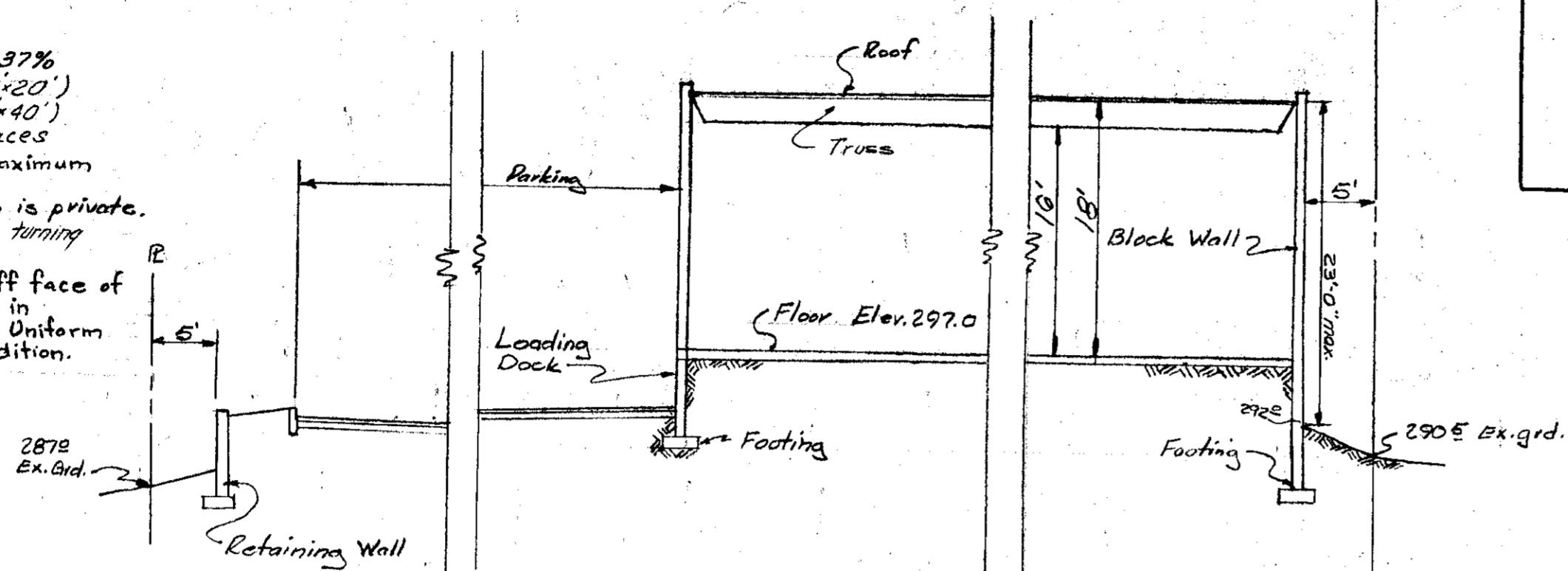
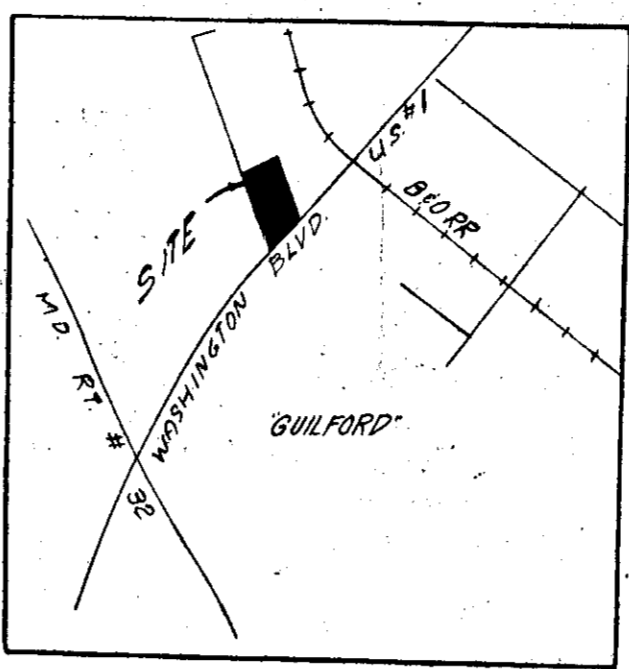


GENERAL NOTES

- Property area = 1.9107 Ac.
- Property zoned M-1 (by case ZB 650)
- Proposed use: Warehouse
- Utilities: a) Public water supply
b) Private sewage disposal system
- All existing buildings, walls & septic systems to be removed.
- Max. Slope = 2:1
- All Radii & Unless Noted
- Building Coverage = 31,000 sq. ft. or 97%
- Parking Spaces: Auto = 17 (10'x20')
Truck = 13 (12'x40')
Total = 30 Spaces
- Number of employees = 20, maximum
- Floor area = 31,000 sq. ft.
- All construction shown herein is private.
- Parking bays conform with minimum turning path for WB-40 vehicle.
- Stop sign to be placed 8' off face of curb & the P.C. of paving fillet in accordance with the "Manual of Uniform Traffic Control Devices", 1971 Edition.



BUILDING SECTION
Scale: 1" = 10'

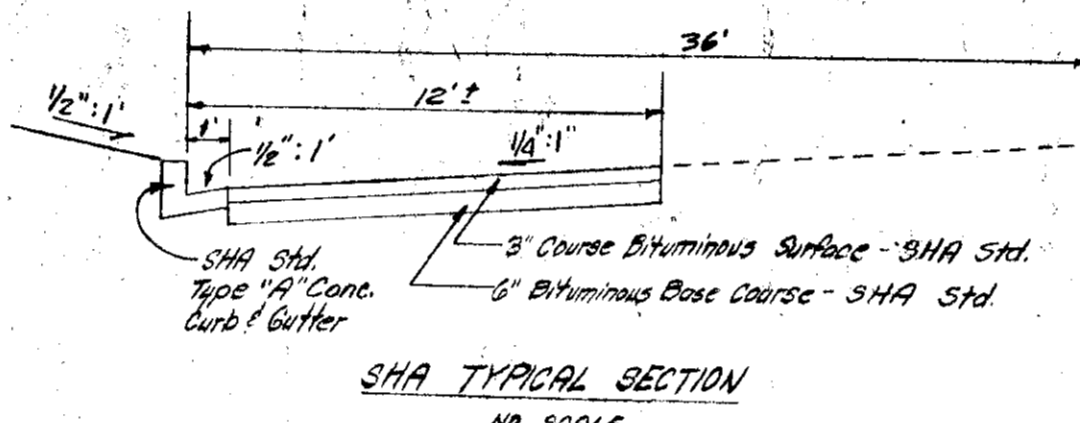
NOTE:
The lots or parcels shown on this plan are subject to the supplemental sewer In-Aid-of-Construction charge created by Section 20.311A of the Howard County Code and to Executive Order No. 72-9

APPROVED: For Public Water and Private Sewerage Systems, Howard County Health Department.
[Signature] 4/30/75
COUNTY HEALTH OFFICER DATE

APPROVED: Howard County Office of Planning & Zoning
[Signature] 5-14-75
PLANNING DIRECTOR DATE

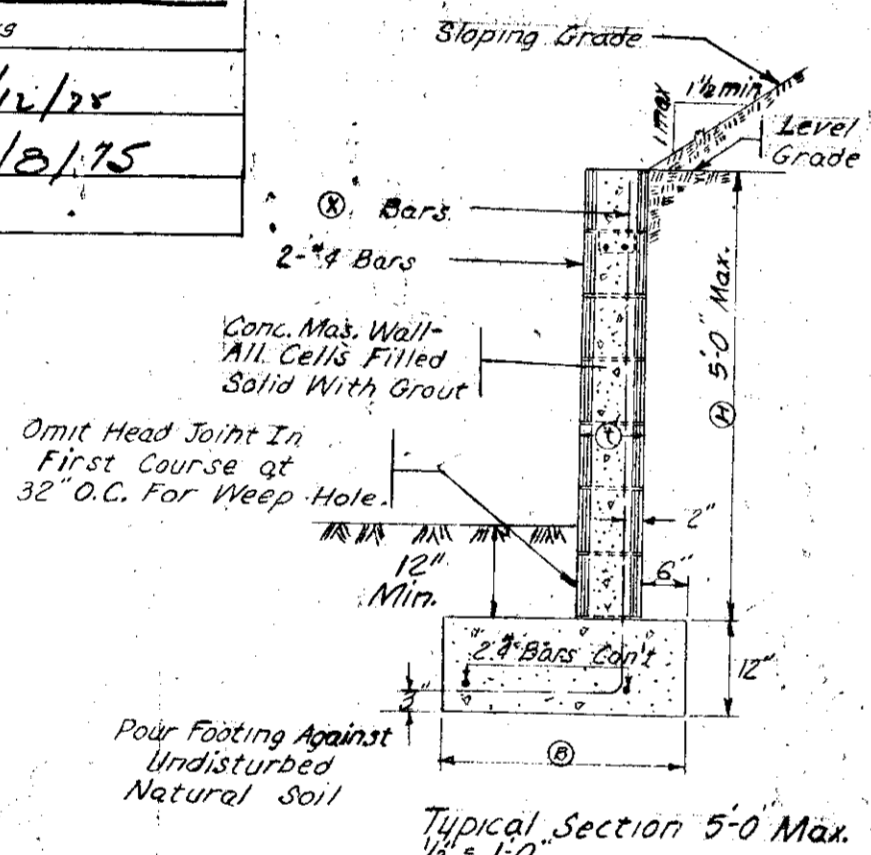
APPROVED: For Public Water and Storm Drainage Systems and Roads
Howard County Department of Public Works
[Signature] 5/14/75
DATE

APPROVED: For Public Water and Storm Drainage Systems and Roads
Howard County Department of Public Works
[Signature] 5/14/75
DATE



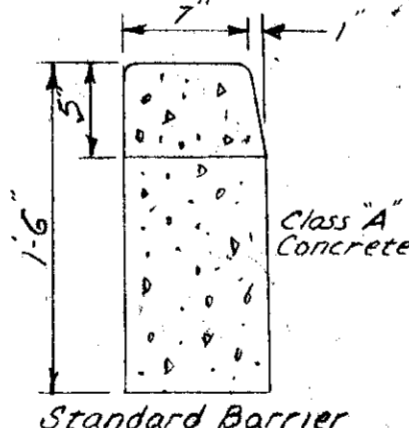
Typical Paving Section

Bituminous Conc. Surface	1"	Band C-3
Bituminous Conc. Binder	1"	Band C-2
Prime Base Course	12"	(2 Courses)
Bank Run Gravel Base	12"	(2 Courses)

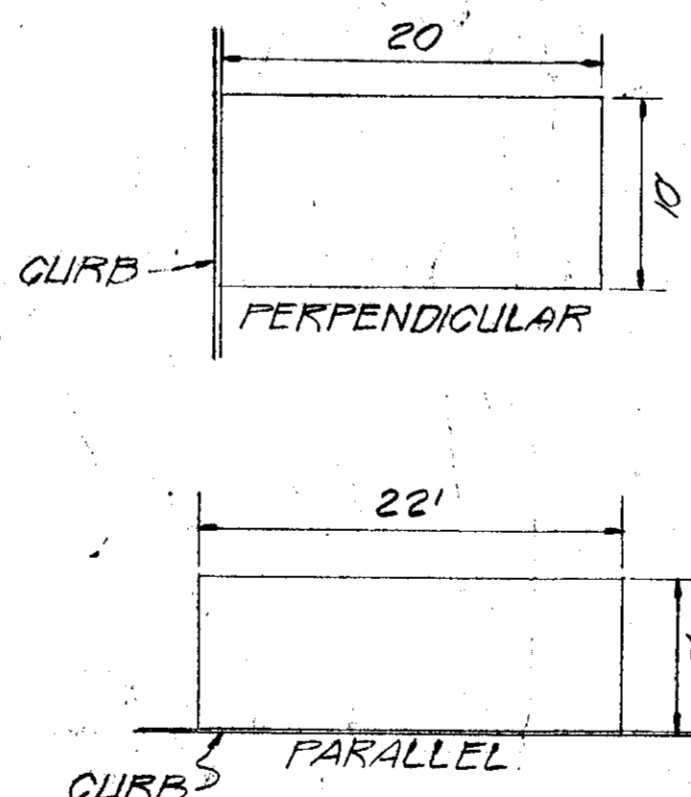


Typical Section 5'-0" Max.
1/2" = 10'

Clearing and Grading: Article C-1
Subgrade: Article C-2
Base Course: Article C-25
Binder Course: Article C-31 or C-33
Surface Course: Article C-31
Base Prime Coat: Article C-30-3
To Be Constructed In Accordance With The Howard County Road Construction Code and Specifications.



Typical Curb Section



TYPICAL PARKING SPACES

W	L	H	D	V
3	6"	1'-9"	3" at 32' O.C.	
4	8"	2'-2"	3" at 48' O.C.	
5	8"	2'-9"	3" at 24' O.C.	
6	12"	3'-3"	3" at 24' O.C.	

Design for level grade above wall

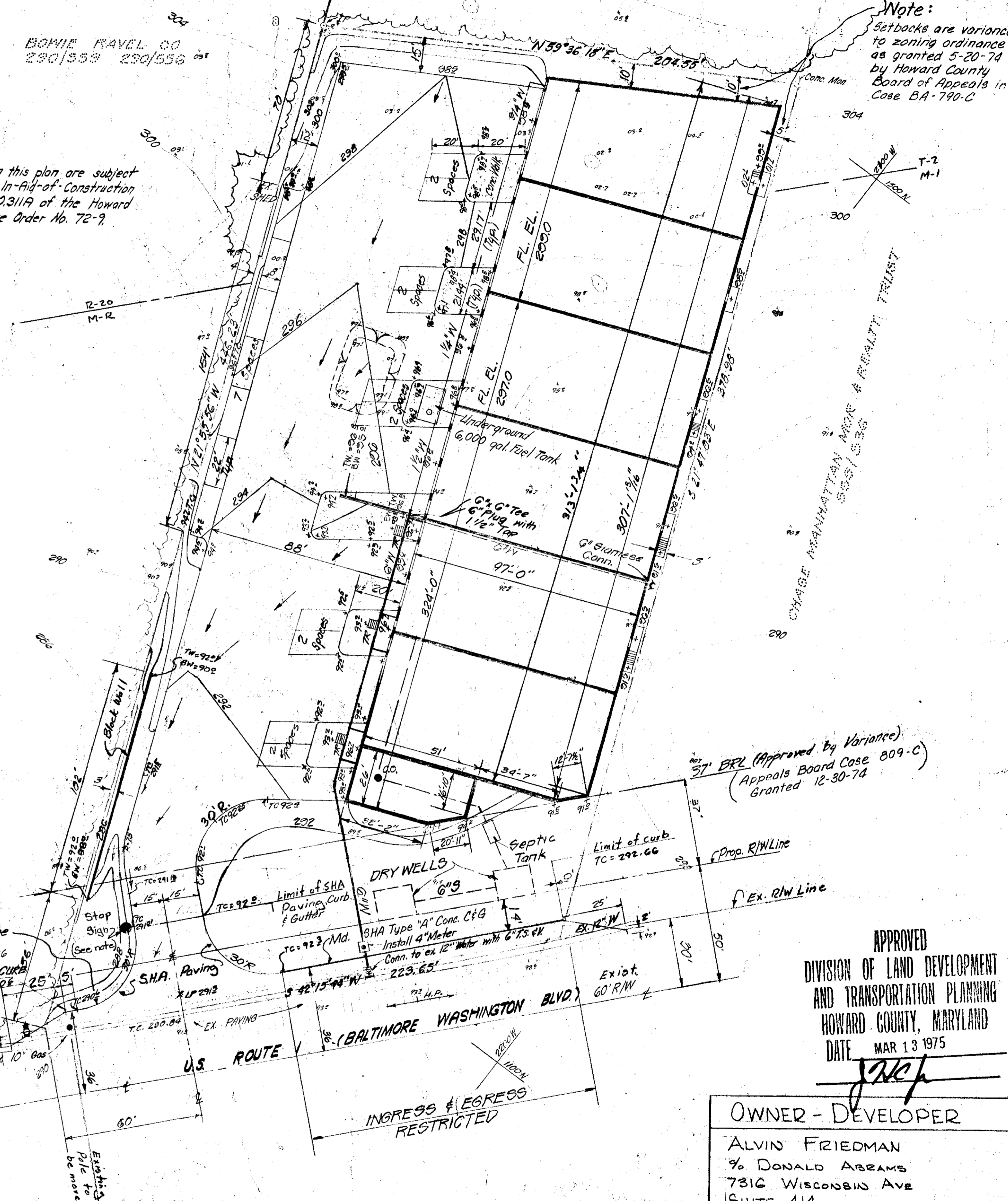
W	L	H	D	V
3	6"	2'-3"	3" at 24' O.C.	
4	8"	3'-0"	3" at 24' O.C.	
5	8"	3'-6"	3" at 16' O.C.	
6	12"	4'-0"	3" at 24' O.C.	

Design for sloping grade above wall

NOTE: Concrete in footing to test 2,000 lbs. per sq. in. at 28 Days; concrete block - Grade "A" Units A.S.T.M. C-90. Grout: 1 part cement, 3 parts sand, 2 parts 1/2" gravel, Mortar: 1 part cement, 1/2 part lime putty, 4 1/2 parts sand.

MAXIMUM STRESSES:
F_s = 18,000 P.S.I.
F_m = 225 P.S.I.
Shear = 15 P.S.I.
Bond U = 100 P.S.I.
Soil Pressure = 1,000 lbs. per sq. ft. Concrete to Soil Friction Coefficient = 0.4

Retaining Wall - Detailed Section



Note:
Setbacks are variances to zoning ordinance as granted 5-20-74 by Howard County Board of Appeals in Case BA-790-C

37' BRL (Approved by Variance) (Appeals Board Case 809-C) Granted 12-30-74

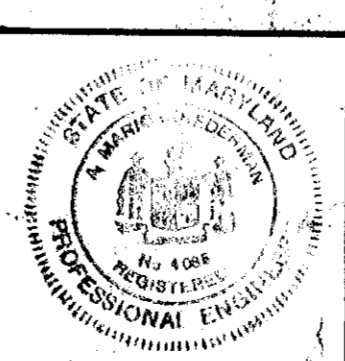
APPROVED
DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING
HOWARD COUNTY, MARYLAND
DATE MAR 13 1975

OWNER - DEVELOPER
ALVIN FRIEDMAN
% DONALD ABEAMS
7316 WISCONSIN AVE
SUITE 414
Bethesda, Md. 20014 Phone: 652-6816

TOUPS AND LOIEDERMAN
CONSULTING ENGINEERS AND PLANNERS
SUITE 409 / CONGRESSIONAL BUILDING
121 CONGRESSIONAL LANE / ROCKVILLE, MARYLAND 20852 / 301-881-9080
A PLANNING RESEARCH CORPORATION COMPANY

NO.	REVISIONS	BY	DATE
1	REVISE BLDG and PARKING SPACES	MKA	8-20-74
2	REVISE BLDG, SIDE & PARKING SPACES	CVT	8-20-74
3	Add stop sign note	MLS	9-25-74
4	Revised Elevation Parking on per variance	MLS	12-20-74
5	Variance data added - building division revision	MLS	1-20-75
6	Final	MLS	4-9-75

PREPARED UNDER THE SUPERVISION OF:
[Signature]
P.E. NO. 4085
DATE 10 March 1974



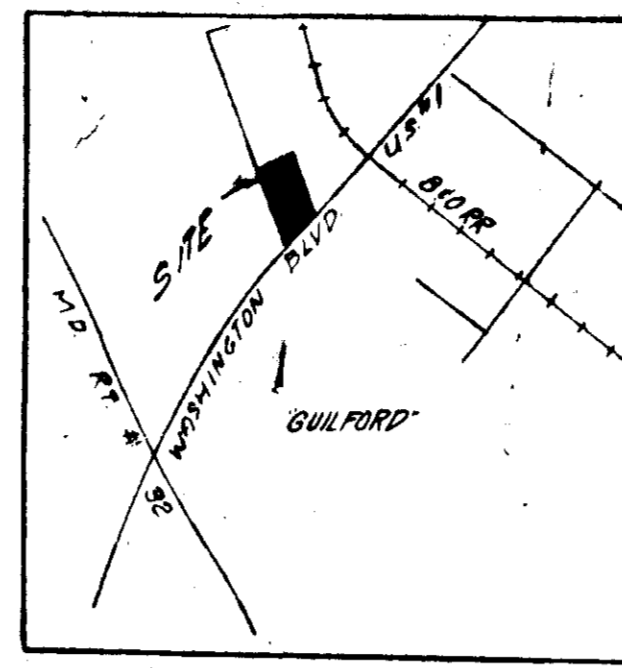
DESIGNED DVG
CHECKED MLS
SCALE 1" = 30'
DRAWN GDT
DATE 2-16-74
R.E.F.

SDP-75-65
SITE PLAN
FRIEDMAN PROPERTY
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
TAX MAP #48, PARCELS 909, 74

JOB NUMBER 1006-006
SHEET NO. 1
SDP-75-65 OF 5 SHEETS

GENERAL NOTES

1. Property Area = 1.91107 AC
2. Existing Sewer M.I.
3. Proposed use: Warehouse
4. Utilities: a) Public water supply
b) Private sewage disposal system
5. All existing buildings have a sewer system to be removed
6. Number of anticipated employees = 20 maximum
7. Anticipated flow generated 20-30 gal/day/person = 600 GPD
8. Area of absorption needed: 20 people x 25 sq ft per person = 500 sq ft
9. Area of absorption provided: 597 sq ft (see comps below)



APPROVED: For Public Water and Private Sewerage Systems, Howard County Health Department.
J. P. Moran (COUNTY HEALTH OFFICER) DATE: 4/30/75

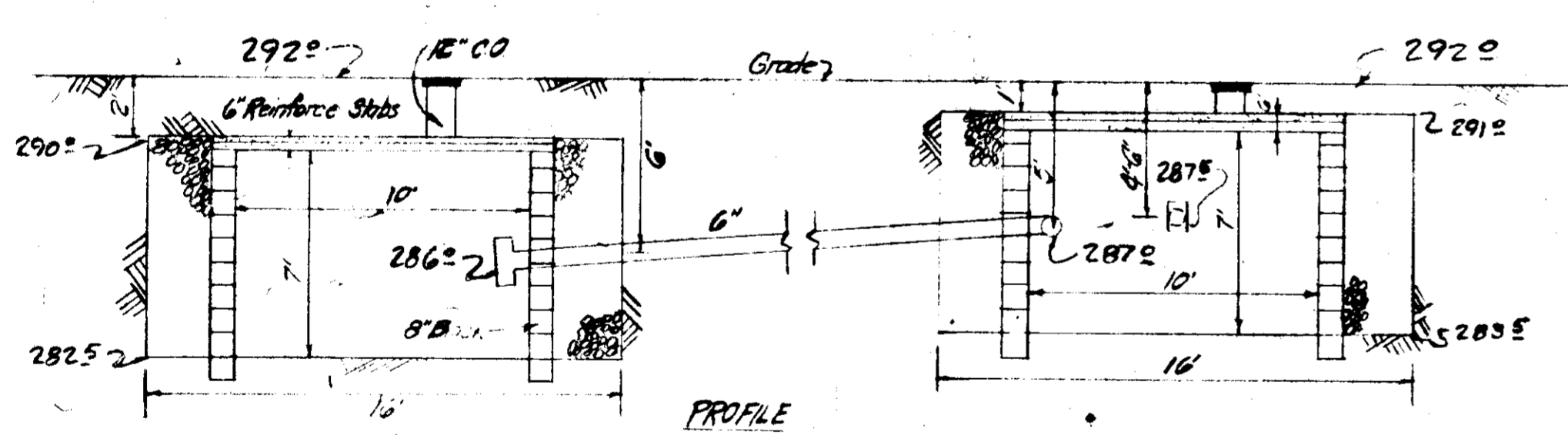
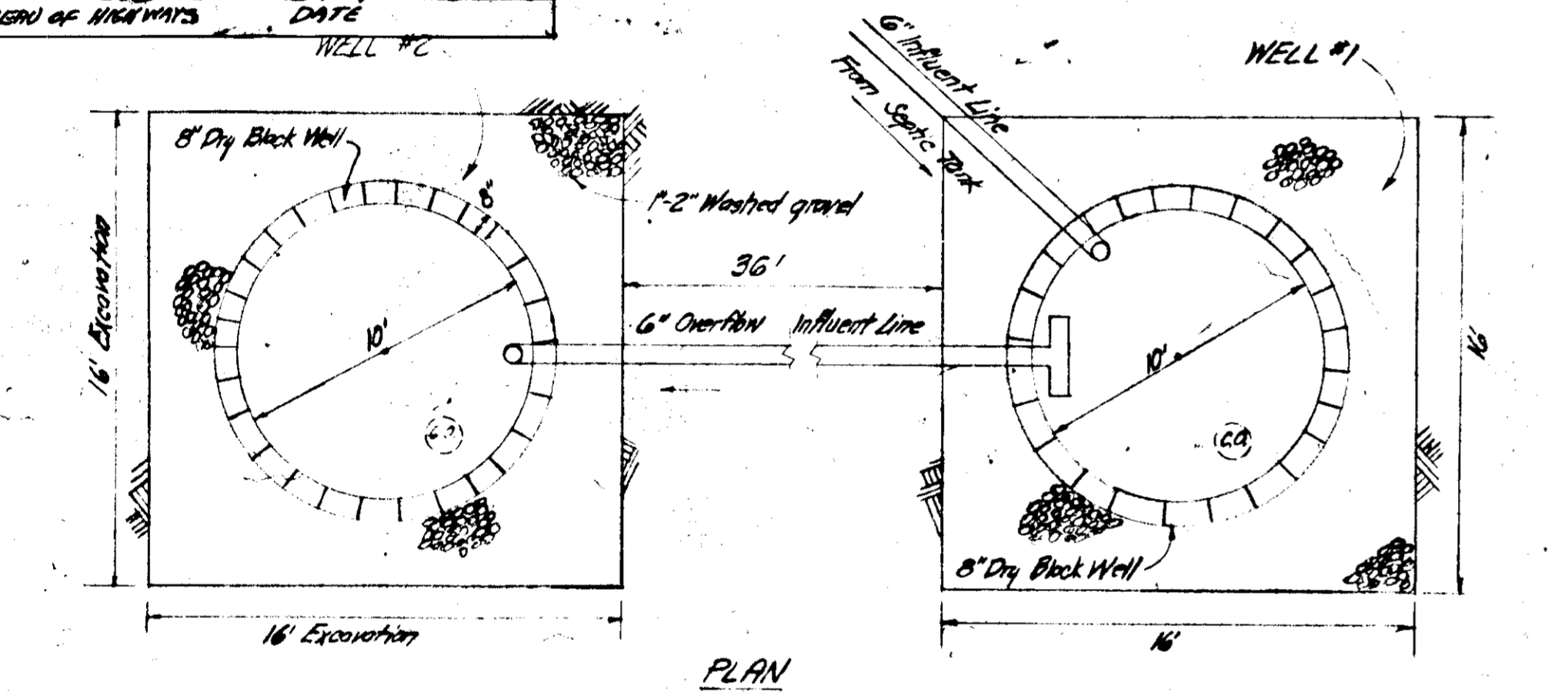
APPROVED: Howard County Office of Planning & Zoning.
James S. Haring (PLANNING DIRECTOR) DATE: 5-14-75

J. A. Leonard (CHIEF DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING) DATE: 5/14/75

APPROVED: For Public Water and Storm Drainage Systems and Roadways, Howard County Department of Public Works.
Will A. Acton (DIRECTOR) DATE: 5/14/75
B. H. Melchior (CHIEF ENGINEER OF HIGHWAYS) DATE: 5/16/75

Test N ^o	Depth	Time	Remarks
1			Exist. ground elev = 292.2
2			Exist. ground elev = 290.5
3			Exist. ground elev = 292.2
4			Exist. ground elev = 290.5
5			Exist. ground elev = 290.2
6			Exist. ground elev = 286.2

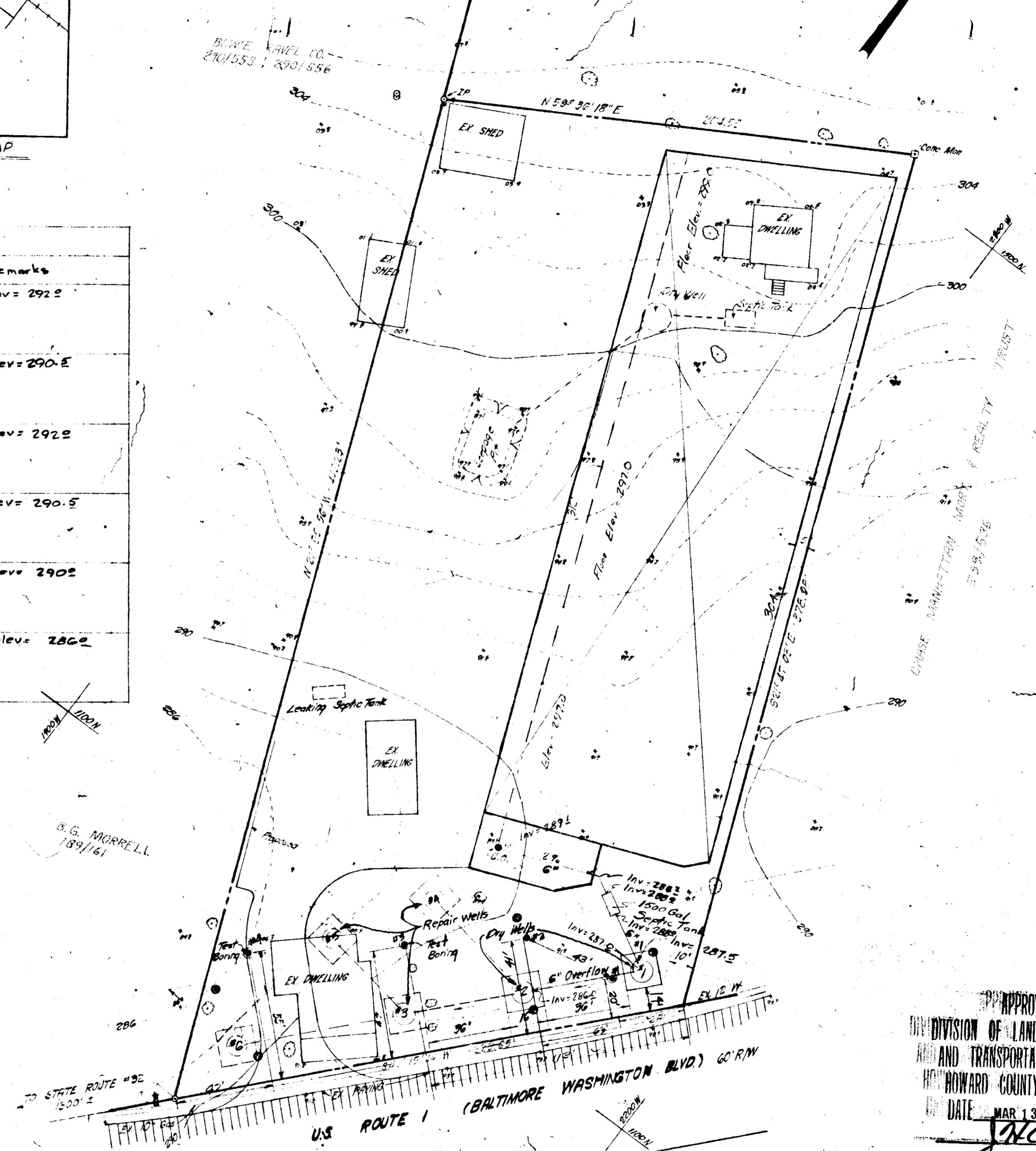
- TEST BORINGS**
- #1 Clay to 15' Sand 15'-25' Dry
 - #2 Clay to 10' Sand 10'-25' Dry
 - #3 Clay to 7' Sand 7'-20' Dry
 - #4 Slope to 10' Sand 10'



DETAILS OF SEWAGE DISPOSAL SYSTEM

- Notes: Scale: 1" = 5'
- 1) Area of dry well = a) bottom = $\pi(5)^2 = 78.5 \text{ sq ft}$
 b) sides = $\pi(10) \times 7 = 220 \text{ sq ft}$
 Total = 298.5 sq ft/well
 - 2) Area of pit = a) bottom = $16 \times 16 - [\pi(5.7)^2] = 154 \text{ sq ft}$
 b) sides = $7.6 \times 16 \times 4 = 486 \text{ sq ft}$
 Total = 640 sq ft
 - 3) Total absorptive area = 712.5 sq ft/dry well

Benchmark: WR 4A BM #6-9; Elev = 282.74
 RR Spike in power pole #308532



APPROVED: DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING, HOWARD COUNTY, MARYLAND.
 DATE: MAR 13 1975
J. A. Leonard

LEGEND
 Test hole locations

TOUPS AND LOIEDERMAN
 CONSULTING ENGINEERS AND PLANNERS
 SUITE 409 / CONGRESSIONAL BUILDING
 121 CONGRESSIONAL LANE / ROCKVILLE, MARYLAND 20852 / 301-881-0080
 A PLANNING RESEARCH CORPORATION COMPANY

NO.	REVISIONS	BY	DATE
1	Elimination of...	MLF	2-10-74
2	...	MLF	12-15-74
3	Final	MLF	4-9-75

PREPARED UNDER THE SUPERVISION OF:
B. Friedman
 1005
 3-4-74
 DATE



SEWAGE DISPOSAL SYSTEM
 A. FRIEDMAN PROPERTY
 6th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

JOB NUMBER: 1006-006
 SHEET NO.: 2
 OF 5 SHEETS

NOTES

- The stone used in dry wells will be the equivalent of Maryland S.M.A. #2 aggregate.
- The owner, A. Friedman, will be responsible for the maintenance and upkeep of the storm water management facilities.
- Roof storage will be provided to detain the storm water that falls on the roof.
- The storm water detained on the roof will be released at a rate of 7.5 CFS.
- The roof will provide 1,700 cubic feet of storage.
- All runoff from the parking lot will be diverted to the dry well.
- Dry well will provide 7,500 cubic feet of storage.
- The dry well will be installed before or as soon as possible after the sediment basin is removed.

GENERAL NOTES

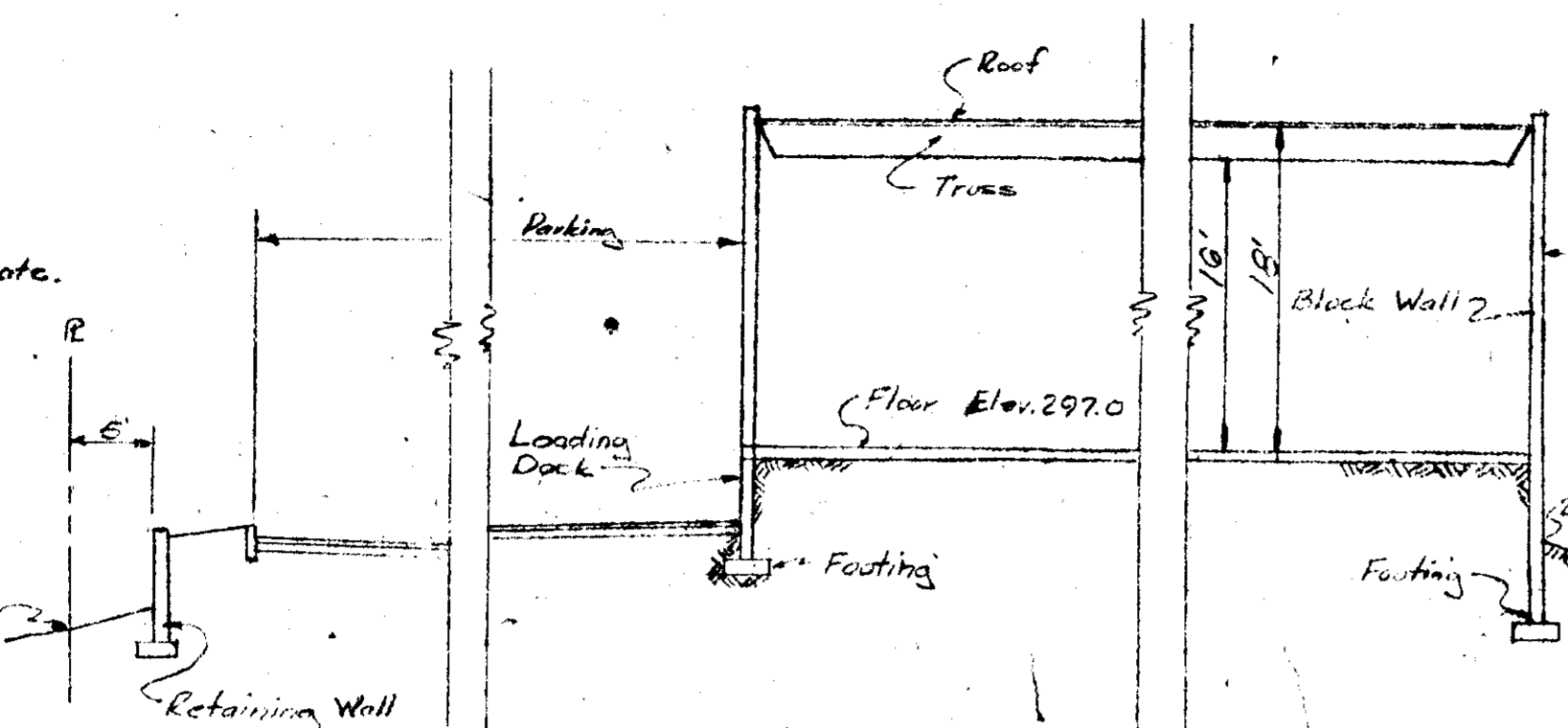
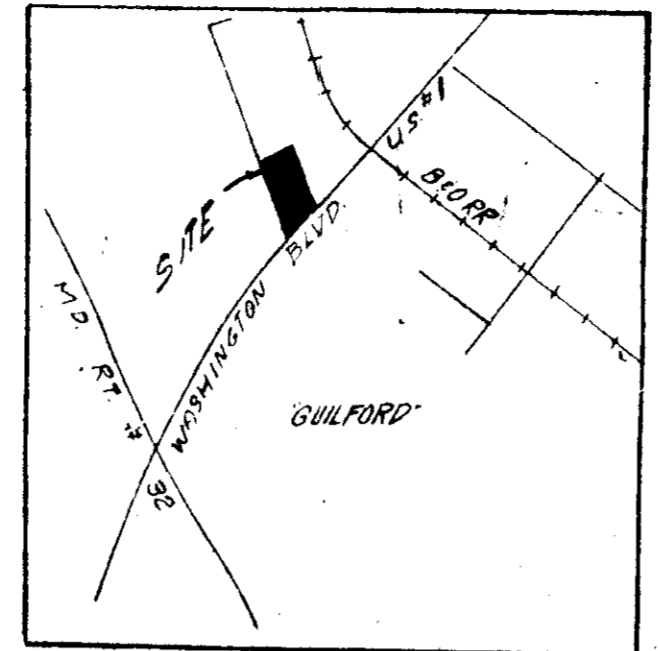
- Property area: 13,107 AC.
- Property area: 117
- Proposed use: Warehouse
- Utilities: a. Public water supply
b. Private sewage disposal system to be removed.
- Max. Slope = 2:1
- All Radii Unless Noted
- Building Coverage = 31,870 sq. ft. (10,200')
- Parking Spaces: Auto = 17 (18,440')
- Truck = 23 (18,440')
- Total = 40 Spaces
- Number of employees = 20 maximum
- Floor area = 31,870
- All construction shown herein is private.

Developers/Builders Certification

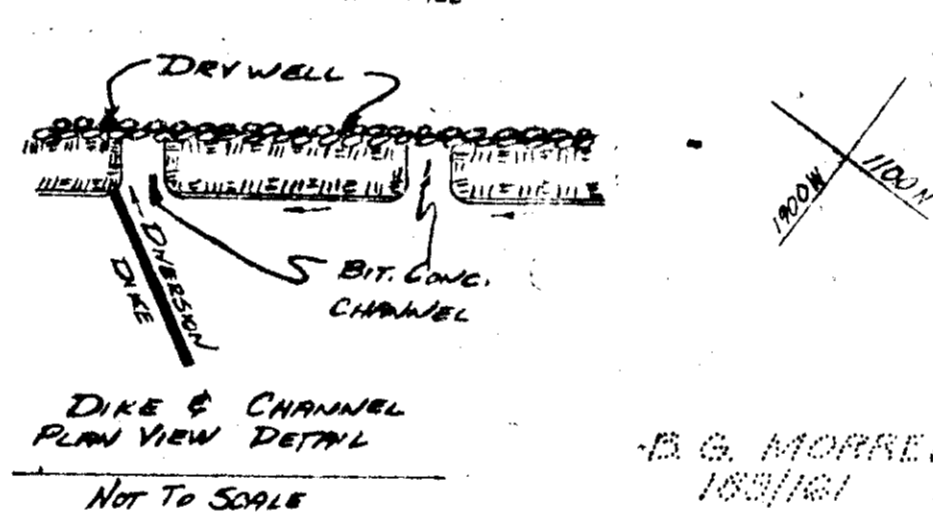
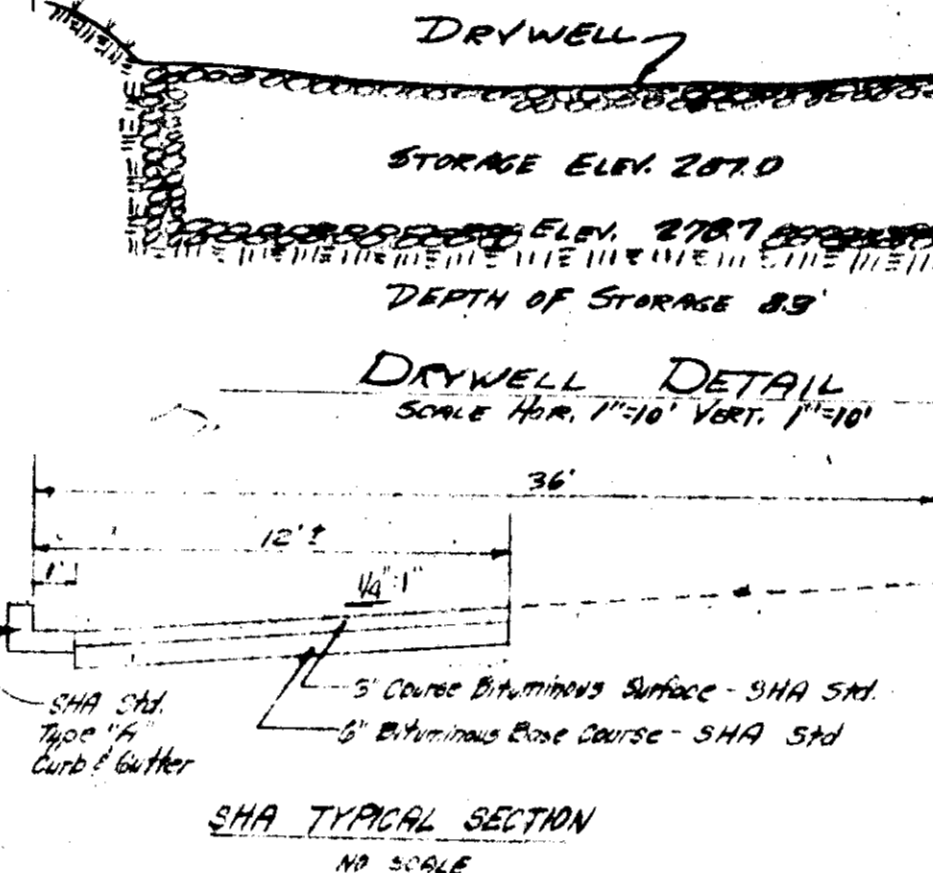
"I/we hereby certify that all clearing, grading, construction and/or development will be done pursuant to this plan."

Donald A. Friedland
Developer

3-14-74
Date



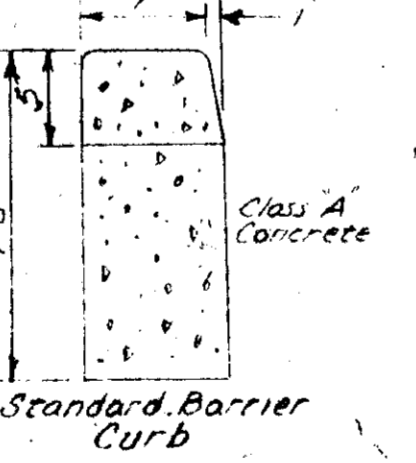
BUILDING SECTION
Scale: 1" = 10'



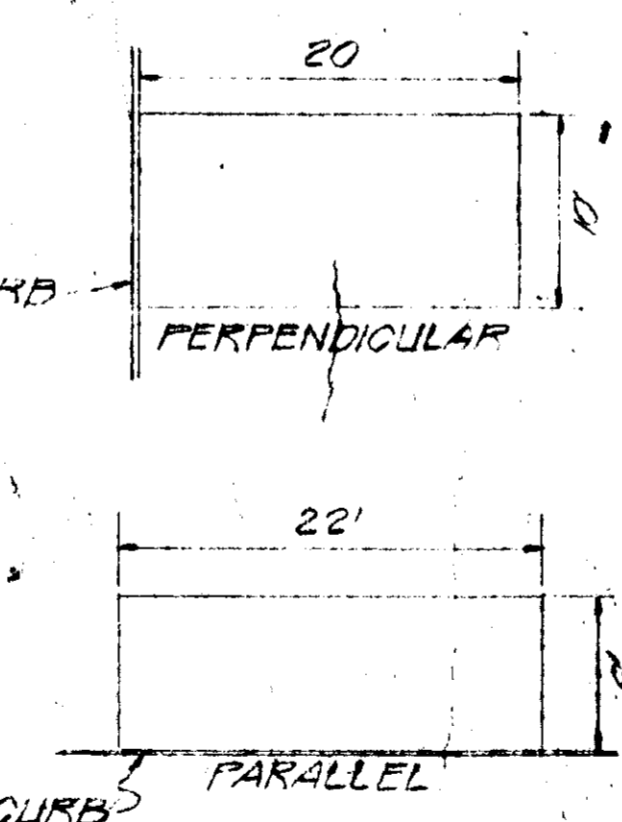
Typical Paving Section

Bituminous Conc. Surface	Band C-3
Bituminous Conc. Binder	Band C-2
Prime Base Course	
Bank Run Gravel Base	(2 Courses)

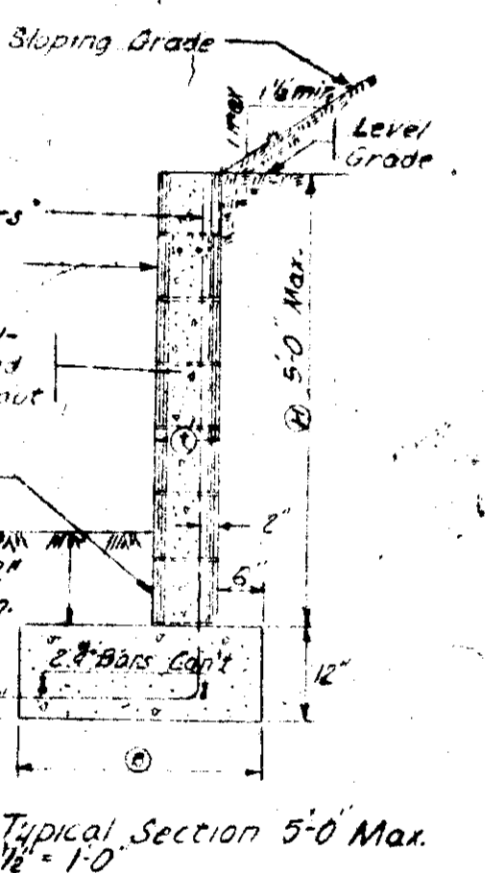
Clearing and Grading: Article C-1
Subgrade: Article C-2
Base Course: Article C-25
Binder Course: Article C-31 or C-33
Surface Course: Article C-31
Base Prime Coat: Article C-30.5
To be constructed in accordance with the Howard County Road Construction Code and Specifications.



Typical Curb Section



TYPICAL PARKING SPACES



Retaining Wall - Detailed Section

3' 6"	1'-2"	3' at 32' O.C.	
4' 0"	2'-2"	3' at 48' O.C.	
5' 0"	3'-2"	3' at 24' O.C.	
6' 0"	3'-2"	3' at 24' O.C.	

Design for level grade above wall

3' 6"	1'-2"	3' at 32' O.C.	
4' 0"	2'-2"	3' at 24' O.C.	
5' 0"	3'-2"	3' at 16' O.C.	
6' 0"	4'-0"	3' at 16' O.C.	

Design for sloping grade above wall

NOTE: Concrete in footing to test 2000 lbs. per sq. ft. at 28 Days. Concrete Block - Grade 1. Under 4.5 M. C-30. Grout - 1 part cement, 3 parts sand, 2 parts pea gravel, Mortar - 1 part cement, 1/2 part lime putty, 4 1/2 parts sand.

MAXIMUM STRESSES
F_s = 18,000 P.S.I.
F_m = 235 P.S.I.
Shear = 1.5 P.S.I.
Bolt U-100 P.S.I.
Soil Pressure = 100 lbs. per sq. ft.
Concrete to Soil
Friction Coefficient = 0.6

TOUPS AND LOIEDERMAN
CONSULTING ENGINEERS AND PLANNERS
SUITE 409 / CONGRESSIONAL BUILDING
121 CONGRESSIONAL LANE / ROCKVILLE, MARYLAND 20852 / 301-881-9080
A PLANNING RESEARCH CORPORATION COMPANY

NO.	REVISIONS	BY	DATE
1.	REVISE BLDG and PARKING SPACES	NKA	3-28-74
2.	Added Dimensions to Foundation	MLC	3-28-74
3.	Revised Bldg Footing as per Variance	MLC	4-26-74
4.	Final	MLC	4-9-74

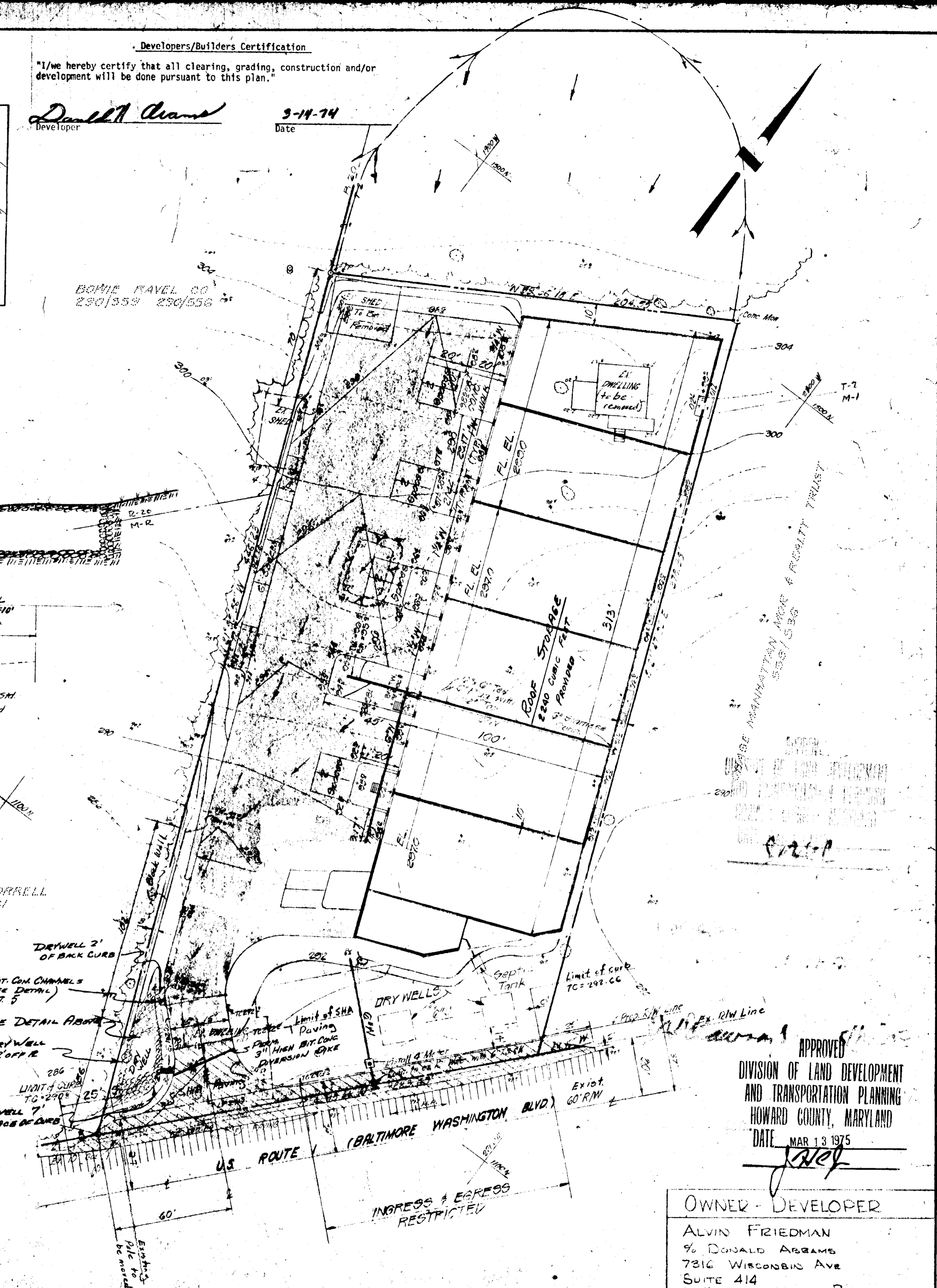
PREPARED UNDER THE SUPERVISION OF:
[Signature]
4085
5-9-74
DATE



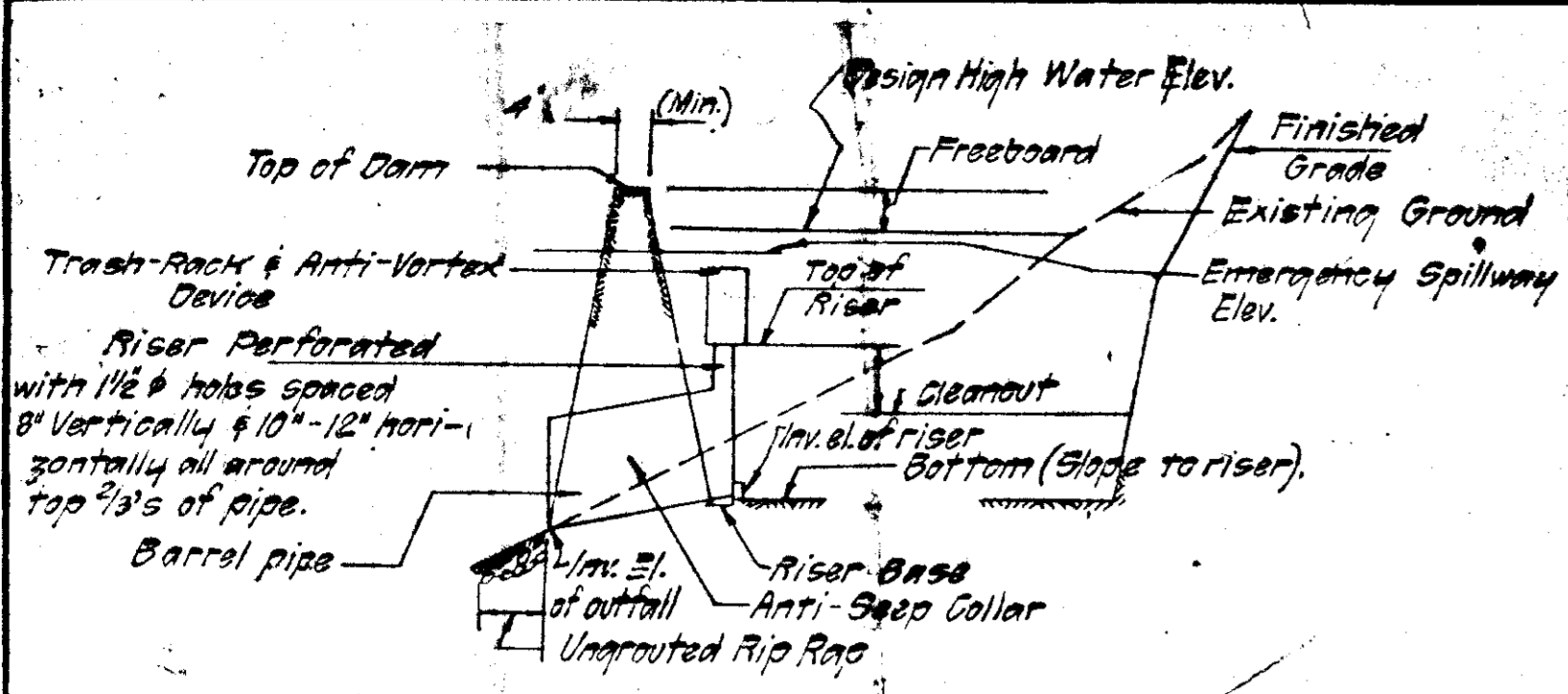
STORMWATER MANAGEMENT PLAN
FRIEDMAN PROPERTY
5th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
TAX MAP #49: PARCELS 30, 9, 14

OWNER - DEVELOPER
ALVIN FRIEDMAN
% DONALD ARBANS
7816 WISCONSIN AVE
SUITE 414
Bethesda, Md. 20014 Phone: 652-6816

JOB NUMBER
600-276
SHEET NO.
3
OF 5 SHEETS

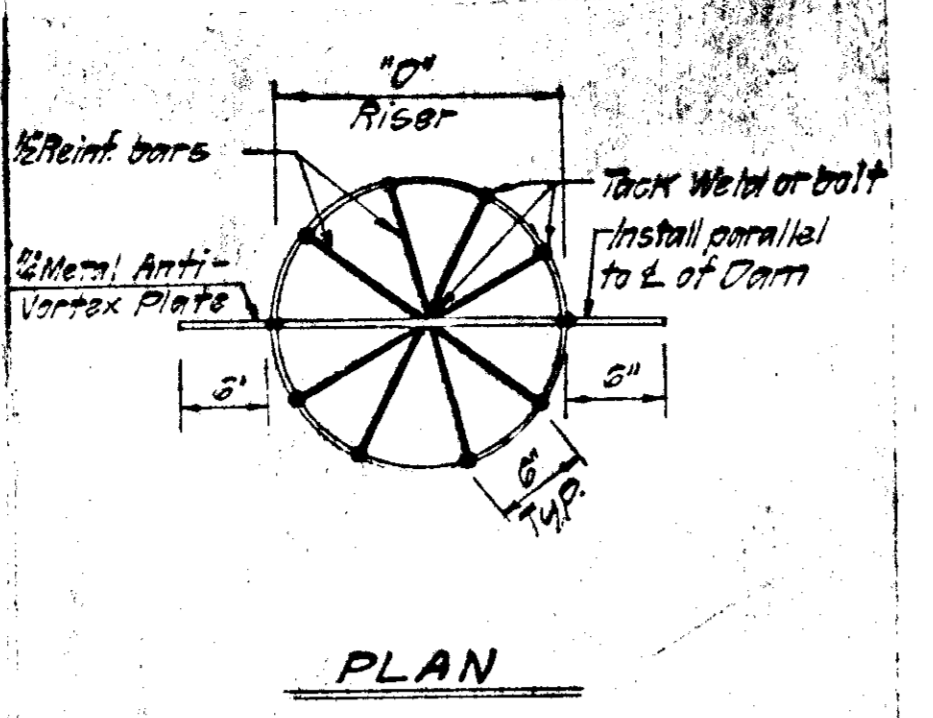


APPROVED
DIVISION OF LAND DEVELOPMENT
AND TRANSPORTATION PLANNING
HOWARD COUNTY, MARYLAND
DATE MAR 13 1975
[Signature]

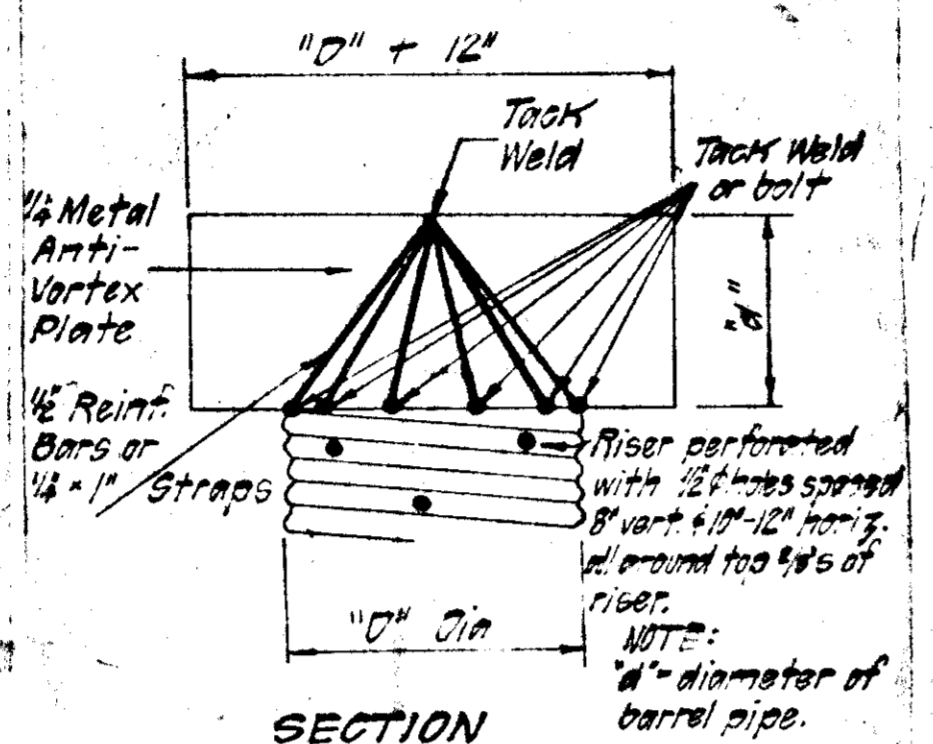


SEDIMENT BASIN SECTION
NO SCALE

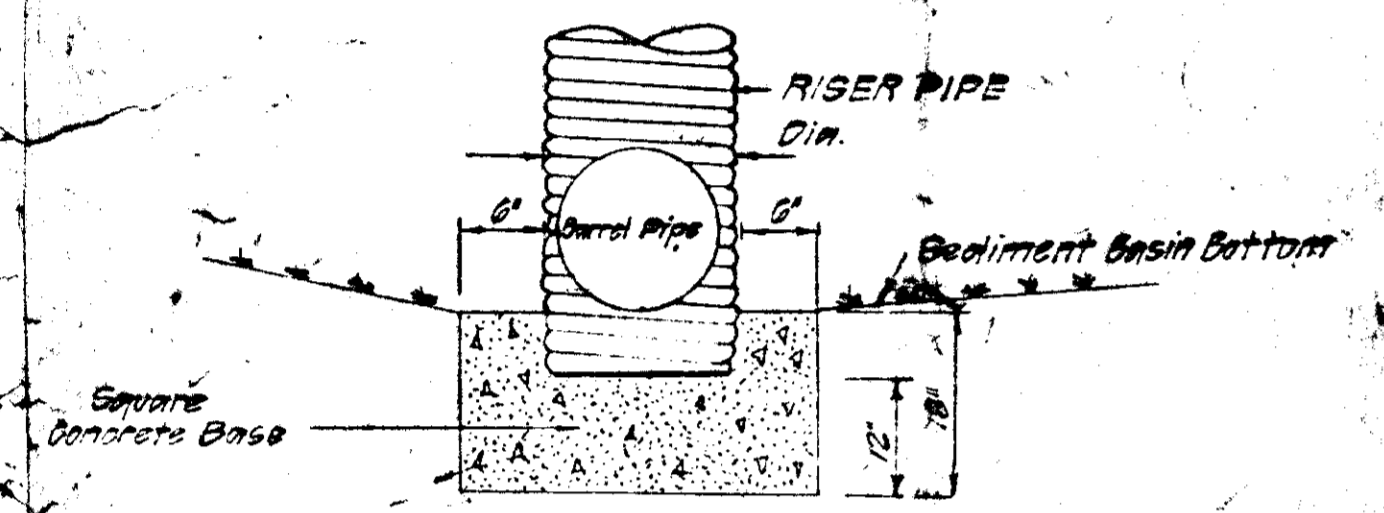
SEDIMENT BASIN TABLE	
BASIN NUMBER	2
Top of Dam Elev.	491.7
Bottom Elev. (Basin)	486.2
Top of Riser Elev.	489.2
Design High Water Elev.	492.2
Basin Volume	0.17 AC.IMP.
Cleanout Elev.	489.0
Invert Elev. of Riser	486.2
Invert Elev. of Outfall	485.0
Riser Pipe Size	12" ACCUM.
Barrel Pipe Size	12" ACCUM.
Riser Pipe Length	3'
Barrel Pipe Length	27'
Emergency Spillway Elev.	N/A



PLAN

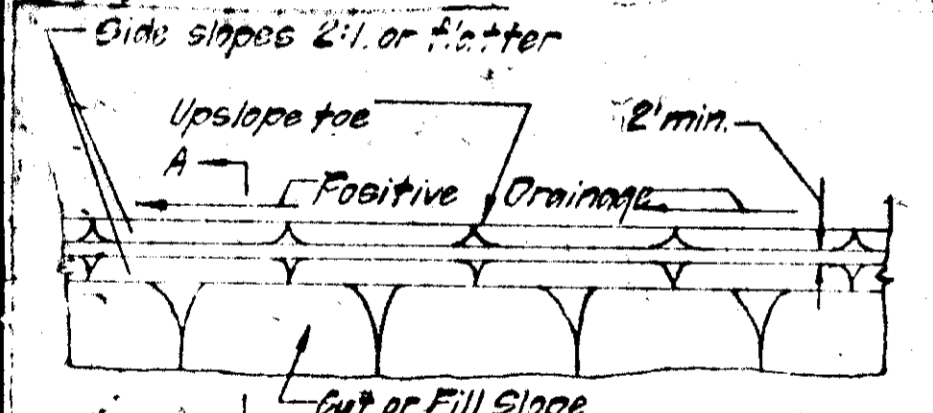


DETAIL OF TRASH RACK AND ANTI-VORTEX DEVICE
NO SCALE



CROSS SECTION OF CONCRETE BASE
NO SCALE

NOTE:
All joints & connections of pipes to be securely fastened & watertight.



PLAN

DIVERSION DIKE
NO SCALE

SECTION "A-A"

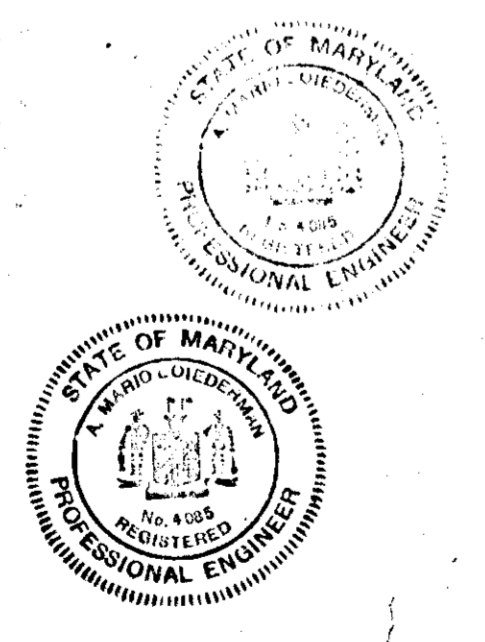
NOTE:
1. All dikes must be machine compacted.
2. All diversion dikes must have positive grade drainage to a stabilized outlet.

ENGINEERS CERTIFICATE

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: *David H. Chandy* Date: 4-9-75

4085
No.



SEDIMENT CONTROL NOTES

- All erosion and sediment control measures are to be constructed and maintained in accordance with applicable published "Standards and Specifications for Soil Erosion and Sediment Control in Urbanizing Areas." (Hereafter referred to as "Standards and Specifications").
- All points of ingress and egress will be protected to prevent tracking of mud onto public ways.
- All sediment will be prevented from entering any constructed storm drainage system.
- Periodic inspection and maintenance of all sediment control measures must be provided to insure their intended purpose is accomplished, until final stabilization is completed.
- The sediment control measures shall be in working condition before any grading or construction is to begin.
- Positive drainage will always be provided to the sediment basin shown on this plan.
- All 3:1 or greater slopes will be sodded as per "Standards and Specifications" (See SHEET 50-5).
- All other disturbed areas will be permanently seeded and mulched as per "Standards and Specifications" (See SHEET 50-5).
- A temporary snow fence will be placed around the top of the sediment basin.

GENERAL NOTES:

- Drawings not to scale.
- Top width may be widened; slopes may be flattened.
- Outlet should function with minimal erosion. Outlet availability should be considered in structure location. A temporary grade stabilization structure is required where outlet is to a critical area.

DEVELOPER CERTIFICATE

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 onsite inspection by the Howard Soil Conservation District or their authorized agent as deemed necessary. Deviation from this plan will not be made unless authorized by the Howard Soil Conservation District.

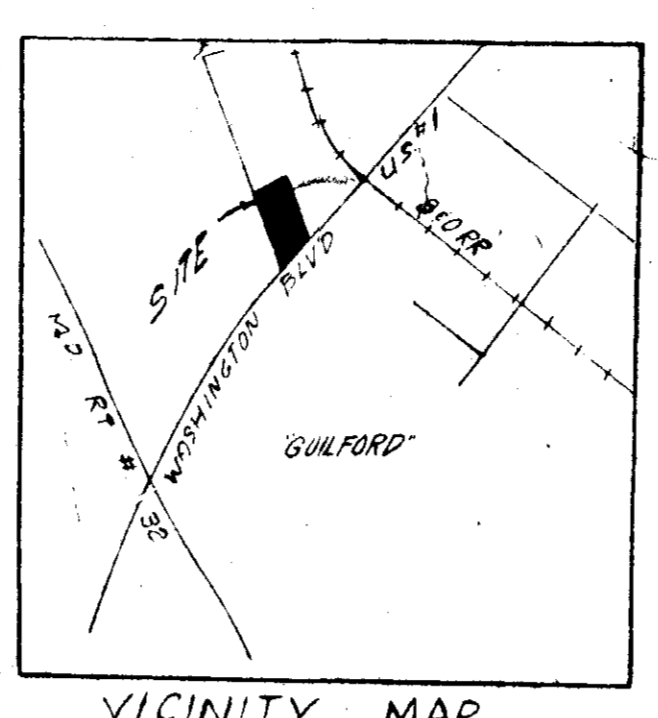
Signature: *David H. Chandy* Date: 4-9-75

Reviewed for HOWARD Soil Conservation District and meets technical requirements.
Signature: *Eric U. Herman* Date: 4/17/75

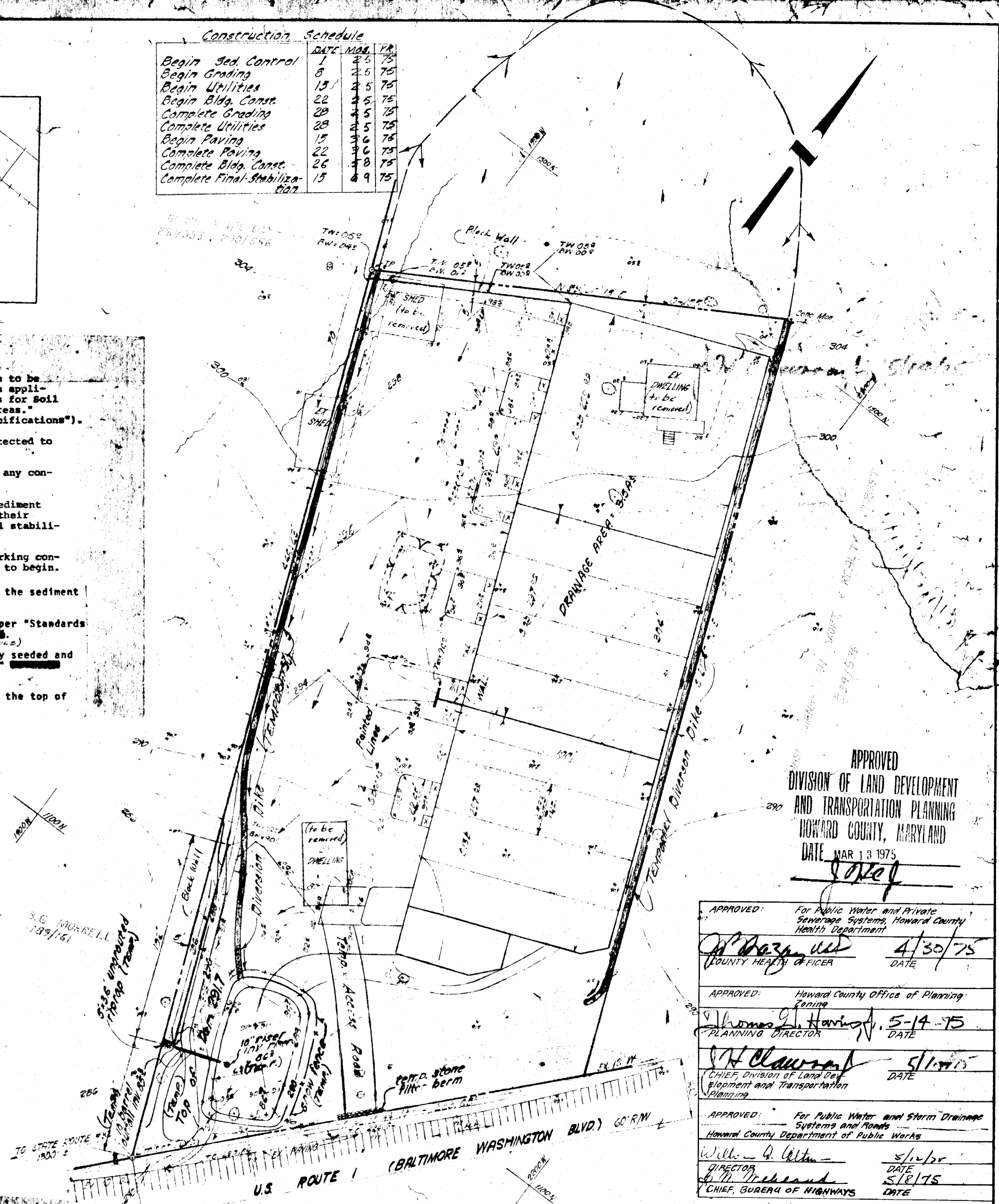
U.S. SOIL CONSERVATION SERVICE

Construction Schedule

ACTIVITY	START	STOP	DATE
Begin Sed Control	1	2	75
Begin Grading	3	5	75
Begin Utilities	13	15	75
Begin Bldg. Const.	22	25	75
Complete Grading	28	30	75
Complete Utilities	13	15	75
Begin Paving	13	15	75
Complete Paving	22	25	75
Complete Bldg. Const.	26	30	75
Complete Final Stabilization	13	15	75



VICINITY MAP
SCALE: 1" = 100'



APPROVED
DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING
HOWARD COUNTY, MARYLAND
DATE: MAR 13 1975
John

APPROVED: For Public Water and Private Sewerage Systems, Howard County Health Department	Signature: <i>John</i>	DATE: 4/30/75
APPROVED: Howard County Office of Planning	Signature: <i>Thomas G. Harris</i>	DATE: 5-14-75
APPROVED: Chief, Division of Land Development and Transportation Planning	Signature: <i>H. Claxton</i>	DATE: 5/1/75
APPROVED: For Public Water and Storm Drainage Systems and Roads, Howard County Department of Public Works	Signature: <i>W. A. G. G. G.</i>	DATE: 5/1/75
APPROVED: Director, Chief, Bureau of Highways	Signature: <i>W. A. G. G. G.</i>	DATE: 5/1/75

OWNER - DEVELOPER
ALVIN FRIEDMAN
96 DONALD AIGANS
7316 WISCONSIN AVE
SUITE 414
BETHESDA, Md. 20814 Phone: 622-6411

TOUPS AND LOIEDERMAN
CONSULTING ENGINEERS AND PLANNERS
SUITE 409 / CONGRESSIONAL BUILDING
121 CONGRESSIONAL LANE / ROCKVILLE, MARYLAND 20852 / 301-881-9080

NO.	REVISIONS	BY	DATE
1	Revise Bldg. & Parking as per variance	MLS	12/24/74
2	Final	MLS	4-9-75

PREPARED UNDER THE SUPERVISION OF:
Eric U. Herman
4085
10 March 1974
DESIGNED: DUT
CHECKED: M.S.
DRAWN: BDT
DATE: 2-10-74
SCALE: 1" = 30'
R.E.T.



APPROVED: *Robert W. Ziehn* 4/17/75
Howard Soil Conservation District
JOB NUMBER: 4
SHEET NO.: 4
OF 5 SHEETS
SDP-75-65

INTERIM
STANDARD AND SPECIFICATIONS
FOR
CRITICAL AREA STABILIZATION
(With Semi-Permanent and Permanent Seedings)

Definition

Stabilizing silt-producing areas by establishing medium to long-term stands of vegetation.

Purpose

To stabilize the area; to reduce damages from sediment and runoff to downstream areas.

Conditions Where Practice Applies

- I. Graded or cleared areas subject to erosion for approximately 1 to 2 years and where a semi-permanent seeding will normally produce sufficient growth to retard erosion.
- II. Graded or cleared areas subject to erosion and where a permanent, long-lived vegetative cover is needed.

SPECIFICATIONS

Vegetation cannot be expected to provide an erosion control cover and prevent soil slippage on a soil that is not stable due to its structure, water movement or excessive slope.

Minimum soil conditions needed for the establishment and maintenance of a long-lived vegetative cover:

- A. Enough fine-grained materials (over 25% silt and clay) to provide the capacity to hold at least a moderate amount of available moisture. Excessively porous sands which have moisture supplies consistently too low for growth of plants cannot be maintained in good cover regardless of other soil factors.
- B. Sufficient pore space to permit adequate root penetration.
- C. No concentrations of toxic elements.

I. Site Preparation

- A. Grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application and anchoring, and maintenance.
- B. Install needed erosion control practices such as interceptor ditches, berms and terraces, contour ripping, erosion stops, channel liners and desilting basins.

II. Seedbed Preparation

- A. Apply 2,000 pounds per acre or 46 pounds per 1000 sq. ft. of pulverized dolomitic limestone, 500 to 1,000 pounds per acre or 11.5 to 23 pounds per 1,000 sq. ft. of 0-20-0, superphosphate, or its equivalent (a higher rate of phosphate is normally needed with soils having a low silt-plus-clay content) and 1,000 pounds per acre or 23 pounds per 1,000 sq. ft. of 10-10-10 fertilizer or its equivalent. If soils are reasonably uniform, lime and fertilizer according to soil test.

Harrow or disc lime and fertilizer into the soil to a depth of 2 - 3 inches. Continue tillage until a reasonably uniform fine, firm seedbed has been prepared. On sloping land, the final harrowing or discing operation should be on the contour wherever feasible.

III. Seeding

- A. Use 20 lbs./acre of Kentucky 31 Turfgrass Seed.
- B. Apply seed uniformly with a cyclone seeder, drill, cultipacker seeder, or hydro-seeder (slurry includes seed and fertilizer) on a firm, moist seedbed.
- C. Where feasible, except when a cultipacker type seeder is used, the seedbed should be firmed following seeding operations, with a cultipacker, roller or light drag; or following mulch application with the mulch anchoring tool or pick chain. On sloping land, seeding operations should be on the contour where feasible. Normal coverage is from 1/4 to 1/2 inch.

IV. Mulching

- A. **Mulch** - Immediately after seeding, uniformly mulch these areas with unweathered small grain straw (preferably wheat) at the rate of 1 1/2 to 2 tons per acre or 69 to 92 pounds per 1,000 sq. ft.

Oat straw may contain many viable seeds which may provide serious competition for the grass and legume seedings.

B. Mulch Anchoring Methods

1. Mulch anchoring tool - a series of flat, notched discs which punch and anchor the mulch material into the soil. Soil must be moist and free of stones and loose enough to permit disc penetration to a depth of 2 - 3 inches.

Note: Operate anchoring tool on the contour to secure maximum erosion control.

2. Asphalt Mulch Tie-down (Use one of the following)

- a. Liquid asphalt - rapid curing (RC-70, RC-250 or RC-800) or medium curing (MC-250 or MC-800) Apply .1 gal/sq.yd.
- b. Emulsified asphalt - (SS-1, SS-X, SM-K, MS-2, RS-1, RS-2, RS-2K, or RS-3K) Apply .04 gal/sq.yd.

Apply so area has uniform appearance.

V. Maintenance

Maintenance is a vital factor in maintaining an adequate vegetative erosion control cover.

- A. **Irrigation** - If soil moisture is deficient, supply new seedlings with adequate water for plant growth until they are firmly established. This is especially true when seedlings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.
- B. **Repairs** - Inspect all seeded areas for failures and make necessary repairs, replacements, and reseeds within the planting season, if possible.
 1. If stand is inadequate, overseed and fertilize using half of the rates originally applied.
 2. If stand is over 60% damaged, re-establish following original lime, fertilizer, seedbed preparation and seeding recommendations.

INTERIM
STANDARD AND SPECIFICATIONS
FOR
CRITICAL AREA STABILIZATION
(With Sod)

Definition

Stabilizing silt-producing areas with grass sod.

Purpose

To stabilize the area; to reduce damages from sediment and runoff to downstream areas.

Conditions Where Practice Applies

Graded areas subject to erosion and where an immediate vegetative cover is desired and feasible.

SPECIFICATIONS

SECTION I - FERTILIZER AND LIME MATERIALS AND FINAL SOIL PREPARATION

Note: Specifications given in this section apply both to areas where topsoil has been added and to areas where soil from existing site is used.

- A. **General:** The contractor shall furnish all labor, material and equipment required to complete the work described herein in strict accordance with the drawings and/or terms of the contract.
- B. **Materials:** Soil tests shall be made to determine the exact requirements for both lime and fertilizer. Soil tests shall be conducted by a state laboratory or recognized commercial laboratory.
 1. Fertilizers: All fertilizers shall be uniform in composition, free flowing and suitable for application with approved equipment. Fertilizers shall be delivered to the site fully labeled according to applicable State Fertilizer laws and shall bear the name, trade name or trademark, and warranty of the producer. Fertilizer application rates shall be determined by soil tests. (Under unusual circumstances where there is insufficient time for a complete soil test, fertilizer materials which supply 2 1/2 lbs. actual N per 1000 sq. ft., 2 1/2 lbs. actual P₂O₅ per 1000 sq. ft., and 2 1/2 lbs. actual K₂O per 1000 sq. ft. can be applied.) Fertilizer shall be distributed evenly over the area to be sodded.

2. **Lime:** Lime material shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Ground limestone shall be ground to such fineness that at least 50% will pass through a 100-mesh sieve and 98 to 100% will pass through a 20-mesh sieve.

Application rates for liming materials shall be determined by soil tests. (Under unusual circumstances where there is insufficient time for a complete soil test, lime shall be applied at a minimum rate of 50 pounds of ground limestone oxide equivalent per 1000 sq. ft.) Lime shall be distributed uniformly over the entire area to be sodded.

C. Grading:

1. **Tillage:** Lime and fertilizer shall be uniformly mixed into the top 4 inches of soil by discing, harrowing, or other approved methods.
2. **Final Grading:** Any undulations or irregularities in the surface resulting from fertilizing, liming, tilling or other causes shall be leveled prior to sodding. Flooded, washed out or areas damaged otherwise shall be reconstructed and all grades re-established by the contractor in accordance with the drawings and/or other applicable specifications.
- D. **Clean Up:** Prior to sodding, the surface shall be cleared of all trash, brush, wire, grade stakes and other objects that would interfere with planting or maintenance operations.
- E. **Acceptance:** Acceptance shall be given by the general contractor, owner, architect or their agent upon satisfactory completion of each section or area as indicated on the drawings or as otherwise specified.
- F. **General Contractor's Responsibility:** The general contractor shall be responsible for maintaining the accepted areas which are to be sodded until the effective date to begin sodding operations. The effective sodding date shall be specified in a written notice from the general contractor.

SECTION II - SOD MATERIALS AND INSTALLATION

- A. **General:** The contractor shall furnish all labor, material and equipment required to complete the work described herein in strict accordance with the drawings and/or terms of the contract. All previously established grades shall be maintained in conformance with the drawings and/or other specifications.

B. Materials:

1. **Class of Sod and Composition:** Class of turfgrass and shall be Approved Sod (Architect to specify State "Certified Sod", State "Approved Sod" or other. See "Explanation of Classes of Turfgrass Sod" on p. 7-200, Appendix B-3). Turfgrass sod shall be composed of Type #3 (Architect to specify one mixture or variety of grass. See "Explanation of Composition of Turfgrass Sod" on p. 7-300, Appendix B-4).
2. **Thickness of Cut:** Sod shall be machine cut at a uniform soil thickness of 3/4 inch, plus or minus 1/4 inch, at the time of cutting. Measurement for thickness shall exclude top growth and thatch.
3. **Pad Size:** Individual pieces of sod shall be cut to the supplier's standard width and length. Maximum allowable deviation from standard widths and lengths shall be 5%. Broken pads and torn or uneven ends will not be acceptable.
4. **Strength of Sod Sections:** Standard size sections of sod shall be strong enough to support their own weight and retain their size and shape when suspended vertically from a firm grasp on the upper 10% of the section.
5. **Moisture Content:** Sod shall not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
6. **Time Limitations:** Sod shall be harvested, delivered and installed within a period of 36 hours. Sod not transplanted within this period shall be inspected and approved by the inspecting officer or his representative prior to its installation.

C. Installation:

- Note: To help insure proper turfgrass establishment, sod should always be installed on areas that have been prepared in accordance with Section I of these specifications (FERTILIZER AND LIME MATERIALS AND FINAL SOIL PREPARATION).
1. **Moistening the Soil:** During periods of high temperature and after all unevenness in the soil surface has been corrected, the soil shall be lightly irrigated immediately prior to laying the sod.
 2. **Starter Strip:** The first row of sod shall be laid in a straight line with subsequent rows placed parallel to and tightly against each other. Material joints shall be staggered to promote more uniform growth and strength. Care shall be exercised to insure that the sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
 3. **Sloping Surfaces:** On sloping areas where erosion may be a problem, sod shall be laid with staggered joints and secured by tamping, pegging or other approved methods.
 4. **Watering and Rolling:** Contractor shall water sod immediately after installation to prevent excessive drying during progress of the work. As sodding is completed in any one section, the entire area shall be rolled. It shall then be thoroughly irrigated to a depth sufficient that the underside of the new sod pad and soil immediately below the sod are thoroughly wet. The general contractor shall be responsible for having adequate water available at the site prior to and during installation of the sod.

- D. **Acceptance:** Acceptance of the installed sod shall be on a daily basis within 14 hours of completion of an area or section unless otherwise specified.
- E. **Disclaimer:** The contractor shall not be held liable for damages incurred to sod caused by delicting compounds, fertilizers, pesticides or other materials not applied by him or under his supervision nor for those caused by acts of God or vandalism.
- F. **Guarantee:** The contractor shall guarantee work covered by this specification to the extent that all installed sod shall be uniform in color and quality and reasonably free of visible imperfections at acceptance.
- G. **General Contractor's Responsibility:** The general contractor shall be responsible for maintaining the accepted sodded areas until the effective date for turf maintenance operations (Section III: MAINTENANCE OF INSTALLED SOD) to begin. The effective date shall be specified in a written notice from the general contractor.

SECTION III - MAINTENANCE OF INSTALLED SOD

- A. **General:** The contractor shall furnish all labor, material and equipment required to complete the work described herein in strict accordance with the drawings and/or terms of the contract. The general contractor shall supply adequate water to the site.

B. Watering:

1. First Week:

The contractor shall provide all labor and arrange for all watering necessary for establishment of the sod. Soil on sod pads shall be kept moist at all times. In the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first week and in sufficient quantities to maintain moist soil to a depth of at least 4 inches. Watering should be done during the heat of the day to help prevent wilting.

2. Second and Subsequent Weeks:

The contractor shall water the sod as required to maintain adequate moisture in the upper 4 inches of soil necessary for the promotion of deep root growth.

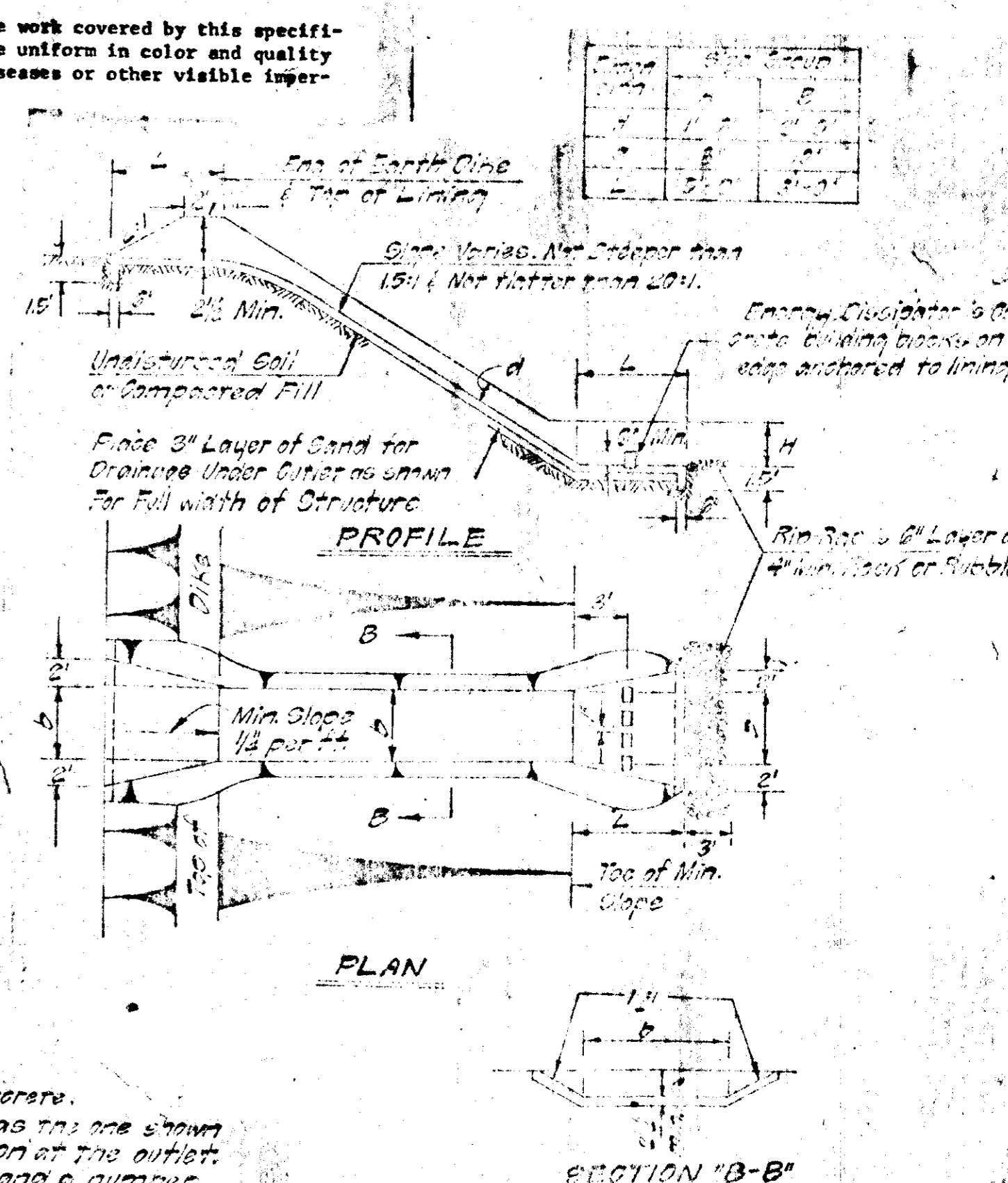
- C. **Mowing:** The first mowing shall not be attempted until the sod is firmly rooted and secure in place. Not more than 1/3 of the grass leaf shall be removed by the initial cutting or subsequent cuttings. Grass height shall be maintained between 1 1/2 and 2 1/2 inches unless otherwise specified.
- D. **Time Limitation:** Duration of maintenance responsibilities shall be for 30 days unless otherwise specified.
- E. **Disclaimer:** The contractor shall not be held liable for damages incurred to sod caused by delicting compounds, fertilizers, pesticides and other materials not applied by him or under his supervision nor those caused by acts of God or vandalism.
- F. **Guarantee:** The contractor shall guarantee work covered by this specification to the extent that all sod shall be uniform in color and quality and shall be reasonably free of weeds, diseases or other visible imperfections at acceptance.

APPROVED: For Public Water and Private Sewerage Systems, Howard County Health Department.
J. Morgan, MD 4/30/75
COUNTY HEALTH OFFICER DATE

APPROVED: Howard County Office of Planning & Economic Development
James A. Harris, Jr. 5-14-75
PLANNING DIRECTOR DATE

APPROVED: For Public Water and Storm Drainage Systems and Roads, Howard County Department of Public Works
W. J. O'Brien 5/14/75
DIRECTOR DATE

B. H. Mealand 5/18/75
CHIEF, BUREAU OF HIGHWAYS DATE



- NOTES:
1. Lining shall be Portland Cement concrete.
 2. Some type of energy dissipation such as that one shown above, must be used to prevent erosion at the outlet.
 3. The slope is designated with a letter and a number such as 2:1, which means 2 horizontal to 1 vertical.
 4. Contractor shall be responsible for providing positive drainage for inlet & outlet entrance of culverts.

GRADE STABILIZATION STRUCTURE
NO. 224-B

APPROVED
DIVISION OF LAND DEVELOPMENT
AND TRANSPORTATION PLANNING
HOWARD COUNTY, MARYLAND
DATE MAR 13 1975
J. J. J.

FREIDMAN PROPERTY
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

JOB NUMBER
1006-006
SHEET NO
5
OF 5 SHEETS

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

NO.	REVISIONS	BY	DATE
1	Revise Buildings & Parking as per variance	RLS	12/22/74
2	Final	RLS	4-9-75

PREPARED UNDER THE SUPERVISION OF
B. H. Mealand
4085 4-9-75
P. E. NO. DATE

