

Permit No.	Date	DIN
43-04	March 24, 2014	20896

March 24, 2014

Mr. Edward Mussler, III, PE  
Permitting Branch Supervisor  
Solid Waste Section Permitting Branch  
North Carolina Department of Environment and Natural Resources  
1646 Mail Service Center  
Raleigh North Carolina 27699-1646

Re: Application for 10-Year Permit for Sanitary Landfill  
Phase 3A and 3B Area  
Permit No. 4304-TIRELF-1992

Dear Ed:

As you are aware, Central Carolina Holdings, LLC (CCT) has been issued a Permit to Operate for the Scrap Tire Disposal Monofill Facility, PHASE III CELL 3A AND 3B which expires July 26, 2016. The purpose of this application is to request a 10-Year Permit for Sanitary Landfill for the currently permitted and operating Phase 3A and 3B area of the Central Carolina Tire Monofill Landfill. This application is prepared in accordance with North Carolina Solid Waste Management Rules 15A NCAC 13B .0206 and 15A NCAC 13B .1108(a) which states: "Scrap tire disposal site shall be permitted and operated in accordance with the provisions of Rules .0503, .0504, and .0505". This submittal includes three copies of:

- Construction Plan Drawings in accordance with 15A NCAC 13B.0504(2)(a)-(g);
- Construction Plan Written Report in accordance with 15A NCAC 13B.0504(2)(h);
- Operations Plan in accordance with 15A NCAC 13B .0505;
- Closure Plan in accordance with 15A NCAC 13B .0206
- Post-closure Plan in accordance with 15A NCAC 13B .0206;
- Water Quality Monitoring Plan in accordance with 15A NCAC 13B .0601 and .0602.

Following is a summary of the key permit amendments that have been issued for the site:

- Permit # 43-04 issued March 1992 approved disposal operations in Phase 1.
- Modification to Permit # 43-04 issued February 1996 approved disposal operations in Phase 2.
- Amendment No 4 issued July 30, 2002 approved Permit to Operate for Continuation of Phase 2.

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- Amendment No 5 issued April 14, 2005 approved Permit to Construct Phase 3 Cell 3A.
- Amendment No 6 issued July 26, 2006 approved Permit to Operate Phase 3 Cell 3A.
- Certification that suitable final cover was applied to the entire Phase 1 and Phase 2 facility area was submitted to DENR August 18, 2010.
- Amendment No 7 issued August 29, 2011 approved Permit to Construct Phase 3 Cell 3B
- Amendment No 8 issued November 17, 2011 approved Permit to Operate Phase 3 Cell 3A and Partially Completed Area in Cell 3B.
- Amendment No 9 issued March 4, 2014 approved Permit to Operate Phase 3 Cells 3A and 3B.

Please invoice Central Carolina Holdings, LLC for any Permit Application Fees required.

If you have any questions or need additional information, please do not hesitate to call.

Sincerely,

GARRETT & MOORE, INC.



Vance F. Moore, P.E.  
President

# APPLICATION FOR 10-YEAR PERMIT

**CENTRAL CAROLINA TIRE MONOFILL  
PHASE 3A AND 3B AREA**

**PERMIT NO. 43-04**

**March 2014**

**Prepared for:**

**CENTRAL CAROLINA HOLDINGS, LLC  
1616 McKoy Town Road  
Cameron, North Carolina 28326**



**NC FIRM: C-2910**





# **CONSTRUCTION PLAN WRITTEN REPORT**

**CENTRAL CAROLINA TIRE MONOFILL  
PHASE 3A AND 3B**

**PERMIT NO. 43-04**

**MARCH 2014**

**Prepared for:**

**Central Carolina Holdings  
1616 McKoy Town Road  
Cameron, North Carolina 28326**





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## **1.0 Purpose and Background**

This report is prepared in accordance with North Carolina Solid Waste Management Rules 15A NCAC 13B .0504(2)(h).

### **1.1 Legal Description**

This section is prepared in accordance with North Carolina Solid Waste Management Rules 15A NCAC 13B .0504(2)(h)(i) which states: "A copy of the deed or other legal description of the landfill site that would be sufficient as a description in an instrument of conveyance and property owner's name".

The facility boundary is approximately 382-acres. A copy of the Deed survey is located at the end of this section.

### **1.2 Individual Responsible**

This section is prepared in accordance with North Carolina Solid Waste Management Rules 15A NCAC 13B .0504(2)(h)(ii) which states: "Name of individual responsible for operation and maintenance of the site."

The individual responsible for operations and maintenance of the Phase 3 Tire Monofill Landfill is:

Mr. Thomas Womble  
Central Carolina Holdings, LLC  
1616 McKoy Town Road  
Cameron, North Carolina 28326  
Phone (919) - 499-2301

### **1.3 Projected Land Use**

This section is prepared in accordance with North Carolina Solid Waste Management Rules 15A NCAC 13B .0504(2)(h)(iii) which states: "Projected use of land after completion of the sanitary landfill".

Upon completion of the landfilling operations, the landfill will be closed in accordance with the appropriate North Carolina Solid Waste Management Rules. The facility will be gated and access will be restricted. No other use for the property is planned at this time.

### **1.4 Anticipated Lifetime of Project**

This section is prepared in accordance with North Carolina Solid Waste Management Rules 15A NCAC 13B .0504(2)(h)(iv) which states "Anticipated lifetime of the project".

The airspace volume of the Phase 3A - 3B area, as computed from the certified subgrade elevations compared to the top of intermediate cover grades as indicated on Sheet 2 of the Drawings, is approximately 1,118,000 cubic yards. Utilizing an Airspace Utilization Factor (AUF) of 900 pounds waste per cubic yard of airspace used (lbs/CY), the airspace volume of 1,117,927.9 cubic yards provides approximately 503,000 tons waste capacity. Landfill

# CONSTRUCTION PLAN WRITTEN REPORT

records indicate a total of 217,657 tons of waste have been disposed within the Phase 3A - 3B area as of December 1, 2013. Therefore, the Phase 3A - 3B area has approximately 285,343 tons of capacity remaining as December 1, 2013. The Phase 3A - 3B area is expected to provide adequate airspace capacity for the ten-year Permit to Operate provided current market conditions and recycling efforts continue.

The airspace volume of the total Phase 3A - 3D area, is approximately 3,500,000 cubic yards. Utilizing an AUF of 900 lbs/CY, the airspace volume of 3,500,000 cubic yards provides approximately 1,575,000 tons waste capacity. The total Phase 3A-3D area is expected to provide adequate airspace capacity for the 30 to 50 years provided current market conditions and recycling efforts continue.

## 1.5 Systematic Usage, Operation, Orderly Development and Completion

This section is prepared in accordance with North Carolina Solid Waste Management Rules 15A NCAC 13B .0504(2)(h)(v) which states: "Description of systematic usage of area, operation, orderly development and completion of the sanitary landfill".

The Phase 3A - 3B area has been constructed. Future Phases 3C - 3D will be permitted and constructed on an as-needed basis. All areas of the operated landfill will be closed after final termination of disposal operations according to the Closure Plan.

## 1.6 Earthwork Calculations

This section is prepared in accordance with North Carolina Solid Waste Management Rules 15A NCAC 13B .0504(2)(h)(vi) which states: "Earthwork calculations".

The Phase 3A - 3B area requires no additional soils for base grade construction. The Phase 3A - 3B area is anticipated to require 124,000 cubic yards daily and intermediate cover soil assuming approximately 1,118,000 cubic yards airspace and an 8:1 waste to cover ratio. The volume of final cover soil material required to construct the 2-foot thick cover system for the Phase 3A - 3B area is (19.3 acre total surface area) is 63,000 cubic yards.

The Phase 3C – 3D area base grade construction is estimated to balance and will not require off-site soils. The Phase 3C – 3D area is anticipated to require 264,000 cubic yards cubic yards daily and intermediate cover soil assuming approximately 2,382,000 cubic yards airspace and an 8:1 waste to cover ratio. The volume of final cover soil material required to construct the 2-foot thick cover system for the Phase 3C – 3D area is (23.3 acre total surface area) is 76,500 cubic yards.

## 1.7 Seeding Specifications and Schedules

This section is prepared in accordance with North Carolina Solid Waste Management Rules 15A NCAC 13B .0504(2)(h)(vii) which states: "Seeding specifications and schedules".

Seeding will be performed in accordance with the following table.

## CONSTRUCTION PLAN WRITTEN REPORT

	Winter-Spring	Summer	Fall
Seeding Mixture	Rye 120 lb/acre	German Millet 40 lb/acre	Rye 120 lb/acre
Seeding Dates	Dec. 1 Apr. 15	Apr. 15 Aug. 15	Aug. 15 Dec. 30
Soil Amendments	Limestone 2000 lb/acre Fertilizer 750 lb/acre 10-10-10	Limestone 2000 lb/acre Fertilizer 750 lb/acre 10-10-10	Limestone 2000 lb/acre Fertilizer 750 lb/acre 10-10-10
Mulch	4,000 lb/acre straw	4,000 lb/acre straw	4,000 lb/acre straw

### 1.8 Calculation for Temporary and Permanent Erosion Control Measures

This section is prepared in accordance with North Carolina Solid Waste Management Rules 15A NCAC 13B .0504(2)(h)(viii) which states: "Calculations for temporary and permanent erosion control measures".

No additional temporary and permanent erosion control measures are required for base grade construction or operation of the Phase 3A - 3B area.

Calculations for Temporary and Permanent Erosion Control Measures required for future construction will be submitted and approved prior to construction of Phase 3C or 3D subgrades.

### 1.9 Compliance with the Sedimentation Pollution Control

This section is prepared in accordance with North Carolina Solid Waste Management Rules 15A NCAC 13B .0504(2)(h)(ix) which states: "Any narrative necessary to describe compliance with the Sedimentation Pollution Control Act of 1973 (15A NCAC 4)".

The facility is currently operating under NPDES General Permit No. NCG130000 (Certificate No. NCG130048) issued by the NCDENR Division of Water Quality for the discharge of stormwater from the facility.

### 1.10 Compliance with Design Requirements

This section is prepared in accordance with North Carolina Solid Waste Management Rules 15A NCAC 13B .0504(2)(h)(x) which states: "A discussion of compliance with design requirements in Rule .0503(2) of this Section".

Each of these requirements are discussed below.

### **1.10.1 Explosive Gases**

This section is prepared in accordance with North Carolina Solid Waste Management Rules 15A NCAC 13B .503(2)(a) which states: “The concentration of explosive gases generated by the site shall not exceed twenty-five percent of the limit for the gases in site structures (excluding gas control or recovery system components)” and “the lower explosive limit for the gases at the property boundary”.

Waste received at the tire monofill landfill will be limited to scrap tire waste. Since the decomposition of scrap tire waste is relatively very slow and limited, the rate and total magnitude of the generation of explosive gases should be relatively very low. Therefore, no landfill gas monitoring system is proposed.

### **1.10.2 Public Access**

This section is prepared in accordance with North Carolina Solid Waste Management Rules 15A NCAC 13B .503(2)(b) which states: “A site shall not allow uncontrolled public access so as to expose the public to potential health and safety hazards at the disposal site”.

The facility will be gated and public access will be restricted.

### **1.10.3 Surface Water Requirements**

This section is prepared in accordance with North Carolina Solid Waste Management Rules 15A NCAC 13B .503(2)(c) which states: “A site shall meet the following surface water requirements”.

In accordance with 15A NCAC 13B .0503(2)(c)(i), the tire monofill landfill shall not cause a discharge of pollutants into the waters of the state that is in violation of the requirements of the national Pollutant Discharge Elimination System (NPDES), under Section 402 of the Clean Water Act, as amended. The facility operates under NPDES General Permit NCG13000. All applicable erosion and sediment control permits for land disturbing activity will be obtained through the necessary agencies.

In accordance with 15A NCAC 13B .0503(2)(c)(ii) which states: “A site shall not cause a discharge of dredged material or fill material into waters of the state that is in violation of the requirements under Section 404 of the Clean Water Act, as amended, or that is in violation of any state requirements regulating the discharge of dredged or fill material into waters of the state, including wetlands”. The Phase 3A and 3B area has been constructed and operations of the Phase 3A and 3B area will not cause a discharge of dredged material or fill material into the waters of the state that is in violation of the requirements under Section 404 of the Clean Water Act as amended.

# CONSTRUCTION PLAN WRITTEN REPORT

In accordance with 15A NCAC 13B .0503(2)(c)(iii) which states: “A site shall not cause non - point source pollution of waters of the state that violates assigned water quality standards”. Operations of the Phase 3A and 3B area will not non-point source pollution of waters of the state that violates assigned water quality standards.

## **1.10.4 Groundwater Requirements**

This section is prepared in accordance with North Carolina Solid Waste Management Rules 15A NCAC 13B .503(2)(d) which states: “A site shall meet the following ground water requirements”.

In accordance with 15A NCAC 13B .0503(2)(d)(i) which states: “a site shall be designed so that the bottom elevation of solid waste will be a minimum of four feet above the seasonal high water table”. The seasonal high groundwater for the entire Phase 3A - 3D area was originally estimated as part of the Phase 3 Design Hydrogeologic Report dated October 2004. No new subgrade construction is requested for this Application. The seasonal high water table will be evaluated and updated prior to future construction request.

In accordance with 15A NCAC 13B .0503(2)(d)(ii) which states: “the design will ensure that the ground water standards established under 15A NCAC 2L will not be exceeded in the uppermost aquifer at the compliance boundary established by the Division in accordance with 15A NCAC 2L”. The Phase 3A & 3B will be monitored in accordance with the Water Quality Monitoring Plan submitted as part of this application.

## **1.10.5 Open Burning of Solid Waste**

In accordance with 15A NCAC 13B .0503(2)(e) which states: “A site shall not engage in open burning of solid waste”.

Open burning of solid waste will not occur at the facility. However, land-clearing operations may utilize burning as a means to deal with vegetative debris from ongoing construction activities. Prior to burning operations, State and/or local burn permits will be obtained and the Solid Waste Section will be notified.

## **1.10.6 Buffer Requirements**

This section is prepared in accordance with North Carolina Solid Waste Management Rules 15A NCAC 13B .503(2)(f) which states: “site, except a land clearing and inert debris landfill, shall meet the following buffer requirements”.

In accordance with 15A NCAC 13B .0503(2)(f)(i) which states: “A 50-foot minimum buffer between all property lines and disposal areas”. A 50-foot minimum buffer between all property lines and disposal areas will be maintained for the Phase 3A and 3B Areas.

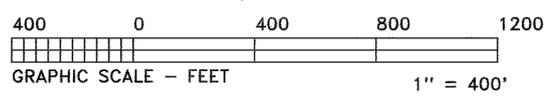
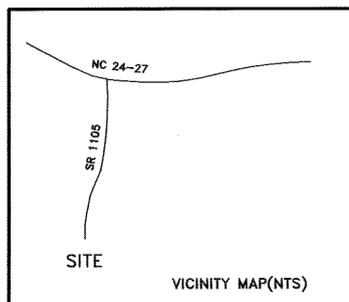
# CONSTRUCTION PLAN WRITTEN REPORT

In accordance with 15A NCAC 13B .0503(2)(f)(ii) which states: “A 500-foot minimum buffer between private dwellings and wells and disposal areas”. A 500-foot minimum buffer between private dwellings and wells and disposal areas will be maintained for the Phase 3A and 3B Areas.

In accordance with 15A NCAC 13B .0503(2)(f)(iii) which states: “A 50-foot minimum buffer between streams and rivers and disposal areas”. A 50-foot minimum buffer between private dwellings and wells and disposal areas will be maintained for the Phase 3A and 3B Areas

## **1.10.7 Sedimentation and Pollution Control Law**

This section is prepared in accordance with North Carolina Solid Waste Management Rules 15A NCAC 13B .503(2)(g) which states: “Requirements of the Sedimentation Pollution Control Law (15A NCAC 4) shall be met”. The facility is currently operating under NPDES General Permit No. NCG130000 (Certificate No. NCG130048) for the discharge of stormwater from the facility. The permit is issued by the NCDENR Division of Water Quality. The Phase 3 area meets the requirement of the Sedimentation Pollution Control Law (15A NCAC 4).



BEARINGS SHOWN ON RECORDED MAP NO.2005-539 WERE NOT TO GRID.

**MINIMUM BUILDING SET BACKS**

FRONT YARD	35'
REAR YARD	25'
SIDE YARD	10'
CORNER LOT SIDE YARD	20'
MAXIMUM HEIGHT	35'

DIANE T. WOMBLE  
DB:1673,PG:893  
PIN 9554-19-6563.000  
PARCEL ID: 9554-19-6563.000  
ZONED RA-20R  
706 AC.+ RESIDUAL  
(TAKEN FROM GIS)

TRACT 2  
20.67 ACRES  
A PORTION OF  
DB:1673,PG:893  
PIN 9554-19-6563.000  
PARCEL ID:  
9554-19-6563.000  
ZONED RA-20R  
MAP NO.2011-494

TRACT 1  
17.15 ACRES  
A PORTION OF  
DB:1673,PG:893  
PIN 9554-19-6563.000  
PARCEL ID:  
9554-19-6563.000  
ZONED RA-20R  
MAP NO.2011-494

CENTRAL CAROLINA HOLDINGS,LLC  
DB:2177,PG:375  
DB:1434,PG:541  
PIN 9554-48-4293.000  
PARCEL ID:099555 0035 01  
ZONED INDUSTRIAL

DIANE T. WOMBLE  
DB:1673,PG:893  
PIN 9554-19-6563.000  
PARCEL ID: 9554-19-6563.000  
ZONED RA-20R  
706 AC.+ RESIDUAL  
(TAKEN FROM GIS)

GREATER THAN 10 ACRES  
SURVEY FOR  
**CENTRAL CAROLINA HOLDINGS,LLC**  
JOHNSONVILLE TOWNSHIP - HARNETT COUNTY - NORTH CAROLINA  
JANUARY 24, 2012  
ZONING RA-20R

**BENNETT SURVEYS, INC.**  
1662 CLARK ROAD, LILLINGTON N.C. 27546 910-893-5252

MAP REFERENCES  
MAP NO. 2005-539  
MAP NO. 2002-767  
MAP NO.2011-494

DEED REFERENCE  
DEED BOOK 1434,PAGE 541  
DEED BOOK 2177,PAGE 375  
DEED BOOK 1673,PAGE 893

THE UNDERSIGNED HEREBY ACKNOWLEDGES THAT THE LAND SHOWN ON THIS PLAT IS WITHIN THE ZONING JURISDICTION OF HARNETT COUNTY AND THAT THIS PLAT AND ALLOTMENT IS (MY OR OUR) FREE ACT AND DEED, FOREVER ALL AREAS SHOWN OR INDICATED ON SAID PLAT.

1/25/12 Diane T. Womble  
DATE OWNER/AGENT SIGNATURE

THIS PROPERTY IS EXEMPT FROM HARNETT COUNTY SUBDIVISION REGULATIONS.  
Shirley Jones 1/25/12  
PLANNING DIRECTOR



FOR REGISTRATION REGISTER OF DEEDS  
HARNETT COUNTY, NC  
2012 JAN 25 12:00:37 PM  
BK. 2012 PG. 68-69 FEE \$21.00  
INSTRUMENT # 2012001209

STATE OF NORTH CAROLINA  
COUNTY OF HARNETT  
I, Nichole W. Temple, REVIEW OFFICER OF HARNETT COUNTY, CERTIFY THAT THE MAP OR PLAT TO WHICH THIS CERTIFICATION IS AFFIXED MEETS ALL STATUTORY REQUIREMENTS FOR RECORDING  
1/25/12 Nichole W. Temple  
DATE REVIEW OFFICER

NORTH CAROLINA  
HARNETT COUNTY  
This Map/Plat was presented for registration and recorded in this office at Map Number 2012-68  
This 25 day of January 2012.  
at 12:00 o'clock P. M.  
KIMBERLY S. HARROVE Register of Deeds  
By: Angela B. McNeil  
Assistant Deputy Register of Deeds

NORTH CAROLINA HARNETT COUNTY  
I, Mickey R. Bennett, PLS do certify that this plat was drawn under my supervision (deed description recorded in Book SEE, Page REF., etc) that the boundaries not surveyed are clearly indicated as drawn from information found in Book SEE, Page REF., that the ratio of precision as calculated is 1:5000; that this plat was prepared in accordance with G.S. 47-30 as amended. Witness my original signature, registration number and seal this 24th day of January, A.D. 2012.



Mickey R. Bennett  
MICKEY R. BENNETT  
L - 1514

I, Mickey R. Bennett, hereby certify that this survey is of another category, such as the recombination of existing parcels, a court ordered survey, a division of heirs or other exception to the definition of subdivision.

- LEGEND**
- LINES NOT SURVEYED-----
  - LINES SURVEYED-----
  - EIP-----EXISTING IRON PIPE
  - ECM-----EXISTING CONCRETE MONUMENT
  - EIS-----EXISTING IRON STAKE
  - EPKN-----EXISTING P.K.NAIL
  - ELS-----EXISTING LIGHTWOOD STAKE
  - NIS-----NEW IRON STAKE NIP-----NEW IRON PIPE
  - PKNS-----P.K.NAIL SET
  - ERRS-----EXISTING RAILROAD SPIKE
  - NRRS-----NEW RAILROAD SPIKE
  - EMN-----EXISTING MAGNETIC NAIL
  - NMN-----NEW MAGNETIC NAIL
  - ECS-----EXISTING COTTON SPINDLE
  - NCS-----NEW COTTON SPINDLE
  - EIP/EIS---(CONTROL CORNERS)
  - ECM/PKN/ECS (CONTROL CORNERS)
  - C/L---CENTER LINE N/F---NOW OR FORMALLY
  - CP---CALCULATED POINT
  - CB&D---CHORD BEARING AND DISTANCE
  - D.E.---DRAINAGE EASEMENT R/W---RIGHT OF WAY
  - EX.---EXISTING AC.---ACRES

MARSHA HARRIS  
DB:1888,PG:586

ODELL SMITH FARM  
DB:1185,PG:9



# **OPERATION PLAN**

**CENTRAL CAROLINA TIRE MONOFILL  
PHASE 3A AND 3B**

**PERMIT NO. 43-04**

**MARCH 2014**

**Prepared for:**

**Central Carolina Holdings  
1616 McKoy Town Road  
Cameron, North Carolina 28326**





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## 1.0 Purpose and Background

The Operations Plan has been prepared in accordance with the North Carolina Solid Waste Rule 15A NCAC 13B .0505.

### 1.1 Plan and Permit Requirements

In accordance with 15A NCAC 13B .0505(1)(a) and .0505(1)(b), construction plans shall be approved and followed and specified monitoring and reporting requirements shall be met.

Construction Plans and specified monitoring plans are included in other sections of this Application.

### 1.2 Spreading and Compacting of Waste

In accordance with 15A NCAC 13B .0505(2)(a), operators shall restrict solid waste within the tire monofill landfill to the smallest area feasible. The working face is defined as the area where waste is unloaded, inspected, spread, compacted, and ultimately covered with cover material. The working face shall be wide enough to prevent a backlog of vehicles waiting to unload and to allow adequate working space for landfill equipment. At a maximum, the width of the working face shall not exceed 200 feet.

In accordance with 15A NCAC 13B .0505(2)(b), solid waste shall be compacted as densely as practical into cells. After solid waste is discharged from vehicles, it shall be inspected for unacceptable items and subsequently spread on the working face not steeper than four feet horizontal to one foot vertical in layers not to exceed two-foot thickness. All areas of each layer shall be compacted by at least four passes of a compactor in order to achieve an average waste density of approximately 900 lb/cubic yard.

### 1.3 Cover Material Requirements

In accordance with 15A NCAC 13B .0505(3)(a), solid waste shall be covered twice per week with a compacted layer of at least six inches of suitable soil cover to control disease vectors, fires, odors, blowing litter, and scavenging. The daily cover must:

- be capable of covering solid waste after it is placed without change in its properties and without regard to weather;
- be capable of allowing loaded vehicles to successfully maneuver over it after placement;
- be noncombustible; and,
- not include rock fragments that are greater than six inches in diameter.

Only suitable soil will be used as daily cover; alternative cover material is not proposed at this time.

In accordance with 15A NCAC 13B .0505(3)(b), areas which will not have additional waste placed on them for 3 months or more, but where final termination of waste disposal has not

occurred, shall be covered with a minimum of one foot of intermediate cover. The composition standards of the intermediate cover shall be the same as for daily cover in addition to being capable of supporting the germination of vegetative cover.

In accordance with 15A NCAC 13B .0505(3)(c), after six months of final termination of disposal operations at the site or a major part thereof, or upon revocation of a permit, the area shall be covered with at least two feet of suitable compacted earth.

## **1.4 Erosion Control Requirements**

In accordance with 15A NCAC 13B .0505(4)(a), adequate erosion control measures shall be practiced to prevent silt from leaving the site. Sediment laden runoff shall be diverted to sedimentation ponds as shown on the drawings.

In accordance with 15A NCAC 13B .0505(4)(b), adequate erosion control measures shall be practiced to prevent excessive on-site erosion. Erosion control measures shall include:

Disturbing as little area as practical at any one time for landfilling operations.

Seeding/ Mulching of all disturbed areas commencing as soon as practically possible. Employing erosion netting or sod on steep slopes and other erosion prone areas.

Use of earthen berms, hay bales, silt fences, mat lining, riprap or equivalent devices down-gradient of disturbed areas, stockpiles, around drainage pipes inlets and outlets and at intervals along grassed waterways, until such time as permanent vegetation is established.

Placement of riprap at the outlets of storm water piping sedimentation pond discharge pipes.

## **1.5 Drainage Control Requirements**

In accordance with 15A NCAC 13B .0505(5)(a), surface water shall be diverted from the operational area. To divert surface runoff away from the working face, temporary diversion berms shall be installed upgradient from the working face. The soil cover in the areas beyond the diversion berms shall be uniformly graded and compacted to prevent the formation of erosion channels. In the event that channels do form, the cover shall be promptly repaired.

In accordance with 15A NCAC 13B .0505(5)(b), surface water shall not be impounded over or in waste. The area between the temporary berm and the working face should be limited to one acre to prevent excessive ponding.

In accordance with 15A NCAC 13B .0505(5)(c), completed areas shall be adequately sloped to allow surface water runoff in a controlled manner. All solid fill areas will be sloped 1% to 5% to allow surface water runoff in a controlled manner.

## **1.6 Vegetation Requirements**

In accordance with 15A NCAC 13B .0505(6)(a), within six months after final termination of disposal operations at the site or a major part thereof or upon revocation of a permit, the area shall be stabilized with native grasses.

In accordance with 15A NCAC 13B .0505(6)(b), temporary seeding will be used as necessary to stabilize the site. Specification for temporary seeding are included on the Written Plan.

### **1.7 Water Protection Requirements**

In accordance with 15A NCAC 13B .0505(7)(a), the separation distance of four feet between waste and water table shall be maintained. The Phase 3A and 3b subgrade was constructed in accordance with approved construction plans. No additional subgrade construction is requested for the application.

In accordance with 15A NCAC 13B .0505(7)(b), solid waste shall not be disposed of in water. The Phase 3A and 3b Area will be operated in a manner to prevent ponding of water within the fill operations.

In accordance with 15A NCAC 13B .0505(7)(c), Leachate shall be contained on site or properly treated prior to discharge. An NPDES permit may be required prior to the discharge of leachate to surface waters. Leachate collection is not required at scrap tire disposal facilities.

### **1.8 Access and Security Requirements**

In accordance with 15A NCAC 13B .0505(8)(a), the landfill must be adequately secured by means of gates, chains, berms, fences, and other security measures approved by the Division of Solid Waste Management, to prevent unauthorized entry. Unauthorized vehicle access to the site is to be prevented by a locked gate when the landfill is closed.

In accordance with 15A NCAC 13B .0505(8)(b), an attendant shall be on duty at the site at all times while it is open for public use to ensure compliance with operational requirements. A full-time attendant will be located on site during operating hours. The attendant will verify compliance with operation requirements.

In accordance with 15A NCAC 13B .0505(8)(c), the access road to the site shall be of all-weather construction and maintained in good condition. The access road will be maintained as necessary to maintain all-weather conditions.

In accordance with 15A NCAC 13B .0505(8)(d), dust control measures shall be implemented where necessary. Minimum dust control will include a water truck for wetting of dusty roads.

### **1.9 Signs Requirements**

In accordance with 15A NCAC 13B .0505(9)(a), a sign providing information on dumping procedures, the hours during which the site is open for public use, the permit number and

other pertinent information shall be posted at the site entrance. Signs including the required information will be posted at the site entrance.

In accordance with 15A NCAC 13B .0505(9)(b), signs shall be clearly posted stating that no hazardous, municipal, yard waste, or liquid waste can be received. Signs including the required information will be posted at the site entrance.

In accordance with 15A NCAC 13B .0505(9)(c), traffic signs or markers shall be provided as necessary to promote an orderly traffic pattern to and from the discharge area to maintain efficient operating conditions. Signs including the required information will be posted at the site as necessary.

### **1.10 Safety Requirements**

In accordance with 15A NCAC 13B .0505(10)(a), open burning of solid waste is prohibited. No open burning of solid waste will occur at the site.

In accordance with 15A NCAC 13B .0505(10)(b), equipment shall be provided to control accidental fires or arrangements shall be made with the local fire protection agency to immediately provide fire-fighting services when needed. On-site earth moving equipment is available for the use of controlling accidental fires. The local fire protection agency is available and will be contacted to control accidental fires.

In accordance with 15A NCAC 13B .0505(10)(c), all fires that occur shall be reported to the Division of Solid Waste Management within 24 hours and a written notification shall be submitted within 15 days. All reports and notifications will be made should a fire occur.

In accordance with 15A NCAC 13B .0505(10)(d), the removal of solid waste from the landfill is prohibited unless the owner/ operator approves the removal and it is not performed on the working face. The removal of solid waste from the landfill is not anticipated at the facility.

In accordance with 15A NCAC 13B .0505(10)(e), Barrels and drums shall not be disposed of unless they are empty and perforated sufficiently to ensure that no liquid or hazardous waste is contained therein. The facility intends to only dispose scrap tires in the monofill. Therefore, barrels and drums shall not be disposed of in the monofill.

### **1.11 Waste Acceptance and Disposal Requirements**

In accordance with 15A NCAC 13B .0505(11)(a), the landfill shall only accept those solid wastes which it is permitted to receive. The landfill operator shall notify the Division of Solid Waste Management within 24 hours of attempted disposal of any waste the landfill is not permitted to receive, including waste from outside the area the landfill is permitted to serve. The facility shall only dispose of scrap tires.

In accordance with 15A NCAC 13B .0505(11)(b), no hazardous or liquid waste shall be accepted or disposed of in a sanitary landfill. The facility shall only dispose of scrap tires and no hazardous or liquid waste shall be accepted or disposed.

In accordance with 15A NCAC 13B .0505(11)(c), Spoiled foods, animal carcasses, abattoir waste, hatchery waste, and other animal waste delivered to the disposal site shall be covered immediately. The facility shall only dispose of scrap tires and spoiled foods, animal carcasses, abattoir waste, hatchery waste, and other animal waste will not be accepted or disposed.

In accordance with 15A NCAC 13B .0505(11)(d), Asbestos waste that is packaged in accordance with 40 CFR 61, which is adopted by reference in accordance with G.S. 150B-14(c), may be disposed of separate and apart from other solid wastes at the bottom of the working face or in an area not contiguous with other disposal areas, in either case, in virgin soil. Separate areas shall be clearly marked so that asbestos is not exposed by future land-disturbing activities. The waste shall be covered immediately with soil in a manner that will not cause airborne conditions. Copies of 40 CFR 61 may be obtained and inspected at the Division. The facility shall only dispose of scrap tires and no asbestos waste shall be accepted or disposed.

In accordance with 15A NCAC 13B .0505(11)(e), wastewater treatment sludges may only be used as a soil conditioner and incorporated into the final two feet of cover. Sludges shall be examined for acceptance by Waste Determination procedures in Rule .0103(e) of this Subchapter. Should wastewater treatment sludges be used as a soil conditioner and incorporated into the final two feet of cover, sludges shall be examined for acceptance by Waste Determination procedures in Rule .0103(e) of this Subchapter.

### **1.12 Miscellaneous Requirements**

In accordance with 15A NCAC 13B .0505(12)(a), effective vector control measures shall be applied to control flies, rodents, and other insects or vermin when necessary. The materials that are to be disposed of in the tire monofill landfill facility will be non-petrucible and, therefore, unlikely to attract nuisance vectors. Therefore, it is not anticipated that additional vector control, other than daily cover will be required.

In accordance with 15A NCAC 13B .0505(12)(b), appropriate methods such as fencing and diking shall be provided within the area to confine solid waste subject to be blown by the wind. At the conclusion of each day of operation, all windblown material resulting from the operation shall be collected and returned to the area by the owner or operator. The material to be disposed of in the tire monofill landfill facility is unlikely to be of the size and weight to be windblown; therefore, it is not anticipated that means of controlling windblown material will be required.



# **CLOSURE PLAN**

**CENTRAL CAROLINA TIRE MONOFILL  
PHASE 3A AND 3B**

**PERMIT NO. 43-04**

**MARCH 2014**

**Prepared for:**

**Central Carolina Holdings  
1616 McKoy Town Road  
Cameron, North Carolina 28326**





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## 1.0 Purpose and Background

Rule 15A NCAC 13B .0505 (3) of the Solid Waste Management Regulations require the owners/operators of all solid waste disposal facilities to prepare written closure plan that describes the steps necessary to close the landfill units at any point during their active life.

### 1.1 Final Cover (Cap) System

The Central Carolina Tire Phase 3 cap system is designed to minimize infiltration and erosion and will consist of 24 inches of compacted soil.

The 24 inch compacted soil layer shall be tested for suitability for growing grass and shall include percentages of organic matter, inorganic matter (silt, clay, and sand), deleterious material, pH, and mineral and plant-nutrient content of topsoil. Any recommended quantities of nitrogen, phosphorus, and potash nutrients and any limestone, aluminum sulfate, or other soil amendments will be added to produce a satisfactory growth layer.

### 1.2 Estimate of Largest Area Requiring Final Cover

The largest area requiring final cover at any time during the active life of the Central Carolina Tire Phase 3 Facility will be a 16-acre area.

### 1.3 Estimate of Maximum Inventory of Waste On-Site

The maximum amount of waste that is expected to be landfilled at the Central Carolina Tire Phase 3 Facility was calculated on CADD using Terramodel Software by comparing the base grades of the landfill facility to the proposed top of waste grades. The Central Carolina Tire Phase 3a area has total capacity of approximately 200,000 tons.

### 1.4 Schedule for Closure

The owner must begin closure activities after final termination of disposal operations at the site.

It is anticipated closure activities will include the following task and will be completed on the timeline as indicated:

TASK	Timeline
Survey of intermediate cover grades	within 30 days of final receipt of wastes
Plan and Specification preparation	within 60 days of final receipt of wastes
Bidding, Evaluation, Award	within 120 days of final receipt of wastes
Construction	within 360 days of final receipt of wastes
CQA Report	within 420 days of final receipt of wastes

Following closure of the Central Carolina Tire Phase 3 Facility, the owner or operator will notify the Division that a certification, signed by the project engineer verifying that closure has been completed in accordance with the closure plan, has been placed in the operating record.

The owner or operator will record a notation on the deed to the landfill facility property at the local county Register of Deeds office, or some other instrument that is normally examined during title search, and notify the Division that the notation has been recorded and a copy has been placed in the operating record.

The Owner has recorded a notation on the notifying any potential purchaser of the property that the land has been used as a tire monofill facility and its use is restricted under the Closure Plan approved by the Division.

### **1.5 Cost Estimate for Closure Activities**

The owner and operator must have a written estimate, in current dollars, of the cost of hiring a third party to close the entire area of the Central Carolina Tire Phase 3 Facility at any time during the active life in accordance with the closure plan. A copy of the closure cost estimate must be placed in the landfill's closure plan and the operating record.

The written estimate for closure of the Central Carolina Tire Phase 3 Facility is included as Table 1.

**Table-1  
ENGINEER'S OPINION OF COSTS  
FOR CLOSURE OF A  
16-ACRE AREA OF PHASE 3  
CENTRAL CAROLINA TIRE MONOFILL  
(2014 DOLLARS)**

<b>Item Number</b>	<b>Description</b>	<b>Estimated Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Extended Total</b>
1	Fine-Grade Intermediate Cover	77,440	SY	\$ 0.50	\$ 38,720.00
2	Remove Unsuitable Materials	250	CY	\$ 5.00	\$ 1,250.00
3	24" Suitable Compacted Earth Material	77,440	SY	\$ 4.00	\$ 309,760.00
4	Permanent Terrace Ditches	3,000	LF	\$ 35.00	\$ 105,000.00
5	CPP Downdrain Pipes	350	LF	\$ 30.00	\$ 10,500.00
6	Energy Dissipaters	1	EA	\$ 2,000.00	\$ 2,000.00
7	Temporary Erosion Controls (Borrow Area)	1	LS	\$ 6,000.00	\$ 6,000.00
8	Seeding & Mulching	77,440	SY	\$ 0.30	\$ 23,232.00
9	Bonds, Insurance, Mobilization	1	LS	\$ 20,000.00	\$ 20,000.00
10	Engineering/CQA Certification	16	LS	\$ 2,000.00	\$ 32,000.00
<b>TOTAL</b>					<b>\$ 548,462.00</b>



# **POST-CLOSURE PLAN**

**CENTRAL CAROLINA TIRE MONOFILL  
PHASE 3A AND 3B**

**PERMIT NO. 43-04**

**MARCH 2014**

**Prepared for:**

**Central Carolina Holdings  
1616 McKoy Town Road  
Cameron, North Carolina 28326**





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## 1.0 Purpose and Background

The purpose of this Plan is to presents the Post-Closure Plan for the Central Carolina Tire Phase 3 Monofill in accordance with the Solid Waste Management Regulations.

### 1.1 Monitoring and Maintenance Activities

#### Closure Cap

Inspection of the closure cap will take place quarterly. The inspection will consist of a field survey of the entire closure cap. Items of concern to be noted by the inspector include but are not limited to: signs of erosion (ruts, sediment deposits, etc.), patches of stressed or dead vegetation, animal burrows, recessed areas or ponding, upheaving, leachate seepage stains and/or flowing leachate, cracks in the cap, and tree saplings (especially species with tap roots). Following each inspection, a summary report of the condition of the cap and the items of concern should be recorded in the post-closure logbook of the facility. Areas that require further attention should be photographed and delineated on a map of the facility. These items should also be entered in the logbook. Since post-closure inspection personnel will most likely change during the post-closure period, the post-closure log book should be keep in a standardized format that allows for new inspection personnel to easily review the results of past post-closure inspections of the site.

The vegetative cover should be mowed at least twice a year to suppress weed and brush growth. If vegetative cover is not adequate in any particular area, fertilizer should be applied and the area re-seeded in order to re-establish vegetation. Insecticides may be used to eliminate insect populations that are detrimental to the vegetation.

Animal burrows and eroded or depressed areas should be filled in with compacted soil and reseeded.

#### Groundwater Monitoring Wells

Inspection of the ground water monitoring wells will take place semi-annually during sampling events. The inspection will consist of verifying the condition of the monitoring wells to ensure that they are providing representative samples of the ground water being collected. The inspector should note the following:

- 1) The total depth of the well should be recorded every time a water sample is collected or a water level reading is taken to check if sediment has accumulated at the bottom. If sediment build-up has occurred, the sediment should be removed by pumping or bailing.
- 2) If turbid samples are collected from a well, redevelopment of the well will be necessary.
- 3) The aboveground protective casing should be inspected for damage. The protective casing should be of good structural integrity and free of any cracks

or corrosion. The lockable cover and lock should also be checked at this time.

- 4) The surface seals should be inspected for settling and cracking. If the seal is damaged in any way, the seal should be replaced.
- 5) The well casing and cap should be inspected. The casing and cap should be of good structural integrity and free of any cracks or corrosion. Any debris should be removed from around the cap to prevent it from entering the well.

The condition of the ground water monitoring system should be recorded in the post-closure logbook following each sampling event.

In the event there is a need to abandon or replace a well, abandonment should be accomplished in accordance with NCDENR Regulations. Prior to abandonment, NCDENR will be notified of any proposed abandonment/replacement activities. The replacement well should be constructed in close proximity to the abandoned well, in accordance with previous well specifications. The location of the original well should be permanently marked and labeled.

Monitoring of the groundwater wells shall be conducted as described in the approved Groundwater Monitoring Plan.

### Erosion and Sediment Control System

Inspection of the erosion and sedimentation control system should occur semi-annually and after major storm events. During each inspection, the elements of the system including ditches, pipes, ponds, and inlet/outlet structures should be checked for obstructions and damage. The ditches should be inspected for obstructions, erosion of side slopes, loss of vegetative cover, shifting of riprap, excessive buildup of sediment, or any other item that may prevent the proper functioning of the ditch. Drainage piping should be checked for blockages and the inlets/outlets should be inspected for undercutting and rutting. The sediment level in the detention ponds should be measured to determine if removal is required. The condition of the riser/barrel should be checked including making sure adequate gravel surrounds the riser and that the barrel is not laden with sediment. The berms of each pond should be inspected for stability.

Following each inspection, a summary report should be entered in the post-closure logbook along with photographs of any items of concern.

Maintenance and/or repairs should be performed as prescribed by the inspectors review.

## **1.2 Person for the Facility During The Post-Closure Period**

Central Carolina Tire Recycling will be responsible for operations and maintenance of the site during the post-closure period. Contact information is as follows:

Central Carolina Holdings  
1616 McKoy Town Road  
Cameron, NC 28326

## **1.3 Planned Uses of the Property During the Post-Closure Period**

There are no current planned uses for the Central Carolina Tire Phase 3 Monofill after closure.

## **1.4 Cost Estimate for Post-Closure Activities**

The owner and operator must have a written estimate, in current dollars, of the cost of hiring a third party to conduct post-closure care for the landfill, which accounts for the total cost of conducting post-closure care, including annual and periodic costs as described in the post-closure plan over the entire post-closure care period. The post-closure cost estimate must be placed in the operating record.

The Post-closure cost estimate for a 15-year post-closure period for the Central Carolina Tire Phase 3 Monofill is included as Table 1



**Table 1  
ENGINEER'S OPINION OF COSTS  
FOR POST-CLOSURE  
CENTRAL CAROLINA TIRE MONOFILL PHASE 3A & 3B  
(2014 DOLLARS)**

<b>Item Number</b>	<b>Description</b>	<b>Estimated Quantity</b>	<b>Unit Price</b>	<b>Extended Total</b>	<b>Annual Quantity</b>	<b>Annual Costs</b>
1	Administration/Recordkeeping	40 Hrs/Yr	\$ 100.00 /EA	\$ 4,000.00	1 /Yr	\$ 4,000.00
2	Groundwater Detection Monitoring	8 EA	\$ 850.00 /EA	\$ 6,800.00	2 /Yr	\$ 13,600.00
3	Stormwater Samples	2 EA	\$ 1,500.00 /EA	\$ 3,000.00	2 /Yr	\$ 6,000.00
4	Mowing	20 Ac	\$ 100.00 /AC	\$ 2,000.00	1 /Yr	\$ 2,000.00
5	Stormwater Structures Repair	1 EA	\$ 2,000.00 /EA	\$ 2,000.00	1 /Yr	\$ 2,000.00
6	Final Cover System Repair	0.75 AC	\$ 10,000.00 /AC	\$ 7,500.00	1 /Yr	\$ 7,500.00
<b>Annual Post Closure Cost</b>						<b>\$ 35,100.00</b>
<b>Remaining Years</b>						<b>15</b>
<b>Total Post Closure Cost</b>						<b>\$ 526,500.00</b>



# **WATER QUALITY MONITORING PLAN**

**CENTRAL CAROLINA TIRE MONOFILL  
PHASE 3A AND 3B**

**PERMIT NO. 43-04**

**MARCH 2014**

**Prepared for:**

**Central Carolina Holdings  
1616 McKoy Town Road  
Cameron, North Carolina 28326**





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# WATER QUALITY MONITORING PLAN

## 1.0 Purpose and Background

The North Carolina Solid Waste Rules, 15A NCAC 13B .0504(g)(iv), specifies that the owner/operator must provide, as part of the groundwater and surface water monitoring program, a water quality sampling and analysis plan (SAP). The SAP is to be designed to provide accurate results of groundwater and surface water quality at upgradient/upstream and downgradient/downstream sampling locations. This SAP addresses the following subjects.

- Groundwater and surface water sample collection
- Sample preservation and shipment
- Analytical procedures
- Chain-of-custody
- Quality assurance/quality control (QA/QC)

The methods and procedures described in the following sections are intended to provide representative samples and test data. Field procedures are presented in their general order of implementation. Equipment requirements are presented in each section, and quality assurance and record keeping requirements are presented in the last sections. Strict adherence to these procedures is required.

## 1.1 Groundwater and Surface Water Sampling Locations

Groundwater and surface water samples will be collected from each monitoring point and analyzed for a list of detection monitoring target parameters in accordance with NC Division of Waste Management (NC DWM) regulations. Groundwater monitoring wells and surface water sampling locations for the facility are shown in Figure 1.

The detection monitoring wells are designed to monitor the shallow aquifer at the site and are constructed of 2-inch inside diameter Schedule 40 PVC, with isolated well screen intervals, in accordance with North Carolina well construction standards 15A NCAC 2C. Well construction data for the groundwater well network is presented in Table 1.

Groundwater and surface water samples will be collected from each monitoring point and analyzed for a list of detection monitoring target parameters in accordance with NC Division of Waste Management (NC DWM) regulations. Baseline detection monitoring will consist of four independent sampling events during the initial semi-annual period, followed by semi-annual sampling at each location thereafter.

## 1.2 Static Water Level Measurements

Static water levels will be measured in each monitoring well prior to purging and sampling of groundwater. Static water level data will be used to monitor changes in site

# WATER QUALITY MONITORING PLAN

hydrogeologic conditions. The following measurements will be recorded in a dedicated field book prior to purging and sample collection.

- Static water level (measured to nearest 0.01 foot)
- Total depth of well
- Height of water column in well
- Changes in conditions of well, protective casing, surface pad and surroundings

An electronic water level instrument will be used to accurately measure water levels to within 0.01 foot. Each well will have a permanent, easily identified reference point on the top of the PVC well casing from which all water level measurements will be made. The reference point will be marked and the elevation of the top of the PVC casing will be surveyed by a North Carolina Registered Land Surveyor. The static water level and total depth measurements will be used to calculate the volume of water in the well.

The parts of the static water level instrument that will contact groundwater within the well (e.g., graduated tape and electronic indicator) will be constructed of inert materials such as stainless steel and Teflon™. The instrument will be thoroughly decontaminated between well measurements by washing with non-phosphate soap and triple rinsing with deionized water to prevent cross-contamination from one well to another.

## 1.3 Detection of Immiscible Liquids

The detection of immiscible non-aqueous phase liquids (NAPLs) is not anticipated at this facility based on the waste stream handled. However, the water-level measuring instrument used at the facility (described above) will be equipped with an electronic interface probe that is capable of distinguishing NAPLs from water. Monitoring for both light NAPLs (less dense than water) and dense NAPLs (more dense than water) will be conducted at the site by measuring at the water-table and at the bottom of each well. In the event that NAPLs are detected, the instrument will initially be cleaned with denatured laboratory grade isopropyl alcohol, followed by washing with non-phosphate soap and triple rinsing with deionized water to prevent cross-contamination from one well to another.

## 1.4 Monitoring Well Purging

Following measurement of the static water levels in all of the wells, individual wells will be purged of all stagnant water. The stagnant water, which is not representative of true aquifer conditions, must be removed to ensure that fresh formation water can be sampled. Each monitoring well will be purged using a new PVC disposable bottom-loading bailer or using pre-cleaned Teflon-lined disposable polyethylene tubing connected to a peristaltic pump under low flow conditions.

Prior to sampling, the monitoring wells will be purged of a minimum of three static well volumes of water, or until dry. During purging, measurements will be made in the field of

# WATER QUALITY MONITORING PLAN

the pH, temperature, specific conductance and turbidity of the groundwater collected from the monitoring wells, in accordance with NC DWM requirements. Data collected will be recorded in a dedicated field book.

## 1.5 Groundwater Sample Collection

After the wells are purged, groundwater samples will be collected for laboratory analysis. New latex or nitrile disposable gloves will be donned prior to sampling at each well. Groundwater samples will be collected using the new disposable PVC bottom-loading bailers that were used to purge the wells or using the pre-cleaned Teflon-lined disposable polyethylene tubing connected to a peristaltic pump under low flow conditions. In general, sampling will be conducted as soon as practical after purging is complete. In the event that a monitoring well runs dry during purging, it is acceptable to allow the well to recharge up to 24 hours prior to sampling. Similarly, wells with excess turbidity may be allowed to sit up to 24 hours prior to sampling to allow collection of a representative groundwater sample. Water levels in the wells will be allowed to recover for a period not exceeding 24 hours after purging to produce an adequate sample volume. Wells that fail to produce an adequate sample volume within 24 hours of purging will not be sampled.

Temperature, ph, specific conductance and turbidity will be measured immediately prior to sampling as a measure of purging efficiency and the results recorded in a dedicated field book. The temperature, pH, specific conductance and turbidity meters will be calibrated prior to each sampling event according to the manufacturer's specifications and consistent with Test Methods for Evaluating Solid Waste – Physical/Chemical Methods (SW-846).

Groundwater samples will be collected and contained in the order of volatilization sensitivity of specific parameters as follows.

- Temperature, ph, specific conductance and turbidity measurements
- Volatile Organic Compounds
- Total Metals

All detection monitoring samples will be collected unfiltered as required by the NC DWM.

All reusable sampling equipment, including meter probes, will be thoroughly decontaminated between wells by washing with non-phosphate soap and water, followed by triple rinsing with deionized water. Samples will be collected directly from the disposable bailers into laboratory-prepared containers that have been specifically prepared for the preservation and storage of compatible parameters. All groundwater sample containers will be immediately placed on ice in a cooler following sample collection in accordance with required sampling protocol.

Blanks and duplicate samples will be collected and analyzed for the same parameters as groundwater samples to ensure cross-contamination has not occurred. One set of trip blanks, described later in this document, will be prepared at the laboratory and will remain

# WATER QUALITY MONITORING PLAN

in the sample cooler during sample collection and shipment to the laboratory for analysis to ensure that the sample containers or handling processes have not affected the quality of the samples. A duplicate groundwater sample may be collected from a single well as a check of laboratory accuracy and reproducibility.

## 1.6 Surface Water Sample Collection

Surface water samples will be obtained from areas of minimal turbulence and aeration. The following procedure will be implemented for sampling surface water at each location.

- Don new latex or nitrile disposable gloves
- Hold sample bottle with one hand, and with the other, remove the cap
- Push the sample container slowly into the water column and tilt up towards the current to fill. A depth of about 6 inches is satisfactory. Avoid breaching the surface or agitating the water while filling the container.
- If there is little current movement, the container should be moved slowly in a lateral direction, side to side, keeping the opening pointed upstream.

Blanks and duplicates, preservatives, handling and transport procedures for the surface water samples will be identical to those noted from the groundwater samples.

## 1.7 Equipment Decontamination

All non-dedicated sampling equipment that will come into contact with groundwater or surface water will be decontaminated before each use. The equipment decontamination procedure is presented below.

- Clean item with tap water and non-phosphate detergent (Alconox™, Liquinox™ or equivalent), using a brush if necessary to remove particulate matter and surface films
- Rinse thoroughly with tap water.
- Triple rinse with deionized water and allow to air dry.
- Wrap with aluminum foil, if necessary, to prevent contamination of equipment during storage or transport.

## 1.8 Field QA/QC Program

Field Quality Assurance/Quality Control (QA/QC) for the subject facility requires the routine collection and analysis of trip blanks to verify that the sampling collection and handling process has not affected the quality of the samples. The trip blanks will be prepared at the laboratory and transported to the site in the sample cooler with the field sample containers, handled like a sample collected in the field, and returned to the laboratory for analysis. The trip blanks will be analyzed for volatile organic compounds (VOCs) only. Any VOCs found

# WATER QUALITY MONITORING PLAN

in the trip blanks will be attributed to: 1) contaminated sample container in which the blank was prepared; 2) contaminated source water; or 3) contamination during handling.

Any concentrations of contaminants found in the trip blanks will be reported but will not be used to correct the water-quality data for the groundwater or surface water samples. In the event that elevated constituent concentrations are found in the trip blanks, the laboratory results for that constituent in the field samples will be flagged for future evaluation and possible resampling.

## 1.9 Sample Preservation and Shipment

Sample preservation and shipment procedures will be carefully monitored to ensure sample integrity. Ice and/or chemical ice packs will be used to preserve samples in a cooler at the required 4°C temperature. Dry ice is not to be used. Samples will be delivered to the laboratory via overnight courier to ensure sample holding times are not exceeded. Shipment and receipt of the samples will be coordinated with the laboratory.

Once collected, samples will be placed on ice and cooled to a temperature of 4°C. Samples are to be packed in high-impact polystyrene-insulated coolers so as to inhibit breakage of sample containers. Chain-of-custody control of all samples will be maintained as follows.

- Labels will be placed on individual sample containers in the field, indicating the site name, sample location, time and date of sampling, required analyses, sampler's initials and sample preservative.
- Sample containers will be individually secured or placed in a secure area in iced coolers and will remain in the continuous possession of the field samplers until custody has been transferred as provided by the chain-of-custody form.
- Upon delivery to the laboratory, samples will be given laboratory sample numbers and recorded into a logbook indicating client, well number, and date and time of delivery. The laboratory manager or his designee will sign the chain-of-custody forms and formally receive the samples. Proper refrigeration of the samples will be maintained at the laboratory prior to preparation of the samples for analysis.

## 1.10 Field Logbook

The field samplers will maintain an up-to-date logbook and sampling forms documenting important information pertaining to field sampling activities. The field logbook and sampling forms will document the following.

- Site name and location
- Date and time of sampling
- Climatic conditions at the time of sampling
- Personnel conducting the sampling

- Sampling locations
- Presence of NAPLs
- Static water levels in wells
- Total depth of wells
- Purged water volumes and qualitative well yield
- Time well purged
- Observations of water samples (appearance, odor, etc.)
- Time of sample collection
- Temperature, pH, specific conductance and turbidity

## 1.11 Laboratory Analysis

The groundwater and surface water parameters to be analyzed will be those specified in the landfill permit and applicable North Carolina Solid Waste Management Rules. These will include field indicators of groundwater quality (temperature, pH, specific conductivity and turbidity), as well as volatile organic and total metal constituents listed in Appendix I of 40 CFR 258. All laboratory analyses will be performed by a laboratory certified by the NC DWM for the analyzed parameters.

QA/QC procedures are to be utilized at all times. The owner/operator of the landfill is responsible for selecting a laboratory and ensuring that they are utilizing proper QA/QC procedures. The laboratory must have a QA/QC program based on specific routine procedures outlined in a written laboratory QA/QC manual. The QA/QC procedures listed in the manual provide the laboratory with the necessary assurances and documentation for accuracy and precision of analytical determinations. Internal QC checks shall be undertaken regularly by the laboratory to assess the precision and accuracy of analytical procedures.

The internal QC checks include the use of calibration standards, standard references, duplicate samples and spiked or fortified samples. Calibration standards shall be verified against a standard reference obtained from an outside source. Calibration curves shall be developed using at least one blank and three standards. Samples shall be diluted if necessary to ensure that analytical measurements fall on the linear portion of the calibration curve. Duplicate samples shall be processed at an average frequency of 10 percent to assess the precision of testing methods, and standard references shall be processed monthly to assess accuracy of analytical procedures. Spike or fortified samples shall be carried through all stages of sample preparation and measurement to validate the accuracy of the analysis.

# WATER QUALITY MONITORING PLAN

During the course of analyses, QC data and sample data shall be reviewed by the laboratory manager to identify questionable data and determine if the necessary QA/QC requirements are being followed. If a portion of the laboratory work is subcontracted, it is the responsibility of the contracted laboratory to verify that all subcontracted work is completed by certified laboratories.

## 1.12 Statistical Evaluation

Copies of all laboratory results and water quality reports will be kept in the Operation Record. Reports summarizing all water quality data and statistical evaluations will be submitted to the NC DWM for each sampling event following the baseline monitoring period. Methods to evaluate the data are taken from the North Carolina Solid Waste Rules, 40 CFR 258.53(g) and the USEPA RCRA Ground Water Monitoring Technical Guidance. The North Carolina Solid Waste Rules require that the owner or operator of the landfill specify a statistical method outlined in the rules to evaluate water quality monitoring data. The goal of the statistical analysis is to determine whether statistically significant evidence of contamination exists and to identify the point of contamination. Upon receipt of the data from each monitoring event, the statistical database of analyses will be updated. The North Carolina Solid Waste Rules provide several acceptable methods for statistical analysis of water-quality data.

- Parametric analysis of variance (ANOVA)
- Rank-based (non-parametric) ANOVA with multiple comparisons
- Tolerance prediction interval
- Control chart
- Test of proportions
- An alternative statistical method that meets the performance standards of 40 CFR 258.53(h)

Statistical evaluation of water-quality monitoring data will be performed for the duration of the monitoring program, including the post-closure care period. The choice of an appropriate statistical test depends on the type of monitoring, the nature of the data, and the proportion of values in the data set that are below detection limits. The statistical analysis will be performed separately for each detected constituent in each well. The statistical methods used will be based on the USEPA Statistical Analysis of Ground Water Monitoring Data at RCRA Facilities, Interim Final Guidance Document (1989). All analyses will be performed in accordance with North Carolina Regulations 15A NCAC 13B.1632.

## 1.13 Record Keeping and Reporting

Should a statistically significant increase in groundwater concentrations of monitored parameters as defined in the North Carolina Solid Waste Rules be detected during

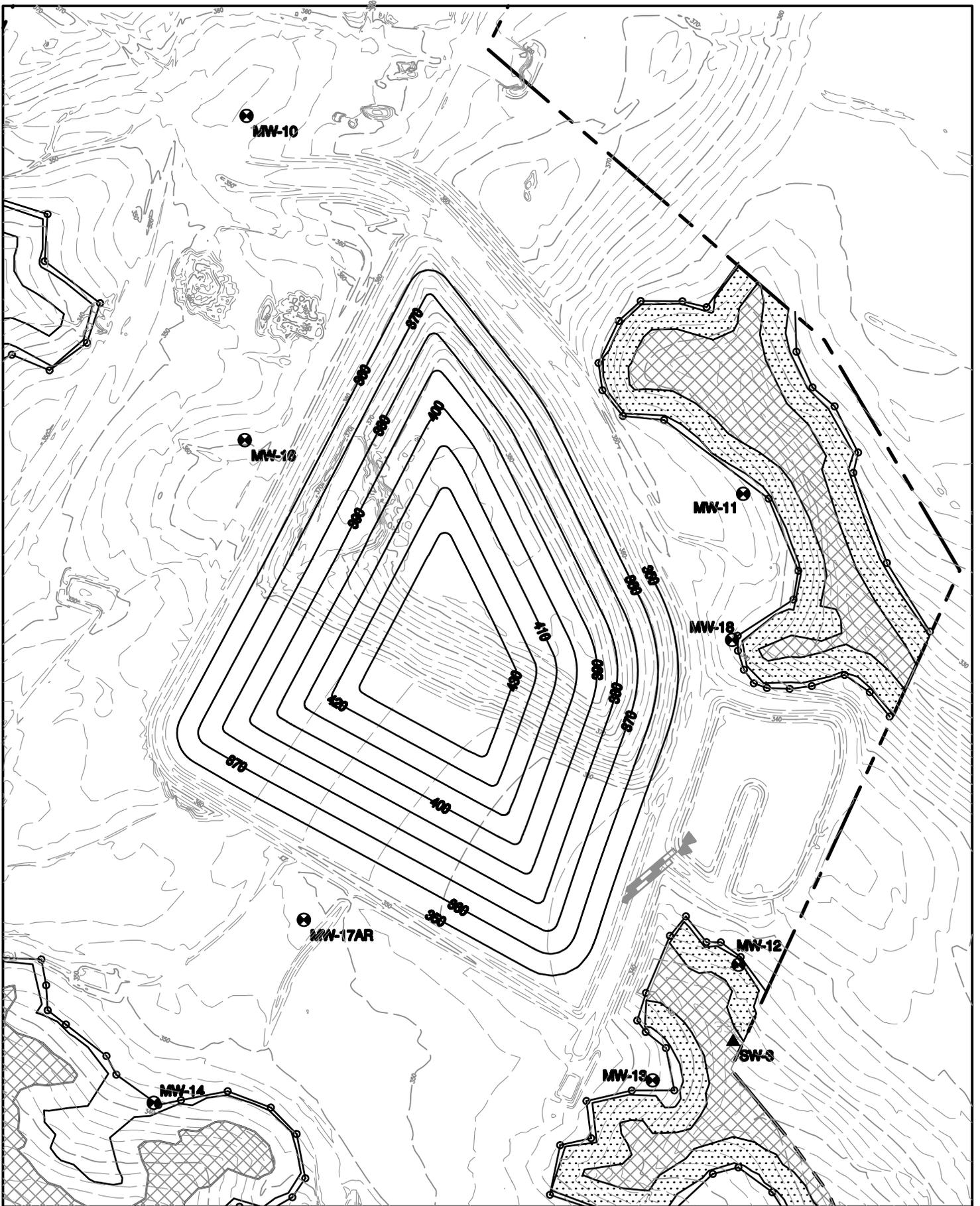
# WATER QUALITY MONITORING PLAN

monitoring, the owner/operator of the landfill shall notify the NC DWM within 14 days and will place a notice in the operating record as to which constituents showed an increase.

Should monitoring wells become irreversibly damaged or require rehabilitation, the NC DWM shall be notified. If monitoring wells and/or piezometers are damaged irreversibly they shall be abandoned under the direction of the NC DWM. The abandonment will consist of plugging the well with a chemically inert sealant which is impermeable, such as neat cement and/or bentonite clay. Where possible, it is preferred to over-drill and remove the well casing, screen and filter pack prior to grouting.

## **1.14 Implementation Schedule**

This Water Quality SAP shall become effective upon approval by the NC DWM and will be implemented contingent on approval for construction of the landfill expansion. Baseline sampling shall commence as soon as possible after the expansion phase is granted approval and prior to waste being disposed in the new phase. Four independent rounds of sampling and laboratory analyses of groundwater and surface water shall be performed within six months of approval of the landfill expansion. Sampling will then be performed semi-annually throughout the active life of operational life of the facility and during the post-closure monitoring period, unless an alternate sampling schedule is accepted by the NC DWM.





**Table 1 - Water Monitoring Locations  
Central Carolina Tire Monofill**

<b>Groundwater Monitoring Locations Phase 3A - 3B Monofill</b>						
Monitoring Well	Northing	Easting	Top of Casing Elevation [ft MSL]	Depth to Bottom of Well [ft BTOC]	Screen Interval [ft BTOC]	Up or Down Gradient
MW-10	549,731.36	1,954,619.21	356.28	27		Up
MW-11	548,984.87	1,955,599.35	347.8	24		Down
MW-12	548,054.79	1,955,590.24	336.58	22		Down
MW-13	547,826.40	1,955,420.62	339.47	21		Down
MW-14	547,781.99	1,954,436.12	344.12	13		Side
MW-16	549,090.90	1,954,615.69	362.53	29		Down
MW-17R	548,143.47	1,954,732.40	347.14	24		Down
MW-18	548,696.28	1,955,577.48	344.71	15		Down

<b>Surface Water Monitoring Locations Phase 3A - 3B</b>	
I.D.	Location
SW-3	280 feet beyond the Phase 3A – 3B landfill at the southeastern property boundary

Notes:

1. MSL = MEAN SEA LEVEL
2. BTOC = Below Top of Casing
3. TBD = To be Determined



**Table 2**  
**Laboratory Analytical Results for Surface Water and Groundwater Samples**

	<b>Parameter:</b>	<b>EPA Method</b>	<b>GWP Std (ug/L)</b>	<b>NCAC 2L STD (ug/L)</b>
1	Alkalinity	SM2320B	NE	NE
2	pH	Field	NE	6.5 - 8.5
3	Specific Conductance	Field	NE	NE
4	Temperature	Field	NE	NE
5	Total Dissolved Solids	SM2540C	NE	500000
	<b>Organic Constituents:</b>	<b>EPA Method</b>	<b>GWP Std (ug/L)</b>	<b>NCAC 2L STD (ug/L)</b>
6	Acetone	8260	NE	6000
7	Acrylonitrile	8260	NE	NE
8	Benzene	8260	NE	1
9	Bromochloromethane	8260	0.6	NE
10	Bromodichloromethane	8260	NE	0.6
11	Bromoform; Tribromomethane	8260	NE	4
12	Carbon disulfide	8260	NE	700
13	Carbon tetrachloride	8260	NE	0.3
14	Chlorobenzene	8260	NE	50
15	Chloroethane; Ethyl chloride	8260	NE	3000
16	Chloroform; Trichloromethane	8260	NE	70
17	Dibromochloromethane; Chlorodibromomethane	8260	0.41	0.4
18	1,2-Dibromo-3-chloropropane; DBCP	8260	NE	0.04
19	1,2-Dibromoethane; Ethylene dibromide; EDB	8260	NE	0.02
20	o-Dichlorobenzene; 1,2-Dichlorobenzene	8260	NE	20
21	p-Dichlorobenzene; 1,4-Dichlorobenzene	8260	NE	6
22	trans-1, 4-Dichloro-2-butene	8260	NE	NE
23	1,1-Dichloroethane; Ethylidene chloride	8260	NE	6
24	1,2-Dichloroethane; Ethylene dichloride	8260	NE	0.4
25	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	8260	NE	7
26	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	8260	60	70
27	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	8260	NE	1000
28	1,2-Dichloropropane; Propylene dichloride	8260	NE	0.6
29	1,3-Dichloropropene (cis and trans isomers)	8260	NE	0.4
30	Ethylbenzene	8260	NE	600
31	2-Hexanone; Methyl butyl ketone	8260	NE	40
32	Methyl bromide; Bromomethane	8260	NE	10
33	Methyl chloride; Chloromethane	8260	NE	3
34	Methylene bromide; Dibromomethane	8260	5.5	NE
35	Methylene chloride; Dichloromethane	8260	NE	5
36	Methyl ethyl ketone; MEK; 2-Butanone	8260	NE	4000
37	Methyl iodide; Iodomethane	8260	NE	NE
38	4-Methyl-2-pentanone; Methyl isobutyl ketone	8260	560	NE
39	Styrene	8260	NE	70
40	1,1,1,2-Tetrachloroethane	8260	1	NE
41	1,1,1,2,2-Tetrachloroethane	8260	0.18	0.2
42	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	8260	NE	0.7
43	Tetrahydrofuran	8260	NE	NE
44	Toluene	8260	NE	600
45	1,1,1-Trichloroethane; Methylchloroform	8260	NE	200
46	1,1,2-Trichloroethane	8260	0.6	NE
47	Trichloroethylene; Trichloroethene	8260	NE	3
48	Trichlorofluoromethane; CFC-11	8260	NE	2000
49	1,2,3-Trichloropropane	8260	NE	0.005
50	Vinyl acetate	8260	88	NE
51	Vinyl chloride	8260	NE	0.03
52	Xylenes	8260	NE	500

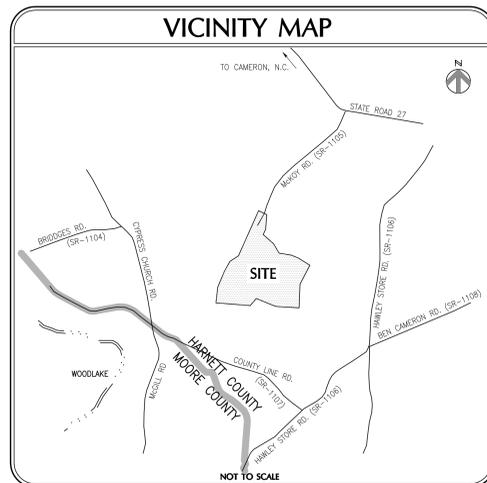
**Table 2 (Continued)**  
**Laboratory Analytical Results for Surface Water and Groundwater Samples**

	<b>Inorganic Constituents:</b>	<b>EPA Method</b>	<b>GWP Std (ug/L)</b>	<b>NCAC 2L STD (ug/L)</b>
53	Antimony	7041	NE	1 *
54	Arsenic	7060/7061	NE	10
55	Barium	7080/6010	NE	700
56	Beryllium	7091	NE	4 *
57	Cadmium	7131	NE	2
58	Chloride	SM4500 CLB	NE	250000
59	Chromium	7191	NE	10
60	Cobalt	7201	NE	1 *
61	Copper	7210/6010	NE	1000
62	Iron	7300	NE	300
63	Lead	7421	NE	15
64	Manganese	200.7	NE	50
65	Mercury	245.1	NE	1
66	Nickel	7520/6010	NE	100
67	Selenium	7740/7741	NE	20
68	Silver	7761	NE	20
69	Sulfate	SM4500	NE	250000
70	Thallium	7841	NE	0.2 *
71	Vanadium	7911	NE	0.3 *
72	Zinc	7950/6010	NE	1000

**Note:**  
Standards marked with an asterisk ( \*) are Interim Maximum Allowable Concentrations (IMAC) (15A NCAC 02L .0202).

# APPLICATION FOR 10-YEAR PERMIT CENTRAL CAROLINA TIRE MONOFILL PHASE 3A AND 3B

## LOCATION MAP



## INDEX OF DRAWINGS

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SHEET 2	PHASE 3A - 3B WASTE FILL ELEVATIONS
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SHEET 5	PHASE 3A - 3D WASTE FILL ELEVATIONS
SHEET 6	PHASE 3 A- 3D CLOSURE PLAN AND DETAILS
SHEET 7	SECTIONS

# March 2014

PREPARED BY:

**GARRETT  
& MOORE**

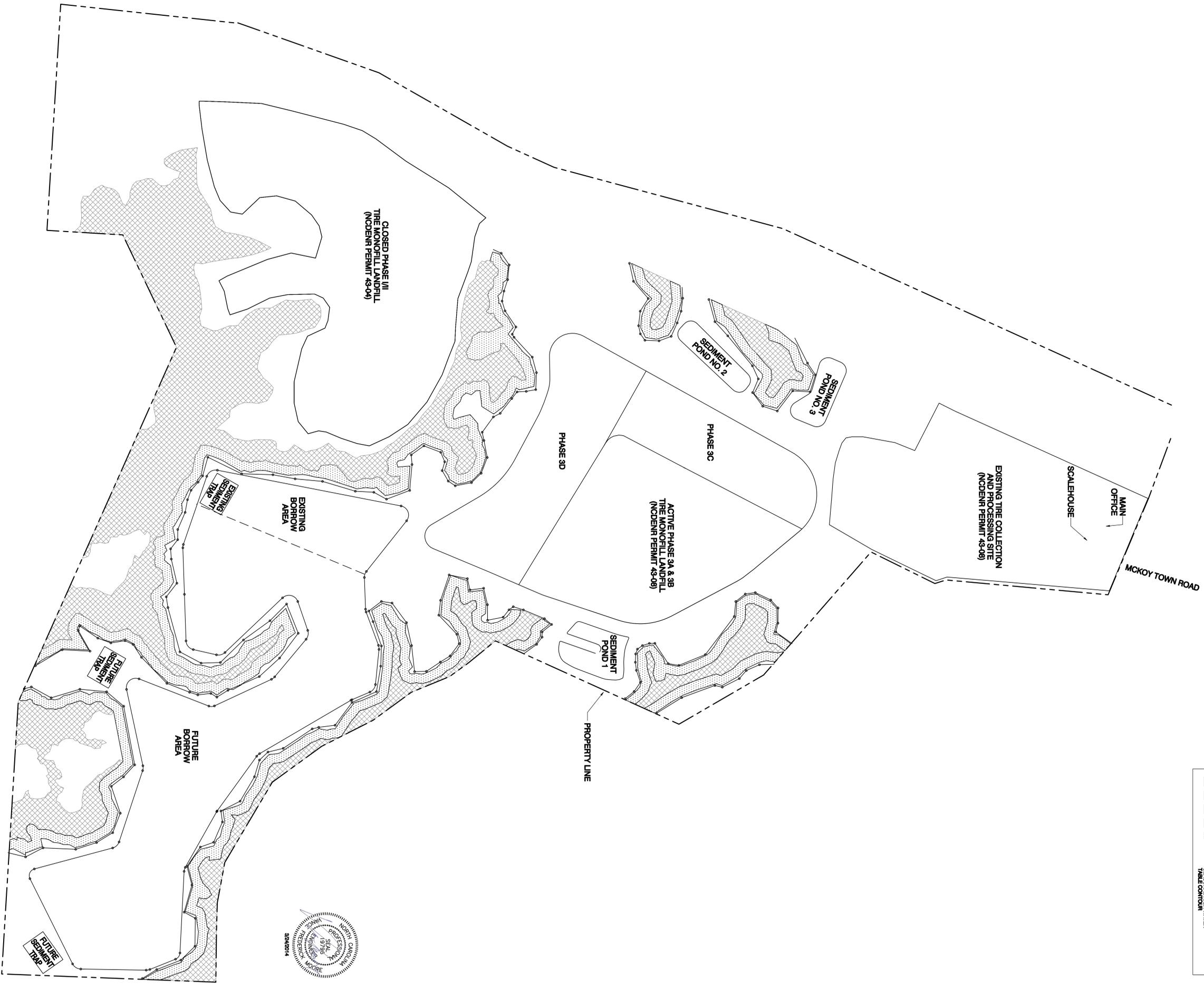


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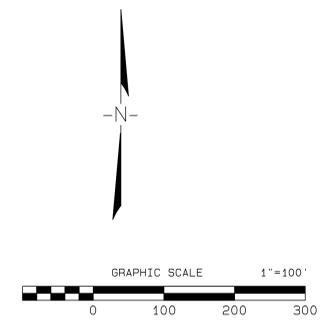
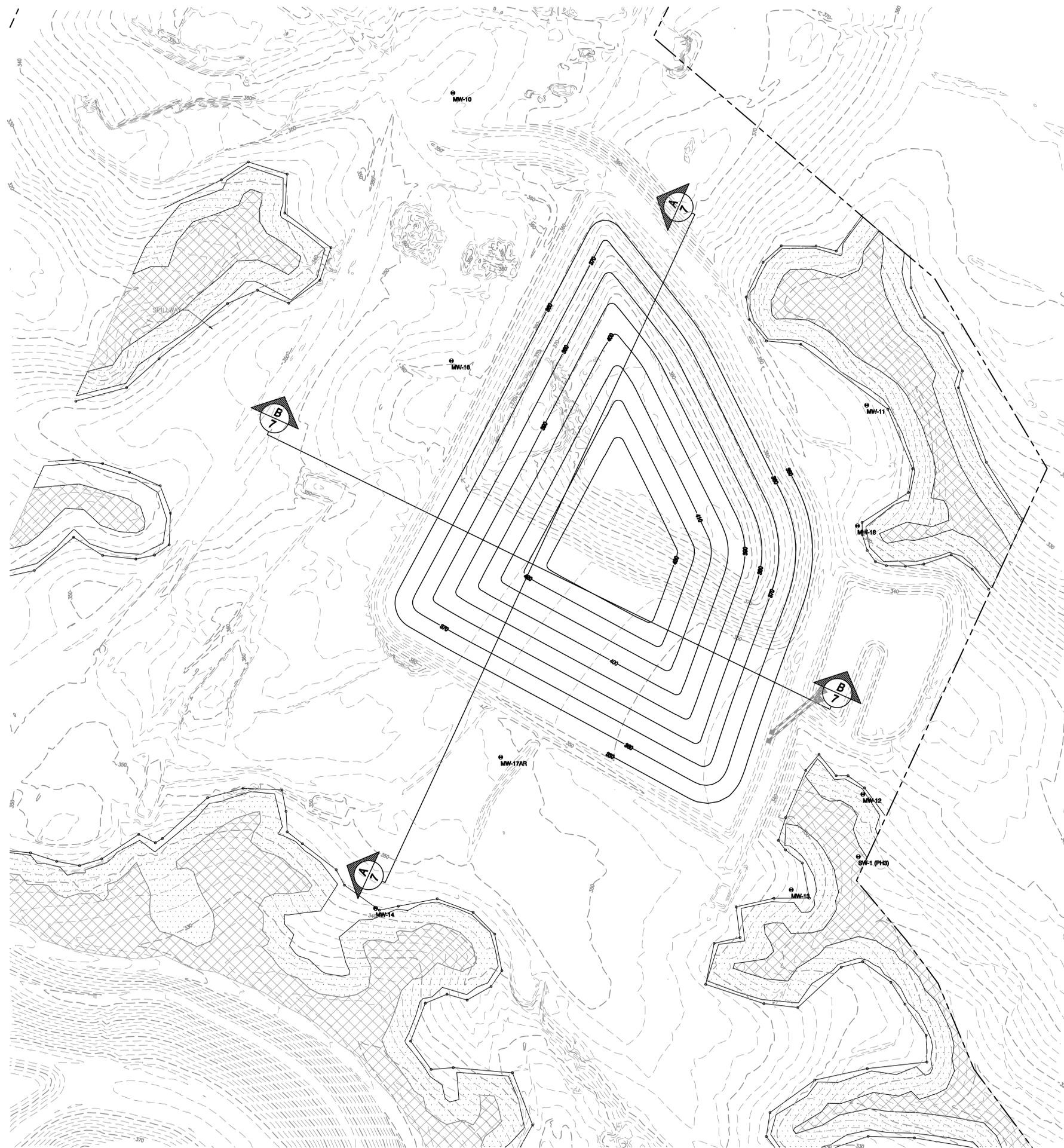


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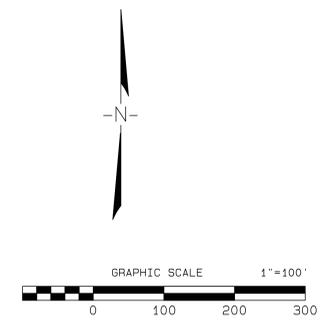
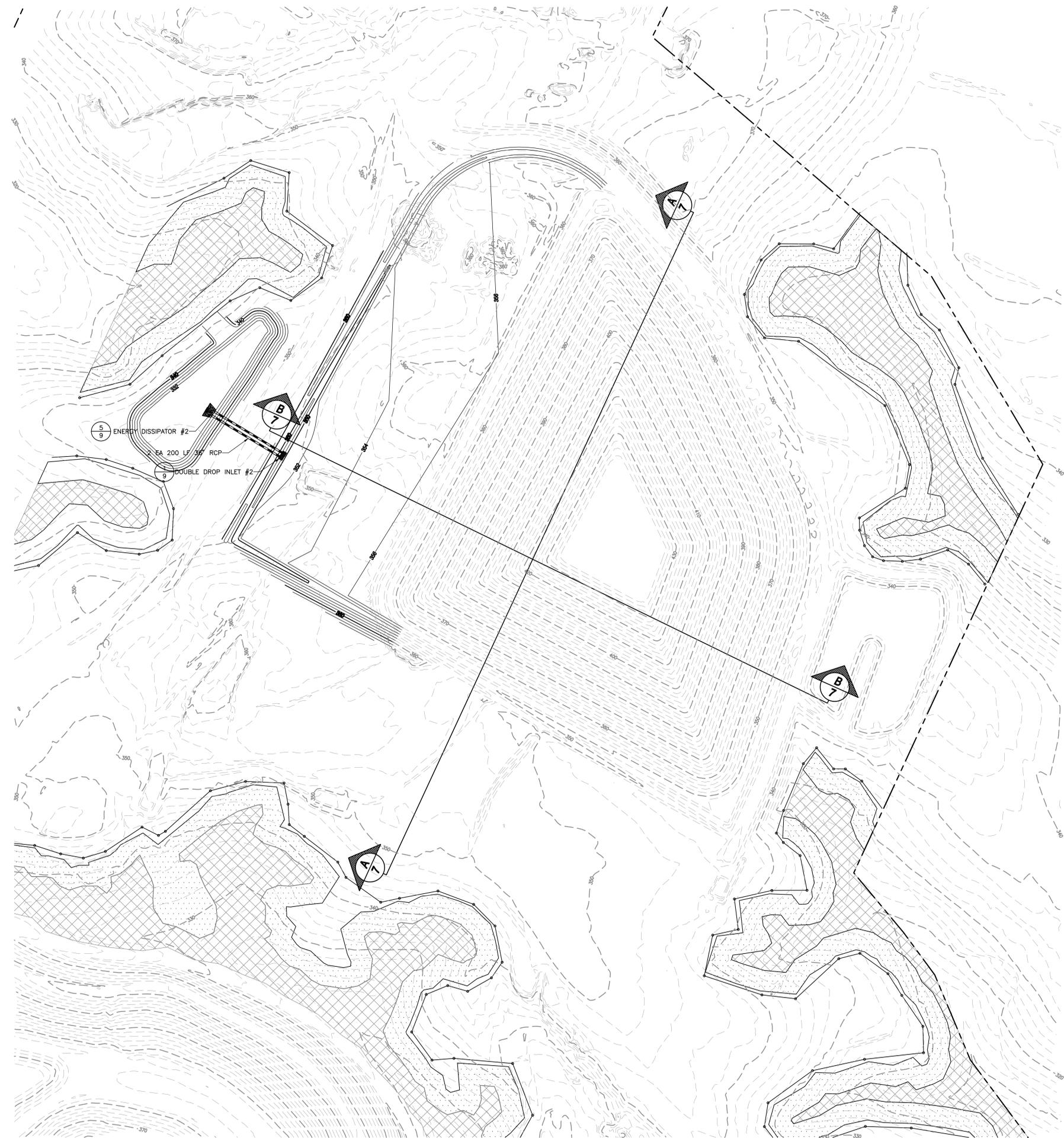
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**PHASE 3A - 3B WASTE FILL ELEVATIONS**



3/24/2014  
**SHEET 2**

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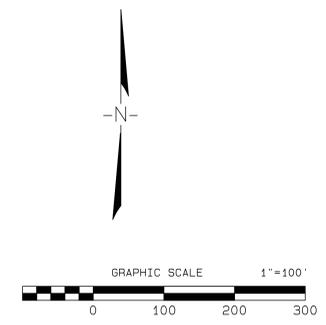
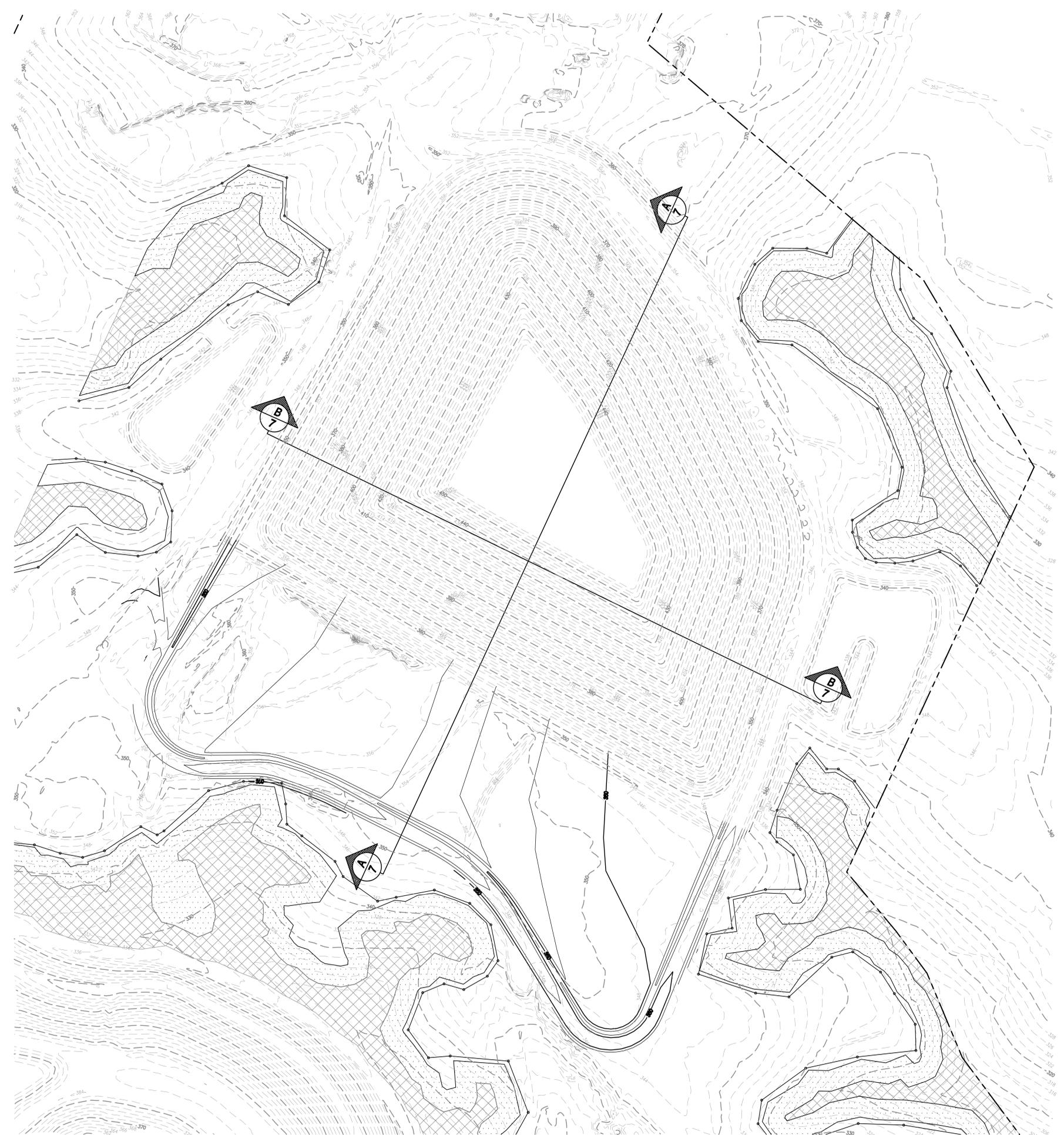
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**PHASE 3C BASE GRADE ELEVATIONS**



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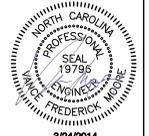
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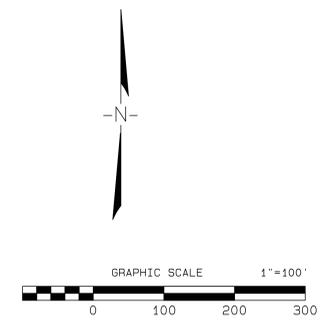
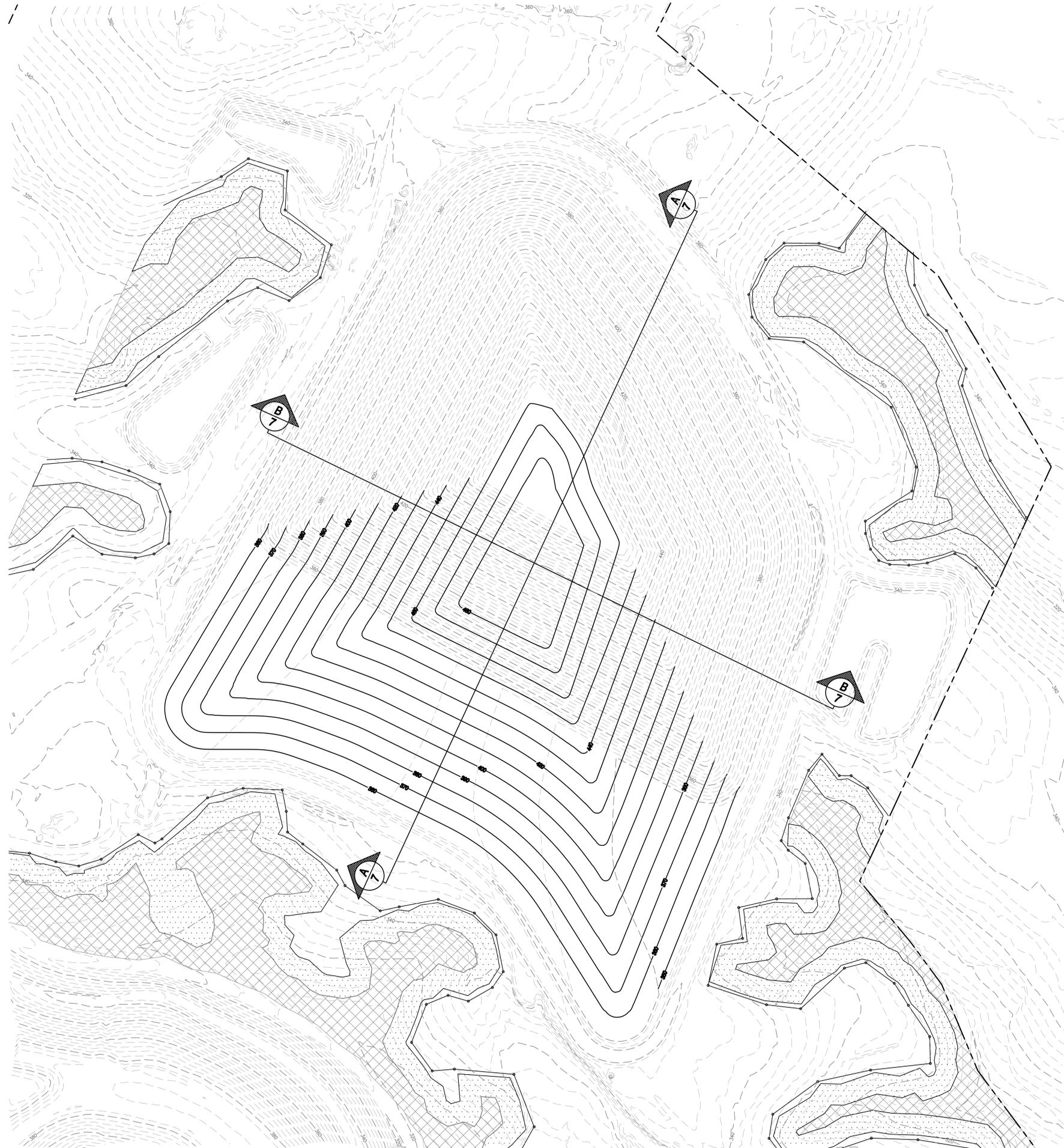
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**PHASE 3A - 3C WASTE FILL ELEVATIONS  
 PHASE 3D BASE GRADE ELEVATIONS**



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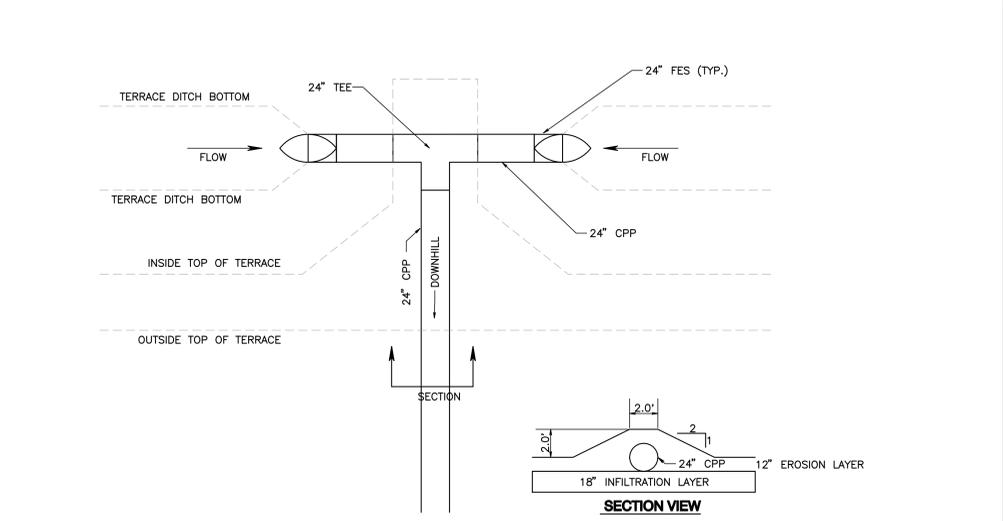
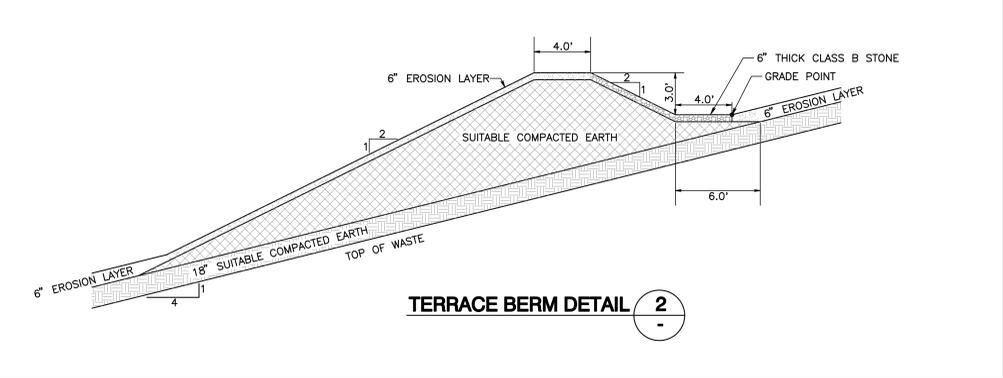
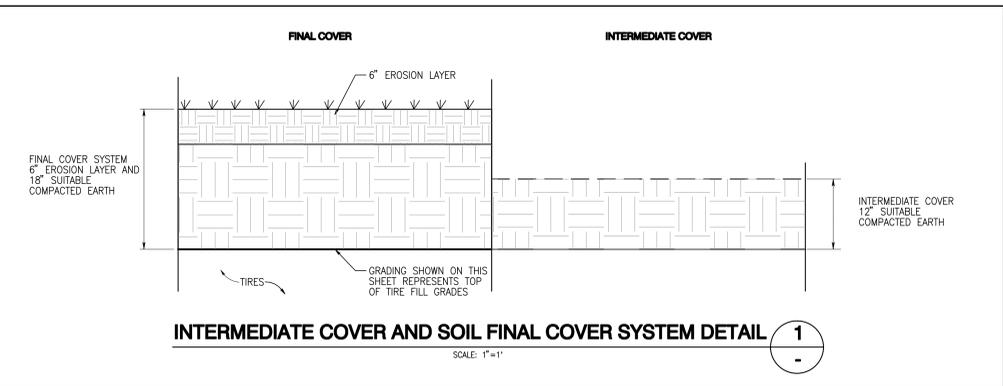
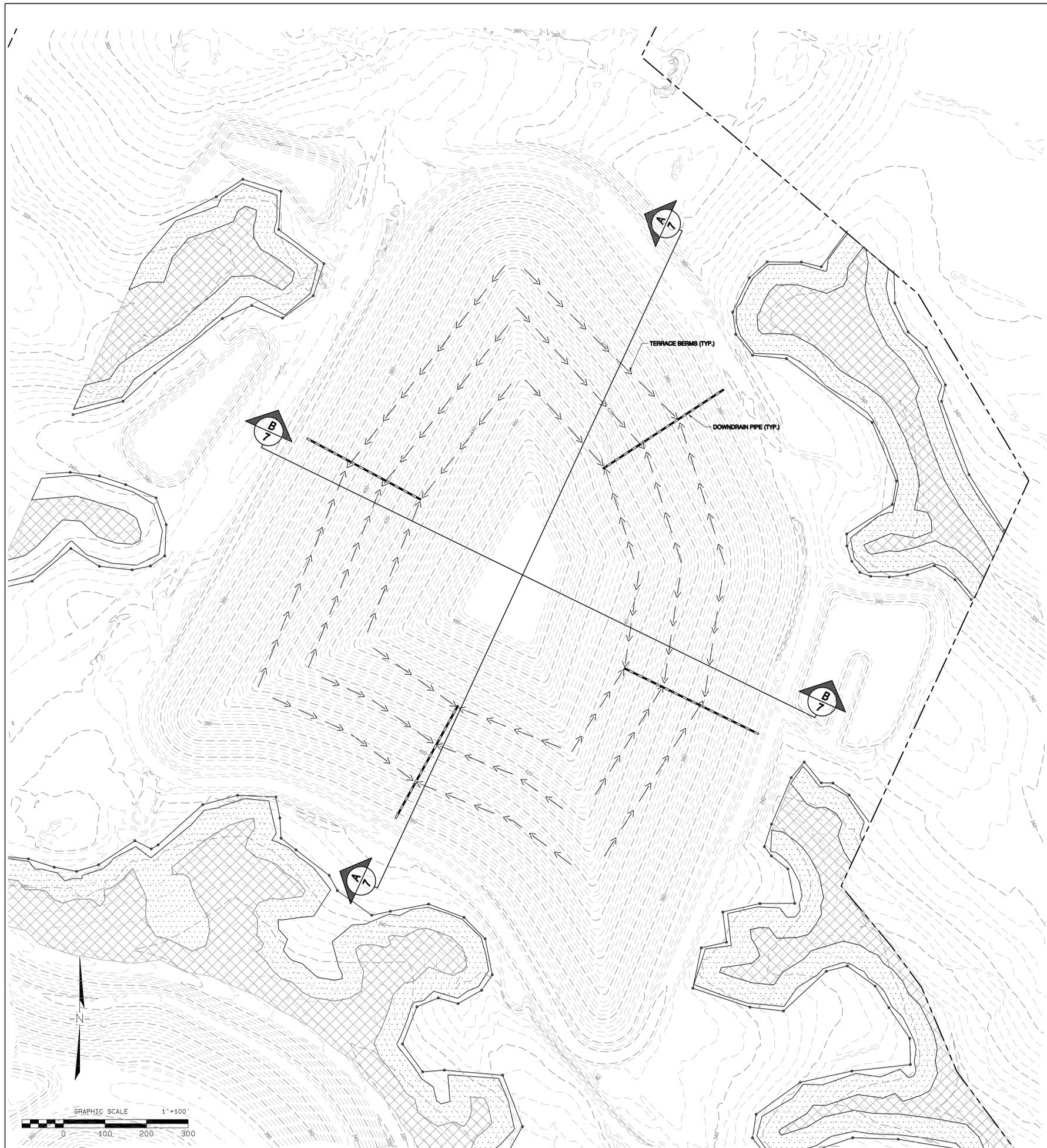
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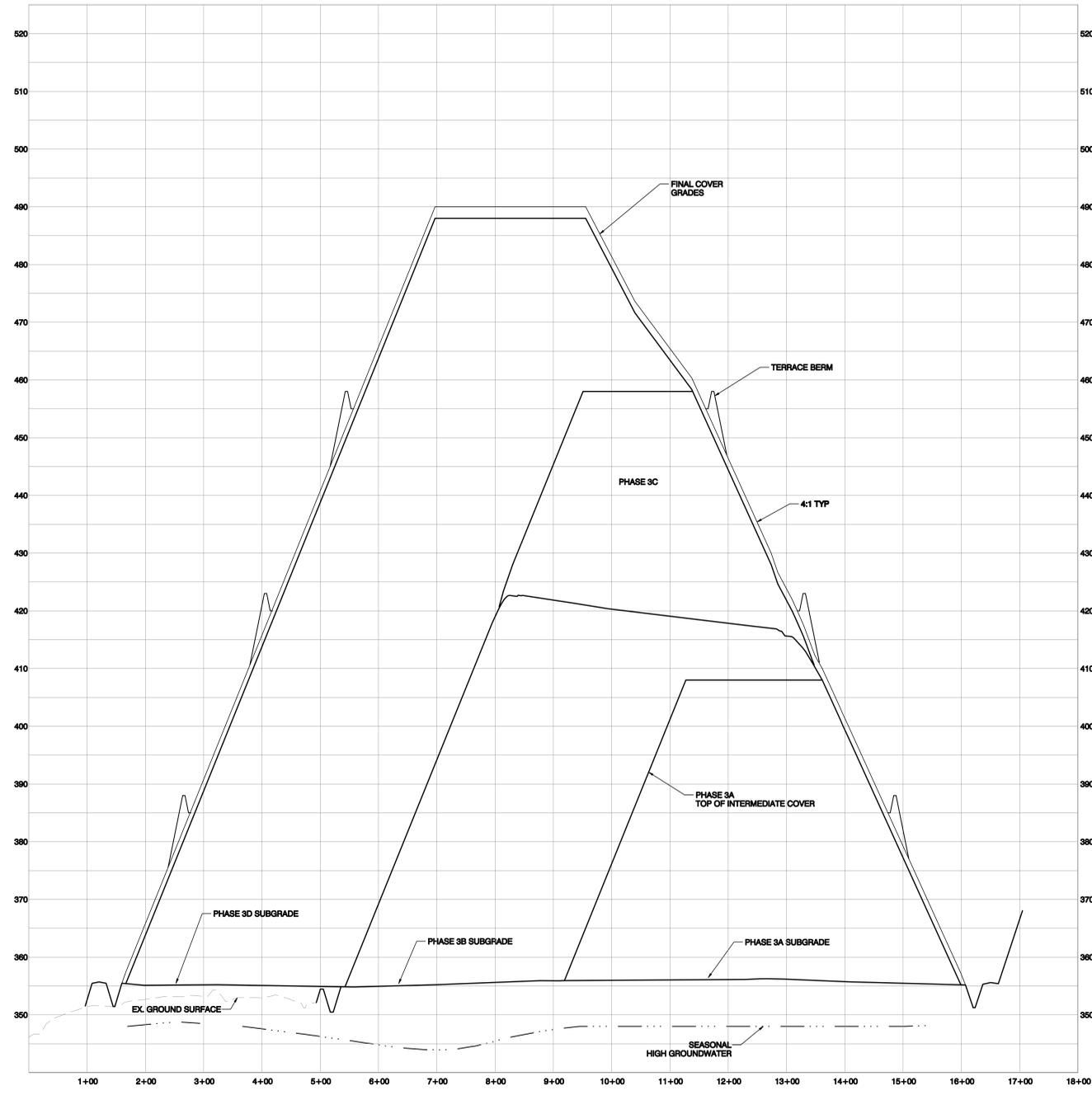
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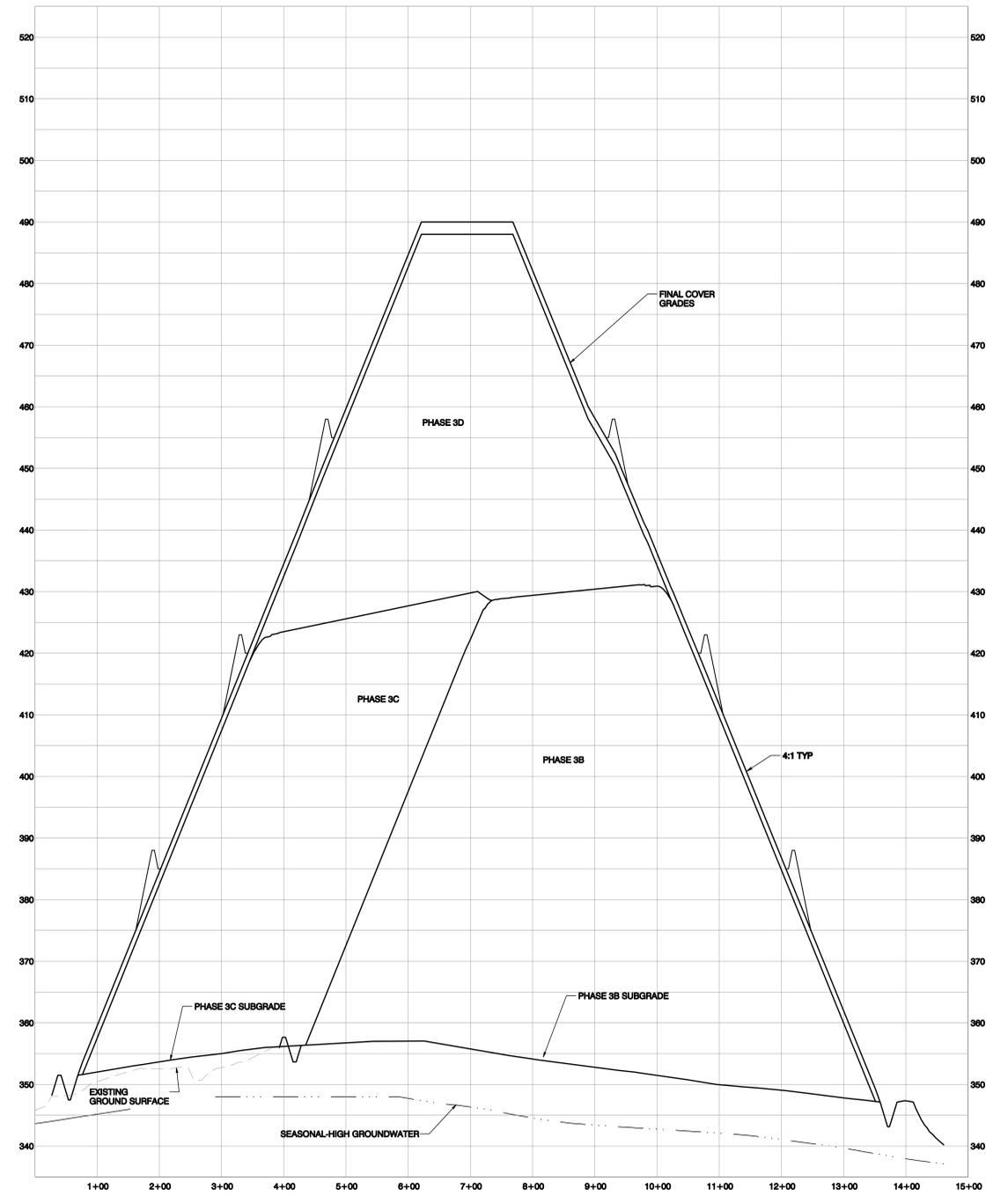
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**LANDFILL SECTION A-A'**  
SCALE: 1" = 100' HORIZ.  
1" = 10' VERT.



**LANDFILL SECTION B-B'**  
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