



July 13, 2016

Mr. Ervin Lane,  
Solid Waste Section  
Division of Waste Management  
NCDEQ  
1646 Mail Service Center  
Raleigh, North Carolina 27699-1646

Subject:        **City of Albemarle Landfill  
Proposed Gas Monitoring Probes – Active C&D and Closed MSWLF  
DSWM Permit No. 84-01  
Shield Project 1110192**

Dear Mr. Lane:

In recent years the methane data collected from permanent gas Monitoring Probes MP-9 and MP-12 (see Figure 1) have on a number of occasions exhibited methane measurements in exceedance of the Lower Explosive Limit of 5% of methane in air. Prior to these exceedances the City of Albemarle had purchased property adjacent to the western property boundary of the Active C&D and the closed MSWLF landfill (see Figure 1). The reason for this land purchase was to use a portion of this property to provide the City of Albemarle an additional buffer along the western property boundary.

The purpose of this letter is to request approval from the Solid Waste Section (SWS) for the installation of two new permanent methane probes to replace existing permanent gas Monitoring Probes MP-9 and MP-12 (see Figure 2).

### **Proposed Gas Probes**

These two proposed gas monitoring probes are to be located on accessible trails already available on the new property, thereby allowing access for a drill rig. Figure 2 shows the proposed locations for these two new gas monitoring probes (i.e., MP-31 and MP-32).



At both of these locations the driller will drill a borehole to locate the water table. The estimated seasonal water table at these two locations based on existing depth to groundwater data collected at the site, is about 6 to 8 feet below ground surface at MP-31 and about 3 to 4 feet at MP-32. The gas monitoring probe installation will comply with the detail provided in Figure 1 of the “Landfill Gas Monitoring Guidance” dated November 2010. The details of the gas monitoring probe construction are shown on the attached Figure 3. A North Carolina certified driller will be used to install both of these gas monitoring probes. The installation of these two gas monitoring probes will be performed in general accordance with 15A NCAC 2C.

### **Abandonment of Gas Monitoring Probes MP-9 and MP-12**

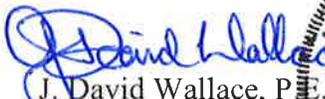
While the driller is at the site both of the existing gas monitoring probes (i.e., MP-9 and MP-12) will be abandoned. Therefore the City of Albemarle is also requesting approval of the SWS for the abandonment of these two existing permanent gas monitoring probes. This abandonment will be performed in general accordance with 15A NCAC 2C.0113(d)(1) and will be certified by a North Carolina Professional Geologist or Professional Engineer.

### **Closing**

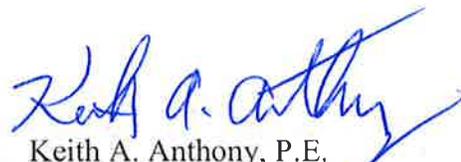
If you should have any questions please do not hesitate to contact David Wallace either by e-mail at [dwallace@shieldengineering.com](mailto:dwallace@shieldengineering.com) or by phone at 704-394-6913.

Sincerely,

**SHIELD ENGINEERING, INC.**

  
J. David Wallace, P.E.  
Senior Engineer



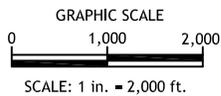
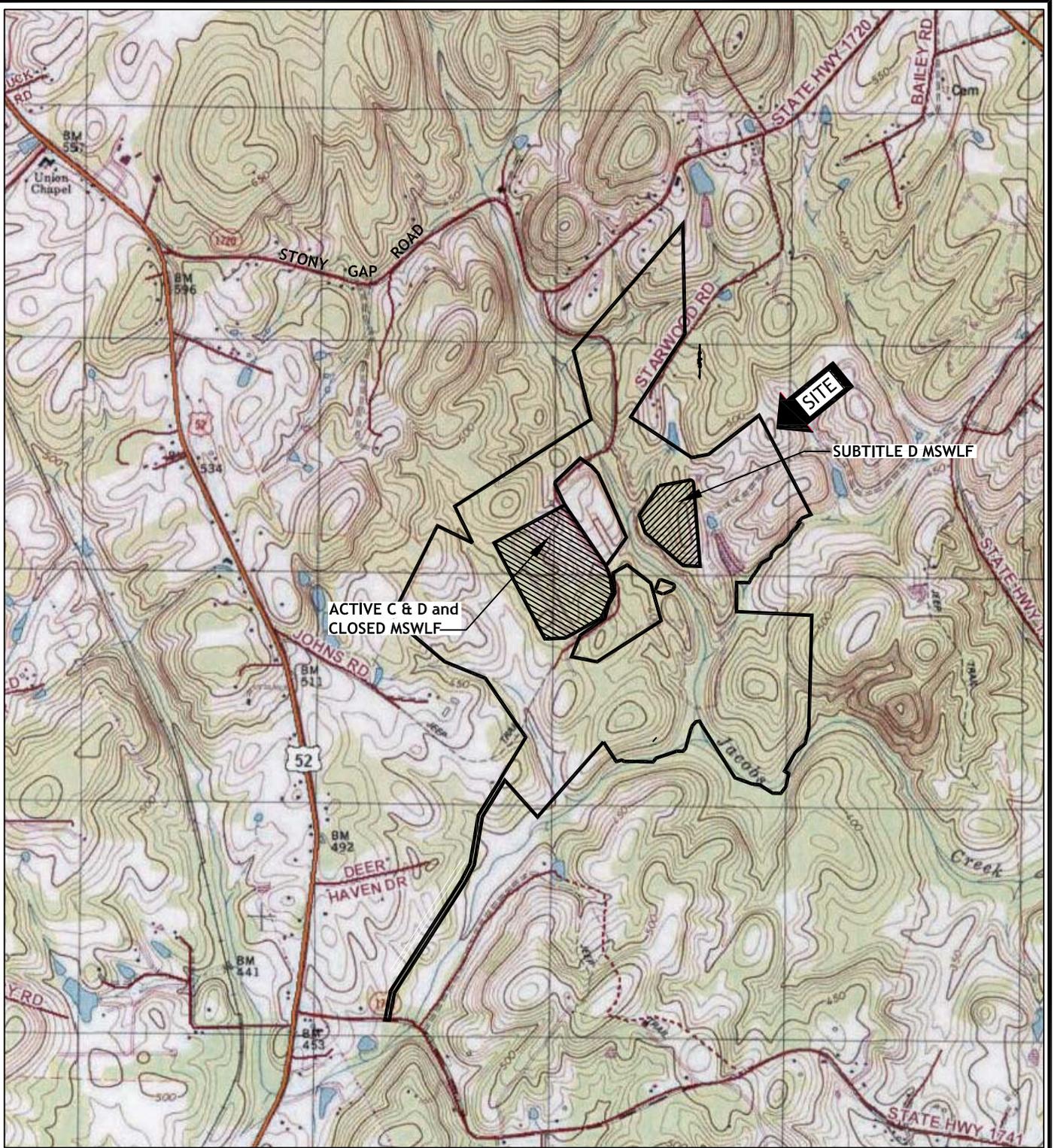
  
Keith A. Anthony, P.E.  
Chief Engineer

JDW/KAA

Attachments: Figure 1 – Site Vicinity Map  
Figure 2 - Proposed Methane Probe Locations  
Figure 3 - Methane Probe Detail

cc: Ms. Nina Underwood, Public Works Director  
Mr. Darren Preslar, Assistant Public Works Director

H:\PROJECTS\2011\110192 - CITY OF ALBEMARLE LANDFILL\FIGURES\ARCHIVED FIGURES\SITE VICINITY MAP 11-01-12.DWG



**SHIELD**  
ENGINEERING, INC.

4301 TAGGART CREEK ROAD  
CHARLOTTE, NC 28208  
704-394-6913  
704-394-6968 fax  
www.shieldengineering.com

**SITE VICINITY MAP**

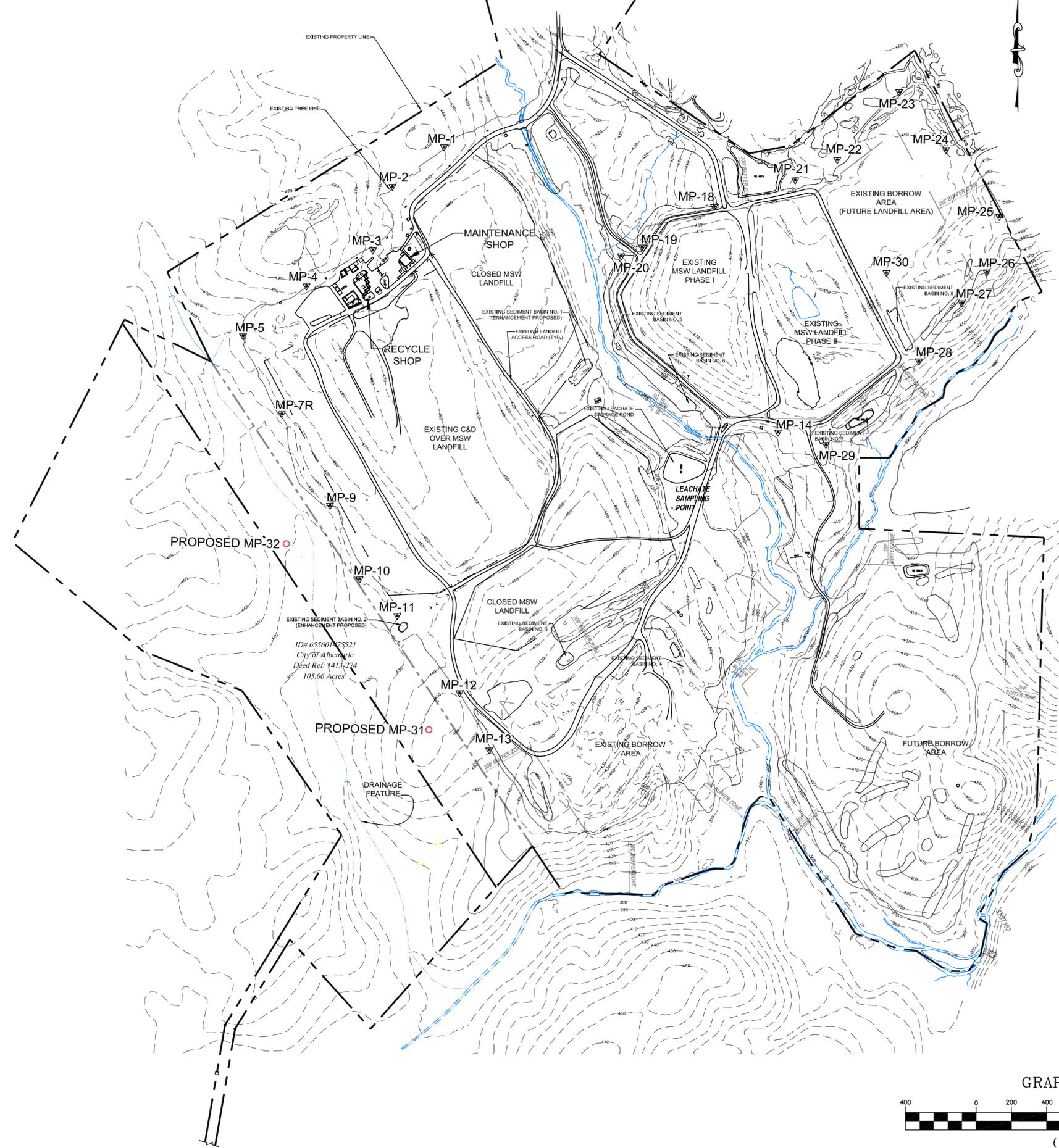
**CITY OF ALBEMARLE LANDFILL**  
STONY GAP ROAD  
ALBEMARLE, NORTH CAROLINA  
SHIELD # 1110192-01

DATE :	11/01/12	DRAWN BY :	RBS
SCALE :	AS SHOWN	FIGURE :	1

SOURCE: NATIONAL GEOGRAPHIC USGS TOPO, 7.5 MINUTE MAP SERIES, STANLY COUNTY, NORTH CAROLINA

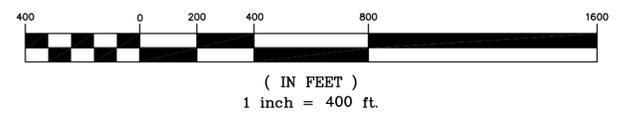
H:\PROJECTS\2011\110192 - CITY OF ALBEMARLE LANDFILL\FIGURES\METHANE WMS\PROPOSED GAS MONITORING PROBE LOCATION MAP 7.7-16.DWG

LEGEND	
	2013 CONTOURS
	PROPERTY LINE
	FORMER PROPERTY LINE
	MP-19 (METHANE) MONITORING PROBE LOCATION
	ROAD
	BUFFER ZONE
	WATER
	CULVERT PIPE
	CULVERT HEADWALL
	PROPOSED GAS MONITORING PROBE LOCATION
	APPROXIMATE WASTE BOUNDARY



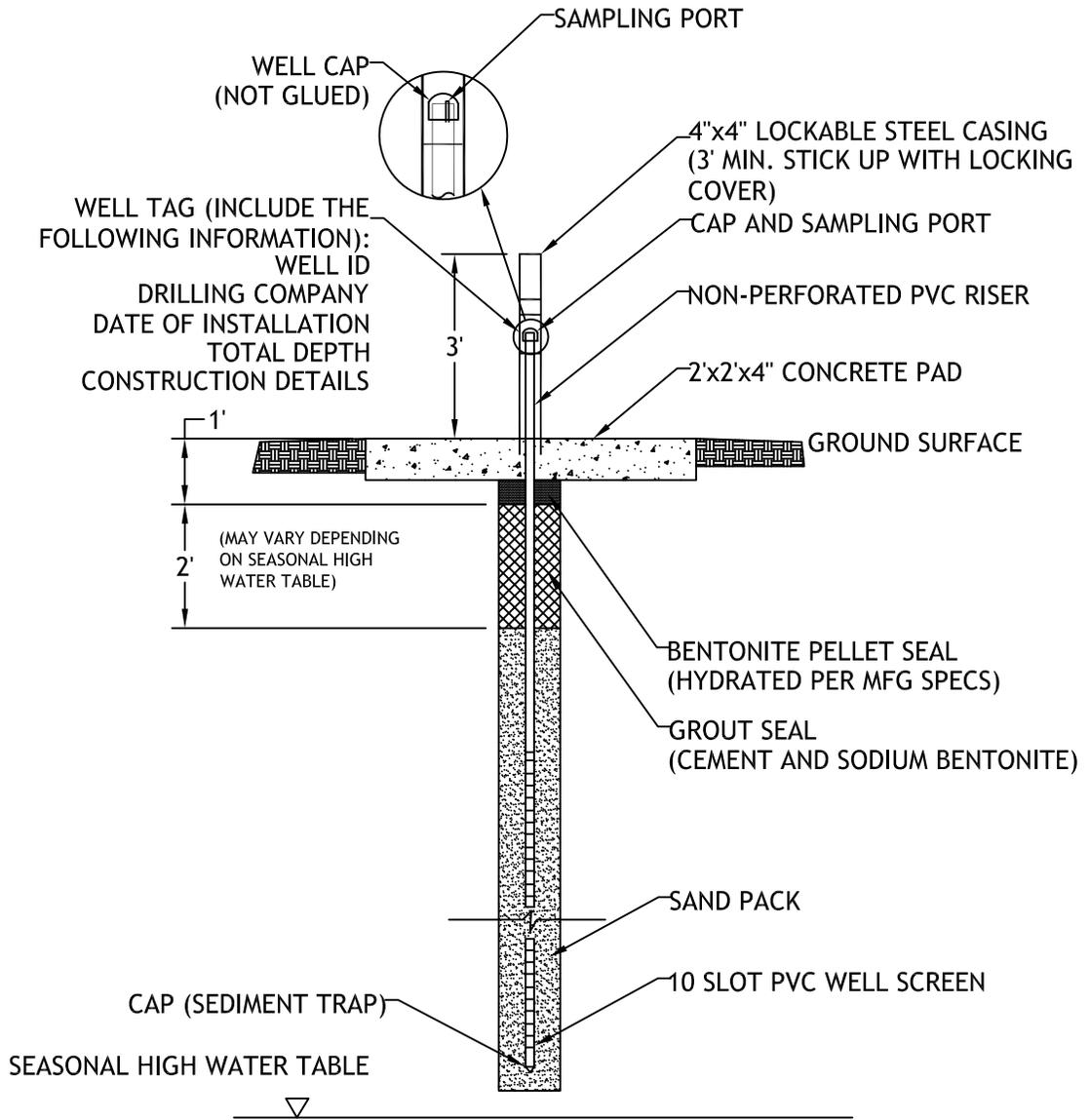
- NOTES:
1. REFERENCE: EROSION CONTROL MASTER PLAN (SHEET 1 OF 4) BY HODGES, HARBIN, NEWBERRY & TRIBBLE, INC. DATED MARCH 2011.
  2. CONTOURS BY SPATIAL DATA CONSULTANTS, INC. PHOTOGRAPHY DATED JULY 29, 2013.
  3. METHANE WELLS WERE SURVEYED BY LAWRENCE ASSOCIATES NOVEMBER, 2013.
  4. CONTOURS FOR PROPERTY ID# 655601475521 AND THOSE OUTSIDE CITY OF ALBEMARLE LANDFILL SOUTHERN BOUNDARY CREATED FROM NCDOT CONTOURS IN MARCH 2016.

GRAPHIC SCALE



	<small>4301 TAGGART CREEK ROAD CHARLOTTE, NC 28208 704-384-0913 704-384-0988 fax www.shieldengineering.com</small>		
	<b>PROPOSED GAS MONITORING PROBE LOCATION MAP</b>		
<b>CITY OF ALBEMARLE LANDFILL</b> STONY GAP ROAD ALBEMARLE, NORTH CAROLINA <small>SHIELD #110192-01</small>			
DATE :	06/10/16	DRAWN BY :	RBS
SCALE :	AS SHOWN	FIGURE :	2

H:\PROJECTS\2011\110192 - CITY OF ALBEMARLE LANDFILL\FIGURES\METHANE MAPS\WELL DETAIL.DWG



**SHIELD**  
ENGINEERING, INC.

4301 TAGGART CREEK ROAD  
CHARLOTTE, NC 28208  
704-394-6913  
704-394-6968 fax  
www.shieldengineering.com

**GAS MONITORING PROBE DETAIL**

CITY OF ALBEMARLE LANDFILL  
STONY GAP ROAD  
ALBEMARLE, NORTH CAROLINA  
SHIELD # 1110192-01

DATE : 06/10/16

DRAWN BY : RBS

SCALE : AS SHOWN

FIGURE : 3