

**D.E.P.**  
**OCT 11 2001**  
**Southwest District Tampa**

**Application for a  
Minor Modification to  
Manatee County Solid Waste Management Facility  
Lena Road Landfill  
Operations Permit No.: 39884-001-SO**

**Submitted by:**

**Manatee County Government  
Utilities Operations Department  
4410 66<sup>th</sup> Street West  
Bradenton, FL 34210**

**Prepared by:**

**PBS&J  
482 South Keller Road  
Orlando, FL 32810  
407-647-7275**

**September 21, 2001  
Project # 120498.01 1001**

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*An employee-owned company*

October 9, 2001

Mr. Robert J. Butera, P.E.  
Solid Waste Manager  
Southwest District  
Florida Department of Environmental Protection  
3804 Coconut Palm Drive  
Tampa, Florida 33619-8318

**RE: Manatee County Solid Waste Management Facility  
Lena Road Landfill  
Permits #39884-001-SO and #39884-004-SF  
Application for Minor Modification**

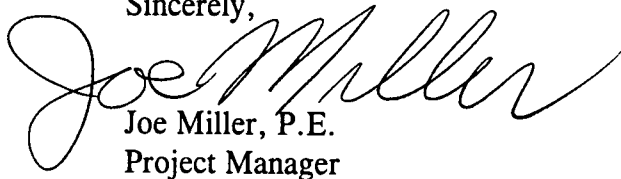
Dear Mr. Butera:

On behalf of Manatee County, PBS&J is submitting this application for a minor modification to the Operations Permit for the Lena Road Landfill to modify the Fill Sequence Plan. Manatee County has built a storage tank at the adjacent WWTP, which eliminates the need for the leachate storage pond. A construction application was submitted to FDEP to extend the leachate collection system around the leachate pond, and incorporate the area into the Class I landfill for waste disposal. The Fill Sequence Plan was changed to show placing of solid waste in the leachate pond prior to moving to the Stage III landfill area.

Per your December 4, 2000 letter, this application is submitted for a minor modification to the operation permit. Another application for a minor modification to the closure permit will be submitted to modify the Stage I Landfill closure plan to incorporate the leachate storage pond. It is our understanding that FDEP will review the operation permit and have the permit ready for issuing upon certification of the construction. It is anticipated that construction will be completed near the end of December 2001 and filling in the leachate pond will start January 1, 2002.

Enclosed are four copies of the application, engineering report and drawings, and a \$250 check for the application fee.

Sincerely,



Joe Miller, P.E.  
Project Manager

C: Gus DiFonzo, Manatee County Solid Waste Manager, w/four copies

G:\WASTEMAN\Manatee County\SW-1 Operation Plan\Butera.LTR.doc

**Section 1**  
**Permit Application**



Florida Department of Environmental Protection  
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, FL 32399-2400

DEP Form # <u>62-701.900(1)</u>
Form Title <u>Solid Waste Management Facility Permit</u>
Effective Date <u>05-27-01</u>
DEP Application No. _____ (Filled by DEP)

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

APPLICATION FOR A PERMIT TO CONSTRUCT,  
OPERATE, MODIFY OR CLOSE  
A SOLID WASTE MANAGEMENT FACILITY

APPLICATION INSTRUCTIONS AND FORMS

Northwest District  
160 Governmental Center  
Pensacola, FL 32501-5794  
850-595-8360

Northeast District  
7825 Baymeadows Way, Ste. B200  
Jacksonville, FL 32256-7590  
904-448-4300

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

Southwest District  
3804 Coconut Palm Dr.  
Tampa, FL 33619  
813-744-6100

South District  
2295 Victoria Ave., Ste. 364  
Fort Myers, FL 33901-3881  
941-332-6975

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

## INSTRUCTIONS TO APPLY FOR A SOLID WASTE MANAGEMENT FACILITY PERMIT

### I. General

Solid Waste Management Facilities shall be permitted pursuant to Section 403.707, Florida Statutes, (FS) and in accordance with Florida Administrative Code (FAC) Chapter 62-701. A minimum of four copies of the application shall be submitted to the Department's District Office having jurisdiction over the facility. The appropriate fee in accordance with Rule 62-701.315, FAC, shall be submitted with the application by check made payable to the Department of Environmental Protection (DEP).

Complete appropriate sections for the type of facility for which application is made. Entries shall be typed or printed in ink. All blanks shall be filled in or marked "not applicable" or "no substantial change". Information provided in support of the application shall be marked "submitted" and the location of this information in the application package indicated. The application shall include all information, drawings, and reports necessary to evaluate the facility. Information required to complete the application is listed on the attached pages of this form.

### II. Application Parts Required for Construction and Operation Permits

- A. Landfills and Ash Monofills - Submit parts A,B, D through T
- B. Asbestos Monofills - Submit parts A,B,D,E,F,G,J,L,N, P through S, and T
- C. Industrial Solid Waste Facilities - Submit parts A,B, D through T
- D. Non-Disposal Facilities - Submit parts A,C,D,E,J,N,S and T

NOTE: Portions of some parts may not be applicable.

NOTE: For facilities that have been satisfactorily constructed in accordance with their construction permit, the information required for A,B,C and D type facilities does not have to be resubmitted for an operation permit if the information has not substantially changed during the construction period. The appropriate portion of the form should be marked "no substantial change".

### III. Application Parts Required for Closure Permits

- A. Landfills and Ash Monofills - Submit parts A,B,M, O through T
- B. Asbestos Monofills - Submit parts A,B,N, P through T
- C. Industrial Solid Waste Facilities - Submit parts A,B, M through T
- D. Non-Disposal Facilities - Submit parts A,C,N,S and T

NOTE: Portions of some parts may not be applicable.

### IV. Permit Renewals

The above information shall be submitted at time of permit renewal in support of the new permit. However, facility information that was submitted to the Department to support the expiring permit, and which is still valid, does not need to be re-submitted for permit renewal. Portions of the application not re-submitted shall be marked "no substantial change" on the application form.

V. Application Codes

S	-	Submitted
LOCATION	-	Physical location of information in application
N/A	-	Not Applicable
N/C	-	No Substantial Change

VI. LISTING OF APPLICATION PARTS

PART A:	GENERAL INFORMATION
PART B:	DISPOSAL FACILITY GENERAL INFORMATION
PART C:	NON-DISPOSAL FACILITY GENERAL INFORMATION
PART D:	PROHIBITIONS
PART E:	SOLID WASTE MANAGEMENT FACILITY PERMIT REQUIREMENTS, GENERAL
PART F:	LANDFILL PERMIT REQUIREMENTS
PART G:	GENERAL CRITERIA FOR LANDFILLS
PART H:	LANDFILL CONSTRUCTION REQUIREMENTS
PART I:	HYDROGEOLOGICAL INVESTIGATION REQUIREMENTS
PART J:	GEOTECHNICAL INVESTIGATION REQUIREMENTS
PART K:	VERTICAL EXPANSION OF LANDFILLS
PART L:	LANDFILL OPERATION REQUIREMENTS
PART M:	WATER QUALITY AND LEACHATE MONITORING REQUIREMENTS
PART N:	SPECIAL WASTE HANDLING REQUIREMENTS
PART O:	GAS MANAGEMENT SYSTEM REQUIREMENTS
PART P:	LANDFILL CLOSURE REQUIREMENTS
PART Q:	CLOSURE PROCEDURES
PART R:	LONG TERM CARE REQUIREMENTS
PART S:	FINANCIAL RESPONSIBILITY REQUIREMENTS
PART T:	CERTIFICATION BY APPLICANT AND ENGINEER OR PUBLIC OFFICER

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
APPLICATION FOR A PERMIT TO CONSTRUCT, OPERATE, MODIFY OR CLOSE  
A SOLID WASTE MANAGEMENT FACILITY

Please Type or Print

A. GENERAL INFORMATION

1. Type of facility (check all that apply):

☒ Disposal

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Class I Landfill | <input type="checkbox"/> Ash Monofill           |
| <input type="checkbox"/> Class II Landfill           | <input type="checkbox"/> Asbestos Monofill      |
| <input type="checkbox"/> Class III Landfill          | <input type="checkbox"/> Industrial Solid Waste |
| <input type="checkbox"/> Other Describe: _____       |   |

☐ Non-Disposal

- |  |
|--|
| <input type="checkbox"/> Incinerator For Non-biomedical Waste              |
| <input type="checkbox"/> Waste to Energy Without Power Plant Certification |
| <input type="checkbox"/> Other Describe: _____                             |

NOTE: Waste Processing Facilities should apply on Form 62-701.900(4), FAC;  
Land Clearing Disposal Facilities should notify on Form 62-701.900(3), FAC;  
Compost Facilities should apply on Form 62-701.900(10), FAC; and  
C&D Disposal Facilities should apply on Form 62-701.900(6), FAC

2. Type of application:

- |   |
|---|
| <input type="checkbox"/> Construction           |
| <input checked="" type="checkbox"/> Operation   |
| <input type="checkbox"/> Construction/Operation |
| <input type="checkbox"/> Closure                |

3. Classification of application:

- |                                  |  |
|----------------------------------|--|
| <input type="checkbox"/> New     | <input type="checkbox"/> Substantial Modification      |
| <input type="checkbox"/> Renewal | <input type="checkbox"/> Intermediate Modification     |
|                                  | <input checked="" type="checkbox"/> Minor Modification |

4. Facility name: Manatee Co. Solid Waste Mgmt. Facility - Lena Road Landfill

5. DEP ID number: 4041C02025 County: Manatee

6. Facility location (main entrance): 3333 Lena Road, Bradenton, FL 34202

7. Location coordinates:

Section: 1, 6 & 31 Township: 34 S Range: 19 E

Latitude: 27 ° 28 ' 00 " Longitude: 82 ° 27 ' 00 "



8. Applicant name (operating authority): Manatee County  
Mailing address: 4410 66th Street West, Bradenton, FL 34210  
Street or P.O. Box City State Zip  
Contact person: Gus DiFonzo Telephone: 941) - 795-3428  
Title: Solid Waste Manager  
E-Mail address (if available)
9. Authorized agent/Consultant: PBS&J  
Mailing address: 482 South Keller Road Orlando FL 32810  
Street or P.O. Box City State Zip  
Contact person: Joseph Miller, P.E. Telephone: 407) 647-7275 ext. 153  
Title: Project Manager  
E-Mail address (if available): JLMiller@pbsj.com
10. Landowner (if different than applicant): N/A  
Mailing address: \_\_\_\_\_  
Street or P.O. Box City State Zip  
Contact person: \_\_\_\_\_ Telephone: (\_\_\_\_) \_\_\_\_\_  
E-Mail address (if available)
11. Cities, towns and areas to be served: Manatee County
12. Population to be served:  
Current: 250,000 Five-Year Projection: 290,000
13. Date site will be ready to be inspected for completion: 12/31/01
14. Expected life of the facility: 25 years
15. Estimated costs:  
Total Construction: \$ 0 Closing Costs: \$ N/A
16. Anticipated construction starting and completion dates:  
From: N/A To: N/A
17. Expected volume or weight of waste to be received:  
\_\_\_\_\_ yds<sup>3</sup>/day 1,500 tons/day \_\_\_\_\_ gallons/day

B. DISPOSAL FACILITY GENERAL INFORMATION

1. Provide brief description of disposal facility design and operations planned under this application:

This application is for a minor modification to the operation permit. The fill sequence plan is modified to allow for filling the leachate pond in Stage I Landfill with solid waste prior to filling in Stage III Landfill.

2. Facility site supervisor: Mike Gore

Title: Superintendent Landfill Telephone: (941) 748-5543  
Division

E-Mail address (if available)

3. Disposal area: Total 312 acres; Used 127 acres; Available 185 acres.

4. Weighing scales used: ☒ Yes [ ] No

5. Security to prevent unauthorized use: ☒ Yes [ ] No

6. Charge for waste received: \_\_\_\_\_ \$/yds<sup>3</sup> 23 \$/ton

7. Surrounding land use, zoning:

[ ] Residential  
☒ Agricultural  
[ ] Commercial

[ ] Industrial  
[ ] None  
[ ] Other Describe: \_\_\_\_\_

8. Types of waste received:

☒ Residential  
☒ Commercial  
[ ] Incinerator/WTE ash  
[ ] Treated biomedical  
☒ Water treatment sludge  
[ ] Air treatment sludge  
☒ Agricultural  
☒ Asbestos  
[ ] Other Describe: \_\_\_\_\_

☒ C & D debris  
[ ] Shredded/cut tires  
☒ Yard trash  
[ ] Septic tank  
[ ] Industrial  
[ ] Industrial sludge  
[ ] Domestic sludge

9. Salvaging permitted: [ ] Yes ☒ No

10. Attendant: ☒ Yes [ ] No Trained operator: [ ] Yes [ ] No

11. Spotters: Yes ☒ No [ ] Number of spotters used: One

12. Site located in: [ ] Floodplain [ ] Wetlands ☒ Other Uplands

13. Property recorded as a Disposal Site in County Land Records: ☒ Yes ☐ No
14. Days of operation: Monday Through Saturday
15. Hours of operation: 8 a.m. to 5p.m.
16. Days Working Face covered: Daily
17. Elevation of water table: Ave 31 Ft. (NGVD 1929)
18. Number of monitoring wells: Twenty-Seven
19. Number of surface monitoring points: Two
20. Gas controls used: ☒ Yes ☐ No Type controls: ☒ Active ☐ Passive  
 Gas flaring: ☒ Yes ☐ No Gas recovery: ☐ Yes ☒ No
21. Landfill unit liner type:
- |   |  |
|---|--|
| <input type="checkbox"/> Natural soils          | <input type="checkbox"/> Double geomembrane      |
| <input type="checkbox"/> Single clay liner      | <input type="checkbox"/> Geomembrane & composite |
| <input type="checkbox"/> Single geomembrane     | <input type="checkbox"/> Double composite        |
| <input type="checkbox"/> Single composite       | <input type="checkbox"/> None                    |
| <input checked="" type="checkbox"/> Slurry wall |  |
| <input type="checkbox"/> Other Describe: _____  |  |
22. Leachate collection method:
- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Collection pipes | <input type="checkbox"/> Sand layer                    |
| <input type="checkbox"/> Geonets                     | <input type="checkbox"/> Gravel layer                  |
| <input type="checkbox"/> Well points                 | <input checked="" type="checkbox"/> Interceptor trench |
| <input type="checkbox"/> Perimeter ditch             | <input type="checkbox"/> None                          |
| <input type="checkbox"/> Other Describe: _____       |  |
23. Leachate storage method:
- ☒ Tanks
- ☐ Surface impoundments The onsite storage pond will be eliminated in January
- ☐ Other Describe: of 2002 when the leachate is pumped to a storage tank  
at the adjacent Southeast Regional Treatment Plant.
24. Leachate treatment method:
- |  |   |
|--|---|
| <input type="checkbox"/> Oxidation       | <input type="checkbox"/> Chemical treatment |
| <input type="checkbox"/> Secondary       | <input type="checkbox"/> Settling           |
| <input type="checkbox"/> Advanced        |   |
| <input checked="" type="checkbox"/> None |   |
| <input type="checkbox"/> Other _____     |   |

25. Leachate disposal method:

- |  |  |
|--|--|
| <input type="checkbox"/> Recirculated          | <input checked="" type="checkbox"/> Pumped to WWTP   |
| <input type="checkbox"/> Transported to WWTP   | <input type="checkbox"/> Discharged to surface water |
| <input type="checkbox"/> Injection well        | <input type="checkbox"/> Percolation ponds           |
| <input type="checkbox"/> Evaporation           |  |
| <input type="checkbox"/> Other <u>SR&amp;P</u> |  |

26. For leachate discharged to surface waters:

Name and Class of receiving water: N/A

27. Storm Water:

Collected: ☒ Yes ☐ No

Type of treatment: Swales and Retention Pond and Filtration System

Name and Class of receiving water: Cypress Strand Creek

28. Environmental Resources Permit (ERP) number or status: \_\_\_\_\_

SWFWMD Permit No.403143.001/CT68530

Operation Phase since 1992

N/A

C. NON-DISPOSAL FACILITY GENERAL INFORMATION

1. Provide brief description of the non-disposal facility design and operations planned under this application:
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
2. Facility site supervisor: \_\_\_\_\_
- Title: \_\_\_\_\_ Telephone: (\_\_\_\_) \_\_\_\_\_
- \_\_\_\_\_
- E-Mail address (if available) \_\_\_\_\_
3. Site area: Facility \_\_\_\_\_ acres; Property \_\_\_\_\_ acres
4. Security to prevent unauthorized use: ☐ Yes ☐ No
5. Site located in: ☐ Floodplain ☐ Wetlands ☐ Other \_\_\_\_\_
6. Days of operation: \_\_\_\_\_
7. Hours of operation: \_\_\_\_\_
8. Number of operating staff: \_\_\_\_\_
9. Expected useful life: \_\_\_\_\_ Years
10. Weighing scales used: ☐ Yes ☐ No
11. Normal processing rate: \_\_\_\_\_ yd<sup>3</sup>/day \_\_\_\_\_ tons/day \_\_\_\_\_ gal/day
12. Maximum processing rate: \_\_\_\_\_ yd<sup>3</sup>/day \_\_\_\_\_ tons/day \_\_\_\_\_ gal/day
13. Charge for waste received: \_\_\_\_\_
14. Storm Water Collected: ☐ Yes ☐ No
- Type of treatment: \_\_\_\_\_
- Name and Class of receiving water: \_\_\_\_\_
15. Environmental Resources Permit (ERP) number or status: \_\_\_\_\_
- \_\_\_\_\_
16. Final residue produced:
- \_\_\_\_\_ % of normal processing rate \_\_\_\_\_ % of maximum processing rate
- \_\_\_\_\_ Tons/day \_\_\_\_\_ Tons/day
- Disposed of at: \_\_\_\_\_
- Facility name: \_\_\_\_\_ County: \_\_\_\_\_

N/A

17. Estimated operating costs: \$ \_\_\_\_\_  
Total cost/ton: \$ \_\_\_\_\_ Net cost/ton: \$ \_\_\_\_\_
18. Provide a site plan, at a scale not greater than 200 feet to the inch, which shows the facility location and identifies the proposed waste and final residue storage areas, total acreage of the site, and any other features which are relevant to the prohibitions or location restrictions in Rule 62-701.300, FAC, such as water bodies or wetlands on or within 200 feet of the site, and potable water wells on or within 500 feet of the site.
19. Provide a description of how the waste and final residue will be managed to not be expected to cause violations of the Department's ground water, surface water or air standards or criteria
20. Provide an estimate of the maximum amount of waste and final residue that will be store on-site.
21. Provide a detailed description of the technology use at the facility and the functions of all processing equipment that will be utilized. The descriptions shall explain the flow of waste and residue through all the proposed unit operations and shall include: (1) regular facility operations as they are expected to occur; (2) procedures for start up operations, and scheduled and unscheduled shut down operations; (3) potential safety hazards and control methods, including fire detection and control; (4) a description of any expected air emissions and wastewater discharges from the facility which may be potential pollution sources; (5) a description and usage rate of any chemical or biological additives that will be used in the process; and (6) process flow diagrams for the facility operations.
22. Provide a description of the loading, unloading and processing areas.
23. Provide a description of the leachate control system that will be used to prevent discharge of leachate to the environment and mixing of leachate with stormwater. Note: Ground water monitoring may be required for the facility depending on the method of leachate control used.
24. Provide an operation plan for the facility which includes: (1) a description of general facility operations, the number of personnel responsible for the operations including their respective job descriptions, and the types of equipment that will be used at the facility; (2) procedures to ensure any unauthorized wastes received at the site will be properly managed; (3) a contingency plan to cover operation interruptions and emergencies such as fires, explosions, or natural disasters; (4) procedures to ensure operational records needed for the facility will be adequately prepared and maintained; and (5) procedures to ensure that the wastes and final residue will be managed to not be expected to cause pollution.
25. Provide a closure plan that describes the procedures that will be implemented when the facility closes including: (1) estimated time to complete closure; (2) procedures for removing and properly managing or disposing of all wastes and final residues; (3) notification of the Department upon ceasing operations and completion of final closure.

D. PROHIBITIONS (62-701.300, FAC)

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
—	—	—	<u>X</u>	1. Provide documentation that each of the siting criteria will be satisfied for the facility; (62-701.300(2), FAC)
—	—	—	<u>X</u>	2. If the facility qualifies for any of the exemptions contained in Rules 62-701.300(12) through (16), FAC, then document this qualification(s).
—	—	—	<u>X</u>	3. Provide documentation that the facility will be in compliance with the burning restrictions; (62-701.300(3), FAC)
—	—	—	<u>X</u>	4. Provide documentation that the facility will be in compliance with the hazardous waste restrictions; (62-701.300(4), FAC)
—	—	—	<u>X</u>	5. Provide documentation that the facility will be in compliance with the PCB disposal restrictions; (62-701.300(5), FAC)
—	—	—	<u>X</u>	6. Provide documentation that the facility will be in compliance with the biomedical waste restrictions; (62-701.300(6), FAC)
—	—	—	<u>X</u>	7. Provide documentation that the facility will be in compliance with the Class I surface water restrictions; (62-701.300(7), FAC)
—	—	—	<u>X</u>	8. Provide documentation that the facility will be in compliance with the special waste for landfills restrictions; (62-701.300(8), FAC)
—	—	—	<u>X</u>	9. Provide documentation that the facility will be in compliance with the special waste for waste-to-energy facilities restrictions; (62-701.300(9), FAC)
—	—	—	<u>X</u>	10. Provide documentation that the facility will be in compliance with the liquid restrictions; (62-701.300(10), FAC)
—	—	—	<u>X</u>	11. Provide documentation that the facility will be in compliance with the used oil restrictions; (62-701.300(11), FAC)

E. SOLID WASTE MANAGEMENT FACILITY PERMIT REQUIREMENTS, GENERAL (62-701.320, FAC)

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
<u>X</u>	<u>Section 1</u>	___	___	1. Four copies, at minimum, of the completed application form, all supporting data and reports; (62-701.320(5)(a), FAC)
<u>X</u>	<u>Section 1-pg.40</u>	___	___	2. Engineering and/or professional certification (signature, date and seal) provided on the applications and all engineering plans, reports and supporting information for the application; (62-701.320(6), FAC)
<u>X</u>	<u>First Page</u>	___	___	3. A letter of transmittal to the Department; (62-701.320(7)(a), FAC)
<u>X</u>	<u>Section 1-p.40</u>	___	___	4. A completed application form dated and signed by the applicant; (62-701.320(7)(b), FAC)
<u>X</u>	<u>Enclosed in envelope</u>	___	___	5. Permit fee specified in Rule 62-701.315, FAC in check or money order, payable to the Department; (62-701.320(7)(c), FAC)
<u>X</u>	<u>Section 2</u>	___	___	6. An engineering report addressing the requirements of this rule and with the following format: a cover sheet, text printed on 8 1/2 inch by 11 inch consecutively numbered pages, a table of contents or index, the body of the report and all appendices including an operation plan, contingency plan, illustrative charts and graphs, records or logs of tests and investigations, engineering calculations; (62-701.320(7)(d), FAC)
<u>X</u>	<u>Section 2</u>	___	___	7. Operation Plan and Closure Plan; (62-701.320(7)(e)1, FAC)
___	___	<u>X</u>	___	8. Contingency Plan; (62-701.320(7)(e)2, FAC)
___	___	___	___	9. Plans or drawings for the solid waste management facilities in appropriate format (including sheet size restrictions, cover sheet, legends, north arrow, horizontal and vertical scales, elevations referenced to NGVD 1929) showing; (62-702.320(7)(f), FAC)
___	___	<u>X</u>	___	a. A regional map or plan with the project location;
___	___	<u>X</u>	___	b. A vicinity map or aerial photograph no more than 1 year old;
___	___	<u>X</u>	___	c. A site plan showing all property boundaries certified by a registered Florida land surveyor;



<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>
----------	-----------------	------------	------------

PART E CONTINUED

- |   |   |          |   |  |
|---|---|----------|---|--|
| — | — | <u>X</u> | — | d. Other necessary details to support the engineering report.  |
| — | — | <u>X</u> | — | 10. Documentation that the applicant either owns the property or has legal authority from the property owner to use the site; (62-701.320(7)(g), FAC)  |
| — | — | <u>X</u> | — | 11. For facilities owned or operated by a county, provide a description of how, if any, the facilities covered in this application will contribute to the county's achievement of the waste reduction and recycling goals contained in Section 403.706, FS; (62-701.320(7)(h), FAC)              |
| — | — | <u>X</u> | — | 12. Provide a history and description of any enforcement actions taken by the Department against the applicant for violations of applicable statutes, rules, orders or permit conditions relating to the operation of any solid waste management facility in this state; (62-701.320(7)(i), FAC) |
| — | — | <u>X</u> | — | 13. Proof of publication in a newspaper of general circulation of notice of application for a permit to construct or substantially modify a solid waste management facility; (62-702.320(8), FAC)  |
| — | — | <u>X</u> | — | 14. Provide a description of how the requirements for airport safety will be achieved including proof of required notices if applicable. If exempt, explain how the exemption applies; (62-701.320(13), FAC)   |
| — | — | <u>X</u> | — | 15. Explain how the operator training requirements will be satisfied for the facility; (62-701.320(15), FAC)   |

F. LANDFILL PERMIT REQUIREMENTS (62-701.330, FAC)

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
—	—	<u>X</u>	—	1. Vicinity map or aerial photograph no more than 1 year old and of appropriate scale showing land use and local zoning within one mile of the landfill and of sufficient scale to show all homes or other structures, water bodies, and roads other significant features of the vicinity. All significant features shall be labeled; (62-701.330(3)(a), FAC)
—	—	<u>X</u>	—	2. Vicinity map or aerial photograph no more than 1 year old showing all airports that are located within five miles of the proposed landfill; (62-701.330(3)(b), FAC)
—	—	<u>X</u>	—	3. Plot plan with a scale not greater than 200 feet to the inch showing; (62-701.330(3)(c), FAC)
—	—	<u>X</u>	—	a. Dimensions;
—	—	<u>X</u>	—	b. Locations of proposed and existing water quality monitoring wells;
—	—	<u>X</u>	—	c. Locations of soil borings;
—	—	<u>X</u>	—	d. Proposed plan of trenching or disposal areas;
—	—	<u>X</u>	—	e. Cross sections showing original elevations and proposed final contours which shall be included either on the plot plan or on separate sheets;
—	—	<u>X</u>	—	f. Any previously filled waste disposal areas;
—	—	<u>X</u>	—	g. Fencing or other measures to restrict access.
—	—			4. Topographic maps with a scale not greater than 200 feet to the inch with 5-foot contour intervals showing; (62-701.330(3)(d), FAC):
—	—	<u>X</u>	—	a. Proposed fill areas;
—	—	<u>X</u>	—	b. Borrow areas;
—	—	<u>X</u>	—	c. Access roads;
—	—	<u>X</u>	—	d. Grades required for proper drainage;
—	—	<u>X</u>	—	e. Cross sections of lifts;

S      LOCATION      N/A    N/C

PART F CONTINUED

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

X    \_\_\_\_\_  
X    \_\_\_\_\_  
X    \_\_\_\_\_

- f. Special drainage devices if necessary;
- g. Fencing;
- h. Equipment facilities.

5. A report on the landfill describing the following;  
(62-701.330(3)(e), FAC)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

X    \_\_\_\_\_  
X    \_\_\_\_\_  
X    \_\_\_\_\_

- a. The current and projected population and area to be served by the proposed site;
- b. The anticipated type, annual quantity, and source of solid waste, expressed in tons;
- c. The anticipated facility life;
- d. The source and type of cover material used for the landfill.

X    Section 2    \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

X    \_\_\_\_\_  
X    \_\_\_\_\_  
X    \_\_\_\_\_

6. Provide evidence that an approved laboratory shall conduct water quality monitoring for the facility in accordance with Chapter 62-160, FAC;  
(62-701.330(3)(h), FAC)
7. Provide a statement of how the applicant will demonstrate financial responsibility for the closing and long-term care of the landfill;  
(62-701.330(3)(i), FAC)

G. GENERAL CRITERIA FOR LANDFILLS (62-701.340, FAC)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

X    \_\_\_\_\_  
X    \_\_\_\_\_  
X    \_\_\_\_\_

1. Describe (and show on a Federal Insurance Administration flood map, if available) how the landfill or solid waste disposal unit shall not be located in the 100-year floodplain where it will restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain unless compensating storage is provided, or result in a washout of solid waste; (62-701.340(4)(b), FAC)
2. Describe how the minimum horizontal separation between waste deposits in the landfill and the landfill property boundary shall be 100 feet, measured from the toe of the proposed final cover slope;  
(62-701.340(4)(c), FAC)
3. Describe what methods shall be taken to screen the landfill from public view where such screening can practically be provided; (62-701.340(4)(d), FAC)

H. LANDFILL CONSTRUCTION REQUIREMENTS (62-701.400, FAC)

S      LOCATION      N/A    N/C

X    Section 2                

1. Describe how the landfill shall be designed so that solid waste disposal units will be constructed and closed at planned intervals throughout the design period of the landfill; (62-701.400(2), FAC)

2. Landfill liner requirements; (62-701.400(3), FAC)

a. General construction requirements; (62-701.400(3)(a), FAC):

                X        

(1) Provide test information and documentation to ensure the liner will be constructed of materials that have appropriate physical, chemical, and mechanical properties to prevent failure;

                X        

(2) Document foundation is adequate to prevent liner failure;

                X        

(3) Constructed so bottom liner will not be adversely impacted by fluctuations of the ground water;

                X        

(4) Designed to resist hydrostatic uplift if bottom liner located below seasonal high ground water table;

                X        

(5) Installed to cover all surrounding earth which could come into contact with the waste or leachate.

b. Composite liners; (62-701.400(3)(b), FAC)

                X        

(1) Upper geomembrane thickness and properties;

                X        

(2) Design leachate head for primary LCRS including leachate recirculation if appropriate;

                X        

(3) Design thickness in accordance with Table A and number of lifts planned for lower soil component.

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>
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—	—	X	—
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—	—	X	—
---	---	---	---

—	—	X	—
---	---	---	---

—	—	X	—
---	---	---	---

# PART H CONTINUED

c. Double liners; (62-701.400(3)(c), FAC)

- (1) Upper and lower geomembrane thicknesses and properties;
- (2) Design leachate head for primary LCRS to limit the head to one foot above the liner;
- (3) Lower geomembrane sub-base design;
- (4) Leak detection and secondary leachate collection system minimum design criteria ( $k > 10$  cm/sec, head on lower liner  $< 1$  inch, head not to exceed thickness of drainage layer);

d. Standards for geosynthetic components; (62-701.400(3)(d), FAC)

—	—	X	—
---	---	---	---

—	—	X	—
---	---	---	---

—	—	X	—
---	---	---	---

—	—	X	—
---	---	---	---

—	—	X	—
---	---	---	---

—	—	X	—
---	---	---	---

—	—	X	—
---	---	---	---

—	—	X	—
---	---	---	---

—	—	X	—
---	---	---	---

- (1) Field seam test methods to ensure all field seams are at least 90 percent of the yield strength for the lining material;
- (2) Geomembranes to be used shall pass a continuous spark test by the manufacturer;
- (3) Design of 24-inch-thick protective layer above upper geomembrane liner;
- (4) Describe operational plans to protect the liner and leachate collection system when placing the first layer of waste above 24-inch-thick protective layer.
- (5) HDPE geomembranes, if used, meet the specifications in GRI GM13;
- (6) PVC geomembranes, if used, meet the specifications in PGI 1197;
- (7) Interface shear strength testing results of the actual components which will be used in the liner system;
- (8) Transmissivity testing results of geonets if they are used in the liner system;
- (9) Hydraulic conductivity testing results of geosynthetic clay liners if they are used in the liner system;

S      LOCATION      N/A    N/C

PART H CONTINUED

e.      Geosynthetic specification requirements;  
(62-701.400(3)(e), FAC)

—      —      X      —

- (1)      Definition and qualifications of the designer, manufacturer, installer, QA consultant and laboratory, and QA program;

—      —      X      —

- (2)      Material specifications for geomembranes, geocomposites, geotextiles, geogrids, and geonets;

—      —      X      —

- (3)      Manufacturing and fabrication specifications including geomembrane raw material and roll QA, fabrication personnel qualifications, seaming equipment and procedures, overlaps, trial seams, destructive and nondestructive seam testing, seam testing location, frequency, procedure, sample size and geomembrane repairs;

—      —      X      —

- (4)      Geomembrane installation specifications including earthwork, conformance testing, geomembrane placement, installation personnel qualifications, field seaming and testing, overlapping and repairs, materials in contact with geomembrane and procedures for lining system acceptance;

—      —      X      —

- (5)      Geotextile and geogrid specifications including handling and placement, conformance testing, seams and overlaps, repair, and placement of soil materials and any overlying materials;

—      —      X      —

- (6)      Geonet and geocomposite specifications including handling and placement, conformance testing, stacking and joining, repair, and placement of soil materials and any overlying materials;

—      —      X      —

- (7)      Geosynthetic clay liner specifications including handling and placement, conformance testing, seams and overlaps, repair, and placement of soil material and any overlying materials;

f.      Standards for soil components  
(62-710.400(3)(f), FAC):

—      —      X      —

- (1)      Description of construction procedures including overexcavation and backfilling to preclude structural inconsistencies and procedures for placing and compacting soil component in layers;

S	LOCATION	N/A	N/C
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—	—	X	—
—	—	X	—
—	—	X	—
—	—	X	—
—	—	X	—
—	—	X	—
—	—	X	—
—	—	X	—
—	—	X	—

# PART H CONTINUED

- (2) Demonstration of compatibility of the soil component with actual or simulated leachate in accordance with EPA Test Method 9100 or an equivalent test method;
- (3) Procedures for testing in-situ soils to demonstrate they meet the specifications for soil liners;
- (4) Specifications for soil component of liner including at a minimum:
  - (a) Allowable particle size distribution, Atterberg limits, shrinkage limit;
  - (b) Placement moisture and dry density criteria;
  - (c) Maximum laboratory-determined saturated hydraulic conductivity using simulated leachate;
  - (d) Minimum thickness of soil liner;
  - (e) Lift thickness;
  - (f) Surface preparation (scarification);
  - (g) Type and percentage of clay mineral within the soil component;
- (5) Procedures for constructing and using a field test section to document the desired saturated hydraulic conductivity and thickness can be achieved in the field.

## 3. Leachate collection and removal system (LCRS); (62-701.400(4), FAC)

### a. The primary and secondary LCRS requirements; (62-701.400(4)(a), FAC)

—	—	X	—
—	—	X	—
—	—	X	—
—	—	X	—

- (1) Constructed of materials chemically resistant to the waste and leachate;
- (2) Have sufficient mechanical properties to prevent collapse under pressure;
- (3) Have granular material or synthetic geotextile to prevent clogging;
- (4) Have method for testing and cleaning clogged pipes or contingent designs for rerouting leachate around failed areas;

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>
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—	—	<u>X</u>	—
---	---	----------	---

—	—	<u>X</u>	—
---	---	----------	---

—	—	<u>X</u>	—
---	---	----------	---

—	—	<u>X</u>	—
---	---	----------	---

# PART H CONTINUED

b. Primary LCRS requirements;  
(62-701.400(4)(b), FAC)

- (1) Bottom 12 inches having hydraulic conductivity  $\geq 1 \times 10^{-3}$  cm/sec;
- (2) Total thickness of 24 inches of material chemically resistant to the waste and leachate;
- (3) Bottom slope design to accommodate for predicted settlement;
- (4) Demonstration that synthetic drainage material, if used, is equivalent or better than granular material in chemical compatibility, flow under load and protection of geomembrane liner.

4. Leachate recirculation; (62-701.400(5), FAC)

—	—	<u>X</u>	—
---	---	----------	---

—	—	<u>X</u>	—
---	---	----------	---

—	—	<u>X</u>	—
---	---	----------	---

—	—	<u>X</u>	—
---	---	----------	---

—	—	<u>X</u>	—
---	---	----------	---

—	—	<u>X</u>	—
---	---	----------	---

- a. Describe general procedures for recirculating leachate;
- b. Describe procedures for controlling leachate runoff and minimizing mixing of leachate runoff with storm water;
- c. Describe procedures for preventing perched water conditions and gas buildup;
- d. Describe alternate methods for leachate management when it cannot be recirculated due to weather or runoff conditions, surface seeps, wind-blown spray, or elevated levels of leachate head on the liner;
- e. Describe methods of gas management in accordance with Rule 62-701.530, FAC;
- f. If leachate irrigation is proposed, describe treatment methods and standards for leachate treatment prior to irrigation over final cover and provide documentation that irrigation does not contribute significantly to leachate generation.



S      LOCATION      N/A    N/C

PART H CONTINUED

5. Leachate storage tanks and leachate surface impoundments; (62-701.400(6), FAC)

a. Surface impoundment requirements; (62-701.400(6)(b), FAC)

—	—	<u>X</u>	—
—	—	<u>X</u>	—
—	—	<u>X</u>	—
—	—	<u>X</u>	—
—	—	<u>X</u>	—
—	—	<u>X</u>	—
—	—	<u>X</u>	—
—	—	<u>X</u>	—
—	—	<u>X</u>	—

- (1) Documentation that the design of the bottom liner will not be adversely impacted by fluctuations of the ground water;
- (2) Designed in segments to allow for inspection and repair as needed without interruption of service;
- (3) General design requirements;
  - (a) Double liner system consisting of an upper and lower 60-mil minimum thickness geomembrane;
  - (b) Leak detection and collection system with hydraulic conductivity  $\geq 1$  cm/sec;
  - (c) Lower geomembrane placed on subbase  $\geq 6$  inches thick with  $k \leq 1 \times 10^{-5}$  cm/sec or on an approved geosynthetic clay liner with  $k \leq 1 \times 10^{-7}$  cm/sec;
  - (d) Design calculation to predict potential leakage through the upper liner;
  - (e) Daily inspection requirements and notification and corrective action requirements if leakage rates exceed that predicted by design calculations;
- (4) Description of procedures to prevent uplift, if applicable;
- (5) Design calculations to demonstrate minimum two feet of freeboard will be maintained;
- (6) Procedures for controlling disease vectors and off-site odors.

PART H CONTINUED

b. Above-ground leachate storage tanks;  
(62-701.400 (6) (c) ,FAC)

- (1) Describe tank materials of construction and ensure foundation is sufficient to support tank;
- (2) Describe procedures for cathodic protection if needed for the tank;
- (3) Describe exterior painting and interior lining of the tank to protect it from the weather and the leachate stored;
- (4) Describe secondary containment design to ensure adequate capacity will be provided and compatibility of materials of construction;
- (5) Describe design to remove and dispose of stormwater from the secondary containment system;
- (6) Describe an overfill prevention system such as level sensors, gauges, alarms and shutoff controls to prevent overfilling;
- (7) Inspections, corrective action and reporting requirements;
  - (a) Overfill prevention system weekly;
  - (b) Exposed tank exteriors weekly;
  - (c) Tank interiors when tank is drained or at least every three years;
  - (d) Procedures for immediate corrective action if failures detected;
  - (e) Inspection reports available for department review.

c. Underground leachate storage tanks;  
(62-701.400 (6) (d) ,FAC)

- (1) Describe materials of construction;
- (2) A double-walled tank design system to be used with the following requirements;

S      LOCATION      N/A    N/C

PART H CONTINUED

—	—	<u>X</u>	—
—	—	<u>X</u>	—
—	—	<u>X</u>	—
—	—	<u>X</u>	—
—	—	<u>X</u>	—
—	—	<u>X</u>	—
—	—	<u>X</u>	—
—	—	<u>X</u>	—
—	—	<u>X</u>	—
—	—	<u>X</u>	—
—	—	<u>X</u>	—
—	—	<u>X</u>	—
—	—	<u>X</u>	—
—	—	<u>X</u>	—
—	—	<u>X</u>	—

- (a) Interstitial space monitoring at least weekly;
- (b) Corrosion protection provided for primary tank interior and external surface of outer shell;
- (c) Interior tank coatings compatible with stored leachate;
- (d) Cathodic protection inspected weekly and repaired as needed;
- (3) Describe an overfill prevention system such as level sensors, gauges, alarms and shutoff controls to prevent overfilling and provide for weekly inspections;
- (4) Inspection reports available for department review.

d. Schedule provided for routine maintenance of LCRS; (62-701.400 (6) (e), FAC)

6. Liner systems construction quality assurance (CQA); (62-701.400 (7), FAC)

a. Provide CQA Plan including:

- (1) Specifications and construction requirements for liner system;
- (2) Detailed description of quality control testing procedures and frequencies;
- (3) Identification of supervising professional engineer;
- (4) Identify responsibility and authority of all appropriate organizations and key personnel involved in the construction project;
- (5) State qualifications of CQA professional engineer and support personnel;
- (6) Description of CQA reporting forms and documents;

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>
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PART H CONTINUED

- |   |   |          |   |   |
|---|---|----------|---|---|
| — | — | <u>X</u> | — | b. An independent laboratory experienced in the testing of geosynthetics to perform required testing; |
|---|---|----------|---|---|

7. Soil Liner CQA (62-701.400(8)FAC)

- |   |   |          |   |   |
|---|---|----------|---|---|
| — | — | <u>X</u> | — | a. Documentation that an adequate borrow source has been located with test results or description of the field exploration and laboratory testing program to define a suitable borrow source; |
| — | — | <u>X</u> | — | b. Description of field test section construction and test methods to be implemented prior to liner installation;   |
| — | — | <u>X</u> | — | c. Description of field test methods including rejection criteria and corrective measures to insure proper liner installation.  |

8. Surface water management systems; (62-701.400(9),FAC)

- |   |   |          |   |  |
|---|---|----------|---|--|
| — | — | <u>X</u> | — | a. Provide a copy of a Department permit for stormwater control or documentation that no such permit is required;                |
| — | — | <u>X</u> | — | b. Design of surface water management system to isolate surface water from waste filled areas and to control stormwater run-off; |
| — | — | <u>X</u> | — | c. Details of stormwater control design including retention ponds, detention ponds, and drainage ways;                           |

9. Gas control systems; (62-701.400(10),FAC)

- |   |   |          |   |  |
|---|---|----------|---|--|
| — | — | <u>X</u> | — | a. Provide documentation that if the landfill is receiving degradable wastes, it will have a gas control system complying with the requirements of Rule 62-701.530, FAC; |
|---|---|----------|---|--|

10. For landfills designed in ground water, provide documentation that the landfill will provide a degree of protection equivalent to landfills designed with bottom liners not in contact with ground water; (62-701.400(11),FAC)

I. HYDROGEOLOGICAL INVESTIGATION REQUIREMENTS (62-701.410(1), FAC)

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
				1. Submit a hydrogeological investigation and site report including at least the following information:
—	—	<u>X</u>	—	a. Regional and site specific geology and hydrogeology;
—	—	<u>X</u>	—	b. Direction and rate of ground water and surface water flow including seasonal variations;
—	—	<u>X</u>	—	c. Background quality of ground water and surface water;
—	—	<u>X</u>	—	d. Any on-site hydraulic connections between aquifers;
—	—	<u>X</u>	—	e. Site stratigraphy and aquifer characteristics for confining layers, semi-confining layers, and all aquifers below the landfill site that may be affected by the landfill;
—	—	<u>X</u>	—	f. Description of topography, soil types and surface water drainage systems;
—	—	<u>X</u>	—	g. Inventory of all public and private water wells within a one-mile radius of the landfill including, where available, well top of casing and bottom elevations, name of owner, age and usage of each well, stratigraphic unit screened, well construction technique and static water level;
—	—	<u>X</u>	—	h. Identify and locate any existing contaminated areas on the site;
—	—	<u>X</u>	—	i. Include a map showing the locations of all potable wells within 500 feet, and all community water supply wells within 1000 feet, of the waste storage and disposal areas;
—	—	<u>X</u>	—	2. Report signed, sealed and dated by PE or PG.

J. GEOTECHNICAL INVESTIGATION REQUIREMENTS (62-701.410(2), FAC)

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
				1. Submit a geotechnical site investigation report defining the engineering properties of the site including at least the following:
—	—	<u>X</u>	—	a. Description of subsurface conditions including soil stratigraphy and ground water table conditions;
—	—	<u>X</u>	—	b. Investigate for the presence of muck, previously filled areas, soft ground, lineaments and sink holes;
—	—	<u>X</u>	—	c. Estimates of average and maximum high water table across the site;
—	—	<u>X</u>	—	d. Foundation analysis including:
—	—	<u>X</u>	—	(1) Foundation bearing capacity analysis;
—	—	<u>X</u>	—	(2) Total and differential subgrade settlement analysis;
—	—	<u>X</u>	—	(3) Slope stability analysis;
—	—	<u>X</u>	—	e. Description of methods used in the investigation and includes soil boring logs, laboratory results, analytical calculations, cross sections, interpretations and conclusions;
—	—	<u>X</u>	—	f. An evaluation of fault areas, seismic impact zones, and unstable areas as described in 40 CFR 258.13, 40 CFR 258.14 and 40 CFR 258.15.
—	—	<u>X</u>	—	2. Report signed, sealed and dated by PE or PG.

K. VERTICAL EXPANSION OF LANDFILLS (62-701.430,FAC)

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
—	—	<u>X</u>	—	1. Describe how the vertical expansion shall not cause or contribute to leachate leakage from the existing landfill or adversely affect the closure design of the existing landfill;
—	—	<u>X</u>	—	2. Describe how the vertical expansion over unlined landfills will meet the requirements of Rule 62-701.400, FAC with the exceptions of Rule 62-701.430(1)(c), FAC;
—	—	<u>X</u>	—	3. Provide foundation and settlement analysis for the vertical expansion;
—	—	<u>X</u>	—	4. Provide total settlement calculations demonstrating that the final elevations of the lining system, that gravity drainage, and that no other component of the design will be adversely affected;
—	—	<u>X</u>	—	5. Minimum stability safety factor of 1.5 for the lining system component interface stability and deep stability;
—	—	<u>X</u>	—	6. Provide documentation to show the surface water management system will not be adversely affected by the vertical expansion;
—	—	<u>X</u>	—	7. Provide gas control designs to prevent accumulation of gas under the new liner for the vertical expansion.

L. LANDFILL OPERATION REQUIREMENTS (62-701.500, FAC)

- |       |       |          |       |    |  |
|-------|-------|----------|-------|----|--|
| _____ | _____ | <u>X</u> | _____ | 1. | Provide documentation that landfill will have at least one trained operator during operation and at least one trained spotter at each working face; (62-701.500(1), FAC)   |
| _____ | _____ |          |       | 2. | Provide a landfill operation plan including procedures for: (62-701.500(2), FAC)   |
| _____ | _____ | <u>X</u> | _____ | a. | Designating responsible operating and maintenance personnel;   |
| _____ | _____ | <u>X</u> | _____ | b. | Contingency operations for emergencies;  |
| _____ | _____ | <u>X</u> | _____ | c. | Controlling types of waste received at the landfill;   |
| _____ | _____ | <u>X</u> | _____ | d. | Weighing incoming waste;   |
| _____ | _____ | <u>X</u> | _____ | e. | Vehicle traffic control and unloading;   |
| _____ | _____ | <u>X</u> | _____ | f. | Method and sequence of filling waste;  |
| _____ | _____ | <u>X</u> | _____ | g. | Waste compaction and application of cover;   |
| _____ | _____ | <u>X</u> | _____ | h. | Operations of gas, leachate, and stormwater controls;  |
| _____ | _____ | <u>X</u> | _____ | i. | Water quality monitoring.  |
| _____ | _____ | <u>X</u> | _____ | j. | Maintaining and cleaning the leachate collection system;   |
| _____ | _____ | <u>X</u> | _____ | 3. | Provide a description of the landfill operation record to be used at the landfill; details as to location of where various operational records will be kept (i.e. FDEP permit, engineering drawings, water quality records, etc.) (62-701.500(3), FAC) |
| _____ | _____ | <u>X</u> | _____ | 4. | Describe the waste records that will be compiled monthly and provided to the Department quarterly; (62-701.500(4), FAC)  |
| _____ | _____ | <u>X</u> | _____ | 5. | Describe methods of access control; (62-701.500(5), FAC)   |
| _____ | _____ | <u>X</u> | _____ | 6. | Describe load checking program to be implemented at the landfill to discourage disposal of unauthorized wastes at the landfill; (62-701.500(6), FAC)   |
| _____ | _____ |          |       | 7. | Describe procedures for spreading and compacting waste at the landfill that include: (62-701.500(7), FAC)  |
| _____ | _____ | <u>X</u> | _____ | a. | Waste layer thickness and compaction frequencies;  |





S      LOCATION      N/A    N/C

PART L CONTINUED

- |   |   |          |   |     |  |
|---|---|----------|---|-----|--|
| — | — | <u>X</u> | — | f.  | Procedures for recording quantities of leachate generated in gal/day and including this in the operating record;   |
| — | — | <u>X</u> | — | g.  | Procedures for comparing precipitation experienced at the landfill with leachate generation rates and including this information in the operating record;                      |
| — | — | <u>X</u> | — | h.  | Procedures for water pressure cleaning or video inspecting leachate collection systems.  |
| — | — | <u>X</u> | — | 9.  | Describe how the landfill receiving degradable wastes shall implement a gas management system meeting the requirements of Rule 62-701.530, FAC;<br>(62-701.500(9), FAC)        |
| — | — | <u>X</u> | — | 10. | Describe procedures for operating and maintaining the landfill stormwater management system to comply with the requirements of Rule 62-701.400(9);<br>(62-701.500(10), FAC)    |
| — | — |          |   | 11. | Equipment and operation feature requirements;<br>(62-701.500(11), FAC)   |
| — | — | <u>X</u> | — | a.  | Sufficient equipment for excavating, spreading, compacting and covering waste;   |
| — | — | <u>X</u> | — | b.  | Reserve equipment or arrangements to obtain additional equipment within 24 hours of breakdown;   |
| — | — | <u>X</u> | — | c.  | Communications equipment;  |
| — | — | <u>X</u> | — | d.  | Dust control methods;  |
| — | — | <u>X</u> | — | e.  | Fire protection capabilities and procedures for notifying local fire department authorities in emergencies;  |
| — | — | <u>X</u> | — | f.  | Litter control devices;  |
| — | — | <u>X</u> | — | g.  | Signs indicating operating authority, traffic flow, hours of operation, disposal restrictions.   |
| — | — | <u>X</u> | — | 12. | Provide a description of all-weather access road, inside perimeter road and other roads necessary for access which shall be provided at the landfill;<br>(62-701.500(12), FAC) |
| — | — |          |   | 13. | Additional record keeping and reporting requirements;<br>(62-701.500(13), FAC)   |

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>
—	—	<u>X</u>	—
—	—	<u>X</u>	—
—	—	<u>X</u>	—
—	—	<u>X</u>	—

PART L CONTINUED

- a. Records used for developing permit applications and supplemental information maintained for the design period of the landfill;
- b. Monitoring information, calibration and maintenance records, copies of reports required by permit maintained for at least 10 years;
- c. Maintain annual estimates of the remaining life of constructed landfills and of other permitted areas not yet constructed and submit this estimate annually to the Department;
- d. Procedures for archiving and retrieving records which are more than five year old.

M. WATER QUALITY AND LEACHATE MONITORING REQUIREMENTS (62-701.510, FAC)

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
—	—	<u>X</u>	—	1. Water quality and leachate monitoring plan shall be submitted describing the proposed ground water, surface water and leachate monitoring systems and shall meet at least the following requirements;
—	—	<u>X</u>	—	a. Based on the information obtained in the hydrogeological investigation and signed, dated and sealed by the PG or PE who prepared it; (62-701.510(2)(a), FAC)
—	—	<u>X</u>	—	b. All sampling and analysis performed in accordance with Chapter 62-160, FAC; (62-701.510(2)(b), FAC)
—	—			c. Ground water monitoring requirements; (62-701.510(3), FAC)
—	—	<u>X</u>	—	(1) Detection wells located downgradient from and within 50 feet of disposal units;
—	—	<u>X</u>	—	(2) Downgradient compliance wells as required;
—	—	<u>X</u>	—	(3) Background wells screened in all aquifers below the landfill that may be affected by the landfill;
—	—	<u>X</u>	—	(4) Location information for each monitoring well;
—	—	<u>X</u>	—	(5) Well spacing no greater than 500 feet apart for downgradient wells and no greater than 1500 feet apart for upgradient wells unless site specific conditions justify alternate well spacings;
—	—	<u>X</u>	—	(6) Well screen locations properly selected;
—	—	<u>X</u>	—	(7) Procedures for properly abandoning monitoring wells;
—	—	<u>X</u>	—	(8) Detailed description of detection sensors if proposed.

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>
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—	—	<u>X</u>	—
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—	—	<u>X</u>	—
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—	—	<u>X</u>	—
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—	—	<u>X</u>	—
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—	—	<u>X</u>	—
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—	—	<u>X</u>	—
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—	—	<u>X</u>	—
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—	—	<u>X</u>	—
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—	—	<u>X</u>	—
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—	—	<u>X</u>	—
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—	—	<u>X</u>	—
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# PART M CONTINUED

d. Surface water monitoring requirements;  
(62-701.510(4), FAC)

(1) Location of and justification for all proposed surface water monitoring points;

(2) Each monitoring location to be marked and its position determined by a registered Florida land surveyor;

e. Leachate sampling locations proposed;  
(62-701.510(5), FAC)

f. Initial and routine sampling frequency and requirements; (62-701.510(6), FAC)

(1) Initial background ground water and surface water sampling and analysis requirements;

(2) Routine leachate sampling and analysis requirements;

(3) Routine monitoring well sampling and analysis requirements;

(4) Routine surface water sampling and analysis requirements.

g. Describe procedures for implementing evaluation monitoring, prevention measures and corrective action as required; (62-701.510(7), FAC)

h. Water quality monitoring report requirements;  
(62-701.510(9), FAC)

(1) Semi-annual report requirements;

(2) Bi-annual report requirements signed, dated and sealed by PG or PE.

N. SPECIAL WASTE HANDLING REQUIREMENTS (62-701.520, FAC)

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
—	—	<u>X</u>	—	1. Describe procedures for managing motor vehicles; (62-701.520(1), FAC)
—	—	<u>X</u>	—	2. Describe procedures for landfilling shredded waste; (62-701.520(2), FAC)
—	—	<u>X</u>	—	3. Describe procedures for asbestos waste disposal; (62-701.520(3), FAC)
—	—	<u>X</u>	—	4. Describe procedures for disposal or management of contaminated soil; (62-701.520(4), FAC)
—	—	<u>X</u>	—	5. Describe procedures for disposal of biological wastes; (62-701.520(5), FAC)

O. GAS MANAGEMENT SYSTEM REQUIREMENTS (62-701.530, FAC)

				1. Provide the design for a gas management systems that will (62-701.530(1), FAC):
—	—	<u>X</u>	—	a. Be designed to prevent concentrations of combustible gases from exceeding 25% the LEL in structures and 100% the LEL at the property boundary;
—	—	<u>X</u>	—	b. Be designed for site-specific conditions;
—	—	<u>X</u>	—	c. Be designed to reduce gas pressure in the interior of the landfill;
—	—	<u>X</u>	—	d. Be designed to not interfere with the liner, leachate control system or final cover.
—	—	<u>X</u>	—	2. Provide documentation that will describe locations, construction details and procedures for monitoring gas at ambient monitoring points and with soil monitoring probes; (62-701.530(2), FAC):
—	—	<u>X</u>	—	3. Provide documentation describing how the gas remediation plan and odor remediation plan will be implemented; (62-701.530(3), FAC):
				4. Landfill gas recovery facilities; (62-701.530(5), FAC):
—	—	<u>X</u>	—	a. Information required in Rules 62-701.320(7) and 62-701.330(3), FAC supplied;
—	—	<u>X</u>	—	b. Information required in Rule 62-701.600(4), FAC supplied where relevant and practical;
—	—	<u>X</u>	—	c. Estimate of current and expected gas generation rates and description of condensate disposal methods provided;
<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	PART O CONTINUED
—	—	<u>X</u>	—	d. Description of procedures for condensate sampling, analyzing and data reporting provided;

\_\_\_\_\_   X   \_\_\_\_\_

e. Closure plan provided describing methods to control gas after recovery facility ceases operation and any other requirements contained in Rule 62-701.400(10), FAC;

\_\_\_\_\_   X   \_\_\_\_\_

f. Performance bond provided to cover closure costs if not already included in other landfill closure costs.

P. LANDFILL FINAL CLOSURE REQUIREMENTS (62-701.600,FAC)

1. Closure schedule requirements; (62-701.600(2),FAC)

\_\_\_\_\_   X   \_\_\_\_\_

a. Documentation that a written notice including a schedule for closure will be provided to the Department at least one year prior to final receipt of wastes;

\_\_\_\_\_   X   \_\_\_\_\_

b. Notice to user requirements within 120 days of final receipt of wastes;

\_\_\_\_\_   X   \_\_\_\_\_

c. Notice to public requirements within 10 days of final receipt of wastes.

2. Closure permit general requirements;  
(62-701.600(3),FAC)

\_\_\_\_\_   X   \_\_\_\_\_

a. Application submitted to Department at least 90 days prior to final receipt of wastes;

b. Closure plan shall include the following:

\_\_\_\_\_   X   \_\_\_\_\_

(1) Closure report;

\_\_\_\_\_   X   \_\_\_\_\_

(2) Closure design plan;

\_\_\_\_\_   X   \_\_\_\_\_

(3) Closure operation plan;

\_\_\_\_\_   X   \_\_\_\_\_

(4) Closure procedures;

\_\_\_\_\_   X   \_\_\_\_\_

(5) Plan for long term care;

\_\_\_\_\_   X   \_\_\_\_\_

(6) A demonstration that proof of financial responsibility for long term care will be provided.

3. Closure report requirements; (62-701.600(4),FAC)

a. General information requirements;

\_\_\_\_\_   X   \_\_\_\_\_

(1) Identification of landfill;





DEP FORM 62-701.900(1)  
Effective 05-27-01

- (2) Schedule for installing final cover after final receipt of waste;
- (3) Description of drought-resistant species to be used in the vegetative cover;
- (4) Top gradient design to maximize runoff and minimize erosion;
- (5) Provisions for cover material to be used for final cover maintenance.

- (1) Protective soil layer design;
- (2) Barrier soil layer design;
- (3) Erosion control vegetation;
- (4) Geomembrane barrier layer design;
- (5) Geosynthetic clay liner design if used;
- (6) Stability analysis of the cover system and the disposed waste.

i. Proposed method of access control;

k. Description of the proposed or existing gas management system which complies with Rule 62-701.530, FAC.

- a. Detailed description of actions which will be taken to close the landfill;
- b. Time schedule for completion of closing and long term care;
- c. Describe proposed method for demonstrating financial responsibility;
- d. Indicate any additional equipment and personnel needed to complete closure.

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>
—	—	<u>X</u>	—
—	—	<u>X</u>	—
—	—	<u>X</u>	—

PART P CONTINUED

- e. Development and implementation of the water quality monitoring plan required in Rule 62-701.510, FAC.
- f. Development and implementation of gas management system required in Rule 62-701.530, FAC.
- 6. Justification for and detailed description of procedures to be followed for temporary closure of the landfill, if desired; (62-701.600(7), FAC)

Q. CLOSURE PROCEDURES (62-701.610, FAC)

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
—	—	<u>X</u>	—	1. Survey monuments; (62-701.610(2), FAC)
—	—	<u>X</u>	—	2. Final survey report; (62-701.610(3), FAC)
—	—	<u>X</u>	—	3. Certification of closure construction completion; (62-701.610(4), FAC)
—	—	<u>X</u>	—	4. Declaration to the public; (62-701.610(5), FAC)
—	—	<u>X</u>	—	5. Official date of closing; (62-701.610(6), FAC)
—	—	<u>X</u>	—	6. Use of closed landfill areas; (62-701.610(7), FAC)
—	—	<u>X</u>	—	7. Relocation of wastes; (62-701.610(8), FAC)

R. LONG TERM CARE REQUIREMENTS (62-701.620, FAC)

—	—	<u>X</u>	—	1. Maintaining the gas collection and monitoring system; (62-701.620(5), FAC)
—	—	<u>X</u>	—	2. Right of property access requirements; (62-701.620(6), FAC)
—	—	<u>X</u>	—	3. Successors of interest requirements; (62-701.620(7), FAC)
—	—	<u>X</u>	—	4. Requirements for replacement of monitoring devices; (62-701.620(9), FAC)
—	—	<u>X</u>	—	5. Completion of long term care signed and sealed by professional engineer (62-701.620(10), FAC).

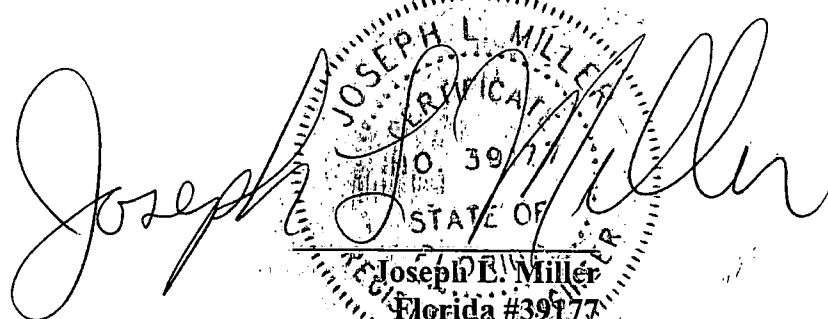
S. FINANCIAL RESPONSIBILITY REQUIREMENTS (62-701.630, FAC)

—	—	<u>X</u>	—	1. Provide cost estimates for closing, long term care, and corrective action costs estimated by a PE for a third party performing the work, on a per unit basis, with the source of estimates indicated; (62-701.630(3)&(7), FAC).
—	—	<u>X</u>	—	2. Describe procedures for providing annual cost adjustments to the Department based on inflation and changes in the closing, long-term care, and corrective action plans; (62-701.630(4)&(8), FAC).
—	—	<u>X</u>	—	3. Describe funding mechanisms for providing proof of financial assurance and include appropriate financial assurance forms; (62-701.630(5), (6), &(9), FAC).



**Section Two**  
**Engineering Report**

**Minor Modification to  
Manatee County Solid Waste  
Management Facility  
Lena Road Facility  
Operations Permit No.: 39884-001-SO**

  
A circular professional seal for Joseph E. Miller, a Professional Engineer in the State of Florida. The seal contains the text: "JOSEPH E. MILLER", "PROFESSIONAL ENGINEER", "STATE OF FLORIDA", "NO. 39177", and "EXPIRATION DATE 09/21/2001". The signature is written over the seal.

September 21, 2001

# ENGINEERING REPORT

## BACKGROUND

This application is for a minor modification to the Operation Permit for the Lena Road Landfill to modify the Fill Sequence Plan. Manatee County has built a storage tank at the adjacent WWTP, which eliminates the need for the leachate storage pond. Leachate can now be pumped directly to the wastewater treatment plant storage tank. A construction application was submitted to FDEP to extend the leachate collection system around the leachate pond, and incorporate the area into the Class I landfill for waste disposal. The Fill Sequence Plan drawings were revised to show placing solid waste in the leachate pond prior to moving to the Stage III landfill area. Another application for a minor modification to the closure permit will be submitted to modify the Stage I Landfill closure plan to incorporate the leachate storage pond. It is anticipated that construction will be completed near the end of December 2001, and filling in the leachate pond will start January 1, 2002.

## CHANGE IN ANTICIPATED FACILITY LIFE

Filling the leachate pond with solid waste will extend the life of the facility from 2023 to 2024 or by an estimated one year.

## LANDFILL CLOSURE INTERVALS

The landfill was designed so that solid waste disposal units can be constructed and closed at planned intervals throughout the design period of the facility. Filling the leachate pond with solid waste will extend the life of the Stage I Landfill by about one year. Partial Closure Number 1 for the Stage I landfill, which closed the east and south side slopes, is complete. Partial Closure Number 2 has been delayed until the leachate pond filling is complete. A permit modification to the landfill closure permit for Partial Closure Number 2 is under preparation. This modification will incorporate the closure of the leachate pond area into Partial Closure Number 2. It is anticipated that construction of Partial Closure Number 2 will occur in 2003.

## REVISION OF THE OPERATION PLAN

The revised Operation Plan is included with this Engineering Report.

## REVISED OF THE STORMWATER/LEACHATE MANAGEMENT PLAN

The revised Stormwater/Leachate Management Plan is included with this Engineering Report.

## SEQUENTIAL FILLING PLAN DRAWINGS

The Sequential Filling Plan drawings were revised and incorporated in Section 3 of this application.

**OPERATION PLAN**

**LENA ROAD LANDFILL**

**MANATEE COUNTY**

**Prepared by**

**Manatee County Public Works Department  
Solid Waste Section  
3333 Lena Road  
Bradenton, FL 34202**

**Revised By**

**HDR Engineering, Inc.**

**Revised  
April 7, 1999**

**Revision 2**

**By**

**PBS&J**

**482 South Keller Road  
Orlando, FL 32810  
407-647-7275  
September 21, 2001**



directs those persons requiring additional assistance. Haulers are responsible for unloading their own vehicles. Wastes requiring special handling are coordinated with and unloaded under the direct supervision of Landfill personnel. Spotters move about the working face as needed to properly direct the positioning of vehicles for unloading and to observe waste as it is unloaded.

Any suspicious loads or vehicles are stopped by the scale staff for inspection. The County also has a random load inspection program in place as discussed in Section K.6. Spot checking also occurs at the active face. If the spotter detects a load of unauthorized waste while the hauler is still present, the waste is reloaded into the vehicle and is removed from the site. If the hauler cannot be identified, it is the County's responsibility to remove the waste from the landfill for proper disposal. Procedures for storage and disposal of unauthorized waste can be found in Section K.6.

f. Method and Sequence of Filling Waste

A seven-year fill sequence plan has been approved by the Department. This plan was submitted to the Department on January 29, 1997. The Fill Sequence Plan is incorporated into this application by reference. Insert Revision 2 - Page K-9A

g. Waste Compaction and Application of Cover

Waste is typically dumped at the toe of the active face and is spread over the face in a maximum two-foot lift with dozers. Upon completion of waste spreading, compactors typically roll the waste with three to five passes prior to spreading of additional waste. To achieve the optimum compaction, while minimizing initial cover usage, the active face slopes are maintained at approximately 5:1 (H:V). The flatter the slope, the greater the compaction rate and greater amount of soil to cover the waste. The 5:1 face slope provides a good compromise between compaction and soil usage. The compaction with the given equipment and working conditions is approximately 1,200 lb/cy. An analysis of the historical annual aerial topographic mapping and scale records indicates the actual compaction rate to be 1,491 lb/cy. Table K-2 shows the measured compaction rates from 1991 through 1996.

Cover material for daily operations of the landfill is obtained from the designated stockpile area. The landfill currently has sufficient cover material available for one year. To minimize soil usage, Manatee County has purchased mechanically installed tarp type alternate daily cover system (ADC). Tarps are laid across the working face and taken up the next day. Tarps are loaded to minimize the effects of wind uplift. If waste is not deposited on the working face within 24 hours, the soil is used as the cover material. The areas of the working face not covered by the tarps are covered with soil.

h. Operations of Gas, Leachate, and Storm Water Controls

See the Stormwater/Leachate Management Plan in Appendix A-1. Gas is passively vented so no operation is necessary. Gas migration monitoring is described in Section K.9.

Insert to Page K-9 of the Operation Plan

**F: Method and Sequence of Filling Waste**

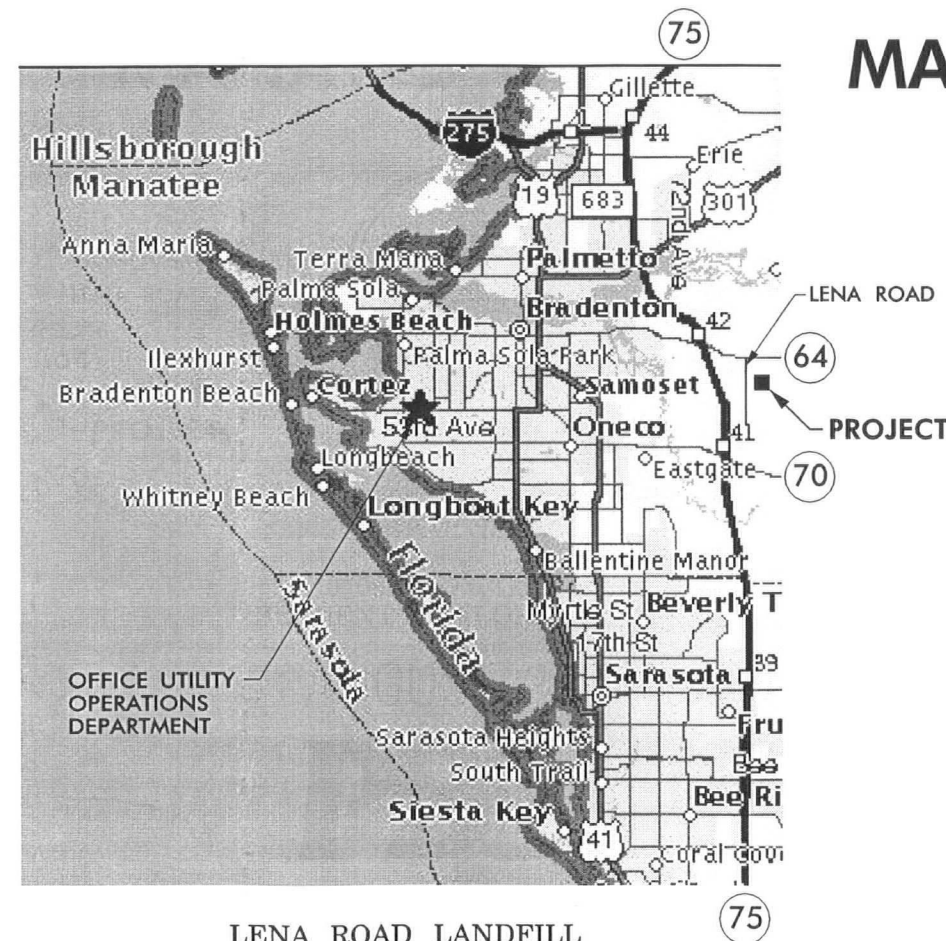
**In September 2001, the fill sequence plan was revised. Prior to filling in Stage III Landfill, the leachate pond will be filled with solid waste.**

**This will add about one year to the landfill. The Fill Sequence Drawings were revised to show this modification. Four new drawings were prepared and included in Section 3 of the application.**

**K-9A**

Revision 2- 9/21/01

PERMIT DRAWINGS FOR  
**LENA ROAD LANDFILL**  
**REVISED SEQUENTIAL FILLING PLAN**  
FDEP LANDFILL OPERATION PERMIT # 39884-001-S0

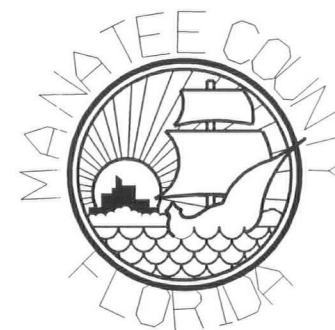


LENA ROAD LANDFILL  
3333 LENA ROAD  
BRADENTON, FLORIDA 34202

Name: JOSEPH L. MILLER  
Florida P.E. No.: 59177  
Address: PBS&J  
482 S. Keller Road  
Orlando, FL 32810

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**MANATEE COUNTY**



MANATEE COUNTY  
UTILITY OPERATIONS  
DEPARTMENT

4410 66th STREET WEST  
BRADENTON, FLORIDA 34210

AUGUST 2001



An Employee - Owned Company  
Consulting Engineers and Planners  
482 South Keller Road  
Orlando, Florida 32810  
PORT BUCKLEY, SCHUB & JERONIAN, Inc.  
484 PRSAJ  
300 N.W. 107th Ave., Miami, FL 33172-2507  
FBPR Certificate of Authorization No. 24

**PERMIT DOCUMENT**

ENGINEER'S PROJECT NO. 120498.01 1001

LIST OF DRAWINGS (REVISED SEQUENCE)

SHEET 1/4	COVER		
C-9A	SHEET 2/4	PLAN VIEW	JUL. 2001 (t=57)
C-10*		PLAN VIEW	DEC. 2001 (t=63)
C-10A	SHEET 3/4	PLAN VIEW	JAN. 2003 (t=75)
C-10B	SHEET 4/4	CROSS SECTIONS	JAN. 2003 (t=75)
C-11*		PLAN VIEW	JUL. 2003 (t=81)
C-12*		PLAN VIEW	JAN. 2004 (t=87)
C-13*		PLAN VIEW	JUL. 2004 (t=93)
C-14*		PLAN VIEW	JAN. 2005 (t=99)
C-15*		PLAN VIEW	JUL. 2005 (t=105)

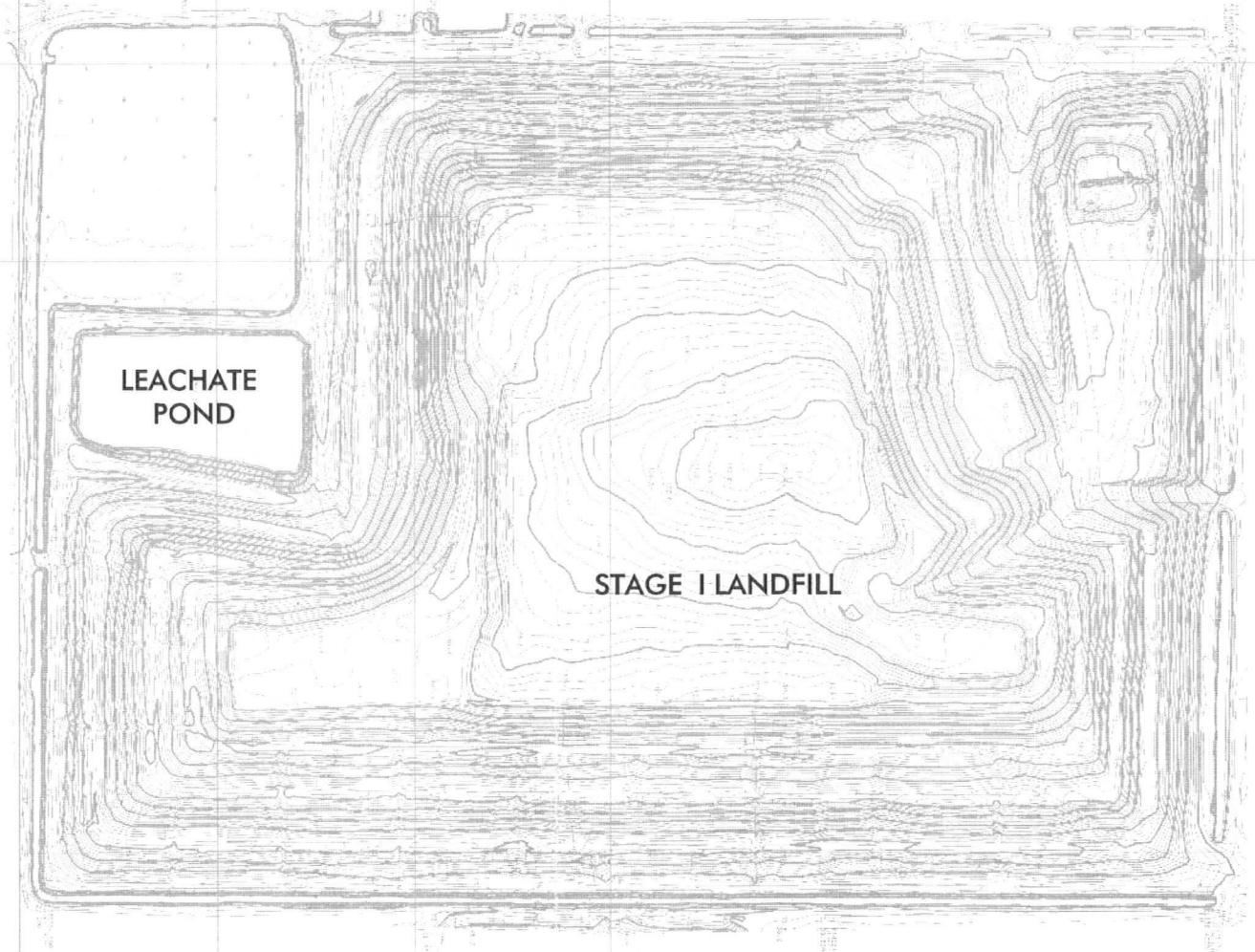
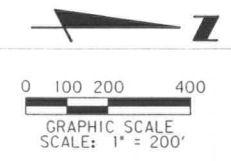
NOTE:

THIS IS A REVISION TO THE SEQUENTIAL FILLING PLAN. AFTER COMPLETING THE FILLING OF THE STAGE I LANDFILL, THE LEACHATE STORAGE POND WILL BE FILLED WITH SOLID WASTE PRIOR TO STARTING THE FILLING OF THE STAGE III LANDFILL. FILLING THE LEACHATE STORAGE POND WILL TAKE AN ESTIMATED 12 MONTHS, AND START IN JANUARY 2002.

DRAWINGS C-10\*, C-11\*, C-12\*, C-13\*, C-14\* AND C-15\* CAN BE FOUND IN "LENA ROAD LANDFILL SEQUENTIAL FILLING PLAN" BY HDR ENGINEERING, INC., JANUARY 1997. THIS REVISION OF THE SEQUENTIAL FILLING PLAN CHANGES ONLY THE SEQUENTIAL FILLING DATES AND TIME FROM START OF PLAN (t=TIME IN MONTHS WITH OCTOBER 1996 BEING t=0). DRAWING C-9A JULY 2001 (t=57) SHOWS THE MOST RECENT LANDFILL CONTOURS. DRAWING C-10 DECEMBER 2001 (SEE HDR'S DRAWINGS) SHOWS THE LANDFILL CONTOURS AFTER FILLING STAGE I, AND JUST PRIOR TO STARTING THE FILLING OF THE LEACHATE STORAGE POND. DRAWINGS C-10A PLAN VIEW AND C-10B CROSS SECTIONS SHOWS THE LANDFILL CONTOURS IN JANUARY 2003 AFTER COMPLETING THE FILLING OF THE LEACHATE STORAGE POND. THE SEQUENTIAL FILLING PLAN THEN RESUMES WITH THE START OF FILLING IN STAGE III LANDFILL. THE ONLY CHANGE BEING IN THE TIME OF FILLING AS INDICATED ON THIS DRAWING.

SHEET 1 / 4

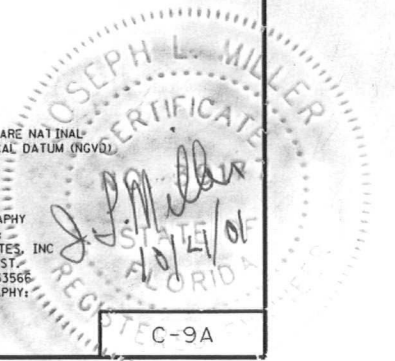
MANATEE COUNTY - LENA ROAD LANDFILL



SEQUENCE PLAN  
SCALE: 1" = 200'

NOTE:  
ALL ELEVATIONS ARE NATURAL  
GEODETIC VERTICAL DATUM (NGVD)

EXISTING TOPOGRAPHY  
PROVIDED BY:  
I.F. ROOK & ASSOCIATES, INC.  
106 N.W. DRANE ST.  
PLANT CITY, FL. 33566  
DATE OF TOPOGRAPHY:  
07/18/01



TEC-9A



482 SOUTH KELLER ROAD  
ORLANDO, FLORIDA 32810  
TEL. (407) 647-7275  
FAX (407) 647-6945

CLIENT  
**MANATEE COUNTY  
UTILITY OPERATIONS  
DEPARTMENT**  
  
4410 66th STREET WEST  
BRADENTON, FLORIDA 34210



PROJECT

LENA ROAD LANDFILL  
  
OPERATION PERMIT

TASK

AERIAL TOPOGRAPHY  
  
SEQUENTIAL FILLING PLAN  
  
PLAN VIEW  
  
JULY 2001 (t=57)

ORIGINAL: AUG. 2001

REVISIONS:

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- 3
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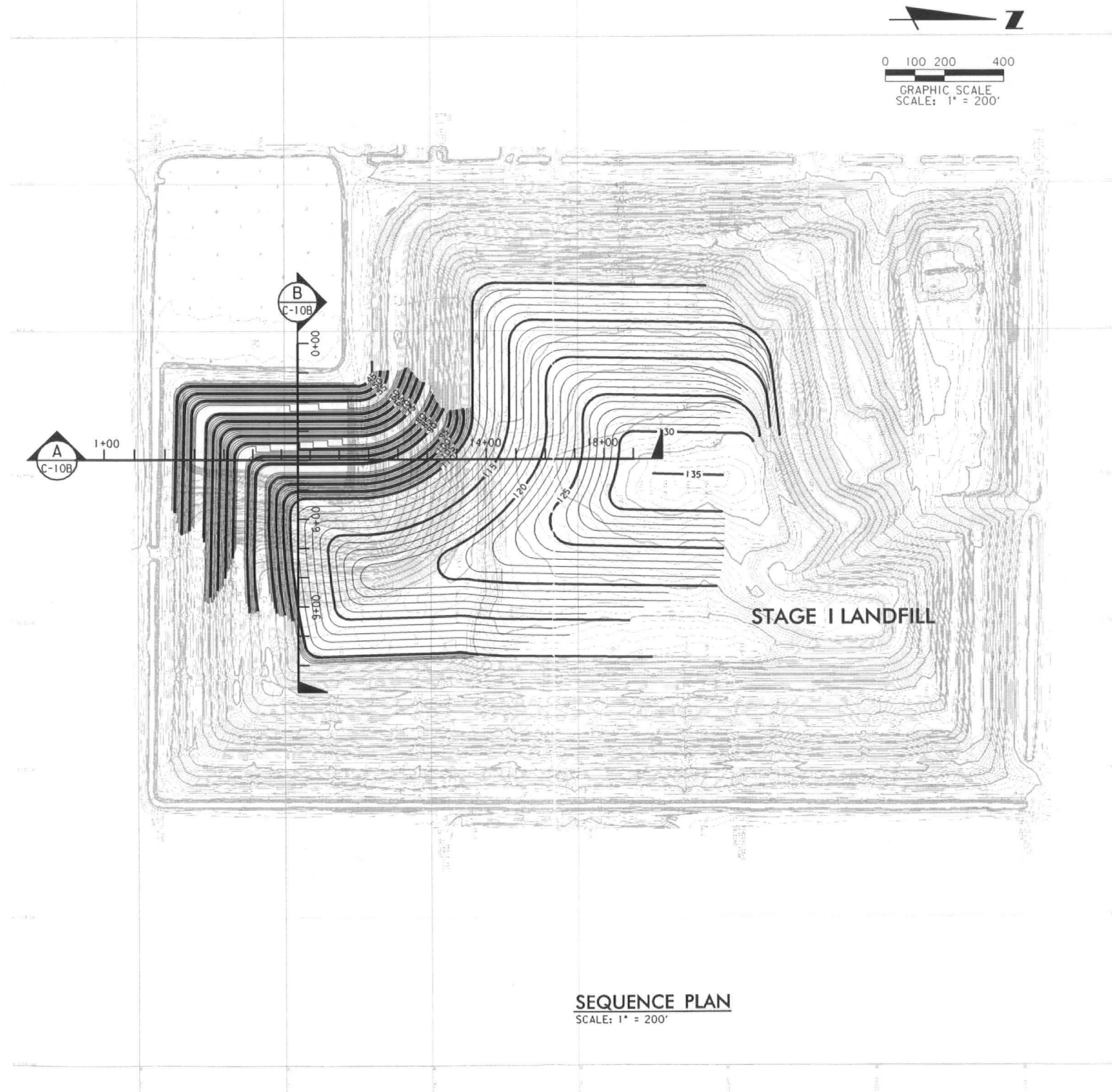
- 6
- 7
- 8
- 9
- 10
- 11
- 12

Name: Joseph S. Miller  
Florida License: 39177  
Address: 1700 N. 1st St.  
Orlando, FL 32810-4101  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
NOT VALID FOR CONSTRUCTION  
UNLESS SIGNED IN THIS BLOCK

JOB NO. 00-000.00  
DRAWN RCC  
DESIGNED JLM/RCC  
CHECKED JLM  
OC DED

SHEET 2/4

H:\ENV\CAD\WASTEWATER\MANATEE\LENA\SEQUENCE\MLR\_EXISTOPO.DGN



SEQUENCE PLAN  
SCALE: 1" = 200'

NOTE:  
ALL ELEVATIONS ARE NATURAL  
GEODETIC VERTICAL DATUM (NGVD)

EXISTING TOPOGRAPHY  
PROVIDED BY:  
I.F. ROOK & ASSOCIATES, INC.  
106 N.W. DRANE ST.  
PLANT CITY, FL 33566  
DATE OF TOPOGRAPHY:  
07/18/01

C-10A



482 SOUTH KELLER ROAD  
ORLANDO, FLORIDA 32810  
TEL (407) 647-7275  
FAX (407) 647-6945

CLIENT

MANATEE COUNTY  
UTILITY OPERATIONS  
DEPARTMENT

4410 66th STREET WEST  
BRADENTON, FLORIDA 34210



PROJECT

LENA ROAD LANDFILL

OPERATION PERMIT

TASK

SEQUENTIAL FILLING PLAN

PLAN VIEW

2003 (I=75)

ORIGINAL: AUG. 2001

REVISIONS:

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Name: Joseph S. Miller  
Address: P.O. Box 1017  
452 S. Keller Road  
Orlando, FL 32810-4101  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

JOB NO. 00-000.00

DRAWN: JRC

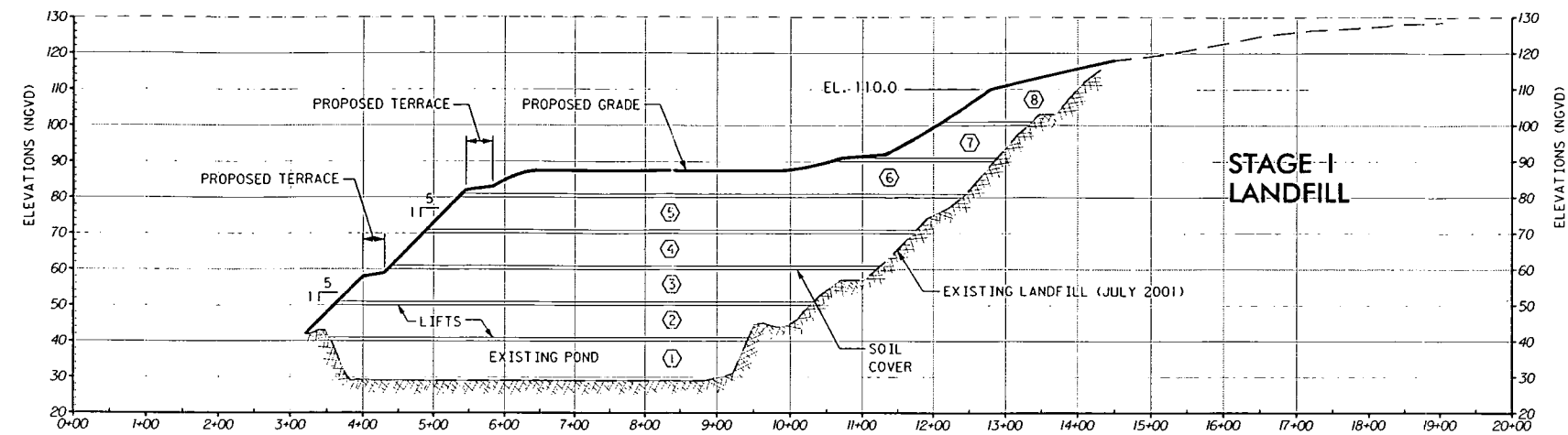
DESIGNED: JLM/RGC

CHECKED: JLM

OC DED

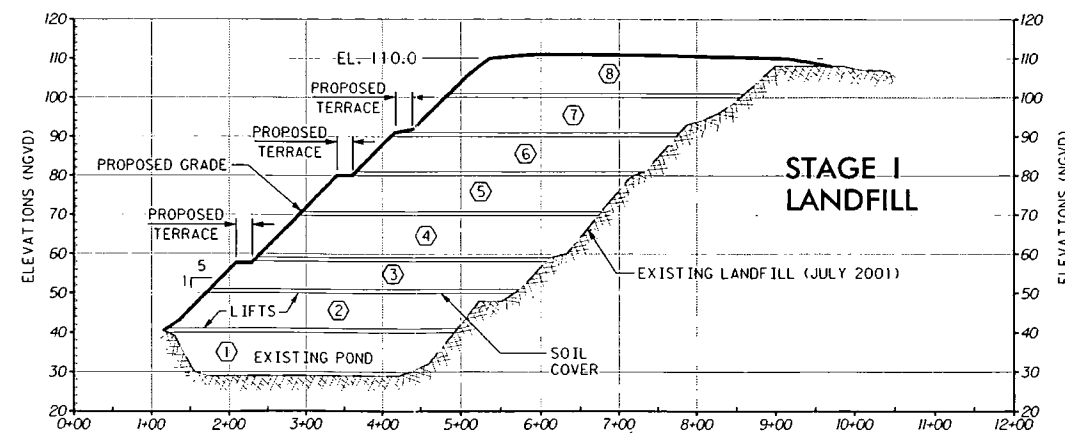
SHEET 3/4





# SECTION A

SCALE:  
H: 1" = 100'  
V: 1" = 30'



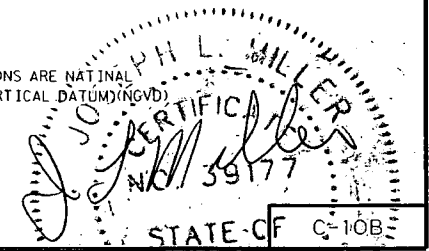
TOTAL AIR SPACE INCLUDING  
COVER - 823,000 (CY)

# SECTION B

SCALE:  
H: 1" = 100'  
V: 1" = 30'

NOTE:

ALL ELEVATIONS ARE NATIONAL  
GEODETIC VERTICAL DATUM (NGVD)



482 SOUTH KELLER ROAD  
ORLANDO, FLORIDA 32810  
TEL. (407) 647-7275  
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CLIENT

MANATEE COUNTY  
UTILITY OPERATIONS  
DEPARTMENT

4410 66th STREET WEST  
BRADENTON, FLORIDA 34210



PROJECT

LENA ROAD LANDFILL

OPERATION PERMIT

TASK

SEQUENTIAL FILLING PLAN

CROSS - SECTIONS

2003 (t=75)

ORIGINAL: AUG. 2001

REVISIONS:

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JOB NO. 00-000.00

DRAWN RGC

DESIGNED JLM/RGC

CHECKED JLM

DATE

08 DEC

SHEET 4/4