

FINAL ROAD CONSTRUCTION AND STORM WATER MANAGEMENT PLANS FOR FRIENDSHIP FARM

LOT 1 - 16, & PARCELS "A" & "B" A RESUBDIVISION OF BRITTEN PROPERTY LOTS 1-4, PROPERTY OF ROBERT H. WIEDEFELD AND MARIE M. WIEDEFELD

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3	WELLWORTH WAY (PLAN & PROFILE) AND FRIENDSHIP FARM CONTROL (PLAN & PROFILE)
4	STREET TREE, GRADING AND SEDIMENT CONTROL PLAN
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APPROVED: DEPARTMENT OF PLANNING AND ZONING

Gina Summari 5/19/96 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH

John S. Britten 5/19/96 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Robert M. Davelle 5-7-96 DATE
CHIEF, BUREAU OF HIGHWAYS

ASPHALT SPECIFICATIONS
These specifications are appropriate to all ponds within the scope of the standard for practice 110-376. All references to ASTM and AASHTO specifications apply to the most recent revision.

Site Preparation
Area designated for borrow areas, embankment, and structure work shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, rocks, channel banks and sharp breaks shall be removed to a depth of 18 inches.

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

Clear and Graded Material
All cleared and graded 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 rocks, stumps, wood, rubbish, stones greater than 6 inches or other objectionable material. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification CC, SC, CL or CL. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

Placement
Areas on which fill is to be placed shall be compacted prior to placement of fill material. The fill shall be placed in minimum 6 inch thick before compaction. The fill shall be compacted over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portion of the embankment. The principal surface may be finished concurrently with fill placement and not excavated into the embankment.

Construction
The movement of the hauling and spreading equipment over the fill shall be controlled so that the surface of the fill is not disturbed. The equipment shall be operated so that the surface of the fill is not disturbed. The equipment shall be operated so that the surface of the fill is not disturbed. The equipment shall be operated so that the surface of the fill is not disturbed.

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

All connections shall use a rubber or neoprene gasket when laying pipe sections. The end of each pipe shall be finished to an acceptable number of diameters from 24" diameter. The following types of connections are acceptable for the ends of the pipe: a 12" wide standard top pipe band with 1/2" wide 3/16" thick closed cell circular neoprene gasket and a 12" wide neoprene type band with 3/16" thick closed cell circular neoprene gasket and a 12" wide neoprene type band with 3/16" thick closed cell circular neoprene gasket. The gasket shall be installed on the end of each pipe for a total of 24".

Neoprene gasket shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.

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

2. Backfilling shall conform to "Structure Backfill".

3. 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 ball and spiral joints with rubber gaskets and shall equal or exceed the following:

2. Bedding - All reinforced concrete pipe concrete shall be laid in a concrete bedding for their entire length. The bedding shall consist of high strength concrete placed under the pipe and up the sides to a depth of at least 12" of the outside diameter with a minimum thickness of 3 inches, or as shown on the drawings.

3. Laying pipe - Ball and spiral pipe shall be placed in accordance with recommendations of the manufacturer. After the pipe is laid, care shall be exercised to prevent any displacement from the original position of the pipe. The first joint must be located within 2 feet from the rise.

4. Backfilling shall conform to "Structure Backfill".

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

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

1. Materials - PVC pipe shall be PVC-1220 or PVC-1224 conforming to ASTM D-1785 or ASTM D-2241.

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

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

4. Backfilling shall conform to "Structure Backfill".

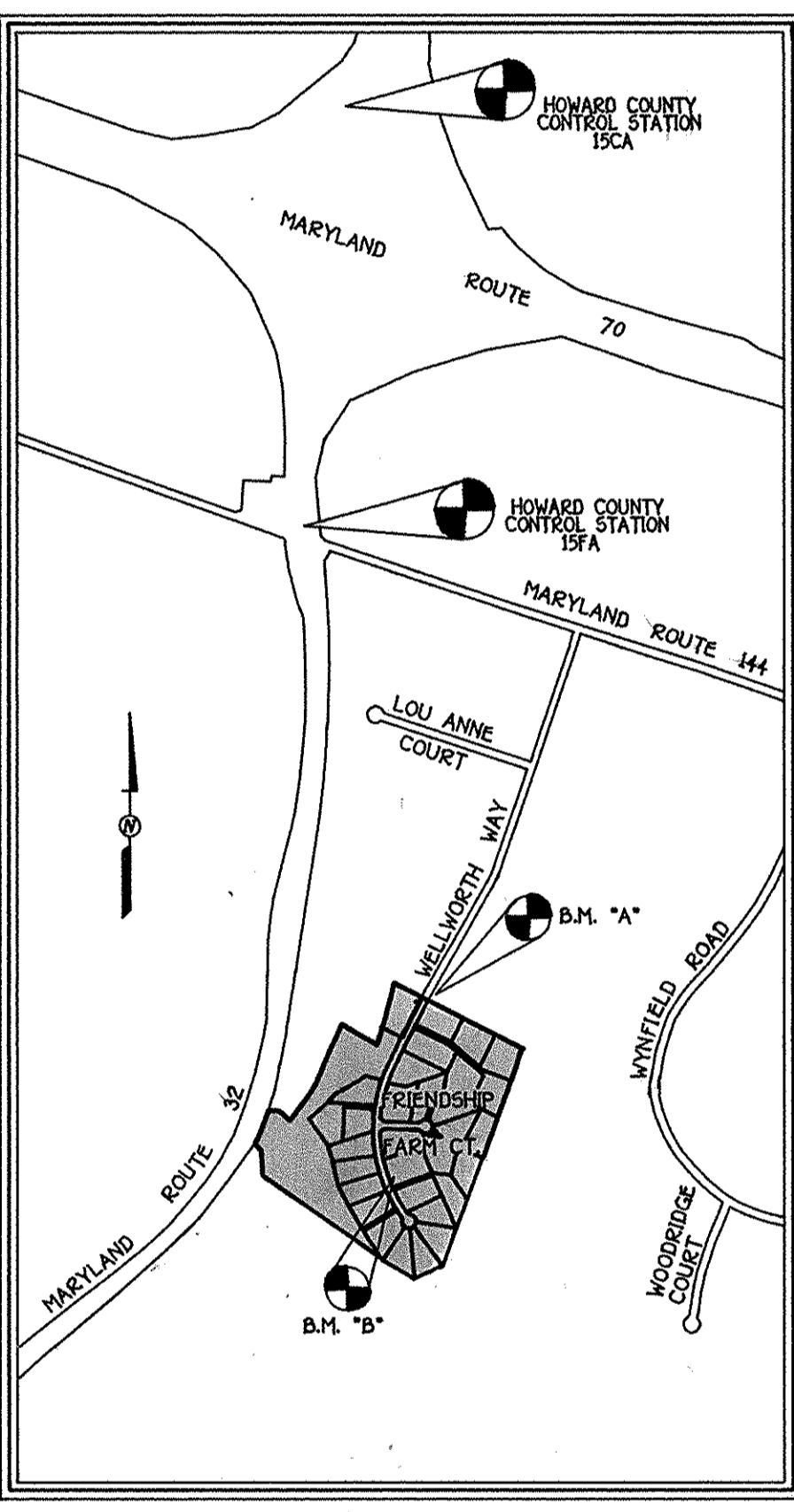
5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Concrete
Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 606, Mix No. 3.

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

The rip-rap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the rip-rap in place shall be reasonably homogeneous with the lower rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. Rip-rap shall be placed under all rip-rap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 905.

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 temporary dikes, levees, cofferdams, ditches, drains, and other structures to prevent the areas to be occupied from being flooded. All necessary pumping and other equipment required for removal of water from the various parts of the work area shall be provided and operated in a manner that will insure the stability of the structure. The contractor shall be responsible for preventing any obstruction in any device whatsoever of the flow of water which will interfere with the operation or maintenance of the structure. Stream diversions shall be made so that the flow of water can pass through the permanent works. The removal of water from the work area shall be accomplished in a manner and to the extent that will maintain stability of the structure and prevent erosion. The contractor shall be responsible for the satisfactory performance of all construction operations. During the placement and compaction of concrete for excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such which may require raising the water to pumps from which the water shall be pumped.



GENERAL NOTES:

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS M.S.H.A. STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTORS SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- PROJECT BACKGROUND:
LOCATION: WELLWORTH WAY, TAX MAP No. 15
PARCELS: 65, 77, 88 AND 89
ZONING: RR-DEO
ELECTION DISTRICT: THIRD
TOTAL TRACT AREA: 153,235 Ac.
NUMBER OF PROPOSED LOTS: 35
DATE OF SKETCH PLAN APPROVAL: (695-04) APPROVED JANUARY 20, 1995 (FOR FRIENDSHIP FARM)
DATE OF PRELIMINARY PLAN APPROVAL (P95-25) APPROVED JULY 7, 1995 (FOR FRIENDSHIP FARM)
DATE OF PRELIMINARY EQUIVALENT SKETCH PLAN APPROVAL FOR GOSSAGE PROPERTY WAS JANUARY 4, 1996
GOSSAGE PROPERTY WAIVER PETITION WP 96-05, FOR SECTION 16.120 (C)(2) AND SECTION 16.119 (F) (3).
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- TOPOGRAPHIC SURVEY BY FISHER, COLLINS AND CARTER, INC. ON OR ABOUT NOVEMBER 25, 1994 TWO (2) FOOT CONTOUR INTERVAL.
- HORIZONTAL AND VERTICAL DATUM BASED ON HOWARD COUNTY CONTROL.
- STORM WATER MANAGEMENT IS PROVIDED FOR THE INCREASE IN RUN-OFF RESULTING FROM THE ROAD IMPERVIOUS AREAS. ALL STORM WATER MANAGEMENT PONDS ARE PUBLIC STORMWATER MANAGEMENT. STORM WATER MANAGEMENT POND IS A RETENTION POND.
- WETLANDS STUDY WAS PREPARED BY ECO-SCIENCE, PROFESSIONALS, INC. ON AUGUST 4, 1994 AND APPROVED BY HOWARD COUNTY ON JANUARY 20, 1995.
- TRAFFIC STUDY WAS PREPARED BY THE TRAFFIC GROUP ON JULY 15, 1995 AND APPROVED BY HOWARD COUNTY ON JANUARY 20, 1995.
- A NOISE STUDY WAS PREPARED BY THE WILSON T. BALLARD COMPANY COMPANY ON AUGUST 13, 1994 AND APPROVED ON JANUARY 20, 1995.
- BOUNDARY SURVEY WAS PERFORMED BY FISHER, COLLINS AND CARTER, INC. ON OR ABOUT JULY 14, 1994.
- EXISTING UTILITIES WERE LOCATED BY A SURVEY PERFORMED BY FISHER, COLLINS AND CARTER, INC.
- AREA OF PROPOSED LOTS: 41,703 Ac.
- AREA OF PROPOSED ROADS: 2,57 Ac.
- SECTION 16.116 (A) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PROHIBITS CLEARING, GRADING OR CONSTRUCTION ACTIVITY WITHIN THE REQUIRED WETLAND OR STREAM BANK BUFFERS.
- ALL LANDSCAPING, REQUIRED STREET TREES AND PERIMETER LANDSCAPE EDGES, ARE PROVIDED WITHIN THIS SUBMITTAL. SEE GRADING SHEETS FOR REQUIREMENTS.
- STORMWATER MANAGEMENT IS PROVIDED FOR ROAD RIGHT-OF-WAY ONLY. LOTS ARE EXEMPT FROM STORMWATER MANAGEMENT UNDER CLUSTER SUBDIVISION GUIDELINES.

NOTE: THE EXISTING STORM WATER MANAGEMENT POND WILL BE REGRADED AS SHOWN ON SHEET 4. A MARYLAND GENERAL PERMIT FOR THE POND HAS BEEN APPROVED BY THE CORPS OF ENGINEERS PERMIT NO. 1995-89596. A LETTER OF AUTHORIZATION FROM M.D.E. NO. 95-NT-0924 HAS BEEN APPROVED FOR THE POND. THESE PERMITS WILL BE RELEASED UPON THE COUNTY'S SIGNATURE ON THE ROAD CONSTRUCTION DRAWINGS.

BENCH MARKS

- B.M. ELEV. 508.31
- P.K. NAIL SET IN TOP OF CURB (WELLWORTH WAY)
- STATION 27+96, 12' LEFT OF C
- B.M. ELEV. 479.88
- REBAR AND CAP SET (WELLWORTH WAY)
- STATION 42+07, 55' LEFT OF E

TAX MAP 15 PARCELS 65 AND 89 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

OWNERS
MR. & MRS. ROBERT WIEDEFELD
2905 ROUTE 32
WEST FRIENDSHIP, MARYLAND 21794

DR. JOHN S. BRITTEN
2716 JENNINGS CHAPEL ROAD
WOODBINE, MARYLAND 21797

DEVELOPER
BRITTEN PROPERTY PARTNERSHIP
P.O. BOX 1371
ELLCOTT CITY, MARYLAND 21041



Jayesh V. Panchohi 3-14-96 DATE
JAYESH V. PANCHOLI, P.E.

1810

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLCOTT CITY, MARYLAND 21042
(410) 461-2299

ENGINEER'S CERTIFICATE
 I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/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.
 Joseph Panchel (JAMES V. PANCHOLO) 1-31-96
 Signature of Engineer (Print name beside signature) Date

DEVELOPER'S CERTIFICATE
 We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize my agents to accept inspections by the Howard Soil Conservation District.
 Andrew H. Ball, Nicholas A. Ball 1/31/96
 Signature of Developer (Print name beside signature) Date

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
 Robert W. Gilman/PC 5/1/96
 Howard Soil Conservation District

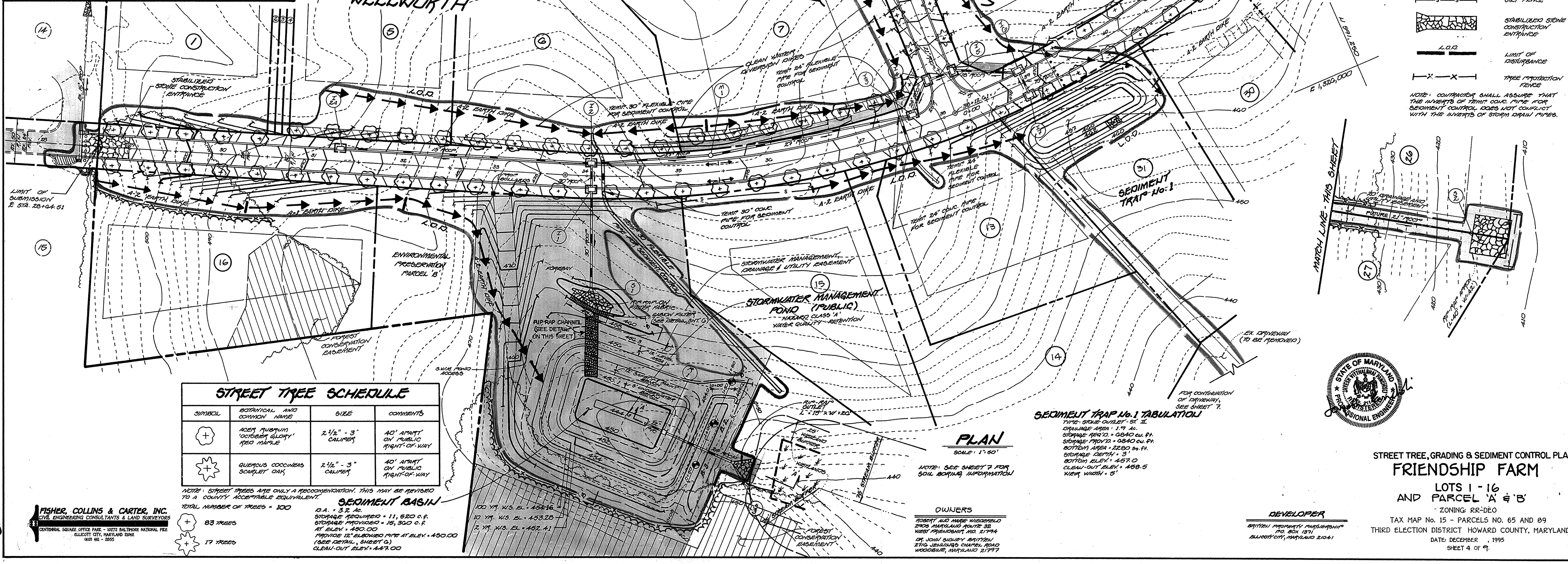
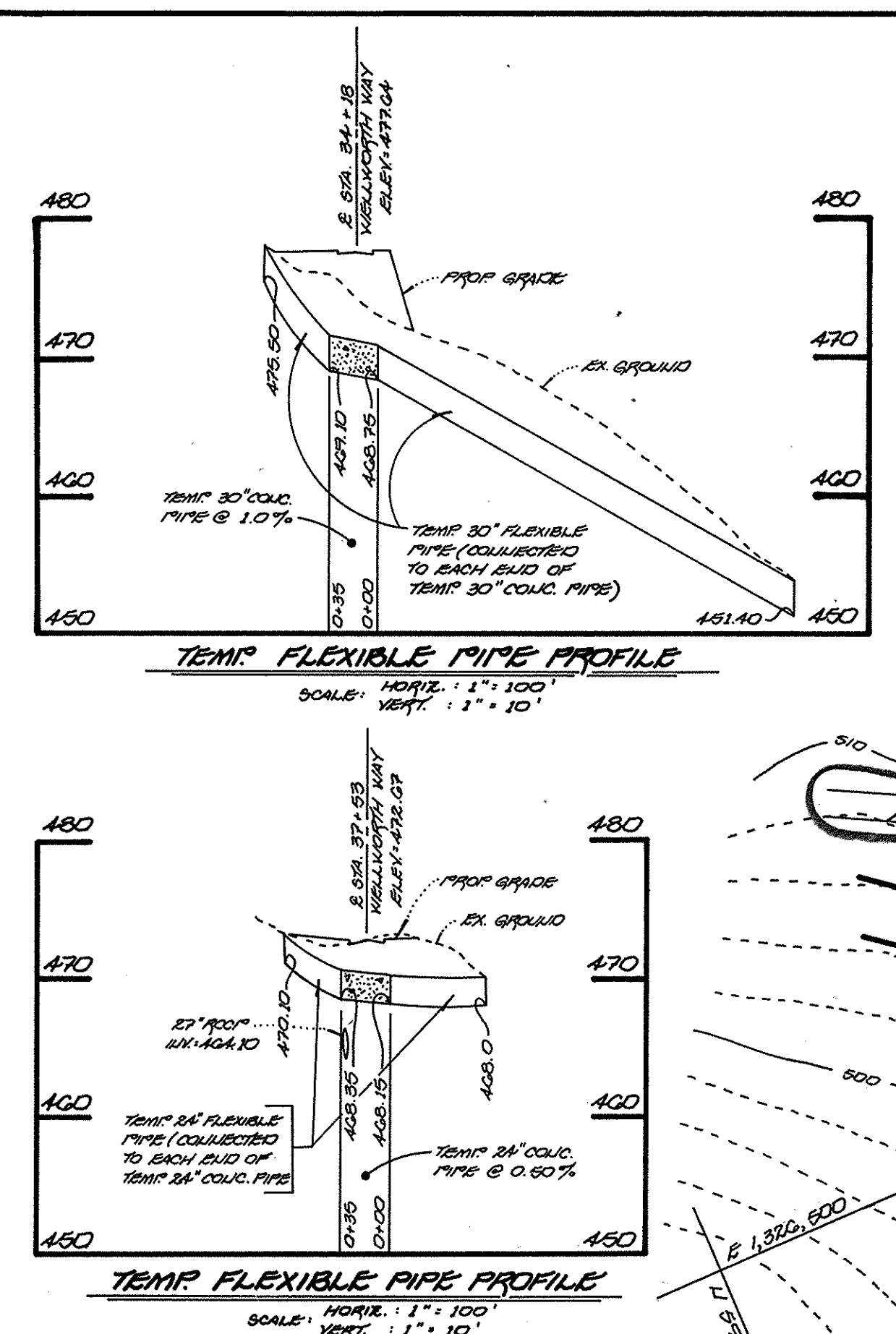
These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.
 H. W. Workal/PC 5/1/96
 Howard Soil Conservation District

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development and Research COH Date
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division 5/8/96
 APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways 5-7-96
 APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief, Division of Land Development 5/9/96

OPERATION, MAINTENANCE AND INSPECTION
 Inspection of the ponds shown hereon shall be performed at least annually, in accordance with the checklist and required within USA, SEC "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.

AS-BUILT CERTIFICATION
 I hereby certify that the facility shown on this plan was constructed as shown on the "as-built" plans and meets the approved plans and specifications.
 Signature Date PE No.

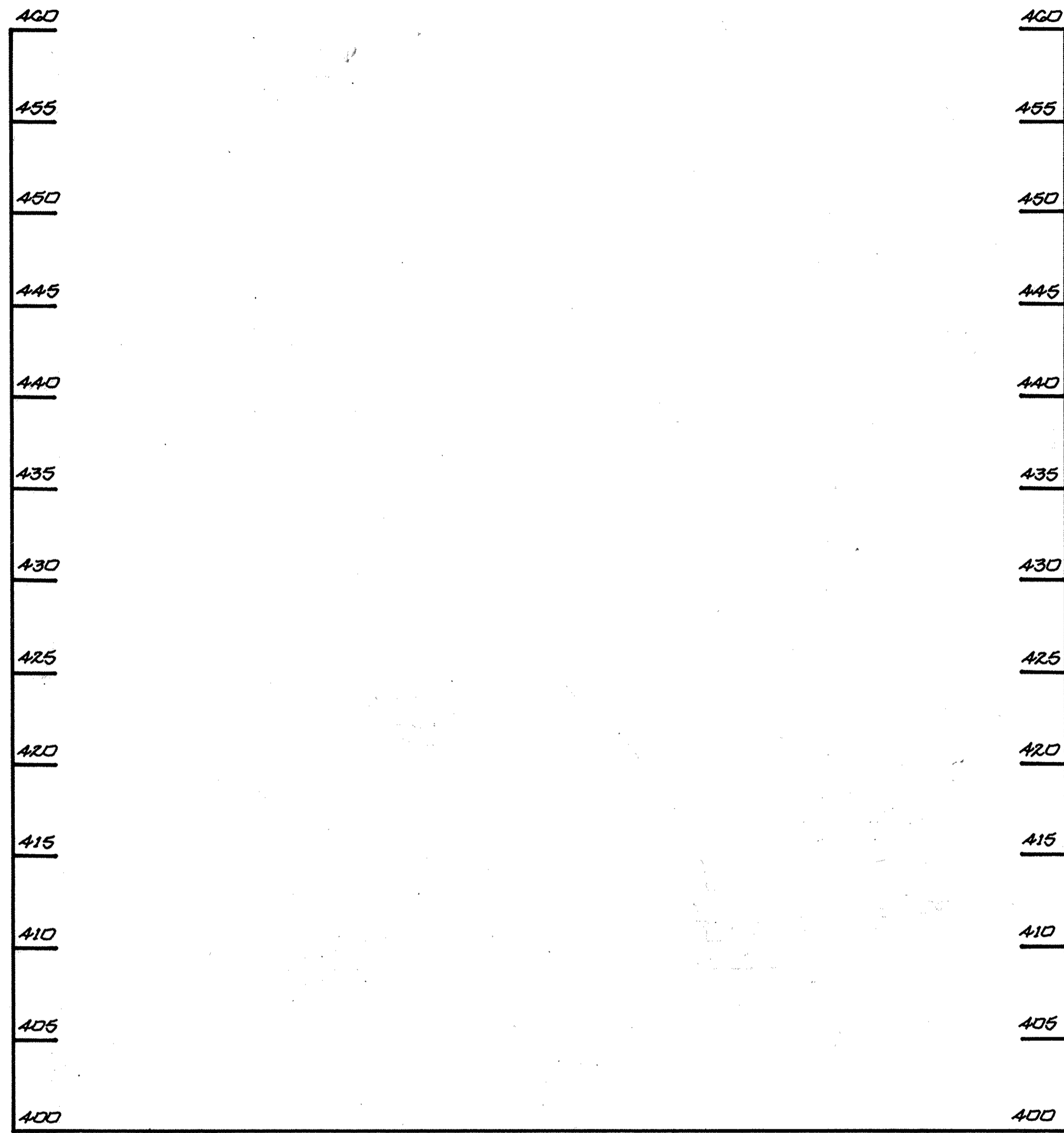
Certify means to state or declare a professional opinion based on site inspections and material tests which are conducted during construction. The on-site inspections and material tests are those inspections and tests deemed sufficient and appropriate by commonly accepted engineering standards. Certify does not mean or imply a guarantee by the engineer nor does an engineer's certification relieve any other party from meeting requirements imposed by contract, employment, or other means, including meeting commonly accepted industry practices.



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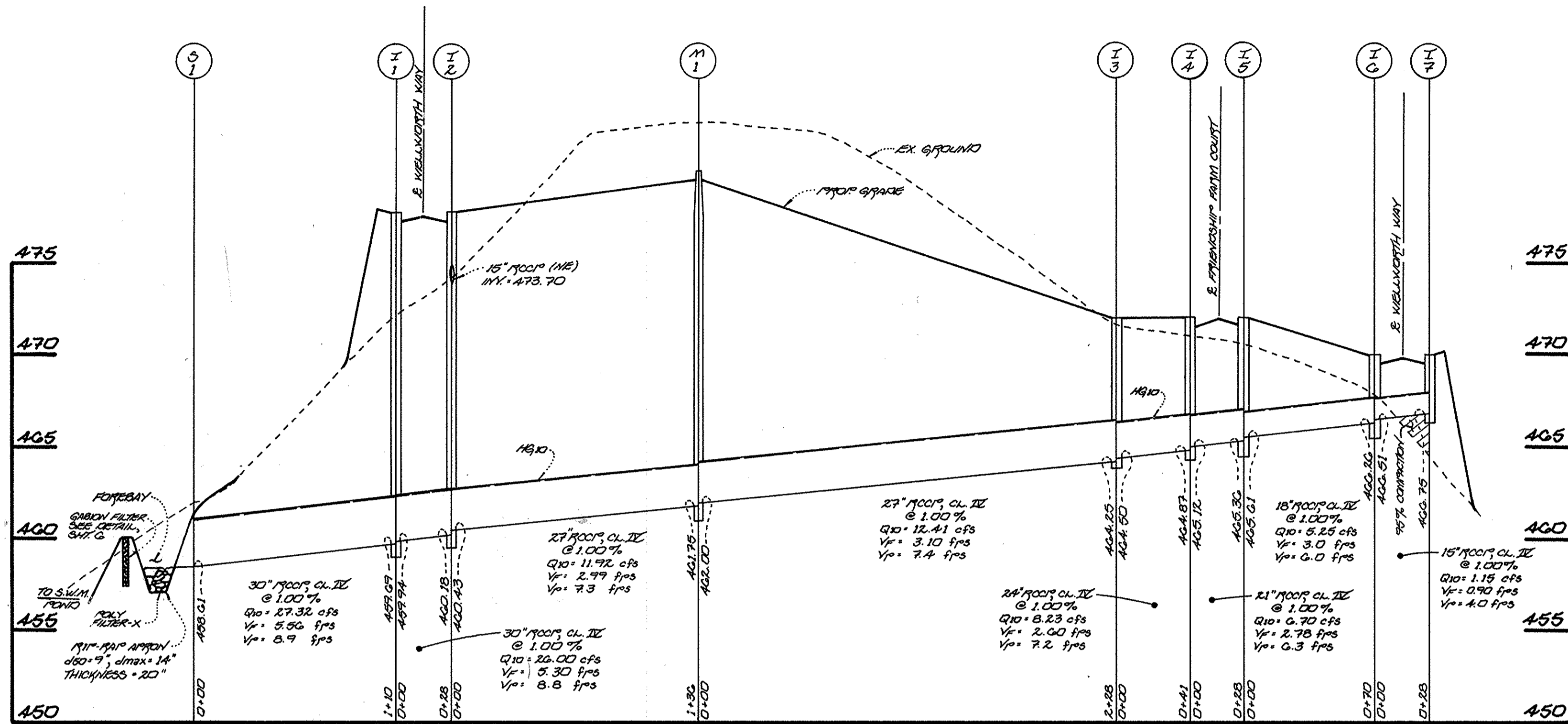
STREET TREE, GRADING & SEDIMENT CONTROL PLAN
FRIENDSHIP FARM
 LOTS 1 - 16
 AND PARCEL 'A' & 'B'
 ZONING: RR-DEO
 TAX MAP No. 15 - PARCELS NO. 65 AND 89
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: DECEMBER, 1995
 SHEET 4 OF 9



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

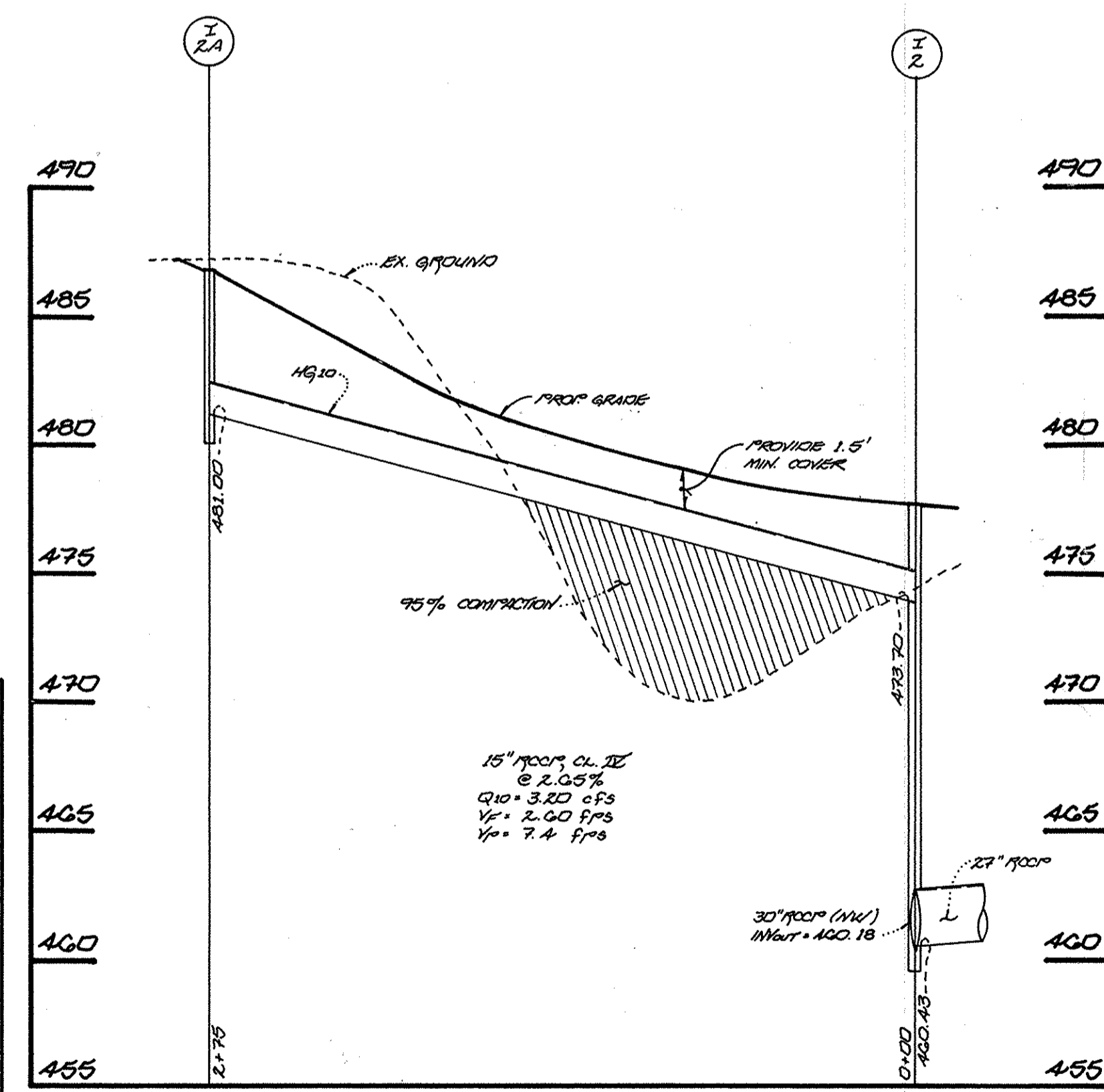
STRUCTURE SCHEDULE

STRUCTURE	TOP ELEV.	THROAT ELEV.	INV. IN	INV. OUT	ROAD NAME	E. ROAD STA.	OFFSET	TYPE	HO. CO. STD. DETAIL
I-1	477.03	470.80	459.74	459.09	WELLWORTH WAY	34+05	12' RT.	A-5 INLET	S.D. 4.01
I-2	477.03	470.80	460.43 473.70	460.18	WELLWORTH WAY	34+05	12' LT.	A-10 INLET	S.D. 4.02
I-3	472.25	471.42	464.50	464.25	WELLWORTH WAY	37+70	12' LT.	A-10 INLET	S.D. 4.02
I-4	472.14	471.31	465.12	464.87	FRIENDSHIP FARM COURT	0+44	12' LT.	A-10 INLET	S.D. 4.02
I-5	472.14	471.31	465.61	465.36	FRIENDSHIP FARM COURT	0+44	12' RT.	A-10 INLET	S.D. 4.02
I-6	469.98	469.15	466.51	466.26	WELLWORTH WAY	38+93.92	12' LT.	A-5 INLET	S.D. 4.01
I-7	469.98	469.15	-----	466.76	WELLWORTH WAY	38+93.92	12' RT.	A-5 INLET	S.D. 4.01
I-2A	487.25	486.42	-----	481.00	WELLWORTH WAY	31+30	12' LT.	A-10 INLET	S.D. 4.02
M-1	479.51	-----	462.00	461.75	WELLWORTH WAY	35+38	18' LT.	STD. MH	6-5.13
S-1	461.11	-----	458.61	-----	-----	N 592120.72 E 1326110.88	---	CONC. END SECT.	S.D. 5.52
S-3	444.00	-----	442.00	-----	-----	N 592039.61 E 1325856.87	---	CONC. END SECT.	S.D. 5.52



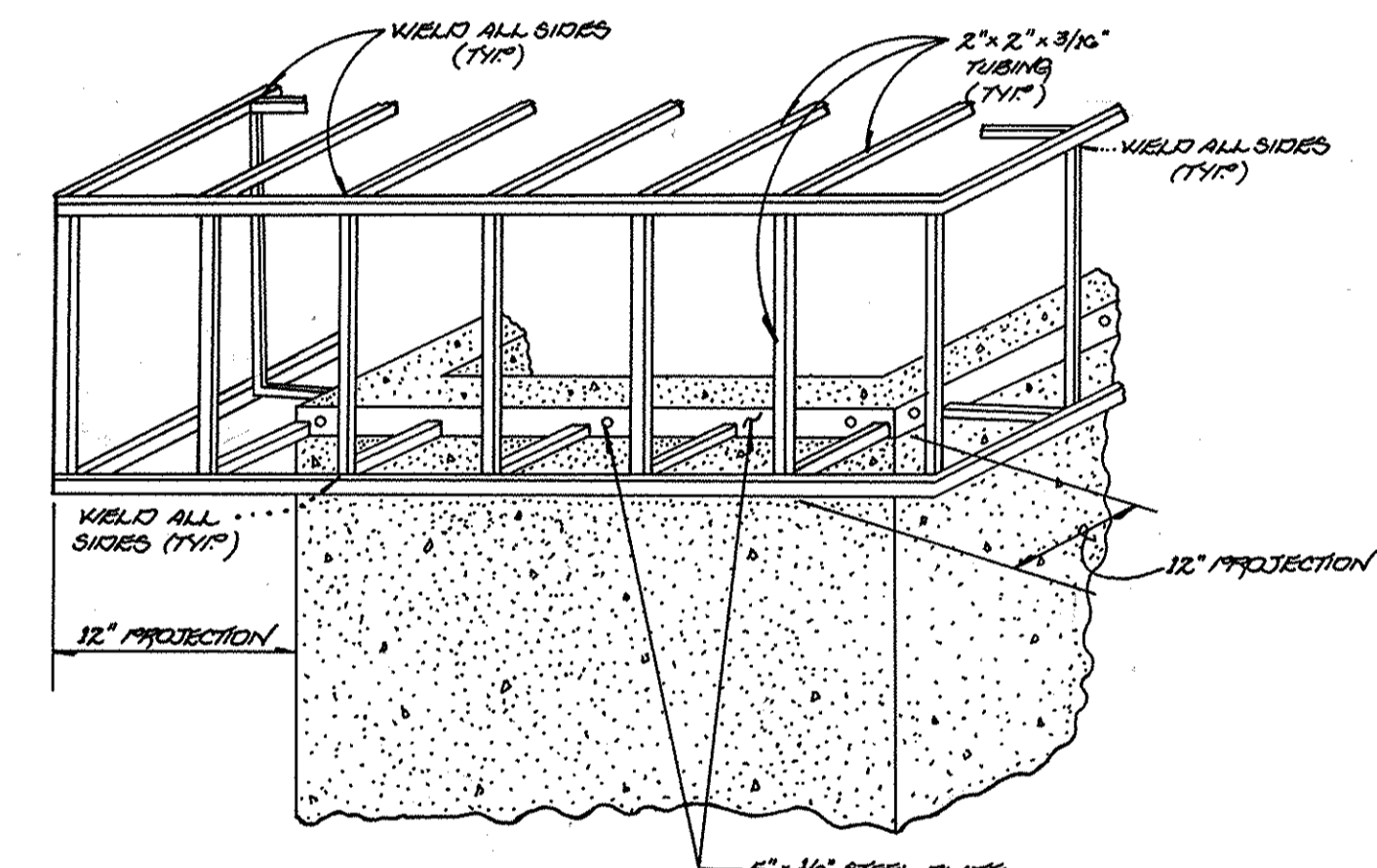
PROFILE

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



PROFILE

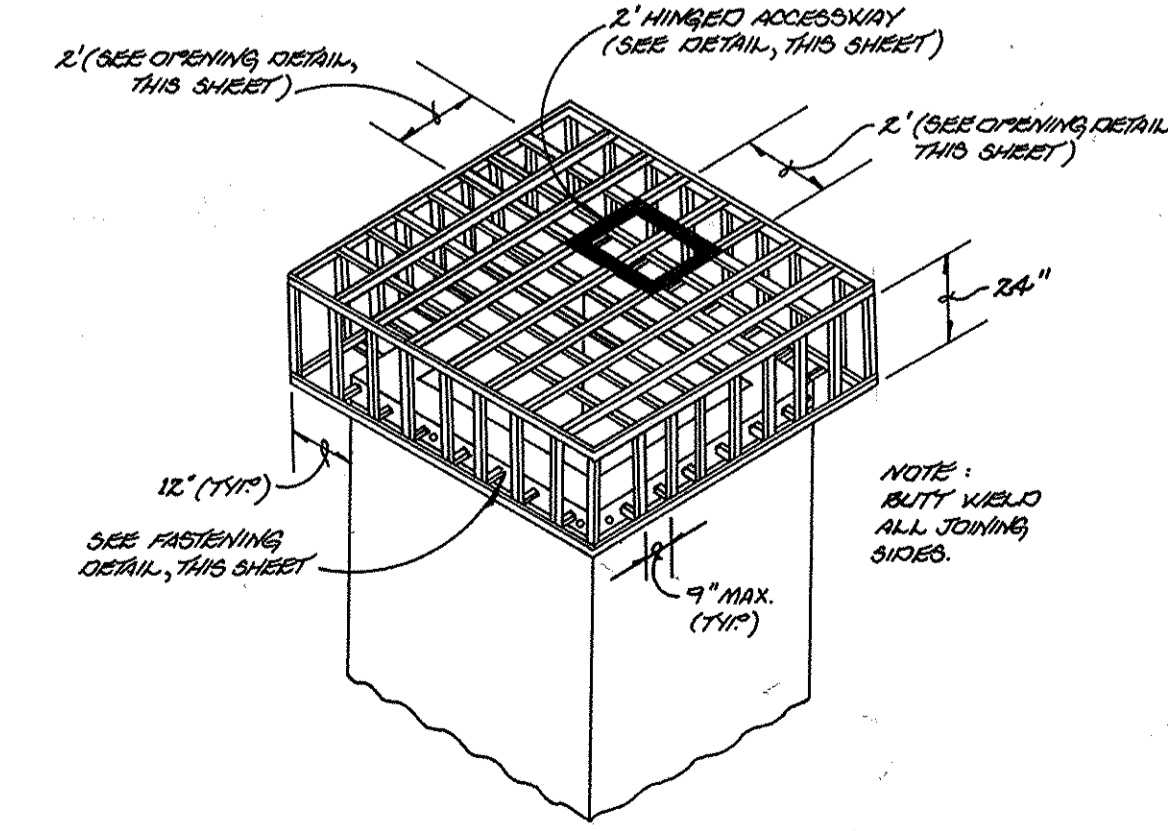
SCALE: 1" = 50' HORIZ.
1" = 5' VERT.



FASTENING DETAIL

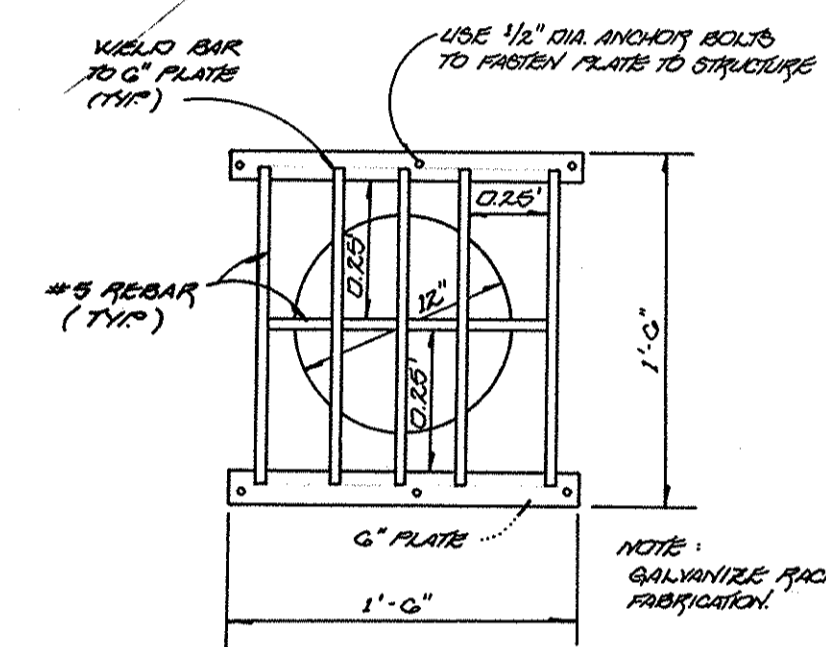
(NO SCALE)

- NOTE: (CONTRACTOR SHALL)
- FIELD MEASURE THE STRUCTURE DIMENSIONS FOR EXACT FITTING OF TRASH RACK.
 - GALVANIZE ENTIRE TRASH RACK.
 - ALL NUTS AND BOLTS SHALL BE GALVANIZED.



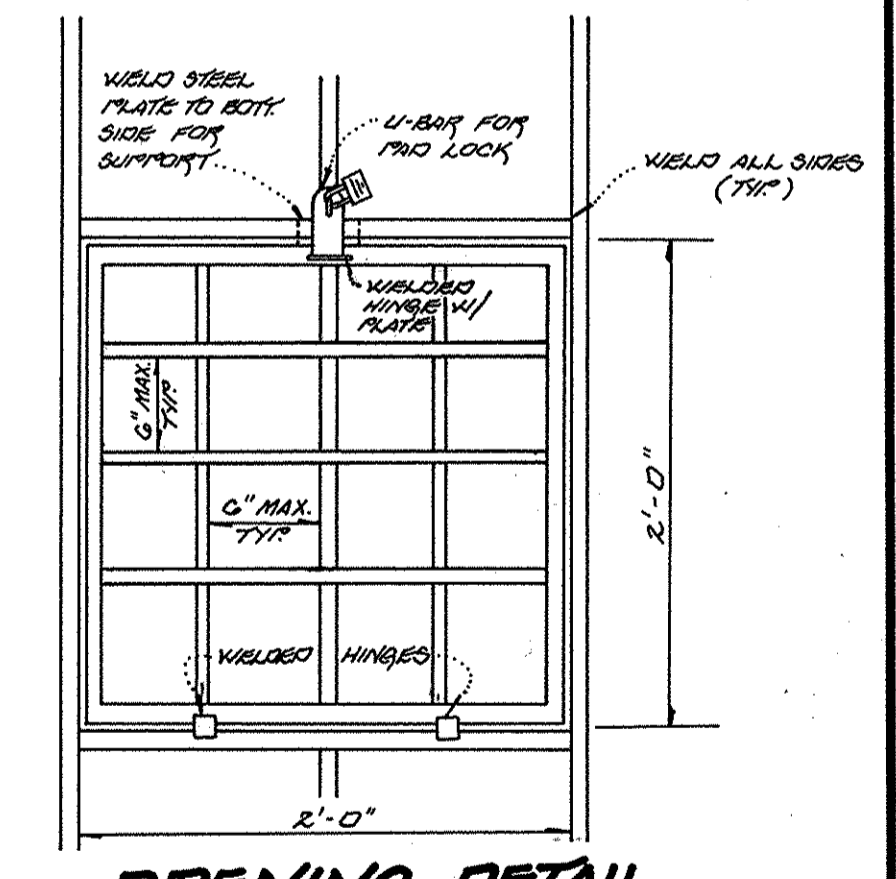
TRASH RACK 'B'

(NO SCALE)



TRASH RACK 'A'

(NO SCALE)



OPENING DETAIL

(NO SCALE)

STORM DRAIN PROFILES AND STORM WATER MANAGEMENT DETAILS
FRIENDSHIP FARM
LOTS 1-16 AND PARCELS A+B
ZONING: RR-DEO
TAX MAP No. 15 - PARCELS NO. 65 AND 89
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: DECEMBER 31, 1995
SHEET 5 OF 9

DEVELOPER'S CERTIFICATE
I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND THAT ANY RESPONSIBLE PERSONNEL IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZED PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.
Michael M. Davis (MICHAEL M. DAVIS) 1/31/96
SIGNATURE OF DEVELOPER DATE

ENGINEER'S CERTIFICATE
I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITION AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
James P. Bunch (JAMES P. BUNCH) 1-31-96
SIGNATURE OF ENGINEER DATE

REVIEW FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS
A. W. [Signature] 5/1/96
LOCAL NATURAL RESOURCES DEPARTMENT SERVICE

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Robert W. Zimmerman 5/1/96
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED DEPARTMENT OF PLANNING AND ZONING
Gina Sumner 5/9/96
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

APPROVED DEPARTMENT OF PLANNING AND ZONING
[Signature] 5/8/96
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Richard M. Decker 5-7-96
CHIEF, BUREAU OF HIGHWAYS DATE

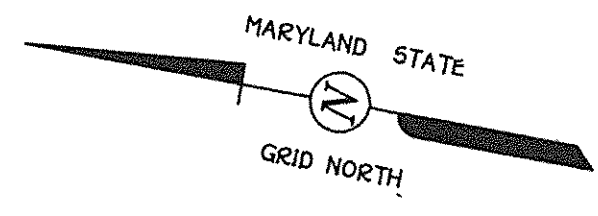


DEVELOPER
BRITTEL PROPERTY PARTNERSHIP
P.O. BOX 1871
ELLIOTT CITY, MARYLAND 21041

OWNERS
ROBERT AND MARIE WOODFIELD
2900 MARYLAND ROUTE 32
WEST FRIENDSHIP, MD. 21794
DR. JOHN BUCKLEY BRITTEL
2710 WILSONS CANYON RD
WOODBINE, MARYLAND 21797

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10722 BALTIMORE NATIONAL FREE
ELLIOTT CITY, MARYLAND 21042
410 961 - 2855

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NOTE:
 ○ DENOTES SHADE TREE
 ☆ DENOTES EVERGREEN TREE
 ▨ DENOTES FOREST CONSERVATION ZONING

SCHEDULE A: PERIMETER LANDSCAPE EDGE

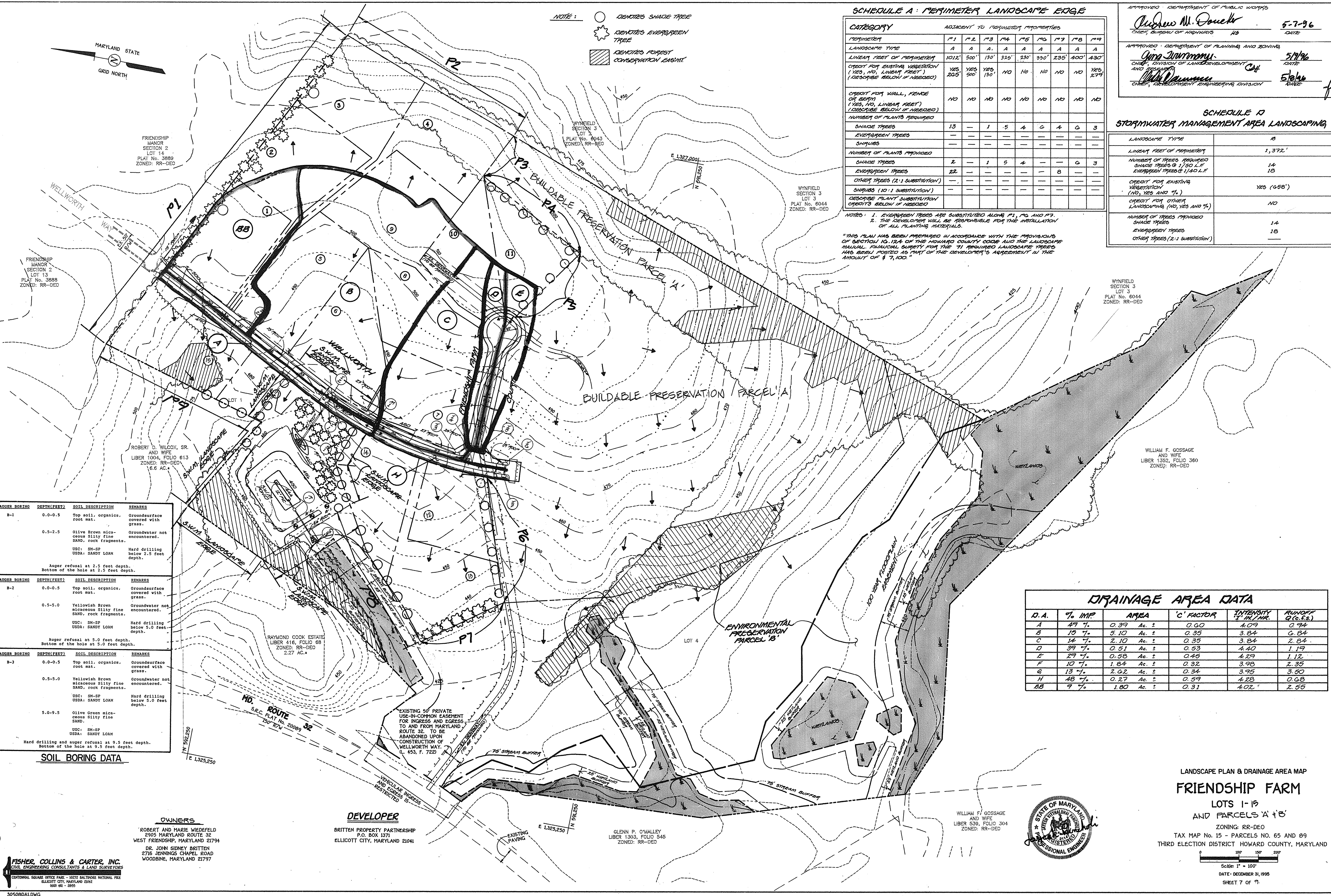
CATEGORY	ADJACENT TO PERIMETER PROPERTIES								
	P1	P2	P3	P4	P5	P6	P7	P8	P9
LANDSCAPE TYPE	A	A	A	A	A	A	A	A	A
LINEAR FEET OF PERIMETER	1012'	500'	130'	325'	230'	990'	235'	400'	430'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES, 225'	YES, 500'	YES, 130'	NO	NO	NO	NO	NO	YES, 279'
CREDIT FOR WALL, FENCE OR BEAM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED	13	1	5	4	6	4	6	3	
SHADE TREES									
EVERGREEN TREES									
SHRUBS									
NUMBER OF PLANTS PROVIDED	2	1	5	4		6	3		
SHADE TREES									
EVERGREEN TREES	22					8			
OTHER TREES (2:1 SUBSTITUTION)									
SHRUBS (10:1 SUBSTITUTION)									
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED									

NOTE: 1. EVERGREEN TREES ARE SUBSTITUTED ALONG P1, P6 AND P7.
 2. THE DEVELOPER WILL BE RESPONSIBLE FOR THE INSTALLATION OF ALL PLANTING MATERIALS.
 "THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 10.12A OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MAINTENANCE FINANCIAL SURETY FOR THE 71 REQUIRED LANDSCAPE TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$ 7,100."

APPROVED: DEPARTMENT OF PUBLIC WORKS
Andrew M. Donohue 5-7-96
 CHIEF, BUREAU OF HIGHWAYS 15 DATE
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
Gina Sturmon 5/7/96
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH CH DATE
Mark Dammann 5/14/96
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

SCHEDULE D: STORMWATER MANAGEMENT AREA LANDSCAPING

LANDSCAPE TYPE	B
LINEAR FEET OF PERIMETER	1,372'
NUMBER OF TREES PROVIDED	14
SHADE TREES @ 1/50 L.F.	10
EVERGREEN TREES @ 1/40 L.F.	
CREDIT FOR EXISTING VEGETATION (NO, YES AND %) (DESCRIBE BELOW IF NEEDED)	YES (65%)
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %) (DESCRIBE BELOW IF NEEDED)	NO
NUMBER OF TREES PROVIDED	14
SHADE TREES	10
EVERGREEN TREES	
OTHER TREES (2:1 SUBSTITUTION)	



AUGER BORING	DEPTH (FEET)	SOIL DESCRIPTION	REMARKS
B-1	0.0-0.5	Top soil, organics, root mat.	Groundsurface covered with grass.
	0.5-2.5	Olive Brown micaceous Silty fine SAND, rock fragments.	Groundwater not encountered.
		USC: SM-SP USDA: SANDY LOAM	Hard drilling below 2.5 feet depth.
	Auger refusal at 2.5 feet depth. Bottom of the hole at 2.5 feet depth.		
B-2	0.0-0.5	Top soil, organics, root mat.	Groundsurface covered with grass.
	0.5-5.0	Yellowish Brown micaceous Silty fine SAND, rock fragments.	Groundwater not encountered.
		USC: SM-SP USDA: SANDY LOAM	Hard drilling below 5.0 feet depth.
	Auger refusal at 5.0 feet depth. Bottom of the hole at 5.0 feet depth.		
B-3	0.0-0.5	Top soil, organics, root mat.	Groundsurface covered with grass.
	0.5-5.0	Yellowish Brown micaceous Silty fine SAND, rock fragments.	Groundwater not encountered.
		USC: SM-SP USDA: SANDY LOAM	Hard drilling below 5.0 feet depth.
	5.0-9.5	Olive Green micaceous Silty fine SAND.	Hard drilling and auger refusal at 9.5 feet depth. Bottom of the hole at 9.5 feet depth.

DRAINAGE AREA DATA

D.A.	% IMP.	AREA	'C' FACTOR	INTENSITY (IN./HR.)	RUNOFF (C.F.S.)
A	47%	0.39 Ac. ±	0.60	4.09	0.94
B	19%	3.10 Ac. ±	0.35	3.84	6.84
C	14%	2.10 Ac. ±	0.35	3.84	2.84
D	39%	0.51 Ac. ±	0.63	4.40	1.19
E	29%	0.58 Ac. ±	0.45	4.29	1.12
F	10%	1.84 Ac. ±	0.32	3.98	2.35
G	13%	2.02 Ac. ±	0.34	3.95	3.50
H	48%	0.27 Ac. ±	0.59	4.28	0.68
BB	7%	1.80 Ac. ±	0.31	4.02	2.55

SOIL BORING DATA

OWNERS
 ROBERT AND MARIE WIEDEFIELD
 2905 MARYLAND ROUTE 32
 WEST FRIENDSHIP, MARYLAND 21794

DEVELOPER
 BRITTEN PROPERTY PARTNERSHIP
 P.O. BOX 1371
 ELLICOTT CITY, MARYLAND 21041

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CONTINENTAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 4101 461 - 2995

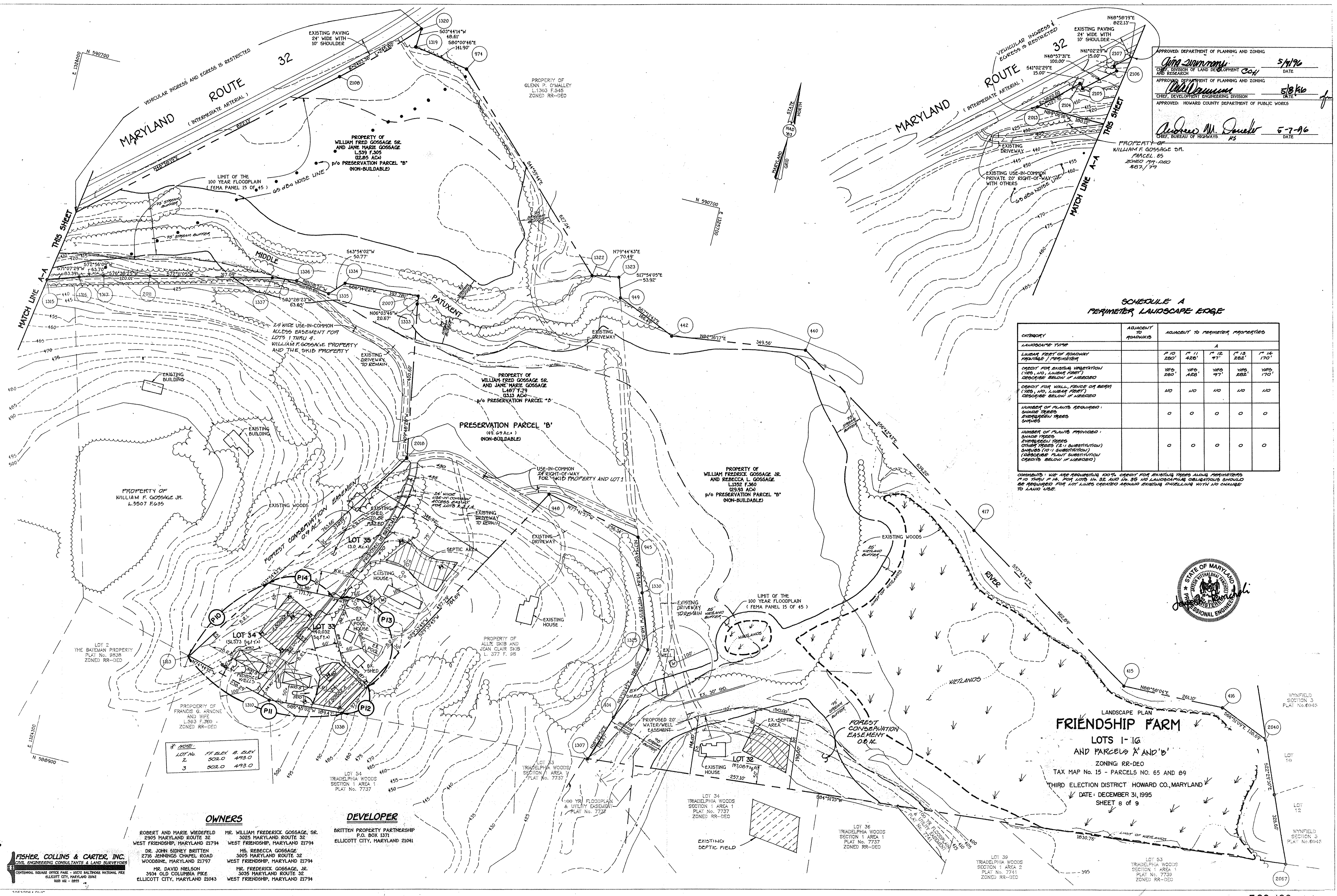
LANDSCAPE PLAN & DRAINAGE AREA MAP
FRIENDSHIP FARM
 LOTS 1-15
 AND PARCELS A, B
 ZONING: RR-DEO
 TAX MAP No. 15 - PARCELS No. 65 AND 89
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

WILLIAM F. GOSSAGE AND WIFE
 LIBER 530, FOLIO 304
 ZONED: RR-DEC

GLENN P. O'NEALLEY
 LIBER 1303, FOLIO 845
 ZONED: RR-DEO

Scale: 1" = 100'
 DATE: DECEMBER 31, 1995
 SHEET 7 OF 7

1810



APPROVED: DEPARTMENT OF PLANNING AND ZONING
Jim Summons 5/1/96
 DATE
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
W.D. Williams 5/18/96
 DATE
 APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daveler 5-7-96
 DATE
 CHIEF, BUREAU OF HIGHWAYS

**SCHEDULE A
 PERIMETER LANDSCAPE EDGE**

CATEGORY	ADJACENT TO ROADWAYS	ADJACENT TO PERIMETER PROPERTIES				
		A	B	C	D	E
LANDSCAPE TYPE						
LINEAR FEET OF ROADWAY FRONTAGE / PERIMETER		280'	420'	12' 97'	13' 282'	14' 170'
CREDIT FOR EXISTING VEGETATION (YES, NO, LAWN, FEET) DESCRIBE BELOW IF APPLICABLE		YES 280'	YES 420'	YES 97'	YES 282'	YES 170'
CREDIT FOR WALL, FENCE OR BEAM (YES, NO, LAWN, FEET) DESCRIBE BELOW IF APPLICABLE		NO	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED: SHADE TREES, EVERGREEN TREES, OTHER TREES (2-1 SUBSTITUTION) SHRUBS (10-1 SUBSTITUTION) (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF APPLICABLE)		0	0	0	0	0
NUMBER OF PLANTS PROVIDED: SHADE TREES, EVERGREEN TREES, OTHER TREES (2-1 SUBSTITUTION) SHRUBS (10-1 SUBSTITUTION) (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF APPLICABLE)		0	0	0	0	0

COMMENTS: WE ARE REQUESTING 100% CREDIT FOR EXISTING TREES ALONG PERIMETERS. NO THRU P.M. FOR LOTS 14, 32, AND 35. NO LANDSCAPING OBLIGATIONS SHOULD BE REQUIRED FOR LOT LINES CREATED THROUGH EXISTING DWELLING WITH NO CHANGE TO LAND USE.



**LANDSCAPE PLAN
 FRIENDSHIP FARM**

LOTS 1-10
 AND PARCELS 'A' AND 'B'
 ZONING: RR-DEO
 TAX MAP No. 15 - PARCELS NO. 65 AND 69
 THIRD ELECTION DISTRICT HOWARD CO., MARYLAND
 DATE: DECEMBER 31, 1995
 SHEET 8 of 9

NOTE:

LOT No.	FF BLEV. B. SUEV.
2	500.0 478.0
3	500.0 478.0

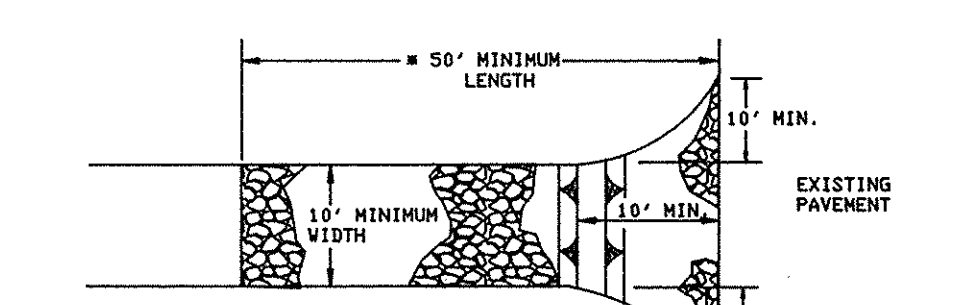
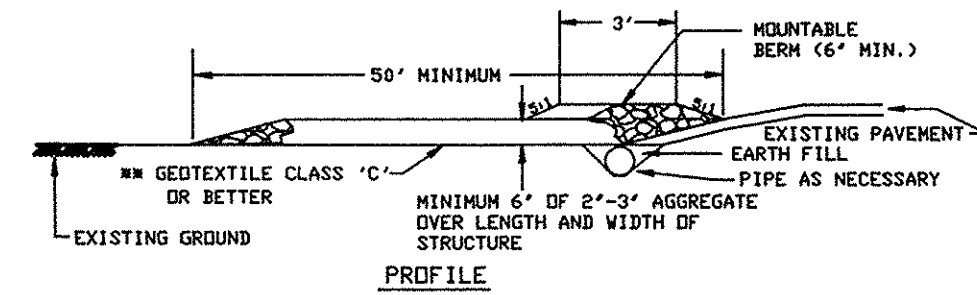
OWNERS

ROBERT AND MARIE WIEDEFIELD
 2905 MARYLAND ROUTE 32
 WEST FRIENDSHIP, MARYLAND 21794
 DR. JOHN SIDNEY BRITTEN
 2716 JENNINGS CHAPEL ROAD
 WOODBINE, MARYLAND 21797
 MR. DAVID NIELSON
 3934 OLD COLUMBIA PIKE
 ELLICOTT CITY, MARYLAND 21043

DEVELOPER

BRITTEN PROPERTY PARTNERSHIP
 P.O. BOX 1371
 ELLICOTT CITY, MARYLAND 21043

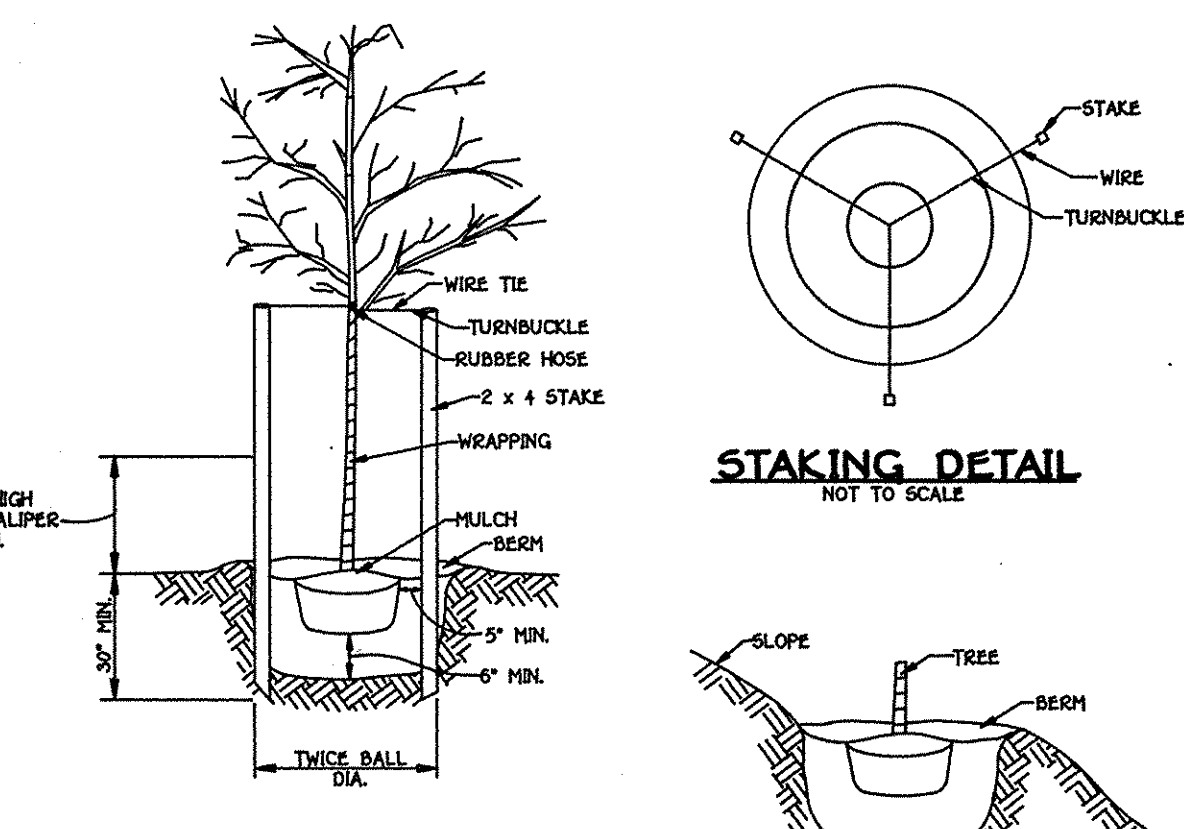
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 20275 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 481-2955



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

STABILIZED CONSTRUCTION ENTRANCE - 2

NOT TO SCALE

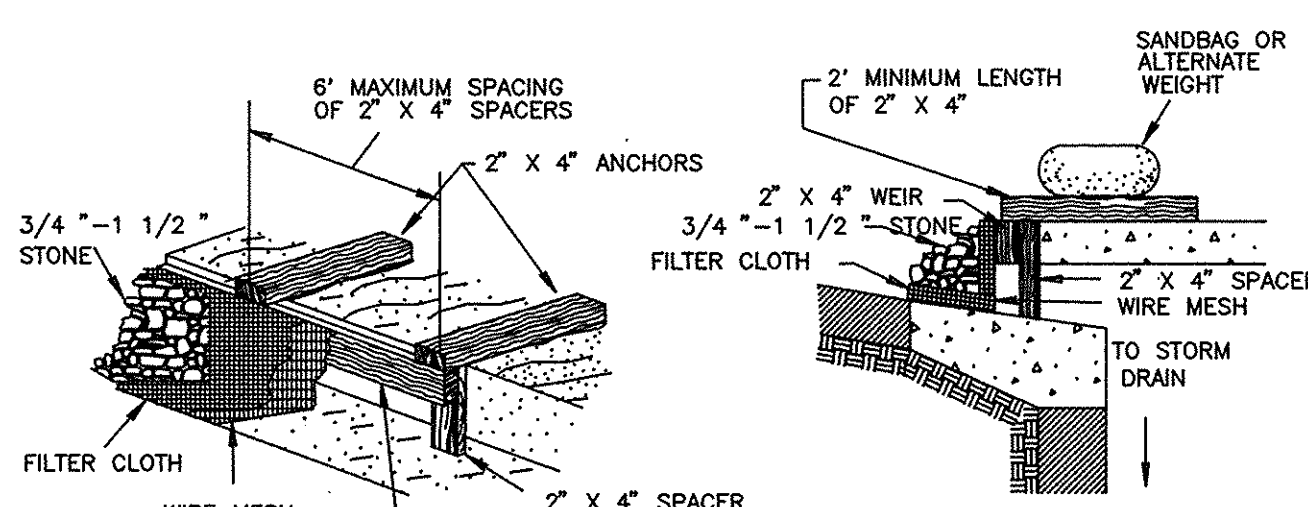


NOTE: REMOVE OVERLAP FROM TOP 1/3 OF BALL.
 TREE PLANTING
 NOT TO SCALE
 GRADING FOR PLANTING ON SLOPES
 NOT TO SCALE

SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSING AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (610-9959).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN 30 DAYS OF THE END OF THE PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, BY 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 50), SO2 (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:

TOTAL AREA OF SITE	67.3	ACRES
AREA DISTURBED	7.90	ACRES
AREA TO BE ROOFED OR PAVED	1.31	ACRES
AREA TO BE VEGETATIVELY STABILIZED	6.59	ACRES
TOTAL CUT	20,000	CU.YDS.
TOTAL FILL	20,000	CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION	N/A	CU.YDS.
- 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.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS LIMITED APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.



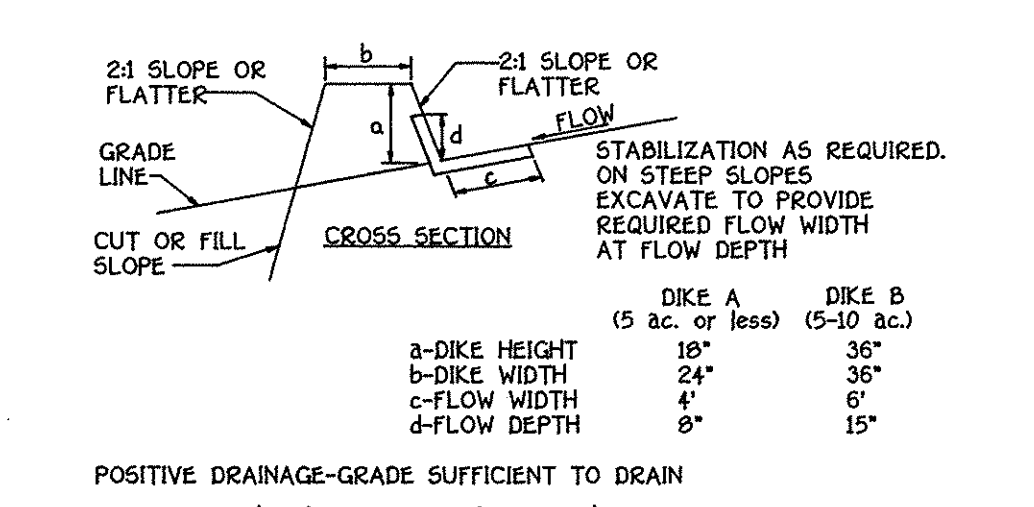
Construction Specifications
 1. Attach a continuous piece of wire mesh (30' minimum width by throat length plus 4') to the 2' x 4' weir (measuring throat length plus 2') as shown on the standard drawing.
 2. Place a continuous piece of Geotextile Class E the same dimensions as the wire mesh over the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

MAX. DRAINAGE AREA = 1/4 ACRE
 STANDARD SYMBOL
 CIP

- ### 20.0 STANDARDS AND SPECIFICATIONS
- #### VEGETATIVE STABILIZATION
- ##### DEFINITION
- Using vegetation as cover for barren soil to protect it from forces that cause erosion.
- ##### PURPOSE
- Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and run-off to downstream areas, and improving wildlife habitat and visual resources.
- ##### CONDITIONS WHERE PRACTICE APPLIES
- This practice shall be used on denuded areas as specified in the plan and on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration (up to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary Soil Stockpiles, cleared areas before final grade, former stockpile and staging areas, etc. Permanent Seeding areas are lawns, dams, cut and fill slopes and other areas at final grade, former stockpile and staging areas, etc.
- ##### EFFECTS ON WATER QUALITY AND QUANTITY
- Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone. Sediment control devices must remain in place during grading, seeded preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.
- ##### SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS
- Site Preparation**
 - Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
 - Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
 - Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.
 - Soil Amendments (Fertilizer and Lime Specifications)**
 - Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
 - Fertilizers shall be uniform in composition, flow and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the producer.
 - Lime materials shall be ground limestone (hydrated or burnt lime may be substituted which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such that at least 50% will pass through a 100 mesh sieve and 90-100% will pass through a #20 mesh sieve.
 - Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.**
 - Temporary Seeding**
 - Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
 - Apply fertilizer and lime as prescribed on the plans.
 - Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
 - Permanent Seeding**
 - Minimum soil conditions required for permanent vegetative establishment:
 - Soil pH shall be between 6.0 and 7.5.
 - Soluble salts shall be less than 500 parts per million (ppm).
 - The soil shall contain less than 40% clay, but enough fine grained material (30% silt plus clay) to provide adequate moisture to hold a moderate amount of moisture. An adequate amount of moisture, or sercia lespedezas is to be planted, then a sandy soil (30% silt plus clay) would be acceptable.
 - Soil shall contain 1.5% minimum organic matter by weight.
 - Soil must contain sufficient pore space to permit adequate root penetration.
 - If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
 - Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
 - Apply soil amendments as per soil test or as included on the plans.

STANDARD CURB INLET PROTECTION

NOT TO SCALE



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

TYPE OF TREATMENT CHANNEL GRADE DIKE A DIKE B

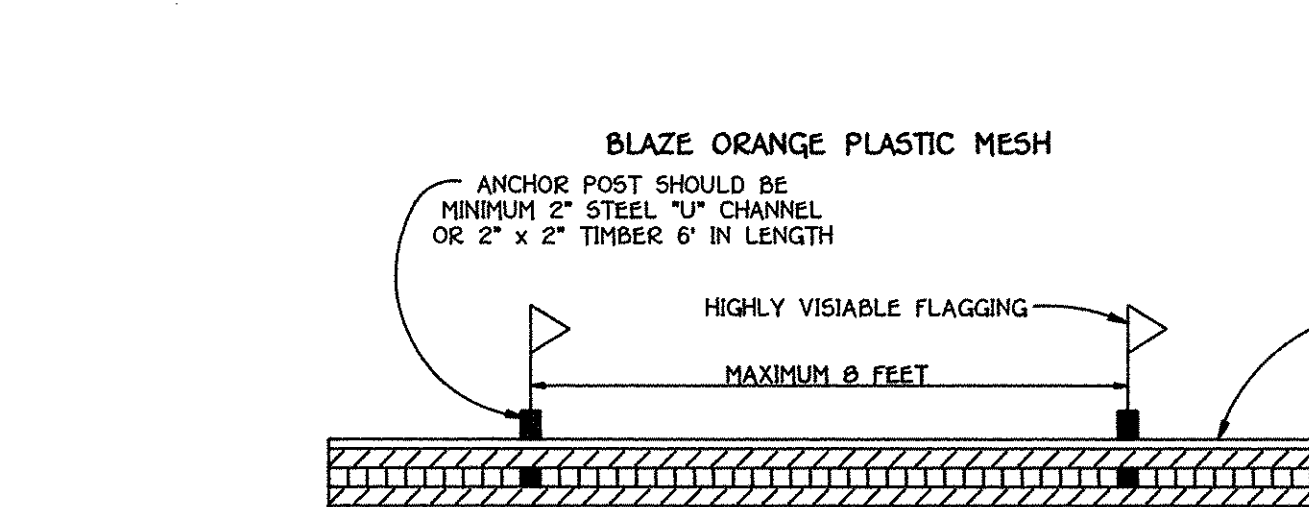
1	5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE, OR EXPOSED SOIL; 2" STONE
3	5.1-8.0%	SEED WITH JUTE, OR SOIL; 2" STONE	LINED RIP-RAP 4'-8"
4	8.1-20%	LINED RIP-RAP 4'-8"	ENGINEERING DESIGN

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

EARTH DIKE

NOT TO SCALE

- Seed Specifications**
 - All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.
 - Seed tags shall be made available to the inspector to verify type and rate of seed used.
 - Inoculant** - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75° F. can weaken bacteria and make the inoculant less effective.
- Methods of Seeding**
 - Hydroseeding**: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeders with a culturing seeder.
 - If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen maximum of 100 lbs. per acre total of soluble nitrogen P205 (phosphorous) 40 lbs. per acre, K2O (potassium) 200 lbs/acre.
 - Lime - use only ground agricultural limestone. (Up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use lime or hydrated lime when hydroseeding.
 - Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
 - Dry Seeding**: This includes use of conventional drop or broadcast spreaders.
 - Seed spread rate shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 265 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
 - Where practical, seed should be applied in two directions perpendicular to each other.
 - Drill or Cultipacker Seeding**: Mechanized seeders that apply and cover seed with soil.
 - Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering.
 - Where practical, seed should be applied in two directions perpendicular to each other.
 - Apply half the seed rate in each direction.
- Mulch Specifications**
 - Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, moldy, caked, decayed or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland State Law.
 - Wood Cellulose Fiber Mulch (WCFF)**
 - WCFF shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
 - WCFF shall be dried green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
 - WCFF, including dye, shall contain no germination or growth inhibiting factors.
 - WCFF materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
 - WCFF material shall contain no elements compounds at concentration levels that will be phytotoxic.
 - WCFF must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 10% maximum and water holding capacity of 50% minimum.
 - Only straw or wood cellulose fiber mulch should be used in areas where green grass is desired.
- Mulching Seeded Areas** - Mulch shall be applied to all seeded areas immediately after seeding.
 - If grading is completed outside of the seeding season, mulch shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
 - When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
 - Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
- Securing Straw Mulch (Mulch Anchoring)**: Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference, depending upon size of area and erosion hazard):
 - A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but it is not recommended where equipment cannot operate safely. If used on sloping land, this practice should be used on the contour if possible.
 - Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at the rate of 100 lbs. per 100 gallons of water. The mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 - Application of liquid binders should be heavier at the edges where wind catches them, such as in valleys and crest of banks. The remainder of area should be applied uniform after binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-70 Petro-Tack, Terra-Tax II, Terra-Tack AR, or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
 - Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.



Construction Specifications
 1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum cut, or 10/4" diameter (cut) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
 2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	6.0 gal / F ² /minute (max.)	Test: MSMT 382
Filtering Efficiency	75% (min.)	Test: MSMT 382

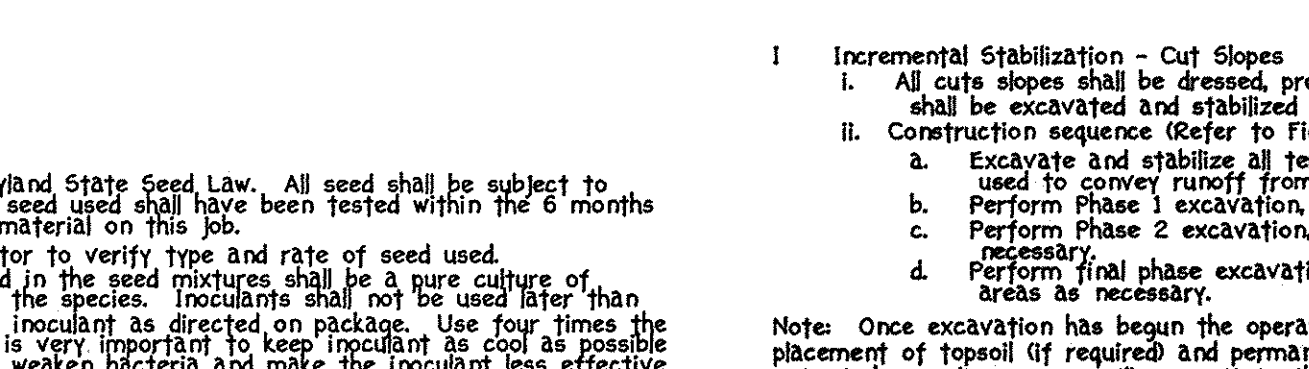
 3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
 4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reaches 50% of the fabric height.

TREE PROTECTION DETAIL

NOT TO SCALE

- Incremental Stabilization - Cut Slopes
 - All cuts slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.
 Construction sequence (Refer to Figure 3 below):
 - Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation.
 - Perform Phase 1 excavation, dress, and stabilize.
 - Perform Phase 2 excavation, dress and stabilize. Overseed Phase 1 areas as areas as necessary.
 - Perform final phase excavation, dress and stabilize. Overseed previously seeded areas as necessary.
 - Excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions into the operation of completing the operation of the seeding season will necessitate the application of temporary stabilization.
 - Incremental Stabilization of Embankments - Fill Slopes
 - Embankments shall be constructed in lifts as prescribed on the plans.
 - Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches 15' or when the grading operation ceases as prescribed in the plans.
 - At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to a sediment trapping device.
 - Construction Sequence (Refer to Figure 4 below):
 - Excavate and stabilize all temporary swales, side ditches, or berms that will be shown to divert runoff around the fill. Construct slope silt fence on low side of fill as shown in Figure 5, unless other methods shown on the plans address this area.
 - Place Phase 1 embankment, dress and stabilize.
 - Place Phase 2 embankment, dress and stabilize.
 - Place final phase embankment, dress and stabilize. Overseed previously seeded areas as necessary.
- Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions into the operation or completing the operation of the seeding season will necessitate the application of temporary stabilization.

SEDIMENT CONTROL NOTES & DETAILS



Construction Specifications
 1. Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
 2. The fill material for the embankment shall be free of roots and other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
 3. All cut and fill slopes shall be 2:1 or flatter.
 4. The stone used in the outlet shall be small rip-rap 4" to 7" in size with a 1" thick layer of 3/4" to 1/2" washed aggregate placed on the upstream face of the outlet. Stone facing shall be as necessary to prevent clogging. Geotextile Class C may be substituted for the stone facing by placing it on the inside face of the stone outlet.
 5. Sediment shall be removed and trap returned to its original dimensions when the sediment has accumulated to one half of the wet storage depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

DETAIL 9 - STONE OUTLET SEDIMENT TRAP - ST II

SEDIMENT CONTROL NOTES & DETAILS

FRIENDSHIP FARM

LOTS 1-16 AND PARCEL 'A' 'B'

ZONING: RR-DEO
 TAX MAP No. 15 - PARCELS No. 65 AND 89
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: DECEMBER 31, 1995
 SHEET 7 OF 9

OWNER'S

ROBERT AND MARIE WOODFIELD
 2905 MARYLAND ROUTE 32
 WEST PICOCHERRY, MARYLAND 21794

DEVELOPER

BRIAN PROFFER PARTNERSHIP
 2100 WOODLAND COUNTRY ROAD
 WOODBRIDGE, MARYLAND 21797

DESIGNER

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 461 - 2255

STATE OF MARYLAND

PROFESSIONAL ENGINEER

SILT FENCE

NOT TO SCALE

DEVELOPER'S CERTIFICATE

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

Signature of Developer: *Michael M. Ball* (MICHAEL M. BALL) DATE: 1/31/96

ENGINEER'S CERTIFICATE

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

Signature of Engineer: *Jayesh K. Anandh* (JAYESH K. ANANDH) DATE: 1-31-96

REVIEW FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS
 Signature: *J. S. Williams* DATE: 5/1/96

Signature: *J. S. Williams* DATE: 5/1/96

Signature: *Robert W. Ziehm* DATE: 5/1/96

Signature: *Robert W. Ziehm* DATE: 5/1/96

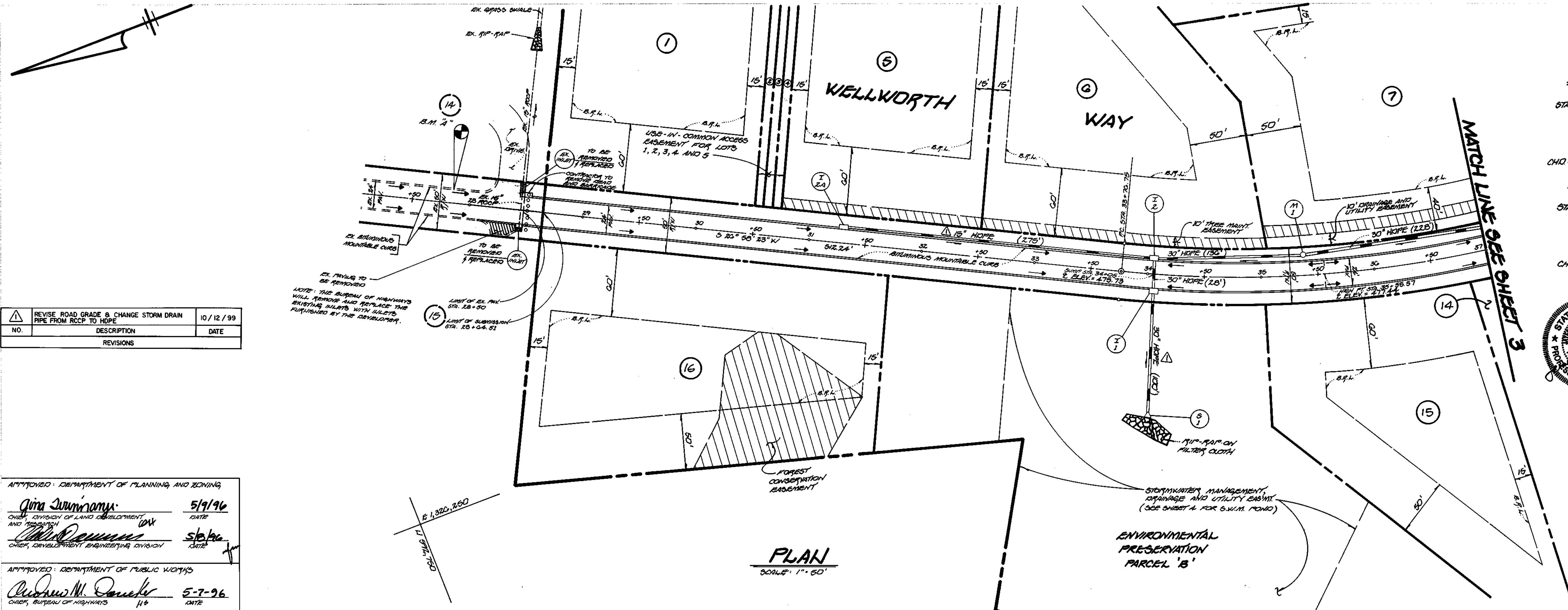
Signature: *James J. ...* DATE: 5/9/96

Signature: *James J. ...* DATE: 5/10/96

Signature: *Stephen M. ...* DATE: 5-7-96

Signature: *Stephen M. ...* DATE: 5-7-96

1810

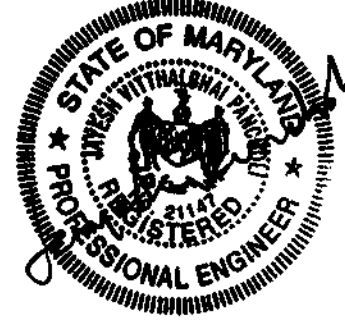


2 CURVE DATA

WELLWORTH WAY
 STA. 33+76.75 TO STA. 38+12.01
 R = 1000.00'
 L = 436.60'
 Δ = 24° 58' 23"
 T = 221.45'
 CHD = 5 14° 29' 12" W, 432.42'

3 CURVE DATA

WELLWORTH WAY
 STA. 33+76.75 TO STA. 44+58.38
 R = 1000.00'
 L = 1081.65'
 Δ = 61° 58' 23"
 T = 600.54'
 CHD = 5 04° 00' 49" E, 1089.67'



FRIENDSHIP FARM
 LOTS 1-16, PARCEL A+B
 TAX MAP 15 PARCELS 05 & 09
 3rd ELECTION DISTRICT HOKIANG COUNTY, MARYLAND

WELLWORTH WAY
 PLAN & PROFILE

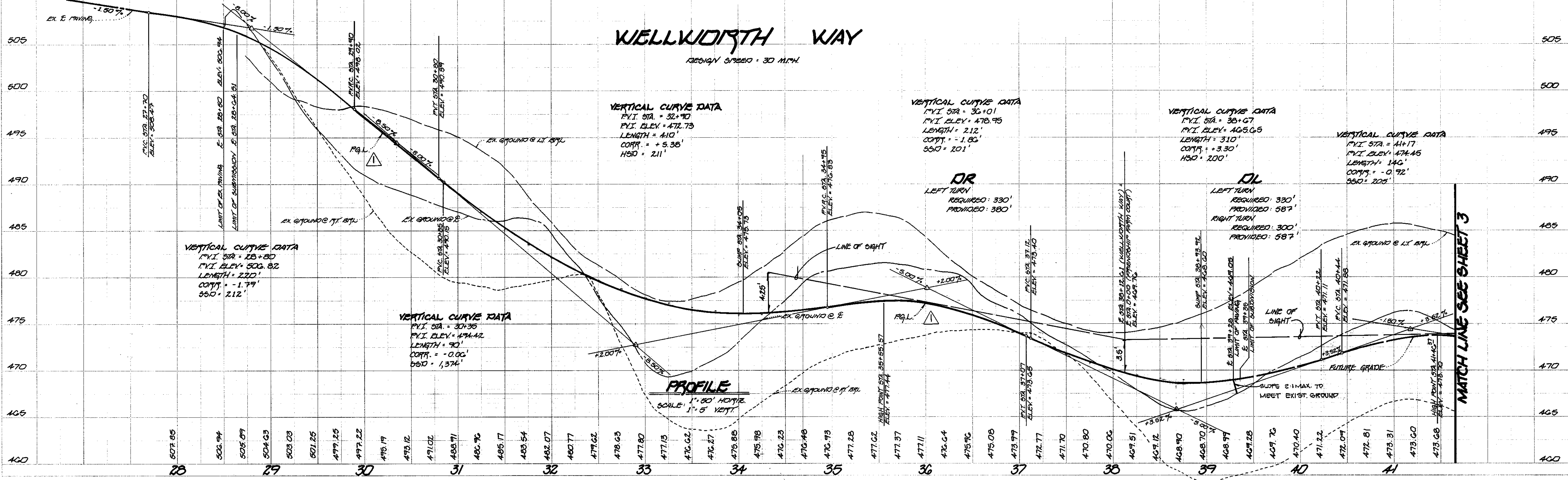
DEVELOPER
 BRITTON PROPERTY DEVELOPMENT
 250 BOW ST.
 BELLGATE CITY, MARYLAND 21041

DATE: DEC. 31, 1996
 SHEET 2 OF 3
 BY: J. PANCHALI, J. LAMKE, C. CYRNO

NO.	DESCRIPTION	DATE
1	REVISE ROAD GRADE & CHANGE STORM DRAIN PIPE FROM REC'D TO HOPE	10/12/99

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Gina Summerville, 5/19/96
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Richard M. Daniels, 5-7-96
 CHIEF, BUREAU OF HIGHWAYS



1810

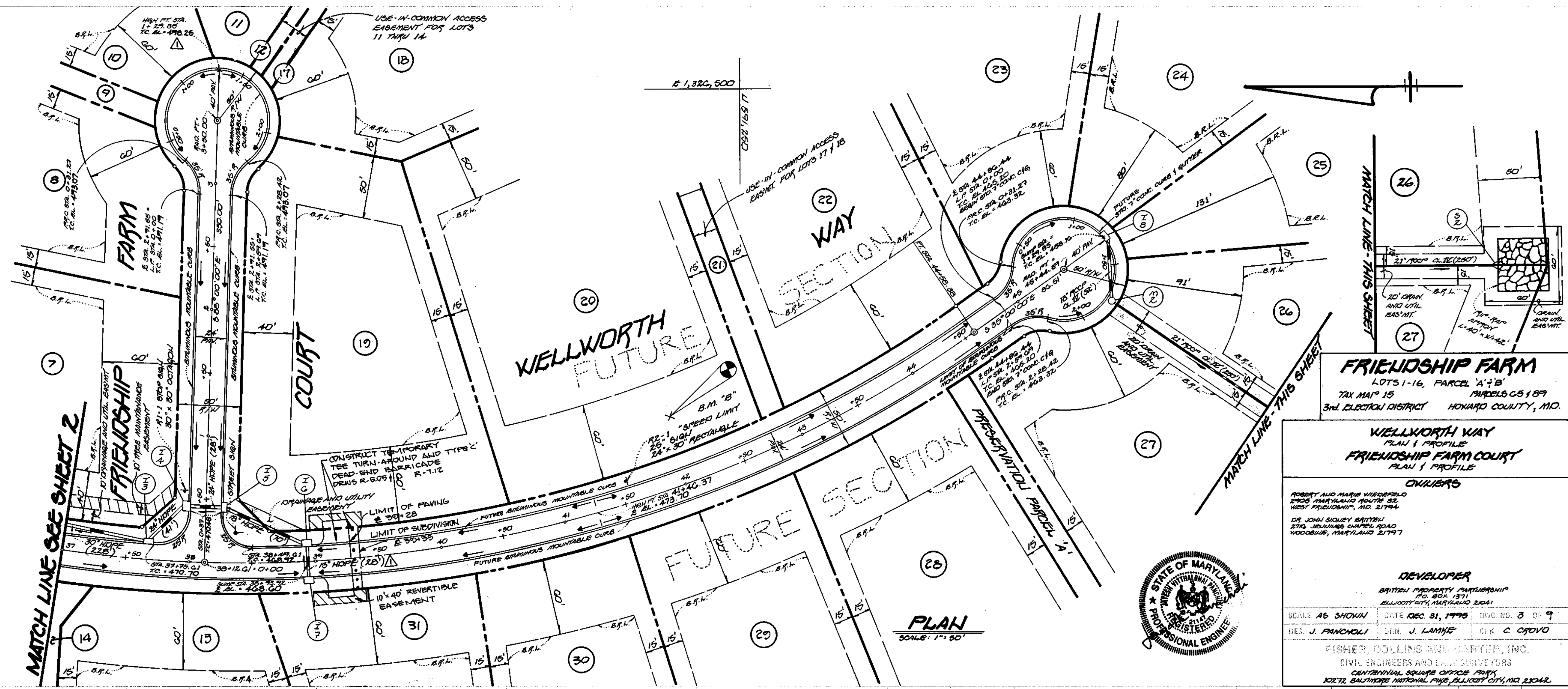
R CURVE DATA
 WELLWORTH WAY
 STA 33+70.75 to STA 35+12.01
 R = 1000.00'
 L = 435.80'
 Δ = 24° 58' 23"
 T = 221.45'
 CHD = 5 14° 29' 12" N, 432.42'

R CURVE DATA
 WELLWORTH WAY
 STA 35+12.01 to STA 44+50.38
 R = 1000.00'
 L = 645.77'
 Δ = 37° 00' 00"
 T = 334.00'
 CHD = 5 16° 30' 00" E, 634.01'

NO.	REVISIONS	DATE
1	REVISE ROAD GRADE & CHANGE STORM DRAIN PIPE FROM R.O.P. TO HERE	10/12/99

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Anna Summerville 5/9/96
 CHIEF, DIVISION OF LAND DEVELOPMENT (AK)
 DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
Andrew M. Danese 5-7-96
 CHIEF, BUREAU OF HIGHWAYS (HS)
 DATE



FRIENDSHIP FARM
 LOTS 1-16, PARCEL 'A' & 'B'
 TAX MAP 15
 3rd. ELECTION DISTRICT HOWARD COUNTY, MD.

WELLWORTH WAY
 PLAN 1 PROFILE
 FRIENDSHIP FARM COURT
 PLAN 1 PROFILE

OWNERS
 ROBERT AND MARIE WISSENFELD
 2705 MARSHLAND DRIVE SE
 WEST FRIENDSHIP, MD 21794

DEVELOPER
 BRITISH PROPERTY PARTNERSHIP
 700 BOX 1571
 BELLEFONTAINE, MARYLAND 21041

SCALE AS SHOWN DATE DEC 31, 1995 DIV. NO. 3 OF 9
 DES. J. PANCHOLI GEN. J. LAMME CHK. C. OROVO

FISHER, COLLINS AND CARTER, INC.
 CIVIL ENGINEERS AND LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK
 10272 BALTIMORE NATIONAL PIKE, BELLEFONTAINE, MD 21034

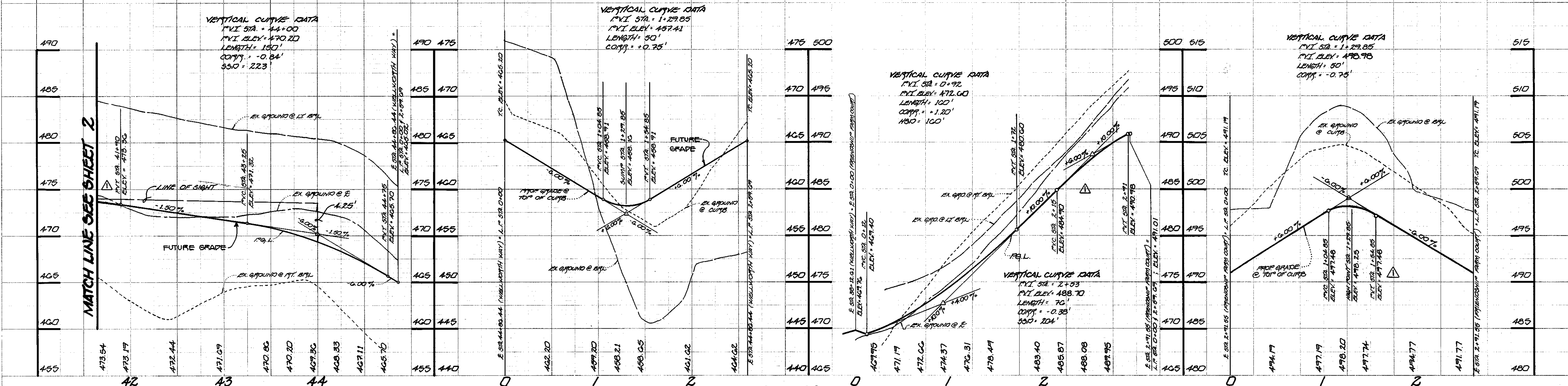
STATE OF MARYLAND
 PROFESSIONAL ENGINEER

WELLWORTH WAY
 DESIGN SPEED = 30 M.P.H.

WELLWORTH WAY
 (LINEAR PROFILE)

FRIENDSHIP FARM COURT
 DESIGN SPEED = 25 M.P.H.

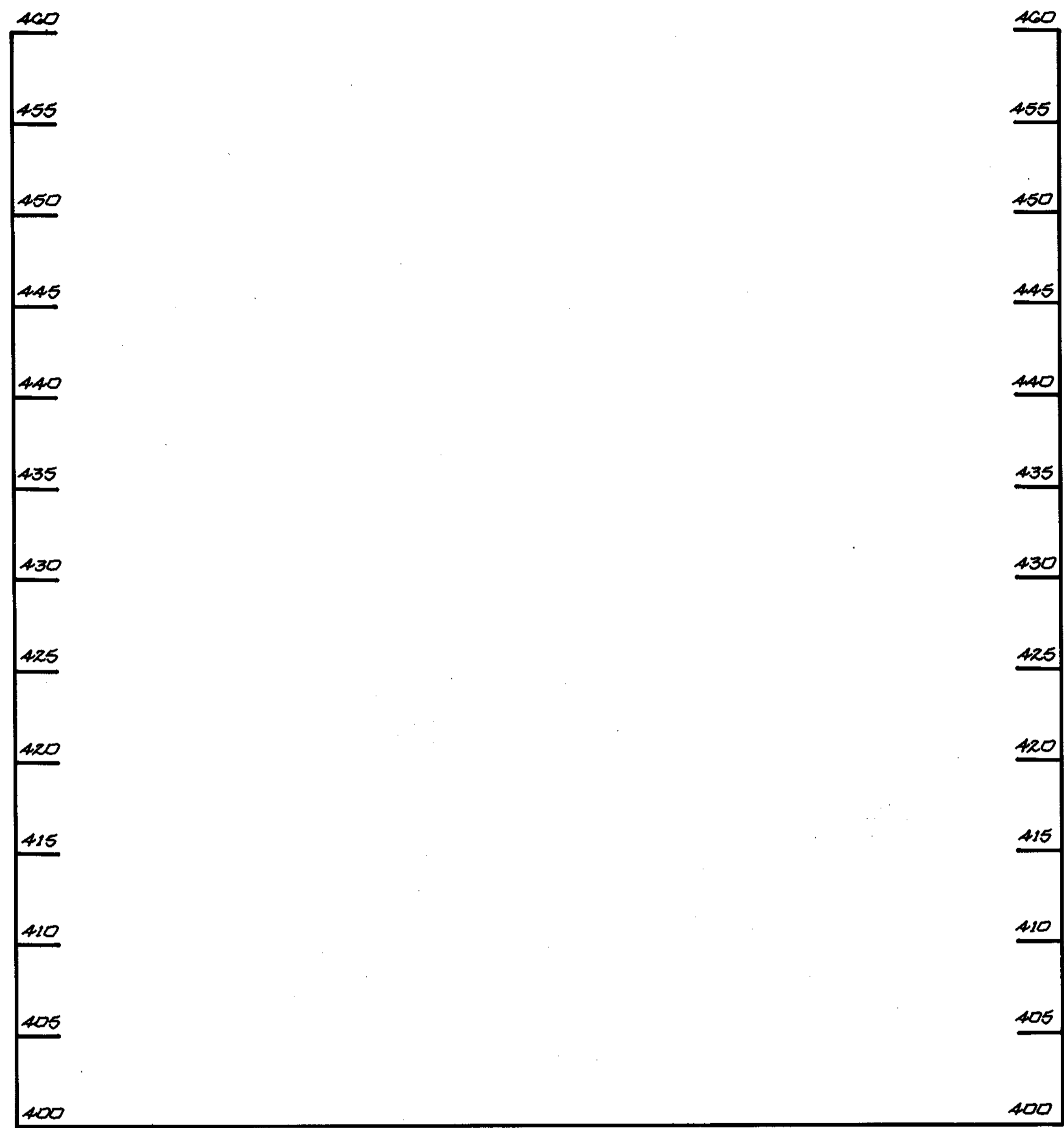
FRIENDSHIP FARM COURT
 (LINEAR PROFILE)



PROFILES
 SCALE: 1" = 20' VERT.
 1" = 50' HORIZ.

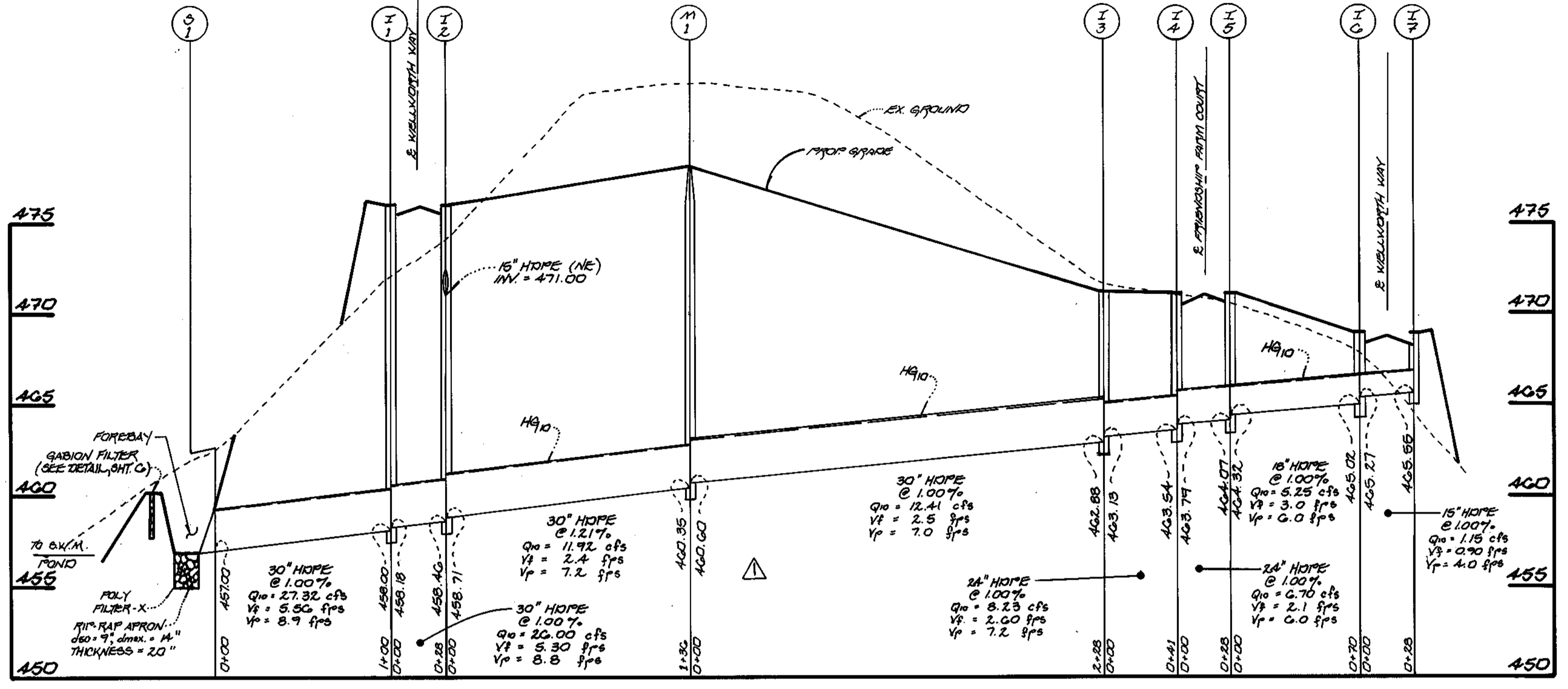
1810

REVISION	DESCRIPTION	DATE
1	REVISE ROAD GRADE AND CHANGE STORM DRAIN PIPE FROM ROOF TO HOPE	10/12/97

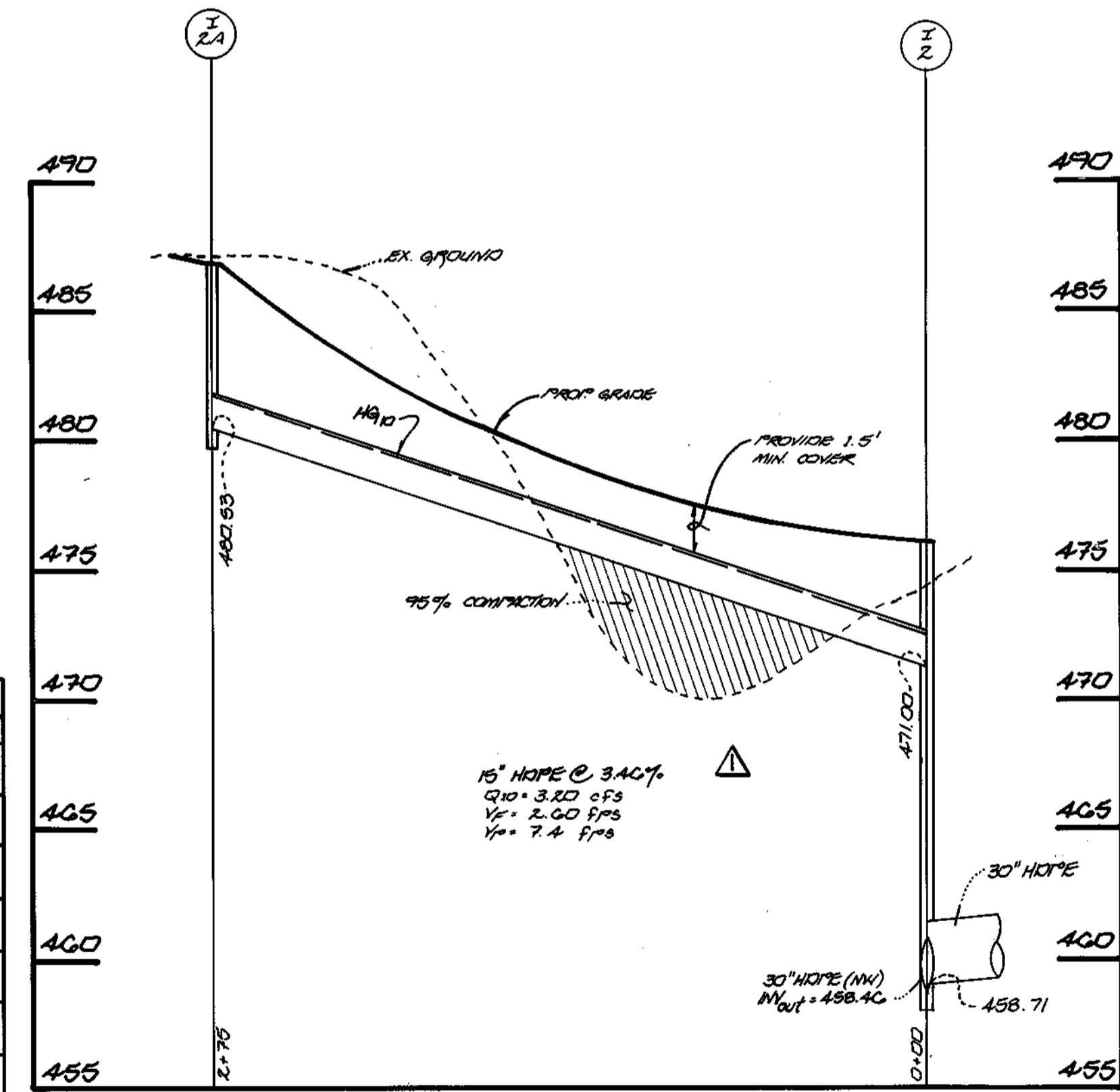


PROFILE
SCALE: 1" = 50' HORIZ.
1" = 5' VERT.

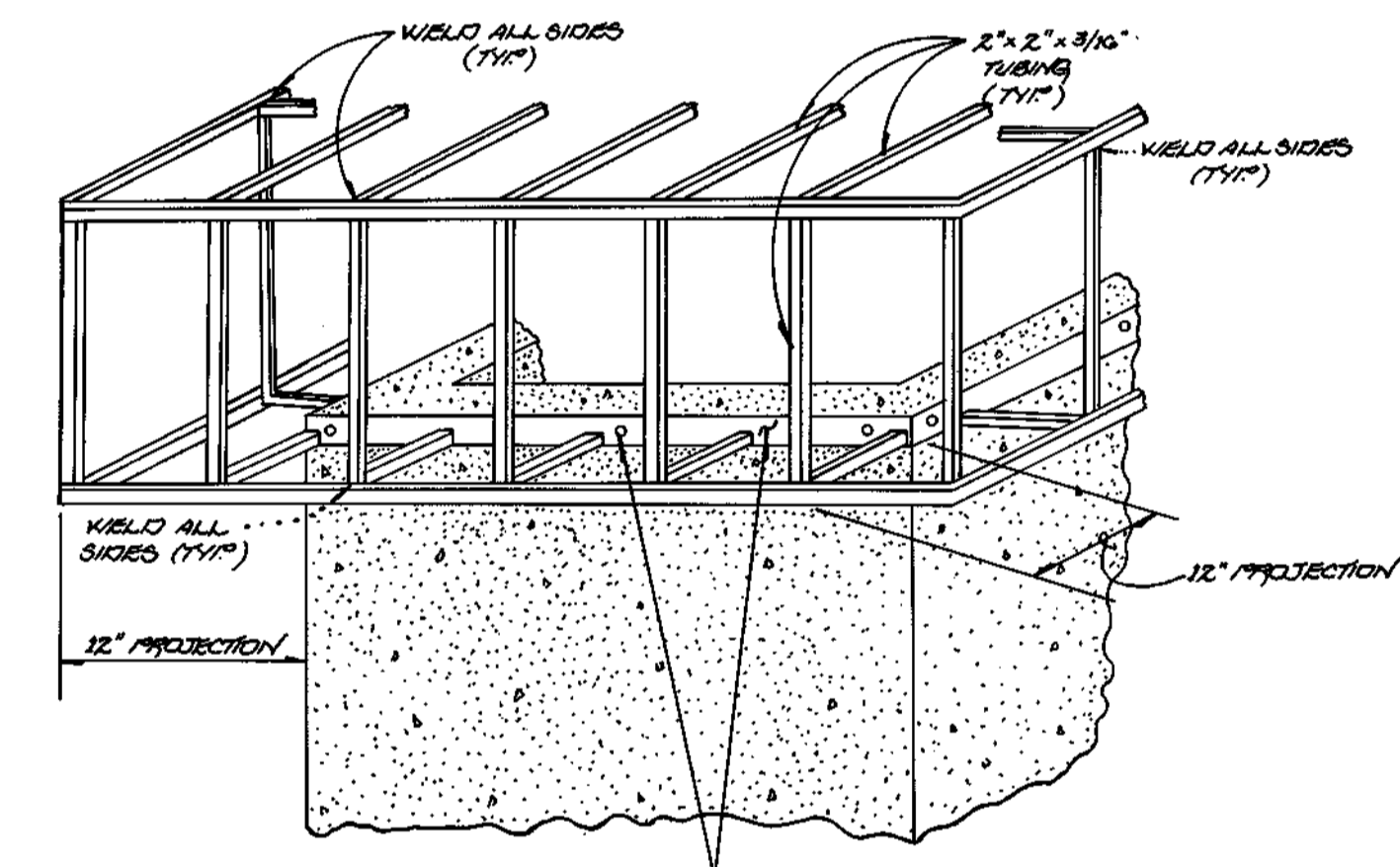
STRUCTURE	TOP ELEV.	THREAT ELEV.	INV. IN	INV. OUT	ROAD NAME	E. ROAD STA.	OFFSET	TYPE	NO. CO. STD. DETAIL
I - 1	475.91	475.08	458.18	458.00	WELLWORTH WAY	34+05	12' RT.	A-5 INLET	S.D. 4.01
I - 2	475.91	475.08	458.71 471.00	458.46	WELLWORTH WAY	34+05	12' LT.	A-10 INLET	S.D. 4.02
I - 3	471.10	470.33	463.13	462.88	WELLWORTH WAY	37+70	12' LT.	A-10 INLET	S.D. 4.02
I - 4	471.07	470.24	463.79	463.54	FRIENDSHIP FARM COURT	0+44	12' LT.	A-10 INLET	S.D. 4.02
I - 5	471.07	470.24	464.32	464.07	FRIENDSHIP FARM COURT	0+44	12' RT.	A-10 INLET	S.D. 4.02
I - 6	468.78	467.95	465.27	465.02	WELLWORTH WAY	38+93.92	12' LT.	A-5 INLET	S.D. 4.01
I - 7	468.78	467.95	-----	465.55	WELLWORTH WAY	38+93.92	12' RT.	A-5 INLET	S.D. 4.01
I - 2A	480.78	485.95	-----	480.53	WELLWORTH WAY	31+30	12' LT.	A-10 INLET	S.D. 4.02
M - 1	477.95	-----	460.00	460.35	WELLWORTH WAY	35+38	18' LT.	STD. MH	G-5.13
S - 1	459.50	-----	457.00	-----	-----	N 592120.72 E 1326110.88	---	CONC. END SECT.	S.D. 5.52
S - 3	444.00	-----	442.00	-----	-----	N 592039.01 E 1326866.87	---	CONC. END SECT.	S.D. 5.52



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

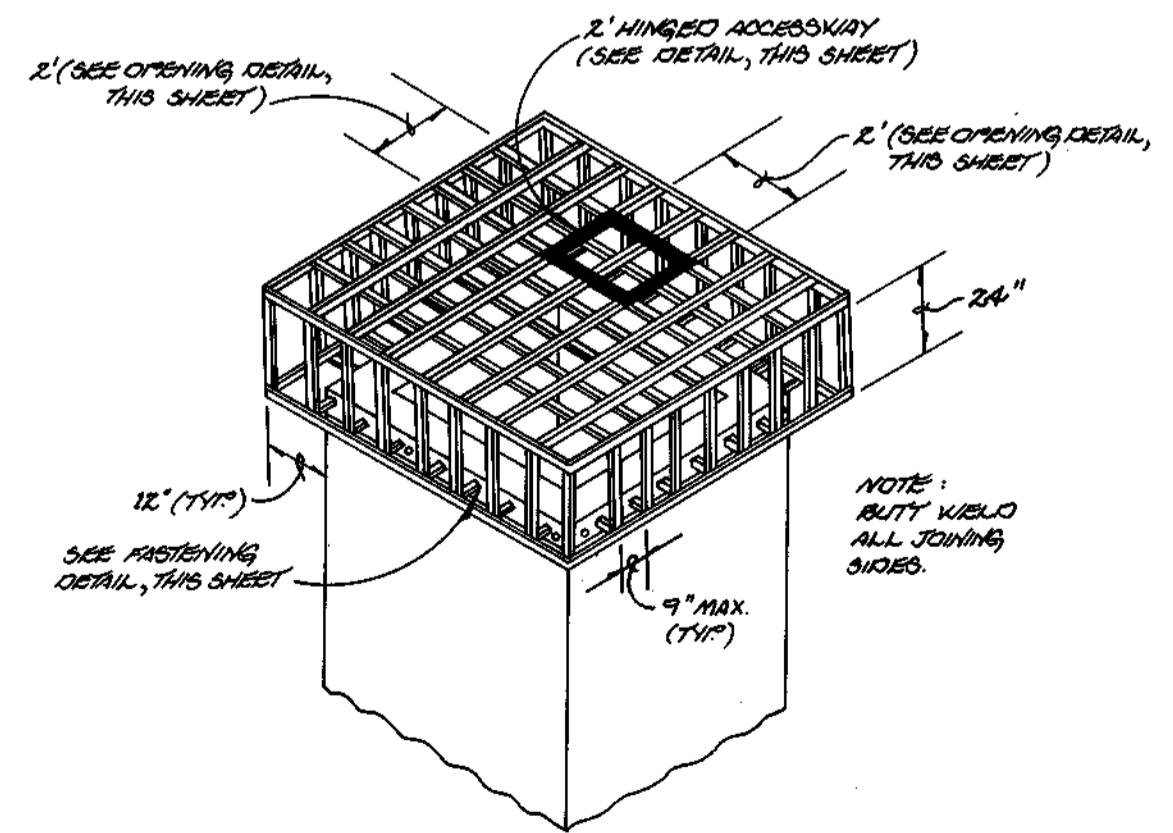


PROFILE
SCALE: 1" = 50' HORIZ.
1" = 5' VERT.

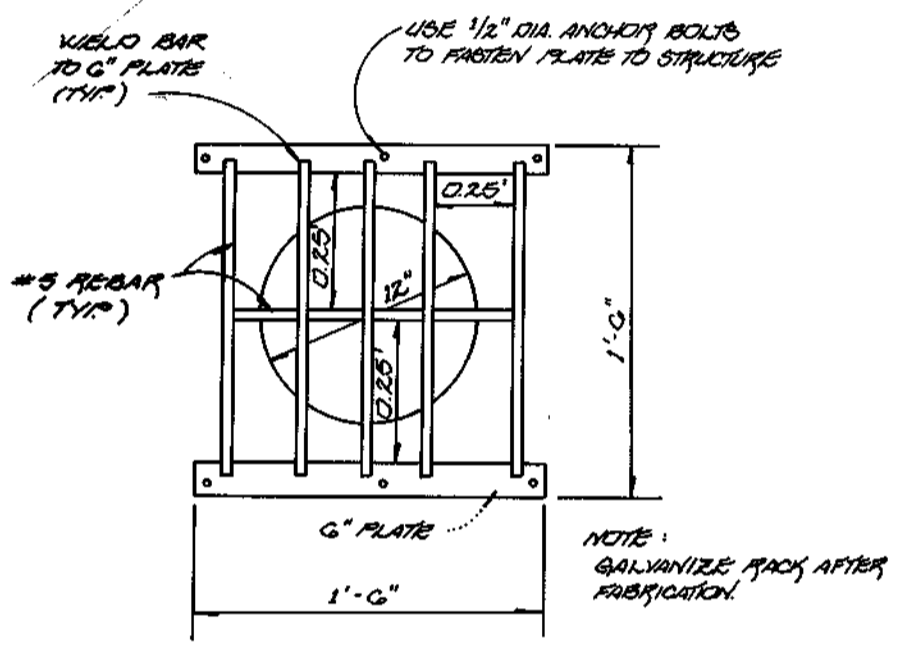


FASTENING DETAIL
(NO SCALE)

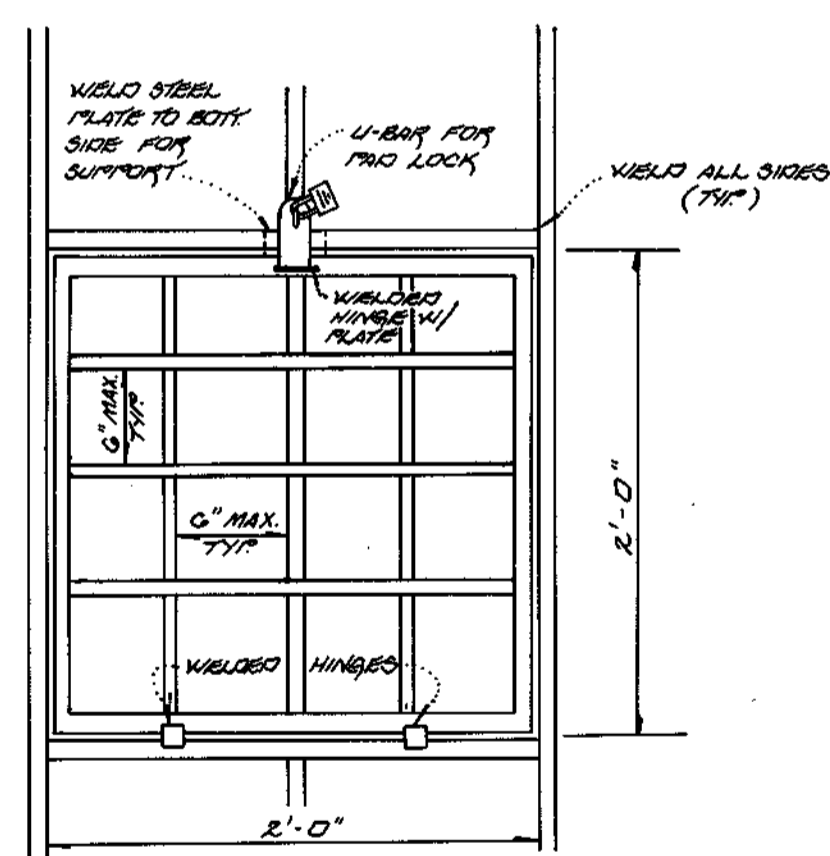
- NOTE: (CONTRACTOR SHALL)
- FIELD MEASURE THE STRUCTURE DIMENSIONS FOR EXACT FITTING OF TRASH RACK.
 - GALVANIZE ENTIRE TRASH RACK.
 - ALL NUTS AND BOLTS SHALL BE GALVANIZED.



TRASH RACK 'B'
(NO SCALE)



TRASH RACK 'A'
(NO SCALE)



OPENING DETAIL
(NO SCALE)

STORM DRAIN PROFILES AND STORM WATER MANAGEMENT DETAILS
FRIENDSHIP FARM
LOTS 1-16
AND PARCELS X+Y
ZONING: RR-DEO
TAX MAP No. 15 - PARCELS NO. 65 AND 89
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: DECEMBER 31, 1995
SHEET 5 OF 9

DEVELOPER'S CERTIFICATE
I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR EROSION AND SEDIMENT CONTROL PERSONNEL IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZED PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.
SIGNATURE OF DEVELOPER: *Michael M. Bunch* DATE: 5/1/96

ENGINEER'S CERTIFICATE
I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITION AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
SIGNATURE OF ENGINEER: *Jay A. Panchol* DATE: 1-31-96

REVIEW FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS:
J. A. Panchol DATE: 5/1/96

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Robert W. Schumpp DATE: 5/1/96

APPROVED DEPARTMENT OF PLANNING AND ZONING
Jim Summery DATE: 5/9/96

CHIEF DIVISION OF LAND DEVELOPMENT AND RESEARCH
Mike Deane DATE: 5/8/96

APPROVED DEPARTMENT OF PLANNING AND ZONING
Robert M. Daveler DATE: 5-7-96



DEVELOPER
BRITISH PROPERTY PARTNERSHIP
P.O. BOX 1271
BILKOTT CITY, MARYLAND 21041

OWNERS
REBERT AND MARIE WOODBRIDGE
2800 MARYLAND ROUTE 30
WEST FRIENDSHIP, MD. 21764
DR. JOHN BARRY BRITISH
2710 JESUITAS CHAPEL RD.
WOODBRIDGE, MARYLAND 21797

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
NATIONAL SQUARE OFFICE PARK - 1077 BALDWIN NATIONAL FEE
ELICOTT CITY, MARYLAND 21042
410 941-2995

1810

