

Fac/Perm/Co ID #	Initials Trail	Date	Doc ID #
43-03	GL	07/09/2010	DIN 11314



July 7, 2010

PN: 03034

Mr. Geof Little
Solid Waste Section
Division of Waste Management
North Carolina Department of Environment and Natural Resources
Mail Service Center 1646
Raleigh, NC 27699-1646

**RE: Leachate Management System
Anderson Creek Landfill
Permit 43-03
Harnett County, North Carolina**

Dear Mr. Little:

On behalf of Harnett County, C. T. Clayton, Sr., P.E., Inc. (CTC) would like to inform you of our proposed leachate management system for the Anderson Creek C&D Landfill (ACLF) Permit 43-03.

Over the last year, routine landfill inspections have uncovered several leachate pop-outs on the active C&D cell that have required attention. The standard method of repair has been to dig back down and into the cell down-gradient of the pop-out and fill the area with stone. This directs the leachate back into the cell. The cap material and vegetative cover would then be replaced.

At the lower end of the landfill cells, several of these standard repairs have been attempted and in the last month, inspections have indicated that this method will not work any further. Therefore, the Owner has implemented a two-phased plan to manage the leachate. Phase 1, the temporary solution, is shown on the attached drawings and operational requirements described in the attached Leachate Management Plan. In summary, the system is as follows:

- Sumps will be dug into the side of the landfill where a perforated 36" corrugated plastic pipe (CPP) will be surrounded with rip-rap.
- A 4" PVC pipe will be inserted into the 24" CPP and exit out the top and down the slope to a truck loading area. The 4" PVC pipe will have a valve located at the discharge point. This pipe will act as a suction pipe.
- An all-weather road will be constructed to the leachate loading station(s).

PO Box 578 – 46 West Washington Street - Coats, North Carolina 27521

Phone: 910-897-7070 - Fax: 910-897-6767

Offices located in Coats and New Bern, North Carolina

License No. C-2570 - dba C. T. Clayton, Sr., P. E., Inc. - www.ctclayton.com

- The leachate loading station(s) will be graded on a 8:1 slope with a clay base and surrounded by a clay containment berm to hold any potential spills. A geosynthetic liner will be installed over the clay base and berm. A 4" PVC drain pipe will be installed on the lower end of the loading station to allow release of storm water. If the hauler has a spill, a plug valve is located on this line which the driver would immediately close to contain the spill within the berm. See the attached Operations Plan for more information.
- The permitted septic hauler will transport the leachate to the Harnett County WWTP in Lillington, NC which has a septic receiving station at the facility.

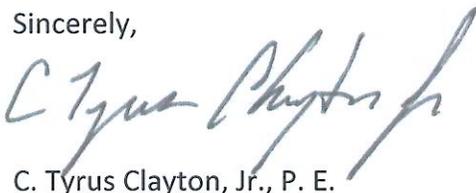
Phase 2 will be the permanent leachate management solution and will involve installing a pumping station on the ACLF facility and running a force main to the nearest gravity sewer that discharges to the Harnett county owned Lillington WWTP, building a constructed wetlands onsite for treatment, or taking over operation of the Carolina Lakes lagoon and spray fields adjacent to the ACLF parcel.

Discussions and planning are currently occurring within the Harnett County Departments of Solid Waste & Public Utilities to decide the most cost effective and otherwise advantageous alternative. Once the permanent solution is decided upon, NCDENR will be notified. It is anticipated that a permanent solution will not be utilized for at least 2-3 years.

In order to not incur any violations for leachate release, the County is proceeding with Phase 1 immediately as weather allows (The sump on the C&D cell has been constructed and is operational). If you have any problems or concerns with this plan, please contact CTC and Harnett County Solid Waste Department immediately. Also, please inform us of any permitting requirements that will be needed, and they will be addressed right away.

Should you have any questions or comments, please contact me or Ryan Sadler at the telephone numbers below or by e-mail at tyrus@ctclayton.com or ryan@ctclayton.com.

Sincerely,



C. Tyrus Clayton, Jr., P. E.

attachments: Leachate Extraction System Drawings (2 sheets)
Leachate Management Plan

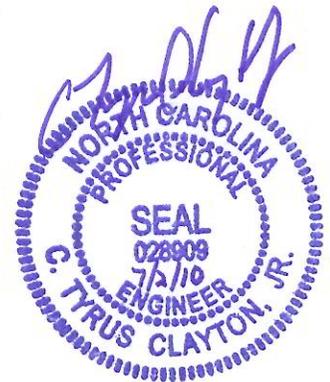
cc: C. T. Clayton, Sr., P. E.
Jerry Blanchard
Drew Hammonds, NCDENR-SWS

LEACHATE MANAGEMENT AND
OPERATIONAL PLAN
FOR
TEMPORARY PUMP AND HAUL STATION(S)
ANDERSON CREEK
CONSTRUCTION AND DEMOLITION
LANDFILL
SWS PERMIT 43-03
HARNETT COUNTY, NORTH CAROLINA

Prepared by:



46 West Washington Street – PO Box 578 - Coats, NC 27521
910-897-7070 Phone – 910-897-6767 Fax
www.ctclayton.com – NCPE Firm C-2570



CTC PN#3034
JUNE 2010

LEACHATE MANAGEMENT PLAN
FOR
TEMPORARY PUMP AND HAUL STATION

ANDERSON CREEK
CONSTRUCTION AND DEMOLITION LANDFILL
HARNETT COUNTY, NORTH CAROLINA

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1.0 Temporary Loading Station(s) Construction

To control repeating leachate pop-outs, sumps will be dug into the side of the landfill cells where a perforated 36" corrugated plastic pipe (CPP) will be surrounded with rip-rap. A 4" PVC pipe will be inserted into the 36" CPP and exited out the top and down the slope to the temporary truck loading area. The 4" PVC pipe will have a valve located at the discharge point. This pipe acts as a suction pipe.

An all-weather road will be constructed to the temporary leachate loading station. The temporary leachate loading station will be graded on an 8:1 slope with a clay base and perimeter containment berm. A layer of HDPE geosynthetic liner will be installed over the clay base and berm. A cushion layer of sand will be placed next to protect the HDPE liner from puncture. Finally, an all-weather road material of mixed stone will be placed for vehicular traffic.

A liner penetration will be made for a 4" PVC drain pipe with plug valve which will be installed on the lower end of the loading station. During normal operation, the valve is to remain open to allow release of storm water. If the hauler has a spill, the driver will immediately close the plug valve to contain the spill within the lined berm.

2.0 Leachate Monitoring

The temporary loading station and leachate sump piping network are to be checked daily and immediately after any precipitation event. See attached landfill inspection checklist which is filled out by the landfill operator daily and kept on file. Any components found to be not properly functioning shall be promptly repaired or replaced.

The operator also, on a weekly basis, visually observes the landfill side slopes for leachate pop-outs which are to be documented and promptly repaired.

The leachate sump will be outfitted with a visual level indicator on a float system. When the leachate in the sump reaches a certain level, a visible colored rod will rise out of the sump which informs the landfill staff that it is time to pump the leachate. A rain gauge will also be installed at this location.

3.0 Leachate Disposal

A permitted septic hauler is contracted to pump from the temporary loading station into trucks and transport the leachate to the Harnett County Wastewater Treatment Plant (WWTP) in Lillington, NC which has a septic receiving station at the facility. There is no pre-treatment required at this time. If in the future Harnett County Public Utilities requires a pre-treatment process, this Leachate Management Plan will be updated to include those items.

4.0 Loading Station Spill Response Plan

In the event of a spill in the temporary loading station, the driver of the contracted hauler is instructed to immediately close the valve on the stormwater bypass pipe exiting the containment area. If this valve is properly closed and the leachate is contained within the temporary loading station, the contaminated soils on top of the geosynthetic liner shall be carefully removed and taken to the on-site Anderson Creek Transfer Station for disposal at a lined MSW landfill. The cushion layer and all-weather layer will be replaced with new materials.

If the driver of the contracted hauler is unable to close the valve on the stormwater bypass pipe in time to prevent a release beyond the liner limits, the following actions will occur:

- A) Should the leachate collect in a sediment pond or other surface waters:
 - 1. The County will notify SWS of the release within 24-hours.
 - 2. The County will analyze the contaminated water for Appendix I list of constituents and BOD₅, COD, phosphate, nitrate and sulfate. The sample results will be forwarded to SWS and used to determine whether the pond or surface waters are impacted by the release. At that time, the County will respond as the SWS deems necessary.

- B) If the leachate release is contained to a soil covered area and does not impact the sediment pond or other surface waters:
 - 1. The County will remove the contaminated soils within 24-hours of release and take the soils to the on-site Anderson Creek Transfer Station for disposal at a lined MSW landfill.
 - 2. Document the leachate release and cleanup activities.

HARNETT COUNTY LANDFILL DAILY/WEEKLY CHECK LIST

Inspector: _____
 Inspection Dates: / / 20 to / / 20

Facility: _____
 Landfill Cell: Active C&D Active LCID Closed MSW/C&D(Weekly)

ACLF

DAILY OPERATION REQUIREMENTS	Facility: _____						
	Mon	Tue	Wed	Thu	Fri	Sat	ACLF
Trucks using designated roads/approved parking areas per permit							
Operations conducted during permitted operating hours							
Access controlled per plan							
Access road(s) maintained (erosion, dust, litter, mud, etc) per plan							
Vehicles directed promptly to unloading area							
Vehicles promptly unloaded							
Inspection procedures implemented for prohibited wastes per plan							
No unapproved wastes							
Solid waste spread and compacted into layers per plan							
No waste <15 ft. from edge of liner, berm, edge marked, etc.							
Procedures followed for special handling and residual wastes							
No open burning							
Vectors minimized and controlled per plan							
Odors minimized and controlled per plan							
Other nuisances minimized and controlled per plan							
Litter minimized and controlled per plan							
Approved weekly cover placed							
Vegetation established and maintained per plan							
Surface and groundwater pollution discharges prevented/controlled							
Soil and erosion control BMPs are maintained per plan							
Leachate popouts detected							
Leachate popouts repaired							
Flow from leachate management system monitored daily							
Leachate management facilities operated and maintained							
Landfill gas controlled per plan/ LFG Flare Operational							
Daily operational records being made and maintained							
Salvaged materials are stored in an approved area							
Recyclable materials collection center maintained							
No immediate threats to public health and safety							

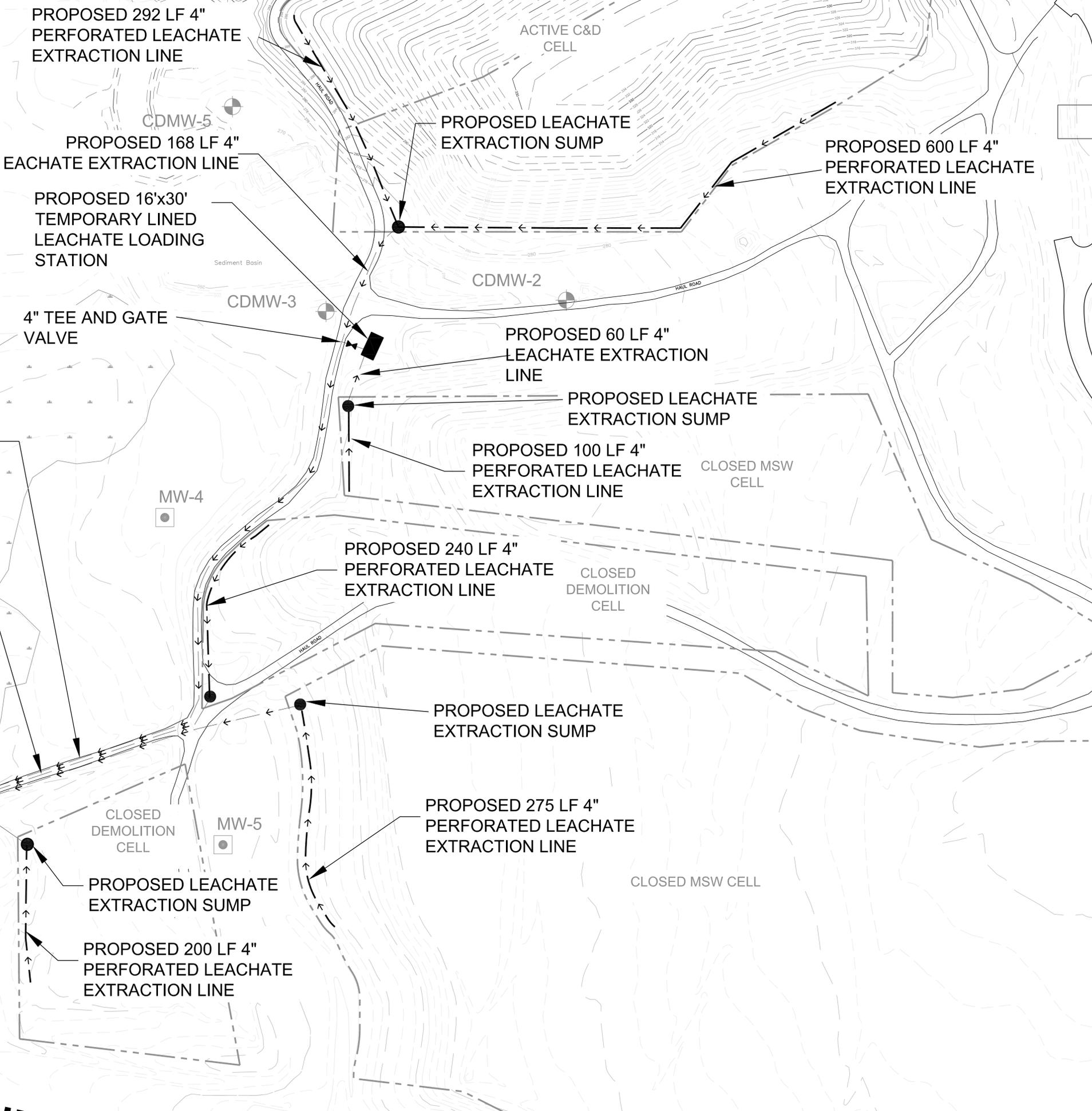
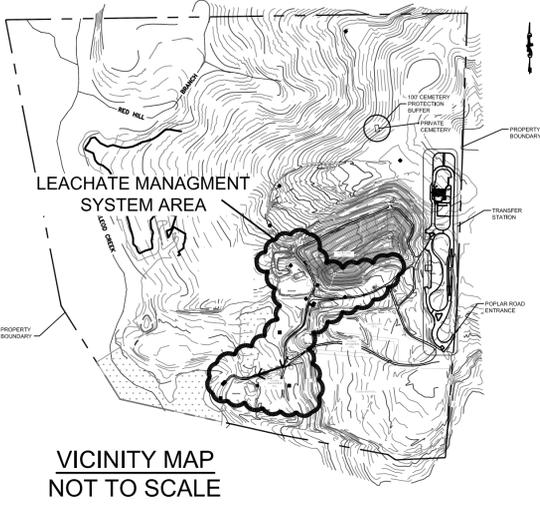
Daily Inspection Items for Active Cells

Daily & Weekly Inspection Items - All Cells

Inspector Signature: _____ Date: _____

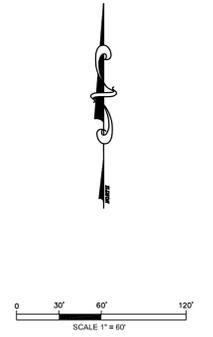
Key = Yes, No, NA (not applicable), ND (not determined)

(FRONT)



LEGEND

- LEACHATE EXTRACTION PUMP
- LINED LEACHATE LOADING STATION
- 4\"/>
- LEACHATE EXTRACTION LINE
- MW-4 existing monitoring well
- CDMW-2 existing monitoring well
- WETLANDS
- existing major contour
- existing minor contour
- existing limits of waste



No.	Revision/Issue	Date

THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY C. TYRUS CLAYTON, Jr., P.E. No. 03999 ON JULY 2, 2010. THIS ELECTRONIC MEDIUM IS NOT CONSIDERED A CERTIFIED DOCUMENT.

21-56.1103(4) BOARD RULES NORTH CAROLINA ADMINISTRATIVE CODE TITLE 21, CHAPTER 56 BOARD OF EXAMINERS FOR ENGINEERS AND SURVEYORS

Signature: _____
Date: _____

CLAYTON Engineering
Civil and Environmental
PO Box 578 - Coats, North Carolina 27521
Phone: 910-897-7070 - Fax: 910-897-6767
License No. C-2570 - www.ctclayton.com

ANDERSON CREEK LANDFILL
LEACHATE EXTRACTION SYSTEM

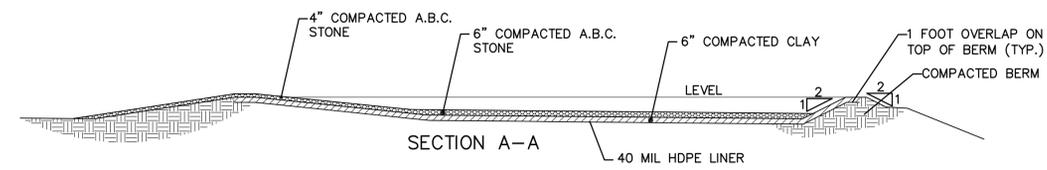
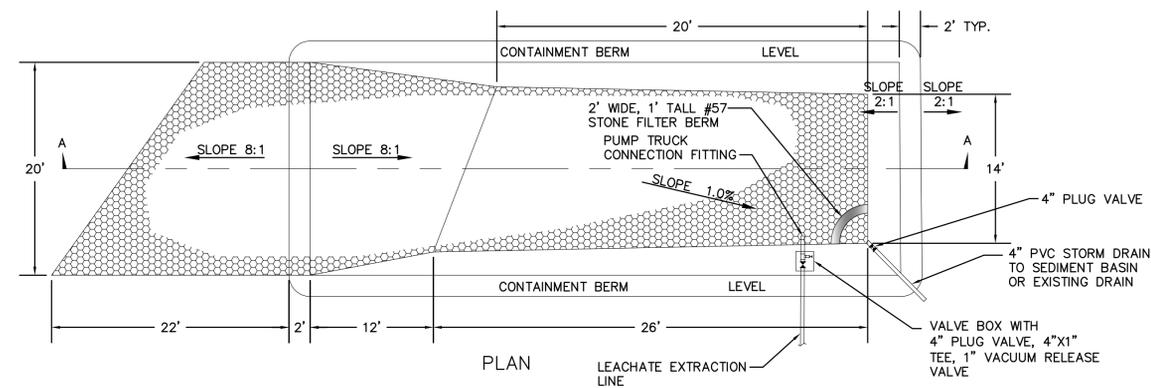
HARNETT COUNTY, NC

Project No:	3034	File Name:	3034MAS
Designed By:	CTC Sr.	Drawn By:	SBK
Checked By:	CTC Sr.	Proj. Eng.:	CTC Sr.

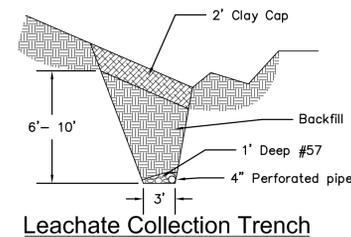
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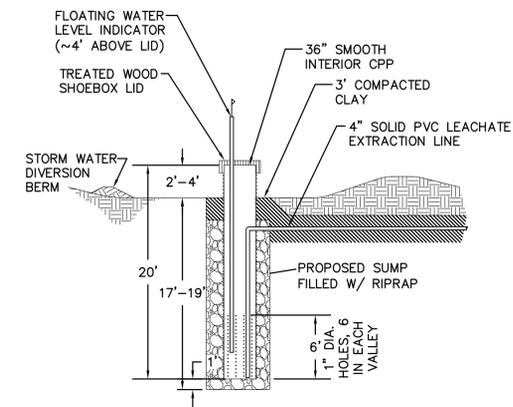
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TEMPORARY LEACHATE LOADING STATION DETAIL
NOT TO SCALE



Leachate Collection Trench



LEACHATE EXTRACTION SUMP DETAIL
NOT TO SCALE

No.	Revision/Issue	Date

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Signature: _____
Date: _____



**ANDERSON CREEK LANDFILL
LEACHATE EXTRACTION
SYSTEM**

HARNETT COUNTY, NC

Project No: 3034	File Name: 3034MAS
Designed By: CTC Sr.	Drawn By: SBK
Checked By: CTC Sr.	Proj. Eng.: CTC Sr.

Sheet Title: **LEACHATE EXTRACTION SYSTEM
DETAILS**

Date: 24 JUNE 2010	Sheet: 2
Scale: NOT TO SCALE	OF 2

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