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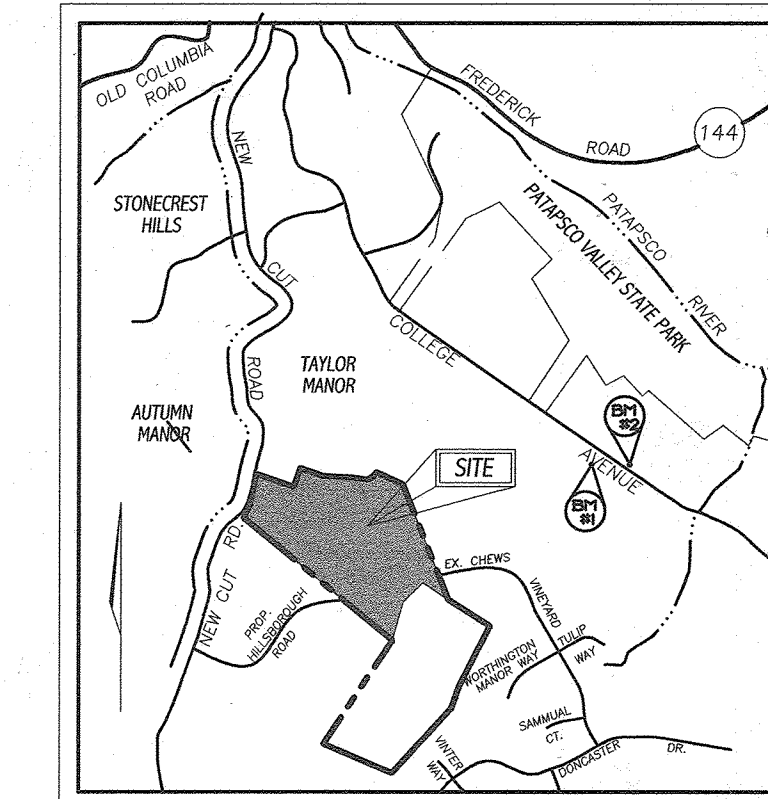
GENERAL NOTES

- ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- DEED REFERENCE: L. 370 / F. 376
- PROJECT BACKGROUND:
LOCATION: TAX MAP 25, GRID 20 AND TAX MAP 31, GRID 2, P/O PARCEL 98
2ND ELECTION DISTRICT
ZONING: R-ED
FOR
R-20
NUMBER OF PROPOSED LOTS: 42 BUILDABLE, 4 OPEN SPACE, 2 NON-BUILDABLE PARCELS
APPLICABLE DPZ FILE NUMBERS: 5-98-18, PB-336, P-00-07.
STREAM CROSSING PERMIT: TRACKING #20006160
- THE PROJECT BOUNDARY IS BASED ON A BOUNDARY SURVEY PERFORMED BY VOGEL & ASSOCIATES, INC. DATED NOVEMBER, 1998.
- THE TOPOGRAPHY SHOWN HEREON IS BASED ON AERIAL PHOTOGRAMMETRIC BY WINGS AERIAL MAPPING COMPANY, INC. DATED MARCH 1995.
- COORDINATE DATUM IS BASED ON THE MARYLAND COORDINATE SYSTEM (NAD 83) AS PROJECTED BY THE FOLLOWING H.O.CO. GEODETIC CONTROL STATIONS: 22R1 & 23R1
- WATER AND SEWER FOR THIS PROJECT WILL BE PUBLIC. WATER IS EXTENDED FROM CHEW'S VINEYARD. SEWER IS TO DRAIN TO PLANNED PUMPING STATION. WATER & SEWER CONTRACT #14-3055-D.
6" FORCE MAIN FROM PUMPING STATION TO CHEW'S VINEYARD AND
4" WATER FROM HILLSBOROUGH TO PUMPING STATION.
6" FORCE MAIN AND 4" WATER CONTRACT # 10-3853-D.
- STORMWATER MANAGEMENT (2 YR AND 10 YR) TO BE PROVIDED FOR ULTIMATE DEVELOPED CONDITION. WATER QUALITY TO BE PROVIDED BY WET POND (POND # 1) AND EXTENDED DETENTION (POND # 2). THE FACILITIES WILL BE HAZARD CLASS 'A'. ALL STORM WATER MANAGEMENT PONDS WILL BE PRIVATELY OWNED AND MAINTAINED BY THE H.O.A.
- WETLANDS AND STREAMS SHOWN ON SITE ARE BASED ON A FIELD INVESTIGATION PERFORMED BY EXPLORATION RESEARCH, INC., DATED OCTOBER, 1999.
- FLOODPLAIN SHOWN ON SITE IS BASED ON FLOODPLAIN STUDY BY VOGEL & ASSOCIATES, INC., DATED OCTOBER, 1999.
- FOREST CONSERVATION PLAN PREPARED BY EXPLORATION RESEARCH, INC., DATED OCTOBER, 1999.
FOREST STAND DELINEATION PLAN PREPARED BY CHESAPEAKE ENVIRONMENTAL, DATED MARCH 1995 AND APPROVED 5-98-18.
- ALL FOREST CONSERVATION EASEMENTS ARE RETENTION AREAS. NO REFORESTATION IS PROPOSED. THE FOREST CONSERVATION OBLIGATION FOR THE LOD FOR HILLSBOROUGH ROAD ON THE POR ZONED RESIDUE PORTION OF PARCEL 98 AND POR ZONED NON BUILDABLE PARCEL A SHALL BE ADDRESS ON THE FUTURE PLANS FOR THE SUBDIVISION, 5-00-05, VILLAGE CREST. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT ARE ALLOWED.
- NO CLEARING GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE WETLANDS, WETLANDS BUFFER, FLOODPLAIN EASEMENT, FOREST CONSERVATION RETENTION EASEMENTS OR STREAM BUFFER AREAS EXCEPT AS SHOWN ON APPROVED PLANS.
- A TRAFFIC STUDY FOR THIS SITE WAS PREPARED BY THE TRAFFIC GROUP, INC., DATED JUNE 8, 1998
- THERE ARE APPROXIMATELY 26.60 AC. OF SLOPES 15%-24.99% AND 0.36 AC. OF SLOPES 25% OR GREATER ON SITE.
- A NOISE STUDY IS NOT REQUIRED FOR THIS SITE.
- ALL LANDSCAPING REQUIREMENTS AS SET FORTH IN THE LANDSCAPE MANUAL SHALL BE COMPLIED WITH.
- A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
FOR LOCATION AND TYPES OF LIGHTS SEE 3 OF 18.
- SEDIMENT AND EROSION CONTROL WILL BE PROVIDED FOR THIS SITE.
- THIS PROPERTY IS LOCATED IN THE WORTHINGTON SCHOOL DISTRICT.
- TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL/CEMETERY LOCATIONS ON SITE.
- OPEN SPACE LOTS 146, 147 & 148 ARE TO BE OWNED AND MAINTAINED BY HOMEOWNERS ASSOCIATION.
OPEN SPACE LOT 145 TO BE CONVEYED TO HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS.
- STORMWATER MANAGEMENT SOIL BORINGS FOR THIS SITE ARE BASED ON A GEOTECHNICAL ANALYSIS PROVIDED BY HILLIS-CARNES ENGINEERING ASSOCIATES, INC., DATED SEPTEMBER 23, 1999.
- REFERENCE PLANNING BOARD CASE PB-336 FOR APPROVAL OF THIS DEVELOPMENT WITHIN THE R-ED DISTRICT ON JUNE 16, 1999 SUBJECT TO THE FOLLOWING CONDITIONS:
1. COMPLIANCE WITH TH SUBDIVISION REVIEW COMMITTEE COMMENTS FOR SKETCH PLAN 5-98-18.
2. THE DEVELOPERS SHALL PROVIDE PEDESTRIAN ACCESS FROM THIS SUBDIVISION TO THE ADJACENT WORTHINGTON ELEMENTARY SCHOOL SITE.
- THE OWNER OF THE ADJACENT PROPERTY WHERE CHEW'S VINEYARD CONNECTS TO THE EXISTING ROAD IS ALSO OWNED BY IRVING & EDITH TAYLOR.
- NON-BUILDABLE PARCELS 'A' AND 'B' ON RESIDUE PARCEL 98 ARE NON-BUILDABLE PENDING FUTURE SUBDIVISION.
- ALL PROPOSED DWELLINGS SHALL BE REQUIRED TO HAVE A SUB-SURFACE VENTING SYSTEM FOR PROTECTION.

WORTHINGTON FIELDS

TOTAL NUMBER OF LOTS AND PARCELS TO BE RECORDED.....	48
TOTAL NUMBER OF BUILDABLE LOTS TO BE RECORDED.....	42
TOTAL NUMBER OF PARCELS TO BE RECORDED.....	2
TOTAL AREA OF BUILDABLE LOTS TO BE RECORDED.....	10.23 ACRES
TOTAL AREA OF PARCELS TO BE RECORDED.....	40.48 ACRES
TOTAL NUMBER OF OPEN SPACE LOTS TO BE RECORDED.....	4
TOTAL NON-CREDITED OPEN SPACE TO BE RECORDED.....	0.54 ACRES
TOTAL AREA OF RECREATIONAL OPEN SPACE TO BE RECORDED.....	1.01 ACRES
TOTAL AREA OF OPEN SPACE LOTS TO BE RECORDED.....	33.03 ACRES
TOTAL AREA OF BUILDABLE LOTS AND PARCELS TO BE RECORDED.....	83.74 ACRES
TOTAL AREA OF NON-BUILDABLE PARCEL TO BE RECORDED(ZONED R-ED).....	37.23 ACRES
TOTAL AREA OF NON-BUILDABLE PARCEL TO BE RECORDED(ZONED POR).....	3.24 ACRES
TOTAL AREA OF ROAD INCLUDING WIDENING STRIPS TO BE RECORDED.....	3.95 ACRES
TOTAL AREA OF SUBDIVISION TO BE RECORDED.....	87.69 ACRES
TOTAL AREA OF PHASE I.....	50.46 ACRES

WORTHINGTON FIELDS PHASE I LOTS 1-46 AND NON-BUILDABLE PARCELS 'A' AND 'B' FINAL PLAN HOWARD COUNTY, MARYLAND

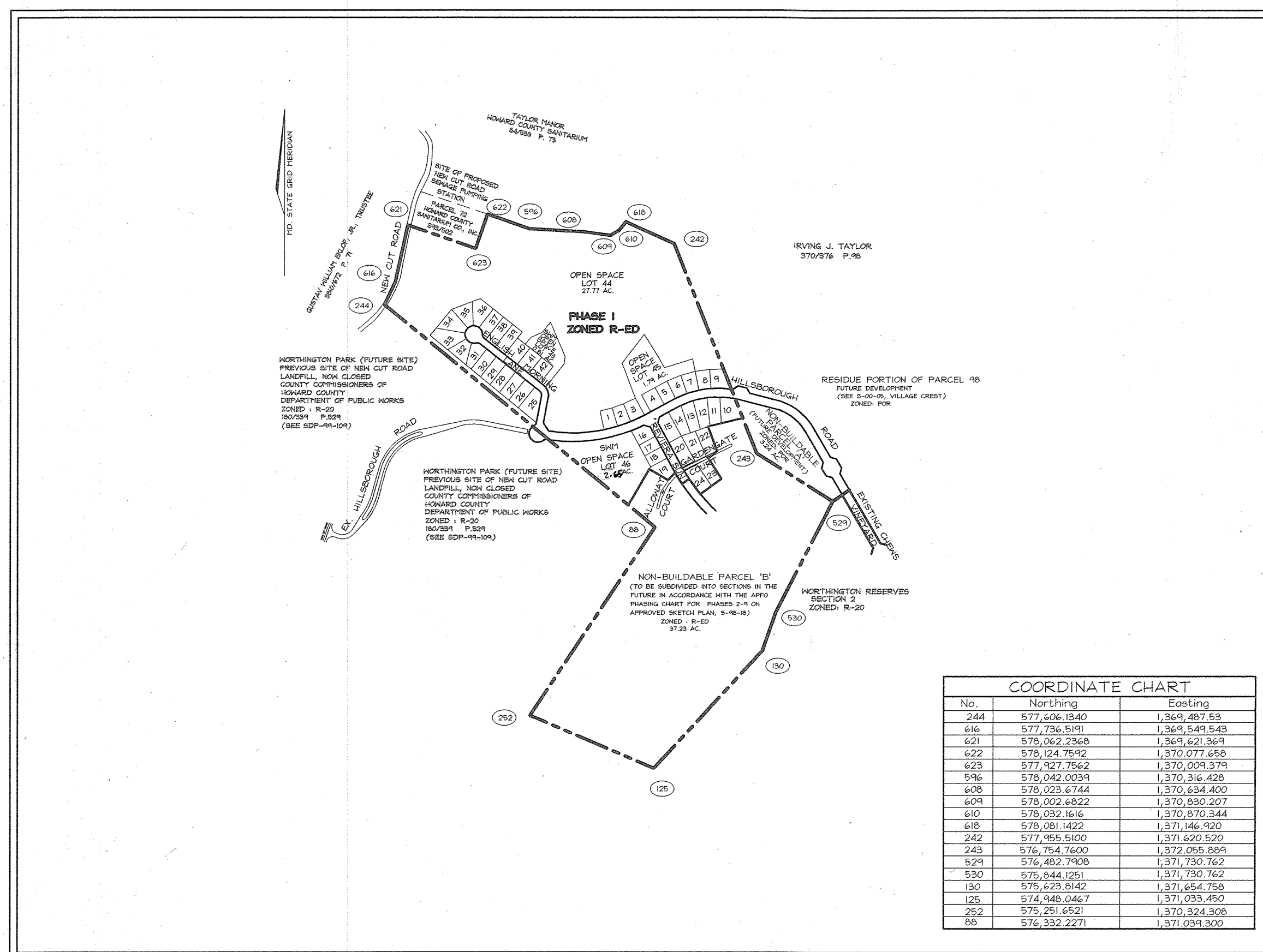


VICINITY MAP
SCALE: 1"=2000'

BENCHMARKS

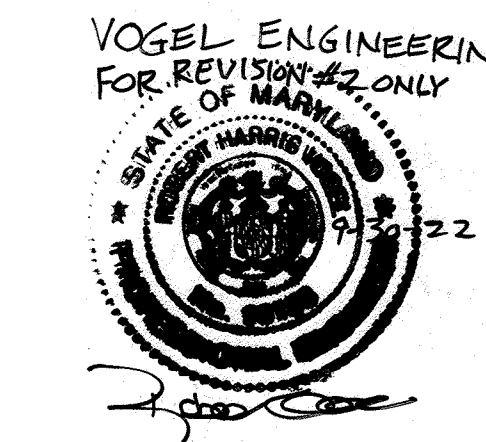
BENCHMARK NO. 1: COUNTY CONTROL #3044005R
3/4" REBAR 0.8' BELOW SURFACE
N. 578233.92, E. 1373142.33
ELEV. = 374.3894

BENCHMARK NO. 2: COUNTY CONTROL #3044004R
3/4" REBAR 0.6' BELOW SURFACE
N. 578128.03, E. 1373460.71
ELEV. = 362.575



No.	Northing	Easting
244	577,426.140	1,369,497.53
416	577,736.510	1,369,549.543
621	578,062.2368	1,369,621.361
622	578,124.7692	1,370,077.658
623	577,927.7562	1,370,028.374
596	578,042.0299	1,370,336.429
608	578,023.6744	1,370,634.400
604	578,022.4822	1,370,850.287
610	578,026.1616	1,371,070.344
618	578,091.1422	1,371,146.920
242	577,955.8100	1,371,600.520
243	576,754.7600	1,372,056.889
529	576,492.7908	1,371,730.762
730	578,848.1291	1,371,730.762
130	578,423.8142	1,371,654.750
128	574,140.0467	1,371,033.450
252	578,251.6521	1,370,324.308
88	576,332.2271	1,371,029.300

LOCATION MAP
SCALE: 1"=600'



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

OWNER
TAYLOR FAMILY LIMITED PARTNERSHIP A
TAYLOR FAMILY LIMITED PARTNERSHIP B
4100 COLLEGE AVE.
ELLCOTT CITY, MARYLAND
21043-5506

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Cindy Hamate 8/3/01
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Donald R. Reuker 7/21/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Thomas M. Puckett 7-29-01
CHIEF, BUREAU OF HIGHWAYS DATE

2	REVISE THE PLAN TO ADD A RAISED CROSSWALK ON HILLSBOROUGH ROAD	7-30-22
1	REVISE PUBLIC ACCESS STREET WITH ADDITION OF SIDEWALK	12-27-01
No.	REVISION	DATE

**FINAL ROAD CONSTRUCTION
PLANS & PROFILES
WORTHINGTON FIELDS
PHASE I LOTS 1-46
AND NON-BUILDABLE PARCELS 'A' AND 'B'
COVER SHEET**

TAX MAP #25, GRID 20 & # 31 PARCEL 98 & P/O PARCEL 4
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

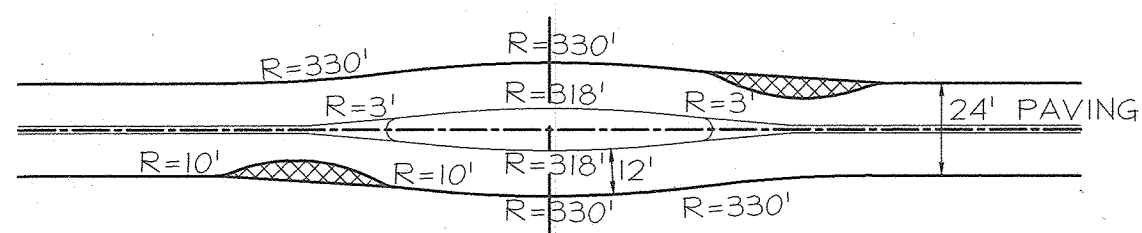
DESIGN BY: JCO
DRAWN BY: RJ
CHECKED BY: RHV
DATE: JULY, 2001
SCALE: AS SHOWN
W.O. NO.: 99-011

PREV. FILE # 5-98-18

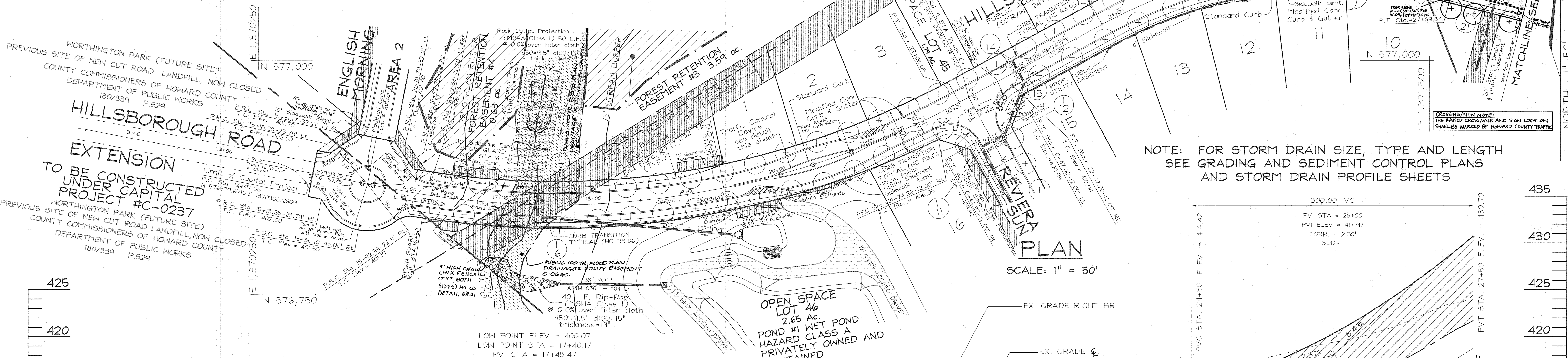
1 SHEET OF 20

CURVE TABLE						
CURVE	RADIUS	LENGTH	DELTA ANGLE	TANGENT	CHORD DIRECTION	CHORD LENGTH
C1	900.00	620.57	39°30'25"	323.19	N81°11'25"E	608.35
C2	520.00	388.32	42°47'13"	203.72	S82°49'49"W	379.36

STREET TREE CALCULATIONS			
STREET NAME	LINEAR FEET	NO. REQUIRED	NO. PROVIDED
HILLSBOROUGH RD.	2428 / 40	61	61

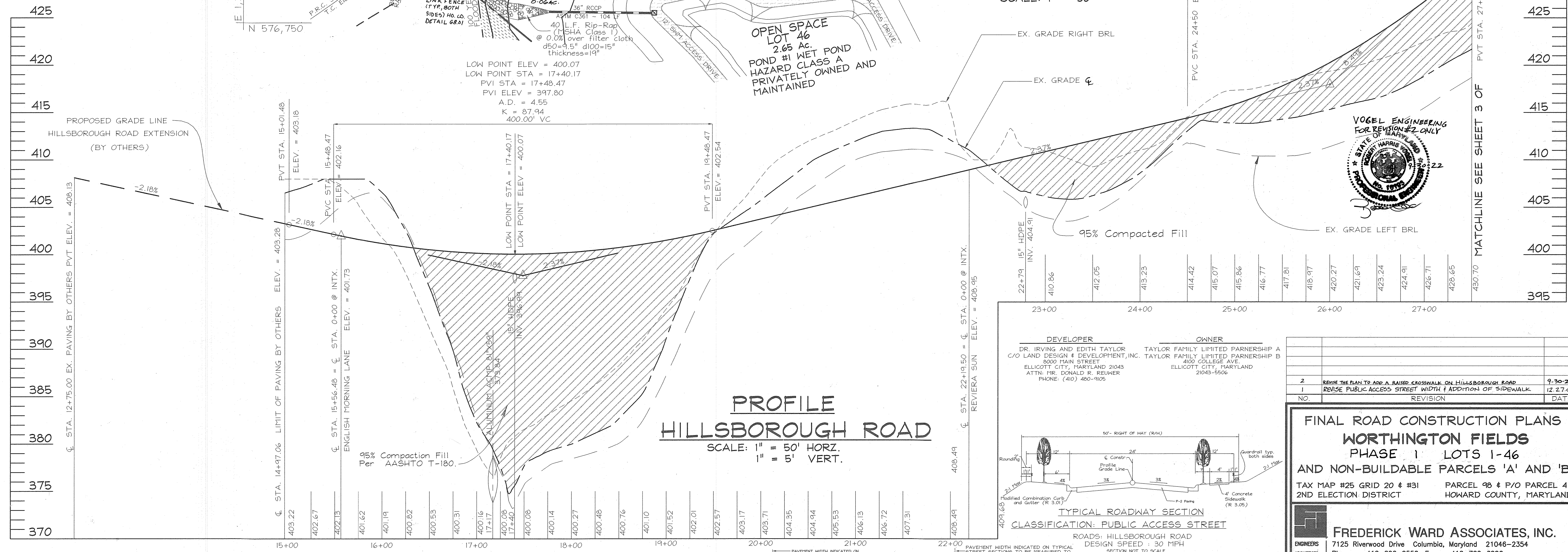


PUBLIC ACCESS STREET TRAFFIC CONTROL DEVICE DETAIL



PLAN SCALE: 1" = 50'

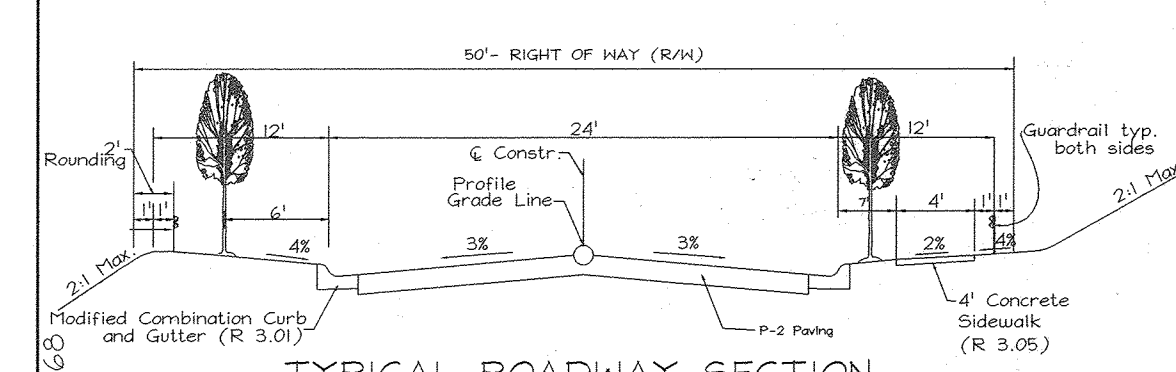
NOTE: FOR STORM DRAIN SIZE, TYPE AND LENGTH SEE GRADING AND SEDIMENT CONTROL PLANS AND STORM DRAIN PROFILE SHEETS



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

NO.	REVISION	DATE
2	REVISE THE PLAN TO ADD A RAISED CROSSWALK ON HILLSBOROUGH ROAD	9-30-22
1	REVISE PUBLIC ACCESS STREET WIDTH & ADDITION OF SIDEWALK	12-27-01

DEVELOPER	OWNER
DR. IRVING AND EDITH TAYLOR C/O LAND DESIGN & DEVELOPMENT, INC. 8000 MAIN STREET ELLCOTT CITY, MARYLAND 21043 ATTN: FRS DONALD R. REINER PHONE: (410) 480-9105	TAYLOR FAMILY LIMITED PARTNERSHIP A TAYLOR FAMILY LIMITED PARTNERSHIP B 4100 COLLEGE AVE. ELLCOTT CITY, MARYLAND 21043-5506



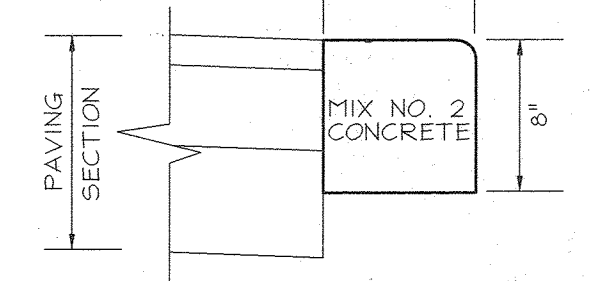
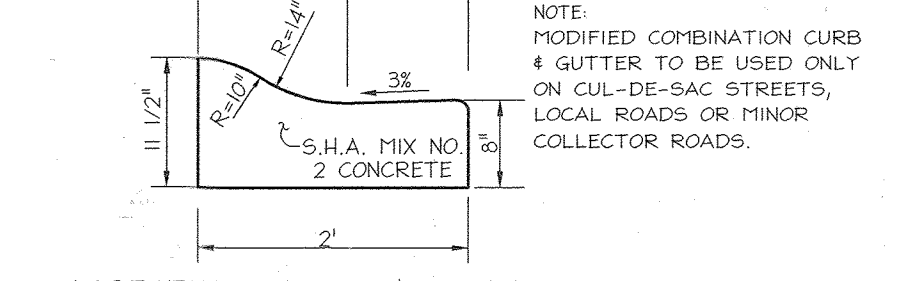
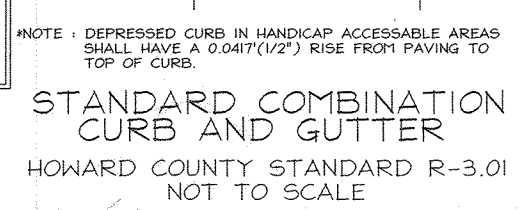
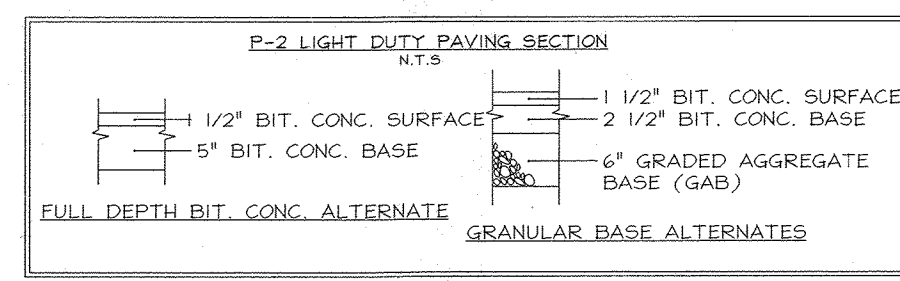
TYPICAL ROADWAY SECTION CLASSIFICATION: PUBLIC ACCESS STREET ROADS: HILLSBOROUGH ROAD DESIGN SPEED: 30 MPH SECTION NOT TO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Cindy Hamrick 8/3/01
CHIEF, DIVISION OF LAND DEVELOPMENT
Robert M. Pucke 7/27/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION

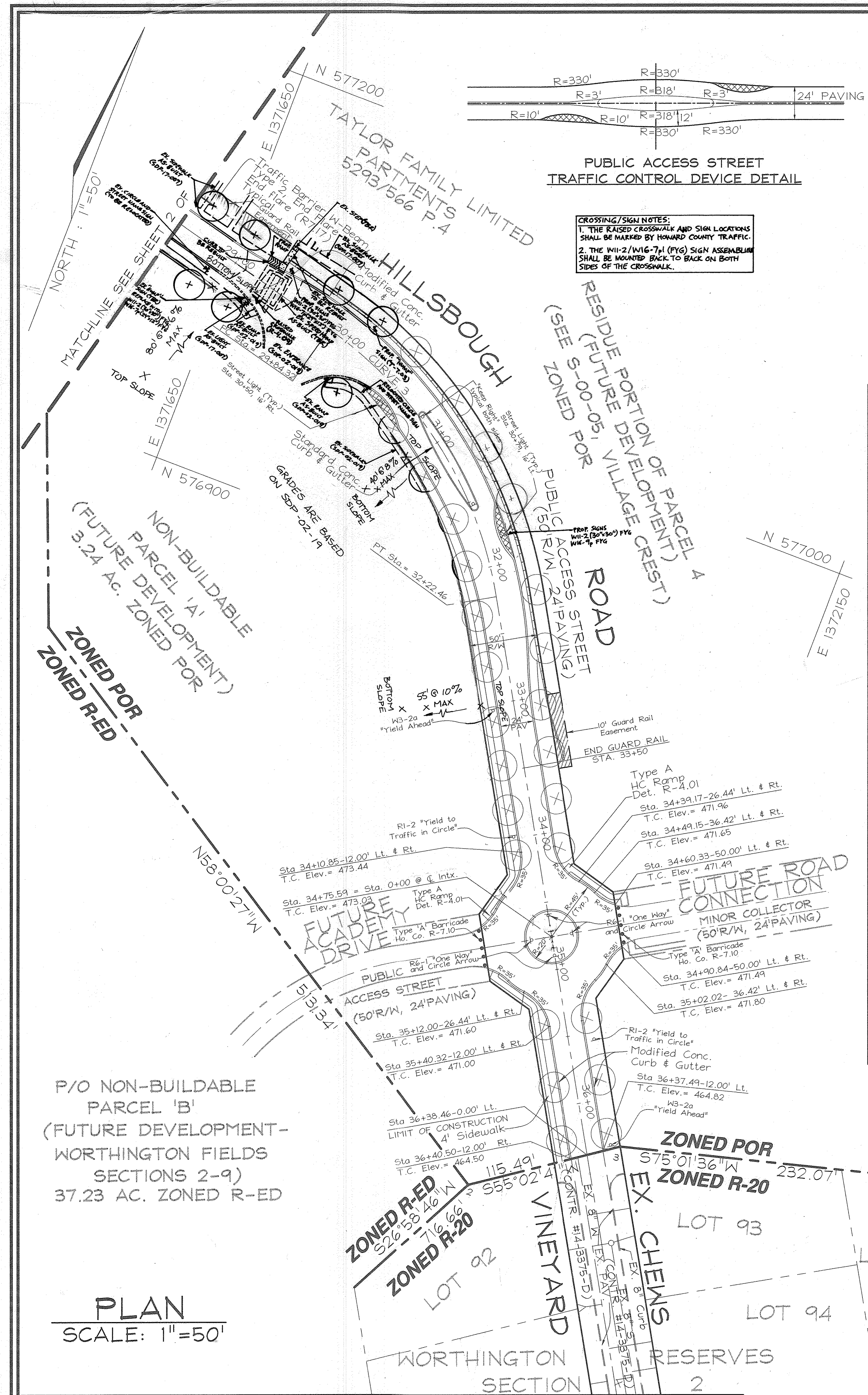
Robert M. Pucke 7-24-01
CHIEF, BUREAU OF HIGHWAYS



FINAL ROAD CONSTRUCTION PLANS
WORTHINGTON FIELDS
PHASE 1 LOTS 1-46
AND NON-BUILDABLE PARCELS 'A' AND 'B'
TAX MAP #25 GRID 20 & #31 PARCEL 98 & P/O PARCEL 4
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
SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: GAH
DRAWN BY: GAH
CHECKED BY: RHV
DATE: JULY, 2001
SCALE: AS SHOWN
W.O. NO.: 99-011
2 SHEET OF 20

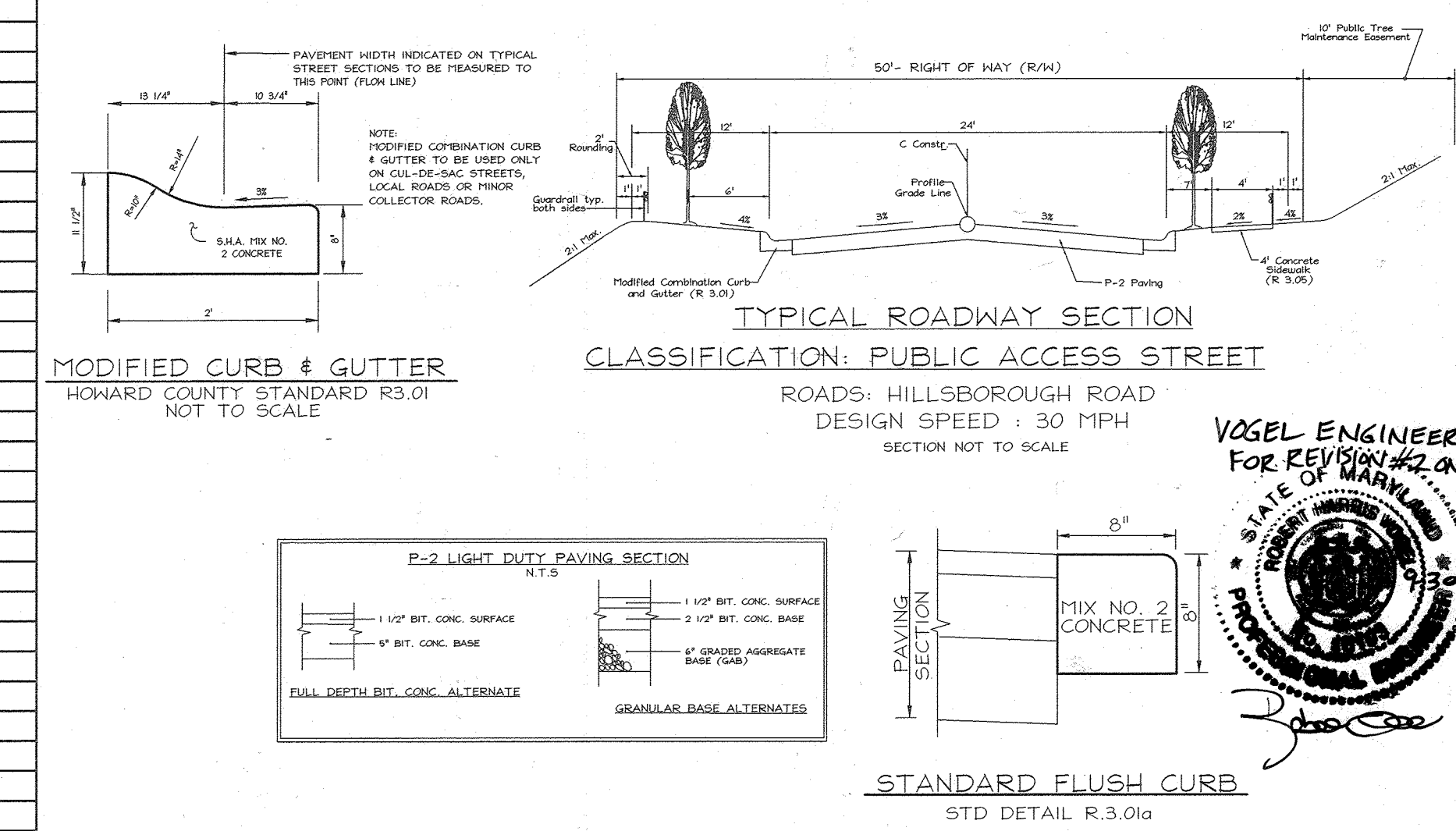
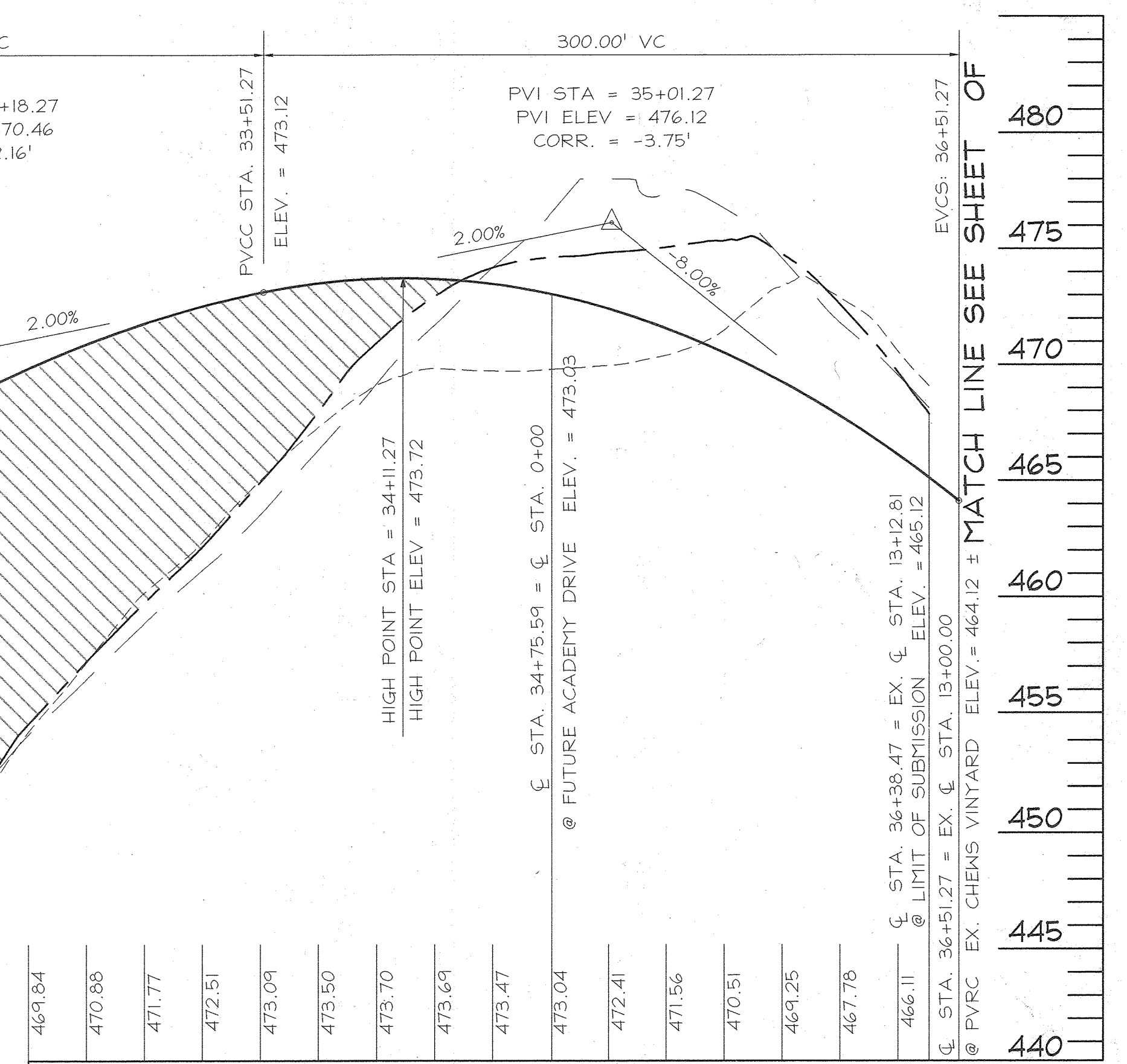
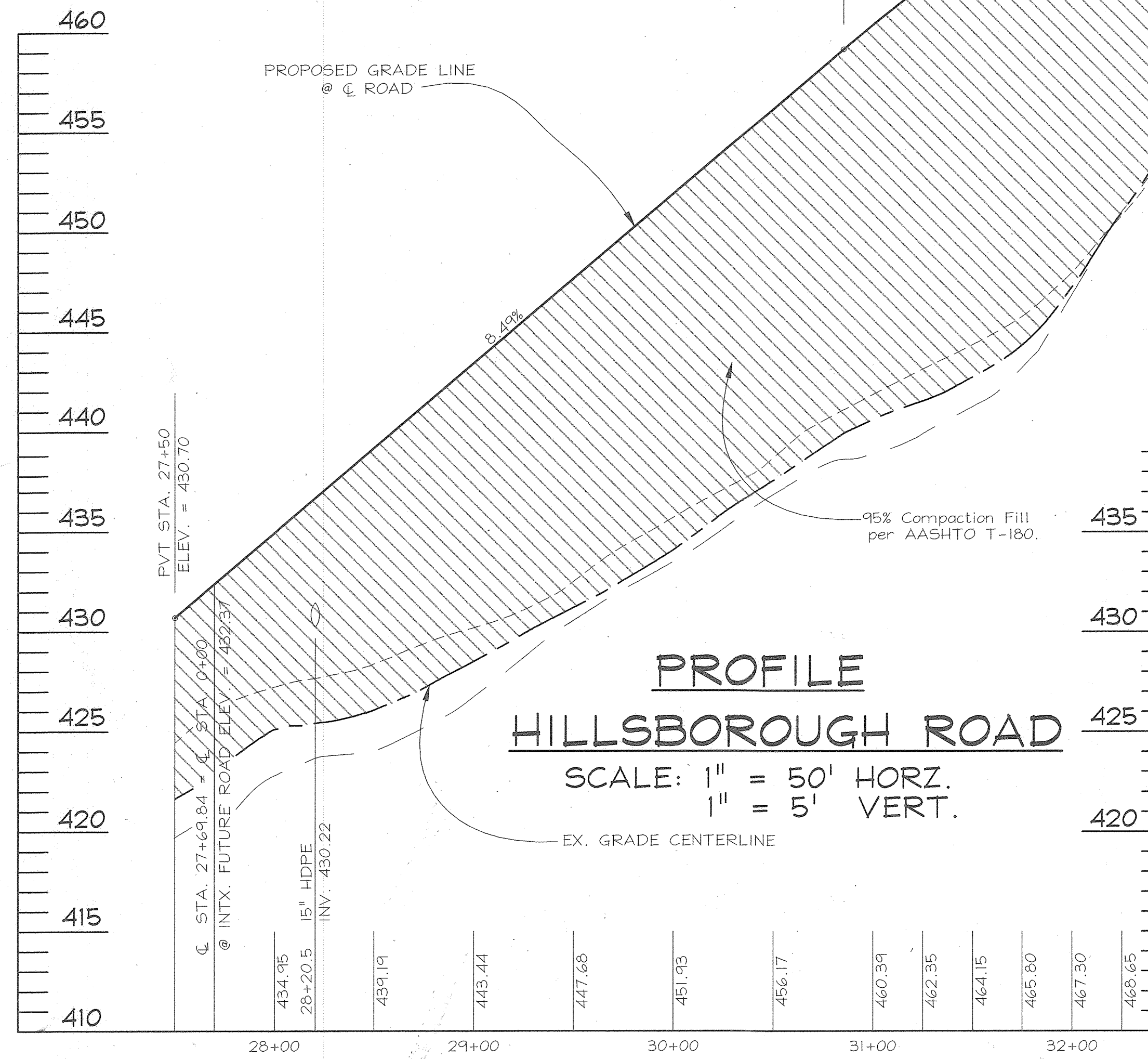


CURVE TABLE						
CURVE	RADIUS	LENGTH	DELTA ANGLE	TANGENT	CHORD DIRECTION	CHORD LENGTH
C3	300.00	238.14	45°28'53"	125.74	N53°02'08"N	231.94

STREET LIGHT LOCATION CHART		
STREET NAME	CENTERLINE STATION	CENTERLINE OFFSET
HILLSBOROUGH ROAD	31+13.89	0.00' RT.
HILLSBOROUGH ROAD	34+75.59	0.00' LT.

STREET TREE CALCULATIONS			
STREET NAME	LINEAR FEET	REQUIRED TREES	PROVIDED TREES
HILLSBOROUGH ROAD	1,390	35	35

CROSSING/SIGN NOTES:
 1. THE RAISED CROSSWALK AND SIGN LOCATIONS SHALL BE MADE BY HOWARD COUNTY TRAFFIC.
 2. THE W11-2/W16-71 (FYC) SIGN ASSEMBLY SHALL BE MOUNTED BACK TO BACK ON BOTH SIDES OF THE CROSSWALK.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Cindy Hamstra 8/3/01
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Robert M. Donker 7-24-01
 CHIEF, BUREAU OF HIGHWAYS DATE

STREET LIGHT LOCATION CHART					
DWG. NO.	STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE	FIXTURE/POLE TYPE
2 OF 18	HILLSBOROUGH RD.	15+56	0.00'	Two(2) - 150 Watt Hps vapor pendant fixture mounted at 30' on bronze fiberglass poles using twin 6' arms on extended as shown on plans (along Hillsborough Road).	in center of circle
	HILLSBOROUGH RD.	18+00	15.00' L	100 Watt Hps vapor Colonial post-top mounted as a 14' black fiberglass pole.	
	HILLSBOROUGH RD.	20+38	0.00'	- do -	in median island
3 OF 18	- do -	30+50	16.00' R	- do -	
2 OF 18	HILLSBOROUGH RD.	25+88	0.00'	- do -	in median island
2 OF 18	HILLSBOROUGH RD.	28+04	20.00' L	- do -	
3 OF 18	- do -	30+79	16.00' L	- do -	
	HILLSBOROUGH RD.	34+76	0.00'	Two(2) - 150 Watt Hps vapor pendant fixture mounted at 30' on bronze fiberglass poles using twin 6' arms on extended as shown on plans (along Hillsborough Road/Chews Vineyard)	in center of circle
4 OF 18	ENGLISH MORNING	2+35	14.00' R	100 Watt Hps vapor Colonial post-top mounted as a 14' black fiberglass pole.	
	ENGLISH MORNING	7+50	0.00'	- do -	in col-de-sac island
5 OF 18	REVIERA SUN	1+90	0.00'	- do -	in median island
	REVIERA SUN	3+20	19.00' R	- do -	

OWNER
 TAYLOR FAMILY LIMITED PARTNERSHIP A
 TAYLOR FAMILY LIMITED PARTNERSHIP B
 ELLICOTT CITY, MARYLAND
 21043-5506

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

2 REVISION THE PLAN TO ADD A RAISED CROSSWALK ON HILLSBOROUGH ROAD 7-30-02

1 REMOVED GUARDRAIL AND GUARDRAIL EASEMENT 12-27-01

NO. REVISION DATE

FINAL ROAD CONSTRUCTION PLANS
WORTHINGTON FIELDS
PHASE I LOTS 1-46
AND NON-BUILDABLE PARCELS 'A' AND 'B'

TAX MAP #25, GRID 20 # 31 PARCEL 98 # P/O PARCEL 4
 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: GAH
 DRAWN BY: GAH
 CHECKED BY: RHV
 DATE: JULY 2001
 SCALE: AS SHOWN
 W.O. NO.: 99-011

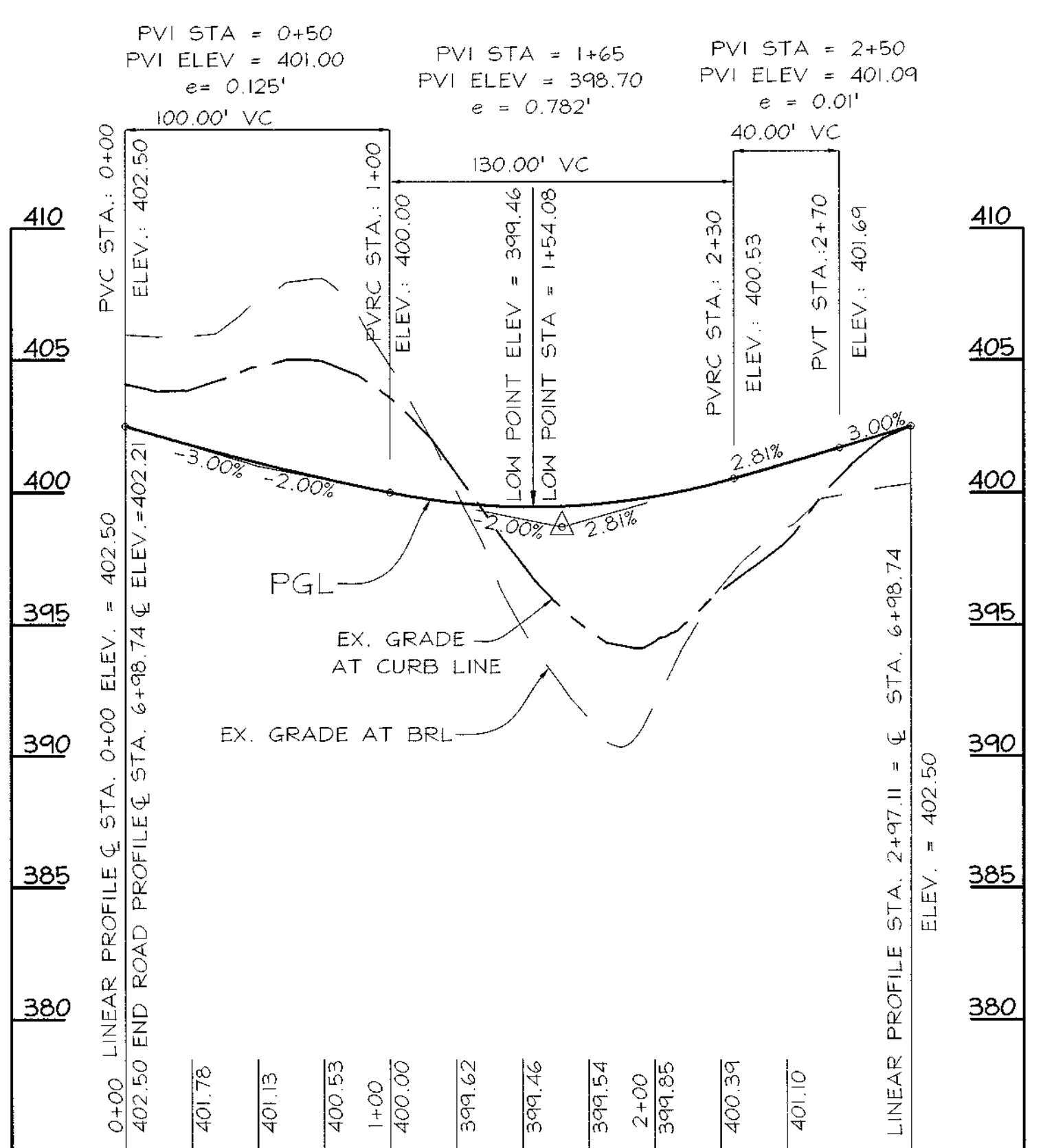
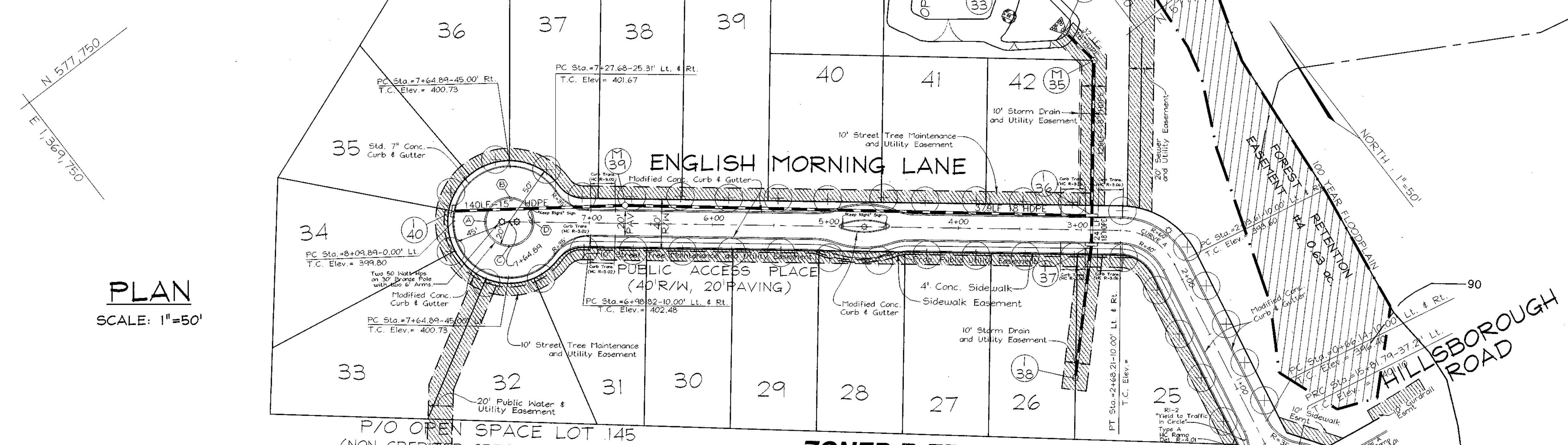
3 SHEET OF 20

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

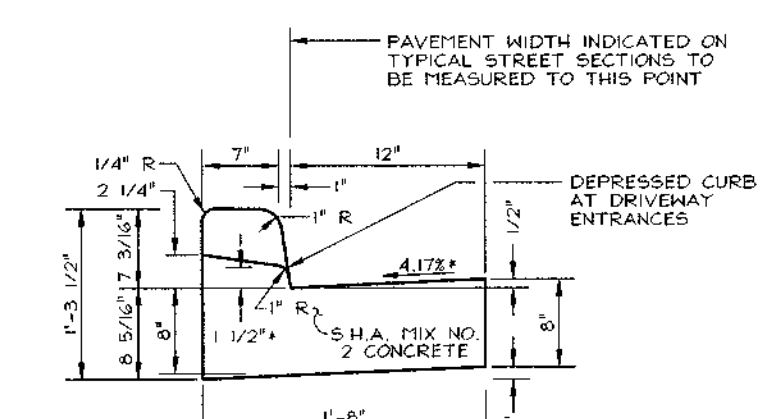
OPEN SPACE LOT 44
27.77 AC.

POND #2 EXTENDED DETENTION
HAZARD CLASS A
PRIVATELY OWNED
AND MAINTAINED

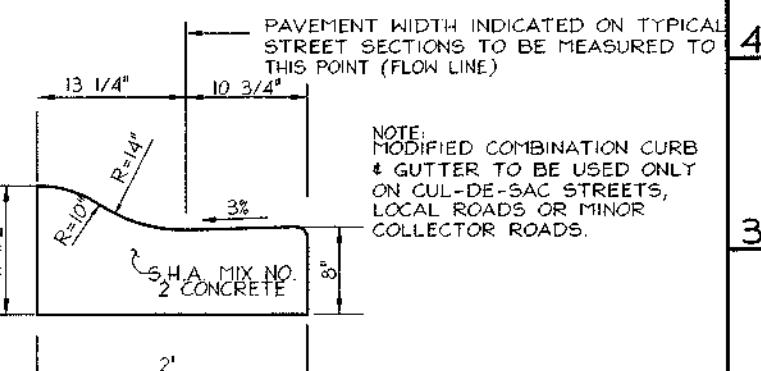
CURVE TABLE						
CURVE	RADIUS	LENGTH	DELTA ANGLE	TANGENT	CHORD DIRECTION	CHORD LENGTH
C4	50.00	54.60	62°34'2"	30.38	N20°20'24"W	51.93



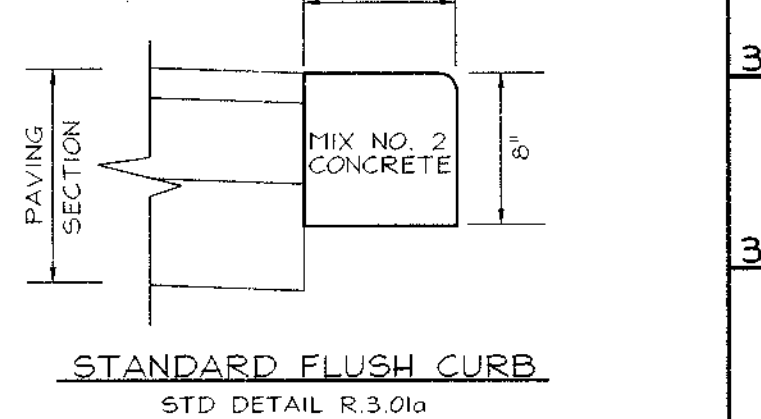
LINEAR PROFILE
ENGLISH MORNING LANE
SCALE: 1"=50' HORIZ.
1"=5' VERT.



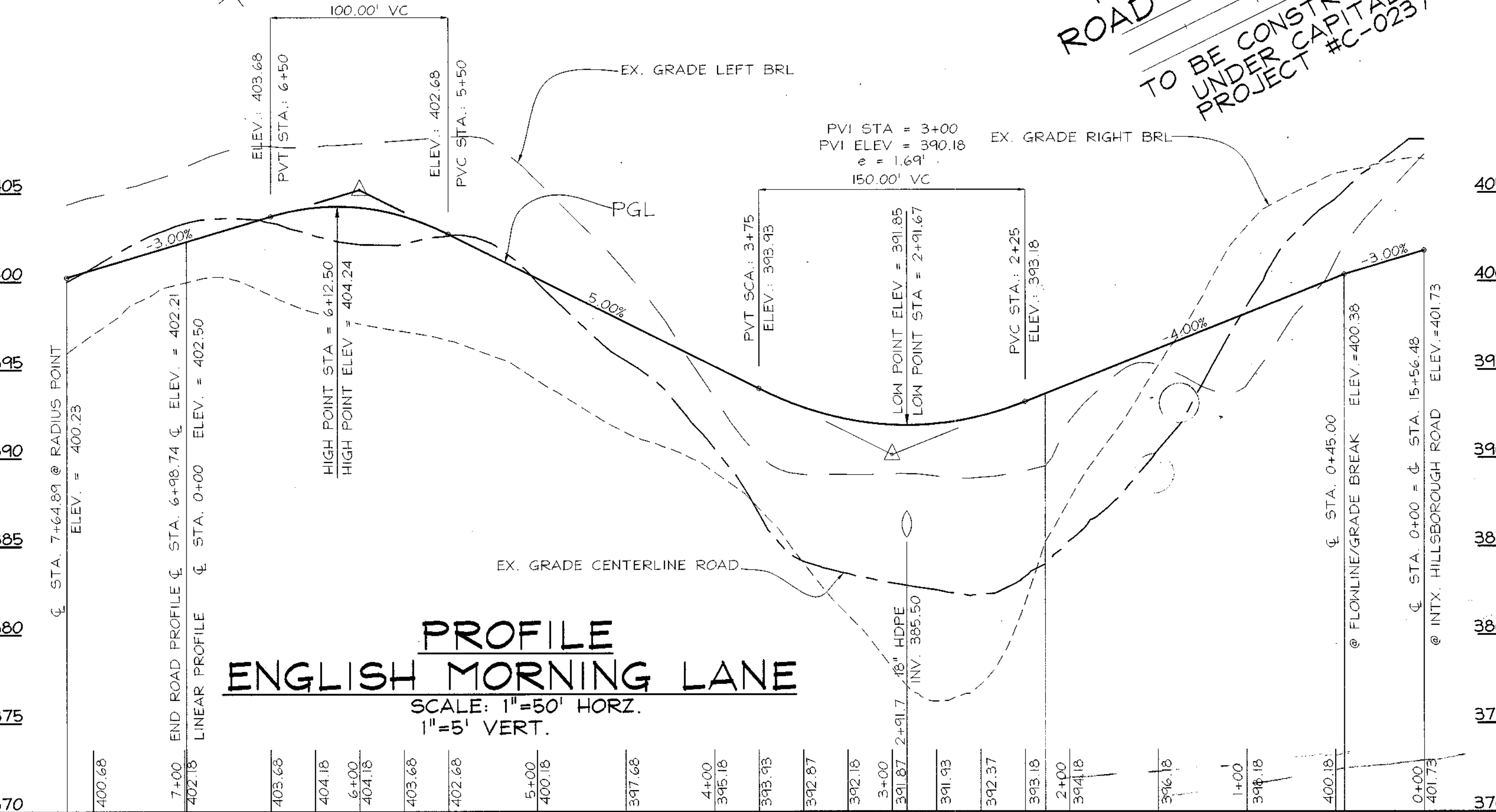
STANDARD COMBINATION CURB AND GUTTER
HOWARD COUNTY STANDARD R-3.01
NOT TO SCALE



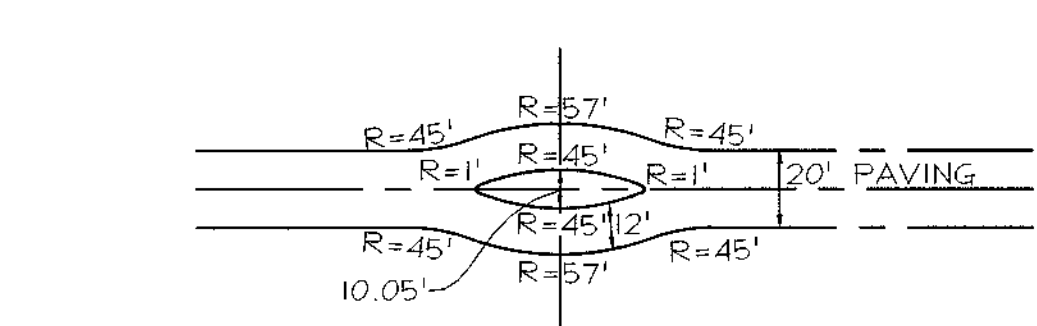
MODIFIED CURB & GUTTER
HOWARD COUNTY STANDARD R3.01
NOT TO SCALE



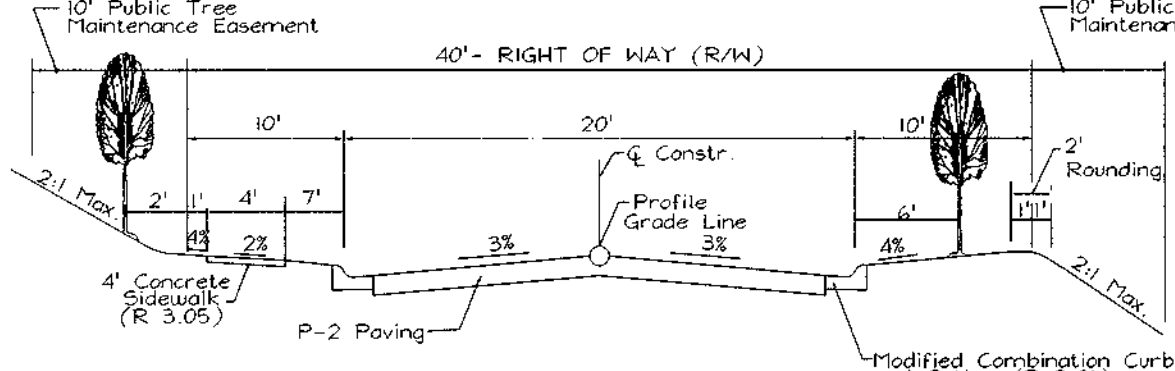
STANDARD FLUSH CURB
STD DETAIL R.3.01a



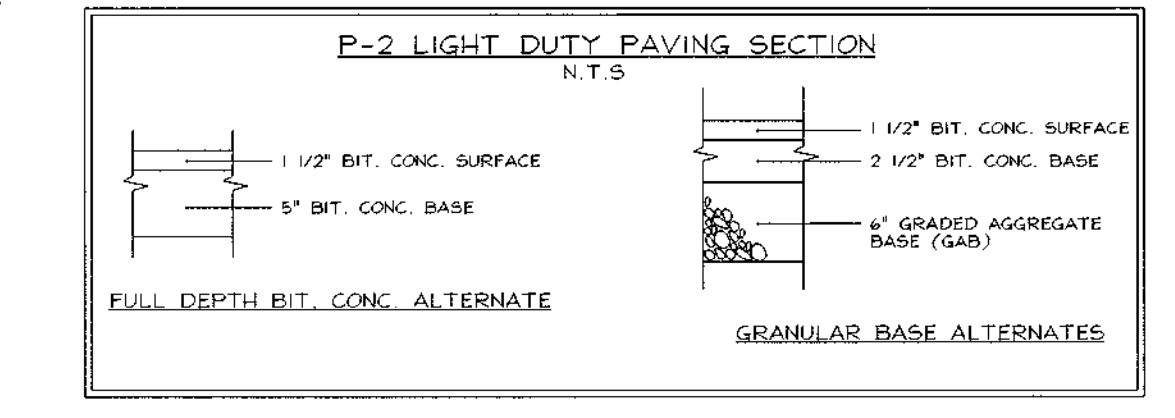
PROFILE
ENGLISH MORNING LANE
SCALE: 1"=50' HORIZ.
1"=5' VERT.



TRAFFIC CONTROL DEVICE



TYPICAL ROADWAY SECTION
CLASSIFICATION: PUBLIC ACCESS PLACE
ENGLISH MORNING LANE
DESIGN SPEED IS MPH
NOT TO SCALE



P-2 LIGHT DUTY PAVING SECTION
N.T.S.

STREET LIGHT LOCATION CHART			
STREET NAME	STATION	OFFSET	
ENGLISH MORNING	7+64.89	0.00' RT	
ENGLISH MORNING	4+76.55	0.00' RT	
ENGLISH MORNING	2+51.82	15.59' RT	
ENGLISH MORNING	25+82.42	0.00' RT	
HILLSBOROUGH	15+56.48	0.00' RT	

STREET TREE CALCULATIONS				
STREET NAME	LINEAR FEET	NO. REQUIRED	NO. PROVIDED	
ENGLISH MORNING	1596 / 40	40	40	

FINAL ROAD CONSTRUCTION PLANS
WORTHINGTON FIELDS
PHASE I LOTS 1-46
AND NON-BUILDABLE PARCELS 'A' AND 'B'

TAX MAP #25, GRID 20 & # 31 PARCEL 98 & P/O PARCEL 4
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FREDERICK WARD ASSOCIATES, INC.
 ENGINEERS: 7125 Riverwood Drive Columbia, Maryland 21046-2354
 ARCHITECTS: Phone: 410-290-9550 Fax: 410-720-8226
 SURVEYORS: Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

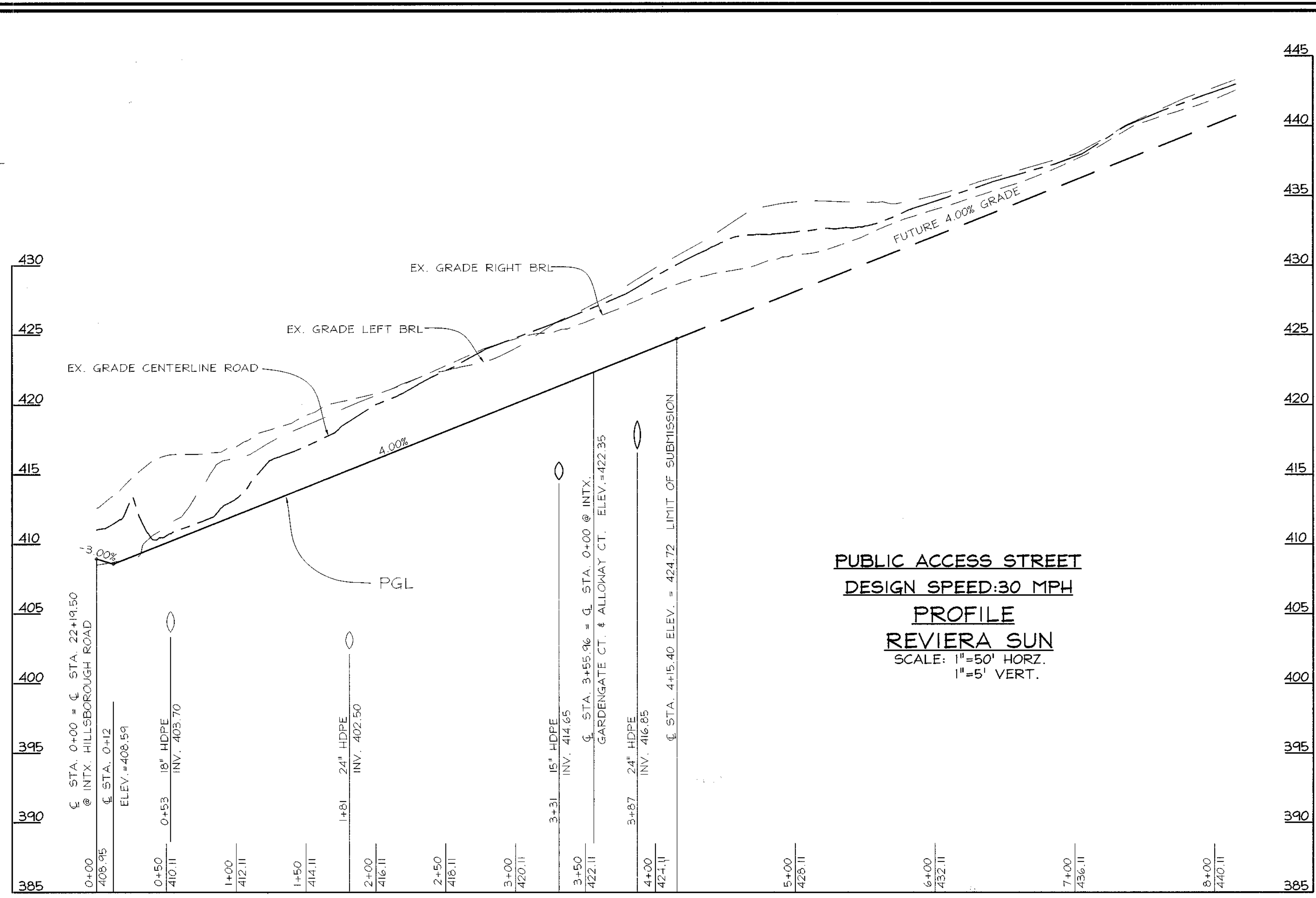
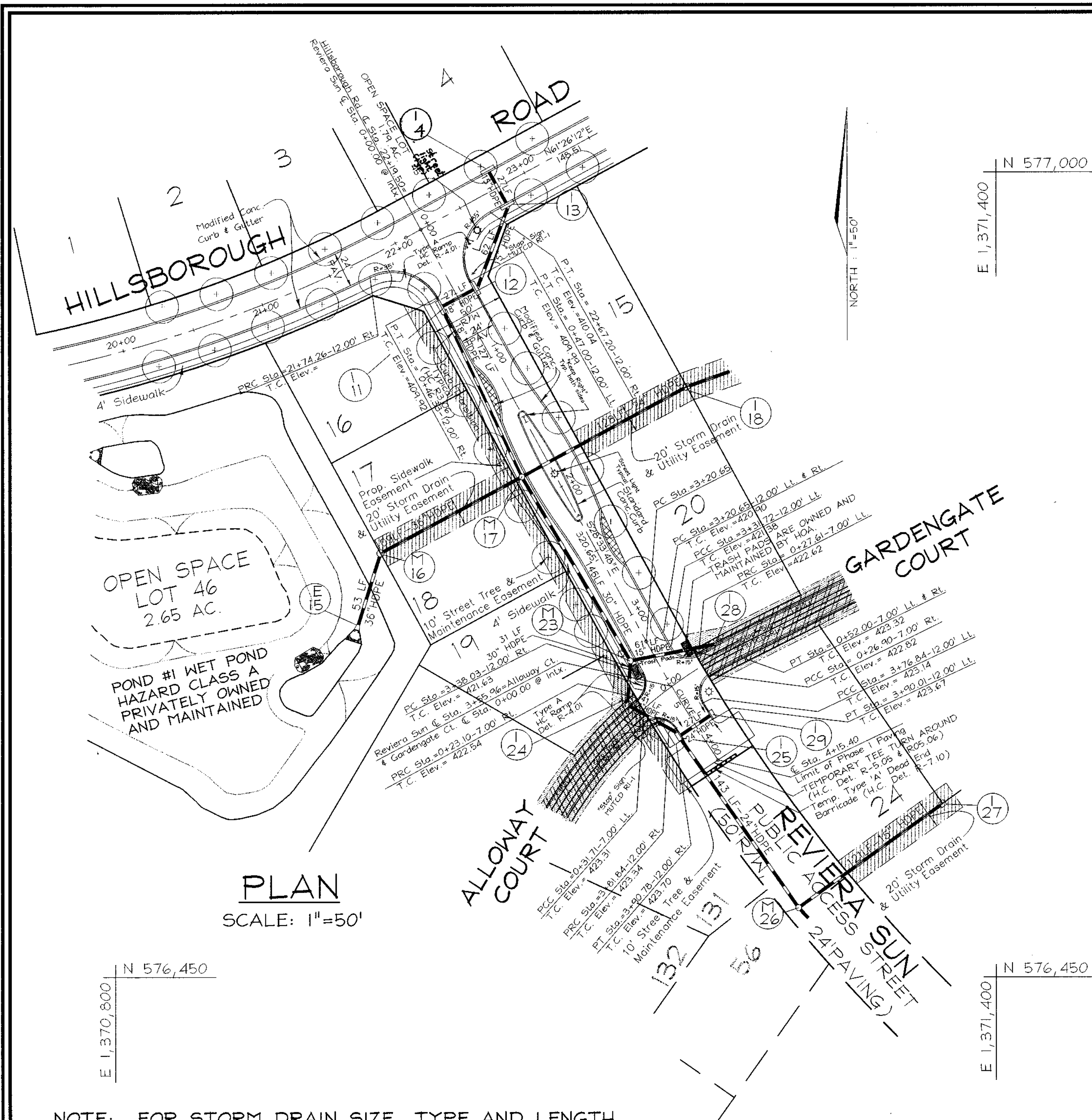
DESIGN BY: GAH
 DRAWN BY: GAH
 CHECKED BY: RHV
 DATE: JULY, 2001
 SCALE: AS SHOWN
 W.O. NO.: 99-011

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Conrad Hamato 8/3/01
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 7-24-01
 CHIEF, BUREAU OF HIGHWAYS DATE

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

OWNER: TAYLOR FAMILY LIMITED PARTNERSHIP A
 TAYLOR FAMILY LIMITED PARTNERSHIP B
 4100 COLLEGE AVE.
 ELLICOTT CITY, MARYLAND
 21043-5506



PLAN
SCALE: 1"=50'

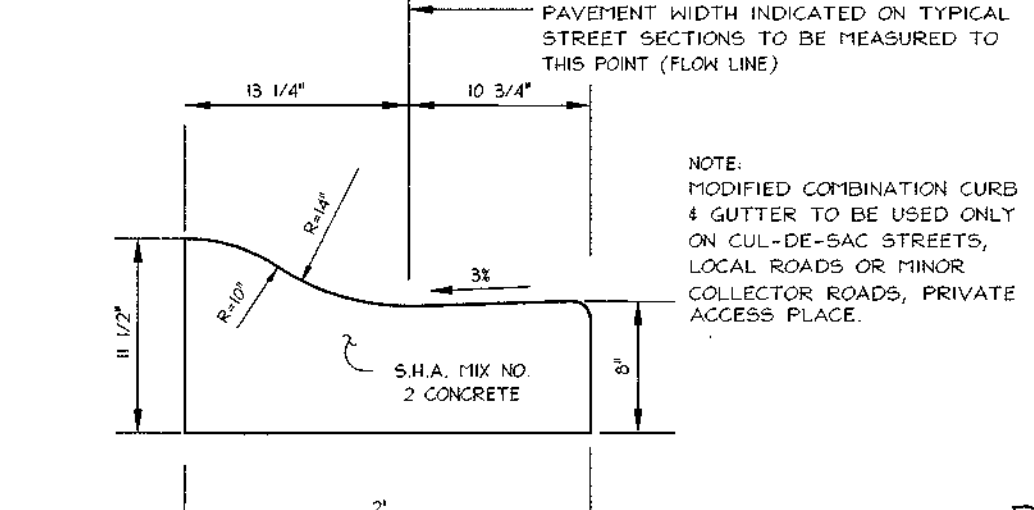
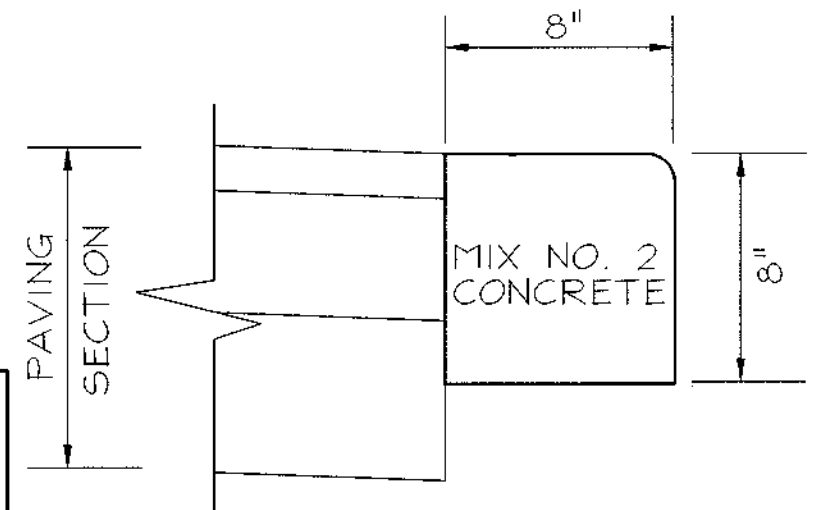
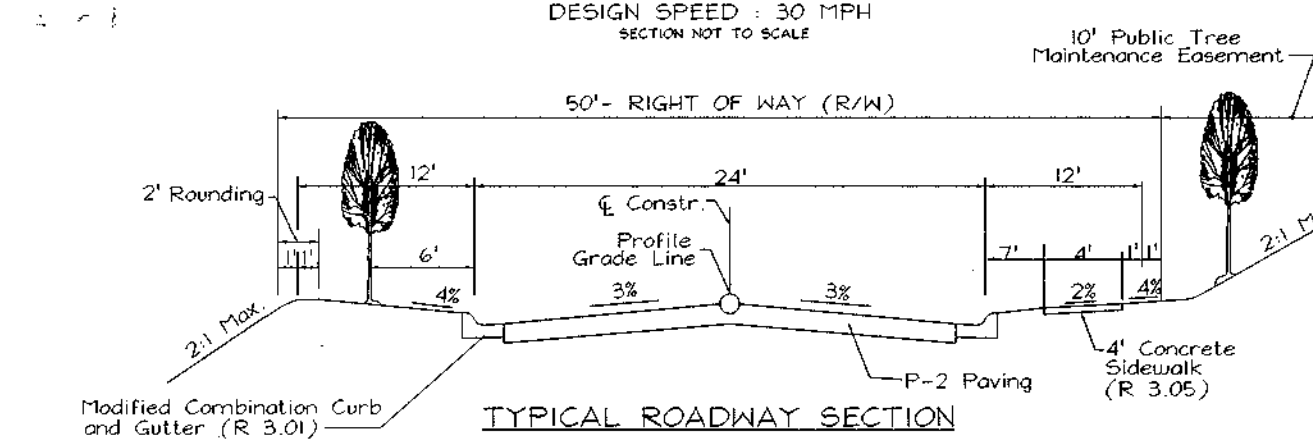
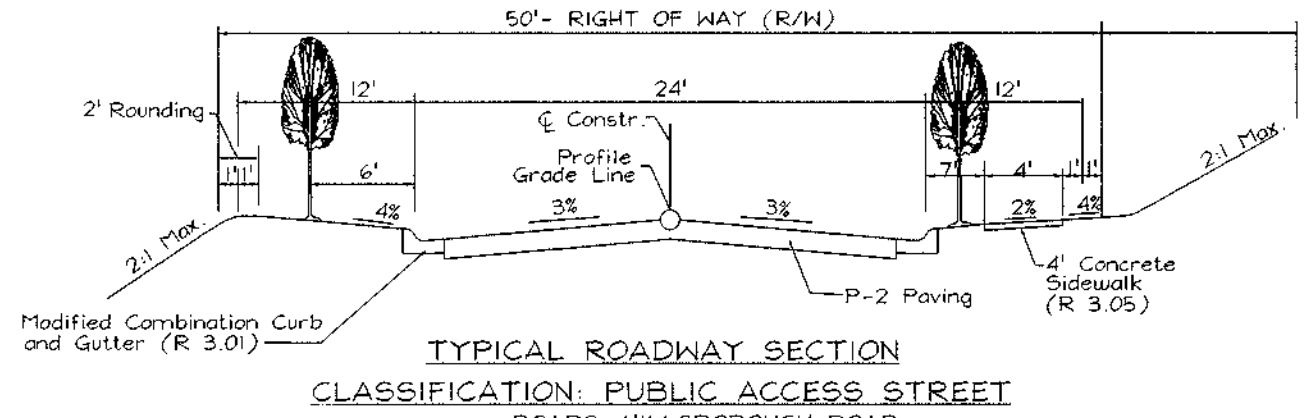
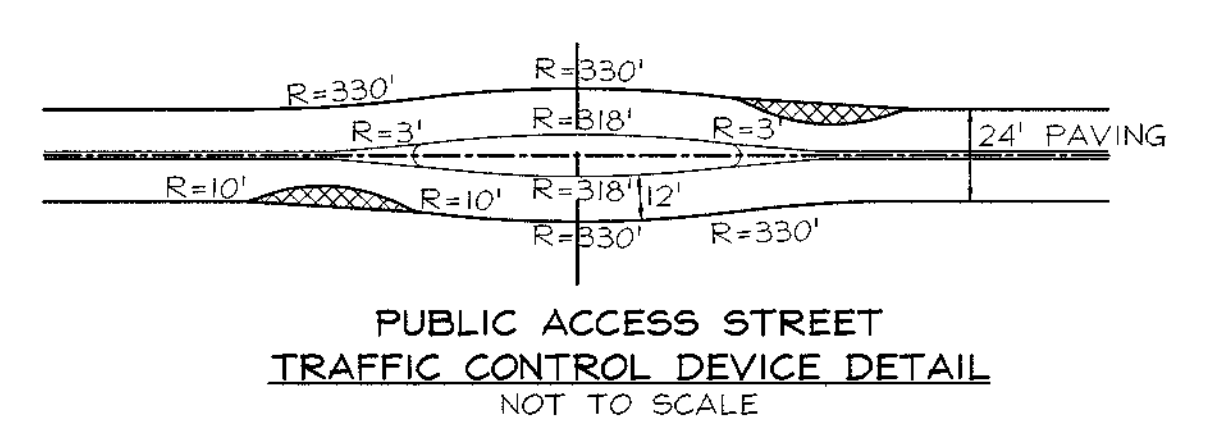
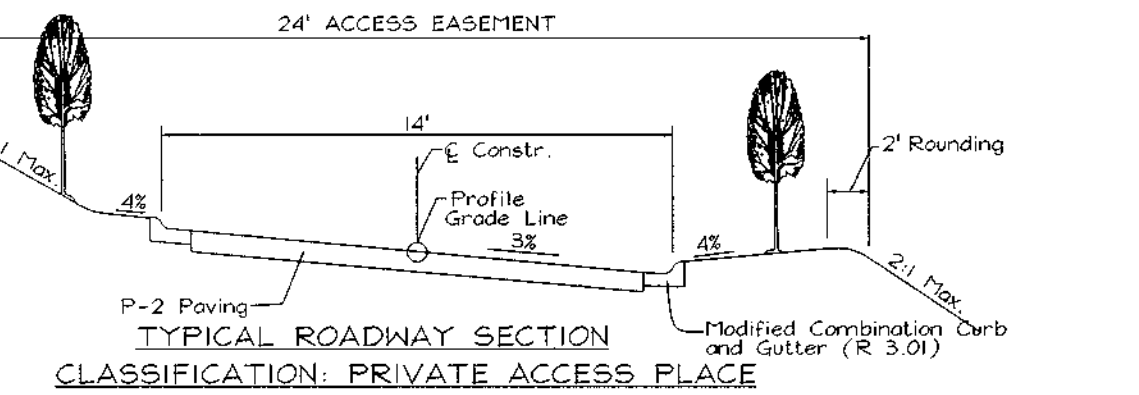
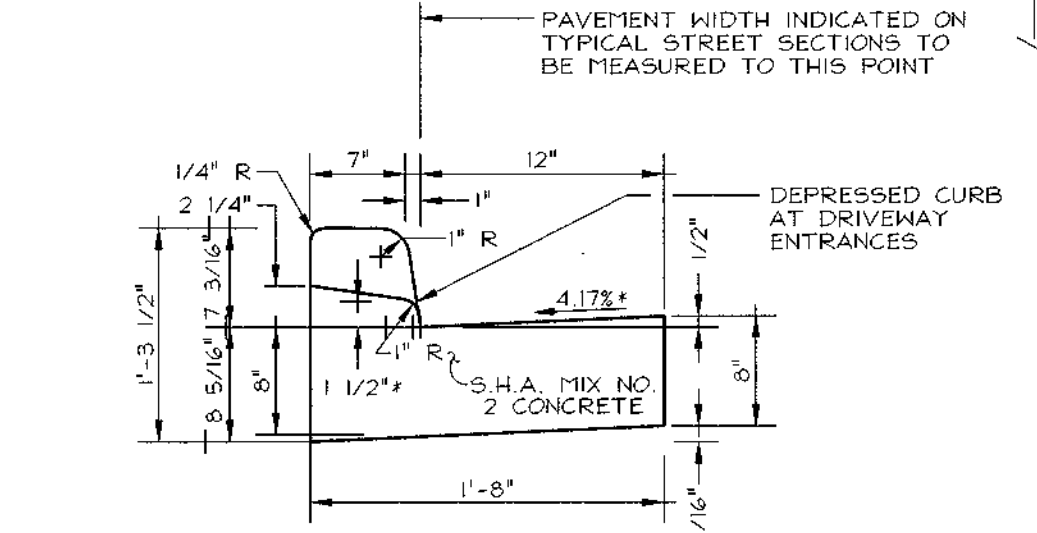
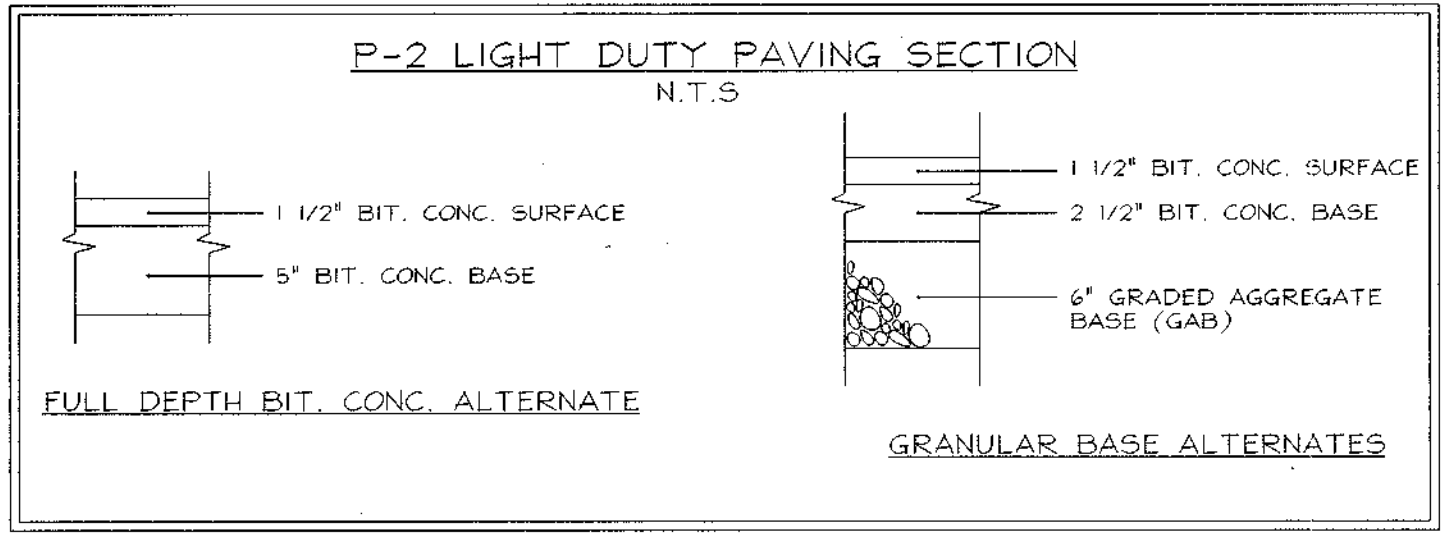
PUBLIC ACCESS STREET
DESIGN SPEED: 30 MPH
PROFILE
REVIERA SUN
SCALE: 1"=50' HORZ.
1"=5' VERT.

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

CURVE TABLE						
CURVE	RADIUS	LENGTH	DELTA ANGLE	TANGENT	CHORD DIRECTION	CHORD LENGTH
C5	1100.00	94.76	04°56'08"	47.41	S31°01'52"E	94.73

STREET LIGHT LOCATION CHART		
STREET NAME	℄ STATION	℄ OFFSET
HILLSBOROUGH RD.	22+41.61	30.97' RT.
REVIERA SUN	1+85.73	0.00' RT.
REVIERA SUN	3+72.18	19.84' LT.

STREET TREE CALCULATIONS			
STREET NAME	LINEAR FEET	NO. REQUIRED	NO. PROVIDED
REVIERA SUN	600 / 40	15	16



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Chris Hamrick 9/3/01
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Andrew M. Conelle 7-24-01
 CHIEF, BUREAU OF HIGHWAYS DATE

STANDARD FLUSH CURB
STD DETAIL R.3.01a

MODIFIED CURB & GUTTER
HOWARD COUNTY STANDARD R.3.01
NOT TO SCALE

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

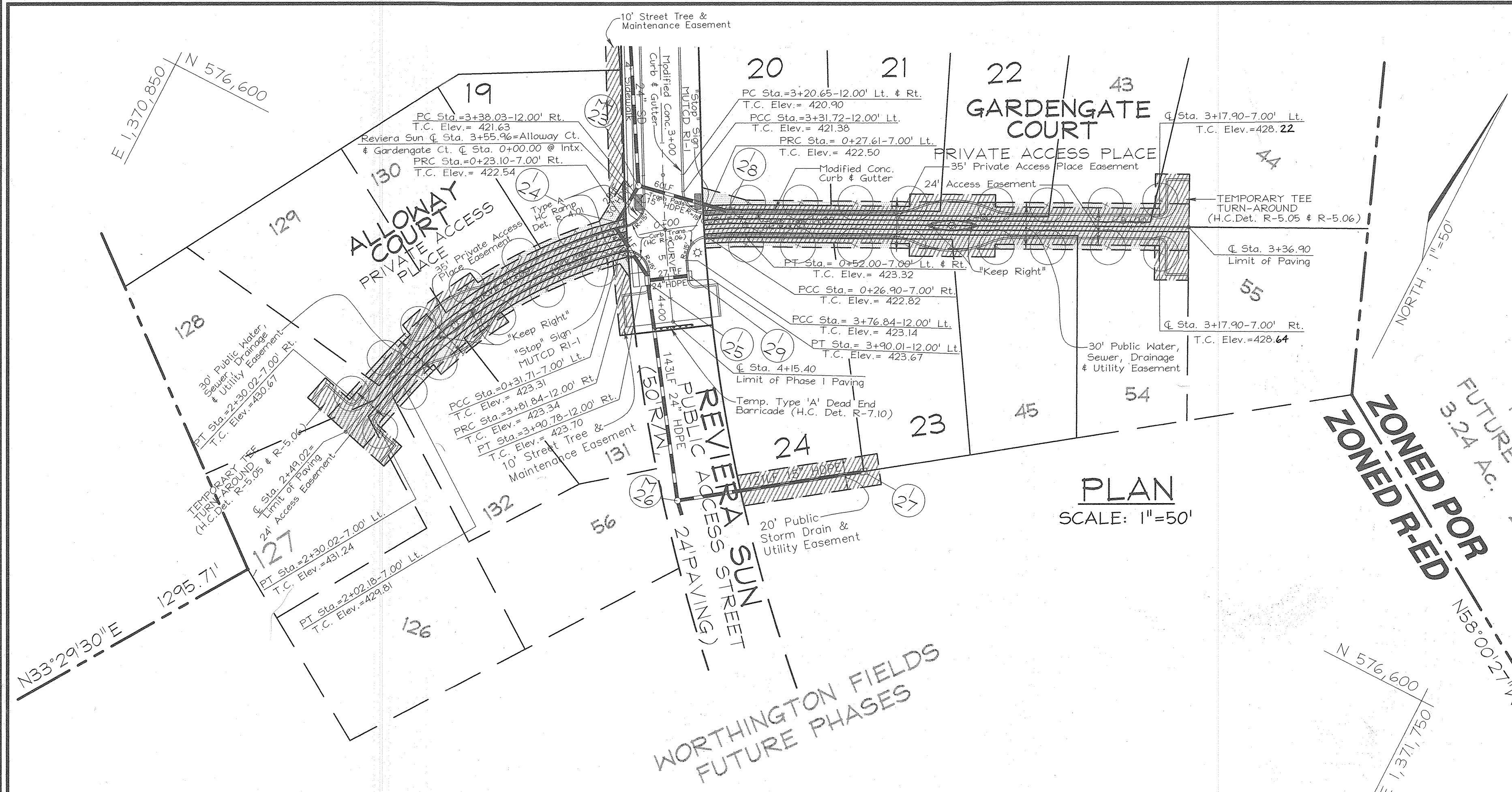
OWNER
TAYLOR FAMILY LIMITED PARTNERSHIP A
TAYLOR FAMILY LIMITED PARTNERSHIP B
4100 COLLEGE AVE
ELLCOTT CITY, MARYLAND
21043-5506

FINAL ROAD CONSTRUCTION PLANS
WORTHINGTON FIELDS
PHASE I LOTS 1-46
AND NON-BUILDABLE PARCELS 'A' AND 'B'
TAX MAP #25, GRID 20 # # 31 PARCEL 9B & P/O PARCEL 4
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: GAH
 DRAWN BY: GAH
 CHECKED BY: RHV
 DATE: JULY, 2001
 SCALE: AS SHOWN
 W.O. NO.: 99-011

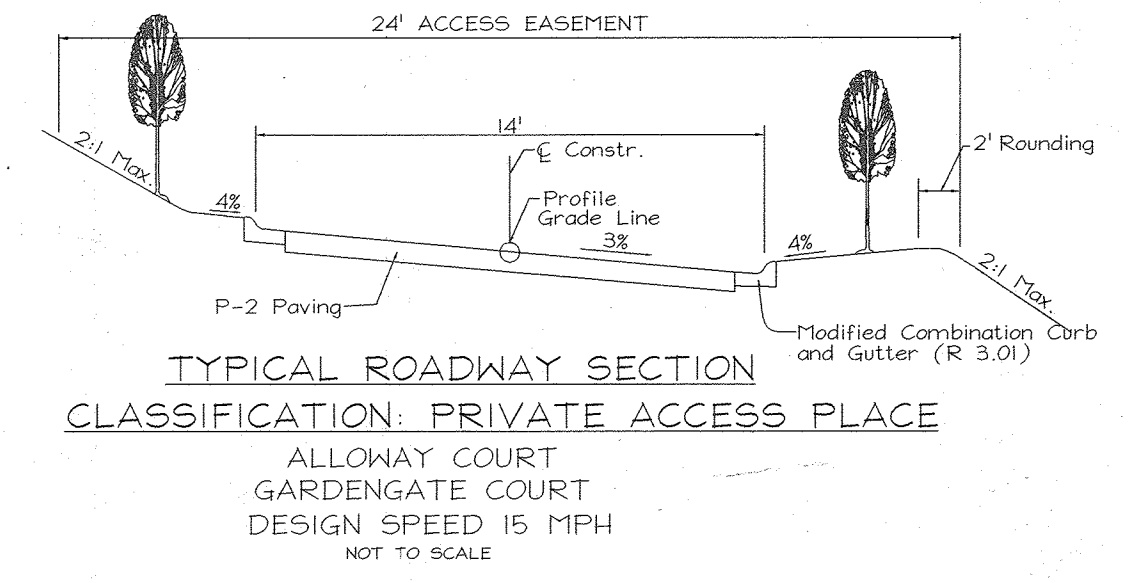
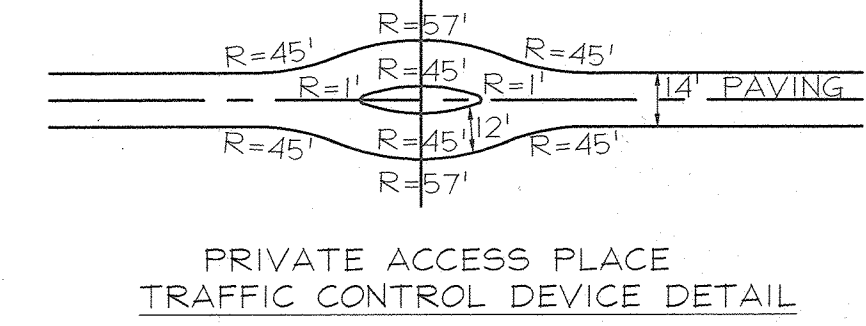
5 SHEET OF 20



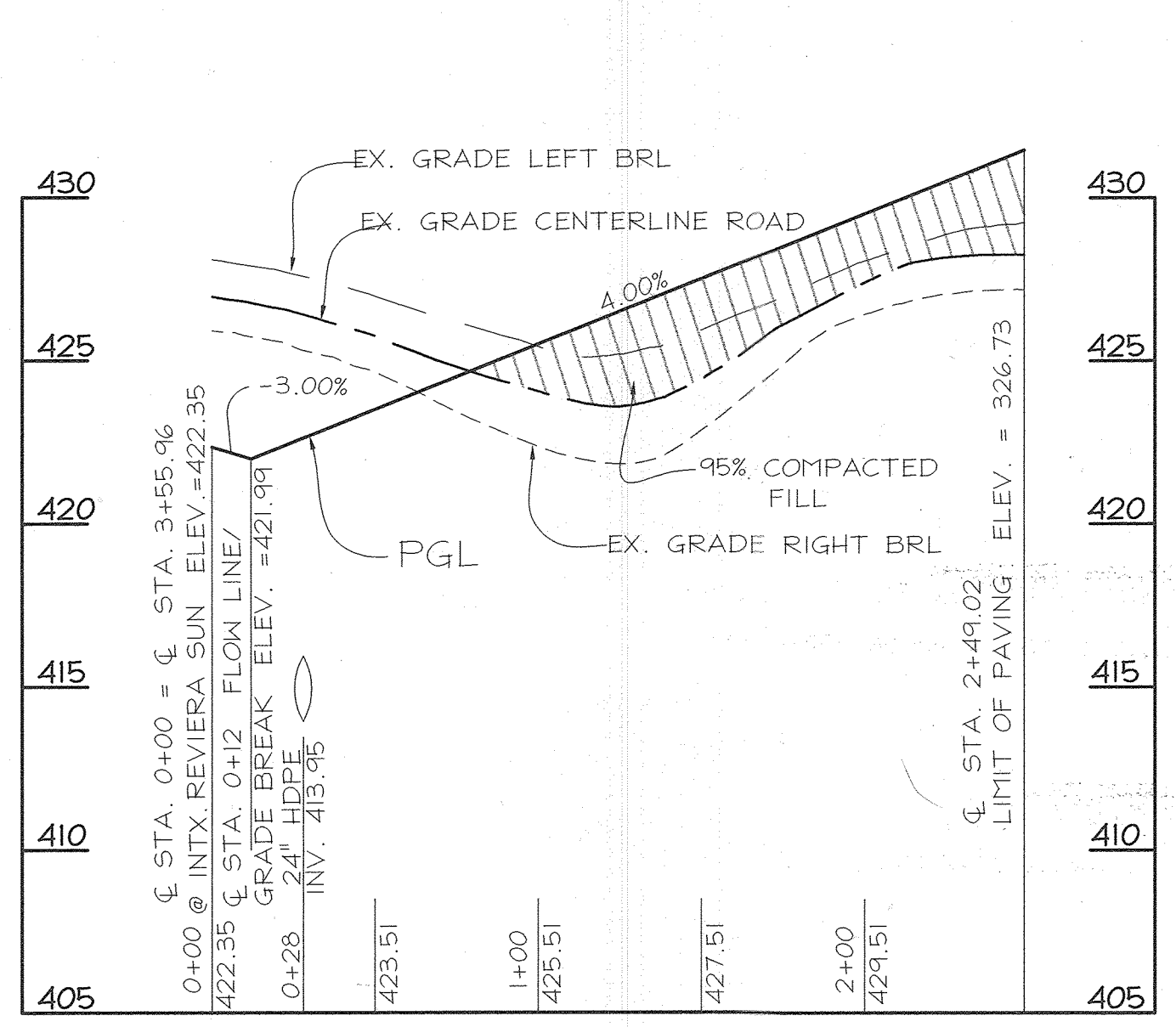
STREET NAME	Q. STATION	Q. OFFSET
REVIERA SUN	3+72.18	19.84' LT.
ALLOWAY CT.	1+50.37	1.73' LT.
GARDENGATE CT.	1+84.42	0.00' LT.

STREET NAME	LINEAR FEET	NO. REQUIRED	NO. PROVIDED
ALLOWAY COURT	444 / 40	11	12
GARDENGATE COURT	618 / 40	16	16

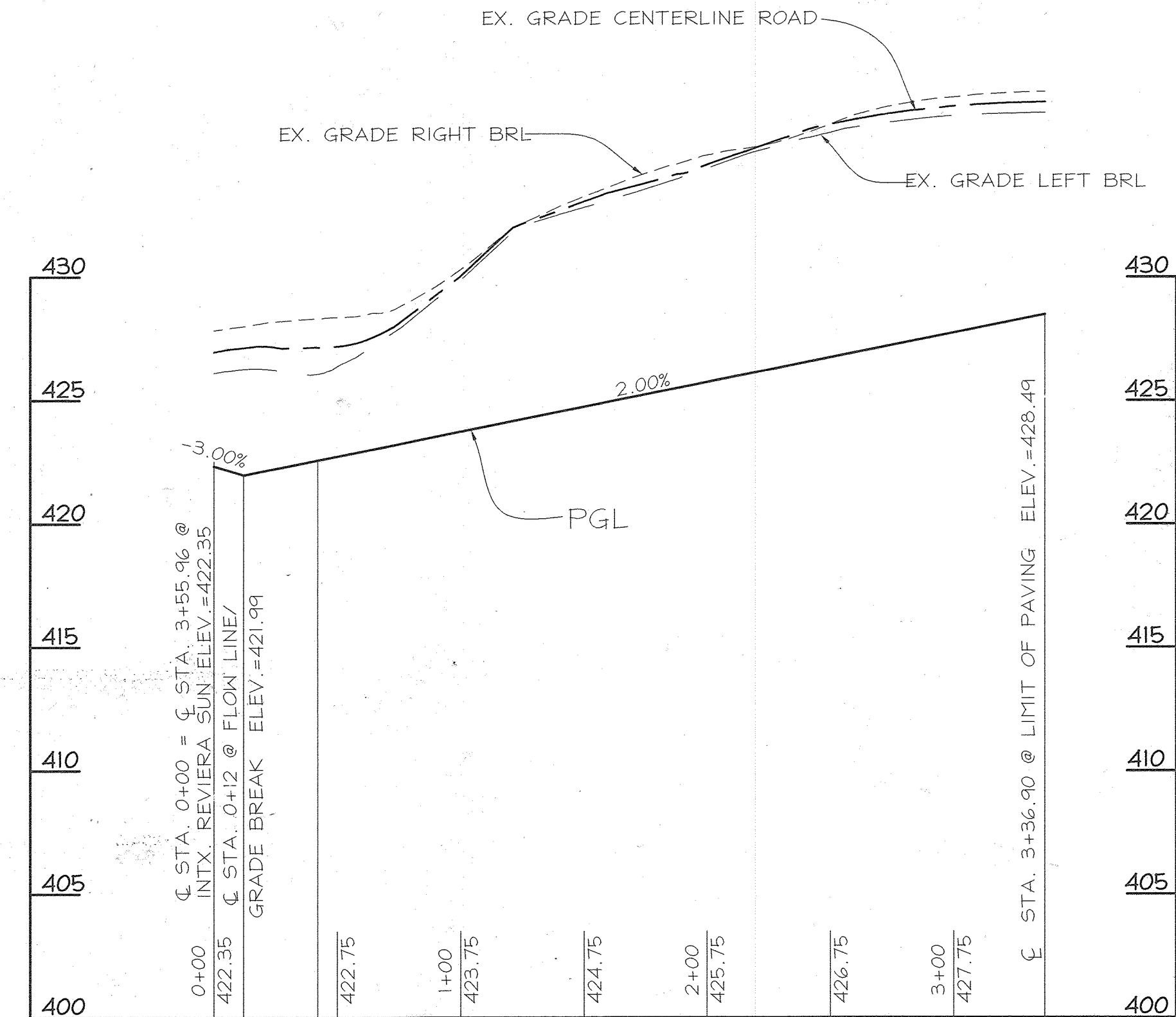
CURVE	RADIUS	LENGTH	DELTA ANGLE	TANGENT	CHORD DIRECTION	CHORD LENGTH
C6	300.00	202.18	38°36'46"	105.10	S34°14'49"W	198.37
C7	300.00	52.00	9°55'54"	26.07	S58°31'09"W	51.94



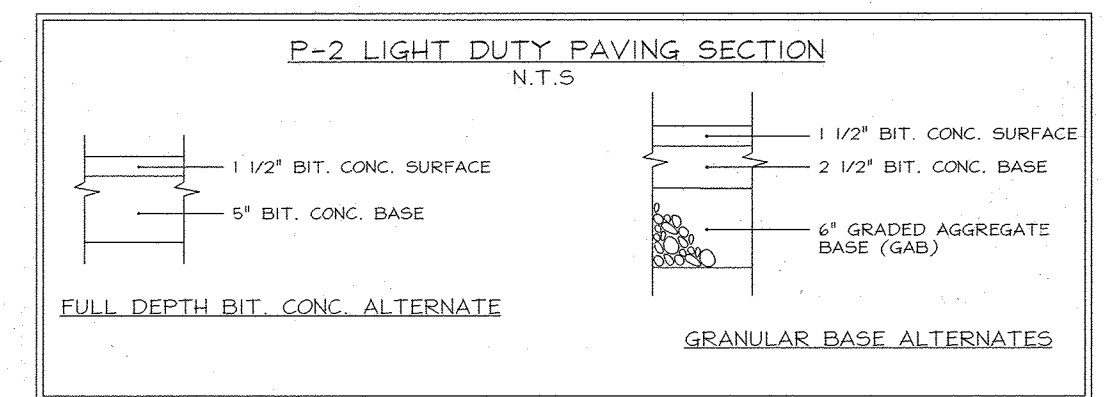
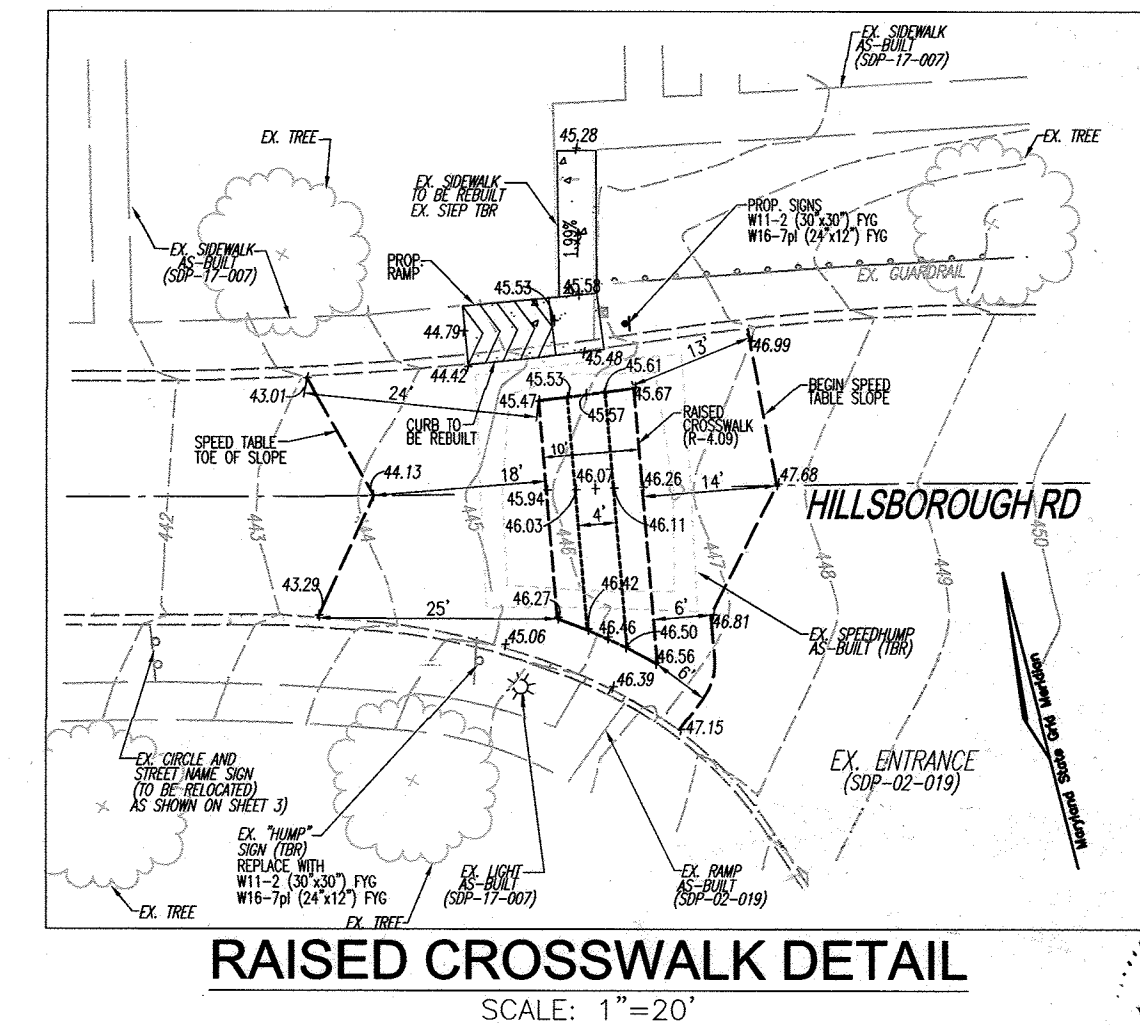
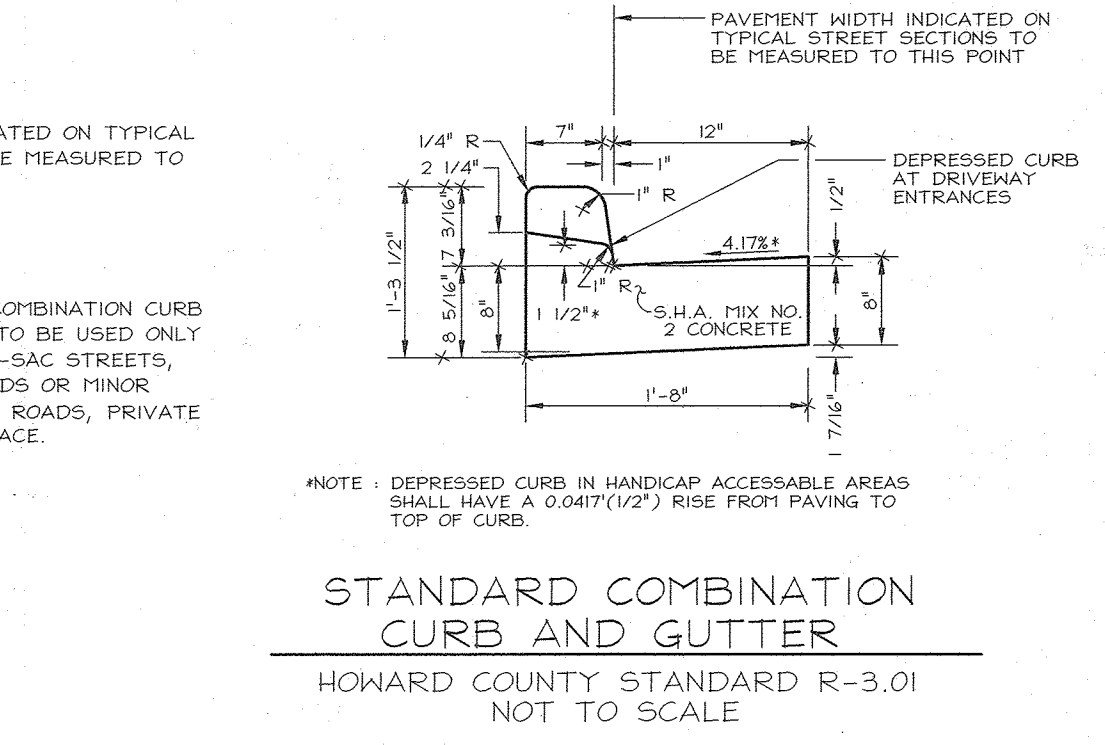
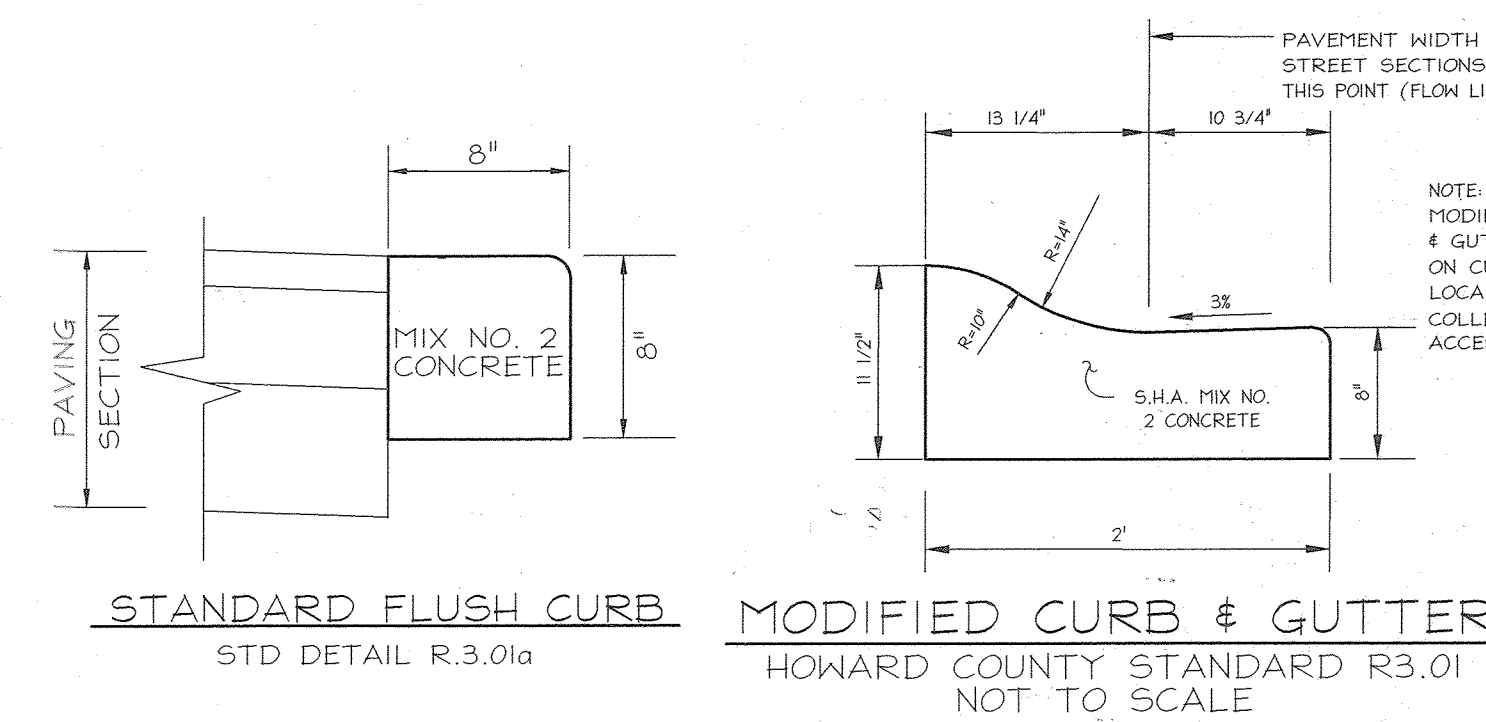
NOTE: FOR STORM DRAIN SIZE, TYPE AND LENGTH SEE GRADING AND SEDIMENT CONTROL PLANS AND STORM DRAIN PROFILE SHEETS



PRIVATE ACCESS PLACE
DESIGN 15 MPH
PROFILE
ALLOWAY COURT
SCALE: 1"=50' HORZ.



PRIVATE ACCESS PLACE
DESIGN 15 MPH
PROFILE
GARDENGATE COURT
SCALE: 1"=50' HORZ.



NO.	REVISION	DATE
2	REVISE THE PLAN TO ADD A RAISED CROSSWALK ON HILLSBOROUGH ROAD	7-30-22
1	REVISED T.C. ELEVATION	9/21/01

FINAL ROAD CONSTRUCTION PLANS
WORTHINGTON FIELDS
PHASE 1 LOTS 1-46
AND NON-BUILDABLE PARCELS 'A' AND 'B'
TAX MAP #25, GRID 20 & # 31 PARCEL 98 & P/O PARCEL 4
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

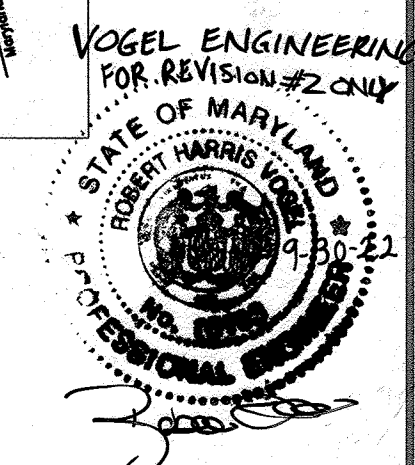
DESIGN BY: GAH
DRAWN BY: GAH
CHECKED BY: RHV
DATE: JULY, 2001
SCALE: AS SHOWN
W.O. NO.: 99-011

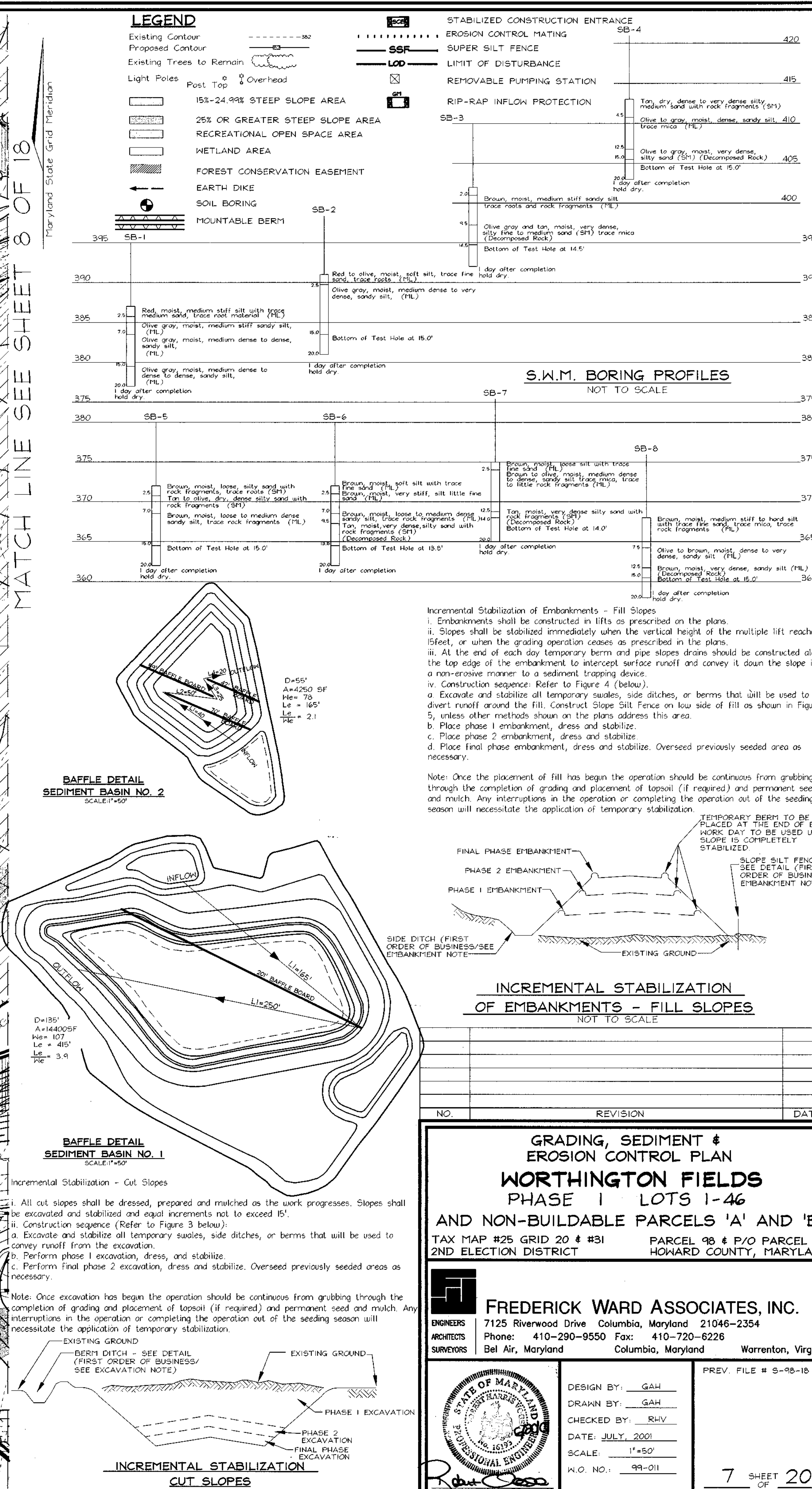
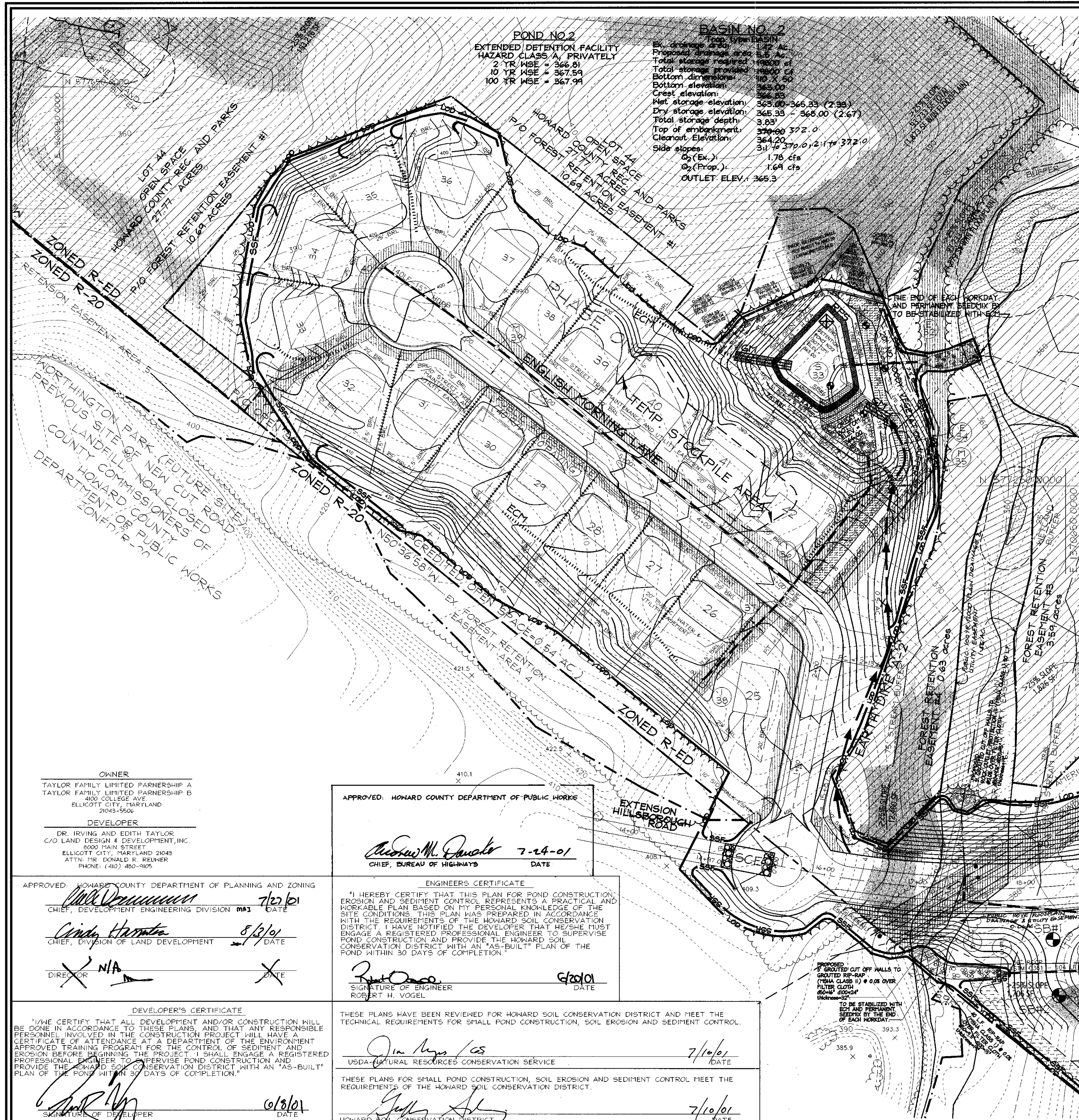
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Condy Hamate 8/2/01
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 7-20-01
CHIEF, BUREAU OF HIGHWAYS

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

OWNER
TAYLOR FAMILY LIMITED PARTNERSHIP A
TAYLOR FAMILY LIMITED PARTNERSHIP B
4100 COLLEGE AVE.
ELLCOTT CITY, MARYLAND
21043-5506





OWNER
 TAYLOR FAMILY LIMITED PARTNERSHIP A
 TAYLOR FAMILY LIMITED PARTNERSHIP B
 4100 COLLEGE AVE
 ELLICOTT CITY, MARYLAND
 21043-9506

DEVELOPER
 DR. IRVING AND EDITH TAYLOR
 C/O LAND DESIGN & DEVELOPMENT, INC.
 8000 MAIN STREET
 ELLICOTT CITY, MARYLAND 21048
 ATTN: MR. DONALD R. REUNER
 PHONE: (410) 480-9105

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Robert H. Vogel 7-14-01
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Cheryl Deane 7/2/01
 CHIEF, DEVELOPMENT ENGINEERING DIVISION (MAJ) DATE

Cinda Harotta 8/2/01
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

N/A 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 6/20/01
 SIGNATURE OF ENGINEER DATE

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."

Irving Taylor 6/8/01
 SIGNATURE OF DEVELOPER DATE

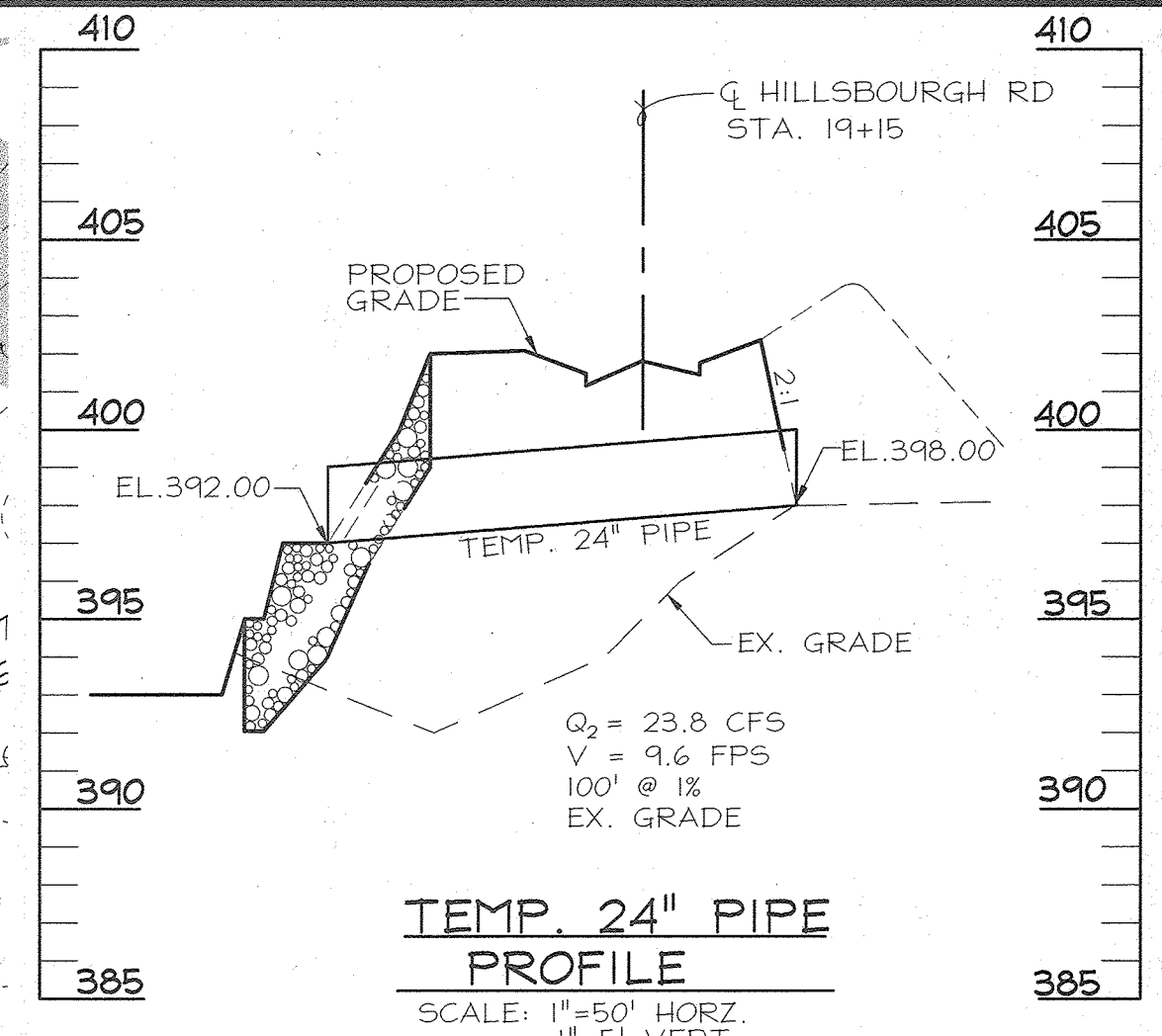
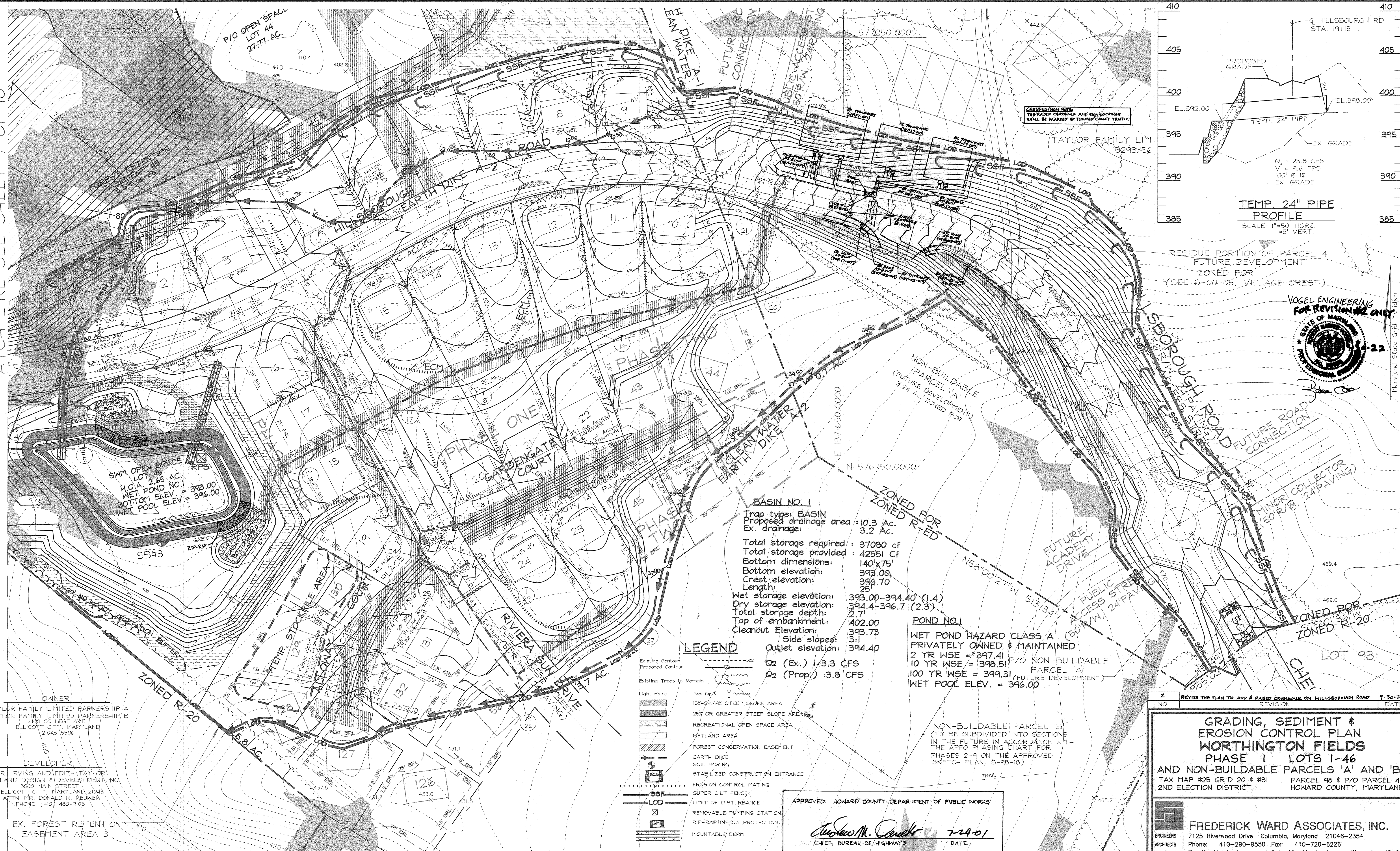
THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

Jim Myers 7/10/01
 USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

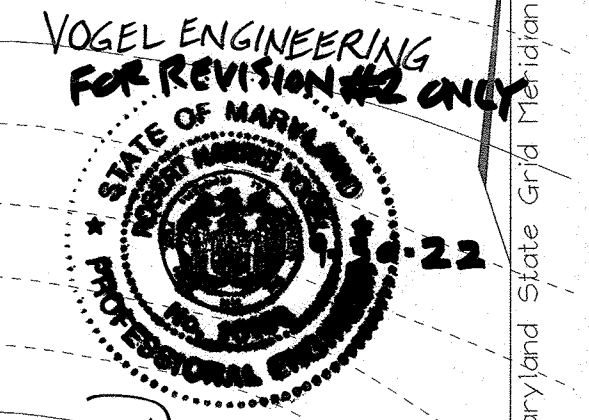
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Jeffrey A. ... 7/10/01
 HOWARD SOIL CONSERVATION DISTRICT DATE

MATCH LINE SEE SHEET 7 OF 18



RESIDUE PORTION OF PARCEL 4 FUTURE DEVELOPMENT ZONED FOR (SEE S-00-05, VILLAGE CREST)



BASIN NO. 1
 Trap type: BASIN
 Proposed drainage area: 10.3 Ac.
 Ex. drainage: 3.2 Ac.
 Total storage required: 37080 cf
 Total storage provided: 42551 Cf
 Bottom dimensions: 140'x75'
 Bottom elevation: 393.00
 Crest elevation: 396.70
 Length: 25'
 Wet storage elevation: 393.00-394.40' (1.4)
 Dry storage elevation: 394.4-396.7' (2.3)
 Total storage depth: 2.7'
 Top of embankment: 402.00
 Cleanout Elevation: 393.73
 Side slopes: 3:1
 Outlet elevation: 394.40

POND NO. 1
 WET POND HAZARD CLASS A
 PRIVATELY OWNED & MAINTAINED
 2 YR WSE = 397.41
 10 YR WSE = 398.51
 100 YR WSE = 399.31 (FUTURE DEVELOPMENT)
 WET POOL ELEV. = 396.00

LEGEND

- Existing Contour
- Proposed Contour
- Existing Trees to Remain
- Light Poles
- 15%-24.9% STEEP SLOPE AREA
- 25% OR GREATER STEEP SLOPE AREA
- RECREATIONAL OPEN SPACE AREA
- WETLAND AREA
- FOREST CONSERVATION EASEMENT
- EARTH DIKE
- SOIL BORING
- STABILIZED CONSTRUCTION ENTRANCE
- EROSION CONTROL MATING
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- REMOVABLE PUMPING STATION
- RIP-RAP INFLOW PROTECTION
- MOUNTABLE BERM

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Stephen M. Conner 7-24-01
 CHIEF, BUREAU OF HIGHWAYS DATE

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."

Robert H. Vogel 6/8/01
 SIGNATURE OF ENGINEER DATE

Robert H. Vogel 6/8/01
 SIGNATURE OF DEVELOPER 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 6/8/01
 SIGNATURE OF ENGINEER DATE

OWNER:
 TAYLOR FAMILY LIMITED PARTNERSHIP 'A'
 TAYLOR FAMILY LIMITED PARTNERSHIP 'B'
 4100 COLLEGE AVE.
 ELLICOTT CITY, MARYLAND 21043-5506

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

EX. FOREST RETENTION EASEMENT AREA 3

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Chad DeWitt 7/2/01
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Candy Hunter 6/8/01
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

NO.	REVISION	DATE
2	REVISE THE PLAN TO ADD A RAISED CROSSWALK ON HILLSBOROUGH ROAD	7-30-22

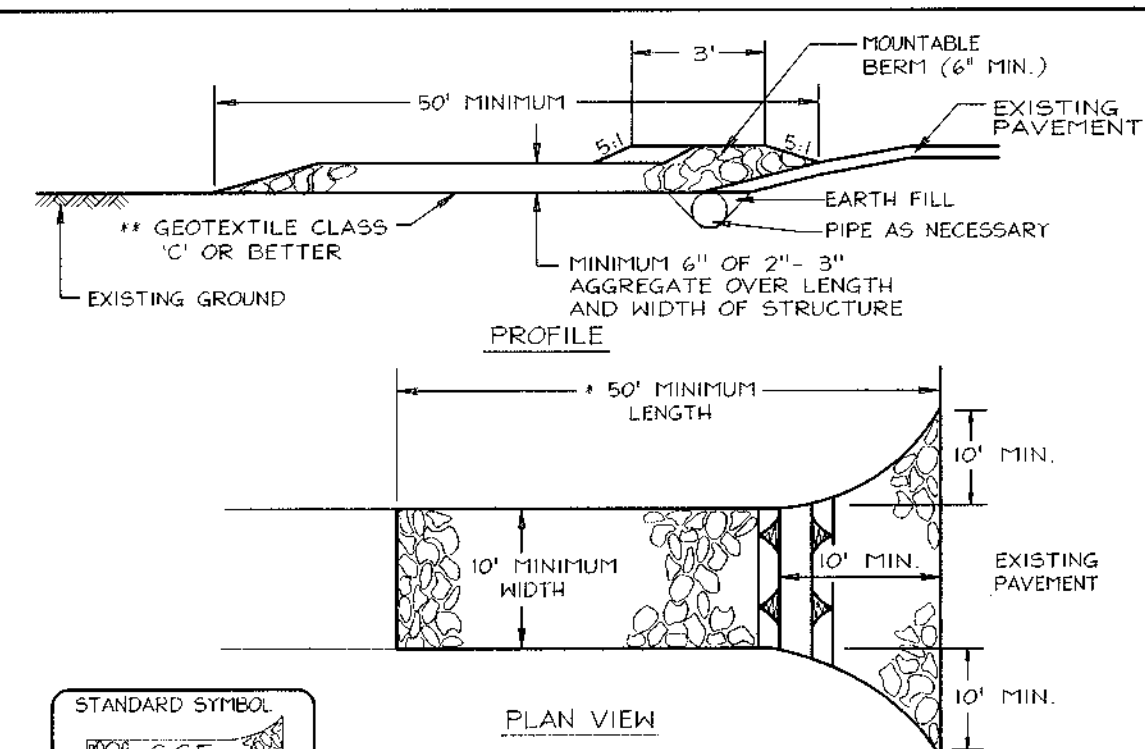
GRADING, SEDIMENT & EROSION CONTROL PLAN
WORTHINGTON FIELDS
PHASE 1 LOTS 1-46
 AND NON-BUILDABLE PARCELS 'A' AND 'B'
 TAX MAP #25 GRID 20 & #31 PARCEL 98 & P/O PARCEL 4
 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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: GAH
 DRAWN BY: GAH
 CHECKED BY: RHW
 DATE: JULY, 2001
 SCALE: 1"=50'
 W.O. NO.: 99-011

PREV. FILE # S-98-18
 8 SHEET OF 20
 F-01-60

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE

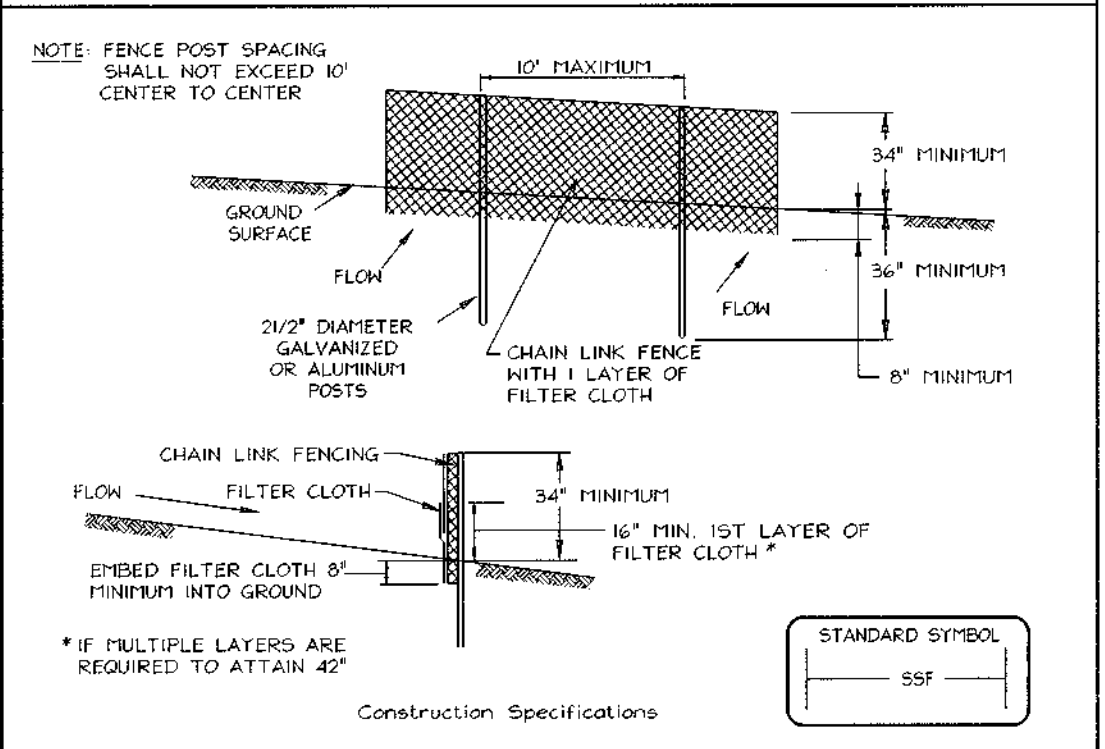


Construction Specifications

- Length - minimum of 50' (30' for a single residence lot).
- Width - 10' minimum, should be flared at the existing road to provide a turning radius.
- Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. The plan approval authority may not require single family residences to use geotextile.
- Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
- Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable curb with 5:1 slopes and a minimum of 6" of slope over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey, a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
- Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE F-17-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 33 - SUPER SILT FENCE



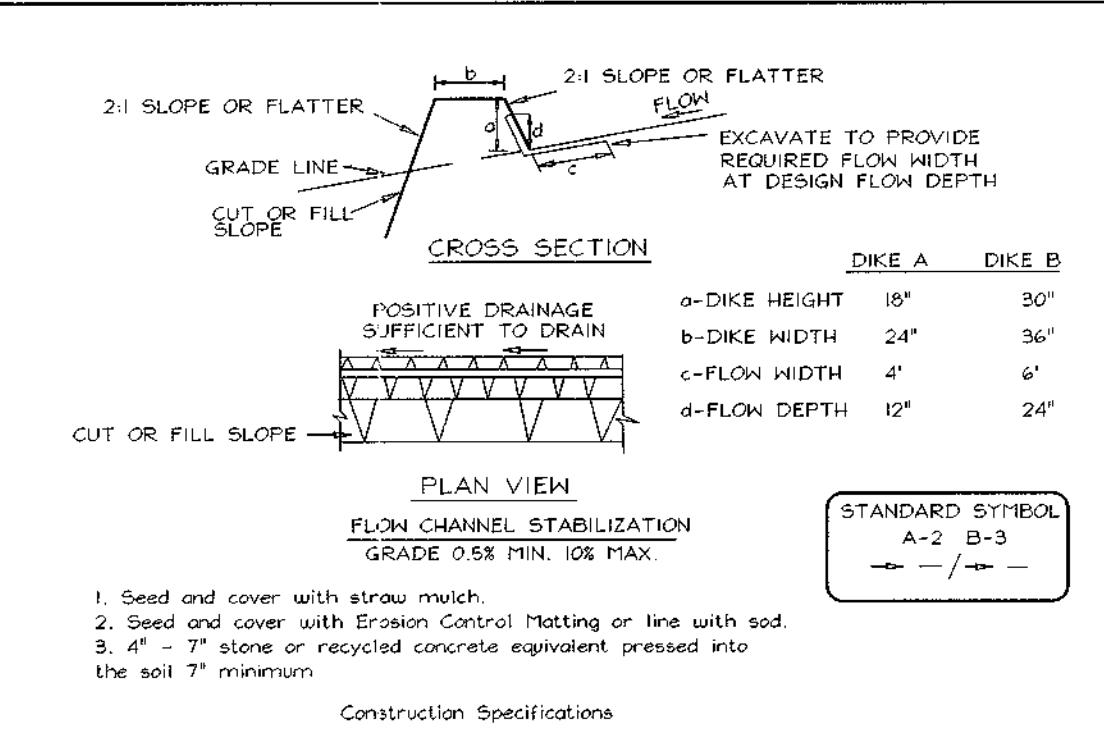
Construction Specifications

- Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.
- Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.
- Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
- Filter cloth shall be embedded a minimum of 8" into the ground.
- When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
- Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

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

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE H-26-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 1 - EARTH DIKE

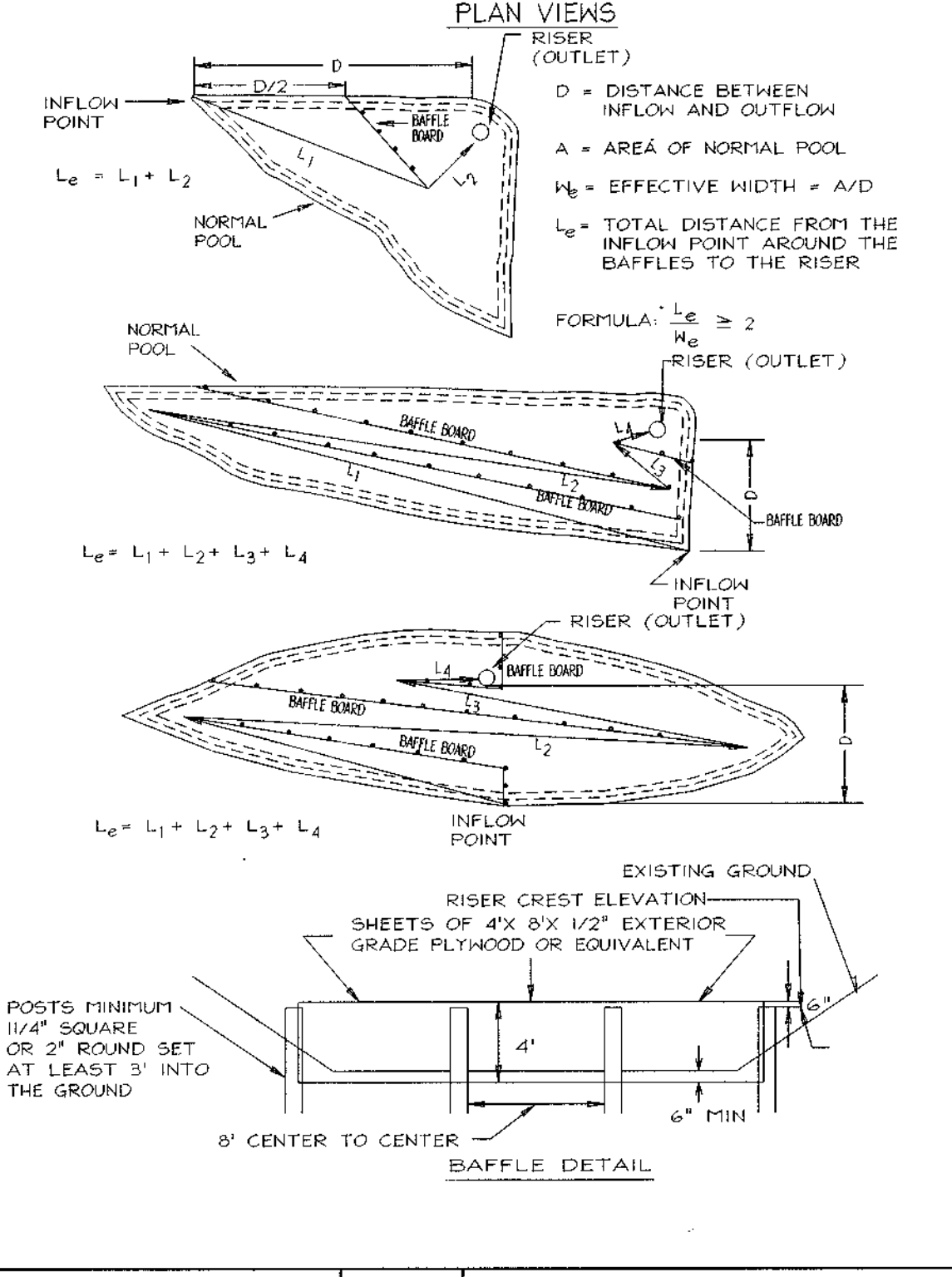


Construction Specifications

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

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE A-11-6 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 18 - SEDIMENT BASIN BAFFLES

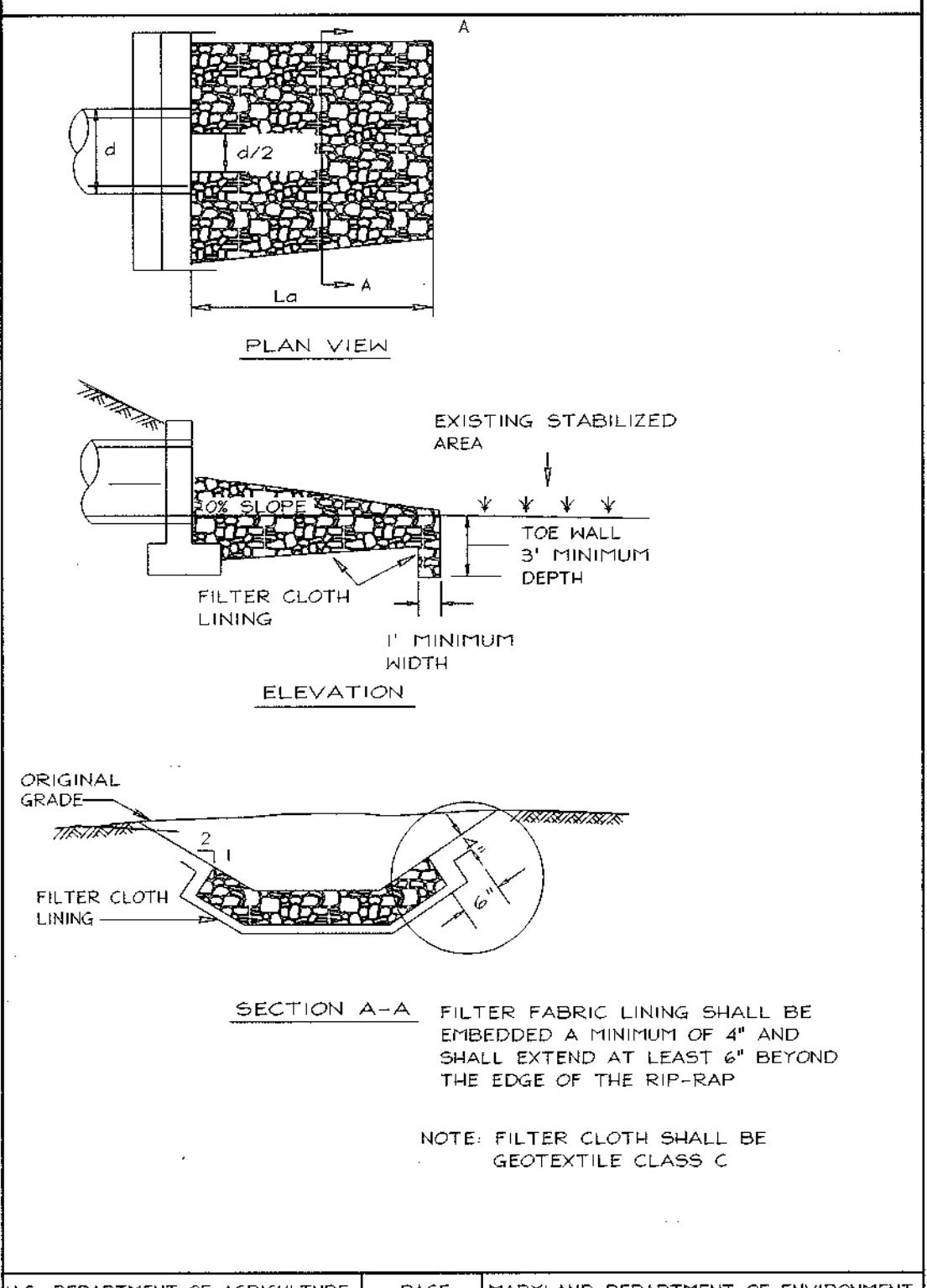


Construction Specifications

- Permanent vegetation - See standards for permanent, vegetative cover, and permanent stabilization with soil. Existing trees or large shrubs may afford valuable protection if left in place.
- Toppingsoil - Covering with less erosive soil materials. See standards for Toppingsoil.
- Stone - Cover surface with crushed stone or coarse gravel.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE C-10-28 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 27 - ROCK OUTLET PROTECTION III

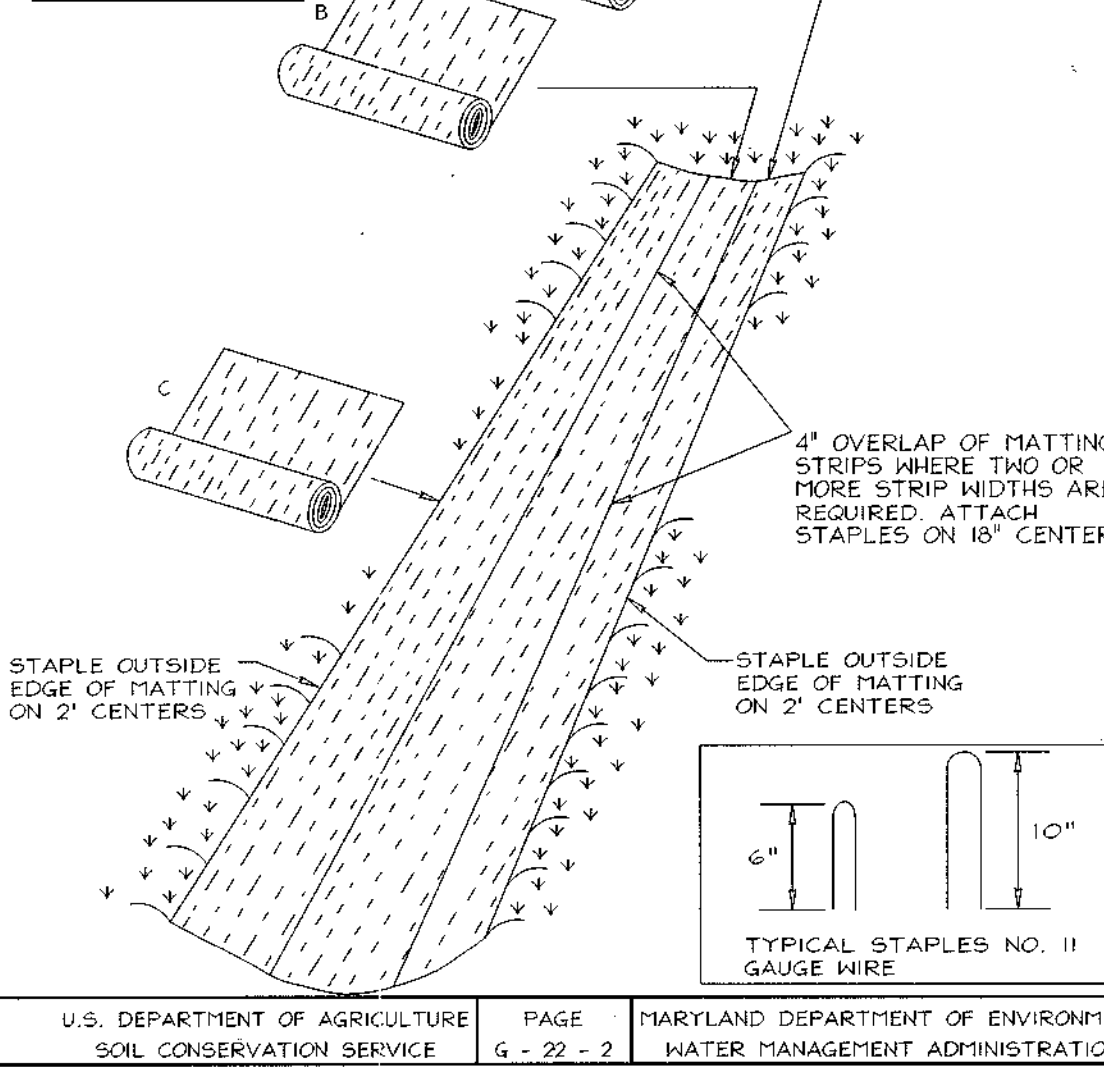


Construction Specifications

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

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE F-18-10 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 30 - EROSION CONTROL MATTING



Construction Specifications

- Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".
- Staple the 4" overlap in the channel center using an 18" spacing between staples.
- Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
- Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.
- Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.
- The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

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

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE G-22-2 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

2.0 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 vegetable growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil structure.

Conditions Where Practice Applies

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

Construction and Material Specifications

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

TEMPORARY SEEDING NOTES

SEEDBED PREPARATION: Loosen upper three inches of soil by raking, discing 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 August 1 thru November 15, seed with 1/2 bushel per acre of annual ryegrass (3.2 lbs./1000 sq.ft.). For the period May 1 thru August 15, seed with 3 lbs. per acre of weeping lovegrass (07 lbs./1000 sq.ft.). For the period November 15 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 seed.

MULCHING: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq.ft.) of eroded straw mulch immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 210 gallons per acre (5 gal/1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 3 feet or higher, use 540 gallons per acre (8 gal/1000 sq.ft.) for anchoring.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

PERMANENT SEEDING NOTES

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, discing or other acceptable means before seeding, if not previously loosened.

SOIL AMENDMENTS: In lieu of soil test recommendations, use one of the following schedules:

- Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs./100 sq.ft.) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq.ft.) before seeding. Seed with one inch of topsoil (0.5 lbs./1000 sq.ft.) at the time of seeding, apply 400 lbs. per acre 30-0-0 ureaform fertilizer (8 lbs./1000 sq.ft.).
- 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. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre of 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 15 thru February 28, protect site by applying 2 tons per acre well anchored straw mulch and seed as soon as possible in the spring. During the period March 1 thru August 15, 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 eroded straw mulch immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 210 gallons per acre (5 gal/1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 3 feet or higher, use 540 gallons per acre (8 gal/1000 sq.ft.) for anchoring.

MAINTENANCE: Inspect all seeded areas and make needed repairs, replacements and seedings.

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 (318-1855).
- 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 dikes, 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	50.46 Acres
Area Disturbed	24.22 Acres
Area to be roofed or paved	5.72 Acres
Area to be vegetatively stabilized	18.60 Acres
Total Cut	120,000 CY
Total Fill	122,000 CY

 Offsite waste/borrow area location:
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment controls must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
- 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.

3.0 DUST CONTROL

Definition
Controlling dust blowing and movement on construction sites and roads.

Purpose
To prevent blowing and movement of dust from exposed soil surfaces, reduce on and off-site damage health hazards, and improve traffic safety.

Conditions Where Practice Applies
This practice is applicable to areas subject to dust blowing and movement where on and off-site damage is likely without treatment.

Temporary Methods

- Mulches - See standards for vegetative stabilization with mulches only. Mulch should be crimped or tacked to prevent blowing.
- Vegetative Cover - See standards for temporary vegetative cover.
- Tillage - To roughen surface and bring clods to the surface. This is an emergency measure which should be used before soil blowing starts. Begin plowing on windward side of site. Chisel-type plows spaced about 12' apart, spring-tooth harrows, and similar plows are examples of equipment which may produce the desired effect.
- Irrigation - This is generally done as an emergency treatment. Site is sprinkled with water until the surface is moist. Repeat as needed. At no time should the site be irrigated to the point that runoff begins to flow.
- Barriers - Solid board fence, silt fences, snow fences, burlap fences, straw bales, and similar material can be used to control or curtail dust and soil blowing. Barriers of about 10 feet in height are effective in controlling soil blowing.
- Calcium Chloride - Apply at rates that will keep surface moist. May need re-treatment.

Permanent Methods

- Permanent vegetation - See standards for permanent, vegetative cover, and permanent stabilization with soil. Existing trees or large shrubs may afford valuable protection if left in place.
- Toppingsoil - Covering with less erosive soil materials. See standards for Toppingsoil.
- Stone - Cover surface with crushed stone or coarse gravel.

References

- Agricultural Handbook 346. Wind Erosion Forces in the United States and Their Use in Predicting Soil Loss.
- Agricultural Information Bulletin 354. How to Control Wind Erosion. USDA-ARS.

SEQUENCE OF CONSTRUCTION	DURATION
1. Obtain grading permit.	
2. Notify Howard County Bureau of Inspections and Permits (318-1850) at least 24 hours before starting any work.	
3. Construct Stabilized Construction Entrance and install tree protection devices.	
4. Install super silt fence.	
5. Construct stormwater management facilities (sediment basins) and construct sediment control deaerating devices. Install earth dikes.	3 DAYS
6. Stabilize all temporary swales, side ditches, or berms.	
7. With Inspector's approval clear and grub site to LOD.	2 WEEK
8. Begin construction of water and sewer.	1 WEEK
9. Relocate fiber optic cable prior to mass grading. Drain systems as site is graded and outfall into basins.	2 WEEKS
10. With Inspector's approval remove earth dikes along rear of lots 1-4 as road is graded, and install super silt fence.	2 WEEKS
11. With road installation of curb and gutters.	1 DAY
12. With curb and gutter in place pave road and install sidewalks and street trees.	2 WEEKS
13. As stormwater management pond is stabilized, install pond landscaping as shown in Schedule 'A' and perimeter stabilization. Landscaping on mountain in Schedule 'A'. See sheet 15 for Schedule tables.	1 WEEK
14. During grading and after each rainfall, the contractor shall inspect and provide the necessary maintenance on the sediment and erosion control measures shown herein.	
15. Following initial soil disturbance or redistribution permanent or temporary stabilization shall be completed within 7 calendar days for all perimeter sediment control structures, dikes, perimeter dikes, and all slopes greater than 3:1, and 14 calendar days for all other disturbed areas.	

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Thomas M. Concko 7-24-01
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Alfred Dammann 7/27/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Cindy Brant 8/3/01
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

N/A
DISPATCHER DATE

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 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 8/10/01
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 FURTHER UNDERSTANDING OF THE ENVIRONMENT AND THE 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."

John Myers 8/10/01
SIGNATURE OF DEVELOPER DATE

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

John Myers 7/10/01
USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

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

John Myers 7/10/01
HOWARD SOIL CONSERVATION DISTRICT DATE

SEDIMENT AND EROSION CONTROL DETAILS

WORTHINGTON FIELDS

PHASE 1 LOTS 1-46 AND NON-BUILDABLE PARCELS 'A' AND 'B' COVER SHEET

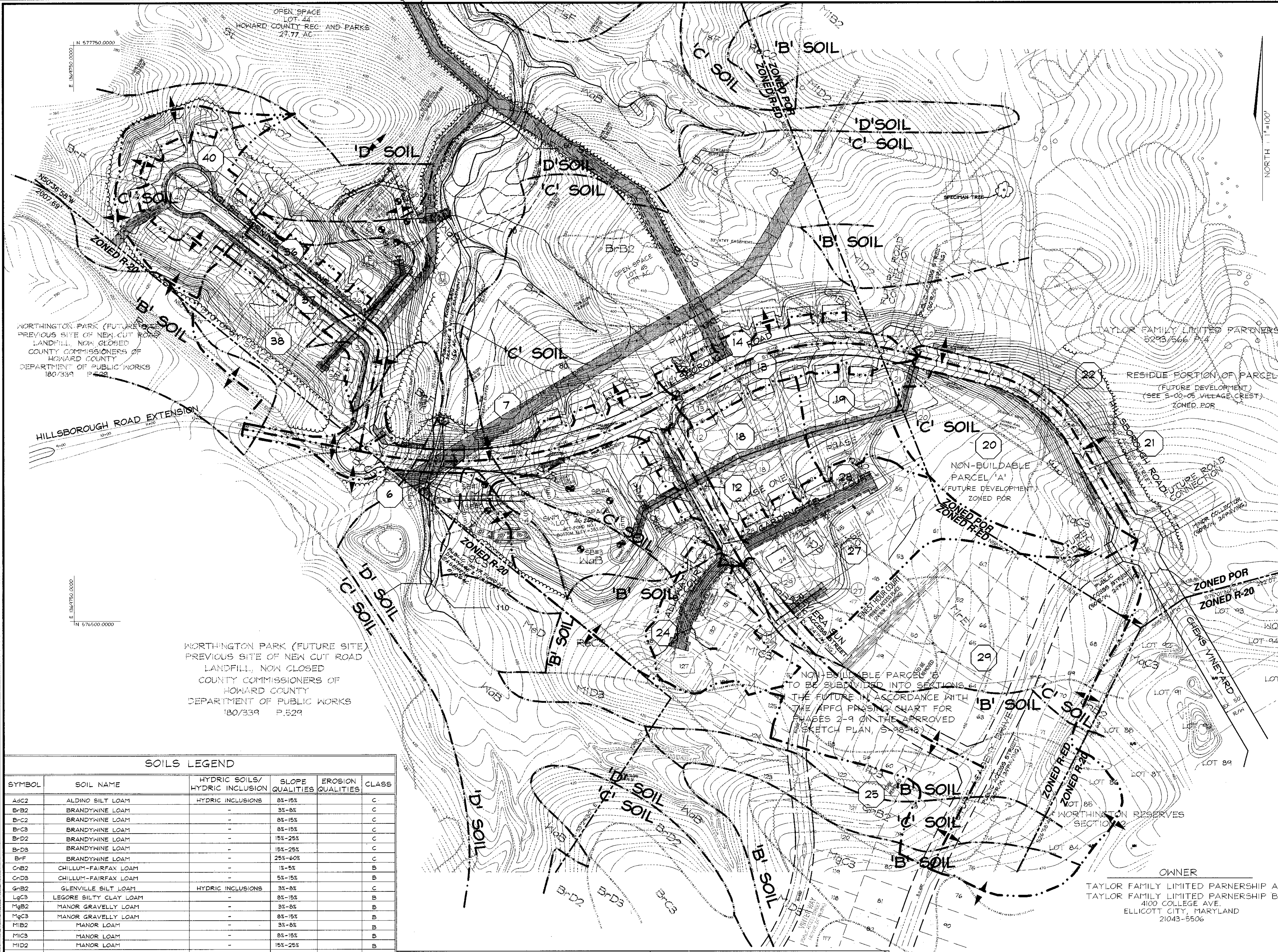
TAX MAP #25, GRID 20 # 31 PARCEL 98 # P/O PARCEL 4
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FREDERICK WARD ASSOCIATES, INC.
7125 Riverdrive 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: JULY 2001
SCALE: As Shown
I.P.O. NO.: 99-011

9 SHEET OF 20

F-01-60



STORM DRAIN DATA				
INLET NO.	AREA	C' VALUE	ZONED	% IMPERV
6	0.77 AC.	0.46	R-ED	40%
7	0.59 AC.	0.46	R-ED	40%
11	0.38 AC.	0.45	R-ED	40%
12	0.22 AC.	0.45	R-ED	40%
13	0.72 AC.	0.45	R-ED	40%
14	0.64 AC.	0.45	R-ED	40%
18	1.29 AC.	0.28	R-ED	14%
19	1.05 AC.	0.24	R-ED	8%
20	2.50 AC.	0.76	POR	85%
21	0.36 AC.	0.60	POR	56%
22	0.35 AC.	0.60	POR	56%
24	1.39 AC.	0.44	R-ED	40%
25	3.30 AC.	0.44	R-ED	40%
27	1.74 AC.	0.35	R-ED	24%
28	1.00 AC.	0.45	R-ED	40%
29	7.48 AC.	0.45	R-ED	40%
36	0.56 AC.	0.46	R-ED	40%
37	0.81 AC.	0.46	R-ED	40%
38	1.86 AC.	0.22	R-ED	7%
40	1.13 AC.	0.45	R-ED	40%

NORTHINGTON PARK (FUTURE SITE)
PREVIOUS SITE OF NEW CUT ROAD
LANDFILL, NOW CLOSED
COUNTY COMMISSIONERS OF
HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS
180/339 P.528

NORTHINGTON PARK (FUTURE SITE)
PREVIOUS SITE OF NEW CUT ROAD
LANDFILL, NOW CLOSED
COUNTY COMMISSIONERS OF
HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS
180/339 P.529

SOILS LEGEND

SYMBOL	SOIL NAME	HYDRIC SOILS/ HYDRIC INCLUSION	SLOPE QUALITIES	EROSION QUALITIES	CLASS
AdC2	ALDINO SILT LOAM	-	8%-15%	-	C
BrB2	BRANDYWINE LOAM	-	3%-8%	-	C
BrC2	BRANDYWINE LOAM	-	8%-15%	-	C
BrD2	BRANDYWINE LOAM	-	15%-25%	-	C
BrE2	BRANDYWINE LOAM	-	25%-60%	-	C
CnB2	CHILLUM-FAIRFAX LOAM	-	1%-5%	-	B
CnD2	CHILLUM-FAIRFAX LOAM	-	5%-15%	-	B
GnB2	GLENVILLE SILT LOAM	HYDRIC INCLUSIONS	3%-8%	-	C
LgC2	LEGORE SILTY CLAY LOAM	-	8%-15%	-	B
MgB2	MANOR GRAVELLY LOAM	-	3%-8%	-	B
MgC2	MANOR GRAVELLY LOAM	-	8%-15%	-	B
MiB2	MANOR LOAM	-	3%-8%	-	B
MiC2	MANOR LOAM	-	8%-15%	-	B
MiD2	MANOR LOAM	-	15%-25%	-	B
MiE2	MANOR LOAM	-	25%-60%	-	B
MpB2	MONTALTO SILT LOAM	-	3%-8%	-	C
MpC2	MONTALTO SILTY CLAY LOAM	-	8%-15%	-	C
MpE2	MONTALTO AND RELAY SOILS	-	15%-45%	-	B
MpD2	MONTALTO AND RELAY VERY STONY SILT LOAMS	-	3%-25%	-	C
MpF2	MONTALTO AND RELAY VERY STONY SILT LOAMS	-	25%-60%	-	C
ReC2	RELAY SILT LOAM	-	3%-15%	-	B
St	STONY LAND	-	-	-	B
WdB	WATCHUNG SANDY LOAM	HYDRIC SOIL	3%-8%	-	D

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Cinda Hanover 8/3/01
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Cavale 7/28/01
CHIEF, BUREAU OF HIGHWAYS DATE

OWNER
TAYLOR FAMILY LIMITED PARTNERSHIP A
TAYLOR FAMILY LIMITED PARTNERSHIP B
4100 COLLEGE AVE.
ELLCOTT CITY, MARYLAND
21043-5506

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

NO. _____ REVISION _____ DATE _____

**DRAINAGE AREA MAP
FOR STORM DRAINAGE
WORTHINGTON FIELDS
PHASE I LOTS 1-46
AND NON-BUILDABLE PARCELS 'A' AND 'B'**

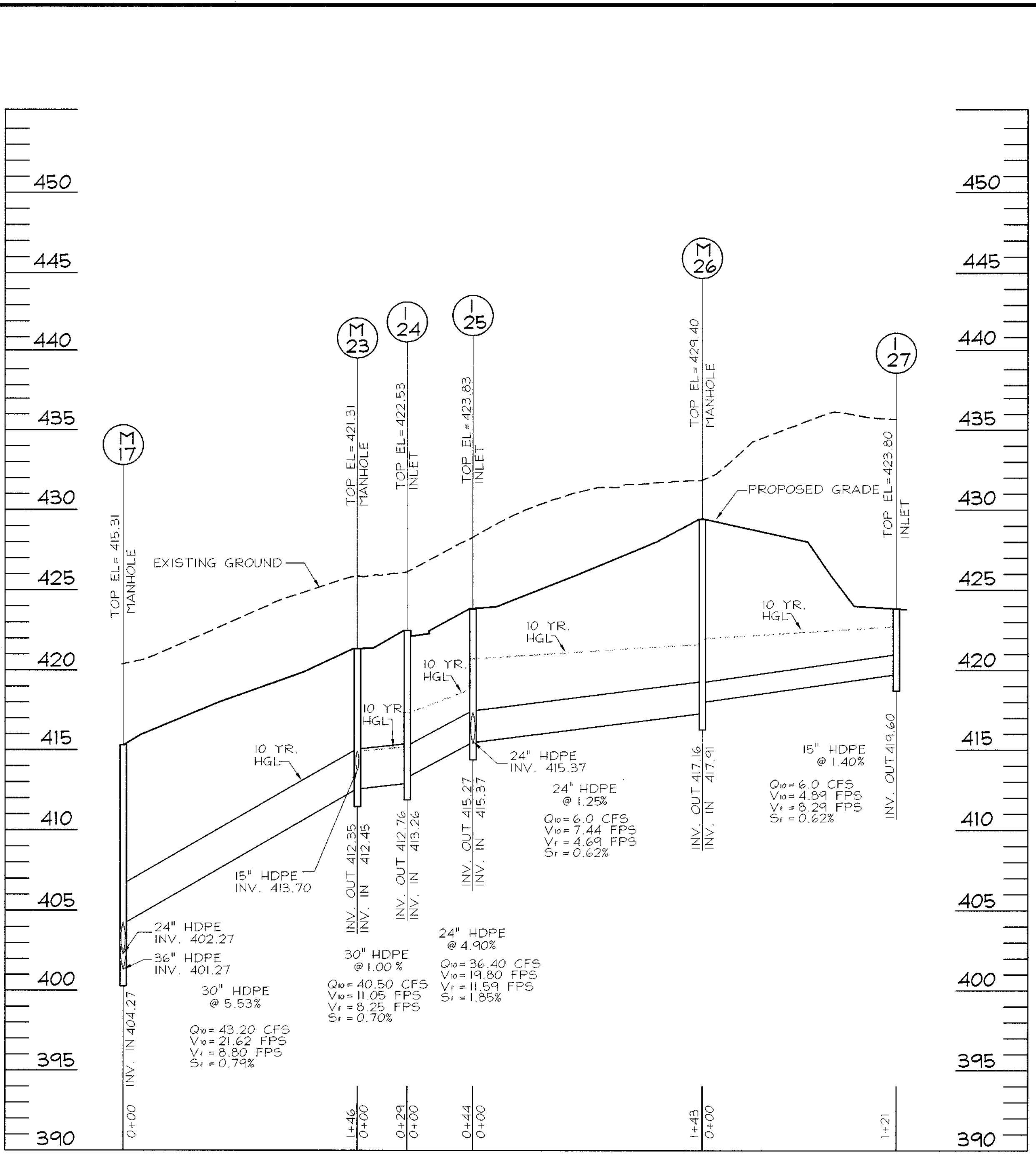
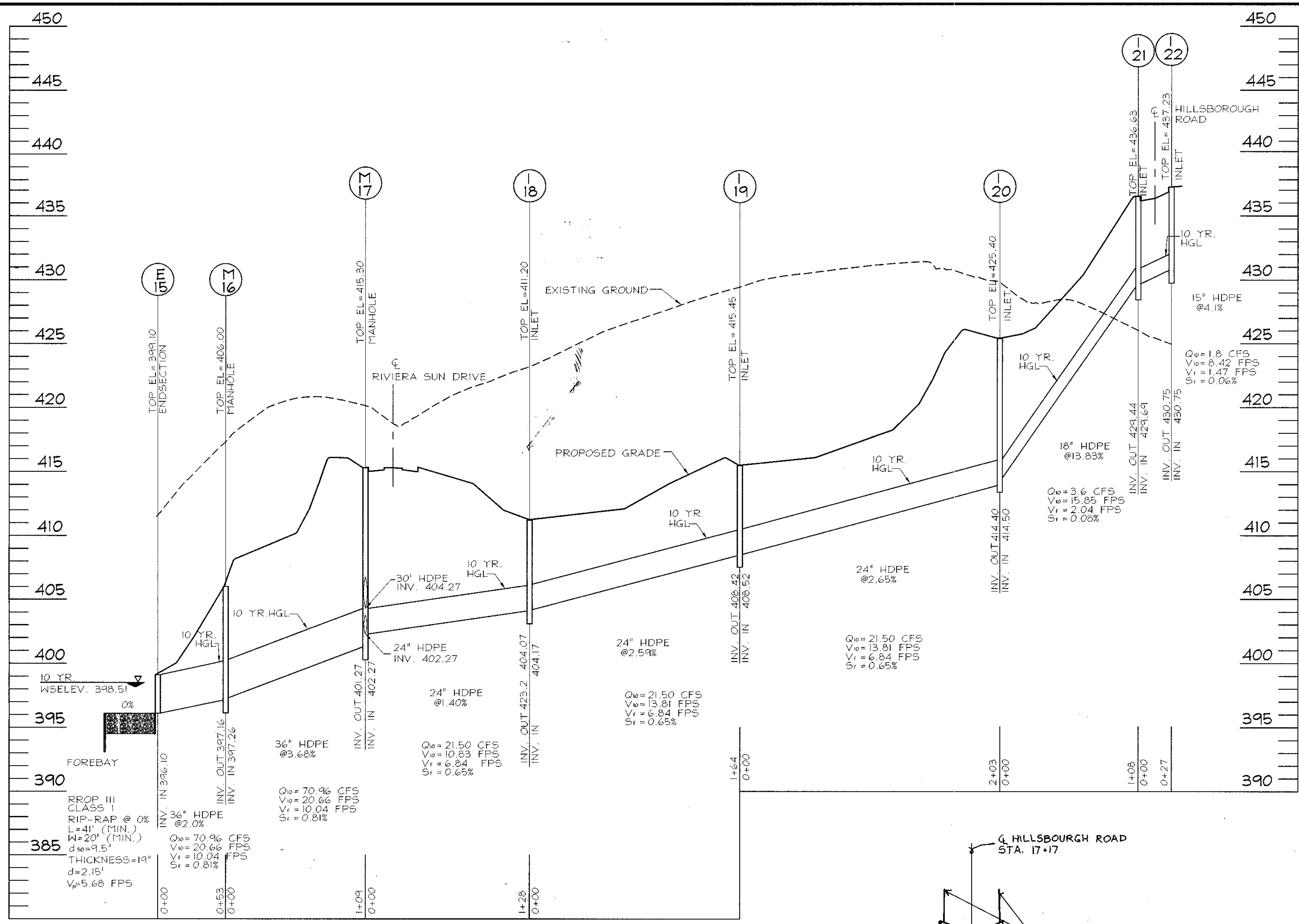
TAX MAP #25 GRID 20 & #31 PARCEL 98 & P/O PARCEL 4
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FREDERICK WARD ASSOCIATES, INC.
ENGINEERS 7125 Riverwood Drive Columbia, Maryland 21046-2354
ARCHITECTS Phone: 410-290-9550 Fax: 410-720-8228
SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: GAH
DRAWN BY: GAH
CHECKED BY: RHV
DATE: JULY, 2001
SCALE: 1"=100'
W.O. NO.: 99-011

10 SHEET OF 20

PREV. FILE # 5-98-18

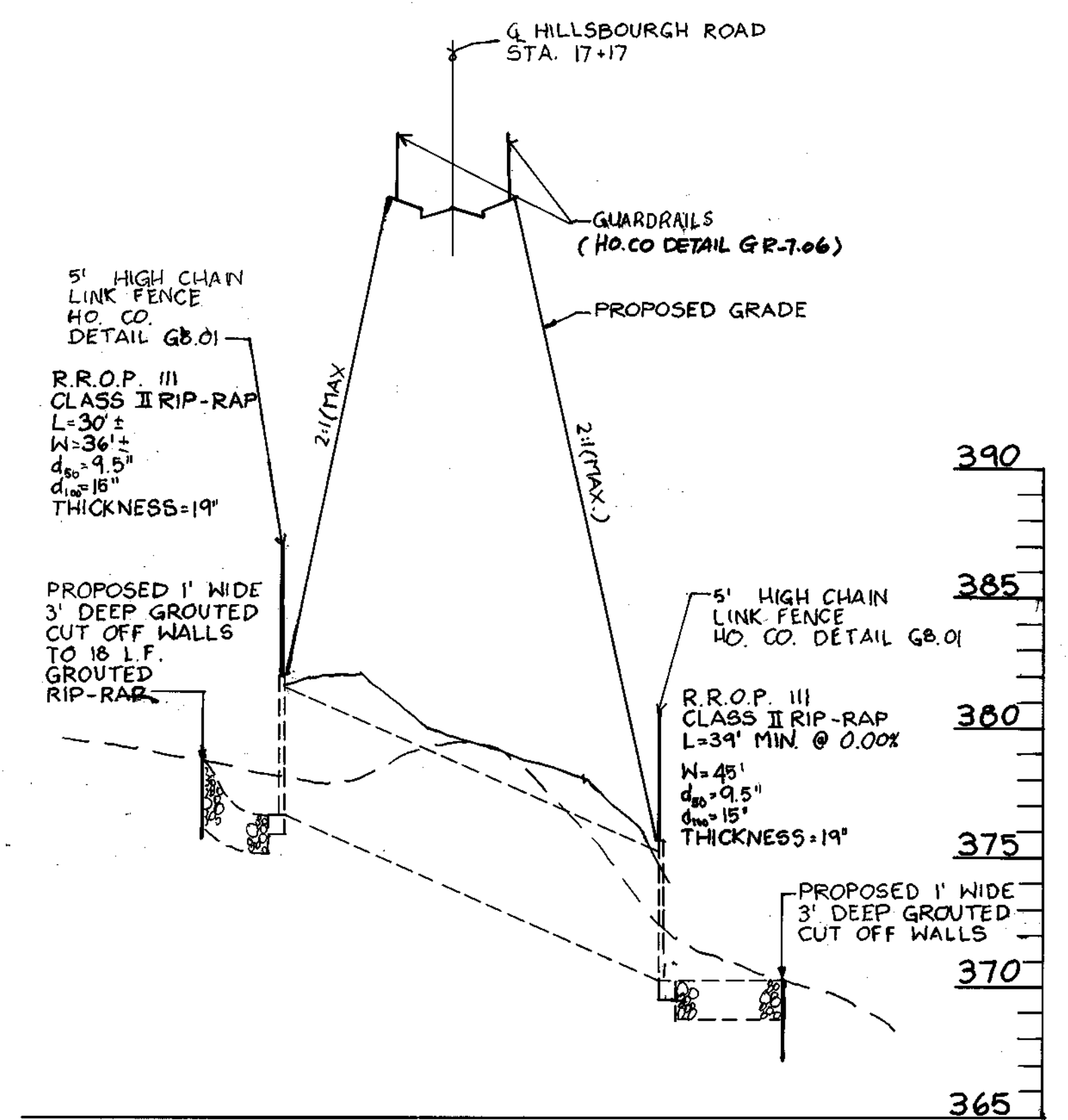


STORM DRAIN PROFILE
SCALE: 1" = 50' HORIZ.
1" = 5' VERT.

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

STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	TOP ELEV.	INV. IN	INV. OUT	REMARKS
E-3	36" CONC. END SECTION	N 576761.5 E 1370576.80	177.08TS	-	398.00	SD-5.51
S-4	CONTROL STRUCTURE	N 576759.6 E 1370630.7	400.20	-	-	SEE DETAIL
E-5	18" HDPE END SECTION	N 5768047.5 E 1370782.6	397.10TP	-	18396.60	SEE DETAIL
I-6	A-5 INLET	CL STA. 17+40, 12' RT.	400.31TS	18396.42	18397.06	SD-4.40
I-7	A-5 INLET	CL STA. 17+40, 12' LT.	400.31TS	18397.06	18397.06	SD-4.40
I-11	A-5 INLET	CL STA. 0+53, 12' RT.	410.47TS	18403.56	18403.56	SD-4.40
I-12	A-5 INLET	CL STA. 0+53, 12' LT.	410.47TS	18403.56	18403.56	SD-4.40
I-13	A-5 INLET	CL STA. 22+79, 12' RT.	410.61TS	18404.80	18404.80	SD-4.40
I-14	A-5 INLET	CL STA. 22+79, 12' LT.	410.61TS	18404.80	18404.80	SD-4.40
E-15	36" HDPE END SECTION	N 5766893.5 E 1370964.9	399.10TP	-	18410.1P	SEE DETAIL
M-16	STANDARD 5' MANHOLE	N 576739.9 E 1370980.6	406.0TR	18397.26	18397.16	G-5.13
M-17	STANDARD 5' MANHOLE	CL STA. 1+81, 20.6' RT.	415.3TR	18403.27	18403.27	G-5.13
I-18	TYPE D INLET	N 576953.5 E 1371894.2	411.20T	24204.17	24204.07	SD-4.34
I-19	TYPE D INLET	N 576909.3 E 1371343.9	415.45T	24208.52	24208.42	SD-4.34
I-20	TYPE D INLET	N 576956.5 E 1371540.8	425.40T	18344.52	24244.42	SD-4.34
I-21	A-5 INLET	CL STA. 28+17, 12' RT.	436.63TS	18429.69	18429.44	SD-4.40
I-22	A-5 INLET	CL STA. 28+24, 12' LT.	437.23TS	18430.75	18430.75	SD-4.40
M-23	STANDARD 4' MANHOLE	CL STA. 3+27, 16' RT.	421.3TR	18398.29	30342.35	G-5.12
I-24	A-5 INLET	CL STA. 0+31, 7' RT.	423.8TS	24243.25	30342.76	SD-4.40
I-25	A-5 INLET	CL STA. 3+87, 12' RT.	423.8TS	24249.57	24249.27	SD-4.40
M-26	STANDARD 4' MANHOLE	CL STA. 5+28, 16' RT.	429.4TR	18407.91	24247.16	G-5.12
I-27	TYPE D INLET	N 576953.4 E 1371263.4	423.80T	-	18419.60	SD-4.34
I-28	A-5 INLET	CL STA. 0+42, 7' LT.	422.90TS	-	18417.35	SD-4.40
I-29	A-10 INLET	CL STA. 3+87, 12' LT.	422.83TS	-	24249.42	SD-4.41
E-32	30" CONC. END SECTION	N 577373.7 E 1370500.6	363.56TP	-	30342.06	SD-5.51
S-33	CONTROL STRUCTURE	N 577370.6 E 1370433.6	363.00TS	-	30342.00	SEE DETAIL
E-34	18" HDPE END SECTION	N 577281.7 E 1370451.9	369.56TP	-	18366.64	SEE DETAIL
M-35	STANDARD 4' MANHOLE	N 577249.7 E 1370456.5	380.5TR	18373.30	18373.10	G-5.12
I-36	A-5 INLET	CL STA. 2+91.7, 12' RT.	391.24TS	18385.36	18385.28	SD-4.40
I-37	A-5 INLET	CL STA. 2+91.7, 12' LT.	391.24TS	18385.67	18385.42	SD-4.40
I-38	TYPE D INLET	N 577054.1 E 1370287.0	392.32T	-	18387.07	SD-4.34
M-39	STANDARD 4' MANHOLE	CL STA. 6+71, 14.6' RT.	403.3TR	18398.27	18398.02	G-5.12
I-40	A-5 INLET	LP STA. 1+54	399.46TS	-	18392.95	SD-4.40

PIPE SCHEDULE		
PIPE SIZE	TYPE	TOTAL LENGTH
15"	HDPE	511 LF
18"	HDPE	965 LF
24"	HDPE	804 LF
30"	HDPE	175 LF
36"	HDPE	162 LF
30"	ASTM C-361	67 LF
36"	ASTM C-361	104 LF



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

OWNER
TAYLOR FAMILY LIMITED PARTNERSHIP A
TAYLOR FAMILY LIMITED PARTNERSHIP B
4100 COLLEGE AVE.
ELLCOTT CITY, MARYLAND
21043-5506

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Andrew M. Quake 7/24/01
CHIEF, BUREAU OF HIGHWAYS
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Cindy K. Hanks 8/3/01
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Chad W. ... 7/27/01
CHIEF, DIVISION OF ENGINEERING
DATE

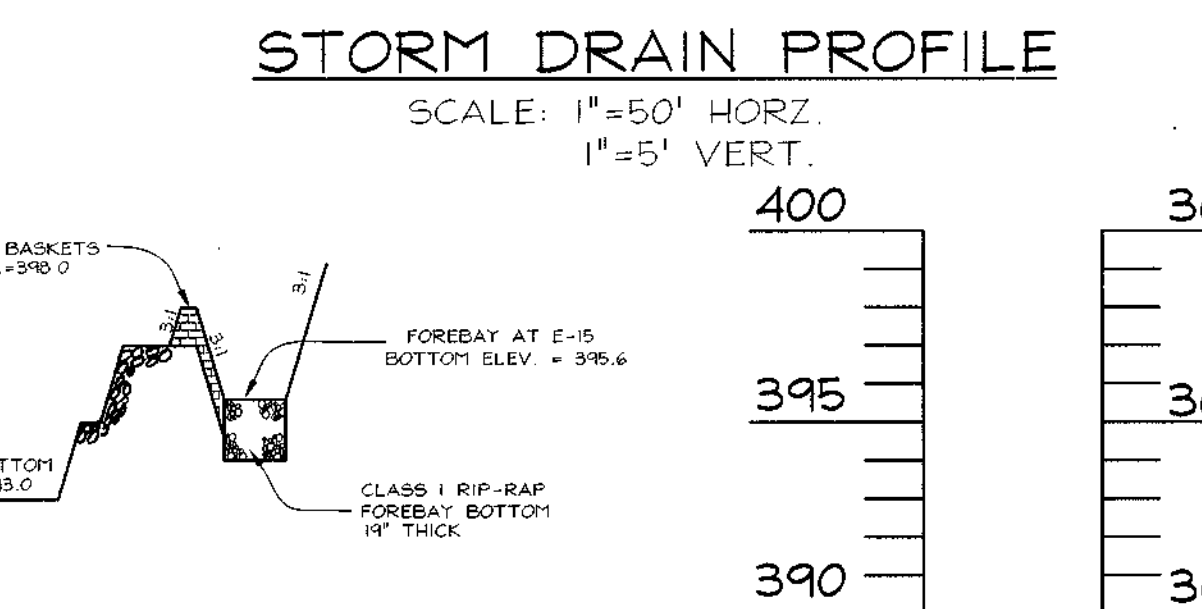
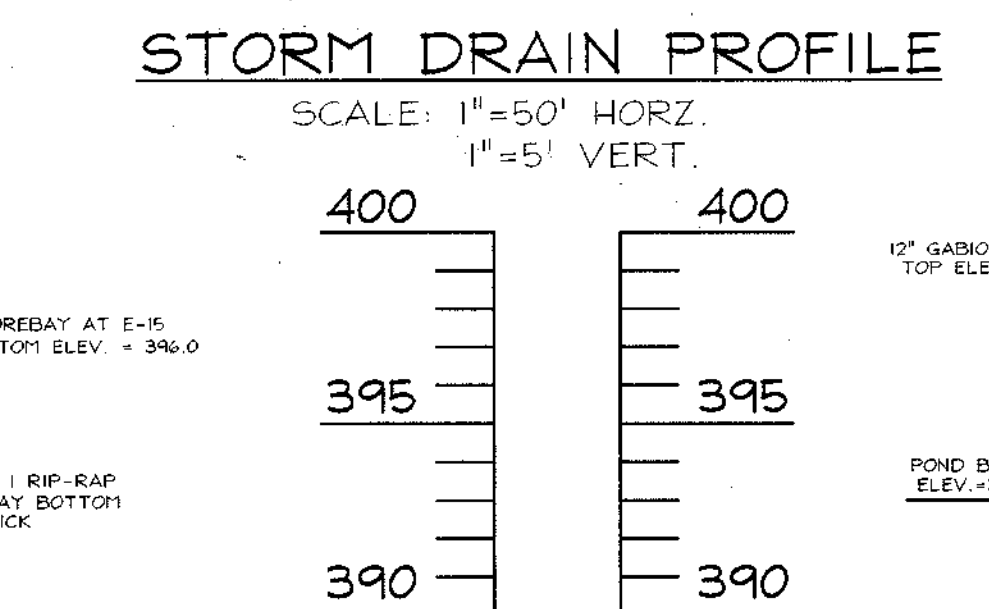
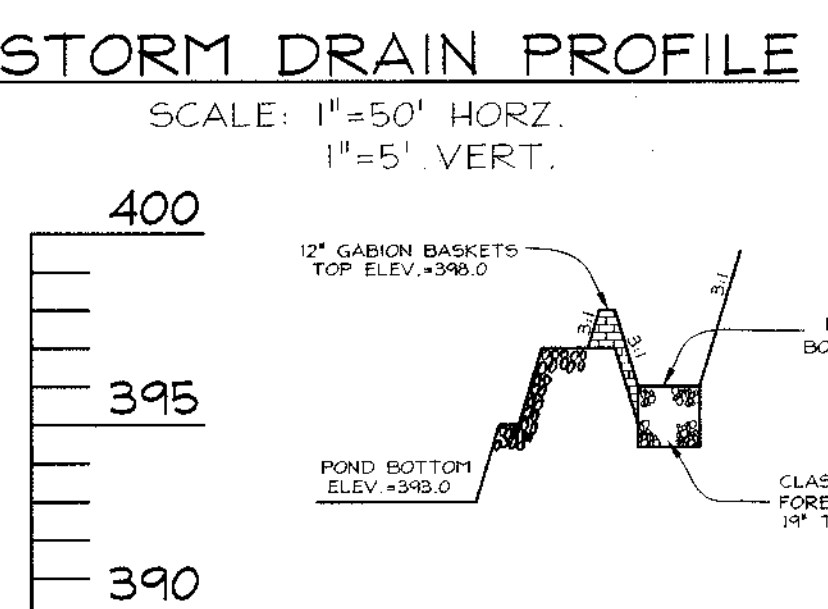
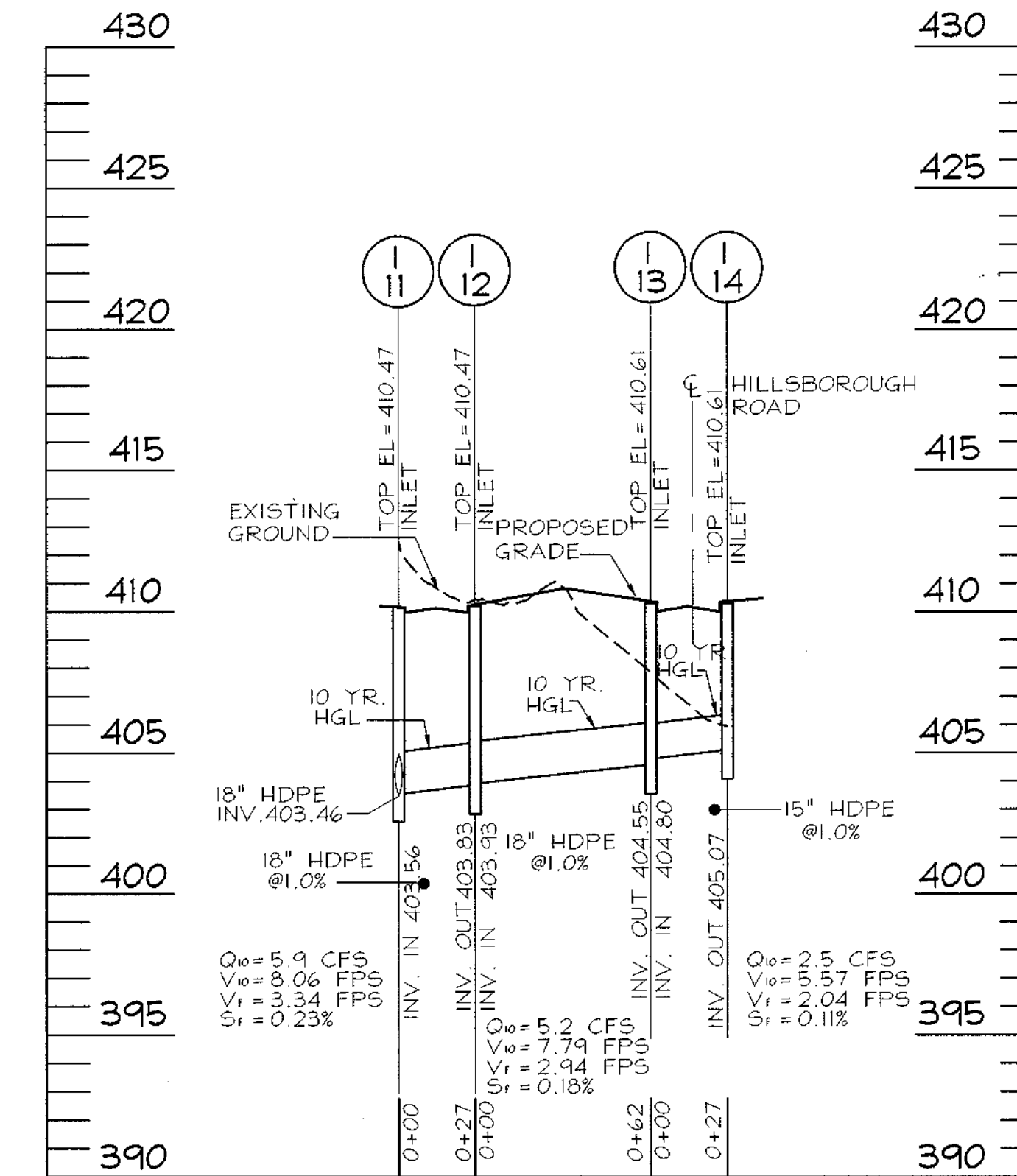
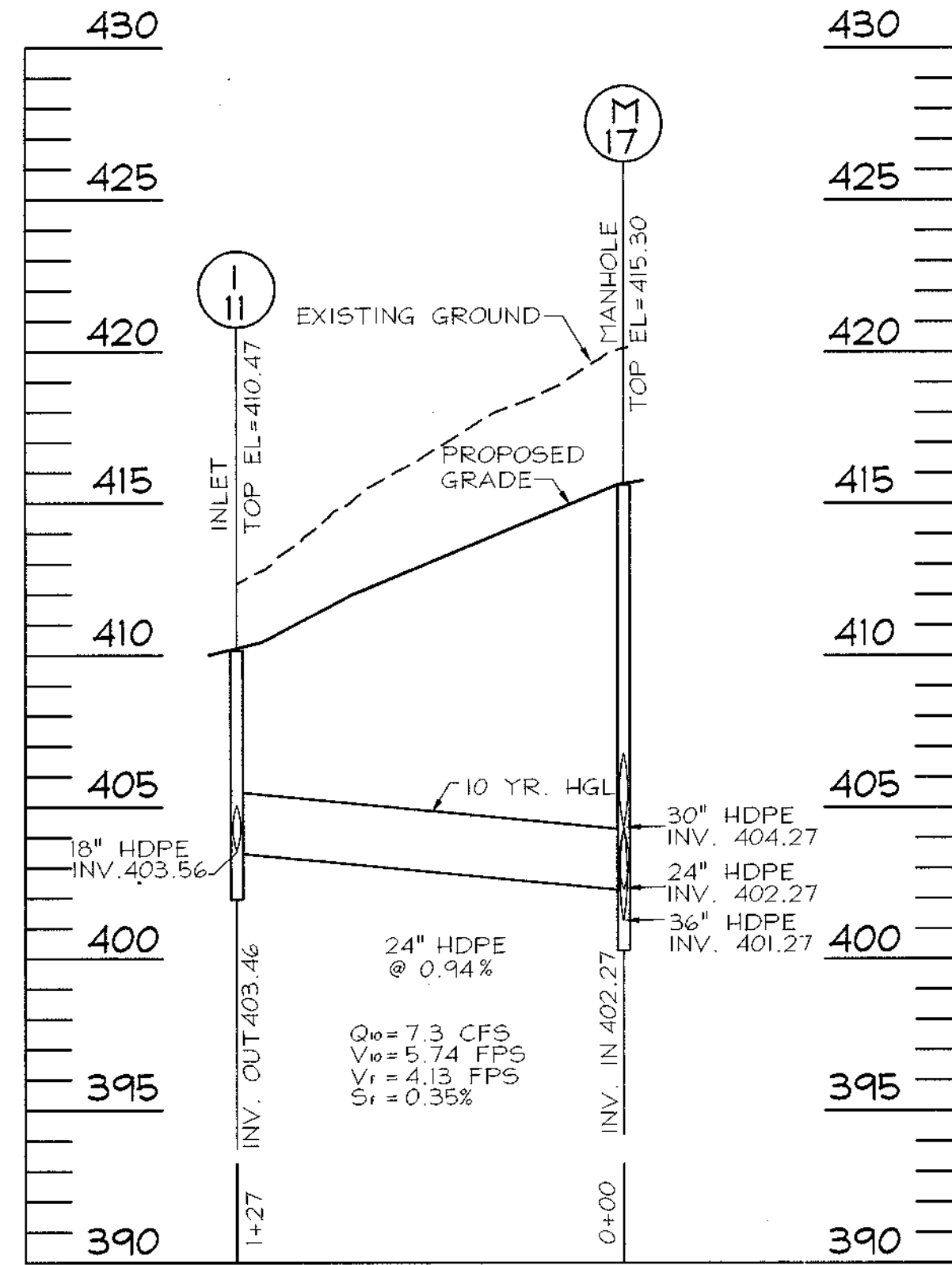
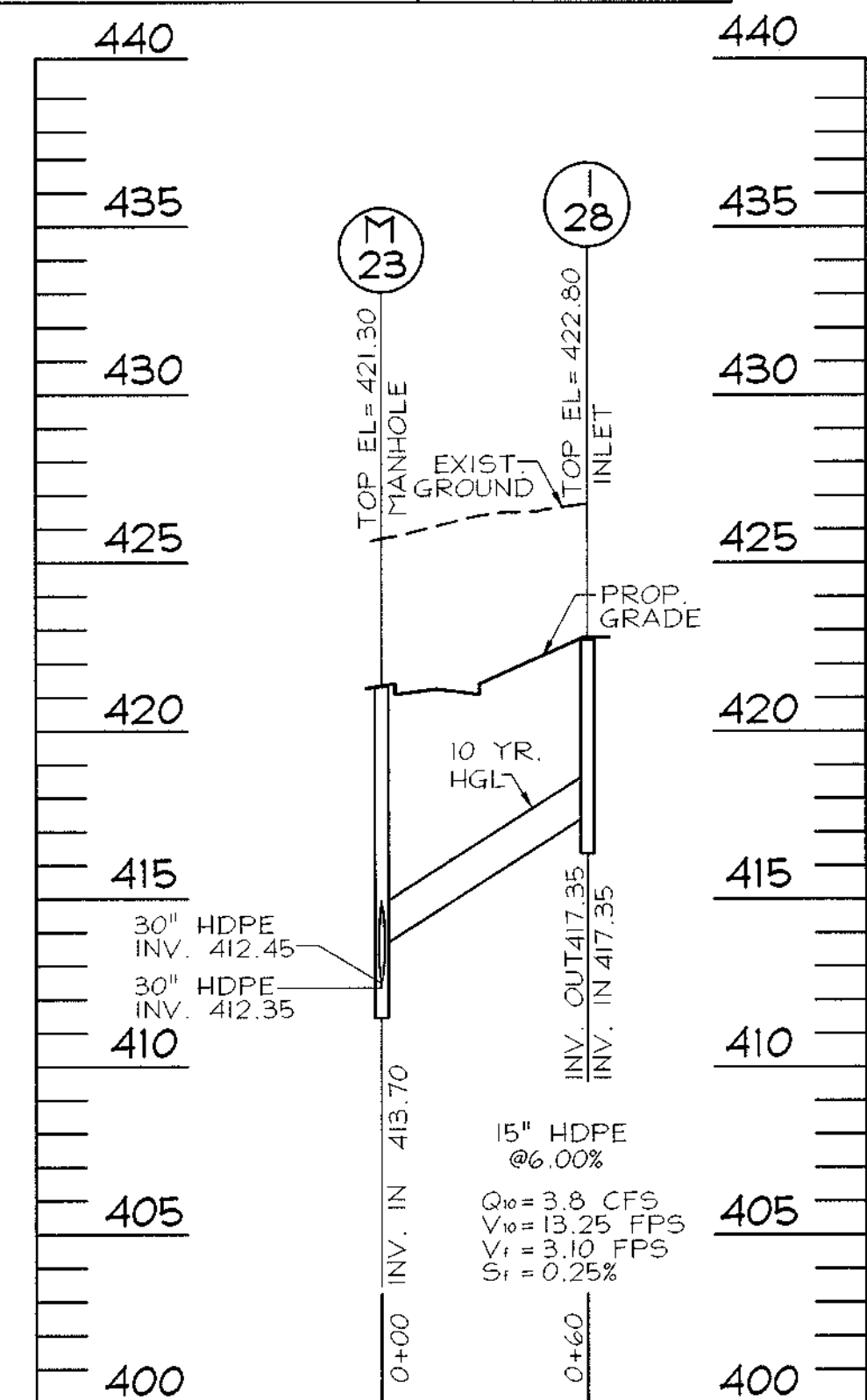
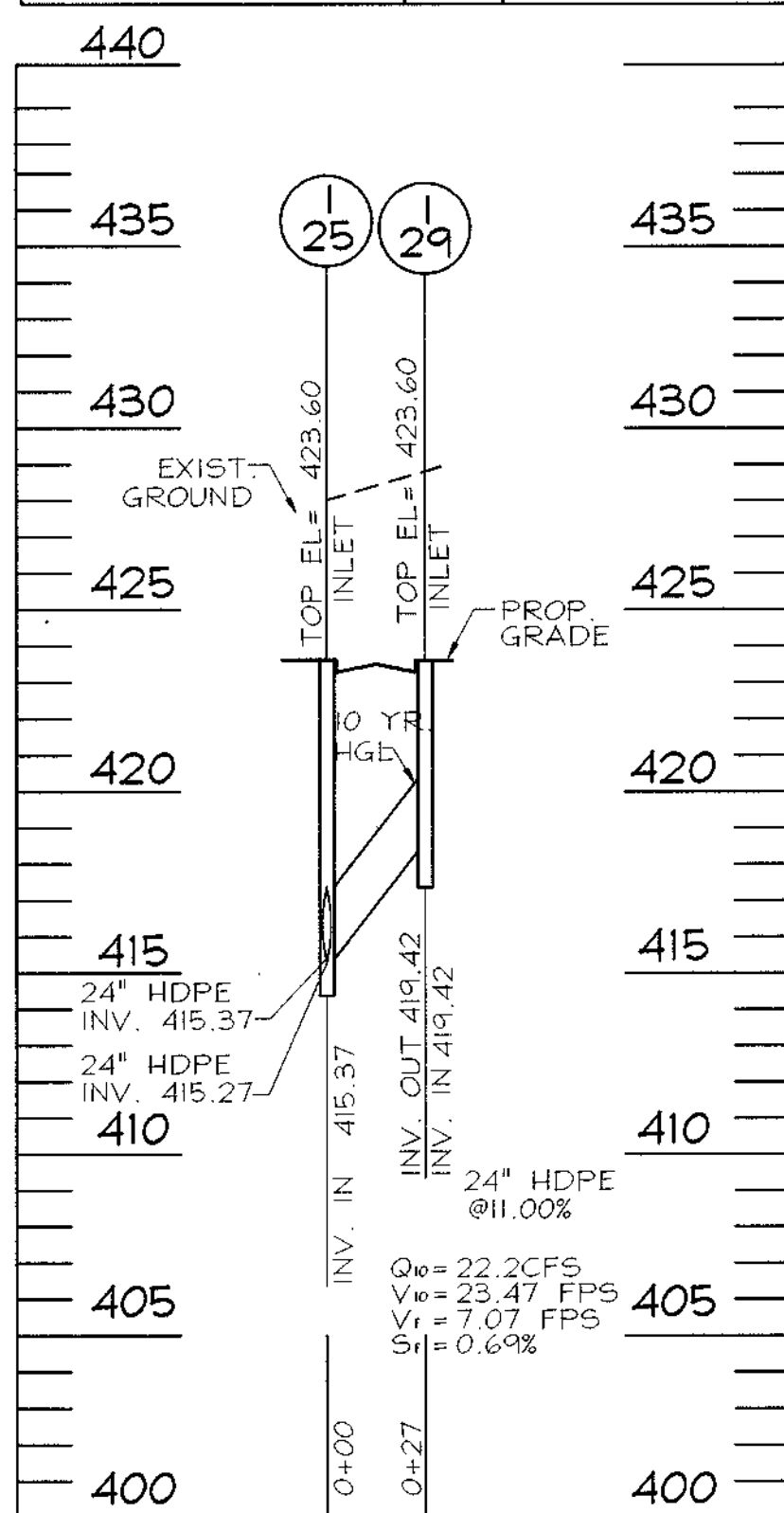
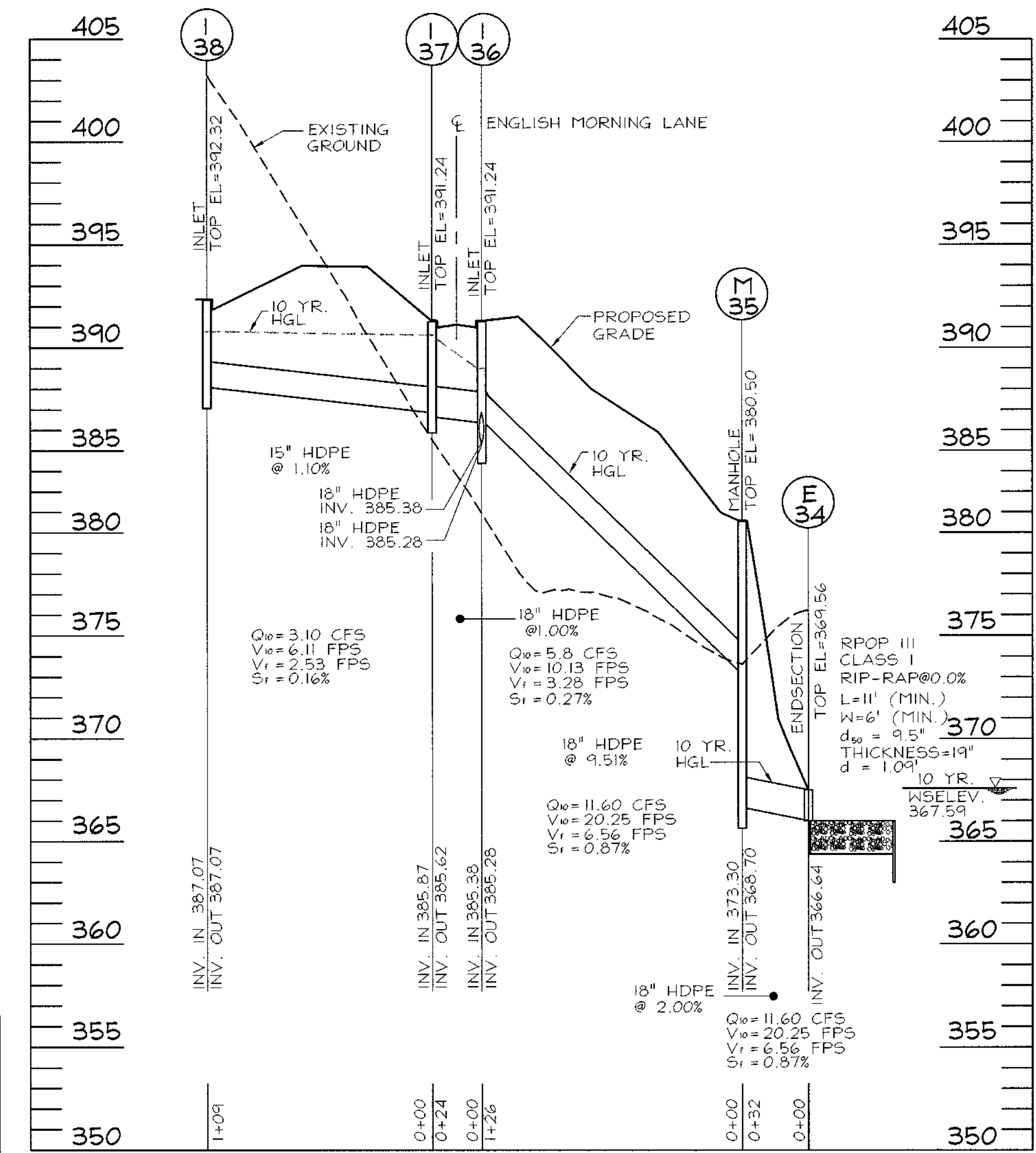
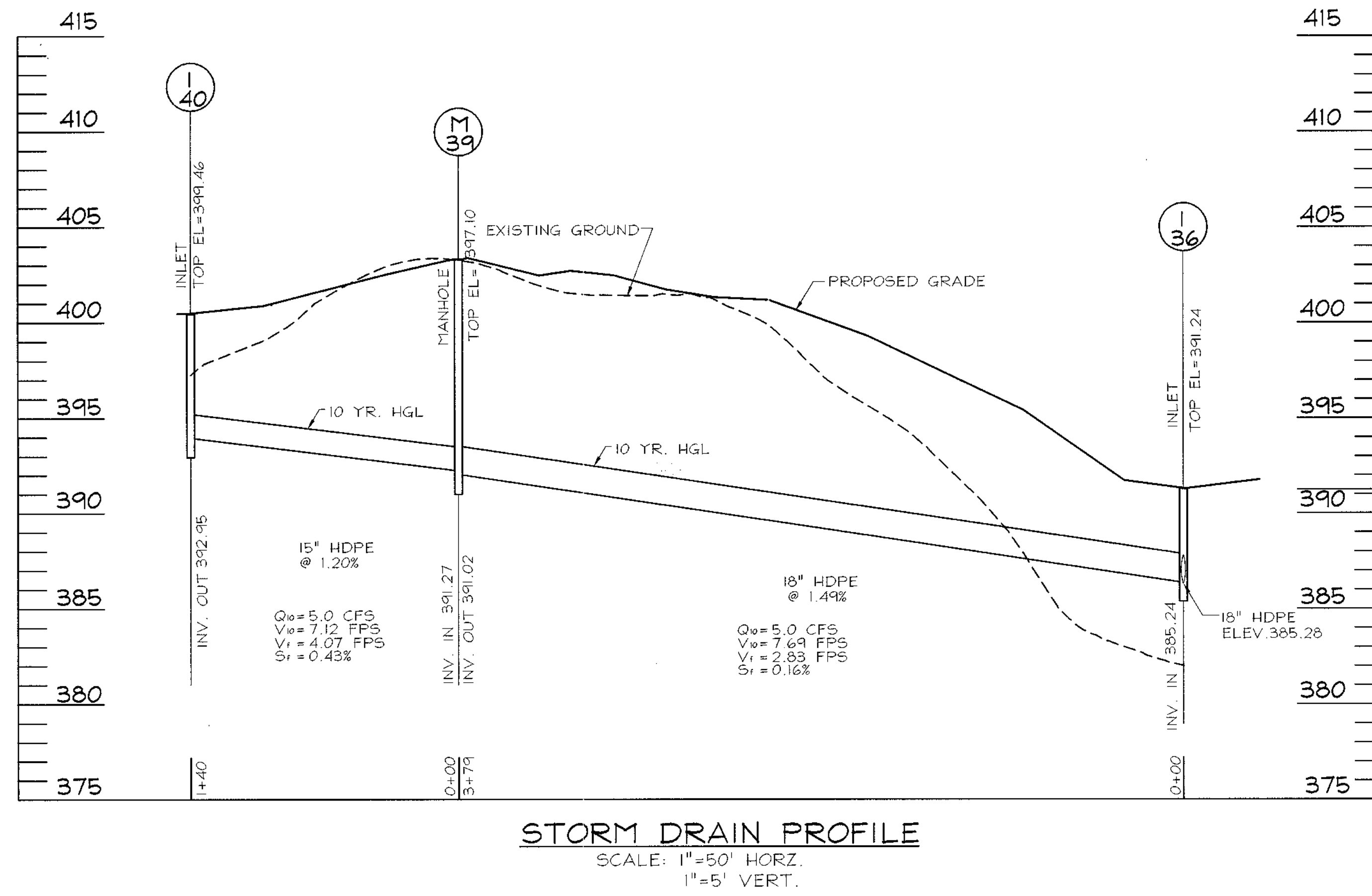
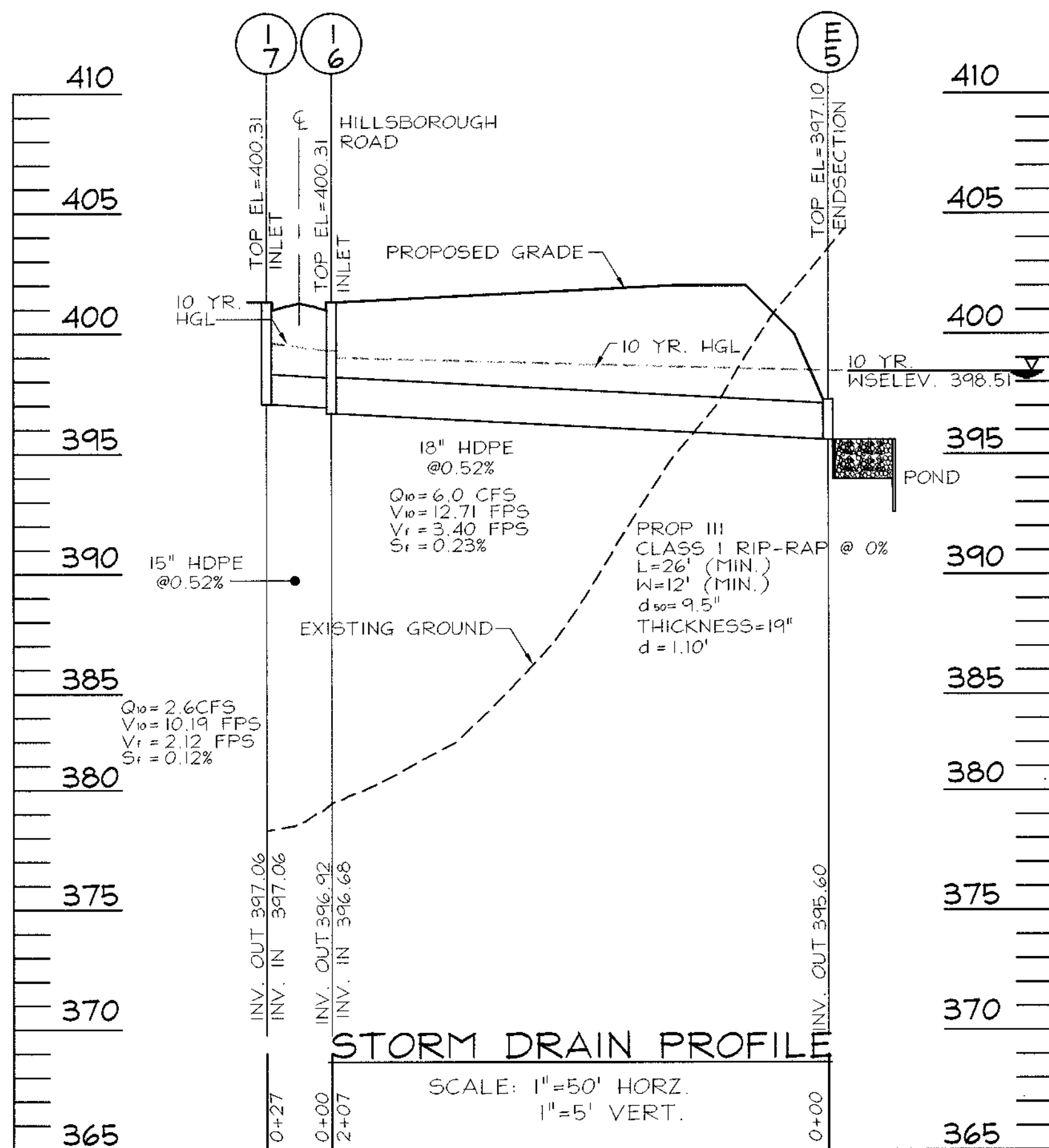
REVISED STRUCTURE SCHEDULE		
NO.	REVISION	DATE
1		9-27-01

STORM DRAIN PROFILES
WORTHINGTON FIELDS
PHASE I LOTS 1-46
AND NON-BUILDABLE PARCELS 'A' AND 'B'
TAX MAP #25 GRID 20 & #31 PARCEL 98 & P/O PARCEL 4
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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

DESIGN BY: GAH
DRAWN BY: R.J.
CHECKED BY: R.H.V.
DATE: JULY, 2001
SCALE: AS SHOWN
W.O. NO.: 99-011

11 SHEET OF 20
F-01-60



OWNER: TAYLOR FAMILY LIMITED PARTNERSHIP A
 TAYLOR FAMILY LIMITED PARTNERSHIP B
 4100 COLLEGE AVE.
 ELLICOTT CITY, MARYLAND
 21043-5506

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

NO.	REVISION	DATE

STORM DRAIN PROFILES
WORTHINGTON FIELDS
 PHASE I LOTS 1-46
 AND NON-BUILDABLE PARCELS 'A' AND 'B'
 TAX MAP #25 GRID 20 # 31 PARCEL 98 # P/O PARCEL 4
 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

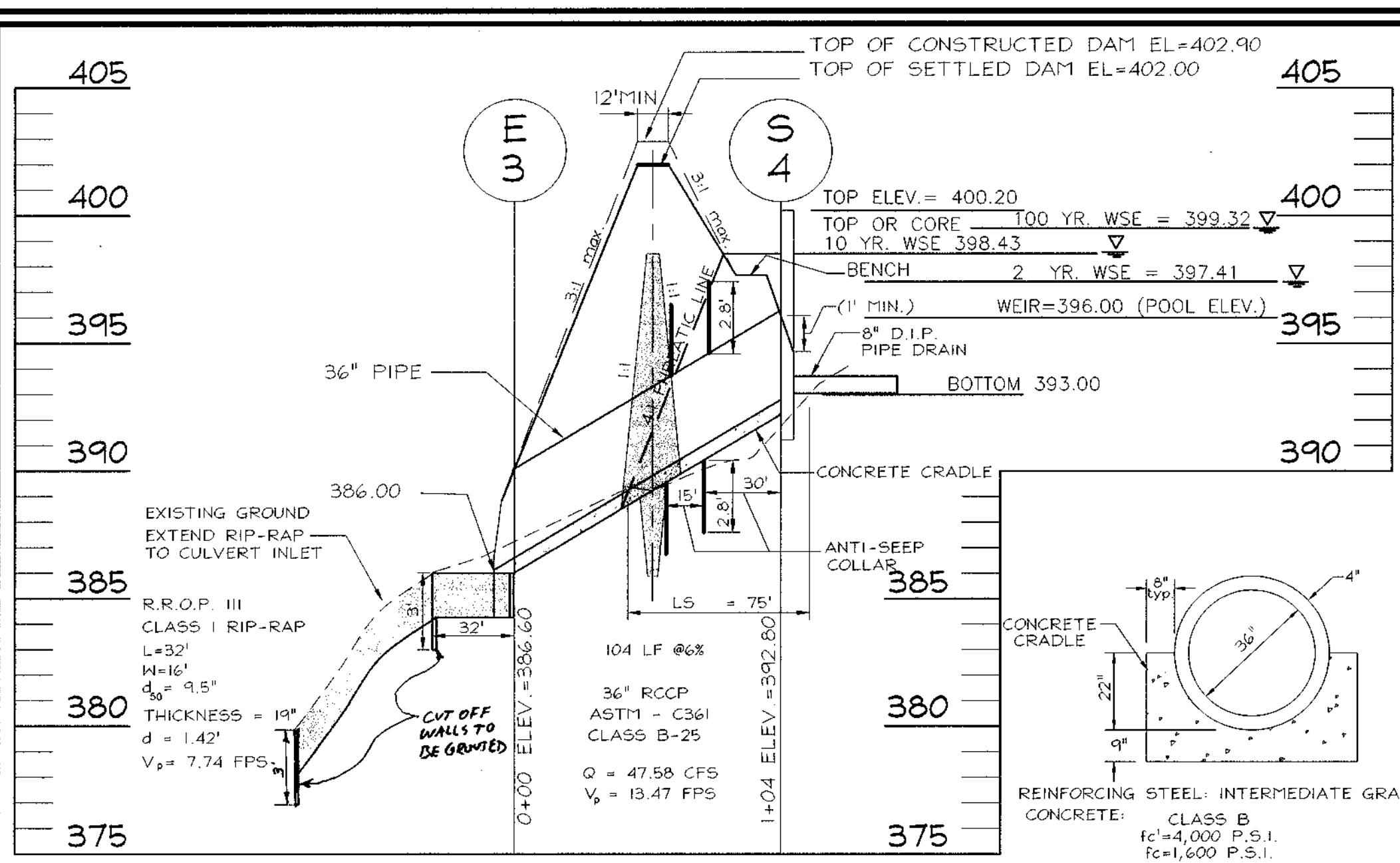
FREDERICK WARD ASSOCIATES, INC.
 ENGINEERS: 7125 Riverwood Drive Columbia, Maryland 21046-2354
 ARCHITECTS: Phone: 410-290-9550 Fax: 410-720-6226
 SURVEYORS: Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: G.A.H.
 DRAWN BY: R.J.
 CHECKED BY: R.H.V.
 DATE: JULY, 2001
 SCALE: AS SHOWN
 W.D. NO.: 99-01

12 SHEET OF 20

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

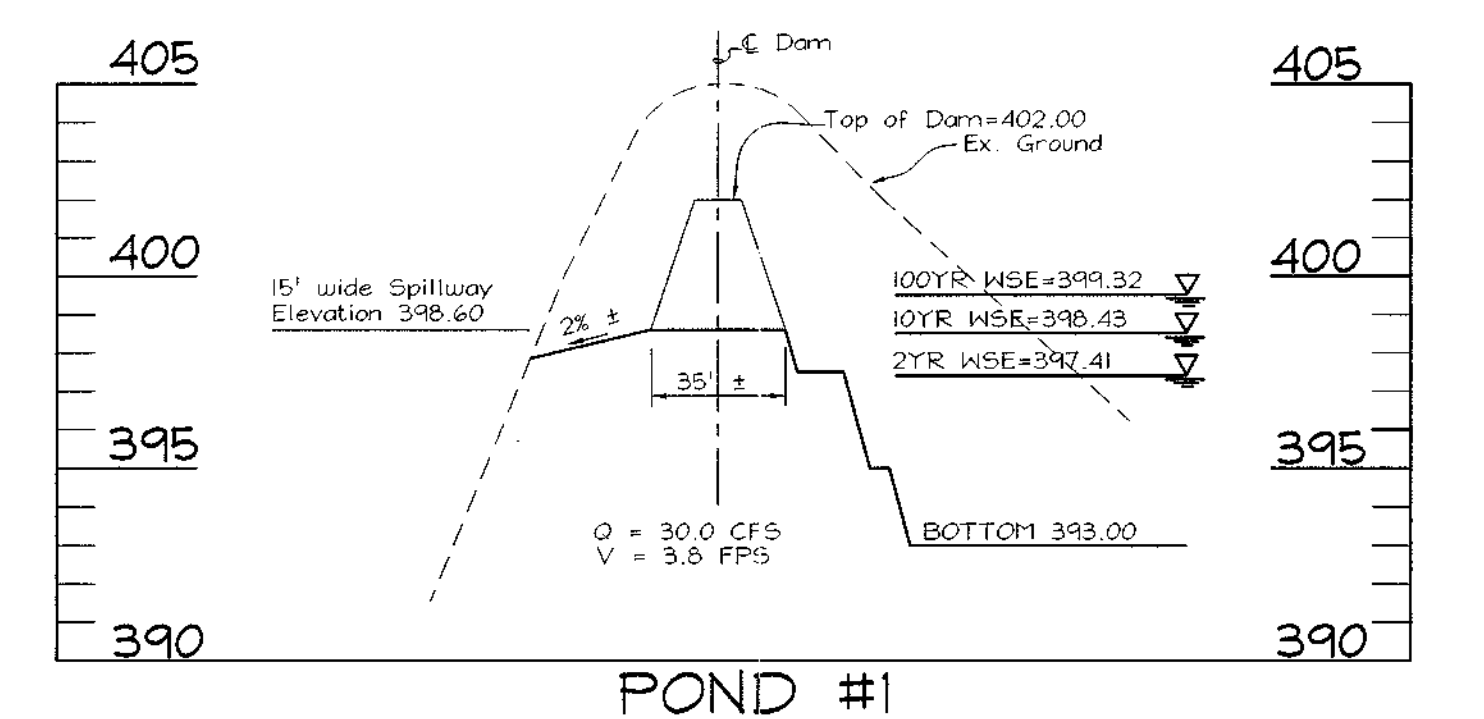
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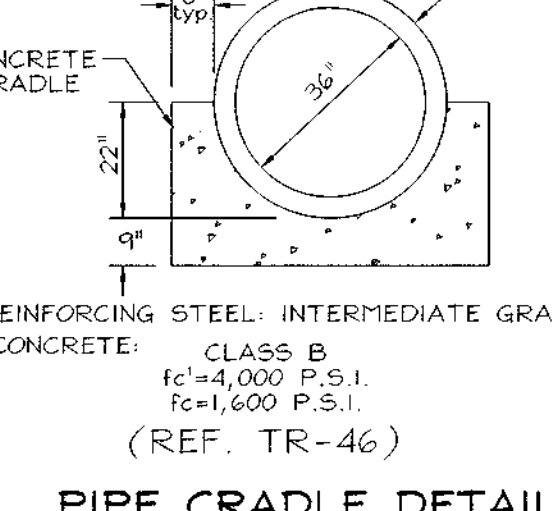
**RETENTION POND #1
PRINCIPLE SPILLWAY PROFILE**
SCALE: 1" = 50' HORIZ.
1" = 5' VERT.

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

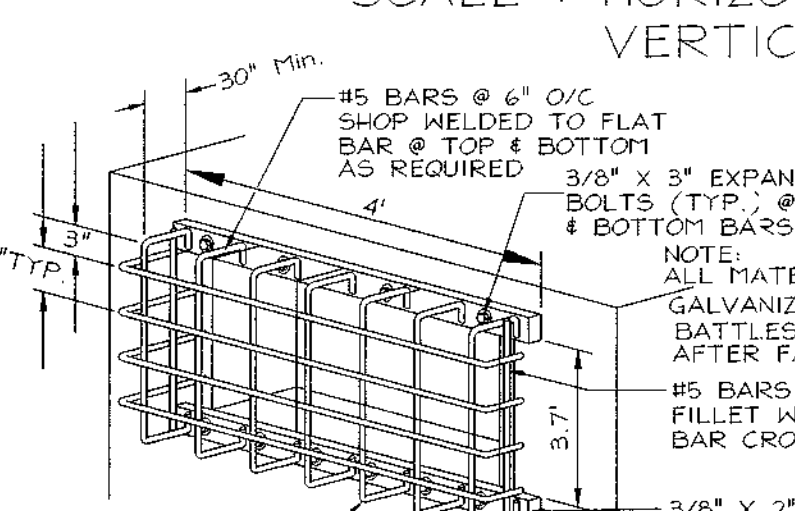
- ROUTINE MAINTENANCE**
1. FACILITY WILL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF FUNCTIONING PROPERLY.
 2. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHOULD BE MOWED AS NEEDED.
 3. DEBRIS AND LITTER NEXT TO THE OUTLET STRUCTURE SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
 4. 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 RISER, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.



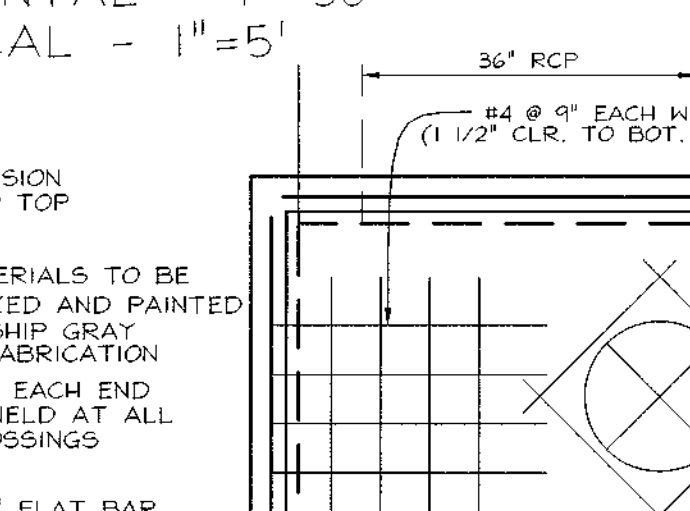
**POND #1
SECTION THROUGH EMERGENCY SPILLWAY**
SCALE: HORIZONTAL - 1" = 50'
VERTICAL - 1" = 5'



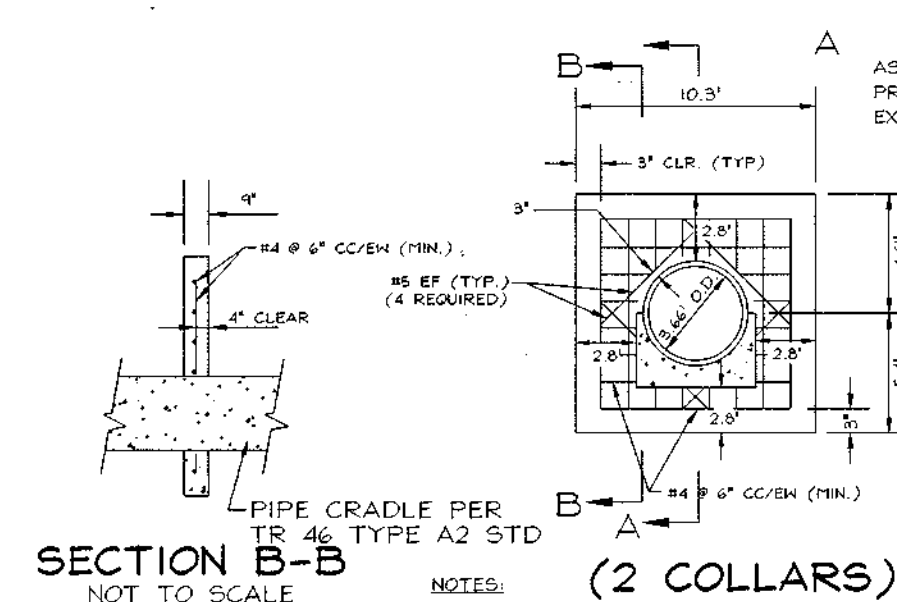
PIPE CRADLE DETAIL
NOT TO SCALE



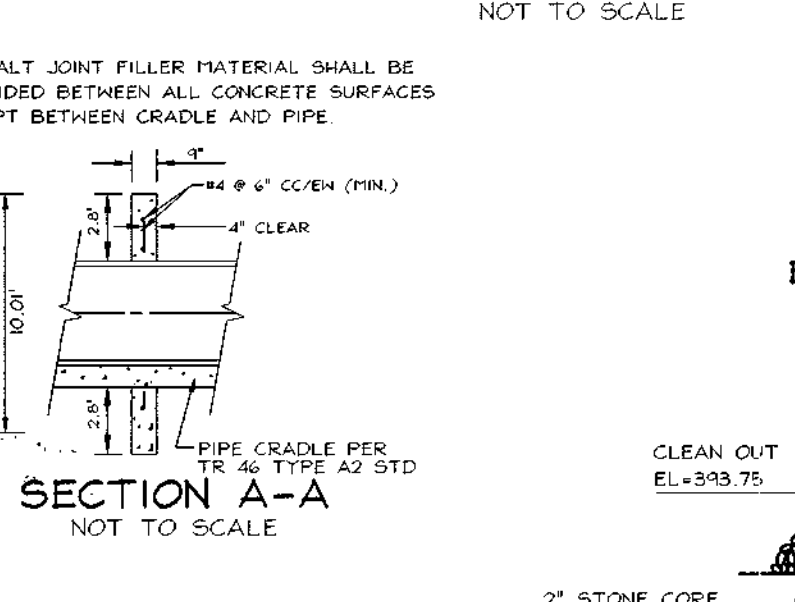
TRASH RACK DETAIL
NOT TO SCALE



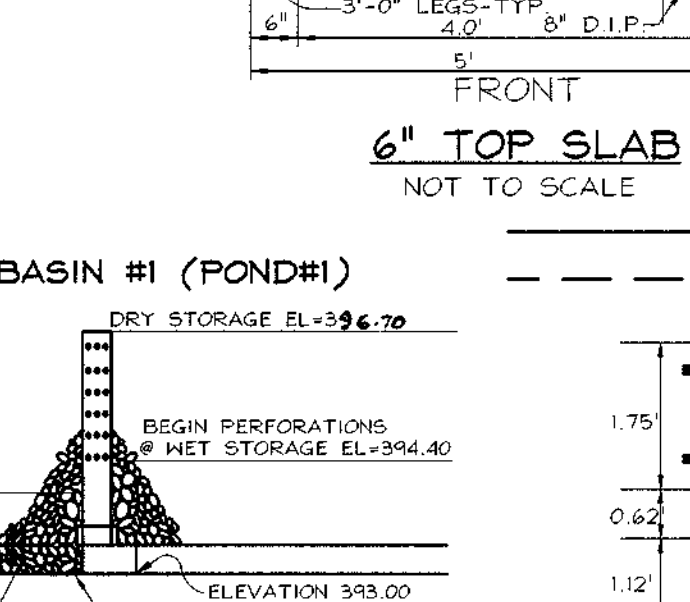
6" TOP SLAB
NOT TO SCALE



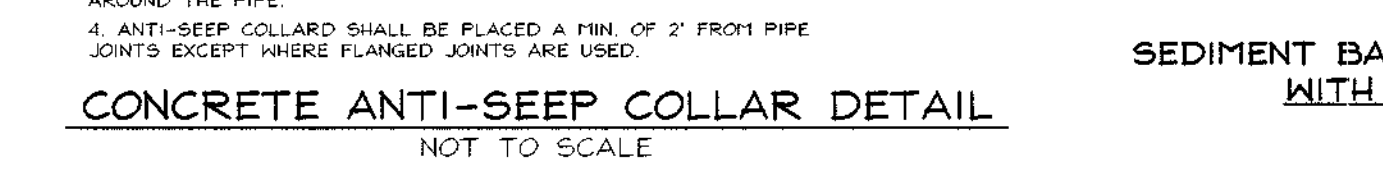
SECTION A-A
NOT TO SCALE



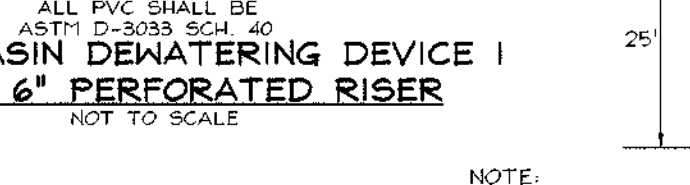
SECTION B-B
NOT TO SCALE



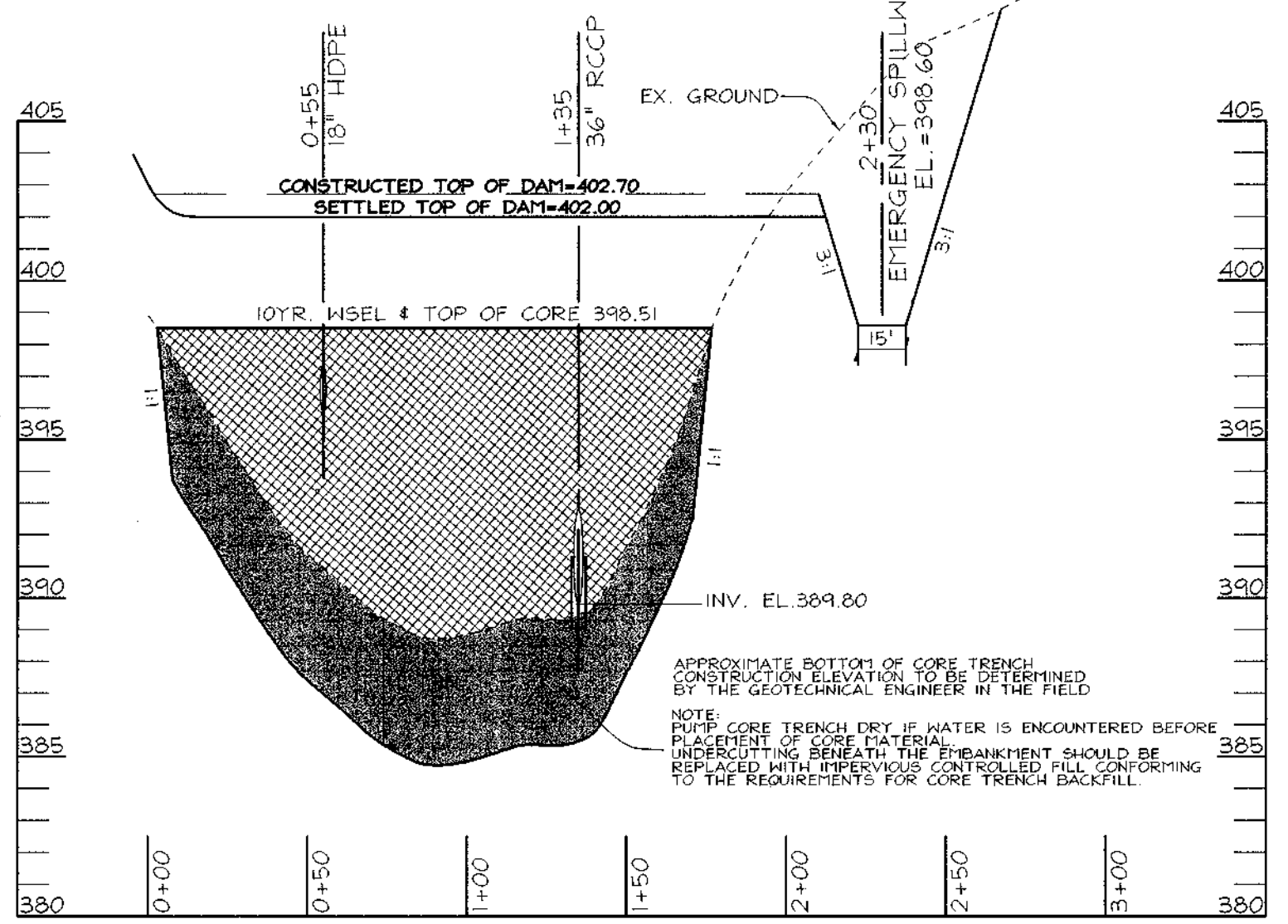
Basin #1 (Pond #1)
NOT TO SCALE



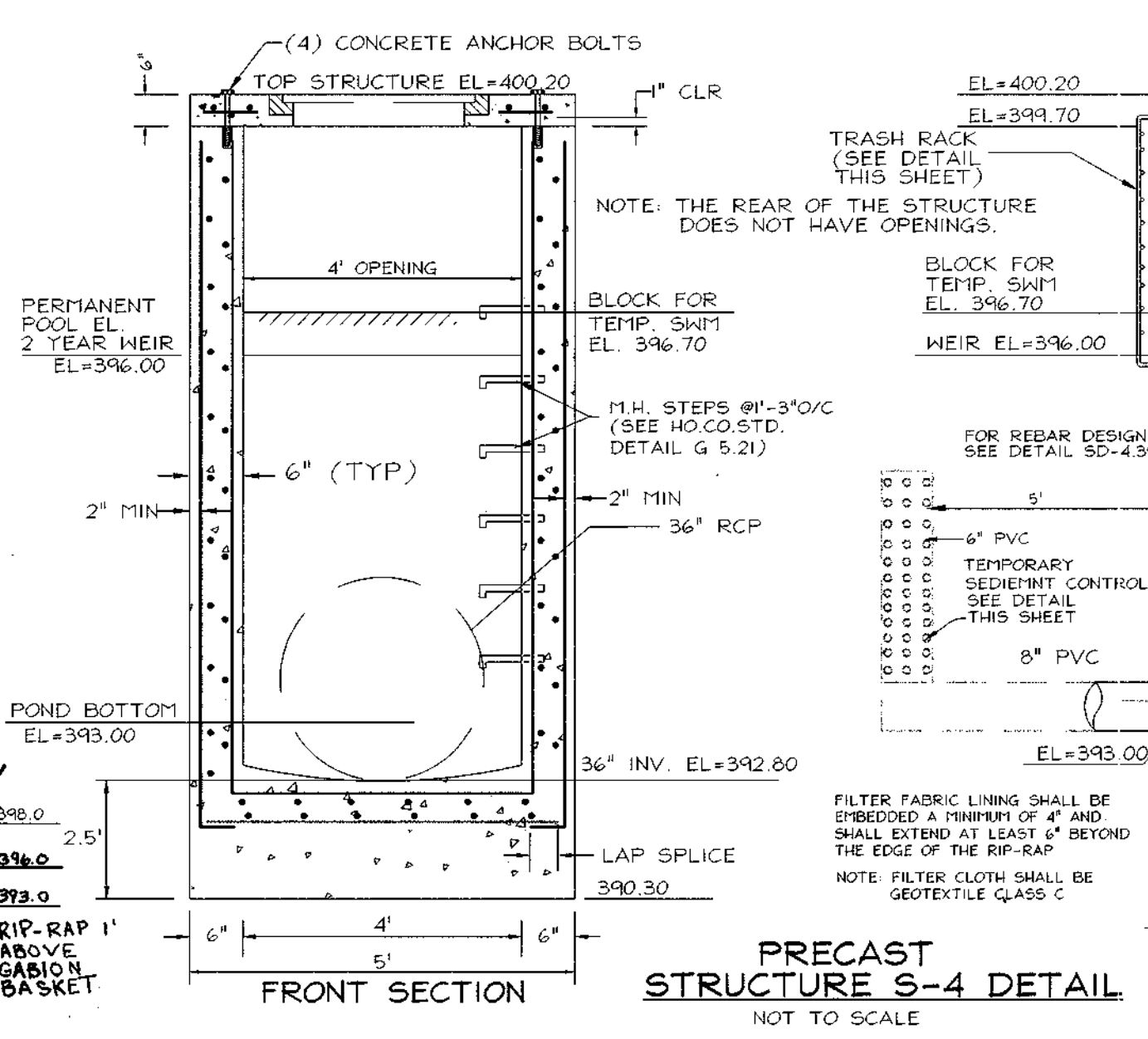
CONCRETE ANTI-SEEP COLLAR DETAIL
NOT TO SCALE



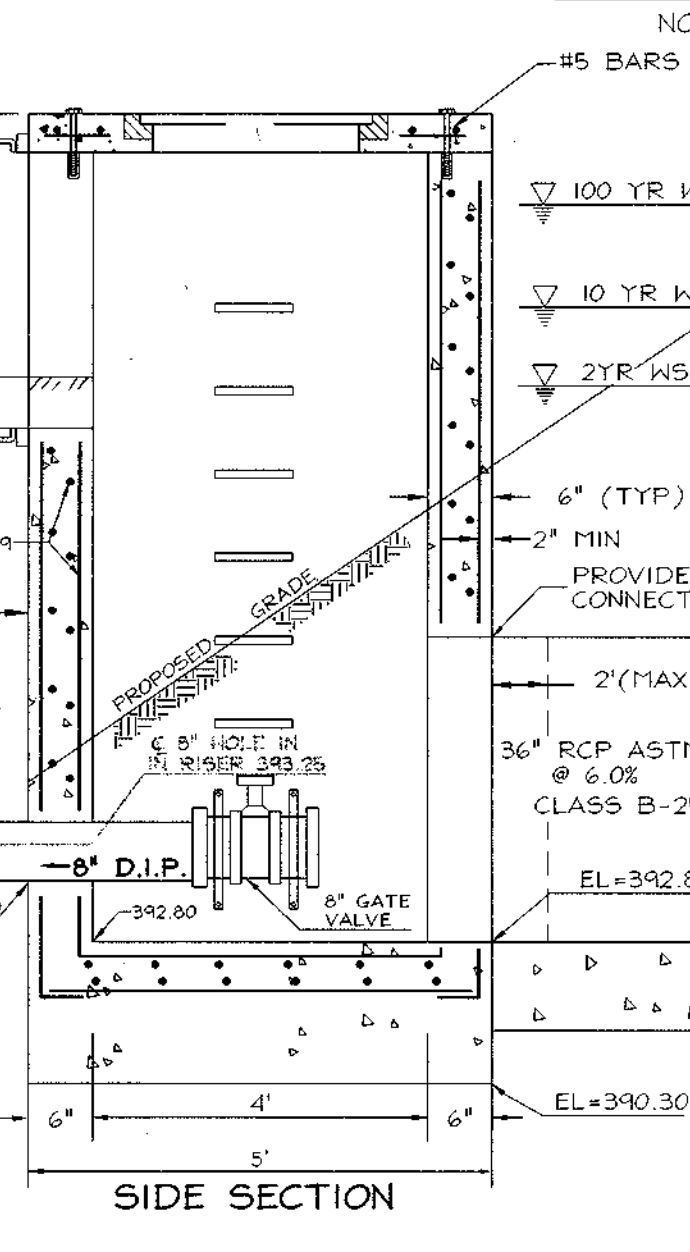
**SEDIMENT BASIN DEWATERING DEVICE
WITH 6" PERFORATED RISER**
NOT TO SCALE



PROFILE ALONG CENTERLINE EMBANKMENT
SCALE: HORIZONTAL - 1" = 50'
VERTICAL - 1" = 5'



PRECAST STRUCTURE S-4 DETAIL
NOT TO SCALE



POND DRAIN DETAIL
NOT TO SCALE

**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 breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 75 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, stumps, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut to 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 specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Earth Fill
Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 4" from or other objectionable materials. Fill material for the center of the embankment, and all off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 3% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer. Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

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

Compaction - The movement of the heating 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 track of heavy equipment or compaction shall be achieved by a mechanical vibrator. The vibrator shall be used in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not continued over the embankment. The fill material shall contain sufficient moisture so that if formed into a ball it will crumble, yet not be so wet that water can be squeezed out.

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

Cut Off Trench The cutoff trench shall be excavated to 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 ensure 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 ensure maximum density and minimum permeability.

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

Structure Backfill
Structure backfill may be flexible fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 303 as modified. The material shall have a minimum of 100-200 psi 28 day unconfined compressive strength. The flexible 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" (measured perpendicular to the outside of the pipe) of flexible fill shall be under (bedding) over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent flooding the pipe. When using flexible fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flexible fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of the structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill (flexible fill) shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

Pipe Conduits
All pipes shall be circular in cross section.
Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:
1. Materials - (Polymer Coated Steel Pipe) - Steel pipes with polymer coating shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with water tight coating bands or flanges.

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

POND #1 SUMMARY

	2 YEAR	10 YEAR	100 YEAR
FLOW INTO POND	47.80 c.f.s	97.67 c.f.s	154.58 c.f.s
FLOW OUT OF POND	20.85 c.f.s	40.73 c.f.s	80.73 c.f.s
W.S. ELEVATION	397.41	398.43	399.32
STORAGE VOLUME	1.03 AC FT	2.06 AC FT	3.17 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

- a. Removal of silt when accumulation exceeds six (6) inches in forebay.
- b. Removal of accumulated paper, trash and debris as necessary.
- c. 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.
- d. Annual inspection and repair of the structure.
- e. Corrective maintenance is required any time a forebay does not drain within 60 hours (i.e., no standing water is allowed unless designed for).

DEVELOPER DR. IRVING AND EDITH TAYLOR
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ELLCOTT CITY, MARYLAND 21043 ELLCOTT CITY, MARYLAND
ATTN: MR. DONALD R. REUWER 21043-5506
PHONE: (410) 480-9105

OWNER TAYLOR FAMILY LIMITED PARTNERSHIP A
TAYLOR FAMILY LIMITED PARTNERSHIP B
4100 COLLEGE AVE.
ELLCOTT CITY, MARYLAND
21043-5506

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 7/2/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 8/3/01
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] N/A
DIRECTOR DATE

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 SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT I WILL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

[Signature] 8/10/01
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 THE PROJECT SHALL BE ENGAGED. 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] 8/10/01
SIGNATURE OF DEVELOPER DATE

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] 7/10/01
USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

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

[Signature] 7/10/01
HOWARD SOIL CONSERVATION DISTRICT DATE

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-190 with water tight coating bands or flanges. Aluminum Pipe, when used with flexible fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be primed with one coat of epoxy primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

2. Coupling, bands, anti-seep collars, and 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 of at least 24 mils in thickness.

3. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Gasket 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 or sanded 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 cellular 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 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.

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

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

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

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:
1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.
2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high strength concrete placed under the pipe and up the sides of the pipe to at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flexible fill may be used as described in the "Structure Backfill" section of the standard. Gravel bedding is not permitted.

3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be given 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.

4. Backfilling shall conform to Backfill.
5. Other details (anti-seep collars, valves, etc.) shall be shown on the drawings.

Plastic Pipe - The following criteria shall apply for plastic pipe:
1. 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" - 10" inch pipe shall meet the requirements of AASHTO M252 Type 5, and 12" through 24" inch shall meet the requirements of AASHTO M254 Type 5.
2. Joints and connections to anti-seep collars shall be completely watertight.

3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
4. Backfilling shall conform to Backfill.
5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Drainage Diagrams - When a drainage diagram 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 404, Pile 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 401.09, Class C.

Care of Water during Construction
All work on permanent structures shall be carried out in areas free from water. The contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect 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 and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work 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 lowered to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works so as to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water seeps 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, pool 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" below the bottom of the broken rock and backfill with fine-grained fill or CL soils compacted to a firm condition. The procedure should be performed under the supervision of the project Geotechnical Engineer.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

[Signature] 7-28-01
CHIEF, BUREAU OF HIGHWAYS DATE

NO.	REVISION	DATE

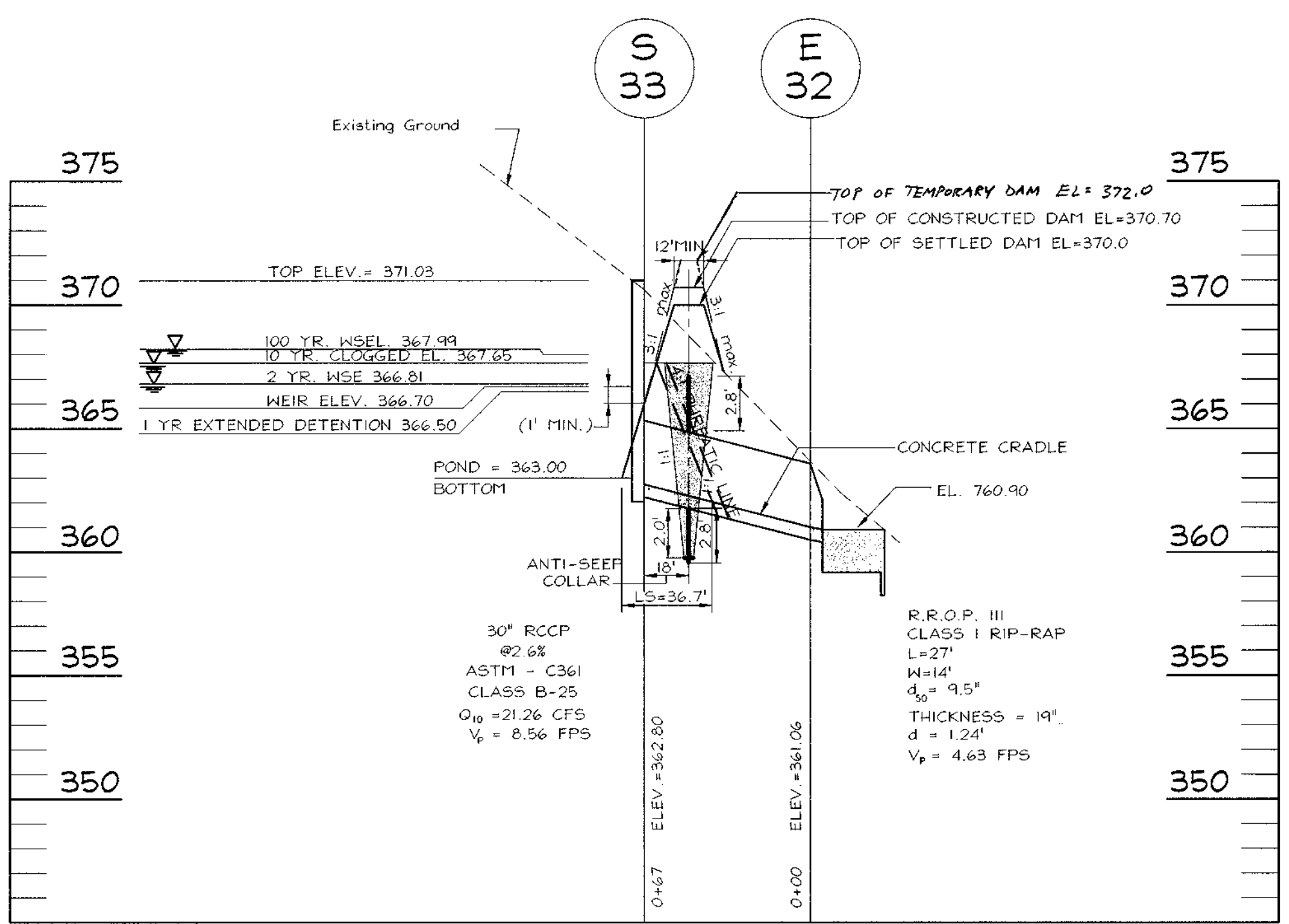
**PROFILES AND DETAILS
SWM POND #1
WORTHINGTON FIELDS**
PHASE 1 LOTS 1-46
AND NON-BUILDABLE PARCELS 'A' AND 'B'

TAX MAP #25 GRID 20 # 31 PARCEL 98 # P/O PARCEL 4
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

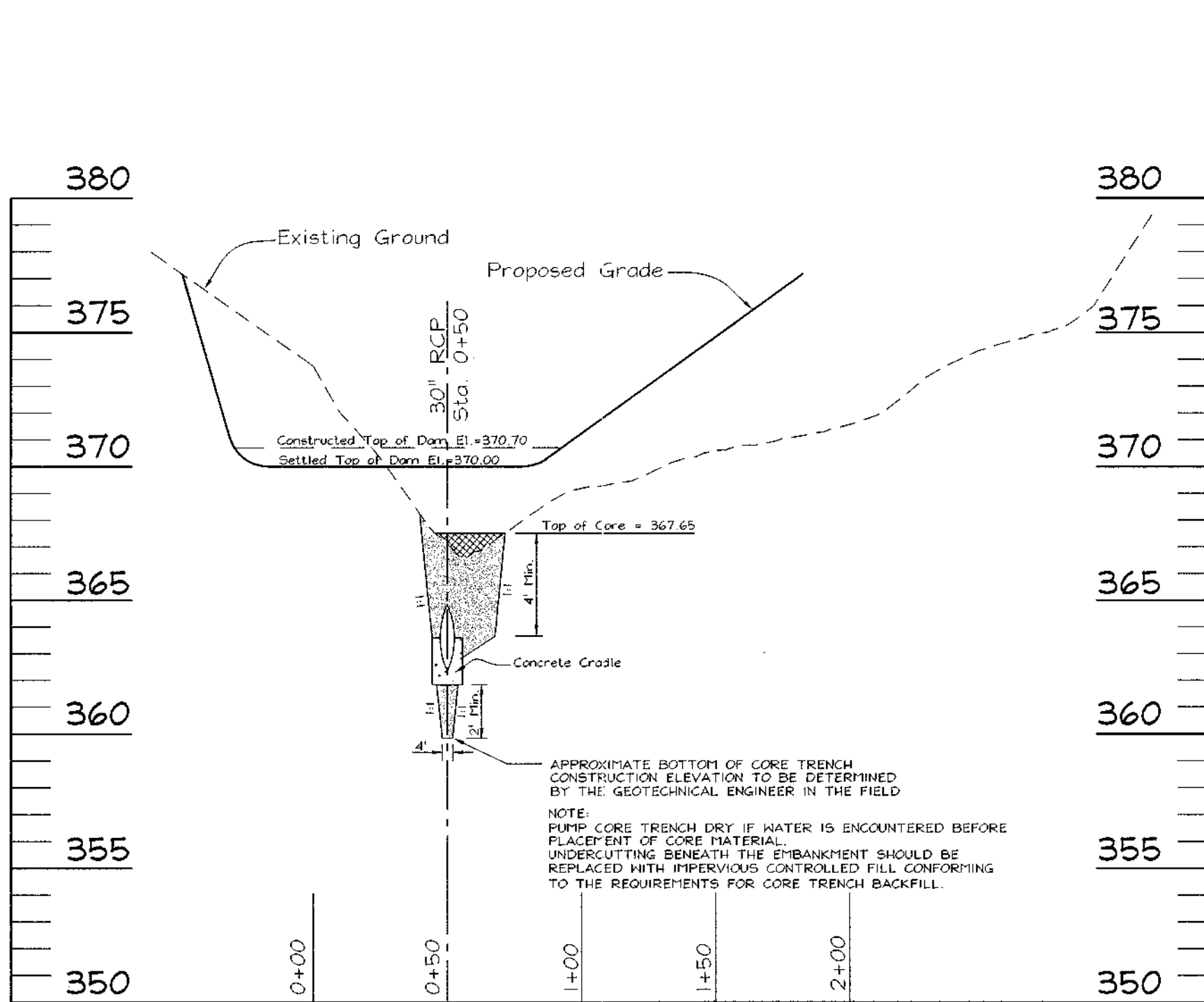
FREDERICK WARD ASSOCIATES, INC.
7125 Riverwood Drive Columbia, Maryland 21046-2354
Phone: 410-290-9550 Fax: 410-720-6226
Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: G.A.H.
DRAWN BY: G.A.H.
CHECKED BY: R.H.V.
DATE: JULY 2001
SCALE: AS SHOWN
W.O. NO.: 99-01

13 SHEET OF 20



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



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

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

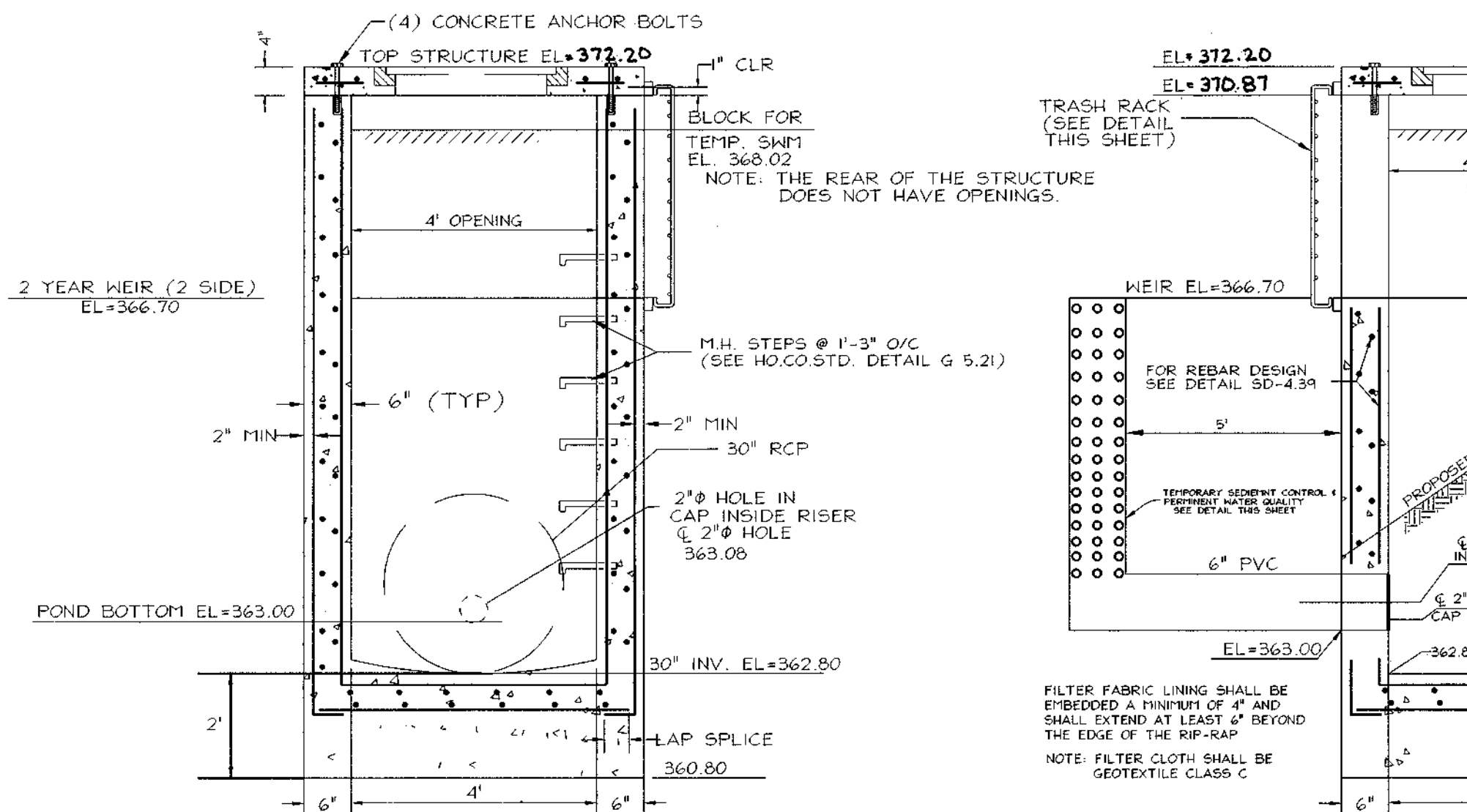
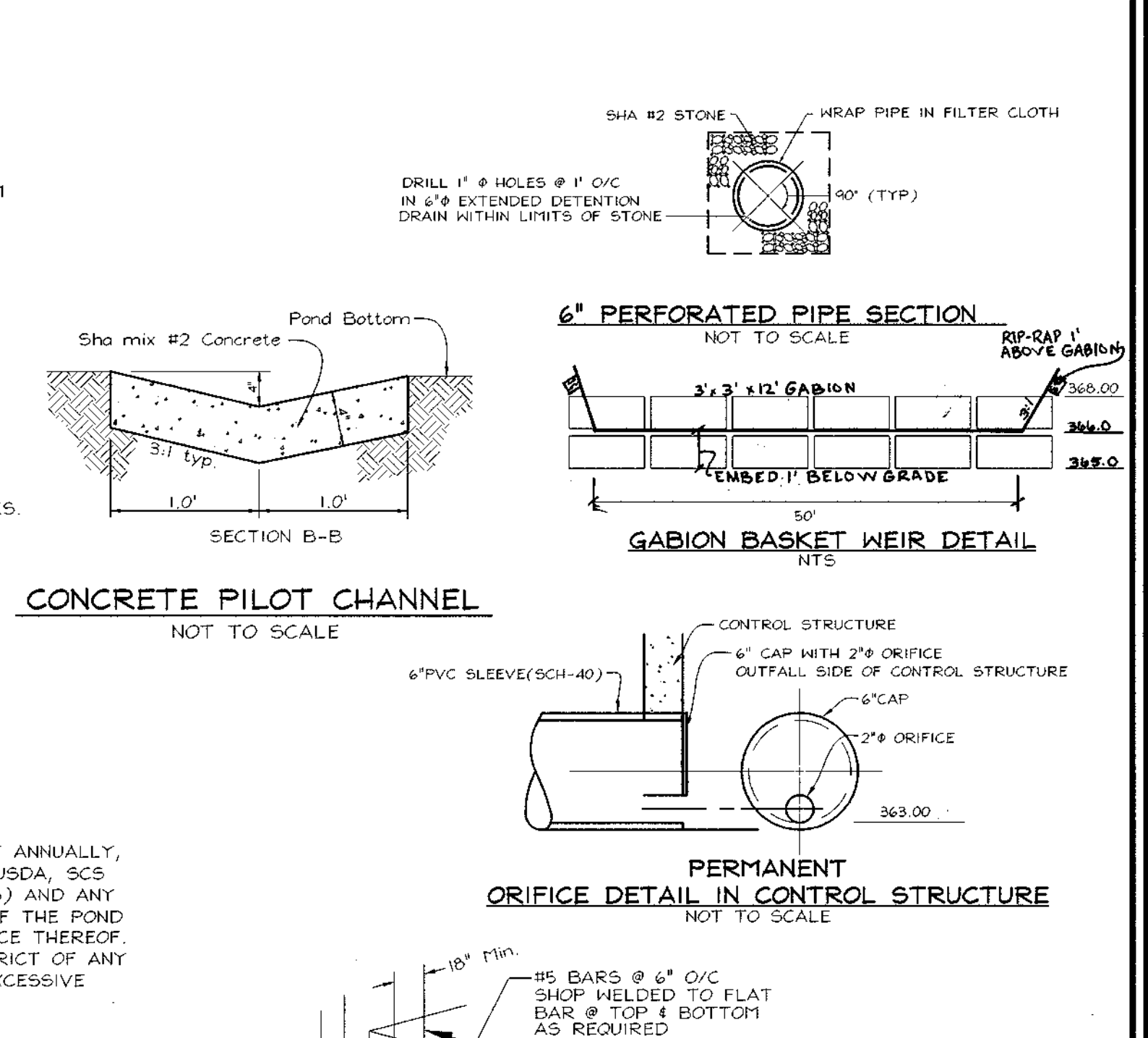
- ROUTINE MAINTENANCE**
1. FACILITY WILL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF FUNCTIONING PROPERLY.
 2. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOWED AS NEEDED.
 3. DEBRIS AND LITTER NEXT TO THE OUTLET STRUCTURE SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
 4. 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 RISER, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

POND #2 SUMMARY

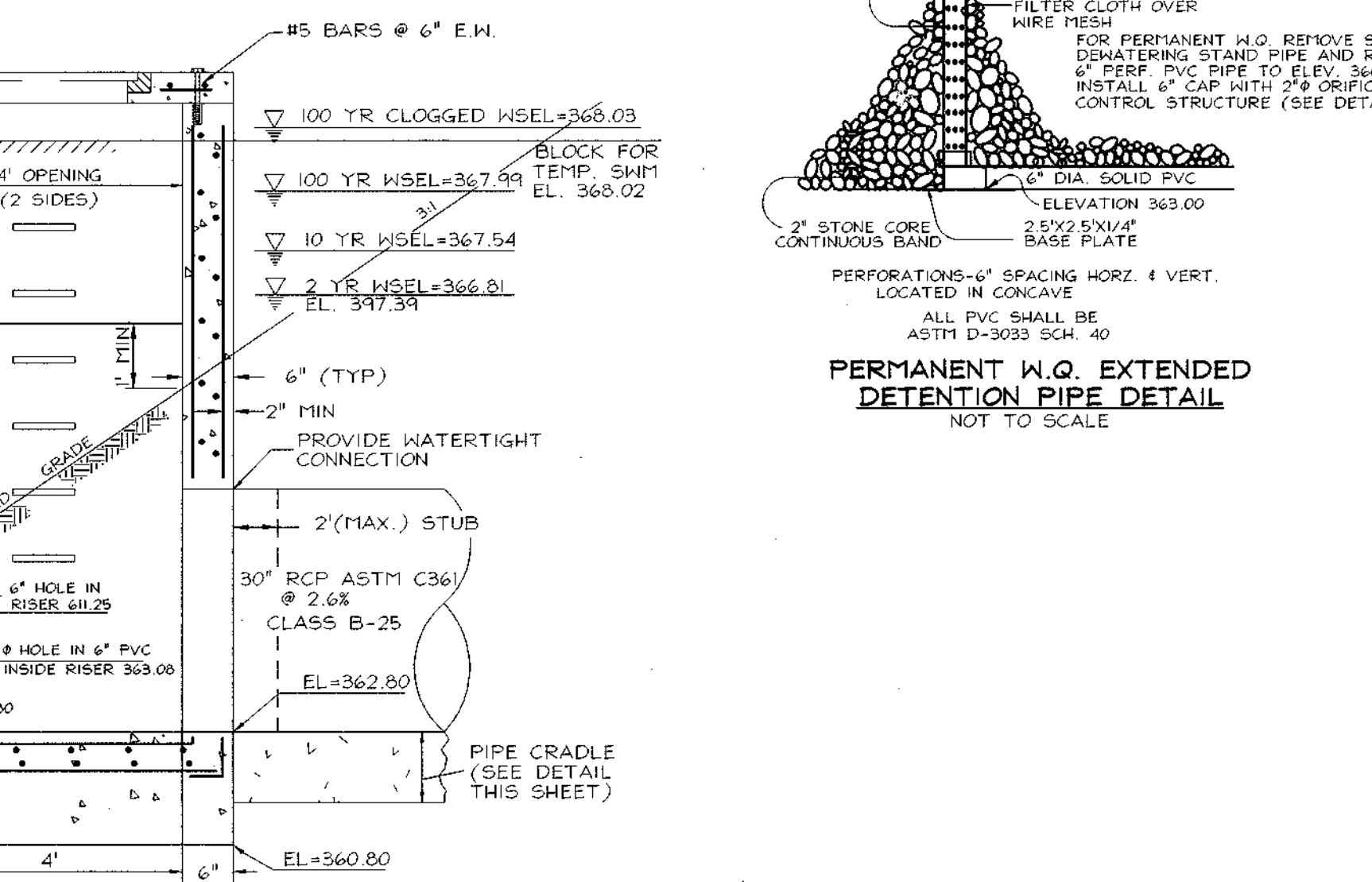
	2 YEAR	10 YEAR	100 YEAR
FLOW INTO POND	12.45 c.f.s.	25.45 c.f.s.	40.28 c.f.s.
FLOW OUT OF POND	1.71 c.f.s.	21.26 c.f.s.	36.73 c.f.s.
W.S. ELEVATION	366.81	367.59	367.99
STORAGE VOLUME	0.44 AC FT	0.59 AC FT	0.67 AC FT

OPERATION, MAINTENANCE AND INSPECTION

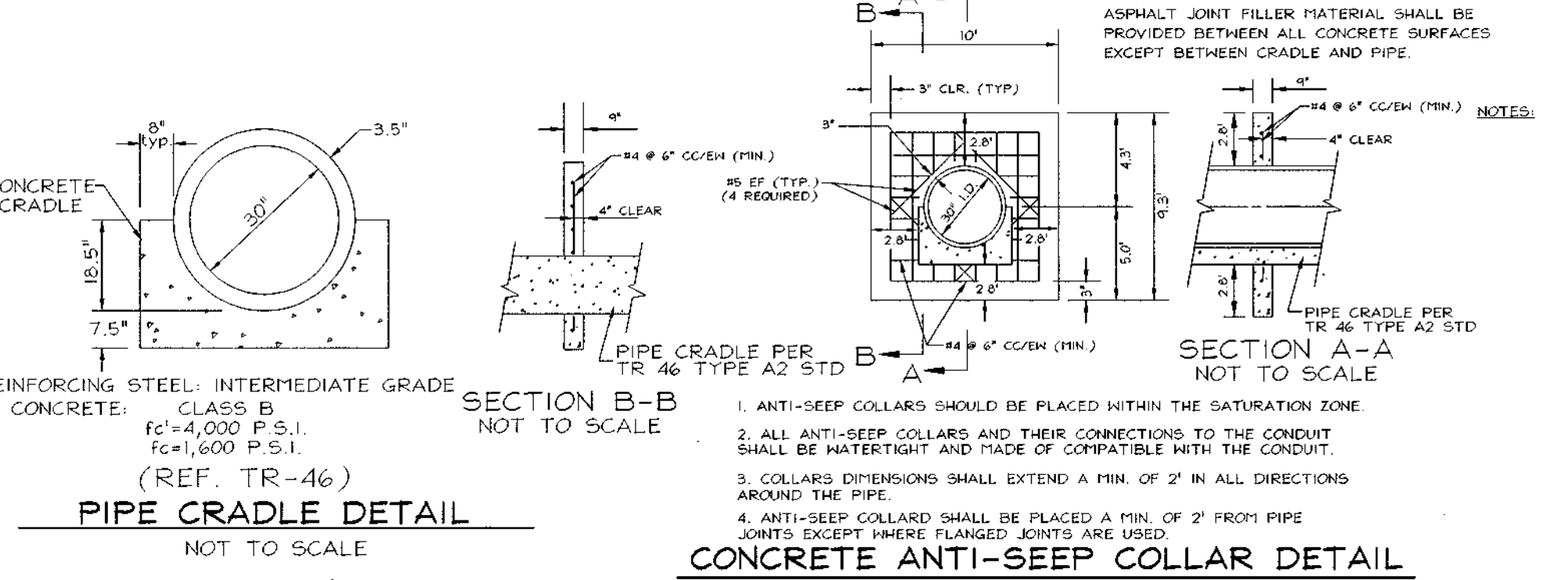
INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SC5 "STANDARDS AND SPECIFICATIONS FOR PONDS" (MID-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF 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.



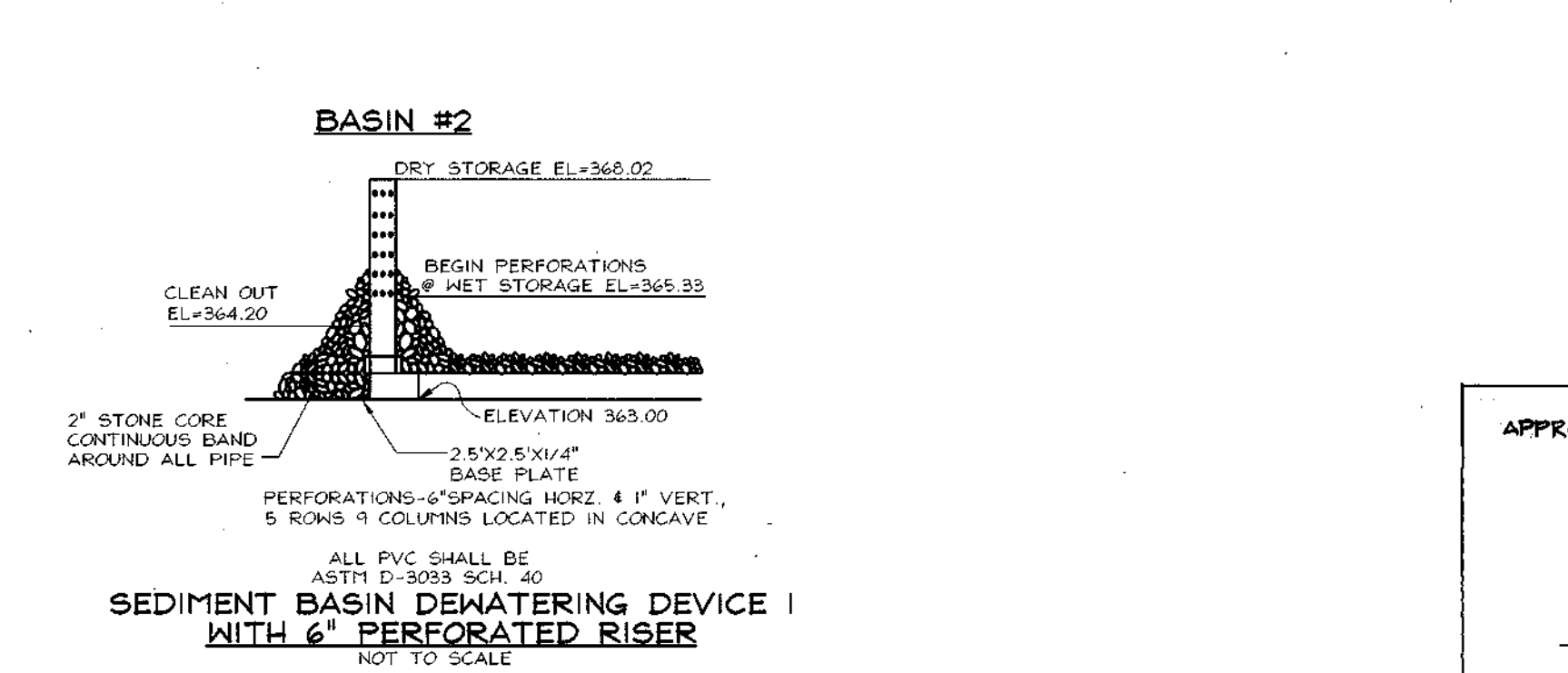
**PRECAST
STRUCTURE S-33 DETAIL**
NOT TO SCALE



**PERMANENT W.Q. EXTENDED
DETENTION PIPE DETAIL**
NOT TO SCALE



CONCRETE ANTI-SEEP COLLAR DETAIL
NOT TO SCALE



**SEDIMENT BASIN DOWATERING DEVICE I
WITH 6\"/>**

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 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 7/2/01
SIGNATURE OF ENGINEER
ROBERT H. VOGEL
DATE

John A. ... 5/3/01
SIGNATURE OF DEVELOPER
DATE

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."

John A. ... 6/8/01
SIGNATURE OF DEVELOPER
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Andrew M. ... 7-27-01
CHIEF, BUREAU OF HIGHWAYS
DATE

John A. ... 7/10/01
USDA-NATURAL RESOURCES CONSERVATION SERVICE
DATE

John A. ... 7/10/01
THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

John A. ... 7/10/01
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

OWNER
TAYLOR FAMILY LIMITED PARTNERSHIP A
TAYLOR FAMILY LIMITED PARTNERSHIP B
4100 COLLEGE AVE.
ELLCOTT CITY, MARYLAND
21043-5506

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

NO.	REVISION	DATE

**PROFILES AND DETAILS
SWI POND #2
WORTHINGTON FIELDS**
PHASE 1 LOTS 1-46
AND NON-BUILDABLE PARCELS 'A' AND 'B'
TAX MAP #25 GRID 20 # 331 PARCEL 98 # P/O PARCEL 4
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FREDERICK WARD ASSOCIATES, INC.
7125 Riverwood Drive Columbia, Maryland 21046-2354
8000 MAIN STREET
Phone: 410-290-9550 Fax: 410-720-6226
Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: G.A.H.
DRAWN BY: G.A.H.
CHECKED BY: R.H.V.
DATE: JULY, 2001
SCALE: AS SHOWN
W.O. NO.: 99-011

14 SHEET OF 20



- LEGEND**
- Existing Contour
 - Proposed Contour
 - Existing Trees to Remain
 - Light Poles Post Top Overhead
 - 15%-24.99% STEEP SLOPE AREA
 - 25% OR GREATER STEEP SLOPE AREA
 - WETLAND AREA
 - FOREST CONSERVATION EASEMENT
- NOTE:
A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.

NO.	REVISION	DATE

LANDSCAPE PLAN
WORTHINGTON FIELDS
PHASE 1 LOTS 1-46
AND NON-BUILDABLE PARCELS 'A' AND 'B'

TAX MAP #25, GRID 20 # # 31 PARCEL 9B # P/O PARCEL 4
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: GAH
DRAWN BY: GAH
CHECKED BY: RHV
DATE: JULY, 2001
SCALE: 1"=100'
W/O NO.: 99-011

PREV. FILE # S-98-18

16 SHEET OF 20

THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY AND THE LANDSCAPE MANUAL.
FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$25,950.00.

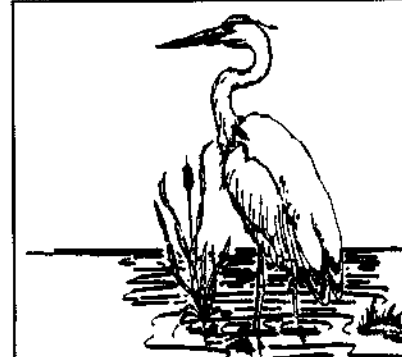
DEVELOPER
DR. IRVING AND EDITH TAYLOR
C/O LAND DESIGN & DEVELOPMENT, INC.
2000 MAIN STREET
ELLCOTT CITY, MARYLAND 21043
ATTN: MR. DONALD R. REUWER
PHONE: (410) 480-9105

OWNER
TAYLOR FAMILY LIMITED PARTNERSHIP A
TAYLOR FAMILY LIMITED PARTNERSHIP B
4100 COLLEGE AVE.
ELLCOTT CITY, MARYLAND
21043-5506

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Cindy Brantley 5/13/01
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

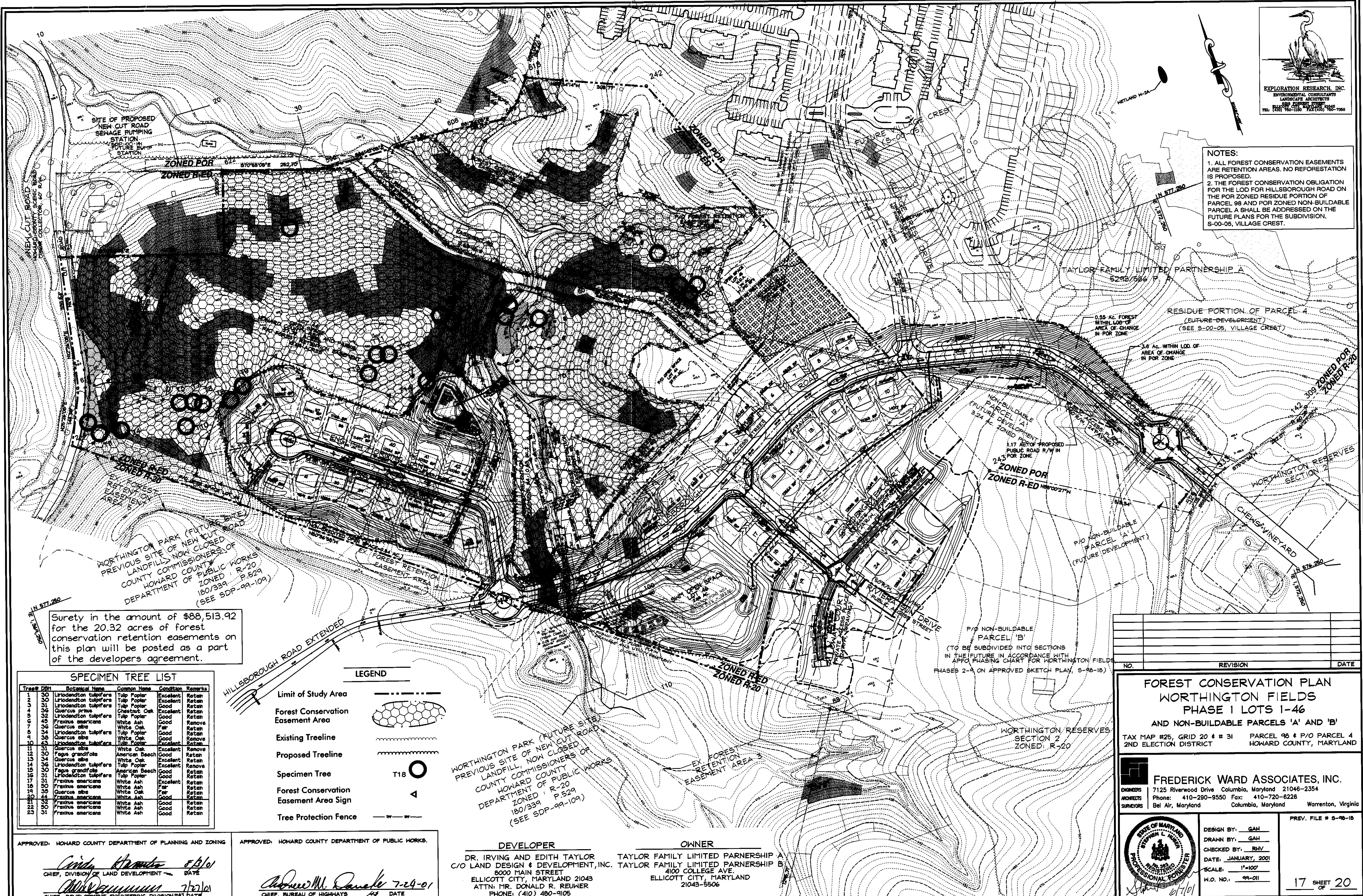
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Richard M. Dwyer 7-24-01
CHIEF, BUREAU OF HIGHWAYS DATE

K:\PROJETS\2010\11\ENR\04\1\1022516.dwg Thu Jun 07 11:12:15 2001 E4



EXPLORATION RESEARCH, INC.
 ENVIRONMENTAL CONSULTANTS
 LANDSCAPE ARCHITECTS
 1100 EASTERN AVENUE, SUITE 100
 WASHINGTON, D.C. 20002
 TEL: (202) 462-1100 FAX: (202) 462-1960

NOTES:
 1. ALL FOREST CONSERVATION EASEMENTS ARE RETENTION AREAS. NO REFORESTATION IS PROPOSED.
 2. THE FOREST CONSERVATION OBLIGATION FOR THE LOD FOR HILLSBOROUGH ROAD ON THE POR ZONED RESIDUE PORTION OF PARCEL 98 AND POR ZONED NON-BUILDABLE PARCEL A SHALL BE ADDRESSED ON THE FUTURE PLANS FOR THE SUBDIVISION, S-00-05, VILLAGE CREST.



Surety in the amount of \$88,513.92 for the 20.32 acres of forest conservation retention easements on this plan will be posted as a part of the developers agreement.

SPECIMEN TREE LIST

Tree #	Dist	Botanical Name	Common Name	Condition	Remarks
1	30	Liriodendron tulipifera	Tulip Poplar	Excellent	Retain
2	30	Liriodendron tulipifera	Tulip Poplar	Excellent	Retain
3	31	Liriodendron tulipifera	Tulip Poplar	Good	Retain
4	32	Quercus prinus	Chestnut Oak	Excellent	Retain
5	32	Liriodendron tulipifera	Tulip Poplar	Good	Retain
6	45	Fraxinus americana	White Ash	Good	Remove
7	36	Quercus alba	White Oak	Fair	Retain
8	34	Liriodendron tulipifera	Tulip Poplar	Good	Retain
9	38	Quercus alba	White Oak	Good	Remove
10	43	Liriodendron tulipifera	Tulip Poplar	Excellent	Retain
11	31	Quercus alba	White Oak	Excellent	Remove
12	30	Fagus grandifolia	American Beech	Good	Retain
13	34	Quercus alba	White Oak	Excellent	Retain
14	36	Liriodendron tulipifera	Tulip Poplar	Excellent	Remove
15	30	Fagus grandifolia	American Beech	Good	Retain
16	31	Liriodendron tulipifera	Tulip Poplar	Good	Retain
17	31	Fraxinus americana	White Ash	Excellent	Retain
18	40	Fraxinus americana	White Ash	Fair	Retain
19	35	Quercus alba	White Oak	Good	Retain
20	44	Fraxinus americana	White Ash	Good	Retain
21	32	Fraxinus americana	White Ash	Good	Retain
22	30	Fraxinus americana	White Ash	Good	Retain
23	31	Fraxinus americana	White Ash	Good	Retain

LEGEND

- Limit of Study Area: - - - - -
- Forest Conservation Easement Area: [Hatched pattern]
- Existing Treeline: ~~~~~
- Proposed Treeline: ~~~~~
- Specimen Tree: T18 ○
- Forest Conservation Easement Area Sign: ▲
- Tree Protection Fence: - - - - -

WORTHINGTON PARK (FUTURE SITE OF NEW CUT ROAD) PREVIOUS SITE OF NEW CUT ROAD LANDFILL, NOW CLOSED. HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS. ZONED: R-20 P.529 (SEE SDP-99-109)

NO.	REVISION	DATE

FOREST CONSERVATION PLAN
WORTHINGTON FIELDS
PHASE I LOTS 1-46
 AND NON-BUILDABLE PARCELS 'A' AND 'B'
 TAX MAP #25, GRID 20 & # 31 PARCEL 98 & P/O PARCEL 4
 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: GAH
 DRAWN BY: GAH
 CHECKED BY: RHW
 DATE: JANUARY, 2001
 SCALE: 1"=100'
 W.O. NO.: 99-011
 PREV. FILE # 8-98-18
 17 SHEET OF 20

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Cindy K... 5/3/01
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 7-24-01
 CHIEF, BUREAU OF HIGHWAYS DATE

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

OWNER
 TAYLOR FAMILY LIMITED PARTNERSHIP A
 TAYLOR FAMILY LIMITED PARTNERSHIP B
 4100 COLLEGE AVE.
 ELLICOTT CITY, MARYLAND
 21043-5506

NARRATIVE

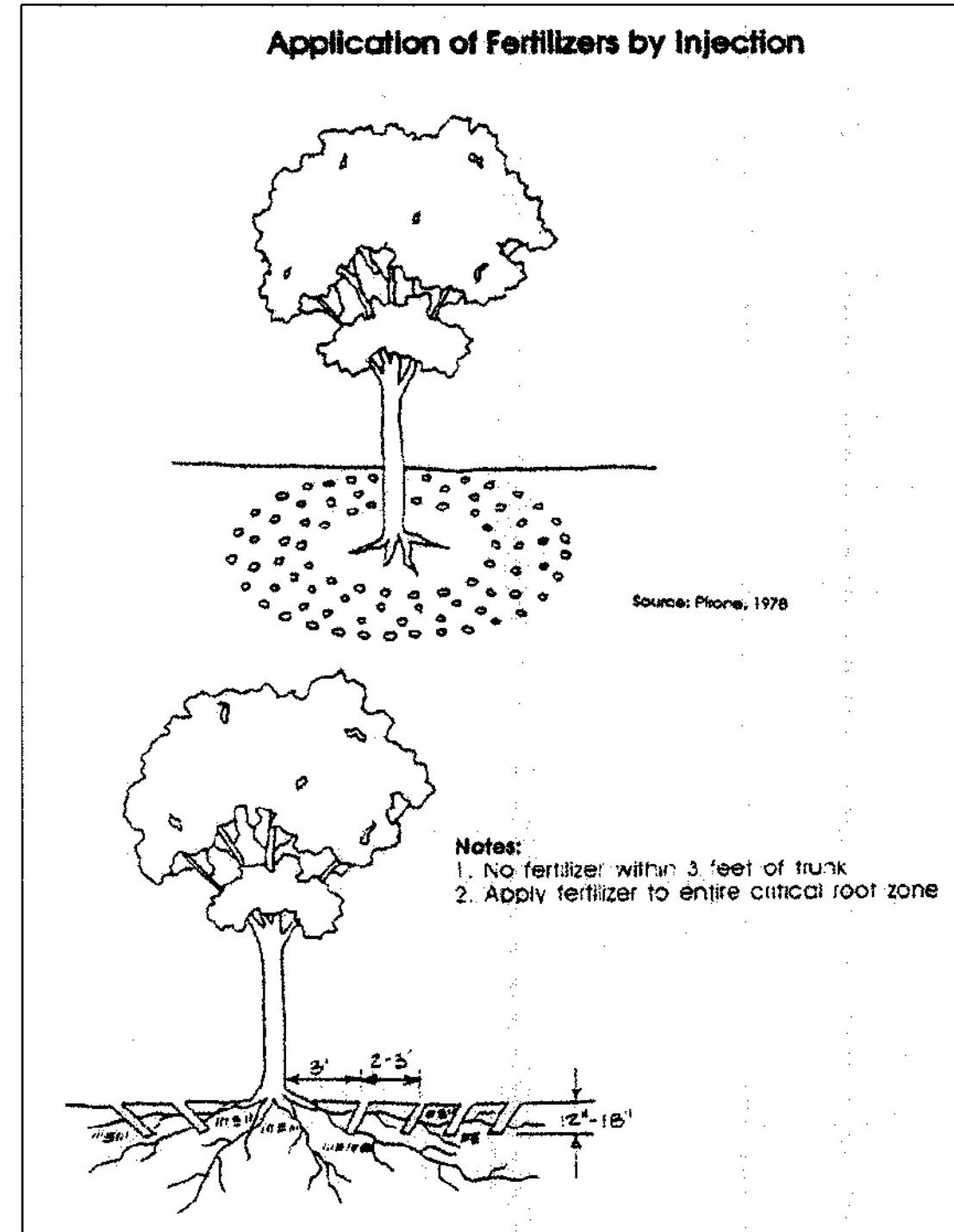
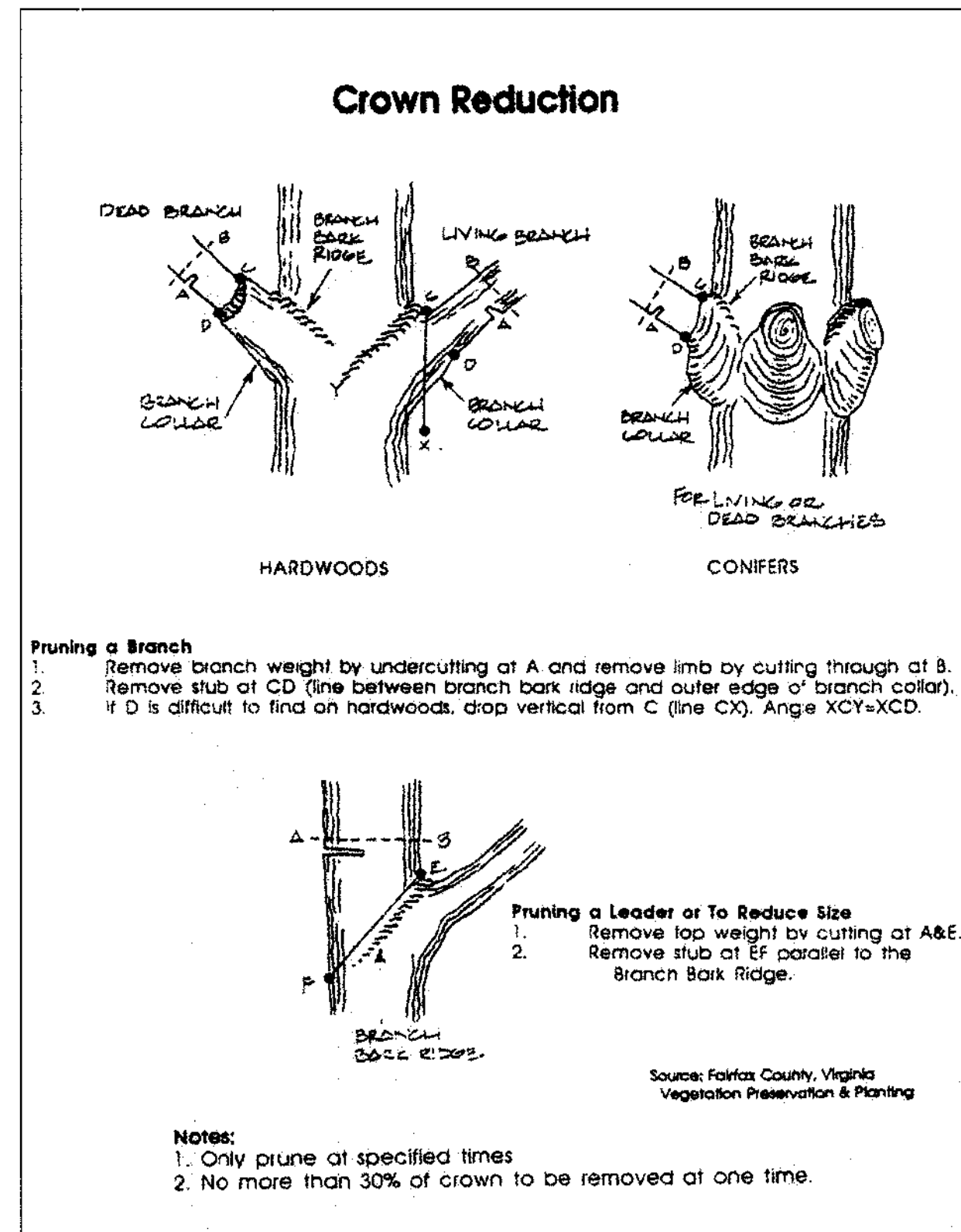
This Forest Conservation Plan has been developed in accordance with the Howard County Forest Conservation Manual and the 1991 Forest Conservation Act.

The existing site consists of 47.22 acres. Floodplain areas consisting of 1.62 acres are excluded from net tract area. The site has 31.37 acres of existing forest within the net tract area. Retention areas have been prioritized to provide protection to steep slopes and highly erodible soils. 20.32 acres of woodland will be retained under easement in these areas. 8.43 acres of this easement area is in excess of the amount of forest that must be retained so that no reforestation is required.

Forest Conservation/Retention Easement Areas platted with Phase 1 which are in excess of the minimum required for Phase 1 will be credited to future phases of Worthington Fields.

MANAGEMENT NOTES FOR FOREST RETENTION AREAS

- All proposed activities shall adhere to the conditions, schedules and terms of an approved sediment control and erosion plan.
- After the boundaries of the retention area have been staked and flagged and before any disturbance has taken place on-site, a preconstruction meeting at the construction site shall take place. The developer, contractor or project manager, and appropriate County inspectors shall attend.
- Tree protection for all retained areas:
 - All retention areas within 50 feet of proposed construction activities shall be protected by highly visible, well anchored temporary protection devices (super silt fence or blaze orange plastic mesh) (super silt fence or blaze orange plastic mesh).
 - All protection devices shall be in place prior to any grading or land clearing.
 - All protection devices shall be properly maintained and shall remain in place until construction has ceased.
 - Attachment of signs, fencing or other objects to trees is prohibited.
 - No equipment, machinery, vehicles, materials or excessive pedestrian traffic shall be allowed within protected areas.
- If the critical root zone (see detail) is affected by construction activities such as grade change, digging for foundations and roads or utility installation:
 - Prune roots with a clean cut using proper pruning equipment (see root pruning detail)
 - Water and fertilize as needed.
- During construction phase, monitor and correct condition of retained trees for: soil compaction, root injury, flood conditions, drought conditions and other stress signs.
- Post-Construction Phase
 - Inspect existing trees around the perimeter of disturbed limits for evidence of soil compaction, root injury, limb injury, or other stress signs and correct with proper management techniques such as root or limb pruning, soil aeration, fertilization, crown reduction or watering. Inspection and evaluation shall be performed by a licensed arborist.
 - Inspect for dead or dying trees or limbs which may pose safety hazard and remove.
 - No burial of discarded materials will occur onsite within the conservation areas.
 - No burning within 100 feet of wooded area.
 - All temporary forest protection structures will be removed after construction.
 - Following completion of construction, prior to use, the County inspector shall inspect the entire area.

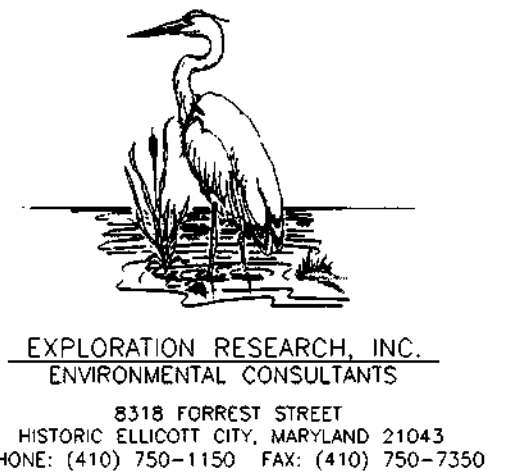
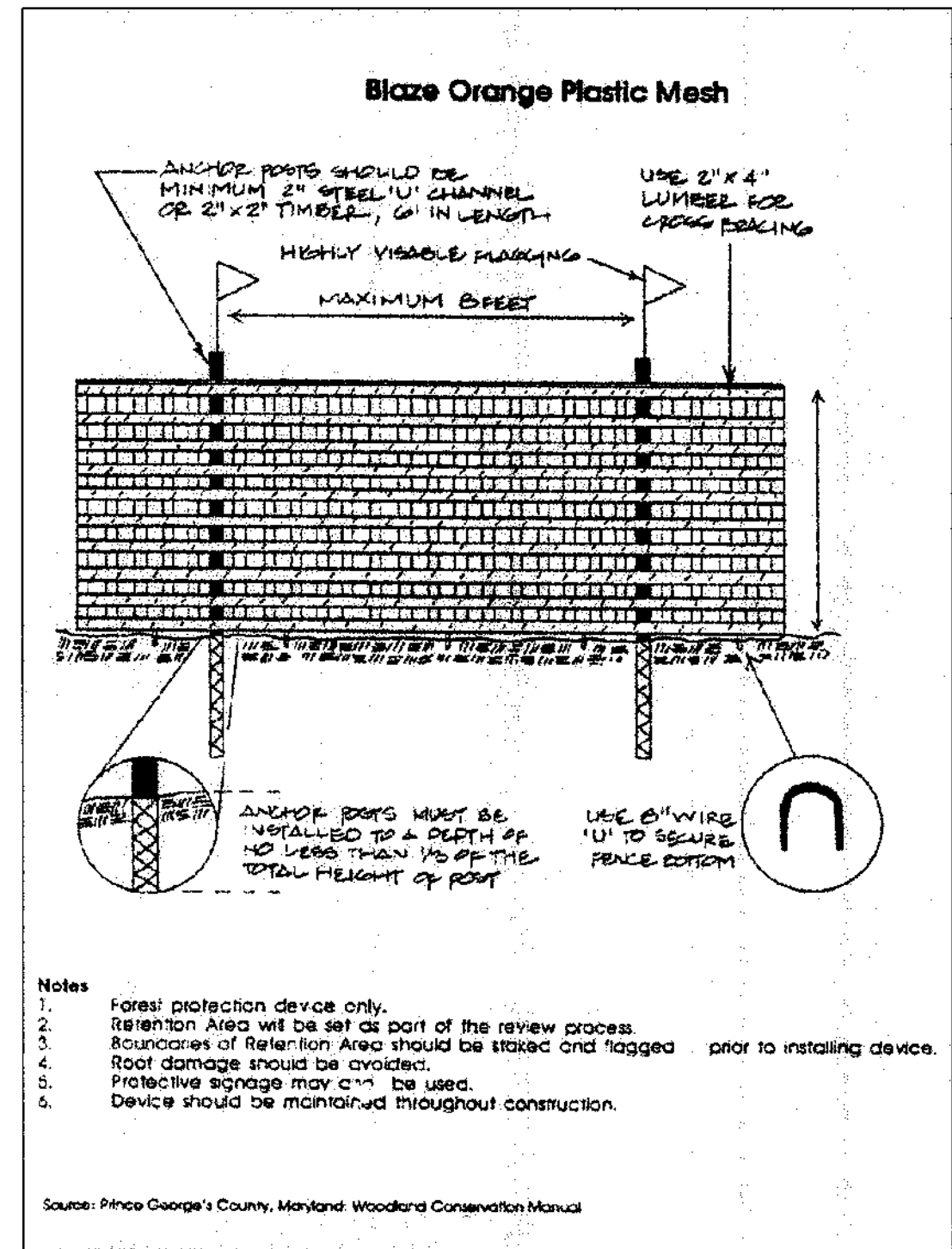
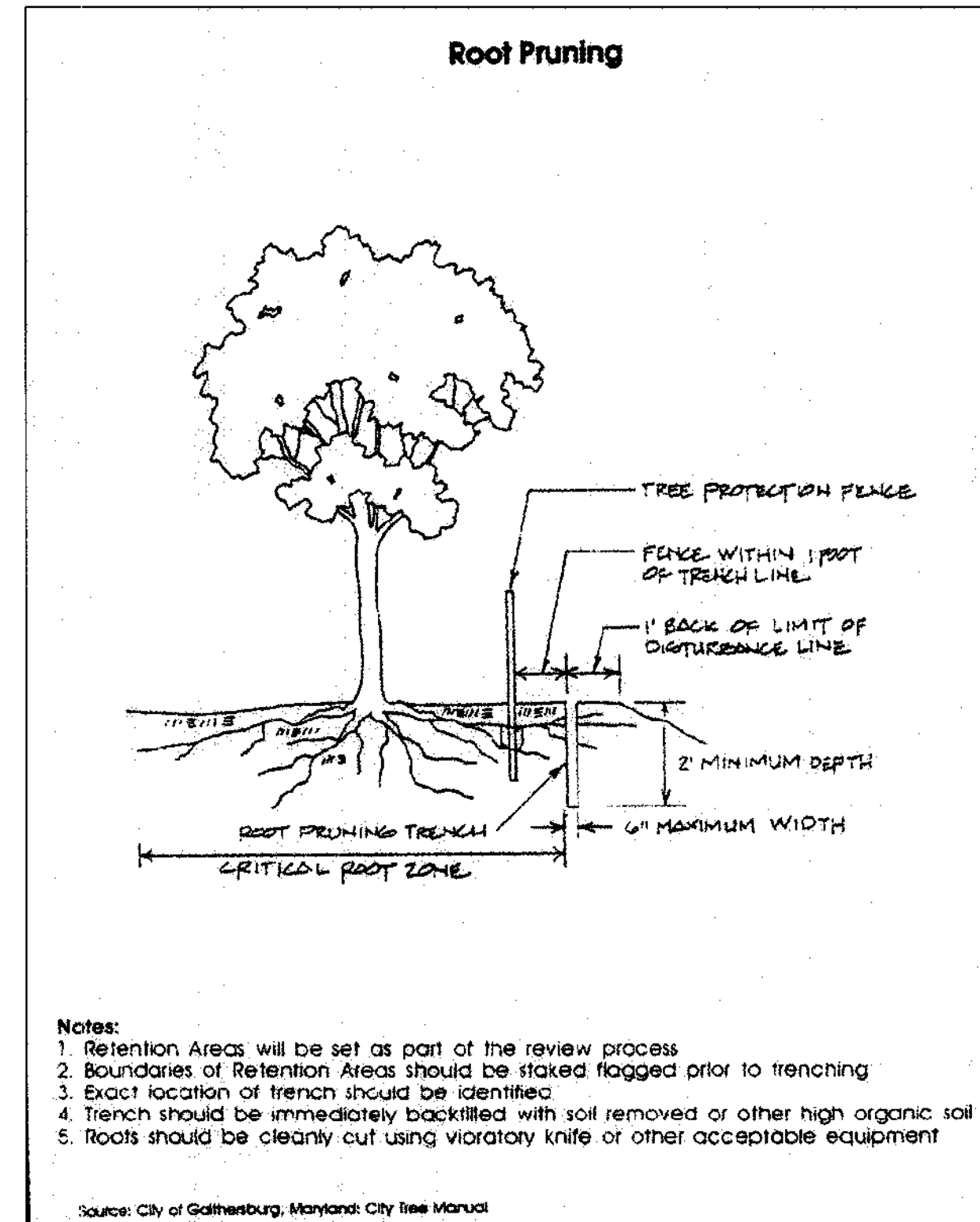
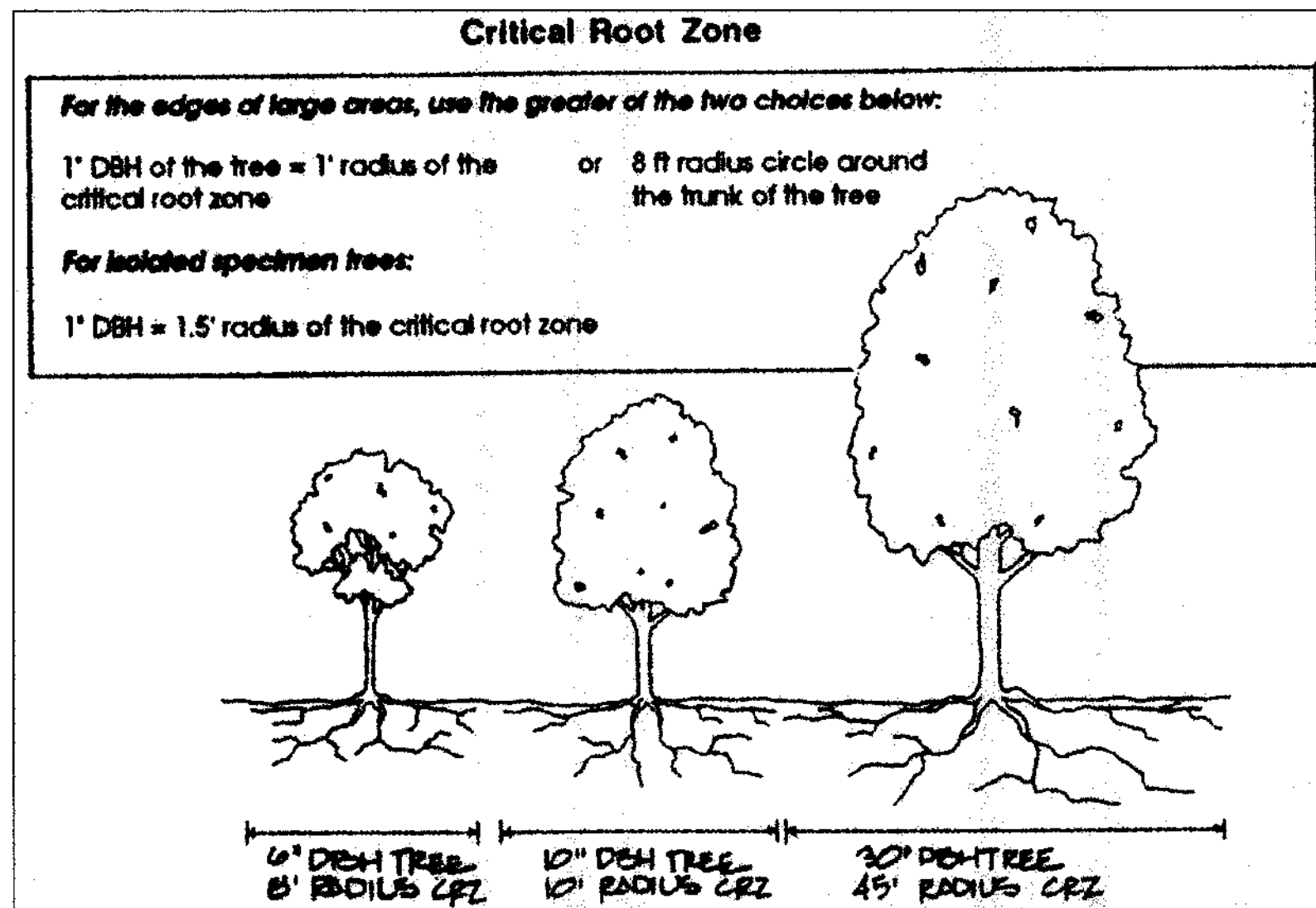
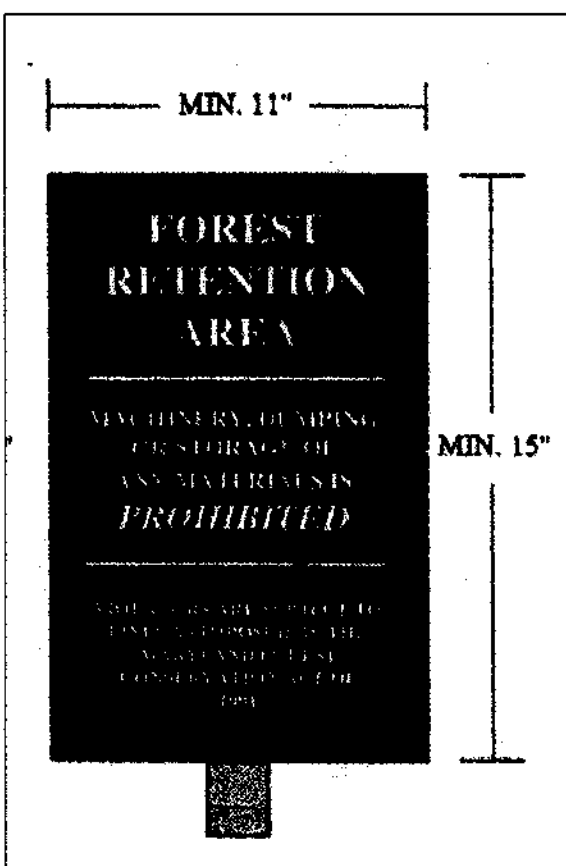


FOREST CONSERVATION WORKSHEET

	Acres (1/100 ac.)
Net Tract Area	
A. Total Tract Area	47.22
B. Area Within 100 Year Floodplain	1.62
C. Other deductions	0
D. Net Tract Area	45.60
Zoning Use Category: High Density Residential	
Land Use Category	
E. Afforestation Threshold (15% x D)	6.84
F. Conservation Threshold (20% x D)	9.12
Existing Forest Cover	
G. Existing Forest on Net Tract Area	31.37
H. Forest Area Above Conservation Threshold	22.25
Breakeven Point	
I. Forest Retention Above Threshold with no Mitigation	13.57
J. Clearing Permitted without Mitigation	17.80
Proposed Forest Clearing	
K. Forest Areas to be Cleared	11.05
L. Forest Areas to be Retained	20.32
Planting Requirements	
M. Reforestation for Clearing Above Threshold	2.76
N. Reforestation for Clearing Below the Threshold	0
P. Credit for Retention Above Conservation Threshold	11.20
Q. Total Reforestation Required	0
R. Total Afforestation Required	0
S. Total Reforestation and Afforestation Requirement	0

FOREST CONSERVATION EASEMENT SUMMARY

Conservation Easement #1	10.69 Ac.
Conservation Easement #2	0.63 Ac.
Conservation Easement #3	3.59 Ac.
Conservation Easement #4	0.63 Ac.
Conservation Easement #5	4.78 Ac.
Total Conservation Easement	20.32 Ac.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Cindy Harter 07/21/01
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Andrew M. Daniels 7-24-01
 CHIEF, BUREAU OF HIGHWAYS DATE

DEVELOPER
 DR. IRVING AND EDITH TAYLOR
 C/O LAND DESIGN & DEVELOPMENT, INC. TAYLOR FAMILY LIMITED PARTNERSHIP A
 8000 MAIN STREET TAYLOR FAMILY LIMITED PARTNERSHIP B
 ELLICOTT CITY, MARYLAND 21043 4100 COLLEGE AVE.
 ATTN: MR. DONALD R. REUWER ELLICOTT CITY, MARYLAND
 PHONE: (410) 480-9105 21043-5506

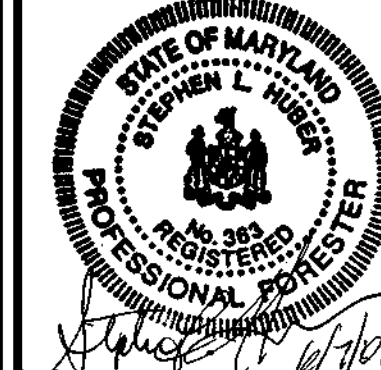
Surety in the amount of \$88,513.92 for the 20.32 acres of forest conservation retention easements on this plan will be posted as a part of the developers agreement.

NO.	REVISION	DATE

FOREST CONSERVATION PLAN
WORTHINGTON FIELDS
PHASE I LOTS 1-46
 AND NON-BUILDABLE PARCELS 'A' AND 'B'
 TAX MAP #25, GRID 20 & # 31 PARCEL 9B & P/O PARCEL 4
 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

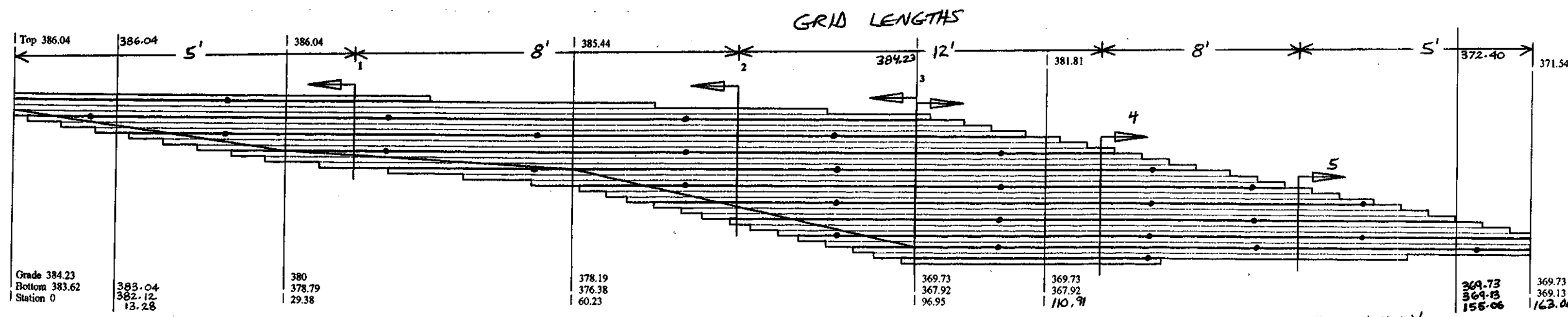
FREDERICK WARD ASSOCIATES, INC.
 ENGINEERS 7125 Riverwood Drive Columbia, Maryland 21046-2354
 ARCHITECTS Phone: 410-290-9550 Fax: 410-720-6226
 SURVEYORS Bel Air, Maryland Columbia, Maryland Warrenton, Virginia

DESIGN BY: CPB
 DRAWN BY: AB
 CHECKED BY: SH
 DATE: JANUARY, 2001
 SCALE: 1"=100'
 H.O. NO.: 99055



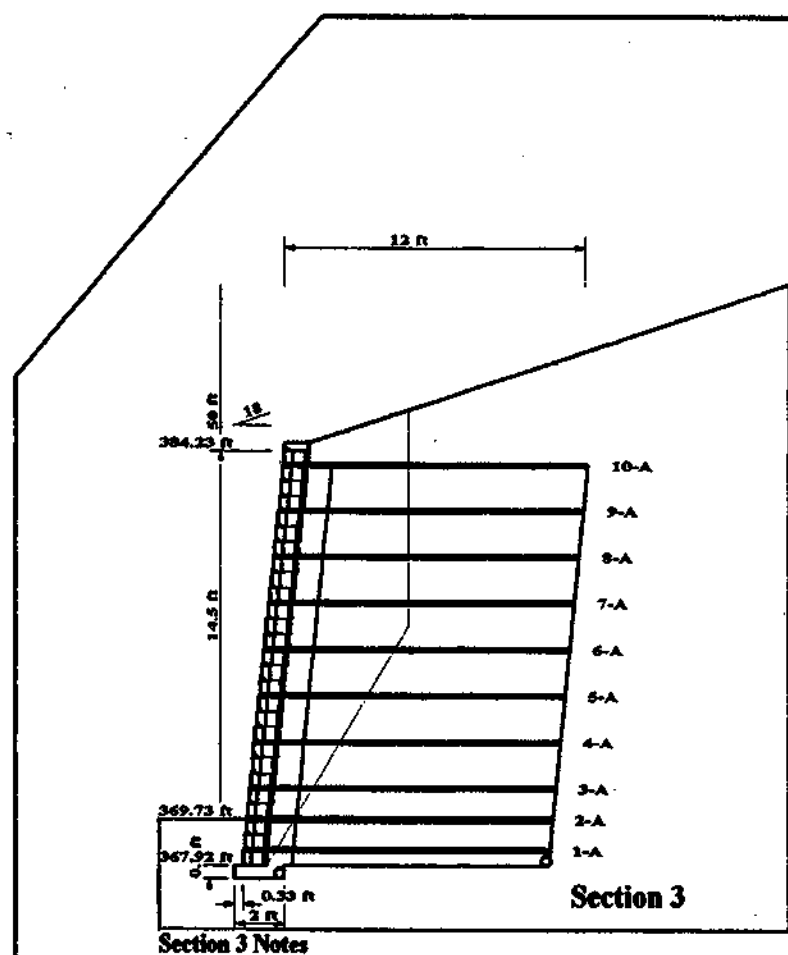
Project Information

Project Name: WORTHINGTON FIELDS- Phase I
Location: Howard County, MD
Project Number: DS211065
Wall Number: Detention Pond- Lots 1- 46
Designer: DKS
Date: 02-23-01



Section	1	2	3
Top	386.04	384.81	384.12
Grade	379.37	378.13	369.78
Bottom	378.19	372.13	367.92
Station	0	13.28	29.38

Allan Block Retaining Wall Elevation - Detention Pond- Lots 1- 46
 Horizontal Scale: 1" = 10'-0" Vertical Scale: 1" = 10'-0"



Project Name: WORTHINGTON FIELDS- Phase I
Location: Howard County, MD
Project Number: DS211065
Wall Number: Detention Pond- Lots 1- 46
Designer: DKS
Date: 02-23-01



Allan Block Corp.
 7400 Metro Blvd.
 Suite 185
 Edina, MN 55439
 Phone 612/835-5309
 Fax 612/835-0013
 http://www.allanblock.com

Nitterhouse Masonry Prod.
 859 Cleveland Ave. PO Box 692
 Chambersburg, PA 17201
 717-267-4500
 717-264-7535 - fax

AB Classic
 Total Wall Height = 16.51 Feet
 Block Height = 0.604 Feet
 Angle of Setback = 6 Deg.
 Depth of Block = 0.97 Feet
 Length of Block = 1.469 Feet

Infill Soil Retained Soil
 Friction Angle = 28 Deg. Friction Angle = 28 Deg.
 Unit Weight = 120 PCF Unit Weight = 120 PCF

Foundation Soil
 Friction Angle = 28 Deg. Cohesion = 0 PSF
 Unit Weight = 120 PCF

Bearing Capacity
 Factor of Safety = 2.02

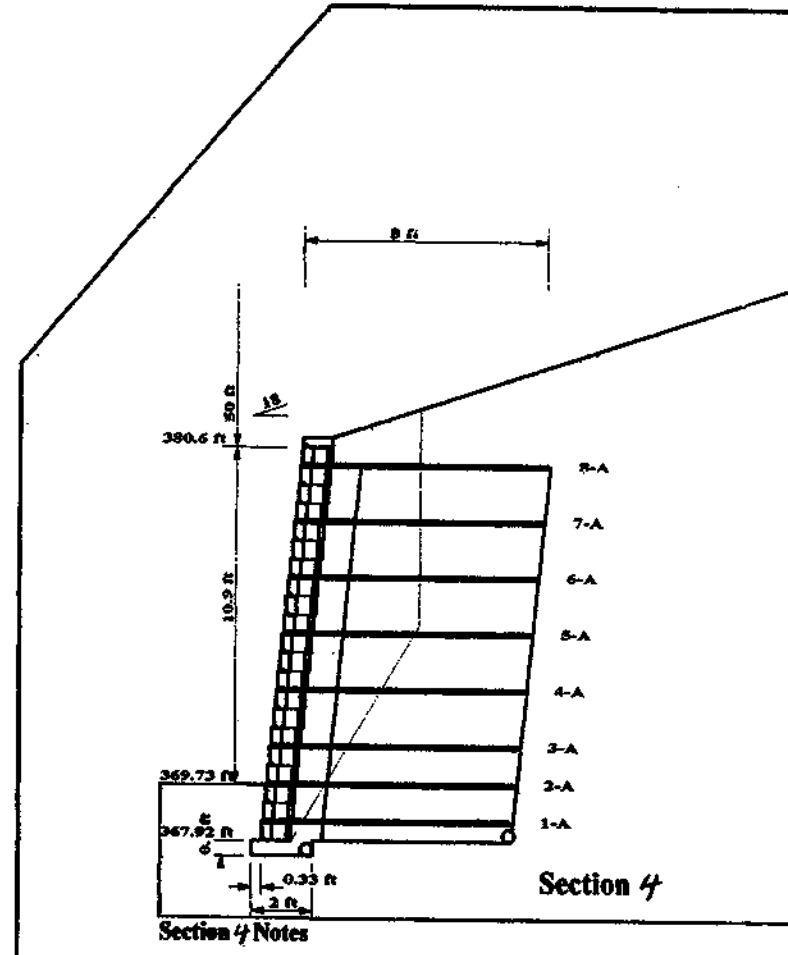
Safety Factors Static
 Actual Sliding = 1.829
 Actual Overturning = 3.022

Safety Factors Seismic
 Actual Sliding = N.A.
 Actual Overturning = N.A.

Geogrid Legend
 A-Minward EXT
 B-Minward EXT
 C-Minward EXT
 e-Crested Con.
 Min. Length of Geogrid = 12 Feet

3 of 5

ABwalls 2000 V.3.1 Allan Block Corporation



Project Name: WORTHINGTON FIELDS- Phase I
Location: Howard County, MD
Project Number: DS211065
Wall Number: Detention Pond- Lots 1- 46
Designer: DKS
Date: 02-23-01



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 717-264-7535 - fax

AB Classic
 Total Wall Height = 12.68 Feet
 Block Height = 0.604 Feet
 Angle of Setback = 6 Deg.
 Depth of Block = 0.97 Feet
 Length of Block = 1.469 Feet

Infill Soil Retained Soil
 Friction Angle = 28 Deg. Friction Angle = 28 Deg.
 Unit Weight = 120 PCF Unit Weight = 120 PCF

Foundation Soil
 Friction Angle = 28 Deg. Cohesion = 0 PSF
 Unit Weight = 120 PCF

Bearing Capacity
 Factor of Safety = 2.32

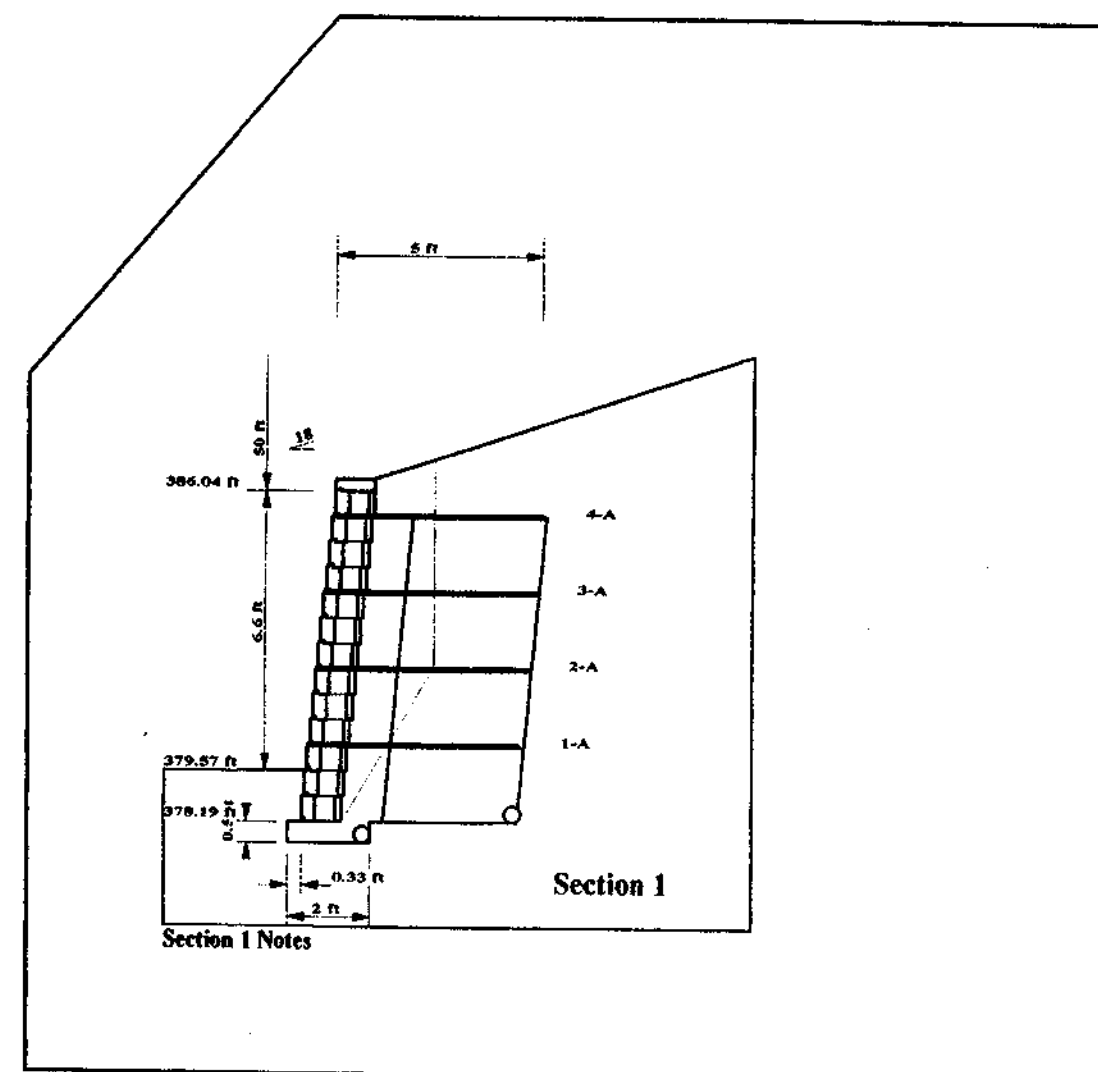
Safety Factors Static
 Actual Sliding = 1.672
 Actual Overturning = 3.537

Safety Factors Seismic
 Actual Sliding = N.A.
 Actual Overturning = N.A.

Geogrid Legend
 A-Minward EXT
 B-Minward EXT
 C-Minward EXT
 e-Crested Con.
 Min. Length of Geogrid = 8 Feet

4 of 5

ABwalls 2000 V.3.1 Allan Block Corporation



Project Name: WORTHINGTON FIELDS- Phase I
Location: Howard County, MD
Project Number: DS211065
Wall Number: Detention Pond- Lots 1- 46
Designer: DKS
Date: 02-23-01



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AB Classic
 Total Wall Height = 12.68 Feet
 Block Height = 0.604 Feet
 Angle of Setback = 6 Deg.
 Depth of Block = 0.97 Feet
 Length of Block = 1.469 Feet

Infill Soil Retained Soil
 Friction Angle = 28 Deg. Friction Angle = 28 Deg.
 Unit Weight = 120 PCF Unit Weight = 120 PCF

Foundation Soil
 Friction Angle = 28 Deg. Cohesion = 0 PSF
 Unit Weight = 120 PCF

Bearing Capacity
 Factor of Safety = 3.14

Safety Factors Static
 Actual Sliding = 1.724
 Actual Overturning = 3.518

Safety Factors Seismic
 Actual Sliding = N.A.
 Actual Overturning = N.A.

Geogrid Legend
 A-Minward EXT
 B-Minward EXT
 C-Minward EXT
 e-Crested Con.
 Min. Length of Geogrid = 5 Feet

1 of 5



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Nitterhouse Masonry Prod.
 859 Cleveland Ave. PO Box 692
 Chambersburg, PA 17201
 717-267-4500
 717-264-7535 - fax

AB Classic
 Total Wall Height = 7.85 Feet
 Block Height = 0.604 Feet
 Angle of Setback = 6 Deg.
 Depth of Block = 0.97 Feet
 Length of Block = 1.469 Feet

Infill Soil Retained Soil
 Friction Angle = 28 Deg. Friction Angle = 28 Deg.
 Unit Weight = 120 PCF Unit Weight = 120 PCF

Foundation Soil
 Friction Angle = 28 Deg. Cohesion = 0 PSF
 Unit Weight = 120 PCF

Bearing Capacity
 Factor of Safety = 3.14

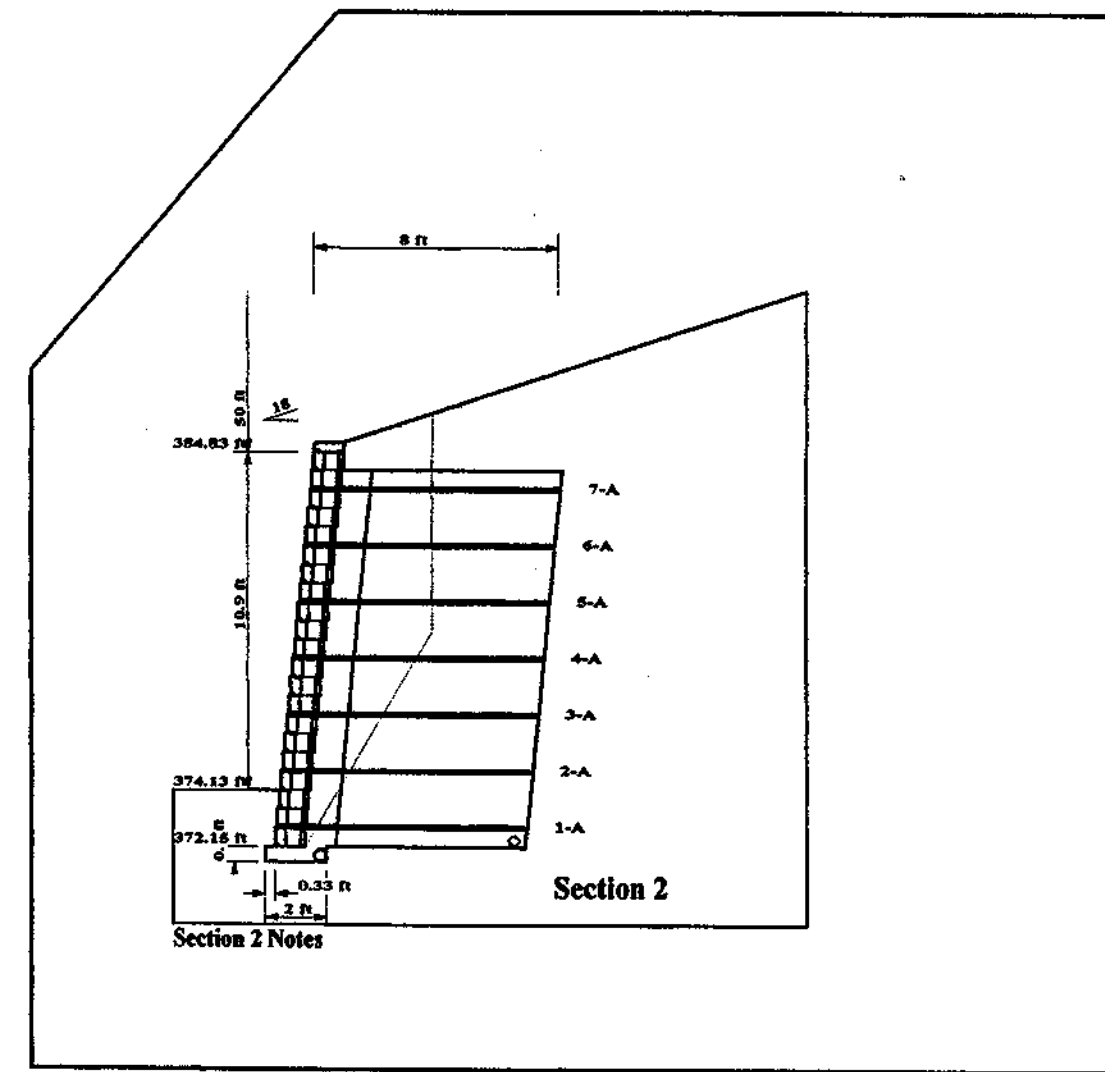
Safety Factors Static
 Actual Sliding = 1.724
 Actual Overturning = 3.518

Safety Factors Seismic
 Actual Sliding = N.A.
 Actual Overturning = N.A.

Geogrid Legend
 A-Minward EXT
 B-Minward EXT
 C-Minward EXT
 e-Crested Con.
 Min. Length of Geogrid = 5 Feet

5 of 5

ABwalls 2000 V.3.1 Allan Block Corporation



Project Name: WORTHINGTON FIELDS- Phase I
Location: Howard County, MD
Project Number: DS211065
Wall Number: Detention Pond- Lots 1- 46
Designer: DKS
Date: 02-23-01



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 Chambersburg, PA 17201
 717-267-4500
 717-264-7535 - fax

AB Classic
 Total Wall Height = 12.68 Feet
 Block Height = 0.604 Feet
 Angle of Setback = 6 Deg.
 Depth of Block = 0.97 Feet
 Length of Block = 1.469 Feet

Infill Soil Retained Soil
 Friction Angle = 28 Deg. Friction Angle = 28 Deg.
 Unit Weight = 120 PCF Unit Weight = 120 PCF

Foundation Soil
 Friction Angle = 28 Deg. Cohesion = 0 PSF
 Unit Weight = 120 PCF

Bearing Capacity
 Factor of Safety = 3.14

Safety Factors Static
 Actual Sliding = 1.672
 Actual Overturning = 3.537

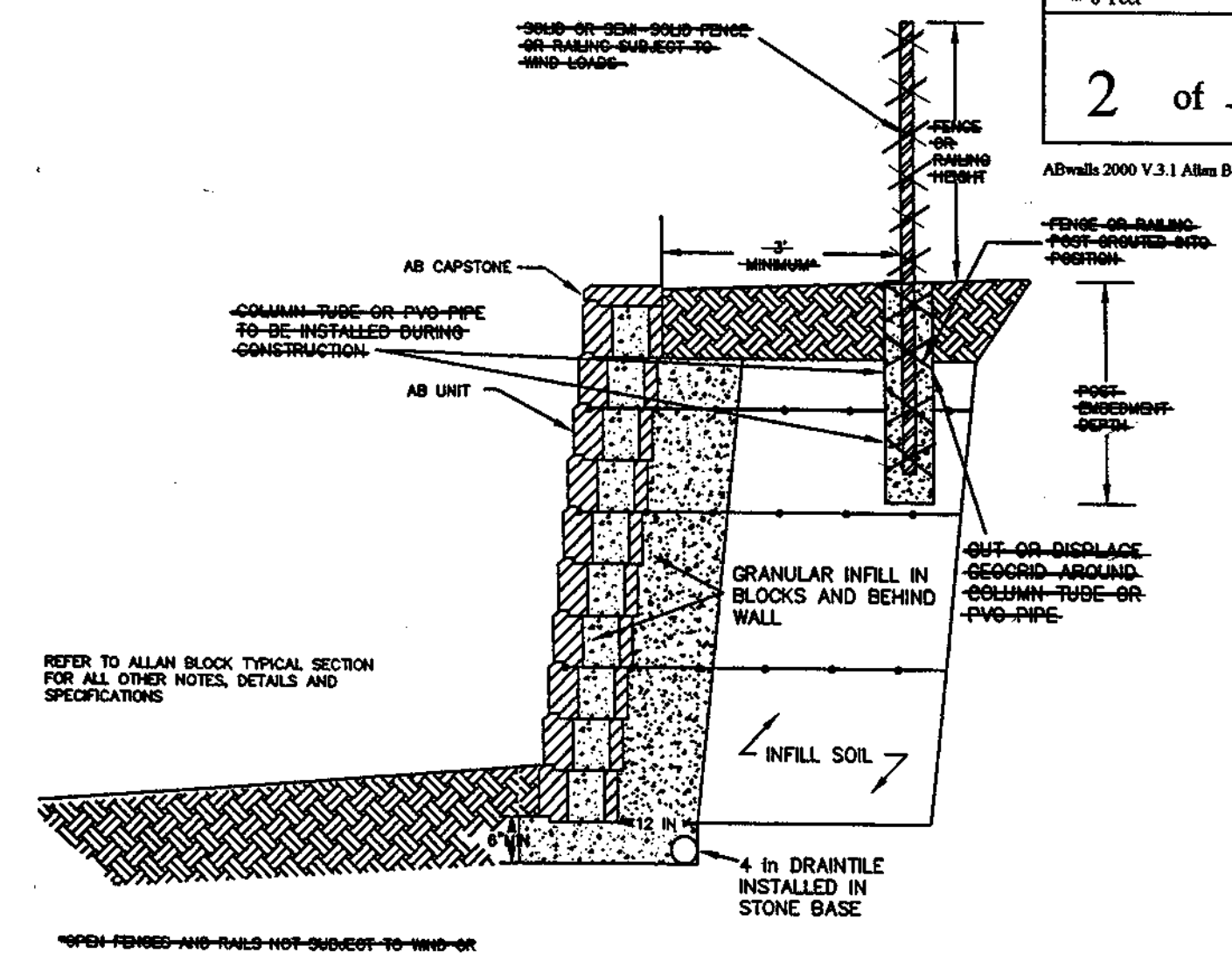
Safety Factors Seismic
 Actual Sliding = N.A.
 Actual Overturning = N.A.

Geogrid Legend
 A-Minward EXT
 B-Minward EXT
 C-Minward EXT
 e-Crested Con.
 Min. Length of Geogrid = 5 Feet

2 of 5

ABwalls 2000 V.3.1 Allan Block Corporation

ALLAN BLOCK FENCE OR RAILING DETAIL



REFER TO ALLAN BLOCK TYPICAL SECTION FOR ALL OTHER NOTES, DETAILS AND SPECIFICATIONS.

NO.	REVISION	DATE

**RETAINING WALL
 WORTHINGTON FIELDS
 PHASE 1 LOTS 1-46
 AND NON-BUILDABLE PARCELS 'A' AND 'B'**

TAX MAP #25, GRID 20 & # 31 PARCEL 98 & P/O PARCEL 4
 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: _____
 DRAWN BY: _____
 CHECKED BY: _____
 DATE: _____
 SCALE: _____
 W.O. NO.: 99-011

PREV. FILE # S-98-18

19 SHEET OF 20

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development DATE 8/3/01
 Chief, Development Engineering Division DATE 7/27/01

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
 Chief, Bureau of Highways DATE 7-24-01

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

OWNER
 TAYLOR FAMILY LIMITED PARTNERSHIP A
 TAYLOR FAMILY LIMITED PARTNERSHIP B
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 ELLICOTT CITY, MARYLAND
 21043-5506

RYAN & ASSOCIATES, INC.
 RETAINING WALL DIVISION
 717-709-1153 fax 717-709-1154
 6242 MollyPitcher Hwy
 Shippensburg, PA 17527

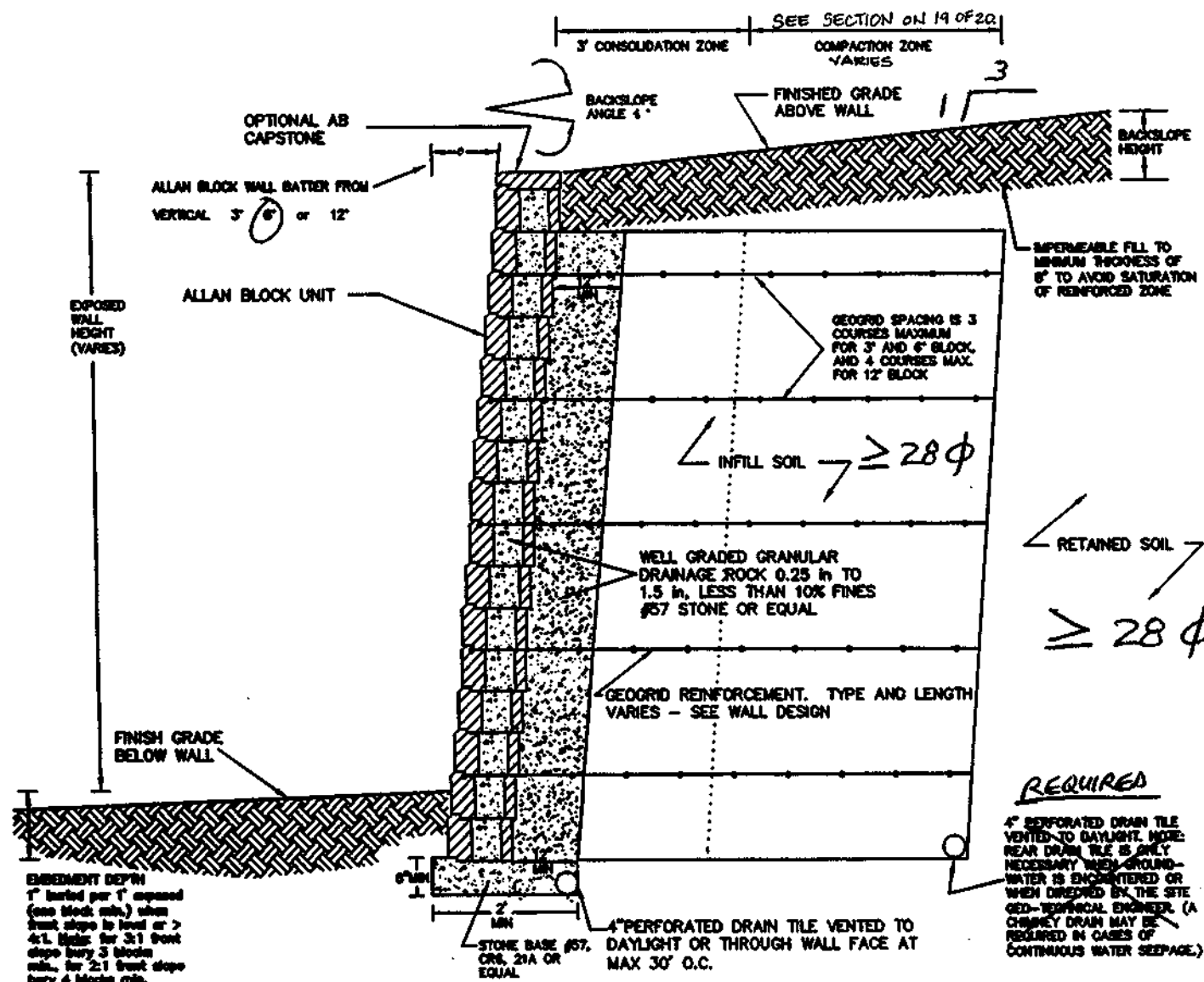
RYAN & ASSOCIATES

PROJECT NAME: Worthington Fields- Phase I PROJECT#: DS211065
 LOCATION: Howard County, MD BLOCK TYPE: Allan Block

GENERAL NOTES:

- SOILS:** An internal angle of friction of 28 degrees was used for the site soil in this design based on review of the geo-technical report done by Hillis-Carnes. This is for the native ML and SM soil types. CH (fat clay), MH (fat silt) and OH (organic) soils are not acceptable for wall construction. If these unsuitable soils are encountered they shall be removed and replaced with soils meeting or exceeding the design friction angle of 28 degrees. The on site geo-technical engineer shall monitor this during the construction process.
- BEARING CAPACITY:** The footing sub-grade must be tested and have an allowable bearing capacity of 3,000 PSF prior to the installation of the stone base. The actual highest bearing pressure exerted by the wall on this project (including any slopes and surcharges above) is 2680 PSF. If this is not met, an enlarged, grid-reinforced stone footer will be required.
- SLOPES & SURCHARGES:** The wall design accounts for the load of a 3:1 infinite slope above the wall.
- WALL PROFILE:** The elevation drawing was done to represent the grade changes necessary on the civil drawings. Since the design was done in even block course increments the elevations may not exactly match those on the civil plans. Minor field changes may be necessary if the actual grades differ from the site plan. NOTE: the cap height of .333' is not shown on the profile drawings. This height may have been used in some cases to achieve the desired TW elevation.
- GEO-GRIDS:** The geo-grid used in this design is Mirafix 5XT which has a LTDS of 1702. No substitutions are acceptable without prior approval of Ryan & Associates.
- SPECIFICATIONS:** Construction and materials must conform to the attached Ryan & Associates' "Specifications for Segmental Retaining Wall Systems" and the Allan Block "Installation Guide for Geo-Grid Reinforced Retaining Walls".
- WALL BATTER:** A 6° batter was used for the Allan block set back in this design.
- EMBEDMENT:** 1 block minimum. 2 blocks and 3 blocks where indicated on the elevation and cross sections. Note that 3 blocks must be buried from station 60 to 1+11 where the wall is above the pond slope.
- REAR DRAIN TILE:** A rear drain pipe is required on this project since it is a "cut" situation and since Howard County dictates a rear drain on walls taller than 12'. This pipe shall be vented to daylight.
- FLOOD ELEVATION:** The 100 year flood elevation is lower than the BW so there is not a water impact on this wall.
- CONSTRUCTION MONITORING:** This wall shall be built under supervision of a qualified geo-technical engineer. The footing sub-grade must be tested. Compaction tests must be done on the reinforced geo-grid zone at 25%, 50%, 75% and 100% of wall height (or as directed by the owner's geo-technical engineer).

ALLAN BLOCK TYPICAL WALL SECTION



SPECIFICATIONS FOR SEGMENTAL RETAINING WALL SYSTEMS

PART 1: GENERAL

- 1.01 Description
- A. Work includes furnishing and installing segmental retaining wall (SRW) units to the lines and grades designated on the construction drawings. Also included is furnishing and installing appurtenant materials required for construction of the retaining wall as shown on the construction drawings.
- 1.02 Reference Standards
- A. ASTM C 140- Sampling and Testing Concrete Masonry Units
 - B. ASTM D 4595- Tensile Properties of Geotextiles by the Wide-Width Strip Method
 - C. ASTM D 5262- Test Method for Evaluating the Unconfined Creep Behavior of Geo-Grids
 - D. GRI-GG1- Single Rib Geogrid Tensile Strength
 - E. GRI-GG5- Geogrid Pullout
 - F. ASTM D 698- Moisture Density Relationship for Soils, Standard Method
 - G. ASTM D 422- Gradation of Soils
 - H. ASTM 4318- Atterberg Limits of Soil
 - I. ASTM 3034- Specification for Polyvinyl Chloride (PVC) Plastic Pipe
 - J. ASTM D1248- Specification for Corrugated Plastic Pipe

PART 2: MATERIALS

- 2.01 Segmental Retaining Wall Units
- A. SRW units shall be machine formed, Portland Cement concrete blocks specifically designed for retaining wall applications. SRW unit currently approved for this project is:
- Allan Block as manufactured by Nitterhouse Masonry Products
- NOTE:** Where Allan Block specifications and reference documents conflict with these specifications, these specifications hold precedence.
- B. SRW units shall be capable of being erected with the horizontal gap between adjacent units not exceeding 1/8". The units shall be uniformly square and not trapezoidal in shape.
 - C. SRW units shall have a minimum 4" overlap of units on each successive course so that walls are interlocked and continuous.
 - D. SRW units shall be sound and free of cracks or other defects that would interfere with the proper placing of the unit or significantly impair the strength or permanence of the structure. Cracking or excessive chipping may be grounds for rejection. Units showing cracks longer than 1/2" shall not be used within the wall. Units showing chips visible at a distance of 30 feet from the wall shall not be used within the wall.
 - E. Concrete used to manufacture SRW units shall have a minimum 28 days compressive strength of 3,000 psi and a maximum moisture absorption rate, by weight, of 8% as determined in accordance with ASTM C 140. Compressive strength test specimens shall conform to the saw-cut coupon provisions of Section 5.2.4 of ASTM C140 with the following exception: Coupon shall be taken from the least dimension of the unit of a size and shape representing the geometry of the unit as a whole.
 - F. SRW units' molded dimensions shall not differ more than ± 1/8 inch from that specified, except height which shall be ± 1/16 inch as measured in accordance with ASTM C140.

- E. Repeat procedures to extent of wall height
 - F. The wall face cant shall not differ more than ± 2 degrees from that specified.
 - G. Embedment shall follow the general rule of 1" buried for every 1' of wall exposed when the front slope is 4:1 or greater. For 3:1 front slopes a minimum of 21" shall be buried, and for 2:1 front slopes a minimum of 29" shall be buried.
- 4.06 Geosynthetic Reinforcement Placement
- A. All geosynthetic reinforcement shall be installed at the proper elevation and orientation as shown on the wall profiles and details on the final construction plans. Partial grid coverage is not acceptable- no gaps shall be present between grid sections.
 - B. At the elevations shown on the plans, the geosynthetic reinforcement shall be laid horizontally on compacted infill and on top of the concrete SRW units. Embedment of the geosynthetic in the SRW units shall be consistent with SRW manufacturer's recommendations. Correct orientation of the geosynthetic reinforcement shall be verified by the Contractor to be in accordance with the geosynthetic manufacturer's recommendations. The highest strength direction of the geosynthetic must be perpendicular to the wall face.
 - C. Geosynthetic reinforcement layers shall be one continuous piece for their entire embedment length. Overlap of the geosynthetic in the design strength direction (perpendicular to the wall face) is not permitted.
 - D. Tracked construction equipment shall not be operated directly on the geosynthetic reinforcement. A minimum of 6 inches of backfill is required prior to operation of tracked vehicles over the geosynthetic. Turning should be kept to a minimum. Rubber-tired equipment may pass over the geosynthetic reinforcement at slow speeds (less than 5 mph).
 - E. The geosynthetic reinforcement shall be in tension and free of wrinkles prior to placement of soil fill. The nominal tension shall be applied to the reinforcement and secured in place with staples, stakes or by hand tensing until reinforcement is covered by six inches of fill.
- 4.07 Drainage Materials
- A. Drainage aggregate shall be installed to the line, grades, and sections shown on the final plans. Drainage fill shall be placed to the minimum thickness of 12" as shown on the construction plans behind units. Drainage fill shall also fill all voids between and within (if hollow) the units.
 - B. Drainage collection pipes shall be installed to maintain gravity flow of water outside the reinforced soil zone. The drainage collection pipe shall daylight into a storm sewer manhole or along a slope at an elevation lower than the lowest point of the pipe within the aggregate drain (see section 2.05).
 - C. All drainage zone aggregate, including the stone placed within the block cells shall be compacted with a vibratory plate compactor with a minimum of two passes.
- 4.08 Backfill Placement
- A. The reinforced backfill shall be placed as shown in the construction plans in the maximum compacted lift thickness of 10 inches and shall be compacted to a minimum of 95% of standard proctor density (ASTM D 698) at a moisture content within 2% of optimum. The backfill shall be placed and spread in such a manner as to eliminate wrinkles or movement of the geosynthetic reinforcement and the SRW units. Compaction testing shall be done at 25%, 50%, 75%, and 100% of the wall height or as specified by the site geo-technical engineer.

- 2.02 Geosynthetic Reinforcement
- A. Geosynthetic reinforcement shall consist of geogrids or geotextiles as indicated on the design plans. No grid substitutions shall be permitted without the approval of Ryan & Associates.
- 2.03 Leveling Pad
- A. Unless otherwise noted on the cross sections, the leveling pad shall be 6" deep X 24" wide. Material for leveling pad shall consist of compacted sand, gravel, or a combination thereof. (Typical stone used for this pad is #57, CR6, 21A, etc.) The leveling pad should extend laterally at least a distance of 6 inches from the toe and heel of the lowest SRW unit. In cases of poor bearing capacity or fill soils an enlarged, grid reinforced footer may be required. This typically consists of 1' deep X 4' wide with geo-grid under and within the stone. Lean, un-reinforced concrete with strength of 1500 PSI and 6" deep may also be used as for the leveling pad.
- 2.04 Drainage Aggregate
- A. Drainage aggregate shall be angular, clean stone or granular fill consisting of #57 or approved equal (i.e. median stone size 1/2" to 1 1/2"). Rounded, pea gravel is not permissible.
- 2.05 Drainage Pipe
- A. The drainage collection pipe shall be a 4" perforated or slotted PVC, or corrugated HDPE pipe.
 - B. Drain pipes are mandatory and shall be vented to daylight at the end(s) of the wall or at a central low point of the wall. If this is not possible, vent through the wall above finished grade at maximum intervals of 30' O.C. In no case shall a continuous pipe be run for more than 300' without an outlet to daylight.
- 2.06 Reinforced (Infill) Soil: the reinforced geo-grid zone
- A. The soil used must meet or exceed the design friction angle noted on the design cross sections. The reinforced material shall be free of debris and organic material (i.e. no trash, plants or root matter, top soil, etc.). Unless otherwise noted on the plans, the reinforced zone material shall not consist of CH (fat clay), MH (fat silt), or OH (organic) soils.
 - B. Rocks may be used as infill material as long as their diameter is 6" or less. NOTE: when all gravel is used as infill the LTDS of the geo-grid must be reduced to account for additional installation damage from the large particles. Recycled concrete is permissible for infill.
- 2.07 Retained Soil: the area beyond the infill soil and extending to a distance of twice the exposed wall height
- A. The soil used must meet or exceed the design friction angle noted on the design cross sections. Unless otherwise noted on the plans, the retained material shall not consist of CH (fat clay), MH (fat silt), or OH (organic) soils.

PART 3: CONSTRUCTION

- 3.01 Inspection
- A. The Owner or Owner's Representative is responsible for verifying that the contractor meets all the requirements of the specification. This includes all submittals for materials and design, qualifications, and proper installation of wall system.
- B. Only a vibratory plate or small-scale vibratory smooth drum compactor equipment shall be allowed within 3 feet of the front of the wall face. Compaction within the 3 feet behind the wall face shall be achieved by at least three (3) passes of the lightweight mechanical plate compactor or roller. Heavy equipment (such as track hoes, ride on rollers, pans, etc.) must be kept back a minimum of 3' from the rear of the wall.
 - C. At the end of each day's operation, the Contractor shall slope the last level of backfill away from the wall facing to direct water runoff away from the wall face.
 - C. At completion of wall construction if final grading, paving, landscaping, and/or storm drainage installation adjacent to the wall is not placed immediately after wall completion, temporary grading shall be provided to ensure water runoff is not allowed to collect or pond behind the wall until final construction adjacent to the wall is completed.
 - D. Filter fabric is neither required nor recommended behind the drainage layer. Installation of filter fabric has proven to result in poor wall construction and its benefit has not been proven when used with clays, silts, and mixed soils. The exception is when all sand is used for infill material since it is non-cohesive and could potentially slough, clogging the drainage layer.
- 4.09 SRW Caps
- A. SRW caps shall be properly aligned and glued to underlying units with a flexible, high-strength concrete adhesive (adhesive should be designed for "concrete to concrete" applications). Rigid adhesive or mortar is not acceptable.
- 4.10 Water Applications
- A. When walls are installed in water applications (such as storm water ponds, streams, bulkheads, areas adjacent to flood plains, etc.) all granular material must be used as infill up to 1' above the 100 year flood elevation or the high water level. This material must be free draining and have less than 10% fines. The leveling pad and the reinforced zone (up to the extent of the stone infill) must be wrapped in filter fabric to prevent migration of fines. Rip rap stone is required in front of the bottom three courses on walls installed in tidal waters. Rip rap stone is also required to prevent scouring and erosion in front of walls installed in water sources prone to fluctuating water levels, and where pipes that frequently carry water exit through walls.
- 4.11 Rails, Fences, & Other Structures
- A. Open rails and fences not subject to wind loads may be placed directly behind the wall as long as they are not subject to vehicular impact. Solid or semi-solid fences that are subject to wind loads must be kept back a minimum of 3' from the rear of the wall to prevent loading of the wall.
 - B. Guardrails subject to vehicular impact must be kept back a minimum of 3' to prevent loading of the wall. Guardrails may be placed closer than this 3' minimum only if a barrier (such as wheel stops, curbing, etc.) prevents impact.
 - C. Light posts and similar structures subject to wind loads must be kept back a minimum of 3' to prevent loading of the wall.
 - D. In cases where this 3' minimum cannot be met due to restraints on the site, additional analyses will need to be done to determine a method of stabilization. Ryan & Associates can be contracted to provide this design for an additional cost.

- B. Contractor's field construction supervisor shall have demonstrated experience and be qualified to direct all work at the site.
- 3.02 Excavation
- A. Contractor shall excavate to the lines and grades shown on the project plans. Contractor shall take precautions to minimize over-excavation. Over-excavation shall be filled with compacted infill material or as directed by the Geotechnical Engineer.
 - B. Contractor shall verify location of existing structures and utilities prior to excavation. Contractor shall ensure all surrounding structures are protected from the effects of wall excavation. Excavation support (shoring), if required, is the responsibility of the Contractor.
- 3.03 Foundation Preparation
- A. Following excavation, the foundation soil shall be examined by the Owner's Geotechnical Engineer to assure that the actual foundation soil strength meets or exceeds the allowable design bearing strength (this parameter can be found in the design's General Notes). Soils not meeting the required strength shall be removed and replaced with select structural fill compacted to 95% of a standard proctor for the full depth.
 - B. If large deposits of fill are encountered an enlarged, grid reinforced footer may be required.
- 4.04 Leveling Pad Construction
- A. Leveling pad shall be placed as shown on the construction drawings with a minimum thickness of 6" and a minimum width of 24". The leveling pad should be at a minimum extend laterally at least a distance of 6 inches from the toe and heel of the lowest SRW Unit.
 - B. Soil leveling pad material shall be compacted with a vibratory plate compactor to provide a firm, level-bearing surface on which to place the first course of units. Compaction will be with mechanical plate compactors to achieve 95% of maximum standard proctor density (ASTM D 698). A thin layer (not to exceed 1/2") of well-graded sand or stone dust can be used to smooth the top of the leveling pad.
- 4.05 SRW Unit Installation
- A. All SRW units shall be installed at the proper elevation and orientation as shown on the wall profiles and details on the construction plans. The SRW units shall be installed in general accordance with the manufacturer's recommendations. The design engineer of record (Ryan & Associates) specifications and drawings shall govern in any conflict between the two requirements.
 - B. First course of SRW units shall be placed on the leveling pad. The units shall be leveled side-to-side, front-to-rear and with adjacent units, and aligned to ensure intimate contact with the leveling pad. The first course is the most important to ensure accurate and acceptable results. No gaps shall be left between the front of adjacent units. Alignment may be done by means of a string line or offset from base line to the back of the units.
 - C. Clean all excess debris from top of units and install next course.
 - D. Lay out of curves and corners shall be installed in accordance with the plan details or in general accordance with SRW manufacturer's installation guidelines. Walls shall be interlocked by overlapping successive courses. Continuous vertical joints are not permitted unless gabled. In general, all tangent angles shown on the civil drawings should be changed into curves to enhance the wall's strength and appearance. Inside and outside corners may be constructed without compromising the wall's integrity.
- 4.13 Construction Adjacent to Completed Wall
- A. The Owner or Owner's Representative is responsible for ensuring that construction adjacent to the wall by others does not disturb the wall or place temporary construction loads on the wall that exceed design loads, including loads such as water pressure, temporary grades, or equipment loading. Heavy paving or grading equipment shall be kept a minimum of three feet behind the back of the wall face. Equipment with wheel loads in excess of 150 pcf live load shall not be operated with 10 feet of the face of the retaining wall during construction adjacent to the wall. Care should be taken by the General Contractor to ensure water runoff is directed away from the wall structure until final grading and surface drainage collection systems are completed.
 - B. Care must be taken when installing appurtenances (such as transformers, generators, etc.) within the reinforced zone of the wall. The compaction integrity of the reinforced zone must be maintained, both below and beside (around) the appurtenance. Neglecting to do so may cause hydrostatic pressure and wall failure.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Cindy H. ...
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE 5/1/01

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Andrew M. ...
 CHIEF, BUREAU OF HIGHWAYS DATE 7-24-01

DEVELOPER

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

OWNER

TAYLOR FAMILY LIMITED PARTNERSHIP A
 TAYLOR FAMILY LIMITED PARTNERSHIP B
 4100 COLLEGE AVE.
 ELLICOTT CITY, MARYLAND
 21043-3506

RYAN & ASSOCIATES, INC.
 RETAINING WALL DIVISION
 717-709-1153 fax 717-709-1154
 6242 MollyPitcher Hwy
 Shippensburg, PA 17257

NO.	REVISION	DATE

RETAINING WALL
WORTHINGTON FIELDS
PHASE 1 LOTS 1-46
AND NON-BUILDABLE PARCELS 'A' AND 'B'

TAX MAP #25, GRID 20 & # 31 PARCEL 98 & P/O PARCEL 4
 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: _____
 DRAWN BY: _____
 CHECKED BY: _____
 DATE: _____
 SCALE: _____
 W.O. NO.: 99-011

PREV. FILE # S-98-18

20 SHEET OF 20