AMENDED CLOSURE PLAN FOR ASH POND

Plant Greene County
Alabama Power Company
Greene County, Alabama

July 2019

AMENDED CLOSURE PLAN
40 C.F.R. § 257.102(b)(3) and ADEM Admin. Code r. 335-13-15-.07(3)(b)3.

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Table 1 Closure Schedule

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1. Introduction

This Amended Closure Plan has been prepared to support the permit application previously submitted to the Alabama Department of Environmental Management (ADEM) for the CCR Surface Impoundment known as the Plant Greene County Ash Pond, located north of Demopolis, Greene County, Alabama. The permit application was submitted in accordance with ADEM Admin. Code r. 335-13-15-.09(1)(c). This Amended Closure Plan, along with other documents, is intended to supplement the previous submittal in response to the ADEM letter dated May 24, 2019 which provided response comments to the original application.

The closure of the ash pond will be accomplished by leaving the CCR in-place, by method of consolidating the existing footprint of approximately 489 acres to approximately 221 acres. CCR removed from outside of the consolidated footprint will be dewatered, excavated, and compacted within the consolidated footprint.

2. General

The Plant Greene County Ash Pond was designed to receive and store coal combustion residuals produced during the coal-fired electric generating process at Plant Greene County and to serve as a low-volume wastewater treatment pond. CCR products were sluiced from the plant to the Ash Pond. The pond covers approximately 489 acres, and currently stores about 10,300,000 cubic yards of CCR.

The Ash Pond was originally constructed between 1960 and 1965. The pond is formed by continuous dikes referenced as the east, south, north, and west dikes. The crest elevations of the dikes are as follows: the east dike ranges from 102.6-ft to 113.6-ft, the south dike ranges from 95.5-ft to 103-ft, the west dike ranges from 95.5-ft to 103.2-ft, and the north dike ranges from 103.3-ft to 113.6-ft. The maximum height of the embankment is 25 feet. The current dike elevations were reached on the east and west by raising the top elevations by as much as 3 feet between 1994 and 2005. These modifications included raising approximately 1,500 feet of the east dike, raising approximately 3,200 feet of the west dike, and extending and modifying the diversion dike to direct flow westerly to allow for more travel distance to support ash deposition. In 2009 the east dike was widened to the inside to address concerns with the adjoining barge canal slope. Finally, the west dike was widened in 2010.

The outboard slope of the east dike is abutted by the slope of the barge canal. After the widening of the east dike in 2009, the crest width from the crest of the barge canal to the inboard crest of the embankment was approximately 50 feet, resulting in an embankment that is more than twice as wide as it is high.

The Plant Greene County Ash Pond will be closed by leaving CCR in place, with consolidation of CCR to reduce the closure footprint to approximately 221 acres. The Ash Pond will be dewatered sufficiently to begin removal of the free liquids and to an extent to provide a stable base for the construction of an ash containment structure for the consolidated footprint, removal of ash outside the consolidated footprint and, construction of the final cover system. CCR will be dredged or excavated from the area outside the consolidated footprint, transported, and disposed of in the consolidated footprint to create a subgrade for the final cover system. Excavation will include removing all visible ash and over excavating into the subgrade soils. Additional details about the dewatering and construction methods to be used can be found within this Amended Closure Plan.

The final cover will be constructed to control, minimize or eliminate, to the maximum extent feasible, post closure infiltration of liquids into the waste and potential releases of CCR from the unit. This will be prevented by providing sufficient grades and slopes to: 1) preclude the probability of future impoundment of water, slurry, or sediment; 2) ensure slope and cover system stability; 3) minimize the need for further maintenance; and 4) be completed in the shortest amount of time consistent with recognized and generally accepted good engineering practices.

3. Notification – Intent to Close

Notification of intent to close the Plant Greene County Ash Pond was placed in the plant's Operating Record on April 15, 2019. The notice of intent was subsequently submitted directly to ADEM. The surface impoundment is closing under the requirements of § 257.101(a)(1) and r. 335-13-15-.07(2)(a)1. Closure of the surface impoundment will be conducted under §257.102(d) and r. 335-13-15-.07(3)(d), *closure performance standard when leaving CCR in place*. As described in more detail below, the surface impoundment will be closed in a manner that will control, minimize or eliminate, to the maximum extent feasible, post-closure infiltration of liquids into the waste and releases of CCR, leachate, or contaminated runoff to the ground or surface waters or to the atmosphere. Closure will also preclude the probability of future impoundment of water, sediment or slurry. Measures will be taken during design and construction of the closure system that provide for major slope stability to prevent the sloughing or movement of the final cover system. Closure will also minimize the need for further maintenance of the CCR unit.

Major closure activities will commence following receipt of a CCR permit from ADEM pursuant to r. 335-13-15-.09.

4. Written Closure Plan – § 257.102(b)(1)(i),(iii) and r. 335-13-15-.07(3)(b)1.(i),(iii)

a. Overview

A written closure plan to comply with § 257.102(b) was posted to the Plant Greene County Operating Record on October 17, 2016. A revised written closure plan incorporating reference to applicable ADEM Administrative Codes was submitted as a part of the original CCR Permit application.

As required by § 257.102(b)(3)(ii) and r. 335-13-15-.07(3)(b)3.(ii), the written closure plan must be amended whenever (i) there is a change in the operation of the CCR unit that would substantially affect the written closure plan or (ii) before or after closure activities have commenced when unanticipated events necessitate a revision of the written closure plan. The time frames for amendment to the written closure plan is in accordance with those specified in § 257.102(b)(3)(iii) and r. 335-13-15-.07(3)(b)3.(iii).

b. Closure Steps

i. Site Preparation

1) Ash pond cease receipt date and activities leading up to date

The ash pond ceased operation and receipt of CCR materials in March 2016. However, after that time, the pond continued to receive low volume wastes and/or other process waters from the Plant until the notification of intent to initiate closure was placed in the Operating Record on April 15, 2019.

Plant Greene County began generating electricity as a two unit coal-fired facility in 1965. During plant operations, CCR material was sluiced into the northern end of the ash pond and allowed to decant naturally. The coarser fraction of the CCR material, consisting of bottom ash, deposited in the northern portion of the ash pond, while the finer fraction, consisting of fly ash, settled out in the southern portion of the ash pond. A concrete riser structure and outlet pipe was installed at the southeast corner of the ash pond, and this structure discharged water from the ash pond to the Black Warrior River, in accordance with state regulations. Periodically throughout its operation, the ash pond underwent planned modifications. The exterior dikes were raised, and modifications were made at the southern end to direct the flow of surface water within the ash pond. In the mid-1990's nine simple cycle combustion turbine units were placed into operation for generation during peak periods.

Planning to convert the plant for gas-fired operations began in 2014. The Unit 1 coal-fired unit ended operations on February 25, 2016, followed by Unit 2 on March 30, 2016, and a project to convert both units to burn natural gas was completed later in 2016, with the fuel supply through the existing gas transmission pipeline installed for the combustion turbine units. Therefore, on March 30, 2016, CCR material was no longer generated.

The design for the ash pond closure calls for consolidating the CCR material within the northern portion of the existing ash pond, which will occupy approximately 221 acres within a diked area, bounded on the northern end by the northern portion of the existing exterior dike, and to the east, west, and south by a new interior dike constructed as part of the ash pond closure. A barrier wall keyed into the existing underlying chalk layer will be constructed around the perimeter of the consolidated CCR

material, along with a final cover, consisting of an engineered synthetic turf and geomembrane. The existing exterior dikes will be left in place at the completion of ash pond closure activities. The existing discharge structure will be removed and replaced during pond closure with a reinforced concrete discharge structure and outlet pipe, equipped with stop logs to control the water level within the ash pond during and after closure. During this design phase, a contractor was selected and closure construction planning commenced.

2) Contractor Mobilization

The Contractor mobilized to the site in February 2019. Initial activities included site preparation to develop contractor facilities (trailers to house support staff), laydown and staging areas, and initial erosion control measures.

3) Vegetation Management

Removed vegetation will be consolidated and burned in excavated burn pits using an Air Curtain Destructor (ACD). Greene County allows vegetation to be burned year-round; however, vegetation will be removed in phases and sequenced as discussed below. Surficial vegetation will be removed ahead of grading operations to the extent needed to support construction. Existing vegetation will serve to stabilize the ash surface and reduce erosion.

4) Clearing/Grading

The construction activities described below will be conducted systematically in phases and repeated within each phase as closure construction proceeds. Initial activities within the ash pond include installation of a Water Treatment Facility for ash contact water, removal of surface vegetation, fish and wildlife removal, construction of haul roads using ash material, and establishment of stormwater controls. Stormwater controls will consist of constructing ditches and installing sump areas equipped with pumps, and piping to convey collected water to Clear Pool areas. Collected water within the Clear Pool areas will be pumped to the temporary Water Treatment Facility, and then discharged in accordance with established permit requirements. Initial ash dewatering activities include removal of standing water (free water) within the ash pond, and removal of interstitial water using passive methods, such as rim ditches to reduce the moisture content and allow for CCR excavation and handling. Passive methods will be implemented whenever possible, and active dewatering (using wellpoint systems or other means) will be used as necessary. Removal of free and interstitial water must take place prior to start of CCR excavation and handling and continue throughout the life of the project.

5) ***Additional Pre-dewatering Site Specific Work***

There is no site specific pre-dewatering work for the ash pond at Plant Greene County.

ii. Removal of Free Water and In-situ Dewatering

Existing free water is generally located at the southern portion of the ash pond. Initially, pore water and free-standing water, not utilized for dust control, will be removed from the CCR and from areas within the ash pond and transferred in a controlled manner to Clear Pool areas. Water within the Clear Pool will be transferred to the temporary Water Treatment Facility for treatment prior to discharge. Initial dewatering of the excavation areas will consist of conventional methods such as rim ditching, cross ditching, sumps, stacking, and windrowing of the in-situ material to relieve surface and interstitial water.

iii. Excavation of CCR from the Closure by Removal Area

As initial dewatering removes interstitial water within the CCR material and the moisture content within the CCR material decreases, the initial excavation of CCR materials will begin.

Initially, bottom ash will be excavated from the northern area of the ash pond and used to construct temporary haul roads within the pond footprint. A Clear Pool area will be installed and pumped to assist in pond dewatering in this area.

Cut and fill areas will be broken into grids, with each grid having its own designated equipment and manpower group with total focus on the operations inside the work grid. Excavation and fill activities will generally proceed from the northern portion of the pond southward. CCR material will be excavated and completely removed in the existing ash pond area outside of the new interior dike footprint (i.e., the “closure by removal area”) using trackhoes and stacked for further dewatering.

iv. Placement and Stabilization of the CCR within the Consolidation Area

The dewatered CCR material will be loaded into off road trucks and transported to consolidation areas within the designated fill zones (within the footprint for the final cover). Dozers will spread the CCR material and moisture conditioning will be applied as needed to achieve the desired range of moisture content. Equipment will compact the CCR material in horizontal lifts to achieve the required density for the CCR material.

The CCR material within the subgrade of the proposed interior dike will be over excavated and a stable, temporary slope formed to the interior to allow the dike and barrier wall to be constructed. During this time, the subgrade beneath the new dike will be dewatered (discussed in a following section).

The interior dike will be constructed using imported offsite soil borrow material that meets design requirements. The soil material will be moisture conditioned to achieve a desired moisture range and compacted in horizontal lifts to the desired elevation for the barrier wall installation. Interior dike construction will be sequenced with construction of the barrier wall. The over excavated area along the inside perimeter of the interior dike will be backfilled with CCR material and compacted in horizontal lifts as the barrier wall is brought to final grade.

v. Final Grading of Consolidation Area for Capping

When areas within the closure footprint approach the designated grade, the CCR material within the final closure footprint will undergo final grading using precise guided equipment. At this time, a protective soil layer will be placed and compacted to protect the surface and minimize erosion until the final cover is installed. The graded material will then be smooth roller compacted per requirements.

vi. Installation of Final Cover System and Stormwater Management System

After the final grading of CCR material and the soil cover, a final cover consisting of a geomembrane in combination with an engineered synthetic turf product will be installed. This cover system meets or exceeds all requirements of § 257.102(d)(3)(i) and r. 335-13-15-.07(3)(d)3.(i). The system incorporates an integrated drainage layer between the geomembrane and engineered turf to prevent the buildup of water on the cover. The final cover system is covered with a manufactured sand infill which provides further protection of the synthetic turf and geomembrane.

The stormwater system for the ash mound final cover consists of a northern perimeter channel, terrace ditch, downslope channels, and interior dike perimeter ditch with outlet culverts. The stormwater system first conveys stormwater from the ash mound final cover to the interior area between the interior and exterior dikes. From there, the stormwater will be conveyed to the discharge structure and to the Black Warrior River.

The slope of the final cover is a nominal three percent grade, bounded by a portion of the existing exterior dike to the north, and the interior dike on the east, west, and south. This final slope is less than the minimum 5 percent slope required by r. 335-13-15-.07(3)(d)3.(i)(III). Therefore, Alabama Power will be requesting a variance on the final minimum slope. The highest elevation of the final grade (ridge line) is aligned on a north-south axis, and a terrace ditch is located approximately halfway down the slope to collect stormwater. Downslope ditches spaced intermittently below the terrace ditch convey stormwater to a perimeter ditch adjacent to the interior dike, and through culverts installed through the interior dike to the interior area to the south. The northern ditch collects stormwater

from the northern one-third of the final cover area and also discharges to the interior area south of closed ash area.

c. Procedures During Closure

i. Dewatering

Dewatering of the CCR Ponds consists of two phases: decanting of free water and dewatering of interstitial water within the CCR material. Dewatering will be required prior to ash excavation and throughout construction.

Free water collected in Clear Pools will be removed using pumps to convey free water through temporary pipes in various areas. The primary area of free water dewatering is the existing South Pond area. Stormwater collected in other areas of the pond will be dewatered throughout construction as needed. These flows will be directed to the south Clear Pool area, and then to the temporary Water Treatment Facility for treatment prior to discharge to the Black Warrior River. The details of the Water Treatment system are described later.

Interstitial dewatering refers to the removal of subsurface water within the saturated CCR material. This dewatering requires lowering phreatic water levels to improve material handling for excavation and transport. Removal of interstitial water will likely require both passive and active methods of drainage. Interstitial dewatering could consist of a combination of the following systems: (1) open rim and cross/bleeder ditches with gravity drainage, (2) open pits and trenching with pumping from sumps, (3) wet stacking of CCR material to allow interstitial water to drain to sumps and pumped to Clear Pool areas for removal, (4) installation of gravity toe drains, and (5) well point or deep well systems. The use of wellpoint and/or deep well systems are not currently anticipated but would be implemented if necessary for deeper excavations. The toe drains will flow to a sump and then will be pumped to the southern Clear Pool.

Open dewatering and gravity drainage is a passive method that is generally used to dewater ash ponds. Open dewatering and gravity drainage are generally sufficient to dewater ash ponds that contain coarser bottom ash or a mixture of bottom and fly ash and can be used in conjunction with constructed haul roads or working platforms to facilitate CCR excavation and hauling. For this project, gravity dewatering will mainly consist of the following key components: rim ditches, settling ponds, bleeder ditches, capillary break layers, toe drains, and stacking/casting/windrowing.

Excavation of rim and bleeder ditches is planned to start interstitial water removal. Rim ditches are excavated within the CCR material using long-reach track-hoes around the perimeter of the ash pond. Bleeder ditches

will be excavated laterally from the rim ditches using long reach track-hoes on a prescribed spacing to reduce the porewater pressure and phreatic surface within the CCR material. This will allow for mass excavation of CCR material. Excavated CCR material will be stacked parallel to the excavation, surcharging the ash below the stack, aiding in dewatering and recovery in the next excavation. Depending on the water withdrawal rates and effectiveness of the initial trenches, excavation of additional drainage ditches across the pond may be necessary. Settling ponds will be excavated in concurrence with the rim ditch installation to allow the heavy solids to fall out before reaching the Clear Pool.

To expedite interstitial water dewatering and construction stormwater management, a capillary break drainage system may also be considered for the ash excavation/placement around the interior dike. The drainage system will help relieve pore water pressure in the underlying ash as the weight of earthwork filling is applied. The drainage system would consist of coarse-graded sandy material or an equivalent free-flowing granular material. This perimeter drain system would continue to function to relieve interstitial water and help collect contact stormwater until the final impervious cover system is installed at the end of the closure construction.

The gravity dewatering onsite may include a toe drain system installed at the bottom of ash excavation slopes. Toe drains allow for a more direct means of gravity dewatering along an ash excavation slope. The typical construction would consist of over excavation at the base of the slope, followed by stone and perforated piping to create a French drain system.

For dewatering of wetter ash across the site, especially in the southern end of the pond, utilization of stacking & casting methods is anticipated. With this approach, ash with higher moister content will be excavated and stacked in piles to allow for gravity drainage. A similar technique of windrowing may be used throughout the site. This technique involves spreading the wet ash in thin lifts and rowing/tilling the ash to allow the moisture to evaporate from the surface.

Combination of ballasted flocculation and filtration systems to treat and discharge both free and interstitial waters (site specific limits/constraints)

The temporary Water Treatment Facility is installed on the southern portion of the exterior dike, west of the existing riser structure and outlet pipe, adjacent to the South Pond, and is rated for 2,000 gpm. The treatment system is skid mounted, and includes the following treatment steps:

- Water is pumped from the ash pond and treated with coagulant, polymer, bleach, and caustic
- Water is then pumped to a mix tank
- From there the water is pumped to three ballasted flocculation clarifiers
- Sand is added to the ballast to allow precipitation and clarification to occur
- Final solids removal using two media filters for polishing
- Solids are collected and dewatered and placed within the consolidated area for disposal

Constituent concentrations are monitored, and effluent water is discharged through the permitted outfall if numerical limits set in the permit are in compliance.

Drawdown guidance regarding dike integrity

In general, the maximum drawdown rate of free water within the ash pond against the exterior dike is initially limited to one foot per week. Maximum allowable pumping and phreatic drawdown rates may be increased to two feet per week if daily inspections of the existing ash pond dike performance indicate no adverse impacts on the integrity of the dike at the higher drawdown rate, subject to review and approval by the Owner and Engineer. In addition, the following criteria apply:

- The “per week” dewatering rate can be applied over a rolling 7-day period as opposed to strictly a calendar week basis.
- The daily dewatering rate within this 7-day rolling period should not exceed 6 inches per day.
- In the event rainfall or other sources temporarily raise the free water pool elevation during the closure construction process, an increased dewatering rate is acceptable as long as the temporary rise can be lowered back to prior levels within 7 days. This is based on the premise that saturation of the earthen embankment will likely not occur within this time frame.

ii. Liquids Management

Plant Greene County has an NPDES permit (AL0002917) which regulates discharges from plant operations as well as dewatering activities from the ash pond closure. A temporary Water Treatment Facility that will treat wastewater throughout the dewatering process is installed on the southern portion of the exterior dike and is rated for 2,000 gpm. Water within the pond will be managed by collecting it in sump areas and conveying it to Clear Pool locations using pumps and HDPE piping during each phase of the project construction. It is anticipated that pump locations will be able to process all free water, stormwater, and drained interstitial waters that accumulate within work areas. Pump locations are strategically placed and will be relocated throughout the phase of work as water collection areas shift within phase limits. Free water collected during construction can also be used for dust control. If additional water is required for dust control, it will be obtained from the discharge channel in accordance with the existing permit requirements.

During larger storm events (i.e., a 25-year event), stormwater and contact water captured within the ash pond will be conveyed to the south pond area. This water will be treated prior to discharge to the Black Warrior River. Because the existing exterior dike will remain both during and after closure, the ash pond will be able to adequately manage flow resulting from a 1,000-year storm event.

As the final cover is placed, precipitation will be segregated from contact water by containing runoff from closed ash areas to reduce the volume of water that must be treated by the temporary Water Treatment Facility. This water can also be used for dust control.

iii. CCR Removal Activities

Prior to completion of the final closure design, a geotechnical investigation was completed that included the following activities:

- Review of available drawings used to construct the ash pond
- Preliminary existing ground elevations prior to construction using multiple sources
- Drilling and sampling of CCR material at multiple locations using drill rigs with hollow stem augers, as well as cone penetrometer testing methods to determine CCR material properties, and to determine the location of the CCR/soil interface
- Standard penetration testing to estimate in-situ ash strengths
- Installation of groundwater monitoring wells, both inside and outside the ash pond
- Use of this data to model the phreatic surface within the ash pond and estimate effective strategies for dewatering, in concert with experience gained from previous ash pond closures

This collective body of data contained in the Site Characterization Report (Wood, 2017) and Site Characterization Report Addendum (Wood, 2018), was used to estimate the bottom of ash surface and determine preliminary excavation depths and CCR volumes by 3-D computer modeling. Depth of CCR to be removed is variable, with an approximate excavation depth of `0-30 feet below existing grade.

The final design involves a strategy to consolidate and isolate the CCR material within a diked area and barrier wall keyed to a low permeability chalk layer beneath the ash pond. The final cover, consisting of a combination geomembrane and engineered synthetic product will limit percolation of precipitation in the CCR material. The existing exterior dike will remain during and after closure activities are completed. The replacement discharge structure will be equipped with a valve used as backflow prevention when the river elevation rises above the outfall elevation. The lowest elevation of the exterior dike is higher than the 100-year elevation of the river. After ash pond closure, the valve will be opened to allow the river to fill the area between the interior and exterior ponds when the river elevation is elevated. The interior dike (and northern portion of the exterior dike) surrounding the closed ash area has a minimum finish grade elevation of 101 feet. This will provide protection from the river when it is elevated.

iv. CCR Removal Verification Protocol

CCR Removal Verification Method

The ash pond closure design includes excavation of CCR in some areas, thus requiring verification and documentation that CCR have been removed. Construction Quality Assurance (CQA) personnel will document removal of CCR material. The CCR removal verification procedure is outlined in the CQA Plan and as summarized below.

1. For CCR removal preparation and prior to CCR removal, the following steps shall be performed:
    - Review topographic mapping, aerial photography, and boring logs to estimate the pre-placement topography and/or CCR/soil interface.
    - Prepare a CCR unit map illustrating a grid spacing of 100 feet for excavation areas. Each grid point will be assigned a unique alphanumeric label for reference and documentation of CCR removal verification.

2. Steps to visually verify CCR removal:

- A system of grid points will be established and used as described.
- CCR will be excavated until there is no visible CCR present. This surface will be referred to as the bottom of ash pond.

- CQA personnel will locate each grid point and determine the elevation.
- CQA personnel will observe and document the surface area represented by the grid point to note if visible CCR is present at the surface. If CCR is present, the location will be documented, and CCR removal continued until no CCR is visible.
- If the observations and evaluations above indicate visual CCR is not present at the final excavated surface for the grid point, CQA personnel may conclude the primary source is removed at that location.

After the CCR removal is verified, the following actions will be taken:

- The bottom of ash pond surface will be surveyed and recorded.
- The excavation will then continue to a depth of 6 inches below the bottom of ash pond surface. This surface will be referred to as the bottom of excavation. Excavated soil will be placed in the on-site CCR consolidated footprint closure area or disposed of at an approved off-site landfill.
- The color of the exposed soil will then be specified by CQA Personnel and documented by using the Munsell color system, one per acre and each change in soil color per area being certified.
- At least one hand auger probe (or Geoprobe) will be advanced to a depth of 12 inches below the final excavated subgrade for verification of color, with one sample being taken per acre and for each change in soil color.
- The bottom of excavation surface will be surveyed and confirmed to be a minimum of 6 inches below the bottom of ash pond surface.

v. CCR Placement and Compaction

As dewatering continues, CCR material will be excavated from the closure by removal areas and placed and compacted in horizontal lifts on top of the existing CCR material within the consolidation area.

As discussed previously, the CCR material will be dewatered in a systematic fashion prior to and during excavation activities, to maintain the phreatic surface below the working elevation of removal operations. For construction of the closed ash pond, it is expected that the CCR material will be handled multiple times prior to final placement and closure of the pond. CCR material will be stacked and dewatered to the proper moisture content prior to placement in the consolidation area. Materials are to be stockpiled separately; the expected material types are CCR fill, potential compacted soil cover material, topsoil, and spoils. The soil stockpiles will be staged outside of the ash pond limits. Spoils are to be stockpiled in a separate location from reusable materials. Dewatered CCR material will be loaded in off-road haul trucks for placement as fill in the consolidation area. Haul routes will be coordinated to maintain safe conditions during heavy equipment operation. The CCR material will be placed to rough grading elevations, graded using guided equipment, and smooth rolled to achieve surface condition and compaction requirements.

The distances traversed by construction equipment will vary by individual phase; however, in general, haul distances will be minimized because CCR material obtained from the closure by removal areas will be transported to the consolidation areas in a sequenced progression from north to south. The consolidated ash footprint within the closed ash pond is planned to be approximately 221 acres.

The design incorporates a very flat slope of three percent for the final cover and is inherently stable for the seismic hazards anticipated. An earthen dike, built to contain the CCR material, will be constructed in horizontal lifts and compacted to 95 percent standard Proctor density. A barrier wall will be constructed around the perimeter of the dike system, keyed into an underlying chalk layer. The perimeter dike and barrier wall system, in concert with the final cover, will minimize the presence of water within the consolidated ash area.

vi. Fugitive Dust Control Plan

This site has a variety of identified potential fugitive dust sources. The dust sources anticipated on this project include:

- CCR excavation in the drier portions of the impoundment
- Existing CCR areas not covered with vegetation
- Designated areas where CCR is being stockpiled for dewatering purposes
- Transfer of CCR from the excavation area to the fill area around the existing stack
- Transport of offsite borrow soil material to the designated stockpile area
- Borrow Material Stockpile Area(s)
- Transport of borrow soil material from the stockpile area to soil backfill areas onsite
- Placement of sand, hydro-binder, or similar products in the proposed CCR capped area

To combat fugitive dust during the excavation and placement of CCR, the Contractor will utilize a variety of methods including:

- Limiting the amount of area exposed at any one time
- Leaving existing vegetation in place as long as possible
- Minimizing the amount of CCR exposed at any one time
- Dispersion of water with water trucks and water wagons

The Contractor will implement procedural type controls which limit the amount of area exposed at any one time. Existing vegetation will be left in place as long as possible, minimizing the amount of ash exposed at any one time. Conventional dust control for the project will include the dispersion of water with water trucks and water wagons.

When practical and feasible, irrigation systems will be used to control dust in exposed areas where minimal construction activity is taking place. Water for the ongoing dust control efforts will be provided by multiple sources depending on which stage of construction. Sources of water will include free water, or contact water contained within sump areas and Clear Pool areas. If required, water can be withdrawn from the discharge channel. As the project progresses and CCR is covered with the designed final cover system there will be less volume of water required to combat dust. However, dust suppression will still need to be controlled until project completion. The owner and the Contractor will assess the effectiveness of fugitive dust control measures by performing visual observations of the ash pond and surrounding areas and implementing appropriate corrective actions, as necessary.

If fugitive dust complaints are received, the owner will document and investigate the complaint with the Contractor's cooperation. The Contractor will implement corrective actions as needed.

vii. Stormwater Management

As discussed previously, the stormwater system for the final cover system consists of a northern perimeter channel, terrace ditch, downslope channels, and interior dike perimeter ditch with outlet culverts. The stormwater system conveys non-contact stormwater from the final cover to the interior area between the interior and exterior dikes. From there, the non-contact stormwater will be conveyed to the discharge structure and then to the Black Warrior River.

viii. Equipment Decontamination

The CCR will be transported only within the boundary limits, and the equipment used for transportation will be stored in a prepared area of the ash pond. Prior to leaving the project, all equipment that has worked within the CCR limits will go through an extensive wash down process within the existing pond area to mitigate any CCR from the leaving the project.

Borrow soil material will be imported from offsite borrow areas for use on the project site. Whenever possible, the Contractor will deliver the borrow soil material directly to the location of the backfill operations and make every effort to keep the delivery trucks from coming into contact with CCR material. Trucks entering and leaving the site will travel through an established construction exit and will be checked for CCR contamination prior to leaving the impoundment.

ix. Site Security

Plant Greene County is an active generating facility. Security for the facility and ash pond are provided by Alabama Power Company (APC). Personnel requesting access to the site must follow established procedures required by APC. Site access is from a single point, and controlled by security personnel.

x. Groundwater Monitoring

A groundwater monitoring plan was submitted with the original Greene County Ash Pond permit application. Please refer to Appendix 8 of the original permit application.

xi. Operational Inspections

Inspections will be conducted by a Qualified Person at intervals not exceeding 7 days to look for appearances of structural weakness and for proper operation of all outlet structures maintained for use during closure. Furthermore, an annual inspection will continue to be conducted by a qualified Professional Engineer throughout the closure process.

d. Closure Design Features

i. Interior Dike

The interior dike will be constructed of specified soil material. The interior dike is designed to structurally contain the CCR material within the

specified footprint. Furthermore, the dike is designed to protect the barrier wall from any inundation of the former ash pond area.

ii. Barrier Wall

A barrier wall will be constructed within the footprint of the interior dike, as well as a portion of the northern dike where CCR material will be consolidated within the mound. The barrier wall is designed to use a Bentonite slurry that is a low permeable material. The Bentonite slurry will be installed extending from the underlying chalk surface to the top of the portion of the containment dike to the cover system. This design of the barrier wall limits the movement of interstitial water through the constructed interior dike and existing northern dike. The barrier wall will be constructed utilizing two primary methods: slurry wall construction, along a portion of the existing northern dike and a one-pass construction method within the interior dike.

iii. Final Grades

The closed ash pond will be graded with a nominal slope of three percent, with a bench approximately halfway down the slope. Variance from slope requirements of r. 335-13-15-.07(3)(d)3.(i)(V) will be requested.

iv. Final Cover System

The final cover system consists of the following (described from the final ash surface upwards):

- CCR surface that is brought up to design grade
- 3-6” of imported protective soil.
- A linear low density polyethylene (LLDPE) geomembrane
- An engineered synthetic turf product
- Sand infill material

The final cover system materials are interlocking with either overlapping seams or welded together to form a continuous barrier. This final cover system is designed to protect the ash surface from wind and rain as well as to prevent rainwater from percolating into the contained ash. The synthetic cover is trafficable by vehicles and does not need mowing.

Approximately 55 acres will be installed in each of four phases of final cover construction.

v. Stormwater Management System

A terrace ditch will be constructed approximately halfway between the interior dike and the top of the mounded CCR material, and will collect stormwater from the upper portion. Downslope ditches will then be installed intermittently along the terrace ditch to convey stormwater to a perimeter ditch adjacent to the interior dike. Aggregate fill underlain by

geotextile material will then be installed within the downslope ditches to complete the system.

HDPE pipes will be installed and penetrate through the interior dike to discharge storm water into the ponded area between the interior and exterior dikes. The HDPE pipes will be booted to the LLDPE geomembrane to provide a watertight connection, and the turf will be wrapped around the HDPE pipes.

A perimeter ditch will be graded along the northern portion the exterior dike to collect stormwater runoff from the northern portion of the final cover. This runoff will be discharged through HDPE pipes installed through the interior dike and into the ponded area between the interior and exterior dikes.

To discharge water from the ponded area, a discharge structure will be built at the southern end of the pond, to replace the existing outlet structure.

The outlet structure will also consist of a gate valve and stop log system, supplied by Plasti-Fab that will be installed during the discharge structure construction.

vi. Final Site Stabilization

Final stabilization of the ash removal area will be achieved by hydroseeding any disturbed areas requiring seeding. Areas requiring seeding include the outer slopes of exterior dike, along the outer toe where disturbed (inside the limits of disturbance), and the Contractor laydown area on the east dike after the closure turf is installed. Upon completion of the final grading of this area, hydroseeding will immediately begin to minimize erosion.

e. Final Cover System

The prescriptive final cover system defined under §257.102(d)(3)(i) and r. 335-13-15-.07(3)(d)3.(i) consists of, from top to bottom:

- A 0.5 foot thick (minimum) erosion layer consisting of earthen material capable of sustaining native plant growth; and
- A 1.5 foot thick (minimum) infiltration layer with a hydraulic conductivity less than or equal to that of any bottom liner system of underlying natural subsoils present, or a hydraulic conductivity no greater than 1×10^{-7} cm/s, whichever is less.

An alternative final cover system defined under §257.102(d)(3)(ii) and r. 335-13-15-.07(3)(d)3.(ii) must include, from top to bottom:

- An erosion layer providing equivalent protection from wind or water erosion as the erosion layer for the prescriptive final cover; and
- An infiltration layer that achieves an equivalent reduction in infiltration as the infiltration layer for the prescriptive final cover.

EPRI (2017) prepared a technical report to study the performance of the prescriptive final cover system (i.e., the minimum requirements) and compare the results to other types of final covers, including alternative final covers consisting of a geomembrane overlain by a synthetic turf product. Unlike the prescriptive cover system, there are no thickness or hydraulic conductivity criteria specified in the CCR Rule for an alternative final cover system. Instead, the performance of the site-specific alternative design must be demonstrated to be equivalent to the prescriptive minimum design. A geomembrane limits the infiltration through a cover system to holes within the geomembrane, which make up only a small fraction of the cover system are, the calculated infiltration through a cover system with a geomembrane underlain by a semi-impermeable soil (e.g., with a hydraulic conductivity of 1×10^{-4} cm/s) is significantly less compared with the infiltration through the prescriptive final cover.

ClosureTurf® has been selected as the final cover for the ash pond closure at Plant Greene County. The final cover design incorporates a 50 mil linear low density polyethylene (LLDPE) geomembrane overlain by a synthetic turf product. The turf product consists of a woven geomembrane with tufts of synthetic turf manufactured from high density polyethylene (HDPE). Sand infill material is placed on the turf, which provides protection of the underlying geotextile material from ultraviolet (UV) rays. The sand infill is designed using angular manufactured aggregate with a low percentage of fines; thus the sand infill, in concert with the synthetic turf, can resist erosion and minimize the need for maintenance. Use of the LLDPE geomembrane overlain by the turf exhibits the following characteristics:

- Achieves a higher degree of infiltration control than a prescriptive cover;
- Minimizes erosion. Testing has shown that a low percentage of sand infill loss occurs over time;
- The LLDPE geomembrane can tolerate small differential settlements;
- For the ash pond closure at Plant Greene County, slope stability is not an issue because the final slope is a nominal three percent; the LLDPE geomembrane has sufficient friction resistance for this relatively flat slope;
- The geomembrane and turf is quicker to install compared with a compacted clay layer incorporated into the final cover;
- Maintenance is less than prescriptive cover. The synthetic turf surface does not require annual maintenance typical of prescriptive covers (i.e., mowing, adding fertilizer, or watering during periods of drought.

f. Achievement of Closure Performance Standards

The ash pond closure is designed to achieve Closure Performance Standards When Leaving CCR in Place (ADEM Standards for the Disposal of Coal Combustions Residuals in Landfills and Surface Impoundments, Chapter 335-13-15-.07(3)(d) and 40 CFR § 257.102(d)). Free water will be

removed, and interstitial water will be lowered to accomplish the CCR removal from the closure by removal areas and to close in a consolidated footprint.

With the installation of the final cover system on the consolidated footprint in concert with installation of a perimeter earthen dike and barrier wall, the post-closure infiltration of liquids into the waste and releases of CCR, leachate, contaminated run-off to the ground or surface waters or to the atmosphere will be accomplished to the maximum extent practicable.

The grading will not allow the future impounding of water or sediment on the closed ash pond. The design utilizes appropriate final cover slopes, terraces and stormwater controls to meet the performance criteria.

The engineered turf final cover system allows for closure in shortest amount of time while minimizing erosion and maintenance post closure. The final cover system also has a lower hydraulic conductivity than conventional soil cover systems thereby reducing infiltration to maintain a stable CCR fill.

An Assessment of Corrective Measures (ACM) for the Plant Greene County Ash Pond was placed in the Plant's Operating Record in June 2019 and submitted to the Department in July 2019. The development of the ACM considered the planned closure approach which will include dewatering, consolidating the footprint of the ash, and constructing a cover system over the consolidated footprint that meets the requirements of r. 335-13-15-.07(3)(d). In addition, a barrier wall keyed into the low-permeability Demopolis Chalk will be installed along the new interior dike system that will contain the consolidated footprint. This hydraulic barrier will be connected to the geomembrane of the final cover system. These actions will effectively control the source of CCR constituents to groundwater by removing free water and some interstitial water from the ash, reducing the footprint area of the ash and preventing further infiltration of surface water resulting from rainfall through the ash. Removal of the free liquid will reduce the volume of water available to flow from the Ash Pond during and after closure, while also minimizing the hydraulic head driving water through the subsurface.

Outside the consolidated footprint, ash will be excavated to remove all visible ash and a minimum of 6 inches of the underlying subgrade soils, thereby removing the source from these areas. The cover system that will be constructed over the consolidated footprint will have a permeability several magnitudes lower than the permeability of the natural clay subsoils beneath the impoundment, reducing the likelihood of future migration of water through the ash below the cover.

At the present time, a combination of the closure process, source control measures and groundwater control discussed above along with Monitored Natural Attenuation and adaptive site management are anticipated to provide the necessary remedy for this facility. However, in an adaptive site management process, system performance is monitored, and one or more of the technologies identified in the ACM will be used to supplement the

remedy as needed if the selected approach is not performing as intended or corrective action goals are not met. If necessary, modifications to the closure plan may also be amended or supplemented to include other protective measures.

5. Maximum Inventory of CCR § 257.102(b)(1)(iv),(iii) and r. 335-13-15-.07(3)(b)1.(i),(iv)

The Report of Annual Inspection of CCR Surface Impoundment for Plant Greene County for 2019 reports the approximate volume of CCR is 10,300,000 cubic yards.

6. Largest Area Requiring Final Cover – § 257.102(B)(1)(V) AND R. 335-13-15-.07(3)(B)1.(V)

Per closure drawing GRN_3.2.4_600, the final cover area will be 221 acres.

7. Schedule for Completing Closure Activities – § 257.102(B)(1)(Vi) AND R. 335-13-15-.07(3)(B)1.(Vi)

The following closure activities are included in the schedule.

Mobilization – February 2019

Site Preparation – May 2019

Clear Pool Drawdown – August 2019

Phase 1 Construction – March 2019 thru July 2021

Phase 2 Construction – December 2020 thru January 2022

Phase 3 Construction – September 2021 thru May 2023

Phase 4 Construction – December 2022 thru April 2024

Phase 5 Construction – January 2024 thru August 2025

Ash Pond Discharge Structure – December 2019

Gas Line Removal – January 2023

8. Certification of Closure

The Contractor shall retain the services of an approved independent Construction Quality Control (CQC) Team to perform specified inspection and testing throughout the construction. The Owner's Construction Quality Assurance (CQA) Team will verify conformance of the materials, testing and constructed work with the specifications.

In accordance with §257.102(h) and r. 335-13-15-.07(3)(h), within 30 days of completion of closure of the CCR unit, the owner or operator will prepare a notification of closure of the CCR unit. The notification will include the certification by a qualified professional engineer licensed in the State of Alabama verifying that closure has been completed in accordance with the closure plan as required by 335-13-15-.07(3)(b) including the

submittal of a Final Certification Report. The Final Certification Report will serve as the permanent record of the completed construction for the ash closure so as to assure regulatory agencies that the components were constructed in substantial accordance with the State permits, CQA Plan and any construction-level specifications and drawings. The owner or operator has completed the notification when it has been submitted to the Department and placed in the facility's operating record.

The Final Certification Report is anticipated to include the following:

1. Certification Letter containing a certification from the CQA engineer working on the project, registered to practice in the State of Alabama, that the project was performed in accordance with the Closure Plan permit and any construction-level specifications and drawings
2. Pond Closure Technical Specifications
3. As applicable, associated permits and filings, such as Notice of Intent (NOI), and any local permits
4. Soil, CCR, and any other material laboratory test results
5. Onsite and off-site borrow source test results that support acceptance of borrow soils
6. Subgrade Proofroll Acceptance Forms with required signatures
7. Soil, CCR, concrete and any other material field test results
8. CCR Fill Density Test Summary and test locations
9. Soil Fill Density Test Summary and test locations
10. One Point Proctor and Drive Tube Density Summary
11. Sand infill material testing results, thickness and test locations
12. Manufacturer's Quality Control Certifications

a. Geosynthetic materials
b. Engineered turf
c. HDPE pipe
d. Geotextile
e. Extrusion welding rods

13. Close by Removal Certification
14. Geomembrane Installation Logs

a. Geomembrane Panel Deployment Log
b. Geomembrane Repair Log
c. Geomembrane Seaming and Testing Log
d. Geomembrane Trial Seam Log
e. Geomembrane Destructive Samples Laboratory Results

15. Certification Subgrade Surveys
16. Daily CQC Field Monitoring Reports
17. Daily CQA Field Reports
18. Record As-Built Drawings

a. Geomembrane As-Built Drawings
b. Periodic Topographic Survey
c. Top of Subgrade As-Built Drawings

19. Certifications for quality control

APC will also submit confirmation that a notation on the property deed has been recorded in accordance with r. 335-13-15-.07(3)(h)(i).

9. Directional Informational Signs

During construction, controlled access points will have necessary signage. Post-construction, signs prohibiting individuals from driving on the closure turf will be posted. Signs will be also be posted at the entrance gate to the facility notifying users of the closed CCR pond. Contact information will be provided on the sign.

10. Vegetative Plan

The engineered synthetic turf product specified as a component of the final cover system will eliminate the need to seed the final cover. The outer slopes of the interior dike, and the inner slopes of the exterior dike will be lined with riprap underlain by geotextile fabric. The outer portion of the exterior dike will continue to be vegetated with grass. The current plan is to allow the area between the interior and exterior dikes to maintain stormwater runoff from the closed ash area as a pond. The water level will be controlled by stoplogs installed in the discharge structure.

11. Site Equipment Needed

The Contractor selected to perform closure construction will be responsible for all equipment needed during the construction period. For post-closure care, Alabama Power will provide all necessary company owned, leased or contracted equipment needed to perform maintenance and any necessary repairs.

12. Sediment Removal

During closure, accumulated sediment in the closure by removal area will be contained within the exterior dike, excavated, and disposed within the consolidation area.

Post-Closure, accumulated sediment will be removed on a periodic basis when necessary from collection ditches, diversion ditches and other drainage structures.

13. Erosion and Sediment Control

Outside the limits of the ash pond

Upon mobilization, initial layout will begin to establish the limits of disturbance. Once limits are identified, silt fence, waddles, and other BMP's will be installed around the job site as identified on the Erosion & Sediment Control drawings.

During construction of the barrier wall within the northern portion of the exterior dike, additional erosion and sediment controls will be installed along the outside of the exterior dike as shown on the drawings. Silt fencing, and other best management practices will be installed to limit erosion and contain sediment. After completion of the barrier wall installation, the dike will be seeded and erosion control matting installed to facilitate stabilization of this area post-closure.

Within the Ash Pond during closure

During the early phases of the project, the existing discharge structure will be removed and replaced with a new discharge structure. The location is to be dewatered prior to exterior dike excavation for the construction of the new structure. CCR in the area will be removed and placed within the consolidation area. Ash removal is to be in accordance with the specification section 312000. A double row of silt fencing will be installed prior to

excavation of the pipe trench. After silt fence placement, embankment excavation will begin, excavated materials will be stockpiled for reuse, silt fence placed around the stockpile, and temporary sediment traps installed. The discharge structure and outlet pipe will be installed at this time. The structure and pipe will be backfilled and compacted to 95 percent standard proctor density in accordance with ASTM D698. Erosion sediment control blankets and silt fence will be installed on the embankment.

14. Cost of Closure

Through coordination with the engineering design team and the subcontractor selected to execute the closure activities, the estimated cost of closing Plant Greene County's ash pond is approximately $330 million. The estimate is considered to be at control level with a high level of project definition. However, due to the complexity, quantities, and duration of the overall project, some variability in costs is expected. Additional expenses of post closure care, maintenance, and corrective action are currently estimated at $32 million. Fully detailed long-term maintenance and corrective action strategies have not yet been determined which have the potential to influence current estimates.

Some of the most significant cost items include:

- Water management including contact and noncontact water;
- ClosureTurf® cover system;
- Construction management and construction quality control (CQC);
- Offsite fill materials such as soil and clay fill, gravel and riprap;
- Barrier wall construction;
- Excavation, placement, compaction, and grading of CCR into the consolidated footprint;
- Construction quality assurance (CQA);
- Dust control management;
- Engineering support; and
- General contingency and inflation on construction items.

15. Closure Schedule

The closure of Plant Greene County's ash pond is expected to exceed the closure activity timeline of five years (§ 257.102(f)(1)(ii) and r. 335-13-15-.07(3)(f)1.(ii)) and is expected to require the allowable two-year extensions to complete the closure due to the excavation, placement, compaction, and grading of approximately 4,000,000 cubic yards of CCR and underlying soil. The ash pond closure is currently expected to be completed in 2025. Table 1 contains a summary level schedule for this project.

26. Recordkeeping/Notification/Internet Requirements

As outlined in § 257.105 and r. 335-13-15-.08(1), each Owner or Operator of a CCR unit subject to the Department regulations must maintain files of certain information in an operating record at the facility. Each file is to be retained for at least five years following the date of each occurrence, measurement, maintenance, corrective action, report, record or study. Electronic storage of the records is acceptable. These records are to be made available to the Department upon request.

Certain notifications are to be made in accordance with the requirements of § 257.106 and r. 335-13-15-.08(2). In many instances, such notifications are to be placed in the facility's Operating Record. In certain instances, further notifications are to be made to the Department Directory within 30 days of placement of a notification into the Operating Records. Furthermore, a publicly accessible internet site must be established for posting of certain notifications and compliance information within 30 days of it being placed in the Operating Record.

Alabama Power and Plant Greene County maintain an electronic Operating Record for the facility. In addition, a publicly accessible internet site has already been established for compliance with EPA's CCR Rule. Required notifications and compliance data, as outlined in § 257.105 through § 257.107 and r. 335-13-15-.08 and as applicable to the Plant Greene County Ash Pond, will be maintained in the electronic Operating Record, and as required, made available on the publicly accessible internet site within 30 days of placement in the Operating Record. Furthermore, required notifications will be made to the Department Director within 30 days of placement in the Operating Record.

Certain plans and assessments are required to be updated at specified intervals and/or upon modification of certain components of the facility. If and when applicable, updates will be made to the respective plans and assessments, and notifications placed in the Operating Record, posted to the publicly accessible internet site, and communicated in writing to the Department Director in accordance with the Department rules.

27. Written Post-Closure Plan

40 CFR § 257.104 and ADEM Administrative Code r. 335-13-15-.07(5) require the owner or operator of an existing CCR surface impoundment that is closed in place to provide for post-closure care of the unit for a period of at least 30 years. Post-closure care includes maintenance of the facility, as well as groundwater monitoring in accordance with § 257.90 through § 257.98 and r. 335-13-15-.06(1) through r. 335-13-15-.06(9).

The Plant Greene County Ash Pond is currently expected to be closed in place under performance standards outlined in § 257.102(d) and r. 335-13-15-.07(3)(d). Following closure, maintenance will be provided on the final cover system for the required post-closure care period so that the integrity and effectiveness of the final cover system will be maintained. Maintenance activities will include, as needed, repairs to the final cover to correct any effects related to settlement, subsidence, erosion or other events, and will be performed to prevent run-on or run-off from eroding or otherwise damaging the final cover. Maintenance tasks could include, but not be limited to, repair of subsidence or erosion features, replacement of sand in-fill within the synthetic turf and re-establishment of vegetation, where applicable. Maintenance will be performed on a semi-annual schedule, or more frequently if needed.

The groundwater monitoring system will be maintained throughout the required post-closure care period. Groundwater monitoring will be performed on a semiannual basis during the required post-closure care period as well.

The following office(s) can be contacted about the facility during the post-closure care period.

Plant Greene County
Compliance and Support Manager
P.O. Box 440, Demopolis, AL 36740
1-334-289-6100
G2CCRPostGRE@southernco.com

At the present time, there is no planned use of the facility after closure. If current plans change, they will be noted in an amendment to this post-closure care plan. Any future use of the property after closure will not disturb the integrity of the final cover, liner or any other component of the containment system. Furthermore, the functionality of the groundwater monitoring system will be maintained.

No later than 60 days following completion of the post-closure care period of 30 years, Alabama Power Company will prepare a notification verifying completion of the post-closure care.

References

EPRI, 2017, *Alternative Cover Systems for Coal Combustion Residuals Landfills and Surface Impoundments, EPRI, Palo Alto, CA, 2017. 3002010902*

Wood, 2017, Site Characterization Report Alabama Power Company – Plant Greene County Forkland, Alabama, December 7, 2017Wood, 2018, Site Characterization Report Addendum Alabama Power Company – Plant Greene County Forkland, Alabama, December 4, 2018

Table 1: Greene County Ash Pond Closure Milestones Schedule (335-13-15-.07(3)(b)1.(vi))

Closure Activity	Completion Date
Notice of Intent to Close	October 2016
Cease Receipt of Waste Streams/Initiate Construction Activities	April 2019
Initiate Free Water Dewatering Activities	May 2019
Begin Barrier Wall Installation	August 2019
Begin CCR Consolidation and Stabilization	August 2019
Begin Final Cover Cap Construction Activities	April 2021
Relocate Gas Line	January 2023
Completion of Barrier Wall Installation	August 2025
End Final Cap Construction Activities	November 2025
Project Completion	December 2025

PLANT GREENE COUNTY

ASH POND CLOSURE

100% DESIGN PACKAGE

801 STEAM PLANT ROAD

FORKLAND, ALABAMA

GREENE COUNTY

APPROXIMATE ASH POND AREA: 477 ACRES

APPROXIMATE ASH POND CENTER: LATITUDE: 32°35'31.92"N, LONGITUDE 87°47'20.30"W

SITE VICINITY MAP

3000 0 3000 6000 FT

SCALE: 1" = 3000'

SITE LOCATION MAP

1000 0 1000 2000 FT

SCALE: 1" = 1000'

ALABAMA STATE MAP

SCALE: NTS

wood.

ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
SUITE 300
KNOXVILLE, TN 37922
TEL: (865) 671-6774

ISSUED FOR 100% CLIENT REVIEW

NOT VALID WITHOUT SIGNATURE AND DATE

PROJECT:

PLANT GREENE COUNTY
ASH POND CLOSURE
100% DESIGN PACKAGE

Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

COVER SHEET

SHEET NUMBER:	REV. #
GRN_3.2.4_100	A

Plotted By:Riquier, Roger J Sheet Set:GRN 80% Design Submittal Layout:100 COVER SHEET December 04, 2018 03:18:39pm T:\3043180005 Southern Co\Plotsheets\100% Drawings\GRN_3.2.4_100_ Cover Sheet.dwg

LEGEND

EXISTING LEGEND

- EXISTING CONTOUR MAJOR (100)
- EXISITNG CONTOUR MINOR
- EXISTING SUBGRADE CONTOUR MAJOR (90)
- EXISTING SUBGRADE CONTOUR MINOR (98)
- UNDERGROUND GAS LINE (G)
- OVERHEAD ELECTRICAL TRANSMISSION LINE (OE)
- EDGE OF WATER
- WETLAND BOUNDARY
- BAT HABITAT BOUNDARY
- EXISTING BORING
- EXISTING CPT
- EXISTING PIEZOMETER
- EXISTING MONITORING WELL
- EXISTING BENCHMARK
- OVERHEAD ELECTRICAL TRANSMISSION LINE TOWER
- OVERHEAD ELECTRICAL TRANSMISSION LINE POLE
- TREE LINE

PROPOSED LEGEND

- PROPOSED CONTOUR MAJOR (100)
- PROPOSED CONTOUR MINOR (98)
- PROPOSED SUBGRADE CONTOUR MAJOR (100)
- PROPOSED SUBGRADE CONTOUR MINOR (98)
- PROPERTY BOUNDARY
- PROPOSED ALIGNMENT AND BASELINES (0+00, 1+00, 2+00)
- PROPOSED CROSS SECTION (0+00, 1+00)
- LIMIT OF CLOSURE TURF
- STORM DRAIN (SD24 — SD24)
- PROPOSED 87.5' NORMAL POOL HATCHING
- EXISTING FEATURE TO BE DEMOLISHED
- RIPRAP
- POND SURFACE

EROSION & SEDIMENT CONTROL LEGEND

- SILT FENCE (S)
- WATTLES (W)
- CHALK SURFACE (RCD)
- EXISTING SURFACE (ST)
- TRIBUTARY BARRIER (TB)

PROFILE AND SECTIONS LEGEND

- 100 YEAR, FLOODPLAIN
- NORMAL POOL
- CHALK SURFACE
- EXISTING SURFACE

DETAIL TITLE — 1 / 004 — DETAIL NUMBER; SHEET NUMBER WHERE DETAIL IS SHOWN

DETAIL TITLE & NUMBER

TITLE — 1 / 004 — DETAIL NUMBER ON DRAWING WHERE SHOWN; SHEET NUMBER OF DRAWING WHERE DETAIL IS SHOWN

DRAWING CALL OUT & DETAIL REFERENCE

GENERAL NOTES

1. AERIAL PHOTO SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEX, GETMAPPING, AEROGRID, IGP, SWISSTOPO, AND THE GEO USER COMMUNITY.
2. PROPERTY LINE DATA PROVIDED BY SOUTHERN COMPANY SERVICES.
3. PRIOR TO PERFORMING ANY WORK OUTSIDE THE EXTERIOR DIKE (NEAR PROPERTY LINES SHOWN, LOCATE THE PROPERTY LINE IN THE FIELD TO VERITY WORK REMAINS WITHIN THE PROPERTY BOUNDARY SHOWN. REPORT ANY DISCREPANCIES TO THE OWNER.
4. ESTIMATED BOTTOM OF ASH CONTOURS WERE DEVELOPED USING THE USGS DEMOPOLIS QUADRANGLE DATED 1947, HISTORIC DESIGN DRAWING D-141828 DATED 09-21-1964, AND AVAILABLE BORING INFORMATION (BORING LOCATIONS SHOWN ON DRAWING GRN_3.2.2_200).
5. EXISTING TOPOGRAPHIC CONTOURS SHOWN FROM ALABAMA POWER COMPANY FIELD SURVEY, DATED 05-16-2016. 3D SURFACE WAS DEVELOPED USING BOTH LIDAR AND BATHYMETRIC SURVEY TECHNIQUES. BENCHMARKS WERE OBTAINED FROM AN EXISTING TOPOGRAPHICAL SURVEY DRAWING COMPLETED BY "SAIN ASSOCIATES CONSULTING AND ENGINEERING", DATED 03-19-2015. CONTROL WAS PROVIDED IN NAD27/NAVD29 AND CONVERTED TO NAD83/NAVD88.
6. ELEVATIONS FROM THE KNOWN CONTROL POINTS WERE TAKEN FROM THE SURVEY DRAWING AND HAVE NOT BEEN VERIFIED.
7. THE KNOWN CONTROL POINTS ARE PROVIDED IN THE TABLE BELOW:

SOUTHERN COMPANY KNOWN CONTROL POINTS				
NUMBER	NORTHING (FT)	EASTING (FT)	ELEVATION (FT)	DESCRIPTION
FP-134	945168.567	1881774.517	102.03	FLIGHT PANEL
FP-135	944457.707	1881798.147	103.12	FLIGHT PANEL
GP105	940425.654	1879754.743	97.54	MW-13 PK NAIL
GP106	940180.894	1878414.094	99.91	MW-12 PK NAIL
GP107	940503.233	1877918.167	102.63	MW-11 PK NAIL

8. COORDINATES SHOWN FOR PIPING AND STRUCTURES ARE TO CENTERLINE OF PIPING OR STRUCTURE, UNLESS NOTED OTHERWISE (UNO).
9. VERIFY SUFFICIENT CLEARANCE UNDER HIGH VOLTAGE LINES FOR CONSTRUCTION EQUIPMENT. INFORM THE OWNER BEFORE ANY WORK STARTS BENEATH HIGH VOLTAGE LINES.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COLLECTING AND PUMPING INTERSTITIAL WATER AND STORMWATER WITHIN THE ASH POND TO THE WATER TREATMENT FACILITY PROVIDED AND OPERATED BY THE OWNER.
11. EXISTING GROUNDWATER MONITORING WELLS ARE DEPICTED ON THESE DRAWINGS. CERTAIN MONITORING WELLS ARE DESIGNATED AS COMPLIANCE MONITORING WELLS FOR REGULATORY PURPOSES. OTHER MONITORING WELLS ARE INSTALLED WITHIN THE ASH POND AND REQUIRE FUNCTIONALITY TO CONTINUE TO THE EXTENT PRACTICABLE, UNTIL SUCH TIME THE SURROUNDING ASH IS SCHEDULED FOR REMOVAL. THE CONTRACTOR SHALL PROTECT ALL OF THE DESIGNATED MONITORING WELLS (SEE DRAWING GRN_3.2.3_200 FOR LIST).
12. THE DRAWINGS DEPICT A SURVEY BASELINE WITH CROSS-SECTIONS SHOWN, REFERENCED TO CROSS SECTIONS DEVELOPED ON THE 800 SERIES DRAWINGS.
13. THE TREELINE DEPICTED ON THE EXISTING CONDITION DRAWINGS SHOWS VEGETATION EXISTING AT THE TIME THE REFERENCED TOPOGRAPHIC SURVEY WAS PERFORMED.
14. FOR BARRIER WALL CONSTRUCTION DETAILS, INCLUDING INTERIOR DIKE AND EXTERIOR DIKE MODIFICATION, SEE DRAWINGS GRN_3.13.1_100 THRU GRN_3.13.1_702.
15. THE ENGINEER APPROVES THE CLOSED ASH POND CONFIGURATION WITH THE COORDINATE DATA AND GRADES SHOWN ON THOSE DRAWINGS. ADDITIONAL INFORMATION PROVIDED TO THE CONTRACTOR IS FOR INFORMATION ONLY.

E&SC LEGEND

SITE PREPARATION
- CEP — CONSTRUCTION EXIT PAD
- LG — LAND GRADING
- TSG — TOP SOIL GRADING

SURFACE STABILIZATION
- CHS — CHEMICAL STABILIZATION
- DC — DUST CONTROL
- ET — ENGINEERED TURF
- ECB — EROSION CONTROL BLANKET
- GK — GROUNDSKEEPING
- MU — MULCHING
- PS — PERMANENT SEEDING
- PV — PRESERVATION OF VEGETATION
- TS — TEMPORARY SEEDING

RUNOFF CONVEYANCE
- CD — CHECK DAM
- DV — DIVERSION
- DS — DROP STRUCTURE
- GS — GRASS SWALE
- LS — LINED SWALE
- OP — OUTLET PROTECTION
- RS — RIPRAP LINED SWALE
- SD — SUBSURFACE DRAIN
- TDS — TEMPORARY SLOPE DRAIN

SEDIMENT CONTROL
- FS — FILTER STRIP
- FB — FLOATING TURBIDITY BARRIER
- RD — ROCK FILTER DAM
- SB — SEDIMENT BARRIER
- SBN — SEDIMENT BASIN
- ST — SEDIMENT TRAP

STREAM PROTECTION
- BZ — BUFFER ZONE
- CS — CHANNEL STABILIZATION
- SP — STREAMBANK PROTECTION

SHEET INDEX	
SHEET NUMBER	SHEET TITLE
GRN_3.2.4_100	COVER SHEET
GRN_3.2.4_101	LEGEND, GENERAL NOTES AND SHEET INDEX
GRN_3.2.4_102	GENERAL SITE PLAN
GRN_3.2.4_103	DEMOLITION PLAN
GRN_3.2.4_104	EXISTING VEGETATION
GRN_3.2.4_200	EXISTING CONDITIONS PLAN
GRN_3.2.4_201	EXISTING CONDITIONS PLAN A
GRN_3.2.4_202	EXISTING CONDITIONS PLAN B
GRN_3.2.4_203	EXISTING CONDITIONS PLAN C
GRN_3.2.4_204	EXISTING CONDITIONS PLAN D
GRN_3.2.4_205	EXISTING CONDITIONS PLAN E
GRN_3.2.4_206	EXISTING CONDITIONS PLAN F
GRN_3.2.4_207	EXISTING CONDITIONS PLAN G
GRN_3.2.4_208	EXISTING CONDITIONS PLAN H
GRN_3.2.4_209	EXISTING CONDITIONS PLAN I
GRN_3.2.4_210	EXISTING CONDITIONS PLAN J
GRN_3.2.4_211	EXISTING CONDITIONS PLAN K
GRN_3.2.4_300	SUBGRADE AND INTERIOR DIKE PLAN INTERIM CONDITIONS
GRN_3.2.4_301	SUBGRADE AND INTERIOR DIKE PLAN A INTERIM CONDITIONS
GRN_3.2.4_302	SUBGRADE AND INTERIOR DIKE PLAN B INTERIM CONDITIONS
GRN_3.2.4_303	SUBGRADE AND INTERIOR DIKE PLAN C INTERIM CONDITIONS
GRN_3.2.4_304	SUBGRADE AND INTERIOR DIKE PLAN D INTERIM CONDITIONS
GRN_3.2.4_305	SUBGRADE AND INTERIOR DIKE PLAN E INTERIM CONDITIONS
GRN_3.2.4_306	SUBGRADE AND INTERIOR DIKE PLAN F INTERIM CONDITIONS
GRN_3.2.4_307	SUBGRADE AND INTERIOR DIKE PLAN G INTERIM CONDITIONS
GRN_3.2.4_308	SUBGRADE AND INTERIOR DIKE PLAN H INTERIM CONDITIONS
GRN_3.2.4_309	SUBGRADE AND INTERIOR DIKE PLAN I INTERIM CONDITIONS
GRN_3.2.4_310	SUBGRADE AND INTERIOR DIKE PLAN J INTERIM CONDITIONS
GRN_3.2.4_311	SUBGRADE AND INTERIOR DIKE PLAN K INTERIM CONDITIONS
GRN_3.2.4_400	INTERIOR DIKE PLAN - PROFILE
GRN_3.2.4_401	BARRIER WALL ALIGNMENT - PLAN VIEW
GRN_3.2.4_402	BARRIER WALL - PROFILE
GRN_3.2.4_600	CLOSURE PLAN
GRN_3.2.4_601	CLOSURE PLAN A
GRN_3.2.4_602	CLOSURE PLAN B
GRN_3.2.4_603	CLOSURE PLAN C
GRN_3.2.4_604	CLOSURE PLAN D
GRN_3.2.4_605	CLOSURE PLAN E
GRN_3.2.4_606	CLOSURE PLAN F
GRN_3.2.4_607	CLOSURE PLAN G
GRN_3.2.4_608	CLOSURE PLAN H
GRN_3.2.4_609	CLOSURE PLAN I
GRN_3.2.4_610	CLOSURE PLAN J
GRN_3.2.4_611	CLOSURE PLAN K
GRN_3.2.4_700	ASH POND OUTLET SPILLWAY STRUCTURAL NOTES
GRN_3.2.4_701	ASH POND OUTLET SPILLWAY STRUCTURE PLANS, ELEVATIONS, DETAILS I
GRN_3.2.4_702	ASH POND OUTLET SPILLWAY STRUCTURE PLANS, ELEVATIONS, DETAILS II
GRN_3.2.4_703	SPILLWAY GATE DETAILS
GRN_3.2.4_704	HEADWALL DETAILS
GRN_3.2.4_802	PROFILE AND SECTIONS - FINAL CONDITIONS
GRN_3.2.4_803	ADDITIONAL SECTIONS - FINAL CONDITIONS
GRN_3.2.4_900	TYPICAL SECTIONS AND DETAILS I
GRN_3.2.4_901	TYPICAL SECTIONS AND DETAILS II
GRN_3.2.4_902	TYPICAL SECTIONS AND DETAILS III
GRN_3.2.4_903	NOT USED
GRN_3.2.4_904	DISCHARGE STRUCTURE - E&SC PLAN
GRN_3.2.4_905	DISCHARGE STRUCTURE - E&SC DETAILS
GRN_3.2.4_906	EXISTING ASH POND - E&SC PLAN DURING CLOSURE
GRN_3.2.4_907	FINAL COVER MONITORING WELL INSTALLATION
GRN_3.2.4_908	EXTERIOR DIKE SLURRY WALL E&SC

TABLE OF BASE LINE STATIONS

PROJECT BASELINE	0+00 TO 70+00
INTERIOR DIKE BASE LINE	300+00 TO 376+80
BARRIER WALL (EXTERIOR DIKE)	501+00 TO 554+07
BARRIER WALL (INTERIOR DIKE)	401+00 TO 478+02

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
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PROJECT:

PLANT GREENE COUNTY
ASH POND CLOSURE
100% DESIGN PACKAGE

Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS			
NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

LEGEND, GENERAL NOTES AND SHEET INDEX

SHEET NUMBER:	REV. #
GRN_3.2.4_101	A

Plotted By:Rhyder, Roger J Sheet Set:GRN 90% Design Submittal Layout:101 LEGEND GENERAL NOTES AND SHEET INDEX December 04, 2018 03:21:15pm T:\3043180005 Southern Co\Phonesets\100% Drawings\GRN_3.2.4_101_Legend and General Notes.dwg

NOTE:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.
2. THE LOCATION OF THE UNDERGROUND GAS LINE IS APPROXIMATE. THE DEPTH IS UNKNOWN.
3. LOCATION OF OVERHEAD ELECTRIC TRANSMISSION LINE AND STRUCTURE IS APPROXIMATE. CONDUCTOR ELEVATIONS AND VOLTAGE IS UNKNOWN.

300 0 300 600 FT

SCALE: 1" = 300'

wood.

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APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

GENERAL SITE PLAN

SHEET NUMBER:	REV. #
GRN_3.2.4_102	A

N

NOTES:

1. FOR GENERAL NOTES, SEE DRAWING GRN_3.2.3_101.
2. REFER TO CONSTRUCTION SEQUENCING FOR SCHEDULED DEMOLITION ACTIVITIES IN THE SPECIFICATIONS.
3. CUT EXISTING ASH PIPES ON NORTHERN SIDE OF EXTERIOR DIKE. REMOVE EXISTING VALVE BOX. EXCAVATE EXTERIOR DIKE TO EXPOSE ABANDONED ASH PIPING. CUT AND REMOVE ALL ABANDONED ASH PIPING. BACKFILL AND COMPACT USING SUITABLE BACKFILL IN ACCORDANCE WITH SPECIFICATION SECTION 312000, EARTH MOVING.
4. EXISTING UNDERGROUND GAS LINE (WITHIN THE ASH POND LIMITS) TO BE DEMOLISHED AND REMOVED AFTER GAS LINE IS RE-ROUTED AROUND THE POND. SEE DRAWING GRN_3.2.4_300, 305, 308 AND 311. FOR TEMPORARY MEASURES TO BE IMPLEMENTED DURING CONSTRUCTION TO PROTECT THE PIPELINE. EXERCISE CAUTION WHEN PERFORMING WORK NEAR THE GAS PIPELINE. DETAIL 3 ON DRAWING GRN_3.2.4_902 CONTAINS INFORMATION PERTAINING TO PROTECTION OF THE PIPELINE DURING ASH POND CLOSURE.
5. EXISTING WOODEN UTILITY POLES AND LOW VOLTAGE OVERHEAD ELECTRICAL LINES TO REMAIN.
6. QUANTITY AND LOCATION OF ASH LINES ON DRAWINGS ARE FOR ILLUSTRATIVE PURPOSES ONLY FROM A.P.C. DRAWING E 354596. CONTRACTOR SHALL FIELD VERIFY ASH LINES PRIOR TO DEMOLITION ACTIVITIES.
7. DEMOLITION OF EXISTING SPILLWAY WILL CONSIST OF THE FOLLOWING ACTIVITIES:
   - REMOVE EXISTING STEEL PLATFORM
   - EXCAVATE AND REMOVE EXISTING RISER AND RCP DISCHARGE PIPE
   - INSTALL NEW DISCHARGE STRUCTURE
   - RESTORE EXISTING COFFERDAM

LEGEND

EXISTING FEATURE TO BE DEMOLISHED

300 0 300 600 FT
SCALE: 1" = 300'

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3043-18-0005

REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:
DEMOLITION PLAN

SHEET NUMBER:	REV. #
GRN_3.2.4_103	A

Plotted By:Rouler, Roger J Sheet Set:GRN 90% Design Submittal Layout:103 DEMOLITION PLAN December 04, 2018 03:23:03pm T:\3043180000 Southern Co\Plansheets\100% Drawings\GRN_3.2.4_103_Demolition Plan.dwg

VEGETATION AREA DESCRIPTION(S).
AREA 1: PRIMARILY ASH WITH SOME GRASS. AREA IS DENSE, WITH NO LARGE TREES OR BUSHES.
AREA 2: DENSE CATTAILS, SPORADIC DEAD TREES 15FT IN HEIGHT.
AREA 3: 2FT HIGH GRASS THROUGHOUT ENTIRE AREA.
AREA 4: DEAD CAT TAILS COVERING GROUND ~1 FOOT IN HEIGHT. IN ADDITION, THE FOLLOWING WERE OBSERVED:
- CAT TAILS AT ~4FT-5FT IN HEIGHT, TREES ~8IN CIRCUMFERENCE AT ~2FT TO 14FT TALL.
- BUSHES/SHRUBS AT ~4IN IN CIRCUMFERENCE AT ~6FT TO 8FT TALL.
- GRASS AT ~3FT TALL.

AREA 5: ~25FT TALL BUSHES AROUND INTERIOR OF DIKE. IN ADDITION, THE FOLLOWING WERE OBSERVED:
- BUSHES ~4IN TO 6IN IN CIRCUMFERENCE AT ~ 8IN TO 12IN TALL.
- TREES ~12IN IN DIAMETER AT ~12FT TO 16FT TALL.

AREA 6: AREA IS DENSE, WITH TREES AT ~18FT TO 20FT TALL AT ~16IN TO 18IN IN DIAMETER. IN ADDITION, THE FOLLOWING WERE OBSERVED:
- BUSHES AT ~8FT TO 9FT TALL WITH LIMBS AT 6IN TO 9IN IN CIRCUMFERENCE.
- DENSE CATTAILS AT 5FT TO 6FT IN HEIGHT.
- DENSE GRASS AT ~3FT TO 4FT IN HEIGHT.

AREA 7: PRE-ASH POND INUNDATED TREES: CYPRESS TREES AT 25FT TO 30FT IN HEIGHT AT ~30IN TO 35IN IN CIRCUMFERENCE. IN ADDITION, GRASS AT ~3FT IN HEIGHT.
AREA 8: CYPRESS TREES AT ~25FT TO 30FT IN HEIGHT AT 30IN TO 40IN IN CIRCUMFERENCE WITH DENSE CATTAILS.
AREA 9: SAME AS AREA 5.
AREA 10: MINI SHRUBS AT ~2FT TO 3FT IN HEIGHT AT~2IN TO 4IN CIRCUMFERENCE WITH DEAD GRASS ACROSS AREA. IN ADDITION, DEAD TREES AT ~10FT TO 20FT IN LENGTH AT ~4IN TO 6IN IN CIRCUMFERENCE, AND BUSHES AT ~8FT TO 10FT IN HEIGHT AT ~4IN TO 8IN DIAMETER(S) WITH LIMBS ~12FT TO 16FT IN LENGTH.
AREA 11: DENSE GRASS/CATTAILS WITH SPORADIC BUSHES/SHRUBS.

NOTE:
1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.3_101.

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PLANT GREENE COUNTY ASH POND CLOSURE 100% DESIGN PACKAGE

Alabama Power

PLANT GREENE COUNTY

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FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

EXISTING VEGETATION

SHEET NUMBER:	REV. #
GRN_3.2.4_104	A

TABLE OF VALUES - EXISTING CONDITIONS

CENTER COORDINATE (LAT, LONG)	32° 35' 31.92" -87° 47' 20.30"
CENTER COORDINATE (STATE PLANE)	N: 943500, W: 1879500
LENGTH OF EXTERIOR DIKE	18,670 FEET
ASH POND AREA	477 ACRES
100 YR. RIVER FLOOD ELEVATION	95.0 FEET
RIVER BANK FULL ELEVATION	80.0 FEET
APPROXIMATE ASH VOLUME	10,700,000 CY

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.
2. DO NOT DAMAGE ANY CCR COMPLIANCE MONITORING WELL DURING POND CLOSURE (SEE TABLE 1).
3. THE ESTIMATED VOLUME OF ASH WITHIN THE EXISTING SEDIMENTATION BASIN IS 840,000 CY, AND IS INCLUDED IN THE TOTAL AS VOLUME.
4. NEW OVERHEAD ELECTRICAL SUPPLY FOR WATER TREATMENT SYSTEM ROUTED ALONG EXISTING DIKE. LOCATION AND VOLTAGE UNKNOWN.
5. ADDITIONAL MONITORING DEVICE WITHIN THE ASH POND (LISTED IN TABLE 2) NEED TO REMAIN FUNCTIONAL TO THE DETENT PRACTICABLE. COORDINATE WORK WITH THE OWNER PRIOR TO DISTURBING OR REMOVING THESE GROUNDWATER MONITORING DEVICE.
6. OVERHEAD ELECTRICAL TRANSMISSION STRUCTURES ARE NOT SHOWN FOR CLARITY.
7. WETLAND AND SENSITIVE HABITAT BOUNDARY LOCATIONS PROVIDED BY SCS.
8. ABANDON EXISTING GROUNDWATER MONITORING WELLS SHOWN IN TABLE 2 IN ACCORDANCE WITH "ALABAMA ENVIRONMENTAL INVESTIGATION AND REMEDIATION GUIDANCE (AEIRG)", REV. 4, FEBRUARY 2017.

LEGEND

- EXISTING BORING
- EXISTING CPT
- EXISTING PIEZOMETER
- EXISTING COMPLIANCE MONITORING WELL
- EXISTING BENCHMARK
- EXISTING 2018 MONITORING WELL
- EXISTING MONITORING WELL

TABLE 1

COMPLIANCE WELLS	
GC-AP-MW-1	GC-AP-MW-18
GC-AP-MW-2	GC-AP-PZ-19
GC-AP-MW-3	GC-AP-PZ-20
GC-AP-PZ-4	GC-AP-MW-21
GC-AP-MW-5	GC-AP-PZ-22
GC-AP-MW-6	GC-AP-MW-23
GC-AP-MW-7	GC-AP-MW-24
GC-AP-MW-8	GC-AP-MW-25 (not shown n draw ing)
GC-AP-MW-9	GC-AP-MW-26 (not shown n draw ing)
GC-AP-MW-10	GC-AP-MW-27 (not shown n draw ing)
GC-AP-MW-11	GC-AP-MW-28 (not shown n draw ing)
GC-AP-MW-12	GC-AP-MW-29 (not shown n draw ing)
GC-AP-MW-13	GC-AP-MW-30 (not shown n draw ing)
GC-AP-MW-14	GC-AP-MW-31
GC-AP-MW-15	GC-AP-MW-32
GC-AP-MW-16	GC-AP-MW-33
GC-AP-MW-17	

TABLE 2

WELL	DESCRIPTION	DISPOSITION
18-W-1	Screened in alluvium	Preserve
18-W-2	Screened in COR material	Preserve
18-W-3	Screened in alluvium	Preserve
18-W-4	Screened in COR material	Preserve
18-W-5	Screened in alluvium	Abandon
18-W-6	Screened in COR material	Remove during excavation
18-W-7	Screened in alluvium	Abandon
18-W-8	Screened in COR material	Remove during excavation
18-W-9A	Screened in alluvium	Abandon
18-W-9B	Screened in alluvium	Abandon
18-W-10	Screened in COR material	Remove during excavation
18-W-11	Screened in alluvium	Abandon
18-W-12	Screened in alluvium	Abandon
18-W-13	Screened in alluvium	Preserve
18-W-14	Screened in alluvium	Abandon

SCALE: 1" = 300'
CONTOUR INTERVAL = 2 FT

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PLANT GREENE COUNTY ASH POND CLOSURE 100% DESIGN PACKAGE

Alabama Power

PLANT GREENE COUNTY
801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

EXISTING CONDITIONS PLAN

SHEET NUMBER:	REV. #
GRN_3.2.4_200	A

Plotted By:Rigsbee, Roger J Sheet Set:GRN 90% Design Submittal Layout:200 EXISTING CONDITIONS PLAN December 04, 2018 03:52:34pm T:\3043180005 Southern Co\Phase#4\1\90% Drawings\GRN_3.2.4_200_Existing Conditions Plan.dwg

KEY MAP

NOTE:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101

LEGEND

- EXISTING BORING
- EXISTING CPT
- EXISTING PIEZOMETER
- EXISTING COMPLIANCE MONITORING WELL
- EXISTING BENCHMARK
- EXISTING 2018 MONITORING WELL
- EXISTING MONITORING WELL

SCALE: 1" = 50'
CONTOUR INTERVAL = 1 FT

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Alabama Power
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FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

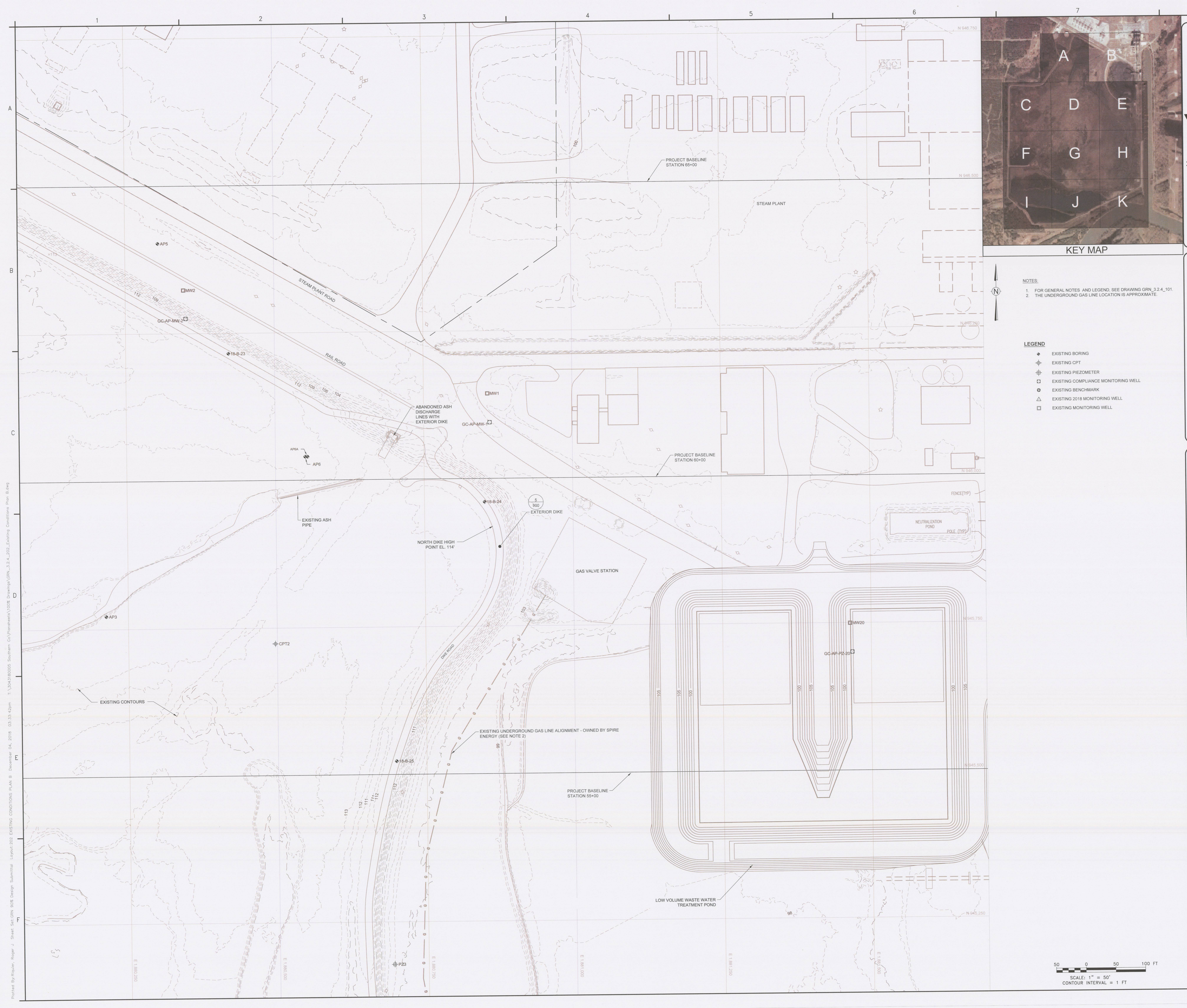
NO.	DATE	BY	APPROVED

DESIGNED BY:	BSF
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:
EXISTING CONDITIONS PLAN A

SHEET NUMBER:	REV. #
GRN_3.2.4_201	A

Plotted By:Rdozier, Roger J Sheet Set:GRN 90% Design Submittal Layout:201 EXISTING CONDITIONS PLAN A December 04, 2018 03:30:08pm T:\3043180005 Southern Co\Plansheets\100R Drawings\GRN_3.2.4_201_Existing Conditions Plan A.dwg



KEY MAP

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.
2. THE UNDERGROUND GAS LINE LOCATION IS APPROXIMATE.

LEGEND

- EXISTING BORING
- EXISTING CPT
- EXISTING PIEZOMETER
- EXISTING COMPLIANCE MONITORING WELL
- EXISTING BENCHMARK
- EXISTING 2018 MONITORING WELL
- EXISTING MONITORING WELL

SCALE: 1" = 50'
CONTOUR INTERVAL = 1 FT

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NO.	DATE	BY	APPROVED

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APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

EXISTING CONDITIONS PLAN B

SHEET NUMBER:	REV. #
GRN_3.2.4_202	A

Plotted By:Rigsler, Roger J Sheet Set:GRN 90% Design Submittal Layout:202 EXISTING CONDITIONS PLAN B December 04, 2018 03:33:42pm T:\3043180005 Southern Co\Plotsheets\100% Drawings\GRN_3.2.4_202_Existing Conditions Plan B.dwg

KEY MAP

NOTE:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.

LEGEND

- EXISTING BORING
- EXISTING CPT
- EXISTING PIEZOMETER
- EXISTING COMPLIANCE MONITORING WELL
- EXISTING BENCHMARK
- EXISTING 2018 MONITORING WELL
- EXISTING MONITORING WELL

50 0 50 100 FT

SCALE: 1" = 50'
CONTOUR INTERVAL = 1 FT

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100% DESIGN PACKAGE

Alabama Power

PLANT GREENE COUNTY

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FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

EXISTING CONDITIONS PLAN C

SHEET NUMBER:	REV. #
GRN_3.2.4_203	A

Plotted By:Riquier, Roger J Sheet Set: GRN 90% Design Submittal Layout:203 EXISTING CONDITIONS PLAN C December 04, 2018 03:38:22pm T:\3043180005 Southern Co\Plansheets\100% Drawings\GRN_3.2.4_203_Existing Conditions Plan C.dwg

KEY MAP

NOTE:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.

LEGEND

- EXISTING BORING
- EXISTING CPT
- EXISTING PIEZOMETER
- EXISTING COMPLIANCE MONITORING WELL
- EXISTING BENCHMARK
- EXISTING 2018 MONITORING WELL
- EXISTING MONITORING WELL

SCALE: 1" = 50'
CONTOUR INTERVAL = 1 FT

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
SUITE 300
KNOXVILLE, TN 37922
TEL: (865) 671-6774

ISSUED FOR 100% CLIENT REVIEW

NOT VALID WITHOUT SIGNATURE AND DATE

PROJECT:

PLANT GREENE COUNTY
ASH POND CLOSURE
100% DESIGN PACKAGE

Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS			
NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

EXISTING CONDITIONS PLAN D

SHEET NUMBER:	REV. #
GRN_3.2.4_204	A

Plotted By: Riquier, Roger J Sheet Set: GRN 90% Design Submittal Layout: 204 EXISTING CONDITIONS PLAN D December 04, 2018 03:39:43pm T:\3043180005 Southern Co\Plansheets\100% Drawings\GRN_3.2.4_204_Existing Conditions Plan D.dwg

KEY MAP

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.
2. THE UNDERGROUND GAS LINE LOCATION OUTSIDE ASH POND IS APPROXIMATE.
3. THE NATURAL GAS LINE LOCATION WITHIN THE EXISTING ASH POND WAS LOCATED USING GPS. FOR SEQUENCE OF ASH REMOVAL IN THE VICINITY OF THE EXISTING GAS PIPELINE, SEE 300 SERIES DRAWINGS AND SPECIFICATION 011100, SUMMARY OF WORK.

LEGEND

- EXISTING BORING
- EXISTING CPT
- EXISTING PIEZOMETER
- EXISTING COMPLIANCE MONITORING WELL
- EXISTING BENCHMARK
- EXISTING 2018 MONITORING WELL
- EXISTING MONITORING WELL

50 0 50 100 FT

SCALE: 1" = 50'
CONTOUR INTERVAL = 1 FT

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
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KNOXVILLE, TN 37922
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PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS			
NO.	DATE	BY	APPROVED

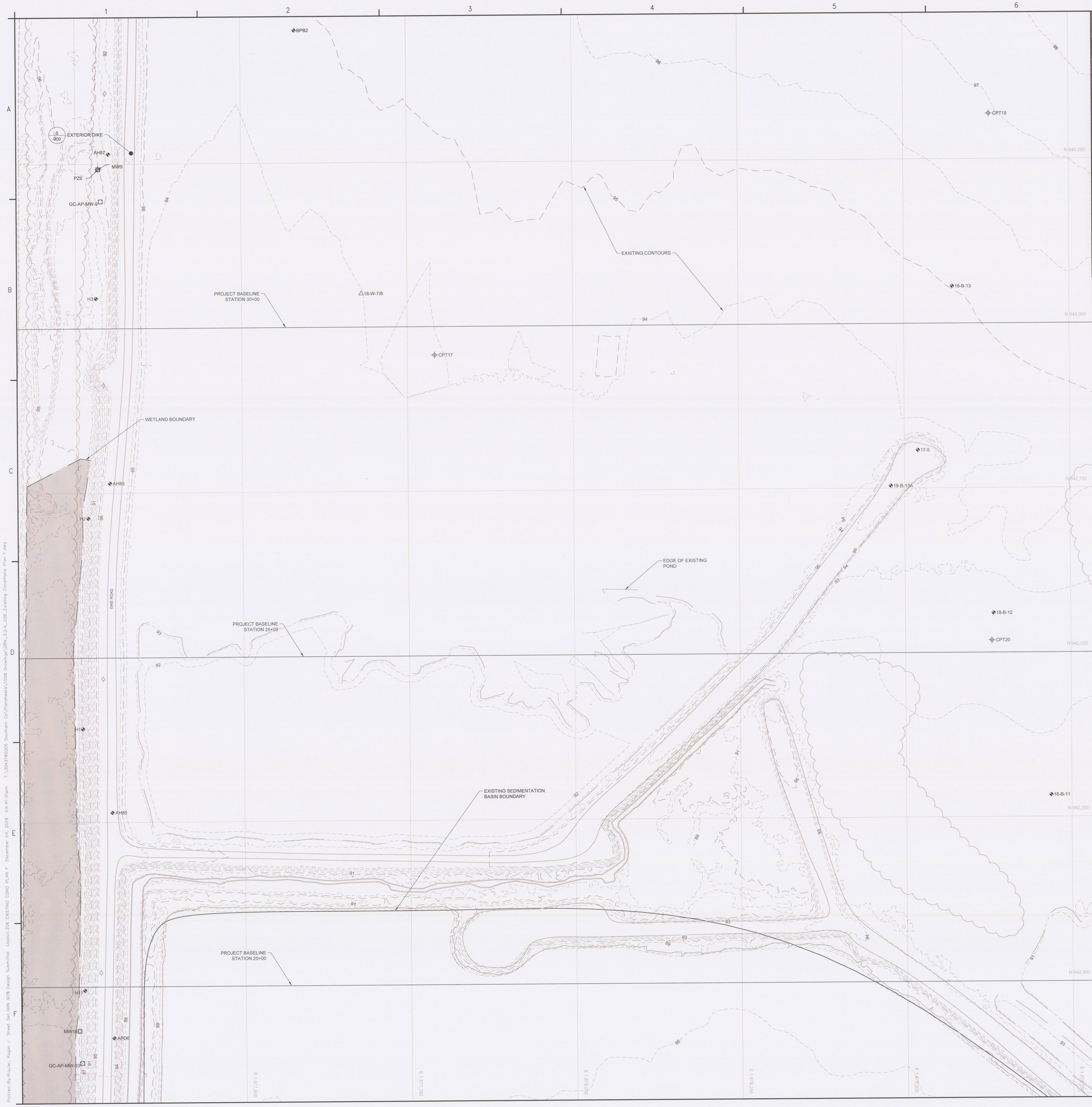
DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

EXISTING CONDITIONS PLAN E

SHEET NUMBER:	REV. #
GRN_3.2.4_205	A

Plotted By:Riquier, Roger J Sheet Set:GRN 90% Design Submittal Layout:205 EXISTING CONDITIONS PLAN E December 04, 2018 03:40:20pm T:\3043180005 Southern CA\Plansheets\100% Drawings\GRN_3.2.4_205_Existing Conditions Plan E.dwg



KEY MAP

NOTE:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.

LEGEND

- EXISTING BORING
- EXISTING CPT
- EXISTING PIEZOMETER
- EXISTING COMPLIANCE MONITORING WELL
- EXISTING BENCHMARK
- EXISTING 2018 MONITORING WELL
- EXISTING MONITORING WELL

50 0 50 100 FT

SCALE: 1" = 50'
CONTOUR INTERVAL = 1 FT

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
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KNOXVILLE, TN 37922
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PROJECT No:
3043-18-0005

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NO.	DATE	BY	APPROVED

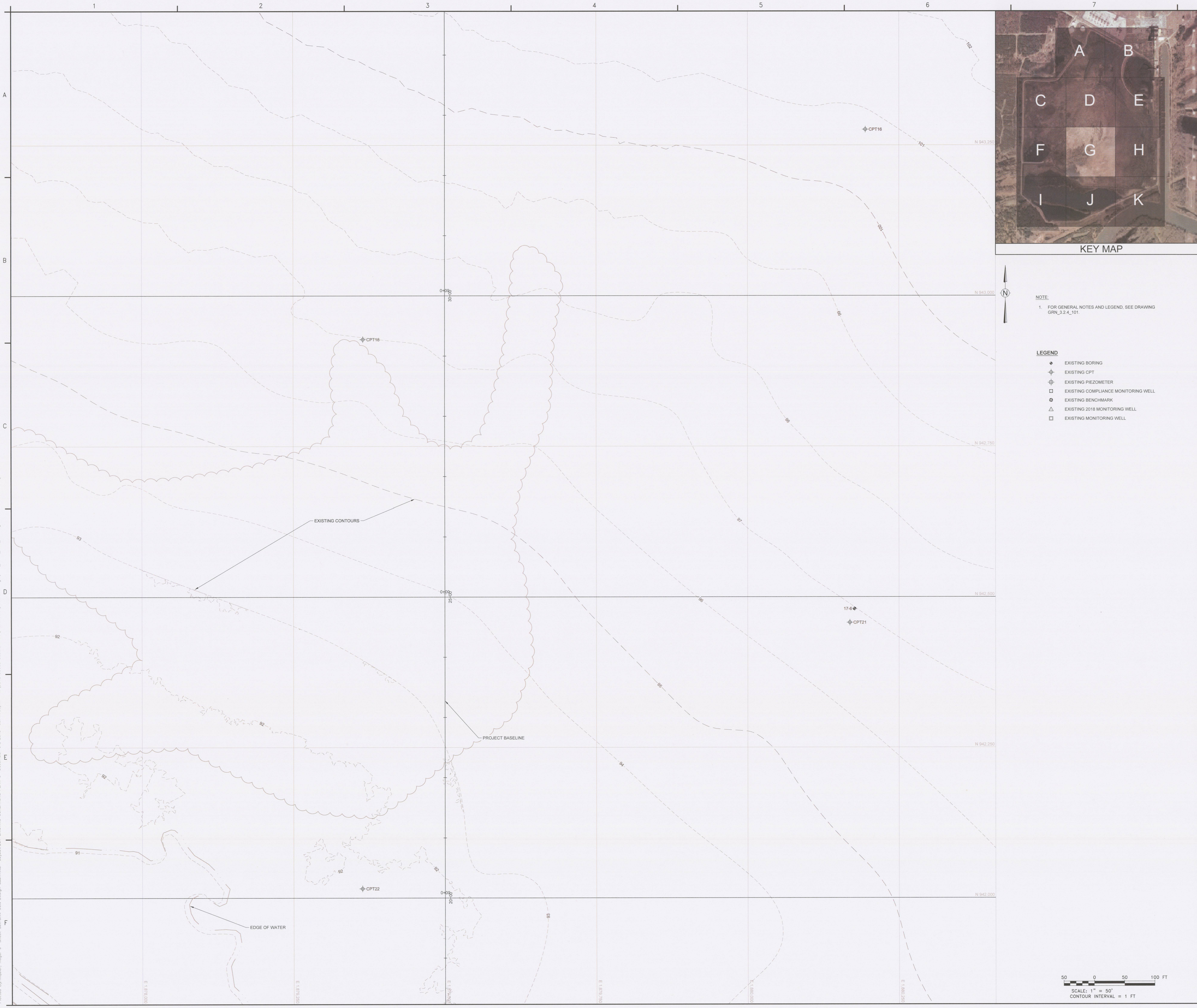
DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

EXISTING CONDITIONS PLAN F

SHEET NUMBER:	REV. #
GRN_3.2.4_206	A

Plotted By:Rojuler, Roger J Sheet Set:GRN 90% Design Submittal Layout:206 EXISTING COND PLAN F December 04, 2018 03:41:01pm T:\3043180005 Southern Co\Plantsets\(1)90% Drawings\GRN_3.2.4_206_Existing Conditions Plan F.dwg



KEY MAP

NOTE:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.

LEGEND

- EXISTING BORING
- EXISTING CPT
- EXISTING PIEZOMETER
- EXISTING COMPLIANCE MONITORING WELL
- EXISTING BENCHMARK
- EXISTING 2018 MONITORING WELL
- EXISTING MONITORING WELL

50 0 50 100 FT

SCALE: 1" = 50'
CONTOUR INTERVAL = 1 FT

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
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FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

NO.	DATE	BY	APPROVED

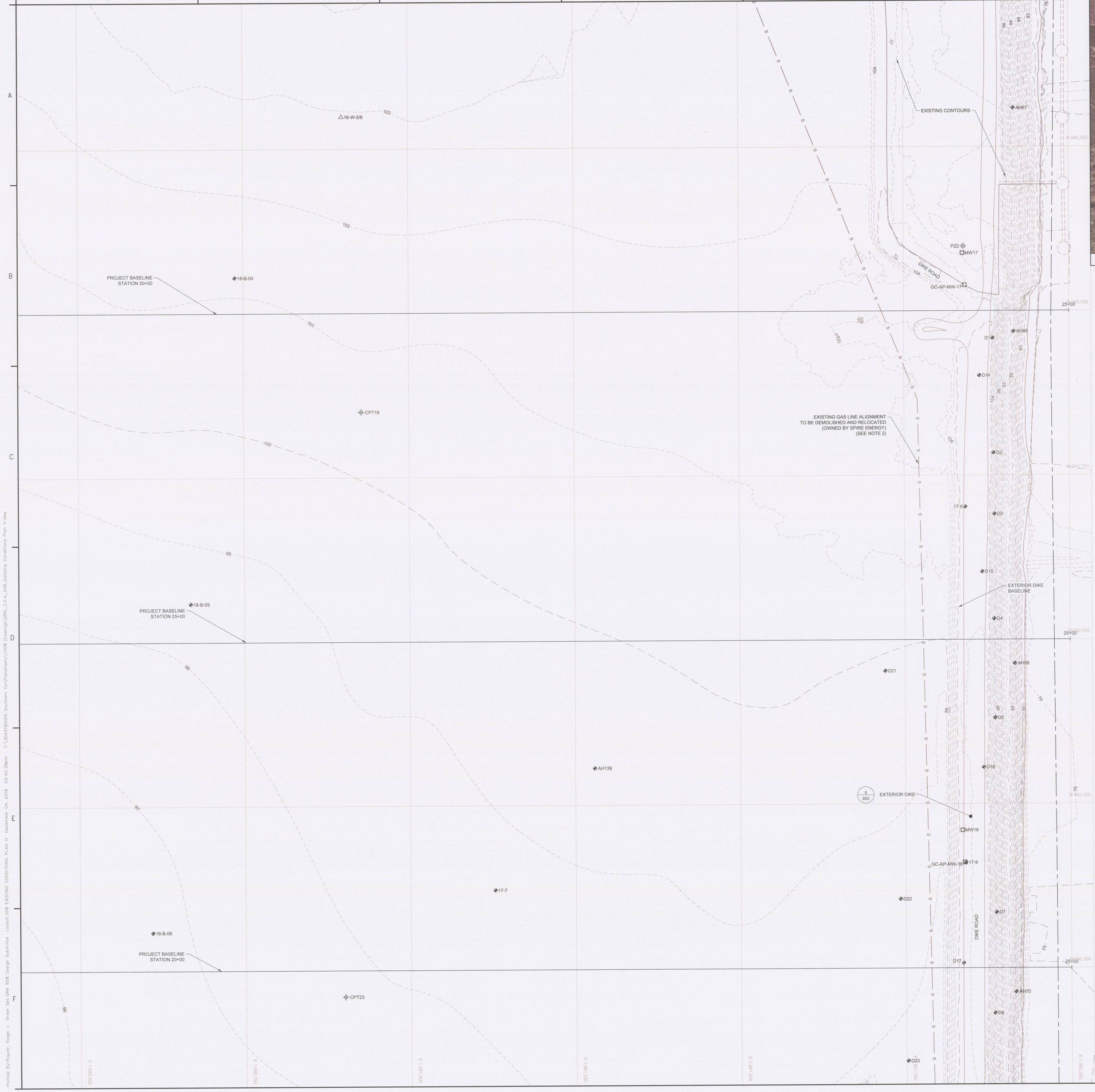
DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

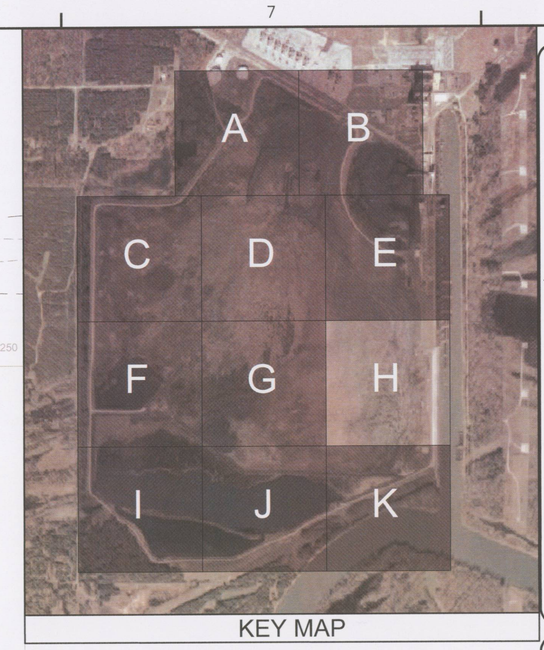
SHEET TITLE:

EXISTING CONDITIONS PLAN G

SHEET NUMBER:	REV. #
GRN_3.2.4_207	A

Plotted By: Rajuler, Roger J Sheet Set: GRN 90% Design Submittal Layout: 207 EXISTING CONDITIONS PLAN G December 04, 2018 03:41:33pm T:\3043\18\0005 Southern Co\Plansheets\100% Drawings\GRN_3.2.4_207_Existing Conditions Plan G.dwg





KEY MAP

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.
2. THE NATURAL GAS LINE LOCATION WITHIN THE EXISTING ASH POND WAS LOCATED USING GPS. FOR SEQUENCES OF ASH REMOVAL IN THE VICINITY OF THE EXISTING GAS PIPELINE, SEE 300 SERIES DRAWINGS AND SPECIFICATION 011100, SUMMARY OF WORK.

LEGEND

- EXISTING BORING
- EXISTING CPT
- EXISTING PIEZOMETER
- EXISTING COMPLIANCE MONITORING WELL
- EXISTING BENCHMARK
- EXISTING 2018 MONITORING WELL
- EXISTING MONITORING WELL

50 0 50 100 FT

SCALE: 1" = 50'
CONTOUR INTERVAL = 1 FT

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
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PROJECT No:
3043-18-0005

REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

EXISTING CONDITIONS PLAN H

SHEET NUMBER:	REV. #
GRN_3.2.4_208	A

KEY MAP

N

NOTE:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.

LEGEND

- EXISTING BORING
- EXISTING CPT
- EXISTING PIEZOMETER
- EXISTING COMPLIANCE MONITORING WELL
- EXISTING BENCHMARK
- EXISTING 2018 MONITORING WELL
- EXISTING MONITORING WELL

wood.

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PROJECT No:
3043-18-0005

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NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

EXISTING CONDITIONS PLAN I

SHEET NUMBER:	REV. #
GRN_3.2.4_209	A

Plotted By: Riquier, Roger J Sheet Set: GRN 90% Design Submittal Layout: 209 EXISTING CONDITIONS PLAN I December 04, 2018 03:42:57pm T:\3043\18\0005 Southern Co\Plansheets\100% Drawings\GRN_3.2.4_209_Existing Conditions Plan I.dwg

KEY MAP

NOTE:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.

LEGEND

- EXISTING BORING
- EXISTING CPT
- EXISTING PIEZOMETER
- EXISTING COMPLIANCE MONITORING WELL
- EXISTING BENCHMARK
- EXISTING 2018 MONITORING WELL
- EXISTING MONITORING WELL

50 0 50 100 FT

SCALE: 1" = 50'
CONTOUR INTERVAL = 1 FT

wood.
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SUITE 300
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FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

EXISTING CONDITIONS PLAN J

SHEET NUMBER:	REV. #
GRN_3.2.4_210	A

Plotted By:Riquier, Roger J Sheet Set:GRN 90% Design Submittal Layout:210 EXISTING CONDITIONS PLAN J December 04, 2018 03:43:51pm T:\3043180005 Southern Co\Plantsheet\100% Drawings\GRN_3.2.4_210_Existing Conditions Plan J.dwg

KEY MAP

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
SUITE 300
KNOXVILLE, TN 37922
TEL: (865) 671-6774

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NOT VALID WITHOUT SIGNATURE AND DATE

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.
2. THE UNDERGROUND GAS LINE LOCATION OUTSIDE ASH POND IS APPROXIMATE.
3. THE NATURAL GAS LINE LOCATION WITHIN THE EXISTING ASH POND WAS LOCATED USING GPS. FOR SEQUENCES OF ASH REMOVAL IN THE VICINITY OF THE EXISTING GAS PIPELINE, SEE 300 SERIES DRAWINGS AND SPECIFICATION 011100, SUMMARY OF WORK.
4. EXISTING COFFERDAM ADJACENT TO EXISTING DISCHARGE STRUCTURE IS NOT SHOWN.

LEGEND

- EXISTING BORING
- EXISTING CPT
- EXISTING PIEZOMETER
- EXISTING COMPLIANCE MONITORING WELL
- EXISTING BENCHMARK
- EXISTING 2018 MONITORING WELL
- EXISTING MONITORING WELL

PROJECT:

PLANT GREENE COUNTY
ASH POND CLOSURE
100% DESIGN PACKAGE

Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

EXISTING CONDITIONS PLAN K

SHEET NUMBER:	REV. #
GRN_3.2.4_211	A

SCALE: 1" = 50'
CONTOUR INTERVAL = 1 FT

Plotted By:Riquier, Roger J Sheet Set:GRN 90% Design Submittal Layout:211 EXISTING CONDITIONS PLAN K December 04, 2018 03:39:08pm T:\3043180000 Southern Co\Plansheets\100% Drawings\GRN_3.2.4_211_Existing Conditions Plan K.dwg

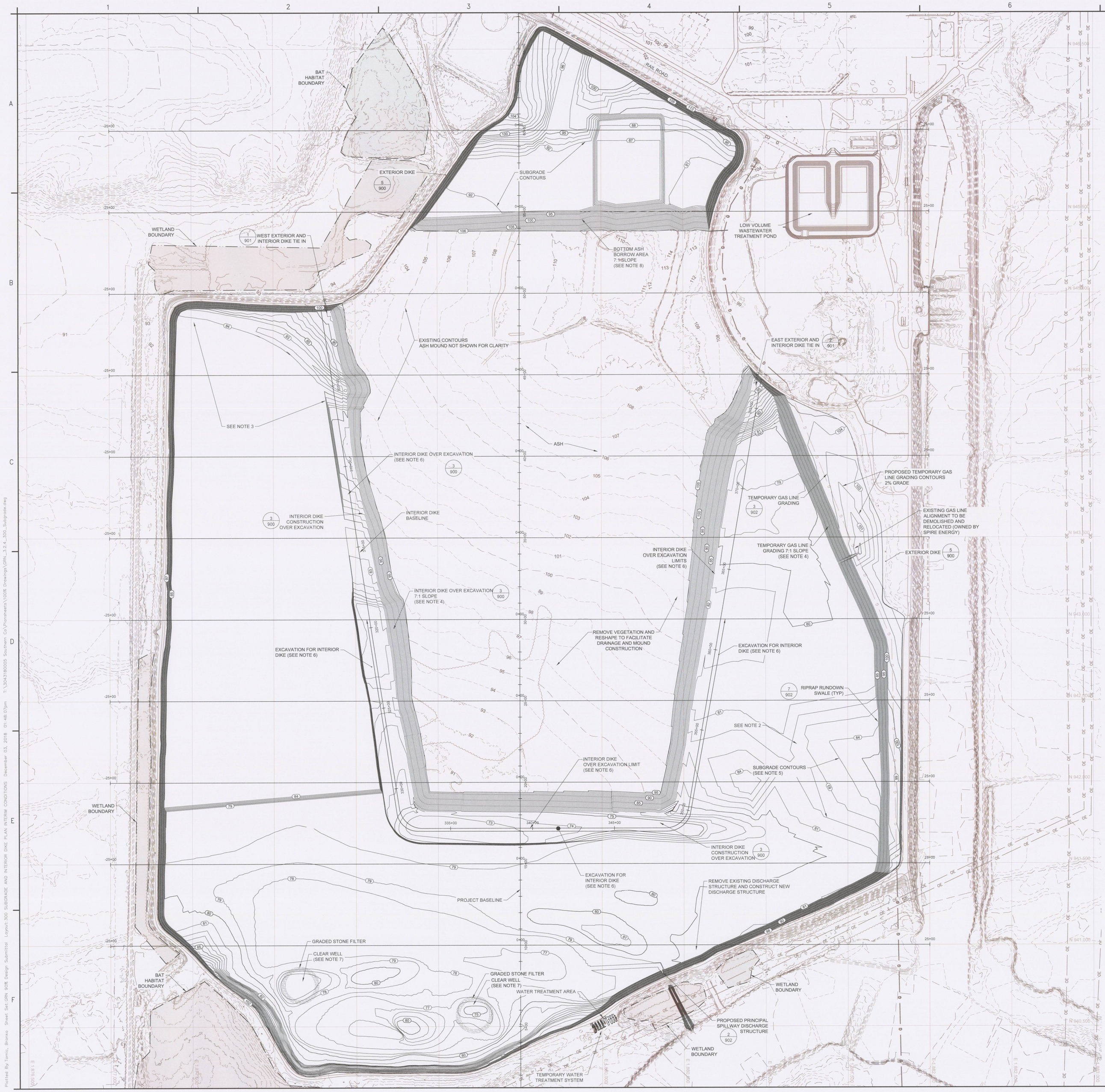

TABLE OF VALUES - SUBGRADE PLAN

EXCAVATION AREA	267 ACRES
ASH EXCAVATION VOLUME	4,800,000 CY
INTERIOR DIKE VOLUME	448,600 CY
OVER EXCAVATION VOLUME	430,000 CY

NOTES:

1. FOR GENERAL NOTES AND LEGEND. SEE DRAWING GRN_3.2.4_101.
2. THE GRADING ELEVATION CONTOURS SHOWN ON THIS DRAWING BEYOND THE ASH IS THE BOTTOM OF ASH SURFACE INCLUDING AN ADDITIONAL HALF FOOT OF EXCAVATION.
3. THE GRADING SHOWN IN THIS AREA REFLECTS A BALANCED GRADING PLAN TO LOWER THE FINISHED GRADE TO EL. 84. REGRADING THIS AREA WILL OCCUR AFTER REMOVAL OF THE UPPER ONE-HALF FOOT OF SOIL IMMEDIATELY BELOW THE ASH.
4. A 7:1 (HORIZONTAL TO VERTICAL) TEMPORARY SLOPE IS SHOWN IN DRAWINGS FOR PLANNING PURPOSES, BASED ON ANTICIPATED SITE CONDITIONS. ACTUAL TEMPORARY SLOPE MAY BE ADJUSTED FOR ACTUAL SITE CONDITIONS, IN CONSULTATION WITH THE ENGINEER.
5. THE ALLUVIUM SURFACE REMAINING AFTER ASH REMOVAL WILL BE EXCAVATED AN ADDITIONAL ONE-HALF FOOT. THE CONTOURS SHOWN DEPT ASH REMOVAL PLUS 0.5 FT.
6. CONSTRUCTION OF THE PROPOSED INTERIOR DIKE MAY REQUIRE DEWATERING AND ADDITIONAL EXCAVATION TO REMOVE UNSUITABLE MATERIAL. UNSUITABLE SUBGRADE IS ANTICIPATED IN THE SOUTHERN MOST PORTION AS INDICATED WITHIN THE LIMITS SHOWN. DEWATERING METHODS ARE OUTLINED IN THE DEWATERING PLAN.
7. CLEAR WELL LOCATIONS ARE SHOWN FOR INFORMATION. THE CONTRACTOR WILL INSTALL CLEAR WELLS TO FACILITATE DEWATERING.
8. BOTTOM ASH BORROW AREA SHOWN REPRESENTS AN AREA THAT IS PREDOMINANTLY BOTTOM ASH, BASED ON DATA COLLECTED FROM SUBSURFACE INVESTIGATIONS. THE CONTRACTOR SHALL PROVIDE A MEANS TO REMOVE ACCUMULATED STORM WATER FROM THIS AREA.

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
SUITE 300
KNOXVILLE, TN 37922
TEL: (865) 671-6774

ISSUED FOR 100% CLIENT REVIEW

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PROJECT:

PLANT GREENE COUNTY ASH POND CLOSURE 100% DESIGN PACKAGE

Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

SUBGRADE AND INTERIOR DIKE PLAN INTERIM CONDITIONS

SHEET NUMBER:	REV. #
GRN_3.2.4_300	A

Plotted By: Tomic, Bronko Sheet Set: GRN 90% Design Submittal Layout: 300 SUBGRADE AND INTERIOR DIKE PLAN INTERIM CONDITIONS December 03, 2018 01:48:07pm T:\3043\180005 Southern Co\Projects\100E Drawings\GRN_3.2.4_300_Subgrade.dwg

PROJECT BASELINE STATION 65+00

BAT HABITAT BOUNDARY

PROJECT BASELINE STATION 60+00

PROJECT BASELINE STATION 55+00

RAIL ROAD

EXTERIOR DIKE

WETLAND BOUNDARY

PROJECT BASELINE

EXISTING CONTOURS

ALLUVIUM CONTOURS

BOTTOM ASH BORROW AREA 7:1 SLOPE

7:1 SLOPE

EXISTING GRADE CONTOURS (ASH MOUND NOT SHOWN FOR CLARITY)

REMOVE VEGETATION AND RESHAPE TO FACILITATE DRAINAGE AND MOUND CONSTRUCTION

KEY MAP

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.

SCALE: 1" = 50'
CONTOUR INTERVAL = 1 FT

wood.
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SUITE 300
KNOXVILLE, TN 37922
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PROJECT:

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Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

SUBGRADE AND INTERIOR DIKE PLAN A INTERIM CONDITIONS

SHEET NUMBER:	REV. #
GRN_3.2.4_301	A

Plotted By: Tomic, Branko Sheet Set: GRN 90% Design Submittal Layout: 301 December 04, 2018 03:15:54pm I:\3043\18\0005 Southern Co\Plantsheets\100% Drawings\GRN_3.2.4_301_Subg Int Dike A Interim Cond A.dwg

KEY MAP

ALLUVIUM CONTOURS

7:1 SLOPE

PROJECT BASELINE STATION 50+00'

FENCE(TYP)

NEUTRALIZATION POND

POLE (TYP)

GAS VALVE STATION

BOTTOM ASH BORROW AREA

LOW VOLUME WASTE WATER TREATMENT POND

UNDERGROUND GAS LINE ALIGNMENT (SEE NOTE 2)

PROJECT BASELINE STATION 55+00'

EXTERIOR DIKE 5/900

EXISTING CONTOURS ASH MOUND NOT SHOWN FOR CLARITY

EXISTING CONTOURS

N 946,750

N 946,500

N 946,250

E 1,880,250

E 1,880,500

E 1,880,750

E 1,881,000

E 1,881,250

E 1,881,500

NOTE:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.
2. UNDERGROUND GAS LINE LOCATION OUTSIDE OF THE ASH POND IS APPROXIMATE.

50 0 50 100 FT

SCALE: 1" = 50'
CONTOUR INTERVAL = 1 FT

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
SUITE 300
KNOXVILLE, TN 37922
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PROJECT:

PLANT GREENE COUNTY ASH POND CLOSURE 100% DESIGN PACKAGE

Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS			
NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

SUBGRADE AND INTERIOR DIKE PLAN B INTERIM CONDITIONS

SHEET NUMBER:	REV. #
GRN_3.2.4_302	A

Plotted By: Tomic, Branko Sheet Set: GRN 90% Design Submittal Layout: 302 SUBGRADE AND INTERIOR DIKE PLAN B INTERIM CONDITIONS B December 04, 2018 03:19:01pm T:\3043\180005 Southern Co\Plansheets\100% Drawings\GRN_3.2.4_302_Subg Int Dike B Interm Cond B.dwg

PROJECT BASELINE STATION 50+00'

WETLAND BOUNDARY

EXISTING CONTOURS

SEE NOTE 3, DRAWING GRN_3.2.3_300

SUBGRADE CONTOURS

PROJECT BASELINE STATION 45+00'

REMOVE VEGETATION AND RESHAPE TO FACILITATE AND MOUND CONSTRUCTION

EXISTING CONTOURS (ASH MOUND NOT SHOWN FOR CLARITY)

PROJECT BASELINE STATION 40+00'

5/900 EXTERIOR DIKE

3/900 INTERIOR DIKE CONSTRUCTION OVER EXCAVATION

PROJECT BASELINE STATION 35+00'

KEY MAP

N

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.

SCALE: 1" = 50'
CONTOUR INTERVAL = 1 FT

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
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KNOXVILLE, TN 37922
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PROJECT:

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801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

SUBGRADE AND INTERIOR DIKE PLAN C INTERIM CONDITIONS

SHEET NUMBER:	REV. #
GRN_3.2.4_303	A

Plotted By: Tomic, Branko Sheet Set: GRN_90% Design Submittal Layout: 303 SUBGRADE AND INTERIOR DIKE PLAN C INTERIM CONDITIONS C December 04, 2018 03:23:55pm T:\3043\18\0005 Southern Co\Plansheets\100% Drawings\GRN_3.2.4_303_Subg Int Dike C Interm Cond C.dwg

KEY MAP

NOTE:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.

50 0 50 100 FT
SCALE: 1" = 50'
CONTOUR INTERVAL = 1 FT

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
SUITE 300
KNOXVILLE, TN 37922
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PROJECT:

PLANT GREENE COUNTY ASH POND CLOSURE 100% DESIGN PACKAGE

Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

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NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

SUBGRADE AND INTERIOR DIKE PLAN D INTERIM CONDITIONS

SHEET NUMBER:	REV. #
GRN_3.2.4_304	A

Plotted By:Tomic, Bronko Sheet Set:GRN 90% Design Submittal Layout:304 SUBGRADE AND INTERIOR DIKE PLAN C INTERIM CONDITIONS C December 04, 2018 03:27:02pm T:\3043180005 Southern Co\Plansheets\100% Drawings\GRN_3.2.4_304_Subg Int Dike D Interm Cond D.dwg

PROJECT BASELINE STATION 50+00

PROJECT BASELINE STATION 45+00

PROJECT BASELINE STATION 40+00

PROJECT BASELINE STATION 35+00

REMOVE VEGETATION AND RESHAPE TO FACILITATE DRAINAGE AND MOUND CONSTRUCTION

EAST EXTERIOR AND INTERIOR DIKE TIE IN (2/901)

EXTERIOR DIKE (5/900)

EXISTING CONTOURS (ASH MOUND NOT SHOWN FOR CLARITY)

RIPRAP RUN DOWN SWALE (TYP) (SEE NOTE 5) (7/902)

INTERIOR DIKE OVER EXCAVATION 7:1 SLOPE (SEE NOTE 4, DRAWING GRN_3.2.4_300) (3/900)

7:1 SLOPE

TEMPORARY GAS LINE GRADING 7:1 SLOPE (SEE NOTE 4, DRAWING GRN_3.2.4_300 AND NOTE 2 TO THIS DRAWING)

SUBGRADE CONTOURS

TEMPORARY GAS LINE GRADING (3/902)

EXISTING GAS LINE ALIGNMENT TO BE DEMOLISHED AND RELOCATED (OWNED BY SPIRE ENERGY)

KEY MAP

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.
2. LOCATE AND MARK THE HORIZONTAL AND VERTICAL LOCATION OF THE GAS LINE WITHIN THE ASH POND LIMITS, AND OTHER LOCATIONS AS DIRECTED BY THE OWNER. PROVIDE HORIZONTAL AND VERTICAL PIPE LINE LOCATION TO THE ENGINEER FOR CONFIRMATION PRIOR TO INITIATING EXCAVATION OF ASH IN THE VICINITY OF THE GAS PIPE LINE.
3. EXISTING ASH COVER SHALL REMAIN OVER GAS PIPE LINE WITHIN THE ASH POND UNTIL THE GAS PIPE LINE IS RELOCATED (BY OTHERS).
4. GRADE THE ASH SURFACE OVER THE PIPE LINE AS GENERALLY SHOWN ON THE DRAWINGS, OR AS OTHERWISE REVISED BY THE ENGINEER UPON RECEIPT OF PIPE LOCATION DATA. PROVIDE MINIMUM OF 30 FEET FROM THE PIPE CENTERLINE TO THE CREST OF THE SLOPE.
5. CONSTRUCT RIPRAP RUNDOWN SWALE AS SHOWN ON DRAWING GRN_3.2.4_308, AND AT ADDITIONAL LOCATIONS APPROXIMATELY 1000 FEET APART. INSTALL BERM AT EDGE OF SLOPE TO PREVENT DIRECT RUNOFF OVER THE CREST OF THE SLOPE.
6. INSTALL AND MAINTAIN A TEMPORARY COVER ON THE ASH OVER THE EXISTING PIPE LINE TO MINIMIZE EROSION.
7. CONSTRUCTION DETAILS OF THE GAS PIPE LINE ARE SHOWN ON ALAGASCO DRAWING AL-04.
8. REMOVAL OF THE GAS PIPE LINE INCLUDES PIPE AND CONCRETE WEIGHTS INSTALLED AS BALLAST.
9. UNDERGROUND GAS LINE LOCATION OUTSIDE OF THE ASH POND IS APPROXIMATE.

50 0 50 100 FT
SCALE: 1" = 50'
CONTOUR INTERVAL = 1 FT

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
SUITE 300
KNOXVILLE, TN 37922
TEL: (865) 671-6774

ISSUED FOR 100% CLIENT REVIEW

NOT VALID WITHOUT SIGNATURE AND DATE

PROJECT:

PLANT GREENE COUNTY
ASH POND CLOSURE
100% DESIGN PACKAGE

Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS			
NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

SUBGRADE AND INTERIOR DIKE PLAN E INTERIM CONDITIONS

SHEET NUMBER:	REV. #
GRN_3.2.4_305	A

Plotted By: Tomic, Branko Sheet Set: GRN 90% Design Submittal Layout: 305 SUBGRADE AND INTERIOR DIKE PLAN E INTERIM CONDITIONS E December 04, 2018 03:30:26pm T:\3043180005 Southern Co\Phasesets\100% Drawings\GRN_3.2.4_305_Subg Int Dike E Interim Cond E.dwg

KEY MAP

NOTE:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.

50 0 50 100 FT
SCALE: 1" = 50'
CONTOUR INTERVAL = 1 FT

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
SUITE 300
KNOXVILLE, TN 37922
TEL: (865) 671-6774

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PLANT GREENE COUNTY ASH POND CLOSURE 100% DESIGN PACKAGE

Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

SUBGRADE AND INTERIOR DIKE PLAN F INTERIM CONDITIONS

SHEET NUMBER:	REV. #
GRN_3.2.4_306	A

Plotted By: Tomic, Branko Sheet Set: GRN 90% Design Submittal Layout: 306 SUBGRADE AND INTERIOR DIKE PLAN F INTERIM CONDITIONS F December 04, 2018 03:34:46pm T:\3043180005 Southern Co\Plansheets\100% Drawings\GRN_3.2.4_306_Subg Int Dike F.dwg

EXISTING CONTOURS
(ASH MOUND NOT SHOWN FOR CLARITY)

REMOVE VEGETATION AND RESHAPE TO FACILITATE DRAINAGE AND MOUND CONSTRUCTION

PROJECT BASELINE

INTERIOR DIKE
OVER EXCAVATION LIMITS
(SEE NOTE 6, DRAWING GRN_3.2.4_300)

INTERIOR DIKE
OVER EXCAVATION
7:1 SLOPE
(SEE NOTE 4, DRAWING GRN_3.2.4_300)

KEY MAP

NOTE:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.

50 0 50 100 FT
SCALE: 1" = 50'
CONTOUR INTERVAL = 1 FT

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
SUITE 300
KNOXVILLE, TN 37922
TEL: (865) 671-6774

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PROJECT:

PLANT GREENE COUNTY
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Alabama Power

PLANT GREENE COUNTY

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FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

SUBGRADE AND INTERIOR DIKE PLAN G INTERIM CONDITIONS

SHEET NUMBER:	REV. #
GRN_3.2.4_307	A

Plotted By: Tomic, Branko Sheet Set: GRN 90% Design Submittal Layout: 307 SUBGRADE AND INTERIOR DIKE PLAN G INTERIM CONDITIONS G December 04, 2018 03:38:10pm T:\3043180005 Southern Co\Plansheets\100% Drawings\GRN_3.2.4_307_Subg Int Dike G Interm Cond G.dwg

INTERIOR DIKE OVER EXCAVATION LIMITS (SEE NOTE 6, DRAWING GRN_3.2.4_300)

RIPRAP RUNDOWN SWALE — 7/902

EXTERIOR DIKE — 6/900

EXISTING GAS LINE ALIGNMENT TO BE DEMOLISHED AND RELOCATED (OWNED BY SPIRE ENERGY)

EXISTING CONTOURS (ASH MOUND NOT SHOWN FOR CLARITY)

INTERIOR DIKE CONSTRUCTION OVER EXCAVATION — 3/900

PROJECT BASELINE STATION 30+00

PROPOSED GAS LINE GRADING 7:1 SLOPE (SEE NOTE 2)

INTERIOR DIKE OVER EXCAVATION 7:1 SLOPE (SEE NOTE 4, DRAWING GRN_3.2.4_300) — 3/900

SEE NOTE 6, DRAWING GRN_3.2.4_300 FOR EXCAVATION OF INTERIOR DIKE

PROJECT BASELINE STATION 25+00

SUBGRADE CONTOURS

RIPRAP RUNDOWN SWALE (SEE NOTE 5, DRAWING GRN_3.2.4_305) — 7/902

TEMPORARY GAS LINE GRADING — 3/902

PROJECT BASELINE STATION 20+00

N 943,250 · 25+00 · N 943,000 · N 942,750 · 25+00 · N 942,500 · 25+00 · N 942,250 · 25+00 · N 942,000

E 1,880,500 · E 1,880,750 · E 1,881,000 · E 1,881,250 · E 1,881,500 · E 1,881,750 · E 1,882,000

50 0 50 100 FT
SCALE: 1" = 50'
CONTOUR INTERVAL = 1 FT

KEY MAP

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.
2. FOR TEMPORARY GAS LINE GRADING, SEE DRAWING GRN_3.2.4_305.

wood.
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801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

SUBGRADE AND INTERIOR DIKE PLAN H INTERIM CONDITIONS

SHEET NUMBER:	REV. #
GRN_3.2.4_308	A

Plotted By: Tomic, Branko Sheet Set: GRN 90% Design Submittal Layout: 308 SUBGRADE AND INTERIOR DIKE PLAN H INTERIM CONDITIONS H December 04, 2018 03:42:19pm T:\3043180005 Southern Co\Plansheets\1005 Drawings\GRN_3.2.4_308_Subg Int Dike H Interm Cond H.dwg

wood.
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FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS			
NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

SUBGRADE AND INTERIOR DIKE PLAN I INTERIM CONDITIONS

SHEET NUMBER:	REV. #
GRN_3.2.4_309	A

Plotted By: Tomic, Brooks Sheet Set: GRN_90% Design Submittal Layout: 309 SUBGRADE AND INTERIOR DIKE PLAN I INTERIM CONDITIONS I December 04, 2018 03:45:44pm T:\3043180005 Southern Co\Plansheets\100% Drawings\GRN_3.2.4_309_Subg Int Dike I Interim Cond I.dwg

SEE NOTE 6, DRAWING GRN_3.2.4_300 FOR EXCAVATION OF INTERIOR DIKE

INTERIOR DIKE CONSTRUCTION OVER EXCAVATION (3/900)

PROJECT BASELINE

SUBGRADE CONTOURS

PROPOSED PRINCIPAL SPILLWAY STRUCTURE (2/902)

GRADED STONE FILTER

CLEAR WELL (SEE NOTE 7, DRAWING GRN_3.2.4_300)

PROPOSED TEMPORARY WATER TREATMENT AREA

WETLAND BOUNDARY

OVERHEAD ELECTRICAL TRANSMISSION LINE SUPPORT STRUCTURE

EXTERIOR DIKE (5/900)

EXISTING CONTOURS

N 941,750
N 941,500
N 941,250
N 941,000
N 940,750
N 940,500
N 940,250

KEY MAP

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.

50 0 50 100 FT
SCALE: 1" = 50'
CONTOUR INTERVAL = 1 FT

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
SUITE 300
KNOXVILLE, TN 37922
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PROJECT:

PLANT GREENE COUNTY
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PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

SUBGRADE AND INTERIOR DIKE PLAN J INTERIM CONDITIONS

SHEET NUMBER:	REV. #
GRN_3.2.4_310	A

Plotted By: Tomic, Brooks Sheet Set: GRN_90% Design Submittal Layout: 310_SUBGRADE AND INTERIOR DIKE PLAN J INTERIM CONDITIONS J December 04, 2018 03:50:26pm T:\3043180005 Southern Co\Plansheets\100% Drawings\GRN_3.2.4_310_Subg Int Dike J Interm Cond .dwg

SUBGRADE CONTOURS

PROJECT BASELINE STATION 15+00

7/902 RIPRAP RUNDOWN SWALE (SEE NOTE 5, DRAWING GRN_3.2.4_305)

3/902 TEMPORARY GAS LINE GRADING

EXISTING GAS LINE ALIGNMENT TO BE DEMOLISHED AND RELOCATED (OWNED BY SPIRE ENERGY)

EXTERIOR DIKE 5/900

PROJECT BASELINE STATION 10+00

WETLAND BOUNDARY

PROPOSED PRINCIPAL SPILLWAY STRUCTURE 2/902

KEY MAP

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101
2. FOR TEMPORARY GAS LINE GRADING, SEE DRAWING GRN_3.2.4_305)

50 0 50 100 FT
SCALE: 1" = 50'
CONTOUR INTERVAL = 1 FT

wood.
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REVISIONS			
NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

SUBGRADE AND INTERIOR DIKE PLAN K INTERIM CONDITIONS

SHEET NUMBER:	REV. #
GRN_3.2.4_311	A

Plotted By:Tomic, Branko Sheet Set:GRN 90% Design Submittal Layout:311 SUBGRADE AND INTERIOR DIKE PLAN K INTERIM CONDITIONS K December 04, 2018 03:54:29pm T:\3043180005 Southern Co\Printsheets\100% Drawings\GRN_3.2.4_311_Subg int Dike K interm Cond K.dwg

POINT 1
POINT 2
POINT 3
POINT 4
POINT 5
POINT 6
EXISTING CONTOURS
ALLUVIUM CONTOURS (SEE NOTE 4)
INTERIOR DIKE (CREST EL. 101')
INTERIOR DIKE BASELINE
EXTERIOR DIKE
SEE NOTE 3
SEE NOTE 6
N
N 945,000
N 944,500
N 944,000
N 943,500
N 943,000
N 942,500
N 942,000
N 941,500
E 1,972,500
E 1,973,000
E 1,973,500
E 1,974,000
E 1,974,500
E 1,975,000
E 1,975,500
E 1,976,000
E 1,976,500
E 1,977,000
E 1,977,500
E 1,978,000
E 1,978,500
E 1,979,000
E 1,979,500
E 1,980,000
E 1,980,500
E 1,981,000
E 1,981,500
E 1,982,000
E

BARRIER WALL NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.
2. BARRIER WALL NOMINAL THICKNESS IS 2 FEET.
3. BARRIER WALL LOCATION IS SHOWN FOR INFORMATION.
4. CONSTRUCTION DETAILS FOR BARRIER WALL WILL BE PROVIDED.
5. SEE DRAWING GRN_3.2.4_402 FOR BARRIER WALL PROFILES.
6. SEE DRAWINGS GRN_3.13.1_100 THRU GRN_3.13.1_701 FOR BARRIER WALL CONSTRUCTION DETAILS AND LOCATION.

200 0 200 400 FT

SCALE: 1" = 200'
CONTOUR INTERVAL = 2 FT

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
SUITE 300
KNOXVILLE, TN 37922
TEL: (865) 671-6774

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PROJECT:

PLANT GREENE COUNTY ASH POND CLOSURE 100% DESIGN PACKAGE

Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

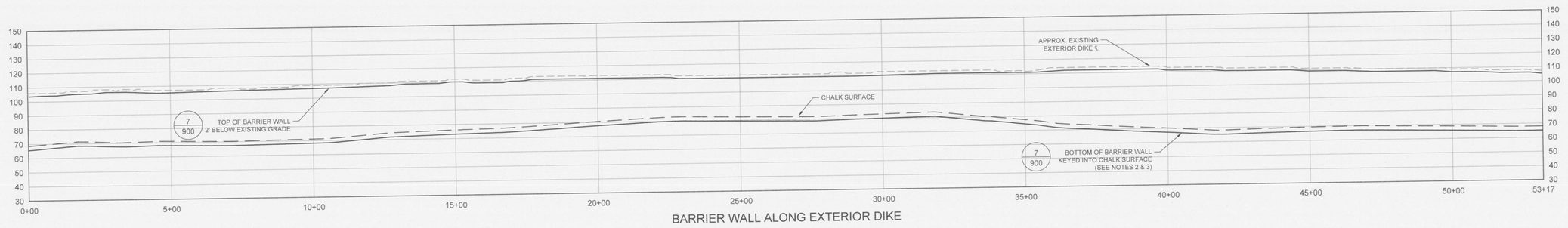
SHEET TITLE:

BARRIER WALL ALIGNMENT- PLAN VIEW

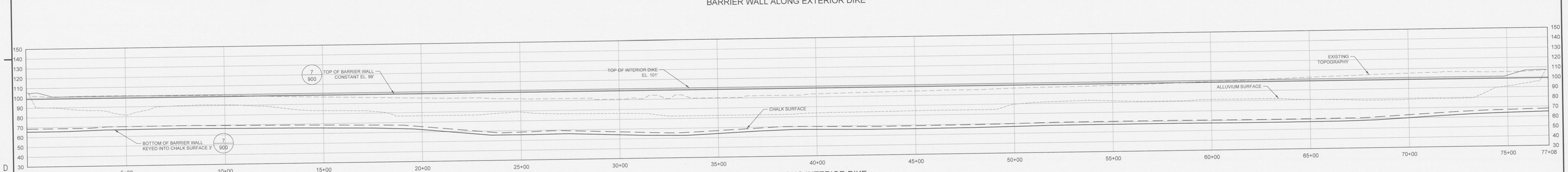
SHEET NUMBER:	REV. #
GRN_3.2.4_401	A

BARRIER WALL NOTES:

1. FOR GENERAL NOTE AND LEGEND, SEE DRAWING GRN_3.2.4_101.
2. SEE DRAWINGS GRN_3.13.1_100 THRU GRN_3.13.1_701 FOR CONSTRUCTION DETAILS AND LOCATION.
3. THE BOTTOM OF BARRIER WALL LOCATION SHOWN IS APPROXIMATE.



BARRIER WALL ALONG EXTERIOR DIKE



BARRIER WALL ALONG INTERIOR DIKE

200 0 200 400 FT
SCALE: 1" = 200'

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
SUITE 300
KNOXVILLE, TN 37922
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FORKLAND, AL

PROJECT No:
3043-18-0005

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NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
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CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

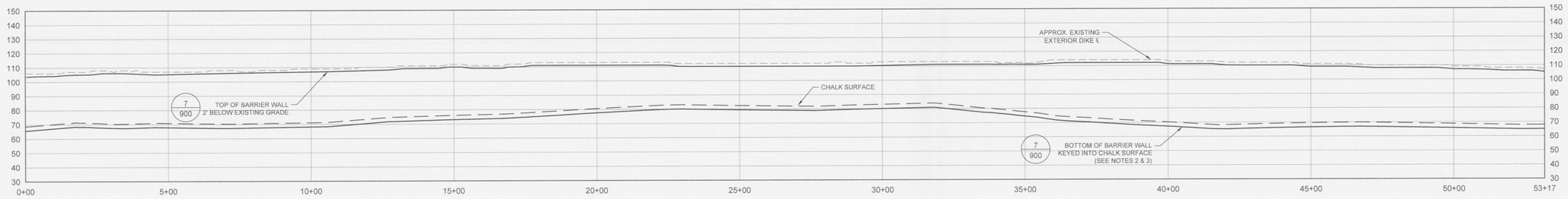
BARRIER WALL - PROFILE

SHEET NUMBER:	REV. #
GRN_3.2.4_402	A

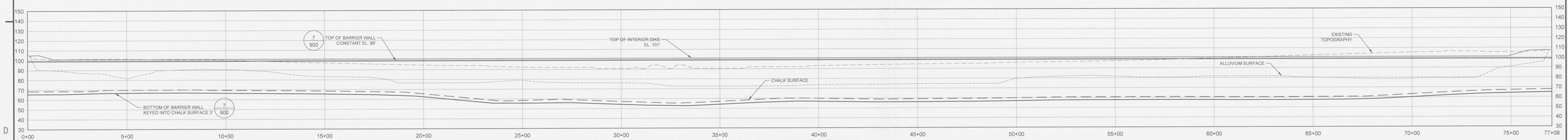
Plotted By: Tomic, Branko Sheet Set: GRN 60% Design Submittal Layout: 402 Barrier Wall PROFILE December 04, 2018 04:00:32pm I:\3043180005 Southern Co\Project\Sheets\100% Drawings\GRN_3.2.4_402 Barrier Wall Profile.dwg

BARRIER WALL NOTES:

1. FOR GENERAL NOTE AND LEGEND, SEE DRAWING GRN_3.2.4_101.
2. SEE DRAWINGS GRN_3.13.1_100 THRU GRN_3.13.1_701 FOR CONSTRUCTION DETAILS AND LOCATION.
3. THE BOTTOM OF BARRIER WALL LOCATION SHOWN IS APPROXIMATE.



BARRIER WALL ALONG EXTERIOR DIKE



BARRIER WALL ALONG INTERIOR DIKE

200 0 200 400 FT
SCALE: 1" = 200'

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
SUITE 300
KNOXVILLE, TN 37922
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100% DESIGN PACKAGE

Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

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NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

BARRIER WALL - PROFILE

SHEET NUMBER:	REV. #
GRN_3.2.4_402	A

Plotted By:Tomic, Branko Sheet Set:GRN 60% Design Submittal Layout:402 Barrier Wall PROFILE December 04, 2018 04:00:32pm I:\3043180005 Southern Co\Plansheets\100% Drawings\GRN_3.2.4_402 Barrier Wall Profile.dwg

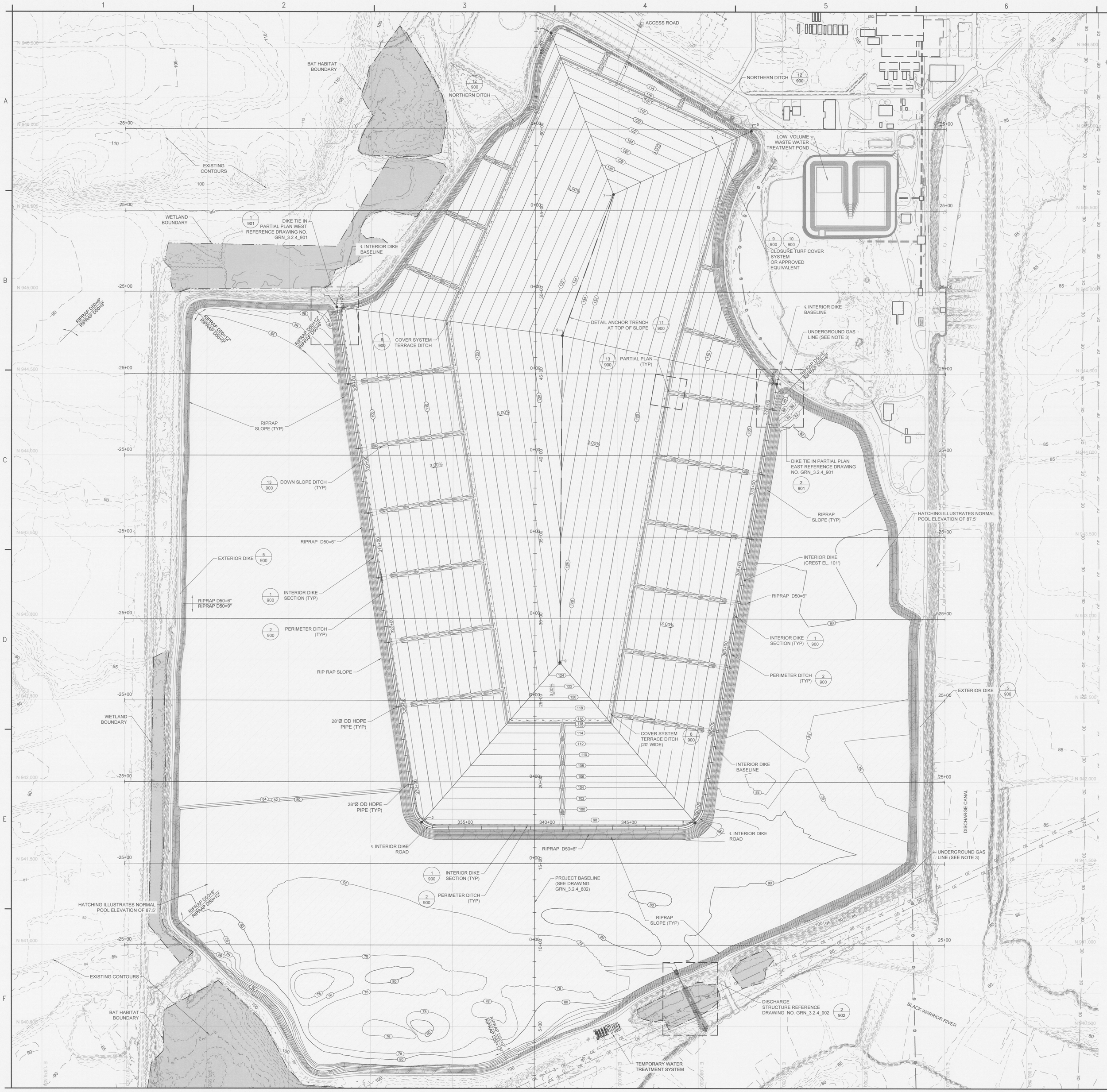

TABLE OF VALUES - CLOSURE PLAN

ASH EXCAVATION VOLUME	4,800,000 CY
ASH CONSOLIDATION	3,800,000 CY (SHRINKAGE)
OVEREXCAVATION	430,000 CY
INTERIOR DIKE VOLUME	448,600 CY
SAND INFILL	27,900 TONS
FINAL COVER AREA	221 ACRES
ASH REMOVE AREA	267 ACRES

NOTES:

1. FOR GENERAL NOTES AND LEGEND SEE DRAWING GRN_3.2.4_101.
2. INSTALL RIPRAP ON SLOPE AS SHOWN ON DETAIL 2 AND 5 ON DRAWING GRN_3.2.4_900.
3. LOCATION OF FUTURE UNDERGROUND GAS LINE IS UNKNOWN AT THIS TIME.
4. CONTOUR INTERVAL IS 1' ON THIS SHEET.
5. TOTAL OF FINAL COVER AREA AND ASH REMOVAL AREA = 488 ACRES - DUE TO OVERLAP OF ASH EXCAVATION AND FINAL COVER.

COORDINATE POINT LISTING

POINT NO.	NORTHING	EASTING	ELEVATION (FT)	DESCRIPTION
1	944909.1790'	1878289.6195'	105	INTERSECTION OF BREAKLINE AND CENTERLINE INTERIOR DIKE
2	941752.2986'	1878810.6532'	101	INTERSECTION OF BREAKLINE AND CENTERLINE INTERIOR DIKE
3	941751.5597'	1880478.6938'	101	INTERSECTION OF BREAKLINE AND CENTERLINE INTERIOR DIKE
4	944439.2865'	1880970.9444'	107	INTERSECTION OF BREAKLINE AND CENTERLINE INTERIOR DIKE
5	945988.3160'	1880811.8992'	114	BREAKLINE AT EXTERIOR DIKE CREST
6	946590.3504'	1879590.9613'	111	BREAKLINE AT EXTERIOR DIKE CREST
7	945599.3615'	1879973.9710'	134	INTERSECTION OF BREAKLINE
8	944733.9687'	1879664.3712'	136	INTERSECTION OF BREAKLINE
9	942732.1449'	1879651.1198'	126	INTERSECTION OF BREAKLINE

SCALE: 1" = 200'
CONTOUR INTERVAL = 2 FT

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
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KNOXVILLE, TN 37922
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PROJECT:

PLANT GREENE COUNTY ASH POND CLOSURE 100% DESIGN PACKAGE

Alabama Power

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PROJECT No:
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REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

CLOSURE PLAN

SHEET NUMBER:	REV. #
GRN_3.2.4_600	A

KEY MAP

NOTE:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.

50 0 50 100 FT

SCALE: 1" = 50'

CONTOUR INTERVAL = 1 FT

wood.

ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
SUITE 300
KNOXVILLE, TN 37922
TEL: (865) 671-6774

ISSUED FOR 100% CLIENT REVIEW

NOT VALID WITHOUT SIGNATURE AND DATE

PROJECT:

PLANT GREENE COUNTY
ASH POND CLOSURE
100% DESIGN PACKAGE

Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS			
NO.	DATE	BY	APPROVED

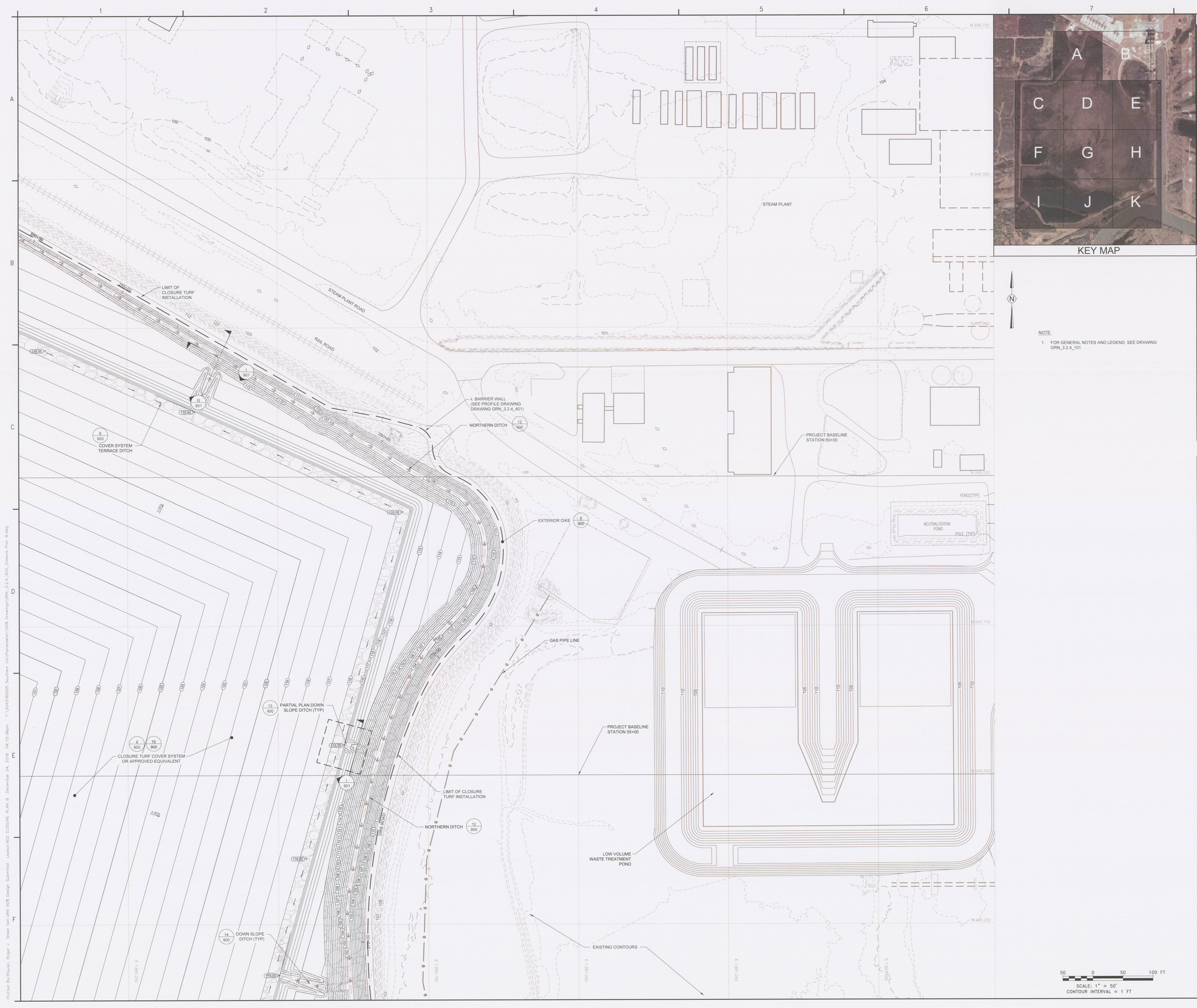
DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

CLOSURE PLAN A

SHEET NUMBER:	REV. #
GRN_3.2.4_601	A

Plotted By:Rouer, Roger J Sheet Set:GRN 90% Design Submittal Layout:601 CLOSURE PLAN A December 04, 2018 04:10:43pm T:\3043180005 Southern Co\Phonsheets\100% Drawings\GRN_3.2.4_601_Closure Plan A.dwg



KEY MAP

NOTE:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.

wood.
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PROJECT:

PLANT GREENE COUNTY ASH POND CLOSURE 100% DESIGN PACKAGE

Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS			
NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

CLOSURE PLAN B

SHEET NUMBER:	REV. #
GRN_3.2.4_602	A

50 0 50 100 FT

SCALE: 1" = 50'
CONTOUR INTERVAL = 1 FT

Plotted By:Rigdon, Roger J Sheet Set:GRN 60% Design Submittal Layout:602 CLOSURE PLAN B December 04, 2018 04:15:08pm T:\3043180005 Southern Co\Printsheets\100% Drawings\GRN_3.2.4_602_Closure Plan B.dwg

KEY MAP

NOTE:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.
2. EXTEND RIPRAP LINING BEYOND TERMINATION OF BERMS. OVER EXCAVATE THE SURFACE TO MATCH TOP OF RIPRAP WITH GRADE.
3. INSTALL RENO MATTRESS AT THE END OF THE TWIN 54" DIA. HDPE PIPES.

50 0 50 100 FT

SCALE: 1" = 50'

CONTOUR INTERVAL = 1 FT

wood.
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FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS			
NO.	DATE	BY	APPROVED

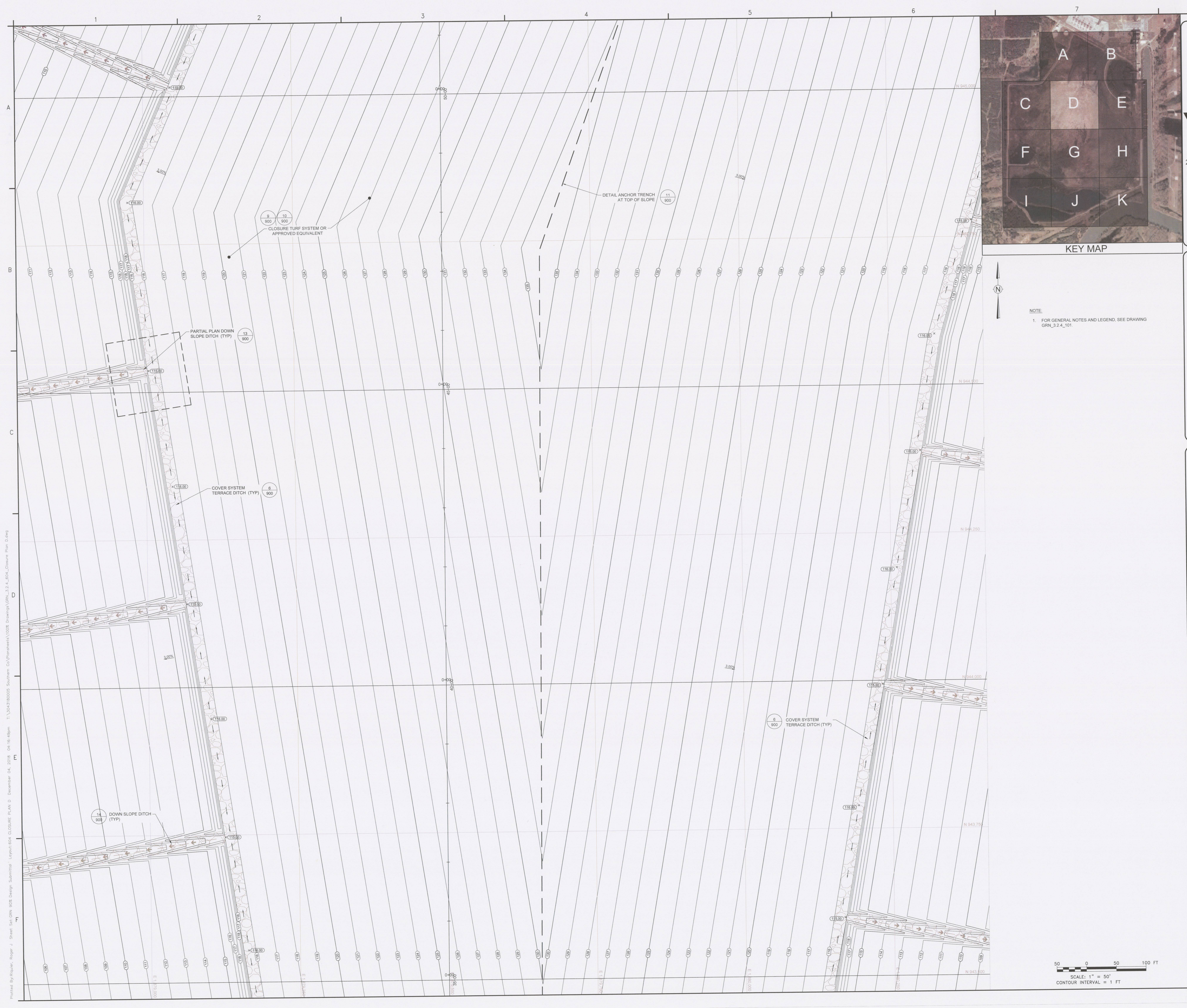
DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

CLOSURE PLAN C

SHEET NUMBER:	REV. #
GRN_3.2.4_603	A

Plotted By:Rauter, Roger J Sheet Set:GRN 90% Design Submittal Layout:603 CLOSURE PLAN C December 04, 2018 04:16:34pm I:\3043180005 Southern Co\Plansheets\100% Drawings\GRN_3.2.4_603_Closure Plan C.dwg



KEY MAP

NOTE:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.

50 0 50 100 FT

SCALE: 1" = 50'
CONTOUR INTERVAL = 1 FT

wood.
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PROJECT No:
3043-18-0005

REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

CLOSURE PLAN D

SHEET NUMBER:	REV. #
GRN_3.2.4_604	A

Plotted By:Riquier, Roger J Sheet Set:GRN 90% Design Submittal Layout:604 CLOSURE PLAN D December 04, 2018 04:16:49pm T:\3043180005 Southern Co\Plansheets\100% Drawings\GRN_3.2.4_604_Closure Plan D.dwg

KEY MAP

NOTE:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.

50 0 50 100 FT

SCALE: 1" = 50'

CONTOUR INTERVAL = 1 FT

wood.

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Alabama Power

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801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

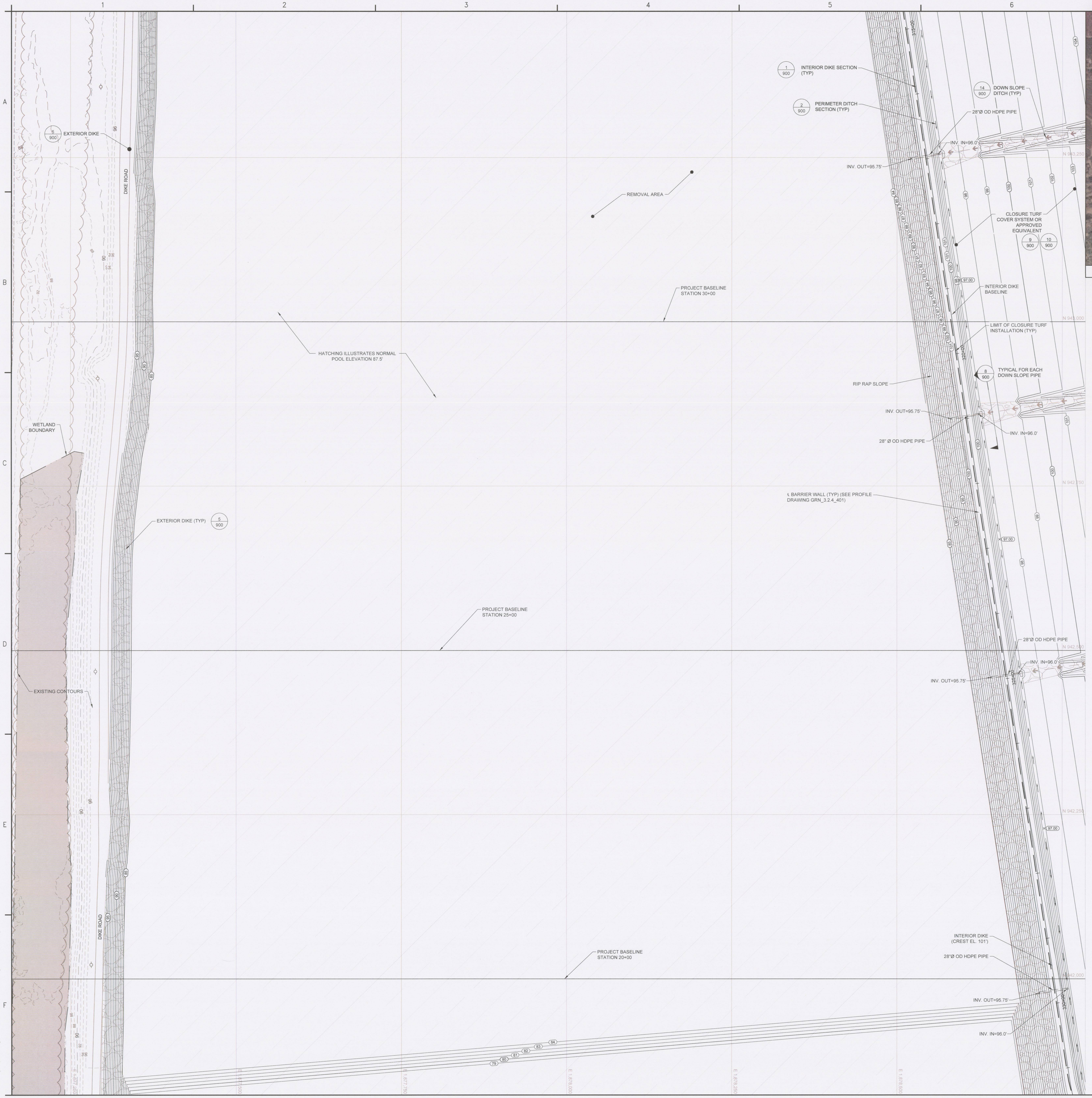
NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

CLOSURE PLAN E

SHEET NUMBER:	REV. #
GRN_3.2.4_605	A



wood.
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Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

CLOSURE PLAN F

SHEET NUMBER:	REV. #
GRN_3.2.4_606	A

Plotted By:Riquier, Roger J Sheet Set:GRN 90% Design Submittal Layout:606 - CLOSURE PLAN F December 04, 2018 04:19:34pm T:\3043180005 Southern Co\Plotsheets\100% Drawings\GRN_3.2.4_606 Closure Plan F.dwg

CLOSURE TURF COVER SYSTEM OR APPROVED EQUIVALENT (9/900) (10/900)

DETAIL ANCHOR TRENCH AT TOP OF SLOPE (11/900)

PARTIAL PLAN DOWN SLOPE DITCH (TYP) (13/900)

14/900 DOWN SLOPE DITCH (TYP)

COVER SYSTEM TERRACE DITCH (TYP) (6/900)

PROJECT BASELINE

0+00 30-00

0+00 25-00

0+00 20-00

N 943.250

N 943.000

N 942.500

N 942.250

N 942.000

E 1 970 000

E 1 970 250

E 1 970 500

E 1 970 750

E 1 971 000

E 1 971 250

KEY MAP

N

NOTE:

1. FOR GENERAL NOTES AND LEGENDS, SEE DRAWING GRN_3.2.4_101.

50 0 50 100 FT

SCALE: 1" = 50'

CONTOUR INTERVAL = 1 FT

wood.

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Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS			
NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

CLOSURE PLAN G

SHEET NUMBER:	REV. #
GRN_3.2.4_607	A

Plotted By:Riquier, Roger J Sheet Set:GRN 90% Design Submittal Layout:607 CLOSURE PLAN G December 04, 2018 04:19:48pm T:\3043180005 Southern Co\Plansheets\100% Drawings\GRN_3.2.4_607 Closure Plan G.dwg

PERIMETER DITCH SECTION (TYP)

INTERIOR DIKE SECTION (TYP)

INV. IN=96.0'

DOWN SLOPE DITCH (TYP)

INV. OUT=95.75'

28" Ø OD HDPE PIPE (TYP)

BARRIER WALL (SEE PROFILE DRAWING GRN_3.2.4_401

INTERIOR DIKE BASELINE

INTERIOR DIKE (CREST EL. 101')

INV. IN=96.0'

28" Ø OD HDPE PIPE (TYP)

INV. OUT=95.75'

CLOSURE TURF COVER SYSTEM OR APPROVED EQUIVALENT

RIP RAP SLOPE

INV. IN=96.0'

INV. OUT=95.75'

HATCHING ILLUSTRATES NORMAL POOL ELEVATION 87.5'

PROJECT BASELINE STATION 30+00

REMOVAL AREA

PROJECT BASELINE STATION 25+00

SUBGRADE CONTOURS

PROJECT BASELINE STATION 20+00

EXISTING CONTOURS

RIP RAP SLOPE

DIKE ROAD

EXTERIOR DIKE

25+00

N 943,250

N 942,750

N 942,250

N 942,000

E 1,881,750

E 1,881,500

E 1,881,250

E 1,881,000

KEY MAP

A B C D E F G H I J K

NOTE:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.

50 0 50 100 FT

SCALE: 1" = 50'

CONTOUR INTERVAL = 1 FT

wood.

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Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS			
NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

CLOSURE PLAN H

SHEET NUMBER:	REV. #
GRN_3.2.4_608	A

Plotted By:McKenzie, John V. Sheet Set:GRN 90% Design Submittal Layout:608 CLOSURE PLAN H December 04, 2018 03:56:02pm T:\3043180005 Southern Co\Plansheets\100% Drawings\GRN_3.2.4_608 Closure Plan H.dwg

KEY MAP

NOTE:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.

50 0 50 100 FT

SCALE: 1" = 50'

CONTOUR INTERVAL = 1 FT

wood.

ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
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KNOXVILLE, TN 37922
TEL: (865) 671-6774

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PROJECT:

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ASH POND CLOSURE
100% DESIGN PACKAGE

Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

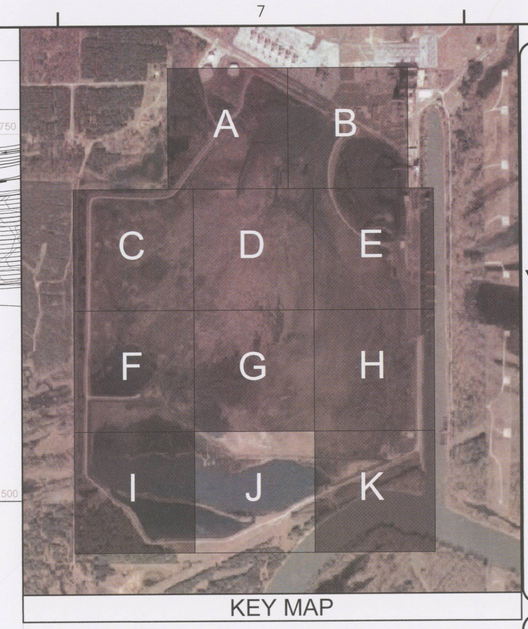
SHEET TITLE:

CLOSURE PLAN I

SHEET NUMBER:	REV. #
GRN_3.2.4_609	A

Plotted By: McKenzie, John V Sheet Set: GRN 90% Design Submittal Layout: GRN_3.2.4_609 Closure Plan I December 04, 2018 03:54:00pm T:\3043180005 Southern Co\Projsheets\100% Drawings\GRN_3.2.4_609 Closure Plan I.dwg

INTERIOR DIKE BASELINE
LIMIT OF CLOSURE TURF INSTALLATION (TYP)
1/900 PERIMETER DITCH SECTION (TYP)
14/900 DOWN SLOPE DITCH
INV. IN=96.0'
INV. OUT=95.75'
1/900 INTERIOR DIKE SECTION
INTERIOR DIKE (CREST EL. 101')
9/900 BARRIER WALL (SEE PROFILE DRAWING GRN_3.2.4_401)
10/900 CLOSURE TURF COVER SYSTEM OR APPROVED EQUIVALENT
RIP RAP SLOPE
335+00
340+00
345+00
N 941,750
N 941,500
N 941,250
N 941,000
N 940,750
N 940,500
N 940,250
0+00
1+00
2+00
3+00
4+00
5+00
HATCHING ILLUSTRATES NORMAL POOL ELEVATION 87.5'
PROJECT BASELINE
SUBGRADE CONTOURS
CLEARED AREA
2/902 DISCHARGE STRUCTURE
RIPRAP SLOPE
EXTERIOR DIKE
6/900
DIKE ROAD
WETLAND BOUNDARY
EXISTING CONTOURS
DIKE ROAD



KEY MAP

NOTE:
1. FOR GENERAL NOTES AND LEGENDS, SEE DRAWING GRN_3.2.4_101.

SCALE: 1" = 50'
CONTOUR INTERVAL = 1 FT

wood.
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PROJECT:
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Alabama Power
PLANT GREENE COUNTY
801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:
CLOSURE PLAN J

SHEET NUMBER:	REV. #
GRN_3.2.4_610	A

Plotted By:Mckenzie, John V Sheet Set:GRN 90% Design Submittal Layout:610 CLOSURE PLAN J December 04, 2018 03:51:03pm T:\3043180005 Southern Co\Plansheets\100% Drawings\GRN_3.2.4_610 Closure Plan J.dwg

LIMIT OF CLOSURE TURF INSTALATION (TYP)

INTERIOR DIKE (CREST EL. 101') 1/900

PERIMETER DITCH SECTION (TYP) 2/900

INTERIOR DIKE BASELINE

BARRIER WALL (SEE PROFILE DRAWING GRN_3.2.4_401)

CLOSURE TURF COVER SYSTEM OR APPROVED EQUIVALENT 9/900 10/900

RIPRAP SLOPE

SUBGRADE CONTOURS

PROJECT BASELINE STATION 15+00

UNDERGROUND GAS LINE (SEE NOTE 3 ON DRAWING GRN_3.2.4_600 BY OTHERS)

REMOVAL AREA

HATCHING ILLUSTRATES NORMAL POOL ELEVATION 87.5'

EXTERIOR DIKE 6/900

DIKE ROAD

BARGE CANAL

EXISTING CONTOURS

PROJECT BASELINE STATION 10+00

WETLAND BOUNDARY

DISCHARGE STRUCTURE 2/902

BLACK WARRIOR RIVER

KEY MAP

NOTE:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.

wood.

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Alabama Power

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801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS			
NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

CLOSURE PLAN K

SHEET NUMBER:	REV. #
GRN_3.2.4_611	A

50 0 50 100 FT

SCALE: 1" = 50'

CONTOUR INTERVAL = 1 FT

Plotted By:Riquier, Roger J Sheet Set:GRN 90% Design Submittal Layout:611 CLOSURE PLAN K December 04, 2018 04:12:34pm T:\3043180005 Southern Co\Projsheets\100% Drawings\GRN_3.2.4_611 Closure Plan K.dwg

GENERAL:

1. ALL LINEAR DIMENSIONS ARE FEET AND INCHES UNLESS NOTED OTHERWISE (U.N.O.).
2. THE STRUCTURAL GENERAL NOTES SHALL BE USED AS A SUPPLEMENT TO THE PROJECT SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS. WHERE DIFFERENCES BETWEEN CONTRACT DRAWINGS, SPECIFICATIONS, OR EXISTING CONDITIONS OCCUR, THE CONTRACTOR SHALL REQUEST CLARIFICATION FROM THE CONTRACTING OFFICER REPRESENTATIVE IMMEDIATELY UPON DISCOVERY AND BEFORE PROCEEDING.
3. THE STRUCTURE HAS BEEN DESIGNED TO RESIST CODE REQUIRED VERTICAL AND LATERAL FORCES AFTER ALL ELEMENTS/MEMBERS ARE INSTALLED. THE STRUCTURE HAS NOT BEEN INTENTIONALLY DESIGNED TO REMAIN STABLE DURING CONSTRUCTION. THE GENERAL CONTRACTOR SHALL BE ENTIRELY RESPONSIBLE FOR PROTECTING AND STABILIZING THE STRUCTURE DURING CONSTRUCTION. THIS RESPONSIBILITY INCLUDES, BUT IS NOT LIMITED TO JOB SITE SAFETY, TEMPORARY SHORING, ERECTION MEANS AND METHODS, ERECTION SEQUENCING, FORMWORK, TEMPORARY BRACING, USE OF CONSTRUCTION EQUIPMENT, AND TEMPORARY FALL PROTECTION. AS A MINIMUM, THE CONTRACTOR SHALL SHORE AND/OR BRACE THE STRUCTURE TO RESIST TEMPORARY CONSTRUCTION LOADS DEFINED BY ASCE 37-14 "DESIGN LOADS ON STRUCTURES DURING CONSTRUCTION."
4. ALL CONTRACTOR FURNISHED DESIGN, DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL COMPLY WITH OSHA CONSTRUCTION SAFETY AND HEALTH STANDARDS, 29 CFR PART 1926 SUBPART - R STEEL ERECTION LATEST EDITION.
5. TYPICAL DETAILS MAY NOT BE NECESSARILY SHOWN ON THE PLANS, BUT APPLY AS REFERENCED IN THE STRUCTURAL DRAWINGS AND DETAILS UNLESS NOTED OTHERWISE. WHERE NO DETAIL IS INDICATED, THE CONTRACTOR SHALL REQUEST CLARIFICATION FROM THE ENGINEER PRIOR TO SHOP DRAWING PRODUCTION, FABRICATION, AND CONSTRUCTION.
6. THE CONTRACTOR SHALL ESTABLISH, COORDINATE, AND VERIFY ALL OPENINGS AND INSERTS REQUIRED FOR ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, SECURITY, AND OTHER TRADES PRIOR TO CONSTRUCTION. NO PENETRATIONS THROUGH STRUCTURAL MEMBERS ARE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE ENGINEER OF RECORD.
7. CONSTRUCTION OBSERVATION BY THE STRUCTURAL ENGINEER IS FOR VERIFICATION OF DESIGN ASPECTS ONLY, AND IS NOT INTENDED IN ANY WAY TO REVIEW THE CONTRACTOR'S CONSTRUCTION PROCEDURES.
8. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SPECIFIED BUILDING CODE AND STANDARDS.
9. PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITIES, CONTRACTOR MUST COORDINATE UTILITIES AND EQUIPMENT RELOCATION.

DESIGN CRITERIA:

1. BUILDING CODE

   IBC INTERNATIONAL BUILDING CODE (2009 EDITION)
2. STANDARDS

   SEI/ASCE 7-05 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES

   AISC 360-05 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS

   AWS D1.1 STRUCTURAL WELDING CODE, 2004

   ACI 318-08 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE

DESIGN LOADS:

1. ALL LOADS ARE IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, 2009 UNO.
2. DEAD LOADS:
   DEAD LOADS EQUAL WEIGHT OF STRUCTURAL COMPONENTS, INCLUDING STRUCTURAL FRAMING, GRATING, TREADS, RAILS, WALLS, AND SLABS.
3. LIVE LOADS:
   STAIRS AND PLATFORMS 100 PSF

GEOTECHNICAL DATA:

1. ALOWABLE BEARING PRESSURE 1000 PSF
2. COHESION 500 PSF
3. ACTIVE EARTH PRESSURE 35 PSF

STRUCTURAL STEEL:

1. DESIGN, FABRICATION, AND ERECTION SHALL BE IN ACCORDANCE WITH THE AISC AND AWS SPECIFICATIONS AND STANDARDS AS ADOPTED AND AMENDED BY THE BUILDING CODE.

   AISC - CODE OF STANDARD PRACTICE FOR STEEL BUILDING AND BRIDGES, 2005
   AISC 360-05 - SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS
   AWS D1.1-04 - STRUCTURAL WELDING CODE - STEEL
   AISC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS
2. STRUCTURAL STEEL SHALL CONFORM TO:

   A. W & S SHAPES SHALL CONFORM TO ASTM A992

   B. CHANNELS SHALL CONFORM TO ASTM A572, GRADE 50.

   C. ANGLES SHALL CONFORM TO ASTM 529, GRADE 50

   D. PLATES AND BARS SHALL CONFORM TO ASTM A 572 GRADE 50 U.N.O.

   E. STRUCTURAL STEEL TUBE (HSS) SHALL CONFORM TO:

   - ROUND: ASTM A500 GRADE B WITH MIN. 42 KSI YIELD STRENGTH.
3. ALL BOLTS SHALL BE ASTM A325 BOLTS TYPE "X", SEE PLANS & DETAILS, U.N.O.
4. ALL BOLTS SHALL BE MINIMUM 7/8" DIAMETER BOLTS U.N.O..
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE SELECTION OF CONNECTIONS FROM THE APPROVED OPTIONS ALLOWED BY THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATING ALL ERECTION AIDES, ERECTION ANGLES, ERECTION LIFT HOLES, OTHER ERECTION DEVICES, WELDING PROCEDURES, JOINT PREPARATIONS, GROOVE ANGLE SELECTION, FILLER METAL SELECTION, BACKING BARS, COPES, AND TAPERS OF UNEQUAL PARTS. THE CONTRACTOR SHALL COORDINATE REMOVAL OF ALL ERECTION AIDS AFTER ERECTION UNLESS OTHERWISE SPECIFICALLY APPROVED OTHERWISE BY THE ENGINEER OF RECORD REPRESENTATIVE.
6. STRUCTURAL STEEL SHALL CONFORM TO SPECIFICATION. PROVIDE DETAILS OF CONNECTIONS REQUIRED BY THE CONTRACT DOCUMENTS TO BE SELECTED OR COMPLETED BY STRUCTURAL-STEEL FABRICATOR, AND TO COMPLY WITH INFORMATION AND TO COMPLY WITH INFORMATION RESTRICTIONS INDICATED.

   A. SELECT AND COMPLETE CONNECTIONS USING SCHEMATIC DETAILS INDICATED AND RECOMMENDED IN AISC 360.
7. WHEN DESIGN LOADS ARE NOT SPECIFICALLY INDICATED ON THE DRAWINGS, THE DETAILER SHALL SELECT A SINGLE-PLATE, DOUBLE- ANGLE OR SINGLE-ANGLE CONNECTION FROM THE AISC STEEL CONSTRUCTION MANUAL (13TH EDITION) THAT IS ADEQUATE FOR THE FULL CAPACITY OF THE MEMBERS. ALL CONNECTIONS SHALL BE DESIGNED TO SUPPORT A LOAD NOT LESS THAN 6000 POUNDS AND SHALL HAVE A MINIMUM OF TWO 7/8" DIAMETER BOLTS OR EQUIVALENT WELD.
8. FIELD CUTTING OF STRUCTURAL STEEL OR ANY FIELD MODIFICATIONS OF STRUCTURAL STEEL SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL OF THE ENGINEER OF RECORD FOR EACH SPECIFIC CASE.
9. SPLICING STRUCTURAL MEMBERS WHERE NOT DETAILED ON THE DRAWINGS IS PROHIBITED WITHOUT PRIOR APPROVAL OF THE ENGINEER OF RECORD.
10. THE CONTRACTOR SHALL SUPPLY ALL PLATES, CLIPS, SEAT ANGLES, CONNECTIONS ETC., AS REQUIRED FOR COMPLETION OF THE STRUCTURAL WORK. EVEN IF SUCH ITEMS ARE NOT EXPLICITLY CALLED FOR ON THE STRUCTURAL DRAWINGS.
11. ALL STRUCTURAL STEEL EXPOSED TO WEATHER SHALL BE HOT DIP GALVANIZED PER ASTM A123. ALL BOLTS EXPOSED TO WEATHER SHALL BE MECHANICALLY GALVANIZED PER ASTM B695, UNLESS NOTED OTHERWISE IN THE STRUCTURAL DRAWINGS.
12. THE FABRICATOR SHALL SUBMIT SHOP DRAWINGS SHOWING MATERIAL, SIZES, SPACING AND LOCATIONS OF STRUCTURAL MEMBERS AND CONNECTIONS. INDICATE WELDED CONNECTION AND NET WELD LENGTHS FOR APPROVAL PRIOR TO FABRICATION. REVIEW OF SHOP DRAWINGS BY THE STRUCTURAL ENGINEER DOES NOT INCLUDE REVIEW OF ERECTION AIDS, SAFETY SYSTEMS, OR OTHER CONTRACTOR MEANS AND METHODS. THE REVIEW OF SHOP DRAWING DOES NOT RELIEVE THE CONTRACTOR FROM REQUIREMENTS OF THE CONTRACT DRAWINGS AND SPECIFICATIONS.
13. GRATING:
    WELDED, GW-125, 19-W-4 SPACING, GALVANIZED, 1 1/4" X 3/16" RECTANGULAR BARS, SMOOTH SURFACE, CHECKERED PLATE ANGLE NOSING.
14. TREADS:
    BAR GRATING, WELDED, GW-125, 19-W-4, GALVANIZED 1 1/4" X 3/16" RECTANGULAR BARS, SMOOTH SURFACE, CHECKERED PLATE ANGLE NOSING.

HIGH-STRENGTH BOLTS FOR STRUCTURAL STEEL FRAMING:

1. ALL HIGH STRENGTH BOLTS SHALL BE ASSEMBLED, INSTALLED, TIGHTENED, AND INSPECTED IN ACCORDANCE WITH THE MINIMUM REQUIREMENTS IN AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS."
2. ALL HIGH STRENGTH BOLTS SHALL BE PRETENSIONED TO THE MINIMUM BOLT PRETENSION FORCE FOR THE BOLT DIAMETER FURNISHED AS SPECIFIED IN THE RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS UNLESS APPROVED BY THE STRUCTURAL ENGINEER. BOLTS SHALL BE PROTECTED DURING STORAGE AND CONSTRUCTION SO THAT THE BOLTS ARE TIGHTENED IN A CLEAN, LUBRICATED CONDITION. ALL BOLTED CONNECTIONS SHALL HAVE BOLT THREADS EXCLUDED FROM THE SHEAR PLANE, U.N.O.
3. NO SLOTTED OR OVERSIZED HOLES ARE PERMITTED IN STRUCTURAL CONNECTIONS UNLESS SPECIFICALLY INDICATED ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE ENGINEER OF RECORD.

STRUCTURAL STEEL WELDING:

1. ALL STRUCTURAL STEEL WELDING SHALL BE PERFORMED BY AWS/WABO CERTIFIED WELDERS IN ACCORDANCE WITH AWS D1.1 AND AWS D1.8. FABRICATOR SHALL SUBMIT CERTIFICATION OF WELDERS FOR APPROVAL.
2. ALL WELDS SHALL BE MADE USING LOW-HYDROGEN ELECTRODES WITH MINIMUM TENSILE STRENGTH EQUAL TO 70 KSI, AND IN ACCORDANCE WITH AWS D1.1. ALL ELECTRODE FILLER METALS SHALL HAVE A CHARPY V-NOTCH TOUGHNESS OF 20 FT LBS AT ZERO DEGREES F UNLESS NOTED OTHERWISE. LOW-HYDROGEN SMAW ELECTRODES SHALL BE USED WITHIN FOUR HOURS OF OPENING THE ORIGINAL SEALED CONTAINERS, OR SHALL BE REDRIED IN ACCORDANCE WITH AWS D1.1. ELECTRODES SHALL NOT BE REDRIED MORE THAN ONE TIME. WET ELECTRODES SHALL BE IMMEDIATELY DISCARDED.
3. ALL WELDS SHALL BE PRE-QUALIFIED, AND SHALL BE PERFORMED IN STRICT CONFORMANCE WITH AN APPROVED WRITTEN WELD PROCEDURE SPECIFICATION (WPS) PER AWS D1.1. ALL WELD PARAMETERS SHALL BE IN STRICT ACCORDANCE WITH AWS D1.1 AND THE ELECTRODE MANUFACTURER'S RECOMMENDATIONS. COPIES OF ALL APPROVED WPS SHALL BE ON-SITE AND READILY AVAILABLE TO ALL WELDERS.
4. WELDING PROCEDURES SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER OF RECORD FOR REVIEW BEFORE STARTING FABRICATION OR ERECTION.
5. ALL WELDS SHALL BE VISUALLY INSPECTED. WELDS PERFORMED IN AN AISC CERTIFIED FABRICATION SHOP, HOWEVER, MAY BE PERIODICALLY INSPECTED. ALL COMPLETE PENETRATION WELDS SHALL BE NDE UT. TESTED UPON COMPLETION OF THE CONNECTION. EXCEPTIONS ARE PLATES 1/4" OR LESS IN THICKNESS WHICH SHALL BE INSPECTED USING MAGNETIC PARTICLE TESTING.
6. TO ADDRESS THE RISK OF POTENTIAL DELAYED HYDROGEN CRACKING, ALL WELDS WHICH REQUIRE NON-DESTRUCTIVE- EXAMINATION TESTING SHALL BE INSPECTED BY NDE METHODS A MINIMUM OF 48 HOURS AFTER WELDING.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WELD PROCESS, JOINT PREPARATIONS, ROOT OPENINGS, ROOT DIMENSIONS, GROOVE ANGLES, BACKING BARS, COPES, SURFACE ROUGHNESS, AND TAPERS OF UNEQUAL PARTS WITH THE APPROVED WELDING PROCEDURE SPECIFICATION.
8. WELDS SHALL DEVELOP THE FULL STRENGTH OF THE MATERIAL BEING WELDED, U.N.O. MINIMUM FILLET WELD SHALL BE 3/16". ALL WELDING SHALL BE PERFORMED IN THE FABRICATORS SHOP UNLESS SPECIFICALLY NOTED AS FIELD WELDED ON THE DRAWINGS.

CONCRETE NOTES:

1. CONCRETE SHALL CONFORM TO ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" EXCEPT AS MODIFIED BY THE SUPPLEMENTAL REQUIREMENTS NOTED IN THE CONTRACT DOCUMENTS.
2. COLD WEATHER AND HOT WEATHER CONCRETE SHALL BE IN ACCORDANCE WITH ACI 306 AND ACI 305, RESPECTIVELY.
3. CONCRETE CONSTRUCTION TOLERANCES SHALL BE IN ACCORDANCE WITH ACI 117 U.N.O.
4. ALL CAST-IN-PLACE STRUCTURAL CONCRETE SHALL HAVE AIR-ENTRAINING ADMIXTURE.
5. CONCRETE SHALL BE PLACED IN ACCORDANCE WITH ACI 304, "GUIDE FOR MIXING, TRANSPORTING, AND PLACING CONCRETE". ALL REINFORCED CONCRETE SHALL BE MECHANICALLY VIBRATED.
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING, U.N.O.

   A. WALLS AND SLABS-ON-GRADE (FROM TOP) 1 1/2 INCHES
   B. CONCRETE PLACEMENT AGAINST THE EARTH 3 INCHES
7. CHAMFER ALL EXPOSED EDGES 3/4 INCHES U.N.O.
8. ALL EMBEDDED ITEMS TO BE PLACED AND SECURED BEFORE CONCRETE PLACEMENT. NO "WET SETTING" OF EMBEDDED ITEMS WILL BE ALLOWED.
9. DETAILING, FABRICATION AND ERECTION OF REINFORCEMENT SHALL CONFORM TO THE FOLLOWING:

   ACI 318 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
   ACI 315 DETAILS AND DETAILING OF CONCRETE REINFORCEMENT
   CRSI MANUAL OF STANDARDS PRACTICE
10. WATERSTOP:
    4" FLAT RIBBED PVC WATERSTOP, SIKA GREENSTREAK 701 OR ENGINEER APPROVED EQUAL.
11. LADDER RUNGS:
    MA INDUSTRIES MANHOLE STEPS OR ENGINEER APPROVED EQUAL INSTALLED IN ACCORDANCE WITH OSHA REQUIREMENTS.

CONCRETE MIX DESIGN:

1. DESIGN STRENGTH OF ALL CONCRETE MIXES SHALL BE THE 28 DAY COMPRESSIVE STRENGTH, DESIGNATED AS "f'c".
2. THE TOTAL AIR CONTENT SHALL BE +/- 1.5% OF THE INDICATED VALUES. AIR CONTENT SHALL BE MEASURED AT THE DISCHARGE END OF THE HOSE WHEN USING A CONCRETE PUMP, OR AT THE TRUCK DISCHARGE WHEN THE CONCRETE IS NOT PLACED USING A PUMP. IF THE MAXIMUM AGGREGATE SIZE IS LESS THAN THE MAXIMUM AGGREGATE SIZE STATED, THEN THE TOTAL AIR CONTENT SHALL BE ADJUSTED PER ACI 318-08 TABLE 4.4.1.
3. CONCRETE SHALL BE CONTROLLED NORMAL WEIGHT CONCRETE, PROPORTIONED, MIXED AND PLACED UNDER THE SUPERVISION OF AN APPROVED QUALITY CONTROL ENGINEER.
4. MINIMUM COMPRESSIVE STRENGTH OF CONCRETE: 4,500 PSI
5. MAXIMUM WATER / CEMENT RATIO: .45
6. MAXIMUM WATER - SOLUBLE CHLORIDE ION (Cl^-) CONTENT IN CONCRETE , PERCENT BY WEIGHT OF CEMENT: .30
7. CEMENT: TYPE II PER ASTM C150
   IP (MS) PER ASTM C595
   MS PER ASTM C1157
8. NOMINAL MAXIMUM AGGREGATE SIZE: 1"
9. AIR CONTENT: 5%

CONCRETE REINFORCING STEEL:

1. ASTM A615/A615 M, 60 KSI YIELD GRADE, DEFORMED BILLET BARS, UNCOATED FINISH.

FORMWORK AND SHORING:

1. FORMWORK AND SHORING OF FORMWORK SHALL BE DESIGNED BY THE CONTRACTOR. FORMWORK SHALL CONFORM TO ACI 301. RESHORING, WHEN REQUIRED, SHALL BE IN ACCORDANCE WITH ACI 301. SUBMIT PROPOSED RESHORING PLANS TO THE STRUCTURAL ENGINEER FOR INFORMATION ONLY.

GROUT:

1. USE R STAR GROUT, CEMENT-BASED, NONMETALLIC, NON-SHRINKING GROUT OR ENGINEER-APPROVED EQUAL.

MUDSLAB:

1. CONCRETE FOR MUDSLAB SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 2,000 PSI OR BETTER

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PROJECT:

PLANT GREENE COUNTY
ASH POND CLOSURE
100% DESIGN PACKAGE

Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

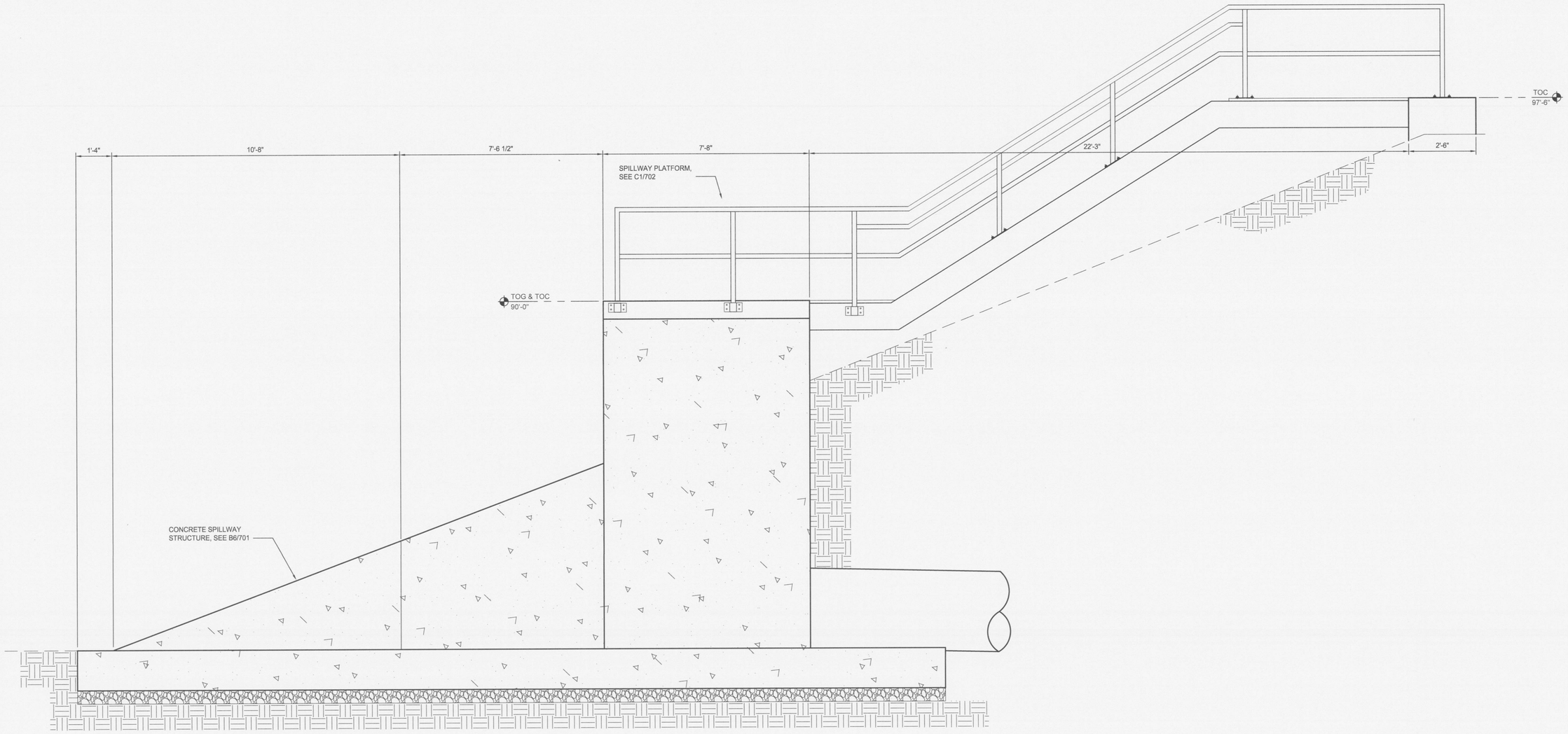
NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

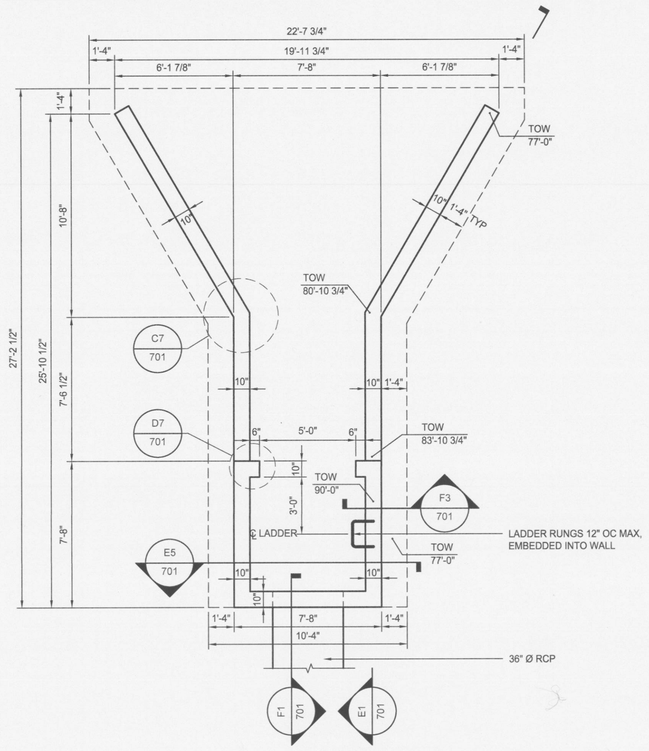
SHEET TITLE:

ASH POND OUTLET SPILLWAY STRUCTURAL NOTES

SHEET NUMBER:	REV. #
GRN_3.2.4_700	A

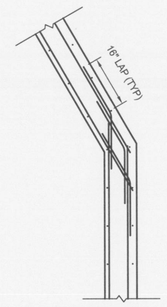


C1/701 OUTLET SPILLWAY ELEVATION
1/2" = 1'-0"

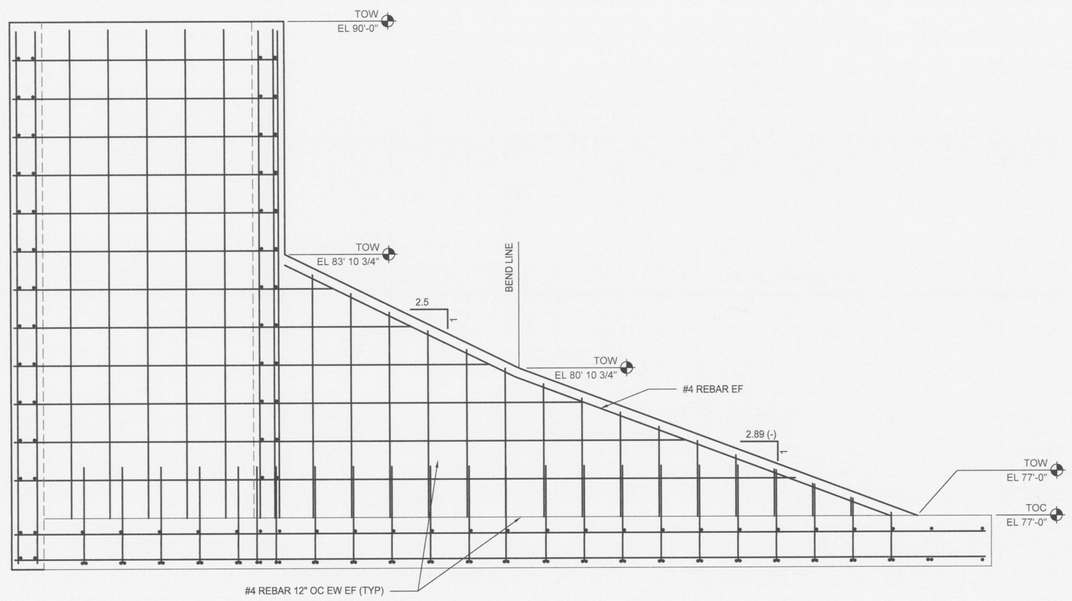


B6/701 FOUNDATION PLAN
1/4" = 1'-0"

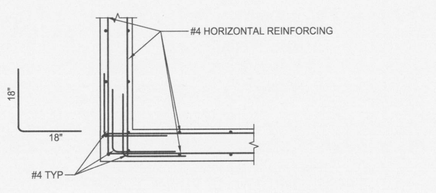
NOTE: FOR LOCATION DATA, REFER TO CIVIL DRAWINGS



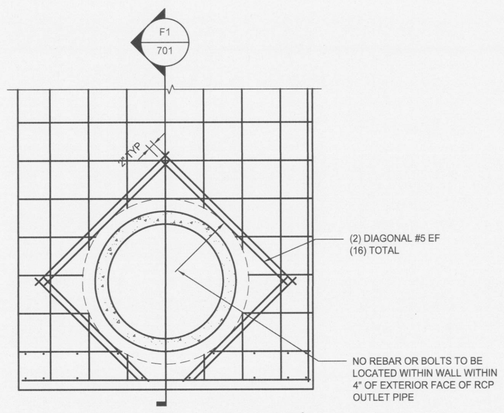
C7/701 RETAINING WALL REBAR DETAIL
1/2" = 1'-0"



E1/701 RETAINING WALL SECTION
1/2" = 1'-0"



E4/701 TYPICAL CORNER REINFORCING DETAIL
1/2" = 1'-0"



E5/701 CHAMBER SECTION
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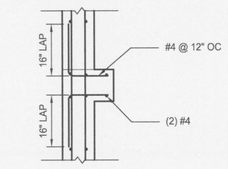
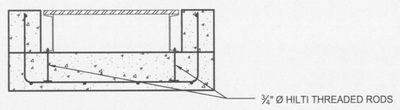


D7/701 WALL DETAIL
1/2" = 1'-0"



E7/701 UPPER LANDING SECTION
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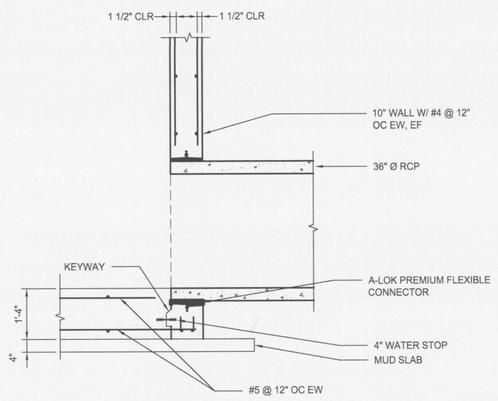
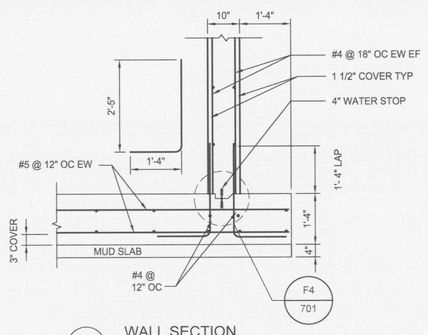


F1/701 WALL SECTION @ RCP
1/2" = 1'-0"



F3/701 WALL SECTION
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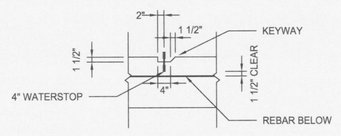

F4/701 KEYWAY SECTION
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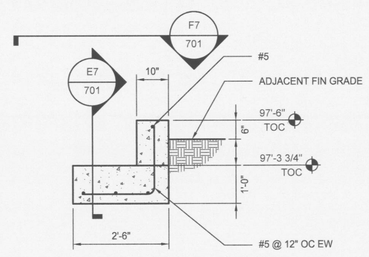
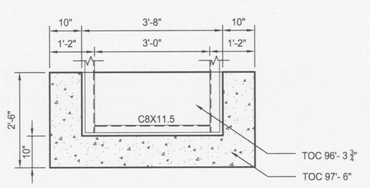


F5/701 SECTION
1/2" = 1'-0"



F7/701 UPPER LANDING PLAN
1/2" = 1'-0"

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PROJECT:

PLANT GREENE COUNTY ASH POND CLOSURE
100% DESIGN PACKAGE

Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

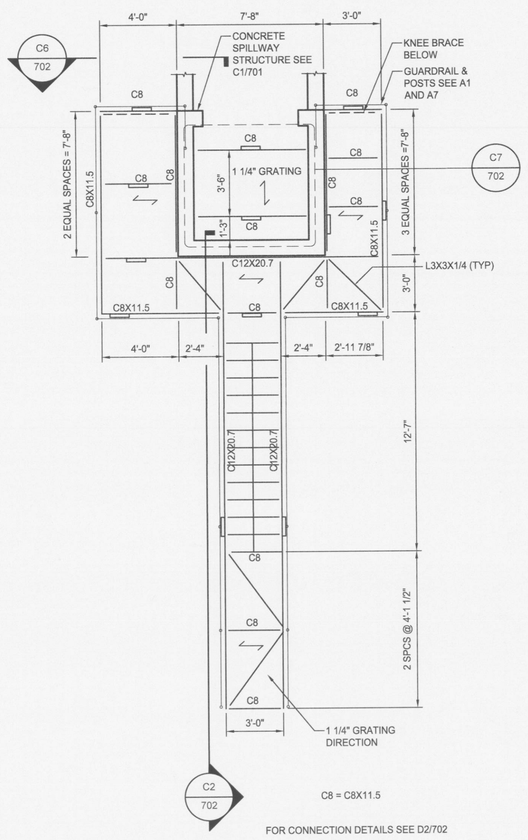
NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

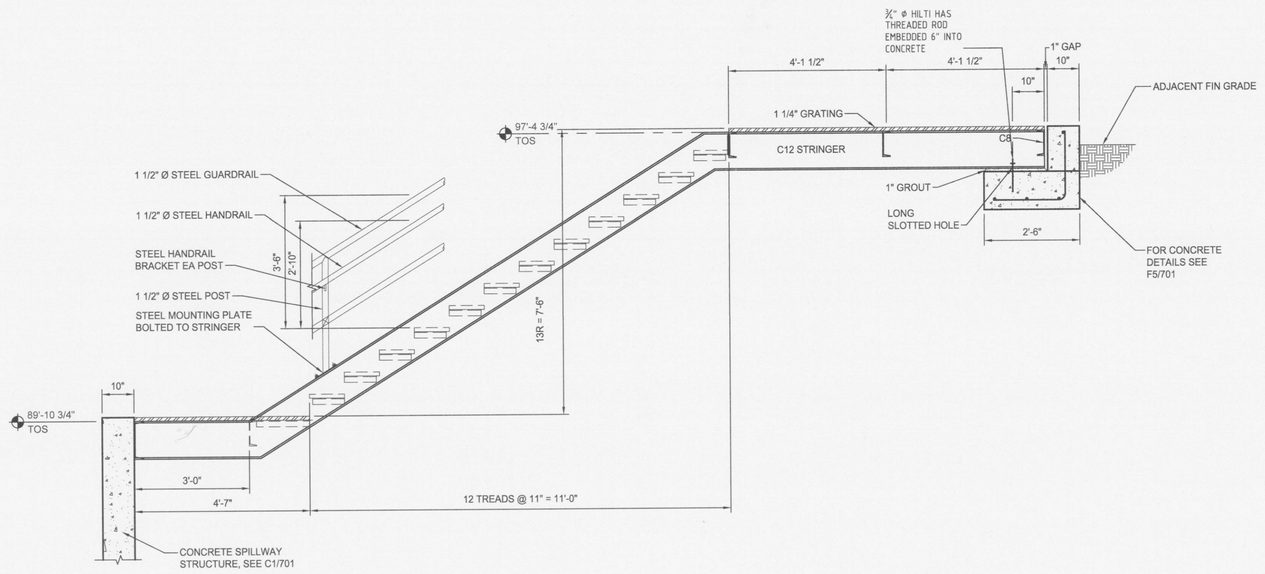
SHEET TITLE:

ASH POND OUTLET SPILLWAY STRUCTURE PLANS, ELEVATIONS DETAILS I

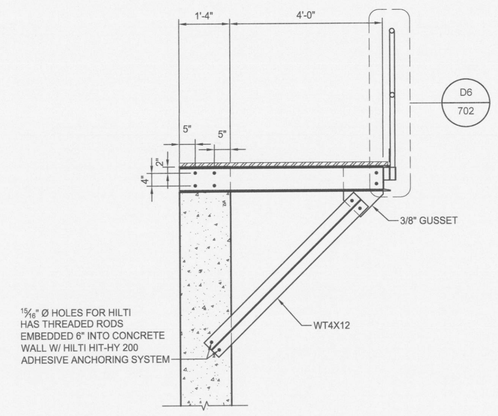
SHEET NUMBER:	REV. #
GRN_3.2.4_701	A



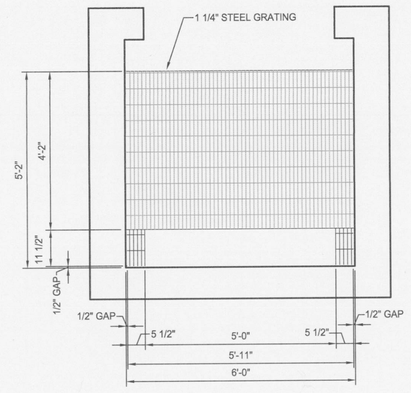
C1/702 STRUCTURAL PLAN
1/4" = 1'-0"



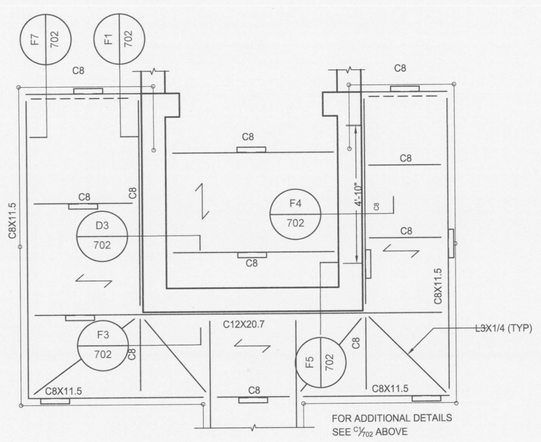
C2/702 SECTION THROUGH STAIR
1/2" = 1'-0"



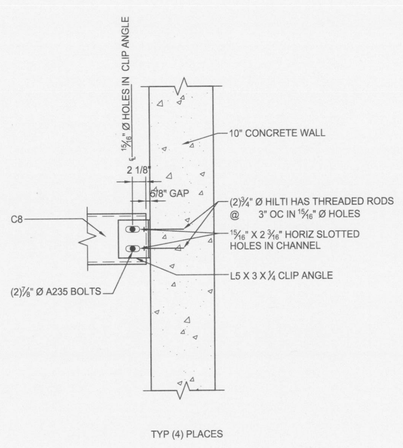
C6/702 PLATFORM DETAIL
1/2" = 1'-0"



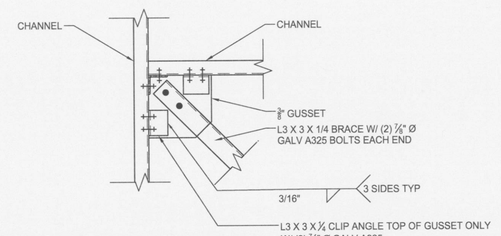
C7/702 PIT GRATING DETAIL
1/2" = 1'-0"



D2/702 STRUCTURAL DETAIL MAP
3/8" = 1'-0"



D3/702 STEEL CONNECTION DETAIL
1" = 1'-0"



D4/702 TYPICAL HORIZONTAL BRACE CONNECTION DETAIL
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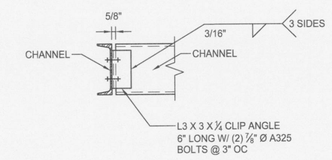

D5/702 TYPICAL CHANNEL END CONNECTION DETAIL
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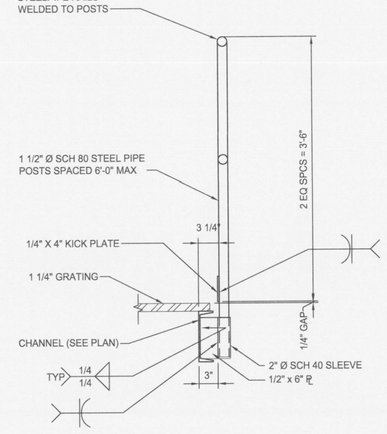
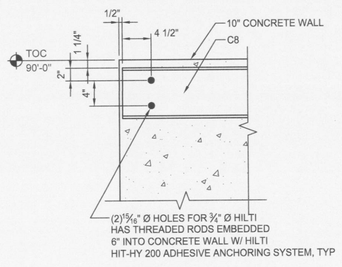
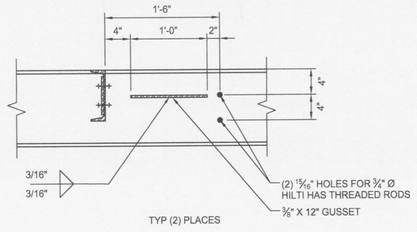


D7/702 PLATFORM RAILING DETAIL
1" = 1'-0"



F1/702 CHANNEL TO CONCRETE BOLT DETAIL
1" = 1'-0"



F3/702 STEEL DETAIL
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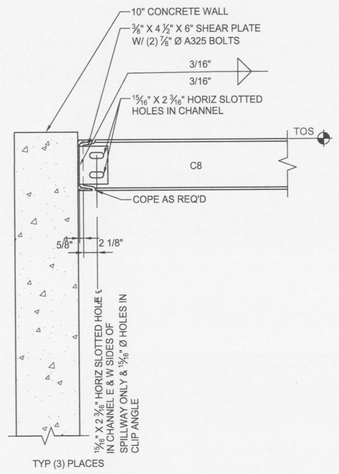

F4/702 STEEL CONNECTION DETAIL
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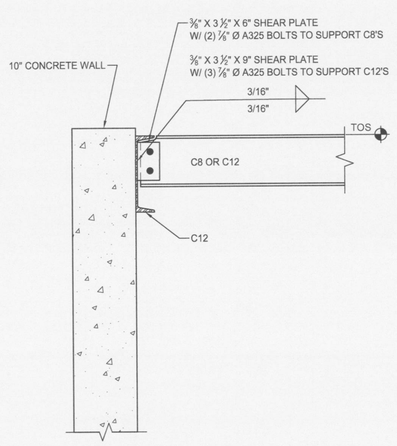

F5/702 STEEL CONNECTION DETAIL
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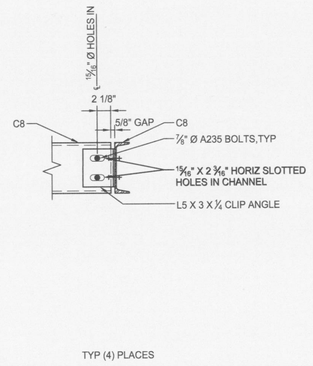

F7/702 STEEL CONNECTION DETAIL
1" = 1'-0"

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SUITE 300
KNOXVILLE, TN 37922
TEL: (865) 671-6774

ISSUED FOR 100% CLIENT REVIEW

NOT VALID WITHOUT SIGNATURE AND DATE

PROJECT:
PLANT GREENE COUNTY ASH POND CLOSURE 100% DESIGN PACKAGE

Alabama Power
PLANT GREENE COUNTY
801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

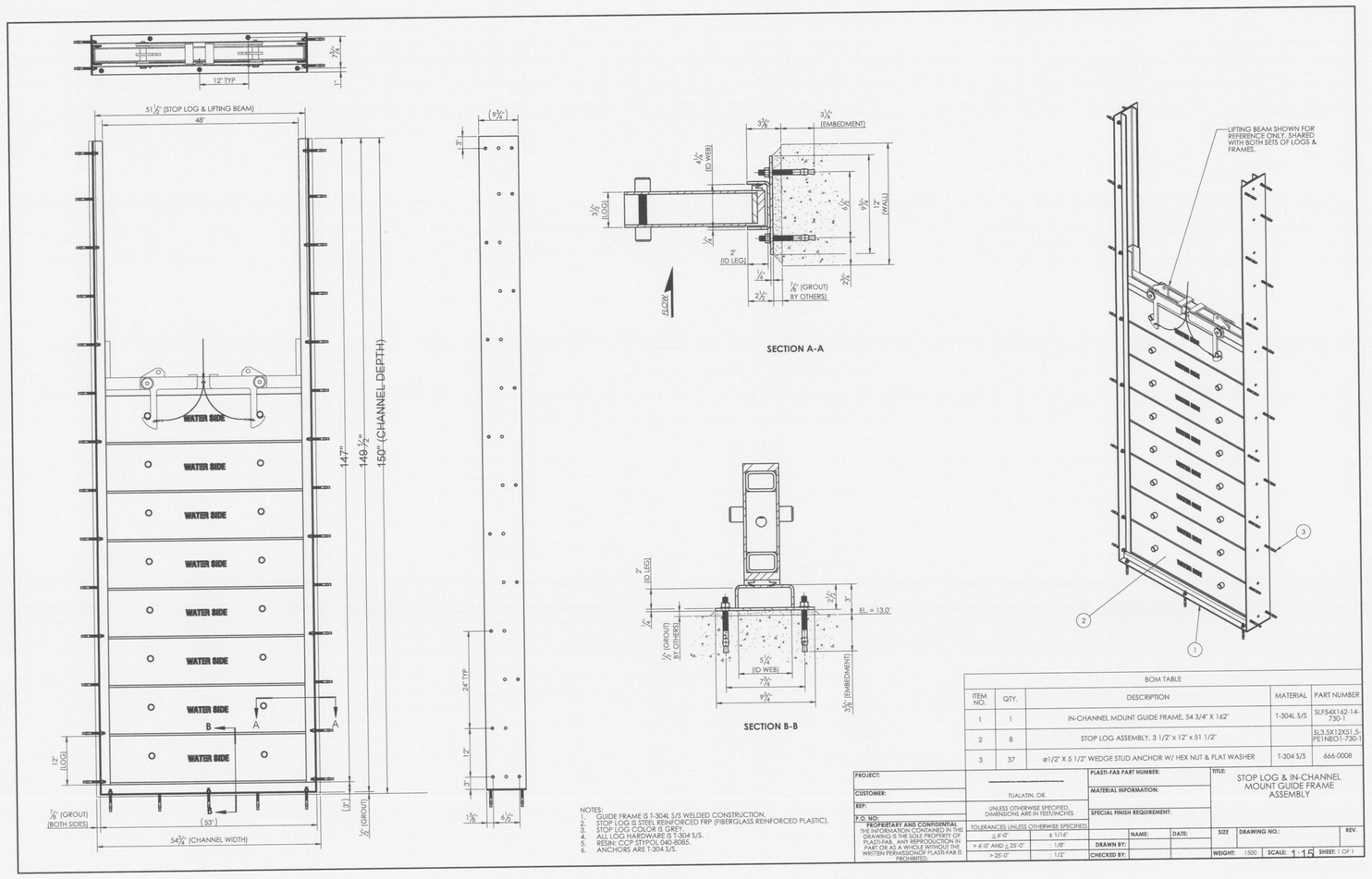
REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:
ASH POND OUTLET SPILLWAY STRUCTURE PLANS, ELEVATIONS DETAILS I I

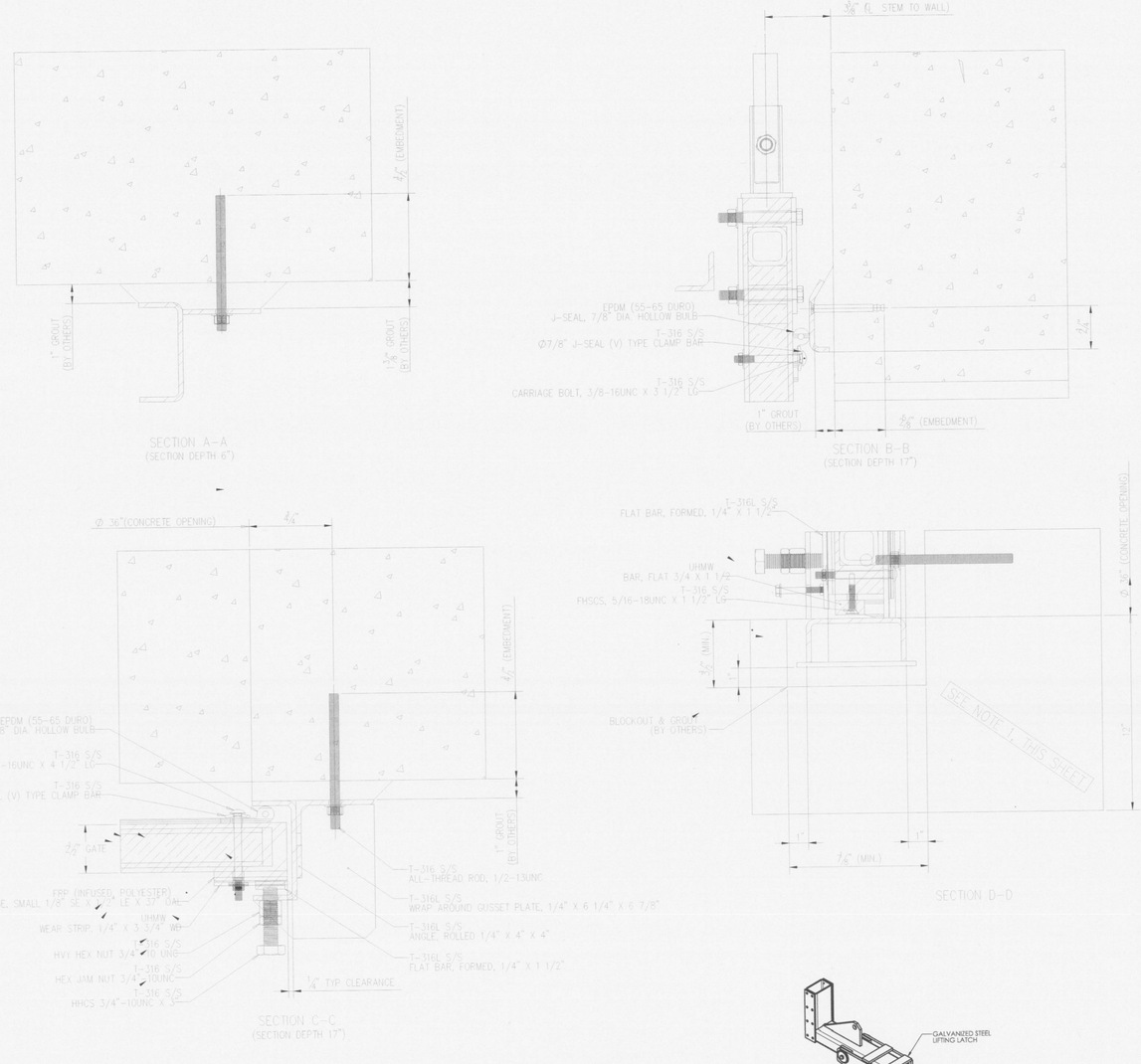
SHEET NUMBER:	REV. #
GRN_3.2.4_702	A



BOM TABLE				
ITEM NO.	QTY.	DESCRIPTION	MATERIAL	PART NUMBER
1	1	IN-CHANNEL MOUNT GUIDE FRAME, 54 3/4" X 142"	T-304L S/S	ELF54X142-14-730-T
2	8	STOP LOG ASSEMBLY, 3 1/2" x 12" x 51 1/2"		SLS 5X12X51.5-PELTNEO-730-T
3	37	ø1/2" X 5 1/2" WEDGE STUD ANCHOR W/ HEX NUT & FLAT WASHER	T-304 S/S	666-0008

PROJECT:		PLASTI-FAB PART NUMBER:	TITLE: STOP LOG & IN-CHANNEL MOUNT GUIDE FRAME ASSEMBLY
CUSTOMER:	TUALATIN, OR	MATERIAL INFORMATION:	
REF:	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN FEET/INCHES	SPECIAL FINISH REQUIREMENT:	
P.O. NO:	TOLERANCES UNLESS OTHERWISE SPECIFIED		
PROPRIETARY AND CONFIDENTIAL: THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF PLASTI-FAB. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF PLASTI-FAB IS PROHIBITED.	± 4'-0" = 1/8"	NAME: DATE:	SIZE: D DRAWING NO.: REV.
	± 4'-0" AND ± 20'-0" = 1/8"	DRAWN BY: J.MENLE 12/27/2017	WEIGHT: 1300 SCALE: 1:15 SHEET: 1 OF 1
	± 20'-0" = 1/2"	CHECKED BY:	

NOTES:
1. GUIDE FRAME IS T-304L S/S WELDED CONSTRUCTION.
2. STOP LOG IS STEEL REINFORCED FRP (FIBERGLASS REINFORCED PLASTIC).
3. STOP LOG COLOR IS GRAY.
4. ALL BOLTS, NUTS & WASHERS ARE T-304 S/S.
5. ARSEAL CCP STYPOL CAS 8060.
6. ANCHORS ARE T-304 S/S.

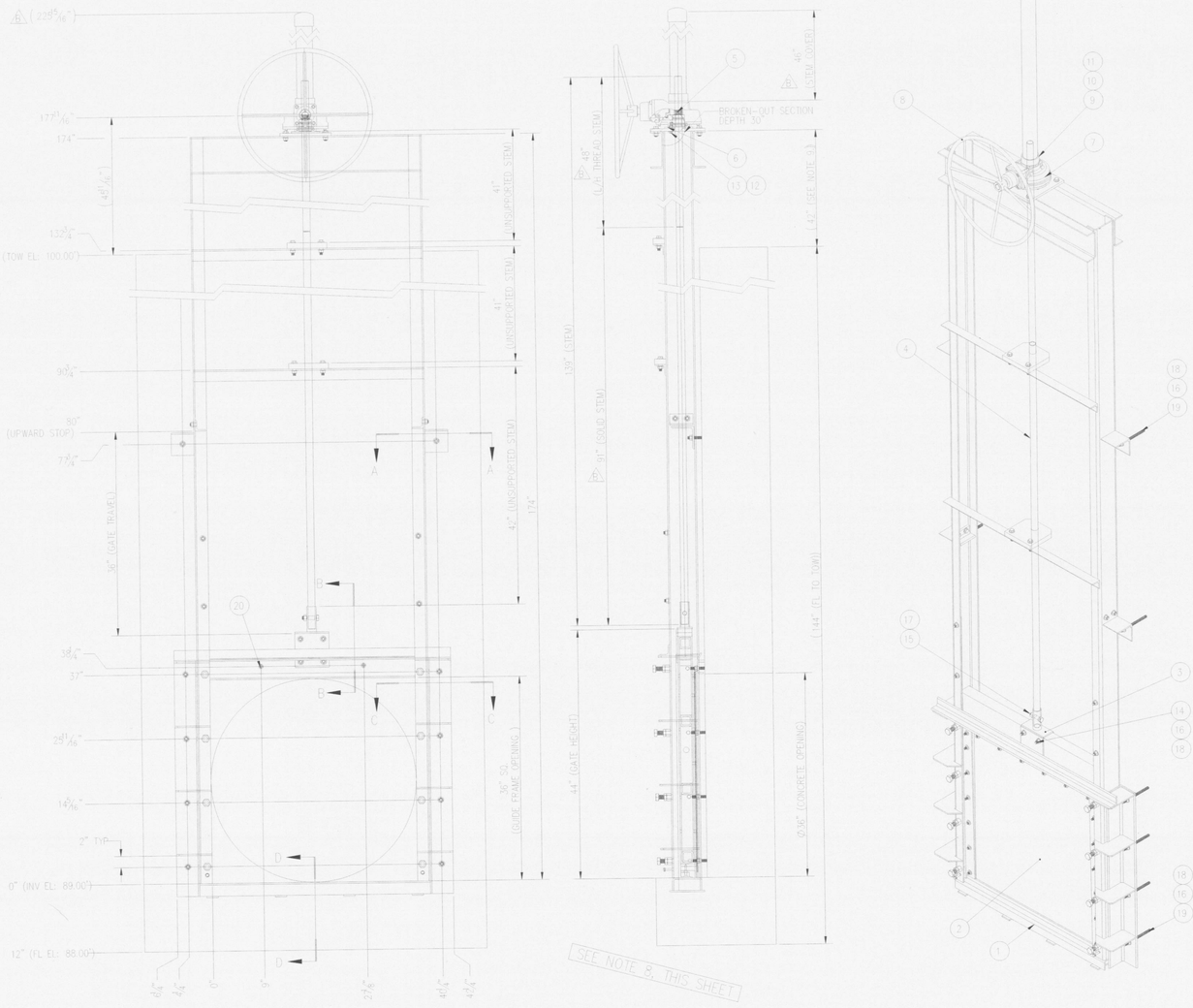


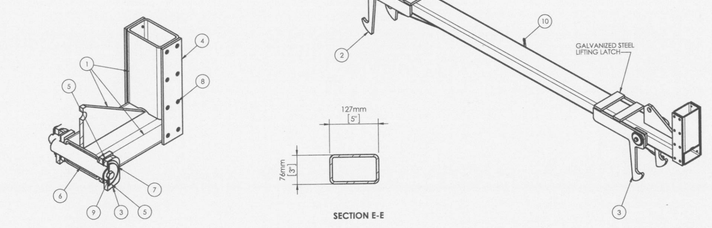
REVISIONS				
REV.	DESCRIPTION	ISSUED NO.	REVISED BY	DATE
A	INITIAL RELEASE		J.MENLE	12/27/2017
B	REVISED DRAWING FOR REVISED TAINTER/DOUBLE STEM & STOP LOG STRUCTURE		J.MENLE	1/3/2018

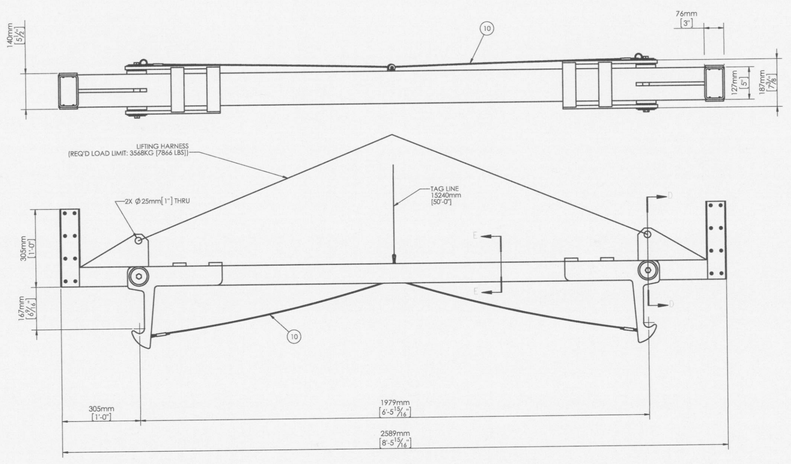
NOTES:
1. GATE REMOVED IN FRONT VIEW FOR CLARITY.
2. THE GATE COLOR IS GRAY.
3. THE GATE MATERIAL IS CORE-LINER-COMPOSITE WITH AN INTERNAL STEEL STRUCTURE.
4. THE GUIDE FRAME IS 1/4" THICK FORMED AND WELDED T-316 S/S.
5. ALL BOLTS, NUTS & WASHERS ARE T-316 S/S. SHIM TO ADD ANTI-SIZE TO ALL ADJUSTING BOLTS TO PREVENT GALLING.
6. RETAIN EXP. STYPOL CAS-8060 OR EQUAL.
7. MAXIMUM OPERATING HEAD FROM INVERT: SEATING 10'-0", UNSEATING 10'-0"
8. CONCRETE SHOWN FOR REFERENCE ONLY. MAY VARY AS SHOWN ON MC-342-F21. RECOMMENDED BLOCKOUT & CONCRETE BY OTHERS (PLANT SIDE). TYP WHERE GATE INVERTS ARE EMBEDDED.
9. 42" TO TOP OF FRAME FOR CONSISTANCY WITH OTHER SC-GATES.

BOM TABLE					
ITEM NO.	QTY.	PART NAME	LENGTH	MATERIAL	PART NUMBER
1	1	HDTS GUIDE FRAME ASSEMBLY			HDTS-04-60894-A
2	1	HDTS GATE ASSEMBLY			HDTS-04-60894-GA
3	1	STEM BRACKET WELDMENT FOR 2 1/2" GATE, 1 1/4" STEM, Ø 11/16" HOLE			1000-1618
4	3	STEM, Ø1 1/4" X 139" DIA X 48" LG L/H THREAD		T-316L S/S	HDTS-04-60894-3
5	1	1 1/4" LIMIT NUT ASSEMBLY, LH THREAD, 1/4#, 1/4L REDUCED OD TO 1 9/16"			1000-1180
6	1	FA10 LIFT ADAPTER PLATE, 1/4"		T-316 S/S	583-0501
7	1	EXECO 694 GEARED LIFT ASSEMBLY (J - 1 RATIO), Z1 1/4" LH ACME THREAD			544-0021
8	1	EXECO 24" HANDWHEEL		A36	544-0027
9	1	SCH 40 PVC 2 1/2" NPT MALE THREADED-FEMALE SOCKET ADAPTER		PVC RIGID	522-0026
10	1	TUBE, ROUND Ø 2 7/8" OD X 1/8" WALL	46"	CLEAR RIGID BUTYRATE	521-0053
11	1	PIPE CAP, SOCKET, 2 1/2" ID SCH 40		PVC RIGID	522-0027
12	8	FLAT WASHER, 3/4"		T-316 S/S	664-0006
13	4	HHCS, 3/8-16UNC X 1 1/2" LG		T-316 S/S	661-0279
14	4	HHCS, 1/2-13UNC X 4"		T-316 S/S	661-0065
15	1	HHCS, 5/8-11UNC X 2 1/2"		T-316 S/S	661-0254
16	16	FLAT WASHER, 1/2"		T-316 S/S	664-0005
17	1	HEX NUT, 5/8-11UNC		T-316 S/S	663-0101
18	16	NUT, HEX, 1/2-13UNC		T-316 S/S	663-0067
19	12	ALL-THREAD ROD, 1/2-13UNC	7"	T-316 S/S	466-0017
20	2	FLAT HEAD EXP. ANCHOR, Ø 3/8" X 4" LG		T-304 S/S	666-0061

PROJECT: 4TH CRONE WATER PHASE III SYSTEMS, INC.	HAPPY VALLEY, OR	PLASTI-FAB PART NUMBER: HDTS-04-60894	TITLE: HDTS GATE & GUIDE FRAME ASSEMBLY SC-F212
REF: SAMPSON ASSOCIATES, INC P.O. NO: 2018-009	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN FEET/INCHES	MATERIAL INFORMATION:	
PROPRIETARY AND CONFIDENTIAL: THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF PLASTI-FAB. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF PLASTI-FAB IS PROHIBITED.	TOLERANCES UNLESS OTHERWISE SPECIFIED: ± 0'-0" = ±1/16" ; 0'-0" AND 25'-0" = ±1/8" ; 25'-0" = ±1/2"	SPECIAL FINISH REQUIREMENT:	
		NAME: DATE:	SIZE: D DRAWING NO.: HDTS-04-60894 REV: B
		DRAWN BY: J.MENLE 12/27/2017	WEIGHT: 744 SCALE: 1:10 SHEET: 1 OF 1
		CHECKED BY:	







NOTES:
1. LIFTING BEAM MATERIAL IS HOT DIPPED GALVANIZED MILD STEEL.
2. APPROXIMATE WEIGHT IS 94 KG [185 LBS]
3. LIFTING BEAM SHIPS PRE-ASSEMBLED. NO FIELD ASSEMBLY REQUIRED.

NOTE:

1. PRODUCT DATA SHEETS ARE PROVIDED FOR INFORMATION ONLY. VENDOR DRAWINGS FOR CONSTRUCTION WILL BE OBTAINED DURING CONSTRUCTION PROCUREMENT.

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
SUITE 300
KNOXVILLE, TN 37922
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ASH POND CLOSURE
100% DESIGN PACKAGE

Alabama Power
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FORKLAND, AL

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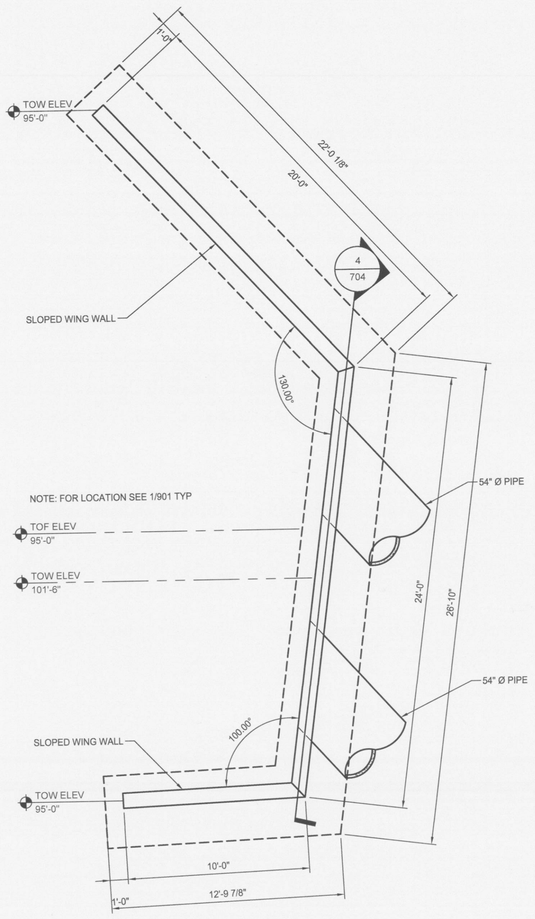
3043-18-0005

REVISIONS			
NO.	DATE	BY	APPROVED

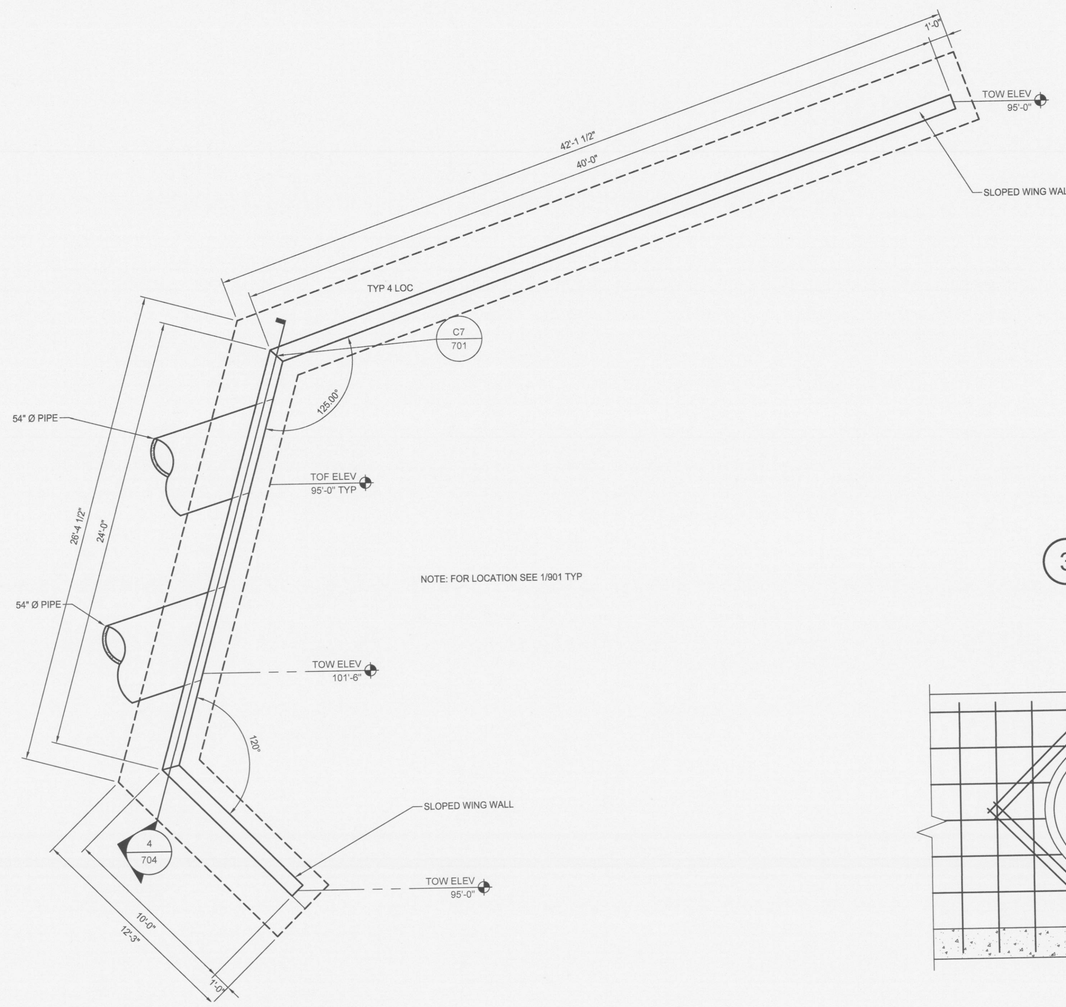
DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:
SPILLWAY GATE DETAILS

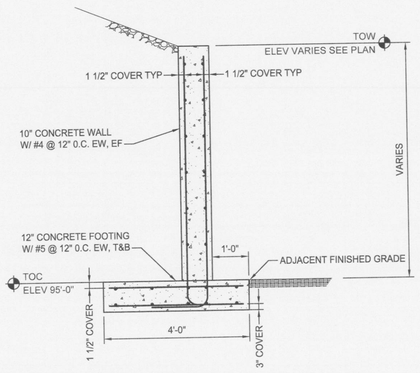
SHEET NUMBER:	REV. #
GRN_3.2.4_703	A



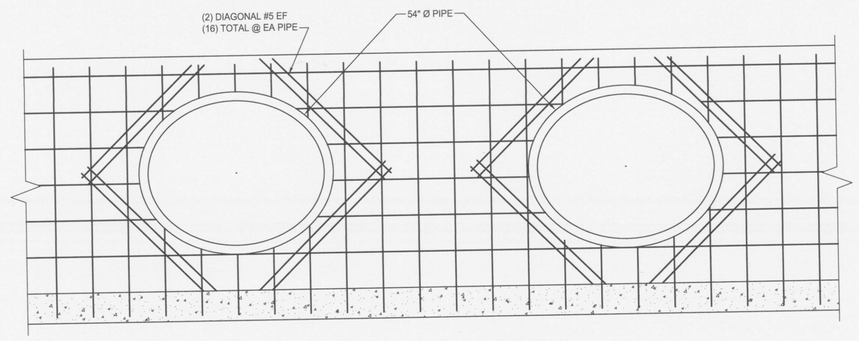
1 EAST DIKE RETAINING WALL
1/4" = 1' - 0"



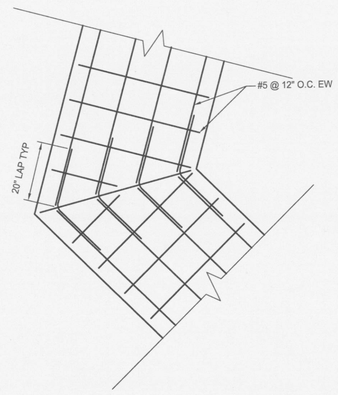
2 WEST DIKE RETAINING WALL
1/4" = 1' - 0"



3 TYPICAL DIKE WALL SECTION
1/2" = 1' - 0"



4 TYPICAL DIKE WALL REINFORCING
1/2" = 1' - 0"



5 TYPICAL FOOTING REINFORCING
1/2" = 1' - 0"

1. FOR STRUCTURAL GENERAL NOTES, SEE DRAWING GRN.3.2.4. 700.
2. FOR DETAILS DEPICTING ATTACHMENT OF CLOSURE TURF COVER SYSTEM TO HEADWALL, SEE DETAILS 4 & 5 ON DRAWING GRN.3.2.4.901.

wood.
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NO.	DATE	BY	APPROVED

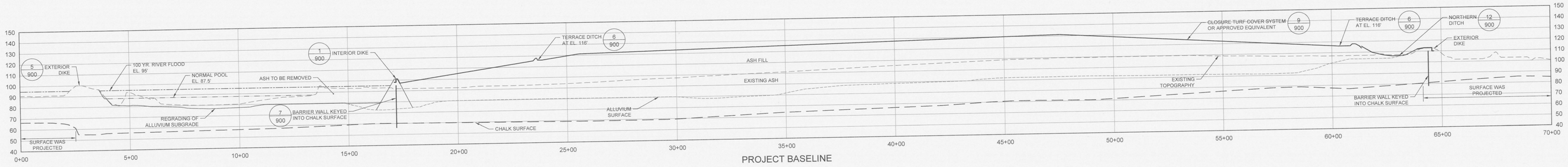
DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:
HEADWALL DETAILS

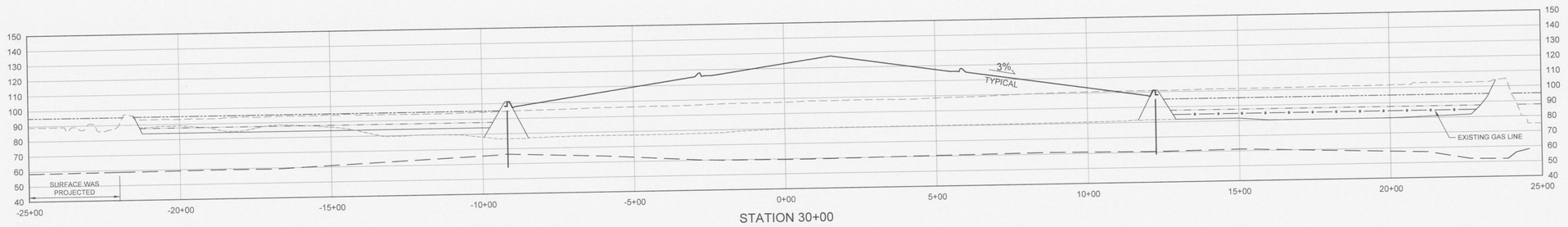
SHEET NUMBER:	REV. #
GRN_3.2.4_704	A

NOTES:

1. FOR GENERAL NOTE AND LEGEND, SEE DRAWING GRN_3.2.4_101.
2. SECTION STATIONING IS SHOWN ON PROJECT BASELINE - SEE PLAN SHEETS.



PROJECT BASELINE



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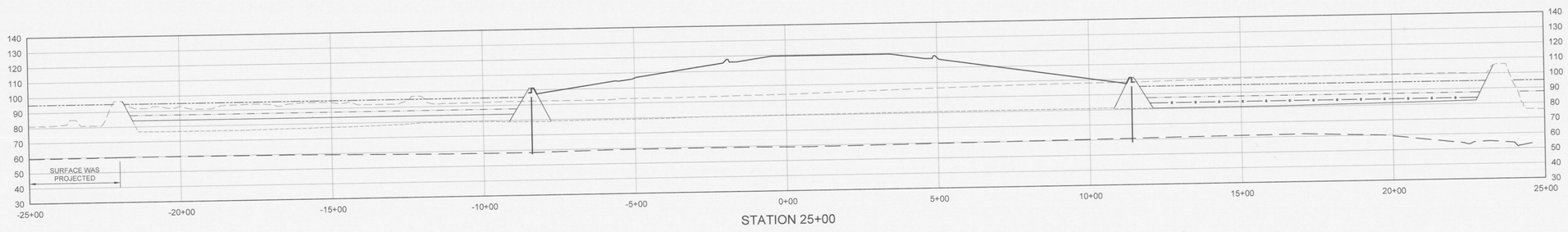

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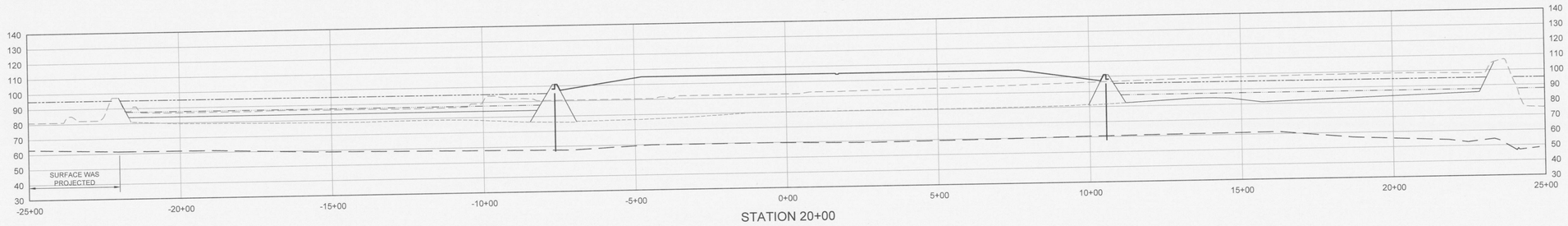

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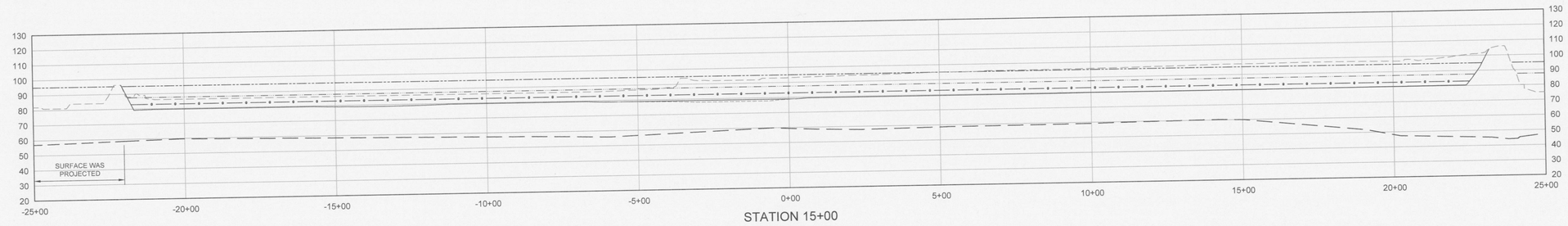

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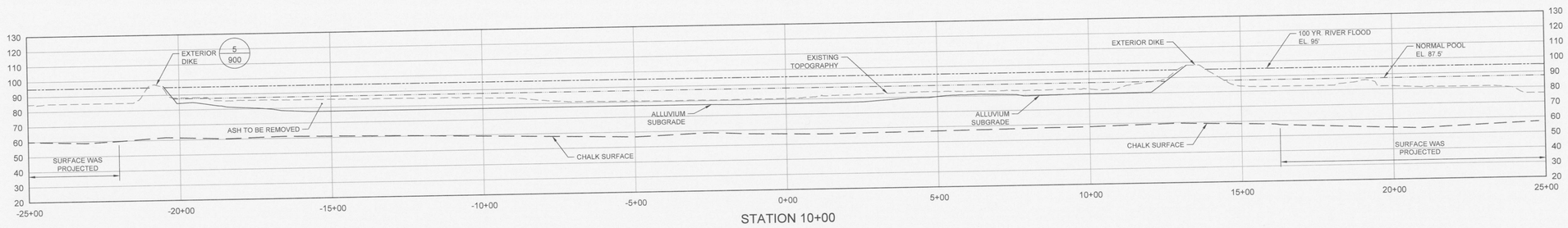

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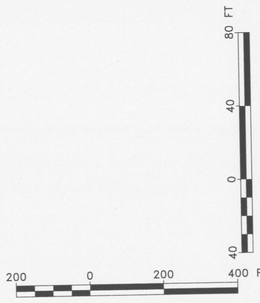

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
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PLANT GREENE COUNTY ASH POND CLOSURE 100% DESIGN PACKAGE

Alabama Power

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801 STEAM PLANT RD.
FORKLAND, AL

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3043-18-0005

REVISIONS

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DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

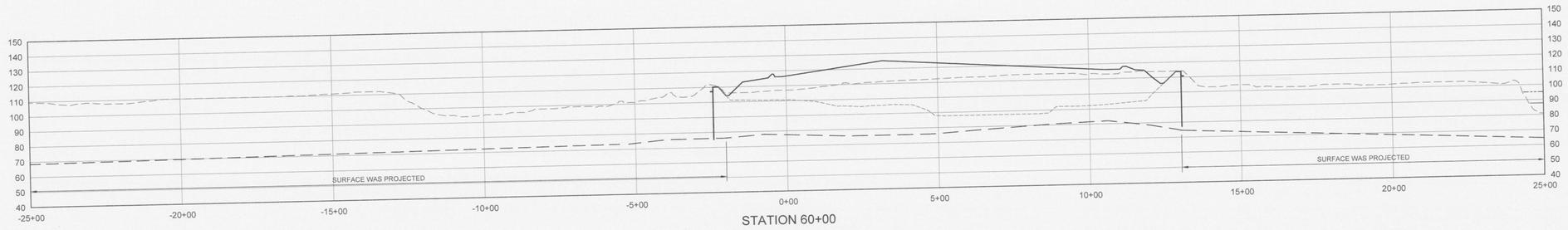
PROFILE AND SECTIONS - FINAL CONDITIONS

SHEET NUMBER:	REV. #
GRN_3.2.4_802	A

Plotted By: McKenzie, John V Sheet Set: GRN 60% Design Submittal Layout: 802 Profile and Sections December 04, 2018 03:28:22pm T:\XA\3180005 Southern Co\Plansheets\100% Drawings\GRN_3.2.4_802 Profile and Sections 2018-1120.dwg

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING GRN_3.2.4_101.
2. SECTION STATIONING IS SHOWN ON PROJECT BASELINE - SEE PLAN SHEETS.



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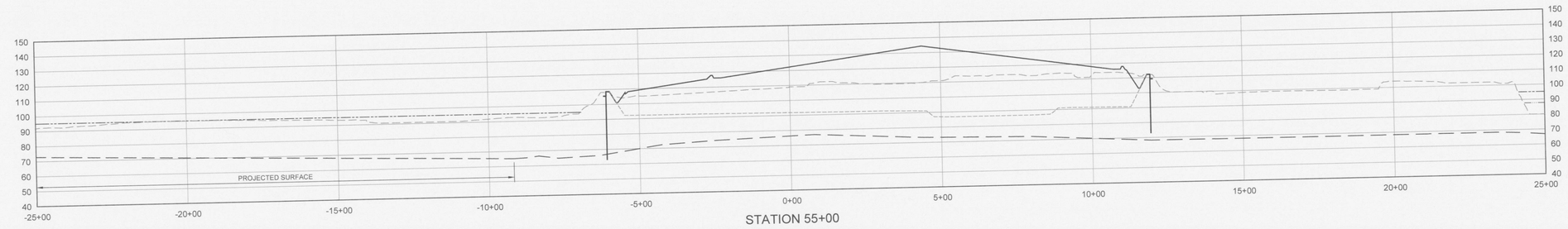

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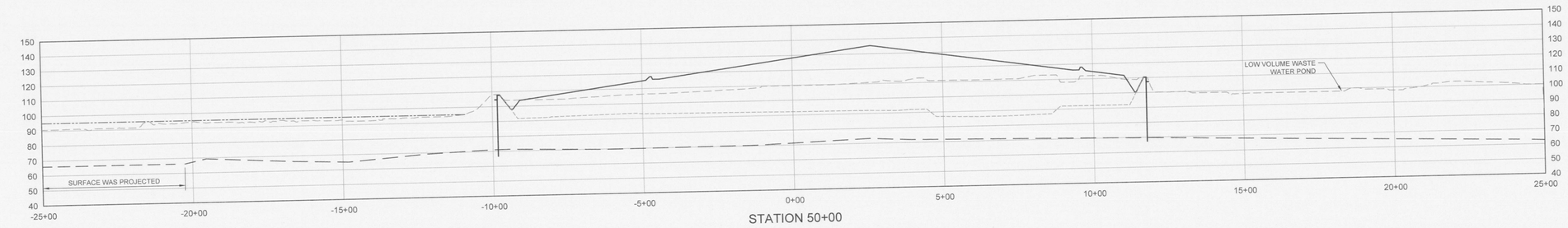

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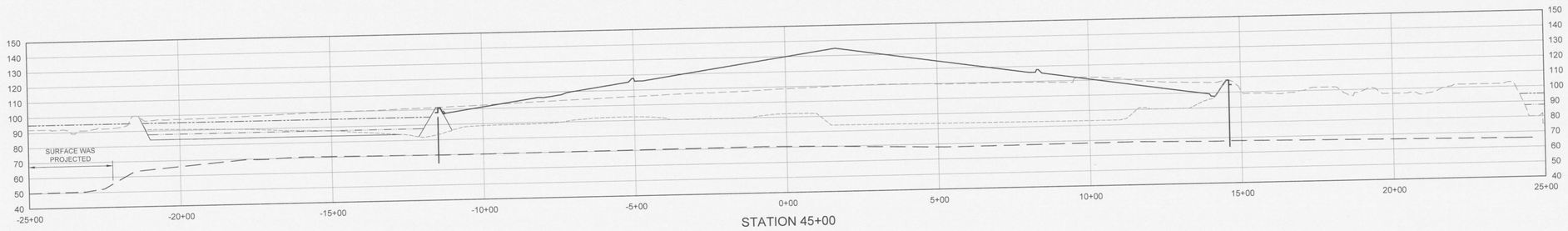

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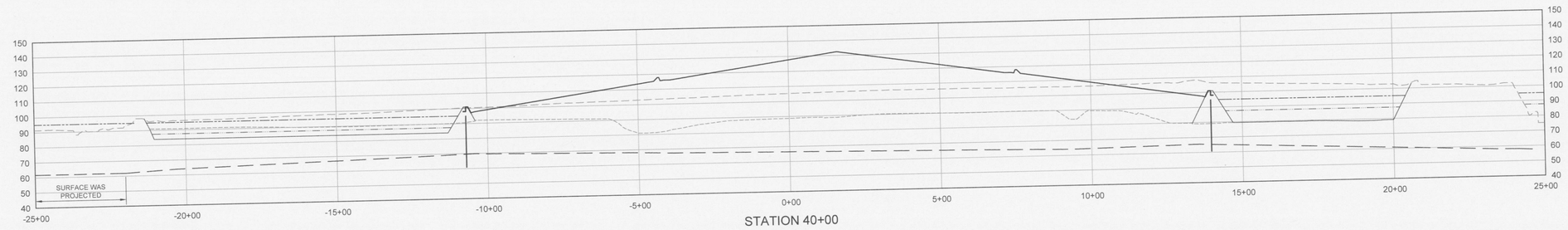

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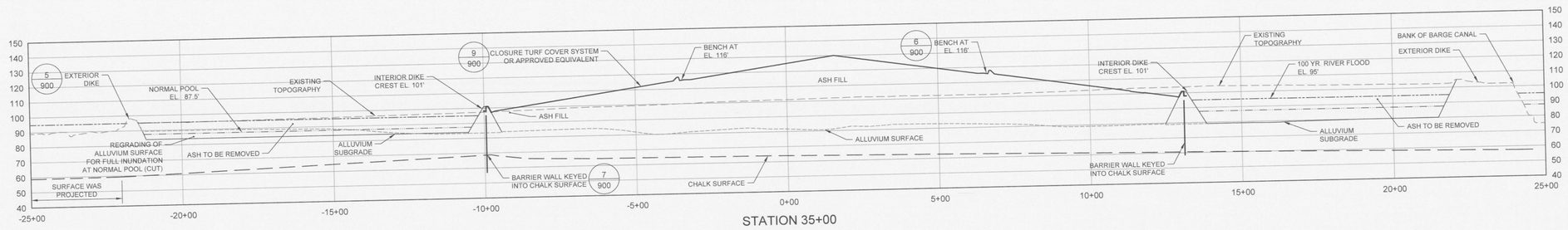

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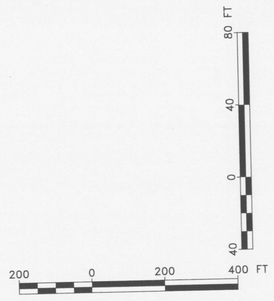

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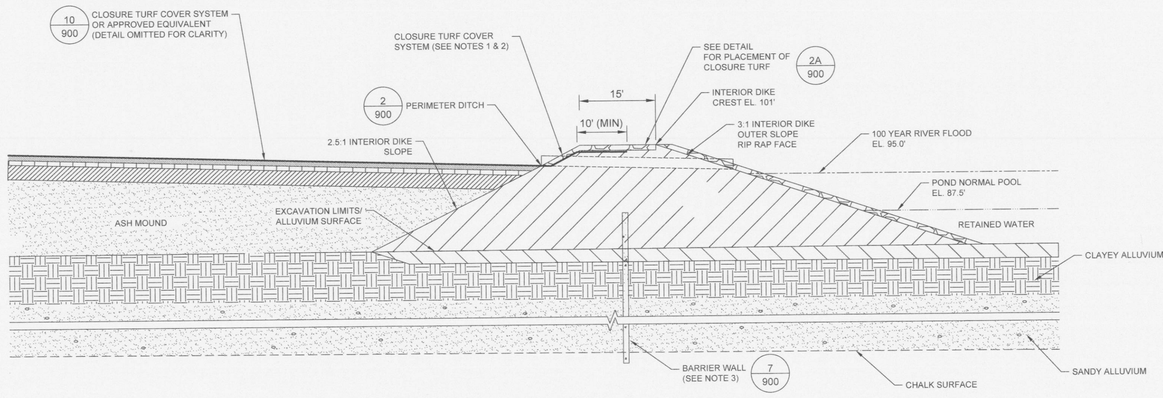
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

ADDITIONAL SECTIONS - FINAL CONDITIONS

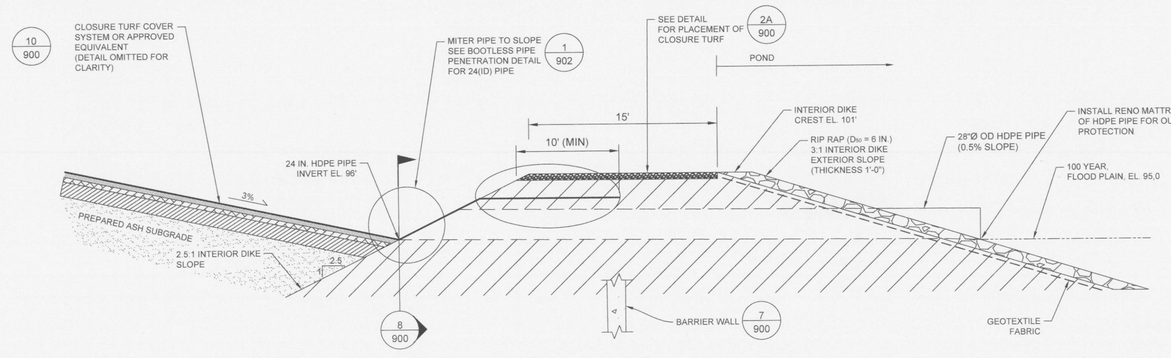
SHEET NUMBER:	REV. #
GRN_3.2.4_803	A

Plotted By:McKenzie, John V Sheet Set: GRN 60% Design Submittal Layout:803 Additional Sections December 04, 2018 03:27:41pm T:\3043180005 Southern Co\Plansheets\100% Drawings\GRN_3.2.4_803 Additional Sections.dwg



1/900 TYPICAL SECTION - INTERIOR DIKE
NTS

NOTE:
1. CLOSURE TURF SHALL BE PLACED 2' BELOW FINAL GRADE.
2. EXTEND CLOSURE TURF BEYOND THE BARRIER WALL.
3. FOR BARRIER WALL CONSTRUCTION DETAILS, AND PLACEMENT OF FILL FOR INTERIOR DIKE, SEE DRAWINGS GRN_3.13.1_100 THRU GRN_3.13.1_702.

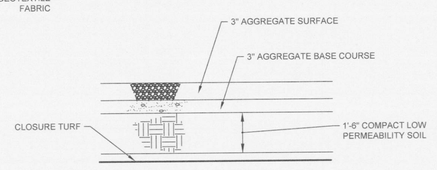


2/900 TYPICAL SECTION PERIMETER DITCH
NTS

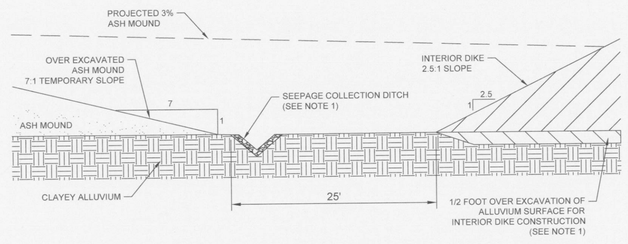
NOTE:
1. ANCHOR TRENCH SHOWN BEYOND 28"Ø OD PIPE.

DETAIL LEGEND

- SYNTHETIC COVER
- 100 YEAR, 24 HOURS FLOOD ELEVATION
- NORMAL POOL ELEVATION
- FLOODPLAIN ELEVATION
- EXCAVATION LIMITS/ALLUVIUM SURFACE
- PROJECTED OUTFALL DITCH
- PROJECTED ASH
- ASH MATERIAL
- INTERIOR DIKE
- EXTERIOR DIKE
- CLAYEY ALLUVIUM
- RIP RAP
- GRAVEL OR AGGREGATE
- SANDY ALLUVIUM
- CHALK
- BARRIER WALL

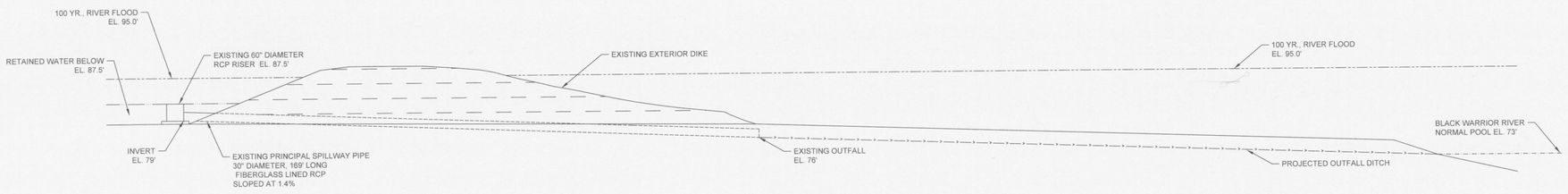


2A/900 DETAIL FOR PLACEMENT OF CLOSURE TURF
NTS

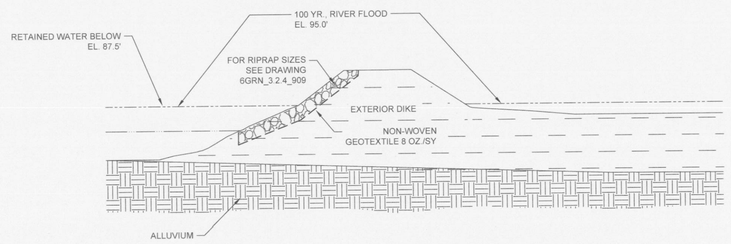


3/900 TYPICAL SECTION - INTERIOR DIKE CONSTRUCTION OVER EXCAVATION
NTS

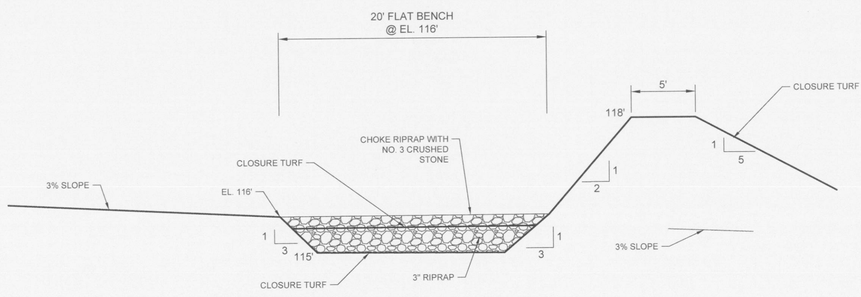
NOTE:
1. EXCAVATION SHOWN BELOW THE PROPOSED INTERIOR DIKE INCLUDES ONE-HALF FOOT BELOW THE ASH/SOIL INTERFACE. SEE DRAWING GRN_3.2.3_800 FOR ADDITIONAL EXCAVATION.



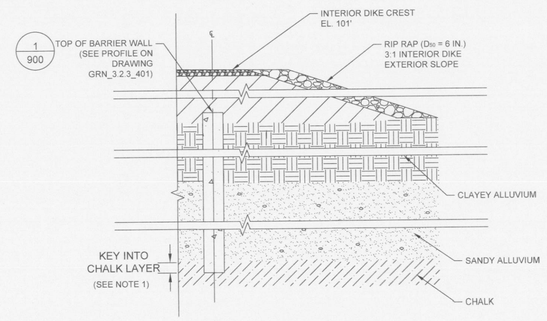
4/900 TYPICAL SECTION - EXISTING CONDITIONS FOR EXTERIOR DIKE AT PRINCIPAL SPILLWAY (TO BE PLUGGED AND ABANDONED)
NTS



5/900 TYPICAL SECTION - EXTERIOR DIKE POST ASH EXCAVATION
NTS

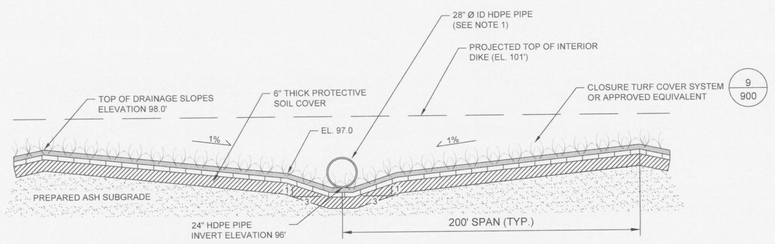


6/900 TERRACE DITCH SECTION @ EL. 116
NTS



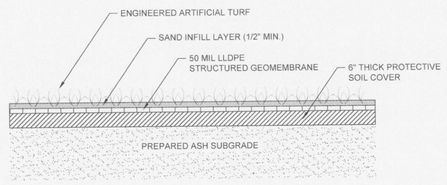
7/900 DETAIL - BARRIER WALL AT THE INTERIOR DIKE
NTS

NOTE:
1. SEE DRAWINGS GRN_3.13.1_100 THRU GRN_3.13.1_702 FOR HYDRAULIC BARRIER WALL FOR DEPTH INTO CHALK LAYER

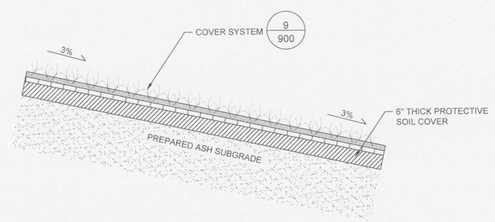


8/900 TYPICAL SECTION - PERIMETER DITCH DRAINAGE PATHWAYS
NTS

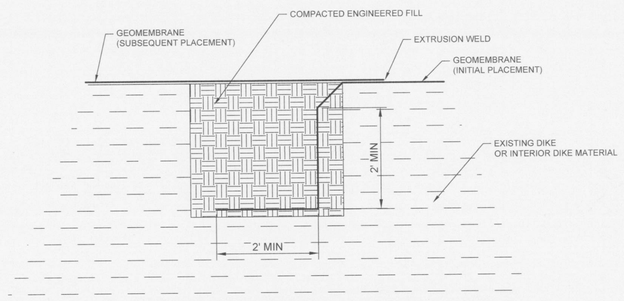
NOTE:
1. SEE PLAN SHEET FOR LOCATIONS WHERE 2-28"ø HDPE PIPES ARE LOCATED.



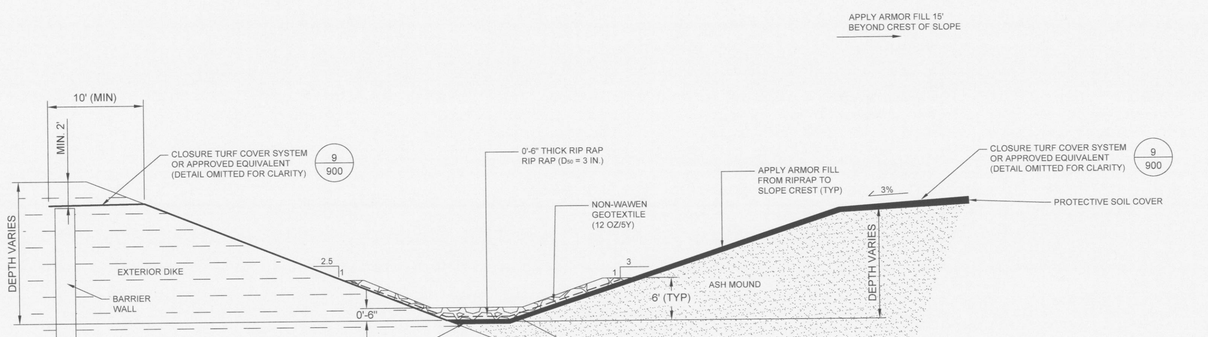
9/900 DETAIL - CLOSURE TURF COVER SYSTEM OR APPROVED EQUIVALENT - NTS



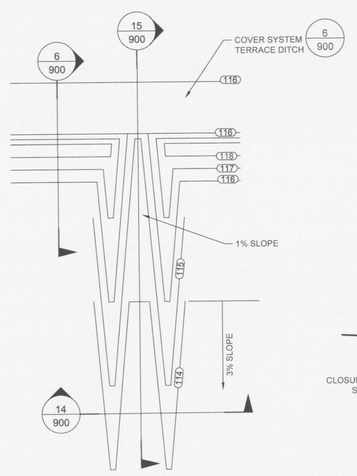
10/900 TYPICAL SECTION - CLOSURE TURF COVER SYSTEM OR APPROVED EQUIVALENT - NTS



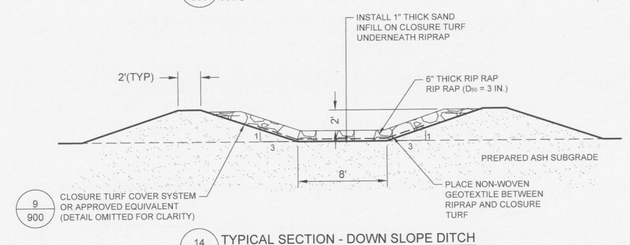
11/900 DETAIL - ANCHOR TRENCH AT THE TOP OF SLOPE
NTS



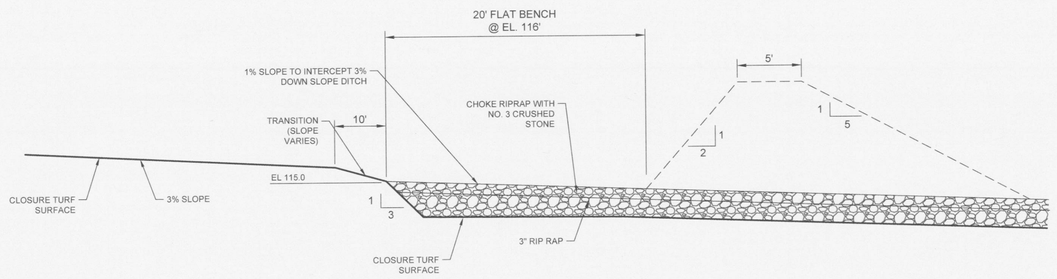
12/900 TYPICAL SECTION - NORTHERN DITCH
NTS



13/900 PARTIAL PLAN - DOWN SLOPE DITCH
NTS



14/900 TYPICAL SECTION - DOWN SLOPE DITCH
NTS



15/900 TERRACE DITCH SECTION @ EL 115 (LP)
NTS

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
SUITE 300
KNOXVILLE, TN 37922
TEL: (865) 671-6774

ISSUED FOR 100% CLIENT REVIEW

NOT VALID WITHOUT SIGNATURE AND DATE

PROJECT:
PLANT GREENE COUNTY ASH POND CLOSURE 100% DESIGN PACKAGE

Alabama Power
PLANT GREENE COUNTY
801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

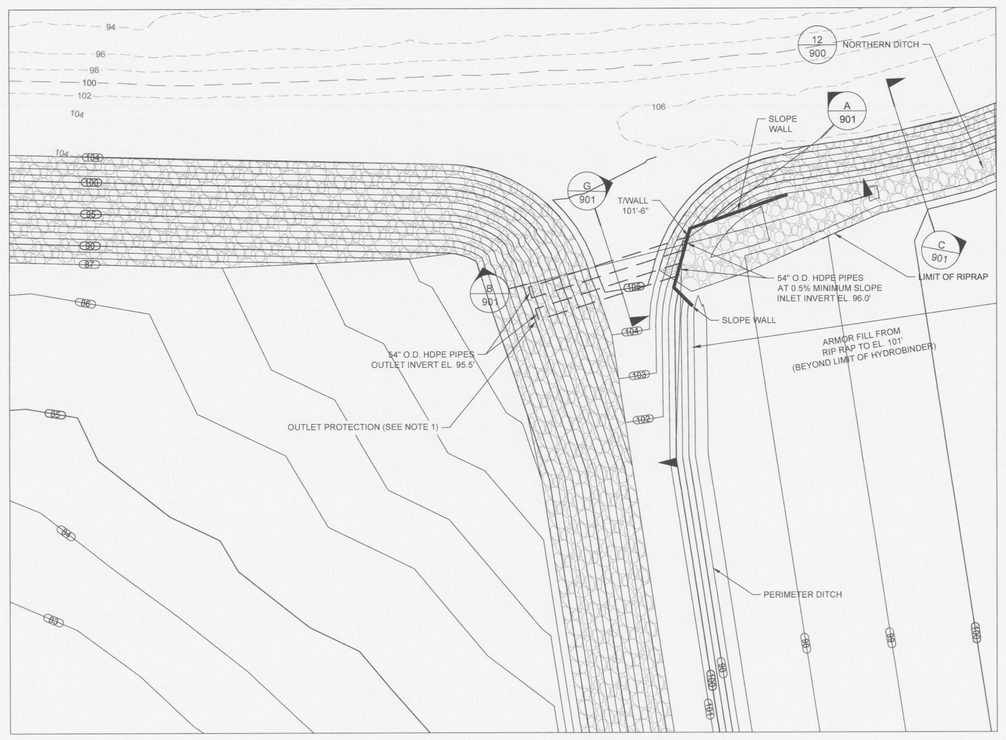
NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:
TYPICAL SECTIONS AND DETAILS I

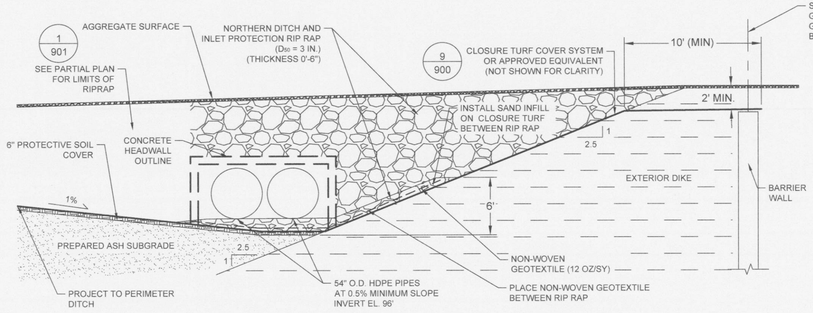
SHEET NUMBER:	REV. #
GRN_3.2.4_900	A

Plotted By: McKenzie, John V. Sheet Set: GRN 90% Design Submittal Layout: GRN_3.2.4_900 Typical Sections and Details I.dwg December 04, 2018 03:24:54pm Y:\3043180005 Southern Co\Plansheets\100% Drawings\GRN_3.2.4_900 Typical Sections and Details I.dwg

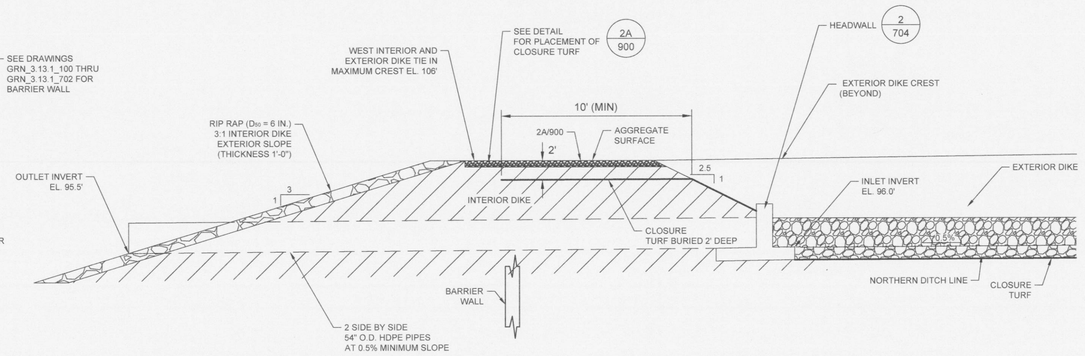


1 / 901 PARTIAL PLAN - WEST EXTERIOR AND INTERIOR DIKE TIE IN
1"=30'

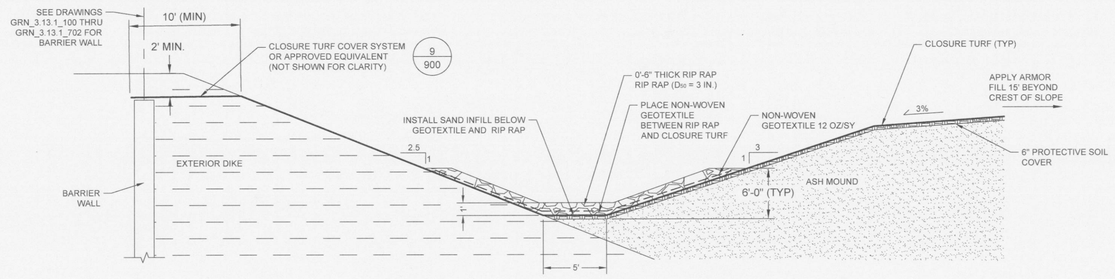
NOTE:
1. OUTLET PROTECTION SHALL CONSIST OF _____.



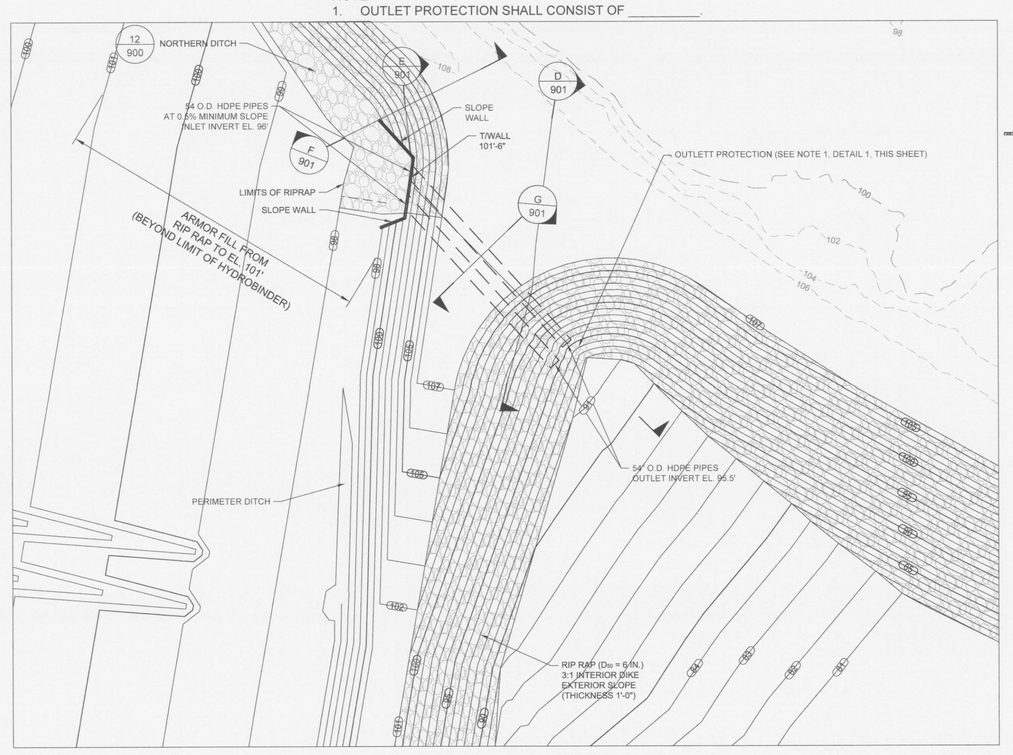
A 901 TYPICAL SECTION - NORTHERN DITCH OUTLET PIPES AT WEST DIKE TIE IN LOCATION
EXTERIOR DIKE SECTION CUT - NTS



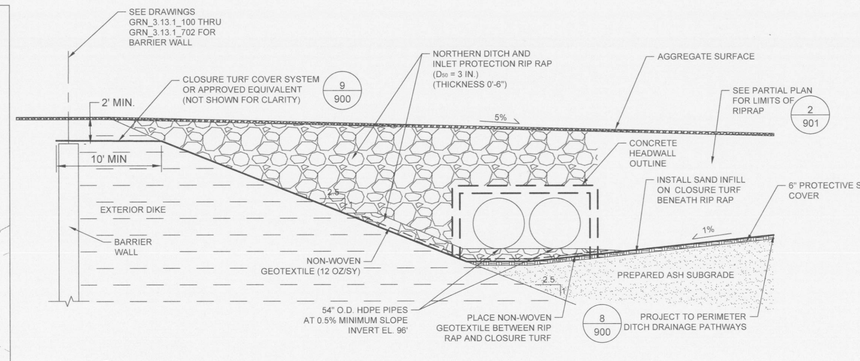
B 901 TYPICAL SECTION - NORTHERN DITCH OUTLET PIPES AT WEST DIKE TIE IN LOCATION
INERIOR DIKE SECTION CUT - NTS



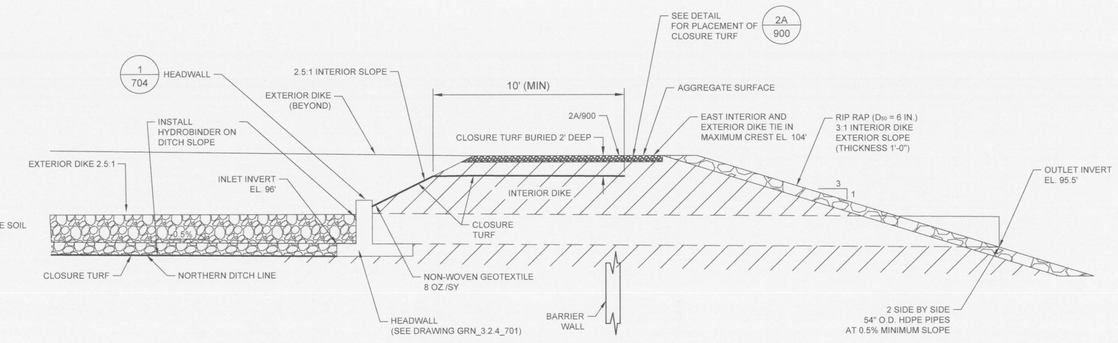
C 901 SECTION - NORTHERN DITCH AT WEST INTERIOR AND EXTERIOR DIKE TIE IN
NTS



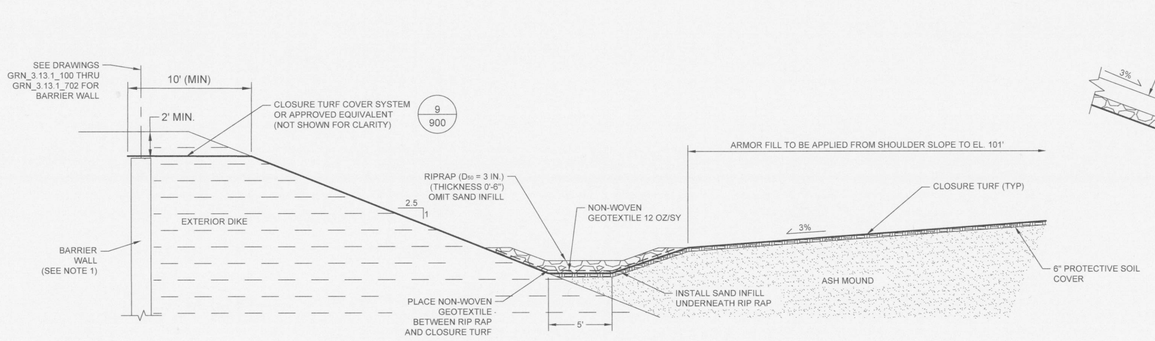
2 / 901 PARTIAL PLAN - EAST EXTERIOR AND INTERIOR DIKE TIE IN
1"=30'



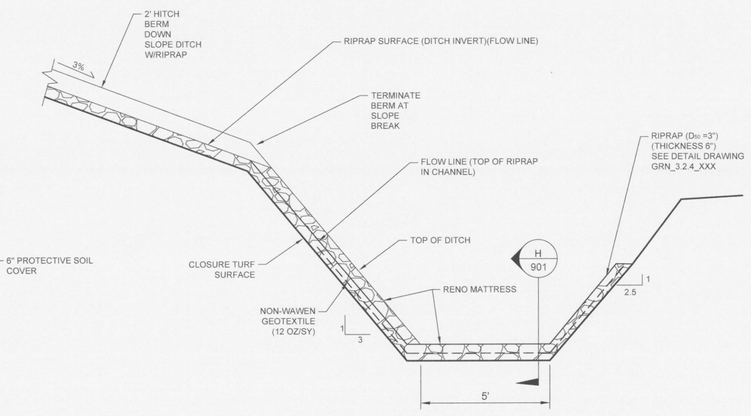
D 901 TYPICAL SECTION - NORTHERN DITCH OUTLET PIPES AT EAST DIKE TIE IN LOCATION
EXTERIOR DIKE SECTION CUT - NTS



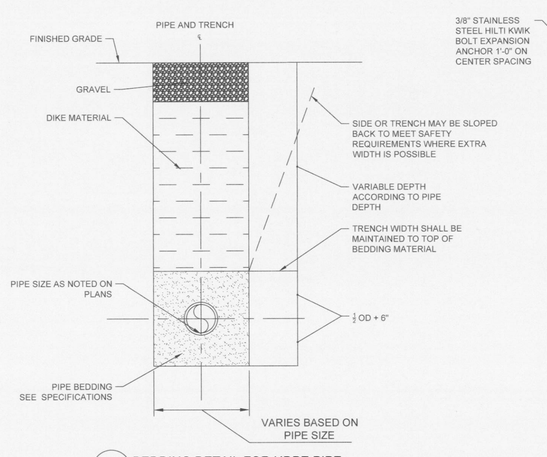
E 901 TYPICAL SECTION - NORTHERN DITCH OUTLET PIPES AT EAST DIKE TIE IN LOCATION
INERIOR DIKE SECTION CUT - NTS



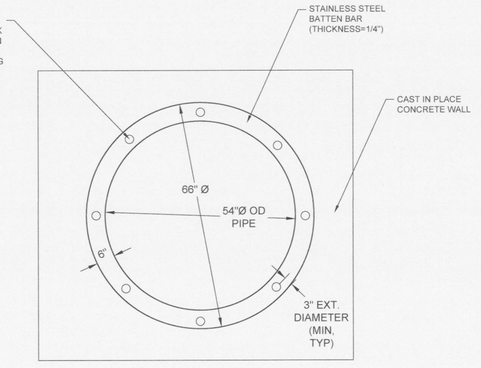
F 901 SECTION - NORTHERN DITCH AT EAST INTERIOR AND EXTERIOR DIKE TIE IN
NTS



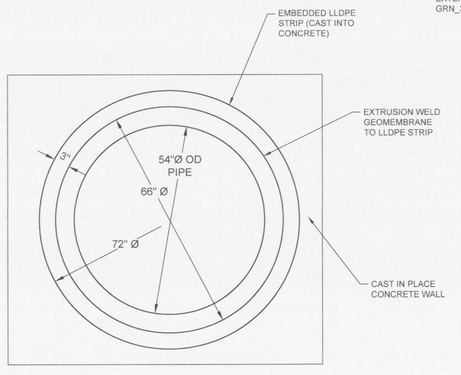
G 901 SECTION - NORTHERN DITCH AND DOWN SLOPE DITCH SECTION
NTS



3 / 901 BEDDING DETAIL FOR HDPE PIPE
NTS



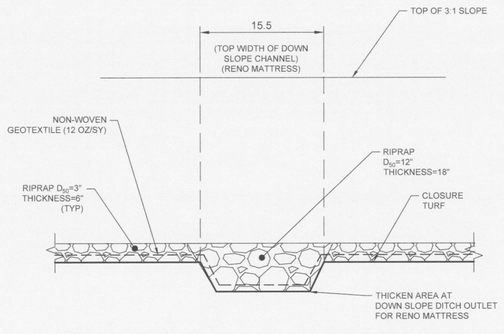
4 / 901 ATTACH TURF TO HEADWALL
NTS



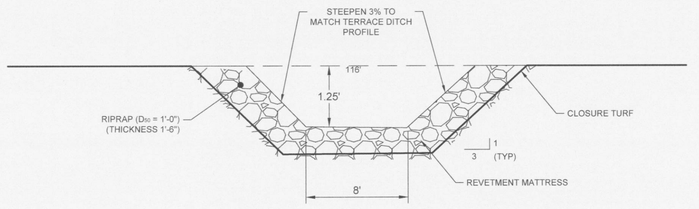
5 / 901 ATTACH GEOMEMBRANE TO HEADWALL
NTS

NOTE

1. FOR CONSTRUCTION OF BARRIER WALL AND MODIFICATIONS TO EXTERIOR DIKE, SEE DRAWINGS EXTRUSION GRN_3.13.1_100 THRU GRN_3.13.1_702.



H 901 SECTION - NORTHERN DITCH SECTION AT DOWN SLOPE DITCH
NTS



I 901 SECTION - DOWN SLOPE DITCH SECTION
NTS

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
SUITE 300
KNOXVILLE, TN 37922
TEL: (865) 671-6774

ISSUED FOR 100% CLIENT REVIEW

NOT VALID WITHOUT SIGNATURE AND DATE

PROJECT:
PLANT GREENE COUNTY ASH POND CLOSURE
100% DESIGN PACKAGE

Alabama Power
PLANT GREENE COUNTY
801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

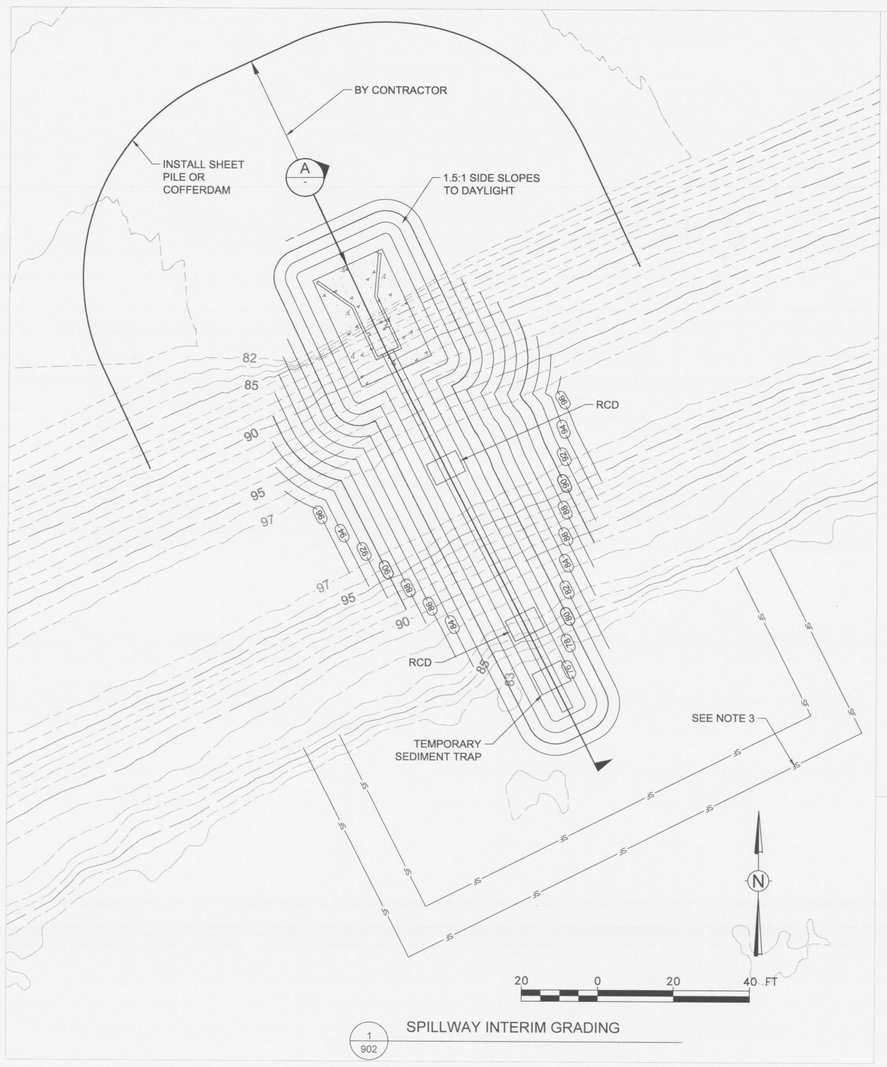
REVISIONS			
NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

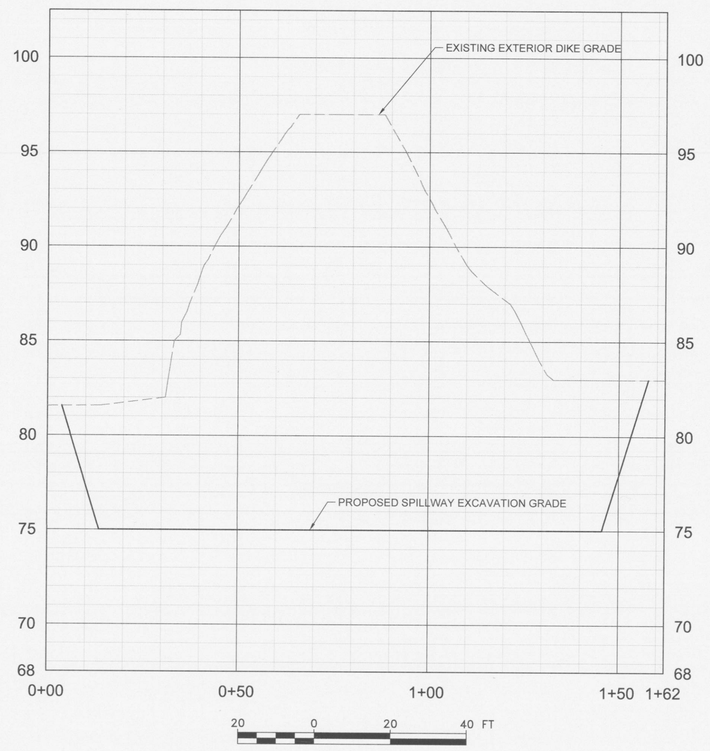
SHEET TITLE:
TYPICAL DETAILS AND SECTIONS II

SHEET NUMBER:	REV. #
GRN_3.2.4_901	A

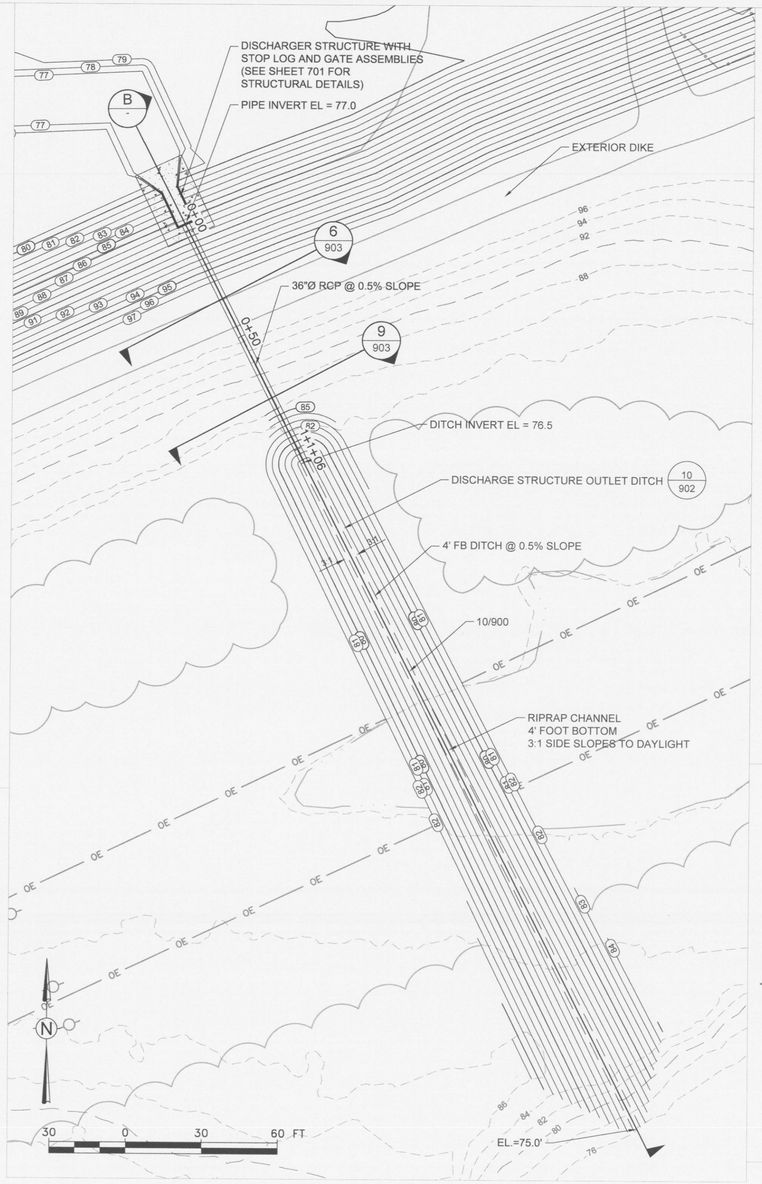
Plotted By: McKenzie, John V. Sheet Set: GRN 90% Design Submittal Layout: GRN_3.2.4_901 Construction Details I December 04, 2018 03:24:35pm T:\30431\60005 Southern Co\Primavera\100% Drawings\GRN_3.2.4_901 Typical Sections and Details II.dwg



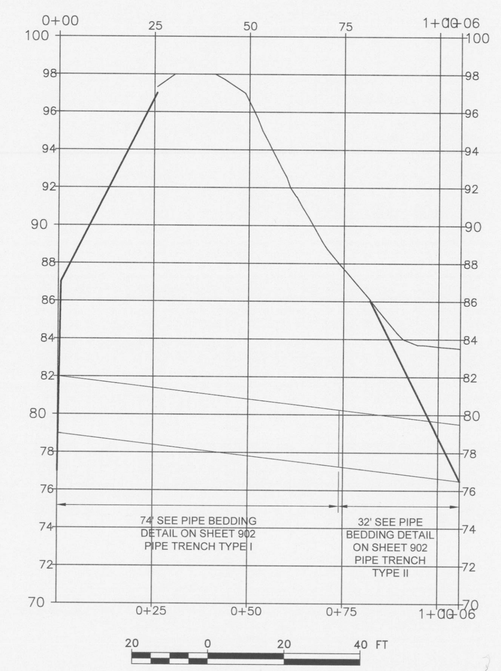
1/902 SPILLWAY INTERIM GRADING



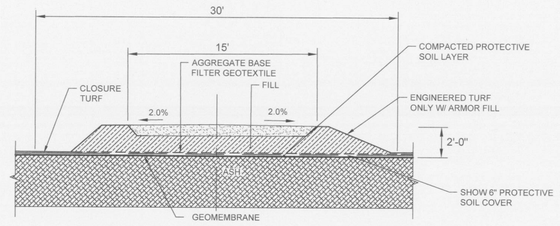
A/902 SPILLWAY INTERIM GRADING PROFILE B
HZ SCALE: 1" = 20'
VT SCALE: 1" = 5'



2/902 PARTIAL PLAN
DISCHARGE STRUCTURE

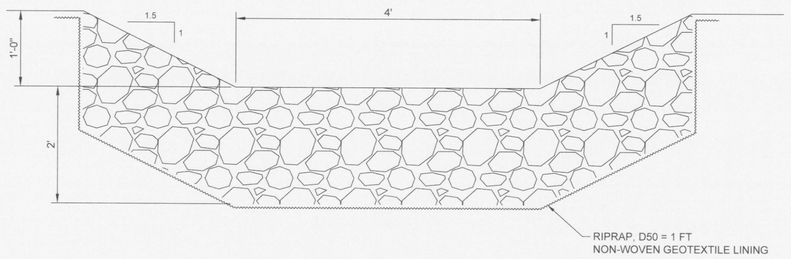


8/902 SPILLWAY OUTLET PIPE PROFILE
HZ SCALE: 1" = 20'
VT SCALE: 1" = 5'

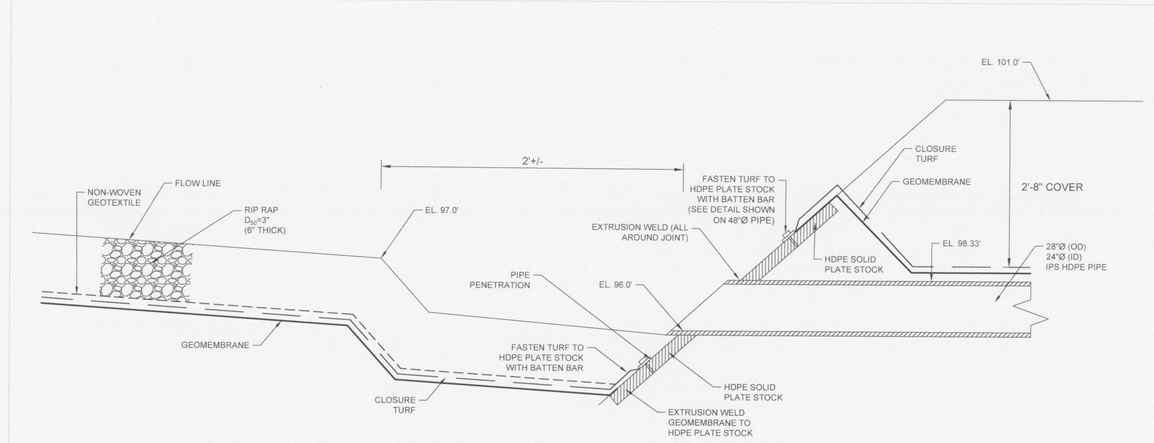


4/902 ACCESS ROAD @ CLOSURE
PROFILE
NTS

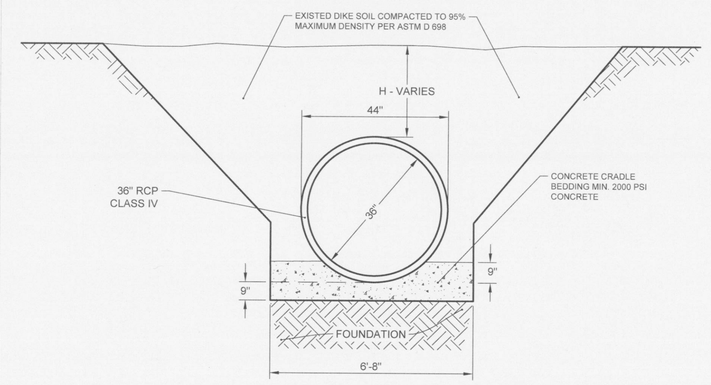
3/902 PROPOSED TEMPORARY GAS LINE GRADING SECTION



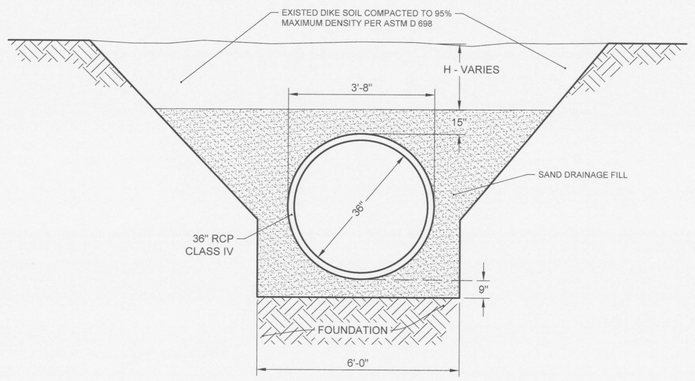
7/902 RIPRAP RUNDOWN SWALE
NTS



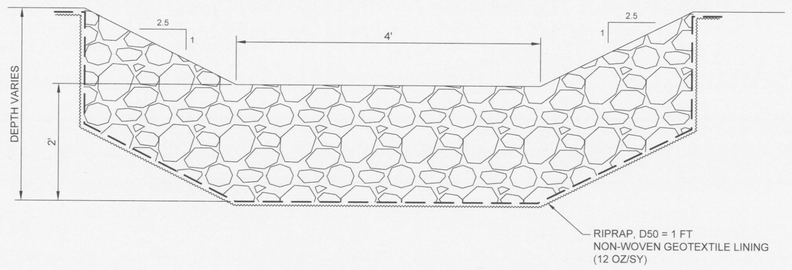
5/902 BOOTLESS PIPE PENETRATION
24"Ø PERIMETER PIPE @ INTERIOR DIKE
NTS



6/902 SPILLWAY OUTLET PIPE TRENCH TYPE I
(W/CONCRETE CRADLE)
NTS



9/902 SPILLWAY OUTLET PIPE TRENCH TYPE II
(W/DRAINAGE FILL)
NTS



10/902 DISCHARGE STRUCTURE OUTLET DITCH
NTS

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
SUITE 300
KNOXVILLE, TN 37922
TEL: (865) 671-6774

ISSUED FOR 100% CLIENT REVIEW

NOT VALID WITHOUT SIGNATURE AND DATE

PROJECT:

PLANT GREENE COUNTY
ASH POND CLOSURE
100% DESIGN PACKAGE

Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS			
NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

TYPICAL SECTIONS AND DETAILS III

SHEET NUMBER:	REV. #
GRN_3.2.4_902	A

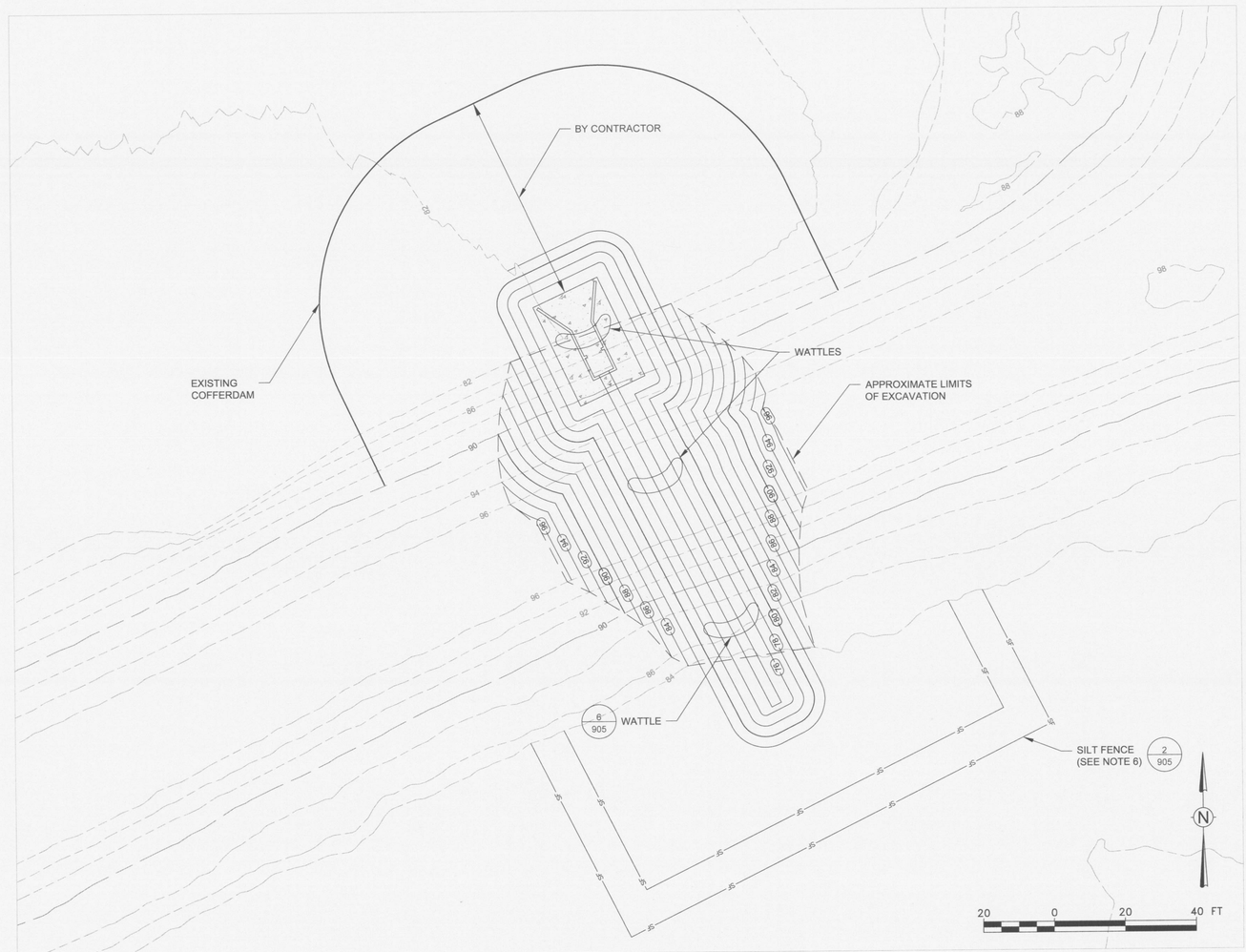
Plotted By: McKenzie, John V. Sheet Set: GRN 90% Design Submittal Layout: 902 OUTLET STRUCTURE SECTIONS AND DETAILS December 04, 2018 03:24:05pm T:\3043180005 Southern Co\Plansheets\1008 Drawings\GRN_3.2.4_902 Typical Sections and Details III.dwg

E&SC NOTES:
1. FOR GENERAL NOTES, SEE DRAWING GRN_3.2.4_101.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE APPROVED BEST MANAGEMENT PRACTICES PLAN (BMPP) FOR THE PROJECT, AND ALABAMA GENERAL STORMWATER PERMIT ALR100000.
3. PERFORM EXCAVATION IN PHASES TO INSTALL OUTLET STRUCTURE.

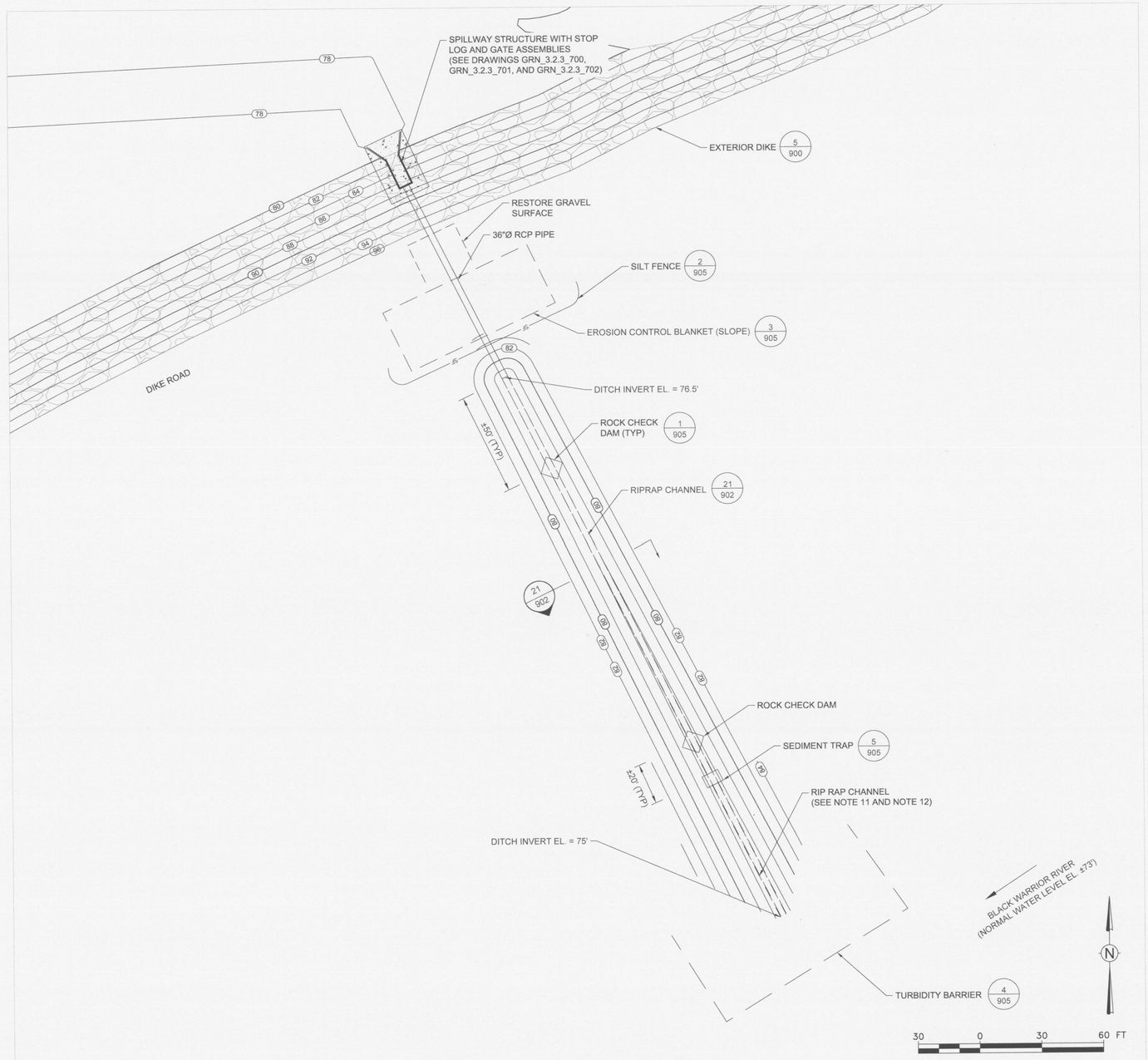
PHASE 1
4. DEWATER AREA TO EXCAVATE FOR OUTLET STRUCTURE CONSTRUCTION.
5. EXCAVATE AND REMOVE ALL ASH AND PLACE WITHIN CONSOLIDATED ASH AREA. VERIFY ASH REMOVAL IN ACCORDANCE WITH SPECIFICATION SECTION 312000.
6. INSTALL DOUBLE ROW OF SILT FENCING PRIOR TO EXCAVATING PIPE TRENCH.
7. EXCAVATE EMBANKMENT AND TRENCH FOR PIPE. STOCKPILE MATERIAL FOR REUSE. INSTALL SILT FENCE AROUND STOCKPILE. INSTALL TEMPORARY SEDIMENT TRAP.
8. INSTALL DISCHARGE STRUCTURE AND OUTLET PIPE IN ACCORDANCE WITH DRAWINGS GRN_3.2.3_700 AND GRN_3.2.3_701.
9. BACKFILL EXCAVATED AREA AND COMPACT TO 95% STANDARD PROCTOR DENSITY IN ACCORDANCE WITH ASTM D698.
10. INSTALL EROSION CONTROL BLANKET AND SILT FENCE (SEE PHASE 2 PARTIAL PLAN).

PHASE 2
11. SEQUENCE EXCAVATION FROM THE END OF THE PIPE DOWNSTREAM TOWARD RIVER. DO NOT EXCAVATE THE DOWNSTREAM END OF THE DITCH UNTIL THE RIPRAP IS SUBSTANTIALLY PLACED WITHIN THE DITCH AS PRACTICABLE. INSTALL ROCK CHECK DAMS AND SEDIMENT TRAP(S), AND PUMP COLLECTED WATER THROUGH A FILTER PRIOR TO DISCHARGE.
12. SEQUENCE CONSTRUCTION OF THE END OF THE DITCH AT THE RIVER TO AVOID STORM EVENTS, AND CONDUCT WORK IN DRY CONDITIONS TO THE EXTENT PRACTICABLE. IF REQUIRED, INSTALL TURBIDITY BARRIER AT THE DOWNSTREAM END OF THE EXCAVATION PRIOR TO EXCAVATION OF THE END OF THE DITCH.
13. INSTALL REMAINING GEOTEXTILE FABRIC AND RIPRAP.
14. REMOVE ALL SEDIMENT AND EROSION CONTROLS WHEN THE CONSTRUCTION AREA IS STABILIZED IN ACCORDANCE WITH THE CBMPP.

WATER TREATMENT
1. CONTACT WATER TO BE TREATED PRIOR TO DISCHARGE IN ACCORDANCE WITH THE APPROVED NPDES PERMIT.



PARTIAL PLAN
DISCHARGE STRUCTURE E&SC PHASE 1



PARTIAL PLAN
DISCHARGE STRUCTURE E&SC PHASE 2

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
SUITE 300
KNOXVILLE, TN 37922
TEL: (865) 671-6774

ISSUED FOR 100% CLIENT REVIEW

NOT VALID WITHOUT SIGNATURE AND DATE

PROJECT:
PLANT GREENE COUNTY ASH POND CLOSURE 100% DESIGN PACKAGE

Alabama Power
PLANT GREENE COUNTY
801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

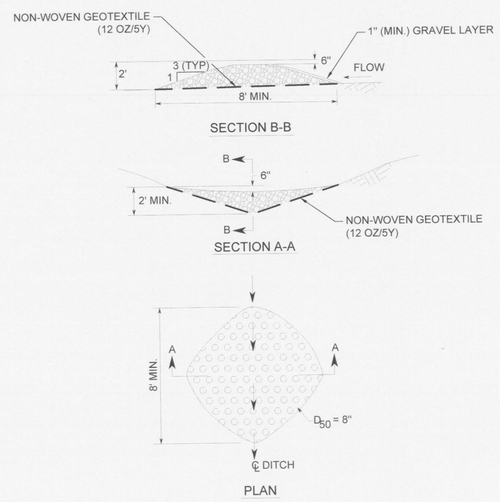
NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:
DISCHARGE STRUCTURE - E&SC PLAN

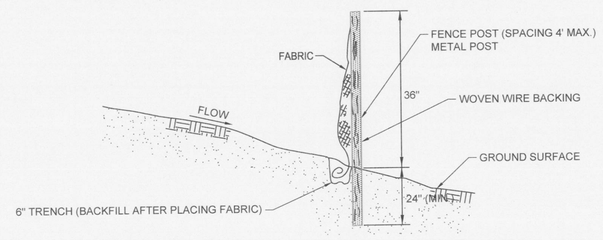
SHEET NUMBER:	REV. #
GRN_3.2.4_904	A

Plotted By:McKenzie, John V. Sheet Set:GRN 60% Design Submittal Layout:904 DISCHARGE STRUCTURE - E&SC PLAN December 04, 2018 03:18:56pm T:\3043180005 Southern Co\Plantnetch\100% Drawings\GRN_3.2.4_904 Discharge Structure - E&SC Plan.dwg



1/905 ROCK CHECK DAM
NTS

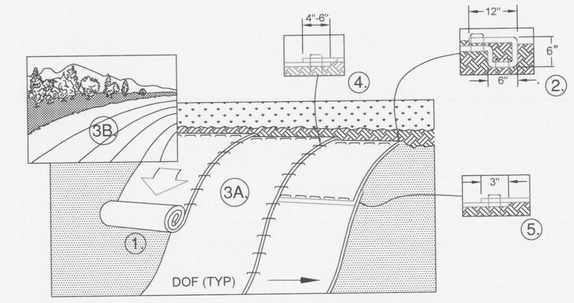
CD



NOTES:
1. SILT FENCE SHALL CONFORM TO THE ALABAMA HANDBOOK FOR EROSION CONTROL, SEDIMENT CONTROL, AND STORMWATER MANAGEMENT ON CONSTRUCTION SITES AND URBAN AREAS, 2018.

2/905 SILT FENCE DETAIL
NTS

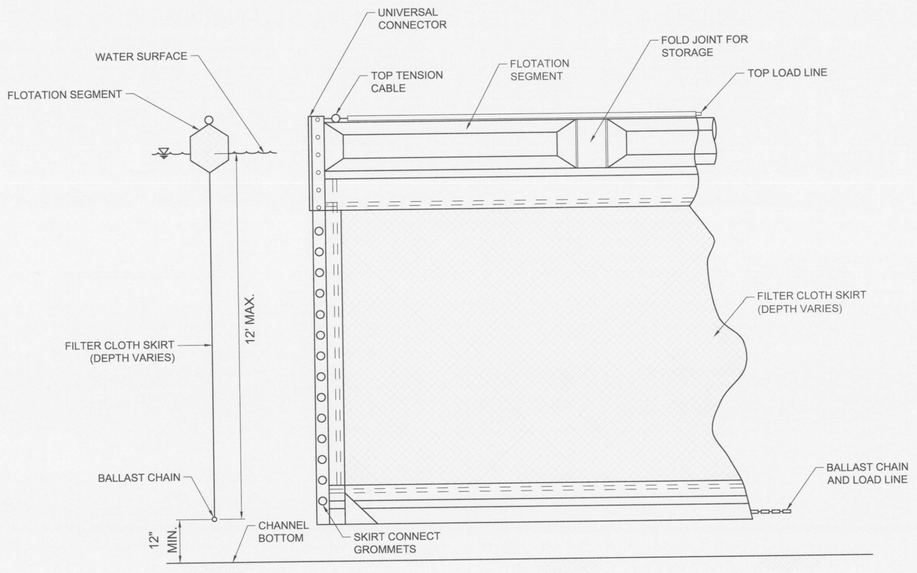
SB



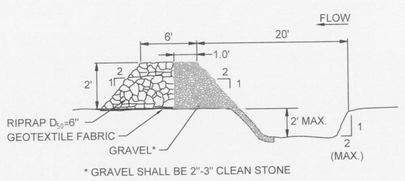
NOTES:
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. ALL ROCKS OR CLODS 1 ½" IN DIAMETER OR GREATER, AND ALL STICKS AND OTHER FOREIGN MATTER SHALL BE REMOVED.
2. ON SLOPES, BLANKETS MAY BE UNROLLED EITHER HORIZONTALLY OR VERTICALLY TO THE SLOPE. ENDS AND SIDES SHALL BE STAPLED. WHEN MULTIPLE BLANKETS ARE UTILIZED, THE UPSLOPE BLANKET SHOULD OVER LAP THE DOWN SLOPE BLANKET. PLACE STAPLES PER MANUFACTURERS RECOMMENDATIONS FOR THE APPROPRIATE SLOPE BEING APPLIED.
3. EROSION PROTECTION BLANKETS PLACED IN CHANNELS SHALL BE IN ACCORDANCE WITH THE ALABAMA HANDBOOK FOR EROSION CONTROL, SEDIMENT CONTROL, AND STORMWATER MANAGEMENT ON CONSTRUCTION SITES AND URBAN AREAS, 2018.

3/905 EROSION CONTROL BLANKET SLOPE INSTALLATION
NTS

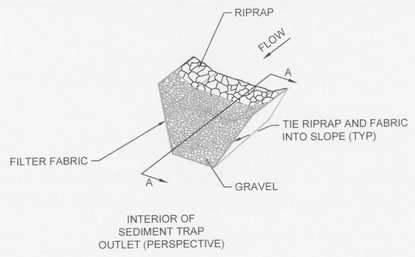
ECB



TYPICAL ANCHORING SECTION



SECTION A-A

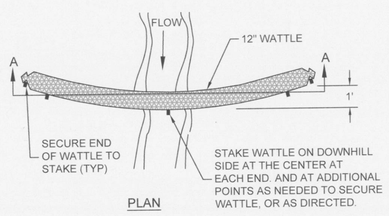


INTERIOR OF SEDIMENT TRAP OUTLET (PERSPECTIVE)

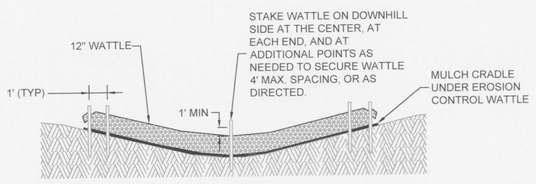
NOTES:
1. GEOTEXTILE FABRIC SHALL BE MARIFI 180N OR EQUAL.
2. PUMP SEDIMENT TRAP AND FILTER EFFLUENT THROUGH A FILTER PRIOR TO DISCHARGE.

5/905 TEMPORARY SEDIMENT TRAP
NTS

ST

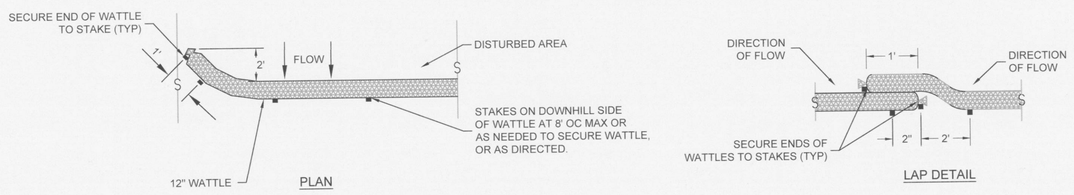


PLAN



SECTION A-A

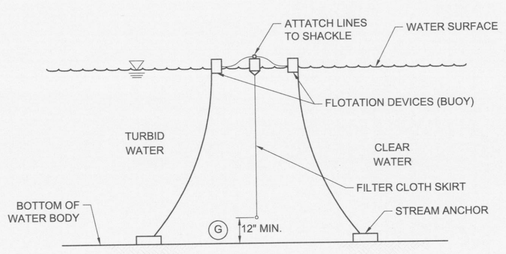
WATTLE CHECK DAM



NOTES:
1. PROVIDE STAKES AND SECURE WATTLES IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

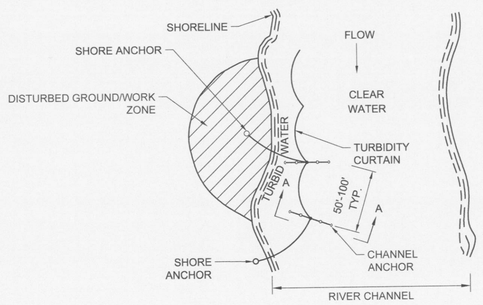
6/905 WATTLE
NTS

BFB



SECTION A-A

TYPICAL ANCHORING PLAN FOR SHORELINE/RIVER EDGE WORK



PLAN VIEW

NOTES:
1. TURBIDITY BARRIER INSTALLATION REQUIRES PERMITTING WITH THE U.S. ARMY CORPS OF ENGINEERS MOBILE DISTRICT BIRMINGHAM ALABAMA REGULATORY DIVISION.
2. TURBIDITY BARRIER SHALL COMPLY WITH REQUIREMENTS FOR A TYPE II FLOATING TURBIDITY BARRIER IN ACCORDANCE WITH THE ALABAMA HANDBOOK FOR EROSION CONTROL, SEDIMENT CONTROL AND STORMWATER MANAGEMENT ON CONSTRUCTION SITES AND URBAN AREAS, 2018.

4/905 FLOATING TURBIDITY BARRIER
NTS

FB

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
SUITE 300
KNOXVILLE, TN 37922
TEL: (865) 671-6774

ISSUED FOR 100% CLIENT REVIEW

NOT VALID WITHOUT SIGNATURE AND DATE

PROJECT:

PLANT GREENE COUNTY
ASH POND CLOSURE
100% DESIGN PACKAGE

Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS			
NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

DISCHARGE STRUCTURE - E&SC DETAILS

SHEET NUMBER:	REV. #
GRN_3.2.4_905	A

Plotted By:McKenzie, John V. Sheet Set:GRN 60% Design Submittal Layout:905 DISCHARGE STRUCTURE - E&SC DETAILS December 04, 2018 03:18:31pm T:\3043\18\0005 Southern Co\Plansheets\100% Drawings\GRN_3.2.4_905 Discharge Structure - E&SC Details.dwg

NOTES:

1. FOR GENERAL NOTE AND LEGEND, SEE DRAWING GRN_3.2.4_101.
2. INSTALL THE DISCHARGE STRUCTURE. I.E = 77.0 FT.
3. CURRENT ESTIMATED VOLUME OF A 10 YEAR STORM EVENT IS 150 AC - FT.
4. MAINTAIN A MINIMUM 1 FT DEPTH OF WATER WITHIN THE SEDIMENTATION POND AREA.
5. TEMPORARY SEDIMENT STORAGE POND CAN BE EXPANDED IN THIS AREA AS REQUIRED.
6. THE WATER SURFACE ELEVATION FOR THE 25 YR - 24 HR STORM EVENT, AS APPLICABLE TO THE EXISTING TOPOGRAPHY DEPICTED ON THIS DRAWING IS APPROXIMATELY EL. 84.5 FT. RUN OFF VOLUME IS ESTIMATED TO BE 254 ACRE FEET.
7. THE WATER SURFACE ELEVATION FOR THE 25YR - 24 HR STORM EVENT, AS APPLICABLE TO THE EXISTING TOPOGRAPHY DEPICTED ON DRAWING GRN_3.2.4_600 (FINAL CLOSURE CONDITIONS) IS APPROXIMATELY EL. 81FT. RUN OFF VOLUME IS ESTIMATED TO BE 227 ACRE FEET.

wood.
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Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS			
NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

EXISTING ASH POND - E&SC PLAN DURING CLOSURE

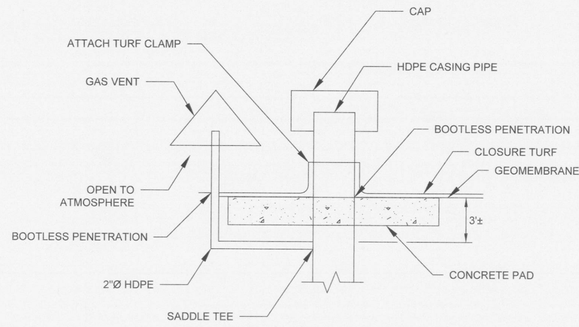
SHEET NUMBER:	REV. #
GRN_3.2.4_906	A

300 0 300 600 FT
SCALE: 1" = 300'

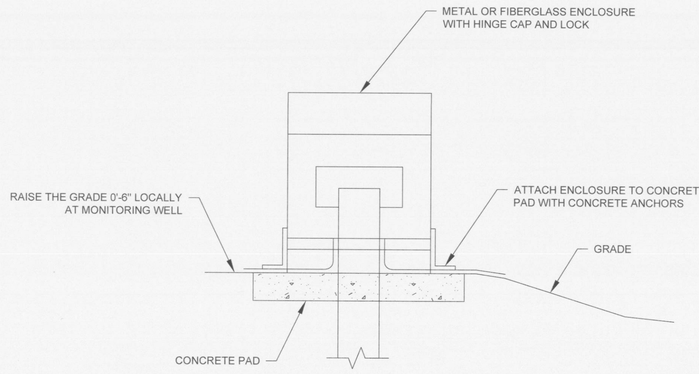
Plotted By:McKenzie, John V. Sheet Set:GRN 90X Design Submittal Layout:906 - EXISTING ASH POND - E&SC PLAN DURING CLOSURE December 04, 2018 03:18:11pm T:\3043\18\0005 Southern Co\Projects\Y90X Drawings\GRN_3.2.4_906 Existing Ash Pond - E&SC Plan During Closure.dwg

NOTES:

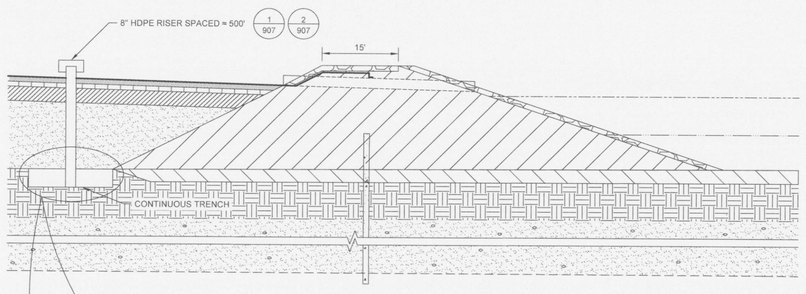
1. FOR GENERAL NOTES AND LEGEND SEE DRAWING GRN_3.2.4_101.
2. INSTALL MONITORING WELLS AT LOCAL LOW POINT ELEVATIONS ESTABLISHED DURING INTERIOR DIKE CONSTRUCTION, AS REASONABLY CLOSE AS PRACTICABLE TO THE HIGH POINT LOCATION OF THE PERIMETER DITCH.
3. OWNER WILL MONITOR WATER SURFACE ELEVATION WITHIN THE CLOSED ASH POND.

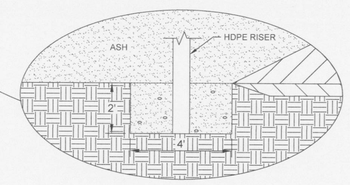


1/907 MONITORING WELL (ENCLOSURE NOT SHOWN FOR CLARITY)
NTS

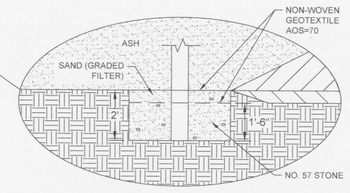


2/907 MONITORING WELL ENCLOSURE
NTS





TRENCH DETAIL



DRAINAGE MEDIA DETAIL

3/907 MONITORING WELL INSTALLATION
NTS

200 0 200 400 FT
SCALE: 1" = 200'

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
SUITE 300
KNOXVILLE, TN 37922
TEL: (865) 671-6774

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PROJECT:
PLANT GREENE COUNTY ASH POND CLOSURE 100% DESIGN PACKAGE

Alabama Power
PLANT GREENE COUNTY
801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS			
NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:
FINAL COVER MONITORING WELL INSTALLATION

SHEET NUMBER:	REV. #
GRN_3.2.4_907	A

Plotted By: McKenzie, John V. Sheet Set: GRN 90% Design Submittal Layout: 907 POST CLOSURE FINAL COVER MONITORING WELL INSTALLATION December 04, 2018 03:17:35pm I:\3043180005 Southern Co\Plansheets\100% Drawings\GRN_

NOTES:

1. FOR GENERAL NOTE AND LEGEND, SEE DRAWING GRN_3.2.4_101.
2. DO NOT DAMAGE ANY CCR COMPLIANCE MONITORING WELL DURING POND CLOSURE (SEE TABLE 1).
3. INSTALL EROSION CONTROL BLANKET ON RE-GRADING SLOPE AFTER COMPLETION OF BARRIER WALL INSTALLATION.

LEGEND

- EXISTING BORING
- EXISTING CPT
- EXISTING PIEZOMETER
- EXISTING COMPLIANCE MONITORING WELL
- EXISTING BENCHMARK

wood.
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
2030 FALLING WATERS RD.
SUITE 300
KNOXVILLE, TN 37922
TEL: (865) 671-6774

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Alabama Power

PLANT GREENE COUNTY

801 STEAM PLANT RD.
FORKLAND, AL

PROJECT No:
3043-18-0005

REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	SSK
DRAWN BY:	RAB
CHECKED BY:	SK
APPROVED BY:	MDB
DATE:	12-04-18

SHEET TITLE:

EXTERIOR DIKE SLURRY WALL E&SC

SHEET NUMBER:	REV. #
GRN_3.2.4_908	A