OPERATIONS PLAN - PHASE II
Land Clearing and Inert Debris Landfill
and
Structural Fill with Coal Combustion By-Products
Fieldcrest Cannon Plant #1
1 Lake Drive
Kannapolis, North Carolina

Prepared For
FIELDCREST CANNON, INC.

Prepared By
ENSCI ENGINEERING GROUP, P.A.

EEG Project No. E001053
February 4, 1994

State of North Carolina
Department of Environment,
Health and Natural Resources

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary

DEHNR

February 15, 1994

Mr. Evander Rowell, P.E.
Fieldcrest Cannon, Inc.
1 Lake Drive
Kannapolis, NC 28081

Reference: Proposed structural fill with coal combustion by-products at Fieldcrest Plant # One, Kannapolis, N.C.

Dear Mr. Rowell:

We are in receipt of your reference (June 7, 1993) proposal as prepared by ENSCI Environmental, Inc. This submittal also includes revisions dated October 6, 1993 and February 4, 1994. These satisfy the requirements for coal ash structural fill activities as set forth in Solid Waste Management Rules 15A NCAC 13B Section .1700 - Requirements for Beneficial use of Coal Combustion By-Products.

Analyses of groundwater samples collected from monitoring wells located at a North Carolina coal ash structural fill site indicate that the ash may have caused or contributed to violation of the 15A N.C. Administrative Code 2L Standards for arsenic, cadmium, chromium, lead, selenium and silver, as well as elevated sulfate levels. Based upon this information, the Solid Waste Division strongly recommends that you retain the services of a qualified hydrogeologic consulting firm to assist you in determining the vulnerability of the groundwater at the site based on site attenuation, waste extractability and end use to inhibit infiltration. You can then consider installation of groundwater monitoring wells depending on vulnerability before commencing fill operations.

If you have any question, please contact Bill Hocutt at (919) 733-0692 or Jan McHargue at (910) 896-7007.

Sincerely,

James C. Coffey

James C. Coffey, Supervisor
Solid Waste Section
Permitting Branch

WRH/jsp

cc: Sherry B. MacQueen
Jan McHargue
Bill Hocutt

TABLE OF CONTENTS

Page

1.0 Project Description 1

1.1 Site Location and Description 1

1.2 Geotechnical Subsurface Investigation 2

1.3 Wetlands and 100-Year Floodplain 2

1.4 Historical or Archaeological Sites 3

1.5 Critical Habitat of Endangered or Threatened Species 4

1.6 Park, Scenic, or Recreation Area Boundaries 4

1.7 Groundwater 4

2.0 Project Scope 5

2.1 Description 5

2.2 Permit Requirements 5

2.3 Projected Land Use 5

3.0 Type and Quantity of Waste 6

3.1 Type of Waste 6

3.2 Landfill Volume Phase II 7

4.0 Construction Schedule 8

5.0 Operations Plan 8

5.1 Warehouse Demolition and Recycling 8

TABLE OF CONTENTS

Page

5.2 Landfill Construction Description 9

5.3 Demolition Landfill Cell Construction Sequence 10

5.4 Landfill Equipment 11

6.0 Maintenance Plan 12

7.0 Site Security and Safety 12

7.1 Site Security 12

7.2 Site Safety 12

7.3 Contact Person 14

Figures

Appendices

Appendix A - Drawings and Specifications
Appendix B - Ash Material
Appendix C - Correspondence

1.0 PROJECT DESCRIPTION

1.1 SITE LOCATION AND DESCRIPTION

The Fieldcrest Cannon Plant #1 facility is located at 1 Lake Drive in Cabarrus County, Kannapolis, North Carolina as shown on the Vicinity Map, Figure 1. The LCID landfill is a land clearing and inert debris (LCID) landfill regulated by the North Carolina Solid Waste Management Rules, 15A NCAC 13B .0560 - .0566. The facility has been operating since September, 1992. The disturbed area associated with the Phase I is approximately 10.4 acres. Fieldcrest Cannon, Inc. plans to expand the existing landfill to include approximately 8.5 additional acres. The expanded area will include a LCID landfill as well as a structural fill using coal combustion by-products. Phase II is bound on the north by the existing landfill and North Loop Road, by Plant #1 on the south, by a Duke Power Company substation and the existing landfill on the west, and by North Main Street on the east.

The original grade of the expanded landfill slopes sharply from Plant #1 at elevation 808 feet mean sea level (MSL) to elevation 769 feet MSL at the existing tank area. A more moderate angle of repose exists at the embankment west of North Main Street. The original grade varies from elevation 808 feet MSL to elevation 791 feet MSL at the existing parking area.

The Site Plan - Phase II, Drawing 7 of 10, shows the proposed landfill expansion configuration. The limits of the landfill are defined by the following buffer zones.

- A 100 foot buffer is provided between the LCID landfill and the property boundary, defined by the Property Map, Figure 2.
- A 50 foot buffer is maintained between the piped stream, Lumber Yard Drain, and the disposal area.

1.0 PROJECT DESCRIPTION

1.1 SITE LOCATION AND DESCRIPTION

The Fieldcrest Cannon Plant #1 facility is located at 1 Lake Drive in Cabarrus County, Kannapolis, North Carolina as shown on the Vicinity Map, Figure 1. The LCID landfill is a land clearing and inert debris (LCID) landfill regulated by the North Carolina Solid Waste Management Rules, 15A NCAC 13B .0560 - .0566. The facility has been operating since September, 1992. The disturbed area associated with the Phase I is approximately 10.4 acres. Fieldcrest Cannon, Inc. plans to expand the existing landfill to include approximately 8.5 additional acres. The expanded area, Phase II, is bound on the north by the existing landfill and North Loop Road, by Plant #1 on the south, by a Duke Power Company substation and the existing landfill on the west, and by North Main Street on the east.

The original grade of the expanded landfill slopes sharply from Plant #1 at elevation 808 feet mean sea level (MSL) to elevation 769 feet MSL at the existing tank area. A more moderate angle of repose exists at the embankment west of North Main Street. The original grade varies from elevation 808 feet MSL to elevation 791 feet MSL at the existing parking area.

The LCID Site Plan - Phase II, Drawing 7 of 10, shows the proposed landfill expansion configuration. The limits of the landfill are defined by the following buffer zones.

- A 100 foot buffer is provided between the LCID landfill and the property boundary, defined by the Property Map, Figure 2.
- A 50 foot buffer is maintained between the piped stream, Lumber Yard Drain, and the disposal area.

- Several residential homes are located on the north side of North Loop Road. A minimum 100 foot buffer has been provided between the homes and the landfill boundary.
- A 100 foot buffer has been provided between the plant and the landfill.

1.2 GEOTECHNICAL SUBSURFACE INVESTIGATION

A geotechnical subsurface investigation of the expanded landfill area was performed by ENSCI in December, 1992. The work included installing nineteen soil borings. The soil borings were drilled until the static groundwater table was encountered. Temporary piezometers were set to compile information regarding the static and seasonal high water tables, excavation limits, and direction of groundwater flow.

The subsurface investigation revealed that fill materials encountered consisted primarily of clean fill (disturbed saprolite). Debris, consisting of stone, gravel, concrete, asphalt, brick, and plant material, was observed in minor amounts. A copy of the complete geotechnical report is included as part of the permit submittal package to the North Carolina Solid Waste Management Division.

1.3 WETLANDS AND 100-YEAR FLOODPLAIN

Phase II, the expanded landfill area, is above the headwaters of Lumber Yard Branch. Runoff from the expanded landfill area drains to the Lumber Yard Branch, which flows north-northeast approximately 0.6 miles to Bakers Creek. Bakers Creek flows west approximately 1 mile, where it joins Irish Buffalo Creek, a tributary of the Rocky River.

Lumber Yard Branch is currently piped from Plant #1 to approximately 150 feet south of North Loop Road. In his letter dated August 19, 1992, Appendix C, Mr. Wayne Wright, Regulatory Branch Chief, U.S. Army Corps of Engineers, indicated that Lumber Yard Branch is above the headwaters. Since the branch is above the headwaters, wetlands are not associated with the site.

During a telephone conversation with Ms. Sherry MacQueen on August 11, 1992, Mr. John Dorney, N.C. Division of Environmental Management, indicated that no State Water Quality Certification is required for disturbed areas less than 1/3 acre. The telephone conversation memo is contained in Appendix C.

1.4 HISTORICAL OR ARCHAEOLOGICAL SITES

The North Carolina Department of Cultural Resources, Division of Archives and History indicated in their letter dated February 9, 1993, Appendix C, that there are no known archaeological sites within the proposed project boundary. They stated that based on their present knowledge of the area, it is unlikely that any archaeological resources, eligible for inclusion in the National Register of Historic Places, will be affected by the project construction. They, therefore, recommended that no additional archaeological investigation be conducted in connection with the project. A search was conducted pursuant to Section 106 of the National Historic Preservation Act of 1966 that revealed the following structures of historical or architectural importance within the general area of the project:

Cannon Mill Housing (Kannapolis Mill Village) including G.I. Town and Black Section. These properties were placed on the state study list for potential nomination to the National Register of Historic Places on March 18, 1980.

1.5 CRITICAL HABITAT OF ENDANGERED OR THREATENED SPECIES

In accordance with required siting criteria for LCID landfills, an investigation was conducted by ENSCI Engineering Group personnel to establish that Phase II will not result in the destruction of critical habitat of endangered or threatened species as identified in 50 CFR Part 17. According to Mr. Marshall Ellis, Resource Management Specialist, the Division of Parks and Recreation's Natural Heritage Program has no records of any rare or threatened species or critical habitat in the project area. As indicated in his letter dated March 16, 1993, Appendix C, unless recommended by other state or local agencies, no biological survey is required.

1.6 PARK, SCENIC, OR RECREATION AREA BOUNDARIES

Phase II will not adversely affect any state parks, state trails, registered natural heritage areas, or state recreation areas. According to Mr. Ellis, there are no state parks in either Cabarrus or Rowan County. In addition, the Kannapolis Department of Parks and Recreation indicated that there are no city or county public recreation facilities in the immediate vicinity of the project.

1.7 GROUNDWATER

Excavation and fill activity will be limited to a minimum buffer of four feet above the seasonal high water table as defined in the Geotechnical Subsurface Investigation report prepared by ENSCI Environmental. A total of five groundwater monitoring wells have been installed in the area. Two wells were installed and sampled during the Phase I site investigation. Three additional wells were installed during the Phase II site investigation. The groundwater sampling test results contained in a report prepared by ENSCI entitled Geotechnical Subsurface

Investigation Addendum, are available upon request.

2.0 PROJECT SCOPE

2.1 DESCRIPTION

The purpose of Phase II is to expand the existing LCID landfill as shown on the Site Plan-Phase II, Drawing 7 of 10, to include the tank area and the existing parking area located south southwest of Phase I. The LCID facility is to be operated for the disposal of land clearing waste, inert debris, untreated wood and yard trash. The current operating procedures will be maintained as permitted by the N.C. Solid Waste Management Division. The structural fill using coal combustion by-products will include ash as well as concrete, brick, concrete block, uncontaminated soil, rock and gravel as specified in the proposed requirements for beneficial use of coal combustion by-products.

2.2 PERMIT REQUIREMENTS

Fieldcrest Cannon, Inc. has been operating a LCID landfill since September, 1992, under the Division of Solid Waste Management, Solid Waste Management rules, 15A NCAC 13B. It is estimated that Phase I will be completed by March, 1994. An extension of the existing permit is requested for Phase II to operate for a maximum of five years.

2.3 PROJECTED LAND USE

After completion of the landfill construction, the area will be seeded and maintained. Proposed future plans for development of the site may include:

- Community recreation areas such as walking trails, softball fields
- Plant parking in the area of the existing parking.

Investigation Addendum, are available upon request.

2.0 PROJECT SCOPE

2.1 DESCRIPTION

The purpose of Phase II is to expand the existing LCID landfill as shown on the Site Plan-Phase II, Drawing 7 of 10, to include the tank area and the existing parking area located south southwest of Phase I. The facility is to be operated for the disposal of land clearing waste, inert debris, untreated wood and yard trash. The current operating procedures will be maintained as permitted by the N.C. Solid Waste Management Division with the exception that inert debris will include ash as well as concrete, brick, concrete block, uncontaminated soil, rock and gravel.

2.2 PERMIT REQUIREMENTS

Fieldcrest Cannon, Inc. has been operating a LCID landfill since September, 1992, under the Division of Solid Waste Management, Solid Waste Management rules, 15A NCAC 13B. It is estimated that Phase I will be completed by March, 1994. An extension of the existing permit is requested for Phase II to operate for a maximum of five years.

2.3 PROJECTED LAND USE

After completion of the landfill construction, the area will be seeded and maintained. Proposed future plans for development of the site may include:

- Community recreation areas such as walking trails, softball fields
- Plant parking in the area of the existing parking.

3.0 TYPE AND QUANTITY OF WASTE

3.1 TYPE OF WASTE

The landfill will receive only those solid wastes for which it is permitted or approved. LCID waste material will consist of brick, gravel, concrete, clean soil, untreated wood, and asphalt pavement material. Structural fill material will be primarily ash. All material associated with demolition of the warehouses, other than those listed above, will be removed for disposal in an approved off-site facility, removed for sale, or recycled as indicated in the Phase I Operations Plan, Warehouse Demolition Sequence, Section 5.01.

Brick, Concrete, Gravel and Clean Soil Material

Inert fill material consisting only of concrete, brick, concrete block, rock, gravel and uncontaminated soil will be used as beneficial fill (BF), in buffer areas as bedding for underground utility pipes, in buffer areas to cover existing utility piping, and in the landfill cells. These materials may be placed in BF1 through BF4 and all Cells.

Ash Material

Appendix B contains information regarding the ash source, chemical and physical characterization of the material including TCLP test results and total metals.

The ash will be used in Cell 10 and 11, as beneficial fill, and in buffer areas (BF1-BF4) to cover existing utility piping (allowing ease of excavation in the event that the pipes require maintenance). However, ash will not be used as pipe bedding or within four feet of the seasonal high water table. A minimum four feet of clean cover will be provided between the seasonal high water table and the ash fill. No excavation will be permitted in areas where ash is used as fill.

3.0 TYPE AND QUANTITY OF WASTE

3.1 TYPE OF WASTE

The landfill will receive only those solid wastes for which it is permitted. Waste material will consists of brick, gravel, concrete, clean soil, ash, untreated wood, and asphalt pavement material. All material associated with demolition of the warehouses, other than those listed above, will be removed for disposal in an approved off-site facility, removed for sale, or recycled as indicated in the Phase I Operations Plan, Warehouse Demolition Sequence, Section 5.01.

Brick, Concrete, Gravel and Clean Soil Material

Inert fill material consisting only of concrete, brick, concrete block, rock, gravel and uncontaminated soil will be used as beneficial fill (BF), in buffer areas as bedding for underground utility pipes, in buffer areas to cover existing utility piping, and in the landfill cells. These materials may be placed in BF1 through BF4 and all Cells.

Ash Material

Appendix B contains information regarding the ash source, chemical and physical characterization of the material including TCLP test results and total metals.

The ash will be used in Cell 10 and 11, as beneficial fill, and in buffer areas (BF1-BF4) to cover existing utility piping (allowing ease of excavation in the event that the pipes require maintenance). However, ash will not be used as pipe bedding or within four feet of the seasonal high water table. A minimum four feet of clean cover will be provided between the seasonal high water table and the ash fill. No excavation will be permitted in areas where ash is used as fill.

Unpainted Wood and Yard Waste Material

Unpainted wood and yard waste will be deposited in Cell 7, Cell 8, and Cell 9. These materials will not be permitted in buffer areas to cover existing utility piping. However, mixing of these materials with ash is not allowed.

3.2 LANDFILL VOLUME PHASE II

TABLE 1 - AREA AND VOLUMES FOR PHASE II				
Cell Number	**Cell Area (Acres)**	**Excavated Material (CY)**	**Fill Material (CY)**	**Cap + Liner Material (CY)**
Cell 7	**1.16**	**7,110**	**17,680**	**3,740+0**
Cell 8	**1.55**	**17,328**	**16,760**	**5,000+0**
Cell 9	**.98**	**11,400**	**10,460**	**3,160+0**
Cell 10	**1.23**	**370**	**48,000**	**3,970+1,720**
Cell 11	**1.96**	**540**	**79,660**	**6,320+1,930**
BF 1	**.37**	**0**	**3,180**	**1,200+0**
BF 2	**.23**	**0**	**2,500**	**740+0**
BF 3	**.68**	**0**	**11,740**	**2,200+0**
BF 4	**.38**	**0**	**12,060**	**1,230+0**
Totals	**8.54**	**36,748.00**	**202,040.00**	**27,560+3,650**

Table 1 gives the area of each cell. Cells designated as BF are for structural fill only and are not considered within the limits of the landfill. Cells 10 and 11 are designated for structural fill using ash.

Unpainted Wood and Yard Waste Material

Unpainted wood and yard waste will be deposited in Cell 7, Cell 8, and Cell 9. These materials will not be permitted in buffer areas to cover existing utility piping. If ash is not used in either or both Cells 10 and 11, these materials may be substituted. However, mixing of these materials with ash is not allowed.

3.2 LANDFILL VOLUME PHASE II

TABLE 1 - AREA AND VOLUMES FOR PHASE II				
Cell Number	**Cell Area (Acres)**	**Excavated Material (CY)**	**Fill Material (CY)**	**Cap + Liner Material (CY)**
Cell 7	**1.16**	**7,110**	**17,680**	**3,740+0**
Cell 8	**1.55**	**17,328**	**16,760**	**5,000+0**
Cell 9	**.98**	**11,400**	**10,460**	**3,160+0**
Cell 10	**1.23**	**370**	**48,000**	**3,970+1,720**
Cell 11	**1.96**	**540**	**79,660**	**6,320+1,930**
BF 1	**.37**	**0**	**3,180**	**1,200+0**
BF 2	**.23**	**0**	**2,500**	**740+0**
BF 3	**.68**	**0**	**11,740**	**2,200+0**
BF 4	**.38**	**0**	**12,060**	**1,230+0**
Totals	**8.54**	**36,748.00**	**202,040.00**	**27,560+3,650**

Table 1 gives the area of each cell. Cells designated as BF are for beneficial fill only and are not considered within the limits of the landfill. Cells 10 and 11 are designated for ash storage but may be dedicated instead to beneficial fill, structural fill or land clearing and inert debris depending on the operational requirements of Fieldcrest Cannon, Inc.

4.0 CONSTRUCTION SCHEDULE

The following construction schedule is proposed. However, Cells 10 and 11 may be filled as early as November, 1993 to accommodate rerouting the existing ash lines.

Cell	Construction Schedule	
	Start Date	**Completion Date**
Cell 7	November 1, 1994	February 1, 1995
BF #2	November 1, 1994	February 1, 1995
Cell 8	February 1, 1995	May 1, 1995
BF #1	May 1, 1995	August 1, 1995
Cell 9	May 1, 1995	August 1, 1995
Cell 10	February 1, 1995	May 1, 1997
BF #3	May 1, 1995	May 1, 1997
Cell 11	May 1, 1997	November 1, 1999
BF #4	September 1, 1997	November 1, 1999

5.0 OPERATIONS PLAN

5.1 WAREHOUSE DEMOLITION AND RECYCLING

The warehouse demolition sequence is described in the Phase I operation plan. Every effort is being made to sell, recycle and reuse materials resulting from the demolition activities. Jim Clemic is the recycling contractor. The following items are recycled:

- Metal roofs
- Brick fire wall and inner walls

- Wood beams and rafters
- Steel columns and support structures
- Piping and electrical wiring

5.2 LANDFILL CONSTRUCTION DESCRIPTION

The landfill will be constructed of several "master" cells comprised of smaller working cells as shown on the Operations Plan - Phase II and Sections - Phase II drawings. The process of building working cells involves spreading the waste in two foot layers, compacting it with a 3-55B Trashmaster landfill compactor to the smallest practical volume by 3 to 5 passes of the compactor. The working cell lifts will typically range from 5-9 feet, with a six inch intermediate, compacted soil cover. Within six months, completed master cells will be covered with two feet of specified impervious soil, compacted and vegetated as specified in the Sediment and Erosion Control Specification, contained in the Sediment and Erosion Control Plan-Phase II, submitted to the Land Quality Section, Division of Land Resources.

In Cells 10 and 11, no excavation is provided. However, the existing contours form large depression that will be filled with ash in 8 to 10 inch lifts moisture conditioned, and compacted with a smooth steel drum compactor. Intermediate cover will be provided when the lifts reach elevations shown on the Cross Section Drawing, Sheet 10 of 10.

The area and trench landfill methods are used in this project. Initially the cell is excavated using the trench method. Debris is deposited in lifts and compacted. The excavated material becomes the cover material. Once the landfill height reaches the elevation of natural grade, the area method is used. The waste is deposited in lifts to form a cell. New cells are

constructed at the toe of the previously compacted cell and then spread and compacted.

5.3 DEMOLITION LANDFILL CELL CONSTRUCTION SEQUENCE

As illustrated on the Operations Plan - Phase II and Cross Sections - Phase II, the cell construction sequence is as follows:

- Field locate underground utilities. Determine which utilities are to remain. Mark buffers for utilities to remain. Buffers are 15' of pipe each side. Remove or relocate remaining pipe. Note gas line and water main in BF2 area.

- Excavate Cell 7. Haul the excavated soil consisting of impervious material to Cell 10 and Cell 11 to construct the required 4 feet of buffer between the seasonal high water table (SHWT) and the fill material. Stockpile the remaining material in Cell 11. Construct the first lift of Cell 7. The working face is to advance to the east. Place six inch intermediate cover.

- Excavate Cell 8. Use the available impervious material to construct the required four foot buffer between the fill and SHWT in Cell 10 and Cell 11. Stockpile the remaining material in Cell 11. Construct Lift 1 in Cell 8. The working face is to advance to the east. Place six inches of intermediate cover when the first lift of Cell 8 is completed.

- Construct Lift 2 in Cell 7. Construct the embankment at a 3 horizontal to 1 vertical slope. Construct Lift 2 in Cell 8 while simultaneously filling the first lift of beneficial fill area BF 2. Construct Lift 3 in Cell 8 and Lift 2 in BF 2. Approximately match the top elevation of completed Cell 7, BF 2 and Cell 8. Place the final one foot of cap material on Cell 7 and Cell 8.

- Begin excavation of Cell 9 prior to completion of the first lift of Cell 8. Stockpile soil in beneficial fill area BF 3. Complete Lift 1 Cell 8 then construct Lift 1 of Cell 9. The working face advancing to the east. Place the intermediate cover. Complete Lift 2 of Cell 8 then construct Lift 2 of Cell 9. Place intermediate cover. Complete lift 3 of Cell 8 then construct Lift 3 of Cell 9 while simultaneously filling beneficial fill area BF 1. No excavation is allowed in BF 1. Place the final one foot of cap material to match the existing grade elevation.

- Prior to beginning fill activities in Cell 10 and Cell 11, ensure that the required four feet of buffer has been placed between the seasonal high water table and the bottom of the fill. With the working face advancing west, place Lift 1 of Cell 11. Place six inches of intermediate cover.

- Construct Lift 2 of Cell 10 with an intermediate cover. Construct Lift 3 of Cell 10. Place the final cover to match existing grade.

- Construct Lift 1 of Cell 11 while simultaneously filling beneficial fill area BF 3 as required. Raise the top of the existing cut. Continue construction of Lifts 2, 3, and 4 of Cell 11. Maintain a 3 horizontal to 1 vertical embankment slope. Place final cover to match the final grade elevations shown on the Site Plan-Phase II.

- The temporary settling basin is located in beneficial fill area BF4. This area will not be filled until the final stages of operation to ensure that all internal drainage is retained for settling in the basin.

- Raise the top elevation of the existing catch basin as required.

- Fill Lift 1 of BF 4 to elevation 790 feet at the end on construction of Lift 3 in Cell 11. Place the final one foot of cap material and seed.

5.4 LANDFILL EQUIPMENT

Equipment Type	Manufacturer	Model No.
Smooth Steel Drum Vibratory Compactor	CAT	CS-433 or Equal
Trackhoe	Case	170
Track loader	CAT	977
Rubber Tire Loader	CAT	950
Trashmaster	REX	3-55B

Hauling Equipment	Capacity
Coal Hauling Dump Trucks	20 Tons
Water Truck	10,000 Gallons

6.0 MAINTENANCE PLAN

The surface of the landfill can be expected to settle from 5%-20% of the landfill depth. The occurrence of surface cracks and depressions due to settlement will be monitored and periodic grading performed. See the Sediment and Erosion Control Plan for maintenance of the erosion control features and vegetative cover.

7.0 SITE SECURITY AND SAFETY

7.1 SITE SECURITY

Site security is provided by fencing the perimeter of the landfill area to control access. Access to the landfill area will be provided as shown on the Site Plan - Phase II. A guard is on duty at the plant gate to prevent unauthorized access. The gate at North Loop Road, east of the landfill, will be locked except when authorized personnel are present. A sign will be posted at the gate which will state the following:

Fieldcrest Cannon, Inc.
Private Demolition Landfill
Absolutely No Public Access Allowed

7.2 SITE SAFETY

Fieldcrest Cannon, Inc., Plant #1 has a fully staffed fire brigade available to respond to fire or other emergencies. The Policy of Emergency Response for Fieldcrest Cannon is as follows:

Plant 1 — Consist of a 24 hour 7 day per week security force which will implement any emergency response action required by calling 704-939-2211.

Plant 1 Has a daytime nursing staff 8:00 A.M. to 5:00 P.M. weekdays and an agreement with Cabarrus Memorial Hospital for emergency service after 5:00 P.M. weekdays and on the weekends.

Plant 1 Has a 24 hour 7 day per week fire brigade. This brigade consists of:

(1) 3 shifts of volunteer fire fighters (10 to 12 persons each shift)

(2) 1 - 1,000 gpm pumper truck

(3) 1 - Emergency van equipped with all material to fight any oil, chemical, or wood fire

This brigade is trained to respond to any fire on or within the boundaries of Fieldcrest Cannon Plant 1 property. There are 2 fire hydrants within 300' of the landfill site. These hydrants are connected to the city of Kannapolis and will provide adequate water for fire control.

In case of fire or emergency, contact the following:

EMERGENCY RESPONSE-FIELDCREST CANNON: 704-939-2211

7.3 CONTACT PERSON

The contact person for resolution of operations problems during construction of the demolition landfill is:

Mr. David Honeycutt
Service and Maintenance Manager
Fieldcrest Cannon, Inc.
1 Lake Drive
Kannapolis, North Carolina 28081
Phone Number 1-704-939-2768

ENSCI ENGINEERING GROUP, P.A.

Sherry B. MacQueen
Project Engineer

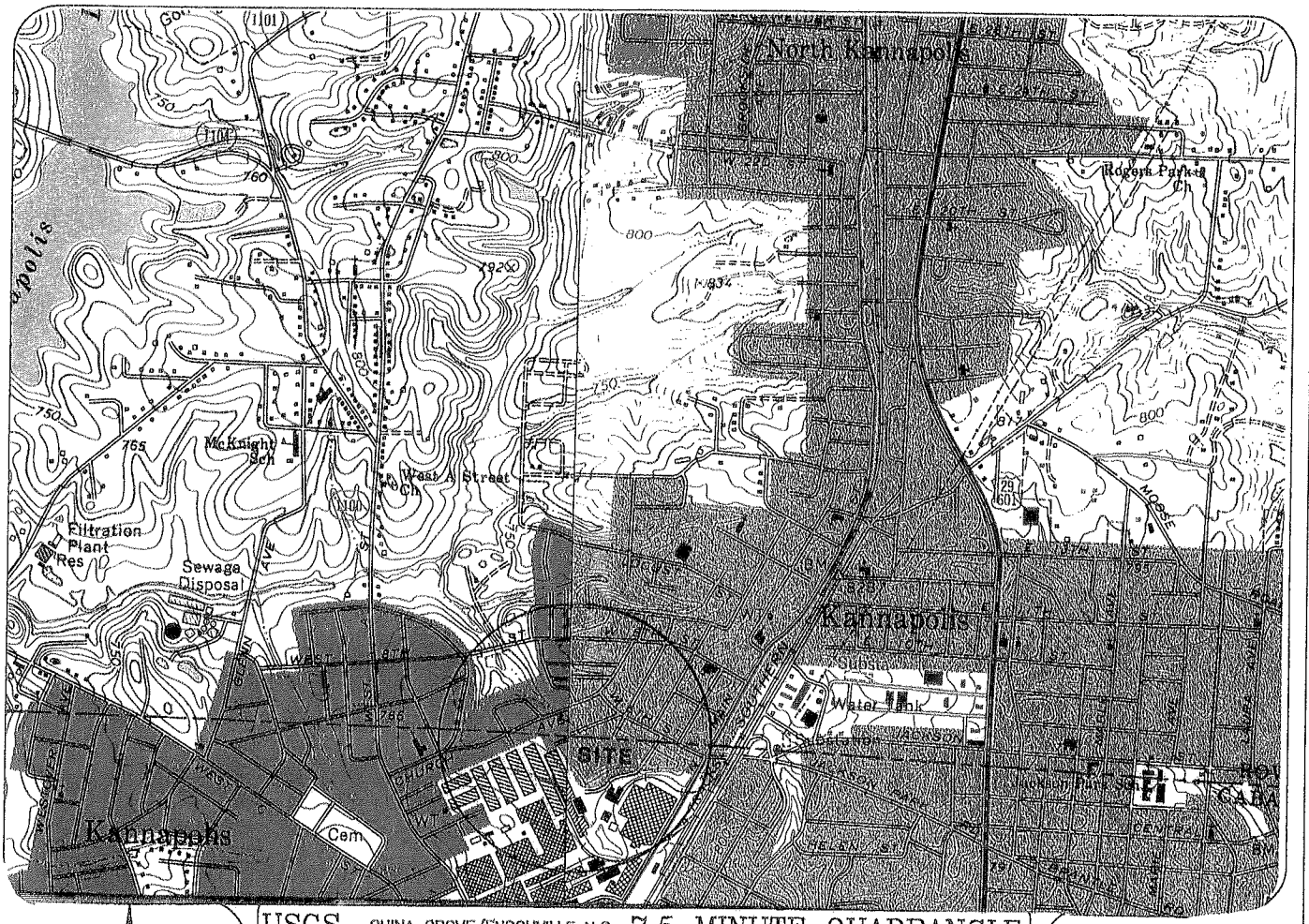
FIGURES

Figure 1 - Vicinity Map

Figure 2 - Property Map

TOPOGRAPHICAL MAP

FIELDCREST CANNON
KANNAPOLIS, NORTH CAROLINA



USGS CHINA GROVE/ENOCHVILLE N.C. 7.5 MINUTE QUADRANGLE

DATE OF MAP: BOTH 1970 PHOTOREVISION DATE: CG: 1970 E: N/A

PHOTOREVISION DENOTED IN PURPLE (COLOR MAPS ONLY)

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

SCALE 1:24000

QUADRANGLE LOCATION

ROAD CLASSIFICATION

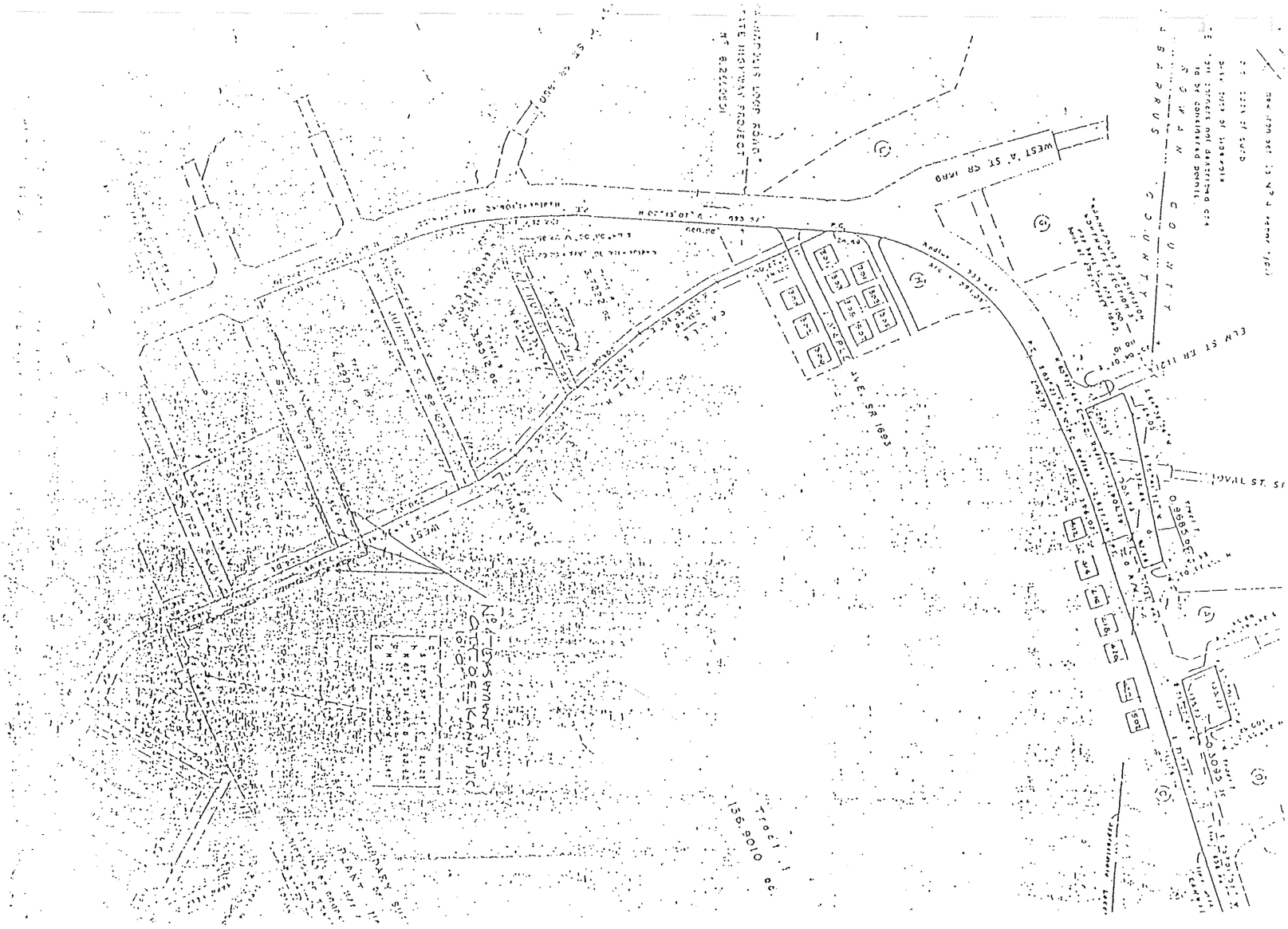
HEAVY-DUTY
MEDIUM-DUTY
LIGHT-DUTY
FOOT TRAIL
WGN & JEEP TRACK
UNIMPROVED ROAD

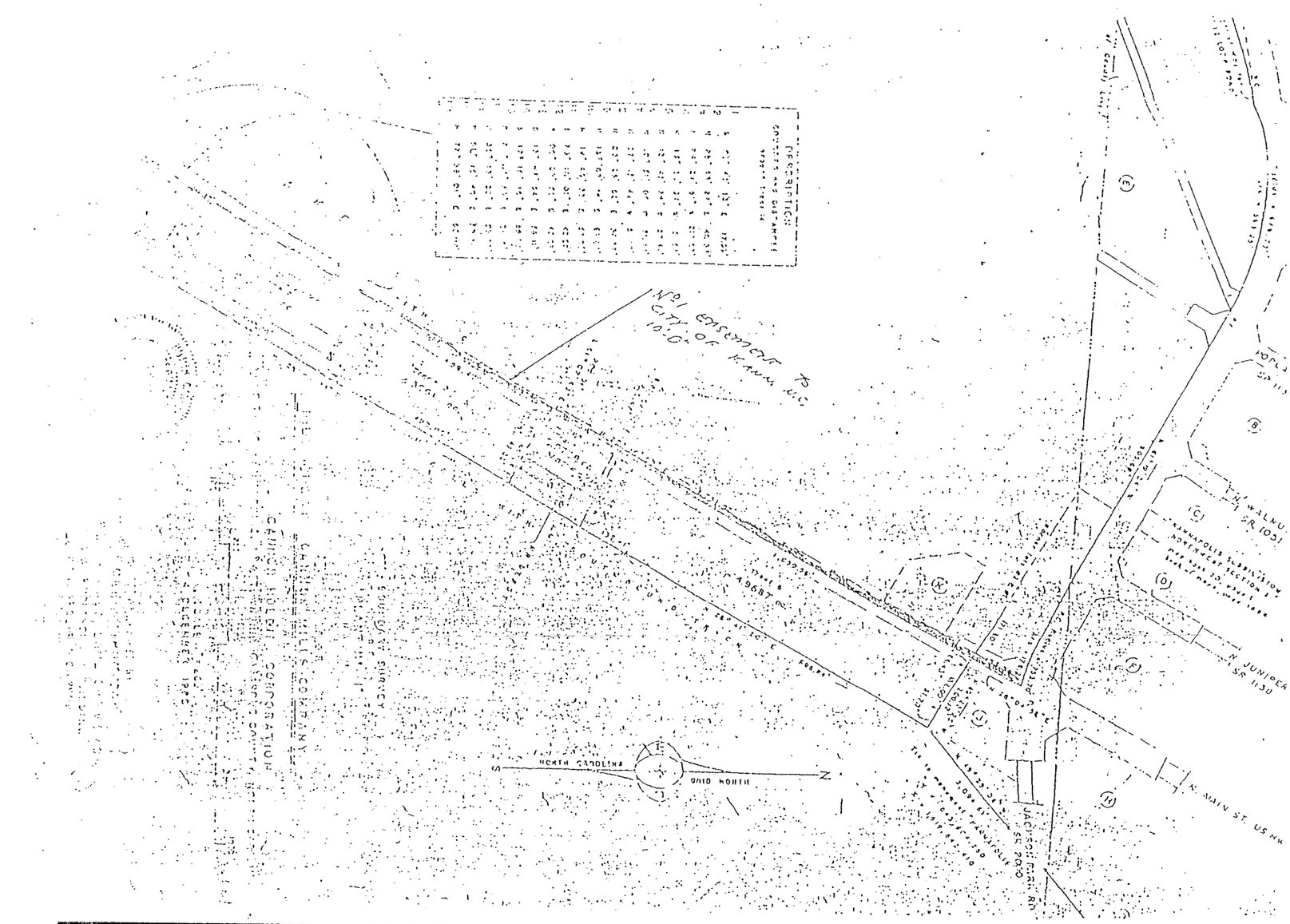
U.S. ROUTE
STATE ROUTE
INTERSTATE ROUTE

ENSCI® CORPORATION
HIGH POINT, NORTH CAROLINA

FOR: FIELDCREST CANNON	CITY: KANNAPOLIS
	STATE: NORTH CAROLINA
TITLE: TOPOGRAPHIC MAP	

SCALE: 1"=2000'	DWN BY: DJ	FIGURE: 1
	DWG NAME: USGS-1	
DATE: 8/5/92	CK BY: SS	JOB #: H92058





ENSCI®
ENGINEERING GROUP, P.A.

FIELDCREST CANNON, INC.
DEMOLITION LANDFILL
PROPERTY MAP

SCALE: NTS	PROJECT NO.: E124841	DRAWING NO.: FIGU

APPENDIX A

DRAWINGS AND SPECIFICATIONS

Drawings 1 through 5 were previously transmitted with Phase I. The following drawings have been prepared for Phase II with the exception of the revised Sections and Details Sheet 5 of 10.

Drawing Sheet	Title
5 of 10	Sections and Details
6 of 10	Site Demolition Plan - Phase II
7 of 10	Site Plan - Phase II
8 of 10	Sediment and Erosion Control Plan - Phase II
9 of 10	Operations Plan - Phase II
10 of 10	Cross Sections - Phase II

Specification Number	Title
ENS1000	Sediment and Erosion Control Specification

FIELDCREST CANNON INC.

EDEN, NORTH CAROLINA • KANNAPOLIS, NORTH CAROLINA

INDEX OF SHEETS

PHASE I

1 OF 5	DEMOLITION LANDFILL SITE PLAN – PHASE I
2 OF 5	DEMOLITION LANDFILL SEDIMENT AND EROSION CONTROL PLAN – PHASE I
3 OF 5	OPERATIONS PLAN – PLAN VIEW – PHASE I
4 OF 5	OPERATIONS PLAN – SECTION VIEWS – PHASE I
5 OF 5	LAND CLEARING AND INERT DEBRIS LANDFILL DETAILS AND SECTIONS – PHASE II

PHASE II

6 OF 10	LAND CLEARING AND INERT DEBRIS LANDFILL SITE DEMOLITION PLAN – PHASE II
7 OF 10	LAND CLEARING AND INERT DEBRIS LANDFILL SITE PLAN – PHASE II
8 OF 10	LAND CLEARING AND INERT DEBRIS LANDFILL SEDIMENT AND EROSION CONTROL PLAN – PHASE II
9 OF 10	LAND CLEARING AND INERT DEBRIS LANDFILL OPERATIONS PLAN – PHASE II
10 OF 10	LAND CLEARING AND INERT DEBRIS LANDFILL OPERATIONS PLAN CROSS SECTIONS – PHASE II

REFERENCE SPECIFICATIONS

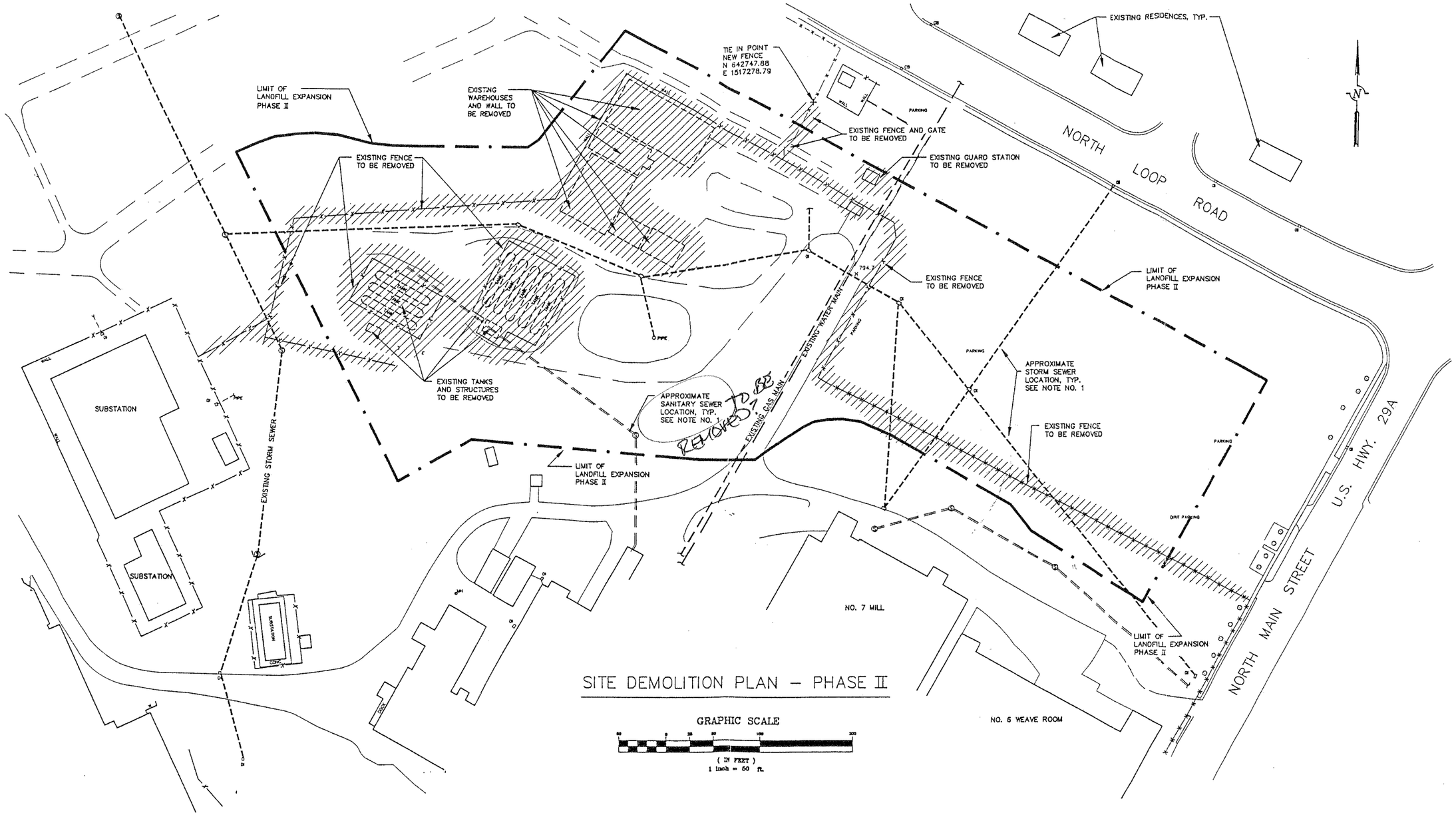
PHASE I

FIELDCREST CANNON, INC.
SEDIMENT AND EROSION CONTROL
ENS1000

PHASE II

FIELDCREST CANNON, INC.
SEDIMENT AND EROSION CONTROL
ENS1000

ENSCI®
ENGINEERING GROUP, P.A.



SITE DEMOLITION PLAN – PHASE II

NORTH CAROLINA PROFESSIONAL SEAL 12345 ENGINEER GREGORY KEITH MESHAW
Cel 9/93

NOTES :

1. FIELD VERIFY LOCATION OF ALL UNDERGROUND PIPING. RELOCATION TO BE FIELD DETERMINED. ALL REMAINING PIPING TO HAVE 15' BUFFER OF BENEFICIAL FILL FROM CENTERLINE (EACH SIDE).
2. RELOCATE EXISTING LIGHT POLES AS REQUIRED PRIOR TO EXCAVATING.

LEGEND :

- LANDFILL LIMITS
- EXISTING FENCE
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- DROP INLET
- FEATURE TO BE REMOVED

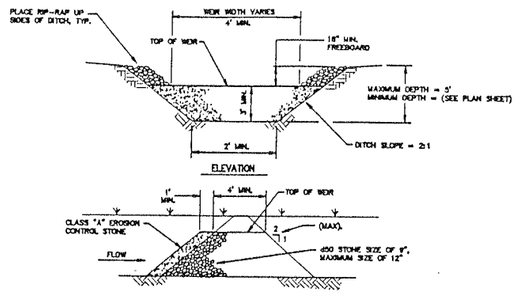
ENSCO ENGINEERING GROUP, P.A.

FIELDCREST CANNON, INC.
1 Lake Drive
Kannapolis, North Carolina 28081

DESCRIPTION
LAND CLEARING AND
INERT DEBRIS LANDFILL
SITE DEMOLITION PLAN–PHASE II

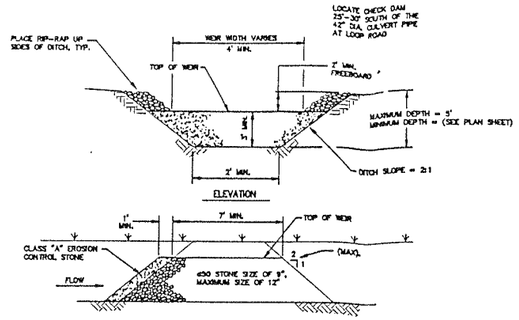
REVISIONS	
NO.	DATE

DATE: MARCH,1993
DRAWN BY: PLW
CHECKED BY: SBM/GKM
SCALE AS NOTED
PROJECT NO. E001053
SHEET NO. 6 OF 10
DRAWING NO. CANNON/DEMOPH2



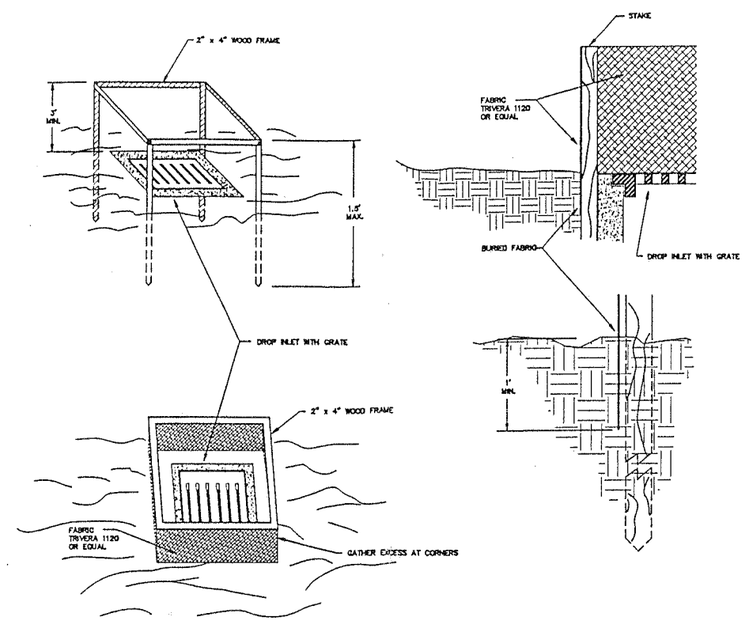
1/2,8 TEMPORARY SEDIMENT TRAP

NOT TO SCALE



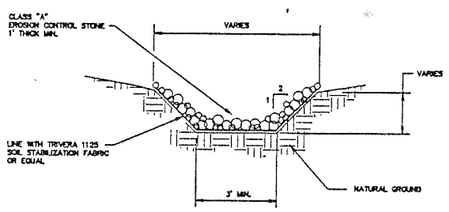
2/2 TEMPORARY ROCK CHECK DAM @ LOOP RD.

NOT TO SCALE



7/2,8 INLET PROTECTION

NOT TO SCALE

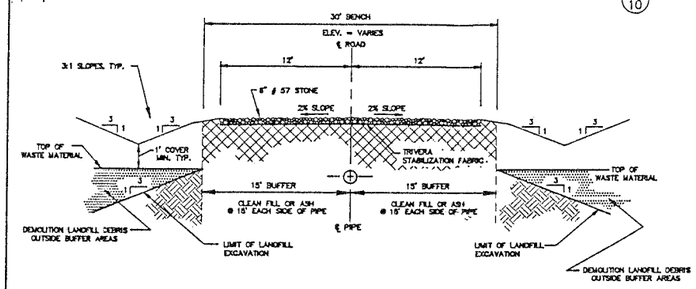


3/2,8 TYPICAL STONE DITCH DETAIL

NOT TO SCALE

NOTE :

AT FIELD LOCATED UNDERGROUND UTILITIES, PROVIDE 15 FT. BUFFER EACH SIDE OF PIPE. NO EXCAVATION PERMITTED WITHIN THE BUFFER AREA. SEE TYP. SECTION 10



4/8 TYPICAL ROADWAY DETAIL @ GAS LINE

NOT TO SCALE

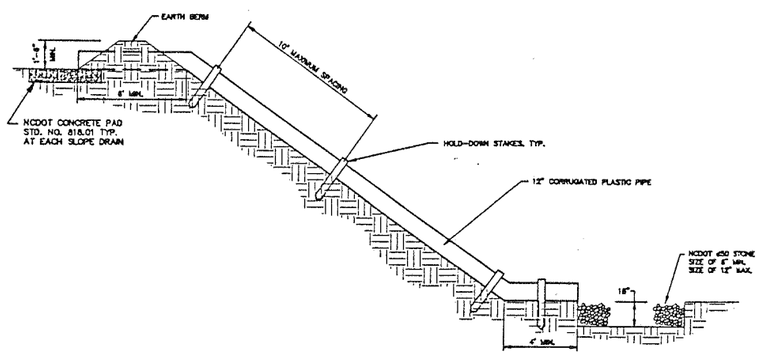
3

REVISIONS :(9/14/92) 2

1. DETAIL NO. 1 CHANGE SIDE SLOPES TO 2:1 CHANGE WIDTH OF DAM TO 5' TOTAL
2. DETAIL NO. 2 CHANGE SIDE SLOPE TO 2:1 ADD FABRIC AND ROCK THICKNESS
3. ADD DETAIL NO. 6 ROCK CHECK DAM 8' WIDE WITH 2:1 SIDE SLOPES AND 2' WEIR DEPTH AS RECOMMENDED BY NCS NEBS-LAND QUALITY
4. ADD INLET PROTECTION DETAIL NO. 7

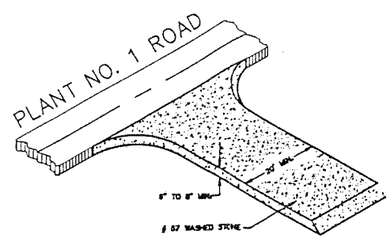
REVISIONS :(4/2/93) 3

1. DETAIL NO. 4 SHOW UNDERGROUND PIPE LOCATION AND 215' BUFFER EACH SIDE



5/2,8 TEMPORARY SLOPE DRAIN @ ACTIVE CELL

NOT TO SCALE



6/2,8 ACCESS ROAD

NOT TO SCALE

LEGEND

DETAIL NO. — SECTION LETTER

3/4 DETAIL

NOT TO SCALE

REFERENCE SHEET NO.

ENGEO GROUP, P.A.

FIELDCREST CANNON, INC.

1 Lake Drive

Kannapolis, North Carolina 28081

DESCRIPTION
LAND CLEARING AND INERT DEBRIS LANDFILL
DETAILS AND SECTIONS

REVISIONS	
NO.	DATE
2	9/14/92
3	4/2/93

DATE: AUGUST, 1992

DRAWN BY: PLW

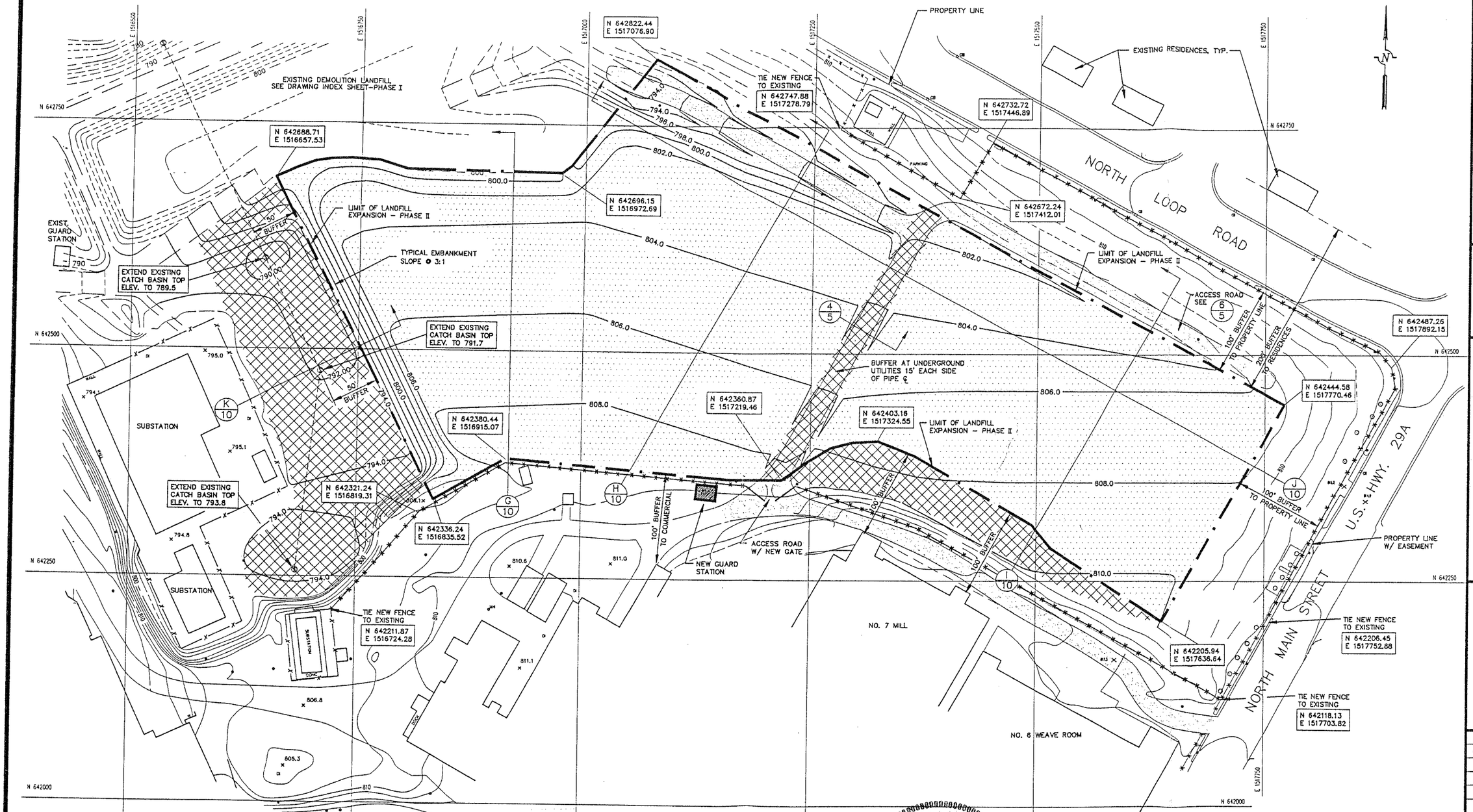
CHECKED BY: SBM/GKM

SCALE AS SHOWN

PROJECT NO.

SHEET NO. 5 OF 5

DRAWING NO. FCDETS



SITE PLAN - PHASE II

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

NORTH CAROLINA PROFESSIONAL SEAL 12345 6/9/93 ENGINEER GREGORY KEITH MESHAW

LEGEND :

- LANDFILL LIMITS
- NEW FENCE
- EXISTING FENCE
- GATE
- 810.0 CONTOUR ELEV.
- 813 × SPOT ELEV.
- BENEFICIAL FILL/ CLEAN FILL ONLY
- LAND CLEARING AND INERT DEBRIS
- ALL SEASON ROADWAY
- 1/10 SECTION / REFERENCE SHEET NO.

ENSOL® ENGINEERING GROUP, P.A.

FIELDCREST CANNON, INC.
1 Lake Drive
Kannapolis, North Carolina 28081

DESCRIPTION
LAND CLEARING AND -
INLET DEBRIS LANDFILL
SITE PLAN - PHASE II

REVISIONS	
NO.	DATE

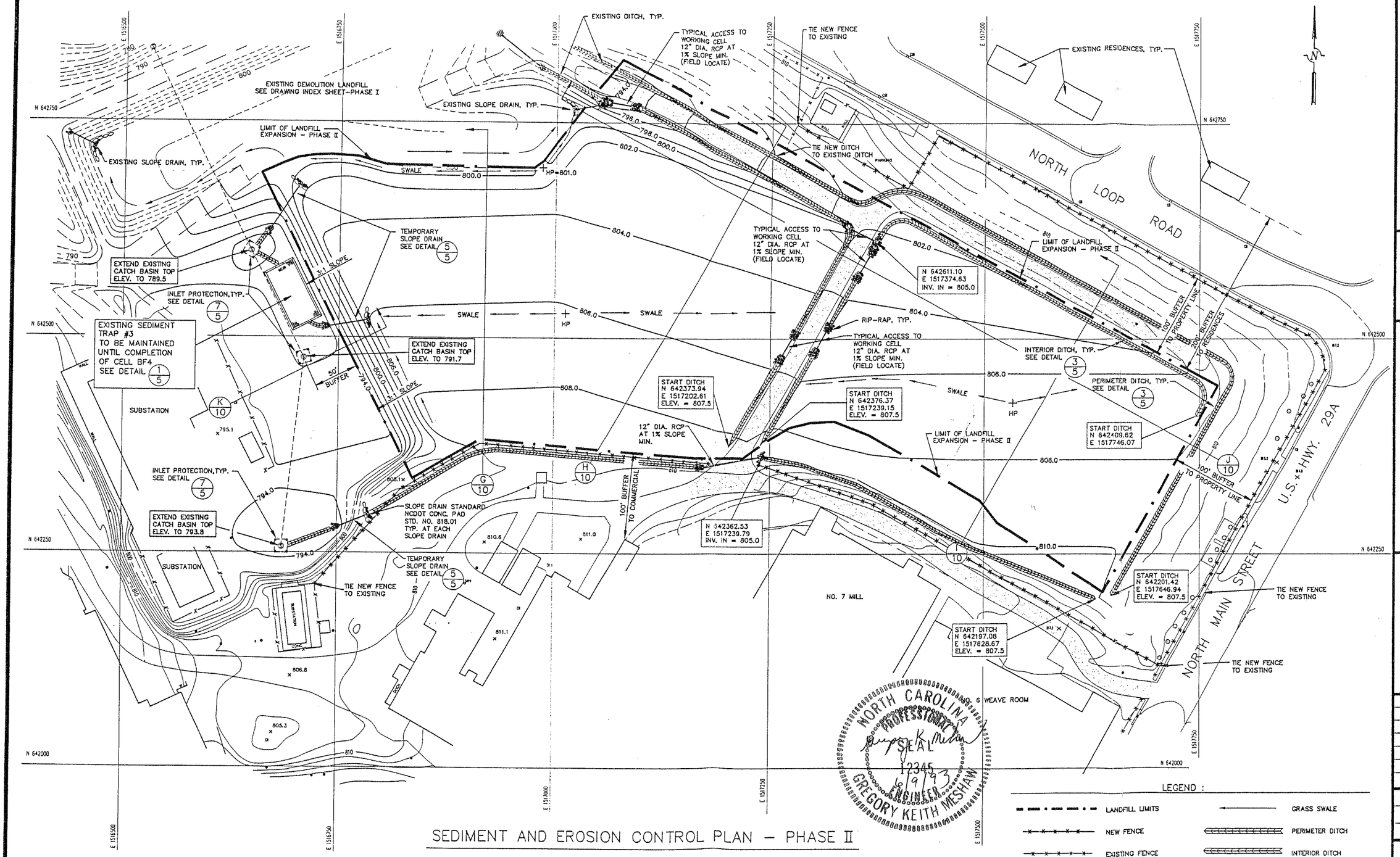
DATE: MARCH,1993
DRAWN BY: PLW
CHECKED BY: SBM/GKM

SCALE
AS NOTED

PROJECT NO.
E001053

SHEET NO.
7 OF 10

DRAWING NO.
CANNON/SITEPH2



NORTH CAROLINA PROFESSIONAL SEAL 12345 ENGINEER GREGORY KEITH MESHAW 6/9/93

SEDIMENT AND EROSION CONTROL PLAN – PHASE II

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

LEGEND :

- LANDFILL LIMITS
- NEW FENCE
- EXISTING FENCE
- GATE
- 810.0 CONTOUR ELEV.
- 812 × SPOT ELEV.
- GRASS SWALE
- PERIMETER DITCH
- INTERIOR DITCH
- ALL SEASON ROADWAY
- 1/10 SECTION / REFERENCE SHEET NO.

ENSCI® ENGINEERING GROUP, P.A.

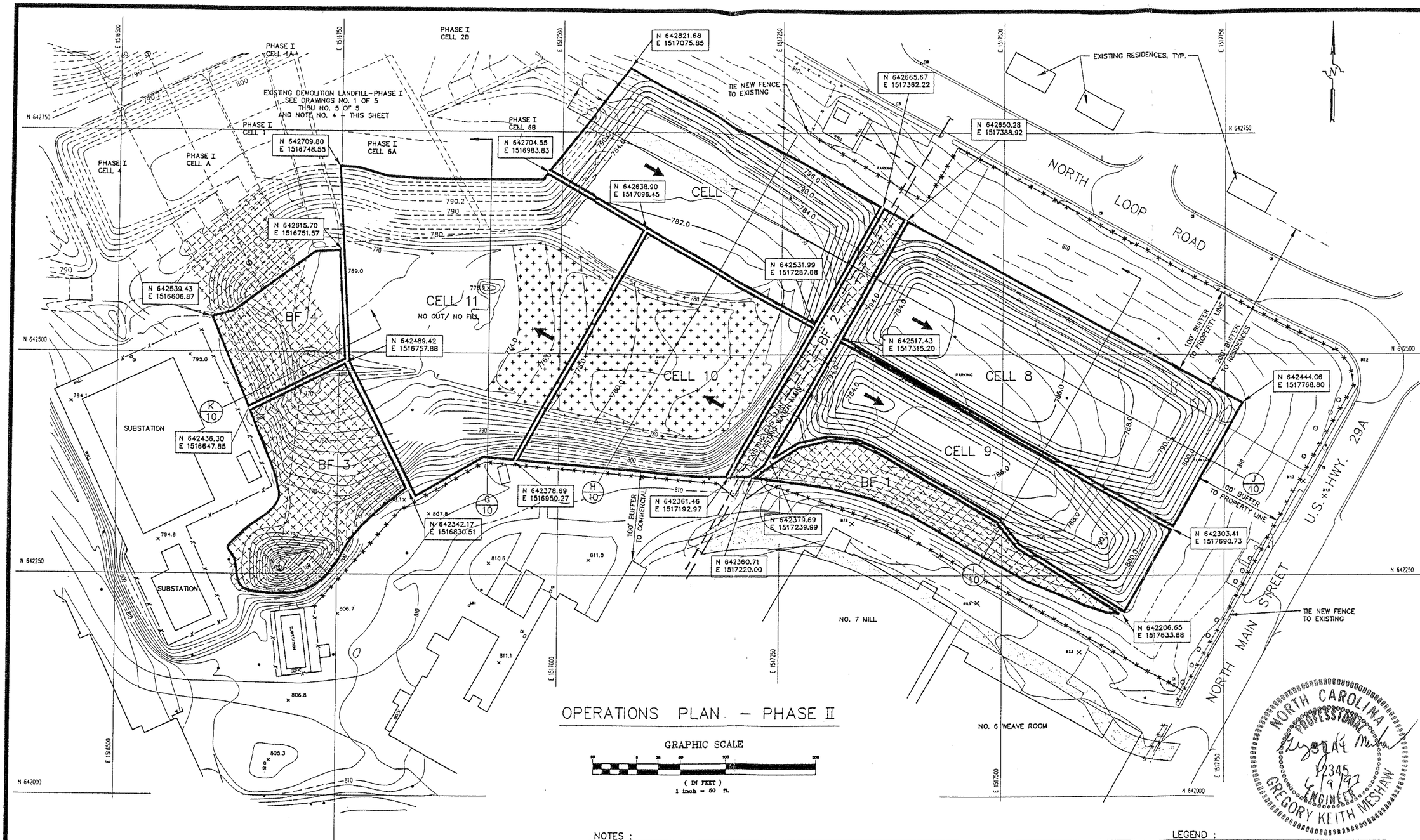
FIELDCREST CANNON, INC.
1 Lake Drive
Kannapolis, North Carolina 28081

DESCRIPTION
LAND CLEARING AND INERT DEBRIS LANDFILL
SEDIMENT & EROSION CONRTOL PLAN – PHASE II

REVISIONS	
NO.	DATE

DATE: MARCH,1993
DRAWN BY: PLW
CHECKED BY: SBM/GKM

SCALE AS NOTED
PROJECT NO. E001053
SHEET NO. 8 OF 10
DRAWING NO. CANNON/EROPH2



OPERATIONS PLAN - PHASE II

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

NOTES :

1. REFER TO THE PHASE II OPERATIONS PLAN REPORT FOR SEQUENCE OF CELL CONSTRUCTION.
2. NATURAL GROUND ELEVATIONS AND LIMIT OF CUT AND FILL ELEVATIONS ARE SHOWN ABOVE. FINAL GRADE ELEVATIONS ARE SHOWN ON THE SITE PLAN - PHASE II .
3. EMBANKMENT SLOPES SHALL BE A MAXIMUM 3:1 FOR EXCAVATION AND FILL.
4. PHASE I CELL CONFIGURATION AND SEQUENCE HAVE BEEN REVISED TO REFLECT ACTUAL FIELD CONDITIONS.
5. CAP COMPLETED CELL WITH A MINIMUM OF ONE FOOT OF SUITABLE SOIL COVER WITHIN 120 CALENDAR DAYS OF COMPLETION.
6. INTERMEDIATE COVER SHALL BE A MINIMUM OF 6" AND CONSIST OF CLEAN SOIL.
7. A MINIMUM 4 FEET OF CLEAN SOIL SHALL BE PROVIDED BETWEEN THE SEASONAL HIGH WATER TABLE AND THE FILL MATERIAL.

LEGEND :

- CELL 9 — CELL BORDER & IDENTIFICATION NO.
- WORKING FACE DIRECTION OF ADVANCEMENT
- NEW FENCE
- EXISTING FENCE
- 810.0 — EXISTING CONTOUR
- 800.0 — EXCAVATION LIMITS
- BENEFICIAL FILL MATERIAL (NOT EXCAVATED)
- FILL MATERIAL FOR BUFFER
- 780.0 — SEASONAL HIGH WATER TABLE (SHWT)
- 1/10 — SECTION / REFERENCE SHEET NO.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 12345 GREGORY KEITH MESHAW 6/9/97

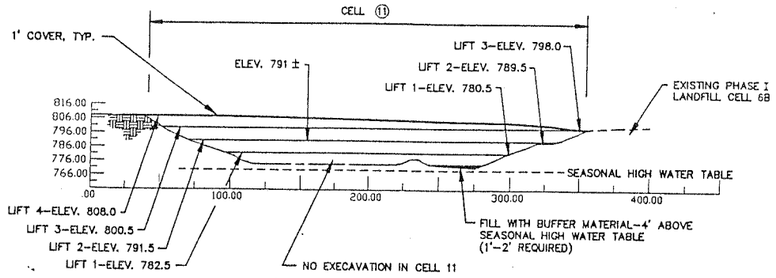
ENSCO ENGINEERING GROUP, P.A.

FIELDCREST CANNON, INC.
1 Lake Drive
Kannapolis, North Carolina 28081

DESCRIPTION
LAND CLEARING AND INERT DEBRIS LANDFILL OPERATIONS PLAN - PHASE II

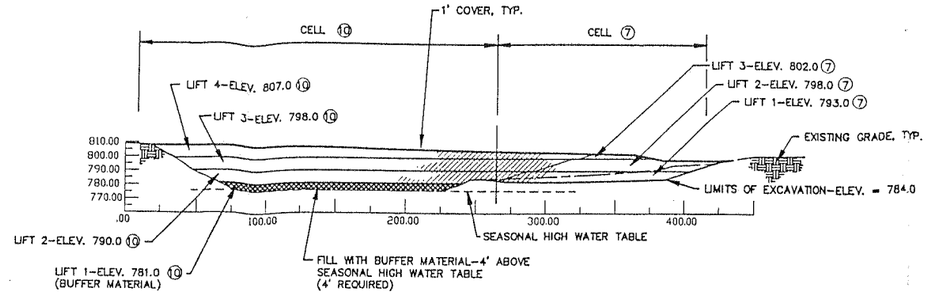
REVISIONS	
NO.	DATE

DATE: MARCH,1993
DRAWN BY: PLW
CHECKED BY: SBM/GKM
SCALE AS NOTED
PROJECT NO. E001053
SHEET NO. 9 OF 10
DRAWING NO. CANNON/OPERPH2



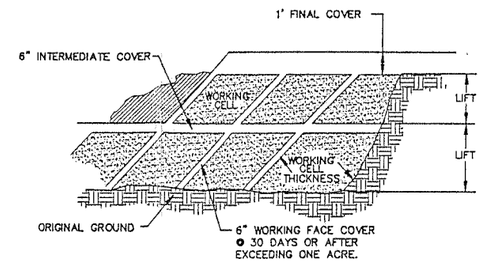
G / 7,8,9 SECTION THROUGH CELL 11

SCALE : VERT. 1"=10'
HORZ. 1"=50'



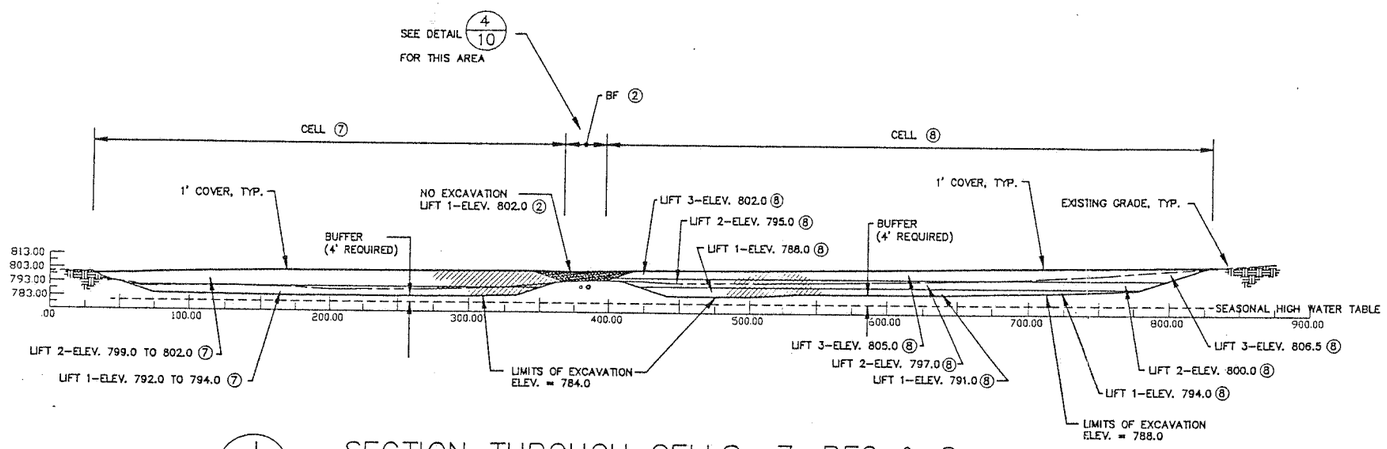
H / 7,8,9 SECTION THROUGH CELLS 10 & 7

SCALE : VERT. 1"=10'
HORZ. 1"=50'



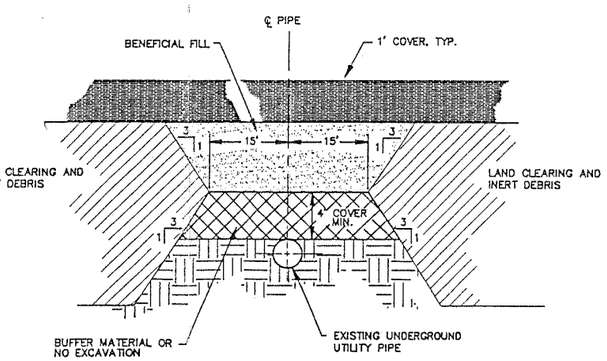
CROSS-SECTION OF CELL CONSTRUCTION

SCALE : NOT TO SCALE



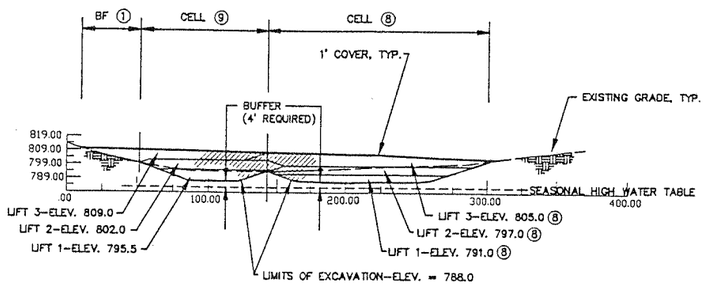
J / 7,8,9 SECTION THROUGH CELLS 7, BF2 & 8

SCALE : VERT. 1"=10'
HORZ. 1"=50'



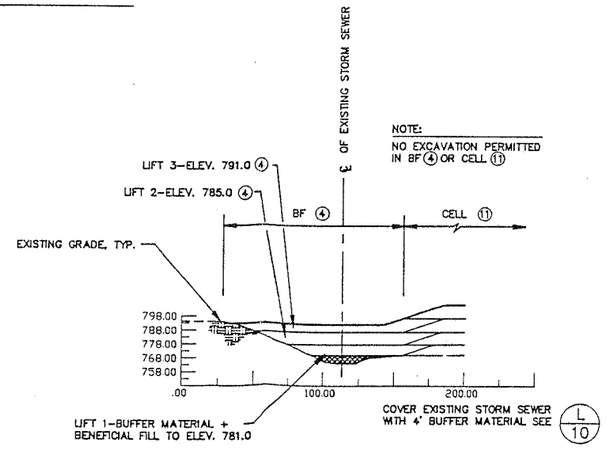
L / 6 TYPICAL DETAIL AT UNDERGROUND UTILITY PIPES

SCALE : NOT TO SCALE



I / 7,8,9 SECTION THROUGH CELLS BF1, 9 & 8

SCALE : VERT. 1"=10'
HORZ. 1"=50'



K / 7,8,9 SECTION THROUGH CELL BF4

SCALE : VERT. 1"=10'
HORZ. 1"=50'

NOTES :

1. REFER TO OPERATIONS PLAN REPORT FOR MORE INFORMATION ABOUT SEQUENCE OF CELL AND LIFT CONSTRUCTION.

LEGEND :

- BENEFICIAL FILL MATERIAL
- LAND CLEARING & INERT DEBRIS
- 1' COVER
- EXISTING GRADE
- BUFFER MATERIAL 4' FROM (SHWT)
- SEASONAL HIGH WATER TABLE (SHWT)
- ELEV. 797.0 FEET ABOVE MEAN SEA LEVEL

NORTH CAROLINA PROFESSIONAL SEAL 12345 6/9/93 ENGINEER GREGORY KEITH MCSHAW

ENSCO ENGINEERING GROUP, P.A.

FIELDCREST CANNON, INC.
1 Lake Drive
Kannapolis, North Carolina 28081

DESCRIPTION
LAND CLEARING & INERT DEBRIS
LANDFILL OPERATIONS PLAN
CROSS SECTIONS - PHASE II

REVISIONS

NO.	DATE

DATE: MARCH,1993
DRAWN BY: PLW
CHECKED BY: SBM/GKM
SCALE AS NOTED
PROJECT NO. E001053
SHEET NO. 10 OF 10
DRAWING NO. CANNON/SECPH2

LAND CLEARING AND INERT DEBRIS LANDFILL - PHASE II
SPECIFICATION ENS1000
Fieldcrest Cannon Plant #1
1 Lake Drive
Kannapolis, North Carolina 28081

Prepared For
FIELDCREST CANNON, INC.

Prepared By
ENSCI ENGINEERING GROUP, P.A.

NORTH CAROLINA PROFESSIONAL SEAL 12345 6/9/93 ENGINEER GREGORY KEITH MESHAW

EEG Project No. E001053
April 7, 1993

TABLE OF CONTENTS

Page

1.0 General

1.1 Scope of Work 1

2.0 Sedimentation and Erosion Control

2.1 Silt Check Dams and Sediment Basins 2

2.2 Silt Fence 3

2.3 Seeding and Mulching 5

3.0 Earthwork

3.1 Clearing and Grubbing 9

3.2 Excavation 11

1.0 GENERAL

1.1 SCOPE OF WORK

This specification includes, but is not limited to, work required to operate and construct a Land Clearing and Inert Debris (LCID) landfill as defined by the following design drawings. Sheets 1 through 5 were previously issued for Phase I operation. Revised Sheet 5 and Sheets 6 through 10 are being issued for Phase II.

Drawing Sheet	Title
1 of 10	Demolition Landfill Site Plan
2 of 10	Erosion and Sediment Control Plan
3 of 10	Demolition Landfill Operations Plan
4 of 10	Demolition Landfill Sections
5 of 10	Details and Sections
6 of 10	Demolition Plan - Phase II
7 of 10	Site Plan - Phase II
8 of 10	Erosion and Sediment Control Plan - Phase II
9 of 10	Operations Plan - Phase II
10 of 10	Cross Sections - Phase II

2.0 EROSION CONTROL (NCDOT - DIVISION 8)

Sedimentation and erosion control shall comply with the design drawings listed above, the Sediment and Erosion Control Plans - Phase I and II and the Operations Plans - Phase I and II.

2.1 SILT CHECK DAMS AND SEDIMENT BASINS

The work covered by this section consists of the construction, maintenance, and removal of physical barriers placed in ditches or swales to reduce water velocity and trap sediment.

The quantity of silt check dams to be constructed will be affected by the actual conditions which occur during the construction of the project. The quantity of silt check dams may be increased, decreased, or eliminated entirely at the direction of the Engineer. Such variations in quantity will not be considered as alterations in the details of construction or a change in the character of the work.

Sediment Traps and Basins will be located as shown of the design drawings.

Materials

Materials shall consist of stone as shown on the Details and Sections Drawing Sheet 5 of 10.

Material for rock silt check dams shall be stone for erosion control, Class A or B as designated on the detail sheet.

Stone for erosion control shall meet the requirements of North Carolina Department of Transportation Division 10, Article 1042.

Construction

The owner will construct silt check dams and sediment traps as shown on the plans. The structures shall be constructed at such time as indicated in the Sediment and Erosion Control Plan.

Maintenance and Removal

The owner will maintain the silt check dams, and remove and dispose of silt accumulations at the check dams in accordance with the plan.

2.2 SILT FENCE

Description

The work covered by this section consists of furnishing, installing, maintaining, and removing a water permeable filter type of fence for the purpose of removing suspended particles from the water passing through it.

The quantity of temporary silt fence to be installed will be affected by the actual conditions which occur during the construction of the project. The quantity of temporary silt fence may be increased or decreased as required by field conditions.

Materials

(A) Posts:

Either wood posts or steel posts may be used. Wood posts shall be a minimum of 6 feet long, at least 3 inches in diameter, and straight enough to provide a fence without noticeable misalignment. Steel posts shall be at least 5 feet in length, approximately 1 3/8 inches wide measured parallel to the fence, and have a minimum weight of 1.25 lb/ft of length. The post shall be equipped with an anchor plate having a minimum area of 14.0 square inches, and shall have a means of retaining wire and fabric in the desired position without displacement.

(B) Woven Wire Fence:

Wire fence fabric shall be at least 32 inches high, and shall have at least 6 horizontal wires. Vertical wires shall be spaced 12 inches apart. The top and bottom wires shall be at least 10 gage. All other wires shall be at least 12½ gage.

(C) Filter Fabric:

Filter fabric shall meet the requirements of Section 1056 for Type 3 engineering fabric, Class A or B.

Silt fence which incorporates filter fabric meeting the requirements of Section 1056 but which fails to perform in an acceptable manner shall be replaced with silt fence which is capable of acceptable performance.

(D) Wire Staples:

Wire staples shall be a No. 9 staple and shall be at least 1½ inches long.

Installation

The owner will install temporary silt fence as shown on the plans. The silt fence shall be constructed at the locations shown on the plans and at other locations directed by the Engineer.

Class B synthetic filter fabric may be used without the woven wire fence fabric backing, subject to the following conditions:

1. Post spacing is reduced to a maximum of 6 feet.
2. The proposed fabric has been approved by the Engineer as being suitable for use without the woven wire fence fabric backing.

3. Fence posts shall be inclined toward the runoff source at an angle of not more than 20° from vertical.

Posts shall be installed so that no more than 3 feet of the post shall protrude above the ground. Filter fabric shall be attached to the wire fence fabric by wire or other acceptable means. The filter fabric shall be installed in such a manner than a minimum overlap of 18 inches is provided at all splice joints.

At the time of installation, the fabric will be rejected if it has defects, rips, holes, flaws, deterioration, or damage incurred during manufacture, transportation or storage.

Maintenance and Removal

The owner will maintain the silt fence until the project is complete or until the fence is removed, and shall remove and dispose of silt accumulations at the silt fence. Filter fabric will be removed and replaced whenever it has deteriorated or clogged to such extent that it reduces the effectiveness of the silt fence or as specified in the Sediment and Erosion Control Plan.

2.3 SEEDING AND MULCHING (NCDOT - DIVISION 8)

The work covered by this section consists of preparing seedbeds; furnishing, placing, and covering limestone, fertilizer and seed; compacting seedbeds; furnishing, placing and securing mulch; mowing; and other operations necessary for the permanent establishment of grasses and legumes from seed on shoulders, slopes, ditches, or other areas; all in accordance with these specifications.

Seeding and mulching shall be performed on all earth areas disturbed by construction.

The owner will adapt operations to variations in weather or soil conditions as necessary for the successful establishment and growth of the grasses or legumes.

Materials

All materials shall meet the requirements of North Carolina Department of Transportation Division 10 shown below:

Fertilizer . . . . . Article 1060-1

Limestone . . . . . Article 1060-2

Seed . . . . . Article 1060-3

Mulch for erosion control . . . . . Article 1060-4

Seedbed Preparation

The soil shall be scarified or otherwise loosened to a depth of not less than 5 inches except as otherwise specified. The top 2 to 3 inches of soil shall be worked into an acceptable seedbed by the use of soil pulverizers, drags or harrow, or by other approved methods.

Where applicable, preparation of seedbed will include but not be limited to the spreading of 6 inches of topsoil to the area to be seeded.

Seedbed preparation within 2 feet of the edge of any pavement shall be limited to a depth of 2 to 3 inches.

Applying and Covering Limestone, Fertilizer, and Seed

Seasonal limitations for seeding operations; the kinds and grades of fertilizers; the kinds of seed; and the rates of application of limestone, fertilizer, and seed shall be as stated in the

application schedule.

Limestone, fertilizer, and seed shall be applied within 24 hours after completion of seedbed preparation unless directed otherwise.

Limestone may be applied as a part of the seedbed preparation provided it is immediately worked into the soil. Otherwise, lime and fertilizer shall be spread uniformly over the prepared seedbed at the specified rate and then harrowed, raked, or otherwise thoroughly worked or mixed into the seedbed.

Seed shall be distributed uniformly over the seedbed at the required rate of application and immediately harrowed, dragged, raked, or worked so as to cover the seed with a sufficient layer of soil. If two or more kinds of seed are to be used which require different depths of coverage, they shall be sown separately.

Immediately after seed has been properly covered, the seedbed shall be compacted in the manner and degree approved by the Owner.

Application Schedule

The kinds of seed and the rates of application of seed, fertilizer, and lime shall be as stated below. During periods of overlapping dates, the kinds of seed to be used shall be determined by the Owner.

All rates are in Pounds Per Acre

Top of Landfill and Temporary Seeding Areas

February 15 - May 15

120 lb. Rye Grain

750 lb. Fertilizer

2000 lb. Lime

May 15 - August 30

40 lb. German Millet

1200 lb. Fertilizer

2000 lb Lime

September 1 - February 15

40 lb. Rye Grain

70 lb. KY 31 Tall Fescue

1000 lb. Fertilizer or Equivalent

2000 lb. Lime

Landfill Embankment Slopes - Permanent

20 lb. Crown vetch

750 lb. Fertilizer

2000 lb. Lime

Fertilizer shall be 10-10-10 grade with not more than 400 pounds per ton potential acidity.

Mulching

All seeded areas shall be mulched unless otherwise directed. Grain straw may be used as mulch at any time of the year.

Mulch shall be applied within 24 hours after completion of seeding unless otherwise directed. Care shall be exercised to prevent displacement of soil or seed or other damage to the seeded area during the mulching operations. Mulch shall be uniformly spread by hand or by approved mechanical spreaders or blowers. An acceptable application will be that which will allow some sunlight to penetrate and air to circulate but partially shade the ground, reduce erosion and conserve soil moisture.

Mulch shall be held in place by a sufficient amount of asphalt or other approved binding material to assure that the mulch is properly held in place. The rate and method of application of binding material shall be approved by the Owner.

Sufficient precautions shall be taken to prevent mulch from entering drainage structures through displacement by wind, water, or other causes; and any blockage to drainage facilities which may occur shall be removed.

3.0 EARTHWORK (NCDOT - DIVISION 2)

3.1 CLEARING AND GRUBBING

The work of clearing shall consist of the cutting, removal, and satisfactory disposal of all vegetation and debris. The work of grubbing shall consist of the removal and satisfactory disposal of all vegetation and surface debris.

The work of clearing and grubbing shall also include the removal of tiles and tile particles. This material shall be disposed of in a designated area of the existing tile stockpile.

This work shall also be performed in accordance with the Site Safety Plan.

As a part of the work of clearing and grubbing, the owner will be required to perform the following:

1. Ensure that all construction permits and encroachment agreements have been obtained prior to starting work. These documents should be kept on site during construction.
2. Complete clearing and grubbing sufficiently in advance of grading operations to prevent any of the debris from the clearing and grubbing operations from interfering with the excavation operations.
3. Provisions should be made to intercept groundwater from springs or seepage planes. Underdrain trenches should be cut and filled with highly permeable aggregate with perforated pipe wherever moisture is likely to collect.
4. Perform temporary or permanent erosion control work in compliance with the Sedimentation and Erosion Control Plan, Appendix A, to cause a minimum of soil erosion. Vegetation resulting from clearing and grubbing shall be used to construct brush barriers and silt check dams to aid in erosion control when called for by the plans.

Clearing

The work of clearing shall be performed within the limits of construction established on the plans.

The Engineer will designate all areas of growth or individual trees which are to be preserved due to their desirability for landscape or erosion control purposes. When the trees to be preserved are located within the construction limits, they will be so shown on the plans.

Grubbing

The work of grubbing shall be performed on all areas cleared unless specified by the Engineer.

1. All brush, roots, stumps, tree laps, timber not reserved by the property owner, and other vegetation, shall be disposed of within the landfill area.
2. No burning will be permitted within the landfill. When the vegetation is disposed of by burning off site, all burning shall be in compliance with all local, state, and federal laws, ordinances, and regulations. The securing of necessary burning permits shall be the responsibility of the owner. All burning shall be under the constant care of competent watchmen. Burning shall be thorough and shall not be permitted to smolder and result in dense smoke.
3. Within the areas between construction limits and the limits of clearing and grubbing, all holes and other depressions shall be filled, and the area brought to sufficiently uniform contour.

3.2 EXCAVATION

The work covered by this section consists of the excavation, placement, and compaction or satisfactory disposal of all materials encountered within the construction limits.

All excavation shall be in conformity with the lines, grades, and cross sections shown on the plans. No excavation will be allowed in areas of beneficial fill, or in Cells 10 and 11.

Equipment Proposed:

Equipment used in performing the grading operation shall be of such weight, size, and capacity to efficiently remove the excavation and construct embankments, subgrades, or shoulders without causing instability or displacement of the underlying or adjacent materials. Proposed Equipment is listed in the Landfill Operations Plan.

ENSCI ENGINEERING GROUP, P.A.

Sherry B. MacQueen
Project Engineer

Gregory K. Meshaw, P.E.
Director of Engineering Services

ENSCI®
ENVIRONMENTAL, INC.

SOLID WASTE SECTION
FEB - 7 1994

February 4, 1994

Bill Hocutt
Solid Waste Section
Solid Waste Management Division
PO Box 27687
Raleigh, North Carolina 27611-7687

RE: Fieldcrest Cannon, Inc.
Operations Plan - Phase II
Land Clearing and Inert Debris and
Structural Fill with Coal Combustion By-Products
EEG Project No. E001053

Dear Mr. Hocutt:

Ms. Janis McHargue contacted ENSCI Engineering Group, P.A. on February 2, 1994, to request that we revise Appendix B of the Operations Plan- Phase II, Land Clearing and Inert Debris Landfill and Structural Fill with Coal Combustion By-Products prepared for Fieldcrest Cannon Plant #1 located in Kannapolis, North Carolina. The operation plan was originally prepared as an amendment to Solid Waste Permit #13-C.

Please find attached three copies of the revised appendix. The revision reflects current proposed operating procedures for using dry ash from Kannapolis Plant #1 and NCF as structural fill in Cells 10, 11, BF1, BF2, BF3 and BF4 of the subject facility.

If you have any questions or if we can provide additional information, please do not hesitate to call 1-800-562-6741.

Sincerely,
ENSCI ENGINEERING GROUP, P.A.

Sherry MacQueen

Sherry B. MacQueen
Project Engineer

cc: Evander Rowell, Fieldcrest Cannon, Inc.

1108 Old Thomasville Road
High Point, North Carolina 27260
T(919) 883-7505
F(919) 882-7958

Post Office Box 80275
Raleigh, North Carolina 27623-0275
T(919) 787-8209
F(919) 881-8205

APPENDIX B

ASH MATERIAL

APPENDIX B - Ash Material

I. Description

Fieldcrest Cannon, Inc., Plant #1 and NCF burn bituminous, pulverized coal in the boilers for processing. The coal source is Morton Virginia, Pardee Coal Company, Steer Branch, Tipple No. 210390. The operating temperature of the boilers is 2400° - 2800° F. Ash, a by-product of coal combustion is collected dry through a multi-cyclone separator. No chemicals are added for firing of coal or collection of multi-cyclone ash. No other products are burned with the coal. The ash will be dry handled and transported to the structural fill area designated as Cells 10, 11, BF1, BF2, BF3, and BF4 as shown on Drawing Sheet 9 of 10 entitled Operations Plan - Phase II.

Ash Quantity

The structural fill area and volumes are shown in Table 1 below:

TABLE 1 - AREA AND VOLUMES FOR PHASE II

Cell Number	Cell Area (Acres)	Excavated Material (CY)	Fill Material (CY)	Cap Material (CY)	Liner Material (CY)
Cell 10	1.23	370	48,000	3,970	1,720
Cell 11	1.96	540	79,660	6,320	1,930
BF 1	.37	0	3,180	1,200	0
BF 2	.23	0	2,500	740	0
BF 3	.68	0	11,740	2,200	0
BF 4	.38	0	12,060	1,230	0
Totals	4.85	910.00	157,140.00	15,660.00	3,650.00

Approximately 13,000 tons of ash is currently anticipated for use as structural fill. The quality is based on 85,000 to 90,000 tons of coal burned per year at Plant #1. The ash content is estimated to range from 8% to 16%. Approximately 70% of the ash will be separated and handled dry. Approximately 35,000 tons of coal per year is burned at NCF. The ash content is estimated to range from 8% to 16%. All the NCF ash is dry handled.

Hauling Equipment

Dry ash will be hauled to the structural fill area in 15-20 cubic yard, dual axil, coal hauling trucks. Hauling equipment will operate on paved roads. The trucks will be covered to eliminate fugitive dust.

Hauling Distances

The hauling distance from Plant #1 to the structural fill area is less than 3,000 feet. The NCF site is approximately 21 miles (one way) from the fill area.

Hauling Quantities

Hauling quantities will be based on 2,200 pounds per cubic yard of conditioned ash.

II. Ash Disposal Operations:

1. Structural fill with ash will be limited to Cells 10, 11, BF1-BF4. Ash will not be mixed with other waste material.
2. The ash will be consolidated in 8 to 10 inch lifts, spread uniformly and compacted to an in-situ density of at least 90% of the Standard Proctor maximum dry density as determined by ASTM Test Designation D698 or a minimum of 80% relative density ASTM D4254 for bottom ash.

3. The maximum slope will be 3:1.

4. The maximum lift height will be 10 feet high. A six inch intermediate cover will be placed between lifts. The structural fill will be covered with a minimum of 12 inches of compacted earth, and an additional six inches of soil capable of supporting the growth of suitable vegetation.

5. Equipment will be available that is capable of spreading and compacting ash as indicated below.

Equipment Type	**Manufacturer**	**Model No.**
Smooth Steel Drum Vibratory Compactor	CAT	CS-433 or Equal
Trackhoe	Case	170
Track loader	CAT	977

Hauling Equipment	**Capacity**
Covered Coal Hauling Dump Trucks	15-20 CY
Water Truck	10,000 Gallons

6. A four foot buffer will be provided between the seasonal high water table and the ash fill.

7. Fugitive dust will be controlled with watering trucks.

8. Surface water will be diverted away from the active landfill by diversion ditches. A detail of the ditch is shown on the Details and Section drawing, sheet 5 of 10. Internal drainage will be diverted to a temporary silt basin. External drainage will be diverted from the landfill via drainage ditches.

9. Supervision of the structural fill operations will be provided by Fieldcrest Cannon, Inc.

10. Monitoring and testing, as required by Solid Waste Section - DEM, will be provided by a private consulting firm and supervised by Fieldcrest Cannon, Inc.

11. The quantity and location of ash placement will be recorded within 90 days and maintained by Fieldcrest Cannon, Inc.

12. The register of deeds will record the notarized statement and index it in the grantor index under the name of Fieldcrest Cannon, Inc.

III. Ash Characteristics

For ash characteristics, TCLP samples were collected from NCF and the boiler at Plant #1 in Kannapolis. Results are attached.

FIELDCREST CANNON, INC.

KANNAPOLIS, NORTH CAROLINA 28081

May 28, 1993

Corporate Engineering
(704) 939-2493

Mrs. Sherry MacQueen
ENSCI Engineering Group
P. O. Box 80275
Raleigh, NC 27623-0275

Dear Sherry:

RE: Boiler Fly Ash & Coal Information - Plant 1 Kannapolis

In response to the agenda questionnaire, the following information is listed below:

1. Plant 1 Boiler's - operating temperature 2400 - 2800 F.
2. Type: Coal burned - Bituminous - pulverized at plant.
3. Region of coal source: Morton, Virginia
   Pardee Coal Co. - Steer Branch
   Tipple No. 210390
4. Process - Boiler ash generated by burnt coal collection through multi-cyclone separators. (Dry collection system.) No chemicals added for firing of coal, or collection of multi-cyclone ash. No other products burned with coal.

5. TLCP - Submitted with letter.
6. Coal - Analysis enclosed.

If any additional information is needed, please advise.

Sincerely,

Roger H. Settlemyer
Environmental Controls Coordinator

RHS/dhr

Enclosure

pc: E. H. Rowell

FIELDCREST CANNON, INC.

Burlington Research

Analytical Services • Aquatic Bioassay Testing • Aquatic Toxicity Reduction Evaluations
AATCC Testing Services • NPDES Testing • Reporting & Data Handling Services
PMN Aquatic Bioassay Evaluations

Post Office Box 2481 • 615 Huffman Mill Road • (919) 584-5564 • Burlington, NC 27216-248

ANALYTICAL REPORT

CUSTOMER: FIELDCREST CANNON, INC.
FACILITY: WWTP #1 P.O. Box 107
REPORT TO: Mr. Vic Holland

SAMPLE: TCLP Analysis
Plant 1 Fly Ash Grab 11/18

WORK ORDER #: 92-12-003-01

COLLECTED: 11/18/92
RECEIVED: 12/01/92
REPORTED: 12/29/92

PARAMETER	METHOD	STARTED	ANALYZED	RESULT
TCLP Filter Test/% Solids	EPA 1311	12/01/92	12/01/92	51.6/30.4 % Wet/Dry Wt.
TCLP Pesticides/Herbicides	EPA8080/8150	12/02/92	12/09/92	Attached
TCLP Semivolatile Organics	EPA8270/TCLP	12/02/92	12/09/92	Attached
TCLP Volatile Organics	EPA8240/TCLP	12/02/92	12/08/92	Attached
✓TCLP Arsenic	EPA 206.2	12/02/92	12/09/92	0.019 mg/L
✓TCLP Barium	EPA 208.1	12/02/92	12/08/92	2.86 mg/L
✓TCLP Cadmium	EPA 213.1	12/02/92	12/07/92	<0.005 mg/L
✓TCLP Chromium	EPA 218.1	12/02/92	12/07/92	<0.05 mg/L
✓TCLP Lead	EPA 239.1	12/02/92	12/09/92	<0.05 mg/L
✓TCLP Mercury	EPA 245.2	12/02/92	12/09/92	<0.0002 mg/L
✓TCLP Selenium	EPA 270.2	12/02/92	12/08/92	<0.005 mg/L
✓TCLP Silver	EPA 272.1	12/02/92	12/08/92	<0.01 mg/L

Burlington Research

Analytical Services • Aquatic Bioassay Testing • Aquatic Toxicity Reduction Evaluations
AATCC Testing Services • NPDES Testing • Reporting & Data Handling Services
PMN Aquatic Bioassay Evaluations

Post Office Box 2481 • 615 Huffman Mill Road • (919) 584-5564 • Burlington, NC 27216-2481

TCLP VOLATILE ORGANICS
(EPA METHOD 8260)

WORK ORDER #: 92-12-003-01
METHOD QUANTITATION LIMIT (MDL) IN MG/L: See Below

	ANALYTE	REGULATORY LEVEL (mg/L)		MQL	CONC. (mg/L)
		EPA	NCDEM		
1	CHLOROFORM	6.0	0.6	0.005	*
2	CARBON TETRACHLORIDE	0.5	0.05	0.005	*
3	TETRACHLOROETHENE	0.7	0.07	0.005	*
4	CHLOROBENZENE	100.0	10.0	0.005	*
5	1,2-DICHLOROETHANE	0.5	0.05	0.005	*
6	BENZENE	0.5	0.05	0.005	*
7	VINYL CHLORIDE	0.2	0.02	0.005	*
8	1,1-DICHLOROETHENE	0.7	0.07	0.005	*
9	TRICHLOROETHENE	0.5	0.05	0.005	*
10	1,4-DICHLOROBENZENE	7.5	0.75	0.005	*
11	2-BUTANONE (MEK)	200.0	20.0	0.10	*

* = Below Quantitation Limit
Results are for amounts found in TCLP/ZHE extract.

tclpvonc.frm
Revised 5/92

Burlington Research

Analytical Services • Aquatic Bioassay Testing • Aquatic Toxicity Reduction Evaluations
AATCC Testing Services • NPDES Testing • Reporting & Data Handling Services
PMN Aquatic Bioassay Evaluations

Post Office Box 2481 • 615 Huffman Mill Road • (919) 584-5564 • Burlington, NC 27216-2481

TCLP SEMIVOLATILE ORGANICS
(EPA METHOD 8270)

WORK ORDER #: 92-12-003-01
METHOD QUANTITATION LIMIT (MQL) IN MG/L: See Below

	ANALYTE	REGULATORY LEVEL (mg/L)		MQL	CONC. (mg/L)
		EPA	NCDEM		
1	CRESOL (Total)	200.0	20.0	0.010	*
2	1,4-DICHLOROBENZENE	7.5	0.75	0.010	*
3	2,4-DINITROTOLUENE	0.13	0.013	0.010	*
4	HEXACHLOROBENZENE	0.13	0.013	0.010	*
5	HEXACHLORO-1,3-BUTADIENE	0.5	0.05	0.010	*
6	HEXACHLOROETHANE	3.0	0.3	0.010	*
7	NITROBENZENE	2.0	0.2	0.010	*
8	PENTACHLOROPHENOL	100.0	10.0	0.050	*
9	PYRIDINE	5.0	0.5	0.010	*
10	2,4,5-TRICHLOROPHENOL	400.0	40.0	0.010	*
11	2,4,6-TRICHLOROPHENOL	2.0	0.2	0.010	*

* Below Method Quantitation Limit (MQL).
Results are for amounts found in the TCLP extract.

tclpsvnc.frm
Revised 5/92

Burlington Research

Analytical Services • Aquatic Bioassay Testing • Aquatic Toxicity Reduction Evaluations
AATCC Testing Services • NPDES Testing • Reporting & Data Handling Services
PMN Aquatic Bioassay Evaluations

Post Office Box 2481 • 615 Huffman Mill Road • (919) 584-5564 • Burlington, NC 27216-248

TCLP PESTICIDES AND HERBICIDES
(EPA METHOD 8080 AND 8150)

WORK ORDER #: 92-12-003-01
METHOD DETECTION LIMIT (MDL) IN mg/L: See Below

	ANALYTE	REGULATORY LEVEL (mg/L)		MDL	CONC. (mg/L)	
		EPA	NCDEM			
1	CHLORDANE	0.03	0.003	0.01	*	1
2	ENDRIN	0.02	0.002	0.001	*	2
3	HEPTACHLOR	0.008	0.0008	0.001	*	3
4	HEPTACHLOR EPOXIDE	0.008	0.0008	0.001	*	4
5	LINDANE	0.40	0.04	0.001	*	5
6	METHOXYCHLOR	10.00	1.0	0.002	*	6
7	TOXAPHENE	0.50	0.05	0.01	*	7
8	2,4-D	10.00	1.0	0.005	*	8
9	2,4,5-TP (SILVEX)	1.00	0.1	0.005	*	9

* Below Method Detection Limit (MDL).
Results are for amounts found in TCLP extract.

tclpphnc.frm
Revised 5/92

Burlington Research

Analytical Services • Aquatic Bioassay Testing • Aquatic Toxicity Reduction Evaluations
AATCC Testing Services • NPDES Testing • Reporting & Data Handling Services
PMN Aquatic Bioassay Evaluations

Post Office Box 2481 • 615 Huffman Mill Road • (919) 584-5564 • Burlington, NC 27216-2481

TCLP METALS

WORK ORDER #: 92-12-003-01
METHOD DETECTION LIMIT (MDL) IN mg/L: See Below

	ANALYTE	EPA METHOD	15A NCAC 2L	REGULATORY LEVEL (mg/L) EPA	REGULATORY LEVEL (mg/L) NCDEM LANDFILL	MDL	CONC. (mg/L)
1	ARSENIC	206.2	0.05	5.0	0.50	0.005	0.019
2	BARIUM	208.1	1.0	100.0	10.00	0.10	2.86
3	CADMIUM	213.1	0.005	1.0	0.10	0.005	*
4	CHROMIUM	218.1	0.05	5.0	0.50	0.05	*
5	LEAD	239.1	0.05	5.0	0.50	0.05	*
6	MERCURY	245.2	0.001	0.2	0.02	0.0002	*
7	SELENIUM	270.2	0.01	1.0	0.1	0.005	*
8	SILVER	272.1	0.05	5.0	0.5	0.01	*

* Below Method Detection Limit (MDL).
Results are for amounts found in TCLP extract.

tclpmtnc.frm
Revised 5/92

Copy to ~~#~~ ~~[illegible]~~ & Grey Jacobs

EnviroTech Mid-Atlantic

Virginia Tech Research Center
1861 Pratt Drive
Blacksburg, Virginia 24060
(703) 231-3983 FAX (703) 231-3984

APRIL 20, 1992

CLIENT : FIELDCREST CANNON
ADDRESS: P O BOX 107
KANNAPOLIS, NC 28082

REPORT # :3549
DATE RECEIVED:4/08/92

ATTENTION:BARBARA SIFFORD
REFERENCE:FLY ASH-NCF
PROJECT NO:
PURCHASE ORDER:B SIFFORD

FAX: 704-939-2714

SAMPLE IDENTIFICATION AND ANALYSIS RESULTS

SAMPLE	FIELD ID	DATE
3549A	FLY ASH-NCF	4-7-92

ANALYSIS	D/L	SAMPLE 3549A ID FLY ASH-NCF
TCLP (ppb)		
Benzene	25	ND
Carbon tetrachloride	25	ND
Chlordane	1	ND
Chlorobenzene	25	ND
Chloroform	25	ND
o-Cresol	10	ND
m-Cresol	20	ND
p-Cresol	20	ND
2,4-D	0.1	ND
1,4-Dichlorobenzene	25	ND
1,2-Dichloroethane	25	ND
1,1-Dichloroethylene	25	ND
2,4-Dinitrotoluene	10	ND
Endrin	0.5	ND
Heptachlor	0.5	ND
Heptachlor epoxide	0.5	ND
Hexachlorobenzene	10	ND
Hexachloro-1, 3-butadiene	10	ND
Hexachloroethane	10	ND
Lindane	0.5	ND
Methoxychlor	0.5	ND
Methyl ethyl ketone (MEK)	500	ND
Nitrobenzene	10	ND
Pentachlorophenol	50	ND
Pyridine	10	ND
Tetrachloroethylene	25	ND
Toxaphene	1	ND

ANALYSIS	D/L	SAMPLE 3549A ID FLY ASH-NCF	2L	(LANDFILL DEM
TCLP CONT'D (ppb)				
Trichloroethylene	25	ND		
2,4,5-Trichlorophenol	10	ND		
2,4,6-Trichlorophenol	10	ND		
2,4,5-TP (Silvex)	1	ND		
Vinyl chloride	50	ND		
TCLP METALS (mg/L)				
ARSENIC (As)	0.002	0.060	>0.05	.5
BARIUM (Ba)	0.1	1.0	1.00	10.0
CADMIUM (Cd)	0.005	0.020	>0.005	0.1
CHROMIUM (Cr)	0.05	ND		
LEAD (Pb)	0.1	0.2	> 0.05	0.5
MERCURY (Hg)	0.0001	ND		
SILVER (Ag)	0.05	ND		
SELENIUM (Se)	0.002	0.084	> 0.01	0.1
TOTAL METALS (mg/kg)				
ARSENIC (As)	0.02	25		
BARIUM (Ba)	1	485		
CADMIUM (Cd)	0.05	0.84		
CHROMIUM (Cr)	0.5	20.9		
LEAD (Pb)	1	32		
MERCURY (Hg)	0.001	0.38		
SILVER (Ag)	0.5	0.5		
SELENIUM (Se)	0.02	13		
MOLYBDENUM (Mo)	1	1		
SODIUM (Na)	20	482		
MAGNESIUM (Mg)	0.05	2,629		
CALCIUM (Ca)	20	28,500		

D/L - DETECTION LIMIT ND - NOT DETECTED

QUALITY CONTROL DATA

	%STD	%SPIKE	%RD
TCLP METALS			
ARSENIC	100	108	0
BARIUM	99	92	4
CADMIUM	97	97	6
CHROMIUM	100	106	0
LEAD	100	118	0
MERCURY	95	100	0
SILVER	100	97	0
SELENIUM	100	87	0

QUALITY CONTROL DATA

	%STD	%SPIKE	%RD
TOTAL METALS			
ARSENIC	100	108	0
BARIUM	99	92	4
CADMIUM	97	97	6
CHROMIUM	100	106	0
LEAD	100	118	0
MERCURY	95	100	0
SILVER	100	97	0
SELENIUM	100	87	0
MOLYBDENUM	100	100	0
SODIUM	100	101	5
MAGNESIUM	102	101	1
CALCIUM	110	112	17
TCLP PESTS	100	72	9
TCLP HERBS	100	72	9
TCLP VOLATILES			
1,1 DCE		101	5.9
TCE		96	1.2
C BENZENE		98	2.0
BENZENE		100	1.0
TOLUENE		96	3.1

TCLP SEMIVOLATILES MSR 53% ACID 82% BASE

LABORATORY DIRECTOR
Elizabeth B. Smiley

research analysis consultation
EFEH & ASSOCIATES
10919 SAGEWIND DRIVE • HOUSTON, TEXAS 77089 • TELEPHONE (713) 996-5031

May 18, 1993

Mr. Roger Settlemyer
Fieldcrest Cannon, Inc. - Plant #1
P.O. Box 107
Kannapolis, North Carolina 28082

Dear Mr. Settlemyer:

Following are the results of the solid sample submitted to our laboratory for analyses on April 30, 1993:

P.O. #: 80-593650

SAMPLE I.D.	Boiler #456 - 1 4/26/93 2:00 PM
LAB NO.	G-6383

PRIORITY POLLUTANTS

Antimony	<0.01
Arsenic	33.25
Barium	466.00
Beryllium	1.90
Boron	55.10
Cadmium	6.85
Chromium	31.75
Copper	61.95
Lead	9.55
Manganese	279.95
Mercury	0.041
Nickel	35.05
Selenium	33.60
Silver	<0.01
Thallium	<0.01
Vanadium	48.20
Zinc	25.15

NOTE: Units expressed in mg/Kg, unless otherwise noted.

VOLATILES

Chloromethane	<120
Bromomethane	<120

EFEH & ASSOCIATES

SAMPLE I.D.	Boiler #456 - 1 4/26/93 2:00 PM
LAB NO.	G-6383
Vinyl Chloride	<120
Chloroethane	<120
Methylene Chloride	<120
Acetone	<120
1,1-Dichloroethene	<120
1,1-Dichloroethane	<120
trans-1, 2-Dichloroethane	<120
Chloroform	<120
1,2-Dichloroethane	<120
2-Butanone	<120
1,1,1-Trichloroethane	<120
Carbon Tetrachloride	<120
Bromodichloromethane	<120
1,2-Dichloropropane	<120
cis-1,3-Dichloropropene	<120
trans-1,3-Dichloropropene	<120
Trichloroethene	<120
Dibromochloromethane	<120
1,1,2-Trichloroethane	<120
Benzene	<120
Bromoform	<120
Tetrachloroethene	<120
1,1,2,2-Tetrachloroethane	<120
Toluene	<120
Chlorobenzene	<120
Ethylbenzene	<120
Styrene	<120
m,p-Xylene	<120
o-Xylene	<120

NOTE: Units expressed in ug/Kg, unless otherwise noted.

BASE NEUTRALS AND ACIDS

Pyridine	<540
N-Nitrosodimethylamine	<540
Phenol	<540
Aniline	<540
bis(2-Chloroethyl)ether	<540
2-Chlorophenol	<540
1,3-Dichlorobenzene	<540
1,4-Dichlorobenzene	2800
Benzyl alcohol	<540
1,2-Dichlorobenzene	<540
o-Cresol	<540

EFEH & ASSOCIATES

SAMPLE I.D.	Boiler #456 - 1 4/26/93 2:00 PM
LAB NO.	G-6383
2,2'-oxybis(1-Chloropropane)	<540
m,p-Cresol	<540
N-Nitroso-di-n-propylamine	<540
Hexachloroethane	<540
Nitrobenzene	<540
Isophorone	<540
2-Nitrophenol	<540
2,4-Dimethylphenol	<540
Benzoic acid	2000
bis(2-Chloroethoxy)methane	<540
2,4-Dichlorophenol	<540
1,2,4-Trichlorobenzene	<540
Naphthalene	1100
4-Chloroaniline	<540
Hexachlorobutadiene	<540
4-Chloro-3-cresol	<540
2-Methylnaphthalene	1500
Hexachlorocyclopentadiene	<540
2,4,6-Trichlorophenol	<540
2,4,5-Trichlorophenol	<540
2-Chloronaphthalene	<540
2-Nitroaniline	<540
Dimethylphthalate	630
Acenaphthylene	<540
2,6-Dinitrotoluene	<540
3-Nitroaniline	<540
Acenaphthene	<540
2,4-Dinitrophenol	<540
4-Nitrophenol	<540
Dibenzofuran	<540
2,4-Dinitrotoluene	<540
Diethylphthalate	<540
4-Chlorophenyl-phenylether	<540
Fluorene	<540
4-Nitroaniline	<540
4,6-Dinitro-2-cresol	<540
N-Nitrosodiphenylamine (1)	<540
1,2-Diphenylhydrazine	<540
4-Bromophenyl-phenylether	<540
Hexachlorobenzene	<540
Pentachlorophenol	<540
Phenathrene	<540
Anthracene	<540
Di-n-butylphthalate	1800
Fluoranthene	<540
Benzidine	<540

SAMPLE I.D.	Boiler #456 - 1 4/26/93 2:00 PM
LAB NO.	G-6383
Pyrene	<540
Butylbenzylphthalate	1000
3,3'-Dichlorobenzidine	<540
Benzo(a)anthracene	<540
Chrysene	<540
bis(2-Ethylhexyl)phthalate	1500
Di-n-octylphthalate	<540
Benzo(b)fluoranthene	<540
Benzo(k)fluoranthene	<540
Benzo(a)pyrene	<540
Indeno (1,2,3-cd)pyrene	<540
Dibenz(a,h)anthracene	<540
Benzo(g,h,i)perylene	<540

NOTE: Units expressed in ug/Kg, unless otherwise noted.

PESTICIDES & HERBICIDES

Aldrin	<0.004
Alpha - BHC	<0.01
Beta - BHC	<0.01
Delta - BHC	<0.01
Gamma - BHC (Lindane)	<0.004
Chlordane	<0.014
4-4' - DDD	<0.012
4-4' - DDE	<0.01
4-4' - DDT	<0.01
Dieldrin	<0.02
Alpha-endosulfan	<0.02
Beta-endosulfan	0.001
Endosulfan Sulfate	0.001
Endrin	<0.01
Endrin Aldehyde	<0.08
Heptachlor	<0.004
Heptachlor Epoxide	<0.004
Methoxychlor	<0.04
Toxaphene	<0.02
2,4-D	<0.01
2,4,5-TP (Silvex)	<0.01

NOTE: Units expressed in mg/Kg, unless otherwise noted.

EFEH & ASSOCIATES

SAMPLE I.D.	Boiler #456 - 1 4/26/93 2:00 PM
LAB NO.	G-6383
PCB's	
PCB 1016	<40
PCB 1221	<40
PCB 1232	<40
PCB 1242	<40
PCB 1248	<40
PCB 1254	<40
PCB 1260	<40

NOTE: Units expressed in ug/Kg, unless otherwise noted.

METHODS: PRIORITY POLLUTANTS - EPA 6010/7471
VOLATILES - EPA 8240
BASE NEUTRALS AND ACIDS - EPA 8270
PESTICIDES & HERBICIDES - EPA 8080/8140/8150
PCB's - EPA 8080

Please contact me if you have any questions concerning these results.

Sincerely,

Edwin B. Smith, Jr.

Edwin B. Smith, Jr. PhD

research analysis consultation
EFEH & ASSOCIATES
10919 SAGEWIND DRIVE • HOUSTON, TEXAS 77089 • TELEPHONE (713) 996-5031

May 18, 1993

Mr. Roger Settlemyer
Fieldcrest Cannon, Inc. - Plant #1
P.O. Box 107
Kannapolis, North Carolina 28082

Dear Mr. Settlemyer:

Following are the results of the solid sample submitted to our laboratory for analyses on April 30, 1993:

P.O. #: 80-593650

SAMPLE I.D.	Composite of Samples Boiler #6 - 2, #5 - 3, and #4 - 4 4/26/93 2:00 PM
LAB NO.	G-6384
TCLP INORGANICS (Leachate)	
Arsenic, mg/L	0.02
Barium, mg/L	0.01
Cadmium, mg/L	0.07
Chromium, mg/L	0.08
Copper, mg/L	0.06
Lead, mg/L	0.17
Mercury, mg/L	<0.002
Nickel, mg/L	0.38
Selenium, mg/L	0.07
Silver, mg/L	<0.01
Zinc, mg/L	0.26
TCLP ORGANICS	
Endrin	<0.005
Lindane	<0.01
Methoxychlor	<0.01
Toxaphene	<0.01
2,4-D	<0.01
Silvex	<0.01
Benzene	<0.01
Carbon Tetrachloride	<0.01

EFEH & ASSOCIATES

SAMPLE I.D.	Composite of Samples Boiler #6 - 2, #5 - 3, and #4 - 4 4/26/93 2:00 PM
LAB NO.	G-6384
Chlordane	<0.01
Chlorobenzene	<0.01
Chloroform	<0.01
o-Cresol	<0.01
m,p-Cresol	<0.01
1,4-Dichlorobenzene	<0.01
1,2-Dichloroethane	<0.01
1-1-Dichloroethylene	<0.01
2,4-Dinitrotoluene	<0.01
Heptachlor	<0.004
Hexachlorobenzene	<0.01
Hexachloro-1,3-butadiene	<0.01
Hexachloroethane	<0.01
Methyl Ethyl Ketone	<0.01
Nitrobenzene	<0.01
Pentachlorophenol	<0.01
Pyridine	<0.01
Tetrachloroethylene	<0.01
Trichloroethylene	<0.01
2,4,5-Trichlorophenol	<0.01
2,4,6-Trichlorophenol	<0.01
Vinyl Chloride	<0.01

NOTE: Units expressed in mg/L, unless otherwise noted.

METHODS: TCLP INORGANICS (Leachate) - EPA 1311/6010/7470
TCLP ORGANICS - EPA 8015/8020/8080/8150

Please contact me if you have any questions concerning these results.

Sincerely,

Edwin B. Smith, Jr.

Edwin B. Smith, Jr. PhD

Send Sample to: EFEH & ASSOC.
3319 Industrial DR.
Pearland, TX. 77581
Att. David Burnette

Research Analysis Consultation

EFEH & ASSOCIATES

CHAIN OF CUSTODY RECORD

Company Name & Address
Fieldcrest Cannon Inc Plant 1
P.O. Box 107
Kannapolis, N.C 28082

Sta. #	Date	Time	comp	Grab	Station Location / Sample #	# of Containers	Priority Pollutants	Full Tclp						Remarks & Analysis Requested:
	4-26	2:00 P.M	✓		Boiler #456 - 1	1 1b								[redacted]
	4-26	2:00 P.M		✓	Boiler #6 - 2	1 1b		✓						G-6383
	4-26	2:00 P.M		✓	Boiler # 5 - 3	1 1b		✓	Are					G-6384
	4-26	2:00		✓	Boiler # 4 - 4	1 1b		✓	Full					
									Boiler					

Composite together for TCLP

Relinquished by:	Date:	Time:	Recieved by:	Relinquished by:	Date:	Time:
Roger Settlemyre	4-26	2:00 P.M				
Relinquished by:	Date:	Time:	Recieved by:	Relinquished by:	Date:	Time:
Relinquished by:	Date:	Time:	Recieved for Laboratory by:		Date:	Time:

Remarks:
Please read Copy of P.O. attached

FIELDCREST CANNON, INC.

Purchase Order No. 80-593650
Release No.

INVOICE TO: FIELDCREST CANNON, INC.
P. O. BOX 829
KANNAPOLIS, N.C. 28082-0829

PAGE: 1

BILLING INSTRUCTIONS - - PLEASE FOLLOW:
1) Invoice in duplicate to the address shown above.
2) Only one purchase order per invoice.
3) Purchase order number and release number must appear on all bills of lading, cases, packing slips and, correspondence.

PURCHASE ORDER TO

EFEH & ASSOCIATES LABS.
3319 INDUSTRIAL DR.
PEARLAND TX 77581

SHIP TO

FIELDCREST CANNON, INC.
CANNON PLANT #1
MAIN STREET (29A S).
KANNAPOLIS NC 28081

DATE	TERMS	REQUIRED DELIVERY	ROUTING	REQ NO.	ACCOUNT NO.
04-21-93	-NET 45 FOB-SP	05-03-93	BEST WAY	222183	491-2140-3000-0

L#	PART NUMBER	DESCRIPTION	UNIT PRICE	UNIT OF MEASURE	QUANTITY ORDERED
		TC SHOW ON ALL PAPERWORK PURCHASE ORDER NO. & SEND INVOICE TO ATTN: E.H. ROWELL, ENGR DEPT.			
	78-0502735	ANALYSIS ONE (1) COMPLETE FULL TCLP ANALYSIS - FLY ASH PLANT 1	850.00	EA	1
	78-0502735	ANALYSIS ONE (1) COMPLETE FULL PRIORITY POLLUTANT ANALYSIS FLY ASH PLANT 1	675.00	EA	1

UNCLASSIFIED ACCOUNT NO. TOTAL $1,525.00

SEE REVERSE SIDE

APPENDIX C

CORRESPONDENCE

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

IN REPLY REFER TO

August 19, 1992

RECEIVED
AUG 24 1992
Shirley

Regulatory Branch

Action ID. 199203204 and Nationwide Permit No. 26
(Headwaters and Isolated Waters)

Mr. Evander H. Rowell
Fieldcrest Cannon Mills
Post Office Box 107
Kannapolis, North Carolina 28082

Dear Mr. Rowell:

Thank you for your inquiry of July 23, 1992, regarding your plans to culvert and fill approximately 780 linear feet of Lumber Yard Branch, a headwaters tributary to Bakers Branch, at an industrial site near the intersection of Main Street and North Loop Road at Kannapolis, Cabarrus County, North Carolina. The project site was reviewed by my staff on July 29, 1992 at which time we confirmed that the proposed work would impact approximately .16 acres of stream bed and bank.

For the purposes of the Corps of Engineers' Regulatory Program, Title 33, Code of Federal Regulations (CFR), Part 330.6, published in the Federal Register on November 22, 1991, lists nationwide permits. Authorization was provided, pursuant to Section 404 of the Clean Water Act, for discharges of dredged or fill material into headwaters and isolated waters provided:

a. the discharge does not cause the loss of more than 10 acres of waters of the United States;

b. the permittee notifies the District Engineer if the discharge would cause the loss of waters of the United States greater than one acre in accordance with the "Notification" general condition. For discharges in special aquatic sites, including wetlands, the notification must also include a delineation of affected specific aquatic sites, including wetlands; and

c. the discharge, including all attendant features, both temporary and permanent, is part of a single and complete project.

Your work is authorized by this nationwide permit provided it is accomplished in strict accordance with the enclosed conditions. This nationwide permit does not relieve you of the responsibility to obtain any required State or local approval. You should contact Mr. John Dorney, NC Division of Environmental Management, at telephone (919) 733-1786 regarding the need for a State Water Quality Certification.

This verification will be valid for 2 years from the date of this letter unless the nationwide authorization is modified, reissued, or revoked. Also, this verification will remain valid for the 2 years if, during that period, the nationwide permit authorization is reissued without modification or the activity complies with any subsequent modification of the nationwide permit authorization. If during the 2 years, the nationwide permit authorization expires or is suspended or revoked, or is modified, such that the activity would no longer comply with the terms and conditions of the nationwide permit, activities which have commenced (i.e., are under construction) or are under contract to commence in reliance upon the nationwide permit will remain authorized provided the activity is completed within 12 months of the date of the nationwide permit's expiration, modification or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend, or revoke the authorization.

Questions or comments may be addressed to Mr. Steven Lund, Asheville Field Office, Regulatory Branch, telephone (704) 259-0857.

Sincerely,

G. Wayne Wright
Chief, Regulatory Branch

Enclosure

Copies Furnished (without enclosure):

Mr. John Parker
North Carolina Department of
Environment, Health and
Natural Resources
Post Office Box 27687
Raleigh, North Carolina 27611-7687

Mr. John Dorney
Water Quality Section
Division of Environmental Management
North Carolina Department of
Environment, Health and
Natural Resources
Post Office Box 27687
Raleigh, North Carolina 27611-7687

Ms. Sherry MacQueen
Applied Environmental Services
Post Office Box 80275
Raleigh, North Carolina 27623-0275

State of North Carolina
Department of Environment, Health, and Natural Resources
512 North Salisbury Street • Raleigh, North Carolina 27604

James B. Hunt, Jr., Governor

Jonathan B. Howes, Secretary

March 16, 1993

Ms. Sherry MacQueen
Applied Environmental Services, Inc.
8809 Running Oak Drive
Raleigh, NC 27613

SUBJECT: Fieldcrest Cannon Landfill Facility, Cabarrus County

Dear Ms. MacQueen:

In response to your inquiry of March 1, 1993 requesting information on potential environmental impacts arising from the proposed Fieldcrest Cannon landfill facility in Kannapolis, the Division of Parks and Recreation has the following comments:

1) This project will not affect any state parks, state trails, registered natural heritage areas, or state recreation areas.

2) The Kannapolis Department of Parks and Recreation has informed us that there are no city or county public recreation facilities in the immediate vicinity of the project.

3) The Division's Natural Heritage Program has no records of any rare or threatened species or critical habitat in the project area. However, we have no records of systematic biological surveys of the area, so we cannot be entirely certain that no rare or endangered species are present. If comments from other state or local agencies involved in this review indicate the presence of rare species or critical habitat, then we recommend that a biological survey be conducted to ensure that no state or federally listed species are subjected to adverse impacts.

Thank you for the opportunity to comment on this project; if you have any additional questions, please call me at 919-733-7795.

Sincerely,

Marshall Ellis

Marshall Ellis
Resource Management Specialist
Division of Parks and Recreation

/me

P.O. Box 27687, Raleigh, North Carolina 27611-7687 Telephone 919-733-4984 Fax # 919-733-0513

An Equal Opportunity Affirmative Action Employer

North Carolina Department of Cultural Resources

James B. Hunt, Jr., Governor
Betty Ray McCain, Secretary

Division of Archives and History
William S. Price, Jr., Director

February 9, 1993

Talmadge Lee Gerald, Jr.
Applied Environmental Services, Inc.
8809 Running Oak Drive
Raleigh, NC 27613

Re: D. L. Site, Kannapolis (E001504X), Cabarrus County, ER 93-8087

Dear Mr. Gerald:

Thank you for your letter of January 21, 1993, concerning the above project.

There are no known archaeological sites within the proposed project area. Based on our present knowledge of the area, it is unlikely that any archaeological resources which may be eligible for inclusion in the National Register of Historic Places will be affected by the project construction. We, therefore, recommend that no archaeological investigation be conducted in connection with this project.

We have conducted a search of our maps and files and have located the following structures of historical or architectural importance within the general area of the project:

> Cannon Mill Housing (Kannapolis Mill Village) including G.I. Town and Black Section. These properties were placed on the state study list for potential nomination to the National Register of Historic Places on March 13, 1980. (See enclosed map.)

The above comments are made pursuant to Section 106 of the National Historic Preservation Act of 1966 and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763.

Sincerely,

David Brook

David Brook
Deputy State Historic Preservation Officer

DB:slw

Enclosure

cc: Rowan County Historic Properties Commission

TELEPHONE CONVERSATION

Mr. Steve Lund
U.S. Army Corps of Engineers
RE: Construction Permit for piping the creek

Fieldcrest Cannon, Inc.
E124841
S. B. MacQueen
August 11, 1992

- Corps of Engineers visited the site.
- Construction work to pipe Lumber Yard Branch can be done under a Nationwide 26 Permit.
- There are no adjacent wetlands, therefore, no 404 impact to the channel.
- Based on a 6' channel width they estimated 7,000 sq. ft. of impacted area. Since this is less than a third of an acre, it will probably require no additional approval from the State. Mr. Lund recommended that we contact Mr. John Dorney to confirm that the work can be done under a general certification.

John Dorney - NC Division of Environmental Management
RE: Construction, Nationwide 26

(919) 733-1786

No permit required with less than 1/3 acre.
Lumber Yard Branch - 6' wide channel approximately 7,000 sq. ft.

We are proceeding with preparation of an erosion control plan. We have contacted the Land Quality Section on a previous job. Mr. Dorney was contacted. He said that if the Corps of Engineers authorizes construction under Nationwide 26 and no wetlands are involved and the creek is less than 1/3 acre, construction can be done under NC General Certification.

Called 8:45 but Mr. Dorney was in a meeting; he will return my call.

Mr. Dorney returned my call. He indicated that we can proceed with installation of the pipe since the creek is less than 1/3 acre and we have a Nationwide 26 Permit. The State does not require any permit - the work will be done under a general certification. If we need written confirmation, we should write to his office requesting it.

OCT 08 1993

ENSCI®

ENGINEERING GROUP, P.A.

October 6, 1993

Janis D. McHargue
Solid Waste Section
Solid Waste Management Division
8025 North Point Boulevard, Suite 100
Winston-Salem, North Carolina 27106-3203

Re: Fieldcrest Cannon Inc.
Landfill Permit Application
Completeness Review Response
EEG Project No. E001053

Dear Ms. McHargue:

On behalf Fieldcrest Cannon, Inc., ENSCI Engineering Group, P.A. requests a revision of the current permit application for the Fieldcrest Cannon LCID Landfill - Phase II. As indicated in your Completeness Review letter dated September 3, 1993, the landfill cannot be approved as a LCID landfill since it contains ash, not included in the definition of LCID. Based on your recommendation during our telephone conversation on September 24, 1993, we request that the following permit/approval combination be considered:

- **LCID Landfill Permit Request -** issue a LCID Landfill permit for Cells 7, 8, and 9 under the Solid Waste Management Rules .0560 Land Clearing and Inert Debris (LCID) Landfill. The location of the cells is shown on the Operations Plan, drawing 9 of 10. The type of material to be permitted is defined on page 6 of the Operations Plan report. The total area of cells is 3.69 acres as shown on page 7 of the Operations Plan report.

- **Beneficial Use of Coal Combustion By-Products -** approve cells 10, 11, BF1, BF2, BF3 and BF4 for use as a structural fill under the proposed new rules 15A NCAC 13B .1702-General Provisions for Structural Fill Facilities. The location of the cells is shown on the Operations Plan, drawing 9 of 10. The type of material to be permitted within the cells, structural design guidelines and equipment requirements are contained in the Operation Plan, Appendix B entitled Ash Material. The total area of the cells is 4.85 acres.

Post Office Box 80275
Raleigh, North Carolina 27623-0275
T (919) 787-8209
F (919) 881-8205

1108 Old Thomasville Road
High Point, North Carolina 27260
T (919) 883-7505
F (919) 882-7958

Currently, the area of the landfill to be structurally filled with ash is a large depression where natural gas storage tanks are located. The storage tanks are to be removed and ash placed in lifts and compacted to provide an area for additional plant parking and for community recreation areas such as walking trails and softball fields.

We have reviewed the draft requirements for beneficial use of coal combustion by-products and have ascertained that the proposed structural ash fill design for the Fieldcrest Cannon facility meets or exceeds those requirements.

Please find attached five copies of the Operation Plan revisions including the cover page, pages 1, 5, 6 and 7. If you have any questions or we can be of assistance, please do not hesitate to call at 1-800-787-8209.

Sincerely,

ENSCI ENGINEERING GROUP, P.A.

Sherry MacQueen

Sherry MacQueen
Project Engineer

SM/dh

cc: Mr. Van Rowell