SARASOTA COUNTY
"Dedicated to Quality Service"

April 20, 2011

Susan Pelz, P.E.
Solid Waste Section
Department of Environmental Protection
Southwest District Office
13051 North Telecom Parkway
Temple Terrace, Florida 33637-0926

RE: Central County Solid Waste Disposal Complex
Permit Number 130542-007-SO/01
Annual Topographic Survey and Disposal Capacity Report - 2010
Email Request of April 13, 2011 – Signed/Sealed Copies of Full Size Topographic Survey

Dear Ms. Pelz:

Per your request, enclosed are the full-size topographic surveys. The surveys have been signed and sealed in Kucera South report of December 2, 2010.

If you have any questions or concerns, please contact me at (941)861-1589 or lerose@scgov.net.

Sincerely,

Lois E. Rose
Manager, Solid Waste

Enc

Lois E. Rose

From: Pelz, Susan [Susan.Pelz@dep.state.fl.us]
Sent: Wednesday, April 13, 2011 8:48 AM
To: Lois E. Rose
Cc: Morris, John R.; Morgan, Steve
Subject: Annual topo & capacity

Lois,

The Department has received the annual topographic survey & capacity analysis. Please provide full-size hard copies of the topographic surveys that are signed and sealed by the professional land surveyor or mapper.

If you have any questions, please call or email (email is better).

Susan J. Pelz, P.E.
Solid Waste Program Manager
Southwest District

13051 N. Telecom Parkway
Temple Terrace, Fl. 33637
813-632-7600 x 386
susan.pelz@dep.state.fl.us

The Department of Environmental Protection values your feedback as a customer. DEP Secretary Herschel T. Vinyard Jr. is committed to continuously assessing and improving the level and quality of services provided to you. Please take a few minutes to comment on the quality of service you received. Simply click on this link to the DEP Customer Survey. Thank you in advance for completing the survey.

KUCERA SOUTH

PHOTOGRAMMETRIC CONSULTANTS

110 W. Reynolds Street, Suite 202, Plant City, Florida 33563-3379
Tel: (813) 754-9247, Fax: (813) 754-9830
Email: l.towles@kucerasouth.com www.kucerainternational.com

PACKING SLIP

SHIP TO:Sarasota County Solid Waste
4000 Knights Trail Road
Nokomis, Florida 34275
ATTN: Lois Rose

DATE:4-18-2011 **KUCERA JOB NO.: 59763**

RE: Sarasota Co.,FL Landfill / Nokomis,FL

QUANTITY	SCALE	DESCRIPTION
1 Set (4)	1"=100'	Mapping Plots
1		Survey Report

DATE OF AERIAL PHOTOGRAPHY:12-2-2010 **PURCHASE ORDER NO. :**

SHIPPED VIA: Mail **BY: Larry E. Towles PSM,CP**

PLEASE REFER TO KUCERA JOB NUMBER ON ALL CORRESPONDENCE

Known Shortage or Damage

Check carefully the number of pieces and the condition of the shipment with the carrier's delivery receipt and if a problem/error is evident, contact us immediately.

Concealed Shortage or Damage

If loss or damage is not evident at time of delivery, it should be reported to shipper and carrier immediately on discovery so that inspection or notification can be made. Carrier regulations require that such claims be made within 15 days of delivery. Shipping carton and packing materials should be saved for inspection.

KUCERA INTERNATIONAL INC.
PHOTOGRAMMETRISTS • GEOMATIC PROFESSIONALS • ENGINEERS

KUCERA SOUTH

A wholly owned subsidiary of Kucera International, Inc.
Certificate of Authorization Number 6643
110W. Reynolds Street, Suite 202
Plant City, Florida 33563

Corporate Headquarters
38133 Western Parkway
Willoughby, OH 44094-7589
(440) 975-4230
Fax (440) 975-4238
map@kucerainternational.com

Henderson Aerial Surveys
3889 Grove City Road
Grove City, OH 43123-9193
(614) 539-3925
Fax (614) 539-3928
map@hendersonaerial.com

Keddal Aerial Mapping
1121 Boyce Road, Suite 3100
Pittsburgh, PA 15241-3955
(724) 942-2881
Fax (724) 942-2885
map@keddalaerial.com

Kucera South
110 W. Reynolds Street
Suite 202
Plant City, FL 33563-3379
(813) 754-9247
Fax (813) 754-9830
l.towles@kucerasouth.com

Kucera Southeast
41 Andover Place
Bluffton, SC 29909
(843) 705-2592
Cell (843) 540-2157
r.mangus@kucerainternational.com

Kucera West
18921G East Valley View Parkway
PMB 296
Independence, MO 64055
(816) 516-0493
(866) 336-2908
t.connelly@kucerainternational.com

REPORT OF TOPOGRAPHIC MAP SURVEY OF LANDS IN Sections 2 &3 -Township 38 South-Range 19 East In Sarasota County, Florida know as Sarasota Landfill for Veolia Enviromental Nokomis, Florida

Our Project No. 59763-Date of Photography December 2, 2010

Ground Surveys and Custodianship

Ground survey control for mapping was provided by Veolia Enviromental. Datum based on SPCS Fl West Zone NAD 83 Adj. and NGVD 1929.

This topographic map and report is not valid without the signature and original seal of a Florida licensed surveyor and mapper which can be found at the end of this report. The map and report are not full and complete without the other.

ACCURACY

Horizontal and vertical ground surveys meet minimum relative accuracy for photogrammetric topographic mapping at 1" = 100' with 1' contours. Photogrammetric topographic mapping meets accuracy standards as classified in the Florida Minimum Technical Standards—Chapter 5J-17 FAC.

LIMITATIONS

No ground surveys were obtained to check photogrammetric horizontal and vertical accuracy's. . This map for viewing at a scale of 1"=100' or smaller.

Planimetric features and vertical data that is obscured from the stereo operators view due to heavy brush, long grass, tree cover or other physical features are to be considered horizontally and vertically indefinite and further ground surveys must be taken to bring these features to an accuracy that meets Minimum Technical Standards. Buildings are shown roof line only.

Continued

Sarasota Co. Landfill
Topographic Mapping
12-2-2010
Nokomis, FL

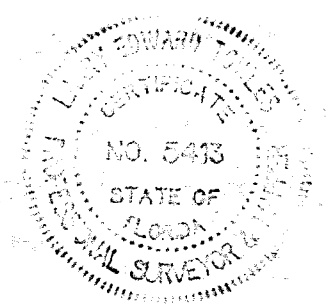
Prepared for:
Client: Veolia Enviromental
Address: 4000 Knights Trail Road
City : Nokomis, Florida 34275

Survey and Mapper in Responsible Charge:
Larry E. Towles
KUCERS SOUTH
Professional Surveyor and Mapper
License Number LS5413

Larry E. Towles

Date Signed: 12-2-2010

Seal



SARASOTA COUNTY
"Dedicated to Quality Service"

April 11, 2011

Susan Pelz, P.E.
Solid Waste Section
Department of Environmental Protection
Southwest District Office
13051 North Telecom Parkway
Temple Terrace, Florida 33637-0926

RE: Central County Solid Waste Disposal Complex
Permit Number 130542-007-SO/01
Annual Topographic Survey and Disposal Capacity Report - 2010

Dear Ms. Pelz:

Enclosed are the annual Topographic Survey and Disposal Capacity Report as specified in Specific Condition Part C.13.c.

If you have any questions or concerns, please contact me at (941)861-1589 or lerose@scgov.net.

Sincerely,

Lois E Rose

Lois E. Rose
Manager, Solid Waste

Enclosure

Sarasota County
Central County Solid Waste Disposal Complex (CCSWDC) Phases I & II

DEP Permit No. 130542-007-SO/01

Remaining Capacity Report

Date: April 5, 2011

Sarasota County

Sarasota County Solid Waste
4000 Knights Trail Road
Nokomis, FL 34241

Spencer L. Anderson, P.E.
Certification No. 64012

Sarasota County

Central County Solid Waste Disposal Complex, Phases I & II

DEP Permit No. 130542-007-SO/01

Remaining Capacity Report, April 2011

FINAL REPORT

1.0 Permit Compliance

The following information is provided to fulfill Specific Condition C.13.c of DEP permit No. 130542-007-SO/01 for Phases I and II of Sarasota County's Central County Solid Waste Disposal Complex, Florida.

2.0 Objective

To calculate remaining air space in the Phase I and Phase II landfill cells at Sarasota County's Central County Solid Waste Disposal Complex, Florida.

3.0 Knowns

3.1 December 2, 2010 topographic survey, prepared by Kucera International, Inc., and provided to the County by Veolia Environmental, Inc. (see Attachment C)

3.2 Waste tonnages placed in the Phase I and Phase II landfill cells during calendar year 2010 (see Table 1)

4.0 Assumptions

4.1 Waste compaction density is based on the landfill operator's, Veolia Environmental, Inc, contractual density requirement of 1,428 lb/cy

4.2 Waste placed in the Phase I cell is based on the 2010 average monthly waste tonnages.

5.0 Conclusions

5.1 Phase I (see supporting calculations in Attachment A)

Minimal air space is remaining in Phase I. Closure has been permitted and is expected to begin construction in Summer 2011.

5.1.1 Remaining Air Space to Intermediate Cover Grade = 307,682 cy

5.1.2 Intermediate Cover Soil Volume = 131,773 cy

5.1.3 Daily Cover Soil Volume = 26,394 cy

5.1.4 Waste Only Remaining Air Space = 149,565 cy (as of 12/1/2010, based on Kucera Aerial)

5.1.5 Adjusted Waste Only Remaining Air Space = 91,377 cy (as of 1/31/2011, based on Kucera Aerial & actual waste tonnages from 12/2/10 – 1/31/11)

5.1.6 Given the Waste Only Remaining Air Space volume of 91,377 cy and a projected monthly waste flow of 28,512 cy, the remaining site life for the Phase I, Class I landfill cell is approximately 3.2 months from January 31, 2011.

5.1.7 Based on the County's review of the December 2010 topographic survey, the side slopes do not exceed the permitted maximum slope of 3H:1V, the top elevation does not exceed the permitted design elevation of 121 ft, and other design features are in accordance with the previously approved Phase I Operational Sequence Drawings submitted to the FDEP.

5.2 Phase II (see supporting calculations in Attachment B)

Phase II was placed into operation in 2010. An initial amount (11,228 tn ~ 15,725 cy) of 'select waste' was placed into Cell 1 in August and September 2010.

5.2.1 Permitted Air Space = 6,000,000 cy

5.2.2 Final Cover Soil Volume = 295,494 cy

5.2.3 Daily Cover Soil Volume = 570,451 cy

5.2.4 Used Waste Only Air Space = 15,725 cy (as of 12/30/2010)

5.2.5 Waste Only Remaining Air Space = 5,118,330 cy

5.2.6 Given the Waste Only Remaining Air Space volume of 5,118,330 cy and a projected monthly waste flow of 28,512 cy, the remaining site life for the Phase II, Class I landfill cell is approximately 180 months.

5.2.7 Based on the County's review of the December 2010 topographic survey, the side slopes do not exceed the permitted maximum slope of 3H:1V, the top elevation does not exceed the permitted design elevation of 121 ft, and other design features are in accordance with the previously approved Phase II Operational Sequence Drawings submitted to the FDEP.

ATTACHMENTS

A – 2010 Calculation of Remaining Air Space, Phase I
B – 2010 Calculation of Remaining Air Space, Phase II
C – Topographic Survey, Prepared By Kucera International, Inc., December 2, 2010
D – HDR Engineering, Inc. Sarasota County CCSWDC Soil Balance Report, August 9, 2010

TABLES

1 – CCSWDC Phases I and II, 2010 Monthly Waste Tonnages

ATTACHMENT A
2010 CALCULATION OF REMAINING AIR SPACE, PHASE I

2010 CALCULATION OF ESTIMATED REMAINING AIR SPACE (Volume) IN PHASE I

*Gross Remaining Phase I Air Space from CAD as of Dec 2, 2010**

$$\mathbf{307,682\ yd^{3*}}$$

Intermediate Cover Surface Area

$$Total = 2{,}691{,}795 ft^{2**}$$

$$West\ Slope\ 320{,}786 ft^{2*}$$

$$2{,}691{,}795\ ft^2 - 320{,}786\ ft^2 = \mathbf{2{,}371{,}009\ ft^2} = \mathbf{263{,}445\ yd^2}$$

Cover Thickness to Intermediate Grades

$$Final\ Inital\ Cover = 0.5\ ft$$
$$Final\ Intermediate\ Cover = 1.0\ ft$$
$$Final\ Cover\ Thickness = \mathbf{1.5\ ft = 0.5\ yd}$$

Intermediate Cover Volume

$$263{,}445\ yd^2 \times 0.5\ yd = \mathbf{131{,}773\ yd^3}$$

Remaining Total Waste Air Space

$$307{,}682\ yd^3 - 131{,}773\ yd^3 = \mathbf{175{,}959\ yd^3}$$

Volume of Operational Cover Soils (Daily Cover)

$$\sim 15\%\ of\ Total\ Waste\ Air\ Space$$

$$175{,}959\ yd^3 \times 0.15 = \mathbf{26{,}394\ yd^3}$$

Dec 1,2010 Remaining Waste Volume Only

$$175{,}959\ yd^3 - 26{,}394\ yd^3 = \mathbf{149{,}565\ yd^3}$$

Adjust for Dec 2–31,2010 and Jan 2011 Waste

$$Dec\ 2 - 31, 2010 = 20{,}298\ tn$$

$$January\ 2011 = 21{,}248\ tn$$

$$= 20{,}298 tn + 21{,}248\ tn = \mathbf{41{,}546\ tn}$$

$$41{,}546\ tn \times \frac{1}{1{,}428}\frac{yd^3}{lb} \times 2{,}000\frac{lb}{tn} = \mathbf{58{,}188\ yd^3}$$

Feb 2011 Estimated Remaining Waste Volume Only

$$149{,}565\ yd^3 - 58{,}188\ yd^3 = \mathbf{91{,}377\ yd^3}$$

CHECK ESTIMATE BASED ON APRIL 2010 REMAINING CAPACITY REPORT

Dec 2009 Estimated Remaining Waste Only Air Space

$$\mathbf{459,757\ yd^{3***}}$$

2010 & Jan 2011 Actual Waste Tonnage

$$\mathbf{265,549\ tn}$$

2010 & Jan 2011 Estimated Waste Volume

$$265{,}548\ tn \times \frac{1}{1{,}428}\frac{yd^3}{lb} \times 2{,}000\frac{lb}{tn} = \mathbf{371,916\ yd^3}$$

Feb 2011 *Estimated Waste Volume Remaining*

$$459{,}757\ yd^3 - 371{,}916\ yd^3 = \mathbf{87,841\ yd^3}$$

$$\frac{87{,}841\ yd^3}{91{,}377\ yd^3} \times 100 = \mathbf{96\%\ agreement\ with\ April\ 2010\ Estimate}$$

FEBRUARY 2011 CALCULATION OF ESTIMATED REMAINING AIR SPACE (Time) IN PHASE I

2010 *Averge Tons of Waste per Month*

$$\mathbf{20,358\ \frac{tn}{mo}}$$

2010 *Average Cubic Yards of Waste per Month*

$$20{,}358\ \frac{tn}{mo} \times \frac{1}{1{,}428}\frac{yd^3}{lb} \times 2{,}000\frac{lb}{tn} = \mathbf{28,512\ \frac{yd^3}{mo}}$$

Feb 2011 *Waste Volume Remaining*

$$\mathbf{91,377\ yd^3}$$

Estimated Time to Fill Remaining Airspace

$$91{,}377\ yd^3 \times \frac{1}{28{,}512}\frac{mo}{yd^3} = \mathbf{3.2\ mo \sim Mid\ May\ 2011}$$

* **Per HDR Engineering, Inc., March 2, 2011**

** **Per HDR Engineering, Inc. Sarasota County CCSWDC Soil Balance Report, August 9, 2010**

*** **Per HDR Engineering, Inc. Sarasota County CCSWDC Remaining Capacity Report, April 6, 2010**

ATTACHMENT B
2010 CALCULATION OF REMAINING AIR SPACE, PHASE II

2010 CALCULATION OF REMAINING AIR SPACE (Volume) IN PHASE II

*Permitted Phase II Air Space**

$$\mathbf{6,000,000\ yd^3}$$

*Final Cover Surface Area**

$$2{,}659{,}448 ft^2 = \mathbf{295,494\ yd^2}$$

Final Cover Thickness

$$\begin{aligned} &\textit{Final Intermediate Cover} = 1.0\ ft \\ &\textit{Final Cover Soil} = \quad 1.5\ ft \\ &\textit{Vegetative Soil Layer} = \quad 0.5\ ft \\ &\textit{Final Cover Thickness} = \quad \mathbf{3\ ft = 1yd} \end{aligned}$$

Final Cover Volume

$$295{,}494\ yd^2 \times 1\ yd = \mathbf{295,494\ yd^3}$$

Total Waste Air Space

$$6{,}000{,}000\ yd^3 - 295{,}494\ yd^3 = \mathbf{5,704,506\ yd^3}$$

Volume of Operational Cover Soils (Daily Cover)

$$\sim 10\%\ of\ Total\ Waste\ Air\ Space$$

$$5{,}704{,}506\ yd^3 \times 0.1 = \mathbf{570,451\ yd^3}$$

Waste Volume Only

$$5{,}704{,}506\ yd^3 - 570{,}451\ yd^3 = \mathbf{5,134,055\ yd^3}$$

2010 Phase II Waste Disposal Tonnage

$$\mathbf{11,228\ tn}$$

Estimated Waste Compaction Density

$$\mathbf{1,428\ \frac{lb}{yd^3}}$$

2010 Phase II Waste Disposal Volume

$$11{,}228\ tn \times \frac{1}{1{,}428}\frac{yd^3}{lb} \times 2{,}000\frac{lb}{tn} = \mathbf{15,725\ yd^3}$$

2010 Waste Volume Remaining

$$5{,}134{,}055\ yd^3 - 15{,}725\ yd^3 = \mathbf{5,118,330\ yd^3}$$

2010 % Waste Volume Remaining

$$\frac{5{,}118{,}330\ yd^3}{5{,}134{,}055\ yd^3} \times 100 = \mathbf{99.7\%}$$

2010 CALCU[redacted]TION OF REMAINING AIR SPACE (Tim[redacted]N PHASE II

2010 *Averge Tons of Waste per Month*

$$\mathbf{20,358\ \frac{tn}{mo}}$$

2010 *Average Cubic Yards of Waste per Month*

$$20{,}358\ \frac{tn}{mo} \times \frac{1}{1{,}428}\frac{yd^3}{lb} \times 2{,}000\frac{lb}{tn} = \mathbf{28,512\ \frac{yd^3}{mo}}$$

2010 *Waste Volume Remaining*

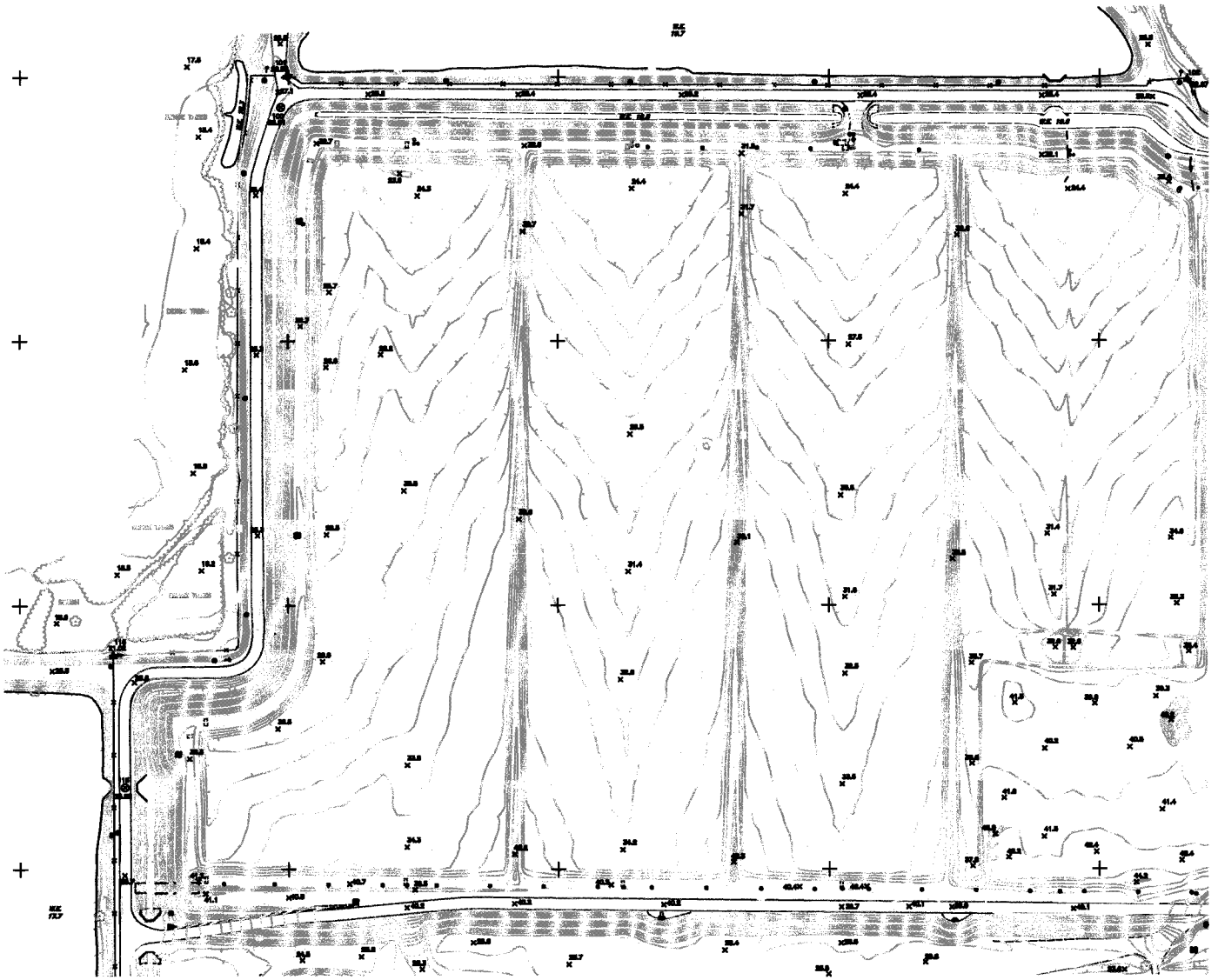
$$\mathbf{5,118,330\ yd^3}$$

Estimated Time to Fill Remaining Airspace

$$5{,}118{,}330\ yd^3 \times \frac{1}{28{,}512}\frac{mo}{yd^3} = \mathbf{180\ mo \sim 15\ years}$$

*** Per HDR Engineering, Inc. Sarasota County CCSWDC Soil Balance Report, August 9, 2010**

ATTACHMENT C
TOPOGRAPHIC SURVEY, PREPARED BY KUCERA INTERNATIONAL, INC., DECEMBER 2, 2010



THIS PLAN HAS BEEN DEVELOPED BY AERIAL PHOTOGRAMMETRIC METHODS FROM PHOTOGRAPHS DATED 12-02-02.
MAPPING DONE BY:

KUCERA INTERNATIONAL INC.

[illegible]

The report of topographic survey of lands in Sec. 8 & 9, Twp. 39S, Range 19E, Sarasota Co., Fl. dated 12-05-02. 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.

Larry E. Towles P.S.M. No. 5413

NMAS 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 12-02-02. Contours which are in wooded or dense vegetation areas are approximations only and should be treated as "shaded contours".

2) Buildings are shown roofline only.

SHEET INDEX

1	2
3	4

LEGEND

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

100 0 50 100 200
SCALE 1" = 100'

VEILIA ENVIRONMENTAL SERVICES
4000 Ridgeline Trail (Road)
Nokomis, Florida 34275

Revisions

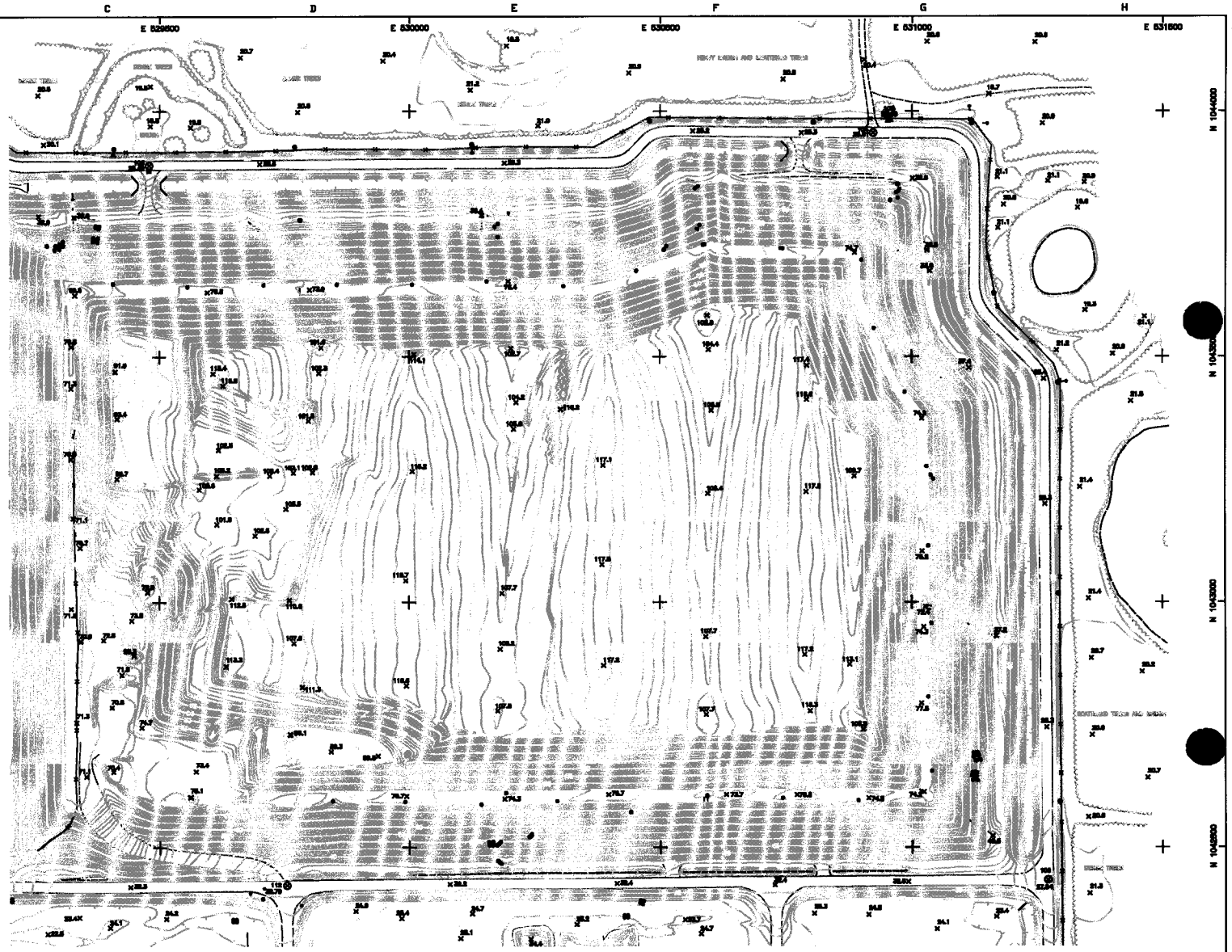
No.	Description	Date	By	No.	Description	Date	By

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. 05, 2002
Sheet Number: 1 of 4



THIS PLAN HAS BEEN DEVELOPED BY AERIAL PHOTOGRAMMETRIC METHODS FROM PHOTOGRAPHS DATED 12-08-00I
MAPPING DONE BY:

KUCERA INTERNATIONAL INC.

[redacted]

[redacted] report of topographic survey of lands in Secs 2 & 3, Twp. 38S, Range 19 [redacted] Sarasota Co, FL dated 12-08-01. This topographic map and [redacted] attached report are not valid without [redacted] the signature and original raised seal [redacted] of a Florida licensed surveyor and [redacted] mapper which can be found on the report. The map and report are not full and complete without [redacted] the other.

Larry E. Towles P.S.M. No. 5413

NMAS 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 12-08-01. Contours which are in wooded or dense vegetation areas are approximations only and should be treated as "shaded contours".

2) Buildings are shown roofline only.

SHEET INDEX

1	2
3	4

LEGEND

- 5' CONTOUR ELEVATION, FEET (NGL)
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- GUY WIRE
- LIGHT POLE
- POST
- SIGN
- TREE
- CATCH BASIN
- PIPE INLET
- MANHOLE

100 0 50 100 200
SCALE 1" = 100'

VEOLIA ENVIRONMENTAL SERVICES
[redacted]
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. 08, 2005
Sheet Number 2 of 4

ATTACHMENT D

HDR ENGINEERING, INC. SARASOTA COUNTY CCSWDC SOIL BALANCE REPORT, AUGUST 9, 2010

FILE COPY

August 9, 2010

Lois Rose
Manager, Solid Waste Operations
Sarasota County
4000 Knights Trail Road
Nokomis, FL 34275

Subject: Central County Solid Waste Disposal Complex
Soil Balance Updates Report – August 2010

Dear Lois:

As requested by Sarasota County Solid Waste Operations, HDR has prepared the following soil balance report as a partial update to the September 2006 Soil Balance Study also prepared by HDR. This report incorporates the conceptual build-out of the Class I Landfill at the CCSWDC to include the removal of the previous footprint of Phase V located to the east of Phase IV and replacing it with the proposed footprints for Phases V and VI, located to the south of Phases III and IV, respectively. This configuration is shown on Drawing C-01 provided in Attachment A. In addition, Drawings C-02 through C-05 illustrate the conceptual build-out of final cover configuration for each phase from which the soil balance calculations provided are based.

INTRODUCTION

The soil balance determination includes soils required for construction of the bottom liner systems for Phases III, IV, V, and VI (cut and fill), the protective cover soil over the bottom liner (2 feet) for each phase, the final cover soils for Phases I through VI, and the operational cover (daily) soils required that will be needed for the remainder of Phase I and Phases II through VI. The on-site soils are not expected to meet the required specifications for drainage sand; therefore, the soil balance summary for bottom liner construction of the phases includes the volume of sand needed for the protective cover soil, but this value was excluded from the on-site soil net fill calculation because the material is assumed to be provided from an off-site source.

CLASS I LANDFILL PHASING AND LAYOUT

Due to the reconfiguration of the landfill expansion footprint to include Phases V and VI to south of Phases III and IV, the conceptual bottom liner systems for Phase III and VI provided in the 2006 Soil Balance Study are no longer feasible using a north to south leachate collection drainage system. The leachate collection system must be rotated 90 degrees to allow leachate

HDR Engineering, Inc.
5426 Bay Center Drive
Suite 400
Tampa, FL 33609-3444
Phone: (813) 282-2300
Fax: (813) 282-2430
www.hdrinc.com

drainage from east to west in Phase III and west to east in Phase IV. This configuration allows the pump stations for Phases III and IV to be located on the west and east sides of the Class I landfill footprint, respectively. The conceptual bottom liner for Phase IV representing this change is provided on Drawing C-03 provided in Attachment 1.

The major drawback to this change is that the bottom liners for the Phases III and IV landfills are longer in the east-west direction; therefore the maximum elevation of the bottom liner is greater in order to maintain the required drainage slopes after settlement. This condition results in greater soil fill requirements for construction of the bottom liners, however, this cost is offset by the additional air space gained in Phases V and VI from expansion to the south thereby maximizing the landfill footprint and airspace of the CCSWDC. In order to further reduce the soil fill requirements, the conceptual bottom liner for Phase IV (shown on Drawing C-03) was designed to have the lower portion of the bottom liner located within the groundwater table.

While this layout reduces soil fill, it may represent additional permitting or construction requirements, including the addition of a 3rd geomembrane liner to protect the underlying GCL from water contact. The addition of the 3rd geomembrane and the potential permitting issues should be examined in more detail before final design which includes location of the bottom liner in the water table.

BOTTOM LINER CONSTRUCTION

The soil balance for bottom liner construction was based on the conceptual bottom liner layout for Phase IV comprising approximately 72 acres. The bottom liner was placed with approximately one-third of the bottom liner area below elevation 21 feet NGVD which was assumed to be the typical seasonal high groundwater table for the surrounding phases. The cut and fill estimates were calculated from comparing the conceptual bottom liner to the existing grade from the June 2010 topographic survey by Kucera. The mulch piles located within the footprint of Phase IV and the soil borrow pile located within the footprint of Phase III were removed from the existing grade for estimating the cut and fill requirements. The cut and fill from Phase IV was converted to a cubic yard of soil per acre basis and applied to the remaining Phases III, V, and VI to determine the soil required for construction of those phases. The conceptual bottom liner for Phase IV includes a 1.5% slope along the leachate collection pipe trench and a 2% cross slope with 500 foot spacing between (250 foot slopes) between pipes. This results in a total of 3 pipe trenches within the Phase IV footprint. The bottom liner includes a minimum 3 foot freeboard to the top elevation of the exterior berms, a 10 foot berm top for the anchor trench system, and 3 to 1 slope returning to grade. The Phase IV bottom liner will be connected to the Phase I bottom liner at approximately elevation 132 feet NGVD. The Phase IV conceptual bottom liner is shown on Drawing C-03 in Attachment 1. The soil required for

construction of the bottom liner protective soil cover was estimated using the approximate footprint area of the proposed phases.

OPERATIONAL COVER SOILS

Operational cover soils (daily cover) during filling of the proposed phases was included in the overall volume of the landfill be assuming that 10% of the waste volume filled for the phase would be comprised of daily cover soils. This value was incorporated into the soil balance calculations as a reduction in available air space. The soil balance assumes two scenarios for operational cover, (1) using only soil for daily cover operations with no mulch mixing and (2) using a 50/50 soil to mulch mixture for the daily cover operations. This effectively reduces the soils required for operations by 50% as shown in Attachment 2 in the summary tables for design and life borrow usage.

FINAL COVER CONSTRUCTION

Finally, a conceptual final cover was developed to incorporate the final build-out of the Phase I through Phase VI footprint as shown on Drawing C-01 in Attachment 1. The conceptual final cover includes a 3 to 1 side slope with a flat top at a maximum elevation of 121 feet NGVD. Since the top of the final cover, as shown in the design of the Phase I landfill, which is currently in the permitting process, will include a saw-tooth configuration on the top of the landfill to allow proper draining of stormwater from the top, placing the conceptual top elevation at 121 feet NGVD is considered an overestimate of the air space that will be available from the conceptual cells. The individual phases, as shown on Drawings C02 through C-04, include a conceptual final cover buildout with interim side slopes abutting future expansions. The final cover quantities provided as part of the soil balance include closure of the abutting side slopes as a conservative estimate of soil requirements. The final cover soil quantity was determined by estimating the 3-foot final cover soil layer (12-inch intermediate and 24-inch final cover layers) for each phase using the 3D surface area of the conceptual cover build-outs as shown in the attached drawings.

CONCLUSIONS

The summary table provided in Attachment 2 provides the results of the soil balance calculations performed using the conceptual bottom liner and final cover buildouts discussed above. In addition, two design life summaries, one for a 100% operational cover soil scenario and a second for 50% soil to mulch operational soils, are provided showing the construction and operational cover soils for each year. The borrow soils are summarized on an annual basis and also on a cumulative basis over the life of the CCSWDC.

In conclusion, the total soil requirements for final buildout of Phases I through VI, assuming operations soils are not mixed with mulch, is approximately 6,951,000 cubic yards. Assuming a 50/50 soil to mulch mix for operational soils, the total borrow soil required for buildout is approximately 5,483,000 cubic yards. The current volume of stockpiled soils located at the CCSWDC stockpile area to the south of Phase II is approximately 600,000 cubic yards. As shown in the 50/50 soil to mulch mixture summary sheet, this quantity of borrow will be depleted by 2021 to 2022. Please note that the life of the borrow stockpile and the design life of the landfill is based on borrow soils comprising 10% of the disposal volume. If the soil ratio in the landfill increases, for example by using additional daily cover soils, the design life and life of the borrow stockpile will be reduced.

The borrow soil requirements above were determined based on bottom liner construction, operational soils, and final cover construction over the operational life of the landfill through 2055 as shown in the tables provided in Attachment 2. Please note that the disposal rates are based on June 2009 through May 2010 disposal rates with a 2% annual increase per year. In addition, the annual disposal volume is based on a fiscal year, from October to September.

Please call me at 813-282-2358 (office) or 813-786-1553 (cell) if you require any clarifications or information relating to this submittal.

Sincerely,

Jason Timmons
Solid Waste Project Manager

Richard A. Siemering
Solid Waste Section Manager

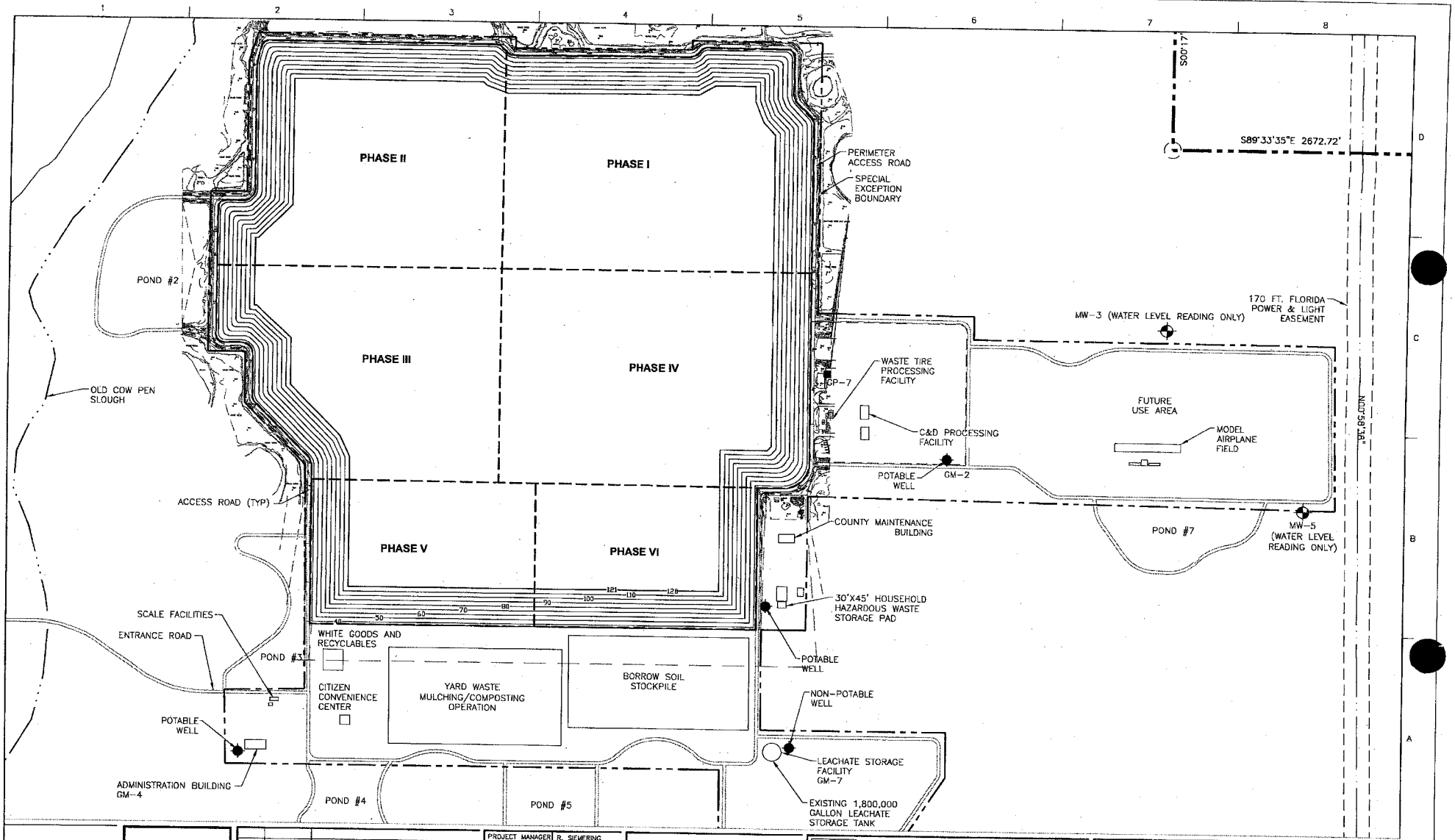
Attachments

Attachment 1 – Drawings
Attachment 2 – Soil Balance Tables

Xc: Gary Bennett, Sarasota County
Bryan Zoller, PBS&J
File

ATTACHMENT 1

CONCEPTUAL SOIL BALANCE DRAWINGS



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A	8/3/2010	INITIAL DESIGN

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REVIEWED BY	R. SIEMERING
CIVIL DESIGN	J. TIMMONS
DRAWN BY	B. JOHNSON
PROJECT NUMBER	00096-130530-001

SARASOTA COUNTY

Central County Solid Waste Disposal Complex

PHASE I CLASS I LANDFILL CONCEPTUAL SOIL BALANCE PLANS

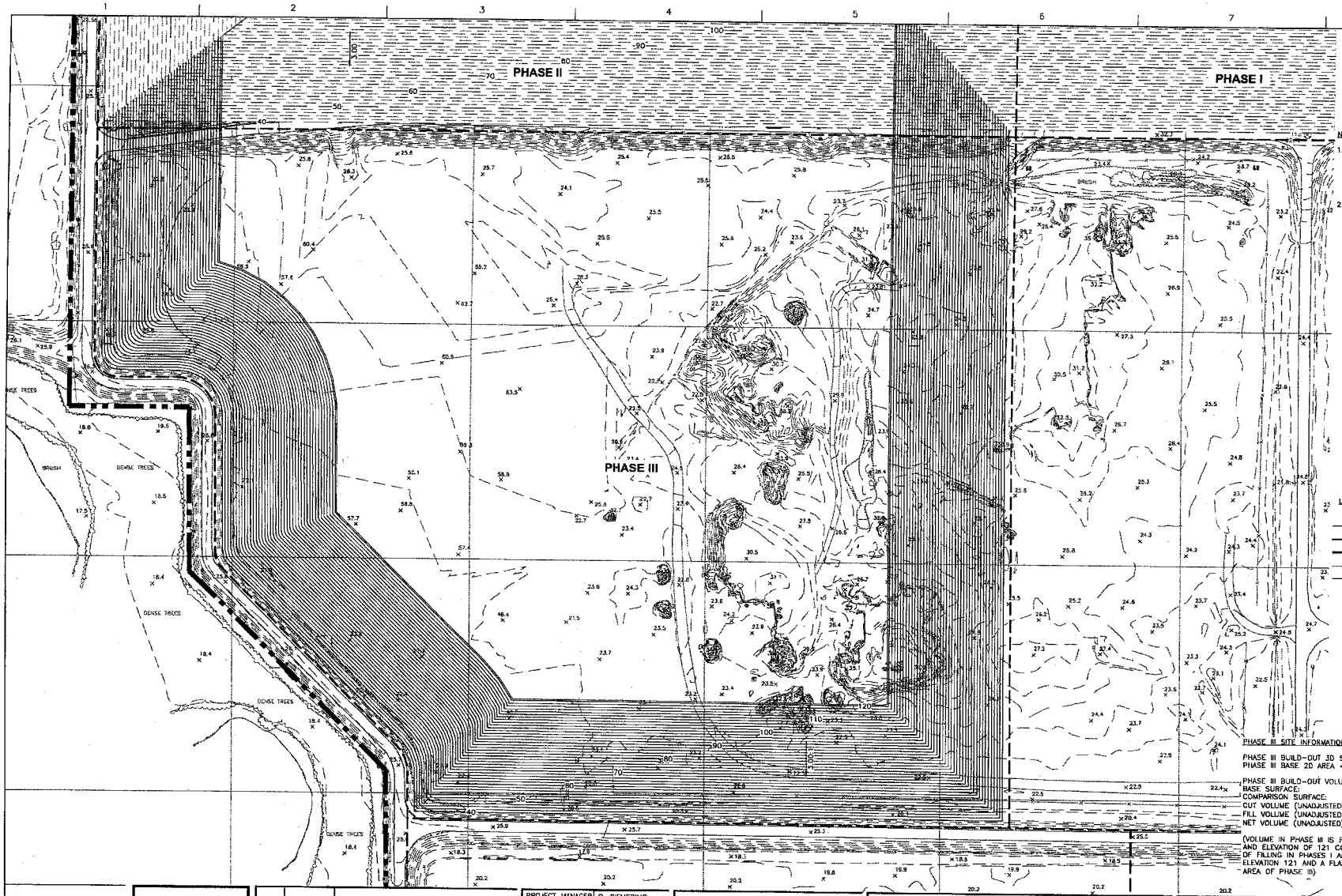
SARASOTA COUNTY FLORIDA

OVERALL SITE PLAN AND BUILD-OUT

0 1" 2"

FILENAME	
SCALE	1"=300'

SHEET 00C-01



NOTES:

1. TOPOGRAPHY WITHIN PHASES III AND IV AREAS COMPILED BY KUCERA INTERNATIONAL INC., OF WILLOUGHBY, OHIO USING PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHS DATED JUNE 1, 2010.
2. PHASE I GRADES REPRESENT MAXIMUM PROPOSED GRADES AT TIME OF CLOSURE. ACTUAL GRADES AT TIME OF CLOSURE CONSTRUCTION MAY VARY FROM THOSE SHOWN BUT WILL NOT EXCEED THE ELEVATIONS SHOWN.

LEGEND

- EXISTING ROADWAY
- PHASE LIMITS
- PROPERTY BOUNDARY
- EXISTING TOPOGRAPHY
- CONCEPTUAL FINAL COVER GRADES

PHASE III SITE INFORMATION

PHASE III BUILD-OUT 3D SURFACE AREA = 2,922,186.20 SQ. FT.
PHASE III BASE 2D AREA = 2,465,728.79 SQ. FT.

PHASE III BUILD-OUT VOLUME:
BASE SURFACE: PHASE 3 VOLUME BASE
COMPARISON SURFACE: PHASE 3 BUILD-OUT
CUT VOLUME (UNADJUSTED) = 0.00 CU. YD.
FILL VOLUME (UNADJUSTED) = 6,397,816.89 CU. YD.
NET VOLUME (UNADJUSTED) = 6,397,816.89 CU. YD.<FILL>

(VOLUME IN PHASE III IS FILLING FROM ELEVATION 40 AT 3:1 TO AND ELEVATION OF 121 COMPARED TO A CONCEPTUAL DESIGN OF FILLING IN PHASES I AND II FROM ELEVATION 40 TO ELEVATION 121 AND A FLAT BASE ELEVATION OF 40 IN THE AREA OF PHASE III)

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ISSUE	DATE	DESCRIPTION
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DRAWN BY	B. JOHNSON
PROJECT NUMBER	00096-130530-001

SARASOTA COUNTY

Central County Solid Waste Disposal Complex
PHASE I CLASS I LANDFILL
CONCEPTUAL SOIL BALANCE PLANS

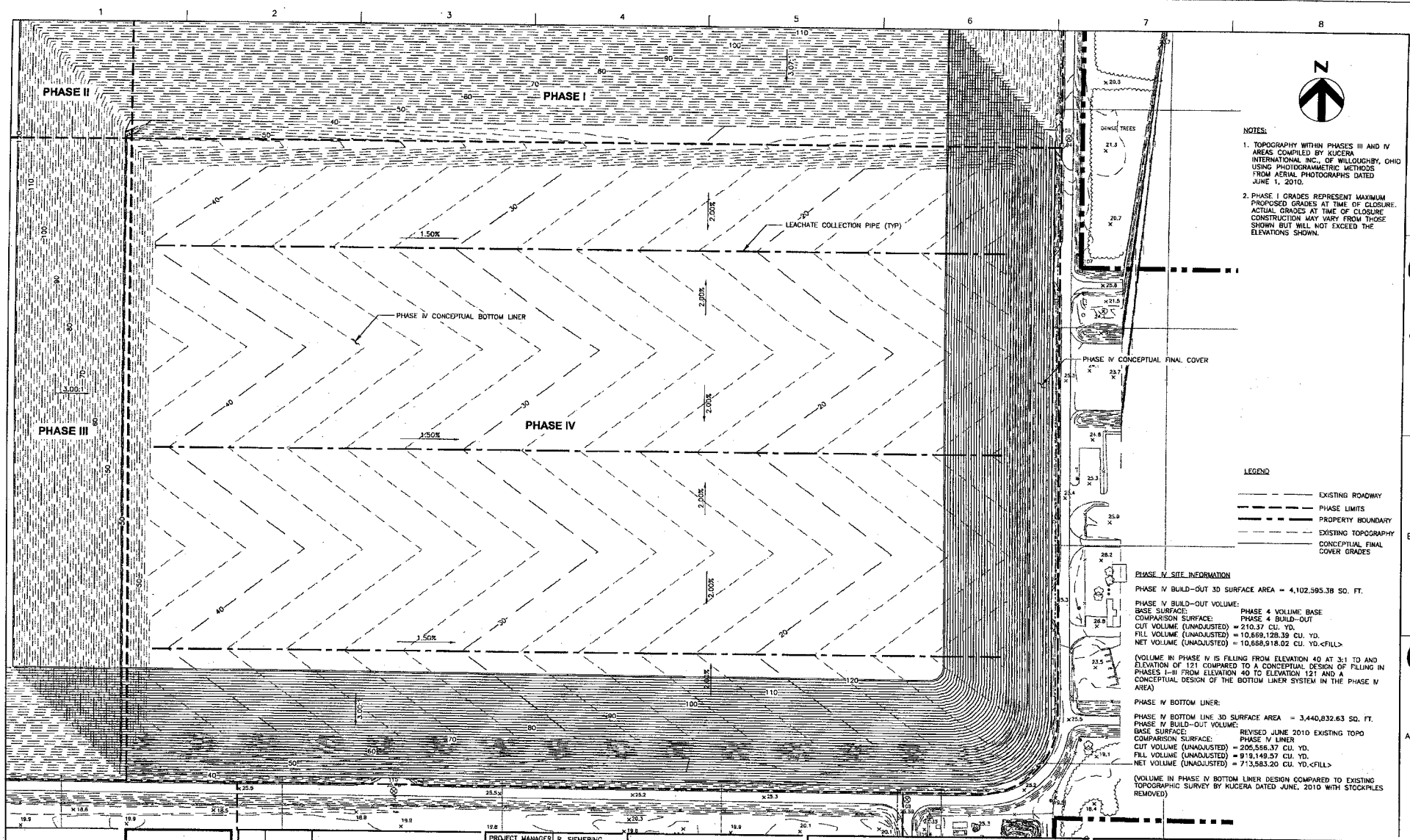
SARASOTA COUNTY FLORIDA

PHASE III SITE PLAN

0 1" 2"

FILENAME	
SCALE	1"=100'

SHEET 00C-02



NOTES:

1. TOPOGRAPHY WITHIN PHASES III AND IV AREAS COMPILED BY KUCERA INTERNATIONAL INC., OF WILLOUGHBY, OHIO USING PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHS DATED JUNE 1, 2010.
2. PHASE I GRADES REPRESENT MAXIMUM PROPOSED GRADES AT TIME OF CLOSURE. ACTUAL GRADES AT TIME OF CLOSURE CONSTRUCTION MAY VARY FROM THOSE SHOWN BUT WILL NOT EXCEED THE ELEVATIONS SHOWN.

LEGEND

- EXISTING ROADWAY
- PHASE LIMITS
- PROPERTY BOUNDARY
- EXISTING TOPOGRAPHY
- CONCEPTUAL FINAL COVER GRADES

PHASE IV SITE INFORMATION

PHASE IV BUILD-OUT 3D SURFACE AREA = 4,102,595.38 SQ. FT.

PHASE IV BUILD-OUT VOLUME:
BASE SURFACE: PHASE 4 VOLUME BASE
COMPARISON SURFACE: PHASE 4 BUILD-OUT
CUT VOLUME (UNADJUSTED) = 210.37 CU. YD.
FILL VOLUME (UNADJUSTED) = 10,659,128.39 CU. YD.
NET VOLUME (UNADJUSTED) = 10,658,918.02 CU. YD.<FILL>

(VOLUME IN PHASE IV IS FILLING FROM ELEVATION 40 AT 3:1 TO AND ELEVATION OF 121 COMPARED TO A CONCEPTUAL DESIGN OF FILLING IN PHASES I-III FROM ELEVATION 40 TO ELEVATION 121 AND A CONCEPTUAL DESIGN OF THE BOTTOM LINER SYSTEM IN THE PHASE IV AREA)

PHASE IV BOTTOM LINER:

PHASE IV BOTTOM LINE 3D SURFACE AREA = 3,440,832.63 SQ. FT.
PHASE IV BUILD-OUT VOLUME:
BASE SURFACE: REVISED JUNE 2010 EXISTING TOPO
COMPARISON SURFACE: PHASE IV LINER
CUT VOLUME (UNADJUSTED) = 205,556.37 CU. YD.
FILL VOLUME (UNADJUSTED) = 919,149.57 CU. YD.
NET VOLUME (UNADJUSTED) = 713,583.20 CU. YD.<FILL>

(VOLUME IN PHASE IV BOTTOM LINER DESIGN COMPARED TO EXISTING TOPOGRAPHIC SURVEY BY KUCERA DATED JUNE, 2010 WITH STOCKPILES REMOVED)

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PROJECT MANAGER	R. SIEMERING
REVIEWED BY	R. SIEMERING
CIVIL DESIGN	J. TIMMONS
DRAWN BY	B. JOHNSON
PROJECT NUMBER	00096-130530-001

Central County Solid Waste Disposal Complex

PHASE I CLASS I LANDFILL CONCEPTUAL SOIL BALANCE PLANS

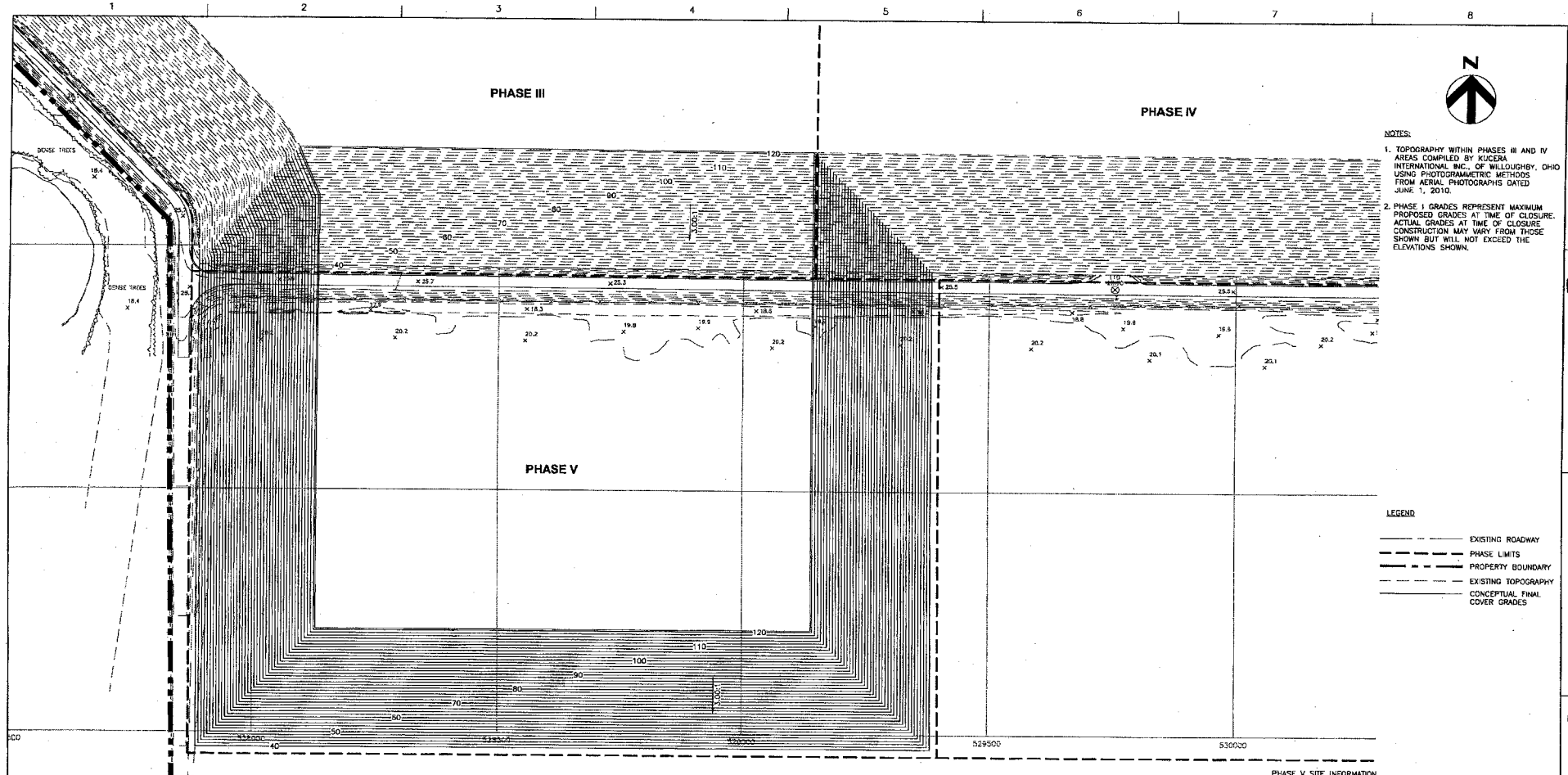
SARASOTA COUNTY FLORIDA

PHASE IV SITE PLAN

0 1" 2"

FILENAME	
SCALE	1"=100'

SHEET 00C-03



NOTES:

1. TOPOGRAPHY WITHIN PHASES III AND IV AREAS COMPILED BY KUCERA INTERNATIONAL INC., OF WILLOUGHBY, OHIO USING PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHS DATED JUNE 1, 2010.
2. PHASE I GRADES REPRESENT MAXIMUM PROPOSED GRADES AT TIME OF CLOSURE. ACTUAL GRADES AT TIME OF CLOSURE CONSTRUCTION MAY VARY FROM THOSE SHOWN BUT WILL NOT EXCEED THE ELEVATIONS SHOWN.

LEGEND

- EXISTING ROADWAY
- PHASE LIMITS
- PROPERTY BOUNDARY
- EXISTING TOPOGRAPHY
- CONCEPTUAL FINAL COVER GRADES

PHASE V SITE INFORMATION

PHASE V BUILD-OUT 3D SURFACE AREA = 1,829,037.86 SQ. FT.
PHASE V BASE 2D AREA = 1,507,814.54 SQ. FT.

PHASE V BUILD-OUT VOLUME:
BASE SURFACE: PHASE 5 VOLUME BASE
COMPARISON SURFACE: PHASE 5 BUILD-OUT
CUT VOLUME (UNADJUSTED) = 0.00 CU. YD.
FILL VOLUME (UNADJUSTED) = 3,713,723.14 CU. YD.
NET VOLUME (UNADJUSTED) = 3,713,723.14 CU. YD.<FILL>

(VOLUME IN PHASE V IS FILLING FROM ELEVATION 40 AT 3:1 TO AND ELEVATION OF 121 COMPARED TO A CONCEPTUAL DESIGN OF FILLING IN PHASES I-IV FROM ELEVATION 40 TO ELEVATION 121 AND A FLAT BASE ELEVATION OF 40 IN THE AREA OF PHASE V)

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ISSUE	DATE	DESCRIPTION
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PROJECT MANAGER	R. SIEMERING
REVIEWED BY	R. SIEMERING
CIVIL DESIGN	J. TIMMONS
DRAWN BY	B. JOHNSON
PROJECT NUMBER	00096-130530-001

SARASOTA COUNTY

Central County Solid Waste Disposal Complex

PHASE I CLASS I LANDFILL

CONCEPTUAL SOIL BALANCE PLANS

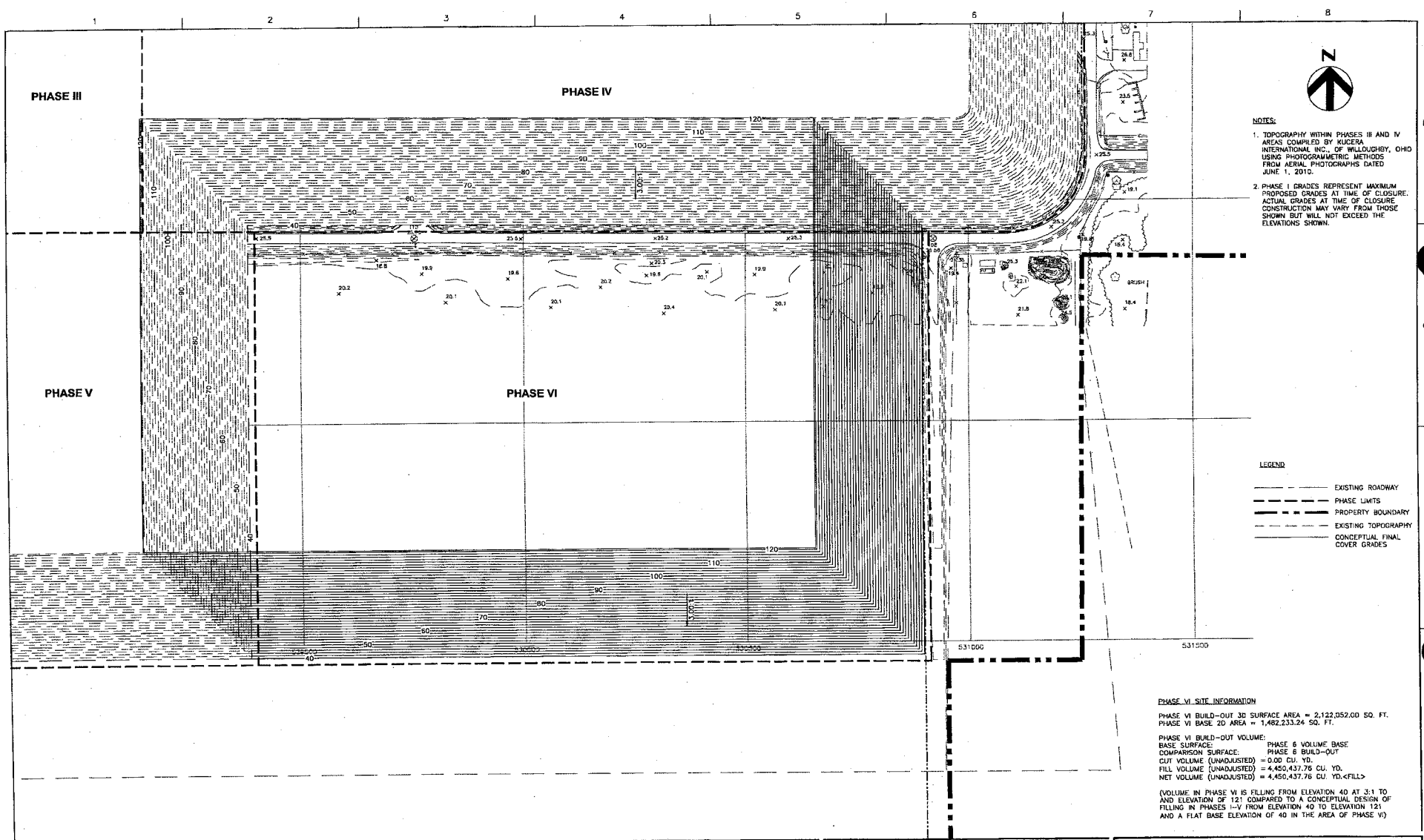
SARASOTA COUNTY FLORIDA

PHASE V SITE PLAN

0 1" 2"

FILENAME	
SCALE	1"=100'

SHEET 00C-04



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A	8/3/2010	INITIAL DESIGN

PROJECT MANAGER	R. SIEMERING
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DRAWN BY	B. JOHNSON
PROJECT NUMBER	00096-130530-001

SARASOTA COUNTY

Central County Solid Waste Disposal Complex
PHASE I CLASS I LANDFILL
CONCEPTUAL SOIL BALANCE PLANS

SARASOTA COUNTY FLORIDA

PHASE VI SITE PLAN

0 1" 2"

FILENAME

SCALE 1"=100'

SHEET 00C-05

HDR Engineering, Inc.

Project	Sarasota County CCSWDC	Computed	J. Timmons	Date	8/2/2010
Subject	Class I Landfill	Checked	R. Siemering	Date	8/2/2010
Task	Soil Balance	Sheet	1	Of	1

General Phase Parameters

Phase	Bottom Liner Surface Area (square feet)	Bottom Liner Surface Area (acres)	Bottom Liner 3D Surface Area* (square feet)	Bottom Liner 3D Surface Area* (acres)
Phase I	2,395,800	55.0	2,646,339	60.8
Phase II	2,352,240	54.0	2,598,224	59.6
Phase III	2,465,729	56.6	2,723,580	62.5
Phase IV	3,115,076	71.5	3,440,833	79.0
Phase V	1,507,615	34.6	1,665,272	38.2
Phase VI	1,482,233	34.0	1,637,237	37.6
Totals	13,318,693	305.8	14,711,484	337.7

*3D surface area represents surface with side slopes included (vertical component).

Phase Bottom Liner Construction

Phase	Bottom Liner Cut (cubic yards)	Bottom Liner Fill (cubic yards)	Protective Soil Cover (cubic yards)	Net Soil Fill* (cubic yards)
Phase I	0	0	0	0
Phase II	0	0	0	0
Phase III	162,715	727,550	201,747	564,834.6
Phase IV	205,566	919,150	254,876	713,583.2
Phase V	99,489	444,844	123,353	345,355.4
Phase VI	97,814	437,355	121,277	339,541.2
Totals	565,584	2,528,899	701,253	1,963,314
	Average Cut per Acre for Phase IV =		**2,602**	**cubic yards/acre**
	Average Fill Per Acre for Phase IV =		**11,636**	**cubic yards/acre**

*Excludes Protective Soil Cover for bottom liner since this materials is assumed to be imported from off-site.

Phase Operations Soils

Phase	Total Airspace (cubic yards)	Total Waste Air Space* (cubic yards)	Waste Volume Only** (cubic yards)	Operational Cover Soils: Soil Only*** (cubic yards)	Operational Cover Soils: 50/50 Soil to Mulch Mixture*** (cubic yards)
Phase I	447,819	348,123	313,311	34,812	17,406
Phase II	6,000,000	5,704,506	5,134,055	570,451	285,226
Phase III	6,397,817	5,871,383	5,284,245	587,138	293,569
Phase IV	10,668,918	9,958,198	8,962,378	995,820	497,910
Phase V	3,713,723	3,387,143	3,048,429	338,714	169,357
Phase VI	4,450,438	4,093,377	3,684,039	409,338	204,669
Totals	31,678,715	29,362,730	26,426,457	2,936,273	1,468,137

*Total Waste Air Space = Total Airspace - Final Cover Soil - Protective Cover Soil

**Waste Volume Only = Total Waste Air Space - Soil Only for Operational Cover

***Volume of operational cover soil estimated as 10% of Total Waste Air Space. 50/50 mixtures is Soil Only divided by 2.

Phase Final Cover Construction - Estimated From Drawings C-02 through C-04

Phase	Final Cover Surface Area (square feet)	Final Cover Surface Area (acres)	Final Cover Soil (cubic yards)
Phase I	2,691,795	61.8	299,088
Phase II	2,659,448	61.1	295,494
Phase III	2,922,186	67.1	324,687
Phase IV	4,102,595	94.2	455,844
Phase V	1,829,038	42.0	203,226
Phase VI	2,122,052	48.7	235,784
Totals	16,327,114	375	1,814,124

Estimate of Site Life and Borrow Requirements
1.5% Leachate Collection Pipe Slope, 0% Soil Mixing Ratio for Operational Cover, Maximum Elevation 121 Feet NGVD

Year (1)	Class I Waste Disposed Tons (2)	Incremental Capacity Used CY (3)	Total Capacity Used CY (4)	Operational Cover Required CY(5)	Remaining Capacity CY (6)	Cell Construction Required (7)	Additional Capacity CY (8)	Net Borrow Fill Required for Cell Construction CY (9)	Cell Closure Required	Closure Required AC (10)	Borrow Fill Required for Closure CY (11)	Borrow Required for Berms CY (12)	Total Borrow Required CY (13)	Cumulative Borrow Required CY	Year (1)
2010	83,426	116,843	129,826	**12,983**	218,297	Phase I Remaining	348,123					**1,048**	**14,031**	**14,031**	2010
2011	264,523	370,481	411,646	**41,165**	5,511,157	Phase II	5,704,506	**0**	Phase I	61.8	**299,088**	**3,323**	**343,576**	**357,607**	2011
2012	269,814	377,890	419,878	**41,988**	5,091,279							**3,390**	**45,378**	**402,985**	2012
2013	275,210	385,448	428,276	**42,828**	4,663,003							**3,457**	**46,285**	**449,270**	2013
2014	280,714	393,157	436,841	**43,684**	4,226,162							**3,526**	**47,210**	**496,480**	2014
2015	286,329	401,020	445,578	**44,558**	3,780,584							**3,597**	**48,155**	**544,635**	2015
2016	292,055	409,041	454,490	**45,449**	3,326,094							**3,669**	**49,118**	**593,753**	2016
2017	297,896	417,222	463,580	**46,358**	2,862,514							**3,742**	**50,100**	**643,853**	2017
2018	303,854	425,566	472,851	**47,285**	2,389,663							**3,817**	**51,102**	**694,955**	2018
2019	309,931	434,077	482,308	**48,231**	1,907,355							**3,894**	**52,125**	**747,080**	2019
2020	316,130	442,759	491,954	**49,195**	1,415,401							**3,971**	**53,166**	**800,246**	2020
2021	322,452	451,614	501,793	**50,179**	913,608							**4,051**	**54,230**	**854,476**	2021
2022	328,901	460,646	511,829	**51,183**	6,273,162	Phase III	5,871,383	**564,835**	Phase II	61.1	**295,494**	**4,132**	**915,644**	**1,770,120**	2022
2023	335,480	469,859	522,066	**52,207**	5,751,096							**4,214**	**56,421**	**1,826,541**	2023
2024	342,189	479,256	532,507	**53,251**	5,218,589							**4,299**	**57,550**	**1,884,091**	2024
2025	349,033	488,842	543,158	**54,316**	4,675,431							**4,385**	**58,701**	**1,942,792**	2025
2026	356,014	498,618	554,020	**55,402**	4,121,411							**4,472**	**59,874**	**2,002,666**	2026
2027	363,134	508,591	565,101	**56,510**	3,556,310							**4,562**	**61,072**	**2,063,738**	2027
2028	370,396	518,763	576,403	**57,640**	2,979,907							**4,653**	**62,293**	**2,126,031**	2028
2029	377,804	529,138	587,931	**58,793**	2,391,976							**4,746**	**63,539**	**2,189,570**	2029
2030	385,361	539,721	599,690	**59,969**	1,792,286							**4,841**	**64,810**	**2,254,380**	2030
2031	393,068	550,515	611,683	**61,168**	1,180,603							**4,938**	**66,106**	**2,320,486**	2031
2032	400,929	561,525	623,917	**62,392**	10,514,884	Phase IV	9,958,198	**713,583**	Phase III	67.1	**324,687**	**5,037**	**1,105,700**	**3,426,186**	2032
2033	408,948	572,756	636,396	**63,640**	9,878,488							**5,137**	**68,777**	**3,494,963**	2033
2034	417,127	584,211	649,123	**64,912**	9,229,365							**5,240**	**70,152**	**3,565,115**	2034
2035	425,469	595,895	662,106	**66,211**	8,567,259							**5,345**	**71,556**	**3,636,671**	2035
2036	433,979	607,813	675,348	**67,535**	7,891,911							**5,452**	**72,987**	**3,709,658**	2036
2037	442,658	619,969	688,854	**68,885**	7,203,057							**5,561**	**74,446**	**3,784,104**	2037
2038	451,511	632,369	702,632	**70,263**	6,500,425							**5,672**	**75,935**	**3,860,039**	2038
2039	460,541	645,016	716,684	**71,668**	5,783,741							**5,786**	**77,454**	**3,937,493**	2039
2040	469,752	657,916	731,018	**73,102**	5,052,723							**5,901**	**79,003**	**4,016,496**	2040
2041	479,147	671,075	745,639	**74,564**	4,307,084							**6,019**	**80,583**	**4,097,079**	2041
2042	488,730	684,496	760,551	**76,055**	3,546,533							**6,140**	**82,195**	**4,179,274**	2042
2043	498,505	698,186	775,762	**77,576**	2,770,771							**6,263**	**83,839**	**4,263,113**	2043
2044	508,475	712,150	791,278	**79,128**	1,979,493							**6,388**	**85,516**	**4,348,629**	2044
2045	518,645	726,393	807,103	**80,710**	1,172,390							**6,516**	**87,226**	**4,435,855**	2045
2046	529,017	740,921	823,246	**82,325**	3,736,287	Phase V	3,387,143	**345,355**	Phase IV	94.2	**455,844**	**6,646**	**890,170**	**5,326,025**	2046
2047	539,598	755,739	839,710	**83,971**	2,896,577							**6,779**	**90,750**	**5,416,775**	2047
2048	550,390	770,854	856,504	**85,650**	2,040,073							**6,914**	**92,564**	**5,509,339**	2048
2049	561,398	786,271	873,634	**87,363**	1,166,439							**7,053**	**94,416**	**5,603,755**	2049
2050	572,625	801,996	891,107	**89,111**	4,368,709	Phase VI	4,093,377	**339,541**	Phase V	42.0	**203,226**	**7,194**	**639,073**	**6,242,828**	2050
2051	584,078	818,036	908,929	**90,893**	3,459,780							**7,338**	**98,231**	**6,341,059**	2051
2052	595,760	834,397	927,108	**92,711**	2,532,672							**7,484**	**100,195**	**6,441,254**	2052
2053	607,675	851,085	945,650	**94,565**	1,587,022							**7,634**	**102,199**	**6,543,453**	2053
2054	619,828	868,107	964,563	**96,456**	622,459							**7,787**	**104,243**	**6,647,696**	2054
2055	632,225	885,469	983,854	**98,385**	-361,395				Phase VI	48.7	**235,784**	**5,025**	**303,054**	**6,950,750**	2055
TOTAL	[illegible]	[illegible]	[illegible]	**2,936,273**	[illegible]	[illegible]	[illegible]	**1,963,314**	[illegible]	[illegible]	**1,814,124**	**237,038**	**6,950,750**	[illegible]	[illegible]

Notes:

(1) Operational Year. 2010 includes June through December only.
(2) Based on disposal rates from June 2009 through May 2010 with 2% annual increase.
(3) Assumed average in-place waste density of 1,428 lbs/CY.
(4) Represents capacity used at the end of the operational year.
(5) Assumed Operational Soil Cover is 10% of Total Waste Volume.
Daily cover consists of 100% soil.
(6) Represents remaining capacity at the end of the year.
(7) Cell Construction as shown in conceptual drawings.
(8) See Net Volume calculation on supporting information table. Remaining capacity in Phase I from Kucera June 2010 survey.
(9) See supporting table for net borrow soil cut and fill calculations. Net fill is shown for construction.
(10) Closure for each phase upon completion of interim build-out.
(11) Assumes 3 feet final cover soil (1 foot intermediate cover and 2 foot final/vegetative cover).
(12) Stormwater Berms include 80,000 LF of berm at 40 cubic feet of soil per LF evenly spaced based on waste received.
(13) Total Borrow Required = Operational Cover Required + Net Borrow Required for Cell Construction + Borrow Fill Required for Closure + Borrow for Berms

Estimate of Site Life and Borrow Requirements
1.5% Leachate Collection Pipe Slope, 50% Soil Mixing Ratio for Operational Cover, Maximum Elevation 121 Feet NGVD

Year (1)	Class I Waste Disposed Tons (2)	Incremental Capacity Used CY (3)	Total Capacity Used CY (4)	Operational Cover Required CY(5)	Remaining Capacity CY (6)	Cell Construction Required (7)	Additional Capacity CY (8)	Net Borrow Fill Required for Cell Construction CY (9)	Cell Closure Required	Closure Required AC (10)	Borrow Fill Required for Closure CY (11)	Borrow Required for Berms CY (12)	Total Borrow Required CY (13)	Cumulative Borrow Required CY	Year (1)
2010	83,426	116,843	129,826	**12,983**	218,297	Phase I Remaining	348,123					**1,048**	**7,540**	**7,540**	2010
2011	264,523	370,481	411,646	**41,165**	5,511,157	Phase II	5,704,506	**0**	Phase I	61.8	**299,088**	**3,323**	**322,994**	**330,534**	2011
2012	269,814	377,890	419,878	**41,988**	5,091,279							**3,390**	**24,384**	**354,918**	2012
2013	275,210	385,448	428,276	**42,828**	4,663,003							**3,457**	**24,871**	**379,789**	2013
2014	280,714	393,157	436,841	**43,684**	4,226,162							**3,526**	**25,368**	**405,157**	2014
2015	286,329	401,020	445,578	**44,558**	3,780,584							**3,597**	**25,876**	**431,033**	2015
2016	292,055	409,041	454,490	**45,449**	3,326,094							**3,669**	**26,394**	**457,427**	2016
2017	297,896	417,222	463,580	**46,358**	2,862,514							**3,742**	**26,921**	**484,348**	2017
2018	303,854	425,566	472,851	**47,285**	2,389,663							**3,817**	**27,460**	**511,808**	2018
2019	309,931	434,077	482,308	**48,231**	1,907,355							**3,894**	**28,010**	**539,818**	2019
2020	316,130	442,759	491,954	**49,195**	1,415,401							**3,971**	**28,569**	**568,387**	2020
2021	322,452	451,614	501,793	**50,179**	913,608							**4,051**	**29,141**	**597,528**	2021
2022	328,901	460,646	511,829	**51,183**	6,273,162	Phase III	5,871,383	**564,835**	Phase II	61.1	**295,494**	**4,132**	**890,052**	**1,487,580**	2022
2023	335,480	469,859	522,066	**52,207**	5,751,096							**4,214**	**30,318**	**1,517,898**	2023
2024	342,189	479,256	532,507	**53,251**	5,218,589							**4,299**	**30,925**	**1,548,823**	2024
2025	349,033	488,842	543,158	**54,316**	4,675,431							**4,385**	**31,543**	**1,580,366**	2025
2026	356,014	498,618	554,020	**55,402**	4,121,411							**4,472**	**32,173**	**1,612,539**	2026
2027	363,134	508,591	565,101	**56,510**	3,556,310							**4,562**	**32,817**	**1,645,356**	2027
2028	370,396	518,763	576,403	**57,640**	2,979,907							**4,653**	**33,473**	**1,678,829**	2028
2029	377,804	529,138	587,931	**58,793**	2,391,976							**4,746**	**34,143**	**1,712,972**	2029
2030	385,361	539,721	599,690	**59,969**	1,792,286							**4,841**	**34,826**	**1,747,798**	2030
2031	393,068	550,515	611,683	**61,168**	1,180,603							**4,938**	**35,522**	**1,783,320**	2031
2032	400,929	561,525	623,917	**62,392**	10,514,884	Phase IV	9,958,198	**713,583**	Phase III	67.1	**324,687**	**5,037**	**1,074,504**	**2,857,824**	2032
2033	408,948	572,756	636,396	**63,640**	9,878,488							**5,137**	**36,957**	**2,894,781**	2033
2034	417,127	584,211	649,123	**64,912**	9,229,365							**5,240**	**37,696**	**2,932,477**	2034
2035	425,469	595,895	662,106	**66,211**	8,567,259							**5,345**	**38,451**	**2,970,928**	2035
2036	433,979	607,813	675,348	**67,535**	7,891,911							**5,452**	**39,220**	**3,010,148**	2036
2037	442,658	619,969	688,854	**68,885**	7,203,057							**5,561**	**40,004**	**3,050,152**	2037
2038	451,511	632,369	702,632	**70,263**	6,500,425							**5,672**	**40,804**	**3,090,956**	2038
2039	460,541	645,016	716,684	**71,668**	5,783,741							**5,786**	**41,620**	**3,132,576**	2039
2040	469,752	657,916	731,018	**73,102**	5,052,723							**5,901**	**42,452**	**3,175,028**	2040
2041	479,147	671,075	745,639	**74,564**	4,307,084							**6,019**	**43,301**	**3,218,329**	2041
2042	488,730	684,496	760,551	**76,055**	3,546,533							**6,140**	**44,168**	**3,262,497**	2042
2043	498,505	698,186	775,762	**77,576**	2,770,771							**6,263**	**45,051**	**3,307,548**	2043
2044	508,475	712,150	791,278	**79,128**	1,979,493							**6,388**	**45,952**	**3,353,500**	2044
2045	518,645	726,393	807,103	**80,710**	1,172,390							**6,516**	**46,871**	**3,400,371**	2045
2046	529,017	740,921	823,246	**82,325**	3,736,287	Phase V	3,387,143	**345,355**	Phase IV	94.2	**455,844**	**6,646**	**849,008**	**4,249,379**	2046
2047	539,598	755,739	839,710	**83,971**	2,896,577							**6,779**	**48,765**	**4,298,144**	2047
2048	550,390	770,854	856,504	**85,650**	2,040,073							**6,914**	**49,739**	**4,347,883**	2048
2049	561,398	786,271	873,634	**87,363**	1,166,439							**7,053**	**50,735**	**4,398,618**	2049
2050	572,625	801,996	891,107	**89,111**	4,368,709	Phase VI	4,093,377	**339,541**	Phase V	42.0	**203,226**	**7,194**	**594,517**	**4,993,135**	2050
2051	584,078	818,036	908,929	**90,893**	3,459,780							**7,338**	**52,785**	**5,045,920**	2051
2052	595,760	834,397	927,108	**92,711**	2,532,672							**7,484**	**53,840**	**5,099,760**	2052
2053	607,675	851,085	945,650	**94,565**	1,587,022							**7,634**	**54,917**	**5,154,677**	2053
2054	619,828	868,107	964,563	**96,456**	622,459							**7,787**	**56,015**	**5,210,692**	2054
2055	632,225	885,469	983,854	**98,385**	-361,395				Phase VI	48.7	**235,784**	**5,025**	**271,931**	**5,482,623**	2055
TOTAL				**2,936,273**				**1,963,314**			**1,814,124**	**237,038**	**5,482,623**		

Notes:

(1) Operational Year. 2010 includes June through December only.
(2) Based on disposal rates from June 2009 through May 2010 with 2% annual increase.
(3) Assumed average in-place waste density of 1,428 lbs/CY.
(4) Represents capacity used at the end of the operational year.
(5) Assumed Operational Soil Cover is 10% of Total Waste Volume. Daily cover consists of 50% soil.
(6) Represents remaining capacity at the end of the year.
(7) Cell Construction as shown in conceptual drawings.
(8) See Net Volume calculation on supporting information table. Remaining capacity in Phase I from Kucera June 2010 survey.
(9) See supporting table for net borrow soil cut and fill calculations. Net fill is shown for construction.
(10) Closure for each phase upon completion of interim build-out.
(11) Assumes 3 feet final cover soil (1 foot intermediate cover and 2 foot final/vegetative cover).
(12) Stormwater Berms include 80,000 LF of berm at 40 cubic feet of soil per LF evenly spaced based on waste received.
(13) Total Borrow Required = **Operational Cover Required / 2** + Net Borrow Required for Cell Construction + Borrow Fill Required for Closure + Borrow for Berms

TABLE 1
CCSWDC PHASES I AND II, 2010 MONTHLY WASTE TONNAGES

TABLE 1. WASTE TONNAGES - JANUARY 1, 2010 THROUGH DECEMBER 31, 2010
CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX
SARASOTA COUNTY, FLORIDA

PHASE I (2010)

TBL ENTRY	WASTE TYPE TO LANDFILL	JANUARY (TONS)	FEBRUARY (TONS)	MARCH (TONS)	APRIL (TONS)	MAY (TONS)	JUNE (TONS)	JULY (TONS)	AUGUST (TONS)	SEPTEMBER (TONS)	OCTOBER (TONS)	NOVEMBER (TONS)	DECEMBER (TONS)	TOTAL (TONS)
10	MIXED GARBAGE	21,540	20,421	24,819	23,574	20,423	20,815	20,935	18,551	10,709	18,499	20,835	20,866	241,986
30	FRIABLE ASBESTOS	-	-	-	-	-	-	0	5	-	-	-	4	9
35	NON FRIABLE ASBESTOS	1	1	4	16	5	26	8	19	76	-	14	136	305
40	SLUDGE	127	93	104	102	32	-	-	28	-	-	-	90	576
200	YARD WASTE TO LANDFILL	70	1	4	7	11	6	11	-	-	-	-	-	110
210	CANKER YARD WASTE	-	-	-	-	-	-	-	-	-	-	-	-	-
220	BAGS FROM YARD WASTE		74	59	54	45	39	24	31	34	35	33	38	464
300	DISASTER MIXED GARBAGE	-	-	-	-	-	-	-	-	-	-	-	-	
410	TIRES - SHREDDED	68	68	62	53	117	65	72	62	54	72	85	72	
450	TIRES - BIG LANDFILLED	-	-	-	-	-	-	-	-	-	-	-	-	-
	TOTAL	21,806	20,658	25,051	23,807	20,631	20,951	21,049	18,696	10,873	18,606	20,967	21,206	**244,301**
												Monthly Average		**20,358**

PHASE II (2010)

TBL ENTRY	WASTE TYPE TO LANDFILL	JANUARY (TONS)	FEBRUARY (TONS)	MARCH (TONS)	APRIL (TONS)	MAY (TONS)	JUNE (TONS)	JULY (TONS)	AUGUST (TONS)	SEPTEMBER (TONS)	OCTOBER (TONS)	NOVEMBER (TONS)	DECEMBER (TONS)	TOTAL (TONS)
10	MIXED GARBAGE	-	-	-	-	-	-	-	2,734	8,494	-	-	-	11,228
30	FRIABLE ASBESTOS	-	-	-	-	-	-	-	-	-	-	-	-	-
35	NON FRIABLE ASBESTOS	-	-	-	-	-	-	-	-	-	-	-	-	-
40	SLUDGE	-	-	-	-	-	-	-	-	-	-	-	-	-
200	YARD WASTE TO LANDFILL	-	-	-	-	-	-	-	-	-	-	-	-	-
210	CANKER YARD WASTE	-	-	-	-	-	-	-	-	-	-	-	-	-
220	BAGS FROM YARD WASTE	-	-	-	-	-	-	-	-	-	-	-	-	-
300	DISASTER MIXED GARBAGE	-	-	-	-	-	-	-	-	-	-	-	-	-
410	TIRES - SHREDDED	-	-	-	-	-	-	-	-	-	-	-	-	-
450	TIRES - BIG LANDFILLED	-	-	-	-	-	-	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-	2,734	8,494	-	-	-	**11,2**

5164

SARASOTA COUNTY
"Dedicated to Quality Service"

Dept. of Environmental Protection
APR 15 2010
Southwest District

April 12, 2010

Susan Pelz, P.E.
Solid Waste Section
Department of Environmental Protection
Southwest District Office
13051 North Telecom Parkway
Temple Terrace, Florida 33637-0926

RE: Central County Solid Waste Disposal Complex
Permit Number 130542-007-SO/01
Annual Topographic Survey and Disposal Capacity Report - 2009

Dear Ms. Pelz:

Enclosed are the annual Topographic Survey and Disposal Capacity Report for 2009 as specified in Specific Condition Part C.13.c. According to the report, Phase I of the Central County Solid Waste Disposal Complex had a remaining capacity of approximately 15 months in December 2009.

If you have any questions or concerns, please contact me at (941)861-1589 or lerose@scgov.net.

Sincerely,

Lois E. Rose

Lois E. Rose
Manager, Solid Waste

Enclosure

April 6, 2010

Ms. Lois Rose
Manager, Solid Waste Operations
Sarasota County
4000 Knights Trail Road
Nokomis, FL 34275

Re: Remaining Capacity Report, Phase I Landfill Cell
Central County Solid Waste Disposal Complex
Sarasota County, Florida
FDEP Permit #130542-007-SO/01, Dated 11/18/2008

Dear Lois:

As requested, HDR Engineering, Inc. (HDR) provides herein the Remaining Capacity Report for the Phase I, Class I landfill cell at the Central County Solid Waste Disposal Complex (CCSWDC), Sarasota County, Florida. The Capacity Report is required to be submitted to the Florida Department of Environmental Protection-Southwest District (FDEP) no later than April 15th, 2010, per the site's Operations Permit, Specific Condition, PART C, Paragraph 13c.

REMAINING SITE LIFE – PHASE I LANDFILL CELL

Objective: Calculate the remaining airspace for the Phase I, Class I landfill cell at the CCSWDC.

Knowns: Provided by County:

- December 21, 2009 topographic survey, prepared by Kucera International, Inc., and provided to the County by Veolia Environmental, Inc.
- Waste tonnages placed in the Phase I landfill during June 2009 through December 2009 (see Table 1).

Assumptions:

- Waste compaction density is based on Veolia's contractual density requirement of 1,428 lbs./cy.
- Waste placed in the Phase I cell based on the 2009 average monthly waste tonnages.

5426 Bay Center Drive
Suite 400
Tampa, FL 33609-3444

Phone: (813) 282-2300
Fax: (813) 282-2430
www.hdrinc.com

Therefore,

- Remaining Gross Airspace based on computer modeling (see attached Sheet 1) = 833,594 cy
- Final Cover Soil Volume = 349,639 cy
- Daily Cover Soil Volume = 24,198 cy (see attached calculations)

Hence,

Net Remaining Airspace = Gross Airspace less Cover Soils
= 833,594 cy – 349,639 cy – 24,198 cy
= **459,757 cy**

Given the Net Remaining Airspace volume of 459,757 cy and a projected average monthly waste flow of 29,266 cy, the remaining site life for the Phase I, Class I landfill cell is approximately 15 months as shown in the attached Table 2.

Based on HDR's review of the December 2009 topographic survey, the side slopes do not exceed the permitted maximum slope of 3H:1V, the top elevation does not exceed the permitted design elevation of 121', and other design features are in accordance with the previously FDEP approved Phase I Operational Sequence Drawings submitted to the FDEP in December 2007.

Sincerely,
HDR ENGINEERING, INC.

Jason Timmons, PE
Project Manager

Richard A. Siemering
Solid Waste Section Manager

Attachments

HDR | ONE COMPANY *Many Solutions*®

Project: SARASOTA PHASE I CCSWDC | Computed: RS | Date: 4/6/10
Subject: SITE LIFE 12/09 | Checked: JT | Date: 4/6/10
Task: | Page: 1 | of: 1
Job #: | No:

- CALCULATE REMAINING AIRSPACE BASED ON 12/09 SURVEY AND FINAL COVER GRADES

- GROSS REMAINING AIRSPACE FROM CAD

  GRID METHOD = 832,885 cy
  COMPOSITE METHOD = 834,303 cy

  AVERAGE = 833,594 cy

- FINAL COVER SOIL VOLUME

  - FINAL INITIAL COVER = 0.5'
  - FINAL INTERMEDIATE COVER = 1.0'
  - FINAL COVER SOIL = 1.5'
  - VEGETATIVE SOIL LAYER = 0.5'

  - FINAL COVER THICKNESS = 3.5'

  - FINAL COVER 3D SURFACE AREA = 2,697,213 sf

  - FINAL COVER VOLUME

  = [(3.5')(2,697,213)] / 27 = 349,639 cy

HDR | ONE COMPANY *Many Solutions*®

Project: SARASOTA PHASE 1 CCSWDC | Computed: RS | Date: 4/6/10

Subject: SITE LIFE 12/09 | Checked: JT | Date: 4/6/10

Task: | Page: 1 | of: 2

Job #: | No:

- ADJUSTED AIRSPACE

  = 833,594 cy − 349,639 cy = 483,955 cy

  LESS 5% FOR COVER SOILS (−) 24,198 cy

- NET REMAINING AIRSPACE AS OF DECEMBER 2009

  = 483,955 cy − 24,198 cy = 459,757 cy

- 2009 AVERAGE MONTHLY TONNAGE

  = 20,895.95 TONS

  = [(20,895.95)(2,000)] / 1,428 lbs/cy

  = 29,266 cy / MONTH (AVERAGE)

TABLE 1. WASTE TONNAGES - JUNE 1, 2009 THROUGH DECEMBER 31, 2009
CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX
SARASOTA COUNTY, FLORIDA

TBL ENTRY	WASTE TYPE TO LANDFILL	2009						
		JUNE (TONS)	JULY (TONS)	AUGUST (TONS)	SEPTEMBER (TONS)	OCTOBER (TONS)	NOVEMBER (TONS)	DECEMBER (TONS)
10	Mixed Garbage	21,297.25	21,026.73	19,608.03	19,958.48	19,817.28	20,236.09	22,887.82
30	Friable Asbestos	78.48	3.50	0.00	0.00	0.00	0.15	0.00
35	Non-Friable Asbestos	0.41	19.84	6.10	0.74	1.79	12.88	16.78
40	Sludge	91.00	197.60	34.79	66.84	86.26	13.20	20.07
200	Yard Waste To Landfill	35.67	25.44	32.35	46.41	56.51	50.33	49.78
210	Canker Yard Waste	0.00	0.00	0.00	0.00	0.00	0.00	0.00
220	Bags From Yard Waste	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300	Disaster Mixed Garbage	0.00	0.00	0.00	0.00	0.00	0.00	0.00
410	Tires - Shredded	42.71	57.44	84.91	69.01	77.33	63.98	89.56
450	Tires - Big Landfilled	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800	Residue	0.00	2.72	1.53	1.57	0.00	2.26	0.00
	TOTAL	**21,545.52**	**21,333.27**	**19,767.71**	**20,143.05**	**20,039.17**	**20,378.89**	**23,064.01**

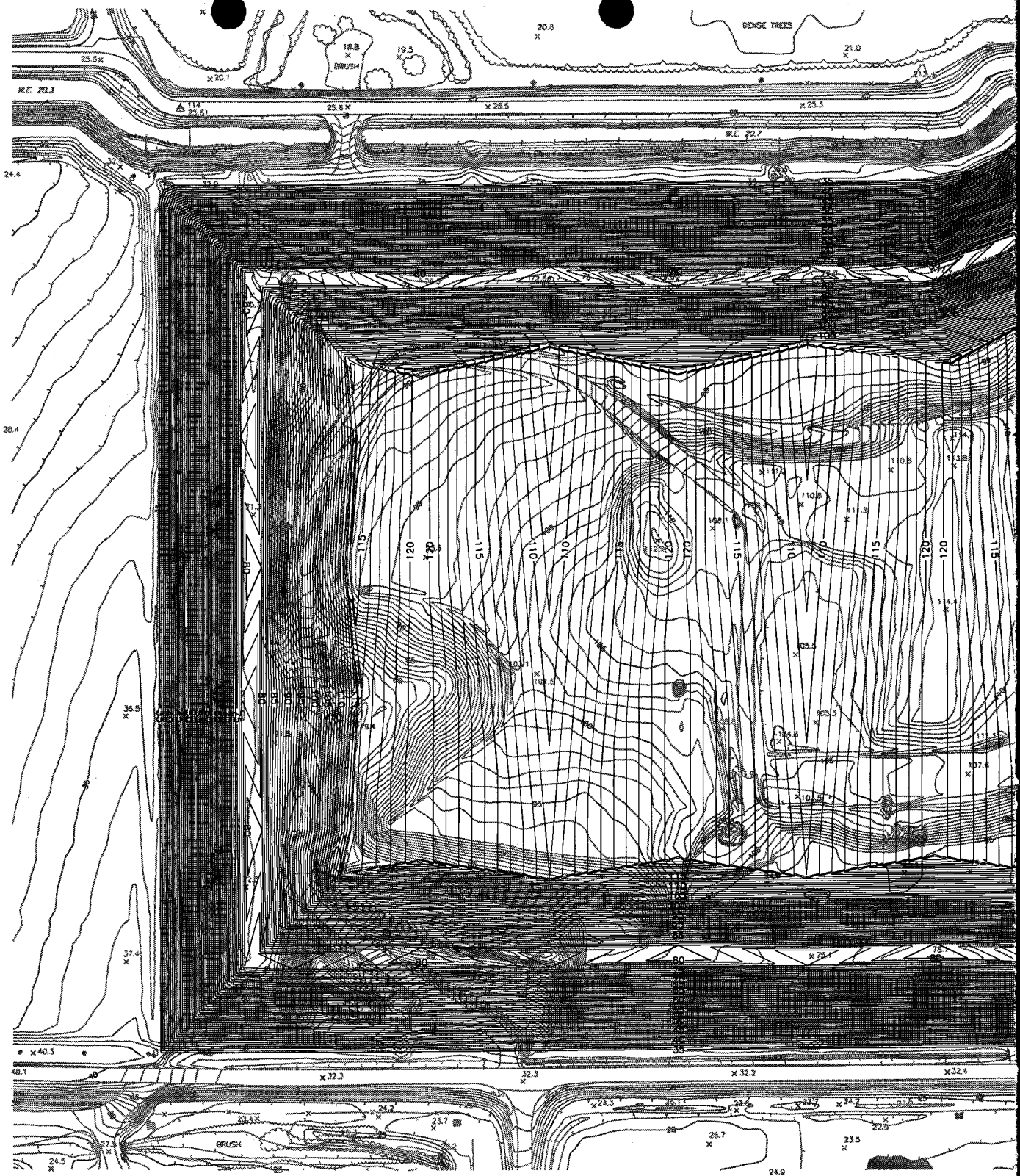
Monthly Average from June 2009 through December 2009 = 20,895.95 tons

TABLE 2. ESTIMATED REMAINING AIRSPACE AND SITE LIFE
PHASE I LANDFILL
CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX
SARASOTA COUNTY, FLORIDA

MONTH/YEAR	MONTHLY WASTE LANDFILLED (CY)	REMAINING NET AIRSPACE (CY)
NET REMAINING NET AIRSPACE AS OF DECEMBER 2009		**459,757**
2009		
December	10,768	448,989
2010		
January	29,266	419,723
February	29,266	390,457
March	29,266	361,191
April	29,266	331,925
May	29,266	302,659
June	29,266	273,393
July	29,266	244,127
August	29,266	214,861
September	29,266	185,595
October	29,266	156,329
November	29,266	127,063
December	29,266	97,797
2011		
January	29,266	68,531
February	29,266	39,265
March	29,266	9,999
April	29,266	-19,267

NOTES:

1. Monthly waste landfilled based on 2009 monthly average tonnages.
2. Assumes contract waste copmaction density of 1,428 lbs./cy
3. December waste tonnage pro-rated from December 21, 2009, through December 31, 2009



Site Volume Table: Unadjusted

Site	Stratum	Surf1	Surf2	Cut cu.yds	Fill cu.yds	Ne cu.yds

REMAINING SITE LIFE DEC 2009

gross airspace dec 2009	existing dec 2009	final cover grade
	1561	834446
	2054	836357

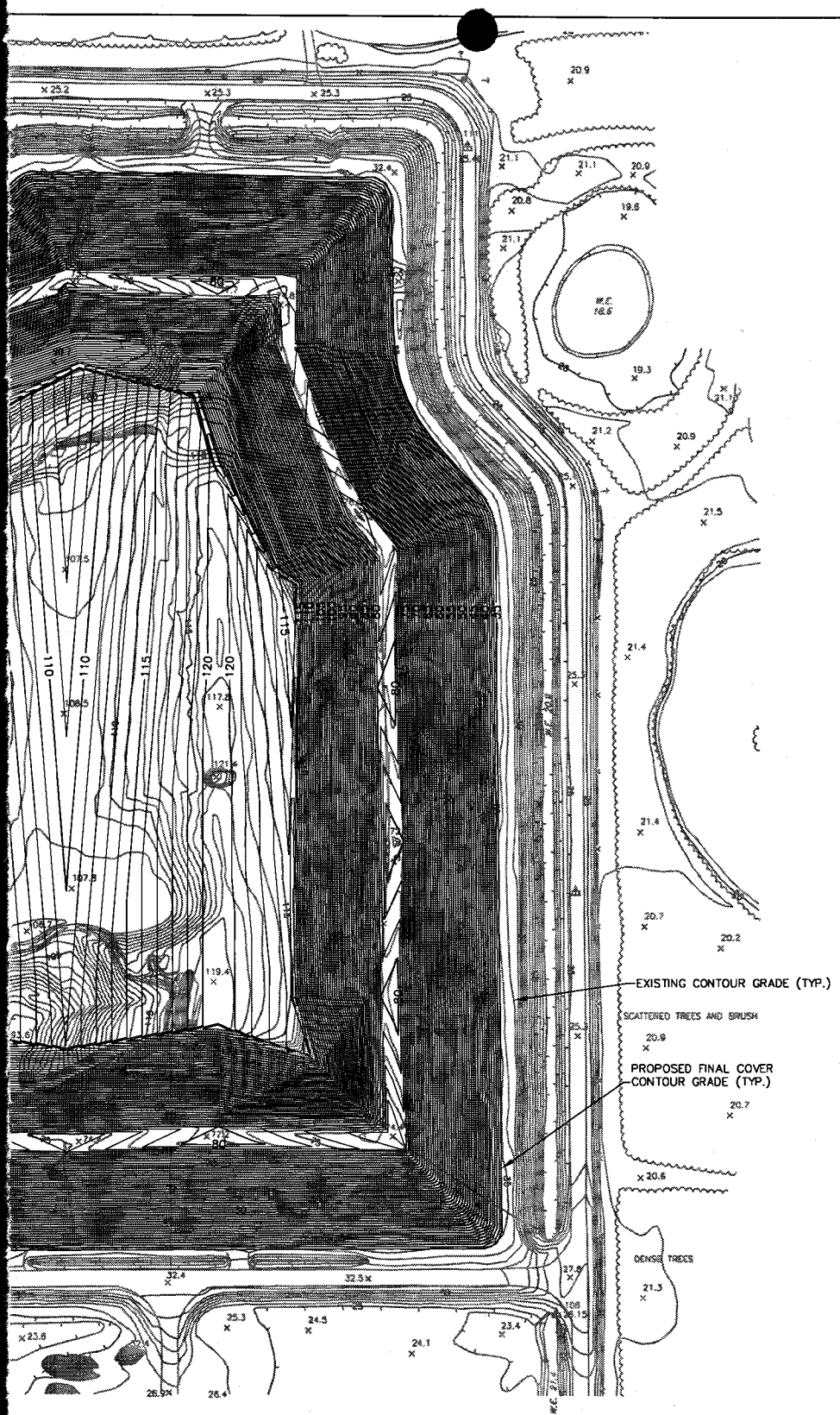
3D SURFACE AREA FROM CAD = 2,697,213 SF

HDR

5426 Bay Center Drive, Suite 400
Tampa, Florida 33609
813-282-2300
HDR CERT. AUTH. NO. CA 4213
FL REG. AA C000457

ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	R. SIEMERING
PROJECT NUMBER	



NOT TO SCALE

Method
32885 (F) Grid
334303 (F) Composite

NOTES:

1. EXISTING TOPOGRAPHIC SURVEY PERFORMED BY KUCERA INTERNATIONAL INC. ON 12/21/2009 AND PROVIDED BY VEOLIA ENVIRONMENTAL, INC.
2. FINAL COVER GRADES BASED ON FDEP PHASE I OPERATIONS FILL SEQUENCE DRAWINGS SUBMITTED TO FDEP IN DECEMBER 2007.

PHASE I
CCSWDC
SARASOTA COUNTY

REMAINING SITE LIFE CALCULATIONS AS OF DECEMBER 2009

0 100' 200'

FILENAME	
SCALE	NOT TO SCALE

SHEET 1

188444
CL I

SARASOTA COUNTY

"Dedicated to Quality Service"

October 25, 2007

Susan Pelz, PE
Florida Dept of Environmental Protection
Southwest District Office
13051 N. Telcom Parkway
Temple Terrace, FL 33627-0926

Re: Central County Solid Waste Disposal Complex
Permit No. 130542-002-SO/01

Dear Ms. Pelz:

Enclosed are the Topographic Survey and remaining capacity calculations as required by Special Conditions D.2.e.

Should you have any questions, please contact me at (941) 861-1571.

Sincerely,

Frank Coggins

Frank Coggins
Manager, Solid Waste Operations

Dept. Of Environmental Protection
OCT 29 2007
Southwest District

ENVIRONMENTAL SERVICES, Solid Waste Operations • 4000 Knights Trail Road, Nokomis, FL 34275
Tel 941-861-5000 • Fax 941-486-2620

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February 02, 2007

Mr. Nick Marotta
Veolia ES Solid Waste, Inc.
4000 Knights Trail Road
Nokomis, Florida 34275
(941) 486-0085

Re: Volumetric Report
Sarasota County Landfill

Dear Mr. Marotta:

Below are the volumes that LandAir Mapping has computed. The volumetric calculations were derived from a base grade supplied by Waste Management dated 1998, and aerial photography taken December 20, 2006.

The volumes are as follows:

The fill volume of the area is 3,967,074.4 yds^3.
The fill volume of the temporary berms and piles is 6,465.2 yds^3.
The net fill volume of the area is 3,960,609.2 yds^3.

The fill volume of the soil stockpile area is 29,415.4 yds^3.

Sincerely,

Major Wilkerson

Major Wilkerson