



**FACILITY DESCRIPTION PLAN**

**FOR**

**CITY OF NEW BERN  
YARD WASTE PROCESSING FACILITY  
1803 COUNTRY CLUB ROAD  
NEW BERN, NORTH CAROLINA**

**FACILITY TYPE: LARGE, TYPE 1 FACILITY**

**APPROVED**  
**DIVISION OF WASTE MANAGEMENT**  
**SOLID WASTE SECTION**  
DATE 8/23/2012 BY Tony Collopy

Doc 10 17090



**AVOLIS ENGINEERING, P.A.**

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**CITY OF NEW BERN  
YARD WASTE PROCESSING FACILITY  
1803 COUNTRY CLUB ROAD  
NEW BERN, NORTH CAROLINA**

**FACILITY TYPE: LARGE, TYPE 1 FACILITY**

**Prepared for:**

**Mr. Mark Stephens, P.E.  
Public Works Director  
City of New Bern  
P.O. Box 1129  
New Bern, NC 28563**

**Prepared by:**

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Revised October 23, 2006  
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## **1.0 FACILITY DESCRIPTION**

### **A. WASTE TYPE/WASTE CLASSIFICATION**

The City of New Bern Yard Waste Processing Facility receives yard and garden type waste from the following activities:

1. Municipal leaf and limb collections
2. Municipal clearing operations (trees, bushes, etc.)
3. Municipal demolition activities
4. Leaf and limb collections from county-wide convenience centers.

Natural organic materials received include: tree trunks, limbs, leaves, bushes, shrubbery and underbrush. Demolition debris received non-treated, non-painted wood only.

All material received at the facility is classifiable as Type 1 waste defined in 15A NCAC 13B, **Solid Waste Compost Rules**. The City of New Bern Yard Waste Processing Facility is classifiable as a **Type 1** facility based upon its limitation to process Type 1 waste only.

### **B. WASTE QUANTITY**

Based upon the most recent annual reconciliation 30,784 tons of Type 1 yard waste were received and processed during the period from July 1, 2010 to June 30, 2011. The volume of Type 1 waste received and processed is estimated to be 153,920 cubic yards. A conversion factor of five cubic yards per ton was utilized in the estimation of the volume received and processed.

No scales are present at the facility and the quantity of material received is estimated by yard personnel based upon the volume of the vehicles hauling the material and upon personal experience. No plans are in place to erect a scale at this facility.

No tipping fees are assessed for materials brought to the facility.

Some seasonal variation in the quantity of material received and distributed is anticipated to occur. More waste is anticipated to be received during autumn and early winter months and early spring as leaf and limb collection increases during periods of more waste-intensive yard maintenance activities. Additionally, a surge in the volume of material received would occur following a significant weather event such as a hurricane or strong storm. This surge most recently occurred following cleanup after Hurricane Irene that occurred in the fall of 2011.

More material is distributed from the facility during spring and summer months as yard maintenance activities increase and the demand for mulch increases. No other seasonal variations are anticipated.

Based upon the quantity of material processed between July 1, 2010 and June 30, 2011, the City of New Bern Yard Waste Processing Facility is classifiable as a **Large Facility**. Small facilities as defined by 15A NCAC, 13B, **Solid Waste Compost Rules**, are those facilities that process or store less than 6,000 cubic yards of material per quarter. Historically, the quantities of materials processed have exceeded the 6,000 cubic yard threshold. Based upon the likelihood that future quantities will continue to exceed 6,000 cubic yards per quarter, the City of New Bern is submitting as a **Large Facility**.

No revisions to the facility size classification are anticipated within the foreseeable future.

### **C. PRODUCT DISTRIBUTION**

The Type 1 waste processed at the City of New Bern Yard Waste Processing Facility is converted through a chipping, mixing and curing operation to mulch. The mulch material is distributed to citizens of New Bern and Craven County for personal use. Additionally, the mulch is distributed amongst governmental agencies such as the City of New Bern, Craven County and the North Carolina Department of Transportation for landscaping and maintenance of public areas.

The City also transports mulched materials to the Craven County Wood Energy facility in the Craven County Industrial Park. The mulched material is incinerated at this facility to generate electrical power. The materials transported to this facility is held on a short-term basis at the Yard Waste Facility. The material is not composted but is processed, stockpiled for a short duration and is transported to the Craven County Wood Energy Facility.

No fee is charged for the receipt of processed mulch.

Large tree trunks and limbs received at the facility are stockpiled in a designated area of the site and are processed for firewood for local needy residents. City of New Bern Yard Waste Facility personnel and convict labor cut, split and distribute the firewood. The firewood is made available for distribution by local community outreach programs as well.

No fees are assessed for material distributed in this manner.

**D. OWNER INFORMATION**

The City of New Bern Yard Waste Processing Facility is operated by the City of New Bern. The address for the City of New Bern is as follows:

City of New Bern  
c/o Mr. Mark Stephens, P.E.  
Director of Public Works  
P.O. Box 1129  
New Bern, NC 28563  
(252)639-7501

*D-1129 copy  
(252) 639-7521  
an 639-7310*

**E. HOURS OF OPERATION**

The City of New Bern Yard Waste Processing Facility has the following hours of operation Monday through Friday:

7:30 a.m. to 4:30 p.m. (Except Holidays)

**F. FACILITY STAFFING**

The City of New Bern Yard Waste Processing Facility operates as a division of the City of New Bern Public Works Department. Included in Appendix A is Facility Staffing/Organizational Chart.

The overall operations of the City of New Bern Yard Waste Processing Facility is the responsibility of Mr. Mark Stephens, P.E., City of New Bern Public Works Director. The day to day supervision and management of the facility is the responsibility of the Yard Waste Processing Facility Supervisor.

**G. FACILITY EQUIPMENT**

The following equipment is presently utilized at the City of New Bern Yard Waste Processing Facility:

- (1) WHO Trailer-Mounted Industrial Tub Grinder
- (3) Front End Loaders
- (2) Excavators

- (1) Duffer, 22 Ton Wood Splitter
- (1) Wildcat TD-103 Windrow Turner
- (1) Tractor
- (2) Pickup Trucks
- (1) Van
- (7) Route/Service Trucks

## **H. FACILITY ACCESS**

Access to the City of New Bern Yard Waste Processing Facility is limited to one driveway connection off of Country Club Road. A gravel drive extends from Country Club Road in an easterly direction to the Yard Waste Processing Facility. No other means of accessing the facility exist.

A gate is present at the entrance off of Country Club Road preventing access during non-operating hours. A second gate is present at the entrance to the yard waste area to further access control.

Signs are posted adjacent to these gates that list facility information such as operator, permit number, hours of operation and emergency contacts.

The location of the access drive, entrance road, gates and signage are indicated on the facility site plan (Appendix D).

## **2.0 FACILITY SETTING AND DESIGN STANDARDS**

### **A. SITE DESCRIPTION**

The City of New Bern Yard Waste Processing Facility is located on approximately 5.32 acres of land located on the eastern side of Country Club Road in New Bern, North Carolina. A site location map is included on the project plans. Included with this document are a set of facility plans (Appendix D) showing existing development features on and around the site.

The Yard Waste Processing Facility is sited on the closed City of New Bern Municipal Landfill. At the onset of yard waste processing operations on this site, a gravel base course material and fill dirt material was added to material receiving, processing and distribution areas of the site. Other areas of the site, outside the material processing and distribution areas are covered with grass vegetation established on the existing landfill cap. There has been a significant accumulation of mulched material in the material processing and distribution areas since the inception of operations on the site. This material provides a buffer to ensure that the existing landfill cap is not disturbed by yard waste processing operations. Despite this protective layer, a pad meeting the permeability requirements specified in 15A NCAC 23b, **Solid Waste Compost Rules** was constructed at the yard waste processing areas in 2001. Appendix D includes a site plan of the waste processing pad along with details of construction.

As depicted on the site map, a significant topographic relief exists on the site. This relief and the presence of earthen berms along the northern and western sides of the site direct stormwater runoff from the processing and distribution areas to the northwestern corner of the site. Stormwater accumulation at this point discharges to adjacent wetland areas through rip-rap flumes. Additional runoff control devices are added as circumstances dictate. With the proposed design, all runoff from the yard waste area will be diverted off of the abandoned landfill area by lined swales to prevent infiltration through the abandoned landfill material.

## **B. SETBACK CONDITIONS**

The location of the City of New Bern Yard Waste Processing Facility complies with the setback requirements specified in 15A NCAC 13B, **Solid Waste Compost Rules**:

- Boundary Line Buffer - 50 Feet (Type 1 Facility)
- Residential Dwelling Buffer - 200 Feet (Type 1 Facility)
- Water Well Setback - 100 Feet
- Stream/River Buffer - 50 Feet
- Swale/Berm Setback - 25 Feet

The nearest property line to the Yard Waste Processing Facility is 50 feet. The nearest residential dwelling is 1,600 feet west of the Yard Waste Facility. The nearest well is 450 feet north of the Yard Waste Processing Pad area. The nearest wetland/stream area is located 50 feet east of the Yard Waste area. As sited, the Yard Waste Facility complies with setbacks specified in 15A NCAC 13B, **Solid Waste Compost Rules**.

## **C. SITE ZONING**

The entire City of New Bern Yard Waste Processing Facility is located with the I-1 Zoning Classification as stated in the City of New Bern Land Use Ordinance.

Included in Appendix B is a letter from the City of New Bern addressing the appropriateness of Yard Waste Processing Facility within an I-1 zoning district.

#### **D. FLOOD PLAIN CONSIDERATION**

The Yard Waste Processing Facility is located within Zone X Flood Zone according to FEMA Community Panel 3720548900J, Panel 5489, dated July 2, 2004. The 100-year flood elevation in this area is eight feet. The minimum elevation in the existing and proposed yard waste processing area is six feet. The elevations in the existing and proposed waste receiving, processing and distribution areas vary from an average low of 10 feet to a high of 19 feet above sea level. The elevations of the site are depicted on the site map.

The presence of this facility in the 100-year flood plain will not restrict the flow of the 100-year flood. The yard waste facility is being established on the site of an abandoned landfill. The portions of the landfill that will be used for processing material was previously elevated to points above the flood elevation by landfill filling activities. No areas currently below the elevation will be altered or elevated above their current elevation.

During periods of flooding, no washout or materials is anticipated to occur. A significant wave action is not anticipated to develop that would increase the likelihood of material washout.

During the most recent hurricane events, washout of materials from the Yard Waste Processing Facility did not occur.

#### **E. SURFACE WATER CONSIDERATIONS**

The City of New Bern Yard Waste Processing Facility is located on the site of the closed City of New Bern Municipal Landfill. The site is abutted along each of its sides by coastal wetland areas. Natural and manmade waterways and canals encircle the facility. A 50 foot minimum buffer is maintained between the compost area and these natural and manmade waterways. To prevent a discharge of materials to wetland areas, earthen berms have been established along the northern and western sides of the site area.

Surface water runoff from the proposed processing area will be controlled. The processing pad area is graded to discharge any runoff to one central discharge point located on the northwestern corner of the pad. All runoff to this point enters a geofabric and rip-rap lined swale and flows northwardly towards a larger rip-rap apron/energy dissipator. The runoff flows across this apron to the abutting canal.

The processing pad is elevated above all surrounding areas; therefore, no runoff from abutting areas occurs to the project area.

## **F. GROUNDWATER CONSIDERATIONS**

The depth to the seasonal high water table is approximately six feet below the lowest elevation on the site. A minimum separation of 12 inches exists between the groundwater and the lowest elevation at the facility as required by 15A NCAC 13B, **Solid Waste Compost Rules**.

The material processed at the City of New Bern Yard Waste Processing Facility is limited to Type 1 waste which would not result in the discharge of regulated compounds to the groundwater.

## **G. AIR QUALITY CONSIDERATIONS**

The City of New Bern Yard Waste Processing Facility receives and processed Type 1 waste only. Therefore, fugitive emissions from chipping and mulching operations would be limited to naturally occurring organic materials and fine soil particles.

Noxious odors do not develop at the site due to the limitation of processing Type 1 material only and considering the continuous circulation of materials through the process.

If high nitrogen waste are received, they will be incorporated rapidly into windrows of processing.

## **H. SITTING ON CLOSED-OUT LANDFILL**

The City of New Bern Yard Waste Processing Facility is located on the closed-out City of New Bern Municipal Landfill. Yard waste processing operations have been continuous on this site since 1991. The operation of the facility was authorized on November 30, 2006 by the issuance of a Solid Waste Permit (Permit # 25-06). The permit expired and due to the smaller quantity of material processed at the time of expiration, the facility was deemed exempt from permitting requirements. Under current facility loading, the facility is required to be permitted.

A cap in accordance with 15A NCAC 13B, **Solid Waste Compost Rules** did not exist in the yard waste processing area at the time of the 2001 permit submission. The existing landfill cap is protected in the processing area by gravel surfacing in the traffic circulation areas and by gravel, dirt, and mulch fill in the material processing areas.

The City of New Bern constructed a waste processing area in the yard waste processing area to comply with 15A NCAC 13B, **Solid Waste Compost Rules** in 2001. Details of the proposed facility and cap are included on the site plans included in Appendix D. The integrity of the waste processing area and stormwater control measures has been maintained to meet the original

design requirements. Once the waste processing pad/cap was completed, Permit # SWC-25-06 was issued to the City of New Bern for operation of a Large, Type 1 Compost Facility. The permit expired on November 30, 2011. The City of New Bern is submitting a permit application to have the permit reissued on a Large, Type 1 Compost Facility.

### **3.0 FACILITY OPERATIONS/PROCESS DESCRIPTION**

#### **A. FACILITY DESIGN CAPACITY**

The processing capacity of the facility is limited by the site area available to properly store raw input material and processed material, and material being composted. Each of these areas is indicated on the attached site plan.

The composting area of the facility is designed to have a maximum of ~~five~~ <sup>2</sup> (2) windrows for curing material. Each window is 15 feet wide at the base and tapers to a width of 6 feet wide at a height of 8 feet. Each windrow shall be a maximum of 160 feet long. The capacity of each windrow is 498 cubic yards and the total curing capacity is 996 cubic yards.

The distribution area has a total estimated capacity of 3,500 cubic yards.

The input material storage area has an estimated capacity of 4,000 cubic yards.

The capacity of the process as a whole is limited by the rate at which material is distributed from the facility and is based upon user demand. It is the desire of the City of New Bern to utilize the storage capacity at the facility to retain undistributed material until demand increases to avoid hauling expenses associated with transporting excess material to the Craven Regional Solid Waste Management Authority Landfill where it is utilized as landfill cover material.

Additionally, if excess mulch is generated, the City of New Bern has established relationships with the Craven County Wood Energy facility in the Craven County Industrial Park. The City stockpiles non-composted waste for short durations and transports this material to the Craven County Wood Energy Facility where it is converted to electrical power.

The yard waste facility more than satisfactorily received, processed and distributed 153,920 cubic yards of material processed during the most recent 12 month reporting period or an average of approximately 12,827 cubic yards of raw material per month.

#### **B. PROCESS FLOW**

Included in Appendix C is a Process Flow Diagram for the City of New Bern Yard Waster Processing Facility.

Raw material is received at the facility. The sources of this raw material area as indicated in Section 1.0, A. The raw material is screened by the Yard Waste Processing Facility Supervisor to insure compliance with the type of waste that can be processed at the facility. The Type 1 waste is placed in a stockpile adjacent to the grinding and mulching machinery. Any waste other than Type 1 waste received is segregated and placed in recycling containers located on the site for off-site disposal. The raw, Type 1 material is processed through the tub grinder and mulcher and a stockpile of mulched material is developed. This material is transported to the distribution area by front-end loaders. The entire product flow process varies in duration between three to five months from the date of receiving the raw material until the final product is distributed. During the periods when the demand for mulched material is high and the amount of stockpiled material is low, the total duration of the process is significantly reduced; in some instances less than one to two weeks.

Additionally, if excess mulch is generated, the City of New Bern has established relationships with the Craven County Wood Energy facility in the Craven County Industrial Park. The City stockpiles non-composted waste for short durations and transports this material to the Craven County Wood Energy Facility where it is converted to electrical power.

Any materials deemed useful for firewood are segregated from the incoming waste and stockpiled in the fire cutting area of the Yard Waste Facility. The material at this location is cut and split into useable firewood and is distributed throughout the community as discussed in Section 1.0, C. The raw material is collected throughout the year and is typically distributed during winter months.

### **C. MONITORING CONTROLS**

Several monitoring and quality assurance control points are located within the mulching and composting processes conducted at the City of New Bern Yard Waste Processing Facility. The initial control measures occur by limiting personnel who can deposit Type 1 waste within the facility. The material deposited within the facility is brought to the site by City of New Bern Personnel who have been trained to segregate the waste at the point of curbside collection. Any material not identifiable as Type 1 waste is not collected. Type 1 waste is also brought to the facility from Craven County Convenience Centers. Other individuals are not permitted to deposit yard waste at the facility.

A second means of control at the facility occurs by ensuring that the operation at the Yard Waste Processing Facility is properly manned during all hours of operation. When the facility cannot be manned, the two gates limiting access to the site are secured. No Type 1 waste is received or mulch distributed unless the facility is properly manned.

The third measure of control at the facility consists of the personal inspection of incoming Type 1 waste by the Yard Supervisor. All incoming loads are documented. The following items are documented for all incoming materials:

- a. Vehicle Number
- b. Time of Deposit
- c. Description of Material
- d. Approximate Quantity
- e. Received by

The next measure of control at the facility occurs by monitoring the distribution of material from the Yard Waste Processing Facility. All materials transported from the facility is documents on a Daily Log recording the following items:

- a. Name of Receiver
- b. Address
- c. Time of Distribution
- d. Quantity Distributed
- e. Material Description

Certain control measures are also employed associated with windrowing of leaf material stockpiled for composting. Windrows are monitored for temperature standards as described in 15A NCAC 13B, **Solid Waste Compost Rules**, Section 1406 (10). The temperature of the windrow material is checked on a daily basis to ensure that the internal temperature is maintained at 55 degrees Celsius for three consecutive days prior to being aerated. Temperature is checked at 25 feet intervals utilizing a portable temperature probe.

When the temperature has been documented to exceed 55 degrees Celsius for three consecutive days, the mulch windrow shall be aerated by turning the complete windrow utilizing the windrow turner.

The Wildcat TD-103 windrow turner utilized at the facility has the capacity to turn the two 15' x 160' windrows during a normal business day.

No other control or monitoring points or methods are utilized or proposed at the facility.

#### **D. SHREDDING, MIXING AND AERATION METHODS**

Shredding occurs at the facility by the placement the raw Type 1 waste through a tub grinder. The material is processed a second time through the grinder to increase a thorough mixing of the product.

Leaf waste material placed in windrows for composting area aerated utilizing a window turner. Upon mixing of the windrowed material, the pile is reshaped utilizing a front-end loader.

No other shredding, mixing or aeration methods are employed at the facility.

#### **E. MULCH DISTRIBUTION**

Mulch is distributed during normal operation hours only. End users are processed through the mulch distribution area where City personnel load the mulch. Recipients are required to complete a log of outgoing material as described in 3.0, C above. All users or receivers of mulch are provided a Mulch End User Safety/Date Sheet which documents the uses of mulch and safe handling practices. A copy of the data sheet provided is included in Appendix E.

Firewood is distributed from the facility on an as needed basis as outlined in Section 1, C above.

#### **F. INCLEMENT WEATHER PROCEDURES**

During periods of inclement weather, the Yard Waste Processing Facility ceases operation. The discretion to cease operations at the facility lies with Mr. Mark Stephens, P.E., City of New Bern Public Works Director. Operations are ceased so that yard personnel can be utilized for critical maintenance functions. During periods of inclement weather, a demand for mulched material does not exist. Additionally, collection personnel are not available to bring raw material to the site since they are performing other more critical City functions.

Following inclement weather conditions, the need may arise to extend the normal working hours of the facility to process excess incoming material from increased yard debris. Extended working hours occurred following the most recent hurricane events. The mulching operation hours may be extended at the discretion of the Public Works Director to reduce the bulk of incoming material to a more manageable volume. Following inclement weather events, if the volume of material exceeds that which can be reasonably processed at the facility, the amount of incoming waste can be limited by slowing collections. As the volume of mulch exceeds the capacity of the facility, the excess mulched material is hauled to the Craven Regional Solid Waste Authority Landfill and utilized as landfill cover material.

Additionally, if excess mulch is generated, the City of New Bern has established relationships with the Craven County Wood Energy facility in the Craven County Industrial Park. The City stockpiles non-composted waste for short durations and transports this material to the Craven County Wood Energy Facility where it is converted to electrical power.

Normal rainfall events do not hamper the processing facility's operation unless extended periods of rainfall are predicted at which time the Yard Waste Processing Facility may be temporarily closed. The City of New Bern has established inclement weather procedures which insure that

all areas under the cognizance of the City of New Bern are properly secured to avoid unnecessary damage or harm to property or persons. As inclement weather is approaching any existing unprocessed material that can be processed is mulched or chipped.

#### **G. NOISE MINIMIZATION**

The sources of noise pollution at the new City of New Bern Yard Waste Facility included the operation of the chipping and mulching equipment and the noise from loading and unloading operations, and normal vehicular traffic to and from the facility. The City of New Bern Yard Waste Processing Facility is isolated from nearby residences by approximately 500 feet of dense mature vegetation. This vegetation serves as a buffering device for noise transmission. Noise generation only occurs during normal yard business hours, eliminating the potential for noise pollution during inappropriate times.

No other special noise reduction methods are utilized at this facility.

#### **H. QUALITY ASSURANCE**

The primary means of assuring the quality of the product at the facility is the quality control inspection processes completed at the time of raw material collection and unloading and prior to mulching operations. All non-type 1 waste is removed from the raw material. To ensure that the material is properly mulched and mixed, the raw material is processed through the mulching equipment two times.

Record keeping at the facility includes the documentation of all incoming and outgoing material as discussed in Section 3.0, C above. The quantities maintained on these daily logs are utilized for the estimation of materials processed at the facility as required by the Annual Report. The Solid Yard Waste Facility Annual Report is submitted for the facility each year prior to August 1. A compilation of all raw materials processed at the facility are included with this report.

Logs are also maintained for all composting activities. Records are maintained of the following composting items:

- a. Dates Windrow Completed
- b. Dates Windrow Turned
- c. Temperatures
- d. Dates Compost Distributed (See Also 2.0, C)

## **I. CONTINGENCY PLAN**

The following conditions warrant contingency planning at the City of New Bern Yard Waste Processing Facility:

- a. Inclement Weather Conditions
- b. Equipment Breakdown
- c. Excess Volume Generation
- d. Fire

The following is a discussion of the contingency plans for each condition above:

### **Inclement Weather Conditions**

As previously discussed, if it appears that inclement weather is approaching, the City of New Bern Yard Waste Facility shall cease operations at the direction of the Public Works Director of the City of New Bern. All equipment shall be properly secured and as time allows, as much raw material as possible shall be mulched and transferred to the product distribution and storage areas. Processed material shall not be distributed during periods of inclement weather.

### **Equipment Breakdown**

If equipment failure occurs and the time for repair will limit the processing ability of the City of New Bern Yard Waste Processing Facility, then any Type 1 waste collected that cannot be properly stored at the City of New Bern Yard Waste Processing Facility shall be transported to the Craven County landfill for processing at their yard waste processing facility.

### **Excess Volume Generation**

If excess quantities of Type 1 waste are generated by the City of New Bern, and these materials cannot be properly processed at the City of New Bern Yard Waste Processing Facility, then these materials shall be transported to the Craven Regional Solid Waste Authority landfill yard waste facility for processing. No material shall be collected beyond that which can be processed at the City of New Bern Yard Waste Processing Facility and that which can be accepted by the Craven County facility.

Additionally, if excess mulch is generated, the City of New Bern has established relationships with the Craven County Wood Energy facility in the Craven County Industrial Park. The City stockpiles non-composted waste for short durations and transports this material to the Craven County Wood Energy Facility where it is converted to electrical power.

## **Fire**

If fire were to develop at the City of New Bern Yard Waste Processing Facility the following actions shall be taken:

1. The City of New Bern Fire Department shall be immediately notified.
2. Actions shall be taken to properly remove personnel and equipment from harms way.
3. Fire fighting action shall be conducted by the yard waste processing facility personnel only to the extent and limitations of the fire fighting equipment maintained at the yard.
4. The Public Works Director shall be notified as soon as possible of any fire that occurs at the yard waste processing facility.

In order for proper fire fighting and fire prevention methods to occur at the site the following items shall be maintained as a minimum at the yard waste processing facility:

1. Fire extinguishers in yard office and on yard equipment.
2. A source of running water.
3. An active telephone with posted emergency numbers.

All yard waste processing facility personnel shall be trained in the proper operations of all fire fighting equipment and the methods and actions to be taken in the event of a fire at the facility.

# **APPENDIX A**

MR. MARK SPEPHENS  
PUBLIC WORKS DIRECTOR  
CITY OF NEW BERN

SUPERVISOR  
YARD WASTE FACILITY  
CITY OF NEW BERN

(4) SENIOR MAINTENANCE  
WORKERS

(2) HEAVY EQUIPMENT  
OPERATORS

(7) CONVICT LABOR

FACILITY STAFFING/ORGANIZATIONAL CHART  
YARD WASTE PROCESSING FACILITY  
NEW BERN, NORTH CAROLINA

# **APPENDIX B**

# City of New Bern



ALDERMEN  
SABRINA BENGEL  
VICTOR J. TAYLOR  
DENNIS K. BUCHER  
JOHNNIE RAY KINSEY  
BERNARD W. WHITE  
DANA E. OUTLAW

LEE WILSON BETTIS, JR.  
MAYOR  
MICHAEL R. EPPERSON  
CITY MANAGER  
VERONICA E. MATTOCKS  
CITY CLERK

## Three Centuries of North Carolina Heritage

FOUNDED 1710

Phone: 252-636-4000      www.newbern-nc.org

P.O. Box 1129 New Bern, NC 28563-1129

### CERTIFICATE OF ZONING COMPLIANCE

City of New Bern Public Works

Re: 1803 Country Club Road

P. O. Box 1129

New Bern, N.C. 28562

New Bern, N.C. 28562

This is to certify that 1803 Country Club Road is zoned I-1 Light Industrial District and is used in accordance with Section 15-146 of the Land Use Ordinance.

Zoning Classification: I-1 Light Industrial District

Vacant Land: No

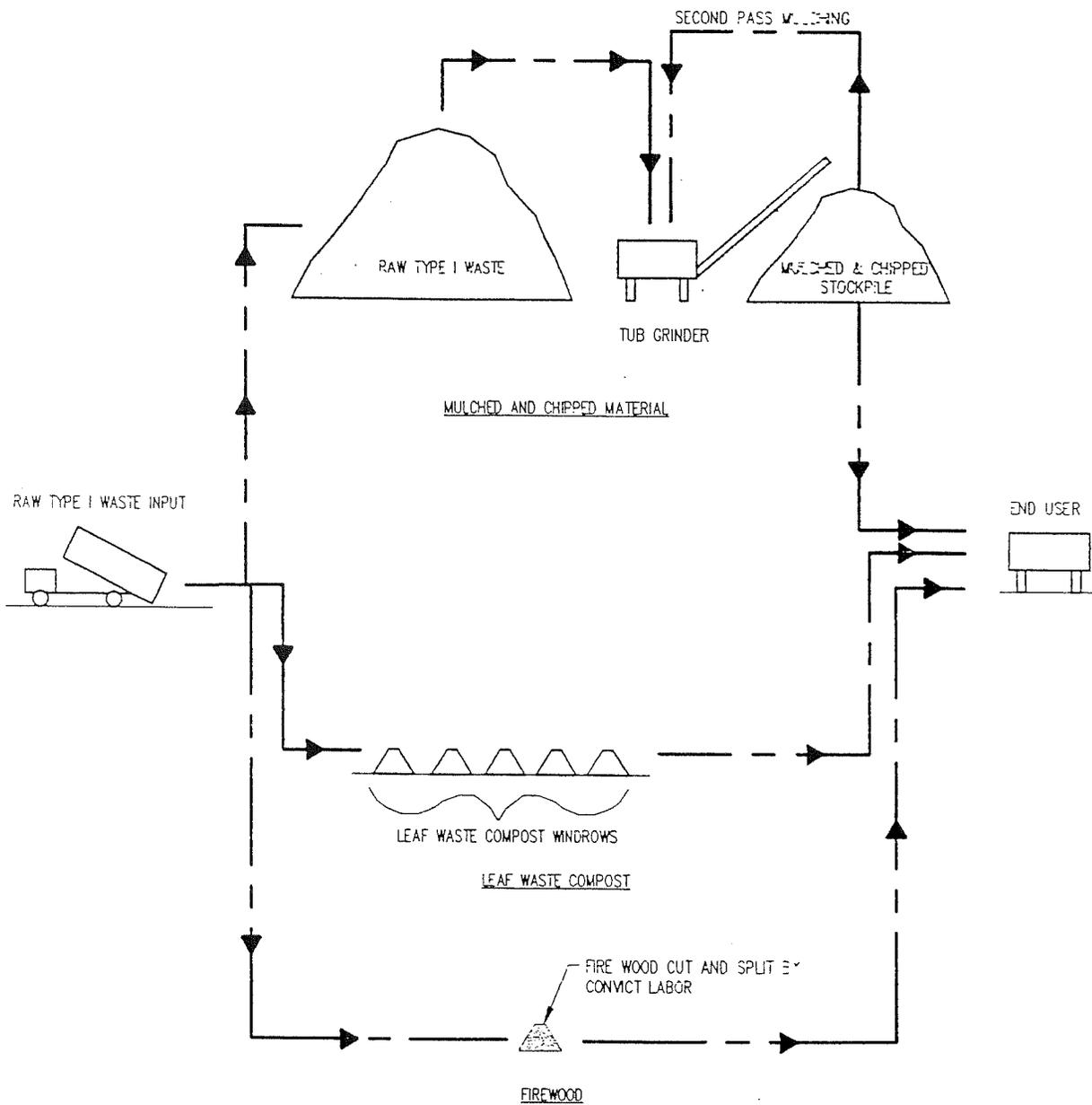
Existing Building: Yes

Non-Conformity: N/A

5-10-12  
Date

[Signature]  
Zoning Enforcement Officer

# **APPENDIX C**



**AVOLIS ENGINEERING, P.A.**  
Civil and Environmental Engineering

APPENDIX C  
PROCESS FLOW DIAGRAM  
CITY OF NEW BERN  
YARD WASTE PROCESSING FACILITY

# **APPENDIX D**

# **APPENDIX E**

## MULCH USE AND SAFETY DATA SHEET

### CITY OF NEW BERN YARD WASTE FACILITY COUNTRY CLUB ROAD NEW BERN, NC

**Purpose:** The City of New Bern operates this Yard Waste Processing Facility as a service to the public and as a means for the responsible recycling of municipal leaf and limb waste. Recycled material is provided to end-users in the form of leaf and limb mulch.

**Disclaimer:** The City of New Bern assumes no responsibility for the use, either proper or improper, of mulch distributed from the City of New Bern yard Waste Facility, the City of New Bern does not warrant the content of the mulch. The end user assumes all responsibility associated with the decision to transport and use mulch from the City of New Bern Yard Waste Facility.

#### Why Mulch?

The term “mulch” refers to materials spread or left on the soil surface as protective layers, whether organic or inorganic, loose particles or sheets. Mulches are used primarily to:

1. Suppress competing vegetation (weeds, grass).
2. Warm the soil to promote earlier spring growth.
3. Delay soil freezing and prevent frost heaving in winter.
4. Protect plants from damage by equipment.
5. Reduce soil erosion and loss.
6. Hold moisture.
7. Reduce evaporation and runoff.
8. Reduce rot and other soil-borne diseases.
9. Enhance garden and landscape appearance.
10. Make garden and landscape maintenance easier.

Organic mulches also:

1. Improve the soil's condition through decomposition.
2. Add nutrients such as nitrogen, phosphorus, sulfur, calcium, and trace elements.

#### Mulch Description

The mulch provided through the City of new Bern Yard Waste Facility has been manufactured from leaf and limb waste and minor quantities of untreated unpainted lumber. These materials are processed through a tub grinder where they are grinded to particles generally less than 3 inches and are intermingled.

In general, the mulch distributed has not been “aged” and can be toxic to tender plans or plants with shallow root systems during the decomposition process. Some vegetation that may exist within the mulch may produce phytotoxic (plant killing) chemicals. Precautions should be taken to ensure the proper placement of mulch materials.

## **Mulch Management**

Apply loose mulches at planting time. To prepare an area to be mulched, remove perennial weeds and level the area. Soil should be moist but not wet. Around young trees, extent the mulch from near the trunk out at least to the drip line (the ground area below the tree canopy). Established lawn trees will benefit from a mulched area extending 2' - 3' out from the trunk. In all cases, keep the area adjacent to the trunk free of mulch to help prevent damage to the tree trunk from excess moisture, insects and diseases, and voles and other pests. Excessive mulching can also stimulate undesirable shallow rooting. If herbicides will be used in combination with mulches for enhanced weed control, apply the mulch first, then the herbicide over the mulch.

Non-aged mulch should not be applied in areas planted with tender plants or plants with shallow root systems.

Mulch placed along foundations may promote infestation of wood destroying insects such as termites.

The local county extension office should be contacted with any questions or concerns regarding the proper use of mulch.

### **Safety Concerns:**

While Handling Mulch:

- Wear dust masks to prevent effects from allergens.
- Wear proper protective equipment such as gloves, goggles, etc.
- Follow proper placement methods.

For additional information regarding the proper use of mulch, contact:

Craven County Extension Office at 633-1477.

For questions regarding the operation of this facility call:

City of New Bern, Public Works Department at 639-7501.

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- MATERIAL SPECIFICATIONS:**
1. GEOSYNTHETIC LINER: PERMAON PLY X-210 AS MANUFACTURED BY REF. INDUSTRIES, INC. P.O. BOX 750250, HOUSTON, TX 77275-0250
  2. 1-800-231-6074, TERORA SQUARE, SERIES #135 AS MANUFACTURED BY HICHSI, U.S. ENVIRONMENTAL TECHNOLOGIES, INC. BOX 5897, SPARTANBURG, SC 29304, 1-800-845-7597
  3. SACRIFICIAL STONE: NC DOT STANDARD ABC
  4. SAND FILL: ASTM D 2487-SW OR SP

- SUMMARY OF WORK:**
1. GRADE EXISTING SITE IN AREA OF NEW PROCESSING PAD
  2. CONSTRUCT NEW PROCESSING PAD
  3. CONSTRUCT OUTLET SWALE
  4. EXTEND WATER LINE AND INSTALL YARD HYDRANT

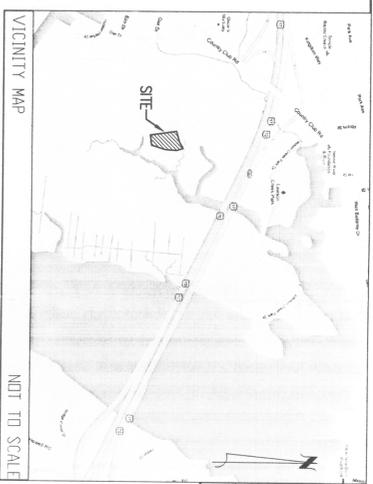


A SITE PLAN  
C1 C1 SCALE 1"=50'

TOTAL SITE AREA = 5.32 ACRES  
TOTAL DISTURBED AREA = 34,400 SF (0.79 ACRES)

3 PROCESSING PAD  
C1 C1 NOT TO SCALE

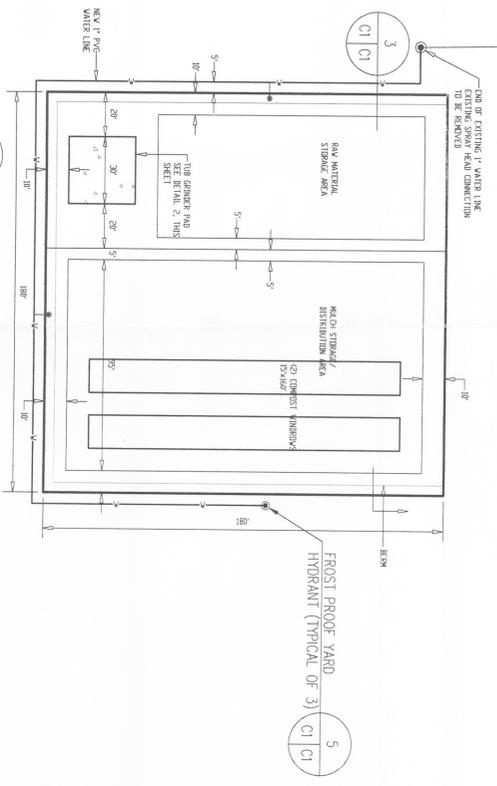
4 250 LF OUTLET SWALE  
C1 C1 NOT TO SCALE



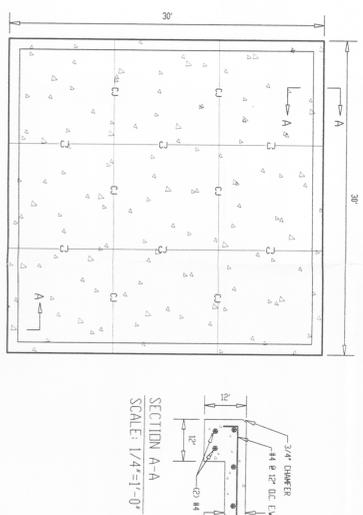
VICINITY MAP  
NOT TO SCALE

NO.	DESCRIPTION	BY	DATE
1	RELEASE FOR PERMITS	JKA	1/13/99
2	REVISION	JKA	10/10/00
3	STATE COMMENTS	JKA	1/20/01
4	REVIEW COMMENTS	JKA	10/23/06
5	2007 PERMIT REVISION	JKA	5/21/2012

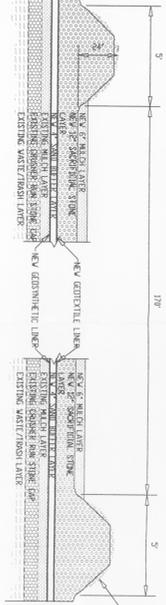
Revisions



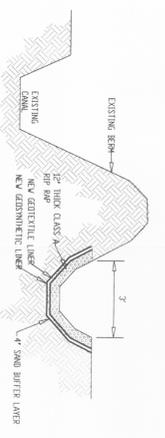
1 PROCESSING PAD - SCHEMATIC PLAN  
C1 C1 NOT TO SCALE



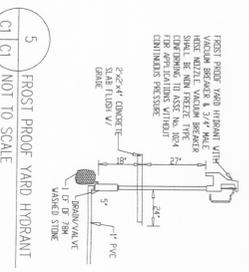
2 TUB GRINDER PAD  
C1 C1 SCALE: 1/8"=1'-0"



3 PROCESSING PAD - CROSS SECTION  
C1 C1 NOT TO SCALE



4 OUTLET SWALE CROSS SECTION  
C1 C1 NOT TO SCALE



5 FROST PROOF YARD HYDRANT  
C1 C1 NOT TO SCALE

C1  
06127C1.DWG

CITY OF NEW BERN YARD WASTE PROCESSING FACILITY  
1803 COUNTRY CLUB ROAD  
NEW BERN, NORTH CAROLINA  
SITE PLAN



AVOLIS ENGINEERING, P.A.  
Civil and Environmental Engineering  
P.O. BOX 15564 NEW BERN, NORTH CAROLINA 28561  
PHONE: (252) 633-0068 FAX: (252) 633-6507

PROJECT NO. 06127  
SCALE: AS NOTED  
DRAWN BY: TDM  
CHECKED BY: JKA  
DATE:

