

**PERMIT APPLICATION
FOR
CONTINUED OPERATION**

**Wayne County
Construction and Demolition
Landfill Facility**

Permit No.: 9601-CDLF-1997

**Site Location: 460B South Landfill Rd.
Dudley, NC 28333**

Applicant: Wayne County

**Applicant's Address: 224 E. Walnut St., 3rd Floor
Goldsboro, NC 27530**

**MESCO Project Number
G07058**

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Submitted By:

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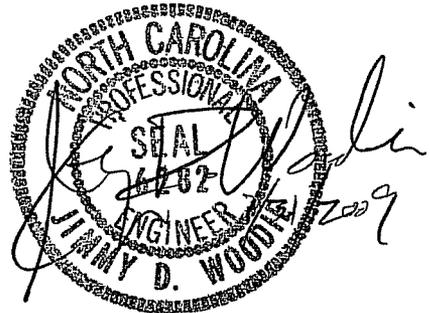


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SECTION 1.0

**OPERATION
PLAN**



County of Wayne
Solid Waste Department

Tim Rogers
Director

460B South Landfill Rd.
Dudley, NC 28833

Statement of Purpose

The purpose for this application is to continue the operation of our existing Construction and Demolition (C&D) Landfill which is on top of a Municipal Solid Waste (MSW) Landfill. The air space that is available on top of the old MSW Landfill for the disposal of the C&D waste is very valuable. Utilizing the space on top of the MSW Landfill prevents the need to develop another area within our landfill property or on other property. The landfill property can be used for additions to our MSW Landfill. Also, if we move to another site, we are creating another brown field that is not necessary. Furthermore, we do not have to use valuable MSW landfill space to dispose of C&D waste. The space on top of the closed landfill is available for several years, and we need to be able to continue to utilize this space.


Tim Rogers
Solid Waste Director
Wayne County

1.1 Introduction

Wayne County will continue to operate a Construction and Demolition Landfill (C&DLF) within the permitted boundaries and upon closed sections of the present municipal solid waste landfill. The section are limited to areas that stopped receiving waste prior to October 9, 1991 and have two feet of final cover.

The C&D Landfill will receive the following solid waste:

1. Land clearing debris as defined in G.S. 130A-290, specifically, solid waste which is generated solely from land clearing activities, such as stumps, trees, etc.;
2. Inert debris from any source that is defined as solid waste which consists solely of material that is virtually inert, such as brick, concrete, rock and clean soil;
3. Asphalt in accordance with G.S. 130-294(m);
4. Construction and demolition debris defined as solid waste resulting solely from construction, remodeling, repair or demolition operations on pavement, buildings or other structures (includes glass, vinyl, plastic, laminates, plumbing fixtures, etc.);
5. Construction materials, that could or would be part of any construction, remodeling, repair or demolition of pavement, buildings or other structures, from industrial and/or commercial sources within the County such as, but not limited to, shingles from shingle manufacturers, mobile home debris from mobile home manufacturers, lumber from lumber yards, scrap materials from cabinet manufacturing facilities and furniture, pre-fabricated building structure components such as joists and any other scrap materials; and,
6. Pallets from any source.

Yard Waste as defined in G.S. 130A-290, shall not be disposed in the landfill area. However, yard trash, along with land-clearing debris, may be accepted for processing in a permitted Yard Waste Composting Area.

Soil cover will be placed at least once a week. (See cover requirements under operational requirements).

The County will implement a program at the landfill for detecting and preventing the disposal of hazardous and liquid wastes. The program consists of random inspection of incoming loads at a minimum of 1% of the weekly traffic. Landfill personnel will be trained to recognize hazardous and liquid wastes. Records will be kept on the training and the inspections. See Appendix C for detailed plan.

The County will monitor for explosive gases at landfill structures and the perimeter of the landfill. The concentration of methane gases generated by the landfill cannot exceed 25 percent of the lower explosive limit for methane in the structures, and it cannot exceed 100 percent of the lower explosive limit for methane of the landfill property boundary. If methane gas is found to exceed the acceptable limits at either the property boundary or landfill structures, it is the County's responsibility to do the following:

1. Immediately take all necessary steps to ensure protection of human health, i.e. no smoking, temporarily abandon the structure and notify the Division of Solid Waste Management.

2. Within seven days of detection, place in the operating record the methane gas levels detected and a description of the steps taken to protect human health; and
3. Within 60 days of detection, implement a remediation plan for the methane gas releases, place a copy of the plan in the operating record, and notify the Division of Solid Waste management that the plan has been implemented. The plan will describe the nature and extent of the problem and the proposed remedy.

Off and on site erosion will be controlled through erosion control structures and devices. Provisions for a vegetative ground cover sufficient to restrain erosion will be accomplished within 30 working days or 120 calendar days upon completion of any phase of landfill development.

The County will record and retain at the landfill an operating record of the following information:

- (1) Inspection records, waste determination records, and training procedures;
- (2) Amounts by weight of solid waste received at the landfill;
- (3) Gas monitoring results and any remediation plans;
- (4) Any demonstration, certification, findings, monitoring, testing or analytical data required for surface and groundwater monitoring;
- (5) Any monitoring, testing or analytical data required for closure or post-closure;
- (6) Any cost estimates and financial assurance documentation.

All information contained in the operating record will be furnished upon request to the Division of Solid Waste Management or be made available at all reasonable times for inspection by the Division.

Ground and surface water will be sampled and analyzed according to Subtitle D Appendix I detection monitoring requirements. The monitoring frequency for all Appendix I detection monitoring constituents will be at least semiannual during the life of the facility (including closure) and the post-closure period. A minimum of four independent samples from each well (background and downgradient) will be collected and analyzed for the Appendix I constituents during the first semiannual sampling event. At least one sample from each well (background and downgradient) will be collected and analyzed during subsequent semiannual sampling events.

If the County determines that there is a statistically significant increase over background for one or more of the constituents listed in Appendix I at any monitoring well at the relevant point of compliance, the County will, within 14 days of the finding, report to the Division of Solid Waste and place a notice in the operating record indicating which constituents have shown statistically significant changes from background levels. The County will establish an assessment monitoring program within 90 days. The County may demonstrate that a source other than the landfill caused the contamination or that the statistically significant increase resulted from an error in sampling, analysis, statistical evaluation, or natural variation in ground-water quality. A report documenting these demonstrations will be certified by a Licensed Geologist or Professional Engineer and approved by the Division of Solid Waste. A copy of this report will be placed in the operating record. If a successful demonstration is made, documented, and approved by the Division, the County may continue detection monitoring. If after 90 days, a successful demonstration is not made, the County will initiate an assessment monitoring program.

1.2 Operational Requirements

1. Waste Acceptance and Disposal Requirements
 - a. The Construction and Demolition Landfill (C&DLF) will only accept those solid wastes which it is permitted to receive. The County will notify the Division within 24 hours of attempted disposal of any waste the landfill is not permitted to receive.
 - b. Asbestos waste will be managed in accordance with 40 CFR 61. The regulated asbestos waste will be covered immediately with soil in a manner that will not cause airborne conditions and will be disposed of separate and apart from other solid waste, as:
 - i. in a defined isolated area within the foot print of the landfill, or
 - ii. in an area not contiguous with other disposal areas. Separate areas will be designated so that asbestos will not be exposed by future land-disturbing activities.
 - c. Wastewater treatment sludges may be accepted, with the approval of the Division, either as a soil conditioner incorporated into or applied onto vegetative growth layer. The wastewater treatment sludge will neither be applied at greater than agronomic rates nor to a depth greater than six inches.
 - d. The following wastes are prohibited from disposal at the C&DLF:
 - i. Containers such as tubes, drums, barrels, tanks, cans, and bottles unless they are empty and perforated to ensure that no liquid, hazardous or municipal solid waste is contained therein.
 - ii. Garbage as defined in G.S. 130A-290(a)(7).
 - iii. Hazardous waste as defined in G.S. 130A-290(a)(8), to also include hazardous waste from conditionally exempt small quantity generators.
 - iv. Industrial solid waste unless a demonstration has been made and approved by the Division that the landfill meets the requirements of Rule .0503(2)(d)(ii)(A).
 - v. Liquid wastes.
 - vi. Medical waste as defined in G.S. 130A-290(a)(18)
 - vii. Municipal solid waste as defined in G.S. 130A-290(a)(18a)
 - viii. Polychlorinated biphenyls (PCB) wastes as defined in 40 CFR 761
 - ix. Radioactive waste as defined in G.S. 104E-5(14)
 - x. Septage as defined in G.S. 130A-290(a)(32)
 - xi. Sludge as defined in G.S. 130A-290(a)(34)
 - xii. Special waste as defined in G.S. 130A-290(a)(40)
 - xiii. White goods as defined in G.S. 130A-290(a)(44)

xiv. Yard trash as defined in G.S. 130A-290(a)(45)

- e. The following waste will not be received if separate from C&DLF waste: lamps or light bulbs including but not limited to halogen, incandescent, neon or fluorescent; lighting ballast or fixtures; thermostats and light switches; batteries including but not limited to those from exit and emergency lights and smoke detectors; lead pipes; lead roof flashing; transformers; capacitors; and copper chrome arsenate (CCA) and creosote treated woods.
- f. Waste accepted for disposal in the C&DLF unit shall be readily identifiable as C&D waste and must not have been shredded, pulverized, or processed to such an extent that the composition of the original waste cannot be readily ascertained except in the case where the waste has come from a permitted recycling and reuse facility.
- g. The County will not knowingly dispose any type or form of C&D waste that is generated within the boundaries of a unit of local government that by ordinance:
 - i. Prohibits generators or collectors of C&D waste from disposing that type or form of C&D waste.
 - ii. Requires generators or collectors of C&D waste to recycle that type or form of C&D waste.

2. Cover material requirements.

- a. Except as in Subparagraph (c), the County must cover the solid waste with six inches of earthen material when the waste disposal area exceeds one-half acre and at least once weekly. Cover must be placed at more frequent intervals if necessary to control disease vectors, fires, odors, blowing litter and scavenging. A notation of the date and time of the cover placement must be recorded in the operating record, as specified in Paragraph 10 in this section.
- b. Except as in Subparagraph (c), areas which will not have additional wastes placed on them for three months or more, but where final termination of disposal operations has not occurred, will be covered and stabilized with vegetative ground cover or other stabilizing material. Ample cover material is available from additional property owned by the County.
- c. Alternative material or an alternative thickness of cover may be used, if the County demonstrates that the alternative material or thickness controls disease vectors, fires, odors, blowing litter, and scavenging without presenting a threat to human health and the environment, and is approved by the Division.

3. Spreading and compacting requirements.

- a. C&DLF units will restrict solid waste to the smallest area feasible.
- b. Solid waste will be compacted as densely as practical into cells.
- c. Fencing and/or diking will be provided within the area to confine solid waste which is subject to be blown by the wind. At the conclusion of each operating day, all windblown material resulting from the operation will be collected and disposed of by the County.

4. Disease vector control
 - a. The County will prevent or control on-site populations of disease vectors using techniques appropriate for protection of human health and the environment.
 - b. "Disease vectors" means any rodents, flies, mosquitoes, or other animals, including insects, capable of transmitting disease to humans.
5. Air Criteria and Fire Control
 - a. The County will ensure that the units do not violate any applicable requirements developed under a State Implementation Plan (SIP) approved or promulgated by the U.S. EPA Administrator pursuant to Section 110 of the Clean Air Act, as amended.
 - b. Open burning of solid waste, except for the approved burning of land clearing debris generated on-site or debris from emergency clean-up operations, is prohibited at all C&DLF facilities. Prior to any burning a request will be sent to the Division for review. The Division will determine the burning to be approved if it is one of two types of burning previously referenced. A notation of the date of approval and the name of the Division personnel who approved the burning must be included in the operating record.
 - c. Equipment will be provided to control accidental fires and arrangements will be made with the local fire protection agency to immediately provide fire-fighting services when needed.
 - d. Fires and explosions that occur at the C&DLF require verbal notice to the Division within 24 hours and written notification within 15 days. Written notification must include the suspected cause of fire or explosion, the response taken to manage the incident, and the action(s) to be taken to prevent the future occurrence of fire or explosion.
6. Access and safety requirements
 - a. The C&DLF will be adequately secured by means of gates, chains, beams, fences and other security measures approved by the Division of Solid Waste Management to prevent unauthorized entry.
 - b. An attendant will be on duty at the site at all times while it is open for public use to ensure compliance with operational requirements.
 - c. The access road to the site will be of all-weather construction and maintained in good condition.
 - d. Dust control measures will be implemented when necessary. If dust problems should arise, the County will use any reasonable means necessary to reduce it. At a minimum the County will spray water on necessary areas.
 - e. Signs providing information on tipping or disposal procedures, the hours during which the site is open for public use, the permit number and other pertinent information will be posted at the site entrance.
 - f. Signs will be posted stating that no hazardous or liquid waste can be received.

- g. Traffic signs or markers will be provided as necessary to promote an orderly traffic pattern to and from the discharge area and to maintain efficient operating conditions.
 - h. The removal of solid waste from the C&DLF will be prohibited unless the County has included in its operational plan a recycling program which has been approved by the Division. The general public is prohibited from removal activities on the working face.
7. Erosion and Sedimentation Control Requirements
- a. Adequate sediment control measures (structures or devices), will be utilized to prevent silt from leaving the landfill.
 - b. Adequate sediment control measures (structures or devices), will be utilized to prevent excessive on-site erosion.
 - c. Provisions for a vegetative ground cover sufficient to restrain erosion will be accomplished within **30 working days** or **120 calendar days** upon completion of any phase of landfill development.
8. Drainage Control and Water Protection Requirements
- a. Surface water will be diverted from the operational area and will not be impounded over waste.
 - b. Solid waste will not be disposed of in water.
 - c. Leachate will be contained on site and properly treated prior to discharge.
 - d. The landfill will not:
 - (i) Cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act, including, but not limited to, the National Pollutant Discharge Elimination System (NPDES) requirements pursuant to Section 402.
 - (ii) Cause the discharge of a nonpoint source of pollution to waters of the United States, including wetlands, that violates any requirements of an area-wide or state-wide water quality management plan that has been approved under Section 208 or 319 of the Clean Water Act, as amended.
9. Survey for Compliance
- Within 60 days of a permittee's receipt of the Division's written request, the permittee will have a survey conducted of active and/or closed portions of the unit(s) at the facility in order to determine whether operations are being conducted in accordance with the approved design and operation plans. The permittee must report the results of the survey, including a map produced by the survey, to the Division within 90 days of receipt of the Division's request.
- a. A survey shall be required by the division:
 - (i) If there is reason to believe that the operations are being conducted in a manner that deviates from the plan listed in the effective permit, or

- (ii) As verification that operations are being conducted in accordance with the plan listed in the effective permit.
 - b. Any survey pursuant to this Paragraph must be performed by a professional land surveyor duly authorized under North Carolina law to conduct such activities.
10. Record keeping Requirements
- a. The County will record and retain at the facility, or an alternative location near the facility approved by the Division of Solid Waste Management, in an operating record the following information as it becomes available.
 - (i) Inspection records, waste determination records, and training procedures;
 - (ii) Amounts by weight of solid waste received at the landfill to include source of generation.
 - (iii) Any demonstration, certification, findings, monitoring, testing or analytical data required for surface, groundwater and gas monitoring;
 - (iv) Any monitoring, testing, or analytical data required for closure or post-closure;
 - (v) Any cost estimates and financial assurance documentation;
 - (vi) Notation of date and time of placement of cover material; and,
 - (vii) All audit records, compliance records and inspection reports.
 - b. All information contained in the operating record will be furnished to the Division of Solid Waste Management according to the permit or upon request, or be made available for inspection by the Division.
 - c. The operating record will also include a copy of the approved operation plan and all required permits.

SECTION 2.0

**CLOSURE
PLAN**

2.1 Introduction

The Division of Solid Waste Management requires that the Engineer certifies the constructed cap is built according to approved plans and specifications. The Engineer that will accomplish this task is the one who did the planning and has written the specifications.

Before construction can begin a pre-construction meeting will be held and the responsibilities and duties of each party will be discussed.

The Contractor is responsible for following and meeting the requirements set forth in the contract documents. The Contractors will provide to the Owner of the landfill and the Engineer a completed landfill constructed by Division of Solid Waste approved plans and specifications. The Contractor will give the Engineer a schedule for completion of the landfill including dates for expected construction of the cohesive soil test pad, cohesive soil cap, erosive layer, and estimated time for project completion. The contractor is responsible for providing a foreman to remain on site at all times during construction, provide qualified personnel to conduct quality control, scheduling and coordinating the subcontractors, provide progress reports and as-built drawings, and coordinating construction activities with the Engineer. The foreman is responsible for supervising and coordinating with his crew, subcontractors, quality control personnel, attending all meetings and notifying the Engineer's Construction Observer when any discrepancies occur. The Contractor will meet with the Construction Observer on a daily basis to discuss the days construction activities. The results of all tests and any change in schedule shall be given to the Construction Observer as soon they are known by the contractor. The Contractor must be registered in the state of North Carolina.

The Engineer is responsible for providing the engineering design, drawings and specifications, contract documents and CQA needed for construction of the landfill. The Engineer is responsible for conduction of the pre-construction meeting, which will lay out the foundation for the project. The engineer will approve any design changes and certify to the Division of Solid Waste Management that the cap was constructed according to the requirements of Rule .0541 Construction Quality Assurance Plan and .0540 Construction requirements for C&D Facilities, and Division approved plans and specifications. This will be accomplished by on site observation, independent laboratory soil testing to test site specific soil properties including permeability. The Engineer will be providing Quality Assurance by spot testing along side the contractor, who will be providing the Quality Control. The Engineer will certify that the construction was completed in accordance with the CQA manual. The Engineer must be a professional engineer registered in North Carolina.

The Construction Observer (CO) is the Engineer's representative on-site. It is the CO's responsibility to know and interpret the plans and specifications of the project. On a daily basis the CO will coordinate with the Foreman to help ensure a quality product for the Owner. The CO will keep a daily log on the activities of the Contractor, keep notes on all meetings, and handle all quality assurance activities indicated in this document. The CO will keep a log of all material delivered on site and ensure the materials meets or exceeds the specifications indicated in this report. If the need arises additional meetings will be scheduled as seen fit by the CO.

The County will cap their landfill within 180 days after the final receipt of solid waste. The cap system will consist of 12 inches of intermediate cover, 18 inches of cohesive soil with a permeability no greater than 1.0×10^{-5} cm/sec, 18 inches of erosive layer. The cap contains gas venting system consisting of a series of washed stone trenches below the soil liner that will be vented through 10" diameter PVC pipes that penetrate the cap. The cap system will also include the proper seeding and mulching of the erosive layer and other erosion control devices. The largest area ever needing closure will be 40 acres.

The estimate of the maximum inventory of wastes ever on-site over the active life of the landfill facility is 309,025 tons from FY 98-99 through FY 07-08.

Prior to beginning closure, the County shall notify the Division of Solid Waste that a notice of the intent to close the unit has been placed in the operating record. The County shall begin closure activities no later than thirty (30) days after the date on which the landfill receives the final wastes or if the landfill has remaining capacity and there is a reasonable likelihood that the landfill will receive additional wastes, no later than one year after the most recent receipt of wastes. Extensions beyond the one-year deadline for beginning closure may be granted by the Division of Solid Waste if the County demonstrates that the landfill has the capacity to receive additional waste and the County has taken and will continue to take all steps necessary to prevent threats to human health and the environment from the closed landfill.

The County shall complete closure activities in accordance with the closure plan within 180 days following the final receipt of waste. Extensions of the closure period may be granted by the Division of Solid Waste if the County demonstrates that closure will, of necessity, take longer than one hundred eighty (180) days and the County has taken and will continue to take all steps to prevent threats of human health and environment from the enclosed landfill.

Following closure of the landfill, the County shall notify the Division that a certification, signed by the project engineer verifying that closure has been completed in accordance with the closure plan, and has been placed in the operating record. The County shall record a notation on the deed to the landfill property and notify the Division of Solid Waste that the notation has been recorded and a copy has been placed in the operating record. The notation on the deed shall in perpetuity notify any potential purchaser of the property that the land has been used as a landfill and its use is restricted under the closure plan approved by the Division of Solid Waste. The County may request permission from the Division to remove the notation from the deed if all waste is removed from the landfill.

2.2 Cap System

All materials and equipment shall be furnished by an established and reputable manufacturer or supplier. All materials and equipment shall be new and shall be of first class ingredients and construction, designed and guaranteed to perform the service required and shall conform with the following standard specifications or shall be the product of the listed manufacturers or similar and equal thereto as approved by the Engineer.

2.3 Cohesive Soil Cap

All materials and equipment shall be furnished by an established and reputable manufacturer or supplier. All materials and equipment shall be new and shall be of first class ingredients and construction, designed and guaranteed to perform the service required and shall conform with the following standard specifications or shall be the product of the listed manufacturers or similar and equal thereto as approved by the Engineer.

Cohesive Soil Cap Borrow Material

Test Name	Test Method	Contractor/Engineer Frequency
Moisture/Density	ASTM D698/D1557	1 per 5000 c.y.
Remolded Permeability	ASTM D5084	1 per 5000 c.y.
Atterberg Limits	ASTM D4318	1 per 5000 c.y.
Visual Classification	ASTM D2488	1 per 5000 c.y.
Grain Size Distribution	ASTM D422	1 per 5000 c.y.

Cohesive Soil Cap Test Pad

Test Name	Test Method	Contractor/Engineer Frequency
Field Moisture/Density	ASTM D1556 (sand cone) ASTM D2922/D3017 (nuclear gauge) ASTM D2937 (drive cylinder)	3 per lift
Permeability	ASTM D5084	1 per lift
Remolded Permeability	ASTM D5084	1 per lift
Atterberg Limits	ASTM D4318	1 per lift
Visual Classification	ASTM D2488	1 per lift
Grain Size Distribution	ASTM D422	1 per lift

In-Place Cohesive Soil Cap

Test Name	Test Method	Contractor/Engineer Frequency
Field Moisture/Density	ASTM D1556 (sand cone) ASTM D2922/D3017 (nuclear gauge) ASTM D2937 (drive cylinder)	1 per lift per acre
Permeability	ASTM D5084	1 per lift per acre
Atterberg Limits	ASTM D4318	1 per lift per acre
Visual Classification	ASTM D2488	1 per lift per acre
Grain Size Distribution	ASTM D422	1 per lift per acre

(a) Suitable on-site and/or off-site soils may be used as cohesive soil cap if it can achieve an in-place permeability of 1.0×10^{-5} cm/sec or less and meets all testing requirements indicated in the material testing paragraph in this section. Wyoming bentonite or an approved equivalent may be blended with the soil to lower the soil's permeability.

(b) A permeability "window" shall be developed for each type of soil from the borrow material that will be used for construction of the cohesive soil cap. The window shall be plotted on a semi-log plot with moisture content versus density. Laboratory testing to develop the window shall include a series of remolded samples compacted to various dry densities and moisture contents utilizing the same compactive effort (ASTM D 698 or D 1557). The remolded samples shall be tested for permeability to determine whether or not the particular soil type will provide the maximum permeability (1.0×10^{-5} cm/sec) at various dry densities and moisture contents. The window is then developed from the accepted remolded samples and moisture contents from the semi-log plot. A straight line is typically drawn between the acceptable points on the moisture-density curve to indicate a range of probable acceptable permeability results. The window will be used in the construction of the test strip to verify the laboratory remolded permeability results.

(c) Atterberg limits and grain size distribution shall also be conducted on the bulk samples used to prepare the permeability window ASTM D2488, D4318, D422. These tests can be used as indices on random samples collected from the borrow site during construction to verify the soil type is the same as was used to develop the "window". As a minimum, sufficient visual classifications and Atterberg limits shall be conducted in association with each permeability test to verify that the construction materials meet specifications.

(d) A test strip of compacted cohesive soil cap shall be prepared to verify the permeability "window" prior to general installation of the cohesive soil cap. The test strip will be used to

verify the results from the remolded permeabilities from the borrow site utilizing the permeability window(s) for each soil type that is going to be used for construction of the cohesive soil cap. At a minimum, the verification will consist of three moisture density tests, one Atterberg limits test, one grain size distribution test (ASTM D2488, D4318, and D422), and one Shelby Tube sample for each lift constructed in the test pad. Laboratory permeability tests shall be performed on tube (Shelby or drive tubes) samples of the cohesive soil cap after placement and compaction. The permeability must be a maximum of 1.0×10^{-5} cm/sec. Tests shall be performed in accordance with the ASTM D5084. The test strip shall be approximately 2,500 sq. ft. in surface area and constructed to conform geometrically to the site topography with a minimum lateral dimension in any direction of 25 ft. The test strip shall consist of at least three compacted 6 inch lifts of cohesive soil cap. Placement and testing of the test strip shall be in conformance with the construction specifications and requirements for general installation of the cohesive soil cap. Test results from the test strip shall be used to guide placement and achievement of the required maximum permeability of 1.0×10^{-5} cm/sec of the cohesive soil cap. The test strip may be used as an integral part of the overall cohesive soil cap if it meets the required specification for the cap. All results shall be given to the Construction Observer.

(e) The soils shall be placed to the total thickness shown on the plans in maximum 8-inch thick loose lifts with a maximum 6" compacted lift compacted preferably at a moisture content between 0 to 3% above optimum moisture content to 95% standard Proctor maximum dry density (ASTM Test Designation D698). A sheepsfoot roller or approved alternative may be used to compact the soil cap provided the compaction and permeability requirements can be achieved. Each lift shall be tested for permeability, moisture content, particle size distribution analysis, Atterberg limits, moisture-density-permeability relation, and if needed percent bentonite admixed with soil, prior to the placement of the succeeding lift and visually inspected to confirm that all soil clods have been broken and that the surface is sufficiently scarified so that adequate bonding can be achieved. Soils for cohesive soil cap shall be screened, disked, or prepared using any other approved method as necessary to obtain a homogeneous cohesive soil with clod sizes in a soil matrix no larger than about 1.5 inches in maximum diameter. After each lift, the surface shall be scarified prior to the placement of the next lift to provide good bonding from one lift to the next.

(f) The cohesive soil cap shall be tested to evaluate the coefficient of permeability. The coefficient of permeability of the soil cap shall be equal to or less than 1.0×10^{-5} cm/sec after placement and compaction. The soil cap must be a minimum of 1.5 feet thick.

(g) Laboratory permeability tests shall be performed on tube (Shelby or drive tubes) samples of the cohesive soil cap after placement and compaction. The permeability must be a maximum of 1.0×10^{-5} cm/sec. Tests shall be performed in accordance with ASTM D5084.

(h) The soil cap shall be tested a minimum of one soil sample per lift per acre for laboratory permeability. All permeability testing will be on random samples judged by the Engineer to be representative of the most permeable soil conditions for the area being tested. The project engineer shall certify that the materials used in construction were tested according to the Division approved plans. If after placement of the soil cap it fails the required tests, the material will either be reworked or replaced. The soil cap must remain moist at all times, if any section becomes dry, rework the dry area and moisten.

(i) A minimum of two (2) inches of soil shall be removed prior to securing each sample for permeability testing. The sampling tube shall be advanced vertically into the soil with as little soil disturbance as possible and should be pushed using a uniform pressure. The sampling tube (Shelby tube), when extracted, shall be free of dents, and the ends shall not be distorted. A backhoe or approved alternative should be used to advance the sampling tube (Shelby tube) as long as disturbance is minimized. Drive tube samples of the cap may be obtained for permeability testings. If the Engineer judges the sample to be too disturbed, another sample shall be taken. Once an acceptable sample has been secured and properly prepared, all

sample excavations shall be backfilled to grade with a 50% mixture of bentonite and similar soils in maximum 3-inch loose lifts and hand tamped with a blunt tool to achieve a tight seal equivalent to the original density.

(j) No additional construction shall proceed on the soil layers at the area being tested until the Engineer has reviewed the results of the tests and judged the desired permeability is being achieved.

(k) As a minimum, sufficient visual classifications (ASTM Test Designation D2488) , analyses (ASTM Test Designation D422) and Atterberg limits (ASTM Test Designation D4318) shall be conducted in association with each permeability test to verify that the construction materials meet specifications. The minimum number of tests will be 1 per lift per acre.

(l) If the soil for the cohesive soil cap is incapable of achieving the required permeability when compacted, bentonite or approved alternative may be mixed with the soils to decrease the permeability. The amount of additive required must be determined in the laboratory. Where additives are required, the soil shall be placed in maximum 8-inch thick loose lifts and compacted preferably between 0 to +3% optimum moisture content to 95% standard Proctor maximum dry density (ASTM Test Designation D698) for the soil-additive mixture. All other compaction procedures for the soil apply.

(m) The Contractor shall protect the cohesive soil cap from desiccation, flooding and freezing. Protection, if required, may consists of a thin plastic protective cover, (or other material as approved by the engineer) installed over the completed cohesive soil cap until such time as the placement of flexible membrane liner begins. Areas found to have any desiccation cracks or which exhibit swelling, heaving or other similar conditions shall be replaced or reworked by the contractor to remove these defects.

(n) The thickness and grade of the soil cap will be verified by the surveyor. The soil cap will be surveyed at 100' grid points where the elevations of the top of landfill will be checked with the top of soil cap to verify 1.5 feet of soil cap. The grade will then be verified with the surveyed information. The survey will be performed by NC licensed surveyors.

2.4 Erosive Layer

The soil for the erosive layer shall consist of any soils suitable of supporting vegetative growth.

(a) Native vegetation will be used as approved by the Erosion Control Plan.

2.5 Methane Venting System

The County will use their existing methane gas collection system.

2.6 Closure Costs

The largest area to be closed within the permitted life will be 40 acres. Post Closure will be 30 years after closure.

Closure Costs:

Closure will consist of the following which costs are estimated as being done by a third party.

1. 18" of 1×10^{-5} cm/sec. cohesive soil cap;
2. Erosion Control Devices;
3. 18" Erosive layer;
4. Seeding and Mulching;
5. Mobilization/Demobilization;
6. Labor Costs; and
7. Engineering Costs and QA/QC of the Composite liner and certification of closure.

Estimate of Probable Costs:

1. 18" of 1×10^{-5} cm/sec. cohesive soil cap for 40 acres:
(including surface preparation)

Total yardage + 15% = 74,213 yd³ @ a cost of \$9.00/yd³
∴ Cost = \$667,917

2. Erosion Control devices

Estimated costs @ \$75,000
∴ Cost = \$75,000

3. 18" erosive soil layer for 40 acres.

Total yardage + 15% = 74,213 yd³ @ a cost of \$4.00/yd³
∴ Cost = \$296,852

4. Seeding and Mulching for 40 acres.

Estimated cost of \$2,000/acre
∴ Cost = \$80,000

5. Mobilization/Demobilization.
(including Machine/Equipment costs and fuel costs)

Estimated cost of \$175,000

6. Labor Costs.

Estimated cost of \$200,000
∴ Cost = \$200,000

7. Engineering Costs and QA/QC of the Composite liner and certification of closure.
(including CQA field monitoring and lab testing, CQA reporting and certification,
construction administration, construction documentation and bidding, Survey as-builts
and recordation fees)

Estimated cost = \$200,000

∴ Cost = \$200,000

Total of Estimated Closure Costs:

1.	\$	667,917
2.	\$	75,000
3.	\$	296,852
4.	\$	80,000
5.	\$	175,000
6.	\$	200,000
7.	\$	<u>200,000</u>
Total:	\$	1,694,769

SECTION 3.0

**POST-CLOSURE
PLAN**

3.1 Introduction

CONTACTS:

Name:	Tim Rogers
Title:	Solid Waste Director
Phone No.:	(919) 689-2994
Address:	460 B. S. Landfill Rd. Dudley, NC 28333

DESCRIPTION OF USE:

The County has no future use planned for their landfill at this time. However, any future use of the landfill shall not disturb the integrity of the cap system, base line system or any other components of the containment system or the functioning of the monitoring systems.

DESCRIPTION OF MAINTENANCE ACTIVITIES:

The County Landfill will be monitored quarterly for evidence of settlement, subsidence and ponding in the cap system. The entire site will be monitored quarterly for evidence and effects of erosion. The erosion control plan will be preserved. All gates, fencing, access roads, and signs shall be maintained appropriately. Annually in the Spring, the vegetative cover will be monitored to assure a good stand of vegetation, and where needed, it will be reseeded. The vegetative cover will be mowed twice a year, once in mid-summer and again in early fall. These maintenance activities will take place over the entire post closure period of thirty years.

DESCRIPTION OF MONITORING ACTIVITIES:

The County Landfill will monitor and analyze ground and surface water semi-annually for Subtitle D Appendix I constituents for a period of thirty years. The County will also monitor methane gas at landfill structures and the boundary quarterly for the thirty-year period.

COMPLETION OF POST-CLOSURE CARE

Following completion of the post-closure care period for each unit, the owner or operator will notify the Division of Solid Waste that a certification, signed by a registered professional engineer, verifying that post-closure care has been completed in accordance with the post-closure plan, has been placed in the operating record.

3.2 Post Closure Costs

The largest closed area to be monitored within the post closure life will 40 acres.

Post Closure Costs:

Methane gas, ground water and surface water will be monitored for 30 years after closure. The cap will also have to be monitored for the 30 year period. All costs include reports, data analysis, and certifications.

1. Ground and Surface Water monitoring semi-annually for 30 years for appendix I constituents and statistical analysis.
Estimated cost/sample = \$840.00/sample
Total annual samples = 2(6 wells + 3 surface) = 18 samples/year
Estimated cost = 30 years x 18 samples/year x \$840.00/sample =

∴ Cost = \$453,600
2. Methane Gas monitoring quarterly for 30 years.
Estimate \$600.00/quarter = \$2,400.00/year
Estimated cost = 30 year x \$2,400.00 = \$72,000.00

∴ Cost = \$72,000.00
3. Cap Monitoring and repairing (including maintenance of all gates, fencing, access roads and signs, mowing and revegetation)

Estimate \$100,000 for the 30 years.

∴ Cost = \$100,000
4. Closure of sedimentation and erosion control devices.
Estimate \$24,000.00 for closure

∴ Cost = \$24,000
5. Maintenance of gas extraction system.
Estimate \$60,000
6. Administration/Record keeping
Estimate \$4,000.00/year for 30 years

∴ Cost = \$120,000

Total of Estimated Post Closure Costs:

1.	\$ 453,600
2.	\$ 72,000
3.	\$ 100,000
4.	\$ 24,000
5.	\$ 60,000
6.	\$ 120,000
Total:	\$ 829,600

SECTION 4.0

**FINANCIAL
RESPONSIBILITIES**



County of Wayne

STATE OF NORTH CAROLINA

Goldsboro
27533-0227

PAMELA M. HOLT
FINANCE DIRECTOR

P.O. BOX 227
PHONE: (919) 731-1424
FAX: (919) 731-1388
pam.holt@waynegov.com

June 26, 2008

Ms. Amy Kadrie, Compliance Officer
Solid Waste Section
NCDENR – Division of Waste Management
1646 Mail Service Center
Raleigh, NC 27699-1646

Dear Ms. Kadrie,

I am the Chief Financial Officer of Wayne County, 224-226 E. Walnut Street, Goldsboro, NC 27533. This letter is in support of this unit of local government's use of the financial test to demonstrate financial assurance, as specified in 15A NCAC 13B.1628(e)(1)(f).

This unit of local government is the owner or operator of the following facility for which financial assurance for closure, post-closure, or corrective action is demonstrated through the financial test specified in 15A NCAC 13B.1628(e)(1)(f). The current closure, post-closure, or corrective action cost estimates covered by the test are shown for the facility:

Opened 01-01-98:

Facility Name:	Wayne County Landfill
Facility Address:	460-B South Landfill Road, Dudley, NC 28333
Permit Number:	9601
Closure Cost Estimate:	\$1,694,769
Post-Closure Estimate:	\$709,600
Corrective Action Cost Estimate:	N/A
Total Costs to be Covered:	\$2,404,369

The fiscal year of the unit of local government ends on June 30, 2008. The figures for the following items marked with an asterisk are derived from this unit of local government's Annual Financial Information Report (AFIR) for the latest completed fiscal year, ended June 30, 2007.

I hereby certify that the wording of this letter is identical to the wording specified in 15A NCAC 13B.1628(e)(2)(g) as such rules were constituted on the date shown immediately below. I further certify the following: (1) that the unit of local government has not operated at a total operating fund deficit equal to five percent or more of total annual revenue in either of the past two fiscal years, (2) that the unit of local government is not in default on any outstanding general obligation bonds or long-term obligations, and (3) does not have any outstanding general obligation bonds rated lower than Baa issued by Moody's, BBB as issued by Standard & Poor's, BBB as issued by Fitch's, or 75 as issued by the Municipal Council.

Sincerely,



Pamela M. Holt
Director of Finance

BOND RATING INDICATOR OF FINANCIAL STRENGTH

- | | |
|---|--|
| 1. Sum of current closure, post-closure, and corrective action cost estimates (total of all cost estimates shown in the paragraphs above) | <u>\$2,404,369</u> |
| 2. Current bond rating of most recent issuance and name of rating service | <u>A1 Moody's,</u>
<u>A+ Standard & Poors</u> |
| 3. Date of issuance bond | <u>June 01, 2001</u> |
| 4. Date of maturity of bond | <u>February 01, 2011</u> |
| 5. Assured environmental costs to demonstrate financial responsibility in the following amounts under Division rules: | |
| MSWLF under 15A NCAC 13B.1600 | <u>\$2,404,369</u> |
| Hazardous waste treatment, storage, and disposal facilities under 15A NCAC 13A .0009 and .0010 | <u>\$0</u> |
| Petroleum underground storage tanks under 15A NCAC 2N.0100-.0800 | <u>\$0</u> |
| Underground Injection Control System facilities under 15A NCAC 2D.0400 and 15A NCAC 2C.0200 | <u>\$0</u> |
| PCB commercial storage facilities under 15A NCAC 20.0100 and 15A NCAC 2N.0100 | <u>\$0</u> |
| Total assured environmental costs | <u>\$2,404,369</u> |
| *6. Total Annual Revenue (AFIR Part 2) | <u>\$125,085,437</u> |
| Circle either "yes" or "no" to the following question. | |
| 7. Is line 5 divided by line 6 less than or equal to 0.43? | <u>YES</u> |

APPENDIX A

**OPERATION DRAWINGS
AND
CLOSURE DRAWINGS**

WAYNE COUNTY CONSTRUCTION AND DEMOLITION LANDFILL FACILITY ENGINEERING/OPERATION PLAN

Permit Number: 96-01

**Site Location: 460 B South Landfill Road
Dudley, NC 28333**

Applicant: Wayne County

**Applicant's Address: 224 E. Walnut St., 3rd Floor
Goldsboro, NC 27530**

BOARD OF COMMISSIONERS

**Roland M. "Bud" Gray - Chairman
C. Munroe "Jack" Best, Jr. - Vice-Chairman
Wilbur E. "Andy" Anderson
John M. Bell
J. D. Evans
Steve Keen
Dr. Sandra McCullen**

COUNTY MANAGER

William "Lee" Smith, III

SOLID WASTE DIRECTOR

Tim Rogers

Engineer

**Municipal Engineering Services Company, P.A.
Garner, NC - Morehead City, NC - Boone, NC**

by  *J. Woodie*
Professional Engineer
(Garner Office)



License Number: C - 0281
Municipal Services
 P.O. BOX 97, GARNER, N.C. 27529 (919) 772-5393
 P.O. BOX 828, MOREHEAD CITY, N.C. 28557 (252) 726-9481

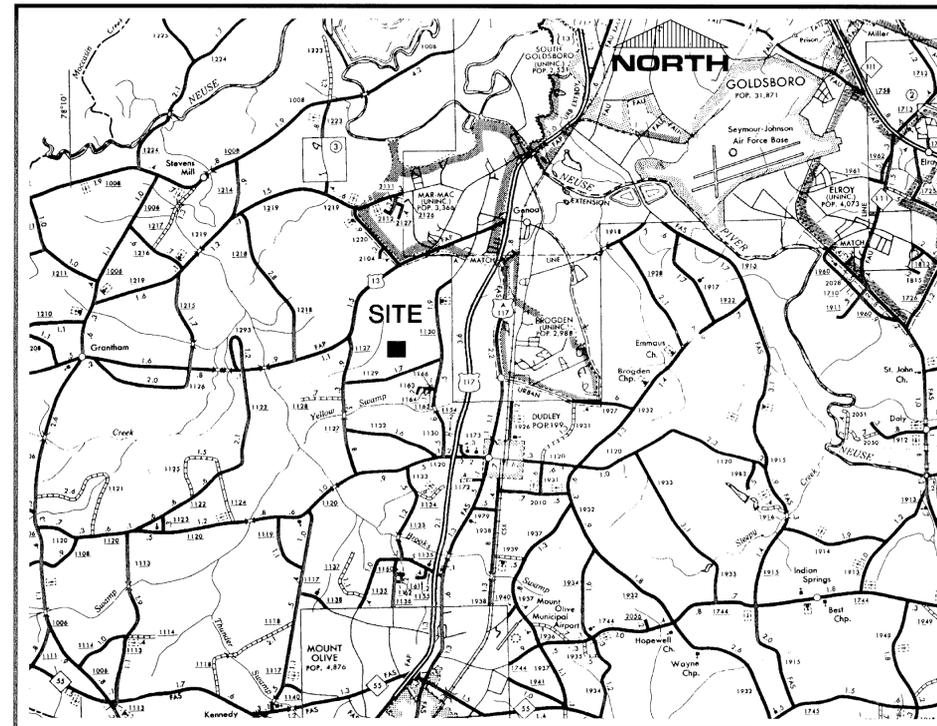
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2/18/09	LCH	1	REVISED PER DENR LETTER DATED 12/23/08.

SCALE: 1:1
 DATE: 11/21/07
 DRWN. BY: L. HAMPTON
 CHKD. BY: J. WOODIE
 PROJECT NUMBER: G07058
 DRAWING NO. T1 SHEET NO. 1 OF 9

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INDEX

SHEET NO.	DRAWING NO.	DESCRIPTION
1	T1	TITLE SHEET
2	T2	INDEX AND VICINITY MAP
3	CD1	FACILITY PLAN
4	CD2	EXISTING CONDITIONS AS OF 11/19/07
5	CD3	1st YEAR FILL PLAN
6	CD4	2nd YEAR FILL PLAN
7	CD5	3rd YEAR FILL PLAN
8	CD6	4th YEAR FILL PLAN
9	CD7	5th YEAR FILL PLAN



VICINITY MAP



 License Number: C - 0281

Municipal Services

 Engineering Company, P.A.

 P.O. BOX 87 GARNER, N.C. 27529 (919) 772-6383

 P.O. BOX 348 BOONE, N.C. 28607 (828) 262-1767

 P.O. BOX 828 MOREHEAD CITY, N.C. 28557 (252) 726-9481

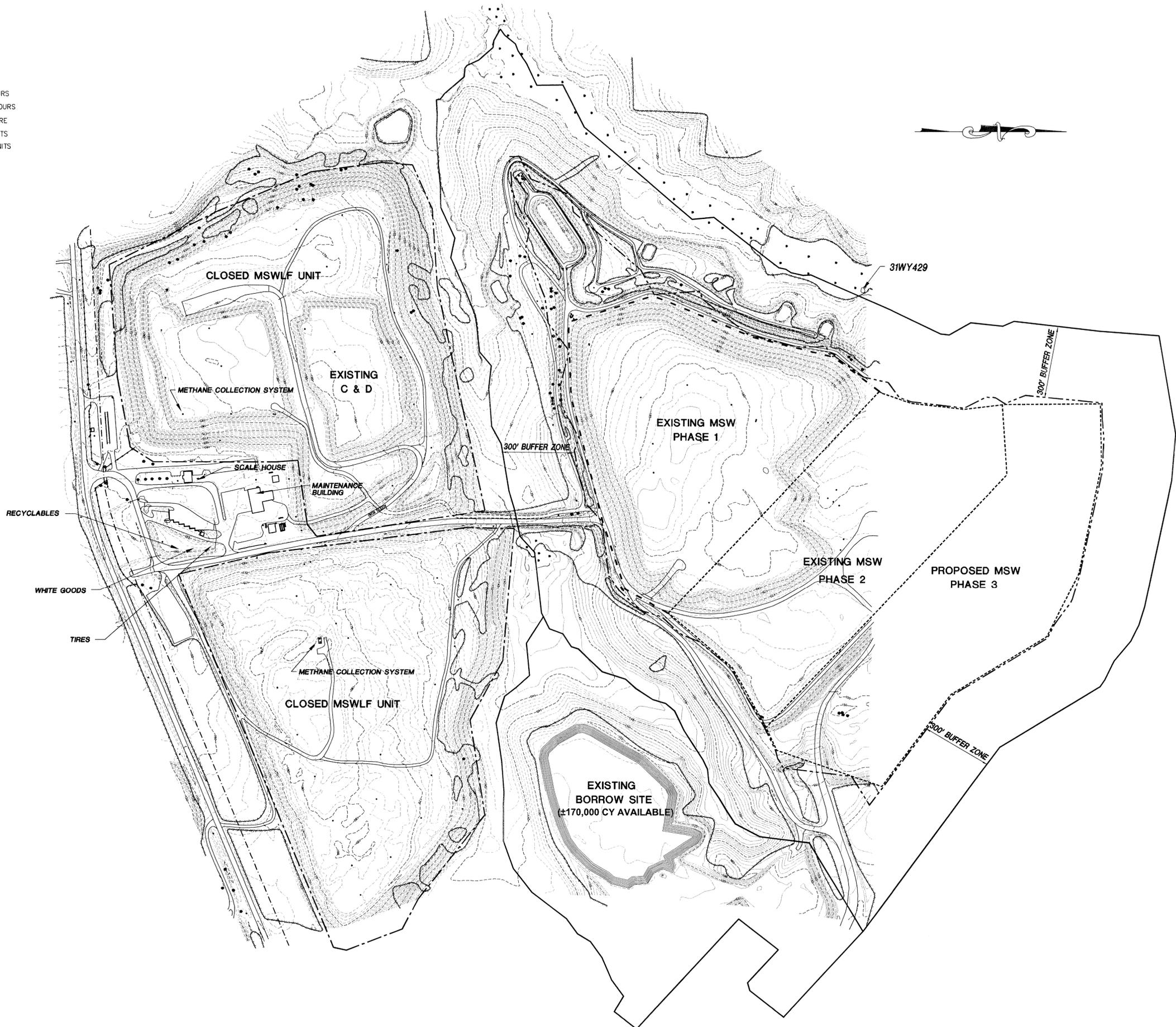
CONSTRUCTION & DEMOLITION
LANDFILL FACILITY
WAYNE COUNTY
NORTH CAROLINA

DATE	BY	REV.	DESCRIPTION

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DRWN. BY:	L. HAMPTON
CHKD. BY:	J. WOODIE
PROJECT NUMBER:	G07058
DRAWING NO.:	T2
SHEET NO.:	2 OF 9



- LEGEND:**
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 - 150--- PROPOSED CONTOURS
 - DRAINAGE FEATURE
 - CLOSED MSW UNITS
 - EXISTING MSW UNITS
 - FENCELINE
 - TREELINE
 - PAVED ROADS
 - UNPAVED ROADS



Engineering Company, P.A.

P.O. BOX 349 BOONE, N.C. 28607
(828) 262-1767

Municipal Services

P.O. BOX 87 GARNER, N.C. 27529
(919) 772-6383

P.O. BOX 828 MOREHEAD CITY, N.C. 28557
(252) 768-9481

LICENSE NUMBER C-0281

**CONSTRUCTION AND DEMOLITION
LANDFILL FACILITY
WAYNE COUNTY
NORTH CAROLINA**

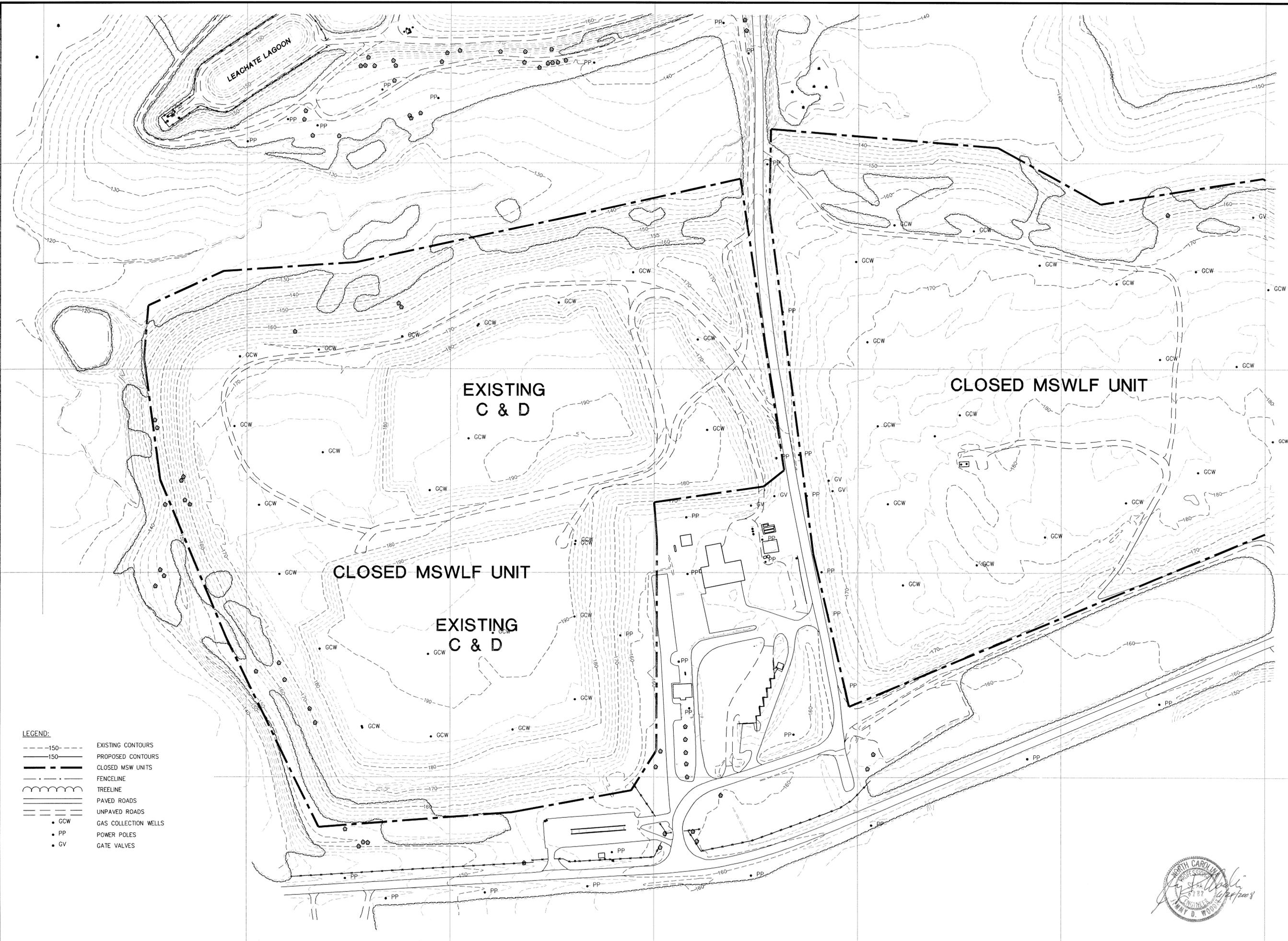
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 CHKD. BY: J. WOODIE
 PROJECT NUMBER: G07058
 DRAWING NO.: CD1
 SHEET NO.: 3 OF 9



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 - - - - - TREELINE
 - - - - - PAVED ROADS
 - - - - - UNPAVED ROADS
 - GCW GAS COLLECTION WELLS
 - PP POWER POLES
 - GV GATE VALVES




Municipal Engineering Services
 License Number: C - 0281
 P.O. BOX 87 GARNER, N.C. 27529
 (919) 772-5585 P.O. BOX 828 MOOREHEAD CITY, N.C. 28557
 (252) 726-9461
Engineering Company, P.A.
 P.O. BOX 348 BOONE, N.C. 28607
 (828) 262-1787

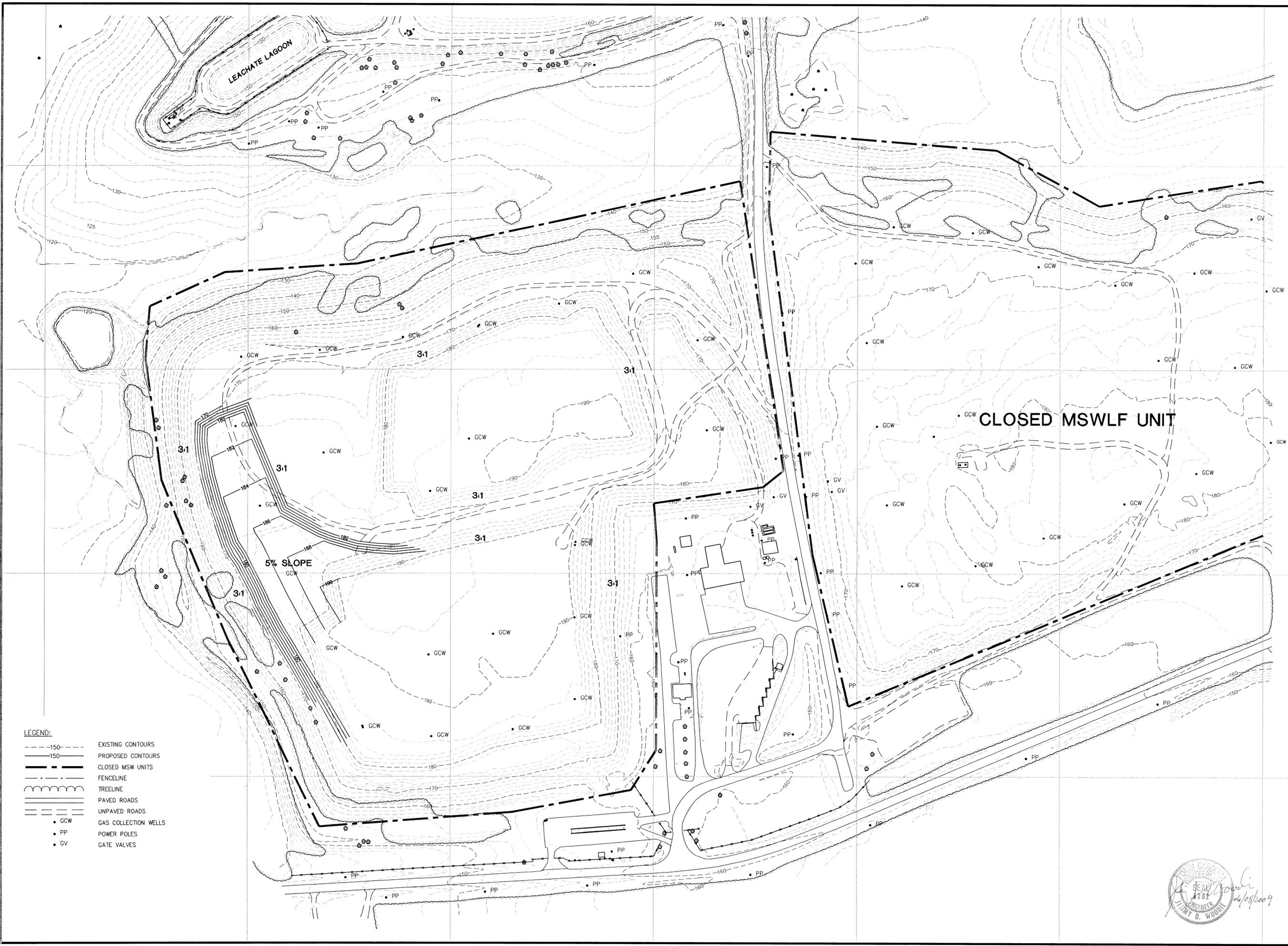
**CONSTRUCTION AND DEMOLITION
 LANDFILL FACILITY
 WAYNE COUNTY
 NORTH CAROLINA**

DATE	BY	REV.	DESCRIPTION

**OPERATION PLAN
 EXISTING CONDITIONS AS OF 11/19/07**

SCALE:	1" = 100'
DATE:	12/03/07
DRWN. BY:	L. HAMPTON
CHKD. BY:	J. WOODIE
PROJECT NUMBER	G07058
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SHEET NO.	4 OF 9

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- LEGEND:**
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 - CLOSED MSW UNITS
 - FENCELINE
 - TREELINE
 - PAVED ROADS
 - UNPAVED ROADS
 - GCW GAS COLLECTION WELLS
 - PP POWER POLES
 - GV GATE VALVES

CLOSED MSWLF UNIT


 License Number: C-0251
Municipal Engineering Services, P.A.
 P.O. BOX 87 GARNER, N.C. 27529 (919) 772-6363
 P.O. BOX 828 MOREHEAD CITY, N.C. 28557 (252) 728-9481

**CONSTRUCTION AND DEMOLITION
 LANDFILL FACILITY
 WAYNE COUNTY
 NORTH CAROLINA**

2/19/09	LCH	REV.	DESCRIPTION
		1	REVISED FILL SLOPE
OPERATION PLAN 1st YEAR FILL PLAN			
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CHKD. BY: J. WOODIE			
PROJECT NUMBER: G07058			
DRAWING NO. CD3	SHEET NO. 5 OF 9		



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 - - - - - TREELINE
 - ==== PAVED ROADS
 - - - - UNPAVED ROADS
 - GCW GAS COLLECTION WELLS
 - PP POWER POLES
 - GV GATE VALVES

License Number: C - 0281

Municipal Services

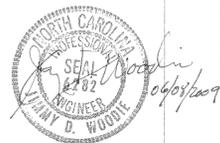
Engineering Company, P.A.

P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5993

P.O. BOX 828 MOREHEAD CITY, N.C. 28557 (252) 726-9481

**CONSTRUCTION AND DEMOLITION
LANDFILL FACILITY
WAYNE COUNTY
NORTH CAROLINA**

2/19/09	DATE	1	REVISED FILL SLOPES	DESCRIPTION
LCH	BY	REV.		
OPERATION PLAN 2nd YEAR FILL PLAN				
SCALE: 1" = 100'				
DATE: 12/03/07				
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CHKD. BY: J. WOODIE				
PROJECT NUMBER G07058				
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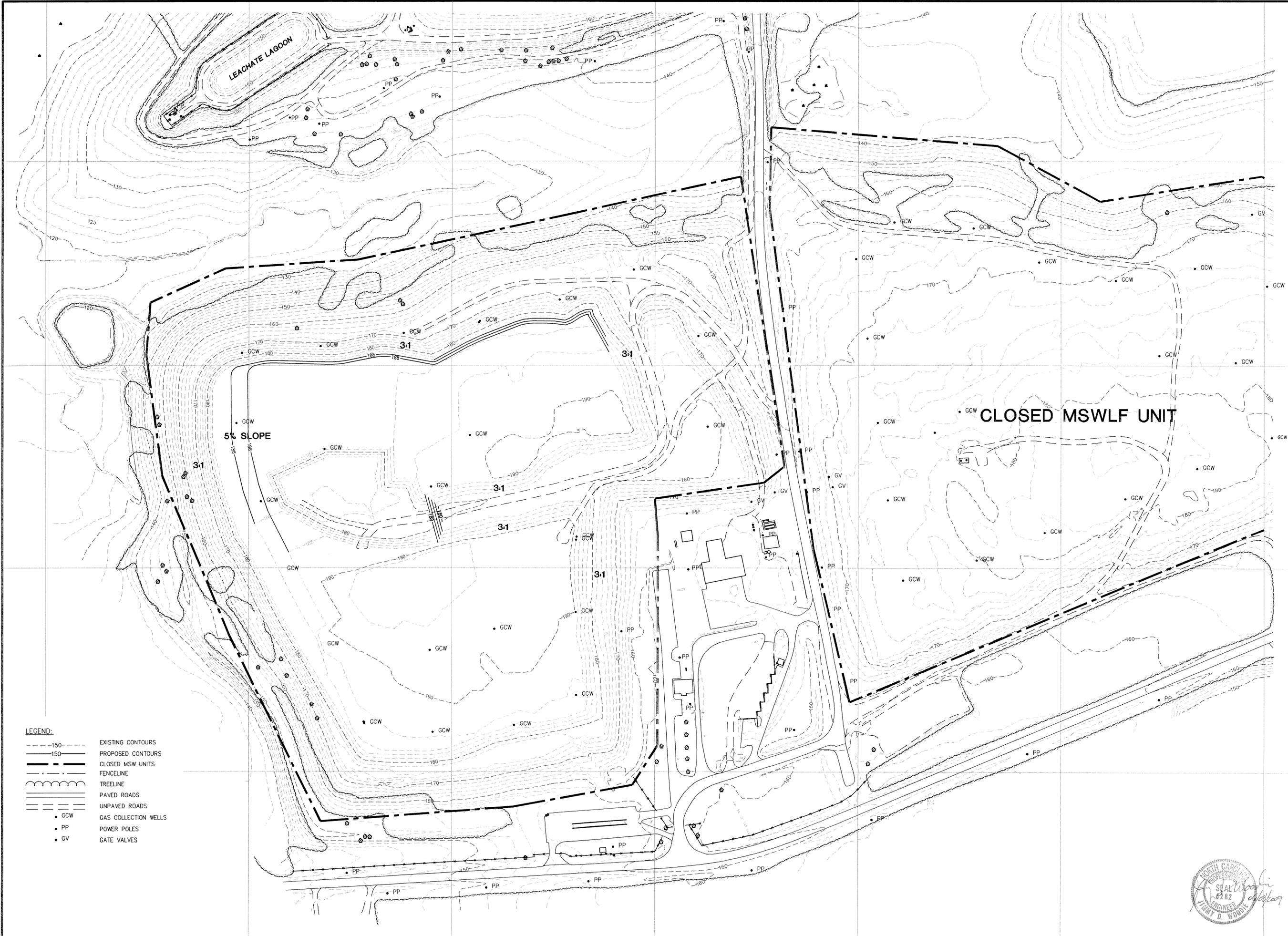


CONSTRUCTION AND DEMOLITION
LANDFILL FACILITY
WAYNE COUNTY
NORTH CAROLINA

DATE	BY	DESCRIPTION
2/19/09	LCH	REVISED FILL SLOPES
	REV.	

OPERATION PLAN
3rd YEAR FILL PLAN

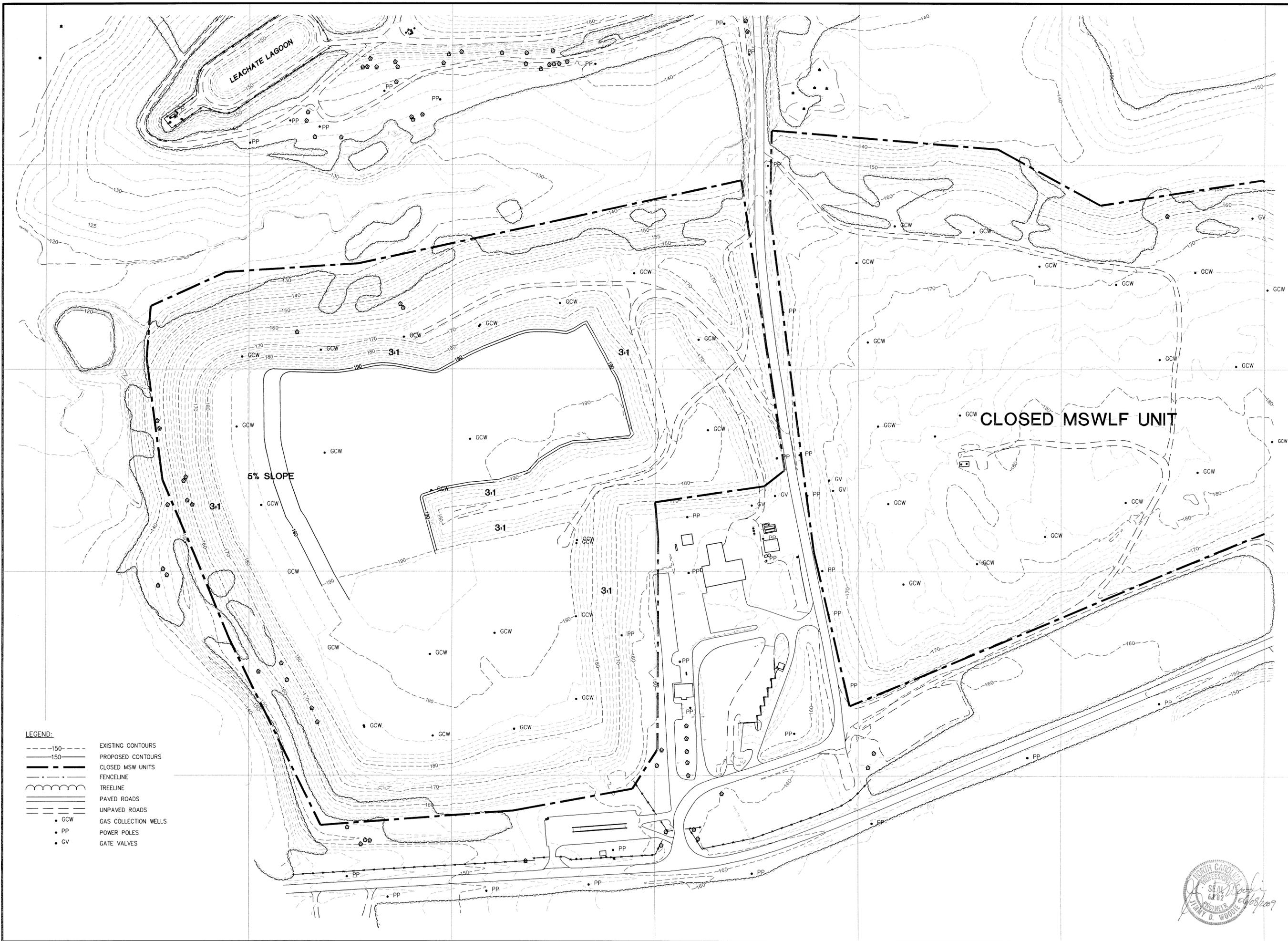
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CHKD. BY: J. WOODIE
PROJECT NUMBER
G07058
DRAWING NO. CD5 SHEET NO. 7 OF 9



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 - GV GATE VALVES



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 - - - - - PAVED ROADS
 - - - - - UNPAVED ROADS
 - GCW GAS COLLECTION WELLS
 - PP POWER POLES
 - GV GATE VALVES



License Number: C-0281

Municipal Services

Engineering Company, P.A.

P.O. BOX 97 GARNER, N.C. 27529 (919) 772-6868 P.O. BOX 828 MORFHELD CITY, N.C. 28667 (252) 726-8461

**CONSTRUCTION AND DEMOLITION
LANDFILL FACILITY
WAYNE COUNTY
NORTH CAROLINA**

DATE	BY	REV.	DESCRIPTION
2/19/09	LCH	1	REVISED FILL SLOPES

OPERATION PLAN
4th YEAR FILL PLAN

SCALE: 1" = 100'

DATE: 12/03/07

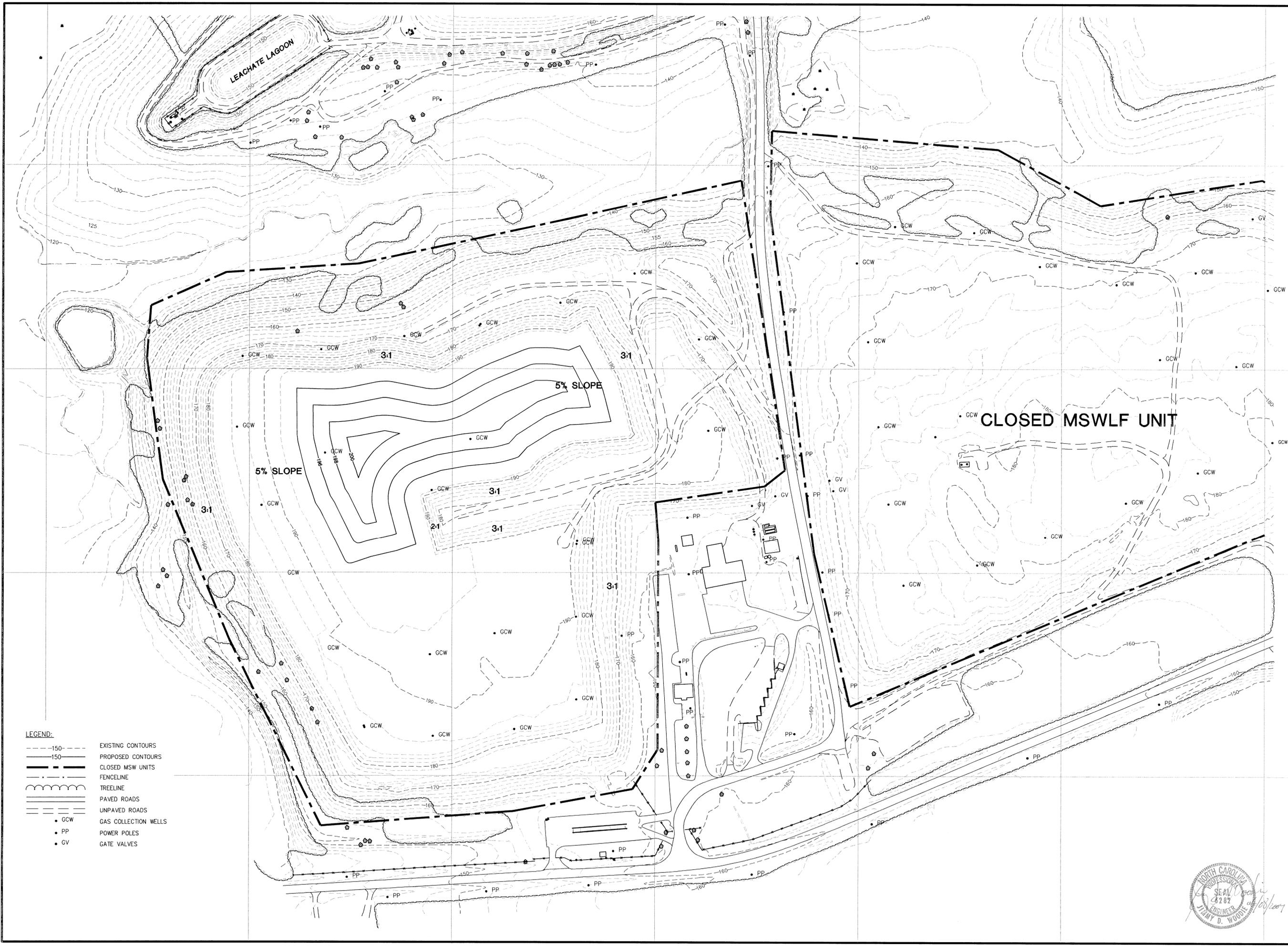
DRWN. BY: L HAMPTON

CHKD. BY: J. WOODIE

PROJECT NUMBER
G07058

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CD6 8 OF 9

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 - - - - - TREELINE
 - - - - - PAVED ROADS
 - - - - - UNPAVED ROADS
 - GCW GAS COLLECTION WELLS
 - PP POWER POLES
 - GV GATE VALVES

Engineering
Company, P.A.

Municipal
Services

License Number: C-0281

P.O. BOX 87 GARNER, N.C. 27529
(919) 772-5888

P.O. BOX 348 BOONE, N.C. 28607
(828) 262-1767

P.O. BOX 828 MORFHELD CITY, N.C. 28557
(252) 726-9481

**CONSTRUCTION AND DEMOLITION
LANDFILL FACILITY
WAYNE COUNTY
NORTH CAROLINA**

DATE	REV.	BY	DESCRIPTION
2/19/09	1	LCH	REVISED FILL SLOPES

SCALE: 1" = 100'
DATE: 12/03/07
DRWN. BY: L. HAMPTON
CHKD. BY: J. WOODIE

PROJECT NUMBER
G07058

DRAWING NO. SHEET NO.
CD7 9 OF 9

OPERATION PLAN
5th YEAR FILL PLAN



WAYNE COUNTY CONSTRUCTION AND DEMOLITION LANDFILL FACILITY CLOSURE PLAN

Permit Number: 96-01

Site Location: 460 B South Landfill Road
Dudley, NC 28333

Applicant: Wayne County

Applicant's Address: 224 E. Walnut St., 3rd Floor
Goldsboro, NC 27530

BOARD OF COMMISSIONERS

Roland M. "Bud" Gray - Chairman
C. Munroe "Jack" Best, Jr. - Vice-Chairman
Wilbur E. "Andy" Anderson
John M. Bell
J. D. Evans
Steve Keen
Dr. Sandra McCullen

COUNTY MANAGER

William "Lee" Smith, III

SOLID WASTE DIRECTOR

Tim Rogers

Engineer

Municipal Engineering Services Company, P.A.
Garner, NC - Morehead City, NC - Boone, NC

by  *Woodie*
Professional Engineer
(Garner Office)

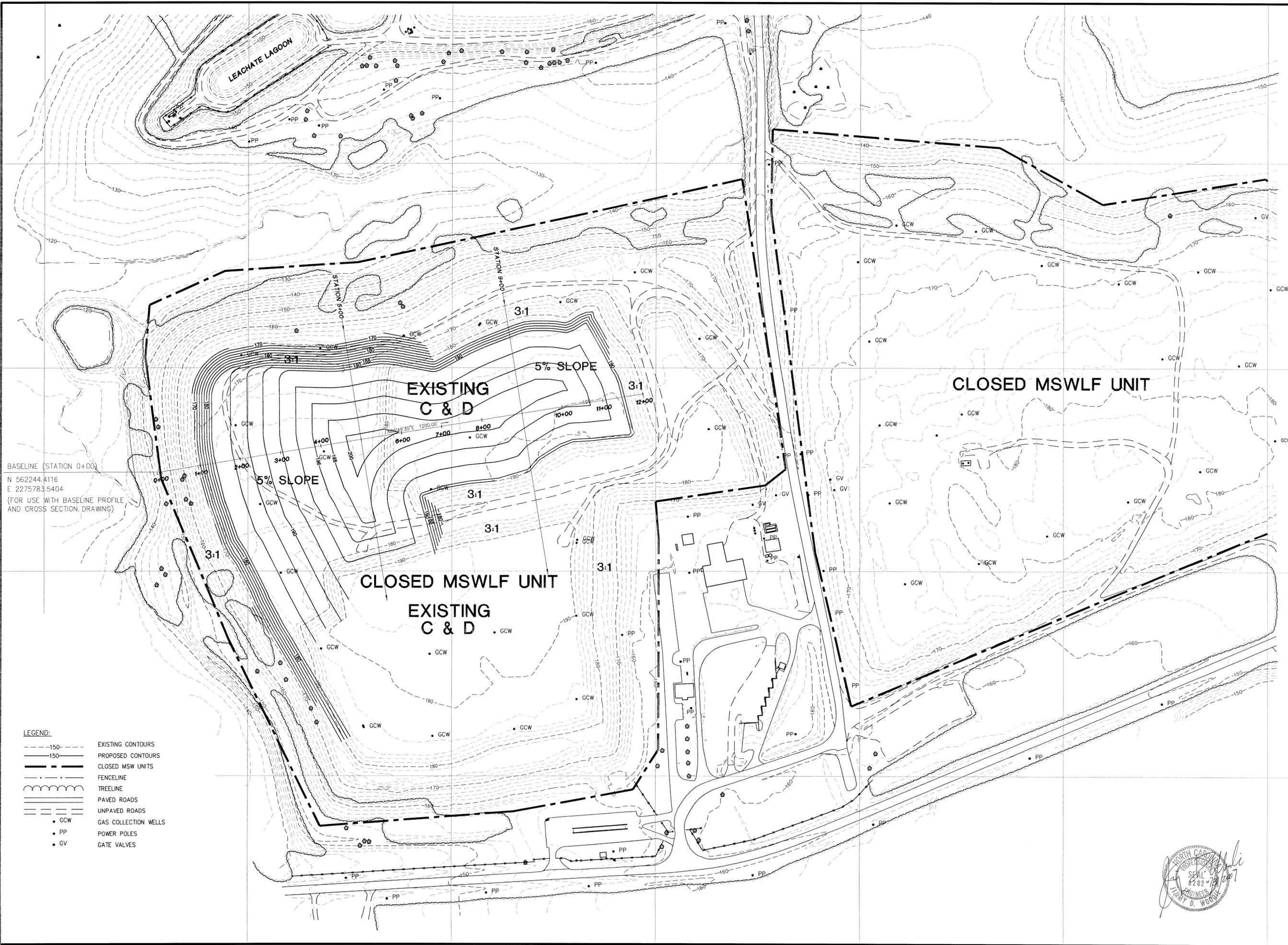
Engineering
Company, P.A.
P.O. BOX 349 BOONE, N.C. 28607
(628) 262-1767

Municipal
Services
P.O. BOX 828 MOREHEAD CITY, N.C. 28557
(919) 772-5393
P.O. BOX 828 MOREHEAD CITY, N.C. 28557
(252) 726-3661

SCALE:	1:1
DATE:	11/21/07
DRWN. BY:	L. HAMPTON
CHKD. BY:	J. WOODIE
PROJECT NUMBER:	G07058
DRAWING NO.:	T1
SHEET NO.:	1 OF 4

2/18/09
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1
BY
REV.
DATE
DESCRIPTION

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BASELINE (STATION 0+00)
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 E 2275783.5404
 (FOR USE WITH BASELINE PROFILE
 AND CROSS SECTION DRAWING)

- LEGEND:**
- - - - - EXISTING CONTOURS
 - — — — PROPOSED CONTOURS
 - — — — CLOSED MSWLF UNITS
 - · - · - FENCELINE
 - ~ ~ ~ ~ TREELINE
 - ==== PAVED ROADS
 - ==== UNPAVED ROADS
 - GCW GAS COLLECTION WELLS
 - PP POWER POLES
 - GV GATE VALVES

Municipal Services

Engineering Company, P.A.

P.O. BOX 87 GARNER, N.C. 27539
 (919) 772-6393

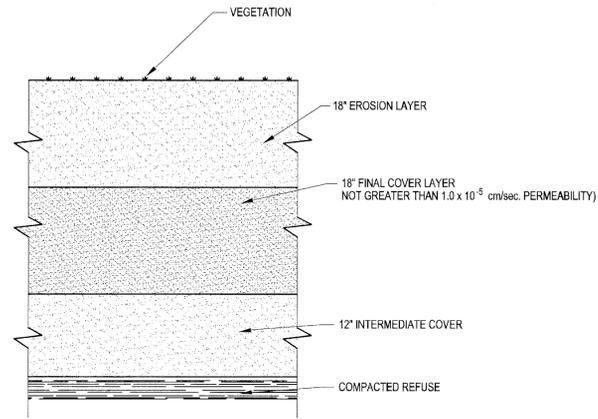
P.O. BOX 828 MOREHEAD CITY, N.C. 28557
 (252) 753-9461

**CONSTRUCTION AND DEMOLITION
 LANDFILL FACILITY
 WAYNE COUNTY
 NORTH CAROLINA**

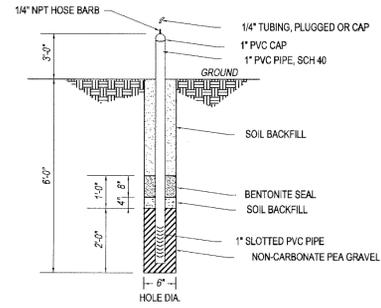
7/28/09	LCH	2	ADDED BASELINE AND STATION INFORMATION
4/19/09	LCH	1	REVISED FILL SLOPES
DATE	BY	REV.	DESCRIPTION
<p>CLOSURE PLAN EXISTING CONDITIONS WITH FINAL FILL</p>			
SCALE: 1" = 100'			
DATE: 12/03/07			
DRWN. BY: L. HAMPTON			
CHKD. BY: J. WOODIE			
PROJECT NUMBER: G07058			
DRAWING NO. CL1	SHEET NO. 3 OF 4		



P:\SolidWaste\G07058-Wayne Co. C&D Transition\dwg\CLOSURE\07058-CL3.dwg, 7/31/2009 11:35:45 AM, lch



FINAL COVER DETAIL
N.T.S.



METHANE GAS MONITORING PROBE
N.T.S.



DATE	BY	REV.	DESCRIPTION

SCALE: 1:1
 DATE: 11/21/07
 DRAWN BY: L. HAMPTON
 CHKD BY: J. WOODIE
 PROJECT NUMBER
G07058
 DRAWING NO. SHEET NO.
 CL2 4 OF 4

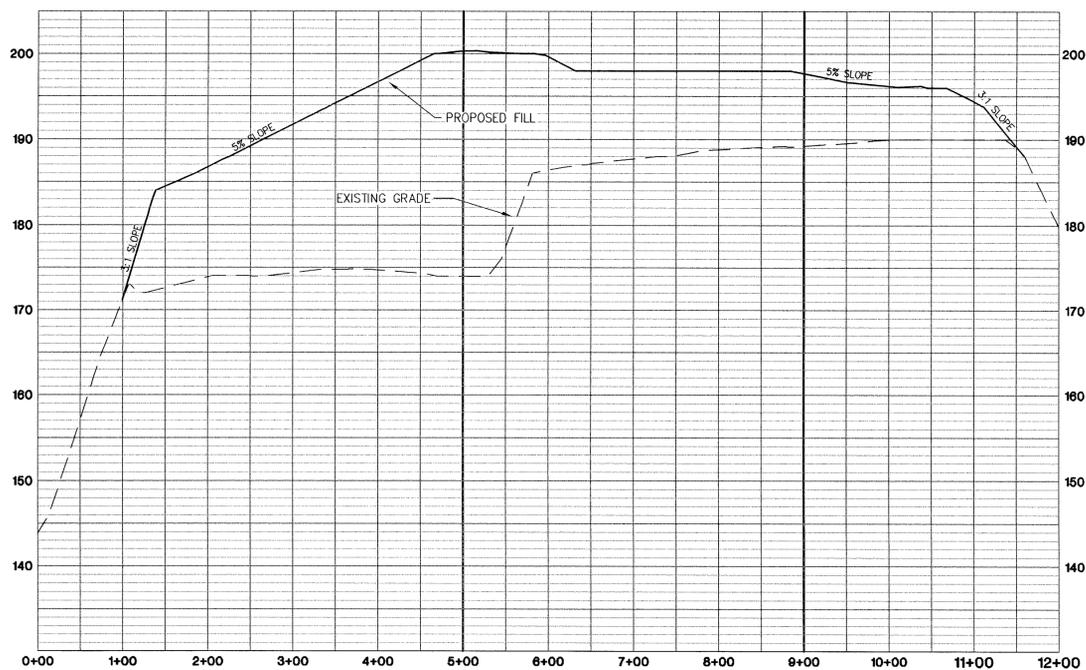
**CONSTRUCTION & DEMOLITION
 LANDFILL FACILITY
 WAYNE COUNTY
 NORTH CAROLINA**

License Number: C - 0281
**Municipal
 Services**
 P.O. BOX 87 GARNER, N.C. 27529
 (919) 772-5393

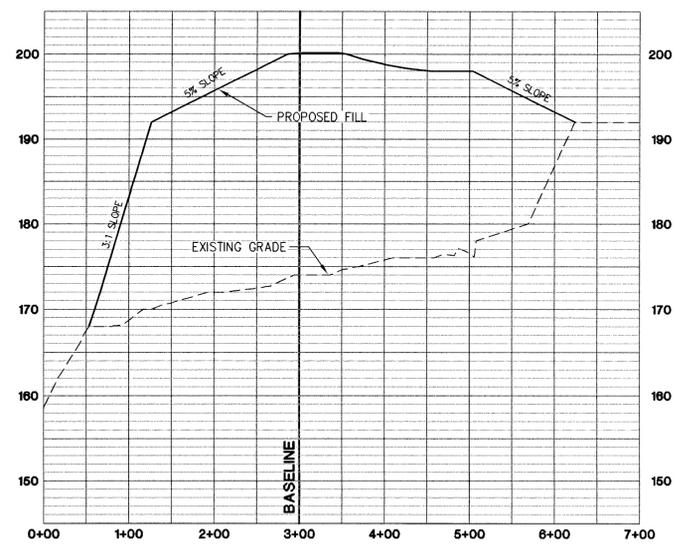
**Engineering
 Company, P.A.**
 P.O. BOX 348 BOONE, N.C. 28607
 (828) 262-1767
 P.O. BOX 828 MOREHEAD CITY, N.C. 28557
 (252) 726-9481

NOTE

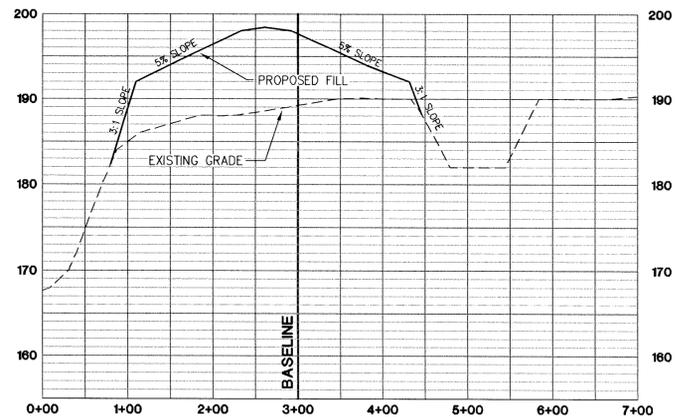
THESE CROSS SECTIONS ARE INTENDED TO SHOW THE CROSS SECTIONS AT SPECIFIC POINTS AS DEFINED BY THE BASELINE GRID ON SHEET 3 OF 4. THEY ARE NOT INTENDED TO BE THE SOLE MEANS FOR CALCULATING THE EARTHWORK FOR THIS PROJECT.



BASELINE PROFILE
SCALE: HORIZ. 1" = 100'
VERT. 1" = 10'



STATION 5+00
SCALE: HORIZ. 1" = 100'
VERT. 1" = 10'



STATION 9+00
SCALE: HORIZ. 1" = 100'
VERT. 1" = 10'



Engineering Company, P.A.
P.O. BOX 348 BOONE, N.C. 28607
(628) 262-1767

Municipal Services
P.O. BOX 97 GARNER, N.C. 27529
(919) 772-5393

Engineering Company, P.A.
P.O. BOX 828 MOREHEAD CITY, N.C. 28557
(252) 728-9461

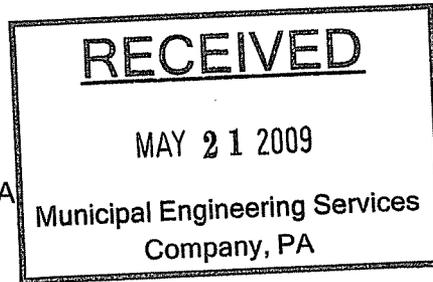
**CONSTRUCTION AND DEMOLITION
LANDFILL FACILITY
WAYNE COUNTY
NORTH CAROLINA**

DATE	BY	REV.	DESCRIPTION
			CLOSURE PLAN
			BASELINE PROFILE AND CROSS SECTIONS
SCALE: 1" = 200'			
DATE: 7/28/09			
DRWN. BY: L. HAMPTON			
CHKD. BY: J. WOODIE			
PROJECT NUMBER			
G07058			
DRAWING NO.		SHEET NO.	
PROF1		4A	

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ENGINEERING CONSULTING SERVICES, LTD.
Geotechnical • Construction Materials • Environmental



May 20, 2009

Mr. Wayne Sullivan, PLS
Municipal Engineering Services Co. PA
The Corporate Center
1140 Benson Highway, Suite 220
Garner, NC 27529

**RE: Preliminary Report of Geotechnical Engineering Services
Wayne County Municipal Landfill – C&D Fill Slope Evaluation
460 South Landfill Drive
Dudley, North Carolina
ECS Report Number: 06P.12847**

Dear Mr. Sullivan:

ECS Carolinas, LLP (ECS) has completed the geotechnical slope stability analysis for the proposed updated maximum fill slopes for Wayne County C&D Landfill as requested by Municipal Engineering Services Company, PA (MESCO). The proposed landfill slopes are at 3 horizontal to 1 vertical (3H:1V), compared to the original design of 4H:1V.

Project Information

Based on the proposed finished grades and the section provided by MESCO we understand that the maximum waste height will be approximately 150 feet. The permanent side slopes for the cap will have an inclination of 3H:1V.

ECS has been provided with preliminary boring and well installation logs performed by others. The Wayne County Landfill lies in the Coastal Plain Region of North Carolina, and the soils generally consist of loose to medium dense silty SANDS and sandy SILTS, with sandy CLAY and Clayey SAND at the surface in many borings. Groundwater was encountered within most of the borings ranging from approximately 1 to 17 feet below the prevailing ground surface.

Engineering Analyses

Analyses were performed to determine global slope stability of the landfill. These analyses were based on the design drawings provided by MESCO. Shear strength and compressibility of the soil were estimated based on the soil descriptions on the provided boring logs and our previous experience. The analyses were performed by engineers specializing in geotechnical engineering and copies of the slope stability analyses are attached in the Appendix.

The C&D waste fill was evaluated for slope stability analysis using circular potential failure mechanism. The location and profile analyzed was based on the drawings provided by MESCO, which was considered representative of the proposed construction. The slope stability analysis was performed using the proprietary STEDwin/GSTABL7 computer program. The modeled slope configuration was based on the topographic information and site grading plan provided to us by MESCO, while the soil strata information, index properties and engineering properties used in these analyses were estimated based on the soil descriptions on the provided preliminary boring logs and our previous experience. For the pseudostatic analysis of the slope, we used an earthquake ground motion having a 2-percent probability of exceedance within a 50-year period (2,475 year return period).

The factors of safety were determined for both static and seismic loading, using the pseudo-static method. According to the USGS Map, Oct 2002, the seismic acceleration at the bed rock level based on the probabilistic earthquake (2,475 year return period) for this site is 0.08g.

The resulting factors of safety were computed to exceed 1.4 for permanent slopes under static loading conditions and more than 1.1 for seismic conditions. The results of the slope stability analyses are presented in the Appendix.

In conclusion, the results of the geotechnical analysis indicate that the 3H: 1V (permanent) slope configuration will be stable and provide an adequate factor of safety.

This report has been prepared in order to aid in the evaluation of C&D landfill side slopes and to assist the engineer in the design of this project. The scope is limited to the specific project and locations described herein and our description of the project represents our understanding of the significant aspects relative to soil and foundation characteristics. In the event that any changes in the nature or location of the proposed construction outlined in this report are planned, we should be informed so that the changes can be reviewed and the conclusions of this report modified or approved in writing by the geotechnical engineer. It is recommended that all construction operations dealing with earthwork and foundations be reviewed by an experienced geotechnical engineer to provide information as to whether the design requirements are fulfilled in the actual construction. If you wish, we would welcome the opportunity to provide field construction services for you during construction.

The data submitted in this report are based upon the information obtained from the soil borings and tests performed by others at the locations as indicated on the information referenced in this report. This report does not reflect any variations which may occur between the borings. In the performance of the subsurface exploration, specific information is obtained at specific locations at specific times. However, it is a well known fact that variations in soil conditions exist on most sites between boring locations and also such situations as groundwater levels vary from time to time. The nature and extent of variations may not become evident until the course of construction. If site conditions vary from those identified during the explorations, the recommendations contained in this report may require revision.

Preliminary Report of Geotechnical Engineering Services
Wayne County Landfill – C&D Fill Slope Evaluation
Dudley, North Carolina
ECS Project Number: 06P.12847

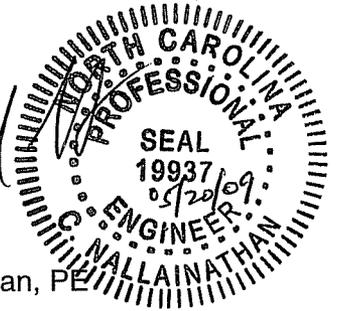
Thank you for the opportunity to work with you on this project. Should you have any questions or if we could be of further assistance, please do not hesitate to contact us.

Respectfully,

ECS CAROLINAS, LLP represented by:
Firm License No. F-1078



Heather A. Hickerson, PE
Geotechnical Project Manager
NC PE License No. 035100



C. (Nathan) Nallainathan, PE
Principal Engineer
NC PE License No. 019937

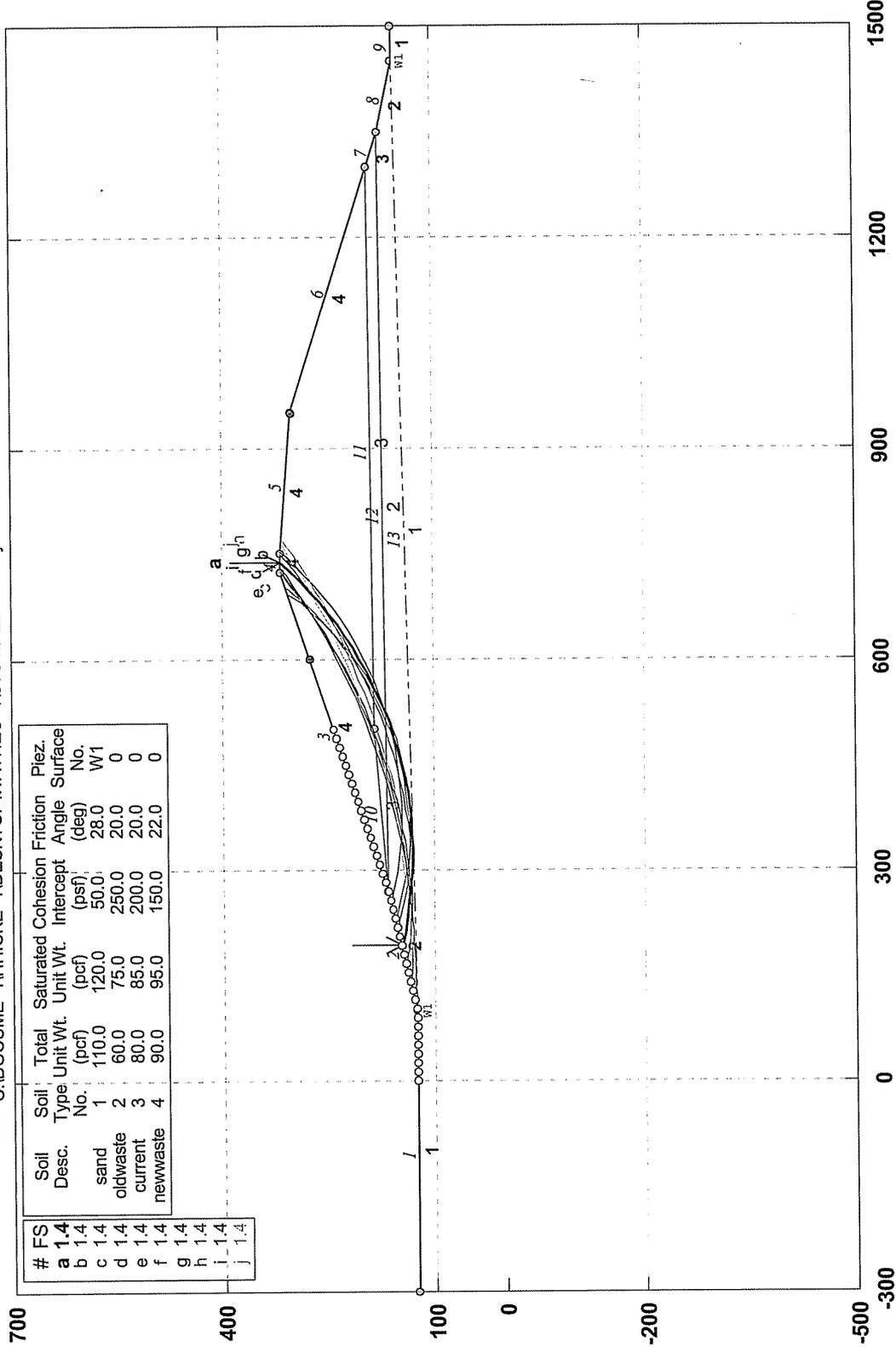
APPENDIX
SLOPE STABILITY ANALYSES RESULTS

Estimated Material Property Legend

Soil Layer	Moist Unit Weight (PCF)	Friction Angle	Cohesion (psf)
Future C&D Waste	95	22	150
Existing C&D Waste	85	20	200
Old Waste	75	20	250
Residual Soils Loose Silty Sands	110	28	50

Wayne County Landfill 3 to 1 slope

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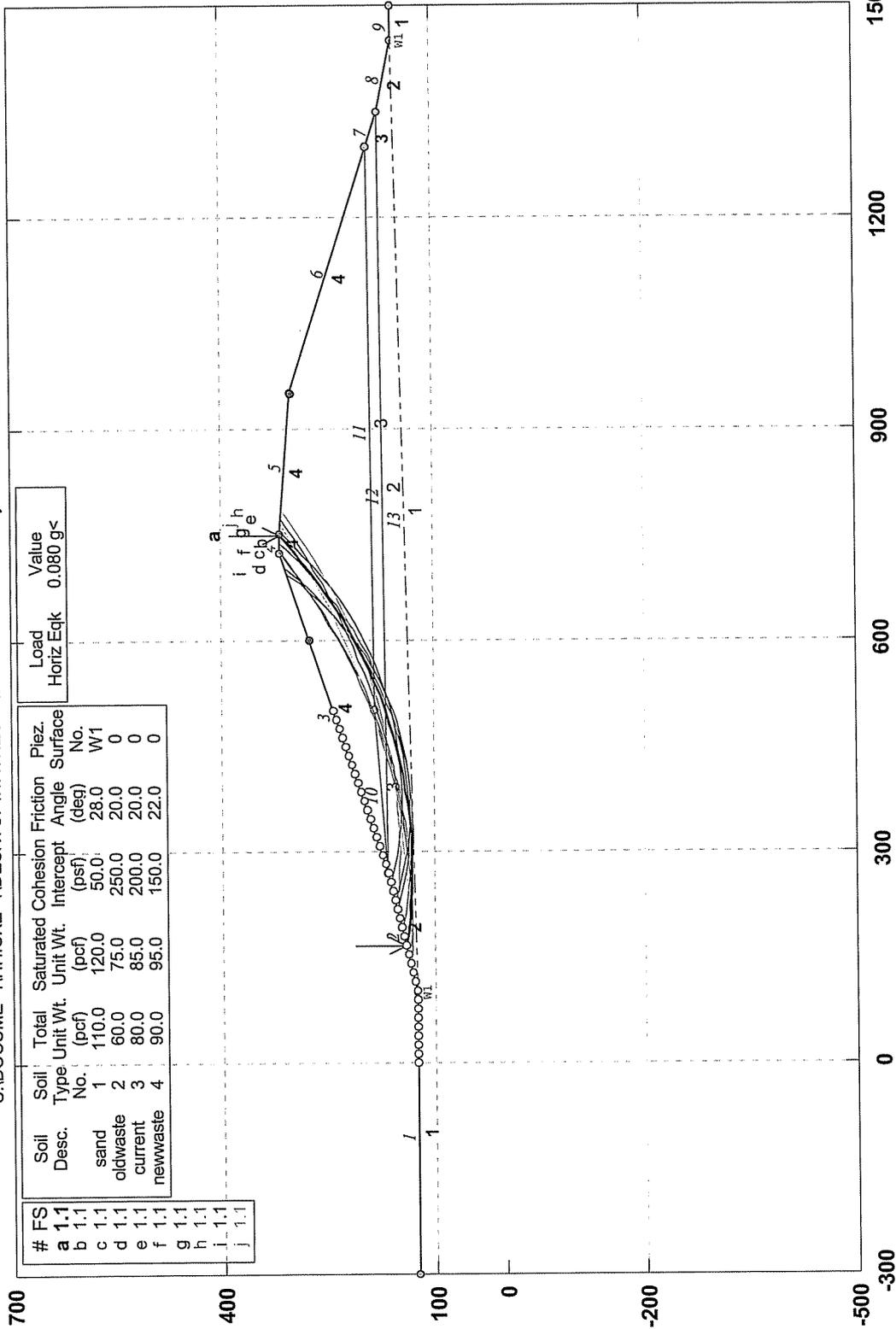


#	FS	Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion (psf)	Friction Angle (deg)	Piez. Surface No.
a	1.4		1	110.0	120.0	50.0	28.0	W1
b	1.4	sand	2	60.0	75.0	250.0	20.0	0
c	1.4	oldwaste	3	80.0	85.0	200.0	20.0	0
d	1.4	current	4	90.0	95.0	150.0	22.0	0
e	1.4	newwaste						
f	1.4							
g	1.4							
h	1.4							
i	1.4							
j	1.4							

GSTABL7 FSmin=1.4
Safety Factors Are Calculated By The Modified Bishop Method

Wayne County Landfill 3 to 1 slope - seismic

C:\DOCUME~1\HICKE~1\DESKTOP\WAYNEC~1\3TO1SEIS.PL2 Run By: Heather Hickerson 4/30/2009 8:47AM



#	FS	Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion (psf)	Friction Angle (deg)	Piez. Surface No.
a	1.1	sand	1	110.0	120.0	50.0	28.0	W1
b	1.1	oldwaste	2	60.0	75.0	250.0	20.0	0
c	1.1	current	3	80.0	85.0	200.0	20.0	0
d	1.1	newwaste	4	90.0	95.0	150.0	22.0	0

Load	Value
Horiz Eqk	0.080 g<

GSTABL7 FSmin=1.1
Safety Factors Are Calculated By The Modified Bishop Method

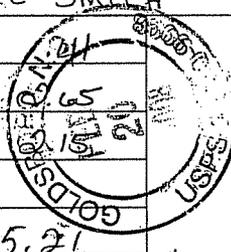
APPENDIX B

**LOCAL GOVERNMENT
APPROVALS**

U.S. Postal Service
CERTIFIED MAIL RECEIPT
 (Domestic Mail Only; No Insurance Coverage Provided)

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Article Sent To:
 LOTTIE DIANE SMITH

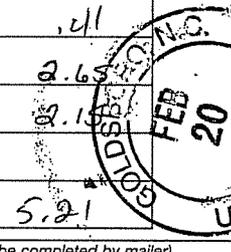
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Certified Fee		2.65	
Return Receipt Fee (Endorsement Required)		2.15	
Restricted Delivery Fee (Endorsement Required)			
Total Postage & Fees	\$	5.21	

Name (Please Print Clearly) (to be completed by mailer)
 LOTTIE DIANE SMITH
 Street, Apt. No., or PO Box No.
 585 S LANDFILL RD
 City, State, ZIP+4
 DUDLEY NC 28333
 PS Form 3800, July 1999 See Reverse for Instructions

U.S. Postal Service
CERTIFIED MAIL RECEIPT
 (Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0011 1323 3842

Article Sent To:
 JACKIE BROADIE

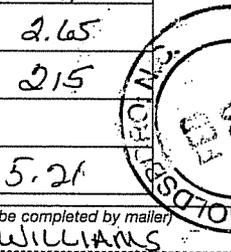
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Certified Fee		2.65	
Return Receipt Fee (Endorsement Required)		2.15	
Restricted Delivery Fee (Endorsement Required)			
Total Postage & Fees	\$	5.21	

Name (Please Print Clearly) (to be completed by mailer)
 JACKIE BROADIE
 Street, Apt. No., or PO Box No.
 565 SOUTH LANDFILL ROAD
 City, State, ZIP+4
 DUDLEY, NC 28333
 PS Form 3800, July 1999 See Reverse for Instructions

U.S. Postal Service
CERTIFIED MAIL RECEIPT
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7099 3400 0011 1323 3869

Article Sent To:
 DOROTHY J. WILLIAMS

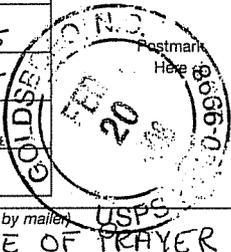
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Restricted Delivery Fee (Endorsement Required)			
Total Postage & Fees	\$	5.21	

Name (Please Print Clearly) (to be completed by mailer)
 DOROTHY J WILLIAMS
 Street, Apt. No., or PO Box No.
 302 S LANDFILL ROAD
 City, State, ZIP+4
 DUDLEY NC 28333
 PS Form 3800, July 1999 See Reverse for Instructions

U.S. Postal Service
CERTIFIED MAIL RECEIPT
 (Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0011 1323 3903

Article Sent To:
 JESUS APOSTOLIC HOUSE OF PRAYER

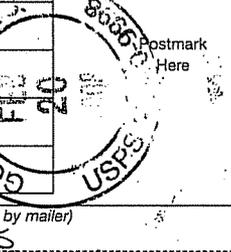
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Return Receipt Fee (Endorsement Required)		2.15	
Restricted Delivery Fee (Endorsement Required)			
Total Postage & Fees	\$	5.21	

Name (Please Print Clearly) (to be completed by mailer)
 JESUS APOSTOLIC HOUSE OF PRAYER
 Street, Apt. No., or PO Box No.
 202 BRENTWOOD DRIVE
 City, State, ZIP+4
 DUDLEY, NC 28333
 PS Form 3800, July 1999 See Reverse for Instructions

U.S. Postal Service
CERTIFIED MAIL RECEIPT
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7099 3400 0011 1323 3897

Article Sent To:
 JAMES OTTO JONES

Postage	\$.41	 Postmark Here
Certified Fee		2.65	
Return Receipt Fee (Endorsement Required)		2.15	
Restricted Delivery Fee (Endorsement Required)			
Total Postage & Fees	\$	5.21	

Name (Please Print Clearly) (to be completed by mailer)
 JAMES OTTO JONES
 Street, Apt. No., or PO Box No.
 320B SOUTH LANDFILL ROAD
 City, State, ZIP+4
 DUDLEY, NC 28333
 PS Form 3800, July 1999 See Reverse for Instructions

U.S. Postal Service
CERTIFIED MAIL RECEIPT
 (Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0011 1323 3880

Article Sent To:
 JEROME McCLARIN

Postage	\$.41	 Postmark Here
Certified Fee		2.65	
Return Receipt Fee (Endorsement Required)		2.15	
Restricted Delivery Fee (Endorsement Required)			
Total Postage & Fees	\$	5.21	

Name (Please Print Clearly) (to be completed by mailer)
 JEROME McCLARIN
 Street, Apt. No., or PO Box No.
 906 SUMMIT LANE
 City, State, ZIP+4
 ORELAND, PA 19075
 PS Form 3800, July 1999 See Reverse for Instructions

NORTH CAROLINA
WAYNE COUNTY.

AFFIDAVIT OF PUBLICATION

Before the undersigned, a Notary Public of said County and State,
I, _____, duly commissioned, qualified, and authorized by law to administer oaths,
personally appeared Teresa Bozeman

_____ who being first duly sworn, deposes and says: that he (she) is
Legal Clerk

(Publisher, or other officer or employee authorized to make affidavit)
of WAYNE PRINTING COMPANY, INC., engaged in the publication of
a newspaper known as GOLDSBORO NEWS-ARGUS, published,
issued, and entered as second class mail in the city of Goldsboro in said
County and State; that he (she) is authorized to make this affidavit and
sworn statement; that the notice or other legal advertisement, a true
copy of which is attached hereto, was published in GOLDSBORO
NEWS-ARGUS on the following dates:

February 22, 2008

and that the said newspaper in which such notice, paper, document, or
legal advertisement was published was, at the time of each, and every
such publication, a newspaper meeting all of the requirements and
qualifications of Section 1-597 of the General Statutes of North Carolina
and was a qualified newspaper within the meaning of Section 1-597 of the
General Statutes of North Carolina.

This 29 day of February, 2008

Teresa Bozeman
(Signature of person making affidavit)

Sworn to and subscribed before me, this 29th day of
February, 2008

Heborah McLand Kennell
Notary Public

My Commission expires: 9-24-2012

**CLIPPING OF LEGAL
ADVERTISEMENT
ATTACHED HERE**

NOTICE OF PUBLIC MEETING
In compliance with the North
Carolina Department of Environ-
ment and Natural Resources
(DENR) New Construction
and Demolition Landfill Rules
15A NCAC 138.0531-0547, the
County of Wayne has scheduled
a public meeting for Wednes-
day, the 26th of March, 2008 at
2:00 pm. It is the intent of the
County to continue operating a
Construction and Demolition
Landfill (CDLF). This meeting
is to inform the public of the
proposed waste management
activities as described in the
proposed facility plan. All inter-
ested parties should attend.
The public meeting will be held
at the County Landfill Office lo-
cated at 4808 South Landfill
Road, Dudley, NC 28333. Appli-
cation documents may be
viewed at the County Landfill
office located at 4808 South
Landfill Road, Dudley, NC
28333; between the hours of
8:00 am - 4:00 pm Monday
through Friday. For further in-
formation concerning this
meeting, contact the County
Solid Waste Department at
(919) 680-2904.
Legal #146
February 22, 2008

NORTH CAROLINA
WAYNE COUNTY

AFFIDAVIT OF PUBLICATION

Before the undersigned, a Notary Public of said County and State, duly commissioned, qualified, and authorized by law to administer oaths, personally

appeared Rose Butts

....., who being first duly sworn, deposes and says: that he (she) is

Office Manager

(Owner, partner, publisher or other officer or employee authorized to make this affidavit)

of MOUNT OLIVE TRIBUNE engaged in the publication of a newspaper known as

MOUNT OLIVE TRIBUNE

published, issued and entered as second class mail in the City of Mount Olive, in said County and State; that he (she) is authorized to make this affidavit and sworn statement; that the notice or other legal advertisement, a true copy of which is attached hereto, was published in

MOUNT OLIVE TRIBUNE

on the following dates:

February 28, 2008

and that the said newspaper in which such notice, paper, document or legal advertisement was published was, at the time of each and every such publication, a newspaper meeting all of the requirements of Section 1-597 of the General Statutes of North Carolina and was a qualified newspaper within the meaning of Section 1,597 of the General Statutes of North Carolina.

This 3 day of March, 2008

Rose Butts

(Signature of person making affidavit)

Sworn to and subscribed before me, this 3

day of March, 2008

Mary J. Rose
Notary Public

My commission expires: April 29, 2008

NOTICE OF PUBLIC MEETING

In compliance with the North Carolina Department of Environment and Natural Resources (NCDENR) New Construction and Demolition Landfill Rules (15A-NCAC 13B.0531-0547) the County of Wayne has scheduled a public meeting for Wednesday, the 26th of March, 2008 at 2:00 p.m. It is the intent of the County to continue operating a Construction and Demolition Landfill (C&DLF). This meeting is to inform the public of the proposed waste management activities as described in the proposed facility plan. All interested parties should attend. The public meeting will be held at the County Landfill office located at 460B South Landfill Road, Dudley, NC 28333. Application documents may be viewed at the County Landfill office located at 460B South Landfill Road, Dudley, NC 28333 between the hours of 8:00 am - 4:00 pm Monday through Friday. For further information concerning this meeting, contact the County Solid Waste Department at (919) 689-2994.



FACSIMILE TRANSMITTAL SHEET

WAYNE COUNTY SOLID WASTE DEPARTMENT

460 B South Landfill Road

Dudley, NC 28333

DATE:	6/27/2008	TOTAL PAGES INCLUDING COVER:	2
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TO:	Wayne Sullivan
COMPANY:	MESCO
FAX NO:	
PHONE NO:	

FROM:	Lynn
FAX NO:	(919) 689-2995
PHONE NO:	(919) 689-2994

URGENT

FOR REVIEW

PLEASE COMMENT

PLEASE REPLY

NOTE/COMMENTS:

I ran the ad in the Mt. Olive Tribune also.

Minutes from Public Meeting
for the Continuing Operation of the
Wayne County Construction and Demolition Landfill

The meeting was held in the Wayne County Scale House Conference Room on March 26, 2008 at 2:00 PM. The meeting was advertised 30 days prior to having it and no one other than Wayne County and Municipal Engineering Representatives were present. The meeting was adjourned after a short discussion amongst the attendees concerning the requirements of local government approval.

NORTH CAROLINA

WAYNE COUNTY

WHEREAS, the construction and demolition landfill is part of the Wayne County Solid Waste facility; and

WHEREAS, the construction and demolition landfill accepts land clearing and inert debris along with construction and demolition type waste or inert material; and

WHEREAS, the Wayne County Solid Waste facility also consists of the municipal solid waste landfill facility, white goods recovery and recycling site, and tire collection area; and

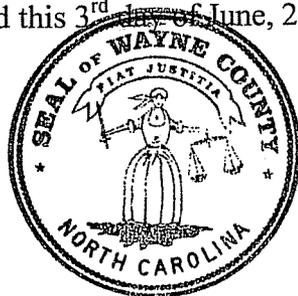
WHEREAS, the Wayne County construction and demolition facility operates on top on the closed municipal solid waste landfill facility; and

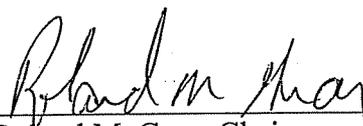
WHEREAS, the Wayne County Solid Waste facility is within Wayne County and now accepts only waste from Wayne County; and

WHEREAS, the Wayne County Solid Waste facility does not lie within any incorporated city or town or within the extraterritorial zoning jurisdiction of any city or town.

NOW, THEREFORE BE IT RESOLVED that the Wayne County Board of Commissioners hereby grants approval for the continuing operation of the existing construction and demolition landfill at the current Solid Waste facility.

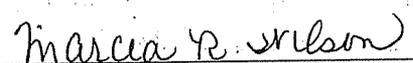
Adopted this 3rd day of June, 2008.



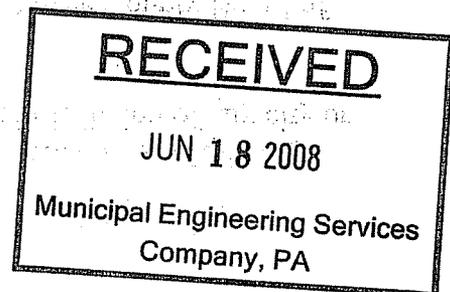


Roland M. Gray, Chairman
Wayne County Board of Commissioners

Attest:



Marcia R. Wilson
Clerk to the Board



APPENDIX C

**WASTE SCREENING
PLAN**

APPENDIX C

A. INTRODUCTION

The municipal solid waste stream is made up of wastes from all sectors of society. The waste is often categorized by its source or its characteristics. Terms used include commercial, industrial, residential, biomedical, hazardous, household, solid, liquid, demolition/construction, sludge, etc. Regardless of how one classifies wastes, the bottom line is that wastes are delivered to the landfill and a management decision must be made to either reject or accept them. This responsibility rests with the manager of the landfill. Wastes which are not authorized to be accepted at the landfill create a number of potential problems including: (1) liability due to future releases of contaminants; (2) bad publicity if media learns of unacceptable waste entering the landfill; (3) potential for worker injury; (4) exposure to civil or criminal penalties; (5) damage to landfill environmental control systems.

B. HAZARDOUS WASTE REGULATIONS AND MANAGEMENT

In the United States, hazardous waste is regulated under RCRA, Subtitle C. A waste is hazardous if it is listed as a hazardous waste by the Administrator of the Environmental Protection Agency (EPA) in the Code of Federal Regulations, Title 40, Part 261, or if it meets one or more of the hazardous waste criteria as defined by EPA. These criteria are:

- Ignitability
- Corrosivity
- Reactivity
- Toxicity

1. Ignitability

Ignitable waste is a waste that burns readily, causes a fire by friction under normal circumstances, or is an oxidizer. Any waste having a flash point of <140F falls in this category. Flash point is that temperature at which a liquid gives off vapors that will ignite when an open flame is applied. Under Department of Transportation (DOT) definitions, a flammable liquid has a flash point of >100 F. A combustible liquid has a flash point between 100 and 200 F. Therefore, a flammable liquid is always hazardous while a combustible liquid may or may not be hazardous depending upon its flash point.

2. Corrosivity

A corrosive waste is one having a very high or a very low pH. The pH of a liquid is a measure of how acidic or basic (alkaline) the material is. The pH scale ranges from 0 to 14. High numbers are basic and low numbers are acidic. A substance having a pH ≤ 2.0 or ≥ 12.5 is defined as hazardous under RCRA.

3. Reactivity

A waste is reactive if it is normally unstable: reacts violently with water; forms an explosive mixture with water; contains quantities of cyanide or sulfur that could be released to the air; or can easily be detonated or exploded. These wastes may fall into any one of several DOT categories.

4. Toxicity Characteristic Leaching Procedure (TCLP)

A waste is TCLP toxic if the concentration of any constituent in Table 1 exceeds the standard assigned to that substance. The TCLP is a methodology which attempts to simulate the conditions within a landfill. An acidic solution is passed through a sample of waste and the resultant "leachate" is analyzed for contaminants. The TCLP is designed to detect heavy metals, pesticides and a few other organic and inorganic compounds. The purpose of the test is to prevent groundwater contamination by highly toxic materials. TCLP tests the mobility of 40 different elements and compounds.

Except in certain specified circumstances, regulated quantities of hazardous waste must be disposed of at a permitted hazardous waste disposal facility. In accordance with 40 CFR Part 261.3, **any material contaminated by a hazardous waste is also deemed to be a hazardous waste and must be managed as such.** Hazardous waste from conditionally exempt small quantity generators are to be disposed of in a Hazardous waste disposal facility. RCRA permits are also required to store, transport, and treat hazardous waste.

C. POLYCHLORINATED BIPHENYL'S (PCBs)

1. Introduction

PCBs are nonflammable and conduct heat without conducting electricity. These compounds were most frequently used as an additive to oil or other liquids in situations where heat was involved. The PCBs enhance the heat conducting properties of the liquid and thereby increase the heat dissipation or cooling effect obtained. They have also been used in lubricants and paint. In the United States one of the most common applications was in electric transformers. The only effective method for destroying PCBs is high Temperature incineration which is relatively expensive due to a shortage of PCB incineration capacity.

TABLE 1

T.C.L.P. CONSTITUENTS & REGULATORY LEVELS (mg/L)			
CONSTITUENT	REG LEVEL	CONSTITUENT	REG LEVEL
Arsenic	5.0	Hexachlorobenzene	0.13
Barium	100	Hexachloro-1,3-butadiene	0.5
Benzene	0.5	Hexachloroethane	3.0
Cadmium	1.0	Lead	5.0
Carbon Tetrachloride	0.5	Lindane	0.4
Chlordane	0.03	Mercury	0.2
Chlorobenzene	100	Methoxychlor	10.0
Chloroform	6.0	Methyl ethyl ketone	200
Chromium	5.0	Nitrobenzene	2.0
m-Cresol	200	Pentachlorophenol	100
o-Cresol	200	Pyridine	5.0
p-Cresol	200	Selenium	1.0
Cresol	200	Silver	5.0
1,4-Dichlorobenzene	10.0	Tetrachloroethylene	0.7
1,2-Dichloroethane	0.7	Toxaphene	0.5
1,1-Dichloroethylene	0.5	Trichloroethylene	0.5
2,4-Dichlorophenoxyacetic acid	0.7	2,4,5-Trichlorophenol	400
2,4-Dinitrotoluene	0.13	2,4,6-Trichlorophenol	2.0
Endrin	0.02	2,4,5-TP (Silvex)	1.0
Heptachlor (and its hydroxide)	0.008	Vinyl Chloride	0.2

By law PCB's are no longer used as dielectrics in transformers and capacitors manufactured after 1979. There are many millions of pounds of PCBs still in use or in storage. One example is the ballasts used in fluorescent light fixtures. It has been estimated that there are between 0.5 million and 1.5 billion ballasts currently in use in this country. Due to the long life of these units, about half of these may be of pre-1979 manufacture and contain PCBs. Since each ballast contains about one ounce of nearly pure PCB fluid, there are about **20 to 30 million pounds** of PCBs in existing lighting fixtures. These items are not the subject to RCRA Subtitle D Waste Screening!

Commercial or industrial sources of PCB wastes that should be addressed by the program include:

- Mineral oil and dielectric fluids containing PCBs;
- Contaminated soil, dredged material, sewage sludge, rags, and other debris from a release of PCBs;
- Transformers and other electrical equipment containing dielectric fluids; and
- Hydraulic machines.

2. PCB Regulatory Requirements

As contrasted to hazardous wastes, the Toxic Substance Control Act regulates PCBs based on the concentration of PCBs in the waste rather than the source or characteristic of the waste. The regulations concerning PCB disposal are spelled out in 40 CFR Part 761. Subtitle D of RCRA merely requires that PCB waste not be disposed in a MSW landfill. PCB management requirements include:

Waste containing more than 500 ppm of PCBs must be incinerated. Waste containing from 50 to 500 ppm must be disposed of by incineration, approved burning, or in chemical waste landfill permitted to receive such wastes. The regulations are silent concerning wastes containing less than 50 ppm of PCBs; however, the regulations cannot be circumvented by diluting stronger wastes.

D. FUNDAMENTALS OF WASTE SCREENING

1. Know Your Generators and Haulers

Since the level of sophistication of your waste screening program will be a reflection of the likelihood of hazardous waste and PCB waste being in your incoming waste, **knowledge of the commercial industrial base of your service area is critical.** Some examples are the automotive industry, which generates solvents, paint wastes, lead acid batteries, grease and oil; the dry cleaning industry, which may generate filters containing dry cleaning solvents; metal platers which generate heavy metal wastes; and other industries which generate a variety of undesirable wastes; e.g. chemical and related products, petroleum refining, primary metals, electrical and electronic machinery, etc.

Landfill managers should also know the haulers and trucks serving the businesses in their community which are likely to carry unacceptable wastes.

Some local governments and solid waste management agencies have enacted legislation requiring haulers to provide a manifest showing the customers whose wastes make up that particular load. Such a manifest is an extremely useful tool when a load is found to contain prohibited wastes. It is unwise to accept wastes from unknown, unlicensed, or otherwise questionable haulers.

2. Inspections

An inspection is typically a visual observation of the incoming waste loads by an individual who is trained to identify regulated hazardous or PCB wastes that would not be acceptable for disposal at the MSWLF unit. The training of landfill personnel will be conducted by a local EMS official or a SWANA certification. An inspection is considered satisfactory if the inspector knows the nature of all materials received in the load and is able to discern whether the materials are potentially regulated hazardous wastes or PCB wastes.

Ideally, all loads should be screened; however, it is generally not practical to inspect in detail all incoming loads. Random inspections, therefore, can be used to provide a reasonable means to adequately control the receipt of inappropriate wastes. Random inspections are simply inspections made on less than every load. At a minimum the inspection frequency will not be less than one percent of the waste stream.

The frequency of random inspections may be based on the type and quantity of wastes received daily, and the accuracy and confidence desired in conclusions drawn from inspection observations. Because statistical parameters are not provided in the regulation, a reasoned, knowledge-based approach may be taken. A random inspection program may take many forms such as inspecting every incoming load one day out of every month or inspecting one or more loads from transporters of wastes of unidentifiable nature each day. If these inspections indicate that unauthorized wastes are being brought to the MSWLF site, the random inspection program should be modified to increase the frequency of inspections.

Inspection priority also can be given to haulers with unknown service areas, to loads brought to the facility in vehicles not typically used for disposal of municipal solid waste, and to loads transported by previous would-be offenders. For wastes of unidentifiable nature received from sources other than households (e.g., industrial or commercial establishments), the inspector should question the transporter about the source/composition of the materials.

An inspection flow chart to identify, accept, or refuse solid waste is provided as Figure 1.

Inspections of materials may be accomplished by discharging the vehicle load in an area designed to contain potentially hazardous wastes that may arrive at the facility. The waste should be carefully spread for observation using a front end loader or other piece of equipment. The Division of Solid Waste recommends that waste should be hand raked to spread the load. Personnel should be trained to identify suspicious wastes. Some indications of suspicious wastes are:

- Hazardous placards or markings;
- Liquids;
- Powders or dusts;
- Sludges;
- Bright or unusual colors;
- Drums or commercial size containers; or
- Chemical odors.

The County will follow these procedures when suspicious wastes are discovered.

- Segregate the wastes;
- Question the driver;
- Review the manifest (if applicable);
- Contact possible source;

- Call the State Solid Waste Management Department;
- Use appropriate protective equipment;
- Contact laboratory support if required; and
- Notify the local Hazardous Material Response Team.

Containers with contents that are not easily identifiable, such as unmarked 55-gallon drums, should be opened only by properly trained personnel. Because these drums could contain hazardous waste, they should be refused whenever possible. Upon verifying that the solid waste is acceptable, it may then be transferred to the working face for disposal.

Testing typically would include the Toxicity Characteristic Leaching Procedure (TCLP) and other tests for characteristics of hazardous wastes including corrosivity, ignitability, and reactivity. Wastes that are suspected of being hazardous should be handled and stored as a hazardous waste until a determination is made.

If the wastes temporarily stored at the site are determined to be hazardous, the County is responsible for the management of the waste. If the wastes are to be transported from the facility, the waste must be: (1) stored at the MSWLF facility in accordance with requirements of a hazardous waste generator, (2) manifested, (3) transported by a licensed Treatment, Storage, or Disposal (TSD) facility for disposal.

E. RECORD KEEPING AND NOTIFICATION REQUIREMENTS

Records must be kept pursuant to an incident where regulated hazardous waste or prohibited waste is found at the landfill. It is also recommended that records be kept of all screening activities and incidents, whether or not, regulated or prohibited wastes are found. This will help prove that the landfill owner/operator has acted in a prudent and reasonable manner.

The best way to prove compliance with this requirement is to document each inspection including:

- Date and time of waste detection
- Hauler name (company and driver)
- Waste(s) detected
- Waste generator(s) if able to identify
- Action(s) taken to manage or return material(s)
- Efforts taken if extreme toxicity or hazard was discovered
- Landfill employee in responsible charge

40 CFR Part 258 requires that records should be maintained at or near the landfill site during its active life and as long after as may be required by the appropriate state or local regulations.

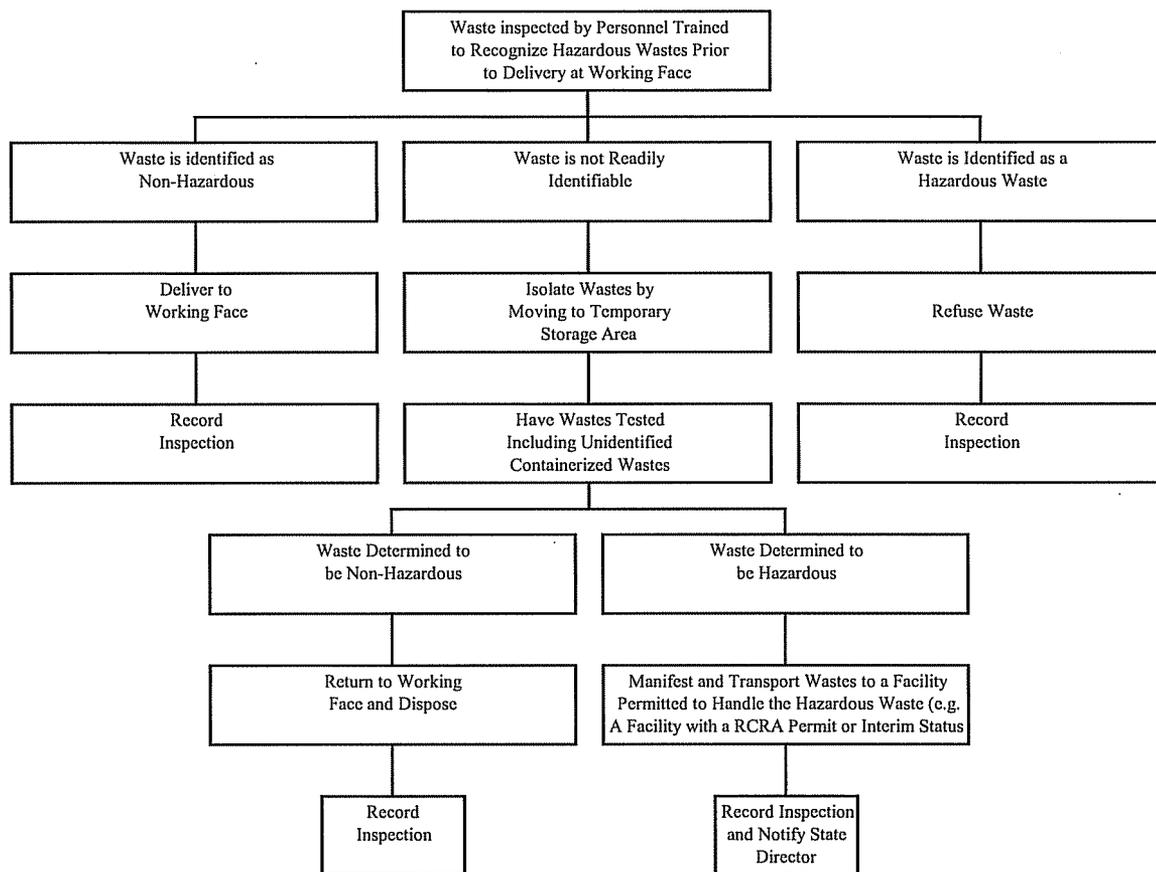


FIGURE 1
Hazardous Waste Inspection Decision Tree
Inspection Prior to Working Face

WASTE SCREENING CHECK LIST

CONTAINERS	YES	NO
FULL.....	_____	_____
PARTIALLY FULL.....	_____	_____
EMPTY.....	_____	_____
CRUSHED.....	_____	_____
PUNCTURED.....	_____	_____
POWDERS/DUSTS		
IDENTIFIED.....	_____	_____
UNKNOWN.....	_____	_____
SATURATION.....	_____	_____
LABEL/HAZARDOUS.....	_____	_____
ODOR/FUMES		
STRONG.....	_____	_____
FAINT.....	_____	_____
HEAT.....	_____	_____
ITEMS FOUND		
BATTERIES.....	_____	_____
OIL.....	_____	_____
BIOMEDICAL.....	_____	_____
RADIOACTIVE.....	_____	_____
ASHES/RESIDUE.....	_____	_____
SOD/SOIL.....	_____	_____
LIQUID.....	_____	_____
HAZARDOUS.....	_____	_____
PCB'S.....	_____	_____

CHECK ALL THAT APPLY

DETAILED SCREENING REPORT

WASTE SOURCE _____
ADDRESS _____

PROBABLE [] SUSPECTED [] CONFIRMED []

WASTE
HAULER _____
ADDRESS _____

DRIVER'S NAME _____
DETAIL _____

NOTIFIED:

WASTE SOURCE [] HAULING MANAGEMENT [] SITE MANAGEMENT []
STATE [] FEDERAL []

NAME _____
WITNESS (IF ANY) _____
DATE _____ TIME _____ AM PM

ACTION REQUIRED