

- GENERAL NOTES**
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY.
 - THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/ BUREAU OF CONSTRUCTION INSPECTION AT (410) 313-1879 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:
 - LOCATIONS TAX MAP #3, P/O PARCEL 13
 - CURVE K-82
 - ELECTION DISTRICT: SECOND
 - TOTAL TRACT AREA: 11.149 AC.
 - NUMBER OF PROPOSED LOTS: 27
 - DATE PRELIMINARY PLAN: SKETCH PLAN EQUIVALENT APPROVED AND DATED FEBRUARY 14, 1992, 592-18
 - THESE PLANS ARE SUBJECT TO WATERS REGULATION 492-202 WHICH IS TO WAIVE SECTION 16.13 (10) TO ALLOW AUTUMN WOODS WAY TO EXCEED THE MAXIMUM CURVE-SAC LENGTH OF 1000 FEET TO APPROXIMATELY 1300 FEET, AND TO WAIVE SECTION 16.13 (9) TO WAIVE THE REQUIREMENTS OF SIDEWALKS ON THE ONE SIDE OF CURVE-SAC STREETS FROM THE SUBDIVISION REGULATIONS AND WAS APPROVED ON NOVEMBER 1992.
 - 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.
 - FIELD SURVEY PERFORMED ON OR ABOUT FEB. 28, 1992 BY FISHER, COLLINS & CARTER, INC.
 - COORDINATES BASED ON NAD 27, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 2944001 AND NO. 2944002.
 - 2944001:
 - N 513669.929
 - E 858664.268
 - N 541963.356
 - E 809596.399
 - 2944002:
 - N 513669.929
 - E 858664.268
 - N 541963.356
 - E 809596.399
 - LIGHT POLES AND FIXTURES FOR STREET LIGHTS SHALL BE IN ACCORDANCE WITH THE LATEST HOWARD COUNTY DESIGN MANUAL, VOLUME III, ROADS AND BRIDGES.
 - PUBLIC WATER AND PUBLIC SEWER SYSTEMS ARE TO BE UTILIZED FOR THIS SITE WHICH IS IN THE PATAPSCO DRAINAGE AREA.
 - STORMWATER MANAGEMENT WILL BE BY THE DETENTION METHOD AS SHOWN ON THIS SET OF PLANS.
 - THERE ARE NO FLOODPLAINS LOCATED WITHIN THIS PROPERTY.
 - WETLANDS DELINEATION STUDY IS PROVIDED BY M.A. DIRKS AND CO., INC. APPROVED ON DECEMBER 2, 1992.
 - GEOTECHNICAL STUDY FOR STORMWATER MANAGEMENT IS PROVIDED BY INVESTIGATIVE TESTING & ENGINEERING, INC. APPROVED ON AUGUST 14, 1992.
 - BOUNDARY SURVEY WAS PREPARED BY FISHER, COLLINS AND CARTER, INC. ON MARCH 4, 1992.

- INDEX OF SHEETS**
- ROAD DRAWING - SHELLEY LANE PLAN AND PROFILE
 - ROAD DRAWING - AUTUMN WOODS WAY, PROFILE AND DETAILS
 - STREET TREE, GRADING AND SEDIMENT CONTROL PLAN
 - STORM DRAIN PROFILES
 - DRAINAGE AREA MAP
 - STORM WATER MANAGEMENT, NOTES & DETAILS
 - SEDIMENT CONTROL NOTES & DETAILS

- STREET LIGHT**
- DESIGNATED 150 WATT HIGH PRESSURE SODIUM LIGHT POST ON A 20' HIGH GALV. STEEL POLE LOCATED AT THE FOLLOWING LOCATIONS:
- THE INTERSECTION OF AUTUMN WOODS WAY AND SHELLEY LANE AT STA. 5+30/10' LT.
 - 6 STA. 4+90 AUTUMN WOODS WAY 24' LT. OF ROAD BEHIND GUARD RAIL.

APPROVED
DEPARTMENT OF PUBLIC WORKS

[Signature] 2/1/94 DATE
CHIEF, LAND DEVELOPMENT DIVISION

[Signature] 1-25-94 DATE
CHIEF, BUREAU OF HIGHWAYS

APPROVED
DEPARTMENT OF PUBLIC WORKS

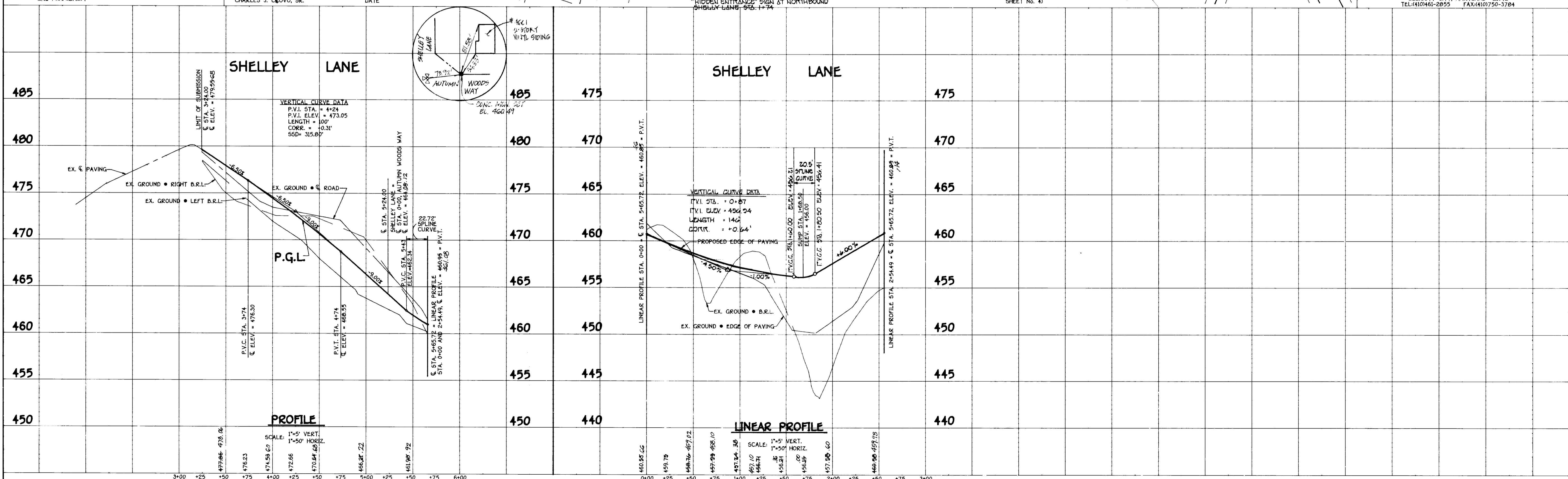
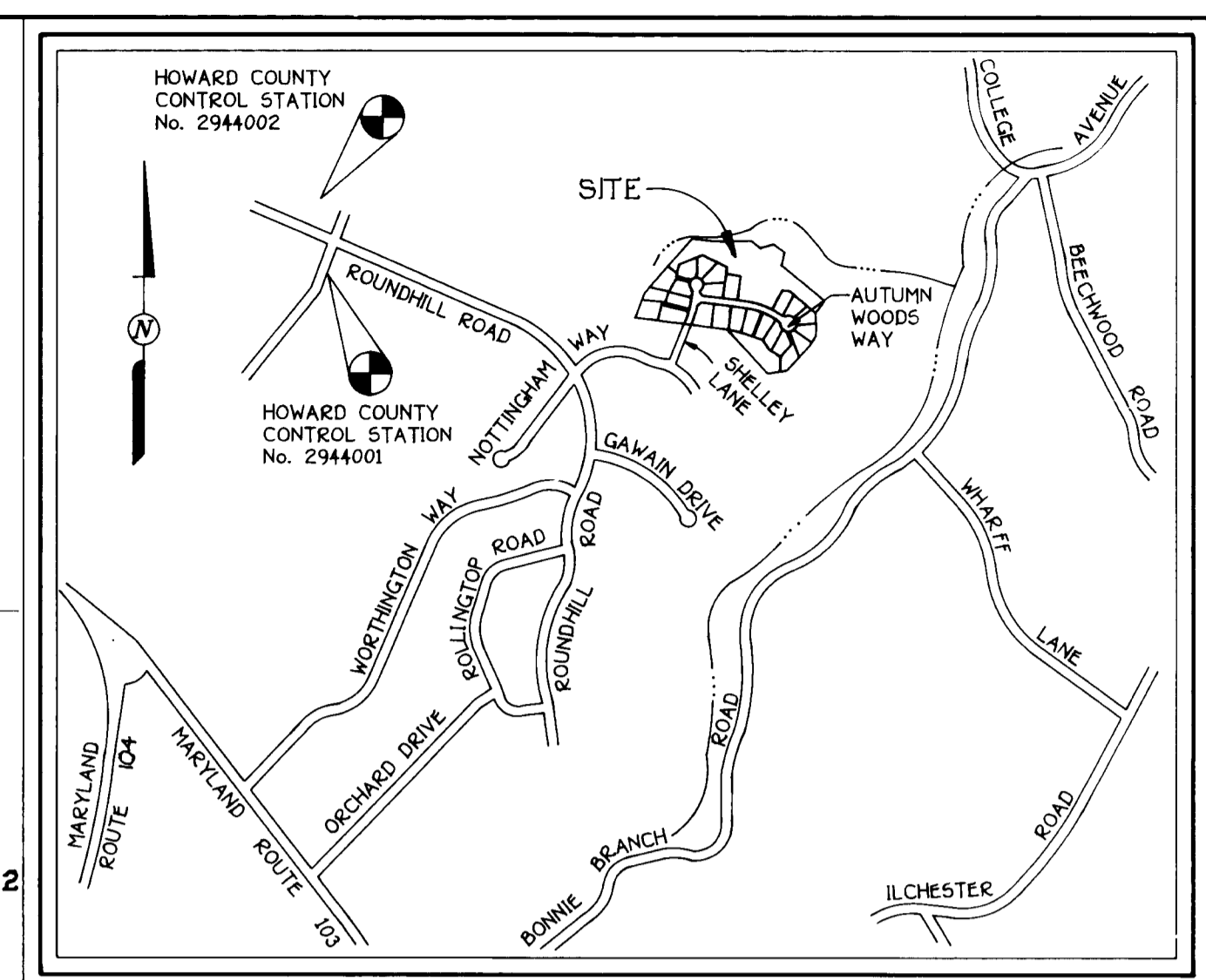
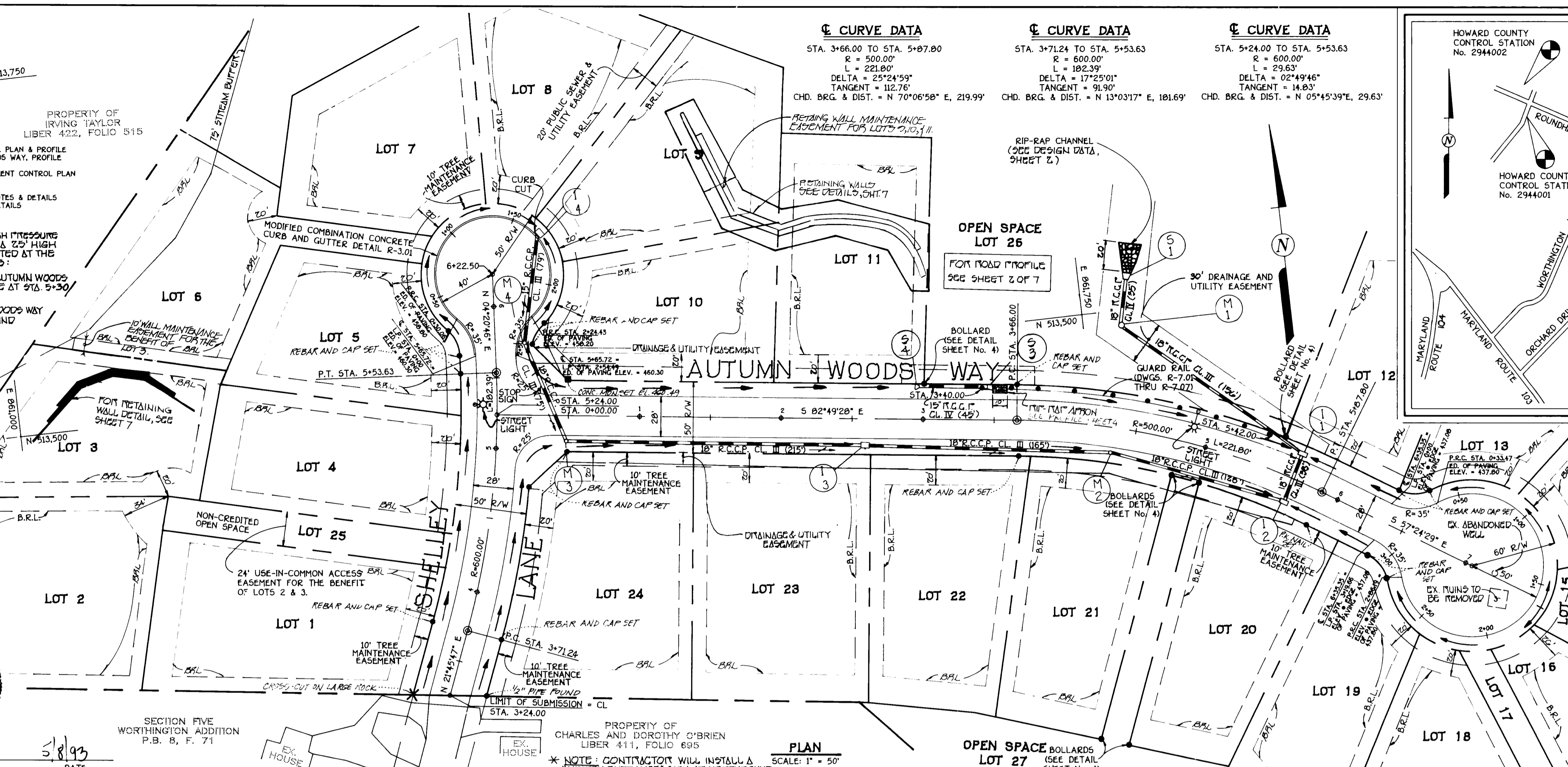
[Signature] 2/19/94 DATE
CHIEF, BUREAU OF ENGINEERING

APPROVED
DEPARTMENT OF PLANNING AND ZONING

[Signature] 2/14/94 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH



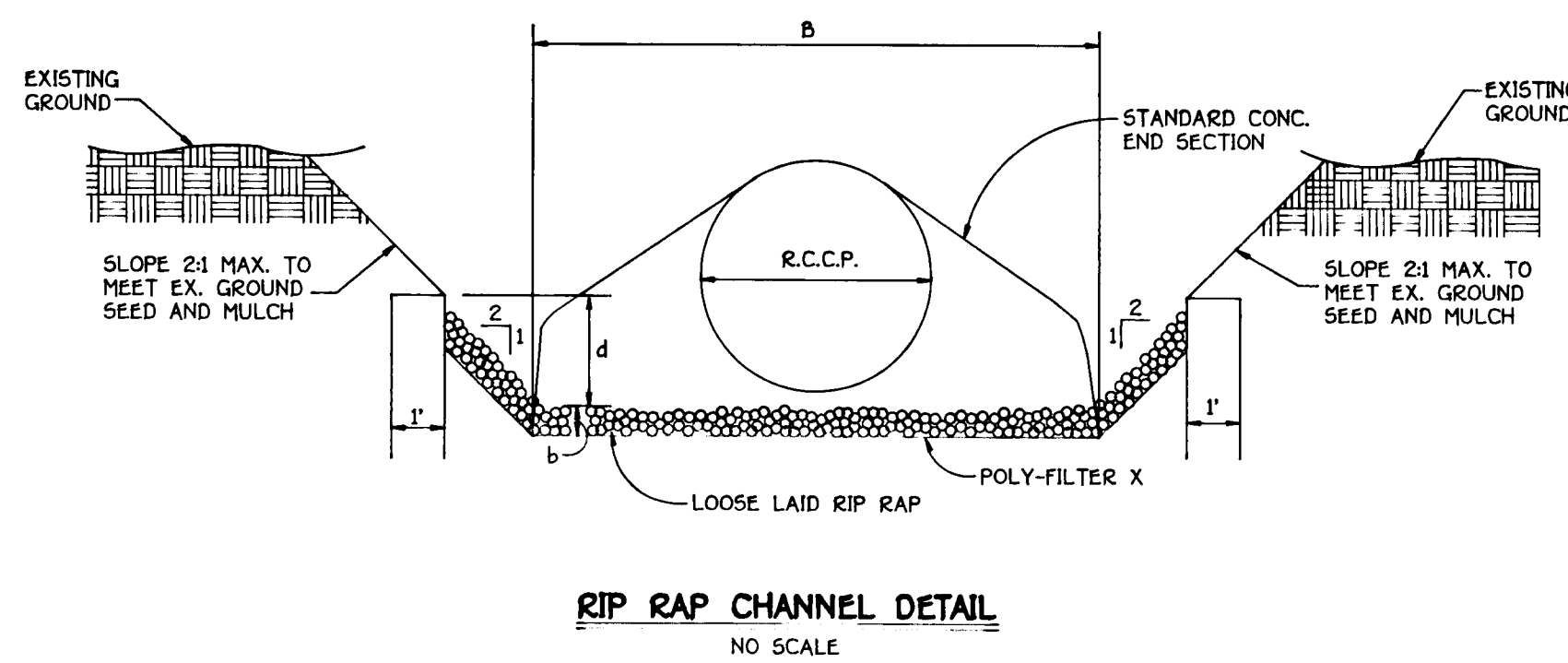
CHARLES J. CROVO, SR.
DATE 2/19/93



1687

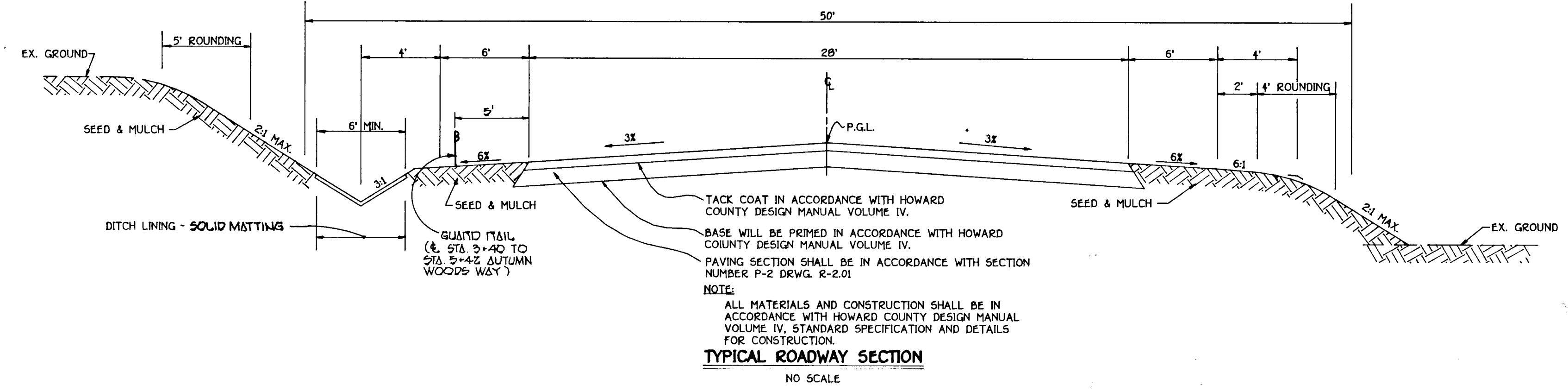
CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

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



RIP-RAP CHANNEL DESIGN DATA

STRUCTURE	AREA	WETTED PERIMETER	R	R 2/3	S	S 1/2	B	d	N	V	Q	RIP-RAP SIZE	BLANKET THICKNESS
										f.p.s.	c.f.s.	D ₅₀	D _{MAX}
S-1	4.771	0.4721	0.5631	0.6806	0.005	0.071	4.00'	0.84'	0.035	2.04	10.36	6"	7"
S-2	3.622	7.2174	0.4222	0.6250	0.005	0.071	4.50'	0.62'	0.025	0.62	6.22	6"	7"



ROADWAY INFORMATION CHART

ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	STATION LIMITS	PAVING SECTION
SHELLEY LANE	CUL-DE-SAC	30 M.P.H.	R-ED	5+24.00 TO 6+22.5	P-2
AUTUMN WOODS WAY	CUL-DE-SAC	30 M.P.H.	R-ED	0+00.00 TO 6+35.35	P-2
SHELLEY LANE	LOCAL ROAD	30 M.P.H.	R-ED	3+24.00 TO 5+24.00	P-2

APPROVED
DEPARTMENT OF PUBLIC WORKS

[Signature] 2/10/94 DATE

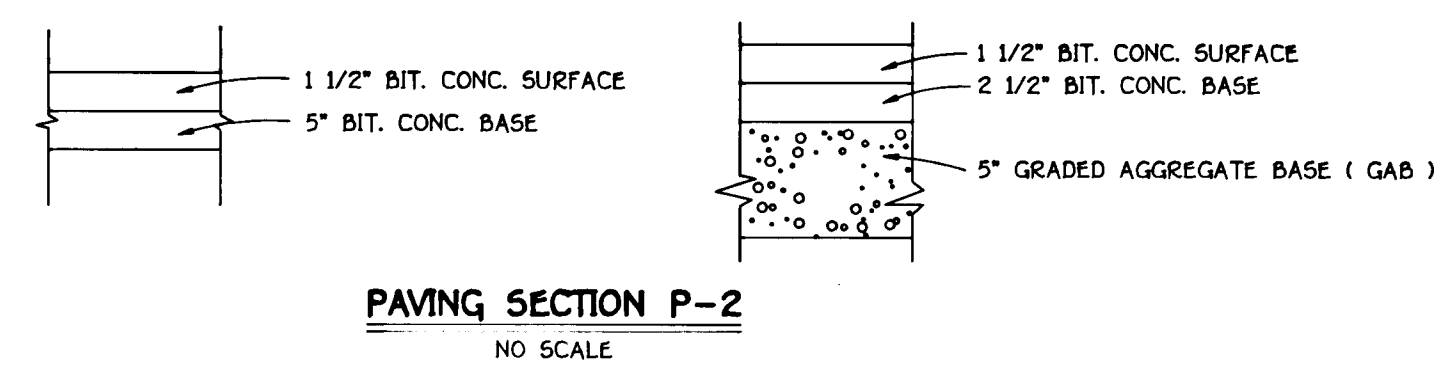
[Signature] 1-25-94 DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS

[Signature] 2/10/94 DATE

APPROVED
DEPARTMENT OF PLANNING AND ZONING

[Signature] 2/14/94 DATE



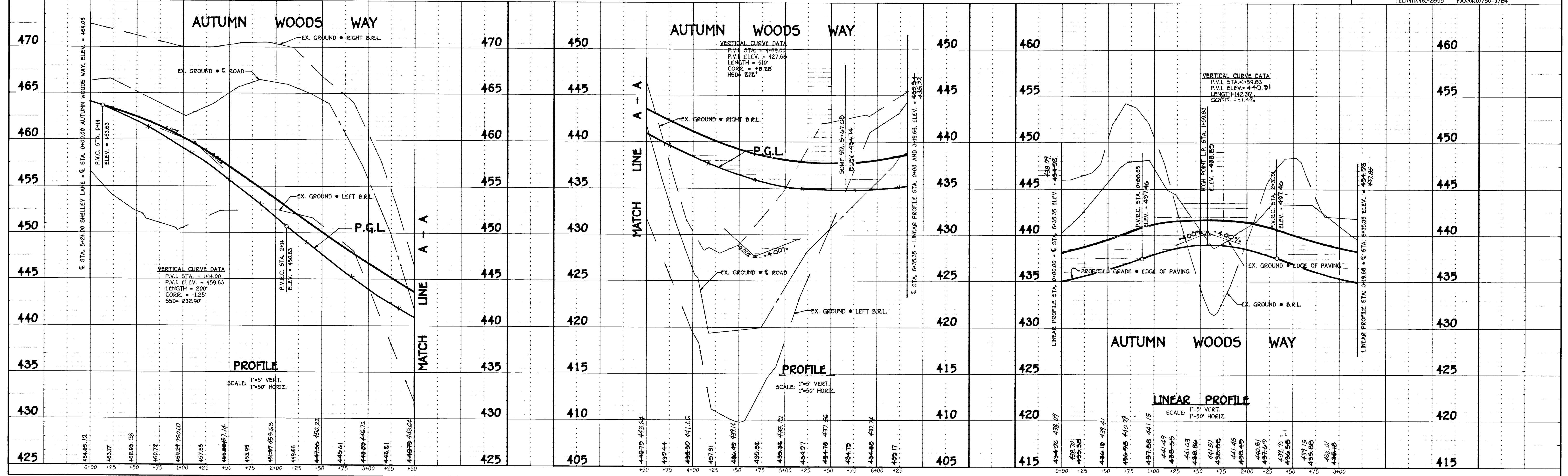
AUTUMN VIEW
LOTS 1 - 27
TAX MAP 31 P/O PARCEL 13
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TYPICAL ROADWAY, SECTION, NOTES AND DETAILS
AUTUMN WOODS WAY PROFILE

OWNER AND DEVELOPER
BONNIE BRANCH CORP.
P.O. BOX 396
ELLCOTT CITY, MARYLAND 21043

SCALE: AS SHOWN DATE: MAY 5, 1993 DWG. NO. 2 OF 7
DES. R. ISAACS DRN. J. ALMUETE CHK. Z. Y. FISCH

FISHER, COLLINS, AND CARTER, INC.
CIVIL ENGINEERING CONSULTANTS AND LAND SURVEYORS
9171 BALTIMORE NATIONAL PIKE, SUITE 100
ELLCOTT CITY, MARYLAND 21042
TEL: (410) 461-2855 FAX: (410) 750-3784



1687

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: *[Signature]* DATE: 5/19/93

DEVELOPER'S CERTIFICATE
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.
 SIGNATURE OF DEVELOPER: *[Signature]* DATE: 5/6/93

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS:
[Signature] DATE: 1-12-94
 U.S. SOIL CONSERVATION DISTRICT

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 APPROVED:
[Signature] DATE: 1-12-94
 DISTRICT HOWARD COUNTY CONSERVATION DIST.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] DATE: 2/14/94
 CHIEF, DIVISION OF LAND DEVELOPMENT AND REGULATION

APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] DATE: 2/9/94
 CHIEF, BUREAU OF ENGINEERING

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] DATE: 2/8/94
 CHIEF, LAND DEVELOPMENT DIVISION

[Signature] DATE: 1-25-94
 CHIEF, BUREAU OF HIGHWAYS

NOTES:

- TW DENOTES TOP OF WALL (SEE DETAIL SHEET 7)
- ⊙ DENOTES STREET TREE * 40' O.C. SEE DETAIL SHEET 4
- X- DENOTES BLAZE ORANGE TREE PROTECTION FENCE (SEE DETAIL SHEET 4)
- ▭ 25% SLOPES OR GREATER
- ▨ 25% SLOPES OR GREATER TO REMAIN WITHIN LOTS

STEEP SLOPES WITHIN LOTS AFTER DEVELOPMENT

LOT #	AREA (SQ FT)	MIN. STEEP SLOPES
7	116	16,950
8	342	14,808
9	2,120	19,776
12	290	14,022
14	242	14,106

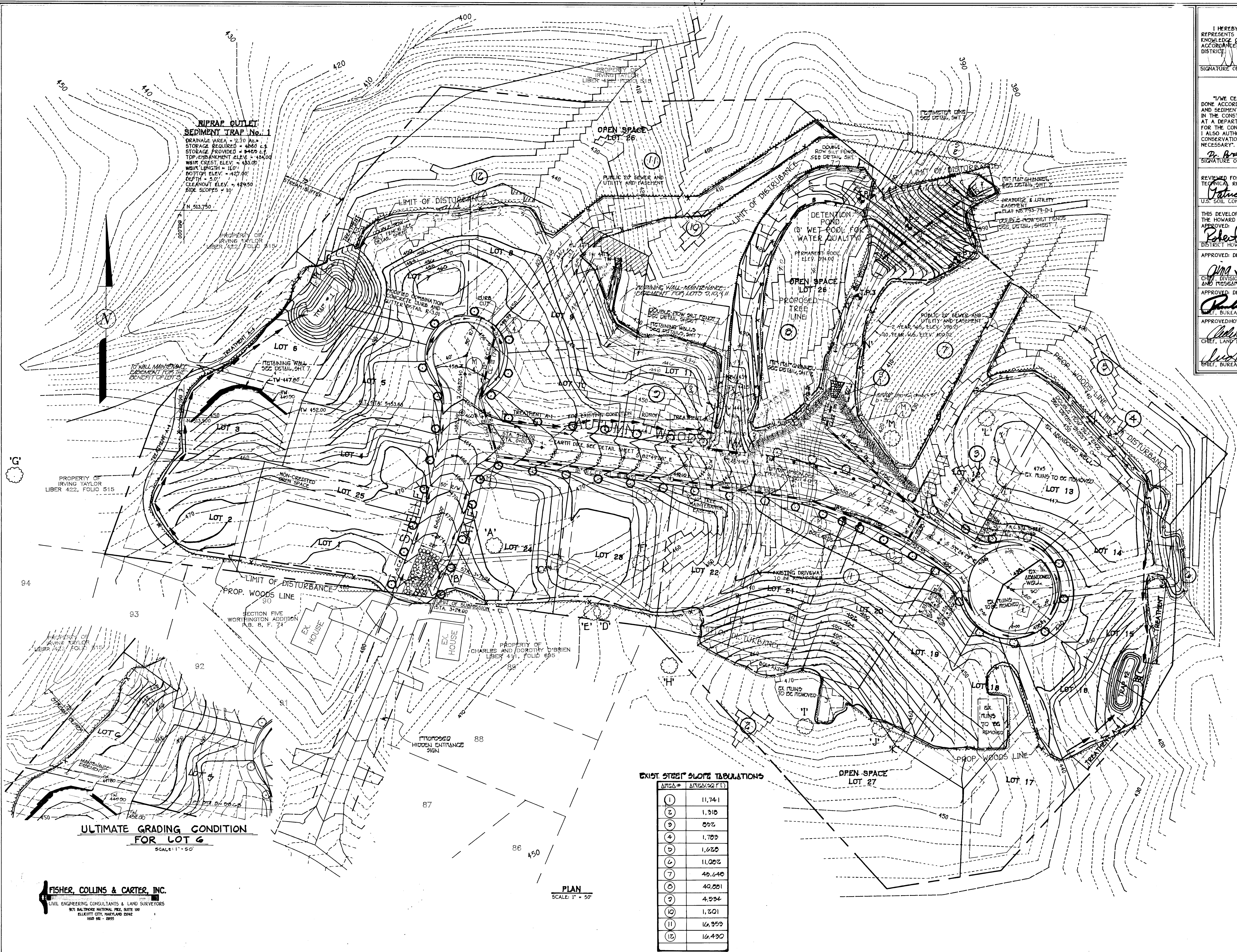
**RIPRAP OUTLET
 SEDIMENT TRAP No. 2**
 DRAINAGE AREA = 167 AC
 STORAGE REQUIRED = 4100 c.f.
 STORAGE PROVIDED = 4300 c.f.
 TOP EMBANKMENT ELEV. = 422.00
 WIER CREST ELEV. = 421.00
 WIER LENGTH = 7.0'
 BOTTOM ELEV. = 415.50
 DEPTH = 6.5'
 CLEANOUT ELEV. = 417.75
 SIDE SLOPES = 1:1



[Signature] DATE: 5/19/93
 CHARLES J. CROVO, SE

OWNER & DEVELOPER
 BONNIE BRANCH CORP.
 P.O. BOX 395
 ELLICOTT CITY, MARYLAND 21045

**STREET TREES, GRADING
 AND SEDIMENT CONTROL PLAN**
AUTUMN VIEW
 LOTS 1 - 27
 TAX MAP 31 P/O PARCEL 13
 SECOND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 MAY 6, 1993
 SHEET 3 OF 7 AS BUILT 11/7-97



EXIST. STEEP SLOPE TABULATIONS

AREA #	AREA (SQ FT)
1	11,741
2	1,318
3	552
4	1,782
5	1,622
6	11,002
7	45,640
8	40,051
9	4,934
10	1,201
11	16,322
12	16,430

**ULTIMATE GRADING CONDITION
 FOR LOT 6**
 SCALE: 1" = 50'

PLAN
 SCALE: 1" = 50'

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 971 BALTIMORE NATIONAL PKWY. SUITE 100
 ELICOTT CITY, MARYLAND 21043
 410 661 - 2855

1687

STRUCTURE SCHEDULE

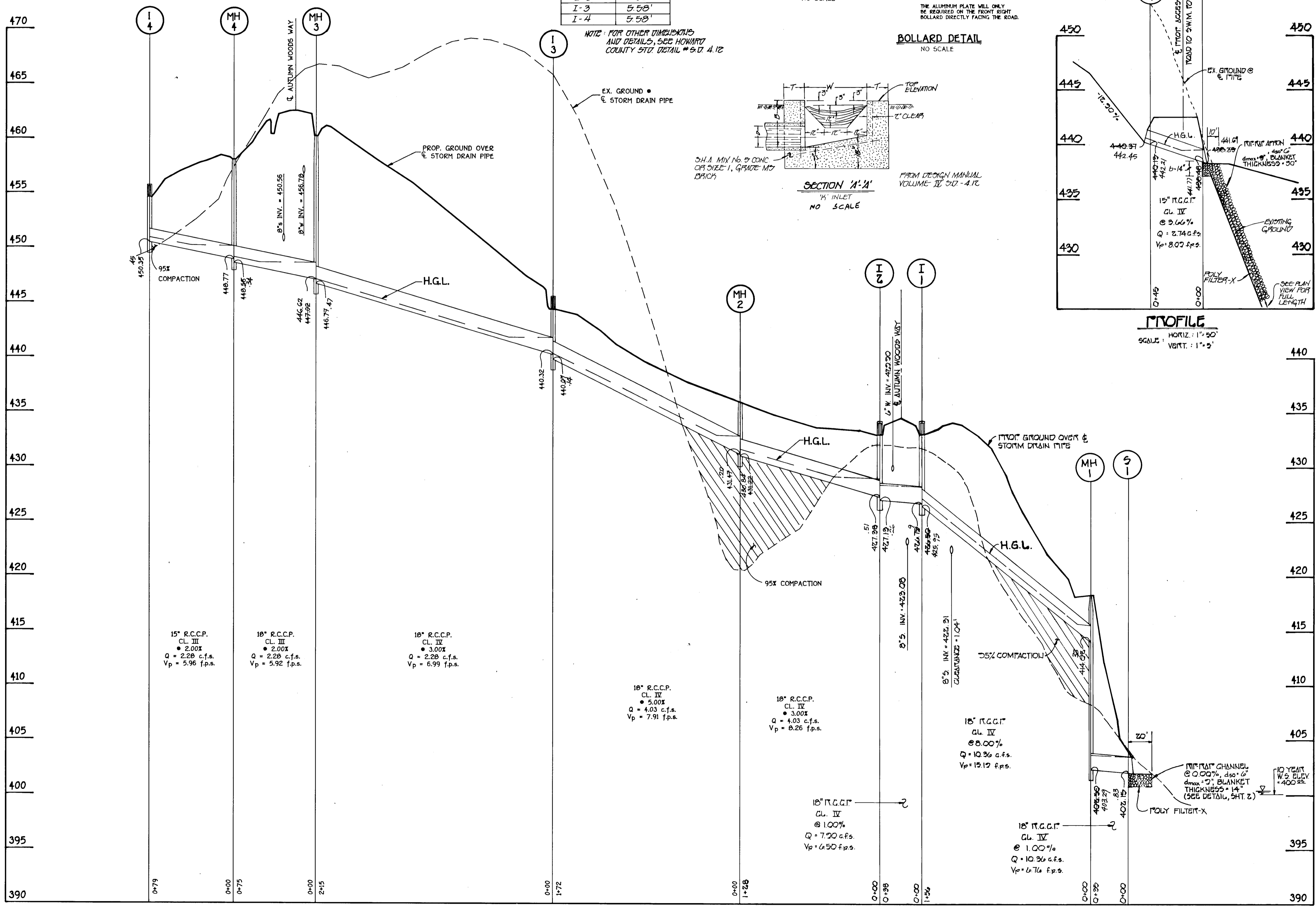
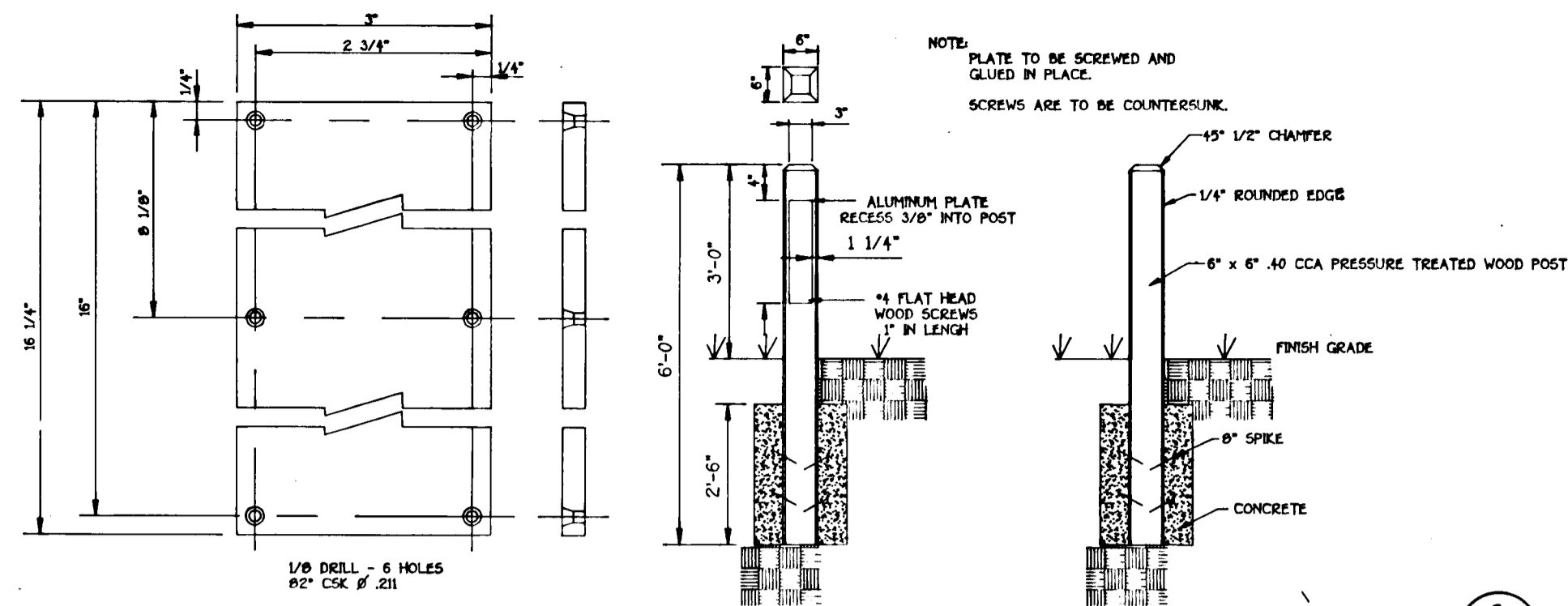
STRUCTURE NO.	TOP ELEVATION	INV. IN	INV. OUT	ROAD NAME	ROAD STA.	OFFSET	TYPE	REMARKS
I-1	426.37	424.42	426.75	AUTUMN WOODS WAY	C.L. STA. 5+67.08	18' LT.	K" INLET	S.D. 4.12
I-2	426.21	424.42	427.95	AUTUMN WOODS WAY	C.L. STA. 5+67.08	18' RT.	K" INLET	S.D. 4.12
I-3	448.32	445.65	440.32	AUTUMN WOODS WAY	C.L. STA. 2+64.00	18' RT.	K" INLET	S.D. 4.12
I-4	455.93	452.86	450.35	SHELLEY LANE	L.P. STA. 1+68.50	5' LT.	K" INLET	S.D. 4.12
M-1	422.63	418.52	414.62	AUTUMN WOODS WAY	C.L. STA. 4+32.00	74' LT.	STD. MH	G 5.11
M-2	421.34	419.70	417.20	AUTUMN WOODS WAY	C.L. STA. 4+39.00	18' RT.	STD. MH	G 5.12
M-3	421.72	418.05	416.77	AUTUMN WOODS WAY	C.L. STA. 0+48.00	18' RT.	STD. MH	G 5.12
M-4	420.32	418.00	416.52	AUTUMN WOODS WAY	C.L. STA. 0+18.00	49' LT.	STD. MH	G 5.12
S-1	404.33	402.00	401.80	AUTUMN WOODS WAY	C.L. STA. 4+30.00	100' LT.	STD. CONC.	S.D. 5.51
S-2	378.41	375.01	374.00	AUTUMN WOODS WAY	C.L. STA. 4+30.00	321' LT.	STD. METAL END 95%	S.D. 5.61
S-3	443.04	441.72	438.48	AUTUMN WOODS WAY	C.L. STA. 3+47.00	22' LT.	STD. CONC.	S.D. 5.51
S-4	442.46	441.20	440.15	AUTUMN WOODS WAY	C.L. STA. 1+36.00	22' LT.	STD. CONC.	S.D. 5.51

* - DENOTES TOP ELEVATION (SEE TYPICAL DETAIL THIS SHEET)

K-INLET SPECS

INLET #	B
I-1	7' 30"
I-2	7' 30"
I-3	5' 58"
I-4	5' 58"

NOTE: FOR OTHER DIMENSIONS AND DETAILS, SEE HOWARD COUNTY STD. DETAIL # S.D. 4.12



PROFILE

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

NOTES:

- 1) STORM DRAIN BEDDING TYPE CLASS 'C' WILL BE USED.
- 2) V_f DENOTES FULL FLOW VELOCITY.
- 3) V_p DENOTES PARTIAL FLOW VELOCITY.

APPROVED
DEPARTMENT OF PUBLIC WORKS

Robert D. ... 2/10/94
CHIEF, LAND DEVELOPMENT DIVISION DATE

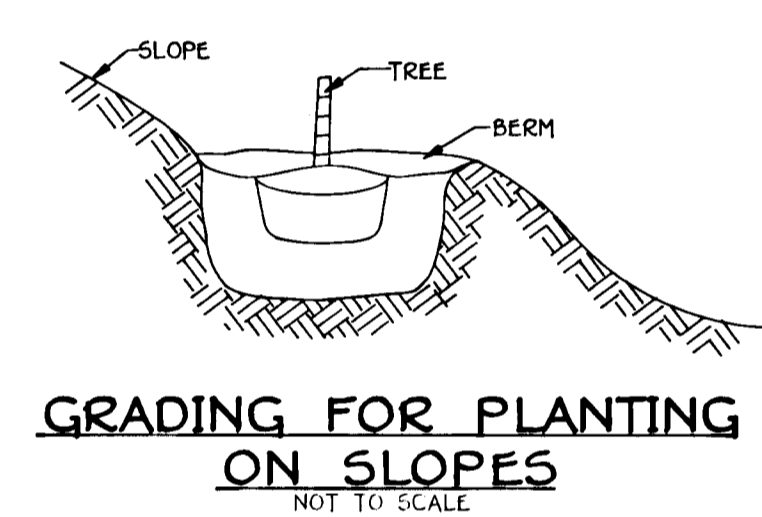
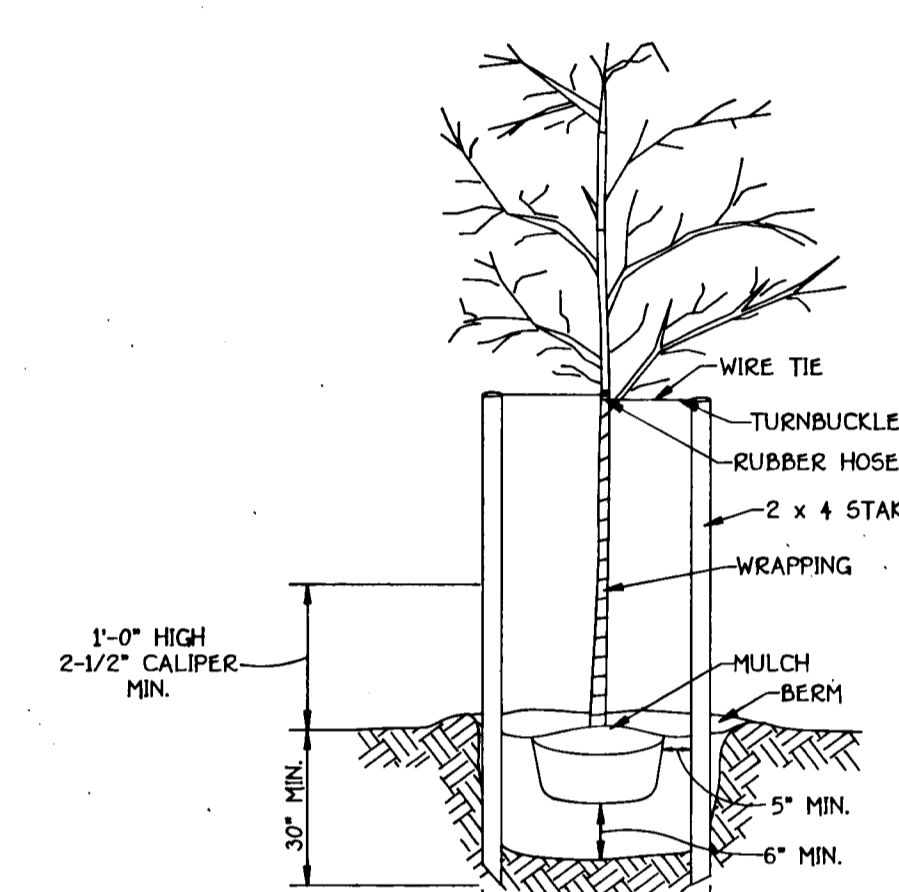
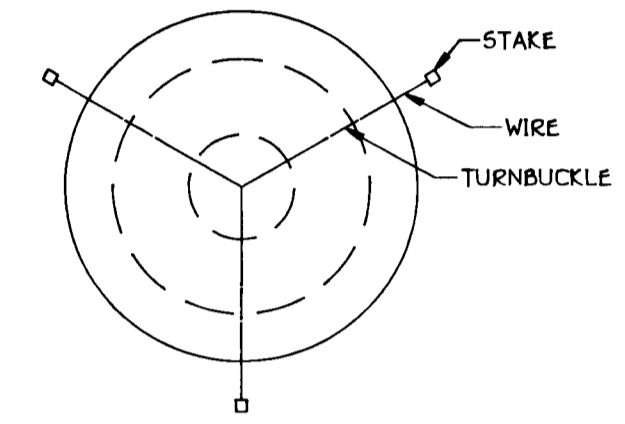
Andrew M. ... 1-25-99
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS

Robert D. ... 2/12/94
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED
DEPARTMENT OF PLANNING AND ZONING

Anna ... 2/14/94
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE



NOTE: TREES TOTAL = 56

DENOTES APPROXIMATE LOCATION OF QUERCUS PALUSTRIS (PIN OAK) 2-1/2" CALIPER, PLANTED 40' ON CENTER.

STREET TREE SCHEDULE

SYMBOL	BOTANICAL AND COMMON NAME	SIZE AND ROOT	COMMENTS
(Symbol)	QUERCUS COCCINEAS SCARLET OAK	MIN. 2 1/2" CALIPER B AND B	40' APART

STATE OF MARYLAND
CHARLES J. CROVO, P.E.
PROFESSIONAL ENGINEER

Charles J. Crovo 2/19/94
DATE

OWNER & DEVELOPER
BONNIE BRANCH CORP.
P.O. BOX 396
ELLICOTT CITY, MARYLAND 21043

STORM DRAIN PROFILE
AUTUMN VIEW
LOTS 1 - 27
TAX MAP 31 P/O PARCEL 13
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
MAY 6/93
SHEET 4 OF 7
AS-BUILT 11-17-97

1687

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
971 HALTHY NATIONAL PINE SUITE 100
ELICOTT CITY, MARYLAND 21042
4100 961 - 2955

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Jim Shimmey 2/14/94
 CHIEF, DIVISION OF LAND DEVELOPMENT AND REGULATION DATE

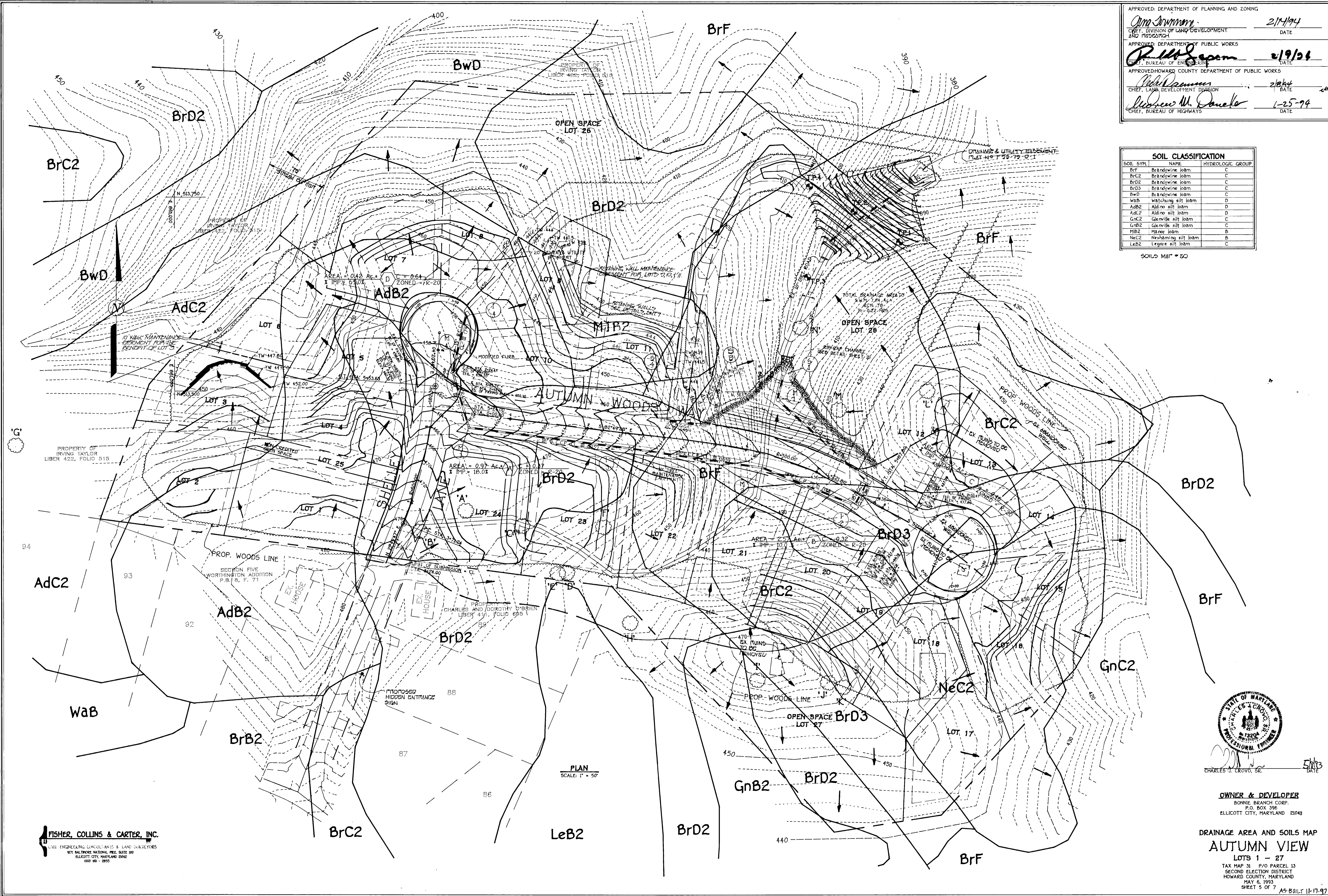
APPROVED: DEPARTMENT OF PUBLIC WORKS
Paul W. Jenson 2/19/94
 CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
William J. ... 2/26/94
 CHIEF, LAND DEVELOPMENT DIVISION DATE

Richard M. ... 1-25-94
 CHIEF, BUREAU OF HIGHWAYS DATE

SOIL CLASSIFICATION		
SOIL SYM.	NAME	HYDROLOGIC GROUP
BrF	Brandwine loam	C
BrC2	Brandwine loam	C
BrD2	Brandwine loam	C
BrD3	Brandwine loam	C
BwD	Brandwine loam	C
Wab	Watchung silt loam	D
AdB2	Aldino silt loam	D
AdC2	Aldino silt loam	D
GnC2	Glenville silt loam	C
GnB2	Glenville silt loam	C
MB2	Manor loam	B
NeC2	Neshaminy silt loam	B
LeB2	Lodge silt loam	C

SOILS MAP * ZO



1687

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 971 BALTIMORE NATIONAL BLDG. SUITE 300
 ELLICOTT CITY, MARYLAND 21114
 410-461-2855

PLAN
 SCALE: 1" = 50'



Charles J. Crovo, Sr.
 CHARLES J. CROVO, SR.
 DATE

OWNER & DEVELOPER
 BONNIE BRANCH CORP.
 P.O. BOX 396
 ELLICOTT CITY, MARYLAND 21048

DRAINAGE AREA AND SOILS MAP
AUTUMN VIEW
 LOTS 1 - 27
 TAX MAP 31 P/O PARCEL 13
 SECOND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 MAY 6, 1993
 SHEET 5 OF 7 AS-BUILT 11-17-97

F93-79

30417DF.DWG

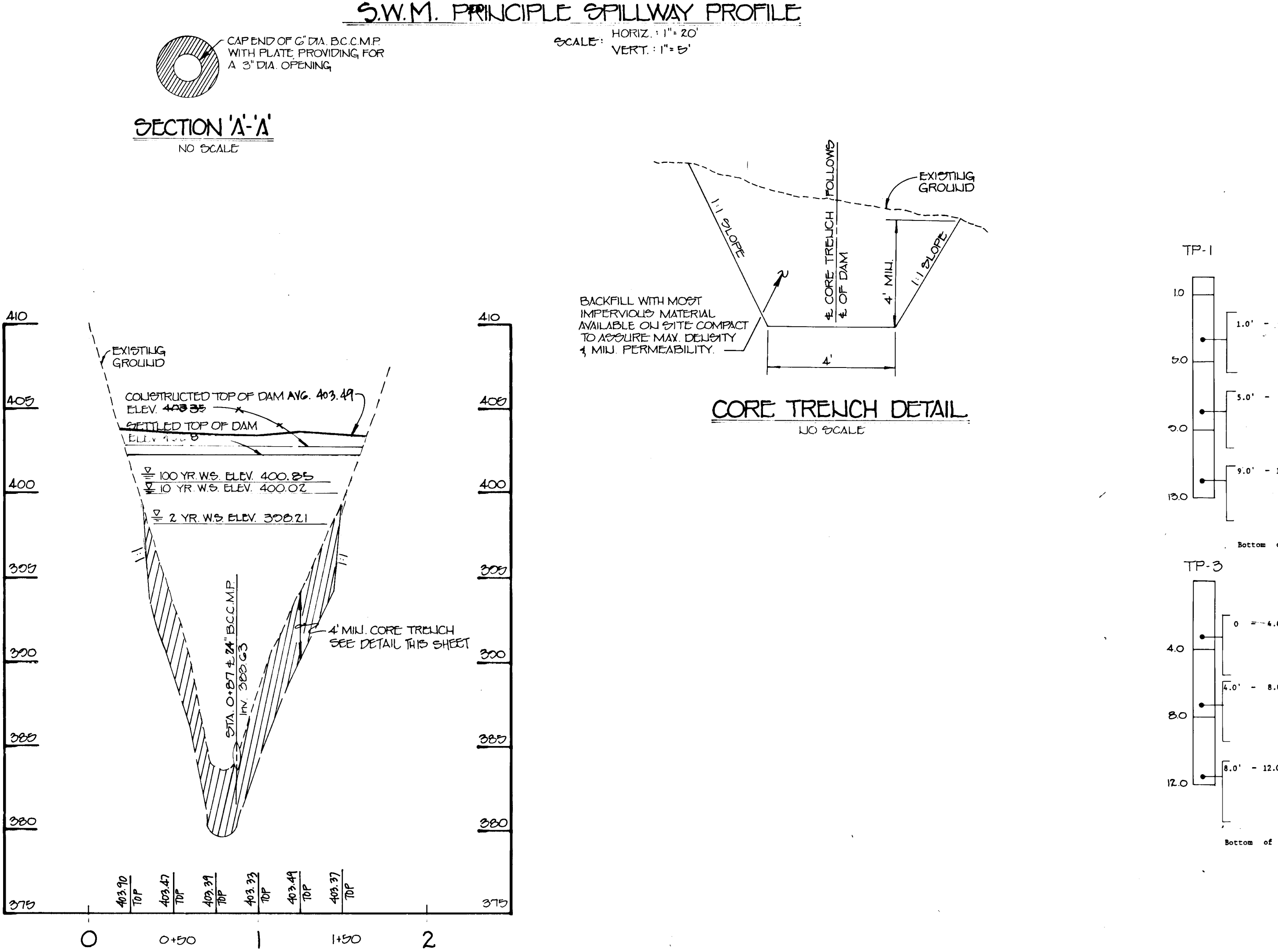
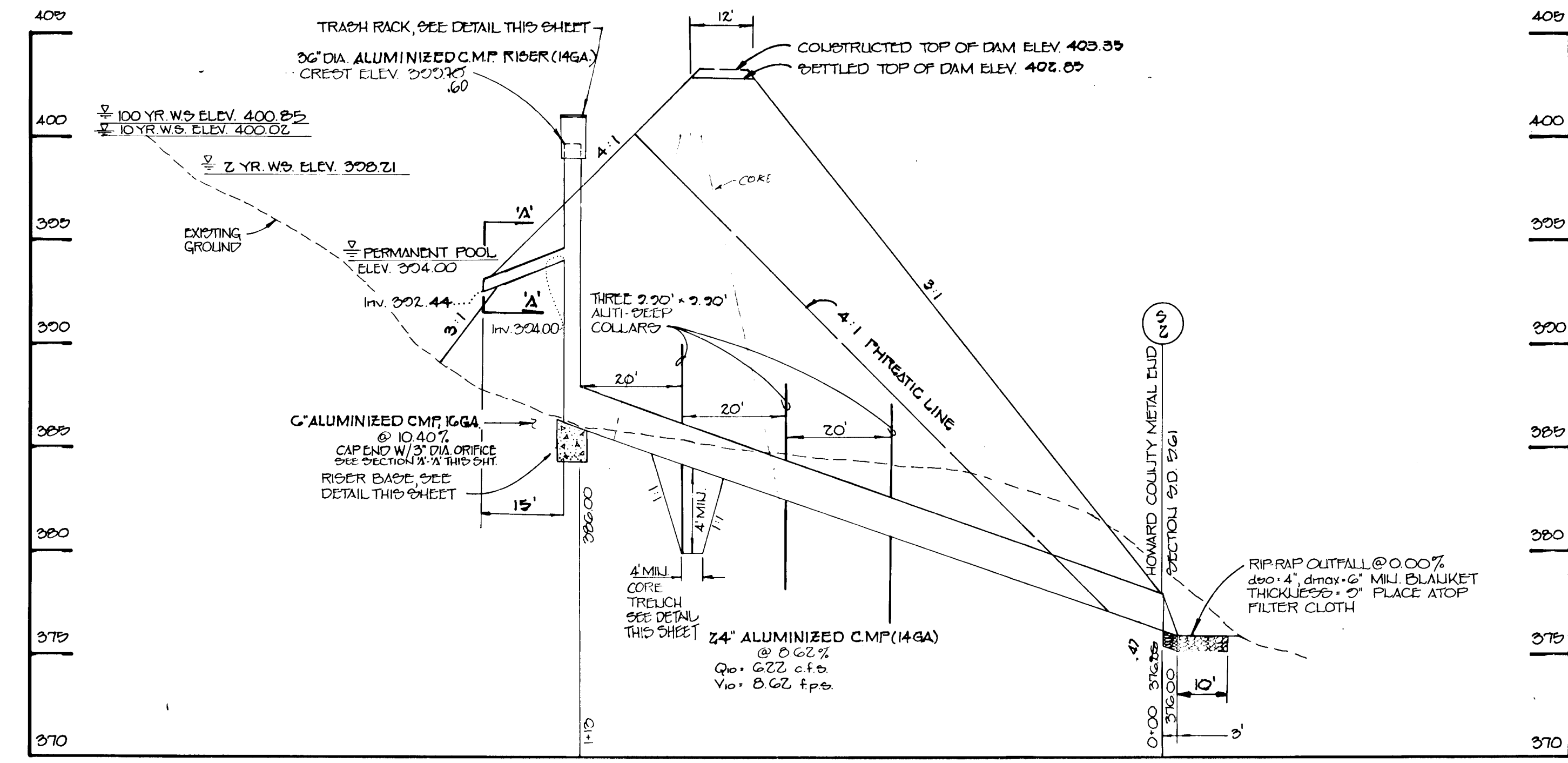
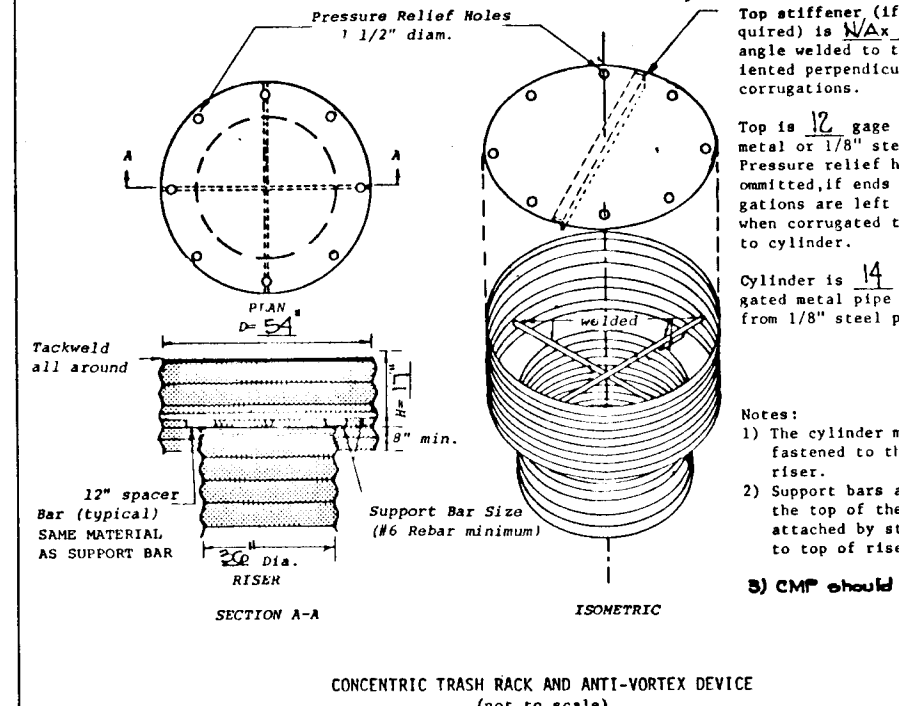
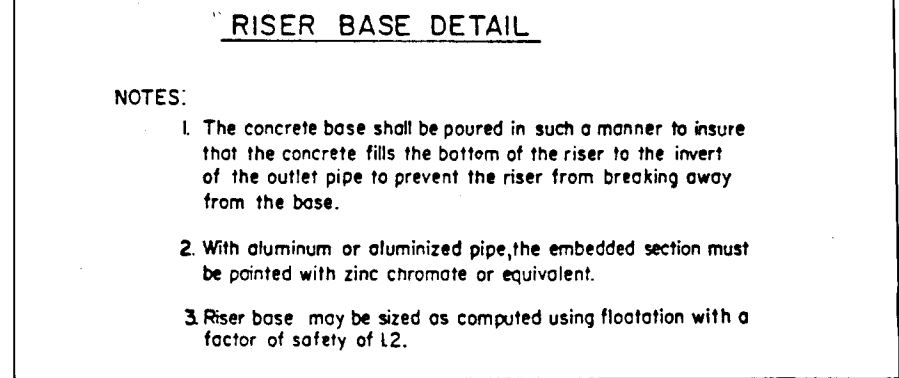
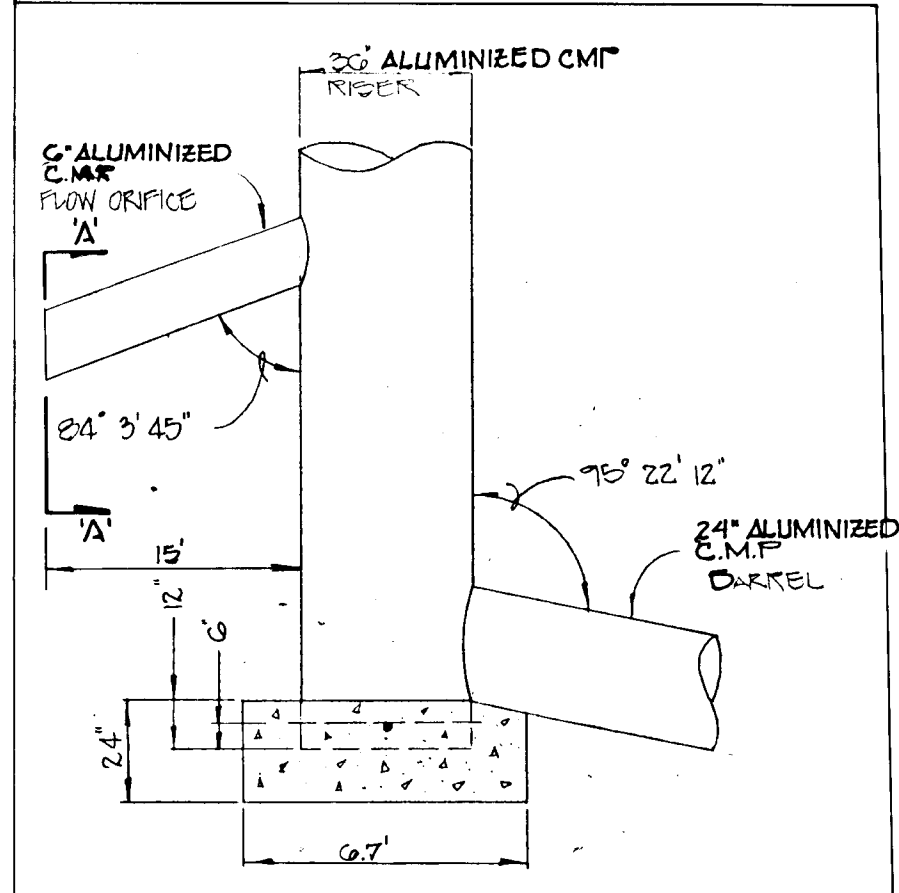
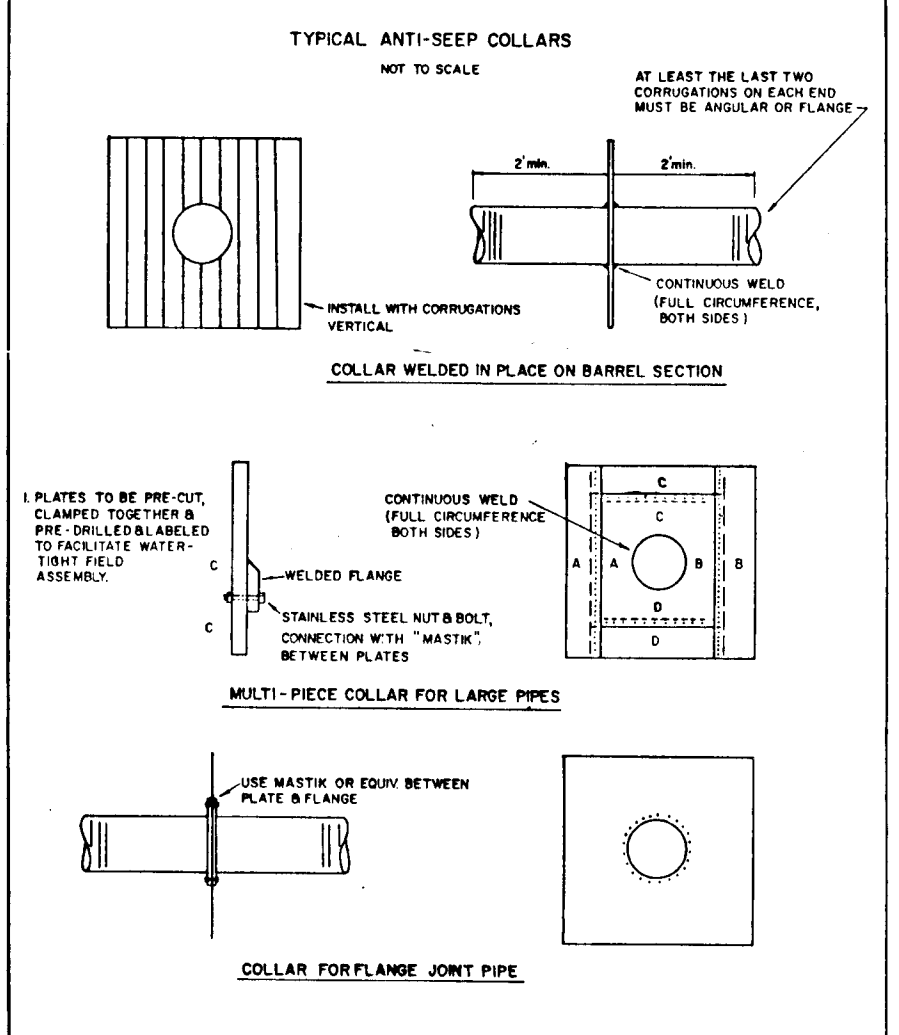
POND SPECIFICATION

- I. **SITE PREPARATION**
Areas under the embankment and structural works shall be cleared, grubbed and the topsoil stripped to remove all trees, vegetation, roots or other objectionable material. To facilitate clean out and restoration, it is recommended that the permanent pool area be cleared of all brush and trees.
- II. **EARTH FILL**
Material
The fill material shall be taken from approved designated borrow areas or areas. It shall be free from roots, stumps, wood, rubbish, over-size stones, frozen or other objectionable materials. The embankment shall be constructed to an elevation which provides for anticipated settlement to the design elevation. The fill height all along the length of the embankment shall be increased at least 10 percent above the design elevation (including freeze-board) unless otherwise shown on the plans. All fill materials shall be CL, CH, GC or SC, as approved by Soils Engineer.
- III. **Placement**
Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in 8 inch maximum thickness (before compaction) layers which are to be continuous over the entire length of the fill. The most porous borrow material shall be placed in the down-draw portions of the embankment.
Core Trench
Where specified, a core trench shall be excavated along or parallel to the centerline of the embankment, as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the sinuous width being 4-feet. The depth shall be at least 4-feet or as shown on the plans. The side slopes of the trench shall be 1:1 or flatter. The backfill material for the core trench shall be compacted either by equipment or rollers to assure maximum density and minimum permeability. Compact to 95% of AASHTO T-99 density. GC, SC, CH, or CL materials only shall be used in the core trench as approved by Soils Engineer.
- IV. **STRUCTURAL BACKFILL**
Backfill material shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed 4 inches in thickness and compacted by hand tampers or other compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall drive equipment be allowed to operate closer than 4 feet to any part of a structure. Under no circumstances shall the contractor drive equipment over any part of a structure or pipe unless there is a compacted fill of 2 feet or greater over the structure or pipe.
- V. **PIPE CONDUITS**
A. CORRUGATED METAL PIPE
1. **Materials - Metal Pipe** - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211, with water-tight coupling bands.
2. **Connections** - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the control structure shall be mortared all around. Macright coupling bands shall be used at all joints. Anti-seep collars shall be connected to the pipe in such a manner as to 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. **Laying pipe** - The pipe shall be placed with inside circumferential laps pointing downstream and with the longitudinal laps at the side(s).
5. **Backfilling** shall conform to structural backfill as shown above.
6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.
- VI. **CONCRETE**
Concrete shall meet minimum requirements set forth in Maryland State Highway Administration Specifications Materials, Highways, Bridges, and Incidental Structures, Article 20.07 (Portland Cement Concrete Mixtures), Mix No. 3.
- VII. **STABILIZATION**
All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway and borrow areas shall be stabilized by permanent seeding and applying straw mulch in accordance with "Standards and Specifications for Soil Erosion and Sediment Control in Urbanizing Areas" immediately after finish grading.
Fertilizer: 10-10-10 @ 11.5 lbs./1000 sq.ft.
Seeds: Crownvetch inoculated @ 0.5 lbs./1000 sq.ft.
"T-31" Tall Fescue @ 1.0 lbs./1000 sq.ft.
Mulch: Straw @ 50 lbs./1000 sq.ft.
Asphalt Tie-down Slopes 8 gal./1000 sq.ft.
Flat areas @ 5 gal./1000 sq.ft.

* PIPES 24" IN DIAMETER AND LARGER SHALL BE CONNECTED BY A 24" LONG ANNULAR CORRUGATED BAND USING RODS AND LUGS.

OPERATION AND MAINTENANCE SPECIFICATIONS

- I HEREBY CERTIFY THAT I WILL OPERATE AND MAINTAIN THE COMPLETED POND IN ACCORDANCE WITH THE FOLLOWING:
1. PERIODIC INSPECTIONS OF THE FACILITY WILL BE MADE TO IDENTIFY POTENTIAL PROBLEMS THAT MAY AFFECT ITS SAFETY. THESE INSPECTIONS WILL BE MADE AFTER PERIODS OF HEAVY RAINFALL AND AT LEAST TWICE ANNUALLY. INSPECTION REPORTS SHALL BE KEPT UNTIL THE SUBSEQUENT INSPECTION. INSPECTIONS ITEMS TO BE LOOKED AT INCLUDE:
 - a) SPILLWAY AND OUTLET WORKS;
 - b) RIP-RAP;
 - c) VEGETATIVE COVER;
 - d) CRACKS IN THE FILL;
 - e) SLOPE FAILURES; AND
 - f) SEEPAGE AND OTHER SIGNS OF DISTRESS.
 2. PROBLEMS IDENTIFIED DURING INSPECTIONS WILL BE PROMPTLY CORRECTED. MAJOR PROBLEMS WILL BE BROUGHT TO THE ATTENTION OF THE SOIL CONSERVATION DISTRICT AND THE DAM SAFETY DIVISION OF THE MARYLAND WATER RESOURCES ADMINISTRATION. AS A VERY MINIMUM, GRASSY VEGETATION WILL BE MAINTAINED IN A DENSE AND HEALTHY STATE, AND WOODY VEGETATION WILL NOT BE PERMITTED TO GROW ON THE EMBANKMENT.



STORM WATER MANAGEMENT POND CERTIFICATION AND APPROVAL

DEVELOPER'S CERTIFICATE
"I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN AS-BUILT PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."
Signature: *Dr. Brent T. Togh* DATE: 1/12/93

ENGINEER'S CERTIFICATE
"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN WITHIN 30 DAYS OF COMPLETION."
Signature: *[Signature]* DATE: 1/14/93

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL. I, THE SOIL CONSERVATION ENGINEER, HEREBY CERTIFY THAT THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Signature: *Fathima Engler* DATE: 1-12-94

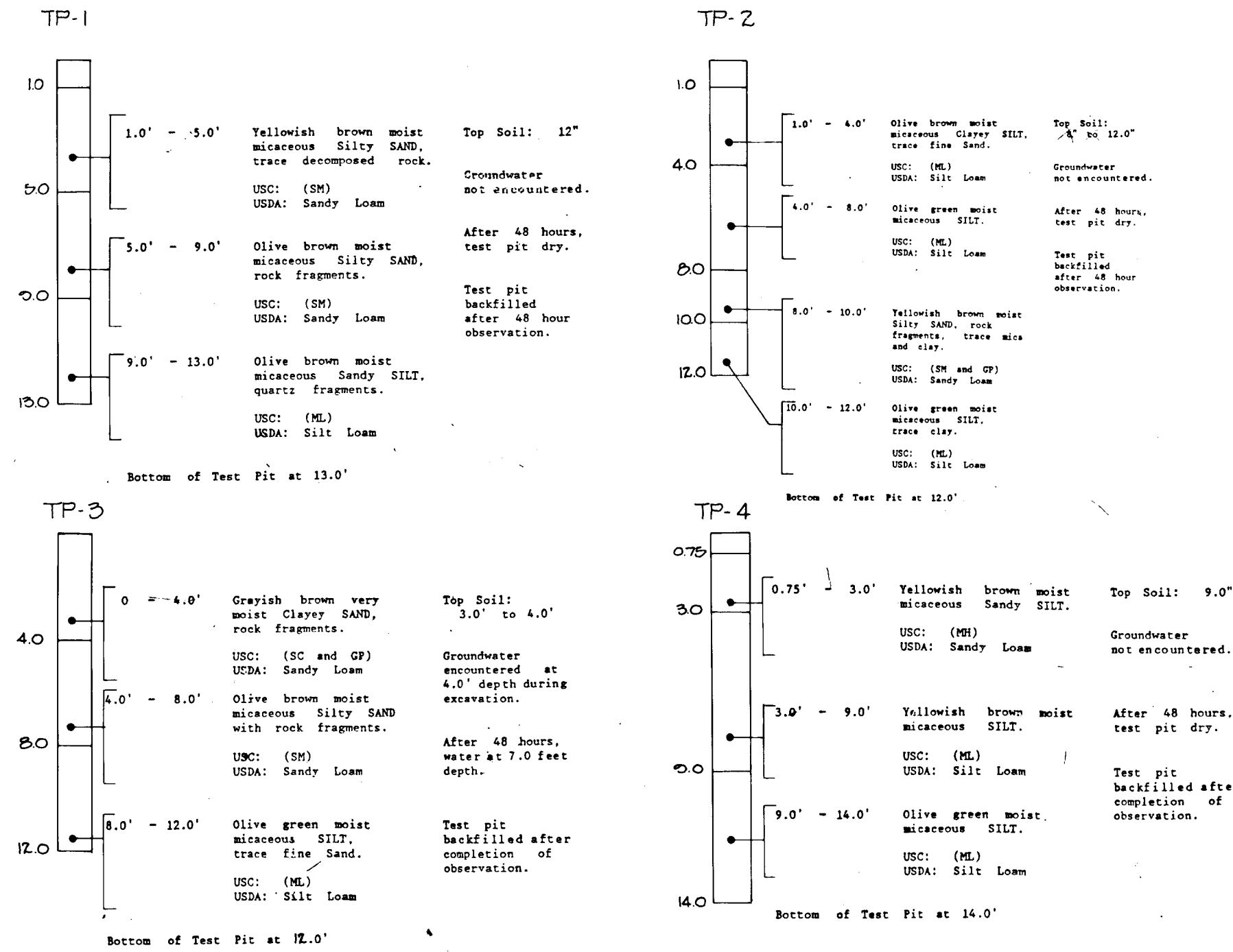
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Signature: *Anna Summery* DATE: 2/14/94

APPROVED: DEPARTMENT OF PUBLIC WORKS
Signature: *[Signature]* DATE: 2/19/94

APPROVED: DEPARTMENT OF PUBLIC WORKS
Signature: *Andrew M. Davelle* DATE: 1-25-94

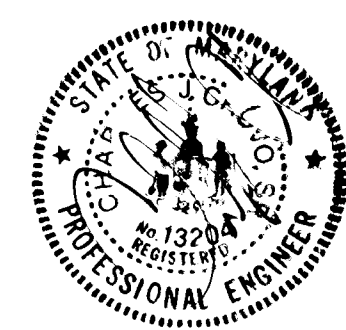
POND CONSTRUCTION CERTIFICATION
I CERTIFY THAT UPON COMPLETION OF CONSTRUCTION I WILL BE RESPONSIBLE FOR THE OPERATION AND MAINTENANCE (O&M) OF THE SMALL POND. O&M WILL BE PERFORMED BY ME IN ACCORDANCE WITH THE SPECIFICATIONS ON THIS PLAN. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS OF THE POND BY SITE AND LOCAL AGENCIES.
Signature: *Dr. Brent T. Togh* DATE: 1/13/93

APPROVED: DEPARTMENT OF PUBLIC WORKS
Signature: *[Signature]* DATE: 2/19/94



SOIL BORING PROFILES
NO SCALE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS • LAND SURVEYORS
1711 BALTIMORE NATIONAL PIKE, SUITE 100
ELLCOTT CITY, MARYLAND 21042
TELEPHONE: (410) 461-2255
FAX: (410) 750-3784



OWNER AND DEVELOPER
BONNIE BRANCH CORP.
P.O. BOX 396
ELLCOTT CITY, MARYLAND 21043

STORM WATER MANAGEMENT
NOTES & DETAILS
AUTUMN VIEW
LOTS 1 - 27
TAX MAP 31 P/O PARCEL 13
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
JANUARY 2005
SHEET 6 OF 7 AS BUILT 11-17-97

PERMANENT SEEDING NOTES:
APPLY TO GRADED OR CLEARED AREAS NOT SUSCEPTIBLE 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:
1) PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (82 LBS/1000 SQ.FT.) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ.FT.) BEFORE SEEDING.
HARROW OR DISC INTO UPPER THREE-INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER 30-0-0 UREA FORM FERTILIZER (9 LBS/1000 SQ.FT.)
2) ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (82 LBS/1000 SQ.FT.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (28 LBS/1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE-INCHES OF SOIL.

SEEDING: FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS. PER ACRE (1.4 LBS/1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE OR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 480 LBS. PER ACRE (.05 LBS/1000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY: OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING; OPTION (2) USE SOIL; OPTION (3) SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WILL ANCHORED STRAW.
MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING. MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

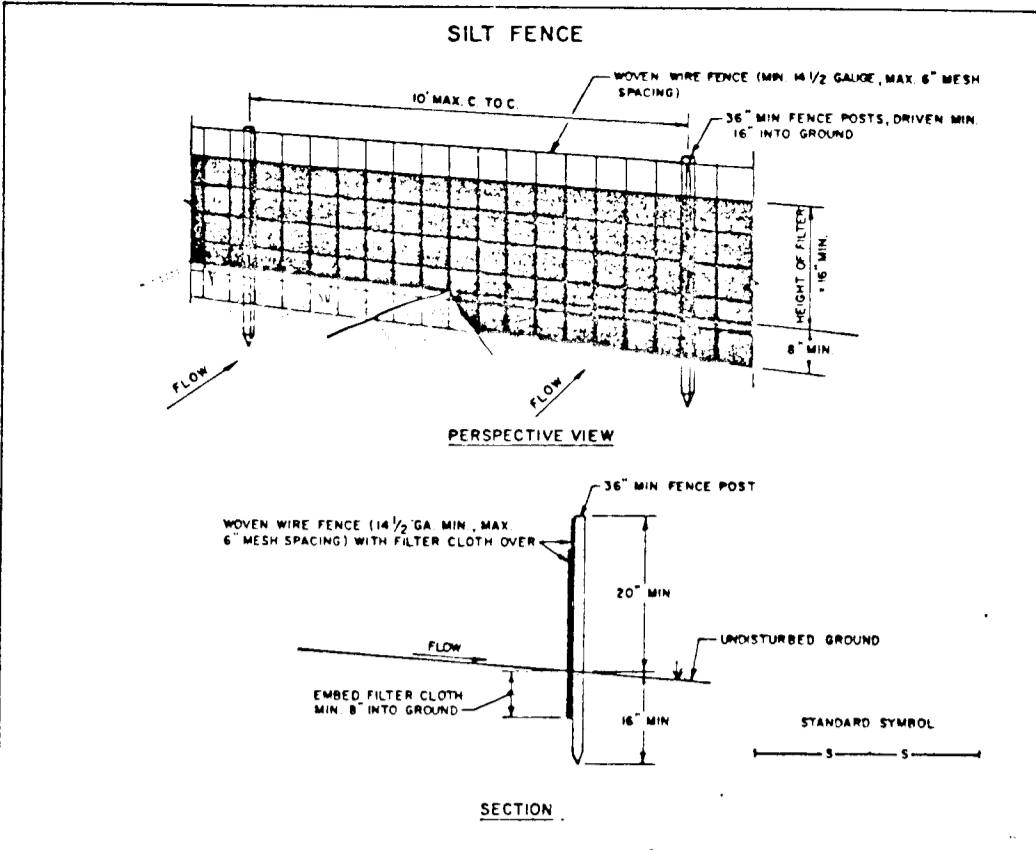
TEMPORARY SEEDING NOTES:
APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE-INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING. IF NOT PREVIOUSLY LOOSENED, SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ.FT.)
SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2 1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ.FT.), FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS. (3.2 LBS/1000 SQ.FT.) OF WEEPING LOVEGRASS (.07 LBS/1000 SQ.FT.), FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT SITE BY 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOIL.
MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES, 8 FT. OR HIGHER, USE 348 GAL. PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

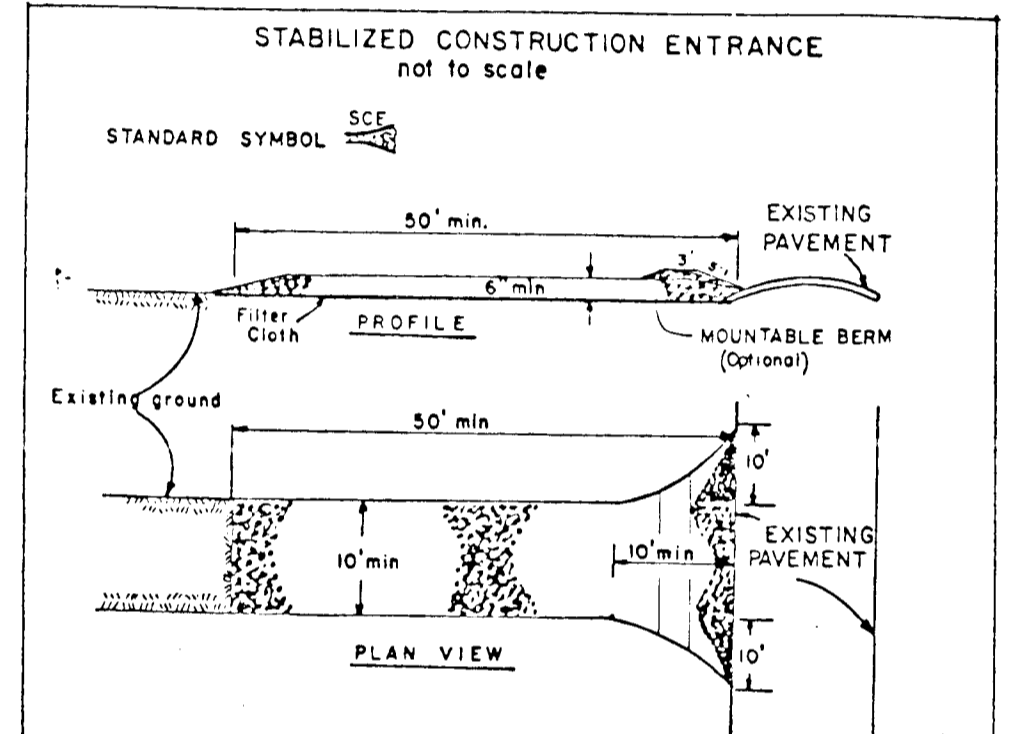
REFER TO THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

SEDIMENT CONTROL NOTES

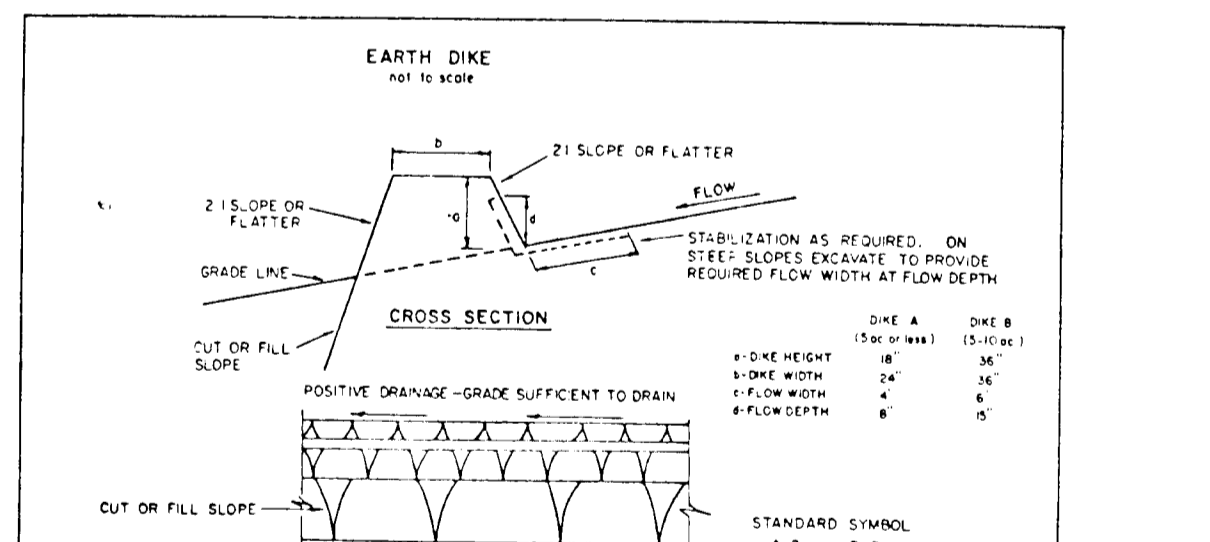
- A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS PRIOR TO THE START OF ANY CONSTRUCTION (990-2437).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- FOLLOWING INITIAL SOIL DISTURANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL 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 MAINTAINED 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 TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (SEC. 51) SOIL (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: 17340 ACRES
 - AREA TO BE ROOFED OR PAVED: 1000 ACRES
 - AREA TO BE VEGETATIVELY STABILIZED: 7258 ACRES
 - TOTAL CUT: 30252 CU. YDS.
 - TOTAL FILL: 10000 CU. YDS.
 - OFFSITE WASTE/BORROW AREA LOCATION: 27714 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 DPM SEDIMENT CONTROL INSPECTOR, ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES.
- APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.



SILT FENCE
NOT TO SCALE

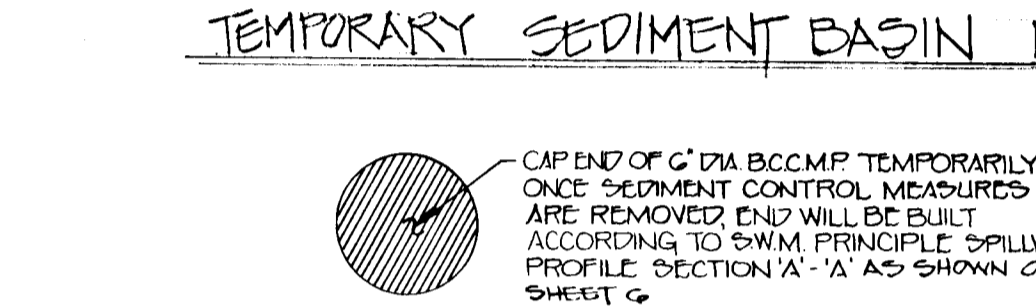
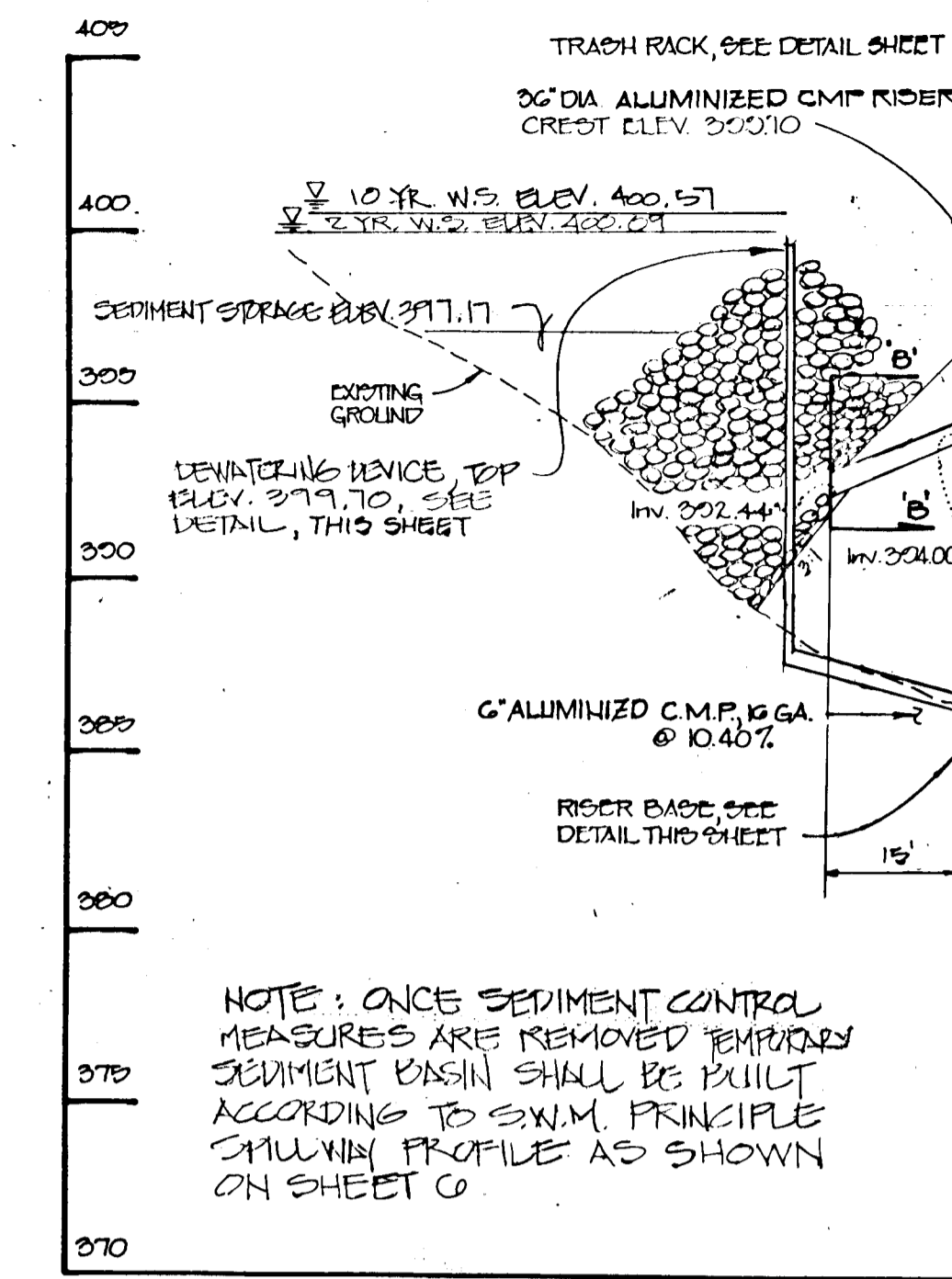


STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

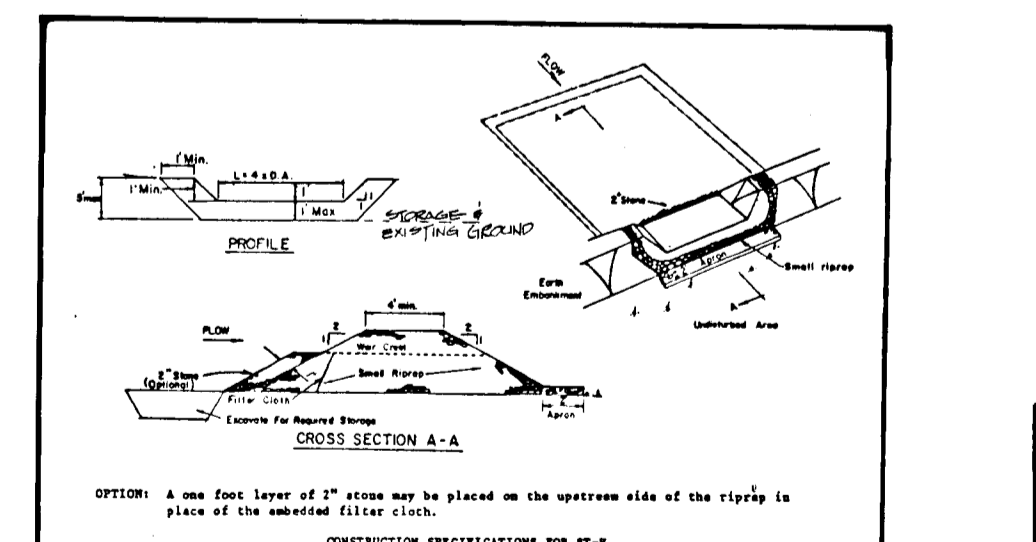
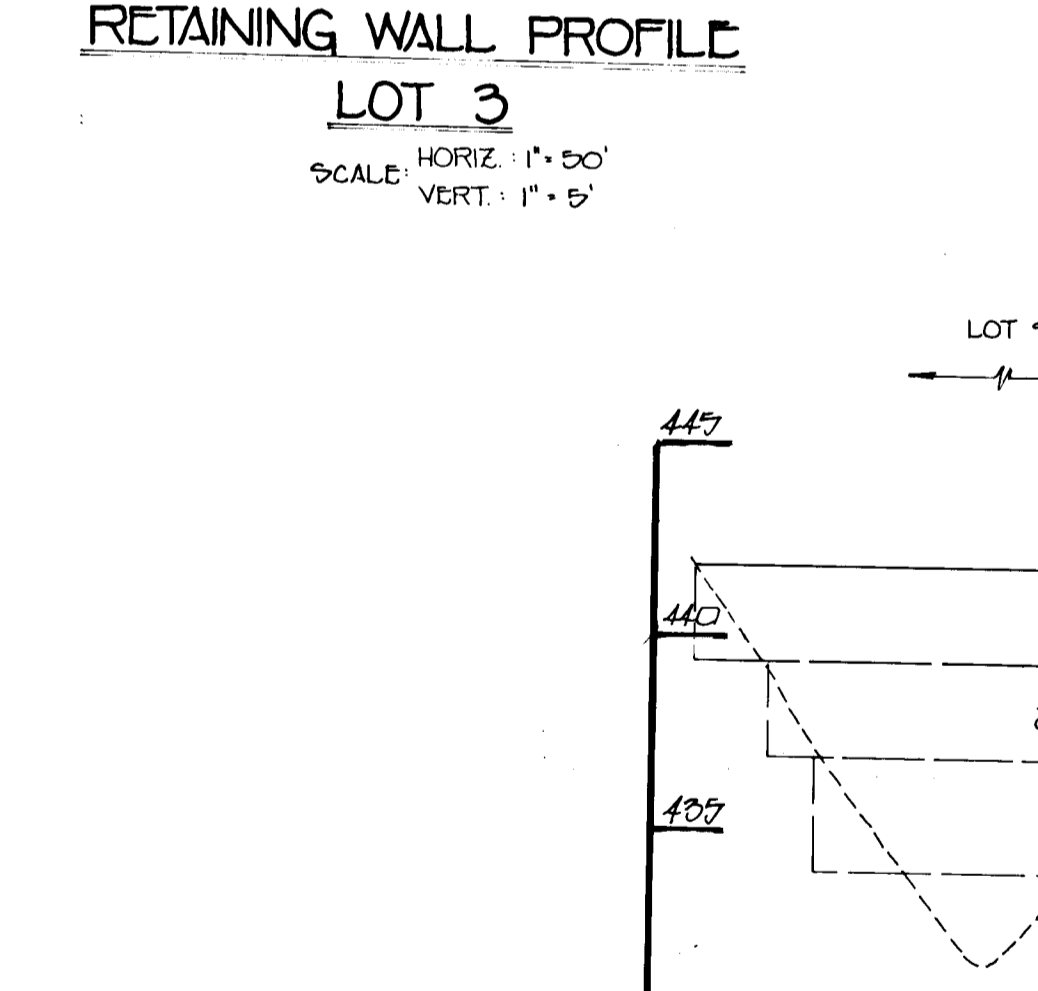
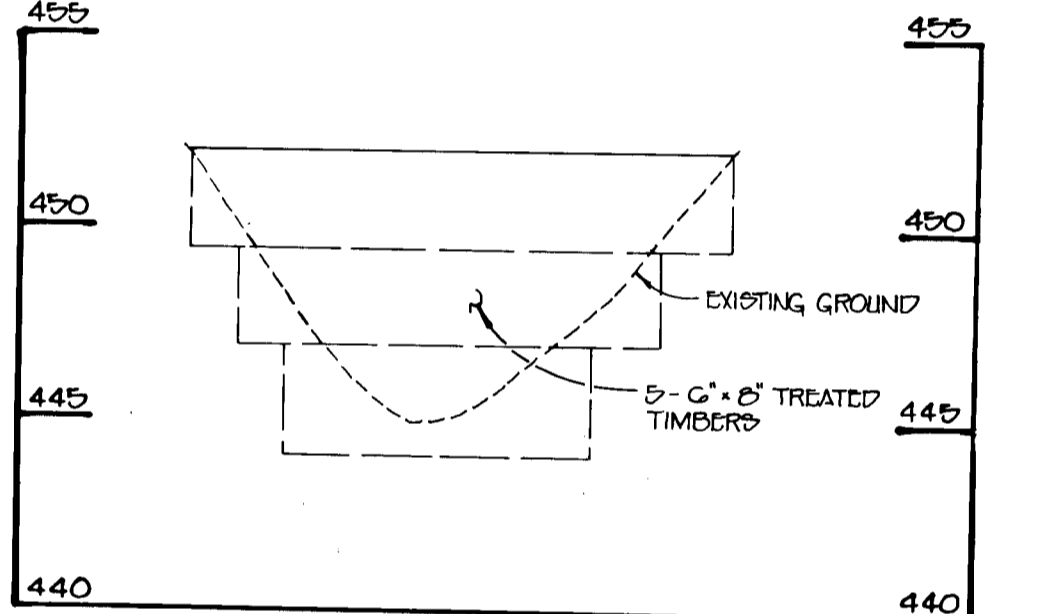
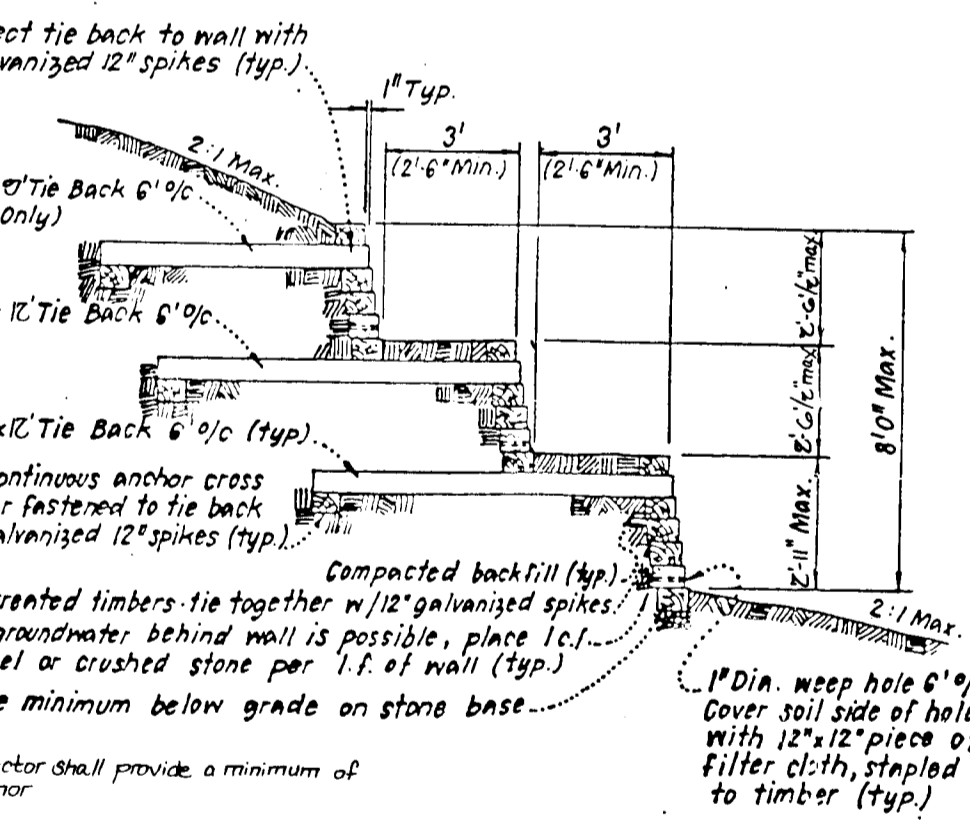


EARTH DIKE
NOT TO SCALE

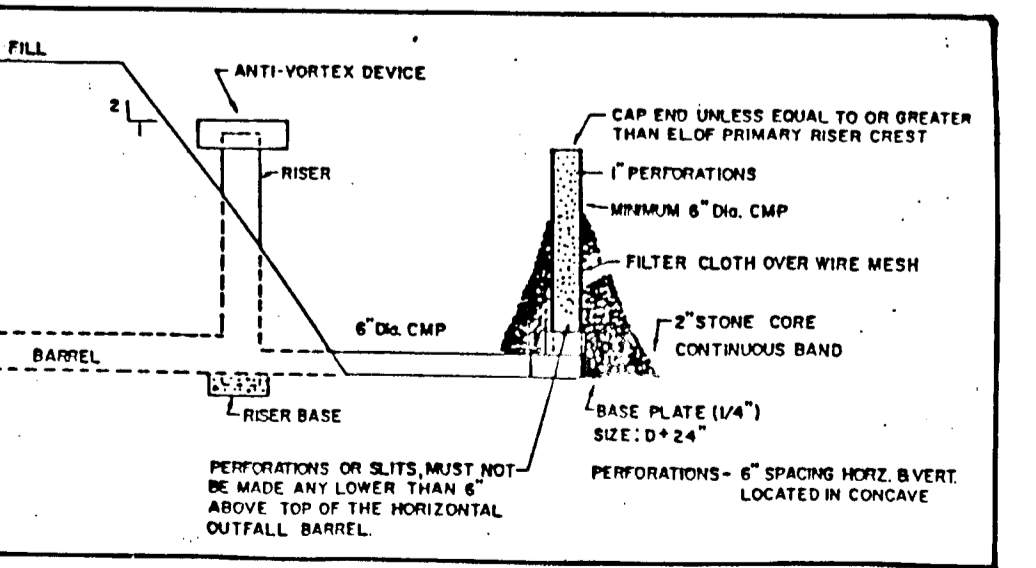
FISHER, COLLINS & CARTER, INC.
3815 BROADWAY, WASHINGTON, D.C. 20004
1100 EAST WASHINGTON STREET, ANNAPOLIS, MARYLAND 21403
TELEPHONE (410) 461-0050
FAX: (410) 700-1904



- NOTE:**
- Timbers shall be either:
a) Cressote treated railroad ties.
b) CCA treated landscaping timbers (40 lb/cu ft retention)
 - Hardware shall be hot dipped galvanized.
 - Weepholes with or without gravel drain are minimum measures for groundwater. For any substantial amount of groundwater, a drain system should be designed and utilized.
 - Design was verified for site specific soil condition by a Professional Geotechnical Engineer.



RIPPRAP OUTLET SEDIMENT TRAP



DEWATERING DEVICE



OWNER AND DEVELOPER
BONNIE BRANCH CORP.
P.O. BOX 396
ELLIOTT CITY, MARYLAND 21043

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 CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CONSERVATION DISTRICT.
DATE: 1/14/93
SIGNATURE: [Signature]

DEVELOPER'S CERTIFICATE
I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD COUNTY CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.
DATE: 1/13/93
SIGNATURE: [Signature]

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS
DATE: 1/12/94
SIGNATURE: [Signature]

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY CONSERVATION DISTRICT.
APPROVED:
DATE: 1/12/94
SIGNATURE: [Signature]

APPROVED DEPARTMENT OF PLANNING AND ZONING
DATE: 2/11/94
SIGNATURE: [Signature]

APPROVED DEPARTMENT OF LAND DEVELOPMENT AND RESEARCH
DATE: 2/15/94
SIGNATURE: [Signature]

APPROVED DEPARTMENT OF PUBLIC WORKS
DATE: 2/15/94
SIGNATURE: [Signature]

APPROVED HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
DATE: 2/16/94
SIGNATURE: [Signature]

DATE: 1-25-94
SIGNATURE: [Signature]

SEDIMENT CONTROL NOTES & DETAILS
AUTUMN VIEW
LOTS 1 - 27
TAX MAP 31, P/O PARCEL 13
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
JANUARY 7, 1993
SHEET 7 OF 7

SEAL OF PROFESSIONAL ENGINEER
STATE OF MARYLAND
[Signature]