



## SARASOTA COUNTY

*"Dedicated to Quality Service"*

April 14, 2016

Solid Waste Section  
Department of Environmental Protection  
South District Office  
2295 Victoria Avenue, Suite 364  
Ft. Myers, Florida 33902

Re: Sarasota County  
Central County Solid Waste Disposal Complex  
Permit No. 0130542-022-SO/01 (Mod# 0130542-024-SO/MM)  
WACS No. 51614  
Annual Topographic Survey and Remaining Site Life Report - 2015

To Whom It May Concern:

In accordance with Specific Condition C.14.b of the above referenced permit for the Central County Solid Waste Disposal Complex (CCSWDC), the Sarasota County Solid Waste Department is pleased to submit the annual topographic survey and remaining site life report. As shown in the supporting calculations the Phase II Class I Landfill Area has approximately 8.9 years of remaining site life from December 15, 2015 assuming a moderate increase in waste tonnage per year until reaching capacity. The topographic survey dated December 15, 2015, performed by Kucera International, Inc. and provided in Attachment A, demonstrates that the Phase II landfill slopes do not exceed 3 to 1 (H:V) and the top elevations do not exceed the maximum permitted design elevation of 121 feet NGVD. The Phase II Landfill Area is being filled and includes stormwater control features in general accordance with the permitted fill sequence plans and grades. The following calculations are provided in support of the site life determination.

### **Objective:**

Calculate the remaining landfill air space and site life in the Phase II Landfill Area located at the Central County Solid Waste Disposal Complex. The Phase I Landfill Area was closed as of November 2011 (closure certification received from FDEP in June 2013) and did not receive any waste during the subject period.

### **Knowns:**

- Topographic survey prepared by Kucera International, Inc. dated December 15, 2015 and provided to the Sarasota County Solid Waste Department by Advanced Disposal, Inc. The signed and sealed report of survey and topographic survey map sheets are provided in Attachment A for reference.

- The volume of air space used in Phase II as calculated using AutoCADD by comparing the Phase II bottom liner to the December 2015 topographic survey. Please refer to the volume report prepared by HDR Engineering, Inc. provided in Attachment B.
- Solid Waste tonnage from December 1, 2014 to December 14, 2015 as reported by scale records for the date range. Please refer to the table provided in Attachment C.

**Assumptions:**

- Total Phase II Air Space= 6,000,000 cu. yards.
- The final cover soil volume is based on 3 feet of soil which includes a 1.0 foot intermediate cover layer, 1.5 foot protective final cover layer, and 0.5 foot vegetative cover soil layer.
- The final cover surface area for Phase II is 2,659,448 square feet.
- Final Cover Soil Volume= 3 feet x 2,659,448 sq. feet / 27 feet/cu. yard= 295,494 cu. yards
- Operational Air Space Used in Phase II as of December 5, 2015 from comparing surface of waste fill from December 15, 2015 topographic survey to Phase II Bottom Liner As-built is 1,984,376 cu. yards. The surface volume report prepared by HDR Engineering, Inc. is provided in Attachment B.
- Average Monthly Waste Acceptance Rate was 23,319 tons/month (based on December 2014 through November 2015, this does not include December 1 – December 14 of 2015). See table provided in Attachment C.
- Apparent Landfill Density equal to contractual density of 1,428 lb/cu. yards. The apparent landfill density is waste tonnage measured by the scales divided by the Operational Air Space Used which includes waste and initial (daily) cover soils.
- Operational Air Space Available, Used, and Remaining include the volume of waste and initial (daily) cover soils.

**Calculations:**

1. Total Phase II Air Space- Final Cover Soil Volume = Operational Air Space Available

$$6,000,000 \text{ cu. yards} - 295,494 \text{ cu. yards} = 5,704,506 \text{ cu. yards}$$

2. Operational Air Space Available- Operational Air Space Used in Phase II as of December 8, 2013 = Operational Air Space Remaining

$$5,704,506 \text{ cu. yards} - 1,984,376 \text{ cu. yards} = 3,720,130 \text{ cu. yards}$$

3. Operational Air Space Remaining X Apparent Landfill Density = Remaining Waste Tonnage

$$3,720,130 \text{ cu. yards} \times 1,428 \text{ lbs/cu. yard} / 2,000 \text{ lbs/ton} = 2,656,172 \text{ tons}$$

4. Remaining Waste Tonnage / Average Monthly Waste Acceptance Rate = Remaining Site Life

$$2,656,172 \text{ tons} / 23,319 \text{ tons/month} = 113.9 \text{ months} = 9.5 \text{ years from December 15, 2015}$$

Therefore, the Phase II Landfill is projected to reach capacity on or about mid-June 2025 assuming 0% increase in waste tonnage through the operational life of Phase II. This is in contrast to the projected date of February 2026 from the April 2015 site life report. The decrease in site life of approximately 8 months is attributed to an increase of waste accepted from 22,043 tons per month in 2014 to 23,319 tons per month in 2015. This is a 5.8% increase in the average monthly tonnage accepted for disposal in the Class I landfill as opposed to the population projected increase of 1.26% used in last year's site life calculation. The subsequent projected year's tonnages were then adjusted to match the new higher tonnage rate, resulting in the decrease in site life shown in this year's report.

Using an average annual population increase based on estimates through 2024 from the *Florida Demographic Estimating Conference, December 2015 and UF, BEBR, Florida Population Studies, Volume 49, Bulletin 174, January 2016* medium county projections would decrease the remaining site life of Phase II to 107 months (8.9 years). This results in Phase II reaching capacity on or about November 2024. Please refer to the calculation sheet provided in Attachment D.

Please contact me anytime at 941-861-1572 if you have questions or require additional information regarding the site life report and attachments.

Sincerely,

Jason Timmons, PE  
Solid Waste Engineer  
FL PE#65869



Xc: Lois Rose, Sarasota County  
Richard Siemering, HDR Engineering, Inc.

Attachments (4)

- Attachment A - Topographic Survey
- Attachment B - Volume Report
- Attachment C - Tonnage Report
- Attachment D - Site Life Calculations with Population Increase

ATTACHMENT A

TOPOGRAPHIC SURVEY

## **Survey Report for Sarasota Landfill**

**Kucera International Project No:** 60502 Sarasota Landfill  
**Type of Survey:** Topographic Survey  
**Date of Survey:** This map is based on aerial photography collected December 15, 2015  
**Site:** Sarasota Landfill  
**Client:** Advanced Disposal

### **Accuracy Statement:**

This survey meets or exceeds National Map Accuracy Standards. Ninety percent of the mapping should meet or exceed the tolerances stated below when the photogrammetric value is compared to a field survey value for well-defined features. This mapping also meets or exceeds the Florida Minimum Technical Standards.

#### **Vertical:**

Photogrammetrically derived breaklines and mass points have been collected to generate contours with an estimated vertical accuracy of 0.5'. Dashed contours in obscured areas are approximate and should be field checked before using. Spot elevations and well defined features have been measured to an estimated vertical accuracy of 0.25'.

#### **Horizontal:**

Well defined features have been measured to an estimated horizontal accuracy of 3.33'.

#### **Map Plotting:**

This map is intended to be plotted at a scale of 1:1200 or smaller.

### **Lineage:**

This topographic map is based on a control supplied to Kucera International in June 2012 by Advanced Disposal. The digital photography was georeferenced to the existing control data.

### **Datum:**

**Horizontal:** Florida State Plane Coordinate System, Florida West Zone (902),  
North American Datum of 1983 (NAD83).

**Vertical Datum:** Elevations based on the National Geodetic Vertical Datum of 1929  
(NAVD29)

**Units:** U.S. Survey Feet

## **Targeted Control Points Used for Photogrammetric Mapping:**

### Datums:

Horizontal: Florida State Plane Coordinate System, Florida West Zone (902),  
North American Datum of 1983 (NAD83).

Vertical: Elevations based on the National Geodetic Vertical Datum of 1929  
(NAVD29).

U.S. Survey Feet

<b>Point #</b>	<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>	<b>Type</b>
100	1043942.95	527486.08	25.54	Vertical
101	1044001.77	527484.64	25.72	Horizontal
102	1043994.08	529162.59	28.93	Horizontal
103	1043880.06	529480.56	25.17	Horizontal & Vertical
104	1043955.55	530922.46	25.43	Vertical
105	1043983.21	530954.17	29.33	Horizontal
106	1042430.90	531254.61	27.79	Horizontal & Vertical
107	1042117.99	531302.40	32.71	Horizontal
108	1040914.16	530922.09	25.49	Vertical
109	1040876.71	530973.47	21.36	Horizontal
110	1040921.02	529753.61	25.83	Vertical
111	1040953.04	529789.47	25.10	Horizontal
112	1042422.45	529753.48	32.87	Vertical
113	1040436.50	527861.59	21.50	Vertical
114	1040533.87	527844.38	23.32	Horizontal
115	1042655.49	527194.47	25.52	Vertical
116	1042905.80	527173.20	27.29	Horizontal
















### **Abbreviations**














W.E. - Water Elevation

NAD83 – North American Datum of 1983

NGVD29- National Geodetic Vertical Datum of 1929

## Legend

	PAVED ROAD
	UNPAVED ROAD
	UNPAVED DRIVE OR PARKING
	TRAIL
	GUARDRAIL
	BUILDING
	DECK
	MISC. OBJECT (LINE)
	MISC. OBJECT (SYMBOL)
	BRIDGE
	FENCE
	WATERLINE (LAKE, STREAM, RIVER)
	DITCH
	CULVERT
	TREELINE

	BRUSHLINE
	10' INDEX CONTOUR
	2' INTERMEDIATE CONTOUR
	DEPRESSION CONTOUR
	SPOT ELEVATION
	HORIZONTAL CONTROL POINT
	VERTICAL CONTROL POINT
	UTILITY POLE
	LIGHT POLE
	TREE
	SWAMP AREA
	TANK / SILD
	PIPE INLET

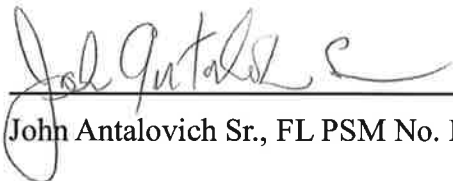
### **Measurement Methods:**

This map was produced using aerial photogrammetric methods using photography captured on December 13, 2015 using a Leica ADS40/SH51 digital camera. The imagery was captured to yield a ground pixel size of 0.25 feet. The digital images were then georeferenced using Leica XPro software suite utilizing ORIMA aerotriangulation software. The existing mapping was then updated using BAE Socet Set combined with Cardinal Systems VR-1 mapping software. Areas of change were delineated and the existing breakline and mass point information was updated. As an independent check of the mapping, LiDAR (Light Detection and Ranging) data was collected and adjusted to the existing control. The LiDAR data was viewed in Socet Set along with the updated mapping to check for agreement. Contours in the changed area were generated using Cardinal Systems VR-1 mapping software and the data was tied into the existing mapping. In areas where the ground is obscured by trees or heavy shadows the contours should be treated as approximate and they do not meet the accuracy standards stated above.

### **Limitations:**

Field surveys should be used when a greater accuracy is required than the accuracy stated in this report.

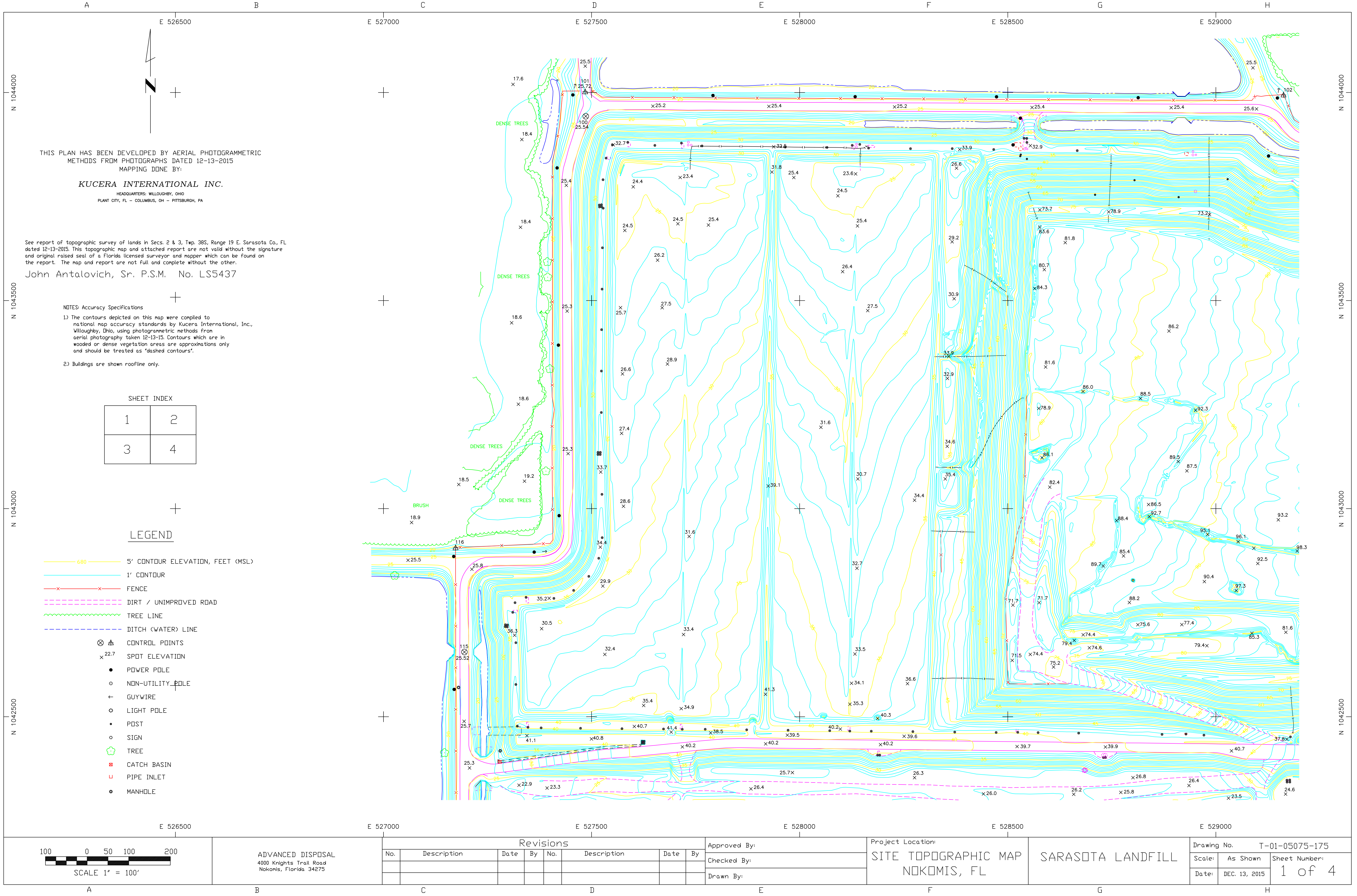
**Note: This report and accompanying map titled Topographic Survey of Sarasota Landfill are not full and complete without the other and are not valid without the signature and original raised seal of a Florida licensed surveyor and mapper.**

**Signed:**   
John Antalovich Sr., FL PSM No. LS5437

**Seal:** \_\_\_\_\_

**Date:**   
January 14, 2016

**Kucera International Inc. License No.:** LB6643



THIS PLAN HAS BEEN DEVELOPED BY AERIAL PHOTOGRAMMETRIC METHODS FROM PHOTOGRAPHS DATED 12-13-2015  
MAPPING DONE BY:

KUCERA INTERNATIONAL INC.

HEADQUARTERS: WILLOUGHBY, OHIO  
PLANT CITY, FL - COLUMBUS, OH - PITTSBURGH, PA

See report of topographic survey of lands in Secs. 2 & 3, Twp. 38S, Range 19 E, Sarasota Co., FL dated 12-13-2015. This topographic map and attached report are not valid without the signature and original raised seal of a Florida licensed surveyor and mapper which can be found on the report. The map and report are not full and complete without the other.

John Antalovich, Sr. P.S.M. No. LS5437

NOTES: Accuracy Specifications

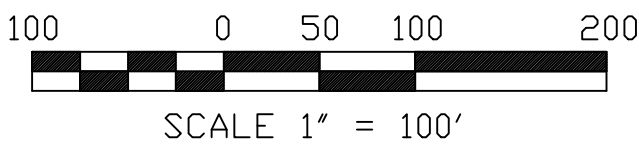
- 1) The contours depicted on this map were compiled to national map accuracy standards by Kucera International, Inc., Willoughby, Ohio, using photogrammetric methods from aerial photography taken 12-13-15. Contours which are in wooded or dense vegetation areas are approximations only and should be treated as 'dashed contours'.
- 2) Buildings are shown roofline only.

SHEET INDEX

1	2
3	4

LEGEND

- 680 5' CONTOUR ELEVATION, FEET (MSL)
- 1' CONTOUR
- FENCE
- DIRT / UNIMPROVED ROAD
- TREE LINE
- DITCH (WATER) LINE
- CONTROL POINTS
- SPOT ELEVATION
- POWER POLE
- NON-UTILITY POLE
- GUYWIRE
- LIGHT POLE
- POST
- SIGN
- TREE
- CATCH BASIN
- PIPE INLET
- MANHOLE



ADVANCED DISPOSAL  
4000 Knights Trail Road  
Nokomis, Florida 34275

Revisions

No.	Description	Date	By	No.	Description	Date	By

Approved By:

Checked By:

Drawn By:

Project Location:

SITE TOPOGRAPHIC MAP  
NOKOMIS, FL

SARASOTA LANDFILL

Drawing No.

T-01-05075-175

Scale:

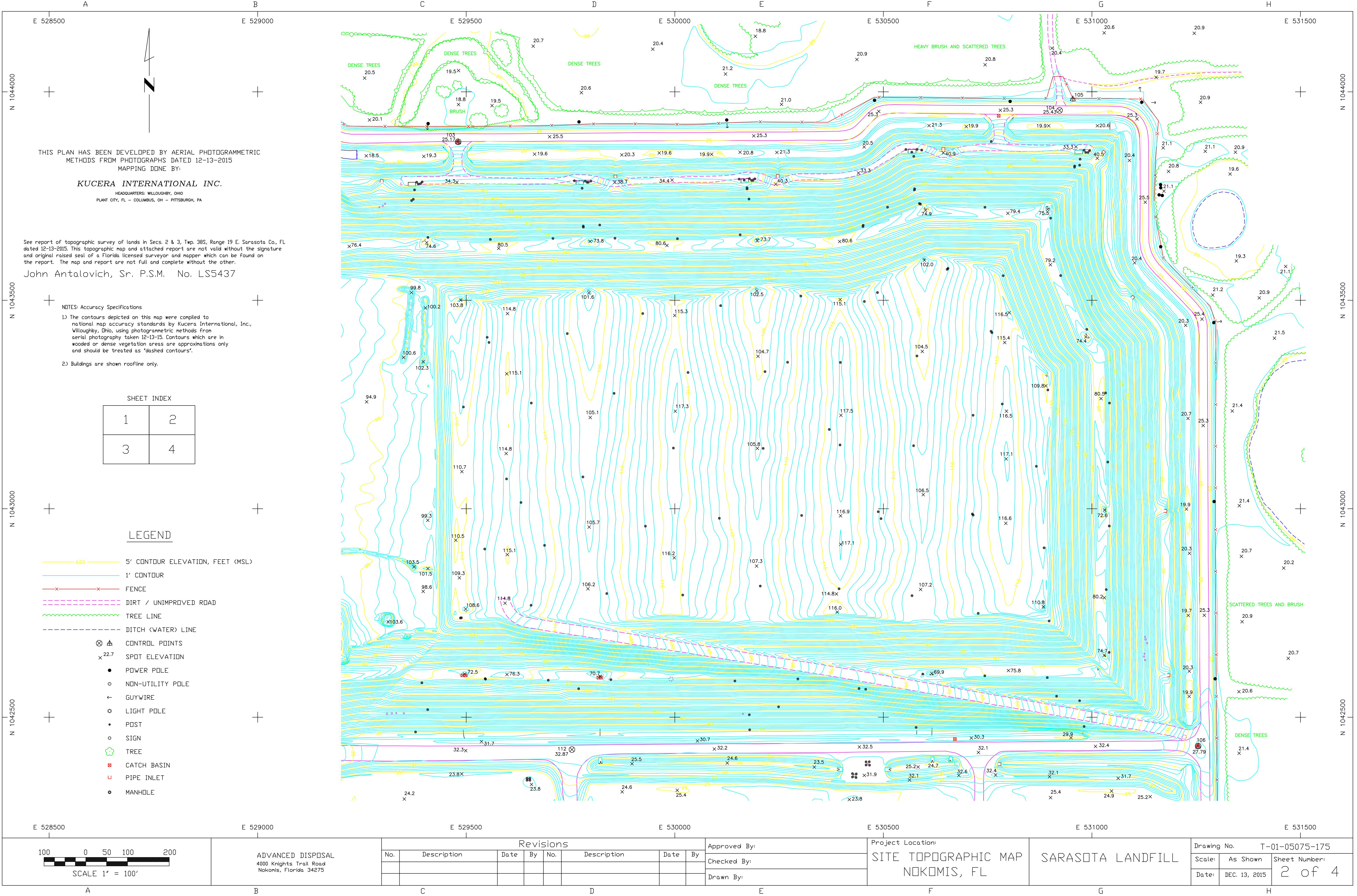
As Shown

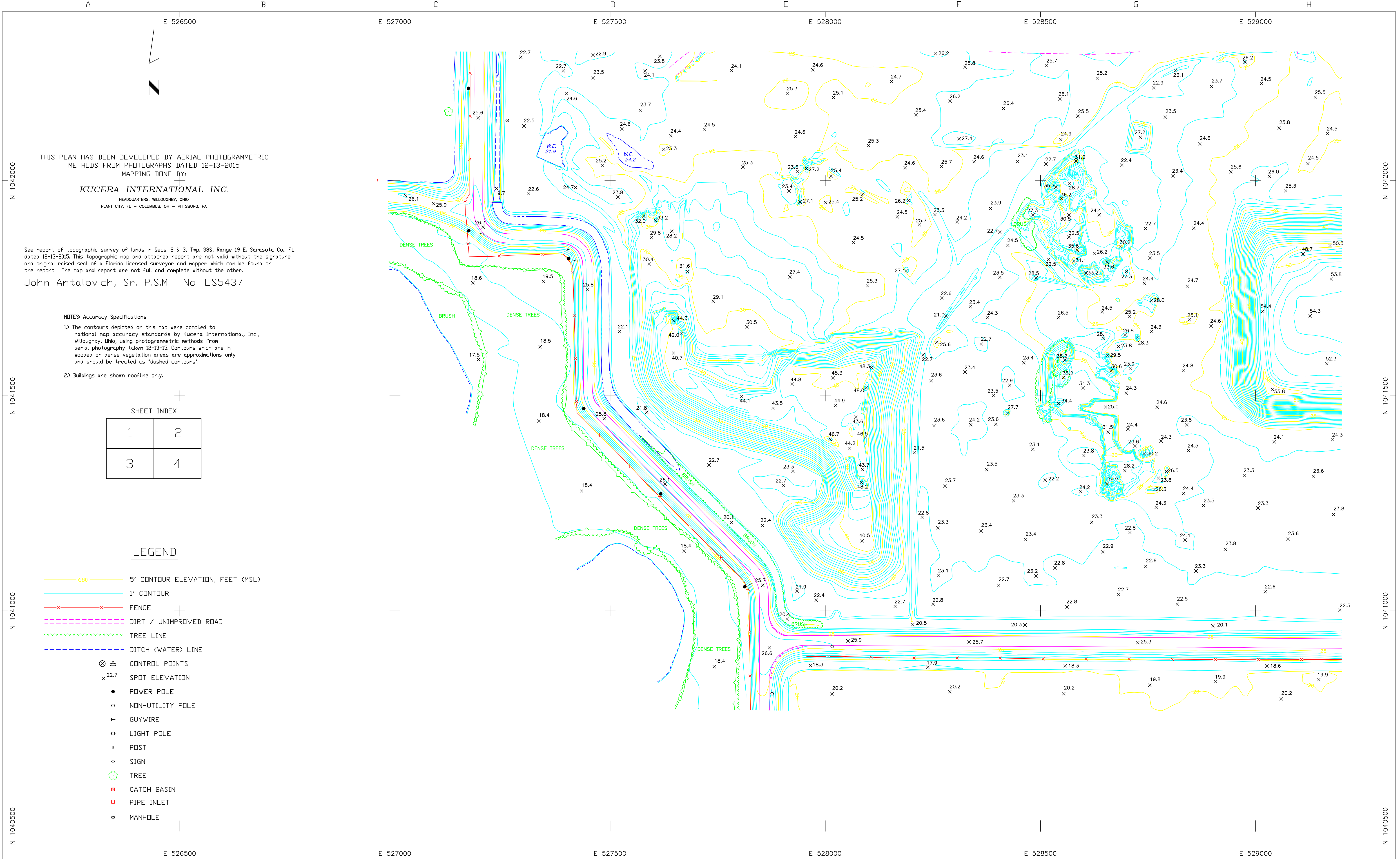
Sheet Number:

Date:

DEC. 13, 2015

1 of 4





THIS PLAN HAS BEEN DEVELOPED BY AERIAL PHOTOGRAMMETRIC METHODS FROM PHOTOGRAPHS DATED 12-13-2015  
MAPPING DONE BY:  
**KUCERA INTERNATIONAL INC.**  
HEADQUARTERS: VILLOUGHBY, OHIO  
PLANT CITY, FL - COLUMBUS, OH - PITTSBURG, PA

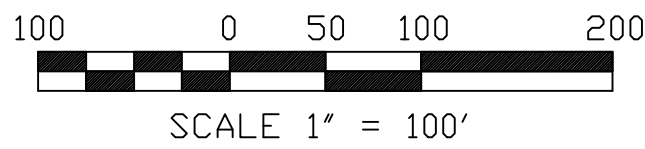
See report of topographic survey of lands in Secs. 2 & 3, Twp. 38S, Range 19 E, Sarasota Co., FL dated 12-13-2015. This topographic map and attached report are not valid without the signature and original raised seal of a Florida licensed surveyor and mapper which can be found on the report. The map and report are not full and complete without the other.  
John Antalovich, Sr. P.S.M. No. LS5437

- NOTES: Accuracy Specifications
- 1) The contours depicted on this map were compiled to national map accuracy standards by Kucera International, Inc., Villoughby, Ohio, using photogrammetric methods from aerial photography taken 12-13-15. Contours which are in wooded or dense vegetation areas are approximations only and should be treated as 'dashed contours'.
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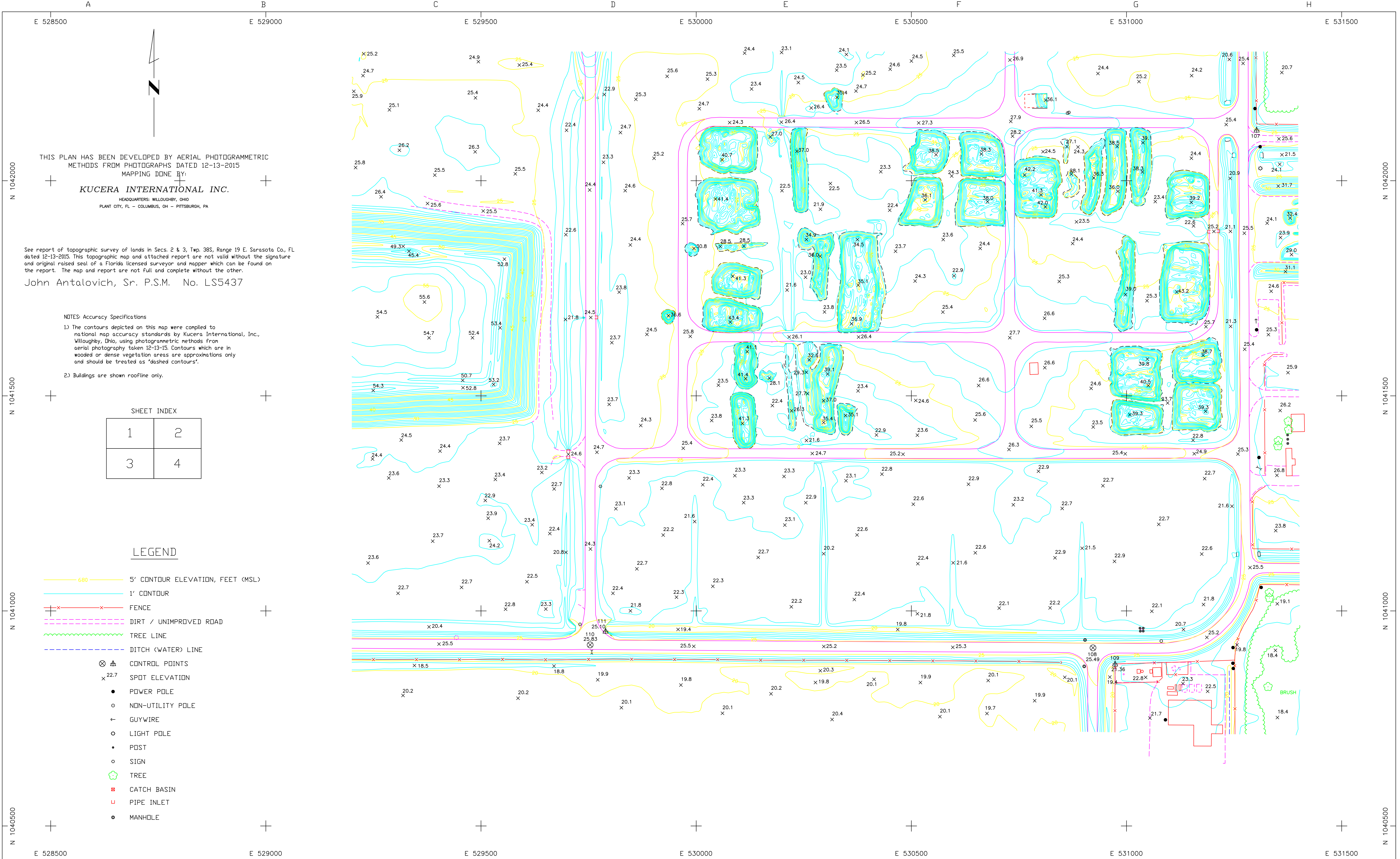
Revisions							
No.	Description	Date	By	No.	Description	Date	By

Approved By:  
Checked By:  
Drawn By:

Project Location:  
SITE TOPOGRAPHIC MAP  
NOKOMIS, FL

SARASOTA LANDFILL

Drawing No. T-01-05075-175  
Scale: As Shown  
Date: DEC. 13, 2015  
Sheet Number: 3 of 4



THIS PLAN HAS BEEN DEVELOPED BY AERIAL PHOTOGRAMMETRIC METHODS FROM PHOTOGRAPHS DATED 12-13-2015  
MAPPING DONE BY:  
**KUCERA INTERNATIONAL INC.**  
HEADQUARTERS: WILLOUGHBY, OHIO  
PLANT CITY, FL - COLUMBUS, OH - PITTSBURGH, PA

See report of topographic survey of lands in Secs. 2 & 3, Twp. 38S, Range 19 E, Sarasota Co., FL dated 12-13-2015. This topographic map and attached report are not valid without the signature and original raised seal of a Florida licensed surveyor and mapper which can be found on the report. The map and report are not full and complete without the other.  
John Antalovich, Sr. P.S.M. No. LS5437

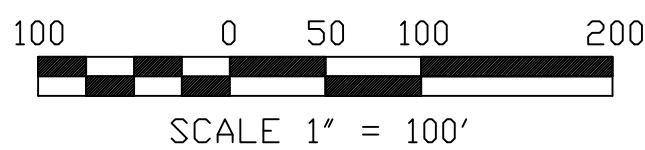
NOTES: Accuracy Specifications

- 1) The contours depicted on this map were compiled to national map accuracy standards by Kucera International, Inc., Willoughby, Ohio, using photogrammetric methods from aerial photography taken 12-13-15. Contours which are in wooded or dense vegetation areas are approximations only and should be treated as 'dashed contours'.
- 2) Buildings are shown roofline only.

SHEET INDEX	
1	2
3	4

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ADVANCED DISPOSAL  
4000 Knights Trail Road  
Nokomis, Florida 34275

Revisions

No.	Description	Date	By	No.	Description	Date	By

Approved By:  
Checked By:  
Drawn By:

Project Location:  
SITE TOPOGRAPHIC MAP  
NOKOMIS, FL

SARASOTA LANDFILL

Drawing No. T-01-05075-175  
Scale: As Shown  
Date: DEC. 13, 2015  
Sheet Number: 4 of 4

ATTACHMENT B

VOLUME REPORT



March 31, 2016  
Mr. Jason Timmons, P.E.  
Solid Waste Engineer  
Sarasota County Solid Waste Operations  
4000 Knights Trail Road  
Nokomis, FL 34275

RE: **Remaining Site Life Volumes - ACAD Calculations**  
**Phases I and II**  
**Central County Solid Waste Disposal Complex**  
**Sarasota County, Florida**

Dear Jason:

As requested, HDR Engineering, Inc. (HDR) has performed the requested volume comparisons for Phases I and II of the Central County Solid Waste Disposal Complex (CCSWDC). Specifically, HDR performed eight volume calculations as shown below, including color coded drawings (see attached) to assess the depth of cut and fill for each scenario. Provided below are summaries of each of the five volume calculations.

Phase II, Sub-Cells 1 and 2, Modified Top of Sand Compared to December 2015 Topographic Survey (See Sheet C-01)

Top of Sand As-Built vs. December 2015 Survey = 1,984,376 cy (net fill)

Phase II, Sub-Cells 3 and 4, Modified Top of Sand Compared to December 2015 Topographic Survey (See Sheet C-02)

Top of Sand As-Built vs. December 2015 Survey = 47,037 cy (net cut)

Phase II, Sub-Cells 1 and 2, December 2014 Topographic Survey to December 2015 Topographic Survey (See Sheet C-03)

December 2014 Survey vs. December 2015 Survey = 402,026 cy (net fill)

Phase II, Sub-Cells 3 and 4, December 2014 Topographic Survey to December 2015 Topographic Survey (see Sheet C-04)

December 2014 Survey vs. December 2015 Survey = 94 cy (net fill)

Mr. Jason Timmons, P.E.  
March 31, 2016  
Page 2

Phase I, December 2014 Topographic Survey to December 2015 Topographic Survey (see Sheet C-05)

December 2014 Survey vs. December 2015 Survey = 64,221 cy (net cut)

Phase I, As-Built Final Cover to December 2015 Topographic Survey (see Sheet C-06)

Phase I As-Built Final Cover vs. December 2015 Survey = 304,367 cy (net fill)

Phase II, Subcell 3, Modified Top of Sand As-Built to December 2015 Topographic Survey (see Sheet C-07)

Phase II, Subcell 3, Top of Sand As-Built vs. December 2015 Survey = 19,788 cy (net cut)

Phase II, Subcell 4, Top of Sand As-Built to December 2015 Topographic Survey (see Sheet C-08)

Phase II, Subcell 4, Top of Sand As-Built vs. December 2015 Survey = 27,249 cy (net cut)

Please let us know if you have any questions or require additional information.

Sincerely,  
**HDR ENGINEERING, INC.**



Richard A. Siemering  
Florida Waste Operations Manager

Attachments



# Memo

Date: Thursday, March 10, 2016

Project: Sarasota CCSWDC Site Life Volumes Calculations

To: Richard Siemering

From: Braden Johnson

Subject: Internal Volumes Report Memo

As requested by Sarasota County, I have prepared seven separate volume calculations using AutoCAD Civil 3D 2014 comparing volume differences between the Phase II Top of Sand As-Built, and the December 2014 and December 2015 topographic surveys. Calculated volumes are for the following five scenarios:

1. Volume from Phase II top of sand as-built surface to December 2015 aerial topographic surface, active Phase II area only (Subcells 1 and 2). See sheet C-01.
2. Volume with cut/fill color map of top of sand (compare Phase II top of sand as-built surface to December 2015 aerial topographic surface), Phase II Subcells 3 and 4. See sheet C-02.
3. Volume from December 2014 aerial topographic surface to December 2015 aerial topographic survey, active Phase II area only (Subcells 1 and 2). See sheet C-03.
4. Volume from December 2014 aerial topographic surface to December 2015 aerial topographic survey, active Phase II area only (Subcells 3 and 4). See sheet C-04.
5. Volume from December 2014 aerial topographic surface to December 2015 aerial topographic survey, Phase I area only, cut/fill grid map. See sheet C-05.
6. Volume from Phase I Final Cover grades to December 2015 aerial topographic survey, Phase I area only, cut/fill grid map. See sheet C-06.
7. Volume from Phase II top of sand as-built surface to December 2015 aerial topographic survey, (Subcell 3 only), cut/fill grid map. See sheet C-07.
8. Volume from Phase II top of sand as-built surface to December 2015 aerial topographic survey, (Subcell 4 only), cut/fill grid map. See sheet C-08.

Surfaces models used for calculations were created using the following sources:

- 2012 Topographic survey provided by Kucera International Inc., Willoughby, Ohio, Dated December 1, 2012.
- 2014 Topographic survey provided by Kucera International Inc., Willoughby, Ohio, Dated December 1, 2014.



- 2015 Topographic survey provided by Kucera International Inc., Willoughby, Ohio, Dated December 5, 2014.
- Top of Sand As-Built Survey by Hyatt Survey Services, Inc. (Project #09-1450) Dated May 17, 2009, CAD File 00c-01A\_ftp.dwg

Files will be provided in AutoCAD Civil 3D 2014 (AutoCAD 2010 file format) and data for surfaces for all seven scenarios are provided in LandXML file format. Drawings for each scenario have been color coded to facilitate review for areas requiring cut/fill.

The results of the volumes are as follows:

1. Volume from Phase II top of sand as-built surface to December 2015 aerial topographic surface, active Phase II area only (Subcells 1 and 2). See sheet C-01.

Volume Cut: 1,968.059	Volume Fill: 1,986,343.646	Volume Total: 1,984,375.587
Compare Surface: 12-2015 Sarasota Existing Topo Base Surface: Modified Top of Sand*		

\*(Phase II Subcells 1-4 As-built Top of Sand / December 2012 aerial topographic surface)

2. Volume with cut/fill color map of top of sand (compare Phase II top of sand as-built surface to December 2015 aerial topographic surface), Phase II Subcells 3 and 4. See sheet C-02.

Volume Cut: 47,232.505	Volume Fill: 195.442	Volume Total: -47,037.063
Compare Surface: 12-2015 Sarasota Existing Topo Base Surface: Modified Top of Sand*		

\*(Phase II Subcells 1-4 As-built Top of Sand / December 2012 aerial topographic surface)

3. Volume from December 2014 aerial topographic surface to December 2015 aerial topographic survey, active Phase II area only (Subcells 1 and 2). See sheet C-03.

Volume Cut: 13,368.042	Volume Fill: 415,394.500	Volume Total: 402,026.459
Compare Surface: 12-2015 Sarasota Existing Topo Base Surface: 12-2014 Sarasota Existing Topo		



4. Volume from December 2014 aerial topographic surface to December 2015 aerial topographic survey, active Phase II area only (Subcells 3 and 4). See sheet C-04.

Volume Cut: 41.550	Volume Fill: 135.056	Volume Total: 93.506
Compare Surface: 12-2015 Sarasota Existing Topo Base Surface: 12-2014 Sarasota Existing Topo		

5. Volume from December 2014 aerial topographic surface to December 2015 aerial topographic survey, Phase I area only, cut/fill grid map. See sheet C-05.

Volume Cut: 64,332.511	Volume Fill: 11.438	Volume Total: -64,221.073
Compare Surface: 12-2015 Sarasota Existing Topo Base Surface: 12-2014 Sarasota Existing Topo		

6. Volume from Phase I Final Cover grades to December 2015 aerial topographic survey, Phase I area only, cut/fill grid map. See sheet C-06.

Volume Cut: 186,701.527	Volume Fill: 491,069.059	Volume Total: 304,367.33
Compare Surface: 12-2015 Sarasota Existing Topo Base Surface: Phase I Final Cover As-built		

7. Volume from Phase II top of sand as-built surface to December 2015 aerial topographic survey, (Subcell 3 only), cut/fill grid map. See sheet C-07.

Volume Cut: 19,911.033	Volume Fill: 123.145	Volume Total: -19,787.889
Compare Surface: 12-2015 Sarasota Existing Topo Base Surface: Modified Top of Sand*		

\*(Phase II Subcells 1-4 As-built Top of Sand / December 2012 aerial topographic surface)

8. Volume from Phase II top of sand as-built surface to December 2015 aerial topographic survey, (Subcell 4 only), cut/fill grid map. See sheet C-08.

Volume Cut: 27,321.472	Volume Fill: 72.298	Volume Total: -27,249.174
Compare Surface: 12-2015 Sarasota Existing Topo Base Surface: Modified Top of Sand*		

\*(Phase II Subcells 1-4 As-built Top of Sand / December 2012 aerial topographic surface)

ATTACHMENT C

TONNAGE REPORT

CCSWDC Monthly Tonnage to Class I Landfill December 1, 2014 to December 14, 2015

Month	Tonnage to Class I Landfill (tons)	
Dec-14	23,978	
Jan-15	23,974	
Feb-15	22,398	
Mar-15	25,202	
Apr-15	24,671	
May-15	22,575	
Jun-15	22,993	
Jul-15	23,902	
Aug-15	21,870	
Sep-15	22,405	
Oct-15	23,267	
Nov-15	22,589	
Dec 1 to Dec 14-15	11,348	
<b>Average</b>	<b>23,319</b>	December 2014 through November 2015
<b>Total</b>	<b>291,173</b>	December 1, 2014 through December 14, 2015

Source: CCSWDC scalehouse tonnage reports.

## ATTACHMENT D

### SITE LIFE CALCULATIONS WITH POPULATION INCREASE

**Sarasota County Central County Solid Waste Disposal Complex Phase II Landfill Site Life  
April 14, 2016**

Total Available Disposal Volume of Phase II = 6,000,000 cubic yards  
 Final Cover Soil Volume (3 feet) = 295,494 cubic yards  
 Total Available Waste Disposal Volume of Phase II = 5,704,506 cubic yards  
 Operational Days per Year = 308 days

Year	Calendar Year	Projected Population <sup>1</sup>	Percent Increase <sup>2</sup>	Waste Received <sup>3</sup> (tons/day)	Waste Received (tons/year)	Assumed Density <sup>4</sup> (tons/cy)	Volume of Waste Received per year (cy)	Cumulative Capacity Used in Phase II (cy)	Volume of Class I Remaining (cy)	Notes Date of Topo
-	2010	-	-	-	-	-	-	0	5,704,506	
-	2011	-	-	Partial Year	150,866	0.66	227,022	227,022	5,477,484	
-	2012	-	-	860	264,846	0.50	530,885	757,907	4,946,599	12/01/2012
-	2013	-	-	841	259,155	0.62	415,644	1,173,551	4,530,955	12/08/2013
	2014	-	-	865	266,453	0.65	408,868	1,582,419	4,122,087	12/01/2014
0	2015	392,090	-	913	281,149	0.70	402,026	1,984,445	3,720,061	12/15/2015
1	2016	397,420	1.36%	925	284,971	0.71	399,119	2,383,564	3,320,942	Current Year
2	2017	402,389	1.25%	937	288,534	0.71	404,109	2,787,673	2,916,833	
3	2018	407,055	1.16%	948	291,880	0.71	408,795	3,196,468	2,508,038	
4	2019	411,522	1.10%	958	295,083	0.71	413,281	3,609,749	2,094,757	
5	2020	415,923	1.07%	968	298,239	0.71	417,701	4,027,450	1,677,056	
6	2021	420,263	1.04%	978	301,351	0.71	422,060	4,449,510	1,254,996	
7	2022	424,522	1.01%	988	304,404	0.71	426,337	4,875,846	828,659	
8	2023	428,684	0.98%	998	307,389	0.71	430,517	5,306,363	398,143	
9	2024	432,732	0.94%	1,007	310,291	0.71	434,582	5,740,945	-36,439	
10	2025	436,649	0.91%	1,017	313,100	0.71	438,516	6,179,460	-474,955	
<b>Design Life<sup>6</sup> = 8.92 years from date of last topo.</b> <b>Approximate Date of Completion = 11/13/2024</b>										

Notes:

- Population Data from the Florida Demographic Estimating Conference, December 2015 and UF, BEBR, Florida Population Studies, Volume 49, Bulletin 174, January 2016 medium county projections provided by the Office of Economic and Demographic Research (EDR).
- The percent increase is based on the EDR population projections for Sarasota County.
- Tonnage based on scale data reports.
- The assumed is an apparent density with cover soil included in volume, therefore a reduction of the total available volume of the landfill is not required for this calculation. This value is a conservative estimate of the actual compacted density in the landfill. The densities before the current year are actual from volume and tonnage data.
- The total available volume was calculated using AutoCAD.
- The design life of the landfill was determined by dividing the volume of waste remaining in the previous year before airspace becomes negative in the table by the total amount of waste that is generated in that year and adding the number of years previous (eg. 398,143 (year 8) / 434,582 (year 9) + 8 years = design life).