

General Notes

- All Storm Drain & Roving shall be Construction in Accordance with the latest edition and specifications of Howard County 1 MDSHA.
- Type of Storm Drainage refer to the Standard Details of Howard County and MDSHA.
- Trench Compacting for Storm Drains within Road or Street Right of Way Limits shall be in accordance with Howard County Design Manual Vol. IV (Class C Trench Bedding to be Used for all storm drains except where shown otherwise).
- Information concerning underground utilities was obtained from Available records, but the Contractor must determine the Exact Location and Elevation of the Mains by digging test pits by hand, at all utility crossings, within Advance of Construction.
- All Utility Companies shall be notified 24 hours in Advance of Construction.
- All traffic Services, parking and signing to be done in Accordance with the Manual of Uniform Traffic Control Devices, 1988 Edition.
- Sag and Crest Vertical Curves were designed in Accordance with Howard County Design Manual Vol. II.
- Provide Concrete Sidewalk ramps, Howard County Std. Type A, R-4.01 Where Shown in Plans.
- The Contractor or developer shall contact the Construction Inspection/ Survey Division 24 hours in Advance of Commencement of work, phone
- Design Speed: See Sheet 2 of Zoning - R-5C
- Storm Water Management provided by Willowood
- Stopping Site Distances are not shown in Curb & Gutter Area since turns, parking travel speed dictate the conditions for stopping rather than the standard Stopping Sight Distance of a traveled way.
- Street lights shall be provided at the locations shown in the Street Light Schedule shown on sheet 2 of 6 and in accordance with Volume III of the Howard County Design Manual.

Approved
Department of Public Works.
Don M. Longmire 2/1/91
Chief, Land Development Div. Date

Francis W. Weisland 2/15/91
Chief, Bureau of Highways Date

W. Coleman & Co. 2-11-91
Chief, Bureau of Engineering Date

Approved
Department of Planning and Zoning
Robert Blood 2/15/91
Chief, Division of Community Planning and Land Development Date

T.C. Elevation Table

Pt. No.	Station	T.C. Elev.
1	0+62.10 14'L	314.54
2	0+67.10 19'L	314.45
3	0+67.10 32'L	314.67
4	0+78.30 32'L	314.32
5	1+34.36 32'L	312.37
6	1+34.36 19'L	311.85
7	1+43.39 19'L	311.52
8	1+43.39 32'L	312.10
9	2+21.89 32'L	309.80
10	2+21.89 19'L	309.50
11	2+31.89 19'L	309.38
12	2+31.89 32'L	309.60
13	Sag Plan	308.00
14	Sag Plan	307.78
15	Sag Plan	307.36
16	Sag Plan	307.00
17	3+56.89 32'L	309.20
18	3+56.89 19'L	309.57
19	3+66.89 19'L	309.91
20	3+66.89 32'L	309.50
21	Sag Plan	312.50
22	Sag Plan	312.67
23	Sag Plan	312.89
24	Sag Plan	313.34
25	Sag Plan	314.82
26	Sag Plan	314.90
27	Sag Plan	314.68
28	2+13.89 14'R	310.46
29	2+59.89 14'R	309.30
30	3+37.89 14'R	309.78
31	3+84.24 14'R	312.00
32	4+99.71 14'R	314.11
33	5+65.25 14'R	312.90
34	4+80.02 19'L	314.79
35	4+80.02 32'L	315.10
36	5+01.62 32'L	314.50
37	5+01.62 19'L	314.16
38	5+66.62 14'L	313.80
39	Sag Plan	313.00
40	0+97.04 14'R	313.30
41	0+78.30 14'R	313.99

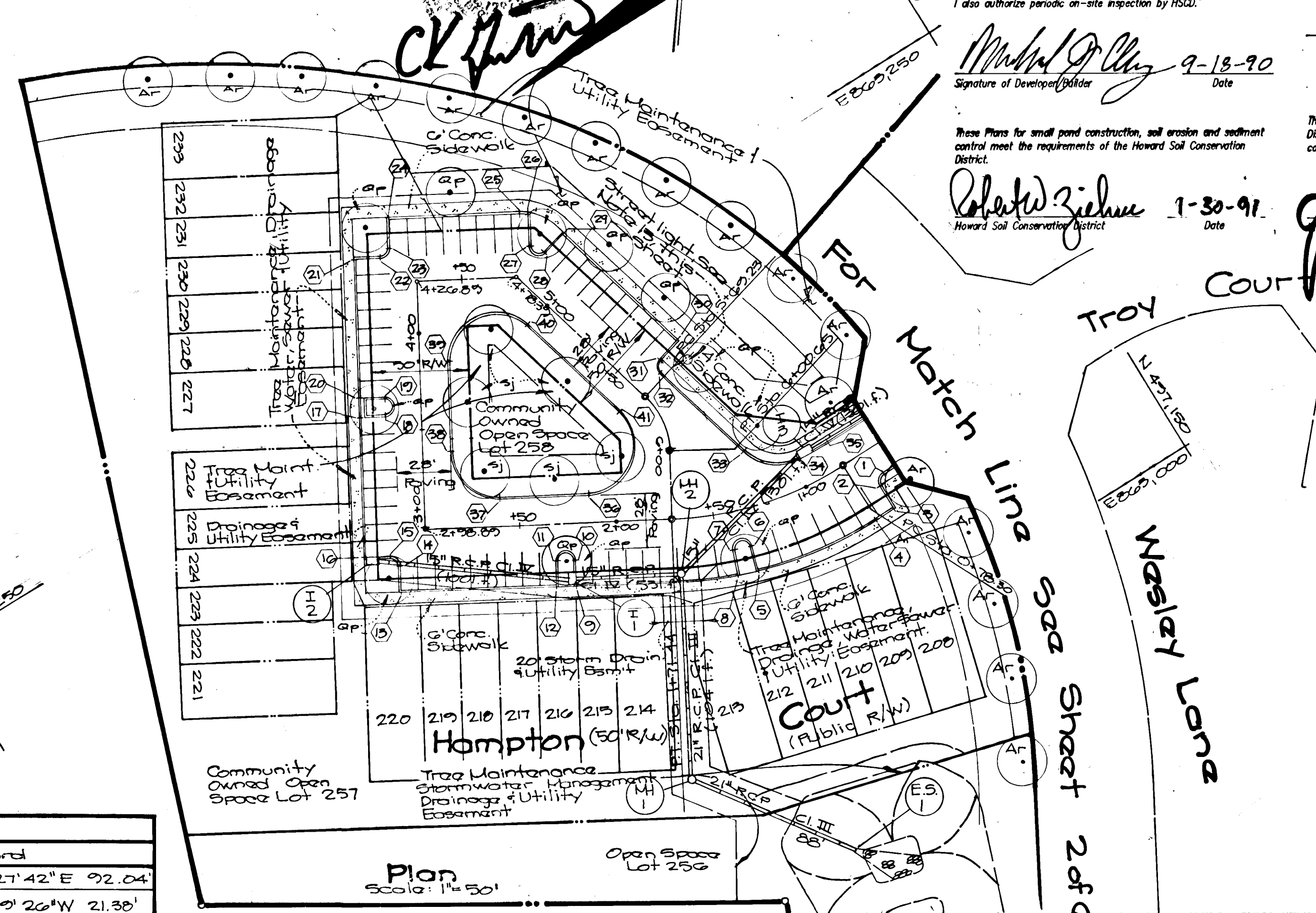
Pt. No.	Station	T.C. Elev.
28	2+13.89 14'R	310.46
29	2+59.89 14'R	309.30
30	3+37.89 14'R	309.78
31	3+84.24 14'R	312.00
32	4+99.71 14'R	314.11
33	5+65.25 14'R	312.90

Curve Data

Road Name	PC Sta.	PT Sta.	Arc	Radius	Δ	Tangent	Chord
Hampton Court	0+78.30	1+71.44	93.14	175.00'	30°29'38"	47.70'	N 14°27'42" E 92.04'
Hampton Court	5+66.23	6+00.23	21.64	40.00'	31°00'00"	11.50'	S 20°49'26" W 21.38'

Curb & Gutter Legend

- 0" Std. Curb & Gutter
- 0" Rev. Curb & Gutter
- Rev. Mountable Curb & Gutter



DEVELOPER'S/BUILDER'S CERTIFICATE
I 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 of a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspection by HSD.

Michael J. Kelly 9-18-90
Signature of Developer/Builder Date

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

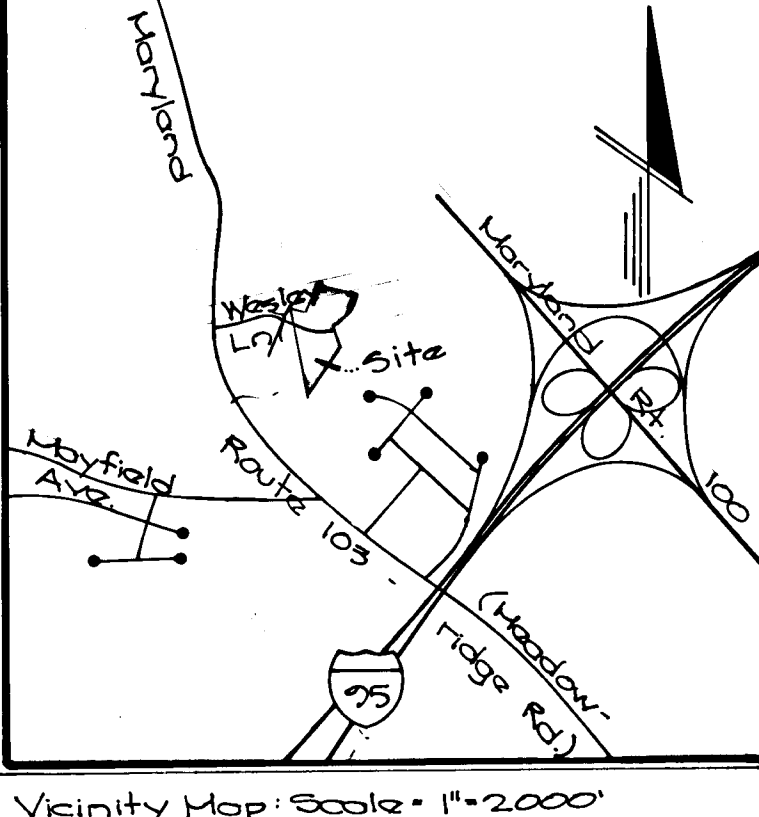
Robert J. Zehner 1-30-91
Howard Soil Conservation District Date

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

John J. Little 1-30-91
Date

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

John J. Little 1-30-91
Soil Conservation Service Date



*for tree planting detail see sheet 2 of 6.

Street Tree Schedule

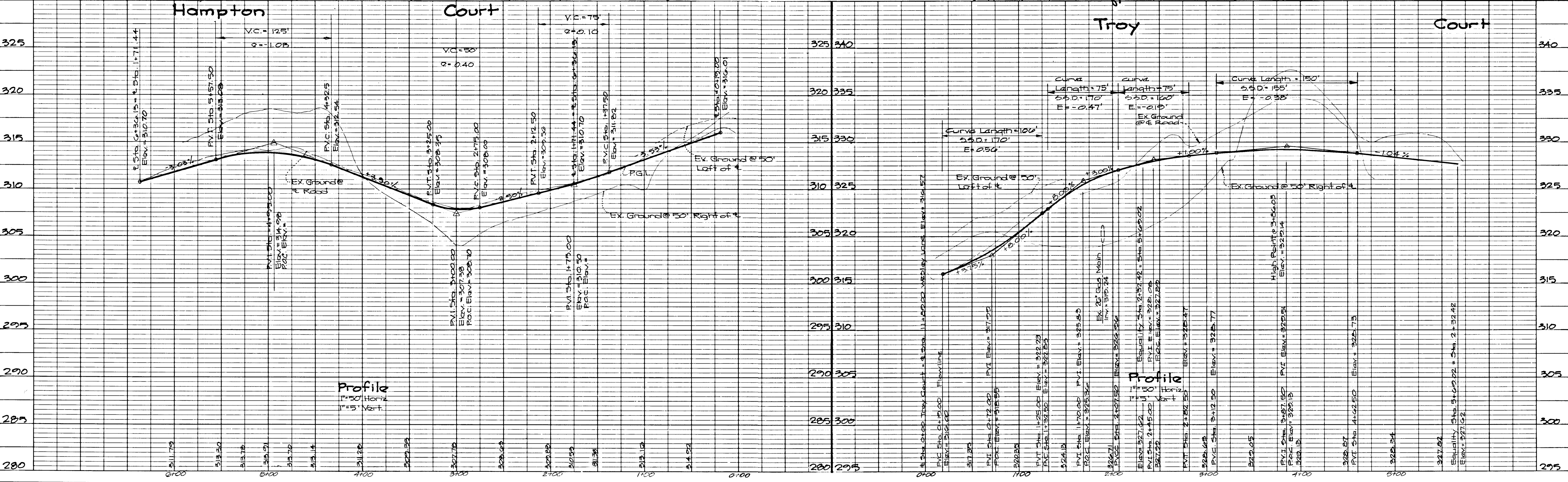
Name (Botanical/Common)	Size	Remarks	Symbol	Quan
Sophora Japonica 'Raquet'	2 1/2"-3' Cal.	B & B	Sj	2
Regent Pagoda Tree	12'-14' Ht.	Full Head		
Acar Rubrum 'October Glory'	2 1/2"-3' Cal.	B & B	Ar	34
October Glory Red Maple	12'-14' Ht.	Full Head		
Quercus Phellos	2 1/2"-3' Cal.	B & B	qp	17
Willow Oak	12'-14' Ht.	Full Head		

GW GUTSCHICK LITTLE & WEBER, P.A.
ENGINEERS, PLANNERS, SURVEYORS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD 20866
TEL: (301) 421-4024

DESIGNED BY: **Willowood**
DRAWN BY: **Section 2, Area 2**
CHECKED BY: **First Election District**
DATE: **Dec 1990**

SCALE: **As Shown**
DRAWING: **1 of 6**
JOB NO.: **89-080**

Project: **Trafalgar House Residential Maryland**
Site: **8145 Guilford Road**
Location: **Columbia, Maryland 21046**
Phone: **(301) 621-8151**



1025

ENGINEER'S CERTIFICATE
 I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.
 Date: 9-18-90

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 Signature of Developer/Builder: [Signature]
 Date: 9-18-90

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
 Date: 1-30-91

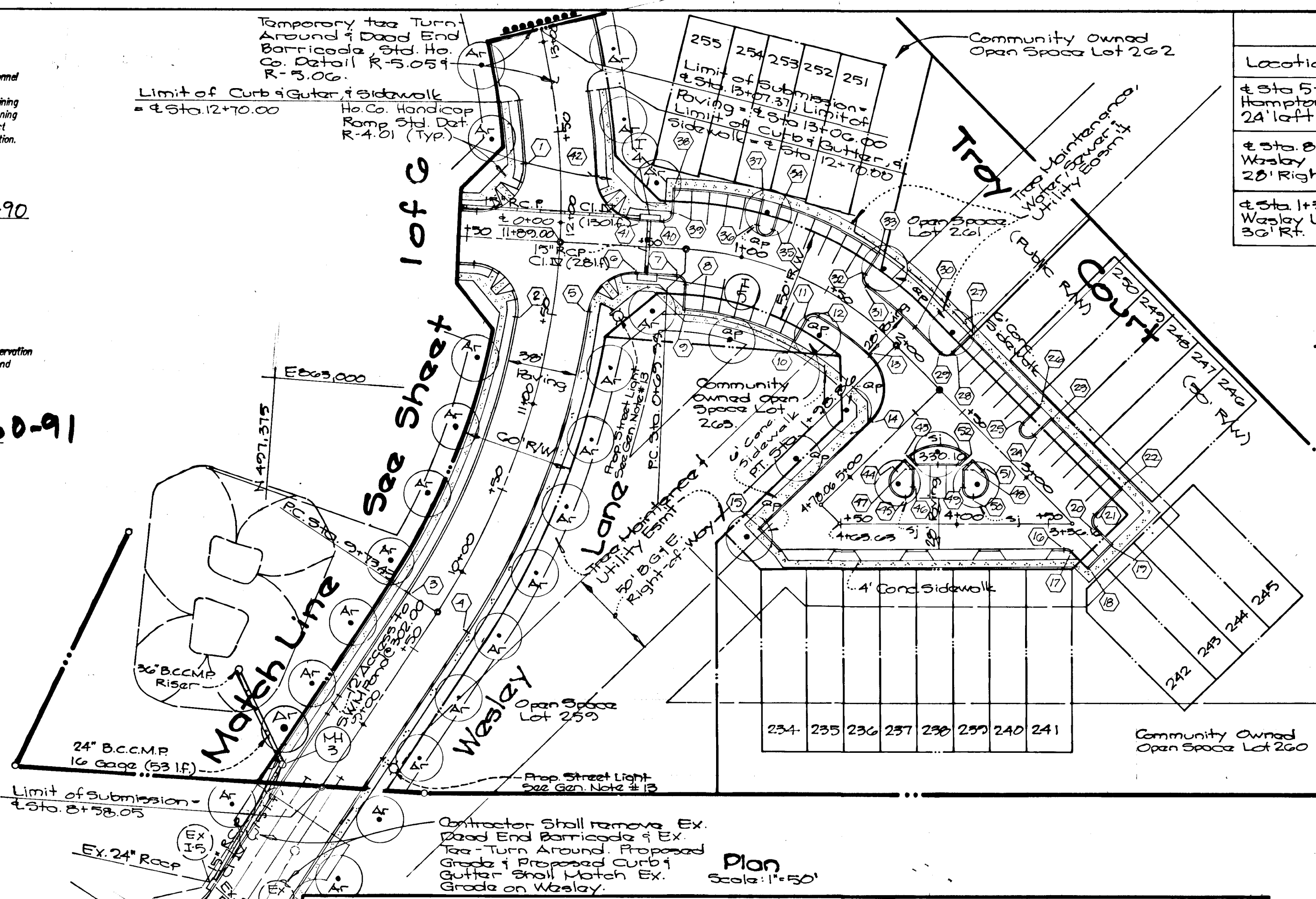
These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.
 Date: 1-30-91

Approved Department of Public Works
 Date: 2/2/91
 Approved: [Signature]
 Chief, Land Development Division

Approved: [Signature]
 Date: 2/15/91
 Chief, Bureau of Highways

Approved: [Signature]
 Date: 3.1.91
 Chief, Bureau of Engineering

Approved Department of Planning and Zoning
 Date: 3/8/91
 Approved: [Signature]
 Chief, Division of Community Planning and Land Development



Street Light Schedule

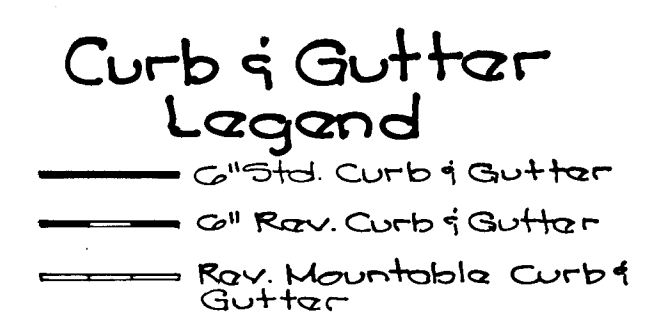
Location	Lamp Type	Mounting	Pole Type
4.5 Sta 5+72 Hampton Ct. 24' Left	150-W High Pressure Sodium Vapor	Post - Top Colonial	14' Black Fiberglass
4.5 Sta 8+90 Wesley Lane 20' Right	250-W High Pressure Sodium Vapor	Pendant	30' GALVANIZED STEEL - Δ
4.5 Sta 1+23.36 Wesley Ln. 30' Rt.	250-W High Pressure Sodium Vapor	Pendant	30' GALVANIZED STEEL

TOP OF CURB ELEVATION TABLE

PT. N°	Station	T.C. Elev.	PT. N°	Station	T.C. Elev.
1	12+32.77	19'L	27	2+23.84	32'L
2	11+45.23	19'L	28	2+23.84	19'L
3	9+73.43	19'L	29	2+18.84	14'L
4	9+73.43	19'R	30	1+95.86	14'L
5	11+53.74	19'R	31	1+69.85	14'L
6	0+42.32	14'R	32	1+62.84	19'L
7	0+64.98	14'R	33	1+62.84	32'L
8	0+64.98	19'R	34	1+12.84	32'L
9	0+64.98	32'R	35	1+12.84	19'L
10	1+47.09	32'R	36	1+03.82	19'L
11	1+47.09	19'R	37	1+03.82	32'L
12	1+52.70	14'R	38	0+60.99	32'L
13	1+91.86	14'R	39	0+60.99	19'L
14	5+29.01	14'L	40	0+55.99	14'L
15	See Plan		41	0+42.32	14'L
16	3+40.05	14'L	42	12+24.26	19'R
17	See Plan		43	5+30.02	14'R
18	See Plan		44	5+19.62	14'R
19	See Plan		45	4+27.98	14'R
20	See Plan		46	4+22.98	19'R
21	See Plan		47	4+22.98	29'R
22	See Plan		48	3+99.98	29'R
23	2+87.84	32'L	49	3+99.98	19'R
24	2+87.84	19'L	50	3+90.98	14'R
25	2+77.84	19'L	51	2+81.35	14'R
26	2+77.84	32'L	52	2+71.42	14'R

Curve Data

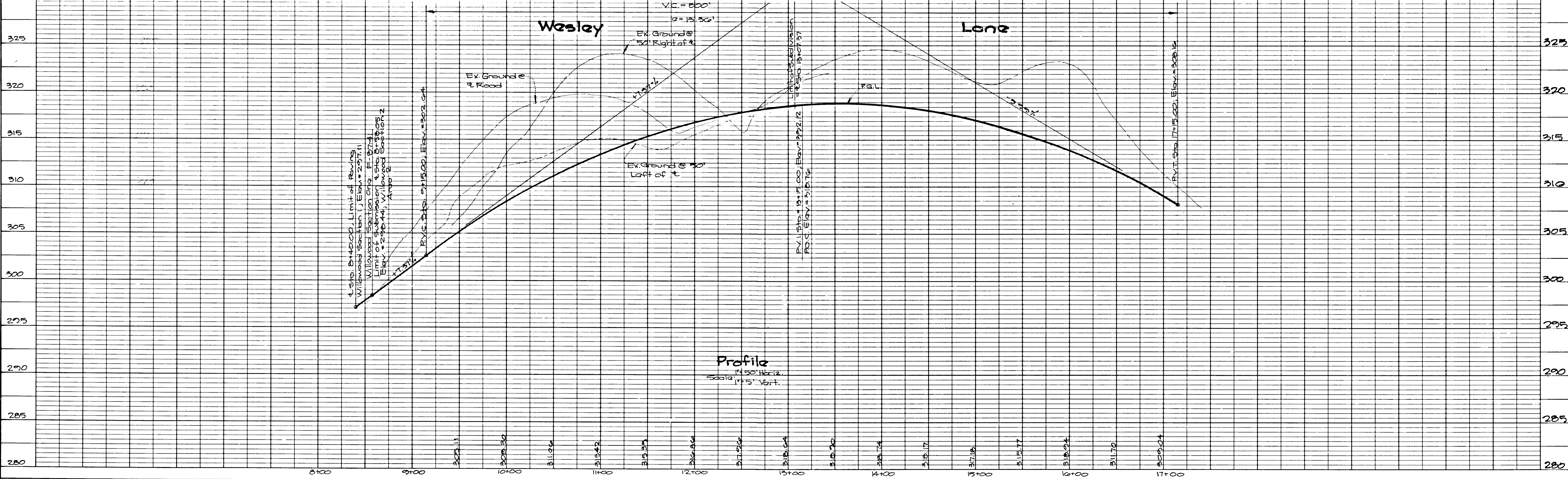
Road Name	P.C. Sta.	P.T. Sta.	Arc	Radius	Δ	Tangent	Chord
Troy Court	0+69.99	1+98.06	128.07'	173.00'	42°11'35"	67.91'	520°15'40"W 125.98'
Wesley Lane	9+73.43	P.C. Sta. 12+07.37	333.94'	410.00'	46°40'01"	176.80'	5 83°59'37"E 324.79'



GW GUTSCHICK LITTLE & WEBER, P.A.
 ENGINEERS, PLANNERS, SURVEYORS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD. 20866
 TEL.: (301) 421-4024

Willowood
 Section 2 Area 2

DESIGNED: [Signature]
 DRAWN: [Signature]
 M.C.F.
 CHECKED: [Signature]
 C.K.G. First Election District Howard County, Md.
 DATE: Dec. 1990
 Job No. 89-080



10A5

ENGINEER'S CERTIFICATE

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

Clifton J. Suter 9-18-90
Date

DEVELOPER'S/BUILDER'S CERTIFICATE

I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance of a Department of the Environment Approval Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspection by HSCD.

William J. Clay 9-18-90
Signature of Developer/Builder Date

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

John M. ... 1-30-91
Date

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

Robert W. Ziehm 1-30-91
Date

Legend

- Limit of Floodplain
- W-W- Limit of Wetlands
- 278--- Existing Contour
- 278--- Proposed Contour
- Drainage Area Divide
- Limit of Disturbance
- Earth Dike (E.D.)
- Temporary Grading for Sediment Control
- s-s- Straw Bole/Silt Fence

5 CE Stone Construction Entrance

- Stream Buffer
- ▲ Wetlands Buffer
- ~ Ex. Trailline
- ~ Proposed Trailline to be Saved

⬡ Drainage Area Designation, Size Drainage Area Tabulation Chart for Calculations.

Drainage Area Tabulation

Drainage Area	Inlet No.	Area (Sq. Area)	C Value	% Roofed	% Area Grassed
(A)	I-1	0.73	0.50	50%	44%
(B)	I-2	0.98	0.55	53%	47%
(C)	I-3	0.32	0.50	44%	50%
(D)	I-4	0.70	0.69	77%	23%
(E)	I-5	0.92	0.34	27%	73%
(F)	EX I-4	1.00	0.35	31%	69%
(G)	EX I-5	0.33	0.61	61%	39%

Approved Department of Public Works

William M. ... 2/18/91
Chief, Land Development Division Date

Francis W. ... 2/18/91
Chief, Bureau of Highways Date

William E. ... 3-1-91
Chief, Bureau of Engineering Date

Approved Department of Planning and Zoning

Richard B. ... 3/1/91
Chief, Division of Community Planning and Land Development Date

CONSTRUCTION SEQUENCE

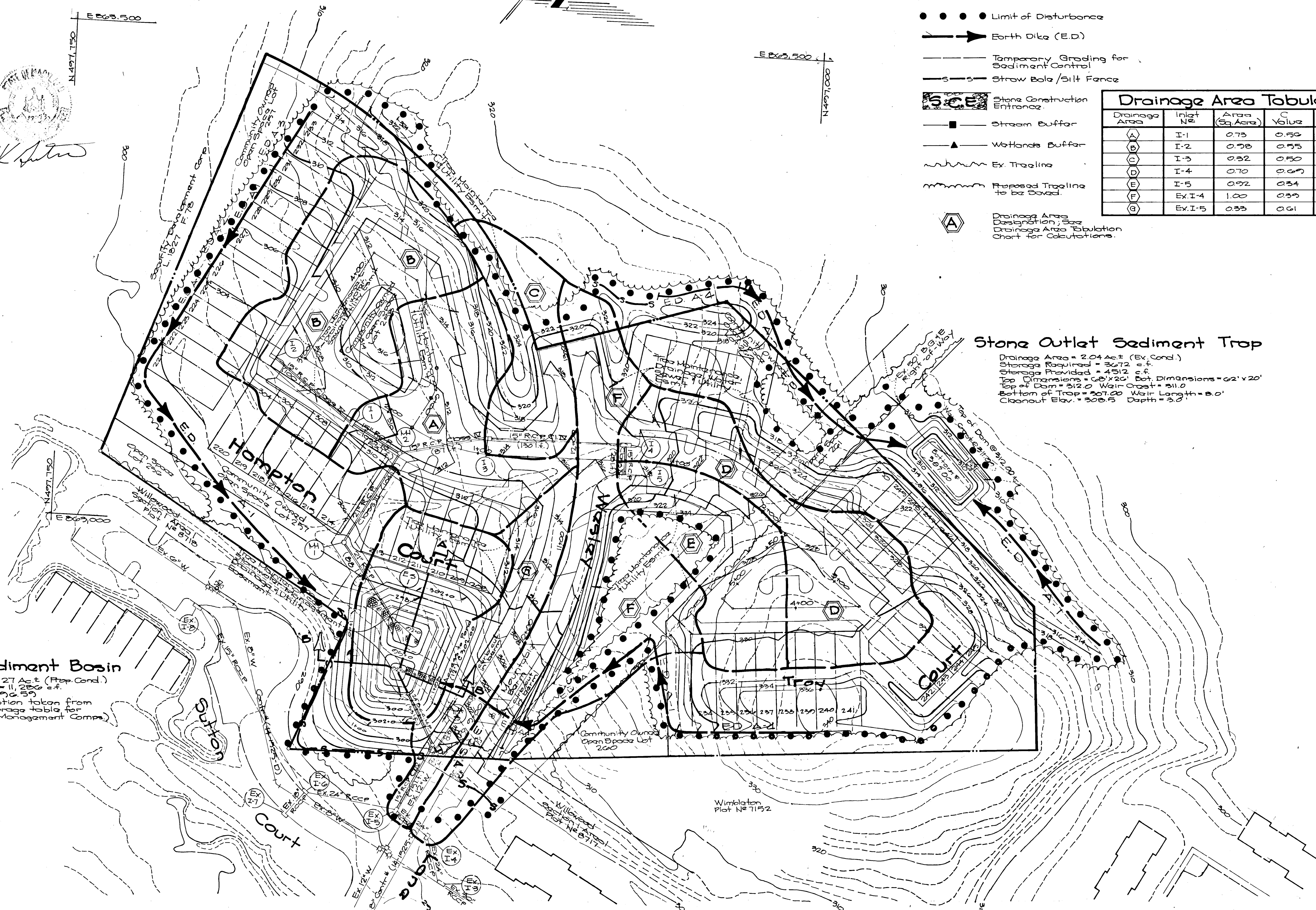
1. OBTAIN GRADING PERMIT.
2. INSTALL STONE CONSTRUCTION ENTRANCE AS SHOWN ON THESE PLANS.
3. INSTALL SILT FENCE, CURB-INLET PROTECTION, EARTH DIKES AND CONSTRUCT STONE OUTLET SEDIMENT TRAP AS SHOWN ON THESE PLANS. ALSO, BEGIN EXCAVATION AND CONSTRUCTION OF TEMPORARY SEDIMENT BASIN.
4. BEGIN GRADING AND INSTALL UTILITIES.
5. REPAIR STONE CONSTRUCTION ENTRANCE AS NECESSARY AFTER THE INSTALLATION OF UTILITIES IS COMPLETE.
6. BRING THE GRADING UP TO SUBGRADE AND DIRECT WATER TO INLET OPENINGS.
7. INSTALL CURB & GUTTER, SIDEWALKS AND BEGIN PAVING.
8. AFTER PAVING IS COMPLETED, STABILIZE ALL DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES.
9. UPON APPROVAL OF THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROL DEVICES AND CONVERT TEMPORARY SEDIMENT BASIN TO STORMWATER MANAGEMENT POND AS FOLLOWS:
 - A. PUMP OUT THE IMPOUNDED WATER FROM THE BASIN.
 - B. REMOVE ALL SEDIMENT FROM THE BASIN AND PLACE IT AS PER THE DIRECTIONS OF THE SEDIMENT CONTROL INSPECTOR.
 - C. REGRADE THE POND TO FORM THE GRADING SHOWN ON THESE PLANS.
 - D. STABILIZE ALL REMAINING DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES.

Temporary Sediment Basin

Drainage Area = 6.27 Ac± (Prop. Cond.)
Storage Required = 11,286 c.f.
Elev. Required = 296.59
(Elev. information taken from Elevation/Storage table for Stormwater Management Comps.)

Stone Outlet Sediment Trap

Drainage Area = 2.04 Ac± (Ex. Cond.)
Storage Required = 3472 c.f.
Storage Provided = 4512 c.f.
Trap Dimensions = 62' x 20'
Top of Dam = 312.0' Wain Crest = 311.0'
Bottom of Trap = 307.00' Wain Length = 80'
Cleanout Elev. = 308.5' Depth = 3.2'



Plan Scale: 1"=50'

1025

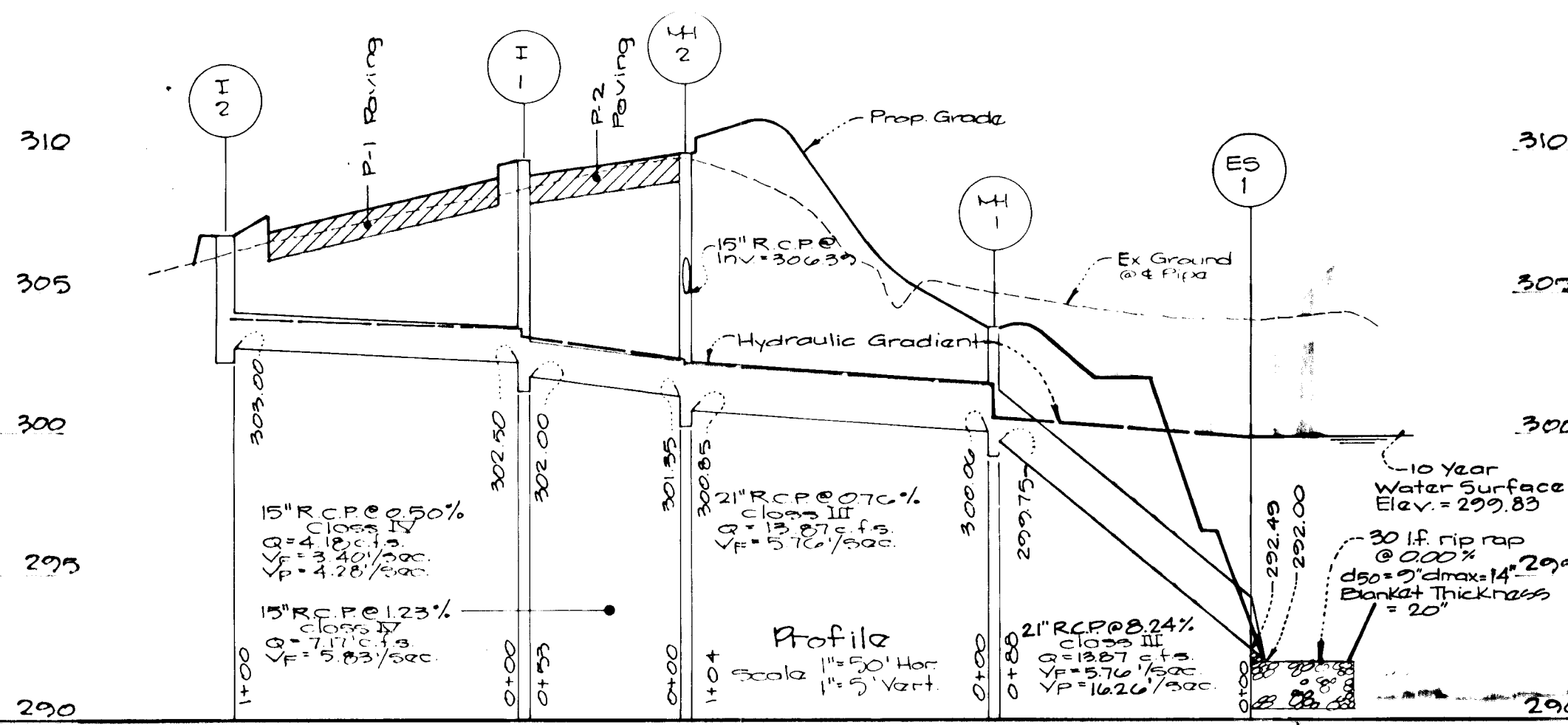
GLW GUTSCHICK LITTLE & WEBER, P.A.
ENGINEERS, PLANNERS, SURVEYORS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD. 20866
TELEPHONE: (301) 421-4024

DES. DEV.	DRN. U.C.F.	CHK. CK.G.	DATE	REVISION	BY	APP'R.

PREPARED FOR:
Trafalgar House Residential Maryland
8905 Guilford Road
Columbia, Maryland 21046
Phone: (301) 621-8151

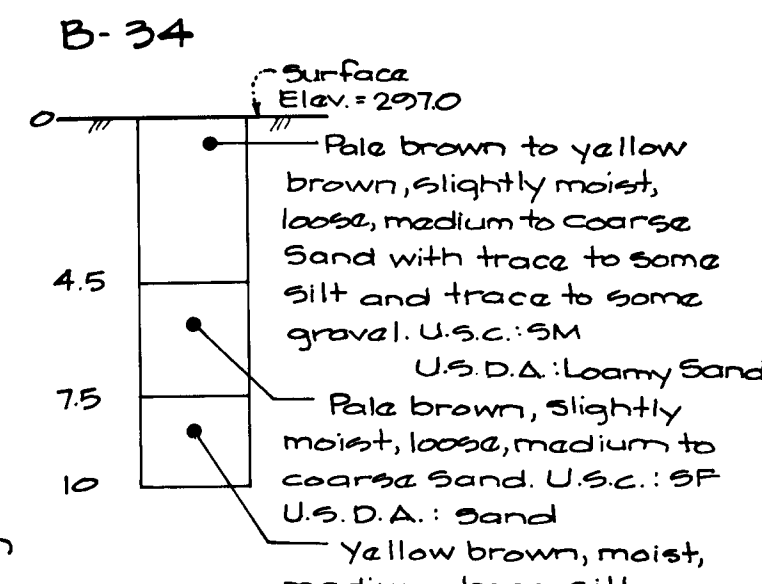
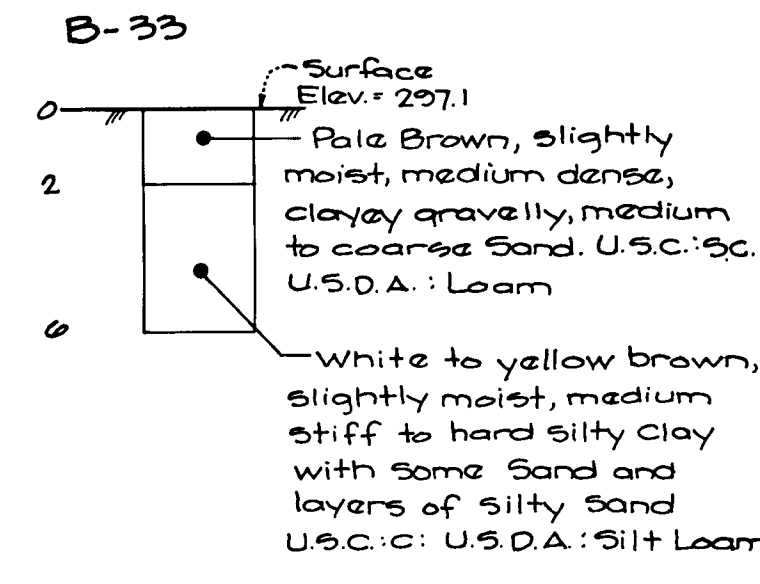
Mass Grading Plan
Willowood
Section 2, Area 2
First Election District
Howard County, Maryland

SCALE	ZONING	G.L.W. FILE No.
1"=50'	R-5C	B9080
DATE	TAX MAP No.	SHEET
Dec., 1990	37	3 of 6



Structure Schedule									
No.	Type	Inv. In	Inv. Out	Top Structure Elev.	Bottom Structure Elev.	# Station	Remarks	U.S.C.	U.S.D.A.
1-1	A-5	302.50	302.00	302.00	301.00	2+21.80	Hampton Court 20' Lt.	0.14	0.14
1-2	A-5	302.00	301.71	301.00	300.00	2+22.00	Hampton Court 10' Rt.	0.14	0.14
1-3	A-5 w/diaphragm	302.78	302.00	315.95	315.58	0+49.00	Hampton Court 10' Rt.	0.14	0.14
1-4	A-5 w/diaphragm	313.30	312.00	317.74	317.19	0+49.50	Troy Court 16' Lt.	0.14	0.14
1-5	A-5 w/diaphragm	313.50	312.00	317.61	317.31	0+49.50	Troy Court 16' Rt.	0.14	0.14
M1	54" Manhole	300.00	299.75	300.00	300.00	502 Plan		0.50	0.50
M2	54" Manhole	301.95	300.65	301.00	301.00	116A Hampton Court 20' Lt.		0.50	0.50
M3	54" Manhole	299.21	299.21	299.00	299.00	B+55 of Wesley Lane 22' Lt.		0.50	0.50
ES-1	End Section	292.45	292.00	-	-	502 Plan		0.50	0.50

Pipe Schedule		
Size & Class	Quantity	
15" R.C.P. cl. IV	398 l.f.	
21" R.C.P. cl. III	192 l.f.	
24" R.C.P. cl. IV	75 l.f.	
24" B.C.C.M.P. 16 Gage	53 l.f.	



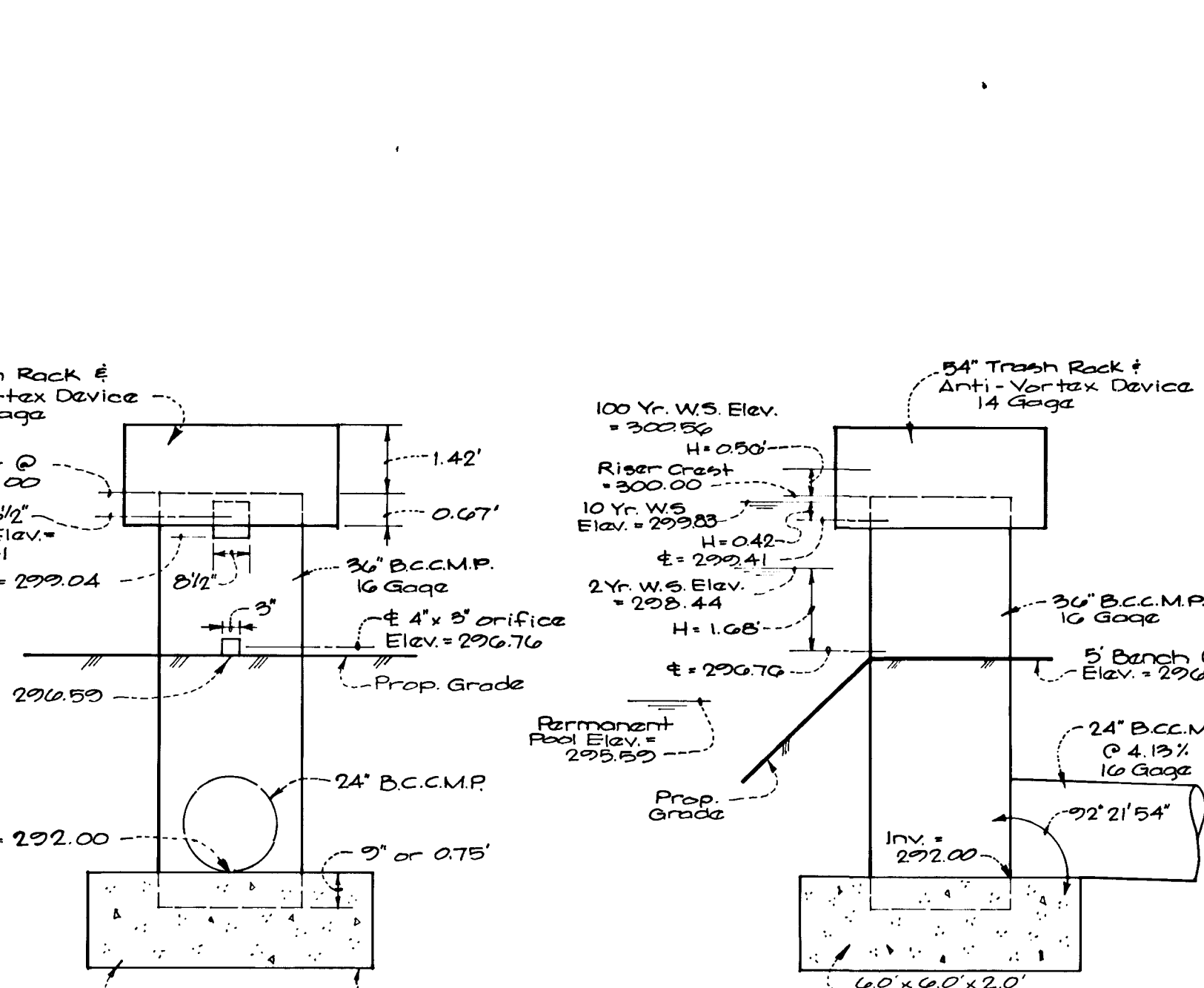
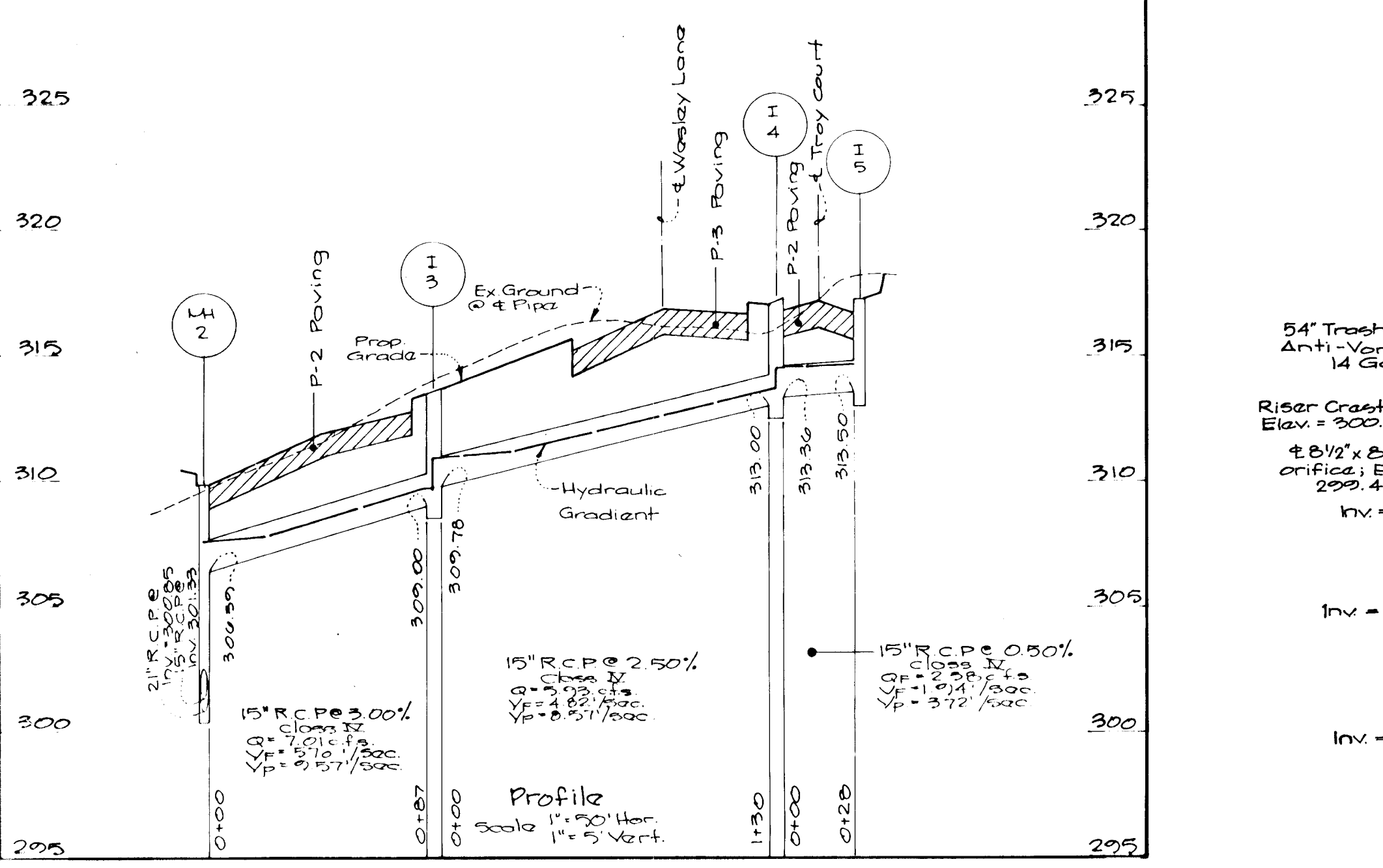
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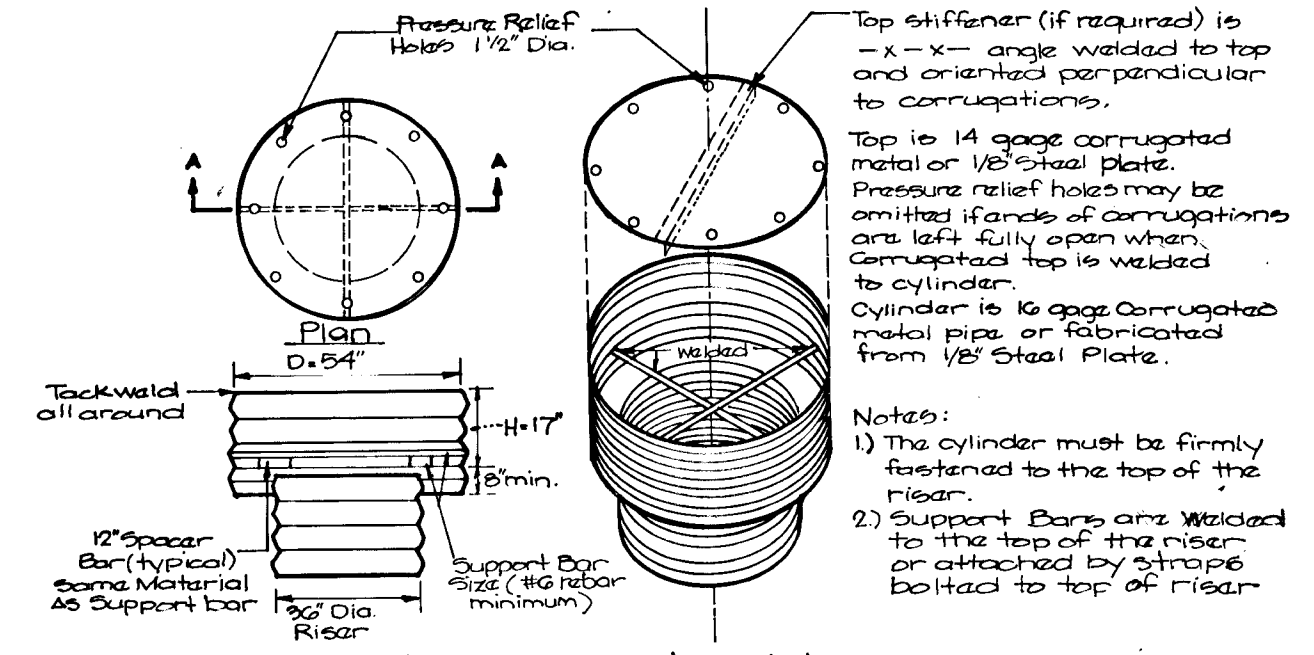
Michael J. Clay
Signature of Developer/Builder

9-18-90
Date

Boring Logs at S.W.M. Pond



Riser Details
Scale: 1" = 3'

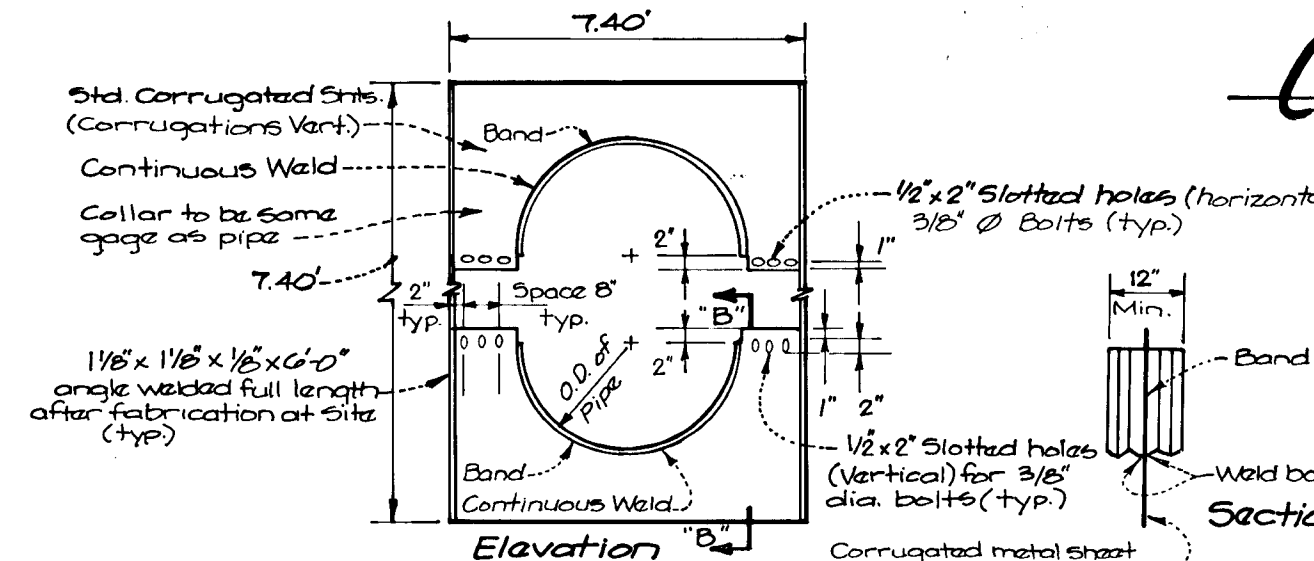


Concentric Trash Rack & Anti-Vortex Device
Not Scale

ENGINEER'S CERTIFICATE

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CK [Signature]
Date



Corrugated Metal Anti-Snag Collar Details
No Scale

CK [Signature]
Date

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

Robert W. Zichner
Howard Soil Conservation District

1-30-91
Date

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

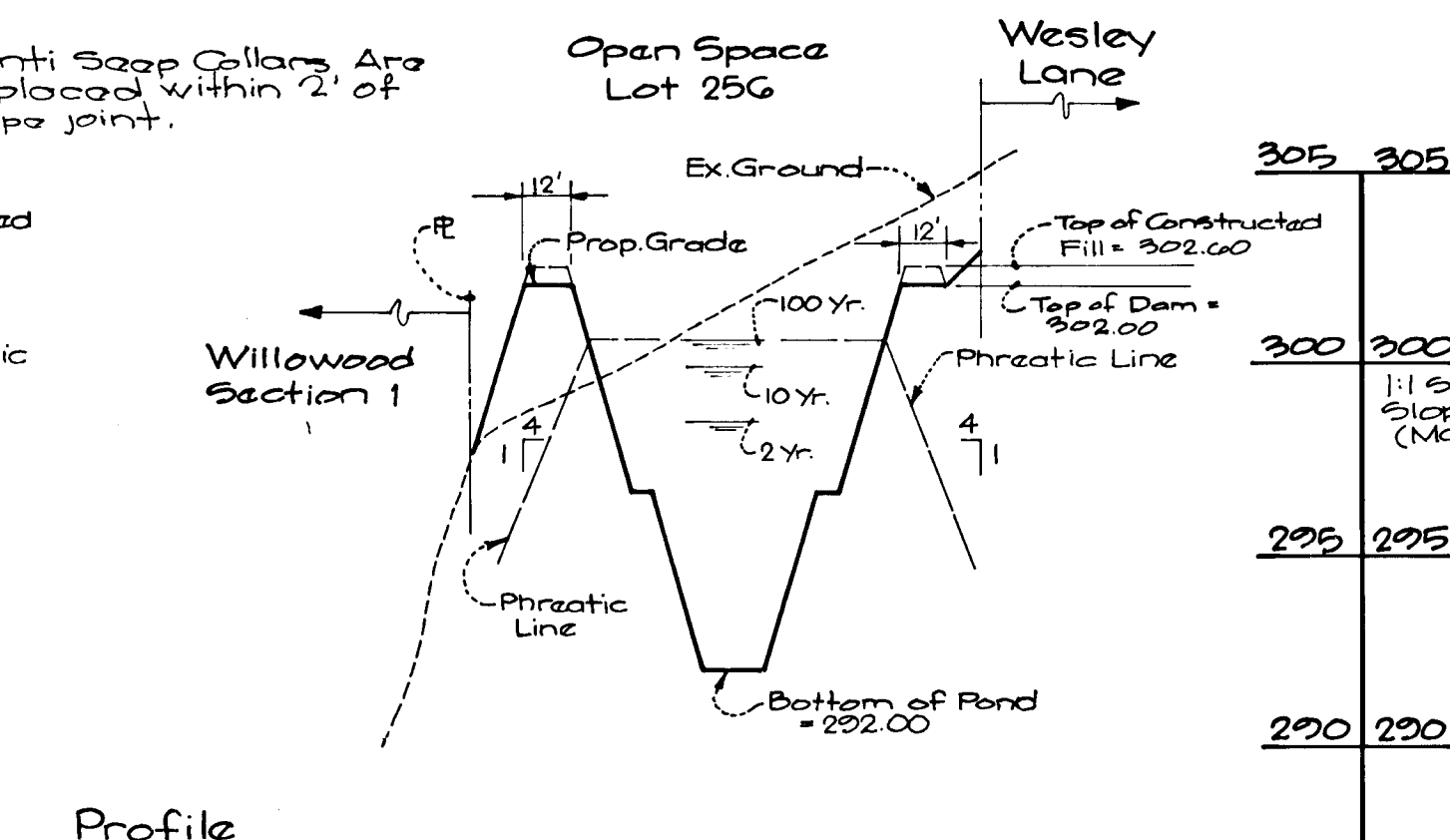
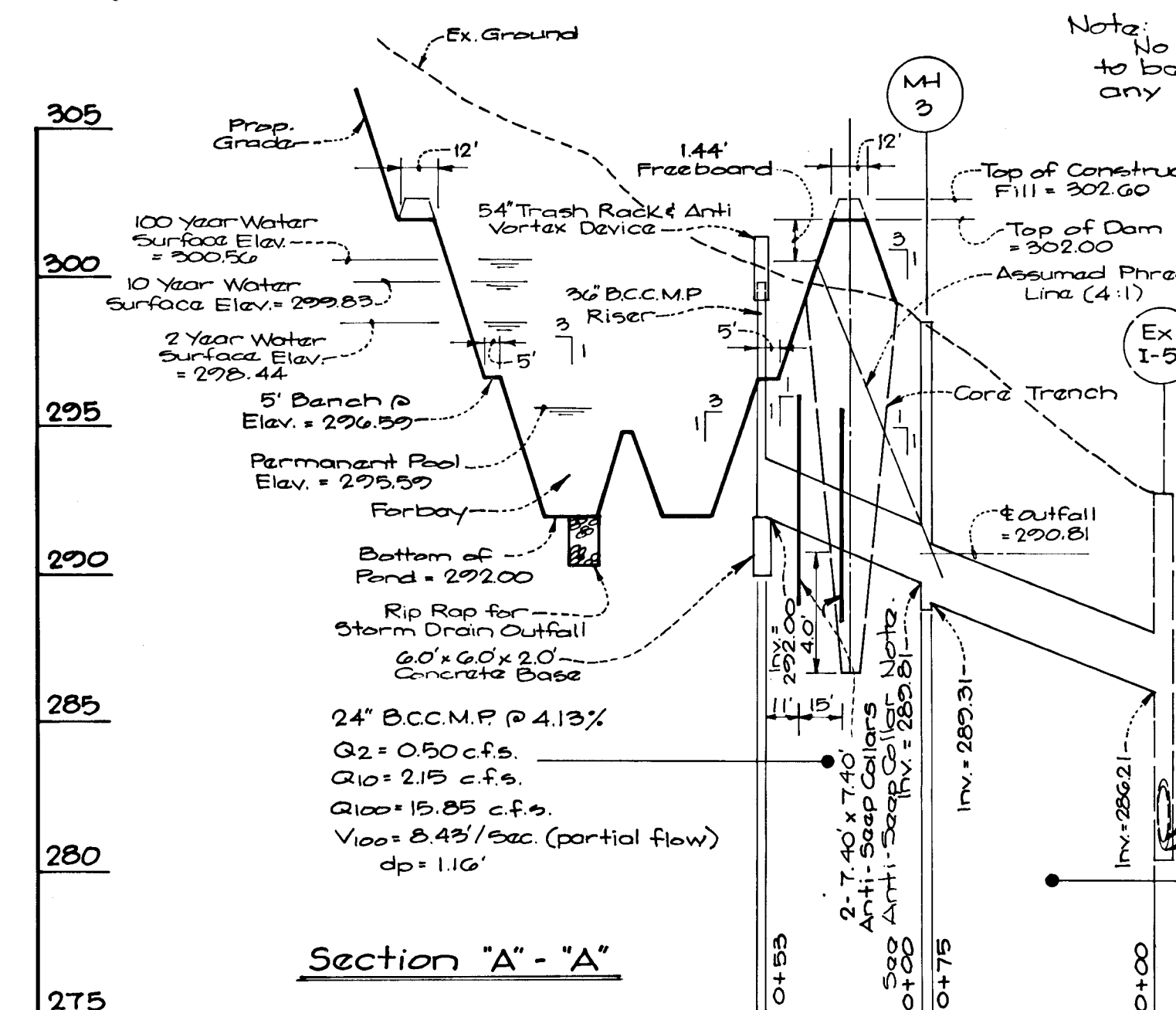
[Signature]
S.S. Soil Conservation Service

1-30-91
Date

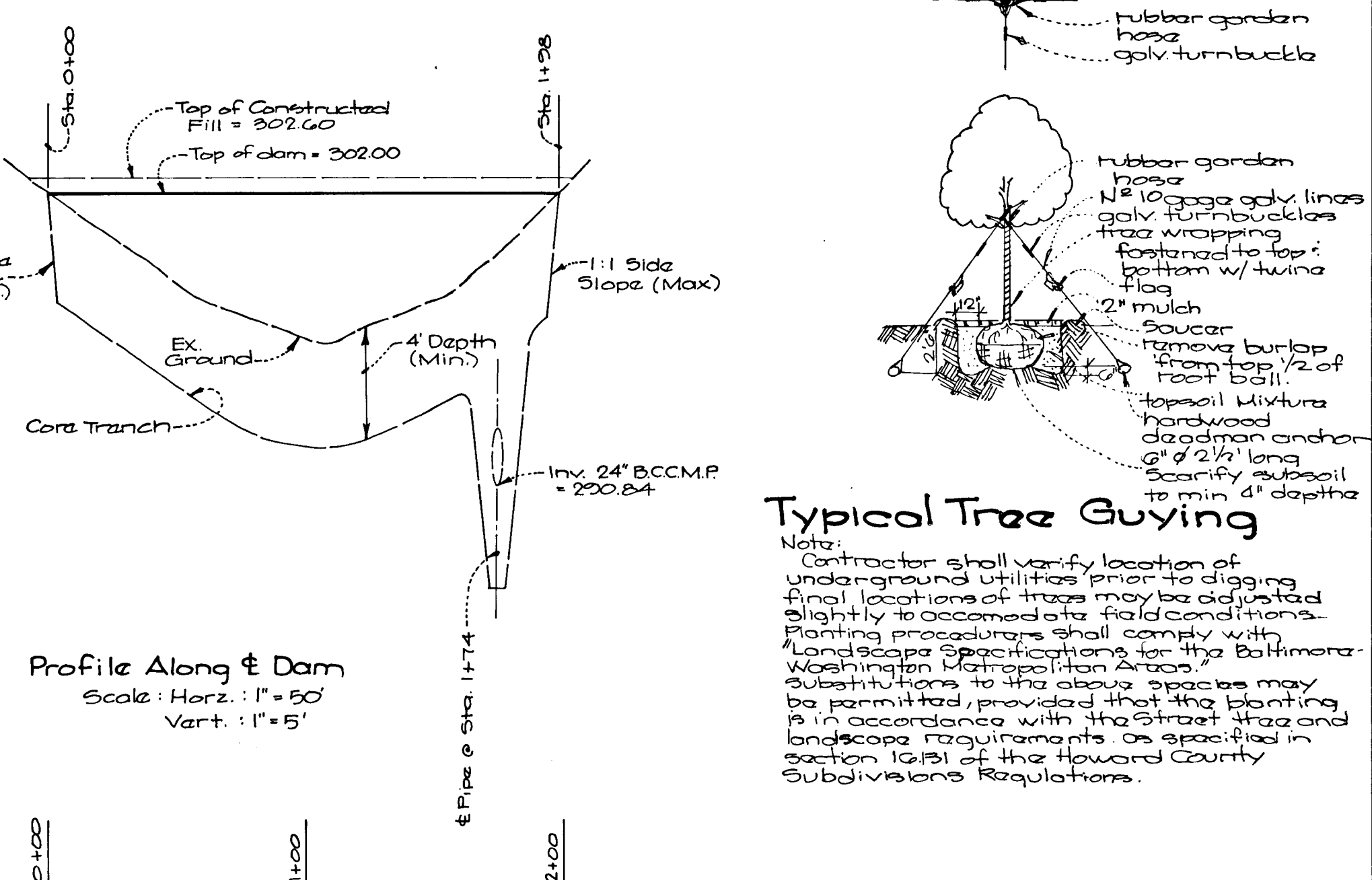
Approved:
Department of Public Works
[Signature] 2/15/91
Chief, Land Development Division

Approved:
Department of Public Works
[Signature] 3-1-91
Chief, Bureau of Engineering

Approved:
Department of Planning and Zoning
[Signature] 3/4/91
Chief, Division of Community Planning and Land Development

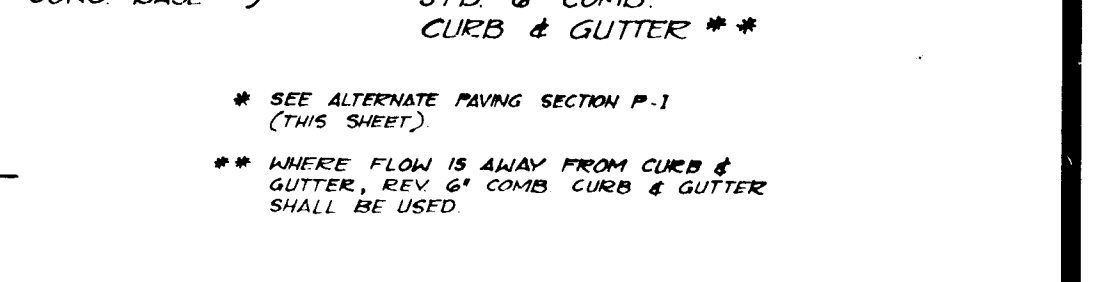
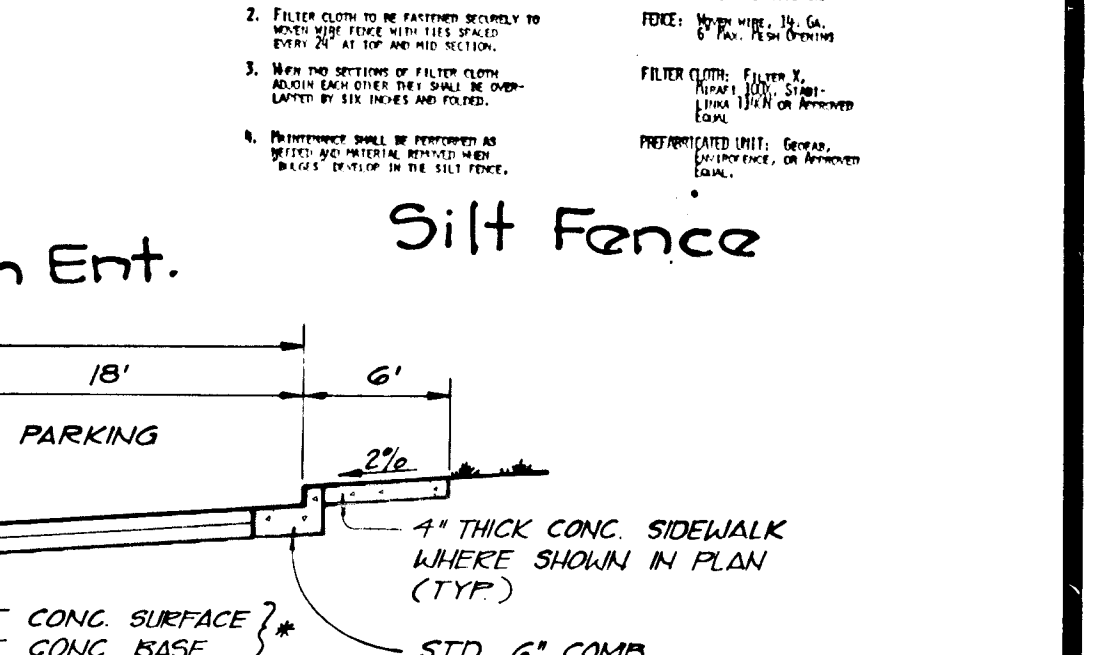
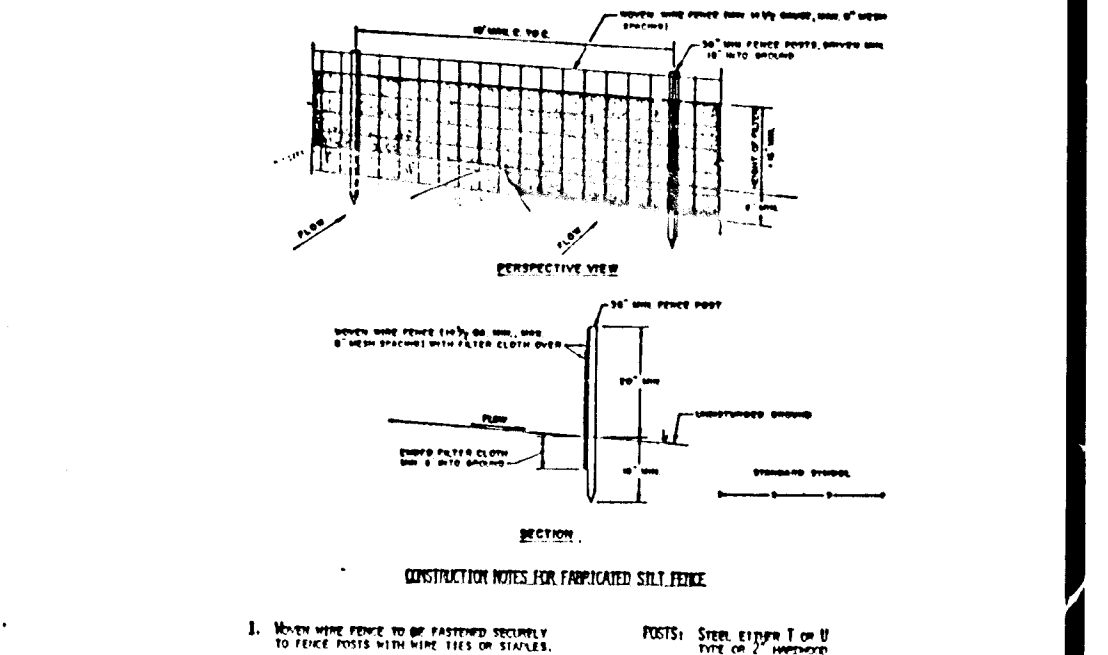
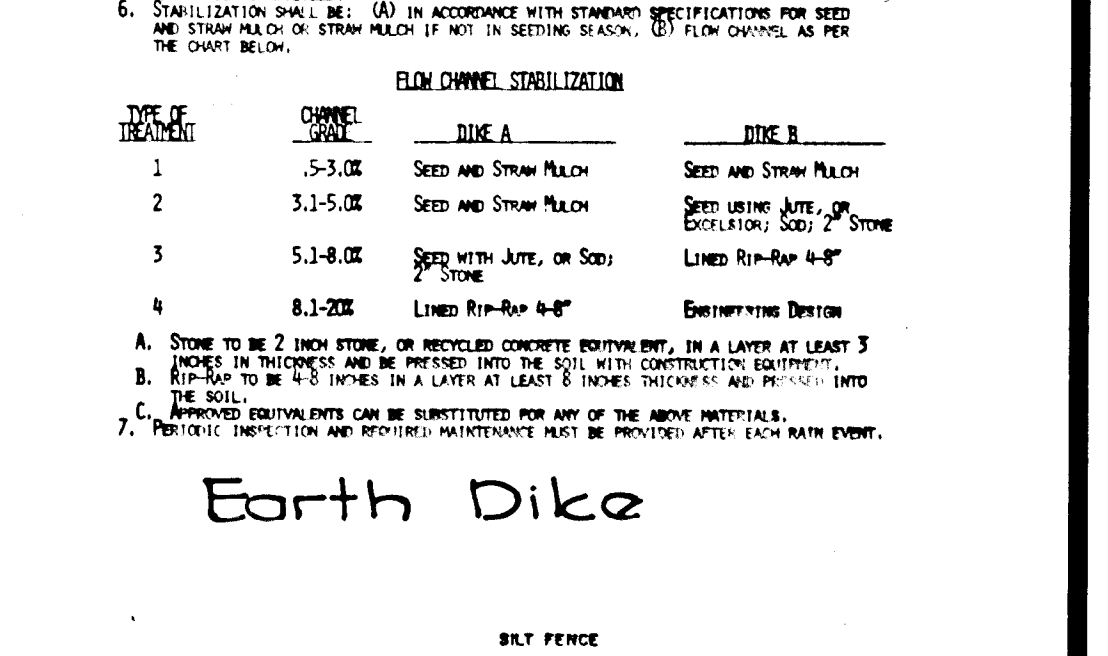
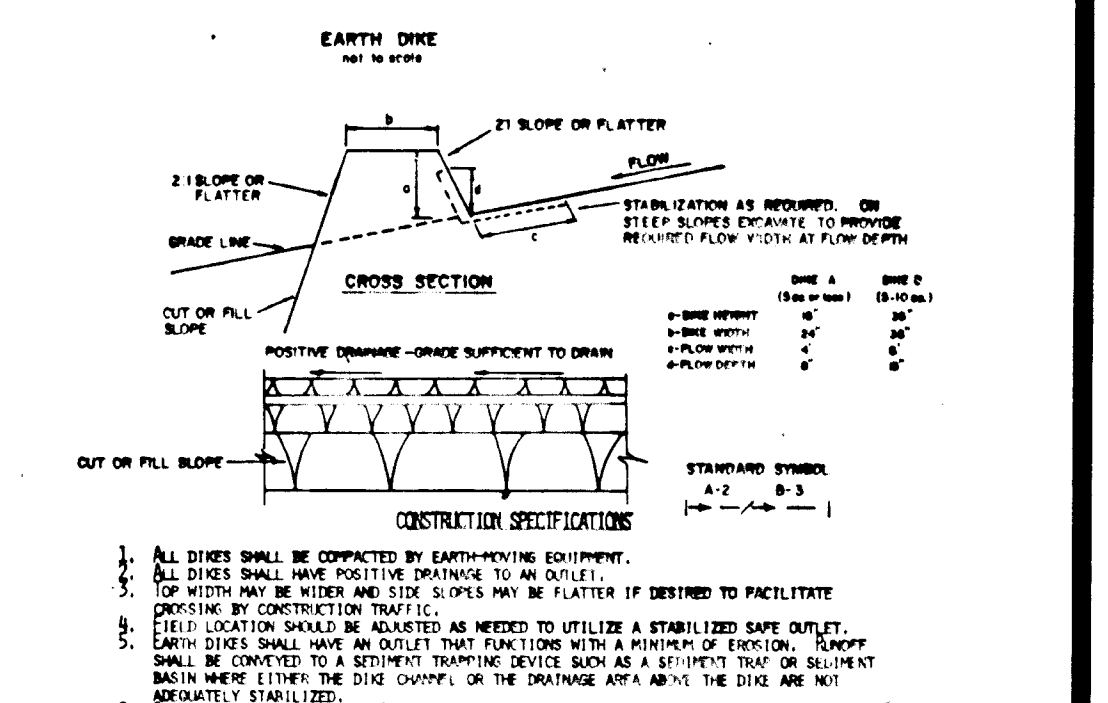
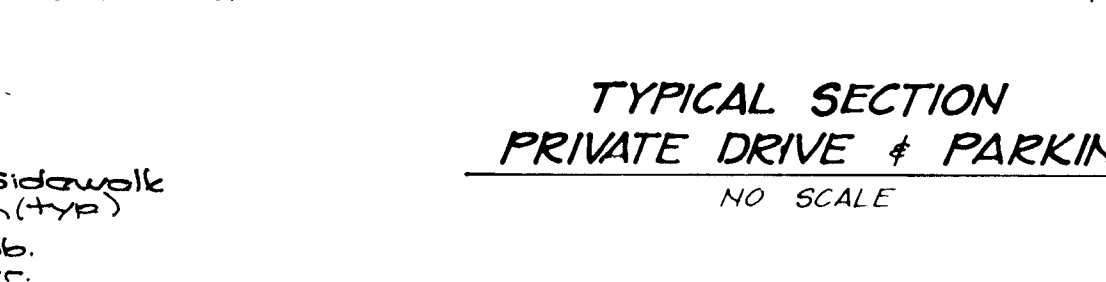
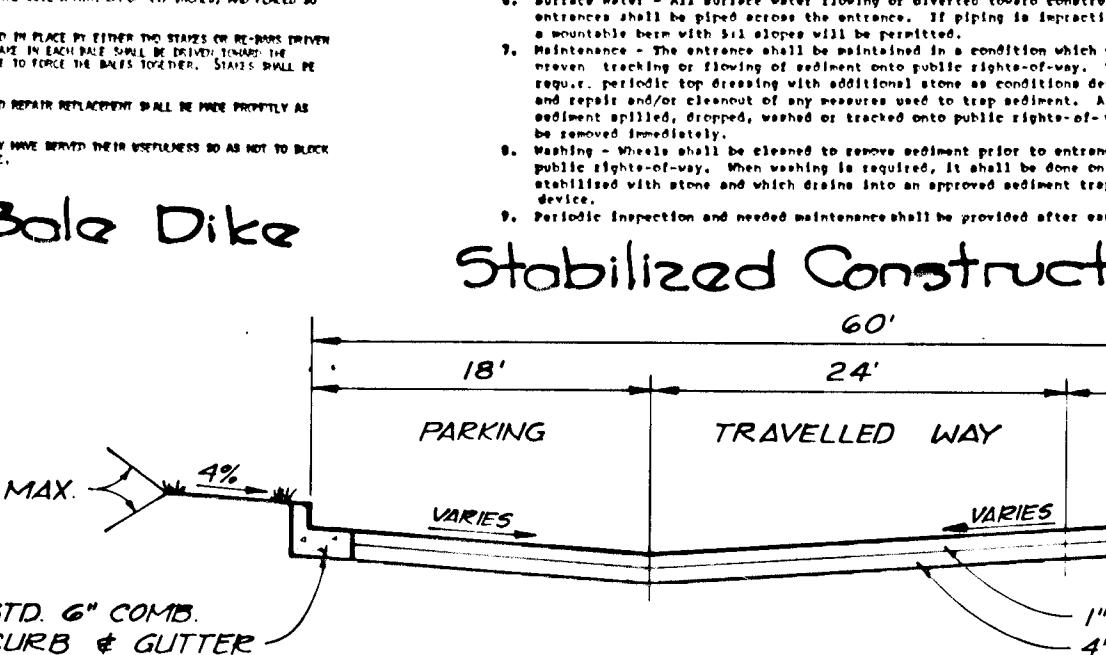
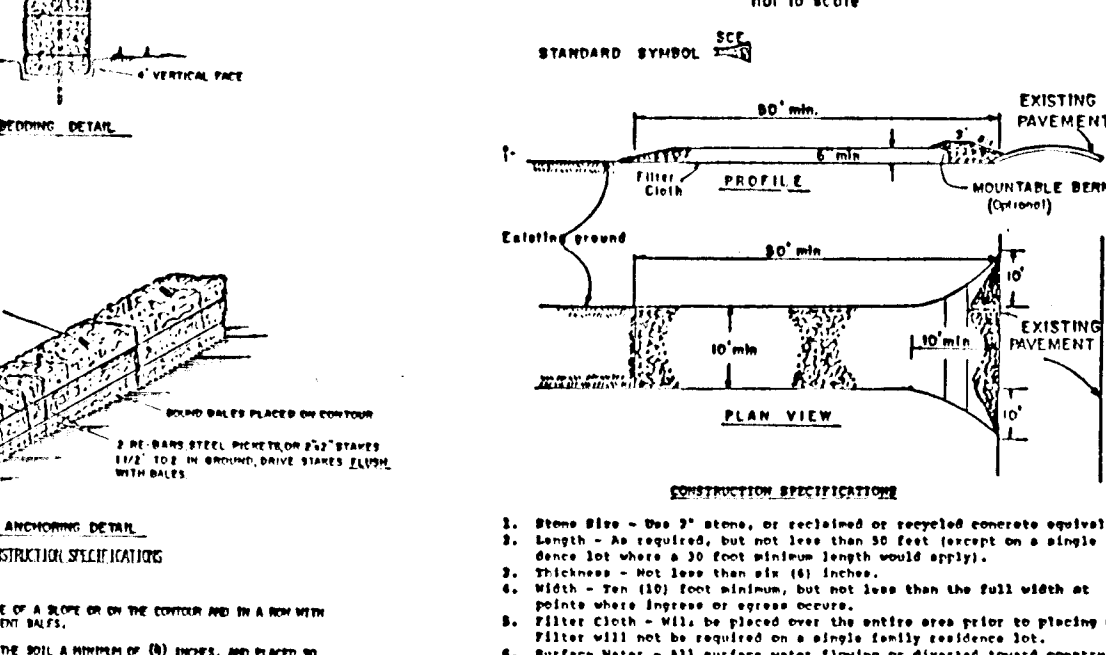
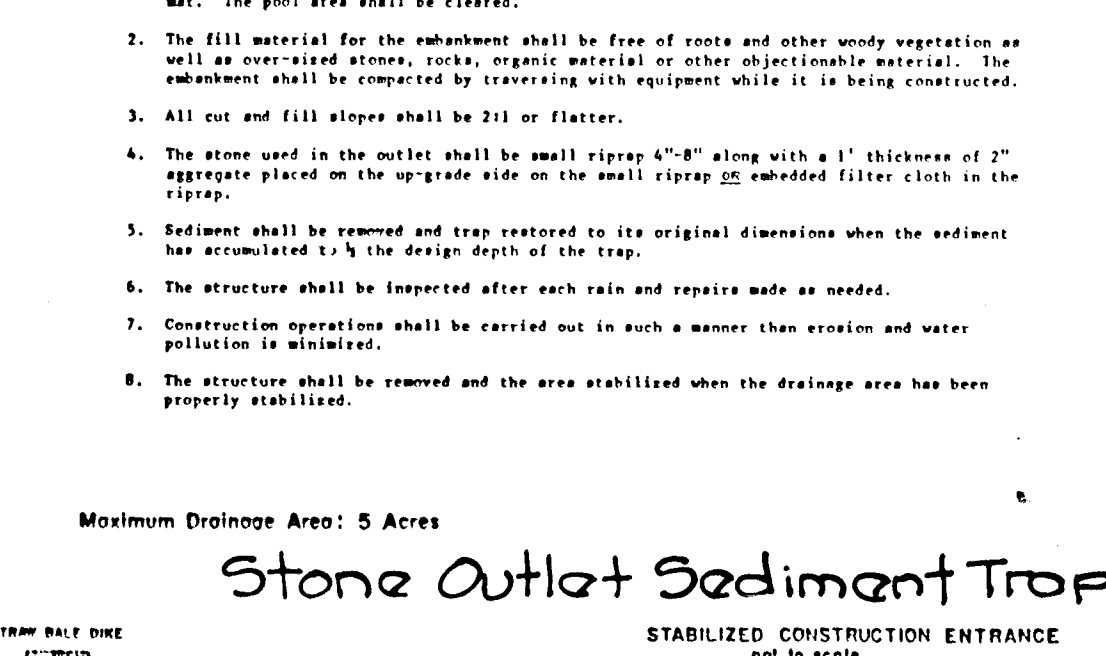
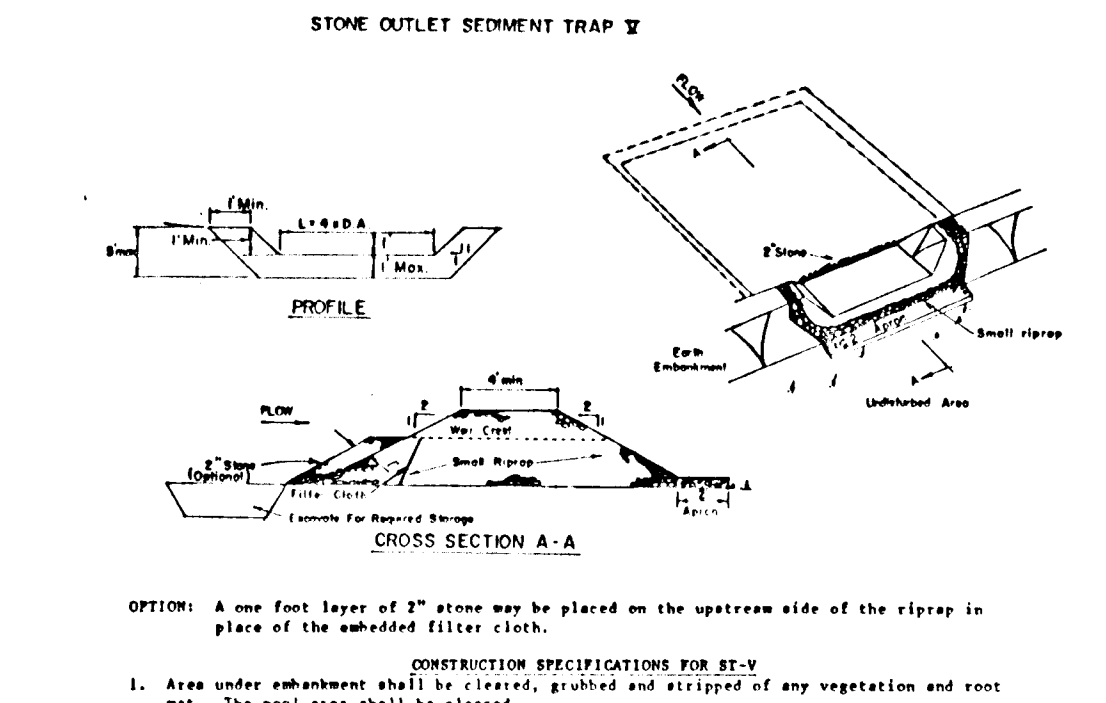
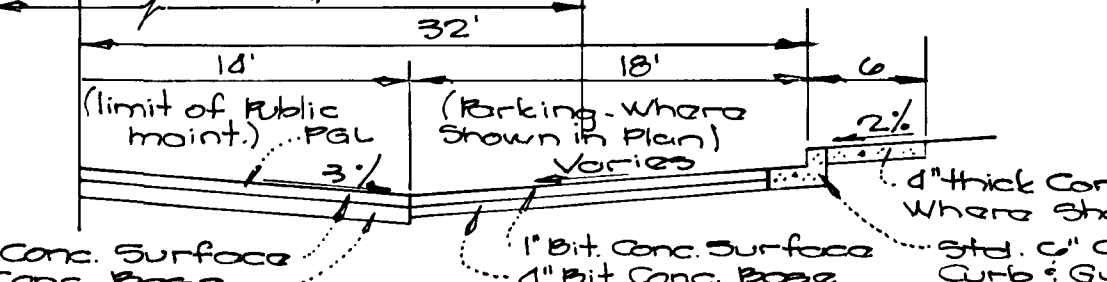
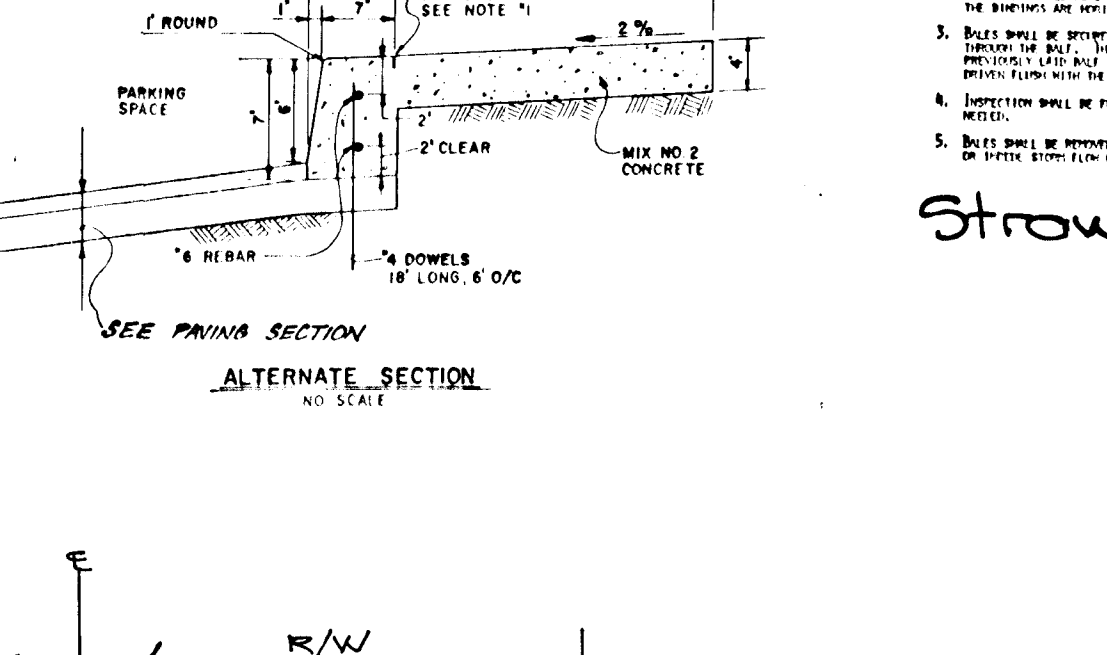
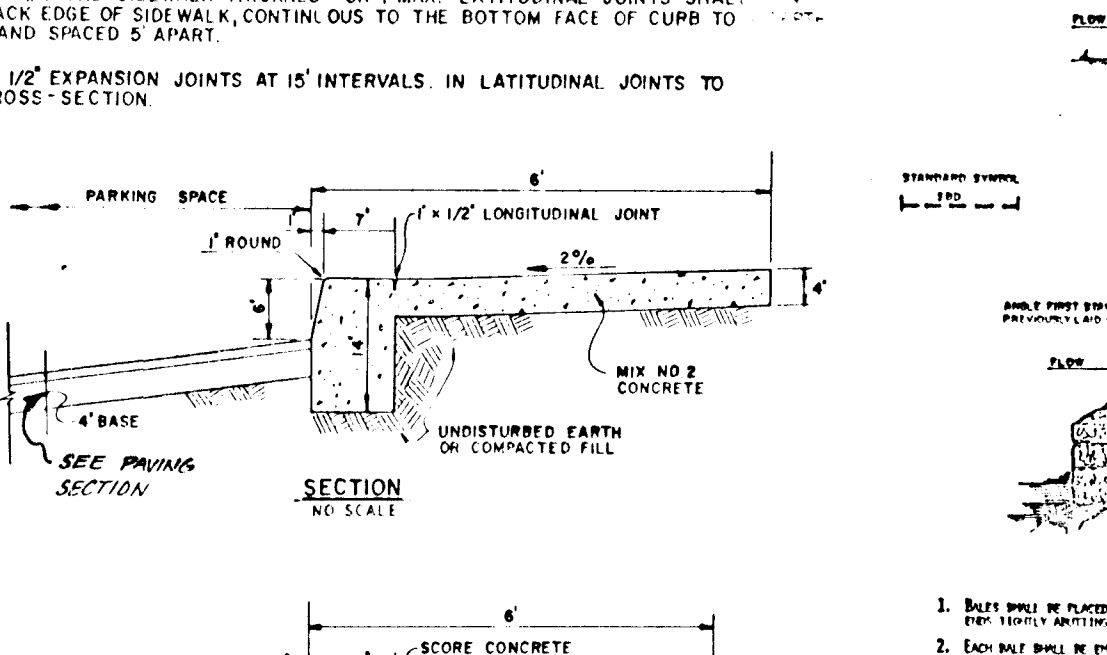
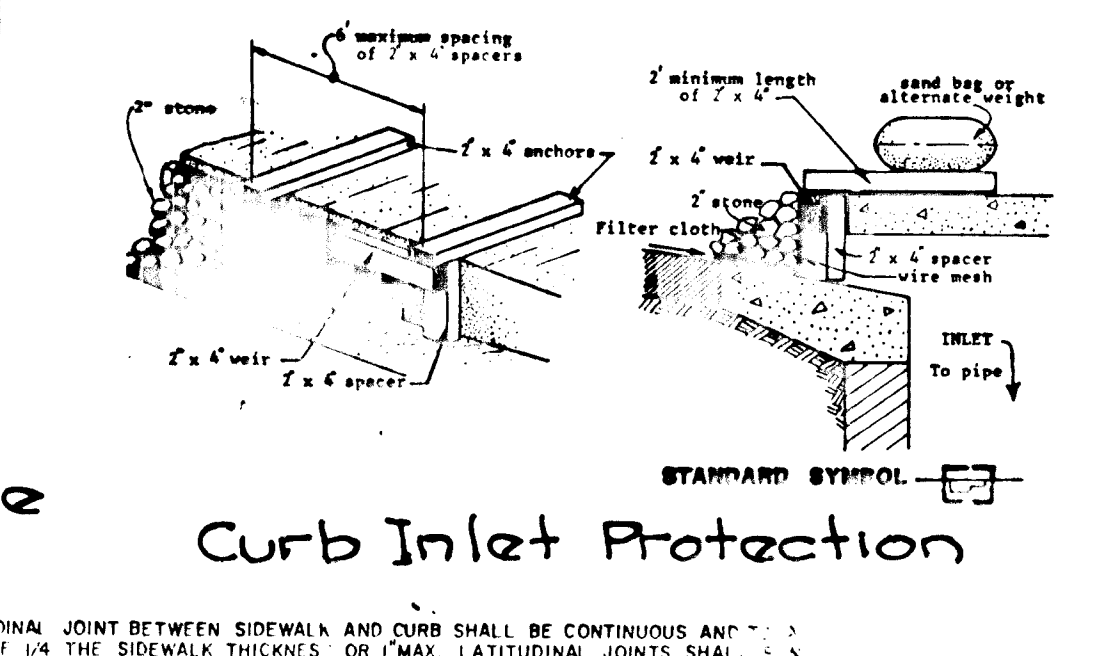
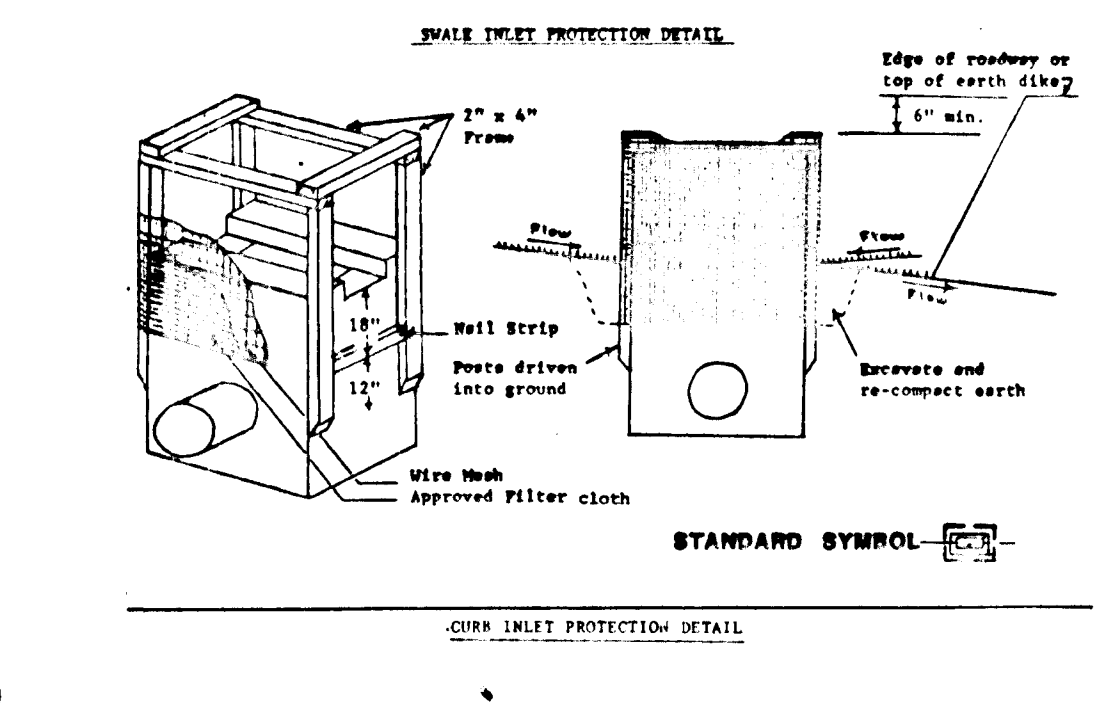
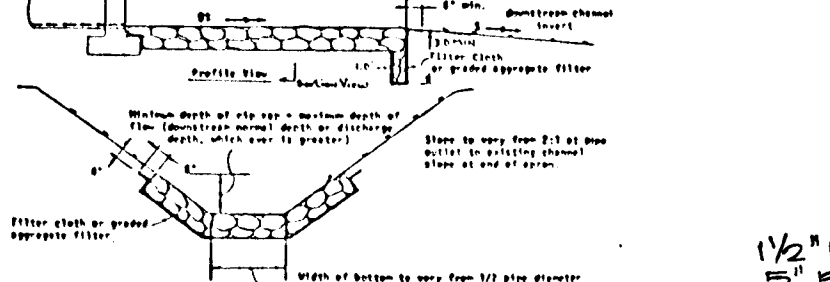
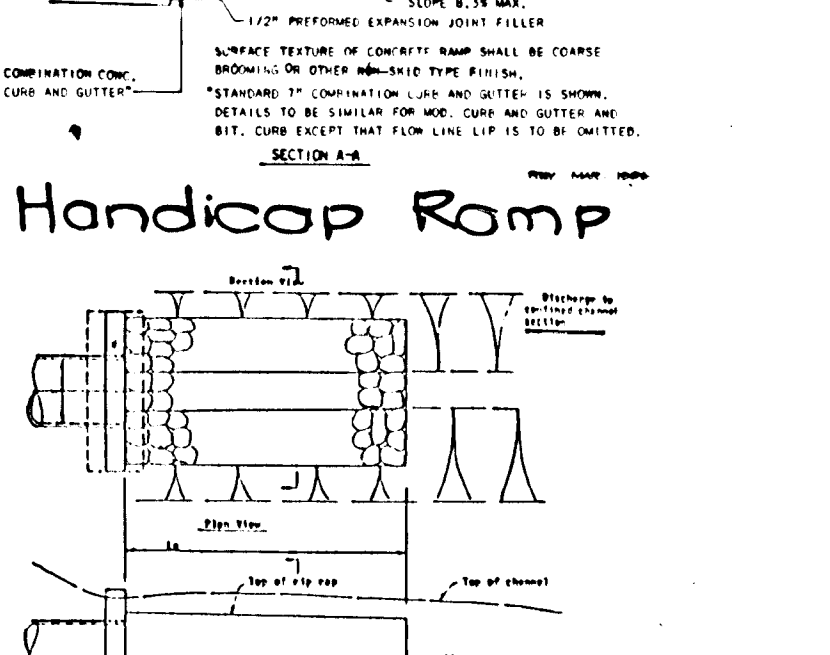
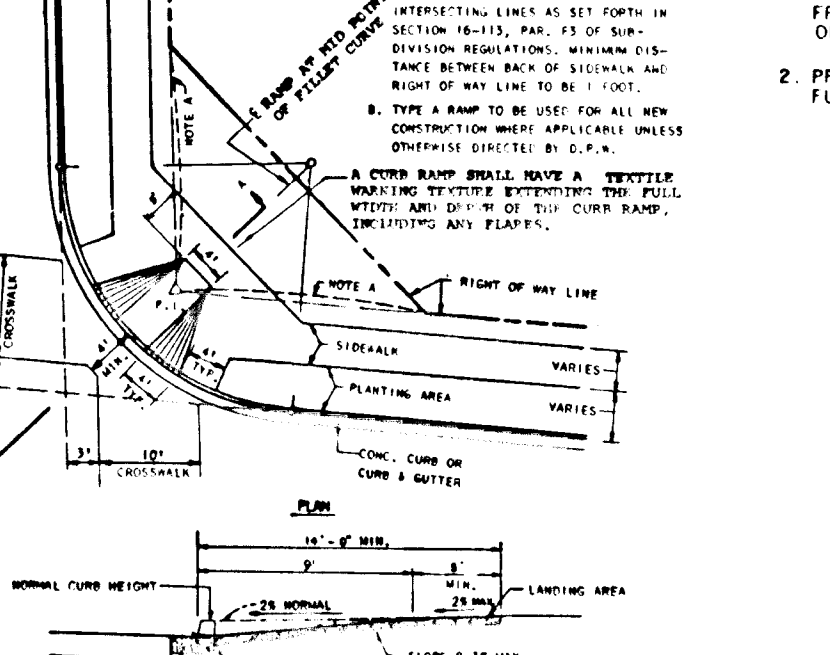
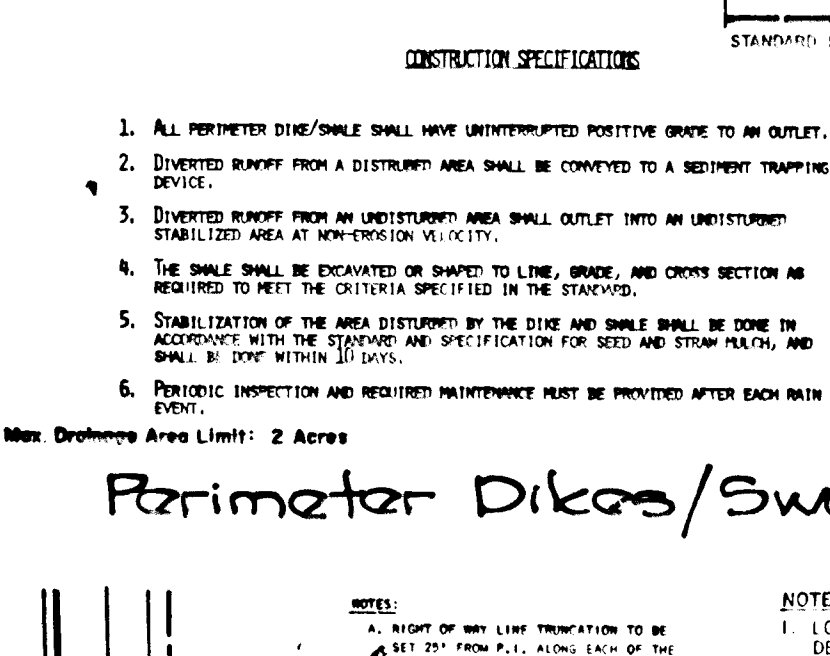
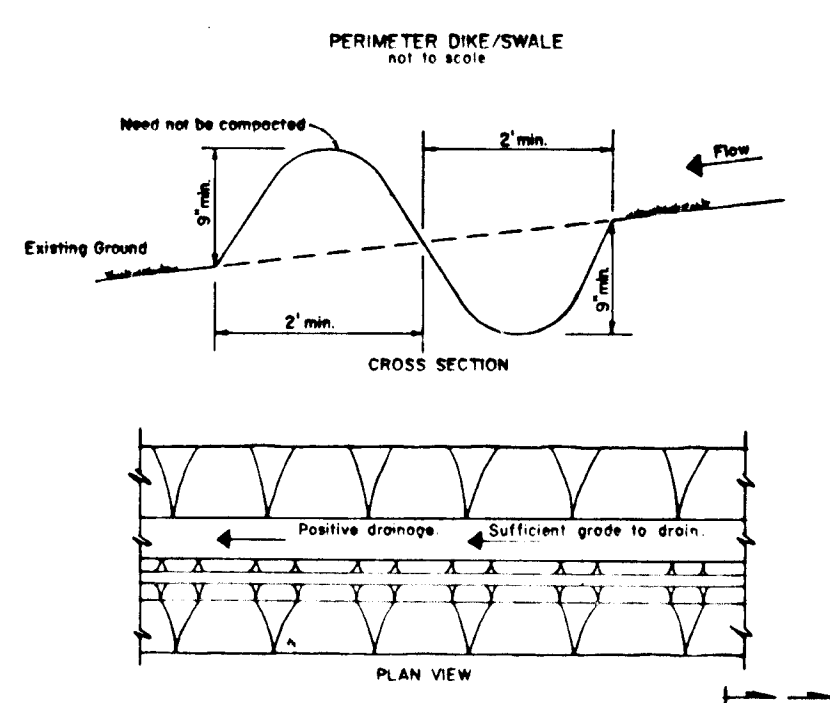
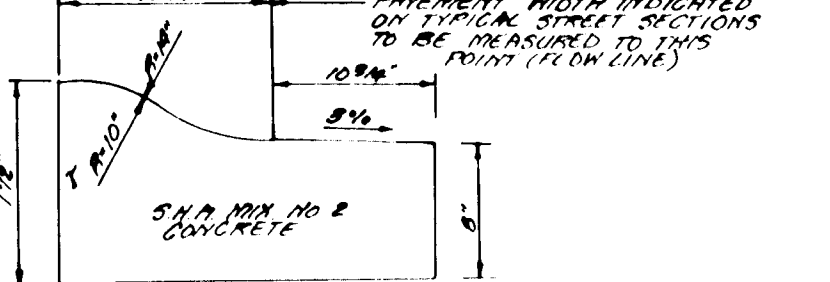
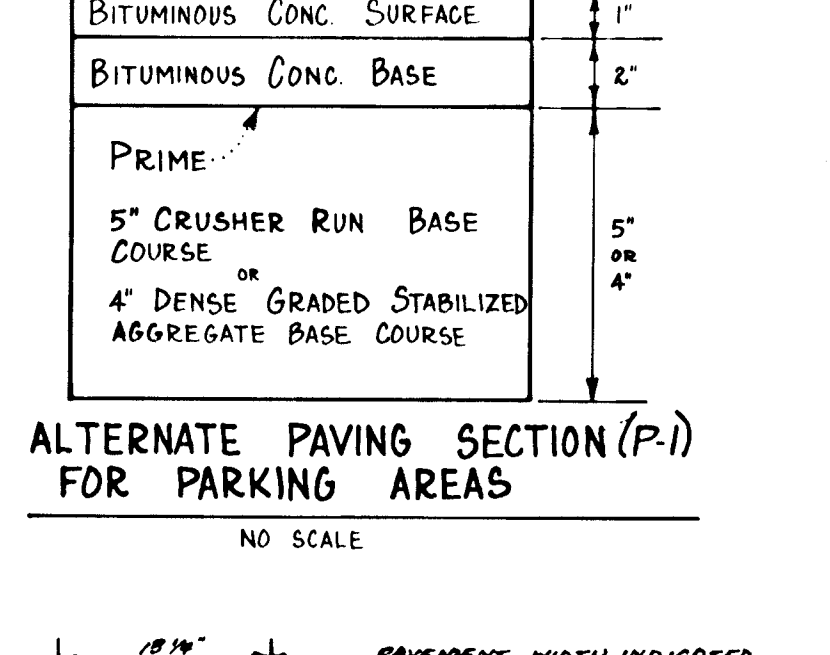
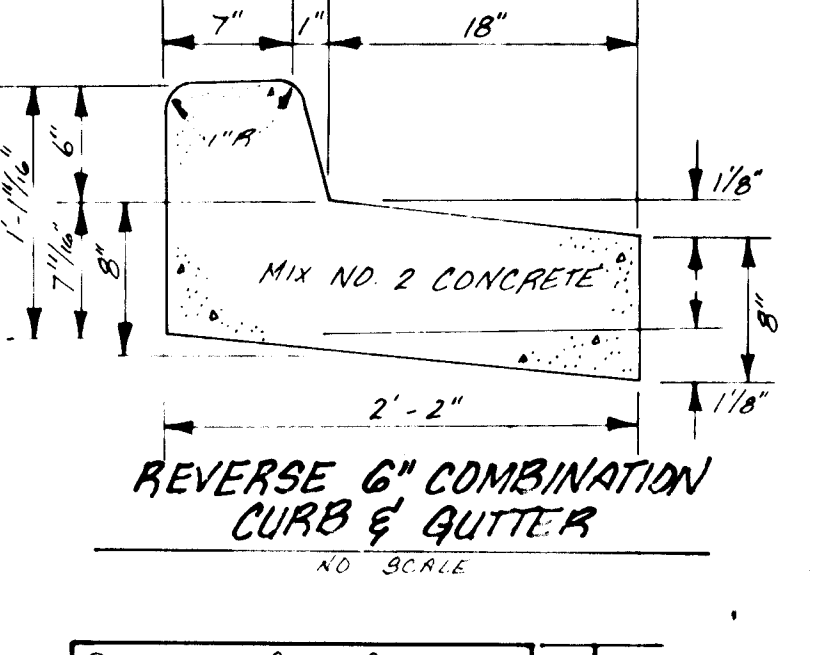
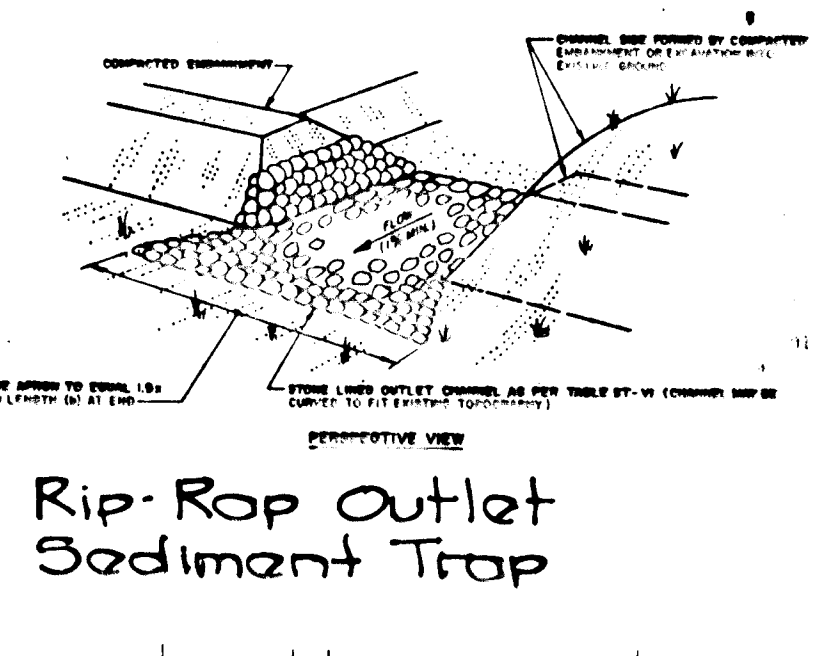
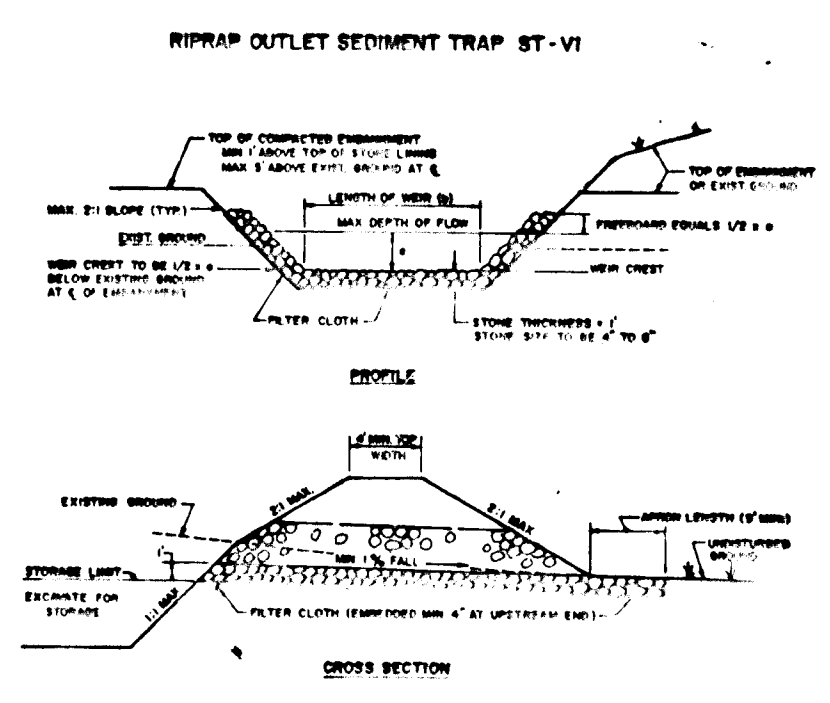
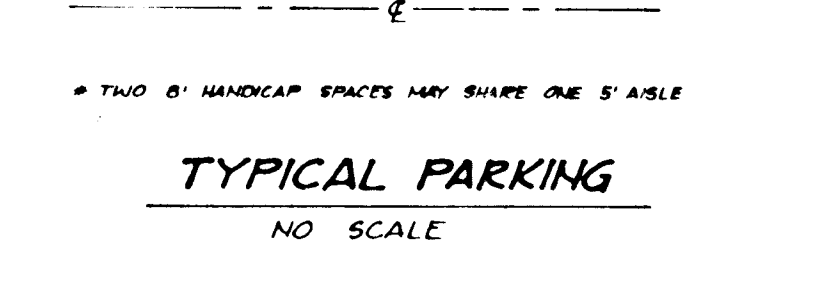
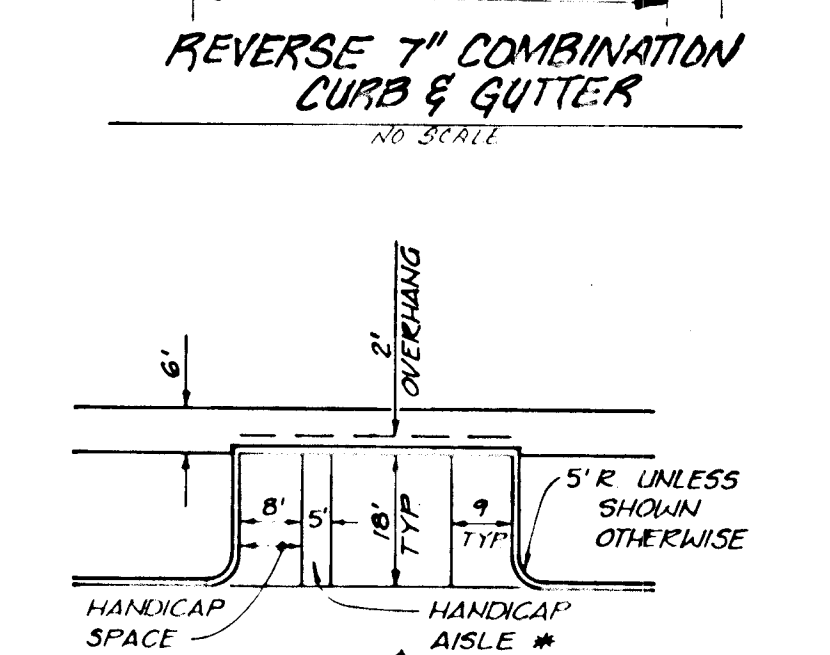
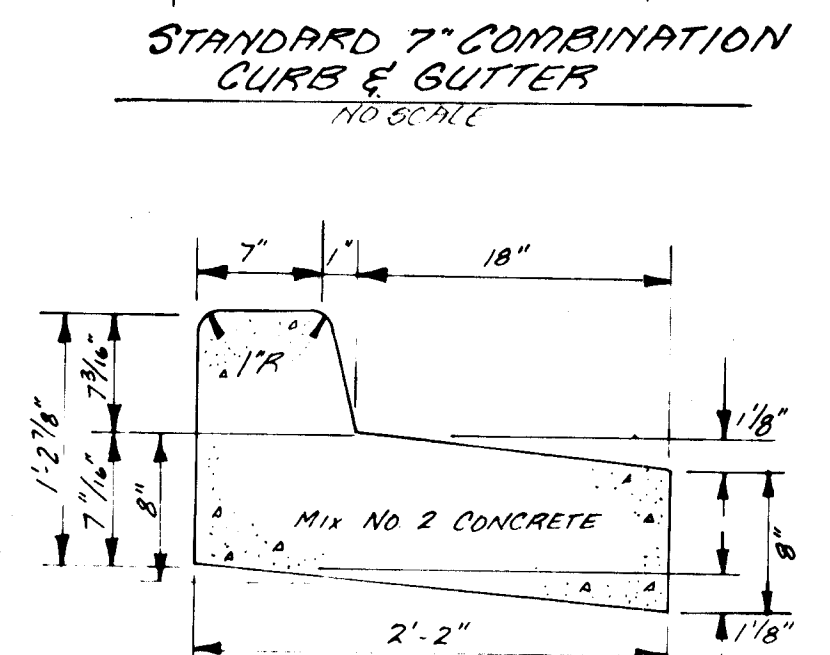
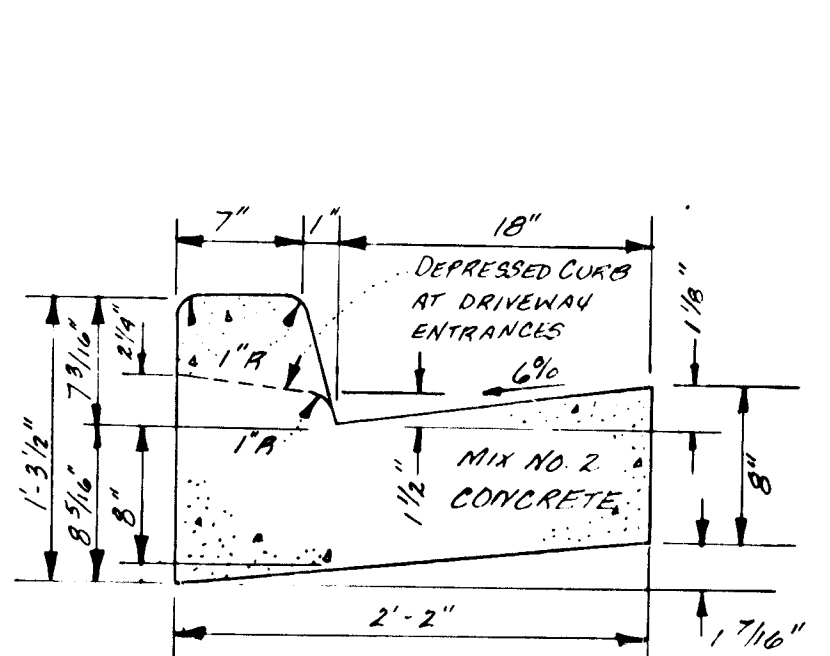
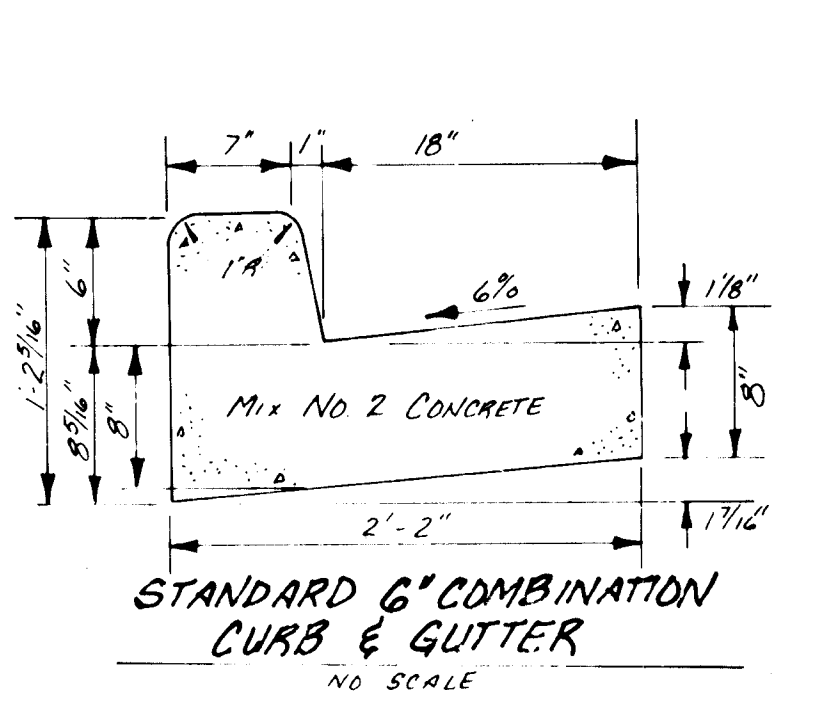


Profile
Scale: Horiz.: 1" = 50'
Vert.: 1" = 5'



Typical Tree Guying

Contractor shall verify location of underground utilities prior to digging. Final locations of trees may be adjusted slightly to accommodate site field conditions. Planting procedures shall comply with Landscape Specifications for the Baltimore-Washington Metropolitan Area. Substitutions to the above species may be permitted, provided that the planting is in accordance with the Street Tree and Landscape Requirements as specified in section 16.01 of the Howard County Subdivisions Regulations.



BITUMINOUS CONC SURFACE 1"
BITUMINOUS CONC BASE 2"
PRIME
5" CRUSHER RUN BASE COURSE OR 4" DENSE GRADED STABILIZED AGGREGATE BASE COURSE

ALTERNATE PAVING SECTION (P-1) FOR PARKING AREAS
NO SCALE

REVERSE MODIFIED COMBINATION CURB & GUTTER
NO SCALE

Handicap Ramp
NO SCALE

Handicap Ramp
NO SCALE

Handicap Ramp
NO SCALE

Handicap Ramp
NO SCALE

Handicap Ramp
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NO SCALE

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

Approved: *Richard Blood* 3/8/91
Chief, Bureau of Highways

Approved: *Richard Blood* 3/8/91
Chief, Bureau of Engineering

Approved: *Richard Blood* 3/8/91
Chief, Bureau of Planning and Zoning

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GUTSCHICK LITTLE & WEBER, P.A.
ENGINEERS, PLANNERS, SURVEYORS
3909 NATIONAL DRIVE SUITE 250 BURTONSVILLE OFFICE PARK BURTONSVILLE, MD 20886
TELEPHONE (301) 421-4024

PREPARED FOR
Trafalgar House
Residential Maryland
8965 Guilford Road
Columbia, Maryland
21046
Phone (301) 621-0131

Sediment & Erosion Control Details, Paving Details
Willowood
Section 2 Area 2
First Election District
Howard County, Maryland

SCALE As Shown
ZONING R-3C
DATE Dec, 1990
TAX MAP No. 37
SHEET 5 of 6

GL.W. FILE No. 89-080
DATE Dec, 1990
TAX MAP No. 37
SHEET 5 of 6

1025

1-91-47

PERMANENT SEEDING NOTES

Apply to graded or cleared area not subject to immediate further disturbance where a permanent long-lived vegetative cover is desired.

Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding (unless previously loosened).

Soil Amendments: In lieu of soil test recommendations, use one of the following schedules

- 1. Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square feet) 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 acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq ft).
2. Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq ft) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil.

Seeding: For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000 sq ft) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 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 sod. Option (3) Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/c're well 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 redistributed 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 (unless 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 per acre of weeping lovegrass (.07 lbs/1000 sq ft). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal 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.

Approved Department of Public Works, Chief Land Development Data Division, Greenville W. Weiland, Chief, Bureau of Highways, Data, N. Reed, Chief, Bureau of Engineering, Data, Approved Department of Planning and Zoning, Chief, Division of Community, Planning and Land Development, Data

DEVELOPER'S/BUILDER'S CERTIFICATE

I, We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspection by HSCD.

Signature of Developer/Builder, Date 9-18-90

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

Howard Soil Conservation District, Date 1-30-91

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

U.S. Soil Conservation Service, Date 1-30-91

SEDIMENT CONTROL NOTES

1. A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (992-2437)

2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

3. Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes and perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.

4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.

5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51), sod (Sec. 54), temporary seedings (Sec. 50) and mulching (Sec. 52). Temporary stabilization, with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.

6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.

7. Site Analysis: Total Area of Site: 21.07 Acres, Area Disturbed: 4.95 Acres, Area to be roofed or paved: 2.57 Acres, Area to be vegetatively stabilized: 2.61 Acres, Total Cut 21,202 Cu. Yds., Total Fill 10,255 Cu. Yds., Off-Site waste/borrow area location Willowood Sect. 2 Area B

8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

9. Additional sediment control must be provided, if deemed necessary by the Howard County DPW Sediment Control Inspector.

10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.



Signature of Howard Soil Conservation District

STORM WATER MANAGEMENT POND NOTES

I. SITE PREPARATION:

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

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

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

II. EARTH FILL

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

B. 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 downstream portions of the embankment.

C. COMPACTION: The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired, or vibratory roller. Fill material shall contain sufficient moisture so that the required degree of compaction can be obtained with the equipment used. Where a minimum required density is specified, each layer of fill shall be compacted as necessary to obtain that density and is to be certified by the Engineer. It is recommended that the Core be constructed in 8" thick layers, each compacted to minimum of 95% of the maximum dry density determined by the standard moisture density relationship test (ASTM D-1557).

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

III. STRUCTURAL BACKFILL:

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

ENGINEER'S CERTIFICATE

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

Signature of Engineer, Date 9-18-90

IV. PIPE CONDUITS: (all pipes shall be circular in cross-section)

A. CORRUGATED METAL PIPE:

1. MATERIALS: (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specifications M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be placed with cold applied bituminous coating compound. Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings are commercially available: Maxon, Plasti-Cote, Blac-Klad, and Beth-Cu-Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

MATERIALS: (Aluminized Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274-791 with watertight coupling bands or flanges.

MATERIALS: (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Coupling bands, anti-seep collars, end section, etc. must be composed of the same material as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of Zinc Chromate Primer. Hot dip galvanized bolts may be used for connections. The PH of the surrounding soils shall be less than 9 and greater than 4.

2. CONNECTIONS: All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around where the pipe and riser are metal. Watertight coupling bands or flanges shall be used at all joints. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be 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 sides.

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.

B. REINFORCED CONCRETE PIPE:

1. MATERIALS: Reinforced concrete pipe shall have a rubber gasket joint and shall equal or exceed ASTM Specification C-561. An approved equivalent is AWWA Specification C-301.

2. BEDDING: All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its outside diameter with a minimum thickness of 3", or as shown on the drawings.

3. LAYING PIPE: Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe.

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

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

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

V. CONCRETE:

A. MATERIALS: 1. CEMENT - Normal Portland cement shall conform to latest ASTM Specification C-150.

2. WATER - The water used in concrete shall be clean, free from oil, acid, alkali, scales, organic matter or other objectionable substances.

V. A. (continued)

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

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

5. REINFORCING STEEL - The reinforcing steel shall be deformed bars of intermediate grade billet steel or rail steel conforming to ASTM Specification A-615.

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

C. MIXING - The concrete ingredients shall be mixed in batch mixers until the mixture is homogeneous and of uniform consistency. The mixing of each batch shall continue for not less than one and one-half minutes after all the ingredients, except the full amount of water, are in the mixer. The minimum mixing time is predicted on proper control of the speed of rotation of the mixture and of the introduction of the materials including water, into the mixer. Water shall be added prior to, during, and following the mixer-changing operations. Excessive overmixing requiring the addition of water to preserve concrete consistency shall not be permitted. Truck mixing will be allowed provided that the use of this method shall cause no violation of any applicable provisions of the specifications given here.

D. FORMS - The forms shall have sufficient strength and rigidity to hold the concrete and to withstand the necessary pressure, tamping and vibration without deflection from the prescribed lines. They should be mortar-tight and constructed so they can be removed without hammering or prying against the concrete. The inside of the forms shall be oiled with a non-staining mineral oil or thoroughly wetted before concrete is placed. Forms may be removed 24 hours after the placement of concrete. All wire ties and other devices used shall be recessed from the surface of the concrete.

E. REINFORCING STEEL - All reinforcing material shall be free of dirt, rust, scale, oil, paint or any other coatings. The steel shall be accurately placed and securely tied and blocked into position so that no movement of the steel will occur during placement of concrete.

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

G. FINISHING - Defective concrete, honey combed areas, voids left by removal of tie rods, ridges on all concrete surfaces permanently exposed to view or exposed to water on the finished structure, shall be repaired immediately after the removal of forms. All voids shall be reamed and completely filled with dry patching mortar.

H. PROTECTION AND CURING - Exposed surfaces of concrete shall be protected from the direct rays of the sun for at least three days. All concrete shall be kept continuously moist for at least ten days after being placed. Moisture may be applied by spraying or sprinkling as necessary to prevent the concrete from drying. Concrete shall not be exposed to freezing during the curing period. Curing compound may also be used.

I. PLACING TEMPERATURE - Concrete may not be placed at temperature below 37°F with temperature falling, or 34°F with the temperature rising.

VI. STABILIZATION

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

VII. EROSION AND SEDIMENT CONTROL

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.

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Table with 10 columns: DES., DRN., CHK., DATE, REVISION, BY, APPR.

PREPARED FOR: Trafalgar House Residential Maryland 8945 Guilford Road Columbia Maryland 21046 Phone: (301) 621-8151

S.W.M. Pond Notes; Sediment Control; Permanent /Temp. Seeding Notes Willowood Section 2 Area 2 First Election District

Table with 4 columns: SCALE, ZONING, DATE, SHEET. SCALE: None, ZONING: R-5C, DATE: December, 1990, SHEET: 0 of 0