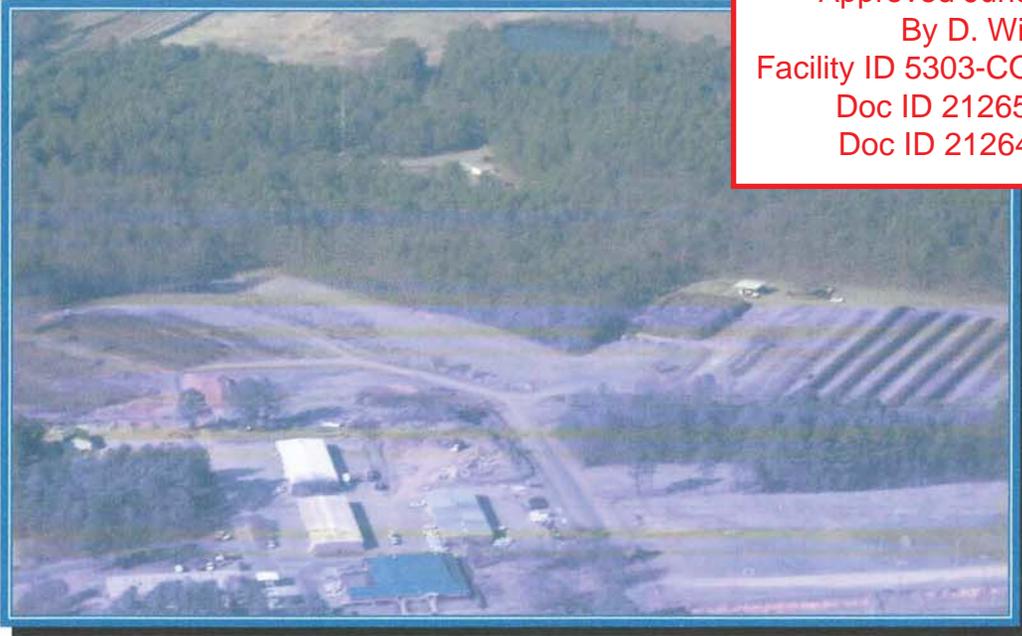


APPLICATION REQUIREMENTS FOR LARGE TYPE 1 SOLID WASTE COMPOST FACILITY

APPROVED DOCUMENT
Division of Waste Management
Solid Waste Section
Approved June 17, 2014
By D. Wilson
Facility ID 5303-COMPOST-1992
Doc ID 21265 (permit)
Doc ID 21264 (applic)



CITY OF SANFORD
SANFORD, NORTH CAROLINA

Last updated January 2013

**APPLICATION FOR LARGE TYPE I
COMPOST FACILITY**



**CITY OF SANFORD
SANFORD, NORTH CAROLINA**

JANUARY 16, 2013



Sanford Fire Department

Post Office Box 3729
Sanford, NC 27331-3729

Wayne Barber
Fire Chief

Office: 919-775-8310
Fax: 919-775-5090

May 7, 2014

To Whom It May Concern:

In reference to the City of Sanford's unprocessed wood debris pile, the Fire Department has access to all sides. There are also multiple fire hydrants within a 750 ft radius of the pile for suppression of any fires that may occur. With the referenced available hydrants and equipment that the City and the Fire Department have on hand, we should be able to contain and extinguish a fire in the debris pile that is approximately 115 ft wide, 130 ft long, and 12-13 ft high.

Regards,

T. Wayne Barber, Fire Chief

1

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STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
1646 Mail Service Center RALEIGH, N.C. 27699



City of Sanford, NC

Is hereby issued a permit modification for the operation of a

**LARGE, TYPE I SOLID WASTE COMPOST
FACILITY**

at

**North 5th Street
Permit Number 53—03**

In accordance with Article 9, Chapter 130A, of the General Statutes of North Carolina and all rules promulgated thereunder and subject to the conditions set forth in this permit.

James C. Coffey, Chief
Solid Waste Section

Date

Permit Conditions

1. Operation and maintenance of this compost facility shall be in accordance with the Solid Waste Compost Rules (15A NCAC 13B, Section .1400), the permit application and the Operation and Maintenance Manual submitted with the permit application. Failure to comply may result in compliance actions or permit revocation.
2. This facility shall be operated in such a manner that erosion and runoff from the sit shall be controlled. Any leachate generated at the facility shall be managed in such a manner that it will not be allowed to adversely impact ground or surface waters. Groundwater monitoring wells may be required if there is indication of the potential for groundwater contamination.
3. Only materials specifically listed in the permit application may be managed at this facility without adequate testing and prior approval of the Division of Waste Management.
4. Odor shall be controlled at the property boundary in accordance with Rule .1404(c) (3) & (4). Wastes with low carbon-nitrogen ratios, such as grass clippings, shall be incorporated into the windrows prior to the waste starting to compost (heat), create odors or attract vectors.
5. The facility shall be operated and maintained with sufficient dust control measures to minimize airborne emissions and to prevent dust from becoming a nuisance or safety hazard.
6. Temperatures of compost windrows shall be monitored at a frequency adequate to assure that the temperature requirements of Rule .1406(11) and (12) are met. Facility operation records shall be maintained in accordance with Rule .1408(b).
7. Compost produced at the facility shall meet the requirements of Rule .1407 of the Solid Waste Compost Rules and the permit application.
8. An annual report of facility activities for the fiscal year July 1 to June 30 shall be submitted to the Solid Waste Section and the Waste Management Specialist that inspects the facility by August 1 of each year. This report shall include the amount of materials composted in tons and the results of all required pathogen and metal testing.
9. Groundwater monitoring wells may be required if there is indication of the potential for groundwater contamination.
10. This permit to operate shall expire on September 30, 2009. A properly completed application for permit renewal, consistent with .0201(e) and the compost rules, shall be submitted at least ninety (90) days prior to the permit expiration date in order to assure continued operation. Changes in ownership, or receiving additional types of wastes shall require a permit modification.



1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

(b) The following information is required for an application for a permit to construct a proposed Large Type 1 solid waste compost facility.

(1) An aerial photograph or scaled drawing, where one inch is less than or equal to 400 feet, accurately showing the area within one-fourth mile of the proposed site's boundaries with the following specifically identified:

- (A) Entire property owned or leased by the person proposing the site;
- (B) Location of all homes, wells, industrial buildings, public or private utilities and roads, water courses, dry runs, and other applicable information regarding the general topography within one-fourth mile; and
- (C) Land use zoning of the proposed site.

AERIAL PHOTOGRAPH – Submitted with original application. See Section 6 of this manual.

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

- (b) The following information is required for an application for a permit to construct a proposed Large Type 1 solid waste compost facility.
 - (2) A letter from the unit of government having zoning jurisdiction over the site which states that the proposed use is allowed within the existing zoning, if any, and that any necessary zoning approval or permit has been obtained.

LETTER ATTACHED.

Sanford/Lee County

Planning and Development
P.O. Box 3729, Sanford, N.C. 27331-3729

Robert L. Bridwell, III
Director

February 5, 2010

City of Sanford
Public Works Department, Engineering Division
Att: Mr. Paul Weeks, City Engineer
P.O. Box 3729
Sanford, NC 27331

Re: Zoning Verification Letter for the City of Sanford Compost Facility in Sanford,
North Carolina

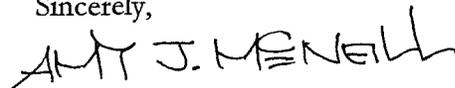
Dear Mr. Weeks,

This letter is in response to a request via email on February 4, 2010 for a zoning verification letter for the City of Sanford Compost Facility.

The above referenced property is located within the City of Sanford's zoning jurisdiction and is zoned Light Industrial (LI) district. Our records indicate that this property was zoned LI in March of 1992. The zoning has not changed since that time.

Please let me know if I may be of additional assistance in this matter.

Sincerely,



Amy J. McNeill

Contact Info.

Amy J. McNeill, Planner II
Sanford/Lee County Planning & Development
900 Woodland Avenue
Sanford, NC 27330
Phone: (919) 718-4656, x5397
Fax: (919) 718-4637
amy.mcneill@sanfordnc.net



Box 338
Sanford, NC 27330

PLN: (919) 775-8242
INS: (919) 775-8244
FAX: (919) 775-8207

City Of Sanford

DEPARTMENT OF PLANNING, COMMUNITY DEVELOPMENT, AND INSPECTION

HAROLD P. McNEILL
DIRECTOR

MEMORANDUM

TO: Victor Czar, City Engineer
FROM: Harold P. McNeill, Director of Planning & C.D.
SUBJECT: Yard Waste Facility
DATE: March 19, 1992

Harold P. McNeill

On March 17, 1992 the Sanford Board of Aldermen with recommendation from the Sanford Planning Board granted a "Conditional Use" permit to the Sanford Public Works Department to operate a collection center for yard waste and similar items on a 52.87 acre tract of land located on the northern end of N. Fifth Street and adjoining and west of Colon Road.

This property is located in a Light Industrial zoning district. Collection centers for yard waste are a "Conditional Use" in this zoning district.

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

- (b) The following information is required for an application for a permit to construct a proposed Large Type 1 solid waste compost facility.
 - (3) An explanation of how the site complies with siting and design standards in Rule .1404 of this section.

EXPLANATION ATTACHED.

.1404 SITING/DESIGN REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

(a) A site shall meet the following requirements at the time of initial permitting and shall continue to meet these requirements throughout the life of the permit only on the property owned or controlled by the applicant or by the landowner(s) at the time of permitting:

- (1) A site located in the floodplain shall not restrict the flow of the 100-year flood; reduce the temporary storage capacity of the floodplain; or result in washout of solid waste so as to pose a hazard to human life, wildlife, land or water resources.

The site is not located in a 100-year floodplain.

- (2) A 100-foot minimum buffer is required between all property lines and compost areas for Type 3 and 4 facilities, 50-foot for Type 1 or 2 facilities.

All buffers between active composting areas and the property line of the facility exceed the 100-foot minimum buffer requirement.

- (3) A 500-foot minimum buffer is required between compost areas and residences of dwellings not owned and occupied by the permittee, except that Type 1 and Small Type 2 and 3 facilities shall have a 200-foot minimum buffer.

As originally constructed (and shown on the enclosed site plan), a portion of the windrow area does not meet this 500-foot minimum buffer. Active composting of leaves shall take place in windrow areas beyond the 500-foot minimum buffering requirement. Only mature compost shall be stored in windrows 9, 10, and 11.

- (4) A 100-foot minimum buffer is required between all wells and compost areas, except monitoring wells.

All buffers between composting areas and any known well site exceed the 100-foot minimum buffering requirement.

- (5) A 50-foot minimum buffer is required between perennial streams/ivers and compost areas.

All buffers required between perennial streams/ivers and active composting areas are exceeded.

- (6) A compost facility shall be located in accordance with 15A NCAC 2B .0200, Classification and Water Quality Standards Applicable to Surface Waters in North Carolina.

The compost facility is sited such that it meets all the requirements of 15A NCAC 2B .0200.

- (7) All portions of any compost facility located over a closed-out disposal area shall be designed with a pad adequate to protect the disposal area cap from being disturbed, as defined in Part (a)(10)(E) of this Rule, and there shall be no runoff from the pad onto the cap or side slopes of the closed out area.

The compost facility is not located over a closed-out disposal area.

- (8) A 25-foot minimum distance is required between compost areas and swales or berms to allow for adequate access of fire fighting equipment.

All distances between active composting areas and drainage swales exceed the 25-foot minimum distances.

- (9) A site shall meet the following surface water requirements:

- (A) A site shall not cause a discharge of materials or fill materials into waters or wetlands of the state that is in violation of Section 404 of the Clean Water Act;
- (B) A site shall not cause a discharge of pollutants into waters of the state that is in violation of the requirements of the National Pollutant Discharge Elimination System (NPDES), under Section 402 of the Clean Water Act;
- (C) A site shall not cause non-point source pollution of waters of the state that violates assigned water quality standards.

Discharge from the City of Sanford compost facility site does not directly discharge into waters of the state.

(10) A site shall meet the following groundwater requirements:

- (A) A site shall not contravene groundwater standards as established under 15A NCAC 2L.

The site does not violate the groundwater standards set forth in 15A NCAC 2L.

- (B) Portions of a site used for waste receipt and storage, active composting, and curing shall have a soil texture finer than loamy sand and the depth to the seasonal high water table shall be maintained at least 12 inches for a Type 1 or 2 facility and 24 inches for a Type 3 facility, unless a pad is provided.

See soil test attached.

- (C) A pad shall be provided for portions of a Type 4 facility used for waste receiving and storage, active composting, and curing.

The City of Sanford is not operating a Type 4 facility.

- (D) A pad is not required for storage of finished product that is dried so as to pass the Paint Filter Liquids Test (EPA Method 9095), and for which the storage area is prepared in such a manner that water does not collect around the base of the stored material, and where the depth to the seasonable high water table is maintained at least 12 inches; and

A pad is not required due to the characteristics of the existing soils.

- (E) The linear coefficient of permeability of pads required in accordance with this Rule shall not be greater than 1×10^{-7} centimeters per second. If natural soils are used, the liner must be at least 18 inches thick.

A pad is not required due to the characteristics of the existing soils.

- (b) For Subparagraphs (a)(2) through (a)(4) and Part (a)(10)(B) of this Rule, (dependent upon waste type, facility design, and regional topography) alternative minimum buffers or requirements may be increased if deemed necessary by the Division in order to protect public health and the environment or to prevent the creation of a nuisance.

It is our belief that, due to the information provided, no increase in buffering is warranted.

- (c) A site shall meet the following design requirements:

- (1) A site shall not allow uncontrolled public access.

The perimeter of the site is fenced with lockable gates controlled by the City of Sanford.

- (2) A site shall meet the requirements of Sedimentation Pollution Control Law (15A NCAC 4).

Prior to construction an erosion and sediment control plan was submitted and approved. The plan was implemented during the course of the construction and, upon completion of construction, the city received approval from the North Carolina Department of Environment, Health, and Natural Resources, Land Quality Section. This approval was reaffirmed by Debbie Fuquay of the above department on 8/7/97.

- (3) A site shall meet the requirements of the Air Pollution Control Requirements (15A NCAC 2D) to minimize fugitive emissions and odors.

Air pollution is minimized by covering all nitrogen-bearing waste with wood chips and incorporating it into windrows within 48 hours after arrival at the site.

- (4) A site shall be designed to minimize odors at the property boundary.

The site is located in a sparsely populated area and minimum buffer requirements are met.

FROM : LEE CO. SOIL & WATER

** TOTAL PAGE 004 **

NOV 04 '97 02:43PM

P.2

**DEPARTMENT OF ENVIRONMENT AND NATURAL
RESOURCES- DIVISION OF SOIL AND WATER CONSERVATION:
REGIONAL SOIL SCIENTIST**

TO: LAUREN MASSEY, DISTRICT CONSERVATION

FROM: RICHARD BROOKS, RALEIGH REGIONAL SOIL SCIENTIST

DATE: NOVEMBER 4, 1997

RE: CITY OF SANFORD COMPOST SITE



The following soils description is in response to your request to help the City of Sanford complete the permit package for a Type III compost facility.

The site, just north of Sanford, consists of Mayodan soils formed in Tertiary sediment and is situated on a sideslope position ranging from 5 to 9 percent slopes. This site has previously been permitted as a compost site, but is in process of completing requirements to be designated as a Type III facility. The site is well compacted due to heavy equipment traffic. Between the compost beds are gravelled equipment paths. The soils on the site are as follows:

MAYODAN SOILS

A		Removed during original construction
Bt1	0-6"	7.5YR5/8 (strong brown) clay loam with 2.5YR5/8 (red) mottles, very firm, sticky, structure is almost massive due to compaction.
Bt2	2-27	2.5YR4/8 (red) clay to clay loam with 7.5YR5/6 (strong brown) mottles, firm, sticky, moderate medium subangular blocky structure.
Bt3	27-38	2.5YR4/8 (red) clay loam, firm to friable, slightly sticky, weak medium subangular blocky structure.
BC	38-49+	2.5YR4/8 (red), 7.5YR5/6 (strong brown), 2.5YR8/4 (light reddish brown), silty clay loam, friable, nonsticky, weak medium subangular blocky structure.

If I can be of further assistance, please let me know. (919-571-4700)

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

(b) The following information is required for an application for a permit to construct a proposed Large Type 1 solid waste compost facility.

(4) A detailed report indicating the following:

(A) Waste type(s), source and quality of the solid waste to be composted, including the source and expected quantity of any bulking agent or amendment (if applicable), and expected recycle of bulking agent or compost, and any seasonal variations in the solid waste type of quantity;

LEAVES- are collected year-round from the curbside throughout the city Monday through Friday. The facility usually takes in about 13,500 cubic yards of leaves and sells about 6,000 cubic yards of compost annually.

LIMBS- are collected daily throughout the year at curbside, Monday through Friday. The facility usually takes in about 23,000 cubic yards of limbs and disposes of approximately 12,000 cubic yards of wood chips annually.

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

(b) The following information is required for an application for a permit to construct a proposed Large Type 1 solid waste compost facility.

(4) A detailed report indicating the following:

(B) For facilities which utilize natural soils as a pad, a soil evaluation of the site conducted by a soil scientist down to the depth of four feet or to be bedrock or evidence of a seasonal high water table, to evaluate all chemical and physical soil properties and depth of the seasonal high water table.

In March of 1993, Patterson exploration Services visited the above-referenced site to determine the plasticity index of the soil obtained from a selected compost pad. A copy of their test results is attached.

In November of 1997, Richard Brooks, Raleigh Regional Soil Scientist, conducted soil tests on the above- referenced site. A copy of his report is attached.



**PATTERSON
EXPLORATION SERVICES**

P.O. BOX 3008 - SANFORD, N.C. 27331-3608 . (919) 774-3770
FAX: (919) 774-3510

March 18, 1993

Mr. Larry Craig
City of Sanford
P.O. Box 338
Sanford, N. C. 27330

RE: Testing Services - Compost Facility
City of Sanford
PXS Job No. 031393

Dear Mr. Craig:

As requested, a representative of Patterson Exploration Services visited the above referenced site to determine the plasticity index of the soil obtained from a selected compost pad.

Observations of two disturbed areas in the pad determined that the pad consisted of a red elastic SILT (MH) and a tan lean CLAY (CL). Atterberg Limits Tests (ASTM: D4318) were performed on both soil types to determine their plasticity index. See Attachments for test results.

We appreciate serving you on this project.

Please contact us at your convenience if you have any questions.

Sincerely,

Paul K. Craig, Jr.
Engineering Technician

Attachments

PKC/scp

FROM : LEE CO. SOIL & WATER

** TOTAL PAGE.004 **

NOV 04 '97 02:43PM

P.2

**DEPARTMENT OF ENVIRONMENT AND NATURAL
RESOURCES- DIVISION OF SOIL AND WATER CONSERVATION:
REGIONAL SOIL SCIENTIST**

TO: LAUREN MASSEY, DISTRICT CONSERVATION
FROM: RICHARD BROOKS, RALEIGH REGIONAL SOIL SCIENTIST
DATE: NOVEMBER 4, 1997
RE: CITY OF SANFORD COMPOST SITE



The following soils description is in response to your request to help the City of Sanford complete the permit package for a Type III compost facility.

The site, just north of Sanford, consists of Mayodan soils formed in Trassic sediment and is situated on a sideslope position ranging from 5 to 9 percent slopes. This site has previously been permitted as a compost site, but is in process of completing requirements to be designated as a Type III facility. The site is well compacted do to heavy equipment traffic. Between the compost beds are gravelled equipment paths. The soils on the site are as follows:

MAYODAN SOILS

- A Removed during original construction
- Bt1 0-6" 7.5YR5/8(strong brown) clay loam with 2.5YR5/8(red) mottles, very firm, sticky, structure is almost massive due to compaction.
- Bt2 2-27 2.5YR4/8(red) clay to clay loam with 7.5YR5/6(strong brown) mottles, firm, sticky, moderate medium subangular blocky structure.
- Bt3 27-38 2.5YR4/8(red) clay loam, firm to friable, slightly sticky, weak medium subangular blocky structure.
- BC 38-49+ 2.5YR4/8(red), 7.5YR5/6(strong brown), 2.5YR6/4(light reddish brown), silty clay loam, friable, nonsticky, weak medium subangular blocky structure.

If I can be of further assistance, please let me know. (919-571-4700)



Understanding the Soil Test Report

LAWN, GARDENS AND ORNAMENTALS

(Crop Codes 040 - 060)



The amounts of lime and fertilizer shown under the heading "Recommendations" are the most important parts of the soil test report. Rates are given in units of lbs/M, which is the same as lbs/1000 ft². If you have a 3750-ft² lawn and are advised to apply 40 lbs/M, then the amount of lime or fertilizer to add is 150 lbs, or (3750 ft² / 1000 ft²) x 40 lbs.

The type or grade of fertilizer recommended depends on the soil test level of phosphorus and potassium. A fertilizer recommendation might be, for example, 20 lbs of 10-10-10 per 1000 ft² or an equivalent fertilizer, such as 10 lbs of 20-20-20. Note 4, enclosed with your report, shows how to calculate fertilizer rates from different sources. When phosphorus (P-I) and potassium (K-I) indices are higher than 50, nitrogen will be the only fertilizer recommended. A typical nitrogen recommendation would be 1.0 lb N/1000 ft². Ammonium nitrate (33.5% N) applied at 3.0 lbs would provide 1.0 lb of nitrogen. For centipedegrass, the annual nitrogen rate is 0.5 lb/1000 ft².

The optimum pH for most turfgrasses, vegetables, shrubs, and annual and perennial flowers ranges from 6.0 to 6.5. "Acid-loving" plants, such as azaleas and rhododendrons, do better at a pH between 5.0 and 5.5. The optimum pH for centipedegrass is 5.5. Maintaining the proper pH is just as important as applying fertilizer. For additional information on lime and fertilizer application, see Note 4 "Lawns, Gardens, and Ornamentals" enclosed with your report.

Abbreviations

MIN	mineral soil
M:O	mineral-organic soil
O	organic soil
HM%	percent humic matter
W/V	weight/volume of soil
CEC	cation exchange capacity
BS%	percent of CEC occupied by bases
Ac	acidity (decreases as pH increases)
P-I	phosphorus index
K-I	potassium index
Ca	calcium
Mg	magnesium
Na	sodium
K	potassium
P ₂ O ₅	phosphate
B	boron

Section 3

Page 16

Soil Test Index		Crop Response to Nutrient Application				
Range	Rating	Phosphorus	Potassium	Manganese	Zinc	Copper
0-10	Very Low	Very High	Very High	Very High	Very High	Very High
11-25	Low	High	High	High	High	High
26-50	Medium	Medium *	Medium *	None	None	None
51-100	High	None	Low-None	None	None	None
100+	Very High	None	None	None	None	None

* Response decreases as soil test index increases.



Soil Test Report

grower: Sanford, City of
 Attn: Phil Lawrence
 PO Box 3729
 Sanford, NC 273313729

Copies to:

Farm:

11/20/97

SERVING N.C. CITIZENS FOR OVER 50 YEARS

Lee County

Agronomist Comments:

Field Information		Applied Lime		Recommendations													
Sample No.	Last Crop	Mo	Yr	T/A	Crop or Year	Lime	N	P ₂ O ₅	K ₂ O	Mg	Cu	Zn	B	Mn	See Note		
COMP1					1st Crop: No Crop												
					2nd Crop:												

Test Results																					
Soil Class	HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	Mn-I	Mn-AI (1)	Mn-AI (2)	Zn-I	Zn-AI	Cu-I	S-I	SS-I	NO ₃ -N	NH ₄ -N	Na
MIN	0.13	1.16	5.4	59.0	2.2	4.7	27	54	35.0	18.0	29			277	277	323	264				0.1

Field Information		Applied Lime		Recommendations													
Sample No.	Last Crop	Mo	Yr	T/A	Crop or Year	Lime	N	P ₂ O ₅	K ₂ O	Mg	Cu	Zn	B	Mn	See Note		
COMP2					1st Crop: No Crop												
					2nd Crop:												

Test Results																					
Soil Class	HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	Mn-I	Mn-AI (1)	Mn-AI (2)	Zn-I	Zn-AI	Cu-I	S-I	SS-I	NO ₃ -N	NH ₄ -N	Na
MIN	0.13	1.05	3.7	19.0	3.0	4.5	0	19	5.0	13.0	9			7	7	16	178				0.1

Heavy Metal Soil Test Report

MEHLICH-3 EXTRACTION

Sanford, City of
Attn: Phil Lawrence
PO Box 3729
Sanford, NC 273313729
Lee County

Report #: 14836

Questions concerning these analyses should be referred to the Agronomic Division, Soil Testing Section

Sample ID	Cd Cadmium	Ni Nickel	Pb Lead	Se Selenium mg/dm ³ (ppm)	Cr Chromium	Al Aluminum	As Arsenic
COMP1	0.00	0.60	0.00	0.00	0.20		
COMP2	0.00	0.10	0.00	0.00	0.20		6.20 7.50

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

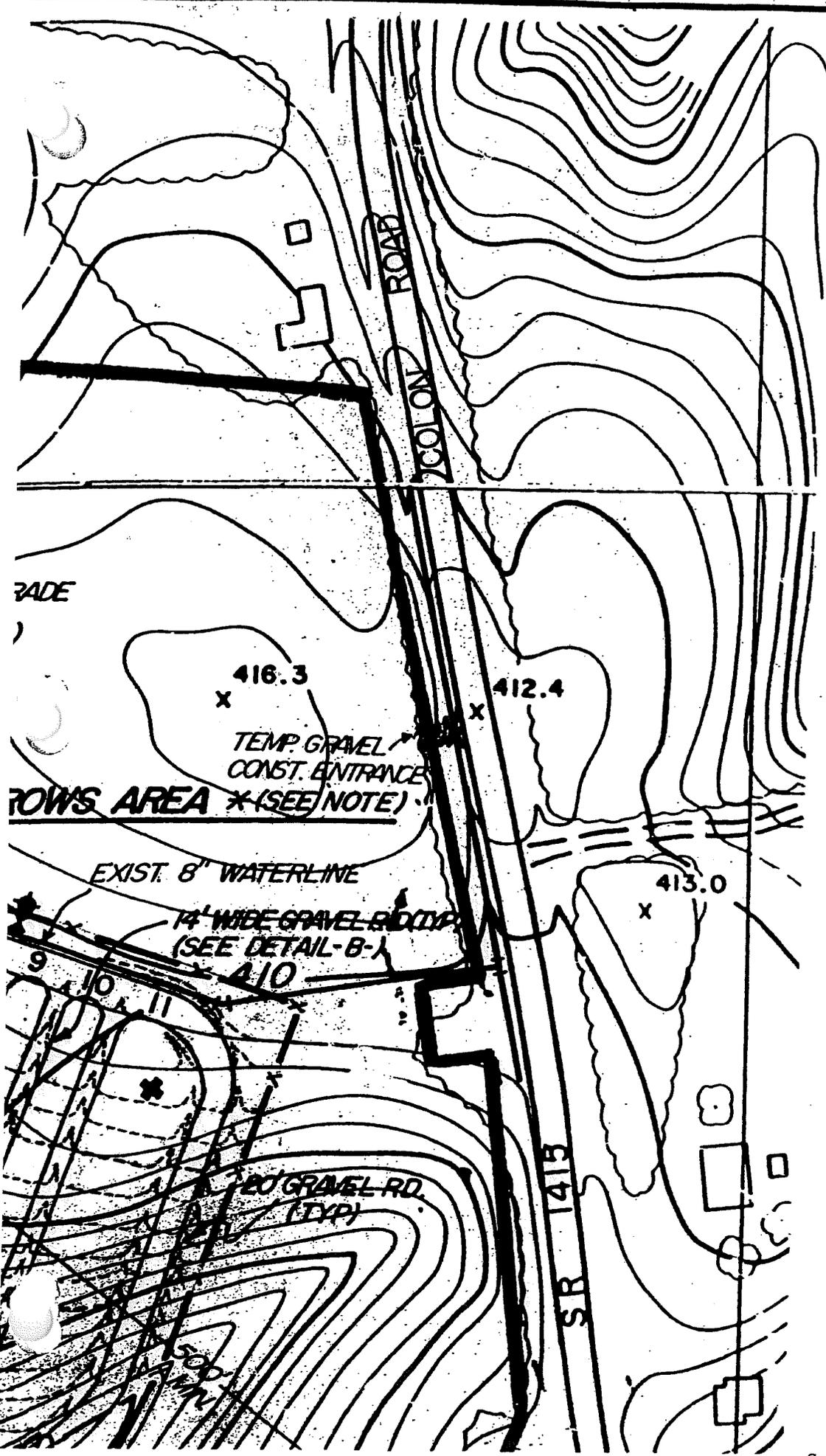
- (b) The following information is required for an application for a permit to construct a proposed Large Type 1 solid waste compost facility.
 - (5) Site plans at a scale where one inch is less than or equal to 100 feet to the inch that delineates the following:
 - (A) Existing and proposed contours; at intervals appropriate to the topography;
 - (B) Location and evaluation of dikes, tranches, and other water control devices and structures for the division and controlled removal of surface water;
 - (C) Designated setbacks, buffer zones and property lines;
 - (D) Proposed utilities and structures;
 - (E) Access roads, details on traffic patterns;
 - (F) Areas for unloading, processing, active composting, curing, and storage of material;
 - (G) Areas for unloading, processing and sorting recyclables, household hazardous waste, and other materials, where applicable;
 - (H) Proposed surface and groundwater monitoring locations;
 - (I) Flood plains and wetlands; and
 - (J) Benchmarks.

SITE PLAN ATTACHED.

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

- (b) The following information is required for an application for a permit to construct a proposed Large Type 1 solid waste compost facility.
 - (B) Operation plan for the facility.

Operational procedures manual follows.



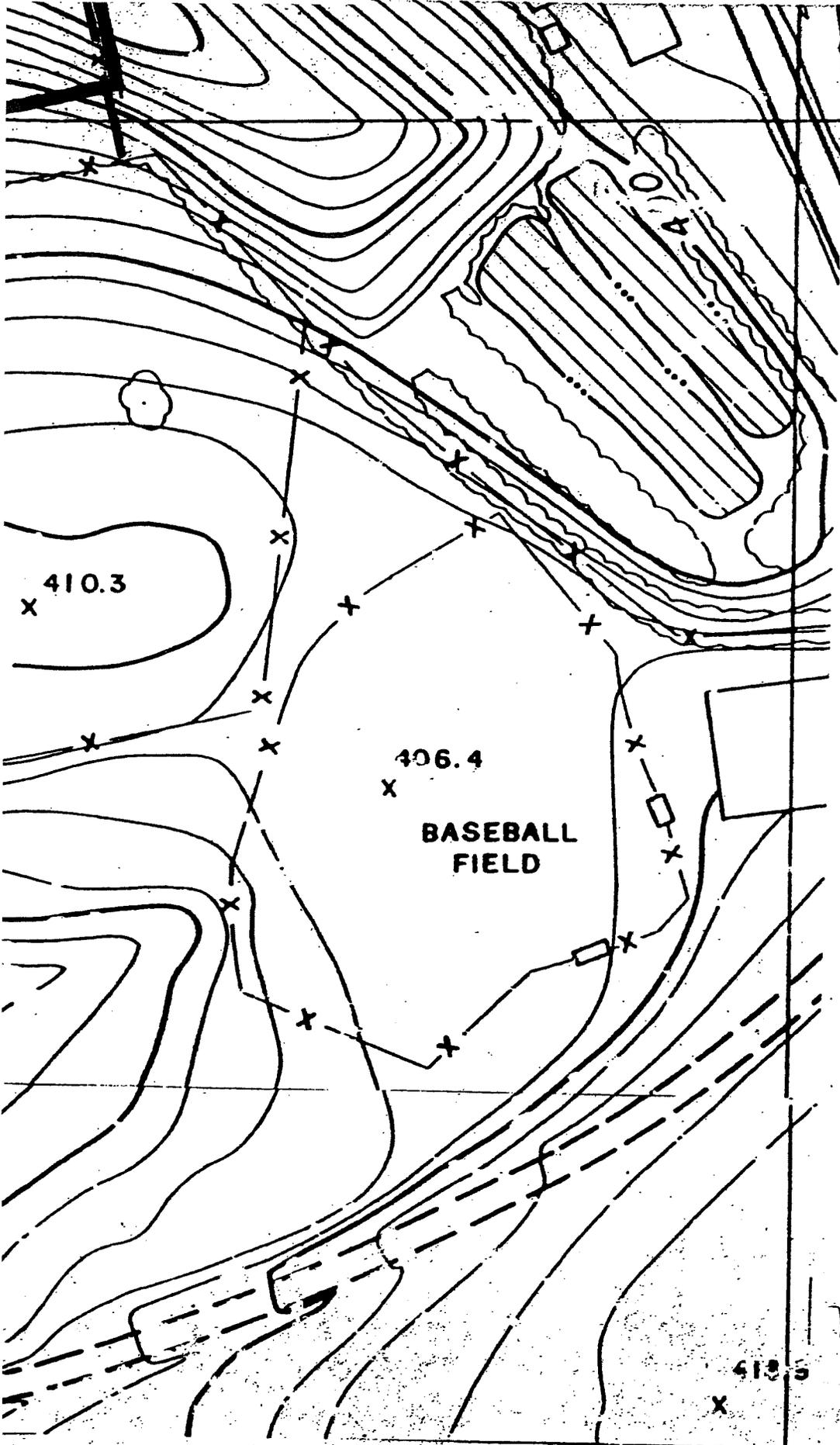
DESIGN BY: V.I.C.
 DRAWN BY: J.J.B.
 CONTRACTOR:

REVISIONS 3/18/92
 0 10 20 30

SCALE: 1" = 100'
 HORIZONTAL: NONE
 VERTICAL: NONE

DATE: 2/19/92

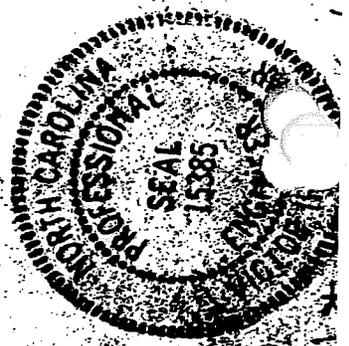
SANFORD
 ENGINEERING
 ORDNANCE, N.C. 27330



PROJECT:

CITY OF SANFORD COMPOST FACILITY
SITE PLAN/PROCESS FLOW DIAGRAM

CIPD PO



B-28-0792

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

(b) The following information is required for an application for a permit to construct a proposed Large Type 1 solid waste compost facility.

(6) A description of the facility, which must include at a minimum:

(A) Name, address and phone number for the person responsible for the operation of the facility;

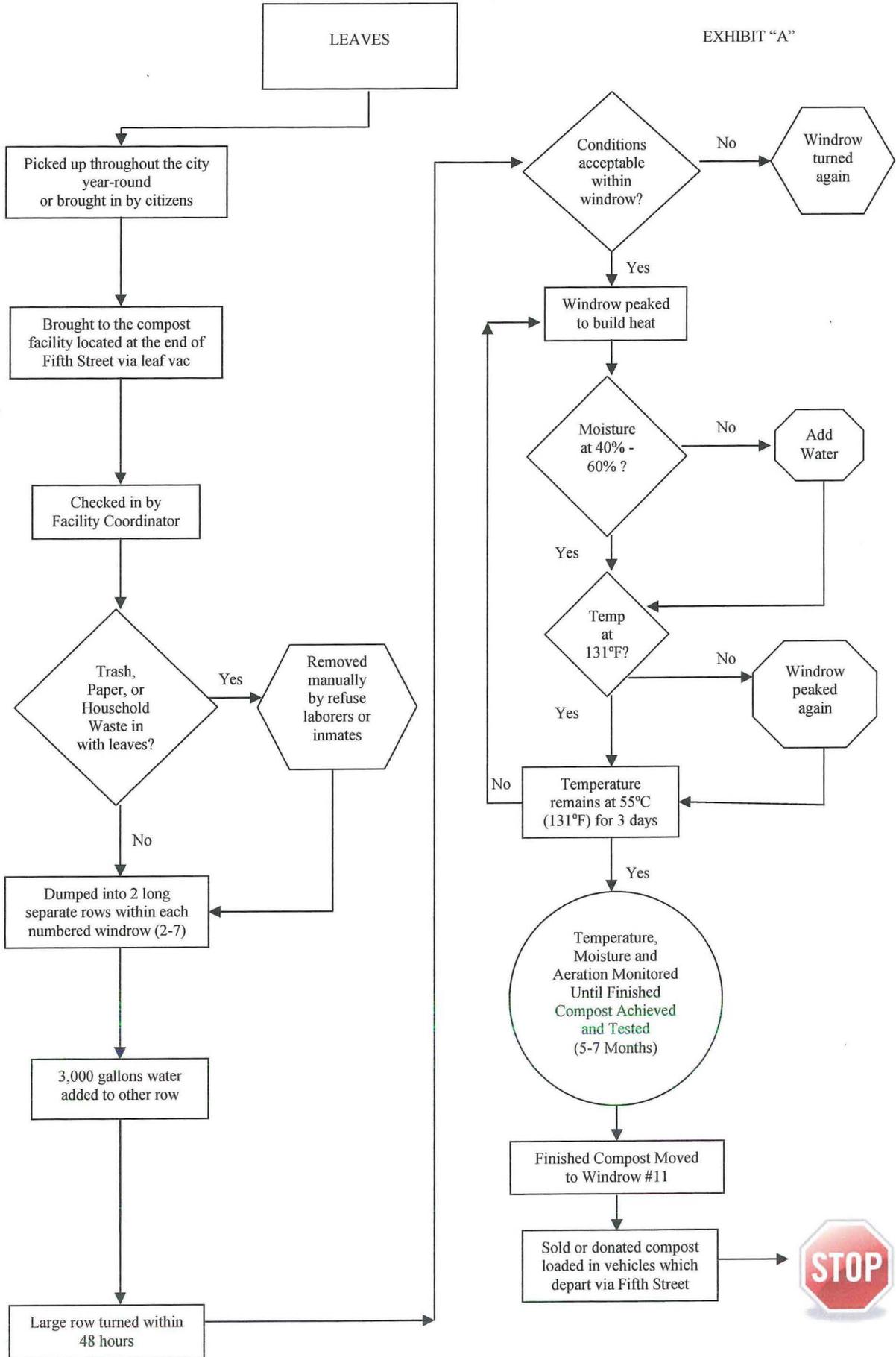
CITY OF SANFORD MUNICIPAL COMPOST FACILITY

**OWNER/OPERATOR: CITY OF SANFORD
225 E. WEATHERSPOON STREET
SANFORD, NC 27330**

**LARRY CRAIG, REFUSE SUPERINTENDENT
919-775-8247**

LEAVES

EXHIBIT "A"



I. LEAVES (see Flow Chart marked Exhibit "A" attached)

A. COLLECTION

1. The compostable materials are gathered by city crews from curbside.
2. LEAVES ARE PICKED UP THROUGHOUT THE CITY YEAR ROUND.
3. City of sanford are allowed to bring their yard waste to the Compost Facility as long as the yard is free from contaminates and checked in by the coordinator.

B. FORMATION AND MIXING OF WINDROWS

1. Leaves are brought in by leaf vac.
2. Leaves are dumped into two long, separate rows within each numbered windrow.
3. Approximately 3,000 gallons of water are added to each of the separate rows prior to mixing.
4. This large row is then turned within 48 hours.

C. PEAKING

1. After turning, when conditions are acceptable with the windrow, the windrow shall be peaked (i.e., the loader is used by going into one side of the windrow and rolling it into a point on top of the other side) to build heat.

D. PROCESSING

1. The time required for compo sting leaves is 5 to 7 months.
2. Size of windrow and mixture must be correct before processing may begin.

3. Moisture must remain at 40% to 60%. To check, reach into pile with hand and pick some up and squeeze. If water runs out it is too wet, if it doesn't stick together it is too dry.
4. Temperature readings must be taken in each windrow at three points (each end and in the middle) and must maintain a minimum temperature of 131 degrees F (55 degrees C) for three consecutive days.
5. Turning is done with the front end loader and a pull-behind TS-616 Wildcat Compost Turner. This process is repeated until finished compost is achieved.

E. STOCKPILING

1. This procedure is done when there is an excess of finished compost and it is necessary for additional compost to be processed for future needs.
2. When stockpiling, the finished compost is taken from the windrows by the Front end loader and loaded on the compost facility dump truck.
3. The compost is then trucked over to windrow #11 where it is dumped and later pushed into a large pile with the front end loader. Stockpiling of finished compost will be in piles no larger than 30 feet high, 50 feet wide, with unlimited length.

City of Sanford Compost Facility
601 N. Fifth Street
Sanford N.C. 27331

Turning and Temperature Record

Compost Row # _____
Row Construction Date _____

Linear Feet: _____

Cycle Day	Date	Temp	Temp	Temp	Turned	Operator
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						

Section 4

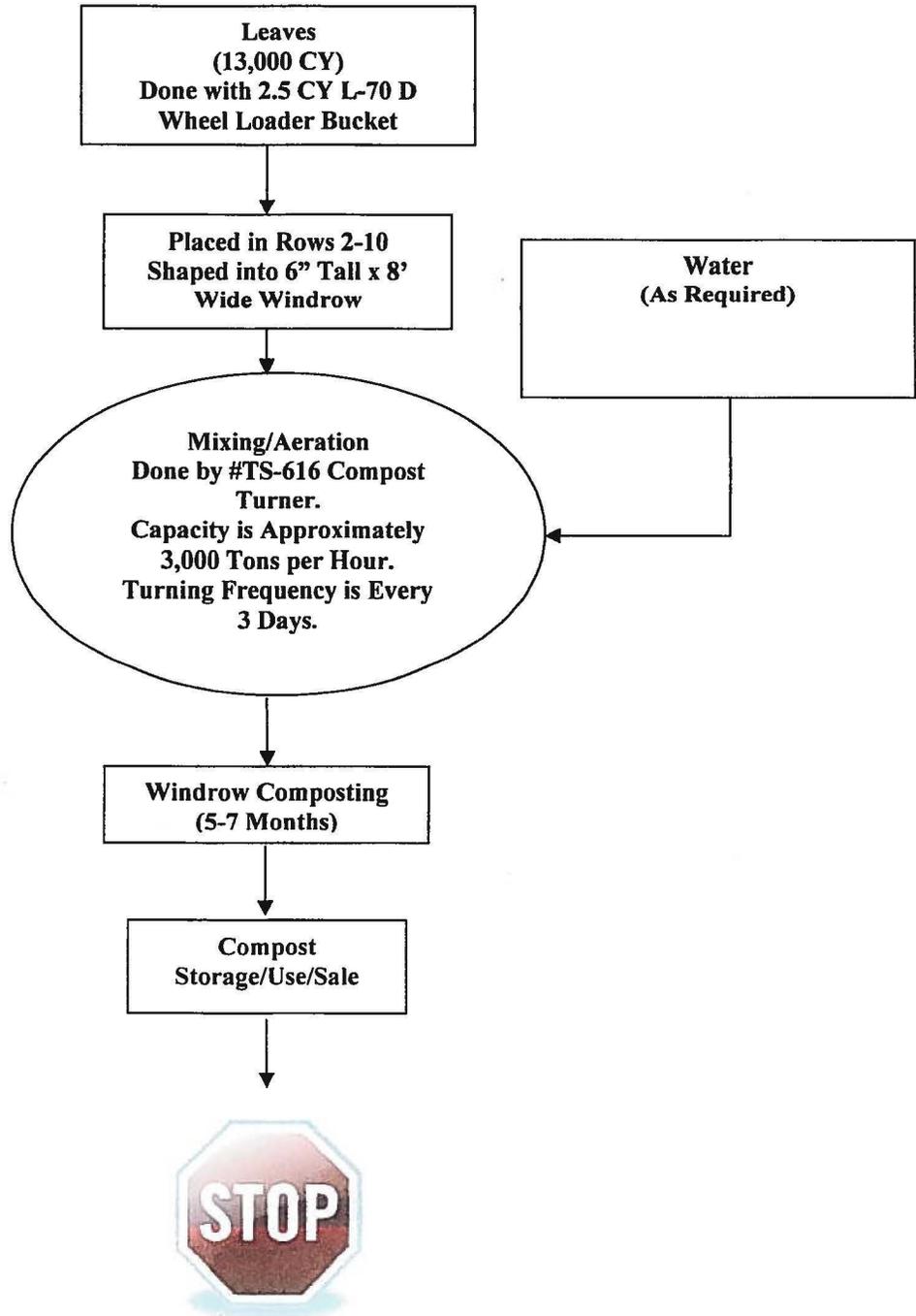
Page 4

Compost Facility Coordinator Gary Graham _____

G. *DISTRIBUTION*

1. Distribution is done through the sale of compost or by donations to city departments, county, or state agencies, or non-profit organizations.
2. The customer pays for the compost at the Public Works Service Center.
3. The customer is given a white and yellow receipt (white is for the compost site and yellow is for customer) which is taken the loader operator.
4. The loader operator then loads the paid-for material in the customer's vehicle.

FACT SHEET AND PROCESS FLOW DIAGRAM



II. LIMBS (see Flow Chart marked Exhibit “B” attached)

A. COLLECTION AND STOCKPILING

1. City crew pick up limbs throughout the city, Monday through Friday year-round, and bring them to the city’s composting facility.
2. Limbs are stockpiled on the staging area until there are enough to grind (approximately 8,000 yards).

B. GRINDING

1. All grinding is done by private contractors.
2. Once there are sufficient limbs for grinding, the compost facility coordinator will obtain quotes and schedule the project.
3. The contractor awarded the project shall do so in a timely, safe manner, and will supply all necessary support equipment.

C. WINDROWING

1. After limbs are ground into chips, they are pushed from the grinder over into windrow #1 for sale.

D. DISTRIBUTION

1. Distribution is done through the sale of wood chips or by donations to city department, county, or state agencies, or non-profit organizations.
2. The customer pays for the wood chips at the Public Works Service Center.
3. The customer is given a white and yellow receipt (white is for the compost site and yellow is for customer) which is taken to and collected by the loader operator.

4. The loader operator then loads the paid-for material in the customer's vehicle.

III. OTHER DUTIES (see Job Description for Compost Facility Coordinator marked Exhibit "C" attached)

A. DELIVERIES

1. Citizens from Sanford and Lee County may purchase material for delivery.
2. Delivery inside the city limits is **\$95.00** per 9 cu.yd. dump truckload.
3. Delivery outside the city limits is **\$120.00** per 9 cu.yd. dump truckload.
4. The coordinator is responsible for scheduling all deliveries.

B. MOWING

1. All mowing is done by the city's refuse division with a pull-behind bush hog or horticultural division finish mower.
2. The coordinator is responsible for scheduling all mowing to be done at the facility.

C. FACILITY REPORTS

1. Daily reports include the following information (see form marked Exhibit "D" attached):
 - a) Date
 - b) Task number
 - c) Description
 - d) Location of job
 - e) Equipment used
 - f) Equipment hours
 - g) Man hours
 - h) Outgoing loads for wood chips
 - i) Outgoing loads for compost
 - j) Dollar amounts sold,
 - k) Cubic yards separately,
 - l) Weather conditions,
 - m) Additional personnel used (if any).

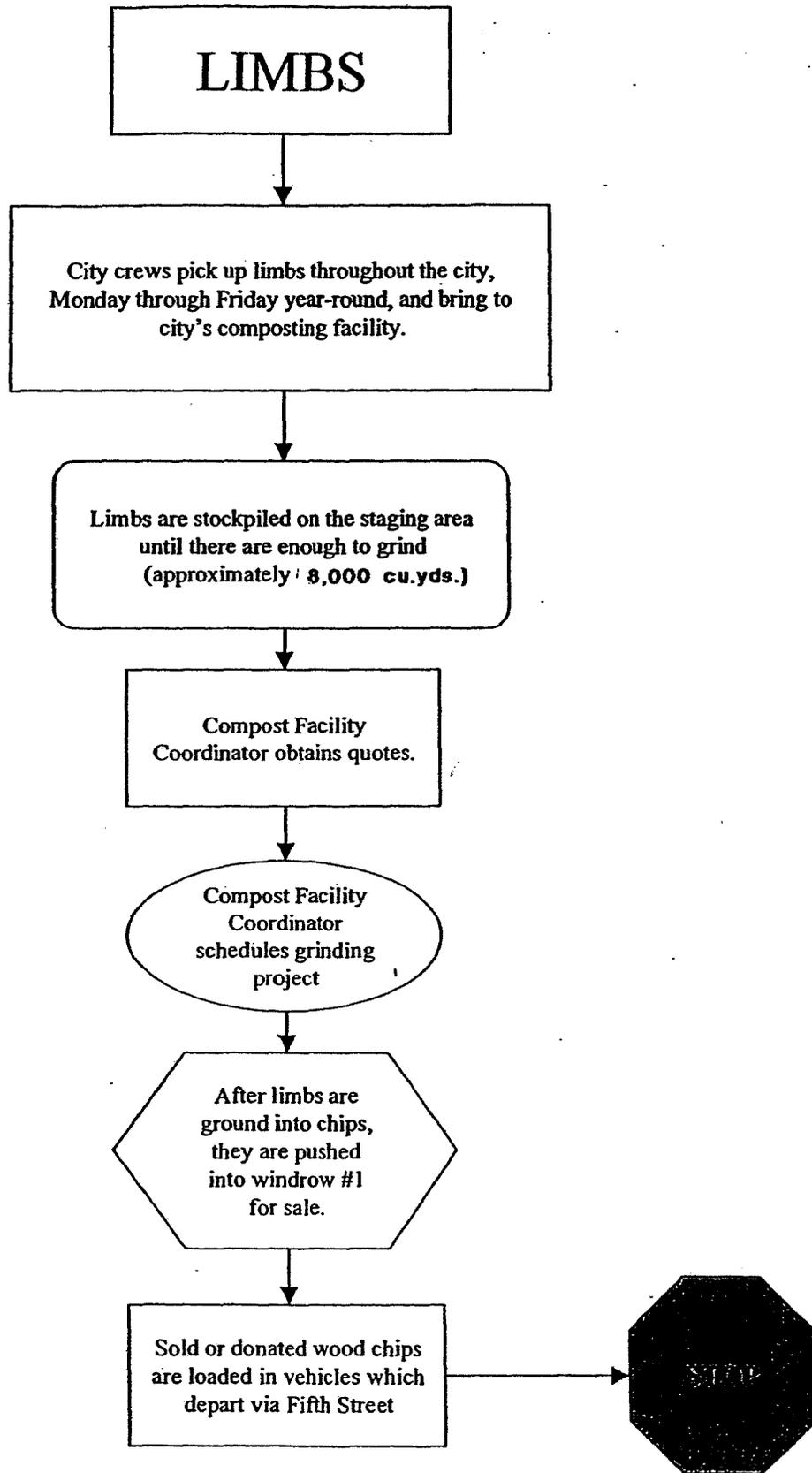
2. Monthly and yearly reports are combined (see for marked Exhibit "E" attached). They include the following information:
 - a. Month
 - b. Cubic yards of wood chips sold
 - c. Cubic yards of compost sold
 - d. Loads out
 - e. Times turned
 - f. Windrows turned
 - g. Times temperature taken
 - h. Temperatures taken
 - i. Man hours
 - j. Equipment hours
 - k. Dollar amount sold for the year
3. Temperatures must be taken from each windrow at three points (each end and in the middle) and must maintain a minimum temperature of 131 degrees F (55 degrees C) for three consecutive days.
4. Unmetered Water Report (see form marked Exhibit "G" attached)- is report of water used by the compost facility. It includes the month, location used, quantity in gallons, and total.

D. EQUIPMENT MAINTENANCE

1. All equipment is maintained according to manufacturer's specifications.
2. All servicing of equipment is done by trained professionals at the City of Sanford's public works garage.

E. TRAINING PERSONNEL

Laborers from other public works divisions are sometimes used to helping load vehicles and other minor job tasks. During training, each individual shall receive proper hands-on training with equipment to be used and receive a copy of the operation manual from the manufacturer on that particular piece of equipment.



JOB DESCRIPTION

COMPOST FACILITY COORDINATOR

Schedule and coordinate deliveries, loading, etc. of materials.

Load all personal vehicles,

Load any public vehicles that come in for crush and run, topsoil, clay, compost, woodchips, etc.

Maintenance of facility (mowing grass, weed-eating, cleaning ditches, etc.)

Contract help when necessary.

 Obtain quotes and schedule grinding of limbs twice yearly.

 Oversee work done by contractors, and assist them when necessary.

Monitoring and turning of windrows:

 Turning of compost

 Peaking compost

 Temperature readings and reports

 Mixing compost

 Moisture control

Maintain and service of compost turner, bucket loader and dump truck.

Determine when dust problems exist and provide appropriate dust control.

Daily, monthly, yearly reports with graphics as necessary.

Stockpile limb area.

Public relations for the facility.

Push off waste pit, keep salt shed pushed up, keep roll-off pad clean.

Oversee refuse laborers when the work at the facility.

Train personnel.

Attend workshops, etc., to stay updated on new procedures and techniques.

Open and close facility.

Check loads brought into the facility to assure that only compostable items are included.

Compost coordinator is to review and sign temperature logging sheets.

SOR: _____

Date: _____

TASK NO.	DESCRIPTION OR WORK ORDER NO.	LOCATION	EQUIP. NO.	MAN-HOURS	EQUIP. HRS.
1.					
2.					
3.					
4.					
5.					
6.					
7.					

OUTGOING LOADS
 W/C
 COMPOST
 WEATHER CONDITIONS _____

Dollar Amount:
 \$ _____
 \$ _____
 WIND ROW TEMPERATURE _____

CUBIC YARDS

REFUSE PERSONNEL	TASK NO.	DESCRIPTION OR WORK ORDER NO.	EQUIP. #	EQUIP. HRS.	MAN-HOURS
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					

COMMENTS

Year _____
Supervisor _____

Twelve Month Compost Facility Report

	CY/W	CY/C	Loads	Times Turned	Windrows Turned	Times Temp. Taken	Avg. Temp.	Man Hours	Equip. Hours	Dollar Amount
January										
February										
March										
April										
May										
June										
July										
August										
September										
October										
November										
December										
Yearly Total										

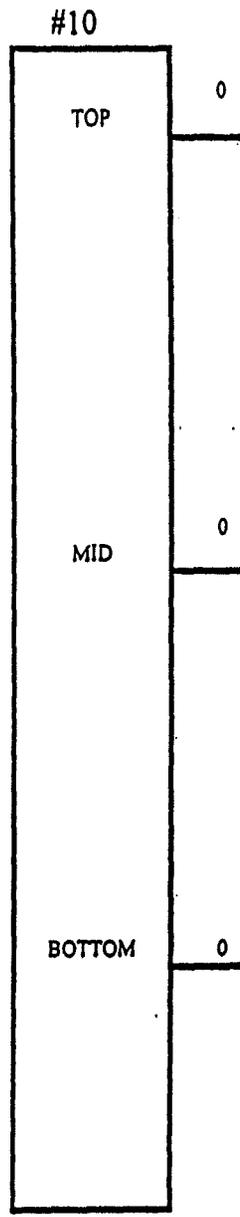
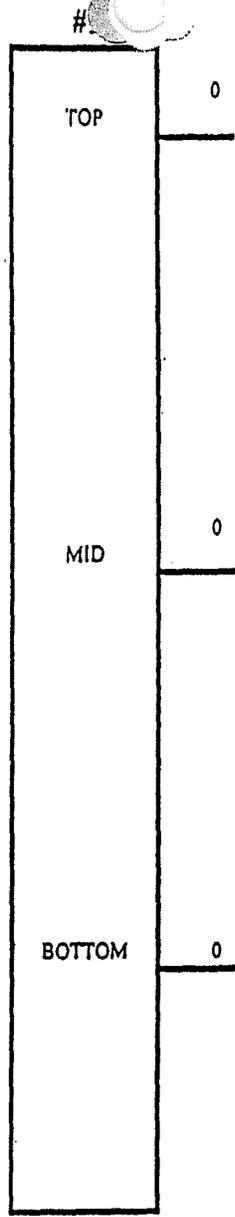
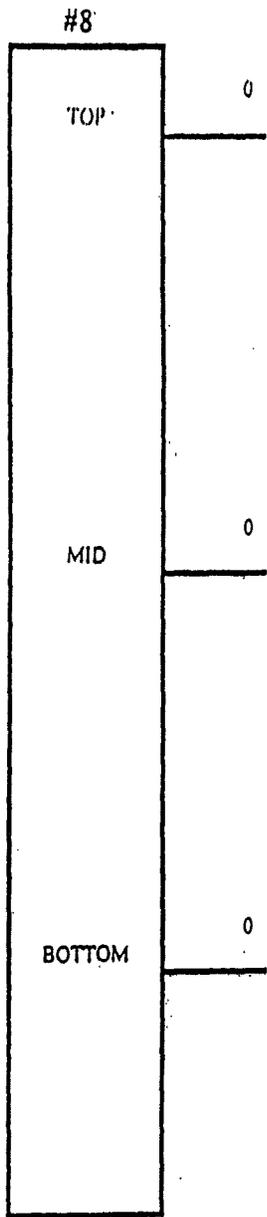
COMMENTS

SUPERVISOR _____

DATE _____

TEMPERATURE CHART RECORDED

#1	#2	#3	#4	#5	#6	#7
TOP						
MID						
BOTTOM						



MONTH	LOCATION USED	QUANTITY - GALLONS	TOTAL
JANUARY			
FEBRUARY			
MARCH			
APRIL			
MAY			
JUNE			
JULY			
AUGUST			
SEPTEMBER			
OCTOBER			
NOVEMBER			
DECEMBER			

1405 Application Requirements For Solid Waste Compost Facilities

(b) The following information is required for an application for a permit to construct a proposed Large Type 1 solid waste compost facility.

(6) A description of the facility, which must include at a minimum:

(c) List of personnel required and the responsibilities of each position:

PERSONNEL:

Compost Facility Coordinator

Other laborers on as-needed basis to assist the coordinator with loading of materials, deliveries, grass mowing, cleaning ditches, etc.

RESPONSIBILITIES OF THE COORDINATOR:

Schedule and coordinate deliveries, loading, etc. of materials

Load all personal vehicles

Load any public works vehicles that come in for crush and run, topsoil, clay, compost, woodchips, etc.

Maintenance of facility (mowing grass, weed-eating, cleaning ditches, etc.)

Contract help when necessary.

Obtain quotes and schedule grinding of limbs twice yearly

Oversee work done by contractors, and assist them when necessary

Monitoring and turning of windrows:

Turning of compost

Peaking compost

Temperatures readings and reports

Mixing compost

Moisture control

Maintain and service of compost turner, bucket loader and dump truck.

Determine when dust problems exist and provide appropriate dust control.

Daily, monthly, yearly reports with graphics as necessary.

Stockpile limb area.

Public relations

Push off waste pit, keep salt shed pushed up, keep roll-off pad clean.

Oversee refuse laborers when they work at facility

Train personnel

Attend workshops, etc., to stay updated on new procedures and techniques.

Open and close facility.

Check loads brought into the facility to assure that only compo stable items are included.

Compost coordinator is to review and sign temperature logging sheets.

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

- (b) The following information is required for application for a permit to construct a proposed Large Type 1 solid waste compost facility.
 - (6) A description of the facility, which must include at a minimum:
 - (D) A schedule for operation. including days and hour that the facility- will be open, preparations before opening, and procedures to be followed after closing for the day;

OPERATING HOURS - MONDAY THROUGH FRIDAY (When school is in session):

**8:00a- 12:00p
1:00p - 5:00p**

OPERATING HOURS - MONDAY THROUGH FRIDAY (when school is not in session):

**7:00a - 12:00p
1:00p - 4:00p**

PREPARATIONS BEFORE OPENING: **Unlock end open gate.**

PROCEDURES AFTER CLOSING: **Close and lock gate.**

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

- (b) The following information is required for an application for a permit to construct a proposed Large Type 1 solid waste compost facility.
 - (6) A description of the facility, which must include at a minimum:
 - (E) For mixed waste processing facilities, a plan for removing and disposal of household hazardous waste from the waste stream;

Inmates from the county prison (when available) and refuse laborers remove any trash, paper, or household waste from the composted leaves manually.

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

(b) The following information is required for an application for a permit to construct a proposed Large Type 1 solid waste compost facility.

(6) A description of the facility, which must include at a minimum:

(F) Special precautions or procedures for operating during wind, heavy rain, snow, freezing, or other adverse conditions;

The compost facility is closed during such conditions.

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

(b) The following information is required for an application for a permit to construct a proposed Large Type 1 solid waste compost facility

(6) A description of the facility, which must include at a minimum:

(E) A description of actions to - be taken to minimize noise, vectors, airborne particulates, and odors;

NOISE - Is minimized by the buffer zone of trees around the facility which allows enough room between residential housing and our facility. In addition, equipment is operated only during daytime hours.

VECTORS - Are controlled with monitoring of the windrows and making sure the material is aerated when needed.

AIRBORNE PARTICLES - Are minimized by the use of a tanker truck in the application of water to all roads and windrows in dry seasons. The site is "watered down" during dry periods and at times when dust is evident it is the responsibility of the Facility Coordinator to determine when a dust problem exists and provide the appropriate dust.

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

- (b) The following information is required for an application for a permit to construct a proposed Large Type 1 solid waste compost facility.
 - (6) A description of the facility, which must include at a *minimum*:
 - (H) A description of the ultimate use for the finished compost, method for removal from the site, and a contingency plan for disposal or alternative usage of residues or finished compost that cannot be used in the expected manner due to poor quality or change in market conditions.

Approximately 95% of all composted material is sold to the public, with donations accounting for the remaining 5%. Approximately 59% of wood waste or chips is sold to the public, and 41% of this product is distributed through the school system, the county beautification department, and the city's own horticulture department.

In the event the market should change, more donations could be made that are not being done at this time.

Any finished compost that cannot be used in the expected manner due to poor quality may be recomposted or sent to landfill.

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

(b) The following information is required for an application for a permit to construct a proposed large Type 1 solid waste compost facility.

(7) A report on the design of the facility, including.

(A) Design capacity of the facility;

The city's 55-acre tract is located within the city limits at the northern terminus of Fifth Street adjacent to the Service Center area. The facility handles the leaves and limbs collected at the curb by city crews. The city will not pick up limbs and leaves contaminated with any foreign materials.

Sixteen acres of this tract is currently being used for windrowing of leaves. Assuming that approximately 3,000 cubic yards of material can be composted on an acre of property, the design capacity of the facility is 48,000 cubic yards.

Limbs are stockpiled (see site plan), ground and stored on six acres. This material is then ground by a contractor with a tub grinder on a semi-annual basis and the material stored until it is sold for landscaping material.

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

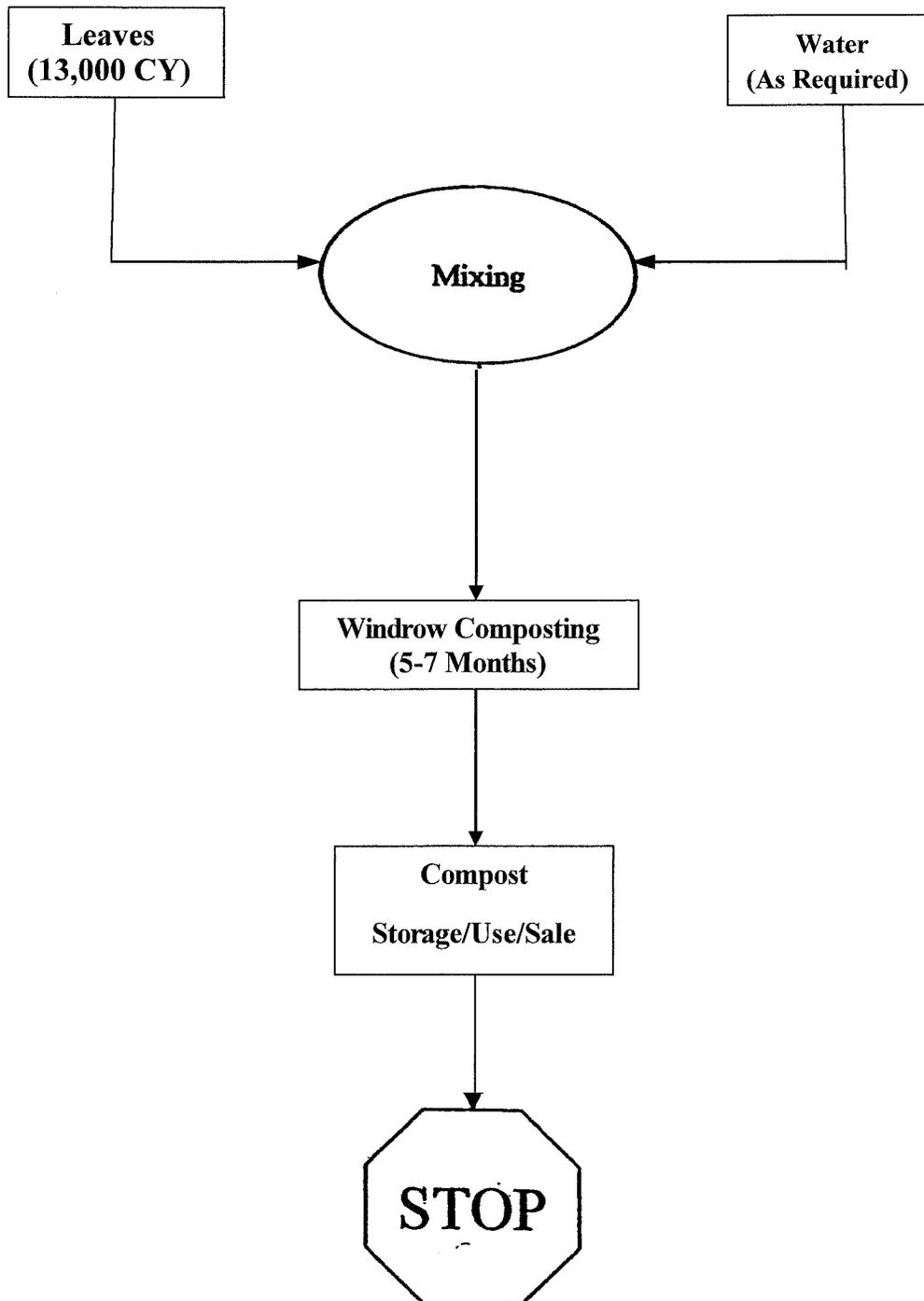
(b) The following information is required for an application for a permit to construct a proposed Large Type 1 solid waste compost facility.

(7) A report on the design of the facility, including:

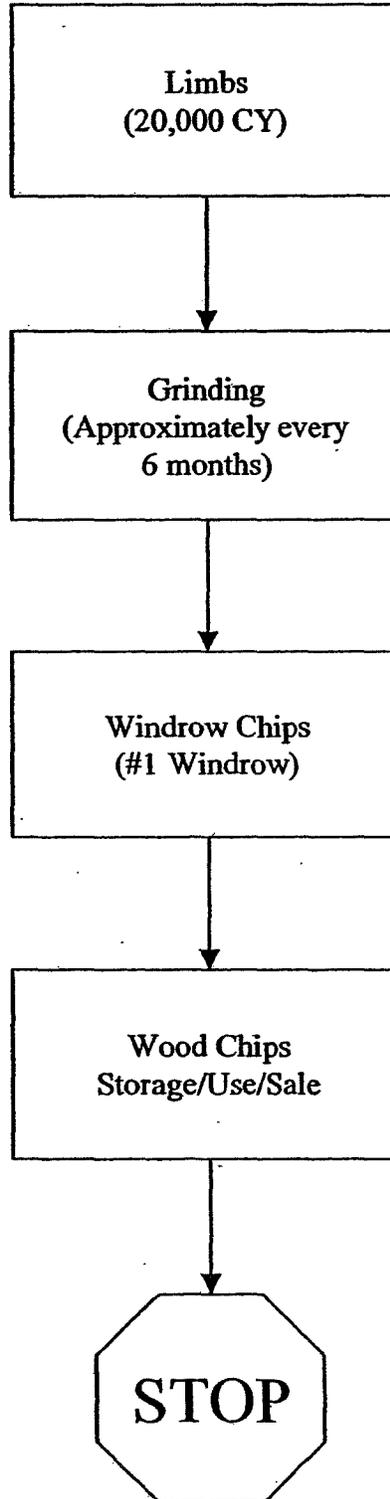
(B) A process flow diagram of the entire facility including the type, size, and location of all major equipment, and feed stock flow streams. The flow streams shall indicate the quantity of material on a wet weight and volumetric basis;

PROCESS FLOW DIAGRAMS ATTACHED.

PROCESS FLOW DIAGRAM - LEAVES



PROCESS FLOW DIAGRAM - LIMBS



1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

(b) The following information is required for an application for a permit to construct a proposed Large Type 1 solid waste compost facility.

(7) A report on the design of the facility, including:

(C) A description and sizing of the storage facilities for amendment, bulking agent, solid waste, recyclables, household hazardous waste and finished compost;

None of the above materials are stored at the facility.

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITY

(b) The following information is required for an application for a permit to construct a proposed Large Type 1 solid waste compost facility.

(7) A report on the design of the facility, including.

(D) The means for measuring and shredding.

MEASURING- is done with a 2.5 cubic yard loader bucket.

SHREDDING- is done with a commercial tub grinder.

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

- (b) The following information is required for an application for a permit to construct a proposed Large Type 1 solid waste compost facility.
 - (7) A report on the design of the facility, including:
 - (E) Anticipated process duration, including receiving, preparation, composting, curing, and distribution;

Leaves are collected daily, Monday through Friday, year-round at curbside throughout the city by city trucks. They are brought to the composting facility at the end of Fifth Street and placed in rows 2 through 10 where they are shaped into a 6' tall by 8' wide windrow. After a windrow is shaped, water is applied and the windrow is then turned to incorporate the water into it. For the next 5 to 7 months strict monitoring of rows is done to assure temperature, moisture, and aeration are all within adequate measures.

Once leaves have been fully processed they are sold and loaded into vehicles from the rows or the finished compost is moved to a stockpile area and loaded from there.

Distribution is done through the sale of the compost to the general public (who either pick up the compost in private vehicles or have it delivered via city trucks) or by donations to city, county, or state agencies or nonprofit organizations.

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

- (b) The following information is required for an application for a permit to construct a proposed Large Type 1 solid waste compost facility.
 - (7) A report on the design of the facility, including:
 - (F) The separation, processing, storage, and ultimate disposal of non-compostable materials, if applicable;

Any non-compostable material is disposed of in the public works dumpster which is disposed of by Waste Management, Inc., a solid waste contractor.

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

- (b) The following information is required for application for a permit to construct a proposed Large Type 1 solid waste compost facility.
 - (7) A report on the design of the facility, including:
 - (G) A description of the location of all temperature, air and any other type of monitoring points, and the frequency monitoring;

Monitoring of temperature is done on windrows #2 through #10. All temperatures are taken in 3 places on each windrow—at each end and at the center. Temperatures are monitored on Monday, Wednesday, and Friday of each week until mature compost is produced.

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

(b) The following information is required for application for a permit to construct a proposed Large Type 1 solid waste compost facility.

(7) A report on the design of the facility, including:

(H) A description of how the temperature control and monitoring equipment will demonstrate that the facility meets the requirements in Rule 1406, Items (10), (11), or (12) of this Section, as appropriate for the feedstock;

Temperatures are taken 3 times weekly to assume that an adequate temperature of 131°F (55°C) or greater is maintained in the windrows for at least 3 days. During this high temperature period the windrow is turned at least 5 times.

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

- (b) The following information is required for application for a permit to construct a proposed Large Type 1 solid waste compost facility.
 - (7) A report on the design of the facility, including:
 - (1) A method of aeration, including turning frequency or mechanical aeration equipment and aeration capacity;

Aeration is provided by a Wildcat Model TS-616 Compost Turner. Capacity is approximately 3,000 tons per hour (see attached specifications). The turning frequency is every 3 days.

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

(b) The following information is required for application for a permit to construct a proposed Large Type 1 solid waste compost facility.

(7) A report on the design of the facility, including:

(J) A description of the air emission and control technologies.

None required.

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

- (b) The following information is required for application for a permit to construct a proposed Large Type 1 solid waste compost facility.
 - (7) A report on the design of the facility, including,
 - (K) A description of the method to control surface water run-off, and the method to control, collect, treat, and dispose of leachate generated, and

Storm water runoff from the site is channeled through grass swales along drainage ways that existed prior to development. The drainage ways are stable ditches and swales covered with well-established ground cover containing only runoff. The facility does not discharge directly to waters of the state. No composted materials are removed from the site via storm water runoff. Only leaves, limbs, brush, etc., are composted on site, therefore, runoff passes through composting materials and grassed swales. Leachate generated is minimal. Woodchip filter dikes are installed at the end of windrows to prevent leachate runoff.

DEHNR Land Quality Section has approved the design (see Sedimentation Inspection Report attached).

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

- (b) The following information is required for application for a permit to construct a proposed Large Type 1 solid waste compost facility.
 - (7) A report on the design of the facility, including;
 - (L) A description of any recycling or other material handling processed used at the facility.

No other recycling or material handling process is done at the facility.

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

- (b) The following information is required for application for a permit to construct a proposed Large Type 1 solid waste compost facility.
 - (8) A description of the label or other information source that meets the requirements of rule .1407(g) of this section.

CLASSIFICATION: Grade A in accordance with North Carolina solid waste rules

APPLICATION RATES: Would be determined from their own soil sample. Not recommended as 100% growing mixture.

RESTRICTIONS ON USAGE: None

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

- (b) The following information is required for application for a permit to construct a proposed Large Type 1 solid waste compost facility.
- (9) Engineering plans and specifications for the facility, including manufacturer's performance data for all equipment selected.

THE FOLLOWING SPECIFICATIONS WERE INCLUDED WITH OUR ORIGINAL APPLICATION:

1. **Compost Facility Grading Project**
2. **North Fifth Street Water Line**
3. **Compost Facility Fencing**
4. **North Fifth Street Extension (including Compost Facility Paved Access Road)**
5. **Manufacturer's Specifications**
 - (a) **Wildcat Manufacturing Co., Inc.
Model # TS-616 Compost Turner**
 - (b) **Volvo L-70D Wheel Loader**
6. **Engineering Plans Dated 2/19/02 (Revised 3/18/92)**

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

- (c) The following information is required for reviewing an application for a permit to operate a proposed Large Type 1 solid waste compost facility:
- (1) Contingency plans detailing corrective or remedial action to be taken in the event of equipment breakdown; air pollution; non-conforming waste delivered to the facility; spills, and undesirable conditions such as fires, particulates, noise, vectors, odors, and unusual traffic conditions;

EQUIPMENT BREAKDOWN: If the loader is down for service or repairs, a backhoe is borrowed from the public works division until the loader is repaired. If the windrow turner breaks down, the loader is used to aerate compost.

AIR POLLUTION: Does not apply.

NON-CONFORMING WASTE DELIVERED TO THE FACILITY: Inmates from the county prison (when available) and refuse laborers remove any trash, paper, or household waste from the composted leaves manually. If non-conforming waste is brought in by residents, it is not accepted.

SPILLS: The city has not had a spill at this facility to date. However, in the event of a spill, it would be contained and, depending upon the type of spill, emergency management and risk management officers notified.

FIRES: We have 3 fire hydrants available on the facility and are within ½ mile of the city's central fire station.

NOISE: Equipment is operated only during the daytime hours.

VECTORS: Any increase in vectors would be controlled by increased monitoring and aeration.

TRAFFIC CONTROL: The facility is located on a dead end road with access control. Gates are locked during non-operating-hours.

AIRBORNE PARTICLES: Would increase the frequency of watering roads and windrows.

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

- (c) The following information is required for reviewing an application for a permit to operate a proposed Large Type 1 solid waste compost facility:
 - (2) A detailed operation and maintenance manual. The manual must contain general design information, a discussion of compliance with operational requirements as outlined in rule .1406 of this Section, detailed operational information and instruction, equipment maintenance, list of personnel, required personnel training, outline of reports to be submitted in compliance with this Section, and safety instructions;

GENERAL DESIGN INFORMATION:

The City of Sanford compost facility is located on a 55-acre tract located within the city limits at the northern terminus of Fifth Street, adjacent to the Service Center area. The facility handles the leaves and limbs collected at the curb by city crews.

Sixteen acres of this tract is currently being used for windrowing of leaves. Assuming that approximately 3,000 cubic yards of material can be composted on an acre of property, the design capacity of the facility is 48,000 cubic yards.

Limbs are stockpiled, ground, and stored on six acres. This material is then ground by a contractor and the material stored until it is sold for landscaping material. The facility usually takes in about 20,000 cubic yards of limbs and disposes of approximately 12,000 cubic yards of wood chips annually.



A DISCUSSION OF COMPLIANCE WITH OPERATIONAL REQUIREMENTS AS OUTLINED IN RULE .1406 OF THIS SECTION FOLLOWS.

I. Plan and Permit Requirements

- A. Construction plans and conditions of permit shall be followed; and**
- B. A copy of the permit, plans and operational reports shall be maintained on site at all times.**

As required, all plans and permits are followed and all required paperwork is maintained at the compost site at all times.

II. Adequate erosion control measures shall be practiced to prevent on-site erosion and to control the movement of soil or contaminants from the site.

Check dams have been placed in various places of the windrows to stop erosion and affecting the pipes at the end of windrows.

III. Surface water shall be diverted from the operational, compost curing, and storage areas.

A ditch has been located at the top of the hill to divert water from the composting area.

IV. Leachate shall be contained on site treated to meet the standards of the off-site disposal method.

A greenway has been established to treat all leachate leaving the site (see Appendix A).

V. Access and Security Requirements:

- A. Large sites shall be secured by means of gates, chains, berms, fences, or other security measures demonstrated to provide equivalent protection approved by the Division, to prevent unauthorized entry.**

The facility has a 7' tall fence, with barbed wire at the top, and gates at all entry points of the facility to control traffic. These have proven to be effective measures in controlling unauthorized access to the facility.

- B. An operator shall be on duty at the site at all times while the facility is open for public use to ensure compliance with operational requirements and access to such facilities shall be controlled.**

An operator is on site at all times when the facility is in operation. This person ensures compliance with all rules and regulations governing the facility.

- C. The access road to the site shall be of all-weather construction and maintained in good condition.

The access road to the facility is asphalt. The roads throughout the facility are gravel. They are maintained by the City of Sanford Public Works condition and kept in excellent condition (See Appendix B).

- VI. A site shall only accept those solid wastes that it is permitted to receive.

It is the responsibility of the operator on duty at the site to assure that only those compostable wastes allowed under our permit are received. All other types of waste are rejected.

VII. Safety Requirements

- A. Open burning of solid waste is prohibited.

- 1. City currently enforces a burning ban within city limits.**
- 2. There are numerous signs throughout the area prohibiting open flames.**
- 3. No smoking is allowed in or around the facility.**

- B. Equipment shall be provided to control accidental fires and arrangements made with the local fire protection agency to immediately provide fire-fighting services when needed.

- 1. Three fire hydrants are located immediately around the composting area. The city's central fire station is located ½ mile from the facility and, in the event of a fire, response time would be minimal.**
- 2. The city's safety coordinator holds annual sessions on fire extinguisher use for all city employees.**

- C. Personnel training shall be provided to insure that all employees are trained in site specific safety, remedial, and corrective action procedures.

All employees are trained by the Facility Coordinator and signed forms required when training is complete. Hands-on classes are scheduled on an as-needed basis when laborers are assigned from other departments.

VIII. Sign Requirements:

- A. Signs providing information on waste that can be received, dumping procedures, the hours during which the site is open for public use, the permit number and other pertinent information shall be posted at the site entrance.

1. *The following signs are posted at the site entrance:*

a. *"No dumping without checking with operator or service center first."*

b. *"City of Sanford Municipal Compost Facility*

Owner/Operator: City of Sanford

In case of emergency: 775-8247

Larry Craig, Refuse Superintendent

Operating Hours: Monday-Friday

8:00 AM – 12:00 Noon

1:00 PM – 5:00 PM

Permit No. 53-03YW

- B. Traffic signs/markers shall be provided as necessary to promote an orderly traffic pattern to and from the discharge area and to maintain efficient operating conditions.

All traffic signs or markers are provided to promote an orderly traffic pattern within the facility, and "Yield" signs and "Speed Limit, 10 MPH" signs are posted in conspicuous places throughout the facility.

- C. Signs shall be posted stating no hazardous waste, asbestos containing waste, or medical waste can be received at the site.

1. The following sign is posted at the site entrance:

"No hazardous waste, asbestos-containing waste, or medical waste will be accepted."

IX. Monitoring Requirements

- A. Specified monitoring and reporting requirements.

All monitoring and reports as required by our permit are complete on a daily basis, and kept on file for at the compost facility.

- B. The temperature of all compost produced shall be monitored sufficiently to ensure that the pathogen reduction criteria is met.

In order to ensure the pathogen reduction criteria is met, temperatures are taken 3 times weekly to assure that an adequate temperature of 131 degrees F (55 degrees C) or greater is maintained in the windrow for at least 3 days.

- X. The composting process shall qualify as a process to further reduce pathogens for all Type I facilities. The following are acceptable methods:

Windrow composting method: temperatures are taken 3 times weekly to assure that an adequate temperature of 131 degrees F (55 degrees C) or greater is maintained in the windrow for at least 3 days.

- A. DOES NOT APPLY TO THIS FACILITY.
- B. DOES NOT APPLY TO THIS FACILITY.

- XI. Nitrogen bearing wastes shall be incorporated as necessary to minimize odor and the migration of nutrients.

Odors are minimized by the covering of all windrows with wood chips when odors exist.

- XII. Miscellaneous Requirement

- A. The finished compost shall meet the classification and distribution requirements outline in Rule 1407 of this section.

- B. The quality of the final product shall determine the allowable uses as outline in Rule .1407 of this section.

The quality of the final product distributed by this facility meets the requirements of Grade A compost as defined in Rule.1407 (d) (1) and, as such, has unlimited, unrestricted distribution.

- C. The final product shall be approved by the Solid Waste Section as outlined in Rule .1407, Subparagraph (6)(b) of this section.

Any solid wastes or finished compost that cannot be used in the expected manner due to poor quality may be recomposted or disposed of in a solid waste management facility. The City of Sanford currently contracts with Waste Management, Inc. for these services.

DETAILED OPERATIONAL INFORMATION AND INSTRUCTION IS OUTLINED IN THE MANUAL TITLED "OPERATIONAL PROCEDURES, COMPOST FACILITY" DATED OCTOBER 13, 1997. THIS MANUAL IS INCLUDED AS PART OF THIS DOCUMENT.

EQUIPMENT MAINTENANCE – THE MAINTENANCE MANUALS FOR THE MODEL #TS 616 COMPOST TURNER AND L70D WHEEL LOADER WERE SUBMITTED WITH ORIGINAL APPLICATION.

All equipment is maintained according to the manufacturer's specifications, and all servicing of equipment is done by trained professionals at the City of Sanford's public works garage.

LIST OF PERSONNEL AND REQUIRED PERSONNEL TRAINING

The only full-time employee is the compost facility operator. This position reports to a crew supervisor.

Laborers from the Refuse Department are employed on an as-needed basis to assist the operator with loading of materials, deliveries, grass mowing, cleaning ditches, etc. If training is required each individual receives property hands-on training with equipment to be used and also receives a copy of the operation manual from the manufacturer on that particular piece of equipment.

See the "Operational Procedures, Compost Facility" manual dated October 13, 1997, for a listing of the responsibilities of the operator.

OUTLINE OF REPORTS TO BE SUBMITTED IN COMPLIANCE WITH THIS SECTION.

1. Daily Reports (see Exhibit "A" attached).
2. Monthly/Yearly Reports (see Exhibit "B" attached).
3. Temperature Report (see Operational Manual)
4. Unmetered Water Report (see Operational Manual).

SAFETY INSTRUCTIONS

During training, each individual receives proper hands-on training with equipment to be used and receives a copy of the operation manual from the manufacturer on that particular piece of equipment.

QUALITY ASSURANCE

1. Inspection of Incoming Materials

All materials from residents being either limbs or leaves are inspected by the Coordinator at the gate, or inspected by City crews picking up at curbside. Nonconforming materials are not accepted or brought to the facility.

2. Monitoring

This is done by taking temperatures of all compostable windrows to insure proper decomposer.

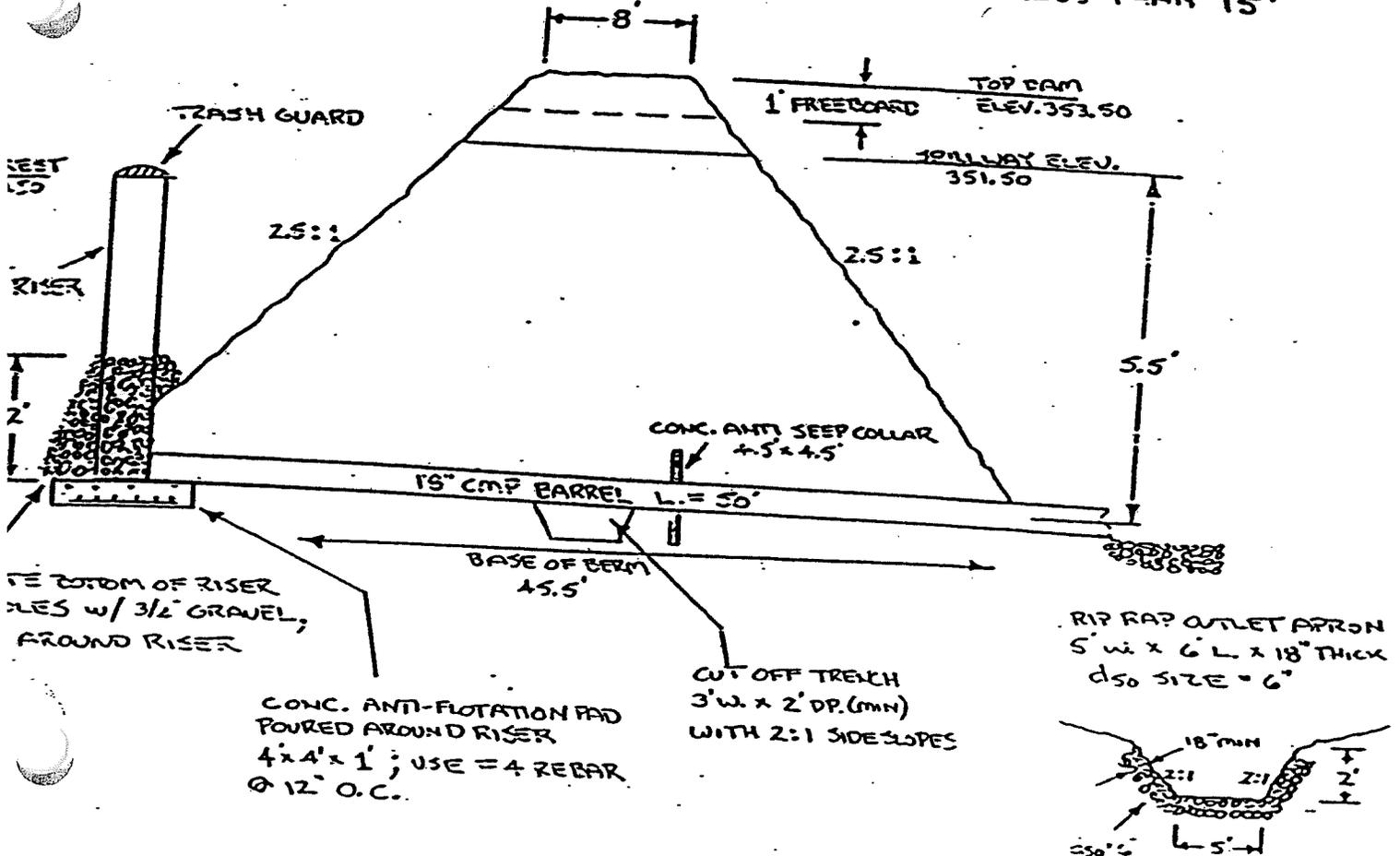
3. Record Keeping Requirements

The facility coordinator keeps daily, monthly and yearly reports and unmetered water reports.

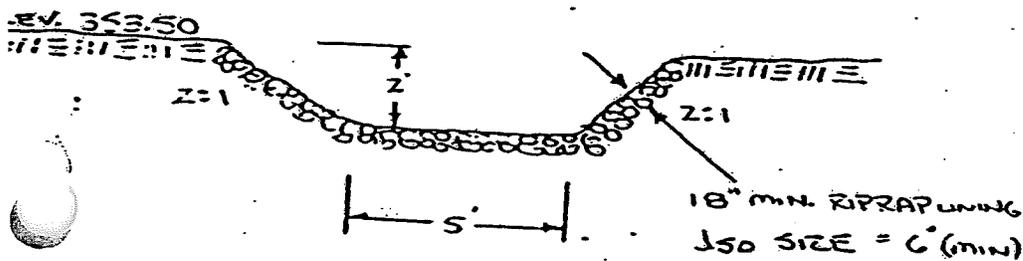
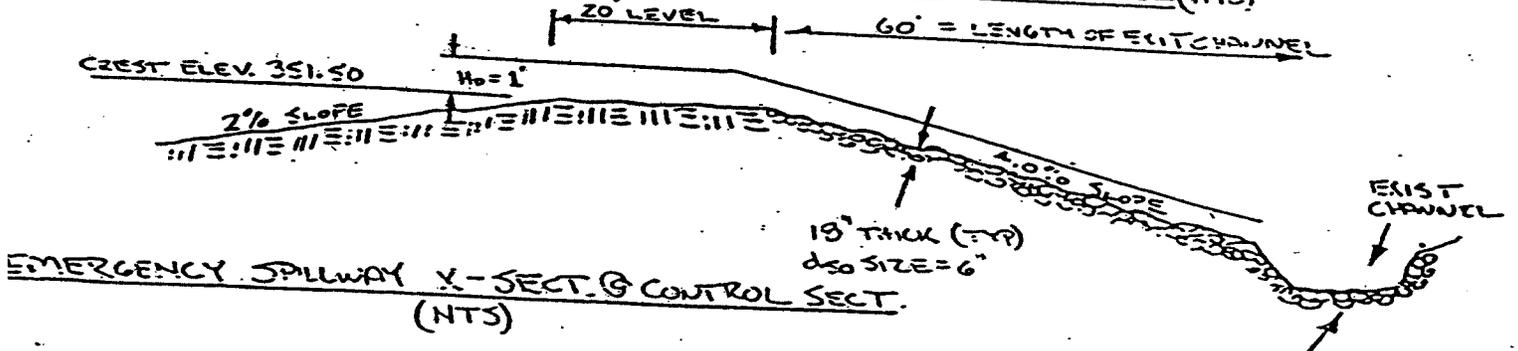
SEDIMENT BASIN

DETAIL - C - (NTS)

NOTE : HEAD OF DAM IS LESS THAN 15' IS

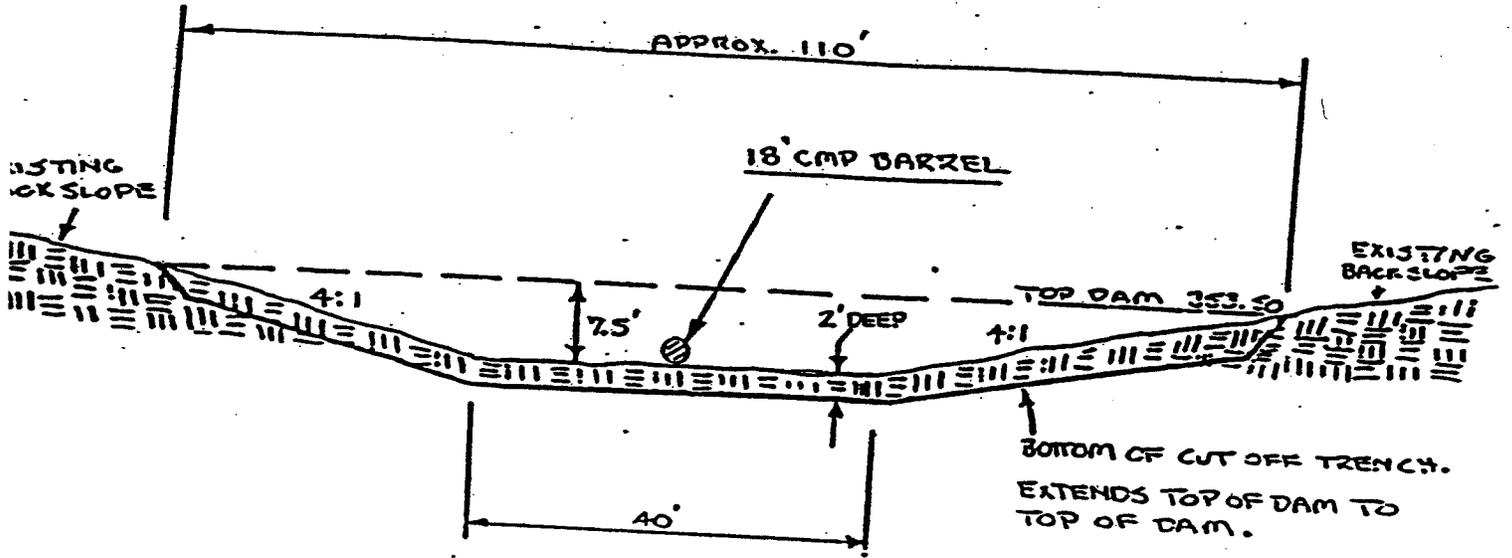


EMERGENCY SPILLWAY PROFILE (NTS)

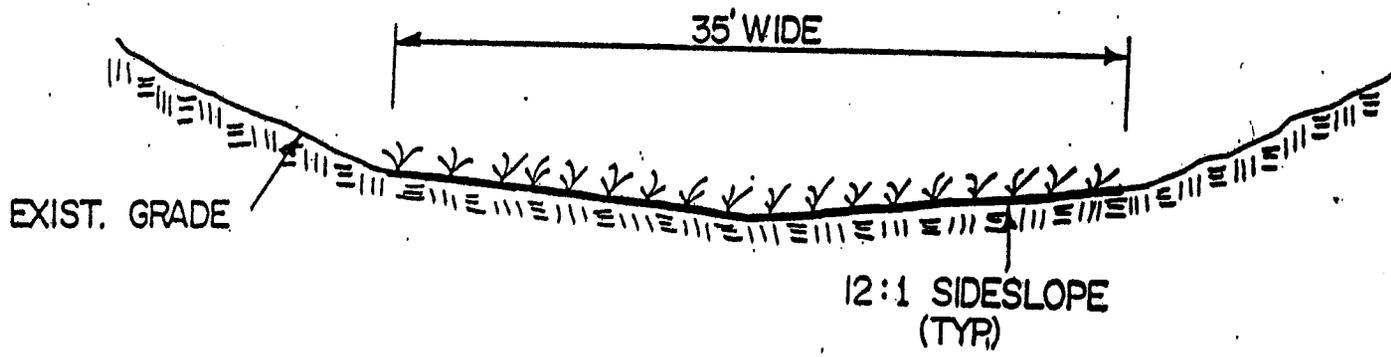
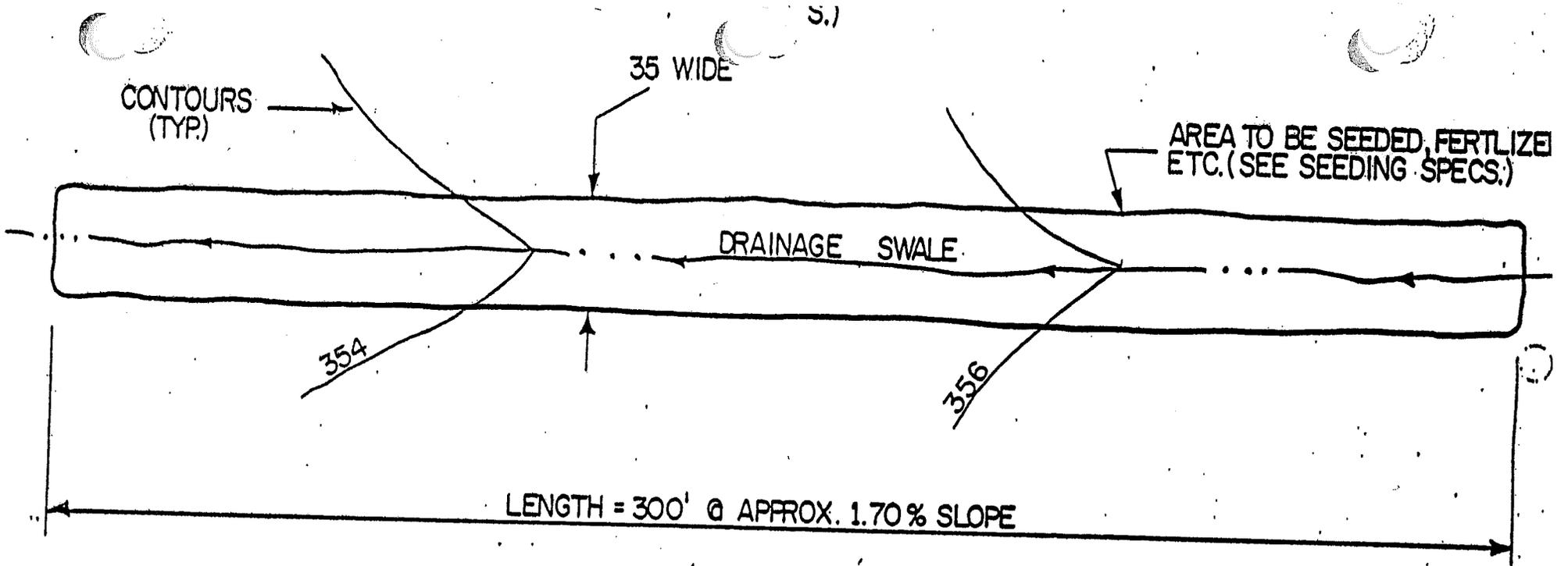


NOTE : FROM DISCHARGE PT. OF EMERGENCY SPILLWAY INTO EXISTING CHANNEL; EXIST. CHANNEL TO BE RIPRAPPED W/ 6" RIPRAP, 20' DOWNSTREAM.

SEDIMENT BASIN
CROSS SECTIONAL VIEW
(NTS.)



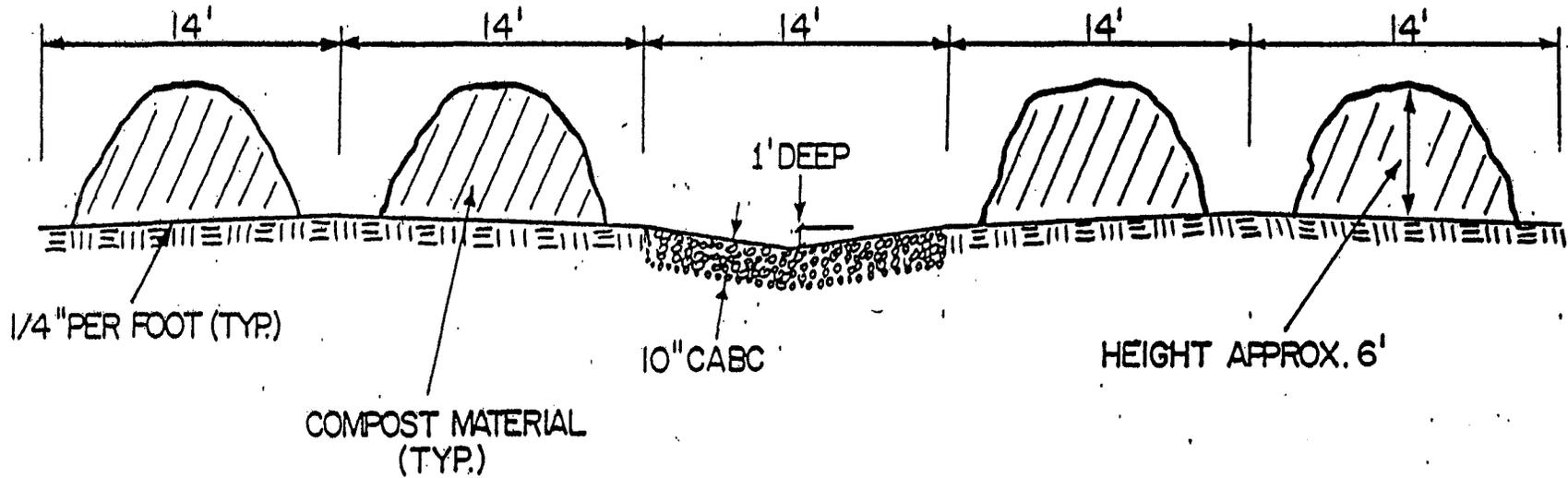
S.1



WINDROW & 14' GRAVEL ACCESS ROAD

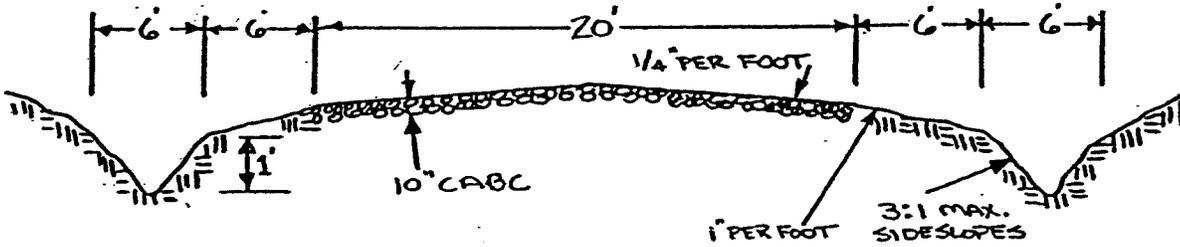
DETAIL

N.T.S.



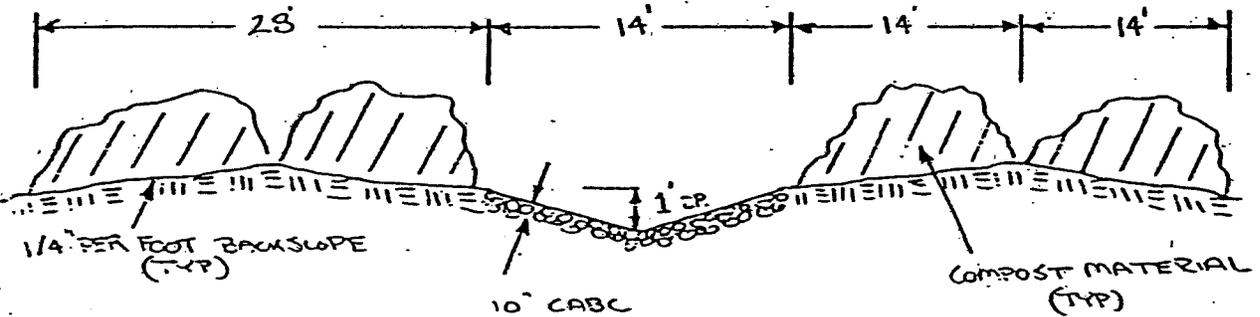
GRAVEL ACCESS RD.
(20' WIDE)

DETAIL - A -
(NTS)



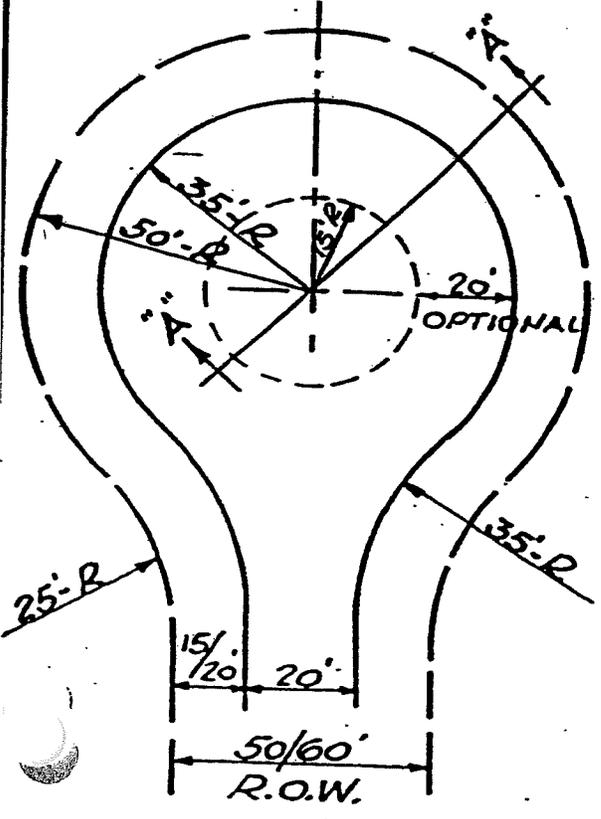
GRAVEL WINDROW RD.
(14' WIDE)

DETAIL - B -
(NTS)

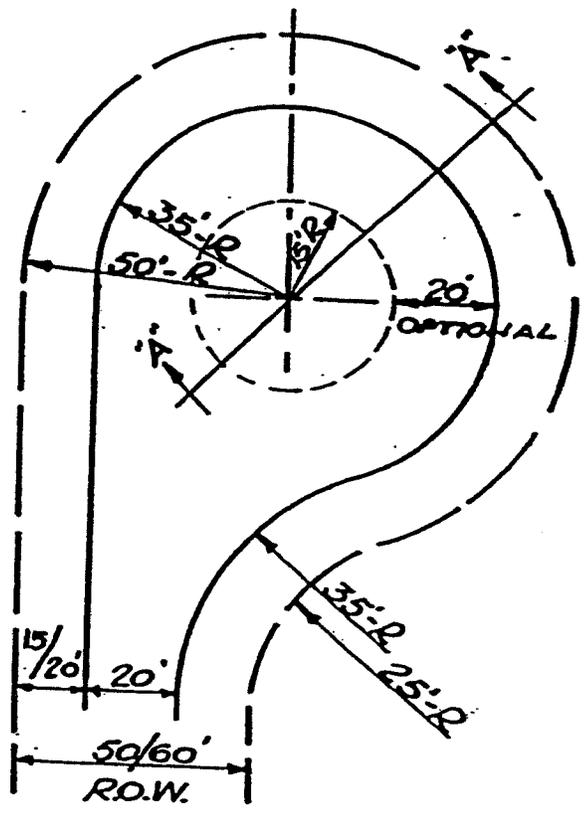


CUL-DE-SAC NO CURB & GUTTER

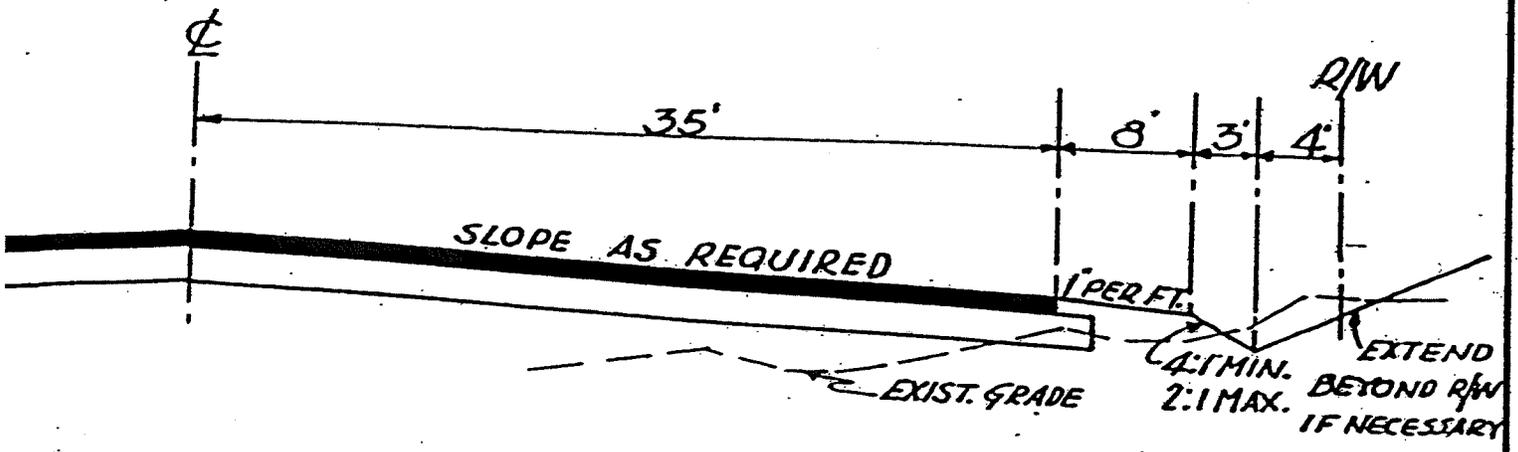
N.T.S.



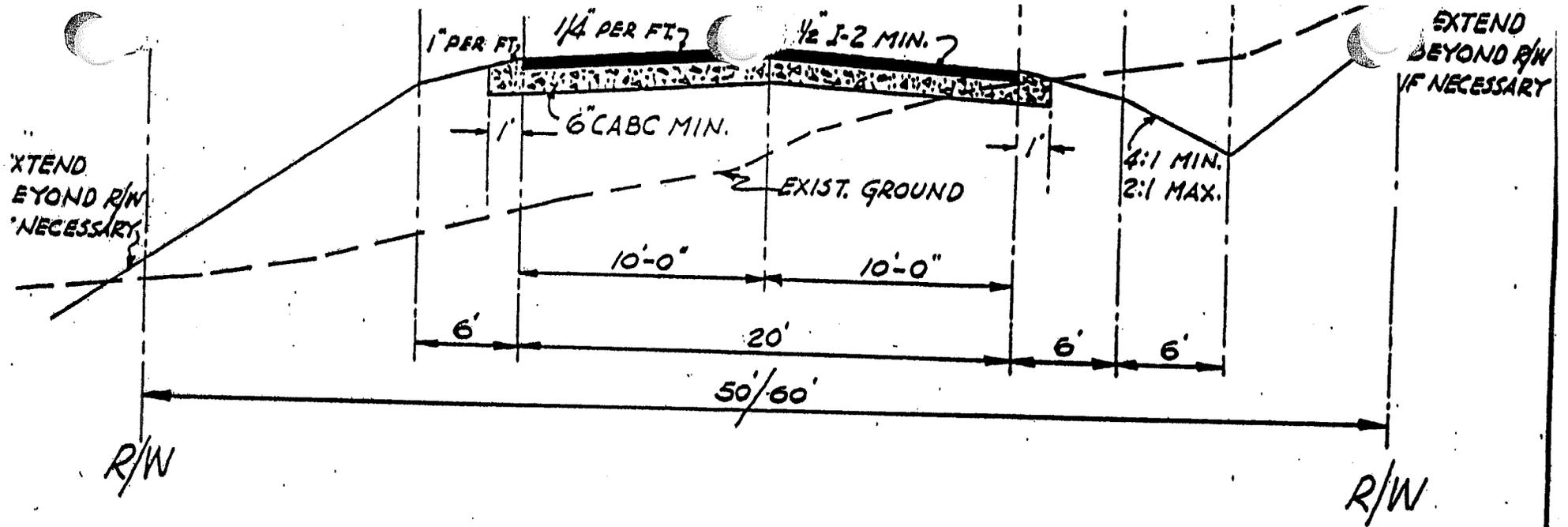
SYMMETRICAL



OFFSET



SECTION "A-A"



TYPICAL RESIDENTIAL STREET SECTION - II

N.T.S.

NOTES

COMMERCIAL STREETS OR THE USE
OF OTHER MATERIALS TO BE SUBMITTED
TO CITY ENGINEER FOR APPROVAL

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

- (d) The following information is required for reviewing an application for a permit to operate a Large Type 1 solid waste composting facility:
 - (3) A quality assurance plan for the process and final product which lists the procedures used in inspecting incoming materials; monitoring, the compost process and final product, and record keeping requirements;

**CITY OF SANFORD
COMPOST FACILITY OPERATIONS AND MAINTENANCE MANUAL
QUALITY ASSURANCE PLAN
(Revised 8/11/04)**

1. *INSPECTION OF INCOMING MATERIALS*

All material from residents being either limbs or leaves are inspected by the Coordinator at the gate, or inspected by city crews picking up at curbside. Nonconforming materials are not accepted or brought to the facility.

2. *MONITORING TEMPERATURES*

This is done by taking temperatures of all compostable windrows to insure proper decomposer.

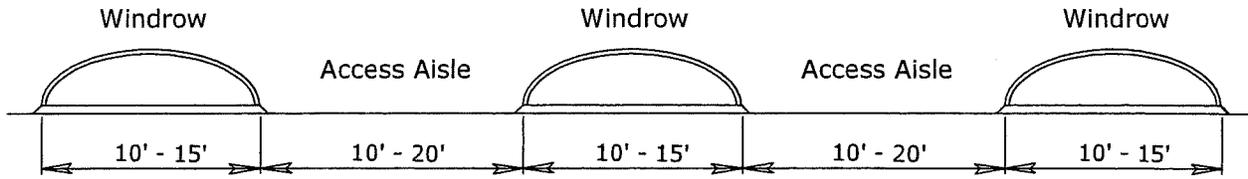
4. RECORD KEEPING REQUIREMENTS

The facility coordinator keeps daily, monthly, and yearly reports, as well as temperature charts and unmetered water reports.

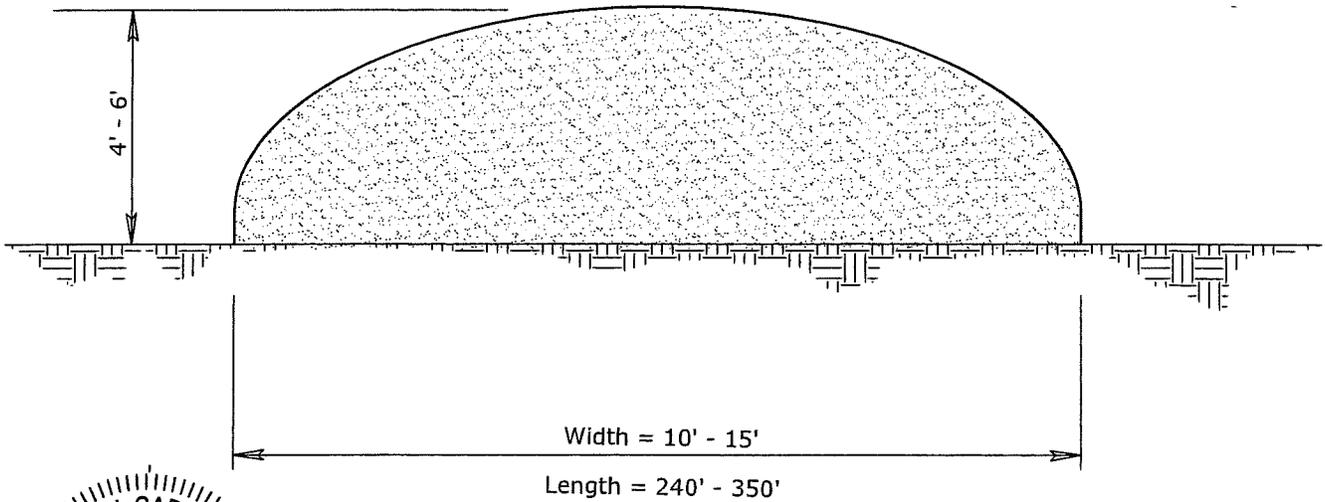
1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

- (e) The following information is required for reviewing an application for a permit to operate a Large Type 1 solid waste composting facility:
 - (4) A fact sheet and process flow diagram that summarizes actual equipment sizing, aeration capacity, detention times, storage capacity, and flow rates (wet weight and volumetric) for the system and equipment chosen. The compost facility's capacity in tonnage for active composting/curing is approx. 3,000 tons. The compost facility's capacity in tonnage for finished and stored product is approx. 1,200 tons respectively.

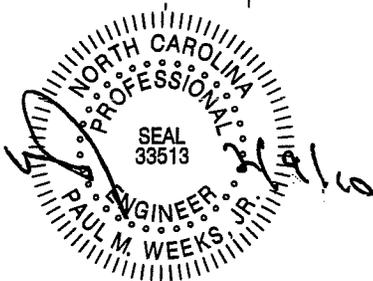
SEE FACT SHEET AND PROCESS FLOW DIAGRAM ON THE FOLLOWING PAGE.



Typical Compost Windrow Spacing



Typical Compost Windrow Cross Section



Typical Composting Windrow

City of Sanford
 Engineering Department - P.O. Box 3729 - Sanford, NC 27331

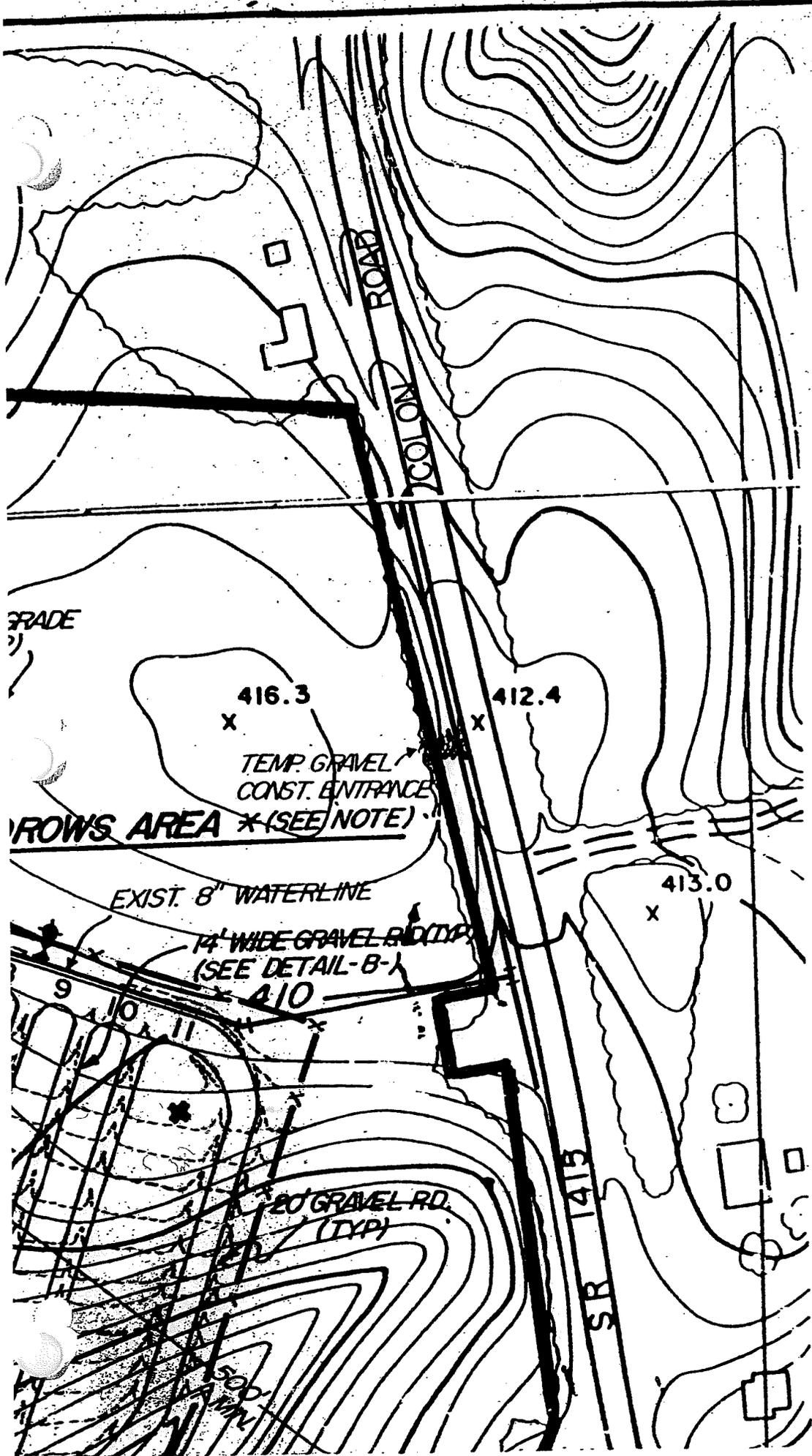
Date: 02/08/2010
 Scale: Not To Scale
 Drawn By: ddb

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

(f) The following information is required for reviewing an application for a permit to operate a Large Type 1 solid waste composting facility:

(5) As-built drawings;

As-Built Drawing attached.

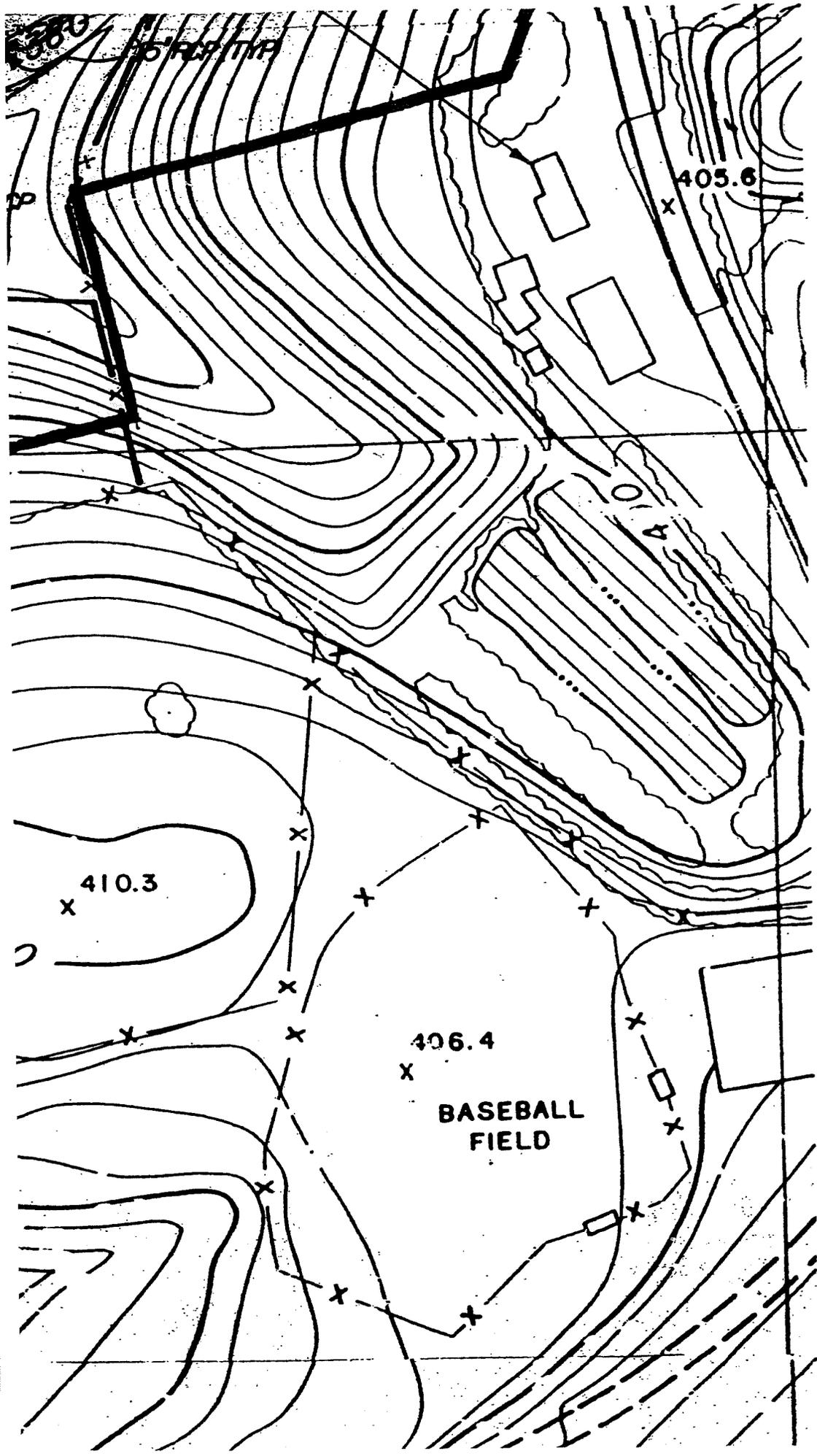


DESIGN BY: V.I.G.
 DRAWN BY: J.J.B.
 CONTRACTOR:
 REVISIONS 3/18/92

SCALE: 1" = 100'
 HORIZONTAL: NONE
 VERTICAL: NONE

DATE: 2/19/92

SANFORD
 ENGINEERING
 WOOD, N.C. 27330



CITY OF
 DEPARTMENT OF
 P.O. BOX 330 SANF

PROJECT:
CITY OF SANFORD COMPOST FACILITY
SITE PLAN/PROCESS FLOW PROGRAM

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

- (g) The following information is required for reviewing an application for a permit to operate a Large Type 1 solid waste composting facility:
 - (6) A copy of all applicable local, state, and federal permits and approvals necessary for the proper operation of the facility.

A copy of Solid Waste No. 53-03-YW issued July 2, 1992, is included on the following pages. Also included is a Certificate of Plan Approval, dated March 6, 1992, for the facility's erosion and sedimentation control plan.



State of North Carolina
 Department of Environment, Health, and Natural Resources
 Division of Solid Waste Management
 P.O. Box 27687 · Raleigh, North Carolina 27611-7687

James G. Martin, Governor
 William W. Cobey, Jr., Secretary

William L. Meyer
 Director

July 2, 1992

Victor I. Czar, PE
 City Engineer
 City of Sanford
 PO Box 338
 Sanford, North Carolina 27330

CITY OF SANFORD
 ENGINEERING DEPT.

JUL 06 1992

RECEIVED

Ref: City of Sanford
 Yard Waste Composting Facility
 Permit Number 53-03-YW

Mr. Czar:

Enclosed please find a Solid Waste Permit and Conditions of the Solid Waste Permit for the above referenced yard facility.

This permit is for a five (5) year period from the date of issuance and approves the construction and operation of the above referenced facility. Ninety (90) days prior to the expiration date of the permit, the City of Sanford shall contact the Solid Waste Section for renewal of the permit. Based upon operational records and rules in effect at that time, changes may be required. If no changes are required, the Section will re-issue the permit for an additional five (5) years.

If you have any questions or require any assistance, please contact our office at (919) 733-0692.

Sincerely,



 William D. Sessoms, PE
 Solid Waste Section

Enclosures

copy: Terry Dover
 Mark Fry



State of North Carolina
Department of Environment, Health, and Natural Resources
Division of Solid Waste Management
P.O. Box 27687 • Raleigh, North Carolina 27611-7687

James G. Martin, Governor
William W. Cobey, Jr., Secretary

William L. Meyer
Director

PERMIT 53-03-YW
July 2, 1992

SOLID WASTE PERMIT

CITY OF SANFORD

is hereby issued a permit to operate a

YARD WASTE FACILITY

located at North Fifth Street, Sanford, Lee County, North Carolina in accordance with Article 9, Chapter 130A, of the General Statutes of North Carolina and all rules promulgated thereunder and subject to the conditions set forth in this permit.



James C. Coffey
Permitting Branch
Solid Waste Section

SOLID WASTE PERMIT

CITY OF SANFORD

YARD WASTE FACILITY

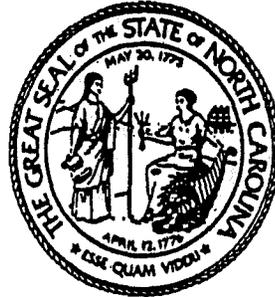
CONDITIONS OF PERMIT

1. This permit is issued for a period not to exceed five (5) years from the date of issuance, and is for the construction and operation of the yard waste composting facility as set forth in the attached application. Ninety (90) days prior to the expiration date of this permit, the City of Sanford must notify the Solid Waste Section. Additional conditions or revisions to the approved plans or operations may be required by the Solid Waste Section in accordance with rules in effect at the time of review.

Amendments or revisions to the Solid Waste Management Rules or violation of surface water, ground water, or land quality standards may necessitate modification of construction, operation, or closure of this facility prior to the expiration date of this permit.
2. The facility is permitted receive "yard waste" as defined in 15A NCAC 13B .0100(65) to include stumps, limbs, leaves, grass, and untreated wood.
3. The facility shall be operated in a manner so as to prevent the creation of a nuisance, potential health hazard, or potential fire hazard.
4. The facility shall be operated in accordance with section .0904 of the Solid Waste Rules and the following specific conditions:
 - a. Site preparation and construction shall be in accordance with the approved site plan.
 - b. A sign shall be posted at the entrance containing the words "Yard Waste Only", the facility name, the permit number, the name of the owner, the name of the operator, the hours of operation, and emergency contact name and number.
 - c. Open burning of solid waste is prohibited.
 - d. If solid waste other than yard waste is left at the facility, it shall be separated and removed within seven (7) days.
 - e. Appropriate litter control measures shall be provided to confine material subject to be wind blown. All wind blown material shall be collected and properly disposed of by the owner or operator on a daily basis.
 - f. Yard waste must be removed from containers prior to composting or mulching, unless contained in bags, or in other materials, that have been approved by the Solid Waste Section for composting or mulching. All containers must be properly disposed of.
 - g. Revisions or modifications to the plans and operations must be approved by the Solid Waste Section.

5. Any water which comes in contact with solid waste shall be contained on-site or properly treated prior to discharge.
6. Effective management practices shall be employed to control flies, rodents, insects, vermin, or other vectors.
7. Fires and other non-conforming waste incidents shall be reported to the Regional Waste Management Specialist, within twenty-four (24) hours, followed by a written notification within fifteen (15) days.
8. All sedimentation and erosion control activities shall be conducted in accordance with the Sedimentation Control Act, 15A NCAC 4).
9. Dust control measures shall be utilized to minimize emissions.
10. Based upon operating performance, the Conditions of this Permit may be subject to revision.

CERTIFICATE OF PLAN APPROVAL



#7

The posting of this certificate certifies that an erosion and sedimentation control plan has been approved for this project by the North Carolina Department of Environment, Health, and Natural Resources in accordance with North Carolina General Statute 113A - 57 (4) and 113A - 54 (d) (4) and North Carolina Administrative Code, Title 15A, Chapter 4B.0007 (c). This certificate must be posted at the primary entrance of the job site before construction begins and until establishment of permanent groundcover as required by North Carolina Administrative Code, Title 15A, Chapter 4B.0027(b).

COMPOST FACILITY - LEE COUNTY

Project Name and Location

3-6-92

Date of Plan Approval


Regional Engineer

1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

- (h) The following information is required for reviewing an application for a permit to operate a Large Type 1 solid waste composting facility:
 - (7) Product marketing and distribution plan.

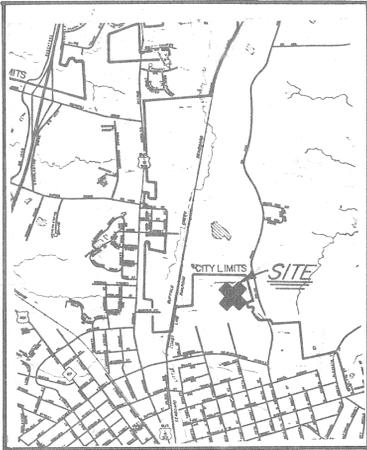
At present, approximately 95% of all composted material is sold to the public, with donations accounting for the remaining 5%.

Approximately 59% of wood waste or chips are sold to the public, and 41% of this product is distributed through the school system, the county beautification department, and the city's own horticulture department.

In the event the market should change, more donations could be made that are not being done at this time.

.1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

- (d) An application for a permit modification shall be required for changes in facility ownership, an increase in facility capacity, or the addition of new feedstock materials.



VICINITY MAP
(NTS)



NOTE: APPROX 21 AC TO BE SEEDED, LIMED, FERTILIZED, ETC.

NOTE: WINDROWS 8-11 WILL NOT BE USED FOR ACTIVE COMPOST. WILL BE USED FOR STOCKPILING OF MATURE COMPOST ONLY.



REVISED: 12/02/98

DESIGN BY: V.I.C.
DRAWN BY: J.J.B.
CONTRACTOR:
REVISIONS 3/18/92
8/04/92

SCALE: 1" = 100'
HORIZONTAL: NONE
VERTICAL: NONE
DATE: 2/19/92

CITY OF SANFORD
DEPARTMENT OF ENGINEERING
P.O. BOX 338 SANFORD, N.C. 27330

PROJECT:
CITY OF SANFORD COMPOST FACILITY
SITE PLAN/PROCESS FLOW DIAGRAM



B-28.0792

1" = 100'

ZONED
RESIDENTIAL-AGRICULTURE
DISTRICT

WELL
(Typical)

ELECTRICAL TRANSMISSION LINE

COMPOST FACILITY

ZONED
LIGHT INDUSTRY

NOTE:
WINDROWS 8-11 WILL NOT BE
USED FOR ACTIVE COMPOST.
WILL BE USED FOR STOCKPILING
OF MATURE COMPOST ONLY.

S.F.D.

ZONED
RESIDENTIAL AGRICULTURE
DISTRICT

COLON

POND

CITY OF SANFORD
SERVICE CENTER

S.F.D.

CIVIC
ORGANIZATION
BUILDING

CITY OF SANFORD
MUNICIPAL BUILDING
ZONED 01-MF

FIFTH

LEE COUNTY
FAIRGROUNDS
ZONED LIGHT INDUSTRY

AVONDALE
INDUSTRY

CHURCH
ZONED B-4

WEATHERSPOON

Waterlines

- 12"
- 10"
- 8"
- 6"
- 500' Radius
- Gas Lines
- City Owned Property
- Citylimits
- Property Lines



This map prepared by
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