LINDSAY'S CHOICE

ROADS AND STORM DRAINS

GRADING AND SEDIMENT CONTROL NOTES

1.) A minimum of 24 hours notice must be given to 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 redisturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
4.) All sediment traps/basins shown must be fenced and warning signs posted around thier perimeter in accordance with Vol. I, 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 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.
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:	5.69 acres ±
Area Disturbed:	4.22 acres ±
Area to be roofed or paved:	0.96 acres ±
Area to be vegetatively stabilized:	3.26 acres ±
Total Cut:	5,750 cu. yds.
Total Fill:	5,010 cu. yds.
Offsite waste / borrow area location:	

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 controls 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.

ENGINEER'S CERTIFICATION

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.

Danby G. Boyd, PE. # 8640 — 8/10/88 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.

U.S. Soil Conservation Service — 8/18/88 Date

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

Howard Soil Conservation District — 8/18/88 Date

APPROVED: OFFICE OF PLANNING AND ZONING

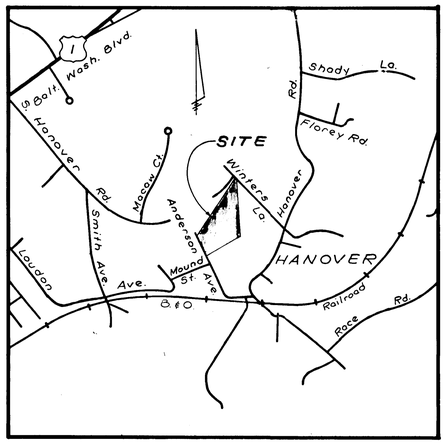
CHIEF DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — 9-8-88 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Land-Development Division — 9/1/88 Date

Chief, Bureau of Highways — 9/1/88 Date

Chief, Bureau of Engineering — 9-2-88 Date



VICINITY MAP

SCALE: 1" = 1000'

DEVELOPER'S CERTIFICATION

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 authorized periodic on-site inspections by the Howard Soil Conservation District.

Thomas A. Keller, President — 12/3/87 Date
Hanover Development Co.

GENERAL NOTES

1. All construction shall be in accordance with the Howard County Department of Public Works "Standard specifications & details for construction" unless otherwise noted.
2. The existing utilities and obstructions shown are from the best available records and shall be verified by the contractor prior to construction. Necessary precautions shall be taken by the contractor to protect existing services and mains and any damage to them shall be repaired immediately at his own expense.
3. It shall be distinctly understood that failure to mention specifically any work which would normally be required to complete the project shall not relieve the contractor of his responsibility to complete such work.
4. The contractor shall notify:
   A.) The Baltimore Gas and Electric Company: (301) 234-5601
   B.) The Miss Utilities Telephone Company: (301) 559-0100
   C. The Howard County Department of Public Works: (301) 992-2400
   Five days before starting work shown on these drawings.
5. The property and topographic information shown hereon is based on surveys performed by Paul K. Miller and Associates June, 1987
6. Pipe elevations refer to inverts unless otherwise noted.
7. All paving fillet radii are 25' unless otherwise noted.
8. Surface courses shall be extended, feathered and flared, where necessary, to meet existing paving.
9. Vertical and horizontal control based on Howard County traverse stations:
   a. 2247002 - N454,994.546, E878,209.658, Elev. = 89.819
   b. 2247005 - N454,872.690, E879,600.222, Elev. = 49.478
10. The contractor shall note that in case of a discrepancy between the scaled and the figured dimensions shown on these plans, the figured dimensions shall govern.
11. The user is responsible to verify all information shown on these plans.
12. All manhole tops shall be set to proper grade and cross-section.
13. All traffic control devices shall be installed in compliance with the manual on uniform Traffic Control Devices for Streets and Highways, Current Edition.
14. All available information indicates that the Stormwater Detention Pond is a class "A" structure; where in the event of a failure, non-residential buildings, agricultural land, floodplains, or county roads may be damaged.

Plans for Public Water and Sewage have been approved by the Dept. of Health and Mental Hygiene and these facilities will be available to all lots offered for sale.

Signature of Owner — 12/3/87 Date

BOYD B. DOWGIALLO, P.A.
405 Headquarters Drive, Suites 7 & 8
Millersville, Maryland 21108
(301) 987-2500

DES: J.J.N.
DRN: D.D.
CHK: D.G.B.
DATE: 7-22-87

BY	NO.	REVISION	DATE

OWNER / DEVELOPER
HANOVER DEVELOPMENT CO.
5136 WESTLAND BLVD.
BALTIMORE, MARYLAND 21227

600' SCALE MAP NO. _____ BLOCK NO. _____

ROADS AND STORM DRAINS
LINDSAY'S CHOICE
First District Lots 1-14 Howard Co. Md.

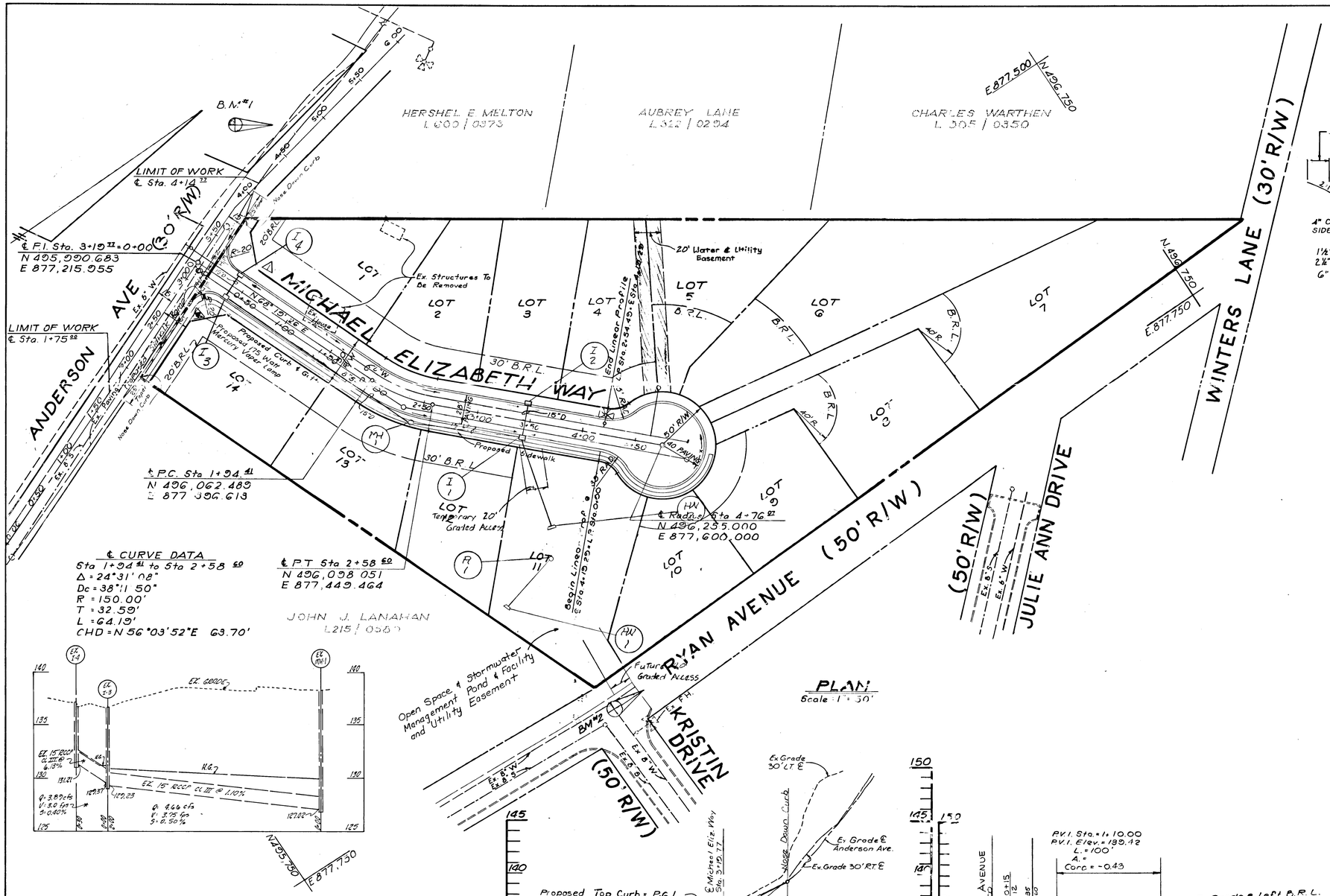
SCALE AS SHOWN

SHEET 1 OF 7

F-88-16

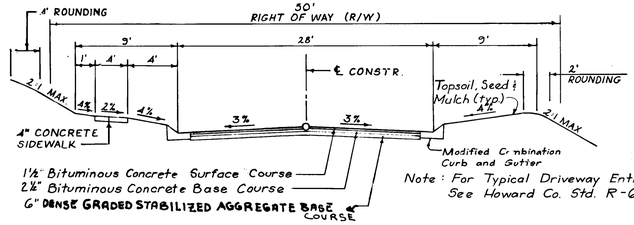
1379

6915 BRUNING



PLAN
Scale 1" = 50'

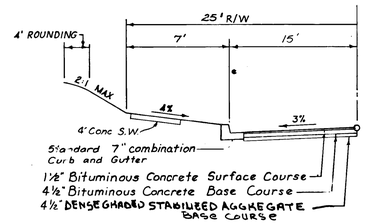
CUL-DE-SAC STREET 25 mph DESIGN SPEED



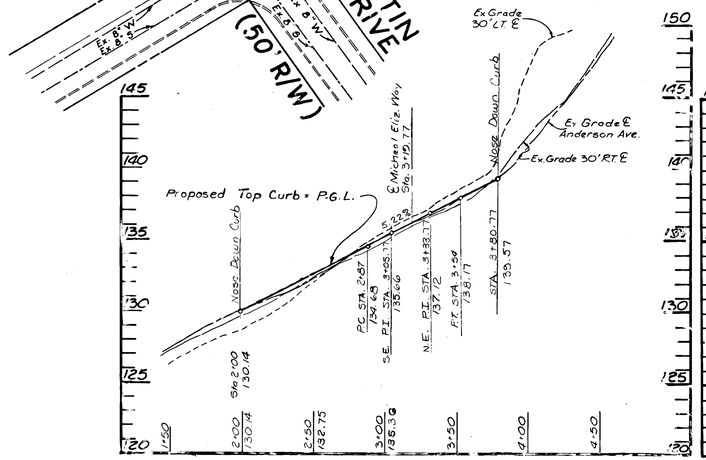
Note: For Typical Driveway Entrance See Howard Co. Std. R-6.03.

TYPICAL SECTION
MICHAEL ELIZABETH WAY
Not to Scale

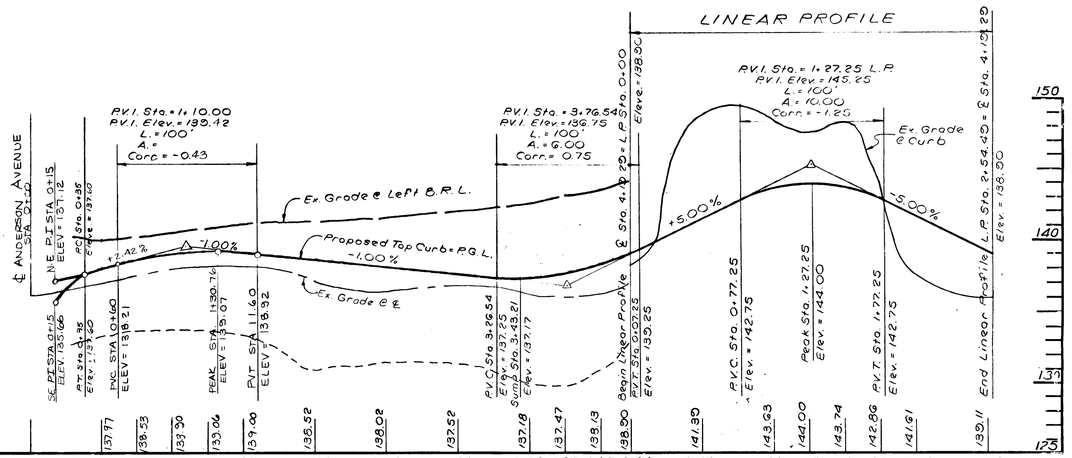
LOCAL ROAD 30 M.P.H. DESIGN SPEED



TYPICAL HALF SECTION
ANDERSON AVENUE
Not to Scale



PROFILE ANDERSON AVE.
Scale: Horiz 1"=50' Vert 1"=5'



PROFILE MICHAEL ELIZABETH WAY
Scale: Horiz 1"=50' Vert 1"=5'

BENCH MARKS			
No	North	East	Elev.
1	496,122.36	877,150.31	149.12
2	496,109.73	877,778.26	130.47

APPROVED
OFFICE OF PLANNING AND ZONING
CHIEF DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 5-8-88

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Land Development Division — Date 9/1/88
Chief, Bureau of Highways — Date 9/1/88
Chief, Bureau of Engineering — Date 9-2-88

BOYD B DOWGIALLO, P.A.
405 Headquarters Drive, Suites 7 & 8
Millersville, Maryland 21108
(301) 987-2500

DES: J.J.N.
DRN: A.W.S.
CHK: D.G.B.
DATE: 7-28-87

NO.	REVISION	DATE	BY	APPROVED
1	REVISED STORM DRAIN LOCATION	4-7-97	AWARD	

OWNER / DEVELOPER
HANOVER DEVELOPMENT CO.
5136 WESTLAND BLVD.
BALTIMORE, MARYLAND 21227

600' SCALE MAP NO. _____ BLOCK NO. _____

ROAD PLAN AND PROFILE
LINDSAY'S CHOICE
First District — Lots 1-14 — Howard Co. Md.

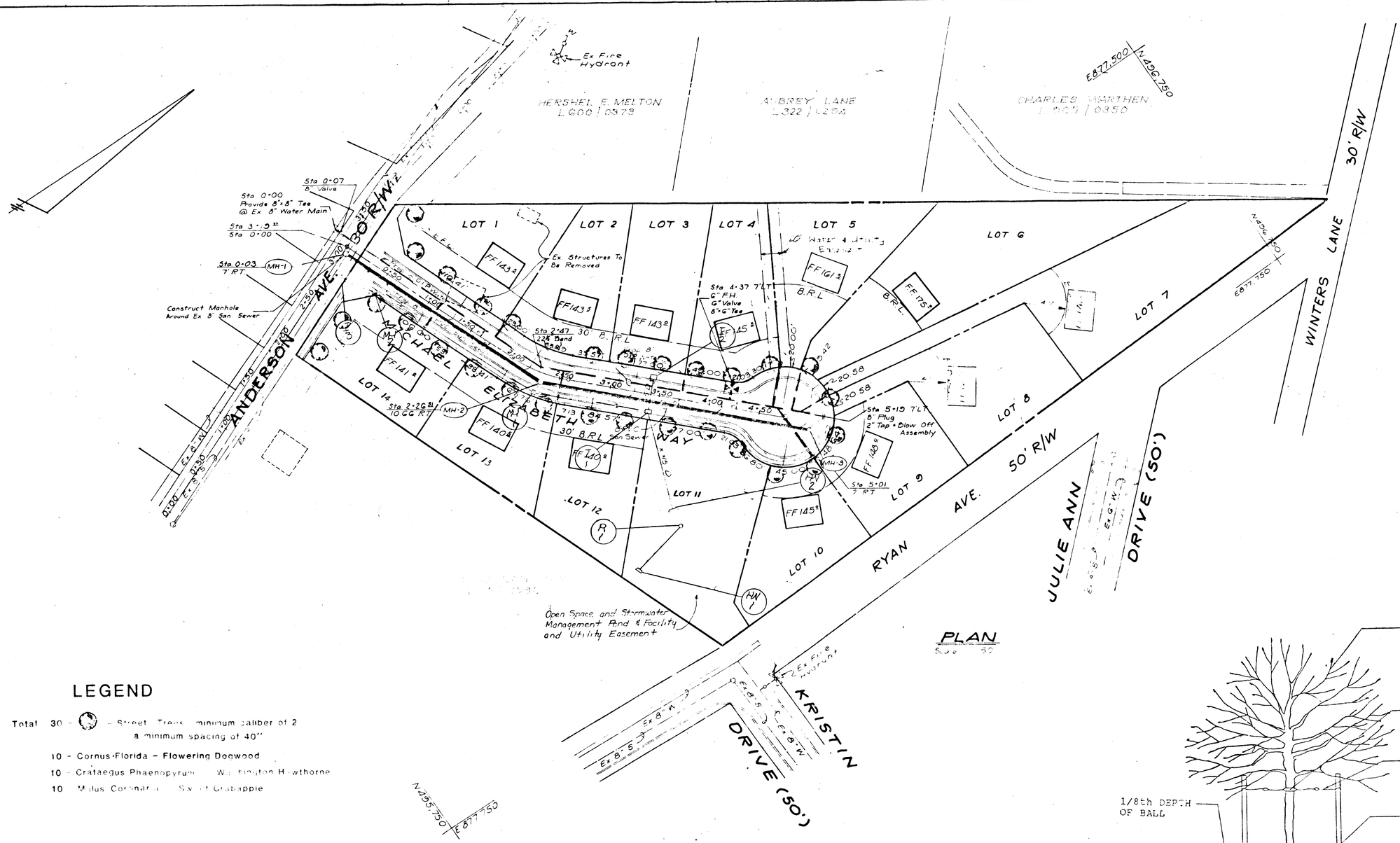
SCALE AS SHOWN

SHEET 2 OF 7

F-88-16

379

69150 BRUNING



PLAN

Scale 1" = 50'

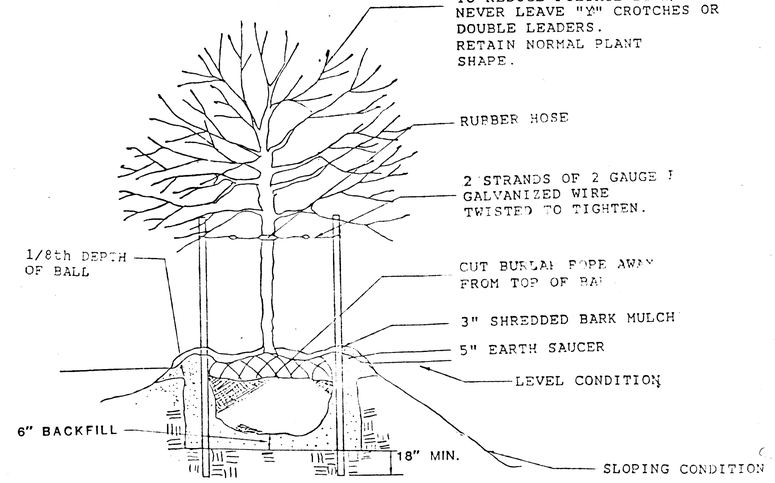
LEGEND

Total 30 - ◯ - Street Trees minimum caliber of 2 & minimum spacing of 40'

10 - Cornus-Florida - Flowering Dogwood

10 - Crataegus Phaenopyrum - Washington Hawthorne

10 - Malus Coronaria - Sweet Crabapple



TREES 3" CALIPER AND UNDER

NOT TO SCALE

APPROVED: Howard County Office of Planning and Zoning

Chief, Division of Community Planning and Land Development — Date 8-4-88

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Land Development Division — Date 9/1/88

Director — Date 9/1/88

Bureau of Engineering — Date 9-2-88

BOYD & DOWGIALLO, P.A.
405 Headquarters Drive, Suites 7 & 8
Millersville, Maryland 21108
(301) 987-2500

DES:
DRN:
CHK:
DATE

BY	NO.	REVISION	DATE

OWNER / DEVELOPER
HANOVER DEVELOPMENT CO.
5136 WESTLAND BLVD.
BALTIMORE, MARYLAND 21227

600' SCALE MAP NO. _____ BLOCK NO. _____

STREET PLANTING PLAN
LINDSAY'S CHOICE

First District — Lots 1 - 14 — Howard Co. Md.

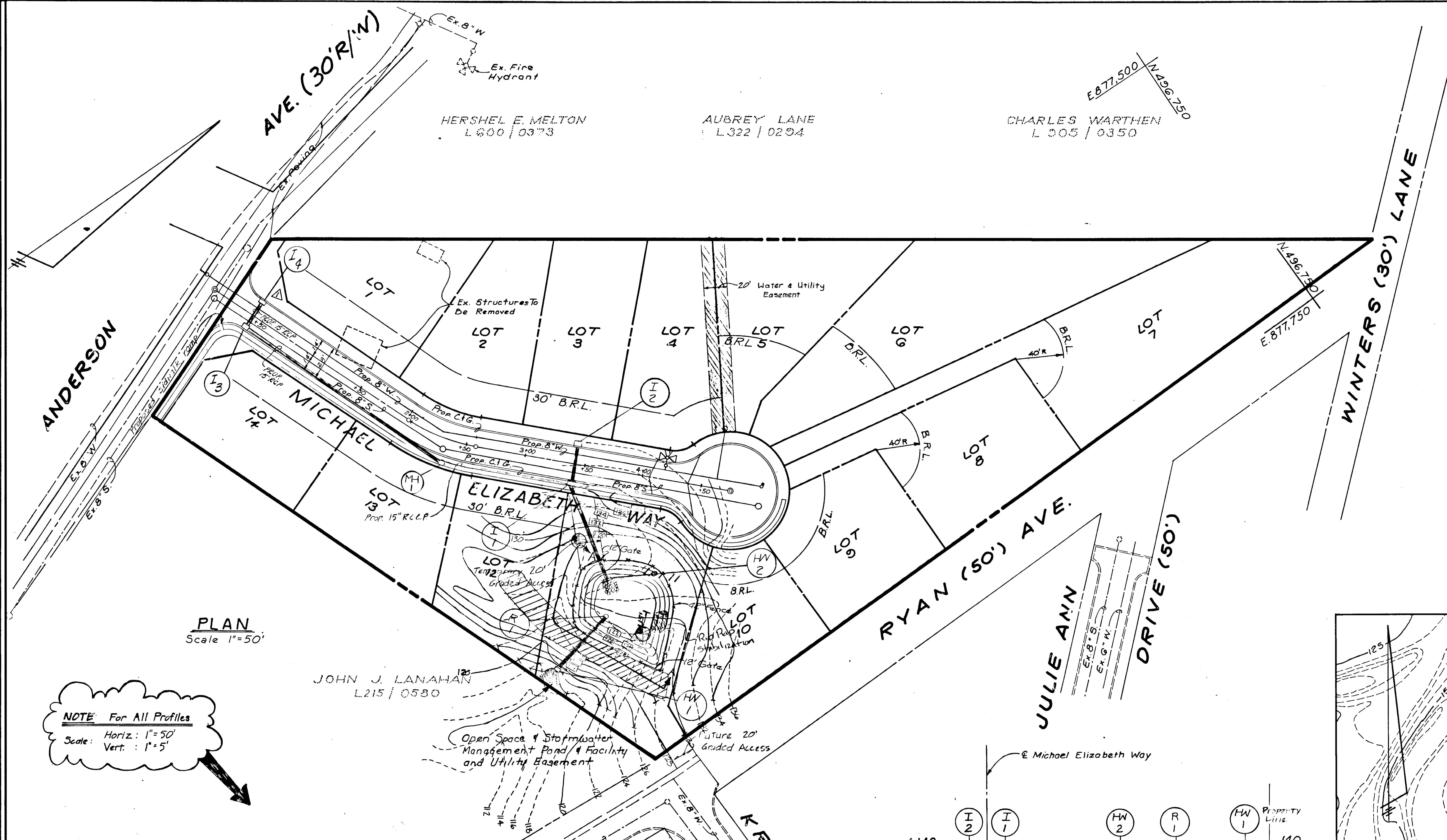
SCALE AS SHOWN

SHEET 3 OF 3

F-88-16

JOB # 330

1220



PLAN
Scale 1"=50'

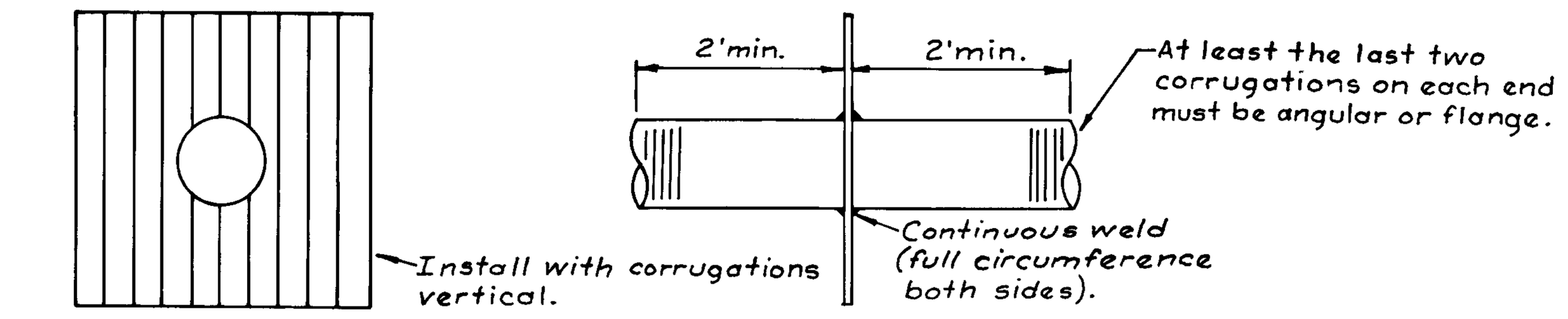
NOTE For All Profiles
Scale: Horiz.: 1"=50'
Vert.: 1"=5'

APPROVED
OFFICE OF PLANNING AND ZONING
[signature] 9-8-88
CHIEF DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE

NO.	TYPE	INVERT IN	INVERT OUT	℄ TOP ELEV	℄ STATIONS	OFFSET
HW-2	A		120.00		3+80	90' R
I-1	A-5	126.29 & 126.89	126.31	137.29 T.C.	3+43.21	17.00 R
I-2	A-5		127.47	137.34 T.C.	3+43.21	17.00' L
HW-1	A		117.84	122.34	3+56	173.00' R
R-1		120.00	120.00	126.30	3+91	122' R
MH-1	STANDARD DEPTH MANHOLE	127.02	126.95	138.27	2+35	20.00' R
I-3	DBL. 'S' COMB.	129.37	129.23	137.00	0+38	14' R
△ I-4	DBL. 'S' COMB.		131.21	137.21	0+38	14' L

STRUCTURE SCHEDULE (above)

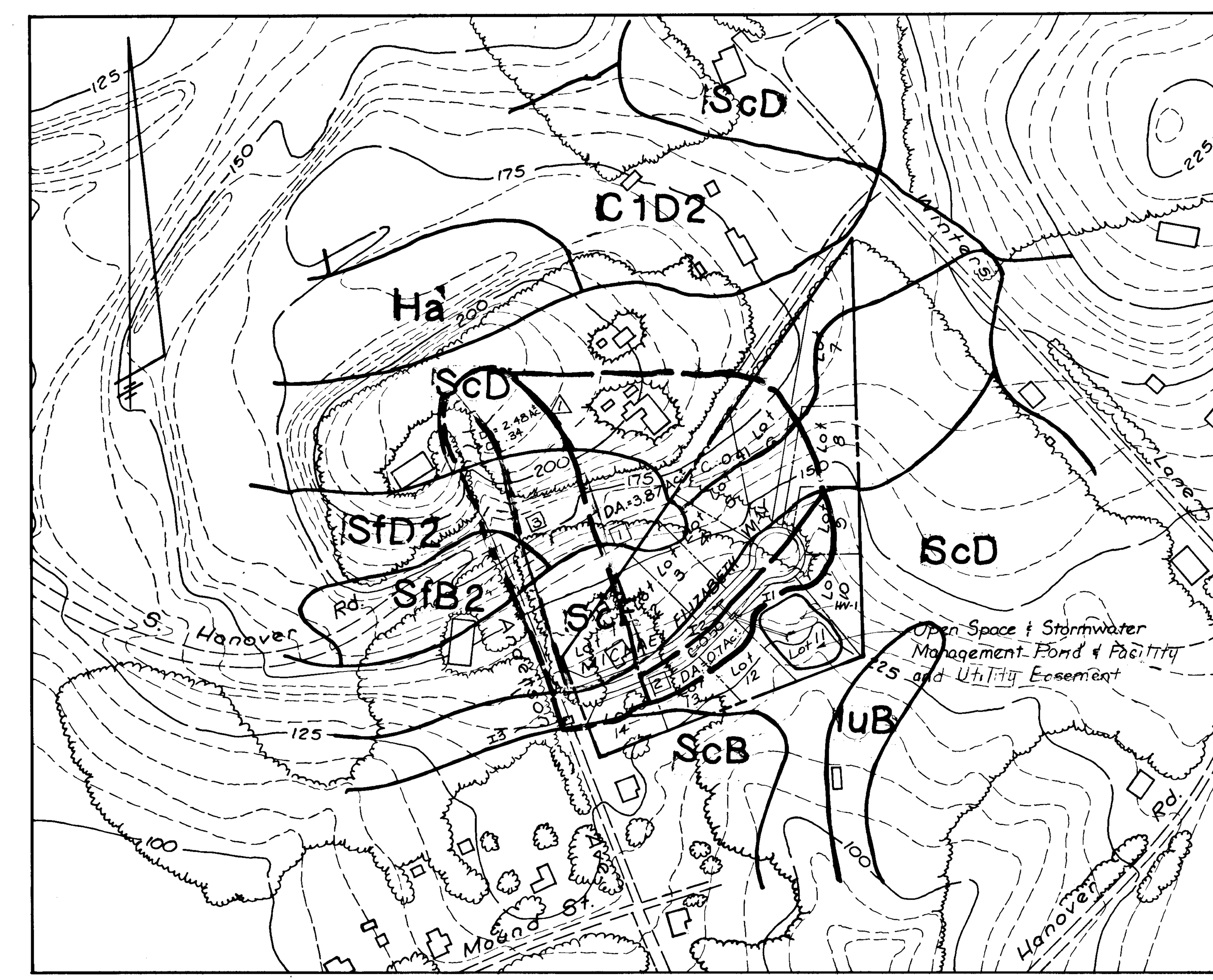
TYPICAL ANTI-SEEP COLLARS



Not to Scale

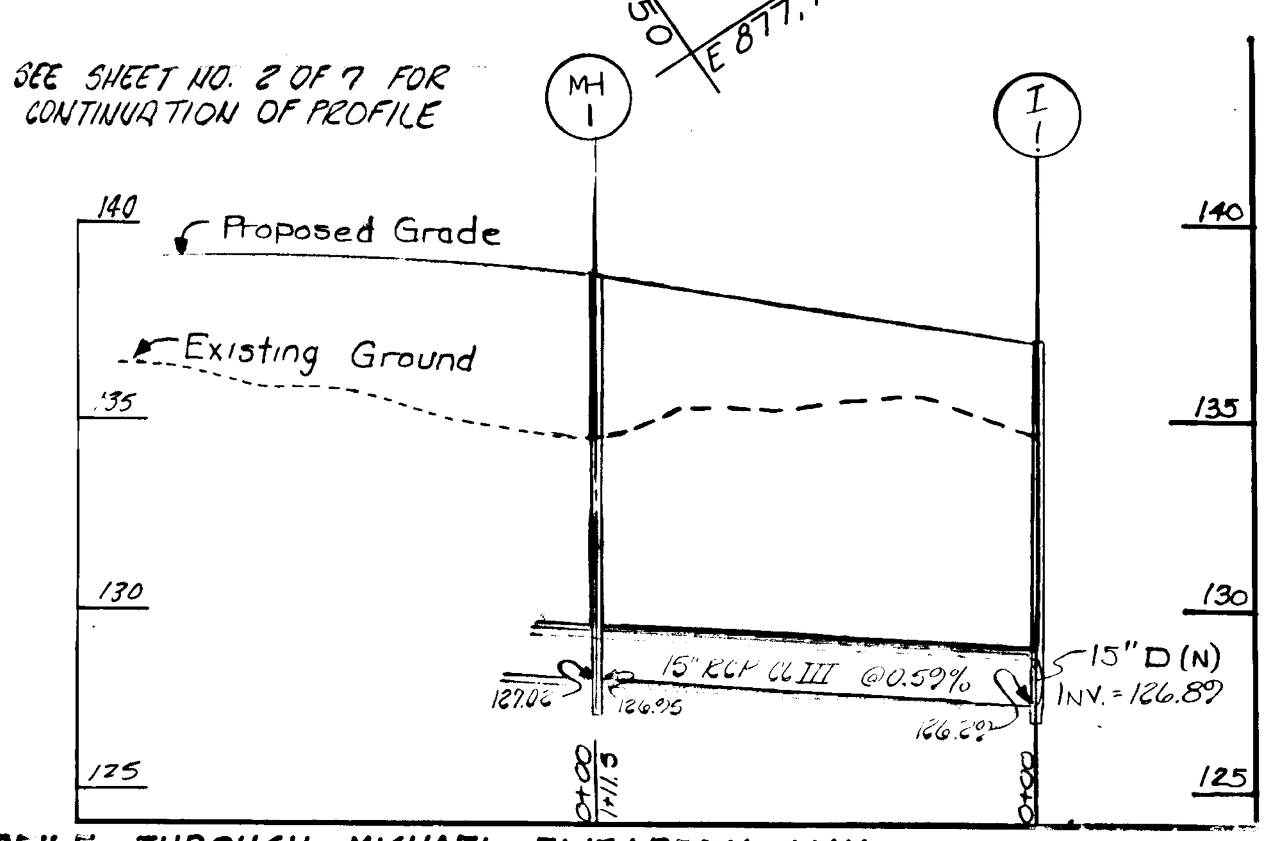
SOIL LEGEND

ScB = Sandy and Clayey
ScD = Sandy and Clayey
ScE = Sandy and Clayey
SfD2 = Sassafras gravelly sandy loam
ClD2 = Chillum gravelly loam
Ha = Hatboro silt loam
SfB2 = Sassafras gravelly sandy loam
IuB = Iuka loam, local alluvium

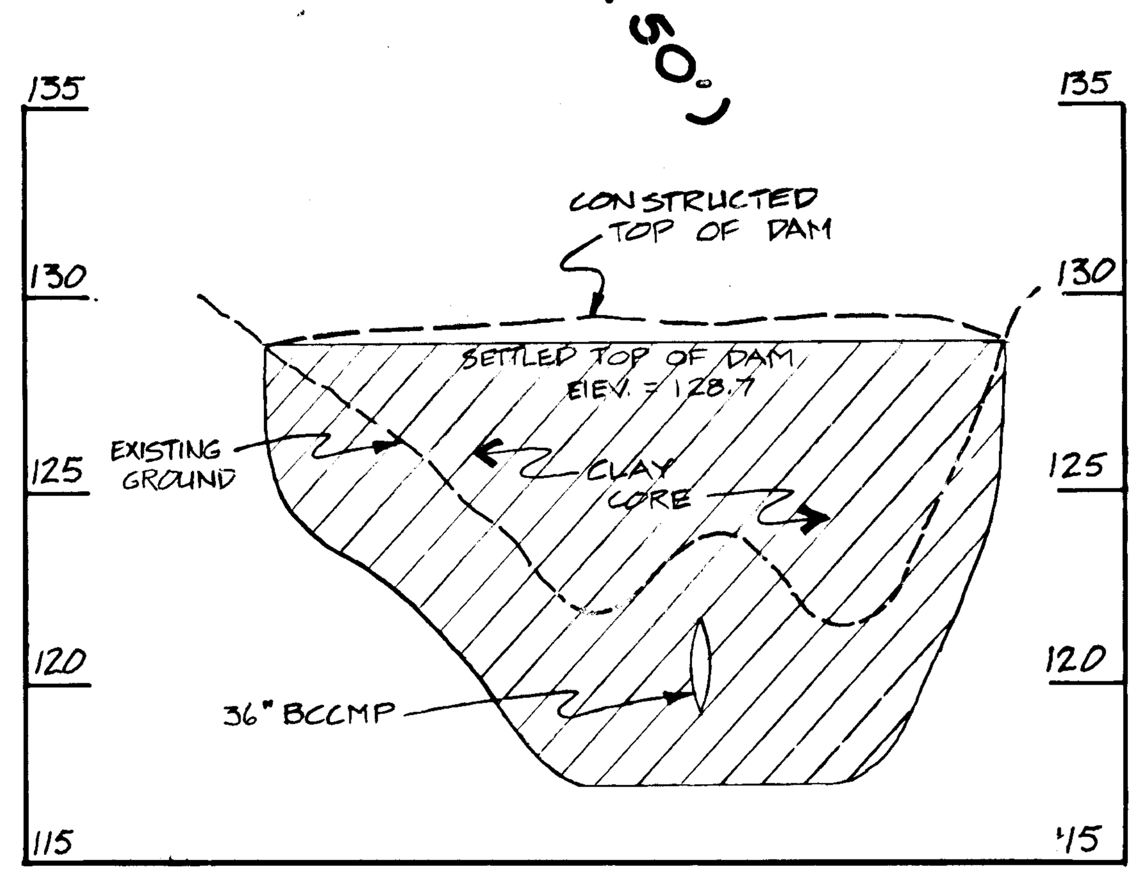


STORM DRAIN AREA MAP
Scale: 1" = 200'

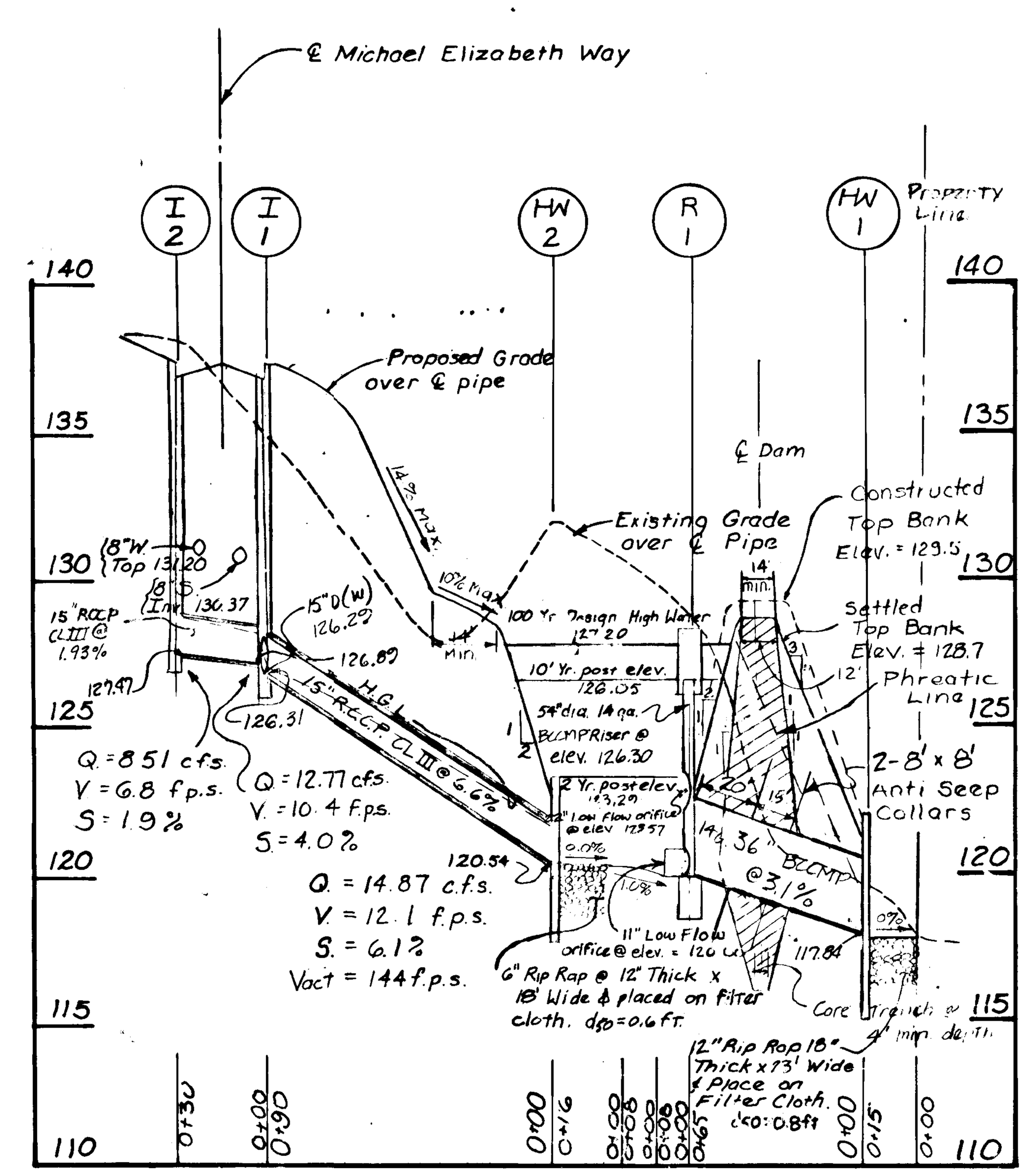
SEE SHEET NO. 2 OF 7 FOR CONTINUATION OF PROFILE



STORM DRAIN PROFILE THROUGH MICHAEL ELIZABETH WAY



SECTION A-A
PROFILE ALONG CENTERLINE OF DAM



STORM DRAIN PROFILE THROUGH SWM POND

Note. 11" low flow orifice to be plugged while riser used as dewatering device for temporary sediment basin. 22" low flow to be installed after sediment basin is converted to swm pond.

NO.	REVISION	DATE	BY	APPROVED
△	REVISED STORM DRAIN LOCATION, STRUCTURE SCHEDULE & S.D. AREA MAP	4-7-97	ANAREZ	

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[signature] 9/1/88
Chief, Land Development Division — Date
[signature] 9/1/88
Chief, Bureau of Highways — Date
[signature] 9-2-88
Chief, Bureau of Engineering — Date

BOYD & DOWGIALLO, P.A.
405 Headquarters Drive, Suites 7 & 8
Millersville, Maryland 21108
(301) 987-2500

DES: J.J.N.
DRN: R.W.H
CHK: D.G.B
DATE: 7-28-87

BY	NO.	REVISION	DATE

600' SCALE MAP NO. ______ BLOCK NO. ______

OWNER / DEVELOPER
HANOVER DEVELOPMENT CO.
5136 WESTLAND BLVD.
BALTIMORE, MARYLAND 21227

STORM DRAIN PLAN AND PROFILE
LINDSAY'S CHOICE
First District — Lots 1-14 — Howard Co. Md.

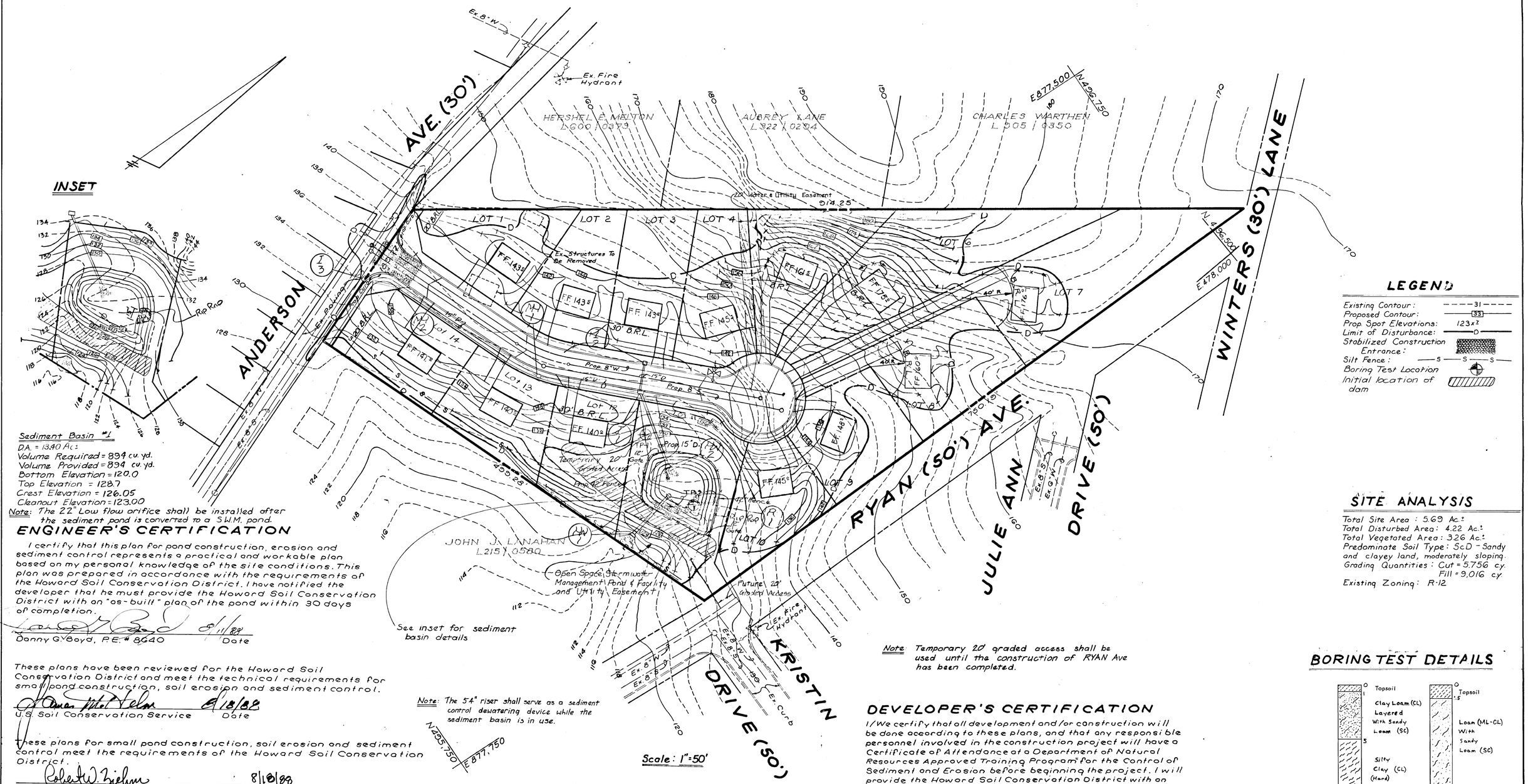
SCALE AS SHOWN

SHEET 4 OF 7

F-88-16

1329

BRUNING 691



LEGEND

- Existing Contour: 31
- Proposed Contour: 33
- Prop. Spot Elevations: 123x2
- Limit of Disturbance: D
- Stabilized Construction Entrance:
- Silt Fence: S S S
- Boring Test Location
- Initial location of dam

Sediment Basin #1
D.A. = 13.40 Ac.±
Volume Required = 894 cu. yd.
Volume Provided = 894 cu. yd.
Bottom Elevation = 120.0
Top Elevation = 128.7
Crest Elevation = 126.05
Cleanout Elevation = 123.00

Note: The 2.2" Low flow orifice shall be installed after the sediment pond is converted to a S.W.M. pond.

Note: The 5.4" riser shall serve as a sediment control dewatering device while the sediment basin is in use.

Note: Temporary 20' graded access shall be used until the construction of RYAN Ave has been completed.

SITE ANALYSIS

Total Site Area : 5.69 Ac.±
Total Disturbed Area: 4.22 Ac.±
Total Vegetated Area: 3.26 Ac.±
Predominate Soil Type: ScD - Sandy and clayey land, moderately sloping
Grading Quantities: Cut = 5,756 cy.
Fill = 9,016 cy.
Existing Zoning: R-12

ENGINEER'S CERTIFICATION

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.

Danny G. Boyd, P.E. # 8640 — 9/1/88 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.

U.S. Soil Conservation Service — 8/18/88 Date

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

Howard Soil Conservation District — 8/18/88 Date

DEVELOPER'S CERTIFICATION

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 authorized periodic on-site inspections by the Howard Soil Conservation District.

Thomas A. Keller, President, Hanover Development Co. — 8/11/88 Date

BORING TEST DETAILS

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Land Development Division — 9/1/88 Date

Chief, Bureau of Highways — 9/1/88 Date

Chief, Bureau of Engineering — 9-2-88 Date

APPROVED: OFFICE OF PLANNING AND ZONING

CHIEF DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 9-2-88

BOYD & DOWGIALLO, P.A.
405 Headquarters Drive, Suites 7 & 8
Millersville, Maryland 21108
(301) 987-2500

DES: JJN.
DRN: M.L.M.
CHK: D.G.B.
DATE: 7-28-87

BY	NO.	REVISION	DATE

OWNER / DEVELOPER
HANOVER DEVELOPMENT CO
5136 WESTLAND BLVD.
BALTIMORE, MARYLAND 21227

600' SCALE MAP NO. _____ BLOCK NO. _____

GRADING AND SEDIMENT CONTROL
LINDSAY'S CHOICE
First District — Lots 1-14 — Howard Co Md.

SCALE AS SHOWN

SHEET 5 OF 7

F-88-16

1329

BRUNING 69150

PERMANENT SEEDING NOTES

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

Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.

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

1) Preferred — Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square 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 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/acre well anchored straw.

Mulching — Apply 1½ 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 60 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 2½ 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 1½ 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.

SCHEDULE OF PHASING AND DEVELOPMENT

This is to cover the construction of Lindsay's Choice Roads, Utilities, and Lot Grading.

PHASE I - INITIALIZATION - Obtain grading permit. Construct Stabilized Construction Entrance (S.C.E.) as shown on these plans. Clear and grade as necessary for sediment control measures. Install Silt Fence and Temporary Sediment Basin as shown on these plans. (1 week)

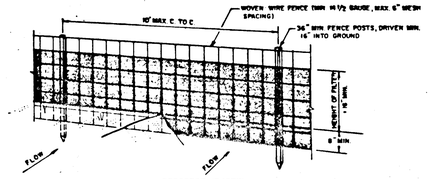
PHASE II - CLEARING AND GRADING - Clear and grade road to subgrade. (1 month)

PHASE III - CONSTRUCTION - Construct houses and driveways simultaneously with sewer lines, storm drains, and water lines. Construct curb and gutter. Pave roadway. (24 months)

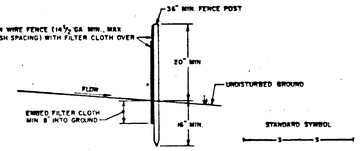
PHASE IV - SITE STABILIZATION - Final grade and stabilize all disturbed areas in accordance with these plans. Remove all sediment controls with the approval of the Howard County Grading Inspector. Convert Temporary Sediment Basin to permanent Stormwater Detention Pond, which will include: regrading of the pond, and proper disposal of all sediments within the basin, construction of the rip-rap apron within the basin, restabilization of all areas within the basin, and the addition of the low flow orifices and trash rack to the riser structure. Final stabilize all affected areas. (1 week)

NOTE: Houses to be constructed under an improved site development plan

SILT FENCE



PERSPECTIVE VIEW



SECTION

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

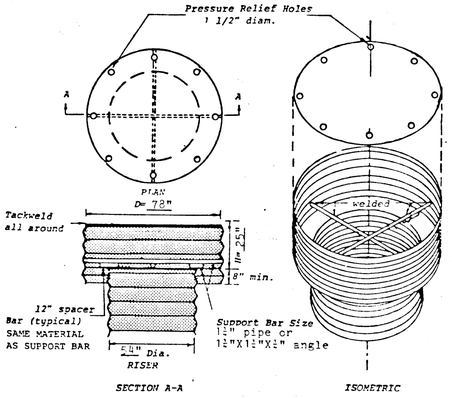
1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

POSTS: STEEL EITHER T OR U TYPE OR 2" HARDWOOD

FENCE: WOVEN WIRE, 14 GA. 6" MAX. MESH OPENING

FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL

PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.



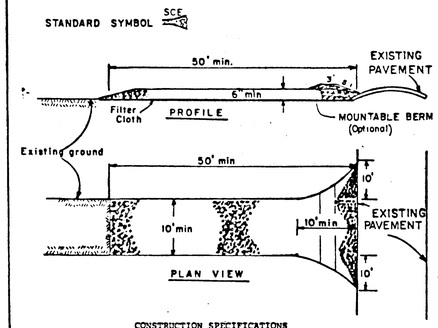
Top is 10 gage corrugated metal or 1/8" steel plate. Pressure relief holes may be ommitted, if ends of corrugations are left fully open when corrugated top is welded to cylinder.

Cylinder is 12 gage corrugated metal pipe or fabricated from 1/8" steel plate.

Notes:
1) The cylinder must be firmly fastened to the top of the riser.
2) Support bars are welded to the top of the riser or attached by straps bolted to top of riser.

CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE
(not to scale)

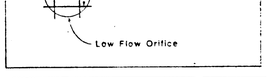
STABILIZED CONSTRUCTION ENTRANCE
not to scale



CONSTRUCTION SPECIFICATIONS

1. Stone Size - Use 2" stone, or reclaimed or recycled concrete equivalent.
2. Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
3. Thickness - Not less than six (6) inches.
4. Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
5. Filter Cloth - Will be placed over the entire area prior to placing of stone. Filter will not be required on a single family residence lot.
6. Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
7. Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
8. Washing - Wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
9. Periodic inspection and needed maintenance shall be provided after each rain.

TYPICAL TRASH RACK DETAIL
Not to scale

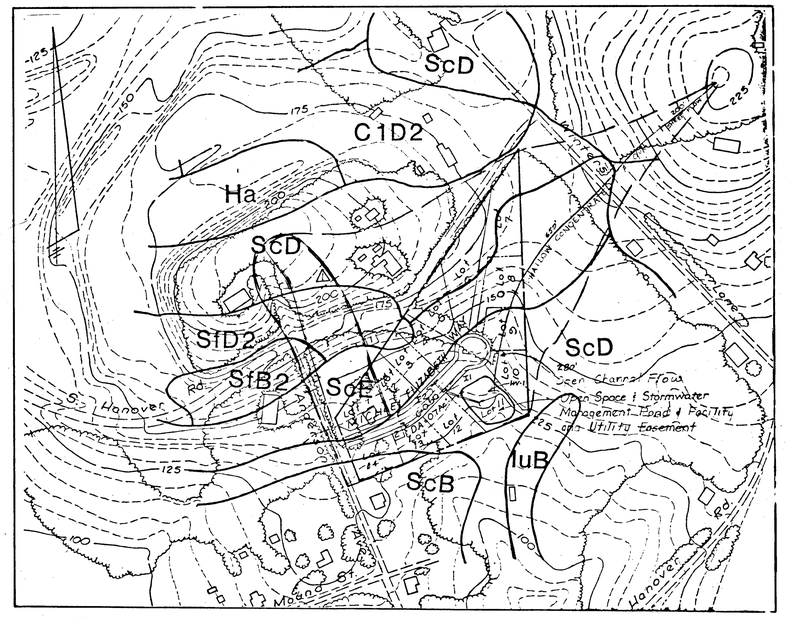


SEDIMENT CONTROL NOTES

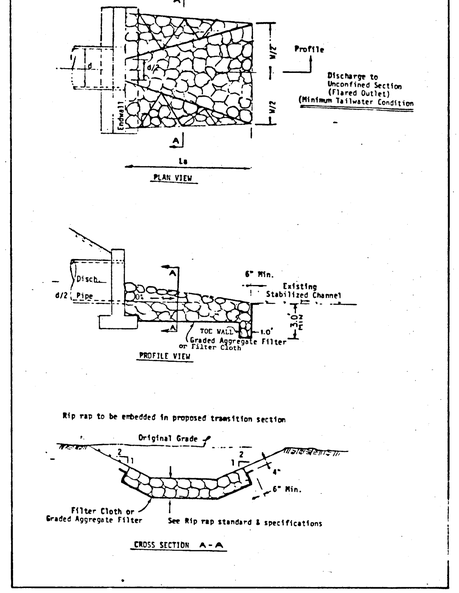
1) A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (992-2437)
2) All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
3) Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
4) All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chaper 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 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.
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:

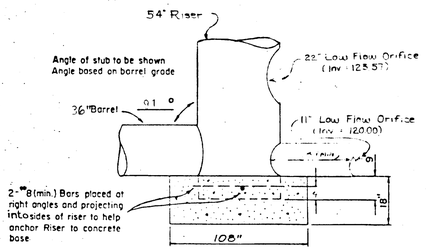
Total Area of Site	5.69	Acres
Area Disturbed	4.6	Acres
Area to be roofed or paved	2.9	Acres
Area to be vegetatively stabilized	1.6	Acres
Total Cut	5750	Cu. yds
Total Fill	3010	Cu. yds
Offsite waste/borrow area location	TO BE DETERMINED BY CONTRACTOR	

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 controls 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.



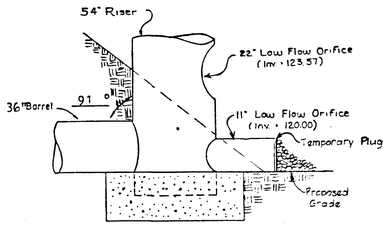
STORM WATER MANAGEMENT DRAINAGE AREA MAP
Scale 1"= 200'





RISER BASE DETAIL

NOTES:
1. The concrete base shall be poured in such a manner to insure that the concrete fills the bottom of the riser to the invert of the outlet pipe to prevent the riser from breaking away from the base.
2. With aluminum or aluminized pipe, the embedded section must be painted with zinc chromate or equivalent.
3. Riser base may be sized as computed using floatation with a factor of safety of 1.2.



DETAIL FOR PLUG
(AT 11" LOW FLOW ORIFICE)

Note: 11" Low flow orifice shall be plugged using:
- 1 Layer of ½" hardware cloth and filter cloth to be overlapped and bonded to low flow orifice.
- 1 Layer of hand placed riprap to cover orifice.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Land Development Division — Date 9/1/88

Chief, Bureau of Highways — Date 9/1/88

Chief, Bureau of Engineering — Date 9-2-88

APPROVED: OFFICE OF PLANNING AND ZONING

CHIEF DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 9-2-88

BOYD & DOWGIALLO, P.A.
405 Headquarters Drive, Suites 7 & 8
Millersville, Maryland 21108
(301) 987-2500

DES: J.J.N.
DRN: R.W.H.
CHK: D.G.B.
DATE: 7-28-87

BY	NO.	REVISION	DATE
DJD/RSK	1	REVISED DRAINAGE AREA MAP	4-9-91

OWNER / DEVELOPER
HANOVER DEVELOPMENT CO.
5136 WESTLAND BLVD
BALTIMORE, MARYLAND 21227

600' SCALE MAP NO. _____ BLOCK NO. _____

GRADING AND SEDIMENT CONTROL
LINDSAY'S CHOICE
First District Lots 1-14 Howard Co. Md.

SCALE AS SHOWN

SHEET 6 OF 7

F-88-16

379

BRUNING 69150

SOIL CONSERVATION SERVICE
MARYLAND
CONSTRUCTION SPECIFICATIONS
FOR
PONDS

These specifications are appropriate to ponds within the scope of the Standard for practice 378.

I. SITE PREPARATION

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

Areas to be covered by the 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 and stumps shall be cut approximately level with the ground surface.

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

Material

The fill material shall be taken from approved designated borrow area or areas. It shall be free of roots, stumps, wood, rubbish, oversize stones, frozer 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.

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.

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 such 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.

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 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 a 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.

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 Specification M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced 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: Nexon, 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-274-79I 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 sections, 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 when 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 the 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-361. 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 as shown on the drawings.

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

V. CONCRETE

1. Materials

   a. Cement - Normal Portland cement shall conform to the latest ASTM Specification C-150.

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

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

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

   e. Reinforcing Steel - The reinforcing steel shall be deformed bars of intermediate grade billet steel or rail steel conforming to ASTM Specification A-615.

2. 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. Gallons of water per 94 pound bag of cement. The proportion of materials for the trial mix shall be 1:2:3-1/2. The combination of aggregates may be adjusted to produce a plastic and workable mix that will not produce harshness in placing or honeycombing in the structure.

3. 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 mixer and of the introduction of the materials, including water, into the mixer. Water shall be added prior to, during, and following the mixer-charging operations. Excessive overmixing requiring the addition of water to preserve the required 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.

4. 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 shall be mortar-tight and constructed so that they can be removed without hammering or prying against the concrete.

   The inside of 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.

5. 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.

6. Consolidating - 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.

7. Finishing - Defective concrete, honeycombed areas, voids left by the 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.

8. Protection and Curing - Exposed surfaces of concrete shall be protected from the direct rays of the sun for at least the first three (3) days. All concrete shall be kept continuously moist for at least ten (10) 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 compunds may also be used.

9. Placing Temperature - Concrete may not be placed at temperatures below 37o F with the temperature falling, or 34o with the temperature risingg.

VI. STABILIZATION

All borrow areas shall be graded to provide proper drainage and left in a sightly 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 locall laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.

1379

APPROVED
OFFICE OF PLANNING AND ZONING

CHIEF DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 9-6-88

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Land Development Division — Date 9/1/88

Chief, Bureau of Highways — Date 9/1/88

Chief, Bureau of Engineering — Date 9-2-88

BOYD & DOWGIALLO, P.A.
405 Headquarters Drive, Suites 7 & 8
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(301) 987-2500

DES:				
DRN:				
CHK:				
DATE:	BY	NO.	REVISION	DATE

OWNER / DEVELOPER
HANOVER DEVELOPMENT CO.
5136 WESTLAND BLVD.
BALTIMORE, MARYLAND 21227

500' SCALE MAP NO. _____ BLOCK NO. _____

GRADING AND SEDIMENT CONTROL
LINDSAY'S CHOICE
First District Lots 1-14 Howard Co. Md.

SCALE AS SHOWN

SHEET 7 OF 7

F-88-76

69150 BRUNING