Subject: Request for Approval of Subdrain
From: "David Garrett, P.E., P.E." <davidgarrettpgpe@mindspring.com>
Date: Wed, 16 Apr 2008 14:23:03 -0500 (GMT-05:00)
To: brian.wootton@ncmail.net, john.murray@ncmail.net, Ed Mussler <Ed.Mussler@ncmail.net>
CC: Mike Gurley <mike.gurley@awin.com>, Fred Brown <fred@earnhardtgrading.com>, aglenn@browncald.com

Gentlemen, please see the attached - this is a new issue for the construction at CMS landfill. I have spoken to Brian Wootton about this matter. Please call me if you have any questions. Thank you.

David Garrett, PG, PE
Engineering and Geology
5105 Harbour Towne Drive
Raleigh, NC 27604
Tel. 919-418-4375 Direct

Request for French Drain Approval.pdf	**Content-Type:** application/pdf **Content-Encoding:** base64

David Garrett & Associates
Engineering and Geology

April 16, 2008

Messrs. Brian Wootton and John Murray
NCDENR – Division of Waste Management
Solid Waste Section
401 Oberlin Road, Suite 150
Raleigh, NC 27605

RE: Request for Approval to Install Subdrain
CMS Landfill-V (MSWLF) – Cell 2G
NCDENR Solid Waste Permit #13-04 (Cabarrus County)

Dear Sirs:

On behalf of Allied Waste Industries, I am pleased to present this request to install a subdrain (i.e., "French" drain) beneath the base liner subgrade elevations in Cell 2G at the referenced site (see **Figure 1**). This request is made to accommodate the presence of subsurface water (either seasonal high ground water or, more likely, this is "perched" water within fine-grain soils), discovered during the grading of Cell 2G. If undrained, the water would pose adverse conditions for installing structural fill planned for that portion of the site. Maximum seasonal high ground water elevations were shown to be 5 to 10 feet beneath the ground surface in the Phase 2 Design Hydrogeologic Investigation (Cells 2F, 2G, and 2H). The affected area will receive at least 4 feet of structural fill to achieve the approved base liner grades, based on the construction plan furnished by the Contractor. The base liner is a 24-inch thick compacted clay liner with a 60-mil flexible membrane. The location of the planned subdrain is near the southwest edge of Cell 2G, whereas most of the drain will be beneath the perimeter embankment.

The water was revealed during the clearing and stripping of the natural soils, in preparation of placing the structural fill. It appeared that approximately 2 feet of topsoil and root zone had been removed to expose a small pocket of water (measuring approximately 5 feet wide by 8 feet long), situated within a natural drainage feature. A thin stream was flowing at an estimated 2 to 4 gpm during my site inspection (April 10, 2008). Water had not been previously seen in this area – this was not a stream bed. The proposed cross section for the subdrain is attached (**Figure 2**).

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Based on the grading plan and depth of embedment, the top of the stone will be at least 6 feet beneath the base liner elevation (8 feet beneath the flexible membrane). The drain will be approximately 230 to 240 feet in length and will discharge at an existing sediment basin. If the flow persists (not expected) after construction, the drain outlet can be added to the ground water monitoring program. Allied officials advised be that similar drains have been installed within Phase 1. Please note that the use of the drain is for accommodating an unanticipated condition to facilitate construction and promote long-term stability, not to lower ground water levels in this portion of the site – there would be adequate ground water separation without the drain. The installation of the drain will be supervised by qualified engineers and documented in the "as-built" construction drawings. I foresee no detrimental effects that would compromise the integrity of the landfill or present an adverse impact on the monitoring program.

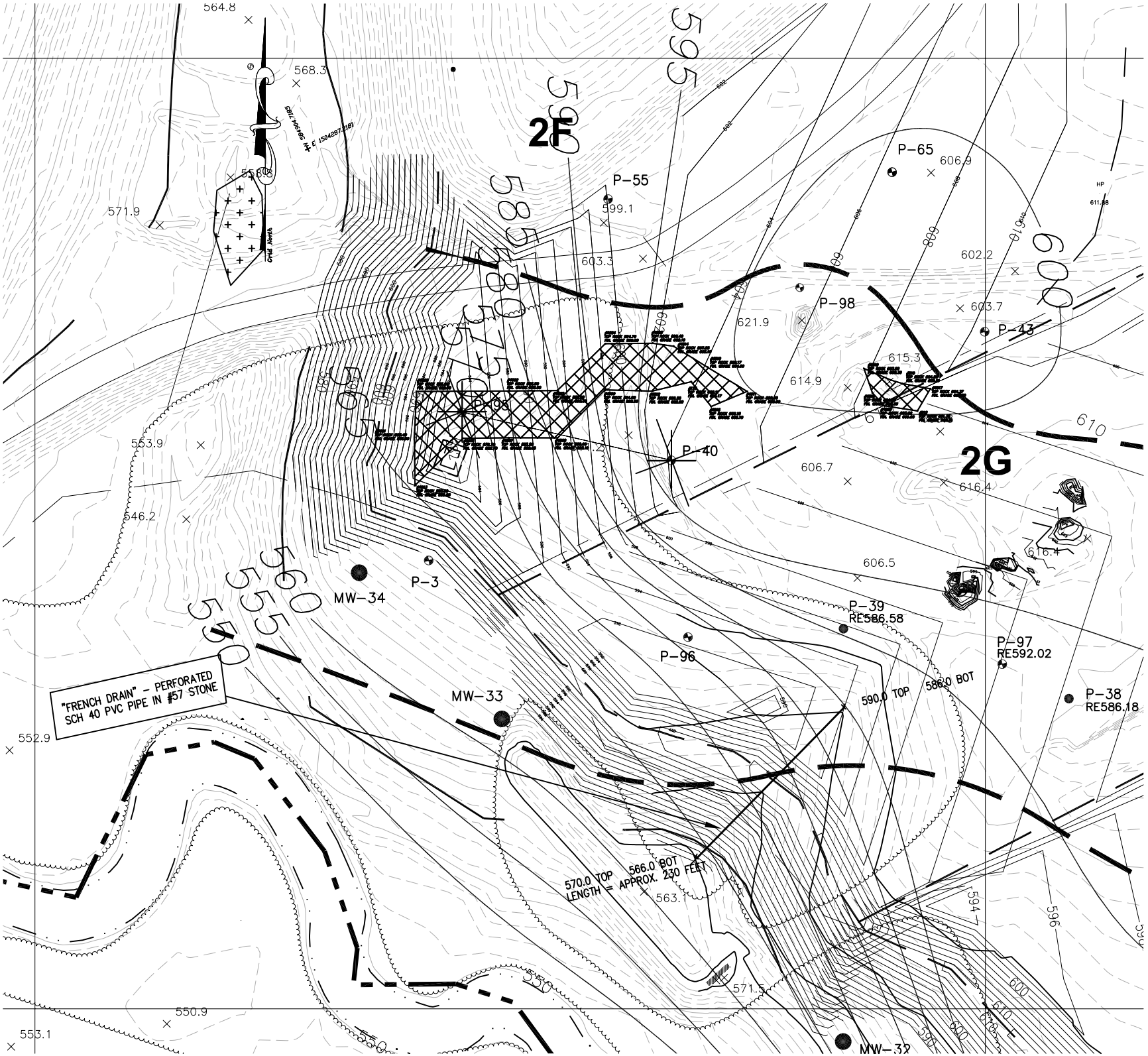
Thank you for your attention on this matter, and I look forward to your response. On behalf of Allied Waste Industries and it contractors, we would appreciate a reply at your earliest convenience. Please contact me if you have any questions.

Cordially yours,

G. David Garrett, P.G., P.E.

cc: Mike Gurley, Environmental Manager – Allied Waste Industries
Fred Brown, Superintendent – Earnhardt Grading, Inc.
Albert Glenn, P.E., Design Engineer – Brown and Caldwell, Inc.
Ed Mussler, P.E., Permitting Branch – NCDENR Division of Waste Management

Attachments – Figures 1 and 2


2F
2G
P-55
P-65
P-98
P-43
P-40
P-3
P-96
P-39
RE586.58
P-97
RE592.02
P-38
RE586.18
MW-34
MW-33
MW-32
"FRENCH DRAIN" - PERFORATED SCH 40 PVC PIPE IN #57 STONE
590.0 TOP
586.0 BOT
570.0 TOP
566.0 BOT
LENGTH = APPROX. 230 FEET
564.8
568.3
571.9
599.1
603.3
602.2
603.7
621.9
615.3
614.9
606.9
606.7
606.5
616.4
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546.2
552.9
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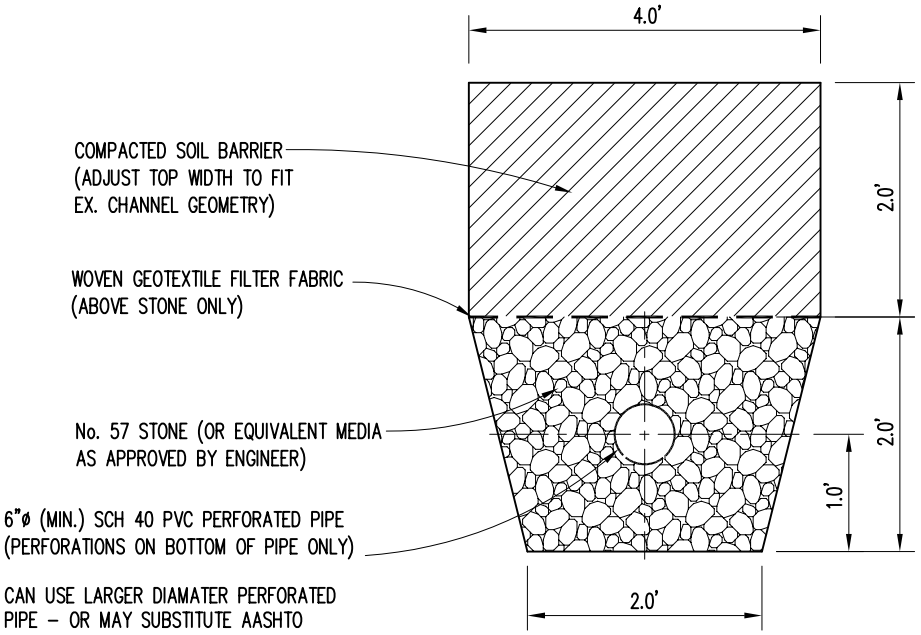
553.1
563.1
571.5



MINIMUM REQUIRED DIMENSIONS SHOWN – MAY BE ADJUSTED TO FIT FIELD CONDITIONS OR PROJECT REQUIREMENTS WITH ENGINEER'S APPROVAL

SUBDRAIN FOR GROUND WATER CONTROL

DETAIL E / EC1

N.T.S.