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Buncombe

~~Rockingham~~

LTR

~~BUNCOMBE~~

May 4, 1977

Mr. A. D. Miles
Manager, Enka Operations
American Enka Company
Enka, North Carolina 28728

Dear Mr. Miles:

Plans for the existing landfill on American Enka Company property at Enka, North Carolina, have been reviewed and are hereby approved for continued operations with the following provisions:

1. That the operations meet the requirements of the Department of Human Resources, Division of Health Services, "Solid Waste Management Rules".
2. That the recordation documents provided be filed with the Registrar of Deeds office in Buncombe County.
3. That erosion control measures such as vegetation establishment and construction of appropriate berms be utilized to supplement the erosion control measures specified in the plan.

It was noted that treatment of surface water from the existing and past waste deposits was not specified; however, treatment of these waters may be required in the future. The existing treatment basins offer possibilities for runoff treatment prior to reaching adjacent streams. In any event, contaminated runoff attributable to the disposal site cannot be allowed.

If this office can be of further assistance, do not hesitate to call.

Yours truly,

Jerry G. Perkins, Head
Solid Waste & Vector Control Branch
Sanitary Engineering Section

JCP:bm
cc: Mr. J. W. Moore, Jr.
Mr. Al E. Parramore, Jr.

N. C. DEPARTMENT OF HUMAN RESOURCES
DIVISION OF HEALTH SERVICES
SOLID WASTE & VECTOR CONTROL BRANCH
P. O. BOX 2091
RALEIGH, NORTH CAROLINA 27602

Wake County
Raleigh, NC

ORDER OF APPROVAL
for

American Enka Company Landfill

- I. Order of Approval Issued to American Enka Company Landfill, Akzona Incorporated
on May 4, 19 77.
- II. Required information for evaluating proposed site and operational plans for a sanitary landfill on the below described property has been submitted for review in compliance with the "Solid Waste Management Rules". Those plans are hereby approved for operation with a complete set of the approved plans being returned to the applicant.
- III. Description of Property:

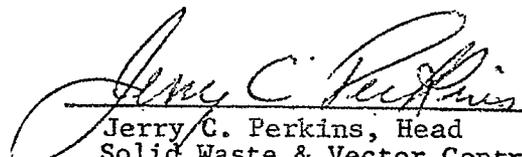
Beginning at Point A (Enka Coordinate N2864.275-E3450.00) thence N3°15'00"E525.00' to Point B thence East 880.00' to Point C thence S44°15'00"E405.00' to Point D thence S47°30'00"W625.00' to Point E thence S42°30'00"E30.00' to Point F thence S47°30'00"W565.00' to Point G thence N48°20'12"W470.04' to Point H thence N3°15'00"-E280.00' to beginning (Point A).

- IV. Effective Date: This approval is not effective until the applicant has recorded this document with the Register of Deeds in the county where the sanitary landfill is located. (G.S. 130-166.21)

This is to certify that this is an exact and true copy of the above order of approval.



Jacob Koomen, M.D., M.P.H.
Director
Division of Health Services



Jerry C. Perkins, Head
Solid Waste & Vector Control Branch
Sanitary Engineering Section

AMERICAN **ENKA** COMPANY
A PART OF AKZONA INC.

ENKA, NORTH CAROLINA 28728

PHONE: 704-667-7110

POLYESTER • NYLON • RAYON • YARNS • FIBERS

April 19, 1977

PLANTS:

Enka, N. C.
Lowland, Tenn.
Murphy, N. C.
Clemson, S. C.

SALES OFFICES:
Chattanooga, Tenn.
Enka, N. C.
Greensboro, N. C.
Los Angeles, Calif.
New York, N. Y.
Providence, R. I.



Mr. Jerry Perkins
N. C. Department of Human Resources
Division of Health Services
Sanitary Engineering Section
Solid Waste and Vector Control
P. O. Box 2091
Raleigh, North Carolina

Dear Mr. Perkins:

This confirms our telephone conversation of April 18. The reactor bottoms resemble hard tar at room temperature. The influent wastewater contains caprolactam ($\text{NH}_2(\text{CH}_2)_4 \text{CH Co}$) and finishes in addition to sanitary sewage. There are no toxic substances or heavy metals in the wastewater except 0.2 to 2.0 ppm of zinc.

We hope this information is sufficient to process the permit application. If additional information is required do not hesitate to call.

Very truly yours,

AMERICAN ENKA COMPANY

John L. Ray

John L. Ray
Environmental Engineer

JLR/ns

AMERICAN **ENKA** COMPANY
A PART OF *ALZONA* INC.

ENKA, NORTH CAROLINA 28728

PHONE: 704-667-7110

POLYESTER · NYLON · RAYON · YARNS · FIBERS

March 17, 1977

PLANTS:

Enka, N.C. 28728
Lowland, Tenn.
Murphy, N.C.
Clemson, S.C.

SALES OFFICES:
Chattanooga, Tenn.
Chicago, Ill.
Enka, N.C.
Greensboro, N.C.
New York, N.Y.
Providence, R.I.



Mr. O. W. Strickland
N. C. Dept. of Human Resources
Division of Health Services
Sanitary Engineering Section
Solid Waste and Vector Control
P. O. Box 2091
Raleigh, North Carolina

Dear Mr. Strickland:

We appreciate the information you sent us concerning landfills. Enclosed is a legal description and a topographic survey of Enka's landfill.

We hope this description is satisfactory. If additional information is required, do not hesitate to call or write.

Very truly yours,

AMERICAN ENKA COMPANY

A handwritten signature in cursive script, appearing to read "A. D. Miles".

A. D. Miles
Manager, Enka Operations

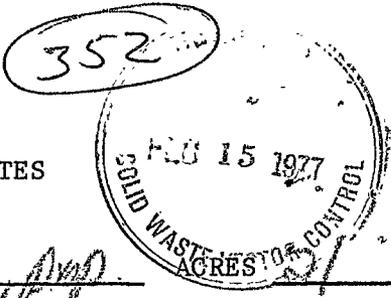
ADM/dmm

Enclosure

LEGAL DESCRIPTION OF ENKA'S LANDFILL

Beginning at Point A (Enka Coordinate N2864.275-
E3450.00) thence N3⁰15'00"E525.00' to Point B thence East
880.00' to Point C thence S44⁰15'00"E405.00' to Point D thence
547⁰30'00"W625.00' to Point E thence S42⁰30'00"E30.00' to
Point F thence S47⁰30'00"W565.00' to Point G thence N48⁰20'12"-
W470.04' to Point H thence N3⁰15'00"E280.00' to beginning
(Point A).

N. C. DEPARTMENT OF HUMAN RESOURCES
 DIVISION OF HEALTH SERVICES
 CHECK-OFF SHEET FOR PROPOSED SANITARY LANDFILL SITES



COUNTY Durham LOCATION SR American Enka Com. Prod.
 PROPERTY OWNER American Enka Company PROPOSED OPERATOR Same

1. Is this site within the boundaries of a public water supply watershed? Watershed _____ YES _____ NO
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 100' (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 Flowing Cr.
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	_____	<input checked="" type="checkbox"/>	_____
B. Location as related to population density	_____	<input checked="" type="checkbox"/>	_____
C. Accessibility to users	_____	<input checked="" type="checkbox"/>	_____
12. Based on the observations made above and otherwise, do you recommend that the requestor proceed with the requirements of Section IX of the Division of Health Services "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) Dyking to prevent surface runoff

S. WASTE -

14. Number of borings recommended for a representative sampling of the site 21 Alreedy Madec
15. Percent of usable land 90%. Include sketch of site on back of this form.

2-11-77
 (DATE)

J. W. Moore, Jr. P.E.
 Division of Health Services
 District Sanitarian for Solid Waste
 or
 Sanitary Engineer

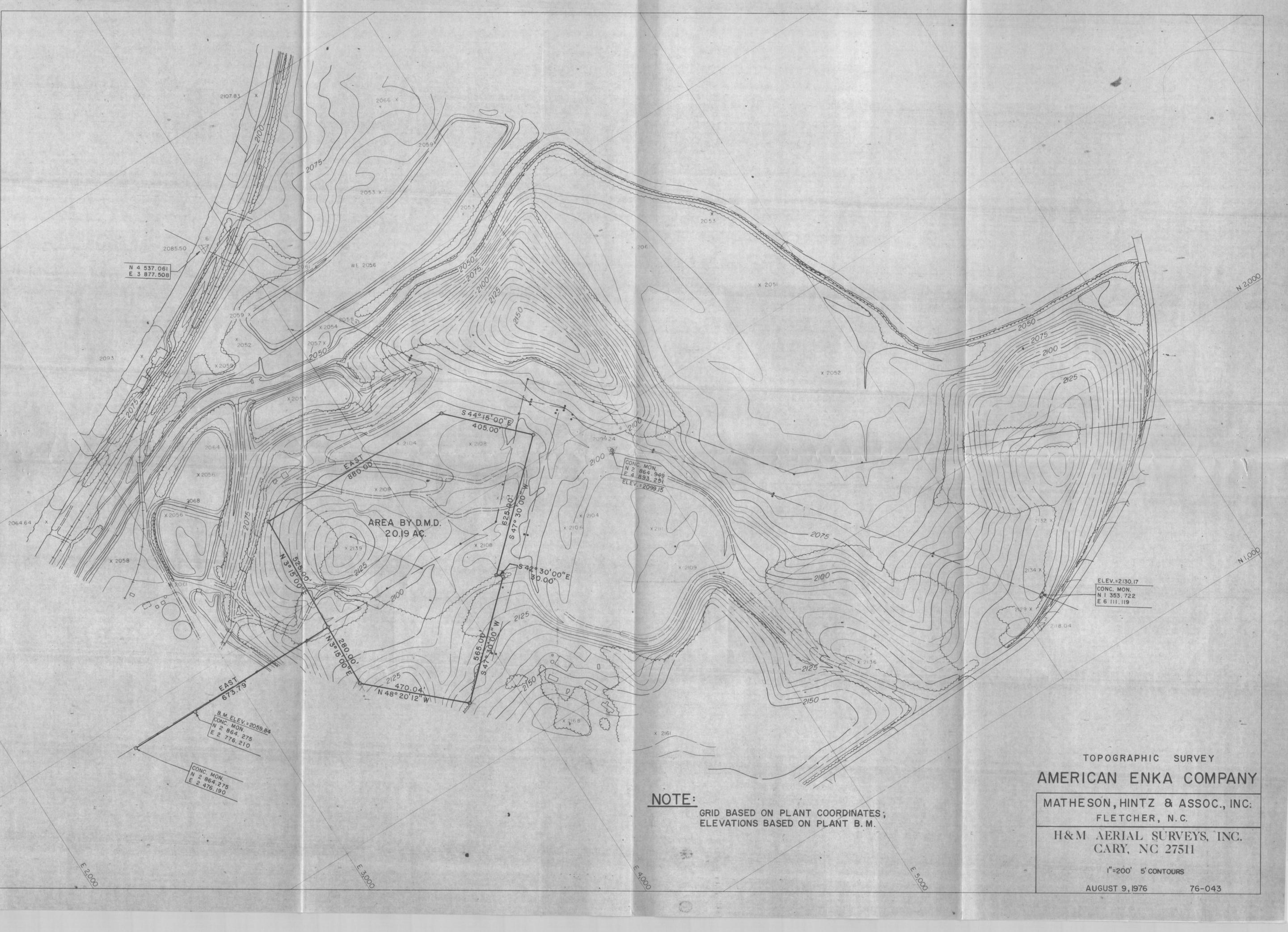


J. E. SIRRINE COMPANY

ARCHITECTS

ENGINEERS

PLANNERS



NOTE:
 GRID BASED ON PLANT COORDINATES;
 ELEVATIONS BASED ON PLANT B. M.

TOPOGRAPHIC SURVEY
AMERICAN ENKA COMPANY
 MATHESON, HINTZ & ASSOC., INC.
 FLETCHER, N. C.
 H&M AERIAL SURVEYS, INC.
 CARY, NC 27511
 1"=200' 5' CONTOURS
 AUGUST 9, 1976 76-043

INDUSTRIAL WASTE LANDFILL PERMIT REPORT

AMERICAN ENKA CORPORATION
ENKA, NORTH CAROLINA

SIRRINE JOB NO. S-1199



JANUARY 12, 1977

J. E. SIRRINE COMPANY
SOUTH CAROLINA DIVISION
ENGINEERS
GREENVILLE, SOUTH CAROLINA

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APPENDIXES

APPENDIX "A" DRAWINGS

 LOCATION MAP, DRAWING 17-1-Y-060

 PRELIMINARY SITE DEVELOPMENT, DRAWING C-17-1-Y-061

 AREA FILL TO ELEVATION 2110', DRAWING C-17-1-Y-062

 AREA FILL TO ELEVATION 2120', DRAWING C-17-1-Y-063

 AREA FILL TO ELEVATION 2130', DRAWING C-17-1-Y-064

 AREA FILL TO ELEVATION 2140', DRAWING C-17-1-Y-065

 SECTIONS, DRAWING C-17-1-Y-066

 TYPICAL CELL CONSTRUCTION, DRAWING 17-1-Y-067

APPENDIX "B" - SOIL BORING INFORMATION

APPENDIX "C" - LETTER FROM BUNCOMBE COUNTY

APPENDIX "D" - NORTH CAROLINA SOLID WASTE DISPOSAL LAW

 NORTH CAROLINA SOLID WASTE DISPOSAL REGULATIONS

APPENDIX "E" - LANDFILL LIFE CALCULATIONS

APPENDIX "F" - SOLID WASTE SURVEY DATA

I. INTRODUCTION

The Division of Health Services of the North Carolina Department of Human Resources through the adoption of "North Carolina Solid Waste Disposal Regulations" has established a permit program to enforce minimum standards for the disposal of solid waste. The purpose of this report is to present a site evaluation and operational plan for modifications to the existing American Enka Company landfill operation at Enka, North Carolina. An operational plan in accordance with Sections IX and XIV of the above regulation, is presented to petition for a variance to some of the operating procedures listed in Section XI of the above regulations. The plan is designed to insure minimum disturbance to the environment while extending the life and upgrading the operation of the existing landfill.

II. SUMMARY

The purpose of this report is to satisfy "North Carolina Solid Waste Disposal Regulations". Modifications to American Enka's existing landfill at Enka, North Carolina will extend the life of the landfill by approximately seven years. Two thousand cubic yards per week of general wastes, lactam wastes, fly ash, construction wastes, and sludges will be landfilled in a modified area fill. Four lifts with a 10' nominal depth will bring the finished elevation of the landfill to elevation 2140'.

III. MANUFACTURING FACILITIES

The American Enka Company facility is a synthetic fiber manufacturing process. Nylon 6 is manufactured by converting caprolactam to nylon fiber. Approximately 3000 people are employed at the Enka, North Carolina site.

IV. WASTE CHARACTERISTICS

The wastes produced at Enka can be classified into five general categories: general wastes; lactam wastes; fly ash; construction wastes; and sludges. Approximately 2000 cubic yards will be landfilled each week. A description of each waste follows.

A. General Wastes

Approximately 650 cu. yds. of general wastes will be placed in the landfill each week. This waste resembles domestic solid waste as it consists primarily of waste paper and small quantities of garbage from the vending machine areas.

B. Lactam Wastes - Nylon Reactor Bottoms

Approximately 110 cubic yards of lactam wastes will be placed in the landfill each week. This material is a black gelatinous material which is delivered to the landfill in open top dumpster containers. The waste is delivered to the landfill in a hot gelatinous form. The waste solidifies at 40°C. The major constituents of the waste are long chain polymers and approximately 40%

IV. WASTE CHARACTERISTICS - Continued

B. Lactam Wastes - Nylon Reactor Bottoms - Continued

phosphoric acid. The material is syrupy at 20°C.

The phosphoric acid is soluble in water and can be toxic to aquatic life at pH below 5.0. The long chain polymers are characteristically caprolactam derivatives. There could be some leachate from this mixture although no documented cases of leachate have been reported from previous landfilling operations.

C. Fly Ash

This waste is produced as a byproduct of combustion at the power plant. The majority of the material is fly ash. Bottom ash is collected in hoppers under firing chambers. Fly ash is collected by precipitators. The ash is composed on non-combustible material in the coal. Constituents may vary with different shipment of coal. Some of the more common non-combustibles are silica, carbonates, iron and sulfides. Fly ash is acceptable as a fill material and, at certain moisture contents (20-25%), the fly and bottom ash can be compacted to reduce the volum 10-15%. Fly ash entering the landfill will be used as an interim cover and as a cover extender. American Enka has successfully used fly ash for these purposes at other landfills.

A small quantity of sand from the washing of air conditioning filters will also be landfilled.

IV. WASTE CHARACTERISTICS - ContinuedD. Construction Wastes

Approximately 580 cubic yards of construction wastes entered the landfill during the week of August 9, 1976. Of course, the volume of construction wastes will vary with construction activity, but American Enka personnel have indicated that there will always be some construction at the site. Construction wastes include masonry, lumber, steel and other building materials.

E. Sludges *Each Sample (from nylon sheet)*1. Wastewater Treatment Sludge

Approximately 63 cubic yards of wastewater treatment sludge will be landfilled each week. This sludge is the waste biological sludge from the secondary waste treatment system. The sludge will be aerobically digested and mechanically dewatered before it is landfilled. Aerobic digestion will produce an odorless humus-like biologically stable end product.

2. Water Treatment Plant Sludge - Alum Sludge

Between 30 and 120 cubic yards of alum sludge will be landfilled each week, depending upon conditions in the raw water supply. The alum sludge will be mechanically dewatered on two Hendricks Screens. It has been shown that the toxicity of the run-off from the dried sludge is negligible. Once the sludge has been dried, it will not rewet or break down into colloidal particles. The sludge cracks and

See also notes on page 7.1

IV. WASTE CHARACTERISTICS - Continued

E. Sludges - Continued

2. Water Treatment Plant Sludge - Alum Sludge - Continued
assumes the appearance of freeze dried coffee when placed under water. The alum sludge will present no problem at this landfill.

V. SITE EVALUATION AND EXISTING LANDFILL OPERATION

A. General

The existing landfill is a 10 acre area northeast of the industrial complex at Enka. Drawing C-17-1-Y-060 is a location map showing the existing landfill and plant site. The landfill is located in a natural valley. The existing site is operated as a modified area landfill in that the waste is not covered daily.

The current volume of solid waste disposed of at this site is approximately 1800 cubic yards per week. Appendix "F" contains a summary of the solid waste survey conducted during the week of August 9, 1976.

The present hours of operation are from 7 A.M. to 3:30 P.M. Blowing paper is not a major problem. No noticeable ^{order} order is evident at the landfill. There is no peripheral security fencing at the landfill. However, there is controlled access to the landfill. To enter the landfill, vehicles must pass through the American Enka plant site which has security fencing and security guards.

V. SITE EVALUATION AND EXISTING LANDFILL OPERATION - Continued

A. General - Continued

American Enka owns and operates a Model 175 International front end loader at the landfill site. This piece of equipment is used for compaction and for covering the landfill material. It is also used to excavate cover material for the waste. Enka has recently purchased an International TD-20 Bulldozer, a 12 cubic yard dump truck, and an International H-65 Payloader expressly for use in the landfill.

Several power lines are located near the landfill site. Two CP&L transmission lines border the existing landfill. Drawing C-17-1-Y-061 shows these existing lines. The landfill borders the 100 ft. right-of-way for these transmission lines. The American Enka Company has erected a power transmission line from the main plant site, across a portion of the landfill and to a pumping station on the French Broad River.

Current side slopes at the landfill are acceptable. One area which will require some earthwork renovation is the natural slope of the ravine near boring hole F 3.5. According to the United States Environmental Protection Agency suggestions, landfill side slopes should not exceed 25%.

The landfill site is not equipped with a toilet or washing facilities. There is no area lighting at the landfill site. There is not a telephone installed. In case of fire, the American Enka Plant fire fighting equipment is cable of extinguishing it.

V. SITE EVALUATION AND EXISTING LANDFILL OPERATION - Continued

B. Cover Material

Cover material is excavated adjacent to the landfill. It is hauled to the active cell in a 1.5 ton flat bed dump truck. This vehicle is also used to transport wastes to the landfill. Cover is not stockpiled at the landfill site because of the proximity of the landfill to the borrow area.

A geologic and soils investigation of the landfill area was conducted by Law Engineering Testing Company, Charlotte, North Carolina in September, 1974. A copy of the subsurface investigation is included in Appendix "B". Generally, the virgin soils in the area are clayey silts and sandy silts with varying amounts of mica present. These soil mixtures will act as a very acceptable cover material for a landfill site. Large deposits of cover material are available on the east hillside (boring holes B-3, C-3 and C-4) and the west hillside (boring holes F-1, G-2, H-2 and H-3).

C. Drainage

During the period July-October, 1974, there were no reports of leachate reaching the landfill surface. The last report of leaching coincided with the landfilling of the viscose pit bottoms in the spring of 1974. No samples of the leachate were taken. Leachate appeared near the boring hole F-3.5, just at the top of the natural ravine. Since then, the manufacturing process responsible

V. SITE EVALUATION AND EXISTING LANDFILL OPERATION - Continued

C. Drainage - Continued

for the viscose pit bottom wastes has been abandoned. No sub-surface drainage system is currently installed.

Groundwater pollution is possible at the landfill site from previously placed waste. An underground stream once surfaced near boring hole C-1. This stream flowed down the natural ravine towards boring hole E-4. The previous landfill operations were concentrated in the ravine which was formed by the surfacing of the underground spring. During the last approximately 40 years, solid waste has been deposited over the stream bed to depth perhaps as great as 40'. There is direct contact between the groundwater table and the solid waste in an area bounded by boring holes C-1, D-2, D-3 and E-2.

Surface water flows towards the wastewater lagoons and Hominy Creek. There is no surface water collection system installed. Some water does stand on the landfill surface after rainfall; however, the amount is limited since the majority of the surface water drains off the landfill.

VII SITE DEVELOPMENT PLAN

The existing site will be renovated and expanded to provide for seven more years of useable life. Earth excavated from the western and eastern hilltops and fly ash will be used for cover during the life of the landfill. When on site cover is exhausted the landfill may be developed further by importing cover. Or Enka

VI. SITE DEVELOPMENT PLAN - Continued

may develop a new landfill at another site. This site development plan assumes that Enka will develop a new site when it becomes necessary to import cover to the existing site.

The site Development Plan can be outlined in the following six stages:

- A. Preliminary Site Development
- B. Gully Fill To Elevation 2100'
- C. Area Fill To Elevation 2110'
- D. Area Fill To Elevation 2120'
- E. Area Fill To Elevation 2130'
- F. Area Fill to Elevation 2140'

A. Preliminary Site Development

In order to extend the life of the existing site and to provide for its orderly operation, some preliminary site development work is required.

1. Approximately 2700' of existing power line that supplies the incinerator on the north western boundary of the landfill and the river water pump station must be relocated. The suggested new location is shown on Drawing C-17-1-&-061. The relocation allows expansion of the landfill beyond its previous border, the power line right-of-way.
2. A stockpile area of 6.9 acres should be established at the location shown on Drawing C-17-1-Y-061. This is a level, fill area designated as a possible future plant expansion

VI. SITE DEVELOPMENT PLAN - Continued

A. Preliminary Site Development - Continued

2. Continued

site. Stock piled materials should be seeded to prevent erosion, loss of material and sediment transport.

3. The expanded fill area should be cleared and grubbed before waste can be placed or cover excavated.

4. As much as possible of the clay from the waste treatment plant construction that is now in the existing landfill should be scavenged and stockpiled separately. This is high quality clay that may be used as future, special needs arise.

5. The existing western hill should be excavated down to elevation 2110' as indicated on Drawing C-17-1-Y-061. Most of the excavated material should be hauled to the stockpile area. As the landfill develops cover from the eastern hill will also be used but this material need not be moved to the stock pile area. It appears from soils information that all of the material above elevation 2110' is good cover material. If extensive rock is encountered, then the excavation of the hill should proceed only down to the rock.

6. Landfill access and haul roads should be established as shown on Drawing C-17-1-Y-061. The 30' wide roads should be of all weather construction, protected from washout by swales

VI. SITE DEVELOPMENT PLAN - ContinuedA. Preliminary Site Development - Continued

6. - Continued

on the upland side of the roads and storm culverts. The slope of both roads should not exceed 10:1. Loaded trucks cannot climb slopes much greater than 10:1. The existing all weather access road to the north of the landfill will be maintained for bull dozer and payloader access. Truck traffic on the existing access road will be abandoned.

7. A fenced and lighted equipment security area will be provided at the location shown on Drawing C-17-Y-061. This area should reduce the equipment vandalism experienced in the past.

8. Three groundwater sample wells will be located as shown on drawing C-17-Y-061. If required, sample analyses and frequency will be as per the direction of the State.

B. Gully Fill to Elevation 2100 ft.

At the westernmost portion of the proposed fill is a small gully that should be filled to elevation 2100' immediately after the preliminary work is completed. Approximately one week of solid waste can be landfilled in this gully at the design waste loading. The gully is shown on Drawing C-17-1-Y-061. The gully fill should proceed as follows.

1. A berm should be constructed along the western perimeter of the gully. The top of the berm should be at elevation 2100'. The berm should have an 8' wide crown, 4:1 outside and 3:1 inside slopes. It should be constructed of earth only.

VI. SITE DEVELOPMENT PLAN - Continued

B. Gully Fill To Elevation 2100 ft.

1. - Continued

The outside slope of the berm should be seeded as soon as possible to discourage erosion. The berm will have a varying cross section and height due to the difference in elevation across the gully.

2. The existing haul road can be used to transport solid waste to the gully.

3. The existing culvert that drains the gully should be kept open until the gully fill is completed. It may be necessary to add a section of pipe to keep the culvert open.

4. Solid waste should be placed and compacted in the gully and covered with approximately 1' of material excavated from the western hill.

5. Although the amount of solid waste that can be landfilled in this gully is small, development of the gully serves to increase the area, and thereby the volume, of succeeding lifts.

C. Area Fill to Elevation 2110 ft.

The entire site should be brought up to elevation 2110' by means of a shallow area fill. Approximately 14 months of solid waste can be landfilled in this lift at the design waste loading. The elevation varies over the existing site, so a varying cell depth will be required to bring the entire site to elevation

VI. SITE DEVELOPMENT PLAN - Continued

C. Area Fill to Elevation 2110 ft. - Continued

2110'. The finished surface of the lift should be slightly crowned in the center to prevent ponding on the lift. The finished lift is shown on Drawing C-17-1-Y-062. Lift construction should proceed as follows.

1. A berm should be constructed along the perimeter of the landfill. The top of the berm should be at elevation 2110'. The berm should have an 8' wide crown, 4:1 outside and 3:1 inside slopes. The berm should be constructed of earth only. The outside slope of the berm should be seeded as soon as possible after construction to discourage erosion. A shallow ditch should be constructed along the inside toe of the berm. The simplest type of ditch is isosceles triangle ditching. This can easily be done with a bulldozer blade. Surface water should flow off the surface of the landfill to the ditch at the toe of the berm. The ditch should direct water away from the body of the fill, to ditching along the access road, haul road and equipment access road, through new 30" diameter culverts under the roads and out away from the landfill. A detail of a typical ditch section is shown on Drawing C-17-1-Y-061.
2. An area fill of varying depth should be used to bring the entire lift up to elevation 2110', even with the top of the berm. Solid waste is to be emptied from the dumpsters,

VI. SITE DEVELOPMENT PLAN - Continued

C. Area Fill to Elevation 2110 ft. - Continued

2. - Continued

placed, and compacted by a bulldozer. Approximately 1' of cover should be placed on the compacted solid waste. A daily cover of 6" of fly ash should be followed with a 6" earth or mixed earth and fly ash cover, periodically as required.

3. It may be more convenient to construct the berm and the lift together, rather than to construct the entire berm first. In that case, the operator should pay special attention to maintaining 2110' elevation on the top of the berm, maintaining the outside slope of 4:1, seeding the outside slope as soon as possible, and maintaining the drainage ditches.

D. Area Fill to Elevation 2120 ft.

The entire site should be brought up to elevation 2120' by a 10' deep area fill on top of the previously prepared base table at elevation 2110'. Approximately 30 months of solid waste can be landfilled in this second lift. As before, the finished surface should be crowned. Lift construction should proceed as follows.

1. The access road and haul road should be extended as shown on Drawing C-17-1-Y-063 to allow solid waste and cover

VI. SITE DEVELOPMENT PLAN - ContinuedD. Area Fill to Elevation 2120 ft. - Continued

1. - Continued

to be deposited on top of the recently completed lift at elevation 2110'.

2. A perimeter berm should be constructed. The top of the berm should be at elevation 2120'. It should be similar in construction to the previous berms. A drainage ditch should be provided at the inside toe of this berm as was done previously.

3. Lift construction will proceed from northeast to southwest within the perimeter berm. Solid waste will be carried to the base of the working face by truck. Each day's solid waste will be compacted into a cell and covered with 1' of cover. As before, the cover can be interim cover of 6" fly ash followed periodically with 6" of earth or earth and fly ash mixture. It is expected that each cell will be approximately 10' deep by 50' wide by 100' long.

E. Area Fill to Elevation 2130 ft.

The entire site should be brought up to elevation 2130' by a 10' deep area fill. Approximately 21 months of solid waste can be landfilled in this lift. As before, the finished surface should be crowned. Lift construction should proceed as follows.

VI. SITE DEVELOPMENT PLAN - Continued

E. Area Fill to Elevation 2130 ft. - Continued

1. The access road and haul roads should be extended as shown on Drawing C-17-1-Y-064 to allow solid waste and cover to be deposited on top of the recently completed lift at elevation 2120'. It is important to maintain a slope less than 10:1 on these roads.
2. A perimeter berm should be constructed. The top of the berm should be at elevation 2130'. It should be similar in construction to the previous berms. A drainage ditch should be provided at the inside toe of the berm as was done previously.
3. Lift construction should be similar to that outlined for the second lift.

F. Area Fill to Elevation 2140 ft.

The entire site should be brought up to elevation 2140' by a 10' deep area fill. Approximately 17 months of solid waste can be landfilled in this, the final lift. The life of the landfill can be extended by filling above elevation 2140'. However, additional cover material must be borrowed from another area to develop the landfill above 2140'. As before, the finished surface should be crowned. Lift construction should proceed as follows.

1. The access road and haul should be extended as shown on Drawing C-17-1-Y-065 to allow solid waste and cover to be

VI. SITE DEVELOPMENT PLAN - Continued

F. Area Fill to Elevation 2140 ft. - Continued

1. - Continued

deposited on top of the recently completed lift at elevation 2130'.

2. A perimeter berm should be constructed. The top of the berm should be at elevation 2140'. It should be similar in construction to the previous four berms. A drainage ditch should be provided at the inside toe of the berm.

3. Lift construction will proceed from northeast to southwest within the perimeter berm. It is expected that each cell will be approximately 10' deep by 50' wide by 100' long. Since this is the final lift of the landfill, the cover should be 2' deep instead of 1' deep as was used on previous lifts.

4. As the final lift progresses it should be seeded as required by North Carolina regulations (See Appendix "D"). Before removing the bulldozer and Payloader from the site, state approval of the finished landfill must be obtained.

VII. OPERATIONAL PLANS

A. Normal Operation

The landfill will be operated on a five day week basis.

Actual operation of the landfill will occur between the hours of 7 A.M. and 3:30 P.M. The landfill supervisor will direct transporting

VII. OPERATIONAL PLANS - Continued

A. Normal Operation - Continued

vehicles to the proper area of the landfill. This is an important aspect of the orderly development of the site.

The most important influence on the operation of any landfill is the supervisor. His conscientious attention to, and understanding of the landfill will insure its proper operation. Lack of conscientious attention or understanding will result in a deterioration of the landfill. Changing or unforeseen conditions are especially demanding on the supervisor.

After wastes are placed in their designated area, they will be compacted in place by landfill equipment. Fly ash will be used as an interim cover material. The cells will be covered with soil no less than once weekly. It is imperative that the cover periods do not exceed this schedule because of possible surface runoff problems.

It is expected that sludges will be received in a landfillable state. They will be spread over the working face by bulldozer. The sludges will be mechanically dewatered prior to landfilling.

Lactam wastes will be placed in a shallow diked area at the base of previously completed cells. After cooling and solidifying the lactam will be covered. New cells will be developed over the covered and solidified lactam wastes.

Drawing 17-1-Y-067 is a stylized view of typical cell construction.

VII. OPERATIONAL PLANS - Continued

A. Normal Operation - Continued

It may be convenient to establish a small stockpile closer to the working face than the designated stockpile area. The supervisor can best determine after startup whether or not a small weekly or monthly stockpile would improve operations.

B. Inclement Weather Operation

There will be no problem operating during periods of inclement weather. The landfill is served by an all-weather road from the plant site. However, it is unlikely that the trucks hauling solid waste will be able to travel across the surface of the fill when it is wet. During wet weather the access road should be extended to the general area of the working face by using compacted fly ash for a temporary road. This road will be covered over as the working face of the fill progresses. Compaction and cover of the solid waste by the bulldozer should continue as during dry weather operation.

All sludges will be landfilled during dry weather whenever possible. However, if this is not possible, sludge will be spread in thin layers (approximately 6 inches) and will be covered as soon as possible.

VIII. EQUIPMENT REQUIREMENTS

To properly operate the proposed sanitary landfill, a new International TD-20 bulldozer will be used. The bulldozer

VIII. EQUIPMENT REQUIREMENTS - Continued

is outfitted to operate in a sanitary landfill. The bulldozer will provide adequate compaction for the wastes and it is extremely versatile in excavating and moving cover material. This bulldozer in tandem with the International Model 175 front end loader currently operating at the landfill and the new International Model H-65 Pay-loader will be adequate for operating the landfill proposed in this report.

It is inevitable that some of the equipment will be inoperative because of mechanical failure. An equipment contingency plan for operation of the landfill is as follows:

- A. If the bulldozer is inoperable, the new front end loader will compact and cover the wastes. Since sufficient cover material will be available at all times because of the nature of the landfill, there will be no loss of efficiency in operating the landfill with a single piece of equipment for short periods of time.
- B. If the new front end loader is not in service, the old Model 175 will handle the operation of the landfill.
- C. If equipment is out of order for more than two weeks, a bulldozer or a front end loader owned by American Enka at the Enka, North Carolina plant will be dispatched to the landfill on a need basis.

IX. PERSONNEL REQUIREMENTS

Three full time people will be provided to operate the solid

IX. PERSONNEL REQUIREMENTS - Continued

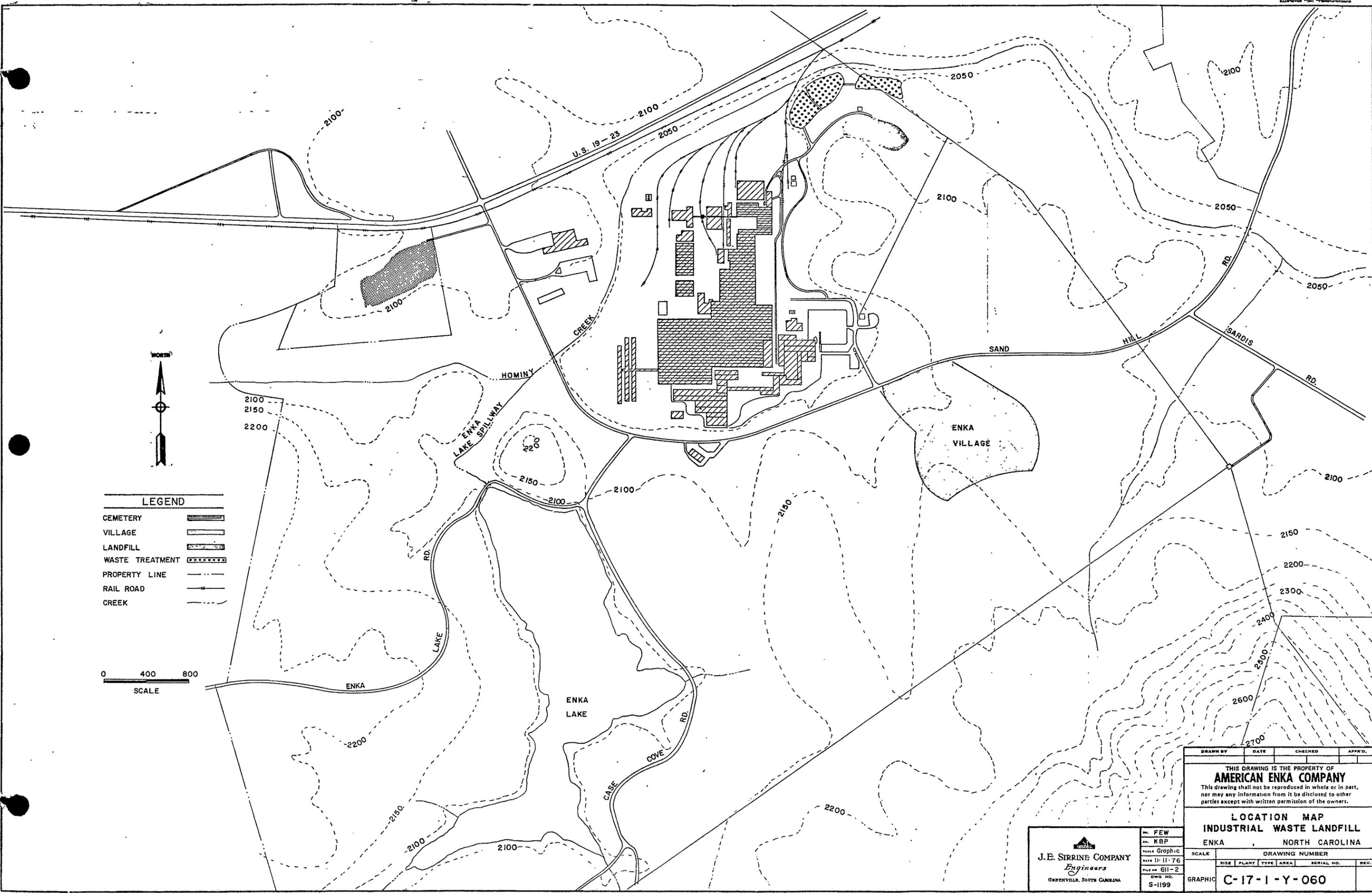
waste disposal system. The personnel consist of a part time supervisor and three equipment operators. All men should be proficient in operating all equipment (bulldozer, loader and truck) so that in case of absence the operation of the landfill could continue without interruption.

The landfill supervisor should be experienced in the proper operation of an industrial landfill.

Mr. John Ray of American Enka Company should be contacted with any questions concerning the operation of the expanded landfill.

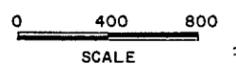
XI. CONCLUSIONS

A thorough analysis of the present landfill site has indicated that the site has approximately seven years of life remaining. The extension of the present landfill is dependent on proper care in daily operation of the site. The site design and the operational plans outlined in this report will insure both maximum site utilization and compliance with all local and state solid waste disposal requirements. Renovation of this land will commence immediately following approval by the North Carolina State Board of Health.



LEGEND

CEMETERY	
VILLAGE	
LANDFILL	
WASTE TREATMENT	
PROPERTY LINE	
RAIL ROAD	
CREEK	



J.E. SIRRINE COMPANY
Engineers
 GREENVILLE, SOUTH CAROLINA

BY: FEW
 BY: KBP
 SCALE: Graphic
 DATE: 11-76
 FILE NO: 611-2
 DWG NO.: S-1199

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LOCATION MAP INDUSTRIAL WASTE LANDFILL ENKA, NORTH CAROLINA			
SCALE	DRAWING NUMBER		
GRAPHIC	SIZE	PLANT TYPE	AREA SERIAL NO. REV.
			C-17-1-Y-060

TOLERANCES UNLESS OTHERWISE SPECIFIED ARE:
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0 100' 200' 400'
 SCALE

J.E. SIRRINE COMPANY
Engineers
 GREENVILLE, SOUTH CAROLINA

DR. FEW
 IN. K.B.P.
 GRAPHIC
 DATE 11-11-76
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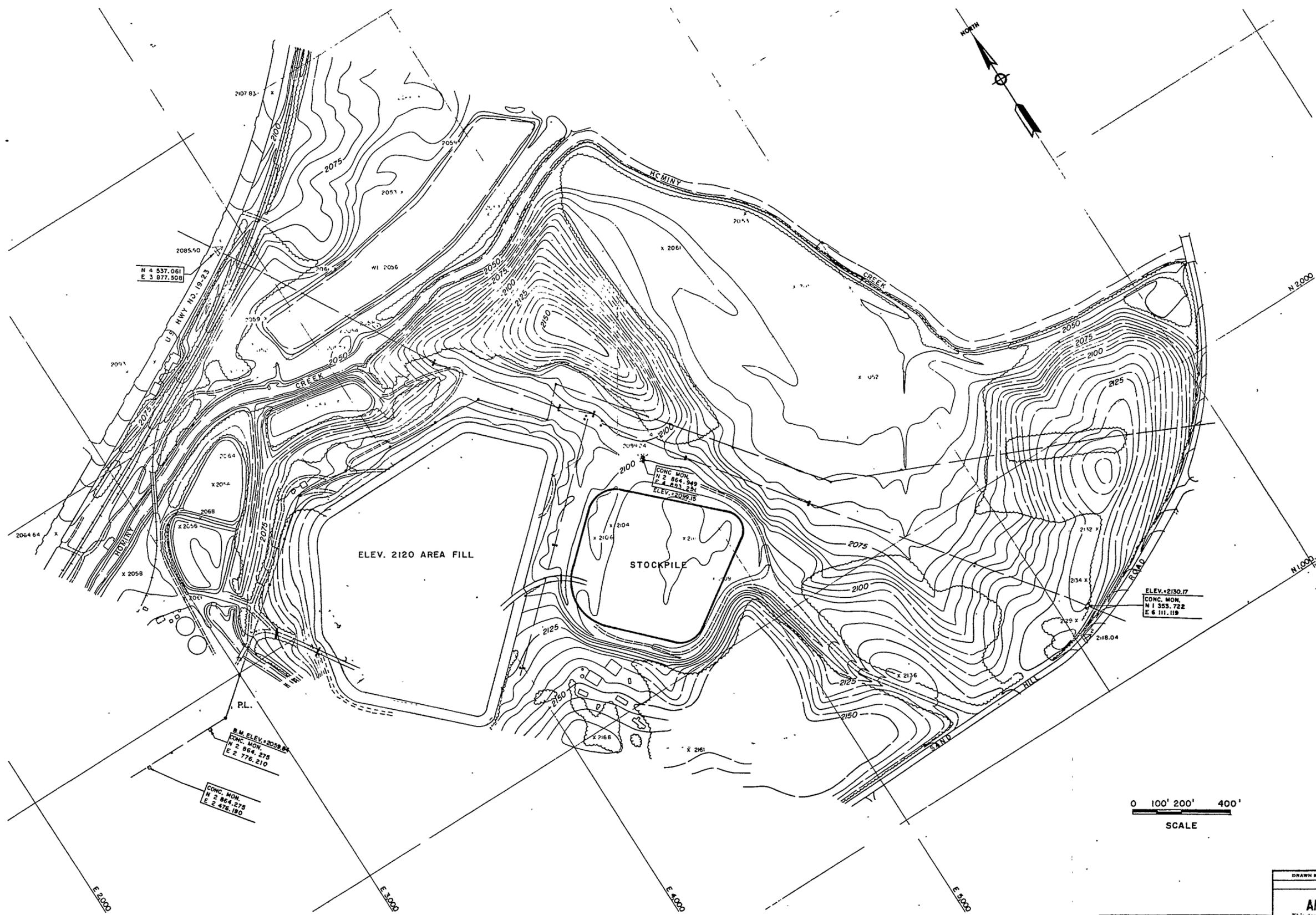
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**AREA FILL TO ELEVATION 2110'
 INDUSTRIAL WASTE LANDFILL**
 ENKA, NORTH CAROLINA

SCALE	DRAWING NUMBER
GRAPHIC	C-17-1-Y-062

REV.	DATE	BY	CHKD.	DESCRIPTION
12				
11				
10				
9				
8				
7				
6				
5				
4				
3				
2				
1				

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BY: FEW
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AREA FILL TO ELEVATION 2120' INDUSTRIAL WASTE LANDFILL			
ENKA		NORTH CAROLINA	

SCALE	DRAWING NUMBER		
GRAPHIC	SIZE	PLANT	TYPIST
			AREA
			SERIAL NO.
			REV.

C-17-1-Y-063

REVISED	BY	DATE	DESCRIPTION
12			
11			
10			
9			
8			
7			
6			
5			
4			
3			
2			
1			

TOLERANCES UNLESS OTHERWISE SPECIFIED ARE:
 FRACTIONS DECIMALS ANGLES
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0 100' 200' 400'
 SCALE

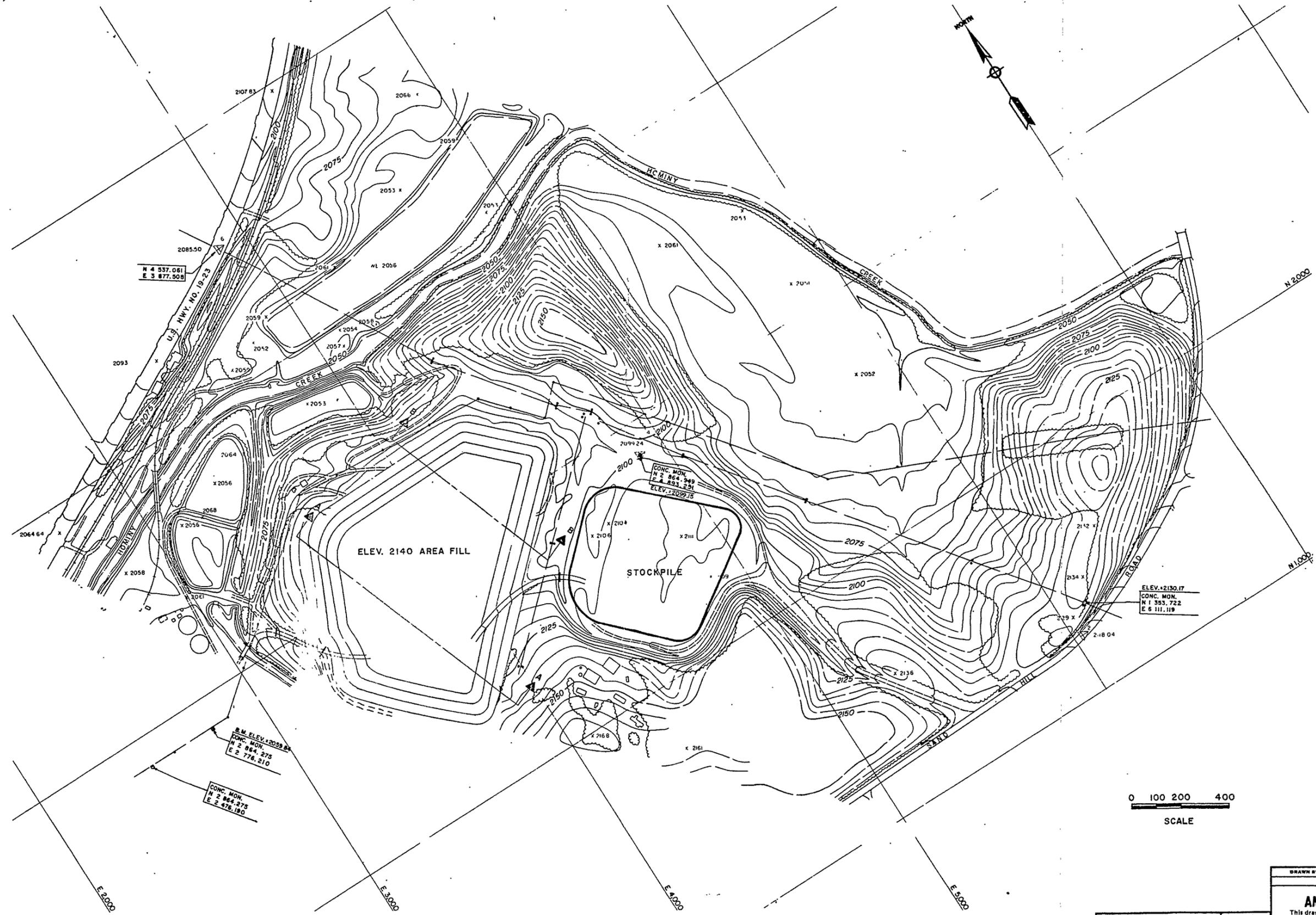
J.E. SIRRINE COMPANY
 Engineers
 GREENVILLE, SOUTH CAROLINA

ENR. FEW
 ENR. KBP
 SCALE: Graphic
 DATE: 11-11-76
 FILE NO.: 611-2
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AREA FILL TO ELEVATION 2130'		INDUSTRIAL WASTE LANDFILL	
ENKA		NORTH CAROLINA	
SCALE	DRAWING NUMBER		
GRAPHIC	SIZE	PLANT	TYPE AREA SERIAL NO. REV.
			C-17-1-Y-064

REV. NO.	DATE	BY	DESCRIPTION
1			
2			
3			
4			
5			
6			
7			
8			

TOLERANCES UNLESS OTHERWISE SPECIFIED ARE:
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0 100 200 400
 SCALE

J.E. SIRRINE COMPANY
Engineers
 GREENVILLE, SOUTH CAROLINA

BY: FEW
 CHK: KBP
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**AREA FILL TO ELEVATION 2140'
 INDUSTRIAL WASTE LANDFILL**
 ENKA, NORTH CAROLINA

NO.	DATE	BY	CHKD.	APP'D.

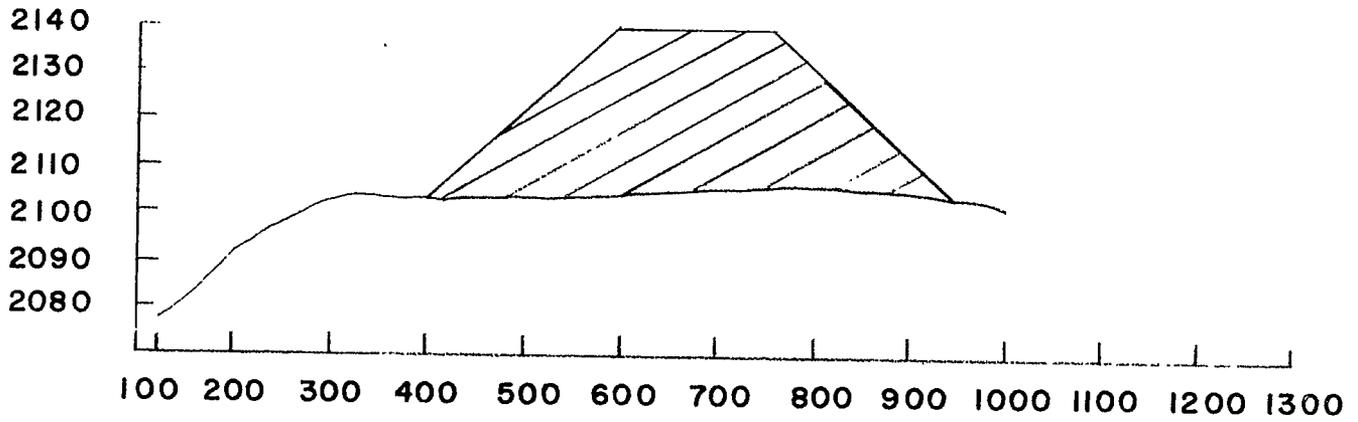
NO.	DATE	BY	CHKD.	APP'D.

NO.	DATE	BY	CHKD.	APP'D.

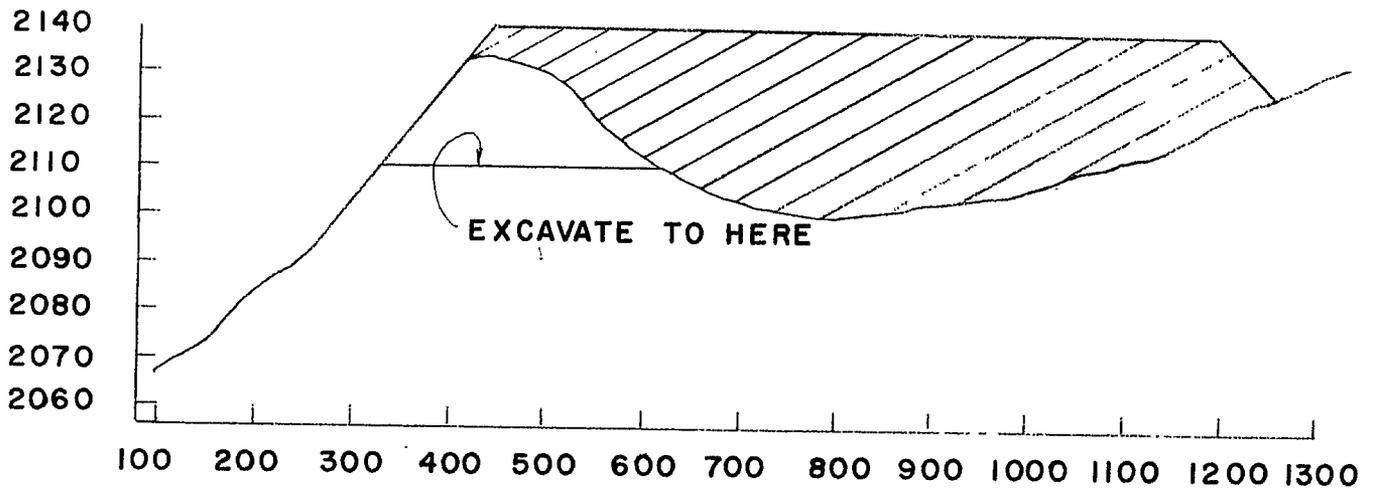
NO.	DATE	BY	CHKD.	APP'D.

NO.	DATE	BY	CHKD.	APP'D.

SCALE	DRAWING NUMBER
GRAPHIC	C-17-1-Y-065



SECTION B-B



SECTION A-A

SECTIONS

AMERICAN ENKA COMPANY

ENKA

N.C.



J.E. SIRRINE COMPANY

Engineers

GREENVILLE, SOUTH CAROLINA

DR. FEW

CH. KBP

SCALE

DATE 11-11-76

FILE NO. 611-2

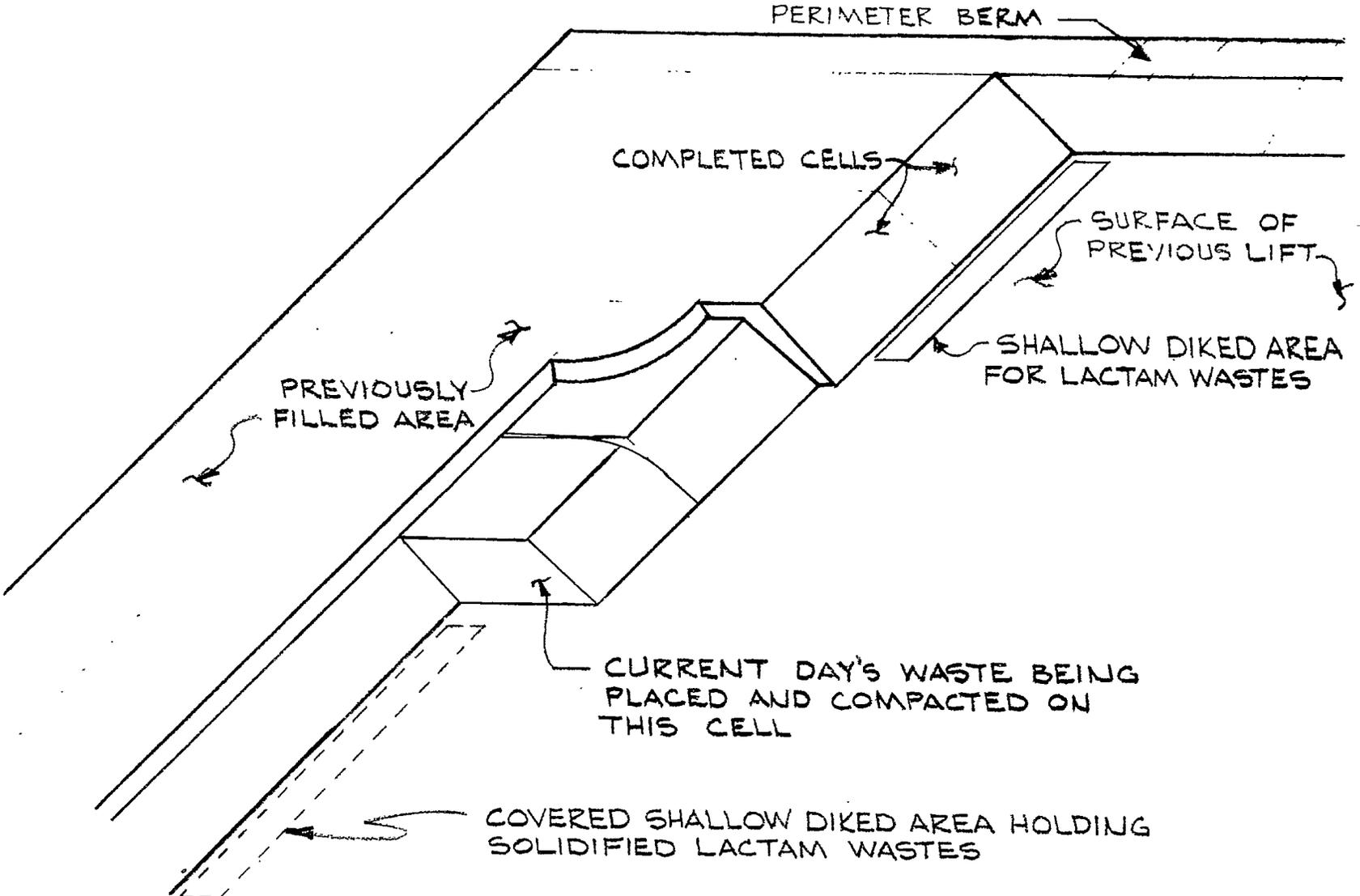
DWG. NO.

17-1-Y-066

TYPICAL CELL CONSTRUCTION
AMERICAN ENKA COMPANY
ENKA, N.C.

J.E. SIRRINE COMPANY
Engineers
GREENVILLE, SOUTH CAROLINA

DR. J.L.D.
CH. K.B.P.
SCALE NONE
DATE 10-1-76
FILE NO.
DWG. NO.
17-1-Y-067



NOTE: PYLONS CAN BE PLACED IN FRONT OF THE CURRENT DAY'S CELL TO DIRECT TRUCKS TO THE CORRECT AREA.

DEPTH
0 FT.

DESCRIPTION

ELEV • PENETRATION-SLOWS PER FT.

2103.6 10 20 30 40 60 80 100

1.0	Topsoil																			
	Red Fine to Medium Sandy Clayey Silt Estimated 25-30 Blows Per Foot	2098.1																		
6.0	Brown Fine to Medium Sandy Silt With Gravel	2093.1																		
12.0	Brown Micaceous Silt	2088.1																		
		2083.1																		
		2078.1																		
30.0	Boring Terminated At 30.0 ft Groundwater At 16.5 ft At Time Of Boring Groundwater At 11.5 ft After 24 Hours	2073.1																		

TEST BORING RECORD

BORING AND SAMPLING METHODS ASTM D-1586
CORE BORING AND LOGS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. LB. SAMPLER 1 FT.

UNDISTURBED SAMPLE

WATER TABLE, 24 HR.

WATER TABLE, 1 HR.

BORING NO. B-2

DATE DRILLED 9-12-74

JOB NO. CH 1944A

DEPTH
FT.

DESCRIPTION

ELEV

• PENETRATION-BLOWS PER FT.

2104.3

10 20 30 40 50 60 70 100

1.5

Topsoil

Brown Red Slightly Micaceous Clayey
Silt
Estimated 30-35 Blows Per Foot

2099.3

2094.3

2089.3

18.0

Brown Micaceous Fine Sandy Silt
Estimated 15-20 Blows Per Foot

2084.3

2079.3

30.0

Boring Terminated At 30.0 ft
Groundwater At 24.0 ft After 24 Hours

2074.3

TEST BORING RECORD

BORING AND SAMPLING DEVICES ASTM D-1586
CORE DEVICES ASTM D-3112

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. DISTANCE TO DRIVE 1.6 IN. L.S. SAMPLER 1 FT.

BORING NO. B-3

DATE DRILLED 9-12-74

JOB NO. CH 1944A

 UNDISTURBED SAMPLE

 WATER TABLE, 25 ML.

 WATER TABLE, 1 ML.

 LOST OR POOR CORE RECOVERY

 LOSS OF DRILLING WATER

LAW ENGINEERING TESTING CO.

DEPTH
0 FT.

DESCRIPTION

ELEV • PENETRATION-BLOWS PER FT.

2098.9 10 20 30 40 50 60 70 80 90 100

0	Red Fine Sandy Clayey Silt	2093.9																		
6.0	Pink Micaceous Fine Sandy Silt	2088.9																		
11.0	Brown Micaceous Fine Sandy Silt With Gravel Estimated 10 Blows Per Foot	2083.9																		
21.0	Brown Micaceous Fine Sandy Silt Estimated 20-30 Blows Per Foot	2078.9																		
		2073.9																		
		2068.9																		
		2063.9																		
40.0		2058.9																		

TEST BORING RECORD

Page 1 of 2

BORING NO. C-1

DATE DRILLED 9-11-74

JOB NO. CH 1944A

BORING AND SAMPLING METHODS ASTM D-1586

COLE BORELOGS MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 143 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.5 IN. DIA. SAMPLER 1 FT.

 UNDISTURBED SAMPLE

 WATER TABLE, 24 IN.

 WATER TABLE, 1 IN.

 ROCK CORE PROPERTY

 LOSS OF LUBRICATING WATER

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	ELEV • PENETRATION-BLOWS PER FT.						
		2058.90	10	20	30	40	50	60
40.0	Brown Micaceous Fine Sandy Silt Estimated 20-30 Blows Per Foot	2058.90						
		2053.9						
		2048.9						
		2043.9						
		2038.9						
		2033.9						
70.0	Boring Terminated At 70.0 ft Groundwater At 8.0 ft At Time Of Boring Groundwater AT 7.0 ft After 24 Hours	2028.9						

TEST BORING RECORD

Page 2 of 2

BORING NO. C-1

DATE DRILLED 9-11-74

JOB NO. CH 1944A

BOHRING AND SAMPLES MADE AFTER D-1506
CORE LOGS MADE AFTER D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. STANDARD
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. LB. SAMPLER 1 FT.

 UNDISTURBED SAMPLE

 WATER TABLE, 36 IN.

 WATER TABLE, 1 IN.

 % ROCK CORE RECOVERY

 LEVEL OF BENCH WATER

LAW ENGINEERING TESTING CO.

DEPTH
0 FT.

DESCRIPTION

ELEV

• PENETRATION-BLOWS PER FT.

2102.6

10 20 30 40 50 60 70 80 90 100

3.0	Fill Gray Black Ash and Clayey Silt																				
5.0	Brown Red Micaceous Fine Sandy Clayey Silt	2097.1																			
7.0	Gravel Layer																				
8.0	Brown Micaceous Fine Sandy Silt																				
	Gravel Layer																				
11.0	Brown Micaceous Fine Sandy Silt	2092.1																			
22.0																					
23.0	Gravel Layer																				
	Brown Micaceous Fine Sandy Silt	2077.1																			
30.0																					
	Boring Terminated At 30.0 ft	2072.1																			
	Groundwater At 19.0 ft At Time Of Boring																				
	Groundwater At 10.5 ft After 24 Hours																				

TEST BORING RECORD

BORING AND SAMPLING METHODS ASTM D-1586
 CORE DRILLING METHODS ASTM D-3113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. LB. SAMPLER 1 FT.

BORING NO. C-2
 DATE DRILLED 9-12-74
 JOB NO. CH 1944A

 UNDISTURBED SAMPLE
 WATER TABLE, 24 IN.
 WATER TABLE, 1 IN.
 100% OF FLOWING WATER

DEPTH
FT.

DESCRIPTION

ELSV • PENETRATION-BLOWS PER FT.

0
6"

2115.1 10 20 30 40 50 60 100

Topsoil
Red Micaceous Fine to Medium Sandy
Clayey Silt
Estimated 30-35 Blows Per Foot

2110.1

2105.1

2100.1

16.0

Brown Micaceous Fine to Medium Sandy
Silt
Estimated 20 Blows Per Foot

2095.1

2090.1

30.0

Boring Terminated At 30.0 ft
No Groundwater Encountered

2085.1

TEST BORING RECORD

SOILS AND SAMPLING METHODS ASTM D-1586
CORE RECORDING METHODS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 100 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. D. SAMPLER 1 FT.

 UNDISTURBED SAMPLE

 WATER TABLE, 24 HR.
 WATER TABLE, 1 HR.

BORING NO. C-3

DATE DRILLED 9-12-74

JOB NO. CH 1944A

DEPTH:
FT.

DESCRIPTION

BSV

2129.15

10

20

30

40

50

60

70

80

90

1.0

Topsoil
Brown Red Micaceous Clayey Silt

2124.15

5.0

Brown Fine to Medium Sandy Silt

2119.15

2114.15

19.0

Gravel Layer

2109.15

21.0

Brown Fine to Medium Sandy Silt

2104.15

30.0

Boring Terminated At 30.0 ft

No Groundwater Encountered

2099.15

TEST BORING RECORD

BORING AND SAMPLING PERFORMED ACCORDING TO ASTM D-1586
CORE DRILLING PERFORMED ACCORDING TO ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HANDED
FALLING 20 IN. REQUIRED TO DRIVE 1.4 IN. DIA. SAMPLER 1 FT.

BORING NO. C-4

DATE DRILLED 9-12-74

JOB NO. CH 1944A

 UNDISTURBED SAMPLE

 WATER TABLE, 24 IN.

 WATER TABLE, 1 IN.

 ROCK CORE RECOVERY

 LOSS OF BELLING WATER

LAW ENGINEERING TESTING CO.

DEPTH
FT.
0

DESCRIPTION

ELEV • PENETRATION-BLOWS PER FT.

2099.6 10 20 30 40 60 80 100

Fill - Ash, Yarn, Etc.

2094.6

2089.6

2084.6

2079.6

2074.6

28.0

Wet Brown Fine Sandy Silt
Estimated 8-10 Blows Per Foot

2069.6

2064.6

40.0

2059.6

TEST BORING RECORD

Page 1 of 2

BORING NO. D-1

DATE DRILLED 9-11-74

JOB NO. CH 1944A

BORING AND SAMPLING METHODS ASTM D-1586
CORE DRILLING METHODS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. RAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

 UNDISTURBED SAMPLE

 WATER TABLE, 24 HR.

 WATER TABLE, 1 HR.

 % ROCK CORE RECOVERY

 LOSS OF DRILLING WATER

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	ELEV • PENETRATION-BLOWS PER FT.							
		2059.6	10	20	30	40	60	80	100
40.0	Wet Brown Fine Sandy Silt Estimated 8-10 Blows Per Foot								
		2054.6							
		2049.6							
		2044.6							
		2039.6							
62.0	Material Hardens Estimated 25 Blows Per Foot	2034.6							
68.0	Hard Material	2029.6							
70.0	Boring Terminated At 70.0 ft Groundwater At 11.0 ft At Time Of Boring Groundwater At 10.0 ft After 24 Hours								

TEST BORING RECORD

Page 2 of 2

BORING NO. D-1

DATE DRILLED 9-11-74

JOB NO. CH 1944A

BORING AND SAMPLING METHODS ASTM D-1586
CORE DRILLING METHODS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

 UNDISTURBED SAMPLE

 WATER TABLE, 24 HR.

 WATER TABLE, 1 HR.

DEPTH
FT.

DESCRIPTION

ELEV • PENETRATION-BLOWS PER FT.
2061.90 10 20 30 40 60 80 100

40.0

42.0

Material Hardens Boring Terminated At 42.0 ft Auger Refusal Groundwater At 19.0 ft At Time Of Boring Groundwater At 17.2 ft After 24 Hours	2061.90																			

TEST BORING RECORD

Page 2 of 2

BORING AND SAMPLING METHODS ASTM D-1586
 CORE DRILLING METHODS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

BORING NO. D-2
 DATE DRILLED 9-11-74
 JOB NO. CH 1944A

 UNDISTURBED SAMPLE  WATER TABLE, 24 HR.
 WATER TABLE, 1 HR.

DEPTH
FT.

DESCRIPTION

ELEV

• PENETRATION-BLOWS PER FT.

2100.7

10

20

30

40

50

60

80

100

Fill - Black Gray Fine Sandy Silt - Ash

2095.7

2090.7

2085.7

2080.7

23.0

Red Micaceous Fine Sandy Clayey Silt

25.0

Gray Black Silt - Ash

2075.7

2070.7

36.0

Brown Micaceous Fine Sandy Silt With
Soft Layer At 48 to 51 ft.

2065.7

40.0

2060.7

TEST BORING RECORD

Page 1 of 2

BORING AND SAMPLING METHODS ASTM D-1586

CORE DRILLING METHODS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. D. CASSETTE 1 FT.

BORING NO. D-3

DATE DRILLED 9-11-74

JOB NO. CH 1944A

 UNDISTURBED SAMPLE

 WATER TABLE 34 IN.

 WATER TABLE 1 IN.

DEPTH FT.	DESCRIPTION	ELEV	• PENETRATION-BLOWS PER FT.																		
			10	20	30	40	50	60	70	80	90	100									
40.0	Brown Micaceous Fine Sandy Silt With Soft Layer At 48 to 51 ft	2060.7																			
		2055.7																			
	Boring Terminated At 53.0 ft Auger Refusal Groundwater At 27.0 ft At Time Of Boring and After 24 Hours	2050.7																			
53.0																					

TEST BORING RECORD

Page 2 of 2

BORING NO. D-3

DATE DRILLED 9-11-74

JOB NO. CH 1944A

BOHRING AND SAMPLING MEETS ASTM D-1586
 CORE DRILLING MEETS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. LB. SAMPLER 1 FT.

 UNDISTURBED SAMPLE

 WATER TABLE, 24 HR.

 WATER TABLE, 1 HR.

DEPTH
FT.

DESCRIPTION

ELSV • PENETRATION-BLOWS PER FT.

DEPTH FT.	DESCRIPTION	PENETRATION-BLOWS PER FT.																			
		10	20	30	40	50	60	70	80	90	100										
0	Fill - Ash, Yarn, Rags, Etc.	2097.2																			
		2092.2																			
10.0		Virgin Soil - Brown Slightly Micaceous Fine To Medium Sandy Silt	2087.2																		
	2082.2																				
	2077.2																				
25.0	Gray Brown Silty Fine To Coarse Sand		2072.2																		
28.5	Refusal To Augers																				
	Boring Terminated At 28.5 ft.	2067.2																			
	Dry At Time Of Boring																				

TEST BORING RECORD

BORING AND SAMPLING METHOD ASTM D-1586
 CORE DRILLING METHOD ASTM D-3113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 29 IN. REQUIRED TO DRIVE 1.4 IN. L.S. SAMPLER 1 FT.

BORING NO. D-4

DATE DRILLED 9-17-74

JOB NO. CH 1944A

 UNDISTURBED SAMPLE
 WATER TABLE, 24 HR.
 WATER TABLE, 1 HR.
 LOSS OF BEARING WATER

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	ELEV	• PENETRATION-BLOWS PER FT.					
			10	20	30	40	50	60
40.0	Gravel Layer	2063.8 ₃						
42.0	Brown Micaceous Silt	2058.8						
50.0	Boring Terminated At 50.0 ft Groundwater At 17.0 ft At Time Of Boring and After 24 Hours	2053.8						

TEST BORING RECORD

Page 2 of 2

BORING AND SAMPLING METHODS ASTM D-1586
 CORE DRILLING METHODS ASTM D-3113
 PENETRATION IS THE NUMBER OF BLOWS OF 143 LB. MAMMER
 PLUNGER ON 30 IN. RODS TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

BORING NO. E-2

DATE DRILLED 9-13-74

JOB NO. CH 1944A

 UNDISTURBED SAMPLE  WATER TABLE, 24 HRS.
 WATER TABLE, 1 HR.

DEPTH
FT.
0

DESCRIPTION

ELEV • PENETRATION-CLOCKS PER FT.
2100.0 10 20 30 40 50 60 70 80 90 100

Fill - Ash, Yarn, Rags, Etc.	2095.0																			
	2090.0																			
	2085.0																			
	2080.0																			
	2075.0																			
	2070.0																			
	2065.0																			
	2060.0																			
	35.0																			
	Brown Micaceous Fine Sandy Silt																			
40.0																				

TEST BORING RECORD

Page 1 of 2

BORING AND SAMPLING EQUIP ASTM D-1585
COLE BELLISH TAPERS ASTM D-2113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. LB. SAMPLE 1 FT.

BORING NO. E-3
DATE DRILLED 9-13-74
JOB NO. CH 1944A

-  UNDISTURBED SAMPLE
-  WATER TABLE, 24 HR.
-  WATER TABLE, 1 HR.
-  1/4" BOX CORE RECOVERY
-  LOSS OF FREE WATER

DEPTH
FT.

DESCRIPTION

ELEV. • PENETRATION-BLOWS PER FT.

40.0

2060.0

10 20 30 40 50 60 70 80 90 100

Brown Micaceous Fine Sandy Silt

45.0

2055.0

Boring Terminated At. 45.0 ft

Groundwater At 22.0 ft At Time Of Boring

Groundwater At 21.5 ft After 24 Hours

TEST BORING RECORD

Page 2 of 2

BORING AND SAMPLING METHODS ASTM D-1586
CORE CORRECTION METHODS ASTM D-3113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 20 IN. REQUIRED TO DRIVE 1.4 IN. LB. SAMPLER 1 FT.

BORING NO. E-3

DATE DRILLED 9-13-74

JOB NO. CH 1944A

 UNDISTURBED SAMPLE

 WATER TABLE, 24 HR.

 WATER TABLE, 1 HR.

1st of page contains

 1st of page contains

DEPTH FT.	DESCRIPTION	ELEV • PENETRATION-BLOWS PER FT.						
		2055.10	10	20	30	40	60	80-100
0	Fill - Yarn, Rags, Etc.							
5.0	Alluvial - Gray Brown Silty Clay	2050.1						
10.5	Gravel Layer -	2045.1						
11.5	Residual - Gray Brown Micaceous Silt	2040.1						
		2035.1						
		2030.1						
30.0	Boring Terminated At 30.0 ft. Groundwater At 9.7 ft At Time Of Boring	2025.1						

TEST BORING RECORD

BORING AND SAMPLING METHODS ASTM D-1586
 CORP. SAMPLING METHODS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 149 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. LB. SAMPLER 1 FT.

BORING NO. E-4
 DATE DRILLED 9-17-74
 JOB NO. CH 1944A

 UNDISTURBED SAMPLE

 WATER TABLE, 30 ML.
 WATER TABLE, 1 ML.

DEPTH FT.	DESCRIPTION	ELEV • PENETRATION-BLOWS PER FT.						
		2107.60	10	20	30	40	50	60 TO 100
0	Fill - Brown Fine To Medium Sandy Silt							
3.0	Virgin Soil - Red Micaceous Fine Sandy Clayey Silt	2102.6						
6.0	Brown Micaceous Silt	2097.6						
		2092.6						
		2087.6						
		2082.6						
		2077.6						
30.0	Boring Terminated At 30.0 ft. Groundwater At 23.0 ft At Time Of Boring Groundwater At 20.0 ft After 24 Hours							

TEST BORING RECORD

BORING AND SAMPLING METHODS ASTM D-1586
 CONE PENETRATION TESTS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

BORING NO. F-1
 DATE DRILLED 9-16-74
 JOB NO. CH 1944A

 UNDISTURBED SAMPLE
 WATER TABLE, 24 HRS.
 WATER TABLE, 1 HR.
 LOCATION OF DRILLING WATER

DEPTH
FT.

DESCRIPTION

ELEV

• PENETRATION-BLOWS PER FT.

DEPTH FT.	DESCRIPTION	ELEV	10	20	30	40	60	80	100
0	Fill - Ash, Yarn, Rags, Etc.	2101.3							
5.0	Virgin Soil - Brown Micaceous Fine To Medium Sandy Silt	2096.3							
11.0	Tan Micaceous Silt	2091.3							
13.0	Brown Gray Micaceous Fine To Medium Sandy Silt	2086.3							
19.0	Estimated 50-60 Blows Per Foot	2081.3							
26.0	Estimated 15 Blows Per Foot	2076.3							
30.0	Boring Offset 20 ft. Boring Terminated At 30.0 ft. Groundwater At 12.2 ft At Time Of Boring Groundwater At 10.5 ft After 24 Hours	2071.3							

TEST BORING RECORD

BORING AND SAMPLING METHODS ASTM D-1586
CORE PREPARATION METHODS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. L.B. SAMPLER 1 FT.

 UNDISTURBED SAMPLE

 WATER TABLE, 24 HR.

 WATER TABLE, 1 HR.

 % ROCK CORE RECOVERY

 LOSS OF RETAINED WATER

BORING NO. F-2

DATE DRILLED 9-16-74

JOB NO. CH 1944A

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	ELEV • PENETRATION-BLOWS PER FT.																		
		2091.10	10	20	30	40	50	60	70	80	100									
0	Fill - Ash, Yarn, Rags, Etc.																			
		2086.1																		
		2081.1																		
13.0	Gray Brown Micaceous Fine Sandy Silt																			
		2076.1																		
		2071.1																		
		2066.1																		
30.0	Boring Terminated At 30.0 ft. Groundwater At 25.5 ft At Time Of Boring Groundwater At 24.0 ft After 24 Hours																			
		2061.1																		

TEST BORING RECORD

BORING AND SAMPLING METHODS ASTM D-1586
CORE BULKING METHODS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. LD. SAMPLER 1 FT.

 UNDISTURBED SAMPLE

 % ROCK CORE RECOVERY

 WATER TABLE, 24 IN.

 WATER TABLE, 1 IN.

 LOSS OF DRILLING WATER

BORING NO. F-3.5

DATE DRILLED 9-16-74

JOB NO. CH 1944A

LAW ENGINEERING TESTING CO.

DEPTH FT.	DESCRIPTION	ELEV • PENETRATION-BLOWS PER FT.						
		2090.8	10	20	30	40	50	60
0	Topsoil							
1.0	Brown Micaceous Fine to Medium Sandy Silt							
	Gravel Layer At 7.0 ft	2085.8						
		2080.8						
		2075.8						
		2070.8						
23.0	Gravel Layer							
24.0	Brown Micaceous Fine To Coarse Sandy Silt	2065.8						
		2060.8						
30.0	Boring Terminated At 30.0 ft. Dry At Time Of Boring Groundwater At 25.5 ft After 24 Hours							

TEST BORING RECORD

BORING AND SAMPLING TESTS ASTM D-1586
 CORE DRILLING TESTS ASTM D-2113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HANNING
 FALLING 30 IN. CONVEYED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

BORING NO. F-4
 DATE DRILLED 9-16-74
 JOB NO. CH 1944A

 UNCONSOLIDATED SAMPLE
 WATER TABLE 24 IN.
 WATER TABLE 1 IN.
 LOSS OF DRILLING WATER

DEPTH FT.	DESCRIPTION	ELEV • PENETRATION FLOWS PER FT.																
		2137.6	10	20	30	40	60	80	100									
0	Topsoil																	
1.0	Brown Micaceous Fine To Medium Sandy Silt	2132.6																
		2127.6																
		2122.6																
		2117.6																
		2112.6																
		2107.6																
30.0	Boring Terminated At 30.0 ft. Dry At Time Of Boring Groundwater AT 25.0 ft After 24 Hours																	

TEST BORING RECORD

BORING AND SAMPLING METHODS ASTM D-1586
 CORE DRILLING METHODS ASTM D-5113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLE 1 FT.

BORING NO. G-2
 DATE DRILLED 9-16-74
 JOB NO. CH 1944A

 UNDISTURBED SAMPLE

 WATER TABLE, 24 HR.
 WATER TABLE, 1 HR.

DEPTH FT.	DESCRIPTION	ELEV • PENETRATION-BLOWS PER FT.						
		2153.8	10	20	30	40	50	60
0	Topsoil							
1.0	Brown Fine To Medium Sandy Silt							
4.0	Brown Micaceous Silt	2148.8						
6.0	Brown Micaceous Fine To Medium Sandy Silt	2143.8						
		2138.8						
		2133.8						
		2128.8						
27.0	Partially Weathered Rock							
30.0	Boring Terminated At 30.0 ft. Dry At Time Of Boring Groundwater At 25.0 ft After 24 Hours	2123.8						

TEST BORING RECORD

BORING AND SAMPLING TESTS ASTM D-1586
 CORE DRILLING TESTS ASTM D-3113
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 RL. LD. SAMPLER 1 FT.

BORING NO. H-2
 DATE DRILLED 9-16-74
 JOB NO. CH 1944A

 UNDISTURBED SAMPLE  WATER TABLE, 20 Hz.
 WATER TABLE, 1 Hz.

DEPTH
FT.

DESCRIPTION

ELEV • PENETRATION-BLOWS PER FT.

0

2132.80

10 20 30 40 50 60 70 80 90

2.0

Topsoil
Tan Micaceous Fine Sandy Silt

2127.8

6.0

Brown Green Micaceous Fine Sandy Silt

2122.8

2117.8

2112.8

2107.8

30.0

2102.8

Boring Terminated At 30.0 ft.
Dry At Time Of Boring
Groundwater At 23.5 ft After 24 Hours

TEST BORING RECORD

BORING AND SAMPLING METHODS ASTM D-1586
CORE DRILLING METHODS ASTM D-3113
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
FALLING 29 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

BORING NO. H-3
DATE DRILLED 9-16-74
JOB NO. CH 1944A

 UNDISTURBED SAMPLE

 WATER TABLE, 24 HR.
 WATER TABLE, 1 HR.

APPENDIX "C"



cc: Mr. Battle
1/27

JAN 27 REC'D

BOARD OF COMMISSIONERS OF
BUNCOMBE COUNTY

R. CURTIS RATCLIFF, CHAIRMAN

January 25, 1977

Mr. A. D. Miles, Manager
Enka Operations
American Enka Company
Enka, North Carolina 28728

Dear Mr. Miles:

The County of Buncombe does not have a zoning ordinance but does have subdivision regulations which would not require approval on a landfill. However, you must meet State requirements, which it appears you have already met. Therefore, I see no reason why you should not proceed as your schedule permits in establishing your new landfill at American Enka.

If I can be of any further assistance, please do not hesitate to contact me.

Sincerely yours,

R. Curtis Ratcliff
R. Curtis Ratcliff, Chairman
Buncombe County Board of
Commissioners

RCR:fb

APPENDIX "D"

NORTH CAROLINA SOLID WASTE DISPOSAL LAW

(Chapter 130, Article 13B, General Statutes of North Carolina; Laws of 1969,
Chapter 899; Amended by Laws of 1973, Chapter 476; Laws of 1975, Chapter 311)

**Administering Agency: North Carolina State Board of Health
Sanitary Engineering Division
Raleigh, N.C. 27602**

Article 13B

Solid Waste Management.

Sec. 130-166.16. *Definitions.* The following definitions shall apply in the enforcement and interpretation of this Article:

(1) "Garbage" — all putrescible wastes, including animal and vegetable matter, animal offal and carcasses, and recognizable industrial by-products, but excluding sewage and human wastes.

(2) "Natural resources" — all materials which have useful physical or chemical properties which exist, unused, in nature.

(3) "Recycling" — the process by which recovered resources are transformed into new products in such a manner that the original products lose their identity.

(4) "Refuse" — all non-putrescible wastes.

(5) "Resource Recovery" — the process of obtaining material or energy resources from solid waste.

(6) "Solid waste" — garbage, refuse, rubbish, trash, and other discarded solid materials, including solid waste materials resulting from industrial, commercial, and agricultural operations, and from community activities, but does not include solids or dissolved materials in domestic sewage or other significant pollutants in water resources, such as silt, dissolved or suspended solids in industrial waste water effluents, dissolved materials in irrigation return flows or other common water pollutants.

(7) "Solid waste disposal" — the collection, storage, treatment, utilization, processing, or final disposal of solid waste.

(8) "Solid waste disposal facility" — land, personnel, equipment or other resources used in the disposal of solid wastes.

(9) "Solid waste disposal site" — any place at which solid wastes are disposed of by incineration, sanitary landfill or any other methods.

(10) "Solid waste management" — the purposeful, systematic control of the generation, storage, collection, transport, separation, processing, recycling, recovery and disposal of solid waste. (1969, c. 899; 1975, c. 311, s. 2)

Sec. 130-166.17. *Solid waste unit in Department of*

Human Resources. For the purpose of promoting and preserving an environment that is conducive to public health and welfare, and preventing the creation of nuisances, the Department of Human Resources shall maintain an appropriate administrative unit to promote sanitary processing, treatment, disposal, and overall management of solid waste and the greatest possible recycling and recovery of the resources of the state, and the Department shall employ and retain such qualified personnel as may be necessary. (1969, c. 899, 1973, c. 476, s. 128; 1975, c. 311, s. 3)

Sec. 130-166.18. *Solid waste management program.* The Department of Human Resources is authorized and directed to engage in research, conduct investigations and surveys, make inspections, and to establish a statewide solid waste management program. In establishing a program, the Board shall have authority to:

(1) Develop a comprehensive program for implementation of safe and sanitary practices for management of solid waste throughout the State; and

(2) Advise, consult, cooperate, and contract with other agencies and units of State and local governments, the federal government, and industries and individuals in the formulation and carrying out of a solid waste management program.

The Commission shall have authority to provide standards for the establishment, location, operation, maintenance, use and discontinuance of solid waste management sites and facilities. Such standards shall be designed to accomplish the maintenance of safe and sanitary conditions in and around solid waste management sites and facilities, and shall be based on recognized public health practices and procedures, sanitary engineering research and studies, and current technological development in equipment and methods. Such standards shall not apply to the management of solid waste accumulated by an individual or individual family or household unit and disposed of on his own property. (1969, c. 899; 1973, c. 476, s. 128; 1975, c. 311, s. 4)

Sec. 130-166.19. *Receipt and distribution of funds.* The Department may accept loans and grants from the Federal government and other sources for carrying out

the purpose of this Article, and distribution of such funds to county and municipal governing bodies and agencies, other state agencies, and private agencies, institutions or individuals, for studies, investigations, demonstrations, surveys, planning, training, and construction or establishment of solid waste disposal facilities. (1969, c. 899, 1973, c. 476, s. 128)

Sec. 130-166.20. *Single agency designation.* The Department of Human Resources is hereby designated as the single agency for the State for the purposes of the Federal Solid Wastes Disposal Act (PL 89-272) and for the purpose of such other State or federal legislation as has or may be hereafter enacted to assist in the proper disposal of solid waste (1969, c. 899, 1973, c. 476, s. 128)

Sec. 130-166.21. *Recordation of order of approval of landfill sites.* — Whenever the Department of Human Resources approves a sanitary landfill as a solid waste

disposal facility, the successful applicant for approval shall file a certified copy of the Department's order of approval in the register of deeds' office of the county or counties in which the landfill is located. The register of deeds shall record the copy of the order of approval and index it in the grantor index under the name of the owner or owners of the landfill site.

The Department's order of approval shall include a description of the landfill site that would be sufficient as a description in an instrument of conveyance. When the Department transmits its order of approval to the successful applicant, it shall cause a certified copy of its order to be included with the original order, which copy shall be the copy filed in the register of deeds' office by the applicant. The Secretary of Human Resources or his duly authorized representative shall certify the copy of the order of approval, and this certificate need not be acknowledged nor probated. The order of approval may not take effect until the certified copy has been filed as required by this section. (1973, c. 444; c. 476, s. 1281)

NORTH CAROLINA SOLID WASTE DISPOSAL REGULATIONS

(Rules and Regulations Providing Standards for Solid Waste Disposal; Effective
March 11, 1971)

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Section I – Definitions	
Section II – Applicability	
Section III – General Conditions	
Section IV – Solid Waste Storage	
Section V – Collection and Transportation of Solid Waste	
Section VI – Treatment, Processing, and Utilization of Solid Waste	
Section VII – Disposal of Solid Waste	
Section VIII – Site and Plan Approval, Denial, Cancellation of Approvals for Solid Waste Disposal Facilities and Exemption of Certain Sites	
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For the protection of public health and pursuant to authority granted by Article 13B of Chapter 130 of the General Statutes of North Carolina, the State Board of Health hereby adopts rules and regulations to provide for the following standards:

Standards governing (1) general conditions for solid waste disposal facilities (2) solid waste storage (3) collection and transportation of solid waste (4) treatment, processing, and utilization of solid waste (5) disposal of solid waste (6) site and plan approval, denial, cancellation of approvals for solid waste disposal facilities, and exemption of certain sites (7) required information for approval of sanitary landfill sites and operational plans (8) restrictions on certain sanitary landfill areas (9) operational requirements for sanitary landfills (10) incineration of solid waste (11) non-conforming sites and facilities for solid waste disposal (12) variances in solid waste disposal programs.

SECTION I—DEFINITIONS

For the purpose of these standards, the following words and phrases shall have the meanings ascribed to them in this section and as ascribed by law.

- A. Garbage—all putrescible wastes, including animal and vegetable matter, animal offal and carcasses, and recognizable industrial by-products, but excluding sewage and human wastes.
- B. Refuse—all non-putrescible wastes.
- C. Solid waste—garbage, refuse, rubbish, trash, and other discarded solid materials, including solid waste materials resulting from industrial, commercial, and agricultural operations, and from community activities, but does not include solids or dissolved materials in domestic sewage or other significant pollutants in water resources, such as silt, dissolved or suspended solids in industrial water effluents, dissolved materials in irrigation return flows or other common water pollutants.
- D. Solid waste disposal—the collection, storage, treatment, utilization, processing, or final disposal of solid waste.
- E. Solid waste disposal facility—land, personnel, equipment, or other resources used in the disposal of solid wastes.
- F. Solid waste disposal site—any place at which solid wastes are disposed of by incineration, sanitary landfill or any other methods.
- G. Hazardous solid wastes—includes but is not limited to explosives, pathological wastes, pesticides, chemicals, and other toxic materials which are harmful to public health.
- H. Radioactive solid waste—any radioactive material.
- I. Incineration—the process of burning solid, semi-solid or gaseous combustible wastes to an inoffensive gas and a residue containing little or no combustible material.
- J. Open dump—the consolidation of solid waste from one or more sources at a disposal site which has insanitary conditions, little or no cover, usually burning, and little or no management.
- K. Person—means any individual, firm, governmental unit, organization, partnership, corporation, or company.
- L. Solid waste collector—means any person who collects or transports solid waste.
- M. Sanitary landfill—a method of disposing of solid waste on land in a sanitary manner without creating nuisances or hazards to public health or safety by utilizing the principles of engineering to confine the solid waste to the smallest practical area, to reduce it to the smallest practical volume, and to cover it with a layer of compacted earth at the conclusion of each day's operation or at such more frequent intervals as may be necessary.
- N. Cell—compacted refuse completely enveloped by a compacted cover material.

- O. Open burning—means any fire wherein the products of combustion are emitted directly into the outdoor atmosphere and are not directed thereto through a stack or chimney, incinerator, or other similar devices.
- P. Putrescible—solid waste capable of being decomposed by microorganisms with sufficient rapidity as to cause nuisances from odors and gases, such as kitchen wastes, offal and carcasses.
- Q. Vector—an insect or other animal which transmits infectious diseases from one person or animal to another.
- R. Spoiled food—means any food which has been removed from sale by the United States Department of Agriculture, North Carolina Department of Agriculture, Food and Drug Administration, or any other regulatory agency having jurisdiction in judging food unfit for consumption.
- S. Local governing agency—refers to incorporated cities, counties, and special purpose districts which are empowered to undertake solid waste management programs.
- T. Water supply watershed—an area from which water drains to a point or impoundment, and the water is then used as a source for a public water supply.
- U. State Board of Health—The term "State Board of Health" shall mean the State Health Director, or his authorized representatives.

SECTION II—APPLICABILITY

These solid waste disposal standards are for general application throughout the State unless otherwise specifically indicated by their context. The official policy and purpose of the State of North Carolina in regard to solid waste control is set forth in North Carolina Statutes, Chapter 130, Article 13B, Solid Waste Disposal.

"Sec. 130-166.18. Solid waste disposal program. The State Board of Health is authorized and directed to engage in research, conduct investigations and surveys, make inspections, and to establish a statewide solid waste disposal program. In establishing a program, the Board shall have authority to:

(a) Provide standards for the establishment, location, operation, maintenance, use and discontinuance of solid waste disposal sites and facilities. Such standards shall be designed to accomplish the maintenance of safe and sanitary conditions in and around solid waste disposal sites and facilities, and shall be based on recognized public health practices and procedures, sanitary engineering research and studies, and current technological development in equipment and methods. Such standards shall not apply to the disposal of solid waste accumulated by an individual or individual family or household unit and disposed of on his own property.

(b) Develop a comprehensive program for implementation of safe and sanitary practices for disposal of solid waste throughout the State.

(c) Advise, consult, cooperate, and contract with other agencies and units of State and local governments, the federal government, and industries and individuals in the formulation and carrying out of a solid waste disposal program."

SECTION III—GENERAL CONDITIONS

- A. All solid waste shall be stored, collected, transported, treated, utilized, processed, reclaimed, recycled, and disposed of in a manner consistent with the requirements of these standards. The State Board of Health is responsible for the enforcement of these standards and encour-

ages cooperation from individuals, municipalities, county governments, local health departments, sanitary and regional districts and private enterprise.

- B. Notwithstanding Section III-A above, no radioactive solid wastes shall be collected and transported, stored, treated, processed, disposed of or reclaimed, except as specifically authorized by a radioactive material license issued by the State Board of Health.

SECTION IV—SOLID WASTE STORAGE

- A. The owner or occupant of any premise, business establishment, or industry shall be responsible for the sanitary storage of all solid waste accumulated at that premise, business establishment, or industry.
- B. Garbage shall be stored in:
1. Durable rust resistant, non-absorbant, water tight, rodent proof, and easily cleanable containers with a close fitting fly-tight cover and with adequate handles or bails to facilitate handling, or
 2. Other types of containers acceptable to the local governing agency and conforming to the intent of this section.
- C. Refuse shall be stored in durable containers or as otherwise provided in this section. Where garbage is stored in combination with non-putrescible refuse, containers for the storage of the mixture shall meet the requirements for garbage containers.
- D. Hazardous solid waste, pending disposal, shall be stored in containers and at locations prescribed in the applicable State or Federal regulations for control of the specific hazardous material.
- E. All containers for the storage of solid waste shall be maintained in such a manner as to prevent the creation of a nuisance or insanitary conditions. Containers that are broken or otherwise fail to meet this standard shall be replaced with acceptable containers. Refuse too large or otherwise not suitable for storage in containers shall be stored in a nuisance free manner consistent with requirements with the local governing agency.

SECTION V—COLLECTION AND TRANSPORTATION OF SOLID WASTE

- A. The solid waste collector shall be responsible for the satisfactory collection and transportation of all solid waste to a disposal site or facility.
- B. Vehicles or containers used for the collection and transportation of garbage, or refuse containing garbage, shall be covered, leakproof, durable and of easily cleanable construction. These shall be cleaned as often as necessary to prevent a nuisance or insect breeding, and shall be maintained in good repair.
- C. Vehicles or containers used for the collection and transportation of any solid waste shall be loaded and moved in such a manner that the contents will not fall, leak or spill therefrom, and shall be covered when necessary to prevent blowing of material. If spillage should occur, the material shall be picked up immediately by the solid waste collector and returned to the vehicle or container and the area properly cleaned.

SECTION VI—TREATMENT, PROCESSING, AND UTILIZATION OF SOLID WASTE

All facilities used in the treatment and processing of solid waste for final disposal, or for utilization by reclaiming or recycling prior to final disposal, shall be operated in such a manner as to prevent the creation of a nuisance, insanitary condition, or potential public health hazard. Facilities used in sorting, separating, reducing, shredding, compressing, reclaiming, recycling, and other associate processes shall conform to

these standards. The State Board of Health reserves the right to request submission of plans for approval to evaluate site location, design, operational techniques and procedures, and overall sanitation aspects of any facility used in the treatment, processing, or utilization of solid waste.

SECTION VII—DISPOSAL OF SOLID WASTE

The disposal or utilization of solid waste shall be by the following approved methods or any combination thereof:

- A. Sanitary landfill
- B. Use of incinerator
- C. Disposal by other sanitary methods which may be developed and demonstrated to be capable of fulfilling the basic requirements of these standards, and which have been approved by the State Board of Health. Plans for any such methods, including reclaiming or recycling processes, shall be submitted to the State Board of Health for approval as required by Section VIII of these standards.

SECTION VIII—SITE AND PLAN APPROVAL, DENIAL, CANCELLATION OF APPROVALS FOR SOLID WASTE DISPOSAL FACILITIES AND EXEMPTION OF CERTAIN SITES

- A. Site and plan approval. Effective July 1, 1971, except as otherwise provided in these standards, no person shall establish a solid waste disposal facility without first obtaining approval from the State Board of Health for site location and operational plan.
- B. Request for approval of site locations shall be submitted to the State Board of Health in writing. Approval by the State Board of Health shall be based on site appraisals, and such approval shall be obtained prior to submission of the operational plan for the facility. Approvals or denials of proposed site locations shall be made in writing by the State Board of Health.
- C. Each request for approval of sanitary landfill sites, operational plans, and other solid waste disposal facilities shall be accompanied by the information and data required by Section IX and other applicable Sections of these standards.
- D. Requests for approval of solid waste disposal facilities and operations submitted by a private agency shall be accompanied by an approval letter from the local governmental agency having jurisdiction over the area where the operations are to be located.
- E. Upon receipt of the request for approval, the State Board of Health shall review the request to assure that all provisions of these standards are met and that proposed facilities and operations will comply with other applicable State laws, rules and regulations. Based on its review, the State Board of Health shall either approve or deny the request in writing.
- F. Denial of approval. When a request is denied approval, the applicant shall be notified in writing of the reasons therefore. A denial shall be without prejudice to the applicant's right to a hearing before the State Board of Health or for filing a future request after revisions are made to meet objections specified as reasons for the denial.
- G. Cancellation of approval. The State Board of Health may cancel any approval if it finds that the disposal operation is not in conformance with these standards.
- H. Sites exempted from approvals. Approvals by the State Board of Health shall not be required for sites used for the disposal of solid waste from a single family or household, a member of which is the owner, occupant, or lessee of the property. However, such sites shall be operated

and maintained in a nuisance-free and aesthetic manner consistent with the intent of these standards.

SECTION IX—REQUIRED INFORMATION FOR APPROVAL OF SANITARY LANDFILL SITES AND OPERATIONAL PLANS

- A. Sanitary landfill site. Three sets of the following information for each proposed site shall be submitted to the State Board of Health for review and evaluation:
 1. Map or aerial photograph on which land use and zoning within one-fourth mile of the solid waste disposal site is shown. The map or aerial photograph shall be sufficient scale to show the entire property owned or leased for the disposal site by the person proposing the landfill, all homes, industrial buildings, wells, watercourses, dry runs, rock out-croppings, roads and other applicable details and shall indicate the general topography.
 2. Geological formations and ground water table to a depth of at least ten feet below the proposed excavation and at the lowest elevation of the site. Such data shall be obtained by soil borings or other appropriate means.
 3. Source and characteristic of cover material.
 4. Identification of watercourses within or adjacent to the sanitary landfill areas and, if no watercourse is involved, indicate the watershed by name which will receive the drainage from the site.
 5. Any other information pertinent to the proposed site.
- B. Sanitary landfill operational plans. Three sets of the following information for each proposed operational plan shall be submitted to the State Board of Health for review and evaluation:
 1. Plans and drawings including plot plan of the site showing dimensions; trenching, ramping, or filling plans; soil boring locations when made; proposed cover stockpiles; screening, natural and man-made; location of existing and proposed utilities; existing and proposed on-site structures for equipment storage or employee usage; weighing facilities if planned; and access and entrance roads to the site. Cross sectional drawings shall be included on the plan or on separate sheets showing both the original elevations and proposed fill elevations. The scale of the plot plan should not be greater than 200 feet per inch.
 2. A report shall accompany the plans indicating:
 - a. Population and area expected to be served by the proposed site.
 - b. Anticipated type, quantity, and source of material to be disposed of at the site.
 - c. Description of systematic usage of area, operation, orderly development and completion of the sanitary landfill.
 - d. Type and number of pieces of equipment to be provided at the site for excavating, earth moving, spreading, compacting, covering, and other needs.
 - e. Name of individual responsible for operation and maintenance of the site.
 - f. Intended use of land after completion of the sanitary landfill.
 - g. Anticipated lifetime of project.
 - h. Any other information pertinent to the proposed operational plan

SECTION X—RESTRICTIONS ON CERTAIN SANITARY LANDFILL AREAS

Sanitary landfill sites are prohibited within the following areas unless written permission for use of such location is obtained from the State Board of Health.

- A. Within the boundaries of a public water supply watershed where disposal of solid waste in a particular site may have a deleterious effect on the quality of the raw water.
- B. Within the flood plain of any watercourse where underground seepage could cause contamination.
- C. Within areas having high water tables where private or public well water supplies could be contaminated.

SECTION XI—OPERATIONAL REQUIREMENTS FOR SANITARY LANDFILLS

Any person who maintains or operates a sanitary landfill site shall maintain and operate the site in conformance with the following practices unless otherwise allowed by the State Board of Health in granting the required approval.

- A. Open burning of solid waste is prohibited.
- B. Solid waste shall be disposed of in such a manner that materials are confined and will have no detrimental effect on any ground or surface water.
- C. Dumping of solid waste shall be restricted to as small an area as practical.
- D. Appropriate facilities shall be provided to confine possible wind-blown material within the area. At the conclusion of each day of operation, all wind-blown material resulting from the operation shall be collected and returned to the area by the owner or operator.
- E. Solid waste shall be compacted as densely as practical into cells and covered after each day of operation, or as specified by the State Board of Health, with a compacted layer of at least six inches of suitable cover.
- F. Spoiled foods shall be compacted and covered immediately and separately from the routine solid waste being deposited at the disposal site.
- G. Animal carcasses, abattoir waste, hatchery waste, and other animal waste delivered to the disposal site shall be compacted and covered immediately and separately from the routine solid waste.
- H. No hazardous wastes shall be disposed of in a sanitary landfill except as may be permitted by applicable federal and State regulations.
- I. Effective vector control measures shall be applied to control flies, rodents, and other insects or vermin.
- J. Surface water shall be diverted from the landfill area.
- K. The approach road to the disposal site shall be of all-weather construction and maintained in good condition.
- L. Equipment shall be provided to control accidental fires or arrangements made with the local fire protection agency to immediately provide fire fighting services when needed.
- M. An attendant shall be on duty at the site at all times while it is open for public use.
- N. Signs providing information on dumping procedures and indicating the hours during which the site is open for public use, penalty for non-conformance dumping, and other pertinent information shall be posted at the site entrance.
- O. Within one month after final termination of disposal operations at the site, or a major part thereof, the area

shall be covered with at least two feet of compacted earth material adequately sloped to allow surface water runoff.

- P. The finished surface of the filled area shall be covered with adequate topsoil and seeded with native grasses or other suitable vegetation immediately upon completion, or in the spring on areas where operations were terminated during winter conditions. If necessary, seeded slopes shall be covered with straw or similar material to prevent erosion.
- Q. Prior to termination of operations at a sanitary landfill site, the State Board of Health shall be notified in order that a site investigation may be conducted by the State Board of Health before earth moving equipment is removed from the property.

SECTION XII—INCINERATION OF SOLID WASTE

- A. All incinerators shall be designed and operated in a manner so as to prevent the creation of a nuisance or potential health hazard and must comply with the applicable requirements of these standards and those of the Department of Water and Air Resources.
- B. Construction of an incinerator shall not be initiated prior to the approval of plans by the State Board of Health.
- C. Plans and drawings for each proposed incinerator facility, including a plot plan of all facilities, together with a detailed description of proposed operational procedures, shall be submitted to the State Board of Health for review and evaluation. Such plans must be accompanied by a written statement from the Department of Water and Air Resources to show that air pollution control emissions can be met by the incinerator design and operation, and by a written statement from the governmental agency having jurisdiction that the proposed incinerator site has been approved.
- D. The incinerator operation for each proposed installation shall be considered for approval on its merits, shall be in compliance with the following criteria, and in accordance with acceptable engineering practices.
 1. The incinerator plant shall be so situated, equipped, operated, and maintained as to minimize interference with other activities in the area.
 2. Signs shall be posted at the site of entrance specifying location of dumping area and indicating the normal hours the facility is in operation for public use. Access to the facility shall be limited to those times when authorized personnel are on duty.
 3. All solid waste to be disposed of at the site shall be confined to the dumping area. Adequate storage facilities shall be provided.
 4. Facilities shall be designed to provide for dust control in the unloading and charging areas.
 5. Effective vector control measures shall be applied to control flies, rodents, and other insects or vermin.
 6. Fire-fighting equipment approved by the North Carolina Fire Insurance Bureau shall be available in the storage and charging areas and elsewhere as needed.
 7. Arrangements shall be made with the local fire protection agency to provide fire-fighting services in an emergency.
 8. Communications shall be provided for emergency purposes.
 9. Equipment shall be provided in the storage and charging areas and elsewhere as needed or as may be required in order to maintain the plant in a sanitary condition.

10. All residue from the incinerator plant shall be promptly disposed of at an approved site and in a manner consistent with the applicable Sections of these standards.
11. All waste water from the incinerator plant shall be disposed of in accordance with the applicable regulations, standards, or requirements of the Department of Water and Air Resources, the State Board of Health, and local government.
12. Upon completion of construction of the incinerator facility, and prior to initial operation, the State Board of Health shall be notified in order that an inspection may be made of the facility to determine conformance with the approved plan and with the applicable provisions of these standards.

SECTION XIII—NONCONFORMING SITE AND FACILITIES

- A. Modification of existing sites and facilities and of operating procedures to conform to the requirements of these standards shall be accomplished. When the degree of necessary improvement is of such extent that immediate compliance cannot be accomplished, special consideration may be made by the State Board of Health. In such event, the owner of the nonconforming site or facility shall, not later than July 1, 1972, submit to the State Board of Health a report setting forth a program and plan for compliance with these standards together with a time schedule for submission of plans and specifications and commencement of construction of necessary improvements. In no case will the State Board of Health consider any time schedule for compliance which extends beyond July 1, 1974, unless a variance is granted as provided under Section XIV. After review and consideration of the report, the State Board of Health shall require completion of necessary improvements in accordance with the schedule submitted or as modified by the State Board of Health.
- B. Existing incinerators which do not meet air pollution emission standards shall conform to requirements and to implementation schedules established by the Department of Water and Air Resources and/or local air pollution control authorities.
- C. A person operating an open dump for disposal of solid waste on the effective date of these standards and not choosing to conform to these standards shall upon abandoning the site or closing operations take the following actions:
 1. Implement effective rat control, including baiting for at least two weeks after closing, to prevent rat migration to adjacent properties.
 2. Compact and cover existing solid waste. Final cover for the entire area shall be two feet or more of compacted earth.

3. Implement erosion control measures by grading and seeding as necessary.
4. Post signs indicating the dump site closure.

SECTION XIV—VARIANCES

- A. In order to avoid undue hardships, promote the effective and reasonable application and enforcement of these standards, the State Board of Health may grant variances from the requirements of these standards in accordance with such procedures and conditions as it may prescribe. Each application for variance shall be examined on the basis of conditions prohibiting full compliance.
- B. Variable factors such as population density, daily or seasonal loadings, nature of wastes, location of facility or facilities, water table conditions, topography, soil and geology, climate, land use, stream and reservoir classification are to be taken into account in determining the degree of variance, if any, which may be allowed.

SECTION XV—LIMITATIONS

Nothing in these standards shall be construed to limit the authority of municipal and county governments or sanitary districts from adopting more stringent solid waste disposal requirements than those set forth in these standards.

SECTION XVI—SEVERABILITY

If any provision of these standards or its application to any person or circumstances is held invalid, such invalidity shall not affect other provisions or applications of the standards which can be given effect without the invalid provisions or applications, and to this end the provisions of these standards are declared to be severable.

SECTION XVII—PENALTIES

If any person shall violate any rules and regulations adopted by the State Board of Health, he shall be guilty of a misdemeanor and punishable by a fine not to exceed (\$50.00) or by imprisonment not to exceed thirty (30) days, as provided by Section 203 of Chapter 130 of the General Statutes of North Carolina.

SECTION XVIII—REPEALER

All rules and regulations heretofore adopted by the State Board of Health which are in conflict with the provisions of these rules and regulations are hereby repealed.

SECTION XIX—EFFECTIVE DATE

These rules and regulations shall be in full force and effect from and after March 11, 1971.

The foregoing rules and regulations were adopted at a meeting of the State Board of Health on March 11, 1971, at Raleigh, North Carolina.

APPENDIX "E"

LANDFILL LIFE CALCULATIONS

A conservative assumption is that the decrease in waste volume due to compaction is offset by the volume of cover required. Following this assumption the life of the landfill is calculated using 2000 cy/wk.

1. Gully Fill to Elevation 2100 ft.

$$(34,400 \text{ f}^2 \text{ area})(7' \text{ avg. depth}) \div 27 = 8919 \text{ cy}$$

$$(470' \text{ of berm})(15.9 \text{ cy/lf on } 10' \text{ berm}) = \frac{7473 \text{ cy}}{1446 \text{ cy available}}$$

$$1446 \text{ cy} \div 2000 \text{ cy/wk} = .7 \text{ weeks say } \underline{1 \text{ week}}$$

2. Area Fill to Elevation 2110 ft.

$$(710,600 \text{ f}^2 \text{ area})(5' \text{ avg. depth}) \div 27 = 131,600 \text{ cy}$$

$$(2400')(4.7 \text{ cy/lf on } 5' \text{ berm}) = \frac{11,300 \text{ cy}}{120,300 \text{ cy available}}$$

$$120,300 \text{ cy} \div 2000 \text{ cy/wk} = 60 \text{ weeks say } \underline{14 \text{ months}}$$

3. Area Fill to Elevation 2120 ft.

$$(791,800 \text{ f}^2 \text{ area})(10' \text{ deep}) \div 27 = 293,300 \text{ cy}$$

$$(2000' \text{ of berm})(15.9 \text{ cy/lf for } 10' \text{ berm}) = \frac{31,800 \text{ cy}}{261,500 \text{ cy available}}$$

$$261,500 \text{ cy} \div 2000 \text{ cy/wk} = 131 \text{ weeks say } \underline{30 \text{ months}}$$

4. Area Fill to Elevation 2130 ft.

$$(639,700 \text{ f}^2 \text{ area})(10' \text{ deep}) \div 27 = 236,900 \text{ cy}$$

$$(3200' \text{ of berm})(15.9 \text{ cy/lf for } 10' \text{ berm}) = \frac{50,900 \text{ cy}}{186,000 \text{ cy available}}$$

$$186,000 \text{ cy} \div 2000 \text{ cy/wk} = 93 \text{ weeks say } \underline{21 \text{ months}}$$

APPENDIX "E"

LANDFILL LIFE CALCULATIONS
(Continued)

5. Area Fill to Elevation 2140 ft.

$$(518,000 \text{ f}^2 \text{ area})(10' \text{ deep}) \div 27 = 191,900 \text{ cy}$$

$$(2900' \text{ of berm})(15.9 \text{ cy/lf for } 10' \text{ berm}) = \frac{46,100 \text{ cy}}{145,800 \text{ cy available}}$$

$$145,800 \text{ cy} \div 2000 \text{ cy/wk} = 73 \text{ weeks say } \underline{17 \text{ months}}$$

6. Total, Five Lifts

1 Week
14 months
30 months
21 months
17 months

$$82 \text{ months} = 6.8 \text{ years say } \underline{7 \text{ years}}$$

APPENDIX "F"
SOLID WASTE SURVEY

1. A solid waste survey was conducted at the Enka North Carolina site during the week of August 9, 1976. Each dumpster, farm wagon and dump truck and its capacity was identified, the previous week. Beginning Monday, August 9, 1976 each dumpster or vehicle entering the landfill was recorded for the entire 5 day week, along with the approximate portion full (1/4 full, 1/2 full, 3/4 full or full). The type waste entering the landfill was also recorded.
2. A summary of the survey data follows:

<u>WASTE</u>	<u>QUANTITY</u>
General Wastes	646.5 cubic yards/week
Lactam Wastes	110. cubic yards/week
Fly Ash	482.5 cubic yards/week
Construction Wastes	<u>581.5</u> cubic yards/week
TOTAL	1,820.5 cubic yards/week

3. In addition to the surveyed wastes, 120 cubic yards per week (max.) of water treatment plant sludge and 63 cubic yards per week (avg.) of waste treatment plant sludge will soon be entering the landfill.
4. The total amount of solid waste that can be expected of the landfill is 2000 cubic yards per week.

Surveyed Wastes	1,820.5 cubic yards/week
Water Treatment Plant Sludge	120. cubic yards/week (max.)
Waste Treatment Plant Sludge	<u>63.</u> cubic yards/week (avg.)
	2,003.5 say <u>2000 cubic yards/week</u>

5. The raw survey data follows.

MONDAY

NO. AD	DATE AM-FM	DUMPSTER NO.	TRUCK NO.	AMOUNT OF LOAD	DUMPSTER CAPACITY	TYPE OF WASTE	ASH MOISTURE CONTROL	NO. OF HOT LANT.
1	7:15 AM	101 ⁵⁰	G	1/4	✓	ASH OUT OF FILTERS	-	1-6
2	7:15 AM	25	B	4/4	✓	-	-	-
3	7:15 AM	12	W	1/2	✓	-	-	-
4	7:30 AM	#2 WAGON	F.B	4/4	✓	PAPER & GEN.	-	-
5	7:30 AM	25	B	4/4	✓	BLACK ASH	-	2-
6	7:45 AM	38	G	4/4	✓ ✓	-	-	-
7	7:45 AM	25	B	4/4	✓	BLACK ASH	-	-
8	7:55 AM	25	B	4/4	✓	BLACK ASH	-	-
9	8:05 AM	25	B	4/4	✓	BLACK ASH	-	-
10	8:07 AM	16	W	3/4	✓	-	-	-
11	8:10 AM	37	G	4/4	✓	PAPER	-	-
12	8:15 AM	25	B	4/4	✓	BLACK ASH	-	-
13	8:15 AM	FLAT-BED FLAT-BED	GOLD	4/4	-	DIRT	-	3
14	8:20 AM	#3 WAGON	G	1/4	-	PAPER	-	-
15	8:36 AM	36	G	4/4	-	PAPER	-	-
16	8:40 AM	YEARGIN	GOLD GOLD	4/4	-	DIRT	-	-3
17	8:40 AM	25	G	4/4	-	-	-	-
18	8:45	33	G	4/4	-	-	-	-
19	9:00	46	W	4/4	-	-	-	-
20	9:00	17 15	W	4/4	-	LACT. WAS.	-	-
21	9:15	YEARGIN	GOLD FLAT BED	4/4	-	DIRT	-	-3
22	9:15	-	RED DODGE TRUCK	4/4	-	WOOD	-	-#5
23	9:20	#1 WAGON	G	1/4	-	PAPER	-	-
24	9:25	24	B	4/4	-	BLACK ASH	-	-

NO. JAD	DATE AM-PM	DUMPSTER NO.	TRUCK NO.	AMOUNT OF LOAD	DUMPSTER CAPACITY	TYPE OF WASTE	ASH MOISTURE CONTENT	COMMENT NO. (SEE LAST 11)
25	9:30 AM	47	W	1/4	—	—	—	—
26	9:35 AM	25	B	4/4	—	BLACK ASH	—	—
27	9:50 AM	17 ¹⁵	W	4/4	—	LACT. WAS	—	—
28	9:55 AM	49	G	4/4	—	—	—	—
29	9:55 AM	25	B	4/4	—	BLACK ASH	—	2
30	10:00 AM	YEARGIN	FLAT BED	4/4	—	DIRT	—	— 3
31	10:05 AM	25	B	4/4	—	BLACK ASH	—	—
32	10:05 AM	RED DODGE	—	4/4	—	WOOD	—	— 5
33	10:15 AM	YEARGIN	FLAT BED	4/4	—	DIRT	—	— 3
34	10:20 AM	25	B	4/4	—	BLACK ASH	—	—
35	10:20 AM	YEARGIN	FLAT BED	4/4	—	DIRT	—	— 3
36	10:30 AM	25	B	4/4	—	BLACK ASH	—	— 1
37	10:30 AM	YEARGIN	FLAT BED	4/4	—	DIRT	—	— 3
38	10:35 AM	17	W	4/4	—	LACT WAS.	—	—
39	10:45 AM	25	B	4/4	—	BLACK ASH	—	—
40	10:45 AM	YEARGIN	FLAT BED	4/4	—	DIRT	—	— 3
41	10:50 AM	25	B ¹³	4/4	—	BLACK ASH	—	—
42	11:00 AM	100 A 100 ⁵⁴	G	1/2	—	CARB. FRILAKE	—	4
43	11:00 AM	YEARGIN	FLAT BED	4/4	—	DIRT	—	—
44	11:00	25	B	4/4	—	BLACK ASH	—	—
45	11:07 AM	17	W	4/4	—	LACT WAS.	—	—
46	11:07	Y	FLAT BED	4/4	—	DIRT	—	—
47	11:11 AM	25	B	4/4	—	BLACK ASH	—	—
48	11:20 AM	10	W	4/4	—	—	—	—

NO. AD	DATE AM-PM	DUMPSTER NO.	TRUCK NO.	AMOUNT OF LOAD	DUMPSTER CAPACITY	TYPE OF WASTE	ASH MOISTURE CONTENT	REAL TONNAGE LAST
49	11:20 AM	38 ✓	G	4/4 ✓	— ✓	—	—	—
50	11:45 AM	37	G	4/4	—	—	—	—
51	12:30 PM	25	B	4/4	—	BLACK ASH	—	—
52	12:35 PM	Y	FLAT BED	4/4	—	PAPER WOOD STL DRUMS	—	— 3
53	12:45 PM	7	W	4/4	—	—	—	—
54	12:50 PM	25	B	4/4	—	BLACK ASH	—	—
55	12:50 PM	36	G	4/4	—	PAPER	—	—
56	1:00 PM	25	B	4/4	—	BLACK ASH	—	—
57	1:00 PM	41	G	3/4	—	PAPER	—	—
58	1:10 PM	25	B ²¹	4/4	—	BLACK ASH	—	—
59	1:15 PM	17	W	4/4	—	LACT WAI	—	—
60	1:20 PM	RED DODGE	—	4/4	—	WOOD PAPER	—	1040 5
61	1:30 PM	45	G	3/4	—	—	—	—
62	1:45 P.M.	25	B	4/4	—	BLACK ASH	—	—
63	1:45 P.M.	6	W	4/4	—	PAPER	—	—
64	1:45 P.M.	Y	FLAT BED	4/4	—	PAPER	—	—
65	1:55 PM	44	G	4/4	—	—	—	—
66	2:15 P.M.	4	W	3/4	—	—	—	—
67	2:15 P.M.	39	G	4/4	—	—	—	—
68	2:30 PM	37	G	4/4	—	PAPER	—	—
69	2:35	RED DODGE	—	3/4	—	CONCRETE / STEEL	—	— 5
70	2:35	38	G	4/4	—	—	—	—
71	TUESDAY		8-10-76					
72	7:10	101:6	G	1/4	—	SAND	—	1

NO. AD	DATE AM-PM	DUMPISTER NO.	TRUCK NO.	AMOUNT OF LOAD	DUMPISTER CAPACITY	TYPE OF WASTE	ASH METERS CONTENT	OTHER COMMENTS
70	7:30	12	W	4/4	-	-	-	-
74	7:35	36	G	4/4	-	PAPER	-	-
75	7:50	33	G	3/4	-	-	-	-
76	8:00	16	W	3/4	-	-	-	-
77	8:10	WAGON #2	G	4/4	-	PAPER	-	-
78	8:10	38	G	4/4	-	PAPER	-	-
79	8:40	37	G	3/4	-	-	-	-
80	9:00	35	G	4/4	-	-	-	-
81	9:10	Y	Y	1/2	-	MUD	-	#3
82	9:20	17	W	4/4	-	LACT.	-	-
83	9:30	31	G	4/4	-	-	-	-
84	9:30	Y	Y	4/4	-	MUD	-	3
85	9:40	X	RED FLAT BED	3/4	-	WOOD	-	#5
86	9:45	17	W	4/4	-	LACT	-	-
87	9:50	30	G	4/4	-	-	-	-
88	9:55	Y	Y	4/4	-	-	-	3
89	10:10	17	W	4/4	-	LACT.	-	-
90	10:10	Y	Y	4/4	-	MUD	-	3
91	10:30	7	W	1/4	-	-	-	-
92	10:50	6	W	3/4	-	-	-	-
93	11:00	X	RED FLAT BED	4/4	-	WOOD	-	5
94	11:05	55	G	4/4	-	-	-	-
95	11:15	9	W	4/4	-	-	-	-
96	11:20	10	W	4/4	-	-	-	-

10-16 JIM BOTTRINI CAME BY V ON ME

NO. AD	DATE AM-PM	DUMPSTER NO.	TRUCK NO.	AMOUNT OF LOAD	DUMPSTER CAPACITY	TYPE OF WASTE	ASH MOISTURE CONTENT	TEST DATE LAST
97	11:40	13	W	4/4	-	-	-	-
98	11:40	48	G	4/4	-	-	-	-
99	12:45	29	G	4/4	-	-	-	-
100	1:00 PM	17	W	4/4	-	LACT	-	-
101	1:05	28	G	4/4	-	-	-	-
102	1:10	X	RED FLAT BED	4/4	-	WOOD	-	5
103	1:20	20	G	4/4 +	-	WOOD +	-	-
104	1:45	X	RED FLAT BED	4/4 +	-	WOOD GLASS	-	5
105	1:50	3	W	4/4	-	-	-	-
106	2:30	X	RED FLAT BED	4/4 +	-	WOOD PLASTIC	-	5
107	2:30	36	G	4/4	-	-	-	-
108	3:00	33	G	1/4	-	-	-	-
109	7:00 AM	32	G	4/4	-	-	-	-
110	7:15	25	B	4/4	-	FLY ASH	-	-
111	7:25	WAGON #2	G	1/4	-	PAPER	-	-
112	7:25	25	B	4/4	-	FLY ASH	-	-
113	7:25	37	G	4/4 +	-	PAPER	-	-
114	7:30	25	B ³	4/4	-	FLY ASH	-	-
115	7:35	10	W	2/4	-	PAPER	-	-
116	7:45	38	G	4/4 +	-	+ PAPER	-	-
117	7:45	25	B ⁴	4/4	-	FA	-	-
118	7:55	25	B ⁵	4/4	-	F-A	-	-
119	8:05	25	B ⁶	4/4	-	FA	-	-
120	8:10	16	W	3/4	-	-	-	-

NO. PAD	DATE AM-FM	DUMPSTER NO.	TRUCK NO.	AMOUNT OF LOAD	DUMPSTER CAPACITY	TYPE OF WASTE	ASH MOISTURE CONTENT	COMMIT. NO. (SLE LAST IN)
121	8:15	25	B ⁹	4/4	—	FLY ASH	—	—
22	8:15	X	RED FLAT BED	4/4 ⁺	—	+WOOD	—	#5
23	8:20	25	B ⁸	4/4	—	FLY ASH	—	—
24	9:00	X	YEARGIN CRANE	1-9'x4'x6" SLAB	—	CONC.	—	7 [#]
125	9:10	25	B ⁹	4/4	—	FLY ASH	—	—
26	9:10	46	W	3/4	—	—	—	—
27	9:25	45	G	2/4	—	—	—	—
28	9:30	25	B ¹⁰	4/4	—	FLY ASH	—	—
29	9:40	X	RED FLY BED	+4/4	—	WOOD PLASTIC	—	#5
130	10:00	25	B ¹¹	4/4	—	FLY ASH	—	6860lbs
31	10:00	7	W	4/4	—	—	—	—
32	10:10	25	B ¹²	4/4	—	FLY ASH	—	6860
33	10:20	49	G	2/4	—	—	—	—
34	10:20	6	W	1/4	—	—	—	—
135	10:20	25	B ¹³	4/4	—	FLY ASH	—	—
36	10:30	25	B ¹⁴	4/4	—	FLY ASH	—	—
37	10:40	25	B ¹⁵	4/4	—	FLY ASH	—	—
38	10:40	5	W	2 3/4	—	—	—	—
39	10:50	25	B ¹⁶	4/4	—	FLY ASH	—	—
140	11:00	25	B ¹⁷	4/4	—	FLY ASH	—	—
41	11:05	4	W	2/4	—	—	—	—
42	11:10	25	B ¹⁸	4/4	—	FLY ASH	—	—
43	11:10	100	G	1/4	—	—	—	—
44	11:30	24	G	3/4	—	—	—	—

0-11-70

NO. JAB	DATE AM-FM	DUMPSTER NO.	TRUCK NO.	AMOUNT OF LOAD	DUMPSTER CAPACITY	TYPE OF WASTE	ASH MOISTURE CONTENT	COMMENTS NO. C SEE LAST PAGE
145	11:45 AM	1	W	3/4	-	-	-	-
146	12:40 PM	25	B ¹⁹	4/4	-	FLY ASH	-	-
47	12:45	RED FLAT BED	X	4/4	-	WOOD PLASTIC	-	5
48	12:50	25	B ²⁰	4/4	-	FLY ASH	-	-
49	12:55	22	G	3/4	-	-	-	-
150	1:00	25	B ²¹	4/4	-	FLY ASH	-	-
151	1:10	25	B ²²	4/4	-	FLY ASH	-	-
52	1:15	Y	Y	3/4	-	DIRT	-	3
53	1:15	17	W	4/4	-	LACT	-	-
54	1:25	21	G	4/4	-	-	-	-
55	1:40	Y	Y	4/4	-	DIRT	-	3
56	1:45	RED FLAT BED	X	4/4	-	WOOD PLASTIC	-	5
57	1:55	Y	Y	3/4	-	DIRT	-	3
58	2:00	100	G	4/4	-	WOOD	-	-
59	3:00	40	G	4/4	-	-	-	-
160	* 12 OF AUGUST * 7:00	37	G	4/4	-	PAPER +	-	-
161	7:10	RED FLAT BED	X	4/4	-	WOOD PLASTIC	-	5
162	7:20	#2 WAGON	G	1/4	-	PAPER	-	-
163	7:30	38	G	3/4	-	-	-	-
164	8:00	RED FLAT BED	X	4/4	-	FRGP PIPE PLASTIC	-	5
165	8:20	16	W	3/4	-	-	-	-
166	8:30	43	G	2/4	-	-	-	-
167	8:40	#1 WAGON	X	3/4	-	PAPER	-	-
168	8:45	RED F.B	X	4/4	-	PLASTIC PIPE	-	5

NO. LOAD	DATE AM-FM	DUMPSTER NO.	TRUCK NO.	AMOUNT OF LOAD	DUMPSTER CAPACITY	TYPE OF WASTE	ASH MOISTURE CONTENT	COMMENTS NO. (SEE LAST PAGE)
160	8:45	44	G	3/4	-	-	-	-
170	9:15	27	G	3/4	-	-	-	-
71	9:40	9	W	4/4	-	-	-	-
72	10:00	RED FLAT BED	X	3/4	-	PLASTIC WOOD	-	5
73	10:00	6	W	4/4	-	-	-	-
74	10:30	50	G	2/4	-	-	-	-
175	10:30	RED F.B.	X	4/4	-	WOOD	-	5
76	10:30	Y	Y	4/4	-	DIRT	-	3
77	10:40	RED F.B.	X	4/4	-	WOOD	-	5
78	10:40	Y	Y	4/4	-	DIRT	-	3
79	10:40	17	W	4/4	-	LACT	-	-
180	10:50	Y	Y	4/4	-	DIRT	-	3
181	10:55	48	G	3/4	-	-	-	-
82	11:05	11	W	4/4	-	-	-	-
83	11:15	RED F.B.	X	4/4	-	WOOD	-	5
84	11:25	RED F.B.	X	4/4	-	WOOD	-	5
185	11:25	Y	Y	4/4	-	DIRT	-	3
186	11:30 AM	RED F.B.	X	4/4	-	ALUM	-	5
87	12:40 PM	RED FB	X	4/4	-	WOOD CONC.	-	5
88	12:40	26	G	4/4	-	-	-	-
89	12:50	RED F.B.	X	4/4	-	DIRT	-	5
190	1:00	Y	Y	4/4	-	DIRT	-	3
191	1:00	16	W	2/4	-	-	-	-
192	1:05	R.F.B.	X	4/4	-	WOOD	-	5

0-16-10

NO. CAD	DATE AM-FM	DUMPSTER NO.	TRUCK NO.	AMOUNT OF LOAD	DUMPSTER CAPACITY	TYPE OF WASTE	ASH MOISTURE CONTENT	COMMENTS NO. (SEE LAST PAGE)
93	1:15	7 18	W	4/4	-	-	-	-
94	1:15	31	G	4/4	-	-	-	-
195	1:25	Y	Y	4/4	-	DIRT	-	3
96	1:30	6	W	4/4	-	-	-	-
97	1:40	RFB	X	4/4	-	WOOD	-	5
98	1:40	Y	Y	4/4	-	DIRT	-	3
99	2:20	30	G	4/4	-	-	-	-
200	2:45	33	G	3/4	-	-	-	-
201	2:45	RFD	X	4/4	-	WOOD	-	-
2	8-13-76 7:10	37	G	3/4	-	-	-	-
3	7:20	10	W	2/4	-	-	-	-
4	7:20	RFB	X	4/4	-	TIN	-	5
7	7:30	33	B	4/4	-	FLYASH	-	-
6	7:30	4	W	3/4	-	-	-	-
7	7:40	33	B	-	-	FLYASH	-	-
8	7:45	RFB	X	4/4	-	TIN WOOD	-	- 5
9	7:50	33	B	4/4	-	FLY ASH	-	-
210	8:00	33	B	4/4	-	F.A.	-	-
11	8:00	3	W	4/4 +	-	PAPER	-	-
12	8:10	RFB	X	4/4	-	TIN WOOD	-	-
13	8:10	33	B	4/4	-	F.A.	-	- 5
14	8:20	33	B ⁶	4/4	-	F.A.	-	-
215	8:20	45	G	2/4	-	-	-	-
216	8:20	RFB	X	4/4	-	TIN WOOD	-	- 5

NO. LOAD	DATE AM-FM	DUMPSTER NO.	TRUCK NO.	AMOUNT OF LOAD	DUMPSTER CAPACITY	TYPE OF WASTE	ASH MOISTURE CONTENT	COMMENT NO. COLE LAST TMS
217	8:40	46	W	4/4	-	-	-	-
218	8:40	44	G	4/4	-	-	-	-
219	8:45	33	B	4/4	-	F.A	-	-
220	9:15	33	B	4/4	-	F.A.	-	-
221	9:15	RFB	x	4/4	-	TIN WOOD	-	5-
222	9:25	RFB	x	4/4	-	TIN WOOD	-	5
223	9:35	47	W	4/4	-	-	-	-
224	9:35	33	B	4/4	-	FA	-	-
225	9:50	33	B	4/4	-	FA	-	-
226	10:00	RFB	x	4/4	-	WOOD	-	5 5
227	10:00	17	x	4/4	-	LACT	-	-
228	10:15	29	E	4/4 ⁺	-	+DIRT WOOD	-	-
229	10:20	33	B	4/4	-	FA	-	-
230	10:40	33	B	4/4	-	FA	-	-
231	10:40	Y	Y	4/4	-	MUD	-	3
232	11:00	33	B ¹²	4/4	-	FA	-	-
233	11:00	100 ¹²	G	1/4	-	-	-	-
234	11:10	33	B	4/4	-	FA	-	-
235	11:10	17	x	4/4	-	LACT	-	-
236	11:10	Y	Y	4/4	-	DIRT	-	3-
237	12:30 PM	6	W	3/4	-	-	-	-
238	12:45	33	B	4/4	-	FA	-	-
239	1:00	17	W	4/4	-	LACT	-	-
240	1:00	38	G	4/4 ⁺	-	-	-	-

NO. ROAD	DATE AM-FM	DUMPSTER NO.	TRUCK NO.	AMOUNT OF LOAD	DUMPSTER CAPACITY	TYPE OF WASTE	ASH MOISTURE CONTENT	COMMENT NO. (SEE LAST PAGE)
241	1:00	33	B ¹⁵	-	-	FA	-	-
242	1:05	X	RFB	3/4	-	FA	-	-
243	1:05	Y	Y	1/4	-	PAPER TRASH	-	3
244	1:10	33	B	4/4	-	FA	-	-
245	1:15	X	RFB	4/4	-	FA	-	B-5
246	1:15	53	G	4/4	-	-	-	-
247	1:20	33	B	4/4	-	FA	-	-
248	1:20	16	W	3/4	-	-	-	-
249	1:25	X	RFB	4/4	-	FA	-	5B
250	1:30	33	B	4/4	-	FA	-	-
51	1:30	41	G	4/4	-	-	-	-
50	1:35	<u>17</u>	W	4/4	-	LACT	-	-
53	1:35	X	RFB	4/4	-	FA	-	B5
54	1:40	33	B ¹⁹	4/4	-	FA	-	-
255	1:45	X	RFB	3/4	-	FA	-	5
51	1:50	<u>17</u>	W	4/4	-	LACT	-	-
57	1:55	X	RFB	4/4	-	FA	-	5
58	1:55	Y	Y	4/4	-	DIRT	-	3
59	2:05	X	RFB	4/4	-	FA	-	5
260	2:10	33	B	4/4	-	FA	-	-
261	2:15	18	G	4/4	-	-	-	-
262	2:27	33	B ²¹	4/4	-	FA	-	-
263	2:25	<u>17</u>	W	4/4	-	LACT	-	-
264	2:35	Y	Y	4/4	-	PAPER	-	3

NOTES:

- 1) THIS DUMPSTER WAS SAME CUB. YARD, AS # ~~28~~ 30
- 2) BLACK ASH = FLY ASH
- 3) YERGIN FLAT BED TRUCK BED 14' X 8' X 3' TALL
- 4) GARB. FROM LAKE. # 100 NEW NO. 6 YD.
- 5) 10 YD. TRUCK RED DODGE
- 6) DUMPSTER # 101 - SAND FROM FILTERS (6 YD.)
- 7) 3 YARDS CONC.

6-7 YD. DIRT

6 yards fly ash weighs 6860 #

EAT 11:30
TO 12:00



J. E. SIRRINE COMPANY

ARCHITECTS

ENGINEERS

PLANNERS

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