



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
Manager, Solid Waste

Enclosure

Dept. Of Environmental Protection

APR 12 2011

Southwest District

FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION

APR 12 2011

SOUTHWEST DISTRICT
TAMPA

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 Solid Waste
4000 Knights Trail Road
Nokomis, FL 34241

FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
APR 12 2011
SOUTHWEST DISTRICT
TAMPA



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

Sarasota County

Central County Solid Waste Disposal Complex, Phases I & II

DEP Permit No. 130542-007-SO/01

Remaining Capacity Report, April 2011

- 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.

Sarasota County
Central County Solid Waste Disposal Complex, Phases I & II

DEP Permit No. 130542-007-SO/01

Remaining Capacity Report, April 2011

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

Sarasota County
Central County Solid Waste Disposal Complex, Phases I & II
DEP Permit No. 130542-007-SO/01
Remaining Capacity Report, April 2011

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**

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

Intermediate Cover Surface Area

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

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

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

Cover Thickness to Intermediate Grades

$$\text{Final Initial Cover} = 0.5 \text{ ft}$$

$$\text{Final Intermediate Cover} = 1.0 \text{ ft}$$

$$\text{Final Cover Thickness} = 1.5 \text{ ft} = 0.5 \text{ yd}$$

Intermediate Cover Volume

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

Remaining Total Waste Air Space

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

Volume of Operational Cover Soils (Daily Cover)

~ 15% of Total Waste Air Space

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

Dec 1, 2010 Remaining Waste Volume Only

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

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

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

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

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

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

Feb 2011 Estimated Remaining Waste Volume Only

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

CHECK ESTIMATE BASED ON APRIL 2010 REMAINING CAPACITY REPORT

Dec 2009 Estimated Remaining Waste Only Air Space

459,757 yd³***

2010 & Jan 2011 Actual Waste Tonnage

265,549 tn

2010 & Jan 2011 Estimated Waste Volume

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

Feb 2011 Estimated Waste Volume Remaining

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

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

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

2010 Average Tons of Waste per Month

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

2010 Average Cubic Yards of Waste per Month

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

Feb 2011 Waste Volume Remaining

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

Estimated Time to Fill Remaining Airspace

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

* 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

Sarasota County
Central County Solid Waste Disposal Complex, Phases I & II

DEP Permit No. 130542-007-SO/01

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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*

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

Final Cover Surface Area*

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

Final Cover Thickness

$$\text{Final Intermediate Cover} = 1.0 \text{ ft}$$

$$\text{Final Cover Soil} = 1.5 \text{ ft}$$

$$\text{Vegetative Soil Layer} = 0.5 \text{ ft}$$

$$\text{Final Cover Thickness} = 3 \text{ ft} = 1 \text{ yd}$$

Final Cover Volume

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

Total Waste Air Space

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

Volume of Operational Cover Soils (Daily Cover)

~ 10% of Total Waste Air Space

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

Waste Volume Only

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

2010 Phase II Waste Disposal Tonnage

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

Estimated Waste Compaction Density

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

2010 Phase II Waste Disposal Volume

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

2010 Waste Volume Remaining

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

2010 % Waste Volume Remaining

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

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

2010 Average Tons of Waste per Month

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

2010 Average Cubic Yards of Waste per Month

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

2010 Waste Volume Remaining

$$5,118,330 yd^3$$

Estimated Time to Fill Remaining Airspace

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

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

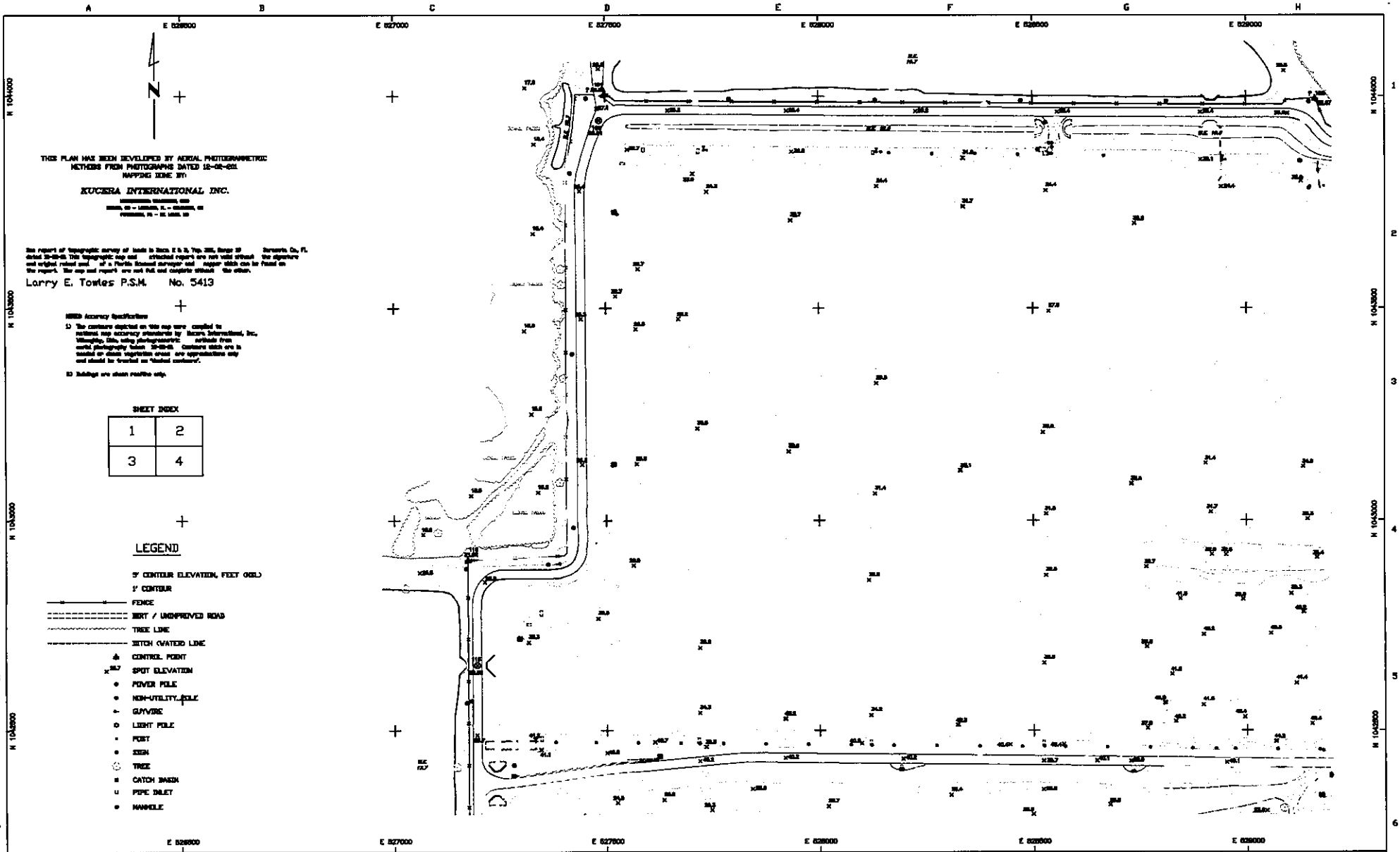
Sarasota County
Central County Solid Waste Disposal Complex, Phases I & II

DEP Permit No. 130542-007-SO/01

Remaining Capacity Report, April 2011

ATTACHMENT C

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



THIS PLAN HAS BEEN DEVELOPED BY AERIAL PHOTOGRAMMETRIC
METHODS FROM PHOTOGRAPHS DATED 10-28-80.
MAPPING CODE 371

KUCERA INTERNATIONAL INC.
10000 W. 10TH AVE., SUITE 100
DENVER, CO 80202

This report of topographic survey of land is based on U.S. Top. Map, Sheet 17, Series 10-28-80. This topographic map and attached report are not valid without the signature and original related seal of a Florida Licensed Surveyor and a paper shall be filed on the report. The map and report are not full and complete without the other.
Larry E. Towles P.S.M. No. 5413

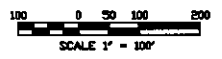
- NEED Accuracy Specifications**
- 1) The contours depicted on this map were compiled to national map accuracy standards by Kucera International, Inc. (Kucera, Inc.) using photogrammetric methods from aerial photography taken 10-28-80. Contour data are based on direct vegetation crown and approximations only and should be treated as "visual contours".
 - 2) Buildings are shown profile only.

SHEET INDEX

1	2
3	4

LEGEND

- 5' CONTOUR ELEVATION, FEET (GSL)
- 1' CONTOUR
- FENCE
- BERT / UNIMPROVED ROAD
- TRAIL LINE
- SWITCH (WATER) LINE
- CONTROL POINT
- SPOT ELEVATION
- POWER POLE
- NON-UTILITY POLE
- GUYWIRE
- LIGHT POLE
- POST
- SEEN
- TRAIL
- CATCH BASIN
- PIPE DILET
- MANHOLE



VEZILIA ENVIRONMENTAL SERVICES
4000 Brighton Trail Road
Nokomis, Florida 34957

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 28, 1980	1 of 4	

Sarasota County
Central County Solid Waste Disposal Complex, Phases I & II

DEP Permit No. 130542-007-SO/01

Remaining Capacity Report, April 2011

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

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 by 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

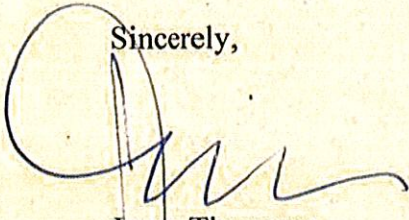
The summary table provided in Attachment 2 provides the results of the soil balance calculations performed using the conceptual bottom liner and final cover buildouts discussed above. In addition, two design life summaries, one for a 100% operational cover soil scenario and a second for 50% soil to mulch 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.

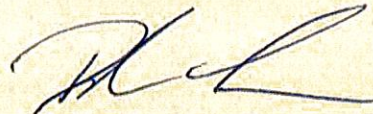
The borrow soil requirements above were determined based on bottom liner construction, operational soils, and final cover construction over the operational life of the landfill through 2055 as shown in the tables provided in Attachment 2. Please note that the disposal rates are based on June 2009 through 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

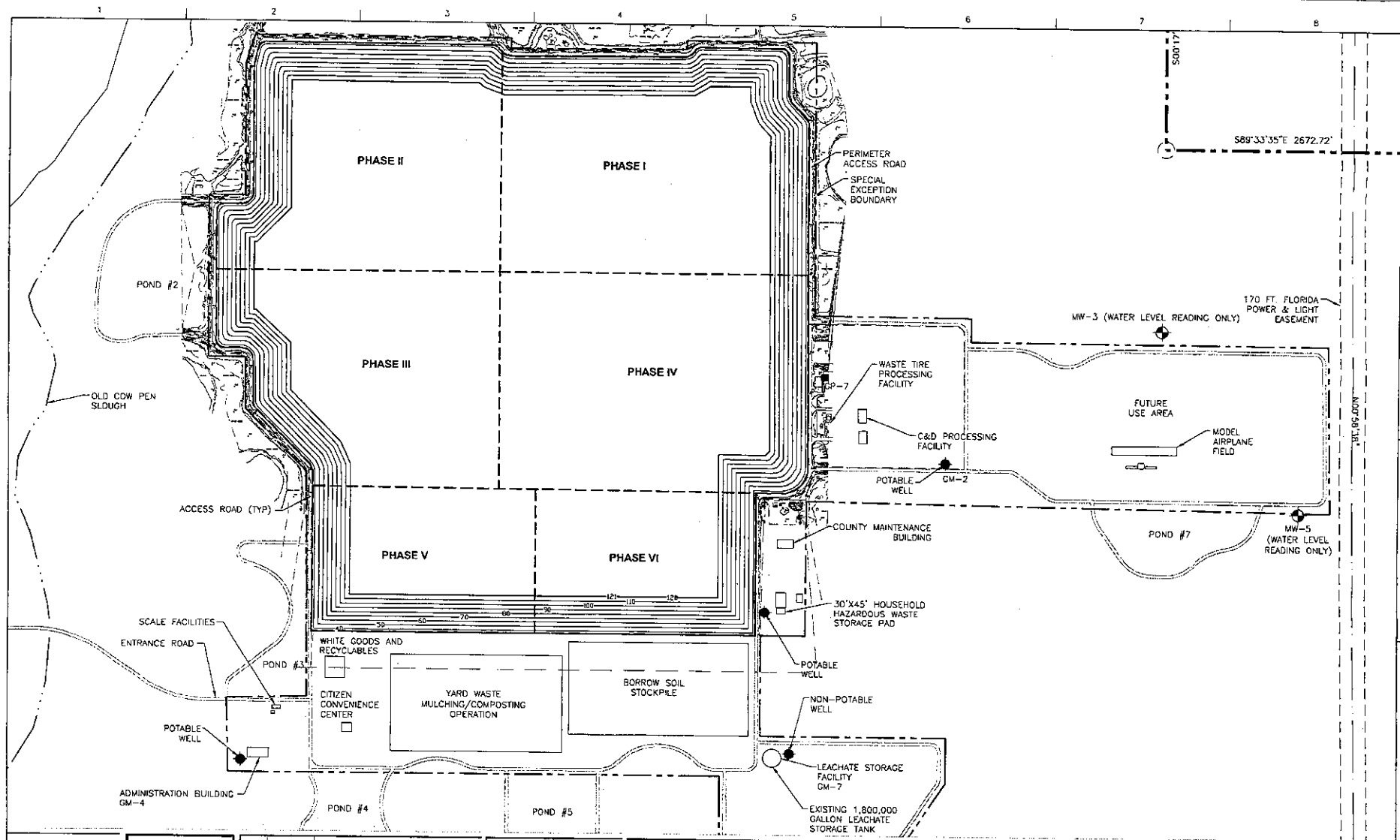
Attachments

Attachment 1 – Drawings
Attachment 2 – Soil Balance Tables

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

ATTACHMENT 1

CONCEPTUAL SOIL BALANCE DRAWINGS



HDR

HDR Engineering, Inc.
3000 California Blvd., Suite 100
Beverly Hills, CA 90210-4117
(310) 271-1270
G00000015

ISSUE	DATE	INITIAL DESIGN	DESCRIPTION
A	8/3/2010		INITIAL DESIGN

PROJECT MANAGER R. SIEMERING
REVIEWED BY R. SIEMERING
CIVIL DESIGN J. TIMMONS
DRAWN BY B. JOHNSON

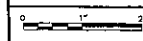
PROJECT NUMBER 00096-130530-001



SARASOTA COUNTY

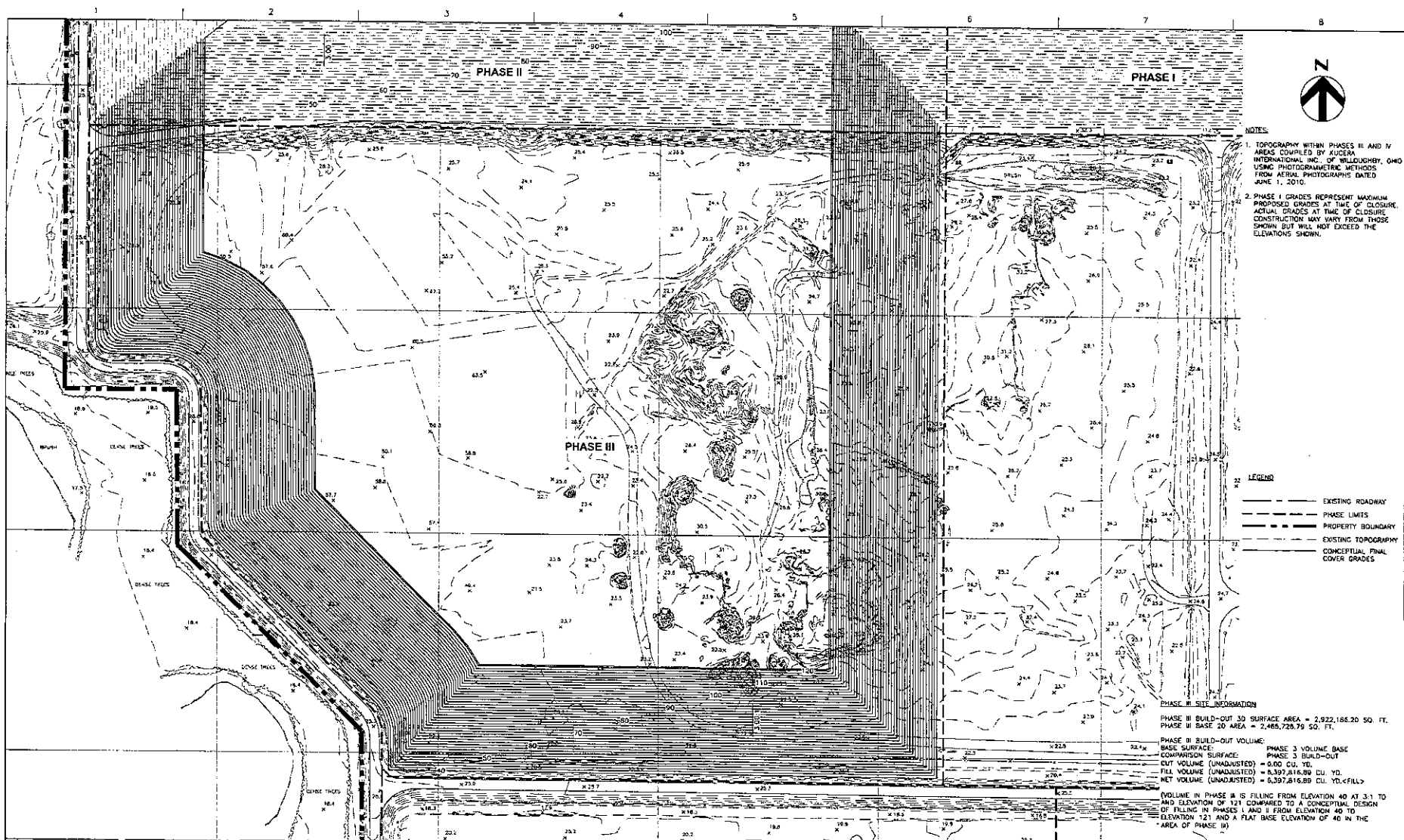
**Central County Solid Waste
Disposal Complex
PHASE I CLASS I LANDFILL
CONCEPTUAL SOIL BALANCE PLANS**

OVERALL SITE PLAN AND BUILD-OUT



FILENAME
SCALE 1"=300'

SHEET
00C-01



HDR

HDR Engineering, Inc.
 2001 Gulfstream Blvd., Ste. 106
 Sarasota, FL 34237-4217
 (941) 551-3900
 CADDWORKS

ISSUE	DATE	DESCRIPTION
A	8/3/2010	INITIAL DESIGN

PROJECT MANAGER R. SIEWERING
 REVIEWED BY R. SIEWERING
 CIVIL DESIGN J. TIMMONS
 DRAWN BY B. JOHNSON

PROJECT NUMBER 00096-1305.30-001



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

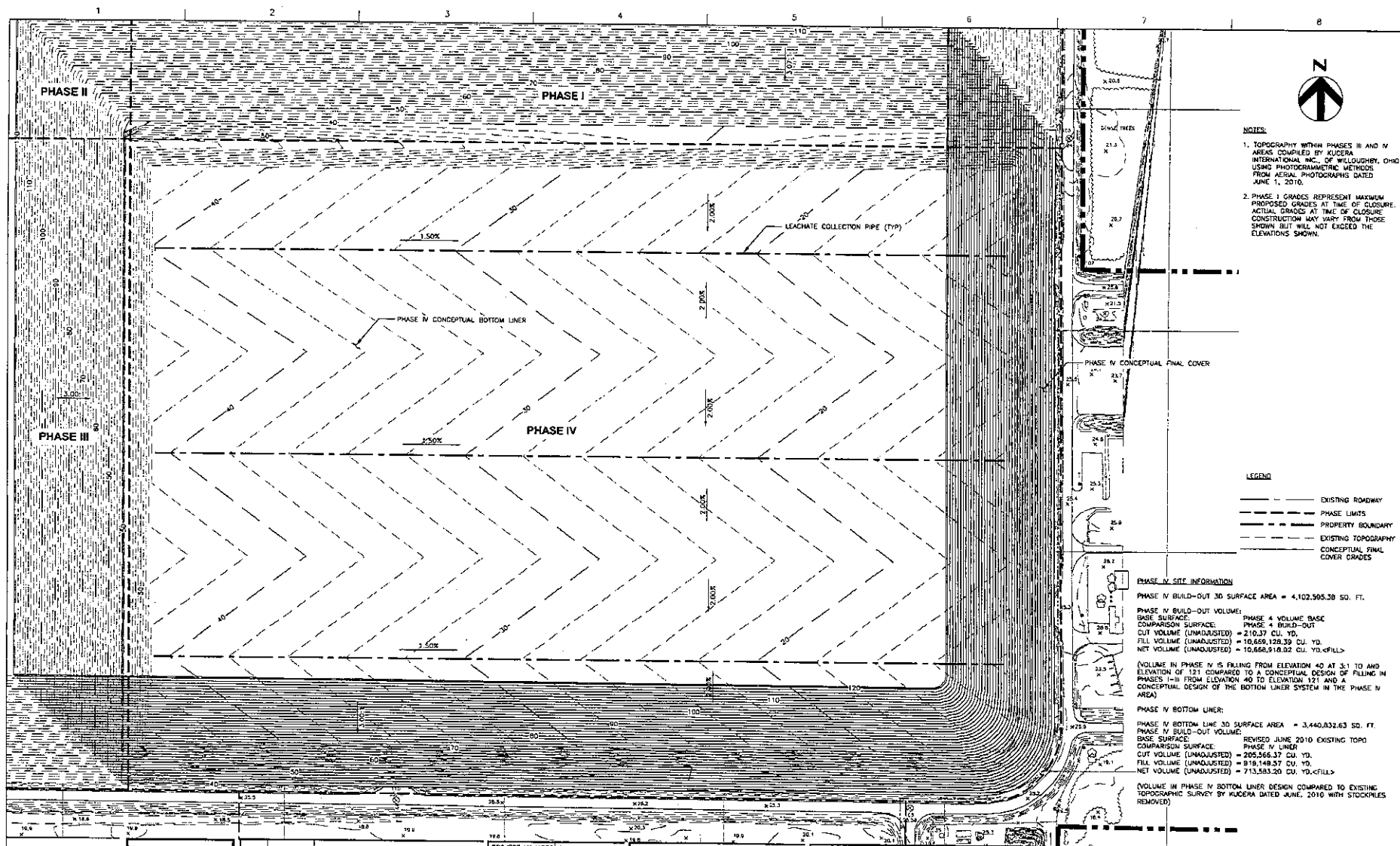
SARASOTA COUNTY

FLORIDA

PHASE III SITE PLAN

0 1" 2"
 SCALE 1"=100'

FILENAME
 SCALE 1"=100'
 SHEET
00C-02



HDR

HDR Engineering, Inc.
 4201 Centerville Pk., Ste. 100
 Nashville, TN 37207-0015
 615.833.7700
 hdr.com

ISSUE	DATE	INITIAL	DESCRIPTION
A	8/3/2010		INITIAL DESIGN

PROJECT MANAGER	R. SIEMERING
REVIEWED BY	R. SIEMERING
CML DESIGN	J. TIMMONS
DRAWN BY	B. JOHNSON
PROJECT NUMBER	00086-130530-001



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

SARAGOTA COUNTY

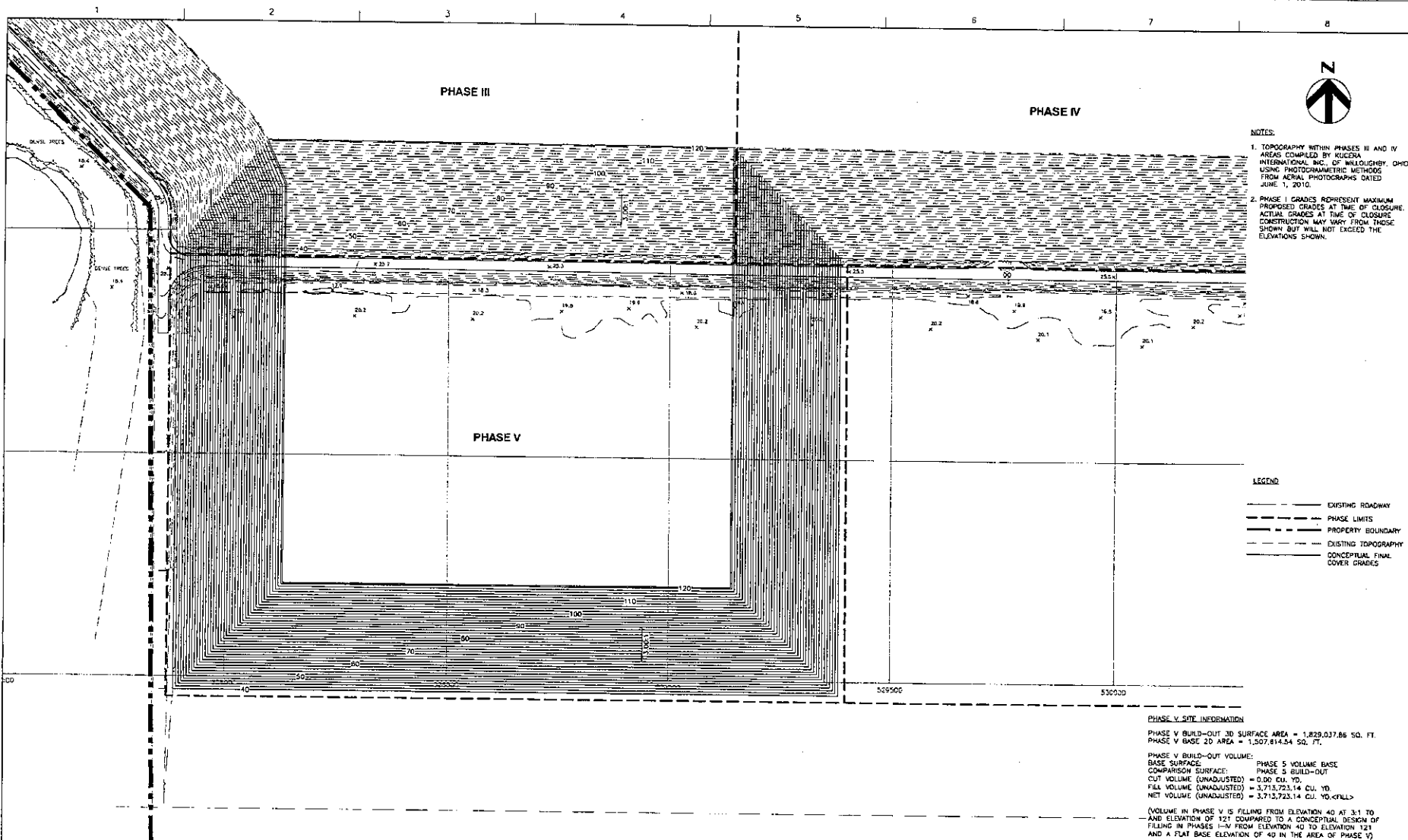
FLORIDA

PHASE IV SITE PLAN

0 1" 2"
 SCALE 1"=100'

FILENAME
 SCALE 1"=100'

SHEET
00C-03



HDR

HDR Engineering, Inc.
 3021 Gateway, Suite 100
 Houston, TX 77057-2717
 (281) 440-2100
 houston@hdr.com

ISSUE	DATE	INITIAL	DESCRIPTION
A	8/3/2010		INITIAL DESIGN

PROJECT MANAGER: R. SIEMERING
 REVIEWED BY: R. SIEMERING
 CIVIL DESIGN: J. TIMMONS
 DRAWN BY: B. JOHNSON

PROJECT NUMBER: 00086-130630-001



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

SARASOTA COUNTY

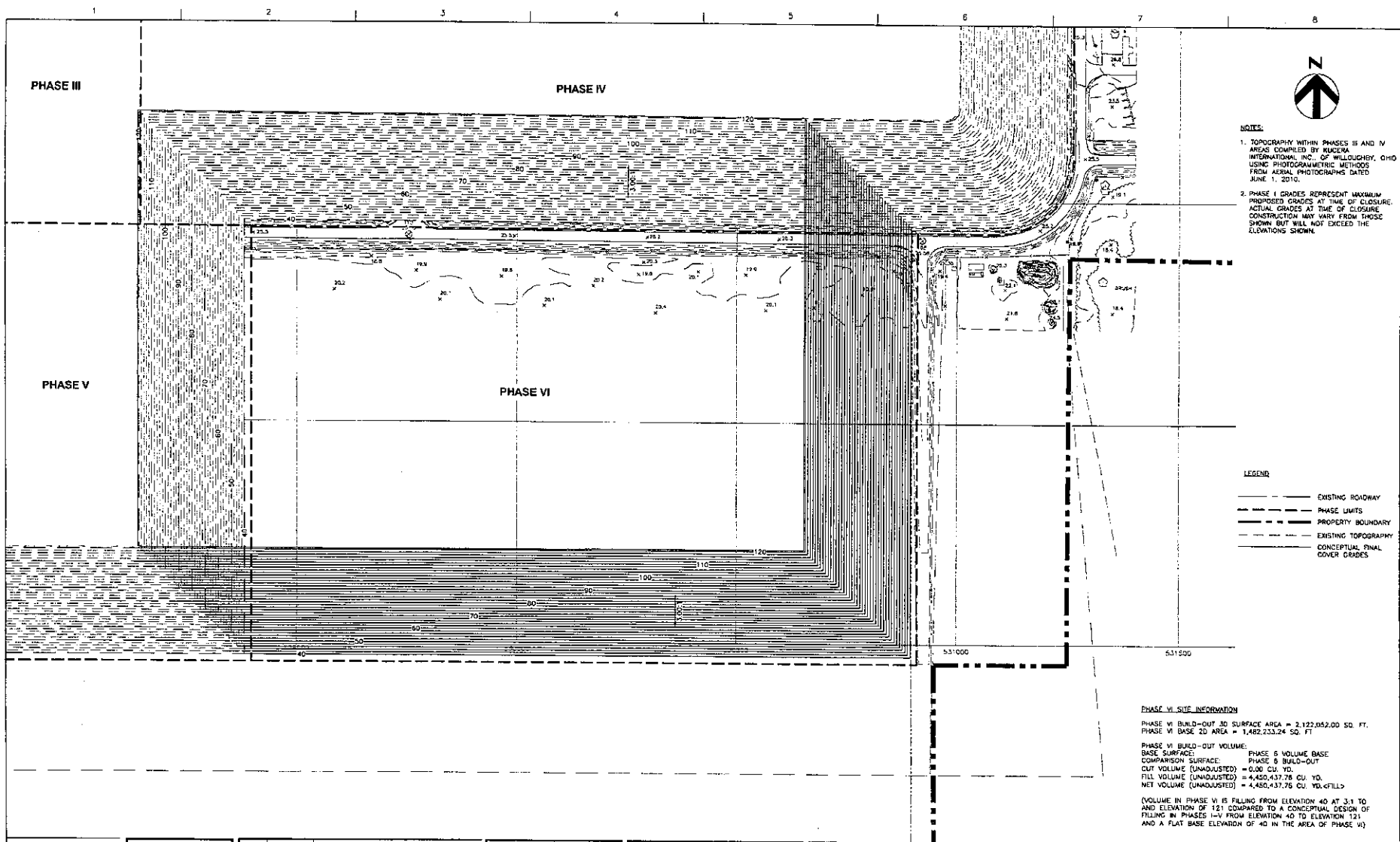
FLORIDA

PHASE V SITE PLAN

0 1" 2"

FILENAME: _____
 SCALE: 1"=100'

SHEET
00C-04



HDR

HDR Engineering, Inc.
 2001 Corporate Blvd., Suite 100
 Ann Arbor, MI 48106-4070
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 CAD000013

PROJECT MANAGER R. SIEMERING
 REVIEWED BY R. SIEMERING
 CIVIL DESIGN J. TIMMONS
 DRAWN BY B. JOHNSON

PROJECT NUMBER 00068-100530-001

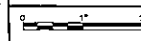


**Central County Solid Waste
 Disposal Complex
 PHASE I CLASS I LANDFILL
 CONCEPTUAL SOIL BALANCE PLANS**

SHARASOTA COUNTY

FLORIDA

PHASE VI SITE PLAN



FILENAME
 SCALE 1"=100'

SHEET
 00C-05

HDR Engineering, Inc.



Project	Sarasota County	Computed	J. Timmons	Date	8/2/2010
Subject	CCSWDC	Checked	R. Siemering	Date	8/2/2010
Task	Class I Landfill	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		Operational Cover Soils	
		Space* (cubic yards)	Waste Volume Only** (cubic yards)	Soil Only*** (cubic yards)	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	289,814	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	2,882,514							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	698,166	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	90,760	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	801,986	891,107	89,111	4,358,709	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	26,426,457	29,862,430	29,862,430	2,936,273	29,862,430			1,963,314			374,838	1,814,124	237,038	6,950,750	

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 Fill Required 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	67,536	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								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

Sarasota County
Central County Solid Waste Disposal Complex, Phases I & II

DEP Permit No. 130542-007-SO/01
Remaining Capacity Report, April 2011

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	850
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	-	-	-	11,228