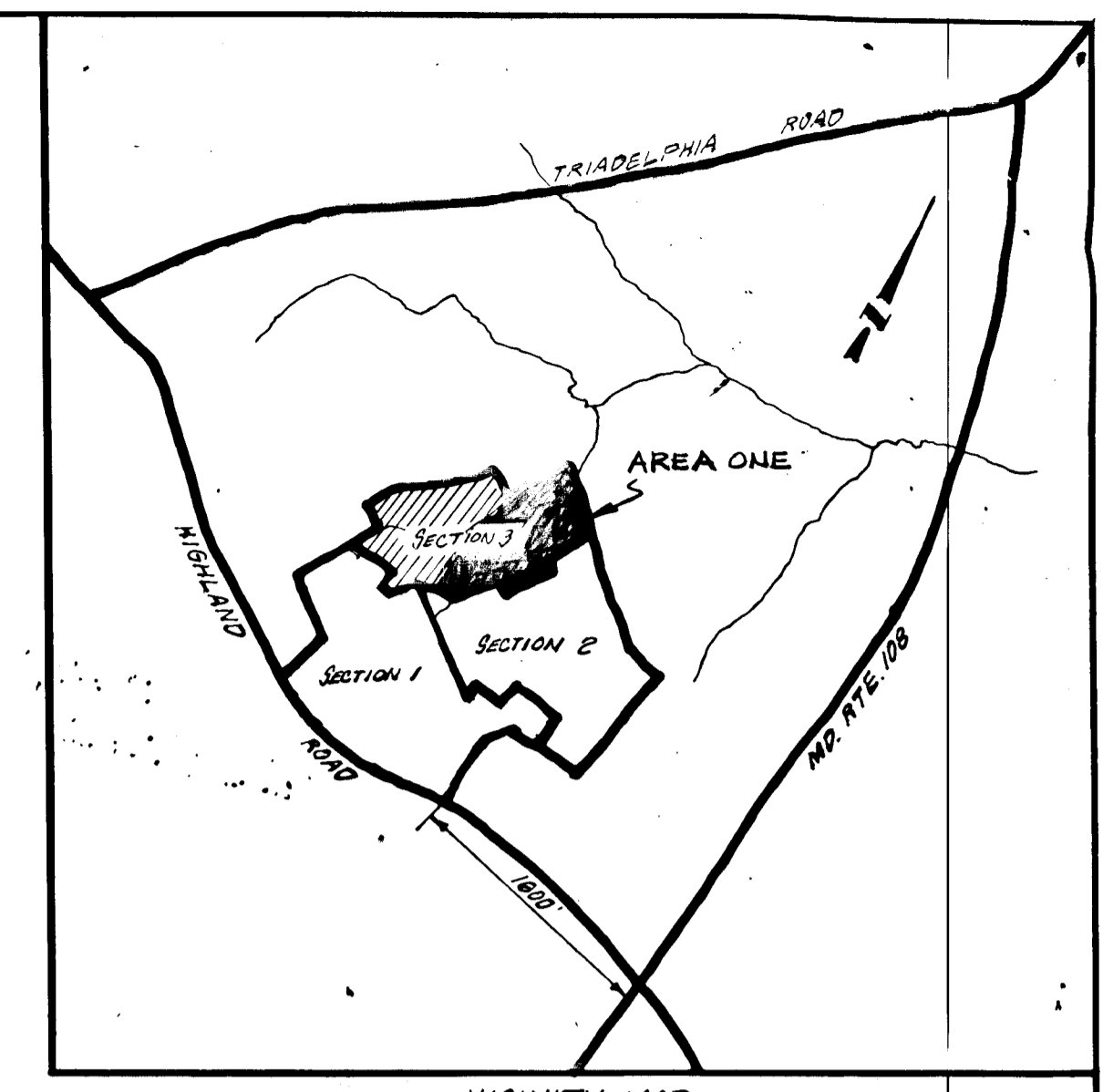


Existing Dirt Road Within Lot 31 To be Abandoned When Construction of ILE OF SKY DRIVE is Complete

NOTE: Tolls and construction permit for this project has been given tentative acceptance by Hurdles & Associates engineers for Allnut Property; written confirmation has been requested.



VICINITY MAP
SCALE: 1"=500'

PERCOLATION TEST DATA

| Lot No. | Time | Inlet Depth | Percolation Rate | Previous No. 100' x 100' | Previous No. 50' x 50' | Previous No. 25' x 25' |
|---------|-------|-------------|------------------|--------------------------|------------------------|------------------------|
| 1 | 3 Min | 2 FT | 1.4 | 1.5 | 1.5 | 1.5 |
| 2 | 3 Min | 4 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 3 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 4 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 5 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 6 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 7 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 8 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 9 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 10 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 11 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 12 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 13 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 14 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 15 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 16 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 17 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 18 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 19 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 20 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 21 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 22 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 23 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 24 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 25 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 26 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 27 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 28 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 29 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 30 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 31 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 32 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 33 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 34 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 35 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 36 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 37 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 38 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 39 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 40 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 41 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 42 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 43 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 44 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 45 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 46 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 47 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 48 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 49 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 50 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 51 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 52 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 53 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 54 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 55 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 56 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 57 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 58 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 59 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 60 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 61 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 62 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 63 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 64 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 65 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 66 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 67 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 68 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 69 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 70 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 71 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 72 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 73 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 74 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 75 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 76 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 77 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 78 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 79 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 80 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 81 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 82 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 83 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 84 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 85 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 86 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 87 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 88 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 89 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 90 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 91 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 92 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |
| 93 | 3 Min | 3 FT | 1.5 | 1.5 | 1.5 | 1.5 |

"All materials and construction shall be in accordance with the Howard County Road Construction Code and Standard Specifications".

APPROVED: DEPARTMENT OF PUBLIC WORKS
W.O. Albert S-29-79
 CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: OFFICE OF PLANNING AND ZONING
[Signature] S-16-79
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

HOWARD COUNTY HEALTH DEPARTMENT
 Approved for private water supply and private disposal systems.
 County Health Officer Date

SITE TABULATION
 1. Number of lots this sheet... 15
 2. Total area this sheet... 5.95 Ac.
 3. Area of lots... 4.55 Ac.
 4. Area of streets... 2.00 Ac.
 5. Total area... 6.55 Ac.
 6. Area of easements... 7.8 Ac.

ENGINEER'S CERTIFICATE
 I hereby certify that the information shown hereon is true and correct to the best of my knowledge and that the locations of the percolation tests shown hereon are correct.
Paul J. [Signature]
 10-14-77



CONTRACT OWNER/DEVELOPER
 HIGHLAND PARTNERSHIP
 8777 FIRST AVENUE
 SILVER SPRING, MARYLAND, 20901
 % W. BUCHER
 301-588-3100

Note: This area designates a private sewage easement of approximately 10,000 sq. ft. as required by the Maryland State Health Department for individual sewage disposal. Improvements of any nature in this area are restricted until public sewage is available and serving any residential structures constructed on these building sites. This easement shall become null and void upon connection to a public sewage system.

DRAINAGE AREA MAP

TOUPS AND LOEDERBERN
 ENGINEERS, PLANNERS, LANDSCAPE ARCHITECTS
 JOSEPH R. HARRIS BUILDING
 1370 PICCARD DRIVE ROCKVILLE, MARYLAND 20850 301-940-1200

| NO. | REVISIONS | BY | DATE |
|-----|---|-----|---------|
| 1 | Let layout revision | JRC | 7-28-76 |
| 2 | Revised perc, house, wall & street layout | MEW | 8-2-76 |
| 3 | Revised perc locations, house, wall & lot nos. | MEW | 9-1-76 |
| 4 | Revised layout River Clyde Dr. | JES | 12-1-76 |
| 5 | Revised layout lots of Skye as per Allnut Prop. | JES | 2-7-77 |
| 6 | Sections changed, Areas & RS marked | JRC | 4-1-77 |

PREPARED UNDER THE SUPERVISION OF:
Paul C. Oscanayan
 P.E. NO. 11443 DATE 8 Mar 76
 DESIGNED: MEW CHECKED: MEW SCALE: 1"=100'
 DRAWN: MEW DATE: Feb 1976 REF:

SECTION THREE AREA I
HIGHLAND LAKE
 ELECTION DISTRICT 5
 HOWARD COUNTY, MARYLAND
 Tax Map #34, Parcel # 170
 JOB NUMBER 1700-004-0
 SHEET NO. 1
 OF 6 SHEETS

APPROVED: DEPARTMENT OF PUBLIC WORKS
W.O. Lambert 5-29-79
 CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: OFFICE OF PLANNING AND ZONING
William H. ... 5-16-79
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

"I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

W. ...
 Signature of Engineer

5/16/78
 Date



GRADE ESTABLISHMENT STORM DRAIN AND PAVING PLAN RIVER CLYDE DRIVE SECTION III HIGHLAND LAKE

Election District #5
 Howard County, Maryland
 (30 M.P.H. DESIGN SPEED)

"All materials and construction shall be in accordance with the Howard County Road Construction Code and Standard Specifications".

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

Approved: *R. Zehner* Date 5/15/79
 Howard S.C.D.

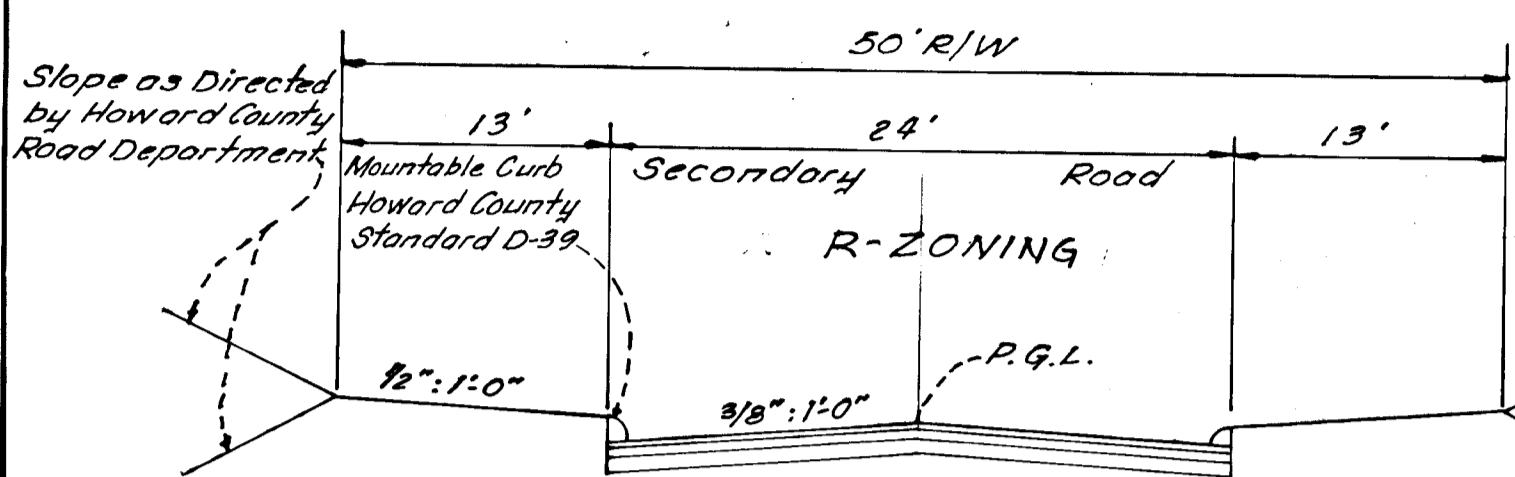
Reviewed for HOWARD S.C.D. Name *W. ...* Date 5/15/79
 and meets Technical Requirements
 Signature
 U.S. Soil Conservation Service

OWNER - DEVELOPER

The Highland Lake Partnership
 Bucher, Myers & Associates
 8777 First Avenue
 Silver Spring, Md. 20910

TOUPS & LOIEDERMAN

Civil Engineers & Land Planners
 1370 Piccard Drive
 Rockville, Maryland 20850
 301-840-1300



Standard Paving Section D-5 - See Detail Sht 3 of 6

Sta 14+50 to 27+47
 TYPICAL SECTION

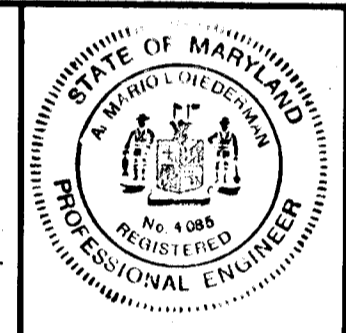
"I certify that all development and/or construction will be done according to this plan of development and plan for Erosion and Sediment Control, and I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary."

W. ...
 Signature of Developer

5/16/78
 Date

PREPARED UNDER THE SUPERVISION OF

A. Mario Loiederman
 A. MARIO LOIEDERMAN
 4085
 R.E. NO. 10-14-77
 DATE



Under construction, Sec. II paving & alignment to meet Sec. II as built

Limit of construction 14+50.00

SECTION II

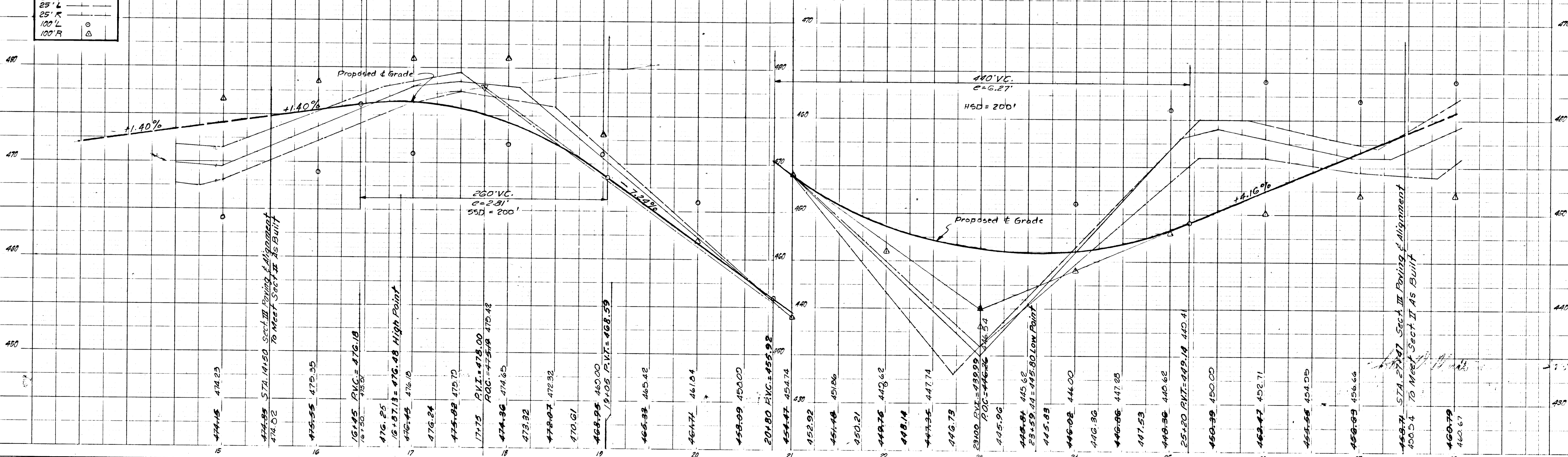
SECTION II

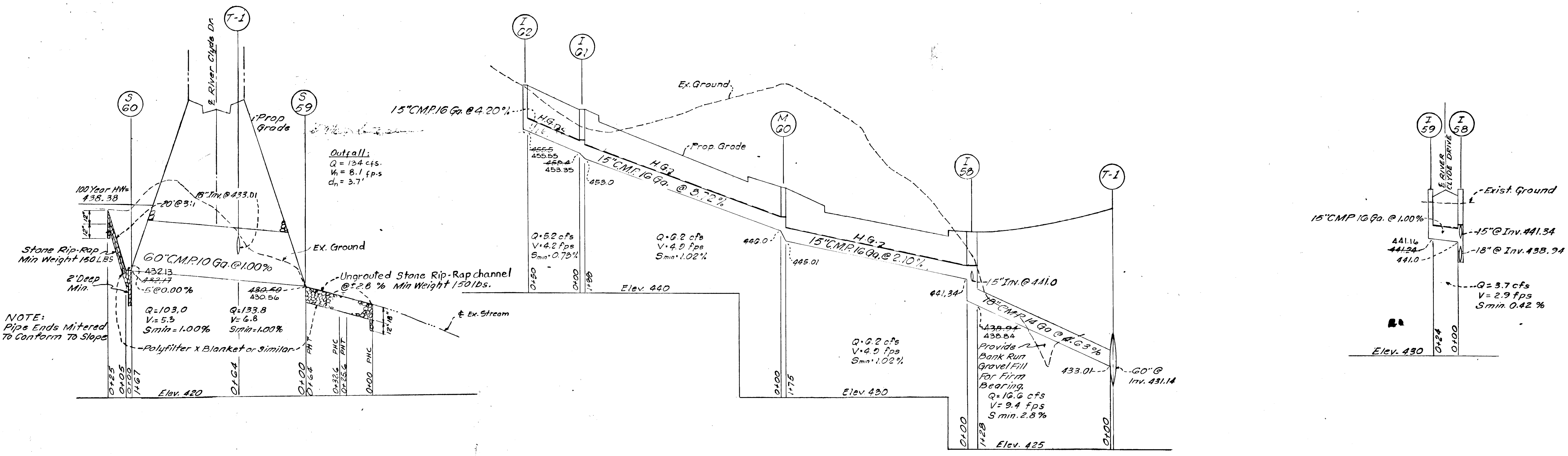
SECTION II

LEGEND

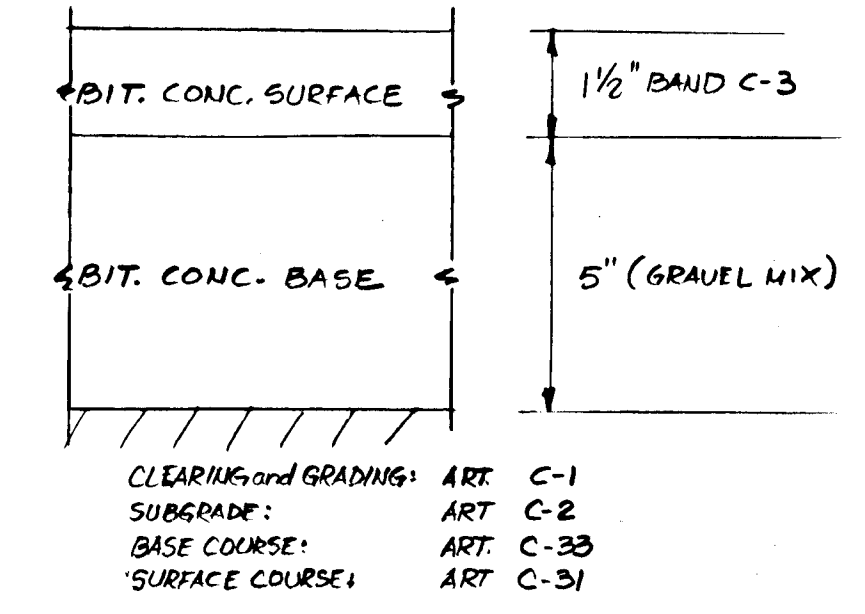
| | |
|--------|---|
| 25' L | ○ |
| 25' R | △ |
| 100' L | ○ |
| 100' R | △ |

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





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



ST'D PAVING SECTION
NOT TO SCALE

"All materials and construction shall be in accordance with the Howard County Road Construction Code and Standard Specifications".

"I certify that all development and/or construction will be done according to this plan of development and plan for Erosion and Sediment Control, and I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary."

Matthew Bucken
Signature of Developer Date 5/11/78

"I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

[Signature]
Signature of Engineer Date 5/16/78

reviewed for Howard S.C.D. Name

and meets Technical Requirements
[Signature] Date 5/16/78
Signature Date
U.S. Soil Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Approved *[Signature]* Date 5/16/78
Howard S.C.D.

OWNER - DEVELOPER
The Highland Lake Partnership
Duchon, Myers & Associates
2777 First Avenue
Silver Spring, Md. 20910

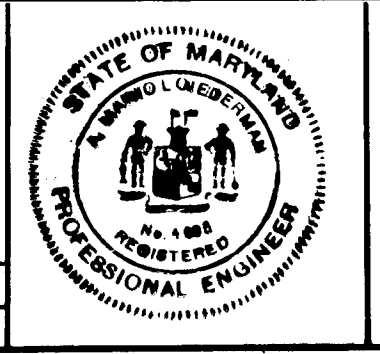
APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 5-29-79
CHIEF, BUREAU OF ENGINEERING DATE
APPROVED: OFFICE OF PLANNING AND ZONING
[Signature] 5-17-79
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

PREPARED UNDER THE SUPERVISION OF
[Signature]
A. MARIO LOIEDERMAN
4085
R.E. NO. 10-18-77
DATE

TOUPS AND LOIEDERMAN
CONSULTING ENGINEERS AND PLANNERS
A PLANNING RESEARCH CORPORATION COMPANY

| NO. | REVISIONS | BY | DATE |
|-----|-------------------------|-----|--------|
| 1 | Rev. Invert Str. # I-5B | AID | 3-3-79 |

PREPARED UNDER THE SUPERVISION OF:
[Signature]
4085
P. E. NO. 5/16/78
DATE



STORM DRAIN PROFILES
SECTION THREE
HIGHLAND LAKE
ELECTION DISTRICT 5 HOWARD COUNTY, MARYLAND

JOB NUMBER 1780-004-0
SHEET NO. 3
OF 6 SHEETS

STRUCTURE SCHEDULE

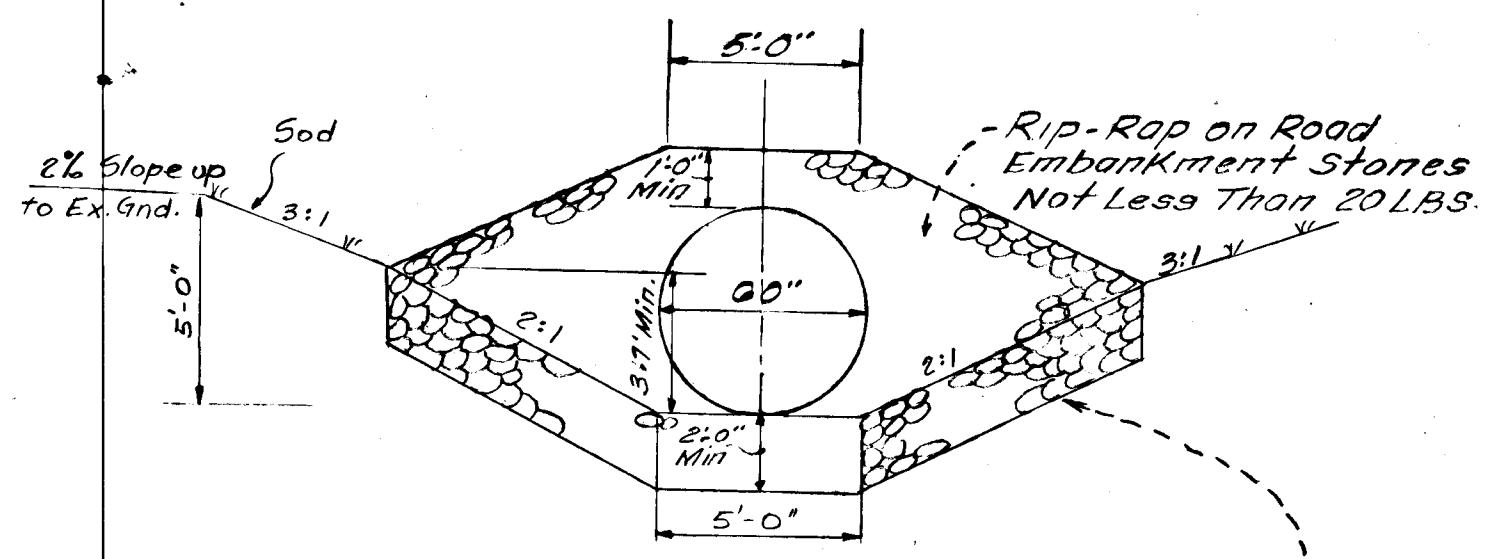
| No. | TYPE | TOP STA. | | TOP ELEV. | | REMARKS | INVERT IN | OUT |
|------|---------------------|------------------|-----------|-----------|--------|--------------------|-----------|--------|
| | | UPPER | LOWER | UPPER | LOWER | | | |
| I-20 | 10' Yard Inlet | 251+24 | 250+64.01 | 455.00 | 455.00 | Howard Co Sta D-58 | - | 455.50 |
| I-21 | 5'-10" Inlet | 27+81.28 | 27+20 | 458.00 | 457.02 | " " " " D-64E | 457.91 | 453.0 |
| M-60 | Sta M | Estn 26+82-213PP | | 457.12 | | " " " " D-10E | 448.0 | 445.01 |
| I-58 | A-10 Inlet | 2 str. 23+59.44 | | 445.88 | | 44606 " " D-54A | 441.34 | 438.94 |
| I-58 | A-10 Inlet | 2 str. 23+62.00 | | 445.88 | | 44582 " " D-64A | - | 441.24 |
| T-1 | 20"x18" Field Conn. | Tied on Profile | | | | PREFABRICATED | 433.01 | - |
| S-59 | Mitered End | Tied on Plan | | | | | - | 430.50 |
| S-60 | " " | Tied on Plan | | | | | 432.17 | - |

* PROVIDE DEFLECTOR
** WITH CONCRETE SLAB ON TOP

PIPE SCHEDULE

| Size | Type | Length |
|------|----------|--------|
| 15" | CMP G-16 | 43' |
| 18" | " " | 14' |
| 60" | " " | 10' |

"All materials and construction shall be in accordance with the Howard County Road Construction Code and Standard Specifications".



Provide Smooth Transition From Trapezoidal Section to Existing Stream Section from Sta. 0+25.6 to Sta. 0+00
TYPICAL SECTION AT STRUCTURES No. 59 & 60
Not to Scale

"I certify that all development and/or construction will be done according to this plan of development and plan for Erosion and Sediment Control, and I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary."

James Bueker
Signature of Developer Date 5/11/78

"I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

William H. ...
Signature of Engineer Date 5/16/78

reviewed for Howard S.C.D. Name
and meets Technical Requirements
William H. ... Date 5/15/79
Signature
U.S. Soil Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Approved *William H. ...* Date 5/15/79
Howard S.C.D.

NOTES:
1. All Corrugated Metal Pipe (CMP) Shall Be Kaiser Aluminum Corlix Pipe or Equivalent With 1/2" x 2 3/8" Helical Corrugations or Bituminous Coated or Galvanized Steel With 1/2" x 2 3/8" Helical Corrugations

2. Design of All Drainage Outfalls are Based on USDA Soil Conservation Service Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas.

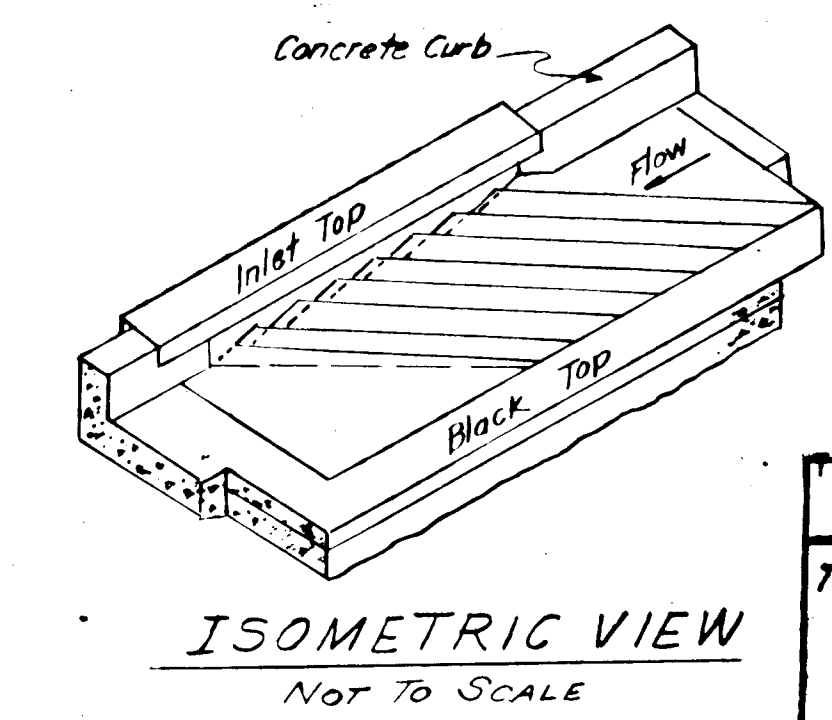
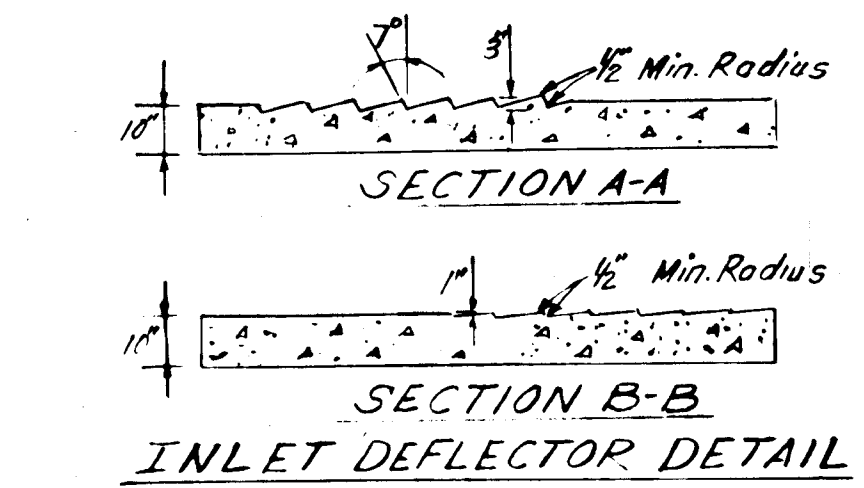
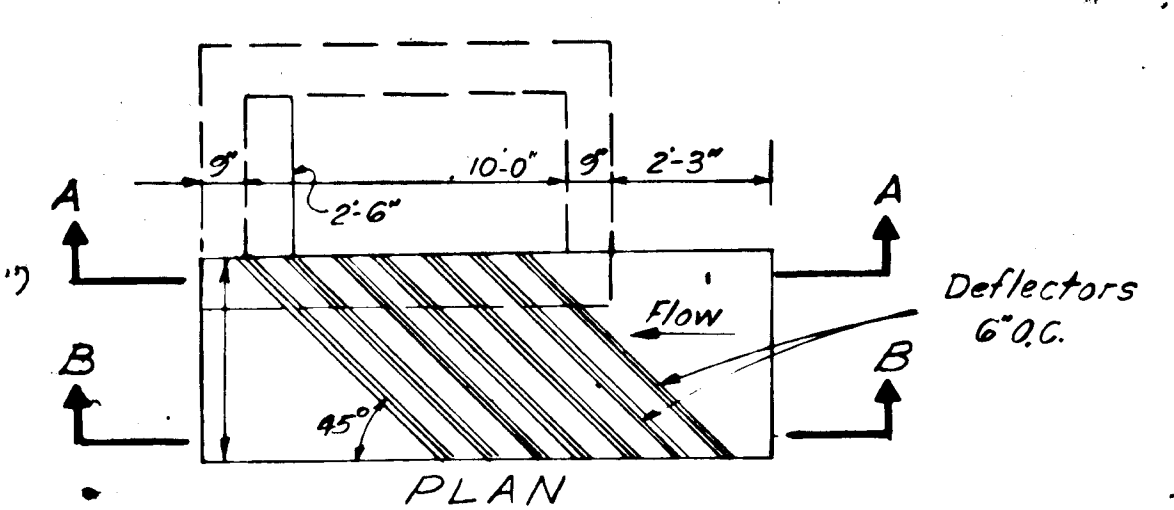
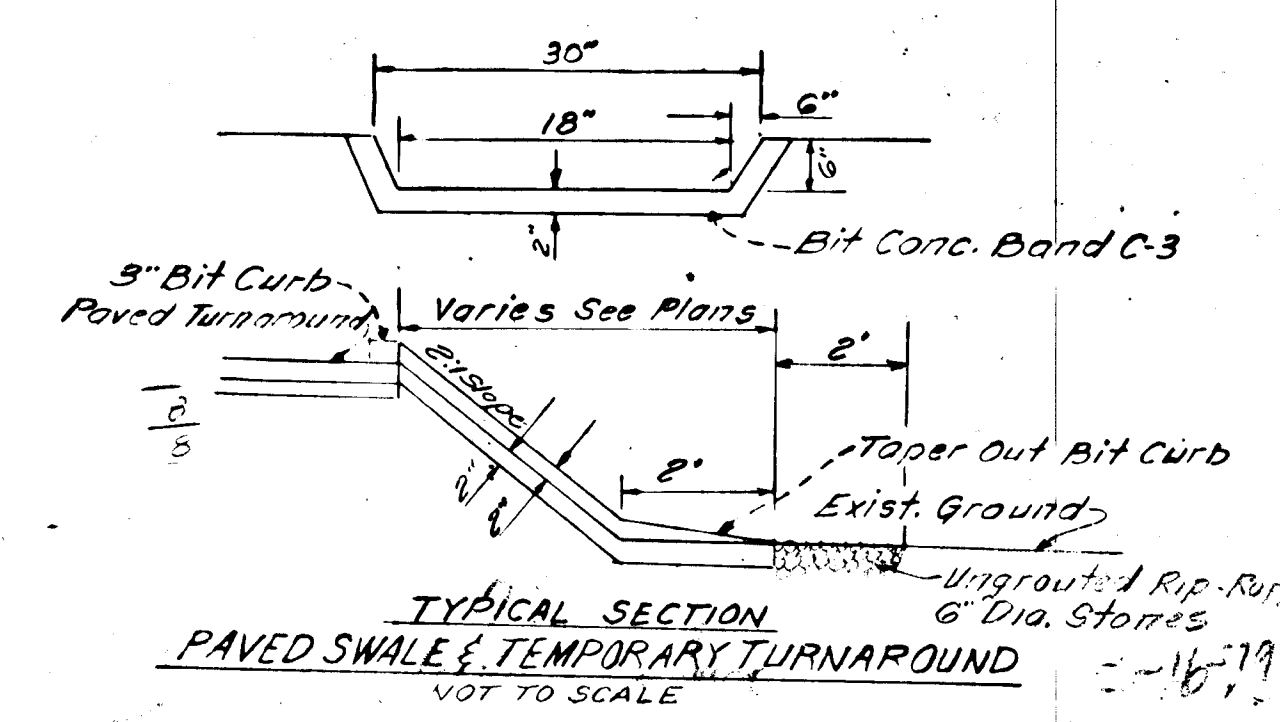
3. CMP Shall Have 2.0' Min Cover
4. Drainage Pipes Shall Have The Following Maximum Roughness Coefficients (MANNING "n")

| PIPE Ø | 15" | 18" | 21" | 24" | 27" |
|-------------|-------|-------|-------|-------|-------|
| MANNING "n" | 0.014 | 0.015 | 0.016 | 0.017 | 0.018 |

OUTFALL "B"

| | |
|------|-----|
| S 59 | 12' |
|------|-----|

NOTE:
Profile Grade of Swale Varies with Existing Ground MIN. Grade 3% Max. Grade 10%.



APPROVED: DEPARTMENT OF PUBLIC WORKS
Wolfe 5-29-79
CHIEF, BUREAU OF ENGINEERING DATE
APPROVED: OFFICE OF PLANNING AND ZONING
William H. ... 5-16-79
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

TOUPS AND LOIEDERMAN
ENGINEERS, PLANNERS, LANDSCAPE ARCHITECTS
JOSEPH R. HARRIS BUILDING
1370 PICCARD DRIVE ROCKVILLE MARYLAND 20850 301-840-1300

| NO. | REVISIONS | BY | DATE |
|-----|-----------|----|------|
| | | | |
| | | | |

PREPARED UNDER THE SUPERVISION OF:
William H. ...
DESIGNED A Z B CHECKED SCALE
DRAWN DATE R.E.P.

STORM DRAIN DETAILS SECTION 3
HIGHLAND LAKE
ELECTION DISTRICT 5
HOWARD COUNTY, MARYLAND

OWNER - DEVELOPER
The Highland Lake Partnership
Bueker, Myers & Associates
8777 First Avenue
Silver Spring, Md. 20910

JOB NUMBER
1780-004-0
SHEET NO.
4
OF 6 SHEETS

"I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

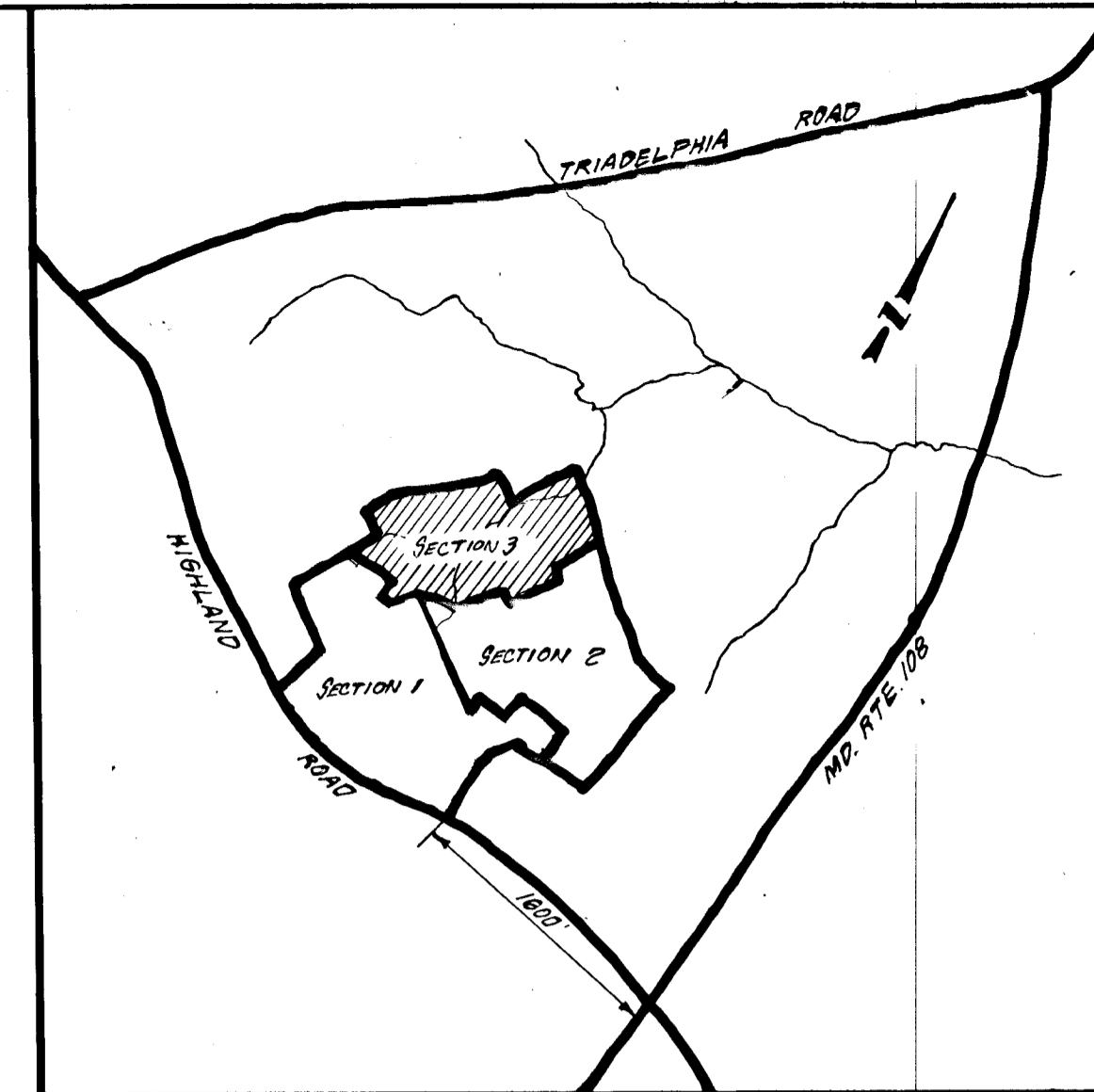
Signature of Engineer _____ Date _____

NOTE: Trops and Leaderman alignment shown has been given tentative acceptance by Mullins & Associates, engineers for Allnut property; written confirmation has been requested.

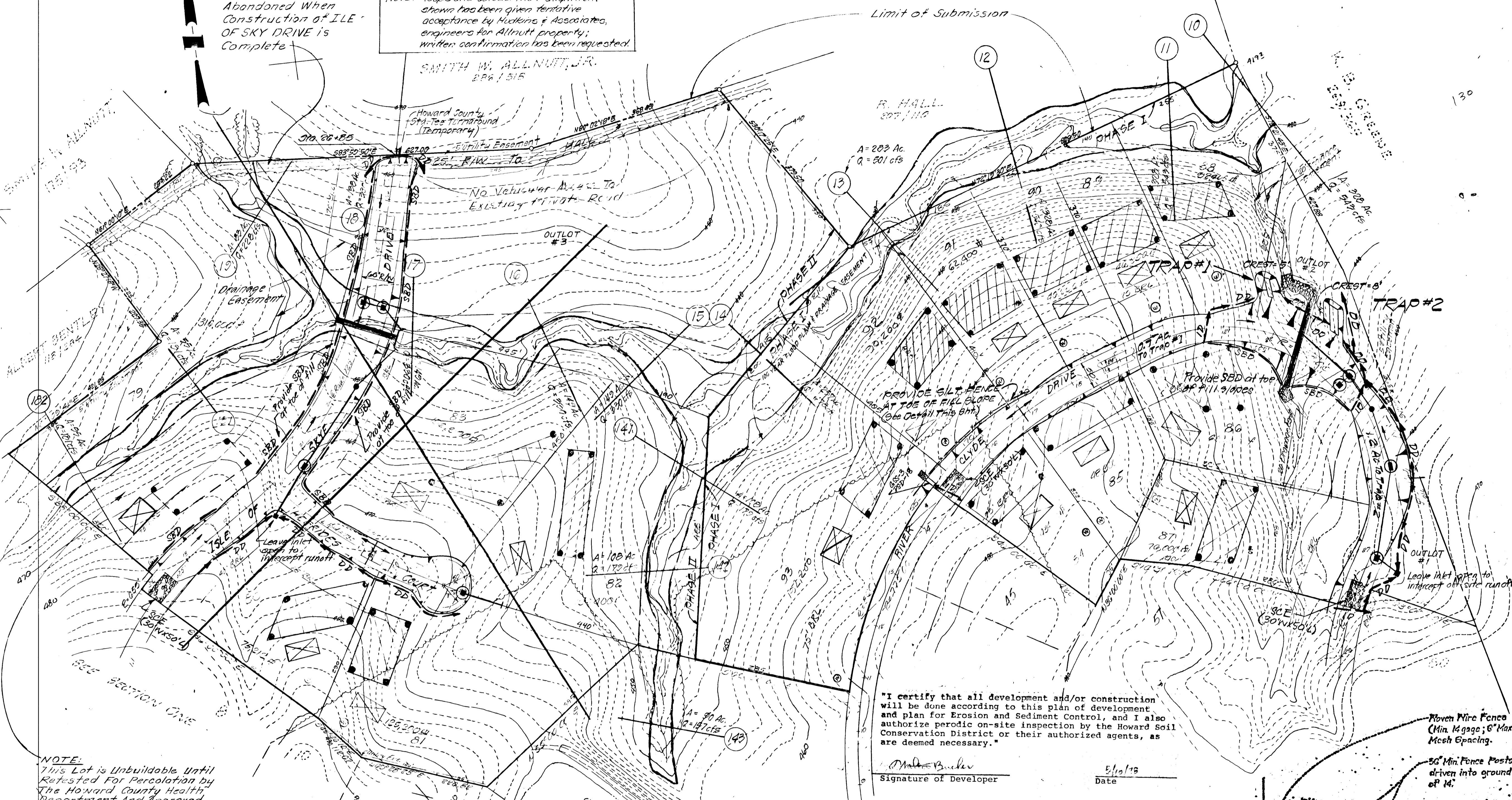
SMITH W. ALLNUTT, JR.
286 / 315

| SEDIMENT TRAP SCHEDULE | | | | | | | | | |
|------------------------|--------------|-----------------------|------------------|--------------|---------------------------------|---|--|-----------------|---------------------|
| TRAP NO. | TYPE | DRAINAGE AREA (ACRES) | BOTTOM ELEVATION | DEPTH (FEET) | AVERAGE BOTTOM DIMENSION (FEET) | APPROX. STORAGE VOLUME (FT ³) | REQUIRED STORAGE VOLUME (FT ³) | CREST ELEVATION | CREST LENGTH (FEET) |
| 1 | STONE OUTLET | 0.7 | 429.5 | 2.5 | 8 x 34 | 13 x 39 x 2.5 = 1268 | 0.7 x 1800 = 1260 | 432.0 | 5 |
| 2 | STONE OUTLET | 1.2 | 435.0 | 2.0 | 16 x 50 | 20 x 54 x 2 = 2160 | 1.2 x 1800 = 2160 | 437.0 | 8 |

NOTE: TRAP 1 & 2 TO BE FENCED. REFER TO SEDIMENT CONTROL NOTE #21

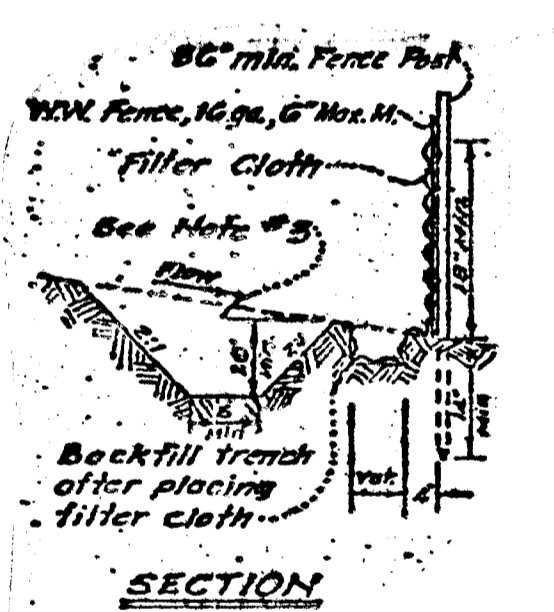


VICINITY MAP
SCALE: 1" = 600'

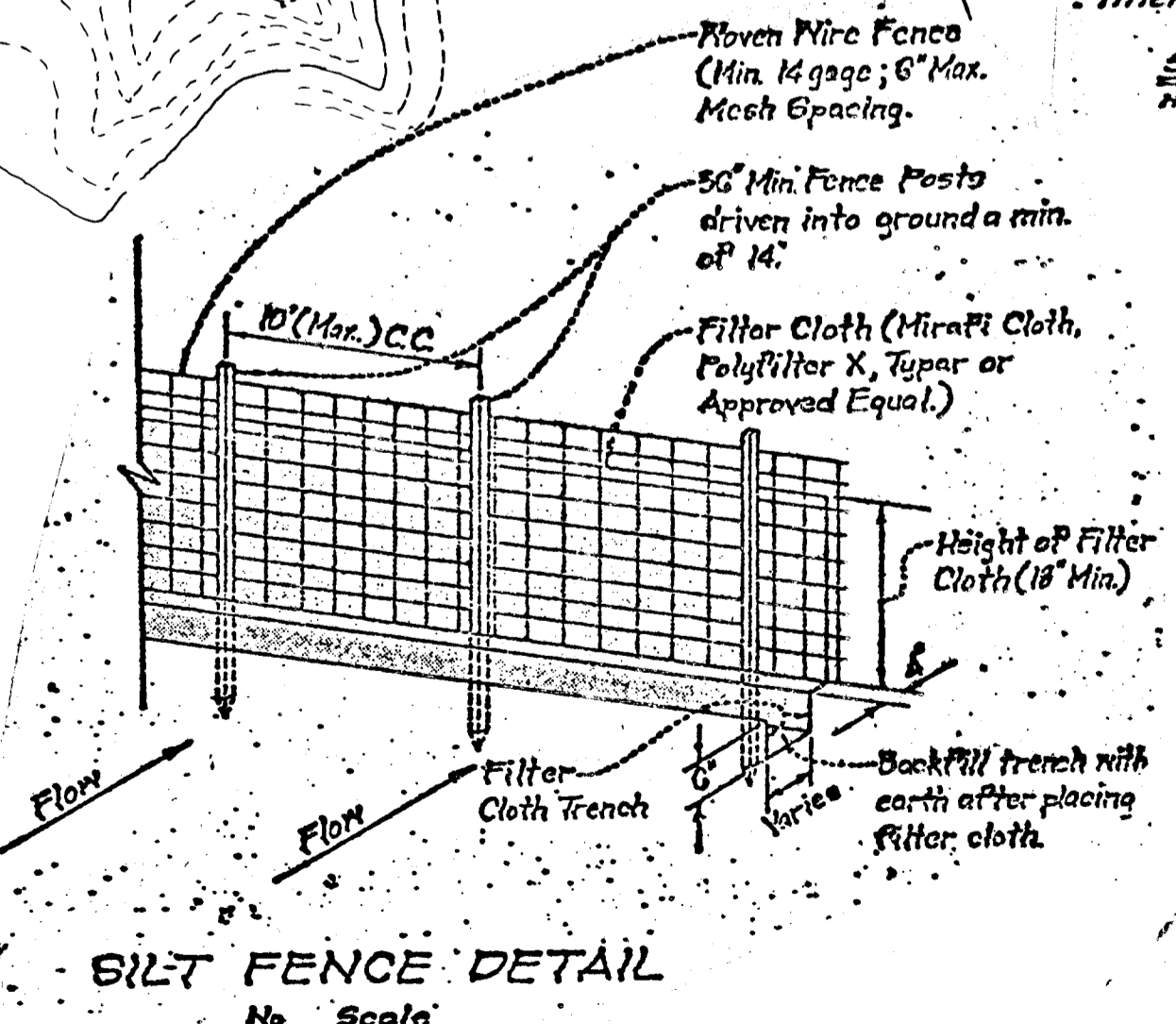


APPROVED: DEPARTMENT OF PUBLIC WORKS
Wolshut 5-29-79
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: OFFICE OF PLANNING AND ZONING
Shullman 3-16-79
CHIEF, DIVISION OF LAND DEVELOPMENT DATE



- NOTES:
1. Woven Wire Fence to be fastened securely to fence posts with wire ties.
 2. Filter Cloth to be fastened securely to woven wire fence with wire ties spaced every 24" at top and mid-section.
 3. At points of high concentration of silt a depression will be constructed as shown. The depression shall be adjusted to prevent damage to trees. Minimum length shall be 15'.



"I certify that all development and/or construction will be done according to this plan of development and plan for Erosion and Sediment Control, and I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary."

M. B. Buehler
Signature of Developer
8/10/78
Date

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

Approved _____ Date _____
Howard S.C.D.

SITE TABULATION

1. Number of lots this sheet... 15
2. Total area this sheet... 51.05 AC.
3. Area of lots... 40.55 AC.
4. Area of streets... 2.90 AC.
5. Total No. of Outlets... 3
6. Area of Outlets... 7.8 AC.
7. Disturbed Area... 3.4 AC.

ENGINEER'S CERTIFICATE

I hereby certify that the information shown hereon is true and correct to the best of my knowledge and that the locations of the percolation tests shown hereon are correct.

A. Hans Liron 10-14-77



NOTE: APPROVAL REQUESTED THIS SUBMISSION FOR PHASE I ONLY

NOTE: This Lot is Unbuildable Until Retested For Percolation by The Howard County Health Department and Approved By The County Health Officer

PHASE II NOT INCLUDED THIS PLAN FOR SEDIMENT CONTROL

reviewed for Howard S.C.D. Name
and meets Technical Requirements
Wolshut Date *8/10/78*
Signature
U.S. Soil Conservation Service

CONTRACT OWNER / DEVELOPER
HIGHLAND PARTNERSHIP
8777 FIRST AVENUE
SILVER SPRING, MARYLAND, 20910
W. BUCHER
301-588-3100

Note: This area designates a private sewage assessment of approximately 10,000 gal. ft. as required by the Maryland State Health Department for individual sewage disposal. Improvements of any nature in this area are restricted until public sewage is available and servicing any residential structures constructed on these building sites. This assessment shall become null and void upon connection to a public sewage system.

OWNER - DEVELOPER
The Highland Lake Partnership
Buehler, Myers & Associates
8777 First Avenue
Silver Spring, Md. 20910

TOUPS AND LOIDERMAN
ENGINEERS, PLANNERS, LANDSCAPE ARCHITECTS
JOSEPH R. HARRIS BUILDING
1370 PICCARD DRIVE ROCKVILLE, MARYLAND 20850 301-940-1300

| NO. | REVISIONS | BY | DATE |
|-----|-----------|----|------|
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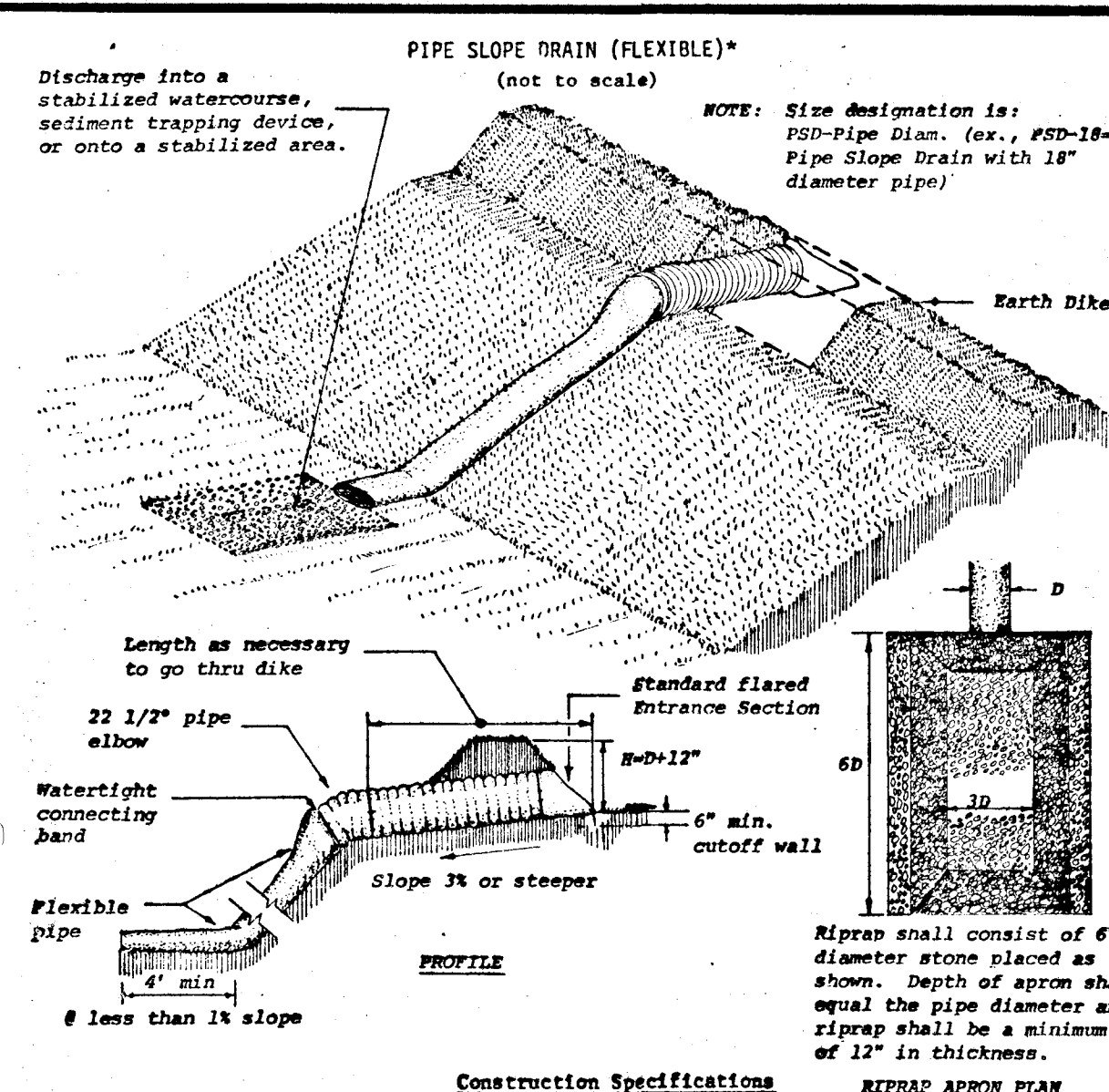
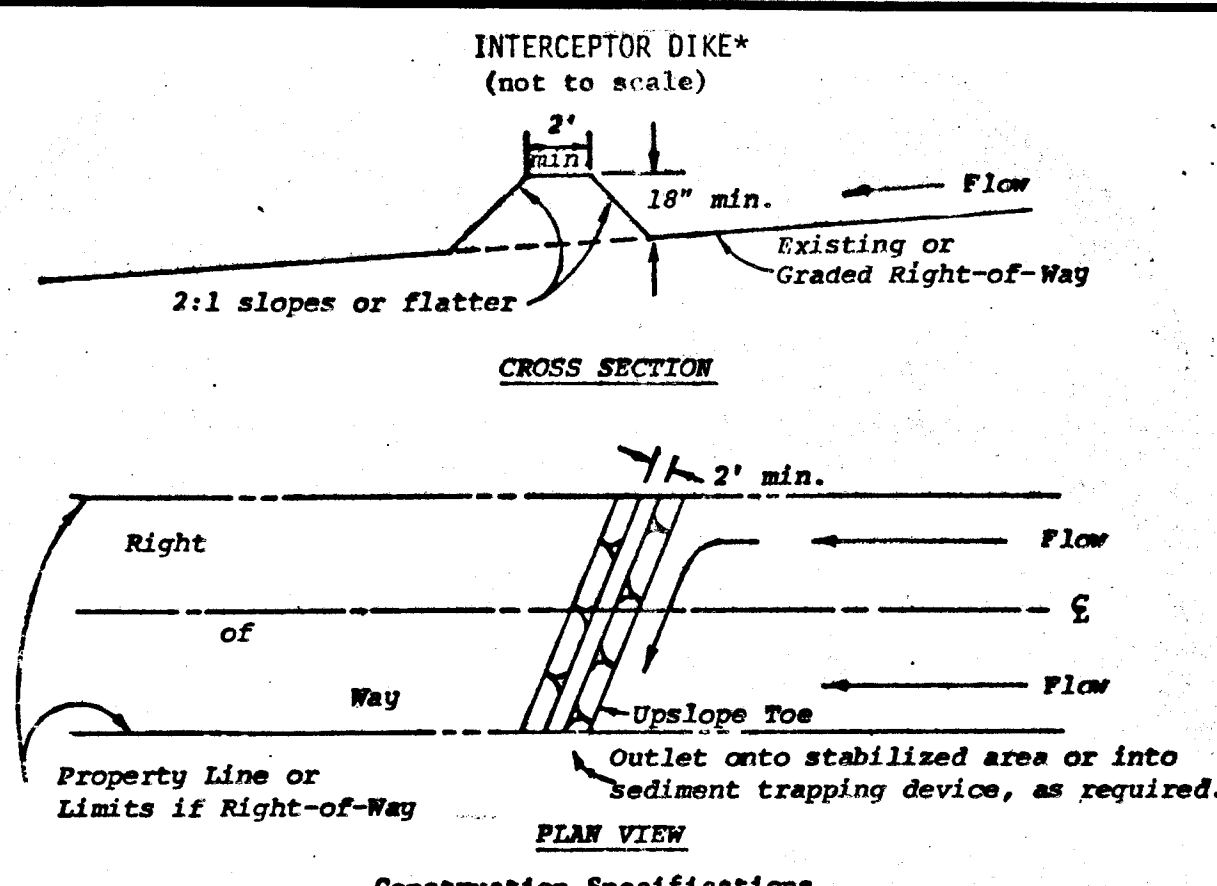
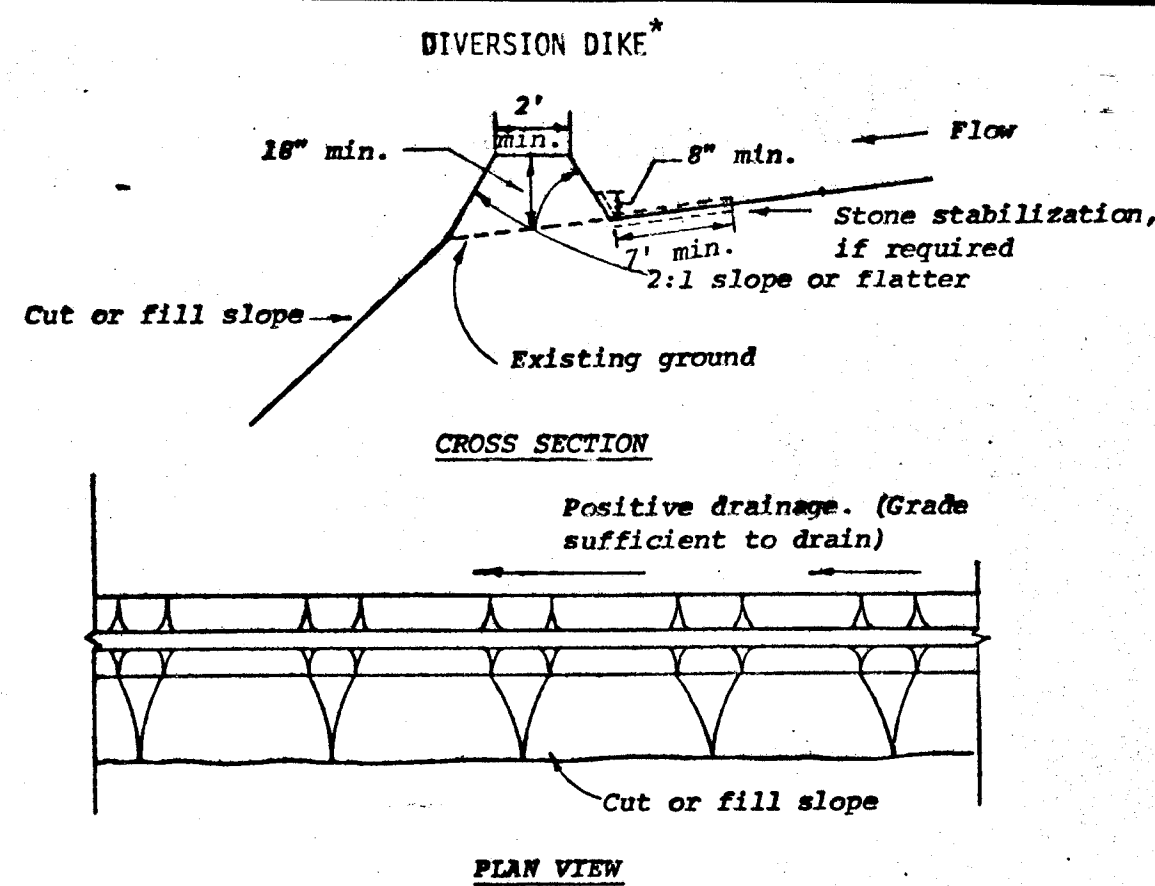
PREPARED UNDER THE SUPERVISION OF:
A. Hans Liron
4085 10-14-77
F.E. NO. DATE

DESIGNER: CHECKER: SCALE: 1/4" = 100'
DRAWN: DATE: 10-7-77 REF.



SECTION THREE PHASE I
SEDIMENT CONTROL
HIGHLAND LAKE
ELECTION DISTRICT 5
HOWARD COUNTY, MARYLAND
Tax Map #34, Parcel #170

JOB NUMBER
1700-004-0
SHEET NO.
5
OF 6 SHEETS



SEDIMENT CONTROL NOTES

- Contractor installing sediment control items shall obtain and follow the "Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas" (herein after referred to as "Standards and Specifications"), dated July 1975, from the Howard Soil Conservation District (H.S.C.D.), 9025 Chevrolet Drive, Ellicott City, Maryland 21043, Phone 465-3180.
- Install and maintain sediment control measures in strict accordance with these approved plans and the criteria and specifications adopted by the Howard Soil Conservation District.
- Sediment control measures may require minor field adjustments at the time of construction to ensure that their intended purpose is accomplished. H.S.C.D. approval will be required for any other deviation from the approved plan.
- Provide periodic inspection and maintenance of all sediment control measures to ensure that maximum sediment control efficiency is obtained until final stabilization of site has taken place.
- Install sediment control devices prior to any grading operations so that effective sediment control can be achieved during the entire grading operation period.
- After clearing, temporarily stabilize any disturbed area that is to be exposed for more than 30 days (but less than 60 days) as follows:
 - Apply small grain straw mulch at a uniform rate of 1 1/2 to 2 tons per acre.
 - Anchor mulch immediately after placement by spraying with a liquid binder of either cut-back or emulsified asphalt at a rate of 200 gal./acre.
- Stabilize all disturbed areas at a grade less than 3 to 1 and not covered by paving as soon as possible by permanent seeding and mulching as follows:
 - Scarify surface to a depth of 3 inches.
 - Seed with a mixture of 15 pounds "Crownvetch" (inoculated) plus 40 pounds "Kentucky 31" tall fescue per acre.
 - Apply straw mulch uniformly at a rate of 1 1/2 to 2 tons per acre.
 - Anchor mulch immediately after placement with either cut-back or emulsified asphalt. Apply at a minimum rate of 200 gal./acre. Application should be heavier in valleys, at the crest of banks and along edges.
- Stabilize all disturbed areas at a grade equal to or greater than 3 to 1 and not covered by paving, as well as all drainage swales, as soon as possible by sodding. Class of sod shall be Maryland State approved or certified, machine cut to a uniform thickness of 3/4 inch (± 1/4 inch) excluding top growth and thatch. Sod shall be installed within 36 hours of harvesting or be subject to inspection and approval by H.S.C.D. Lay sod to a tight fit. Roll to ensure contact with underlying soil. Water as necessary for first two weeks (in summer) to ensure establishment.
- If stabilization of disturbed areas is to be accomplished during the months of December, January, or February, the stabilization shall consist of mulching in accordance with Note 6 above. Seeding and mulching shall then be done as soon as the season permits.
- Prior to seeding or sodding, the following amounts of fertilizer (10-10-10) and ground agricultural limestone will be incorporated into the subsoil by disking:

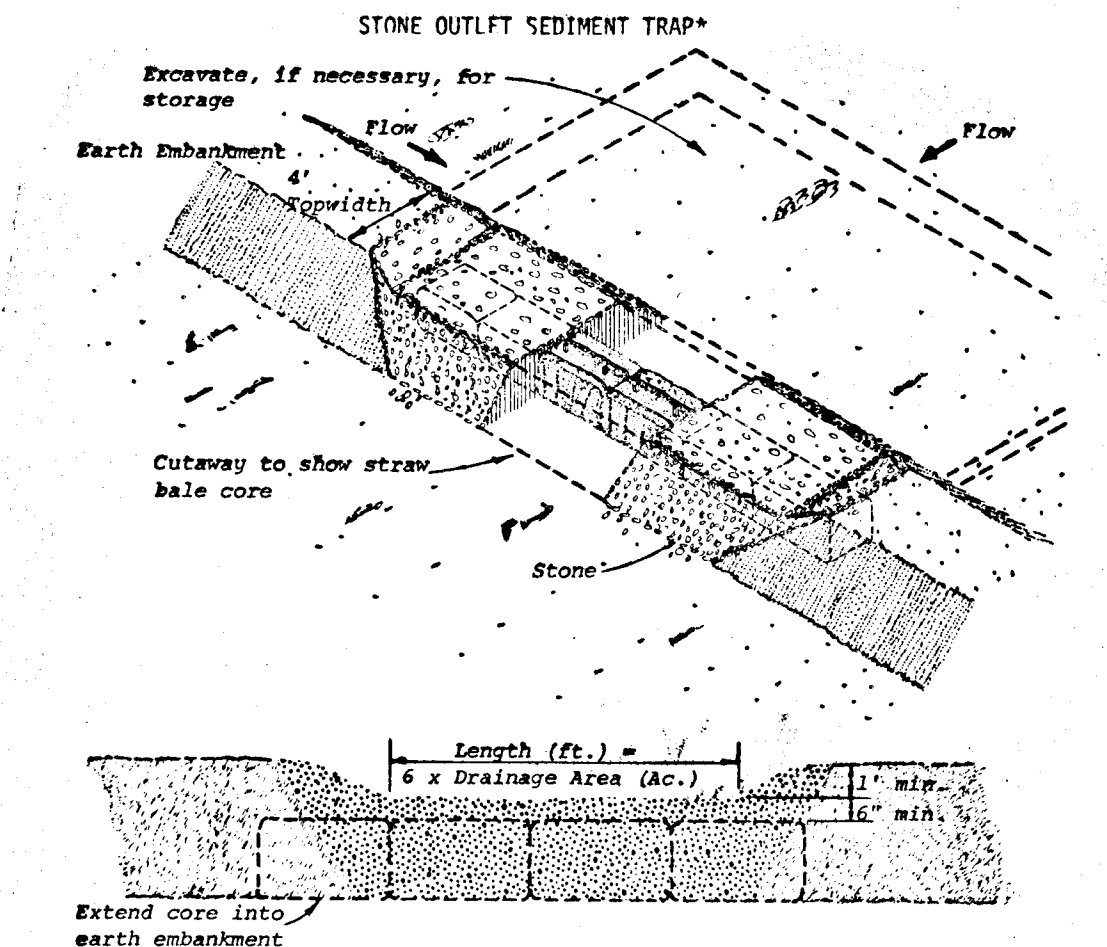
| | | |
|----------------|-------------|-----------------|
| Seeding Areas: | Fertilizer: | 500 lbs./acre |
| | Limestone: | 1,000 lbs./acre |
| Sodding Areas: | Fertilizer: | 1,000 lbs./acre |
| | Limestone: | 2,000 lbs./acre |
- The term "seeding" on this plan shall mean the successful germination and establishment of a stable grass cover from a properly prepared seedbed containing the specified amounts of lime and fertilizer, in accordance with the applicable "Standards and Specifications".
- The term "mulching" on this plan shall mean the application and anchoring of a H.S.C.D. approved mulch (such as wheat straw or Timothy hay) in accordance with the applicable "Standards and Specifications".
- All points of construction ingress and egress shall be stabilized as per the H.S.C.D. standard for stabilized construction entrances to prevent tracking of mud onto public ways.
- Notify the Howard County Department of Inspection and Permits before the start of work and before removal of temporary sediment control measures.
- Notify the Howard County Department of Inspection and Permits if the accompanying construction schedule cannot be met, and provide the said Department with a revised construction schedule.
- Prevent all sediment from entering any constructed storm drainage system through the use of sand bags, gravel, board or other applicable method.
- The Highland Partnership, developers of the site, will be responsible for the maintenance of the sediment control and storm water management structures to ensure that they remain clear of debris and in effective working condition, after completion and acceptance of the work.
- The sediment control measures shown on this plan are designed for use during construction of the roads and storm drainage system within the limits of (Section) III as delineated on Sheet #5 of these Drawings.
- Use 4-inch to 6-inch surge stone in place of #2 gravel in all sediment control structures.
- Prior to proceeding with any construction, the contractor shall obtain a grading permit.
- Surround sediment traps with semi-permanent fence not less than 42" in height with openings not more than three inches in width. Fence to be anchored at a spacing not less than eight feet.

OWNER - DEVELOPER
 The Highland Lake Partnership
 Bucher, Myers & Associates
 6777 First Avenue
 Silver Spring, Md. 20910

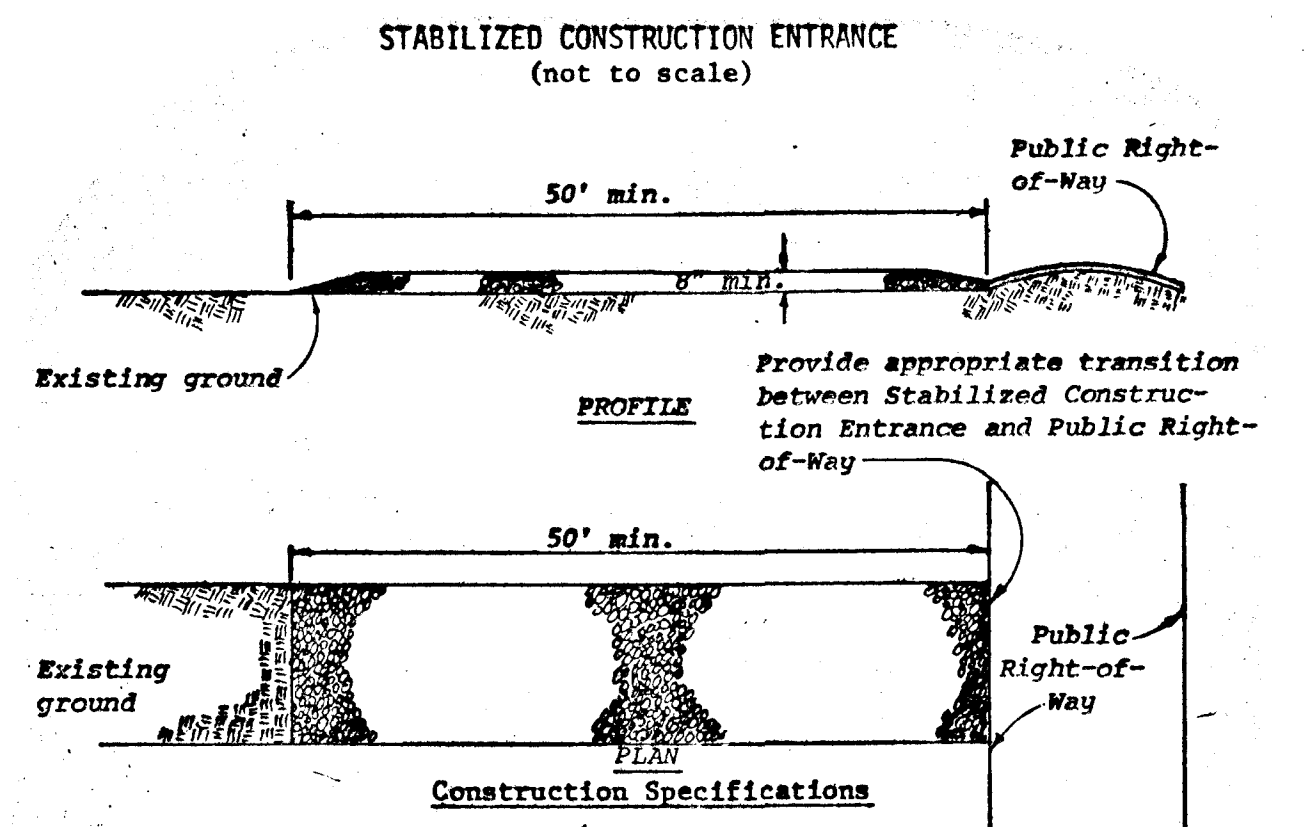
CONSTRUCTION SCHEDULE (PHASE I)

| Item No. | Item | Start | Complete |
|----------|---------------------|-----------|-----------|
| 1. | Sediment control | Feb. 1978 | Feb. 1978 |
| 2. | Rough grading | Mar. 1978 | Apr. 1978 |
| 3. | Storm drain | Apr. 1978 | May, 1978 |
| 4. | Final grading | May, 1978 | May, 1978 |
| 5. | Paving | May, 1978 | Jun. 1978 |
| 6. | Final stabilization | Jun. 1978 | Jun. 1978 |

Note: Approval requested this submission for Phase I only.



- The inlet pipe shall have a slope of 3% or steeper.
- The top of the earth dike over the inlet pipe and those dikes carrying water to the pipe shall be at least 1' higher at all points than the top of the inlet pipe.
- The inlet pipe shall be corrugated metal pipe with watertight connecting bands.
- The flexible tubing shall be the same diameter as the inlet pipe and shall be constructed of a durable material with hold-down grommets spaced 10' on centers.
- The flexible tubing shall be securely fastened to the corrugated metal pipe with metal strapping or watertight connecting collars.
- The flexible tubing shall be securely anchored to the slope by staking at the grommets provided.
- A riprap apron shall be provided at the outlet. This shall consist of 6" diameter stone placed as shown on Standard Drawing GSS-3.
- The soil around and under the inlet pipe and entrance section shall be hand tamped in 4" lifts to the top of the earth dike.
- Follow-up inspection and any needed maintenance shall be performed after each storm.



- 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.
- Length - As effective, but not less than 50 feet.
- Thickness - Not less than eight (8) inches.
- Width - Not less than full width of ingress or egress.
- 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.
- 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.

reviewed for Howard S.C.D.
 Name
 and meets Technical Requirements
 Date 5-10-78
 Signature
 U.S. Soil Conservation Service

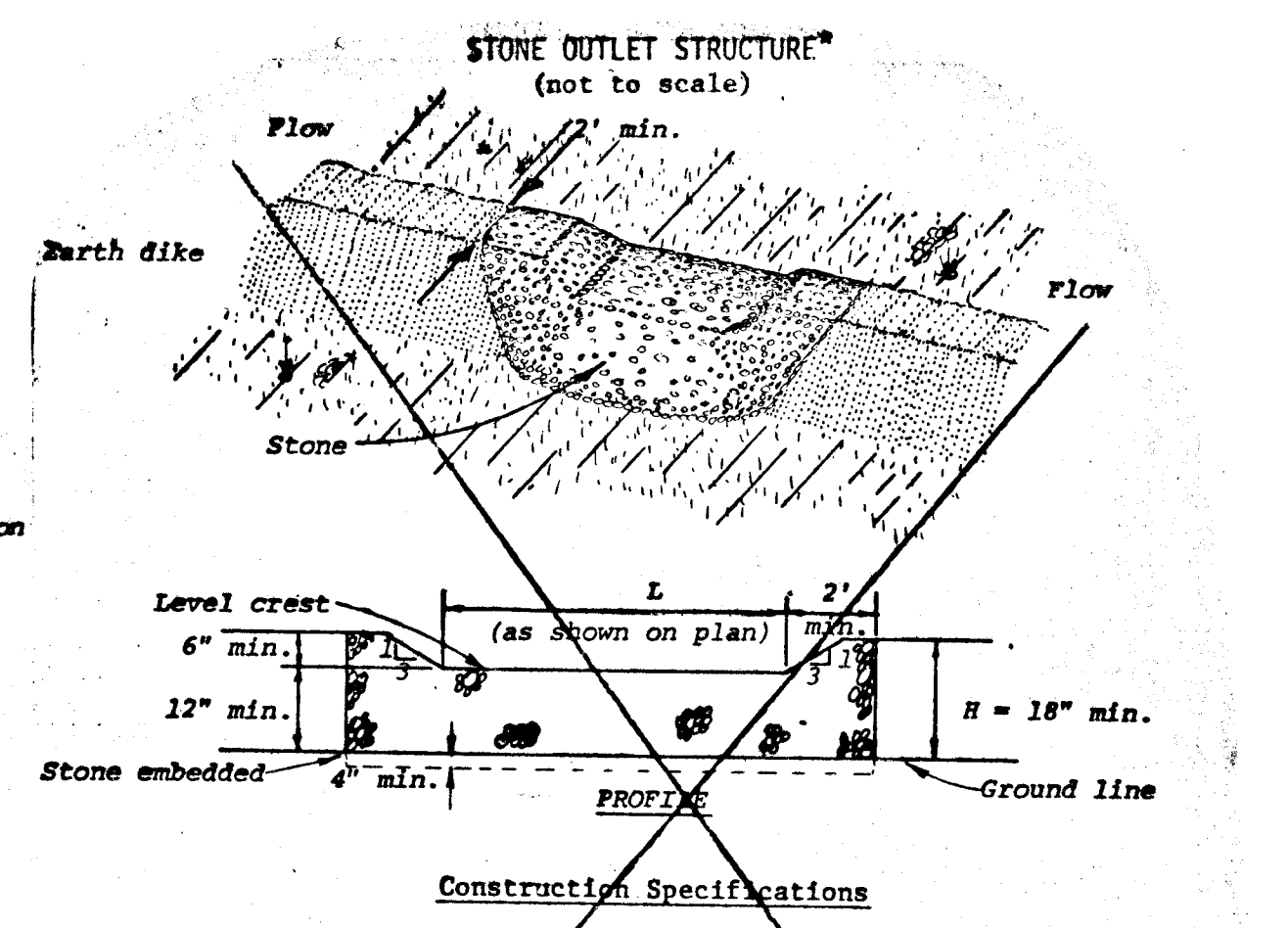
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 Approved Richard Date 5/10/78
 Signature
 Howard S.C.D.

NOTE - Drawings show straw bales used for core. Bales are anchored as per Standard and Specifications for Straw Bale Dike. Other materials (e.g., timber or concrete block) may also be used for core. Firmly anchor all core material to ground.

- Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
- 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.
- 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.
- The structure shall be inspected after each rain and repairs made as needed.
- Construction operations shall be carried out in such a manner that erosion and water pollution is minimized.
- The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.
- All cut and fill slopes shall be 2:1 or flatter.
- The crushed stone used in the outlet shall meet AASHTO designation M43, Size No. 2 or 24 or its equivalent such as MSHA No. 2. Gravel, meeting the above gradation, may be used if crushed stone is not available. Crusher run is not acceptable.

* Drainage area less than 5 acres.

- All dikes shall be machine compacted.
- All interceptor dikes shall have positive drainage to an outlet.
- Top width may be wider and side slopes may be flatter if desired to facilitate crossing by construction traffic.
- Field location should be adjusted as needed to utilize a stabilized safe outlet.
- Interceptor 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 when either the interceptor ditch channel or the drainage area above the dike are not adequately stabilized.
- Stabilization, as specified by the plans, shall be: (1) in accordance with Standard and Specifications for Grassed Waterway, and the area to be stabilized shall be the channel (flow area); or (2) the flow area shall be lined with stone that meets MSHA size No. 2 or AASHTO size No. 2 or 24 which is placed in a 3 inch thick layer and pressed into the soil. The area covered by the stone shall be as shown on Standard Drawing DD-1.
- Periodic inspection and required maintenance must be provided.



- The stone shall be crushed stone. Gravel may be used if crushed stone is not available. The stone shall meet MSHA Size No. 2 or AASHTO designation M43 Size No. 2 or 24.
- The crest of the stone dike shall be at least six inches lower than the lowest elevation of the top of the earth dike and shall be level.
- The stone outlet structure shall be embedded into the soil a minimum of four inches.
- The minimum length, in feet, of the crest of the stone outlet structure shall be equal to six times the number of acres of contributing drainage area.
- The stone outlet structure shall be inspected after each rain, and the stone shall be replaced when the structure ceases to function as intended due to silt accumulation among the stone, washout, construction traffic damage, etc.

"I certify that all development and/or construction will be done according to this plan of development and plan for Erosion and Sediment Control, and I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary."
 Signature of Developer W. B. Bucher Date 5/10/78

"I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."
 Signature of Engineer W. B. Bucher Date 10-14-77

Construction Specifications

- All dikes shall be machine compacted.
- All diversion dikes shall have positive drainage to an outlet.
- A. Diverted runoff from a protected or stabilized area shall outlet directly to an undisturbed stabilized area or into a level spreader or grade stabilization structure.
- B. Diverted runoff from a disturbed or exposed upland area shall be conveyed to a sediment trapping device such as a sediment trap or a sediment basin or to an area protected by any of these practices.
- Stabilization, as specified by the plans, shall be: (1) in accordance with Standard and Specifications for Grassed Waterway, and the area to be stabilized shall be the channel (flow area); or (2) the flow area shall be lined with stone that meets MSHA size No. 2 or AASHTO M43 size No. 2 or 24 which is placed in a 3 inch thick layer and pressed into the soil. The area covered by the stone shall be as shown on the drawing above.
- Periodic inspection and required maintenance shall be provided.

Construction Specifications

- Bales shall be placed in a row with ends tightly abutting the adjacent bales.
- Each bale shall be embedded in the soil a minimum of 4".
- Bales shall be securely anchored in place by stakes or re-bars driven through the bales. The first stake in each bale shall be angled toward previously laid bale to force bales together.
- Inspection shall be frequent and repair or replacement shall be made promptly as needed.
- Bales shall be removed when they have served their usefulness so as not to block or impede storm flow or drainage.

Construction Specifications

- The stone shall be crushed stone. Gravel may be used if crushed stone is not available. The stone shall meet MSHA Size No. 2 or AASHTO designation M43 Size No. 2 or 24.
- The crest of the stone dike shall be at least six inches lower than the lowest elevation of the top of the earth dike and shall be level.
- The stone outlet structure shall be embedded into the soil a minimum of four inches.
- The minimum length, in feet, of the crest of the stone outlet structure shall be equal to six times the number of acres of contributing drainage area.
- The stone outlet structure shall be inspected after each rain, and the stone shall be replaced when the structure ceases to function as intended due to silt accumulation among the stone, washout, construction traffic damage, etc.

SAND-BAG DETAIL

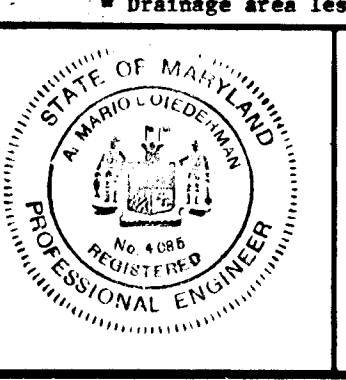


NOTE: Form 18" High Dike of Sand-Bags Around Inlet, Stagger Sand-Bags

TOUPS AND LOIEDERMAN
 ENGINEERS, PLANNERS, LANDSCAPE ARCHITECTS
 JOSEPH R. HARRIS BUILDING
 1370 PICCARD DRIVE ROCKVILLE MARYLAND 20850 301-840-1300
 A PLANNING RESEARCH CORPORATION COMPANY

| NO. | REVISIONS | BY | DATE |
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| | | | |

PREPARED UNDER THE SUPERVISION OF:
W. B. Bucher
 4085 10-14-77
 P.E. NO. DATE
 DESIGNED CHECKED SCALE AS SHOWN
 DRAWN DATE 10-7-77 R.E.P.



SECTION THREE - PHASE I
SEDIMENT CONTROL DETAILS
HIGHLAND LAKE
 ELECTION DISTRICT 5
 HOWARD COUNTY, MARYLAND
 TAX MAP #34 PARCEL #170

APPROVED: DEPARTMENT OF PUBLIC WORKS
W. B. Bucher 5-29-79
 CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: OFFICE OF PLANNING AND ZONING
John W. Munneman 5-16-79
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

JOB NUMBER 1780-0090
 SHEET NO. 6 of 6