4/8/86
1-2. P.M.

01-167014

PERMIT

P 36764

A REPAIR

SEWAGE DISPOSAL SYSTEM

MARYLAND STATE DEPARTMENT OF HEALTH*

HOWARD COUNTY
BUREAU OF ENVIRONMENTAL HEALTH
~~XXXXXXX~~
461-9933

ELLICOTT CITY
DISTRICT 1st

INDEXED

DATE 4/08/86

Mechanical Services, Inc. IS PERMITTED TO INSTALL X ALTER _____

ADDRESS 2710-14 Old St. Johns Lane, Ellicott City, MD PHONE 465-7197

SUBDIVISION _____ ROAD 6525 Hanover Road LOT _____

PROPERTY OWNER _____

ADDRESS _____

IF GARBAGE GRINDER IS USED INCREASE SEPTIC TANK CAPACITY BY 50% AND ABSORPTION AREA BY 22%.

GARBAGE GRINDER? YES _____ NO _____

SEPTIC TANK CAPACITY _____ GALLONS NUMBER OF BEDROOMS _____

REPAIR - CALL FOR INSPECTION WHEN GROUND IS OPENED UP SO SANITARIAN CAN RECOMMEND REPAIR.

PLANS APPROVED BY C. Williams DATE 4/08/86

COVER NO WORK UNTIL INSPECTED AND APPROVED.

NEITHER THE HOWARD COUNTY COUNCIL NOR THE HEALTH DEPARTMENT IS RESPONSIBLE FOR THE SUCCESSFUL OPERATION OF ANY SYSTEM.

NOTE: IF TRENCH IS USED CALL FOR INSPECTION BEFORE AND AFTER PLACING GRAVEL IN TRENCH.

NOTE: NO DRY WELL SHALL EXCEED 15 FOOT IN DIAMETER. NO ABSORPTION TRENCH TO EXCEED 100 FEET IN LENGTH.

NOTE: ALL PIPE FROM HOUSE TO SEPTIC TANK MUST BE CAST IRON OR SCHEDULE 40 PVC OR ABS.

PERMIT VOID AFTER THREE YEARS.

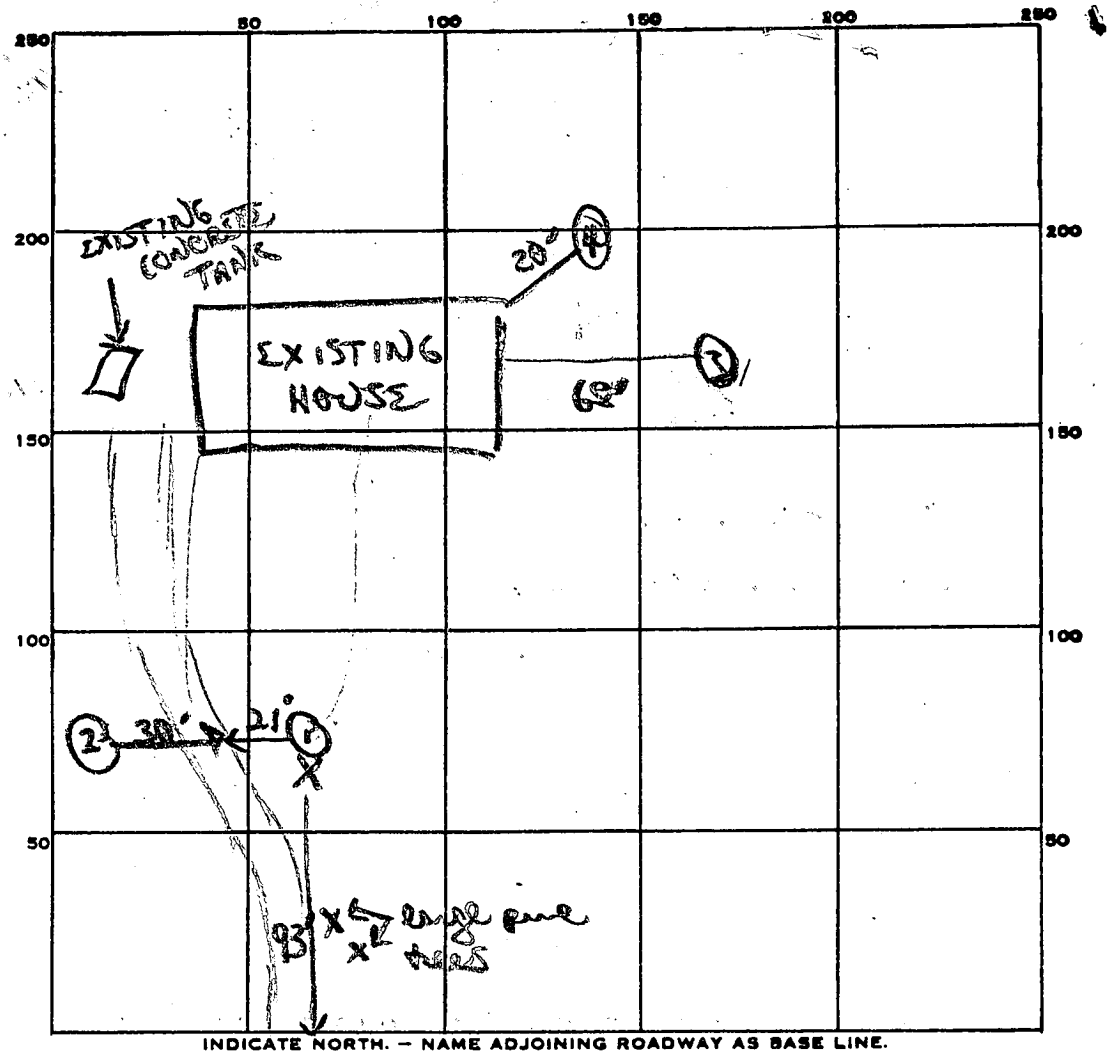
NOTE: INSTALL STAND PIPE ON SEPTIC TANK AND DRY WELL. STAND PIPES MUST BE 6 INCHES IN DIAMETER. CAST IRON, CONCRETE OR TERRA COTTA, OR PVC OR ABS ACCEPTED. IF TOP OF SEPTIC TANK IS DEEPER THAN 3 FEET MANHOLE TO GRADE REQUIRED.

A 36764

***INSTALLER IS RESPONSIBLE FOR OBTAINING FINAL APROVAL ON THIS PERMIT**

~~*CALL 992-2330~~ *FOR INSPECTION OF SEPTIC SYSTEMS.

EH - 2-1082



INDICATE NORTH. — NAME ADJOINING ROADWAY AS BASE LINE.

PERMIT CARD_____

SEPTIC TANK, LEVEL_____ CLEANOUTS_____

DISTRIBUTION BOX, LEVEL_____

TILE FIELD, DEPTH_____FT. TRENCH WIDTH_____FT.

GRAVEL DEPTH_____IN. TOTAL LENGTH_____FT.

NUMBER OF TRENCHES_____ TOTAL BOTTOM AREA_____

SEEPAGE PITS, INSIDE DIAMETER_____FT. DEPTH BELOW INLET_____FT.

ABSORBENT AREA_____SQ. FT.

REMARKS_____

DATE SYSTEM APPROVED _____ INSPECTOR_____

5/6/86

Testing existing system for possible drain field failure
Tank ≈ 80% filled (mostly solid looking in nature)
Added blue tracing dye to toilet (2 flushes)
+ some directly into S.T., into bathroom + kitchen sinks

Ran H_2O for 1 Hour straight
Estimated H_2O input (1st 20 min 2+ gal/min; then 4+ gal/m for 40 mins
9-10 toilet flushes 3-5 gal/per

S.T. Tank H_2O/sludge level holding steady ≈ ½ hour after adding H_2O

Ground conditions very dry which may bias the finding of any H_2O overflow

Total estimated H_2O input ≈ 225 gal - 250

(SA) 4/18/86

Retest 6525 Hanover Rd
(see yellow sheet for locations of holes)

1	2	3	4
Brown/yellow clay — 4½-5' — Below majority of soil blue/gray mottled to bottom clay (yellow) from 7' all wet. Water at 8'	Red/yellow brown clay loam — 2½' — Red/yellow clay w/ patches of mottled soil. H_2O at 6' (solid H_2O to bottom	Red/brown changing to yellow/red clay to clay loam ↓ H_2O 11½'	yellow/red clay — 4½ — patches of blue/gray mottled soil in areas of yellow/red clay water in at sides from 5½' H_2O at 10'
fail	fail	fail	fail

Hole #3

3½ 5 2[47] 3[27] STOPPED H_2O barely moved
11½ H_2O in bottom not even close to 1st inch

Air Conditioning
Refrigeration
Plumbing
Heating
Sheet Metal
Ventilating

Mechanical Services, Inc.

2710-14 Old St. John's Lane • Ellicott City, Maryland 21043 • (301) 465-7197

Mechanical Contractors

April 16, 1986

Bureau Of Environmental Health
Box 476
Ellicott City, Maryland 21043
Attn: Mr. Craig Williams

RE: Septic System @ 6525 Hanover Road

Gentlemen,

I am writing to request your approval for making changes to the existing septic system at the above referenced location. This property is approximately 25 years old, and has a septic system which is suspected of failing. Located on the property is a three bedroom house with one and a half baths, which has been utilized as a primary residence.

I purchased the property, which is zoned M-2 (Heavy Industrial) with the intention of utilizing the existing house as office space and constructing a one story shop, warehouse office building, (approx. 6,000 sq. ft.) attached to the house.

On Monday, April 7, 1986, we dug four perc trenches to evaluate soil suitability for possible extension or relocation of the existing system. All trenches were rejected. Given this and the assumption that the existing system is failing, we are proposing to install a two thousand gallon holding tank with level alarms, which would be periodically pumped.

Our sanitary waste system would be designed to accommadate approximately ten employee's withvery limited public usage, (an occasional salesperson). We would install water saving devices on all sinks (5), and would utilize the new one gallon flush toilets (5) in new and existing toilet rooms. We project our weekly usage of water to be approximately 600 gallons, which would require three week pumping intervals.

According to Mrs. Reed of Howard County department of public works, public sewerage is planned to be extended to this property in 1991.

MECHANICAL SERVICES, INC.

In summarization we have a existing septic system, 25 years old, which is presummed to be failing. Our business usage would require substantially less water usage than a residence, therefore we believe the holding tank concept to be the most practical application, in lieu of continuing to try to use a bad system which undoubtedly will only get worse.

Please review this situation at your earliest convience and call me at #465-7197 with your decision.

Very Truly Yours,

Ralph W. Campbell

Ralph W. Campbell
President

RWC/vr

HARDIN GROUP

HARDIN-KIGHT ASSOCIATES, INC.
CONSULTING ENGINEERS

- CONSTRUCTION INSPECTION
- MATERIALS TESTING
- SOILS ENGINEERING

March 26, 1986

Mechanical Services, Inc.
2710-14 Old St. John's Lane
Ellicott City, MD 21043

Attention: Mr. R.W. Bud Campbell

Reference: New Warehouse & Office
Preliminary Subsurface Investigation
Our No. 10486

Dear Mr.Campbell:

Submitted herein is our report of subsurface investigation for the proposed new warehouse and office facility. The investigation was undertaken to determine the soil and groundwater conditions and to make recommendations for earthwork construction and foundation design. The investigation is intended for evaluation of soil conditions relative to the stormwater management design and specifically infiltration characteristics of the soils.

We understand that the proposed building will be a one story structure. At this time, the design of the building has not been firmly established, and there is the possibility that the structure may be a conventional or pre-engineered metal building. We understand that the proposed first floor slab elevation is approximately 65, matching the existing building. The existing ground surface slopes from a high elevation of approximately 64 near the existing building on the northern portion of the site to approximately 56 on the northeast portion of the building. The entire building area will be filled to achieve the desired slab elevation.

The investigation included the performance of five standard penetration test borings in the area of the proposed building and three additional borings which were located in the proposed stormwater management area. The borings were located based on the preliminary location of the building as shown on the location sketch site initally provided. Based on recently obtained drawings, the borings are located just beyond the limits of the building as currently positioned. The borings were drilled to depths of 12' to 15' below the existing ground surface. Standard penetration tests were conducted at 2.5' intervals. Laboratory tests were conducted on representative soil samples for classification purposes and the remaining samples were classified by visual comparison to the tested samples. Soils encountered in the designated stormwater management area were classified in accordance with the Unified Soil Classification (USC) system and the U.S Department of Agriculture (USDA) textural classification system.

FINDINGS

The soils encountered near the ground surface are primarily silty clays and clayey silts containing varying amounts of fine sand. Thin sand layers (2' thick) were encountered at the ground surface in two of the borings (B-4 & B-5). The clay silt soils extend to a depth of 7' to 12' below the existing ground surface and are underlain by silty sand. Standard penetration test resistance values indicate that the the clay is soft to medium stiff, and the sands are loose to medium dense. The loose or soft condition is present at the ground surface in the majority of the boreholes and extends to a depth of a few feet in most cases, however, the condition extends to a depth of approximately 5' in two of the borings.

Water was encountered in five of the test borings at depths of 6' to 12' below the ground surface.

ANALYSIS

The subsurface conditions on this site are suitable for the proposed development using normal design and construction procedures. Due to the presence of soft or loose surface soils, we are recommending that the slab subgrade be carefully inspected and proofrolled and that all of the footing excavations be inspected and tested. We anticipate that some of the footings will have to modified either by lowering through soft or loose soils or reproportioned based on conditions encountered.

The subsurface conditions encountered in the stormwater management area are not favorable for implementation of infiltration design procedures. The surface soils are generally classified as silty or clayey loam and the underlying sandy loam is located below the level at which water was encountered. According to Hydrologic Soil Properties Classified by Soil Texture (Source: Rawls, Brakensiek, and Saxton, 1982), the estimated infiltration rate of the soils encountered in this area varies from 0.06 to 0.52 inches per hour.

RECOMMENDATIONS - STRUCTURES

1. We recommend that the structure be supported by spread footings proportioned for an allowable soil pressure of 2,000 pounds per square foot. We recommend that the footings be located in firm natural ground or in suitably compacted fill. The footings may be located at minimum depth for frost protection.

2. We recommend that the slab on grade be designed as a floating slab, not ridgidly connected to the foundation walls or footings. The slab may rest on footing projections. We recommend that the slab be designed for a modulus of subgrade reaction of 100 psi per inch.

3. We recommend that foundation walls which support earth on one side be designed to resist earth pressures computed by using a pressure equivalent to that which would be applied by a fluid weighing 50 pounds per cubic foot.

RECOMMENDATIONS - EARTHWORK

1. We recommend that the building area be stripped of topsoil to a minimum distance of 5' beyond the building limits and that the proposed paved areas be stripped of topsoil to a minimum of 5' beyond the pavement limits. We recommend that the building and paved areas be proofrolled to determine if soft spots are present. Soft spots identified by the proofroll shall be stabilized by reworking and compacting or by undercutting and backfilling with suitably compacted fill.

2. We recommend that all fill and backfill be compacted to a minimum of 95% of the maximum dry density as determined by the standard moisture density relationship test (ASTM D-698).

3. We recommend that the contractor be prepared to dry the soils to achieve satisfactory compaction. This will include the use of equipment such as a disc harrow to manipulate the soil.

4. We recommend that fill and cut slopes be constructed to a 3:1 horizontal to vertical gradient or flatter if possible.

5. We recommend that the stormwater management infiltration design be based on an estimated infiltration rate of 0.17 inches per hour, and an effctive water capacity of 0.14 inches per inch.

RECOMMENDATIONS - QUALITY CONTROL

We recommend that the following inspection and testing services be provided:

1. Monitor proofroll and subgrade approval

2. Perform tests on compacted fill

3. Inspect footing excavations and perform tests on the bearing stratum

The recommendations given herein are based on the principles of soils engineering and our experience with similar soil conditions and similar projects in this area. This is a preliminary evaluation of the subsurface conditions on this site. Further information including a topographic survey with existing and proposed finish grades, type of construction, typical loads for walls and columns, and planned sequence of construction are required to develope final design recomendations. We request that the construction drawings and specifications be reviewed by this office to determine if modifications are required prior to solicitation of bids.

Attached are the test boring logs, location sketch, and boring profile for your reference. If you have any questions concerning this report, please call our office.

Very truly yours,

HARDIN-KIGHT ASSOCIATES, INC.

Stephen E. Kight

TABLE 2-2. HYDROLOGIC SOIL PROPERTIES CLASSIFIED BY SOIL TEXTURE*

Texture Class	Effective Water Capacity (C_w) (in. per in.)	Minimum Infiltration Rate (f) (in. per hr.)	Hydrologic Soil Grouping
Sand	0.35	8.27	A
Loamy Sand	0.31	2.41	A
Sandy Loam	0.25	1.02	B
Loam	0.19	.52	B
Silt Loam	0.17	.27	C
Sandy Clay Loam	0.14	.17	C
Clay Loam	0.14	.09	D
Silty Clay Loam	0.11	.06	D
Sandy Clay	0.09	.05	D
Silty Clay	0.09	.04	D
Clay	0.08	.02	D

*Source: Rawls, Brakensiek and Saxton, 1982

Textural Triangle U.S.D.A.

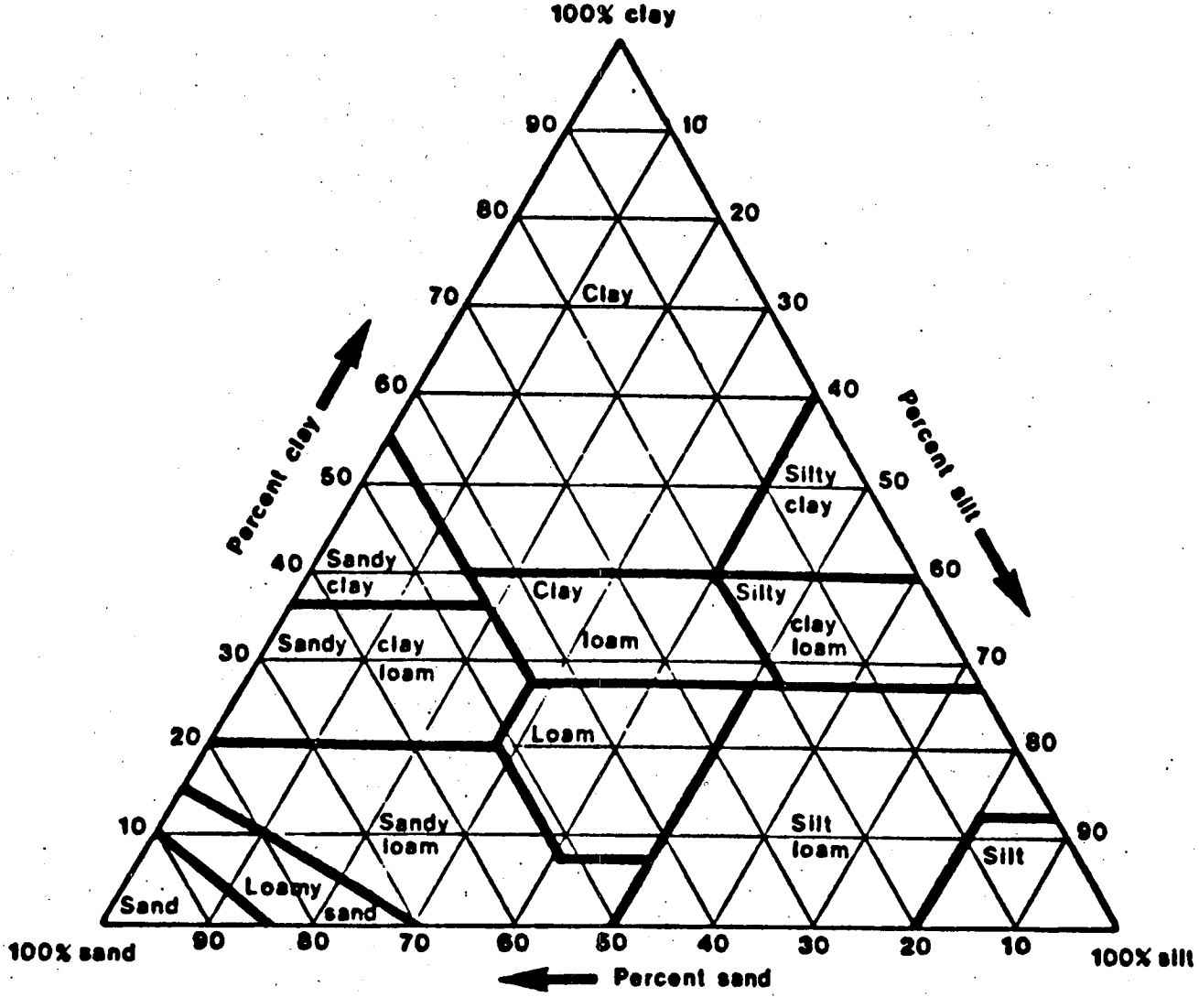


Figure 2-13. U.S.D.A. Textural Triangle

HARDIN-KIGHT ASSOCIATES, INC.
CONSULTING ENGINEERS

HARDIN GROUP

RECORD OF SOIL EXPLORATION

Contracted With: MECHANICAL SERVICES, INC. | Boring # B-1
Projects Name: MECHANICAL SERVICES OFFICE WAREHOUSE | Job # 14786
Location: ANNE ARUNDEL COUNTY, MD

SAMPLER

Datum: | Hammer Wt. 140 Lbs. | Hole Diameter 8" | Foreman K. Huber
Surf. Elev. 57.0 Ft. | Hammer Drop 30 In. | Rock Core Dia | Inspector
Date Started 2/3/86 | Pipe Size 2 In. | Boring Method HSA | Date Completed 2/3/86

ELEV.	SOIL DESCRIPTION Color, Moisture, Density, Plasticity, Size Proportions	STRA DEPTH	DEPTH SCALE	SAMPLE Cond	Blows/6"	No.	Type	Rec	BORING & SAMPLING NOTES
	Brown moist soft to medium stiff silty CLAY w/trace of gravel U.S.D.A. - silt loam U.S.C. - (CL)			I	1-1-3	1	DS	12	
			2.5	I	4-3-3	2	DS	10	
			5.0						Caved at 4.0'
				I	3-4-6	3	DS		
50.0		7.0							
	Brown wet medium dense clayey fine to coarse SAND and gravel U.S.D.A. - silt loam U.S.C. - (SW)		7.5	D	12-15-13	4	DS	14	Water encountered at 8.0'
			10.0	D	4-5-10-20	5	DS	16	
45.0		12.0							
	Bottom of hole at 12.0'		12.5						

SAMPLER TYPE
DS - DRIVEN SPLIT SPOON
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

GROUND WATER DEPTH
AT COMPLETION 2.5 FT.
AFTER ____ HRS. ____ FT
AFTER 24 HRS. ____ FT.

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

HARDIN-KIGHT ASSOCIATES, INC.
CONSULTING ENGINEERS

HARDIN GROUP

RECORD OF SOIL EXPLORATION

Contracted With MECHANICAL SERVICES, INC. Boring # B-2
Projects Name MECHANICAL SERVICES OFFICE WAREHOUSE Job # 14786
Location ANNE ARUNDEL COUNTY, MD

SAMPLER

Datum ____ Hammer Wt. 140 Lbs. Hole Diameter 8" Foreman ____
Surf. Elev. 59.0 Ft. Hammer Drop 30 In. Rock Core Dia ____ Inspector K. Huber
Date Started 2/3/86 Pipe Size 2 In. Boring Method HSA Date Completed 2/3/86

ELEV.	SOIL DESCRIPTION Color, Moisture, Density, Plasticity, Size Proportions	STRA DEPTH	DEPTH SCALE	SAMPLE Cond	Blows/6"	No.	Type	Rec	BORING & SAMPLING NOTES
	Brown moist medium stiff sandy silt with trace of sandstone			I	2-3-4	1	DS	14	
			2.5	I	4-3-5	2	DS	12	
54.5		4.5							
	Brown moist medium stiff silty CLAY		5.0	I	3-3-4	3	DS	14	
			7.5	I	4-7-20	4	DS	16	Caved at 10.0'
49.5		9.5							
	Brown green tan moist to wet medium dense to dense SAND w/gravel and rock fragments		10.0	D	22-17-15	5	DS	12	Water encountered at 12.0'
			12.5						
				D	7-11-14	6	DS	10	
44.0		15.0							
	Bottom of hole at 15.0'								

SAMPLER TYPE
DS - DRIVEN SPLIT SPOON
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

GROUND WATER DEPTH
AT COMPLETION dry FT.
AFTER ____ HRS. ____ FT
AFTER 24 HRS. ____ FT

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVAL

HARDIN GROUP

HARDIN-KIGHT ASSOCIATES, INC.
CONSULTING ENGINEERS

RECORD OF SOIL EXPLORATION

Contracted With: MECHANICAL SERVICES, INC. — Boring # B-3
Projects Name: MECHANICAL SERVICES OFFICE WAREHOUSE — Job # 14786
Location: ANNE ARUNDEL COUNTY, MD

SAMPLER

Datum: — Hammer Wt. 140 Lbs. — Hole Diameter 4" — Foreman:
Surf. Elev. 60.5 Ft. — Hammer Drop 30 In. — Rock Core Dia: — Inspector K. Huber
Date Started 2/3/86 — Pipe Size 2 In. — Boring Method hand auger — Date Completed 2/3/86

ELEV.	SOIL DESCRIPTION Color, Moisture, Density, Plasticity, Size Proportions	STRA DEPTH	DEPTH SCALE	SAMPLE Cond	Blows/6"	No.	Type	Rec	BORING & SAMPLING NOTES
	Brown black moist medium stiff sandy SILT w/trace of iron-cemented sandstone			I	2-3-4	1	DS	10"	
58.5		2.0	2.5						Water at 13.0'
				I	2-2-3	2	DS	18"	Caved dry at 10.0'
	Brown black moist soft to medium stiff silty CLAY w/trace of SAND		5.0	I	3-3-5	3	DS	18"	
			7.5	I	7-10-11	4	DS	16"	
			10.0	I	5-10-20	5	DS	16"	
48.5		12.0	12.5						
	Tan wet medium dense fine to medium SAND			D	12-7-20	6	DS	18"	
45.5		15.0							
	Bottom of hole 15.0'								

SAMPLER TYPE
DS - DRIVEN SPLIT SPOON
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

GROUND WATER DEPTH
AT COMPLETION dry FT
AFTER ____ HRS. ____ FT
AFTER 24 HRS. ____ FT

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

BLOW COUNT MADE AT 6" INTERVALS

HARDIN GROUP

HARDIN-KIGHT ASSOCIATES, INC.
CONSULTING ENGINEERS

RECORD OF SOIL EXPLORATION

Contracted With: MECHANICAL SERVICES, INC. — Boring # B-4
Project's Name: MECHANICAL SERVICES OFFICE WAREHOUSE — Job # 14786
Location: ANNE ARUNDEL COUNTY, MD

SAMPLER

Datum: — Hammer Wt. 140 Lbs. — Hole Diameter 8" — Foreman K. Huber
Surf. Elev. 64.5 Ft. — Hammer Drop 30 In. — Rock Core Dia — Inspector
Date Started 2/3/86 — Pipe Size 2 In. — Boring Method HSA — Date Completed 2/3/86

ELEV.	SOIL DESCRIPTION Color, Moisture, Density, Plasticity, Size Proportions	STRA DEPTH	DEPTH SCALE	SAMPLE Cond	Blows/6"	No.	Type	Rec	BORING & SAMPLING NOTES
62.5	Dark brown moist very loose silty SAND	2.0		I	1-2-3	1	DS	12"	
	Brown moist medium stiff to very stiff silty CLAY		2.5	I	2-3-4	2	DS	16"	
			5.0	I	3-4-8	3	DS	18"	
			7.0	I	6-7-9	4	DS	18"	Caved at 11.0' dry
55.0		9.5							
	Brown wet medium dense silty SAND to SAND with sandstone rock fragments at 13.5'-15'		10.0	I	4-6-8	5	DS	18"	
			12.5						
49.5		15.0	15.0	D	43-10-7	6	DS	16"	
	Bottom of hole at 15.0'								

SAMPLER TYPE
DS - DRIVEN SPLIT SPOON
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

GROUND WATER DEPTH
AT COMPLETION dry FT
AFTER ____ HRS. ____ FT
AFTER 24 HRS. ____ FT

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

HARDIN-KIGHT ASSOCIATES, INC.
CONSULTING ENGINEERS

HARDIN GROUP

RECORD OF SOIL EXPLORATION

Contracted With MECHANICAL SERVICES, INC. Boring # B-5
Projects Name MECHANICAL SERVICES OFFICE WAREHOUSE Job # 14786
Location ANNE ARUNDEL COUNTY, MD

SAMPLER
Datum ____ Hammer Wt. 140 Lbs. Hole Diameter 8" Foreman ____
Surf. Elev. 63.8 Ft. Hammer Drop 30 In. Rock Core Dia ____ Inspector K. Huber
Date Started ____ Pipe Size 2 In. Boring Method HSA Date Completed ____

ELEV.	SOIL DESCRIPTION Color, Moisture, Density, Plasticity, Size Proportions	STRA DEPTH	DEPTH SCALE	SAMPLE Cond	Blows/6"	No.	Type	Rec	BORING & SAMPLING NOTES
61.8	Brown moist very loose silty SAND w/trace of CLAY	2.0		I	2-2-2	1	DS	14"	
	Brown to tan moist very soft to stiff silty CLAY with some iron-cemented sandstone		2.5	I	1-1-2	2	DS	18"	
			5.0	I	3-2-4	3	DS	8"	
			7.5	I	5-6-9	4	DS	14"	
			10.0	I	3-4-8	5	DS	18"	
51.8		12.0	12.5						
	Tan brown wet loose silty SAND w/trace of CLAY			D	4-5-5	6	DS	16"	Caved at 10.0'
48.8		15.0	15.0						
	Bottom of hole at 15.0'								

SAMPLER TYPE
DS - DRIVEN SPLIT SPOON
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

GROUND WATER DEPTH
AT COMPLETION dry FT.
AFTER ____ HRS. ____ FT
AFTER 24 HRS. ____ FT

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

SAMPLES TAKEN AT 5' INTERVAL

HARDIN-KIGHT ASSOCIATES, INC.
CONSULTING ENGINEERS
HARDIN GROUP

RECORD OF SOIL EXPLORATION

Contracted With: MECHANICAL SERVICES — Boring # B-6
Projects Name: MECHANICAL SERVICES OFFICE AND WAREHOUSE — Job # 14786
Location: ANNE ARUNDEL COUNTY, MD

SAMPLER
Datum: —
Surf. Elev. 62.8 Ft.
Date Started 2/3/86
Hammer Wt. 140 Lbs.
Hammer Drop 30 In.
Pipe Size 2 In.
Hole Diameter 8"
Rock Core Dia —
Boring Method hand auger
Foreman K. Huber
Inspector [illegible]
Date Completed 2/3/86

ELEV.	SOIL DESCRIPTION Color, Moisture, Density, Plasticity, Size Proportions	STRA DEPTH	DEPTH SCALE	SAMPLE Cond	Blows/6"	No.	Type	Rec	BORING & SAMPLING NOTES
	Brown to dark brown moist medium stiff fine sandy CLAY			I	1-3-3	1	DS	12	
			2.5	I	1-1-2	2	DS	18	
			5.0						
55.5		7.0		I	3-3-3	3	DS	12	
	Brown to reddish brown moist medium stiff to stiff silty CLAY		7.5	I	3-5-5	4	DS	14	Caved at 9.0'
			10.0	I	4-5-8	5	DS	16	
50.5		12.0							
	Tan moist very stiff SILT with trace of fine sand and trace of iron-cemented sandstone		12.5	I	11-9-10	6	DS	18	
47.5		15.0	15.0						
	Bottom of hole at 15.0'								

SAMPLER TYPE
DS - DRIVEN SPLIT SPOON
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

GROUND WATER DEPTH
AT COMPLETION dry FT
AFTER ___ HRS. ___ FT
AFTER 24 HRS. ___ FT

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

HARDIN-KIGHT ASSOCIATES, INC.
CONSULTING ENGINEERS
HARDIN GROUP

RECORD OF SOIL EXPLORATION

Contracted With: MECHANICAL SERVICES — Boring #: B-7
Projects Name: MECHANICAL SERVICES OFFICE AND WAREHOUSE — Job #: 14786
Location: ANNE ARUNDEL COUNTY, MD

SAMPLER

Datum:	Hammer Wt. 140 Lbs.	Hole Diameter: 8"	Foreman: K. Huber
Surf. Elev. 57.5 Ft.	Hammer Drop 30 In.	Rock Core Dia:	Inspector:
Date Started: 2/3/86	Pipe Size 2 In.	Boring Method: HSA	Date Completed: 2/3/86

ELEV.	SOIL DESCRIPTION Color, Moisture, Density, Plasticity, Size Proportions	STRA DEPTH	DEPTH SCALE	SAMPLE Cond	Blows/6"	No.	Type	Rec	BORING & SAMPLING NOTES
55.5	Brown moist very soft clayey silt USC-(ML) USDA-loam	2.0	2.5	I	1/12-1	1	DS	16"	
53.5	Brown moist soft silty CLAY USC-(CL) USDA-silty clay loam	4.5	5.0	I	1-2-2	2	DS	14"	Water encountered at 7.0'
50.5	Brown moist stiff fine sandy silt USC-(ML) USDA-loam	7.0	7.5	I	3-4-7	3	DS	14"	
48.0	Reddish brown wet dense clayey fine to coarse SAND and gravel w/rock fragments USC-(SM) USDA-sandy loam	9.5	10.0	D	17-19-19	4	DS	18"	Caved at 4.5'
35.0	Gray black moist very stiff silty CLAY USDA-silty clay loam USC-(CL)		12.5	I	5-7-12-19	5	DS	18"	
	Bottom of hole at 12.0'								

SAMPLER TYPE	SAMPLE CONDITIONS	GROUND WATER DEPTH	BORING METHOD
DS - DRIVEN SPLIT SPOON	D - DISINTEGRATED	AT COMPLETION 4.5 FT.	HSA - HOLLOW STEM AUGERS
PT - PRESSED SHELBY TUBE	I - INTACT	AFTER ___ HRS. ___ FT	CFA - CONTINUOUS FLIGHT AUGERS
CA - CONTINUOUS FLIGHT AUGER	U - UNDISTURBED	AFTER 24 HRS. ___ FT	DC - DRIVING CASING
RC - ROCK CORE	L - LOST		MD - MUD DRILLING

HARDIN-KIGHT ASSOCIATES, INC.
CONSULTING ENGINEERS
HARDIN GROUP

RECORD OF SOIL EXPLORATION

Contracted With MECHANICAL SERVICES, INC. Boring # B-8
Projects Name MECHANICAL SERVICES OFFICE AND WAREHOUSE Job # 14786
Location ANNE ARUNDEL COUNTY, MD

SAMPLER

Datum ____ Hammer Wt. 140 Lbs. Hole Diameter 8 Foreman K. Huber
Surf. Elev. 56.5 Ft. Hammer Drop 30 In. Rock Core Dia ____ Inspector ____
Date Started 2/3/86 Pipe Size 2 In. Boring Method HSA Date Completed 2/3/86

ELEV.	SOIL DESCRIPTION Color, Moisture, Density, Plasticity, Size Proportions	STRA DEPTH	DEPTH SCALE	SAMPLE Cond	Blows/6"	No.	Type	Rec	BORING & SAMPLING NOTES
	Brown black moist soft sandy silt with trace of sanstone fragments			I	1-1-3	1	DS	18"	
54.5	USC-(ML) USDA-loam	2.0	2.5						
	Brown moist very soft silty CLAY			I	1-1-2	2	DS	10"	Encountered water at 6.0'
	USC-(CL)								
51.5	USDA-silt loam	5.0	5.0						
	Tan brown orange moist very stiff silty CLAY with trace of gravel and rock fragments			I	4-5-24	3	DS	16"	
49.5	USC-(CL) USDA-silty clay loam	7.0	7.5						
	Gray moist very stiff silty CLAY			I	5-7-9	5	DS	16"	Caved at 7.0'
	USC-(CL)								
	USDA-silty clay loam		10.0						
				I	3-5-10-11	5	DS	16"	
44.5		12.0	12.5						
	Bottom of hole at 12.0'								

SAMPLER TYPE
DS - DRIVEN SPLIT SPOON
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

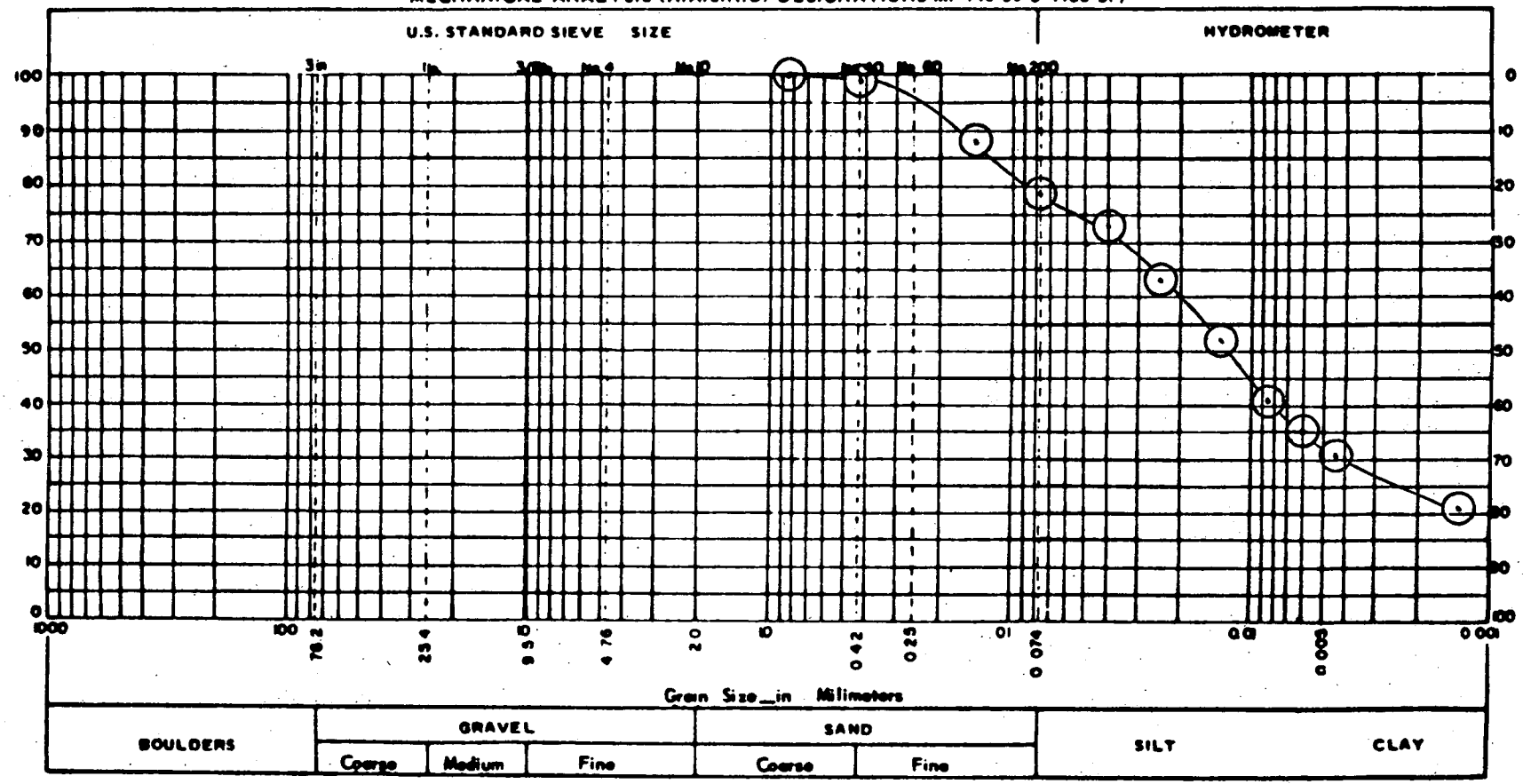
SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

GROUND WATER DEPTH
AT COMPLETION 3.0 FT
AFTER ____ HRS. ____ FT
AFTER 24 HRS. ____ FT

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

PROJECT:		LOCATION:	
MECHANICAL SERVICES OFFICE AND WAREHOUSE		ANNE ARUNDEL COUNTY, MD	
BORING NO.	**SAMPLE NO.**	**DEPTH:**	**CONTRACT NO.**
B-1	S-2	2.5'-4.0'	14786

MECHANICAL ANALYSIS (A.A.S.H.O. DESIGNATIONS M. 146-60 & T.88-57)



SAMPLE NO.	MOISTURE CONTENT	L.L.	P.L.	P.I.	CLASSIFICATION M.S.H.A.	CLASSIFICATION U.S.C.	REMARKS
86247	25.1%					(CL)	USDA-silt loam

HARDIN - KIGHT ASSOCIATES, INC.
Consulting Engineers

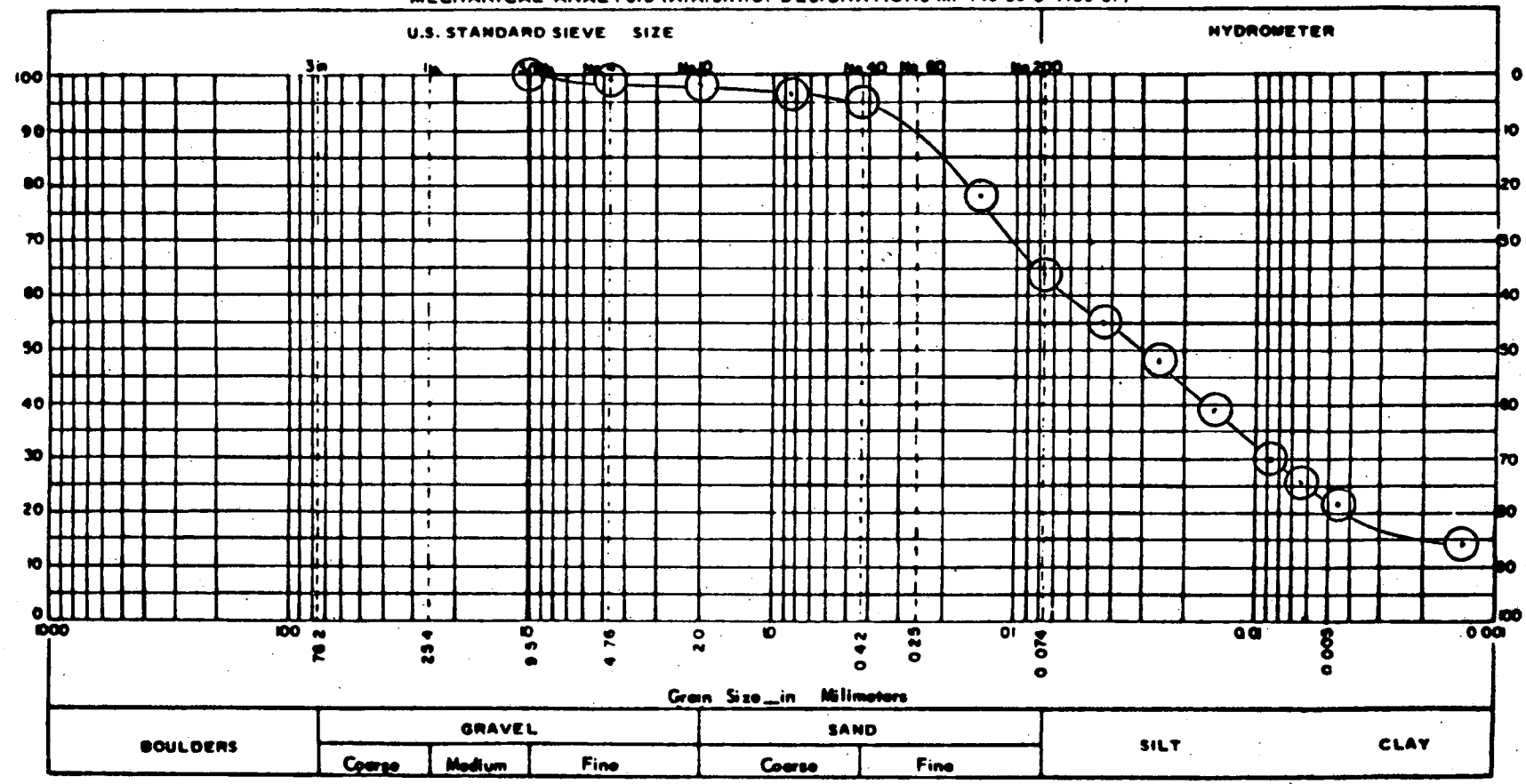
MATERIALS TESTING,
SOILS AND FOUNDATIONS DIVISION

TESTED BY:	DATE:
SJC	2/17/86
CHECKED BY:	SHEET NO. ____ OF ____
SEK	

86246

PROJECT:		LOCATION:	
MECHANICAL SERVICES OFFICE AND WAREHOUSE		ANNE ARUNDEL COUNTY, MD	
BORING NO. B-8	**SAMPLE NO.** S-1	**DEPTH:** 0.0'-1.5'	**CONTRACT NO.** 14786

MECHANICAL ANALYSIS (A.A.S.H.O. DESIGNATIONS M. 146-60 & T.88-57)



SAMPLE NO.	MOISTURE CONTENT	L.L.	P.I.	P.I.	CLASSIFICATION M.S.H.A.	CLASSIFICATION U.S.C.	REMARKS
86246	20.8%					(ML)	USDA-loam

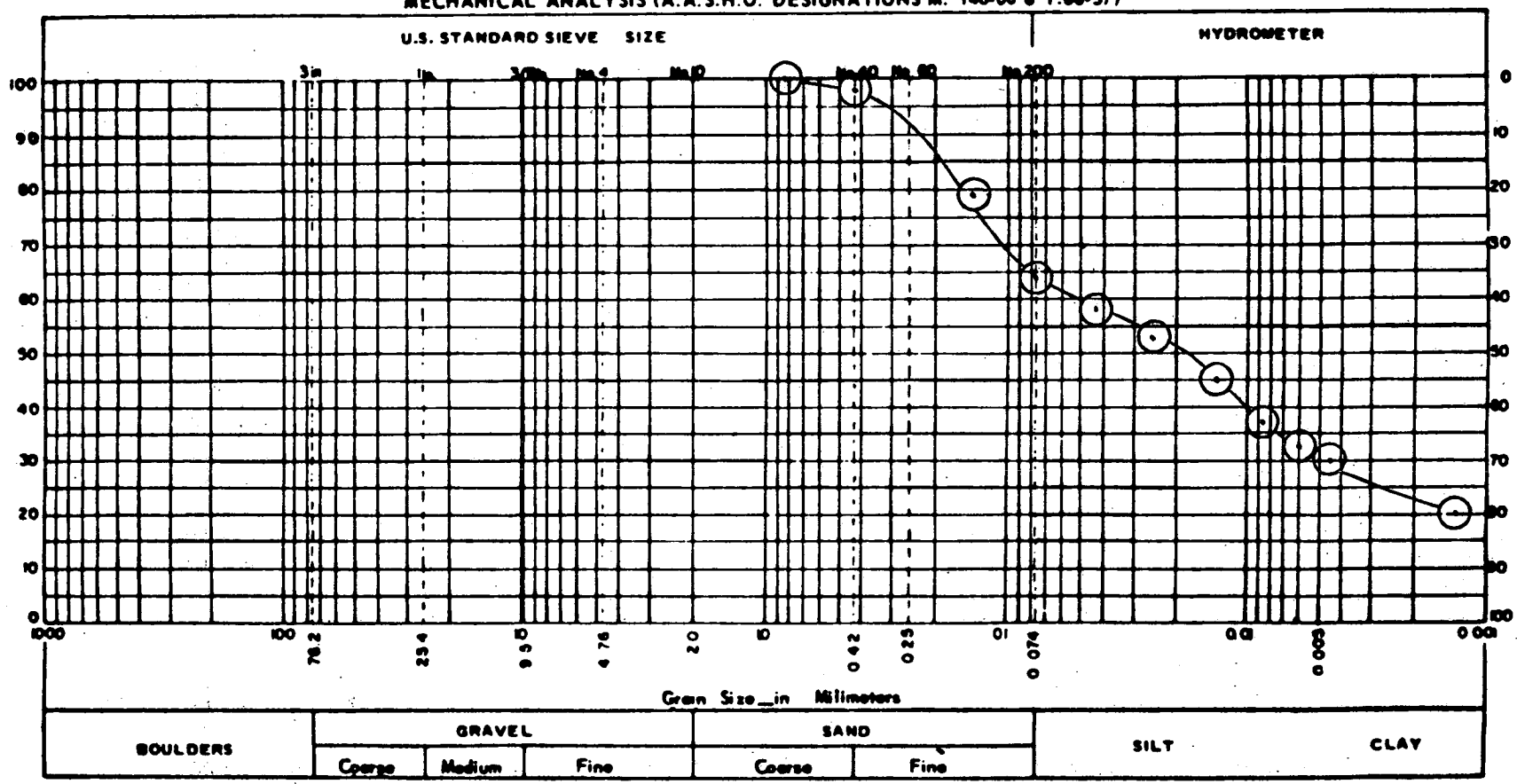
HARDIN - KIGHT ASSOCIATES, INC.
Consulting Engineers

MATERIALS TESTING,
SOILS AND FOUNDATIONS DIVISION

TESTED BY:	DATE:
SJC	2/17/86
CHECKED BY: SEK	SHEET NO. ____ OF ____

PROJECT:		LOCATION:	
MECHANICAL SERVICES		ANNE ARUNDEL COUNTY, MD	
BORING NO.	**SAMPLE NO.**	**DEPTH:**	**CONTRACT NO.**
B-7	S-3	5.0'-6.5'	14786

MECHANICAL ANALYSIS (A.A.S.H.O. DESIGNATIONS M. 146-60 & T.88-57)



SAMPLE NO.	MOISTURE CONTENT	L.L.	P.L.	P.I.	CLASSIFICATION M.S.H.A.	CLASSIFICATION U.S.C.	REMARKS
86245	19.3%					(ML)	USDA-loam

HARDIN - KIGHT ASSOCIATES, INC.
Consulting Engineers

MATERIALS TESTING,
SOILS AND FOUNDATIONS DIVISION

TESTED BY:	DATE:
SJC	2/17/86
CHECKED BY:	SHEET NO. ____ OF ____
SEK	

EXISTING SHED

EXISTING HOUSE

B-4

B-5

CURRENT PROPOSED BUILDING LOCATION

ORIGINAL PROPOSED BUILDING LOCATION

B-3

B-2

B-7

B-8

B-1

N

HARDIN-KIGHT ASSOCIATES, INC.
Consulting Engineers
PASADENA, MARYLAND 21122

MECHANICAL SERVICES BORING LOCATION PLAN

DATE	SCALE	PLATE NO.
3-27-86	1"=30'	1

PERMIT

SEWAGE DISPOSAL SYSTEM

MARYLAND STATE DEPARTMENT OF HEALTH

P 02808

A 00732

HOWARD COUNTY ELLICOTT CITY

INDEXED 01-167014

DISTRICT 1

DATE ~~Aug. 17, 1960~~

~~John Grabowski~~ IS PERMITTED TO INSTALL x ALTER

ADDRESS ~~6806 Washington Blvd.~~ PHONE ~~Elk. 817 W~~

A SEWAGE DISPOSAL-SYSTEM LOCATED AT 6525 HANOVER Hanover Road. 1/8 of a mile from the ~~R~~ R ~~track. Hanover Road is off of Old Wahington Blvd, House is about 2 miles down~~ Hanover Rd.

SUBDIVISION ROAD LOT

PROPERTY OWNER MelvinLee Gowl

ADDRESS 6112 Old Wash. Blvd.

SPECIFICATIONS

DRAIN FIELD ____ DEPTH ____ FEET, BOTTOM AREA ____ SQ. FT.

SEEPAGE PITS ____ ABSORBENT SIDE-WALL AREA ____ SQ. FT.

SEPTIC TANK CAPACITY 750 GALLONS

FOR GARBAGE GRINDER, INCREASE DISPOSAL AREA 22% & TANK CAPACITY 50%.

OTHER ~~333 sq. ft. tile field. Trenches to be 3 ft. wide, not greater than 2 ft. deep, not longer than 60 ft. and in area tested as shown n application.~~

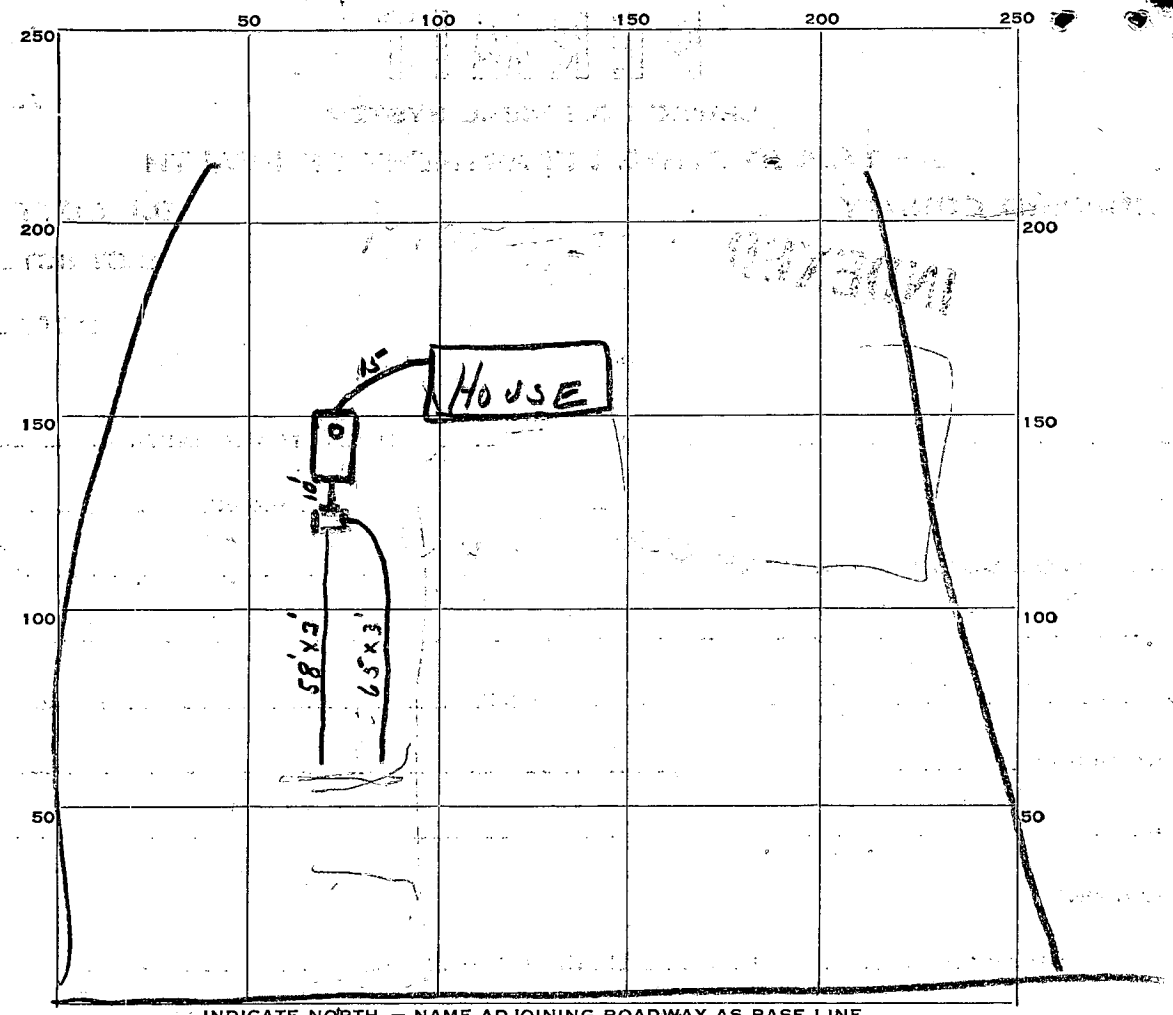
System to be placed on right side of house which is right to the front w ll when ~~facing road. System will encompass holes 5, 6, and 7.~~

PLANS APPROVED BY J. Hennigan DATE 4-28-59

FILL SEPTIC TANK AND DISTRIBUTION BOX WITH WATER BEFORE CALLING FOR AN INSPECTION. COVER NO WORK UNTIL INSPECTED AND APPROVED.

NEITHER THE HOWARD COUNTY COMMISSIONERS NOR THE HEALTH DEPARTMENT IS RESPONSIBLE FOR THE SUCCESSFUL OPERATION OF ANY SYSTEM.

A00732



INDICATE NORTH. — NAME ADJOINING ROADWAY AS BASE LINE.

HANOVER ROAD

PERMIT CARD Yes

SEPTIC TANK, LEVEL OK 750 CLEANOUTS Standpipe

DISTRIBUTION BOX, LEVEL OK

TILE FIELD, DEPTH 3 FT. TRENCH WIDTH 3 FT.

GRAVEL DEPTH 6 IN. TOTAL LENGTH 123 FT.

NUMBER OF TRENCHES 2 TOTAL BOTTOM AREA 369

SEEPAGE PITS, INSIDE DIAMETER _____ FT. DEPTH BELOW INLET _____ FT.

ABSORBENT AREA _____ SQ. FT.

REMARKS _____

DATE SYSTEM APPROVED 8-18-60 INSPECTOR J. Hennigan

1:00 TUES
4-14-59

APPLICATION

A 00735

P 02828

SEWAGE DISPOSAL TESTING

MARYLAND STATE DEPARTMENT OF HEALTH

HOWARD COUNTY

1:00

ELLICOTT CITY

DISTRICT 1

~~Apr. 14, 1959~~ Apr. 29

DATE 4-11-59

333 sq. ft. Tile Field
750 gal septic Tank

INDEXED

Trenches to be 3 ft wide not greater than 2 feet deep and not longer than 60 ft and 9'3 in area tested as shown on application.
System to be placed on right side of house which is right to the front wall when facing road.
System will encompass holes 5, 6 and 7.

TO: THE COUNTY HEALTH OFFICER
ELLICOTT CITY, MARYLAND

I, HEREBY, APPLY FOR THE NECESSARY TESTS IN ORDER TO CONSTRUCT (OR RECONSTRUCT) A SEWAGE DISPOSAL SYSTEM.

PROPERTY OWNER Melvin Lee Gowl

ADDRESS 6112 Old Washington Blv'd., Elkridge. PHONE Elkridge 1137R

PROPERTY LOCATION:

SUBDIVISION LOT NO.

ROAD AND DESCRIPTION Hanover road. One-eighth of a mile from the railroad track. Hanover road is off of Old Washington Blv8d. House is about 2 mile down Hanover Road.

OCCUPANT Melvin Lee Gowl and Family. PHONE

PERSON TO CONSTRUCT SYSTEM Henry Weber

ADDRESS Havervill Road., Baltimore PHONE

SIZE OF LOT 1.834Acres TYPE BLDG. Residence - 3 bedrooms
NUMBER OF BEDROOMS

IF NOT SINGLE RESIDENCE DESCRIBE

SIGNATURE OF APPLICANT Fred Kreuz Per. Melvin Lee Gowl.

APPROVED BY J. Hannigan FOR Tile field DATE 4-28-59
(KIND OF SYSTEM)

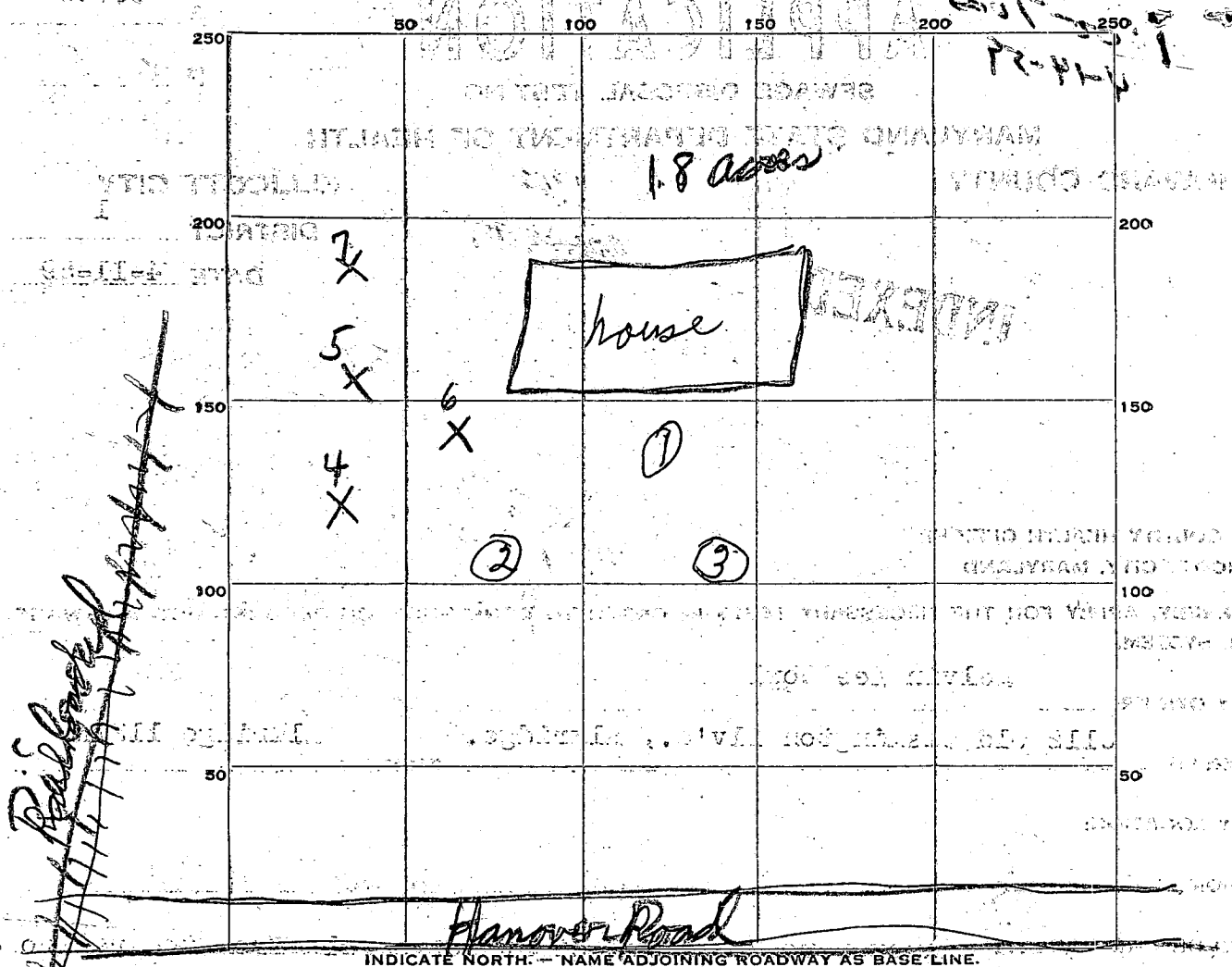
REJECTED BY FOR DATE
(KIND OF SYSTEM)

HOLD PENDING FURTHER TESTS ✓ DATE 4/14/59

REASONS FOR REJECTION OR HOLDING

THIS IS NOT A PERMIT

A 00732



DATE	TEST NO.	DEPTH	PRE-WET START	PRE-WET STOP	TEST - 1" DROP START	TEST - 1" DROP STOP	TIME
4/14/59	1 #	3'	11:04	11:30			
	2 #	3'	water in test hole				
	3 #	3'	11	11	11	11	
4-28-59	4 #	3FT	9:50	10:03	10:03	10:08	5 Minutes
	5 #	2FT.	9:52	9:58	9:58	10:07	9 Minutes
	6 #		9:54	10:15	10:15	10:50	35 Minutes
	7		10:24	10:30	10:30	10:35	5 Minutes
			9:50	9:55	9:55	11:01	6 "

SOIL AUGER FINDING

TESTED BY P. W.

REMARKS Water in 2 test holes

ALSO PRESENT Melvin Lee Deal LOT NO.