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55-03	May 20, 2009	7417



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May 20, 2009

Solid Waste Section
Asheville Regional Office

May 19, 2009

North Carolina Department of Environment and Natural Resources
Division of Waste Management
Solid Waste Section
2090 U.S. Highway 70
Swannanoa, NC 28778

Attention: Mr. Larry Frost

Reference: **Lincoln County Landfill – Phase III Cell 3 Stormwater Pipe Removal**
Crouse, North Carolina
S&ME Project No. 1356-03-255B
S&ME Engineering License No. F-0176

Dear Mr. Frost:

On behalf of Lincoln County, S&ME, Inc. (S&ME) is submitting this letter summarizing a work plan to remove a stormwater pipe from the Phase III Cell 3 area. We have prepared this letter in response to the request of Ms. Nancy Rickard, of Lincoln County, made to Ms. Julie Petersen, of S&ME, on April 20, 2009. This work plan describes general steps that Lincoln County plans to take to remove the stormwater pipe and restore the liner system consistent with requirements of the original Permit to Construct Application for Phase III dated September 03, 2004.

The Phase III landfill is subdivided into three cells, identified as Cells 1 through 3 on the attached drawing C7 titled Operational Cover and Stormwater Removal Plan. Cell 3 is located on the west side of Phase III. Cell 3 is sloped to drain to the southwest corner of the cell, where a gravity leachate sump and stormwater conveyance pipe are located. The gravity stormwater conveyance pipe is positioned at the protective soil cover level. The pipe drained stormwater from the Cell 3 prior to waste placement in the cell. The leachate sump is approximately 2-feet below the elevation of, and in the general vicinity of the stormwater pipe. The stormwater pipe was abandoned in-place by grouting, consistent with the Operations Plan on October 14, 2008. The stormwater pipe was capped by welding an HDPE cover over it on April 3, 2009. Since that time, stormwater has been observed dripping at the outlet end of the stormwater pipe from the hole made in the end of the pipe to grout it closed.

At this time, Lincoln County wishes to remove the stormwater pipe altogether. Removing the stormwater pipe will require breaching and restoring the liner system at this location. The proposed general sequence of activities is summarized as follows:

1. isolate stormwater run-on by building a soil diversion berm up gradient from the pipe location;
2. remove existing protective soil liner to expose underlying geosynthetics (from top to bottom: geocomposite drainage layer; 60 mil HDPE geomembrane; and geosynthetic clay liner);
3. cut and peel back geosynthetics to expose the underlying compacted soil liner;
4. excavate compacted soil liner and structural fill from around the pipe, minimizing the quantity of excavation;
5. remove the pipe;
6. replace and restore structural fill and compacted soil liner;
7. replace existing GCL with new GCL;
8. lay back and patch the HDPE geomembrane and geocomposite drainage layer with new material;
9. replace protective soil cover; and
10. remove the soil diversion berm.

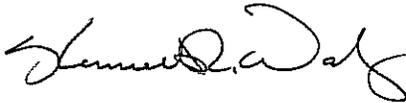
S&ME will monitor construction activities and conduct construction quality assurance (CQA) to demonstrate liner system construction is consistent with the Phase III Permit to Construction Application CQA Plan and technical specification requirements. Lincoln County personnel will complete earthwork activities. Lincoln County will contract a geosynthetics installer (i.e. Plastic Fusion Fabricators) to complete geosynthetics work. Monitoring activities will include, but not be limited to:

1. verify geosynthetics manufacturer quality control (MQC) data for new/replacement geosynthetics meets project requirements (conformance testing will not be conducted);
2. monitoring and testing compacted soil liner and structural fill placement. The compacted soil liner will be restored from existing materials surrounding the pipe. We understand the structural fill surrounding the existing pipe is of compacted soil liner material quality (see Detail 12 Drawing D2). Soil samples will be collected for index testing to verify material consistency with original materials reported in the construction certification report. However, permeability testing is not proposed.
3. performing geosynthetic observation and CQA consistent with CQA Plan. We anticipate monitoring GCL placement; geomembrane repair including seaming and non-destructive testing; and monitoring geocomposite drainage layer repair. We do not plan to collect non-destructive seam samples. However, trial welds and non-destructive testing will be conducted consistent with the CQA Plan requirements.
4. S&ME will prepare and submit a letter report documenting the liner restoration to NCDENR for review.

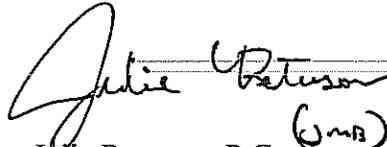
We respectfully request your timely review and comment of our proposed plans as Lincoln County wishes to complete this work as quickly as practical. Please contact us should you have comments or need additional information.

Sincerely,

S&ME, Inc.



Kenneth R. Daly, P.E.
Senior Project Engineer

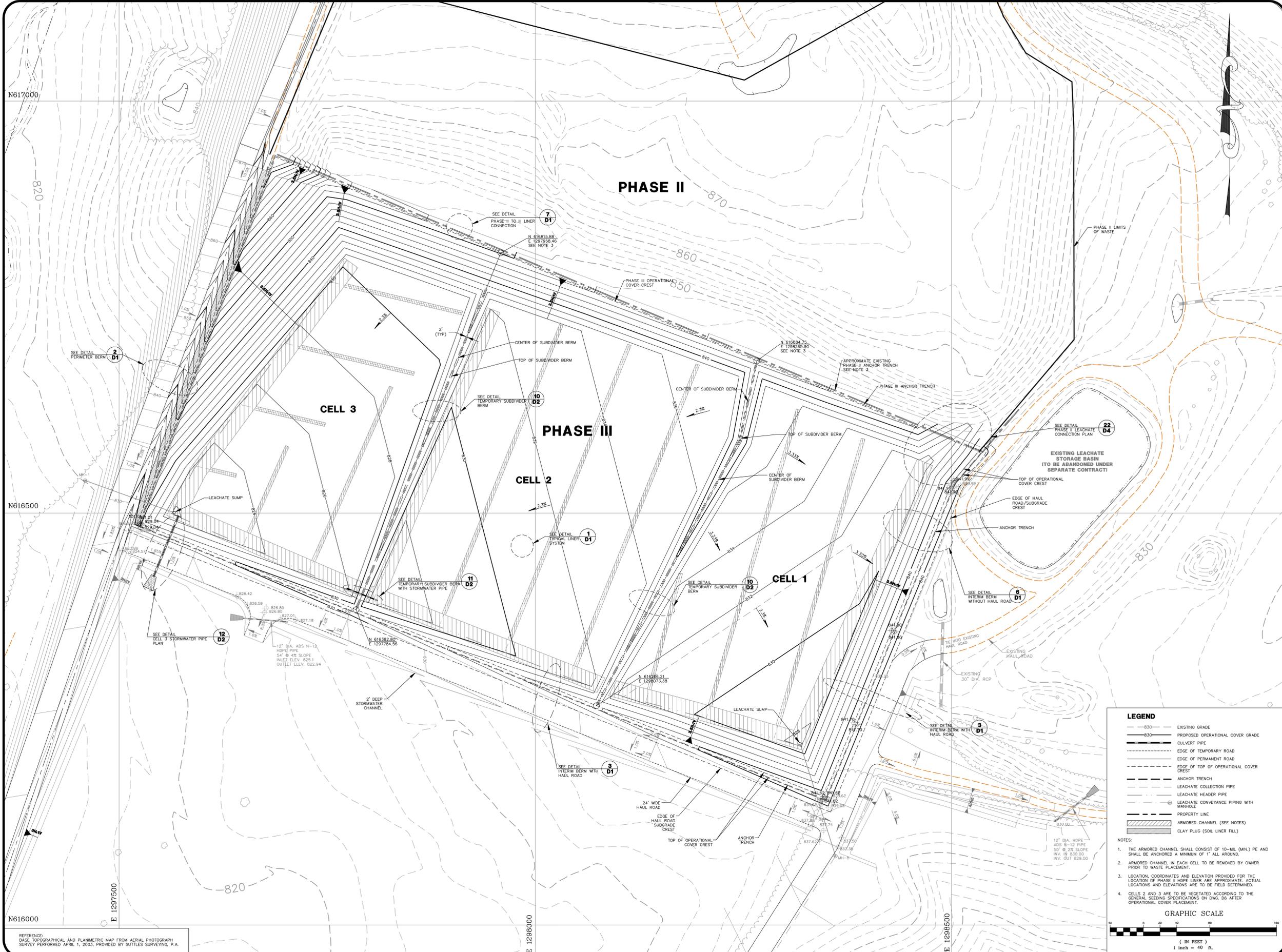


Julie Petersen, P.G. (jms)
Project Manager

Senior Reviewed by: Jack J. Amar, P.E.

Cc: Nancy Rickard, Lincoln County

Attachments: Drawing C7 - Operational Cover and Stormwater Removal Plan
Drawing D2 - Stormwater Removal System Details



LINCOLN COUNTY LANDFILL
5291 CROUSE ROAD
CROUSE, NORTH CAROLINA



8700 GARDNER RD., SUITE 100
CROUSE, NC 28725
PHONE: 828.288.1100
WWW.ASME.COM



NO.	DATE	DESCRIPTION	BY

NO.	DATE	DESCRIPTION	BY

OPERATIONAL COVER AND STORMWATER REMOVAL PLAN	
LINCOLN COUNTY LANDFILL - PHASE III	
CROUSE, NORTH CAROLINA	
DRAWN BY: CLD	CHECKED BY:
DESIGNED BY: DPM	APPROVED BY:
PROJECT NUMBER: 1356-03-255B	DATE: 5-9-05
SCALE: 1" = 40'	DRAWING OF:
C7	19

- LEGEND**
- 830 — EXISTING GRADE
 - 830 — PROPOSED OPERATIONAL COVER GRADE
 - — CULVERT PIPE
 - — EDGE OF TEMPORARY ROAD
 - — EDGE OF PERMANENT ROAD
 - — EDGE OF TOP OF OPERATIONAL COVER CREST
 - — ANCHOR TRENCH
 - — LEACHATE COLLECTION PIPE
 - — LEACHATE HEADER PIPE
 - — LEACHATE CONVEYANCE PIPING WITH MANHOLE
 - — PROPERTY LINE
 - — ARMORED CHANNEL (SEE NOTES)
 - — CLAY PLUG (SOIL LINER FILL)

- NOTES:**
- THE ARMORED CHANNEL SHALL CONSIST OF 10-MIL (MIN.) PE AND SHALL BE ANCHORED A MINIMUM OF 1' ALL AROUND.
 - ARMORED CHANNEL IN EACH CELL TO BE REMOVED BY OWNER PRIOR TO WASTE PLACEMENT.
 - LOCATION, COORDINATES AND ELEVATION PROVIDED FOR THE LOCATION OF PHASE II HOPE LINER ARE APPROXIMATE. ACTUAL LOCATIONS AND ELEVATIONS ARE TO BE FIELD DETERMINED.
 - CELLS 2 AND 3 ARE TO BE VEGETATED ACCORDING TO THE GENERAL SEEDING SPECIFICATIONS ON DWG. 06 AFTER OPERATIONAL COVER PLACEMENT.
- GRAPHIC SCALE**
- (IN FEET)
1 inch = 40 ft.

REFERENCE:
BASE TOPOGRAPHICAL AND PLANIMETRIC MAP FROM AERIAL PHOTOGRAPH SURVEY PERFORMED APRIL 1, 2003, PROVIDED BY SUTLITS SURVEYING, P.A.