

Permit No.	Scan Date	DIN
<b>0201-CDLF-1997</b>	<b>May 11, 2016</b>	<b>26084</b>

RECEIVED

**May 5, 2016**

Solid Waste Section

Asheville Regional Office

# Alexander County

## Construction and Demolition Landfill

### Operations Plan

Revised 1/26/16 and 5/5/16

## 1.1 Introduction

Alexander County will continue to operate a Construction and Demolition Landfill (C&DLF) within the permitted boundaries and upon closed sections of the present municipal solid waste landfill. The section are limited to areas that stopped receiving waste in 1998 and have two feet of final cover.

The C&D Landfill will receive the following solid waste:

1. Land clearing debris as defined in G.S. 130A-290, specifically, solid waste which is generated solely from land clearing activities, such as stumps, trees, etc.;
2. Inert debris from any source that is defined as solid waste which consists solely of material that is virtually inert, such as brick, concrete, rock and clean soil;
3. Asphalt in accordance with G.S. 130-294(m);
4. Construction and demolition debris defined as solid waste resulting solely from construction, remodeling, repair or demolition operations on pavement, buildings or other structures (includes glass, vinyl, plastic, laminates, plumbing fixtures, etc.);
5. Construction materials, that could or would be part of any construction, remodeling, repair or demolition of pavement, buildings or other structures, from industrial and/or commercial sources within the County such as, but not limited to, shingles from shingle manufacturers, mobile home debris from mobile home manufacturers, lumber from lumber yards, scrap materials from cabinet manufacturing facilities and furniture, pre-fabricated building structure components such as joists and any other scrap materials; and,
6. Pallets from any source.

Yard Waste as defined in G.S. 130A-290, shall not be disposed in the landfill area. However, yard trash, along with land-clearing debris, may be accepted for processing in a permitted Yard Waste Composting Area.

Soil cover will be placed at least once a week. (See cover requirements under operational requirements).

The County will implement a program at the landfill for detecting and preventing the disposal of hazardous and liquid wastes. The program consists of random inspection of incoming loads at a minimum of 1% of the weekly traffic. Landfill personnel will be trained to recognize hazardous and liquid wastes. Records will be kept on the training and the inspections.

The County will monitor for explosive gases at landfill structures and the perimeter of the landfill. The concentration of methane gases generated by the landfill cannot exceed 25 percent of the lower explosive limit for methane in the structures, and it cannot exceed 100 percent of the lower explosive limit for methane of the landfill property boundary. If methane gas is found to exceed the acceptable limits at either the property boundary or landfill structures, it is the County's responsibility to do the following:

1. Immediately take all necessary steps to ensure protection of human health, i.e. no smoking, temporarily abandon the structure and notify the Division of Solid Waste Management.
2. Within seven days of detection, place in the operating record the methane gas levels detected and a description of the steps taken to protect human health; and

3. Within 60 days of detection, implement a remediation plan for the methane gas releases, place a copy of the plan in the operating record, and notify the Division of Solid Waste management that the plan has been implemented. The plan will describe the nature and extent of the problem and the proposed remedy.

Off and on site erosion will be controlled through erosion control structures and devices. Provisions for a vegetative ground cover sufficient to restrain erosion will be accomplished within 30 working days or 120 calendar days upon completion of any phase of landfill development.

The County will record and retain at the landfill an operating record of the following information:

- (1) Inspection records, waste determination records, and training procedures;
- (2) Amounts by weight of solid waste received at the landfill;
- (3) Gas monitoring results and any remediation plans;
- (4) Any demonstration, certification, findings, monitoring, testing or analytical data required for surface and groundwater monitoring;
- (5) Any monitoring, testing or analytical data required for closure or post-closure;
- (6) Any cost estimates and financial assurance documentation.

All information contained in the operating record will be furnished upon request to the Division of Solid Waste Management or be made available at all reasonable times for inspection by the Division.

Ground and surface water will be sampled and analyzed according to Subtitle D Appendix I detection monitoring requirements. The monitoring frequency for all Appendix I detection monitoring constituents will be at least semiannual during the life of the facility (including closure) and the post-closure period. A minimum of four independent samples from each well (background and down gradient) will be collected and analyzed for the Appendix I constituents during the first semiannual sampling event. At least one sample from each well (background and down gradient) will be collected and analyzed during subsequent semiannual sampling events.

If the County determines that there is a statistically significant increase over background for one or more of the constituents listed in Appendix I at any monitoring well at the relevant point of compliance, the County will, within 14 days of the finding, report to the Division of Solid Waste and place a notice in the operating record indicating which constituents have shown statistically significant changes from background levels. The County will establish an assessment monitoring program within 90 days. The County may demonstrate that a source other than the landfill caused the contamination or that the statistically significant increase resulted from an error in sampling, analysis, statistical evaluation, or natural variation in ground-water quality. A report documenting these demonstrations will be certified by a Licensed Geologist or Professional Engineer and approved by the Division of Solid Waste. A copy of this report will be placed in the operating record. If a successful demonstration is made, documented, and approved by the Division, the County may continue detection monitoring. If after 90 days, a successful demonstration is not made, the County will initiate an assessment monitoring program.

## 1.2 Operational Requirements

1. Waste Acceptance and Disposal Requirements
  - a. The Construction and Demolition Landfill (C&DLF) will only accept those solid **wastes generated within Alexander County** and which it is permitted to receive. The County will notify the Division within 24 hours of attempted disposal of any waste the landfill is not permitted to receive.
  - b. Asbestos waste will be managed in accordance with 40 CFR 61. The regulated asbestos waste will be covered immediately with soil in a manner that will not cause airborne conditions and will be disposed of separate and apart from other solid waste, as:
    - i. in a defined isolated area within the foot print of the landfill, or
    - ii. in an area not contiguous with other disposal areas. Separate areas will be designated so that asbestos will not be exposed by future land-disturbing activities.
  - c. Wastewater treatment sludges may be accepted, with the approval of the Division, either as a soil conditioner incorporated into or applied onto vegetative growth layer. The wastewater treatment sludge will neither be applied at greater than agronomic rates nor to a depth greater than six inches.
  - d. The following wastes are prohibited from disposal at the C&DLF:
    - i. Containers such as tubes, drums, barrels, tanks, cans, and bottles unless they are empty and perforated to ensure that no liquid, hazardous or municipal solid waste is contained therein.
    - ii. Garbage as defined in G.S. 130A-290(a)(7).
    - iii. **Waste generated outside of Alexander County.**
    - iv. Hazardous waste as defined in G.S. 130A-290(a)(8), to also include hazardous waste from conditionally exempt small quantity generators.
    - v. Industrial solid waste unless a demonstration has been made and approved by the Division that the landfill meets the requirements of Rule .0503(2)(d)(ii)(A).
    - vi. Liquid wastes.
    - vii. Medical waste as defined in G.S. 130A-290(a)(18)
    - viii. Municipal solid waste as defined in G.S. 130A-290(a)(18a)
    - ix. Polychlorinated biphenyls (PCB) wastes as defined in 40 CFR 761
    - x. Radioactive waste as defined in G.S. 104E-5(14)
    - xi. Septage as defined in G.S. 130A-290(a)(32)
    - xii. Sludge as defined in G.S. 130A-290(a)(34)
    - xiii. Special waste as defined in G.S. 130A-290(a)(40)

- xiv. White goods as defined in G.S. 130A-290(a)(44)
- xv. Yard trash as defined in G.S. 130A-290(a)(45)
- e. The following waste will not be received if separate from C&DLF waste: lamps or light bulbs including but not limited to halogen, incandescent, neon or fluorescent; lighting ballast or fixtures; thermostats and light switches; batteries including but not limited to those from exit and emergency lights and smoke detectors; lead pipes; lead roof flashing; transformers; capacitors; and copper chrome arsenate (CCA) and creosote treated woods.
- f. Waste accepted for disposal in the C&DLF unit shall be readily identifiable as C&D waste and must not have been shredded, pulverized, or processed to such an extent that the composition of the original waste cannot be readily ascertained except in the case where the waste has come from a permitted recycling and reuse facility.
- g. The County will not knowingly dispose any type or form of C&D waste that is generated within the boundaries of a unit of local government that by ordinance:
  - i. Prohibits generators or collectors of C&D waste from disposing that type or form of C&D waste.
  - ii. Requires generators or collectors of C&D waste to recycle that type or form of C&D waste.

2. Cover material requirements.

- a. Except as in Subparagraph (c), the County must cover the solid waste with six inches of earthen material when the waste disposal area exceeds one-half acre and at least once weekly. Cover must be placed at more frequent intervals if necessary to control disease vectors, fires, odors, blowing litter, and scavenging. A notation of the date and time of the cover placement must be recorded in the operating record, as specified in Paragraph 10 in this section.
- b. Except as in Subparagraph (c), areas which will not have additional wastes placed on them for three months or more, but where final termination of disposal operations has not occurred, will be covered and stabilized with vegetative ground cover or other stabilizing material.
- c. Alternative material or an alternative thickness of cover may be used, if the County demonstrates that the alternative material or thickness controls disease vectors, fires, odors, blowing litter, and scavenging without presenting a threat to human health and the environment, and is approved by the Division.

3. Spreading and compacting requirements.

- a. C&DLF units will restrict solid waste to the smallest area feasible.
- b. Solid waste will be compacted as densely as practical into cells.
- c. Fencing and/or diking will be provided within the area to confine solid waste which is subject to be blown by the wind. At the conclusion of each operating day, all windblown material resulting from the operation will be collected and disposed of by the County.

4. Disease vector control
  - a. The County will prevent or control on-site populations of disease vectors using techniques appropriate for protection of human health and the environment.
  - b. "Disease vectors" means any rodents, flies, mosquitoes, or other animals, including insects, capable of transmitting disease to humans.
5. Air Criteria and Fire Control
  - a. The County will ensure that the units do not violate any applicable requirements developed under a State Implementation Plan (SIP) approved or promulgated by the U.S. EPA Administrator pursuant to Section 110 of the Clean Air Act, as amended.
  - b. Open burning of solid waste, except for the approved burning of land clearing debris generated on-site or debris from emergency clean-up operations, is prohibited at all C&DLF facilities. Prior to any burning a request will be sent to the Division for review. The Division will determine the burning to be approved if it is one of two types of burning previously referenced. A notation of the date of approval and the name of the Division personnel who approved the burning must be included in the operating record.
  - c. Equipment will be provided to control accidental fires and arrangements will be made with the local fire protection agency to immediately provide fire-fighting services when needed.
  - d. Fires and explosions that occur at the C&DLF require verbal notice to the Division within 24 hours and written notification within 15 days. Written notification must include the suspected cause of fire or explosion, the response taken to manage the incident, and the action(s) to be taken to prevent the future occurrence of fire or explosion.
6. Access and safety requirements
  - a. The C&DLF will be adequately secured by means of gates, chains, beams, fences and other security measures approved by the Division of Solid Waste Management to prevent unauthorized entry.
  - b. An attendant will be on duty at the site at all times while it is open for public use to ensure compliance with operational requirements.
  - c. The access road to the site will be of all-weather construction and maintained in good condition.
  - d. Dust control measures will be implemented when necessary. If dust problems should arise, the County will use any reasonable means necessary to reduce it. At a minimum the County will spray water on necessary areas.
  - e. Signs providing information on tipping or disposal procedures, the hours during which the site is open for public use, the permit number and other pertinent information will be posted at the site entrance.
  - f. Signs will be posted stating that no hazardous or liquid waste can be received.



(ii) As verification that operations are being conducted in accordance with the plan listed in the effective permit.

b. Any survey pursuant to this Paragraph must be performed by a professional land surveyor duly authorized under North Carolina law to conduct such activities.

10. Record keeping Requirements

a. The County will record and retain at the facility, or an alternative location near the facility approved by the Division of Solid Waste Management, in an operating record the following information as it becomes available.

(i) Inspection records, waste determination records, and training procedures;

(ii) Amounts by weight of solid waste received at the landfill to include source of generation.

(iii) Any demonstration, certification, findings, monitoring, testing or analytical data required for surface, groundwater and gas monitoring;

(iv) Any monitoring, testing, or analytical data required for closure or post-closure;

(v) Any cost estimates and financial assurance documentation;

(vi) Notation of date and time of placement of cover material; and,

(vii) All audit records, compliance records and inspection reports.

b. All information contained in the operating record will be furnished to the Division of Solid Waste Management according to the permit or upon request, or be made available for inspection by the Division.

c. The operating record will also include a copy of the approved operation plan and all required permits.

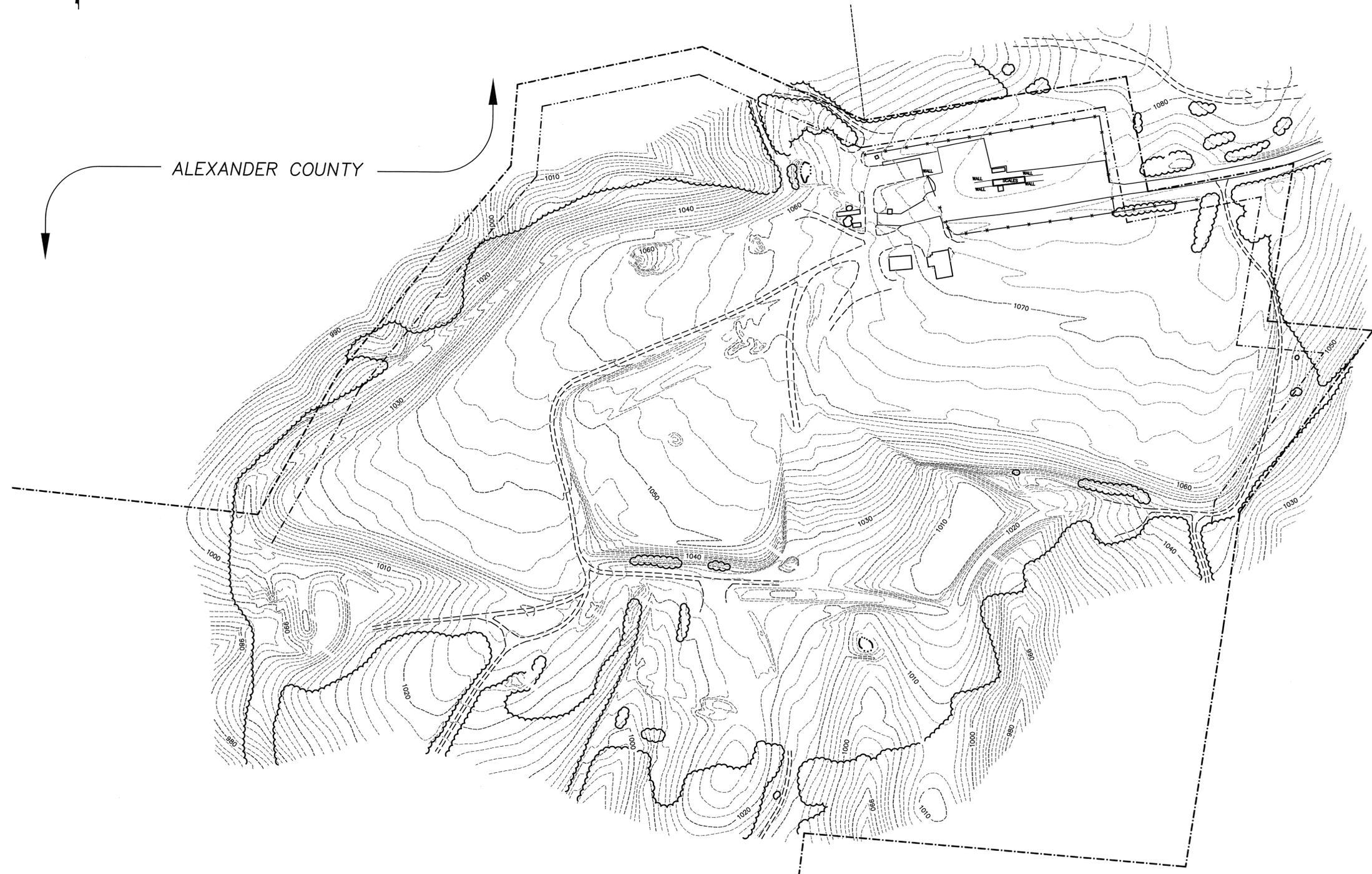
Revised 1/26/16 by: JM

**LEGEND**

- PROPOSED CONTOURS
- PHASE LIMITS
- - - EXISTING CONTOURS
- - - PROPERTY LINE
- - - BUFFER ZONE
- - - TREE LINE
- - - ROAD
- - - WATER



ALEXANDER COUNTY



**DRAWING PREVIOUSLY SUBMITTED  
WITH DECEMBER 1997 PERMIT**

**NOTES:**  
THIS MAP WAS GENERATED FROM  
AERIAL PHOTOS FLOWN ON 2-23-94  
BY TRIANGLE AERIAL MAPPING.

**Engineering  
Company, P.A.**

P.O. BOX 349 BOONE, N.C. 28607  
(704) 262-1767

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**Municipal  
Services**

P.O. BOX 97 GARNER, N.C. 27529  
(919) 772-5393

**MUNICIPAL SOLID WASTE  
CONSTRUCTION & DEMOLITION  
LANDFILL  
ALEXANDER COUNTY, N.C.**

DATE	BY	REV.	DESCRIPTION
			EXISTING CONDITIONS

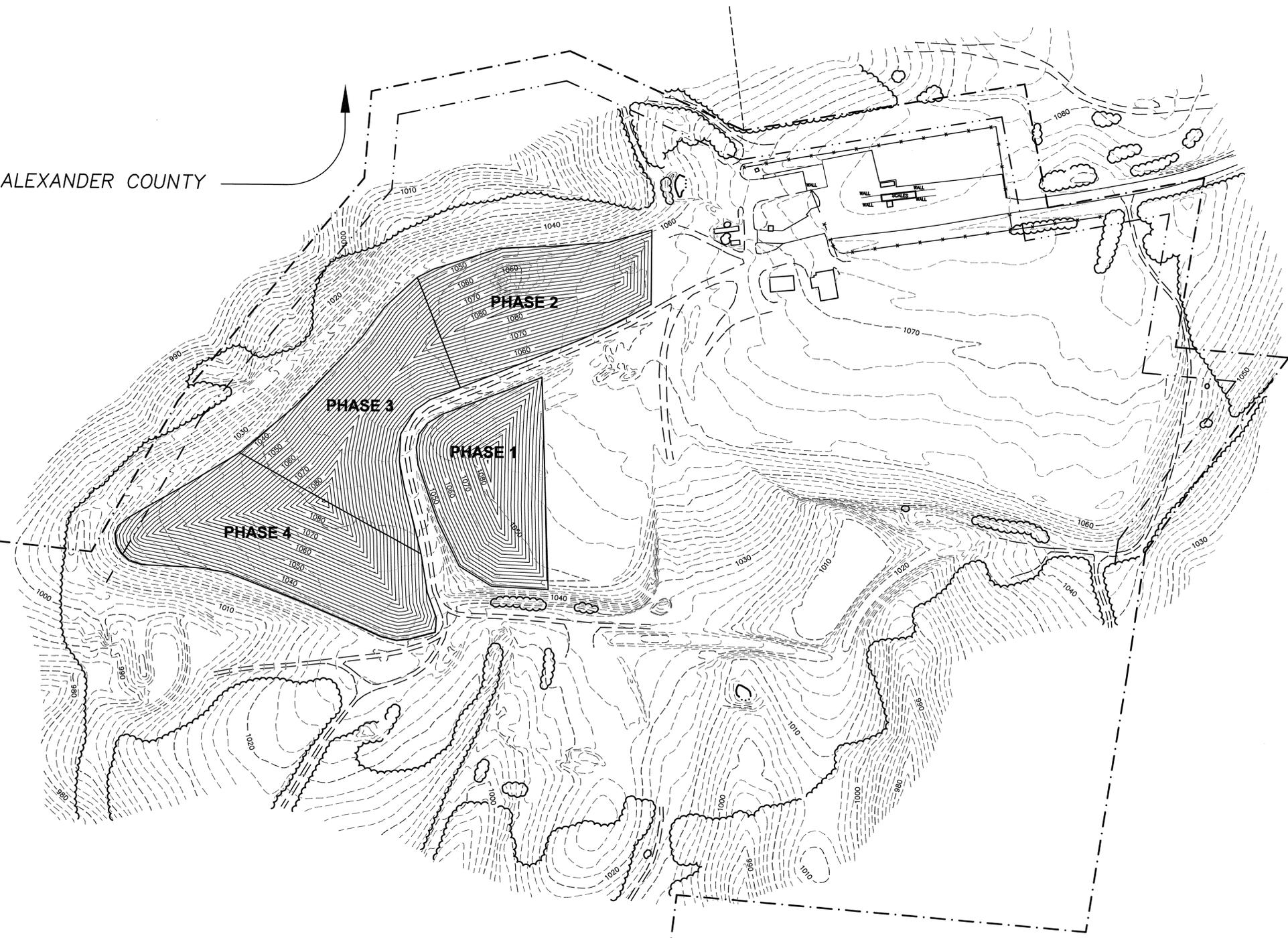
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DATE: 12/19/97  
DRWN. BY: B. BADEY  
CHKD. BY: W. SULLIVAN  
PROJECT NUMBER  
**G97019.6**  
DRAWING NO. SHEET NO.  
E1 1 OF 4



**LEGEND**

- PROPOSED CONTOURS
- - - PHASE LIMITS
- - - EXISTING CONTOURS
- - - PROPERTY LINE
- - - BUFFER ZONE
- - - TREE LINE
- - - ROAD
- - - WATER

ALEXANDER COUNTY



**DRAWING PREVIOUSLY SUBMITTED  
WITH DECEMBER 1997 PERMIT**

**NOTES:**  
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BY TRIANGLE AERIAL MAPPING.

**MUNICIPAL SOLID WASTE  
CONSTRUCTION & DEMOLITION  
LANDFILL  
ALEXANDER COUNTY, N.C.**

DATE	BY	REV.	DESCRIPTION
1/9/98	BMB	1	REVISED FILL

SCALE: 1" = 100'  
DATE: 12/22/97  
DRWN. BY: B. BADEY  
CHKD. BY: W. SULLIVAN  
PROJECT NUMBER  
G97019.6

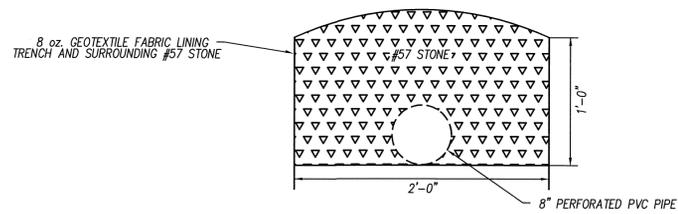
DRAWING NO. E3 SHEET NO. 3 OF 4

**Municipal  
Services**

**Engineering  
Company, P.A.**

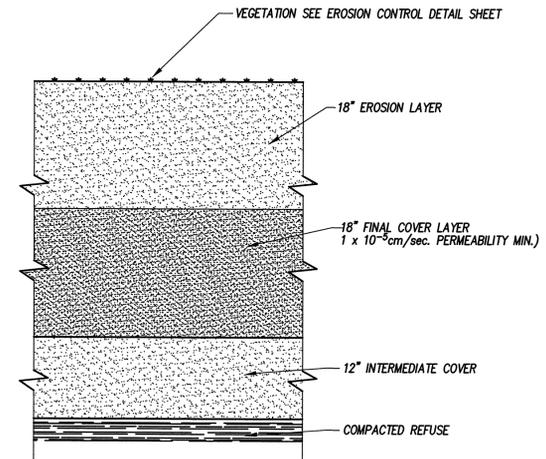
P.O. BOX 97 GARNER, N.C. 27529  
(919) 772-5393

P.O. BOX 349 BOONE, N.C. 28607  
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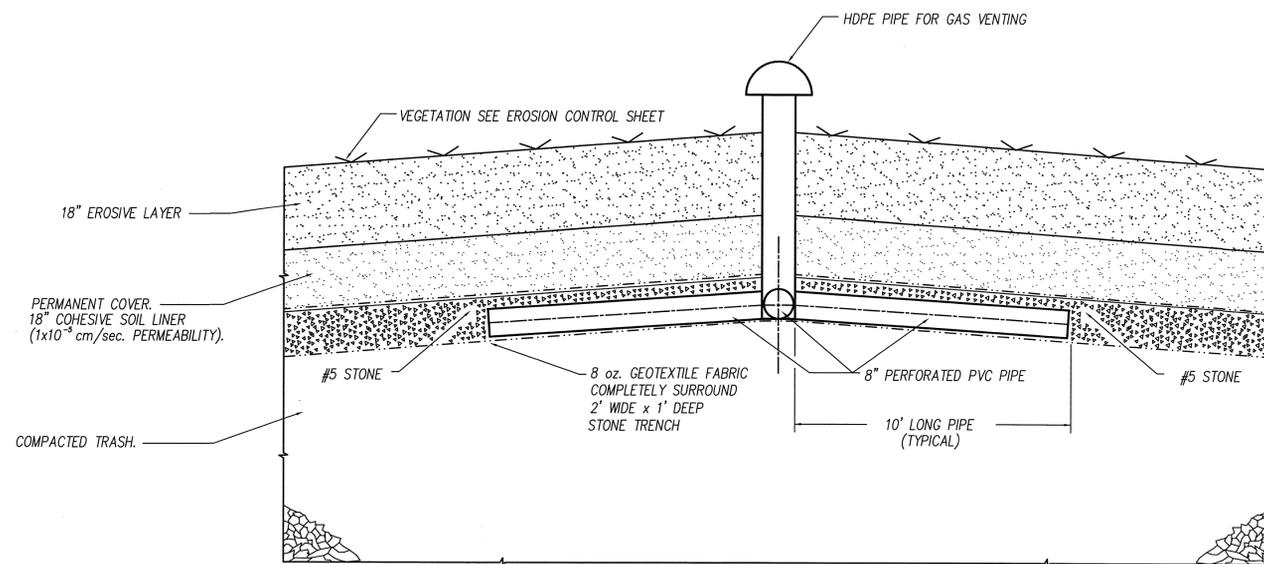
**PERMANENT METHANE TRENCH DETAIL**

N.T.S.



**FINAL COVER CLOSURE DETAIL**

N.T.S.



**TYPICAL METHANE GAS COLLECTION TRENCH CLOSURE DETAIL**

N.T.S.

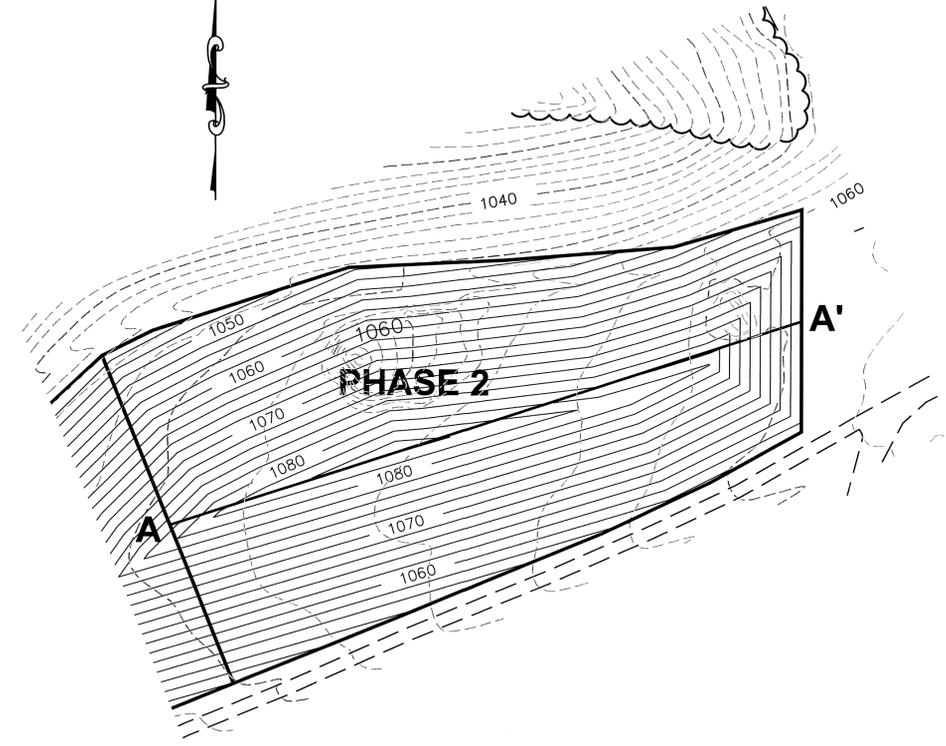
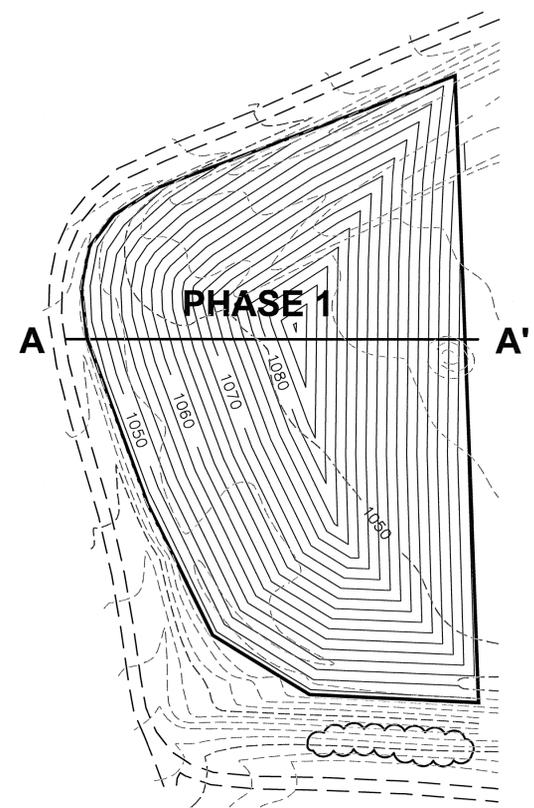
DATE	BY	REV.	DESCRIPTION

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 DATE: 12/22/97  
 DRWN. BY: B. BADEY  
 CHKD. BY: W. SULLIVAN  
 PROJECT NUMBER  
**G97019.6**

DRAWING NO. **E4** SHEET NO. **4 OF 4**

**DRAWING PREVIOUSLY SUBMITTED  
 WITH DECEMBER 1997 PERMIT**

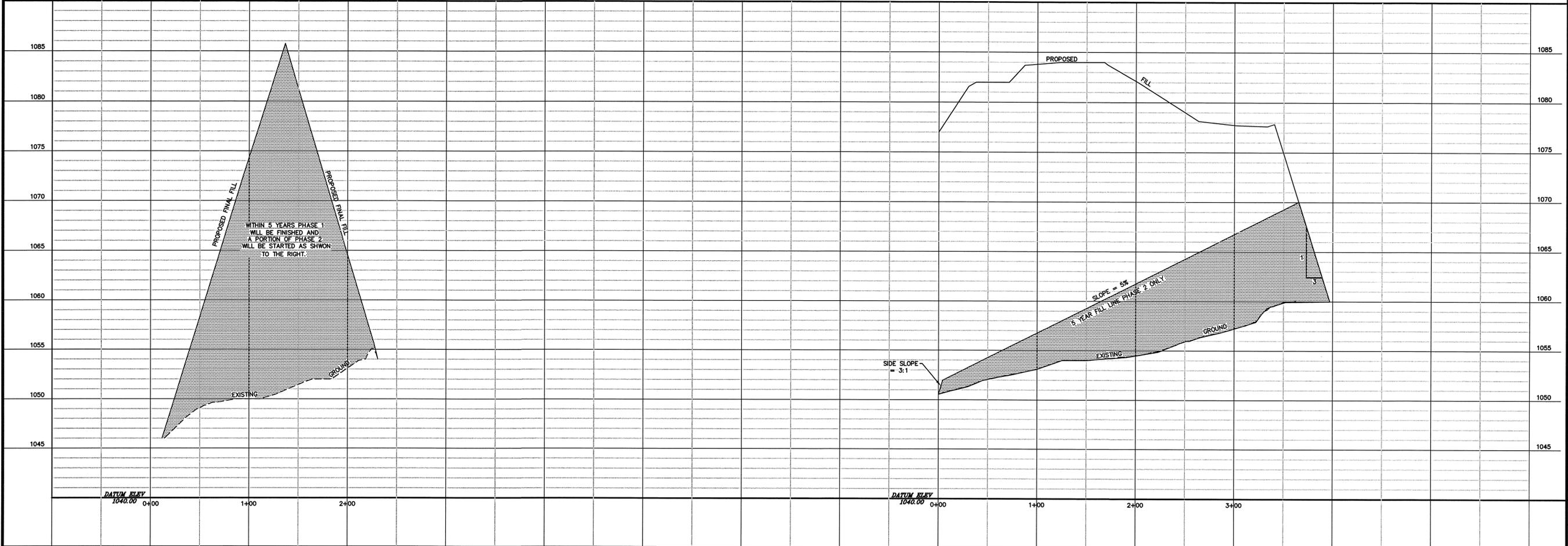
F:\SolidWaste\2016 Alexander\097019\97019-04.DWG, 5/4/2016 9:53:48 AM, lhc,lhc



- LEGEND**
- PROPOSED CONTOURS
  - - - EXISTING CONTOURS
  - PROPERTY LINE
  - - - BUFFER ZONE
  - - - TREE LINE
  - == ROAD
  - == WATER

**SITE PLAN**  
 SCALE: HORIZ. 1" = 50'  
 VERT. 1" = 5'

**DRAWING PREVIOUSLY SUBMITTED  
 WITH DECEMBER 1997 PERMIT**



WITHIN 5 YEARS PHASE 1  
 WILL BE FINISHED AND  
 A PORTION OF PHASE 2  
 WILL BE STARTED AS SHOWN  
 TO THE RIGHT.

SIDE SLOPE  
 = 3:1

SLOPE = 5%  
 5 YEAR FILL LINE PHASE 2 ONLY

**MUNICIPAL SOLID WASTE  
 CONSTRUCTION & DEMOLITION  
 LANDFILL  
 ALEXANDER COUNTY, N.C.**

**Engineering  
 Company, P.A.**  
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**Municipal  
 Services**  
 P.O. BOX 97 GARNER, N.C. 27529  
 (919) 772-5393

DATE	BY	REV.	DESCRIPTION

**CROSS SECTION**

SCALE: AS SHOWN  
 DATE: 1/9/97  
 DRWN. BY: B. BADEY  
 CHRD. BY: W. SULLIVAN

PROJECT NUMBER  
**G97019.6**

DRAWING NO. SHEET NO.  
**E5 4A**

## FACILITY PLAN

The Alexander County Construction and Demolition Landfill will be operated within an area covered under the Transition Plan. Groundwater and methane gas will be monitored according to Subtitle D through the existing monitoring systems.

The existing cap system is in place with a minimum of 2.0 feet of soil which was placed prior to October 9, 1991.

The total air space available for Phases 1-4 is approximately 156,184 cubic yards. The annual tonnage of construction and demolition material will be approximately 6,000 tons. Assuming a compacted density of 1,500 lbs./yd<sup>3</sup> and a soil to trash ratio of 10:1, the life expectancy of Phases 1-4 is approximately 17.7 years.



Doc # 10668 Page 4 of 82

Approval of C&D  
12/1997