

**GAS MONITORING REPORT
SECOND QUARTER 2018
FDEP PERMIT #: 69684-005-SF/14**

Site:

**UNIVERSAL DOOR SITE / LANDFILL
VETERANS EXPRESSWAY PROJECT
TAMPA, HILLSBOROUGH COUNTY, FLORIDA
WACS FACILITY #: SWD/29/44718**

Prepared For:

**FLORIDA TURNPIKE ENTERPRISE AND
ROY JORGENSEN ASSOCIATES, INC.
13018 US HIGHWAY 41
SPRING HILL, FLORIDA 34610**

Prepared By:

**ENVIROTRAC LTD.
5309 56TH COMMERCE PARK BOULEVARD
TAMPA, FLORIDA 33610
(813) 626-8443**

JUNE 2018

***A Full Service Environmental Consulting
and Contracting Firm***



TABLE OF CONTENTS

1.0	PROFESSIONAL GEOLOGIST'S CERTIFICATION	1
2.0	METHANE GAS MONITORING	2
3.0	METHANE GAS COLLECTION SYSTEM	2
4.0	GAS MONITORING PROBES	2
5.0	SAMPLING PROCEDURES AND RESULTS	3
6.0	REPRESENTATIONS	4

TABLES

Table 1	METHANE GAS MONITORING RESULTS WITH MULTIRAE LITE CALIBRATION REPORT
---------	---

FIGURES

Figure 1	SITE MAP
----------	----------

APPENDICES

Appendix A	FIGURES FROM MARCH 3, 2017 REPORT SUBMITTED BY HANDEX
------------	---

1.0 PROFESSIONAL GEOLOGIST'S CERTIFICATION

I certify that I have prepared this:

Gas Monitoring Report, Second Quarter 2018, FDEP Permit No.: 69684-005-SF/14, for the Universal Door Site/FDOT Closed Class III Landfill, Veterans Expressway Project, in Tampa, WACS Facility No: SWD/29/44718,

with information gathered from qualified personnel who properly evaluated the information submitted. The applicable portions of this technical document and associated work comply with standard professional practices, rules of the FDEP and any other laws and rules governing the profession. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Reviewed and Certified By:

EnviroTrac Ltd.

Name

Date

John Ferrill, P.G.

Florida P.G. License No. 1953

Florida Geology License NBR GB284

Florida Engineering Certificate of Authorization No. 00008333

2.0 METHANE GAS MONITORING

The Florida Department of Transportation (FDOT) has implemented a routine methane gas-monitoring program at the Universal Door Site, located in Section 3.1 of the Veterans Expressway project. The Universal Door Site consists of a former landfill located in Hillsborough County. Permit No. 69684-005-SF/14 was issued on August 6, 2014 for long term care of the site. Section 2 - Specific Conditions E. Gas Management System Requirements details the quarterly monitoring of methane in vadose zone soils. Monitoring is completed to demonstrate compliance with the criteria established in Rule 62-701.530(1)(a), F.A.C., (less than 25% of the lower explosive limit (LEL) for combustible gases at or beyond the property boundary). Monitoring is accomplished by measuring the percent LEL in air samples collected from vadose zone gas probes located at the site boundaries; see **Figure 1**.

Roadway construction activities were recently completed in the vicinity of the Landfill. Based on the March 3, 2017 Vent Line Modification & Well Completion Letter Report submitted by Handex Consulting & Remediation, LLC (Handex), construction activities did not penetrate the existing geomembrane cover of the landfill nor disturb the six gas monitoring points, GP-1 through GP-6.

Due to construction activities and the roadway layout, the four passive vents (NE, SE, NW, SW) were extended away from the roadway. The NE and SE vents were extended approximately eight (8) feet to the east while the NW and SW vents were extended approximately 25 feet to the west. Construction details of the passive vents along with the new locations are shown on **Figures 2, 3, and 4** located in **Appendix A**.

3.0 METHANE GAS COLLECTION SYSTEM

A passive gas collection system was installed at the site during closure activities. The system consists of several perforated, horizontal collection pipes connected to four vertical vents. The piping extends from centerline stations 255 + 20 to 259 + 00, with lateral venting.

4.0 GAS MONITORING PROBES

Gas monitoring probes GP-1 through GP-6 were installed on March 21, 1993, at the locations shown on **Figure 1**. Gas probe GP-4 was destroyed in August 1997 and replaced with GP-4A

in December 1997. The probes were installed in 4-inch diameter boreholes advanced to a depth of 4 to 5 feet below land surface (BLS). Each probe was constructed of 3.5 to 4 feet of 1-inch diameter, SCH 40 PVC, 010 slotted screen flush threaded to solid SCH 40 PVC casing extending approximately three feet above ground surface. The annular space of the gas probes were sand packed with coarse sand to 3 inches above the screen, followed by a bentonite seal and cement grout to the surface. The probes were completed with a PVC cap, brass sampling valve, and a protective steel casing with lock.

5.0 SAMPLING PROCEDURES AND RESULTS

Quarterly gas monitoring was conducted at the site on June 7, 23, 2018. Gas samples were collected from gas monitoring probes GP-1 through GP-6, along with the four gas vents (Northeast, Southeast, Northwest, and Southwest) alongside the roadway. The gas vents are located within the landfill liner while the gas probes are installed at the property boundaries. For the gas probes (GPs), initial readings for O₂ and percent LEL were recorded. The probes were then purged for approximately 20 minutes and second readings were collected and recorded. For the passive gas vents, one reading was collected from each vent. Data from this event and from the three previous methane monitoring events are shown for comparison purposes on **Table 1**.

All readings from the probes and the four gas vents were recorded using a calibrated MultiRAE Lite (SN: M01CA07061) portable multi-gas detector. The meter is owned, maintained, and calibrated by U.S. Environmental Rental Corporation. A copy of the June 6, 2018 Calibration Report is included with Table 1.

For this event, Gas Probes readings at GP-1, GP-2, GP-3, GP-5 and GP-6 were 0% LEL for Pre-Purge and Post-Purge. The Pre-Purge LEL reading at GB-4A was recorded at 1% and the Post-Purge LEL reading was 0% (zero). The four passive vents, Northeast, Southeast, Northwest, and Southwest, were recorded with LEL readings of 0%.

6.0 REPRESENTATIONS

The field observations, measurements, and research reported herein are considered sufficient in detail and scope to form a reasonable basis for a gas monitoring event of this property. The assessment, conclusions and recommendations presented herein are based upon the subjective evaluation of limited data. They may not represent all conditions at the subject site as they reflect the information gathered from specific locations. EnviroTrac Ltd. warrants that the findings and conclusions contained herein have been promulgated in accordance with generally accepted environmental investigation methodology and only for the site described in this report.

The Gas Monitoring Report has been developed to provide the client with information regarding specific parameters as stated in the associated permit. It is necessarily limited to the conditions observed and to the information available at the time of the work. Due to the limited nature of the work, there is a possibility that conditions may exist which could not be identified within the scope of the monitoring event or were not apparent at the time of report preparation. It is also possible that the testing methods employed at the time of the report may later be superseded by other methods. The description, type, and composition of what are commonly referred to as “hazardous materials or conditions” can also change over time. EnviroTrac Ltd. does not accept responsibility for changes in the state of the art, nor for changes in the scope of various lists of hazardous materials or conditions. EnviroTrac Ltd. believes that the findings and conclusions provided in this report are reasonable. However, no other warranties are implied or expressed.

TABLE 1

Table 1 - Methane Gas Monitoring Results

Landfill, Veterans Expressway, Tampa, Hillsborough County, Florida

Probe I.D.	Date	Pre-Purging		Post-Purging (20 min.)	
		% LEL	% O2	% LEL	% O2
GP-1	09/14/17	24.0	6.1	18.0	13.0
	12/07/17	10.6	15.7	5.0	16.6
	03/23/18	0.0	16.1	0.0	18.9
	06/07/18	0.0	16.3	0.0	15.8
GP-2	09/14/17	9.0	6.0	0.0	20.9
	12/07/17	14.1	6.0	0.0	20.9
	03/23/18	0.0	15.9	0.0	20.9
	06/07/18	0.0	15.1	0.0	20.9
GP-3	09/14/17	0.0	20.9	0.0	20.9
	12/07/17	0.0	20.4	0.0	20.9
	03/23/18	0.0	19.4	0.0	20.4
	06/07/18	0.0	20.7	0.0	20.9
GP-4A	09/14/17	6.0	18.2	0.0	18.7
	12/07/17	1.0	19.7	0.0	20.9
	03/23/18	0.0	19.7	0.0	19.9
	06/07/18	1.0	19.8	0.0	19.1
GP-5	09/14/17	0.0	20.9	0.0	20.9
	12/07/17	0.0	20.8	0.0	20.9
	03/23/18	0.0	20.9	0.0	20.9
	06/07/18	0.0	20.7	0.0	20.9
GP-6	09/14/17	0.0	20.9	0.0	20.9
	12/07/17	0.0	20.9	0.0	20.9
	03/23/18	0.0	20.9	0.0	20.9
	06/07/18	0.0	19.6	0.0	20.9
Northeast gas vent	09/14/17	56.0	19.7		
	12/07/17	0.0	20.9		
	03/23/18	0.0	20.9		
	06/07/18	0.0	20.9		
Southeast gas vent	09/14/17	65.0	19.5		
	12/07/17	0.0	20.9		
	03/23/18	0.0	20.9		
	06/07/18	0.0	20.8		
Northwest gas vent	09/14/17	0.0	20.9		
	12/07/17	17.0	20.4		
	03/23/18	0.0	20.9		
	06/07/18	0.0	20.9		
Southwest gas vent	09/14/17	0.0	20.9		
	12/07/17	0.0	20.9		
	03/23/18	0.0	20.9		
	06/07/18	0.0	20.7		



US Environmental Rental Corporation

(888) 550-8100

www.usenvironmental.com

166 Riverview Ave, Waltham, MA 02453 (781) 899-1560

91 Prestige Park Circle, Suite 5, East Hartford, CT 06108 (860) 289-8700

5C South Gold Dr, Hamilton, NJ 08691 (609) 570-8555

1202 Tech Blvd., Suite 108, Tampa, FL 33619 (813) 628-4200

Order No.: 7038

Date: 6/6/2018

Technician: SVE

Company: EnviroTrac Ltd.

Contact: Ron Kiely

Phone #: #N/A

Packing List

Item	Serial Number	Included	QC
Ind. Sci. MX4	14062X2-009		
Manual		✓	
Charger		✓	
Sample Tubing		✓	
Alkaline Battery Pack			
External Filters		✓	
Software			
Comm. Cable			
Regulator		✓	
Tedlar Bag		✓	
Calibration Gas		✓	

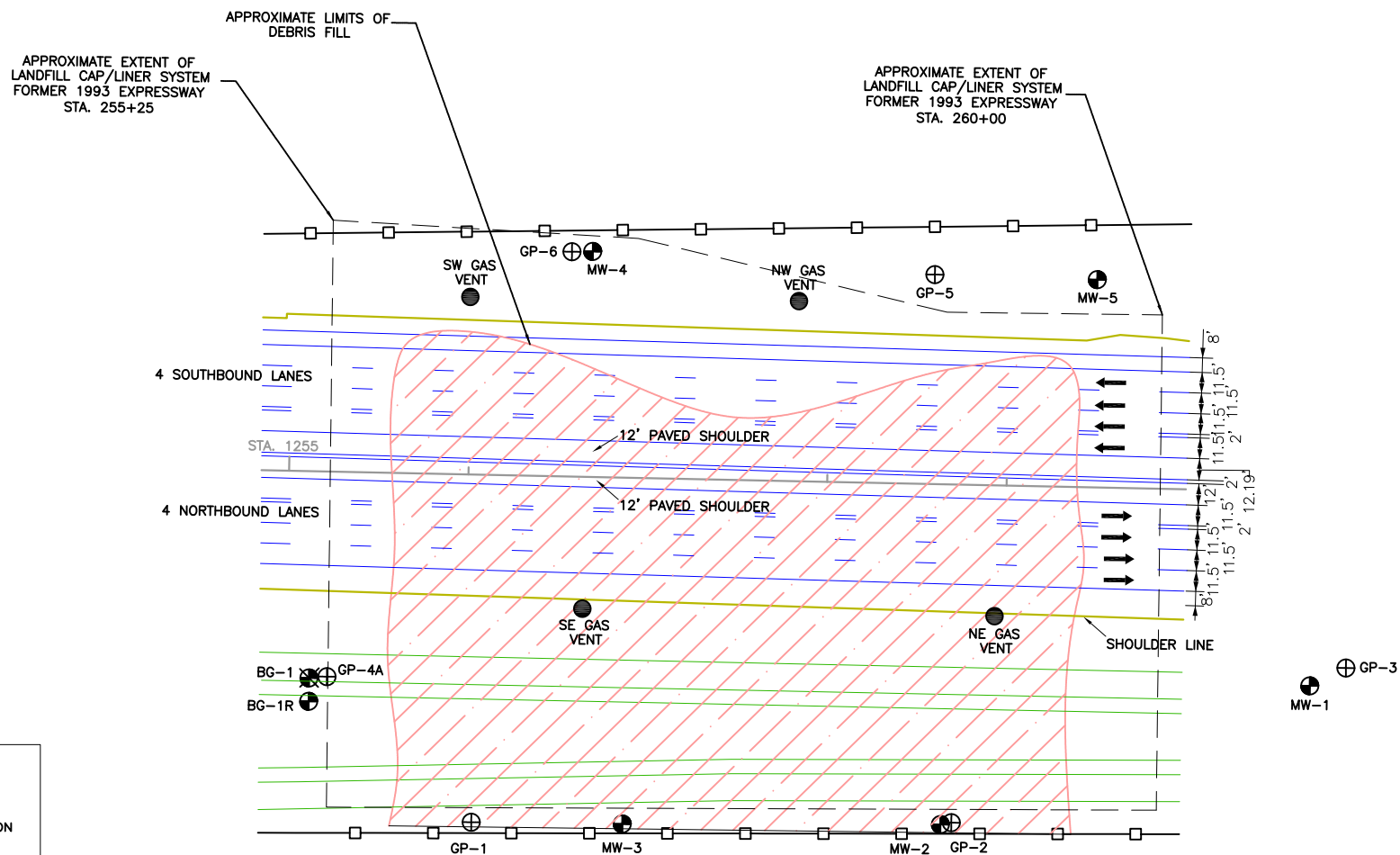
Calibration Report

14062X2-009			
Calibrated with the following calibration gas:			
25 H2S / 100 CO / 50 LEL (C5H12) / 19 O2		Lot #:	IBH-411-17
		Lot #:	
		Lot #:	
Span	Calibrated	Post-Calibration	
Setting	Reading	Bump Test	
H ₂ S	0 ppm	25.3	ppm
CO	100 ppm	98	ppm
LEL	25% %	25%	%
O ₂	19% %	19%	%
		0	

This document certifies that US Environmental Rental Corporation has provided this rental equipment and all accessories in good working order. It is the renter's responsibility to: a) review all included items upon receipt, b) verify that all items are in acceptable condition and function properly, and c) contact a US Environmental associate immediately if any item is missing, damaged, and/or not functioning properly. Any delay in notifying US Environmental will be considered as the Renter taking responsibility for such missing, damaged, and/or malfunctioning item.

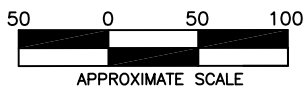
Missing, damaged, and/or malfunctioning equipment and accessories will result in additional fees.

FIGURE 1



LEGEND:

- ⊕ - MONITORING WELL LOCATION
- ⊗ - ABANDONED WELL
- - GAS VENT LOCATION
- ⊕ - GAS PROBE LOCATION



SITE MAP

REVISED BY: RK
AUGUST 14, 2017

BASE MAP PROVIDED BY HANDEX
CONSULTING & REMEDIATION, LLC

UNIVERSAL DOOR SITE / LANDFILL
WACS ID#: 69684
VETERANS EXPRESSWAY, TAMPA
HILLSBOROUGH COUNTY, FLORIDA

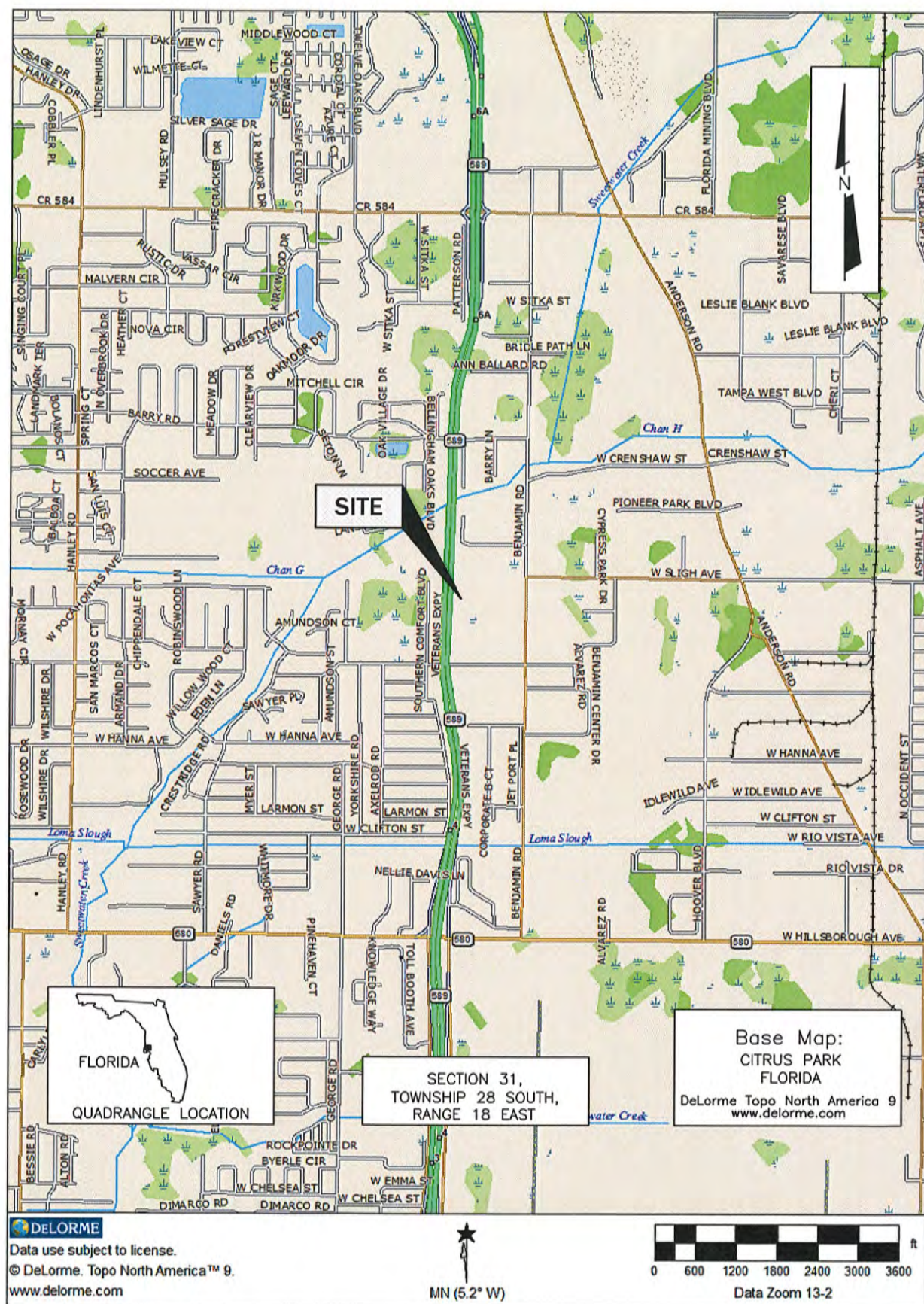
FIGURE #

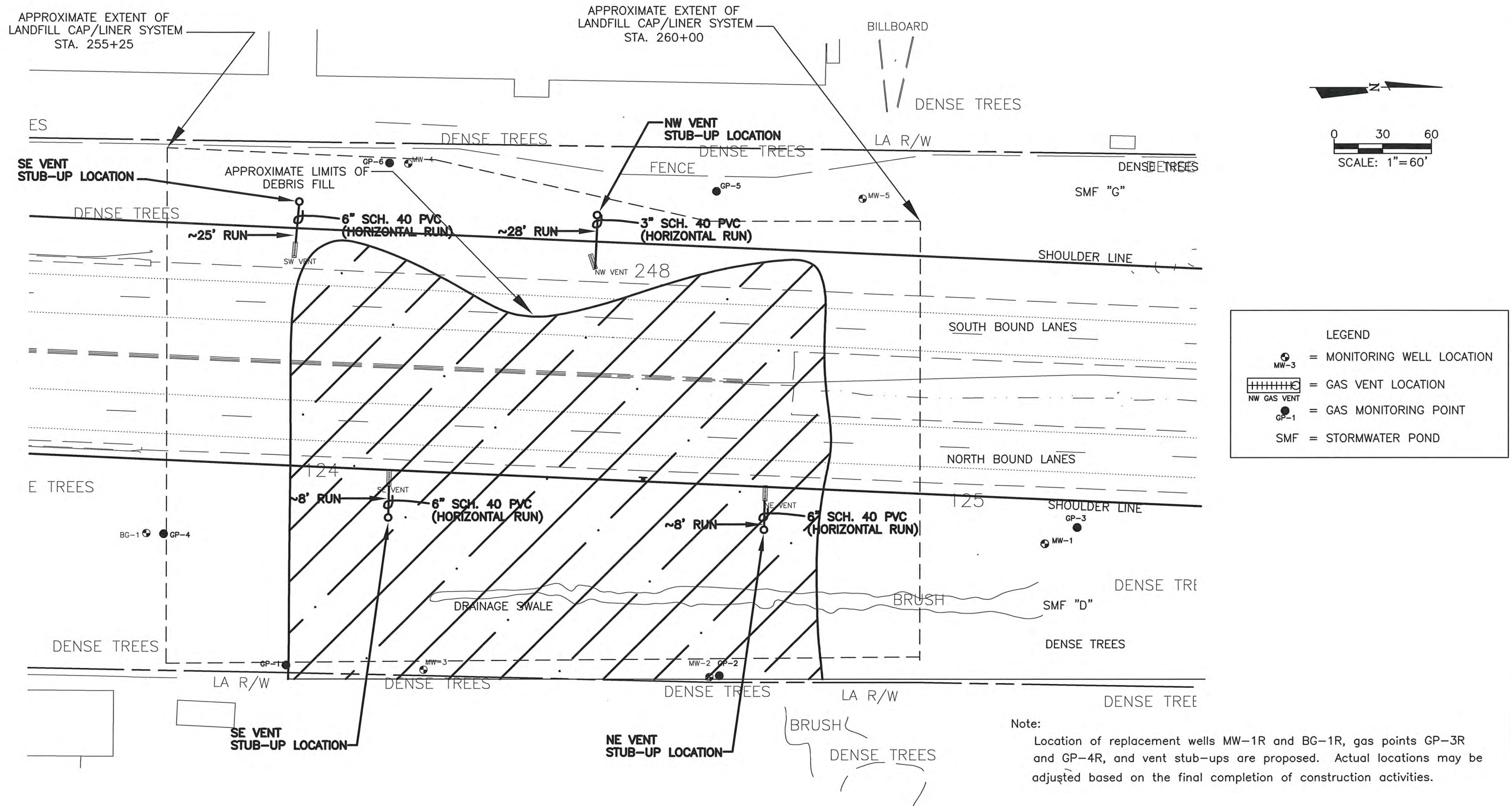
1

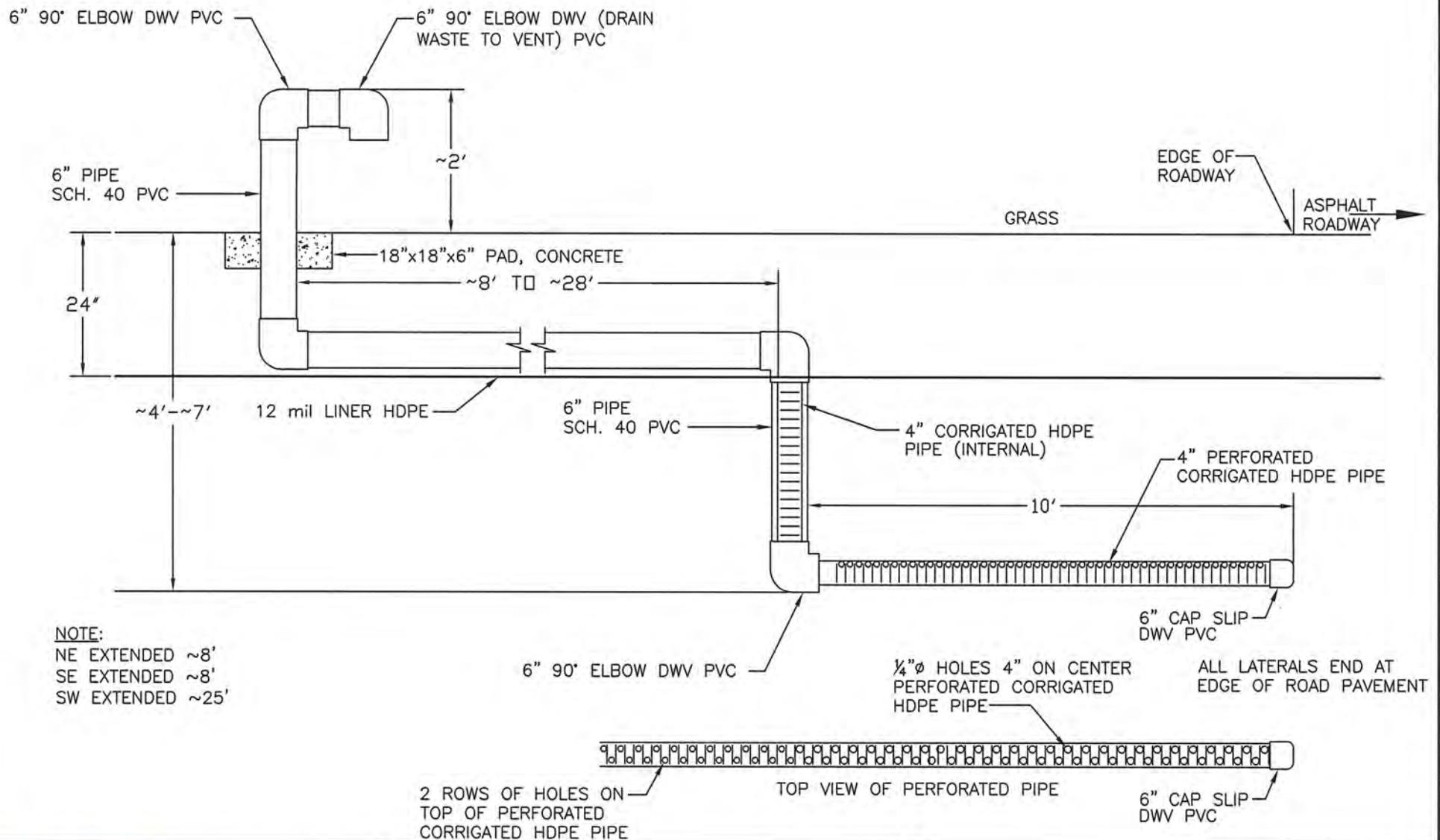
EnviroTrac
ENVIRONMENTAL SERVICES

5309 56th COMMERCE PARK BLVD., TAMPA, FLORIDA 33610
PHONE: (813)626-8443 FAX: (813)628-8479

APPENDIX A
FIGURES FROM MARCH 3, 2017 REPORT BY HANDEX





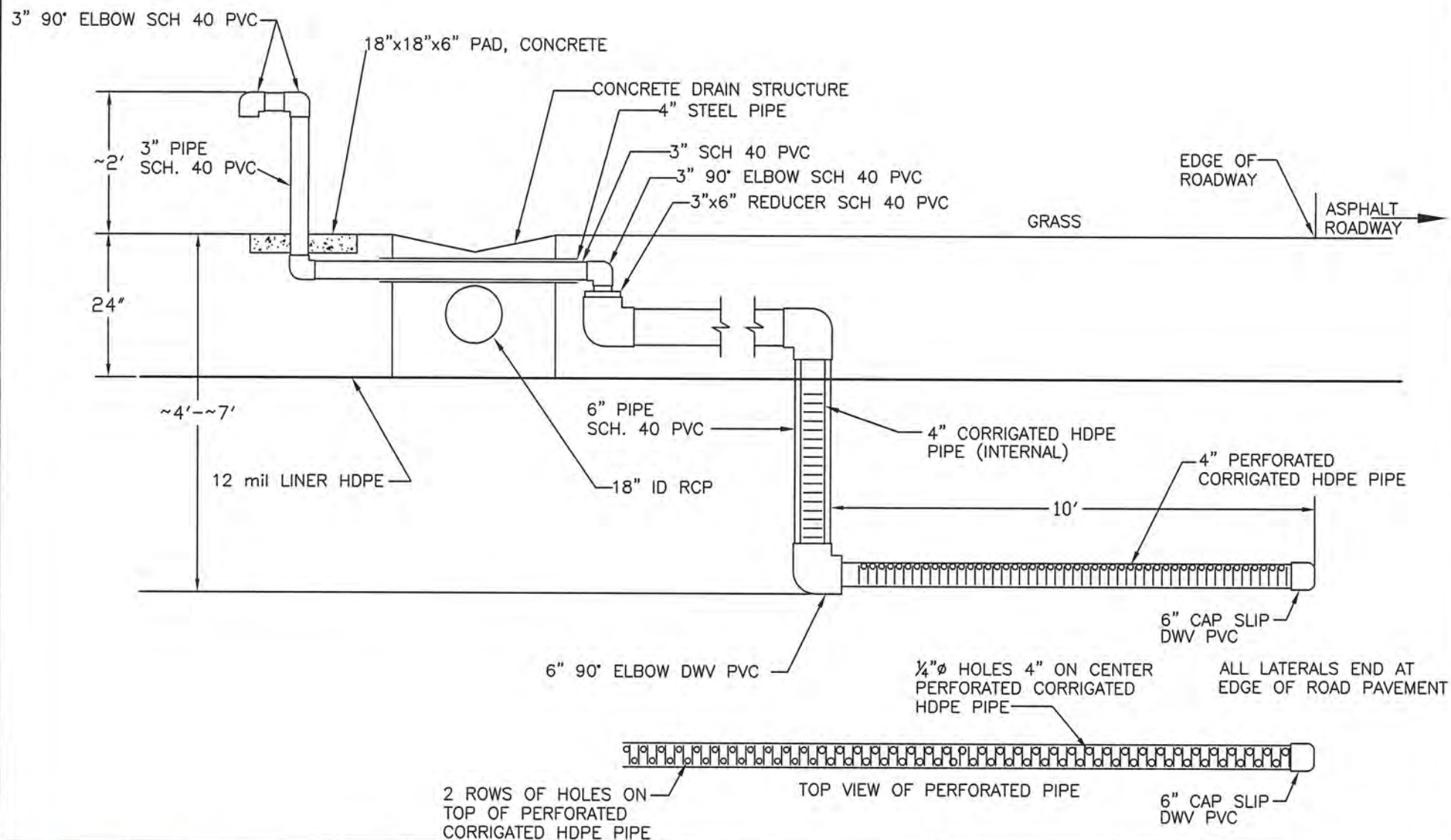


1202 Tech Boulevard Suite 204
Tampa, Florida 33619
Telephone: (813) 626-4646
Fax: (813) 626-1898
Certificate of Authorization# 26812

UNIVERSAL DOOR SITE / LANDFILL
VETERANS EXPRESSWAY
TAMPA, HILLSBOROUGH COUNTY, FLORIDA

03-31-14

FIGURE 3
CURRENT MODIFIED PASSIVE GAS
VENT WELL DETAILS
(VENTS NE, SE, & SW)



1202 Tech Boulevard Suite 204
Tampa, Florida 33619
Telephone: (813) 626-4646
Fax: (813) 626-1898
Certificate of Authorization# 26812

UNIVERSAL DOOR SITE / LANDFILL
VETERANS EXPRESSWAY
TAMPA, HILLSBOROUGH COUNTY, FLORIDA

03-31-14

FIGURE 4
CURRENT MODIFIED PASSIVE GAS
VENT WELL DETAILS
(VENT NW)