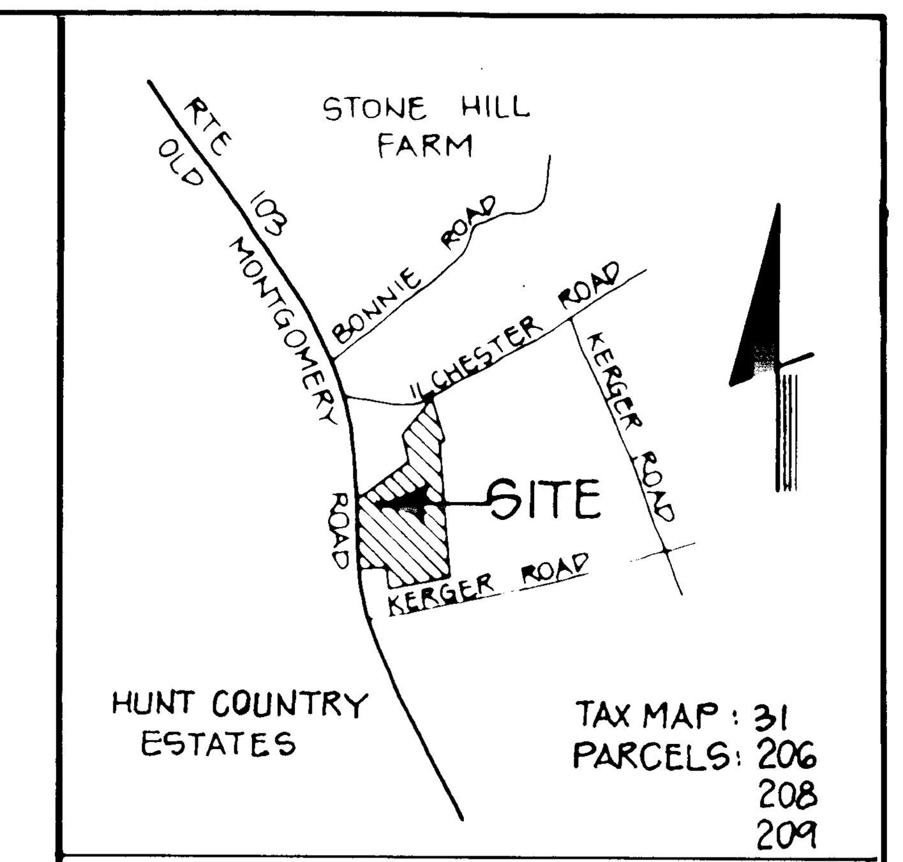
SHEET INDEX

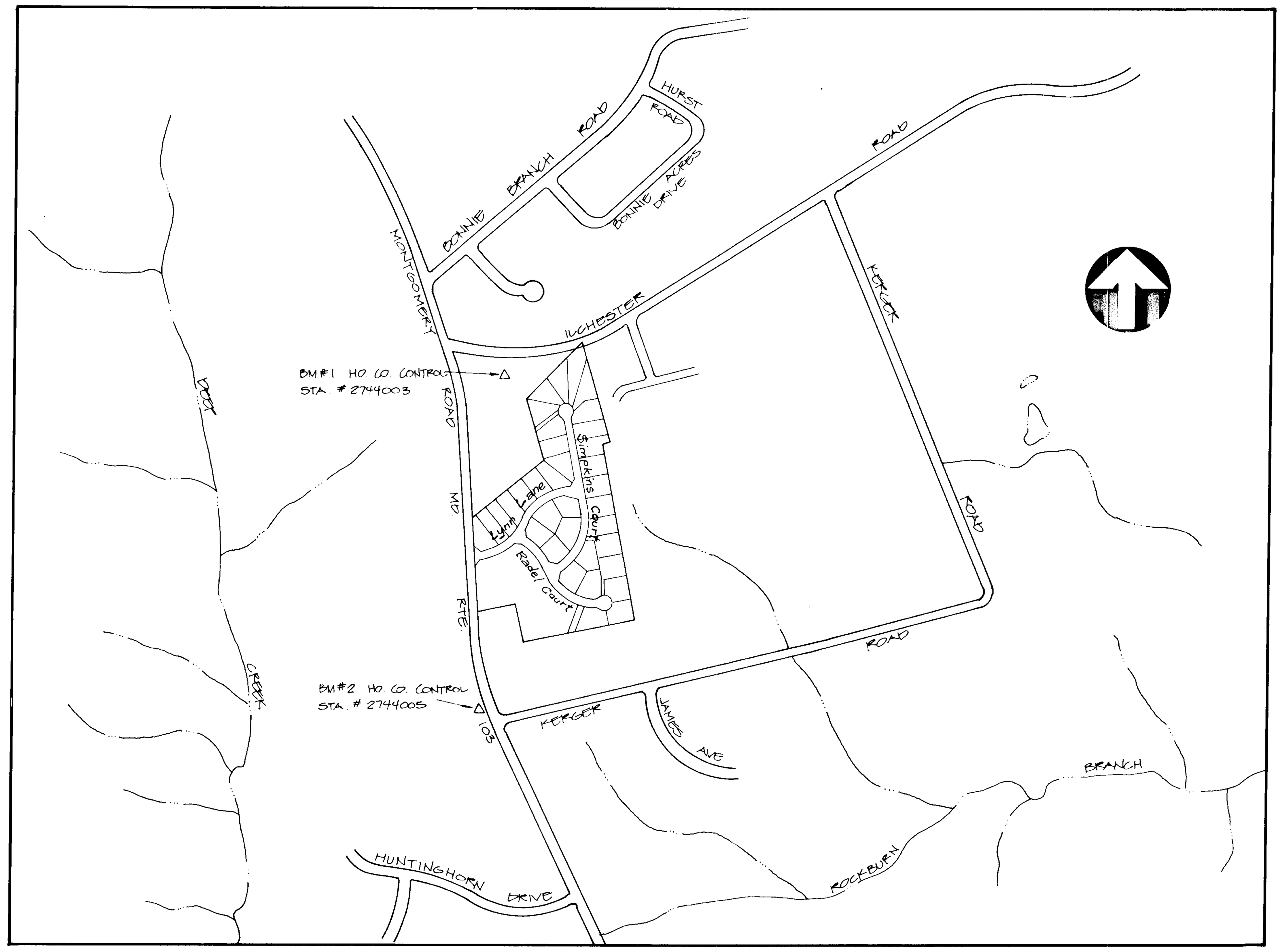
BENCHMARKS

BM#1 HOWARD COUNTY CONTROL STATION 2744003 ELEV. 489.218, CONC. MON. AT SURFACE ON HILL IN POWER LINES BETWEEN ILCHESTER RD & MONTGOMERY RD.

BM#2 HOWARD COUNTY CONTROL STATION 2744005 ELEV. 419.625, 3/4" REBAR 0.6 BELOW SURFACE 10'± W. EDGE OF ROUTE 103 & 80'± N. OF ℄ OF KERGER RD.



VICINITY MAP
SCALE: 1" = 2000'



LOCATION MAP
1" = 600'

"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 DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

JANG H. LEE PROFESSIONAL ENGINEER — 3/5/94 DATE

"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."

JANG H. LEE PROFESSIONAL ENGINEER — 3/5/94 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — 11/14/94 DATE

CHIEF, BUREAU OF HIGHWAY HS — 11-10-94 DATE

CHIEF, BUREAU OF ENGINEERING — 11/14/94 DATE

APPROVED HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH. — 11/18/94 DATE

ABBEYFIELD ESTATES

ROAD CONSTRUCTION DRAWINGS
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING DRAWING NO# : P-93-01, S-90-09

General Notes:

1. All construction shall be in accordance with the current *Howard County Design Manual, Volume IV, plus MSHA standards and specifications.*
2. The contractor shall notify the Department of Public Works/Construction Inspection Division at (410) 313-1880 at least five (5) working days prior to the start of work.
3. The contractor shall notify "Miss Utility" at (800) 257-7777 at least 48 hours prior to any excavation work.
4. Project Background:

   Location: Howard County **Tax Map** 31, **Parcel** 206-208-209
   Zoning: R-20
   Election District: 1st
   Section/Area: One
   Total Tract Area: 25.0 Ac.
   Section Area: 25.0 Ac.
   Number of Proposed Lots: 35 Buildable
   Date Preliminary Plan Approved and DPZ Reference#: P-93-01 12/02/93; S-90-09 08/17/89
5. Traffic control devices, markings, and signing shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
6. Boundary survey prepared by Lavelle & Associates, Inc. dated November, 1992. Vertical contour interval is 2'.
7. Horizontal and vertical datum based on:

   BM #1
   Howard County Control Station 2744003 Elevation 489.218, conc. mon. at surface on hill in power lines between Ilchester Road and Montgomery Road.

   BM #2
   Howard County Control Station 2744005 Elevation 419.625, 3/4" Rebar 0.6' below surface 10' +/- W. edge of Route 103 & 80' +/- N. of center line of Kerger Road.
8. *Street light placement and the type of fixture and pole selected shall be in accordance with Howard County Design Manual, Volume III (1993) and as modified by Guidelines for Street Lights in Residential Developments (June 1993).*
9. Public water and sewer is proposed. Water line connections to Howard County Contract 132-W. Sewer line connections to Howard County #10-1215 Project #S-6089, draining into Kerger Road collection system and pumping station.
10. Extended detention is proposed for Stormwater Management water quality control 2 and 10 year attenuation and 100 year safe pass is proposed for water quantity control.
11. In all roadway fill areas 95% compaction shall be used and shall be done in accordance with A.A.S.H.T.O. T-180.
12. All sidewalk ramps shall be in conformity with the current ADA requirements.
13. A minimum of 20 feet shall be maintained between any street tree and street light.
14. *Street trees to be provided as required by Section 16.124 of the Howard County Subdivision and Land Development Regulations.*
15. *Flood Plain Study by Lavelle and Associates, compiled January 1993, Approved October 21, 1993. P-93-01.*
16. *Wetlands Delineation Study by McCarthy and Associates, compiled September 1992, Approved October 21, 1993. P-93-01.*
17. *Noise Study by Scott Harvey, Acoustical Engineer, compiled October 1992, Approved October 21, 1993. P-93-01.*
18. *Geotechnical Report by Hydro-Terra, Inc. compiled June 30, 1994, Approval pending, submitted with F-94-99 July 8, 1994.*
19. *Existing Utilities field located.*

"AS-BUILT" F-94-99

DESIGNED		date
DRAWN		date
CHECKED		date
APPROVED		date

REVISIONS

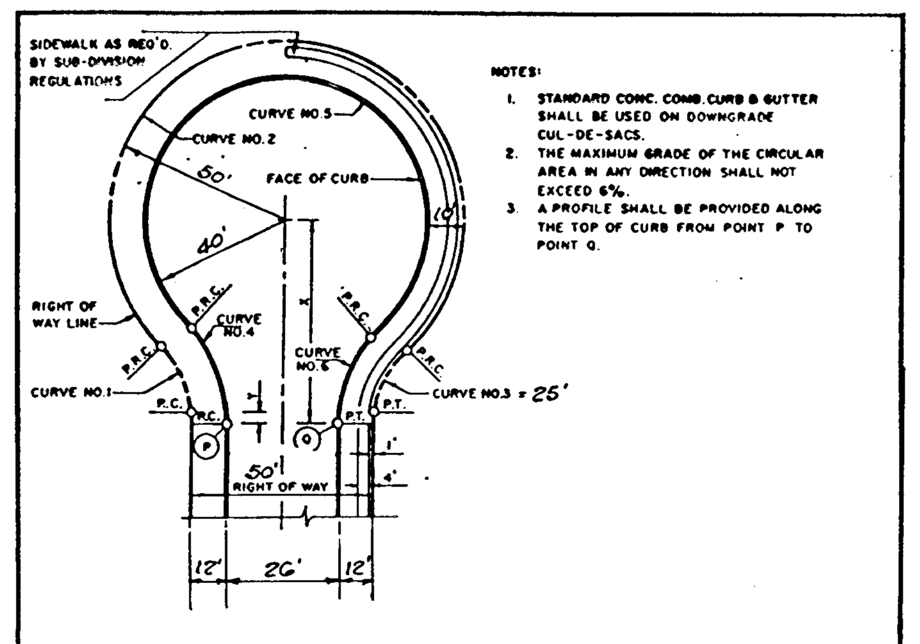
DATE	BY	DESCRIPTION
9/95	RCH	Per Howard County (Sheets 2,3 + 4 of 12) (Transition Curb + Gutter)

LAVELLE & ASSOCIATES INCORPORATED
CIVIL ENGINEERS • LAND PLANNERS • LAND SURVEYORS
10 NORTH JEFFERSON STREET SUITE 203 FREDERICK, MARYLAND 21701
OFFICE: (301) 831-4510 (301) 695-9722 FAX: (301) 695-9766

OWNER/DEVELOPER
THE PICH CORPORATION
13200 SKY WAY
ELLICOTT CITY, MD. 21043

TITLE SHEET
ABBEYFIELD ESTATES
TAX MAP 31 PARCELS 206, 208 & 209
1st. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

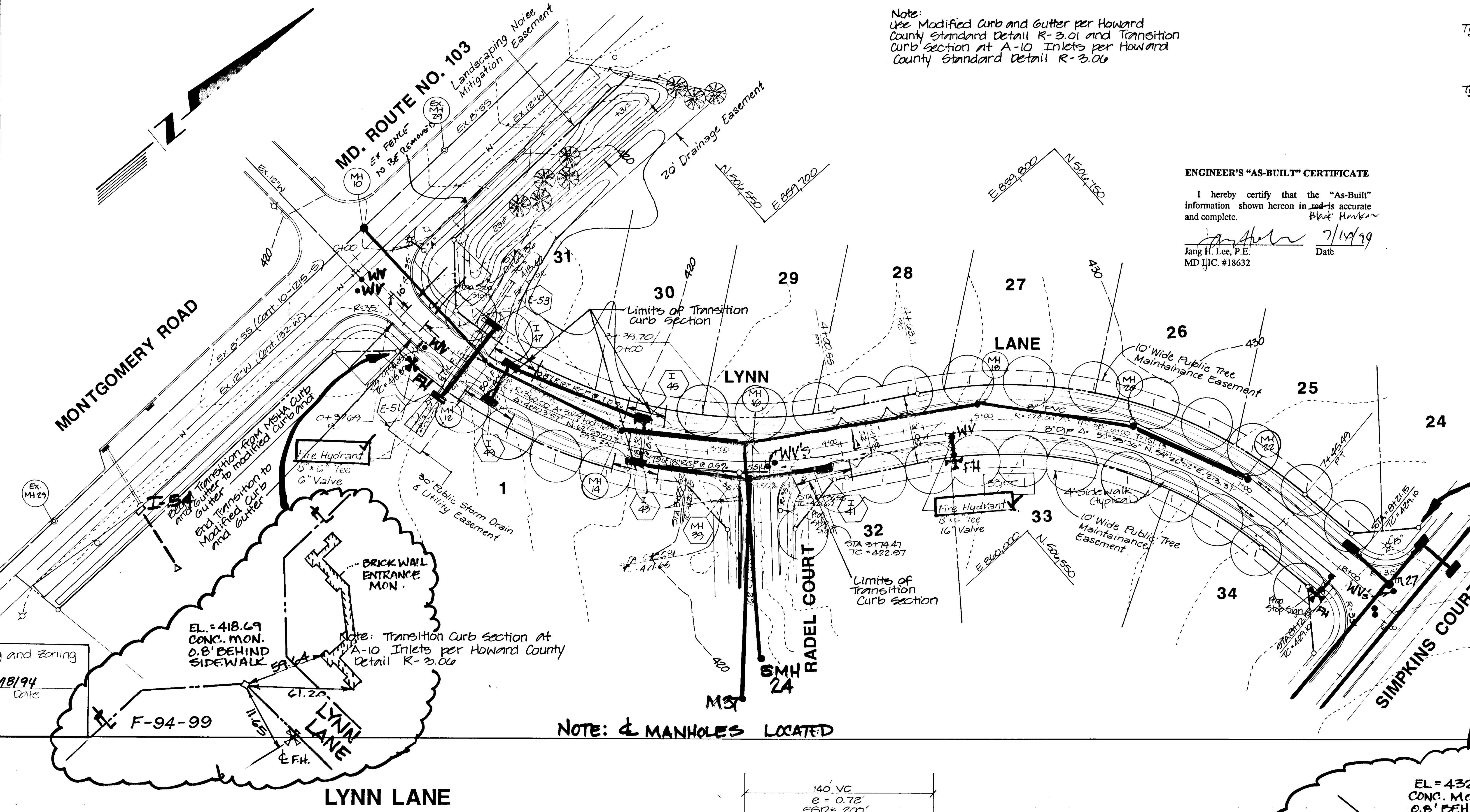
F 94-99



CURVE DATA				
Residential (26' Approach)				
Curve	1 & 3	2	4 & 6	5
Δ	48°11'23"	276°22'46"	50°12'29"	280°24'55"
R	25.00'	50.00'	35.00'	40.00'
L	21.03'	241.19'	30.67'	195.77'
T	11.18'	44.72'	16.40'	33.32'
LC	20.41'	66.67'	29.70'	51.20'

CUL-DE-SAC DETAIL
(N.T.S.)

Note:
Use Modified Curb and Gutter per Howard County Standard Detail R-3.01 and Transition Curb Section at A-10 Inlets per Howard County Standard Detail R-3.06



ENGINEER'S "AS-BUILT" CERTIFICATE

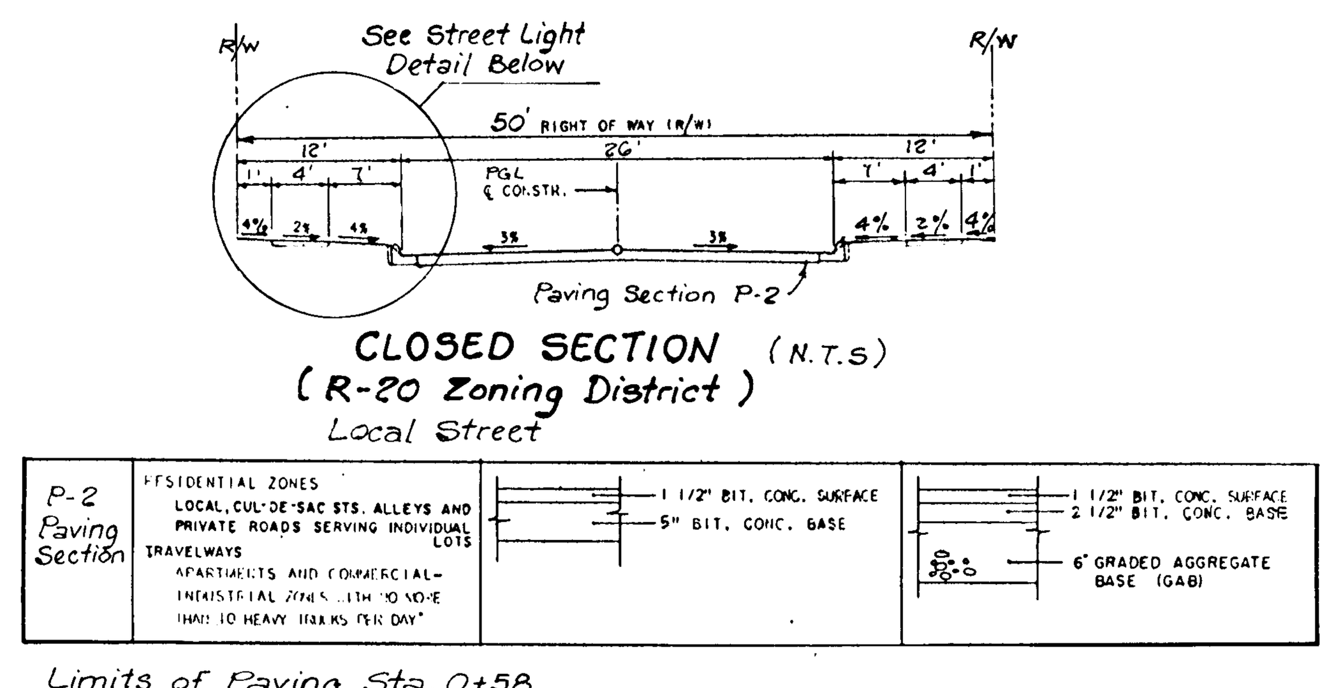
I hereby certify that the "As-Built" information shown hereon is ~~and is~~ accurate and complete.

Jang H. Lee, P.E. 7/14/99
MD LIC. #18632 Date

Lighting Legend

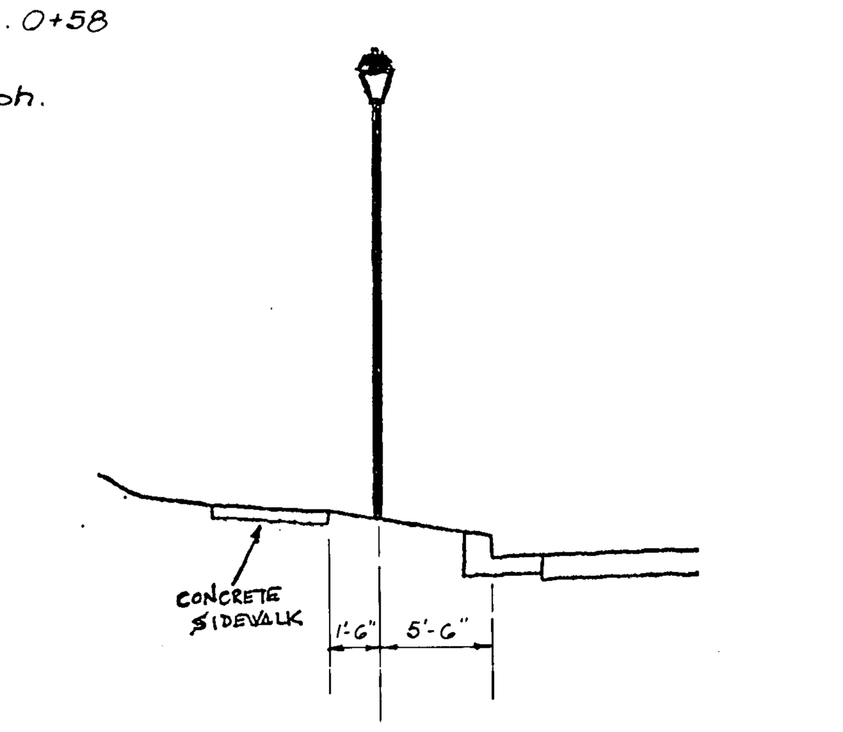
Type 'A' - 250 Watt High Pressure Sodium Vapor Cobra Fixture with cut-off optics mounted on 30 foot Galvanized Steel Pole with a breakaway transformer base, use a 15 foot arm extending over MD 103 at street light at intersection of Lynn Lane and MD 103.

Type 'B' - 100 Watt High Pressure Sodium Vapor Traditionaire Post-Top Fixture mounted on a 14 foot Black Fiberglass Pole.



CLOSED SECTION (N.T.S.)
(R-20 Zoning District)
Local Street

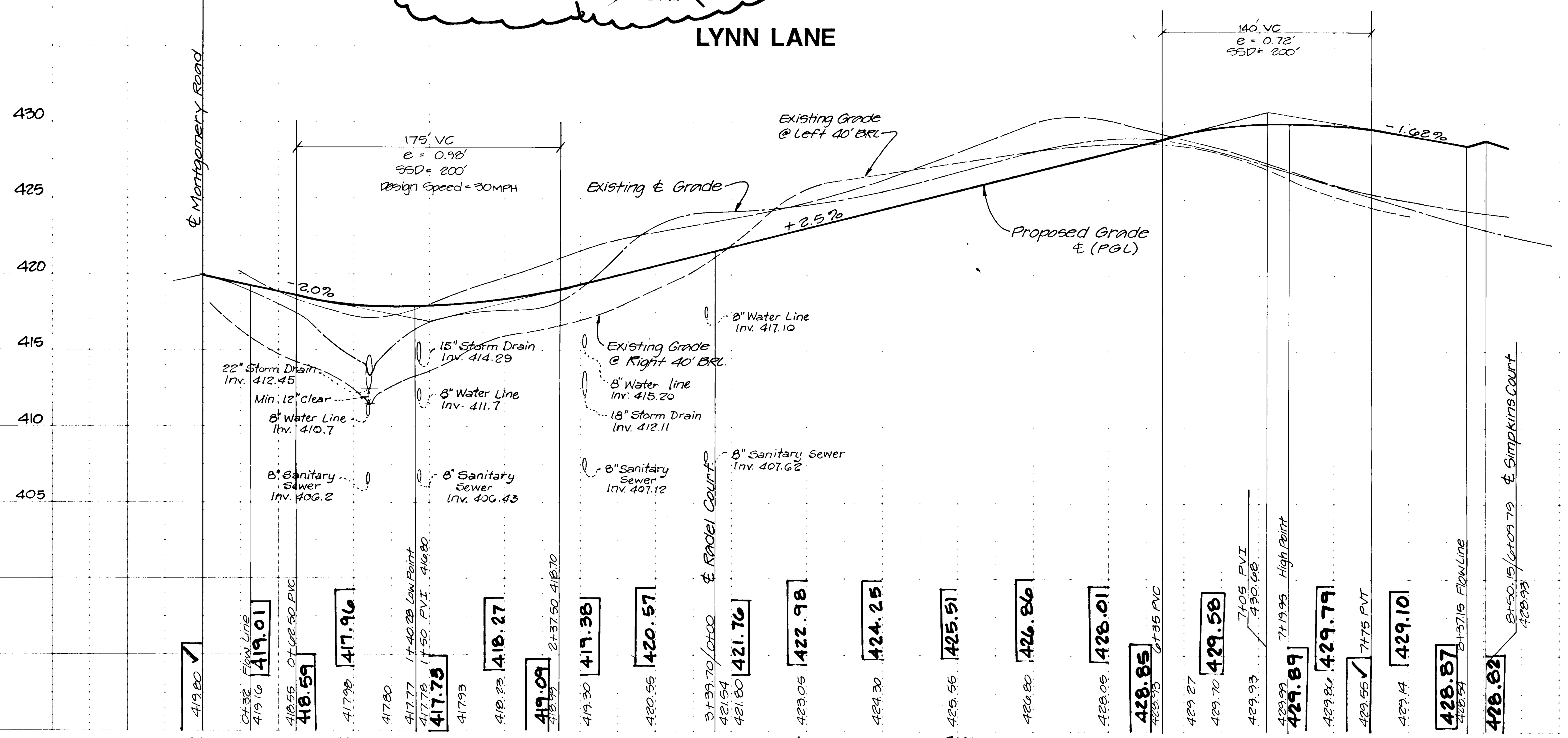
Limits of Paving Sta. 0+58 to Sta. 8+50.15
Design Speed = 30 mph.

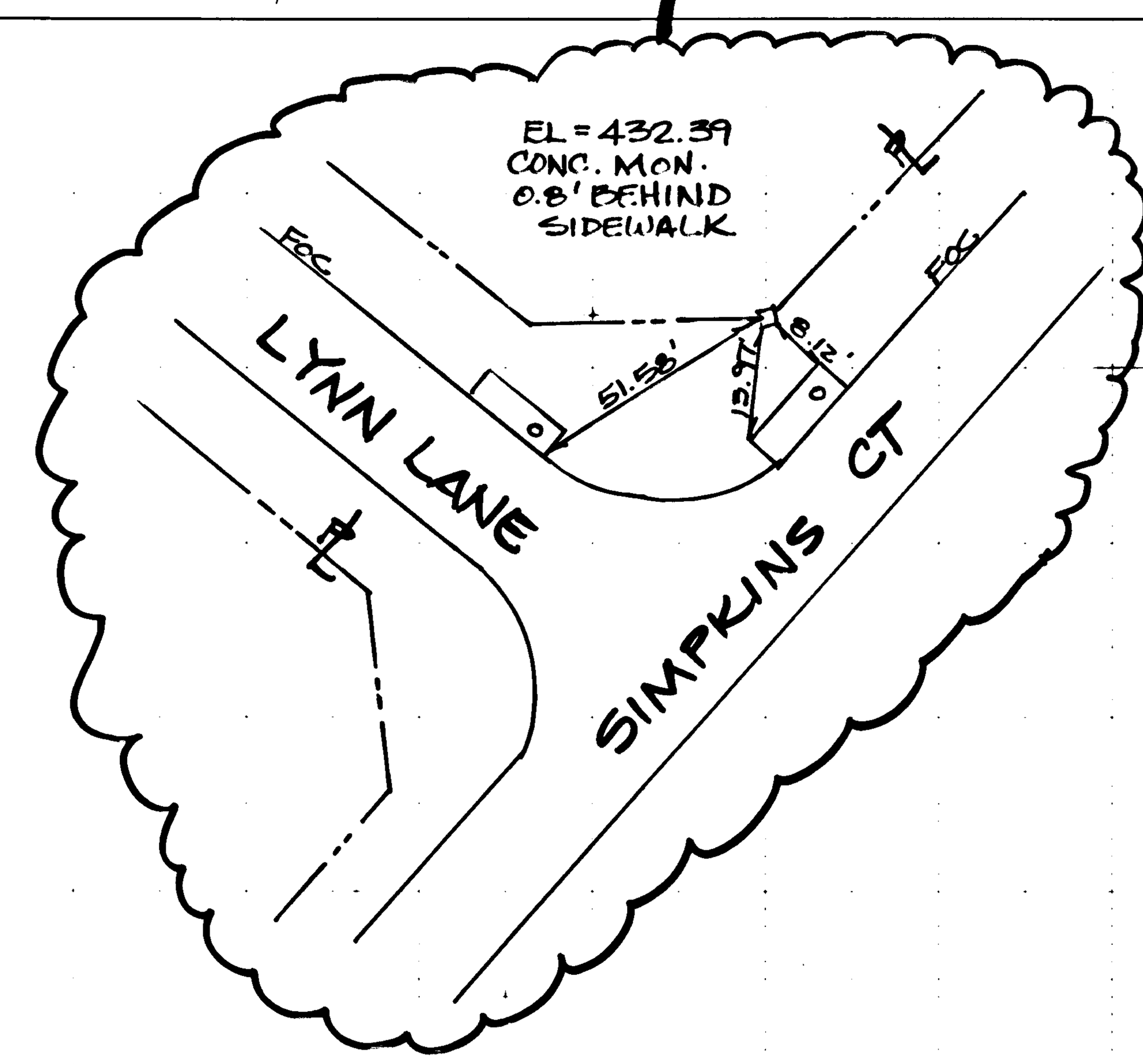


PLACEMENT OF STREET LIGHT DETAIL
(N.T.S.)

Approved Howard County Department of Planning and Zoning
Chief, Division of Land Development and Research. 11/18/94 Date

SCALE: PLAN: 1" = 50'
PROFILE: 1" = 5'





1714

"AS-BUILT"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Chief, Land Development Division 11/14/94 Date
Chief, Bureau of Engineering 11/14/94 Date
Chief, Bureau of Highways 11-10-94 Date

LAVELLE & ASSOCIATES, INCORPORATED
ENGINEERS · PLANNERS · SURVEYORS
10 NORTH JEFFERSON STREET · SUITE 203 · FREDERICK, MARYLAND 21701
OFFICE (301) 831-4510 · (301) 695-9722 · FAX (301) 695-6766

DES:	KCH	1	Revise per Howard Co. (Transition Curb + Gutter)	9/95
DRN:				
CHK:				
DATE:	BY	NO.	REVISION	DATE

600' SCALE MAP NO. ____ BLOCK NO. ____

PLAN AND PROFILE
ABBEYFIELD ESTATES
TAX MAP 31 PARCELS 206, 208 & 209
1st. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 2 OF 12

F 94-99

Note:
Transition Section at A-10 Inlets per Howard County Detail R-3.06

Note:
Use Modified Curb and Gutter per Howard County Standard Detail R-3.01 and Transition Curb Section at A-10 Inlets per Howard County Standards Detail R-3.06

PLACEMENT OF STREET LIGHT DETAIL
(N.T.S.)

NOTE: ℄ MANHOLES LOCATED

F-94-99

NOTES:
1. STANDARD CONC. COMB. CURB & GUTTER SHALL BE USED ON DOWNGRADE CUL-DE-SACS.
2. THE MAXIMUM GRADE OF THE CIRCULAR AREA IN ANY DIRECTION SHALL NOT EXCEED 6%.
3. A PROFILE SHALL BE PROVIDED ALONG THE TOP OF CURB FROM POINT P TO POINT Q.

CURVE DATA				
Residential (26' Approach)				
	Curve 1 & 3	2	4 & 6	5
Δ	48° 11' 23"	276° 22' 46"	50° 12' 29"	280° 24' 59"
R	25.00'	50.00'	35.00'	40.00'
L	21.03'	241.19'	30.67'	195.77'
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LC	20.41'	66.67'	29.70'	51.20'

CUL-DE-SAC DETAIL
(N.T.S.)

Approved Howard County Department of Planning and Zoning

Gina Tirimmanji 11/18/94
Chief, Division of Land Development and Research. Date
C94

Lighting Legend

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Type "B" – 100 Watt High Pressure Sodium Vapor Traditionaire Post-Top Fixture mounted on a 14 foot Black Fiberglass Pole.

CLOSED SECTION (N.T.S)
(R-20 Zoning District)
Cul-De-Sac Street

P-2 Paving Section	RESIDENTIAL ZONES LOCAL, CUL-DE-SAC STS. ALLEYS AND PRIVATE ROADS SERVING INDIVIDUAL LOTS TRAVELWAYS APARTMENTS AND COMMERCIAL-INDUSTRIAL ZONES WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY*	1 1/2" BIT. CONC. SURFACE 5" BIT. CONC. BASE	1 1/2" BIT. CONC. SURFACE 2 1/2" BIT. CONC. BASE 6" GRADED AGGREGATE BASE (GAB)

Limits of Paving Sta. 0+00 to Sta. 10+89.79
Design Speed = 30 MPH

SCALE: PLAN: 1" = 50'

PROFILE: 1" = 5'

SIMPKINS COURT

ENGINEER'S "AS-BUILT" CERTIFICATE

I hereby certify that the "As-Built" information shown hereon in ~~red~~ BLACK MARKER is accurate and complete.

Jang H. Lee, P.E. 7/14/99
MD LIC. #18632 Date

SIMPKINS COURT (CONT.)

10/10/94

Jang Holm
7/13/99

No. 12379

"AS-BUILT"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

11/14/94
Chief, Land Development Division

Andrew M. Donnelly 11-10-94
Chief, Bureau of Highways HS DATE

11/14/94
Chief, Bureau of Engineering Date

LAVELLE & ASSOCIATES, INCORPORATED
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DES:
DRN:
CHK:
DATE:

BY	NO.	REVISION	DATE
RCH	1	Revise Per Howard County (Transition Curb + Gutter)	9/95

600' SCALE MAP NO.________ BLOCK NO.________

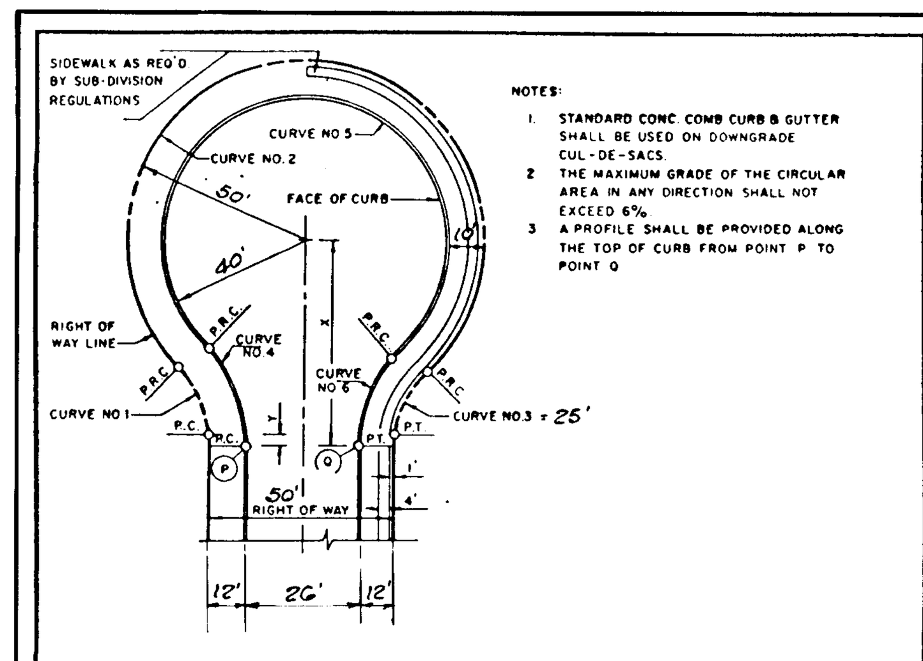
PLAN AND PROFILE
ABBEYFIELD ESTATES
TAX MAP 31 PARCELS 206, 208 & 209
1st. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 3 OF 12

F-94-99

1714



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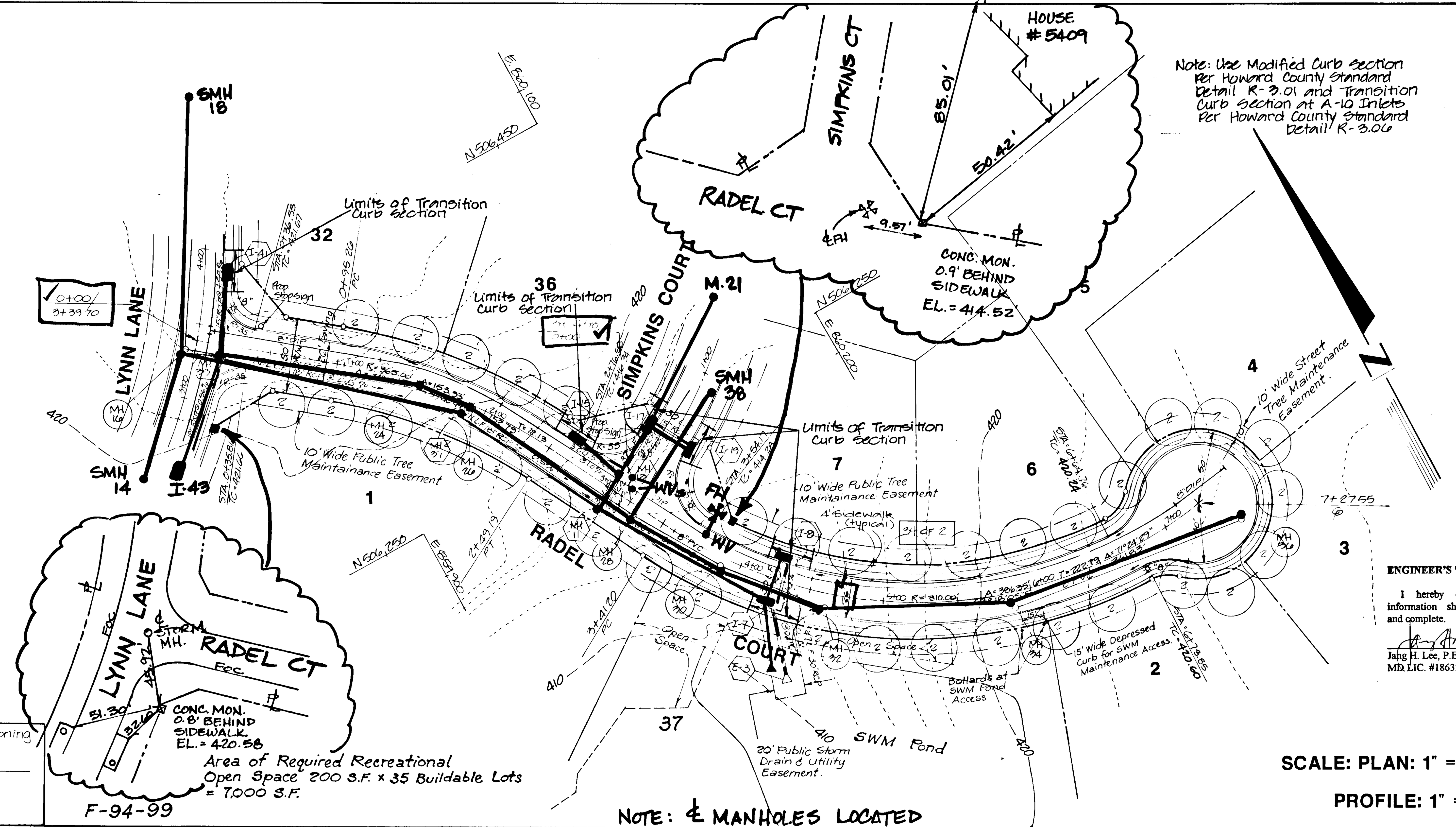
CUL-DE-SAC DETAIL
(N.T.S.)



Note: Use Modified Curb Section Per Howard County Standard Detail R-3.01 and Transition Curb Section at A-10 Inlets Per Howard County Standard Detail R-3.06

Area of Required Recreational Open Space 200 S.F. × 35 Buildable Lots = 7,000 S.F.

NOTE: ℄ MANHOLES LOCATED

Approved Howard County Department of Planning and Zoning
Chief, Division of Land Development and Research. 11/18/94 Date

Lighting Legend

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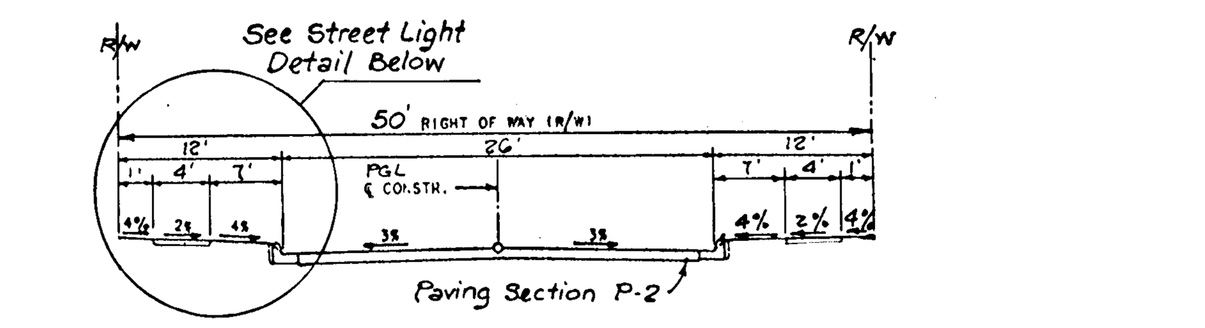


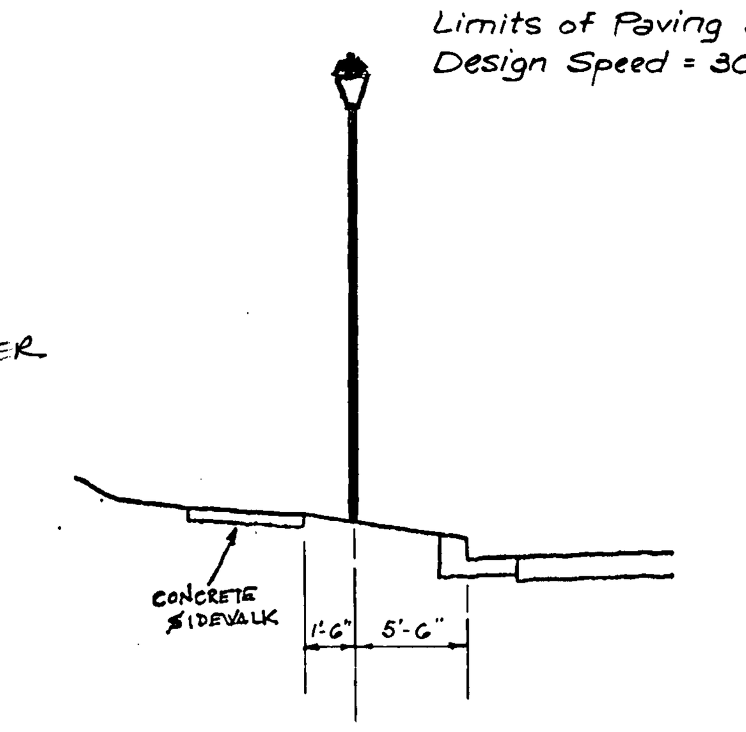
CLOSED SECTION (N.T.S)
(R-20 Zoning District)
CUL-DE-SAC Street

Limits of Paving Sta. 0+00 to Sta. 7+27.55
Design Speed = 30 mph.

ENGINEER'S "AS-BUILT" CERTIFICATE

I hereby certify that the "As-Built" information shown hereon in ~~red~~ BLACK MARKER is accurate and complete.

Jang H. Lee, P.E. — 7/14/99
MD LIC. #18632 — Date



PLACEMENT OF STREET LIGHT DETAIL
(N.T.S.)

SCALE: PLAN: 1" = 50'
PROFILE: 1" = 5'

"AS BUILT"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Chief, Land Development Division 11/14/94
Chief, Bureau of Highways 11-10-94
Chief, Bureau of Engineering 11/14/94

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BY	NO.	REVISION	DATE
RCH	1	Revise Per Howard County (Transition Curb & Gutter)	9/95

DES:
DRN:
CHK:
DATE:

600' SCALE MAP NO. ______ BLOCK NO. ______

7/13/99

PLAN AND PROFILE
ABBEYFIELD ESTATES
TAX MAP 31 PARCELS 206, 208 & 209
1st. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 4 OF 12

F 94-99

1714

STONE OUTLET SEDIMENT TRAP NO. 1

* EX. DRAINAGE AREA	=	0.3 AC
PROP. DRAINAGE AREA	=	2.9 AC
STORAGE REQUIRED	=	194 CY
STORAGE PROVIDED	=	200 CY
BOTTOM TRAP DIMENSIONS	=	72' x 25' x 3'
BOTTOM ELEVATION	=	413.0
CREST ELEVATION	=	416.0
OUTLET WIDTH	=	6'
SIDE SLOPES	=	2:1

* After Diversion is Constructed.

SCHEDULE A
PERIMETER LANDSCAPE EDGE

Category	Adjacent to Roadways	Adjacent to Perimeter Properties
Landscape Type	B 1:50 Shade B 1:40 Evergreen	A 1:60 Shade
Linear Feet of Roadway Frontage/Perimeter	585'	4363'
Credit for Existing Vegetation (Yes, No, Linear Feet) (Describe below if needed)	YES - 280'	YES - 938'
Credit for Wall, Fence or Berm (Yes, No, Linear Feet) (Describe below if needed)	NO	NO
Number of Plants Required Shade Trees Evergreen Trees Shrubs	Net Area 305 7 Shade 8 Evergreen	3425 59 Shade 0 0
Number of Plants Provided Shade Trees Evergreen Trees (2:1 SUB) Other Trees (2:1 substitution) Shrubs (10:1 substitution) (Describe plant substitution credits below if needed)	7 Shade 8 Evergreen 3 Flowering Equates to 13 trees	15 Shade 47 Evergreen 47 Flowering Equates to 62 trees

Note: Landscaping obligations to be fullfilled by combination of preservation of existing vegetation and planting as shown above.
The Developer shall be responsible for the installation of the required landscaping

Planting along Perimeter: 2 x 59 - 118 units req. (shade = 2 units, FL & Pine = 1 Unit Each)
(2 x 15 = 30) + 47 + 47 = 124 Units Provided

SCHEDULE D
STORMWATER MANAGEMENT AREA LANDSCAPING

Linear Feet of Perimeter	625'
Number of Trees Required Shade Trees Evergreen Trees	7 Shade . 9 Evergreen
Credit for Existing Vegetation (No, Yes and %)	YES - 46% (287')
Credit for Other Landscaping (No, Yes and %)	NO

Note: Landscaping obligations to be fullfilled by combination of preservation of existing vegetation and planting as shown above.

THIS IS TO CERTIFY THAT THE LANDSCAPE PLANTING SHOWN ON THE PERIMETER AND THE STREETS MEETS THE REQUIREMENTS SET FORTH IN THE HOWARD COUNTY LANDSCAPE MANUAL AS ADOPTED JANUARY 4, 1993.

4/4/94
LAWRENCE J. READER RLA #193

STREET TREES

Qty	No.	Species	Size		Spacing
44	1	ACER RUBRUM - OCTOBER GLORY MAPLE	2 1/2-3" CAL	B&B	35-40' O.C
35	2	PYRUS C. REDSPIRE - REDSPIRE PEAR	2 1/2-3" CAL	B&B	35-40' O.C
36	3	FRAXINUS AMERICANA AUTUMN PURPLE WHITE ASH	2 1/2-3" CAL	B&B	35-40' O.C
29	4	PRUNUS SARGENTI COLUMNARIS - COLUMNAR SARGENT CHERRY	2 1/2-3" CAL	B&B	35-40' O.C

PERIMETER TREES

Qty	No.	Species	Size		Spacing
7	5	ACER SACCHARUM GREEN MOUNTAIN MAPLE	2 1/2-3" CAL	B&B	---------
8	6	PLATANUS ACERIFOLIA - BLOOD GOOD LONDON PLANE	2 1/2-3" CAL	B&B	---------
6	7	CORNUS FLORIDA - FLOWERING DOGWOOD	8-10' HT.	B&B	15' O.C.
13	8	MALUS SNOWDRIFT SNOWDRIFT CRABAPPLE	8-10' HT.	B&B	MIN. 20' O.C.
7	9	PRUNUS THUNDERCLOUD - THUNDERCLOUD PLUM	8-10' HT.	B&B	MIN. 20' O.C.
12	10	MALUS ZUMI CALOCARPA - REDBUD CRABAPPLE	8-10' HT.	B&B	MIN. 20' O.C.
9	11	PRUNUS SERRULATA KWANZAN - KWANZAN CHERRY	8-10' HT.	B&B	MIN. 20' O.C.
14	12	PRUNUS YEDOENSIS - YOSHINO CHERRY	8-10' HT.	B&B	MIN. 20' O.C.
6	13	PICEA ABIES - NORWAY SPRUCE	7-8' HT.	B&B	15' O.C.
20	14	PINUS NIGRA - AUSTRIAN PINE	6-8' HT.	B&B	10-15' O.C.
30	15	PINUS STROBUS - WHITE PINE	6-8' HT.	B&B	10-15' O.C.
4	16	SALIX NIOBE - NIOBE WEEPING WILLOW	1 1/2 - 2" CAL	B&B	

Note: 6 of the 36 White Ash street trees and 11 of 44 Glory Maple street trees are located on the Noise Mitigation Berm or along Montgomery Road.

"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 DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

JANG H. LEE PROFESSIONAL ENGINEER — DATE 4/5/94

"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."

JANG H. LEE PROFESSIONAL ENGINEER — DATE 4/5/94

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 11/14/94
CHIEF, BUREAU OF HIGHWAY — DATE 11-10-94
CHIEF, BUREAU OF ENGINEERING — DATE 11/14/94

APPROVED HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 11/18/94

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS
SIGNATURE — DATE 11/7/94
U.S. SOIL CONSERVATION SERVICE
S.C.S. APPROVAL FOR SEDIMENT AND EROSION CONTROL IS CONTINGENT UPON REGULATORY PERMITS.

HOWARD SOIL CONSERVATION DISTRICT
S.C.S. APPROVAL FOR SEDIMENT AND EROSION CONTROL IS CONTINGENT UPON ISSUANCE OF ALL APPLICABLE REGULATORY PERMITS.
APPROVED BY: DISTRICT MANAGER
DATE 11/1/

This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard County Code and the Landscape Manual. Financial Surety for the required 91 landscape trees in the amount of $ 9,100 is part of the Developer's agreement.

Stone Outlet Sediment Trap № 2

Drainage Area	=	2.2 Ac.
Storage Required	=	149 CY
Storage Provided	=	160 CY
Bottom Elevation	=	412.0
Crest Elevation	=	416.0
Outlet Width	=	6'
Side Slopes	=	2:1

GRADING, SEDIMENT CONTROL & LANDSCAPING
ABBEYFIELD ESTATES
TAX MAP 31 PARCELS 206, 208 & 209
1st. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SEDIMENT CONTROL & POND CONSTRUCTION — Scale: 1" = 50' — April, 1994

STATE OF MARYLAND — LAWRENCE J. READER — NO. 193 — REGISTERED LANDSCAPE ARCHITECT

LAWRENCE READER ASSOCIATES, INC.
landscape architecture / site planning / recreation planning
15304 spencerville court / suite 102 / burtonsville md 20866-1660
telephone 301-384-3026 / fax 301-384-8696

( ) By The Developer:

"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 the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

Signature of Developer — Date
Print name below signature

( ) By the Engineer:

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

JANG H LEE 7-7-94
Signature of Engineer — Date
Print name below signature

( ) 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

( ) 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

ENGINEER'S "AS-BUILT" CERTIFICATE

I hereby certify that the "As-Built" information shown hereon in ~~red~~ BLACK MARKER is accurate and complete.

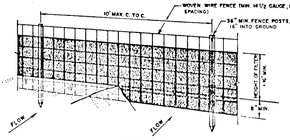
Jang H. Lee, P.E. — Date 7/13/99
MD LIC. #18632

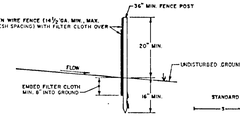
"AS-BUILT" F-94-99

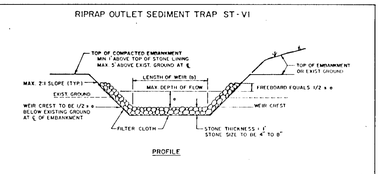
100 Year Flood Plain Chart		
A	S.10°51'00"E.	185.92'
B	S.03°34'35"W.	16.03'
C	S.13°08'02"W.	30.81'
D	S.04°05'08"E.	28.07'
E	S.45°00'00"E.	36.77'
F	S.64°03'28"E.	44.43'
G	S.81°50'08"E.	21.86'
H	S.52°39'02"E.	47.80'
I	S.73°44'23"E.	25.00'
J	S.78°41'24"E.	50.99'
K	S.61°23'22"E.	25.06'
L	S.36°52'12"E.	30.00'
M	S.51°20'25"E.	25.61'
N	S.59°25'15"E.	25.55'
O	S.33°41'24"E.	25.24'
P	S.17°22'11"E.	61.83'
Q	S.09°51'57"E.	103.20'
R	S.17°14'29"E.	59.33'
S	S.22°42'59"W.	61.07'
T	S.74°34'40"W.	30.08'
U	N.71°33'54"W.	11.98'
V	S.03°03'50"E.	8.62'
W	S.74°34'40"E.	8.20'
X	S.36°52'12"E.	25.00'
Y	S.41°34'17"E.	69.53'

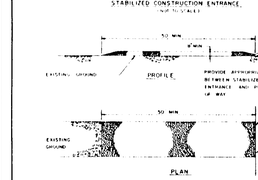
25' Wetlands Buffer Chart		
A	N.82°21'52"E.	20.93'
B	N.33°56'09"E.	11.65'
C	N.63°24'18"E.	53.72'
D	S.61°41'41"E.	53.55'
E	S.21°21'57"W.	22.19'
F	S.39°57'41"E.	24.66'
G	S.18°09'26"W.	56.39'
H	S.04°54'26"W.	33.24'
I	S.53°05'34"E.	26.40'
J	S.65°35'34"E.	31.67'
K	S.32°35'34"E.	56.76'
L	S.17°17'35"E.	36.75'
M	S.12°31'34"E.	75.08'
N	S.00°06'25"W.	118.13'
O	N.66°29'55"W.	45.35'

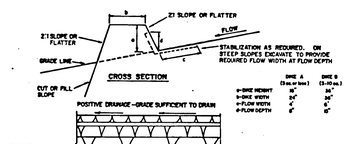
F-94-99

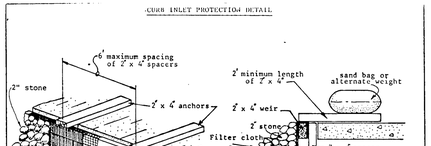


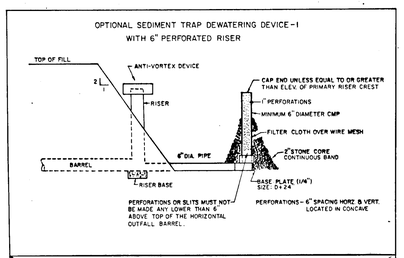


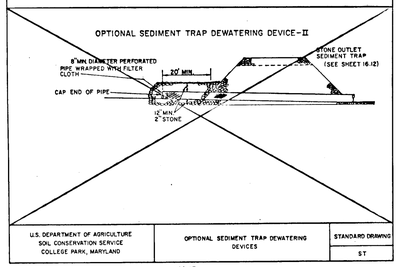


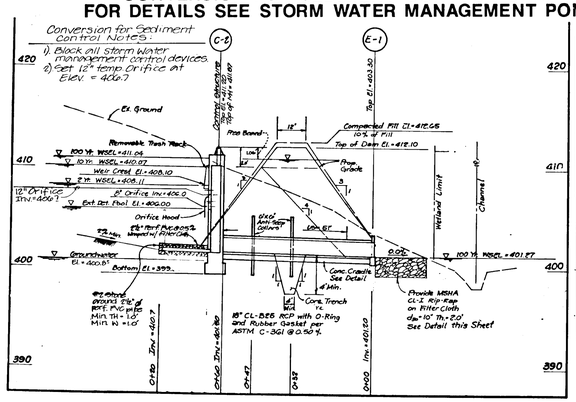












SILT FENCE

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, 14½ GA. 6" MAX. MESH OPENING

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

PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
COLLEGE PARK, MARYLAND

SILT FENCE

STANDARD DRAWING
SF-1

RIPRAP OUTLET SEDIMENT TRAP ST-VI

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
COLLEGE PARK, MARYLAND

RIPRAP OUTLET SEDIMENT TRAP

STANDARD DRAWING
ST-VI

STABILIZED CONSTRUCTION ENTRANCE

(NOT TO SCALE)

CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE MSHA SIZE NO 2 (2-1/2" TO 1") OR AASHTO DESIGNATION M43 SIZE NO 2 (2-1/2" TO 1-1/2") USE CRUSHED STONE
2. LENGTH - AS EFFECTIVE, BUT NOT LESS THAN 50 FEET
3. THICKNESS - NOT LESS THAN EIGHT (8) INCHES
4. WIDTH - NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS
5. WASHING - WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH USE OF SAND BAGS, GRAVEL, BOARDS OR OTHER APPROVED METHODS
6. 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

STANDARD SYMBOL SCE

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved William E. Riley 11-8-80
Chief - Bureau of Engineering

STABILIZED CONSTRUCTION ENTRANCE

REV. JAN 1982
DRAWN BY R.K.H.
CHECKED BY J.L.R.
SCALE NONE
G 6.11

CONSTRUCTION SPECIFICATIONS FOR ST VI

1. The area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
2. The fill material for the embankment shall be free of roots or other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed. Maximum height of embankment shall be five (5) feet, measured at centerline of embankment.
3. All fill slopes shall be 2:1 or flatter; cut slopes 1:1 or flatter.
4. Elevation of the top of any dike directing water into trap must equal or exceed the height of embankment.
5. Storage area provided shall be figured by computing the volume available behind the outlet channel up to an elevation of one (1) foot below the level weir crest.
6. Filter cloth shall be placed over the bottom and sides of the outlet channel prior to placement of stone. Sections of fabric must overlap at least one (1) foot with section nearest the entrance placed on top. Fabric shall be embedded at least six (6) inches into existing ground at entrance of outlet channel.
7. Stone used in the outlet channel shall be four (4) to eight (8) inches (riprap). To provide a filtering effect, a layer of filter cloth shall be embedded one (1) foot back into the upstream face of the outlet stone or a one (1) foot thick layer of two (2) inch or finer aggregate shall be placed on the upstream face of the outlet.
8. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
9. The structure shall be inspected after each rain and repaired as needed.
10. Construction operations shall be carried out in such a manner that erosion and water pollution are minimized.
11. The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.
12. Drainage area for this practice is limited to 15 acres or less.

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, 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) AND (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 ARE OF SITE	25.0	ACRES
AREA DISTURBED	18.35	ACRES
AREA TO BE ROOFED OR PAVED	3.28	ACRES
AREA TO BE VEGETATIVELY STABILIZED	15.07	ACRES
TOTAL CUT	30,800	CU. YDS.
TOTAL FILL	30,800	CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION	N/A	

8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT. — 1 Day
2. INSTALL AND STABILIZE CONSTRUCTION ENTRANCE. — 1 Day
3. INSTALL EARTH-DIKES, CUT SWALE, SILT FENCES AND STONE OUTLET SEDIMENT TRAP NO. 1 & 2 AND INSTALL STORMWATER POND AND CONVERT TO TEMPORARY SEDIMENT TRAP. — 2 weeks Note: Swale on Lots 2 & 3 is part of the Sediment Control Scheme.
4. INSTALL CULVERT UNDER LYNN LANE. — 1 Week
5. INSTALL DITCH ALONG LOT 31. PROVIDE EROSION CONTROL MATTING ALONG DITCH TO BY-PASS OFF SITE DRAINAGE. — 1 Week.
6. GRADE AS NECESSARY TO INSTALL STORM DRAIN ALONG LYNN LANE/RADEL COURT TO SWM/SED. POND. — 2 Weeks
7. GRADE REMAINING SITE, NOT TO INCLUDE LOT GRADING ON 7-13 UNTIL SIMPKINS COURT GRADING IS COMPLETE. — 1 Months
8. INSTALL REMAINING UTILITIES. — 2 Months
9. PAVE STREETS. — 1 Week
10. CONSTRUCT HOUSES (EXCEPT FOR LOTS 10 & 11). — 2 Years
11. STABILIZE ENTIRE SITE (CONSTRUCT LOTS 10 & 11). — 1 Week
12. REMOVE SEDIMENT CONTROL DEVICES. — 1 Day.
13. STABILIZE REMAINING AREAS. — 1 Day.
14. FLUSH OUT STORM DRAIN SYSTEM. — 1 Day.
15. CONVERT STORMWATER MANAGEMENT POND. — 1 Week

TEMPORARY SEEDING NOTES

GENERAL

1. SCOPE: PLANTING SHORT-TERM VEGETATION TO STABILIZED, CLEARED OR GRADED AREAS SUBJECT TO EROSION FOR A PERIOD OF 14 DAYS OR MORE.
2. STANDARDS: TEMPORARY SEEDING SHALL CONFORM TO ALL REQUIREMENTS OF "1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" PUBLISHED JOINTLY BY WATER RESOURCES ADMINISTRATION, SOIL CONSERVATION SERVICE, AND STATE SOIL CONSERVATION COMMITTEE.
3. SEDIMENT AND EROSION CONTROL: ALL PERIMETER CONTROLS MUST BE STABILIZED IN 7 DAYS. ALL INTERIOR CONTROLS MUST BE STABILIZED IN 14 DAYS.

SPECIFICATIONS

1. SITE PREPARATION
   - A) PRIOR TO SEEDING INSTALL ALL REQUIRED SEDIMENT AND EROSION CONTROL MEASURES.
   - B) FINAL GRADING NOT REQUIRED FOR TEMPORARY SEEDING.
2. SOIL AMENDMENTS
   - A) FERTILIZER SHALL BE APPLIED AT THE RATE OF 600 LBS/ACRE USING 10-10-10 OR EQUIVALENT.
   - B) ACID SOILS SHALL BE LIMED.
3. SEEDBED PREPARATION
   - A) SOIL SHALL BE LOOSENED TO A DEPTH OF 3 INCHES BY RAKING, DISCING, OR OTHER ACCEPTABLE MEANS PRIOR TO SEEDING.
4. SEEDING
   - A) SELECT A MIXTURE FROM TABLE 50-1 IN STANDARD SPECIFICATIONS.
   - B) APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER DRILL, CULTIPACKER, OR HYDRO SEEDER.
5. MULCHING
   - A) MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING. MULCH MATERIALS AND APPLICATIONS SHALL CONFORM TO THE STANDARD SPECIFICATIONS.

EARTH DIKE

not to scale

	DIKE A (5 ac. or less)	DIKE B (5-10 ac.)
a-DIKE HEIGHT	18"	36"
b-DIKE WIDTH	24"	36"
c-FLOW WIDTH	4'	6'
d-FLOW DEPTH	8"	15"

CONSTRUCTION SPECIFICATIONS

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

FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1	.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE, OR EXCELSIOR; SOD; 2" STONE
3	5.1-8.0%	SEED WITH JUTE, OR SOD; 2" STONE	LINED RIP-RAP 4-8"
4	8.1-20%	LINED RIP-RAP 4-8"	ENGINEERING DESIGN

- A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
- B. RIP-RAP TO BE 4-8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.
- C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.

7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

CURB INLET PROTECTION DETAIL

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
COLLEGE PARK, MARYLAND

INLET PROTECTION DETAIL

STANDARD DRAWING
IPD-1

21.04

CONVERSION FOR SEDIMENT CONTROL ONLY
FOR DETAILS SEE STORM WATER MANAGEMENT POND

Conversion for Sediment Control Notes:
1). Block all Storm Water management control devices.
2) Set 12" temp. Orifice at Elev. = 406.7

PROFILE ALONG PRINCIPAL SPILLWAY

NTS

For Construction See Detail on Sheet 9 of 12

TEMPORARY SWALE

CONSTRUCTION SPECIFICATIONS

1. ALL TEMPORARY SWALES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
2. DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSIVE VELOCITY.
4. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE SWALE.
5. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
6. FILLS SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT.
7. ALL EARTH REMOVED AND NOT NEEDED ON CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE SWALE.
8. STABILIZATION SHALL BE AS PER THE CHART BELOW:

FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	A (5 AC OR LESS)	B (5 AC - 10 AC)
1	0.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE OR EXCELSIOR
3	5.1-8.0%	SEED WITH JUTE OR EXCELSIOR; SOD	LINED RIP-RAP 4-8" RECYCLED CONCRETE EQUIVALENT
4	8.1-20%	LINED 4-8" RIP-RAP	ENGINEERED DESIGN

9. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
COLLEGE PARK, MARYLAND

TEMPORARY SWALE

STANDARD DRAWING
TS-1

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved William E. Riley 11-8-80
Chief - Bureau of Engineering

METAL END SECTION
CIRCULAR METAL PIPE

CHECKED BY J.L.R.
SCALE NONE
SD-3.61

OPTIONAL SEDIMENT TRAP DEWATERING DEVICE-I
WITH 6" PERFORATED RISER

OPTIONAL SEDIMENT TRAP DEWATERING DEVICE-II

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
COLLEGE PARK, MARYLAND

OPTIONAL SEDIMENT TRAP DEWATERING DEVICES

STANDARD DRAWING
ST

16.15

REVIEWED FOR HOWARD S.C.D.
AND MEETS TECHNICAL REQUIREMENTS

Patricia Engler 11/3/94
SIGNATURE DATE

U.S. SOIL CONSERVATION SERVICE

S.C.S. APPROVAL FOR SEDIMENT AND EROSION CONTROL IS CONTINGENT UPON REGULATORY PERMITS.

HOWARD SOIL CONSERVATION DISTRICT

S.C.S. APPROVAL FOR SEDIMENT AND EROSION CONTROL IS CONTINGENT UPON ISSUANCE OF ALL APPLICABLE REGULATORY PERMITS.

APPROVED BY Robert W. Ziehm
DISTRICT MANAGER
DATE 11/3/94

TYPICAL UPRIGHT STAKING DETAIL:

Mountable Berm

NTS

Tree Protection Fence Detail

Blaze Orange Plastic Mesh

Notes:
1. Forest protection device only.
2. Retention Area will be set as part of the review process.
3. Boundaries of Retention Area should be staked and flagged prior to installing device
4. Root damage should be avoided.
5. Protective signage may also be used.
6. Device should be maintained throughout construction.

PERMANENT SEEDING & SOD NOTES

GENERAL

1. SCOPE: PLANTING PERMANENT, LONG-LIVED VEGETATIVE COVER ON GRADED OR CLEARED AREAS.
2. STANDARDS: PERMANENT SEEDING SHALL CONFORM TO ALL REQUIREMENTS OF "1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" PUBLISHED JOINTLY BY WATER RESOURCES ADMINISTRATION, SOIL CONSERVATION SERVICE, AND STATE SOIL CONSERVATION COMMITTEE.

SPECIFICATIONS

1. SITE PREPARATION
   - A) PRIOR TO SEEDING INSTALL ALL REQUIRED SEDIMENT AND EROSION CONTROL MEASURES.
   - B) FINE GRADING REQUIRED FOR PERMANENT SEEDING.
2. SOIL AMENDMENTS
   - A) FERTILIZER SHALL BE APPLIED AT THE RATE OF 1000 LBS/ACRE USING 10-10-10 OR EQUIVALENT.
3. SEEDBED PREPARATION
   - A) SOIL SHALL BE LOOSENED TO A DEPTH OF 3 INCHES BY RAKING, DISCING, OR OTHER ACCEPTABLE MEANS PRIOR TO SEEDING.
   - B) APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER OR HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER ON A FIRM, MOIST SEEDBED). MAXIMUM SEEDING DEPTH SHOULD BE ¼ INCH ON CLAYEY SOILS AND ½ INCH ON SANDY SOILS, WHEN USING OTHER THAN HYDROSEEDER METHOD OF APPLICATION. NOTE: IF HYDROSEEDING IS USED AND THE SEED AND FERTILIZER IS MIXED, THEY WILL BE MIXED ON SITE AND THE SEEDING SHALL BE IMMEDIATE WITHOUT INTERRUPTION.

PERMANENT STABILIZATION WITH SOD

1. ALL SPECIFICATIONS, SITE PREPARATION, INSTALLATION AND MAINTENANCE OF SOD FOR PERMANENT, LONG-LIVED VEGETATIVE COVER SHALL CONFORM TO SECTION 54.01 OF "1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" PUBLISHED JOINTLY BY WATER RESOURCES ADMINISTRATION, SOIL CONSERVATION SERVICE, AND THE STATE SOIL CONSERVATION COMMITTEE.

APPROVED HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Gina Ivrinnanji 11/18/94
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

10/10/94

No. 12379

OWNERS/DEVELOPERS CERTIFICATION

"I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN 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."

OWNER/DEVELOPER (name & title) 4-6-94
DATE

ENGINEER'S CERTIFICATE

I HEREBY CERTIFY THAT THE PLANS HAVE BEEN DESIGNED IN ACCORDANCE WITH LOCAL ORDINANCES, COMAR 08.05.01 AND 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

STEPHEN K CHAN 12379
REG. NO.

STEPHEN K. CHAN
No. 12379

1714

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

~~DIRECTOR OF PUBLIC WORKS~~ DATE
Andrew M. Danefer 11-10-94
CH. BUR. OF HWYS. HS

CHIEF, BUREAU OF ENGINEERING 11/14/94
DATE

CHIEF, LAND DEV. DIV. 11/14/94
DATE

DES				
DRN				
CHK				
DATE	BY	NO	REVISION	DATE

600' SCALE MAP NO ______ BLOCK NO ______

F-94-99 "AS-BUILT"

Jay Holm 7/13/99

DETAIL SHEET
ABBEYFIELD ESTATES
TAX MAP 31 PARCELS 206, 208 & 209
1st. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 6 OF 12

F94-99 92-041

STONE OUTLET SEDIMENT TRAP NO. 1

* EX. DRAINAGE AREA	= 0.3 AC
PROP. DRAINAGE AREA	= 2.9 AC
STORAGE REQUIRED	= 194 CY
STORAGE PROVIDED	= 200 CY
BOTTOM TRAP DIMENSIONS	= 72'x 25' x 3'
BOTTOM ELEVATION	= 413.0
CREST ELEVATION	= 416.0
OUTLET WIDTH	= 6'
SIDE SLOPES	= 2:1

* After Diversion is Constructed.

ILCHESTER ROAD
AREA DEDICATED TO HOWARD COUNTY FOR THE PURPOSE OF PUBLIC ROAD 957.24 ± OR 0.0220 AC.±

DA=0.64AC± C=0.28 IMP=37% INV.=453.70

DA=1.01AC± C=0.28 IMP=21% INV.IN=453.42 INV.OUT=453.25

DA=0.69AC± C=0.23 IMP=30% INV.=424.31

SIMPKINS COURT

DA=0.81AC± C=0.23 IMP=27% INV.IN=423.99 INV.OUT=423.42

DA=1.38AC± C=0.24 IMP=8% INV.=422.21

24' R/W FOR INGRESS & EGRESS TO PARCELS 204 & 205 4258.30

INV.IN=414.14 INV.OUT=413.60

DA=0.08AC± C=0.23 IMP=23%

DA=1.14AC± C=0.24 IMP=12% INV.=408.05

DA=1.42AC± C=0.23 IMP=6% INV.=412.13 INV.OUT=411.75

INV.=412.39

DA=0.52AC± C=0.23 INV.=416.50

DA=0.52AC± C=0.24 IMP=22% INV.=413.93

RADEL COURT INV.IN=407.68 INV.OUT=407.23

LYNN LANE

DA=1.00AC± C=0.23 IMP=25% INV.IN=412.02 INV.OUT=411.44

DA=0.23AC± C=0.23 IMP=78% INV.IN=411.14 INV.OUT=411.12

DA=0.71AC± C=0.26 IMP=37% INV.IN=413.15 INV.OUT=412.94

INV.=414.02 DA=0.15AC± C=0.20 IMP=72%

Tree Protection Fence (TPF) See Detail on Sheet 6 of 12.

SWM Note: County will only cut grass once per year and perform yearly inspections.

#2 STONE 80'-6" DIA. PERFORATED PIPE - SHEATHED WITH FILTER CLOTH CONVERSION FOR SEDIMENT CONTROL ONLY FOR RETAIL SEE STM. WATER MAN. POND

Stream Buffer

N.11°50'19"W. 243.00'

25' Wetland Buffer

30' Public Storm Drain & Utility Easement

100 YEAR FLOODPLAIN

WETLANDS

BUFFER

PROVIDE EROSION CONTROL MATTING ALONG DITCH

Stone Outlet Sediment Trap NO 2
Drainage Area = 2.2 AC.
Storage Required = 149 CY
Storage Provided = 160 CY
Bottom Elevation = 412.0
Crest Elevation = 416.0
Outlet Width = 6'
Side Slopes = 2:1

DA=12.60 AC±
RCN = 72
TC = 0.18 HR.

MONTGOMERY ROAD

(MD. ROUTE 103)

"AS-BUILT"

SOIL TYPES

Symbol	Description	Soil Group
AgB2	Aura gravelly loam, 1 to 5 percent slopes, moderately eroded	A
AgC2	Aura gravelly loam, 5 to 10 percent slopes, moderately eroded	A
AgE3	Aura gravelly loam, 10 to 30 percent slopes, severely eroded	A
BeB2	Beltsville silt loam, 1 to 5 percent slopes, moderately eroded	C
BeC2	Beltsville silt loam, 5 to 10 percent slopes, moderately eroded	C
BeD2	Beltsville silt loam, 10 to 15 percent slopes, moderately eroded	C
CmB2	Chillum silt loam, 1 to 5 percent slopes, moderately eroded	B
CmC2	Chillum silt loam, 5 to 10 percent slopes, moderately eroded	B
CnB2	Chillum-Fairfax loams, 1 to 5 percent slopes, moderately eroded	B
CnD3	Chillum-Fairfax loams, 5 to 15 percent slopes, severely eroded	B
Co	Codorus silt loam	C
CuB	Comus silt loam, local alluvium, 3 to 8 percent slopes	B
Ha	Hatboro silt loam	D
Ju&B	Juka loam, local alluvium, 1 to 5 percent slopes	C
KnC2	Keyport silt loam, 5 to 10 percent slopes, moderately eroded	B
Ll	Leonardtown silt loam	D
NeB2	Neshaminy silt loam, 3 to 8 percent slopes, moderately eroded	B
NeC2	Neshaminy silt loam, 8 to 15 percent slopes, moderately eroded	B
SfB2	Sassafras gravelly sandy loam, 1 to 5 percent slopes, moderately eroded	B
SfC2	Sassafras gravelly sandy loam, 5 to 10 percent slopes, moderately eroded	B
SfD2	Sassafras gravelly sandy loam, 10 to 15 percent slopes, moderately eroded	B
SlB2	Sassafras loam, 1 to 5 percent slopes, moderately eroded	B
SlC2	Sassafras loam, 5 to 10 percent slopes, moderately eroded	B
SlD2	Sassafras loam, 10 to 15 percent slopes, moderately eroded	B
SuB2	Sunnyside fine sandy loam, 1 to 5 percent slopes, moderately eroded	B

		Symbol				
			STREET TREES			
44	11	AcR	ACER RUBRUM - OCTOBER GLORY MAPLE	2 1/2-3" CAL	B&B	35-40' O.C
35	2	PyC	PYRUS C. REDSPIRE - REDSPIRE PEAR	2 1/2-3" CAL	B&B	35-40' O.C
32	3	FrA	FRAXINUS AMERICANA AUTUMN PURPLE WHITE ASH	2 1/2-3" CAL	B&B	35-40' O.C
29	4	PrS	PRUNUS SARGENTI COLUMNARIS - COLUMNAR SARGENT CHERRY	2 1/2-3" CAL	B&B	35-40' O.C
			PERIMETER TREES			
7	5	AcS	ACER SACCHARUM GREEN MOUNTAIN MAPLE	2 1/2-3" CAL	B&B	--------
8	6	PlA	PLATANUS ACERIFOLIA - BLOOD GOOD LONDON PLANE	2 1/2-3" CAL	B&B	--------
17	7	CoF	CORNUS FLORIDA - FLOWERING DOGWOOD	8-10' HT.	B&B	15' O.C.
13	8	MaS	MALIUS SNOWDRIFT SNOWDRIFT CRABAPPLE	8-10' HT.	B&B	MIN. 20' O.C.
7	9	PrT	PRUNUS THUNDERCLOUD - THUNDERCLOUD PLUM	8-10' HT.	B&B	MIN. 20' O.C.
12	10	MaR	MALIUS ZUMI CALOCARPA - REDBUD CRABAPPLE	8-10' HT.	B&B	MIN. 20' O.C.
9	11	PrK	PRUNUS SERRULATA KWANZAN - KWANZAN CHERRY	8-10' HT.	B&B	MIN. 20' O.C.
14	12	PrY	PRUNUS YEDOENSIS - YOSHINO CHERRY	8-10' HT.	B&B	MIN. 20' O.C.
6	13	PiA	PICEA ABIES - NORWAY SPRUCE	6-8' HT.	B&B	15' O.C.
20	14	PiN	PINUS NIGRA - AUSTRIAN PINE	6-8' HT.	B&B	10-15' O.C.
30	15	PiS	PINUS STROBUS - WHITE PINE	6-8' HT.	B&B	10-15' O.C.
4	16	SaN	SALIX NIOBE - NIOBE WEEPING WILLOW	1 1/2 - 2" CAL	B&B	

Note: 6 of the 36 White Ash street trees and 11 of 44 Glory Maple street trees are located on the Noise Mitigation Berm or along Montgomery Road.

*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 DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

JANG H. LEE, PROFESSIONAL ENGINEER — 4/5/94 DATE

*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."

JANG H. LEE, PROFESSIONAL ENGINEER — 4/5/94 DATE

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS
Patricia Eyler 11/2/94
SIGNATURE DATE
U.S. SOIL CONSERVATION SERVICE
S.C.S. APPROVAL FOR SEDIMENT AND EROSION CONTROL IS CONTINGENT UPON REGULATORY PERMITS.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — 11/14/94 DATE
CHIEF, BUREAU OF HIGHWAY — 11-10-94 DATE
CHIEF, BUREAU OF ENGINEERING — 11/10/94 DATE

APPROVED HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — 11/18/94 DATE

HOWARD SOIL CONSERVATION DISTRICT
S.C.S. APPROVAL FOR SEDIMENT AND EROSION CONTROL IS CONTINGENT UPON ISSUANCE OF ALL APPLICABLE REGULATORY PERMITS.
APPROVED BY Robert W. Dick DISTRICT MANAGER
DATE 11/2/94

The Developer shall be responsible for the installation of the required landscaping and the planting will be shown on the Final Plan.

Planting along roadway on berm:
Perimeter: 2 x 58 = 116 units req (shade: 2 units, PL & Pine: 1 each)
2 x 9 = 18 + 50 + 50 = 118 provided

SUMMARY TABLE FOR DRAINAGE AREA AND "C" FACTOR FOR INLETS

INLET #	DRAINAGE AREA (Ac) B SOIL	C SOIL	TOTAL	"C" FACTOR (WEIGHTED)
TO SWM	0.52	0.43	0.95	0.25
I-7	0.75	0.49	1.24	0.24
I-9	1.60	0.30	1.80	0.24
I-15	0.17	0.15	0.32	0.25
I-17	0.49	0.93	1.42	0.26
I-19	0.55	0.86	1.41	0.26
I-23	0.11	0.70	0.81	0.27
I-29	1.01	0.37	1.38	0.24
I-31	0.81	-	0.81	0.23
I-33	0.67	-	0.67	0.23
I-35	1.01	-	1.01	0.28
I-36	0.64	-	0.64	0.28
I-41	0.37	0.15	0.52	0.24
I-43	0.29	-	0.29	0.23
I-45	0.79	0.27	1.06	0.24
I-47	0.26	0.45	0.71	0.26
I-49	0.06	0.09	0.15	0.26
TOTAL	10.08	5.19	15.27	TO SWM POND
E-53	10.10	2.50	12.60	RCN=72 FOR CULVERT

ENGINEER'S "AS-BUILT" CERTIFICATE

I hereby certify that the "As-Built" information shown hereon is accurate and complete. BLACK MAFFER

Jang H. Lee, P.E. — 7/10/95 Date
MD LIC. #18632

STATE OF MARYLAND — JANG H. LEE No. 18632 — REGISTERED PROFESSIONAL ENGINEER

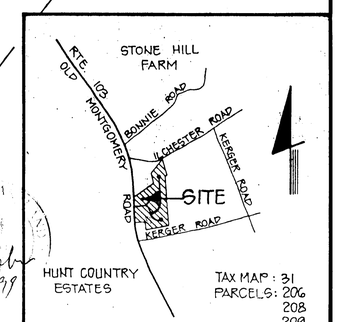
SOILS MAP (N.T.S.)
From Howard Co. SCD Soils Map Pages 20 of 25

DRAINAGE AREA MAP

ABBEYFIELD ESTATES

TAX MAP 31 PARCELS 206, 208 & 209
1st. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
Scale: 1" = 50' — April, 1994
F-94-99

VICINITY MAP
SCALE: 1" = 2000'



TAX MAP: 31
PARCELS: 206, 208, 209

7/13/95

7 OF 12

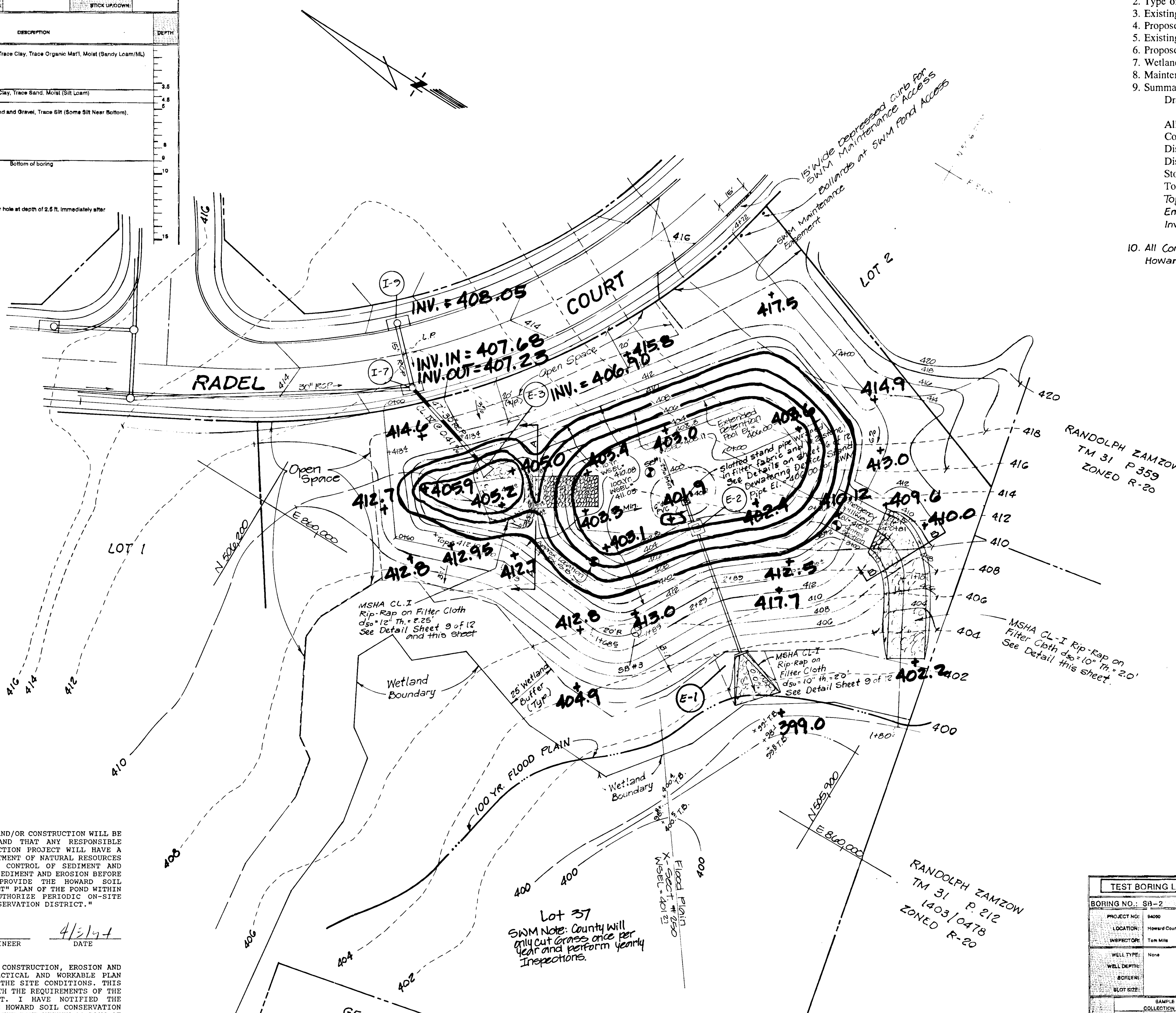
F94-99 92-041

TEST BORING LOG	HYDRO-TERRA, INCORPORATED	PAGE 1
BORING NO.: SB-3	PROJECT: ABBEYFIELD ESTATES	DATE: 8/24/94

PROJECT NO:	94050	DRILLER:	Hillis-Carnes (K. Calender)	DRILLING BIT:	Auger
LOCATION:	Howard County, MD	RIG TYPE:	Mobile B-61	GROUND ELEVATION:	405.4 ft.
INSPECTOR:	Tom Mills	METHOD:	H.S. Auger	SAMPLING METHOD:	Split-spoon
WELL TYPE:	None	SCREEN LENGTH:		PROTOP WIDTH/TYPE	
WELL DEPTH:		GROUT LENGTH/TYPE:		PAD ELEVATION:	
SCREEN:		SEAL LENGTH/TYPE:		TOC ELEVATION	
SLOT SIZE:		FILTER LENGTH/TYPE:		STICK UP/DOWN:	

SAMPLE NUMBER	HNU (PPM)	STP TEST BLOWS / 6"	REC (in.)	DESCRIPTION	DEPTH
S-1		2-2-3	12	Brown Silt, Trace Sand, Trace Clay, Trace Organic Mat'l, Moist (Sandy Loam/ML)	
S-2		3-6-21	15		3.5
				Tan & Brown Silt, Trace Clay, Trace Sand, Moist (Silt Loam)	4.5
S-3		16-54-32	15	Brown & Rust Brown Sand and Gravel, Trace Silt (Some Silt Near Bottom), Wet (Sand/GW)	5
S-4		10-10-13	15		8
				Bottom of boring	9

Notes:
Water standing in auger hole at depth of 2.5 ft. immediately after withdrawing augers.



SWM Plan Notes:

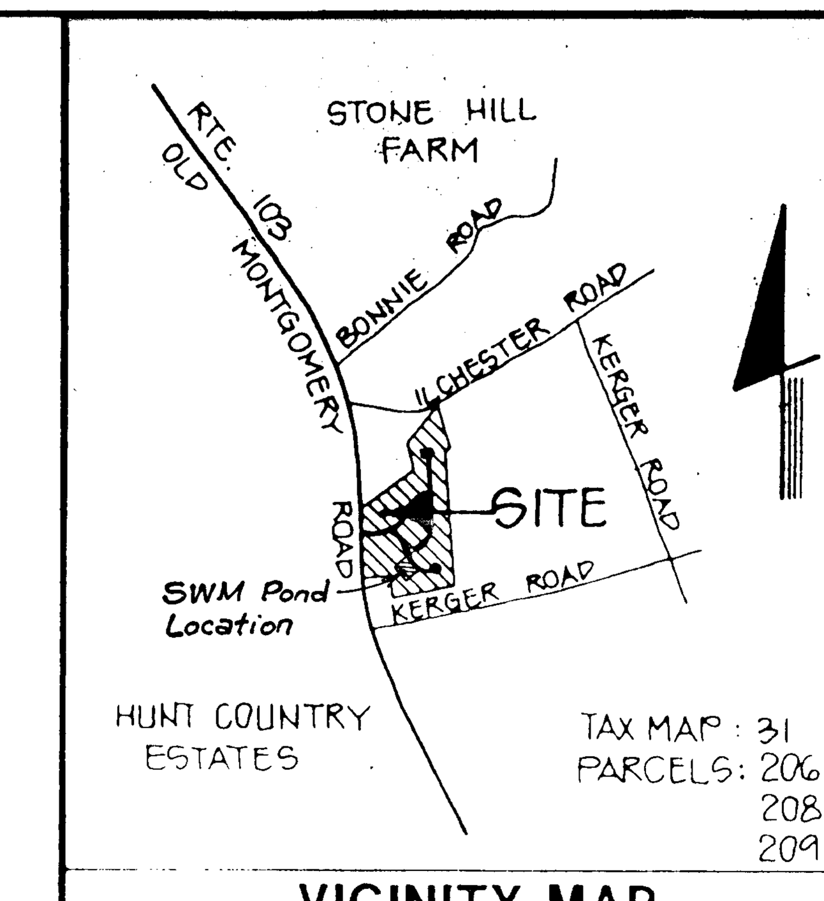
1. Hazard class of Dam is "A".
2. Type of water quality device: Extended Detention
3. Existing Topography shown thusly: - - - - - - - - - -
4. Proposed Topography shown thusly: ————————
5. Existing spot elevation shown thusly: +400.5
6. Proposed spot elevation shown thusly: +400.5
7. Wetland delineation by McCarthy and Assoc., Inc.
8. Maintenance will be provided by: County (No Home Owner's Association)
9. Summary Table:

Drainage area to the facility: 15.27 Acre.

	2 year	10 year	100 year
Allowable release rete to West:	9.05 cfs	29.31 cfs	
Computed inflow to the facility:	17.81 cfs	44.33 cfs	77.04 cfs
Discharge from the facility:	2.62 cfs	17.79 cfs	63.52 cfs
Discharge Elevation at facility:	408.11	410.08	411.04
Storage provided at the elevation:	0.48 Ac-ft	1.04 Ac-ft	1.40 Ac-ft
Total discharge to West:	9.05 cfs	28.47 cfs	87.34 cfs

Top of Dam Elevation = 412.10
Emergency Spill Way Elevation = 410.10
Invert of Principal Spill Way = 401.50

10. All Construction shall be in accordance with the current Howard County Design Manual Volumn IV.



VICINITY MAP
SCALE: 1" = 2000'

TEST BORING LOG	HYDRO-TERRA, INCORPORATED	PAGE 1
BORING NO.: SB-1	PROJECT: ABBEYFIELD ESTATES	DATE: 8/24/94

PROJECT NO:	94050	DRILLER:	Hillis-Carnes (K. Calender)	DRILLING BIT:	Auger
LOCATION:	Howard County, MD	RIG TYPE:	Mobile B-61	GROUND ELEVATION:	412.4 ft.
INSPECTOR:	Tom Mills	METHOD:	H.S. Auger	SAMPLING METHOD:	Split-spoon
WELL TYPE:	None	SCREEN LENGTH:		PROTOP WIDTH/TYPE	
WELL DEPTH:		GROUT LENGTH/TYPE:		PAD ELEVATION:	
SCREEN:		SEAL LENGTH/TYPE:		TOC ELEVATION	
SLOT SIZE:		FILTER LENGTH/TYPE:		STICK UP/DOWN:	

SAMPLE NUMBER	HNU (PPM)	STP TEST BLOWS / 6"	REC (in.)	DESCRIPTION	DEPTH
S-1		3-3-3	6	Brown Silt, Trace Sand, Trace Clay, Trace Gravel Near Bottom, Moist (Sandy Loam/ML)	
S-2		2-7-16	12		
S-3		5-12-14	12		5
S-4		8-19-21	15	Brown Sand, Trace Silt, Moist to Wet (Silt Loam/ML)	8
S-5		6-10-18	15	Tan and Rust Brown Silt, Some Sand, Trace Clay, Moist - Occasional Thin Sand Seams, More Clay Near Bottom. (Silt Loam/ML)	10
S-6		5-15-17	18		15
S-7		4-23-78	18		16
S-8		11-46-115	15	White to Tan Sand and Gravel, Trace Silt, Wet (Sand/GW)	20
S-9		40-100-ref			21
				Bottom of boring at 21 feet	

Notes:
Hole collapsed to 10 ft. when augers withdrawn. New hole drilled 10 ft. away at slightly higher elevation to depth of 19.5 ft. and slotted one-inch PVC pipe installed to 19 ft. in order to measure water table. Water at 400.8 ft. elevation 96 hrs. after installation. Abandoned by filling pipe with neat cement.

PROPORTIONS USED: TRACE = 0-10%, LITTLE = 10-20%, SOME 20-35%, AND = 35-50%

SEDIMENT CONTROL & POND CONSTRUCTION

( ) By The Developer:

"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 the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

Signature of Developer — 7/7/94 Date
Print name below signature
MIKE PICH

( ) By the Engineer:

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

Signature of Engineer — 7-7-94 Date
Print name below signature
JANG H. LEE

( ) 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 — 11/3/94 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 — 11/3/94 Date

HOWARD SOIL CONSERVATION DISTRICT
S.C.S. APPROVAL FOR SEDIMENT AND EROSION CONTROL IS CONTINGENT UPON ISSUANCE OF ALL APPLICABLE REGULATORY PERMITS.
APPROVED BY ______ DISTRICT MANAGER
DATE 11/3/94

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS
SIGNATURE — 11/3/94 DATE
U.S. SOIL CONSERVATION SERVICE
S.C.S. APPROVAL FOR SEDIMENT AND EROSION CONTROL IS CONTINGENT UPON REGULATORY PERMITS.

"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 DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

JANG H. LEE PROFESSIONAL ENGINEER — 4/5/94 DATE

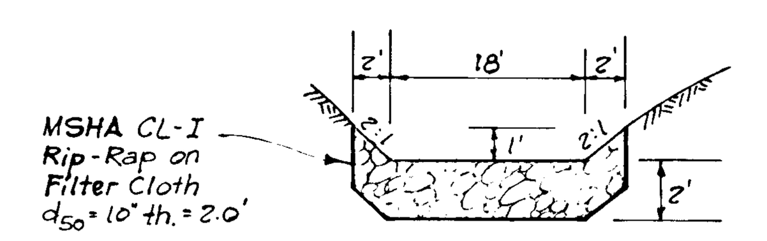
"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

JANG H. LEE PROFESSIONAL ENGINEER — 4/5/94 DATE

TEST BORING LOG	HYDRO-TERRA, INCORPORATED	PAGE 1
BORING NO.: SB-2	PROJECT: ABBEYFIELD ESTATES	DATE: 8/24/94

PROJECT NO:	94050	DRILLER:	Hillis-Carnes (K. Calender)	DRILLING BIT:	Auger
LOCATION:	Howard County, MD	RIG TYPE:	Mobile B-61	GROUND ELEVATION:	410.9 ft.
INSPECTOR:	Tom Mills	METHOD:	H.S. Auger	SAMPLING METHOD:	Split-spoon
WELL TYPE:	None	SCREEN LENGTH:		PROTOP WIDTH/TYPE	
WELL DEPTH:		GROUT LENGTH/TYPE:		PAD ELEVATION:	
SCREEN:		SEAL LENGTH/TYPE:		TOC ELEVATION	
SLOT SIZE:		FILTER LENGTH/TYPE:		STICK UP/DOWN:	

SAMPLE NUMBER	HNU (PPM)	STP TEST BLOWS / 6"	REC (in.)	DESCRIPTION	DEPTH
				Brown Silt, Trace Sand, Trace Clay, Moist (Sandy Loam/ML)	
S-1		1-6-16	6		4.5
S-2		6-10-10	12	Brown Sand and Gravel, Trace Silt, Moist (Sand/GW)	5
S-3		10-17-19	18		8
				Tan & Brown Silt, Some Sand, Trace Clay, Moist	8.5
				Bottom of Boring	9



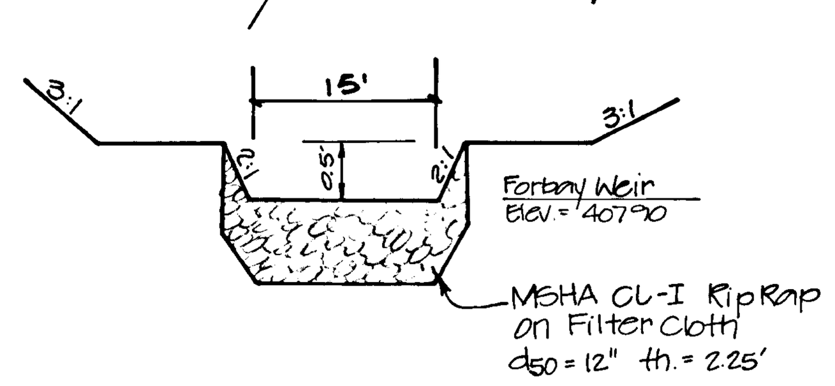
DETAIL OF OUTFALL PROTECTION FROM EMERGENCY SPILLWAY
Section B-B
N.T.S.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — 11/14/94 DATE
CHIEF, BUREAU OF HIGHWAY — 11-10-94 DATE
CHIEF, BUREAU OF ENGINEERING — 11/14/94 DATE

APPROVED HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — 11/18/94 DATE



Forebay Weir Detail
Section A-A
N.T.S.

ENGINEER'S "AS-BUILT" CERTIFICATE

I hereby certify that the "As-Built" information shown hereon is accurate and complete. BLACK MARKER

Jang H. Lee, P.E. — 7/16/99 Date
MD LIC. #18632

OPERATION, MAINTENANCE AND INSPECTION

Inspection of the pond(s) shown hereon shall be performed at least annually, in accordance with the checklist and requirements contained within USDA, SCS "Standards And Specifications For Ponds" (MD-378). The pond owner(s) and any heirs, successors, or assigns shall be responsible for the safety of the pond and the continued operation, surveillance, inspection, and maintenance thereof. The pond owner(s) shall promptly notify the Soil Conservation District of any unusual observations that may be indications of distress such as excessive seepage, turbid seepage, sliding or slumping.

DESIGN	JL
DRAFT	T.C. Tang
CHECKED	JL
DATE	April 5, 1994
SCALE	1" = 30'

NO.	REVISION	DATE	BY

LAVELLE & ASSOCIATES INCORPORATED
CIVIL ENGINEERS • LAND PLANNERS • LAND SURVEYORS
10 NORTH JEFFERSON STREET, SUITE 203, FREDERICK, MARYLAND 21701
OFFICE: (301) 831-4510 (301) 695-9722 FAX: (301) 695-9766

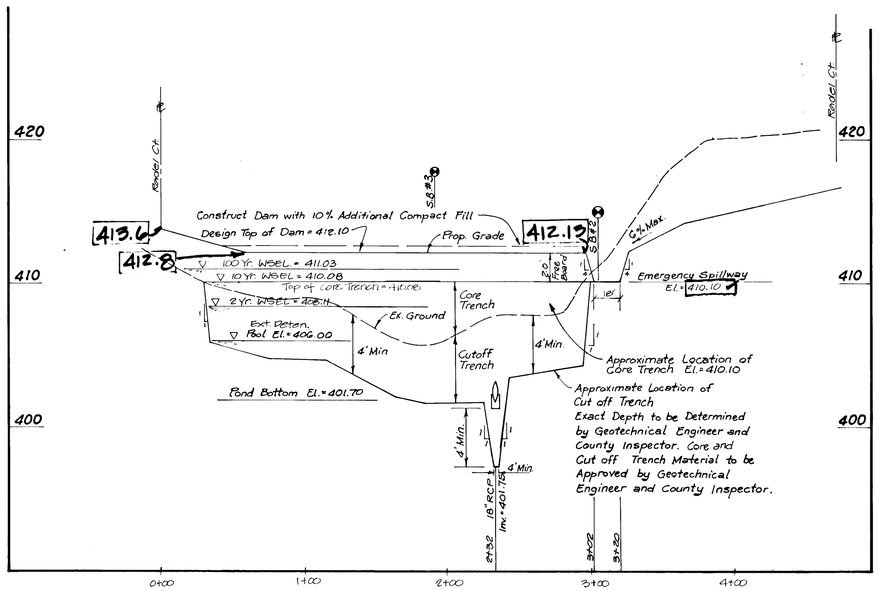
STORMWATER MANAGEMENT PLAN
ABBEYFIELD ESTATES
TAX MAP 31 PARCELS 206, 208 & 209
1st. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

F-94-99

1714

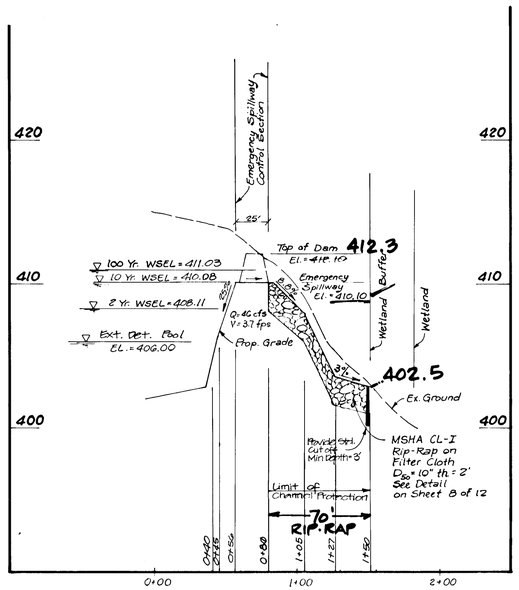
F-94-99 "AS-BUILT"

F 94.99



PROFILE ALONG ℄ OF DAM

SCALE : H : 1" = 50'
V : 1" = 5'



PROFILE ALONG ℄ OF EMERGENCY SPILLWAY

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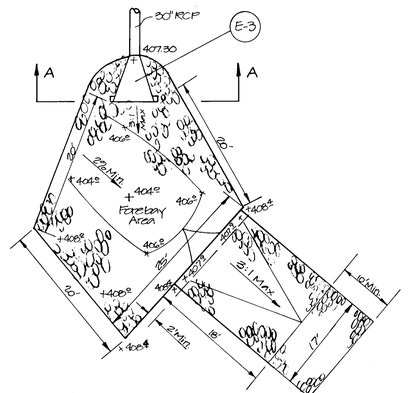
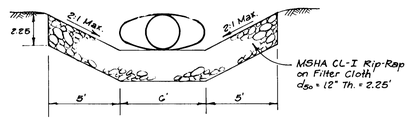
V : 1" = 5'





SECTION A-A
N.T.S

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 11/14/94

CHIEF, BUREAU OF HIGHWAYS — DATE 11-10-94

CHIEF, BUREAU OF ENGINEERING — DATE 11/14/94

APPROVED HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 11/18/94

HOWARD SOIL CONSERVATION DISTRICT

S.C.S. APPROVAL FOR SEDIMENT AND EROSION CONTROL IS CONTINGENT UPON ISSUANCE OF ALL APPLICABLE REGULATORY PERMITS.

APPROVED BY _____ DISTRICT MANAGER

DATE 11/7/94

REVIEWED FOR HOWARD S.C.D. AND MFFS TECHNICAL REQUIREMENTS

SIGNATURE _____ DATE 11/7/94

U.S. SOIL CONSERVATION SERVICE

S.C.S. APPROVAL FOR SEDIMENT AND EROSION CONTROL IS CONTINGENT UPON REGULATORY PERMITS.

SEDIMENT CONTROL & POND CONSTRUCTION

( ) By The Developer:

"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 the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

Signature of Developer — Date 7/7/94
Print name below signature
MILE FITH

( ) By the Engineer:

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

Signature of Engineer — Date 7-7-94
Print name below signature
JANG H. LEE

( ) 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 11/7/94

( ) 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 11/7/94

DESIGN	JL
DRAFT	T.C. Tang
CHECKED	JL
DATE	April 5, 1994
SCALE	As Shown

NO.	REVISION	DATE	BY

LAVELLE & ASSOCIATES INCORPORATED
CIVIL ENGINEERS • LAND PLANNERS • LAND SURVEYORS
10 NORTH JEFFERSON STREET SUITE 203 FREDERICK, MARYLAND 21701
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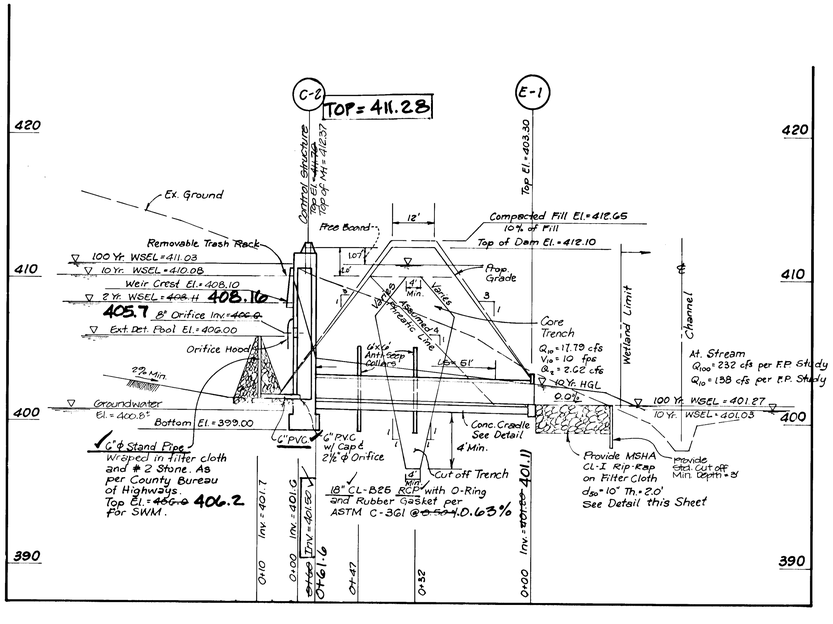
SWM DETAILS
ABBEYFIELD ESTATES
TAX MAP 31 PARCELS 206, 208 & 209
1st. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

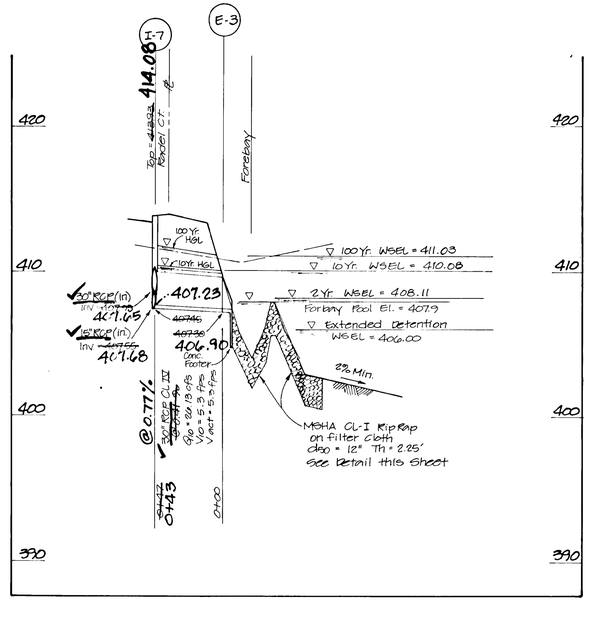
F-94-99

9 OF 12



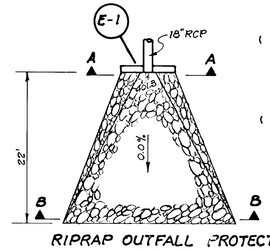
PROFILE ALONG PRINCIPAL SPILLWAY

SCALE : H : 1" = 20'
V : 1" = 5'

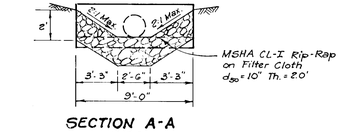


FOREBAY SECTION A-A

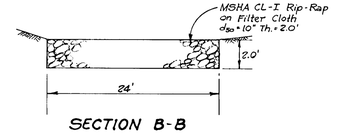
SCALE : H : 1" = 30'
V : 1" = 5'



RIPRAP OUTFALL PROTECTION
N.T.S.



SECTION A-A
N.T.S.



SECTION B-B
N.T.S.

ENGINEER'S "AS-BUILT" CERTIFICATE

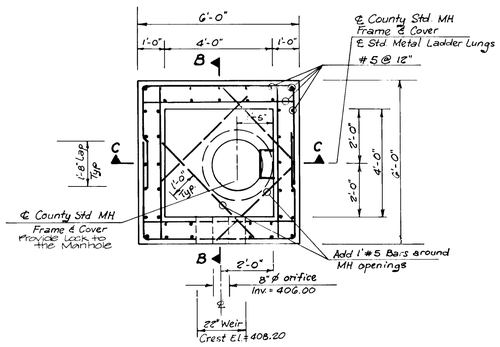
I hereby certify that the "As-Built" information shown hereon in red is accurate and complete. BLACK MARKER

Jang H. Lee, P.E. MD.LIC. #18632 — Date 7/17/99

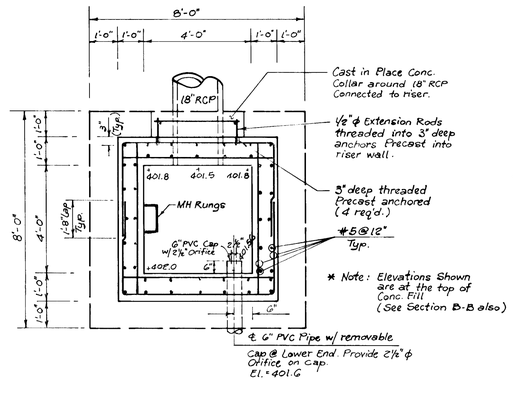
JANG H. LEE 18632 REGISTERED PROFESSIONAL ENGINEER

"AS-BUILT"

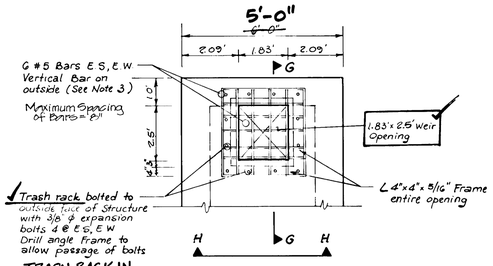
F-94-99



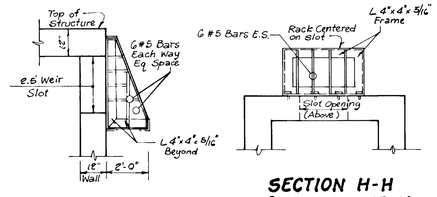
TOP PLAN VIEW (SECTION A-A)
N.T.S.



BOTTOM PLAN VIEW (SECTION D-D)
N.T.S.



FRONT ELEVATION



SECTION G-G (SIDE VIEW)
N.T.S.

SECTION H-H (BOTTOM VIEW)
N.T.S.

REMOVABLE TRASH RACK DETAILS
N.T.S.

REMOVABLE TRASH RACK NOTES:
1. For exposed steel, re-bar shall be hot dipped galvanized, and angles shall be painted with 2 coats of ZRC cold galvanizing compound.
2. Butt weld frame angle, fillet weld bars to angle frame.
3. Provide 5/16" fillet weld at bar crossings.
4. Angle frames and bars shall be fabricated using ASTM A-36 steel.
5. Trash rack shall be mounted to riser with 3/8" dia. hex. head bolts stainless steel.
6. Horizontal bars to be behind vertical bars.
7. All metal surface in contact with concrete shall be coated with bitumastic.
8. All trash racks and their components to be galvanized after fabrication and to be painted Battleship Gray.

STRUCTURAL NOTES

SPECIFICATIONS: All construction and materials shall conform to the latest edition of the Maryland State Highway Administration Specifications dated January 1982, including all revisions and additions thereto.

DESIGN METHOD: Cast-In-Place Concrete Design: Service Load Design Method
Concrete Design: fc = 1,575 p.s.i
Reinforcing Steel Design: fs = 24,000 p.s.i

DESIGN CONDITIONS: 1. 100 year flood elevation
2. 100 psf Live Load

GEOTECHNICAL INFORMATION: A geotechnical engineering report has been prepared for this project and is available for information and design purposes only and may not be sufficient for the preparation of an accurate bid.

The following geotechnical parameters were used for design:
1. Unit weight of wet soil = 120 pcf
2. Coefficient of soil pressure = 0.58
3. Minimum safe bearing capacity = 3000 psf

The design foundation bearing capacity and soil properties shall be verified in the field by a qualified Geotechnical Engineer prior to construction. If the actual bearing capacity or design properties do not meet the design parameters assumed, the Structural Engineer shall be contacted before construction continues. When directed by the Geotechnical Engineer, the subgrade beneath the base slab shall be removed and backfilled with 2000 psi concrete.

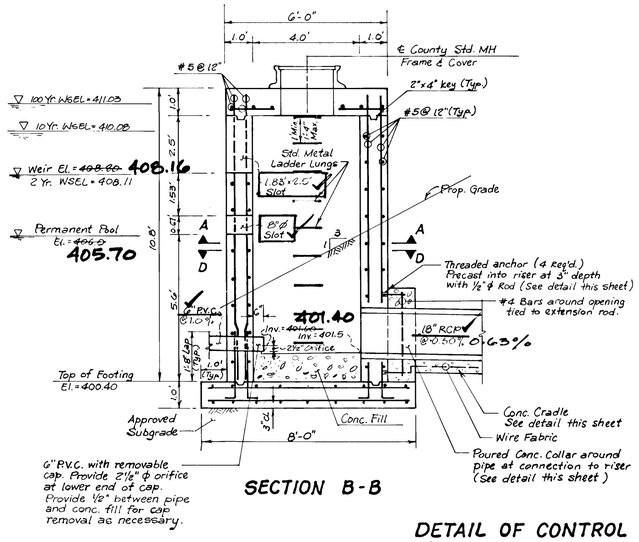
CONCRETE: All cast-in-place concrete shall obtain a minimum compressive strength of 3500 psi at 28 days, and shall conform to MSHA Specification Section 918. All exposed corners of concrete shall be chamfered 3/4" X 3/4". All keys are nominal size.

REINFORCING STEEL: All reinforcing steel bars shall conform to ASTM A-615, Grade 60. Concrete cover over all reinforcing shall be 2", unless noted otherwise. All rebar laps, bends and embedment depth shall meet the requirements of ACI 318-89.

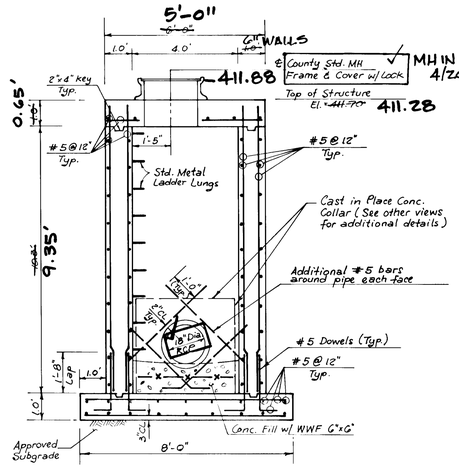
CONSTRUCTION DEWATERING: All work performed for permanent structures shall be carried out in areas free from water. Dewatering of the excavations shall be accomplished by methods approved by the Engineer. After having served their purpose, all temporary protective works required by dewatering shall be removed as required to prevent any obstruction to flow of water.

STRUCTURAL BACKFILLING: When directed by the Geotechnical Engineer, undercutting of the soil below the footing and backfilling with materials acceptable to the Geotechnical Engineer shall be performed. Backfilling of the undercut areas shall conform to MD 378. No backfill shall be placed against the cast-in-place walls until the concrete has attained the specified 28-day compressive strength. The static weight of compaction equipment used adjacent to walls shall not exceed 3000 pound.

SHOP DRAWINGS: All shop drawings, working drawings and calculations submitted to the Structural Engineer for review or approval shall be sealed, signed and dated by a Professional Engineer registered in the State of Maryland.

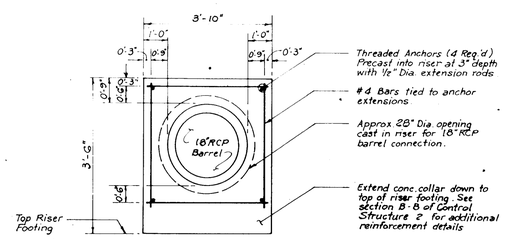


SECTION B-B

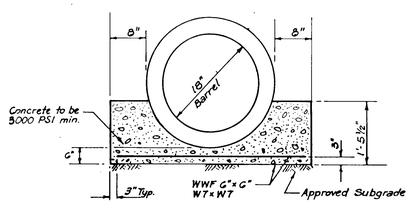


SECTION C-C

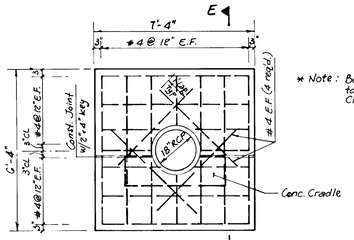
DETAIL OF CONTROL STRUCTURE (2)
N.T.S.



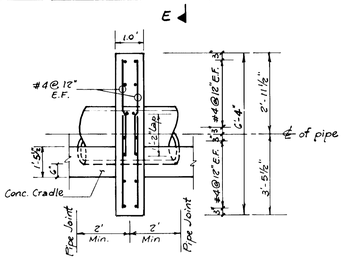
DETAIL CONCRETE COLLAR AT 18" RCP BARREL CONNECTION TO RISER
NTS



CONCRETE CRADLE DETAIL
NTS

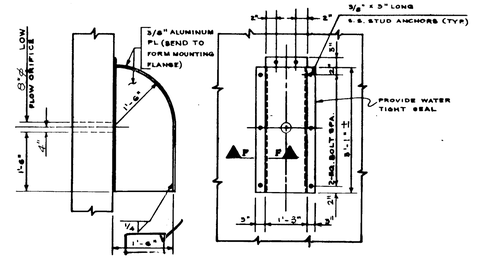


* Note: Bottom half of Collar to be poured with Cradle.

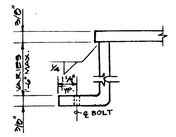


SECTION E-E
ANTI-SEEP COLLAR DETAIL
N.T.S.

NOTE: Asphalt joint filler material shall be placed between all concrete surface except between the pipe and cradle.



SIDE VIEW FRONT ELEVATION
LOW FLOW ORIFICE HOOD ✓ IN PLACE 4/20/99
N.T.S.



SECTION "F-F"
N.T.S.

ORIFICE HOOD NOTES:
1. ALL METAL SURFACES IN CONTACT WITH CONCRETE SHALL BE COATED WITH BITUMASTIC.
2. ALL EXPOSED METAL FOR HOOD SHALL BE PAINTED WITH 2 COATS OF ZRC COLD GALVANIZING COMPOUND.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 11/14/94

CHIEF, BUREAU OF HIGHWAY — DATE 11-10-94

CHIEF, BUREAU OF ENGINEERING — DATE 11/14/94

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS
Patricia Engh for MS 11/8/94
SIGNATURE DATE
U.S. SOIL CONSERVATION SERVICE
S.C.S. APPROVAL FOR SEDIMENT AND EROSION CONTROL IS CONTINGENT UPON REGULATORY PERMITS.

HOWARD SOIL CONSERVATION DISTRICT
S.C.S. APPROVAL FOR SEDIMENT AND EROSION CONTROL IS CONTINGENT UPON ISSUANCE OF ALL APPLICABLE REGULATORY PERMITS.
APPROVED BY Robert Eich DISTRICT MANAGER
DATE 11/9/94

APPROVED HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 11/18/94

ENGINEER'S "AS-BUILT" CERTIFICATE

I hereby certify that the "As-Built" information shown hereon in red is accurate and complete. BLACK MARKER

Jang H. Lee, P.E. — Date 7/13/95
MD LIC.#18632

STATE OF MD. JANG H LEE No. 18632 PROFESSIONAL ENGINEER

"AS-BUILT"
F-94-99

NO.	REVISION	DATE	BY

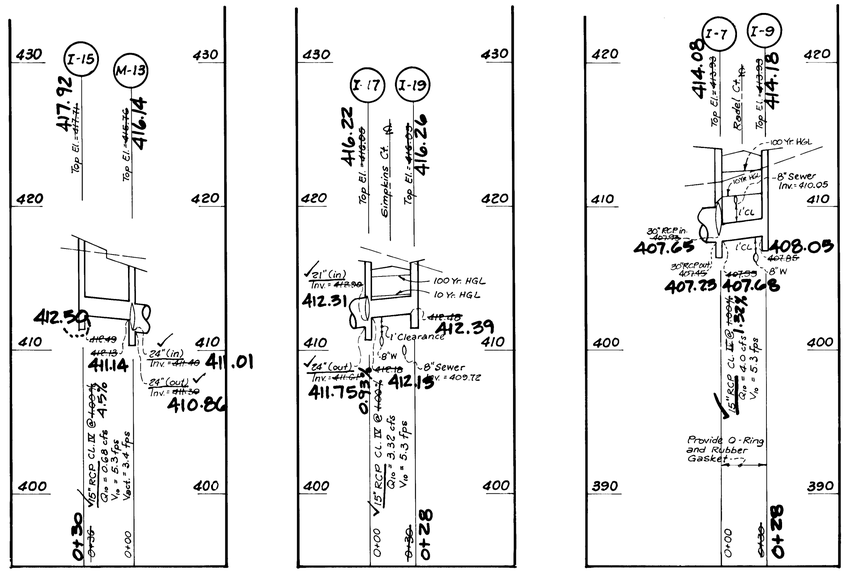
DESIGN	J.L.
DRAFT	T.C. Tang
CHECKED	J.L.
DATE	April 5, 1994
SCALE	As Shown

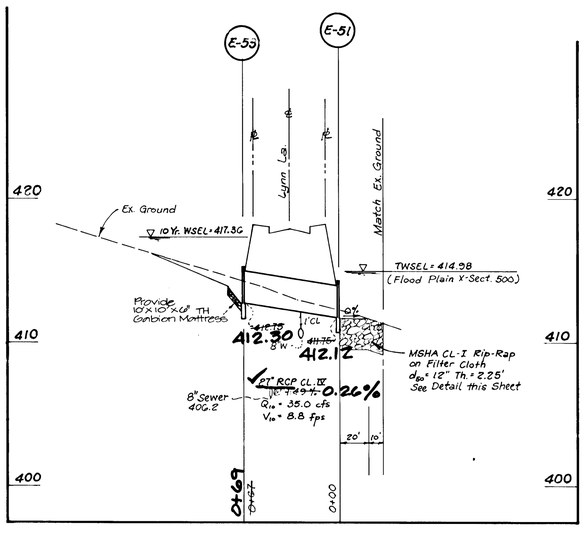
LAVELLE & ASSOCIATES INCORPORATED
CIVIL ENGINEERS • LAND PLANNERS • LAND SURVEYORS
10 NORTH JEFFERSON STREET SUITE 203 FREDERICK, MARYLAND 21701
OFFICE: (301) 831-4510 (301) 695-9722 FAX: (301) 695-0766

SWM STRUCTURE DETAILS
ABBEYFIELD ESTATES
TAX MAP 31 PARCELS 206, 208 & 209
1st. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

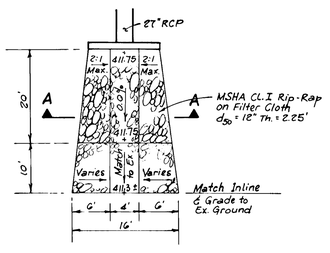
F-94-99

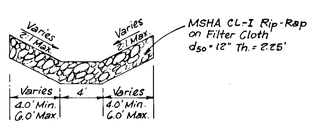
10 OF 12





24" CULVERT PROFILE @ LYNN LANE
STA. 1+12
SCALE : H : 1" = 50'
V : 1" = 5'





DETAILS FOR OUTFALL PROTECTION
@ STR. #51

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 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. For dry stormwater management ponds, a minimum of a 50 foot radius around the inlet structure shall be cleared.

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

Earth Fill

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into 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 will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble yet not be so wet that water can be squeezed out.

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

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of 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 24" or greater over the structure or pipe.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-361. An approved equivalent is AWWA Specification C-302.
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 inches, 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. The first joint must be located within 2 feet from the riser.
4. Backfilling shall conform to "Structure Backfill."
5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Concrete

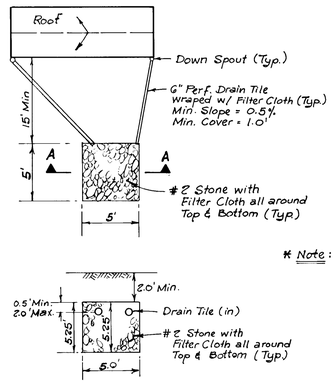
Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 608, Mix No. 3

Care of Water during Construction

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from the various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom of required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such levels which may require draining the water to sumps from which the water shall be pumped.

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 in accordance with the Maryland Soil Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.



SECTION A-A

DETAIL OF DRYWELL FOR ROOF DRAIN
N.T.S.

* Note: 1. Drywell not to be installed on fill area.
2 Exact location and depth at any lot to be installed per detail or as directed by Soil Engineer or County Inspector.

STRUCTURE SCHEDULE

STR. NO.	TYPE	TOP ELEV.	INV. IN	INV. OUT	REMARKS	LOCATION
E-1	Conc. EW	403.45	401.20	-	SD 5.21	See SWM Plan
C-2	SWM Str.	411.70	See Control Structure Details			
E-3	Conc. ES	-	407.30	-	SD 5.51	Radel Ct. 4+40, 59' R
I-7	A-10	413.93	407.55	407.45	SD 4.02	Radel Ct. 4+28.66, 15' R
			407.93			
I-9	A-10	413.93	-	407.85	SD 4.02	Radel Ct. 4+28.66, 15' L
M-11	Shallow	416.27	411.10	408.60	G 5.05	Radel Ct. 2+98, 15' R
	Br. MH		409.78			
M-13	Shallow	415.76	411.40	411.30	G 5.12	Radel Ct. 2+98, 15' L
	PC MH		412.13			
I-15	A-10	417.71	-	412.49	SD 4.02	Radel Ct. 2+62, 15' L
I-17	A-10	416.05	412.09	411.61	SD 4.02	Simpkins Ct. 0+52, 15' L
			412.18			
I-19	A-10	416.05	-	412.48	SD 4.02	Simpkins Ct. 0+52, 15' R
M-21	Shall. MH	417.57	412.78	412.63	G 5.12	Simpkins Ct. 1+57, 9' L
I-23	A-10	419.80	413.73	413.26	SD 4.02	Simpkins Ct. 2+52, 15' L
M-25	Shall. MH	421.61	415.70	415.50	G 5.12	Simpkins Ct. 3+49, 15' L
M-26	Shall. MH	423.29	418.00	417.75	G 5.12	Simpkins Ct. 4+34, 15' L
M-27	Std. MH	429.10	422.25	421.50	G 5.12	Simpkins Ct. 6+23, 15' L
			422.00			
I-29	A-10	429.31	-	422.61	SD 4.02	Lynn La. 8+00, 15' L
I-31	A-10	431.50	424.10	423.70	SD 4.02	Simpkins Ct. 6+65, 15' L
			424.00			
I-33	A-10	431.50	-	424.55	SD 4.02	Simpkins Ct. 6+65, 15' R
I-35	A-10	457.29	453.47	453.22	SD 4.02	Simpkins Ct. 10+23, 15' L
I-36	A-10	457.29	-	453.77	SD 4.02	Simpkins Ct. 10+23, 15' R
M-37	Std. PC MH	420.42	410.44	410.34	G 5.11	Radel Ct. 1+82, 9' R
M-39	Std. PC MH	420.95	411.40	411.25	G 5.11	Lynn La. 3+28, 17' R
			413.00			
I-41	A-10	422.75	-	415.50	SD 4.02	Lynn La. 3+81, 15' R
I-43	A-10	419.54	412.00	411.80	SD 4.02	Lynn La. 2+53, 15' R
I-45	A-10	419.47	412.77	412.16	SD 4.02	Lynn La. 2+50, 15' L
I-47	A-10	417.94	414.10	413.85	SD 4.02	Lynn La. 1+40.28, 15' L
I-49	A-10	417.94	-	414.40	SD 4.02	Lynn La. 1+40.28, 15' R
I-51	Conc. EW	414.75	411.75	-	SD 5.21	Lynn La. 1+12, 35' R
I-53	Conc. EW	415.75	-	412.75	SD 5.21	Lynn La. 1+12, 33' L

PIPE SCHEDULE

ITEM	SIZE	TYPE	CLASS	LENGTH	REMARKS
1	2.5"	PVC	-	10'	With 30 - 1/2" perf.
2	18"	RCP	C-25	60'	With O-ring and Rubber Gasket
3	15"	RCP	IV	30'	With O-ring and Rubber Gasket
4	15"	RCP	IV	277'	
5	18"	RCP	IV	1253'	
6	21"	RCP	IV	195'	
7	24"	RCP	IV	70'	
8	27"	RCP	IV	67'	
9	30"	RCP	IV	182'	

* Length taken from storm drain profile measuring center to center. Contractor shall verify all quantity considering slope and structural connections.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 11/14/94

CHIEF, BUREAU OF HIGHWAYS — DATE 11-10-94

CHIEF, BUREAU OF ENGINEERING — DATE 11/14/94

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS

SIGNATURE — DATE 11/9/94

U.S. SOIL CONSERVATION SERVICE

S.C.S. APPROVAL FOR SEDIMENT AND EROSION CONTROL IS CONTINGENT UPON REGULATORY PERMITS.

HOWARD SOIL CONSERVATION DISTRICT

S.C.S. APPROVAL FOR SEDIMENT AND EROSION CONTROL IS CONTINGENT UPON ISSUANCE OF ALL APPLICABLE REGULATORY PERMITS.

APPROVED BY [signature] DISTRICT MANAGER

DATE 11/9/94

APPROVED HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 11/18/94

ENGINEER'S "AS-BUILT" CERTIFICATE

I hereby certify that the "As-Built" information shown hereon in ~~red~~ PENCIL NOTATION is accurate and complete.

Jang H. Lee, P.E. — Date 3/10/99
MD LIC. #18632

STATE OF MARYLAND — JANG H. LEE No. 18632 — PROFESSIONAL ENGINEER

"AS-BUILT"

DESIGN	JL
DRAFT	T.C. Tang
CHECKED	JL
DATE	April 5, 1994
SCALE	As Shown

NO.	REVISION	DATE	BY

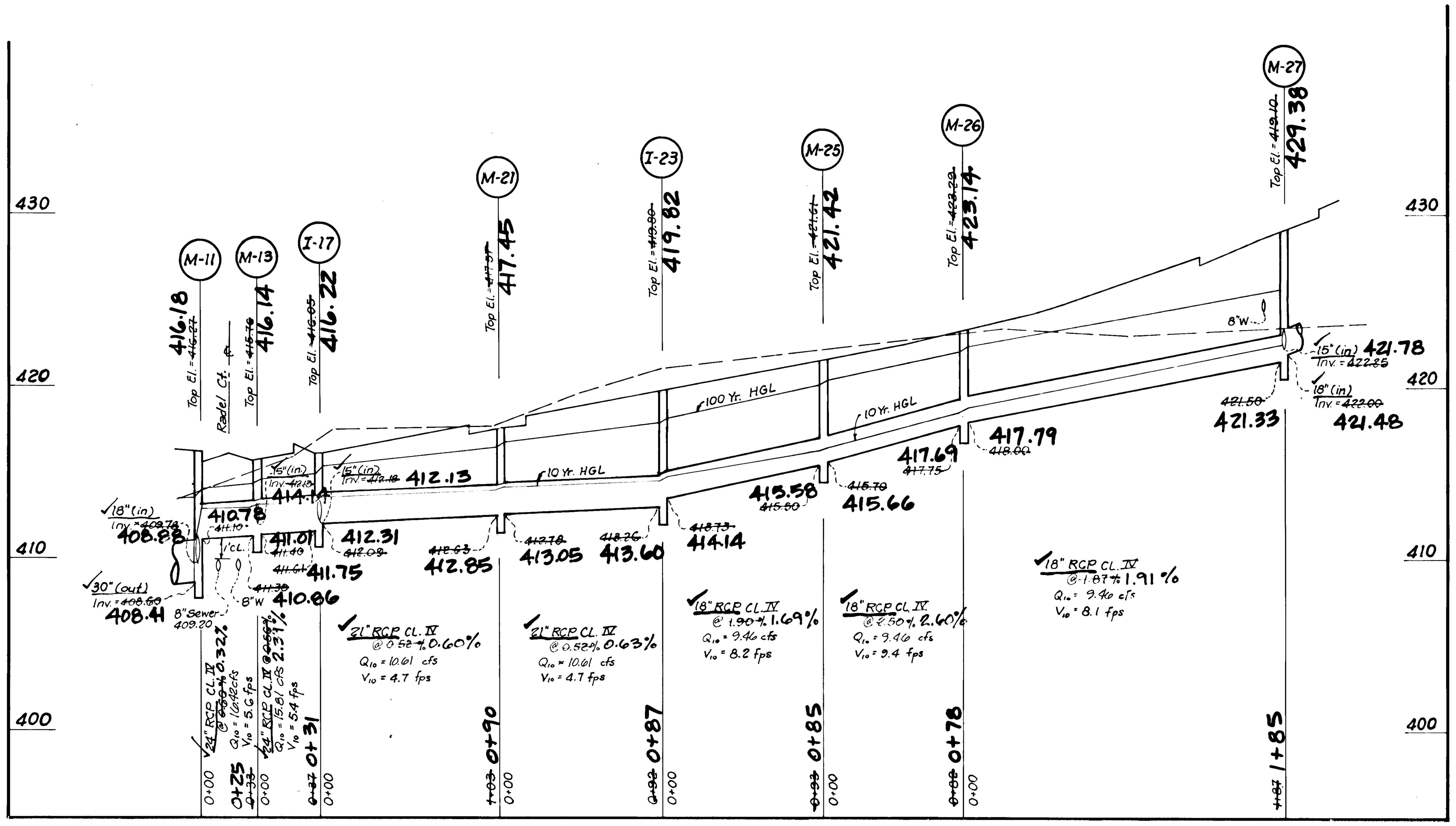
LAVELLE & ASSOCIATES INCORPORATED
CIVIL ENGINEERS • LAND PLANNERS • LAND SURVEYORS
10 NORTH JEFFERSON STREET SUITE 203 FREDERICK, MARYLAND 21701
OFFICE: (301) 831-4510 (301) 695-9722 FAX: (301) 695-9766

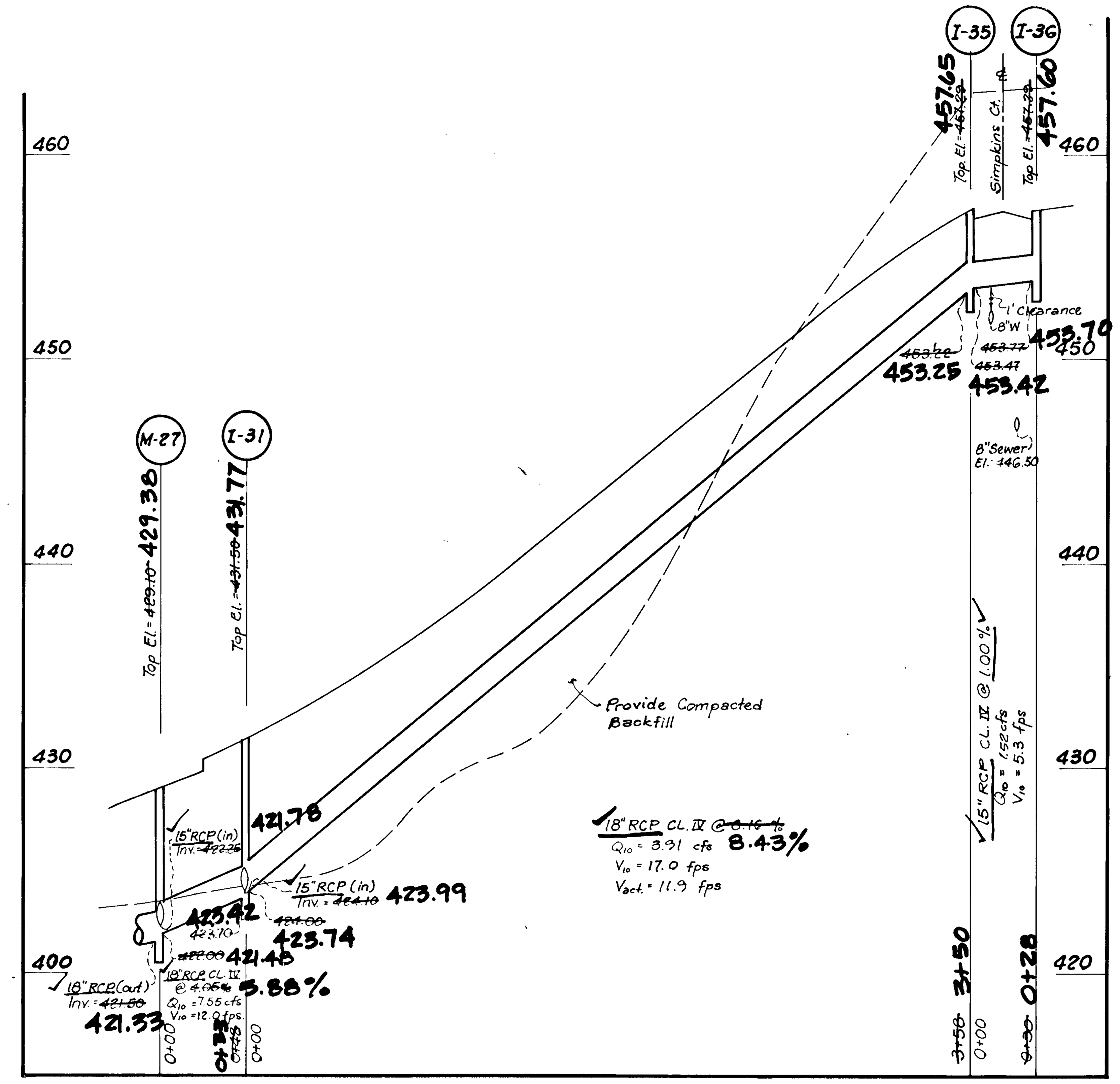
STORM DRAIN AND SWM DETAILS
ABBEYFIELD ESTATES
TAX MAP 31 PARCELS 206, 208 & 209
1st. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

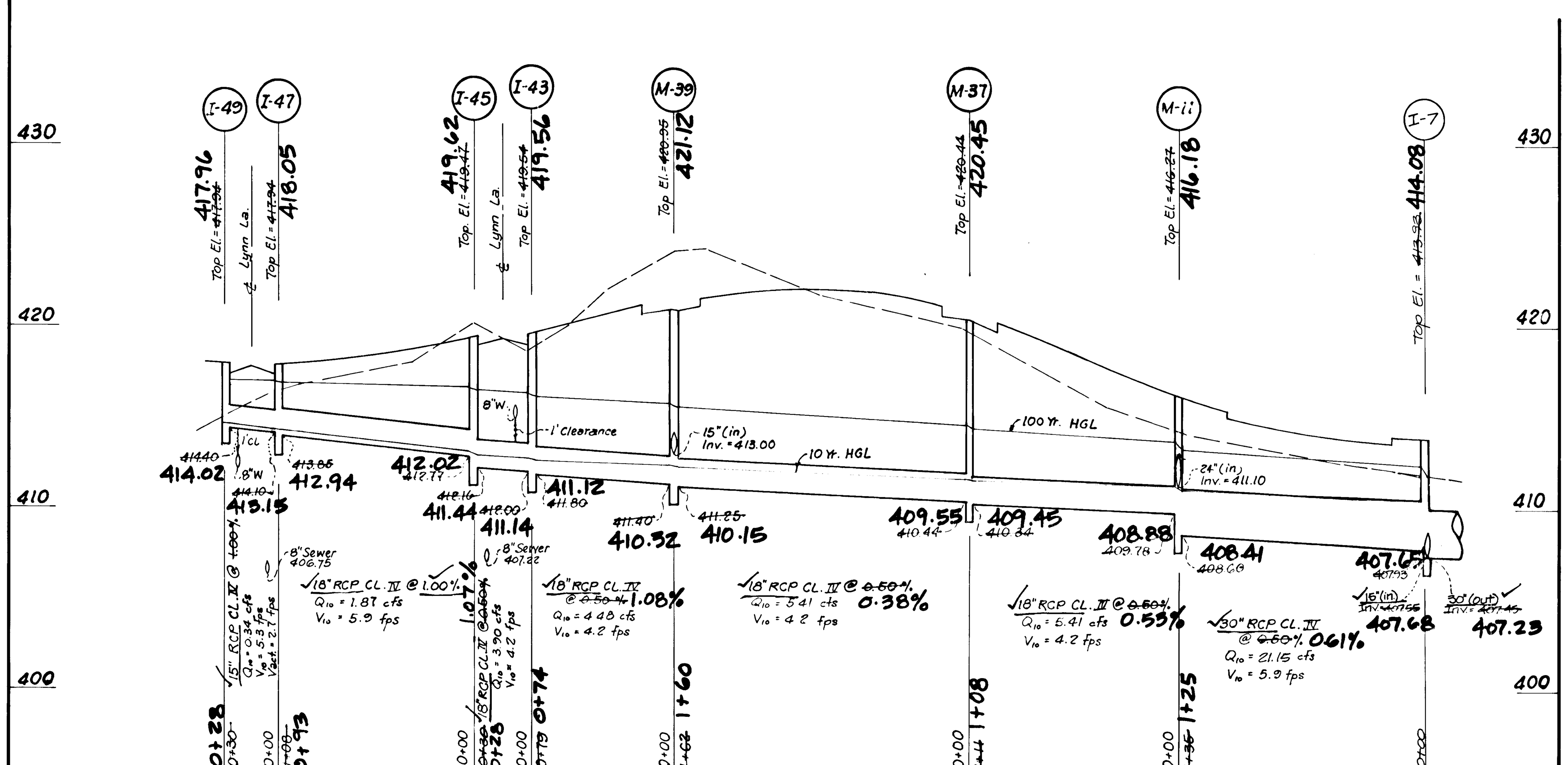
F-94-99

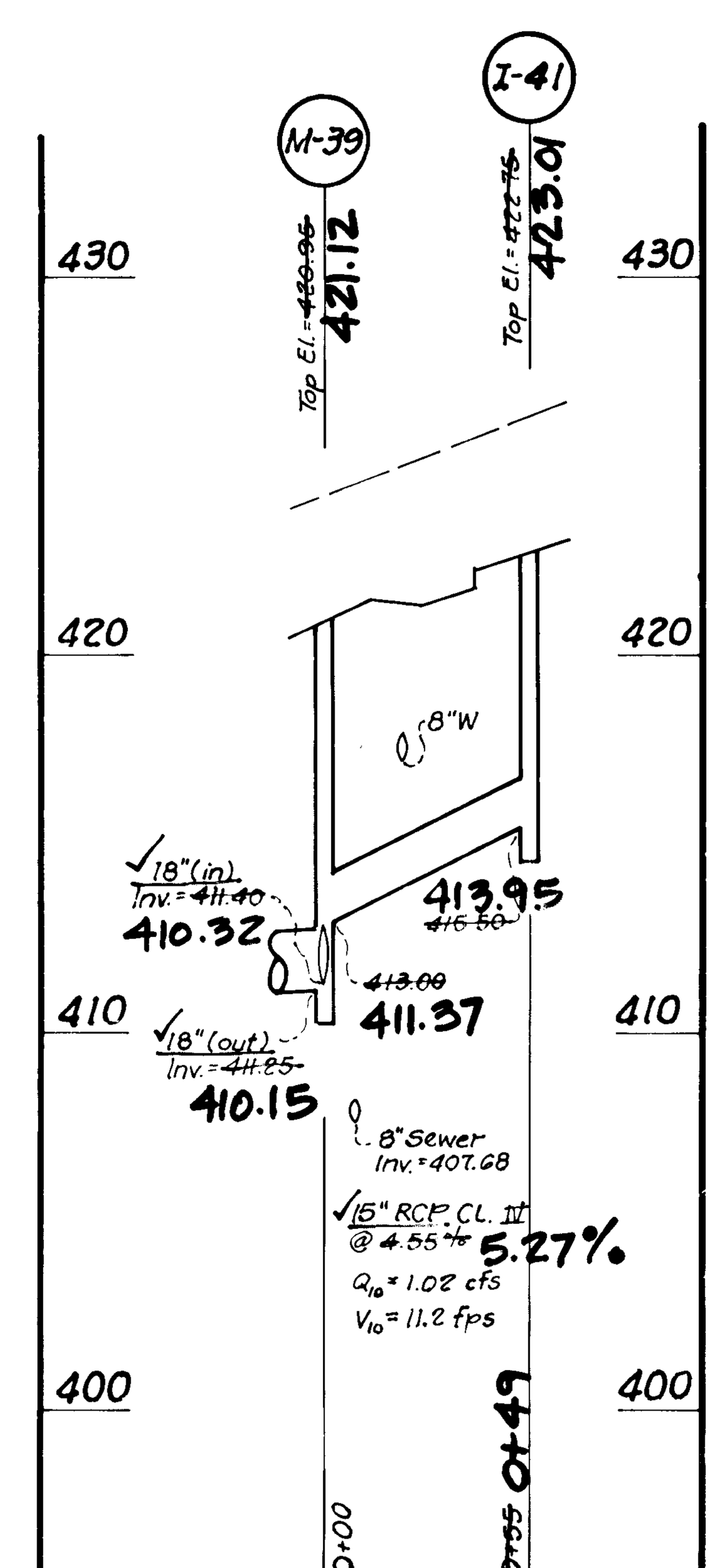
11 OF 12

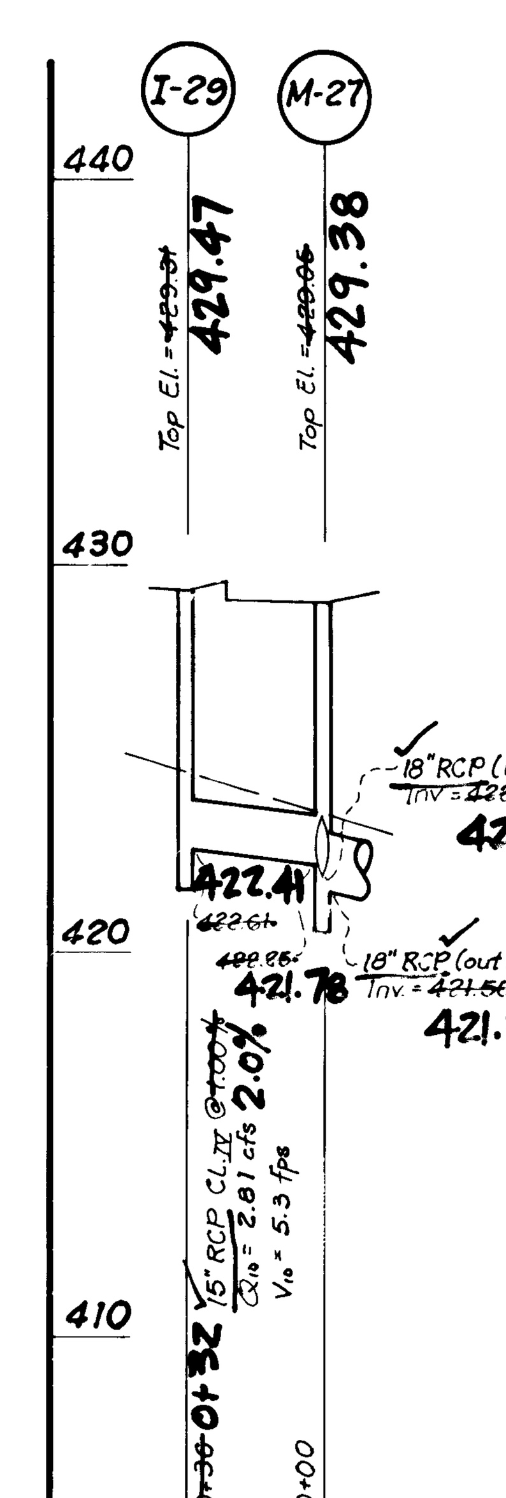
F-94-99

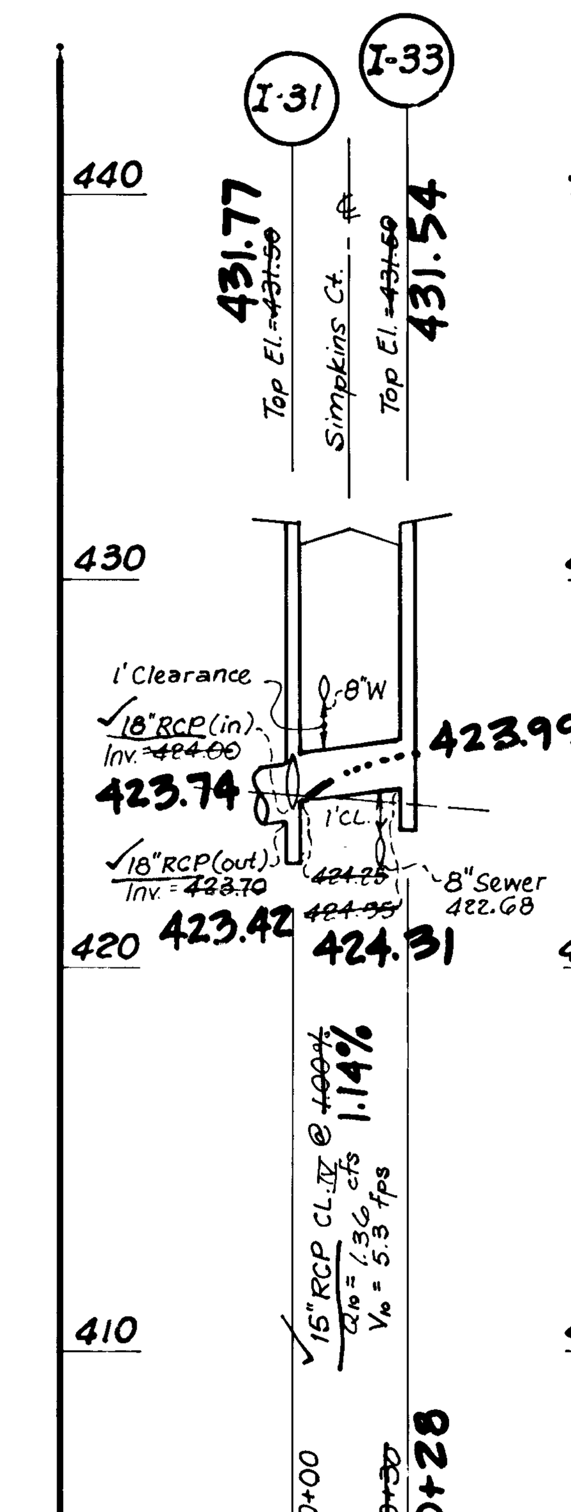












ENGINEER'S "AS-BUILT" CERTIFICATE

I hereby certify that the "As-Built" information shown hereon in ~~red~~ BLACK MARKER is accurate and complete.

Jang H. Lee, P.E. 7/13/98
MD LIC. #18632 — Date

"AS-BUILT"

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — 11/4/94 — DATE

CHIEF, BUREAU OF HIGHWAYS — 11-10-94 — DATE

CHIEF, BUREAU OF ENGINEERING — 11/1/94 — DATE

APPROVED HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — 11/18/94 — DATE

NO.	REVISION	DATE	BY

DESIGN	JL
DRAFT	T.C. Tang
CHECKED	JL
DATE	April 5, 1994
SCALE	As Shown

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STORM DRAIN PROFILE
ABBEYFIELD ESTATES
TAX MAP 31 PARCELS 206, 208 & 209
1st. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

F-94-99

F-94-99 12-041