

May 23, 1979

Mr. Lacy Williams, Jr.
Director of Environmental Health
Cumberland County Health Department
515 Person Street
Post Office Box 470 *AWV*
Fayetteville, NC 28302

Dear Mr. Williams:

The preliminary soil borings submitted for evaluation of the proposed landfill site on SR 1593 have been received and reviewed. The evaluation is restricted as far as determining its potential use for a solid waste disposal site due to the lack of horizontal and vertical control. submitted with the information.

Surficial soils (SC) on the site are minimally sufficient, with respect to compacted permeability requirements, to meet criteria for reducing infiltration of surface water and exfiltration of leachate generated from landfilling activity. There does not appear to be a sufficient volume of clay materials on site for impermeable liners.

Little water table information on the 24-hour static water levels was determined; however, sufficient water was present in several borings to cause caving of the bore hole. This may indicate that the historical high ground water level is relatively close to the surface. Excavation limits will be limited to 4 or 5 feet above the historical high water table, which could possibly mean excavation limits to a depth of less than 10 feet in the area of borings 1, 2, 4, 5 and 6.

The CL layer may be the controlling geological feature for ground water in this area. Due to the lack of data this cannot be determined. If a hydraulic connection between leachate discharged and the private wells adjacent to the site exists, the site would not be acceptable for solid waste disposal.

Based upon data submitted, this agency could not recommend the site for development as a sanitary landfill. The site is marginal with respect to surficial soils, depth to historical high ground water levels and potential hydraulic connection between subsurface discharge and adjacent private water systems. It should be emphasized that this was a preliminary review from preliminary information.

Mr. Williams
Page 2
May 23, 1979

Any further investigation of this site should be accomplished by a professional sub-surface investigation company and include grain size analysis, Atterburg Limits, maximum dry density, in-place permeability, permeability at 95% and 100% maximum dry density, historical high ground water levels, 24-hour ground water levels, gradient, flow rate and direction, and potential under flow of off-site sub-surface and surface water to the site.

The engineering cost of developing this site into a sanitary landfill and affording protection of the public health will be high. It is recommended that alternative sites for solid waste disposal be investigated and this site be considered only if an alternative site is not available.

If I can be of further assistance in this matter please contact me.

Yours truly,

William L. Meyer, Environmental Engineer
Solid Waste & Vector Control Branch
Sanitary Engineering Section

Enclosure

WLM:nts

cc: Terry F. Dover

Health Department

County of Cumberland
Fayetteville, N. C. 28302

May 10, 1979

Mr. William Myers
Solid Waste and Vector Control Section
Sanitary Engineering Division
Division of Health Services
Department of Human Resources
Raleigh, North Carolina



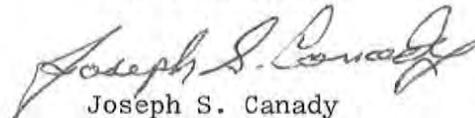
Dear Mr. Myers:

As per your and Mr. Dover's request on Monday, May 7, 1979, I have noted on the plat attached the depths of the wells that are contiguous to the proposed landfill site that you, Mr. Dover and others observed this past Monday.

Rather than make a new and separate entry regarding these well depths, I noted them on the plat.

Please let this correspondence serve as confirmation of this requested data as shown on the attached.

Very truly yours,


Joseph S. Canady
Sanitarian Supervisor

Attachment

T0: Smoot Canady
Health Department



Here is a copy of the notes we took at the proposed landfill site on May 7, 1979. The boring numbers correspond to the numbers Bill Myers put on the plat you were using, not to the order in which they were bored.

Boring #1

<u>Depth (ft.)</u>	<u>Color</u>	<u>Texture (Unified)</u>
0-3	yellowish brown	SM
3-6	yellowish red	SC
6-15	yellowish brown	SC
15-40	yellowish brown reddish brown	SM
40-45	gray	SM
45+	gray	CL

Notes: Wet at 18 feet. Water at 25 feet.

Boring #2

<u>Depth (ft.)</u>	<u>Color</u>	<u>Texture (Unified)</u>
0-3	yellowish brown	SM
3-19	yellowish brown yellowish red	SC
19-30	pale yellow	SM
30-35	light gray	SM
35-40	gray	SM
40+	gray	CL

Notes: Water at 25-30 feet. Below 40 feet - alternate layers SC and CL material.

Boring #3

<u>Depth (ft.)</u>	<u>Color</u>	<u>Texture (Unified)</u>
0-3	yellowish brown	SM
3-19	yellowish brown	SC
19-45	gray	SC

Notes: Water at 43 feet.

Boring #4

<u>Depth (ft.)</u>	<u>Color</u>	<u>Texture (Unified)</u>
0-3	yellowish brown	SM
3-15	brown	SC
15-30	light brown	SM

Note: Water at 15 feet.

Boring #5

<u>Depth (ft.)</u>	<u>Color</u>	<u>Texture (Unified)</u>
0-3	yellowish brown	SM
3-16	yellowish brown	SC
16-35	yellowish brown (gray in lower 10 feet)	SC-SM

Note: Water at 16 feet.

Boring #6

<u>Depth (ft.)</u>	<u>Color</u>	<u>Texture (Unified)</u>
0-2	yellowish brown	SM
2-19	yellowish brown	SC
19-24	yellowish brown-red	SM
24-26	yellowish brown	SC
26-44	yellowish brown	SM-SC

Note: Water at 26 feet.

Boring #7

<u>Depth (ft.)</u>	<u>Color</u>	<u>Texture (Unified)</u>
0-2	yellowish brown	SM
2-18	red and brown	SC
18-35	pale brown	SM

Note: Water at 18 feet.

Boring #8

<u>Depth (ft.)</u>	<u>Color</u>	<u>Texture (Unified)</u>
0-3	brown	SM
3-14	brown	SC
14-23	gray	CL
23-28	gray	SC
28-40	pale brown	SM

Note: Water at 28 feet.

Boring #9

<u>Depth (ft.)</u>	<u>Color</u>	<u>Texture (Unified)</u>
0-5	brown	SM
5-14	brown	SC
14-22	gray	CL
22-31	pale brown	SC
32+	pale brown	SM

Note: Water at 32 feet.

Boring #10

<u>Depth (ft.)</u>	<u>Color</u>	<u>Texture (Unified)</u>
0-2	brown	SM
2-20	pale brown	SC
20-47	gray	SC
47+	gray	SM

Note: Water at 47 feet.

Boring #11

<u>Depth (ft.)</u>	<u>Color</u>	<u>Texture (Unified)</u>
0-4	brown	SM
4-50	brown	SC

Note: Water not evident. 30 to 35 feet - some SM material in thin layers.

Boring #12

<u>Depth (ft.)</u>	<u>Color</u>	<u>Texture (Unified)</u>
0-5	brown	SM
5-23	brown	SC
23-26	brownish yellow	CL
26-33	brown	SC
33-43	gray	CL

Note: Water not evident.

Respectfully submitted,

Berman D. Hudson

Mr. Berman D. Hudson
Soil Survey Party Leader

SOIL BORINGS

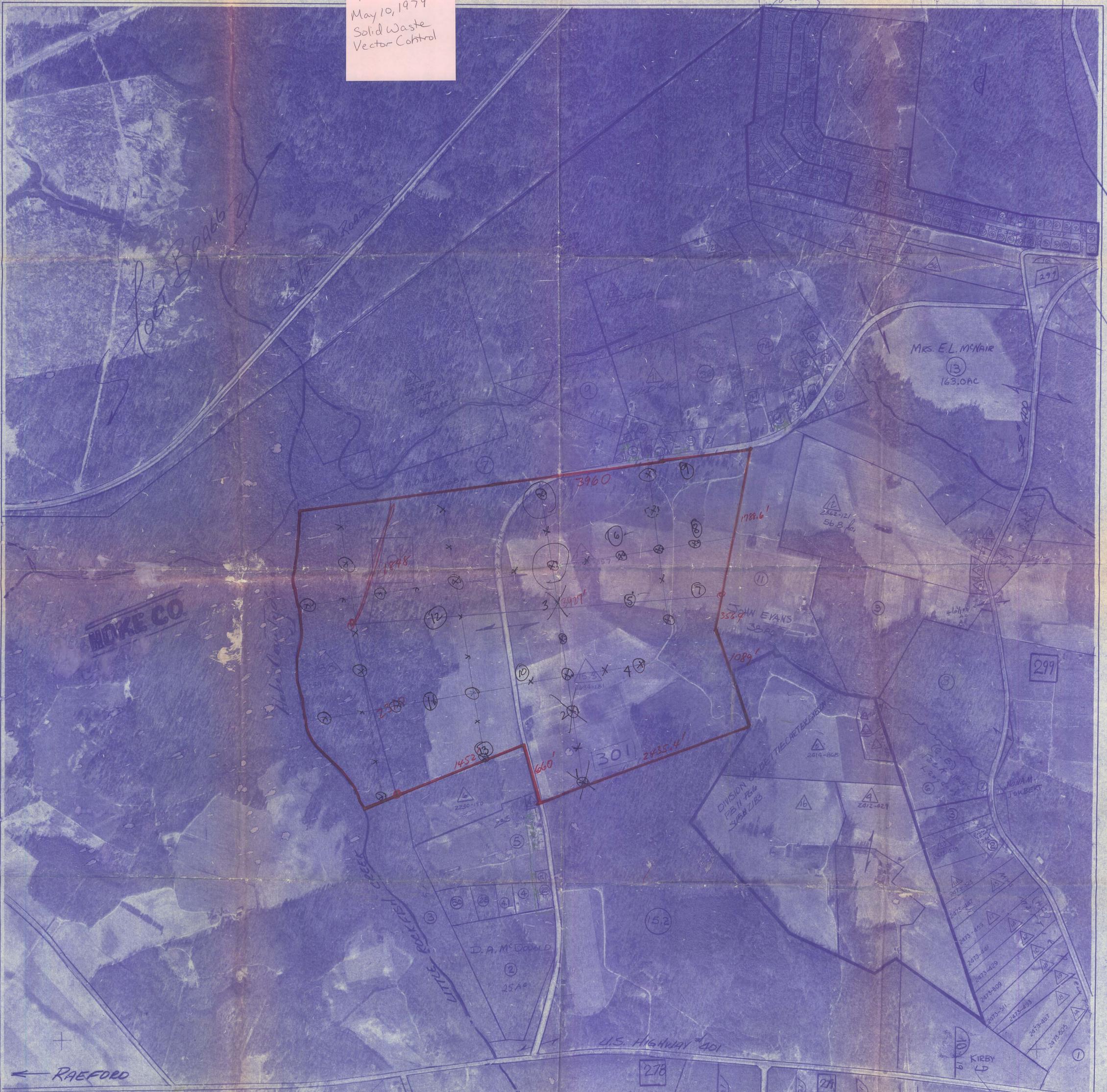
5-7-79

DEPTH OF BORE	WATER LINE ABOVE BOTTOM OF BORE
1 12'	1.5
2 10'	1.5
3 23'	1.0
4 18'	1.5
5 13'	1.0
6 15'	1.5
7 15'	1.0
8 25'	2.0
9 20'	3.0
10 33'	1.5
11 45'	Ø
12 30'	Ø



Received
 May 10, 1979
 Solid Waste
 Vector Control

CLIFF SPA...
 SEC 1 PG 95 PG 65
 SUB # 2505 KEVAD TO
 MAP # B
 * LHM CHG
 NOW CHG
 9-2557-70



REVISIONS		DRAWN	CHECKED
DESCRIPTION	DATE		
PER REVAL	11-7-78		

AERIAL PHOTOGRAPHY
 PHOTOGRAMMETRIC SERVICES
 INC.
 COLUMBUS, OHIO

MAP CONSULTANTS
 HOWZE AND ASSOCIATES INC.
 TAMPA, FLORIDA

PROPERTY OWNERSHIP MAP
CUMBERLAND COUNTY

MAP NUMBER
 9
 SCALE 1" = 400'



Cumberland

JHR

May 30, 1973

Mr. Robert M. Bennett
City Engineer
City of Fayetteville
119 Bow Street
Fayetteville, North Carolina 28301

Dear Mr. Bennett:

The required information for evaluation of the proposed landfill site off Jossie Street near Eureka Springs has been reviewed as amended by supplemental data of May 15, 1973, and the site has been found suitable for sanitary landfill use.

The required information concerning proposed operational plans on this site has been reviewed and those plans are hereby approved with the following conditions:

1. That the operations meet the requirements of the North Carolina State Board of Health "Rules and Regulations Providing Standards for Solid Waste Disposal."
2. That a separation distance of at least three feet be maintained between the waste placed in excavated areas and the ground water table of the site.

If this office can be of further assistance in the development of this project, do not hesitate to call.

Very truly yours,

Sidney H. Usry, Chief
Solid Waste & Vector Control Section
Sanitary Engineering Division

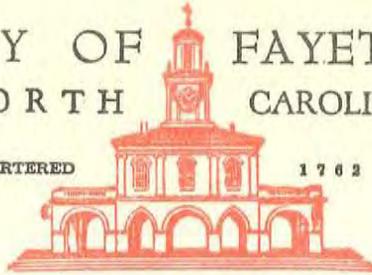
JCP:bm

cc: Mr. Terry F. Dover
Mr. Lacy Williams

THE CITY OF FAYETTEVILLE
NORTH CAROLINA

CHARTERED

1762



April 9, 1973



PHONE (919) 483-3654
FAYETTEVILLE, N. C. 28301

OFFICE OF CITY ENGINEER
119 Bow Street

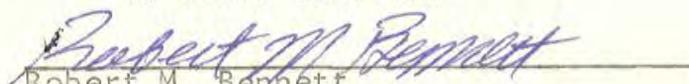
North Carolina State Board of Health
Sanitary Engineering Department, Box 2091
Raleigh, North Carolina 27602

SUBJECT: Jossie, Street Area Landfill, Eureka Springs,
North Carolina

Per your request and instructions outlined in the State Board of Health's Bulletin Number 411 dated March 11, 1971, we are enclosing three copies each of the following for the proposed landfill:

1. Topographic map, one-inch equals thirty feet with one foot contour intervals showing boundaries of property owned by Mr. J. B. Evans of Eureka Springs, North Carolina with the following plotted on the map:
 - a. Proposed area for a city operated landfill with dimensions.
 - b. Location of soil borings.
 - c. Access and entrance roads to the site.
 - d. Location of cross sectional made on drawing Sheet 1 of 1.
 - e. Proposed direction for ramping operations.
 - f. Proposed fill elevations.
 - g. Proposed location of equipment storage.
2. Aerial photo, Tax property map, one-inch equals 200 feet, covering at least one-fourth mile surrounding the Jossie Street Landfill site and showing boundaries of property owned by Mr. J. B. Evans.
3. Soil boring data showing the ground, water level, and soil description, Sheets 1 of 1.
4. Cross section data showing original ground elevations grade, fill elevations, and proposed ramping operations.

5. The City proposes to begin filling at the 232 foot elevation, three feet above the water table. The toe of the berm, north end of the site, shall begin at the existing 235 foot elevation. It will have a four-to-one slope and seeded in ten foot increments to contain the runoff in the landfill area. The completed fill elevation shall not have a slope greater than one per cent with a minimum cover of two feet of compacted earth material. The operations of the fill site will be the ramping method, with cover material obtained from the south end of the site. A ditch to contain surface water will be located to the south and along the west side of the landfill site, draining toward the north. An access road will be constructed from Jossie Street northward into the site.
6. The landfill site is being used to dispose of commercial, industrial and street and household refuse. One bulldozer and one compactor is being used in the operation of the landfill. The usage of the area upon completion is farming. The anticipated lifetime of the project is estimated at ten months and the operation of the site is the responsibility of the Superintendent, City of Fayetteville Street and Sanitation Department. The site is being operated 5½ days weekly, and its hours of operation are 7:30 - 4:00, Monday through Friday. The site will be open on Saturdays from 8:00 a.m. until 12:00 noon. Pertinent information is posted at the entrance to the landfill site.
7. The area, approximately 75 feet x 651 feet and adjoining on the west side of Mr. J. B. Evans property is owned by Mr. M. Griffin, presently in Vietnam. This parcel of land is under negotiation so that the landfill can be extended westwardly and the proposed elevations can be tied into the existing elevation. This will extend the landfill time of operation and eliminate the need of a berm on the west side of the site itself.
8. The sanitary landfill site shall be operated following the rules and regulations and standards for solid waste disposal as outlined by the North Carolina State Board of Health, Sanitary Engineering Division, and applicable to State statutes.


Robert M. Bennett
City Engineer

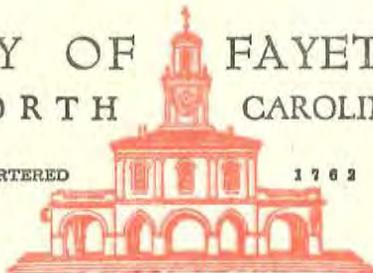
RMB/kls

Enclosures

THE CITY OF FAYETTEVILLE
NORTH CAROLINA

CHARTERED

1782



OFFICE OF CITY ENGINEER
119 Bow Street

May 15, 1973

PHONE (919) 483-3654
FAYETTEVILLE, N. C. 28301

Mr. Jerry C. Perkins, Deputy Chief
Sanitary Engineering Division
State Department of Human Resources
Post Office Box 2091
Raleigh, North Carolina 27602



Dear Mr. Perkins:

Per our telephone discussion and your letter dated May 11, 1973,
the requested information is hereby submitted for further review.

- 1) Tax topographic map, Scale one-inch equals 200 feet indicating location of borrow pits One and Two, direction of drainage for each borrow pit and entrance and exit routes to site for collection vehicles.
- 2) Cover material from borrow pit One shall be transported to required area over a prepared route from the south to the northeast end of the site. Temporary concrete piping shall be installed to prevent obstruction of surface water drainage in the ditch running east to west near borrow pit.
- 3) The initial operation of the site shall begin at the northeast end of the site and progress towards the south end borrow pit One.

Yours truly,

Frank J. Dallas
Project Engineer

emm

Enclosure



STATE OF NORTH CAROLINA
DEPARTMENT OF HUMAN RESOURCES

JAMES E. HOLSHOUSER, JR.
Governor

DAVID T. FLAHERTY
SECRETARY

State Board of Health

P. O. Box 2091 Raleigh 27602

May 11, 1973

JACOB KOOMEN, M.D., M.P.H.
STATE HEALTH DIRECTOR AND
SECRETARY-TREASURER

W. BURNS JONES, JR., M.D., M.P.H.
ASSISTANT STATE HEALTH DIRECTOR

Mr. Robert M. Bennett *Room B*
Office of City Engineer
119 Bow Street
Fayetteville, North Carolina 28301

Dear Mr. Bennett:

As discussed during our telephone discussion of May 10, 1973, the information submitted concerning the proposed landfill site off Jossie Street, does not show that the proposed site and operations can meet the State requirements for solid waste disposal.

Any additional information available is needed to clarify the following points prior to further review.

1. Source of cover material for daily and final cover plus earthen material for dyking.
2. Information concerning initial operating areas and direction of development in addition to entrance and exit routes for collection vehicles.
3. Information concerning the drainage outlets for the borrow pit during development.

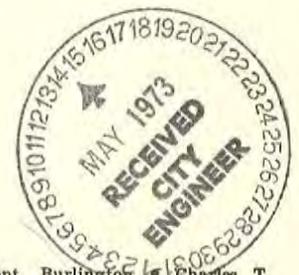
Provide the above and any other additional information in triplicate when re-submitted.

Yours truly,

Jerry C. Perkins, Deputy Chief
Solid Waste & Vector Control Section
Sanitary Engineering Division

JCP:clf

cc: Mr. Terry Dover



*Cumberland
SM*

May 11, 1973

Mr. Robert M. Bennett
Office of City Engineer
119 Bow Street
Fayetteville, North Carolina 28301

Dear Mr. Bennett:

As discussed during our telephone discussion of May 10, 1973, the information submitted concerning the proposed landfill site off Jossie Street, does not show that the proposed site and operations can meet the State requirements for solid waste disposal.

Any additional information available is needed to clarify the following points prior to further review.

1. Source of cover material for daily and final cover plus earthen material for dyking.
2. Information concerning initial operating areas and direction of development in addition to entrance and exit routes for collection vehicles.
3. Information concerning the drainage outlets for the borrow pit during development.

Provide the above and any other additional information in triplicate when re-submitted.

Yours truly,

Jerry C. Perkins, Deputy Chief
Solid Waste & Vector Control Section
Sanitary Engineering Division

JCP:clf

cc: Mr. Terry Dover

N. C. STATE BOARD OF HEALTH
CHECK-OFF SHEET FOR PROPOSED SANITARY LANDFILL SITES

190

MAR 22 1973

(4)

COUNTY Cumberland LOCATION Eureka Springs-Jossie St. ACRES 32
PROPERTY OWNER Evans Family PROPOSED OPERATOR City of Fayetteville

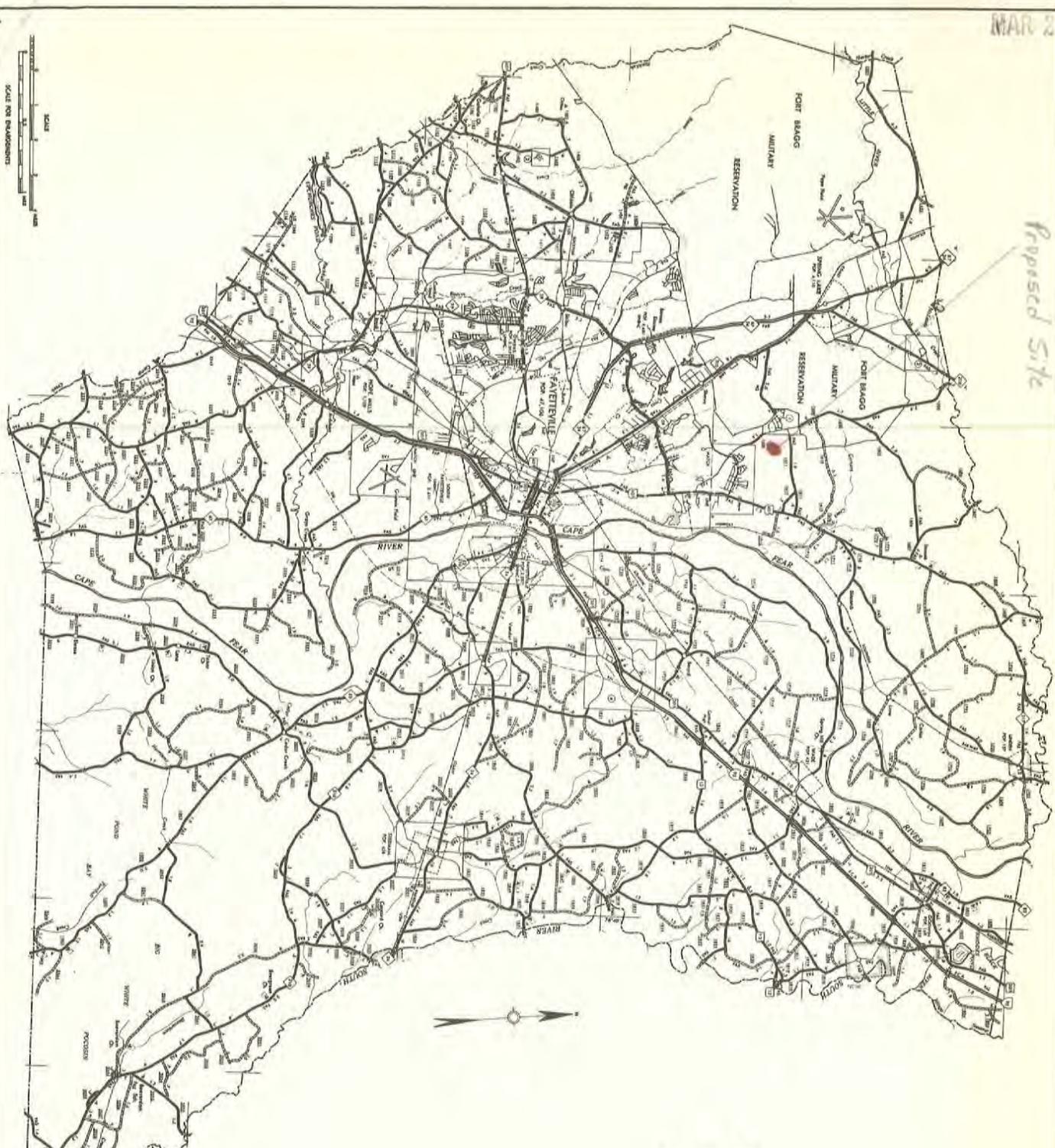
1. Is this site within the boundaries of a public water supply watershed? Watershed _____ YES _____ NO ✓ (ok)
2. Does any portion of this site contain floodplain areas? YES _____ NO ✓
3. Are there public or private wells nearby that could be affected? YES _____ NO ✓
Nearest well in feet _____ (Elaborate in Comments Section)
4. Are there springs present on the site? Number _____ YES _____ NO ✓
5. Will this site require dyking? YES ✓ NO _____
6. Will this site require piping of surface drainage? YES _____ NO ✓
7. Not precluding required boring information, does this site have adequate cover material for the sanitary landfill development? YES ✓ NO _____
8. Will this site require diversion of surface water? YES ✓ NO _____
Receiving stream for surface drainage from site Carvers Creek
9. Will this site require extensive preparation, such as clearing? YES _____ NO ✓
(Elaborate in Comments Section)
10. Will this site require a new all-weather access road? YES _____ NO ✓
(Elaborate in Comments Section)
11. Evaluate the following:

	POOR	GOOD	EXCELLENT
A. Surface soil conditions as related to cover requirements	_____	<u>✓</u>	_____
B. Location as related to population density	_____	<u>✓</u>	_____
C. Accessibility to users	_____	<u>✓</u>	_____
12. Based on the observations made above and otherwise, do you recommend that the requestor proceed with the requirements of Section IX of the North Carolina State Board of Health "Rules and Regulations Providing Standards for Solid Waste Disposal"? YES ✓ NO _____
13. COMMENTS: (Include any requirements noted by you for the sanitary landfill development and operation) _____
The only possible problem with this site would be dust from Jossie St. Mr. Jones felt that the S.H.C. would pave Jossie St thus eliminating the problem
14. Number of borings recommended for a representative sampling of the site 8-10
15. Percent of usable land 100%. Include sketch of site on back of this form.

March 16, 1973
(DATE)

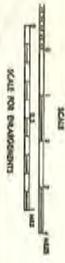
Terry F. Dover
N. C. State Board of Health
District Sanitarian for Solid Waste
or
Sanitary Engineer

Proposed Site



- LEGEND**
- PROPOSED LANDFILLS
 - EXISTING LANDFILLS
 - △ OPEN DUMPS

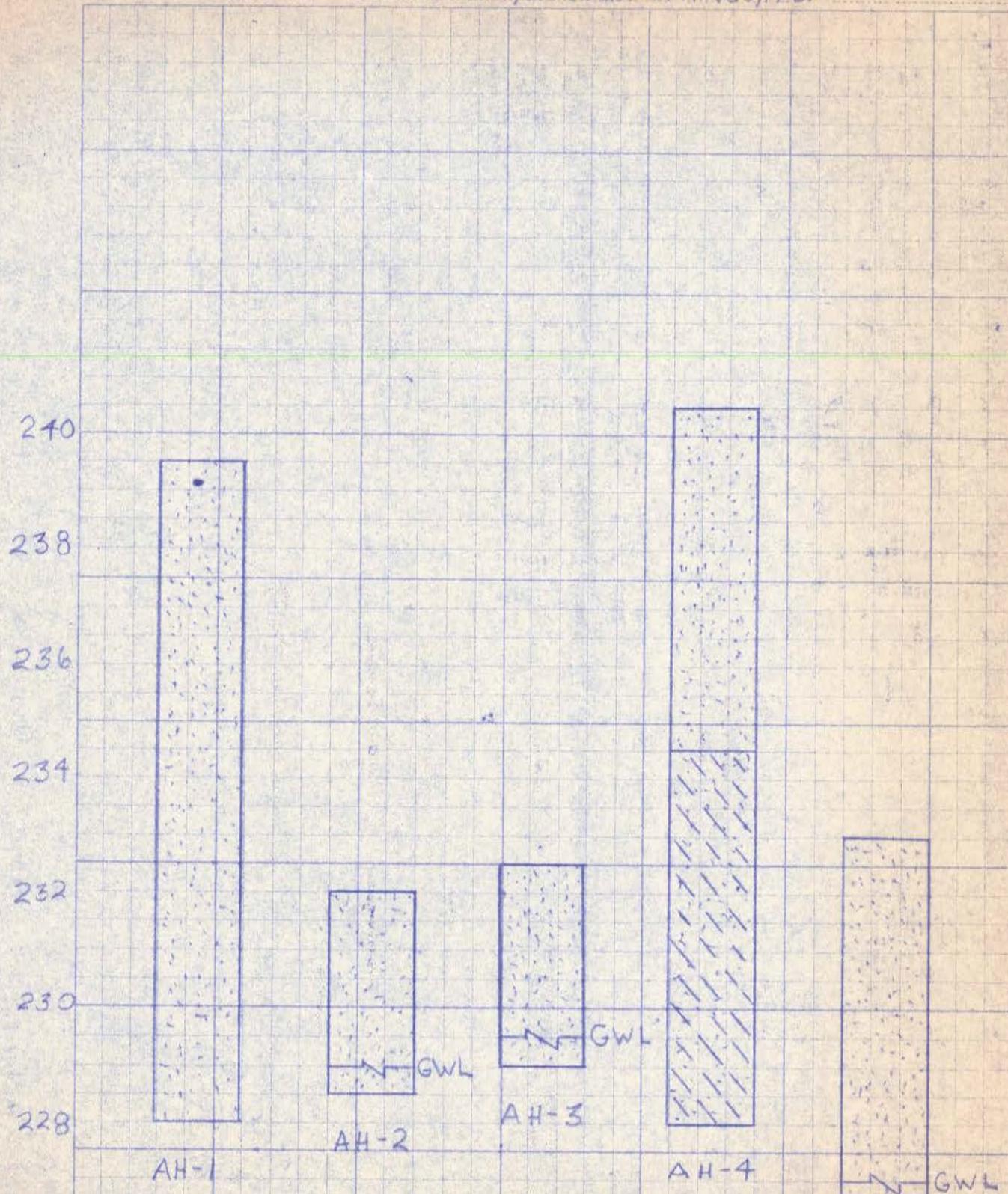
CUMBERLAND COUNTY
 NORTH CAROLINA



BY F. J. D. DATE 4/2/73
CHKD BY I. G. D. DATE 4/10/73

SUBJECT TEST BORINGS OF
JOSSIE ST. PROPOSED
LANDFILL, EUREKA SPRINGS, N.C.

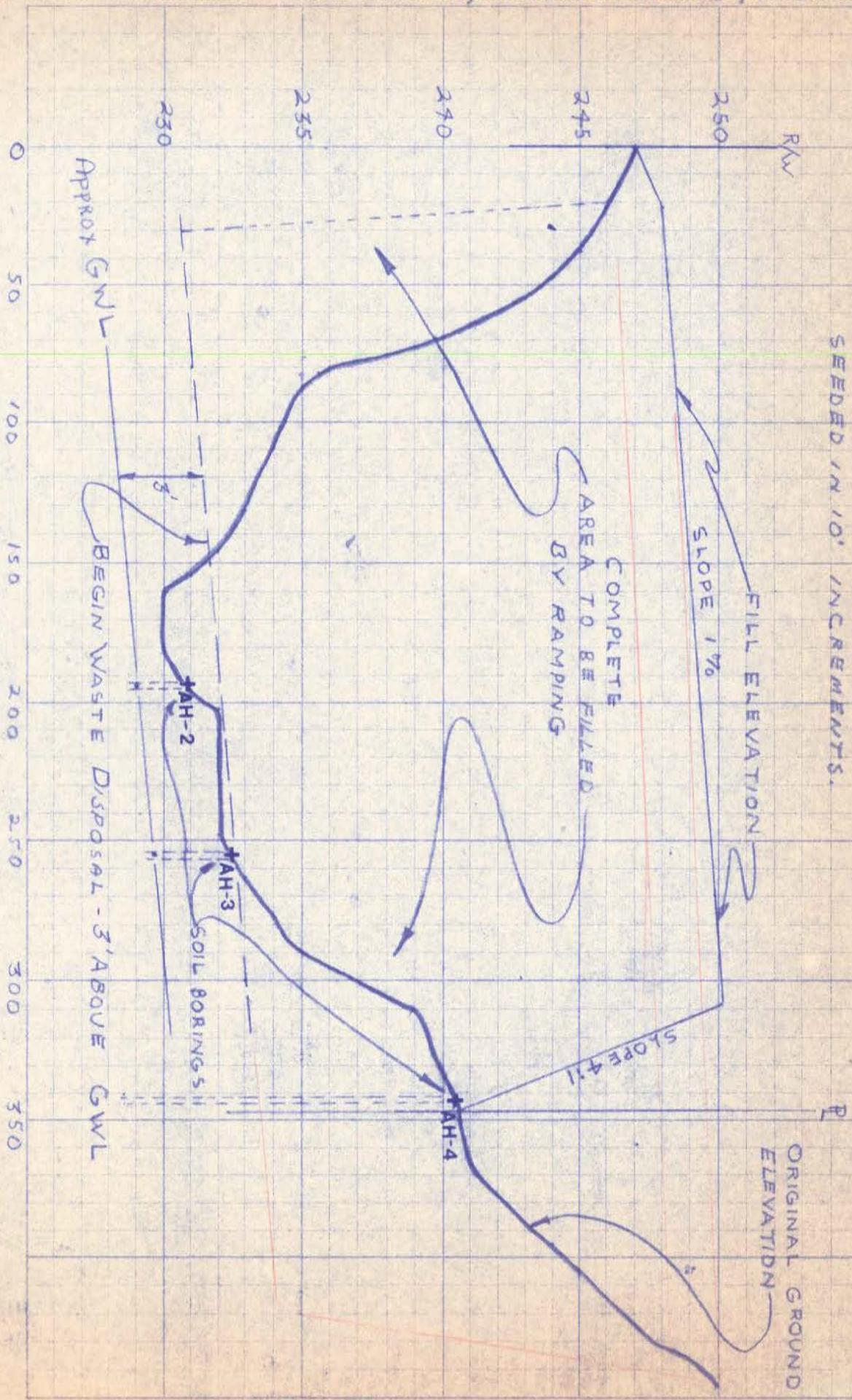
SHEET NO 1 OF 1
JOB NO.



B. K. ELLIOTT COMPANY
NO. 70212-ELL-VEL
5/15 TO INCH

LEGEND:

- GWL GROUND WATER LEVEL
- COARSE & MEDIUM SAND
- SAND CLAY



COMPACTED DYKE TO BE MAINTAINED AT ALL TIMES TO CONTAIN RUNOFF FROM FILL SITE. DYKE TO BE SEEDED IN 10' INCREMENTS.

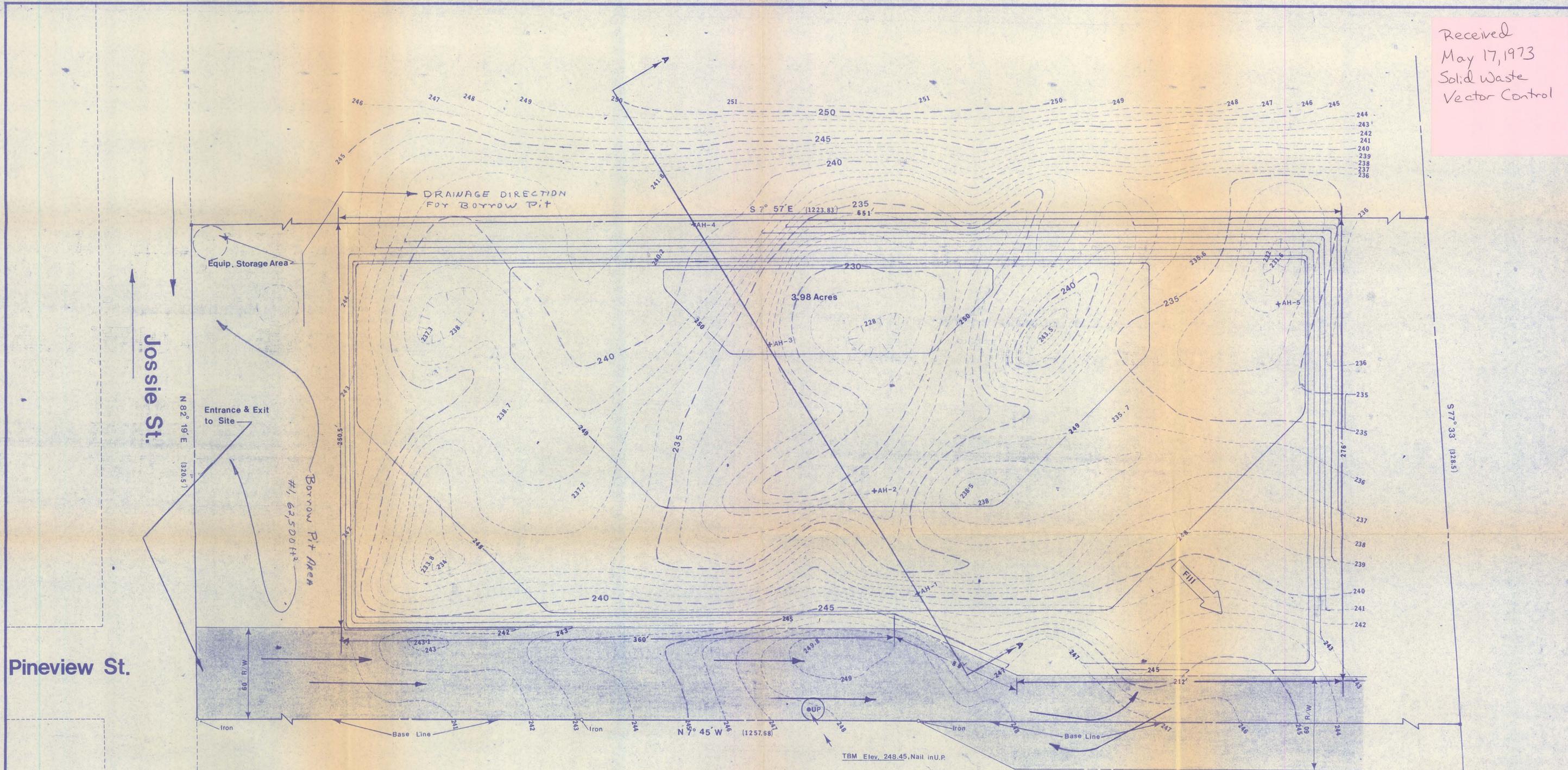
Levi's Son. Set
SR-1107
Proposed
OA

Rec'd
4/11/73
Solid Waste
Vector Control
(Stamp on back of
map)



Scale: 1" = 200'
FJD
April 5, 1973

Received
 May 17, 1973
 Solid Waste
 Vector Control



Jossie St.
 N 82° 19' E (320.5')

Pineview St.

Entrance & Exit to Site
 Borrow Pit Area #1, 62500ft²

DRAINAGE DIRECTION FOR BORROW PIT

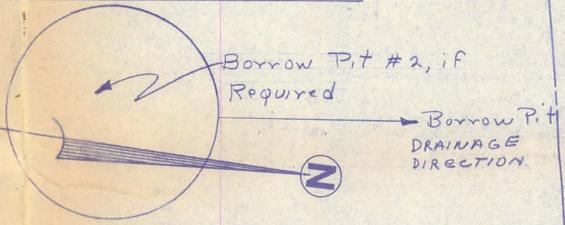
S 7° 57' E (1223.83')
 235 651'

N 7° 45' W (1257.68')

TBM Elev. 248.45, Nail in U.P.

S 77° 33' (328.5')

- Legend:**
- 234.7 Spot Elevation
 - +AH-1 Soil Boring
 - Property Line
 - - - 5 Ft. Contour Line
 - - - 1 Ft. Contour Line
 - ⊖ Depression
 - 235 Finished Elevation
 - ▨ 60 Ft. R/W
 - UP Utility Pole



**CITY OF FAYETTEVILLE
 ENGINEERING DEPARTMENT**

PROPOSED JOSSIE, St.
 LANDFILL, EUREKA, SPRINGS, N.C.

APPROVED *Robert M. Bennett* 10 Apr 73
 CITY ENGINEER

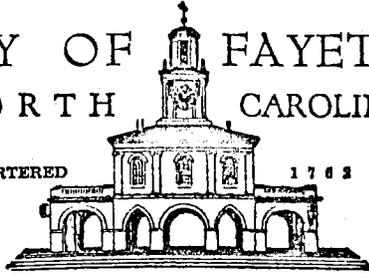
DESIGNED BY FJD	DRAWN BY FJD	CHECKED BY E.G.D.	FIELD BOOK NO.
SCALE 1" = 30'	DATE April 1973	JOB NO.	PG.

SHEET 1 OF 1

DUNCAN PRINTMAKERS, CHARLOTTE

THE CITY OF FAYETTEVILLE
NORTH CAROLINA

CHARTERED 1763



OFFICE OF CITY ENGINEER
Room 101 City Hall
Ph. 483-3634
Area Code 919

FAYETTEVILLE, N. C.
28301

August 27, 1971

North Carolina Board of Health
Sanitary Engineering Department
Raleigh, North Carolina

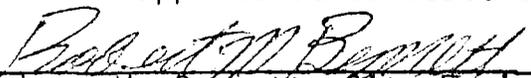
SUBJECT: South Fayetteville Area Landfill (East of Highway 301)

Per your instructions we are enclosing three copies each of the following:

1. Topographic maps, one-inch equals 100 feet, with 2 foot contour intervals showing boundaries of property owned by Wilson Franklin Yarborough, Sr. with the following plotted on the map.
 - a. Proposed area for a city operated landfill with dimensions.
 - b. Location of soil borings.
 - c. Access and entrance roads to the site.
 - d. Location of cross sectional made on drawing, Sheet 1 of 1.
 - e. Proposed fill elevations.
 - f. Proposed direction for ramping and trenching operations.
2. Soil boring data showing the ground, water level and soil description, Sheets 1 through 4.
3. Cross section data showing original ground elevation, grade, fill elevations, and proposed ramping and trenching operations.
4. The City proposes to begin at the 150 foot elevation leaving the existing natural vegetation below the 150 foot elevation around the pond to prevent erosion, and leaving the existing flood plane undisturbed. A compacted earth dyke will begin at the beginning of the 150 foot elevation and be maintained on a four-to-one- ratio seeded in ten foot increments

to contain the runoff in the landfill area. The completed fill elevation shall not have a slope greater than one per cent with a minimum cover of three feet compacted earth material. The operation of fill will be that of the combination of ramping and trenching as the terrain permits. The trenches shall be approximately 20 feet in width at the base and a maximum of 25 feet in height. Deep fills shall be developed in successive layers, each approximately 8 feet in thickness. Each layer is covered with approximately 6 inches to one foot of earth before the next layer is begun. In event it is not possible to advance both fill and cover simultaneously, a preliminary cover will be applied to the new fill at the end of each day's work. This cover shall be approximately 6 inches thick, cover over the entire surface of the compacted refuse, including the dumping face to effectively close the cell.

5. The pertinent information for the proposed landfill and its operation as required is as follows:
 - a. Population and area served - 75,000 estimated City of Fayetteville and adjacent county suburban area, south side.
 - b. Anticipated type, quantity of material to be disposed at the site - household, commercial, and industrial refuse, estimated 2,000,000 lbs. weekly.
 - c. Usage of area upon completion of landfill-unknown.
 - d. Type of equipment used in the operation of landfill - one dragline, one bulldozer, and one frontloader.
 - e. Responsible individual for operation and maintenance of the site; Superintendent, City of Fayetteville Street and Sanitation Departments.
 - f. Anticipated lifetime of project-estimated 3 years.
 - g. Hours of operation - Monday through Friday 7:30 - 4:30 and 7:30 - 10:00 Saturdays, closed Sundays.
 - h. Public information on landfill operation - publicity and information on landfill operation shall be by the City. Signs providing information on dumping procedures, hours of operation, penalty for non-conformance dumping, control and other pertinent information shall be by the City, posted at the site entrance.
 - i. Utilities - area lighting to be provided by the Public Works Commission at the site.
6. The sanitary landfill site shall be operated following the rules and regulations and standards for solid waste disposal as outlined by the North Carolina State Board of Health, Sanitary Engineering Division, and applicable to State statutes.


Robert M. Bennett, City Engineer

NORTH CAROLINA
STATE BOARD OF HEALTH
RALEIGH

July 17, 1970

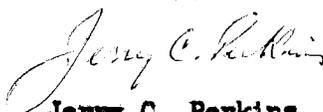
Mr. Lacy Williams
Sanitarian Supervisor
Cumberland County Health Department
Post Office Box 470
515 Person Street
Fayetteville, North Carolina 28302

Dear Mr. Williams:

Please find enclosed the investigative reports, recommendations, site plans, and cross sections for the five proposed landfills investigated in Cumberland County.

If this section can be of further assistance in developing your solid waste disposal program, do not hesitate to call.

Sincerely,



Jerry C. Perkins
Sanitary Engineer
Solid Waste & Vector Control Section
Sanitary Engineering Division

Enclosures

cc: Mr. Fred J. Wood

STATE BOARD OF HEALTH
SANITARY ENGINEERING DIVISION
RALEIGH, NORTH CAROLINA

REPORT OF INVESTIGATION OR INSPECTION OF 5 Proposed Sanitary Landfills in Cumberland County

Place visited Cumberland County Date June 23 and 30, 1970

Address Cumberland County Health Department Time spent 2 days

By whom Jerry Perkins, Sanitary Engineer, Sanitary Engineering Division, N. C. State Board of Health

Persons contacted (See Report)
(Owner, agent tenant, manager, other)

Reason for visit To determine feasibility of sites for Sanitary Landfills and provide planning assistance.

Copies to: Mr. Lacy Williams, Sanitarian Supervisor, Cumberland County Health Department
Mr. Fred Wood, District Sanitarian, Solid Waste & Vector Control Section, State Board of Health

REPORT:

During the investigation of five proposed sanitary landfills in Cumberland County the following personnel were contacted: Mr. Lacy Williams, Sanitarian Supervisor; Mr. Joe Gladden, Sanitarian I; Mr. Gary Freeman, Sanitarian Aide; and Mr. Terry Dover, Sanitarian Aide; all of the Cumberland County Health Department. The dates of the investigations were 23 June and 30 June, 1970, respectively. The report and recommendations for each site are presented below:

Site No. I (Near Godwin)

Report:

Site No. I is located near the intersection of SR 1812 and SR 1802 approximately one mile southwest of Godwin and near the Cape Fear River. Approximate acreage contained in the plot is 1.5 acres. The site contains approximately 50 percent woodland and 50 percent abandoned farmland.

The terrain is rolling and has good general drainage. Parameters to the development of the site are the property lines of the plot. Soil conditions observed is a sandy clay with evidence of gravel content in the lower stratus. The elevation of the property is deemed to be high enough so that no water table problems should be encountered with the shallow excavations. Available sources indicated that the amount of refuse received at the site is expected to be of a low volume. The overall site lends itself to the trench method of disposal by sanitary landfill. No industrial wastes of any major consequence are expected to be delivered for disposal at this site. Elevations of the completed portions of the landfill are expected to approximate the original elevation prior to use.

Recommendations:

1. Utilize the trench method of disposal for sanitary landfill.
2. Construct the trench in such a manner that the trench drainage is directed toward the southwest property line. (A sketch providing a site plan and a cross section of the recommended operation is attached to this report.)

3. Trench dimensions should approximate those provided on the attached drawing. A 30-foot width has been designated to allow for the initial impact of a newly opened disposal site in this part of the county. Subsequent trenches can be reduced in width if the volume received at the site is not sufficient to justify the 30-foot width.
4. Improve the access road as necessary to withstand heavy wheel loads of collection vehicles.

Site No. II (Near Stedman)

Report:

Site No. II is located off SR 1846 near South River and the Cumberland/Sampson County line and is four miles northeast of Stedman. Approximate acreage investigated is 3.7 acres consisting of an old borrow pit. The terrain has a general roll and the soil condition was observed to be sandy clay. Drainage to the pit was observed to be good, centered about one control point. Dyking was observed to be needed on the east property line and portions of the southwest property lines. Parameters to the development of this site are primarily property lines. Water table problems are not anticipated as shallow excavations for cover material should not enter the existing water table. No industrial waste of any large consequence is expected to be delivered to this site. The amount of refuse expected at this site is to be of low volume. The aim of the development of this site by sanitary landfill is to reclaim land. The finished elevations should approximate the original elevation prior to the borrow pit excavations.

Recommendations:

1. It is recommended that the area ramp method of disposal by sanitary landfill be utilized. This method will entail the use of protective dyking in the southern corner and along the southwestern property line. (A site plan and cross section for the proposed landfill development is attached to this report.)
2. It is recommended that development of the proposed site follow sequential steps as indicated on the attached plan. This being the development of Section A, Section B and finally, Section C in such a manner that surface drainage of the operational area is directed toward the drainage control point at all times.
3. Improve the access road from SR 1846, as needed, primarily to divert storm drainage from the operational area.

Site No. III (Near Hope Mills)

Report:

Site No. III is located approximately three miles west of Hope Mills on SR 1003 near Rock Fish Creek. The approximate acreage contained in the overall proposed site is 7.5 acres with initial emphasis on 3.5 acres on the eastern side. The terrain was observed to be rolling and the soil was observed to have a high sand content. The drainage for this site was observed to be good with primary drainage outlets at two locations on the property. The elevation of the property was deemed to be sufficient so that no water table problems should be encountered by shallow excavations. Dyking will be required in the southern corner of the property as this portion of the property is low in elevation and will require dyking material to prevent possible leaching from the landfill operation. No industrial waste of any major quantity or any hazardous quality is expected to be delivered at this site. The aim of the development site is to restore land to its approximate, original elevation by use of sanitary landfill.

Recommendations:

1. It is recommended that a trench be excavated to provide initial dyking material in the southern corner of the property.
2. After the initial trench of the compacted and covered refuse has been completed, it is recommended that the disposal method be by area ramp. (Site plan and cross section for the recommended development is attached to this report.)
3. It is recommended that development as shown on the attached site plan be implemented by developing Section A, Section B and finally, Section C keeping surface drainage from the operational area directed toward the drainage control point. Also, note on the site plan that the development, as recommended, takes advantage of an existing natural ridge which separates the proposed operational area from a major drainage way for storm water.
4. Dyke, as necessary, the two areas designated on the site plan for the disposal of inert waste materials such as tree stumps, demolition wastes, etc.
5. Improve the access road as necessary to divert storm drainage away from the operational area.

Site No. IV (Near Clifdale)

Report:

Site No. IV is located on SR 1400, 1.5 miles west of Clifdale and near Bones Creek. Approximate acreage contained in this site is 5.4 acres. The terrain was observed to have a general roll and soil was observed to have a high sand content. Drainage for the proposed operational site rolls to both sides of the site as a natural ridge extends the length of the site. No water table problems are anticipated on this site as long as excavations remain shallow. Dyking will be required on either side of the property along the lower elevations to prevent any possible leaching from the landfill. No industrial waste of any major consequence is anticipated to be delivered to this site. The aim of the development of this site is to restore original elevations plus an increase of elevation on each of the low sides of the property by use of the sanitary landfill.

Recommendations:

1. Utilize initial trench on either side of the property to provide needed dyking material.
2. After completion of the compacted and covered trenches, utilize the area ramp method of disposal for the remaining portions of the site in a manner similar to that shown on the attached drawings.
3. Recommend development in a manner as shown on the drawing developing Section A, B, C, and D in that order to facilitate maximum use of cover materials and to provide drainage outlets at all times. Under no circumstances is this cover material to be borrowed from the center of the plot as this area will serve as access to both sides and should not be disturbed until the last stage of development.
4. Maintain the access road in a manner suitable to accommodate the wheel loads of delivery vehicles.

Site No. V (Near Spring Lake)

Report:

Site No. V is located off Highway 210 and 4.5 miles southeast of Spring Lake. Approximate acreage included in the site is 7.8 acres. The observed terrain in the surrounding area is fairly flat and the site itself is an abandoned borrow pit whose bottom elevation is approximately 12 feet lower than the original elevation. Soil condition was observed to be sandy. Drainage was observed to be generally good with a drainage outlet located on the northwestern property line. Test holes dug on the borrow pit site indicated that the existing water table was approximately nine feet from the borrow pit bottom. This site is expected to receive a high volume of waste, but no industrial waste of any major consequence is anticipated.

Recommendations:

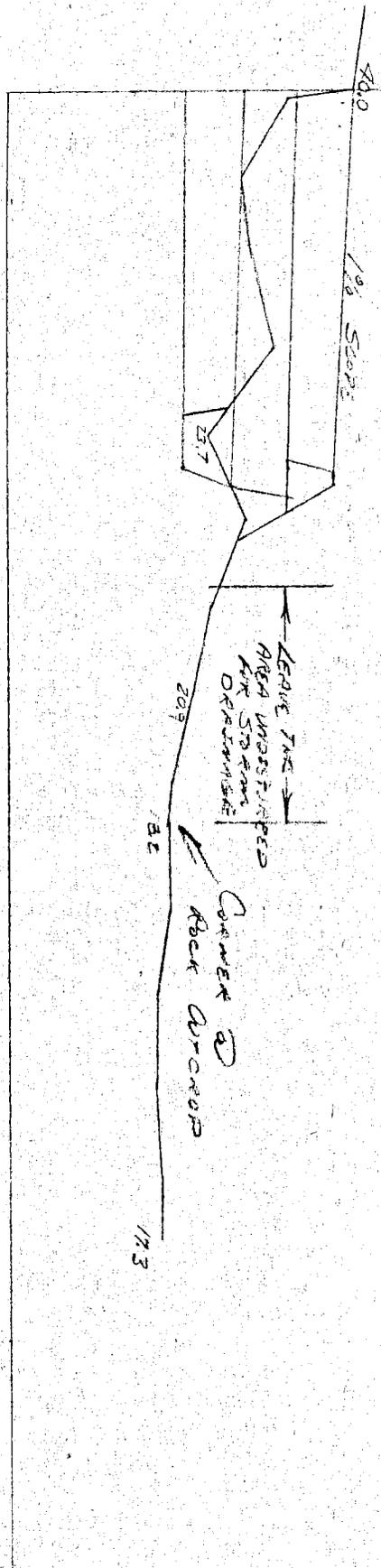
1. Utilize a combination trench and ramp method by sanitary landfill. Dyking will not be required initially but provisions should be made to stockpile dyking material to be used in the last stages of development of the site, particularly on the side of the property on which the drainage outlet is located.
2. Develop the completed ^{land} field sections in a manner approximate to that recommended on the attached drawings.
3. Maintain entrances to the specified deposit areas as needed and as the development of the plot proceeds.
4. The aim of this development project is to restore this land to elevations approximate to the original elevations prior to the borrow pit excavations.
5. Excavations for cover material should at no time be closer than three feet of the existing water table.
6. Development of the site to finished elevations as shown will require the handling of earth material more than once in some cases as the cover material for the top lift of compacted refuse will have to come from stockpile sources. It is recommended that particular attention be paid to this aspect to realize maximum utilization of the available cover material and to prevent the need for hauling cover material from other sources during the latter stages of sanitary landfill development.

General Recommendations:

The following general recommendations are applicable to all five sites. These recommendations are premised on the condition that adequate supervision and equipment as recommended in the refuse disposal plan presented to Cumberland County by the State Board of Health will be used.

1. Thoroughly compact and cover refuse at the sites receiving a high volume of waste on a daily basis. Covering at the low volume sites is required often enough to deter fly, rat, mosquito, and other vermin populations.
2. No burning of refuse is allowed at any of the sites.
3. Designate separate areas for tree limbs, stumps, demolition wastes.
4. Maintain access roads to all sites in such a condition that heavy wheel loads of collection vehicles can be accommodated.
5. In all cases, make no excavations into the existing water table.

6. Provide a site attendant at the sites receiving a high volume of waste to direct users to deposit areas.
7. Provide signs indicating regulations governing use of the sites and also to provide directions for county residents to find the site.
8. Negotiate agreements with industrial firms in the event that high volumes of industrial wastes are encountered and require preconditioning for safe and economical handling.

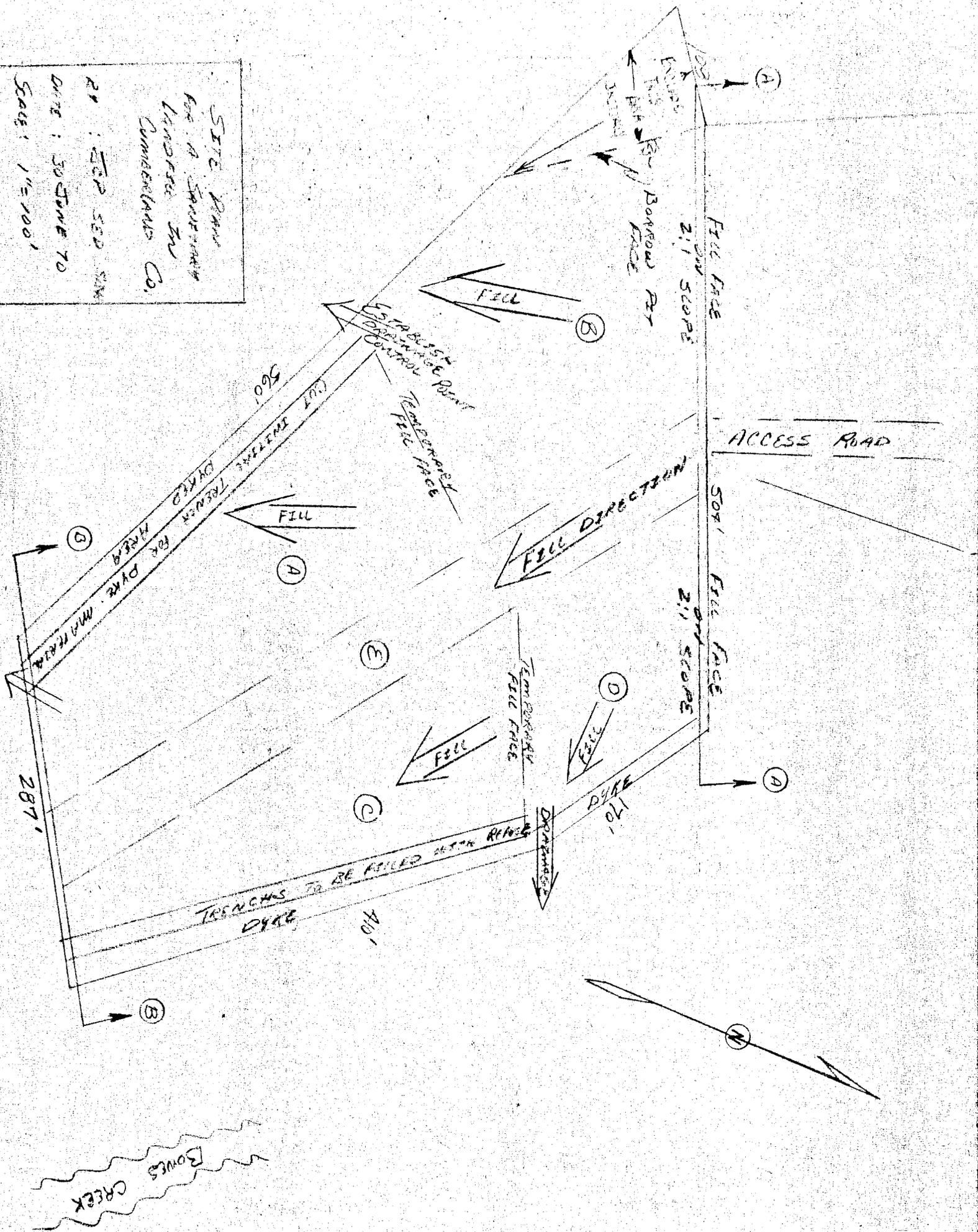


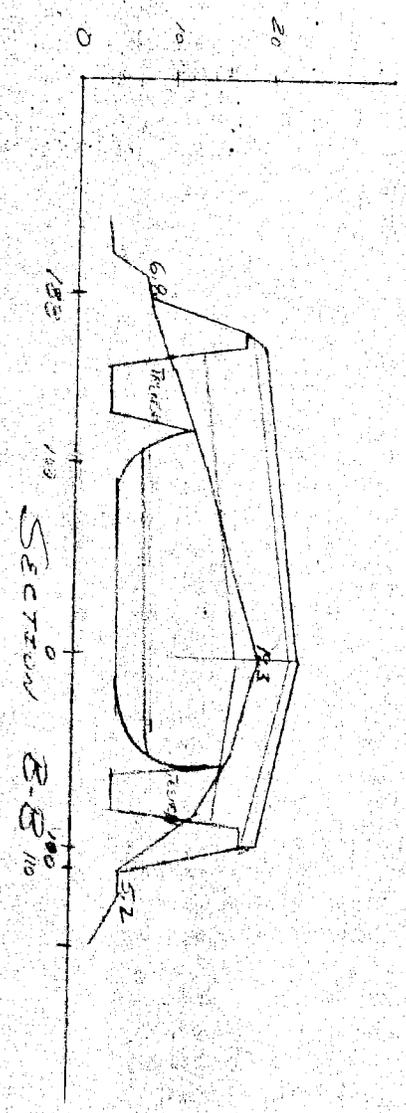
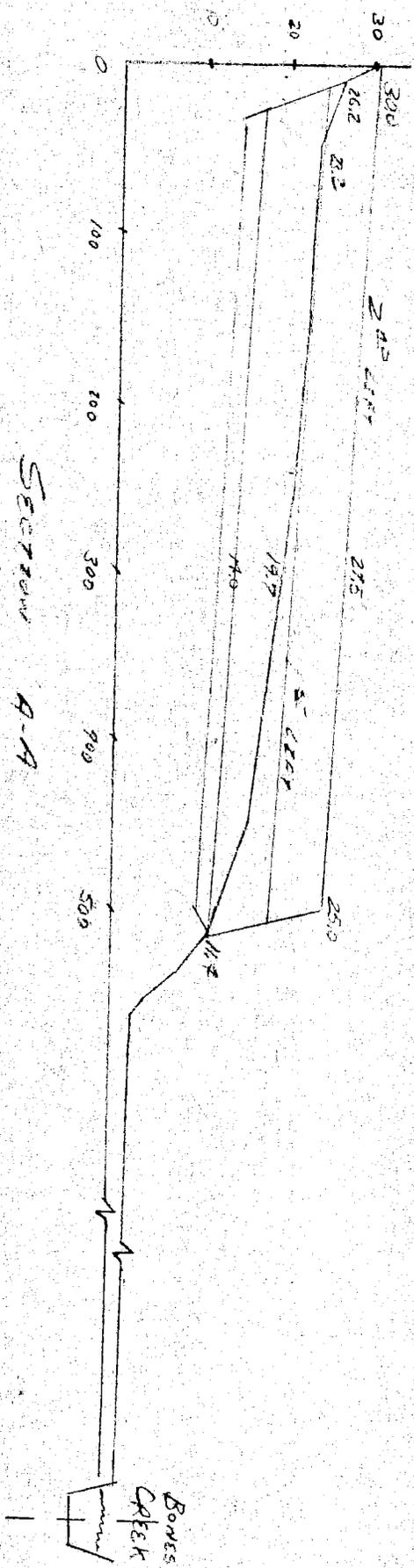
SECTION A-A

NOTE: ALL ELEVATIONS ARE RECIPIENT.

CROSS SECTION
 FOR A PROPOSED
 SANITARY LINE
 IN CUMBERLAND
 BY: JOP SED SM
 DATE: 30 JUNE 1970
 SCALE: HOR. 1"=100'
 VERT. 1"=10'

SITE PLAN
 FOR A SPURWAY
 LAYOUT IN
 COMMERCE CO.
 BY: ECP SED
 DATE: 30 JUNE 70
 SCALE: 1"=100'





CROSS SECTION
 FOR A PROPOSED
 SPURWAY (AND/OR)
 IN CONNECTION TO

BY: JOP SCD SR

DATE: 30 June 1970

SCALE: HORIZ. 1"=100'
 VERT. 1"=10'

Page 5 of 10 of 10

JACOB KOOMEN, M.D..M.P.H.
STATE HEALTH DIRECTOR
AND SECRETARY-TREASURER



W. BURNS JONES, JR., M.D..M.P.H.
ASSISTANT STATE HEALTH DIRECTOR

James S. Raper, M.D.
President
Asheville

Lenox D. Baker, M.D.
Vice-President
Durham

Charles T. Barker, D.D.S.
New Bern

Ben W. Dawsey, D.V.M.
Gastonia

Joseph S. Hiatt, Jr., M.D.
Southern Pines

J. M. Lackey
Hiddenite

Paul F. Maness, M.D.
Burlington

Ernest A. Randleman, Jr., B.S.Ph.
Mount Airy

Jesse H. Meredith, M.D.
Winston-Salem

NORTH CAROLINA
STATE BOARD OF HEALTH

P. O. BOX 2091
RALEIGH, NORTH CAROLINA 27602

February 16, 1971

Mr. Lacy Williams
Sanitarian Supervisor
Cumberland County Health Department
Box 470
Fayetteville, North Carolina 28302

Dear Mr. Williams:

Enclosed is the investigative report, recommendations, and drawings for the proposed landfill in the Grays Creek Section of Cumberland County.

Please note that the site has been approved for a sanitary landfill operation and that recommendations and drawings have been prepared according to sanitary landfill standards with the exception of an attendant on duty during the hours the site is open for public use. It is the policy of the State Board of Health to minimize the number of unattended solid waste disposal sites in any county, as the users do not differentiate between putrescible and non-putrescible waste and the resulting site has the characteristics of an open dump, which is to be eliminated in the current solid waste disposal program.

Very truly yours,

A handwritten signature in cursive script, reading "Sidney H. Usry, J.P.", written in dark ink.

Sidney H. Usry, Chief
Solid Waste & Vector Control Section
Sanitary Engineering Division

Enclosure
cc: Dr. Carl Hammer

STATE BOARD OF HEALTH
SANITARY ENGINEERING DIVISION
RALEIGH, NORTH CAROLINA

REPORT OF INVESTIGATION OR INSPECTION OF New Landfill Site

Place visited Cumberland County Date January 5 19 71

Address Fayetteville Time spent 3 hours

By whom Fred J. Wood, District Sanitarian, N. C. State Board of Health

Persons contacted Mr. Lacy Williams, Sanitarian Supervisor; Mr. Joe Gladden Sanitarian
(Owner, agent, tenant, manager, other)

Reason for visit Request from Mr. Lacy Williams

Copies to: Dr. Carl Hammer, Health Director, Cumberland County Health Department
Mr. Lacy Williams, Sanitarian Supervisor, Cumberland County Health Department

REPORT:

The purpose of this investigation was to determine the suitability of a site for a sanitary landfill in the Grays Creek Section of Cumberland County.

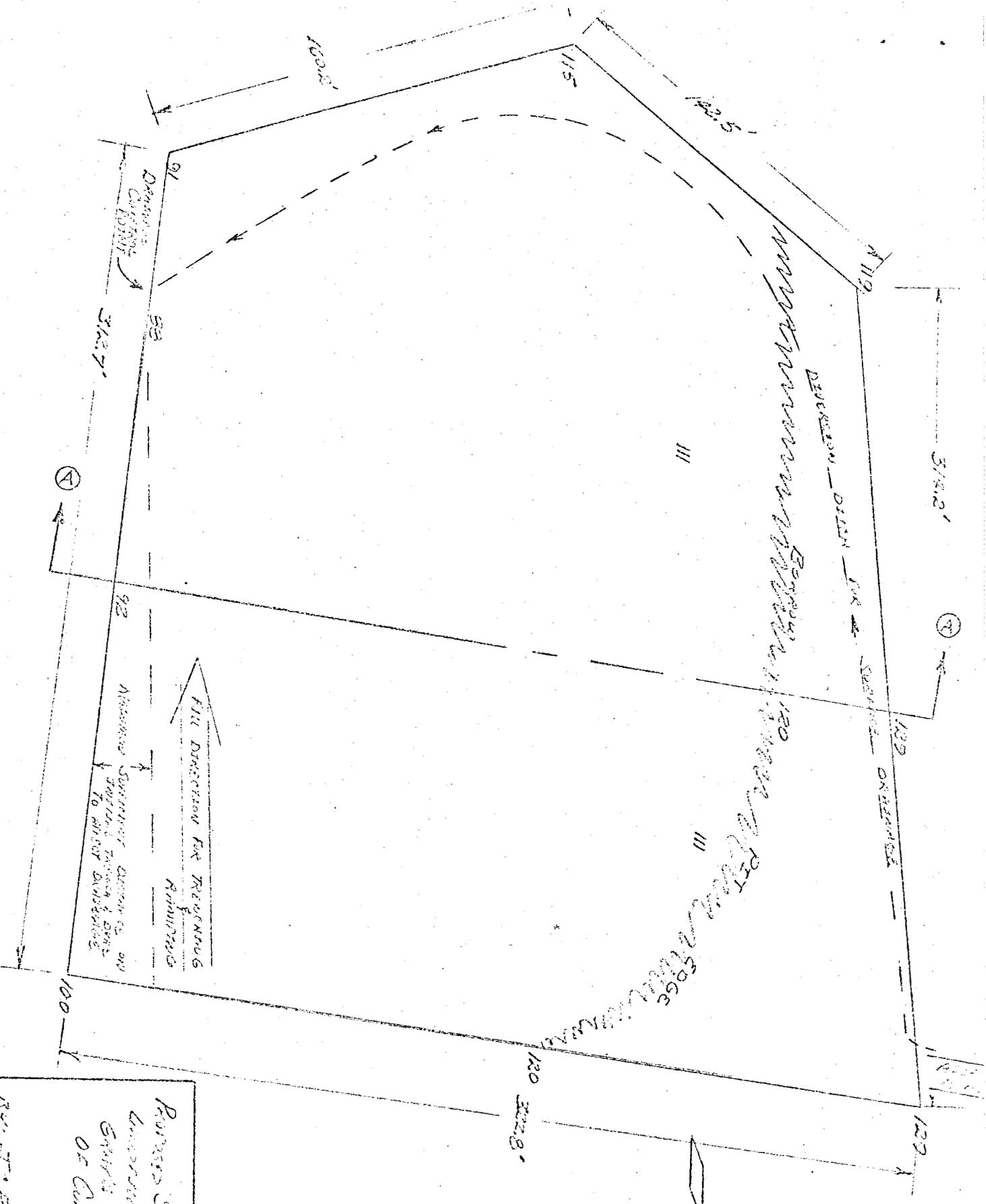
This site is an abandoned borrow pit located near the intersection of State Road 2234 and 2235. The site contains an area of approximately three to four acres.

With proper planning and operation this should be a very good site.

The following recommendations for operation of the sanitary landfill are based on the above report, site plan and cross sections presented to the Raleigh office of the Solid Waste and Vector Control Section, and subsequent conferences between personnel of the Solid Waste and Vector Control Section and Mr. Lacy Williams and Mr. Terry Dover of the Cumberland County Health Department.

RECOMMENDATIONS:

1. Utilize a combination trench and ramp method of disposal by sanitary landfill.
2. Develop the site in accordance with the attached drawings and cross sections, i.e.
 - A. Initiate trenching and dyking on the eastern side of the property, directing site drainage to the drainage control point.
 - B. Use an incremental form of development, utilizing a step design, as shown.
 - C. Ramping operations are to coincide with the incremental development to preclude long-distance hauling of dyking and cover material from the higher elevations.
3. Trenches, as shown, have a bottom width of 12 feet with sloped sides. The width can be increased if a sufficient volume of solid waste is disposed of at this site.
4. No burning of solid waste is to be allowed.
5. Thoroughly compact and cover all solid waste received at the site. If putrescible wastes are received at the site daily, cover shall be daily. A two-foot layer of earth is required over all completed sections of the site.
6. Improve the access road as necessary to accommodate the heavy wheel loads of collection vehicles.
7. Provide signs indicating regulations governing use of the sites and to direct county residents to the site.



④

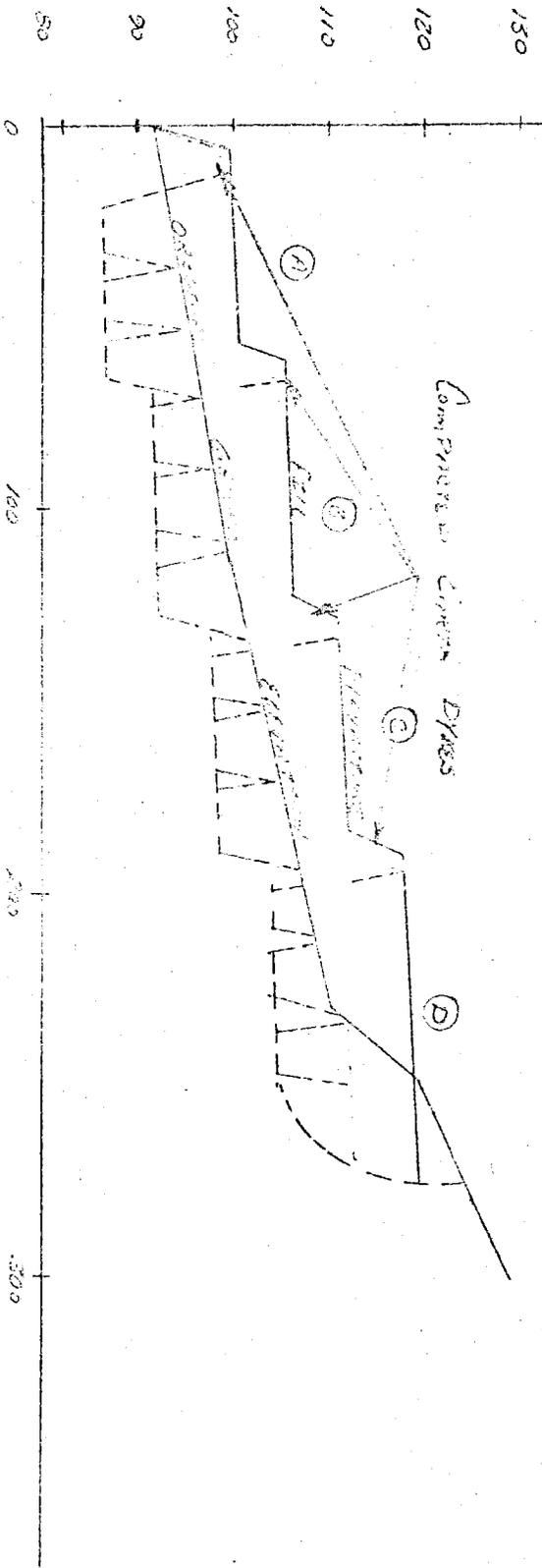
⑦

FILL DIRECTION FOR REVISIONS
 ROADWAY
 APPROVED SURVEYOR DESIGN & DIV.
 TRAFFIC THROUGH & DRIVE
 TO MOST DRAINAGE

(N)

Sheet 1 of 2

Robert S. ...
 Licensed Surveyor
 State of California
 Of Communications Co.
 BY: J.P.P. ...
 DATE: 9 FEB 71
 SCALE: 1" = 50'



SECTION (A)-(D)
 TEMPERATURE & HUMIDITY COMPARISON

Cross Section of
 Proposed Dam with
 Machine to Control
 Crest Seepage at
 Commissioning (B).
 BY : JAY, S.P., S.M.
 DATE : 27/03/21
 SCALE AS SHOWN

February 16, 1971

Mr. Lucy Williams
Sanitarian Supervisor
Cumberland County Health Department
Box 470
Waynesville, North Carolina 28392

J + R
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Solid Waste & Vector Control Section
Sanitary Engineering Division

FJW:bm
Enclosure
cc: Dr. Carl Hamner

STATE BOARD OF HEALTH
SANITARY ENGINEERING DIVISION
RALEIGH, NORTH CAROLINA

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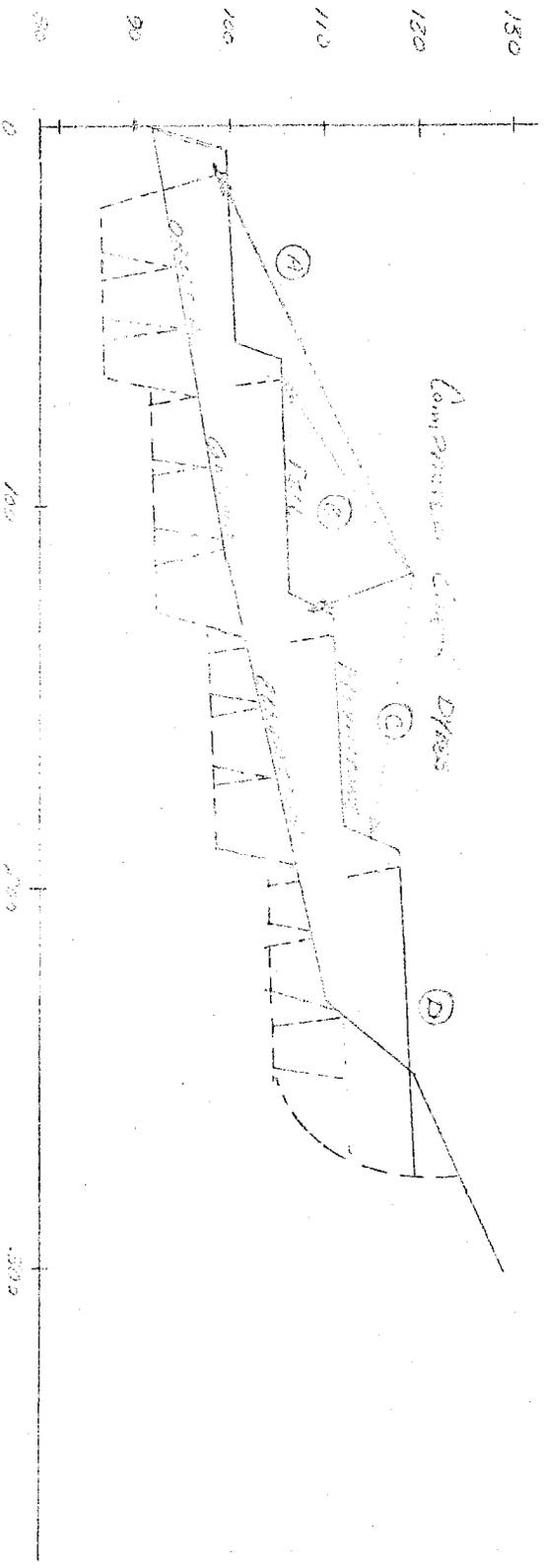
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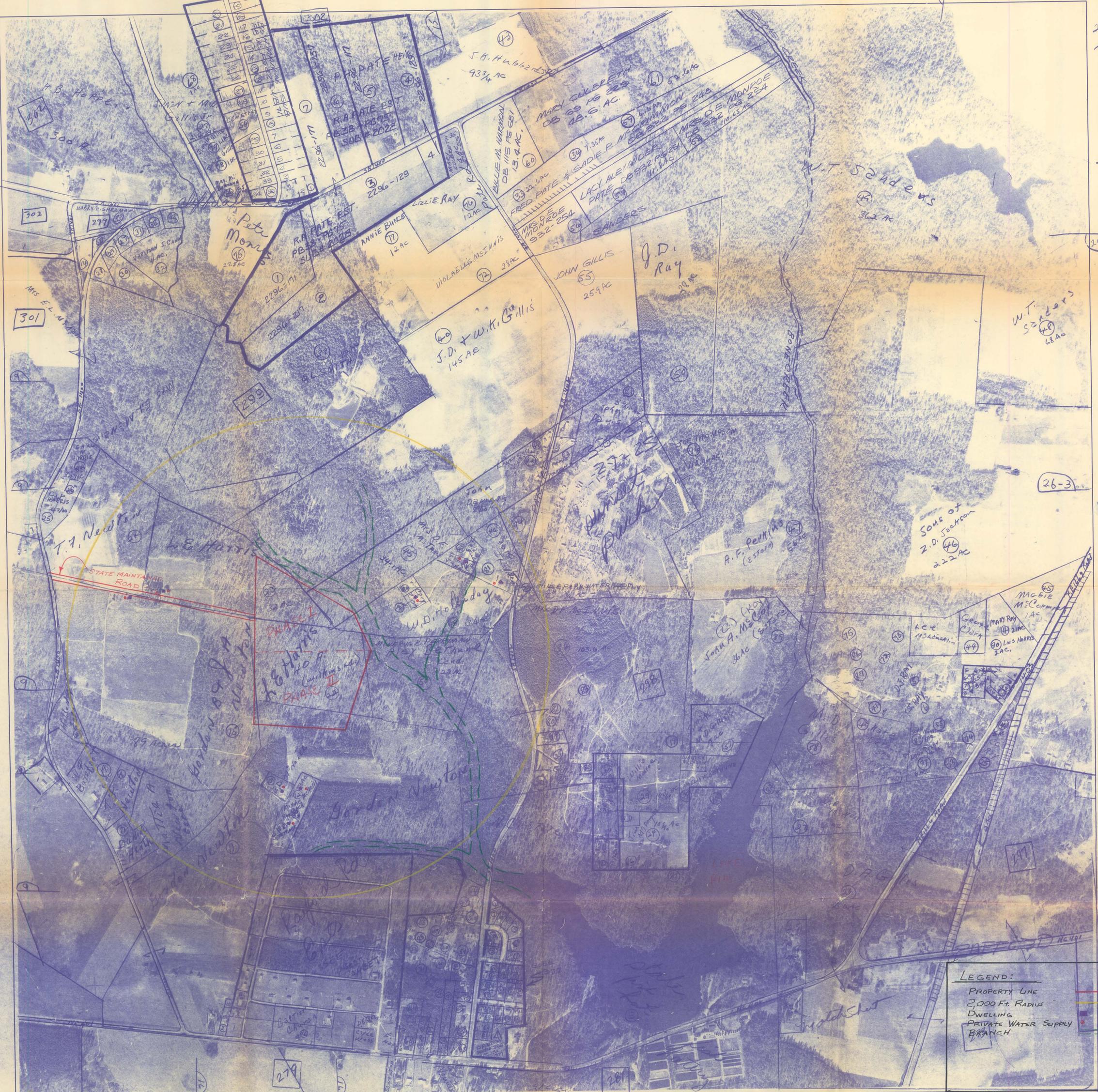
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7. Provide signs indicating regulations governing use of the sites and to direct county residents to the site.



SECTION (A)-(D)

Thickness of various conglomerates

Cross-Section of
 Profile showing
 thickness of various
 Creek Section of
 conglomerate No.
 at 100, 200, 300
 mile; 900 ft
 Scale: 1/2 inch = 100 feet



298
26-2
298
6465
26-3
26
299
30
108
80
208
12
153

LEGEND:

PROPERTY LINE	
2,000 FT. RADIUS	
DWELLING	
PRIVATE WATER SUPPLY BRANCH	

REVISIONS	DATE	APPROVED
DESCRIPTION		

AERIAL PHOTOGRAPHY
PHOTOGRAMMETRIC SERVICES INC.
 COLUMBUS, OHIO

MAP CONSULTANTS
HOWZE AND ASSOCIATES INC.
 TAMPA, FLORIDA

PROPERTY OWNERSHIP MAP
CUMBERLAND COUNTY

MAP NUMBER
 16
 SCALE 1" = 400'