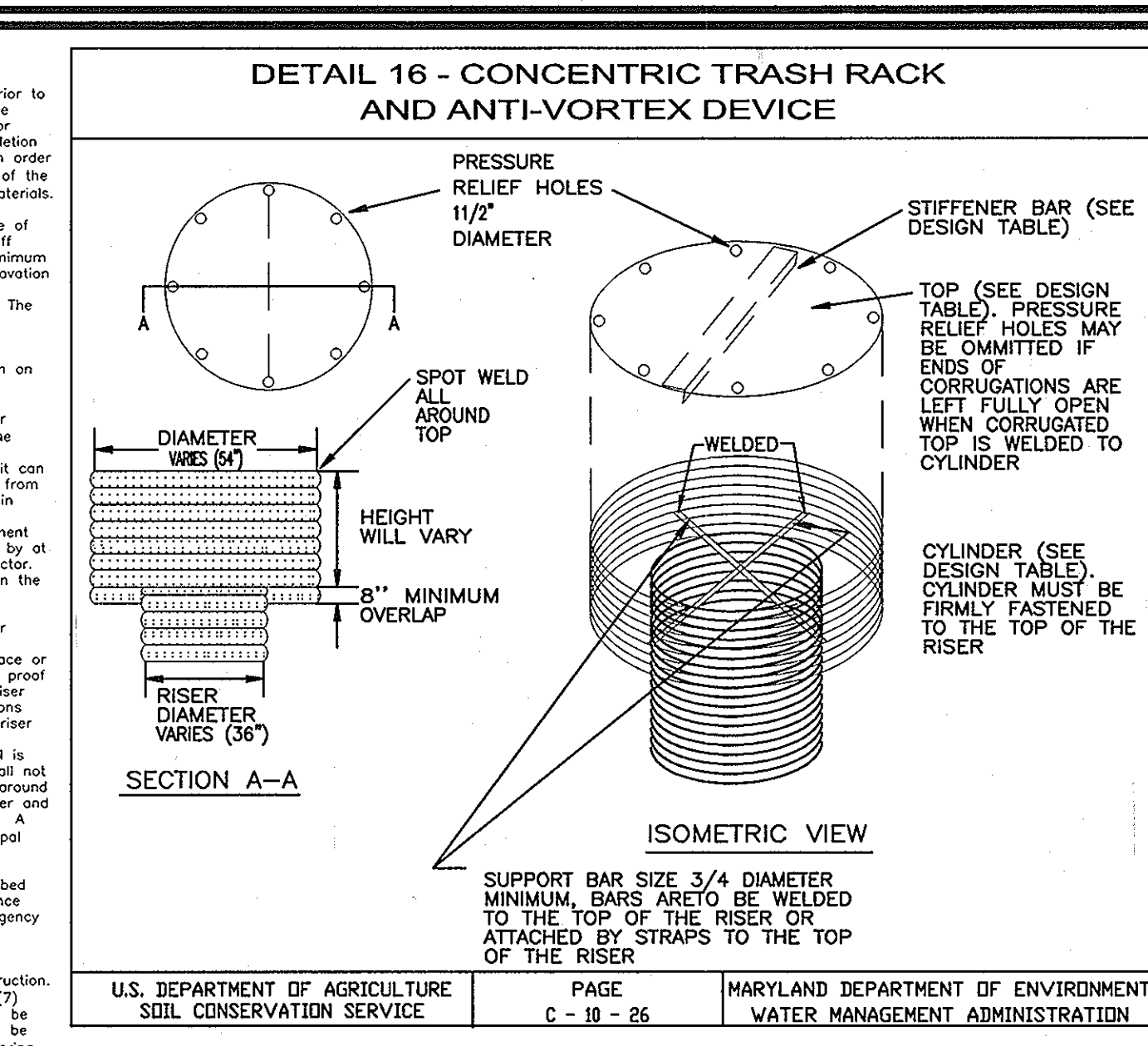
*Donald R. Reuver, Jr.*  
 SIGNATURE OF DEVELOPER  
 DONALD R. REUVER, JR.  
 DATE: 2/18/03

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

*Jim Myers*  
 USDA-NATURAL RESOURCES CONSERVATION SERVICE  
 DATE: 4/21/03

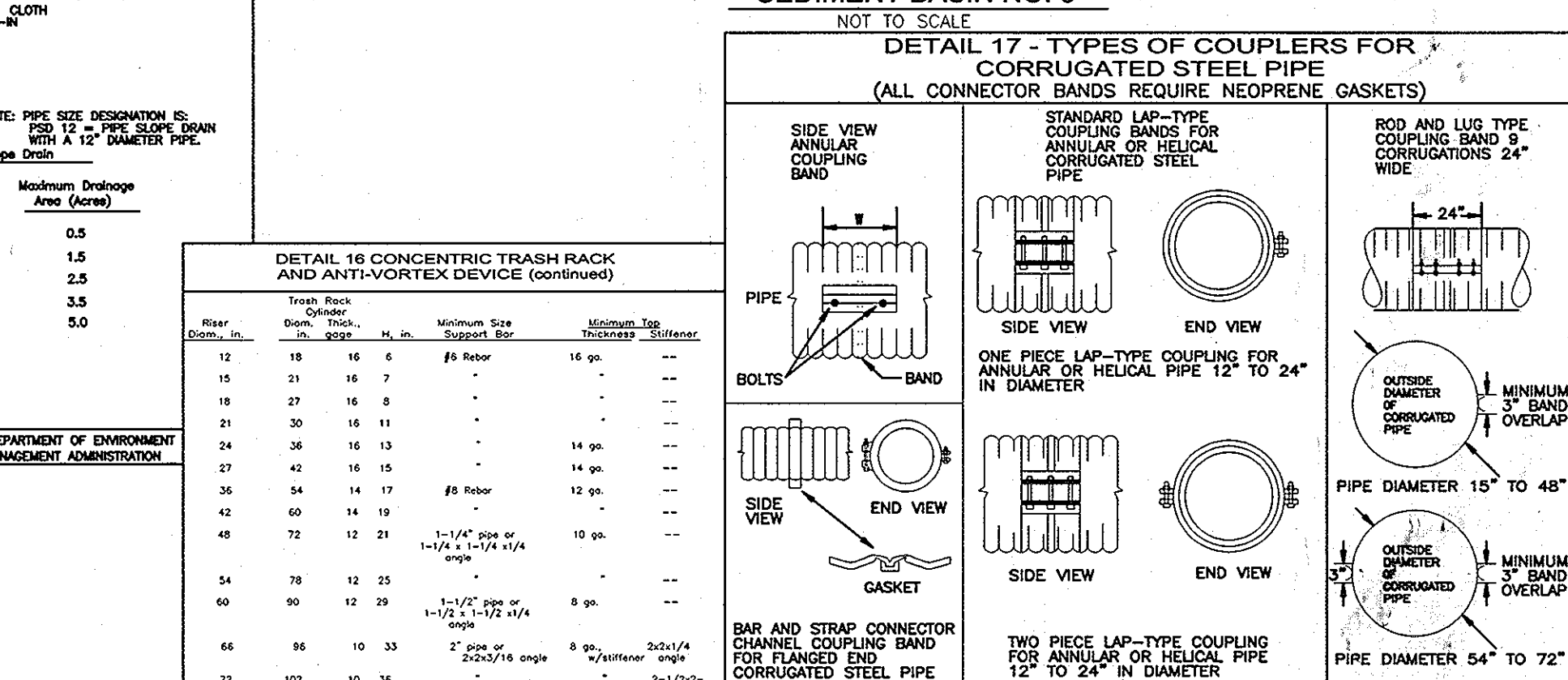
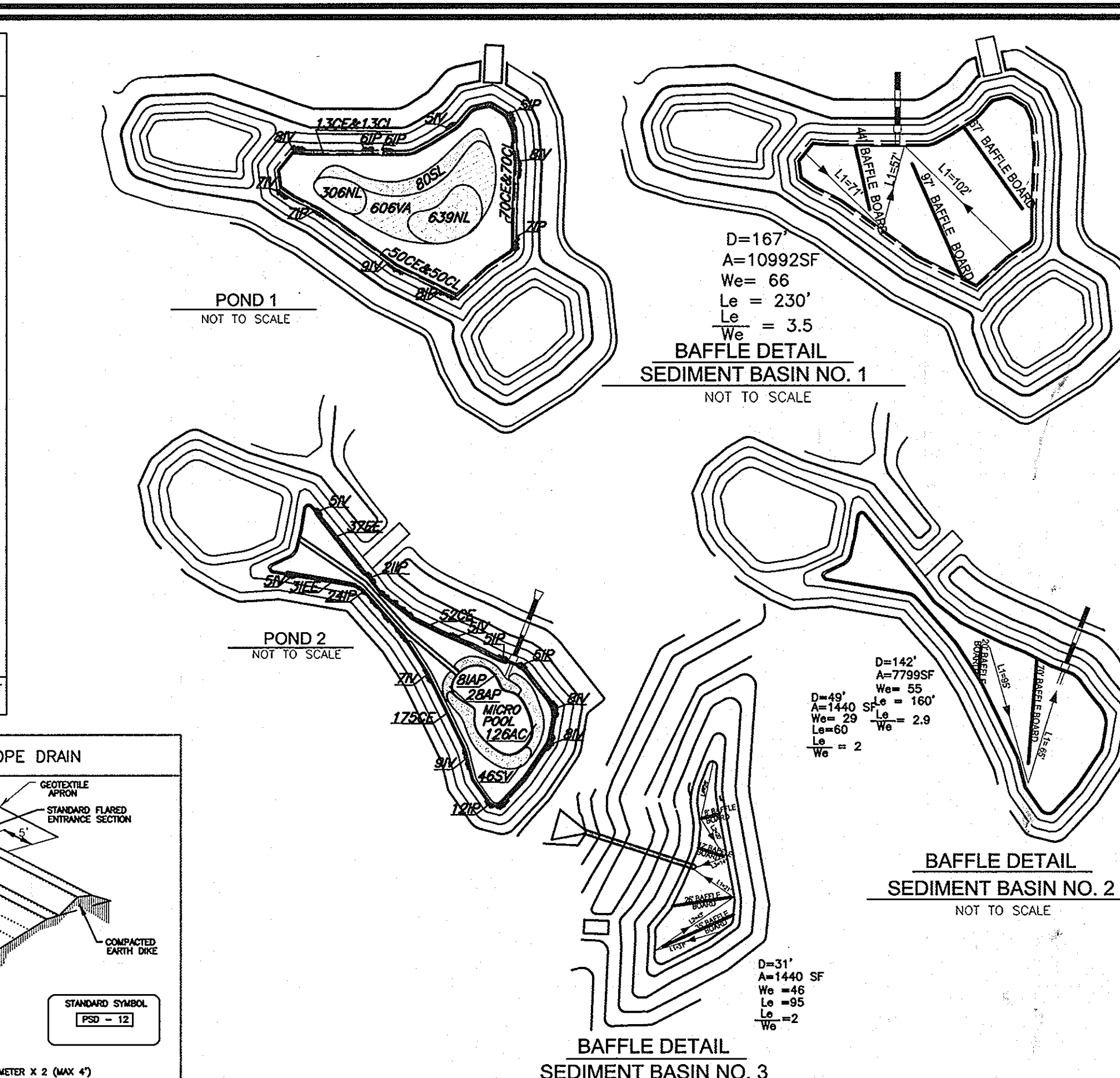
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*John S. [Signature]*  
 HOWARD SOIL CONSERVATION DISTRICT  
 DATE: 4/21/03



DETAIL 16 CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE (continued)

PIPE SIZE (in.)	Minimum Slope	Minimum Support Spacing (ft.)	Minimum Top Thickness (in.)	Minimum Spacing (ft.)
12	1.5	10	16	10
18	1.5	10	16	10
24	2.5	10	16	10
30	3.5	10	16	10
36	5.0	10	16	10



FINAL PROFILES AND DETAILS SWM VILLAGE CREST PARCELS C-1, D-1 AND E-1

TAX MAP #25 BLOCK 20 2ND ELECTION DISTRICT

PARCEL P/O 98 HOWARD COUNTY, MARYLAND

FREDERICK WARD ASSOCIATES, INC.  
 7125 Riverwood Drive Columbia, Maryland 21046-2354  
 Phone: 410-290-9550 Fax: 410-720-6226  
 Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: JCOURJ  
 DRAWN BY: RJ  
 CHECKED BY: RHV  
 DATE: FEBRUARY, 2003  
 SCALE: AS SHOWN  
 W.O. NO.: 2018121.00

14 SHEET OF 17

AS-BUILT 6/28/2011 F-02-47



**LEGEND**

- Existing Contour
- Proposed Contour
- Existing Trees to Remain
- Light Poles
- 15%-24.99% STEEP SLOPE AREA
- 25% OR GREATER STEEP SLOPE AREA
- WETLAND AREA
- 100 YR FLOOD PLAN
- FOREST CONSERVATION EASEMENT
- PROP. SIDEWALK
- NO WOODY VEGETATION BUFFER
- TPF TREE PROTECTION FENCE
- PROP. SHADE TREE
- PROP. EVERGREEN TREE
- PROP. STREET TREE

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

CATEGORY	ADJACENT TO ROADWAYS					ADJACENT TO PERIMETER PROPERTIES				
	1	2	3	4	5	1	2	3	4	5
PERIMETER/FRONTAGE DESIGNATION										
LANDSCAPE TYPE										
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)										
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)										
NUMBER OF PLANTS REQUIRED										
SHADE TREES	1:50	1:20	1:10	1:40	1:20	1:40	1:20	1:40	1:20	1:40
EVERGREEN TREES	1:40	1:15	1:10	1:40	1:20	1:40	1:20	1:40	1:20	1:40
SHRUBS	1:1	1:1	1:1	1:1	1:1	1:1	1:1	1:1	1:1	1:1
NUMBER OF PLANTS PROVIDED										
SHADE TREES	8	1:50	36	1:40	12	1:40	49	1:60	3	1:40
EVERGREEN TREES	10	1:40	44	1:20	24	1:20	98	1:40	1:40	1:40
SHRUBS (2:1 SUBSTITUTION)	1	1	1	1	1	1	1	1	1	1
OTHER TREES (2:1 SUBSTITUTION)	1	1	1	1	1	1	1	1	1	1
SHRUBS (10:1 SUBSTITUTION)	1	1	1	1	1	1	1	1	1	1
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED										

NOTES:  
EAST SIDE OF VILLAGE CREST ALONG COLLEGE AVE. (SCENIC ROAD) PART OF PERIMETER 1 AND PERIMETER 2. TOTAL 44 SHADE TREES, 54 EVERGREEN TREES FOR THE PERIMETER TO BE PLANTED PER THIS PLAN.  
WEST SIDE OF VILLAGE CREST ALONG COLLEGE AVE. (SCENIC ROAD)-PART OF PERIMETER 1 AND PERIMETER 3.4.5. TOTAL 76 SHADE TREES, 137 EVERGREEN TREES FOR THE PERIMETER TO BE PLANTED PER THE FUTURE SITE DEVELOPMENT PLANS.

SCHEDULE D - STORMWATER MANAGEMENT AREA LANDSCAPING POND 1	
LANDSCAPE TYPE	TYPE B
LINEAR FEET OF PERIMETER	1140 LF
CREDIT FOR EXISTING VEGETATION (NO, YES AND LINEAR FEET)	* YES 151
CREDIT FOR OTHER LANDSCAPING (NO, YES AND #)	N/A
NUMBER OF TREES REQUIRED	
SHADE TREES (1:50)	20 SHADE TREES
EVERGREEN TREES (1:40)	25 EVERGREEN TREES
NUMBER OF TREES PROVIDED	
SHADE TREES (1:50)	20 SHADE TREES
EVERGREEN TREES (1:40)	25 EVERGREEN TREES
OTHER TREES (2:1 SUBSTITUTION)	0 TREES (0 SUBSTITUTION TREES)

SCHEDULE D - STORMWATER MANAGEMENT AREA LANDSCAPING POND 2	
LANDSCAPE TYPE	TYPE B
LINEAR FEET OF PERIMETER	1160 LF
CREDIT FOR EXISTING VEGETATION (NO, YES AND LINEAR FEET)	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND #)	400 LF
NUMBER OF TREES REQUIRED	
SHADE TREES (1:50)	15 SHADE TREES
EVERGREEN TREES (1:40)	19 EVERGREEN TREES
NUMBER OF TREES PROVIDED	
SHADE TREES (1:50)	15 SHADE TREES
EVERGREEN TREES (1:40)	18 EVERGREEN TREES
OTHER TREES (2:1 SUBSTITUTION)	0 TREES (0 SUBSTITUTION TREES)

THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.104 OF THE HOWARD COUNTY AND THE LANDSCAPE MANUAL.  
FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS A PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$38,400.00

LANDSCAPE PLANT LIST				
SYMBOL	QTY	BOTANICAL NAME	SIZE	REMARKS
+	79	SHADE TREES ACER RUBRUM/ RED MAPLE	2.5-3" CAL	B & B
⊙	98	EVERGREEN TREES PINUS STROBUS/ EASTERN SHITE PINE	6'-8" HT.	B & B

STREET TREE PLANT LIST				
SYMBOL	QTY	BOTANICAL NAME	SIZE	REMARKS
⊙	171	SHADE TREES ACER RUBRUM/ RED MAPLE	2.5-3" CAL	B & B

**OWNER / DEVELOPER**  
DR. IRVING AND EDITH TAYLOR  
C/O LAND DESIGN & DEVELOPMENT, INC.  
8000 MAIN STREET  
ELLICOTT, MARYLAND 21043  
ATTN: MR. DONALD R. REUWER  
PHONE: (410) 480-9105

**FINAL LANDSCAPE PLAN**  
**VILLAGE CREST PARCELS C-1, D-1 AND E-1**  
TAX MAP #25 BLOCK 20 PARCEL P/O 98  
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**FREDERICK WARD ASSOCIATES, INC.**  
ENGINEERS 7125 Riverwood Drive Columbia, Maryland 21046-2354  
ARCHITECTS Phone: 410-290-9550 Fax: 410-720-6226  
SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: RJ	DATE: FEBRUARY, 2003
DRAWN BY: RHV	SCALE: 1"=100'
CHECKED BY: [Signature]	W.O. NO.: 2018121.00
DATE: [Signature]	15 SHEET OF 17

NO.	REVISION	DATE
1	SEQUENCE OF CONSTRUCTION & REFLECTING CHANGES OF FC EASEMENTS	1.31.06

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*James M. Owens* 5-01-03  
Chief, Bureau of Highways Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Cinda Hamont* 5/1/03  
Chief, Division of Land Development Date

*Mr. Damnum* 5/2/03  
Chief, Development Engineering Division Date

TM 25 P/O 98  
WORTHINGTON FIELDS  
SUBDIVISION  
PHASE 1  
ZONED R-ED  
PLAT NO. 14946-14955

**PLAN**  
SCALE: 1"=100'



THE FOREST CONSERVATION EASEMENTS WILL BE ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENTS, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

**LEGEND**

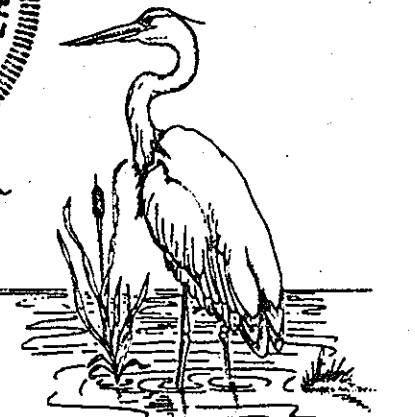
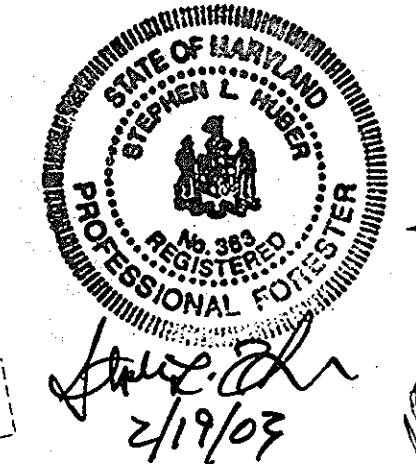
- -382 EXISTING CONTOUR
- 82 PROPOSED CONTOUR
- EXISTING TREELINE
- PROPOSED TREELINE
- Post Top Overhead LIGHT POLES
- 15%-24.99% STEEP SLOPE AREA
- 25% OR GREATER STEEP SLOPE AREA
- WETLAND AREA
- 100 YR FLOOD PLAIN
- LOD LIMIT OF DISTURBANCE
- FOREST CONSERVATION EASEMENT FOREST RETENTION AREA
- FOREST CONSERVATION EASEMENT REFORESTATION AREA
- TPF TREE PROTECTION FENCE
- FOREST CONSERVATION EASEMENT SIGN
- ADJ. FOREST CONSERVATION EASEMENT FOREST RETENTION AREA

NOTE:  
A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.  
ABANDONMENT OF FOREST CONSERVATION EASEMENT F, G & I AND REPLACE THEM WITH NEW FOREST CONSERVATION EASEMENTS FA, GA, AND IA, PER PLAT # 18112-18114.

FC EASEMENT	AREA OF RETENTION	AREA OF RE FORESTATION
FA	0.1055 AC.	0.1976 AC.
GA	1.2322 AC.	0.880 AC.
IA	0.0898 AC.	0.1896 AC.

**OWNER / DEVELOPER**

DR. IRVING AND EDITH TAYLOR  
C/O LAND DESIGN & DEVELOPMENT, INC.  
8000 MAIN STREET  
ELLCOTT, MARYLAND 21043  
ATTN: MR. DONALD R. REUWER  
PHONE: (410) 480-9105



EXPLORATION RESEARCH, INC.  
ENVIRONMENTAL CONSULTANTS  
LANDSCAPE ARCHITECTS  
8318 FOREST STREET  
ELLCOTT CITY, MARYLAND 21043  
TEL (410) 750-1100 FAX (410) 750-7350

ROBERT H. VOGEL-RE NO. 16193 LARRY THOMPSON DNR QUALIFIED PROFESSIONAL

**FOREST CONSERVATION PLAN  
VILLAGE CREST  
PARCELS A-1 THRU E-1**

TAX MAP #25 BLOCK 20 PARCEL P/098  
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

NO.	REVISION	DATE
1	ADDITIONAL GRADING & SE CONTROLS AND LIMIT OF DISTURBANCE	06/19/03
2	SEQUENCE OF CONSTRUCTION & REFLECTING CHANGE OF FC EASEMENT	1/31/06

THE FOREST CONSERVATION EASEMENTS WILL BE ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE. TOTAL FOREST CONSERVATION OBLIGATION IS 16.45 ACRES. AREA OF RETENTION EASEMENTS WILL BE 2.93 ACRES AND 12.03 ACRES WILL BE PLANTED IN REFORESTATION EASEMENTS. A FEE-IN-LIEU PAYMENT FOR THE REMAINING 5.50 ACRES WILL BE PAID IN THE AMOUNT OF \$119,790.00 (239,580 SF @ 0.50) BOND FOR THE 14.96 ACRES WILL BE PAID IN THE AMOUNT OF \$287,539.56 (RETENTION - \$127,630.8 SF @ .20 = 25,526.16 + REFORESTATION - 524,020.8 = 262,013.40)

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Cindy Hamman* 5/4/02  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*Chris Dammann* 5/1/03  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

PLAN SCALE: 1"=100'

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# FOREST CONSERVATION WORKSHEET

Acres (1/100 ac.)

Net Tract Area

A. Total Tract Area 73.84

B. Area Within 100 Year Floodplain 0.25

C. Other Deductions 0

D. Net Tract Area 73.59

Land Use Category: Commercial/Industrial/Office

E. Afforestation Minimum (15% x D) 11.04

F. Conservation Threshold (15% x D) 11.04

Existing Forest Cover

G. Existing Forest on Net Tract Area 16.28

H. Forest Area Above Conservation Threshold 5.24

Breakeven Point

I. Forest Retention Above Threshold with no Mitigation 12.09

J. Clearing Permitted without Mitigation 4.19

Proposed Forest Clearing

K. Forest Areas to be Cleared 18.35

L. Forest Areas to be Retained 2.93

Planting Requirements

M. Reforestation for Clearing Above Threshold 1.31

N. Reforestation for Clearing Below the Threshold 16.22

O. Credit for Retention Above Conservation Threshold 0

P. Total Reforestation Required 17.53

R. Total Afforestation Required 0

S. Total Reforestation and Afforestation Requirement 17.53

## Forest Conservation Narrative

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

Please note that the calculations are based on the ultimate build out plan for this site, not just the shown proposed development. Areas of development are not expected to vary from the plans used to create this forest conservation plan.

The site consists of a gross tract area of 73.84 AC with 0.25 AC of floodplain deductions. The areas around wetlands and streams have been preserved the greatest extent possible. This has resulted in an area of 2.93 AC of forest retention, out of 16.28 AC of existing forest. The existing site was a meadow in the early stages of forest succession, so variation in tree lines from the original Forest Stand Delineation is apparent. The areas which qualify as forest have been re-measured based on the current, most accurate survey, and match the revised FSD which was submitted in 08/01. Areas of forest, smaller than the 10,000 sq ft minimum stand size have been retained for credit due to their being adjacent to areas to be reforested. A total reforestation obligation of 17.53 AC is incurred due to on-site development. Of this, 12.03 AC will be accomplished with on-site reforestation within Forest Conservation Easements totaling 14.96 AC of reforestation and preservation. We request that the remaining 5.50 AC of reforestation obligation be met with a Fee-in-Lieu payment.

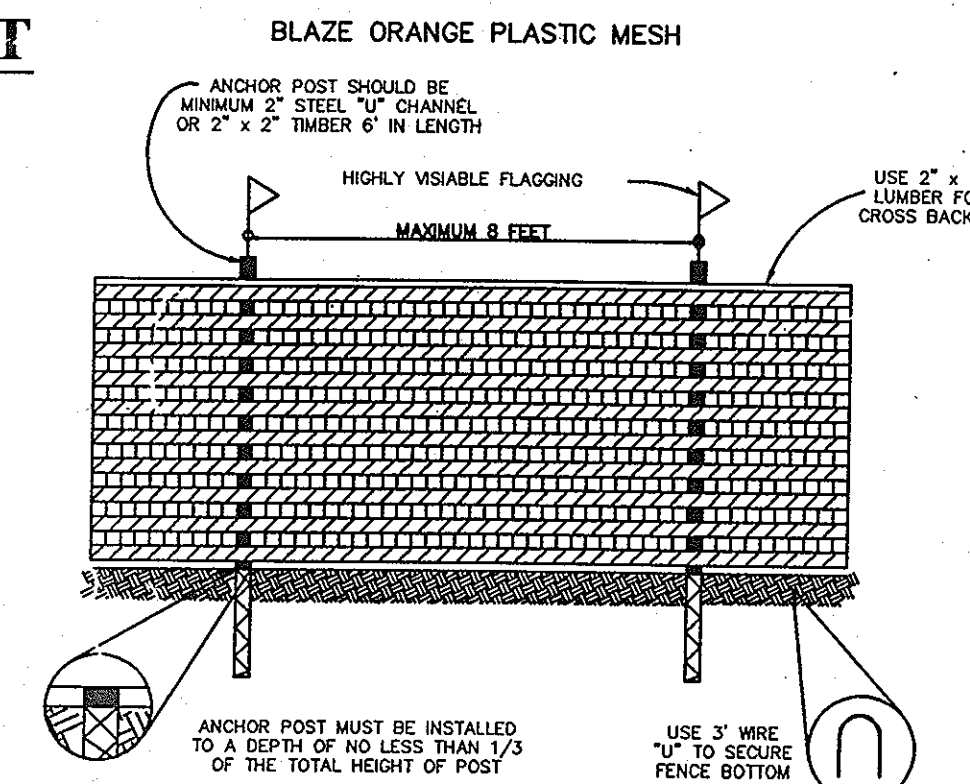
The reforestation areas will be planted with 2'-3' container grown whip-stock at 350 stems/acre. These will help to augment pioneer species of Osage Orange, Black Cherry, Persimmon, and Box Elder already present on-site. It is recommended that any invasive species be managed a minimum six months prior to planting in reforestation areas.

## REFORESTATION AREA MONITORING NOTES

- Monthly visits during the first growing season are to assess the success of the plantings and to determine if supplemental watering, pest control or other actions are necessary. Early spring visits will document winter kill and autumn visits will document summer kill.
- The minimum survival rate shall be 75% of the total number of trees planted per acre at the end of the two year maintenance period. Wild tree seedlings from natural regeneration on the planting site may be counted up to 50% toward the total survival number if they are healthy native species at least 12 inches tall.
- Survival will be determined by a stratified random sampling of the plantings. The species composition of the sample population should be proportionate to the amount of each species in the entire planting to be sampled.
- Effective monitoring will assess plant survivability during the first growing season and make recommendations for reinforcement plantings if required at that time.

## REFORESTATION PLANTING NOTES

- Reforestation areas may be planted as soon as reasonable to do so. Late fall plantings are preferred, before the ground is frozen. Late winter-early spring planting dates will vary from year to year but planting may generally begin as soon as the ground is no longer frozen. Alternate planting dates may be considered as condition warrants.
- Soil amendments and fertilization recommendations will be made based upon the results of soil analysis for nitrogen, phosphorus, potassium, organic matter content and pH. If required, fertilizer will be provided using a slow release, soluble 16-8-16 analysis designed to last 5-8 years contained in polyethylene perforated bags such as manufactured by ADCO Works, P.O. Box 310 Hollis, N.Y. 11423 or approved equal.
- Plant materials will be planted in accordance with the Planting Distribution Diagram, Planting Details and plant schedule, under the supervision of a Exploration Research, Inc. qualified professional.
- Plant material shall be nursery grown and inspected prior to planting. Plants not conforming to the American Standard for Nursery Stock specifications for size, form, vigor, or roots, or due to trunk wounds, breakage, desiccation, insect or disease must be replaced.
- Planting stock must be protected from desiccation at all times prior to planting. Materials held for planting shall be moistened and placed in cool shaded areas until ready for placement.
- Newly planted trees may require watering, at least once per week during the first growing season depending on rainfall in order to get established. The initial planting operation should allow for watering during installation to completely soak backfill material.
- Mulch shall be applied in accordance with the diagram provided and shall consist of composted, shredded hardwood bark mulch, free of wood alcohol.
- All nursery stock to be sprayed with deer repellent containing Bitrex, such as Repellex. All nursery stock to be grown with deer repellent tablets in growing medium, such as Repellex Tablets.



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

## TREE PROTECTION DETAIL

FOREST CONSERVATION EASEMENT TABLE

EASEMENT	RETENTION	REFORESTATION
EASEMENT A:	7.86 AC	1.37 AC
EASEMENT B:	0.82 AC	0.00 AC
EASEMENT C:	0.79 AC	0.00 AC
EASEMENT D:	1.01 AC	0.35 AC
EASEMENT E:	0.35 AC	0.35 AC
EASEMENT F:	0.47 AC	0.17 AC
EASEMENT G:	2.17 AC	1.25 AC
EASEMENT H:	0.99 AC	0.36 AC
EASEMENT I:	0.50 AC	0.14 AC
TOTAL	14.96 AC	2.93 AC

THE FOREST CONSERVATION EASEMENTS WILL BE ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENTS, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

ABANDONMENT OF FOREST CONSERVATION EASEMENTS P.G. AND I. AND REPLACE THEM WITH NEW FOREST CONSERVATION EASEMENTS FA, GA AND IA, PER PLAT # 1814-1814

DATED: FEBRUARY 24, 2006

EASEMENT FA: 0.1055 AC. REFORESTATION: 0.1976 AC.

EASEMENT GA: 1.2822 AC. REFORESTATION: 0.880 AC.

EASEMENT IA: 0.0898 AC. REFORESTATION: 0.1890 AC.

## FOREST TREE PROTECTION AND MANAGEMENT NOTES

- TREE PROTECTION DEVICES SHALL BE INSTALLED PRIOR TO ANY GRADING OR LAND CLEARING.
  - AFTER THE BOUNDARIES OF THE RETENTION AREAS HAVE BEEN STAKED AND FLAGGED AND BEFORE ANY DISTURBANCE HAS TAKEN PLACE A PRE-CONSTRUCTION MEETING WITH THE HOWARD COUNTY INSPECTOR IS REQUIRED.
  - PROVIDE MAINTENANCE TO TREE PROTECTION DEVICES AND SIGNAGE TO MAINTAIN THEIR INTEGRITY THROUGHOUT THE DURATION OF THE PROJECT.
  - ATTACHMENT OF SIGNS OR ANY OTHER OBJECTS TO TREES IS PROHIBITED.
  - ANY SIGNIFICANT CHANGES MADE TO THE FOREST CONSERVATION PLAN SHALL BE MADE WITH THE PRIOR APPROVAL OF THE HOWARD COUNTY DEPT. OF PLANNING AND ZONING.
  - NO BURIAL OF DISCARDED MATERIAL IS PERMITTED WITHIN FOREST CONSERVATION AND PLANTING AREAS.
  - NO OPEN BURNING WITHIN 100 FEET OF WOODED AREAS IS PERMITTED.
  - POST CONSTRUCTION PHASE
    - INSPECT EXISTING TREES AROUND PERIMETER OF SITE FOR SIGNS OF ROOT OR TRUNK DAMAGE AND EXCESSIVE SOIL COMPACTION.
    - REMOVE DEAD OR DYING TREES AND EVALUATE FOR HAZARD TREE REMOVAL.
    - ALL TEMPORARY FOREST PROTECTION DEVICES WILL BE REMOVED AFTER CONSTRUCTION.
    - FOLLOWING COMPLETION OF CONSTRUCTION, PRIOR TO USE, THE COUNTY INSPECTOR SHALL INSPECT THE ENTIRE SITE FOR COMPLIANCE WITH THIS FOREST CONSERVATION PLAN.
- \* A LICENSED ARBORIST OR FORESTER SHOULD BE RETAINED FOR THIS SERVICE AS NEEDED.

## REFORESTATION AREA 1: 5.80 AC p/o EASEMENT A = 2030 TREES

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
508	Acer rubrum	Red Maple	2-3'	11' o.c.	Container
508	Fraxinus pennsylvanica	Green Ash	2-3'	11' o.c.	Container
507	Platanus occidentalis	Sycamore	2-3'	11' o.c.	Container
507	Quercus palustris	Pin Oak	2-3'	11' o.c.	Container

## REFORESTATION AREA 2: 0.14 AC p/o EASEMENT A = 49 TREES

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
12	Acer rubrum	Red Maple	2-3'	11' o.c.	Container
13	Fraxinus pennsylvanica	Green Ash	2-3'	11' o.c.	Container
12	Platanus occidentalis	Sycamore	2-3'	11' o.c.	Container
12	Quercus palustris	Pin Oak	2-3'	11' o.c.	Container

## REFORESTATION AREA 3: 0.55 AC p/o EASEMENT A = 193 TREES

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
48	Acer rubrum	Red Maple	2-3'	11' o.c.	Container
48	Fraxinus pennsylvanica	Green Ash	2-3'	11' o.c.	Container
49	Platanus occidentalis	Sycamore	2-3'	11' o.c.	Container
48	Quercus palustris	Pin Oak	2-3'	11' o.c.	Container

## REFORESTATION AREA 4: 0.64 AC p/o EASEMENT B = 287 TREES

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
72	Acer rubrum	Red Maple	2-3'	11' o.c.	Container
72	Fraxinus pennsylvanica	Green Ash	2-3'	11' o.c.	Container
72	Platanus occidentalis	Sycamore	2-3'	11' o.c.	Container
72	Quercus alba	White Oak	2-3'	11' o.c.	Container

## REFORESTATION AREA 5: 0.43 AC p/o EASEMENT C = 277 TREES

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
67	Acer rubrum	Red Maple	2-3'	11' o.c.	Container
70	Fraxinus pennsylvanica	Green Ash	2-3'	11' o.c.	Container
70	Platanus occidentalis	Sycamore	2-3'	11' o.c.	Container
70	Quercus alba	White Oak	2-3'	11' o.c.	Container

## REFORESTATION - EASEMENT D: 1.01 AC = 354 TREES

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
89	Acer rubrum	Red Maple	2-3'	11' o.c.	Container
88	Fraxinus pennsylvanica	Green Ash	2-3'	11' o.c.	Container
88	Platanus occidentalis	Sycamore	2-3'	11' o.c.	Container
89	Quercus palustris	Pin Oak	2-3'	11' o.c.	Container

## REFORESTATION - EASEMENT E: 0.35 AC = 123 TREES

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
30	Acer rubrum	Red Maple	2-3'	11' o.c.	Container
31	Fraxinus pennsylvanica	Green Ash	2-3'	11' o.c.	Container
31	Platanus occidentalis	Sycamore	2-3'	11' o.c.	Container
31	Quercus palustris	Pin Oak	2-3'	11' o.c.	Container

## REFORESTATION AREA 6: 0.19 AC p/o EASEMENT IA = 67 TREES

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
17	Acer rubrum	Red Maple	2-3'	11' o.c.	Container
17	Fraxinus pennsylvanica	Green Ash	2-3'	11' o.c.	Container
17	Platanus occidentalis	Sycamore	2-3'	11' o.c.	Container
16	Quercus palustris	Pin Oak	2-3'	11' o.c.	Container

## REFORESTATION AREA 7: 0.88 AC p/o EASEMENT GA = 308 TREES

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
177	Acer rubrum	Red Maple	2-3'	11' o.c.	Container
177	Fraxinus pennsylvanica	Green Ash	2-3'	11' o.c.	Container
77	Platanus occidentalis	Sycamore	2-3'	11' o.c.	Container
177	Quercus palustris	Pin Oak	2-3'	11' o.c.	Container

## REFORESTATION - EASEMENT H: 0.99 AC = 347 TREES

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
87	Acer rubrum	Red Maple	2-3'	11' o.c.	Container
87	Fraxinus pennsylvanica	Green Ash	2-3'	11' o.c.	Container
87	Platanus occidentalis	Sycamore	2-3'	11' o.c.	Container
86	Quercus palustris	Pin Oak	2-3'	11' o.c.	Container

## REFORESTATION AREA 8: 0.19 AC p/o EASEMENT IA = 67 TREES

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
17	Acer rubrum	Red Maple	2-3'	11' o.c.	Container
17	Fraxinus pennsylvanica	Green Ash	2-3'	11' o.c.	Container
17	Platanus occidentalis	Sycamore	2-3'	11' o.c.	Container
16	Quercus palustris	Pin Oak	2-3'	11' o.c.	Container

## REFORESTATION AREA 9: 0.20 AC p/o EASEMENT FA = 70 TREES

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
18	Acer rubrum	Red Maple	2-3'	11' o.c.	Container
17	Fraxinus pennsylvanica	Green Ash	2-3'	11' o.c.	Container
18	Platanus occidentalis	Sycamore	2-3'	11' o.c.	Container
17	Quercus palustris	Pin Oak	2-3'	11' o.c.	Container

## REFORESTATION AREA 10: 0.20 AC p/o EASEMENT FA = 70 TREES

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
18	Acer rubrum	Red Maple	2-3'	11' o.c.	Container
17	Fraxinus pennsylvanica	Green Ash	2-3'	11' o.c.	Container
18	Platanus occidentalis	Sycamore	2-3'	11' o.c.	Container
17	Quercus palustris	Pin Oak	2-3'	11' o.c.	Container

## REFORESTATION AREA 11: 0.20 AC p/o EASEMENT FA = 70 TREES

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
18	Acer rubrum	Red Maple	2-3'	11' o.c.	Container
17	Fraxinus pennsylvanica	Green Ash	2-3'	11' o.c.	Container
18	Platanus occidentalis	Sycamore	2-3'	11' o.c.	Container
17	Quercus palustris	Pin Oak	2-3'	11' o.c.	Container

## REFORESTATION AREA 12: 0.20 AC p/o EASEMENT FA = 70 TREES

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
18	Acer rubrum	Red Maple	2-3'	11' o.c.	Container
17	Fraxinus pennsylvanica	Green Ash	2-3'	11' o.c.	Container
18	Platanus occidentalis	Sycamore	2-3'	11' o.c.	Container
17	Quercus palustris	Pin Oak	2-3'	11' o.c.	Container

## REFORESTATION AREA 13: 0.20 AC p/o EASEMENT FA = 70 TREES

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
18	Acer rubrum	Red Maple	2-3'	11' o.c.	Container
17	Fraxinus pennsylvanica	Green Ash	2-3'	11' o.c.	Container
18	Platanus occidentalis	Sycamore	2-3'	11' o.c.	Container
17	Quercus palustris	Pin Oak	2-3'	11' o.c.	Container

## REFORESTATION AREA 14: 0.20 AC p/o EASEMENT FA = 70 TREES

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
18	Acer rubrum	Red Maple	2-3'	11' o.c.	Container
17	Fraxinus pennsylvanica	Green Ash	2-3'	11' o.c.	Container
18	Platanus occidentalis	Sycamore	2-3'	11' o.c.	Container
17	Quercus palustris	Pin Oak	2-3'	11' o.c.	Container

## REFORESTATION AREA 15: 0.20 AC p/o EASEMENT FA = 70 TREES

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
18	Acer rubrum	Red Maple	2-3'	11' o.c.	Container
17	Fraxinus pennsylvanica	Green Ash	2-3'	11' o.c.	Container
18	Platanus occidentalis	Sycamore	2-3'	11' o.c.	Container
17	Quercus palustris	Pin Oak	2-3'	11' o.c.	Container

## REFORESTATION AREA 16: 0.20 AC p/o EASEMENT FA = 70 TREES

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
18	Acer rubrum	Red Maple	2-3'	11' o.c.	Container
17	Fraxinus pennsylvanica	Green Ash	2-3'	11' o.c.	Container
18	Platanus occidentalis	Sycamore	2-3'	11' o.c.	Container
17	Quercus palustris	Pin Oak	2-3'	11' o.c.	Container

## REFORESTATION AREA 17: 0.20 AC p/o EASEMENT FA = 70 TREES

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
18	Acer rubrum	Red Maple	2-3'	11' o.c.	Container
17	Fraxinus pennsylvanica	Green Ash	2-3'	11' o.c.	Container
18	Platanus occidentalis	Sycamore	2-3'	11' o.c.	Container
17	Quercus palustris	Pin Oak	2-3'	11' o.c.	Container

## REFORESTATION AREA 18: 0.20 AC p/o EASEMENT FA = 70 TREES

Qty	Botanical Name	Common Name	Min. Size	Spacing	Notes
18	Acer rubrum	Red Maple	2-3'	11' o.c.	Container
17	Fraxinus pennsylvanica	Green Ash	2-3'	11' o.c.	Container
18	Platanus occidentalis				