Permit No.	Scan Date	DIN
5503-CDLF-1999	**April 11, 2016**	**25940**

RECEIVED
March 11, 2016
Solid Waste Section
Asheville Regional Office

AMENDMENT TO PERMIT

LINCOLN COUNTY CONSTRUCTION AND DEMOLITION

Phase 3

Permit No.: 5503-CDLF-1999

Site Location: 5291 Crouse Road
Crouse, NC 28033

Applicant: County of Lincoln

Applicant's Address: 5291 Crouse Road
Crouse, NC 28033

APPROVED DOCUMENT
Division of Waste Management
Solid Waste Section
Date September 21, 2016 By

Digitally signed by Larry Frost
DN: cn=Larry Frost, o=Division of Waste Management, ou=Solid Waste Section, email=larry.frost@ncdenr.gov, c=US
Date: 2016.09.21 09:10:00 -04'00'

MESCO Project Number
G16062

NORTH CAROLINA PROFESSIONAL SEAL 31020 ENGINEER STEVEN R. GANDY

3/11/16

March 2016

Submitted by the Garner Office of:

Municipal Services — P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393
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LICENSE NUMBER: C-0281

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SECTION 1.0

ENGINEERING PLAN

ANALYSIS OF THE FACILITY DESIGN AND LANDFILL CAPACITY

The existing C&DLF unit is located a minimum of 50' from the property lines, 500' from existing wells, and 50' from any stream, river or lake, and the post settlement subbase elevation was prepared a minimum of four feet above the seasonal high groundwater table and bedrock.

The County will cap their landfill within 180 days after the final receipt of solid waste. The cap system will consist of 12 inches bridging material (temporary cover), 18 inches of soil liner with a permeability no greater than 1.0×10^{-5} cm/sec, drainage layer, 24 inches of protective/erosive layer. The cap contains gas venting system consisting of a series of washed stone trenches below the soil liner that will be vented through pipes with membrane boots that penetrate the cap. The cap system will also include the proper seeding and mulching of the erosive layer and other erosion control devices.

Landfill Capacity

The Life Expectancy calculations were calculated for Phase 3 of development (vertical expansion). The C&DLF footprint is approximately 10.5 acres in size.

LIFE EXPECTANCY CALCULATIONS PHASE 3

Given:

Life expectancy is based on average air space used from FY 2011-2015, which was 20,460 cubic yards.

Life expectancy based on using 20,460 cubic yards the first year and the waste stream growing at a 2.1% rate which is the same annual rate the population had grown between 1990 and 2000.

Phase 3 = 97,999 cubic yards available = 4.79 years

Soil requirements for daily cover and final cap for Phase 3

Soil needed for Daily Cover (10:1,trash:soil)	=	8,909 cubic yards
Soil needed for Closure (10.5 acres)	=	76,230 cubic yards
Overall Soil Requirements (soil needed for closure, and daily cover)	=	85,139 cubic yards

Note: All air space and soil calculation were determined by Autodesk Land Development computer program.

SECTION 2.0

OPERATION PLAN

2.1 Introduction

Lincoln County will continue to operate a Construction and Demolition Landfill (C&DLF) within the permitted boundaries.

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

The County will monitor for explosive gases at landfill structures and the perimeter of the landfill. Landfill gas will be monitored in accordance with the Facility's approved Landfill Gas Monitoring Plan.

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

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

2. Within seven days of detection, place in the operating record the methane gas levels detected and a description of the steps taken to protect human health; and

3. Within 60 days of detection, implement a remediation plan for the methane gas releases, place a copy of the plan in the operating record, and notify the Division that the plan has been implemented. The plan will describe the nature and extent of the problem and the proposed remedy.

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

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

(1) Inspection records, waste determination records, and training procedures;

(2) Amounts by weight of solid waste received at the landfill;

(3) Gas monitoring results and any remediation plans;

(4) Any demonstration, certification, findings, monitoring, testing or analytical data required for surface and groundwater monitoring;

(5) Any monitoring, testing or analytical data required for closure or post-closure;

(6) Any cost estimates and financial assurance documentation.

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

Groundwater and surface water will be monitored in accordance with Facility's approved Water Quality Monitoring Plan. Ground and surface water will be sampled and analyzed according to 40 CFR, Part 258, Appendix I detection monitoring requirements. The monitoring frequency for all Appendix I detection monitoring constituents will be at least semiannual during the life of the facility (including closure) and the post-closure period. A minimum of four independent samples from each well (background and downgradient) will be collected and analyzed for the Appendix I constituents during the first semiannual sampling event. At least one sample from each well (background and downgradient) will be collected and analyzed during subsequent semiannual sampling events.

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

2.2 Operational Requirements

1. Waste Acceptance and Disposal Requirements

    a. The C&DLF will only accept those solid wastes which it is permitted to receive. The County will notify the Division within 24 hours of attempted disposal of any waste the landfill is not permitted to receive.

    b. Asbestos waste will be managed in accordance with 40 CFR 61. The regulated asbestos waste will be covered immediately with soil in a manner that will not cause airborne conditions and will be disposed of separate and apart from other solid waste, as:

        i. in a defined isolated area within the foot print of the landfill, or

        ii. in an area not contiguous with other disposal areas. Separate areas will be designated so that asbestos will not be exposed by future land-disturbing activities.

    c. Wastewater treatment sludges may be accepted, with the approval of the Division, either as a soil conditioner incorporated into or applied onto vegetative growth layer. The wastewater treatment sludge will neither be applied at greater than agronomic rates nor to a depth greater than six inches.

    d. Inert debris from any source that is defined as solid waste which consists solely of material that is virtually inert, such as brick, concrete, rock and clean soil will be accepted, upon approval;

    e. Construction materials, that could or would be part of any construction, remodeling, repair or demolition of pavement, buildings or other structures, from solid waste that is generated by mobile or modular home manufacturers and asphalt shingle manufacturers in the County. The waste must be source separated at the manufacturing site and must exclude municipal solid waste,

hazardous wastes, and other wastes prohibited from disposal in a C&DLF. It must be transported to the County C&DLF in a shipment or container that consists solely of the separated waste to be disposed of. The County C&DLF will not except this waste if it has not been separated or transported as specified.

f. Wooden pallets generated only from C&D activities.

g. The following wastes are prohibited from disposal at the C&DLF:

h. Containers such as tubes, drums, barrels, tanks, cans, and bottles unless they are empty and perforated to ensure that no liquid, hazardous or municipal solid waste is contained therein.

ii. Garbage as defined in G.S. 130A-290(a)(7).

iii. Hazardous waste as defined in G.S. 130A-290(a)(8), to also include hazardous waste from conditionally exempt small quantity generators.

iv. Industrial solid waste unless a demonstration has been made and approved by the Division that the landfill meets the requirements of Rule .0503(2)(d)(ii)(A).

v. Liquid wastes.

vi. Medical waste as defined in G.S. 130A-290(a)(18)

vii. Municipal solid waste as defined in G.S. 130A-290(a)(18a)

viii. Polychlorinated biphenyls (PCB) wastes as defined in 40 CFR 761

ix. Radioactive waste as defined in G.S. 104E-5(14)

x. Septage as defined in G.S. 130A-290(a)(32)

xi. Sludge as defined in G.S. 130A-290(a)(34)

xii. Special waste as defined in G.S. 130A-290(a)(40)

xiii. White goods as defined in G.S. 130A-290(a)(44)

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

xv. Wooden Pallets generated by means other than C&D activities

i. The following waste will not be received if separate from C&DLF waste: lamps or light bulbs including but not limited to halogen, incandescent, neon or fluorescent; lighting ballast or fixtures: thermostats and light switches; batteries including but not limited to those from exit and emergency lights and smoke detectors; lead pipes; lead roof flashing; transformers; capacitors; and copper chrome arsenate (CCA) and creosote treated woods.

j. Waste accepted for disposal in the C&DLF unit shall be readily identifiable as C&D waste and must not have been shredded, pulverized, or processed to such an extent that the composition of the original waste cannot be readily ascertained except in the case where the waste has come from a permitted recycling and reuse facility.

k. The County will not knowingly dispose any type or form of C&D waste that is generated within the boundaries of a unit of local government that by ordinance:

i. Prohibits generators or collectors of C&D waste from disposing that type or form of C&D waste.

ii. Requires generators or collectors of C&D waste to recycle that type or form of C&D waste.

l. Any recyclables received on site including yard wastes, white goods, used tires, and etc., shall be managed and stockpiled in accordance with established best management practices (BMP's), in designated areas within the permitted landfill property.

2. Cover material requirements.

a. Except as in Subparagraph (c), the County must cover the solid waste with six inches of earthen material when the waste disposal area exceeds one-half acre and at least once every seven (7) days. Cover must be placed at more frequent intervals if necessary to control disease vectors, fires, odors, blowing litter and scavenging. A notation of the date and time of the cover placement must be recorded in the operating record, as specified in Paragraph 10 in this section.

b. Except as in Subparagraph (c), areas which will not have additional wastes placed on them for three months or more, but where final termination of disposal operations has not occurred, will be covered and stabilized with vegetative ground cover or other stabilizing material.

c. Alternative material or an alternative thickness of cover may be used, if the County demonstrates that the alternative material or thickness controls disease vectors, fires, odors, blowing litter, and scavenging without presenting a threat to human health and the environment, and is approved by the Division.

3. Spreading and compacting requirements.

a. C&DLF units will restrict solid waste to the smallest area feasible.

b. Solid waste will be compacted as densely as practical into cells.

c. Fencing and/or diking will be provided within the area to confine solid waste which is subject to be blown by the wind. At the conclusion of each operating day, all windblown material resulting from the operation will be collected and disposed of by the County.

4. Disease vector control

a. The County will prevent or control on-site populations of disease vectors using techniques appropriate for protection of human health and the environment.

b. "Disease vectors" means any rodents, flies, mosquitoes, or other animals, including insects, capable of transmitting disease to humans.

5. Air Criteria and Fire Control

a. The County will ensure that the units do not violate any applicable requirements developed under a State Implementation Plan (SIP) approved or promulgated by the U.S. EPA Administrator pursuant to Section 110 of the Clean Air Act, as amended.

b. Open burning of solid waste, except for the approved burning of land clearing debris generated on-site or debris from emergency clean-up operations, is prohibited at all C&DLF facilities. Prior to any burning a request will be sent to the Division for review. The Division will determine the burning to be approved if it is one of two types of burning previously referenced. A notation of the date of approval and the name of the Division personnel who approved the burning must be included in the operating record.

c. Equipment will be provided to control accidental fires. In the event of an emergency the operator(s) will call 911. The site is located in the La Grange Fire District and will be served by their volunteer fire department. Fire extinguishers are located in all buildings and on all equipment. Dirt piles are also on site to use in emergency situations.

d. Fires and explosions that occur at the C&DLF require verbal notice to the Division within 24 hours and written notification within 15 days. Written notification must include the suspected cause of fire or explosion, the response taken to manage the incident, and the action(s) to be taken to prevent the future occurrence of fire or explosion.

6. Access and safety requirements

a. The C&DLF will be adequately secured by means of gates, chains, beams, fences and other security measures approved by the Division of Solid Waste Management to prevent unauthorized entry.

b. An attendant will be on duty at the site at all times while it is open for public use to ensure compliance with operational requirements.

c. The access road to the site and monitoring locations will be of all-weather construction and maintained in good condition.

d. Dust control measures will be implemented when necessary. If dust problems should arise, the County will use any reasonable means necessary to reduce it. At a minimum the County will spray water on necessary areas.

e. Signs providing information on tipping or disposal procedures, the hours during which the site is open for pubic use, the permit number and other pertinent information will be posted at the site entrance.

f. Signs will be posted stating that no hazardous or liquid waste can be received.

g. Traffic signs or markers will be provided as necessary to promote an orderly traffic pattern to and from the discharge area and to maintain efficient operating conditions.

h. The removal of solid waste from the C&DLF will be prohibited unless the County has included in it's operational plan a recycling program which has been approved by the Division. The general public is prohibited from removal activities on the working face.

7. Erosion and Sedimentation Control Requirements

a. Adequate sediment control measures (structures or devices), will be utilized to prevent silt from leaving the landfill.

b. Adequate sediment control measures (structures or devices), will be utilized to prevent excessive on-site erosion.

c. Provisions for a vegetative ground cover sufficient to restrain erosion will be accomplished within **30 working days** or **120 calendar days** upon completion of any phase of landfill development.

8. Drainage Control and Water Protection Requirements

a. Surface water will be diverted from the operational area and will not be impounded over waste.

b. Solid waste will not be disposed of in water.

c. Leachate will be contained on site and properly treated prior to discharge.

d. The landfill will not:

(i) Cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act, including, but not limited to, the National Pollutant Discharge Elimination System (NPDES) requirements pursuant to Section 402.

(ii) Cause the discharge of a nonpoint source of pollution to waters of the United States, including wetlands, that violates any requirements of an area-wide or state-wide water quality management plan that has been approved under Section 208 or 319 of the Clean Water Act, as amended.

e. The County will inspect the exterior slopes of the landfill at least weekly to determine if there are any breakouts of leachate in the slopes. If any are discovered, they will be contained immediately to assure that they will not leave the site. The containment can consist but not be limited to an earthen berm, sand bags, erosion control logs and/or anything that will contain the leachate on the slope.

The repair of the breakout will require excavating into the cover soil on the slope down to the waste and into the waste to determine what is causing the leachate to come to the surface. Normally it is another layer of soil that has been used as cover and the leachate is flowing along that layer to the slope and surfacing on the slope. The lower layer of cover needs to be removed at the breakout so that the leachate that is flowing along this cover has a point where it will go vertically into the landfill instead of flowing along the soil boundary that was once either daily cover or an intermediate cover.

Once this soil layer has been breached, the excavation can be filed back with stone, clean waste or any material, other than soil, that will allow the leachate to flow vertically instead of horizontally. Once the excavation has been filled with this material, the surface can be cover with soil so that surface water does not intrude into the excavation. Vegetative cover will be reestablished over the excavated area.

9. Survey for Compliance

Within 60 days of a permittee's receipt of the Division's written request, the permittee will have a survey conducted of active and/or closed portions of the unit(s) at the facility in order to determine whether operations are being conducted in accordance with the approved design and operation plans. The permittee must report the results of the

survey, including a map produced by the survey, to the Division within 90 days of receipt of the Division's request.

a. A survey shall be required by the Division:

(i) If there is reason to believe that the operations are being conducted in a manner that deviates from the plan listed in the effective permit, or

(ii) As verification that operations are being conducted in accordance with the plan listed in the effective permit.

b. Any survey pursuant to this Paragraph must be performed by a professional land surveyor duly authorized under North Carolina law to conduct such activities.

10. Record keeping Requirements

a. The County will record and retain at the facility, or an alternative location near the facility approved by the Division, in an operating record the following information as it becomes available.

(i) Inspection records, waste determination records, and training procedures;

(ii) Amounts by weight of solid waste received at the landfill to include source of generation.

(iii) Any demonstration, certification, findings, monitoring, testing or analytical data required for surface, groundwater and gas monitoring;

(iv) Any monitoring, testing, or analytical data required for closure or post-closure;

(v) Any cost estimates and financial assurance documentation;

(vi) Notation of date and time of placement of cover material; and,

(vii) All audit records, compliance records and inspection reports.

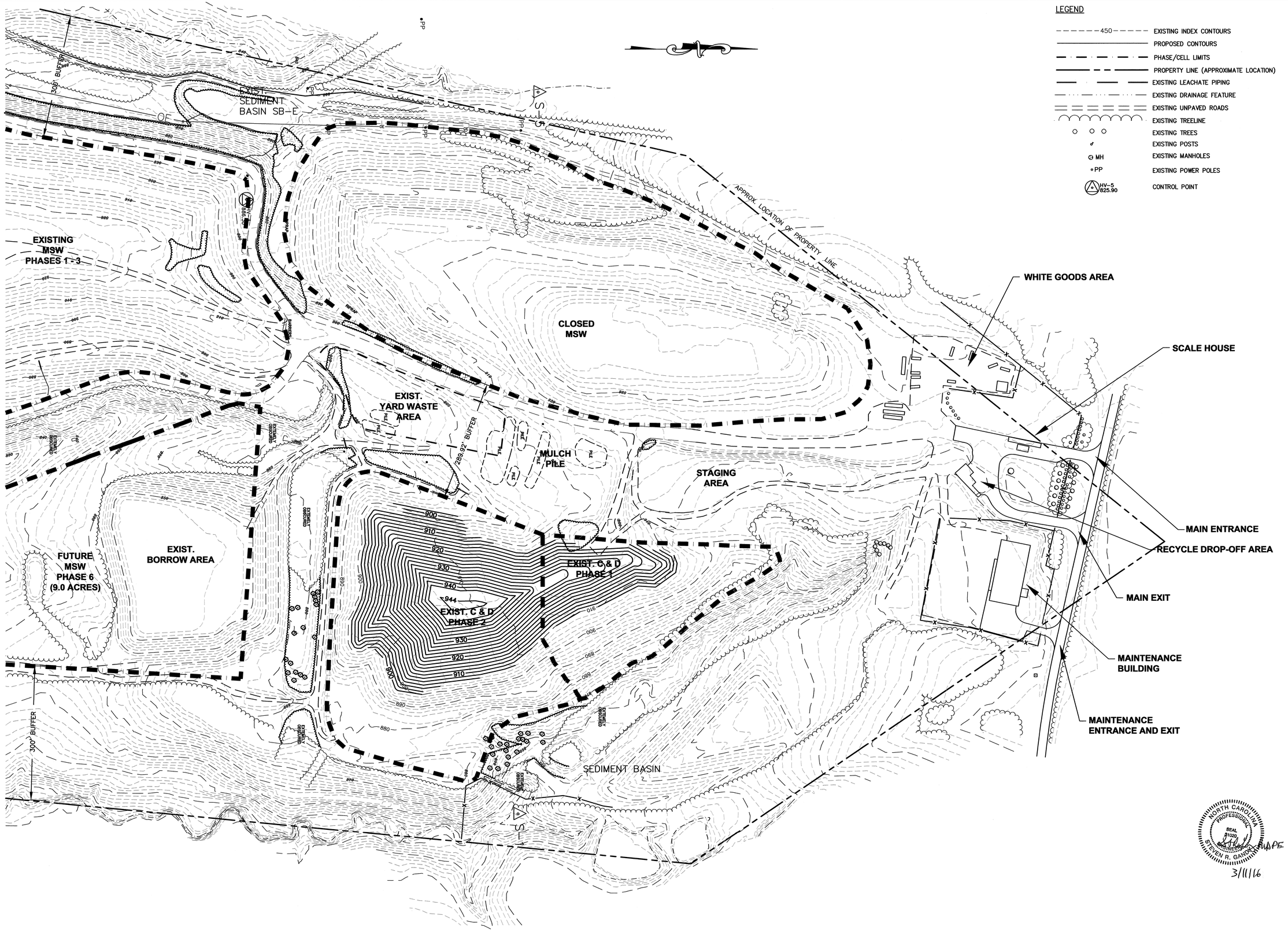
(viii) Notation of approval date and the name of the Division personnel who approved the type of the open burning; and

(ix) Approved monitoring plan and corrective action plans.

b. All information contained in the operating record will be furnished to the Division of Solid Waste Management according to the permit or upon request, or be made available for inspection by the Division.

c. The operating record will also include a copy of the approved operation plan and all required permits.

2.3 <u>Operation Drawing-Five year Fill Plan</u>



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P.O. BOX 349 BOONE, N.C. 28607 (828) 262-1767
LICENSE NUMBER: C-0281

CONSTRUCTION AND DEMOLITION LANDFILL FACILITY
LINCOLN COUNTY
CROUSE, NORTH CAROLINA

DATE	BY	REV.	DESCRIPTION

OPERATION PLAN
FIVE YEAR FILL PLAN

SCALE:	1" = 100'
DATE:	3/4/2016
DRWN. BY:	L. CRAWFORD
CHKD. BY:	S. GANDY
PROJECT NUMBER	G16062
DRAWING NO.	P1
SHEET NO.	1 OF 1