

704-662-0100

92-30



SCANNED
3/13/14 *Carman Johnson*

THIS DOC.
NOT APPROVED

**HWY 55 REPROCESSING
FACILITY APPLICATION**

Carman Johnson
Doc ID#
Date 8/14/13
92-30
Permit/Co ID#

SEE DOC. DATED 12/17/02
FOR APPROVED APPLICATION

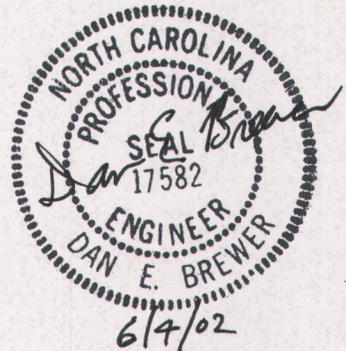
Prepared For:

NCDENR
Division of Waste Management
Raleigh, North Carolina

Prepared By:

**PATTERSON
BREWER**
& Associates
Engineering • Surveying • Planning

PO Box 1387
Mooresville, NC 28115



**HIGHWAY 55 REPROCESSING FACILITY
TABLE OF CONTENTS**

- 1.0 SITING AND DESIGN REQUIREMENTS**
- 2.0 APPLICATION REQUIREMENTS**
- 3.0 OPERATIONAL REQUIREMENTS**
- 4.0 REPORTING REQUIREMENTS**

APPENDECES

APPENDIX 1

SITE PLAN

EROSION AND SEDIMENTATION CONTROL PERMIT

SOIL TEST BORINGS

GEOTECHNICAL DATA TABLE

PROPERTY DEED

APPENDIX 2

AERIAL PHOTOGRAPH

¼-MILE RADIUS MAP

ZONING APPROVAL LETTERS

FIRE DEPARTMENT LETTER

APPENDIX 3

PROCESSING EQUIPMENT SPECIFICATIONS AND O&M MANUALS

1.0 SITING AND DESIGN REQUIREMENTS

The Highway 55 Reprocessing Facility is sited and designed in accordance with Section .1404 of the North Carolina Solid Waste Management Rules. A description of each siting and design requirement is listed below in the order presented in Section .1404 of the Solid Waste Management Rules.

1.1 Floodplain

As shown on the Site Plan, presented in Appendix 1, the site is not located within a 100-year floodplain. The 100-year floodplain is below the southwestern property boundary on Little Branch.

1.2 Property Line Buffers

The site provides a minimum buffer of 100 feet from the property lines. The minimum buffer requirements for a Type 1 facility is 50 feet to property lines. Buffers are shown on the Site Plan presented in Appendix 1.

1.3 Residential Buffers

The site provides a minimum 200-foot buffer from the compost areas to residences or dwellings. Buffers are shown on the Site Plan.

1.4 Well Buffers

The site provides a minimum 100-foot buffer from the compost areas to water supply wells.

1.5 Stream Buffers

The site provides a minimum 50-foot buffer from the compost areas to streams.

1.6 Surface Waters Water Quality Standards

The site has been designed in accordance with NCDENR water quality standards. The erosion and sedimentation control permit presented in Appendix 1 includes the drainage area for the entire property [permit pending].

Based upon communications with NCDENR Water Quality Section, NPDES Group, the facility will fall under NPDES General Permit No. NCG040000. A NOI for this permit has been filed with the Water Quality Section, NPDES Group.

1.7 Compost Areas Over Closed-out Landfilled Areas

Proposed windrow areas within permitted landfill areas will be removed prior to landfilling. No windrows will be located on landfilled areas.

1.8 Compost Area Separation Requirement

As shown on the Site Plan, a minimum 25-foot separation is provided between all windrow areas and drainage structures to allow for access of fire fighting equipment.

1.9 Surface Water Requirements

The site does not cause discharge of materials into waters or wetlands of the State. As shown on the Site Plan, existing erosion control structures will prevent the discharge of materials into any waters.

The site does not cause discharge of pollutants into waters of the State. As required by the NPDES, a storm water permit (General Permit No. NCG040000) has been applied for.

The site does not cause non-point source pollution of waters of the State that violate assigned water quality standards.

1.10 Groundwater Requirements

The site does not contravene groundwater standards as established under 15A NCAC 2L. Due to the composition of the materials, no groundwater sampling is required.

Portions of the site used for storage and reprocessing have soil textures finer than loamy sand and seasonal high water depths greater than 12 inches in depth. A hydrogeologic assessment was performed for the permitting of the on-site C&D landfill. Soil test borings and monitoring wells were performed throughout the landfill and composting areas. Soil test borings (SB-4, SB-5 and SB-6) and monitoring wells (MW-1, MW-9, MW-10 and MW-21) were performed in the reprocessing area. Locations are shown on the Site Plan. Soil Test and Monitoring Well logs are presented in Appendix 1. As indicated on the logs, near surface soils generally classify as clayey silts. Soil permeability tests were also performed on near surface clays as shown on Table 4 in Appendix 1. Bedrock was encountered prior to intercepting groundwater in and around the reprocessing area.

Pads are not required for the facility's product due to the composition of the material. Also, the windrows are placed so that the natural slope allows positive drainage of surface water along the base of the windrows. Surface water does not collect along the base of the material, and storage areas are well above minimum seasonal high water table depths of 12 inches. The depth to water in this area of the site is greater than 20 feet below ground surface.

1.11 Site Access

As shown on the Site Plan, the site is designed with a gated entrance to control public access to the facility.

1.12 Sedimentation Pollution Control Law

The entire site has an approved erosion and sedimentation control plan [permit pending] as required by the Sedimentation Pollution Control Law. The existing erosion control structures are

designed for the C&D landfill as well as the composting areas. A copy of the erosion and sedimentation control permit is included in Appendix 1 [permit pending].

1.13 Air Pollution Control Requirements

The site meets the requirements of the Air Pollution Control Requirements as outlined in 15A NCAC 2D. Due to the composition of the material and based upon communications with the NCDENR Air Quality Section, no air quality permitting is required for this facility.

In regards to fugitive emissions from the on-site equipment, the power screens are supplied with misters that reduce dust emissions.

The Highway 55 Reprocessing Facility does not have a permanent on-site tub grinder that would require an air quality permit. This facility contracts its tub grinding operations on a temporary, as needed basis. The tub grinder operator has a separate air quality permit for his equipment where required.

1.14 Odor Control

Due to the composition of the material, odor is not a problem at the facility. Odor at the on-site C&D landfill is controlled by the application of soil cover.

2.0 APPLICATION REQUIREMENTS

2.1 Project Description

The proposed Highway 55 Reprocessing Facility is a Type 1 facility located off Old Smith Field Road in Wake County, NC. The site is bound to the north by the Proposed Wake County Expressway, to the east by undeveloped wooded property, to the west Little Branch Creek and to the south by Falls Branch Creek. A detailed property description is presented on the Site Plan. A copy of the property deed is included in Appendix 1. Locations of all homes, wells, industrial

buildings, utilities, roads, watercourses, dry runs, and other topographic information is presented on the ¼ Mile Radius (Figure 3) Aerial Photograph and ¼-Mile Radius Survey Map (Figure 4) presented in Appendix 2. Land use is residential to the east and generally woodlands to the north, west, and south.

2.2 Zoning Approval

The site is located in an Industrial Zoning District (I-1). Wake County issued a "Special Use" zoning approval of the facility on August 14, 2001 (Figure 4- ¼ Mile Radius Survey Map indicates zoning). A copy of the Zoning Approval, Special Use Permit and Franchise Agreement is presented in Appendix 2.

2.3 Siting and Design Standards

Siting and design requirements (Section .1404) are presented in Section 1.0 of this Application.

2.4 Description of Materials and Pads

The site operations involve the processing of compost in the form grass clippings and loose leaf, ground land-clearing debris in the form of tree stumps, tree limbs and branches and soil from land clearing debris. Aggregate inert debris such as brick and concrete will also be processed at this site. Soil compaction for the windrows pads can be found in Appendix 1, Table 4.

Expected yearly quantities of product generated are as follows:

- Compost (grass clippings and loose leaf)- 3,000 cu. yds./year
- Ground land-clearing debris (tree stumps, tree limbs, branches, etc.)- 6,000 cu. yds./year
- Soil from land-clearing debris- 2,000 cu. yds./year
- Aggregate (crushed inert debris such as brick and concrete)- 4,000 cu. yds./year

As presented in Section 1.10 above, soil test borings and monitoring well installations were performed by a geologist for the permitting of the on-site C&D landfill. Groundwater depths are estimated to be greater than 20 feet. Soil test boring logs and monitoring well installation records are presented in Appendix 1.

No chemical tests were performed on the subsurface soils since the clayey soils and are not expected to have any chemical properties that may affect the types of materials used for the composting operations. Soil laboratory tests performed on near surface clays indicate low permeability's as shown on Table 4 in Appendix 1.

2.5 Site Plan Information

The Site Plan included in Appendix 1 has the existing and proposed contours, location and elevations of surface water control and diversion structures. Designated setback and property lines, utilities and structures, and areas for unloading, processing, composting, and material storage areas are also shown on the Site Plan.

2.6 Facility Description Report

2.6.1 Facility Personnel

The facility property is owned and operated by Highway 55 C&D Landfill, LLC. There are four (4) positions involved in the reprocessing area: Manager, Assistant Manager, Secretary/ Office Coordinator and Technicians. The following describes each of their responsibilities and qualifications.

Manager: Roger Barnes

The Manager is a SWANA certified C&D landfill manager with over 10 years of C&D landfill experience. The Manager also has over 5 years of recycling/reprocessing experience. The Manager will be responsible for coordinating the delivery and setup of all recycling equipment for reprocessing of all materials on a quarterly basis. The Manager will supervise the on-site staff.

Assistant Manager: Steve Blossom

The Assistant Manager will coordinate all placements of products in windrows for bulk storage. In conjunction with the Manager, they will coordinate the composting the activity on all yard waste products. They will direct the technician level staff including equipment operators for routing of final product.

Secretary/Office Coordinator: To be named later.

The Secretary/Office Coordinator will direct all deliveries of materials that will be recycled. This position will be responsible for tracking and reporting all loads based on content, weight and source of generation. All Town of Apex loads will be tracked separately by this position. This position will coordinate pick-up of products by local residents. This position will be responsible for generating a monthly report that will track all product types. The monthly report will be submitted to the Town of Apex.

Technicians: To be named later.

The Technicians will be responsible for moving the products from the drop-off area to the reprocessing area on a daily basis. They will also be responsible for moving mulch products to active areas of the landfill for slope management and erosion control on an as needed basis. The technicians move the aggregate products as needed for construction and haul road improvements. Technician staff will also load Town of Apex residents and local Wake County residents with mulch for use on their yards. The position will report to the assistant manager.

2.6.2 Hours of Operation

The reprocessing facility will be open Monday through Sunday from the hours of 7:00 am to 7:00 pm.

2.6.3 Drop Off Area

The drop off area is located near the scalehouse entrance area of the C&D landfill as shown on the Site Plan. The material is separated at the drop off area. This area includes 1.0 acre asphalt paved drop-off. Material that is not suitable for reuse is disposed into the C&D landfill.

2.6.4 Windrow Construction

Next out
The processed waste is placed in windrows at the locations shown on the Site Plan. The windrows shall be placed with a minimum buffer of 100 feet from wells and 200 feet from residences. (See Figure 4, ¼ mile radius map, which indicates location of residential homes and provides drinking water well survey information).

The windrows will be placed about 8 to 12 feet high and up to 300 feet in length. Windrows up to 12 feet in height will require a base width of 20 feet. Each windrow will be placed no closer than 25 feet apart. Windrow construction will progress as needed on Phase 3 of the proposed C&D landfill. These windrows will be removed prior to landfilling within Phase 3. No windrows will be placed on landfilled areas unless approved by NCDENR and in accordance with pad testing outlined in Section .1404(a)(10) of the Solid Waste Management Rules. Other unfilled areas may be utilized for storage as needed.

2.6.5 Windrow Processing Equipment

The following equipment is owned and operated by Highway 55 Landfill, LLC:

- 950F CAT Loader
- Trackhoe
- 943 CAT Track Loader
- Ford F-650 Dump Truck
- 630 Trommel Powerscreen
- Eagle Rock Crusher

The Tub Grinder will be subcontracted on an as needed basis. Detailed information for the powerscreen, rock crusher, and tub grinder is included in Appendix 3. The air quality permit for the rock crusher is also included in Appendix 3.

2.6.6 Windrow Processing

The majority of the material is stored in windrows and does not need turning.

2.6.7 Adverse Weather Conditions

Processing, loading, and storage of bulk product is generally done regardless of weather conditions.

2.6.8 Noise, Vectors, Dust, and Odors

Noise at the site is generated due to the type of operation at the facility. Extensive tree buffers are provided around the site perimeter to aid in buffering the equipment noise. Mufflers are also provided on all gasoline engines.

Dust generated due to operations will be controlled by the application of water by truck or other approved dust control products, if necessary. Removal of mud and dirt from the roads will also be a part of the dust control measures. Additionally, final landfill cover and borrow areas will be vegetated as soon as practical in order to reduce the blowing of dust on-site. Misters located within the hopper equipment control dust produced from the hoppers.

Odors are not anticipated to be a problem at this site. Material that is not reprocessed is disposed in the C&D landfill. Odor at landfills is generally controlled by the application of soil cover. Control of vectors at the on-site C&D landfill will be reduced by the application of soil cover.

2.6.9 End Use of Product

The processed material is either used on-site or by the Town of Apex or Wake County residents. The mulch material is offered to local residents free of charge.

or compact

2.7 Design Report

2.7.1 Design Capacity

The design capacity of the facility is approximately 20,000 cubic yards per year.

2.7.2 Material Processing and Flow Diagrams

The following operations information refers to station numbers on the Site Plan and the attached flow diagram. Detailed operations and maintenance manuals for the equipment listed is presented in Appendix 3.

1) Compost (grass clippings and loose leaf)

Grass clippings generated by the Town of Apex will be brought in free of charge in bulk loads. All material will be transported through the scales for weight verification. At this time it will be transported to drop-off area for unloading. The grass clippings will be moved and segregated in compost windrows. Product mixing may include some soil and mulch fines to enhance nitrification. Compost will be turned approximately once weekly or as needed to enhance biodegradation. Compost will be used on-site to maintain natural areas.
Loose leaves in the fall will be handled in a similar manner.

2) Ground land-clearing (tree stumps, tree limbs etc.)

Land clearing debris will be transported in bulk loads and weighed at scalehouse. At this time it will be transported to drop-off areas. The land-clearing debris will be routed to temporary stockpile in the reprocessing area. This material will also be stored in windrows for proper management. The material will be scheduled for grinding quarterly or when windrows storage reaches a capacity of 3,000 cubic yards. A Diamond Z tub grinder will be transported in and set up in the area shown on the Site Plan for processing. The mulch products will then be deposited in windrows for storage. All windrow mulch products will be power screened for fines separation and topsoil generation. Mulch products will be used on-site to supplement erosion control measures. Also, mulch material will be offered to townspeople of Apex and local residents of Wake County free of charge.

Compost Post w
TSP area

Windrow ?
scales

Lesson P. 12

3) Soil from land-clearing debris

The topsoil from root balls of stumps will be removed prior to grinding and stockpiled separately. The fines from the mulch screening will be mixed with the topsoil from the root balls and power screened to refine product type. This material will then be windrowed for aging and temperature monitoring. This material will be used on-site to enhance cover soils for hydro-seeding. Also, some topsoil products may be offered to Town of Apex and local residents for use as landscaping.

4) Aggregate (crushed inert debris such as concrete, brick, block etc.)

Segregated loads of clean inert debris will be weighed at scalehouse and directed to drop-off area. At this time, inert debris will be transported from drop-off to the reprocess area to stockpile. This material will not be placed in windrows. The temporary storage area is shown on the Site Plan. This material will be scheduled for processing quarterly or when storage reaches a capacity of 2000 cubic yards. A Bohringer Eagle rock crusher which is rated at less than 100 tons per hour will be used for processing inert materials. This product will be used on-site for construction roads.

2.7.5 Temperature Monitoring

The compost, mulch, and soil products are monitored once monthly for temperature. Mulch or soil products are not likely to generate heat much above ambient temperature. The temperature probes will be placed in these materials to measure and document temperature generation for a minimum of three days. The recorded temperature will be used to ensure that the minimum 131 degrees are maintained for the compost. If the recorded temperature falls below the 131 degrees specified, the required pathogen testing (in accordance with Appendix B of .1400) will be performed every 6 months or 20,000 yards.

? why

for 3 days

2.7.6 Temperature Control

The procedure for temperature is random testing of all stored products in windrows at the frequencies mentioned above. Every windrow will be monitored with a compost thermometer,

which has a 48-inch probe to ensure that all areas inside the windrow can be measured. The windrows containing nugget and mulch materials are monitored in sequence from the front of the storage areas to the back. Each probe measurement will be obtained within the midsection of the windrow using the full extent of the probe. Each probe will be monitored for a period of approximately five minutes or until the temperature has stabilized. Each monitoring event will be recorded on a monitoring chart.

The compost will be monitored on a more frequent basis. In addition, each probe will remain in the desired windrow for a period of three days. The probe will be checked twice daily for temperature recordation. If necessary, additional windrow aeration will be performed for the compost to bring the temperatures up to the required 131 degrees for three days.

or N added consist w 2,7,5

2.7.7 Aeration

Aeration will be performed for the compost once to twice monthly by turning the aged fines windrows with a front-end loader. As discussed above, additional aeration of the compost will be done in order to elevate temperatures.

2.7.8 Surface Water Control

Surface water run-on is controlled by the use of diversion channels or berms along the site perimeter. Surface water run-off is routed to the on-site erosion and sedimentation control structures. Surface water sheet flows off the windrows; therefore, no leachate is generated.

for an water permit

2.8 Labeling

No commercial bagging or selling of this product will take place at this facility, therefore, no labeling will be necessary.

?

Label can be handout

2.9 Equipment Plans and Specifications

Detailed information regarding the on-site processing equipment is presented in Appendix 3 for reference.

3.0 OPERATIONS AND MAINTENANCE MANUAL

3.1 Introduction

The proposed Highway 55 Reprocessing Facility is a Type 1 facility located on Old Smith Field Road and Hwy 55 Bypass in Wake County, NC. This Operations and Maintenance Manual has been prepared in accordance with Section .1405(a)(10) of the North Carolina Administrative Code.

3.2 Plan and Permit Requirements

All construction plan and conditions of the permit shall be followed. A copy of the plans, permits, and operational reports shall be maintained at the office at all times.

3.3 Hours of Operation

The reprocessing facility is open Monday through Sunday from the hours of 7:00 am to 7:00 pm.

3.4 Drop Off Area

weighed? inspected?

The drop off area is located near the scalehouse and entrance area of the C&D landfill as shown on the Site Plan. The material is separated at the drop off area. Waste that is not permitted for disposal in the C&D landfill shall be disposed in the waste container for disposal in a municipal solid waste landfill.

into what

3.5 Windrow Construction

how, where, how often
LCD windrows

The processed waste is placed in windrows at the locations shown on the Site Plan. The windrows shall be placed with a minimum buffer of 100 feet from wells and 200 feet from

residences. The windrows will be placed about 8 to 12 feet high and up to 500 feet in length. Windrows up to 12 feet in height will require a base width of 20 feet. Each windrow will be placed no closer than 25 feet apart. Windrow construction will progress as needed on Phase 3 of the proposed C&D landfill. These windrows will be removed prior to landfilling within Phase 3. No windrows will be placed on landfilled areas unless approved by NCDENR and in accordance with pad testing outlined in Section .1404(a)(10) of the Solid Waste Management Rules. Other unfilled areas may be utilized for storage as needed.

3.6 Windrow Processing

The majority of the material is stored in windrows and does not need turning. Only the compost takes an extended period to process. The compost windrows are turned once to twice monthly P10 and remain in the windrow storage area for approximately 3 to 6 months for aging prior to use by the landfill.

3.7 Adverse Weather Conditions

Processing, loading, and storage of mulch compost and aggregate are generally done regardless of weather conditions. Covered storage may be provided for the topsoil products.

*25', 18" snow
high wind + dust*

3.8 Noise, Vectors, Dust, and Odors

Noise at the site is generated due to the type of operation at the facility. Extensive tree buffers are provided around the site perimeter to aid in buffering the equipment noise. Mufflers are also provided on all gasoline engines.

Dust generated due to operations will be controlled by the application of water by truck or other approved dust control products, if necessary. Removal of mud and dirt from the roads will also be a part of the dust control measures. Additionally, final landfill cover and borrow areas will be vegetated as soon as practical in order to reduce the blowing of dust on-site. Misterters located within the hopper equipment control dust produced from the hoppers.

Odors are not anticipated to be a problem at this site. Material that is not reprocessed is disposed in the C&D landfill. Odor at landfills is generally controlled by the application of soil cover. Control of vectors at the on-site C&D landfill will be reduced by the application of soil cover.

3.9 Material Processing and Flow Diagrams

The following operations information refers to station numbers on a flow diagram presented on the Site Plan and on the attached Flow Diagram. Detailed operations and maintenance manuals for the equipment listed is presented in Appendix 3.

3.9.1 Compost (grass clippings and loose leaf)

Station 1- Drop off area for bulk grass clippings or loose leaf to be processed. Station 2 – Storage in windrows in reprocessing area. Station 3- Power screens mixing area. Station 4- Back to windrows for composting.

3.9.2 Land-clearing debris (tree stumps, tree limbs etc.)

Station 1- Drop off area for land-clearing debris to be processed. Station 2- Storage in windrows in reprocessing area. Station 3- Tub grinder area. Station 3- Power screen area. Station 4- Back to windrows storage.

3.9.3 Topsoil

Station 1- Soil separation area. Station 3- Power screen with fines from mulch. Station 4- Windrows storage.

3.9.4 Aggregate

Station 1-Drop-off area. Station 2- Reprocessing area for storage. Station 3- Rock crusher .
Station 5- Storage in reprocessing area.

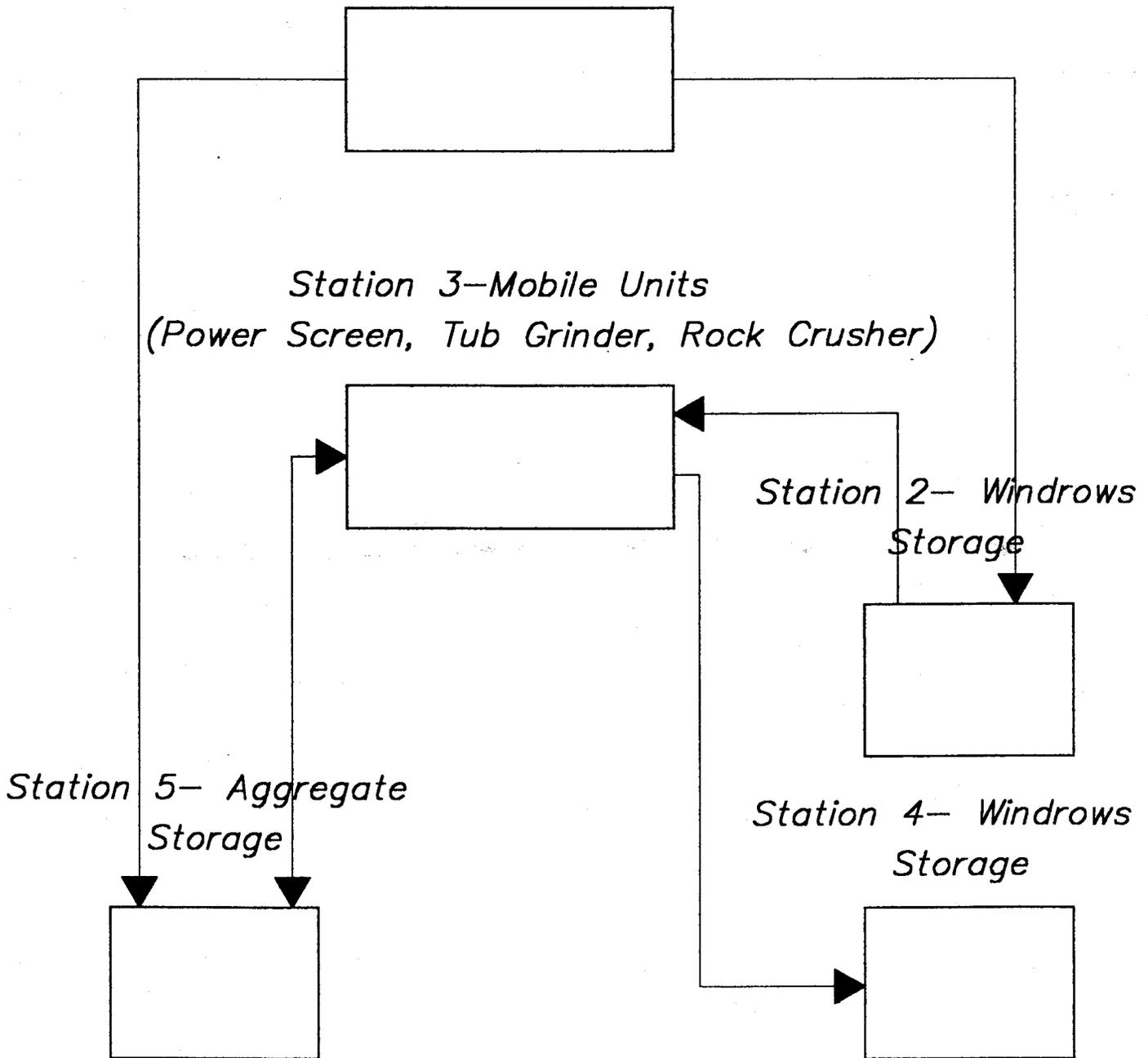
3.10 Measuring and Mixing

The material for outgoing loads is measured by a front-end loader bucket capacity of 2 cubic yards and 4 cubic yards.

Flow Diagram

grass d: 11.19.92

Recycling & Reprocessing Drop-off Area



3.11 Process Duration

The process duration from the time loaded in conveyor to finished product is the same for all compost, mulch, and soil product types. The same process takes place for the topsoil. At this time each product is transferred to the appropriate storage area. Placing in windrows after screening further refines the compost product. This product is turned for aeration once to twice monthly and remains in the windrow storage area for approximately 3 to 6 months.

3-6 months for mulch

3.12 Temperature Monitoring

The mulch, and soil products are monitored once monthly for temperature. It doesn't appear that mulch or soil products will generate heat much above ambient temperature. The compost will be monitored weekly on products that have been in storage for 30 days or longer. The temperature probes are placed in these materials to measure and document temperature generation for a minimum of three days. The recorded temperature will be used to ensure that the minimum 131 degrees are maintained for this product. If the recorded temperature falls below the 131 degrees specified, the required pathogen testing (in accordance with Appendix B of .1400) will be performed every 6 months or 20,000 yards.

mech 3

3.13 Temperature Control

which

The procedure for temperature is random testing of all stored products in windrows at the frequencies mentioned above. Every windrow will be monitored with a compost thermometer, which has a 48-inch probe to ensure that all areas inside the windrow can be measured. The windrows containing mulch materials are monitored in sequence from the front of the storage areas to the back. Each probe measurement will be obtained within the midsection of the windrow using the full extent of the probe. Each probe will be monitored for a period of approximately five minutes or until the temperature has stabilized. Each monitoring event will be recorded on a monitoring chart.

How far apart, how deep.

The compost will be monitored on a more frequent basis. In addition, each probe will remain in the desired windrow for a period of three days. The probe will be checked twice daily for temperature

or per

recordation. Additional windrow aeration will be performed for the compost to bring the temperatures up to the required 131 degrees for three days.

what if drops below start over

3.14 Aeration

Aeration is only performed for the compost once to twice monthly by turning the compost windrows with a front-end loader. As discussed above, additional aeration of the compost will be done in order to elevate temperatures.

3.15 Quality Assurance Plan

and 3

Each incoming load of material shall be inspected at the drop off area. Material is to be separated at the drop off area into material type for composting. Unauthorized material shall be disposed in the on-site 40 cubic yard waste container for future disposal at a permitted municipal solid waste landfill.

All products are to be inspected weekly by the Operations Manager for size and quality before each product type is transferred to windrow storage. If proper mixing or sizing is not maintained during the screening process, the material is screened a second time to ensure quality. Inspection records shall be kept on file.

Monthly temperature monitoring data shall be kept on file. As discussed above, the recorded temperature will be used to ensure that the minimum 131 degrees are maintained for this product. If the recorded temperature falls below the 131 degrees specified, pathogen testing for fecal coliform (in accordance with attached Appendix B of .1400) will be performed every 6 months or 20,000 yards. Results for pathogen testing of the aged fines (if required) will be submitted to NCDENR for review. All laboratory data sheets shall be kept on file.

} more often

All permits shall be maintained at the main office/check station for compliance.

All processing equipment shall be periodically inspected in accordance with the O&M Manuals. Inspection logs shall be kept on file.

3.16 Contingency Plan

In the event of on-site equipment failure or a temporary shut down of the facility, incoming material loads shall be stockpiled in the drop off area. Overflow stockpiling is available on the Phase 2 C&D landfill area.

No open burning of material is permitted at the site. Equipment and stockpiled soil shall be provided to control accidental fires. Any fire that occurs at the facility shall be reported to the Division of Waste Management within 24 hours, and the Operations Manager shall submit written notification within 15 days.

If a fire occurs at the facility, the local fire department (Apex Volunteer Fire Department and Rescue Station located 4 miles from the landfill) shall be notified. Hot loads that are brought in are to be immediately dumped away from the facility and the fire department is to be called. The hot load shall be sprayed down with water until the fire or combustion is extinguished. The load is then to be reloaded for disposal in the landfill. The Town of Apex Volunteer Fire Department and Rescue has been notified of our intent to operate this reprocessing facility. They have agreed to respond to a fire if one were to occur at the site. (See letter attached from Town of Apex Fire department in Appendix 2.

3.17 Erosion/Sedimentation Control

Erosion/sedimentation control structures include sediment basins and diversion ditches. Sediment basins shall be checked after periods of significant runoff. Sediment shall be removed from the basin to its original dimensions when sediment accumulates to one half of the design depth. The sediment basins, embankments, spillways and outlets shall also be inspected for erosion damage. All necessary repairs shall be made immediately. Any trash or debris within the sediment basin riser shall be removed.

Diversion ditches shall be inspected for damage after each runoff event. Riprap-lined channels and outlet protection used to prevent damage to channel vegetation shall be inspected for wash-outs. Riprap shall be added to these areas as needed to maintain the integrity of the structure.

Seeding, fertilizing and mulching shall be in accordance with the seeding specifications and the North Carolina Erosion and Sedimentation Control Guidelines.

3.18 Surface Water Diversion

Surface water run-on shall be diverted away from the operational, composting, and storage areas by the use of diversion berms or channels.

3.19 Leachate Management

Based upon the design of the facility and the type of material, leachate is not created at the facility. Ponding of surface water at the base of the material shall be prohibited.

3.20 Access and Security Requirements

The site has controlled access with the use of entrance gates. A security check station is located at the facility entrance to evaluate the incoming material for reprocessing or disposal. An attendant is on duty at the site at all times while the facility is open for public use to assure compliance with operational requirements. The remainder of the site has wooded buffer zones that prohibit vehicular traffic. Access roads to the site shall be of all weather construction and maintained in good condition.

3.21 Waste Acceptance

The site shall accept only those solid wastes that it is permitted to receive.

3.22 Safety Requirements

No open burning of solid waste is allowed. As discussed above, equipment shall be provided to control accidental fires. On-site earth moving equipment is available for fire control. As mentioned previously, the Apex Volunteer Fire Department has agreed to respond to a fire at this facility. On-site personnel shall be trained in site specific safety, remedial, and corrective action procedures.

3.23 Signs

Signs providing information on drop off procedures, the hours that the site is open for public use, the permit number, statement that no hazardous or unauthorized waste can be received, and other pertinent information will be posted at the site entrance. Traffic signs and markers will be provided as necessary to promote an orderly traffic pattern to and from the drop off area and maintain efficient operating conditions.

3.24 Monitoring Requirements

Specified monitoring and reporting requirements shall be met. The temperature of all compost produced shall be monitored sufficiently to ensure that the pathogen reduction criteria is met.

3.25 Compost Process

3 Compost process at this Type 1 facility shall be maintained at or above 131 degrees F for three days and aerated to maintain elevated temperatures.

4.0 REPORTING REQUIREMENTS

4.1 Record Keeping

All facility owners or operators shall record and maintain records for a minimum of five years. Records shall be available for inspection by the DENR personnel during normal business hours and shall be sent to the Division upon request. The following records shall be maintained at the office:

- Daily operational records of temperature data, length of composting period, and quantity of material processed,
- Analytical results on compost testing,
- Quantity, type and source of waste received,
- Quantity and type of waste processed in compost,
- Quantity and type of compost produced by product classification, and
- Quantity and type of compost removed for use or disposal, by product classification, and the market or permitted disposal facility.

4.2 Annual Reporting

The facility owner or operator shall submit, to the Division, an annual report for the period July 1 to June 30 by August 1 of each year. The annual report shall include:

- The facility name, address, and permit number,
- The total quantity in tons, with sludge values expressed in dry weight, and type of waste received at the facility during the year covered by the report, including tons of waste received from local government of origin,
- The total quantity in tons, with sludge values expressed in dry weight, and type of waste processed into compost during the year covered by the report,
- The total quantity in tons and type of compost produced at the facility, by product classification, during the year covered by the report,

- The total quantity in tons and type of compost removed for use or disposal from the facility, by product classification, along with a general description of market if for use during the year covered by the report,
- Monthly temperature monitoring to support Rule .1406, and
- Results of test required in Table 3 of Rule .1408 (not applicable to Type 1 Facility).

Annual totals of solid waste received and composted shall be reported back to the local government of origin for annual recycling reporting.

APPENDIX 1

Site Plan

Erosion & Sediment Control Permit

Geotechnical Data Table

Soil Test Boring Records

Property Deed

TABLE 4

GEOTECHNICAL DATA
HIGHWAY 55 C&D LANDFILL, LLC.

SUMMARY OF LABORATORY TEST DATA
Highway 55 C&D Landfill
Wake County, North Carolina
SHIELD Engineering, Inc.

Boring No., Sample Depth	USCS Classification	% Gravel	% Sand	% Silt	% Clay	Atterberg Limits		Proctor Data		In Situ Conditions				Hydraulic Conductivity k (cm/sec)	
						Liquid Limit %	Plasticity Index %	Max Dry Density (pcf)	Optimum Moisture Content (%)	Specific Gravity	Effective Porosity	Day Density (pcf)	Moisture Content (%)		
MW 25 (5'-7')	SC	10.6	53.5	21.1	14.8	25	10	N/A	N/A	2.681	N/A	N/A	N/A	N/A	N/A
MW 25 (10'-17')	CL	3.1	22.7	55.1	19.1	29	9	N/A	N/A	2.691	N/A	N/A	N/A	N/A	N/A
MW 26 (0'-5')	CL	0.0	5.4	48.5	46.1	45	21	N/A	N/A	2.618	0.3775	101.7	22.1	2.42E-08	
MW 29 (3'-4')	CL	0.5	25.6	49.4	24.7	28	11	N/A	N/A	2.727	0.2595	126	10.1	3.63E-08	
SB 1 (3'-5')	SC	5.2	48.1	25.5	21.4	31	9	N/A	N/A	2.608	0.2755	117.9	9.7	9.29E-07	
SB 1 (13'-15')	CL	0.1	22.7	54.5	22.9	25	9	N/A	N/A	2.662	N/A	N/A	N/A	N/A	N/A
SB 2 (3'-4')	CH	0.2	7.4	36.5	55.9	69	47	N/A	N/A	2.611	N/A	N/A	N/A	N/A	N/A
SB 2 (13'-14')	CL	1.2	22.9	45.4	30.5	30	15	N/A	N/A	2.662	N/A	N/A	N/A	N/A	N/A
SB 3 (5'-6')	CL	1.3	16.8	38.2	43.7	42	23	N/A	N/A	2.697	*	*	5.9	*	
SB 4 (4'-5')	CL	0.1	10.0	47.0	42.9	44	25	N/A	N/A	2.672	N/A	N/A	N/A	N/A	N/A
SB 4 (8'-9')	CL	0.5	18.2	45.8	35.5	32	18	N/A	N/A	2.711	N/A	N/A	N/A	N/A	N/A
SS 1	CH	1.2	19.7	33.6	45.5	68	43	105.1	16.6	2.606	0.3748	101.7	18.9	2.60E-08	
SS 2	CL	1.3	20.3	39.2	30.2	41	22	114.5	13.3	2.606	0.3332	108.5	16.5	1.35E-08	
SS 3	CL	11.8	12.9	42.3	33.0	42	23	108.6	17.1	2.642	0.3735	105.3	19.6	2.27E-08	

* Sample SB 3 (5'-6'): too dry to run permeability test.

ENVIRO-PRO, P.C.
Charlotte, North Carolina

LITHOLOGIC LOG

Boring No.: MW-1 Job No: EP-1306
Client: Hwy 55 CSD Landfill, LLC

on: Wake Co State: NC Total Depth: 75'
Soil Sample Method: Split-Spoon Date Started: 9-10-01 Date Complete: 9-10-01
Drill Method: HSA/Air Rotary Equipment Type: Cantorval T-250 Boring Diameter: 8"/6"
Groundwater (bmp): 0 hrs 24 hrs
Elevation (LS): 352.85 Measuring Point Elev. (MP): 45 Remarks:

Depth ft.	SPT/Interval	Sample ID No.	Description	Soil Gas	Moisture	USCS Log	Comments
			Yel-brn. clayey Silt				
5	24, 31, 32		Rd-brn clayey Silt				
10	48, 50 1/3"						
15			PWR - Sampled as tan-brn. sandy Silt w/ Rx frag.				
20			Auger Refusal @ 20.5' bgs				
			Air drilled through weathered fanglomerate to 35' bgs				
25							
30							
35			Began 1st Coring Run @ 35' bgs (35.0'-48.2') 36.5'-42.0' - Rd-brn fanglomerate w/ 0.5"- 1" metamorphic/igneous rock inclusions				98% Rec. 56% RQD

ENVIRO-PRO, P.C.
Charlotte, North Carolina

LITHOLOGIC LOG

Boring No.: MW-1 Job No: EP-1306
Client: Hwy 55 chd Landfill, LLC

Location: Wake Co. State: NC Total Depth: 75'
Soil Sample Method: split - spoon Date Started: 9-10-01 Date Complete: 9-10-01
Drill Method: HSA / Air Rotary Equipment Type: Canterra - RT-250 Boring Diameter: 8 1/16"
Sample Method: Groundwater (bmp): 0 hrs 24 hrs
Elevation (LS): 352.85 Measuring Point Elev. (MP): 25 Remarks:

Depth ft	SPT/Interval	Sample ID No.	Description	Soil Gas	Moisture	USCS Log	Comments
45			44.5'-49.0' - Highly fractured weathered zone				
50			Began 2nd Core Run (48.2' - 62.6')				99% Rec. 63% RQD
55			53'-59' - 0.25" - 1" metamorphic / igneous rock inclusions				
60			61.0' - 62.5' - Highly weathered clayey siltstone w/ rock fragments Began 3rd Core Run (62.6' - 75.0')				100% Rec. 89% RQD
65			63.5' - 67.0' - 0.5" - 2" rock inclusions				
70			67' - 75' - 0.25" - 1" rock inclusions				
75			Terminated Coring @ 75' bgs				

ENVIRO-PRO, P.C.
Charlotte, North Carolina

LITHOLOGIC LOG

Boring No.: MW-9 Job No: EP-1306
Client: Hwy 55 C&D Landfill, LLC

Location: Wake Co State: NC Total Depth: 50'
Soil Sample Method: Split-Spoon Date Started: 9-11-01 Date Complete: 9-11-01
Drill Method: HSA/Air Rotary Equipment Type: Canterra CT-250 Boring Diameter: 8" / 6"
Groundwater (bmp): 0 hrs 24 hrs
Elevation (LS): 358.35 Measuring Point Elev. (MP): LS Remarks:

Depth ft	SPT/Interval	Sample ID No.	Description	Soil Gas	Moisture	USCS Log	Comments
			Yel-brn sl. clayey silt				
5	28, 39, 50/4		Rd-brn. clayey silt				
10	50/11		PWR - Sampled as tan-brn. silty sand w/ Rx frag.				
15			Auger Refusal @ 17.5' bgs				
20							
25			Rd-brn Conglomerate				
30							
50			Terminated Air Drilling @ 50' bgs				

ENVIRO-PRO, P.C.
Charlotte, North Carolina

LITHOLOGIC LOG

Boring No.: MW-10 Job No: EP-1306
Client: Hwy 55 C&D Landfill, LLC

Location: Wake Co. State: NC Total Depth: 40'
Soil Sample Method: Split-Spoon Date Started: 9-12-01 Date Complete: 9-12-01
Drill Method: HSA/Air Rotary Equipment Type: Canterra CT-250 Boring Diameter: 2 1/6"
Groundwater (bmg): 0 hrs 24 hrs
Elevation (LS): 348.87 Measuring Point Elev. (MP): LS Remarks:

Depth ft.	SPT/Interval	Sample ID No.	Description	Soil Gas	Moisture	USCS Log	Comments
5	12, 16, 24		Yel-brn clayey silt				
10	30, 50/10		PWR - Sampled as tan-rd brn. silty clayey sandy silt w/ Rx frag.				
15			Anchor Refusal @ 17' bgs				
20			Switched to Air Rotary				
25			Rd-brn Fanglomerate				
30							
40			Terminated Air Drilling @ 40' bgs				

ENVIRO-PRO, P.C.
Charlotte, North Carolina

LITHOLOGIC LOG

Boring No.: MW-21 Job No: EP-1306
Client: Itwy 55 C&D Landfill, LLC

Location: Wake Co. State: NC Total Depth: 55
Soil Sample Method: Split-Spoon Date Started: 9-14-01 Date Completed: 9-14-01
Drill Method: HSA/Air Rotary Equipment Type: Cantera CF-250 Boring Diameter: 8 1/6"
Sample Method: R. Simmons Groundwater (bmp): 0 hrs 24 hrs
Elevation (LS): 351.07 Measuring Point Elev. (MP): LS Remarks:

Depth ft.	SPT/Interval	Sample ID No.	Description	Soil Gas	Moisture	USCS Log	Comments
			Yel-brn clayey silt				
5	22, 31, 39		Rd-brn clayey silt				
10	50/2"						
15			PWR - sampled as tan-rd. brn. sl. clayey fine sandy silt w/ Rx frag.				
20			Auger Refusal @ 19' bgs Switched to Air Rotary				
25							
30			Rd-brn Fonglomerate				
55			Terminated Air Drilling @ 55' bgs				

ENVIRO-PRO, P.C.
Charlotte, North Carolina

LITHOLOGIC LOG

Boring No.: SB-4 Job No: EP-1306
Client: Hwy 55 Cold Landfill, LLC

Contractor: Wake Co. State: NC Total Depth: 17'
Soil Sample Method: Split-spoon Date Started: 11-6-01 Date Complete: 11-6-01
Drill Method: HSA Equipment Type: Quinterra DT-250 Boring Diameter: 8"
Groundwater (bmg): 0 hrs 24 hrs
Elevation (LS): 347.77 Measuring Point Elev. (MP): LS Remarks:

Depth ft.	SPT/Interval	Sample ID No.	Description	Soil Gas	Moisture	USCS Log	Comments
			Yel-brn. clayey silt				
5	32, 38, 50/4"		Rd-brn clayey silt			CL	
10	50/1"		PWR - Sampled as tan-rd brn. sl. clayey fine sandy silt w/ Rx frag.			CL	
15			Auger Refusal @ 17' bgs				
20							

Prepared by ~~to return to:~~

Poyner & Spruill L.L.P. (RWW)
(without title examination)
Post Office Box 10096
Raleigh, NC 27605

Mail To: *Granted*

Wake County, NC 1006
Laura M Riddish, Register Of Deeds
Presented & Recorded 10/01/2001 15:09:02
State Of NC Real Estate Excise Tax : \$2400
Book : 009053 Page : 01039 - 01044

Excise \$ 2,480.00 Out of 0072826

NORTH CAROLINA GENERAL WARRANTY DEED

THIS DEED is made this 24th day of September, 2001, from FON ASSOCIATES LIMITED PARTNERSHIP, a North Carolina limited partnership (the "Grantor"), to HIGHWAY 55 C&D LANDFILL, LLC, a North Carolina limited liability company (the "Grantee"), with a mailing address of 19109-110 W Catawba Ave. Cornelius, NC 28031

WITNESSETH:

For and in consideration of \$1.00 cash in hand paid and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Grantor has and by these presents does grant, bargain, sell and convey unto Grantee in fee simple, all that certain lot or parcel of land situated in Wake County, North Carolina, more particularly described on Exhibit A attached hereto and by this reference made a part hereof:

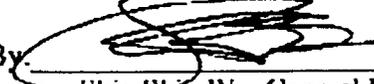
TO HAVE AND TO HOLD the aforesaid lot or parcel of land and all privileges and appurtenances thereto belonging to the Grantee in fee simple.

Grantor covenants with Grantee that Grantor is seized of said land in fee simple, that Grantor has the right to convey the same in fee simple, that title is marketable and free and clear of all encumbrances, and that Grantor will warrant and defend the title against the lawful claims of all persons whomsoever, except for those exceptions described on Exhibit B attached hereto and by this reference made a part hereof.

The designation "Grantor", and "Grantee" as used herein shall include said named parties and their respective heirs, successors and assigns, and shall include the singular, plural, masculine, feminine or neuter as required by context.

IN WITNESS WHEREOF, the undersigned has executed this instrument under seal as of the day and year first above written.

FON ASSOCIATES LIMITED PARTNERSHIP
a North Carolina limited partnership (SEAL)

By:  (SEAL)
Shie-Shin Wu, General Partner

STATE OF NORTH CAROLINA
COUNTY OF WAKE

I, a Notary Public of the County and State aforesaid, certify that Shic Shin Wu, personally appeared before me, who, being by me duly sworn, says that he is General Partner of FON ASSOCIATES LIMITED PARTNERSHIP., a North Carolina limited partnership, and that the said writing was signed by them in behalf of said limited partnership as their act and deed and as the act and deed of said limited partnership.

WITNESS my hand and notarial seal, this 1st day of October, 2001.

Sara J Perin
Sara J Perin Notary Public

My Commissior Expires: 01/01/2006

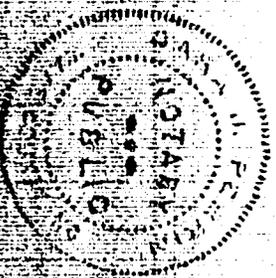


EXHIBIT "A"

BEGINNING at a point located in Falls Branch, said point being located North 70 degrees 30 minutes 09 seconds West 2709.93 feet from a mag nail located in the centerline of S. R. 1172 (a/k/a Old Smithfield Rd.) and the centerline of Highway 55, said point also being the POINT AND PLACE OF BEGINNING, thence along the run of Falls Branch Creek the following calls and distances: South 70 degrees 17 minutes 40 seconds West 82.58 feet to a point, thence North 42 degrees 11 minutes 55 seconds West 197.13 feet to a point, thence South 70 degrees 16 minutes 53 seconds West 125.20 feet to a point, thence South 01 degrees 50 minutes 53 seconds West 120.77 feet to a point, thence South 70 degrees 44 minutes 34 seconds West 156.46 feet to a point, thence North 75 degrees 48 minutes 30 seconds West 99.08 feet to a point, thence South 66 degrees 50 minutes 57 seconds West 127.19 feet to a point, thence South 46 degrees 59 minutes 42 seconds West 104.40 feet to a point, thence South 29 degrees 30 minutes 11 seconds West 155.68 feet to a point, thence South 53 degrees 28 minutes 52 seconds West 162.59 feet to a point, thence South 88 degrees 57 minutes 47 seconds West 156.63 feet to a point, thence South 09 degrees 55 minutes 53 seconds West 72.11 feet to a point, thence South 82 degrees 32 minutes 55 seconds West 246.55 feet, thence South 25 degrees 00 minutes 16 seconds West 112.16 feet to a point, thence North 58 degrees 34 minutes 44 seconds West 89.83 feet to a point, thence South 77 degrees 55 minutes 10 seconds West 104.07 feet to a point, thence North 55 degrees 08 minutes 41 seconds West 128.16 feet to a point, thence North 46 degrees 20 minutes 01 seconds West 160.15 feet to a point, thence South 66 degrees 30 minutes 35 seconds West 95.59 feet to a point, thence North 45 degrees 46 minutes 13 seconds West 87.66 feet to a point, thence South 73 degrees 24 minutes 16 seconds West 114.69 feet to a point, thence South 11 degrees 10 minutes 12 seconds East 87.05 feet to a point, thence North 62 degrees 13 minutes 03 seconds West 106.40 feet to a point, thence South 83 degrees 26 minutes 30 seconds West 152.16 feet to a point, thence South 32 degrees 29 minutes 39 seconds West 85.70 feet to a point, thence North 56 degrees 55 minutes 23 seconds West 163.19 feet to a point, thence South 65 degrees 16 minutes 36 seconds West 230.69 feet to a point, thence North 61 degrees 40 minutes 39 seconds West 269.37 feet to a point, thence North 41 degrees 39 minutes 35 seconds West 233.34 feet to a point, thence South 73 degrees 22 minutes 35 seconds West 210.49 feet to a point, thence South 60 degrees 14 minutes 01 seconds West 206.57 feet to a point, said point being the final point located in the run of Falls Branch Creek, thence North 19 degrees 08 minutes 52 seconds West 169.59 feet to an iron pipe, thence North 54 degrees 25 minutes 57 seconds West 325.79 feet to an iron pipe, thence North 69 degrees 25 minutes 11 seconds West 183.82 feet to an iron pipe, thence North 73 degrees 57 minutes 20 seconds West 219.38 feet to an iron pipe, thence North 77 degrees 55 minutes 48 seconds West 217.53 feet to an iron pipe, thence North 05 degrees 34 minutes 39 seconds West 998.63 feet to a point, thence South 80 degrees 04 minutes 02 seconds East 106.02 feet to a point, thence South 82 degrees 38 minutes 07 seconds East 1467.38 feet to a point, thence South 88 degrees 20 minutes 16 seconds East 672.04 feet to a point, thence South 80 degrees 54 minutes 58 seconds East 580.68 feet to a point, thence North 88 degrees 37 minutes 31 seconds East 704.64 feet to a point, thence South 80 degrees 29 minutes 29 seconds East 647.01 feet to a point, thence South 53

degrees 46 minutes 40 seconds East 472.48 feet to a point, thence South 03 degrees 27 minutes 32 seconds West 400.96 feet to the POINT AND PLACE OF BEGINNING, containing 116.333 acres and being designated as Tract "C" on an unrecorded survey entitled "Property Survey for Highway 55 C & D Landfill, LLC", dated 9/22/01 and prepared by Patterson, Brewer & Associates.

This tract is a portion of the same tract of land referred to as Tract 3 in Deed Book 3850, Page 359, Wake County Registry.

EXHIBIT B

1. Lien of ad valorem taxes for the year 2002 and subsequent years.
2. Right of way of Technology Drive.
3. Right of way of Dixie Pipeline recorded in Book 1484, Page 239, Wake County Registry.
4. Right of way to Data General Corporation recorded in Book 2829, Page 177 and Book 2791, Page 428, Wake County Registry.
5. Wastewater Utility Easement to County of Wake recorded in Book 3059, Page 118, Wake County Registry.
6. Easement Agreement and Quit-Claim to Fred G. Cash, Jr. and Annie Ruth Cash Maynard for perpetual ingress and egress across subject property recorded in Book 4454, Page 661, Wake County Registry.
7. Utility easement to Carolina Power & Light Company recorded in Book 8419, Page 2323, Wake County Registry.
8. Memorandum of Action for eminent domain taking of perpetual sewer easement recorded in Book 8943, page 596 Wake County Registry.
9. Future right of way to Department of Transportation for construction of I-540 Western Wake Expressway.

Laura M Riddick
Register of Deeds
Wake County, NC



Book : 009899 Page : 01039 - 01044

**Yellow probate sheet is a vital part of your recorded document.
Please retain with original document and submit for rerecording.**



**Wake County Register of Deeds
Laura M. Riddick
Register of Deeds**

North Carolina - Wake County

The foregoing certificate of _____

Laura M. Riddick

Notary(ies) Public is (are) certified to be correct. This instrument and this certificate are duly registered at the date and time and in the book and

**Yellow probate sheet is a vital part of your recorded document.
Please retain with original document and submit for rerecording.**



**Wake County Register of Deeds
Laura M. Riddick
Register of Deeds**

North Carolina - Wake County

The foregoing certificate of _____
Sara J. Person

Notary(ics) Public is (are) certified to be correct. This instrument and this certificate are duly registered at the date and time and in the book and page shown on the first page hereof.

Laura M. Riddick, Register of Deeds -

By: *Sabrina Elliott*
Assistant/Deputy Register of Deeds

This Customer Group _____
of Time Stamps Needed

This Document _____
New Time Stamp
of Pages

Appendix 2

Aerial Photograph

¼ Mile Radius Map

Zoning Approval Letters

Fire Department Letter

**WAKE COUNTY
SPECIAL USE PERMIT
&
FRANCHISE AGREEMENT**



Board of Commissioners

P.O. Box 550 • Raleigh, NC 27602

TEL 919 856 6160
FAX 919 856 5699

LINDA D. COLEMAN, CHAIRMAN
HERBERT H. COUNCIL, VICE-CHAIRMAN
KENNETH M. GARDNER
VERNON MALONE
BETTY O. MANGUM
BETTY LOU WARD
MICHAEL A. WEEKS

WAKE COUNTY)
NORTH CAROLINA)

I, Gwendolyn I. Reynolds, Clerk to the Board of County Commissioners, County of Wake, State of North Carolina, hereby certify that the attached is a true and complete copy of Excerpts from minutes of Board of Commissioners' meeting - Granting franchise to Griffin Brothers Companies, D/B/A Highway 55 C&D Landfill, LLC, for operation of a construction and demolition debris landfill in Wake County, North Carolina (2nd vote), dated December 3, 2001.

Witness my hand as Clerk to the Board, and the Seal of the County of Wake, this the 19th day of December, 2001.

Gwendolyn I. Reynolds
Gwendolyn I. Reynolds
Clerk to the Board of Commissioners
Wake County, North Carolina

APPROVED

GRANT OF LANDFILL FRANCHISE
GRIFFIN BROTHERS COMPANIES DOING BUSINESS
AS HIGHWAY 55 C&D LANDFILL, LLC

Griffin Brothers Companies, doing business as Highway 55 C&D Landfill, LLC, has filed an application for a franchise to operate a construction and demolition debris landfill in Wake County. The site contains approximately 85 acres and is located west of the NC-55 By-pass, north of SR-1172 (Old Smithfield Road) south of the proposed right of way of the Western Wake Expressway and just east of the existing Wake County Landfill. The application is being filed pursuant to the franchise ordinance for C&D landfills enacted by the Board of Commissioners September 7, 1999.

On November 19, 2001, the Board of Commissioners voted to approve the franchise request. State law requires that a franchise be approved at two regular meetings before it may be finally adopted.

Upon motion of Commissioner Gardner, seconded by Commissioner Council, the Board unanimously approved granting a landfill franchise to Griffin Brothers Companies, doing business as Highway 55 C&D Landfill, LLC to operate a C&D landfill in Wake County.

ORDINANCE GRANTING FRANCHISE TO
GRIFFIN BROTHERS COMPANIES, D/B/A HIGHWAY 55 C&D LANDFILL, LLC
FOR OPERATION OF CONSTRUCTION AND DEMOLITION DEBRIS LANDFILL

WHEREAS, Griffin Brothers Companies, doing business as Highway 55 C&D Landfill, LLC, has applied for a franchise for the operation of a construction and demolition debris landfill in Wake County; and,

WHEREAS, the application filed by Griffin Brothers Companies, doing business as Highway 55 C&D Landfill, LLC, contains all of the information required by the Wake County franchise ordinance for construction debris (C&D) landfills; and,

WHEREAS, the applicant has received a special use permit from the Wake County Planning Board for operation of a C&D landfill on the site identified in the application.

NOW THEREFORE BE IT ORDAINED THAT, Griffin Brothers Companies, doing business as Highway 55 C&D Landfill, LLC, is hereby granted a franchise to operate a construction and demolition debris landfill in Wake County in accordance with the representations made on the application submitted by Griffin Brothers Companies, doing business as Highway 55 C&D Landfill, LLC a copy of which is maintained in the permanent files of the Clerk to the Board. This franchise shall be in effect for a period of 20 years.



Board of Commissioners

P.O. Box 550 • Raleigh, NC 27602

TEL 919 856 6160
FAX 919 856 5699

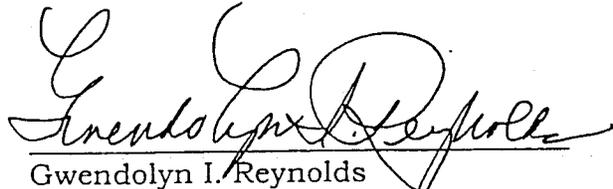
LINDA D. COLEMAN, CHAIRMAN
HERBERT H. COUNCIL, VICE-CHAIRMAN
KENNETH M. GARDNER
VERNON MALONE
BETTY O. MANGUM
BETTY LOU WARD
MICHAEL A. WEEKS

WAKE COUNTY)

NORTH CAROLINA)

I, Gwendolyn I. Reynolds, Clerk to the Board of County Commissioners, County of Wake, State of North Carolina, hereby certify that the attached is a true and complete copy of Excerpts from minutes of Board of Commissioners' meeting - Granting franchise to Griffin Brothers Companies, D/B/A Highway 55 C&D Landfill, LLC, for operation of a construction and demolition debris landfill in Wake County, North Carolina (1st vote), dated November 19, 2001.

Witness my hand as Clerk to the Board, and the Seal of the County of Wake, this the 19th day of December, 2001.


Gwendolyn I. Reynolds
Clerk to the Board of Commissioners
Wake County, North Carolina

GRANT OF LANDFILL FRANCHISE
HIGHWAY 55 C&D LANDFILL, LLC

Chairman Weeks recognized the County Attorney to give an overview of Griffin Brothers Companies request for landfill franchise. He stated that Griffin Brothers Companies, doing business as Highway 55 C&D Landfill, LLC, has filed an application for a franchise to operate a construction and demolition debris landfill in Wake County. The site contains approximately 85 acres and is located west of the NC 55-Bypass, north of SR-1172 (Old Smithfield Road) south of the proposed right of way of the Western Wake Expressway (I-540), and just east of the existing Wake County Landfill. The application has been filed pursuant to the franchise ordinance for C&D landfills enacted by the Board of Commissioners September 7, 1999.

The County Attorney stated that the Board of Commissioners may but is not required to hold a public hearing prior to acting on a request for a C&D franchise. He also stated that State law requires that a franchise be approved at two regular meetings before it may be adopted.

Mr. Tom Worth, Post Office Box 1799, Raleigh, NC, representing the applicant, Griffin Brothers, stated that the required items have been submitted by the applicant. He introduced the following persons: Larry Griffin, principal of Griffin Brother Companies; Ron Gilkerton, geologist with Griffin Brothers; Steve Williams, land appraiser; and Jonathan Reed, Traffic/Transportation Engineer. He then outlined the items that have been submitted pursuant to the franchise ordinance for C&D landfills:

1. The name and address of the applicant and owner of the proposed site.
2. The trade and other fictitious names, if any, under which the applicant does business, along with a certified copy of an assumed name certificate stating such name or articles of incorporation stating such name.
3. A legal description and map of the property proposed to be included in the C&D landfill.
4. A statement of the population to be served by the C&D landfill, including a description of the geographic area.
5. A description of the volume and characteristics of the waste stream.
6. A projection of the useful life of the C&D landfill; and
7. Evidence that the Wake County Board of Adjustment has granted a special use permit for the proposed C&D landfill.

Mr. Worth further stated that the C&D also has a recycling component to it; that the applicant has held discussions with the Town of Apex both before and after consideration by the Wake County Board of Adjustment, as well as with the Town of Holly Springs. He also noted that there was public input at the public hearing conducted by the Board of Adjustment August 14, 2001, and the applicant has addressed those issues brought forward at that time.

Chairman Weeks noted that the site is industrially zoned, the applicant has planned for additional buffers, there is no residential impact, the operation will have a recycling function; that access to the site will be limited to the new bypass—a four-lane road, thus the landfill will not be in operation until a portion of the 55 Bypass is open.

Following much discussion, **Commissioner Gardner moved approved of granting a franchise to Griffin Brothers Companies, D/B/A Highway 55 C&D Landfill, LLC for operation of a construction and demolition debris landfill. The motion was seconded by Commissioner Council and was unanimously approved.**

ORDINANCE
GRANTING FRANCHISE TO GRIFFIN BROTHERS COMPANIES D/B/A
HIGHWAY 55 C&D LANDFILL, LLC FOR OPERATION OF
CONSTRUCTION AND DEMOLITION DEBRIS LANDFILL

WHEREAS, Griffin Brothers Companies, doing business as Highway 55 C&D Landfill, LLC, has applied for a franchise for the operation of a construction and demolition debris landfill in Wake County; and

WHEREAS, the application filed by Griffin Brothers Companies, doing business as Highway 55 C&D Landfill, LLC, contains all of the information required by the Wake County franchise ordinance for construction debris (C&D) landfills; and

WHEREAS, the applicant has received a special use permit from the Wake County Board of Adjustment for operation of a C&D landfill on the site identified in the application.

NOW, THEREFORE, BE IT ORDAINED THAT, Griffin Brothers Companies, doing business as Highway 55 C&D Landfill, LLC, is hereby granted a franchise to operate a construction and demolition debris landfill in Wake County in accordance with the representations made on the application submitted by Griffin Brothers Companies, doing business as Highway 55 C&D Landfill, LLC, a copy of which is maintained in the permanent files of the Clerk to the Board. This franchise shall be in effect for a period of 20 years.

Return to: Tom Worth Jr
P.O. Box 1799
Raleigh, N.C. 27602

STATE OF NORTH CAROLINA

NOTICE OF SPECIAL USE APPROVAL

COUNTY OF WAKE

PETITION NO BA: SU-1923-01

Property recorded in Deed Book 9099, Page 1039-1044,
Wake County Register of Deeds.

NAME OF PROPERTY OWNER (s):

Griffin Brothers ^{Companies} dba Highway 55 C&D Landfill
L.L.C. and Ray Markham Stewart, Ruth B. Stewart,
Anthony K. Woodell and Melissa S. Woodell

KNOW ALL PERSONS BY THESE PRESENTS, that Griffin Brothers, 19109-118 West Catawba Avenue,
Cornelius, North Carolina 28031-5613, applied to Wake County for Special Use Approval for the use and
development of the property described above which permit was granted by Wake County on August 14, 2001.

To construct and operate a Construction and Demolition Debris (C&D) landfill and a recycling facility.
GRIFFIN BROTHERS Companies Highway 55 C&D LANDFILL, LLC

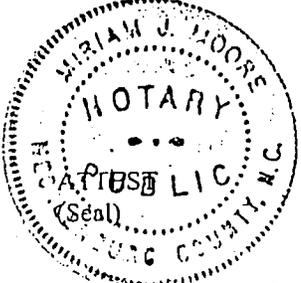
Ray Markham Stewart

By: *M. L. Griffin*
PETITIONER

By: *M. L. Griffin* MANAGER
OWNER (if other than petitioner)

Ruth B. Stewart
Melissa S. Woodell

I, *Miriam J Moore*, a Notary Public in and for said County and State do hereby certify that
MIKE L GRIFFIN, RAY MARKHAM STEWART, ANTHONY K WOODELL, RUTH B. STEWART, MELISSA S WOODELL personally appeared before me and acknowledge the execution of this document.
Witness my hand and official stamp or seal, this 14th day of November, 2001.



Miriam J Moore
Notary Public
My Commission Expires: 5-07-06
WAKE COUNTY

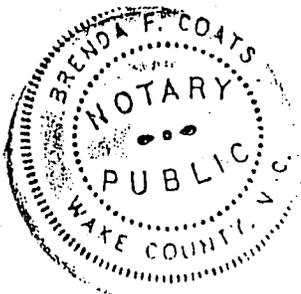
Becky Smith
Becky Smith, Clerk to the Wake County
Board of Adjustment

BY

Melinda Clark
Melinda Clark, Wake County
Land Development Administrator

I, Brenda F. Coats, a Notary Public in and for said County and State do hereby certify that Melinda Clark, Land
Development Administrator of Wake County, and Becky Smith, Clerk to the Wake County Board of Adjustment
personally appeared before me and duly sworn says each for himself/herself that he/she knows that this document is
a true and accurate account of the Order of The Board of Adjustment to the Land Development Administrator to
issue said special use approval subject the any terms or conditions specified in the order.

IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal this the 6th
day of September, 2001.



Brenda F. Coats
Notary Public
My Commission Expires: 9-1-2003

Laura M Riddick
Register of Deeds
Wake County, NC



Book : 009218 Page : 00197 - 00198

Yellow probate sheet is a vital part of your recorded document.
Please retain with original document and submit for rerecording.



Wake County Register of Deeds
Laura M. Riddick
Register of Deeds

North Carolina - Wake County

The foregoing certificate S of Miriam J. Moore
Brenda F. Coats

Notary(ies) Public is (are) certified to be correct. This instrument and this certificate are duly registered at the date and time and in the book and page shown on the first page hereof.

Laura M. Riddick, Register of Deeds

By: Frederick C. Baymon
Assistant/Deputy Register of Deeds

This Customer Group _____ # of Time Stamps Needed

This Document _____ New Time Stamp
_____ # of Pages



Board of Commissioners

P.O. Box 550 • Raleigh, NC 27602

TEL 919 856 6160
FAX 919 856 5699

LINDA D. COLEMAN, CHAIRMAN
HERBERT H. COUNCIL, VICE-CHAIRMAN
KENNETH M. GARDNER
VERNON MALONE
BETTY O. MANGUM
BETTY LOU WARD
MICHAEL A. WEEKS

I, Gwendolyn I. Reynolds, Clerk to the Wake County Board of Commissioners, do hereby certify that the attached pages are true and accurate copy of the following:

1. Pages 1-6 from the agenda package of the November 19, 2001, meeting provided to the Wake County Board of Commissioners relating to the *Application for Construction and Demolition Debris (C&D) Landfill Franchise for Griffin Brothers Companies doing business as Highway 55 C&D Landfill, LLC*, said landfill to be located west of the NC-55 Bypass, north of SR-1172 (Old Smithfield Road), south of the proposed right-of-way of the Western Wake Expressway (I-540), and just east of the existing Wake County Landfill.



Gwendolyn I. Reynolds
Gwendolyn I. Reynolds
Clerk to the Board of Commissioners

February 11, 2002
Date

APPROVED

11/19/2001

ITEM # 10

Item Title:

Request for Grant of Landfill Franchise

Item Summary:

Griffin Brothers Companies, doing business as Highway 55 C&D Landfill, LLC, has filed an application for a franchise to operate a construction and demolition debris (C&D) landfill in Wake County. The site contains approximately 85 acres and is located west of the NC-55 By-pass, north of SR-1172 (Old Smithfield Road) south of the proposed right of way of the Western Wake Expressway (I-540), and just east of the existing Wake County Landfill (map attached). The application is filed pursuant to the franchise ordinance for C&D landfills enacted by the Board on September 7, 1999. The ordinance provides that the Board shall issue a franchise upon the presentation of the following information to the County:

1. The name and address of the applicant and owner of the proposed site.
2. The trade or other fictitious names, if any, under which the applicant does business, along with a certified copy of an assumed name certificate stating such name or articles of incorporation stating such name.
3. A legal description and a map of the property proposed to be included in the C&D landfill.
4. A statement of the population to be served by the C&D landfill, including a description of the geographic area.
5. A description of the volume and characteristics of the waste stream.
6. A projection of the useful life of the C&D landfill; and
7. Evidence that the Wake County Board of Adjustment has granted a special use permit for the proposed C&D landfill.

The Board may, but is not required to, hold a public hearing prior to acting on a request for a C&D franchise. A proposed ordinance granting a franchise is attached for consideration. State law requires that a franchise be approved at two regular meetings before it may be adopted. A copy of the application (w/o attachments) is attached.

Attachments:3

Specific Action Requested:

Consideration of application of Griffin Brothers Companies, doing business as Highway 55 C&D Landfill, LLC for grant of franchise to operate a C&D landfill.

APPROVED

APPLICATION FOR CONSTRUCTION AND DEMOLITION DEBRIS (C&D)
LANDFILL FRANCHISE

NOW COMES Applicant Griffin Brothers Companies d/b/a Highway 55 C&D Landfill, LLC, Property Owner and Landfill Operator and submits this application for a C&D Landfill Franchise to the Wake County Board of Commissioners on this 1st day of November, 2001.

In support of this Application there is hereby presented the following information:

1. The name of the Applicant is Griffin Brothers Companies d/b/a Highway 55 C&D Landfill, LLC of 19109-118 W. Catawba Ave, Cornelius, NC 28031 property owner and proposed landfill operator.
2. Applicant Highway 55 C&D Landfill, LLC's Articles of Organization are attached hereto as Exhibit A. (Note: Griffin Brothers Companies is doing business as [(d/b/a)] Highway 55 C&D Landfill, LLC.
3. A legal description of the tract which includes the proposed C&D landfill is set forth in the Deed recorded in Book 9099, page 1039-1044, Wake Registry attached as Exhibit B and the proposed Access Road, which is under contract for purchase by Applicant, is shown upon Exhibit B1. The landfill area is shown on the preliminary Special Use Permit Site Plan attached as Exhibit C and is proposed to be located within the portion of the tract which contains approximately 85 acres and lies south of the proposed right of way of the Western Wake Expressway (I-540) and east of Little Branch.
4. The area to be served by the site is Wake County and its municipalities, including without limitation the municipalities of Apex, Cary, Fuquay-Varina, Holly Springs, and Raleigh. The population of Wake County and the municipalities specified in this paragraph is estimated to be approximately 1.2 million people.

The Wake County Board of Adjustment unanimously approved this landfill site to accept C&D waste on August 14, 2001. The landfill site is located west of the new NC Highway 55 Bypass, east of Little Branch, north of Old Smithfield Road, and south of the future Western Wake Expressway (I-540). The site is well buffered with trees on all sides. Access to the site will be from a special lane adjacent to Old Smithfield Road from NC Highway 55 Bypass for approximately 300 feet to our entrance as shown upon Exhibit B1. Traffic from our site will exit onto Old Smithfield Road. The South Wake County (Feltonville) Landfill is the only entity that shares Old Smithfield Road to the NC Highway 55 Bypass. All truck traffic will be required to exit onto NC Highway 55 Bypass from this portion of Old Smithfield Road.

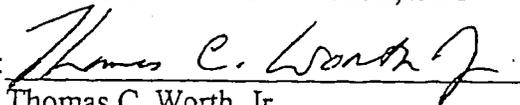
Attached as Exhibit D is the Traffic Study report performed by Parsons Brinckerhoff, Quade & Douglas, Inc. dated August 10, 2001 which updated the attached Traffic Impact Assessment dated May 29, 2001. Attached as Exhibit E is the letter dated August 13, 2001

from Williams Appraisers, Inc. stating the site is well suited for this landfill. Both exhibits were entered into evidence at the Wake County Board of Adjustment on August 14, 2001.

5. It is projected over the life of the proposed C&D landfill to receive approximately 3 to 4 million tons of C&D waste. The annual tons are projected to be approximately 300,000 tons. The proposed landfill site will operate six days per week. The waste stream will be strictly limited by its State Permit to be issued by the North Carolina Department of Environmental and Natural Resources (NC DEHNR), Division of Waste Management, prior to construction. The waste stream will include the following types of waste materials: inert debris similar to types deposited in LCID landfills, asphalt, solid waste resulting from construction, remodeling, repair of demolition operations on pavement, buildings or other structures (such as furniture, carpet remnants and any other waste materials resulting from the demolition of a structure) and other materials approved by NC DEHNR.
6. The projected useful life of this C&D landfill is anticipated to be approximately 20 years.
7. Applicant attaches as Exhibit F a copy of the Notice of Special Use Approval, which confirms that the Wake County Board of Adjustment approved the issuance of a Special Use Permit Request No. BA SU-1923-01 for this proposed landfill on August 14, 2001.

WHEREFORE, Applicant, Griffin Brothers Companies d/b/a Highway 55 C&D Landfill, LLC, through their undersigned attorney, respectfully request that the Wake County Board of Commissioners, after such notices, consideration and deliberation as said Board deems appropriate and in accordance with all applicable statutes, ordinances and regulations, issue the Franchise as requested by the Applicant.

GRIFFIN BROTHERS COMPANIES, d/b/a
HIGHWAY 55 C&D LANDFILL, LLC

By: 

Thomas C. Worth, Jr.

Attorney for Applicant

16 West Martin Street, Suite 700

Raleigh, North Carolina 27601

Telephone (919) 831-1125

Facsimile (919) 831-1205

APPROVED

ORDINANCE GRANTING FRANCHISE TO
GRIFFIN BROTHERS COMPANIES, D/B/A HIGHWAY 55 C&D LANDFILL, LLC
FOR OPERATION OF CONSTRUCTION AND DEMOLITION DEBRIS LANDFILL

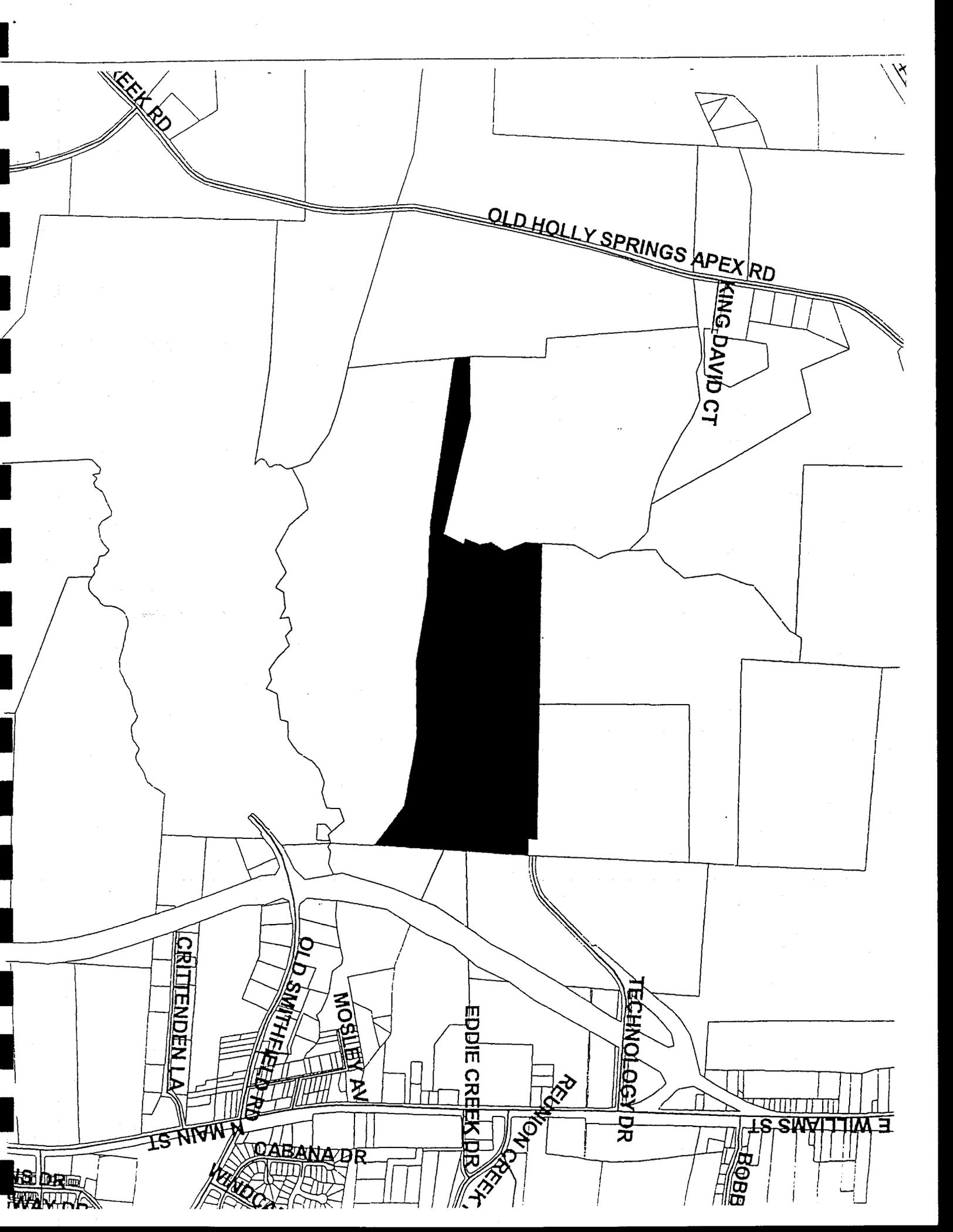
WHEREAS, Griffin Brothers Companies, doing business as Highway 55 C&D Landfill, LLC, has applied for a franchise for the operation of a construction and demolition debris landfill in Wake County; and

WHEREAS, the application filed by Griffin Brothers Companies, doing business as Highway 55 C&D Landfill, LLC, contains all of the information required by the Wake County franchise ordinance for construction debris (C&D) landfills; and

WHEREAS, the applicant has received a special use permit from the Wake County Board of Adjustment for operation of a C&D landfill on the site identified in the application.

NOW, THEREFORE, BE IT ORDAINED THAT, Griffin Brothers Companies, doing business as Highway 55 C&D Landfill, LLC, is hereby granted a franchise to operate a construction and demolition debris landfill in Wake County in accordance with the representations made on the application submitted by Griffin Brothers Companies, doing business as Highway 55 C&D Landfill, LLC, a copy of which is maintained in the permanent files of the Clerk to the Board. This franchise shall be in effect for a period of 20 years.

Adopted November 19, 2001.



EEK RD

OLD HOLLY SPRINGS APEX RD

KING DAVID CT

CRITTENDEN LA

OLD SMITHFIELD RD

MOSLEY AV

EDDIE CREEK DR

REUNION CREEK

TECHNOLOGY DR

E WILLIAMS ST

CABANA DR

BOBB

IS DR

April 30, 2002

Ronald C. Gilkerson
Hwy 55 Landfill and Recycling Center
19109 West Catawba Ave.; Suite 118
Cornelius, NC 28031-5613

Dear Mr. Gilkerson:

I am writing this letter to confirm that the Apex Fire Department is aware of your project and will respond to any fire safety needs. The Fire Department has received a site plan and has knowledge of all products and their locations that will be on site. Based on the information provided, we understand the following about the project:

- The project is located on Old Smithfield Road off Highway 55 Bypass, Wake County, NC.
- The facility will be reprocessing land-clearing debris, grass clippings, loose leaves, soil components, aggregate material, and tree limbs.
- These materials will be reprocessed in windrows that will be 8-12 feet high. Windrows that are 12 feet high will require a width of 20 feet, and each winrow will be placed no closer than 25 feet apart which will provide adequate fire breaks.

If you required additional information from the Town of Apex, please contact me at 919-362-4001 or Dan LaMontagne at 919-362-8166.

Sincerely,



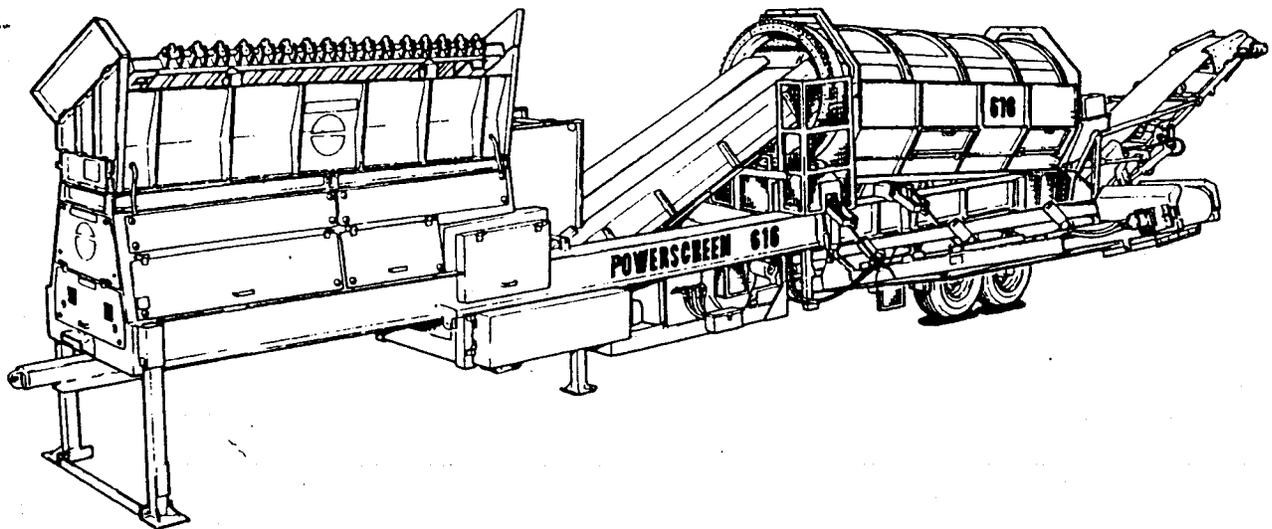
Alan Capps
Interim Chief

Cc: Dan LaMontagne, PE – Apex Public Works



Appendix 3

Processing Equipment Specifications And O & M Manuals



POWERSCREEN TROMMEL 616

POWERSCREEN TROMMEL 616
Maintenance & Spare parts

Powerscreen Trommel 616

OPERATING INSTRUCTIONS MAINTENANCE & SPARE PARTS

Ref. No. P.91/Issue 1/February 1995

Owners Name

Machine serial no.

Engine/Electric Motor serial no.

Engine agent

Tel. No.

Machine supplied by

Tel. No.

Contents

Introduction, general description, specifications

Operating instructions & Maintenance

Lubrication

Hydraulic Circuit Diagram

Wiring Circuit Diagrams

Safe Operation of Powerscreen Machines

Spare parts ordering procedure

Index to spare parts list

Spare parts list

The right is reserved to alter any details contained in this manual without notice.

Copyright 1995

Powerscreen International Distribution Ltd.

Dungannon, Co. Tyrone, N. Ireland.

Telephone: +44 (0)1868 740701 Telegrams: Powerscreen, Dungannon Telex: 74136 PSCREN G

Fax no: +44 (0)1868 747231

Powerscreen Ltd.

Lower Main St., Kilbeggan, Co. Westmeath, Rep. of Ireland.

Telephone: +353 (0)506 32176/32203 Fax: +353 (0)506 32443

Introduction

The machine which you have now received has been manufactured, assembled and tested with the utmost care and was built with first class materials. Close attention has been paid to all details in assembly, running tests and final inspection. We are confident that you have received a machine which will give you every satisfaction over a long period.

To be assured of faultless operation we would ask you to carefully read the following paragraphs and give the required time and attention to essential maintenance, cleaning and inspection. The machine is simple to operate, adjustments are easy to make and expert assistance is seldom required, provided that ordinary care is exercised in daily use.

If in doubt, please contact our authorised distributors quoting machine serial no. which can be taken from the machine plate or this manual.

GENERAL DESCRIPTION

The machine is designed as a self contained mobile unit for shredding, screening and stockpiling materials into various sizes. The material is deposited in the feed hopper (a reject grid will discharge oversize material). The variable speed feeder delivers the material evenly on to the main belt which conveys it to the screen. The two grades of screened material are stockpiled to one end and one side of the machine.

SPECIFICATIONS

Working Length :	21.92m (71ft. 11ins.)
Towing Length :	16.1m (52ft. 10ins.)
Working Width :	7.01m (23ft)
Towing Width :	2.9m (9ft. 4ins)
Working Height :	4.35m (14ft. 3ins)
Towing Height :	4.00m (13ft. 1ins)
Hopper Capacity (including Grid) :	6.9Cu.m. (9.0Cu. yd's.)
Hopper Opening Size :	1.8m (5ft. 10ins.) x 4.0m (13ft. 1ins.)
Screen Diameter :	1.83m (6ft.)
Screen Length :	4.9m (16ft.)
Engine Size :	67 KW (90 H.P.)
Fuel Consumption (at 2200 r.p.m.)	15.2 ltr/hr (3.5 gal/hr)
Diesel Tank Capacity :	295ltr (65 gal)
Hydraulic system capacity :	500ltr (110 gal)
Total weight :	20440kg (44968lbs)
Total weight on Axle Bogie :	14080kg (30976lbs)
Weight at King Pin :	6360kg (14000 lbs)
Tyre Size :	385/65/R22.5
Tyre Pressure :	9.8 bar (140 psi)
Wheel Stud Torque :	745 Nm (550 lbs ft)

Operating instructions & maintenance

TOWING THE MACHINE ON THE HIGHWAY

Before the Trommel 616 is towed on the highway ensure:

1. Wing plates are secured to grid by transport brackets
2. Side conveyor is secured to chassis by the transport brackets (Item 63, Fig. 14).
3. Side conveyor belt is secured.
4. Tail conveyor transport stays (Item 68, Fig. 13) are in place.
5. Tail conveyor belt is secured.
6. Drum is secured by transport stays (Item 70, Fig. 13).

INSTALLATION

Before the machine is put into operation it must stand perfectly level on a firm foundation. Level the machine with a precision spirit level. Ensure both axles and the towing end of the machine are level. On your general inspection of the machine, and before starting the engine the following should be checked:

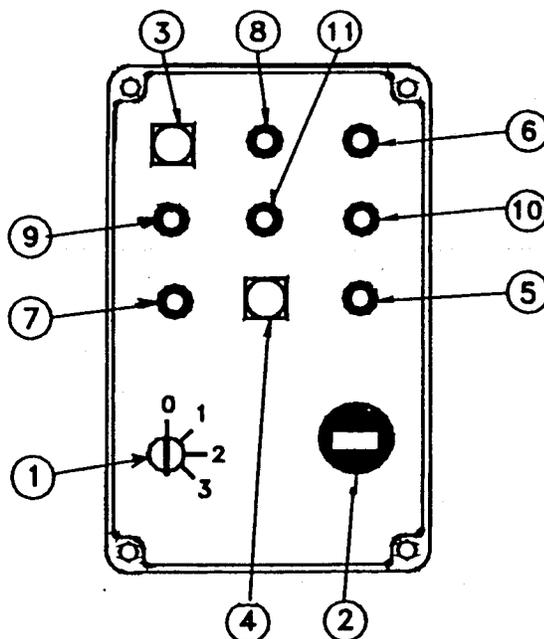
1. Engine fuel and lubrication oil levels.
2. Hydraulic tank oil level (Item 54, Fig. 7)
3. Control valve levers are in neutral position.
4. All other personnel are clear of the machine.
5. All guards are in position.

TO START THE ENGINE

1. To start the engine turn the ignition key to position 1, "Ignition" position. Charge lamp, oil pressure lamp and control lamp are illuminated.
2. If pre-heating is required then turn the ignition key to position 2, "Pre-heat" position. Hold key in this position until pre-heat warning lamp is extinguished after approximately 1.5 to 2 minutes.
3. Fully depress and hold override button. Fuel solenoid engages and control lamp is extinguished. Turn ignition key to position 3, "start" position. When engine starts, release ignition key to position 1. When oil light is extinguished release override button.
5. If engine fails to start consult engine operation manual.

SEE DIAGRAM BELOW FOR ENGINE CONTROL PANEL IDENTIFICATION
(diagram is also positioned on the inside of powerunit door).

1. Ignition key switch
2. Hour meter
3. Override button
4. Tip grid button
5. Control lamp
6. Ignition lamp
7. Pre-heat lamp
8. Oil pressure lamp
9. Fan belt failure lamp
10. Air cleaner blockage lamp
11. Cylinder head temp. lamp



As well as 4 fused circuits for existing circuits the panel has 2 additional fuses provided for connecting additional (auxiliary) equipment. The warning lamps on the panel are fitted with 12 volt, 2 watt bulbs. On no account should bulbs of a higher wattage be fitted. Care should be taken if the wiring has to be removed from the bulb holders. Do not pull on the wiring or wire terminals as damage may be caused to the bulb holders

RAISING THE FEEDER TO WORKING POSITION

To raise the feeder end of the machine to working position:

1. Remove the safety pin (Item 14, Fig. 8) from the feeder control valve (Item 9, Fig. 8)
2. Check that the handle of the 4 port valves (Items 53 & 60, Fig. 8) are in the neutral (central) position.
3. Move the lever of the Trommel drum valve (Item 11, Fig. 8) to the "Up" position.
4. Move the handle of the back 4 port valve (Item 53, Fig. 8) down to retract the jacking legs (Item 61, Fig. 4) and lower the feeder end of the machine
5. Lower the rear support legs (Item 75, Fig. 17) at the end of the chassis behind the wheels manually and insert pins (Item 76, Fig. 17) over the top of the legs. There is no hole in these legs. Replace all washers and spring pins (Item 77 & 78, Fig. 17).
6. Move the handle of the back 4 - port valve (Item 53, Fig. 8) up to extend the jacking legs (Item 61, Fig. 4) and raise the feeder end of the machine.
7. Lower hopper support legs (Item 30, Fig. 2) manually from transport position to working position and insert pins and spring pins (Items 31 & 33, Fig. 2).
8. Bolt the hopper support legs cross-tie (Item 34, Fig. 2) into position.
9. Move the handle of the back 4 - port valve (Item 53, Fig. 8) down to retract the jacking legs until the hole in the inner jacking leg is in line with the hole in the outer jacking leg and insert jacking leg pins (Item 62 & 63, Fig. 4). The weight of the feeder end of the machine is now supported by the jacking legs and hopper support legs.
10. Move the handle of the back 4 - port valve (Item 53, Fig. 8) to the neutral (central) position.
11. Move the lever of the feeder control valve (Item 9, Fig. 8) to the neutral position and insert safety pin (Item 14, Fig. 8).
12. Check if the Trommel 616 is level using a spirit level. The best positions to check are under the fifth wheel coupling plate underneath the feeder, and the box iron across the chassis underneath the drum, which the Trommel frame is pivoted on. Check also both chassis sides in two positions equally spaced along the length of the chassis. It is important that the Trommel 616 is level otherwise it will be difficult to track the conveyor belts
13. Remove the 2 yellow transport brackets fixing the side extensions (Item 20, Fig. 1) to the grid sides. The side extensions which are hinged, are then lifted up into position and bolted to the tipping frame.
14. The hopper outlet door bar (Item 67, Fig. 3) needs to be moved from the bottom holes in the hopper outlet side shields to the top holes. This will allow the hopper door (Item 60, Fig. 3) to swing. The extension (Item 63, Fig. 3) on the hopper outlet door may need adjusting and the hopper door counterweights (Item 66, Fig. 3) may need to be removed depending on the material being screened.

UNFOLDING SIDE CONVEYOR

To unfold side conveyors from transport position:

1. Remove bolts on both transport brackets (Items 63, Fig. 14) securing the conveyor to the chassis.
2. Remove bar securing side conveyor belt.
3. Engage side conveyor control valve (Item 12, Fig. 8) in the "down" position.
4. Operate the triple bank control valve (Item 63 Fig. 16) first to open out the side conveyor slowly ensuring that the conveyor belt does not get caught. Insert pins and spring pins.
5. Fit pins (Item 65, Fig. 15) to secure side conveyor in working position.
6. Fit head drum guards (Item 44 & 45, Fig. 15), underguard side plates (Item 46 & 47, Fig. 15) and underguard bottoms (Item 49, Fig. 15).
7. Fit guards over troughing rollers (Item 60 & 62, Fig. 15)

ADJUSTING THE SCREEN ANGLE

To raise the screen from transport position to working position:

1. Remove the 4 bolts securing the Trommel frame to the chassis (Item 91, Fig. 11)
2. Check that the handle of the 4 port valves (Item 53 & 60, Fig. 8) are in the neutral (central) position
3. Move the lever of the feeder control valve (Item 9, Fig. 8) up.
4. Move the handle of the 4 port valve (Item 60, Fig. 8) up to increase the screening angle. Set at the 2nd position down from the largest angle position. Replace the 4 bolts in position and tighten. **IMPORTANT - ENSURE** these bolts are correctly tightened otherwise vibrations may occur in the chassis
5. The yellow transport (Item 30, Fig. 13) bracket on the "A" frame (Item 42, Fig. 13) over the top of the

UNFOLDING TAIL CONVEYOR

To unfold the tail conveyor from the transport position:-

1. Remove both transport stays (Item 68, Fig. 13) securing conveyor to chassis.
2. Engage the side and tail conveyor control valve (Item 12, Fig. 8) in the "Up" position.
3. Operate the triple bank control valve (Item 63, Fig. 16) to unfold the tail conveyor slowly ensuring that the conveyor belt and hydraulic pipes do not get caught in the mechanism. Insert pins and spring pins
4. The Trommel 616 is supplied with hanger arms (Item 72 & 73, Fig. 16) which are left in the drum for transportation. These are fixed between the Trommel frame and the tail conveyor.
5. When the conveyor angle is set, insert pins and spring pins (Item 74 & 76 Fig. 16) in the required holes.
6. Pivot the return roller assembly (Item 63 & 64, Fig. 17) into position below the belt and secure in place with pins and spring pins (Item 68 & 69, Fig. 17).
7. All guards, hanger arms, steps, bolt mil etc. are removed from inside Trommel 616 drum. Check inside hopper and on incline conveyor belt for any guards or parts.
8. Fit Trommel rear guide doors (Item 49 & 50, Fig. 13) to Trommel frame at the outlet of the Trommel drum, one on either side. Fit the drum spillage plate (Item 60, Fig. 13) with rubber flap (Item 63, Fig. 13), underneath the drum bolted to both rear guide doors, and fit bracing angle (Item 66, Fig. 13) across the top of the doors. Tighten up the bolts after all parts have been loosely bolted together.
9. Fit the hanger arms (Item 72 & 73, Fig. 16) from the Trommel frame to the tail conveyor using the pins, washer and spring pins (Item 74, 75 & 76, Fig. 16). The length of the hanger arms is adjustable to allow the angle of the tail conveyor to be adjusted to the required height.

PUTTING THE MACHINE INTO OPERATION

The machine is started in the following sequence.

NOTE: The control valves are positioned on the control panel in the correct sequence for starting and stopping.

1. Tail and Side conveyors - move lever of tail & side conveyor control valve (Item 12, Fig. 8) down.
2. Trommel Drum - move lever of Trommel control valve (Item 11, Fig. 8) down.
3. Main and Collection conveyor - move lever of main and collection conveyor control valve (Item 10, Fig. 8) down.
4. Feeder - move lever of feeder control valve (Item 9, Fig. 8) down.
5. When the complete machine is running empty (without material) check that all the conveyor belts are running in alignment and adjust as required according to safety instructions on page headed "Safe Operation of Powerscreen Machines" (Very Important)
6. Stop the feeder belt by moving the lever of feeder control valve (Item 9, Fig. 8) up to neutral position.
7. Fill up the feed hopper with material, set the dial on feeder flow control valve (Item 40, Fig. 8) to No. 2 and start up the feeder by moving the lever of feeder control valve (Item 9, Fig. 8) down.
8. Check that all conveyors belts are still running in alignment and adjust as required according to safety instructions on page headed "Safe Operation of Powerscreen Machines". (Very Important).
9. Fill up the feed hopper again and adjust the feeder flow control valve (Item 40, Fig. 8) to increase the feed rate to the optimum for the application in hand.

THE MACHINE IS NOW READY FOR CONTINUOUS OPERATION

STOPPING THE MACHINE

1. The feed hopper should be empty and the conveyor belts and screen free of material before the machine is stopped. Always stop the feeder conveyor first by moving the lever of the feeder control valve (Item 9, Fig. 8) to the neutral position.
2. Stop the rest of the machine in reverse order to the starting sequence i.e. Feeder conveyor, Main Conveyor, Trommel drum, Tail and side Conveyors.
3. Reduce engine speed gradually from working speed to idling speed.
4. Stop the engine by switching off the ignition key (Item 27, Fig. 6) after approx. 2 minutes at idling speed.

FEED CONTROL

The feed rate is determined by speed of the feed conveyor belt which is adjusted by the dial on the feeder flow control valve (Item 40, Fig. 8).

OPERATING THE REJECT GRID

To raise reject grid:

1. Place air hose on the ground in such a place where the loading shovel can drive over the hose and operate the tipping grid.

OR

Operate infra-red transmitter (Item 89, Fig. 8), pointing it in the direction of the infra-red receiver (Item 87, Fig. 8) fitted above the power unit.

OR

Press the tipping grid button (Item 36, Fig. 6) on the instrument panel (Item 22, Fig. 6).

The reject grid will lower automatically.

TENSIONING CONVEYOR BELTS

Correct tensioning of the conveyor belts should be maintained at all times. Adjustment may be carried out according to safety instructions on page headed "Safe Operation of Powerscreen Machines". (Very Important).

HYDRAULIC SYSTEM MAINTENANCE

Keep a daily check on the level of oil in the hydraulic tank by observing the hydraulic oil level indicator (Item 54, Fig. 7). If the oil in the tank falls below the level of the line on the indicator it should be topped up immediately.

The oil in the hydraulic system should be changed annually and it is recommended that the suction element (Item 57, Fig. 7) is changed when an oil change is being carried out.

The return line filter elements (Item 24, Fig. 7) should be changed when the needle on the return line filter gauge moves into the red section.

IMPORTANT - When changing or topping up the oil in the hydraulic system or when checking the filter element the utmost cleanliness should be observed at all times as impurities in the oil will ruin the system

NOTE: If the hydraulic system requires any major repairs contact your local Powerscreen dealer immediately. Hydraulic pumps, motors, valves, etc. must not be tampered with, otherwise the guarantee will be invalidated.

The filler cap (Item 52, Fig. 7) of the hydraulic tank should be cleaned every 250 hours. The air vents in the cap must be kept open to allow the hydraulic system to "breathe" - **IMPORTANT**.

Check the condition of all parts of the Hydraulic system regularly.

SCREEN UNIT MAINTENANCE

When the screen unit is running there should be minimal or no vibration in the Trommel frame or in the machine framework. If there is any vibration contact your local Powerscreen dealer as any such vibration must be eliminated immediately. Regular checks should be carried out on the screen meshes.

Maintenance

DAILY MAINTENANCE

Before starting engine:

Note: Before carrying out any maintenance, isolate the engine by removing ignition key and depressing one emergency stop.

1. Check engine fuel and lubrication oil levels and top up as necessary.
2. Check Hydraulic tank oil level and top up as necessary.
3. Check screen meshes for wear and material build-up. Replace or clean as necessary.
4. Check that the brushes (Item 11, Fig. 13) are adjusted to approx. 10mm inside the screen meshes and that there is no build up of any material around the bearing and shaft which may prevent the brushes from rotating freely.
5. Remove any material build-up around moving parts and ensure all rollers can rotate freely.
6. Check that all guards are in place and properly secured.
7. Check that all bolts are in place and fully tightened.

When machine is in operation

1. Check that all conveyor belts are properly aligned and adjust as necessary according to instructions on page headed "Safe Operation of Powerscreen Machines".
2. Check that the screen unit is running at approx. 20 r.p.m. This is generally found to be the optimum speed, but can be varied depending on application. Check also that the brushes are turning freely with screen

WEEKLY MAINTENANCE

1. Grease bearings according to the greasing schedule on page headed "Lubrication"
2. Examine skirting rubbers on feed hopper and all feedboots and adjust until they are just touching the conveyor belt. Replace as necessary.
3. Check conveyor belt tensions. Adjust as necessary according to instructions on page headed "Safe Operation of Powerscreen Machines".
4. Check belt cleaners on feeder, main conveyor side and tail conveyors and adjust or replace plastic strips as necessary

Lubrication

ENGINE LUBRICATION

For details of engine lubrication see engine handbook

GEARBOX LUBRICATION (Item 15, Fig. 3)

Bongfiglioli gearbox is "Oil lubricated" and maintenance should not be required. If however this is necessary, top up with Shell Tivella WB synthetic gear oil (or equivalent).

GREASING SCHEDULE

The following greasing schedule should be observed:

Fig	Item	Description	Frequency	Grease Gun Strokes
2	54	Feeder Tail Drum Bearings	100 hours	2
3	9	Feeder Drive Drum Bearings	100 hours	2
4	7	Incline Conveyor Tail Drum Bearings	100 hours	2
5	7	Incline Conveyor Head Drum Bearings	100 hours	2
11	11	Collection Conveyor Drive Drum Bearings	100 hours	2
11	74	Collection Conveyor Tail Drum Bearings	100 hours	2
12	6	Trommel Drum Support Wheel Bearings	70 Hours	10
12	38	Trommel Drum Retaining Wheel Bearings	70 Hours	10
12	53	Idler Sprocket Bearing	50 Hours	2
14	9	Side Conveyor Tail Drum Bearings	100 hours	2
15	9	Side Conveyor Drive Drum Bearings	100 hours	2
16	9	Tail Conveyor Tail Drum Bearings	100 hours	2
17	9	Tail Conveyor Drive Drum Bearings	100 hours	2

RECOMMENDED OILS AND GREASES

Engine

As specified in the Deutz Operation Manual heavy duty lubricating oil meeting the requirements of API quality grade **CD/SE** or **CD/SF**, must be used. Shell Fortisol 15W/40 (or equivalent) which is suitable for ambient temperatures above -10c, is recommended.

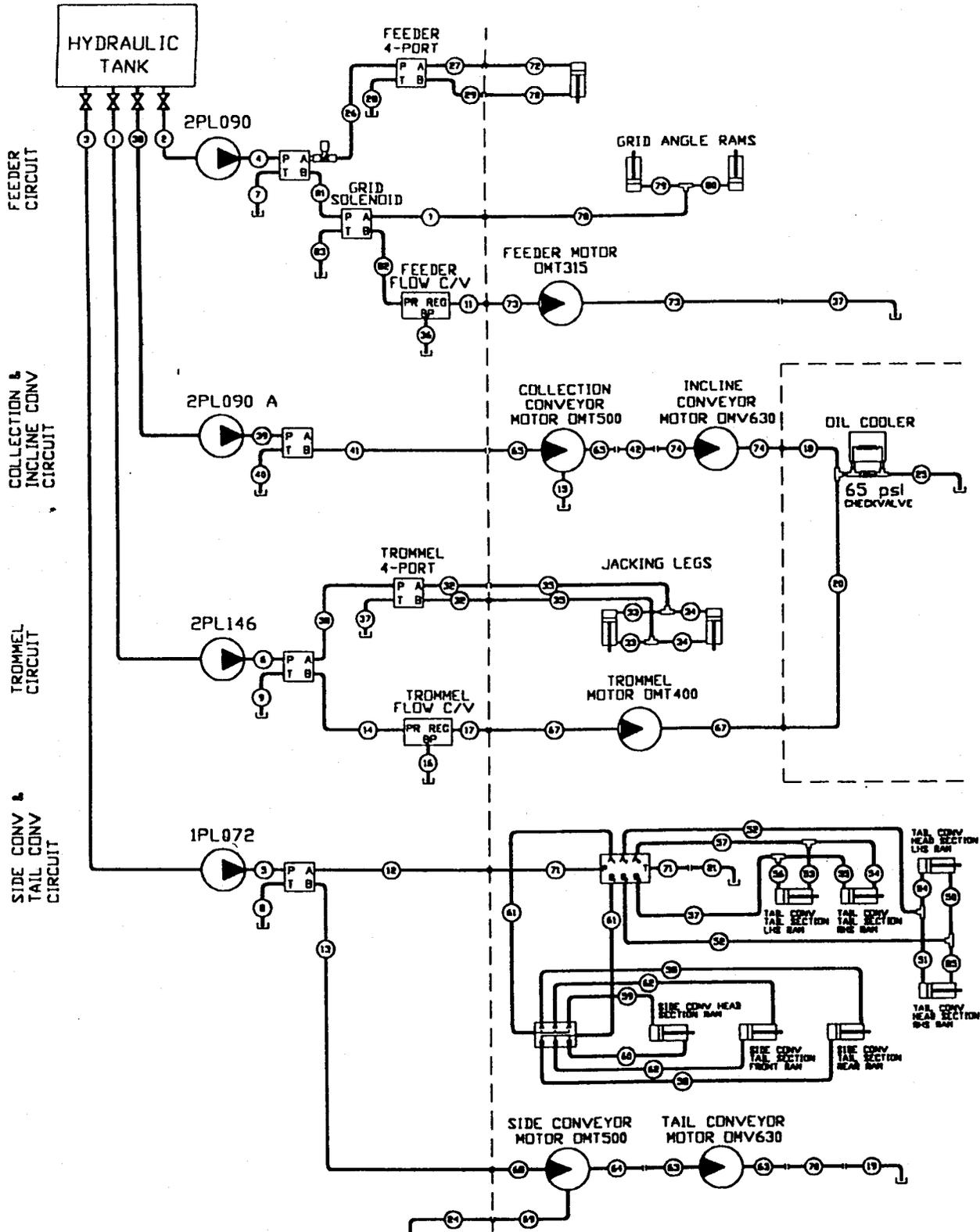
Hydraulic System

BELOW 30c	Shell Tellus 37 (or equivalent)
ABOVE 30c	Shell Tellus 100 (or equivalent)

Lubrication Points

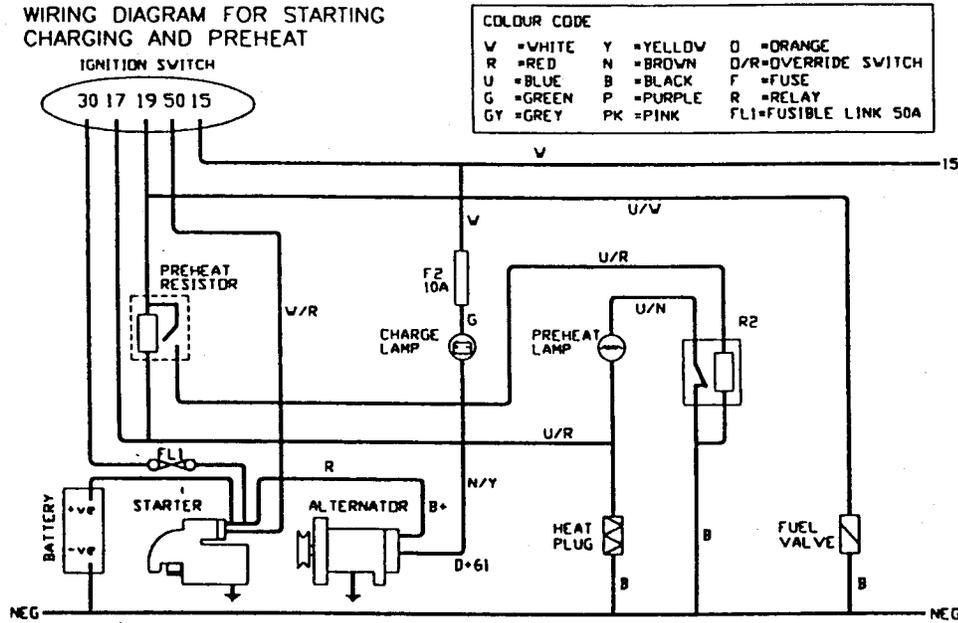
BEARINGS (General)	Shell Alvania EP2 (or equivalent)
GEARBOX (Grease Filled)	Shell Tivella Compound A (or equivalent)
GEARBOX (Oil Filled)	Shell Tivella WB (or equivalent)

Hydraulic Circuit Diagram

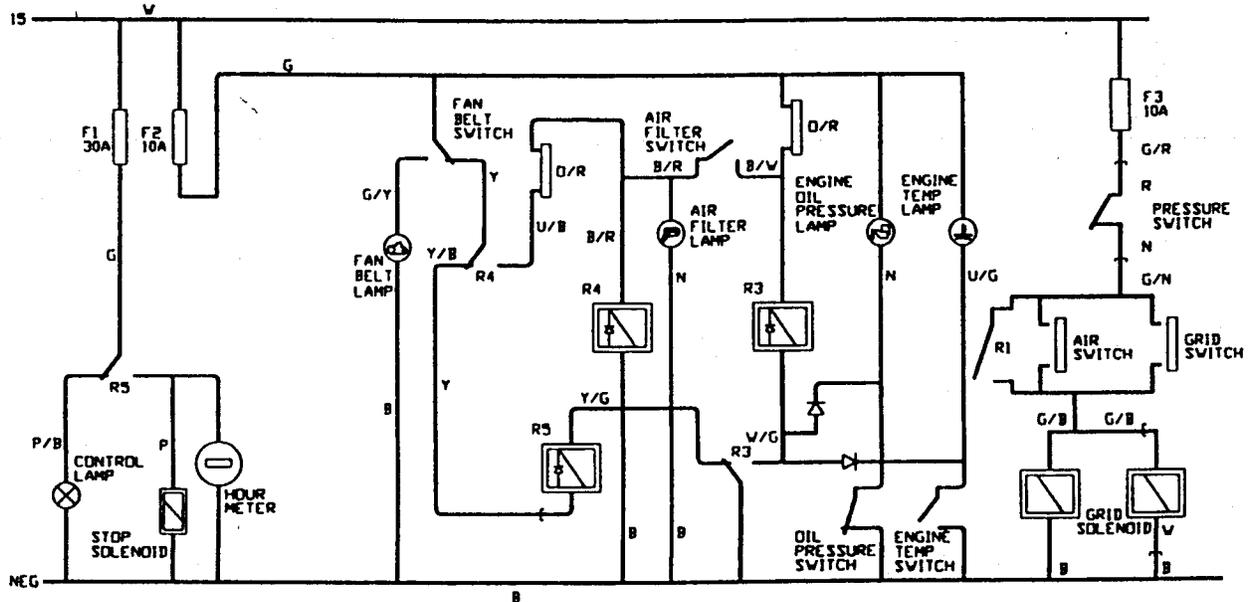


Wiring Circuit Diagrams

WIRING DIAGRAM FOR STARTING CHARGING AND PREHEAT



WIRING DIAGRAM FOR STOP SYSTEMS AND TIPPING GRID



Safe Operation Of Powerscreen Machines.

Powerscreen machines are guarded to prevent injury from moving parts. It is important that each operator is aware of the following rules which must be strictly adhered to.

1. All guard doors must be in position when the machine is in operation.
2. Always wear a safety helmet and hearing protection in the vicinity of the machine when it is in operation.
3. Always adjust belts according to the correct procedure below.
4. Never carry out maintenance when machine is in operation. Always stop the engine/electric motor, remove key or fuse to isolate the machine and ensure other workers are aware that you are carrying out work.
5. Never clean or lubricate any moving parts (e.g. rollers, end drums, chain drives) when the machine is in operation.
6. Ensure all Pins, Nuts, Bolts are securely fastened.
7. Stay clear of the reject grid.
8. Do not use belt dressings.
9. Never climb on conveyors for inspection or maintenance

ANY VIOLATION OF THE ABOVE COULD LEAD TO SERIOUS INJURY.

Procedure for tensioning and adjusting conveyor belts, in complete safety is as follows:-

ONLY Feeder conveyor and conveyors which can be adjusted and observed without opening guard doors.

1. Start engine/electric motor and start belt which requires adjustment.
2. Observe belt through viewing apertures and decide which side of the drum needs more tension. Note that if the belt is 'tracking off' to the right hand side of the drum then the right hand side will need more tension.
3. Operate the belt adjusters to provide more tension on the appropriate side of the drum.
4. Observe the belt running empty and loaded and ensure that it is now "tracking" correctly.

ONLY Conveyors which require guard doors to be opened for adjustment of the conveyor belt

1. Start engine/electric motor and start belt which requires adjustment and run for short period of time.
2. **STOP** engine/electric motor and remove key or fuse to isolate.
3. Open guard door and observe drum. Note if the belt has "tracked off" to the right hand side of the drum, then the right hand side will need more tension.
4. Operate belt adjusters to provide more tension on the appropriate side of the drum.
5. **CLOSE** guard door
6. Repeat steps 1 to 5 until belt is tracking correctly.

ANY VIOLATION OF THE ABOVE COULD LEAD TO SERIOUS INJURY.

Spare Parts Ordering Procedure

When ordering spare parts, the following must be carefully observed.

1. State the type of machine and the machine serial number. The serial number may be found on the machine plate or on the first page of this manual.
2. State clearly the Item No., the description and the Fig. No. for the part required.
3. State the quantity being ordered.
4. State name and address clearly as well as method of delivery required.
5. Engine spare parts should be obtained from your nearest Engine Agent. The Name, Address and Telephone No. may be found on the first page of this manual.

N.B. Left and Right Hand of Machine

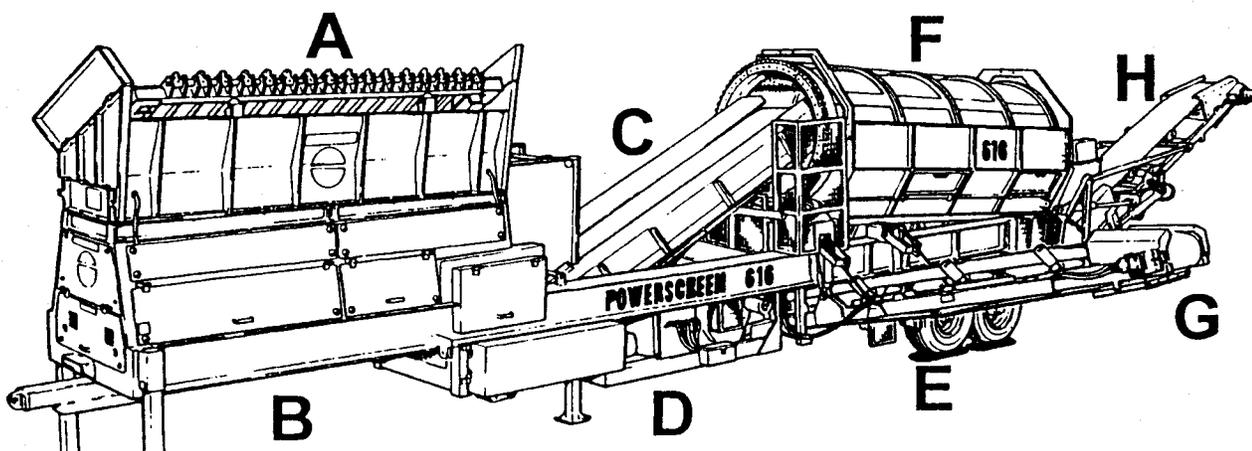
Left and Right hand of machine is obtained by viewing the machine from the towbar end.

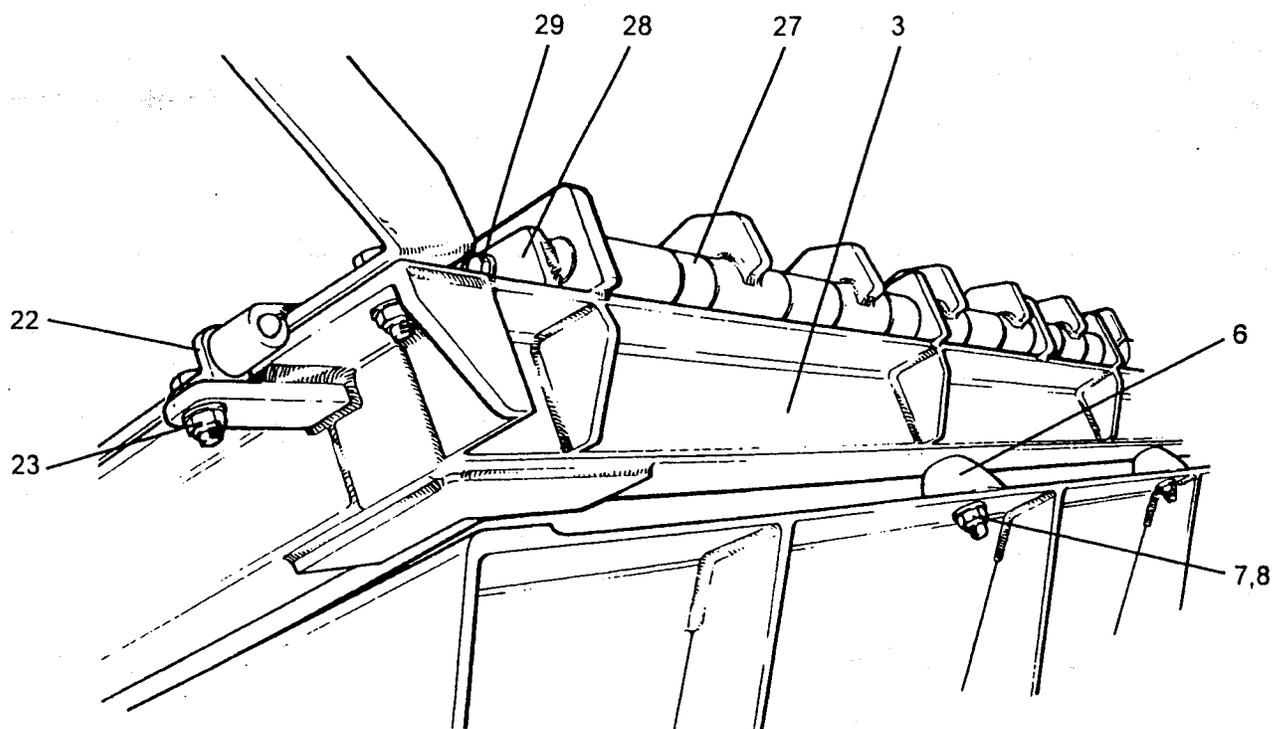
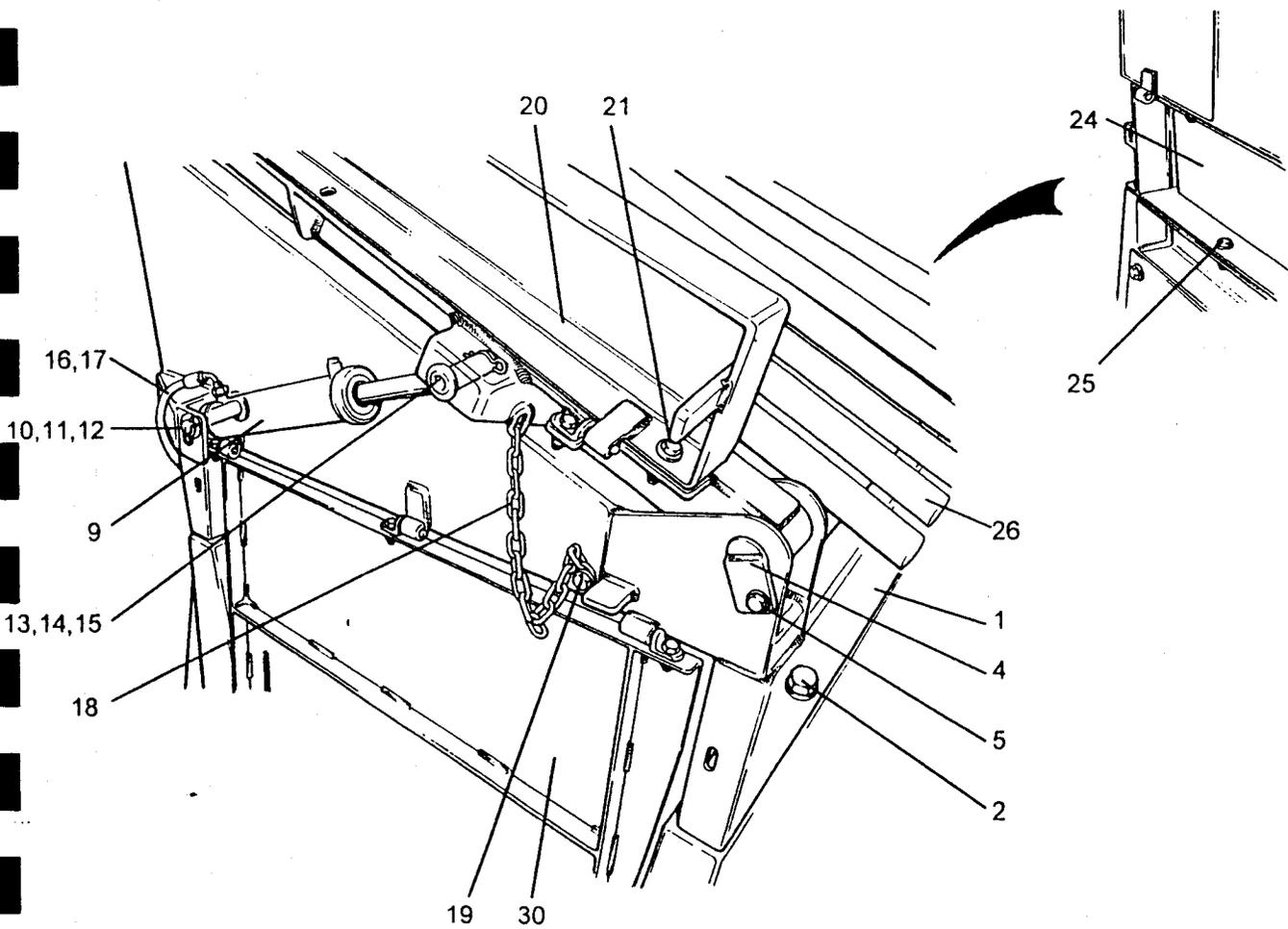
When purchasing parts customers should, in their own interest, always use genuine Powerscreen International parts.

Parts that have not been supplied by Powerscreen International Distribution Ltd., Powerscreen Ltd., or Powerscreen of America Inc., cannot be relied upon for correct material, dimensions or finish. Powerscreen International Distribution Ltd., Powerscreen Ltd., or Powerscreen of America Inc.

Index to Spare Parts List

Section	Description	Item	Fig.
A	Reject Grid:	Grid, Side Extensions, Tipping Frame, Hyd. Cylinders, Bars	1
B	Feeder Unit:	Guards, Hopper, Support Legs, Tail Drum, Belt Cleaner, Rollers	2
B	Feeder Unit:	Drive Drum, Gearbox, Hydraulic Motor, Hopper Outlet, Belt Scraper	3
C	Incline Conveyor:	Drive Drum, Hydraulic Motor, Belt Scraper, Feedboot, Rollers, Jacking Legs, Guards, Frame	4
C	Incline Conveyor:	Head Drum, Belt Scraper, Skirting, Engine Canopy	5
D	Power Unit:	Frame, Battery, Control Panel, Exhaust, Air Cleaner	6
D	Power Unit:	Diesel Tank, Fuel Lines, Hyd. Tank, Hyd. Filters, Suction & Return Hoses, Hydraulic Hoses	7
D	Power Unit:	Control Valves, Hydraulic Hoses, Grid Powerpack, Remote Control	8
D	Power Unit:	Engine, Hyd. Pumps, Pump Couplings, Oil Return, Hyd. Hoses	9
E	Chassis:	Axle, Wheels, Suspension, Braking Components, Chassis	10
E	Collection Conveyor:	Drive Drum, Hydraulic Motor, Belt Cleaner, Rollers, Tail Drum	11
F	Trommel Frame:	Support Wheels, Retaining Wheel, Plummer Block, Trommel Drive, Hydraulic Motor, Guards	12
F	Trommel Frame:	Trommel Drum, Brushes, Meshes, Pivot Assembly, Hydraulic Cylinder, Guide Doors	13
G	Side Conveyor: Tail Section	Tail Drum, Belt Scraper, Rollers, Feedboot, Pivot Assembly	14
G	Side Conveyor: Head Section	Drive Drum, Motor Coupling, Belt Cleaner, Guards, Hydraulic Cylinders	15
H	Tail Conveyor: Tail Section	Tail Drum, Belt, Scraper, Feedboot, Rollers, Pivot Assembly, Control Valve, Hydraulic Hoses, Hydraulic Cylinders	16
H	Tail Conveyor: Head Section	Drive Drum, Motor, Coupling, Guards, Belt Cleaner, Rollers, Jacking Legs	17
H	Lights:	Lighting Board, Lights, Light Holders, Marker Boards, Brakes and Light Connectors	18

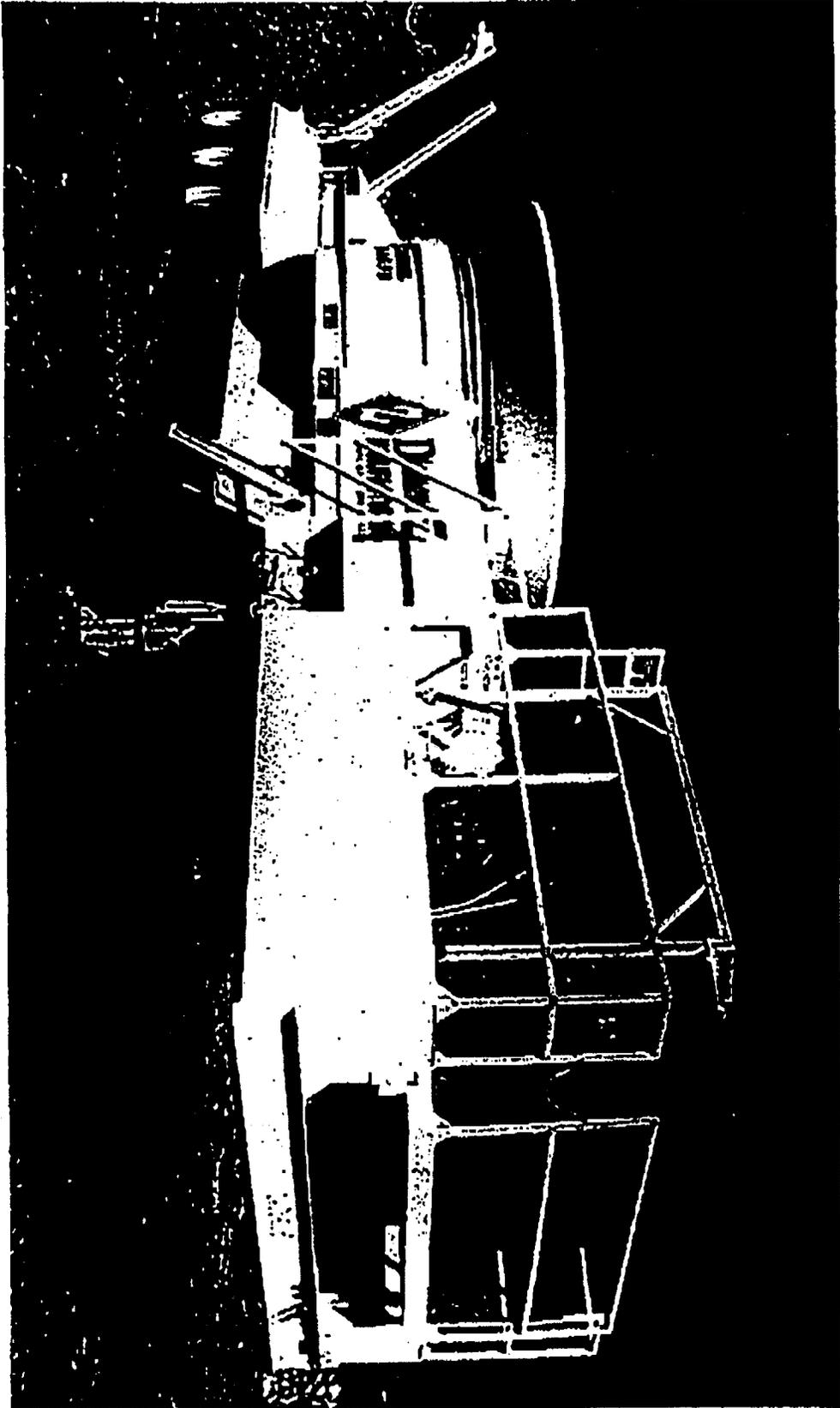




APPENDIX 4

DZ[®] MODEL 1463B

INDUSTRIAL TUB GRINDER

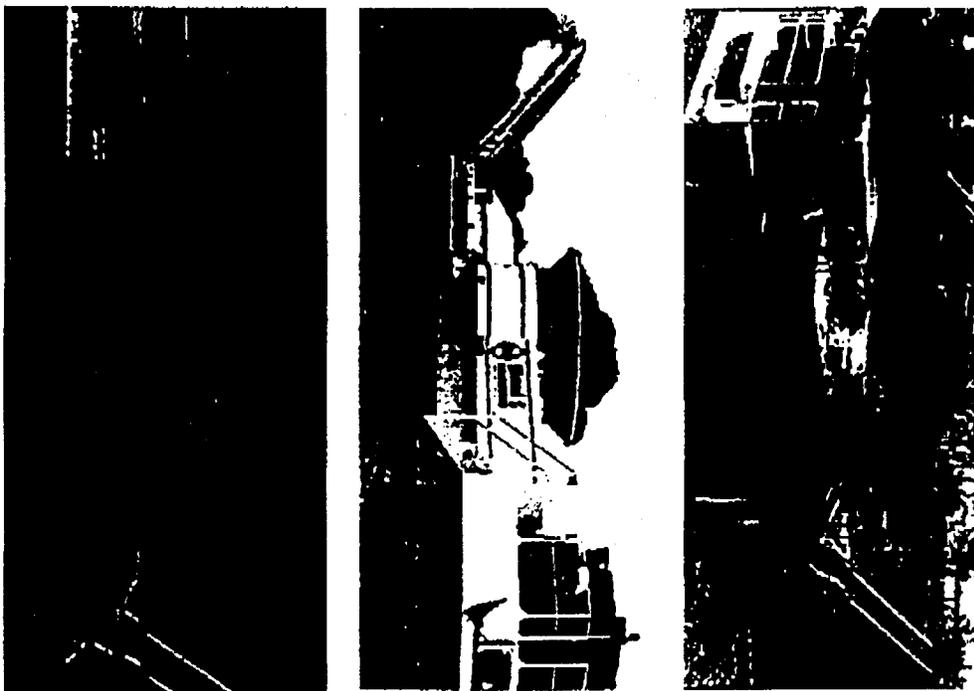


Diamond Z Manufacturing

41299 BASS LANE ♦ CALDWELL, ID 83605 ♦ (800) 949-2183 ♦ FAX (208) 385-2112
 E-Mail diamondz@diamondz.com ♦ Visit our Web Site at <http://www.diamondz.com>

U. S. Patent Nos. 4,987,135; 6,045,072

Danwood reserves the right to improve our products and make changes without notice to the customer. Actual product offered for sale may vary in design, available optional items, required attachments, and safety features.



DZ[®] MODEL 1463B

INDUSTRIAL TUB GRINDER

The 1463B is the standard by which all tub grinders are measured. No other grinder can match its power, at up to 1,650 horsepower, or its versatility. It grinds wood waste, green waste, and tires at unparalleled rates. Since the first one produced in 1988, not one has been worn beyond use and all continue to out-perform all of the competition, producing the industry's highest resale value.

Engine

- ◆ Caterpillar or Detroit
- ◆ 850 to 1,650 Horsepower
- ◆ **Hammermill & Hammers**
- ◆ 53" Hammermill
- ◆ 26 @ 120 lbs. Each (fixed)
- ◆ Industry's Largest Deflector Shield for Safety

Dimensions

- ◆ Length - 45'6" (Transport)
- ◆ Tub Diameter - 14'
- ◆ Width - 11'11" (Transport)
- ◆ Weight - 97,000 lbs. (Approx.)
- ◆ Screen Area - 6,758 sq. inches
- ◆ Conveyor Widths
- ◆ Phase I - 60"
- ◆ Phase II - 36"

Optional Items

- ◆ Hydraulic Rod Puffer
- ◆ Fuel Transfer Pump
- ◆ Magnetic Head Pulley w/Chute
- ◆ Vandalism Lock Package
- ◆ Engine Enclosure
- ◆ Swinging Hammers
- ◆ Tool Box
- ◆ LHM/V on Phase I & II Conveyors
- ◆ Radial Stacking Phase II Conveyor
- ◆ Tire Grinding Wear Parts Package
- ◆ Auxiliary Hydraulic Power
- ◆ Air Compressor
- ◆ Fanatic Fan
- ◆ Air Ride Suspension

Dive

- ◆ Fluid Coupling (Replaces Manual Clutch Assembly) With Powerbands

Radio Remote

- ◆ Standard
- ◆ Self Diagnostic

Capacities

- ◆ Fuel - 850 Gallons
- ◆ Hydraulic - 120 Gallons

Production Rates

- ◆ Stumps & Logs
 - ◆ Brush & Yard Waste
 - ◆ Pallets & Construction Waste
 - ◆ Railroad Ties
 - ◆ Solid Waste
 - ◆ Mixed Passenger & Truck Tires
- Up to 100 Tons or 300 Yards Per Hour
 - Up to 85 Tons or 340 Yards Per Hour
 - Up to 120 Tons or 800 Yards Per Hour
 - Up to 90 Tons or 360 Yards Per Hour
 - Up to 60 Tons or 225 Yards Per Hour
 - Up to 1500 Tires Per Hour

Tri-State Process Equipment

3108 Chamber Dr.

Monroe, NC 28110

1-704-289-1556 1-800-728-1409

New Web-site www.TriProEq.com





Custom Crushing Inc.



18200 Westmoreland Road. • Cornelius, NC 28031 • 704.791.2882 • Fax 987.0150

October 3, 2000

Mr. Dan Hardin
Air Hygienist, Env. Protection
Mecklenburg County Government
700 North Tryon Street
Charlotte, NC. 28202

Dear Mr. Hardin,

The intent of this letter is to provide the required information for the, "Registration of Air Pollution Sources," (Section 2.0202, Mecklenburg County Air Pollution Control Ordinance).

As I mentioned in our previous letter dated, September 15, 2000, our company, Custom Crushing, Inc. has recently purchased a mobile rock-crushing unit. This unit is a 1988 Bohringer-Eagle 1000 crusher, which is rated at 100 tons per hour. We also purchased a 20' conveyor, a 30" X 60' radial stacker and a 36" X 60' conveyor.

The principal officer of our company is Mr. Charlie Ainge. Our business address is 18200 Westmoreland Road, Cornelius, NC. 28031. I am also a partner in the business and possess over 20 years crushing experience with the majority of the last 10 on recycling. Our business was founded for the sole purpose of performing recycling services for landfills, reprocessing facilities, and demolition projects.

The project we are in the process of completing involves the recycling of approximately 10,000 tons of concrete materials at North Mecklenburg Landfill (NML). The projects we are interested in performing will be similar to that of NML. We have recently been selected to provide a proposal to recycle inert debris from a demolition project in Charlotte, NC.

The rock crusher unit is powered by a Cummins 325 horsepower diesel engine. The fuel that powers the unit is #2 diesel and the fuel capacity is 200 gallons. This provides us with approximately 20 hours of operating time. The engine is equipped with a hospital muffler and a four-foot emissions stack. See attached Rock Crusher Flow Diagram.

The following emission calculations for crushed stone processing have been provided for your review:

NML Reprocessing-Actual Emissions

8/28-9/2/00 30 tons/hour x 8 hours/day x 6 days = 1440 tons
1440tons x .00059* = .85 lbs. (Total emissions)

9/4-9/13/00 60 tons/hour x 8 hours/day x 9 days = 4320 tons
4320tons x .00059 = 2.54 lbs. (Total emissions)

9/13-9/19/00 Rock crusher did not operate

*The Emission Factor of .00059 was selected from Table 11.19.2-2 for Tertiary Crushing (Controlled).

Maximum Operating Capacity-Total Emissions

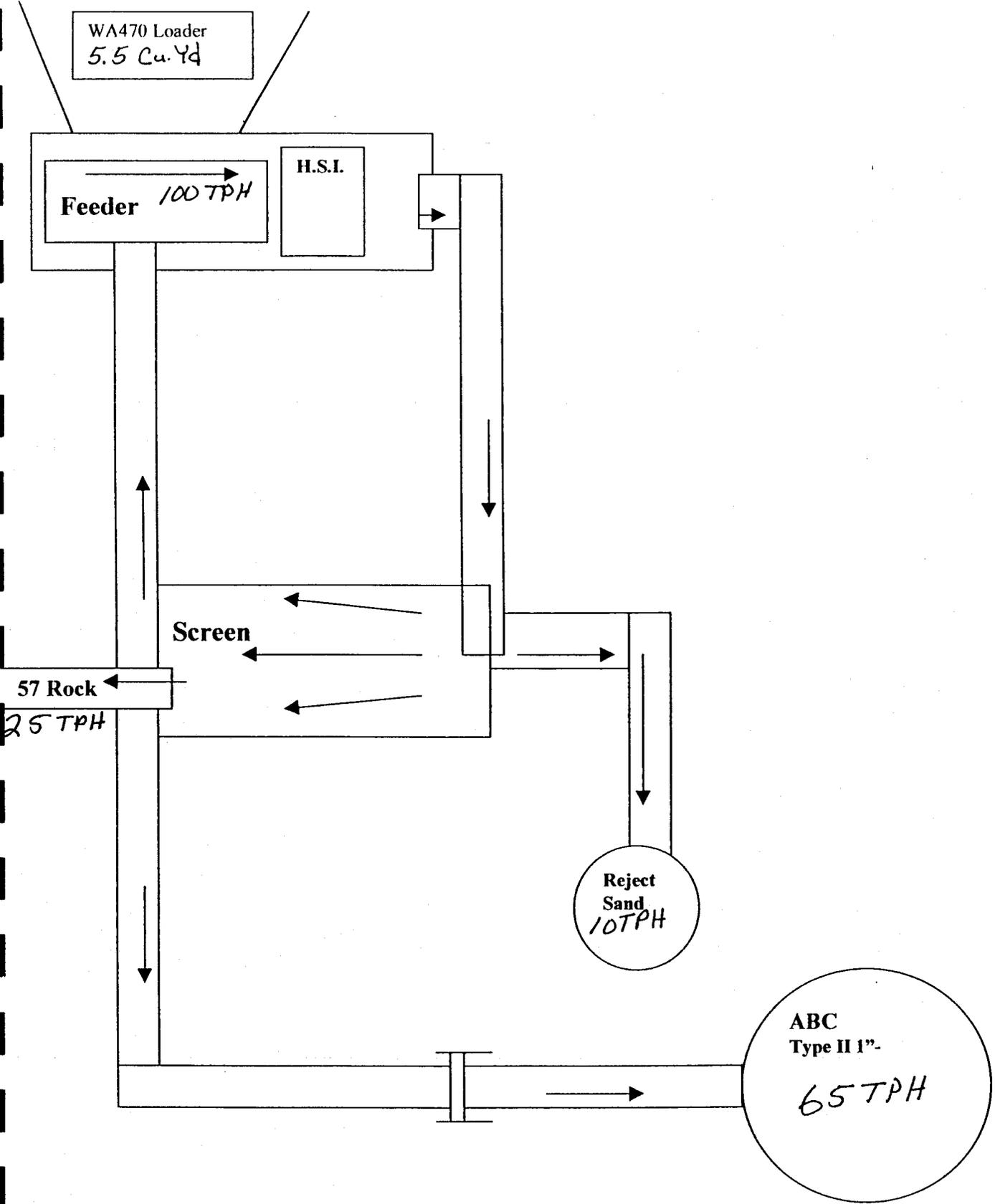
100 tons/hour x 24 hours x 365 days = 876,000 tons
876,000 tons x .00059 = 517 lbs./year

The maximum operating capacity emissions total of 517 lbs./year calculated above is well below the maximum allowable limit of 5 tons/year. The actual emissions total for each of our projects will be calculated to ensure compliance with the Mecklenburg County Air Pollution Control Ordinance.

We would like to work very closely with your office by providing our operating schedule to you on all projects in Mecklenburg County. As we are informed of new projects, we will send you a project description including type of material to be processed, project location, and estimated start and completion dates. We appreciate your assistance and look forward to developing a long lasting relationship with you and the county.

Sincerely,

Larry Eilers



Custom Crushing, Inc.
Flow Diagram

North Carolina Department of Environment
and Natural Resources
Division of Air Quality



Michael F. Easley, Governor
William G. Ross Jr., Secretary
Alan W. Klimek, P.E., Director

June 19, 2001

Mr. Ron Gilkerson
Griffin Brothers Companies
19109 W Catawba Avenue
Suite 118
Cornelius, North Carolina 28031-5613

Subject: Air Quality Permit Determination
Griffin Brothers Companies
Cornelius, North Carolina

Dear Mr. Gilkerson:

This Office is in receipt of your fax received June 11, 2001, in which you requested that this Office determine whether an Air Quality Permit is necessary for the construction and operation of a mobile crusher and associated diesel-fired engine to be operated by Griffin Brothers Companies.

Personnel of the Division of Air Quality of this Office have reviewed your letter relative to applicability to Air Quality Permits, and our determinations are listed as follows:

North Carolina Administrative Code 15A 2Q, which was amended on July 1, 2000, includes Section .0102, "Activities Exempted from Permit Requirement" (one copy is enclosed). Paragraph .0102(c)(2) states in part: "The following activities do not need a permit ...because of size or production rate:.... (B) combustion and heat transfer equipment: (iv) emergency use generators and other internal combustion engines not regulated by rules adopted under Title II of the Federal Clean Air Act, except self-propelled vehicles, that have a rated capacity of no more than...(III)...410 horsepower for diesel-fired or kerosene-fired engines."

Based upon the information submitted in your fax received on June 11, 2001, it appears that the diesel-fired engine has a heat input rating of 325 horsepower which is below the 410 horsepower limit in the above referenced Section of the new rules.

Furthermore, Paragraph .0102(c)(2)(E)(ii) states: "any facility whose actual emissions of particulate, sulfur dioxide, nitrogen oxides, volatile organic compounds, or carbon monoxide before air pollution control devices, i.e., uncontrolled emissions, are each less than five tons per year, whose potential emissions of all hazardous air pollutant are below their lesser quantity cutoff emission rate:"

Based upon the information submitted in your fax received on June 11, 2001, it appears that

Mooresville Regional Office
919 North Main Street, Mooresville, North Carolina 28115
Phone: 704-663-1699 FAX: 704-663-7579 Internet: <http://daq.state.nc.us/>

Mr. Ron Gilkerson
June 19, 2001
Page 2

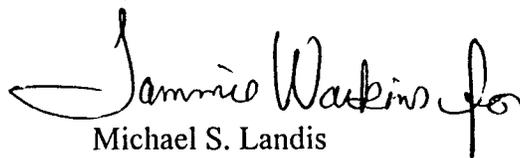
the mobile crusher and associated diesel-fired engine actual PM/SO₂/NO_x/VOC/CO emissions are each less than the five ton per year exemption levels in the above referenced Section of the new rules and that the potential emissions of all hazardous air pollutants are below their lesser quantity cutoff emission rates.

Therefore, this Office has determined that an Air Quality Permit is NOT required for the construction and operation of the mobile crusher and associated diesel-fired engine to be operated by Griffin Brothers Companies. It should be noted that this exemption from the permitting requirement does not exempt Griffin Brothers Companies, from complying with the applicable emission control standards, including 15A NCAC 2D .0521, "Control of Visible Emissions". Furthermore, should you decide to modify the process such that the result is an increase of emissions of any air pollutants including toxic air pollutants, an Air Quality Permit modification may be required and Griffin Brothers Companies should submit a permit application (one copy is enclosed) to this Office 90 days prior to such actions.

It should also be noted that future Regulations including Federal Maximum Achievable Control Technology (MACT) for hazardous air pollutant (HAP) may be promulgated and adopted by the Division which apply to this type of manufacturing facility. If so, Griffin Brothers Companies may be required to apply for an Air Permit modification at that date. The Division will attempt to notify you of any Regulation changes that would require your facility to obtain an Air Permit modification.

This exemption from the permitting requirement is based upon your statement that this source will be operated under the threshold levels as outlined in the Regulation. If you have any questions with reference to the above matter, please do not hesitate to contact Angela Hall or me at (704) 663-1699.

Sincerely,



Michael S. Landis
Regional Supervisor

ADH:adh

c: Central files

Attachments

G:\DEMVAQ\WPDATA\COUNTIES\GASTON\MISC\GRIFFINB.LET

1 (iii) not to violate any applicable emission control standard when operating at
2 maximum design capacity or maximum operating rate, whichever is greater.

3 (c) Because an activity is exempted from being required to have a permit does not mean that the activity is
4 exempted from any applicable requirement or that the owner or operator of the source is exempted from
5 demonstrating compliance with any applicable requirement.

6 (d) Emissions from stationary source activities identified in Paragraph (b) of this Rule shall be included in
7 determining compliance with the toxic air pollutant requirements under 15A NCAC 2D .1100 or 2Q .0700
8 according to 15A NCAC 2Q .0702 (exemptions from air toxic permitting).

9 (e) The owner or operator of a facility or source claiming an exemption under Paragraph (b) of this Rule
10 shall provide the Director documentation upon request that the facility or source is qualified for that
11 exemption.

12
13 *History Note: Filed as a Temporary Adoption Eff. March 8, 1994 for a period of 180 days or until the
14 permanent rule becomes effective, whichever is sooner;*

15 *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(4); 143-215.108;*

16 *Eff. July 1, 1994;*

17 *Amended Eff. April 1, 1999; July 1, 1998; July 1, 1997; November 1, 1996;*

18 *Filed as a Temporary Amendment Eff. December 1, 1999 for a period of 180 days or until
19 the permanent rule becomes effective, whichever is sooner.*

20
21 **.0103 DEFINITIONS**

22 For the purposes of this Subchapter, the definitions in G.S. 143-212 and 143-213 and the following
23 definitions apply:

- 24 (1) "Air Pollutant" means an air pollution agent or combination of such agents, including any physical,
25 chemical, biological, radioactive substance or matter which is emitted into or otherwise enters the
26 ambient air. Water vapor is not considered to be an air pollutant.
- 27 (2) "Allowable emissions" mean the maximum emissions allowed by the applicable rules contained in
28 15A NCAC 2D or by permit conditions if the permit limits emissions to a lesser amount.
- 29 (3) "Alter or change" means to make a modification.
- 30 (4) "Applicable requirements" means:
- 31 (a) any requirement of Section .0500 of this Subchapter;
- 32 (b) any standard or other requirement provided for in the implementation plan approved or
33 promulgated by EPA through rulemaking under Title I of the federal Clean Air Act that
34 implements the relevant requirements of the federal Clean Air Act including any revisions to
35 40 CFR Part 52;

1 (E) miscellaneous:

2 (i) any source whose emissions would not violate any applicable emissions standard and
3 whose potential emissions of particulate, sulfur dioxide, nitrogen oxides, volatile
4 organic compounds, and carbon monoxide before air pollution control devices, i.e.,
5 potential uncontrolled emissions, are each no more than five tons per year and whose
6 potential emissions of hazardous air pollutants are below their lesser quantity cutoff
7 except:

- 8 (I) storage tanks,
9 (II) fuel combustion equipment,
10 (III) space heaters burning waste oil,
11 (IV) generators, excluding emergency generators, or other non-self-propelled
12 internal combustion engines,
13 (V) bulk gasoline plants,
14 (VI) printing, paint spray booths, or other painting or coating operations,
15 (VII) sawmills,
16 (VIII) perchloroethylene dry cleaners, or
17 (IX) electrostatic dry powder coating operations,

18 provided that the total potential emissions of particulate, sulfur dioxide, nitrogen
19 oxides, volatile organic compounds, and carbon monoxide from the facility are each
20 less than 40 tons per year and the total potential emissions of all hazardous air
21 pollutants are below their lesser quantity cutoff emission rates or provided that the
22 facility has an air quality permit;

23 (ii) any facility whose actual emissions of particulate, sulfur dioxide, nitrogen oxides,
24 volatile organic compounds, or carbon monoxide before air pollution control devices,
25 i.e., uncontrolled emissions, are each less than five tons per year, whose potential
26 emissions of all hazardous air pollutants are below their lesser quantity cutoff
27 emission rate:

28 (iii) any source that only emits hazardous air pollutants that are not also a particulate or a
29 volatile organic compound and whose potential emissions of hazardous air pollutants
30 are below their lesser quantity cutoff emission rates; or

31 (iv) any incinerator covered under Subparagraph (c)(4) of 15A NCAC 2D .1201;

32 (F) case-by-case exemption: activities that the applicant demonstrates to the satisfaction of the
33 Director:

- 34 (i) to be negligible in their air quality impacts,
35 (ii) not to have any air pollution control device, and

- 1 (III) The combustion gases from the heater are vented to the ambient air;
- 2 (iv) emergency use generators and other internal combustion engines not regulated by
- 3 rules adopted under Title II of the federal Clean Air Act, except self-propelled
- 4 vehicles, that have a rated capacity of no more than:
- 5 (I) 310 kilowatts (electric) or 460 horsepower for natural gas-fired engines,
- 6 (II) 830 kilowatts (electric) or 1150 horsepower for liquefied petroleum gas-fired
- 7 engines,
- 8 (III) 270 kilowatts (electric) or 410 horsepower for diesel-fired or kerosene-fired
- 9 engines, or
- 10 (IV) 21 kilowatts (electric) or 31 horsepower for gasoline-fired engines;
- 11 (v) portable generators and other portable equipment with internal combustion engines
- 12 not regulated by rules adopted under Title II of the federal Clean Air Act, except self-
- 13 propelled vehicles, that operate at the facility no more than a combined 350 hours for
- 14 any 365-day period provided the generators or engines have a rated capacity of no
- 15 more than 750 kilowatt (electric) or 1100 horsepower each and provided records are
- 16 maintained to verify the hours of operation;
- 17 (vi) peak shaving generators that produce no more than 325,000 kilowatt-hours of
- 18 electrical energy for any 12-month period provided records are maintained to verify
- 19 the energy production on a monthly basis and on a 12-month basis;
- 20 (C) gasoline distribution: bulk gasoline plants with an average daily throughput of less than 4000
- 21 gallons;
- 22 (D) processes:
- 23 (i) graphic arts operations, paint spray booths or other painting or coating operations
- 24 without air pollution control devices (water wash and filters that are an integral part of
- 25 the paint spray booth are not considered air pollution control devices), and solvent
- 26 cleaning operations located at a facility whose facility-wide actual emissions of:
- 27 volatile organic compounds are less than five tons per year
- 28 (Graphic arts operations, coating operations, and solvent cleaning operations are
- 29 defined in 15A NCAC 2Q .0803);
- 30 (ii) sawmills that saw no more than 2,000,000 board feet per year provided only green
- 31 wood is sawed;
- 32 (iii) perchloroethylene dry cleaners that emit less than 13,000 pounds of
- 33 perchloroethylene per year;
- 34 (iv) electrostatic dry powder coating operations with filters or powder recovery systems
- 35 including electrostatic dry powder coating operations equipped with curing ovens with
- 36 a heat input of less than 10,000,000 Btu per hour;

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36

protection, except those units used as or in conjunction with air pollution control equipment;

- (viii) equipment not vented to the outdoor atmosphere with the exception of equipment that emits volatile organic compounds;
- (ix) equipment that does not emit any regulated air pollutants;
- (x) facilities subject only to a requirement under 40 CFR Part 63 (This Subpart does not apply when a control device is used to meet a MACT or GACT emission standard.);
- (xi) sources for which there are no applicable requirements
- (xii) animal operations not required to have control technology under 15A NCAC 2D .1800 (If an animal operation is required to have control technology, it shall be required to have a permit under this Subchapter).

(2) activities exempted because of size or production rate:

(A) storage tanks:

- (i) above-ground storage tanks with a storage capacity of no more than 1100 gallons storing organic liquids with a true vapor pressure of no more than 10.8 pounds per square inch absolute at 70°F; or
- (ii) underground storage tanks with a storage capacity of no more than 2500 gallons storing organic liquids with a true vapor pressure of no more than 10.8 psi absolute at 70°F;

(B) combustion and heat transfer equipment:

- (i) fuel combustion equipment, except for internal combustion engines, firing exclusively kerosene, No. 1 fuel oil, No. 2 fuel oil, equivalent unadulterated fuels, or a mixture of these fuels or one or more of these fuels mixed of with natural gas or liquefied petroleum gas with a heat input of less than:
 - (I) 10 million Btu per hour for which construction, modification, or reconstruction commenced after June 9, 1989; or
 - (II) 30 million Btu per hour for which construction, modification, or reconstruction commenced before June 10, 1989;
- (ii) fuel combustion equipment, except for internal combustion engines, firing exclusively natural gas or liquefied petroleum gas or a mixture of these fuels with a heat input rating less than 65 million Btu per hour;
- (iii) space heaters burning waste oil if:
 - (I) The heater burns only oil that the owner or operator generates or used oil from do-it-yourself oil changers who generate used oil as household wastes;
 - (II) The heater is designed to have a maximum capacity of not more than 500,000 Btu per hour; and

- 1 (F) wastewater treatment processes: industrial wastewater treatment processes or municipal
2 wastewater treatment processes for which there are no applicable requirements;
- 3 (G) gasoline distribution: gasoline service stations or gasoline dispensing facilities;
- 4 (H) dispensing equipment: equipment used solely to dispense diesel fuel, kerosene, lubricants
5 or cooling oils;
- 6 (I) solvent recycling: portable solvent distillation systems used for on-site solvent recycling if:
7 (i) The portable solvent distillation system is not:
8 (I) owned by the faciity, and
9 (II) operated at the facility for more than seven consecutive days; and
10 (ii) The material recycled is
11 recycled at the site of origin;
- 12 (J) processes:
13 (i) small electric motor burn-out ovens with secondary combustion chambers or
14 afterburners;
15 (ii) small electric motor bake-on ovens;
16 (iii) burn-off ovens for paint-line hangers with afterburners;
17 (iv) hosiery knitting machines and associated lint screens, hosiery dryers and associated
18 lint screens, and hosiery dyeing processes where bleach or solvent dyes are not
19 used;
20 (v) blade wood planers planing only green wood;
- 21 (K) solid waste landfills: municipal solid waste landfills (This Part does not apply to flares and
22 other sources of combustion at solid waste landfills.);
- 23 (L) miscellaneous:
24 (i) motor vehicles, aircraft, marine vessels, locomotives, tractors or other self-propelled
25 vehicles with internal combustion engines;
26 (ii) non-self-propelled non-road engines, except generators, regulated by rules adopted
27 under Title II of the federal Clean Air Act;
28 (iii) equipment used for the preparation of food for direct on-site human consumption;
29 (iv) a source whose emissions are regulated only under Section 112(r) or Title VI of the
30 federal Clean Air Act;
31 (v) exit gases from in-line process analyzers;
32 (vi) stacks or vents to prevent escape of sewer gases from domestic waste through
33 plumbing traps;
34 (vii) refrigeration equipment that is consistent with Section 601 through 618 of Title VI
35 (Stratospheric Ozone Protection) of the federal Clean Air Act, 40 CFR Part 82, and
36 any other regulations promulgated by EPA under Title VI for stratospheric ozone

- 1 (iv) use of fire fighting equipment;
- 2 (v) paving parking lots; or
- 3 (vi) replacement of existing equipment with equipment of the same size, type, and
- 4 function that does not result in an increase to the actual or potential emission of
- 5 regulated air pollutants and that does not affect the compliance status, and with
- 6 replacement equipment that fits the description of the existing equipment in the
- 7 permit, including the application, such that the replacement equipment can be
- 8 operated under that permit without any changes in the permit;
- 9 (B) air conditioning or ventilation: comfort air conditioning or comfort ventilating systems which
- 10 do not transport, remove, or exhaust regulated air pollutants to the atmosphere;
- 11 (C) laboratory activities:
- 12 (i) bench-scale, on-site equipment used exclusively for chemical or physical analysis for
- 13 quality control purposes, staff instruction, water or wastewater analyses, or non-
- 14 production environmental compliance assessments;
- 15 (ii) bench-scale experimentation, chemical or physical analyses, training or instruction
- 16 from not-for-profit, non-production educational laboratories;
- 17 (iii) bench-scale experimentation, chemical or physical analyses, training or instruction
- 18 from hospitals or health laboratories pursuant to the determination or diagnoses of
- 19 illness; or
- 20 (iv) research and development laboratory activities that are not required to be permitted
- 21 under Section .0500 of this Subchapter provided the activity produces no commercial
- 22 product or feedstock material;
- 23 (D) storage tanks:
- 24 (i) storage tanks used solely to store fuel oils, kerosene, diesel, crude oil, used motor oil,
- 25 lubricants, cooling oils, natural gas or liquefied petroleum gas;
- 26 (ii) storage tanks used to store gasoline for which there are no applicable requirements
- 27 except Stage I controls under 15A NCAC 2D .0928;
- 28 (iii) storage tanks used solely to store inorganic liquids; or
- 29 (iv) storage tanks or vessels used for the temporary containment of materials resulting
- 30 from an emergency response to an unanticipated release of hazardous materials;
- 31 (E) combustion and heat transfer equipment:
- 32 (i) space heaters burning distillate oil, kerosene, natural gas, or liquefied petroleum gas
- 33 operating by direct heat transfer and used solely for comfort heat;
- 34 (ii) residential wood stoves, heaters, or fireplaces;
- 35 (iii) hot water heaters which are used for domestic purposes only and are not used to
- 36 heat process water;

1 .0102 ACTIVITIES EXEMPTED FROM PERMIT REQUIREMENTS

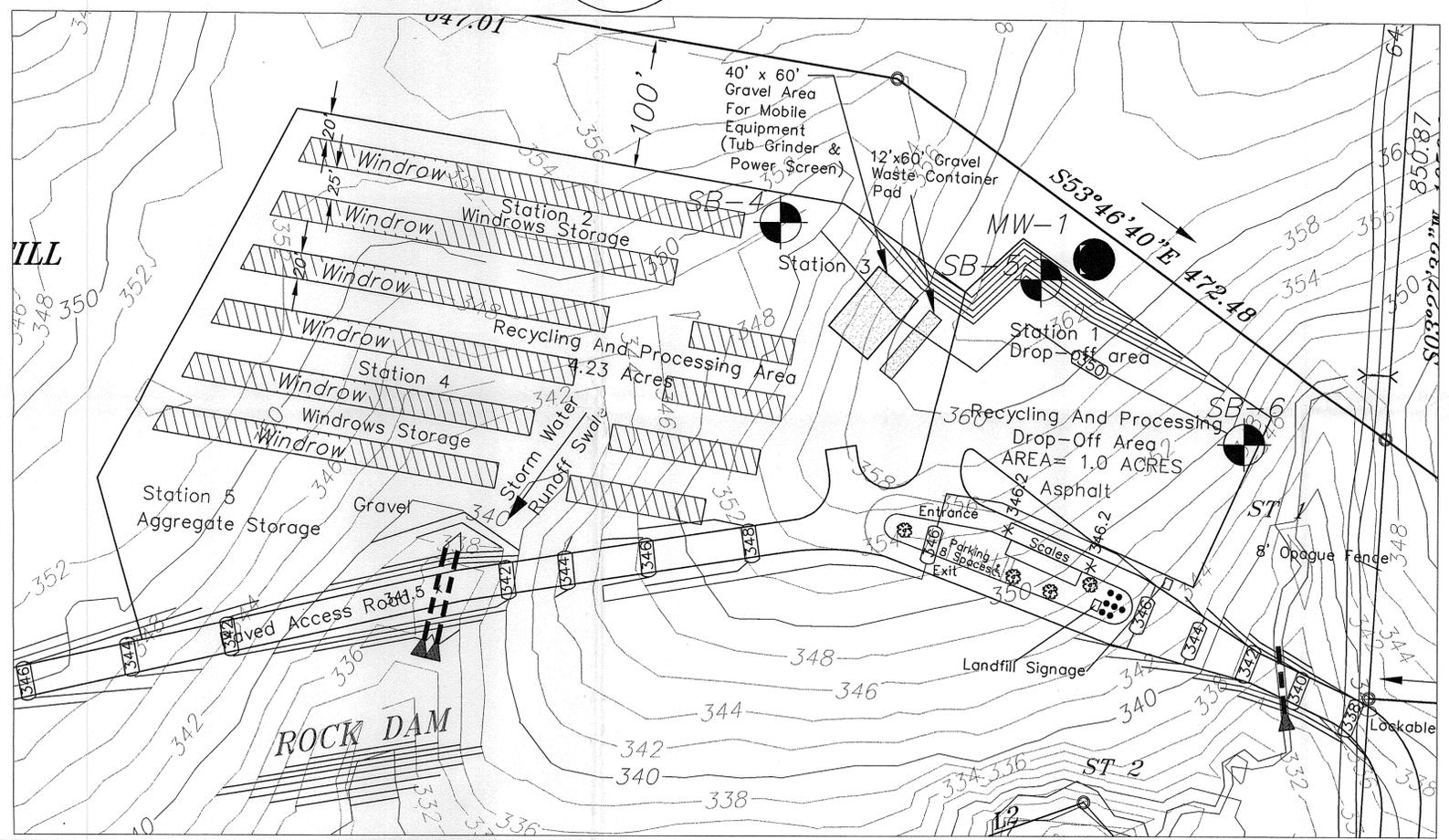
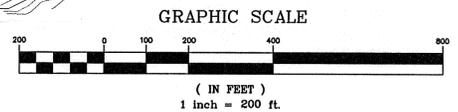
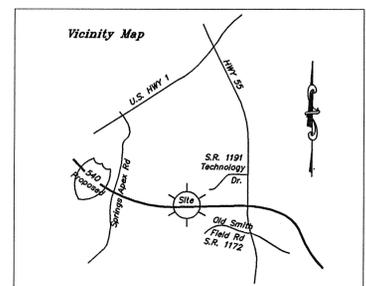
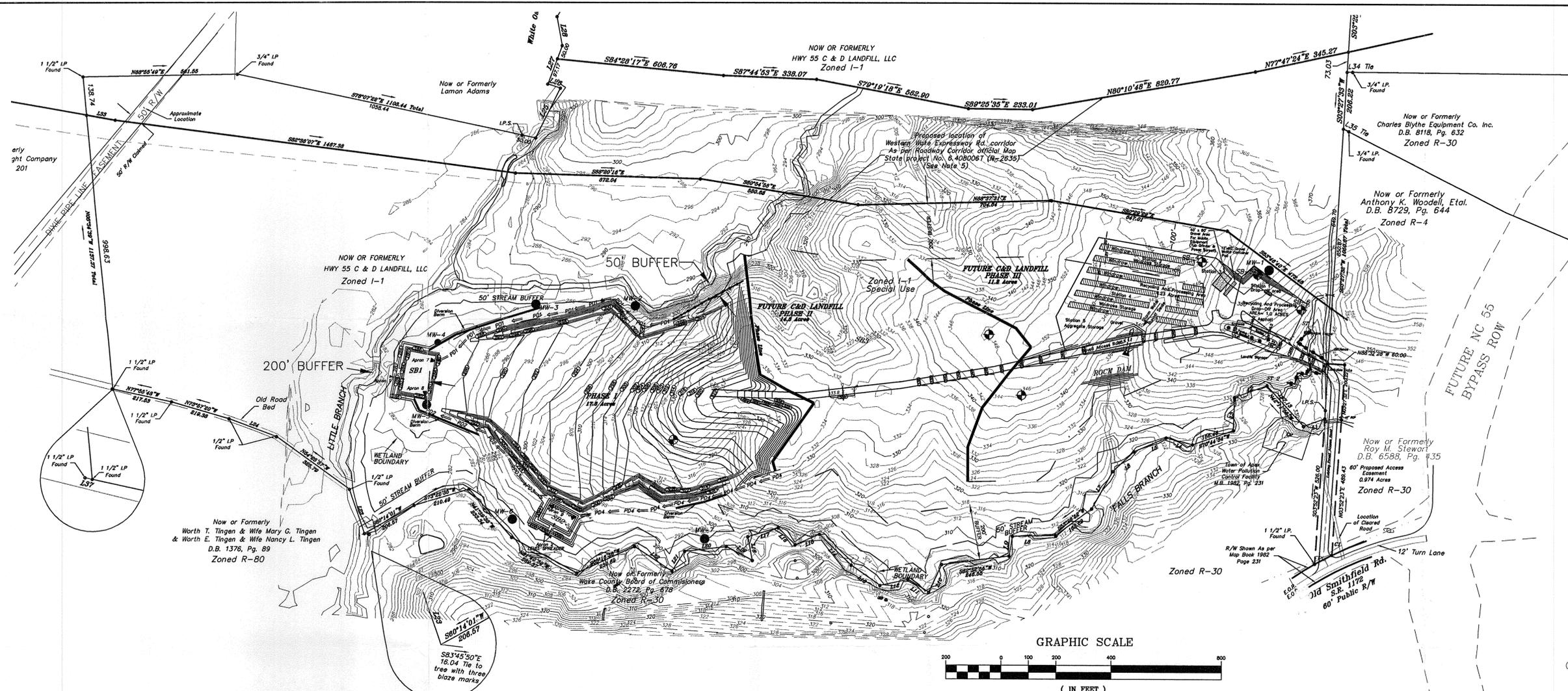
2 (a) This Rule does not apply to facilities required to have a permit under Section .0500 of this
3 Subchapter. This Rule applies only to permits issued under Section .0300 of this Subchapter.

4 (b) If a source is subject to any of the following rules, then the source is not exempted from permit
5 requirements, and the exemptions in Paragraph (b) of this Rule do not apply:

- 6 (1) new source performance standards under 15A NCAC 2D .0524 or 40 CFR Part 60, except:
- 7 (A) 40 CFR Part 60, Subpart Dc, industrial, commercial, and institutional steam generating
8 units;
 - 9 (B) 40 CFR Part 60, Subparts K, Ka, or Kb, volatile organic liquid storage vessels;
 - 10 (C) 40 CFR Part 60, Subpart AAA, new residential wood heaters; or
 - 11 (D) 40 CFR Part 60, Subpart WWW, municipal solid waste landfills;
- 12 (2) national emission standards for hazardous air pollutants under 15A NCAC 2D .1110 or 40 CFR
13 Part 61, except asbestos demolition and renovation activities;
- 14 (3) prevention of significant deterioration under 15A NCAC 2D .0530;
- 15 (4) new source review under 15A NCAC 2D .0531 or .0532;
- 16 (5) sources of volatile organic compounds subject to the requirements of 15A NCAC 2D .0900 that
17 are located in Mecklenburg County in accordance with 15A NCAC 2D .0902;
- 18 (6) sources required to apply maximum achievable control technology (MACT) for hazardous air
19 pollutants under 15A NCAC 2D .1109, .1111, .1112, or 40 CFR Part 63 that are required to have a
20 permit under Section .0500 of this Subchapter;
- 21 (7) sources at facilities subject to 15A NCAC 2D .1100. (If a source does not emit a toxic air pollutant
22 for which the facility at which it is located has been modeled, it shall be exempted from needing a
23 permit if it qualifies for one of the exemptions in Paragraph (b) of this Rule).

24 (c) The following activities do not need a permit or permit modification under Section .0300 of this
25 Subchapter; however, the Director may require the owner or operator of these activities to register them
26 under 15A NCAC 2D .0200:

- 27 (1) activities exempted because of category:
- 28 (A) maintenance, upkeep, and replacement:
 - 29 (i) maintenance, structural changes, or repairs which do not change the capacity of such
30 process, fuel-burning, refuse-burning, or control equipment, and do not involve any
31 change in quality or nature or increase in quantity of emission of regulated air
32 pollutants;
 - 33 (ii) housekeeping activities or building maintenance procedures, including painting
34 buildings, resurfacing floors, roof repair, washing, portable vacuum cleaners,
35 sweeping, use and associated storage of janitorial products, or insulation removal;
 - 36 (iii) use of office supplies, supplies to maintain copying equipment, or blueprint machines;



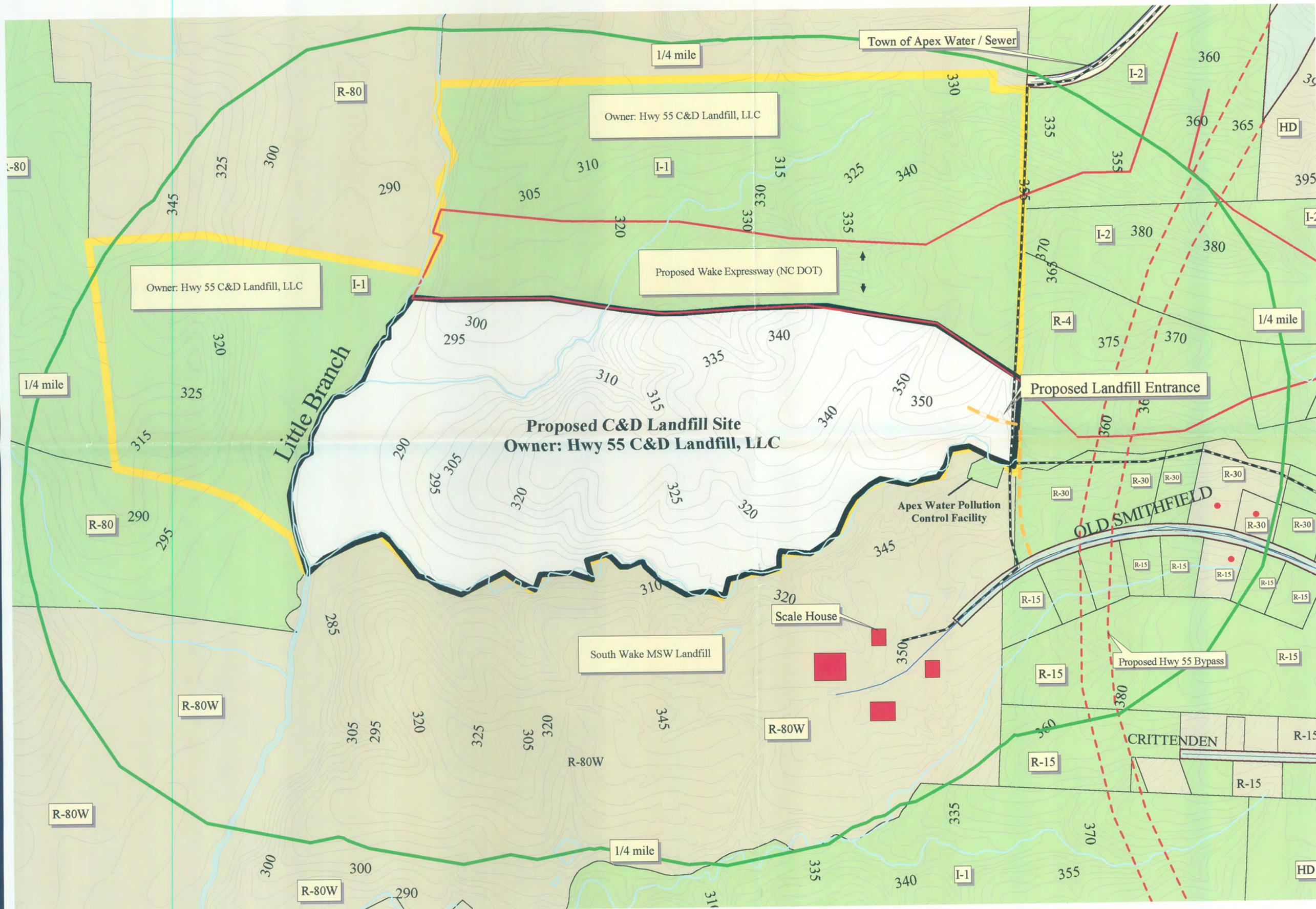
- ⊙ MW-18 = Monitoring Well Location
- ⊙ SB-3 = Soil Boring Location
- = Wetland Boundary
- = 50' Stream Buffer
- = Total Landfill Boundary
- = Usable Landfill Boundary

REPROCESSING & ENTRANCE AREA
SCALE: 1" = 60'



PATTERSON BREWER & Associates Engineering * Surveying * Planning Post Office Box 1387 * Mooresville, NC 28115 704/662-0100 * Fax 704/662-0101	JOB NAME: HWY 55 C&D LANDFILL AND RECYCLING CENTER REPROCESSING AREA SITE PLAN	
	LOCATION: WAKE COUNTY, NC	DRAWN BY: TPD CHECKED BY: DEB
	OWNERS: HWY 55 C & D LANDFILL, LLC 19109-118 WEST CATAWBA AVENUE CORNELIUS, NC 28031-5613	SCALE: 1" = 200' DATE OF FIELD SURVEY: 1/1/00 DATE OF MAP: 1/1/00
		JOB NUMBER: MO1117 SHEET NUMBER: C 1

Proposed Hwy 55 C & D Landfill and Recycling Center 1/4 Mile Radius Survey Map



Map Legend

- Apex / Holly Springs Utilities**
- Sewer
 - Water
 - Hydrology
 - Topo
 - Proposed Expressway Corridor
 - Proposed Hwy 55 Bypass
 - Houses
 - Buildings
 - Developed Parcels
 - Undeveloped Parcels
 - Tax Parcel Boundaries
 - Proposed C&D Landfill Site
 - Hwy 55 C&D Landfill, LLC owned land
- Zoning Codes**
- R80 & R-80W (critical watershed) - 50 du/acre
 - R-40 & R-40W (critical watershed) - 1 du/acre
 - R-30 - 1.45 du/acre
 - R-20 - 2.17 du/acre
 - R-15 - 2.90 du/acre
 - R-10 - 4.35 du/acre
 - R-5 - 8.7 du/acre
 - HD - Highway District (1.45 du/acre)
 - OI - Office & Institutional
 - GB - General Business District
 - HC - Heavy Commercial District
 - I1 - Industrial District
 - I2 - Industrial District 2
 - RA - Research Applications District

Note: No Schools, Airports, or private drinking wells within a 1/4 mile radius of proposed landfill site.

Wake County does not distribute FEMA 100yr Floodplain data in a GIS format to the public.

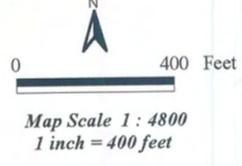
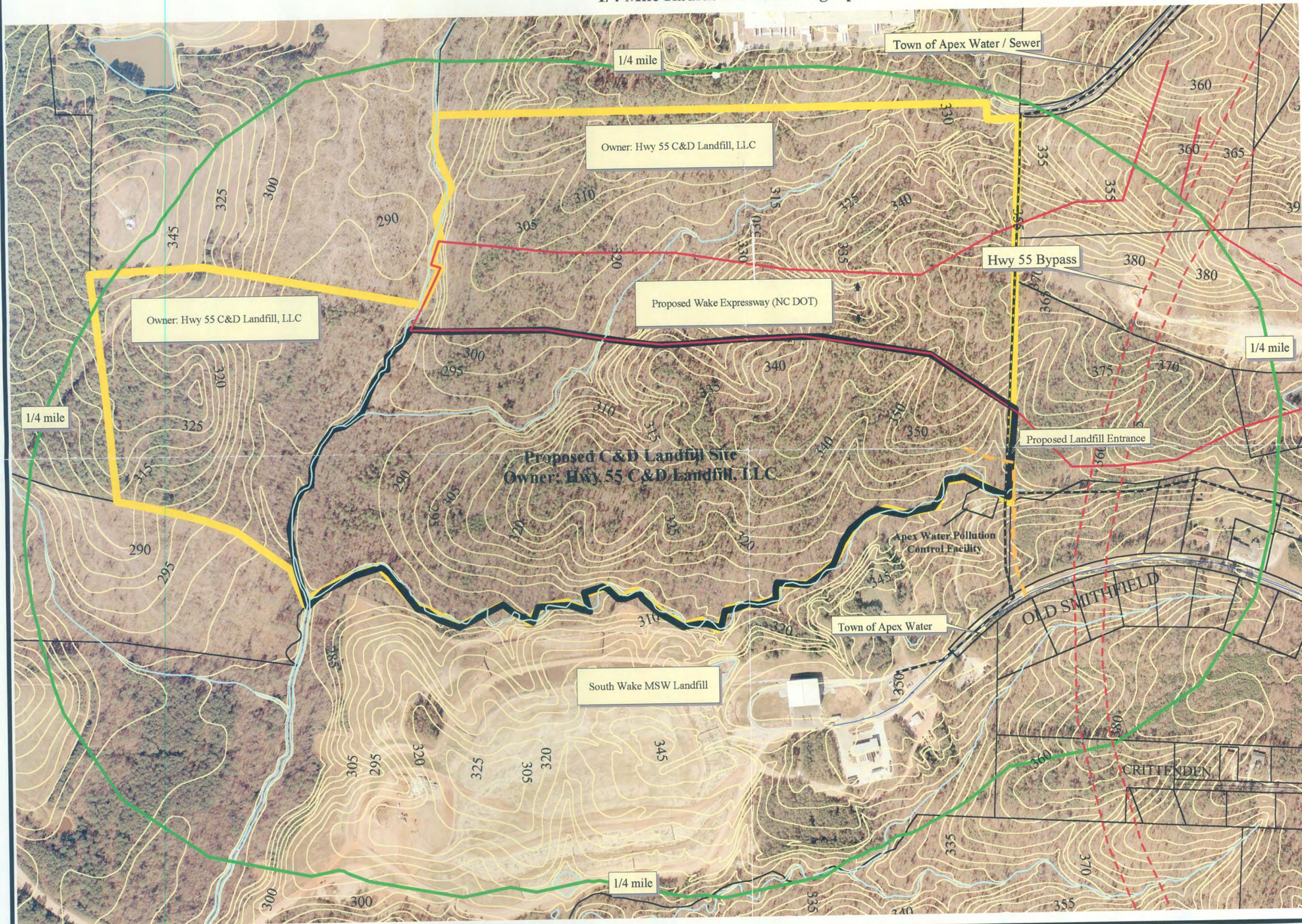


Figure 4

Proposed Hwy 55 C & D Landfill and Recycling Center 1/4 Mile Radius Aerial Photograph

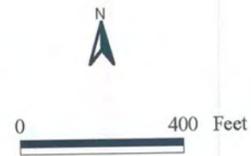


Map Legend

- Apex / Holly Springs Utilities**
- Sewer
 - Water
 - Hydrology
 - Topo
 - Proposed Expressway Corridor
 - Proposed Hwy 55 Bypass
 - Tax Parcel Boundaries
 - Proposed C&D Landfill Site
 - Hwy 55 C&D Landfill, LLC owned land

Note: No Schools, Airports, or private drinking wells within a 1/4 mile radius of proposed landfill site.

Wake County does not distribute FEMA 100yr Floodplain data in a GIS format to the public.



Map Scale 1 : 4800
1 inch = 400 feet

Figure 3

