

**BLUE RIDGE PAPER PRODUCTS, INC.
CANTON, NORTH CAROLINA**

**OPERATIONS MANUAL
FOR
LANDFILL NO. 6
AREA A WEST**

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1.0 GENERAL

1.1 Purpose

The purpose of this manual is to provide information to the personnel involved in the operation, maintenance and closure of the Landfill. Guidelines for development and operation are provided herein for Landfill Area 6A West and connection with waste filling to Landfill Area 6A East. This document will be revised to describe the development of future phases, as necessary.

It is important to recognize that some of the procedures in this manual may require modification over time as improved methods are developed for carrying out the day to day landfill activities. Changes in procedures must be verified with the Canton mill area management, Environmental, Health and Safety Department (EHS) and Mill Engineering prior to implementation.

It is equally important for the personnel involved in landfill operations to understand the critical requirements for successful landfill operation and maintenance. Operation of a landfill is primarily a task of managing water. Approximately one million gallons per acre of precipitation falls to the ground in the Canton, North Carolina area on a yearly basis. Management of this and other waters which may be associated with or absorbed by the incoming waste is the principal task of the landfill operations personnel.

The landfill has been designed to collect the precipitation and other water which becomes leachate. It is the operations personnel's goal to insure that maximum leachate collection efficiency is maintained while simultaneously minimizing leachate generation to the extent practical. Minimizing leachate generation is accomplished by separating clean surface runoff from the wastes, encouraging evaporation of leachate and other procedures which are discussed herein.

This manual was prepared with regard to the Solid Waste Rules and Regulations of the North Carolina Department of Environment and Natural Resources (NCDENR). It includes descriptions of development procedures, landfill operations, site maintenance, safety procedures,

monitoring requirements, leachate management and numerous other important procedures which must be adhered to. Everyone associated with the management and operation of the landfill should be familiar with this manual to insure a safe and environmentally secure facility.

1.2 Design Concept

It is not the purpose of this document to provide a detailed account of the design of the landfill, however, a general discussion of the design concept is presented herein. The landfill operations personnel are encouraged to review the Design Reports and Engineering Drawings which provide detailed descriptions of the landfill facilities.

The Landfill incorporates a synthetic liner system beneath the waste to minimize the potential for leakage to the underlying groundwater. The bottom liner consists of 60-mil high density polyethylene (HDPE). A drainage layer with embedded perforated pipe is placed above the HDPE to collect and transport leachate. The perforated pipe network connects through a series of manholes to a gravity sewer line which discharges into a wet well. A pump station pumps the leachate to the mill's wastewater treatment plant. During high leachate flows, leachate will be temporarily stored in leachate storage ponds.

1.3 Development Concept

Landfill Area 6A has previously been developed in two major phases, Area 6A East and 6A West. Area 6A East was constructed in 1993. Area 6A East encompasses approximately 15 acres with an estimated capacity of approximately 1.5 million cubic yards. Area 6A East was developed from 1993 through 2002 in three cells: two base cells located on the western and eastern half, known as Cell III and Cell IV, respectively, and one upper cell placed on top of the lower base cells, known as Cell V. Development and operation of Area 6A East in this manner allowed for separation of clean surface water runoff from the waste, thus minimizing leachate generation. Area 6A East underwent Final Closure in two phases completed in the Spring of 2003 and the Fall of 2003.

Area 6A West was constructed in 2000 and is the current active waste-filling area of the landfill. Area 6A West encompasses approximately 15 acres with an estimated capacity of approximately 1.7 million cubic yards. Area 6A West is being developed in three cells: two base cells located on the western and eastern half, known as Cells I and II, respectively, and one upper cell placed on top of the lower base cells, known as Cell VI. Development and operation of Area 6A West in this manner will allow for separation of clean surface water from the waste, thus minimizing leachate generation.

2.0 OPERATIONAL PROCEDURES

2.1 Commencement of Operations

- (a) At least 5 business days prior to commencing operation of the new landfill, Blue Ridge Paper Products, Inc. shall notify the NCDENR of the intent to commence operations.
- (b) The notice shall include the following:
- (1) Facility identification, including permit number;
 - (2) Date of intended commencement of operations; and
 - (3) The name and telephone number of the facility manager or other primary contact person.

2.2 Site Access

All vehicles and visitors will enter the site via the gated road which accesses the Landfill. The entrance to the landfill will have a facility sign which includes the following:

- The facility name and permit number;
- The name, address, and telephone number of Blue Ridge Paper Products, Inc.;
- The days and hours that the facility is open to accept waste;
- The type of wastes accepted and not accepted (i.e. "No hazardous or liquid waste accepted"); and
- The penalty for unlawful dumping.

All visitors will check in at the main gate which is located on Main Street. Only approved employees will have unrestricted access to the landfill facility. All others will proceed only after receiving clearance from security at the main gate and landfill management. No visitors will be allowed on-site unaccompanied and the number of visitors will be minimized.

During non-operational hours the gate at the entrance to the site will be locked.

2.3 Operating Hours

The Landfill will normally accept mill wastes seven days per week, and up to a 12-hour per day schedule, depending on daylight hours.

The normal start of the work day for operators will be 6:00 A.M. The operators will perform daily maintenance and move the equipment to the operating area within 1/2 hour of commencement of dumping. An operator shall be present at the operating area at the commencement of dumping.

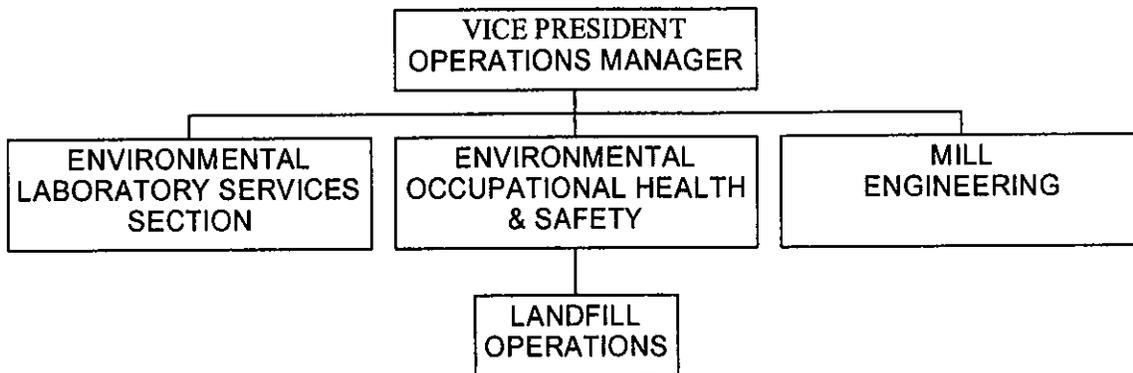
2.4 Personnel Responsibilities

The personnel and departments involved in the operation of the landfill include: 1) EHS department; 2) Mill Engineering; 3) RURU-Environmental Laboratory Services (ELS); and 4) landfill operations. The organization, responsibilities and tasks conducted by these people are described below.

2.4.1 Organization. An organization chart, Figure 2-1, is presented to outline the chain of command and support groups which include the EHS Department and Mill Engineering.

FIGURE 2-1

ORGANIZATION CHART



2.4.2 Personnel.

2.4.2.1 Environmental, Health and Safety Department (EHS)

This group is responsible for securing and assuring compliance with licenses and permits required for operating the landfill. This responsibility includes quantity estimates of all plant waste brought to the site and environmental monitoring of the landfill in accordance with the conditions of the landfill permit. In addition, the department's responsibility includes assuring that the landfill operation is in compliance with all regulations of the NCDENR. This responsibility includes periodic site audits and inspections as well as submission of appropriate data to the NCDENR.

EHS personnel are also charged with directing and overseeing the daily operation of the landfill to assure that the operating plans are being implemented properly. Responsibilities of the EHS personnel in this area include:

- a. initiating site development to maintain continuity of operation;
- b. directing the overall planning and scheduling of waste placement;
- c. maintaining site records and tracking landfill volume consumption;
- d. supervising and training personnel; and

- e. supervising the site safety program.

In addition, this department is responsible for the maintenance of leachate collection systems, storm water runoff facilities, and roads.

2.4.2.2 Mill Engineering

This group is responsible for overseeing major construction projects at the landfill and providing support services for site maintenance. Major construction projects, such as landfill construction, would be implemented by Mill Engineering.

2.4.2.3 Landfill Operator

The landfill site operators will be responsible for the daily details of landfill operation at the area receiving the wastes. The Operator will:

- a. direct placement of the waste by haul vehicle operators;
- b. spread and compact wastes;
- c. apply cover materials as required;
- d. inspect equipment and facilities;
- e. abide by established safety rules;
- f. maintain site security in conjunction with Canton Mill security;
- g. immediately note and report unusual events or circumstances;
- h. maintain such records as may be required;
- i. immediately report any observed and/or imminent environmental impacts to EHS department management; and
- j. strive to maintain neat and efficient operations.

The mill site operators and drivers of the haul vehicles will be responsible for the proper loading and handling of their loads. While on the landfill site they will comply with the provisions of this manual and directions provided by the Landfill Site Operator.

Problems encountered at the landfill should be reported to the Landfill Team and to EHS management.

2.5 Health, Safety and Fire Considerations

The following health and safety procedures will be adhered to at the landfill facility:

1. Only essential personnel will be involved in activities associated with operation of the landfill.
2. Prior to personnel entering into manholes or other similar enclosed facilities, the inside air will be tested in accordance with confined space entry procedures.
3. Dumping areas will be maintained firm and level. After directing trucks to the dumping area, the operating personnel will stand clear of the truck.
4. The leachate storage pond gate will be locked at all times, except when access is required.
5. Exit ramps will be provided in the leachate storage pond for exit in the event that someone falls in.
6. In the event of an accident involving property damage, the mill security will be notified immediately to generate necessary reports.
7. In the event of an accident involving personal injury, assess the severity of the injury and call emergency personnel by dialing 911 outside the mill, or 2911 in the mill. If injuries are only minor, the injured person must report to the mill medical section.

8. In the event of an environmental emergency, the operator will follow the spill and release reporting procedure or call mill extension 6711.
9. Keep gate locked when area not in use.

In the event of a fire, the following procedures will be implemented:

1. If it is an equipment fire, the fire extinguisher provided with all equipment will be utilized, if feasible, to extinguish the fire.
2. If the fire does not appear to be controllable with a fire extinguisher, or if the fire is associated with the landfilled wastes, the emergency dispatcher at mill extension 2911 will be contacted immediately. The emergency dispatcher will be provided with information concerning the location and extent of the fire.
3. The emergency dispatcher will mobilize the appropriate fire fighting equipment and personnel. All fire personnel should be notified in advance to alert them of the nature of hazards at the landfill so they may be appropriately prepared and equipped.
4. All efforts to keep applied water and fire fighting chemicals within the landfill limits will be made.
5. EHS department personnel will be notified as soon as possible so that an inspection can be made.
6. Hot ashes on the sludge pile will not be considered a fire hazard unless they are blown by strong winds.

2.6 Equipment Requirements

The following equipment will be available to conduct the daily landfilling activities, place intermediate and final cover, minimize erosion, maintain roads and operate the leachate system:

1. Bulldozer for fine grading;
2. Bulldozer for waste placement and grading;
3. Front-end loader to move cover material and construct temporary berms;
4. Two-way radio communication system.

2.7 Waste Delivery and Acceptance

To assure that all information regarding a waste delivery is accurately recorded, it is necessary to adhere to a "flow control" system. The details of the "flow control" system are described in this Subsection 2.7 and the following Subsection 2.8, as well as Section 7.0 which describes in detail the record keeping and reporting requirements which will be followed by this facility.

Each day, drivers will provide the following information:

1. The types and sources of the waste being delivered;
2. The number of truck loads of each type of waste delivered; and
3. Weights of the trucks according to the established plan.

Landfill personnel will determine if the landfill is permitted for the type and source of waste being delivered, see the following Subsection 2.8. When the truck arrives at the disposal area, the Landfill Operator will direct the unloading of the waste. Each day the weight tickets will be obtained from the Scale Operator by Landfill personnel for recording onto the daily accounting forms.

2.8 Waste Inspection Plan

The truck driver will inspect the waste load and determine if the waste is accepted at the landfill. If there is any question as to the waste being accepted at the landfill, the truck driver will notify the EHS management for a decision on whether it is an acceptable waste.

The landfill operator will also inspect each load. If an unpermitted waste is disposed, the landfill operator shall notify EHS management.

In the event a special waste is generated, the owner will secure NCDENR approval prior to disposal.

2.9 Waste Placement and Grading

2.9.1 Waste Placement Plan. The following is the waste placement plan. This plan was designed around the nature of the waste disposed at the facility.

The sludge, woodwaste, and lime mud will be dumped by the haul truck operator and spread by an equipment operator. The landfill operator will place the waste in lifts 10 to 15 feet thick. As waste is dumped from the top of the lift the landfill operator will push and spread the waste over the working face, see Figure 2-2. The waste will be spread in layers no greater than 2-feet thick. By spreading the waste in thin layers, the waste is allowed to drain, greater compaction is achieved, and stability of the working face is maintained.

Each lift must be constructed with the ultimate goal of achieving the grades shown on the individual cell grading plans. The grading of each lift must also achieve positive drainage as described in the next section. The next section, Section 3.0, of this manual also describes the staged development of Cells I, II, and VI of Area 6A West in detail.

2.9.2 Special Handling of Waste. Landfilling procedures for the sludge, wood waste, and lime mud, as discussed above, are straight forward. Certain wastes require special handling to dispose

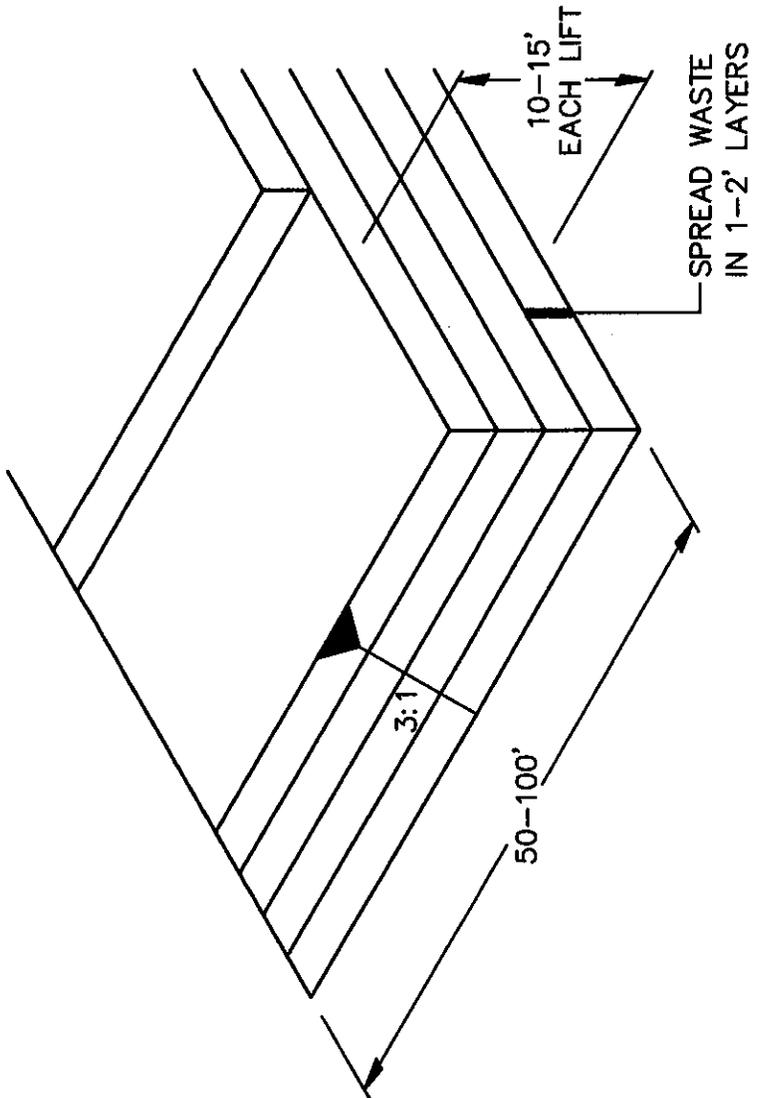


FIGURE 2-2
WASTE PLACEMENT
BLUE RIDGE PAPER PRODUCTS, INC.
LANDFILL NO. 6A WEST
CANTON, NORTH CAROLINA



of them. The waste which requires special handling is boiler ash. The safe disposal of ash is discussed below.

Boiler Ash. Boiler ash will amount to approximately 1,400 cy per week. Two types of ash are brought out to the landfill: cinders; and fly ash. The cinders consist of soil, bark, and charred wood. This material can be landfilled by spreading it over the working face or used as a gravel substitute for roadways on the landfill. The fly ash is a much finer material and can dry out and become dusty. Landfilling the fly ash can be accomplished by spreading the fly ash and immediately placing a layer of sludge over it, depending on the moisture content of the sludge. This will prevent blowing of the ash, and, water from the sludge will eliminate any fly ash from drying and blowing.

2.9.3 Wet Weather. During very wet weather, access to the working face may become difficult. Grit or gravel can be used to provide a stable traffic mat to improve movement of vehicles on the landfill as needed, but the amount of these materials should be held to a minimum.

3.0 LANDFILL DEVELOPMENT

This section describes the development and operation of Landfill Area 6A. Area 6A is divided into two major phases, Landfill Area 6A East and Area 6A West. Final closure of Area 6A East has been completed and therefore is not described herein. Area 6A West is the active filling area of Landfill 6A and is currently filled to approximately 50 percent of its capacity.

Area 6A West will be subdivided into three cells: two base cells which are currently being filled, known as Cells I and II, and one upper cell, Cell VI, placed on top of the lower base cells. The Landfill permit does not currently permit placement at Cell VI. Application for Cell VI will be made as a request for Vertical Increase of Area 6A West, pending successful operation in Cells I and II. Cells I and II encompass approximately 7.5 acres each, and will have a combined total capacity of approximately 1.1 million cubic yards. The locations of Cell I and Cell II are shown on Figure 3-1. Cell VI will be approximately 15 acres, with a capacity of approximately 600,000 cubic yards. Waste filling within Cell VI will also complete the connection of Area 6A West with Area 6A East. The location of the upper cell is shown on Figure 3-2. The primary purpose of this cellular design is to minimize the active operating area of the landfill at any one time and, thereby, minimize potential odor and the quantity of leachate generated.

The development for the base cells was completed as part of the Area 6A West (facility) construction in 2000. Components of the facility construction included installation of a 60-mil HDPE liner, leachate collection system and underdrain system, and containment dikes. In addition to the HDPE liner, the southern half of Area 6A West was underlain by a geosynthetic clay liner. Cell I and Cell II are the current active filling areas of Landfill 6A and are discussed in Section 3.1 below.

The development of Cell VI will require the installation and tie-in of a geosynthetic clay liner, 60-mil HDPE liner, and leachate collection system above the divider berm bisecting Area 6A West and Area 6A East. Lining the divider berm will allow the “valley” between Area 6A West and Area 6A East to accept waste. The development of Cell VI will also require the stripping of

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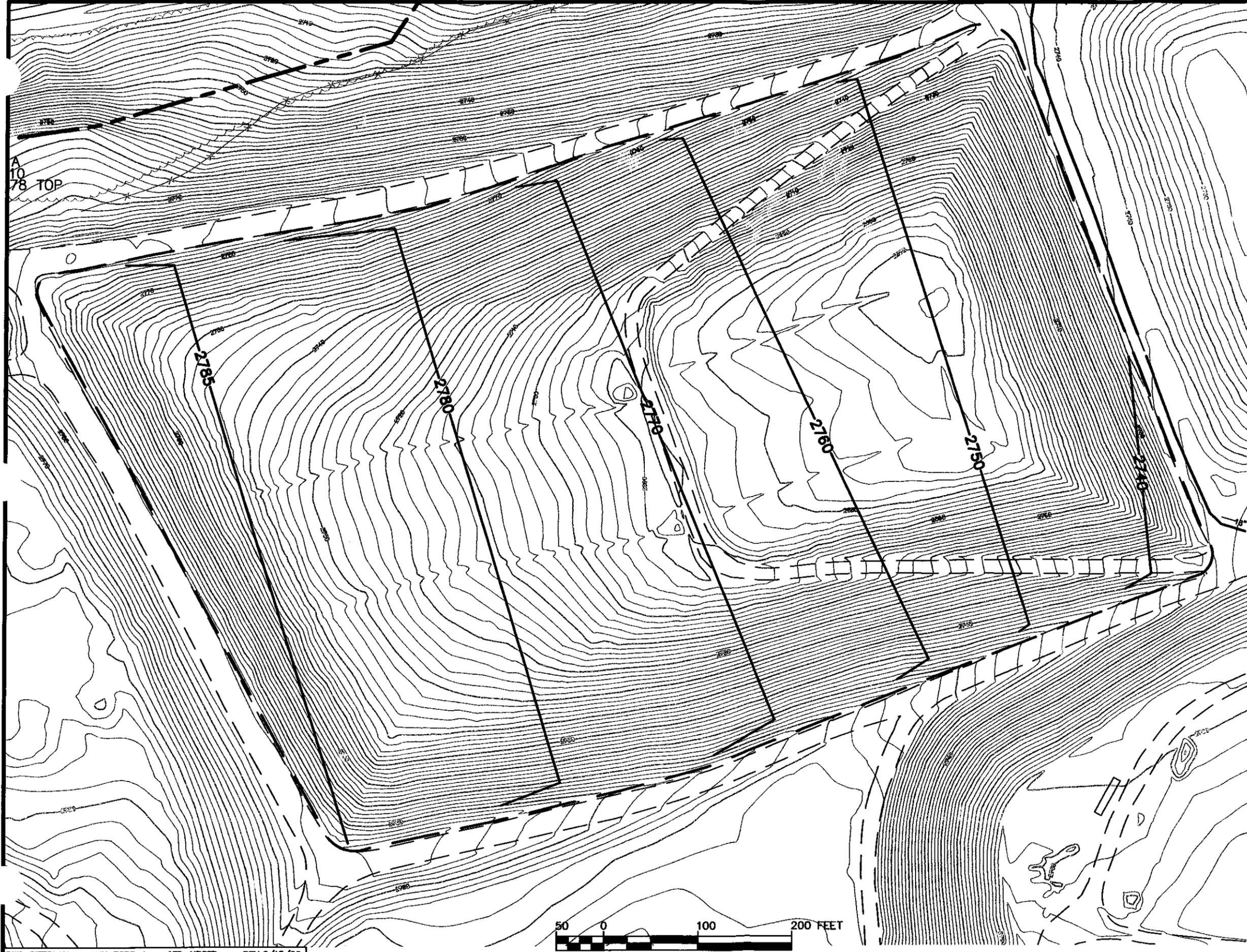


FIGURE 3-1
 CELL I & CELL II
 FINAL GRADING PLAN
 BLUE RIDGE PAPER PRODUCTS, INC.
 LANDFILL NO. 6A WEST
 CANTON, NORTH CAROLINA

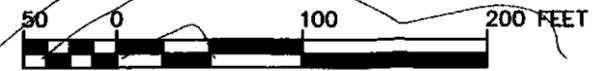
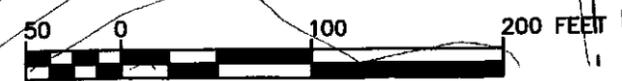




FIGURE 3-2
 CELL VI SITE DEVELOPMENT PLAN
 BLUE RIDGE PAPER PRODUCTS, INC.
 LANDFILL NO. 6A WEST
 CANTON, NORTH CAROLINA



the west sideslope cover soils on Area 6A East, construction of containment dikes, the installation of the necessary leachate collection and transport systems to connect the upper cell to the existing leachate transport system, and installation of stormwater structures as the facility is capped.

3.1 Cell I and Cell II

Cell I and Cell II (base cells) are the current active filling areas of Landfill 6A, ranging in depth from 60 to 80 feet, and sloping from west to east. The base of the landfill is sloped in a saw-tooth pattern from north to south with two drains running west to east. The cells contain a leachate collection system consisting of 15 inches of granular material, and a piping network consisting of 12-inch diameter collection/transport pipes. The transport pipes carry the leachate by means of gravity flow through the base of Area 6A West to the wet well located at the southeast corner of the site. From the wet well, the leachate is pumped to the mill's wastewater treatment plant.

Access to the base cells is provided by an access road approximately 24 feet wide to accommodate two-way traffic. Waste will be dumped by the haul truck operator as directed by the landfill operator. The landfill operator will construct waste lifts up to 15 feet thick and maintain an adequate width on the working face. As waste is dumped from the top of the lift, the landfill operator will push and spread the waste over the working face. The waste will be spread in layers no greater than 2 feet thick. The Boiler ash will require special handling and is discussed in Subsection 2.9.2 as well as later in this section. By spreading the waste in thin layers, the waste is allowed to drain, and greater compaction is achieved, see Figure 3-3.

Each lift must be constructed with the ultimate goal of achieving the final grades shown on the Site Development Plan for Cells I and II, provided in Figure 3-1. The grading of each lift must also achieve positive drainage toward the chimney drain strips which are located in the northern and southern halves of Cell II.

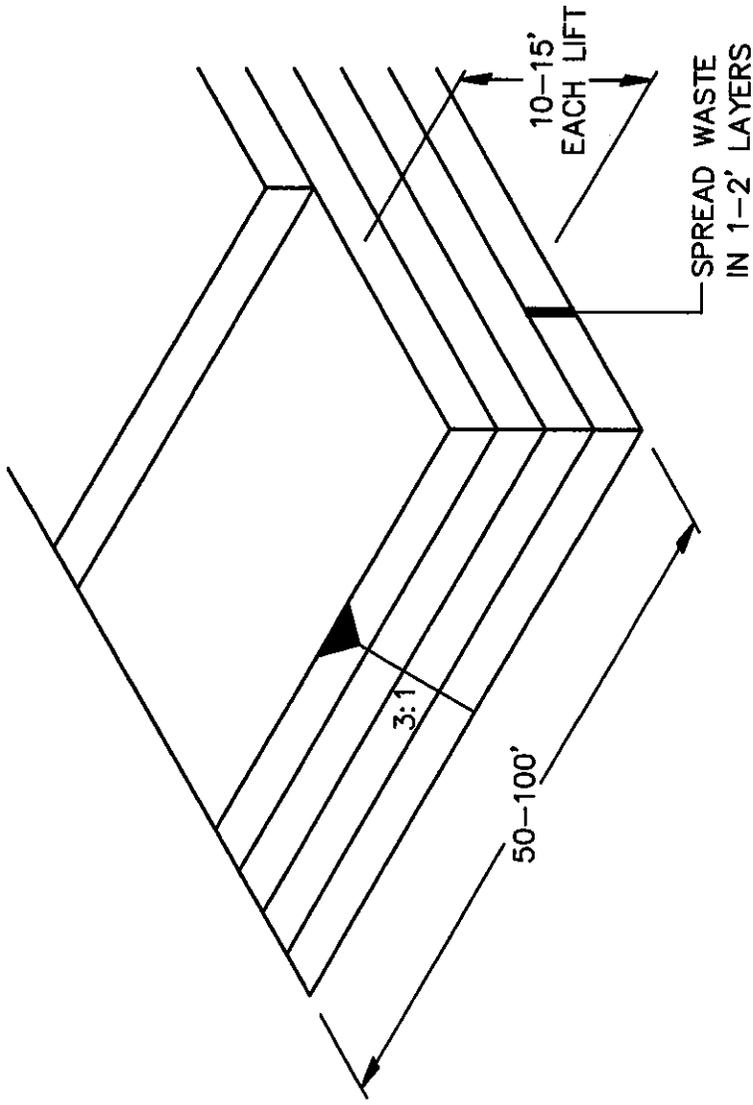


FIGURE 3-3
WASTE PLACEMENT
BLUE RIDGE PAPER PRODUCTS, INC.
LANDFILL NO. 6A WEST
CANTON, NORTH CAROLINA

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Sevee & Maher Engineers, Inc.

A property of papermill sludge is that it contains clay from the papermaking process. As the sludge is landfilled deeper, the consolidation of the sludge also makes the sludge less permeable; water does not drain as easily. In order to maintain good drainage within the landfill, the top surface of each lift will be covered with a 12-inch thick layer of granular material, i.e. stone, gravel, etc. The drainage layer will aid in draining the next lift of waste, making for a more stable landfill operation. In addition to the drainage layers, the chimney drain strips will be expanded upward to the top of the base cells. With each new lift of waste, each chimney drain strip will consist of a 5-foot high dike of drainage stone directly above the previous chimney drain strip. In a horizontal (west-east) direction, the chimney drain strips will be 50 feet in length and spaced 50 feet apart. The waste will be landfilled up to the top of the stone. The process repeats again with a 5-foot high dike of drainage stone. As with the chimney drain strips, the sand drainage layer along the lined sideslopes will also be extended with each new lift of waste.

Special operating procedures will need to be implemented during winter operations. During winter operations, provisions must be made for snow removal to maintain the necessary landfill operations. Waste placement, grading and site cleanliness become more important during the winter since waste such as ungraded frozen sludge can become a barrier to traffic movement. The access road must be plowed and sanded to provide safe travel conditions. Salt should not be used because it may seep into the groundwater and will affect groundwater quality data. Sanding will be the preferred method of road treatment in the winter months. Drainage structures such as culverts should be kept free of ice and snow to assure unrestricted runoff during thaw conditions. ***Any damage to the liner system of the landfill that occurs as a result of construction or operational activities will be reported immediately to EHS management for appropriate action.***

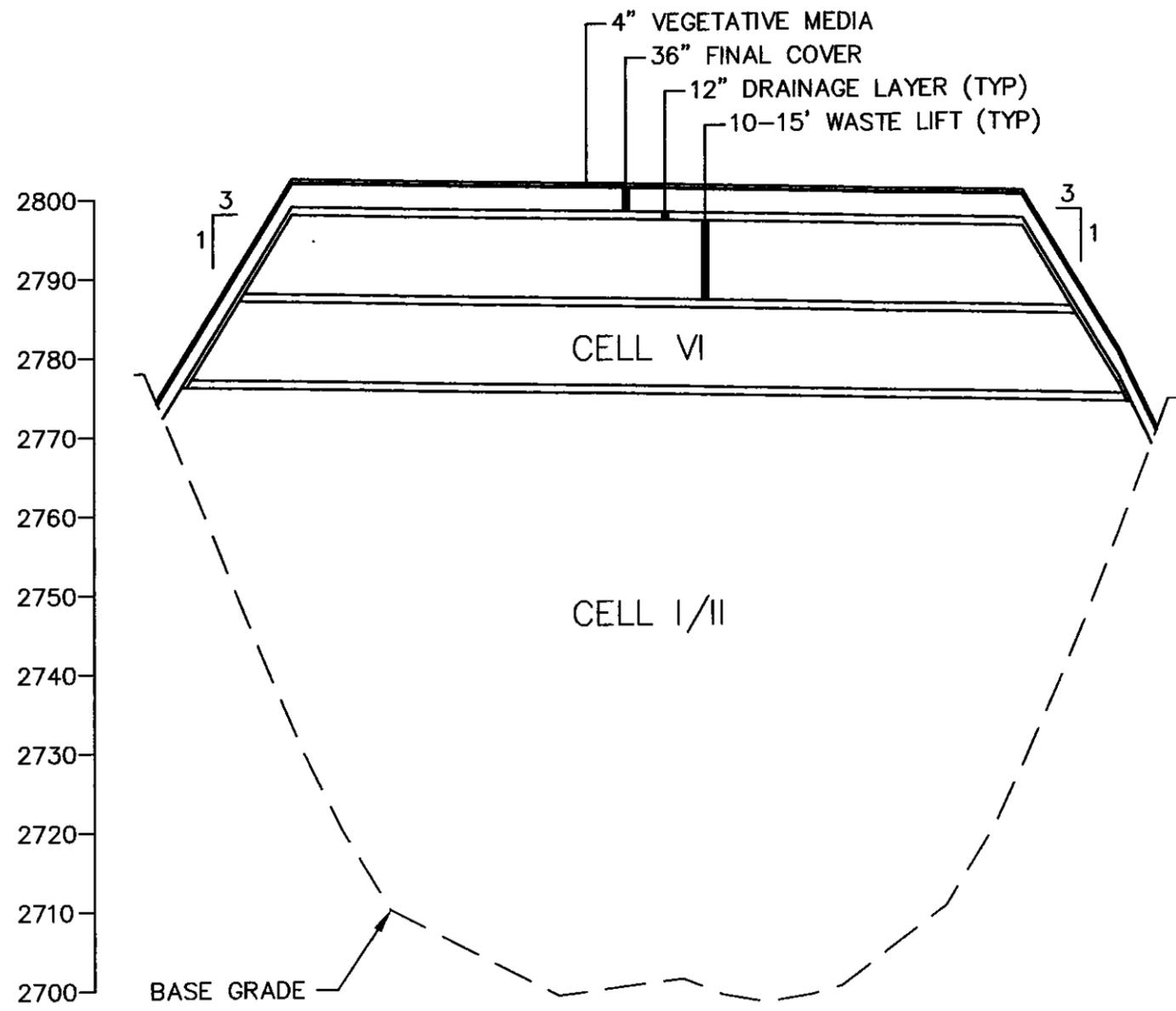
3.2 Cell VI

The final cell to be filled within Area 6A West will be Cell VI, located above the previously filled base cells (Cells I and II). Cell VI is designed to provide an additional 30 feet of waste thickness to Area 6A West and also complete the landfill connection of Area 6A West to Area 6A East.

Prior to taking in waste, the development of Cell VI will require the installation and tie-in of a geosynthetic clay liner, 60-mil HDPE liner, and leachate collection system above the divider berm bisecting Area 6A West and Area 6A East. Lining the divider berm will allow the “valley” between Area 6A West and Area 6A East to accept waste. The development of Cell VI will also require the stripping of the west sideslope cover soils on Area 6A East, construction of containment dikes, the installation of the necessary leachate collection and transport systems to connect the upper cell to the existing leachate transport system, and installation of stormwater structures as the facility is capped. Cell VI will handle leachate collection through the use of the stone drainage layers which tie into the stone drainage layer located along the perimeter of the landfill, as shown on Figure 3-4. The stone drainage layer is contiguous along the sideslope to the bottom of the landfill. The leachate will drain to the piping system at the bottom which connects to the leachate transport pipeline east of Area 6A West. The extension of the chimney drain is not proposed within this cell. Leachate collected at the east end will pass down through the chimney drain to the piping system at the bottom of the landfill.

Filling operations for Cell VI will begin at the West end of Area 6A West working eastward to Area 6A East to bring the landfill to final grade. Cell VI will be accessed from an access road created during waste placement on the north sideslope of the cell. The access road will be 24 feet wide to accommodate two-way traffic flow in and out of the cell. Waste will be dumped by the haul truck operator as directed by the landfill operator. The landfill operator will construct waste lifts up to 15 feet thick and maintain an adequate width on the working face. As waste is dumped from the top of the lift, the landfill operator will push and spread the waste over the working face. The waste will be spread in layers no greater than 2 feet thick. By spreading the waste in thin layers, the waste is allowed to drain, and greater compaction is achieved, see Figure 3-3. Occasionally, wetter than normal waste material will be delivered to the landfill for disposal. This type of waste material will not be placed closer than 100 feet from the perimeter of Cell VI.

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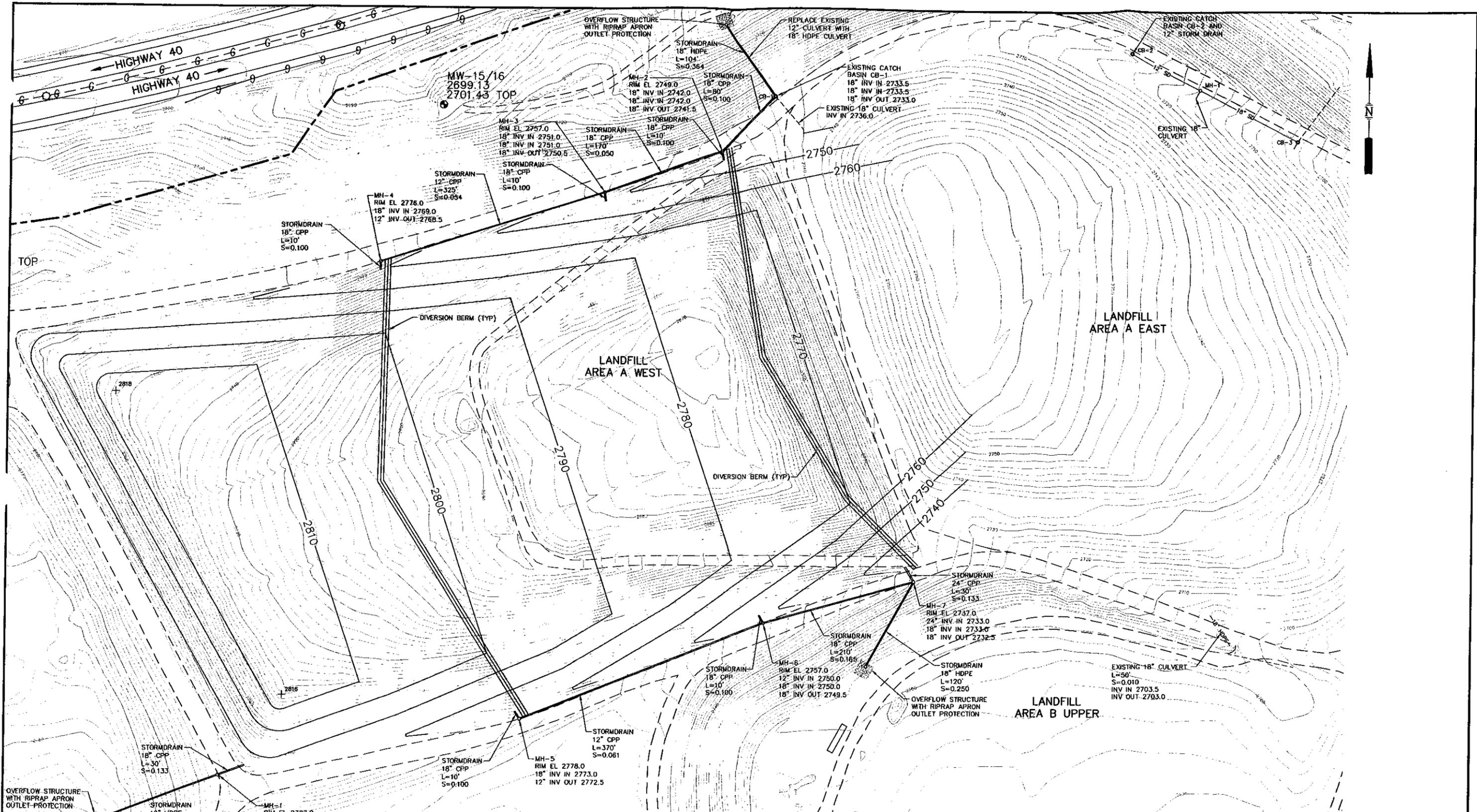
SCALE: H: 1" = 100'
V: 1" = 20'

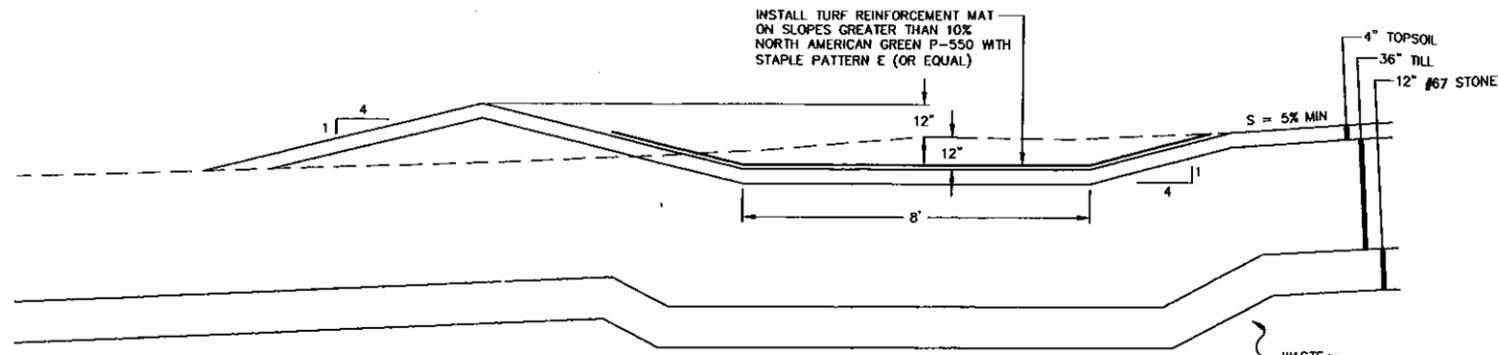
FIGURE 3-4
CELL VI CROSS SECTION
BLUE RIDGE PAPER PRODUCTS, INC.
LANDFILL NO. 6A WEST
CANTON, NORTH CAROLINA



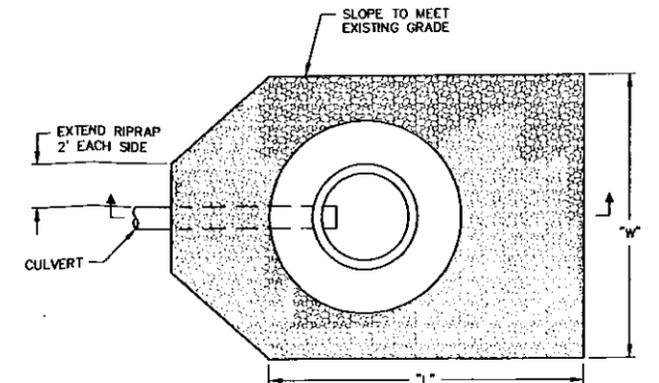
Upon completion of the waste filling to final grade, final cover will be installed over the waste. The final cover layer will consist of 12-inches of drainage stone over waste, covered by 36-inches of compacted low hydraulic conductivity soil, overlain by 4-inches of vegetative soil layer. The 12-inch drainage stone layer will tie into the stone leachate collection and drainage layer along the perimeter of the landfill as shown on Figure 3-4.

A system of manholes, storm drain piping, and culverts will need to be installed during the final cover placement on Area 6A West. Surface water runoff management on the north side of the landfill will consist of 3 culverts along the perimeter ditch that tie into 3 storm drain manholes (Manholes MH-2, MH-3, and MH-4) connected by corrugated HDPE storm drain pipes. The northern storm drain system follows the northern access road to the east and will be routed into existing catch basin CB-1, outletting through an 18-inch culvert that replaces the existing 12-inch culvert at the northeast corner of Area 6A West. Two diversion berms constructed in the final cover will direct surface water runoff from the top of the northern side of the landfill through the culverts into the storm drain system. Surface water runoff management on the south side of the landfill will consist of 3 culverts along the perimeter ditch that tie into 3 storm drain manholes (Manholes MH-5, MH-6, and MH-7) connected by corrugated HDPE storm drain pipes. The southern storm drain system follows the southern access road to the east and will be routed to outlet through an 18-inch culvert at the south side of Area 6A West. Two diversion berms constructed in the cover will direct surface water runoff from the top of the southern side of the landfill through the culverts into the storm drain system. Surface water management on the east side of the landfill will consist of an 18-inch culvert that ties into a storm drain manhole outletting through a 12-inch culvert to the west. An Erosion and Sediment Control Plan for the final cover condition of Landfill No. 6 - Area A West is provided in Appendix F-3. The Erosion and Sediment Control Plan further details the system of manholes, storm drain piping, culverts, and erosion control measures described above, necessary to manage surface water runoff. Figures 3-5 and 3-6 present the closure plan for Area 6A West which includes stormwater details.

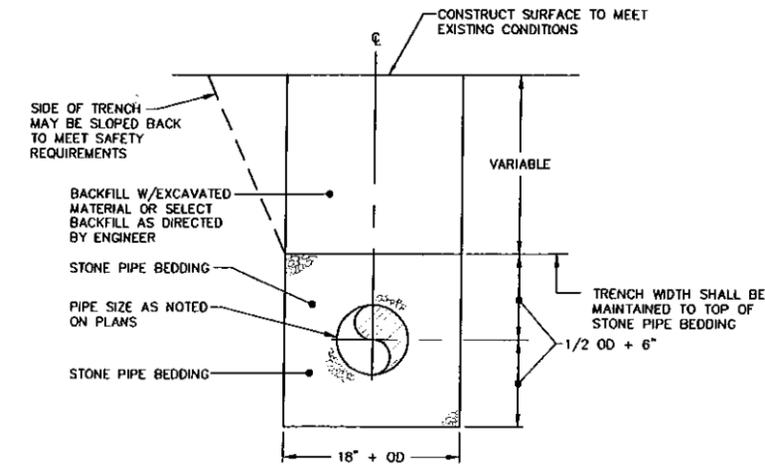




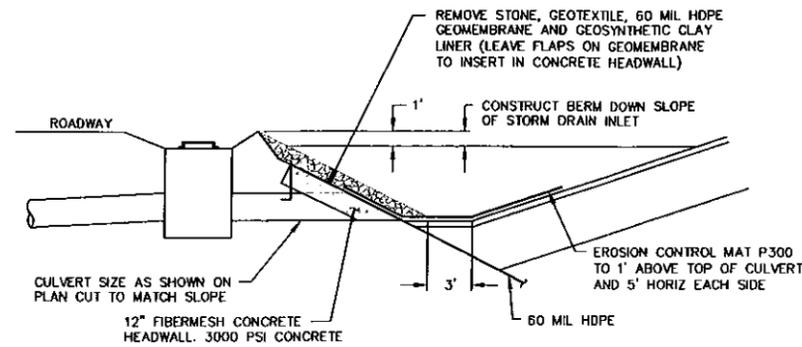
DIVERSION BERM
NTS



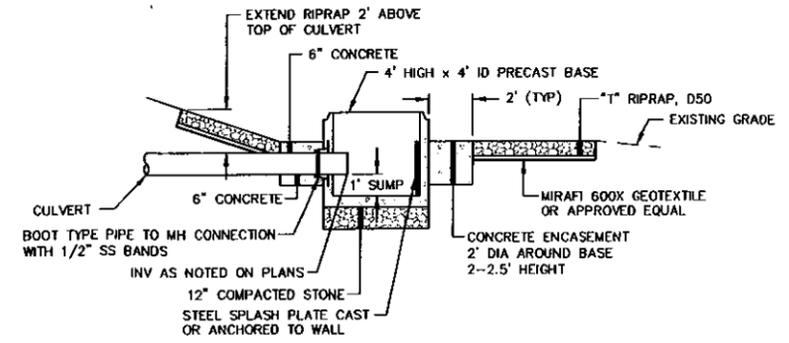
PLAN



STORM DRAIN
NTS



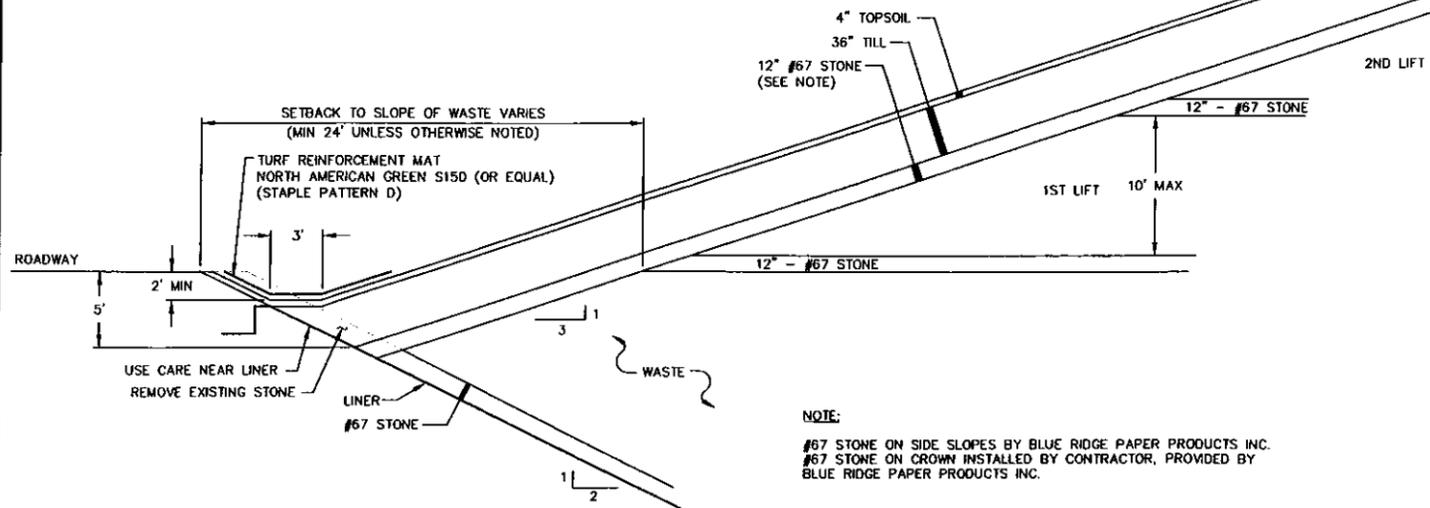
STORM DRAIN INLET/PENETRATION
NTS



SECTION

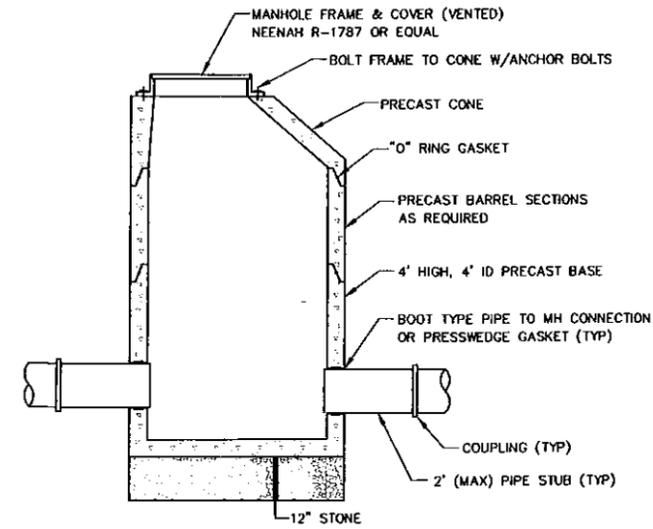
| CULVERT NO | DIA | "L" | "W" | RIPRAP D50 | "T" |
|------------|-----|-----|-----|------------|-----|
| 1R | 12" | 12' | 13' | 4" | 8" |
| 5R | 18" | 20' | 22' | 10" | 20" |
| 8R | 18" | 20' | 22' | 10" | 20" |

RIPRAP OUTLET PROTECTION
NTS



FINAL COVER SYSTEM
NTS

NOTE:
#67 STONE ON SIDE SLOPES BY BLUE RIDGE PAPER PRODUCTS INC.
#67 STONE ON CROWN INSTALLED BY CONTRACTOR, PROVIDED BY BLUE RIDGE PAPER PRODUCTS INC.



TYPICAL MANHOLE
NTS

- MANHOLE NOTES:**
1. ALL CONCRETE SHALL HAVE A MINIMUM 4000 PSI COMPRESSIVE STRENGTH AFTER 28 DAYS.
 2. DESIGN FOR H-20 WHEEL LOADING.
 3. CONFORM TO ASTM-C478 SPECIFICATIONS.
 4. FIELD VERIFY EXISTING PIPE INVERTS PRIOR TO CONSTRUCTION.
 5. PENETRATIONS INTO EXISTING MANHOLES FOR NEW PIPES SHALL USE EITHER A PRESS BOOT CONNECTION OR COMPRESSION TYPE GASKET.

FIGURE 3-6
SECTIONS & DETAILS
BLUE RIDGE PAPER PRODUCTS, INC.
LANDFILL NO. 6A WEST
CANTON, NORTH CAROLINA

SME
Sevee & Maher Engineers, Inc.
Consulting Engineers
Cumberland Center, Maine

21/2008 2:23:37 PM.dwg

4.0 LEACHATE MANAGEMENT

4.1 Leachate Generation

Leachate will be generated in the landfill through two mechanisms. The major source of leachate will be generated through precipitation falling onto the active landfill areas. Precipitation generated leachate will be minimized through the placement of a soil cover over areas which have reached intermediate grade.

Leachate will also be generated through waste consolidation and subsequent drainage of entrained water. Further discussion concerning the volumes of leachate may be found in the Design Report.

Leachate will be collected through a gridwork of perforated pipes which underlie the waste and drainage layers which are placed between waste lifts. Leachate will flow by gravity to the leachate pump station and storage ponds and pumped via a force main to the Canton Mill wastewater treatment plant.

4.2 Leachate Storage

The leachate storage ponds utilize a synthetic liner to contain leachate, and have been designed to store leachate for extended periods prior to transportation to the WWTP. The capacity of the ponds is approximately 1.7 million gallons.

4.3 Leachate Flow Control

The leachate transport piping system from the landfill is designed with gate valves to control the flow if necessary. The following scenarios are described with the proper actions to be taken.

The leachate transport system from the leachate ponds to the wastewater treatment plant includes a pump station capable of handling up to 200 gpm of flow. Should this flow be exceeded, the

leachate flow above the 200 gpm will be directed to the leachate storage ponds. There are no actions required by the landfill operator for this scenario. Once the flow falls below 200 gpm, the ponds will begin to empty.

In the event the leachate transport pipe from the pump station to the treatment plant develops a leak, pipe break, blockage, or the pump station needs maintenance, the transport pipeline can be shut off. A gate valve located on the outlet of the pond can be opened, thereby allowing the ponds to fill. Leachate flow will remain to the leachate storage ponds for temporary storage.

4.4 Leachate Disposal

The leachate generated during the operation of the secure landfill will be treated by Blue Ridge Paper Products, Inc.'s wastewater treatment facility.

5.0 LANDFILL INSPECTION AND MAINTENANCE

5.1 General

Landfill inspection and maintenance will be an ongoing activity. All personnel will be expected to observe the condition of landfill facilities throughout their workday and notify the EHS management of areas and equipment which may need repair and maintenance. Formal landfill inspections will be conducted in the spring and fall of each year. Additional inspections may be warranted following unusual climatic or operational events including, but not limited to, major rain storms, flood, fire, hurricane or earthquake. These inspections will follow the inspection forms attached in Appendix F-2. A description of the inspection items are discussed in the remainder of this section. EHS management is ultimately responsible to insure that the inspection and maintenance of all landfill facilities and equipment occurs.

5.2 Access Roads

The access roads to the landfill will be maintained by Blue Ridge Paper Products, Inc.. Frequent inspections by the operators, especially during the spring and winter months will be made to insure that these roads are in safe condition.

Internal landfill access roads, including those within the landfill cells, will be maintained as all weather roads. Prompt attention to road repairs is the most cost-effective approach since deterioration becomes increasingly more rapid once it has begun.

5.3 Equipment

Maintenance of equipment and landfill operations vehicles is critical in controlling and maintaining landfill operations. All equipment will be subject to a comprehensive, preventive maintenance program, as specified in the manufacturers specifications. Critical parts or replacement equipment will be identified and obtainable within a short period of time to maintain

continuity of operations. Replacement parts with long lead times will be purchased and kept on-site.

5.4 Erosion Control Facilities

Open Areas - Areas outside of the landfill, which have been disturbed will be seeded to prevent erosion. The seeding will be performed in accordance with the seeding schedule contained in the closing plan. Prior to any land disturbing activity greater than 1/2 acre, a soil and erosion plan must be secured by the appropriate mill group (EHS or Mill Engineering).

Ditches - Areas, which are rip-rapped or otherwise protected, will be repaired as necessary. All ditches, which are not rip-rapped or otherwise protected, will be seeded. All debris and other blockages will be removed from the ditch to allow for unobstructed drainage. Reseeding of the drainage ditches will be necessary from time to time as erosion occurs.

Cover System - Areas, which have received final or intermediate cover, will be reconditioned and reseeded as necessary. In areas which have eroded, the soil will be replaced and seeded.

5.5 Leachate Collection Piping

A cleanout is located at the end of the leachate collection main. This device provides a means to remove blockages within the piping system, should they occur.

5.6 Leachate Storage Pond

To insure the integrity of the leachate storage pond, periodic inspections will be made. Annually, when the pond has been emptied, visual inspection of the liner will be made. Any tears or punctures will be noted and repaired.

5.7 Liner Repair

If tears or punctures occur in the liner within the pond or along the sideslopes of the landfill, they will be repaired as soon as possible. Punctures and tears less than 6 inches in length will be repaired by Blue Ridge Paper Products, Inc. personnel if trained personnel are available. Repairs will involve placement of an overlapping patch (6-inch minimum overlap) which will be tack-welded to the underlying liner. Extra liner will be stored on-site for field repairs. If the liner tear is greater than 6 inches in length, a liner installer will be contacted to make the necessary repairs.

5.8 Landfill Underdrain System

The landfill underdrain system will be inspected on a monthly basis. An inspection form, See Appendix F-2, will be filled out to document each inspection. The inspection will consist of the following list.

1. Pipe outlets shall be checked for blockages and that the discharge is not eroding the outlet ditch. Any blockages should be removed to provide free flow from the pipe outlet. If erosion should occur, the ditch outlet should be stabilized, i.e. riprapped. The end of the pipe also has a rodent guard to prevent animals from entering the pipe. This should be checked and repaired, if necessary.
2. Inspect the manholes for blockages or silt build-up. For either case the EHS management should have the manhole cleaned and reinspected.

In addition to a monthly inspection, the underdrains shall be inspected after any major rain storms, floods, fire, hurricane, and earthquake or facility failure.

6.0 WATER QUALITY MONITORING

6.1 General

To aid in evaluating the performance of the landfill, a groundwater and surface water monitoring program will be conducted as described herein. The collection, preparation, preservation and delivery of the samples to the laboratory shall be the responsibility of the EHS. A description of the sampling program is given below.

6.2 Groundwater Monitoring

Twenty-one wells will be used for groundwater quality monitoring. The approximate locations for monitoring wells are shown on Figure 6-1. The schedule for monitoring is shown in Table 6-1. Semi-annual samples will be collected in March and November.

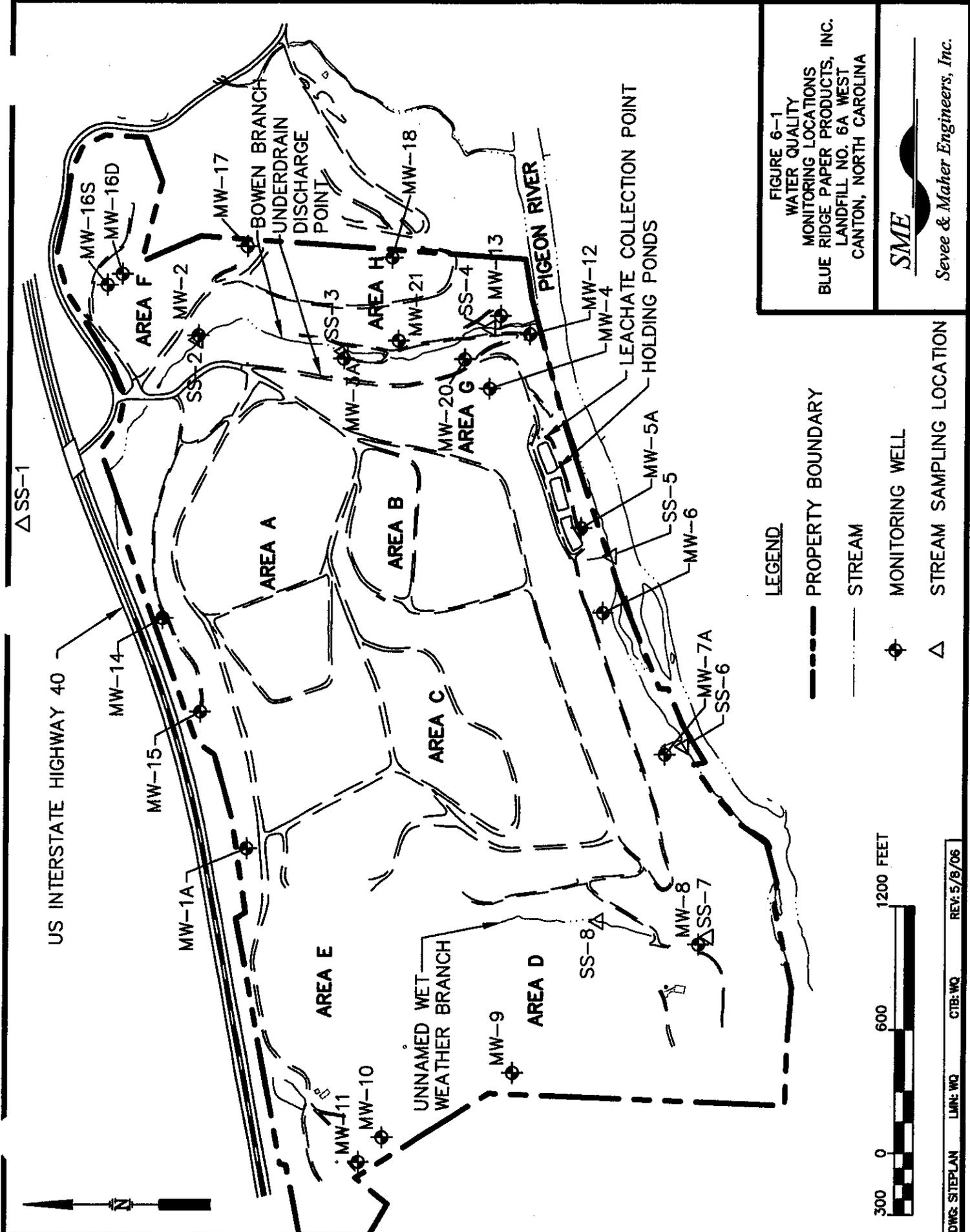


FIGURE 6-1
WATER QUALITY
MONITORING LOCATIONS
BLUE RIDGE PAPER PRODUCTS, INC.
LANDFILL NO. 6A WEST
CANTON, NORTH CAROLINA

SME
Sevee & Maher Engineers, Inc.

LEGEND

- PROPERTY BOUNDARY
- STREAM
- ⊕ MONITORING WELL
- △ STREAM SAMPLING LOCATION

300 0 600 1200 FEET

DWG: SITEPLAN LMR: WQ CTB: WQ REV: 5/8/06

TABLE 6-1

LANDFILL NO. 6 WATER QUALITY ANALYSES

| Parameter | Semi-annually |
|----------------------|---------------|
| pH | X |
| specific conductance | X |
| temperature | X |
| water level | X |
| TOC | X |
| TOH | X |
| <u>Inorganics</u> | |
| Arsenic | X |
| Barium | X |
| Calcium | X |
| Cadmium | X |
| Chromium | X |
| Iron | X |
| Lead | X |
| Magnesium | X |
| Manganese | X |
| Mercury | X |
| Nickel | X |
| Potassium | X |
| Selenium | X |
| Silver | X |
| Sodium | X |
| Zinc | X |
| Chloride | X |
| Fluoride | X |
| Nitrite (as N) | X |
| Nitrate (as N) | X |
| Phenol, Total | X |
| Sulfate | X |
| Dissolved solids | X |

6.3 Surface Water Sampling

Surface water sampling will be collected at upgradient and downgradient locations. The approximate locations of the four surface water sampling stations are shown on Figure 6-1.

Samples will be collected on a semi-annual basis when a sample can be obtained. Samples will be analyzed according to the schedule in Table 6-1.

6.4 Underdrain Monitoring

An underdrain sample will be collected from the underdrain outlet as shown on Figure 6-1. Samples will be collected semi-annually and analyzed according to the schedule in Table 6-1.

7.0 RECORD KEEPING & REPORTING

7.1 General

One of the most important elements of a well run landfill is an efficient record keeping system. For a facility of this nature it requires the timely collection, interpretation and management of large volumes of data. Data collected will be presented in an annual report to the NCDENR. The annual report will include the source, type and volume of waste accepted over the course of the calendar year.

A copy of the permit and operating plan will be maintained at the facility.

7.2 Operating Records and Annual Reports

- (a) Blue Ridge Paper Products, Inc. will maintain documentation of all facility operations, including:
 - (1) Identification of the facility, owner, and operator;
 - (2) Quantity, type and source(s) of wastes received;
 - (3) Complete record of inspections, maintenance, repairs, and emergency event response;
 - (4) Data on all environmental monitoring required at or for Landfill Area 6A;

- (b) Blue Ridge Paper Products, Inc. will file an annual report of operation with the NCDENR by July 31 of each year, for the previous 12 months of operation.

7.3 Waste Description

The Landfill is licensed to dispose of wastes which fall into five general categories. Regardless of the type of waste, similar accounting procedures will be used. Accounting will include logging the number of truckloads with regard to waste type and volume.

The five general categories are:

1. Fly ash from multi-fuel boilers;
2. Lime waste;
3. Wastewater treatment plant sludge;
4. Wood waste; and
5. Cinders.

The daily amount of each category of acceptable waste will be recorded on a truckload log sheets. A daily truck weight sample of each waste category will be logged as needed. A copy of the log sheets are included in Appendix F-1.

8.0 FINAL AND INTERMEDIATE CLOSURE

8.1 General

Closure of the site is a continuing process which includes the following activities:

1. Final grading and shaping;
2. Closure of discontinued channels, pipes, or drains;
3. Placement of cover materials;
4. Seeding and fertilizing.

The principle goals of the closing plan for the Landfill are: 1) to minimize future generation of leachate; and 2) to provide a cover system suitable for developing a grass crop which will prevent erosion. The final cover system designed for this site will minimize future generation of leachate, and provide a suitable stormwater management plan which will minimize the potential of erosion.

Inspection and monitoring of closed areas are necessary to detect erosion and to initiate repair for prevention of significant damage to the landfill cover. Uneven settlement may result in ponding or breaks in the cover system, these areas will be rebuilt and/or regraded to restore proposed contours. In addition, maintenance and post-closure care will include periodic mowing to discourage large, deep rooted vegetation which can damage the cover integrity.

8.2 Closure Procedures

The subsections which follow describe the various closure procedures and activities which must be performed.

8.2.1 Grading. The waste will be placed and graded to the elevations shown on the figures provided in Section 3.0 of this report. Prior to seeding, a surveyor will check elevations to insure

that the proper grades exist and there are no low areas or depressions within the site. The surveyor will also check the perimeter slopes to be sure they are at the proper grades. Spot elevations will be taken in the surface runoff ditches to insure that proper slopes exist.

8.2.2 Closure of Channels, Pipes, or Drains. The closure of channels, pipes, or drains will be accomplished in a manner which ensures the integrity of the system for the system's design life.

The design life of all components within the landfill is 50 years, typical products which have this life is stainless steel and high density polyethylene (HDPE). Design of the closure should also take into consideration the forces acting on the area of interest.

The site development of Cell VI includes several piping systems associated with the proper management of leachate. The closure of inlet structures for Cell VI will require the use of properly designed caps with the above mentioned materials and strength requirements.

8.2.3 Final Cover System. The final cover system over the Landfill will consist of three layers. The three layers from top to bottom are:

1. Four inches of cover soil;
2. 36 inches of suitable on-site soils, i.e. residual soils; and
3. 12 inches of granular drainage material.

8.2.4 Seeding. All areas which have been covered will be seeded. Seeding will normally occur between April 30 and September 30. All surface water runoff control facilities such as drainage ditches, berms and culverts are to be constructed prior to seeding. All grading will also be performed prior to seeding. The top layer of soil should be loosened by raking, discing or other acceptable means before seeding. Lime (2 tons/acre or as needed based on testing) and fertilizer (1,000 lbs/acre of 10/10/10 or as needed based on testing) will be harrowed or disced into the soil at a minimum of 3 inches. If the site is hydroseeded, lime, fertilizer and seed can be applied simultaneously. The seed mixture to be used is as shown below.

SEEDING MIXTURE (OR EQUAL)

| | |
|---------------------|-------------------|
| Tall Fescue (KY 31) | 80 lb/acre |
| Sericea lespedeza | 20 lb/acre |
| Kobe lespedeza | <u>10 lb/acre</u> |
| | 110 lb/acre |

The seed will be applied uniformly with a cyclone seeder, drill, cultipack seeder or hydroseeder. Seed should not be planted if there is a danger of frost shortly after seed germination. Maximum seeding depth is 1/4 inch when using methods other than hydroseeding.

8.3 Erosion Control

The following procedures will be used for erosion control on the seeded areas:

- Slopes less than 4:1 - Apply unrotted, long-fibered hay, straw or cellulose fiber at a rate of 2 tons per acre. Mulch material should be relatively free of all kinds of weeds, and should be anchored with a tractor drawn implement designed to punch and anchor it into the top 2 inches of soil. Anchoring of the mulch will be performed immediately after placement to minimize loss by wind or water. This method of anchoring should be done on the contour wherever possible.
- Slopes steeper than 4:1 - On 4:1 slopes or steeper, the seed will be applied by hydroseeding with a binder or excelsior matting to control erosion. Siltation fences will be installed at the bottom of all seeded slopes. Berms will divert runoff from the top of the slopes to established slopes.
- Drainage ditches - The grass-bottomed drainage ditches will be seeded in the same manner as the remainder of the site. The same mulch specified above will

be placed in these areas. Staples, lightweight biodegradable paper, plastic or cotton nettings will be placed within the ditches to anchor the mulch.

8.4 Long-Term (Post Closure) Maintenance

The subsections which follow describe the various activities which must be performed to insure the long-term integrity of the landfill subsequent to final closure.

8.4.1 Mowing. To prevent deep rooted tree growth, the closed portions of the landfill and drainage ditches will be mowed at least twice per year.

8.4.2 Site Inspection. Once the landfill is closed, the area will be inspected by the EHS in the spring and fall of each year for a period of at least three years to insure the cover system integrity is maintained against differential settlement, erosion and other problems. The inspection will include an examination of the following items:

- Surface drainageways
- Surface grading
- Grass growth

Each inspection will include notation of any problems and recommended remedial actions. Following the three years, an inspection frequency of once per year will be sufficient unless major problems develop, whereupon more frequent inspections will be made.

8.5 Leachate Collection

Leachate collection will continue past the closure of the landfill. The primary source of leachate will be consolidation of waste. The amount of leachate which must be collected, transported and treated will be greatly reduced from that generated during operation of the landfill.

8.6 Water Quality Monitoring

The semi-annual monitoring program described elsewhere in this manual will continue after site closure. After closure, if the concentrations of parameters analyzed stabilize, the NCDENR can be approached to reduce the frequency of sampling and the number of parameters analyzed.