



ENVIRONMENTAL PROTECTION DIVISION

ANNA H. LONG, Manager

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Received DEP
SEP 8 - 2000
Central Dist. ERP

Orange County
Keene Road / Buttrey

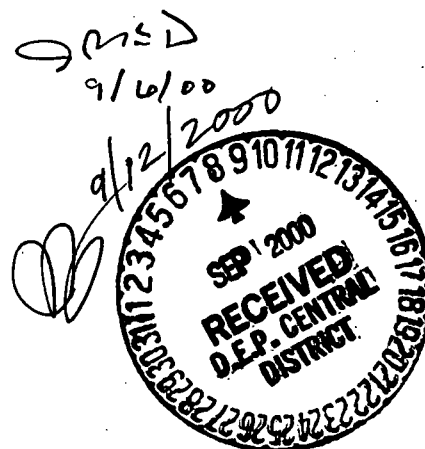
Jim Bradner

Per Your Request

September 6, 2000

Mr. Ed Chesney, PE
Buttrey Development L.L.C.
6239 Edgewater Drive, Suite D-1
Orlando, Florida 32810 - 4747

Subject: Keene Road Disposal Class III Landfill
Application For Class III Landfill Permit
Received August 7, 2000



Dear Mr. Chesney:

Staff has reviewed the subject application against the requirements of County Ordinance 99-16, Solid Waste Management. Following are our comments and requests for additional information needed to complete our evaluation. We are returning the original application and 2 copies for your use in resubmittal. Please resubmit a revised original full application, with 4 copies, addressing each of the comments below. Add to the resubmittal a new section that restates each comment below and summarizes your response.

The 4 copies must have each change marked; additions are to be shaded, deletions are to be struck. The resubmittal must be accompanied by a letter, bearing the stamp of the professional engineer of record for the application, certifying that all unmarked portions of the resubmittal are identical to the subject application which has already been reviewed and accepted by the County. A resubmittal with changes not so marked or not accompanied by such a certifying letter will be returned as unacceptable.

Your resubmittal is to be delivered to this office no later than November 6, 2000. All of the following comments must be fully addressed in a diligent manner. If your resubmittal is not received by the above deadline or the responses provided do not diligently address the following comments, the subject permit request will be denied. Please review Section 32-214(h)(1) of the Solid Waste Management Ordinance covering this issue before preparing your resubmittal. If denied on the above grounds, you may reapply for the subject permit by submitting a new application and paying the application fee.

Comment 1: Please submit a copy of Florida Power Corporation response to the letter attached to the permit application as Exhibit A. Please note that Orange County has not approved a Class III landfill operation as indicated in your letter to Florida Power. The opportunity for Orange County to approve the Class III landfill will occur after the completion of the Orange County Environmental Protection Division (OCEPD) technical review when OCEPD presents its recommendation to the Board of County Commissioners at the final Public Hearing.

Comment 2: Orange County, Florida is to be named on the insurance policy succeeding the expiration of the Benefit of Commitment of Title No. 2-0003899, effective date of May 24, 2000, issued by Lawyers Title Insurance Company. Please provide a copy of this policy for verification. Also, the Boundary Survey is to be certified to owner, Orange County, Florida and Lawyers Title Insurance Company.

Comment 16: Please submit the calculation of the soil volume required to operate the site for the life of site. Be sure to include activities such as fire fighting and cover maintenance. Also, please explain the discrepancy between the volume of soil available as reported in Exhibit C at 1,267,050 CY and Page 1 of Section II at 329,000 CY. Please submit a legible copy of the *The Earth Works* report.

Comment 18: The decision on the setback request is pending the resolution of issues such as the bottom liner design, stormwater, and buffer landscape features. The setback requirements will be evaluated when the landfill design is final. Please consider a narrower pond layout that will leave more existing trees as a visual buffer to the North.

Comment 23: A copy of the Proof of Ownership must be provided prior to the presentation to the BCC.

Comment 26: Please submit the complete ERP permit application including Construction Plans and other attachments. Please copy Jim McDonald of OCEPD on correspondence to the Florida Department of Environmental Protection pertaining to the ERP application to allow review for consistency with the stormwater management system submitted to the County.

Comment 32: Please revise the swale construction at the access ramp and perimeter roads to include a protective cover component such as topsoil and sod to prevent erosion of the clay. Also, please provide a detail showing the tie-in between the swale liner and final cover shown on the revised sheets 8 and 9 of 11.

Comment 33: The following items address the comments pertaining to the Financial Assurance Program submittal. It appears the color cartridge in the printer being used needs replacement. An updated Financial Assurance Program disc is being provided for your use.

1. Provide construction schedule per page 6.
2. Soil quotes do not meet all the requirements on page 2. Use attached form for soil quotes for assistance. Also, other quotes must follow same guidelines.
3. No installation costs for infiltration gallery, culvert and related items were provided (only materials).
4. Please add liner cost to swale construction.
5. No cost for irrigation or tree planting on page 35.
6. Topographic survey estimates for steepness, etc. on page 6 appears incorrect.
7. Add cost to mow on page 37C. Pond is visible on east and west sides.
8. Please provide cost for site cleanup (recycling activities).
9. Cost to furnish stormwater structures is in post closure care on page 38E. Culverts go on revised page 33 and the galleries and mattress go on page 36G.

10. Please provide cost to maintain stormwater structures, especially the galleries.
11. Well number shown on application form (13) is not consistent with Financial Assurance (7).
12. On page 36, new monitoring wells are to be shown in vertical feet, not Ea.
13. On bottom of page 34, show total number of culverts.

Comment 34: Please provide Ms. Rozier's written final determination. Copy Jim McDonald of OCEPD on correspondence to Orange County Public Works pertaining to traffic issues.

Comment 38: Although we are in receipt of a base grade map, it is too general to complete our review. Using the topographic map, please prepare a base grade map with 1-foot contours extending 150 feet past the property line. Label limit of waste/top of slope and show surrounding grade elevations.

Additionally, please provide "current" (post November 8, 1999) topographic map, especially in the area between PZ - 19 and 20. It appears that excavation and/or backfilling activities occurred in this area after the survey. Surface/ground water was observed north and east of that area during a site visit on August 21, 2000. Referencing the topographic map submitted in the application, it appears that the surface water elevations are at approximately 78' NGVD, which contradicts other information shown on the cross-sections and other documents.

Please prepare the SHWT map in 5 feet contours using this topographic map. See Comment 45 for additional comment regarding SHWT determination.

Comment 39: The clay plug concept is unacceptable. The plug cannot be anchored continuously. Following the review of cross sections A-E, it is determined that laboratory tested confining soils are not located in all areas to allow a complete anchor. Perched water contained in soils adjacent to the landfill base grades in the northwest section of the landfill is expected to continue to seep into the landfill following recharge. Sump areas are created in order to allow anchoring into the confining soils. There is a lack of interim stormwater controls. It is doubtful that a 10^{-5} cm/sec liner permeability specification will prevent the groundwater from exceeding MCL standards when tested.

Clear evidence that a bottom liner is unnecessary is not provided. Please propose a design that provides a continuous bottom liner having a maximum permeability of 10^{-7} cm/sec.

Comment 40: If a suitable liner design can be developed to restore confinement, it will be necessary to monitor up and down gradient Floridan aquifer water quality to monitor impacts from the landfill. Please show locations and design for Floridan monitoring wells. The wells are required to monitor the effectiveness of the liner system and identify any impact from the landfill.

Comment 41: Please revise the surficial groundwater contour map (Figure 1) to reflect the flatness and interconnectivity shown by the water levels measured at MW-2, PZ- 17a, 17b, 21b, 20b, 8a, 8b, 1 and MW-3. Add 1-foot contours between the 50 and 45 feet contours. The lowest measured water table elevation is near the center of the site at PZ-21b at 44.70'. Please clarify the conflicting direction flows shown by the blue and green arrows on figure 1. Include green arrows in the legend.

September 6, 2000

Keene Road Disposal Class III Landfill

Page Four

Comment 42: See Comment 40. The intent for mapping the site-specific Floridan potentiometric surface is to assist in defining the limits and understanding the aquifer interconnectivity features of this site and surrounding area and selecting effective locations for monitoring water quality for impacts from the landfill. Please provide a potentiometric surface map of the site and surrounding area, using site specific data for the proposed landfill area. Previous correspondence indicates you already have this information from the Keene Road facility to the north. Upon your request, we will try to assist you in obtaining similar information from the County facility to the south.

Comment 45: Your response addresses water table fluctuations for an approximately one-year period. Please expand your evaluation to include several past seasons of typical rainfall.

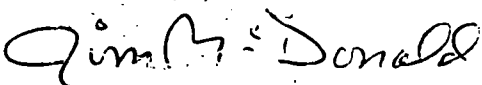
Comment 53: GTC Engineering submitted a report analyzing inlets, pipes and swales. In this report, GTC reports potential flowby for inlets D1, D2, D3, D4, D5, D6 and D8. For some of the inlets, the potential flowby is substantial. Please defend or redesign with larger inlets.

Comment 54: Please provide calculations of volumes held by Gallery 1 and 2 and provide proof that they hold the 100-year storm for the basin served.

This concludes the OCEPD comments on the subject application. Please resubmit a revised original full application, with 4 copies, addressing each of the above comments to this office no later than November 6, 2000. Be sure your response is timely and diligent and that all changes are marked in the copies and that unchanged portions are certified as outlined in the opening of this letter.

If you have any questions, please contact the undersigned at the letterhead address or phone (407) 836-1411.

Sincerely,



Jim McDonald, P.E.
Supervisor, Landfill Management

JMD/AHL:bk

C: Ruby Rozier, Manager, Traffic Engineering Division
Anna H. Long, Manager, Environmental Protection Division
Bill Claypool, Development Engineering Division

**Orange County Environmental Protection Division
Annual Landfill Financial Assurance Update
Cost of Offsite Soil**

Date:

Name of Company Providing Soil:

Company Address:

Street or Post Office Box Number

City

State

Zip Code

Name of Pit or Borrow Site:

Site Address:

Street or Post Office Box Number

City

State

Zip Code

Type of Soil and Cost:

TYPE OF SOIL	\$ per Ton	\$ Per Cubic Yard	Tax \$ Per Unit	Amount in Tons	Amount in CY
Cover Soil Underlying Cap					
Buffer Soil at 1x10-5cm/s					
Protective Cover Soil					
Topsoil					

Cost Applies to the Following Year Period:

PERIOD	DATE
To	
From	

I verify that the soil provided will meet any applicable soil specifications at the cost indicated above to Orange County. A weigh ticket generated from a State certified weigh scale will be provided with each load delivered to the landfill closure site. The delivery schedule for soil will be compatible with the approved closure schedule.

Signature of Company Officer or Designated Representative



ENVIRONMENTAL PROTECTION DIVISION

ANNA U. LONG, Manager

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www.citizens-first.co.orange.fl.us

Sh. Henning

Jim Bradner

Per Your Request

MSD
9/6/00

6 REPE stamp
June 8, 2000

Mr. Ed Chesney, PE
Buttrey Development L.L.C.
6239 Edgewater Drive Suite D-1
Orlando, Florida 32810 - 4747

Subject: Keene Road Disposal Class III Landfill
Application For Class III Landfill Permit
Submitted January 26, 2000

Dear Mr. Chesney:

Staff has reviewed the subject application against the requirements of County Ordinance 99-16, Solid Waste Management. Following are our comments and requests for additional information needed to complete our evaluation. We are returning the original application and 2 copies for your use in resubmittal. Please resubmit a revised original full application, with 3 copies, addressing each of the comments below. Add to the resubmittal a new section that restates each comment below and summarizes your response.

The 3 copies must have each change marked; additions are to be shaded, deletions are to be struck. The resubmittal must be accompanied by a letter, bearing the stamp of the professional engineer of record for the application, certifying that all unmarked portions of the resubmittal are identical to the subject application which has already been reviewed and accepted by the County. A resubmittal with changes not so marked or not accompanied by such a certifying letter will be returned as unacceptable.

Your resubmittal is to be delivered to this office no later than August 8, 2000. All of the following comments must be fully addressed in a diligent manner. If your resubmittal is not received by the above deadline or the responses provided do not diligently address the following comments, the subject permit request will be denied. Please review **Section 32-214(h)(1)** of the Solid Waste Management Ordinance covering this issue before preparing your resubmittal. If denied on the above grounds, you may reapply for the subject permit by submitting a new application and paying the application fee.

General Comment: In general, the subject application was found to be conceptual. An application must be for a designed landfill with sufficient design details for staff to confirm that all aspects of the Solid Waste Management Ordinance are being satisfied.

Section I - Operations Plan

1. Please explain the status of features impacting the proposed facility such as the easement area associated with the overhead power lines shown on the Boundary and Survey Location Map.
2. Note 4 of the Boundary & Location Survey compromises the reliability of the document. Please have the surveyor do the necessary research to replace this note with the following statement:

"This survey is based, at a minimum, in part, on a current abstract performed by <name of the Title Company or attorney performing the title search>, dated <date of the abstract being used>, provided by the owner."

3. Please correct the north arrow shown on Figure 1 on Page 6 of Operations Plan.
4. Please correct the operating hours shown in the following or any other application sections:
 - Sec 1.2.3 on Page 8 of the Operations Plan shows the operating hours as -7am-7pm weekdays and 7am-1pm on Saturday
 - No. 10 on Page 1 of Section II shows hours from 7am to 7pm weekdays and 1/2 days Saturday
 - No. 18 on Page 5 of the Application Form contained in Section II shows the operating hours are shown as 7am-7pm weekdays and 7am-12pm Saturday
 - Section 1.2 of the Fire Fighting Agreement shows operating hours as 6am-6pm weekdays and 6am-12pm Saturday

The above referenced hours are not consistent with the Section III Exhibit A documents signed by Mel Martinez, Chairman of the Orange County Board of County Commissioners and Melvin Pittman, Manager of the Orange County Zoning Division (at that time). Exhibit A documents indicate that the approved operating hours are 7am-5pm weekdays and 7am-12pm Saturday. It can be noted that the operating hours are correctly shown on Drawing 3 of 11 and Response P on Page 2 of Section III.

Please note that at all times, the actual operating hours must be consistent with the permitted hours unless otherwise approved in writing by the County. If different operating hours are proposed, an approval from the County must be granted prior to changing the hours.

5. Please correct the typo in Section I on Page 8 of the Operations Plan. Delete the word fires from "(1) detection of prohibited materials fires".

6. Please correct Section 1.3.1 (10th bullet) on Page 9 of the Operations Plan to require that the County be informed when there is a presence of hazardous waste at the landfill. It can be noted that Section 1.10.3 (8th bullet) on Page 24 of the Operations Plan correctly indicates that the County will be notified when hazardous waste is detected during random load inspections.
7. Please confirm in Section 1.3.2 on Page 10 of the Operations Plan that the water well meets the 50 gpm requirement to be consistent with Section 2.4 of the Fire Fighting Agreement. Also, please specify in Section 1.18.4 on Page 32 of the Operations Plan whether the referenced well is the same one used for fire protection. Please show the proposed location for the well designated for use in fire fighting in the revised Fire Fighting Agreement in your resubmittal. A corrected Fire Fighting Agreement must be forwarded to and accepted by OCFRD prior to permit issuance.
8. Please correct the typo in the first sentence of Section 1.4.3 on Page 14 of the Operations Plan. The word "the" is missing the "t".
9. Please correct the typo in Section 1.5.2 on Page 16. The spelling of the word "submitted" is incorrect.
10. Please correct the Above Grade Detail (Typical) shown on drawing 8 of 11 to show eighteen inches rather than twelve inches of intermediate cover to be consistent with Section 1.5.1 and 1.12.1 of the Operations Plan. These Sections indicate that eighteen inches instead of twelve inches of intermediate cover will be constructed.

Additionally, also on the referenced drawing detail, please correct to show an initial or intermediate cover underlying the final cover.

11. Please add the permeability specification (minimum of 1×10^{-5} cm/s) to the buffer layer and also provide specifications for the topsoil layer shown on the final cover detail on Drawing 8 of 11.
12. Please indicate that areas where slopes are reworked from 5:1 to 2:1 will not to exceed a width of 100 feet and that the removed soil will be replaced with debris concurrently in Section 1.12.1 and 1.15 of the Operations Plan. This will be compatible with Sections 1.5.1 and 1.12.1 of the Operations Plan where it is indicated that the active face is typically maintained at a 75' width.
13. Please provide documentation that demonstrates that the open 2:1 base grade slope as referenced in Section 1.12.1 and 1.15 of the Operations Plan will meet acceptable stability criteria considering factors such as physical characteristics of the in place soil and erosion.

14. Please indicate that quarterly reports will be submitted to ENVIRONMENTAL PROTECTION DIVISION (EPD) on Page 18, Section 1.9.1. of the Operations Plan. The reports must include the volume of waste received at the gate in cubic yards, excavated soil volumes in cubic yards, density of in place volume of debris, compaction ratio, volume of waste stream recycled in cubic yards and any other information needed to track landfill airspace. Also, volume of recycled material must be reported in tons quarterly to the County Solid Waste Division.

Add weekly random load inspections, scale calibrations and monthly fire extinguisher inspections to the list of operating records.

15. Please add reference to the County in Section 1.11.1 on Page 26 and 1.11.2 on Page 27 of the Operations Plan when indicating that employee training records are available for review.
16. Please show the calculations for the indicated estimated quantity of cover required to maintain initial cover for the life of the landfill and available quantity on site in Section 1.12.2 on Page 29 of the Operations Plan and No. 12 on Page 1 of Section II.
17. Please correct the reference in the Regulatory Requirements for Class III Sites section on Page 2 of the New Hire Training document contained in the Operations Plan following Section 1.23 Exhibit B to reference the Orange County permit. It does not reference the requirement for the site to have a valid County permit in addition to the FDEP permit.
18. The waiver request for a 50 feet above grade setback is noted. The County Solid Waste Management Ordinance requires that a 150 feet setback be maintained between the waste placed above grade and the property boundary. The granting of waivers lies in the purview of the Board of County Commissioners at the final public hearing to decide permit issuance or denial. Individuals supporting the waiver at earlier steps in the review process and the applicant will have an opportunity to voice support or opposition to the waiver request during that hearing. EPD will also be expected to render an opinion at that time. The Division will decide its position on the waiver request at the completion of its technical review. In part, responses to our requests for additional information pertaining to subjects such as buffer area, stormwater, access road, and final cover design/construction details and site hydrogeologic characteristics are needed to make that determination.

Section II – Required Submittals

19. Please correct No. 9 to show the tonnage rate and No. 11 on Page 1 of Section II to indicate the use of weigh scales to be consistent with Section 1.4.3 on Page 14 and Section 1.10.1 on Page 19 of the Operations Plan and Application Form No. 6 response. Also please add an entry for the tonnage rate at Response No. 8 of the Application form Part A.

20. Please provide an aerial evaluation that extends 1-mile from the site property boundary as referenced in No.13 on Page.1 of Section II. The aerial photograph attached as Exhibit F extends 1-mile from the center of the site rather than from the boundary.

Also, the summary of wells and private residences is not correct. Please show all possible potable wells and residences to complete evaluation of the aerial survey.

21. Please broaden the Demonstration of Need Analysis contained in Exhibit H to include the capacity of other permitted County Class III landfills and further justification of the annual estimated intake quantities indicated on Drawing 5 of 11. Adjust the site total life estimate as necessary.

22. Please broaden response No. 21 of Section II to provide all specifics pertaining to the recycling program. The response must address what materials will be recycled and how recycling activities will meet the minimum recycling goal of 30 %. The response does not adequately demonstrate how the recycling program goals will be met.

Additionally, please include Operation Plans for ancillary activities such as mulching. Operation Plans will include information such as actual or potential impacts from the ancillary operation on air quality, water quality, and abutting property owners (especially in regard to noise level, odors and visual impacts).

23. Please correct Application Form Part A Nos. 8 and 10 to show the correct owner as indicated in your cover letter dated April 17, 2000. All other affected documents, such as proof of ownership, also need to be corrected. Also, please clarify how the requirement for the excavation and solid waste permits to be issued to the same operator will be met. Currently, the excavation permit is issued to Bishop & Buttrey, Inc., the site is owned by Bishop Development L.L.C and the solid waste permittee and site owner is proposed as Bishop Development Two L.L.C.

24. Please see Section IV Comment No. 38, 43, 45 and 47 pertaining to Application Form No. 20, 21 and 22.

25. Application Form No. 23 shows 11 surface water monitoring points. Where are they?

26. Please submit the ERP Permit No. 4-095-0564-ERP Modification Application referenced in Application Form No.32 response and Response O on Page 2 of Section III for County review in conjunction with Section V of this application.

27. Please explain the significance of the UES letter report dated May 8, 1998. Borings B1-4 do not pertain to the landfill investigation.

28. Please explain why the UES letter report dated March 2, 1999 does not contain report sections such as Project Description and Findings. The other UES reports dated May 8, 1998, May 9, 1999, November 22, 1999 and December 28, 1999 contained in the application all provide report sections that provide information such as project description and findings.

Additionally, please provide the surveyed ground elevations for all borings, monitoring wells and piezometers referenced in this application.

29. Please list the specific trees that will be added when necessary to provide a visual buffer on the Landscape Plan (drawing 11 of 11). At a minimum, tree spacing must be 40 feet along any street and 60 feet on other sides. In addition to the type of trees referenced in the Ordinance, the enclosed supplemental tree list is available to select from.
30. Please explain how the buffer tree's root system will not enter the infiltration galleries shown on Drawing 10 of 11.
31. Please add scaled construction details including cross sections for tree plantings in the area of the infiltration gallery, swale and underlying or nearby final cap.
32. Please demonstrate how stormwater water leaving the infiltration gallery and conveyed in the perimeter road swales and all other stormwater collection and conveyance structures will not contact the in place waste.
33. Please submit a complete set of Financial Assurance Program documents. The only financial assurance documents contained in the application are Sheet 7 of 10. The Financial Assurance Program will be reviewed upon receipt of the complete document.

Section III – Technical Requirements

34. The DRC approval Condition No. 6 of 7 contained the approval dated August 12, 1999, contained in Section III Exhibit A Response B requires that a commercial site plan review determine the need for a left turn lane at the landfill entrance. Since a commercial site plan review is not part of the landfill permitting process, please have your engineer contact Ms. Ruby Rozier, Manager of Traffic Engineering Division, Public Works Department at (407) 836-7890 for the purpose of obtaining a determination as the need for a turning lane. Please prepare a traffic study report for her review and written comment. The report is to include any information required by Ms. Rozier in addition to all information pertaining to existing traffic flow, traffic flow when two landfills are accepting waste for disposal while the subject site is conducting an excavation operation, traffic flow when all landfill traffic is to the proposed site and impacts to Keene Road noted in existing traffic studies resulting from the Greenway and 441 Bypass Road projects.

- 35. Regarding Response H, please see Comment No. 18
- 36. Regarding Response Q, please see Comment No. 38 and 39
- 37. Please correct Response T to indicate daily compaction to be consistent with other application documents. Response T indicates that waste is compacted at least weekly unlike Section 1.5.1 on Page 15 and Section 1.12.1 on Page 28 of the Operations Plan and No. 15 on Page 2 of Section III, where it is indicated that a load of waste receives three compactor passes.

Section IV – Groundwater

- 38. Please provide a base grade and seasonal high water table (SHWT) contour map. It should be noted that the review of the proposed groundwater quality monitoring program cannot be completed until the above and other information requested is provided. Information pertaining to subjects such as stormwater management, hydrogeology and final cap construction is requested by other comments.
- 39. Please provide additional hydrogeologic data. The data provided is not sufficient to completely evaluate criteria such as the ability of the 5 feet separation to impede the flow of Class III leachate, vertical permeability, thickness and extent of the confining unit and hydraulic interconnections with the Floridan. Please add a bottom liner in your resubmittal or provide clear evidence why one is not needed.
- 40. Please provide an isopach map showing the Hawthorne Formation thickness within the property boundary. The hydrogeologic data provided for the site indicates that there are hydraulic interconnections between the surficial and Floridan aquifers and that the Hawthorn formation present at the site does not sufficiently confine the upper aquifer from the Floridan.

It should be noted that Section 3.0 Site Hydrogeology on Page 3 incorrectly refers to B-8 as being outside the footprint. See Drawing No. 3 of 11 which shows B-8 located approximately 70' north of the south landfill footprint boundary.

- 41. Please broaden the Groundwater Elevation Contour Map to include more water level measurement points. Figure 2 is not sufficient to adequately determine the direction and velocity of groundwater flow.
- 42. Please prepare a map showing the Floridan potentiometric surface.
- 43. Please explain the discrepancy between the elevation of water table shown in Section IV pg. 4 as 50' NGVD and Response No. 20 of the Application Form Part B at 55' NGVD.

44. What is the elevation of the underlying aquifer at MW-1? MW-1 shows the water level measured at a perch zone.
45. Please include an explanation of how the SHWT is determined in Section IV Hydrologic Survey & Groundwater Monitoring Plan. Please incorporate the updated water table contour map referenced above. The SHWT elevation determination contained in this application is unclear. It should be noted that Table 1 contained in Section V shows at nearby Lake Mitchell an approximate 20' range (approximately 54' to 74') in measured water elevations during the 1960 to 1975 period. Additionally, the application documents in Section IV show an approximately six feet difference between water level measurements during May 1999 and December 1999.
46. Please correct Figure 3 Soil Boring Cross Section to consistently use the Unified Classification System throughout the application. Figure 3 is difficult to read due to the scale used and discrepancy between symbols used and those provided in the legend. Please enlarge for clarity and revise legend to ensure that symbols match. Additionally, please make corrections as necessary. For example, the boring log for B-5 shows different soil types than noted on the cross section.
47. Please correct Figure 3 Soil Boring Cross Section to include B-8, add notation for water measured at B-5, and confirm that a water level was measured at B-1 and B-6 as shown. The UES report dated May 8, 1998 in the Findings section indicates that no water was measured at B-1. Additionally, the UES report dated March 2, 1999 shows no water table notation on the boring log for B-6. Conversely, a water level obtained at B-8 but does not show on the cross section.
48. Please explain why nested wells are not proposed. Section 4.1 on Page 5 indicates that distinct confining units do not exist between the surficial, intermediate or deeper zones. Additionally, other application documents indicate:
- The surficial aquifer consists of the saturated zones of the Hawthorne Formation
 - The measured Hawthorne Formation thickness from B1-9 ranges from 43-47 feet per the UES letter report dated May 26, 1999. It should be noted that the report incorrectly refers to the top of the Hawthorne contact at 0' NGVD and B-5 shows the confining strata/Hawthorne unit at least 60' thick. This is the regional contact elevation for the top of the Ocala or Floridan aquifer. It should be further noted that no borings penetrated the Ocala Formation indicating that the complete thickness range at the site is unknown.
 - Although the Hawthorne unit may perform as a confining unit to the Floridan aquifer, it does not appear to contain a continuous clay unit within the landfill footprint.

- The defined zone of discharge extends to the base of the uppermost aquifer (bottom of Hawthorne)
 - Evidence of discontinuity (at B-8) and variability of the Hawthorne unit. The UES slug test results at MW-2 & MW-3 contained in Exhibit D of Section IV show the variability of the groundwater velocity and hydraulic conductivity in the aquifer. The calculated hydraulic conductivity is 101.29 ft/day and 1.03 ft/day, respectively
49. The request to modify the sampling frequency in Section 5.2 on Page 7 cannot be evaluated until the previous requested information is provided. Additional comment will be provided following receipt of the requested information.

Section V – Stormwater Management

50. Sheet 4 of 11 - Basin Map

- The basin boundaries are not clear on this plan. Use a different type of line (there are too many dotted lines on sheet) or line weight to clearly distinguish the boundaries of the basins.
- List type and weight of basin line in Legend.
- Basins 10, 20 and 30 should include entrance road, flat area in front of mound and ponds. Include entire basin plus pond in area depicted by boundary line.
- Label Top of Slope for Ponds 10, 20 and 30
- Provide Basin lines for infiltration galleries.
- Basin 30 must include all of Pond 30

51. Sheet 6 of 11 - Final Grade Plan

Please correct the discrepancy regarding the pond slopes. Section 4.0 narrative and Drawing 11 of 11 Construction Note No. 5 indicates that ponds are designed and constructed as 5:1 slopes.

- Pond 10 - slope of pond is steeper than 5:1
- Pond 20 - slope of pond is steeper than 5:1
- Pond 30 - slope of pond is steeper than 5:1
- Label Top of Slope for Ponds 20 and 30
- 1-foot free board required for all ponds
- 20-foot flat maintenance access required around all ponds on all sides. This needs to be also shown on cross-section for each pond.

52. Provide narrative comparing required storage in each pond to what is provided. Include discussion of infiltration galleries.

53. Have conveyance systems (swales, chutes, pipes, and inlets) been checked against estimated flows?
54. Sheet 9 of 11 - Details
- Detail 5/7 - Final Cover Swale. This is not a swale. Rename or redraw to show a swale.
 - This berm (Detail 5/7) may work on the top of mound with gentle 50:1 slope, but this berm is not sufficient for steeper side 3:1 slopes. Please defend or re-design.
 - Part of the final grade is shown at 2 % (50:1). This slope does not account for expected settlement of the waste. Please redesign the final grade to provide a minimum 2 % grade, after expected settlement, at the end of the 30 year post closure period. Provide calculations.
 - Please explain erosion control measures required including where the spiral "swales" discharge into the upper and lower circumferential swales
55. Sheet 7 of 11 - Surface Water Control
- Show size of pipes to be used and slopes. Some of the runs are long. What are the starting and ending inverts of the pipes.
 - Some of the swale runs are long. Show spot elevations along swale to demonstrate that flow in the swale is possible from back to front. There is some doubt that conveyance systems are adequate to move water from rear to front. Please defend design or re-design.
 - Show swale flow direction arrows where missing along east and south sides.
 - Infiltration galleries are given with no details as to basin served. Provide detail showing basin size and storage within infiltration galleries. What volume is stored to serve what size basin?
56. Provide nodal diagram and discussion for model.
- Provide results in table and provide discussion of results.
 - Provide analysis of pipe and swale runs, size to convey adequate flow.
 - Provide entire basin and sub-basin analysis.
57. GW elevation at MW-1 on 12-14-99 was 85.86. MW-1 is near Pond 30 with a proposed dry bottom of 83.00. This pond bottom is not designed properly according to your data. Please explain or re-design.
58. Provide a description of the interim stormwater management plan to be used as the pit is filled. Please show details for stormwater structures such as the top slope berm referenced in Section 1.15 and whatever structure is proposed to segregate stormwater as referenced in Section 1.6.1 of the Operations Plan.

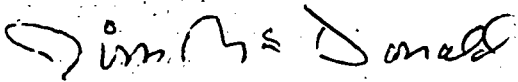
June 7, 2000
Keene Road Disposal
Page Eleven

59. Sheet 10 of 11, Detail 3/6. This detail shows west top of slope at 95 feet. Table 2 indicates top of slope at 105 feet. Please explain discrepancy or re-design.
60. Provide description of maintenance program to maintain swales, chutes and pipes.
61. All the retention ponds are to the front of the project. Other landfill projects evaluated have had retention ponds located around the perimeter of the project. EPD has a concern of the ability of the system as presented to convey water from the farthestmost reaches of the project to the front ponds. Please defend long reaches of pipes and swales or re-design.
- Provide spot elevations around swale to support drainage flow.
 - Provide inverts of pipes to support drainage flow.
62. Please clarify swale bottom width of 5 feet as referenced on Page 2 of Section V. This dimension conflicts with the detail shown on Drawing No. 8 of 11 which shows the typical access road swale bottom as 2 feet wide.

This concludes the Divisions comments on the subject application. Please resubmit a revised original full application, with 3 copies, addressing each of the above comments to this office no later than 8/8/00. Be sure your response is timely and diligent and that all changes are marked in the copies and that unchanged portions are certified as outlined in the opening of this letter.

If you have any questions, please contact the undersigned at the letterhead address or phone (407) 836-1411.

Sincerely,


6/6/00

Jim McDonald, P.E.
Supervisor, Landfill Management

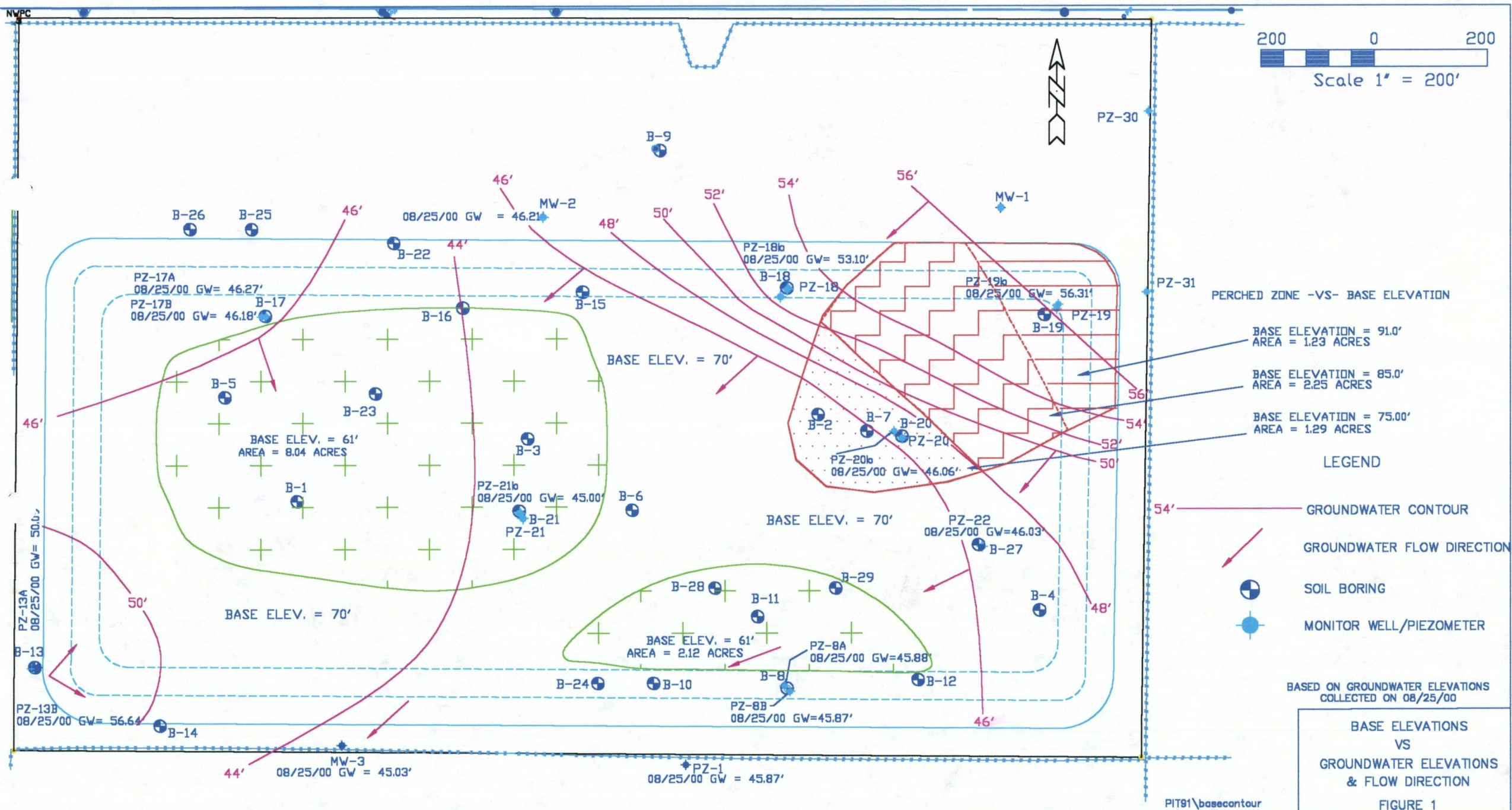
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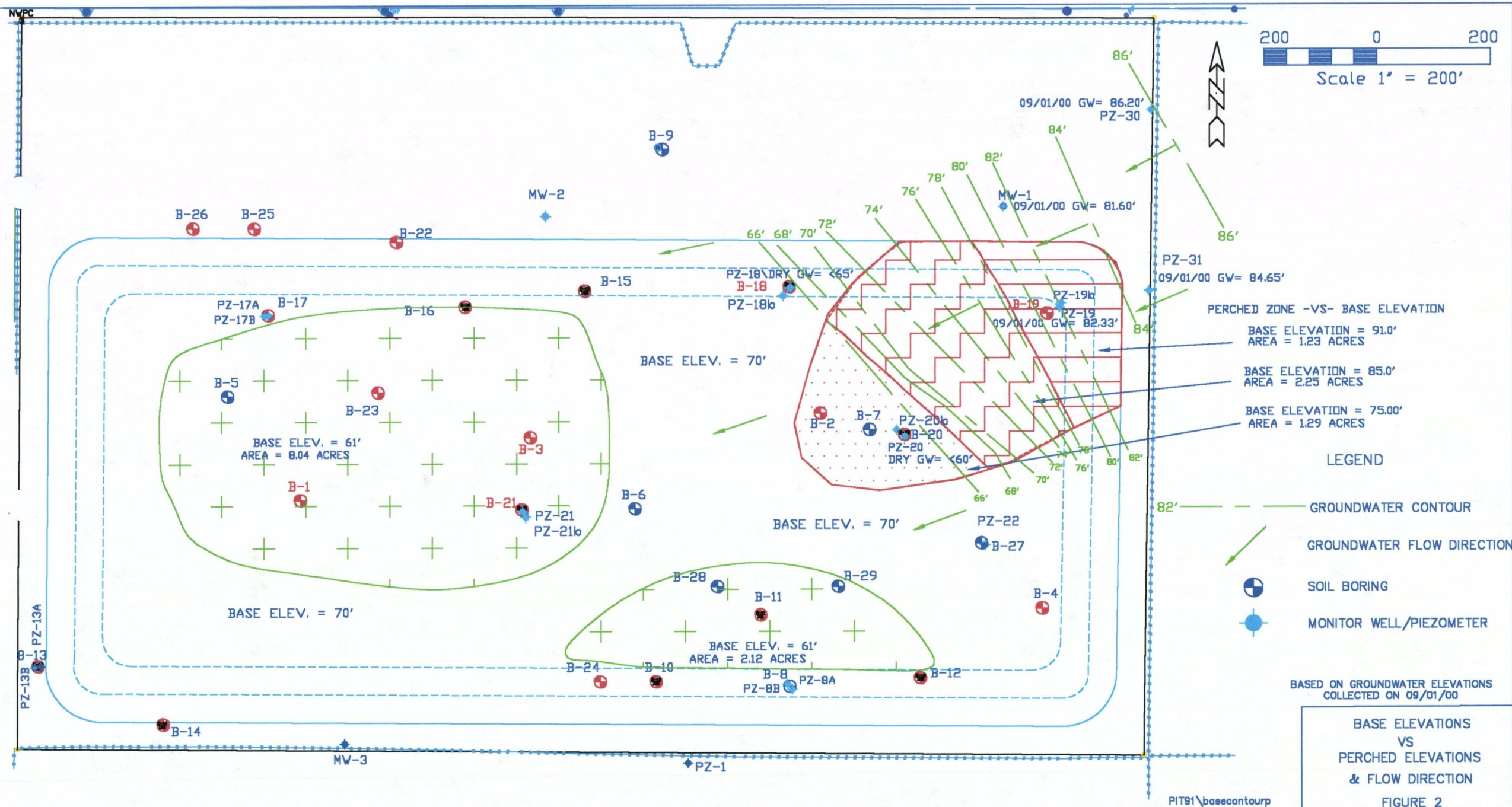
- C: Vickie Whidden, Coordinator, Development Review Committee
Gail Tyree, Zoning, for Board of Zoning Adjustments and Appeals
Mike Iacona, Fire Chief, Fire and Rescue Division
Ruby Rozier, Manager, Traffic Engineering Division
Anna H. Long, Manager, Environmental Protection Division
Bill Claypool, Development Engineering Division
Arnaldo Mercado, Environmental Protection Division

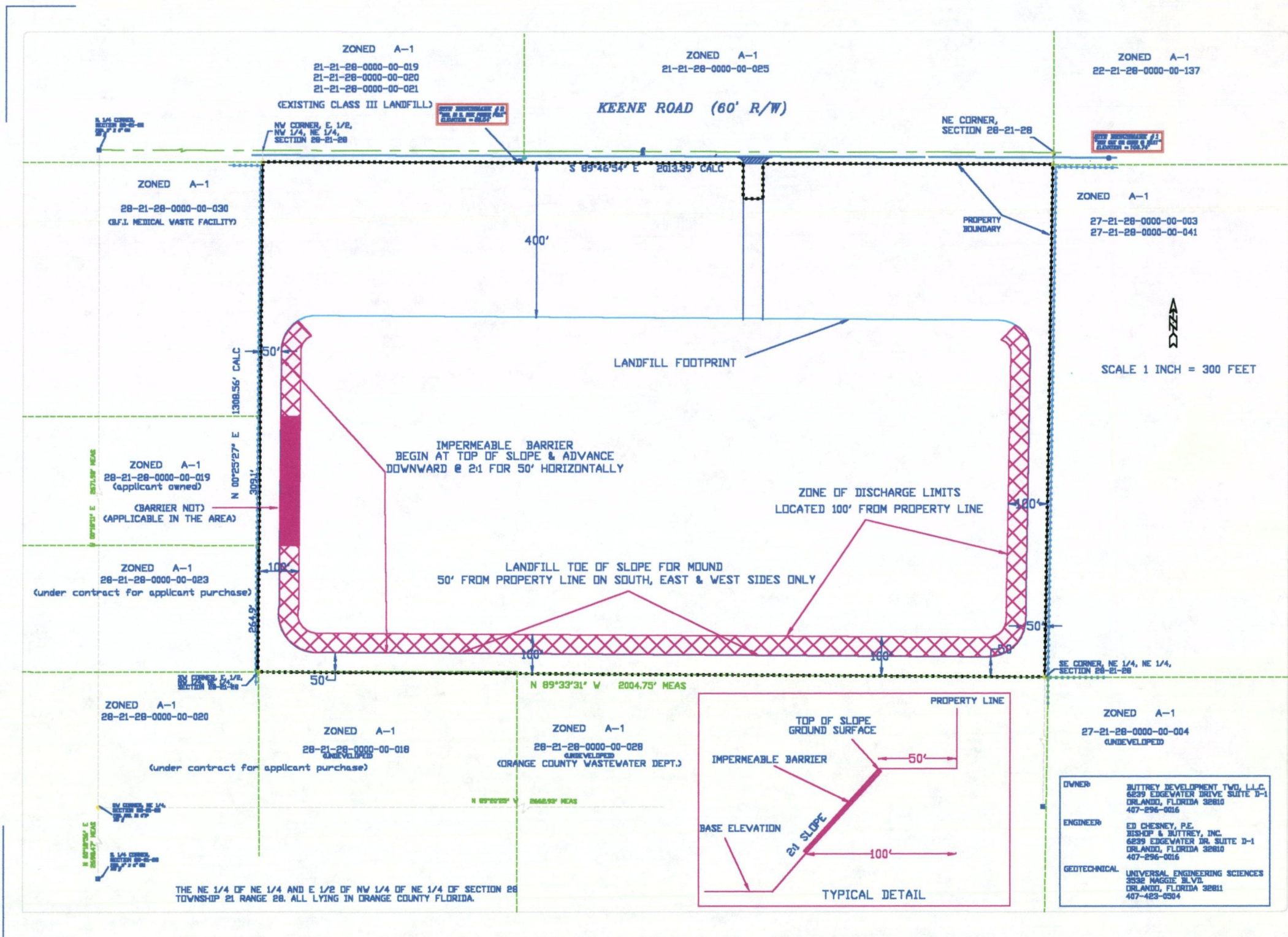
RECOMMENDED TREES FOR CENTRAL FLORIDA

Allspice	Magnolia X folgi
Attenuate Holly	Ilex attenuata
Bald Cypress	Taxodium distichum
Cabbage Palm	Sabal palmetto
Cherry Laurel	Prunus caroliniana
Chinese Elm	Ulmus parvifolia
Golden Rain Tree	Koelreuteria formosana
Jerusalem Thorn	Parkinsonia aculeata
Laurel Oak	Quercus laurifolia
Live Oak	Quercus virginiana
Longleaf Pine	Pinus palustris
Loquat	Eriobotrya japonica
Magnolia	Magnolia grandiflora
Sand Pine	Pinus clausa
Slash Pine	Pinus elliotii
Sweetgum	Liquidambar styraciflua
Sycamore	Plantus occidentalis
Winged Elm	Ulmus alata
Yaupon Holly	Ilex vomitoria

NWPC







BISHOP &
BUTTREY,
INC.

KEENE ROAD DISPOSAL CLASS III LANDFILL
IMPERMEABLE BARRIER LAYOUT

JOB NO.
DATE
SCALE
DRAWN BY EC
CHKD BY EC

REVISIONS
08/31/00

DESIGN/PLANS/SECTION
DRAWING DESCRIPTION
IMPERMEABLE
BARRIER
DRAWING NO.
FIGURE