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October 30, 2019

Ann Seiler
Environmental Consultant
Siting Coordination Office
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 5500
Tallahassee, Florida 32399-2400

RE: Pasco County Resource Recovery Facility (PA87-23)
Petition to Modify Conditions of Certification (Mod E)
Response to Request for Additional Information (RAI)

Dear Ms. Seiler:

This letter is provided in response to your Florida Department of Environmental Protection (FDEP) September 30, 2019 Request for Additional Information (RAI) concerning modifications to the Conditions of Certification for the above-referenced facility regarding the Class I Landfill. In addition to the RAI response, this letter includes additional changes to the facility's Operations Plan regarding the processing of ash to remove metals that is proposed at the Pasco County Resource Recovery Facility.

RAI RESPONSE

Comments were received from FDEP regarding the proposed changes to the Class I Landfill. Each FDEP RAI comment is presented below in *italics* followed by our response in **bold**.

Closure Cost Estimates, Rule 62-701.630(3), F.A.C. The recalculated 2019 cost estimates submitted as part of the proposed modification were compared with the recalculated costs submitted dated August 27, 2018, which were approved by the Department. As a result, the comments below are provided as a result of this comparison.

> **The RAI comments are generally regarding the differences between the 2018 and 2019 recalculated cost estimates. The 2018 recalculated cost estimate was performed by others; therefore, the quantity take-off methods, material and installation costs, and proposed design changes contribute to the differences in the cost estimates. The 2019 recalculated cost estimate is based on quantities and material and installation costs obtained by Jones Edmunds in addition to our engineering judgment regarding the closure costs based on our experience with similar projects and knowledge of the industry.**

1. *Closure Cost Estimate, Item 3, Cover Material. The 2019 unit rates for 40 mil synthetics of $4.14/sy and geocomposite synthetics of $5.43/sy are lower than those provided in the recalculated estimate dated August 27, 2018, which were $5.50 for 40 mil synthetics and $7.50 for geocomposite synthetics. Please explain the reason for the lower costs in the August 2019 estimate.*

   Response 1: The unit cost of Item 3, Cover Material (Barrier Layer), of the 2019 recalculated cost estimate is based on a quote from a geosynthetics manufacturer and typical geosynthetic installation unit costs for projects of similar size. The 2018 cost estimate was based on a quote from an installer and the geosynthetics manufacturer is unknown; therefore, the source of the materials may differ. Material costs may vary between suppliers and fluctuate in the geosynthetics market as a result of the cost of raw materials and construction demand. However, we believe that the 2019 Financial Assurance Cost Estimate (FACE) Cover Material costs are representative of the current geosynthetics market for the proposed closure design.

2. *Closure Cost Estimate, Item 4, Top Soil Cover. The 2018 closure cost estimate included costs for off-site material, delivery, and spread, for a total of $1,689,765, for 88,935 cy. The 2019 costs did not include a cost for delivery, and a had a total cost of $1,640,454.00, for 92,160 cy, which is lower for a larger volume than the 2018 estimate. Please explain why the 2019 estimate for a larger volume is lower than the August 2018 estimate.*

   Response 2: The Off-Site Material cost item is based on the Florida Department of Transportation's (FDOT) unit cost item "*Borrow Excavation.*" Section 120 of FDOT's "*Standard Specifications for Road and Bridge Construction, January 2020*" indicates that Borrow Excavation includes excavating, dredging, hauling, placing, and compacting in the unit price; therefore, the cost of delivery is included. However, the unit cost for Item 4, Top Soil Cover Spread[ing], was revised based on an updated quote obtained from a contractor. The change resulted in a total Item 4 cost of $1,970,388. The Placement and Spreading cost for Item 2, Slope and Fill, was also updated based on this quote, resulting in a total cost of $1,295,774. Attachment 1 includes the revised FACE report in the revised Part R.

3. *Closure Cost Estimate, Item 5, Stormwater Control System. The 2018 closure cost estimate included costs [for] earthwork, 2,600 feet of piping, 7 control structures at $22,625 each, and 7,046 cy of pipe trenches, for a total of $378,425.08. The 2019 closure cost estimate contained 377 feet of 12-inch piping, 499 feet of 18-inch piping, and 10 control structures at $3,957 each, for a total cost of $100,447.00. Please provide*

the reason for revisions to the stormwater control system in 2019 and associated lower cost.

Response 3: The conceptual final closure plan was modified as part of the vertical expansion and slope modification; the conceptual stormwater control system was modified as well. Attachment J.1-4 of the permit application provides the conceptual stormwater control system design and associated calculations that were used for the closure cost estimate. We determined that the approximate 400 feet of 12-inch piping and 500 feet of 18-inch piping and 10 control structures were sufficient for a 25-year/ 24-hour design storm event for Pasco County.

The 12- and 18-inch-diameter cost items and the Control Structures are based on FDOT historical unit costs, which include furnishing and installing pipe (FDOT *Standard Specifications for Road and Bridge Construction, January 2020,* Section 430). Therefore, the cost of excavation is included.

4. *Closure Cost Estimate, Item 9, Security System. The August 2018 closure cost estimate included a cost $2,000 for signs. This cost was not included in the 2019 estimate. Please indicate how or if the signs included in the 2018 estimate will be provided for future closure activities.*

   Response 4: Item 9, Security Systems, was revised to include the cost for repairing 100 feet of fencing and replacing one gate and one sign at the time of closure. These revisions are included in the revised FACE report provided as Attachment 1.

5. *Closure Cost Estimate, Item 10, Engineering. The August 2018 closure cost estimate included a cost of $420,000 for engineering versus $338,608 in the 2019 estimate. Please provide the reason for the lower cost in 2019.*

   Response 5: Item 10, Engineering, of the recalculated closure cost estimate was revised based on the expected effort to perform the closure design, permitting, and engineering. This estimate is based on our experience with similar closure projects and is about 7.5 percent of the cost of construction for the closure cost estimate, which is generally adequate for a project of this size.

6. *Closure Cost Estimate, Item 11, Professional Services. The August 2018 closure cost estimate included a cost of $450,000 for professional versus $348,200 in the 2019 estimate. Please provide the reason for lower cost in 2019.*

   Response 6: Item 11, Professional Services, is based on the expected effort to perform the contract management and construction quality assurance (CQA) and as a percentage of the estimated construction cost. Item 11 was revised based on the change in construction cost and is 5 percent of

the construction cost, which is adequate for contract management and CQA services for a project of this size.

7. *Closure Cost Estimate, Item 13, Site Specific Costs. A cost of $364,111 was included in the 2019 estimate for mobilization, bonds, and insurance. Please explain why this item was not included in the August 2018 estimate, and is now included in the 2019 estimate.*

   Response 7: Construction mobilization, bonds, and insurance are typical site-specific costs associated with construction projects. These costs typically range from 5 to 10 percent of the construction contract. We have estimated this cost to be 7 percent of the closure cost estimate and believe this is adequate for a project of this size and scope. It is not clear why this item has not been included in previous cost estimates, but the associated costs may have been built into the unit cost for each item.

8. *Long Term Care, Item 13, Leachate Collection Treatment Systems Operation. The August 2018 long term care estimate included 2,080 hours for an on-site technician at $35.00/hr. for a total of $72,800. The 2019 estimate included 416 hours for an on-site technician at $85.00/hr. for a total of $35,360.00. Please provide the reason for lower number of hours on-site, and lower cost in 2019.*

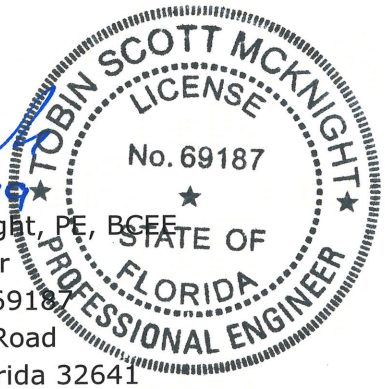
   Response 8: The 2018 and 2019 cost estimates for Long-term Care, Item 13, Leachate Collection Treatment Systems Operation, were reviewed and compared. The 2018 FACE report assumes a full-time employee would be required to operate the leachate collection/treatment system. Based on our experience, a full-time employee is not required to operate the leachate collection/treatment system for the West Pasco County Class I Landfill and allocating 8 hours per week is sufficient. Additionally, the cost of this technician may be shared among the other landfill cells on site and covered in the other FACEs.

OPERATIONS PLAN CHANGES

The facility's Operations Plan has been modified to reflect proposed changes to process ash on site to remove ferrous and non-ferrous metals. These proposed changes have been discussed with the FDEP solid waste section. Attachment 2 includes the revised Operation Plan, and the changes to the Operations Plan are shown in red font in Sections 6 and 15.

If you have any questions or need clarification regarding this information, please contact me at (352) 377-5821.

Sincerely,



10/30/2019

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Attachments:
Attachment 1 – Revised Financial Assurance Cost Estimate
Attachment 2 – Revised Operations Plan

Xc: Cindy Mulkey, FDEP, SCO Administrator: cindy.mulkey@floridadep.gov
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Attachment 1

Financial Assurance Cost Estimate

PART R – FINANCIAL RESPONSIBILITY REQUIREMENTS

R.1 COST ESTIMATES

Please see the Financial Assurance Cost Estimate provided in Attachment R.1.

R.2 PROCEDURES FOR PROVIDING ANNUAL COST ADJUSTMENTS

Cost estimates for closure and long-term care are adjusted and provided to the Florida Department of Environmental Protection (FDEP) before September 1 of each year. Costs will be listed separately for closure and for long-term care. Pasco County Public Infrastructure uses and plans to continue the use of an escrow account to demonstrate financial responsibility. These estimates will be based on one of the two following methods as appropriate:

- Prepared and certified by a professional engineer for a third party performing the work on a per-unit basis with the source of estimates indicated.
- Inflating the previous year's estimate by the appropriate inflation factor as required by Chapter 62-701.630(4), Florida Administrative Code (FAC).

R.3 FUNDING MECHANISMS

Pasco County Public Infrastructure uses and plans to continue using an escrow account to demonstrate financial responsibility. Appropriate audits and forms will be provided as required by Rule 62-701.630, FAC.

Attachment R.1

Financial Assurance and Long-Term-Care Cost Estimates

FINANCIAL ASSURANCE CLOSURE AND LONG-TERM-CARE COST ESTIMATE PASCO COUNTY RESOURCE RECOVERY FACILITY

CONDITIONS OF CERTIFICATION NO.: PA 87-23D

FACILITY ID NO.: 45799

Submitted to:

Florida Department of Environmental Protection

Division of Waste Management

2600 Blair Stone Road, MS #4565

Tallahassee, Florida 32399-2400

Prepared for:

Pasco County Public Infrastructure

14230 Hays Road

Spring Hill, Florida 34610

Prepared by:

Jones Edmunds & Associates, Inc.

730 NE Waldo Road

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Certificate of Engineering Authorization #1841

Jones Edmunds Project No.: 16002-002-01

October 2019

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EXHIBITS

INTRODUCTION

This document presents the estimated closure and long-term-care costs for the West Pasco County Landfill (WPCL) as required by Rules 62-701.630 and 62-701.730, Florida Administrative Code (FAC). The landfill cells included in this cost estimate is the Class I Cells SW-1 and SW-2. Exhibit 1 provides Financial Assurance Cost Estimate Form 62-701.900(28) showing the detailed cost estimates for closure and long-term care (LTC) of the Class I Landfill cells. Exhibit 2 provides backup for the costs.

GENERAL INFORMATION AND ASSUMPTIONS

The following information provides justification for quantities and unit prices for the closure and LTC cost estimates in accordance with Rule 62-701.630(3)(a), FAC. This information is provided in support of the cost estimate provided in the *Closure Cost Estimating Form for Solid Waste Facilities*, FDEP Form 62-701.900(28). The cost estimates are based on a third party performing the work on a per-unit basis with the source of the estimates indicated. "Number of Units" (quantities) and "Costs/Unit" (unit costs) are explained for each line item where applicable based on the final cover design presented in the following Engineering Plans and details provided in Appendix A of this permit application:

- Sheet C6, *Conceptual Final Cover Plan*
- Sheet C7, *Slope Modification Sections*
- Sheet C8, *Closure Details*

The final cover will consist of 12 inches of intermediate bedding layer over the Class I waste, a 40-mil textured geomembrane, a drainage geocomposite, 24 inches of soil final cover, and vegetative cover. The WPCL closure system consists of the following, from top to bottom:

- Vegetative Topsoil Layer: 6 inches of vegetative topsoil, including sod.
- Soil Fill: 18 inches of soil.
- Geocomposite: 200-mil.
- Barrier Layer: 40-mil textured geomembrane.
- Intermediate Bedding Layer: 12 inches of sandy soil.

A soil-loss factor is used to adjust for a reduction in volume due to soil compaction. The soil-loss factor is included in the quantity calculation because quantities of soil purchased will be greater than the quantity of soil in-place after compaction.

Table 1 presents the general information and assumptions used to calculate the closure and long-term-care cost estimates.

Table 1 General Information and Assumptions

Facility Name:	West Pasco County Landfill
Facility Type:	Class I Landfill
Phase/Cell:	Cells SW-1 and SW-2
Acres (footprint):	20 acres
Closure Surface Area (3D):	1,036,803
Soil Loss Factor	20%
Synthetics Loss Factor	10%
Long-Term-Care Period	30 years (minimum)

Table 2 presents calculations for soil volumes used in the closure cost estimates.

Table 2 Soil Volume Calculations

Thickness (feet)	Surface Area (SF)	Loss Factor (%)	Soil Volume (CF)	Soil Volume (CY)
0.5	1,036,803	20%	622,082	23,040
1.0	1,036,803	20%	1,244,164	46,080
1.5	1,036,803	20%	1,866,246	69,120
2.0	1,036,803	20%	2,488,328	92,162

Table 3 presents calculations for surface area units such as geosynthetics and maintenance.

Table 3 Geosynthetic Area Calculations

3D Surface Area	Unit	Loss Factor	Surface Area
1,036,803	SF	10%	1,140,484
115,200	SY	10%	126,720
23.8	acres	10%	26

Table 4 defines the abbreviations used in the cost estimate.

Table 4 List of Abbreviations

AC	Acre	LF	Linear foot
CF	Cubic foot	LS	Lump sum
CY	Cubic yard	MSF	1,000 square feet
DY	Day	SF	Square foot
EA	Each	SY	Square yard
HR	Hour	YR	Year

The detailed closure and long-term-care cost estimates are based on the following assumptions:

- The unit costs provided with each item are costs from recent bids, County Contracts, Florida Department of Transportation (FDOT) Pay Item 12-Month Moving Averages, and RS Means Heavy Construction Cost Data.
- Item costs that were estimated using the RS Means Heavy Construction Cost Data are for Tampa, Florida, which is the closest location available in the online edition and is representative of costs for Spring Hill, Florida.

IV. EXPLANATION OF CLOSURE COST ESTIMATES

1. PROPOSED MONITORING WELLS

No additional monitoring wells are required at the time of closure. As part of the operation of the landfill, the permit-required wells are installed.

2. SLOPE AND FILL

This item assumes grading and surface preparation will be required throughout the closure area and 12 inches of off-site material will be spread over the closure surface and compacted to serve as intermediate cover. The cost estimate is based on the estimates shown below:

Description	Unit	Number of Units	Cost/Unit	Cost Reference
Excavation	CY	46,080	$6.80/CY	FDOT Item: 0120 1 *Regular Excavation*
Placement and Spreading	CY	46,080	$5.00~~1.92~~ /CY	~~RS Means Item: 312323170020 *Spread Material by Dozer*~~Comanco Quote
Compaction	CY	46,080	$0.44/CY	RS Means Item: 312323235100 *Compaction, Roller, 12" 4 Passes*
Off-Site Material	CY	46,080	$15.88/CY	FDOT Item: 0120 2 2 *Borrow Excavation, Truck Measure*

3. COVER MATERIAL (BARRIER LAYER)

The final cover of the landfill will consist of a layer of textured geomembrane and an overlying geocomposite. The cost estimate is based on the estimates shown below:

Description	Unit	Number of Units	Cost/Unit	Cost Reference
Geomembrane	SY	126,720	$4.14/SY	*ARGU America Quote*
Geocomposite	SY	126,720	$5.43/SY	*ARGU America Quote*

4. TOP SOIL COVER

The quantity for this item is based on 18 inches of final cover soil plus 6 inches of vegetative soil over the landfill closure area (including soil loss factor). The cost estimate figures are based on the following:

Description	Unit	Number of Units	Cost/Unit	Cost Reference
Off-Site Material	CY	92,160	$15.88/CY	FDOT Item: 0120 2 2 *Borrow Excavation, Truck Measure*
Placement and Spreading	CY	92,160	$5.501~~.92~~/CY	~~RS Means Item: 312323170020 *Spread Material by Dozer*~~Comanco Quote

5. VEGETATIVE LAYER

Jones Edmunds assumes that the top of the landfill and the side slopes will be sodded.

Description	Unit	Number of Units	Cost/Unit	Cost Reference
Sodding	SY	115,200	$2.97/SY	FDOT Item: 0570 1 2, *Performance Turf, Sod*

6. STORMWATER CONTROL SYSTEM

The stormwater system for Cells SW-1 and SW-2 consists of approximately 377 feet of 12-inch-diameter and 499 feet of 18-inch-diameter downchute piping and 10 inlet and outlet structures.

Description	Unit	Number of Units	Cost/Unit	Cost Reference
Piping – 12-inch	LF	377	$75.26/LF	FDOT Items: 0430175118 *Pipe Culv, 12″*
Piping – 18-inch	LF	499	$65.13/EA	FDOT Items: 0430175124 *Pipe Culv, 18″*
Control Structures	EA	10	$3,957/EA	FDOT Item: 0425 1521 *Inlets, Type C, <10′*

7. PASSIVE GAS CONTROLS

The final cover gas-control system will consist of 13 gas vents. The cost estimate figures are based on the following:

Description	Unit	Number of Units	Cost/Unit	Cost Reference
Gas Vent	EA	13	$5,013/EA	*Preferred Drilling Solutions, Inc. Quote*

8. ACTIVE GAS EXTRACTION CONTROLS

An active gas system will not be constructed at this facility.

9. SECURITY SYSTEM

Security System costs include the repair of 100 feet of fencing and the replacement of one gate and sign at the time of closure. The cost estimate figures are based on the following:

Description	Unit	Total Units	Cost/Unit	Cost Reference
Fence repairs	LF	100	$15.00/LF	FDOT Item: 05550 10221 *Fencing, Type B, 6' with Barb Attmt*
Gate repairs	EA	1	$2,250/EA	FDOT Item: 0550 60224 *Fence Gate, Type B, 20' Opening*
Sign repairs	EA	1	$296.93/EA	FDOT Item: 0700 1 11 *Single Post Sign, <12 SF*

~~The fencing at the property is considered sufficient for access control to the landfill.~~

10. ENGINEERING

Engineering costs for designing and permitting were estimated based on experience with previous landfill closure projects in Florida and were estimated at 7.5 percent of the total construction cost.

11. PROFESSIONAL SERVICES

This item consists of project management for the bidding, construction, construction quality assurance, and construction completion certification phases of the project and uses Jones Edmunds' standard rates.

Construction quality control (CQC) responsibilities belong to the general contractor and geomembrane installation subcontractor. Costs shown in Quality Assurance Testing are the third-party Construction Quality Assurance (CQA) activities, which are assumed to be administered by the consulting engineer. These costs were estimated from experience with previous landfill closure projects in Florida.

12. CONTINGENCY

A contingency amount of 5 percent of the total construction cost is estimated to cover unforeseen costs that may be incurred during construction and price fluctuations in the construction industry.

13. SITE SPECIFIC COSTS

Mobilization/Demobilization – This item is 7 percent of the subtotal of Items 1 through 11 to account for mobilization (5%) and bonds and insurance (2%).

V. LONG-TERM CARE EXPLANATION OF COST ESTIMATES

1. GROUNDWATER MONITORING

The groundwater monitoring system for Cells SW-1 and SW-2 consists of nine monitoring wells that must be sampled semi-annually. Based on Jones Edmunds' estimates for the annual sampling, laboratory analyses, and biannual reporting, the cost breakdown is as follows:

Description	Sampling Frequency (Events/Year)	Number of Wells	(Cost/Well)/Event	Cost Reference
Semiannual Well Sampling	2	9	$1,086.33	Jones Edmunds Estimate

2. SURFACE WATER MONITORING

The existing stormwater system will not discharge from the site; therefore, no cost was assumed for surface water monitoring regarding Cells SW-1 and SW-2.

3. GAS MONITORING

The WPCL Cells SW-1 and SW-2 comprise six perimeter gas monitoring probes that must be monitored quarterly.

Description	Sampling Frequency (Events/Year)	Number of Sampling Points	(Cost/Well)/Event	Cost Reference
Quarterly monitoring	4	6	$124.55	Jones Edmunds Estimate

4. LEACHATE MONITORING

Leachate monitoring is not required at the WPCL by FDEP permit.

5. LEACHATE COLLECTION/TREATMENT SYSTEMS

The total annual leachate generation rate is estimated based on the generation rates for the closed East Pasco County Class I Landfill as determined in the previous Financial Assurance Cost Estimate by JMG Engineering, attached as Reference 1, and assumes that Cells SW-1 and SW-2 will generate a similar amount annually.

Maintenance of the leachate collection and treatment system includes jet cleaning the collection pipes every 5 years. The costs for cleaning the facility's sumps annually include the use of a vacuum truck and technician for an estimated 2 days. Leachate is directly pumped to the nearby Shady Hills Wastewater Treatment Plant.

Description	Unit	Total Units	Frequency (Event/Years)	Number of Units/Year	Cost/Unit	Cost Reference
Collection Pipes	LF	8,108	1/5YR	1,622	$0.77/LF	*Florida Jet Clean Quote*
Sumps, Traps	DY	2	1/5YR	0.40	$2,555/DY	*Florida Jet Clean Quote*
Disposal	KGAL	515	1/YR	1	$70/KGAL	*Aqua Clean Environmental Quote*

6. Groundwater Monitoring Wells Maintenance

The cost for this item is based on replacing one groundwater well every 5 years. This includes abandoning and drilling a new well.

Description	Unit	Total Units	Frequency (Event/Year)	Cost/Unit	Cost Reference
Replacement Well	EA	1	1/5YR	$3,915/EA	*Preferred Drilling Solutions, Inc. Quote*
Abandonment	EA	1	1/5YR	$680/EA	*Preferred Drilling Solutions, Inc. Quote*

7. Gas System Maintenance

The cost for this item is based on replacing one gas well annually. A Factor of Safety of 1.5 was added to account for miscellaneous operations costs related to the gas system. The lump-sum cost for this item has been included under the operation line item.

Description	Unit	Total Units	Frequency (Event/Year)	Cost/Unit	Cost Reference
Replacement Vent	EA	1	1/YR	$5,013/EA	*Preferred Drilling Solutions, Inc. Quote*
Abandonment	EA	1	1/YR	$1,050/EA	*Preferred Drilling Solutions, Inc. Quote*
Operation	EA	1	1/YR	$2,670/EA	Factor of Safety of 1.5

8. Landscape Maintenance

The cost for this item is based on mowing the Landfill approximately eight times a year. The area to be mowed is based on the 3D surface area of Cell's closure surface.

Description	Unit	Total Units	Cost/Unit	Cost Reference
Mowing	AC	23.8	$26.90/AC	FDOT Item: 0107 2 *Mowing*

9. Erosion Control and Cover Maintenance

For erosion control and cover maintenance, Jones Edmunds assumed that the entire closure surface would be regraded and sodded over the 30-year closure period; this is approximately 3,840 SY per year. The repair of 1,000 square yards of liner and underlying geocomposite is assumed per year. A mobilization cost of $3,000 is included for the liner repair and has been incorporated into the unit cost.

Description	Unit	Total Units	Cost/Unit	Cost Reference
Sodding	SY	3,840	$2.97/SY	FDOT Item: 0570 1 2, *Performance Turf, Sod*
Regrading	SY	3,840	$2.43/SY	FDOT Item: 0162 1 11 *Prepared Soil Layer, Finish Soil, 6"*
Liner Repair	SY	1,000	$12.57/SY	*ARGU America Quote*

10. Stormwater Management System Maintenance

Jones Edmunds assumed that the perimeter ditch system will be cleaned annually. Approximately 6 inches of sediment is assumed to be removed from the bottom of a 2-foot-wide ditch.

Description	Unit	Total Units	Frequency (Event/Years)	Cost/Unit	Cost Reference
Conveyance Maintenance	CY	167	1/YR	$6.80/CY	FDOT Item: 0120 1 *Regular Excavation*

11. Security System Maintenance

Security system maintenance assumes 100 feet of fencing repairs annually and a new sign and gate replacement annually.

Description	Unit	Total Units	Cost/Unit	Cost Reference
Fence repairs	LF	100	$15.00/LF	FDOT Item: 05550 10221 *Fencing, Type B, 6' with Barb Attmt*
Gate repairs	EA	1	$2,250/EA	FDOT Item: 0550 60224 *Fence Gate, Type B, 20' Opening*
Sign repairs	EA	1	$296.93/EA	FDOT Item: 0700 1 11 *Single Post Sign, <12 SF*

12. Utilities

This item is estimated to be $1,000 annually to run the leachate pumps.

13. Leachate Collection/Treatment Systems Operation

This item includes operation labor costs for managing the system and the current Jones Edmunds' billing rates for the personnel. The estimate includes 8 hours per week for an on-site technician.

14. Administrative

This item includes administration labor costs for managing the permitting and reporting requirements, inspections, and maintenance. The cost estimate is consistent with current Jones Edmunds' labor rates and experience with similar facilities.

15. Contingency

The contingency is calculated as 5 percent of the total costs of Items 1 through 14. This number is based on Jones Edmunds' engineering judgment and consideration of estimation of expected annual costs.

16. Site-Specific Costs

There are no long-term-care Site-Specific Costs identified for WPCL Cells SW-1 and SW-2.

Reference 1

LONG TERM CARE COST ESTIMATE

(Note: These estimates are for the entire Class I Landfill, inclusive of A1, A2, A3, A4, SW1, and SW2)

June 2018

1. **Groundwater Monitoring [62-701.510 (6), and (8)(a)]**

   The West Pasco Class I Landfill has 29 groundwater monitoring wells (20 associated with the ash cells and 9 associated with the solid waste cells) that are sampled semi-annually. Sampling and analysis is conducted by Pasco County Environmental Services. Included in Part 4 are the unit costs estimates provided by Pasco County Environmental Laboratory to obtain the required groundwater samples and to analyze them for the required constituents. Annual groundwater sampling and analysis is estimated to be **$20,300.**

2. **Surface Water Monitoring [62-701.510(4), and (8)(b)]**

   It is not anticipated that the existing stormwater system will discharge from the site. Accordingly, there is no cost associated with surface water monitoring.

3. **Gas Monitoring [62-701.400(10)]**

   Landfill gas from the solid waste cells is monitored at 6 gas monitoring locations on a quarterly basis. Sample analysis is conducted in-situ, so the only costs associated with the gas monitoring program are employee time and mileage. Annual costs associated with the gas monitoring program are:

   - Quarterly samples (four hours on site at $20/hr, four 30-mile trips @ $0.575/mile) = $389 (add $100 for conservancy)

   Annual gas monitoring is estimated to be approximately **$480.**

4. **Leachate Monitoring [62-701.510(5),(6)(b) and 62-701.510(8)(c).**

   Currently, leachate is collected and periodically hauled off-site for disposal. The disposal site requires an annual demonstration that the leachate does not exhibit the toxicity characteristic defined at 40 CFR 261.24. The annual cost to conduct a TCLP analysis is approximately $350.

   Annual leachate monitoring is estimated to be **$350.**

5. **Leachate Collection/Treatment Systems Maintenance**

   Routine maintenance of the leachate collection system is a high-pressure cleaning of all laterals and collection mains every five years. A third-party contractor recently conducted this maintenance at a cost of $9,120 (see **Part 4**). Though not deemed necessary following the last routine pressure cleaning, it is possible that additional video-inspection *could* become necessary

in the future. Therefore, for purposes of estimating long-term care costs, Pasco County will apply a safety factor to this estimate and assume an annual cost of **$9,000** per year for the ash cells and **$9,000** per year for the solid waste cells.

Leachate from the ash cells is currently collected in a 2 million gallon above ground storage tank and periodically hauled off site for disposal at a permitted domestic wastewater treatment facility. Leachate from the solid waste cells is pumped directly to the adjacent Shady Hills Wastewater Treatment Facility. The current contract price for transportation and disposal of the ash leachate is approximately $0.07/gallon. For consistency, it is conservatively assumed that leachate from the solid waste cells will also be hauled off-site once the cells are closed.

Once the landfill (both the ash cells and the solid waste cells) is in long term care, the amount of leachate generated will be minimal because of the landfill cover. To approximate the amount of leachate that will be generated following installation of the final cover systems, leachate generation rates for the closed East Pasco Class I landfill were reviewed. The East Pasco Landfill was used for this analysis because the closure design is similar to that anticipated for the West Pasco landfill. The portion of the East Pasco Landfill that incorporates a leachate collection system is approximately 80 acres in size, which is just slightly larger than the 70 acres envisioned in this Long Term Care Cost estimate for the West Pasco site. Monthly leachate generation rates for East Pasco show that the average monthly volume of leachate collected in the capped and closed landfill is approximately 150,000 gallons per month. Extrapolating this value out over a 12-month period results in an estimated annual leachate generation rate of 1.8 million gallons for the 80 acre closed landfill (which is conservatively larger than the 70 acre West Pasco landfill.) At $0.07/gallon for transportation and disposal, this equates to approximately **$126,000** per year in leachate disposal costs ($90,020 for the ash cells and $35,980 for the solid waste cells).The previously prepared estimate for leachate collection erroneously assumed that the leachate generation rate following closure would be identical to the rate generated during operation.

6. Groundwater Monitoring Well Maintenance

It is estimated that the construction of a new well, installed to a depth of approximately 30 feet (the average depth of a surficial aquifer monitoring well at the site) is approximately $4,500. Assuming that all of the existing monitoring wells will at some point during the 30-year long term care period be replaced, total replacement cost will be $130,500 ($4,500 x 29 wells). Dividing this value by the 30-year long term care period results in an estimated annual cost of **$4,350**.

7. Gas System Maintenance

The gas monitoring system at SW-1 and SW-2 consists of passive vents designed to reduce the potential for lateral gas migration beyond the property boundary. The estimated cost to design, permit, and construct a passive vent is assumed to be $12,500 (based on 2015 installation of passive vents at the East Pasco Class I Landfill). Assuming that routine maintenance over the

Exhibit 1

Financial Assurance Cost Estimate
Form 62-701.900(28), FAC

Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

DEP Form # 62-701.900(28), F.A.C.
Form Title: Closure Cost Estimating Form For Solid Waste Facilities
Effective Date: January 6, 2010
Incorporated in Rule 62-701.630(3), F.A.C.

CLOSURE COST ESTIMATING FORM FOR SOLID WASTE FACILITIES

Date of DEP Approval: _____

I. GENERAL INFORMATION:

Facility Name: West Pasco County Landfill (Class I Cells SW-1 and SW-2) WACS ID: 45799

Permit Application or Consent Order No.: _____ Expiration Date: _____

Facility Address: 14230 Hays Road, Spring Hill, FL 34610

Permittee or Owner/Operator: Pasco County Public Infrastructure

Mailing Address: 19420 Central Boulevard, Land O'Lakes, FL 34637

Latitude: 28° 22' 42.23 Longitude: 82° 33 29.46

Coordinate Method: Google Earth Datum: WGS 84

Collected by: Thomas Le Blanc Company/Affiliation: Jones Edmunds

Solid Waste Disposal Units Included in Estimate:

Phase / Cell	Acres	Date Unit Began Accepting Waste	Active Life of Unit From Date of Initial Receipt of Waste	If active: Remaining life of unit	If closed: Date last waste received	If closed: Official date of closing
Cell SW-1 and SW-2	20	1991	28	5.3	N/A	N/A

Total disposal unit acreage included in this estimate: Closure: 20 Long-Term Care: 20

Facility type: (check all that apply)
☑ Class I ☐ Class III ☐ C&D Debris Disposal
☐ Other: _____

II. TYPE OF FINANCIAL ASSURANCE DOCUMENT (Check type)

☐ Letter of Credit*
☐ Performance Bond*
☐ Guarantee Bond*
☐ Insurance Certificate
☐ Financial Test
☐ Trust Fund Agreement
☑ Escrow Account
☐ Form 29 (FA Deferral)

* - Indicates mechanisms that require the use of a Standby Trust Fund Agreement

Northwest District
160 Government Center
Pensacola, FL 32502-5794
850-595-8360

Northeast District
7825 Baymeadows Way, Ste. B200
Jacksonville, FL 32256-7590
904-807-3300

Central District
3319 Maguire Blvd., Ste. 232
Orlando, FL 32803-3767
407-894-7555

Southwest District
10351 N. Telecom Pky.
Temple Terrace, FL 33637
813-632-7600

South District
2295 Victoria Ave., Ste.364
Fort Myers, FL 33901-3881
239-332-6975

Southeast District
400 N. Congress Ave., Ste 200
West Palm Beach, FL 33401
561-681-6600

II. ESTIMATE ADJUSTMENT

40 CFR Part 264 Subpart H as adopted by reference in Rule 62-701.630, Florida Administrative Code, (F.A.C.) sets forth the method of annual cost estimate adjustment. Cost estimates may be adjusted by using an inflation factor or by recalculating the maximum costs of closure in current dollars. Select one of the methods of cost estimate ajustment below.

☐ **(a) Inflation Factor Adjustment** ☑ **(b) Recalculated or New Cost Estimates**

Inflation adjustment using an inflation factor may only be made when a Department approved closure cost estimate exists and no changes have occurred in the facility operation which would necessitate modification to the closure plan. The inflation factor is derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its survey of Current Business. The inflation factor is the result of dividing the latest published annual Deflatory by the Deflator for the previous year. The inflation factor may also be obtained from the Solid Waste website www.dep.state.fl.us/waste/categories/swfr or call the Financial Coordinator at (850) 245-8706.

This adjustment is based on the Department approved closing cost estimate dated: _____

Latest Department Approved **Closing Cost** Estimate:		Current Year Inflation Factor, **e.g. 1.02**		Inflation Adjusted Closing Cost Estimate:
_____	×	_____	=	_____

This adjustment is based on the Department approved long-term care cost estimate dated: _____

Latest Department Approved Annual **Long-Term Care** Cost Estimate:		Current Year Inflation Factor, **e.g. 1.02**		Inflation Adjusted Annual Long-Term Care Cost Estimate:
_____	×	_____	=	_____
Number of Years of Long Term Care Remaining:			×	_____
Inflation Adjusted Long-Term Care Cost Estimate:			=	_____

Signature by: **Owner/Operator** **Engineer** (check what applies)

Signature	Address
Name & Title	City, State, Zip Code
Date	E-Mail Address
Telephone Number	

IV. ESTIMATED CLOSING COST (check what applies)

☑ **Recalculated Cost Estimate** ☐ **New Facility Cost Estimate**

Notes:
1. Cost estimates for the time period when the extent and manner of landfill operation makes closing most expensive.
2. Cost estimate bust be certified by a professional engineer.
3. Cost estimates based on third party suppliers of material, equipment and labor at fir market value.
4. In some cases, a price quote in support of individual

Description	Unit	Number of Units	Cost / Unit	Total Cost
1. Proposed Monitoring Wells	**(Do not include wells already in existence.)**			
	EA		$ -	$ -
			Subtotal Proposed Monitoring Wells:	$ -
2. Slope and Fill (bedding layer between waste and barrier layer):				
Excavation	CY	46,080	$ 6.80	$ 313,345
Placement and Spreading	CY	46,080	$ 5.00	$ 230,401
Compaction	CY	46,080	$ 0.44	$ 20,275
Off-Site Material	CY	46,080	$ 15.88	$ 731,753
Delivery	CY		$ -	$ -
			Subtotal Slope and Fill:	$ 1,295,774
3. Cover Material (Barrier Layer):				
Off-Site Clay	CY		$ -	$ -
Synthetics - 40 mil	SY	126,720	$ 4.14	$ 524,621
Synthetics - GCL	SY		$ -	$ -
Synthetics - Geonet	SY		$ -	$ -
Synthetics - Other (explain) Geocomposite	SY	126,720	$ 5.43	$ 688,090
			Subtotal Cover Material:	$ 1,212,711
4. Top Soil Cover:				
Off-Site Material	CY	92,160	$ 15.88	$ 1,463,506
Delivery	CY			$ -
Spread	CY	92,160	$ 5.50	$ 506,882
			Subtotal Top Soil Cover:	$ 1,970,388
5. Vegetative Layer:				
Sodding	SY	115,200	$ 2.97	$ 342,144
Hydroseeding	SY		$ -	$ -
Fertilizer	AC		$ -	$ -
Mulch	AC		$ -	$ -
Other (explain)			$ -	$ -
			Subtotal Vegetative Layer:	$ 342,144
6. Stormwater Control System:				
Earthwork	CY			$ -
Grading	SY		$ -	$ -
Piping - 12"		377	$ 75.26	$ 28,373
Piping - 18"	LF	499	$ 65.13	$ 32,500
Ditches	LF		$ -	$ -
Berms	LF		$ -	$ -
Control Structures	EA	10	$ 3,957	$ 39,574
Other (explain)	LF			$ -
			Subtotal Stormwater Control System:	$ 100,447

Description	Unit	Number of Units	Cost / Unit	Total Cost
7. **Passive Gas Control:**				
Wells	EA	13	$ 5,013	$ 65,169
Pipe and Fittings	LF		$ -	$ -
Monitoring Probes	EA		$ -	$ -
NSPS/Title V Requirements	LS		$ -	$ -
			Subtotal Passive Gas Control:	$ 65,169
8. Active Gas Extraction Control:				
Traps	EA		$ -	$ -
Sumps	EA		$ -	$ -
Flare Assembly	EA		$ -	$ -
Flame Arrestor	EA		$ -	$ -
Mist Eliminator	EA		$ -	$ -
Flow Meter	EA		$ -	$ -
Blowers	EA		$ -	$ -
Collection System	LS			$ -
Other (explain)	EA		$ -	$ -
			Subtotal Active Gas Extraction:	$ -
9. Security System:				
Fencing	LF	100	$ 15.00	$ 1,500
Gate(s)	EA	1	$ 2,250.00	$ 2,250
Sign(s)	EA	1	$ 296.93	$ 297
			Subtotal Security System:	$ 4,047
10. Engineering:				
Closure Plan Report	LS	1	$ 200,000	$ 200,000
Certified Engineering Drawings	LS	1	$ 120,000	$ 120,000
NSPS/Title V Air Permit	LS		$ -	$ -
Final Survey	LS	1	$ 25,000	$ 25,000
Certification of Closure	LS	1	$ 35,000	$ 35,000
Other (explain)			$ -	$ -
			Subtotal Engineering:	$ 380,000

Description	Hours	Cost / Hour	Hours	Cost / Hour	Total Cost
11. Professional Services:					
	Contract Management		Quality Assurance		
P.E. Supervisor	210	$ 215	120	$ 215	$ 70,950
On-Site Engineer	70	$ 170	240	$ 170	$ 52,700
Office Engineer	210	$ 130	240	$ 130	$ 58,500
On-Site Technician	110	$ 85	1,460	$ 85	$ 133,450
Other (explain) Administrative Assistant	110	$ 80	30	$ 80	$ 11,200
				Subtotal Professional Services:	$ 326,800

Description	Unit	Number of Units	Cost / Unit	Total Cost
Quality Assurance Testing	LS	1	$ 50,000	$ 50,000
			Subtotal Professional Services:	**$ 376,800**
			Subtotal of 1-11 Above:	$ 5,747,480
12. Contingency:	5	% of Subtotal of 1-11 Above		$ 287,374
			Subtotal Contingency:	$ 287,374
			Estimated Closing Cost Subtotal:	$ 6,034,854

Description	Total Cost
13. Site-Specific Costs:	
Mobilization and Bonds and insurance	**$ 402,324**
Waste Tire Facility	$ -
Materials Recovery Facility	$ -
Special Wastes	$ -
Leachate Management System Modification - Annual Disposal	$ -
Other (explain)	$ -
Subtotal Site Specific Costs:	$ 402,324
TOTAL ESTIMATED CLOSING COSTS ($):	**$ 6,437,178**

V. ANNUAL COST FOR LONG-TERM CARE

See 62-701.600(1)a.1., 62-701.620(1), 62-701.630(3)a. and 62-701.730(11)b. F.A.C. for required term length. For landfills certified closed and Department accepted, enter the remaining long-term care length as "Other" and provide years remaining.

(Check Term Length) ☐ 5 Years ☐ 20 Years ☐ 30 Years ☑ Other, ____ Years

Notes: 1. Cost estimates must be certified by a professional engineer.

2. Cost estimates based on third party suppliers of material, equipment and labor at fair market value.

3. In some cases, a price quote in support of individual item estimates may be required.

All items must be addressed. Attach a detailed explanation for all items marked not applicable (N/A)

Description	Sampling Frequency (Events / Year)	Number of Wells	(Cost / Well) / Event	Annual Cost
1. Groundwater Monitoring [62-701.510(6), and (8)(a)]				
Monthly	12		$ -	$ -
Quarterly	4		$ -	$ -
Semi-Annual	2	9	$ 1,086.33	$ 19,554
Annual	1		$ -	$ -
			Subtotal Groundwater Monitoring:	$ 19,554
2. Surface Water Monitoring [62-701.510(4), and (8)(b)]				
Monthly	12		$ -	$ -
Quarterly	4		$ -	$ -
Semi-Annual	2		$ -	$ -
Annual	1		$ -	$ -
			Subtotal Surface Water Monitoring:	$ -
3. Gas Monitoring [62-701.400(10)]				
Monthly	8		$ -	$ -
Quarterly	4	6	$ 124.55	$ 2,989
Semi-Annual	2		$ -	$ -
Annual	1		$ -	$ -
			Subtotal Gas Monitoring:	$ 2,989
4. Leachate Monitoring [62-701.510(5), (6)(b) and 62-701.510(8)c]				
Monthly	12		$ -	$ -
Quarterly	4		$ -	$ -
Semi-Annual	2		$ -	$ -
Annual	1		$ -	$ -
Other (explain) _____			$ -	$ -
			Subtotal Leachate Monitoring:	$ -

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
5. Leachate Collection/Treatment Systems Maintenance				
Maintenance				
Collection Pipes	LF	1,622.0	$ 0.77	$ 1,249
Sumps, Traps	DY	0.4	$ 2,555.00	$ 1,022
Lift Stations	EA		$ -	$ -
Cleaning	LS		$ -	$ -
Tanks	DY		$ -	$ -

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
5. (continued)				
Impoundments				
Liner Repair	SY		$ -	$ -
Sludge Removal	CY		$ -	$ -
Aeration Systems				
Floating Aerators	~~EA~~ DAY			$ -
Spray Aerators	EA		$ -	$ -
Disposal				
Off-site (Includes transportation and disposal)	1,000 gallon	515	$ 70.00	$ 36,050
		Subtotal Leachate Collection / Treatment Systems Maintenance:		$ 38,321
6. Groundwater Monitoring Wells Maintenance				
Monitoring Wells	LF		$ -	$ -
Replacement	EA	0.2	$ 3,915.00	$ 783
Abandonment	EA	0.2	$ 680.00	$ 136
		Subtotal Groundwater Monitoring Well Maintenance:		$ 919
7. Gas System Maintenance				
~~Piping, Vents~~ Replacement Well	EA	1	$ 5,013.00	$ 5,013
~~Blowers~~ Abandonment	EA	1	$ 1,050.00	$ 1,050
Flaring Units	EA		$ -	$ -
Meters, Valves	EA		$ -	$ -
Compressors	EA		$ -	$ -
Flame Arrestors	EA		$ -	$ -
Operation	EA	1	$ 2,506.50	$ 2,507
			Subtotal Gas System:	8,570
8. Landscape Maintenance				
Mowing 8 /yr	AC	23.8	$ 26.90	$ 5,122
Fertilizer /yr	AC		$ -	$ -
		Subtotal Landscape Maintenance:		$ 5,122
9. Erosion Control and Cover Maintenance				
Sodding	SY	3,840	$ 2.97	$ 11,405
Regrading	SY	3,840	$ 2.43	$ 9,331
Liner Repair	SY	1,000	$ 12.57	$ 12,570
Clay	CY		$ -	$ -
		Subtotal Erosion Control and Cover Maintenance:		$ 33,306
10. Storm Water Management System Maintenance				
Conveyance Maintenance	CY	167	$ 13.64	$ 2,273
		Subtotal Storm Water System Maintenance:		$ 2,273
11. Security System Maintenance				
Fences	~~LS~~ LF	100	$ 15.00	$ 1,500
Gate(s)	EA	1	$ 2,250.00	$ 2,250
Sign(s)	EA	1	$ 296.93	$ 297
			Subtotal Security System:	$ 4,047

Description	Unit		Number of Units / Year	Cost / Unit	Annual Cost
12. Utilities		LS	1	$ 1,000	$ 1,000
13. Leachate Collection/Treatment Systems Operation					
Operation					
P.E. Supervisor		HR	0	$ 215	$ -
On-Site Engineer		HR	0	$ 170	$ -
Office Engineer		HR	0	$ 130	$ -
On-Site Technician		HR	416	$ 85	$ 35,360
Materials		LS			
				Subtotal Leachate Collection/Treatment System Operation:	$ 35,360
14. Administrative			Hours	$/Hour	Total
P.E. Supervisor		HR	52	$ 165	$ 8,580
On-Site Engineer		HR	0	$ 125	$ -
Office Engineer		HR	104	$ 125	$ 13,000
Onsite Technician		HR	520	$ 80	$ 41,600
Other		HR			$ -
				Subtotal Administrative:	$ 63,180
				Subtotal of 1-14 Above:	$ 214,641
15. Contingency	5%	% of Subtotal of 1-14 Above			$ 10,732
				Subtotal Contingency:	$ 10,732

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
16 Site-Specific Costs (explain)				
				$ -
				$ -
				$ -
				$ -
			Subtotal Site Specific Costs:	$ -
			ANNUAL LONG-TERM CARE COST ($ / Year):	**$ 225,373**
			Number of Years of Long-Term Care:	30
			TOTAL LONG-TERM CARE COST ($):	**$ 6,761,190**

VI. CERTIFICATION BY ENGINEER

This is to certify that the Cost Estimates pertaining to the engineering features of this solid waste management facility have been examined by me and found to conform to engineering principles applicable to such facilities. In my professional judgment, the Cost Estimates are a true, correct and complete representation of the financial liabilities for closing and/or long-term care of the facility and comply with the requirements of Rule 62-701.630 F.A.C. and all other Department of Environmental Protection rules, and statutes of the State of Florida. It is understood that the Cost Estimates shall be submitted to the Department annually, revised or adjusted as required by Rule 62-701.630(4), F.A.C.

TOBIN SCOTT MCKNIGHT ★ LICENSE No. 69187 ★ STATE OF FLORIDA ★ PROFESSIONAL ENGINEER

Signature

Tobin S. McKnight, P.E., BCEE
Department Manager/Vice President
Name and Title (please type)

730 NE Waldo Road
Mailing Address

Gainesville, Florida 32641
City, State, Zip Code

10/30/2019
Date

tmcknight@jonesedmunds.com
E-Mail address (if available)

69187
Florida Registration Number

(352) 377-5821
Telephone Number

(please affix seal)

Cert of Auth. #1841

VII. SIGNATURE BY OWNER/OPERATOR

E-Mail address (if available) Telephone Number

John Power 10-29-19
Signature

14230 Hays Road
Mailing Address

John Power, Solid Waste Director
Name and Title (please type)

Spring Hill, FL 34610
City, State, Zip Code

Jpower@PascoCountyFL.net
E-Mail address (if available)

(727) 861-3053
Telephone Number

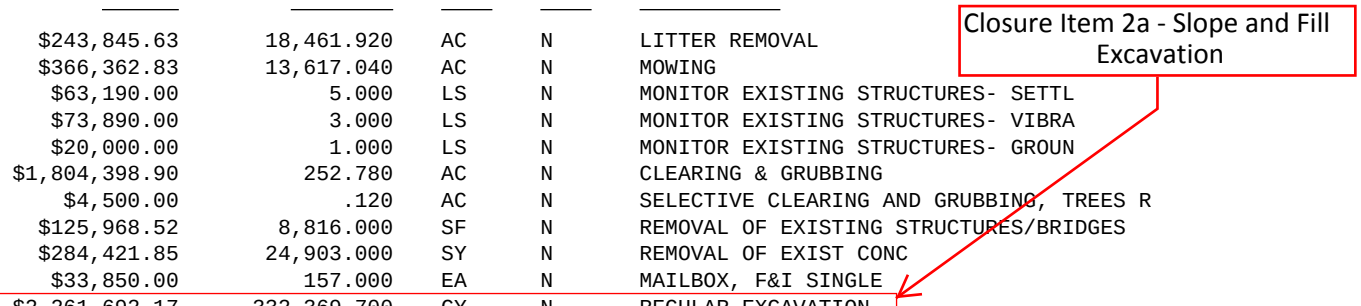
Exhibit 2

Backup of Closure and Long-Term Care Unit Costs

Florida Department of Transportation
Item Average Unit Cost
From 2018/04/01 to 2019/03/31

Contract Type: CC AREAS: 07
Displaying: VALID ITEMS WITH HITS
From: 0102 1 To: 9999999

Item	No. of Conts	Weighted Average	Total Amount	Total Quantity	Unit Meas	Obs?	Description
0107 1	14	$13.21	$243,845.63	18,461.920	AC	N	LITTER REMOVAL
0107 2	14	$26.90	$366,362.83	13,617.040	AC	N	MOWING
0108 1	5	$12,638.00	$63,190.00	5.000	LS	N	MONITOR EXISTING STRUCTURES- SETTL
0108 2	3	$24,630.00	$73,890.00	3.000	LS	N	MONITOR EXISTING STRUCTURES- VIBRA
0108 3	1	$20,000.00	$20,000.00	1.000	LS	N	MONITOR EXISTING STRUCTURES- GROUN
0110 1 1	14	$7,138.22	$1,804,398.90	252.780	AC	N	CLEARING & GRUBBING
0110 2 2	1	$37,500.00	$4,500.00	.120	AC	N	SELECTIVE CLEARING AND GRUBBING, TREES R
0110 3	2	$14.29	$125,968.52	8,816.000	SF	N	REMOVAL OF EXISTING STRUCTURES/BRIDGES
0110 4 10	12	$11.42	$284,421.85	24,903.000	SY	N	REMOVAL OF EXIST CONC
0110 7 1	5	$215.61	$33,850.00	157.000	EA	N	MAILBOX, F&I SINGLE
0120 1	13	$6.80	$2,261,692.17	332,369.700	CY	N	REGULAR EXCAVATION
0120 4	2	$9.75	$291,879.60	29,934.000	CY	N	SUBSOIL EXCAVATION
0120 6	12	$10.73	$3,556,093.85	331,317.800	CY	N	EMBANKMENT
0160 4	10	$3.60	$1,638,989.75	454,899.000	SY	N	TYPE B STABILIZATION
0162 1 11	4	$2.43	$39,967.79	16,444.000	SY	N	PREPARED SOIL LAYER, FINISH SOIL, 6"
0173 76	1	$15.00	$603,600.00	40,240.000	LF	N	GROUT PIPE INSTALLATION
0173 77 1	1	$230.00	$443,670.00	1,929.000	CY	N	SUBSURF PRESSURE GROUTING,SAND CEM
0285701	6	$17.44	$466,888.60	26,774.000	SY	N	OPTIONAL BASE,BASE GROUP 01
0285702	1	$18.00	$439,290.00	24,405.000	SY	N	OPTIONAL BASE,BASE GROUP 02
0285703	1	$10.00	$50,240.00	5,024.000	SY	N	OPTIONAL BASE,BASE GROUP 03
0285704	2	$16.68	$9,275.86	556.000	SY	N	OPTIONAL BASE,BASE GROUP 04
0285706	4	$17.78	$509,241.15	28,635.000	SY	N	OPTIONAL BASE,BASE GROUP 06
0285709	6	$26.07	$6,670,944.80	255,891.000	SY	N	OPTIONAL BASE,BASE GROUP 09
0285710	3	$30.32	$168,453.75	5,555.000	SY	N	OPTIONAL BASE,BASE GROUP 10
0285711	1	$32.00	$585,504.00	18,297.000	SY	N	OPTIONAL BASE,BASE GROUP 11
0285712	1	$16.00	$341,568.00	21,348.000	SY	N	OPTIONAL BASE,BASE GROUP 12
0285713	1	$91.80	$17,533.80	191.000	SY	N	OPTIONAL BASE,BASE GROUP 13
0285715	3	$57.84	$295,494.50	5,109.000	SY	N	OPTIONAL BASE,BASE GROUP 15
0286 1	2	$35.27	$38,835.00	1,101.000	SY	N	TURNOUT CONSTRUCT/DRIVEWAY BASE- OPTION
0286 2	2	$100.62	$324,422.00	3,224.200	TN	N	TURNOUT CONSTRUCT-ASPHALT/DRIVEWAY BASE
0327 70 1	4	$4.52	$23,486.10	5,197.000	SY	N	MILLING EXIST ASPH PAVT, 1" AVG DEPTH
0327 70 2	3	$2.73	$67,975.71	24,918.000	SY	N	MILLING EXIST ASPH PAVT,3 1/2" AVG DEPTH
0327 70 3	2	$4.28	$11,651.38	2,724.000	SY	N	MILLING EXIST ASPH PAVT,4 1/2" AVG DEPTH
0327 70 4	5	$1.50	$577,875.42	384,820.000	SY	N	MILLING EXIST ASPH PAVT, 3" AVG DEPTH
0327 70 5	1	$3.00	$48,684.00	16,228.000	SY	N	MILLING EXIST ASPH PAVT, 2" AVG DEPTH
0327 70 6	9	$1.49	$858,759.34	577,658.000	SY	N	MILLING EXIST ASPH PAVT,1 1/2" AVG DEPTH
0327 70 7	3	$2.08	$21,039.39	10,093.000	SY	N	MILLING EXIST ASPH PAVT, 4" AVG DEPTH
0327 70 8	1	$1.49	$28,456.02	19,098.000	SY	N	MILLING EXIST ASPH PAVT,2 1/2" AVG DEPTH
0327 70 10	1	$1.49	$216.05	145.000	SY	N	MILLING EXIST ASPH PAVT, 5" AVG DEPTH
0327 70 11	5	$1.37	$1,055,221.11	768,424.000	SY	N	MILLING EXIST ASPH PAVT,2 1/4" AVG DEPTH



Closure Items 2b and 4a

Thomas Le Blanc

From: Tyler Woody <twoody@comanco.com>
Sent: Wednesday, October 09, 2019 4:05 PM
To: Thomas Le Blanc
Cc: David Scherbaty
Subject: FW: Pasco County Budget Items
Attachments: COMANCO 2019 Pasco County - Budget Items.pdf

Thomas,

As requested, please see the attached revised Pasco County budget items list. I brought these up to the current market values and they should be good for another year. Feel free to contact me with any questions and let me know if you need anything further on this.

Respectfully,

COMANCO
SAFETY • QUALITY • SERVICE

Tyler Woody | Estimator
COMANCO Environmental Corporation
4301 Sterling Commerce Dr. | Plant City, FL 33566
Office: 813-988-8829 ext. 121 | Fax: 813-988-8779
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From: Thomas Le Blanc <TLeBlanc@jonesedmunds.com>
Sent: Wednesday, October 09, 2019 7:39 AM
To: David Scherbaty <dscherbaty@comanco.com>
Subject: Pasco County Budget Items

Good Afternoon David,

We prepared a permit application for Pasco County and wanted to reach out to you about Closure Budgetary Items. In 2018, you had provided a cost of $4.50/CY for “Placement and Spreading” and $5.00/CY for “Spread” (see attachment). Would you mind providing us an updated cost per unit for these items? Thank you for the help!

Regards,

Thomas Le Blanc
Graduate Intern

Closure Items 2b and 4a

IV. ESTIMATED CLOSING COST (check what applies)

☐ **Recalculated Cost Estimate** ☐ **New Facility Cost Estimate**

Notes: 1. Cost estimates for the time period when the extent and manner of landfill operation makes closing most ex
2. Cost estimate must be certified by a professional engineer.
3. Cost estimates based on third party suppliers of material, equipment and labor at fair market value.
4. In some cases, a price quote in support of individual item estimates may be required.

Description	Unit	Number of Units	Cost / Unit	Total Cost
1. Proposed Monitoring Wells	**(Do not include wells already in existence.)**			
	EA			
			Subtotal Proposed Monitoring Wells:	
2. Slope and Fill (bedding layer between waste and barrier layer):				
Excavation	CY SY		1.00	
Placement and Spreading	CY		~~4.50~~ 5.00	
Compaction	CY			
Off-Site Material	CY			
Delivery	CY			
			Subtotal Slope and Fill:	
3. Cover Material (Barrier Layer):				
Off-Site Clay	CY			
Synthetics - 40 mil	SY		5.50	
Synthetics - GCL	SY			
Synthetics - Geonet	SY			
Synthetics - Other (explain) Geocomposite	SY		7.50	
			Subtotal Cover Material:	
4. Top Soil Cover:				
Off-Site Material	CY		10.00	
Delivery	CY		~~4.00~~ 5.00	
Spread	CY		~~5.00~~ 5.50	
			Subtotal Top Soil Cover:	
5. Vegetative Layer				
Sodding	SY		2.75	
Hydroseeding	AC			
Fertilizer	AC			
Mulch	AC			
Other (explain)				
			Subtotal Vegetative Layer:	
6. Stormwater Control System:				
Earthwork	CY			
Grading	SY			
Piping	LF			
Ditches	LF			
Berms	LF			
Control Structures	EA			
Other (explain)				
			Subtotal Stormwater Control System:	

Cost Estimate Report

Closure Item 2c - Slope and Fill Compaction

West Pasco County Landfill

Date: 06/12/2019

Pasco County

Year 2019

Unit Detail Report

Prepared By: JoAnne Talamo Jones Edmunds & Associates, Inc.

LineNumber	Description	Quantity	Unit	Total Incl. O&P	Ext. Total Incl. O&P
Division 31	**Earthwork**				
312323170020	Fill, dumped material, spread, by dozer, excludes compaction	0.00	L.C.Y.	$1.92	$0.00
312323235100	Compaction, riding, vibrating roller, 4 passes, 12" lifts	0.00	E.C.Y.	$0.44	$0.00
Division 31	**Earthwork Subtotal**				**$0.00**
Division 33	**Utilities**				
334211501040	Public storm utility drainage piping, drainage and sewage, corrugated HDPE, type S, bell and spigot, with gaskets, 12" diameter, excludes excavation and backfill	0.00	L.F.	$9.15	$0.00
Division 33	**Utilities Subtotal**				**$0.00**

Florida Department of Transportation
Item Average Unit Cost
From 2018/04/01 to 2019/03/31

Contract Type: CC STATEWIDE
Displaying: VALID ITEMS WITH HITS
From: 0102 1 To: 9999999

Item	No. of Conts	Weighted Average	Total Amount	Total Quantity	Unit Meas	Obs?	Description
0102911 3	9	$2.81	$28,816.99	10,246.000	SF	N	PAVT MARKING REMOVABLE TAPE,WH BLK,OTHER
0102912 1	4	$1.97	$7,307.93	3,718.000	LF	N	PAVT MARKING REMOVABLE TAPE,YELLOW,SKIP
0102912 2	32	$1.97	$427,157.31	216,646.000	LF	N	PAVT MARKING REMOVABLE TAPE,YELLOW,SOLID
0103 1 16	1	$1,064,773.68	$1,064,773.68	1.000	LS	N	TEMPORARY WORK STRUCTURE, 43282815201
0104 1	40	$3.36	$571,917.77	170,108.000	SY	N	ARTIFICIAL COVERINGS / ROLL EROSION CNTL
0104 6	4	$32.49	$39,020.70	1,201.000	LF	N	TEMPORARY SLOPE DRAIN / RUNOFF CONT STR
0104 7	4	$2,936.37	$102,773.00	35.000	EA	N	SEDIMENT BASIN / CONTAINMENT SYSTEM
0104 9	8	$2,106.07	$191,652.60	91.000	EA	N	SEDIMENT BASIN / CONTAINMENT SY CLEANOUT
0104 10 3	168	$2.20	$4,510,552.52	2,048,385.000	LF	N	SEDIMENT BARRIER
0104 11	86	$11.92	$1,201,985.77	100,801.900	LF	N	FLOATING TURBIDITY BARRIER
0104 12	40	$3.74	$907,753.52	242,438.000	LF	N	STAKED TURBIDITY BARRIER- NYL REINF PVC
0104 15	59	$2,601.29	$710,152.27	273.000	EA	N	SOIL TRACKING PREVENTION DEVICE
0104 18	176	$114.64	$1,133,670.55	9,889.000	EA	N	INLET PROTECTION SYSTEM
0104 19	6	$1.25	$25,704.45	20,485.000	SY	N	CHEMICAL TREATMENT FOR EROSION CONTROL
0107 1	172	$12.76	$2,309,553.22	180,995.160	AC	N	LITTER REMOVAL
0107 2	170	$20.10	$2,923,306.42	145,465.320	AC	N	MOWING
0108 1	88	$13,218.91	$1,335,109.62	101.000	LS	N	MONITOR EXISTING STRUCTURES- SETTL
0108 2	49	$12,277.24	$699,802.62	57.000	LS	N	MONITOR EXISTING STRUCTURES- VIBRA
0108 3	2	$13,995.00	$27,990.00	2.000	LS	N	MONITOR EXISTING STRUCTURES- GROUN
0110 1 1	199	$11,492.50	$47,593,173.64	4,141.236	AC	N	CLEARING & GRUBBING
0110 2 2	20	$34,719.04	$368,716.18	10.620	AC	N	SELECTIVE CLEARING AND GRUBBING, TREES R
0110 2 3	2	$11,456.31	$141,600.00	12.360	AC	N	SELECTIVE CLEARING AND GRUB, PLANT PRES
0110 3	43	$33.66	$10,739,300.85	319,048.000	SF	N	REMOVAL OF EXISTING STRUCTURES/BRIDGES
0110 4 10	169	$13.59	$6,679,801.77	491,468.000	SY	N	REMOVAL OF E
0110 6	2	$2,450.00	$4,900.00	2.000	EA	N	PLUGGING WAT
0110 7 1	41	$242.47	$171,180.84	706.000	EA	N	MAILBOX, F&I
0110 8	1	$2,200.00	$11,000.00	5.000	DA	N	UNDERWATER DEBRIS REMOVAL
0110 12 1	3	$1,214.05	$565,745.37	466.000	SY	N	HYDRODEMOLITION, REM OF DECK SURFACE
0110 71 1	3	$329.23	$358,531.25	1,089.000	LF	N	BRIDGE FENDER SYSTEM, REMOVAL & DISPOSAL
0110 73	6	$106.50	$403,724.00	3,791.000	LF	N	REMOVE EXISTING BULKHEAD
0110 82	1	$2,500.00	$49,750.00	19.900	MB	N	REMOVE & DISPOSE OF STRUCTURAL TIMBER
0110 84	1	$50,000.00	$50,000.00	1.000	LS	N	TRANSPORT EXIST MATL FOR REEF EST
0120 1	143	$3.96	$38,012,658.03	9,587,284.100	CY	N	REGULAR EXCAVATION
0120 2 2	45	$15.88	$1,609,519.41	101,357.900	CY	N	BORROW EXCAVATION, TRUCK MEASURE
0120 3	3	$10.23	$85,234.00	8,332.000	CY	N	LATERAL DITCH EXCAVATION
0120 4	38	$9.56	$5,952,483.01	622,868.500	CY	N	SUBSOIL EXCAVATION
0120 5	11	$16.32	$496,953.65	30,443.000	CY	N	CHANNEL EXCAVATION
0120 6	126	$6.40	$117,855,582.90	18,424,235.300	CY	N	EMBANKMENT
0120 11	1	$43.00	$61,920.00	1,440.000	SY	N	EMBANKMENT- SPECIAL SELECT FOR RIGID PAV
0120 71	29	$26,104.21	$1,018,064.02	39.000	LS	N	REGULAR EXCAVATION (3-R PROJECTS ONLY)

Closure Item 2d and 4a - Slope and Fill & Top Soil Cover Off-Site Material

Closure Item 3 - Cover Material
Geomembrane
Geocomposite

500 Garrison Road
Georgetown, SC 29440
Phone: 1-843-546-0600

Janurary 10, 2018

Jeremy Toms, EI
Jones Edmunds & Associates, Inc.
730 NE Waldo Road
Gainesville, FL 32641

RE: **Sarasota County Central Landfill Closure – Requested Budgetary Pricing**

Agru America is pleased to provide the following budget pricing for the requested geosynthetic profile(s). Budget pricing options include a 40mil LLDPE MicroSpike and Geocomposite system as Option #1 and a 50 mil LLDPE MicroDrain geomembrane and geotextile as Option #2. As discussed, ClosureTurf may work well in this application if you would want to evaluate further.

Requested Geosynthetic Closure System #1

This geosynthetic closure system includes a standard 40 mil LLDPE MicroSpike geomembrane with 8-200-8 geocomposite.

Description	Quantity (SF)	Unit Price ($/SF)	Total
40 mil MicroSpike LLDPE - Material	2,700,000	$ 0.30	$ 810,000.00
40 mil MicroSpike LLDPE - Installation	2,700,000	$ 0.15	$ 405,000.00
8/200/8 Geocomposite - Material	2,700,000	$ 0.46	$ 1,242,000.00
8/200/8 Geocomposite - Installation	2,700,000	$ 0.13	$ 351,000.00
Total Budget for Conventional			**$ 2,808,000.00**

Geomembrane:
($0.30+$0.15) = ($0.45/SF)x(9 SF/SY) = ($4.05/SY)x(1.022% (Inflation Factor)) = $4.14/SY
Geocomposite:
($0.46+$0.13) = ($0.59/SF)x(9 SF/SY) = ($5.31/SY)x(1.022%) = $5.43/SY

Description	Quantity (SF)	Unit Price ($/SF)	Total
50 mil LLDPE MicroDrain - Material	2,700,000	$ 0.55	$ 1,485,000.00
50 mil LLDPE MicroDrain - Installation	2,700,000	$ 0.18	$ 486,000.00
Agrutex 081 Nonwoven Geotextile - Material	2,700,000	$ 0.11	$ 297,000.00
Agrutex 081 Nonwoven Geotextile - Installation	2,700,000	$ 0.10	$ 270,000.00
Total Budget for MicroDrain Option			**$ 2,538,000.00**

*Material budget pricing includes estimated freight to Sarasota, FL but no taxes. Installation budget pricing assumes non-union/non-prevailing wage rates.

Florida Department of Transportation
Item Average Unit Cost
From 2018/04/01 to 2019/03/31

Contract Type: CC AREAS: 07
Displaying: VALID ITEMS WITH HITS
From: 0102 1 To: 9999999

Item	No. of Conts	Weighted Average	Total Amount	Total Quantity	Unit Meas	Obs?	Description
0524 1 4	1	$72.00	$16,272.00	226.000	SY	N	CONCRETE DITCH PAVT, NR, 6"
0524 1 29	3	$52.97	$197,775.00	3,734.000	SY	N	CONC DITCH PAVT, 4", REINFORCED
0527 2	7	$25.56	$89,681.00	3,509.000	SF	N	DETECTABLE WARNINGS
0530 3 4	3	$193.86	$45,828.50	236.400	TN	N	RIPRAP, RUBBLE, F&I, DITCH LINING
0530 74	2	$293.55	$48,348.00	164.700	TN	N	BEDDING STONE
0536 1 1	4	$22.29	$147,429.10	6,615.000	LF	N	GUARDRAIL- ROADWAY, GEN TL-3
0536 1 3	3	$35.64	$42,595.06	1,195.000	LF	N	GUARDRAIL- ROADWAY, DOUBLE FACE
0536 5 1	1	$9.50	$4,750.00	500.000	LF	N	RUB RAIL FOR GUARDRAIL, SINGLE SIDED RUB
0536 8 13	3	$3,230.48	$67,840.00	21.000	EA	N	APPROACH TRANS CONN TO RIGID BA, F&I, 3
0536 73	5	$3.27	$43,228.60	13,234.000	LF	N	GUARDRAIL REMOVAL
0536 85 24	3	$3,278.89	$29,510.00	9.000	EA	N	GUARDRAIL END TREATMENT- PARA APP TERM
0536 85 25	1	$1,350.00	$4,050.00	3.000	EA	N	GUARDRAIL END TREAT- TRAIL AN TYPE II
0536 85 28	1	$2,997.00	$5,994.00	2.000	EA	N	GUARDRAIL END TREAT- DBL TRAIL AN
0546 72 1	3	$1,704.03	$132,515.82	77.766	GM	N	GROUND-IN RUMBLE STRIPS, 16"
0548 12	1	$27.00	$2,635,200.00	97,600.000	SF	N	RET WALL SY
0550 10120	1	$8.50	$53,261.00	6,266.000	LF	N	FENCING, TY
0550 10221	1	$15.00	$41,490.00	2,766.000	LF	N	FENCING, TY
0550 10222	1	$18.00	$91,728.00	5,096.000	LF	N	FENCING, TY
0550 10228	1	$14.50	$36,003.50	2,483.000	LF	N	FENCING, TYPE B, 5.1-6.0, RESET EXISTING
0550 60224	1	$2,250.00	$4,500.00	2.000	EA	N	FENCE GATE,TYP B, DBL,18.1-20.0' OPENING
0570 1 1	4	$2.60	$64,694.25	24,843.000	SY	N	PERFORMANCE TURF
0570 1 2	13	$2.97	$2,015,761.90	679,343.000	SY	N	PERFORMANCE TURF, SOD
0571 1 11	3	$3.70	$109,073.70	29,455.000	SY	N	PLASTIC EROSION MAT, TRM, TYPE 1
0580 1 1	2	$59,000.00	$236,000.00	4.000	LS	N	LANDSCAPE COMPLETE- SMALL PLANTS
0580 1 2	1	$16,000.00	$16,000.00	1.000	LS	N	LANDSCAPE COMPLETE- LARGE PLANTS
0590 1	1	$25,000.00	$25,000.00	1.000	EA	N	LANDSCAPE IRRIGATION SYSTEM
0630 2 11	7	$11.69	$788,530.21	67,455.000	LF	N	CONDUIT, F& I, OPEN TRENCH
0630 2 12	8	$30.08	$348,299.27	11,580.000	LF	N	CONDUIT, F& I, DIRECTIONAL BORE
0630 2 14	1	$35.00	$2,100.00	60.000	LF	N	CONDUIT, F& I, ABOVEGROUND
0630 2 15	1	$20.71	$5,964.48	288.000	LF	N	CONDUIT, F& I, BRIDGE MOUNT
0630 2 16	1	$10.00	$4,430.00	443.000	LF	N	CONDUIT, F& I, EMBEDDED- BARR./RAILINGS
0632 7 1	4	$14,852.78	$133,675.00	9.000	PI	N	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL
0632 7 6	3	$996.43	$6,975.00	7.000	PI	N	SIGNAL CABLE, REMOVE- INTERSECTION
0633 1121	2	$2.83	$5,184.76	1,830.000	LF	N	FIBER OPTIC CABLE, F&I, UG,2-12
0633 1122	1	$3.40	$90,154.40	26,516.000	LF	N	FIBER OPTIC CABLE, F&I, UG,13-48
0633 1123	1	$3.30	$66,894.30	20,271.000	LF	N	FIBER OPTIC CABLE, F&I, UG,49-96
0633 1420	1	$2.00	$350.00	175.000	LF	N	FIBER OPTIC CABLE, REL, UG
0633 1620	1	$.50	$5,287.50	10,575.000	LF	N	FIBER OPTIC CABLE, REM, UG
0633 2 31	2	$44.20	$7,338.00	166.000	EA	N	FIBER OPTIC CONNECTION, INSTALL, SPLICE
0633 2 32	1	$94.00	$4,512.00	48.000	EA	N	FIBER OPTIC CONNECTION, INSTALL, TERM

Closure Item 5a and LTC Item 9a -
Vegetative Layer & Erosion Control and Cover Maintenance
Sodding

Florida Department of Transportation
Item Average Unit Cost
From 2018/07/01 to 2019/06/30

Contract Type: CC STATEWIDE
Displaying: VALID ITEMS WITH HITS
From: 0102 1 To: 9999999

Item	No. of Conts	Weighted Average	Total Amount	Total Quantity	Unit Meas	Obs?	Description
0425 3 61	2	$14,650.00	$29,300.00	2.000	EA	N	JUNCTION BOXES, J-7, <10'
0425 3 63	2	$2,880.00	$5,760.00	2.000	EA	N	JUNCTION BOXES, DRAINAGE, J-7, PARTIAL
0425 4	5	$1,622.62	$56,791.84	35.000	EA	N	INLETS, ADJUST
0425 5	58	$799.30	$404,448.20	506.000	EA	N	MANHOLE, ADJUST
0425 5 1	29	$808.64	$271,704.35	336.000	EA	N	MANHOLE, ADJUST, UTILITIES
0425 6	38	$464.95	$291,058.17	626.000	EA	N	VALVE BOXES, ADJUST
0425 7	2	$1,463.67	$4,391.00	3.000	EA	N	MANHOLE COVER- REPLACE
0425 11	13	$2,653.30	$98,172.11	37.000	EA	N	MODIFY EXISTING DRAINAGE STRUCTURE
0425 14 1	1	$950.00	$14,250.00	15.000	SF	N	GRATE FOR EXISTING DRAINAGE STR, FUR INS
0425 74 1	1	$1,600.00	$16,000.00	10.000	EA	N	MANHOLES & INLETS CLEANING & SEAL, <10'
0425 78	2	$2,703.00	$10,812.00	4.000	EA	N	INLET CAP, PRECAST
0425 82	11	$1,558.88	$204,213.83	131.000	EA	N	REPLACE GRATE
0430 94 1	10	$7.87	$168,904.17	21,456.000	LF	N	DESILTING PIPE, 0 - 24"
0430 94 2	6	$8.78	$18,111.90	2,063.000	LF	N	DESILTING PIPE, 25 - 36"
0430 94 3	3	$11.98	$47,033.70	3,927.000	LF	N	DESILTING PIPE, 37 - 48"
0430 94 4	1	$27.60	$6,734.40	244.000	LF	N	DESILTING PIPE, 49 - 60"
0430173115	1	$253.00	$2,024.00	8.000	LF	N	PIPE CULV OPT MATL, ROUND, 15", GD
0430173118	3	$96.74	$132,916.00	1,374.000	LF	N	PIPE CULV OPT MATL, ROUND, 18", GD
0430173124	2	$94.95	$191,885.00	2,021.000	LF	N	PIPE CULV OPT MATL, ROUND, 24", GD
0430173130	2	$116.07	$107,595.00	927.000	LF	N	PIPE CULV OPT MATL, ROUND, 30", GD
0430173136	2	$164.99	$59,891.00	363.000	LF	N	PIPE CULV OPT MATL, ROUND, 36", GD
0430173142	1	$113.00	$52,319.00	463.000	LF	N	PIPE CULV OPT MATL, ROUND,42"GD
0430174112	1	$413.63	$1,654.52	4.000	LF	N	PIPE CULV, OPT MATL, ROUND,12"SD
0430174115	9	$113.02	$48,145.06	426.000	LF	N	PIPE CULV, OPT MATL, ROUND,15"SD
0430174118	45	$78.59	$749,750.65	9,540.000	LF	N	PIPE CULV, O
0430174124	29	$91.24	$360,872.86	3,955.000	LF	N	PIPE CULV, O
0430174130	9	$90.22	$186,763.17	2,070.000	LF	N	PIPE CULV, OPT MATL, ROUND,30"SD
0430174136	9	$144.72	$104,055.30	719.000	LF	N	PIPE CULV, OPT MATL, ROUND,36"SD
0430174142	1	$240.00	$5,760.00	24.000	LF	N	PIPE CULV, OPT MATL, ROUND,42"SD
0430174172	1	$412.14	$52,753.92	128.000	LF	N	PIPE CULV, OPT MATL, ROUND,72"SD
0430174215	2	$337.69	$5,065.28	15.000	LF	N	PIPE CULV, OPT MATL, OTHER, 15"SD
0430174218	22	$96.22	$504,406.97	5,242.000	LF	N	PIPE CULV, OPT MATL, OTHER, 18"SD
0430174224	9	$120.19	$136,775.39	1,138.000	LF	N	PIPE CULV, OPT MATL, OTHER, 24"SD
0430174230	6	$156.39	$65,841.15	421.000	LF	N	PIPE CULV, OPT MATL, OTHER, 30"SD
0430174236	1	$181.92	$26,560.32	146.000	LF	N	PIPE CULV, OPT MATL, OTHER, 36"SD
0430175112	9	$75.26	$61,415.14	816.000	LF	N	PIPE CULV, OPT MATL, ROUND, 12"S/CD
0430175115	33	$120.30	$284,625.51	2,366.000	LF	N	PIPE CULV, OPT MATL, ROUND, 15"S/CD
0430175118	87	$65.13	$14,432,574.93	221,608.000	LF	N	PIPE CULV, OPT MATL, ROUND, 18"S/CD
0430175124	55	$73.65	$10,730,853.88	145,709.000	LF	N	PIPE CULV, OPT MATL, ROUND, 24"S/CD
0430175130	34	$94.92	$6,129,812.95	64,582.000	LF	N	PIPE CULV, OPT MATL, ROUND, 30"S/CD

Closure Item 6a - Stormwater Control System Piping

Florida Department of Transportation
Item Average Unit Cost
From 2018/04/01 to 2019/03/31

Contract Type: CC STATEWIDE
Displaying: VALID ITEMS WITH HITS
From: 0102 1 To: 9999999

Item		No. of Conts	Weighted Average	Total Amount	Total Quantity	Unit Meas	Obs?	Description
0425	1452	10	$9,295.22	$669,255.77	72.000	EA	N	INLETS, CURB, TYPE J-5, >10'
0425	1455	1	$4,514.21	$4,514.21	1.000	EA	N	INLETS, CURB, TYPE J-5, PARTIAL
0425	1459	1	$15,965.00	$15,965.00	1.000	EA	N	INLETS, CURB, TYPE J-5, MODIFY
0425	1461	20	$8,727.83	$471,303.00	54.000	EA	N	INLETS, CURB, TYPE J-6, <10'
0425	1462	7	$10,321.07	$258,026.86	25.000	EA	N	INLETS, CURB, TYPE J-6, >10'
0425	1465	1	$3,110.00	$3,110.00	1.000	EA	N	INLETS, CURB, TYPE J-6, PARTIAL
0425	1469	1	$5,600.00	$5,600.00	1.000	EA	N	INLETS, CURB, TYPE J-6, MODIFY
0425	1471	11	$5,006.41	$575,736.70	115.000	EA	N	INLETS, CURB, TYPE 7, <10'
0425	1473	5	$7,953.81	$55,676.67	7.000	EA	N	INLETS, CURB, TYPE 7, J BOT , <10'
0425	1475	1	$8,236.67	$8,236.67	1.000	EA	N	INLETS, CURB, TYPE 7, PARTIAL
0425	1481	2	$6,090.24	$60,902.36	10.000	EA	N	INLETS, CURB, TYPE 8, <10'
0425	1501	7	$3,301.28	$468,782.00	142.000	EA	N	INLETS, DT BOT, TYPE A,
0425	1502	1	$4,500.00	$9,000.00	2.000	EA	N	INLETS, DT BOT, TYPE A,
0425	1503	2	$3,665.22	$84,300.00	23.000	EA	N	INLETS, DT BOT, TYPE A,
0425	1504	2	$7,160.71	$50,125.00	7.000	EA	N	INLETS, DT BOT, TYPE A, J BOT, >10'
0425	1505	2	$2,518.00	$12,590.00	5.000	EA	N	INLETS, DT BOT, TYPE A, PARTIAL
0425	1511	7	$4,091.47	$1,317,452.64	322.000	EA	N	INLETS, DT BOT, TYPE B, <10'
0425	1512	3	$6,067.86	$84,950.00	14.000	EA	N	INLETS, DT BOT, TYPE B, >10'
0425	1513	3	$6,546.09	$301,120.00	46.000	EA	N	INLETS, DT BOT, TYPE B, J BOT,<10'
0425	1514	2	$8,108.57	$227,040.00	28.000	EA	N	INLETS, DT BOT, TYPE B, J BOT, >10'
0425	1515	1	$9,000.00	$9,000.00	1.000	EA	N	INLETS, DT BOT, TYPE B, PARTIAL
0425	1519	1	$5,200.00	$15,600.00	3.000	EA	N	INLETS, DT BOT, TYPE B, MODIFY
0425	1521	48	$3,957.35	$977,464.86	247.000	EA	N	INLETS, DT BOT, TYPE C, <10'
0425	1522	1	$11,120.00	$11,120.00	1.000	EA	N	INLETS, DT BOT, TYPE C, >10'
0425	1523	8	$5,821.56	$785,911.24	135.000	EA	N	INLETS, DT BOT, TYPE C,J BOT,<10'
0425	1524	5	$9,338.70	$821,805.66	88.000	EA	N	INLETS, DT BOT, TYPE C, J BOT, >10'
0425	1525	10	$3,373.78	$60,728.00	18.000	EA	N	INLETS, DT BOT, TYPE C, PARTIAL
0425	1529	6	$4,799.39	$110,385.86	23.000	EA	N	INLETS, DT BOT, TYPE C, MODIFY
0425	1531	5	$3,133.96	$166,100.00	53.000	EA	N	INLETS, DT BOT, TYPE C MOD- BACK, <10'
0425	1541	41	$4,056.99	$1,537,598.23	379.000	EA	N	INLETS, DT BOT, TYPE D, <10'
0425	1542	5	$6,406.06	$38,436.34	6.000	EA	N	INLETS, DT BOT, TYPE D, >10'
0425	1543	13	$6,890.41	$337,630.33	49.000	EA	N	INLETS, DT BOT,TYPE D, J BOT, <10'
0425	1544	5	$10,801.02	$97,209.18	9.000	EA	N	INLETS, DT BOT,TYPE D, J BOT, >10'
0425	1545	3	$4,470.50	$17,882.00	4.000	EA	N	INLETS, DT BOT,TYPE D, PARTIAL
0425	1549	20	$5,765.57	$801,414.76	139.000	EA	N	INLETS, DT BOT, TYPE D, MODIFY
0425	1551	17	$5,371.67	$499,565.20	93.000	EA	N	INLETS, DT BOT, TYPE E, <10'
0425	1552	2	$7,276.80	$21,830.40	3.000	EA	N	INLETS, DT BOT, TYPE E, >10'
0425	1555	1	$1,755.00	$1,755.00	1.000	EA	N	INLETS, DT BOT, TYPE E, PARTIAL
0425	1559	5	$4,317.01	$30,219.05	7.000	EA	N	INLETS, DT BOT, TYPE E, MODIFY
0425	1561	15	$4,894.80	$616,744.18	126.000	EA	N	INLETS, DT BOT, TYPE F, <10'

Closure Item 6b - Stormwater Control System Control Structures

Closure Item 7 - Passive Gas Control Gas Vent Installation

Preferred Drilling Soluti
11747 87th St. North, Largo, F
Ph: 727-561-7477 Fax: 72
www.pdsflorida.com

Contractor Name: JonesEdmunds

Site Name & Location: Walton County Central Landfill
Near Defuniak Springs, FL

Date: 8/22/19

FAC ID#:

PROPOSED SCOPE OF WORK:

(1) 4" x 20' Schedule 80 Landfill Gas Vent with 20' .050 screen, no soil sampling, pack with 3/4" river rock, seal with bentonite and grout

Well to be completed with 90° elbows approx 3' above grad

4 Concrete filled bollards painted safety yellow

PDS Assumes location is truck accessible

**Note: It is against PDS policy to drill in Pea Gravel. Borings in Pea Gravel will be terminated or can proceed solely at the risk of the consultant, DEP or Property Owner*

DRILLING	Unit	Unit Rate	Number of Units	Extended Price
Rig Type: Auger/Mud Rotary_____ Sonic_____ Other_____				
Split Spoon Collection (continuous or 5' intervals) (can be used in conjunction with well installation) (includes decon)				
<50 foot boring depth	per foot			$0.00
50 foot to 100 foot boring depth	per foot			$0.00
>100 foot boring depth	per foot			$0.00
Borehole Grouting				
4 - inch borehole diameter	per foot			$0.00
6 - inch borehole diameter	per foot			$0.00
8 - inch borehole diameter	per foot			$0.00
1" - 2" Well Installation (includes steamcleaning decon, screen, riser, sand pack, seal and grout)				
<50 foot boring depth	per foot			$0.00
50 foot to 100 foot boring depth	per foot			$0.00
>100 foot boring depth	per foot			$0.00
4" Well Installation (includes steamcleaning decon, screen, riser, sand pack, seal and grout)				
<50 foot boring depth	per foot	$83.50	20	$1,670.00
50 foot to 100 foot boring depth	per foot			$0.00
>100 foot boring depth	per foot			$0.00
Recovery Well Diameter: 4-6"	per foot			$0.00
Double Cased Wells				$0.00
6" Surface Casing	per foot			$0.00
8" Surface Casing	per foot			$0.00
Well Completion (includes AGP w/ cover, concrete pad, locking well cap, and saw/jackhammer prep.)	per well	$250.00	1	$250.00
1"- 2" Well Abandonment (includes grouting)	per foot			$0.00
3"- 4" Well Abandonment (includes grouting)	per foot			$0.00
5"- 6" Well Abandonment (includes grouting)	per foot			$0.00
2' x 2' Well Pad Removal and Patch	each			$0.00
MISCELLANEOUS				
Mobilization	roundtrip	$775.00	1	$775.00
Per Diem	per crew	$300.00		$0.00
DOT Approved 55-gal Drum	each	$50.00		$0.00
Permits (Drilling or abandonment only)	each	$30.00		$0.00
Well Development Time (30 minutes per well)	each	$75.00		$0.00
Concrete filled 4" bollard painted yellow	each	$100.00	4	$400.00
				$0.00
Additional Development Time	per hour	$150.00		$0.00
Additional Decontamination Time	per hour			$0.00
Standby/Delay/Difficult Access Time	per hour	$300.00		$0.00

Days to Complete Scope of Work: 1

Signature and Title of Person Submitting Quote:

Assume vent is drilled to an average of 50 feet

Cost per Vent: *(without mobilization)*
($83.50/LF)(50 LF)+($250)+($30)+($75)+($100)(4) = $4,930/Vent

Cost per Day: *(assumes 1 day of work for 1 crew)*
($775/roundtrip)+($300/crew) = $1,075/Day

Cost per Well: *(including mobilization)*
[($4,930/Vent)(13 Vents)+($1,075)]/(13 Vents) = $5,012.69/Vent

Florida Department of Transportation
Item Average Unit Cost
From 2018/04/01 to 2019/03/31

Contract Type: CC AREAS: 07
Displaying: VALID ITEMS WITH HITS
From: 0102 1 To: 9999999

Item	No. of Conts	Weighted Average	Total Amount	Total Quantity	Unit Meas	Obs?	Description
0524 1 4	1	$72.00	$16,272.00	226.000	SY	N	CONCRETE DITCH PAVT, NR, 6"
0524 1 29	3	$52.97	$197,775.00	3,734.000	SY	N	CONC DITCH PAVT, 4", REINFORCED
0527 2	7	$25.56	$89,681.00	3,509.000	SF	N	DETECTABLE WARNINGS
0530 3 4	3	$193.86	$45,828.50	236.400	TN	N	RIPRAP, RUBBLE, F&I, DITCH LINING
0530 74	2	$293.55	$48,348.00	164.700	TN	N	BEDDING STONE
0536 1 1	4	$22.29	$147,429.10	6,615.000	LF	N	GUARDRAIL- ROADWAY, GEN TL-3
0536 1 3	3	$35.64	$42,595.06	1,195.000	LF	N	GUARDRAIL- ROADWAY, DOUBLE FACE
0536 5 1	1	$9.50	$4,750.00	500.000	LF	N	RUB RAIL FOR GUARDRAIL, SI
0536 8 13	3	$3,230.48	$67,840.00	21.000	EA	N	APPROACH TRANS CONN TO RIG
0536 73	5	$3.27	$43,228.60	13,234.000	LF	N	GUARDRAIL REMOVAL
0536 85 24	3	$3,278.89	$29,510.00	9.000	EA	N	GUARDRAIL END TREATMENT- PARA APP TERM
0536 85 25	1	$1,350.00	$4,050.00	3.000	EA	N	GUARDRAIL END TREAT- TRAIL AN TYPE II
0536 85 28	1	$2,997.00	$5,994.00	2.000	EA	N	GUARDRAIL END TREAT- DBL TRAIL AN
0546 72 1	3	$1,704.03	$132,515.82	77.766	GM	N	GROUND-IN RUMBLE STRIPS, 16"
0548 12	1	$27.00	$2,635,200.00	97,600.000	SF	N	RET WALL SYSTEM, PERM, EX BARRIER
0550 10120	1	$8.50	$53,261.00	6,266.000	LF	N	FENCING, TYPE A, 5.1-6.0, STANDARD
0550 10221	1	$15.00	$41,490.00	2,766.000	LF	N	FENCING, TYPE B, 5.1-6.0', W/ BARB ATTMT
0550 10222	1	$18.00	$91,728.00	5,096.000	LF	N	FENCING, TYPE B, 5.1-6.0, W/ VINYL COAT
0550 10228	1	$14.50	$36,003.50	2,483.000	LF	N	FENCING, TYPE B, 5.1-6.0, RESET EXISTING
0550 60224	1	$2,250.00	$4,500.00	2.000	EA	N	FENCE GATE,TYP B, DBL,18.1-20.0' OPENING
0570 1 1	4	$2.60	$64,694.25	24,843.000	SY	N	PERFORMANCE TURF
0570 1 2	13	$2.97	$2,015,761.90	679,343.000	SY	N	PERFORMANCE TURF, SOD
0571 1 11	3	$3.70	$109,073.70	29,455.000	SY	N	PLASTIC EROSION MAT, TRM, TYPE 1
0580 1 1	2	$59,000.00	$236,000.00	4.000	LS	N	LANDSCAPE COMPLETE- SMALL PLANTS
0580 1 2	1	$16,000.00	$16,000.00	1.000	LS	N	LANDSCAPE COMPLETE- LARGE PLANTS
0590 1	1	$25,000.00	$25,000.00	1.000	EA	N	LANDSCAPE IRRIGATION SYSTEM
0630 2 11	7	$11.69	$788,530.21	67,455.000	LF	N	CONDUIT, F& I, OPEN TRENCH
0630 2 12	8	$30.08	$348,299.27	11,580.000	LF	N	CONDUIT, F& I, DIRECTIONAL BORE
0630 2 14	1	$35.00	$2,100.00	60.000	LF	N	CONDUIT, F& I, ABOVEGROUND
0630 2 15	1	$20.71	$5,964.48	288.000	LF	N	CONDUIT, F& I, BRIDGE MOUNT
0630 2 16	1	$10.00	$4,430.00	443.000	LF	N	CONDUIT, F& I, EMBEDDED- BARR./RAILINGS
0632 7 1	4	$14,852.78	$133,675.00	9.000	PI	N	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL
0632 7 6	3	$996.43	$6,975.00	7.000	PI	N	SIGNAL CABLE, REMOVE- INTERSECTION
0633 1121	2	$2.83	$5,184.76	1,830.000	LF	N	FIBER OPTIC CABLE, F&I, UG,2-12
0633 1122	1	$3.40	$90,154.40	26,516.000	LF	N	FIBER OPTIC CABLE, F&I, UG,13-48
0633 1123	1	$3.30	$66,894.30	20,271.000	LF	N	FIBER OPTIC CABLE, F&I, UG,49-96
0633 1420	1	$2.00	$350.00	175.000	LF	N	FIBER OPTIC CABLE, REL, UG
0633 1620	1	$.50	$5,287.50	10,575.000	LF	N	FIBER OPTIC CABLE, REM, UG
0633 2 31	2	$44.20	$7,338.00	166.000	EA	N	FIBER OPTIC CONNECTION, INSTALL, SPLICE
0633 2 32	1	$94.00	$4,512.00	48.000	EA	N	FIBER OPTIC CONNECTION, INSTALL, TERM

Closure Item 9a - Security System Maintenance Fence Repairs

Florida Department of Transportation
Item Average Unit Cost
From 2018/04/01 to 2019/03/31

Contract Type: CC AREAS: 07
Displaying: VALID ITEMS WITH HITS
From: 0102 1 To: 9999999

Item	No. of Conts	Weighted Average	Total Amount	Total Quantity	Unit Meas	Obs?	Description
0524 1 4	1	$72.00	$16,272.00	226.000	SY	N	CONCRETE DITCH PAVT, NR, 6"
0524 1 29	3	$52.97	$197,775.00	3,734.000	SY	N	CONC DITCH PAVT, 4", REINFORCED
0527 2	7	$25.56	$89,681.00	3,509.000	SF	N	DETECTABLE WARNINGS
0530 3 4	3	$193.86	$45,828.50	236.400	TN	N	RIPRAP, RUBBLE, F&I, DITCH LINING
0530 74	2	$293.55	$48,348.00	164.700	TN	N	BEDDING STONE
0536 1 1	4	$22.29	$147,429.10	6,615.000	LF	N	GUARDRAIL- ROADWAY, GEN TL-3
0536 1 3	3	$35.64	$42,595.06	1,195.000	LF	N	GUARDRAIL- ROADWAY, DOUBLE FACE
0536 5 1	1	$9.50	$4,750.00	500.000	LF	N	RUB RAIL FOR GUARDRAIL, SINGLE SIDED RUB
0536 8 13	3	$3,230.48	$67,840.00	21.000	EA	N	APPROACH TRANS CONN TO RIGID BA, F&I, 3
0536 73	5	$3.27	$43,228.60	13,234.000	LF	N	GUARDRAIL REMOVAL
0536 85 24	3	$3,278.89	$29,510.00	9.000	EA	N	GUARDRAIL END TREATMENT- PARA APP TERM
0536 85 25	1	$1,350.00	$4,050.00	3.000	EA	N	GUARDRAIL END TREAT- TRAIL AN TYPE II
0536 85 28	1	$2,997.00	$5,994.00	2.000	EA	N	GUARDRAIL END TREAT- DBL TRAIL AN
0546 72 1	3	$1,704.03	$132,515.82	77.766	GM	N	GROUND-IN RUMBLE STRIPS,
0548 12	1	$27.00	$2,635,200.00	97,600.000	SF	N	RET WALL SYSTEM, PERM, E
0550 10120	1	$8.50	$53,261.00	6,266.000	LF	N	FENCING, TYPE A, 5.1-6.0
0550 10221	1	$15.00	$41,490.00	2,766.000	LF	N	FENCING, TYPE B, 5.1-6.0
0550 10222	1	$18.00	$91,728.00	5,096.000	LF	N	FENCING, TYPE B, 5.1-6.0, W/ VINYL COAT
0550 10228	1	$14.50	$36,003.50	2,483.000	LF	N	FENCING, TYPE B, 5.1-6.0, RESET EXISTING
0550 60224	1	$2,250.00	$4,500.00	2.000	EA	N	FENCE GATE,TYP B, DBL,18.1-20.0' OPENING
0570 1 1	4	$2.60	$64,694.25	24,843.000	SY	N	PERFORMANCE TURF
0570 1 2	13	$2.97	$2,015,761.90	679,343.000	SY	N	PERFORMANCE TURF, SOD
0571 1 11	3	$3.70	$109,073.70	29,455.000	SY	N	PLASTIC EROSION MAT, TRM, TYPE 1
0580 1 1	2	$59,000.00	$236,000.00	4.000	LS	N	LANDSCAPE COMPLETE- SMALL PLANTS
0580 1 2	1	$16,000.00	$16,000.00	1.000	LS	N	LANDSCAPE COMPLETE- LARGE PLANTS
0590 1	1	$25,000.00	$25,000.00	1.000	EA	N	LANDSCAPE IRRIGATION SYSTEM
0630 2 11	7	$11.69	$788,530.21	67,455.000	LF	N	CONDUIT, F& I, OPEN TRENCH
0630 2 12	8	$30.08	$348,299.27	11,580.000	LF	N	CONDUIT, F& I, DIRECTIONAL BORE
0630 2 14	1	$35.00	$2,100.00	60.000	LF	N	CONDUIT, F& I, ABOVEGROUND
0630 2 15	1	$20.71	$5,964.48	288.000	LF	N	CONDUIT, F& I, BRIDGE MOUNT
0630 2 16	1	$10.00	$4,430.00	443.000	LF	N	CONDUIT, F& I, EMBEDDED- BARR./RAILINGS
0632 7 1	4	$14,852.78	$133,675.00	9.000	PI	N	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL
0632 7 6	3	$996.43	$6,975.00	7.000	PI	N	SIGNAL CABLE, REMOVE- INTERSECTION
0633 1121	2	$2.83	$5,184.76	1,830.000	LF	N	FIBER OPTIC CABLE, F&I, UG,2-12
0633 1122	1	$3.40	$90,154.40	26,516.000	LF	N	FIBER OPTIC CABLE, F&I, UG,13-48
0633 1123	1	$3.30	$66,894.30	20,271.000	LF	N	FIBER OPTIC CABLE, F&I, UG,49-96
0633 1420	1	$2.00	$350.00	175.000	LF	N	FIBER OPTIC CABLE, REL, UG
0633 1620	1	$.50	$5,287.50	10,575.000	LF	N	FIBER OPTIC CABLE, REM, UG
0633 2 31	2	$44.20	$7,338.00	166.000	EA	N	FIBER OPTIC CONNECTION, INSTALL, SPLICE
0633 2 32	1	$94.00	$4,512.00	48.000	EA	N	FIBER OPTIC CONNECTION, INSTALL, TERM

Closure Item 9b - Security System Maintenance Gate Repairs

Florida Department of Transportation
Item Average Unit Cost
From 2018/04/01 to 2019/03/31

Contract Type: CC AREAS: 07
Displaying: VALID ITEMS WITH HITS
From: 0102 1 To: 9999999

Closure Item 9c - Security System Maintenance Sign Repairs

Item		No. of Conts	Weighted Average	Total Amount	Total Quantity	Unit Meas	Obs?	Description
0695	7600	4	$362.26	$1,449.04	4.000	EA	N	TMS CABINET, REMOVE
0700	1 11	12	$296.93	$166,877.00	562.000	AS	N	SINGLE POST SIGN, F&I GM, <12 SF
0700	1 12	11	$963.66	$138,766.90	144.000	AS	N	SINGLE POST SIGN, F&I GM, 12-20 SF
0700	1 13	7	$1,446.32	$57,852.60	40.000	AS	N	SINGLE POST SIGN, F&I GM, 21-30 SF
0700	1 14	1	$2,000.00	$2,000.00	1.000	AS	N	SINGLE POST SIGN, F&I GM, 31+ SF
0700	1 31	1	$1,850.00	$11,100.00	6.000	AS	N	SINGLE POST SIGN, F&I BRG MNT, <12 SF
0700	1 32	1	$1,966.39	$9,831.95	5.000	AS	N	SINGLE POST SIGN, F&I BRG MNT, 12-20 SF
0700	1 33	1	$2,700.00	$5,400.00	2.000	AS	N	SINGLE POST SIGN, F&I BRG MNT, 21-30 SF
0700	1 50	9	$194.82	$14,027.30	72.000	AS	N	SINGLE POST SIGN, RELOCATE
0700	1 60	12	$20.94	$11,121.65	531.000	AS	N	SINGLE POST SIGN, REMOVE
0700	2 12	1	$3,550.00	$7,100.00	2.000	AS	N	MULTI- POST SIGN, F&I GM, 12-20 SF
0700	2 13	3	$4,415.00	$44,150.00	10.000	AS	N	MULTI- POST SIGN, F&I GM, 21-30 SF
0700	2 14	3	$4,675.00	$37,400.00	8.000	AS	N	MULTI- POST SIGN, F&I GM, 31-50 SF
0700	2 15	4	$5,800.00	$46,400.00	8.000	AS	N	MULTI- POST SIGN, F&I GM, 51-100 SF
0700	2 50	2	$4,435.00	$17,740.00	4.000	AS	N	MULTI- POST SIGN, RELOCATE
0700	2 60	5	$501.07	$14,030.00	28.000	AS	N	MULTI- POST SIGN, REMOVE
0700	3101	3	$158.61	$2,855.00	18.000	EA	N	SIGN PANEL, F&I GM, UP TO 12 SF
0700	3102	1	$560.00	$3,920.00	7.000	EA	N	SIGN PANEL, F&I GM, 12-20 SF
0700	3201	2	$414.74	$7,880.00	19.000	EA	N	SIGN PANEL, F&I OM, UP TO 12 SF
0700	3202	1	$825.00	$825.00	1.000	EA	N	SIGN PANEL, F&I OM, 12-20 SF
0700	3204	1	$2,050.00	$2,050.00	1.000	EA	N	SIGN PANEL, F&I OM, 31-50 SF
0700	3205	3	$2,790.00	$27,900.00	10.000	EA	N	SIGN PANEL, F&I OM, 51-100 SF
0700	3206	1	$5,000.00	$35,000.00	7.000	EA	N	SIGN PANEL, F&I OM, 101-200 SF
0700	3207	1	$8,000.00	$32,000.00	4.000	EA	N	SIGN PANEL, F&I OM, 201-300 SF
0700	3208	1	$10,800.00	$10,800.00	1.000	EA	N	SIGN PANEL, F&I OM, 301-400 SF
0700	3501	1	$80.00	$80.00	1.000	EA	N	SIGN PANEL, RELOCATE, UP TO 12 SF
0700	3601	5	$50.40	$1,663.10	33.000	EA	N	SIGN PANEL, REMOVE, UP TO 12 SF
0700	3605	1	$240.00	$1,200.00	5.000	EA	N	SIGN PANEL, REMOVE, 51-100 SF
0700	3606	1	$800.00	$1,600.00	2.000	EA	N	SIGN PANEL, REMOVE, 101-200 SF
0700	3624	1	$1,375.00	$1,375.00	1.000	EA	N	SIGN PANEL, REMOVE, UP TO 50 SF WITH LIG
0700	3625	1	$1,375.00	$1,375.00	1.000	EA	N	SIGN PANEL, REMOVE, 51-100 SF W LIGHTING
0700	3626	1	$1,350.00	$4,050.00	3.000	EA	N	SIGN PANEL, REMOVE, 101-200 SF W LIGHT
0700	3627	1	$2,400.00	$7,200.00	3.000	EA	N	SIGN PANEL, REMOVE, 201-300 SF W LIGHT
0700	4112	1	$42,500.00	$42,500.00	1.000	EA	N	OH STATIC SIGN STR, F&I, C 21-30 FT
0700	4113	1	$73,500.00	$147,000.00	2.000	EA	N	OH STATIC SIGN STR, F&I, C 31-40 FT
0700	4114	1	$66,800.00	$200,400.00	3.000	EA	N	OH STATIC SIGN STR, F&I, C 41-50 FT
0700	4126	1	$175,000.00	$525,000.00	3.000	EA	N	OH STATIC SIGN STR, F&I, S 101-150 FT
0700	4610	1	$5,900.00	$29,500.00	5.000	EA	N	OH STATIC SIGN STR, REMOVE, CANT
0700	5 22	3	$3,091.30	$71,100.00	23.000	EA	N	INTERNAL ILLUM SIGN, F&I OM, 12-18 SF
0700	5 60	1	$220.00	$440.00	2.000	EA	N	INTERNAL ILLUM SIGN, REMOVE

LTC Item 5a,5b- Leachate Collection/Treatment Systems Maintenance
Collection Pipes
Sumps, Traps

FLORIDA JETCLEAN

HIGH PRESSURE WATER JETTING – EXPLOSION PROOF INSPECTION
PIPE LOCATING – NO DIG REPAIRS – VACUUM TRUCK SERVICES

7538 Dunbridge Drive
Odessa, FL 33556
www.floridajetclean.com

TEL : 800-226-8013
FAX : 813-926-4616

PROPOSAL

DATE : 4/5/2018
TO : Jeremy Toms - Jones Edmunds
FROM : Ralph Calistri (floridajetclean@yahoo.com)
SUBJECT : 2018 - Polk County NCLF - Phases I, II, V, VI - LCS Jetting Project

Thank you for your inquiry. We confirm our capability and interest in performing these services LCS jetcleaning services for Jones Edmunds at the Polk County NCLF.

Based on your email and our prior work at this location, we quote as follows:

High-pressure water-jetting of an estimated 24,100' of existing leachate collection piping across 4 Phases (Phase I = 5,000', Phase II = 10,000', Phase V = 6,400', Phase VI = 2,700') $ 18,075.00

Vacuum Truck for Vacuum Removal of Silting and Solids From Sump Areas and/or Pump Stations $ 2,500.00 / day

Subject to:

- An adequate no-charge on site water supply for jetcleaning via hydrant or water truck.
- 2 wheel drive access to within 10' of all system access points.
- Exposed and opened cleanouts at ground level.
- Pricing is unrelated to actual or achieved footages but on the number of setups required and the time we anticipate being on site.
- Pipes affected by heavy non-routine silting or hardened blockages will require additional equipment or extended jetting/vacuum truck time, at additional expense.
- Payment : net 30 days

Regards,

Ralph Calistri – Florida Jetclean - 800-226-8013

Maintenance/cleaning: $18,075 / 24,100 ft = $0.75/LF

$0.75/LF x 1.022% = $0.77/LF

$2,500/day x 1.022% = $2,555/day

LTC Item 5c - Leachate Collection System Maintenance Disposal

AWARD INFORMATION FOR Quote # 15-358 Leachate Treatment & Disposal

AWARD DATE:	July 1, 2015
AWARDED TO:	Aqua Clean Environmental
ADDRESS:	3210 Whitten Road
	Lakeland, FL 33811
PHONE NUMBER:	863-644-0665
FAX NUMBER:	863-646-1880
EMAIL ADDRESS:	aquacclean@acelkd.com
CONTACT:	Mike Zellars
CONTRACT PERIOD:	July 1, 2015 through June 30 , 2018
Master PO#	21503754

QUOTE ANALYSIS
Q 15-358, Leachate Treatment Disposal

Aqua Clean Environmental

Item	Description	Est. Qty	Unit Price	UOM	Est. Qty X Unit Price
1	Receive, unload, treat and dispose of leachate (During regular business hours)	25,000	$0.07	GAL	$1,750.00
2	Receive, unload, treat and dispose of leachate (After regular	25,000	$0.07	GAL	$1,750.00
	GRAND TOTAL (BASIS OF AWARD)				**$3,500.00**

$0.07/GAL x 1000 GAL = $70/KGAL

Item	Description	Quantity	UOM
1	Minimum number of gallons per day Vendor guarantees to accept from County.	No Minimum	GAL
2	Maximum number of gallons per day Vendor guarantees to accept from County	150,000	GAL

Local Vendor	Yes
W/MBE	No
Polk County Business Tax Receipt	Yes
Registered with County	Yes
WWTP Operation permit	Yes

Preferred Drilling Solutions, Inc.
11747 87th St. North, La
Ph: 727-561-7477 Fax
www.pdsflorida.com

LTC Item 6a - GW Well Maintenance
Replacement Well

Contractor Name: JonesEdmunds

Site Name & Location: Walton County Central Landfill
Near Defuniak Springs, FL

Date: 8/20/19

FAC ID#:

PROPOSED SCOPE OF WORK:

(1) 2" x 60' MW with 10' .010 screen, no soil sampling, soread cuttings, pad and AGP

4 Concrete filled bollards painted safety yellow

PDS Assumes location is truck accessible

**Note: It is against PDS policy to drill in Pea Gravel. Borings in Pea Gravel will be terminated or can proceed solely at the risk of the consultant, DEP or Property Owner*

DRILLING	Unit	Unit Rate	Number of Units	Extended Price
Rig Type: Auger/Mud Rotary_____ Sonic_____ Other_____				
Split Spoon Collection (continuous or 5' intervals) (can be used in conjunction with well installation) (includes decon)				
<50 foot boring depth	per foot			$0.00
50 foot to 100 foot boring depth	per foot			$0.00
>100 foot boring depth	per foot			$0.00
Borehole Grouting				
4 - inch borehole diameter	per foot			$0.00
6 - inch borehole diameter	per foot			$0.00
8 - inch borehole diameter	per foot			$0.00
1" - 2" Well Installation (includes steamcleaning decon, screen, riser, sand pack, seal and grout)				
<50 foot boring depth	per foot	$34.75	60	$2,085.00
50 foot to 100 foot boring depth	per foot			$0.00
>100 foot boring depth	per foot			$0.00
4" Well Installation (includes steamcleaning decon, screen, riser, sand pack, seal and grout)				
<50 foot boring depth	per foot			$0.00
50 foot to 100 foot boring depth	per foot			$0.00
>100 foot boring depth	per foot			$0.00
Recovery Well Diameter: 4-6"	per foot			$0.00
Double Cased Wells				$0.00
6" Surface Casing	per foot			$0.00
8" Surface Casing	per foot			$0.00
Well Completion (includes AGP w/ cover, concrete pad, locking well cap, and saw/jackhammer prep.)	per well	$250.00	1	$250.00
1"- 2" Well Abandonment (includes grouting)	per foot			$0.00
3"- 4" Well Abandonment (includes grouting)	per foot			$0.00
5"- 6" Well Abandonment (includes grouting)	per foot			$0.00
2' x 2' Well Pad Removal and Patch	each			$0.00
MISCELLANEOUS				
Mobilization	roundtrip	$775.00	1	$775.00
Per Diem	per crew	$300.00		$0.00
DOT Approved 55-gal Drum	each	$50.00		$0.00
Permits (Drilling or abandonment only)	each	$30.00		$0.00
Well Development Time (30 minutes per well)	each	$75.00		$0.00
Concrete filled 4" bollard painted yellow	each	$100.00	4	$400.00
				$0.00
Additional Development Time	per hour	$150.00		$0.00
Additional Decontamination Time	per hour			$0.00
Standby/Delay/Difficult Access Time	per hour	$300.00		$0.00

Days to Complete Scope of Work: 1

Signature and Title of Person Submitting Quote: _____

Cost per Well: *(without mobilization)*
($34.75/LF)(60 LF)+($250)+($30)+($75)+($100)(4) = $2,840/Well

Cost per Day: *(assumes 1 day of work for 1 crew)*
($775/roundtrip)+($300/crew) = $1,075/Day

Cost per Well: *(including mobilization)*
[($2,840/Well)(1 Well)+($1,075)]/(1 Well) = $3,915/Well

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11747 87th St. North, Larg
Ph: 727-561-7477 Fax:
www.pdsflorida.

LTC Item 6b - GW Well Maintenance Abandonment

Contractor Name: JonesEdmunds

Site Name & Location: Walton County Central Landfill
Near Defuniak Springs, FL

Date: 8/22/19

FAC ID#:

PROPOSED SCOPE OF WORK:

Abandon (2) 4" x 20' gas vent wells with bentonite hole plug, cap with grout
Abandon (1) 2" x 60' MW with cement bentonite grout from the bottom up'
Pad and manhole removal as needed

**Note: It is against PDS policy to drill in Pea Gravel. Borings in Pea Gravel will be terminated or can proceed solely at the risk of the consultant, DEP or Property Owner*

DRILLING	Unit	Unit Rate	Number of Units	Extended Price
Rig Type: Auger/Mud Rotary_____ Sonic_____ Other_____				
Split Spoon Collection (continuous or 5' intervals) (can be used in conjunction with well installation) (includes decon)				
<50 foot boring depth	per foot			$0.00
50 foot to 100 foot boring depth	per foot			$0.00
>100 foot boring depth	per foot			$0.00
Borehole Grouting				
4 - inch borehole diameter	per foot			$0.00
6 - inch borehole diameter	per foot			$0.00
8 - inch borehole diameter	per foot			$0.00
1" - 2" Well Installation (includes steamcleaning decon, screen, riser, sand pack, seal and grout)				
<50 foot boring depth	per foot			$0.00
50 foot to 100 foot boring depth	per foot			$0.00
>100 foot boring depth	per foot			$0.00
4" Well Installation (includes steamcleaning decon, screen, riser, sand pack, seal and grout)				
<50 foot boring depth	per foot			$0.00
50 foot to 100 foot boring depth	per foot			$0.00
>100 foot boring depth	per foot			$0.00
Recovery Well Diameter: 4-6"	per foot			$0.00
Double Cased Wells				$0.00
6" Surface Casing	per foot			$0.00
8" Surface Casing	per foot			$0.00
Well Completion (includes AGP w/ cover, concrete pad, locking well cap, and saw/jackhammer prep.)	per well			$0.00
1"- 2" Well Abandonment (includes grouting)	per foot	$8.00	60	$480.00
3"- 4" Well Abandonment (includes grouting)	per foot	$20.00	40	$800.00
5"- 6" Well Abandonment (includes grouting)	per foot			$0.00
2' x 2' Well Pad Removal and Patch	each	$150.00	1	$150.00
MISCELLANEOUS				
Mobilization	roundtrip	$575.00	1	$575.00
Per Diem	per crew	$300.00		$0.00
DOT Approved 55-gal Drum	each	$50.00		$0.00
Permits (Drilling or abandonment only)	each	$50.00	1	$50.00
Well Development Time (30 minutes per well)	each	$75.00		$0.00
Concrete filled 4" bollard painted yellow	each	$100.00		$0.00
				$0.00
Additional Development Time	per hour	$150.00		$0.00
Additional Decontamination Time	per hour			$0.00
Standby/Delay/Difficult Access Time	per hour	$300.00		$0.00

Assume mobilization is covered in Well Installation Quote
Cost per Well: *(without mobilization)*
($8/LF)(60LF)+($150)+($50) = $680/Well

Days to Complete Scope of Work: 1

Signature and Title of Person Submitting Quote:

Preferred Drilling Solut
11747 87th St. North, Largo
Ph: 727-561-7477 Fax: 7
www.pdsflorida.com

LTC Item 7a - Gas Monitoring Maintenance
Gas Vent Installation

Contractor Name: JonesEdmunds

Site Name & Location: Walton County Central Landfill
Near Defuniak Springs, FL

Date: 8/22/19

FAC ID#:

PROPOSED SCOPE OF WORK:

(1) 4" x 20' Schedule 80 Landfill Gas Vent with 20' .050 screen, no soil sampling, pack with 3/4" river rock, seal with bentonite and grout

Well to be completed with 90° elbows approx 3' above grad

4 Concrete filled bollards painted safety yellow

PDS Assumes location is truck accessible

**Note: It is against PDS policy to drill in Pea Gravel. Borings in Pea Gravel will be terminated or can proceed solely at the risk of the consultant, DEP or Property Owner*

DRILLING	Unit	Unit Rate	Number of Units	Extended Price
Rig Type: Auger/Mud Rotary_____ Sonic_____ Other_____				
Split Spoon Collection (continuous or 5' intervals) (can be used in conjunction with well installation) (includes decon)				
<50 foot boring depth	per foot			$0.00
50 foot to 100 foot boring depth	per foot			$0.00
>100 foot boring depth	per foot			$0.00
Borehole Grouting				
4 - inch borehole diameter	per foot			$0.00
6 - inch borehole diameter	per foot			$0.00
8 - inch borehole diameter	per foot			$0.00
1" - 2" Well Installation (includes steamcleaning decon, screen, riser, sand pack, seal and grout)				
<50 foot boring depth	per foot			$0.00
50 foot to 100 foot boring depth	per foot			$0.00
>100 foot boring depth	per foot			$0.00
4" Well Installation (includes steamcleaning decon, screen, riser, sand pack, seal and grout)				
<50 foot boring depth	per foot	$83.50	20	$1,670.00
50 foot to 100 foot boring depth	per foot			$0.00
>100 foot boring depth	per foot			$0.00
Recovery Well Diameter: 4-6"	per foot			$0.00
Double Cased Wells				$0.00
6" Surface Casing	per foot			$0.00
8" Surface Casing	per foot			$0.00
Well Completion (includes AGP w/ cover, concrete pad, locking well cap, and saw/jackhammer prep.)	per well	$250.00	1	$250.00
1"- 2" Well Abandonment (includes grouting)	per foot			$0.00
3"- 4" Well Abandonment (includes grouting)	per foot			$0.00
5"- 6" Well Abandonment (includes grouting)	per foot			$0.00
2' x 2' Well Pad Removal and Patch	each			$0.00
MISCELLANEOUS				
Mobilization	roundtrip	$775.00	1	$775.00
Per Diem	per crew	$300.00		$0.00
DOT Approved 55-gal Drum	each	$50.00		$0.00
Permits (Drilling or abandonment only)	each	$30.00		$0.00
Well Development Time (30 minutes per well)	each	$75.00		$0.00
Concrete filled 4" bollard painted yellow	each	$100.00	4	$400.00
				$0.00
Additional Development Time	per hour	$150.00		$0.00
Additional Decontamination Time	per hour			$0.00
Standby/Delay/Difficult Access Time	per hour	$300.00		$0.00

Days to Complete Scope of Work: 1

Signature and Title of Person Submitting Quote:

Assume vent is drilled to an average of 50 feet

Cost per Vent: *(without mobilization)*
($83.50/LF)(50 LF)+($250)+($30)+($75)+($100)(4) = $4,930/Vent

Cost per Day: *(assumes 1 day of work for 1 crew)*
($775/roundtrip)+($300/crew) = $1,075/Day

Cost per Well: *(including mobilization)*
[($4,930/Vent)(13 Vents)+($1,075)]/(13 Vents) = $5,012.69/Vent

Preferred Drilling Solutions, Inc.
11747 87th St. North, Larg
Ph: 727-561-7477 Fax:
www.pdsflorida.

LTC Item 7b - Gas Monitoring
Maintenance
Abandonment

Contractor Name: JonesEdmunds

Site Name & Location: Walton County Central Landfill
Near Defuniak Springs, FL

Date: 8/22/19 **FAC ID#:**

PROPOSED SCOPE OF WORK:

Abandon (2) 4" x 20' gas vent wells with bentonite hole plug, cap with grout

Abandon (1) 2" x 60' MW with cement bentonite grout from the bottom up'

Pad and manhole removal as needed

**Note: It is against PDS policy to drill in Pea Gravel. Borings in Pea Gravel will be terminated or can proceed solely at the risk of the consultant, DEP or Property Owner*

DRILLING	Unit	Unit Rate	Number of Units	Extended Price
Rig Type: Auger/Mud Rotary_____ Sonic_____ Other_____				
Split Spoon Collection (continuous or 5' intervals) (can be used in conjunction with well installation) (includes decon)				
<50 foot boring depth	per foot			$0.00
50 foot to 100 foot boring depth	per foot			$0.00
>100 foot boring depth	per foot			$0.00
Borehole Grouting				
4 - inch borehole diameter	per foot			$0.00
6 - inch borehole diameter	per foot			$0.00
8 - inch borehole diameter	per foot			$0.00
1" - 2" Well Installation (includes steamcleaning decon, screen, riser, sand pack, seal and grout)				
<50 foot boring depth	per foot			$0.00
50 foot to 100 foot boring depth	per foot			$0.00
>100 foot boring depth	per foot			$0.00
4" Well Installation (includes steamcleaning decon, screen, riser, sand pack, seal and grout)				
<50 foot boring depth	per foot			$0.00
50 foot to 100 foot boring depth	per foot			$0.00
>100 foot boring depth	per foot			$0.00
Recovery Well Diameter: 4-6"	per foot			$0.00
Double Cased Wells				$0.00
6" Surface Casing	per foot			$0.00
8" Surface Casing	per foot			$0.00
Well Completion (includes AGP w/ cover, concrete pad, locking well cap, and saw/jackhammer prep.)	per well			$0.00
1"- 2" Well Abandonment (includes grouting)	per foot	$8.00	60	$480.00
3"- 4" Well Abandonment (includes grouting)	per foot	$20.00	40	$800.00
5"- 6" Well Abandonment (includes grouting)	per foot			$0.00
2' x 2' Well Pad Removal and Patch	each	$150.00	1	$150.00
MISCELLANEOUS				
Mobilization	roundtrip	$575.00	1	$575.00
Per Diem	per crew	$300.00		$0.00
DOT Approved 55-gal Drum	each	$50.00		$0.00
Permits (Drilling or abandonment only)	each	$50.00	1	$50.00
Well Development Time (30 minutes per well)	each	$75.00		$0.00
Concrete filled 4" bollard painted yellow	each	$100.00		$0.00
				$0.00
Additional Development Time	per hour	$150.00		$0.00
Additional Decontamination Time	per hour			$0.00
Standby/Delay/Difficult Access Time	per hour	$300.00		$0.00

Assume mobilization is covered in Well Installation Quote
Cost per Vent: *(without mobilization)*
($20/LF)(50 LF)+($50) = $1,050/Vent

Days to Complete Scope of Work: 1

Signature and Title of Person Submitting Quote: _____ Kevin Bonacum, Estimator **Date:** 8/22/19

Florida Department of Transportation
Item Average Unit Cost
From 2018/04/01 to 2019/03/31

Contract Type: CC AREAS: 07
Displaying: VALID ITEMS WITH HITS
From: 0102 1 To: 9999999

LTC Item 8 - Landscape Maintenance Mowing

Item	No. of Conts	Weighted Average	Total Amount	Total Quantity	Unit Meas	Obs?	Description
0107 1	14	$13.21	$243,845.63	18,461.920	AC	N	LITTER REMOVAL
0107 2	14	$26.90	$366,362.83	13,617.040	AC	N	MOWING
0108 1	5	$12,638.00	$63,190.00	5.000	LS	N	MONITOR EXISTING STRUCTURES- SETTL
0108 2	3	$24,630.00	$73,890.00	3.000	LS	N	MONITOR EXISTING STRUCTURES- VIBRA
0108 3	1	$20,000.00	$20,000.00	1.000	LS	N	MONITOR EXISTING STRUCTURES- GROUN
0110 1 1	14	$7,138.22	$1,804,398.90	252.780	AC	N	CLEARING & GRUBBING
0110 2 2	1	$37,500.00	$4,500.00	.120	AC	N	SELECTIVE CLEARING AND GRUBBING, TREES R
0110 3	2	$14.29	$125,968.52	8,816.000	SF	N	REMOVAL OF EXISTING STRUCTURES/BRIDGES
0110 4 10	12	$11.42	$284,421.85	24,903.000	SY	N	REMOVAL OF EXIST CONC
0110 7 1	5	$215.61	$33,850.00	157.000	EA	N	MAILBOX, F&I SINGLE
0120 1	13	$6.80	$2,261,692.17	332,369.700	CY	N	REGULAR EXCAVATION
0120 4	2	$9.75	$291,879.60	29,934.000	CY	N	SUBSOIL EXCAVATION
0120 6	12	$10.73	$3,556,093.85	331,317.800	CY	N	EMBANKMENT
0160 4	10	$3.60	$1,638,989.75	454,899.000	SY	N	TYPE B STABILIZATION
0162 1 11	4	$2.43	$39,967.79	16,444.000	SY	N	PREPARED SOIL LAYER, FINISH SOIL, 6"
0173 76	1	$15.00	$603,600.00	40,240.000	LF	N	GROUT PIPE INSTALLATION
0173 77 1	1	$230.00	$443,670.00	1,929.000	CY	N	SUBSURF PRESSURE GROUTING,SAND CEM
0285701	6	$17.44	$466,888.60	26,774.000	SY	N	OPTIONAL BASE,BASE GROUP 01
0285702	1	$18.00	$439,290.00	24,405.000	SY	N	OPTIONAL BASE,BASE GROUP 02
0285703	1	$10.00	$50,240.00	5,024.000	SY	N	OPTIONAL BASE,BASE GROUP 03
0285704	2	$16.68	$9,275.86	556.000	SY	N	OPTIONAL BASE,BASE GROUP 04
0285706	4	$17.78	$509,241.15	28,635.000	SY	N	OPTIONAL BASE,BASE GROUP 06
0285709	6	$26.07	$6,670,944.80	255,891.000	SY	N	OPTIONAL BASE,BASE GROUP 09
0285710	3	$30.32	$168,453.75	5,555.000	SY	N	OPTIONAL BASE,BASE GROUP 10
0285711	1	$32.00	$585,504.00	18,297.000	SY	N	OPTIONAL BASE,BASE GROUP 11
0285712	1	$16.00	$341,568.00	21,348.000	SY	N	OPTIONAL BASE,BASE GROUP 12
0285713	1	$91.80	$17,533.80	191.000	SY	N	OPTIONAL BASE,BASE GROUP 13
0285715	3	$57.84	$295,494.50	5,109.000	SY	N	OPTIONAL BASE,BASE GROUP 15
0286 1	2	$35.27	$38,835.00	1,101.000	SY	N	TURNOUT CONSTRUCT/DRIVEWAY BASE- OPTION
0286 2	2	$100.62	$324,422.00	3,224.200	TN	N	TURNOUT CONSTRUCT-ASPHALT/DRIVEWAY BASE
0327 70 1	4	$4.52	$23,486.10	5,197.000	SY	N	MILLING EXIST ASPH PAVT, 1" AVG DEPTH
0327 70 2	3	$2.73	$67,975.71	24,918.000	SY	N	MILLING EXIST ASPH PAVT,3 1/2" AVG DEPTH
0327 70 3	2	$4.28	$11,651.38	2,724.000	SY	N	MILLING EXIST ASPH PAVT,4 1/2" AVG DEPTH
0327 70 4	5	$1.50	$577,875.42	384,820.000	SY	N	MILLING EXIST ASPH PAVT, 3" AVG DEPTH
0327 70 5	1	$3.00	$48,684.00	16,228.000	SY	N	MILLING EXIST ASPH PAVT, 2" AVG DEPTH
0327 70 6	9	$1.49	$858,759.34	577,658.000	SY	N	MILLING EXIST ASPH PAVT,1 1/2" AVG DEPTH
0327 70 7	3	$2.08	$21,039.39	10,093.000	SY	N	MILLING EXIST ASPH PAVT, 4" AVG DEPTH
0327 70 8	1	$1.49	$28,456.02	19,098.000	SY	N	MILLING EXIST ASPH PAVT,2 1/2" AVG DEPTH
0327 70 10	1	$1.49	$216.05	145.000	SY	N	MILLING EXIST ASPH PAVT, 5" AVG DEPTH
0327 70 11	5	$1.37	$1,055,221.11	768,424.000	SY	N	MILLING EXIST ASPH PAVT,2 1/4" AVG DEPTH

Florida Department of Transportation
Item Average Unit Cost
From 2018/04/01 to 2019/03/31

Contract Type: CC AREAS: 07
Displaying: VALID ITEMS WITH HITS
From: 0102 1 To: 9999999

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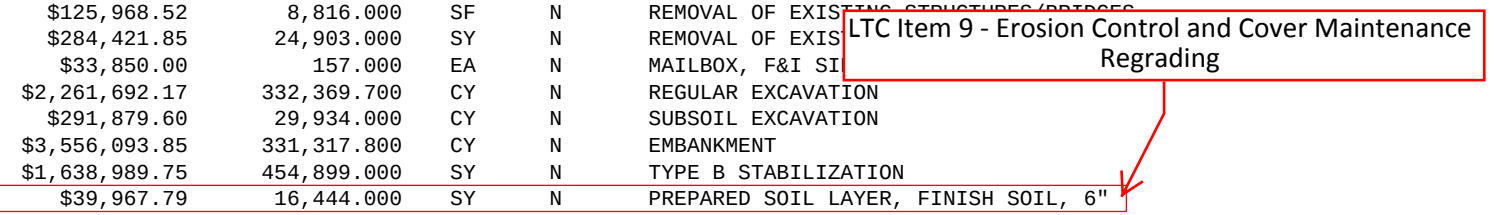
0120 6	12	$10.73	$3,556,093.85	331,317.800	CY	N	EMBANKMENT
0160 4	10	$3.60	$1,638,989.75	454,899.000	SY	N	TYPE B STABILIZATION
0162 1 11	4	$2.43	$39,967.79	16,444.000	SY	N	PREPARED SOIL LAYER, FINISH SOIL, 6"
0173 76	1	$15.00	$603,600.00	40,240.000	LF	N	GROUT PIPE INSTALLATION
0173 77 1	1	$230.00	$443,670.00	1,929.000	CY	N	SUBSURF PRESSURE GROUTING,SAND CEM
0285701	6	$17.44	$466,888.60	26,774.000	SY	N	OPTIONAL BASE,BASE GROUP 01
0285702	1	$18.00	$439,290.00	24,405.000	SY	N	OPTIONAL BASE,BASE GROUP 02
0285703	1	$10.00	$50,240.00	5,024.000	SY	N	OPTIONAL BASE,BASE GROUP 03
0285704	2	$16.68	$9,275.86	556.000	SY	N	OPTIONAL BASE,BASE GROUP 04
0285706	4	$17.78	$509,241.15	28,635.000	SY	N	OPTIONAL BASE,BASE GROUP 06
0285709	6	$26.07	$6,670,944.80	255,891.000	SY	N	OPTIONAL BASE,BASE GROUP 09
0285710	3	$30.32	$168,453.75	5,555.000	SY	N	OPTIONAL BASE,BASE GROUP 10
0285711	1	$32.00	$585,504.00	18,297.000	SY	N	OPTIONAL BASE,BASE GROUP 11
0285712	1	$16.00	$341,568.00	21,348.000	SY	N	OPTIONAL BASE,BASE GROUP 12
0285713	1	$91.80	$17,533.80	191.000	SY	N	OPTIONAL BASE,BASE GROUP 13
0285715	3	$57.84	$295,494.50	5,109.000	SY	N	OPTIONAL BASE,BASE GROUP 15
0286 1	2	$35.27	$38,835.00	1,101.000	SY	N	TURNOUT CONSTRUCT/DRIVEWAY BASE- OPTION
0286 2	2	$100.62	$324,422.00	3,224.200	TN	N	TURNOUT CONSTRUCT-ASPHALT/DRIVEWAY BASE
0327 70 1	4	$4.52	$23,486.10	5,197.000	SY	N	MILLING EXIST ASPH PAVT, 1" AVG DEPTH
0327 70 2	3	$2.73	$67,975.71	24,918.000	SY	N	MILLING EXIST ASPH PAVT,3 1/2" AVG DEPTH
0327 70 3	2	$4.28	$11,651.38	2,724.000	SY	N	MILLING EXIST ASPH PAVT,4 1/2" AVG DEPTH
0327 70 4	5	$1.50	$577,875.42	384,820.000	SY	N	MILLING EXIST ASPH PAVT, 3" AVG DEPTH
0327 70 5	1	$3.00	$48,684.00	16,228.000	SY	N	MILLING EXIST ASPH PAVT, 2" AVG DEPTH
0327 70 6	9	$1.49	$858,759.34	577,658.000	SY	N	MILLING EXIST ASPH PAVT,1 1/2" AVG DEPTH
0327 70 7	3	$2.08	$21,039.39	10,093.000	SY	N	MILLING EXIST ASPH PAVT, 4" AVG DEPTH
0327 70 8	1	$1.49	$28,456.02	19,098.000	SY	N	MILLING EXIST ASPH PAVT,2 1/2" AVG DEPTH
0327 70 10	1	$1.49	$216.05	145.000	SY	N	MILLING EXIST ASPH PAVT, 5" AVG DEPTH
0327 70 11	5	$1.37	$1,055,221.11	768,424.000	SY	N	MILLING EXIST ASPH PAVT,2 1/4" AVG DEPTH



LTC Item 9c - Cover Maintenance
Geomembrane
Geocomposite

500 Garrison Road
Georgetown, SC 29440
Phone: 1-843-546-0600

Janurary 10, 2018

Mobilization:
$3,000/1,000SY = $3/SY
Liner Repair:
$3/SY + $4.14/SY + $5.43/SY = $12.57/SY

Jeremy Toms, EI
Jones Edmunds & Associates, Inc.
730 NE Waldo Road
Gainesville, FL 32641

RE: **Sarasota County Central Landfill Closure – Requested Budgetary Pricing**

Agru America is pleased to provide the following budget pricing for the requested geosynthetic profile(s). Budget pricing options include a 40mil LLDPE MicroSpike and Geocomposite system as Option #1 and a 50 mil LLDPE MicroDrain geomembrane and geotextile as Option #2. As discussed, ClosureTurf may work well in this application if you would want to evaluate further.

Requested Geosynthetic Closure System #1

This geosynthetic closure system includes a standard 40 mil LLDPE MicroSpike geomembrane with 8-200-8 geocomposite.

Description	Quantity (SF)	Unit Price ($/SF)	Total
40 mil MicroSpike LLDPE - Material	2,700,000	$ 0.30	$ 810,000.00
40 mil MicroSpike LLDPE - Installation	2,700,000	$ 0.15	$ 405,000.00
8/200/8 Geocomposite - Material	2,700,000	$ 0.46	$ 1,242,000.00
8/200/8 Geocomposite - Installation	2,700,000	$ 0.13	$ 351,000.00
Total Budget for Conventional			**$ 2,808,000.00**

Geomembrane:
($0.30+$0.15) = ($0.45/SF)x(9 SF/SY) = ($4.05/SY)x(1.022% (Inflation Factor)) = $4.14/SY
Geocomposite:
($0.46+$0.13) = ($0.59/SF)x(9 SF/SY) = ($5.31/SY)x(1.022%) = $5.43/SY

Description	Quantity (SF)	Unit Price ($/SF)	Total
50 mil LLDPE MicroDrain - Material	2,700,000	$ 0.55	$ 1,485,000.00
50 mil LLDPE MicroDrain - Installation	2,700,000	$ 0.18	$ 486,000.00
Agrutex 081 Nonwoven Geotextile - Material	2,700,000	$ 0.11	$ 297,000.00
Agrutex 081 Nonwoven Geotextile - Installation	2,700,000	$ 0.10	$ 270,000.00
Total Budget for MicroDrain Option			**$ 2,538,000.00**

*Material budget pricing includes estimated freight to Sarasota, FL but no taxes. Installation budget pricing assumes non-union/non-prevailing wage rates.

Florida Department of Transportation
Item Average Unit Cost
From 2018/07/01 to 2019/06/30

Contract Type: CC STATEWIDE
Displaying: VALID ITEMS WITH HITS
From: 0102 1 To: 9999999

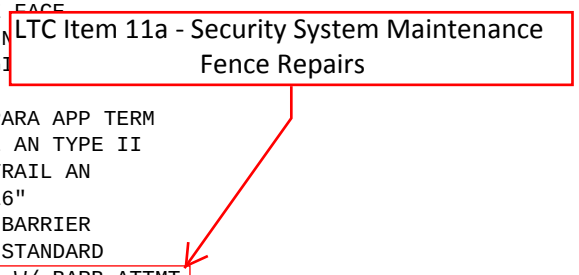
Item		No. of Conts	Weighted Average	Total Amount	Total Quantity	Unit Meas	Obs?	Description
0102909		15	$32.14	$94,399.95	2,937.000	DA	N	TEMPORARY RAISED RUMBLE STRIPS
0102911	1	10	$2.37	$32,412.66	13,657.000	LF	N	PAVT MARKING REMOVABLE TAPE,WH BLK,SKIP
0102911	2	37	$2.73	$361,626.28	132,521.000	LF	N	PAVT MARKING REMOVABLE TAPE,WH BLK,SOLID
0102911	3	8	$7.25	$22,312.95	3,077.000	SF	N	PAVT MARKING REMOVABLE TAPE,WH BLK,OTHER
0102912	1	1	$2.49	$1,566.21	629.000	LF	N	PAVT MARKING REMOVABLE TAPE,YELLOW,SKIP
0102912	2	24	$2.55	$157,655.02	61,786.000	LF	N	PAVT MARKING REMOVABLE TAPE,YELLOW,SOLID
0102912	3	1	$4.50	$891.00	198.000	SF	N	PAVT MARKING REMOVABLE TAPE,YELLOW,OTHER
0104	1	29	$3.42	$477,778.63	139,824.000	SY	N	ARTIFICIAL COVERINGS / ROLL EROSION CNTL
0104	6	1	$12.30	$861.00	70.000	LF	N	TEMPORARY SLOPE DRAIN / RUNOFF CONT STR
0104	7	1	$3,072.00	$12,288.00	4.000	EA	N	SEDIMENT BASIN / CONTAINMENT SYSTEM
0104	9	5	$1,936.04	$135,522.60	70.000	EA	N	SEDIMENT BASIN / CONTAINMENT SY CLEANOUT
0104 10	3	176	$1.96	$4,039,617.22	2,058,360.000	LF	N	SEDIMENT BARRIER
0104 11		76	$12.08	$1,140,264.25	94,380.000	LF	N	FLOATING TURBIDITY BARRIER
0104 12		35	$4.87	$529,921.00	108,871.000	LF	N	STAKED TURBIDITY BARRIER- NYL REINF PVC
0104 15		49	$2,626.89	$512,243.16	195.000	EA	N	SOIL TRACKING PREVENTION DEVICE
0104 18		175	$104.39	$969,952.54	9,292.000	EA	N	INLET PROTECTION SYSTEM
0104 19		1	$2.80	$14.00	5.000	SY	N	CHEMICAL TREATMENT FOR EROSION CONTROL
0107	1	178	$11.89	$2,079,363.86	174,952.780	AC	N	LITTER REMOVAL
0107	2	173	$20.88	$2,959,876.94	141,746.550	AC	N	MOWING
0108	1	74	$10,673.51	$907,248.76	85.000	LS	N	MONITOR EXISTING STRUCTURES- SETTL
0108	2	44	$9,080.04	$481,241.89	53.000	LS	N	MONITOR EXISTING STRUCTURES- VIBRA
0108	3	2	$14,982.00	$29,964.00	2.000	LS	N	MONITOR EXISTING STRUCTURES- GROUN
0110	1 1	208	$10,075.04	$34,194,497.00	3,393.980	AC	N	CLEARING & GRUBBING
0110	2 2	32	$20,055.67	$444,834.86	22.180	AC	N	SELECTIVE CLEARING AND GRUBBING, TREES R
0110	2 3	1	$130,000.00	$19,500.00	.150	AC	N	SELECTIVE CLEARING AND GRUB, PLANT PRES
0110	3	39	$30.81	$5,035,348.22	163,430.000	SF	N	REMOVAL OF EXISTING STRUCTURES/BRIDGES
0110	4 10	175	$16.43	$5,901,355.43	359,077.000	SY	N	REMOVAL OF EXIST CONC
0110	6	3	$2,780.00	$13,900.00	5.000	EA	N	
0110	7 1	35	$232.55	$128,137.66	551.000	EA	N	
0110	8	1	$2,200.00	$11,000.00	5.000	DA	N	
0110 12	1	3	$1,214.05	$565,745.37	466.000	SY	N	HYDRODEMOLITION, REM OF DECK SURFACE
0110 71	1	3	$329.23	$358,531.25	1,089.000	LF	N	BRIDGE FENDER SYSTEM, REMOVAL & DISPOSAL
0110 73		5	$121.67	$257,334.00	2,115.000	LF	N	REMOVE EXISTING BULKHEAD
0110 82		1	$2,500.00	$49,750.00	19.900	MB	N	REMOVE & DISPOSE OF STRUCTURAL TIMBER
0120	1	135	$3.75	$33,375,278.97	8,888,584.900	CY	N	REGULAR EXCAVATION
0120	2 2	47	$15.85	$1,873,752.50	118,215.500	CY	N	BORROW EXCAVATION, TRUCK MEASURE
0120	3	3	$10.23	$85,234.00	8,332.000	CY	N	LATERAL DITCH EXCAVATION
0120	4	30	$7.48	$5,588,601.82	747,544.900	CY	N	SUBSOIL EXCAVATION
0120	5	6	$13.64	$259,917.00	19,051.400	CY	N	CHANNEL EXCAVATION
0120	6	123	$5.75	$93,676,898.80	16,293,687.000	CY	N	EMBANKMENT

LTC Item 10 - Stormwater Conveyance Maintenance Excavation

Florida Department of Transportation
Item Average Unit Cost
From 2018/04/01 to 2019/03/31

Contract Type: CC AREAS: 07
Displaying: VALID ITEMS WITH HITS
From: 0102 1 To: 9999999

Item	No. of Conts	Weighted Average	Total Amount	Total Quantity	Unit Meas	Obs?	Description
0524 1 4	1	$72.00	$16,272.00	226.000	SY	N	CONCRETE DITCH PAVT, NR, 6"
0524 1 29	3	$52.97	$197,775.00	3,734.000	SY	N	CONC DITCH PAVT, 4", REINFORCED
0527 2	7	$25.56	$89,681.00	3,509.000	SF	N	DETECTABLE WARNINGS
0530 3 4	3	$193.86	$45,828.50	236.400	TN	N	RIPRAP, RUBBLE, F&I, DITCH LINING
0530 74	2	$293.55	$48,348.00	164.700	TN	N	BEDDING STONE
0536 1 1	4	$22.29	$147,429.10	6,615.000	LF	N	GUARDRAIL- ROADWAY, GEN TL-3
0536 1 3	3	$35.64	$42,595.06	1,195.000	LF	N	GUARDRAIL- ROADWAY, DOUBLE FACE
0536 5 1	1	$9.50	$4,750.00	500.000	LF	N	RUB RAIL FOR GUARDRAIL, SIN
0536 8 13	3	$3,230.48	$67,840.00	21.000	EA	N	APPROACH TRANS CONN TO RIGI
0536 73	5	$3.27	$43,228.60	13,234.000	LF	N	GUARDRAIL REMOVAL
0536 85 24	3	$3,278.89	$29,510.00	9.000	EA	N	GUARDRAIL END TREATMENT- PARA APP TERM
0536 85 25	1	$1,350.00	$4,050.00	3.000	EA	N	GUARDRAIL END TREAT- TRAIL AN TYPE II
0536 85 28	1	$2,997.00	$5,994.00	2.000	EA	N	GUARDRAIL END TREAT- DBL TRAIL AN
0546 72 1	3	$1,704.03	$132,515.82	77.766	GM	N	GROUND-IN RUMBLE STRIPS, 16"
0548 12	1	$27.00	$2,635,200.00	97,600.000	SF	N	RET WALL SYSTEM, PERM, EX BARRIER
0550 10120	1	$8.50	$53,261.00	6,266.000	LF	N	FENCING, TYPE A, 5.1-6.0, STANDARD
0550 10221	1	$15.00	$41,490.00	2,766.000	LF	N	FENCING, TYPE B, 5.1-6.0', W/ BARB ATTMT
0550 10222	1	$18.00	$91,728.00	5,096.000	LF	N	FENCING, TYPE B, 5.1-6.0, W/ VINYL COAT
0550 10228	1	$14.50	$36,003.50	2,483.000	LF	N	FENCING, TYPE B, 5.1-6.0, RESET EXISTING
0550 60224	1	$2,250.00	$4,500.00	2.000	EA	N	FENCE GATE,TYP B, DBL,18.1-20.0' OPENING
0570 1 1	4	$2.60	$64,694.25	24,843.000	SY	N	PERFORMANCE TURF
0570 1 2	13	$2.97	$2,015,761.90	679,343.000	SY	N	PERFORMANCE TURF, SOD
0571 1 11	3	$3.70	$109,073.70	29,455.000	SY	N	PLASTIC EROSION MAT, TRM, TYPE 1
0580 1 1	2	$59,000.00	$236,000.00	4.000	LS	N	LANDSCAPE COMPLETE- SMALL PLANTS
0580 1 2	1	$16,000.00	$16,000.00	1.000	LS	N	LANDSCAPE COMPLETE- LARGE PLANTS
0590 1	1	$25,000.00	$25,000.00	1.000	EA	N	LANDSCAPE IRRIGATION SYSTEM
0630 2 11	7	$11.69	$788,530.21	67,455.000	LF	N	CONDUIT, F& I, OPEN TRENCH
0630 2 12	8	$30.08	$348,299.27	11,580.000	LF	N	CONDUIT, F& I, DIRECTIONAL BORE
0630 2 14	1	$35.00	$2,100.00	60.000	LF	N	CONDUIT, F& I, ABOVEGROUND
0630 2 15	1	$20.71	$5,964.48	288.000	LF	N	CONDUIT, F& I, BRIDGE MOUNT
0630 2 16	1	$10.00	$4,430.00	443.000	LF	N	CONDUIT, F& I, EMBEDDED- BARR./RAILINGS
0632 7 1	4	$14,852.78	$133,675.00	9.000	PI	N	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL
0632 7 6	3	$996.43	$6,975.00	7.000	PI	N	SIGNAL CABLE, REMOVE- INTERSECTION
0633 1121	2	$2.83	$5,184.76	1,830.000	LF	N	FIBER OPTIC CABLE, F&I, UG,2-12
0633 1122	1	$3.40	$90,154.40	26,516.000	LF	N	FIBER OPTIC CABLE, F&I, UG,13-48
0633 1123	1	$3.30	$66,894.30	20,271.000	LF	N	FIBER OPTIC CABLE, F&I, UG,49-96
0633 1420	1	$2.00	$350.00	175.000	LF	N	FIBER OPTIC CABLE, REL, UG
0633 1620	1	$.50	$5,287.50	10,575.000	LF	N	FIBER OPTIC CABLE, REM, UG
0633 2 31	2	$44.20	$7,338.00	166.000	EA	N	FIBER OPTIC CONNECTION, INSTALL, SPLICE
0633 2 32	1	$94.00	$4,512.00	48.000	EA	N	FIBER OPTIC CONNECTION, INSTALL, TERM



Florida Department of Transportation
Item Average Unit Cost
From 2018/04/01 to 2019/03/31

Contract Type: CC AREAS: 07
Displaying: VALID ITEMS WITH HITS
From: 0102 1 To: 9999999

Item	No. of Conts	Weighted Average	Total Amount	Total Quantity	Unit Meas	Obs?	Description
0524 1 4	1	$72.00	$16,272.00	226.000	SY	N	CONCRETE DITCH PAVT, NR, 6"
0524 1 29	3	$52.97	$197,775.00	3,734.000	SY	N	CONC DITCH PAVT, 4", REINFORCED
0527 2	7	$25.56	$89,681.00	3,509.000	SF	N	DETECTABLE WARNINGS
0530 3 4	3	$193.86	$45,828.50	236.400	TN	N	RIPRAP, RUBBLE, F&I, DITCH LINING
0530 74	2	$293.55	$48,348.00	164.700	TN	N	BEDDING STONE
0536 1 1	4	$22.29	$147,429.10	6,615.000	LF	N	GUARDRAIL- ROADWAY, GEN TL-3
0536 1 3	3	$35.64	$42,595.06	1,195.000	LF	N	GUARDRAIL- ROADWAY, DOUBLE FACE
0536 5 1	1	$9.50	$4,750.00	500.000	LF	N	RUB RAIL FOR GUARDRAIL, SINGLE SIDED RUB
0536 8 13	3	$3,230.48	$67,840.00	21.000	EA	N	APPROACH TRANS CONN TO RIGID BA, F&I, 3
0536 73	5	$3.27	$43,228.60	13,234.000	LF	N	GUARDRAIL REMOVAL
0536 85 24	3	$3,278.89	$29,510.00	9.000	EA	N	GUARDRAIL END TREATMENT- PARA APP TERM
0536 85 25	1	$1,350.00	$4,050.00	3.000	EA	N	GUARDRAIL END TREAT- TRAIL AN TYPE II
0536 85 28	1	$2,997.00	$5,994.00	2.000	EA	N	GUARDRAIL END TREAT- DBL TRAIL AN
0546 72 1	3	$1,704.03	$132,515.82	77.766	GM	N	GROUND-IN RUMBLE STRIPS, 16'
0548 12	1	$27.00	$2,635,200.00	97,600.000	SF	N	RET WALL SYSTEM, PERM, EX B/
0550 10120	1	$8.50	$53,261.00	6,266.000	LF	N	FENCING, TYPE A, 5.1-6.0, S'
0550 10221	1	$15.00	$41,490.00	2,766.000	LF	N	FENCING, TYPE B, 5.1-6.0', W/ BARB ATTMT
0550 10222	1	$18.00	$91,728.00	5,096.000	LF	N	FENCING, TYPE B, 5.1-6.0, W/ VINYL COAT
0550 10228	1	$14.50	$36,003.50	2,483.000	LF	N	FENCING, TYPE B, 5.1-6.0, RESET EXISTING
0550 60224	1	$2,250.00	$4,500.00	2.000	EA	N	FENCE GATE,TYP B, DBL,18.1-20.0' OPENING
0570 1 1	4	$2.60	$64,694.25	24,843.000	SY	N	PERFORMANCE TURF
0570 1 2	13	$2.97	$2,015,761.90	679,343.000	SY	N	PERFORMANCE TURF, SOD
0571 1 11	3	$3.70	$109,073.70	29,455.000	SY	N	PLASTIC EROSION MAT, TRM, TYPE 1
0580 1 1	2	$59,000.00	$236,000.00	4.000	LS	N	LANDSCAPE COMPLETE- SMALL PLANTS
0580 1 2	1	$16,000.00	$16,000.00	1.000	LS	N	LANDSCAPE COMPLETE- LARGE PLANTS
0590 1	1	$25,000.00	$25,000.00	1.000	EA	N	LANDSCAPE IRRIGATION SYSTEM
0630 2 11	7	$11.69	$788,530.21	67,455.000	LF	N	CONDUIT, F& I, OPEN TRENCH
0630 2 12	8	$30.08	$348,299.27	11,580.000	LF	N	CONDUIT, F& I, DIRECTIONAL BORE
0630 2 14	1	$35.00	$2,100.00	60.000	LF	N	CONDUIT, F& I, ABOVEGROUND
0630 2 15	1	$20.71	$5,964.48	288.000	LF	N	CONDUIT, F& I, BRIDGE MOUNT
0630 2 16	1	$10.00	$4,430.00	443.000	LF	N	CONDUIT, F& I, EMBEDDED- BARR./RAILINGS
0632 7 1	4	$14,852.78	$133,675.00	9.000	PI	N	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL
0632 7 6	3	$996.43	$6,975.00	7.000	PI	N	SIGNAL CABLE, REMOVE- INTERSECTION
0633 1121	2	$2.83	$5,184.76	1,830.000	LF	N	FIBER OPTIC CABLE, F&I, UG,2-12
0633 1122	1	$3.40	$90,154.40	26,516.000	LF	N	FIBER OPTIC CABLE, F&I, UG,13-48
0633 1123	1	$3.30	$66,894.30	20,271.000	LF	N	FIBER OPTIC CABLE, F&I, UG,49-96
0633 1420	1	$2.00	$350.00	175.000	LF	N	FIBER OPTIC CABLE, REL, UG
0633 1620	1	$.50	$5,287.50	10,575.000	LF	N	FIBER OPTIC CABLE, REM, UG
0633 2 31	2	$44.20	$7,338.00	166.000	EA	N	FIBER OPTIC CONNECTION, INSTALL, SPLICE
0633 2 32	1	$94.00	$4,512.00	48.000	EA	N	FIBER OPTIC CONNECTION, INSTALL, TERM

LTC Item 11b - Security System Maintenance Gate Repairs

Florida Department of Transportation
Item Average Unit Cost
From 2018/04/01 to 2019/03/31

Contract Type: CC AREAS: 07
Displaying: VALID ITEMS WITH HITS
From: 0102 1 To: 9999999

LTC Item 11c - Security System Maintenance Sign Repairs

Item		No. of Conts	Weighted Average	Total Amount	Total Quantity	Unit Meas	Obs?	Description
0695	7600	4	$362.26	$1,449.04	4.000	EA	N	TMS CABINET, REMOVE
0700	1 11	12	$296.93	$166,877.00	562.000	AS	N	SINGLE POST SIGN, F&I GM, <12 SF
0700	1 12	11	$963.66	$138,766.90	144.000	AS	N	SINGLE POST SIGN, F&I GM, 12-20 SF
0700	1 13	7	$1,446.32	$57,852.60	40.000	AS	N	SINGLE POST SIGN, F&I GM, 21-30 SF
0700	1 14	1	$2,000.00	$2,000.00	1.000	AS	N	SINGLE POST SIGN, F&I GM, 31+ SF
0700	1 31	1	$1,850.00	$11,100.00	6.000	AS	N	SINGLE POST SIGN, F&I BRG MNT, <12 SF
0700	1 32	1	$1,966.39	$9,831.95	5.000	AS	N	SINGLE POST SIGN, F&I BRG MNT, 12-20 SF
0700	1 33	1	$2,700.00	$5,400.00	2.000	AS	N	SINGLE POST SIGN, F&I BRG MNT, 21-30 SF
0700	1 50	9	$194.82	$14,027.30	72.000	AS	N	SINGLE POST SIGN, RELOCATE
0700	1 60	12	$20.94	$11,121.65	531.000	AS	N	SINGLE POST SIGN, REMOVE
0700	2 12	1	$3,550.00	$7,100.00	2.000	AS	N	MULTI- POST SIGN, F&I GM, 12-20 SF
0700	2 13	3	$4,415.00	$44,150.00	10.000	AS	N	MULTI- POST SIGN, F&I GM, 21-30 SF
0700	2 14	3	$4,675.00	$37,400.00	8.000	AS	N	MULTI- POST SIGN, F&I GM, 31-50 SF
0700	2 15	4	$5,800.00	$46,400.00	8.000	AS	N	MULTI- POST SIGN, F&I GM, 51-100 SF
0700	2 50	2	$4,435.00	$17,740.00	4.000	AS	N	MULTI- POST SIGN, RELOCATE
0700	2 60	5	$501.07	$14,030.00	28.000	AS	N	MULTI- POST SIGN, REMOVE
0700	3101	3	$158.61	$2,855.00	18.000	EA	N	SIGN PANEL, F&I GM, UP TO 12 SF
0700	3102	1	$560.00	$3,920.00	7.000	EA	N	SIGN PANEL, F&I GM, 12-20 SF
0700	3201	2	$414.74	$7,880.00	19.000	EA	N	SIGN PANEL, F&I OM, UP TO 12 SF
0700	3202	1	$825.00	$825.00	1.000	EA	N	SIGN PANEL, F&I OM, 12-20 SF
0700	3204	1	$2,050.00	$2,050.00	1.000	EA	N	SIGN PANEL, F&I OM, 31-50 SF
0700	3205	3	$2,790.00	$27,900.00	10.000	EA	N	SIGN PANEL, F&I OM, 51-100 SF
0700	3206	1	$5,000.00	$35,000.00	7.000	EA	N	SIGN PANEL, F&I OM, 101-200 SF
0700	3207	1	$8,000.00	$32,000.00	4.000	EA	N	SIGN PANEL, F&I OM, 201-300 SF
0700	3208	1	$10,800.00	$10,800.00	1.000	EA	N	SIGN PANEL, F&I OM, 301-400 SF
0700	3501	1	$80.00	$80.00	1.000	EA	N	SIGN PANEL, RELOCATE, UP TO 12 SF
0700	3601	5	$50.40	$1,663.10	33.000	EA	N	SIGN PANEL, REMOVE, UP TO 12 SF
0700	3605	1	$240.00	$1,200.00	5.000	EA	N	SIGN PANEL, REMOVE, 51-100 SF
0700	3606	1	$800.00	$1,600.00	2.000	EA	N	SIGN PANEL, REMOVE, 101-200 SF
0700	3624	1	$1,375.00	$1,375.00	1.000	EA	N	SIGN PANEL, REMOVE, UP TO 50 SF WITH LIG
0700	3625	1	$1,375.00	$1,375.00	1.000	EA	N	SIGN PANEL, REMOVE, 51-100 SF W LIGHTING
0700	3626	1	$1,350.00	$4,050.00	3.000	EA	N	SIGN PANEL, REMOVE, 101-200 SF W LIGHT
0700	3627	1	$2,400.00	$7,200.00	3.000	EA	N	SIGN PANEL, REMOVE, 201-300 SF W LIGHT
0700	4112	1	$42,500.00	$42,500.00	1.000	EA	N	OH STATIC SIGN STR, F&I, C 21-30 FT
0700	4113	1	$73,500.00	$147,000.00	2.000	EA	N	OH STATIC SIGN STR, F&I, C 31-40 FT
0700	4114	1	$66,800.00	$200,400.00	3.000	EA	N	OH STATIC SIGN STR, F&I, C 41-50 FT
0700	4126	1	$175,000.00	$525,000.00	3.000	EA	N	OH STATIC SIGN STR, F&I, S 101-150 FT
0700	4610	1	$5,900.00	$29,500.00	5.000	EA	N	OH STATIC SIGN STR, REMOVE, CANT
0700	5 22	3	$3,091.30	$71,100.00	23.000	EA	N	INTERNAL ILLUM SIGN, F&I OM, 12-18 SF
0700	5 60	1	$220.00	$440.00	2.000	EA	N	INTERNAL ILLUM SIGN, REMOVE

Attachment 2

Revised Operations Plan

Table of Contents

FIGURES

Tables

1.0 General Description of the Solid Waste Complex

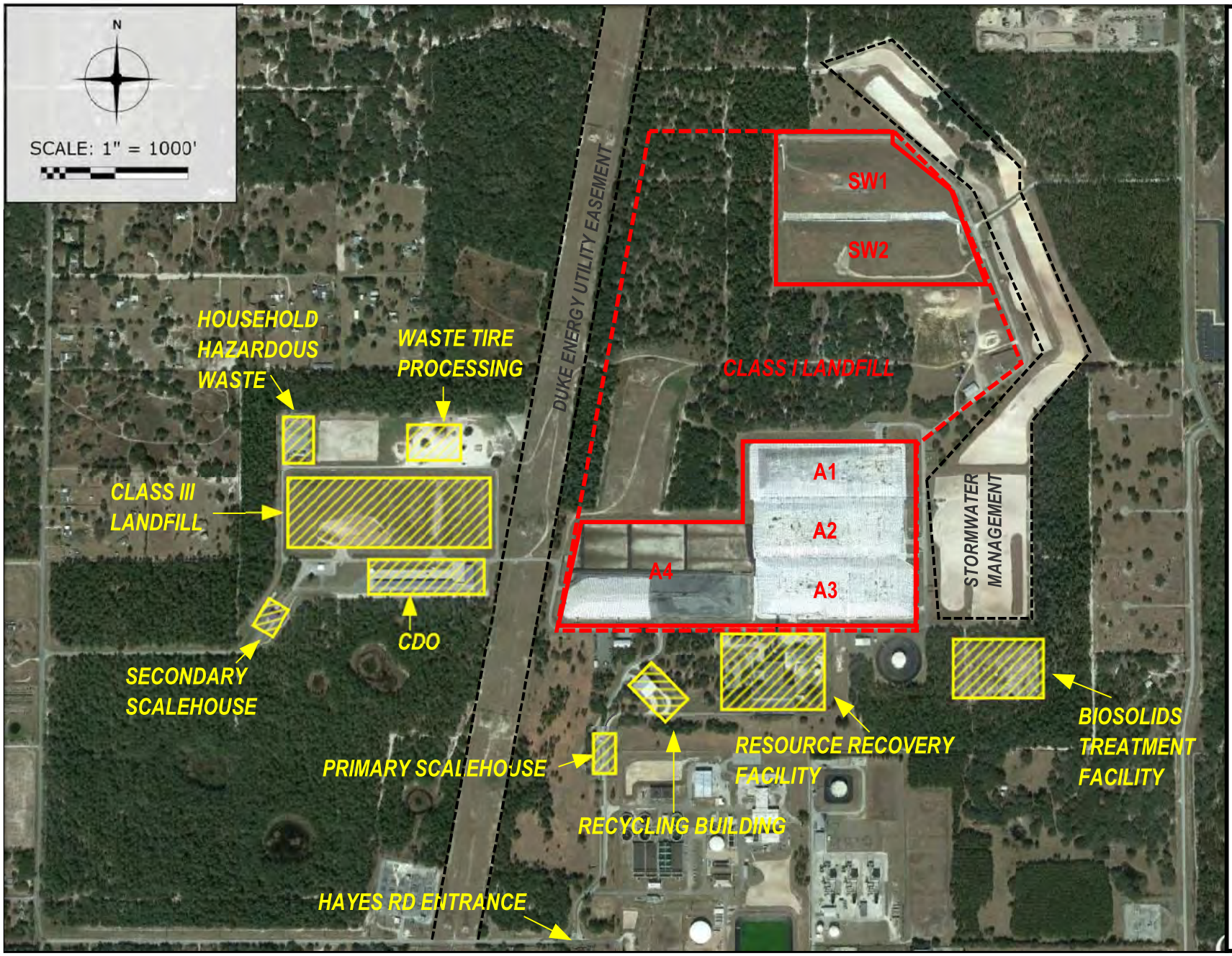
The West Pasco Class I Landfill (for which this Operations Plan has been prepared) is an integral component of the larger West Pasco Solid Waste Complex. The overall 800 acre Complex is comprised of the following components:

- The Pasco County Resource Recovery Facility;
- The West Pasco Class I Landfill (the component addressed by this Operations Plan);
- The West Pasco Class III Landfill;
- The West Pasco Materials Recovery Facility;
- Citizen's Drop Off Facility;
- The Pasco County Biosolids Treatment Plant, and;
- Various support structures, including two scalehouses, vehicle maintenance buildings, etc.

The main entrance of the West Pasco Solid Waste Complex is located at 14230 Hays Road in Spring Hill and is depicted on **Figure 1-1**. The majority of the complex is permitted under the Florida Electrical Power Plant Siting Act through Conditions of Certification No. PA 87-23D, however, the Class III Landfill and the Biosolids Treatment Plant are permitted through individual permits outside of PA 87-23C. The following solid waste management activities occur at the Complex:

- Scalehouse operations
- Solid Waste combustion at the Resource Recovery Facility
- Metals recovery in the Ash Storage Building of the Resource Recovery Facility
- Ash disposal in the Ash Monofill (currently Cell A-4)
- Engineered Aggregate processing within the Ash Monofill (currently limited to Cell A-4)
- Maintenance of temporary cover on the inactive cells of Ash Monofill (Cells A-1, A-2, and A-3)
- Solid Waste Disposal in the Solid Waste Landfill (currently Cell SW-2)
- Maintenance of temporary cover on the inactive cell of the Solid Waste Landfill (Cell SW-1)
- Construction and demolition (C&D) disposal within the Class III Landfill
- Yard waste processing
- White goods collection and recycling
- Household hazardous waste (HHW) collection
- Recycled materials processing
- Stormwater collection and treatment
- Landfill gas monitoring
- Groundwater monitoring
- Landfill leachate collection and transport
- Heavy equipment and vehicle maintenance
- Waste tire collection and processing

The entire 800-acre site is enclosed by a chain link fence or barbed wired fence to limit access. Public access is limited to two gates, both of which are monitored by Pasco County staff located in the scalehouses adjacent to the gates. After-hours access to the primary entrance gate off of Hays Road is monitored and controlled by the control room operator at the Resource Recovery Facility.



Site Plan

West Pasco Solid Waste Facility

Figure 1-1

2.0 Safety

2.1 Emergency Contacts and Reporting

Mr. John Power	Office	(727) 856-0119
Solid Waste Director	Cell	(813) 763-5881
Dr. Justin Roessler	Office	(727) 856-0119
Asst. Solid Waste Director	Cell	(352) 270-1454

The emergency contact individuals are subject to change. The Operations Plan will be updated if any changes occur. All accidents should be immediately reported to the Asst. Solid Waste Director. After immediately reacting to the accident (first aid or equipment repair), the Asst. Solid Waste Director or others designated by the Director will investigate the cause of the accident. A full accident report will be drafted and submitted to Solid Waste Director. The accident report will include all facts involved in the incident as applicable including, but not limited to, date, time of day, weather conditions, hauler vehicle traffic conditions, location on the landfill, equipment and personnel involved, circumstances leading to cause, and response. Photographs will be attached when applicable.

2.2 Operator and Hauler Requirements

Smoking is prohibited on and near the landfill cells and the working face. A spark from a lighter, cigarette, cigar, or pipe could ignite LFG. A sign at the scalehouse notifies anyone entering the landfill of the No-Smoking Policy. All Pasco County employees will enforce this policy in the field. “No Smoking” signs are posted at all entrances, roadways, and active areas.

Welding and oxy-acetylene cutting are prohibited near the landfill or working face. If a vehicle requires this type of maintenance, it shall be towed to an area away from LFG venting. If this is not possible, an employee trained in using a combustible gas meter will take a reading around the area to determine whether methane/combustible gases are absent and their concentrations if they are present.

2.3 Training, Equipment, and Materials

Safety materials and equipment include fire extinguishers at landfill sites and first aid kits that are easily accessible for field use. Other equipment provided by the County may include various types of Personal Protective Equipment (PPE) and protective disposable coveralls. Landfill field employees are required to wear appropriate clothing on the work site, such as steel-toed boots, long pants, and a shirt.

Pasco County Utilities maintains a pro-active approach to training by requiring key operating personnel attend the University of Florida’s Training, Research, and Education of Environmental Operations (TREEO) certification courses. All Operators and Spotters must attend and pass the Initial Training for Operators of Landfills and Waste Processing Facilities course. Within three years of passing the initial training course and every three years thereafter, each operator must complete an additional 16 hour refresher course. Additionally, all spotters must attend and pass the Initial Training Course for Spotters at Landfills, C&D Sites, and Transfer Stations. Within three years of passing the initial training course and every three years thereafter, each spotter must complete an additional 8 hour refresher course.

Copies of course completion certificates are kept on file within the Administration offices. The landfill has at least one trained operator on site during all times when the landfill receives waste. At least one trained spotter is at each working face at all times to detect unauthorized wastes when the landfill receives waste other than ash.

3.0 Organization

Pasco County Solid Waste is organized as follows:

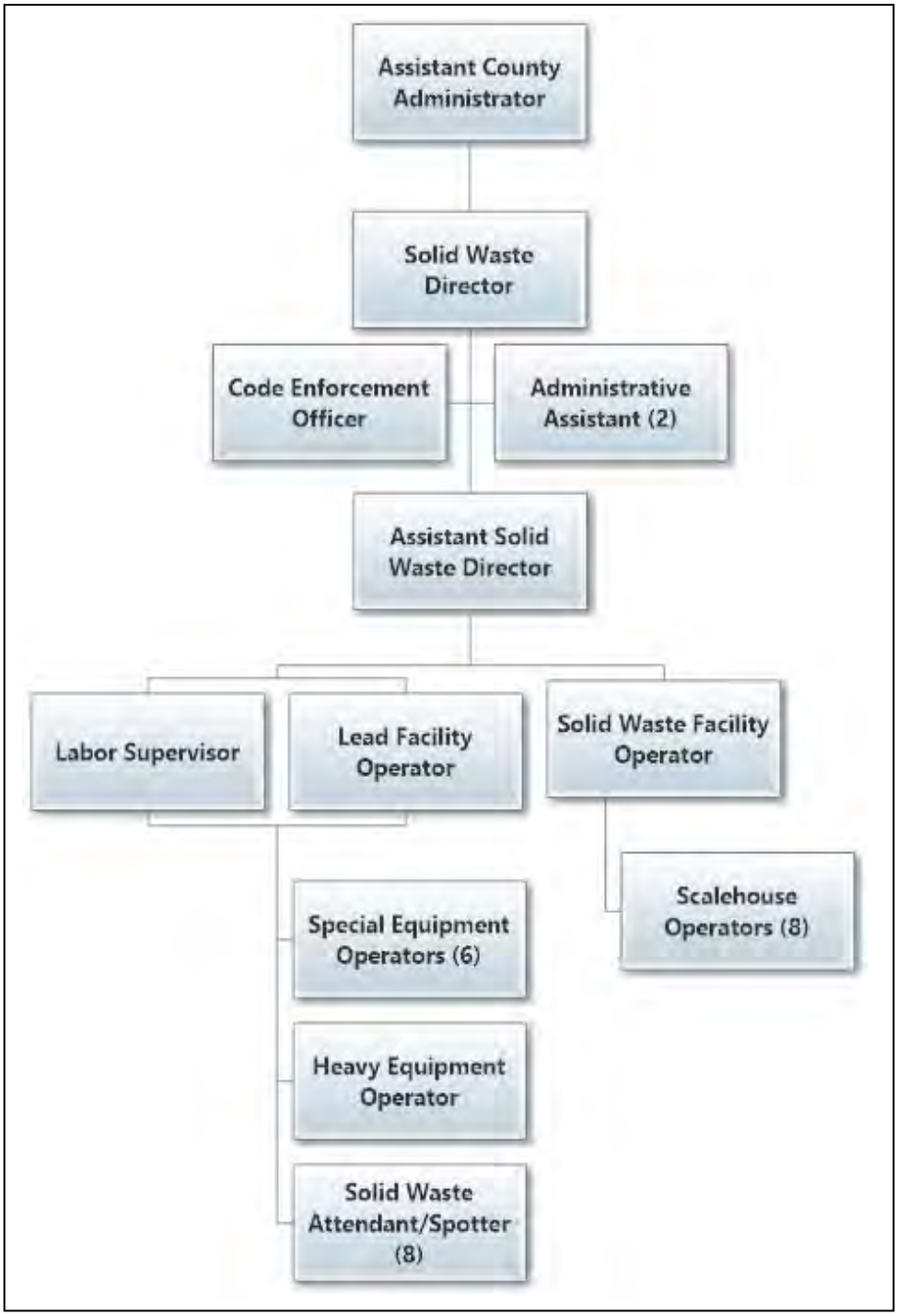


Figure 3-1
Organizational Chart

4.0 Scalehouse Operations

The scale operation is critical to the efficiency of the landfill facility. This operation serves several important functions including security, initial load checking, waste identification and segregation, traffic control, waste quantity recording, and financial documentation.

The primary scalehouse is the original to Facility, was constructed in 1990, and is approximately 1,000 feet from the entrance gate on the main facility access road. The scale facility has a scalehouse, two inbound scales, one outbound scale, one inbound bypass lane, one outbound bypass lane, and a video surveillance system. Monitoring the movement of haul trucks and other vehicles is part of the duties of the Scalehouse Attendant. All traffic entering the facility must check in with the Scalehouse Attendant. Waste delivery vehicles are required to weigh in, and all visitors must first report in and state the purpose of their visit. A Scalehouse Attendant is maintained on duty during all periods when the facility is open.

A secondary scalehouse, constructed in 2011, is utilized primarily for citizens that choose to self-haul to the Citizens' Drop-Off facility. The secondary scalehouse has a scalehouse, one inbound scale, one outbound scale, one inbound bypass lane, one outbound bypass lane, and a video surveillance system.

Administration maintains communication with landfill staff via hand-held radios and cell phones. A sign at both entrances to the facility identifies the operating authority, hours and days of operation, waste disposal restrictions, and other information. Speed limit signs are posted along the main road leading to the active filling areas. Signs identifying roads leading to the Class I filling area are posted at the intersection of each road. Other miscellaneous signs direct customers to the other public facilities, including recycling drop-off containers, mulch, and tire disposal area.

4.1 Load Screening

The Scalehouse Attendant screens all loads as they are received at the scale facility. The Scalehouse Attendant performs two types of inspections on incoming waste loads per transaction: hauler interview, and visual inspections when visible from inside the scale facility.

The initial inspection of the incoming waste is conducted by the Scalehouse Attendant. This inspection includes identification from the driver of the type of waste and random visual inspections of the vehicle. The random visual inspections include looking for suspicious containers that may contain prohibited wastes and smoke rising from the payload area of the vehicle.

The types of businesses in the area that may generate prohibited wastes include automotive repair, painting, dry cleaning, fiberglass fabrication, and marine service. All incoming loads of waste should be checked for visual and olfactory indications. Indications of suspicious loads include the following:

- Hazardous placards or markings
- Drums
- Containerized liquids
- Powders or dusts
- Sludges
- Bright or unusual colors
- Chemical odors

4.2 Prohibited Wastes

The Scalehouse Attendant should also scan incoming loads for components that contain prohibited materials. Waste materials prohibited from disposal at the West Pasco Facility are listed below. Refer to Section 7.6 for handling and removal of prohibited wastes from the waste stream. References to sections where disposal is addressed are shown parenthetically. Please note that waste tires, white goods, yard waste, and other selected items are accepted at the Complex but diverted from the Class I cell.

- Lead Acid Batteries (8.7)
- Paint (8.4 and 8.5)
- Biomedical wastes (8.10)
- Whole tires (8.11)
- Used motor oil and oil filters (8.3)
- White goods (8.12)
- Household Hazardous Waste (8.1)
- Unknown Wastes (8.2)
- Septic/sewage/sludge except that bound for the Biosolids Processing Facility or meeting the definition of a solid waste in accordance with 62-701(107) and not prohibited by Rule 62-701.300, FAC (8.10)
- Segregated Electronics (8.8)
- Contaminated Soils (8.9)

4.3 Waste Categories

Pasco County utilizes defined categories of types of waste received at the scalehouse. These categories of waste are designed to provide required reporting to FDEP as well as to properly manage the incoming waste. Each waste category is managed at a specific area of the Complex. The Scalehouse Attendant is responsible for directing the driver of the haul vehicle to the proper location in the landfill for unloading.

Table 4-1 lists all waste categories received at the Complex and the location for unloading within the Complex.

The tonnage of all waste categories is compiled monthly. The waste quantity reports are submitted annually to FDEP.

Table 4-1
PC Scales Waste Category Codes and Disposal Area

Code	Description	Disposal Area
AC	Air Conditioner	HHW
AR	Adopt a Road	RRF, Class I, Class III, Waste Tire
CCT	Coastal Cleanup	RRF, Class I, Class III, Waste Tire
CD	Construction Debris	Class III
CEE	Commercial Electronic Equipment	HHW
CM	Computer Monitor	HHW
COM	Computer without Monitor	HHW
EE	Electronic Equipment	HHW
FCY	Fuel Cylinder	HHW
HEL	Helium Tank	HHW
MET	Metal	Class III
MSW	Municipal Solid Waste – Residential	RRF, Class I
MSWC	Municipal Solid Waste – Commercial	RRF, Class I
OXY	Oxygen Tank	HHW
PT20	Propane Tank up to 20 gallons	HHW, Class III
PT50	Propane Tank up to 50 gallons	HHW, Class III
REF	Refrigeration	HHW
RIMS	Outbound Tire Rims	N/A
TC	Tire Chips	Waste Tire
TCOTR	Off road Tire Chips	Waste Tire
TLT	Toilet Recycling Program	Class III
TR	Tires	Waste Tire
TRE1	Tires (each) car or pickup	Waste Tire
TRE2	Tires (each) large truck or semi	Waste Tire
TVP	TV Projection and Console	HHW
TV1	TV up to 36” screen	HHW
WC	Wood Chips	RRF, Class I, Class III
WG	Outbound metal and white goods	N/A
YWC	Yard Waste Commercial	Yard Waste
YWR	Yard Waste Residential	Yard Waste

4.4 Data Recording and Reporting

Vehicles are first weighed at the scale with the gross weight of the vehicle recorded. Pasco County utilizes the software PC Scale to categorize and track inbound and outbounds loads. Following assignment of the appropriate commodity code into the PC Scale program, the Scalehouse Attendant then directs the vehicle to the appropriate area of the Complex to unload. The vehicle returns to the scale where the tare weight is recorded to determine the net weight of the material. Materials such as white goods, tires, and bulk yard waste are dropped off at the designated areas as shown on **Figure 1-1**. These areas are clearly indicated by signs.

5.0 Landfill Operator and Spotter Training Plan

Landfill Operator and Spotter training will comply with Rule 62-701.320(15), FAC.

Training courses, whether public or in-house, meet the requirements of Rule 62- 701.320(15), FAC and shall be certified by the FDEP Solid Waste Management Training Committee (SWMTC). This training plan, along with documents that record training plan implementation, are kept onsite and will be made available to FDEP's inspection staff upon request. Training records are also be kept by University of Florida Center for Training, Research, and Education for Environmental Occupations (TREEO).

5.1 Operators

New Supervisors hired by Pasco County Solid Waste will participate in 24 hours of initial training provided by an entity that has been pre-approved by the Department pursuant to Section 403.716, Florida Statutes. Within 3 years after passing the exam and every 3 years thereafter, Supervisors will participate in continuing education courses totaling 16 hours conducted by an approved provider.

5.2 Spotters

New spotters will participate in 8 hours of initial training provided by entities meeting the requirements of Rule 62-701.320(15), FAC. Every 3 years after initial training, landfill Spotters will participate in continuing education courses provided by approved entities totaling 4 hours.

6.0 Ash Monofill Operations

The Ash Monofill portion of the Class I Landfill receives only combustion residue (ash) from the Pasco County Resource Recovery Facility. Ash that is generated from the combustion process is directed to the dedicated Ash Storage Building at the Resource Recovery Facility, where it is periodically loaded within the building by a front-end loader into top loading trucks. The loaded trucks travel to the active ash disposal cell, where they are off-loaded. Ash hauling operations occur between 7 AM and 6 PM, Monday through Friday, or more frequently as needed.

The liner and leachate collection system have been constructed, one disposal unit at a time (A-1, A-2, A-3, A-4) with temporary roads and swales for access and surface-water management. The phasing plan for the currently active ash disposal cell (A-4) is depicted in the drawing set dated July 2008 by CDM sheets C-6 through C-15A.

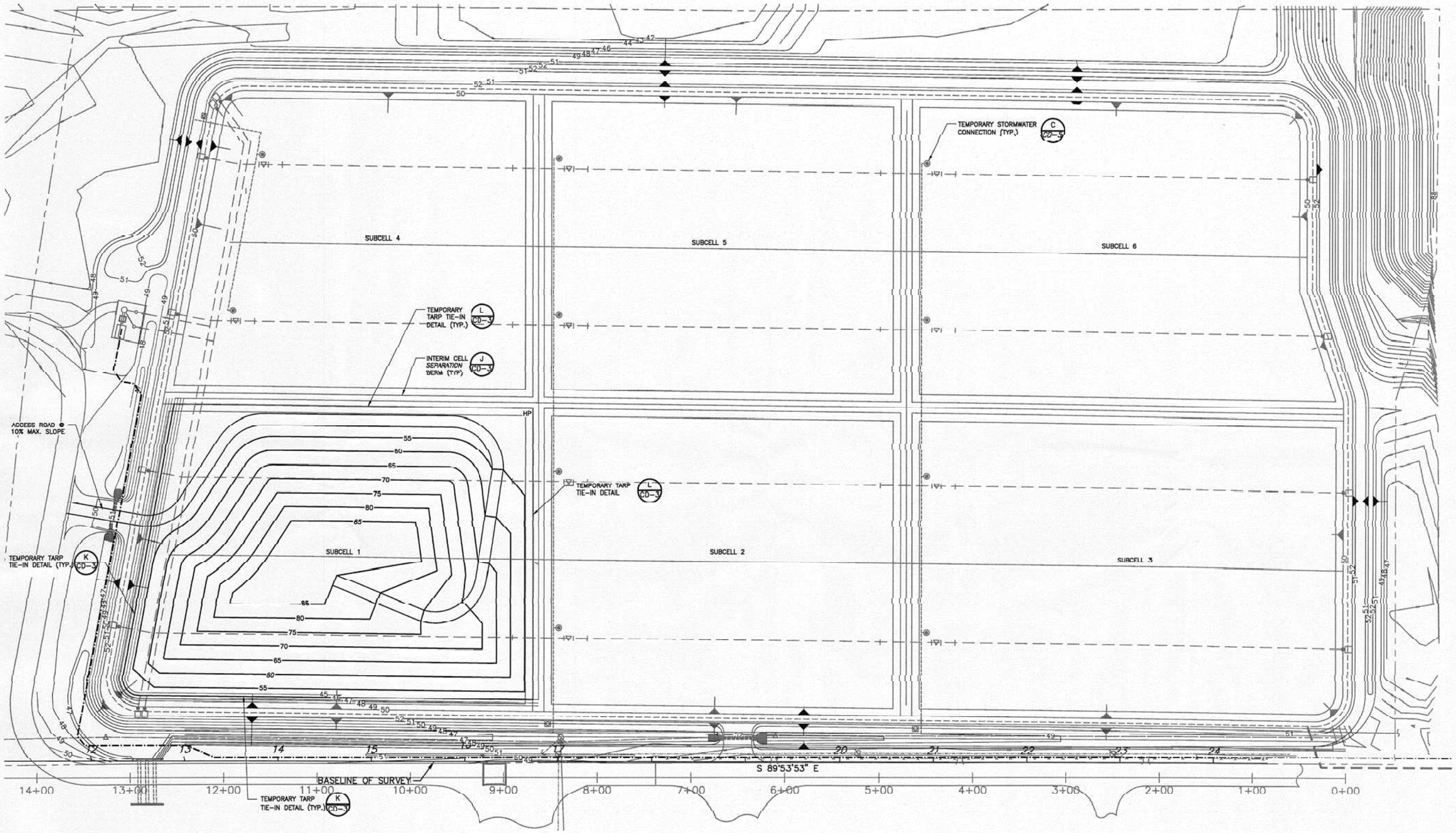
In general, waste filling is done in conjunction with the application of a rain tarp as intermediate cover to reduce leachate generation. As of November 2018, Cells A-1, A-2, and A-3 are covered by such intermediate cover, with Cell A-4 being the active disposal cell. It is anticipated that Cell A-4 will remain active for at least 5 more years. The rain tarp is a 20 mil geomembrane that serves as intermediate cover for areas that are not expected to be used for disposal within 180 days. All precipitation on the landfill that comes in contact with the rain tarp (and not in contact with ash) is managed as non-contact stormwater.

Following is a detailed description of the sequence of Cell A-4 phase by phase:

6.1 Cell A-4 Fill Sequence

Cell A-4 is divided into six sub-cells. The sub-cells are numbered from one to six, starting at the southwest corner of the overall progressing eastward (subcells 1, 2, and 3), then from the northwest corner progressing eastward (subcells 4, 5, and 6). The sequence of filling is depicted on drawings dated July 2008 by CDM, sheets C-6 through C-15A.

The general filling sequence is accomplished by filling in each sub-cell to an approximate elevation of 85 feet, with a side-slope of 3:1. A secondary berm (inside the sub-cell divider berms) around the Phase I fill area has been constructed to divert contaminated stormwater (leachate) to low areas as shown on sheet C-6. Once all the sub-cells are complete, ash will be filled at a 3:1 slope up to the permitted height of Elevation 120 feet.



NOTE:

1. TEMPORARY TARP DETAIL WILL BE AS DETAILS K & L, SHEET CD-3, TO BE USED AS NECESSARY.
2. SEE LANDFILL OPERATIONS PLAN 3.6.1, PHASE 1.

FLORIDA STATEWIDE ENGINEERING AUTHORIZATION DEC 10 2008 SOUTHWEST DISTRICT TAMPA

DATE:
AAMOD S. SONAWANE
P.E NO. 62526

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: A. SONAWANE
DRAWN BY: P. ANDUZE
SHEET CHK'D BY: J. LADNER
CROSS CHK'D BY: M. SINUSHKUR
APPROVED BY: A. SONAWANE
DATE: NOVEMBER 2008

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Tel: (813) 281-2900
FL COA No. EB-0000020
consulting • engineering • construction • operations

PASCO COUNTY, UTILITIES SERVICES BRANCH
PASCO COUNTY FLORIDA

WEST PASCO CLASS I LANDFILL
CELL A-4 CONSTRUCTION

PHASE 1 PLAN FOR
CELL A-4

PROJECT NO. 6104-46136
FILE NAME: C006STPL

SHEET NO.
C-6

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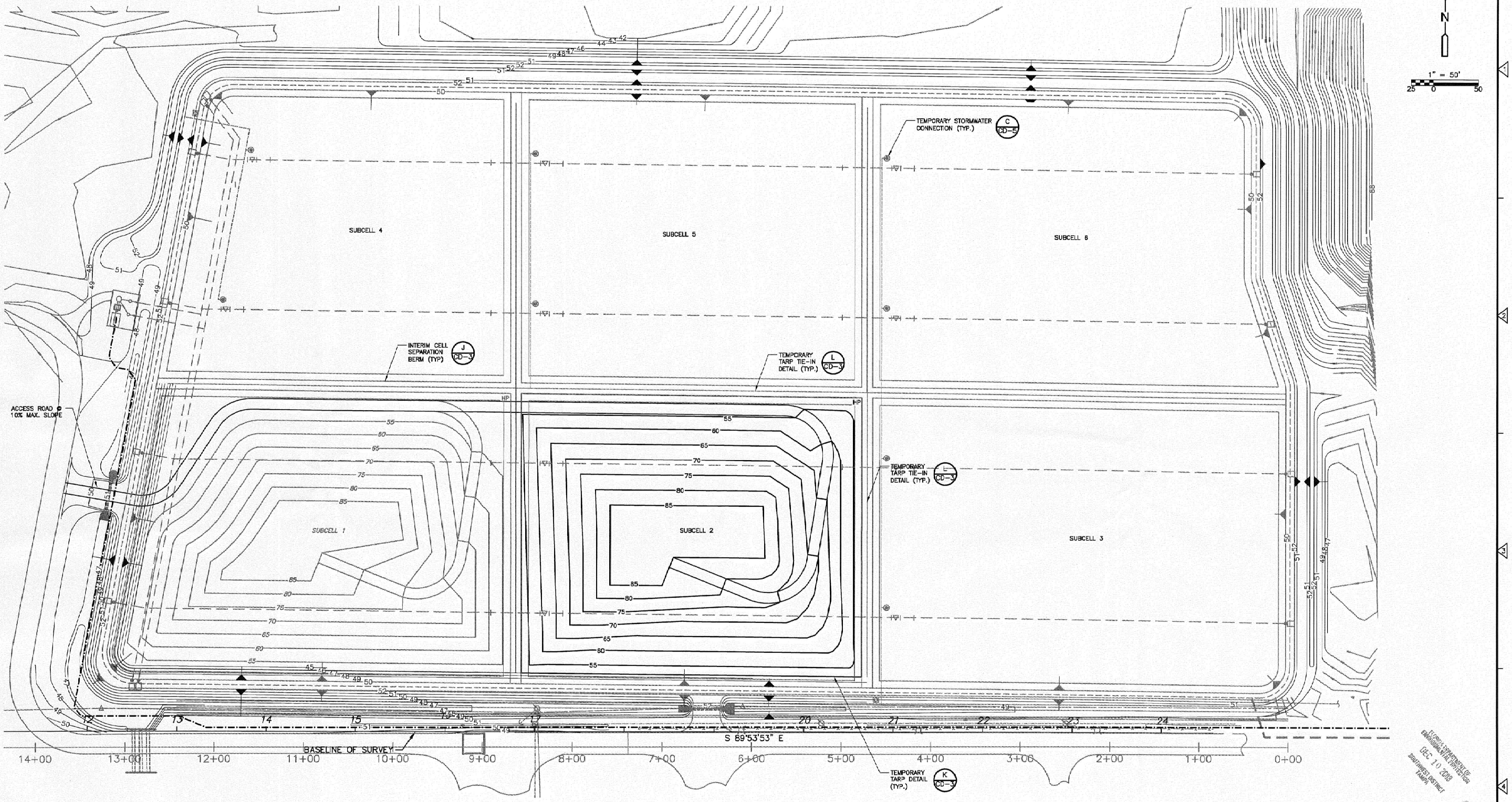

NOTE:

1. TEMPORARY TARP DETAIL WILL BE AS DETAILS K & L, SHEET CD-3, TO BE USED AS NECESSARY.
2. SEE LANDFILL OPERATIONS PLAN 3.6.1, PHASE 2.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION DEC 10 2008 SOUTHWEST DISTRICT TAMPA

DATE:
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P.E NO. 62526

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: A. SONAWANE
DRAWN BY: P. ANDUZE
SHEET CHK'D BY: J. LADNER
CROSS CHK'D BY: STROBRIDGE
APPROVED BY: A. SONAWANE
DATE: NOVEMBER 2008

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PASCO COUNTY, UTILITIES SERVICES BRANCH
PASCO COUNTY FLORIDA

WEST PASCO CLASS I LANDFILL
CELL A-4 CONSTRUCTION

PHASE 2 PLAN FOR
CELL A-4

PROJECT NO. 5104-46136
FILE NAME: CC07STPL

SHEET NO.
C-7

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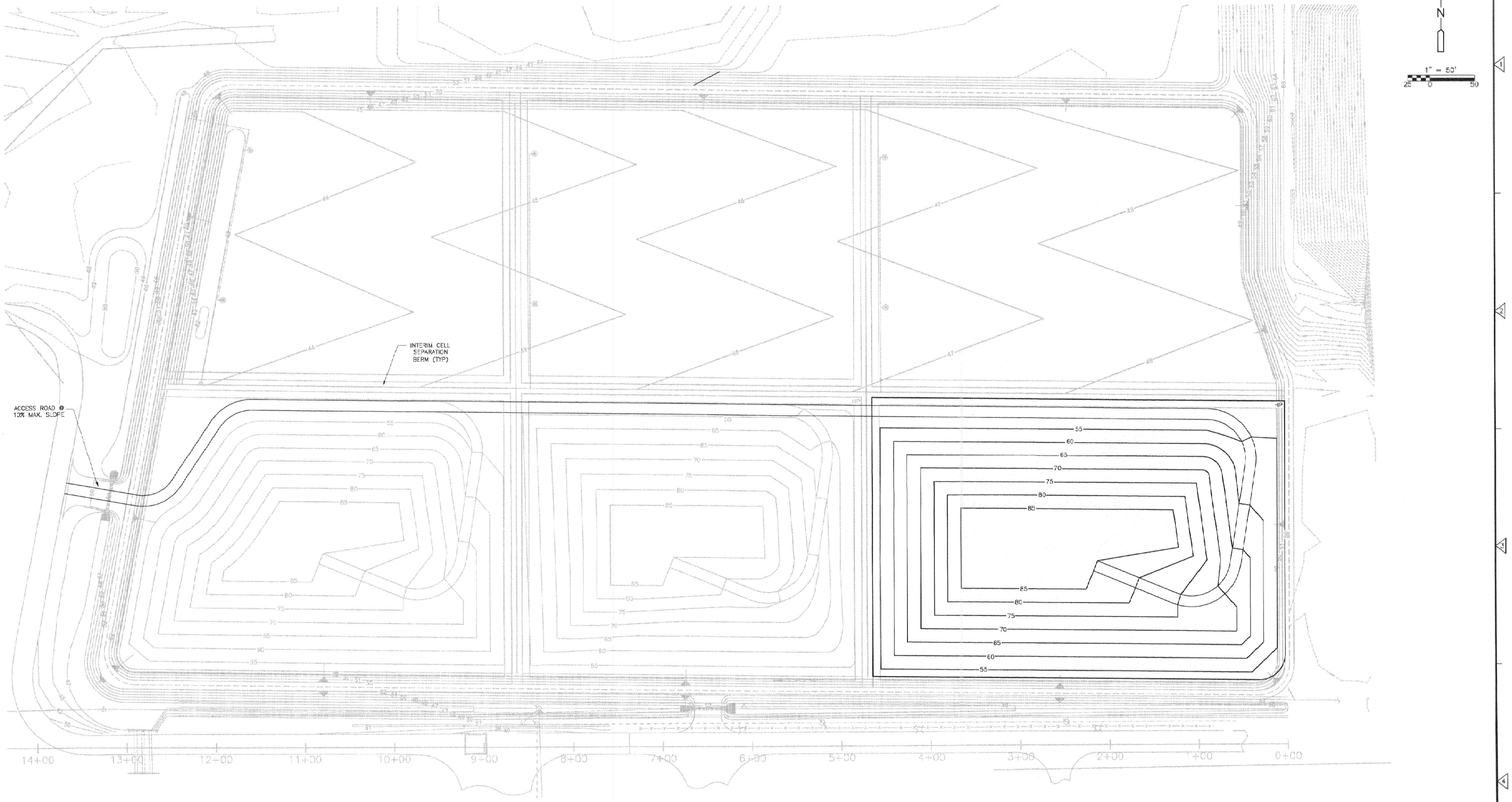

NOTE:
1. TEMPORARY TARP DETAIL WILL BE AS DETAIL K, SHEET CC-3, TO BE USED AS NECESSARY.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
JUL 28 2008
SOUTHWEST DISTRICT TAMPA

DATE:
AAMOD S. SONAWANE
P.E NO. 62526

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: A. SONAWANE
DRAWN BY: P. ANDUZE
SHEET CHK'D BY: J. ADNER
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PASCO COUNTY, UTILITIES SERVICES BRANCH
PASCO COUNTY FLORIDA

WEST PASCO COUNTY LANDFILL
EXPANSION CELL A-4

PHASE 3 PLAN FOR
CELL A-4

PROJECT NO. 6104-46136
FILE NAME: C008STPL
SHEET NO.
C-8

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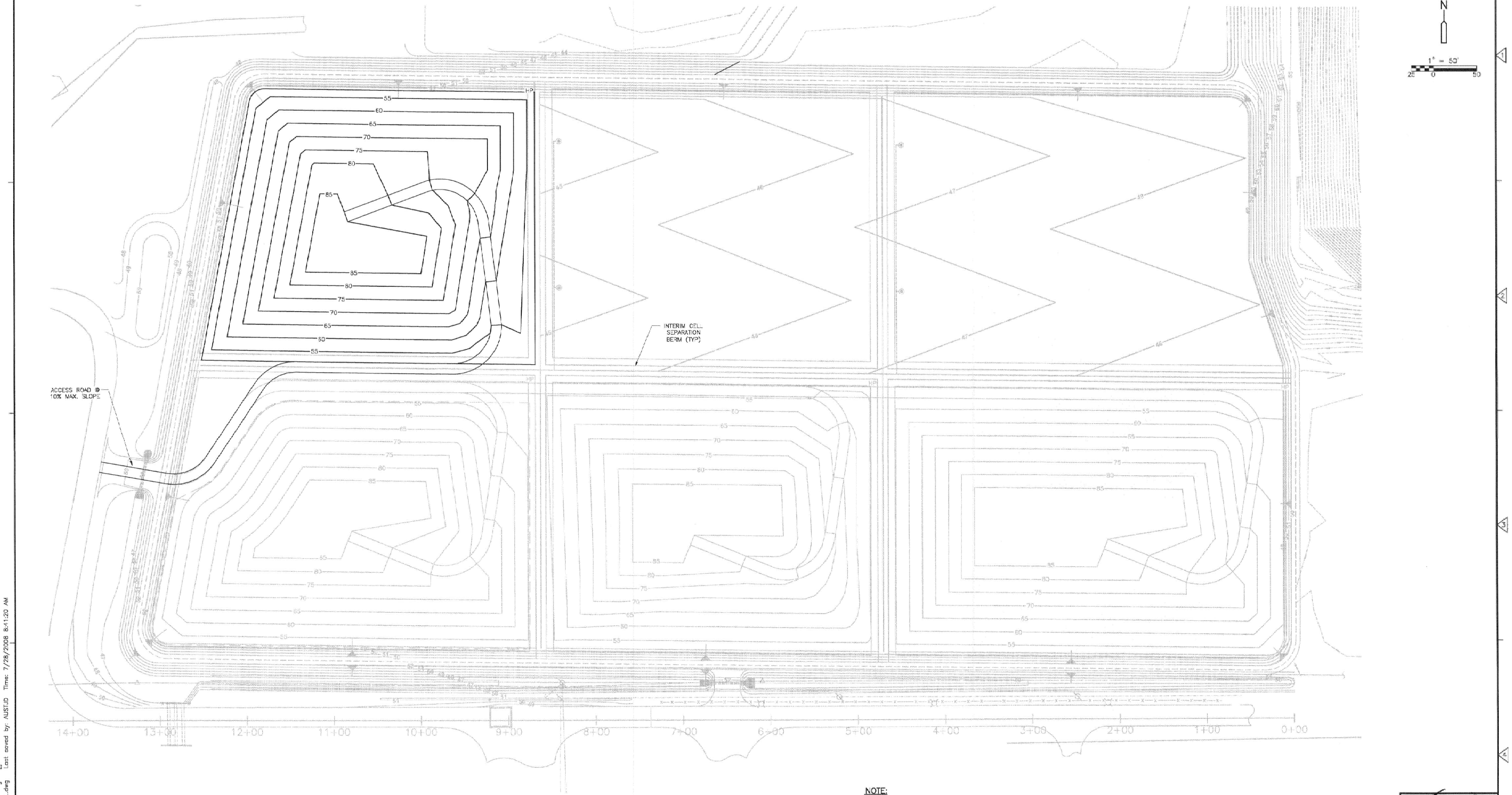

NOTE:
1. TEMPORARY TARP DETAIL WILL BE AS DETAIL K, SHEET CD-3, TO BE USED AS NECESSARY.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
JUL 28 2008
SOUTHWEST DISTRICT TAMPA

DATE:
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P.E NO. 62526

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PASCO COUNTY, UTILITIES SERVICES BRANCH
PASCO COUNTY FLORIDA

WEST PASCO COUNTY LANDFILL
EXPANSION CELL A-4

PHASE 4 PLAN FOR
CELL A-4

PROJECT NO. 6104-46136
FILE NAME: C009STPL

SHEET NO.
C-9

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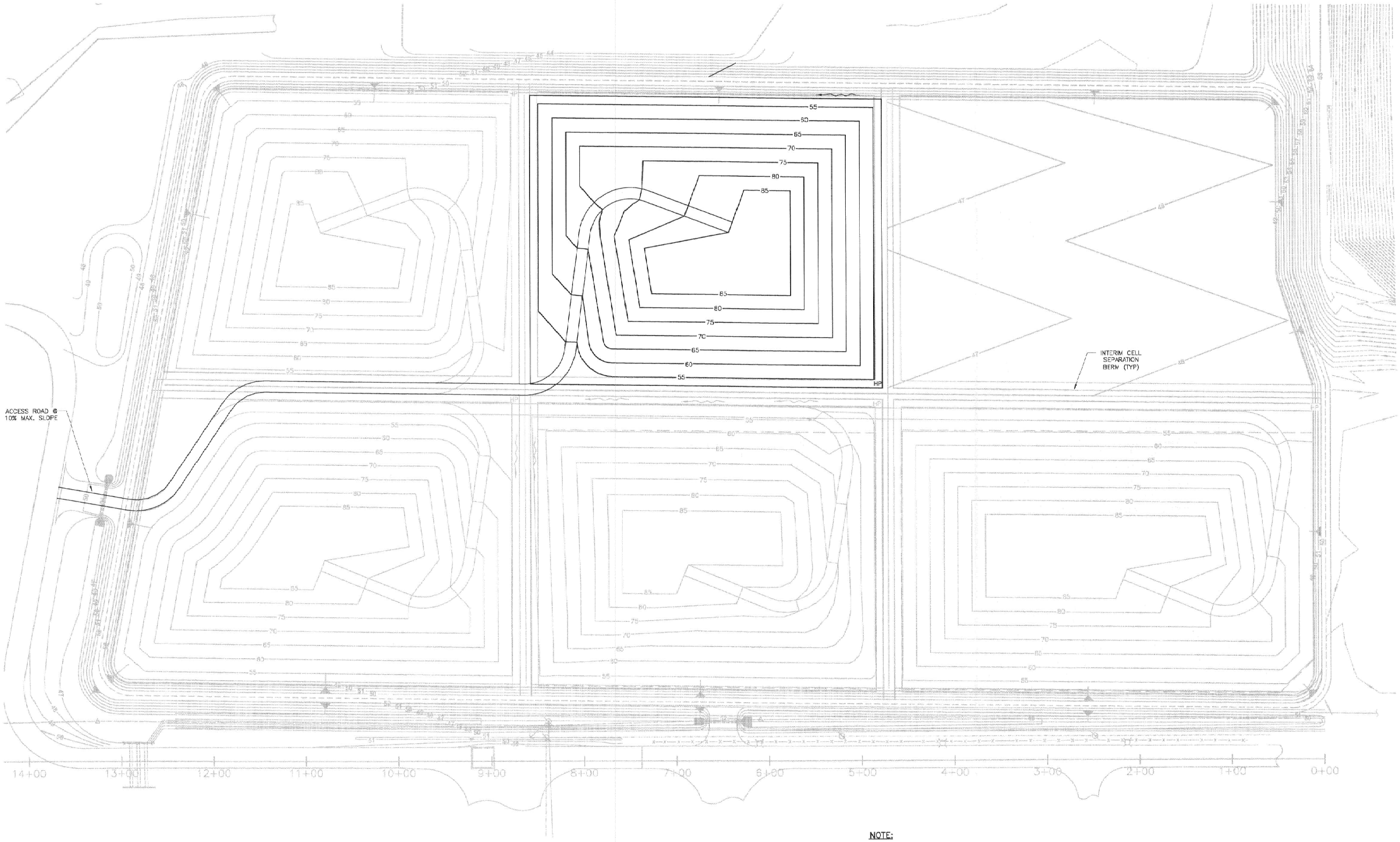

NOTE:
1. TEMPORARY TARP DETAIL WILL BE AS DETAIL K, SHEET CD-3, TO BE USED AS NECESSARY.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
JUL 25 2008
SOUTHWEST DISTRICT TAMPA

AAMOD S. SONAWANE
STATE OF FLORIDA
DATE:
AAMOD S. SONAWANE
P.E NO. 62526

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: A. SONAWANE
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APPROVED BY: A. SONAWANE
DATE: JULY 2308

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FL COA No. EB-0000020
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PASCO COUNTY, UTILITIES SERVICES BRANCH
PASCO COUNTY FLORIDA

WEST PASCO COUNTY LANDFILL
EXPANSION CELL A-4

PHASE 5 PLAN FOR
CELL A-4

PROJECT NO. 6104-48136
FILE NAME: C010STPL

SHEET NO.
C-10

Xrefs: [CDM_2436_CBASE MODEL, C-BASE,] Images: []
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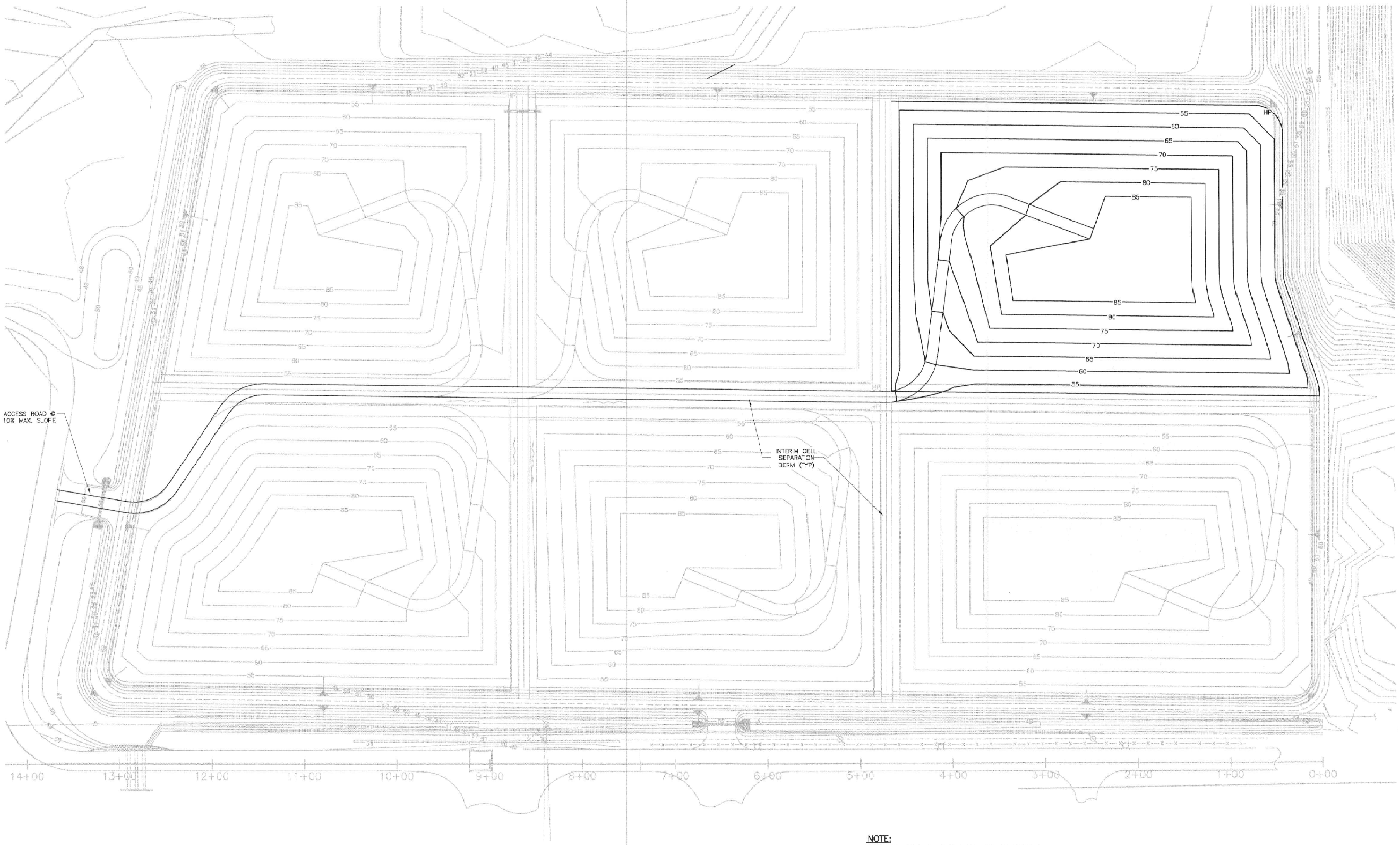

NOTE:

1. TEMPORARY TARP DETAIL WILL BE AS DETAIL K, SHEET CD-3, TO BE USED AS NECESSARY.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
JUL 29 2008
SOUTHWEST DISTRICT TAMPA

DATE:
AAMOD S. SONAWANE
P.E NO. 62526

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: A. SONAWANE
DRAWN BY: P. ANDUZE
SHEET CHKD BY: J. LADNER
CROSS CHKD BY: D. STROBRIDGE
APPROVED BY: A. SONAWANE
DATE: JULY 2008

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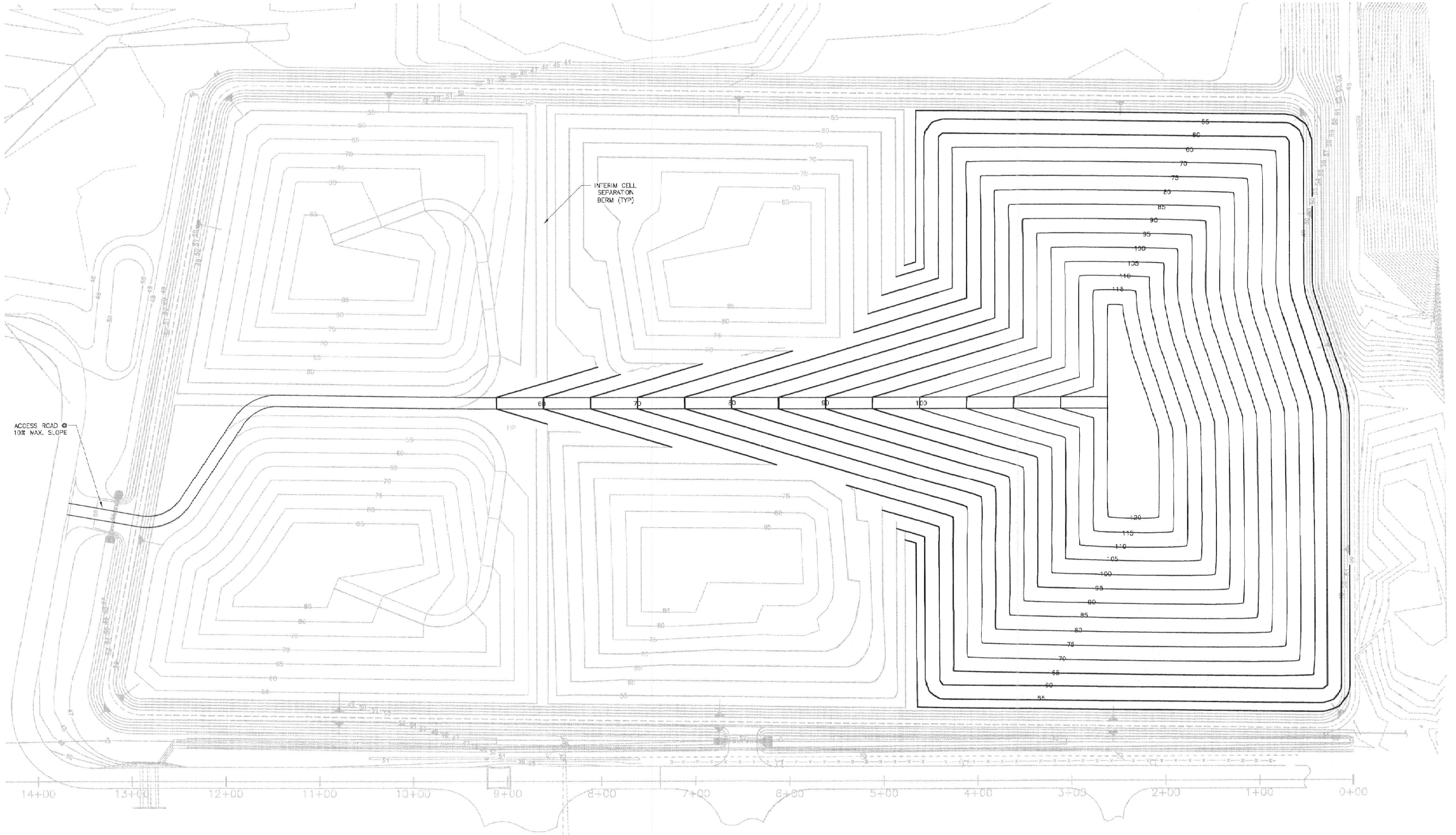
PASCO COUNTY FLORIDA

WEST PASCO COUNTY LANDFILL
EXPANSION CELL A-4

PHASE 6 PLAN FOR
CELL A-4

PROJECT NO. 6104-46136
FILE NAME: C011STPL

SHEET NO.
C-11



NOTE:
1. TEMPORARY TARP DETAIL WILL BE AS DETAIL K, SHEET CD-3, TO BE USED AS NECESSARY.

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JUL 28 2008
SOUTHWEST DISTRICT TAMPA

DATE: 07/28/08
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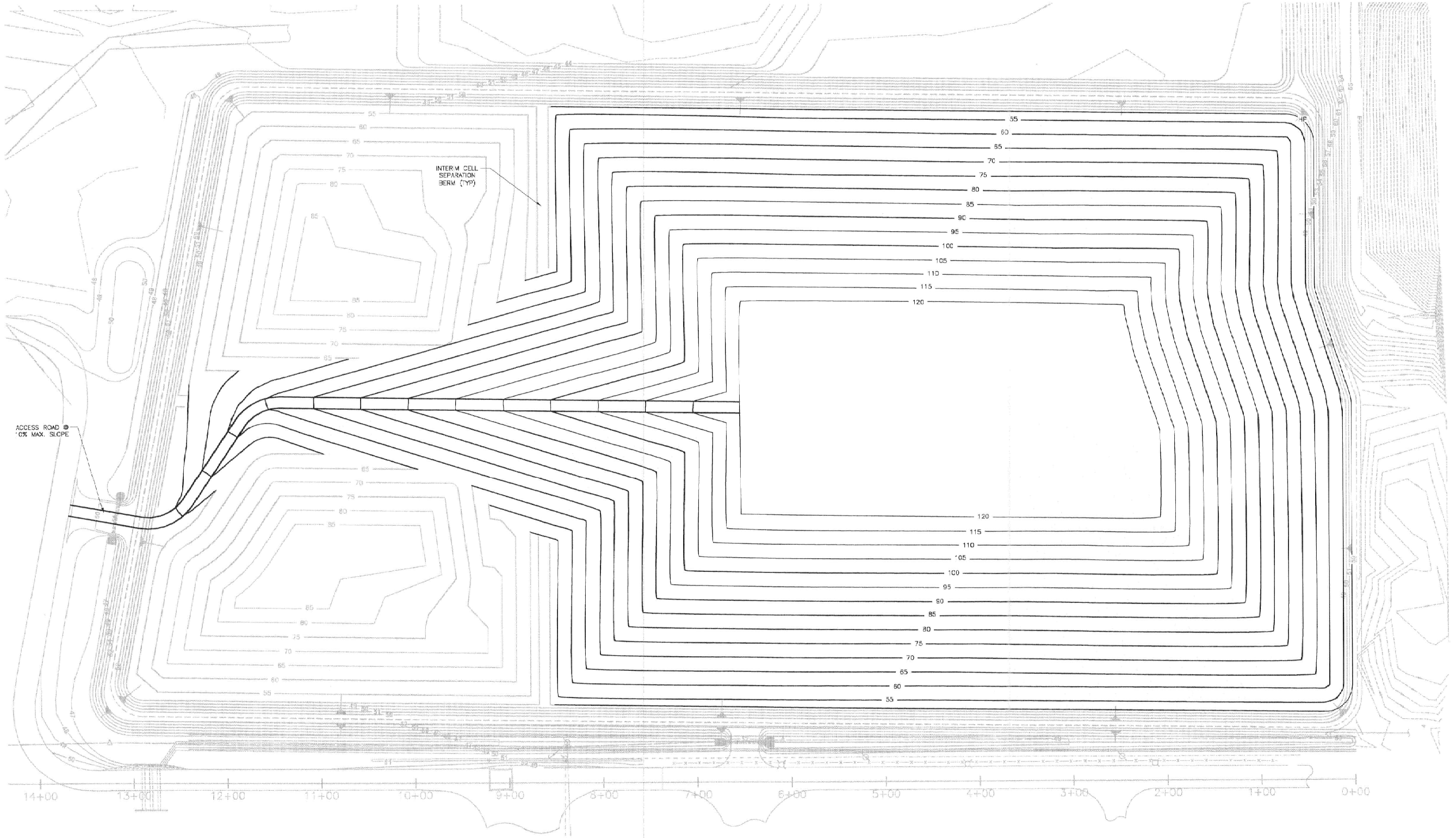
WEST PASCO COUNTY LANDFILL
EXPANSION CELL A-4

PHASE 7 PLAN FOR
CELL A-4

PROJECT NO. 6104-46136
FILE NAME: C012STPL
SHEET NO.
C-12



NOTE:
1. TEMPORARY TARP DETAIL WILL BE AS DETAIL K, SHEET CD-3, TO BE USED AS NECESSARY.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
JUL 28 2008
SOUTHWEST DISTRICT TAMPA

AAMOD S. SONAWANE
P.E. NO. 62526
DATE:

REV. NO.	DATE	DRWN	CHKD	REMARKS

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SHEET CHK'D BY: J. LADNER
CROSS CHK'D BY: G. STROBRIDGE
APPROVED BY: A. SONAWANE
DATE: JULY 2008

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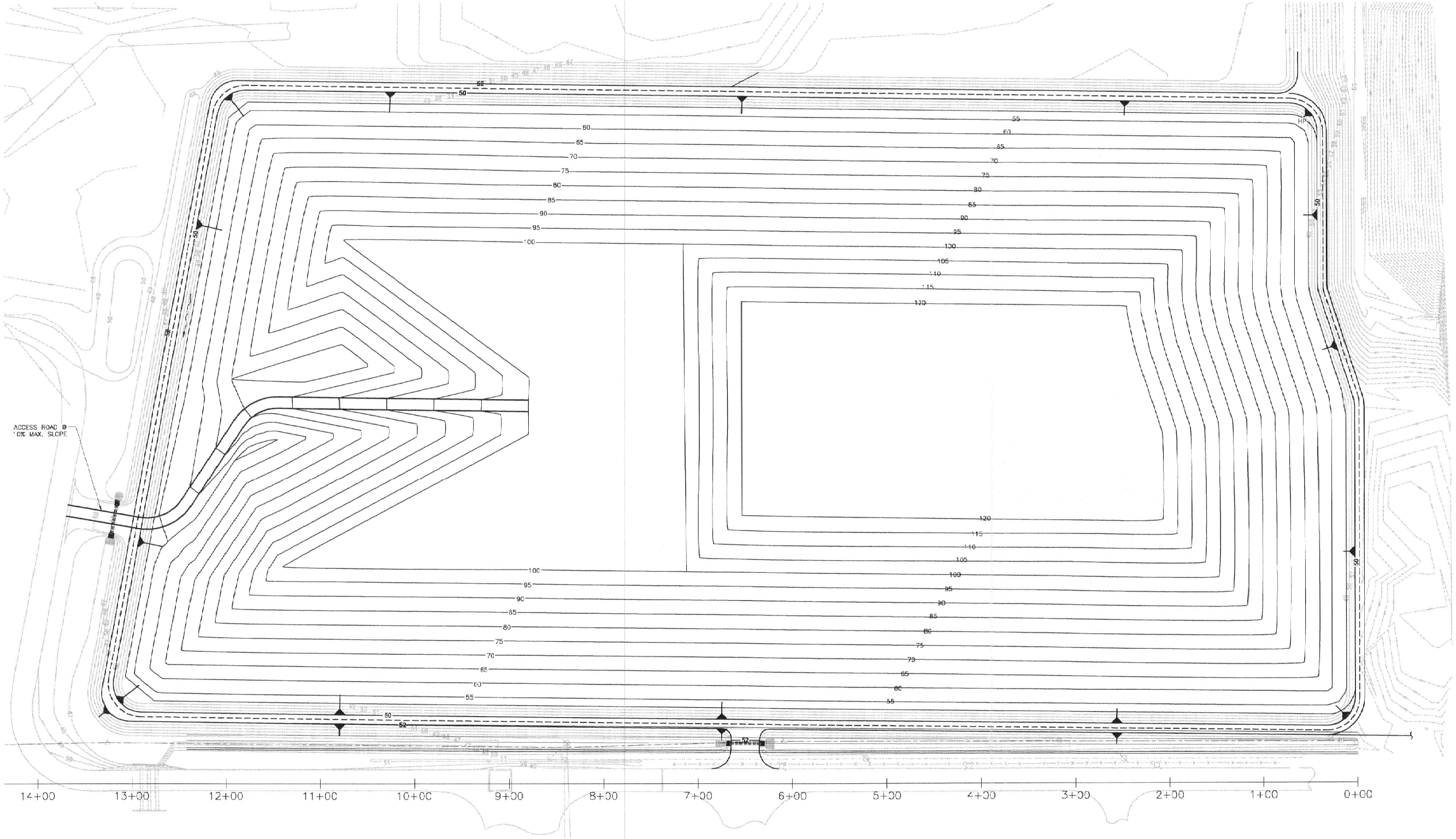
WEST PASCO COUNTY LANDFILL
EXPANSION CELL A-4

PHASE 8 PLAN FOR
CELL A-4

PROJECT NO. 6104-46136
FILE NAME: C013ST3L

SHEET NO.
C-13



NOTE:
1. TEMPORARY TARP DETAIL WILL BE AS DETAIL K, SHEET CC-3, TO BE USED AS NECESSARY.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
JUL 29 2008
SOUTHWEST DISTRICT TAMPA

DATE:
AAMOD S. SONAWANE
P.E NO. 62526

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: A. SONAWANE
DRAWN BY: P. ANDUZE
SHEET CHK'D BY: J. LADNER
CROSS CHK'D BY: R. STROBRIDGE
APPROVED BY: A. SONAWANE
DATE: JULY 2008

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PASCO COUNTY FLORIDA

WEST PASCO COUNTY LANDFILL
EXPANSION CELL A-4

PHASE 9 PLAN FOR
CELL A-4

PROJECT NO. 5104-46136
FILE NAME: CC14STPL

SHEET NO.
C-14

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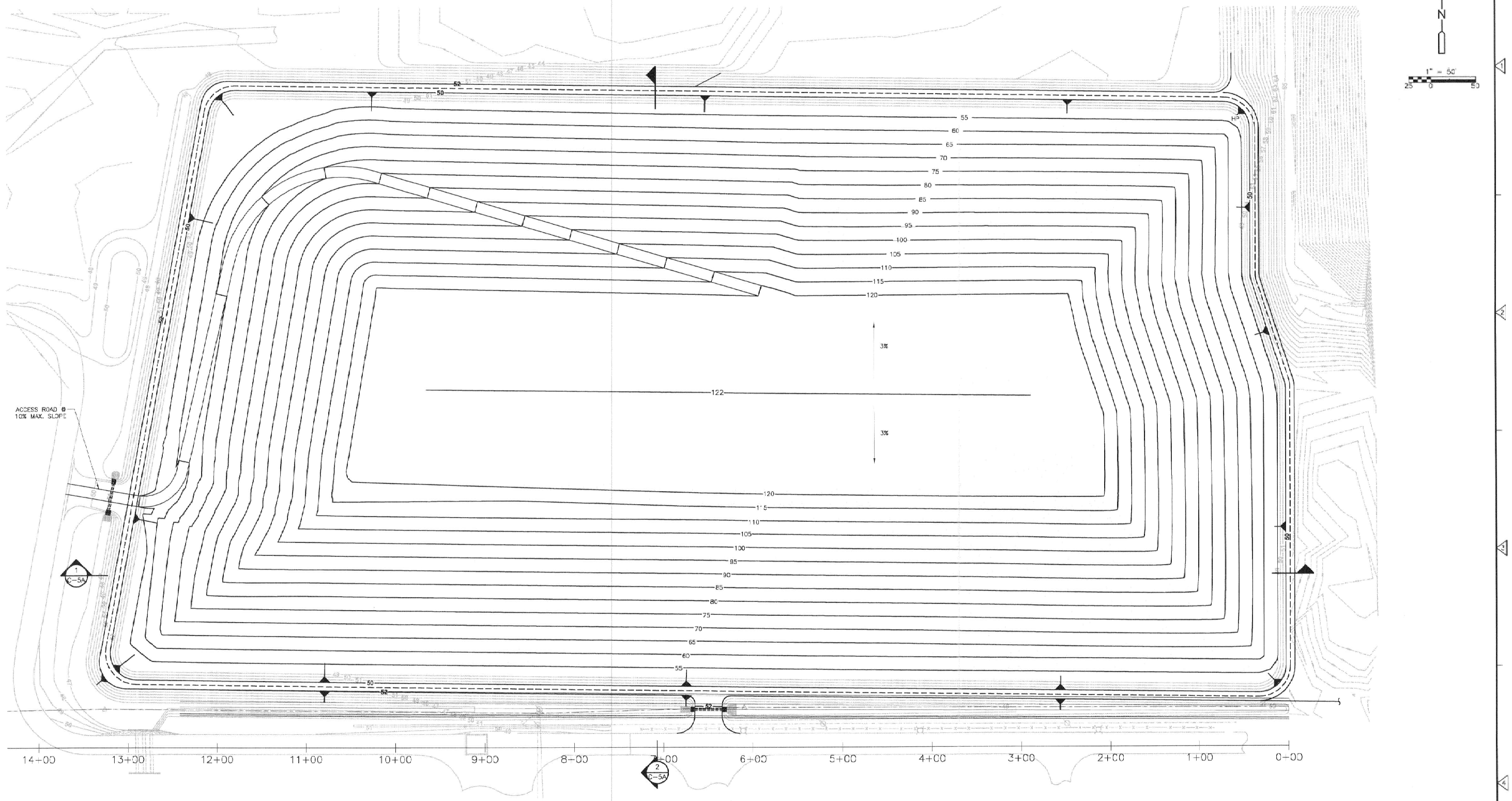

NOTE:
1. TEMPORARY TARP DETAIL WILL BE AS DETAIL K, SHEET CD-3, TO BE USED AS NECESSARY.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
JUL 28 2008
SOUTHWEST DISTRICT TAMPA

AAMOD S. SONAWANE
STATE OF FLORIDA
P.E. NO. 62526

DATE:
AAMOD S. SONAWANE
P.E NO. 62526

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: A. SONAWANE
DRAWN BY: P. ANDUZE
SHEET CHKD BY: J. LADNER
CROSS CHK'D BY: A. STROBRIDGE
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PASCO COUNTY FLORIDA

WEST PASCO COUNTY LANDFILL
EXPANSION CELL A-4

PHASE 9A PLAN FOR
CELL A-4

PROJECT NO. 6104-46136
FILE NAME: C015STPL

SHEET NO.
C-15

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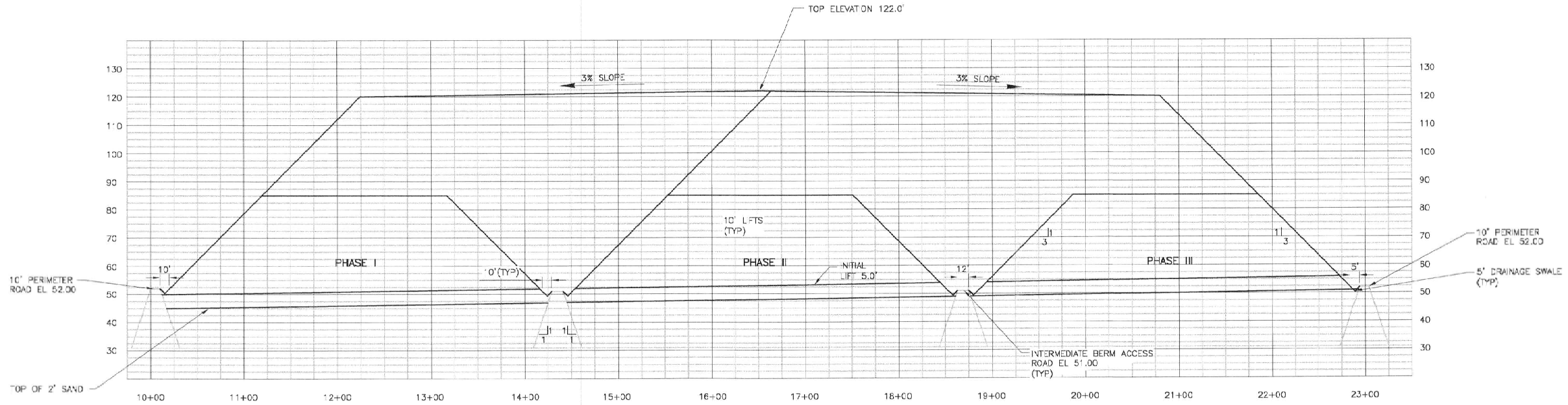
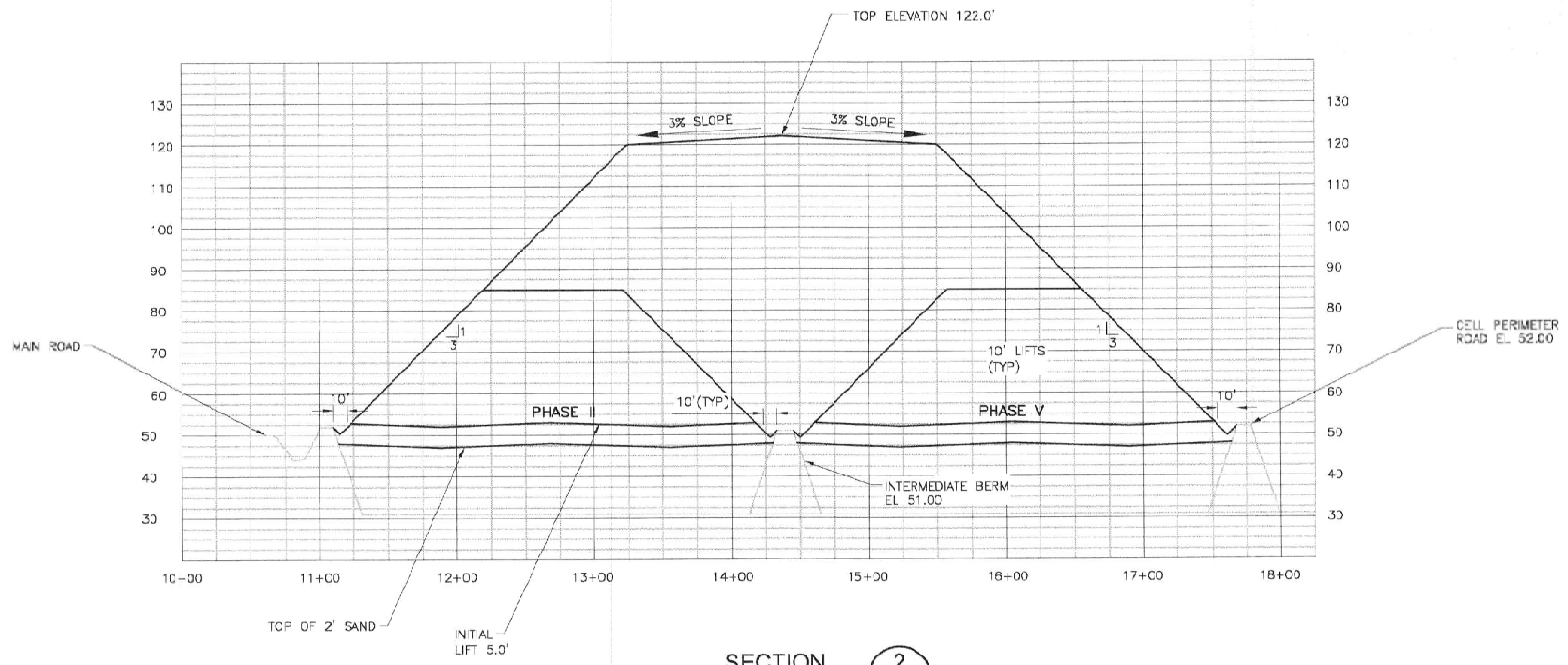


SECTION 1
1"=60' HOR
1"=20' VER
C-15



SECTION 2
1"=60' HOR
1"=20' VER
C-15

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
JUL 28 2008
SOUTHWEST DISTRICT TAMPA

DATE:
AAMOD S. SONAWANE
P.E NO. 62526

REV. NO.	DATE	DRAWN	CHKD	REMARKS

DESIGNED BY: A. SONAWANE
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SHEET CHK'D BY: J. LADNER
CROSS CHK'D BY: D. STROBRIDGE
APPROVED BY: A. SONAWANE
DATE: JULY 2008

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PASCO COUNTY FLORIDA

WEST PASCO COUNTY LANDFILL
EXPANSION CELL A-4

OPERATION PLAN - SECTIONS

PROJECT NO. 6104-45136
FILE NAME: C15ACLSC

SHEET NO.
C-15A

The filling sequence for Ash Monofill Cell A-4 is as follows:

6.1.1 Phase I - Filling in sub-cell 1

1. Flag the edge of the liner at the top of the berm or mark with traffic cones. Ash will not be placed within two feet of the flagged or marked line.

2. Close the ball valves in sub-cell 2 and 4. All other ball valves will be in open position. Install stormwater pumps in sub-cell 2 and sub-cell 4. Stormwater from all sub-cells except sub-cell 1 will be pumped to the surface drainage swales.

3. Place a berm/ swale around the active phase of the cell area. All waste and water in contact with waste will be contained within the bermed area. (See sheet C-6).

4. Ash will be unloaded from the entrance ramp to the cell and spread over the hvo feet of protective sand cover, constructing a platform. A minimum of 5 feet of initial lift will be placed and rolled to cover the sub-cell 1. The ash for the initial lift will be free from large, sharp objects that may damage the liner system.

5. Continue normal filling operation, maintaining the perimeter berm/ swale around the sub-cell 1. Filling the sub-cell 1 will be accomplished by constructing approximately 10-foot lifts, working in a general direction from south to north, and from west to east.

6. As the filling operation progresses, construct an access road using ash from the west of the sub-cell 1 as shown in sheet C-6, and provide drainage berm/ swales on both sides of the access road and around the perimeter of sub-cell 1 area. Only the portion of the access road within the landfill footprint shall be constructed of ash.

7. Continue the operation until the elevation of 85 feet is achieved as indicated in sheet C-6.

6.1.2 Phase II - Filling in sub-cell 2

1. Close the ball valves in sub-cell 3 and 4. All other ball valves will be in open position. Remove stormwater pumps for sub-cell 2 and install them in sub-cell 3. Stormwater from all sub-cells except sub-cells 1 and 2 will be pumped to the surface drainage swales.

2. Begin the filling operation in the Phase II area in a similar manner as in Phase I. Please see Sheet C-7 for additional details.

6.1.3 Phase III - Filling in sub-cell 3

1. Close the ball valves in sub-cell 4. All other ball valves will be in open position. Remove stormwater pumps for sub-cell 3. Stormwater from all sub-cells except sub-cells 1, 2, and 3 will be pumped to the surface drainage swales.

2. Begin the filling operation in the Phase III area in a similar manner as in Phases I and II. Please see Sheet C-8 for additional details.

6.1.4 Phase IV - Filling in sub-cell 4

1. Close the ball valves in sub-cell 5. All other ball valves will be in open position. Remove stormwater pumps for sub-cell 4 and install them in sub-cell 5. Stormwater from all sub-cells except sub-cells 1, 2, 3, and 4 will be pumped to the surface drainage swales.

2. Begin the filling operation in the Phase IV area in a similar manner as in Phases I, II, and III. Please see Sheet C-9 for additional details.

6.1.5 Phase V - Filling in sub-cell 5

1. Close the ball valves in sub-cell 6. All other ball valves will be in open position. Remove stormwater pumps for sub-cell 5 and install them in sub-cell 6. Stormwater from all sub-cell 6 will be pumped to the surface drainage swales

2. Begin the filling operation in the Phase V area in a similar manner as in Phases I, II, III, and IV. Please see Sheet C-10 for additional details.

3. The Aggregate Processing Operation described in Section 6.5 will take place within sub-cell 5. Once the sub-cell has been floored with ash, equipment will be placed in the approximate configuration shown on **Figure 6-1**. Please refer to Section 6.5 of this Operations Plan for a description of the Aggregate Processing operation.

6.1.6 Phase VI - Filling in sub-cell 6

1. All ball valves will be in open position. Remove stormwater pumps for sub-cell 6.

2. Begin the filling operation in the Phase VI area in a similar manner as in Phases I, II, III, IV, and V. Please see Sheet C-11 for additional details.

6.1.7 Phase VII - Filling the valley between sub-cells 3 and 6 and 2 and 5

1. Begin filling the valley area from east to west. Fill the area by constructing approximately 10 foot lifts working in the general direction from south to north and towards the west. Continue the filling operation until approximate elevation of 85 feet.

2. Once filling the valley between sub-cell 3 and 6 and 2 and 5 is complete, build an appropriate ramp as to continue filling operation to the eastern parts of A-4 up to an elevation of 120. Please see Sheet C-12 for additional details.

6.1.8 Phase VIII - Filling the valley between sub-cells 1 and 4

1. Extend the stormwater separation berm (approximately 2 feet) up the slope to the top of Cell A-4 berms as appropriate to provide leachate/stormwater separation.

2. Begin filling the valley area from east to west. Fill the area by constructing approximately 10-foot lifts working in the general direction from south to north and towards the west. Continue the filling operation until approximate elevation of 85 feet.

3. Once filling the valley between sub-cells 1 and 4 is complete, build an appropriate ramp as to continue filling operation to the eastern parts of A-4 up to an elevation of 120. Please see Sheet C-13 for additional details.

6.1.9 Phase IX – Final Fill Sequence

1. Construct temporary berms as necessary to provide leachate/stormwater segregation.

2. Begin filling the remaining valley areas from east to west. Fill the entire area by constructing 10-foot lifts working in the general direction from south to north and towards the east. Continue the valley filling operation until approximate achieving an elevation of 120 feet at a slope of 3:1. Continue the filling operation at a 3% slope at the top to an elevation of 122 feet.

3. See Sheets C-14, C-15, and C-15A for details.

6.2 Ash Monofill Waste Inspection

Because the ash monofill receives only combustion residue (ash) from the Resource Recovery Facility, there is no need to deploy spotters to the working face. All Operators working within the ash monofill are trained to identify materials that may have inadvertently been loaded into the ash transport trucks and to segregate such materials if necessary. Such materials could be oversized material (such as white goods) that were segregated at the tipping floor of the Resource Recovery Facility. If such non-ash materials are identified at the monofill, they will be segregated and taken to the appropriate location within the larger Solid Waste Complex.

6.3 Ash Monofill Hauler Queuing

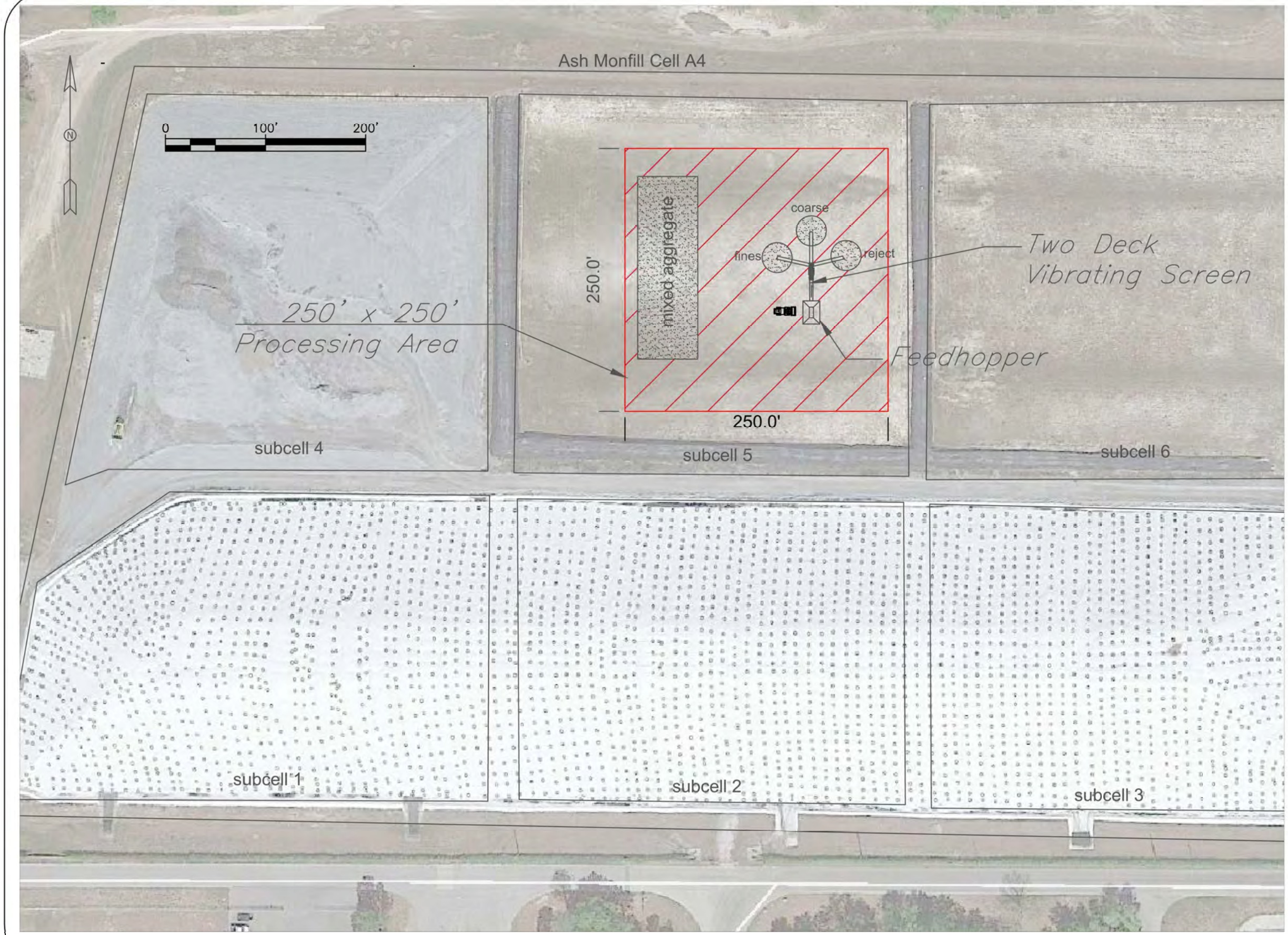
Private haulers are not authorized to utilize the ash monofill. All hauling of ash residue from the Ash Storage Building to the active cell is accomplished by a single contractor employed by the Resource Recovery Facility Operator (Covanta Pasco, Inc.). Hauling takes place Monday through Friday, or more frequently if needed. The Ash Storage Building is sufficiently sized to store several day's worth of ash.

6.4 Waste Compaction and Application of Cover

The ash is spread and compacted as necessary by a front-end loader. Because it contains no putrescible material, daily cover is not applied. On areas where no activity is expected for 180 days or more, a 20 mil geomembrane rain tarp may be installed to minimize leachate generation.

6.5 Engineered Aggregate Processing

In 2014, the FDEP approved the use of processed bottom ash as an engineered aggregate in certain roadway and building construction applications. A copy of the FDEP approval and subsequent modifications made thereto is included as **Attachment 1**. To enhance the properties of the bottom ash



Generalized Layout
Ash Processing Equipment

JMG ENGINEERING

Project Name and Address

Pasco County Class I Landfill
14230 Hays Rd
Spring Hill, FL

Project	Sheet
Date 12/18/2018	6-1
Scale 1" = 100'	

6.5 Engineered Aggregate Processing

In 2014, the FDEP approved the use of processed bottom ash as an engineered aggregate in certain roadway and building construction applications. A copy of the FDEP approval and subsequent modifications made thereto is included as **Attachment 1**. To enhance the properties of the bottom ash for use as a construction material, it is necessary to process the bottom ash to achieve a specified gradation. To accomplish this, a two-deck vibrating screen will periodically be leased and positioned on subcell 5 of A-4 as shown on **Figure 6-1**. The frequency of the screening operation is dependent upon the need for engineered aggregate destined for beneficial reuse. The screen will segregate raw bottom ash into three size fractions: > 1 1/4", 3/8" – 1 1/4", and < 3/8". The screening operation will occupy an approximate 250' x 250' area within the cell.

Raw bottom ash will be placed in the screening equipment feedhopper and processed into separate piles of the size fractions discussed above. Processing will continue until each pile is approximately 20-feet high as depicted on **Figure 6-2**. The material greater than 1 1/4" is unsuitable for beneficial reuse and will remain as waste in the ash cell. Depending upon the specified use, the two remaining piles (referred to as the coarse fraction and the fine fraction) will either be used "as-is" or blended together to achieve the desired gradation. In addition to screening of ash, the processing area in A4 may also be utilized to remove residual ash from ferrous and non-ferrous metals *(additional information on this process is presented in Section 15).*

Figure 6-2
Segregated Aggregate Piles

7.0 Municipal Solid Waste Landfill Operations (SW-1 and SW-2)

The Solid Waste Landfill portion of the Class I Landfill receives municipal solid waste delivered to the Complex that is unable to be processed by the Resource Recovery Facility because the Facility is either at capacity or is unavailable during maintenance periods. The Resource Recovery Facility is the primary disposal option for all of the municipal solid waste generated within the County, however, it becomes necessary from time to time to divert MSW from the RRF. The diverted waste is directed to disposal cells SW-1 and SW-2. Diversion periods typically last for up to one month before all maintenance at the Resource Recovery Facility is completed and all waste once again is processed at the Resource Recovery Facility.

Following is a detailed description of the fill sequence for the Solid Waste cells (SW-1 and SW-2)

7.1 Valley Fill Cells SW-1 and SW-2 Fill Sequence

The Class I Landfill at the West Pasco Landfill and Resource Recovery Facility consists of two 10-acre cells – SW-1 and SW-2. Cell SW-1 is nearly at capacity and Cell SW-2 is the active cell. Cell SW-2 was designed with features and filled in such a manner to reduce leachate generation from stormwater. The filling of SW-1 and SW-2 to-date has been conducted as two separate cells, which resulted in a valley between the two cells. The general filling sequence will be accomplished by filling the valley between the cells and then area-filling SW-2 until the final build-out grades are achieved. Before valley filling begins, the temporary rain tarp will be removed, and protective cover soil will be placed in preparation for accepting waste. The filling sequence is as follows:

7.1.1 Lifts 1 and 2, Valley Fill, Part 1

The following liner preparations and valley filling may be progressed all at one time or in three or more phases depending upon site conditions and operational needs. Work will progress within the valley from west to east.

Liner Preparation

1. Remove temporary rain tarp and stormwater interceptor berm from side slope of SW-1 exposing geocomposite (geonet and geotextile), as shown in Figure 7, Stormwater Interceptor Control. Inspect geocomposite for damage. Geocomposite should not be exposed to sunlight for more than 21 days.

2. Install 2 feet of sand protective cover on the geocomposite side slope where the rain tarp has been removed. Verify sand depths on a 50-foot grid by potholing taking care not to damage the geocomposite or geomembrane.

Filling Lifts 1 and 2

3. Selected waste filling - Selected solid waste will be unloaded and spread over the two feet of protective sand cover. The waste will be inspected for large objects that shall be removed so there is no damage to the liner system. The initial selected waste lift shall be a minimum of 4 feet thick.

4. Fill Lift 1 of the Phase IV valley area between SW-1 and SW-2 from west to east. Fill the area by constructing approximately 10-foot lifts working in the general direction from south to north and west to east. Lift 1 may be progressed across the entire width of the cell or lifts may be placed in phases depending upon site conditions and operational needs. Continue the filling operation until the solid waste match waste elevation in Cell SW-2 as shown in **Figure 7-1** and **Figure 7-2**.

7.1.2 Lifts 3 and 4

1. Lifts 3 and 4 will be area fills over the SW-2 cell and the previous valley fill. Filling will generally begin in the northwest and will proceed from north to south in rows such that the lift is filled to the outer buildout grades. Once a row is complete, additional rows will be filled moving from west to east.

2. Lifts 3 and 4 are approximately 10 feet thick and will fill up to elevation 95 feet. Slopes will be modified to meet the final build out criterial of 3H:1V. ~~Slopes from the base of the landfill up to elevation 77 feet will be 3H:1V. Slopes from elevation 77 feet to 95 feet will be 4H:1V. Slopes above elevation 95 feet up to 101 feet will be 5H:1V.~~

7.1.3 Lift 5

1. Lift 5 will be an area fill over the SW-1 and SW-2 cells. Lift 5 varies in thickness and may be up to 15 feet thick. Filling will generally begin in the northwest and will proceed from north to south in rows such that the lift is filled to the outer buildout grades. Once a row is complete, additional rows will be filled moving from west to east.

2. Lift 5 will be filled so that the outer slopes are at build out grades of 3H:1V. ~~Outer slopes from the base of the landfill up to elevation 77 feet will be 3H:1V. Slopes from elevation 77 feet to 95 feet will be 4H:1V. Slopes above elevation 95 feet up to 101 feet will be 5H:1V.~~

7.1.4 Lift 6

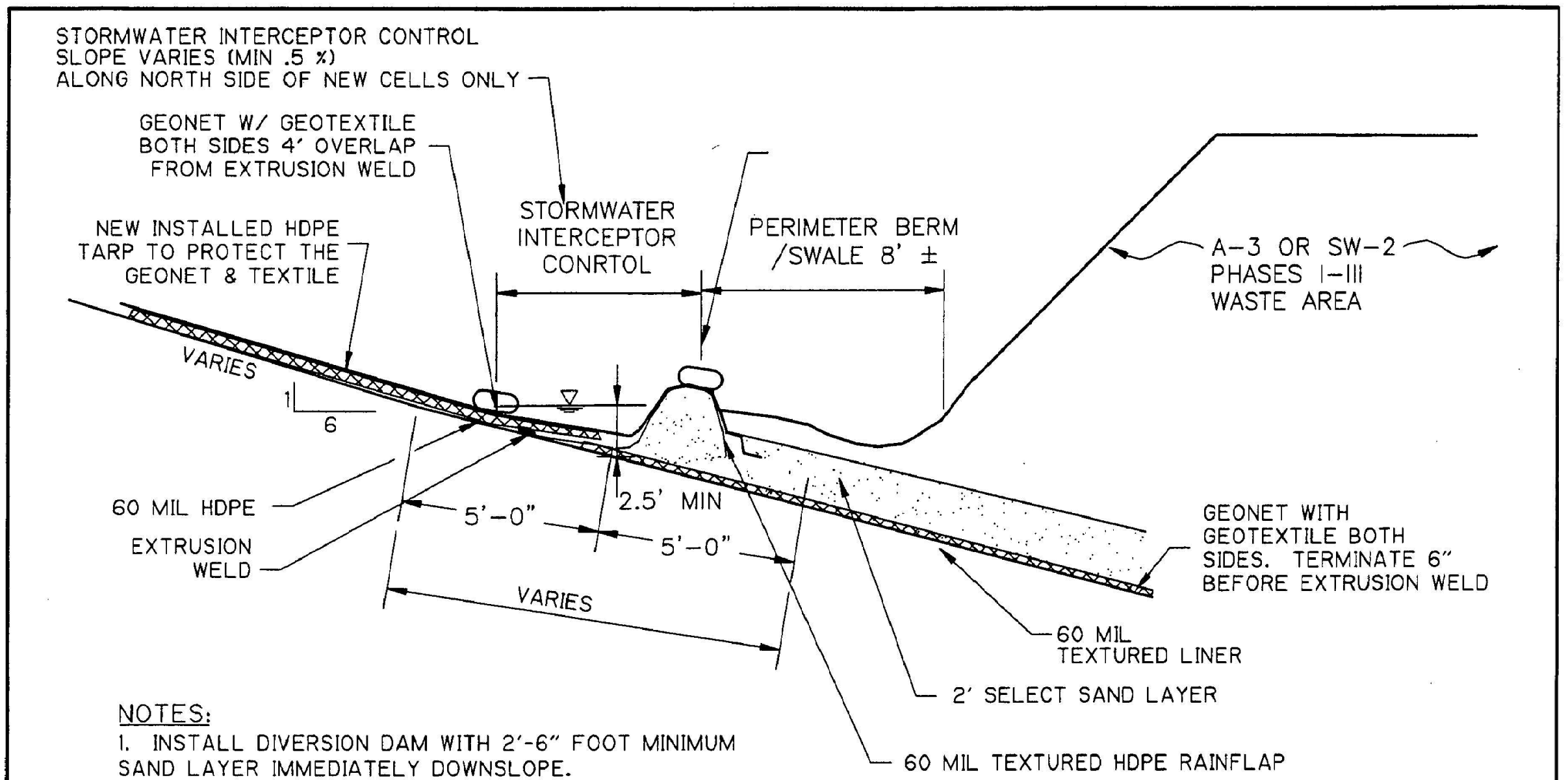
1. Lift 6 will be an area fill over the SW-1 and SW-2 cells. Filling will generally begin in the northwest and will proceed from north to south in rows such that the lift is filled to the outer buildout grades. Once a row is complete, additional rows will be filled moving from west to east.

2. Lift 6 is approximately 10 feet thick and will fill up to elevation 111 feet. Slopes will be modified to meet the final buildout criterial of 3H:1V.

7.1.5 Lift 7

1. Lift 7 will be an area fill over the SW-1 and SW-2 cells. Filling will generally begin in the northwest and will proceed from north to south in rows such that the lift is filled to the outer buildout grades. Once a row is complete, additional rows will be filled moving from west to east.

2. Lift 7 is approximately 10 feet thick and will be fill up to an elevation of 118 feet to account for the 3 feet of soil cover resulting in the final elevation of 121 feet.



NOTES:

1. INSTALL DIVERSION DAM WITH 2'-6" FOOT MINIMUM SAND LAYER IMMEDIATELY DOWNSLOPE.

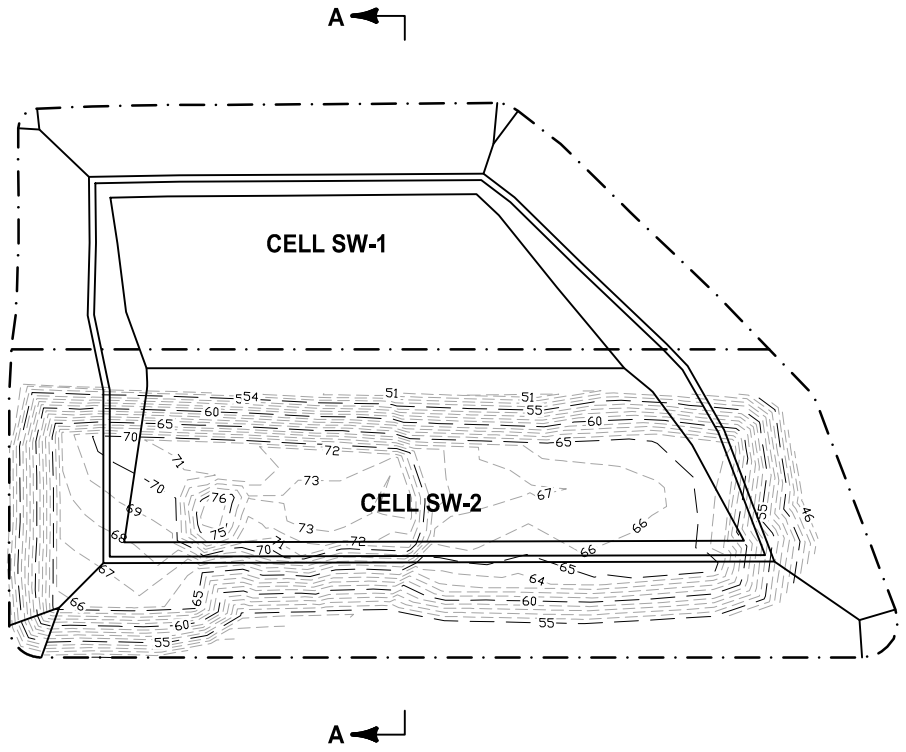
2. PRIOR TO FILLING IN PHASES, IV, V, AND VI, THE RAINFLAP SHALL BE CUT AWAY, AND THE GEONET W/ GEOTEXTILE TO BE OVERLAPED BY 12" MIN ON TOP OF THE EXISTING GEONET W/ GEOTEXTILE.

3. CONTINUE 2' SAND LAYER ON SIDE SLOPE BEFORE FILLING WASTE/ASH

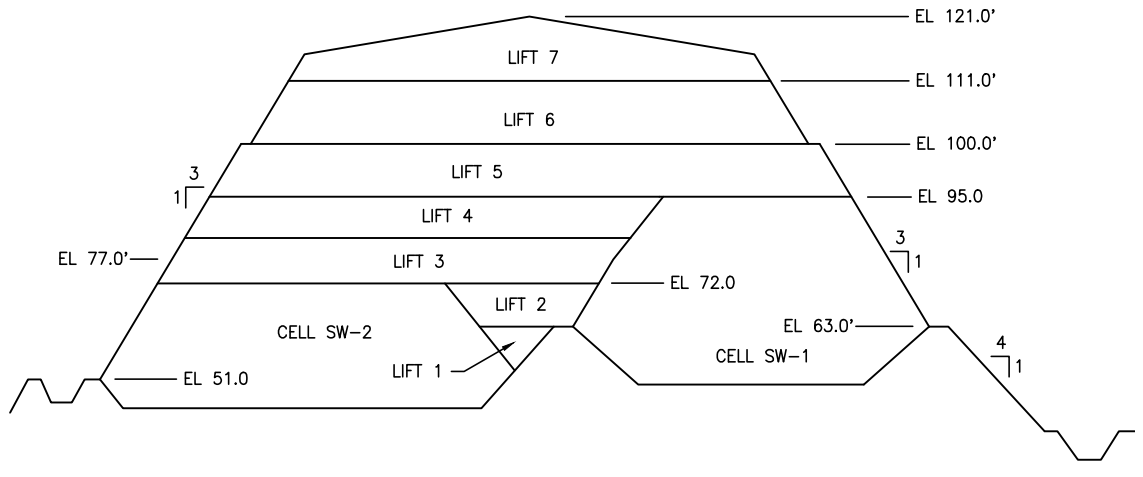
SCALE: NTS

Figure No. 7
Stormwater Interceptor Control

CDM



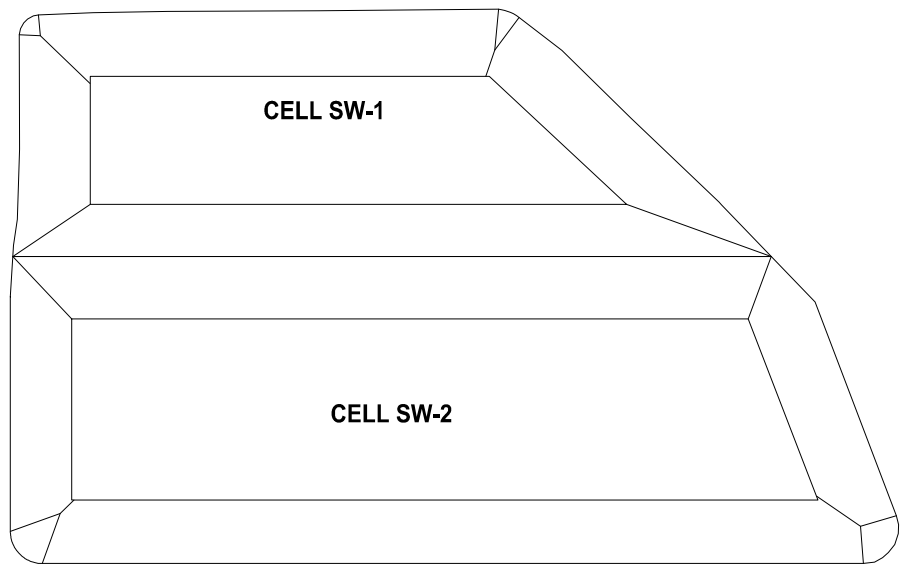
PLAN
NTS



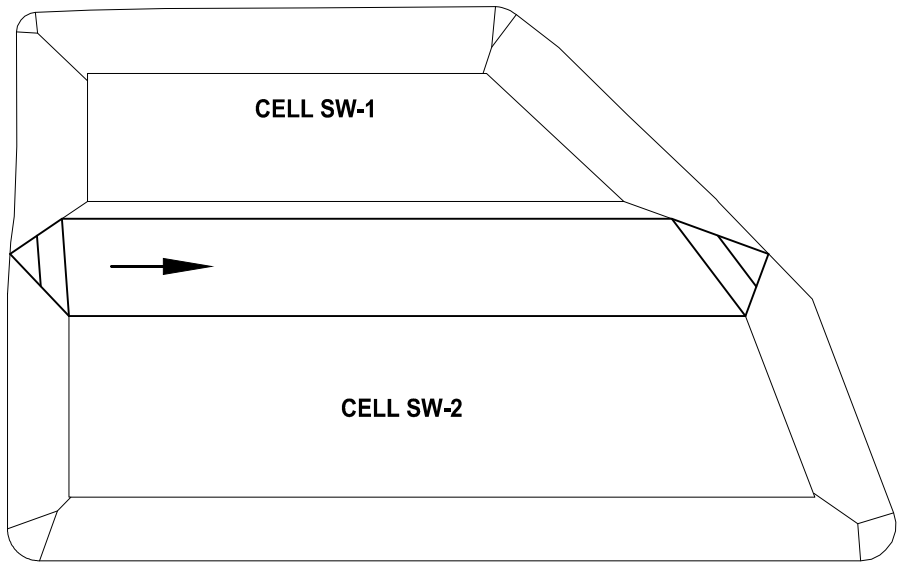
SECTION A-A
NTS

FIGURE 7-1 PHASING PLAN
WEST PASCO LANDFILL AND
RESOURCE RECOVERY FACILITY
PASCO COUNTY, FLORIDA

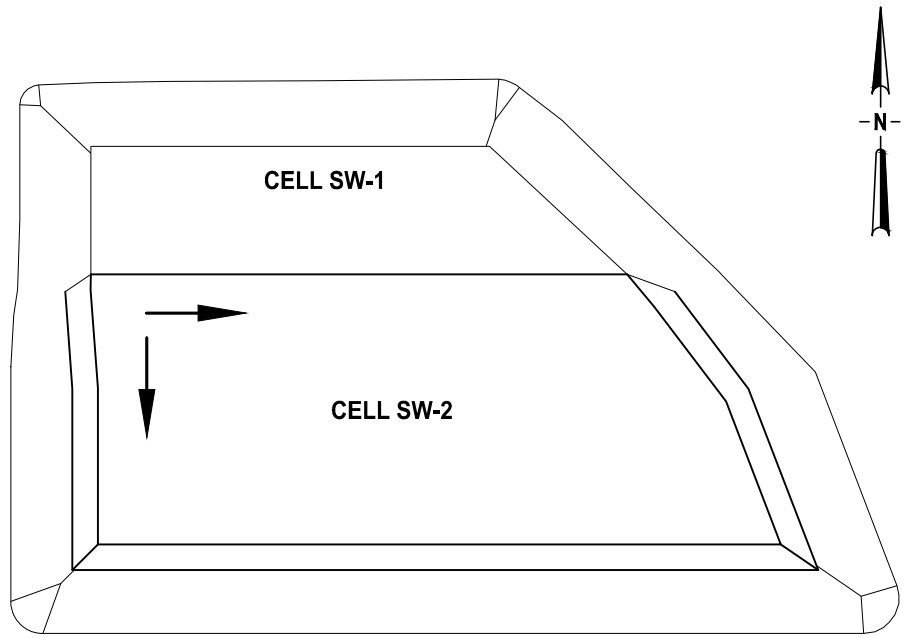
JonesEdmunds



EXISTING CONDITIONS
NTS



LIFTS 1 AND 2
NTS



LIFTS 3 AND 4
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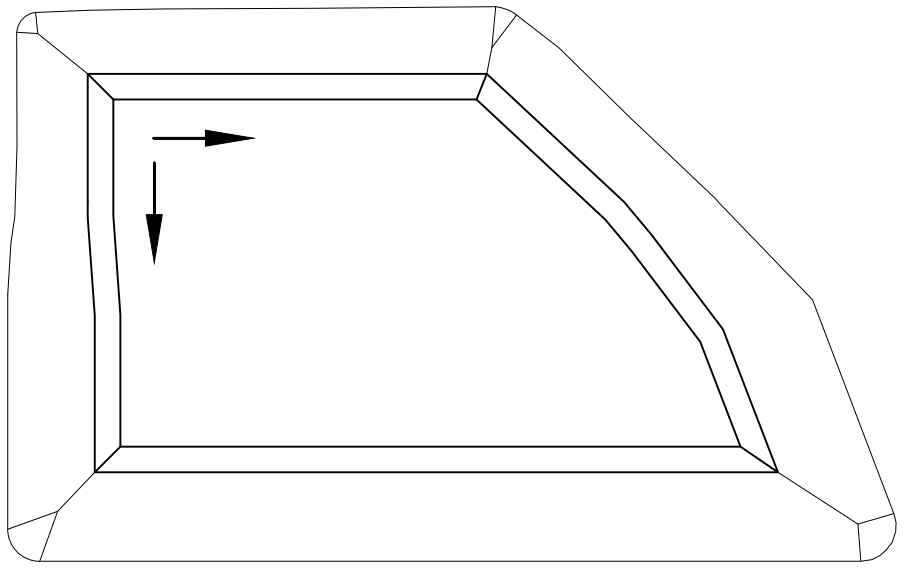

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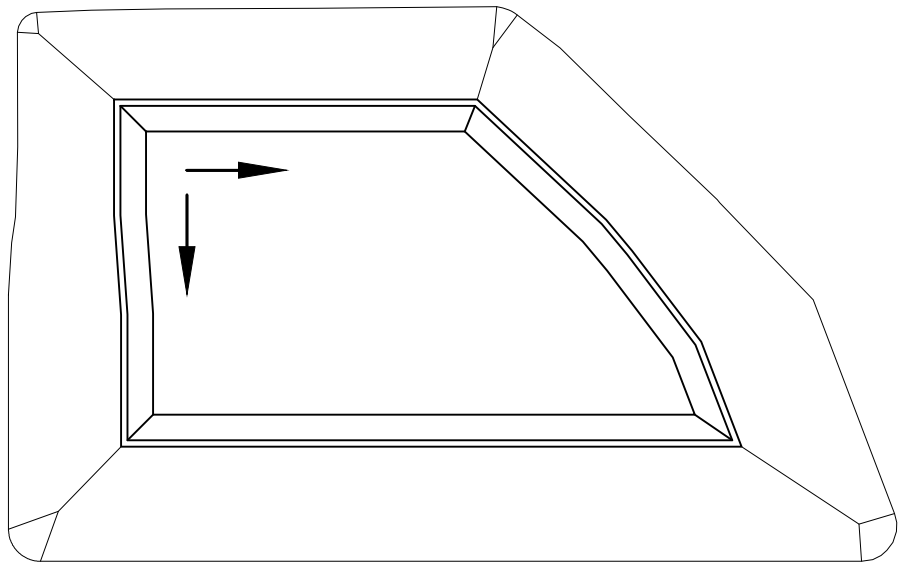

LIFT 6
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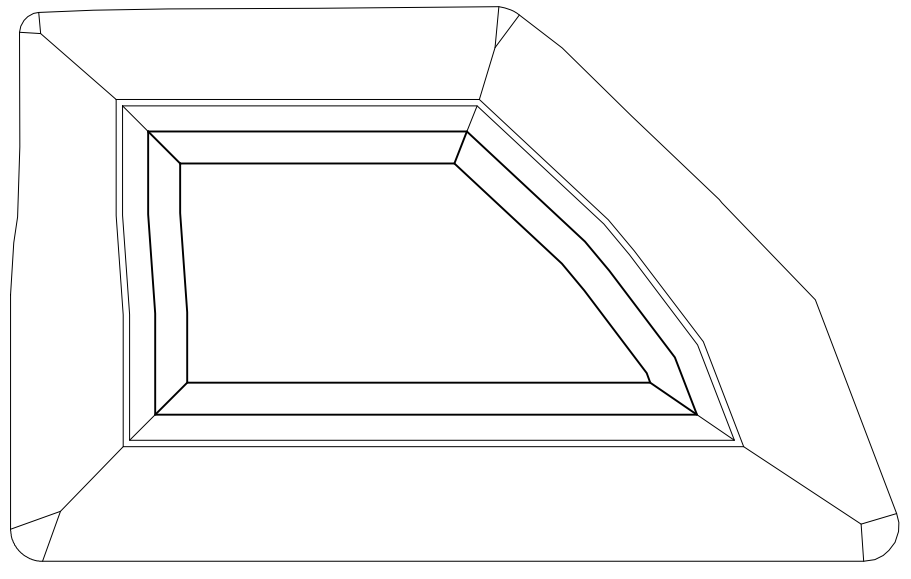


LIFT 7
NTS

FIGURE 7-2
CELLS SW-1 AND SW-2 FILLING SEQUENCE
WEST PASCO LANDFILL AND
RESOURCE RECOVERY FACILITY
PASCO COUNTY, FLORIDA

JonesEdmunds

7.2 Solid Waste Inspection

All Operators and Spotters are trained according to the requirements of Section 5.0. Pasco County Solid Waste maintains at a minimum one trained Spotter at the active working face during waste disposal operations. The Spotter (trained) is stationed where they can inspect each shipment of waste for unauthorized/prohibited waste before being compacted. The Spotter (trained) will be located on heavy equipment spreading the waste at the working face. Although this section is written to generally address Spotters on heavy equipment, Spotters trained on the ground may be used periodically if Equipment Operators are used that are not trained Spotters. Additionally, trained Operators may also serve as Spotters. Generally, two Operators are onsite available to assist at the active working face.

A Pasco County employee will direct incoming traffic to the appropriate area at the working face. If the Equipment Operator identifies unauthorized/prohibited materials, they will do one of the following as allowed by the Florida Administrative Code:

- Move the unauthorized waste away from the active area for later removal and proper management. These wastes will be moved to temporary storage points as addressed below as soon as ground labor is available (same day).

- Stop operation and notify another person on the ground or on other equipment who will come to the active area and remove the unauthorized waste before operations are resumed.

A Spotter or Operator is inspecting waste at all times when a waste-hauling vehicle is unloading. Waste materials such as white goods, and tires are pulled from the working face and placed in pick-up trucks or to the side away from traffic if the pickup truck is not close to the Spotter. To ensure the health and safety of the spotters, if tires are observed in the waste while the waste is being pushed, the tires will be staged at the end of the slope and picked up at the end of the day. Other landfill staff have been trained to be aware of materials that are prohibited from disposal in a Class I Landfill and to help identify and remove these materials as required.

If suspicious wastes are identified, the waste load is cordoned off and the Landfill Operations Supervisor is contacted. They will examine the suspicious waste and determine whether to accept or reject the load. Loads are rejected if they contain hazardous waste or prohibited material that cannot feasibly be separated from the rest of the load or when separation would cause possible contamination such as the presence of liquids or powders that cannot be removed from the landfill once the load is dumped. If the waste material is determined to be an unacceptable waste, the hauler is contacted and asked to remove the waste themselves from the waste stream. All incidents of attempted unauthorized waste disposal will be documented and maintained in the Administration Office.

Scavenging and salvaging by the employees or the public are strictly forbidden at the landfill for the safety of everyone at the landfill. Employees have been informed of this prohibition.

7.3 Hauler Queuing

The Pasco County employees (who may be trained Spotters) at each working area shall control the number of vehicles allowed at that working face to afford comfortable maneuverability. Additional vehicles will be held at a distance from the working face to allow existing vehicles sufficient room to maneuver and unload.

Unloading vehicles should be spaced adequately to allow the crews sufficient space to work safely. For their own safety, vehicle crews are not permitted to wander from their vehicle for any reason. As vehicles leave the working face, the next vehicle is directed to a vacant unloading area. Pasco County employees move traffic into and out of the working face as quickly as possible while maintaining safe working conditions.

The trained Landfill Equipment Operators or Spotters inspect all loads discharged from the unloading vehicles, remove all unacceptable wastes, and spread the waste as soon as the vehicle moves. Another vehicle is permitted to unload its waste load in an area only after the previous waste load has been inspected, the prohibited wastes have been removed, and the load has been moved to the working face for compaction.

7.4 Waste Placement and Compaction

The active face width will be kept as small as practical to accommodate waste delivery vehicles. The actual working face width may vary depending on the daily vehicle traffic volume. The maximum width of the active face will be maintained at approximately 250 feet. Landfill Management may consider expanding the size of the working face if the backup of waste vehicles become too large.

For health and safety reasons and due to weather, fill-sequencing two working faces may be necessary to accommodate traffic in some situations. This second working face will be bermed and use the same traffic area. This area will be in the immediate vicinity of the Primary Active Area. Given the limited use of the Solid Waste cells, the use of two working faces is unlikely.

Solid waste shall be formed into horizontal lifts to construct cells. The working face of the cell and side grades above land surface shall be at a slope no greater than 3 feet horizontal to 1 foot vertical rise (3H:1V). Normal lift depths should not exceed 20 feet of compacted solid waste. However, during initial filling of the bottom lift of waste or when completing the last lifts in a phase, larger depths may be necessary.

7.5 Cover Materials and Methods

All soil used for daily, intermediate, and final cover over the required impervious cover or synthetic liner required for closure consists of material excavated from the landfill property, other County-owned lands, or purchased from offsite sources.

7.5.1 Initial Daily Cover

At the end of each working day, a compacted 6-inch layer of soil (daily cover) shall be placed over the working face to control odor, litter, fires, and vector control. Pasco County will use Alternative Daily Cover (ADC) in place of soil for daily cover, such as plastic tarps, Posi-Shell or other FDEP-approved materials, to extend the life of onsite soil sources. This includes a 50% soil and mulch mixture. Posi-Shell or mulch may also be utilized to stabilize erosion of covered side slopes as necessary.

Daily cover material is applied in a manner that prevents wasting material or exposing wastes. In areas where the initial waste layer is being installed or the lift is near the side slope, daily cover shall be applied from the top down the face of the fill cell. Inner slopes or plateaus are covered from the top or bottom depending on working conditions.

Throughout the day, cover soil and mulch may be delivered to the active area and spread when possible to reduce the area needing cover at the end of the working day. Additional landfill equipment is used to transport cover soil to the working face area. A dozer is used to spread the cover soil and compact it over the working face. Pasco County maintains excavating equipment and off-road dump trucks to perform this work.

7.5.2 Intermediate Cover/Temporary Cover

Intermediate cover consisting of 12 inches of soil will be placed on areas that are not expected to receive additional wastes within 180 days. This intermediate cover is in addition to the 6-inch initial cover required. When an ADC is used in lieu of the 6-inch initial soil cover, the intermediate cover shall be 18 inches thick. Before additional wastes are placed in areas previously covered with intermediate cover, the intermediate cover will be removed and stockpiled adjacent to the active face to use as daily cover.

7.5.3 Final Cover

Cell closure will begin immediately after final receipt of waste, when all grades have reached their final elevations. Final cover and seeding or planting of vegetative cover will be fully described in a separate Application for Landfill Closure Permit.

7.6 Special Waste Recovery

Special wastes prohibited from disposal in the Class I Landfill are addressed in Section 4.2. Small amounts of special and hazardous wastes may be contained within a load of refuse unloaded from a vehicle. While spreading the wastes onto the working face from a discharged load, the Spotters/Equipment Operators will be looking for special and hazardous wastes, which will be removed from the discharged load before being compacted into the landfilled waste. These prohibited waste materials will be placed to the side of the working face, in pick-up trucks, or 20-yard bins that are away from vehicle traffic. The materials collected in the bins and pick-up trucks will be removed from the site daily. Spotters/Equipment Operators will remove items such as white goods and tires more frequently throughout the day if a stockpile accumulates. These materials are taken to the white goods and tire storage areas within the Solid Waste Complex.

Operators are to be aware of containers that could contain prohibited hazardous wastes. These containers include the following:

- 55-gallon drums.
- 5-gallon chemical drums or paint containers.
- Marked medical wastes.
- Small containers of paints or pesticides and other HHWs.

As discussed in Section 4.2, these non-allowed wastes are isolated and the Landfill Operations Supervisor will be contacted for closer inspection. The vehicle will be detained until the material is identified for proper disposal. If the material is identified as a hazardous waste, it is loaded back into the hauler vehicle for proper disposal, if practical. Otherwise, the area should be cordoned off to prevent other loads from being dumped in the vicinity. The Solid Waste Director will contact a contracted hazardous waste hauler. The identified hazardous waste will be loaded onto this vehicle as soon as it arrives at the landfill. All identified hazardous wastes must be removed the same day they are identified

or stored in the Household Hazardous Waste Area if transportation cannot occur until the next working day.

7.7 Litter Control

Litter fences will typically be used near the active cells and working face to collect and prevent the spread of litter. Due to the shifting waste operations, fences may periodically not be in place. Litter that escapes the landfill working area shall be picked up by the end of the working day but no later than the next working day. The Landfill Operations Manager or Landfill Construction/Lead Operator inspects the normal traffic areas surrounding SW-2 daily when the cell is in use. The operational boundaries of the entire Solid Waste Complex are inspected weekly.

Pasco County staff will collect litter continually on windy days. Temporary labor may be used as needed to support County staff for litter control if the volume of litter becomes too much for existing staff. The use of trustees and community service workers is also available as needed.

All open vehicles delivering waste to the Pasco County Solid Waste Complex must have a tarp or some type of enclosure to prevent litter on the site as well as all roads within the County, as required by Florida law. All open-top vehicles entering the Complex without a tarp or enclosure will be informed by the Scalehouse Attendant that a tarp or enclosure is required to transport solid waste within the County.

8.0 Special Waste Management

8.1 Household Hazardous Waste

Household hazardous waste (HHW) is accepted for disposal at the HHWCF north of the Class III Landfill (see **Figure 1-1**). This facility is operated for Pasco County residents Monday through Saturday, 7:00 A.M. to 5:00 P.M.

The personnel at the facility manage a diverse range of HHWs according to the characteristics of each waste. All personnel at the HHW are 40-hour HAZWOPER-certified and receive 8-hour refresher courses annually. The facility is capable of accepting and managing nearly any waste produced in a household including oils, paints, solvents, fertilizers, pesticides, herbicides, fluorescent tubes, oxidizers, and propane. However, explosive, radioactive, and bio hazardous materials like hypodermic needles, lancets, and wound dressings are not accepted for disposal at the HHHW.

At the HHW, personnel only accept materials for disposal from households within Pasco County. Wastes from Conditionally Exempt Small Quantity Generators (CESQGs) may be accepted under specific circumstances, such as a special business waste collection event. However, if a customer has an especially large amount of waste, if they have numerous containers of a particular brand of product, or if the waste they have brought for disposal is typically produced by a business, the customer will be asked additional questions. These questions may include, but are not limited to, what the product was used for.

Once collected, wastes are disposed of using a hazardous waste transporter and delivery to treatment, storage, and disposal facilities (TSDFs) operating under a permit issued pursuant to Subtitle C of the Federal Resource Conservation and Recovery Act (RCRA) and issued by the U.S. Environmental Protection Agency (USEPA) or an authorized state.

All packaged materials are shipped by a licensed hazardous waste transporter every 60 days to a fully-permitted TSDF as defined in 40 CFR 264. No waste remains at the HHWCF for more than 120 days.

8.2 Unknown and Unmarked Wastes

If containers accepted for disposal are unmarked, have illegible labels, or have contents that do not resemble their labels, the customer is questioned about the purchase and use of the material to determine its waste characteristics (i.e., flammability, reactivity [oxidizers], toxicity, or corrosivity). Many household products have uniquely shaped containers to help determine their use and waste characteristic. Materials are further grouped according to physical appearance (e.g., solid, liquid, color, viscosity etc.). The unknown material is then stored in a chemical storage lockers with blast-proof doors. Ultimately, Pasco County uses their Hazardous Waste Contractor to identify waste types before bulking or lab packing the material for disposal.

Liquids suspected of being acidic or basic are tested using pH paper. Smelling a container to determine its contents is forbidden at the HHW. However, most poisons, petroleum products, and some cleaners have strong, distinct aromas that are detectable simply by opening their container. Any HHWs that are found to be potentially reactive by these tests are stored separately from antagonistic chemicals (e.g., acids are stored in the locker marked “Corrosive”). The caustic materials are stored in the “Corrosive” locker. Flammable liquids must be kept away from oxidizers, so they are stored in the “Flammable”

locker while the oxidizers are stored in the "Corrosive" locker. Regardless of the results of these tests, all collected materials are stored at the HHW until they have been prepared for reuse or disposal. Any material determined to be reactive is stored in a locker with fire suppression and blast-proof doors. If material in unlabeled drums can be identified, it will be bulked with compatible material.

8.3 Used Oil

Used motor oils, hydraulic fluids, transmission fluids, and similar petroleum lubricants are consolidated into 55 gallon drums. The Used Oil Contractor is responsible for testing for the halogen content in these materials when they are collected. The drums are removed by a contracted Used Oil Contractor. Used oil is not permitted to be disposed of in the Class I Landfill.

8.4 Latex Paints

The HHW uses a wire rack to store 1- and 5-gallon paint cans. These racks are typically capable of holding about 60 cans of paint. Approximately two-thirds of the paint that arrives at the HHW is latex-based. Useable latex paint is opened and consolidated into 5- gallon buckets. This paint is given to citizens of Pasco County.

Paint that is not suitable for give-away is combusted at the Resource Recovery Facility.

8.5 Oil Based Paints

The HHW uses wire racks to store 1- and 5-gallon paint cans. These racks are typically capable of holding about 60 cans of paint. Approximately one-third of the paint that arrives at the HHWCF is oil-based. Useable oil-based paint is consolidated into 5-gallon buckets. This paint is given to citizens of Pasco County. Paint that is unusable is bulked into 55-gallon drums for disposal. A hazardous waste transporter moves the filled drums to a fully-permitted TSDF for proper disposal.

8.6 Poisons

Herbicides and pesticides are the largest group of poisons that are accepted at the HHW. They are prepared as "combination packages" or "lab packs" for disposal by the Hazardous Waste Contractor. Small individual containers are placed with similar wastes into a larger container (5-gallon bucket or 55-gallon drum) with Vermiculite to provide shock absorption and hold any liquids that may escape during shipment. The material is moved by a hazardous waste transporter to a fully-permitted TSDF for proper disposal. A few specialized wastes such as pentachlorophenol and arsenic compounds are packed by and managed separately by the Hazardous Waste Contractor. These specialized wastes are shipped by a hazardous waste transporter to a fully-permitted TSDF in the same way that the lab packs are. However, they are subject to different treatment standards.

8.7 Lead Acid Batteries

Lead-acid batteries are stacked on wooden pallets. The stacked batteries are then shrink wrapped onto the pallets and stored on a large containment pallet inside the HHW. The containment pallet has enough room to store three wooden pallets and have room for other products. The wooden pallets are picked up by a Lead-Acid Battery Contractor for recycling.

8.8 Electronics Recycling

Electronics waste, including televisions, VCRs, computer towers, monitors, digital cameras, and PDAs are collected and stored at the HHW for recycling. Electronics wastes are stored and managed in a manner that prevents breakage. The e-waste is stored in enclosed roll-off containers and transported to an electronics recycler.

8.9 Contaminated Soils

Pasco County will accept minor amount of contaminated soils for disposal in SW-2. Soil that has been contaminated with petroleum products or any other materials that are not hazardous wastes may be disposed of in permitted Class I landfills. Petroleum-contaminated soil that has been treated pursuant to Chapter 62-713, FAC may be disposed of at permitted disposal facilities and may, if it meets the criteria of Rules 62-701.200 (53) and (55), FAC, be used as initial or intermediate cover material at solid waste disposal facilities. Contaminated soil that has the potential to leach constituents in excess of FDEP groundwater standards or criteria may be used only at Class I landfills and only in those areas of the landfill where runoff or infiltration is captured by the leachate collection system.

8.10 Biological Wastes

Bodies of captive wildlife, as well as bodies of domestic animals that have not died due to disease, may be disposed of in the SW cells of the Class I Landfill.

Disposal of bodies of domestic animals, after death due to natural or accidental causes or euthanasia, shall be accomplished according to Section 823.041(1), FS. This statute requires the disposal of the bodies of domestic animals by burning or burying at least 2 feet below the ground surface. This provision does not prohibit the disposal of such animals in Class I landfills.

Disposal of dead poultry and hatchery residue shall be accomplished according to Section 583.181(2), FS, which provides for disposal of dead poultry and hatchery residue by every poultry producer, egg producer, and poultry hatchery in Florida. The statute includes disposal of the dead poultry and hatchery residue in a sanitary landfill as an acceptable method of disposal. Furthermore, the transporter of the poultry or hatchery residue will transport the material in containers that are sufficiently sealed to prevent spillage.

Treated biomedical waste (i.e. autoclaved waste) is not accepted at the Class I landfill but is accepted at the Resource Recovery Facility. Biomedical waste that has been treated may be disposed of as solid waste that is not biomedical. Such treated waste must be in containers clearly labeled with the phrase “Treated Biomedical Waste.” The local governments that are responsible for solid waste collection and disposal shall be notified that treated biomedical waste will be disposed of in their facility before such disposal. All transport vehicles transporting treated biomedical waste to a solid waste facility for disposal shall be fully enclosed and secured when unattended. Treated biomedical waste shall be disposed of only at permitted Class I landfills or incinerators used to combust solid waste.

8.11 Tires

Segregated tires that are brought to the Facility are stored and processed in a Waste Tire Processing Area just north of the Class III Landfill. A chipping contractor is brought in approximately every six months to process the tires, which are then hauled to a permitted off-site disposal facility.

8.12 White Goods

White goods are removed from the site at least every 3 months. White goods containing chlorofluorocarbons (CFCs, such as Freon) are stored upright and managed carefully so that CFCs are not discharged to the atmosphere. White goods with the refrigerant removed are marked as such. Because Freon is extracted from all units, the compressors are not removed.Other scrap metals, such as lawnmowers, are processed (by removing tires, oil, and gasoline, as needed) and compacted with the white goods into 40-cubic-yard containers.

9.0 Leachate Management

As defined in Rule 62-701.200 (66), FAC, leachate is liquid that has passed through or emerged from solid waste and may contain dissolved, suspended, or mixed materials. Leachate must be contained and kept separate from any groundwater or surface waters. This section will provide Pasco County Solid Waste employees with a general understanding of the requirements for managing the leachate generated from the Class I (Ash and Solid Waste) Landfill operations. **Figure 9-1** identifies all locations for the leachate collection system. Rule 62-701.500(8) FAC establishes requirements for leachate management and provides the criteria for this section.

9.1 Leachate Reduction

Leachate is generated from rainfall that is absorbed into the landfill and water within the waste at the time of disposal. The leachate is collected by the Class I Landfill bottom liner system and treated as wastewater. One of the goals of the landfill design and daily operation is to minimize leachate production from the landfill to reduce the cost associated with leachate treatment and to minimize the potential environmental contamination risks. The methods described in this section can be used separately or simultaneously to achieve leachate reduction.

9.1.1 Rain Covers

In addition to the leachate/stormwater separation intrinsic to the design of the A-4 and SW-2 cells, Pasco County may use rain covers (or tarpaulins) to minimize leachate generation. Areas of the landfill that will not be utilized for at least 180 days may be covered with a 20 mil geomembrane and anchored using tires. Stormwater that collects on the rain cover in areas utilizing this technique is managed as non-contact stormwater, which discharges to the perimeter stormwater ditch.

9.1.2 Stabilized Sideslopes

As filling progresses, side slopes that will not receive solid waste for 2 months or more will be stabilized with sod, seed and mulch, or rain covers. Exterior side slopes that are up to design grade and interior side slopes that will not be filled again for longer than 180 days will be covered with either intermediate cover and sod or a rain cover.

9.1.3 Closing

Pasco County Solid Waste plans to achieve an effective runoff factor of at least 30% and will work toward a goal of 50% or more upon final closure in the Class I Landfill. The methods described above represent the present plan; however, as operations continue, they may be modified if alternate

C:\Users\jason\OD\Pasco\Update Ops Plan (TO 5-18)\leachte collection system.dwg, 1/30/2019 3:05:40 PM, Adobe PDF

Note: THIS FIGURE IS NOT TO SCALE AND THE LOCATIONS OF SOME ITEMS HAVE BEEN EXAGGERATED FOR CLARITY

JMG ENGINEERING INC

LEACHATE COLLECTION SYSTEM
WEST PASCO CLASS I LANDFILL

FIGURE
9-1

methods prove more efficient or allow a higher percentage of stormwater runoff resulting in greater leachate minimization.

9.2 Leachate Collection

The leachate collection system encompasses the Ash Monfill (Cells A-1, A-2, A-3, and A-4) and the Solid Waste Landfill (Cells SW-1 and SW-2). Monitoring the collection, pumping and storage components occurs daily, Monday through Friday. All of these phases have been included in this Operations Plan.

9.2.1 Ash Monofill Cell A-1

Cell A-1 of the Ash Monofill is the original cell of the landfill constructed in 1990. It is approximately 10 acres in size and received ash between approximately 1990 and 1995. The cell was constructed with a double liner system, with intrinsic leachate removal systems for both liners (primary and secondary).

Leachate in the cell is collected by perforated laterals running north-south which drain to a 12-inch PVC leachate header pipe that runs (east to west) on the southern perimeter of the cell. The leachate collection pipes (primary and secondary) penetrate the liner(s) and discharges into one of two leachate manholes on the east side of the cell, one for the primary leachate collection system and one for the secondary leachate collection system. Leachate from the secondary liner is allowed to accumulate in the metering manhole and is periodically pumped (and metered) into the primary manhole. Leachate drains from the metering manholes by gravity to a pump station adjacent to the metering manholes. From the pump station, leachate is pumped to a 2,000,000 concrete storage tank for eventual disposal off-site.

9.2.2 Ash Monofill Cell A-2

Cell A-2 was constructed circa 1995 and is of a similar configuration to that of Cell A-1. The leachate collection system for Cell A-2 was modified circa 2000 from its original design by converting the leachate evacuation method from a pumped principle to a gravity principle. The original design and construction of the cell directed leachate from the primary liner system and the secondary liner system to headers running east-west along the northern perimeter of the cell. The headers discharged into a sump in the northeast corner of the cell, and the accumulated leachate was pumped through a side-slope riser pipe to the pump station located adjacent to cell A-1. In 2000, the side slope riser pumping system was abandoned, and new gravity pipes with liner penetrations (one for leachate collected by the primary liner and one for leachate collected by the secondary liner) were installed and directed to new leachate metering manholes. As with Cell A-1, leachate flows by gravity from the metering manholes to the master pump station adjacent to A-1. From the pump station, leachate is combined with the leachate from Cell A-1 and pumped to a 2,000,000 concrete storage tank for eventual disposal off-site.

In 2016, during a routine evaluation of the effectiveness of the landfill leachate collection and removal system, it was discovered that little to no leachate was flowing from the primary liner sump to the metering manhole. It has been determined that the most likely cause of this problem is calcification of the stone within the sump, thus preventing leachate from draining through the gravity pipes. To remedy the situation the County has been utilizing a diesel-powered pump to pump the primary leachate from the 8-inch HDPE leachate clean-out pipe stub on the east side of the cell to the primary metering manhole of Cell A-2. The County is currently in the design process of replacing the temporary diesel pump with permanent infrastructure consisting of the following:

- One submersible pump of 1.0-HP, (Grundfos Model 30 SQE 05-40 or equal) located inside the existing 8-inch HDPE primary leachate collection clean-out pipe which connects to the leachate collection sump. The submersible pump is electrically powered and sits at the bottom of the clean-out pipe to

pump out primary leachate through a half-inch or greater size discharge tubing into a new 3-inch leachate forcemain.

- 3-inch HDPE pipe connection to the existing 8-inch HDPE leachate clean-out pipe stub on the east side of Cell A-2. This new 3-inch pipe is the new leachate forcemain and is buried at least 3 feet below grade from the east side of Cell A-2 and crosses the access road and discharges into the primary wet-well of Cell A-2. The road crossing is accomplished by using a 12-inch steel casing extended beyond the paved road limits by at least 5 feet.

- A control panel integral with the submersible pump which offers controls over the submersible pump and has an emergency hand 'ON/OFF' switch. A magnetic flow meter which is strapped on the 3-inch forcemain and measures leachate flows. Instrumentation with the control panel which transmits electronic signals for recorded flow through a fiber optic cable to provide output and record flow at the leachate building.

- A 8 feet x 12 feet concrete pad on the east side of Cell A-2 to house the above grade parts of the 3-inch primary leachate forcemain, flow meter and control panel.

- A new 120v single phase electrical power connect stub-out on the concrete pad/control panel as a potential measure to power a new submersible pump for pumping secondary leachate in case the secondary leachate cannot flow by gravity in future. The existing 3-inch leachate forcemain is capable to convey the additional flow for secondary leachate.

9.2.3 Ash Monofill Cell A-3

Cell A-3 was constructed circa 2003 and is of a similar configuration to cell A-1. It is approximately 10 acres in size and received ash between approximately 2003 and 2008. The cell was constructed with a double liner system, with intrinsic leachate removal systems for both liners (primary and secondary).

Leachate in the cell is collected by perforated 8-inch PVC leachate header pipes that run (east to west) on the interior of the cell. The leachate collection pipes (primary and secondary) penetrate the liner(s) and discharges into one of two leachate manholes on the east side of the cell, one for the primary leachate collection system and one for the secondary leachate collection system. Leachate from the secondary liner is allowed to accumulate in the metering manhole and is periodically pumped (and metered) into the primary manhole. Leachate drains from the metering manholes by gravity to a pump station adjacent to cell A-1. From the pump station, leachate is combined with the leachate from Cells A-1 and A-2 and pumped to a 2,000,000 concrete storage tank for eventual disposal off-site.

9.2.4 Ash Monofill Cell A-4

Cell A-4 was constructed circa 2008 and currently serves as the active ash disposal cell for the landfill. It is approximately 20 acres in size and has been receiving ash since 2009. The cell was constructed with a double liner system, with intrinsic leachate removal systems for both liners (primary and secondary).

Leachate in the cell is collected by perforated laterals running north-south which drain to four 12-inch PVC leachate header pipes that run (east to west) on in the interior of the cell. The leachate collection pipes (primary and secondary) penetrate the liner(s) and discharges into one of two leachate holding tanks on the west side of the cell, one for the primary leachate collection system and one for the secondary leachate collection system. Leachate drains from the holding tanks by gravity to a pump station adjacent to the holding tanks. From the pump station, leachate is pumped to a 2,000,000-gallon concrete storage tank for eventual disposal off-site.

9.2.5 Solid Waste Cell SW-1

Cell SW-1 of the Solid Waste Landfill is the original cell of the landfill constructed in 1990. It is approximately 10 acres in size and received waste between approximately 1990 and 1998. The cell was constructed with a double liner system, with intrinsic leachate removal systems for both liners (primary and secondary).

Leachate in the cell is collected by perforated laterals running north-south which drain to an 8-inch PVC leachate header pipe that runs (east to west) on the southern perimeter of the cell. The leachate collection pipes (primary and secondary) penetrate the liner(s) and discharges into one of two leachate manholes on the east side of the cell, one for the primary leachate collection system and one for the secondary leachate collection system. Leachate from the secondary liner is allowed to accumulate in the metering manhole and is periodically pumped (and metered) into the primary manhole. Leachate drains from the metering manholes by gravity to a pump station adjacent to the metering manholes. From the pump station, leachate is pumped directly to the adjacent Shady Hills Wastewater Treatment Facility.

9.2.6 Solid Waste Cell SW-2

Cell SW-2 of the Solid Waste Landfill was constructed circa 2001. It is approximately 10 acres in size and has been receiving waste since 2002. The cell was constructed with a double liner system, with intrinsic leachate removal systems for both liners (primary and secondary).

Leachate in the cell is collected by perforated laterals running north-south which drain to an 8-inch PVC leachate header pipe that runs (east to west) on the southern perimeter of the cell. The leachate collection pipes (primary and secondary) penetrate the liner(s) and discharges into one of two leachate manholes on the east side of the cell, one for the primary leachate collection system and one for the secondary leachate collection system. Leachate from the secondary liner is allowed to accumulate in the metering manhole and is periodically pumped (and metered) into the primary manhole. Leachate drains from the metering manholes by gravity to a pump station adjacent to the metering manholes. From the pump station, leachate is pumped directly to the adjacent Shady Hills Wastewater Treatment Facility.

9.3 Ash Leachate Storage Tank

As described above, leachate that is collected in the ash disposal cells is pumped to a 2 million gallon concrete storage tank located to the south of cell A-3. From the pump station, the leachate flows through a 6” PVC forcemain, through a totalizing meter, and into the storage tank. The tank has a 100-foot interior diameter and is 34 feet tall (excluding the domed roof). Each foot of depth in the tank holds approximately 60,000 gallons.

9.3.1 Tank Inspections

Pasco County staff visually inspect the exterior of the tank weekly. The inspector will look for any structural damage to the tank, damage to the coating system, loose connections, visible leaks, and maintenance deficiencies. The inspector also looks for any structural damage to the secondary containment system (described below) and visible leaks.

The interior of the tank is inspected at least once every 5 years. During an interior inspection, the inspector looks for any damage to the interior two part epoxy coating system, structural damage or cracking of the tank, and/or visible leaks.

If inspections reveal any deficiencies with the interior and/or exterior of the tanks that could result in the system failing to contain leachate, Pasco County will take immediate action to remediate the situation. The tank manufacturer (Crom Corporation), coordinating with Pasco County, will handle failures or damage to the tank. Pasco County will immediately notify the manufacturer of the situation; the tank manufacturer will perform a detailed damage assessment report and remediation of the tank. FDEP will be immediately notified in writing by Pasco County of the situation and of the proposed corrective action for significant deficiencies that require more than 48 hours to repair.

9.3.2 Secondary Containment System

The secondary containment design includes a bermed area lined with 60-mil HDPE geomembrane. This area is designed to provide 2,200,000 gallons of storage capacity or 110 percent of the tank volume. Two feet of freeboard is provided at the maximum design capacity. The containment area liner material is high density polyethylene (HDPE), which is compatible with the leachate. The liner is continuous under the storage tank slab, separated by a soil drainage layer for protection of the liner.

The secondary containment area is designed with a 12-inch drain line which discharges to a stormwater swale leading to stormwater retention pond No. 1. The 12-inch discharge line is designed to discharge up to 5.4 cubic feet per second (cfs). This rate is equal to the accumulation rate of a 25-year/24-hour storm event at the point in time when 10 percent of the secondary containment volume has accumulated.

A valve is also provided on the gravity discharge line for the secondary containment system. The valve will normally remain closed. Within 24 hours of any significant rainfall accumulation, Stormwater collected in secondary containment will be visually inspected to determine if the stormwater has been contaminated. Signs of contamination include the following:

- An oily sheen on the surface of the liquid.
- A dark or nontransparent appearance of the liquid.
- An excess of suspended solids in the liquid.
- An odor coming from the liquid.

If no contamination is noted, the valve will be opened to discharge the accumulated stormwater. Once the stormwater is drained from the secondary containment area, the valve will be closed by the operator. If it is contaminated, the stormwater will be treated as leachate and pumped to the storage tank.

9.4 Ash Leachate Disposal

Once produced, leachate must be disposed of. Disposal of leachate generated by the ash disposal cells is achieved by loading leachate onto tanker trucks and hauling it to a WWTP for treatment. Leachate is normally loaded into tanker trucks from a dedicated pump station located adjacent to the 2 million gallon storage tank, but can also be loaded from different areas (such as the metering manholes or the pump station sump) as needed based on the conditions at the site. The primary disposal mechanism for leachate generated from the ash monofill is the City of Tampa's Howard F. Curren Wastewater Treatment Facility. Pasco County maintains a contract with the City of Tampa for leachate disposal rights at the wastewater treatment plant. If changes in the facility receiving leachate occur, FDEP will be notified.

9.5 Solid Waste Leachate Disposal

Leachate collected by the leachate collection systems serving Cells SW-1 and SW-2 is pumped directly to the adjacent Shady Hills Wastewater Treatment Plant, owned by Pasco County, for disposal. An intra-Department account has been established to charge Solid Waste for the amount of leachate delivered to the wastewater plant.

9.6 Leachate Monitoring, Data Collection, and Reporting

Rule 62-701.500(8)(f), F.A.C. requires that the quantity of leachate collected by the leachate collection and removal system be recorded in gallons per day before on-site treatment and transport off-site. To accurately record the amount of leachate collected, Pasco County utilizes in-line magnetic flow meters on the discharge side of the three pump stations (the first serving A-1, A-2, and A-3; the second serving A-4; and the third serving SW-1 and SW-2). Each of the flow meters totalizes the volume of leachate (in gallons) passing through the respective leachate transmission pipeline. On a daily basis (Monday through Friday), an Operator records the totalized value and the time of day that the reading was recorded. The records are compiled on monthly basis into a spreadsheet and submitted semi-annually to the FDEP.

Separate from the flow measuring requirements of 62-701.500(8)(f) is an obligation to monitor the effectiveness of the liner systems serving each of the individual cells. Pasco County accomplishes this by separately collecting leachate generated off of the secondary liner system(s). Anything but a trivial amount of leachate collected off of a secondary liner system could indicate a possible breach (or other problem) of the primary liner. On a daily basis, Pasco County operators inspect the metering manholes for all of the secondary liner systems. Anything more than a small amount of leachate collected in a secondary liner metering manhole is immediately reported to the Solid Waste Manager.

9.7 Leachate System Maintenance

Leachate flow rates from the pump stations are observed at least weekly. An extremely low (or high) flow rate, when compared to recent flow rates, may indicate a problem with the leachate-collection system. This problem could be a malfunction with pumps or its instrumentation controls. The problem could also be a blockage in or a collapse of the leachate-collection pipe. If a block is suspected, Pasco County will hire the services of a jet-cleaning and video-inspection company. An emergency purchase order for jet-cleaning and/or video-inspection of the leachate collection lines can be prepared as soon as an inspection is determined to be required. Pasco County expects that an emergency purchase order can be approved and a contractor can be hired within a maximum of 1 month. The jet-cleaning and video-inspection company will first jet-clean the pipes from the clean-outs and then video-inspect the

pipes from the same clean outs. If major problems within the system are found, Pasco County will propose a remedial action plan and submit it to FDEP for approval before beginning the remedial work.

In accordance with 62-701.500(8)(h), FAC water pressure cleaning or video recording inspection is conducted at least once every five years.

9.8 Leachate Contingency Plan

9.8.1 Leachate Pumps, Hauling, and Flow Meters

If all pumps (onboard vehicle pump, storage tank transfer pumps, and leachate wet well pumps) fail, portable pumps are available from other County Departments. In addition, a rental transfer pump can be obtained from a local rental source.

If the sewer discharge pipeline is not functioning (for the Solid Waste cells) and the existing hauling contractor is unable to transport the leachate offsite (for the Ash Cells), an emergency can be declared to select another hauler so that unnecessary delays caused by bidding and selection can be prevented.

If the primary flow meter (the compliance meter) ceases to operate for either the Solid Waste cells or the Ash cells, contracted maintenance personnel will remove the instrument and insert a spare flow meter supplied by Pasco County Water & Wastewater. The faulty instrument will be shipped to the service representative or manufacturer to repair or replace.

9.8.2 Electrical Power Failure

The leachate collection and leak detection metering manholes that receive leachate from all primary and secondary leachate collection systems are all gravity based and do not require electrical power. However, the pump stations that evacuate the manholes require electrical power. In the event of a prolonged electrical outage, back-up generators will be brought in to operate the leachate collection pump stations.

If electrical power is not available at the ash monofill tanker loadout station, leachate can be pumped from the Crom tank directly into tankers using the onboard vehicle pumps or a portable 3-inch pump or an electrical generator can be provided to supply backup power to the pump station. Backup generators are available from Pasco County Utilities.

9.8.3 Leachate Treatment Contingency

If the primary disposal facilities (City of Tampa for ash leachate and Shady Hills for solid waste leachate) are unable to accept the leachate, Pasco County will implement a contingency plan consisting of hauling the leachate to an industrial disposal facility or another treatment facility for disposal. Pasco County retains one or more vendors who can haul leachate off-site for disposal. If leachate is determined to be hazardous, it will be managed in accordance with the requirements of Rule 62-730, FAC, for hazardous waste generators and transporters.

10.0 Surface Water Management

The Class I Landfill utilizes two surface water drainage areas as shown on **Figure 10-1**. The ponds have been sized to accommodate surface water runoff from the entire landfill at buildout and are at this time largely over-sized. Surface water flowing from the landfill drains to perimeter swales that discharge to the large retention ponds east of the landfill. Stormwater modeling indicates that any runoff that will overflow the ponds will travel essentially along the natural drainage paths that existed pre-development to undeveloped depressional areas west of the power line easement. However, because the retention pond capacity is largely underutilized at this time, overflow from the ponds is not expected to occur.

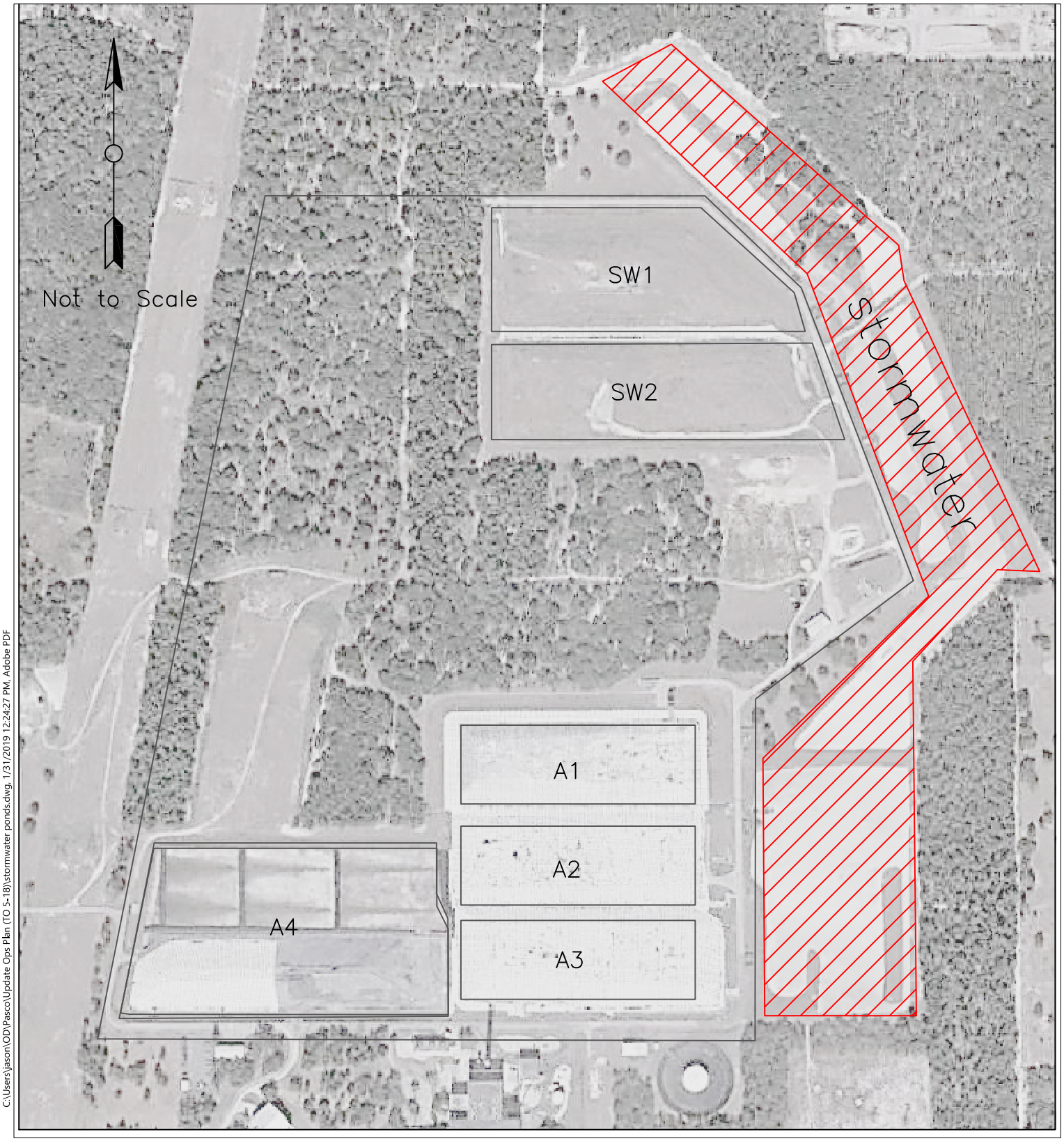
Drainage ditches have been constructed adjacent to the operating landfill cells and the closed landfill areas. These drainage ditches lead to the surface water ponds described above. These ditches are designed to receive the stormwater runoff from the landfill cells, paved areas and roads for collection and infiltration (and/or evapotranspiration) in the ponds.

10.1 Stomwater System Maintenance

The following maintenance activities are performed as needed on an appropriate frequency to ensure the proper collection, conveyance, and disposition of surface waters associated with the Class I Landfill:

- All conveyance swales and ditches on the project site will be kept cleared of dense vegetation, debris, and trash that would impede the flow of stormwater runoff.
- All disturbed areas, swales, and basin side slopes that do not have living grass to prevent erosion will be sodded or seeded and mulched.
- All culverts that are damaged thereby inhibiting design flow rates will be cleaned, repaired, or replaced.
- The ditches, side slopes, and stormwater pond side slopes and berms will be mowed and kept clear of vegetation that would impede the discharge or receiving of stormwater.

In accordance with Rule 62-701.500(7)(k), F.A.C., the landfill will repair within 3 days erosion that causes waste to be exposed or the stormwater management system to malfunction. If the major erosion cannot be repaired within 7 days, the Pasco County will notify FDEP and propose an erosion correction schedule for the repairs.



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Note: THIS FIGURE IS NOT TO SCALE AND THE LOCATIONS OF SOME ITEMS HAVE BEEN EXAGGERATED FOR CLARITY

JMG ENGINEERING INC

STORMWATER MANAGEMENT PONDS
WEST PASCO CLASS I LANDFILL

FIGURE
10-1

11.0 Landfill Gas Management

Because the solid waste disposal cells SW-1 and SW-2 are relatively small and are intended to be utilized infrequently, there is no active landfill gas management associated with them. In addition to a series of passive vents, Pasco County maintains a robust landfill gas monitoring program to insure that landfill gas does not migrate laterally. The monitoring program is described below.

11.1 Landfill Gas Monitoring Program

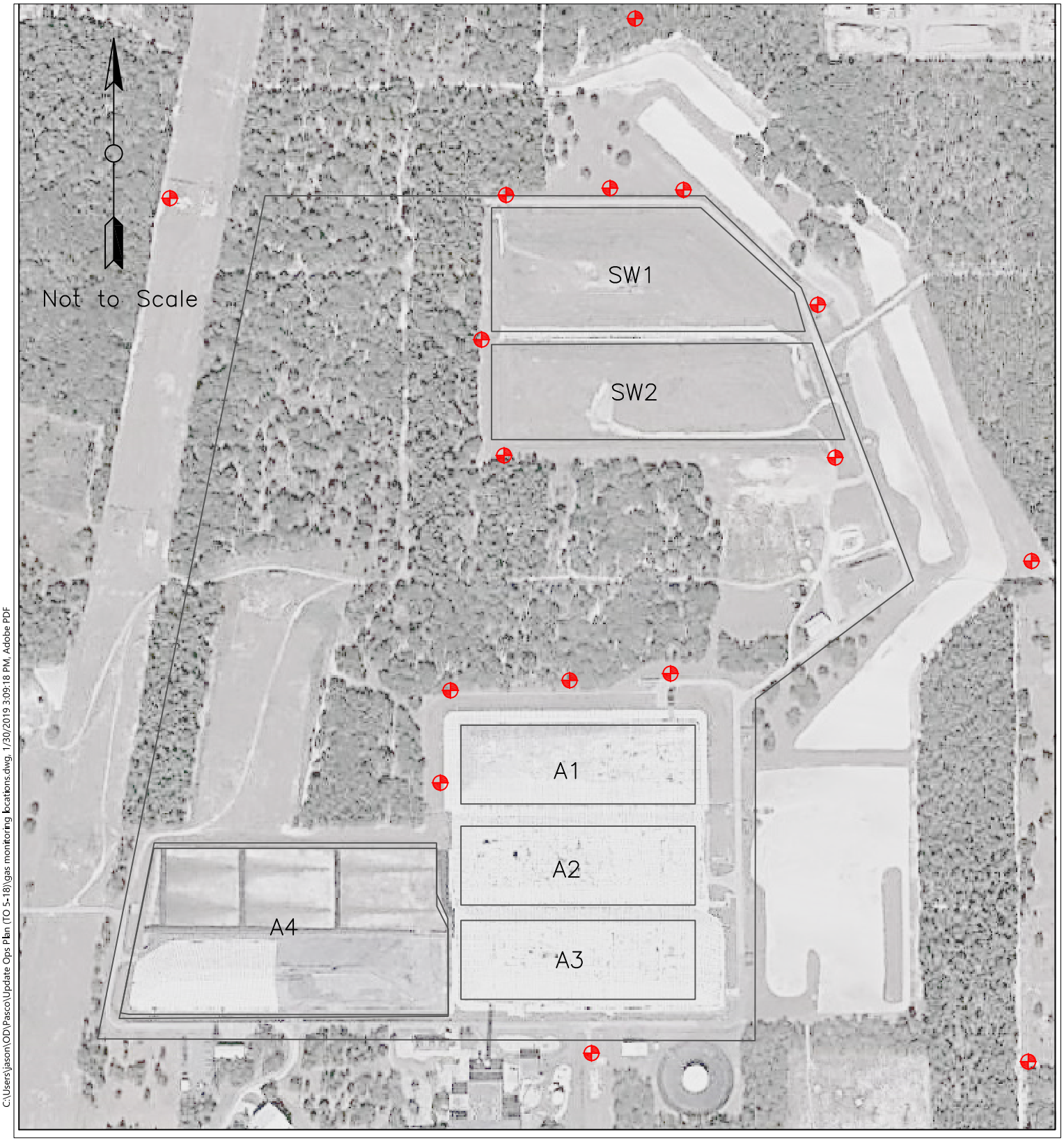
Pasco County Environmental Services is responsible for implementing the Gas Monitoring Program at the landfill. The LFG monitoring program consists of quarterly monitoring of six LFG monitoring wells, in addition to monitoring gas levels in nineteen groundwater monitoring wells. Gas monitoring is also conducted within the enclosed structures at the Class III scalehouse and the Class III Operations Building. **Figure 11-1** depicts the location of each of the gas monitoring locations. Gas monitoring is conducted in accordance with Rule 62-701.530(2)(c), F.A.C.

A portable landfill gas analyzer is used to measure the levels of combustible gases (primarily methane) at each of the monitoring locations. Part of the monitoring program is inspection of the monitoring wells for any symptoms of LFG leakage such as dead grass in the vicinity of the monitoring well or other locations. All field measurement data and observations are provided to FDEP no later than 15 days after the end of the quarter in which the monitoring occurred.

If results indicate that gas is present in excess of the 25% of the lower explosive limit (LEL) in a structure or 100% of the LEL at or beyond the landfill property boundary, a Gas Remediation Plan will be prepared in accordance with Rule 62-701.530(3)(a), F.A.C., and Pasco County Utilities will:

- Immediately take all necessary steps to ensure protection of human health and notify FDEP.

- Within 7 days of detection, submit to FDEP for approval a remediation plan for the methane gas releases. The plan shall describe the nature and extent of the problem and the proposed remedy.



C:\Users\jason\OD\Pasco\Update Ops Plan (TO 5-18)\gas monitoring locations.dwg, 1/30/2019 3:09:18 PM, Adobe PDF

Note: THIS FIGURE IS NOT TO SCALE AND THE LOCATIONS OF SOME ITEMS HAVE BEEN EXAGGERATED FOR CLARITY

JMG ENGINEERING INC

GAS MONITORING LOCATIONS
WEST PASCO CLASS I LANDFILL

FIGURE
11-1

12.0 Site Contingency Plan

Emergency conditions that may constitute a special waste-handling event at the Solid Waste Complex may be created by a natural disaster (i.e., hurricane, tornado, and/or flooding), explosion, or fire. The Landfill Operations Manager is responsible for implementing the contingency operations.

12.1 Landfill Fire

A fire extinguisher is maintained in all Pasco County landfill equipment. The quantity, type, and location of fire extinguishers located throughout the site is subject to change as conditions change on the site. Landfill fires can be very dangerous with the presence of LFG, which includes methane. Fire-fighting should only be attempted if the fire is relatively small and controllable. The area should be immediately evacuated of operating staff and outside personnel if a fire is ignited that cannot be easily and quickly controlled. The Solid Waste Manager should be contacted, and the fire should be reported to the Administration Office via field communications. The Administration office will immediately call the fire department. During a fire, incoming trucks will be prevented from using the landfill.

Once the fire is extinguished, appropriate cover will be applied to the waste and operations will continue at the original active face. If the fire is extensive and a temporary active face cannot be established, incoming trucks will be redirected to another landfill.

Landfill fires can be ignited from several sources or causes. These causes include the following:

- A gas pocket ignited from a spark generated from smoking.
- Sparks generated from pushing metal wastes.
- Chemical reactions.
- Sparks from operating equipment.
- Introduction of smoldering waste into the working face.

Onsite materials and equipment of fire protection consist of soil stockpiles near the working face, fire extinguishers carried on landfill equipment, and onsite water trucks.

The daily cover used in the landfill operation provides an effective firewall. Instructions in firefighting procedures will be routinely provided to site personnel through the prescribed TREEO training. If a fire occurs within the waste pile at the landfill, the fire department will be immediately notified, and additional soil cover will be applied to cut off the flow of oxygen to the burning area. If the fire cannot be extinguished or controlled within 1 hour, the landfill shall cease accepting waste for disposal in those areas of the facility impacted by the fire. The local fire department will again be notified via 911 of the conditions at the site and may be requested to assist site personnel and provide additional equipment, if necessary. Pasco County officials and FDEP will also be notified of conditions at the site and of the fire control plan belong implemented.

Collection vehicles entering the landfill with smoldering loads shall be directed to the Hot Load area at the Resource Recovery Facility. The truck should remain closed to minimize the amount of oxygen available to feed the fire. The local fire department shall be notified by dialing 911; Pasco County HHW staff shall be notified as well as landfill operations.

13.0 Recordkeeping

In addition to records and reporting required by other sections of this operation plan, Pasco County Solid Waste will maintain the following the following:

- Keep records of all information used to develop or support the permit applications and any supplemental information submitted to comply with FDEP requirements pertaining to the construction of the landfill throughout the design period. Records pertaining to the operation of the landfill, except for weigh tickets, shall be kept for the design period of the landfill. Weigh tickets shall be kept for a minimum of 5 years.

- Retain records of all monitoring information, including calibration and maintenance records and copies of all reports required by permit, for at least ten years. Background water quality records shall be kept for the design period of the landfill.

- Maintain an annual estimate of the remaining life and capacity in cubic yards of each active disposal facility for the Class I landfill. The annual estimate shall be based on a summary of the heights, lengths, and widths of the solid waste disposal units. The estimate shall be made and reported annually to FDEP.

All records 5 years or older may be archived offsite given that the records can be retrieved within 7 days for inspection.

14.0 Off-Site Beneficial Ash Reuse

Section 403.7045(5) of the Florida Statutes authorizes the Department to allow beneficial reuse of ash residue when an applicant demonstrates that "no significant threat to public health will result and that applicable Department standards and criteria will not be violated." Beginning in 2012, Pasco County began working with the FDEP to investigate the recycling of bottom ash for beneficial reuse as a building construction material. A series of roadway test strips and associated groundwater monitoring wells were constructed under an FDEP research and development project (Permit No. 26254-004-SO-21). Through the research and development process, the County demonstrated that the requirements of Chapter 403.7045(5), F.S. could be achieved and the Department issued a Standing Authorization specifying the conditions under which bottom ash could be beneficially utilized within the County's geographic boundaries. Subsequent modifications have been made to the original 2014 Authorization, all of which are attached as **Appendix A**.

To render the bottom ash usable for targeted recycling projects, the County follows the procedures described in Section 6.5 of the Operations Plan. Following processing, the engineered aggregate is provided to contractors under the direction of Pasco County Utilities. The engineered aggregate is provided to contractors only for construction projects that have been demonstrated to meet the criteria of the Beneficial Use Authorization (as amended).

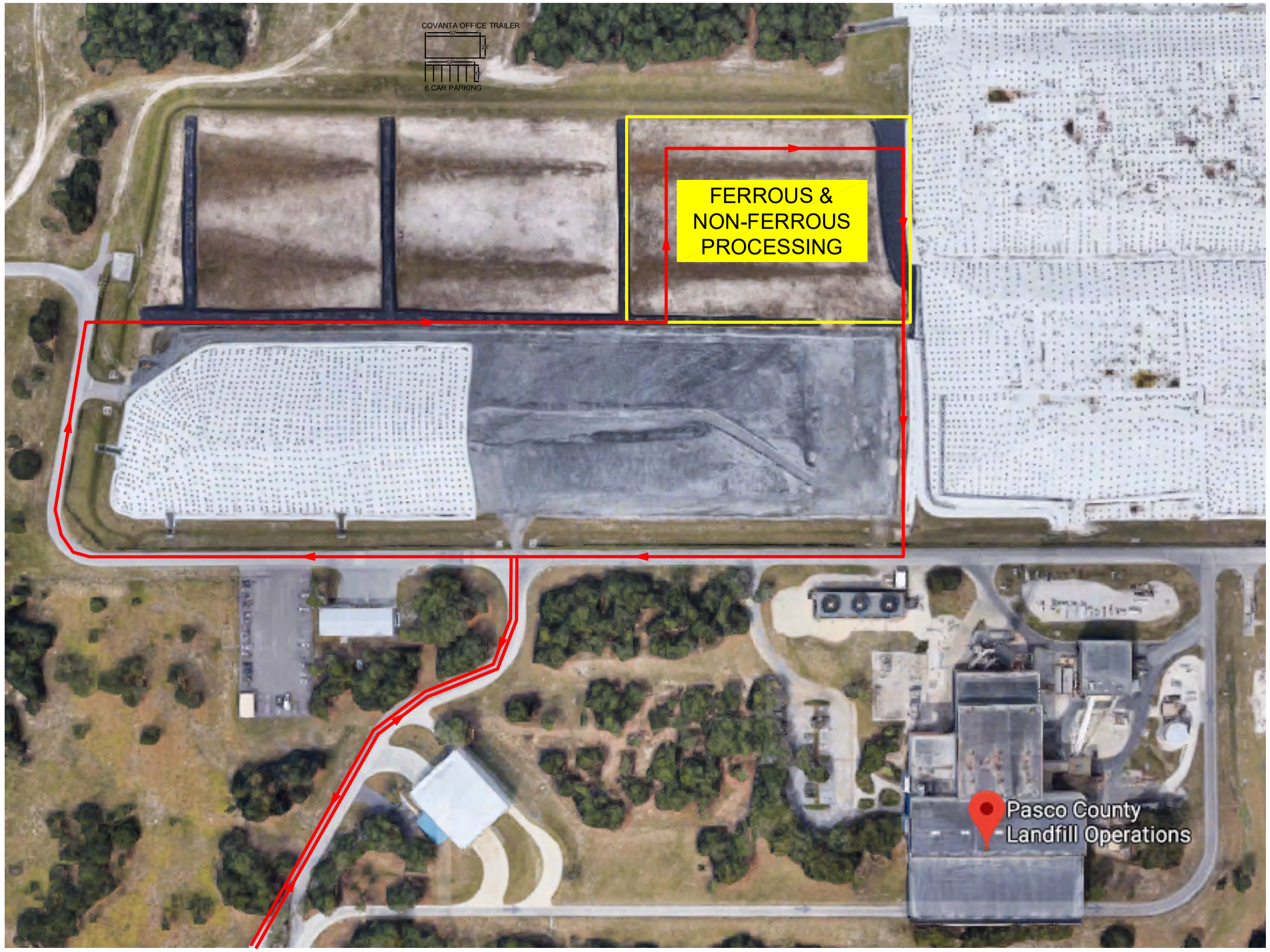
15.0 Ash Monofill Ferrous and Non-Ferrous Metals Processing

The 6th subcell of ash cell 4 will be temporarily used to process ferrous and non-ferrous metal to remove residual ash prior to transport to a third-party recycling facility. This will include metal generated at the Pasco County Resource Recovery Facility as well as metal from other waste-to-energy (WTE) facilities within the state. Metal from all facilities will be brought over the County's scales and weighed. This metal will be stored in discrete storage bunkers and then processed through a series of screens and magnets to remove the residual ash. Following processing, the ash and metal will be loaded into separate bunkers. All ash not generated from Pasco County will be returned to the facility of origin. The mass of outgoing metal and ash for all facilities be weighed and recorded.

Figure 15-1 outlines the location of the processing area and a traffic pattern for the transfer truck operations. Figure 15-2 provides an illustration of the equipment and storage bunkers which will be located within the ash cell. The processing area (A4 – subcell 6) will be floored with 4 feet of select waste (ash) before the processing equipment is brought on site. All equipment will be placed on top of the floored ash and will not be anchored into the ash or underlying leachate collection system in any way. The metals processing system is designed as a mobile operation.

To prevent the mixing of leachate and stormwater, the cell will be floored such that all rainwater that contacts the area will be introduced into the leachate collection and removal system. This will be accomplished by establishing a floored area no less than 10 feet inward from the extent of the liner. The aerial displayed in Figure 15-1 is several years old; to reduce leachate generation the entire south 10 acres of the cell have been covered with a temporary rain cap and the metals processing area in operation in the north 10 acres of the cell will be open. Consistent with practices previously described in the Operations Plan, fugitive dust emissions within the processing area will be controlled by wetting on an as-needed basis.

Figure 15-1



NOTES:

1. ALL TRUCK MUST CHECK IN AND OUT AT THE SCALE HOUSE LOCATED AT THE ENTRANCE TO THE PASCO FACILITY.

PROPOSED PASCO MOBILE NFE/FE PLANT

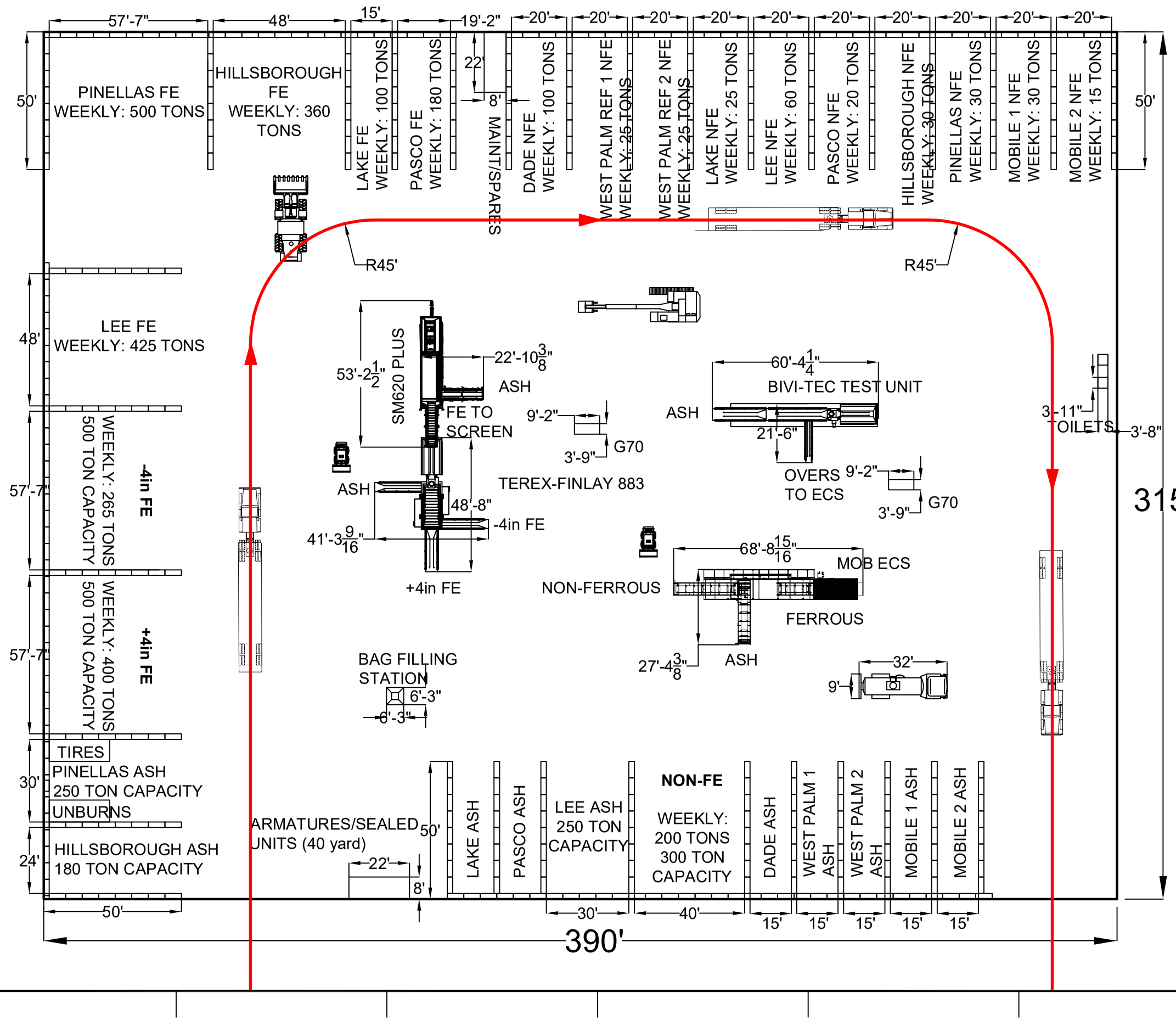
COVANTA

COVANTA ENGINEERING SERVICES, INC.
445 SOUTH STREET
MORRISTOWN, NEW JERSEY 07960

APPROVED	DATE	DRAWING NO.	SHT. NO.	REV.
	10/01/19	PASCO-1	1 OF 2	1

PASCO-1 10/01/19 PF: 1=1 "ANSI B"

Figure 15-2



NOTES:

1. ALL NFE BUNKERS HAVE 150 TON CAPACITY, CAN BE INCREASED IF NECESSARY.
2. ALL ASH BUNKERS HAVE 100 TON CAPACITY UNLESS OTHERWISE SPECIFIED.
3. ARMATURES/SEALED UNITS TO BE PICKED OUT AND STORED IN ROLL–OFF 40 YARD CONTAINER 8'X22'.
4. PINELLAS ASH: TIRES AND UNBURNS TO BE SEPARATED INTO TWO ROLL–OFF CONTAINERS 8'X22'.
5. TWO (2) G70 GENERATORS WILL BE USED TO POWER THE MOBILE PROCESSING EQUIPMENT. 9'–2" BY 3'–9".
6. SIX (6) PARKING SPOTS AVAILABLE FOR EMPLOYEES.
7. TWO (2) PORTABLE TOILETS AVAILABLE FOR EMPLOYEES IN ADDITION TO FACILITIES IN COVANTA OFFICE TRAILER.

PROPOSED PASCO MOBILE NFE/FE PLANT

COVANTA

COVANTA ENGINEERING SERVICES, INC.
445 SOUTH STREET
MORRISTOWN, NEW JERSEY 07960

APPROVED	DATE	DRAWING NO.	SHT. NO.	REV.
	10/22/19	PASCO–2	2 OF 2	1

PASCO–2 10/22/19 PF: 1=1 "ANSI B"