AMENDED CLOSURE PLAN FOR ASH POND

Plant Miller
Alabama Power Company
Quinton, Alabama

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1.0 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 Miller Ash Pond, located in west Jefferson 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.

2.0 GENERAL

The Plant Miller Ash Pond was designed to receive and store coal combustion residuals produced during the electric generating process at Plant Miller. Most of the CCR placed in the impoundment in recent years was dry-stacked CCR. The pond covers approximately 321 acres, and currently stores about 19,500,000 cubic yards of CCR.

The Ash Pond was originally constructed in the late 1970's. The initial phase constructed the main cross-valley dam and saddle dike to EL 425 ft. There have been no significant alterations to the Ash Pond since the original construction. The main dike is approximately 170 feet tall at its highest point and 3,300 feet long, while the saddle dike is 25 feet tall and 1,000 feet long. The main dam is a zoned embankment constructed with a relatively impervious clay core, random soil and rock fill on the embankment to each side of the core, and a chimney drain on the downstream side of the clay core. The design crest width is 45 feet. Exterior and interior slopes are 2.5(H):1(V). The up-gradient slope has a rip-rap cover as protection from wind-blown wave erosion. The downgradient slope is vegetated with grass and other low growing grassy vegetation. The saddle dike, located in the northeast corner of the impoundment, is an earth fill embankment constructed across a topographic low area, or saddle, within the up-gradient perimeter of the impoundment. The saddle dike has a design crest width of 45 feet and side slopes of 2.5(H):1(V). The up-gradient slope has a rip-rap cover previously placed for protection from wind-blown wave erosion when the pond maintained free water in this area of the pond. The down-gradient slope is vegetated with grass and other low growing vegetation. An adjoining surface mine excavation, located in the southeastern portion of the facility, was also used for bottom ash storage.

The Plant Miller Ash Pond will be closed by leaving CCR in place, with consolidation of ash to reduce the closure footprint to approximately 191 acres. The pond will be dewatered sufficiently to remove the free liquids, and to an extent, to provide a stable base for the construction of the final cover system. CCR will be consolidated within the footprint of the impoundment to the extent practical and used to create a subgrade for the final cover system. 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.

The final cover system will be designed to minimize infiltration and erosion. The final cover system, at a minimum, will be designed to meet or exceed the requirements of r. 335-13-15-.07(3)(d)3.(ii) (alternative cover system). The permeability of the final cover system will be less than the permeability of the natural subsoils present beneath the surface impoundment. Final design will ensure the disruption of the integrity of the final cover system is minimized through a design that accommodates settlement and subsidence, in addition to providing an upper component for protection from wind or water erosion.

3.0 NOTIFICATION – INTENT TO CLOSE

Notification of intent to close the Plant Miller 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 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.

4.0 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 Miller 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

The primary construction closure tasks are listed below. More details on specific procedures undertaken during these tasks are described in the following subsection.

i. Site preparation

- Contractor mobilization and site establishment
- Clearing, grubbing and vegetation management

- Abandonment, demolition and relocation of existing structures and utilities
- Construction of a working platform and access for heavy equipment
- Construction of parking areas, and installation of security and access gates

ii. Mechanical excavation and placement of fill for construction of dredged ash processing area

iii. Removal of free water and in-situ dewatering

iv. Excavation of CCR from the closure by removal areas

v. Blasting and excavation of rock for perimeter stormwater channel

vi. Placement and stabilization of CCR within the consolidation area

vii. Partial excavation of existing dam

viii. Construction of cross-valley access embankment and culvert

ix. Buttress and buttresses drainage system construction

x. Final grading of consolidation area

xi. Installation of final cover system and stormwater management system

xii. Final grading of closure by removal areas

The construction sequence is organized into seven primary phases. A summary of each of these phases is described next. **Figure 1**, located below, provides a visual reference for the terminology used in the phasing summary.

The phasing shown is preliminary, and will likely change based on site conditions, construction sequencing, and other factors.

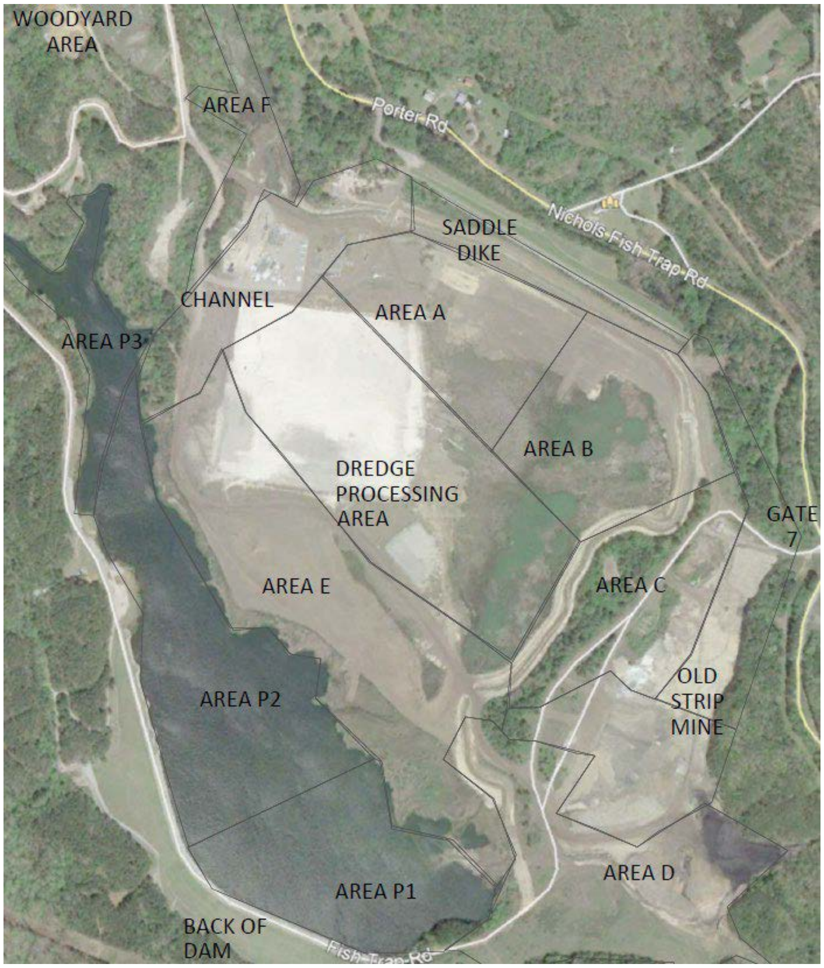


Figure 1

Phase 1

CCR excavation for the construction of the dredge processing area will take place in Phase 1. CCR excavation will begin in Area D, Channel, Area E, and the Woodyard Area. The dredge will be mobilized and assembled, and initial dredging will be performed during this phase. Pumps will be installed on modular floating systems for pumping free water to the water treatment system. Clearing of vegetation will also take place in Phase 1 and/or Phase 2.

Phase 2

In this phase, dredging will be performed in Area E, P1, & P2. Mechanical excavations in Area E, Channel, Saddle Dike, Old Strip Mine, Area D, and the Woodyard will be performed.

For slope stability reasons, Area E will be excavated in shallow cuts close to water level. For this phase, once Area E is excavated down to near water level, the dewatering pumps will start lowering the water level down from EL 421 ft to EL 400 ft. As this occurs, the dredge will be performing cuts in subsequent lifts to capture material down to EL 380 ft.

In order to achieve appropriate stormwater flow during mechanical excavation, Crew 1 will begin excavations in Area E and Channel area and will work in a clockwise motion around towards the Old Strip Mine and Area D. The end result in this phase will allow stormwater to gravity flow from the north side of the Old Strip Mine, through the Saddle Dike and Channel and outlet back into the pond in Area P2. Both crews will be placing CCR on the north side of the stack in Area B and Area C. The fill will be constructed and sloped to promote stormwater runoff away from the working area. Deep dewatering wells will be activated during this phase to support dewatering the in-situ water within the CCR stack Area E. The deep dewatering wells will keep the water level within the CCR stack approximately the same elevation as the water level in the pond.

Phase 3

Bulk dredging, ash excavation, soil excavation, additional deep wells, and the first stages of cover liner installation will be performed in this phase.

Dredging operations will continue in P1, P2 and portions of Area E. Dredged material will continue to be placed on the north side of the stack. Mechanically excavated material operations will continue being performed in a south to north direction starting in the channel and will proceed around the stack in a clockwise direction toward the Old Strip Mine area. Area F excavation will start and will be completed in this Phase 3. Once Area F is completely excavated, a temporary stormwater pond will be constructed on the north side of the channel area. Soil mechanically excavated from the channel will be used to construct buttresses for stability.

During this phase a controlled pond drawdown will occur from water elevation 400’ to 370’. This will enable the dredge to continue dredging both Areas P1 and P2 in controlled lifts down to elevation 350’.

Cover liner installation will begin on the lower end of Areas A, B, and C, Saddle Dike and the northern section of the Old Strip Mine. During installation, stormwater control will be performed by the construction of temporary stormwater ponds and diversion berms. Additional deep dewatering wells be installed for slope stability and the continued mechanical excavation in Area E.

Phase 4

Dredging, mechanical ash excavation, and channel blasting will be performed in this phase. Dredging will be performed in Area P1. Mechanical ash excavation will focus on hauling blasting material from the channel area and excavating in Areas E and D. The blasting and fill areas will be protected from stormwater runoff. Additional berms, diversion ditches, and stormwater collection areas with pumps will be constructed during Phase 4.

Phase 5

Final dredging, mechanical ash excavation, and closure turf installation will take place in this phase. Final dredging will commence in P2. Ash and soil excavation will take place in Area E, P1, P2, Old Strip Mine and Area D. Ash fill will continue in Area A and B until dredging is complete. Once dredging is complete, the rim ditches will be taken out of service.

Closure Turf installation will be performed in Areas A, B, C, and the Old Strip Mine. All ash contact stormwater will be diverted away from final closed areas and into the temporary stormwater ponds. A final lowering of the remaining water in the main pond will occur allowing for the start of the final cleanup in Areas P1 and P2.

Temporary diversion berms and ponds will need to be constructed so the lowest points of the pond can be cleaned effectively. Dewatering pumps will continue to pump from temporary ponds to the water treatment facility. Additional dewatering wells will be installed to allow for final CCR excavation in Area E.

Phase 6

Construction of the roadway embankment and main soil buttress, final mechanical excavation of Area D, final grading, cover system installation, and storm water pond construction will be performed in this phase. The buttress drainage system will be installed concurrently with construction of the main buttress.

Other activities will consist of filling restoration areas, constructing the North and South final stormwater ponds and associated spillways, and the roadway embankment culvert. CCR excavated from Area D will be placed in the former dredge processing area and Area E in order to achieve stack final grades. The final cover system installation will be complete on the north side of the stack.

Phase 7

Final restoration of closure by removal areas, final cover system installation, and stormwater pond cleanout will take place in this phase. Final restoration will be performed in Area D and P1. Restoration will consist of topsoil placement and hydroseeding. The stormwater ponds will be cleaned and final hydroseeding will be performed around the perimeter of the ponds and surrounding area. The final cover system will continue to be installed in the dredge processing area and in Area E.

c) Procedures During Closure

i. Dewatering

This section provides a summary of the removal of free water, interstitial water, contact water, and stormwater. The following terminology is used in this section:

- Free water – water contained in the CCR unit above the surface of CCR material
- Interstitial water – water within the pore space of CCR material
- Contact water – stormwater that comes in contact with CCR material

The management of the free water level in the pond will be important for the dredging process and hence these activities will be closely coordinated. Multiple modular floating platforms will be used to pump from the pond to the water treatment facility. As the free water is drawn down, interstitial water will flow into the pond, and can be pumped from the pond. The pumps have been sized to accommodate expected inflows from direct precipitation and run-on, and can pump at a rate of approximately 4,000 gpm. Treated water from the water treatment facility will be discharged through the NPDES discharge point.

To allow for safe excavation and working areas it will be necessary to lower and maintain water levels below the current CCR surface. Interstitial water will be removed using a system of deep wells, well points, and collection trenches. Collected interstitial water will be routed through the water treatment facility before being discharged.

Contact water will be directed to collection points by temporary diversion berms and ditches located within the limits of the Ash Pond. Overflow water from the dredge processing area will be directed back to the main pond.

The main dam creates a perimeter control for contact water and acts as a final collection point during most phases of construction. When the final phases of construction are being performed and the main dam can no longer act as a stormwater pond, additional temporary ponds will be created upstream of the main dam.

Variations in site conditions, construction means and methods, weather conditions, and other factors impact the dewatering sequencing and approach to the project. During the project, specific means and methods will be reviewed and approved by the construction management and oversight team.

ii. Liquids Management

During closure construction, run-on stormwater and run-off contact water will be controlled with best management practices such as channels, diversion berms, and pumps and managed in accordance with the NPDES Construction Stormwater, Industrial Stormwater and Industrial Wastewater Discharge permit(s).

The existing dam will be retained during most of the construction. This will allow for stormwater generated from the adjacent drainage areas and the pond surface to be contained. Contact water will in general be allowed to drain into the main pond.

Non-contact water is expected to be generated in areas that have the final or temporary covers installed. These areas will be isolated and will have some temporary storage capacity (typically by constructing temporary containment berms). The storage areas will be equipped with pumps to convey the non-contact water directly to the NPDES discharge points.

iii. Dredging and CCR Removal Activities

Dredging of CCR will take place within the approximate limits of the existing pond. Dredging will be performed using a suction dredge and auger cutter head, generally making a cut approximately 10 to 30 ft beneath the current water level. Dredged material will be pumped to the ash processing area, which includes two rim ditches each approximately 2,000 feet long. The ash processing area requires approximately 35 acres. Approximately 3.1 million cubic yards or material is expected to be dredged.

The CCR slurry from the dredge is discharged into one end of a rim ditch, and the CCR is allowed to settle out. Overflow water from the rim ditches will be directed back to the main pond. The ash processing area includes space for CCR excavated from the rim ditches to be windrowed and loaded into haul trucks when sufficiently dry.

Mechanical excavation will be undertaken using conventional excavators, loading directly into off-road articulated dump trucks (ADTs). These operations will occur primarily in Areas D, F, the Woodyard, Channel area, and P3. Mechanical excavation will also be used for final excavation and over-excavation in the closure by removal areas. Mechanically excavated ash may need to be placed in windrows for further drying. Once sufficiently dried, the ash will be loaded into ADTs and transported to the final placement area. Temporary access roads and ramps may have to be constructed to allow for access into the closure-by-removal area. The CCR removal verification protocol will be followed to finalize the excavation limits.

The average depth to which CCR removal is required is approximately 37 feet, with a maximum depth of approximately130 ft beneath existing ground surface.

iv. CCR Removal Verification Protocol

The CCR removal verification protocol and the roles and responsibilities of Southern Company, the Contractor, and the certifying engineer, are described in detail in the technical specifications for construction. An outline of the protocol is presented below:

1. Identification and demarcation of the area subject to removal verification.

2. Removal of accumulated CCR such that no CCR remains visible.

3. Visual inspection and documentation of the area by certifying engineer or other CQA personnel.

4. If required, repeat steps 1 through 3 until certifying engineer is satisfied that no CCR remains visible.

5. Complete "Pre 6-Inch Over-Dig Survey" and photographic documentation of applicable removal area.

6. Over-excavation of a minimum of 6 inches across the designated area.

7. If this additional visual inspection shows no visible or other evidence of CCR materials at depth, continue to Step 9. If additional CCR materials are discovered either during the over-dig and or during the additional visual inspection, additional excavation is required under direction of Southern Company.

8. Complete Post 6-Inch Over-Dig Survey and photographic documentation using the same survey points, procedures, and prescribed minimum tolerances as for the Pre 6-Inch Over-Dig Survey. Complete verification of the prescribed minimum 6-inch removal across the removal area by survey and visual comparison of the removal area(s).

9. If required, perform additional excavation and repeat steps 7 through 9 until the certifying engineer is satisfied that no CCR remains visible and that a minimum of 6 inches has been over-excavated below the observed limits of visual CCR.

10. Visually inspect materials obtained by hand-augering (or similar technique) at an interval of one sample per acre, or part thereof, to a depth of 12 inches beneath the bottom of the over-dig excavation.

For areas where rock, existing concrete designated to remain, or other similar hard surfaces are present in the excavation area (including the over-excavation zone) the surface will be cleaned to a visually-clean condition through hydraulic or mechanical means such as pressure washing. The soils surrounding the hard areas will be removed to the 6-inch over-excavation criterion.

Documentation of the removal verification procedure will include pre and post over-dig photographs documenting the removal verification area, daily field reports from the certifying engineer, and survey data indicating removal verification areas and confirmation that the over-excavation criterion was achieved. This documentation will be compiled into a CCR Removal Verification Report at the completion of the project.

The certifying engineer and land surveyor must be professionally licensed in their respective disciplines in the State of the Alabama.

v. CCR Placement

The final consolidation area encompasses approximately 191 acres. CCR will be tipped at the final placement area and spread using bulldozers. It is anticipated that CCR will generally be dried to close to optimum moisture content prior to placement in its final deposition area, and that pre-hauling conditioning may require double or triple handling of certain portions of the excavated CCR. CCR will be placed within the allowable moisture content limits and once spread, will be compacted to meet the technical specifications.

Dewatering and bridge lifts will be used, as needed, to create a firm and stable base to ensure proper compaction of CCR. The groundwater elevation under the majority of the consolidation area is approximately 10 ft below the pre-existing ground surface. Groundwater levels will be continuously monitored as the water level in the pond is drawn down, which should result in a draw down in the water levels in the consolidation area. Deep and shallow dewatering will also be performed, as needed.

Stormwater will be managed, as described in other sections, to protect CCR placement areas and reduce erosion and rework. All final closure slopes and conditions are designed to meet the stability requirements for each loading case outlined in section § 257.73(e) and r. 335-13-15-.04(4)(e).

vi. Fugitive Dust Control Plan

A fugitive dust control plan identifies and describes the CCR fugitive dust control measures that will be implemented during closure to minimize CCR from becoming airborne at the facility, including CCR fugitive dust originating from ash ponds, roads, and material handling activities. 40 CFR § 257.53 and ADEM Admin. Code r.335-13-15-.02(11) defines “fugitive dust” as “solid airborne particulate matter that contains or is derived from CCR, emitted from any source other that a stack or chimney”.

Fugitive dust mitigation shall be implemented on-site though the use of water trucks and/or large sprinklers. Water trucks will be equipped with front, rear and side spraying nozzles to maximize the versatility of dust mitigation.

Water trucks routinely operate anytime the weather conditions or work activities promote dusting concerns onsite. Water will be sprayed on active construction areas including, but not limited to, the Ash Pond soil stockpile/borrow source, paved haul roads, and gravel haul roads.

In order to control dust, work areas that achieve final grades or intermediate cover grades will be seeded, stoned, or use of another approved alternative will be used to reduce dusting.

In the event that dusting occurs over holidays or weekends, employees will be on call to perform dust mitigation as needed.

Southern Company and construction personnel will assess the effectiveness of the control measures by performing visual observations of the ash pond and surrounding areas and implementing appropriate corrective actions for fugitive dust, as necessary. Complaints received from citizens regarding CCR fugitive dust will be documented and appropriate steps will be taken, including any corrective action, if needed.

vii. Stormwater Management

Managing water is a critical aspect of this closure project. Stormwater management during closure will be achieved by the management and operation of temporary berms, ditches, ponds, and pumps to convey contact water to the water treatment facility. Once final cover grades have been achieved, a cover system will be installed to limit the infiltration of surface run-off into the CCR unit, and stormwater will be managed in a series of channels and spillways.

Post-closure, stormwater is managed through a series of berms and channels on the closure cap. Trapezoidal channels on benches direct stormwater to downslope channels, lined with protective Hydroturf. In turn, stormwater is conveyed off the cap and into either the perimeter stormwater channel or to restoration areas, and finally into the stormwater ponds.

The Hydroturf layer will be used for cap stormwater conveyance in all areas of concentrated flow, such as downslope channels. Hydroturf consists of an impermeable geomembrane and engineered turf which is infilled with Hydrobinder in order to provide armoring against high flow velocities and shear stresses. On areas of the cap in which sheet flow will be encountered (embankment surface between benches) ClosureTurf will be installed, which differs in that a sand infill is used rather than the cement infill used in Hydroturf sections.

Stormwater runoff from the restored Northern Finger will be directed into the perimeter channel upstream of the rock-cut reach and ultimately in to the main stormwater pond. Stormwater runoff from the restored North area will be directed into the main stormwater pond. Stormwater from the restored South area will be directed to the Southern stormwater pond.

The perimeter stormwater drainage channel will surround the edges of the lined capping system collecting runoff from both adjacent on-cap and off-cap areas. The perimeter channel north of the high point will convey water from the high point at the east side of the CCR cap around to the main stormwater pond on the west side of the site. The perimeter channel south of the high point will convey storm water from the high point to the Southern stormwater pond.

The north perimeter channel will be trapezoidal in section with a longitudinal slope varying from 0.75% to 6%. The south perimeter channel will have a longitudinal slope of up to 10%. Hydroturf will be used to line the side slopes of the perimeter channel, with a riprap layer placed along the channel bottom.

Transitional areas and energy disipation devises such as large-size riprap bolder aprons, level spreaders or concrete structures will be needed at locations along the perimeter channel at downslope inflow points, sharp bends, transitions between high capacity (steep slope) reaches and lower capacity (shallower slope) reaches, and at discharge points to natural or restored areas. The location and nature of these transitions are shown in the drawings.

In places the perimeter drainage channel will be directed through culverts where access roads cross the drainage channel. The downstream end of the perimeter channel will be a rock-cut reach that will allow runoff from the Northern Finger stormwater basin and the northern reach of the perimeter channel to join and drain towards the main stormwater pond to the south. The soil overburden will need to be removed and graded to a 3H:1V slope to expose the underlying rock. Once the rock is exposed, a second cut through rock up to about 70 feet deep will establish the rock-cut reach of the perimeter channel. Drilling and blasting, and ripping will be required to construct this channel reach.

The stormwater ponds and spillways are designed to safely pass the 1,000-year, 24-hour storm event. The proposed auxiliary spillways consist of earthen grass-lined overflow spillway channels.

viii. Equipment Decontamination

All equipment (vehicles, pumps, pipelines, etc.) departing site that have been in contact with CCR will be decontaminated via washing to remove all CCR materials, and/or materials will be disposed of offsite in a landfill certified to accept applicable CCR wastes. The overspray and all contact water from decontamination operations will be stored on site and treated prior to discharge. To the extent possible, all wash down activities will take place within the footprint of the ash pond.

ix. Site Security

The site has a perimeter fence on public-facing boundaries with two exterior controlled access points at Gate 5 and Gate 7. Both gates are equipped with security cameras and access through these gates is by approved persons in possession of a valid keycard only. Security personnel will be present at Gate 7 during work hours, and will also perform routine perimeter inspections. The security plan for the site will be overseen and managed by the permanent Plant Miller security team.

x. Groundwater Monitoring

A groundwater monitoring plan was submitted with the original Plant Miller 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. Soil Buttress

The Ash Pond closure design incorporates a soil buttress to maintain the stability of the closed CCR unit. The containment buttress will provide long term stability to the ash stack and will be constructed of a combination of engineered earth and rock fills. The containment buttress will be designed to meet the stability requirements for each loading case outlined in section § 257.73(e) and r. 335-13-15-.04(4)(e).

The main soil buttress will be constructed with the earth fill obtained from excavating the main dam. The buttress will be constructed according to the structural fill specifications, so the quality and strength of the soil fill can be verified. The main soil buttress extends from the natural ground surface exposed at the base of the excavation up to an elevation of 420 ft.

The buttress also incorporates a drainage system, designed to convey remaining interstitial water to a collection sump. The drainage system includes approximately 8,000 linear feet of finger and toe drains, constructed with a stone filter layer and internal perforated pipes. Flow from the toe drain is directed to a rectangular precast concrete sump located within the soil buttress. The sump will be approximately 35 feet deep and will be progressively constructed in sections as the buttress is built up. Electric pumps located in the base of the sump will pump flow to a water treatment system. Backup power for the pumps will be provided by diesel generators with an automatic transfer switch.

Soil fill will be placed against the highwall in the Old Strip Mine Area to create a 12-ft wide wedge of soil between the highwall (natural ground) and compacted CCR. CCR in this area will thus be maintained within the existing limits of the CCR limit. The geomembrane cover layer will terminate against the highwall in an anchor trench of compacted backfill. It will be protected from stormwater infiltration by sloping the cover and providing protection with geocomposite and riprap.

Reducing infiltration of stormwater into the placed CCR through the gravel access roads will also be accomplished through underdrainage installed at the base of the structural fill prism supporting the roadway.

ii. Cover

Closure of the Plant Miller Ash Pond shall be accomplished by the installation of a final cover system designed to minimize infiltration and erosion. An engineered turf product was selected for the final cover system and will be placed directly on top of the placed CCR. The cover system consists of a three-component system which comprises a structured geomembrane, an engineered turf, and engineered sand or cementitious infill. The geomembrane in the system provides an impermeable barrier and can either be a 40-mil or 50-mil geomembrane. A textured geomembrane is used for the flatter top deck, while a geomembrane with and integrated drainage layer has been specified for use on slopes. The sand infill protects the geotextile from UV degradation and provides ballast for the system.

iii. Achievement of Closure Performance Standards

In accordance with § 257.102(d)(1) and r. 335-13-15-.07(3)(d)1., 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 achieved 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.

The final cover grades were designed such that side slopes are either 4H:1V or 6H:1V. The top deck of the cover is graded at 5% to promote drainage. Benches are installed at 25-ft vertical spacing, with trapezoidal channels on the benches. A variance is being requested to allow for berms or terraces on a 25-ft vertical spacing rather than 20-ft as required by r. 335-13-15-07(3).

An Assessment of Corrective Measures (ACM) for the Plant Miller 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). This closure approach 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 and source control measures 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.

e) Final Cover System

The final cover system for the Ash Pond closure is designed in accordance with § 257.102(d)(3)(i) and r. 335-13-15-.07(3)(d)3.(i) to minimize maintenance after closure of the CCR unit. The final cover system is designed to prevent the future impoundment of water and includes measures to prevent infiltration, sloughing, minimize erosion from wind and water, settling, and subsidence. The largest area requiring a final cover is approximately 191 acres. The engineered final cover system consists of the following minimum components, listed from top to bottom:

- Specified final cover infill as outlined in the final closure plan design (see the Design Drawings)
  - 1/2” minimum sand infill or
  - 3/4” minimum HydroBinder® infill OR
  - Riprap overlying a geocomposite separation and protection layer
- Engineered Synthetic Turf (ClosureTurf)
- A textured 40 mil (minimum) geomembrane liner

5.0 MAXIMUM INVENTORY OF CCR– § 257.102(B)(1)(IV) AND R. 335-13-15-.07(3)(B)1.(IV)

The final closed configuration of the Ash Pond is designed to contain approximately 19.5 million cubic yards of CCR material. Volume estimates for the CCR within the Ash Pond were calculated by comparing topographic and bathymetric survey data of existing conditions (top of in-place CCR) with an estimate of the bottom of CCR surface. The bottom of CCR surface was estimated using USGS 1971 Sylvan Springs topographic survey information, original design drawings, and geotechnical investigation data from both recent and historical field investigations.

6.0 LARGEST AREA REQUIRING FINAL COVER– § 257.102(B)(1)(V) AND R. 335-13-15-.07(3)(B)1.(V)

The closure configuration requiring final cover is estimated to total approximately 191 acres (r.335-13-15-.07(3)(b)1.(v)).

7.0 SCHEDULE FOR COMPLETING CLOSURE ACTIVITIES– § 257.102(B)(1)(VI) AND R. 335-13-15-.07(3)(B)1.(VI)

A detailed construction schedule for the closure has been developed by construction managers and schedulers experienced with ash handling and heavy civil construction. The schedule is based on estimates of quantities, productivity rates, manpower, and equipment fleet size. The construction schedule is below. Key estimated construction milestone dates are summarized below.

Construction Milestone	**Expected Date**
Start of Construction	August 2019
Demolition Work	August 2019
Mechanical CCR Excavation	August 2019 – June 2026
Dewatering	February 2020 – July 2025
Final Cover Installation	March 2022 – October 2026
Soil Fill and Buttress Construction	August 2022 – May 2026
Buttress Drainage	August 2024 – December 2024
Restoration Area Grading	May 2022 – March 2027
End of Construction	May 2027

8.0 CERTIFICATION OF CLOSURE

Within 30 days of completion of the Plant Miller Ash Pond closure construction, a professional engineer registered in Alabama will prepare, and APC will submit, a Closure Construction Certification Report, which will include a Removal Certification Report, documenting the completion of closure activities as indicated in r. 335-13-15-.07(3)(f)3. APC, as required by ADEM, will submit confirmation that a notation on the property deed has been recorded in accordance with § 257.102(i) and r. 335-13-15-.07(3)(i).

9.0 DIRECTIONAL INFORMATIONAL SIGNS

Signs will be posted at the entrance gate to the facility notifying users of the closed CCR pond. Contact information will be provided on the sign.

10.0 VEGETATIVE PLAN

The Ash Pond has existing trees and smaller vegetation that require removal. The trees, stumps, and vegetation debris will be excavated, stockpiled and burned onsite using an Air Curtain Firebox, in accordance with APC air compliance guidelines, Jefferson County Department of Health, Alabama Forestry Department, and the Alabama Department of Environmental Management requirements.

A long reach excavator will travel the perimeter of the Ash Pond and will remove vegetation in areas easily accessible. In order to provide adequate stability for further vegetation removal, a bridge lift will be constructed by placing material at an adequate lift depth out into the ash pond vegetated area.

11.0 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.

12.0 SEDIMENT REMOVAL

On a periodic basis, accumulated sediment will be removed when necessary from drop inlets, drainage pipes, diversion ditches and other drainage structures.

13.0 EROSION AND SEDIMENT CONTROL

A Construction Best Management Practices Plan (CBMPP) will be developed and will comply with the *Alabama Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Areas*. Typical erosion and sedimentation techiques will be applied, which may include construction exit pads, silt fencing, check dams, filter rings, mulching, and temporary grassing. Drawings showing the perimeter controls for three broad stages of construction are included as attachments. The three phases are (1) Dredging and Initial Perimeter Controls, (2) Final Grading, and (3) Final Stabilization.

Most construction stormwater willl be ultimately directed to the main stormwater pond for sediment removal and pumping to the water treatment plant. Construction stormwater runoff not directed to the main stormwater pond will be managed by a series of erosion and sedimentation control devices pursuant to the sensitivity of the site and discharge location.

Temporary cover will be an important means for managing the closure prior to installation of the final cover system. Temporary cover can limit contact water (and consequently water treatment demands), reduce the need for dust control measures, and reduce erosion. Different methods and products are available, ranging from engineered turf products to a traditional soil cover.

Final site stablization will be provided through previously described closure cover, permanent grassing and native vegetation, channel linings, and sediment removal at the main stormwater pond.

14.0 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 Miller's ash pond is approximately $415 million. The estimate is considered to be at feasibility level with a moderate to 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 $27 million. Fully detailed long-term maintenance and corrective action strategies have not yet been determined which will 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;
- Dredging operations;
- 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.

15.0 CLOSURE SCHEDULE

The closure of Plant Miller'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 moisture conditioning, placement, compaction, and grading of approximately 9,500,000 cubic yards of CCR and underlying soil. Key estimated milestone dates for the closure of the Ash Pond are summarized below.

Milestone	**Expected Date**
CCR placement ceased	April 15, 2019
Closure construction starts	August 2019
Begin dewatering activities	Q2 2020
Final cover construction completes	Q4 2026

Closure constructions ends	Q2 2027

16.0 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 Miller 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 Miller 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.

17.0 WRITTEN POST-CLOSURE PLAN

40 CFR § 257.104 and ADEM Administrative Code r. 335-13-15-.07(5) requires 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 Miller Ash Pond is currently expected to be closed in place under the 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.

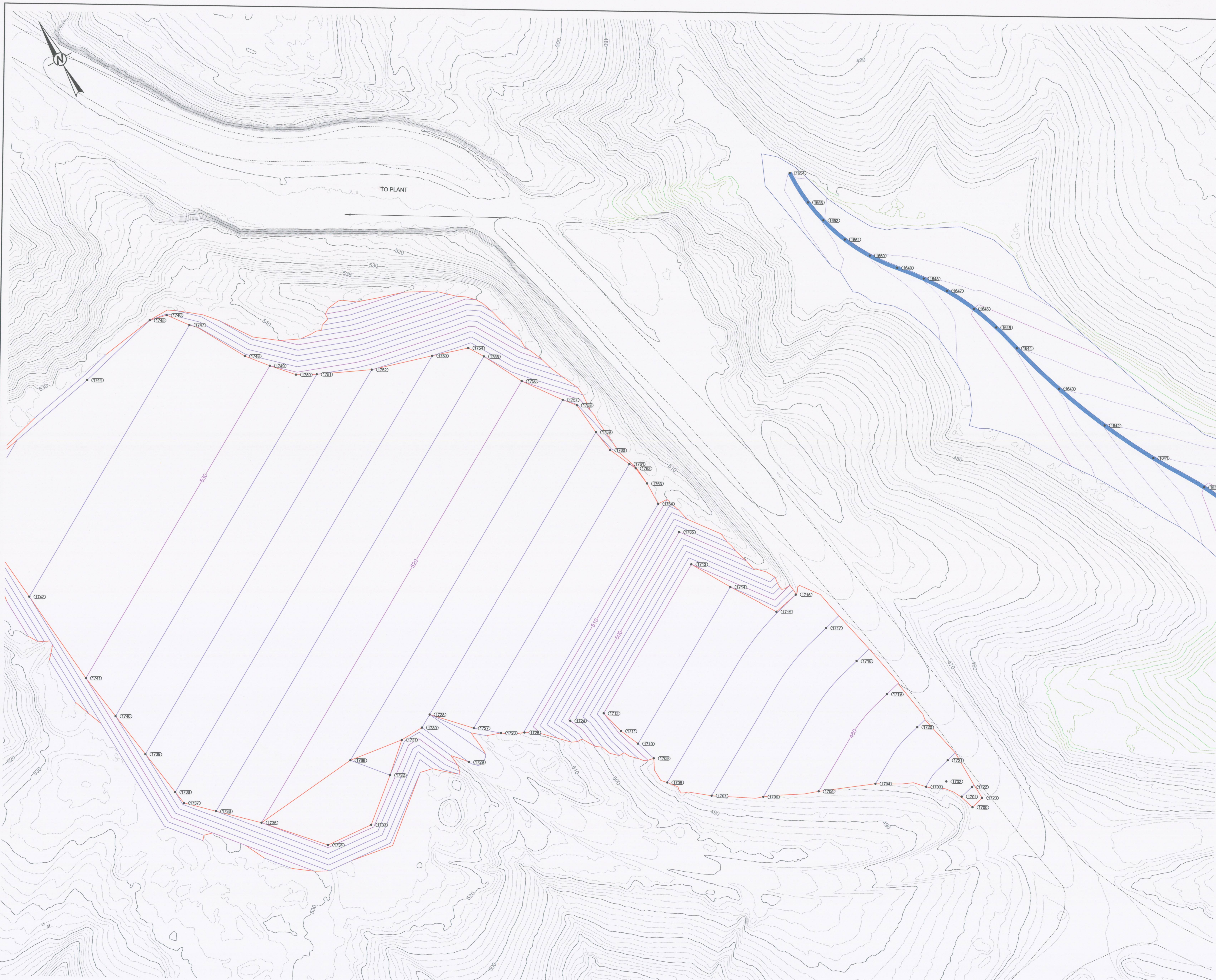
Plant Miller
Environmental Asset Manager
4250 Porter Road, Quinton, AL 35130
1-205-488-2999
G2CCRPostMIL@southernco.com

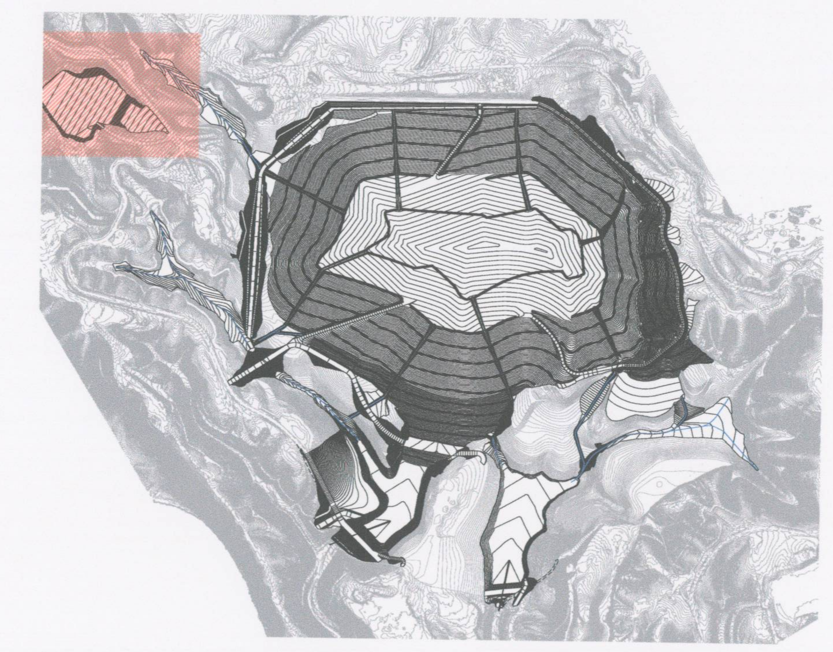
At the present time, there is no planned use of the facility after closure. If current plans change, they will be noted in an amendment to this post-closure care plan. Any future use of the property after closure will not disturb the integrity of the final cover, liner or any other component of the containment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

Table 1: Miller 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
Begin Dredging	August 2019
Begin CCR Consolidation and Stabilization	August 2019
Initiate Free Water Dewatering Activities	February 2020
Begin Final Cover Cap Construction Activities	March 2022
Completion of Dredging	July 2026
End Final Cap Construction Activities	November 2026
Finalize Restoration Areas/Project Completion	May 2027





LEGEND

420	EXISTING CONTOURS
380	PROPOSED GRADING CONTOURS (SEE NOTE 2)
380	CLOSURE BY REMOVAL CONTOURS
	CHANNEL IN RESTORATION AREA

NOTES

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REFERENCES

1. EXISTING TOPOGRAPHY PROVIDED BY SOUTHERN COMPANY SERVICES, FEBRUARY 2018.

2. BOTTOM OF ASH TOPOGRAPHY TAKEN FROM USGS, SYLVAN SPRINGS, 1971 QUADRANGLE. TOPOGRAPHY WAS INTERPRETED BETWEEN 20 FOOT CONTOURS AND ADJUSTED BASED ON GEOTECHNICAL INVESTIGATION DATA BY GOLDER ASSOCIATES INC.

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1" = 40' FEET

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN

Feb 28, 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
	2019/02/28	100% DESIGN SUBMITTAL	CCP	CCP	ARF	WRS

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Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
CONTROL PLAN
SHEET OF

CONSULTANT
GOLDER

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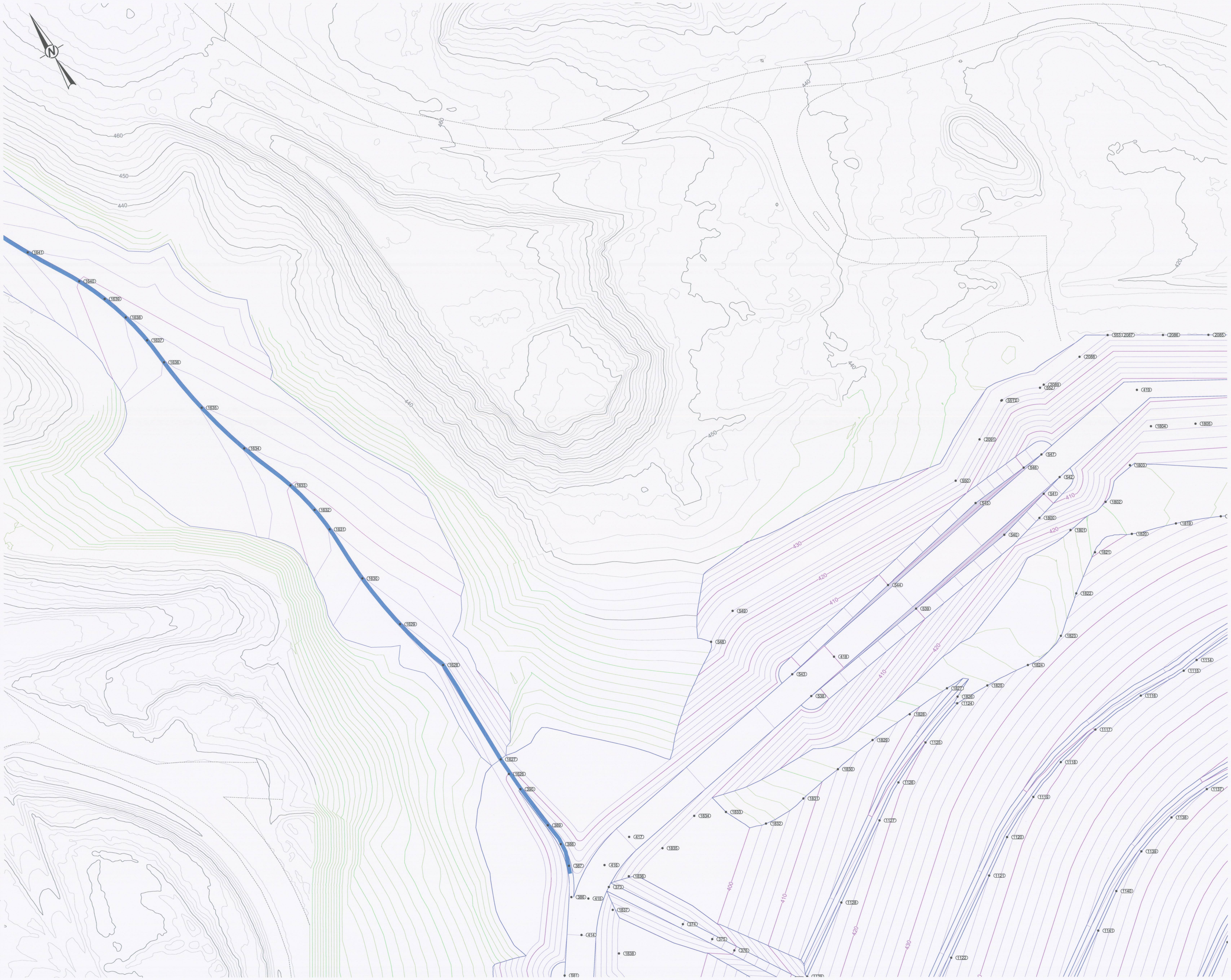

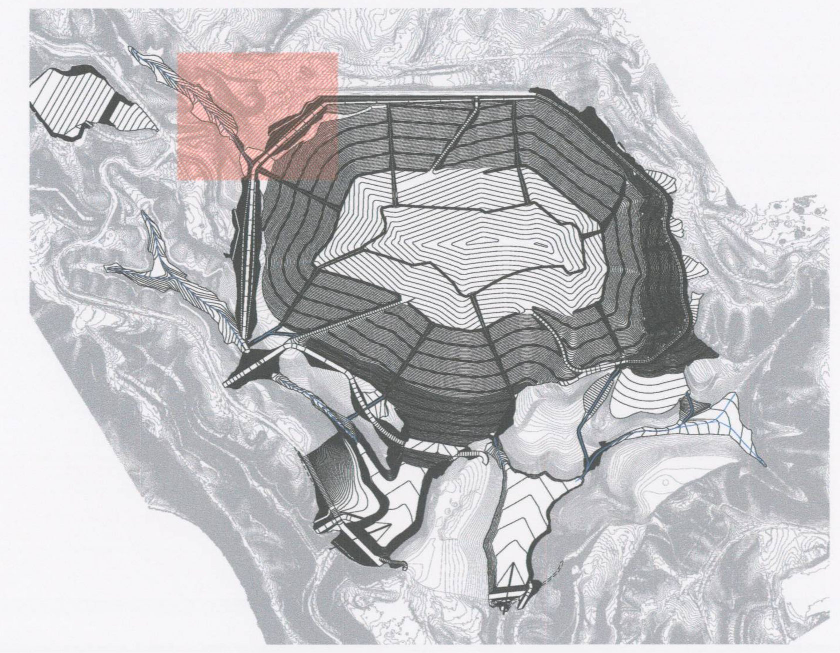

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Feb 28 2019

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ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20296

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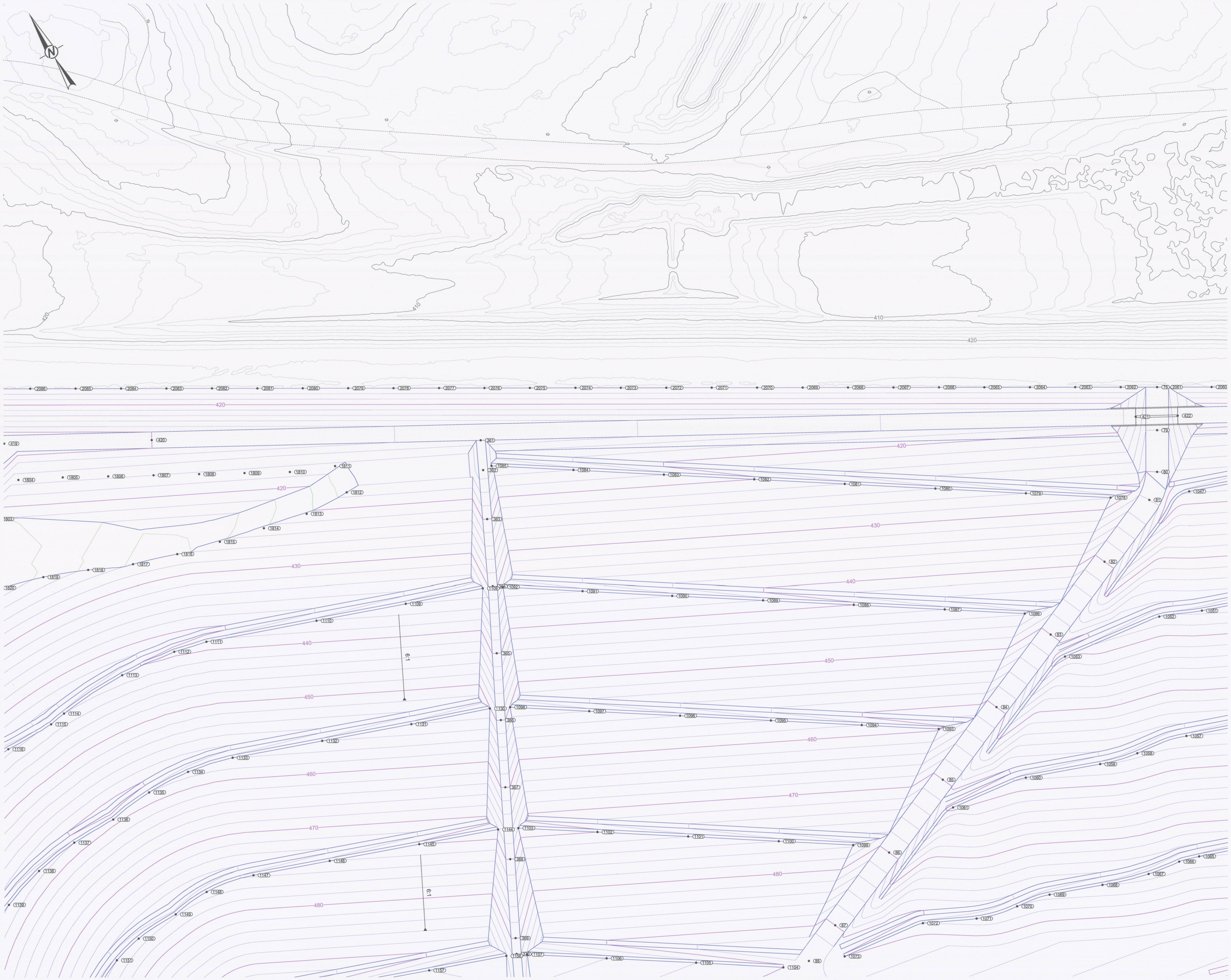

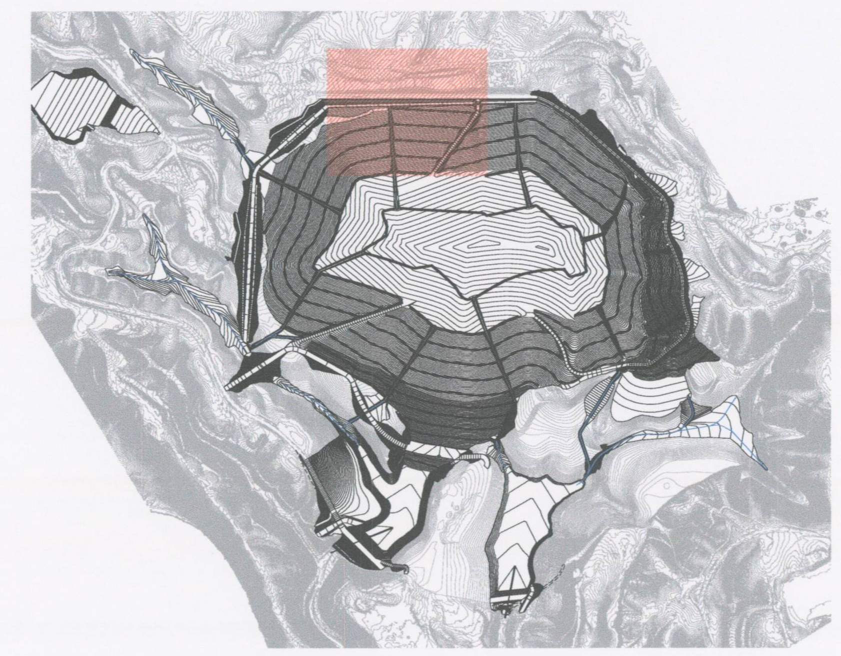

KEY MAP

LEGEND

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- 380 PROPOSED GRADING CONTOURS (SEE NOTE 2)
- 380 CLOSURE BY REMOVAL CONTOURS
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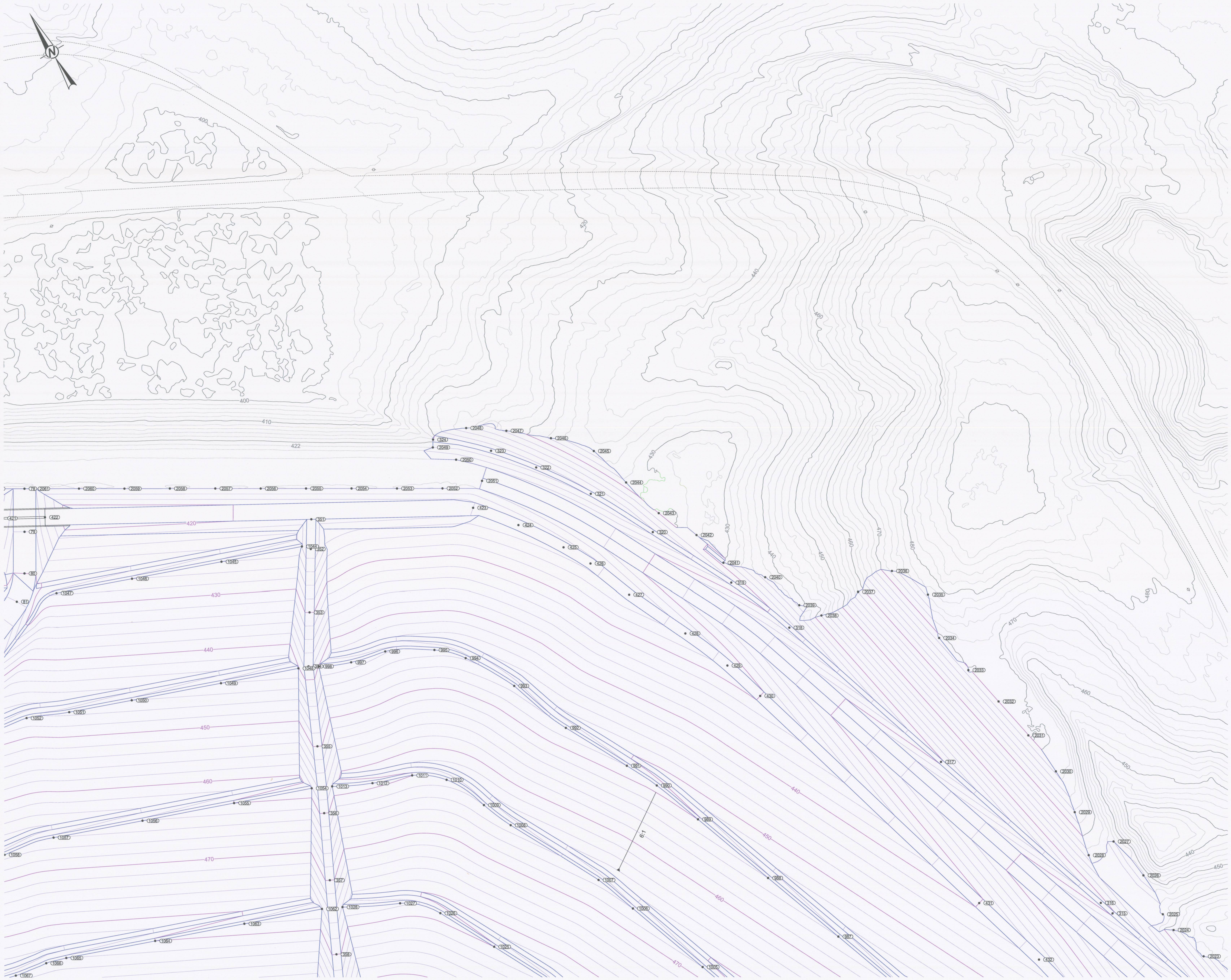

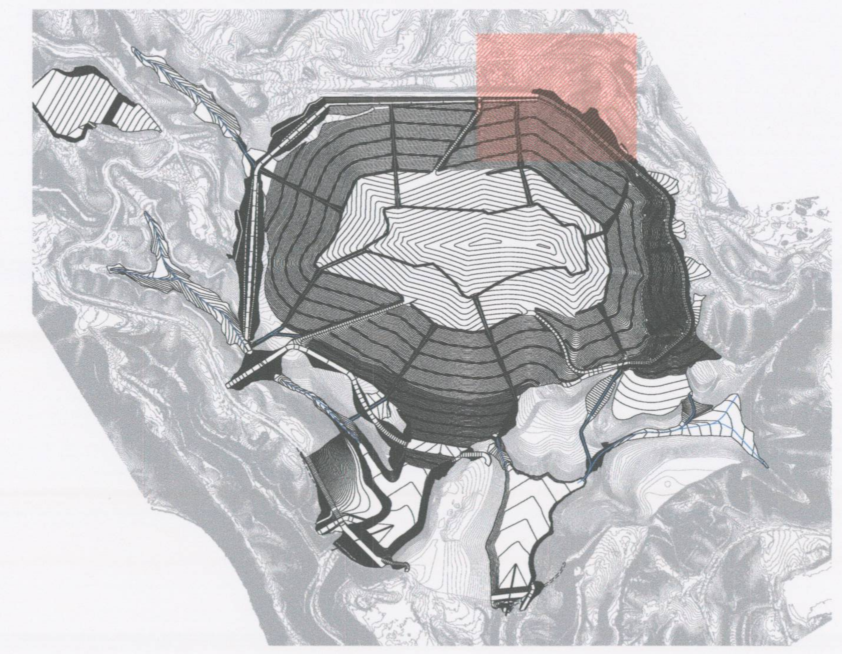

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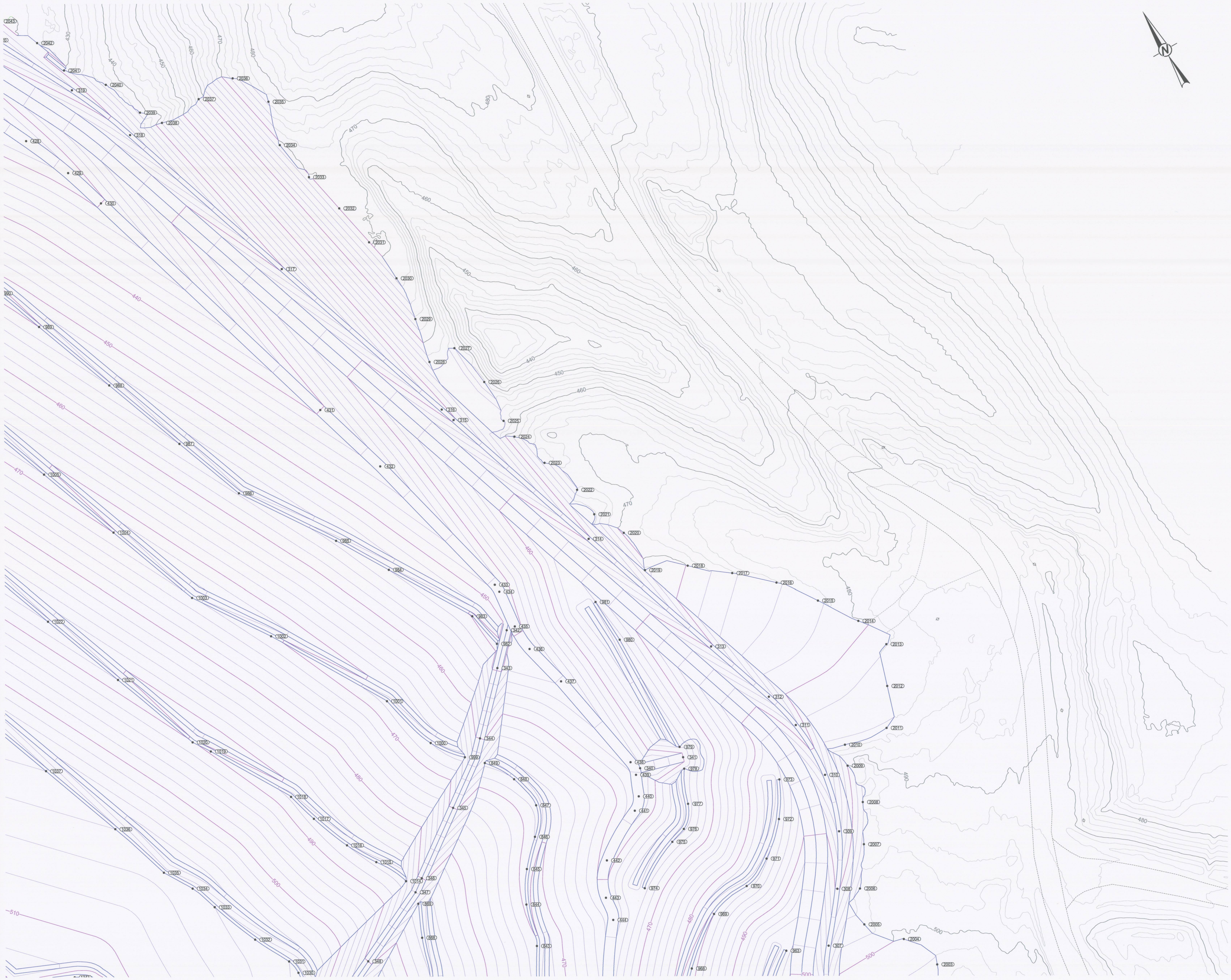

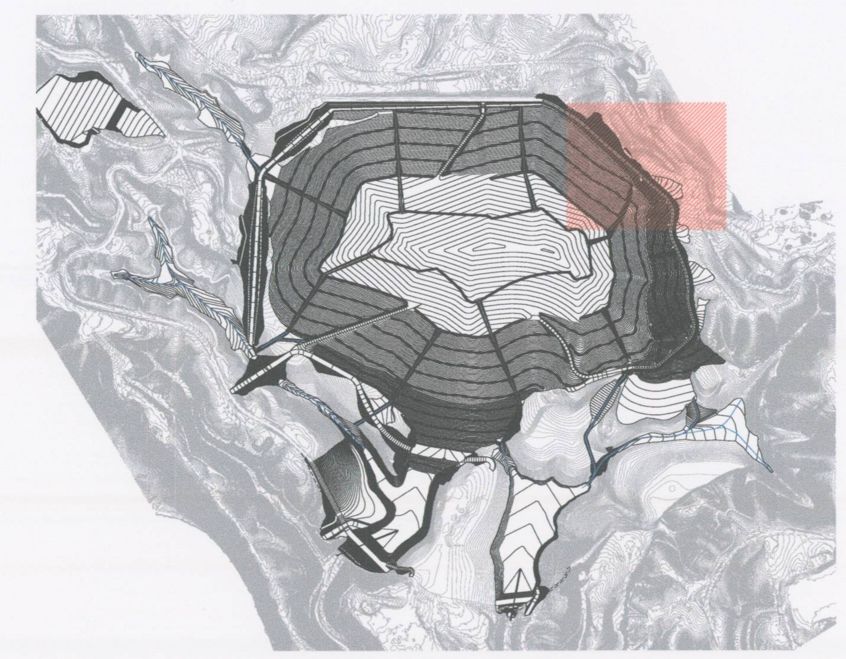

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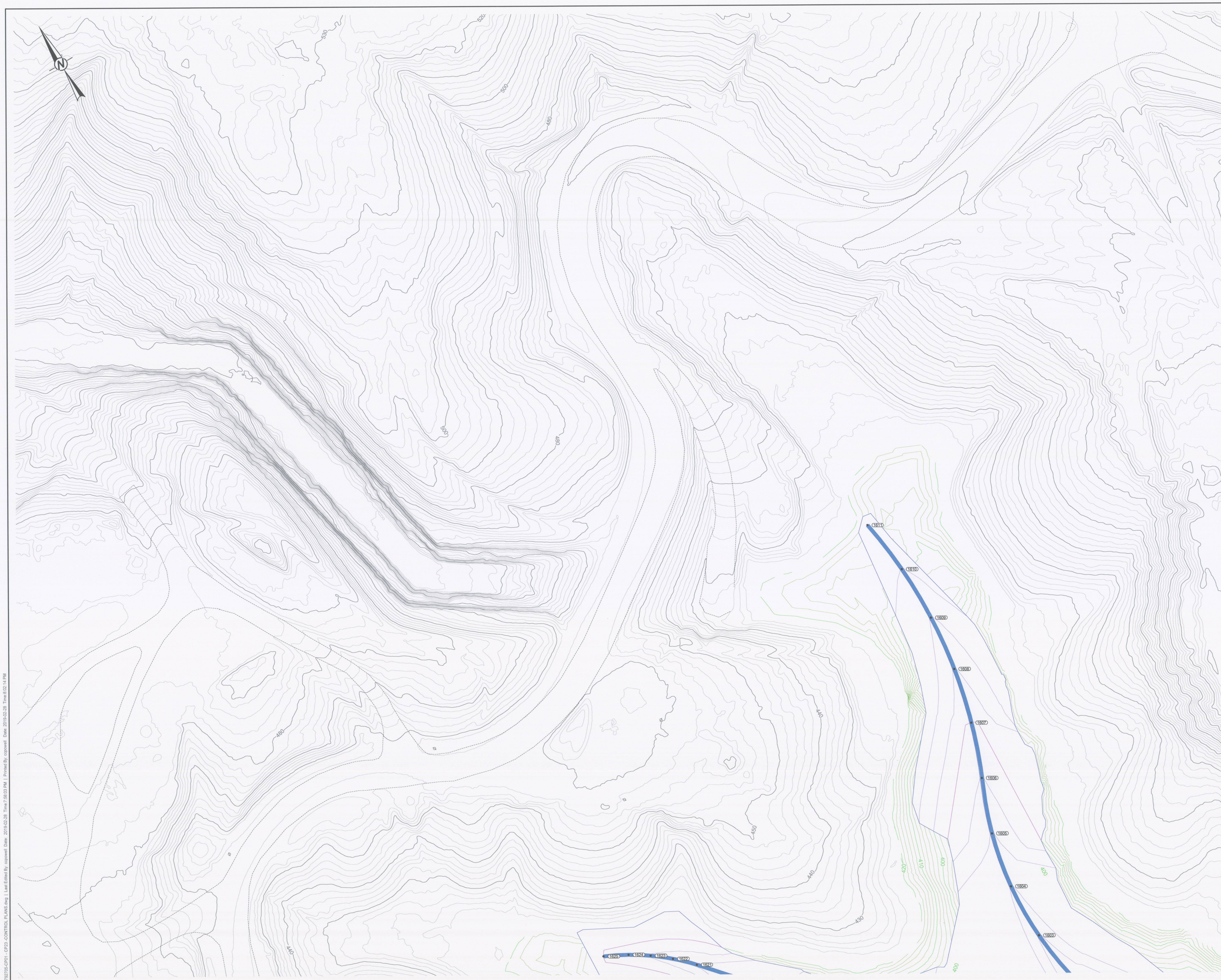

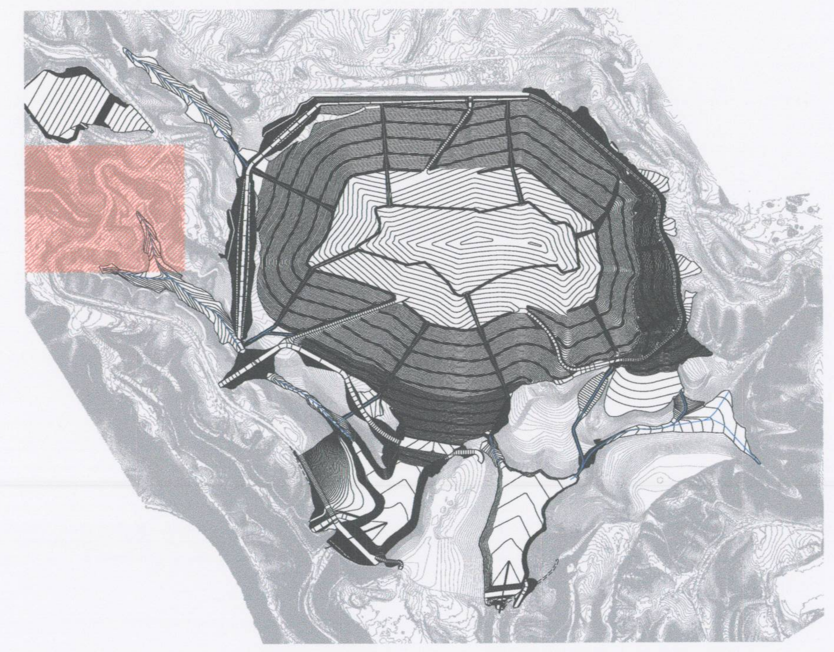

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PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING CP-06

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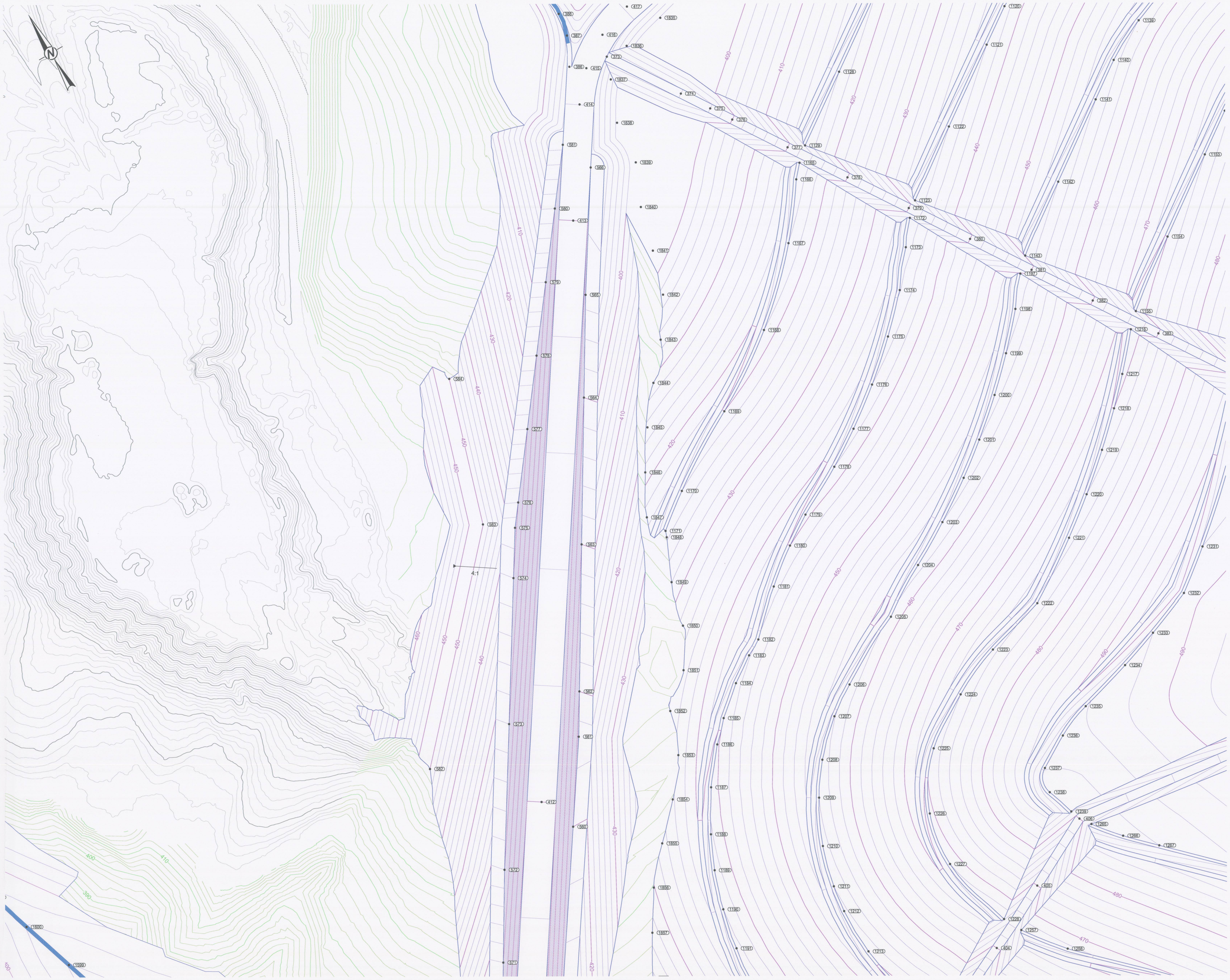
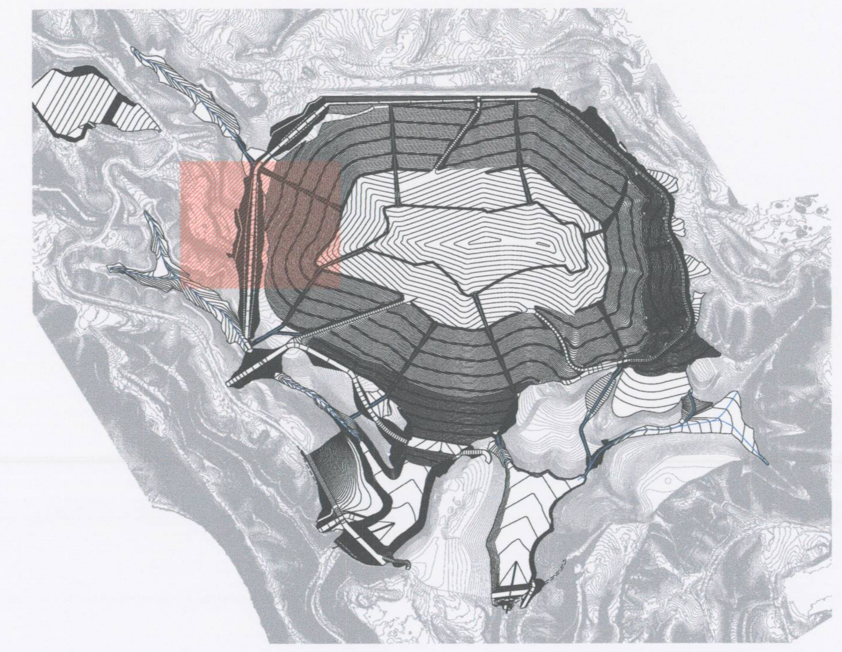




LEGEND

420	EXISTING CONTOURS
380	PROPOSED GRADING CONTOURS (SEE NOTE 2)
380	CLOSURE BY REMOVAL CONTOURS
	CHANNEL IN RESTORATION AREA

NOTES

1. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL NATIONAL GEODETIC VERTCAL DATUM (NGVD) 1988. COORDINATES CORRESPOND TO ALABAMA WEST COORDINATE SYSTEM, NORTH AMERICAN DATUM (NAD) 1983.

2. PROPOSED GRADING CONTOURS SHOW FINAL COVER GRADES FOR CAPPED AREA, STREAM RESTORATION GRADING IN CLOSURE BY REMOVAL AREAS, AND PROPOSED GRADING OF NATURAL GROUND AFTER DAM REMOVAL.

REFERENCES

1. EXISTING TOPOGRAPHY PROVIDED BY SOUTHERN COMPANY SERVICES, FEBRUARY 2018.

2. BOTTOM OF ASH TOPOGRAPHY TAKEN FROM USGS, SYLVAN SPRINGS, 1971 QUADRANGLE. TOPOGRAPHY WAS INTERPRETED BETWEEN 20 FOOT CONTOURS AND ADJUSTED BASED ON GEOTECHNICAL INVESTIGATION DATA BY GOLDER ASSOCIATES INC.

0 40 80
1" = 40' FEET

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
△	2019/02/28	100% DESIGN SUBMITTAL	CCP	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES

Southern Company | Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
CONTROL PLAN
SHEET 7 OF

ALABAMA REGISTERED No. 20290 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN

Feb 28 2019

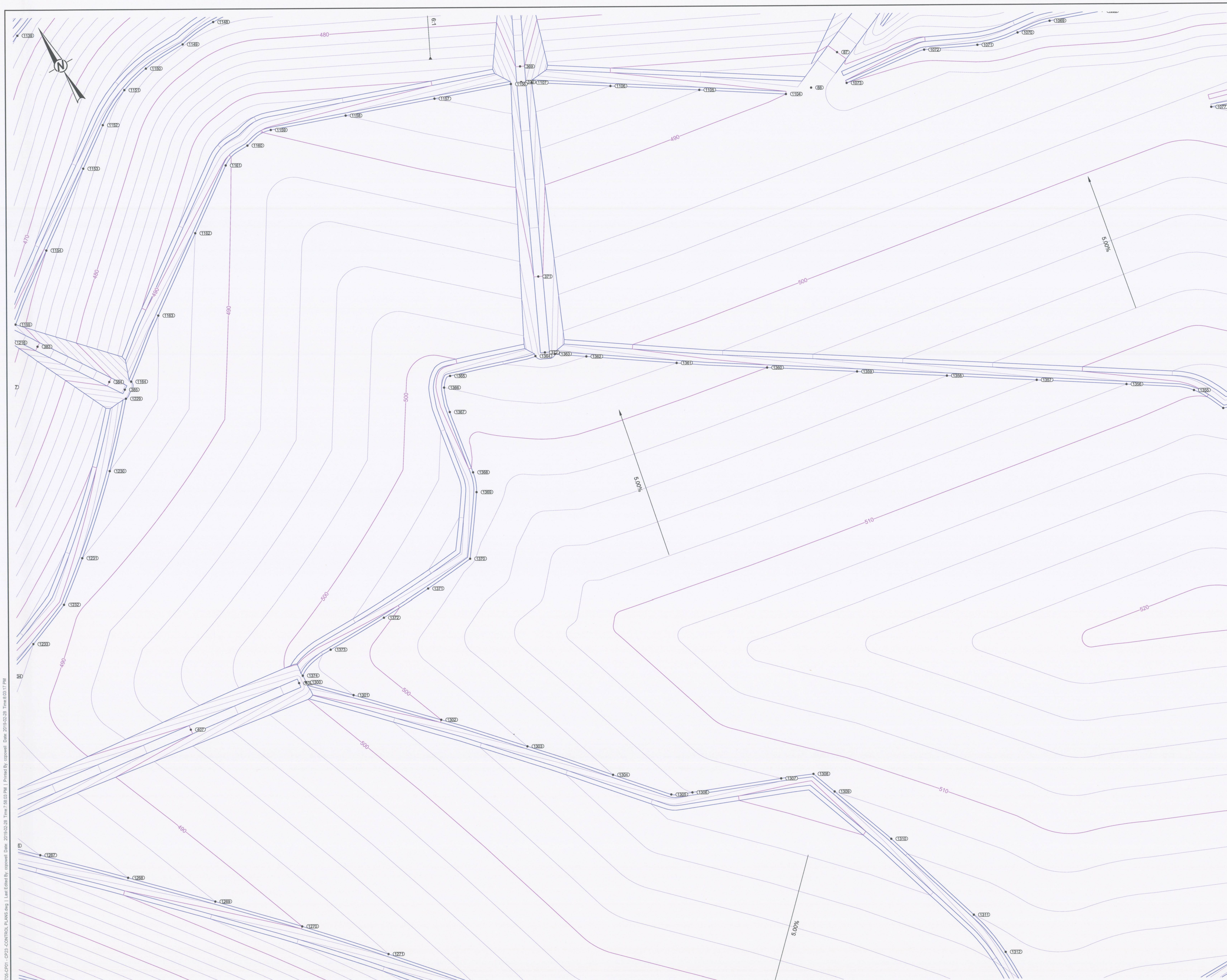
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20290

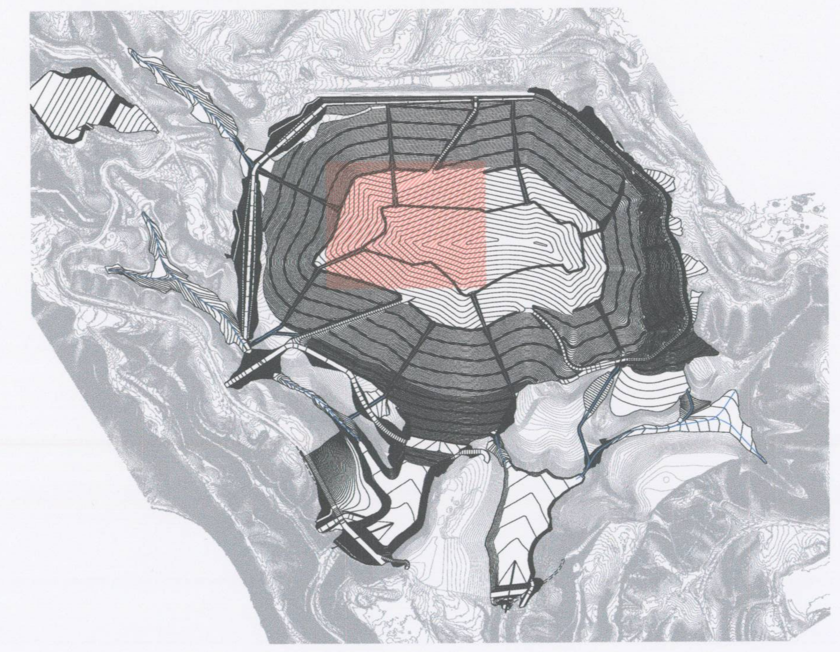
CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	CCP
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	CP-07

0 1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ARCH D





LEGEND

420	EXISTING CONTOURS
380	PROPOSED GRADING CONTOURS (SEE NOTE 2)
380	CLOSURE BY REMOVAL CONTOURS
	CHANNEL IN RESTORATION AREA

NOTES

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0 40 80
1" = 40' FEET

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN

Feb 28, 2019

WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
A	2019/02/28	100% DESIGN SUBMITTAL	CCP	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES

Southern Company
Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
CONTROL □LAN
SHEET □OF □□

CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	CCP
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	CP-08

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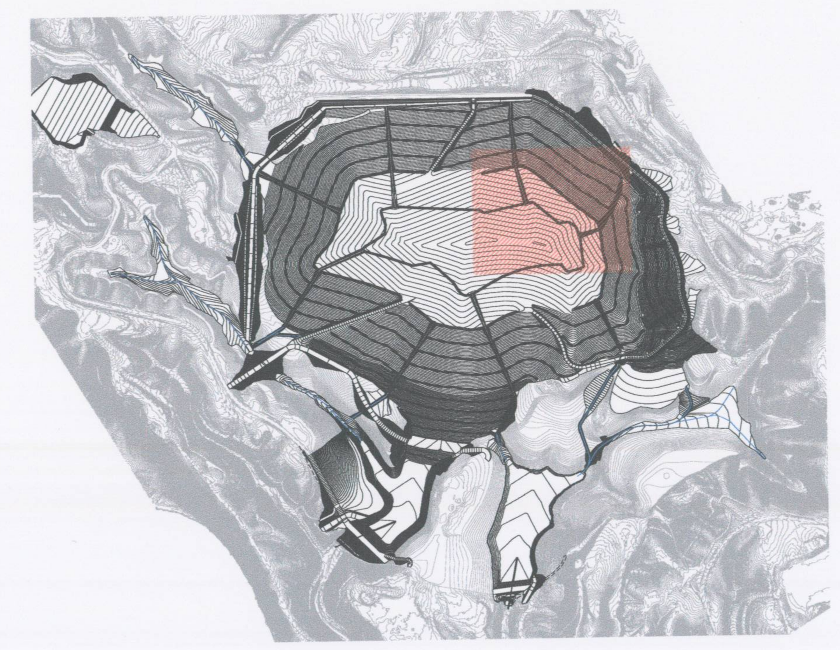

KEY MAP

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
A	2019/02/28	100% DESIGN SUBMITTAL	CCP	CCP	ARF	WRS

LEGEND

- 420 EXISTING CONTOURS
- 380 PROPOSED GRADING CONTOURS (SEE NOTE 2)
- 380 CLOSURE BY REMOVAL CONTOURS
- CHANNEL IN RESTORATION AREA

NOTES

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0 40 80
1" = 40' FEET

CLIENT
SOUTHERN COMPANY SERVICES

Southern Company | Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
CONTROL PLAN
SHEET OF

ALABAMA REGISTERED PROFESSIONAL ENGINEER No. 20266 WILLIAM R SULLIVAN

Feb 28 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

CONSULTANT

GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	CCP
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO.	SCS REF	REV	DRAWING
1792705	MIL17010	0	CP-09

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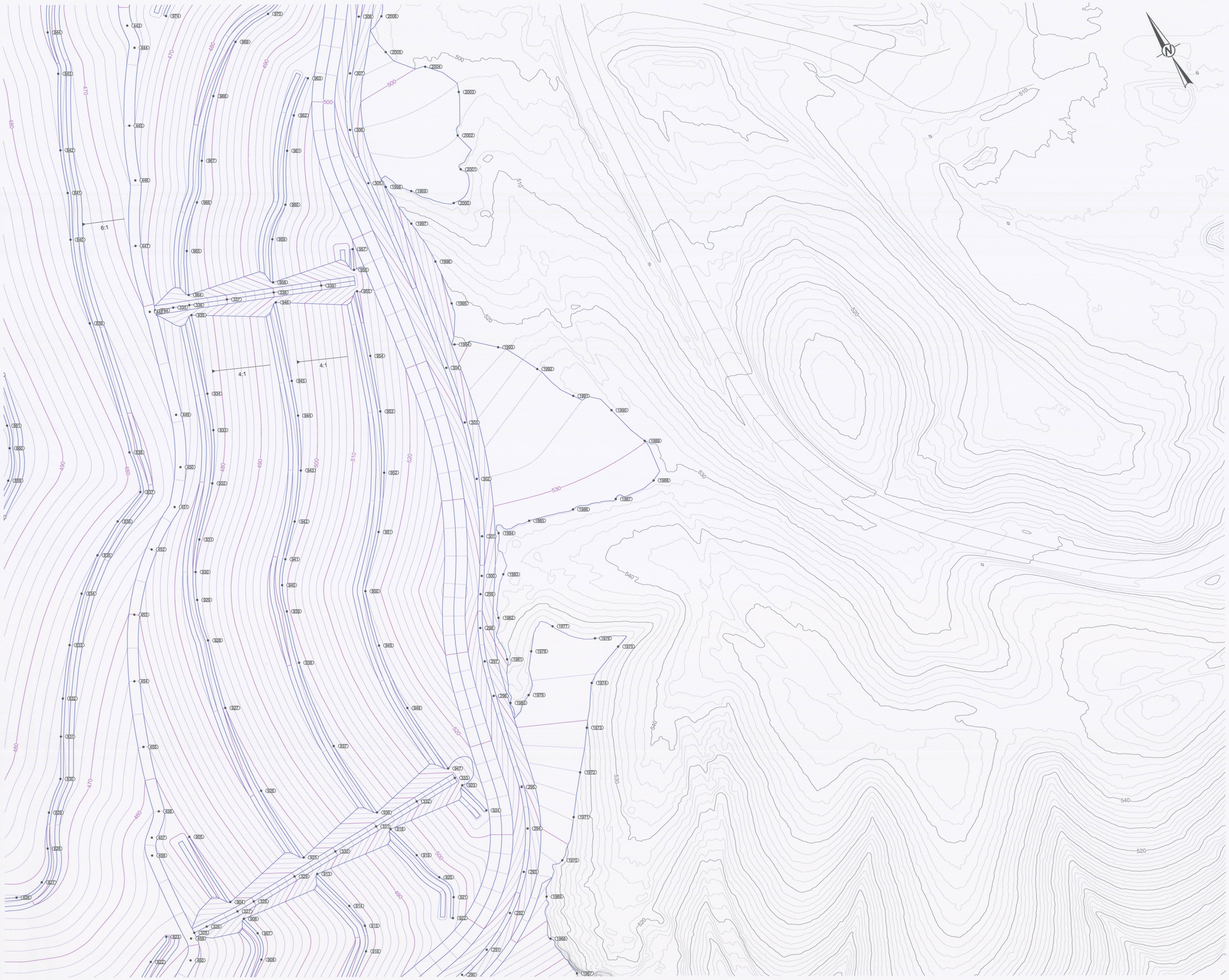

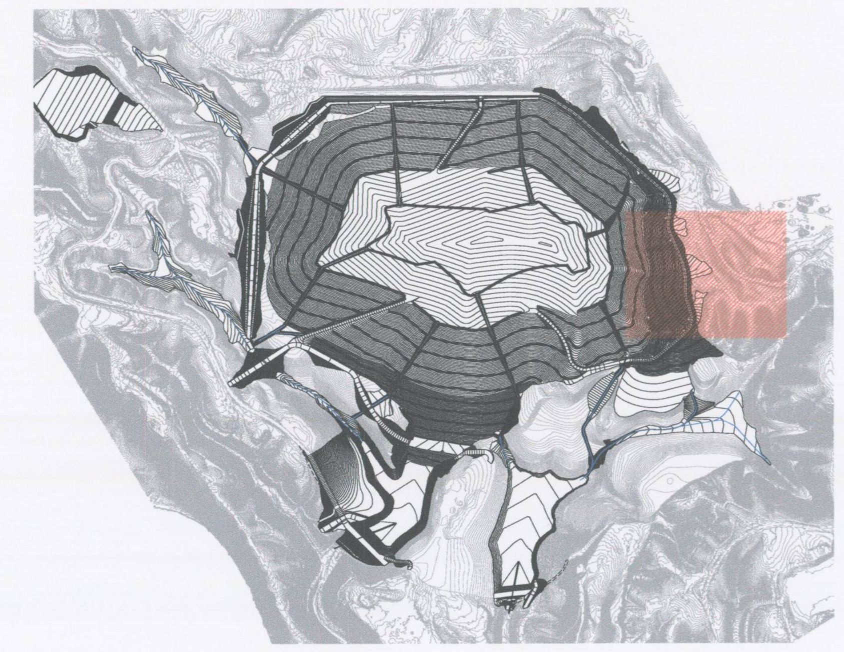

LEGEND

- 420 EXISTING CONTOURS
- 380 PROPOSED GRADING CONTOURS (SEE NOTE 2)
- 380 CLOSURE BY REMOVAL CONTOURS
- CHANNEL IN RESTORATION AREA

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	2019/02/28	100% DESIGN SUBMITTAL	CCP	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES

Southern Company
Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
CONTROL PLAN
SHEET OF

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN

Feb 28, 2019

WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	CCP
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING CP-10

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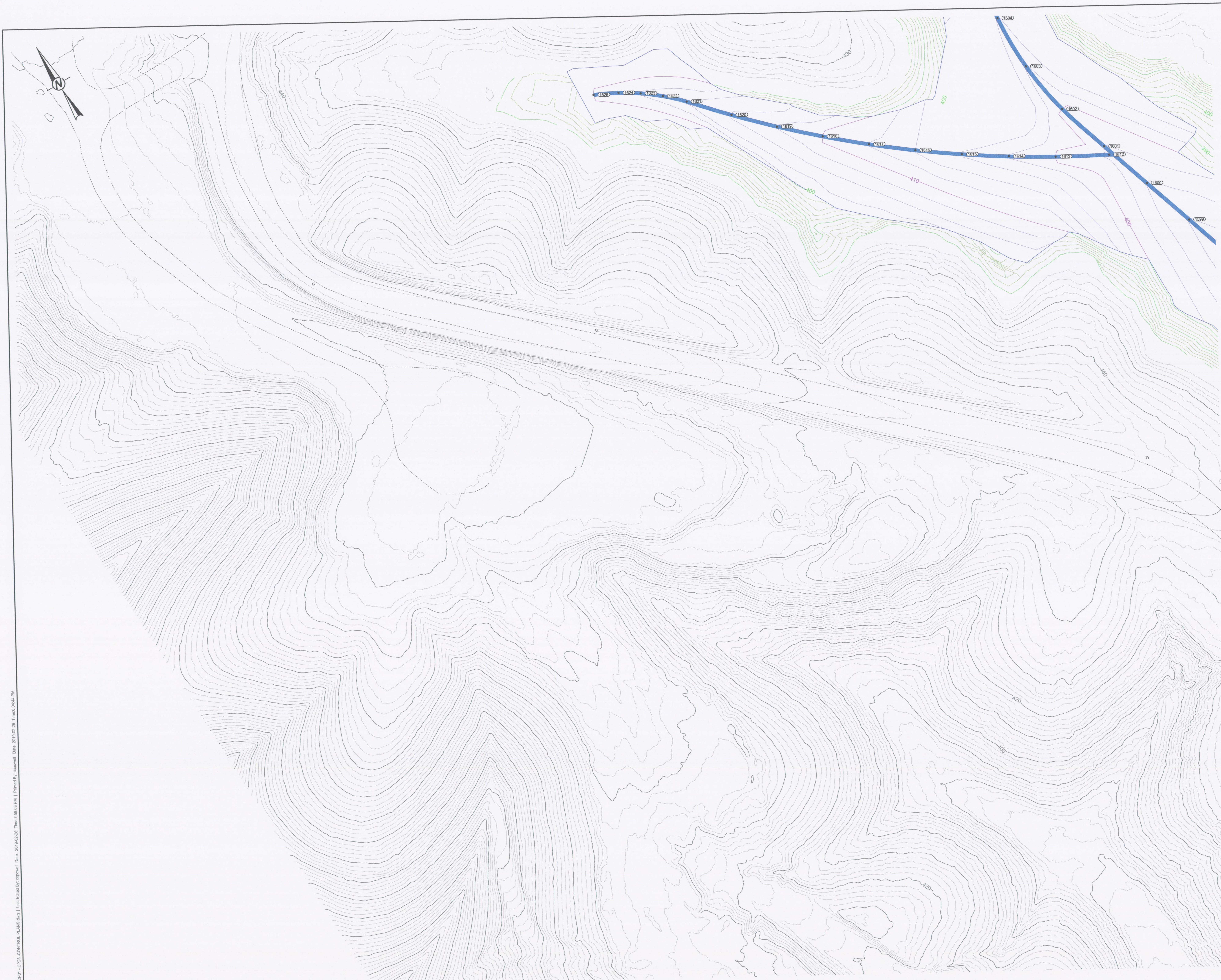

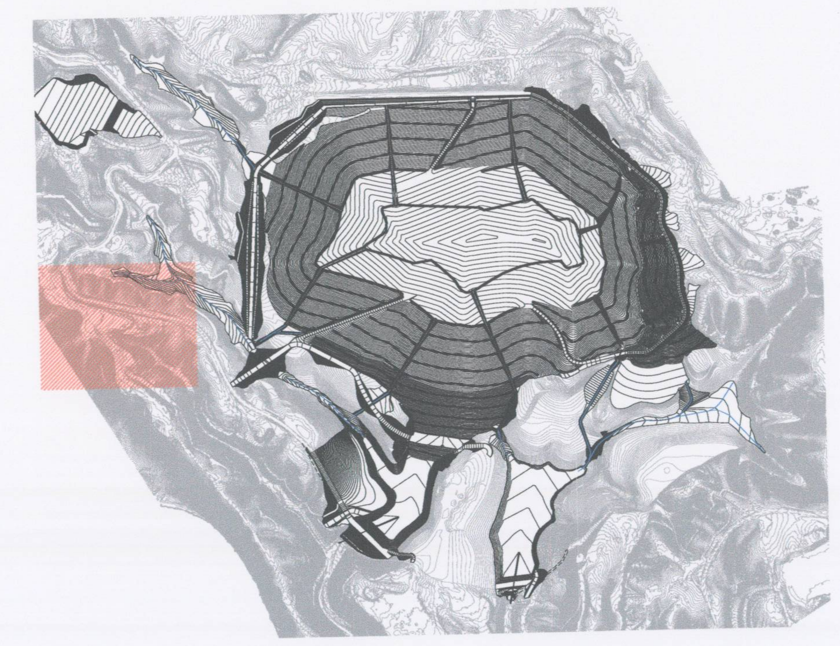

KEY MAP

LEGEND

420	EXISTING CONTOURS
380	PROPOSED GRADING CONTOURS (SEE NOTE 2)
380	CLOSURE BY REMOVAL CONTOURS
	CHANNEL IN RESTORATION AREA

NOTES

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0 40 80
1" = 40' FEET

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CLIENT
SOUTHERN COMPANY SERVICES

Southern Company
Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
CONTROL PLAN
SHEET OF

CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	CCP
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO. 1792705
SCS REF. MIL17010
REV. 0
DRAWING CP-11

ALABAMA REGISTERED PROFESSIONAL ENGINEER No. 20266 WILLIAM R SULLIVAN

Feb 28, 2019

WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

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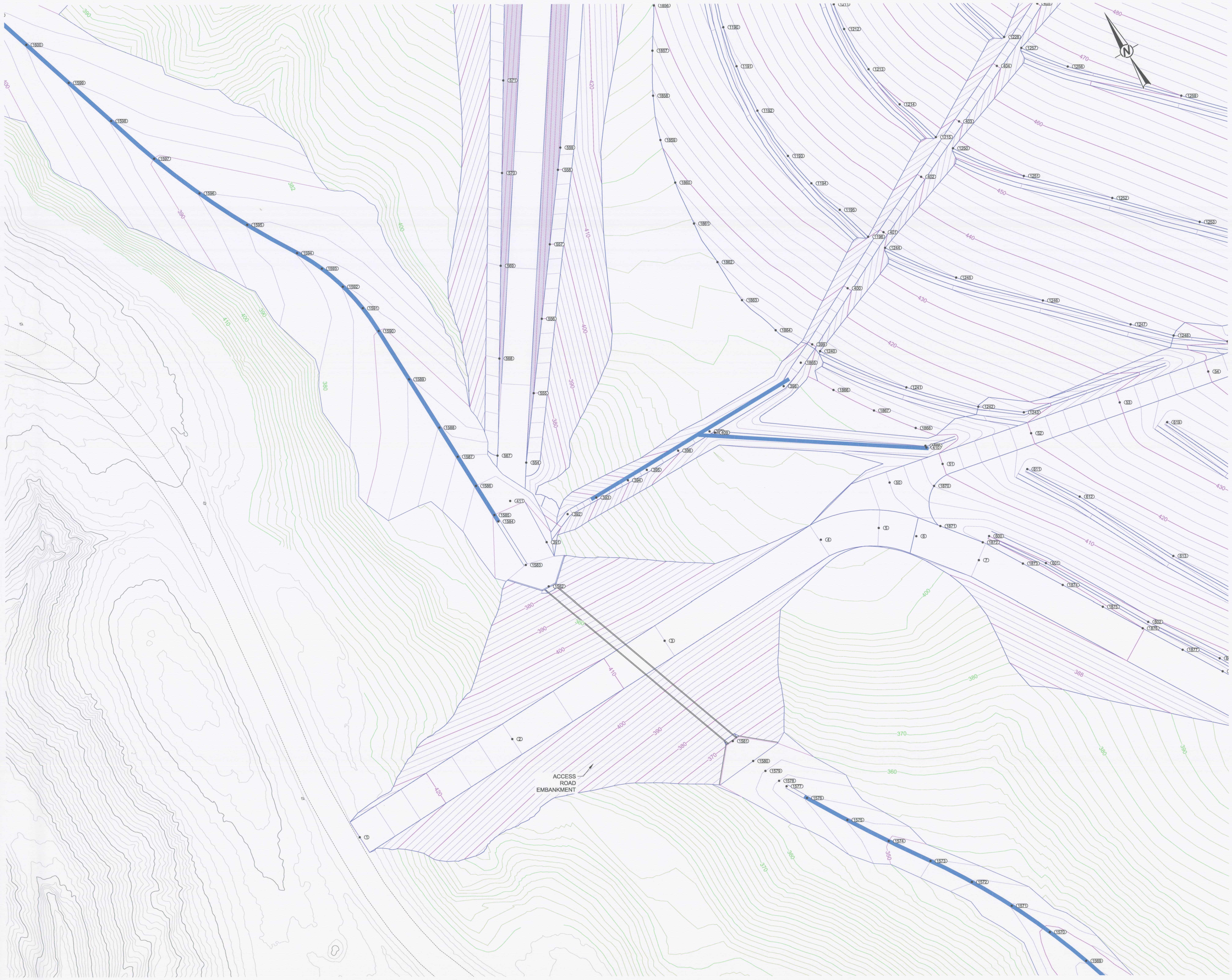

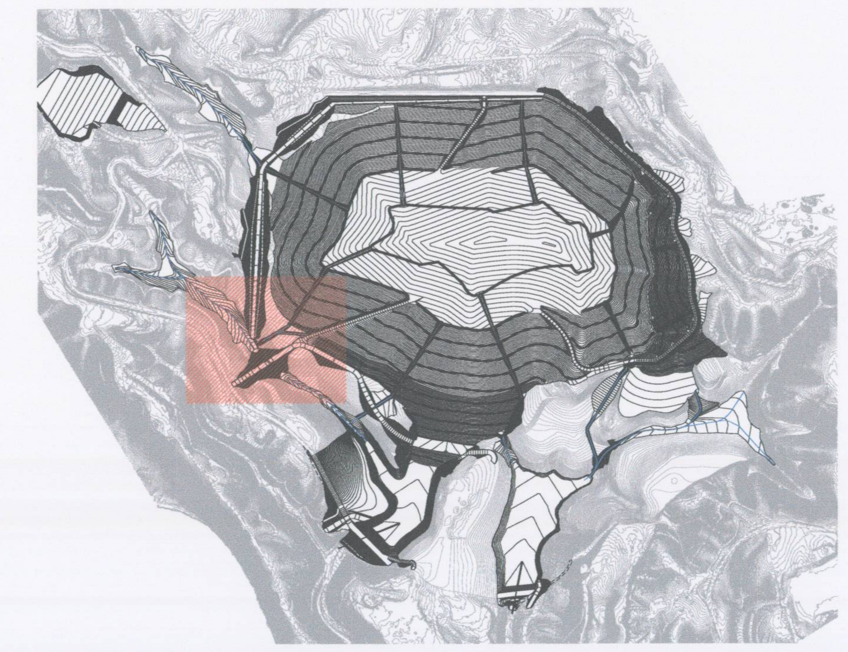

KEY MAP

LEGEND

420	EXISTING CONTOURS
380	PROPOSED GRADING CONTOURS (SEE NOTE 2)
380	CLOSURE BY REMOVAL CONTOURS
	CHANNEL IN RESTORATION AREA

NOTES

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0 40 80
1" = 40' FEET

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R. SULLIVAN

Feb 28 2019

WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
	2019/02/28	100% DESIGN SUBMITTAL	CCP	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES

Southern Company — Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
CONTROL PLAN
SHEET OF

CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	CCP
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	CP-12

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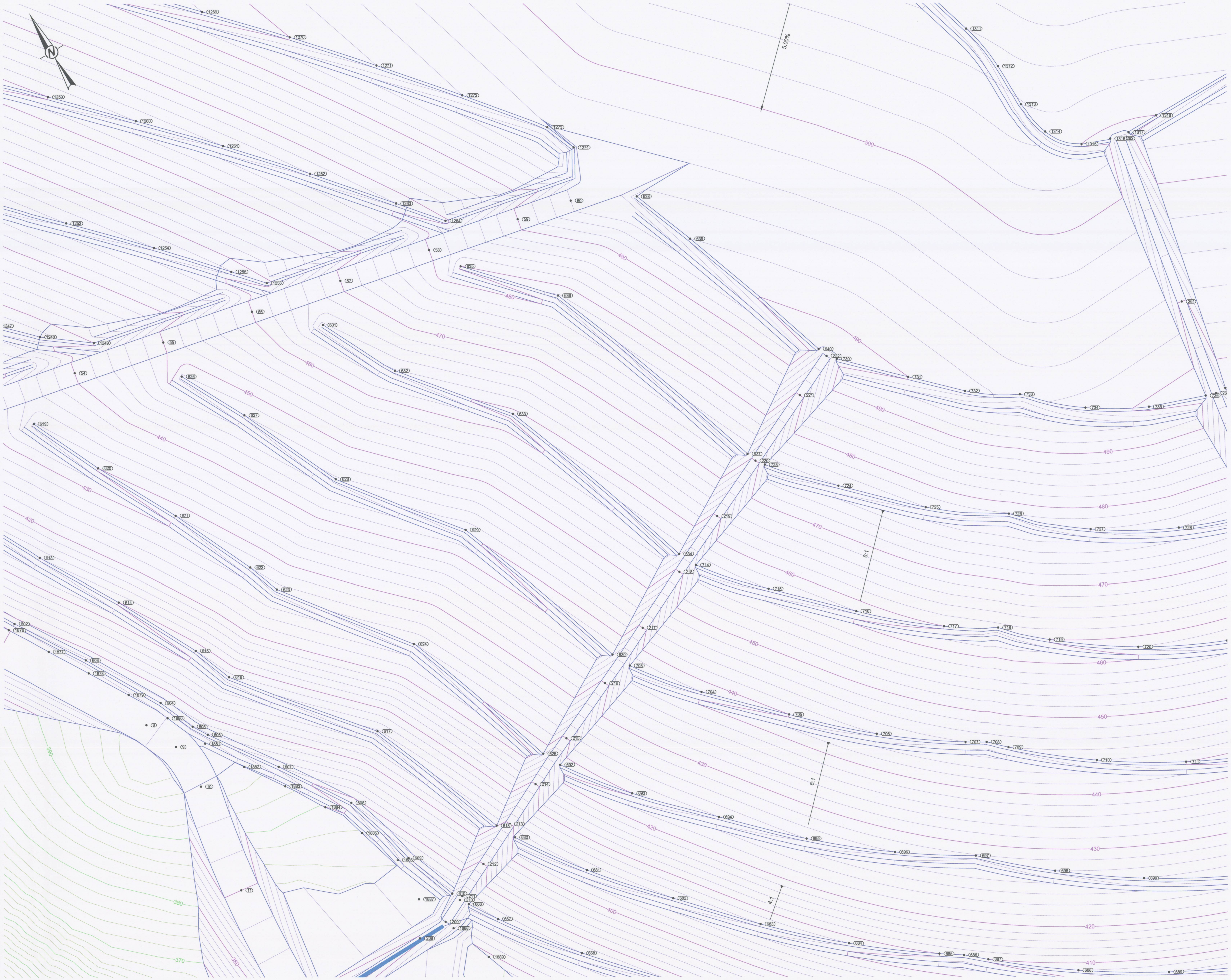

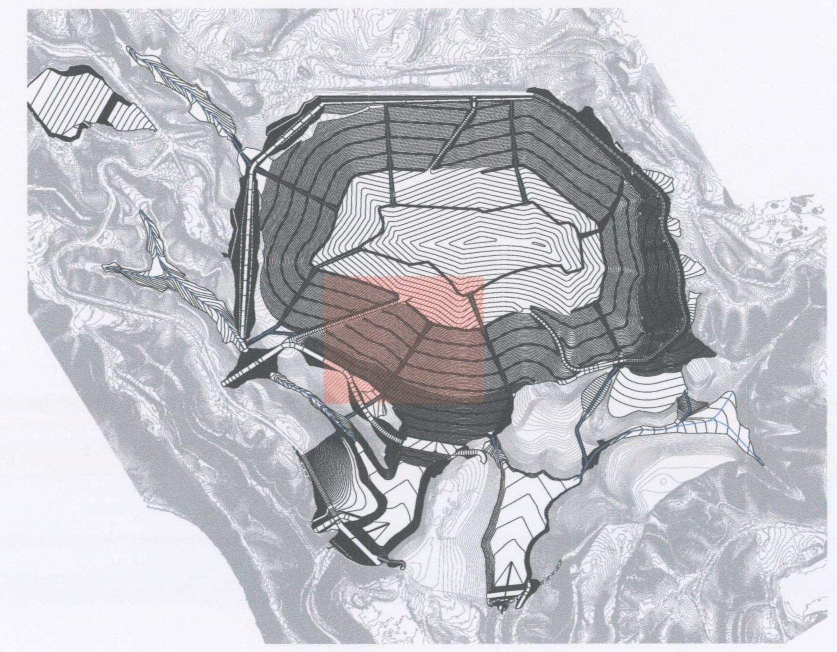

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LEGEND

- EXISTING CONTOURS
- PROPOSED GRADING CONTOURS (SEE NOTE 2)
- CLOSURE BY REMOVAL CONTOURS
- CHANNEL IN RESTORATION AREA

NOTES

1. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL, NATIONAL GEODETIC VERTCAL DATUM (NGVD) 1988. COORDINATES CORRESPOND TO ALABAMA WEST COORDINATE SYSTEM, NORTH AMERICAN DATUM (NAD) 1983.
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0 40 80
1" = 40' FEET

ALABAMA REGISTERED PROFESSIONAL ENGINEER WILLIAM R SULLIVAN
W. R. Sullivan
Feb 28 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
△	2019/02/28	100% DESIGN SUBMITTAL	CCP	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES
Southern Company
Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
CONTROL □LAN
SHEET □□ OF □□

CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	CCP
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	CP-13

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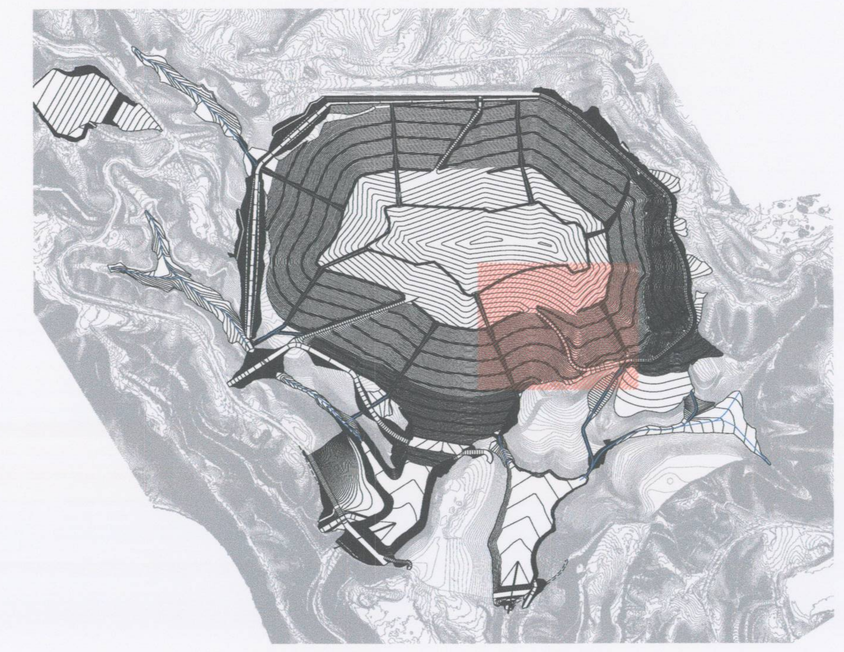

LEGEND

- 420 — EXISTING CONTOURS
- 380 — PROPOSED GRADING CONTOURS (SEE NOTE 2)
- 380 — CLOSURE BY REMOVAL CONTOURS
- CHANNEL IN RESTORATION AREA

NOTES

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0 40 80
1" = 40' FEET

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R. SULLIVAN
Feb 28, 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
0	2019/02/28	100% DESIGN SUBMITTAL	CCP	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES
Southern Company
Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
CONTROL □LAN
SHEET □□ OF □□

CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	CCP
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING CP-14

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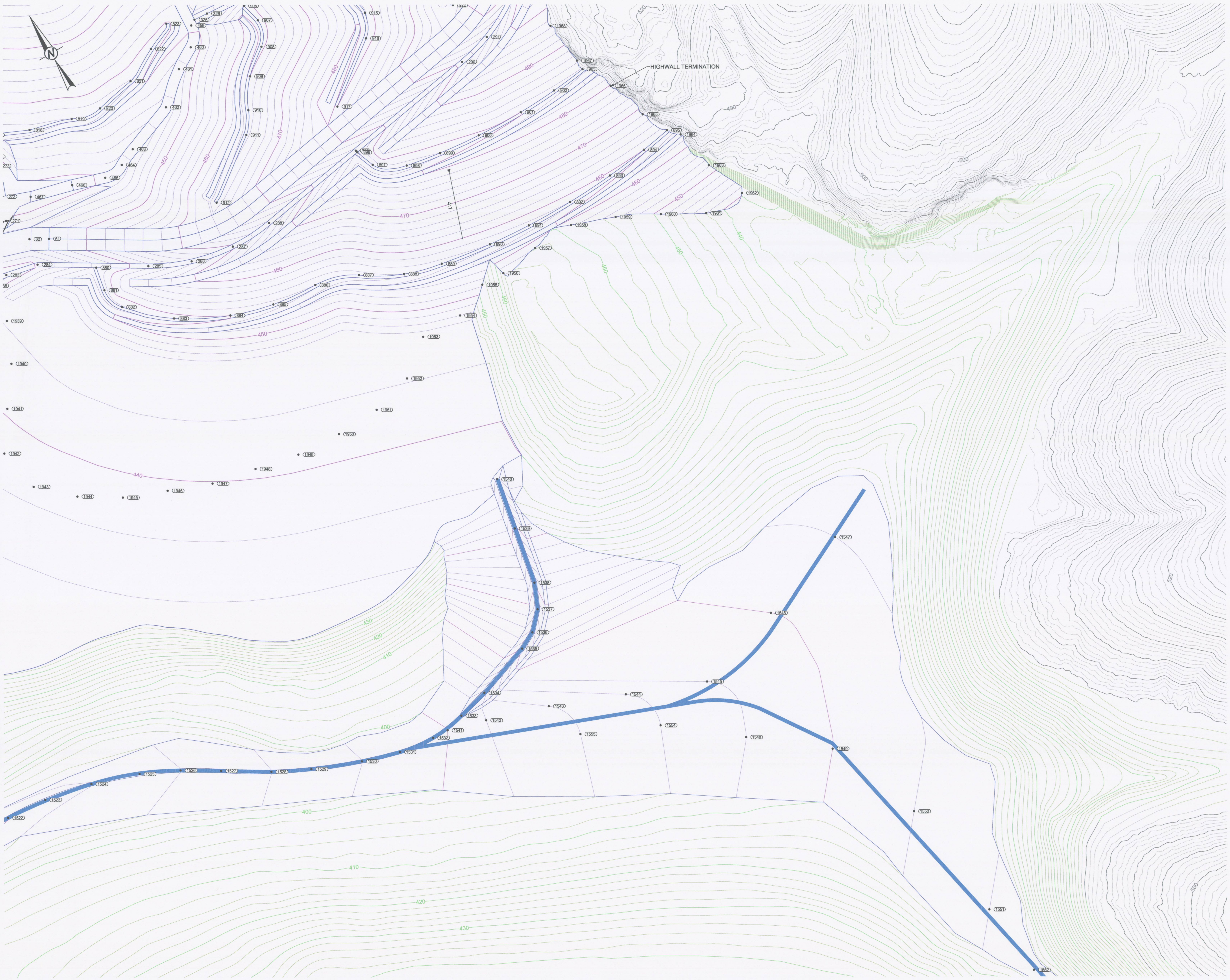

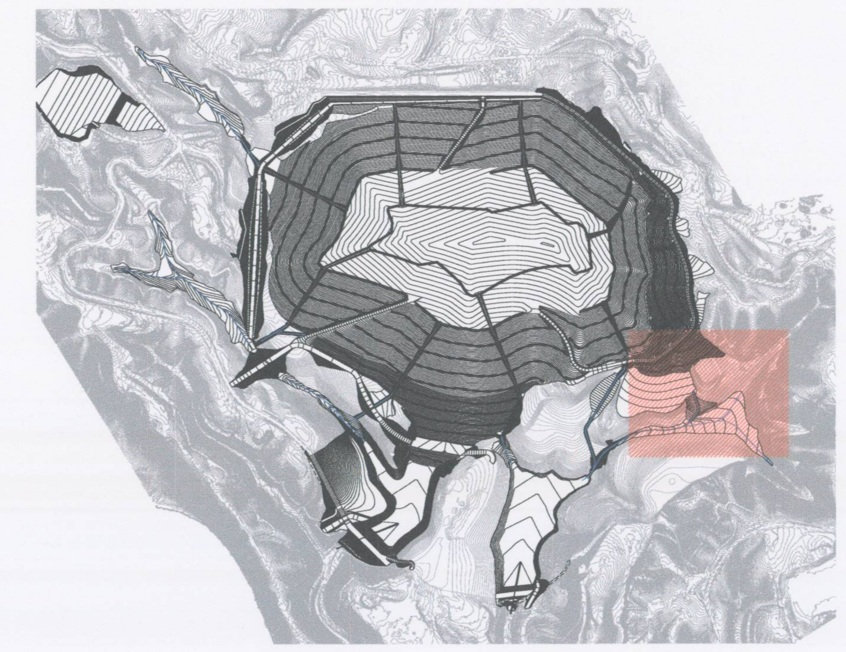

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LEGEND

420	EXISTING CONTOURS
380	PROPOSED GRADING CONTOURS (SEE NOTE 2)
380	CLOSURE BY REMOVAL CONTOURS
	CHANNEL IN RESTORATION AREA

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0 40 80
1" = 40' FEET

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN

Feb 28 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
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CLIENT
SOUTHERN COMPANY SERVICES
Southern Company
Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
CONTROL □LAN
SHEET □□ OF □□

CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	CCP
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	CP-15

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ARCH D
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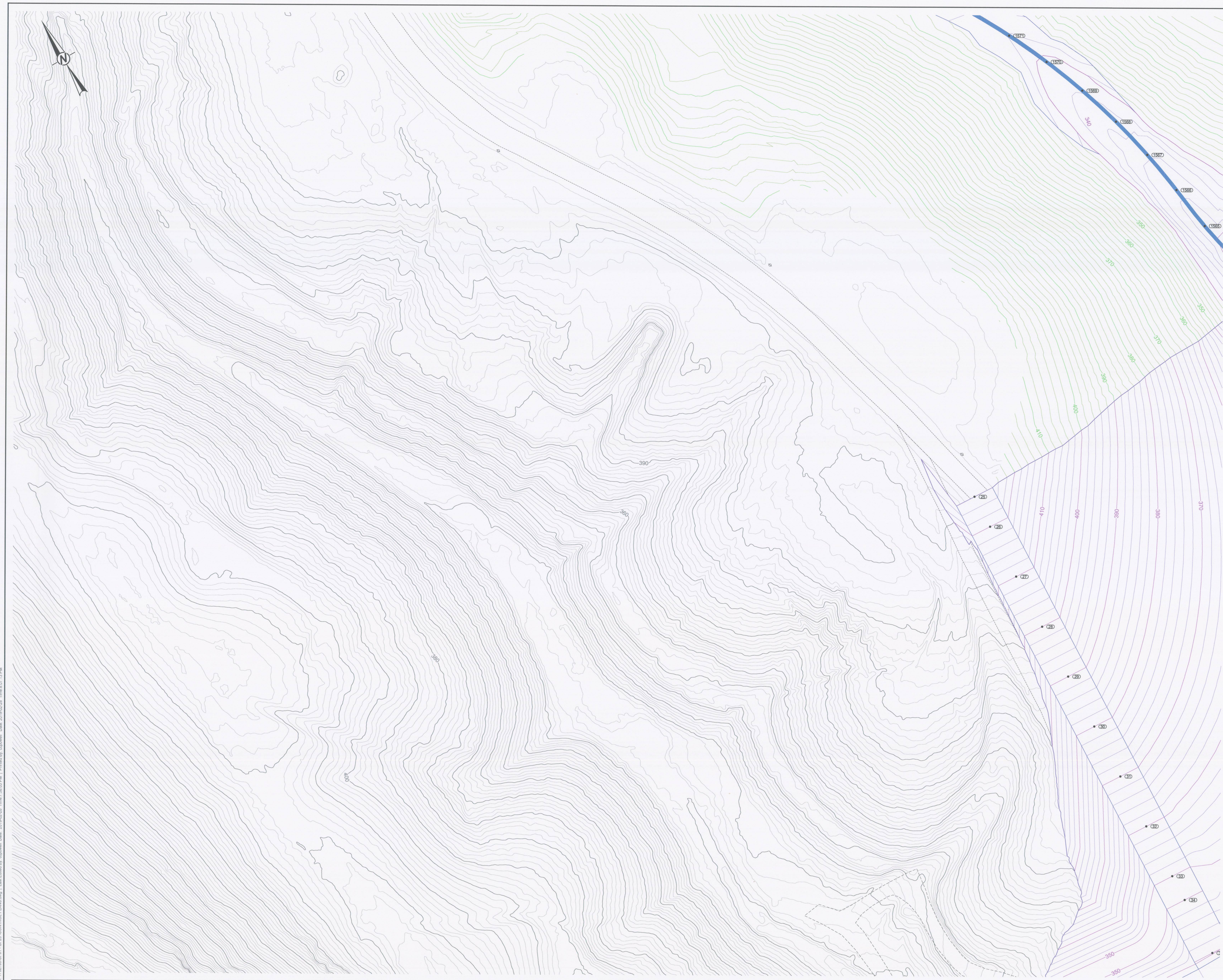

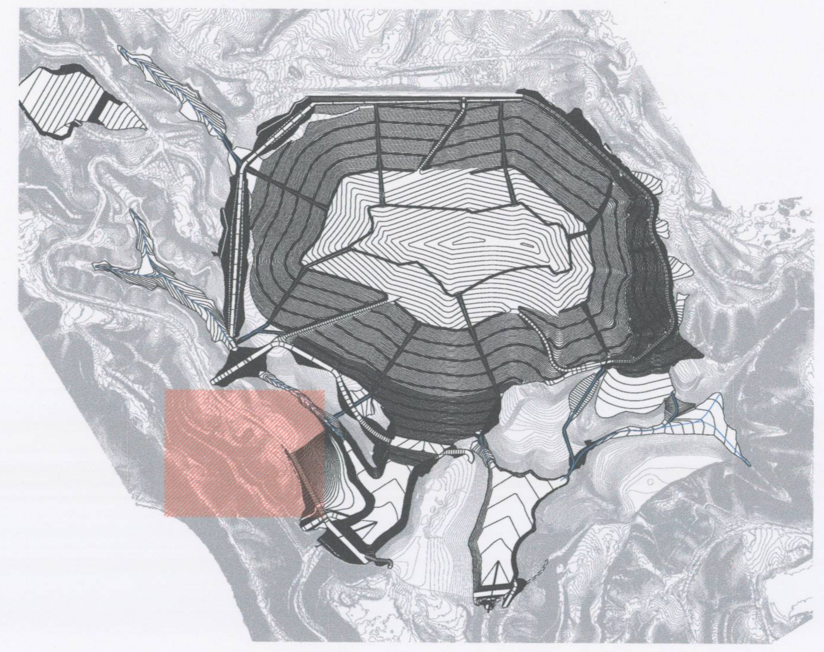

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LEGEND

420	EXISTING CONTOURS
380	PROPOSED GRADING CONTOURS (SEE NOTE 2)
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0 40 80 FEET
1" = 40'

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN
Feb 28, 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
	2019/02/28	100% DESIGN SUBMITTAL	CCP	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES
Southern Company | Alabama Power

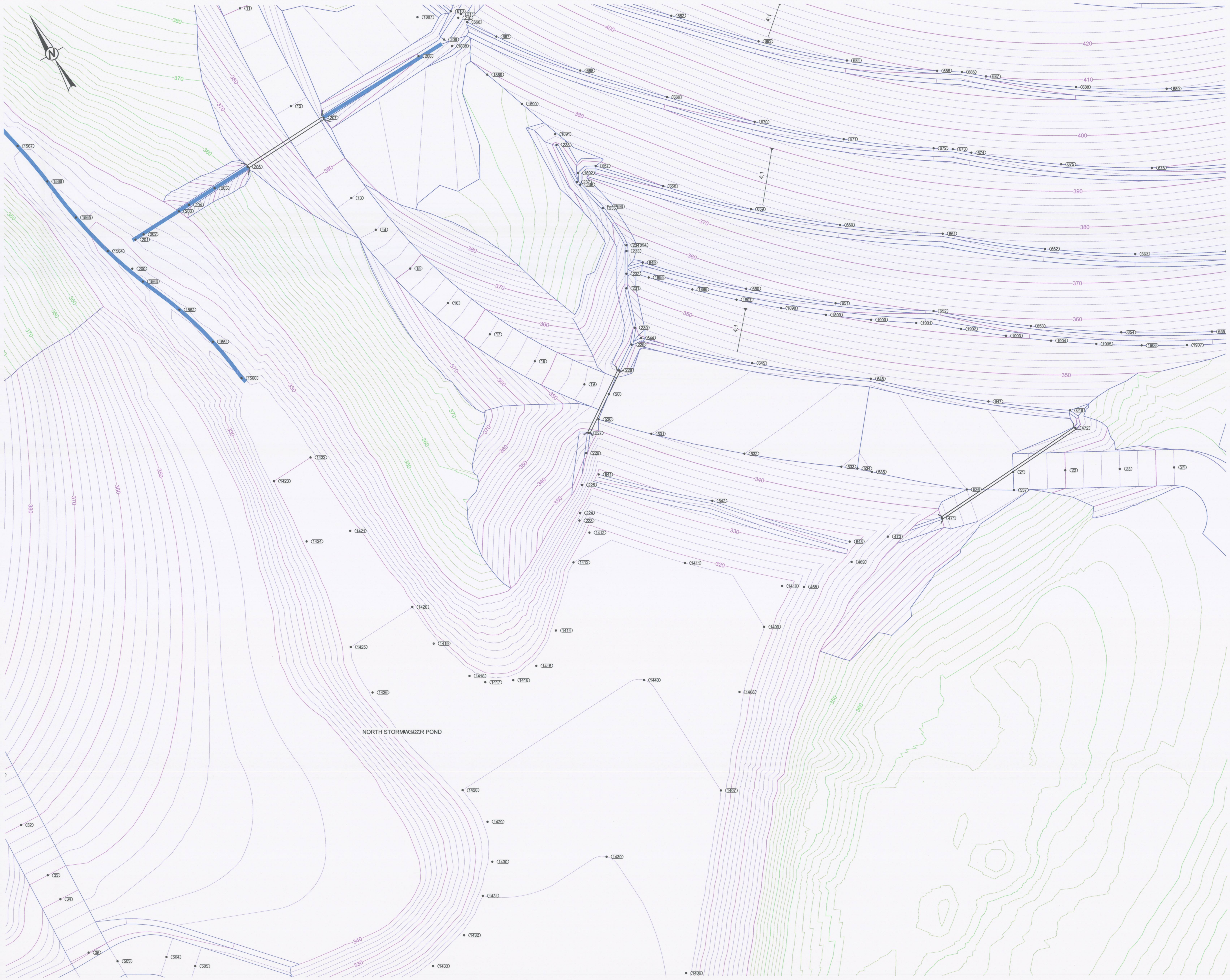
PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

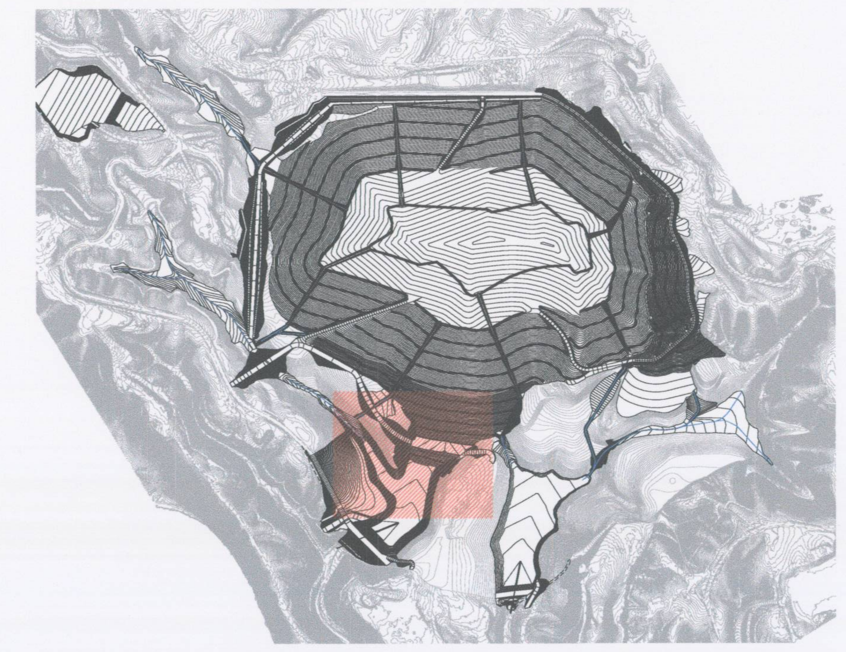
TITLE
CONTROL □LAN
SHEET □□ OF □□

CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	CCP
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	CP-16





KEY MAP

LEGEND

420	EXISTING CONTOURS
380	PROPOSED GRADING CONTOURS (SEE NOTE 2)
380	CLOSURE BY REMOVAL CONTOURS
	CHANNEL IN RESTORATION AREA

NOTES

1. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL, NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1988. COORDINATES CORRESPOND TO ALABAMA WEST COORDINATE SYSTEM, NORTH AMERICAN DATUM (NAD) 1983.

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1. EXISTING TOPOGRAPHY PROVIDED BY SOUTHERN COMPANY SERVICES, FEBRUARY 2018.

2. BOTTOM OF ASH TOPOGRAPHY TAKEN FROM USGS, SYLVAN SPRINGS, 1971 QUADRANGLE. TOPOGRAPHY WAS INTERPRETED BETWEEN 20 FOOT CONTOURS AND ADJUSTED BASED ON GEOTECHNICAL INVESTIGATION DATA BY GOLDER ASSOCIATES INC.

0 40 80
1" = 40' FEET

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R. SULLIVAN
Feb 28, 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

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SOUTHERN COMPANY SERVICES
Southern Company
Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

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CONTROL PLAN
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CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	CCP
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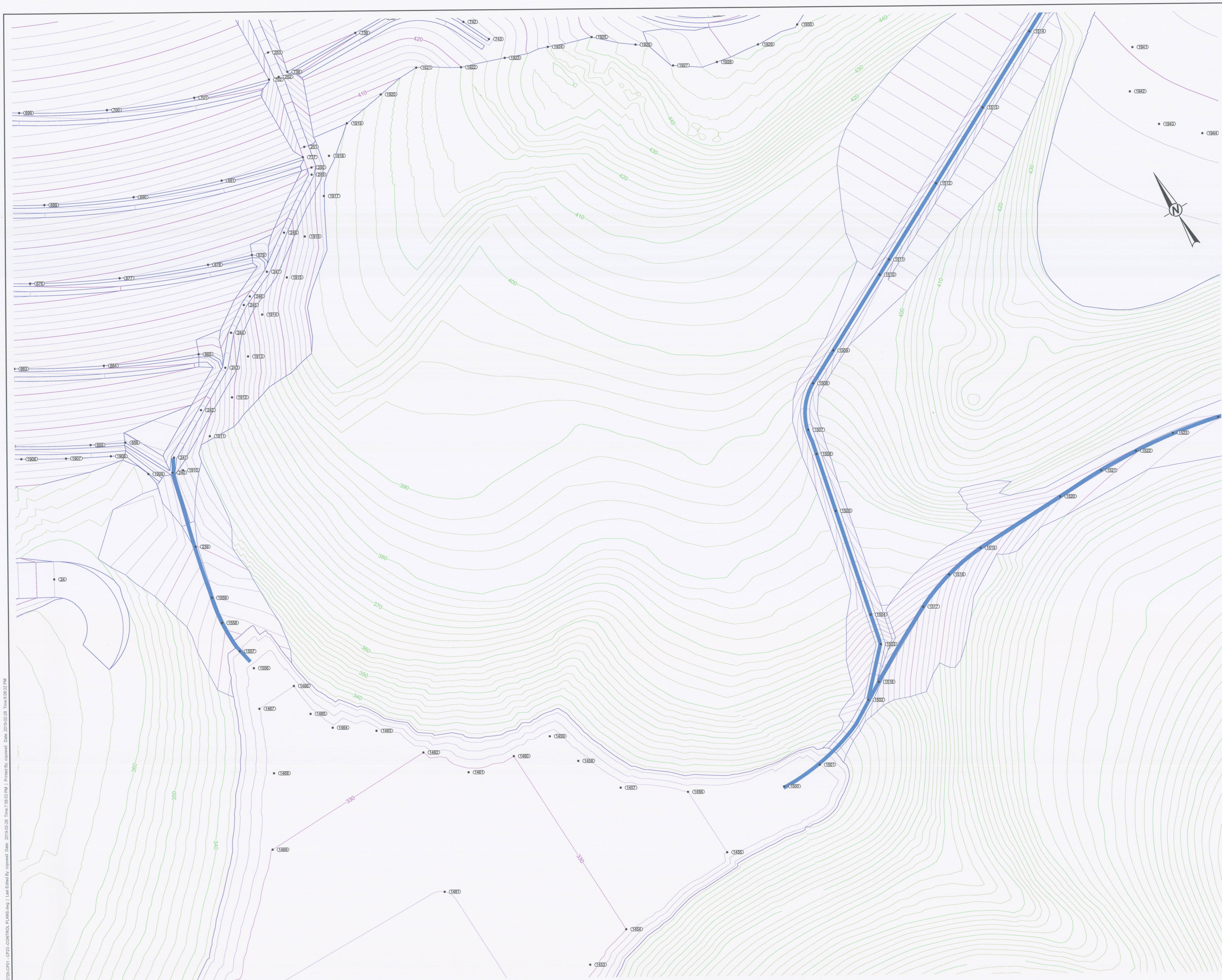
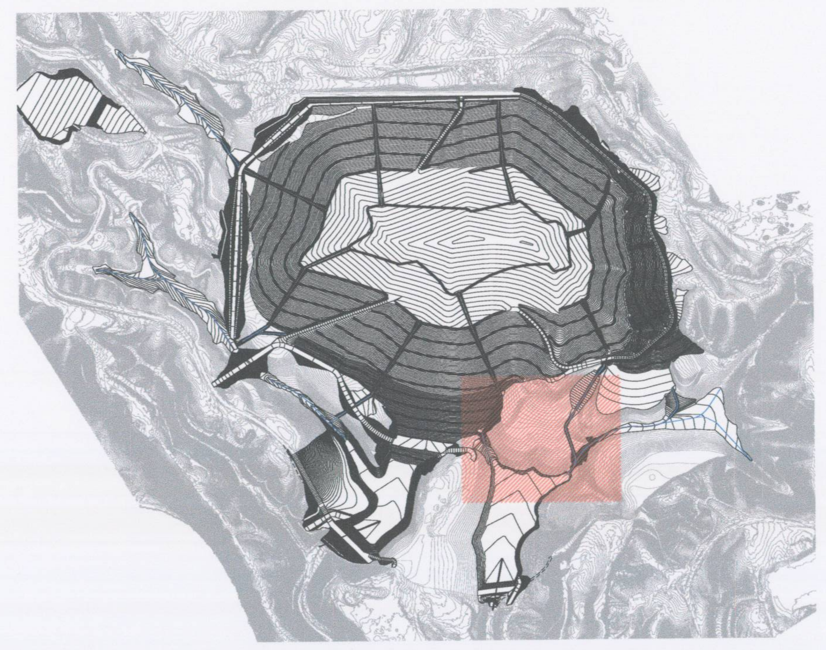
REVIEWED / APPROVED	WRS

PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING CP-17





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Southern Company
Alabama Power

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ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN
Feb 28 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
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PREPARED	CCP
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REVIEWED / APPROVED	WRS

PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING CP-18

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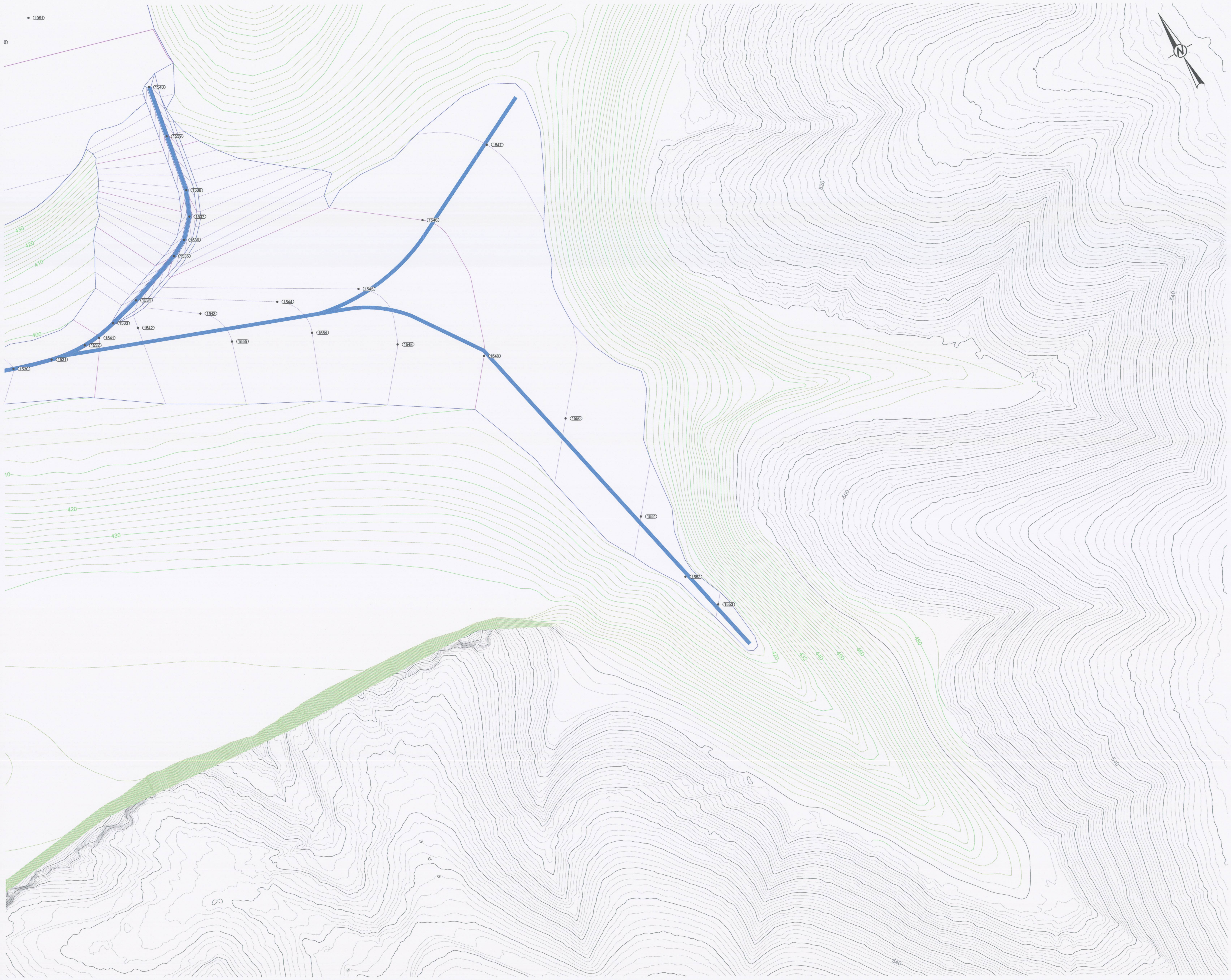

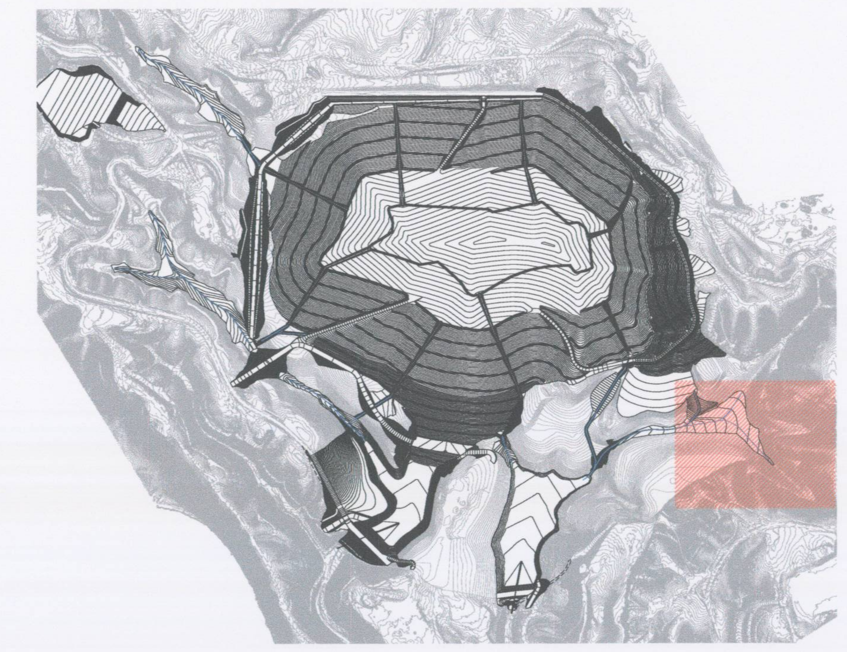

KEY MAP

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ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R. SULLIVAN

Feb 28 2019

WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

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SOUTHERN COMPANY SERVICES

Southern Company | Alabama Power

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YYYY-MM-DD	2019/02/28
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PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	CP-19

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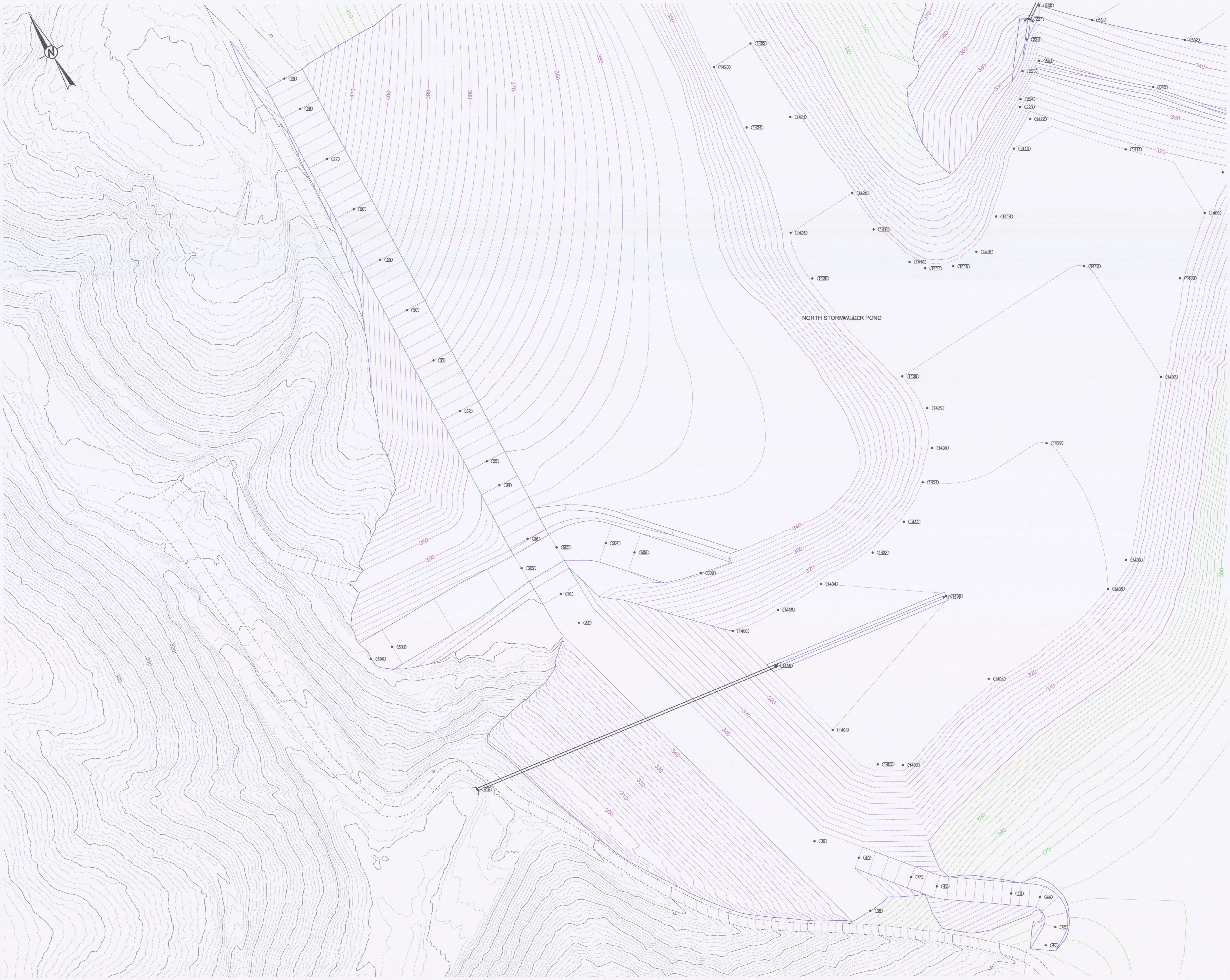

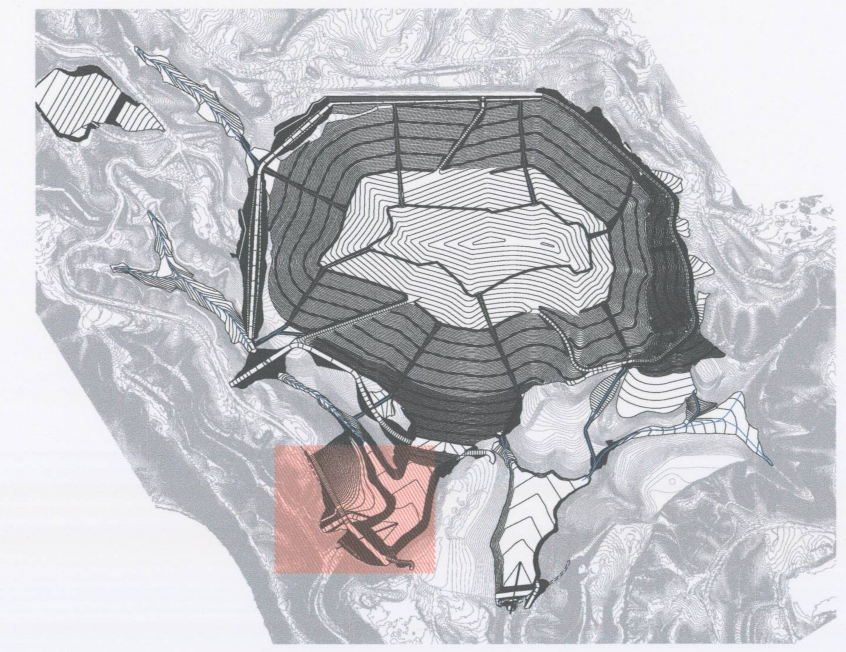

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Feb 28 2019

WILLIAM R. SULLIVAN
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CERTIFICATE NUMBER 20266

CONSULTANT
GOLDER

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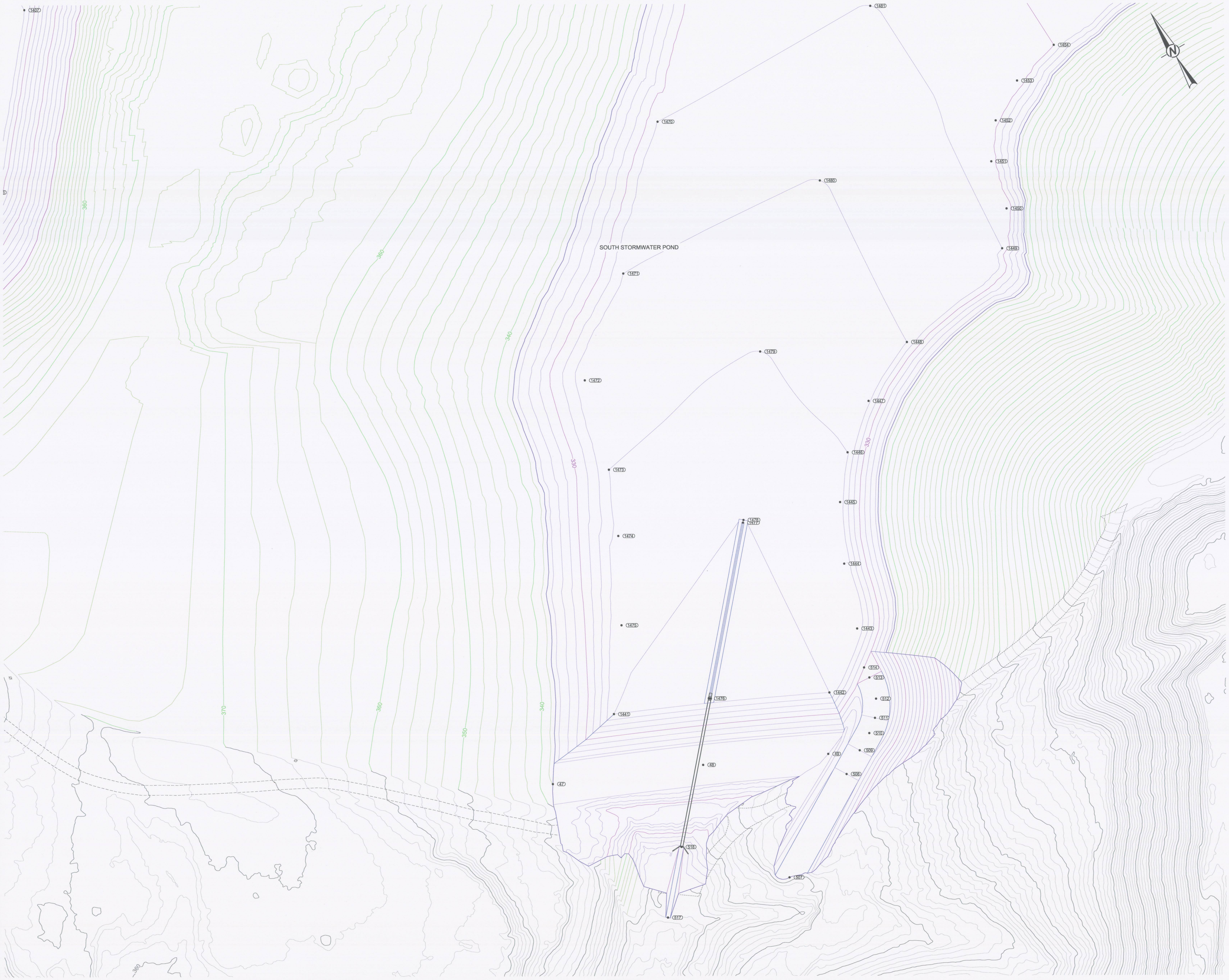
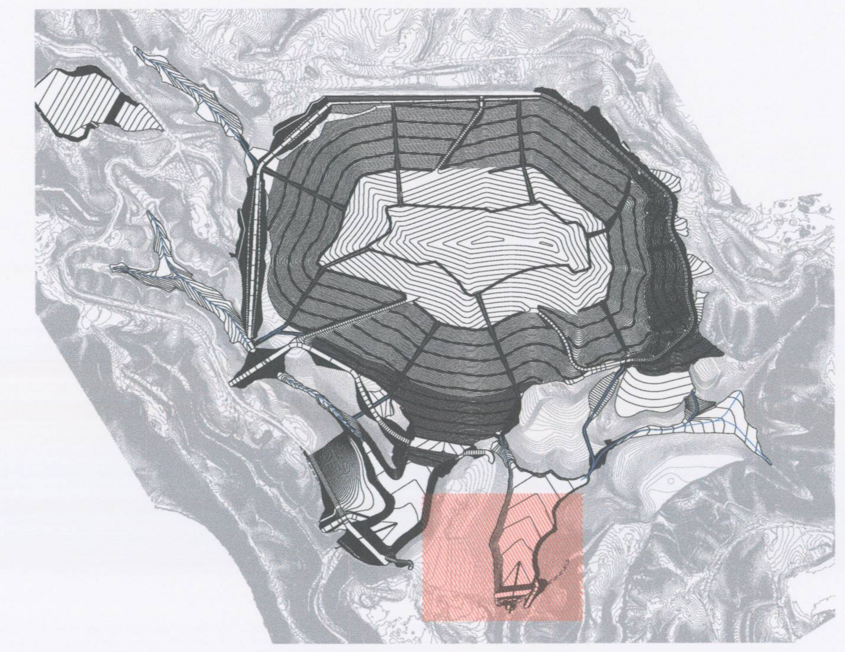
PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	CP-20





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ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN

Feb 28 2019

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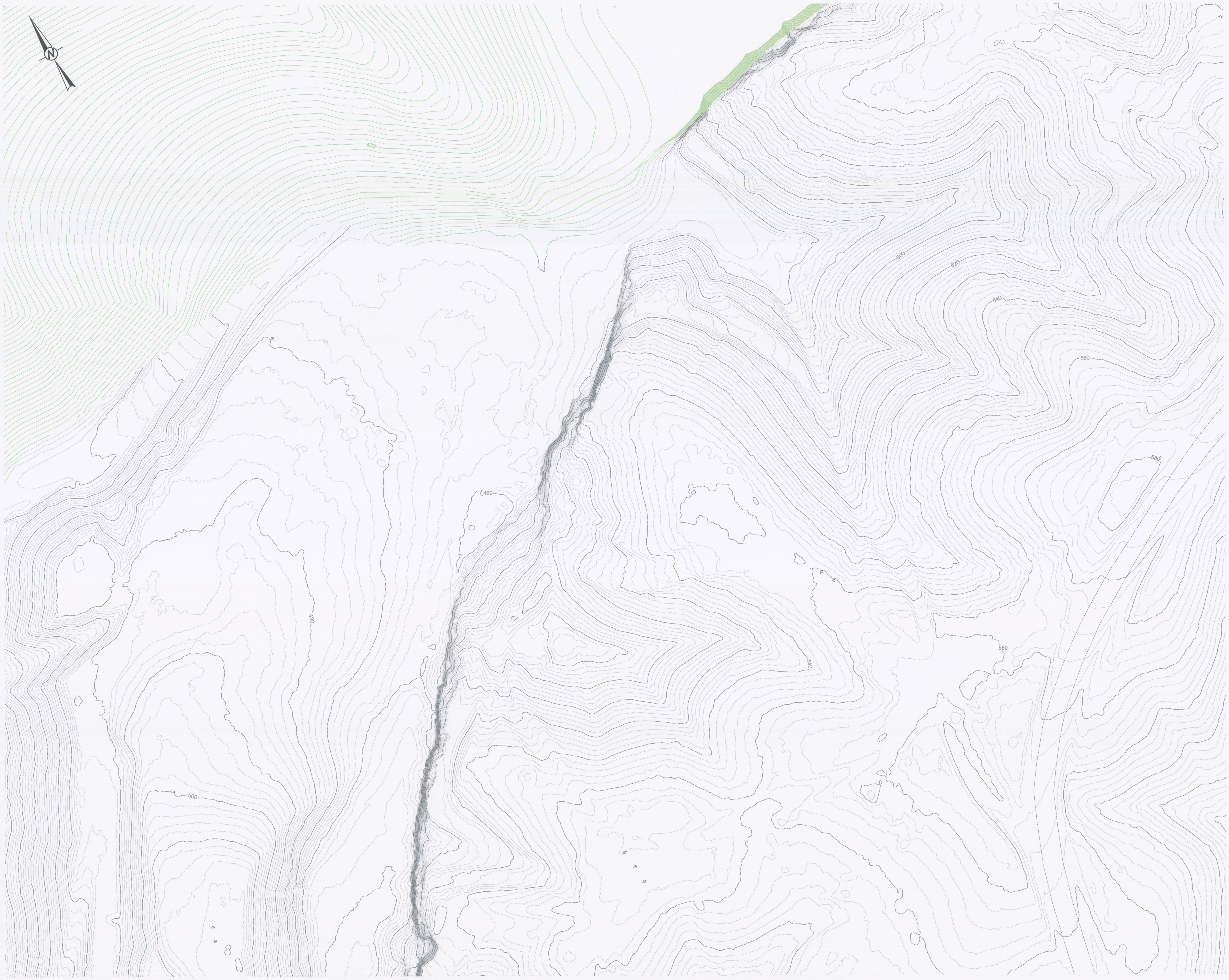
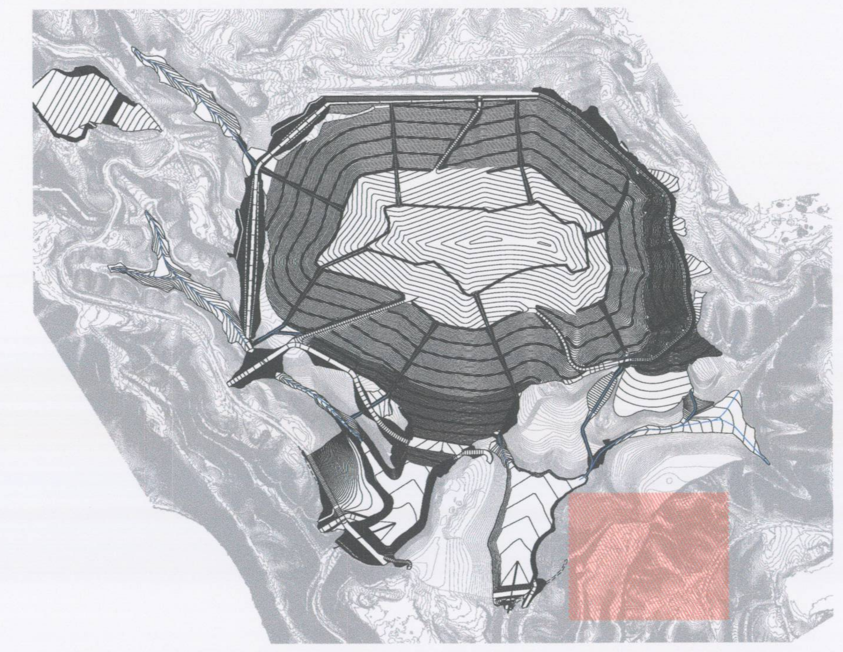
PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	CP-21





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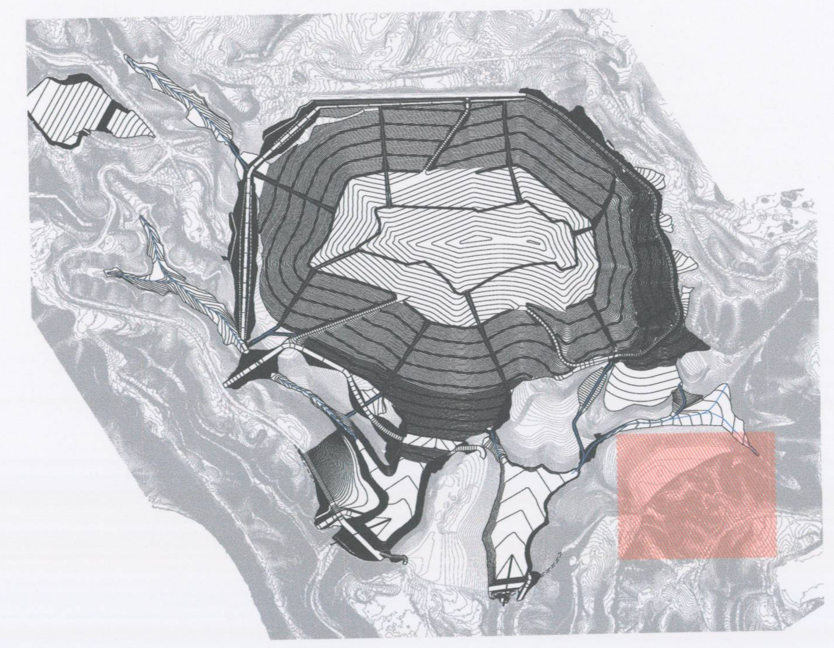
1792705	MIL17010	0	CP-22



KEY MAP

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PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	CP-23

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN

Feb 28 2019

WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

Path: \\atlanta\cadd\Southern Company\Plant Miller\1792705 Closure Design\01_Civil\Production\ | File Name: 1792705-CP01 - CP23 -CONTROL PLANS.dwg | Last Edited By: ccpowell Date: 2019-02-28 Time:7:58:03 PM | Printed By: ccpowell Date: 2019-02-28 Time:8:10:43 PM

ROAD CENTERLINE CONTROL POINT TABLE

POINT NO.	NORTHING (FT)	EASTING (FT)	ELEVATION (FT)
1	1313942.52	2101184.79	426.00
2	1313952.35	2101364.55	414.00
3	1313962.19	2101584.31	408.00
4	1313972.28	2101789.35	406.00
5	1313951.66	2101851.00	404.00
6	1313922.93	2101882.26	402.57
7	1313885.40	2101928.47	402.00
8	1313543.32	2102125.08	398.15
9	1313506.13	2102141.17	397.67
10	1313454.42	2102143.07	396.00
11	1313332.99	2102123.98	390.00
12	1313211.21	2102117.85	384.00
13	1313089.45	2102124.55	378.00
14	1313045.62	2102130.10	376.00
15	1312989.55	2102141.43	370.00
16	1312935.48	2102158.25	364.00
17	1312882.35	2102180.81	358.00
18	1312831.66	2102208.71	352.00
19	1312782.07	2102243.20	345.84
20	1312759.20	2102260.95	342.73
21	1312460.80	2102603.18	344.80
22	1312433.65	2102653.81	350.00
23	1312404.97	2102706.50	356.00
24	1312376.30	2102759.19	362.00
25	1313087.15	2101478.02	426.00
26	1313049.41	2101476.49	420.00
27	1312986.51	2101473.93	410.00
28	1312923.61	2101471.37	400.00
29	1312860.71	2101468.82	390.00
30	1312797.81	2101466.26	380.00
31	1312734.91	2101463.71	370.00
32	1312672.01	2101461.15	360.00
33	1312609.11	2101458.60	350.00
34	1312579.14	2101457.38	350.00
35	1312512.29	2101454.66	340.00
36	1312441.12	2101455.47	342.00
37	1312403.92	2101456.98	342.00
38	1311967.73	2101574.85	342.00
39	1312065.08	2101560.05	342.00
40	1312024.86	2101593.14	342.00
41	1311977.34	2101632.24	350.00
42	1311954.37	2101651.50	354.00
43	1311906.50	2101718.42	370.00
44	1311887.39	2101744.03	376.00
45	1311850.03	2101741.76	382.00
46	1311837.96	2101722.62	383.44
47	1311283.90	2100220.98	337.00
48	1311219.16	2102374.91	337.00
49	1311160.47	2102500.21	337.00
50	1313889.20	2101886.60	404.00
51	1313977.57	2101947.46	410.00
52	1313958.18	2102048.90	420.00
53	1313938.80	2102150.33	430.00
54	1313919.41	2102251.77	440.00
55	1313900.02	2102353.20	450.00
56	1313880.63	2102454.64	460.00
57	1313861.25	2102556.07	470.00
58	1313841.86	2102657.51	480.00
59	1313822.47	2102758.94	489.94
60	1313810.64	2102819.81	496.00
61	1314218.98	2104232.74	446.00
62	1314229.46	2104213.71	444.00
63	1314255.33	2104130.65	444.00
64	1314494.99	2104003.36	446.00
65	1314518.78	2103926.98	450.00
66	1312538.60	2103865.51	453.22
67	1312577.60	2103910.86	458.00
68	1312626.74	2103784.19	462.00
69	1312681.86	2103779.42	466.00
70	1312739.69	2103795.36	470.00
71	1312801.23	2103808.96	474.00
72	1312864.02	2103814.75	478.00
73	1312927.02	2103812.62	482.00
74	1312989.10	2103802.78	486.00
75	1313049.72	2103787.88	490.00
76	1313109.17	2103768.81	494.00
77	1313167.04	2103745.45	498.00
78	1313500.91	2104251.49	426.00
79	1314659.69	2104227.70	428.00
80	1314919.83	2104204.51	430.00
81	1314897.25	2104181.60	432.00
82	1314862.85	2104104.89	440.00
83	1314823.05	2104012.98	450.00
84	1314783.49	2103921.25	460.00
85	1314743.54	2103829.60	470.00
86	1314703.49	2103738.42	480.00
87	1314663.50	2103646.77	490.00
88	1314643.94	2103601.93	492.00

CHANNEL CENTERLINE CONTROL POINT TABLE

POINT NO.	NORTHING (FT)	EASTING (FT)	ELEVATION (FT)
200	1313143.10	2101876.51	328.63
201	1313169.17	2101895.62	329.50
202	1313169.72	2101906.23	330.00
203	1313172.13	2101952.64	336.00
204	1313172.82	2101965.97	340.00
205	1313174.57	2101999.61	350.00
206	1313176.82	2102043.03	360.00
207	1313182.00	2102142.84	376.00
208	1313188.48	2102267.60	380.00
209	1313190.23	2102301.21	381.08
210	1313203.22	2102326.89	381.56
211	1313205.47	2102331.33	382.00
212	1313224.67	2102369.27	390.00
213	1313248.61	2102416.51	400.00
214	1313272.35	2102463.06	410.00
215	1313299.16	2102517.88	420.00
216	1313330.58	2102585.20	430.00
217	1313362.95	2102651.73	440.00
218	1313395.93	2102717.73	450.00
219	1313428.25	2102784.64	460.00
220	1313460.40	2102851.78	470.00
221	1313498.45	2102930.39	480.00
222	1313521.27	2102977.55	486.00
223	1312654.22	2102162.80	318.00
224	1312661.36	2102167.62	320.00
225	1312687.10	2102185.10	327.50
226	1312715.14	2102206.55	330.50
227	1312733.07	2102220.26	336.00
228	1312776.42	2102283.93	338.10
229	1312794.23	2102310.10	339.00
230	1312808.62	2102322.69	340.00
231	1312850.96	2102336.38	349.00
232	1312864.96	2102344.65	352.57
233	1312886.60	2102357.40	353.00
234	1312892.13	2102360.36	355.00
235	1312940.68	2102358.50	363.00
236	1312975.65	2102350.21	367.00
237	1312980.04	2102348.62	367.27
238	1313027.01	2102349.90	369.00
239	1313027.61	2102913.80	350.00
240	1312412.43	2102933.48	351.87
241	1312426.14	2102943.66	352.71
242	1312456.55	2102996.62	357.00
243	1312483.77	2103044.03	366.55
244	1312514.27	2103069.47	372.00
245	1312533.84	2103097.53	377.00
246	1312538.79	2103108.25	379.00
247	1312552.86	2103138.72	383.94
248	1312580.86	2103177.44	387.00
249	1312621.22	2103236.96	399.23
250	1312628.25	2103240.97	400.00
251	1312652.22	2103245.81	400.00
252	1312734.93	2103261.14	416.00
253	1312764.04	2103264.78	420.00
254	1312837.90	2103273.87	430.00
255	1312911.37	2103282.71	440.00
256	1312984.59	2103291.40	450.00
257	1313058.36	2103300.17	460.00
258	1313132.27	2103308.96	470.00
259	1313218.80	2103320.93	480.00
260	1313270.72	2103328.11	486.00
261	1313377.38	2103346.05	490.00
262	1313567.26	2103378.00	497.12
263	1312483.56	2104174.35	439.18
264	1312485.33	2104144.72	440.00
265	1312494.47	2104115.24	440.86
266	1312512.87	2104078.52	442.00
267	1312525.69	2104045.31	443.00
268	1312532.75	2104010.59	444.00
269	1312535.29	2103971.88	446.00
270	1312426.06	2104151.58	436.00
271	1312459.96	2104201.65	438.00
272	1312485.20	2104211.45	438.00
273	1312517.96	2104222.82	439.00
274	1312530.15	2104222.43	440.00
275	1312552.75	2104221.72	442.00
276	1312610.23	2104225.94	450.00
277	1312682.03	2104231.23	460.00
278	1312755.18	2104236.44	470.00
279	1312829.02	2104241.61	480.00
280	1312913.29	2104247.04	490.00
281	1312982.78	2104251.44	498.00
282	1312412.58	2104133.82	435.66
283	1312407.96	2104171.66	438.00
284	1312400.61	2104207.53	440.22
285	1312337.99	2104312.29	452.00
286	1312318.69	2104358.10	456.00
287	1312310.10	2104403.49	460.00
288	1312312.69	2104451.15	464.00
289	1312334.15	2104573.83	476.00
290	1312360.55	2104724.73	490.76
291	1312370.88	2104762.05	494.00
292	1312393.27	2104804.84	498.00
293	1312424.97	2104840.74	502.00
294	1312464.33	2104868.49	506.00
295	1312507.39	2104885.86	509.86
296	1312610.09	2104909.83	520.00
297	1312648.00	2104920.38	524.00
298	1312682.44	2104934.75	528.00
299	1312714.70	2104953.79	532.00
300	1312731.20	2104965.09	530.74
301	1312768.97	2104987.34	528.00
302	1312826.90	2105014.23	524.00
303	1312887.55	2105034.15	520.00
304	1312950.02	2105046.94	516.00
305	1313169.87	2105075.16	502.00
306	1313231.22	2105087.31	498.00
307	1313285.36	2105118.91	494.00
308	1313334.96	2105158.79	490.00
309	1313386.29	2105192.36	486.00
310	1313450.84	2105210.23	482.00
311	1313514.71	2105210.17	478.00
312	1313556.69	2105200.24	475.31
313	1313636.75	2105173.11	470.00
314	1313807.12	2105116.06	460.00
315	1313995.36	2105053.46	450.00
316	1314011.92	2105047.99	449.12
317	1314234.89	2104973.58	440.00
318	1314447.00	2104903.37	431.15
319	1314521.87	2104872.96	428.00
320	1314613.30	2104826.24	424.00
321	1314684.15	2104788.25	422.00
322	1314739.34	2104750.88	421.12
323	1314780.20	2104717.03	420.47
324	1314822.77	2104667.99	420.47

CHANNEL CENTERLINE CONTROL POINT TABLE

POINT NO.	NORTHING (FT)	EASTING (FT)	ELEVATION (FT)
325	1312546.73	2104492.99	450.70
326	1312547.77	2104508.33	450.70
327	1312545.42	2104546.00	456.00
328	1312545.96	2104567.09	460.00
329	1312547.32	2104619.81	470.00
330	1312548.72	2104672.50	480.00
331	1312550.14	2104725.18	490.00
332	1312551.62	2104777.87	500.00
333	1312553.03	2104827.17	509.36
334	1313186.09	2104801.51	470.22
335	1313158.71	2104820.34	470.22
336	1313152.15	2104837.07	472.00
337	1313136.86	2104875.85	480.00
338	1313117.75	2104924.33	490.00
339	1313098.05	2104973.39	500.00
340	1313555.37	2105037.86	456.00
341	1313546.08	2105084.87	460.00
342	1313765.26	2104987.30	449.62
343	1313734.21	2104957.42	449.62
344	1313676.41	2104901.81	460.00
345	1313624.70	2104837.62	470.00
346	1313574.72	2104768.79	480.00
347	1313564.72	2104755.03	482.00
348	1313524.88	2104671.52	490.00
349	1313485.04	2104588.01	498.00
350	1313523.33	2104417.83	503.13
351	1314813.56	2104507.92	420.65
352	1314785.43	2104490.90	420.64
353	1314726.64	2104454.72	430.00
354	1314674.57	2104423.82	430.00
355	1314593.04	2104388.02	450.00
356	1314525.34	2104357.45	460.00
357	1314458.01	2104325.78	470.00
358	1314383.40	2104291.11	480.00
359	1314303.95	2104254.44	490.00
360	1313993.33	2104172.33	501.12
361	1315322.82	2103578.03	412.71
362	1315292.93	2103583.81	412.71
363	1315243.92	2103540.49	420.00
364	1315176.69	2103508.50	430.00
365	1315110.57	2103475.23	440.00
366	1315044.32	2103442.04	450.00
367	1314977.52	2103409.16	460.00
368	1314906.02	2103373.99	470.00
369	1314827.41	2103335.37	480.00
370	1314811.76	2103327.65	482.00
371	1314615.07	2103234.38	490.00
372	1314538.36	2103198.01	493.12
373	1315398.03	2102344.24	392.95
374	1315321.73	2102394.09	394.00
375	1315291.19	2102413.91	396.00
376	1315268.33	2102428.74	400.00
377	1315211.18	2102465.82	410.00
378	1315149.19	2102506.22	420.00
379	1315085.96	2102547.48	430.00
380	1315022.46	2102588.88	440.00
381	1314958.96	2102630.29	450.00
382	1314895.62	2102671.61	460.00
383	1314827.99	2102715.84	470.00
384	1314753.80	2102764.43	480.00
385	1314737.75	2102775.05	482.18
386	1315409.05	2102302.85	392.63
387	1315440.31	2102317.96	394.00
388	1315465.62	2102322.07	395.00
389	1315490.85	2102320.22	396.00
390	1314129.44	2102314.10	398.00
391	1314121.55	2101526.75	368.51
392	1314136.74	2101562.36	371.00
393	1314136.81	2101598.86	380.00
394	1314136.02	2101638.50	390.00
395	1314135.55	2101662.28	396.00
396	1314136.56	2101702.91	400.00
397	1314137.61	2101743.55	404.00
398	1314140.03	2101839.25	405.63
399	1314184.18	2101889.62	410.00
400	1314198.45	2101954.51	420.00
401	1314232.30	2102019.76	430.00
402	1314264.47	2102086.48	440.00
403	1314296.73	2102153.31	450.00
404	1314328.12	2102220.34	460.00
405	1314366.53	2102293.58	470.00
406	1314407.23	2102370.99	480.00
407	1314374.15	2102646.75	490.00
408	1314358.28	2102776.57	494.75
409	1314133.50	2101747.93	404.09
410	1314002.33	2101941.07	406.00
411	1314181.25	2101514.93	370.00
412	1314720.83	2101887.69	380.00
413	1315258.36	2102220.88	390.00
414	1315367.31	2102291.63	392.00
415	1315398.31	2102318.30	392.69
416	1315421.42	2102352.28	393.38
417	1315434.89	2102391.32	394.07
418	1315494.47	2102886.16	400.00
419	1315582.62	2103122.38	408.78
420	1315504.56	2103264.90	410.00
421	1314984.37	2104214.77	418.10
422	1314962.17	2104255.30	418.45
423	1314735.53	2104668.29	422.00
424	1314693.99	2104702.09	422.67
425	1314647.89	2104732.68	423.38
426	1314617.60	2104749.39	423.81
427	1314565.69	2104769.08	424.50
428	1314498.85	2104801.08	426.75
429	1314444.75	2104823.41	428.52
430	1314347.69	2104857.84	430.00
431	1314078.61	2104932.07	440.00
432	1313991.62	2104957.84	442.47
433	1313815.12	2105001.21	448.17
434	1313806.18	2105001.75	448.50
435	1313764.43	2104997.16	449.76
436	1313734.64	2104998.75	450.60
437	1313686.22	2105010.74	452.10
438	1313570.46	2105032.04	455.84
439	1313555.34	2105030.25	456.21
440	1313533.17	2105020.96	456.93
441	1313521.63	2105009.22	457.56
442	1313489.46	2104954.92	459.42
443	1313454.30	2104903.37	461.42
444	1313429.03	2104927.96	461.42
445	1313357.18	2104879.60	464.00
446	1313301.40	2104854.79	465.81
447	1313238.64	2104818.60	468.00
448	1313167.60	2104795.67	470.22
449	1313054.44	2104763.62	473.76

CHANNEL CENTERLINE CONTROL POINT TABLE

POINT NO.	NORTHING (FT)	EASTING (FT)	ELEVATION (FT)
450	1313001.86	2104738.68	475.56
451	1312966.94	2104710.94	476.89
452	1312939.07	2104665.35	474.00
453	1312886.37	2104612.65	470.00
454	1312822.68	2104575.74	465.97
455	1312754.79	2104547.83	462.00
456	1312684.63	2104526.66	458.00
457	1312663.34	2104505.48	456.34
458	1312645.96	2104495.82	455.54
459	1312544.97	2104486.77	450.49
460	1312524.31	2104474.11	448.94
461	1312509.85	2104450.80	447.60
462	1312480.36	2104417.25	445.35
463	1312458.56	2104362.13	442.44
464	1312449.80	2104342.95	441.64
465	1312446.41	2104320.07	440.48
466	1312457.52	2104284.56	439.00
467	1312469.36	2104238.29	438.00
468	1312466.65	2102339.94	318.00
469	1312464.15	2102399.11	327.00
470	1312468.36	2102447.85	330.00
471	1312456.16	2102509.53	337.00
472	1312466.81	2102686.95	339.80
473	1312371.12	2104042.40	433.86
474	1312393.37	2104114.76	435.00

CREST CONTROL POINT TABLE

POINT NO.	NORTHING (FT)	EASTING (FT)	ELEVATION (FT)
530	1312740.77	2102237.21	342.91
531	1312697.86	2102279.59	344.00
532	1312627.25	2102357.16	346.00
533	1312561.09	2102442.35	346.00
534	1312550.51	2102456.68	348.34
535	1312539.34	2102468.64	348.00
536	1312489.75	2102549.24	346.00
537	1312443.15	2102593.79	344.80
538	1312243.92	2102642.58	399.06
539	1315495.26	2102790.97	410.00
540	1315517.07	2102915.84	419.21
541	1315534.57	2102976.07	410.00
542	1315541.67	2103000.53	406.26
543	1315500.77	2102636.55	399.07
544	1315533.34	2102777.33	410.00
545	1315563.13	2102906.08	420.00
546	1315570.58	2102971.48	410.00
547	1315573.35	2102995.73	406.29
548	1315576.36	2102577.29	426.00
549	1315594.11	2102614.96	426.00
550	1315595.47	2102899.47	426.00
551	1315646.99	2102987.34	426.00
552	1315637.97	2103031.28	426.00
553	1315651.17	2103124.75	426.00
554	1314209.12	2101551.51	370.67
555	1314271.47	2101597.24	380.00
556	1314338.29	2101646.26	390.00
557	1314405.11	2101695.27	400.00
558	1314471.92	2101744.28	410.00
559	1314491.97	2101758.99	413.00
560	1314679.48	2101884.00	420.00
561	1314762.55	2101939.37	423.08
562	1314805.48	2101965.21	420.00
563	1314944.75	2102049.03	410.00
564	1315084.03	2102132.84	400.00
565	1315181.53	2102191.52	393.00
566	1315300.67	2102267.07	390.93
567	1314231.69	2101528.04	370.76
568	1314323.61	2101583.77	380.00
569	1314411.75	2101636.52	390.00
570	1314499.89	2101689.28	400.00
571	1314588.03	2101742.03	410.00
572	1314676.17	2101794.79	420.00
573	1314813.17	2101880.12	430.00
574	1314950.17	2101994.89	443.45
575	1314997.44	2101994.89	440.00
576	1315019.96	2102011.98	440.00
577	1315065.23	2102061.50	430.00
578	1315150.49	2102111.02	420.00
579	1315215.75	2102160.54	410.00
580	1315281.02	2102210.06	400.00
581	1315337.84	2102253.18	391.29
582	1314813.95	2101779.68	450.00
583	1315018.38	2101966.15	450.00
584	1315176.45	2102014.81	450.00

TOP DECK TERRACE CENTERLINE INVERT CONTROL POINT TABLE

POINT NO.	NORTHING (FT)	EASTING (FT)	ELEVATION (FT)
1300	1314355.31	2102783.67	496.94
1301	1314316.23	2102821.96	498.00
1302	1314243.42	2102891.93	500.00
1303	1314169.61	2102959.57	502.00
1304	1314094.22	2103025.44	503.99
1305	1314042.73	2103070.09	505.40
1306	1314032.91	2103091.39	506.00
1307	1313996.89	2103184.30	508.00
1308	1313982.86	2103217.72	508.57
1309	1313954.08	2103228.08	508.00
1310	1313876.96	2103255.68	506.48
1311	1313757.54	2103292.01	504.00
1312	1313704.10	2103301.48	502.99
1313	1313654.89	2103302.17	502.00
1314	1313615.37	2103310.15	501.09
1315	1313583.38	2103337.82	500.00
1316	1313572.86	2103366.23	499.34
1317	1313568.56	2103389.15	499.31
1318	1313569.64	2103434.86	500.00
1319	1313570.90	2103525.02	502.00
1320	1313568.91	2103625.97	504.00
1321	1313567.17	2103661.48	505.10
1322	1313556.07	2103752.03	506.50
1323	1313542.15	2103826.34	508.00
1324	1313528.83	2103876.27	509.00
1325	1313512.60	2103924.02	510.00
1326	1313493.73	2103976.14	511.10
1327	1313475.59	2104019.62	512.00
1328	1313428.73	2104108.36	513.99
1329	1313403.04	2104154.26	515.09
1330	1313396.22	2104170.64	515.20
1331	1313329.41	2104176.62	514.00
1332	1313312.72	2104190.40	513.19
1333	1313295.92	2104247.10	512.00
1334	1313288.69	2104276.58	511.29
1335	1313288.81	2104308.25	510.23
1336	1313392.01	2104353.29	508.00
1337	1313447.32	2104377.08	506.80
1338	1313514.04	2104411.60	505.34
1339	1313534.40	2104416.39	505.34
1340	1313570.44	2104418.56	506.00
1341	1313603.08	2104421.00	506.70
1342	1313656.97	2104399.22	508.00
1343	1313671.94	2104363.08	508.69
1344	1313699.46	2104316.36	509.96
1345	1313794.34	2104284.02	508.00
1346	1313891.18	2104248.97	506.00
1347	1313949.45	2104227.88	504.80
1348	1313972.24	2104214.15	504.00
1349	1313987.05	2104181.43	503.31
1350	1313993.58	2104160.99	503.31
1351	1313999.11	2104133.41	503.80
1352	1314033.17	2104028.37	506.00
1353	1314064.12	2103932.92	508.00
1354	1314104.77	2103815.95	510.32
1355	1314136.40	2103798.06	509.61
1356	1314182.05	2103736.84	508.00
1357	1314236.39	2103653.24	506.00
1358	1314290.72	2103569.64	504.00
1359	1314345.05	2103486.04	502.00
1360	1314399.29	2103402.13	500.00
1361	1314454.42	2103318.10	498.00
1362	1314511.15	2103235.45	496.00
1363	1314531.17	2103206.76	495.32
1364	1314540.08	2103186.93	495.21
1365	1314568.80	2103093.95	497.21
1366	1314580.94	2103081.74	498.02
1367	1314534.28	2103073.43	498.67
1368	1314463.22	2103061.81	500.10
1369	1314442.19	2103053.99	500.42
1370	1314381.78	2103010.31	501.74
1371	1314376.65	2102993.28	500.75
1372	1314373.57	2102894.73	499.59
1373	1314372.70	2102825.98	498.22
1374	1314363.40	2102784.33	497.14

PONDS CONTROL POINT TABLE

POINT NO.	NORTHING (FT)	EASTING (FT)	ELEVATION (FT)
1400	1312311.28	2101598.55	312.00
1401	1312161.46	2101639.04	312.00
1402	1312103.66	2101662.86	312.80
1403	1312088.99	2101686.72	312.70
1404	1312124.21	2101816.18	313.00
1405	1312144.21	2101976.56	314.00
1406	1312182.06	2102012.79	314.30
1407	1312317.84	2102147.48	316.00
1408	1312401.91	2102220.02	317.00
1409	1312450.68	2102279.72	318.00
1410	1312479.58	2102319.57	318.00
1411	1312555.26	2102239.82	318.00
1412	1312637.22	2102165.65	318.00
1413	1312617.51	2102133.81	318.00
1414	1312582.21	2102079.27	317.00
1415	1312539.37	2102040.86	316.88
1416	1312538.36	2102010.84	316.80
1417	1312551.84	2101983.06	316.92
1418	1312568.56	2101971.54	317.00
1419	1312617.37	2101955.40	317.50
1420	1312664.11	2101955.33	318.00
1421	1312771.21	2101938.58	319.00
1422	1312863.66	2101941.44	320.00
1423	1312861.18	2101893.37	320.00
1424	1312785.31	2101891.05	319.25
1425	1312659.54	2101874.42	318.00
1426	1312604.46	2101869.89	317.50
1427	1312549.38	2101877.96	317.00
1428	1312461.07	2101901.36	316.00
1429	1312416.99	2101907.86	315.25
1430	1312376.10	2101890.04	314.50
1431	1312348.64	2101861.99	314.00
1432	1312321.24	2101822.17	313.32
1433	1312308.84	2101775.46	312.84
1434	1312307.21	2101709.03	312.00
1435	1312306.35	2101653.68	312.00
1436	1312254.17	2101620.68	310.00
1437	1312226.94	2101818.31	311.00
1438	1312226.53	2101821.28	312.00
1439	1312317.64	2102001.70	314.00
1440	1312466.22	2102135.47	316.00
1441	1313117.17	2102318.09	322.00
1442	1313118.89	2102535.54	322.00
1443	1313264.54	2102597.59	322.50
1444	1313333.53	2102621.29	323.00
1445	1313394.78	2102651.67	323.56
1446	1314138.33	2102686.51	324.00
1447	1314186.07	2102735.04	324.89
1448	1311511.28	2102804.36	326.00
1449	1311548.29	2102947.35	328.00
1450	1311584.04	2102973.66	328.20
1451	1311637.52	2102985.29	328.54
1452	1311674.43	2103012.29	328.83
1453	1311700.88	2103054.83	329.29
1454	1311714.75	2103109.76	330.00
1455	1311731.85	2103250.60	332.00
1456	1311812.30	2103247.27	332.00
1457	1311854.51	2103184.99	331.00
1458	1311904.40	2103159.41	330.71
1459	1311944.33	2103146.15	330.00
1460	1311945.54	2103100.22	330.00
1461	1311955.60	2103047.48	329.80
1462	1312000.33	2103015.43	330.00
1463	1312047.84	2102982.84	330.00
1464	1312075.60	2102942.33	331.00
1465	1312101.57	2102928.99	331.44
1466	1312137.91	2102928.82	332.00
1467	1312135.58	2102882.65	332.00
1468	1312064.99	2102859.91	331.00
1469	1311992.05	2102815.17	330.00
1470	1311880.30	2102686.29	328.00
1471	1311733.78	2102572.19	326.00
1472	1311682.73	2102475.95	325.00
1473	1311553.73	2102449.30	324.00
1474	1311485.09	2102421.42	323.46
1475	1311398.01	2102374.82	322.73
1476	1311279.14	2102418.21	720.00
1477	1311428.89	2102547.74	321.00
1478	1311431.16	2102549.70	322.00
1479	1311583.30	2102659.32	324.00
1480	1311714.04	2102811.12	326.00
1481	1311853.83	2102956.53	328.00

STREAM RESTORATION CONTROL POINT TABLE

POINT NO.	NORTHING (FT)	EASTING (FT)	ELEVATION (FT)
1500	1311763.05	2103342.84	333.24
1501	1311783.86	2103385.34	334.03
1502	1311798.73	2103473.24	346.00
1503	1311845.56	2103516.76	355.00
1504	1311879.71	2103523.99	366.00
1505	1311869.45	2103549.34	376.38
1506	1312065.29	2103563.28	380.00
1507	1312093.27	2103569.20	383.46
1508	1312135.46	2103600.14	389.09
1509	1312155.72	2103638.20	394.39
1510	1312202.02	2103726.11	398.00
1511	1312211.92	2103743.76	400.00
1512	1312258.90	2103832.04	410.00
1513	1312305.89	2103920.31	420.00
1514	1312352.86	2104008.58	430.00
1515	1312366.36	2104033.90	433.20
1516	1311810.28	2103493.40	349.00
1517	1311857.67	2103578.97	361.88
1518	1311873.74	2103622.14	368.00
1519	1311881.65	2103667.54	374.11
1520	1311886.13	2103773.34	388.00
1521	1311888.03	2103827.65	389.10
1522	1311887.30	2103872.31	390.00
1523	1311883.80	2103917.79	390.92
1524	1311873.48	2103970.59	392.00
1525	1311856.53	2104021.96	393.09
1526	1311837.34	2104063.08	394.00
1527	1311814.52	2104101.37	394.90
1528	1311785.94	2104148.80	396.00
1529	1311766.39	2104188.37	396.80
1530	1311746.07	2104240.73	398.00
1531	1311733.82	2104282.35	398.86
1532	1311729.15	2104321.75	399.65
1533	1311734.74	2104361.02	400.44
1534	1311744.04	2104395.55	402.00
1535	1311765.45	2104456.26	410.89
1536	1311775.28	2104474.99	413.74
1537	1311794.54	2104492.86	417.26
1538	1311821.56	2104504.51	421.23
1539	1311884.28	2104515.94	430.02
1540	1311941.25	2104526.33	438.00
1541	1311728.41	2104339.67	400.00
1542	1311716.70	2104382.10	402.00
1543	1311695.63	2104449.64	404.00
1544	1311664.43	2104529.81	406.00
1545	1311631.90	2104614.00	408.00
1546	1311662.36	2104713.21	410.00
1547	1311699.12	2104816.25	412.00
1548	1311557.05	2104820.48	408.00
1549	1311388.11	2104696.45	410.00
1550	1311393.34	2104739.32	412.00
1551	1311257.77	2104756.73	414.00
1552	1311175.42	2104765.59	415.00
1553	1311131.06	2104781.49	416.00
1554	1311615.62	2104545.49	406.00
1555	1311651.49	2104464.17	404.00
1556	1312177.80	2102900.44	335.00
1557	1312202.05	2102896.41	337.36
1558	1312239.44	2102890.80	341.04
1559	1312269.17	2102900.25	344.00
1560	1312977.81	2101919.84	322.00
1561	1313028.46	2101912.67	324.00
1562	1313077.81	2101898.86	326.00
1563	1313124.99	2101879.39	328.00
1564	1313173.39	2101862.92	330.00
1565	1313223.12	2101851.10	332.00
1566	1313273.70	2101843.71	334.00
1567	1313324.13	2101835.18	336.00
1568	1313373.88	2101823.29	338.00
1569	1313422.69	2101808.02	340.00
1570	1313470.33	2101789.48	342.00
1571	1313516.63	2101767.79	344.00
1572	1313561.38	2101743.04	346.00
1573	1313604.39	2101715.34	348.00
1574	1313646.65	2101686.53	350.00
1575	1313689.82	2101658.81	352.00
1576	1313733.01	2101632.57	354.00
1577	1313755.53	2101619.56	355.00
1578	1313764.90	2101615.51	356.00
1579	1313781.86	2101607.93	358.00
1580	1313798.20	2101601.76	359.00
1581	1313828.55	2101593.43	360.00
1582	1314078.08	2101504.14	367.00
1583	1314111.27	2101494.17	368.00
1584	1314168.09	2101492.33	369.56
1585	1314176.39	2101492.06	370.00
1586	1314214.46	2101490.82	372.00
1587	1314252.53	2101489.58	374.00
1588	1314290.59	2101488.34	376.00
1589	1314353.66	2101486.20	378.00
1590	1314416.71	2101484.06	380.00
1591	1314447.25	2101481.66	380.97
1592	1314478.82	2101474.63	382.00
1593	1314507.84	2101464.69	382.97
1594	1314536.43	2101449.81	384.00
1595	1314590.98	2101417.84	386.00
1596	1314647.47	2101389.78	388.00
1597	1314705.86	2101365.93	390.00
1598	1314765.74	2101346.09	392.00
1599	1314825.82	2101326.84	394.00
1600	1314885.77	2101307.64	396.00
1601	1314945.99	2101288.35	398.00
1602	1315006.36	2101270.09	400.00
1603	1315068.58	2101260.36	402.00
1604	1315131.61	2101261.19	404.00
1605	1315193.53	2101272.73	406.00
1606	1315252.79	2101294.17	408.00
1607	1315312.24	2101315.24	410.00
1608	1315373.70	2101329.17	412.00
1609	1315436.41	2101335.79	414.00
1610	1315499.46	2101335.00	416.00
1611	1315561.33	2101326.91	418.00
1612	1314935.03	2101288.24	397.71
1613	1314964.16	2101235.75	400.00
1614	1314991.92	2101191.16	402.00
1615	1315021.00	2101147.39	404.00
1616	1315052.09	2101105.01	406.00
1617	1315084.95	2101064.04	408.00
1618	1315119.45	2101024.38	410.00
1619	1315155.55	2100986.20	412.00
1620	1315193.25	2100949.62	414.00
1621	1315232.23	2100914.33	416.00
1622	1315251.40	2100894.73	417.04
1623	1315267.01	2100874.99	418.00
1624	1315280.36	2100854.21	418.94

STREAM RESTORATION CONTROL POINT TABLE

POINT NO.	NORTHING (FT)	EASTING (FT)	ELEVATION (FT)
1625	1315292.87	2100829.09	420.00
1626	1315581.34	2102311.53	400.00
1627	1315579.85	2102311.86	400.26
1628	1315701.94	2102309.10	402.00
1629	1315784.71	2102290.79	404.00
1630	1315826.98	2102280.23	406.00
1631	1315893.98	2102276.28	408.00
1632	1315920.78	2102272.58	408.83
1633	1315957.65	2102263.23	410.00
1634	1316018.37	2102239.69	412.00
1635	1316080.88	2102221.55	414.00
1636	1316145.08	2102210.82	416.00
1637	1316175.45	2102206.87	416.94
1638	1316209.13	2102189.26	418.00
1639	1316236.38	2102188.31	418.95
1640	1316269.39	2102174.89	420.00
1641	1316325.45	2102141.76	422.00
1642	1316383.53	2102112.31	424.00
1643	1316444.02	2102088.08	426.00
1644	1316506.37	2102069.28	428.00
1645	1316537.90	2102060.55	429.01
1646	1316568.17	2102049.08	430.00
1647	1316600.22	2102032.87	431.10
1648	1316624.71	2102017.00	432.00
1649	1316649.77	2101997.15	432.98
1650	1316676.35	2101977.31	434.00
1651	1316705.57	2101961.83	435.02
1652	1316735.77	2101951.33	436.00
1653	1316761.67	2101946.18	436.81
1654	1316800.30	2101944.55	438.00

WOOD YARD CONTROL POINT TABLE

POINT NO.	NORTHING (FT)	EASTING (FT)	ELEVATION (FT)
1700	1316083.51	2101776.13	473.00
1701	1316099.66	2101771.51	474.00
1702	1316122.74	2101764.90	475.20
1703	1316128.42	2101742.50	476.00
1704	1316159.02	2101684.89	478.00
1705	1316182.33	2101635.77	0.00
1706	1316207.08	2101579.10	0.00
1707	1316236.06	2101529.67	484.00
1708	1316273.04	2101493.68	486.00
1709	1316303.96	2101494.01	488.00
1710	1316326.79	2101486.71	488.00
1711	1316348.30	2101477.12	489.00
1712	1316374.93	2101469.97	490.00
1713	1316472.33	2101836.21	490.00
1714	1316429.22	2101861.54	488.00
1715	1316380.33	2101692.73	486.20
1716	1316386.25	2101720.71	486.00
1717	1316337.54	2101732.11	484.00
1718	1316288.83	2101743.50	482.00
1719	1316240.12	2101754.89	480.00
1720	1316191.41	2101766.28	478.00
1721	1316142.71	2101777.68	476.00
1722	1316103.50	2101786.84	474.00
1723	1316087.50	2101790.59	473.00
1724	1316385.79	2101433.60	500.00
1725	1316399.31	2101382.60	512.00
1726	1316411.53	2101359.64	514.00
1727	1316430.88	2101335.99	514.00
1728	1316468.09	2101300.59	516.00
1729	1316400.23	2101312.87	516.00
1730	1316459.58	2101298.07	516.00
1731	1316458.56	2101259.60	516.80
1732	1316430.53	2101229.13	518.00
1733	1316392.40	2101184.00	519.00
1734	1316396.03	2101131.04	519.50
1735	1316453.99	2101078.72	520.00
1736	1316489.75	2101040.83	522.00
1737	1316515.22	2101014.26	523.50
1738	1316530.57	2101011.60	524.00
1739	1316583.75	2101003.46	526.00
1740	1316636.93	2100995.32	528.00
1741	1316690.11	2100987.18	530.00
1742	1316799.90	2100976.76	532.00
1743	1316941.17	2100962.07	536.00
1744	1316979.32	2101150.89	534.00
1745	1317003.83	2101244.18	534.00
1746	1316999.56	2101263.43	533.50
1747	1316977.61	2101280.06	532.00
1748	1316917.18	2101316.85	530.60
1749	1316894.37	2101335.60	530.00
1750	1316871.51	2101356.31	528.80
1751	1316860.38	2101376.70	528.00
1752	1316835.16	2101432.56	526.00
1753	1316815.93	2101498.85	524.00
1754	1316803.85	2101537.90	522.80
1755	1316787.18	2101548.48	522.00
1756	1316742.75	2101571.58	520.00
1757	1316702.17	2101601.22	518.00
1758	1316689.31	2101611.88	517.50
1759	1316652.71	2101615.70	516.00
1760	1316627.46	2101619.78	515.00
1761	1316603.60	2101630.79	514.00
1762	1316596.00	2101634.55	513.80
1763	1316575.06	2101637.31	513.00
1764	1316549.30	2101637.02	512.00
1765	1316510.45	2101641.92	500.00
1766	1316466.46	2101198.90	518.00

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
	2019/02/28	100% DESIGN SUBMITTAL	CCP	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES
Southern Company
Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
CONTROL POINT TABLES
SHEET □ OF □

CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	CCP
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

ALABAMA REGISTERED PROFESSIONAL ENGINEER No. 20260 WILLIAM R. SULLIVAN
Feb 28, 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20260

PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	CP-24

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ARCH D
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Path: \\atlanta\cadd\Southern Company\Plant Miller\1792705 Closure Design\01_Civil\Production\ | File Name: 1792705-CP01 - CP23 -CONTROL PLANS.dwg | Last Edited By: ccpowell Date: 2019-02-28 Time:7:58:03 PM | Printed By: ccpowell Date: 2019-02-28 Time:8:11:23 PM

SLOPE TERRACE CENTERLINE INVERT CONTROL POINT TABLE

POINT NO.	NORTHING (FT)	EASTING (FT)	ELEVATION (FT)
600	1313882.84	2101951.63	400.00
601	1313825.60	2101990.78	399.30
602	1313712.95	2102055.65	398.00
603	1313638.64	2102103.30	397.10
604	1313556.67	2102150.89	396.15
605	1313516.43	2102168.31	395.71
606	1313500.38	2102178.21	395.52
607	1313430.61	2102227.93	392.00
608	1313356.07	2102277.33	388.00
609	1313271.84	2102301.22	384.00
610	1313213.54	2102323.29	383.28
611	1313925.96	2102025.24	415.76
612	1313870.52	2102059.84	414.45
613	1313761.98	2102116.14	412.00
614	1313675.77	2102166.82	410.00
615	1313587.22	2102213.27	408.00
616	1313543.47	2102230.45	407.06
617	1313410.18	2102341.86	403.58
618	1313254.21	2102403.09	400.22
619	1313893.53	2102184.57	431.73
620	1313815.35	2102221.55	430.00
621	1313727.33	2102269.00	428.00
622	1313636.74	2102311.35	426.00
623	1313601.13	2102324.62	425.24
624	1313473.53	2102424.73	422.00
625	1313297.31	2102487.34	418.26
626	1313857.18	2102351.88	447.62
627	1313785.55	2102390.18	446.00
628	1313673.76	2102441.85	443.57
629	1313553.85	2102537.41	440.49
630	1313353.83	2102608.21	436.26
631	1313828.46	2102515.22	463.85
632	1313745.28	2102558.27	461.82
633	1313638.99	2102646.75	459.05
634	1313413.26	2102727.45	454.27
635	1313808.79	2102678.61	479.94
636	1313727.20	2102755.23	477.71
637	1313471.22	2102848.08	472.27
638	1313778.49	2102884.96	493.48
639	1313708.70	2102912.57	491.99
640	1313532.32	2102973.91	488.24
641	1312687.89	2102206.74	328.58
642	1312599.71	2102300.50	331.16
643	1312484.66	2102408.69	328.00
644	1312795.37	2102323.13	339.54
645	1312709.64	2102414.88	342.00
646	1312629.00	2102519.42	344.64
647	1312542.20	2102618.80	342.00
648	1312488.45	2102691.68	340.19
649	1312866.57	2102366.44	353.65
650	1312784.33	2102450.53	356.00
651	1312720.84	2102527.64	358.00
652	1312659.11	2102616.74	360.17
653	1312591.09	2102701.18	358.00
654	1312534.96	2102783.82	356.00
655	1312485.47	2102870.71	354.00
656	1312468.12	2102905.42	353.24
657	1312985.07	2102375.29	368.44
658	1312928.37	2102428.50	370.00
659	1312857.71	2102499.12	372.00
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707	[illegible]	[illegible]	[illegible]
708	[illegible]	[illegible]	[illegible]
709	[illegible]	[illegible]	[illegible]
710	[illegible]	[illegible]	[illegible]
711	[illegible]	[illegible]	[illegible]
712	[illegible]	[illegible]	[illegible]
713	[illegible]	[illegible]	[illegible]
714	[illegible]	[illegible]	[illegible]
715	[illegible]	[illegible]	[illegible]
716	[illegible]	[illegible]	[illegible]
717	[illegible]	[illegible]	[illegible]
718	[illegible]	[illegible]	[illegible]
719	[illegible]	[illegible]	[illegible]
720	[illegible]	[illegible]	[illegible]
721	[illegible]	[illegible]	[illegible]
722	[illegible]	[illegible]	[illegible]
723	[illegible]	[illegible]	[illegible]
724	[illegible]	[illegible]	[illegible]

SLOPE TERRACE CENTERLINE INVERT CONTROL POINT TABLE

POINT NO.	NORTHING (FT)	EASTING (FT)	ELEVATION (FT)
725	[illegible]	[illegible]	[illegible]
726	[illegible]	[illegible]	[illegible]
727	[illegible]	[illegible]	[illegible]
728	[illegible]	[illegible]	[illegible]
729	[illegible]	[illegible]	[illegible]
730	[illegible]	[illegible]	[illegible]
731	[illegible]	[illegible]	[illegible]
732	[illegible]	[illegible]	[illegible]
733	[illegible]	[illegible]	[illegible]
734	[illegible]	[illegible]	[illegible]
735	[illegible]	[illegible]	[illegible]
736	[illegible]	[illegible]	[illegible]
737	[illegible]	[illegible]	[illegible]
738	[illegible]	[illegible]	[illegible]
739	[illegible]	[illegible]	[illegible]
740	[illegible]	[illegible]	[illegible]
741	[illegible]	[illegible]	[illegible]
742	[illegible]	[illegible]	[illegible]
743	[illegible]	[illegible]	[illegible]
744	[illegible]	[illegible]	[illegible]
745	[illegible]	[illegible]	[illegible]
746	[illegible]	[illegible]	[illegible]
747	[illegible]	[illegible]	[illegible]
748	[illegible]	[illegible]	[illegible]
749	[illegible]	[illegible]	[illegible]
750	[illegible]	[illegible]	[illegible]
751	[illegible]	[illegible]	[illegible]
752	[illegible]	[illegible]	[illegible]
753	[illegible]	[illegible]	[illegible]
754	[illegible]	[illegible]	[illegible]
755	[illegible]	[illegible]	[illegible]
756	[illegible]	[illegible]	[illegible]
757	[illegible]	[illegible]	[illegible]
758	[illegible]	[illegible]	[illegible]
759	[illegible]	[illegible]	[illegible]
760	[illegible]	[illegible]	[illegible]
761	[illegible]	[illegible]	[illegible]
762	[illegible]	[illegible]	[illegible]
763	[illegible]	[illegible]	[illegible]
764	[illegible]	[illegible]	[illegible]
765	[illegible]	[illegible]	[illegible]
766	[illegible]	[illegible]	[illegible]
767	[illegible]	[illegible]	[illegible]
768	[illegible]	[illegible]	[illegible]
769	[illegible]	[illegible]	[illegible]
770	[illegible]	[illegible]	[illegible]
771	[illegible]	[illegible]	[illegible]
772	[illegible]	[illegible]	[illegible]
773	[illegible]	[illegible]	[illegible]
774	[illegible]	[illegible]	[illegible]
775	[illegible]	[illegible]	[illegible]
776	[illegible]	[illegible]	[illegible]
777	[illegible]	[illegible]	[illegible]
778	[illegible]	[illegible]	[illegible]
779	[illegible]	[illegible]	[illegible]
780	[illegible]	[illegible]	[illegible]
781	[illegible]	[illegible]	[illegible]
782	[illegible]	[illegible]	[illegible]
783	[illegible]	[illegible]	[illegible]
784	[illegible]	[illegible]	[illegible]
785	[illegible]	[illegible]	[illegible]
786	[illegible]	[illegible]	[illegible]
787	[illegible]	[illegible]	[illegible]
788	[illegible]	[illegible]	[illegible]
789	[illegible]	[illegible]	[illegible]
790	[illegible]	[illegible]	[illegible]
791	[illegible]	[illegible]	[illegible]
792	[illegible]	[illegible]	[illegible]
793	[illegible]	[illegible]	[illegible]
794	[illegible]	[illegible]	[illegible]
795	[illegible]	[illegible]	[illegible]
796	[illegible]	[illegible]	[illegible]
797	[illegible]	[illegible]	[illegible]
798	[illegible]	[illegible]	[illegible]
799	[illegible]	[illegible]	[illegible]
800	[illegible]	[illegible]	[illegible]
801	[illegible]	[illegible]	[illegible]
802	[illegible]	[illegible]	[illegible]
803	[illegible]	[illegible]	[illegible]
804	[illegible]	[illegible]	[illegible]
805	[illegible]	[illegible]	[illegible]
806	[illegible]	[illegible]	[illegible]
807	[illegible]	[illegible]	[illegible]
808	[illegible]	[illegible]	[illegible]
809	[illegible]	[illegible]	[illegible]
810	[illegible]	[illegible]	[illegible]
811	[illegible]	[illegible]	[illegible]
812	[illegible]	[illegible]	[illegible]
813	[illegible]	[illegible]	[illegible]
814	[illegible]	[illegible]	[illegible]
815	[illegible]	[illegible]	[illegible]
816	[illegible]	[illegible]	[illegible]
817	[illegible]	[illegible]	[illegible]
818	[illegible]	[illegible]	[illegible]
819	[illegible]	[illegible]	[illegible]
820	[illegible]	[illegible]	[illegible]
821	[illegible]	[illegible]	[illegible]
822	[illegible]	[illegible]	[illegible]
823	[illegible]	[illegible]	[illegible]
824	[illegible]	[illegible]	[illegible]
825	[illegible]	[illegible]	[illegible]
826	[illegible]	[illegible]	[illegible]
827	[illegible]	[illegible]	[illegible]
828	[illegible]	[illegible]	[illegible]
829	[illegible]	[illegible]	[illegible]
830	[illegible]	[illegible]	[illegible]
831	[illegible]	[illegible]	[illegible]
832	[illegible]	[illegible]	[illegible]
833	[illegible]	[illegible]	[illegible]
834	[illegible]	[illegible]	[illegible]
835	[illegible]	[illegible]	[illegible]
836	[illegible]	[illegible]	[illegible]
837	[illegible]	[illegible]	[illegible]
838	[illegible]	[illegible]	[illegible]
839	[illegible]	[illegible]	[illegible]
840	[illegible]	[illegible]	[illegible]
841	[illegible]	[illegible]	[illegible]
842	[illegible]	[illegible]	[illegible]
843	[illegible]	[illegible]	[illegible]
844	[illegible]	[illegible]	[illegible]
845	[illegible]	[illegible]	[illegible]
846	[illegible]	[illegible]	[illegible]
847	[illegible]	[illegible]	[illegible]
848	[illegible]	[illegible]	[illegible]
849	[illegible]	[illegible]	[illegible]

SLOPE TERRACE CENTERLINE INVERT CONTROL POINT TABLE

POINT NO.	NORTHING (FT)	EASTING (FT)	ELEVATION (FT)
850	[illegible]	[illegible]	[illegible]
851	[illegible]	[illegible]	[illegible]
852	[illegible]	[illegible]	[illegible]
853	[illegible]	[illegible]	[illegible]
854	[illegible]	[illegible]	[illegible]
855	[illegible]	[illegible]	[illegible]
856	[illegible]	[illegible]	[illegible]
857	[illegible]	[illegible]	[illegible]
858	[illegible]	[illegible]	[illegible]
859	[illegible]	[illegible]	[illegible]
860	[illegible]	[illegible]	[illegible]
861	[illegible]	[illegible]	[illegible]
862	[illegible]	[illegible]	[illegible]
863	[illegible]	[illegible]	[illegible]
864	[illegible]	[illegible]	[illegible]
865	[illegible]	[illegible]	[illegible]
866	[illegible]	[illegible]	[illegible]
867	[illegible]	[illegible]	[illegible]
868	[illegible]	[illegible]	[illegible]
869	[illegible]	[illegible]	[illegible]
870	[illegible]	[illegible]	[illegible]
871	[illegible]	[illegible]	[illegible]
872	[illegible]	[illegible]	[illegible]
873	[illegible]	[illegible]	[illegible]
874	[illegible]	[illegible]	[illegible]
875	[illegible]	[illegible]	[illegible]
876	[illegible]	[illegible]	[illegible]
877	[illegible]	[illegible]	[illegible]
878	[illegible]	[illegible]	[illegible]
879	[illegible]	[illegible]	[illegible]
880	[illegible]	[illegible]	[illegible]
881	[illegible]	[illegible]	[illegible]
882	[illegible]	[illegible]	[illegible]
883	[illegible]	[illegible]	[illegible]
884	[illegible]	[illegible]	[illegible]
885	[illegible]	[illegible]	[illegible]
886	[illegible]	[illegible]	[illegible]
887	[illegible]	[illegible]	[illegible]
888	[illegible]	[illegible]	[illegible]
889	[illegible]	[illegible]	[illegible]
890	[illegible]	[illegible]	[illegible]
891	[illegible]	[illegible]	[illegible]
892	[illegible]	[illegible]	[illegible]
893	[illegible]	[illegible]	[illegible]
894	[illegible]	[illegible]	[illegible]
895	[illegible]	[illegible]	[illegible]
896	[illegible]	[illegible]	[illegible]
897	[illegible]	[illegible]	[illegible]
898	[illegible]	[illegible]	[illegible]
899	[illegible]	[illegible]	[illegible]
900	[illegible]	[illegible]	[illegible]
901	[illegible]	[illegible]	[illegible]
902	[illegible]	[illegible]	[illegible]
903	[illegible]	[illegible]	[illegible]
904	[illegible]	[illegible]	[illegible]
905	[illegible]	[illegible]	[illegible]
906	[illegible]	[illegible]	[illegible]
907	[illegible]	[illegible]	[illegible]
908	[illegible]	[illegible]	[illegible]
909	[illegible]	[illegible]	[illegible]
910	[illegible]	[illegible]	[illegible]
911	[illegible]	[illegible]	[illegible]
912	[illegible]	[illegible]	[illegible]
913	[illegible]	[illegible]	[illegible]
914	[illegible]	[illegible]	[illegible]
915	[illegible]	[illegible]	[illegible]
916	[illegible]	[illegible]	[illegible]
917	[illegible]	[illegible]	[illegible]
918	[illegible]	[illegible]	[illegible]
919	[illegible]	[illegible]	[illegible]
920	[illegible]	[illegible]	[illegible]
921	[illegible]	[illegible]	[illegible]
922	[illegible]	[illegible]	[illegible]
923	[illegible]	[illegible]	[illegible]
924	[illegible]	[illegible]	[illegible]
925	[illegible]	[illegible]	[illegible]
926	[illegible]	[illegible]	[illegible]
927	[illegible]	[illegible]	[illegible]
928	[illegible]	[illegible]	[illegible]
929	[illegible]	[illegible]	[illegible]
930	[illegible]	[illegible]	[illegible]
931	[illegible]	[illegible]	[illegible]
932	[illegible]	[illegible]	[illegible]
933	[illegible]	[illegible]	[illegible]
934	[illegible]	[illegible]	[illegible]
935	[illegible]	[illegible]	[illegible]
936	[illegible]	[illegible]	[illegible]
937	[illegible]	[illegible]	[illegible]
938	[illegible]	[illegible]	[illegible]
939	[illegible]	[illegible]	[illegible]
940	[illegible]	[illegible]	[illegible]
941	[illegible]	[illegible]	[illegible]
942	[illegible]	[illegible]	[illegible]
943	[illegible]	[illegible]	[illegible]
944	[illegible]	[illegible]	[illegible]
945	[illegible]	[illegible]	[illegible]
946	[illegible]	[illegible]	[illegible]
947	[illegible]	[illegible]	[illegible]
948	[illegible]	[illegible]	[illegible]
949	[illegible]	[illegible]	[illegible]
950	[illegible]	[illegible]	[illegible]
951	[illegible]	[illegible]	[illegible]
952	[illegible]	[illegible]	[illegible]
953	[illegible]	[illegible]	[illegible]
954	[illegible]	[illegible]	[illegible]
955	[illegible]	[illegible]	[illegible]
956	[illegible]	[illegible]	[illegible]
957	[illegible]	[illegible]	[illegible]
958	[illegible]	[illegible]	[illegible]
959	[illegible]	[illegible]	[illegible]
960	[illegible]	[illegible]	[illegible]
961	[illegible]	[illegible]	[illegible]
962	[illegible]	[illegible]	[illegible]
963	[illegible]	[illegible]	[illegible]
964	[illegible]	[illegible]	[illegible]
965	[illegible]	[illegible]	[illegible]
966	[illegible]	[illegible]	[illegible]
967	[illegible]	[illegible]	[illegible]
968	[illegible]	[illegible]	[illegible]
969	[illegible]	[illegible]	[illegible]
970	[illegible]	[illegible]	[illegible]
971	[illegible]	[illegible]	[illegible]
972	[illegible]	[illegible]	[illegible]
973	[illegible]	[illegible]	[illegible]
974	[illegible]	[illegible]	[illegible]

SLOPE TERRACE CENTERLINE INVERT CONTROL POINT TABLE

POINT NO.	NORTHING (FT)	EASTING (FT)	ELEVATION (FT)
975	[illegible]	[illegible]	[illegible]
976	[illegible]	[illegible]	[illegible]
977	[illegible]	[illegible]	[illegible]
978	[illegible]	[illegible]	[illegible]
979	[illegible]	[illegible]	[illegible]
980	[illegible]	[illegible]	[illegible]
981	[illegible]	[illegible]	[illegible]
982	[illegible]	[illegible]	[illegible]
983	[illegible]	[illegible]	[illegible]
984	[illegible]	[illegible]	[illegible]
985	[illegible]	[illegible]	[illegible]
986	[illegible]	[illegible]	[illegible]
987	[illegible]	[illegible]	[illegible]
988	[illegible]	[illegible]	[illegible]
989	[illegible]	[illegible]	[illegible]
990	[illegible]	[illegible]	[illegible]
991	[illegible]	[illegible]	[illegible]
992	[illegible]	[illegible]	[illegible]
993	[illegible]	[illegible]	[illegible]
994	[illegible]	[illegible]	[illegible]
995	[illegible]	[illegible]	[illegible]
996	[illegible]	[illegible]	[illegible]
997	[illegible]	[illegible]	[illegible]
998	[illegible]	[illegible]	[illegible]
999	[illegible]	[illegible]	[illegible]
1000	[illegible]	[illegible]	[illegible]
1001	[illegible]	[illegible]	[illegible]
1002	[illegible]	[illegible]	[illegible]
1003	[illegible]	[illegible]	[illegible]
1004	[illegible]	[illegible]	[illegible]
1005	[illegible]	[illegible]	[illegible]
1006	[illegible]	[illegible]	[illegible]
1007	[illegible]	[illegible]	[illegible]
1008	[illegible]	[illegible]	[illegible]
1009	[illegible]	[illegible]	[illegible]
1010	[illegible]	[illegible]	[illegible]
1011	[illegible]	[illegible]	[illegible]
1012	[illegible]	[illegible]	[illegible]
1013	[illegible]	[illegible]	[illegible]
1014	[illegible]	[illegible]	[illegible]
1015	[illegible]	[illegible]	[illegible]
1016	[illegible]	[illegible]	[illegible]
1017	[illegible]	[illegible]	[illegible]
1018	[illegible]	[illegible]	[illegible]
1019	[illegible]	[illegible]	[illegible]
1020	[illegible]	[illegible]	[illegible]
1021	[illegible]	[illegible]	[illegible]
1022	[illegible]	[illegible]	[illegible]
1023	[illegible]	[illegible]	[illegible]
1024	[illegible]	[illegible]	[illegible]
1025	[illegible]	[illegible]	[illegible]
1026	[illegible]	[illegible]	[illegible]
1027	[illegible]	[illegible]	[illegible]
1028	1314425.29	2104322.98	476.25
1029	1313504.23	2104592.91	500.44
1030	1313552.58	2104598.74	501.50
1031	1313568.51	2104596.02	502.00
1032	1313608.19	2104575.78	502.90
1033	1313661.47	2104555.26	504.00
1034	1313691.48	2104544.55	504.70
1035	1313722.60	2104526.05	505.40
1036	1313791.14	2104503.87	504.00
1037	1313885.01	2104470.06	502.00
1038	1313979.32	2104435.83	500.00
1039	1314073.27	2104401.93	498.00
1040	1314179.96	2104363.35	495.70
1041	1314245.12	2104329.10	494.20
1042	1314276.49	2104303.30	493.20
1043	1314298.03	2104264.80	492.27
1044	1314792.74	2104484.01	422.20
1045	1314822.51	2104398.72	424.00
1046	1314855.53	2104304.10	426.00
1047	1314883.38	2104224.30	427.69
1048	1314678.24	2104413.21	440.23
1049	1314706.67	2104331.02	442.00
1050	1314739.45	2104236.56	444.00
1051	1314762.52	2104170.42	445.40
1052	1314780.42	2104126.40	446.38
1053	1314794.04	2104014.47	448.70
1054	1314556.03	2104359.37	458.26
1055	1314584.66	2104277.10	460.00
1056	1314618.25	2104180.09	462.01
1057	1314651.06	2104086.10	464.00
1058	1314661.62	2104029.83	465.21
1059	1314671.65	2103988.46	466.00
1060	1314699.79	2103909.98	467.66
1061	1314711.31	2103824.14	469.50
1062	1314434.81	2104302.38	476.23
1063	1314463.46	2104220.15	478.00
1064	1314496.14	2104125.72	480.00
1065	1314528.75	2104031.59	482.00
1066	1314534.82	2104009.65	482.28
1067	1314539.91	2103973.78	482.98
1068	1314554.75	2103923.73	484.00
1069	1314574.71	2103867.89	485.18
1070	1314581.41	2103830.56	486.00
1071	1314591.97	2103785.18	486.86
1072	1314617.18	2103731.45	488.06
1073	1314628.55	2103638.56	490.00
1074	1314307.82	2104243.35	492.24
1075	1314336.11	2104162.22	494.00
1076	1314368.69	2104068.00	496.00
1077	1314401.22	2103974.04	498.00
1078	1314920.79	2104145.93	427.87
1079	1314971.66	2104067.65	426.00
1080	1315026.00	2103984.06	424.00
1081	1315080.34	2103900.46	422.00
1082	1315134.68	2103816.87	420.00
1083	1315189.02	2103733.27	418.00
1084	1315243.36	2103649.68	416.00
1085	1315292.51	2103574.07	414.19
1086	1314857.48	2103999.93	443.76
1087	1314905.48	2103925.99	442.00
1088	1314959.95	2103842.02	440.00
1089	1315014.30	2103758.14	438.00
1090	1315068.70	2103674.05	436.00
1091	1315122.71	2103591.24	434.00
1092	1315170.56	2103517.90	432.23
1093	1314794.43	2103853.96	459.69
1094	1314840.52	2103782.97	458.00
1095	1314895.03	2103698.98	456.00
1096	1314949.66	2103615.06	454.00
1097	1315004.06	2103531.04	452.00
1098	1315051.55	2103458.03	450.23
1099	1314730.34	2103708.39	475.65

SLOPE TERRACE CENTERLINE INVERT CONTROL POINT TABLE

POINT NO.	NORTHING (FT)	EASTING (FT)	ELEVATION (FT)
1100	[illegible]	[illegible]	[illegible]
1101	[illegible]	[illegible]	[illegible]
1102	[illegible]	[illegible]	[illegible]
1103	[illegible]	[illegible]	[illegible]
1104	[illegible]	[illegible]	[illegible]
1105	[illegible]	[illegible]	[illegible]
1106	[illegible]	[illegible]	[illegible]
1107	[illegible]	[illegible]	[illegible]
1108	[illegible]	[illegible]	[illegible]
1109	[illegible]	[illegible]	[illegible]
1110	[illegible]	[illegible]	[illegible]
1111	[illegible]	[illegible]	[illegible]
1112	[illegible]	[illegible]	[illegible]
1113	[illegible]	[illegible]	[illegible]
1114	[illegible]	[illegible]	[illegible]
1115	[illegible]	[illegible]	[illegible]
1116	[illegible]	[illegible]	[illegible]
1117	[illegible]	[illegible]	[illegible]
1118	[illegible]	[illegible]	[illegible]
1119	[illegible]	[illegible]	[illegible]
1120	[illegible]	[illegible]	[illegible]
1121	[illegible]	[illegible]	[illegible]
1122	[illegible]	[illegible]	[illegible]
1123	[illegible]	[illegible]	[illegible]
1124	[illegible]	[illegible]	[illegible]
1125	[illegible]	[illegible]	[illegible]
1126	[illegible]	[illegible]	[illegible]
1127	[illegible]	[illegible]	[illegible]
1128	[illegible]	[illegible]	[illegible]
1129	[illegible]	[illegible]	[illegible]
1130	[illegible]	[illegible]	[illegible]
1131	[illegible]	[illegible]	[illegible]
1132	[illegible]	[illegible]	[illegible]
1133	[illegible]	[illegible]	[illegible]
1134	[illegible]	[illegible]	[illegible]
1135	[illegible]	[illegible]	[illegible]
1136	[illegible]	[illegible]	[illegible]
1137	[illegible]	[illegible]	[illegible]
1138	[illegible]	[illegible]	[illegible]
1139	[illegible]	[illegible]	[illegible]
1140	[illegible]	[illegible]	[illegible]
1141	[illegible]	[illegible]	[illegible]
1142	[illegible]	[illegible]	[illegible]
1143	[illegible]	[illegible]	[illegible]
1144	[illegible]	[illegible]	[illegible]
1145	[illegible]	[illegible]	[illegible]
1146	[illegible]	[illegible]	[illegible]
1147	[illegible]	[illegible]	[illegible]
1148	[illegible]	[illegible]	[illegible]
1149	[illegible]	[illegible]	[illegible]
1150	[illegible]	[illegible]	[illegible]
1151	[illegible]	[illegible]	[illegible]
1152	[illegible]	[illegible]	[illegible]
1153	1314973.58	2102859.48	472.00
1154	1314915.54	2102778.35	470.00
1155	1314861.83	2102706.68	468.21
1156	1314815.64	2103316.68	484.24
1157	1314844.39	2103235.22	486.00
1158	1314877.78	2103140.60	488.01
1159	1314905.93	2103060.84	489.70
1160	1314903.93	2103029.69	490.51
1161	1314897.04	2102997.65	489.65
1162	1314848.80	2102930.32	488.00
1163	1314790.38	2102848.77	486.00
1164	1314741.92	2102785.72	484.40
1165	1315189.83	2102468.58	414.20
1166	1315175.62	2102456.23	414.58
1167	1315118.87	2102413.47	416.00
1168	1315049.26	2102341.87	418.00
1169	1314993.28	2102259.04	420.00
1170	1314940.56	2102174.26	422.00
1171	1314911.29	2102136.51	422.95
1172	1315075.90	2102543.02	432.20
1173	1315050.11	2102522.97	432.86
1174	1315012.42	2102493.41	433.82
1175	1314974.45	2102456.45	434.88
1176	1314937.26	2102414.61	436.00
1177	1314905.14	2102372.46	437.06
1178	1314879.42	2102332.94	438.00
1179	1314849.50	2102278.84	439.24
1180	1314828.45	2102246.88	440.00
1181	1314798.28	2102208.64	440.97
1182	1314756.32	2102164.55	442.19
1183	1314746.22	2102146.90	441.78
1184	1314726.84	2102118.97	441.10
1185	1314700.19	2102087.82	440.28
1186	1314678.54	2102067.09	439.68
1187	1314640.89	2102037.33	438.72
1188	1314596.02	2102011.11	437.69
1189	1314559.54	2101994.72	436.89
1190	1314517.35	2101981.27	436.00
1191	1314472.66	2101972.19	435.09
1192	1314418.54	2101967.32	434.00
1193	1314358.18	2101971.17	432.79
1194	1314318.84	2101978.26	431.99
1195	1314277.73	2101990.49	431.13
1196	1314236.47	2102002.60	430.24
1197	1314961.59	2102617.51	450.21
1198	1314930.47	2102593.18	451.00
1199	1314893.15	2102559.66	452.00
1200	1314859.56	2102525.62	452.96
1201	1314825.16	2102486.21	454.00
1202	1314797.18	2102450.11	454.91
1203	1314766.51	2102405.23	456.00
1204	1314739.00	2102358.05	457.09
1205	1314704.77	2102303.55	458.38
1206	1314662.73	2102226.46	456.63
1207	1314640.76	2102194.29	455.84
1208	1314605.82	2102158.61	454.84
1209	1314571.30	2102134.39	454.00
1210	1314522.92	2102111.18	452.92
1211	1314478.29	2102099.32	452.00
1212	1314448.81	2102095.37	451.41
1213	1314396.88	2102096.20	450.37
1214	1314345.94	2102106.43	449.33
1215	1314294.44	2102122.58	448.24
1216	1314847.20	2102691.83	468.21
1217	1314809.08	2102658.92	469.22
1218	1314780.70	2102631.97	470.00
1219	1314747.51	2102597.49	470.96
1220	1314713.45	2102558.20	472.00
1221	1314681.56	2102517.14	473.04
1222	1314636.78	2102450.65	474.64
1223	1314616.88	2102382.53	473.22
1224	1314591.85	2102326.89	472.00

SLOPE TERRACE CENTERLINE INVERT CONTROL POINT TABLE

POINT NO.	NORTHING (FT)	EASTING (FT)	ELEVATION (FT)
1225	1314555.14	2102271.12	470.66
1226	1314494.89	2102231.22	469.21
1227	1314435.33	2102222.49	468.00
1228	1314352.82	2102243.36	466.27
1229	1314728.44	2102771.04	484.38
1230	1314667.87	2102714.75	486.00
1231	1314599.44	2102639.50	488.00
1232	1314565.13	2102595.92	489.04
1233	1314544.47	2102544.35	488.00
1234	1314528.98	2102499.77	487.07
1235	1314511.35	2102439.50	485.83
1236	1314496.02	2102401.31	484.92
1237	1314474.85	2102366.15	484.08
1238	1314449.02	2102357.31	482.96
1239	1314418.59	2102367.19	482.31
1240	1314153.32	2101893.33	411.88
1241	1314071.03	2101955.56	414.00
1242	1314012.79	2102013.23	415.66
1243	1313982.25	2102053.50	417.00
1244	1314216.50	2102012.62	430.24
1245	1314148.65	2102063.82	432.00
1246	1314078.81	2102133.87	434.00
1247	1314007.52	2102204.10	436.00
1248	1313973.03	2102238.87	436.98
1249	1313937.66	2102286.80	440.00
1250	1314274.27	2102132.60	448.26
1251	1314208.62	2102184.78	450.00
1252	1314138.57	2102256.66	452.00
1253	1314067.33	2102326.67	454.00
1254	1313995.53	2102396.80	456.00
1255	1313930.08	2102457.15	458.00
1256	1313899.86	2102484.55	459.50
1257	1314332.77	2102253.68	466.27
1258	1314289.27	2102287.51	467.40
1259	1314198.61	2102379.41	470.00
1260	1314127.13	2102449.54	472.00
1261	1314054.91	2102518.99	474.00
1262	1313980.40	2102586.44	476.00
1263	1313904.52	2102651.87	478.00
1264	1313860.71	2102689.42	479.69
1265	1314395.44	2102379.45	482.38
1266	1314366.84	2102403.14	483.16
1267	1314337.63	2102432.23	484.00
1268	1314266.71	2102503.46	486.00
1269	1314195.06	2102573.46	488.00
1270	1314122.59	2102642.64	490.00
1271	1314047.60	2102709.78	492.00
1272	1313971.63	2102775.00	494.00
1273	1313894.12	2102838.30	495.92
1274	1313860.23	2102852.05	495.21

CAP AREA CONTROL POINT TABLE

POINT NO.	NORTHING (FT)	EASTING (FT)	ELEVATION (FT)
1800	1315513.86	2102958.67	413.25
1801	1315484.94	2102981.52	422.61
1802	1315492.71	2103030.53	420.47
1803	1315514.40	2103073.98	421.33
1804	1315540.03	2103115.67	415.16
1805	1315517.90	2103159.41	415.26
1806	1315493.89	2103203.27	415.64
1807	1315469.88	2103247.12	416.01
1808	1315445.87	2103290.98	416.38
1809	1315421.86	2103334.84	416.75
1810	1315397.84	2103378.69	417.13
1811	1315378.47	2103425.04	416.62
1812	1315346.98	2103421.52	417.13
1813	1315348.54	2103371.49	420.53
1814	1315358.41	2103322.66	422.61
1815	1315369.70	2103273.21	424.52
1816	1315381.44	2103225.93	426.00
1817	1315396.23	2103178.18	426.00
1818	1315415.42	2103132.24	424.47
1819	1315433.35	2103085.59	422.44
1820	1315447.69	2103037.76	420.35
1821	1315450.36	2102992.53	419.56
1822	1315421.52	2102952.03	423.52
1823	1315389.44	2102913.78	427.51
1824	1315379.72	2102866.15	426.92
1825	1315382.47	2102816.27	423.63
1826	1315388.13	2102781.75	421.77
1827	1315401.94	2102776.29	422.30
1828	1315397.66	2102726.42	419.17
1829	1315393.43	2102676.68	415.52
1830	1315384.61	2102627.52	412.05
1831	1315375.70	2102578.36	407.67
1832	1315372.29	2102528.89	402.60
1833	1315405.35	2102497.26	400.00
1834	1315419.16	2102464.89	400.00
1835	1315405.78	2102416.71	400.00
1836	1315397.40	2102369.24	397.76
1837	1315373.99	2102335.33	397.07
1838	1315328.95	2102317.16	400.00
1839	1315280.63	2102312.94	400.00
1840	1315235.01	2102292.89	400.00
1841	1315186.72	2102280.17	400.00
1842	1315138.92	2102265.42	402.78
1843	1315097.11	2102238.12	406.92
1844	1315059.70	2102207.29	410.74
1845	1315020.48	2102176.89	414.64
1846	1314978.52	2102149.80	418.78
1847	1314934.57	2102126.33	423.08
1848	1314904.54	2102134.06	423.67
1849	1314858.86	2102113.73	427.95
1850	1314811.12	2102100.41	432.76
1851	1314768.23	2102076.15	435.20
1852	1314736.57	2102040.87	434.30
1853	1314689.87	2102024.00	436.64
1854	1314650.56	2101994.08	435.70
1855	1314614.32	2101959.65	433.04
1856	1314576.63	2101927.09	429.84
1857	1314534.18	2101900.68	426.93
1858	1314490.60	2101876.21	423.54
1859	1314443.93	2101858.54	420.49
1860	1314394.88	2101849.01	418.02
1861	1314345.14	2101844.14	415.73
1862	1314295.38	2101845.05	413.86
1863	1314245.46	2101847.29	411.68
1864	1314198.01	2101862.67	410.70
1865	1314153.01	2101868.58	407.23
1866	1314108.79	2101884.53	410.00
1867	1314066.83	2101911.70	410.00
1868	1314026.97	2101941.87	410.00
1869	1314004.60	2101941.24	406.15
1870	1313961.24	2101927.19	408.10
1871	1313919.29	2101910.80	403.34
1872	1313880.33	2101942.13	402.08
1873	1313837.91	2101968.55	401.53
1874	1313795.24	2101994.61	401.02
1875	1313752.57	2102020.68	400.52
1876	1313709.90	2102046.75	400.02
1877	1313667.24	2102072.81	399.51
1878	1313624.57	2102098.88	399.00
1879	1313581.90	2102124.95	398.50
1880	1313538.25	2102149.12	397.99
1881	1313493.28	2102170.84	397.45
1882	1313449.61	2102195.18	395.30
1883	1313408.35	2102223.42	392.58
1884	1313366.10	2102250.11	389.80
1885	1313321.29	2102270.65	387.84
1886	1313275.89	2102289.85	386.48
1887	1313226.48	2102288.24	385.09
1888	1313179.59	2102305.22	383.80
1889	1313132.78	2102322.80	378.98
1890	1313085.65	2102339.47	376.29
1891	1313038.01	2102354.41	372.52
1892	1312988.17	2102354.64	367.63
1893	1312939.40	2102364.34	364.09
1894	1312889.58	2102365.57	356.20

CAP AREA CONTROL POINT TABLE

POINT NO.	NORTHING (FT)	EASTING (FT)	ELEVATION (FT)
1895	1312848.94	2102363.87	355.86
1896	1312813.25	2102398.87	356.86
1897	1312779.07	2102435.34	357.85
1898	1312746.30	2102473.10	358.84
1899	1312715.06	2102512.13	359.83
1900	1312685.41	2102552.38	360.81
1901	1312657.33	2102593.74	361.80
1902	1312626.72	2102633.14	361.50
1903	1312595.44	2102672.15	360.51
1904	1312565.72	2102712.35	359.52
1905	1312537.59	2102753.68	358.53
1906	1312511.08	2102796.07	357.54
1907	1312486.26	2102839.47	356.56
1908	1312463.13	2102883.79	355.57
1909	1312424.90	2102909.63	355.06
1910	1312408.76	2102945.15	354.38
1911	1312426.43	2102990.31	362.16
1912	1312451.33	2103033.67	369.06
1913	1312481.82	2103072.33	375.06
1914	1312514.21	2103109.82	383.28
1915	1312536.06	2103154.70	390.97
1916	1312565.34	2103195.22	394.62
1917	1312593.59	2103236.45	402.85
1918	1312629.61	2103264.41	403.26
1919	1312650.87	2103300.15	404.04
1920	1312659.64	2103349.17	407.81
1921	1312665.44	2103398.64	412.01
1922	1312640.37	2103441.80	419.87
1923	1312624.64	2103489.24	426.57
1924	1312610.85	2103537.02	433.39
1925	1312595.45	2103584.52	440.03
1926	1312563.22	2103622.65	443.13
1927	1312521.88	2103646.70	446.14
1928	1312500.37	2103690.82	449.03
1929	1312494.01	2103740.35	451.00
1930	1312491.05	2103789.38	451.22
1931	1312493.39	2103836.40	452.00
1932	1312485.25	2103885.19	451.49
1933	1312476.45	2103934.40	449.02
1934	1312465.80	2103983.24	446.53
1935	1312451.23	2104031.04	444.00
1936	1312442.52	2104080.28	444.00
1937	1312429.74	2104127.99	440.06
1938	1312405.56	2104152.38	437.60
1939	1312363.61	2104146.80	442.38
1940	1312320.02	2104127.61	441.31
1941	1312279.20	2104098.75	440.20
1942	1312237.84	2104071.09	439.00
1943	1312189.82	2104080.49	438.55
1944	1312156.26	2104116.85	438.79
1945	1312130.29	2104159.57	439.17
1946	1312112.03	2104206.07	439.62
1947	1312094.19	2104252.75	439.93
1948	1312084.49	2104301.80	440.33
1949	1312074.60	2104350.74	440.55
1950	1312071.77	2104400.65	440.89
1951	1312074.27	2104450.13	441.37
1952	1312087.48	2104496.46	442.16
1953	1312118.54	2104535.01	443.77
1954	1312118.55	2104581.85	446.00
1955	1312135.78	2104620.15	452.42
1956	1312135.17	2104646.76	463.46
1957	1312141.85	2104690.87	461.80
1958	1312144.03	2104737.77	458.57
1959	1312127.00	2104784.77	454.73
1960	1312104.73	2104829.31	448.90
1961	1312080.51	2104872.97	442.03
1962	1312080.25	2104918.47	440.62
1963	1312125.07	2104902.13	452.28
1964	1312170.28	2104892.38	463.32
1965	1312210.47	2104867.56	468.18
1966	1312255.62	2104852.96	479.78
1967	1312298.41	2104834.79	484.49
1968	1312346.27	2104829.03	496.53
1969	1312388.66	2104848.67	502.51
1970	1312414.75	2104883.75	508.49
1971	1312449.86	2104918.53	512.28
1972	1312489.10	2104949.51	515.97
1973	1312528.14	2104980.69	519.46
1974	1312568.27	2105010.29	521.56
1975	1312588.52	2105055.72	523.50
1976	1312609.13	2105038.18	524.00
1977	1312644.06	2105004.57	524.00
1978	1312631.91	2104970.37	523.26
1979	1312591.53	2104943.60	521.37
1980	1312594.10	2104921.91	523.16
1981	1312637.61	2104942.90	531.11
1982	1312682.10	2104957.82	535.18
1983	1312720.85	2104986.46	534.00
1984	1312762.87	2105004.88	533.11
1985	1312757.80	2105040.96	531.50
1986	1312744.47	2105088.94	531.50
1987	1312730.76	2105135.42	531.50
1988	1312727.66	2105181.91	531.00
1989	1312770.49	2105195.42	529.92

CAP AREA CONTROL POINT TABLE

POINT NO.	NORTHING (FT)	EASTING (FT)	ELEVATION (FT)
1990	1312818.19	2105180.78	529.00
1991	1312853.00	2105152.33	527.58
1992	1312898.58	2105133.08	525.53
1993	1312941.18	2105107.81	521.55
1994	1312967.84	2105067.71	518.84
1995	1313008.73	2105087.83	521.61
1996	1313057.77	2105095.66	518.89
1997	1313107.47	2105093.78	513.23
1998	1313156.62	2105089.81	507.19
1999	1313138.61	2105111.64	505.50
2000	1313103.59	2105145.44	505.50
2001	1313132.10	2105170.78	505.50
2002	1313166.33	2105186.88	503.98
2003	1313207.41	2105212.05	502.32
2004	1313250.15	2105194.35	500.53
2005	1313285.95	2105164.83	497.03
2006	1313322.72	2105180.60	497.22
2007	1313362.95	2105208.89	494.91
2008	1313403.93	2105231.29	493.90
2009	1313447.14	2105236.92	490.14
2010	1313468.67	2105246.03	484.50
2011	1313461.77	2105295.04	484.50
2012	1313501.58	2105319.00	482.98
2013	1313542.08	2105341.37	481.80
2014	1313579.83	2105327.63	479.51
2015	1313621.66	2105300.31	477.71
2016	1313661.52	2105270.86	475.73
2017	1313695.07	2105233.83	473.56
2018	1313726.74	2105195.60	470.13
2019	1313746.07	2105152.44	467.54
2020	1313793.54	2105152.99	470.66
2021	1313827.58	2105134.98	463.50
2022	1313860.37	2105132.34	467.63
2023	1313904.16	2105116.40	464.84
2024	1313945.89	2105102.24	462.53
2025	1313966.98	2105100.68	456.00
2026	1314014.86	2105103.79	452.00
2027	1314063.70	2105094.12	454.08
2028	1314064.30	2105062.75	457.13
2029	1314113.15	2105073.19	463.76
2030	1314162.60	2105077.81	468.60
2031	1314212.24	2105071.57	469.88
2032	1314261.13	2105061.99	470.01
2033	1314307.75	2105050.48	469.35
2034	1314354.63	2105040.43	468.75
2035	1314402.39	2105053.70	476.74
2036	1314444.52	2105032.57	472.62
2037	1314443.39	2104988.63	458.11
2038	1314440.99	2104940.59	442.15
2039	1314463.02	2104925.25	438.64
2040	1314508.37	2104908.22	436.98
2041	1314545.20	2104876.43	430.95
2042	1314586.49	2104866.10	428.00
2043	1314628.16	2104842.43	430.00
2044	1314675.51	2104828.21	431.63
2045	1314723.36	2104814.78	435.33
2046	1314759.30	2104781.12	432.37
2047	1314790.91	2104742.81	428.52
2048	1314815.72	2104705.85	425.47
2049	1314815.45	2104663.42	422.02
2050	1314790.90	2104678.74	426.00
2051	1314756.43	2104691.72	426.00
2052	1314770.95	2104649.91	426.00
2053	1314795.94	2104606.60	426.00
2054	1314820.94	2104563.30	426.00
2055	1314845.93	2104519.99	426.00
2056	1314870.93	2104476.69	426.00
2057	1314895.92	2104433.38	426.00
2058	1314920.92	2104390.08	426.00
2059	1314945.91	2104346.77	426.00
2060	1314970.91	2104303.47	426.00
2061	1314995.90	2104260.17	426.00
2062	1315020.89	2104216.86	426.00
2063	1315045.89	2104173.56	426.00
2064	1315070.88	2104130.25	426.00
2065	1315095.88	2104086.95	426.00
2066	1315120.87	2104043.64	426.00
2067	1315145.87	2104000.34	426.00
2068	1315170.86	2103957.04	426.00
2069	1315195.86	2103913.73	426.00
2070	1315220.85	2103870.43	426.00
2071	1315245.85	2103827.12	426.00
2072	1315270.84	2103783.82	426.00
2073	1315295.84	2103740.51	426.00
2074	1315320.83	2103697.21	426.00
2075	1315345.82	2103653.90	426.00
2076	1315370.82	2103610.60	426.00
2077	1315395.81	2103567.30	426.00
2078	1315420.81	2103523.99	426.00
2079	1315445.80	2103480.69	426.00
2080	1315470.80	2103437.38	426.00
2081	1315495.79	2103394.08	426.00
2082	1315520.79	2103350.77	426.00
2083	1315545.78	2103307.47	426.00
2084	1315570.78	2103264.16	426.00

CAP AREA CONTROL POINT TABLE

POINT NO.	NORTHING (FT)	EASTING (FT)	ELEVATION (FT)
2085	1315595.77	2103220.86	426.00
2086	1315620.76	2103177.56	426.00
2087	1315645.76	2103134.25	426.00
2088	1315645.79	2103086.08	426.00
2089	1315638.89	2103036.56	426.00
2090	1315647.07	2102988.18	426.00
2091	1315621.83	2102945.12	426.00

	REV	DATE	REVISION DESCRIPTION	CCP	CCP	ARF	WRS
	0	2019/02/28	100% DESIGN SUBMITTAL	DES	PREP	CHK	RVW

CLIENT
SOUTHERN COMPANY SERVICES
Southern Company
Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
CONTROL □OINT TA□LES
SHEET □OF □

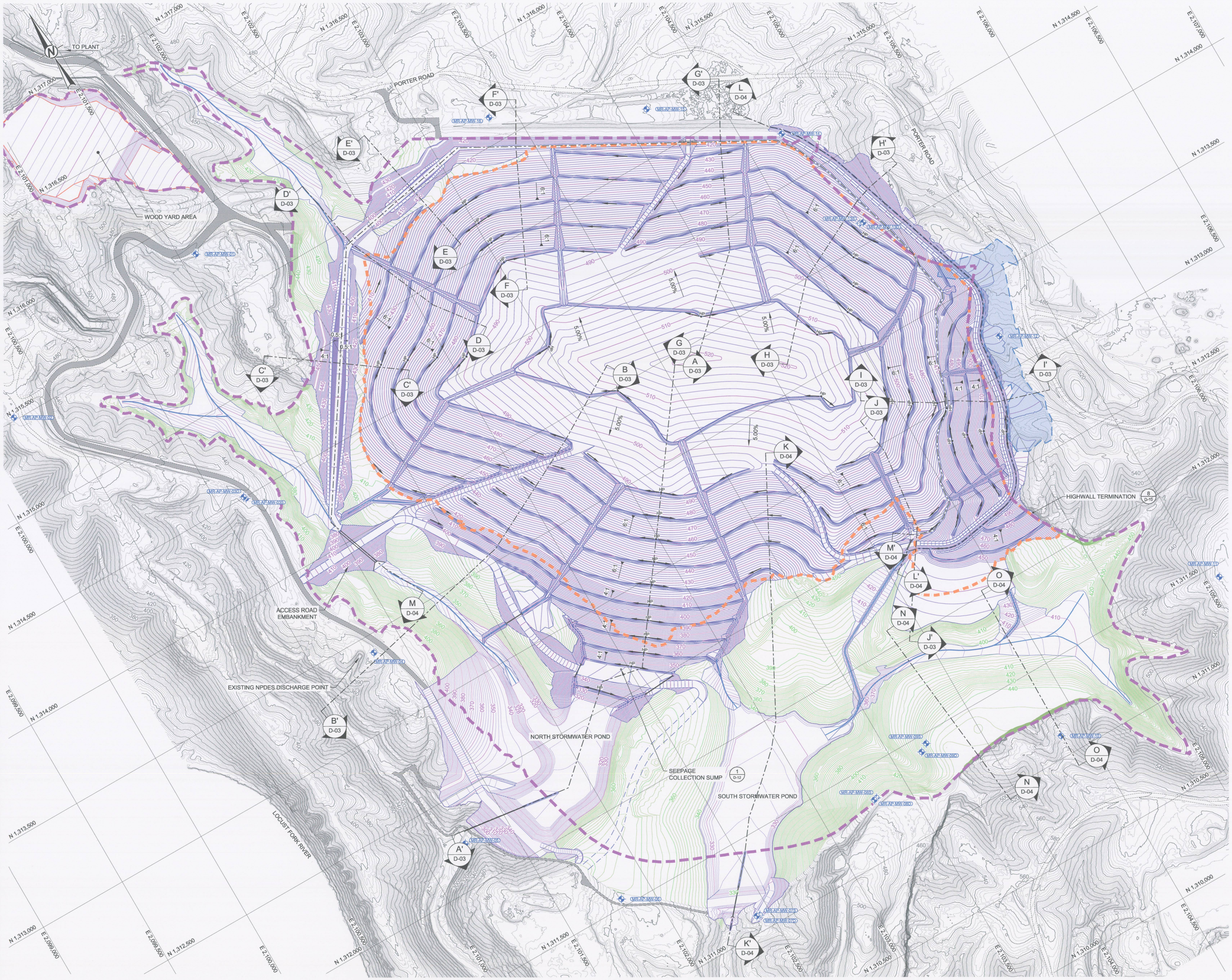
ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN
Feb 28, 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	CCP
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING CP-25

0 1in
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ARCH D



0 200 400
1" = 200' FEET

LEGEND

- EXISTING CONTOURS
- PROPOSED GRADING CONTOURS (SEE NOTE 4)
- CLOSURE BY REMOVAL CONTOURS
- CHANNEL IN RESTORATION AREA
- ESTIMATED CCR LIMITS
- FINAL CCR LIMITS
- MONITORING WELLS
- SCS GRADING
- HIGH POINT
- EXISTING ROAD
- PROPOSED ROAD

NOTES

1. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL, NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1988. COORDINATES CORRESPOND TO ALABAMA WEST COORDINATE SYSTEM, NORTH AMERICAN DATUM (NAD) 1983.

2. "ESTIMATED CCR LIMITS" INDICATES THE ESTIMATED OUTER EXTENT OF THE CCR TO BE ADDRESSED IN THE CLOSURE PROJECT. LOCATIONS OF HIGH-LYING NATURAL GROUND WHERE NO CCR IS PRESENT EXIST WITHIN THESE ESTIMATED LIMITS.

3. PROPOSED GRADING CONTOURS SHOW FINAL COVER GRADES FOR CAPPED AREA, STREAM RESTORATION GRADING IN CLOSURE BY REMOVAL AREAS, AND PROPOSED GRADING OF NATURAL GROUND AFTER DAM REMOVAL. GRADING WILL BE ADJUSTED, AS NEEDED, TO ACCOMODATE ACTUAL ASH EXCAVATION VALUES.

4. LIMITS OF SCS GRADING PROVIDED ON SEPTEMBER 26, 2018.

5. CONTACT WATER SHALL BE CONTROLLED WITHIN THE ESTIMATED CCR LIMITS.

6. FINAL GRADING CONTOURS SHOWN REFER TO THE TOP OF ASH, FILL, OR NATURAL GROUND. WITHIN RIPRAP LINED AREAS, GRADING CONTOURS REFER TO THE BOTTOM OF THE RIPRAP. EXCEPTIONS TO THIS ARE THE AREAS IDENTIFIED ON SHEET D-05 AS "CLASS 3 RIPRAP CHANNEL BOTTOM" WHERE THE GRADING CONTOURS REFER TO THE TOP OF RIPRAP.

7. EXCAVATION AND GRADING ACTIVITIES IN THE WOODYARD AREA SHALL NOT IMPACT EXISTING POWER POLES.

REFERENCES

1. EXISTING TOPOGRAPHY PROVIDED BY SOUTHERN COMPANY SERVICES, FEBRUARY 2018.

2. BATHYMETRY DATA PROVIDED BY SOUTHERN COMPANY SERVICES, DATED AUGUST 2018.

3. TOPOGRAPHY FOR THE OLD STRIP MINE AREA PROVIDED BY SOUTHERN COMPANY SERVICES, DATED OCTOBER 10, 2006.

4. BOTTOM OF ASH TOPOGRAPHY TAKEN FROM USGS, SYLVAN SPRINGS, 1971 QUADRANGLE. TOPOGRAPHY WAS INTERPRETED BETWEEN 20 FOOT CONTOURS AND ADJUSTED BASED ON GEOTECHNICAL INVESTIGATION DATA BY GOLDER ASSOCIATES INC.

ALABAMA REGISTERED PROFESSIONAL ENGINEER No. 20266 WILLIAM R. SULLIVAN

Feb 28 2019

WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
0	2019/02/28	100% DESIGN SUBMITTAL	CCP	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES

Southern Company · Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

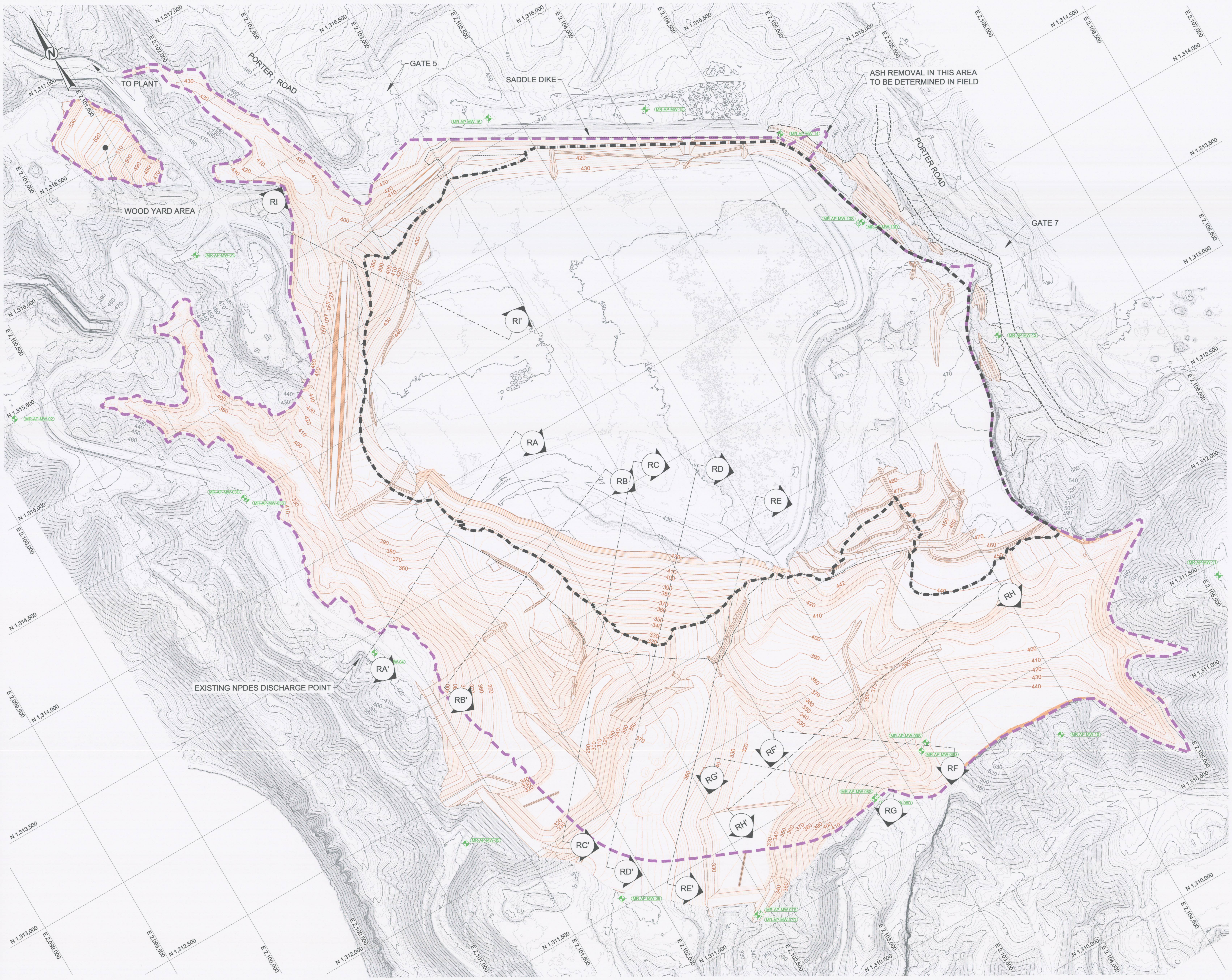
TITLE
FINAL COVER AND RESTORATION AREA GRADING

CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	CCP
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	D-01

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ARCH D



LEGEND

380	EXISTING CONTOURS
400	EXCAVATION CONTOURS
	ESTIMATED CCR LIMITS
	GAS LINE EASEMENT
	MONITORING WELL
	FINAL CCR LIMITS

NOTES:

1. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL, NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1988. COORDINATES CORRESPOND TO ALABAMA WEST COORDINATE SYSTEM, NORTH AMERICAN DATUM (NAD) 1983.
2. "ESTIMATED CCR LIMITS" INDICATES THE ESTIMATED OUTER EXTENT OF THE CCR TO BE ADDRESSED IN THE CLOSURE PROJECT. LOCATIONS OF HIGH-LYING NATURAL GROUND WHERE NO CCR IS PRESENT EXIST WITHIN THESE ESTIMATED LIMITS.
3. CONTACT WATER SHALL BE CONTROLLED WITHIN THE ESTIMATED CCR LIMITS.
4. EXCAVATION AND GRADING ACTIVITIES IN THE WOODYARD AREA SHALL NOT IMPACT EXISTING POWER POLES.

REFERENCES:

1. EXISTING TOPOGRAPHY PROVIDED BY SOUTHERN COMPANY SERVICES, FEBRUARY 2018.
2. BATHYMETRY DATA PROVIDED BY SOUTHERN COMPANY SERVICES, DATED AUGUST 2018.
3. BOTTOM OF ASH TOPOGRAPHY TAKEN FROM USGS, SYLVAN SPRINGS, 1971 QUADRANGLE. TOPOGRAPHY WAS INTERPRETED BETWEEN 20 FOOT CONTOURS AND ADJUSTED BASED ON GEOTECHNICAL INVESTIGATION DATA BY GOLDER ASSOCIATES INC FROM 2017 & 2018 INVESTIGATIONS.

0 200 400
1" = 200' FEET

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
	2019/02/28	100% DESIGN SUBMITTAL	ARF	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES

Southern Company   Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
EXCAVATION PLAN

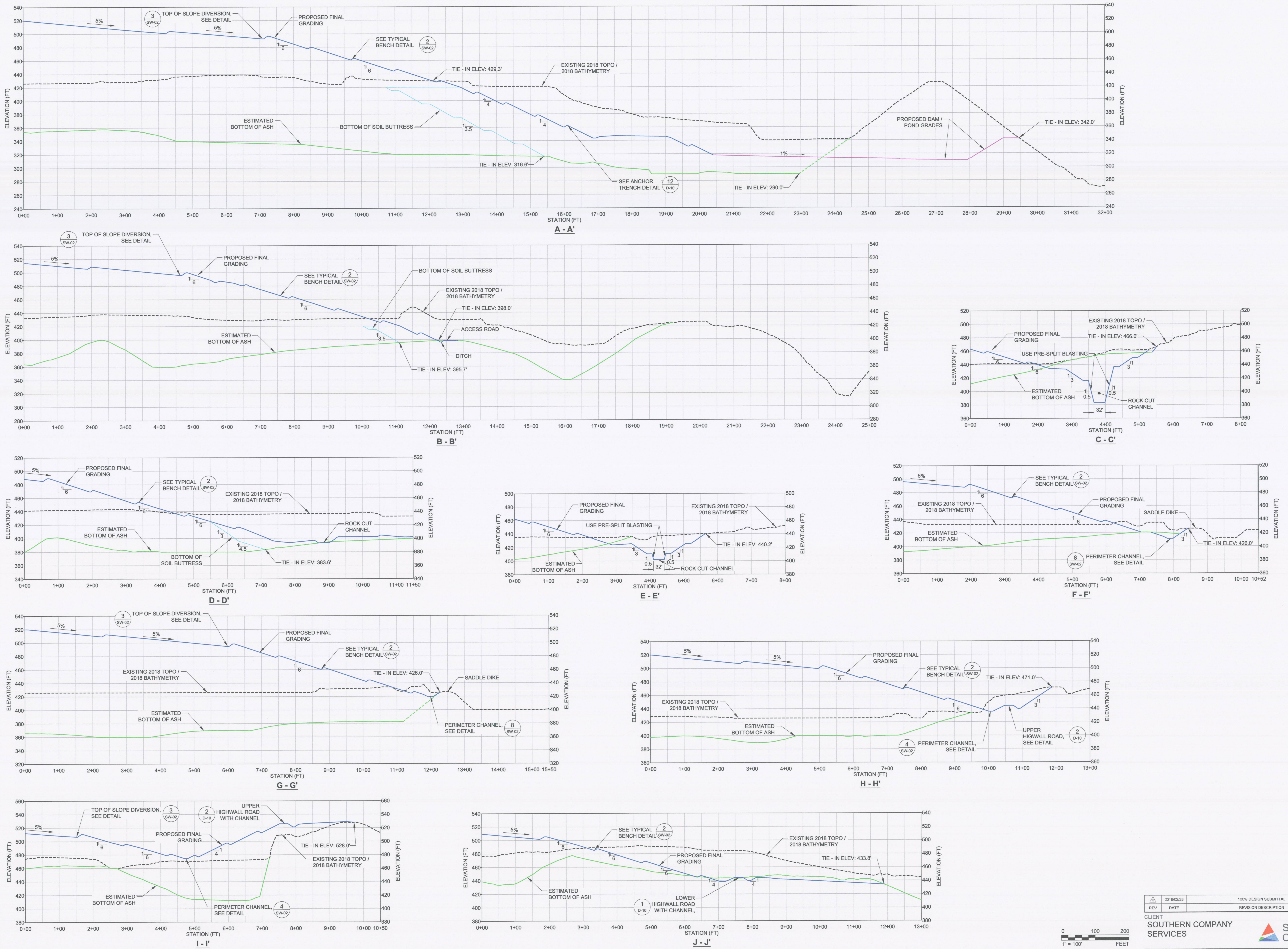
ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN
Feb 28 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	ARF
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO.	SCS REF	REV.	DRAWING
1792705	MIL17010	0	D-02

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ARCH D



LEGEND

- PROPOSED FINAL GRADING
- PROPOSED POND / DAM GRADES
- EXISTING 2018 TOPOGRAPHY / 2018 BATHYMETRY
- ESTIMATED BOTTOM OF ASH
- ESTIMATED UPSTREAM DAM / DIKE SLOPE
- SOIL BUTTRESS

NOTES

1. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL, NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1988. COORDINATES CORRESPOND TO ALABAMA WEST COORDINATE SYSTEM, NORTH AMERICAN DATUM (NAD) 1983.

REFERENCES

1. EXISTING TOPOGRAPHY PROVIDED BY SOUTHERN COMPANY SERVICES, FEBRUARY 2018.
2. BATHYMETRY DATA PROVIDED BY SOUTHERN COMPANY SERVICES, DATED AUGUST 2018.
3. TOPOGRAPHY FOR THE OLD STRIP MINE AREA PROVIDED BY SOUTHERN COMPANY SERVICES, DATED OCTOBER 10, 2006.
4. BOTTOM OF ASH TOPOGRAPHY TAKEN FROM USGS, SYLVAN SPRINGS, 1971 QUADRANGLE. TOPOGRAPHY WAS INTERPRETED BETWEEN 20 FOOT CONTOURS AND ADJUSTED BASED ON GEOTECHNICAL INVESTIGATION DATA BY GOLDER ASSOCIATES INC.

0 100 200 FEET
1" = 100'
HORIZONTAL SCALE

0 50 100 FEET
1" = 50'
VERTICAL SCALE

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
0	2019/02/28	100% DESIGN SUBMITTAL	CCP	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES

Southern Company Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
□ROFILES AND SECTIONS
□ OF □

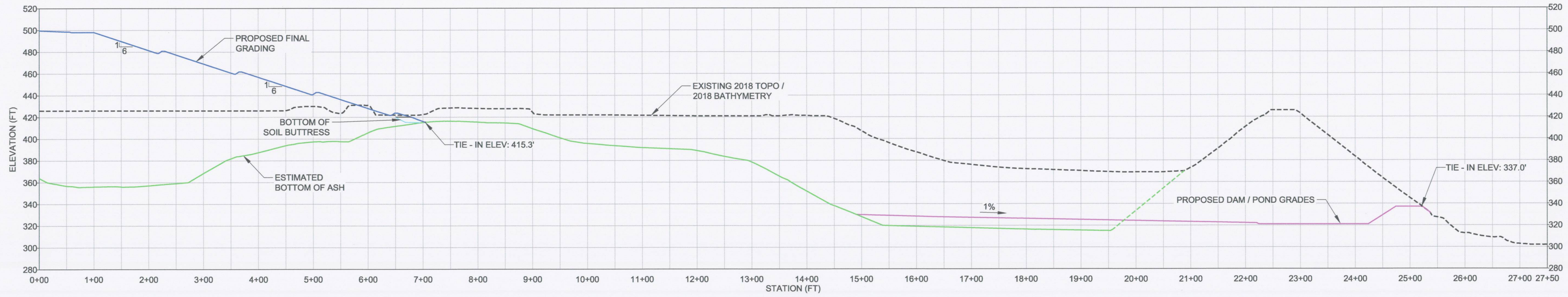
CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	CCP
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

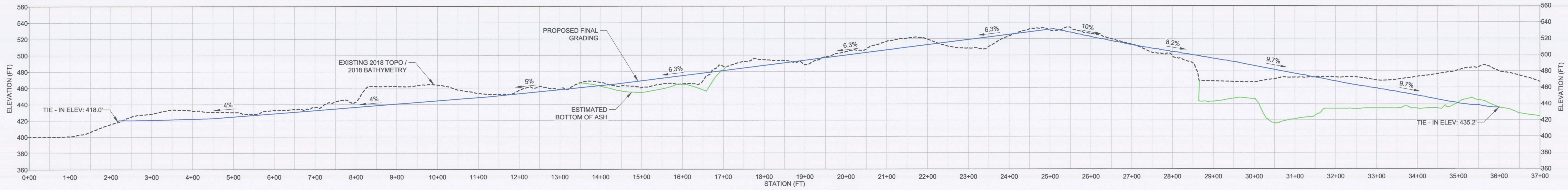
ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN
Feb. 28, 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING D-03

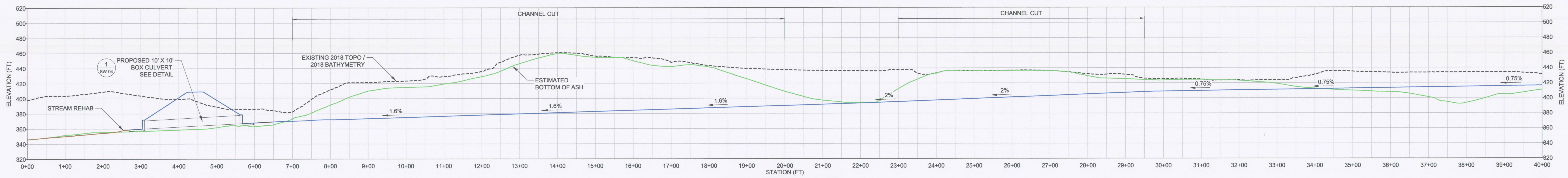
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ARCH D



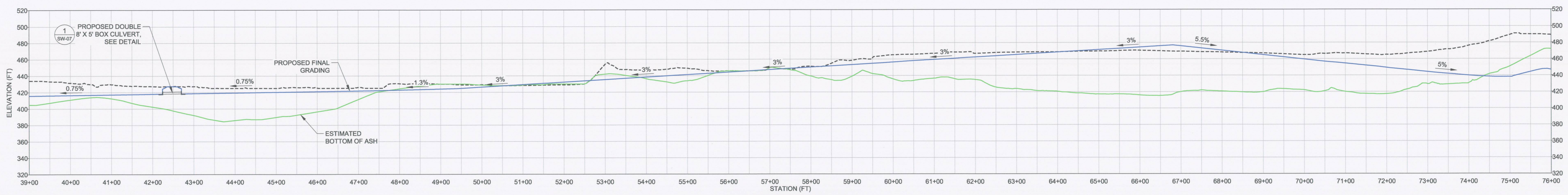
K - K'



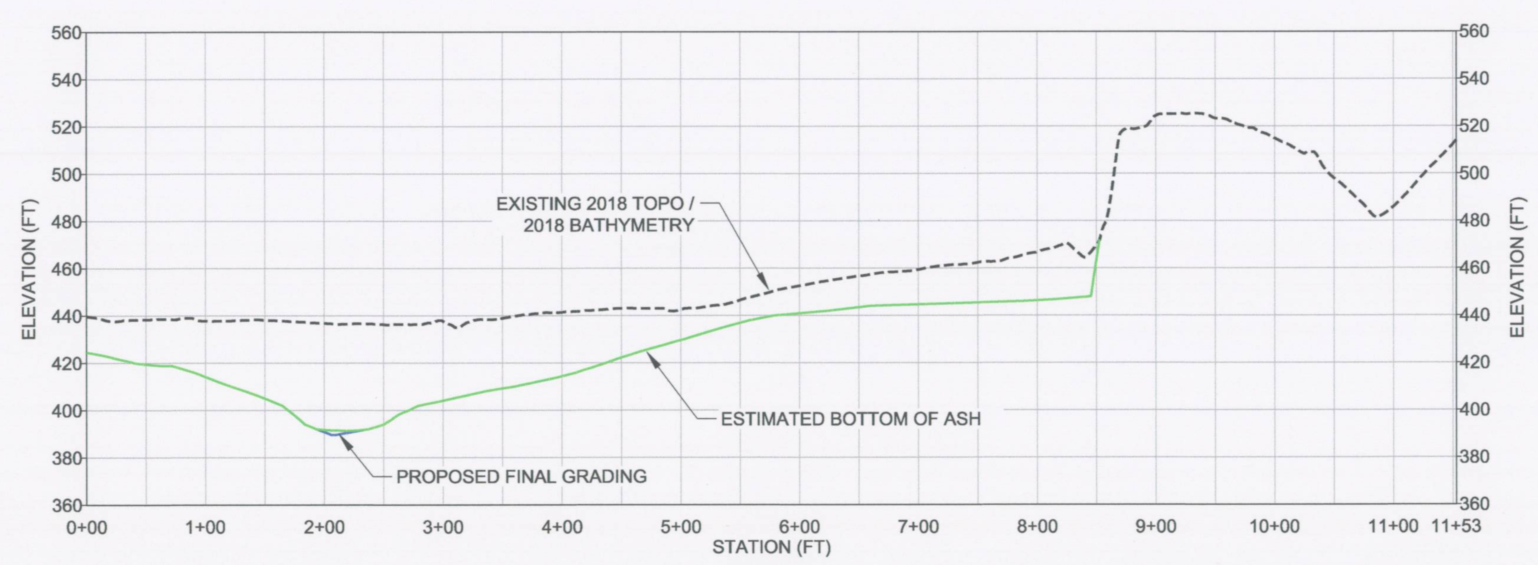
L - L' ABOVE HIGHWALL CHANNEL



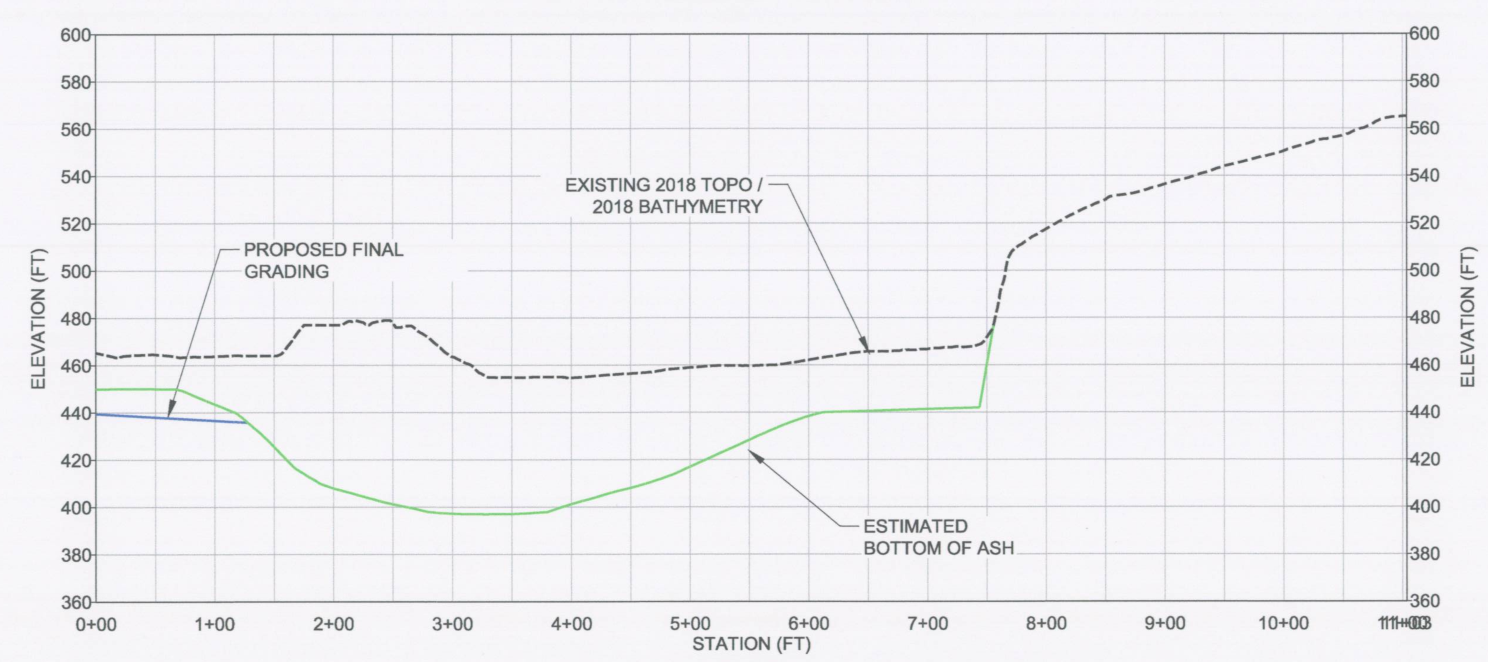
M - M' PERIMETER CHANNEL



M - M' PERIMETER CHANNEL



N - N'



O - O'

LEGEND

- PROPOSED FINAL GRADING
- PROPOSED POND / DAM GRADES
- EXISTING 2018 TOPOGRAPHY / 2018 BATHYMETRY
- ESTIMATED BOTTOM OF ASH
- ESTIMATED UPSTREAM DAM / DIKE SLOPE
- BACK OF SOIL BUTTRESS
- STREAM RESTORATION

NOTES:

1. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL, NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1988. COORDINATES CORRESPOND TO ALABAMA WEST COORDINATE SYSTEM, NORTH AMERICAN DATUM (NAD) 1983.

REFERENCES:

1. EXISTING TOPOGRAPHY PROVIDED BY SOUTHERN COMPANY SERVICES, FEBRUARY 2018.
2. BATHYMETRY DATA PROVIDED BY SOUTHERN COMPANY SERVICES, DATED AUGUST 2018.
3. TOPOGRAPHY FOR THE OLD STRIP MINE AREA PROVIDED BY SOUTHERN COMPANY SERVICES, DATED OCTOBER 10, 2006.
4. BOTTOM OF ASH TOPOGRAPHY TAKEN FROM USGS, SYLVAN SPRINGS, 1971 QUADRANGLE. TOPOGRAPHY WAS INTERPRETED BETWEEN 20 FOOT CONTOURS AND ADJUSTED BASED ON GEOTECHNICAL INVESTIGATION DATA BY GOLDER ASSOCIATES INC.

0 100 200 FEET
1" = 100'
HORIZONTAL SCALE

0 50 100 FEET
1" = 50'
VERTICAL SCALE

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R. SULLIVAN

Feb 28 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
	2019/02/28	100% DESIGN SUBMITTAL	CCP	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES
Southern Company | Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

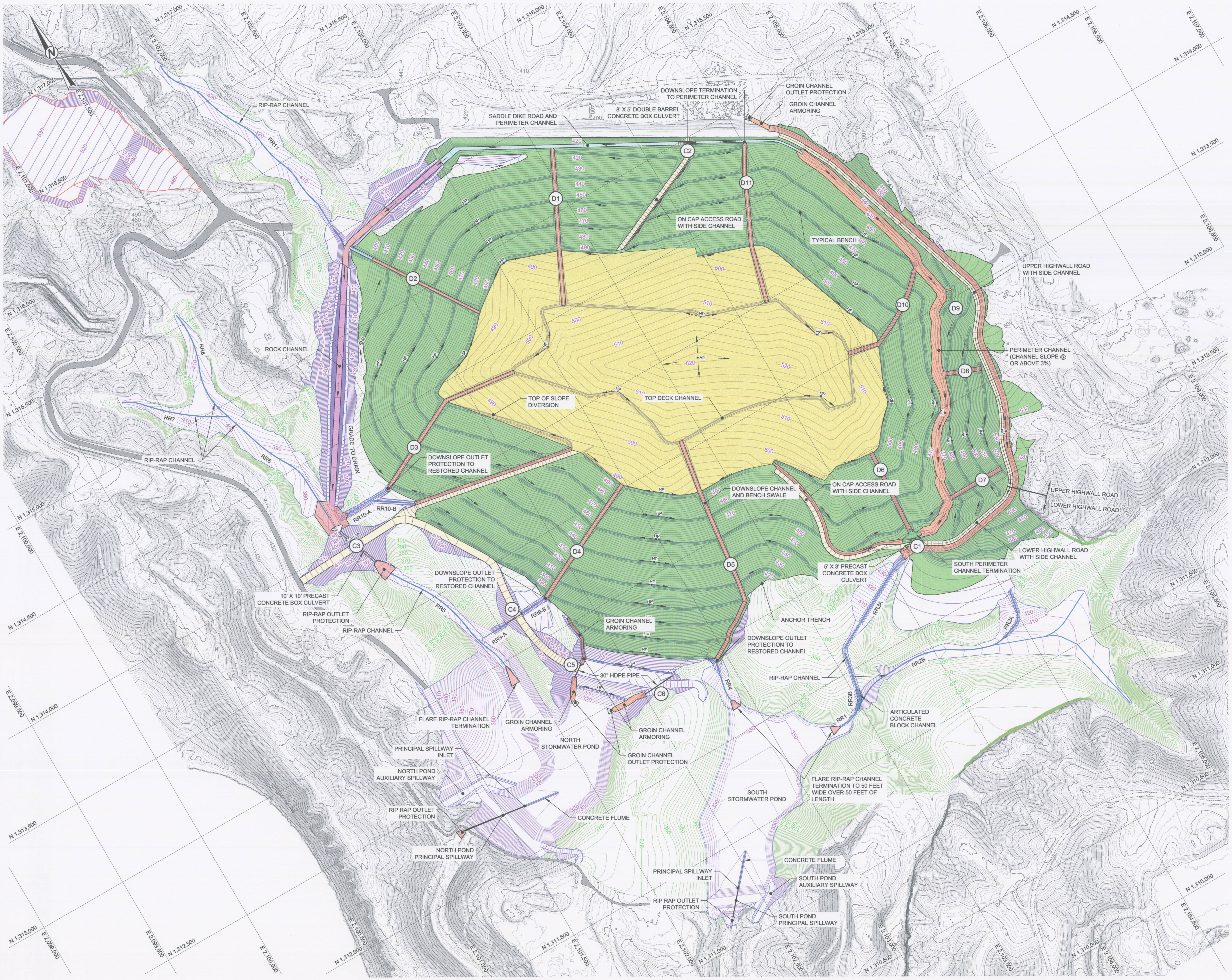
TITLE
ROFILES AND SECTIONS
OF

CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	CCP
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING D-04

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ARCH D



LEGEND

425	EXISTING CONTOURS
380	PROPOSED GRADING CONTOURS
425	CLOSURE BY REMOVAL CONTOURS
	HYDRO TURF OVER MICRODRAIN / MICROSPIKE
	RIP-RAP OVER CLOSURE TURF (NO INFILL)
	ROCK CHANNEL
	ROAD
	CLOSURE TURF OVER MICRODRAIN
	CLOSURE TURF OVER MICROSPIKE
	CLASS 3 RIPRAP CHANNEL BOTTOM
	ARTICULATED CONCRETE BLOCK CHANNEL
	RESTORATION CHANNEL
HP	HIGH POINT & FLOW DIRECTION

NOTE S

1. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL, NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1988. COORDINATES CORRESPOND TO ALABAMA WEST COORDINATE SYSTEM, NORTH AMERICAN DATUM (NAD) 1983.
2. EXTEND HYDROTURF TO 6' ABOVE CHANNEL INVERT, OPPOSITE OF DOWNSLOPE CHANNEL TERMINATION POINTS. TAPER HYDROTURF BACK TO TYPICAL CHANNEL SECTION OVER 30' DOWNSTREAM IN THE PERIMETER CHANNEL.
3. FINAL GRADING CONTOURS SHOWN REFER TO THE TOP OF ASH, FILL, OR NATURAL GROUND. WITHIN RIPRAP LINED AREAS, GRADING CONTOURS REFER TO THE BOTTOM OF THE RIPRAP. EXCEPTIONS TO THIS ARE THE AREAS IDENTIFIED ON SHEET D-05 AS "CLASS 3 RIPRAP CHANNEL BOTTOM" WHERE THE GRADING CONTOURS REFER TO THE TOP OF RIPRAP.

CULVERT SUMMARY

CONDUIT	MATERIAL	DIMENSIONS	LENGTH (FT)	INLET INVERT (FT-MSL)	OUTLET INVERT (FT-MSL)
C1	CONCRETE BOX	5' X 3'	93	438.0	436.0
C2	CONCRETE BOX	DOUBLE 8' X 5'	123	418.7	417.8
C3	CONCRETE BOX	10' X 10'	350	368.0	363.5
C4	HDPE PIPE	36"	105	376.0	360.0
C5	HDPE PIPE	30"	118	339.0	336.0
C6	HDPE PIPE	30"	195	340.0	336.0

REFERENCE S

1. EXISTING TOPOGRAPHY PROVIDED BY SOUTHERN COMPANY SERVICES, FEBRUARY 2018.
2. BATHYMETRY DATA PROVIDED BY SOUTHERN COMPANY SERVICES, DATED AUGUST 2018.
3. TOPOGRAPHY FOR THE OLD STRIP MINE AREA PROVIDED BY SOUTHERN COMPANY SERVICES, DATED OCTOBER 10, 2006.
4. BOTTOM OF ASH TOPOGRAPHY TAKEN FROM USGS, SYLVAN SPRINGS, 1971 QUADRANGLE. TOPOGRAPHY WAS INTERPRETED BETWEEN 20 FOOT CONTOURS AND ADJUSTED BASED ON GEOTECHNICAL INVESTIGATION DATA BY GOLDER ASSOCIATES INC.

PIPE AND DOWNSLOPE CHANNEL FLOW SUMMARY

CONDUIT	25 YEAR STORM VELOCITY (FT/S)	25 YEAR STORM DISCHARGE (FT/S)	100 YEAR STORM VELOCITY (FT/S)	100 YEAR STORM DISCHARGE (FT/S)
D1	11	91	12	127
D2	10	61	11	84
D3	10	86	12	118
D4	12	100	13	138
D5	12	118	13	164
D6	8	53	9	73
D7	4	13	5	18
D8	3	10	3	14
D9	1	5	1	6
D10	7	50	8	68
D11	11	118	12	164
C1	9	97	11	126
C2	6	242	7	326
C3	12	631	16	1050
C4	47	123	49	168
C5	10	23	12	30
C6	5	5	6	11

0 200 400
1" = 200' FEET

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN
W. R. Sullivan
Feb. 28, 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
0	2019/02/28	100% DESIGN SUBMITTAL	MC	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES

Southern Company | Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

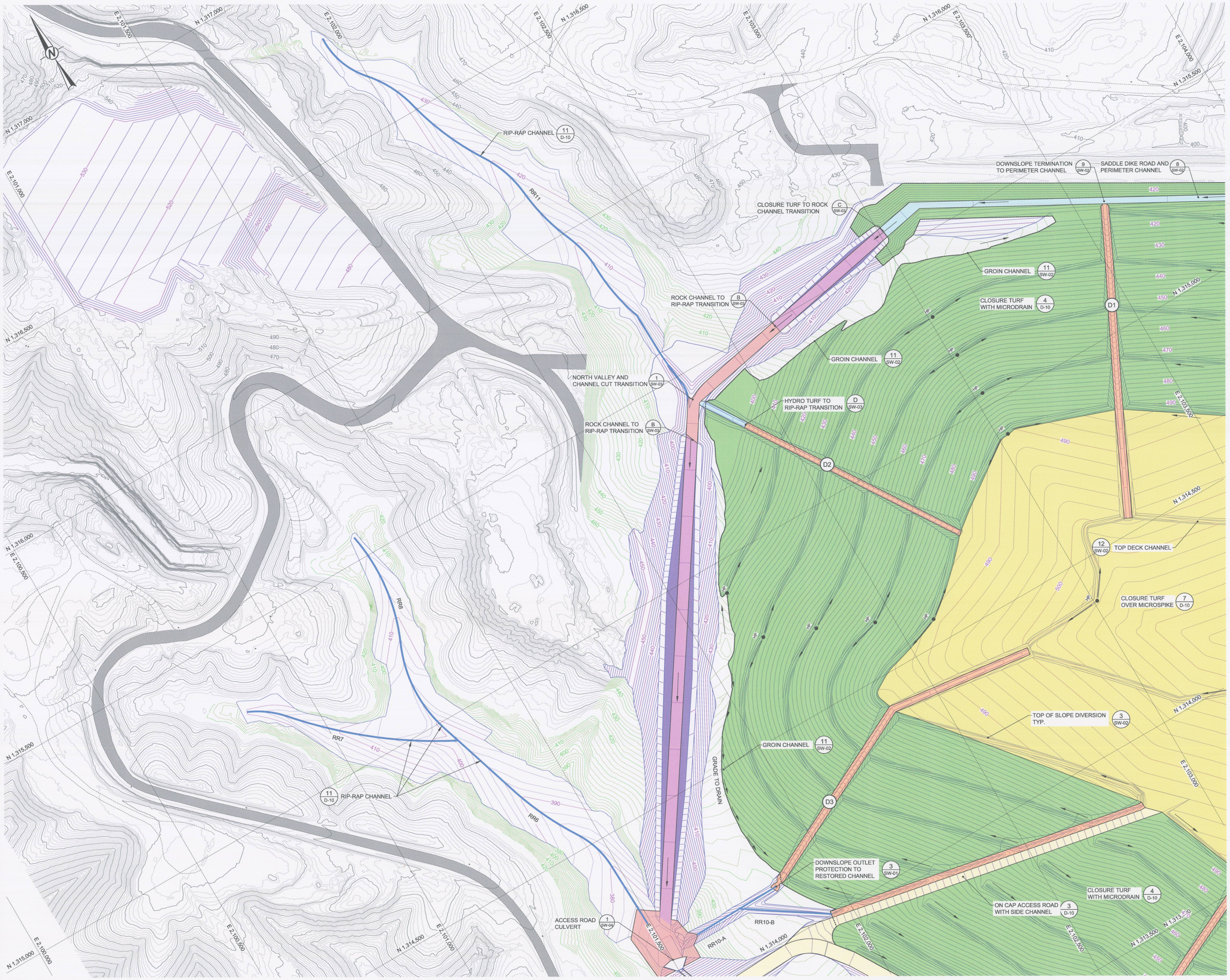
TITLE
SURFACE WATER MANAGEMENT PLAN OVERVIEW

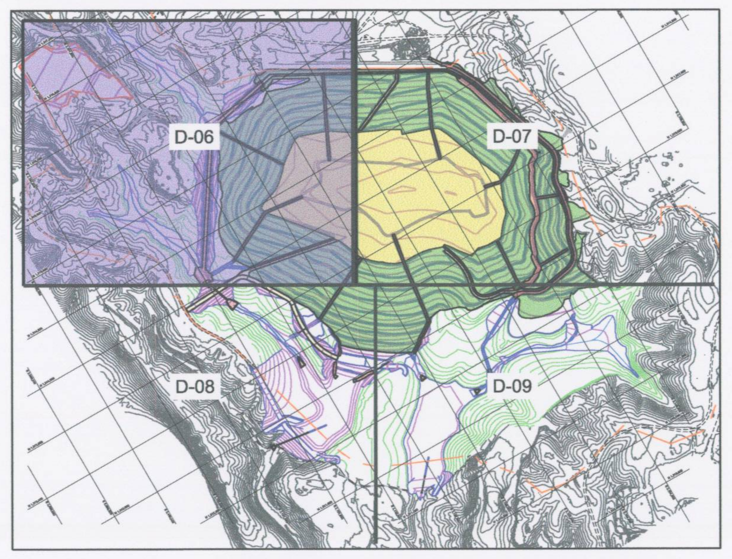
CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	MC
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING D-05

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ARCH D





LEGEND

- EXISTING CONTOURS
- PROPOSED GRADING CONTOURS
- CLOSURE BY REMOVAL CONTOURS
- HYDRO TURF OVER MICRODRAIN / MICROSPIKE
- RIP-RAP OVER CLOSURE TURF (NO INFILL)
- ROCK CHANNEL
- ROAD
- CLOSURE TURF OVER MICRODRAIN
- CLOSURE TURF OVER MICROSPIKE
- CLASS 3 RIPRAP CHANNEL BOTTOM
- ARTICULATED CONCRETE BLOCK CHANNEL
- RESTORATION CHANNEL
- HIGH POINT & FLOW DIRECTION

CULVERT SUMMARY					
CONDUIT	MATERIAL	DIMENSIONS	LENGTH (FT)	INLET INVERT (FT-MSL)	OUTLET INVERT (FT-MSL)
C1	CONCRETE BOX	5' X 3'	93	438.0	436.0
C2	CONCRETE BOX	DOUBLE 8' X 5'	123	418.7	417.8
C3	CONCRETE BOX	10' X 10'	350	368.0	363.5
C4	HDPE PIPE	36"	105	376.0	360.0
C5	HDPE PIPE	30"	118	339.0	336.0
C6	HDPE PIPE	30"	195	340.0	336.0

NOTE(S)

1. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL, NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1988. COORDINATES CORRESPOND TO ALABAMA WEST COORDINATE SYSTEM, NORTH AMERICAN DATUM (NAD) 1983.
2. FINAL GRADING CONTOURS SHOWN REFER TO THE TOP OF ASH, FILL, OR NATURAL GROUND. WITHIN RIPRAP LINED AREAS, GRADING CONTOURS REFER TO THE BOTTOM OF THE RIPRAP. EXCEPTIONS TO THIS ARE THE AREAS IDENTIFIED ON SHEET D-05 AS "CLASS 3 RIPRAP CHANNEL BOTTOM" WHERE THE GRADING CONTOURS REFER TO THE TOP OF RIPRAP.

REFERENCE(S)

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2. BATHYMETRY DATA PROVIDED BY SOUTHERN COMPANY SERVICES, DATED AUGUST 2018.
3. TOPOGRAPHY FOR THE OLD STRIP MINE AREA PROVIDED BY SOUTHERN COMPANY SERVICES, DATED OCTOBER 10, 2006.
4. BOTTOM OF ASH TOPOGRAPHY TAKEN FROM USGS, SYLVAN SPRINGS, 1971 QUADRANGLE. TOPOGRAPHY WAS INTERPRETED BETWEEN 20 FOOT CONTOURS AND ADJUSTED BASED ON GEOTECHNICAL INVESTIGATION DATA BY GOLDER ASSOCIATES INC.

PIPE AND DOWNSLOPE CHANNEL FLOW SUMMARY				
CONDUIT	25 YEAR STORM VELOCITY (FT/S)	25 YEAR STORM DISCHARGE (FT/S)	100 YEAR STORM VELOCITY (FT/S)	100 YEAR STORM DISCHARGE (FT/S)
D1	11	91	12	127
D2	10	61	11	84
D3	10	86	12	118
D4	12	100	13	138
D5	12	118	13	164
D6	8	53	9	73
D7	4	13	5	18
D8	3	10	3	14
D9	1	5	1	6
D10	7	50	8	68
D11	11	118	12	164
C1	9	97	11	126
C2	6	242	7	326
C3	12	631	16	1050
C4	47	123	49	168
C5	10	23	12	30
C6	5	5	6	11

0 100 200
1" = 100' FEET

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
0	2019/02/28	100% DESIGN SUBMITTAL	JG	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES
Southern Company
Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
SURFACE WATER MANAGEMENT □□LAN □ □□□

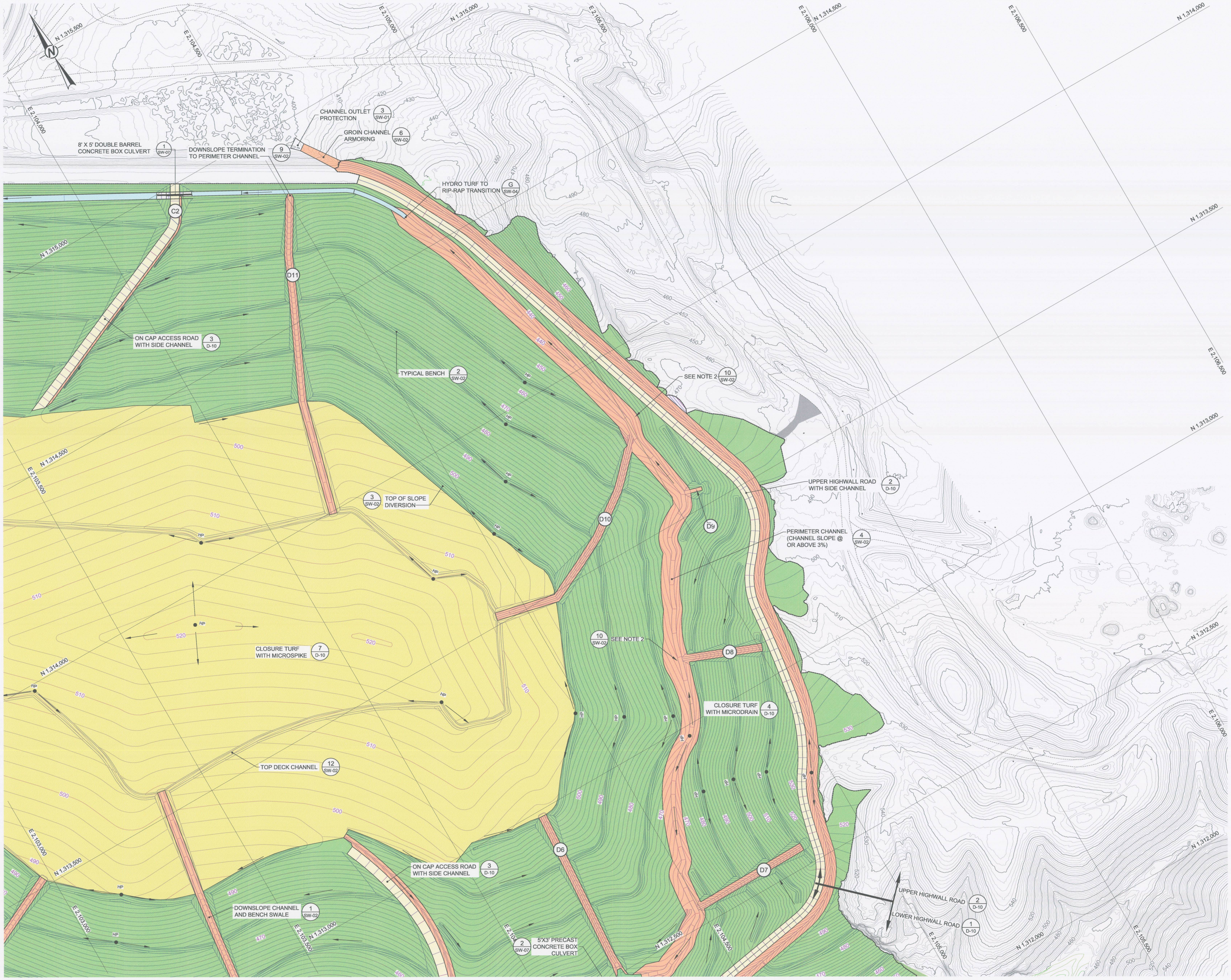
ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN
Feb. 28, 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

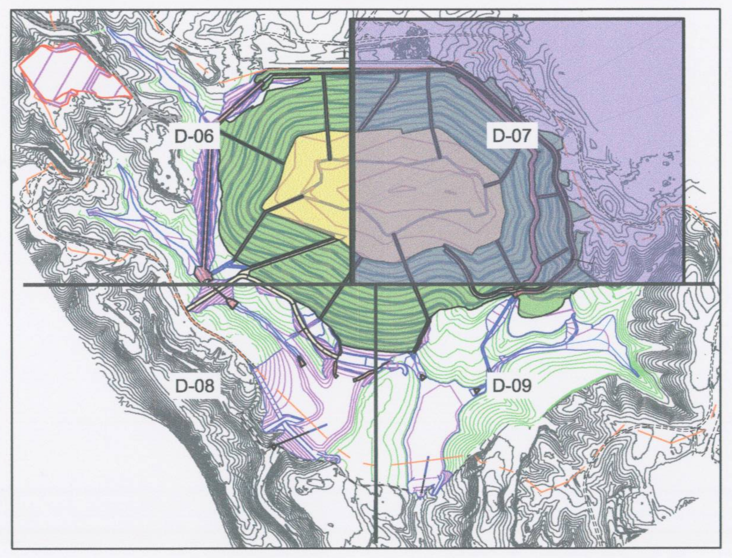
CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	JG
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING D-06

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ARCH D





LEGEND

425	EXISTING CONTOURS
380	PROPOSED GRADING CONTOURS
425	CLOSURE BY REMOVAL CONTOURS
	HYDRO TURF OVER MICRODRAIN / MICROSPIKE
	RIP-RAP OVER CLOSURE TURF (NO INFILL)
	ROCK CHANNEL
	ROAD
	CLOSURE TURF OVER MICRODRAIN
	CLOSURE TURF OVER MICROSPIKE
	CLASS 3 RIPRAP CHANNEL BOTTOM
	ARTICULATED CONCRETE BLOCK CHANNEL
	RESTORATION CHANNEL
HP	HIGH POINT & FLOW DIRECTION

NOTES:

1. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL, NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1988. COORDINATES CORRESPOND TO ALABAMA WEST COORDINATE SYSTEM, NORTH AMERICAN DATUM (NAD) 1983.
2. EXTEND HYDROTURF TO 6' ABOVE CHANNEL INVERT, OPPOSITE OF DOWNSLOPE CHANNEL TERMINATION POINTS. TAPER HYDROTURF BACK TO TYPICAL CHANNEL SECTION OVER 30' DOWNSTREAM IN THE PERIMETER CHANNEL.
3. FINAL GRADING CONTOURS SHOWN REFER TO THE TOP OF ASH, FILL, OR NATURAL GROUND. WITHIN RIPRAP LINED AREAS, GRADING CONTOURS REFER TO THE BOTTOM OF THE RIPRAP. EXCEPTIONS TO THIS ARE THE AREAS IDENTIFIED ON SHEET D-05 AS "CLASS 3 RIPRAP CHANNEL BOTTOM" WHERE THE GRADING CONTOURS REFER TO THE TOP OF RIPRAP.

CULVERT SUMMARY

CONDUIT	MATERIAL	DIMENSIONS	LENGTH (FT)	INLET INVERT (FT-MSL)	OUTLET INVERT (FT-MSL)
C1	CONCRETE BOX	5' X 3'	93	438.0	436.0
C2	CONCRETE BOX	DOUBLE 8' X 5'	123	418.7	417.8
C3	CONCRETE BOX	10' X 10'	350	368.0	363.5
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PIPE AND DOWNSLOPE CHANNEL FLOW SUMMARY

CONDUIT	25 YEAR STORM VELOCITY (FT/S)	25 YEAR STORM DISCHARGE (FT/S)	100 YEAR STORM VELOCITY (FT/S)	100 YEAR STORM DISCHARGE (FT/S)
D1	11	91	12	127
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C1	9	97	11	126
C2	6	242	7	326
C3	12	631	16	1050
C4	47	123	49	168
C5	10	23	12	30
C6	5	5	6	11

0 100 200
1" = 100' FEET

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN

W. R. Sullivan
Feb. 28, 2019

WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
0	2019/02/28	100% DESIGN SUBMITTAL	MC	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES

Southern Company | Alabama Power

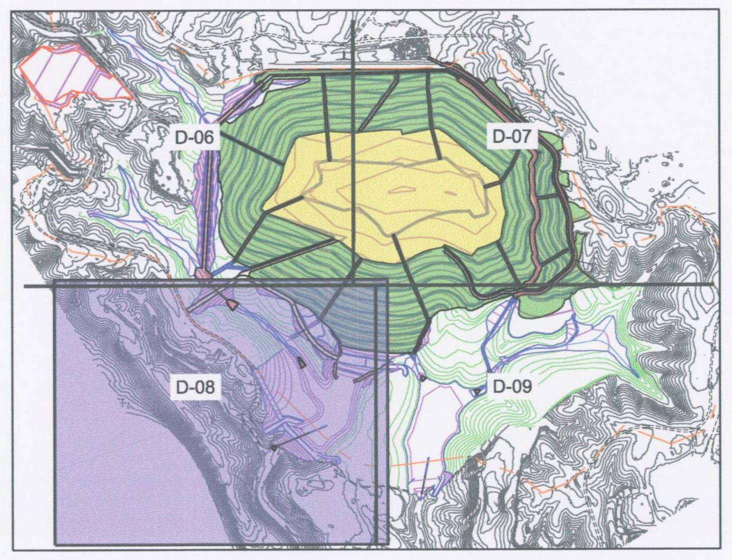
PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
SURFACE WATER MANAGEMENT PLAN OF

CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	MC
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING D-07



KEY MAP

LEGEND

425	EXISTING CONTOURS
380	PROPOSED GRADING CONTOURS
425	CLOSURE BY REMOVAL CONTOURS
	HYDRO TURF OVER MICRODRAIN / MICROSPIKE
	RIP-RAP OVER CLOSURE TURF (NO INFILL)
	ROCK CHANNEL
	ROAD
	CLOSURE TURF OVER MICRODRAIN
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	RESTORATION CHANNEL
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PIPE AND DOWNSLOPE CHANNEL FLOW SUMMARY				
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NOTE S

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A	2019/02/28	100% DESIGN SUBMITTAL	MC	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES
Southern Company
Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

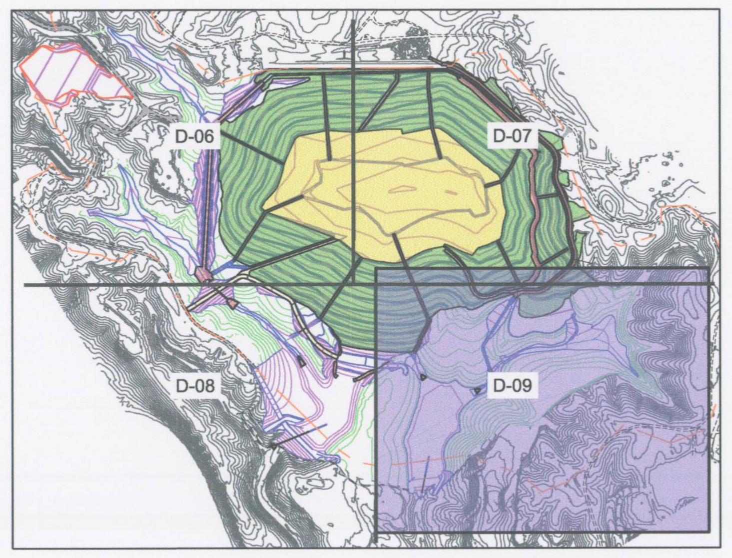
TITLE
SURFACE WATER MANAGEMENT PLAN OF

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R. SULLIVAN
Feb 28, 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	MC
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING D-08



LEGEND

- 425 EXISTING CONTOURS
- 380 PROPOSED GRADING CONTOURS
- 425 CLOSURE BY REMOVAL CONTOURS
- HYDRO TURF OVER MICRODRAIN / MICROSPIKE
- RIP-RAP OVER CLOSURE TURF (NO INFILL)
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- ROAD
- CLOSURE TURF OVER MICRODRAIN
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C1	9	97	11	126
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C4	47	123	49	168
C5	10	23	12	30
C6	5	5	6	11

0 100 200
1" = 100' FEET

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
A	2019/02/28	100% DESIGN SUBMITTAL	MC	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES
Southern Company
Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

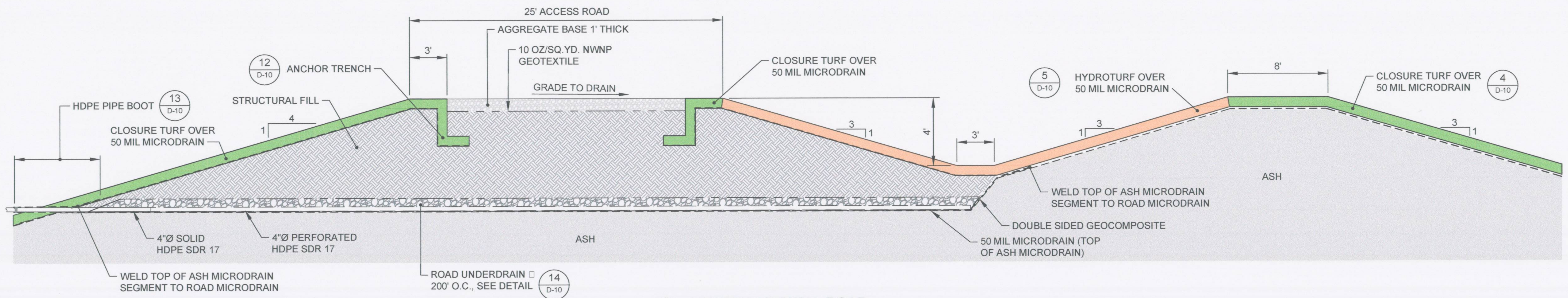
TITLE
SURFACE WATER MANAGEMENT LAN OF

ALABAMA REGISTERED PROFESSIONAL ENGINEER No. 22006 WILLIAM R. SULLIVAN
Feb 28, 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 22006

CONSULTANT
GOLDER

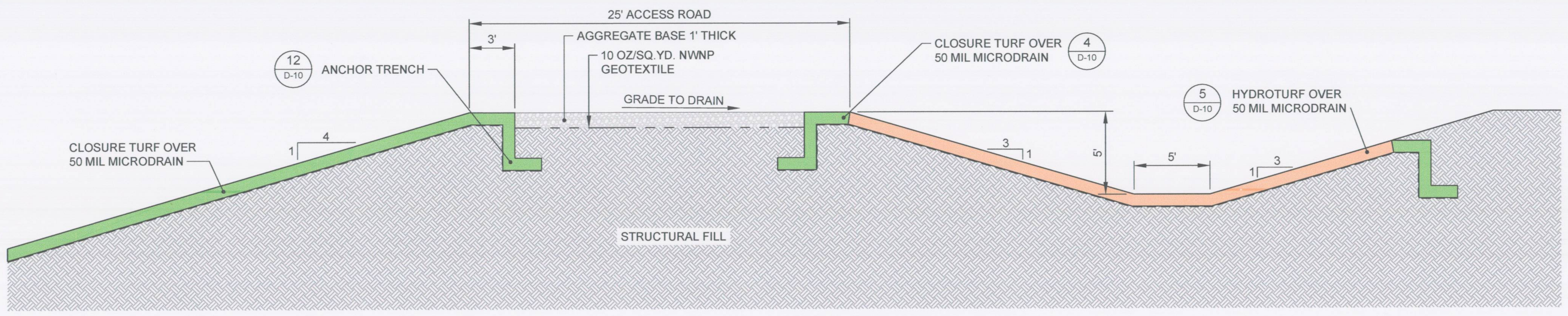
YYYY-MM-DD	2019/02/28
DESIGNED	MC
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	D-09



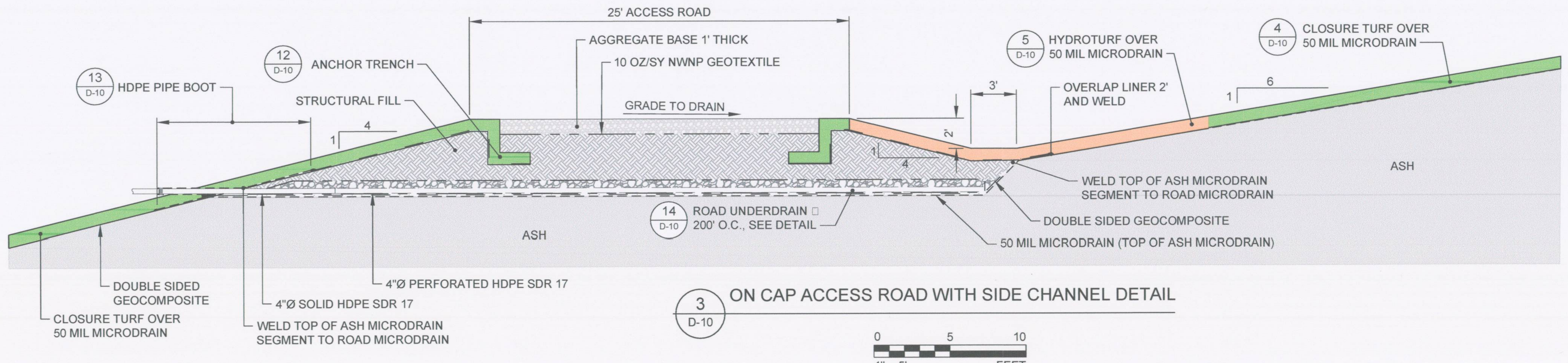
1 D-10 LOWER HIGHWALL ROAD

1" = 5' 0 5 10 FEET



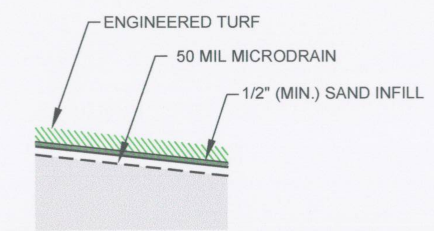
2 D-10 UPPER HIGHWALL ROAD

1" = 5' 0 5 10 FEET



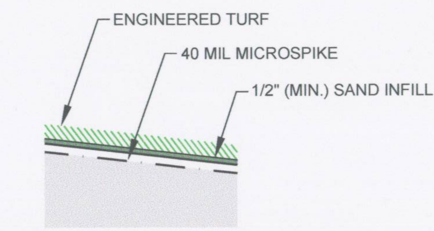
3 D-10 ON CAP ACCESS ROAD WITH SIDE CHANNEL DETAIL

1" = 5' 0 5 10 FEET



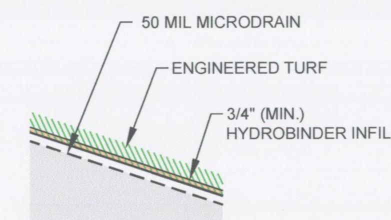
4 D-10 CLOSURE TURF W/ MICRODRAIN AS FINAL COVER

1" = 3' 0 3 6 FEET



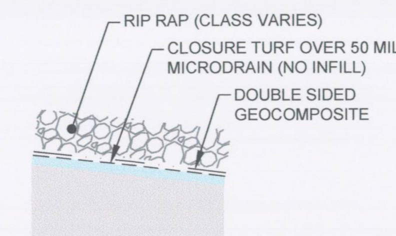
7 D-10 CLOSURE TURF W/ MICROSPIKE AS FINAL COVER

1" = 3' 0 3 6 FEET



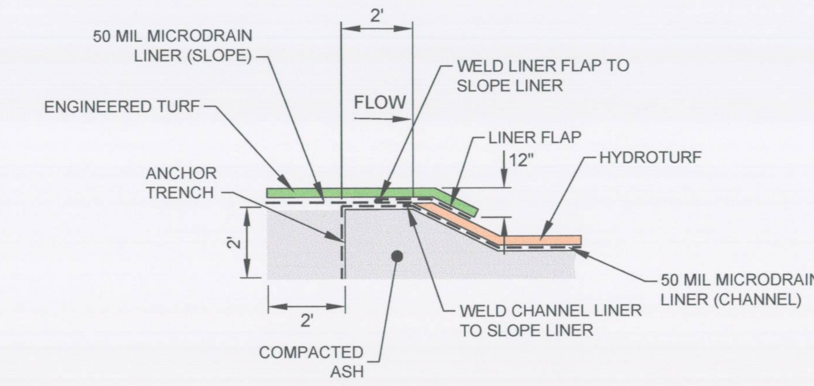
5 D-10 HYDROTURF AS FINAL COVER

1" = 3' 0 3 6 FEET



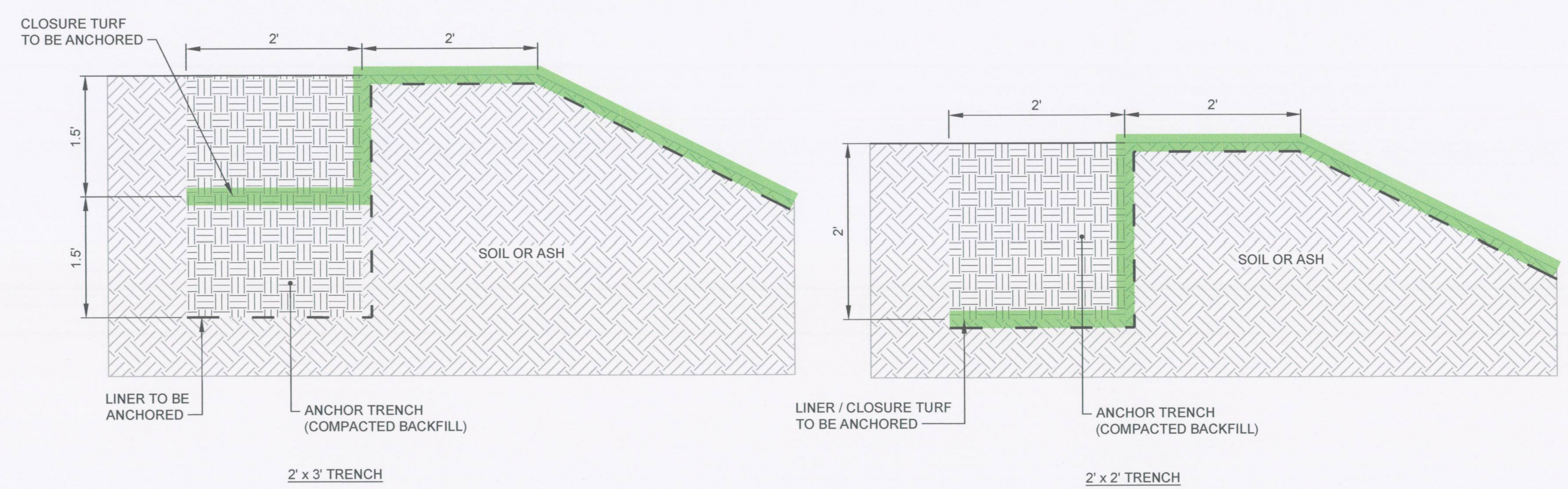
6 D-10 RIP RAP OVER CLOSURE TURF

1" = 3' 0 3 6 FEET



8 D-10 CLOSURE TURF FLAP AND WELD AT HYDROTURF CHANNEL

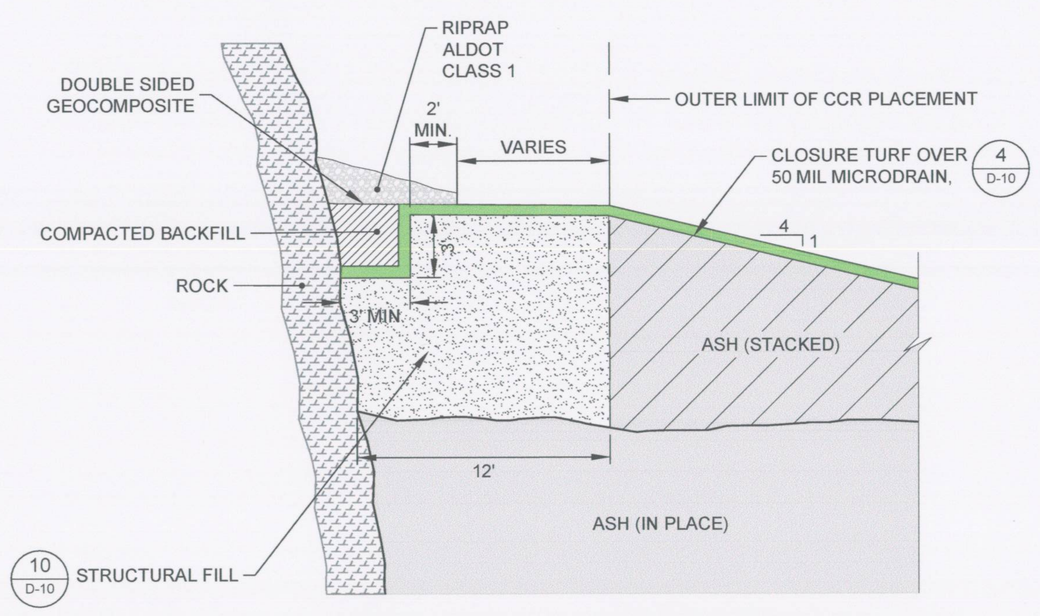
1" = 3' 0 3 6 FEET



WHEN TURF AND LINER ARE INSTALLED SIMULTANEOUSLY, USE 2'x 2' TRENCH CONFIGURATION.
IF LINER IS INSTALLED IN ADVANCE OF TURF, USE 2'x 3' TRENCH CONFIGURATION.

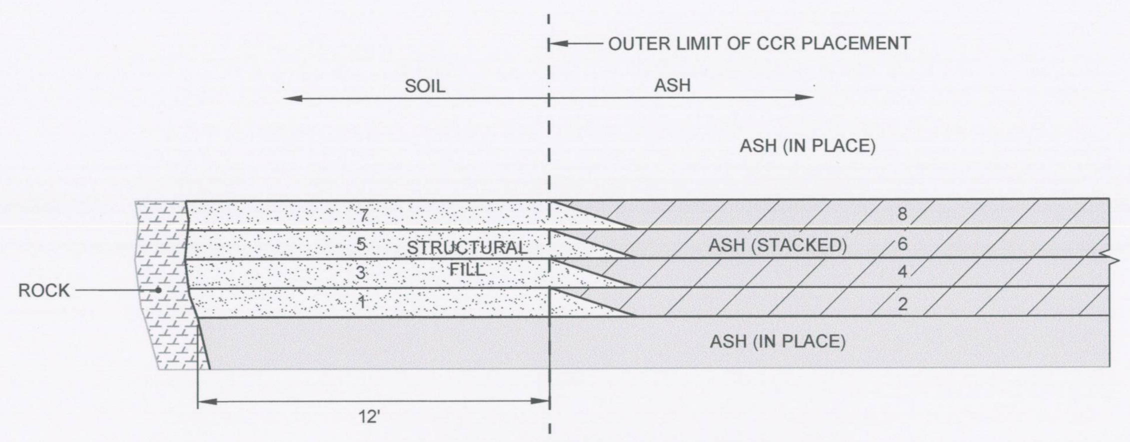
12 D-10 ANCHOR TRENCH

1" = 2' 0 2 4 FEET



9 D-10 HIGHWALL TERMINATION DETAIL

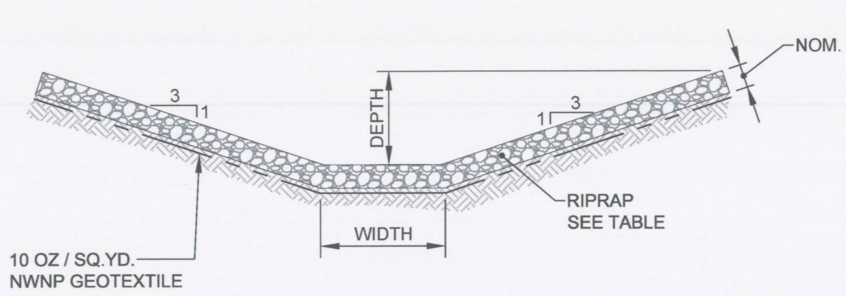
1" = 5' 0 5 10 FEET



10 D-10 SOIL WEDGE CONSTRUCTION

1" = 4' 0 4 8 FEET

- NUMBERS DESIGNATE SEQUENCING OF LIFTS.
- STACKED ASH LIFT THICKNESS TO MATCH STRUCTURAL FILL LIFT THICKNESS.

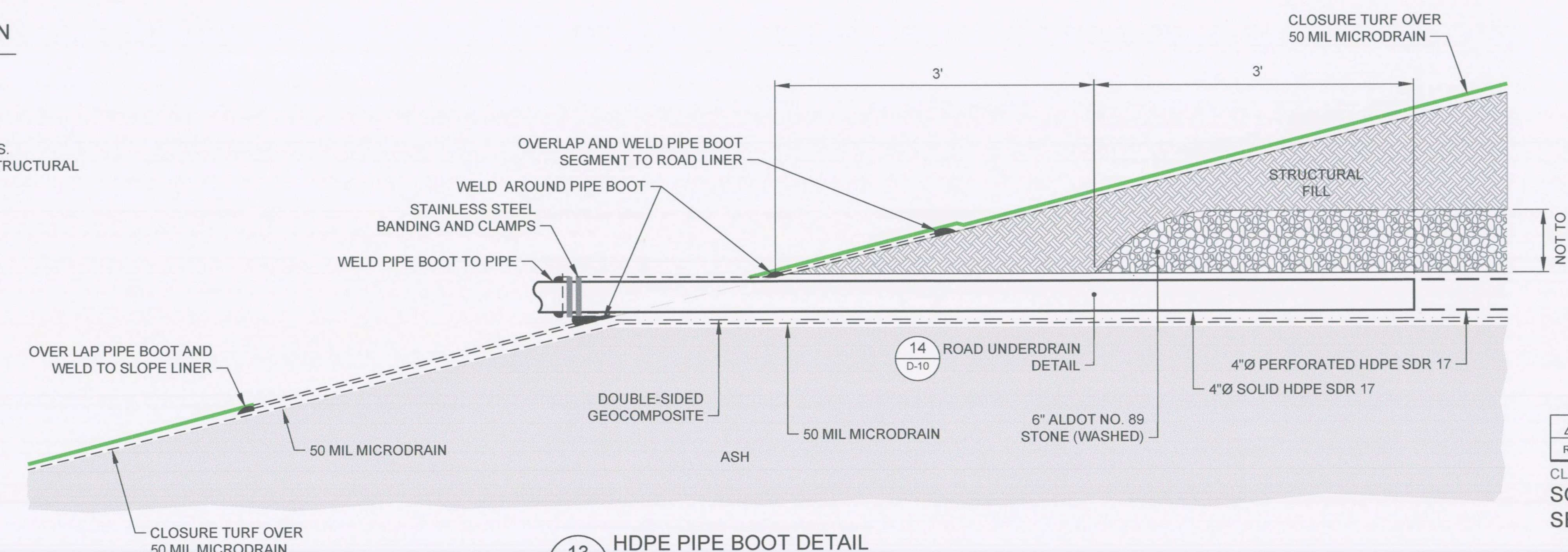


Reach	Typical Slope (ft/ft)	Width (feet)	Depth (feet)	Riprap Class	D50 (inches)
RR1	0.05	10	3	3	18
RR2A	0.14	5	2	1	11
RR2B	0.05	10	2	1	11
RR3A	0.15	10	2	3	18
RR4	0.02	10	2	1	11
RR5A	0.05	15	3	3	18
RR5B	0.01	15	3	3	18
RR6	0.03	5	2	1	11
RR7	0.04	5	2	1	11
RR8	0.03	5	2	1	11
RR9A	0.18	10	2	3	18
RR9B	0.03	10	2	1	11
RR10A	0.17	10	2	3	18
RR10B	0.02	10	2	1	11

THIS DETAIL AND TABLE ARE ALSO PLACED ON THE CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN CONSTRUCTION DETAILS, SHEET ES-13. SEE SHEET D-06 FOR REACH LOCATIONS.

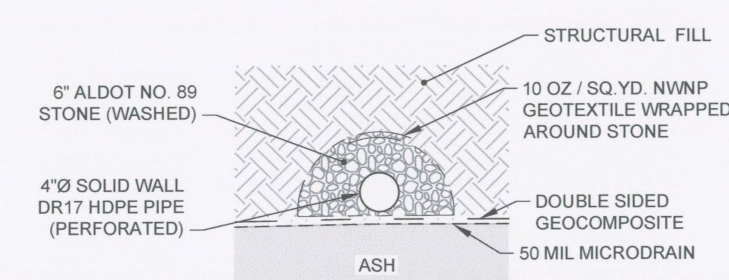
11 D-10 RIP-RAP CHANNEL DETAIL AND TABLE

1" = 5' 0 5 10 FEET



13 D-10 HDPE PIPE BOOT DETAIL

1" = 1' 0 1 2 FEET



14 D-10 ROAD UNDERDRAIN DETAIL

1" = 1' 0 1 2 FEET

NOTE S:
1. DOUBLE-SIDED GEOCOMPOSITE INCLUDES 200 MIL GEONET AND 8 OZ/SY NON-WOVEN GEOTEXTILE ON EACH SIDE.
2. NWNP = NON-WOVEN NEEDLE PUNCHED

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
A	2019/02/28	100% DESIGN SUBMITTAL	ARF	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES

Southern Company | Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
MISCELLANEOUS DETAILS

CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	ARF
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ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R. SULLIVAN
Feb 28, 2019
WILLIAM R. SULLIVAN
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CERTIFICATE NUMBER 20266

PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING D-10

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
	2019/02/28	100% DESIGN SUBMITTAL	ARF	JRM	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES

Southern Company · Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
UTTRESS DRAINAGE S STEM

CONSULTANT
GOLDER

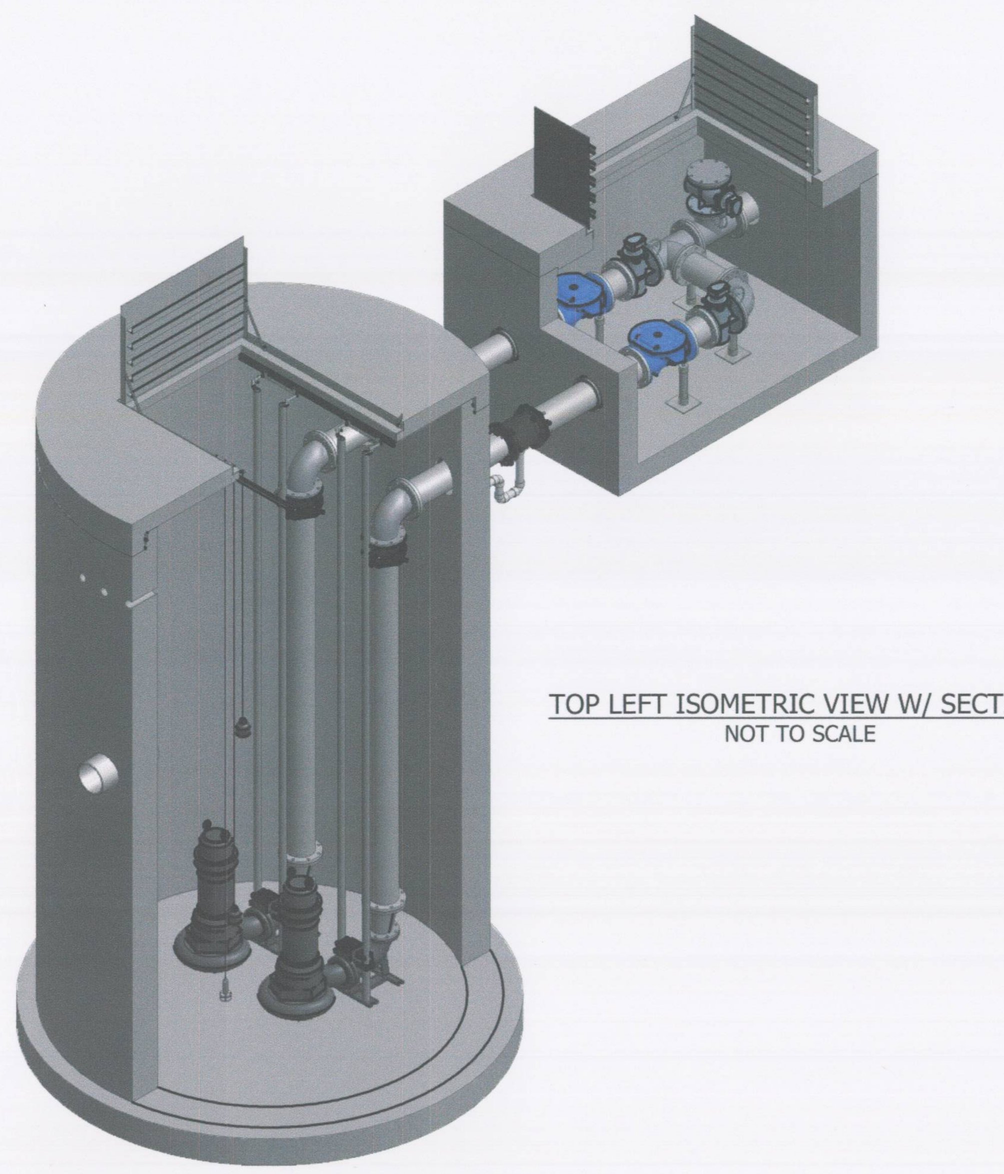
YYYY-MM-DD	2019/02/28
DESIGNED	ARF
PREPARED	JRM
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING D-11

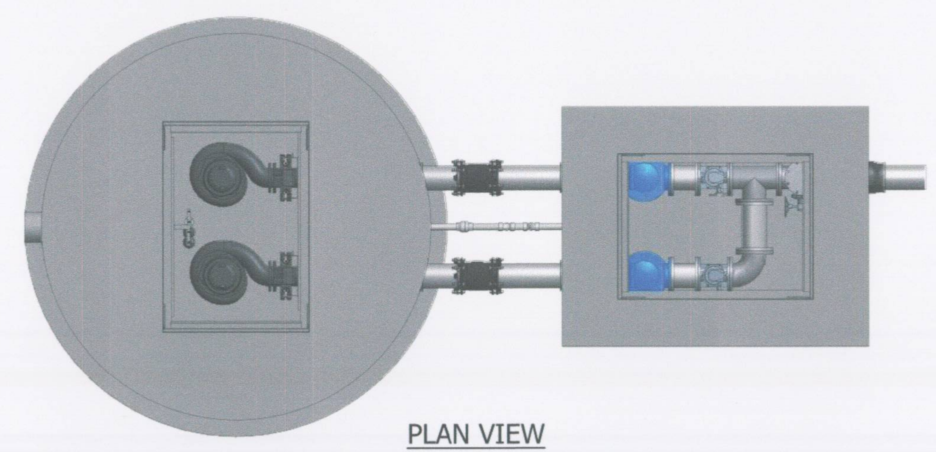
Feb 28 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER CERTIFICATE NUMBER 20266

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ARCH D

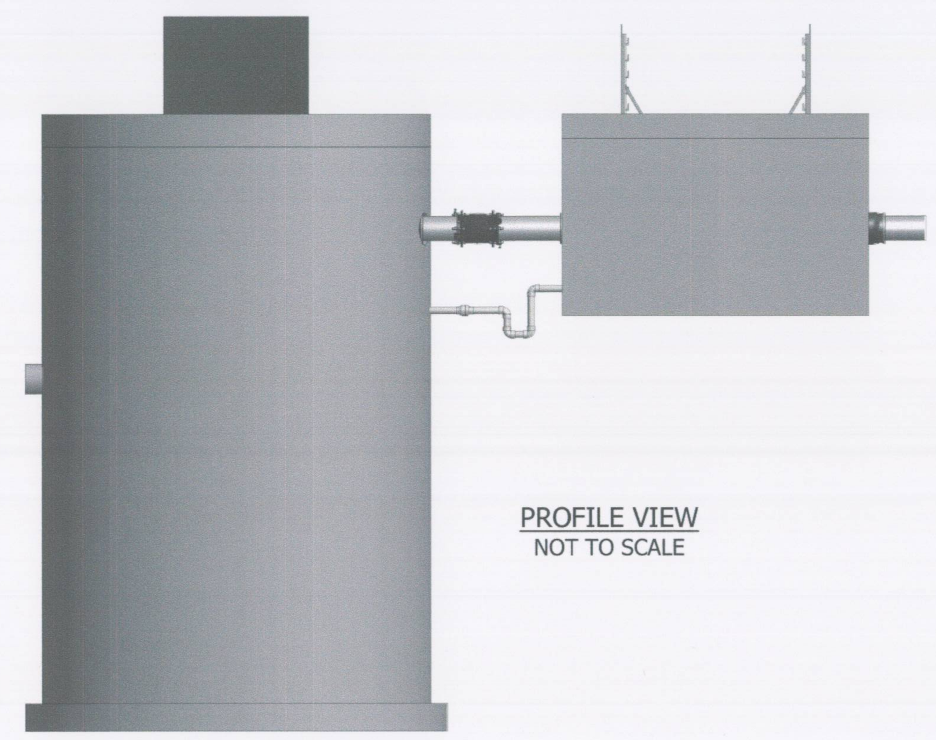
6"X8" PUMP DISCHARGE
DUPLEX LIFT STATION



TOP LEFT ISOMETRIC VIEW W/ SECTION
NOT TO SCALE



PLAN VIEW
NOT TO SCALE



PROFILE VIEW
NOT TO SCALE

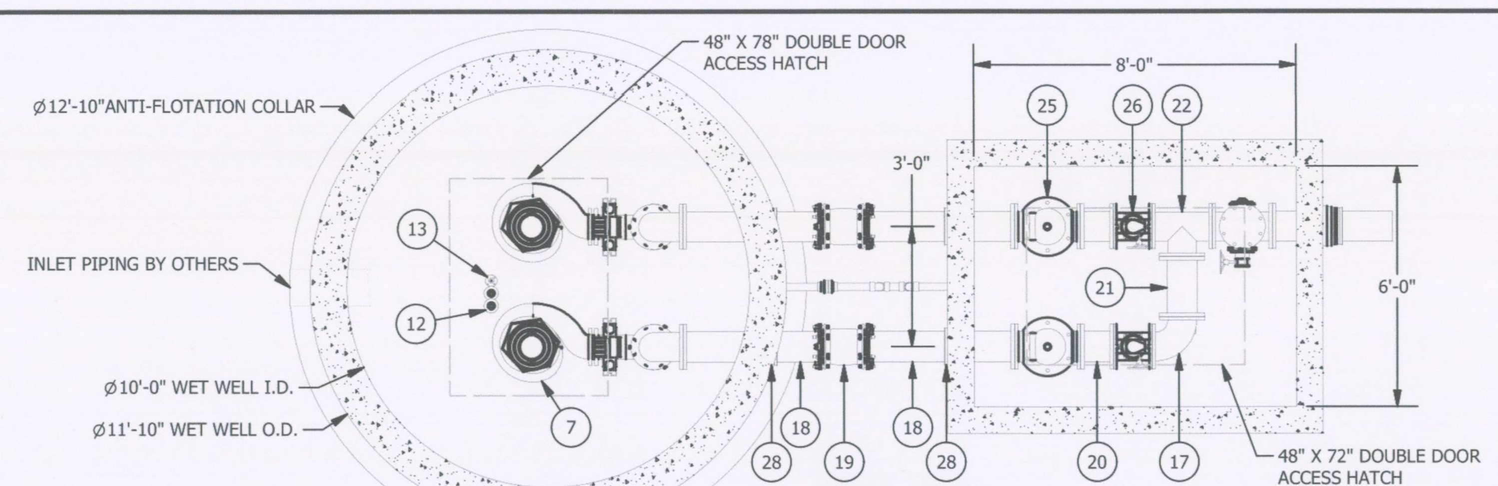
DISCLAIMERS, INCLUDING BUT NOT LIMITED TO:
1.) Elevations provided by others. Changes greater than 0.1' require engineer approval. Field elevations have not been verified by Jensen Precast. Refer to Jensen Precast concrete production drawings for concrete excavation. These mechanical drawings are not intended for setting of precast structures.
2.) Pump station design characteristics such as, but not limited to; inflow rate, on-site power availability, etc., were provided by the engineer of record.
3.) Purchasing agent must verify pump station complies with engineering plans, specifications, and site conditions prior to production.
4.) Site assembly required. Purchasing agent is responsible for assembly of entire pump station. Includes but is not limited to; off-loading & setting of concrete material, piping assembly, and electrical wiring.
5.) Location of control panel must be disclosed to Jensen Precast.

PROJECT: 6"X8" DISCHARGE LIFT STATION
TITLE PAGE
DATE: May 2014 | DRAWN BY: NEC | SHEET NO: 1 of 2

JENSEN ENGINEERED SYSTEMS
521 DUNN CIRCLE, SPARKS, NV 89431
JensenEngineeredSystems.com
(855) 468-5600

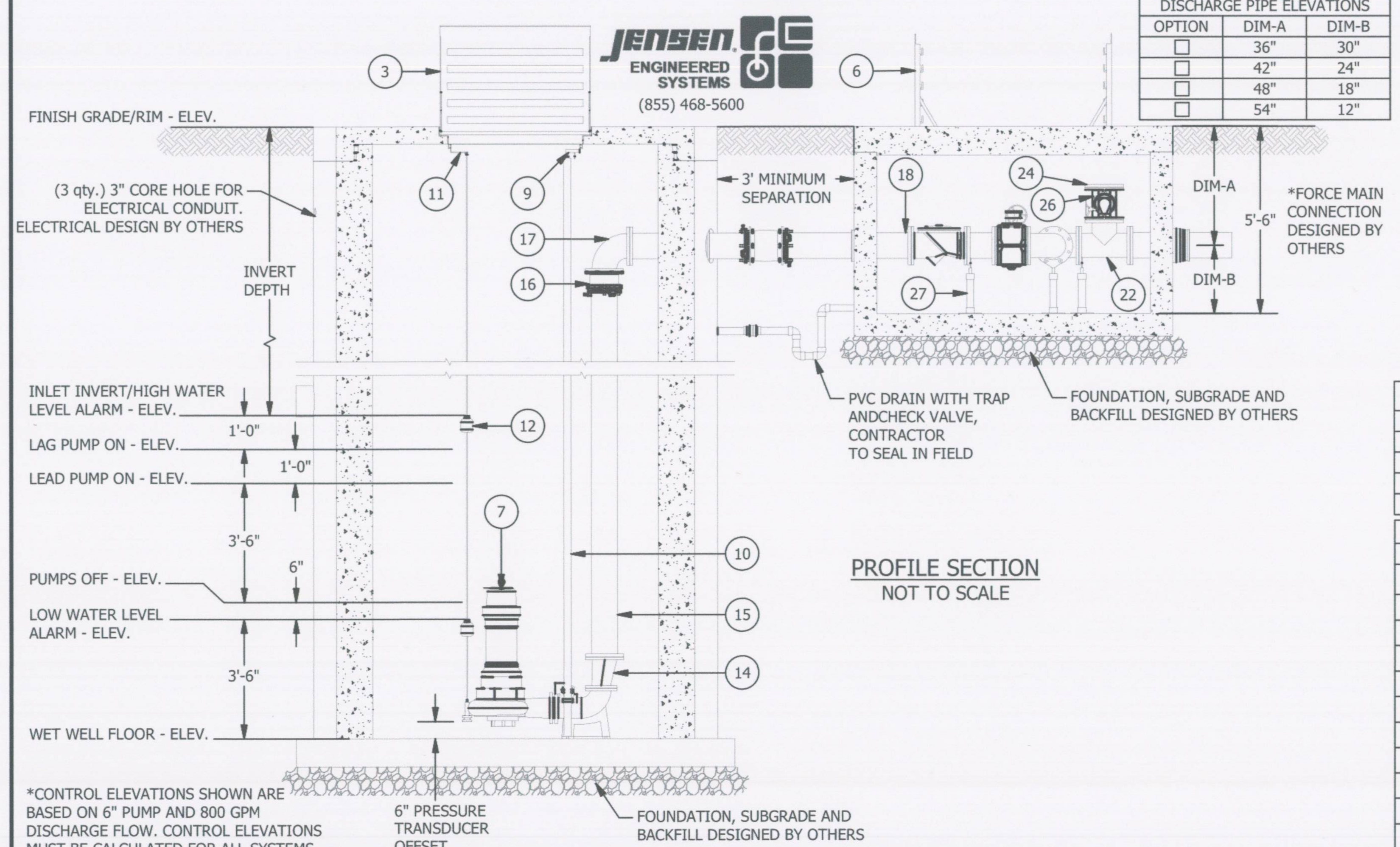
NOTES:

1. JENSEN DETAIL SHOWN FOR INFORMATION ONLY. CONTRACTOR MAY SUBMIT AN EQUIVALENT SYSTEM FOR APPROVAL.
2. CONTRACTOR SHALL SUBMIT SEALED DRAWINGS OF PRECAST CONCRETE SUMP FOR APPROVAL BY CONSTRUCTION MANAGER.
3. PRECAST CONCRETE SUMP SHALL BE LINED ACCORDING TO TECHNICAL SPECIFICATION 33 05 61 - CONCRETE PROTECTIVE LINER. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF THE LINER SYSTEM, PIPE PENETRATIONS, AND JOINT SEALANT TO THE PROJECT CONSTRUCTION MANAGER FOR APPROVAL. SHOP DRAWINGS SHALL BE SUBMITTED AT LEAST 28 DAYS IN ADVANCE OF INSTALLATION.
4. PUMPS, PIPING AND CONTROLS TO BE SPECIFIED BY SOUTHERN COMPANY SERVICES.



PLAN SECTION
NOT TO SCALE

DISCHARGE PIPE ELEVATIONS		
OPTION	DIM-A	DIM-B
☐	36"	30"
☐	42"	24"
☐	48"	18"
☐	54"	12"



PROFILE SECTION
NOT TO SCALE

*CONTROL ELEVATIONS SHOWN ARE BASED ON 6" PUMP AND 800 GPM DISCHARGE FLOW. CONTROL ELEVATIONS MUST BE CALCULATED FOR ALL SYSTEMS.

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	120" DIA JENSEN PRECAST CONCRETE MANHOLE
2	1	120" DIA JENSEN PRECAST CONCRETE FLAT TOP
3	1	48" X 78" ALUMINUM OR STEEL DOUBLE DOOR ACCESS HATCH TO MEET LOADING CRITERIA
4	1	72" X 96" JENSEN PRECAST CONCRETE VAULT
5	1	72" X 96" JENSEN PRECAST CONCRETE VAULT FLAT TOP
6	1	48" X 72" ALUMINUM OR STEEL DOUBLE DOOR ACCESS HATCH TO MEET LOADING CRITERIA
7	2	6" NON-CLOG SUBMERSIBLE PUMP W/ AUTOCOUPLING RATED FOR CONTINUOUS DUTY, INCLUDES SEAL FAILURE AND THERMAL SENSORS
8	2	UNISTRUT CHANNEL
9	2	UPPER GUIDE RAIL BRACKET PER MANUFACTURER DESIGN
10	4	304SS GUIDE RAIL
11	1	SS FLOAT BRACKET W/ CORD GRIPS
12	2	INTERNALLY WEIGHTED NON-MECURY MECHANICAL FLOAT BACK-UP FOR REDUNDANT HIGH/LOW LEVEL CONDITION
13	1	DWYER PBLT SERIES STAINLESS STEEL, SUBMERSIBLE PRESSURE TRANSDUCER
14	2	6"X8" DIP FLGXFLG ECCENTRIC REDUCER
15	2	8" DIP FLG x PE SPOOL, PER DESIGN LENGTH
16	2	8" DIP RFCA W/ SS HRDWR
17	3	8" DIP FLGXFLG 90DEG ELBOW
18	4	8" DIP FLG x PE 4'-0" SPOOL
19	2	8" MJ SLEEVE (LONG) W/ SS HDWR
20	2	8" DIP FLG x FLG 0'-10" SPOOL
21	1	8" DIP FLG x FLG 1'-6" SPOOL
22	2	8" DIP FLGXFLGXFLG TEE
23	1	8" DIP FLG x PE 3'-0" SPOOL
24	1	8" DIP BLIND FLANGE
25	2	8" FLG SWING CHECK VALVE BY VAL-MATIC
26	3	8" ECCENTRIC PLUG VALVE BY VAL-MATIC
27	4	ADJUSTABLE PIPE STAND FOR 8" DIP
28	5	FLEXIBLE BOOT TYPE PIPE CONNECTOR
29	1	2" SCH40 PVC DRAIN PIPE W/ CHECK VALVE

PROJECT SPECIFIC ELEVATIONS	
DESCRIPTION	VALUE (ft)
FINISH GRADE/RIM ELEV.	
WET WELL FLOOR ELE.	
TOTAL MANHOLE DEPTH	
INVERT (IN) DEPTH	

SYSTEM CHARACTERISTICS	
DESCRIPTION	VALUE
DESIGN FLOW	gpm
STATIC HEAD	ft
TOTAL DYNAMIC HEAD	ft
FORCE MAIN LENGTH	ft
MANUFACTURER	HOMA ___
(SELECT ONLY ONE)	ABS ___
	GRUNDFOS ___
MOTOR SIZE	Hp
FULL LOAD AMPS	A
AVAILABLE POWER SUPPLY	___ PHASE ___ V
NUMBER OF PUMPS	

ACCESSORIES AND OPTIONS	
SEWAGE APPLICATION REQUIRING FM (CLASS1/DIVISION 1) EXPLOSION PROOF PUMPS	☐
SEWAGE APPLICATION - DURAPLATE (PVC CORROSION PROTECTION LINER) BY A-LOK	☐
ODOR CONTROL FOR SEWAGE APPLICATION, 1800 SERIES MEDIA CANISTER FILTER BY WAGER	☐
ACCESS COVER LOADING CRITERIA (SPECIFY ONLY ONE)	
PEDESTRIAN LOADING (pedestrian, non-vehicular, uniform 300 lbs/sq.ft. live load)	☐
INCIDENTAL H-20 LOADING (off street, sidewalk, and low speed, non-impact areas of parking lots, 16,000 lbs./sq.ft. dual wheel live load, 0% impact)	☐
H-20 FULL TRAFFIC LOADING (in street, 16,000 lbs./sq.ft. dual wheel live load, 30% impact)	☐
H-20-44 PARKING LOT LOADING (parking lots and alley ways where speed does not exceed 15 mph)	☐

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1.) Elevations provided by others. Changes greater than 0.1' require engineer approval. Field elevations have not been verified by Jensen Precast. Refer to Jensen Precast concrete production drawings for concrete excavation. These mechanical drawings are not intended for setting of precast structures.
2.) Pump station design characteristics such as, but not limited to; inflow rate, on-site power availability, etc., were provided by the engineer of record.
3.) Purchasing agent must verify pump station complies with engineering plans, specifications, and site conditions prior to production.
4.) Site assembly required. Purchasing agent is responsible for assembly of entire pump station. Includes but is not limited to; off-loading & setting of concrete material, piping assembly, and electrical wiring.
5.) Location of control panel must be disclosed to Jensen Precast.

PROJECT: 6"X8" DISCHARGE LIFT STATION
MECHANICAL DETAIL
DATE: May 2014 | DRAWN BY: NEC | SHEET NO: 2 of 2

JENSEN ENGINEERED SYSTEMS
521 DUNN CIRCLE, SPARKS, NV 89431
JensenEngineeredSystems.com
(855) 468-5600

NOT TO SCALE 1 D-12 SEEPAGE COLLECTION SUMP

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
	2019/02/28	100% DESIGN SUBMITTAL	——	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES
Southern Company | Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
SEE□AGE COLLECTION SUM□ DETAILS

ALABAMA REGISTERED PROFESSIONAL ENGINEER No. 20266 WILLIAM R SULLIVAN
Feb 28 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	——
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING D-12

LEGEND

420	EXISTING CONTOURS
380	BATHYMETRY CONTOURS
380	ESTIMATED BASE OF EXCAVATION
380	EXCAVATION CONTOURS PRIOR TO GROUNDWATER CONTROL LEVELS BEING MAINTAINED.
	ESTIMATED CCR LIMITS
	LIMITS OF MARSH AREA
	MONITORING WELL
	EXISTING ROAD
	EXTENT OF DEWATERING REQUIRED AT START OF DREDGING
	AREA OF ESTIMATED ASH THICKNESS LESS THAN 5'

NOTE(S)

1. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL, NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1988. COORDINATES CORRESPOND TO ALABAMA WEST COORDINATE SYSTEM, NORTH AMERICAN DATUM (NAD) 1983.

2. "ESTIMATED CCR LIMITS" INDICATES THE ESTIMATED OUTER EXTENT OF THE CCR TO BE ADDRESSED IN THE CLOSURE PROJECT. LOCATIONS OF HIGH-LYING NATURAL GROUND WHERE NO CCR IS PRESENT EXIST WITHIN THESE ESTIMATED LIMITS.

3. GROUNDWATER CONTROL LEVELS ARE SHOWN ON D-14. THEY SHALL BE ACHIEVED AND MAINTAINED PRIOR TO EXCAVATING BELOW THE GRADES SHOWN IN THIS PLAN AND MAINTAINED DURING EXCAVATION. THESE GROUNDWATER LEVELS ARE REQUIRED FOR STABILITY OF THE TEMPORARY CUT SLOPE IN SLUICED ASH BEFORE BUTTRESS CONSTRUCTION.

REFERENCE(S)

1. EXISTING TOPOGRAPHY PROVIDED BY SOUTHERN COMPANY SERVICES, FEBRUARY 2018.

2. BATHYMETRY DATA PROVIDED BY SOUTHERN COMPANY SERVICES, DATED AUGUST 2018.

0 200 400
1" = 200' FEET

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN
Feb. 28, 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
0	2019/02/28	100% DESIGN SUBMITTAL	ARF	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES

Southern Company — Alabama Power

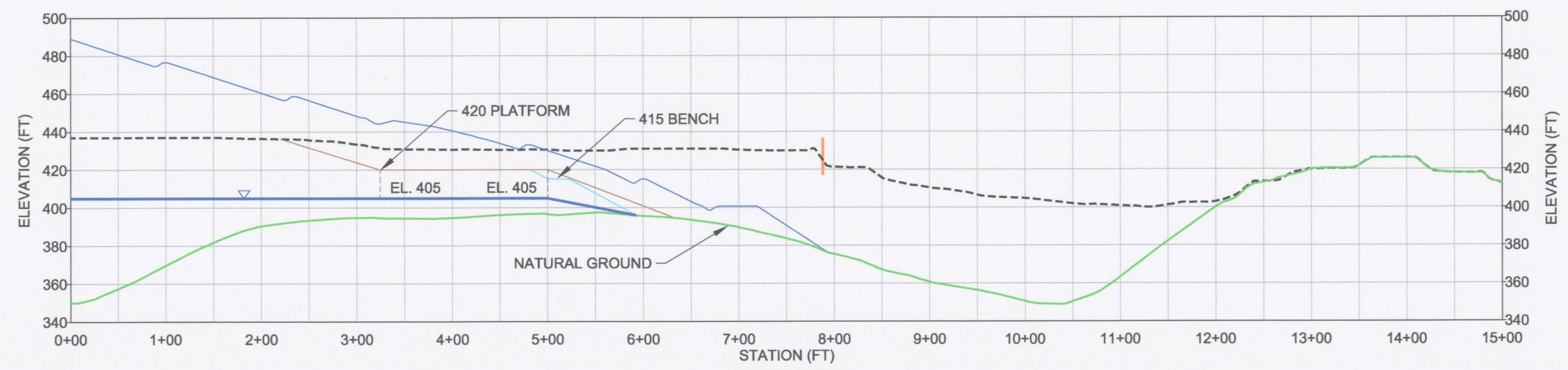
PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
MA□IMUM E□CA□ATION □RIOR TO MAINTENANCE GROUNDWATER CONTROL LE□ELS

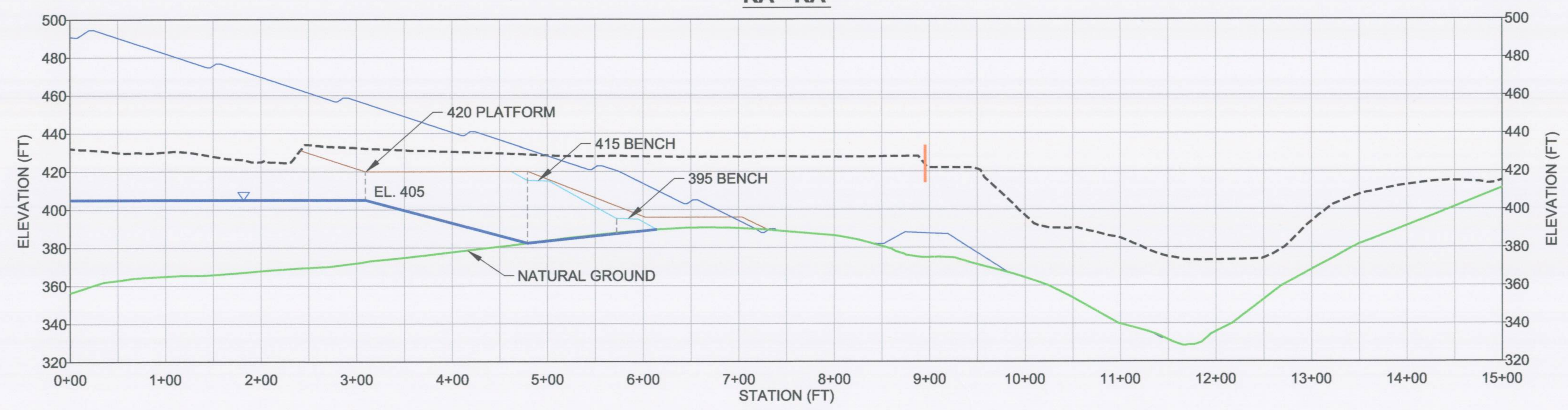
CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	ARF
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

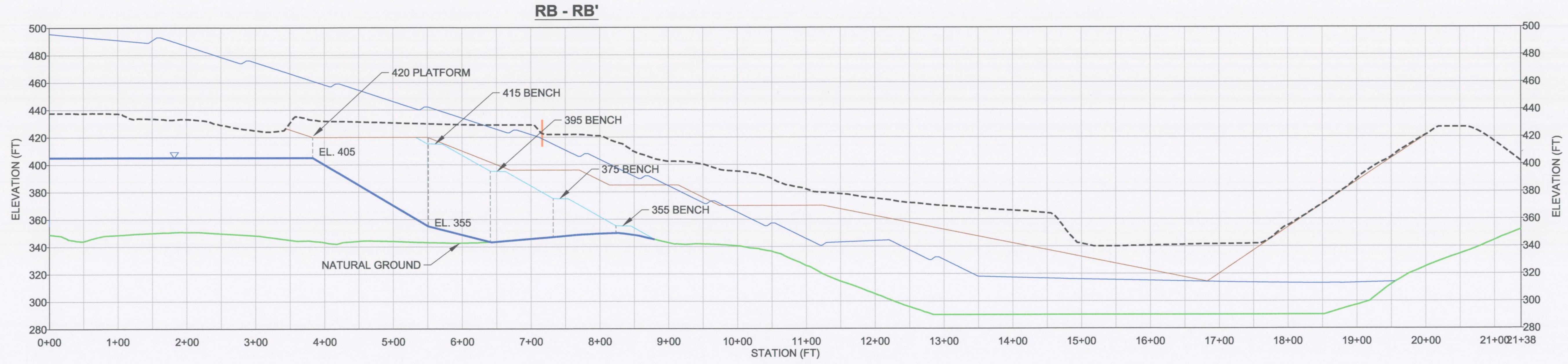
PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	D-13



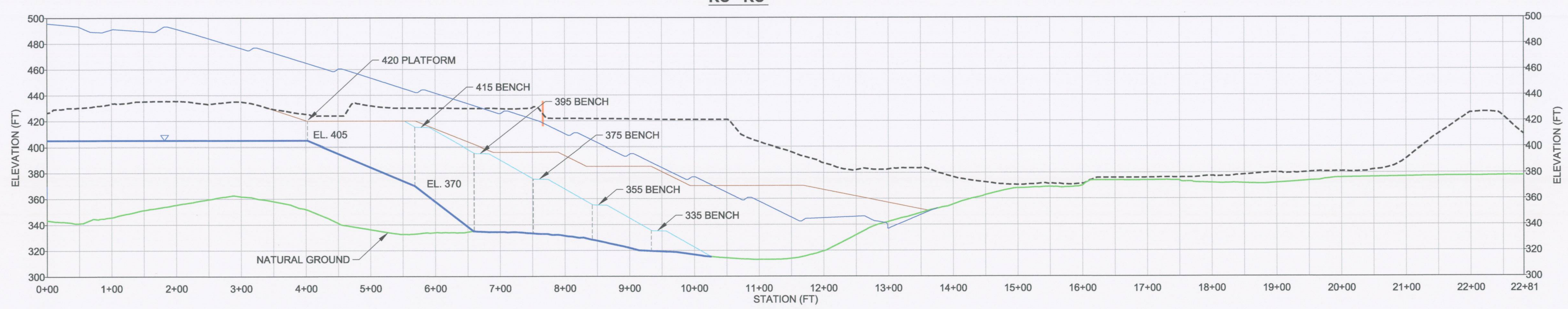
RA - RA'



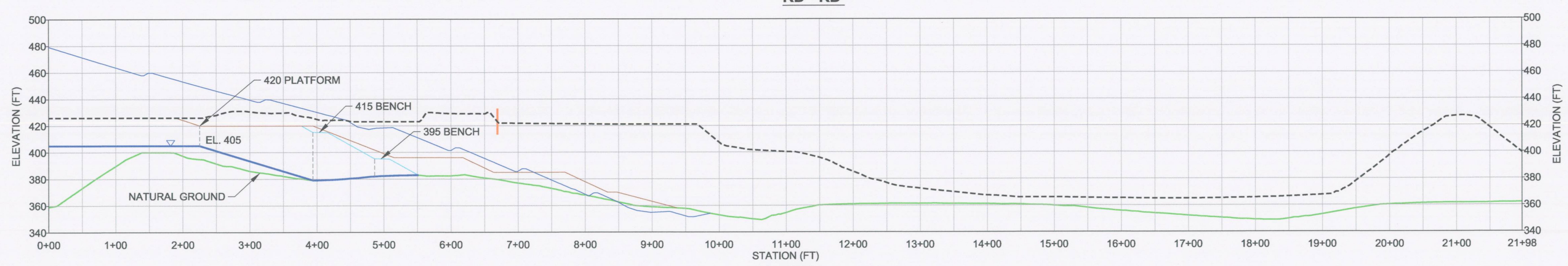
RB - RB'



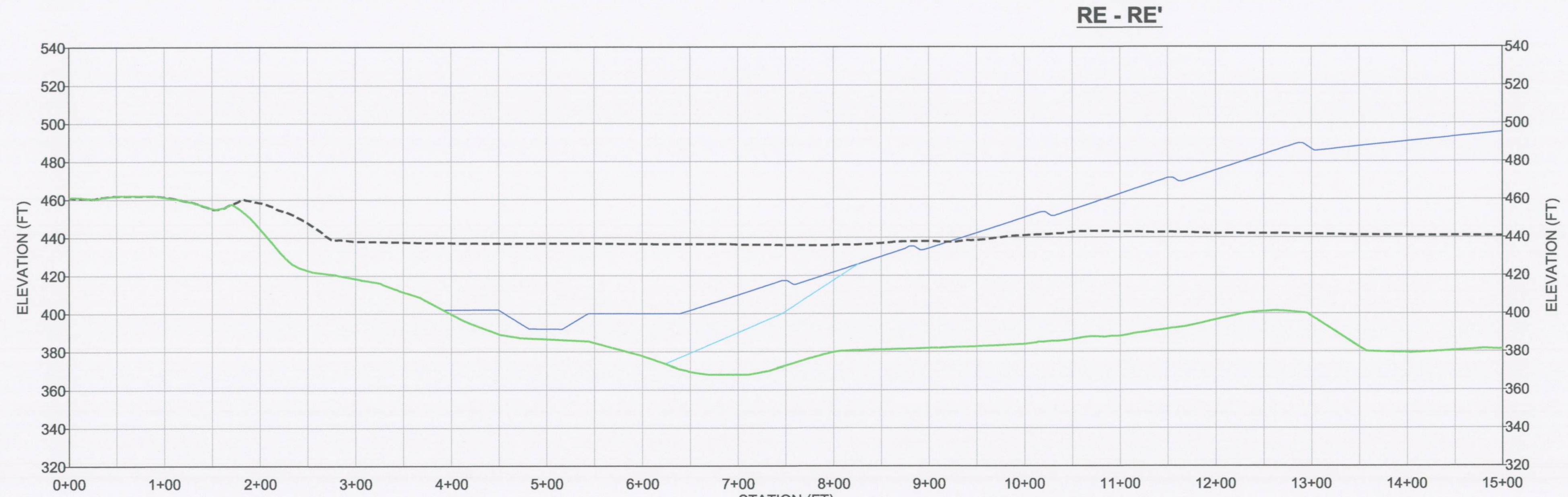
RC - RC'



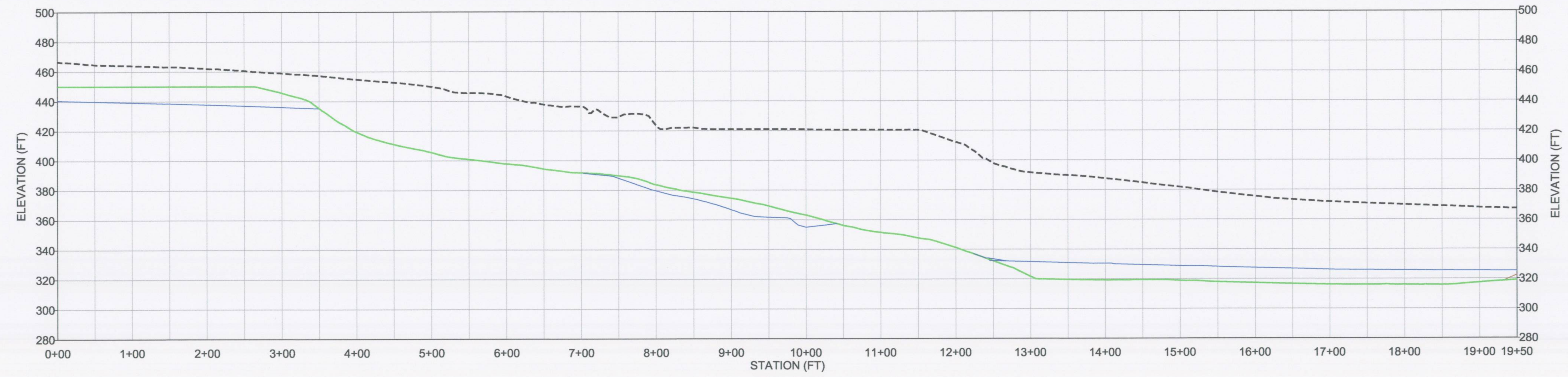
RD - RD'



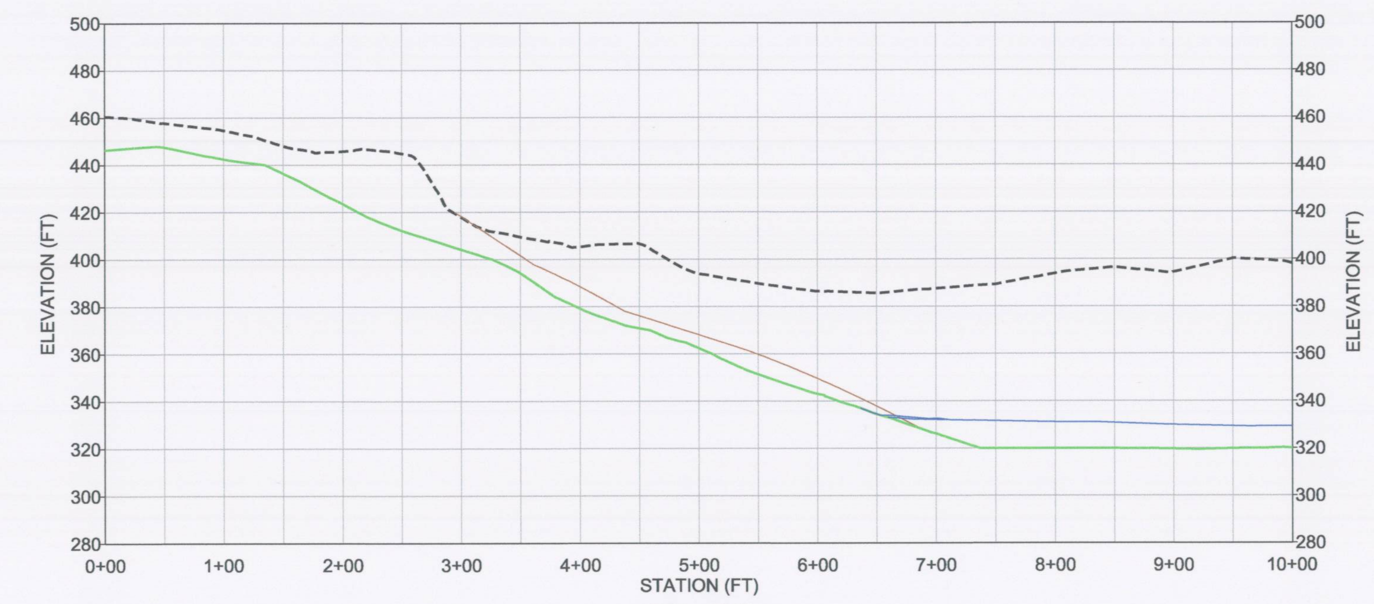
RE - RE'



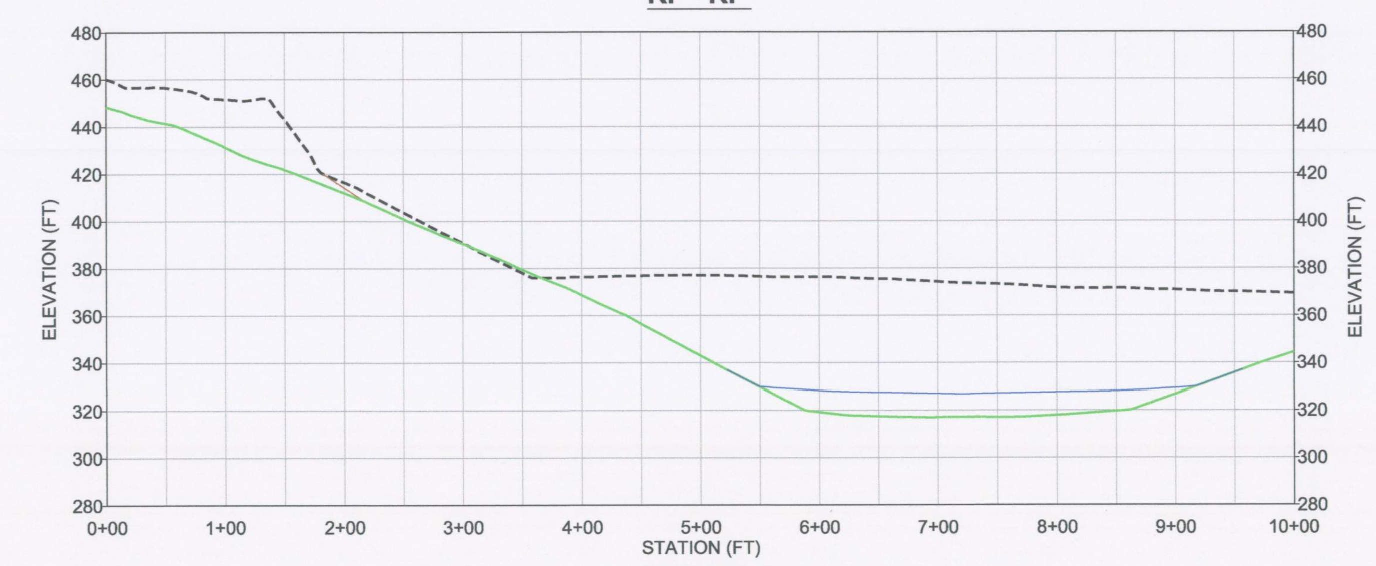
RI - RI'



RH - RH'



RF - RF'



RG - RG'

		ALL REFERENCED FROM BACK OF BENCH OR PLATFORM					
Section	Buttress Elev.	WL at 420 platform	WL at 415 bench	WL at 395 bench	WL at 375 bench	WL at 355 bench	WL at 335 bench
RA	415	405	405	NG			
RA	No Buttress	405	405	NG			
RB	415	405	405	--			
RB	395	405	NG	NG			
RB	No Buttress	405	NG	NG			
RC	415	405	405	--	--	--	
RC	395	405	375	355	355	NG	
RC	375	405	360	NG	NG	NG	
RC	355	405	355	NG	NG	NG	
RC	No Buttress	405	355	NG	NG	NG	
RD	415	405	405	--	--	--	--
RD	395	405	375	355	355	350	330
RD	375	405	360	350	NG	NG	NG
RD	355	405	350	NG	NG	NG	NG
RD	335	405	350	NG	NG	NG	NG
RD	No Buttress	405	350	NG	NG	NG	NG
RE	415	405	405	--	--		
RE	395	405	NG	NG	NG		
RE	No Buttress	405	NG	NG	NG		

NG = NATURAL GROUND

LEGEND

- FINAL GRADES
- MAXIMUM EXCAVATION PRIOR TO GROUNDWATER CONTROL LEVELS BEING MAINTAINED
- EXISTING 2018 TOPOGRAPHY / 2018 BATHYMETRY COMPLETION
- ESTIMATED BOTTOM OF ASH
- BACK OF SOIL BUTTRESS
- GROUNDWATER CONTROL LEVEL
- EDGE OF MARCH

NOTES

1. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL, NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1988. COORDINATES CORRESPOND TO ALABAMA WEST COORDINATE SYSTEM, NORTH AMERICAN DATUM (NAD) 1983.
2. GROUNDWATER CONTROL LEVELS ARE SHOWN ON EACH CROSS-SECTION. THEY SHALL BE ACHIEVED AND MAINTAINED PRIOR TO EXCAVATING BELOW THE GRADES SHOWN IN THIS PLAN AND MAINTAINED DURING EXCAVATION. THESE GROUNDWATER LEVELS ARE REQUIRED FOR STABILITY OF THE TEMPORARY CUT SLOPE IN SLUICED ASH BEFORE BUTTRESS CONSTRUCTION.
3. GROUNDWATER CONTROL LEVELS SHOWN MAY BE MODIFIED BASED ON A NUMBER OF FACTORS, INCLUDING BUT NOT LIMITED TO, CONSTRUCTION SEQUENCING, THE RESPONSE OF GROUNDWATER AND POND WATER LEVELS TO DEWATERING, AND ASH SLOPE PERFORMANCE. DESIGN ENGINEER SHALL EVALUATE AND ANALYZE THESE FACTORS DURING CONSTRUCTION, AND MAY MODIFY GROUNDWATER CONTROL LEVELS ACCORDINGLY. VERIFICATION OF DESIGN ASSUMPTIONS BY THE DESIGN ENGINEER SHALL BE REQUIRED DURING CONSTRUCTION.

REFERENCES

1. EXISTING TOPOGRAPHY PROVIDED BY SOUTHERN COMPANY SERVICES, FEBRUARY 2018.
2. BATHYMETRY DATA PROVIDED BY SOUTHERN COMPANY SERVICES, DATED AUGUST 2018.
3. TOPOGRAPHY FOR THE OLD STRIP MINE AREA PROVIDED BY SOUTHERN COMPANY SERVICES, DATED OCTOBER 10, 2006.
4. BOTTOM OF ASH TOPOGRAPHY TAKEN FROM USGS, SYLVAN SPRINGS, 1971 QUADRANGLE. TOPOGRAPHY WAS INTERPRETED BETWEEN 20 FOOT CONTOURS AND ADJUSTED BASED ON GEOTECHNICAL INVESTIGATION DATA BY GOLDER ASSOCIATES INC.

0 100 200
1" = 100' FEET
HORIZONTAL SCALE

0 50 100
1" = 50' FEET
VERTICAL SCALE

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
0	2019/02/28	100% DESIGN SUBMITTAL	ARF	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES

Southern Company
Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

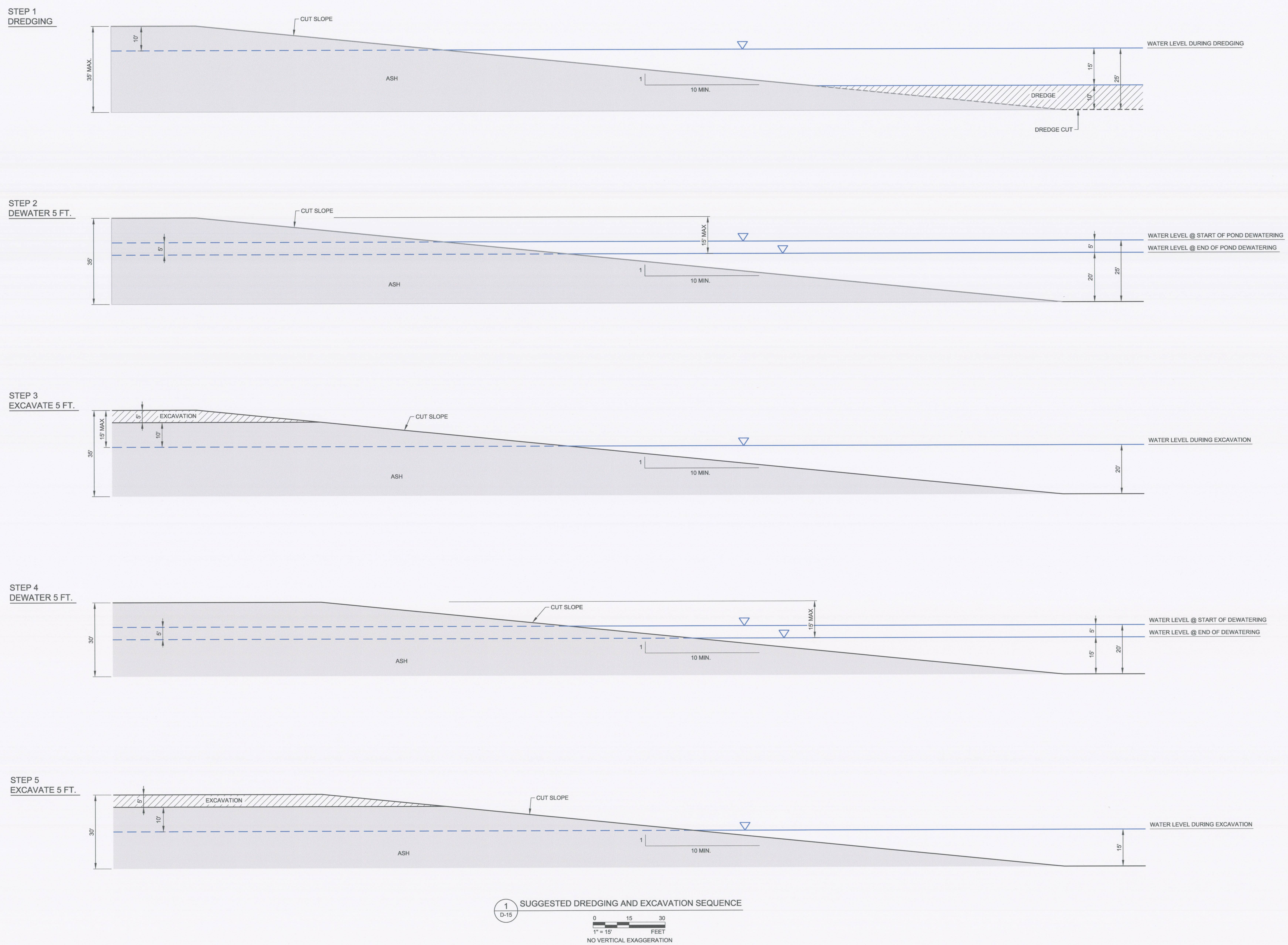
TITLE
E□CA□ATION LIMITS AND GROUNDWATER CONTROL LE□ELS

ALABAMA REGISTERED No. 20080 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN
Feb 28, 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20080

CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	ARF
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING D-14



1 D-15 SUGGESTED DREDGING AND EXCAVATION SEQUENCE

LEGEND

POND LEVEL

GROUNDWATER LEVEL

NOTE:S

1. REPEAT STEPS 1 THROUGH 5 UNTIL WATER LEVEL IN POND REACHES 360 FT ELEVATION.

2. SEE D-14 FOR GROUNDWATER CONTROL ELEVATIONS TO BE ACHIEVED AND MAINTAINED PRIO TO EXCAVATING LOWER THAN MAXIMUM SHOWN ON D-13.

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
△	2019/02/28	100% DESIGN SUBMITTAL	LJ	JRM	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES

Southern Company | Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
SUGGESTED DREDGING AND E CA ATION SE UENCE FOR SECTIONS RC AND RD

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN

Feb 28, 2019

WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	LJ
PREPARED	JRM
CHECKED	ARF
REVIEWED / APPROVED	WRS

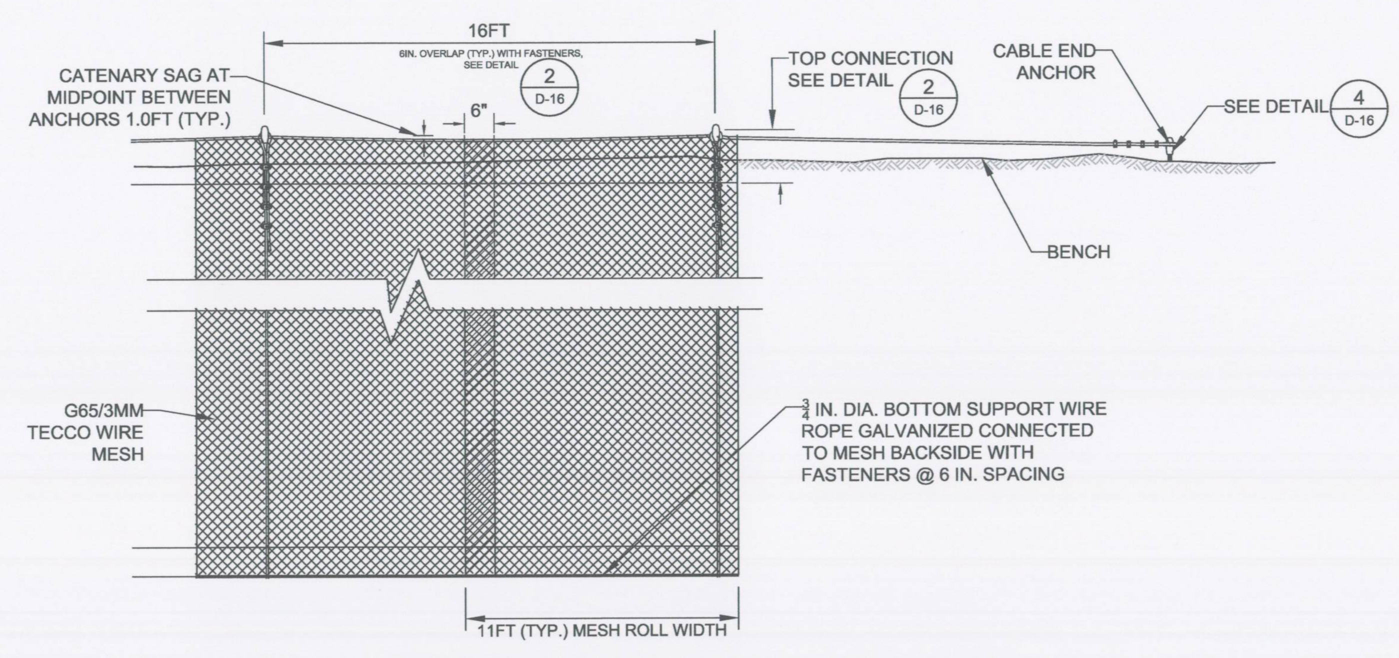
PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	D-15

11 / D-16 **WIRE MESH DRAPE LAYOUT**

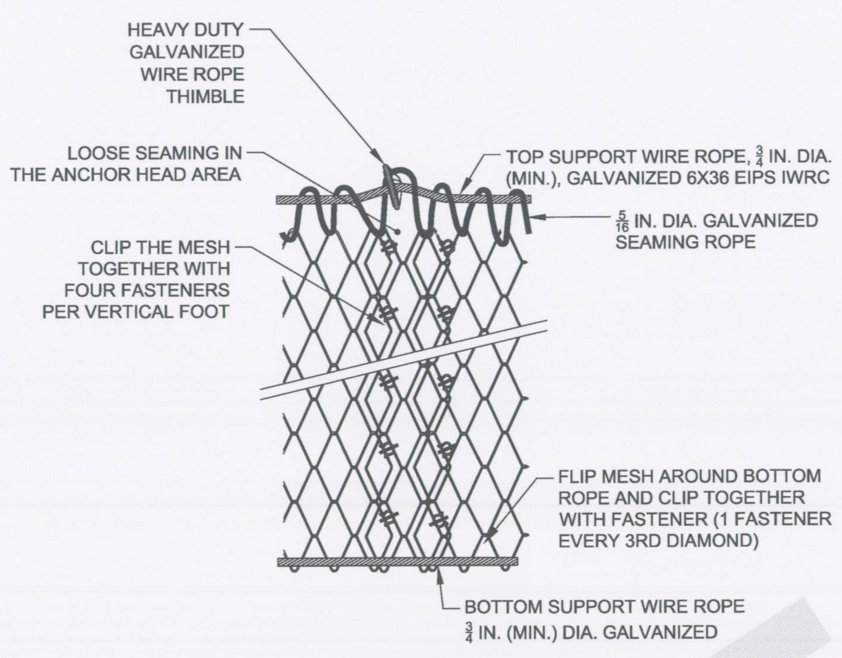
0 100 200 FEET
1" = 100'

LEGEND

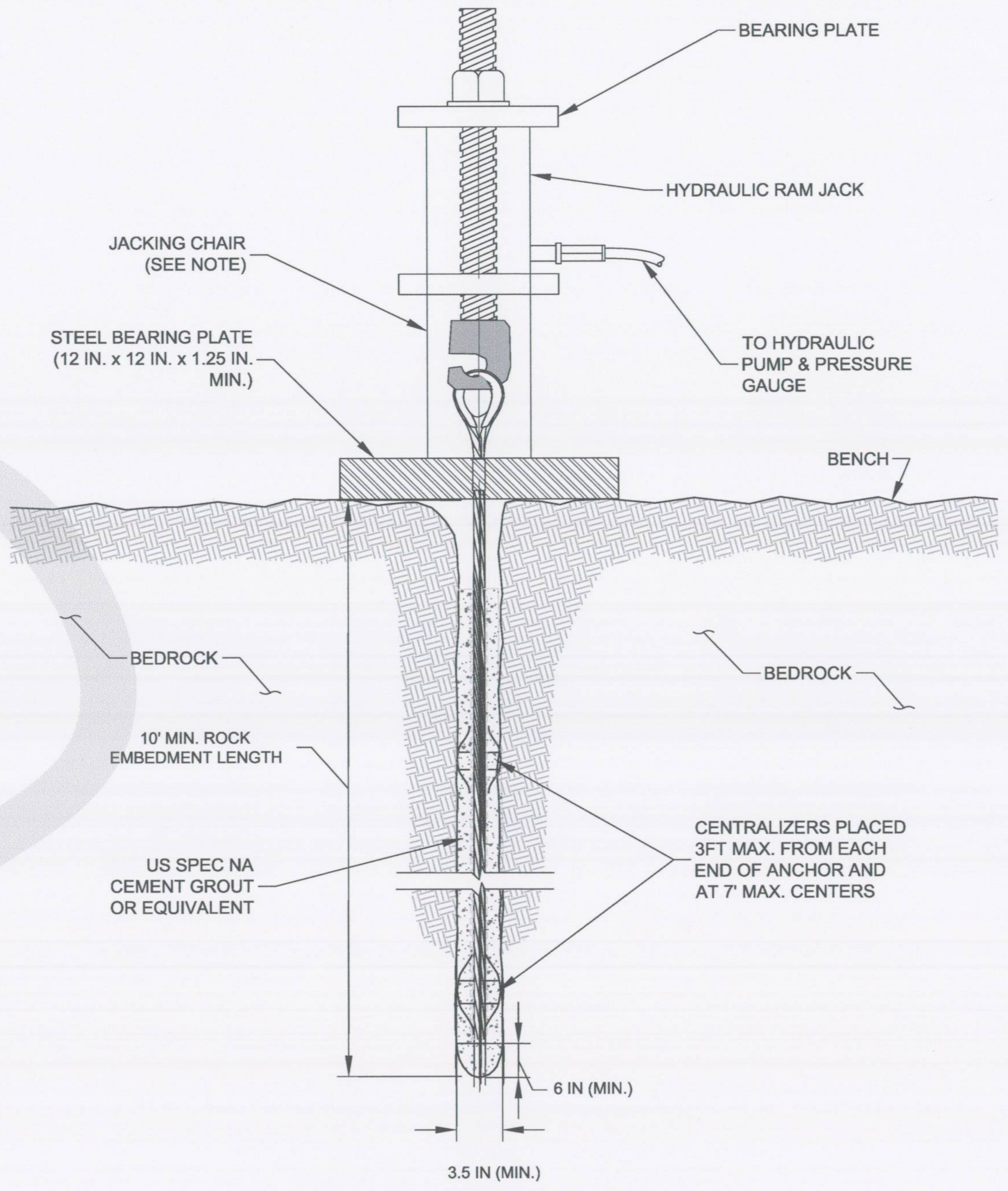
- 420 EXISTING CONTOURS
- 380 PROPOSED GRADING CONTOURS (SEE NOTE 5)
- 380 CLOSURE BY REMOVAL CONTOURS
- ESTIMATED CCR LIMITS
- WIRE MESH DRAPE



1 / D-16 **FRONT FACE OF ROCK SLOPE**
NTS

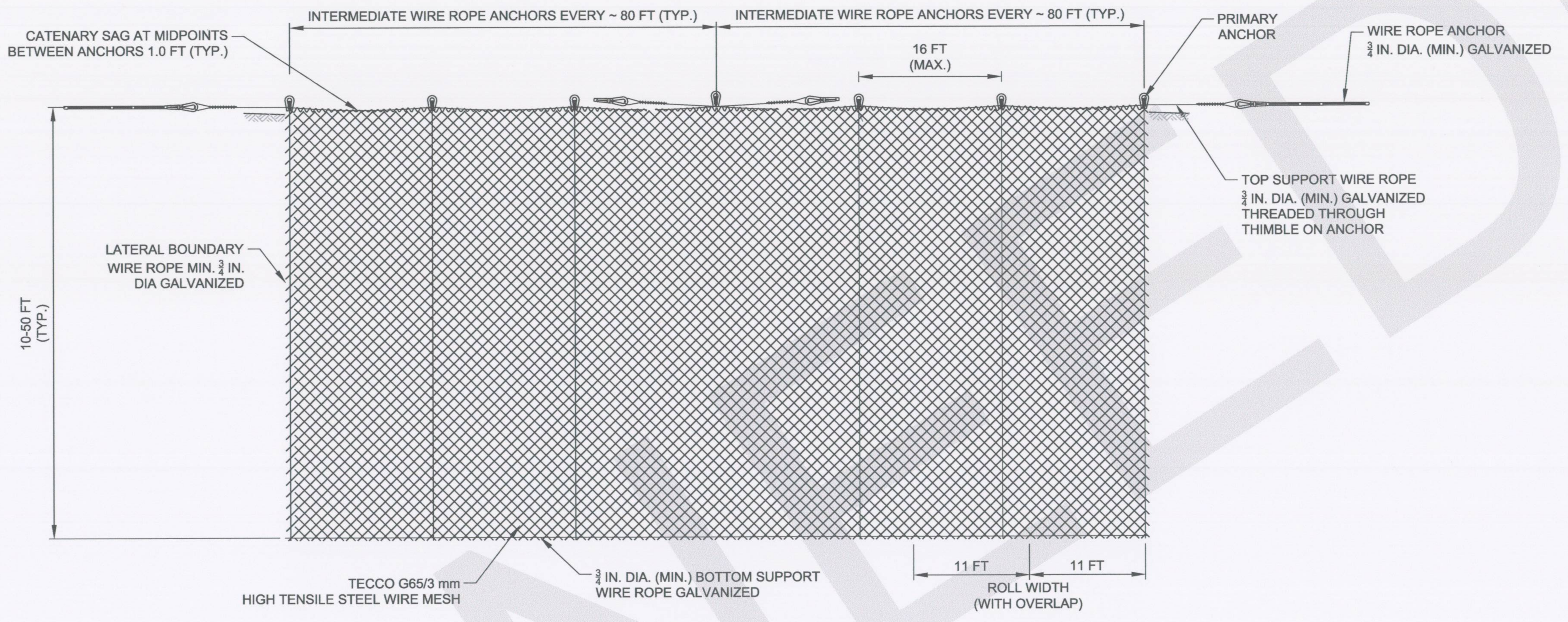


2 / D-16 **OVERLAP DETAIL**
NTS

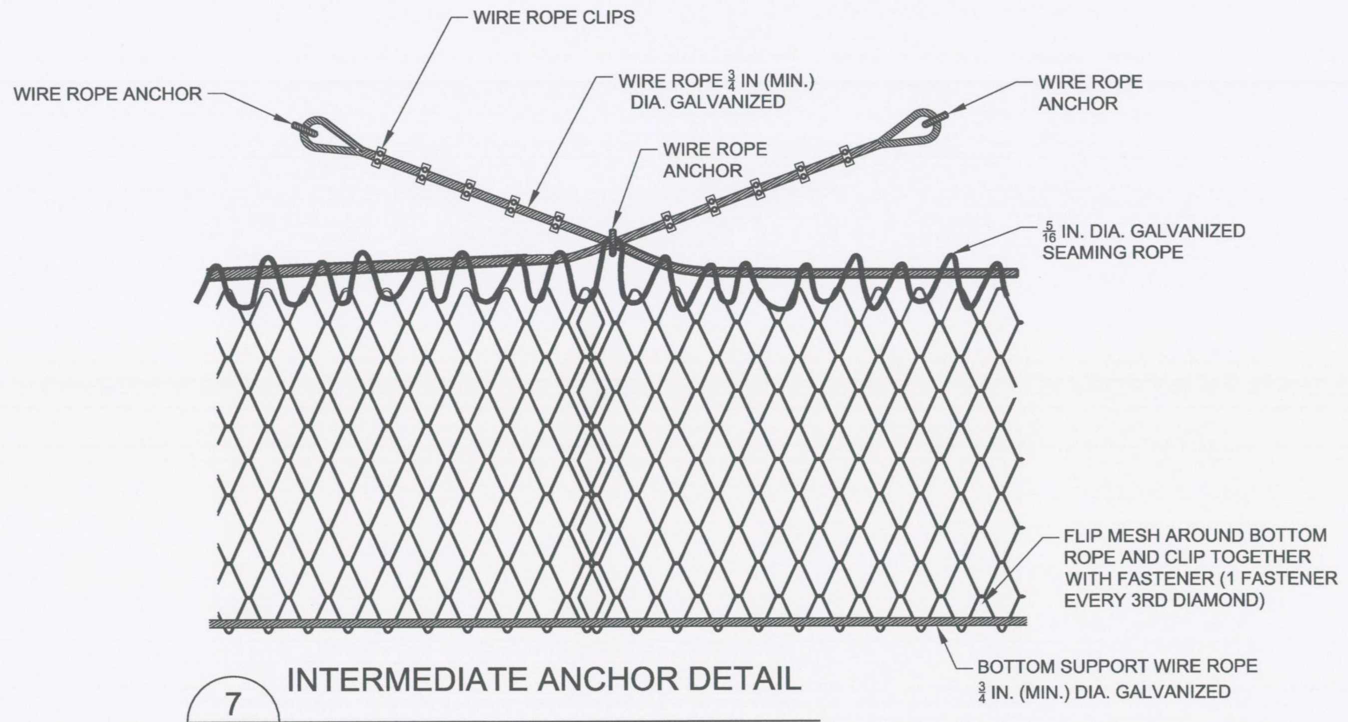


6 / D-16 **TYPICAL PULL-OUT TEST WIRE ROPE ANCHOR DETAIL**

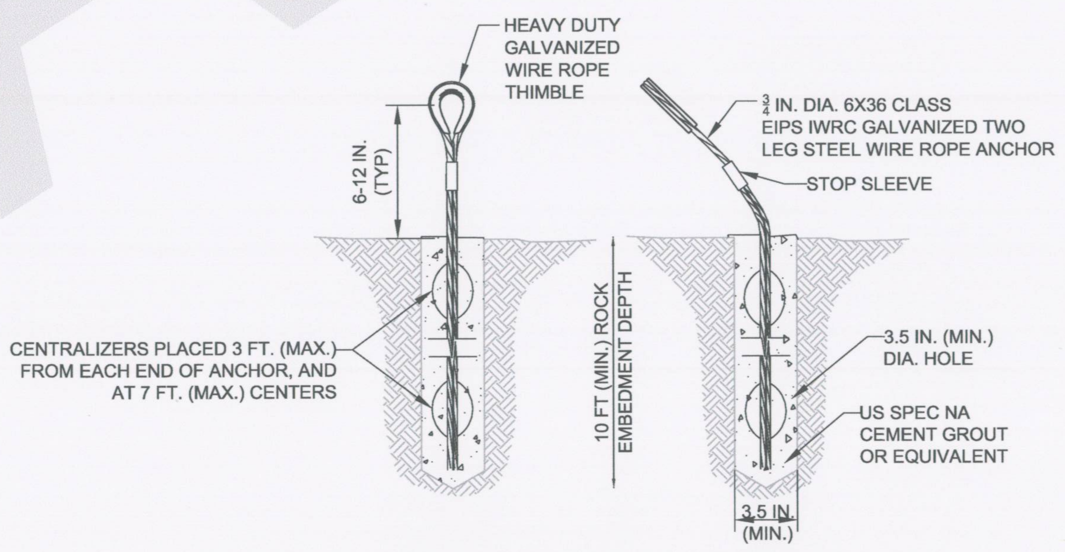
NOTE:
CONTRACTOR TO DESIGN JACK ATTACHMENT DEVICE FOR TESTING.



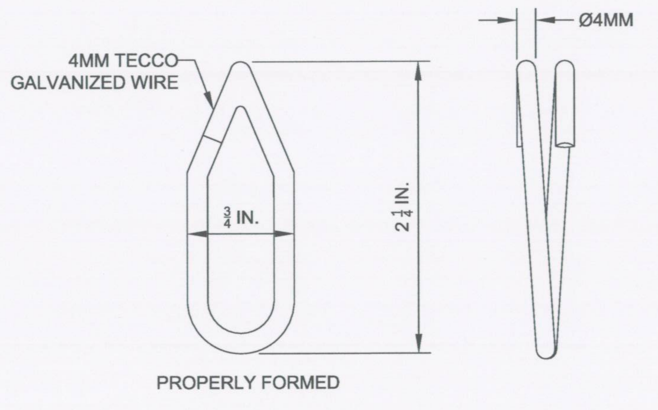
3 / D-16 **WIRE MESH PLAN**
NTS



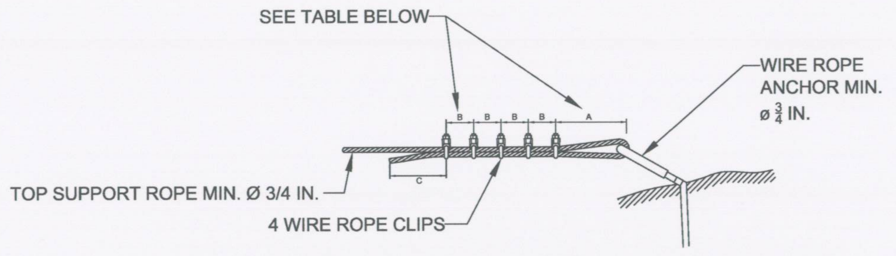
7 / D-16 **INTERMEDIATE ANCHOR DETAIL**



4 / D-16 **TYPICAL FRONT AND LATERAL WIRE ROPE ANCHOR DETAIL**
NTS

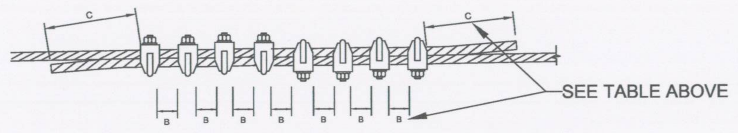


5 / D-16 **TYPICAL FASTENER DETAIL**
NTS

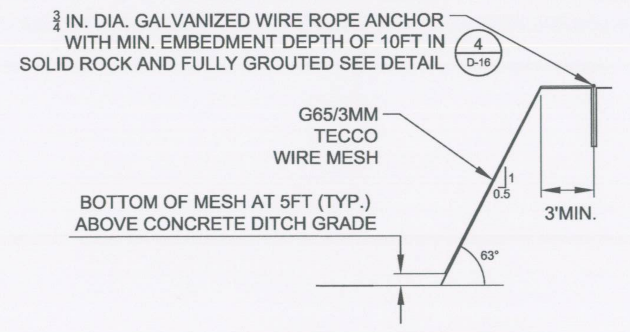


8 / D-16 **WIRE ROPE ANCHOR LOOP DETAIL**
NTS

ROPE DIAMETER IN.	ROPE DIAMETER mm	MINIMUM WIRE ROPE CLIP SIZE IN.	MINIMUM WIRE ROPE CLIP SIZE mm	MINIMUM WIRE ROPE CLIP QUAN.	A IN.	A mm	B IN.	B mm	C IN.	C mm	TORQUE REQUIRED FT-LBS.	TORQUE REQUIRED N*m
3/4	19	3/4	19	4	9	229	4	102	6	152	130	176



9 / D-16 **WIRE ROPE SPLICING DETAIL**
NTS



10 / D-16 **TYPICAL SECTION WIRE MESH DRAPE**
NTS

NOTES:
1. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL, NATIONAL GEODETIC VERTCAL DATUM (NGVD) 1988. COORDINATES CORRESPOND TO ALABAMA WEST COORDINATE SYSTEM, NORTH AMERICAN DATUM (NAD) 1983.

REFERENCES:
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REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
A	2019/02/28	100% DESIGN SUBMITTAL	JRS	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES
Southern Company
Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

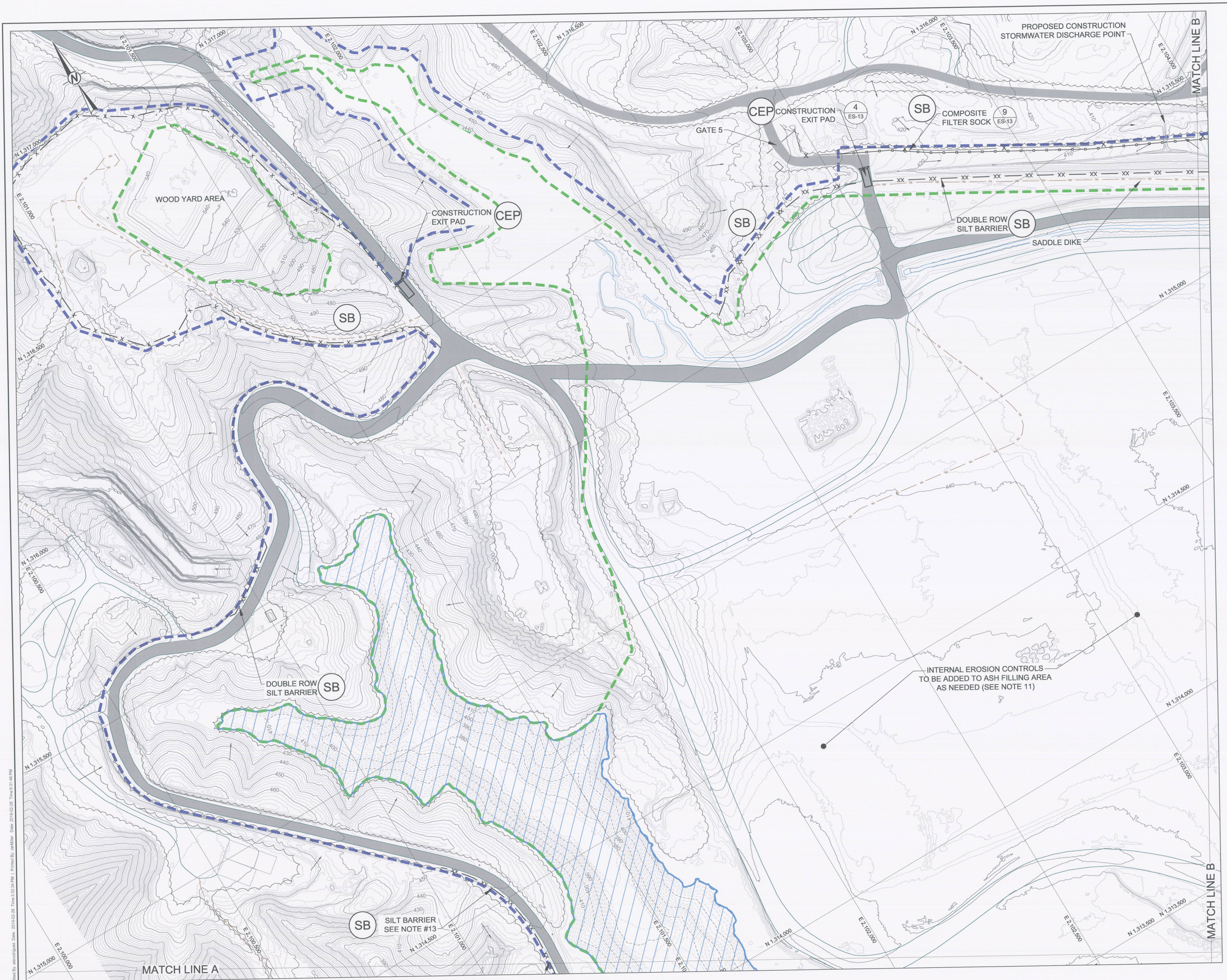
TITLE
WIRE MESH DRA□E FOR CHANNEL CUTS

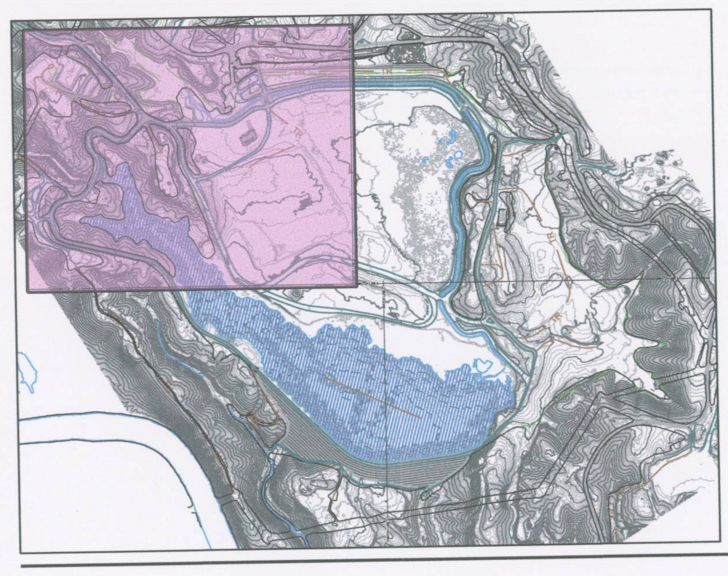
ALABAMA REGISTERED No. 20966 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN
Feb 28 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20966

CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	JRS
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO. 1792705 | SCS REF MIL17010 | REV. 0 | DRAWING D-16





LEGEND

- 420 — EXISTING CONTOURS
- 380 — BATHYMETRY CONTOURS
- ESTIMATED CCR LIMITS
- LIMITS OF DISTURBANCE
- WATER SURFACE
- SB — X — TYPE A SILT FENCE (SEE NOTE 9)
- SB — XX — DOUBLE TYPE A SILT FENCE (SEE NOTE 10)
- DI — DIVERSION CHANNEL
- CEP — CONSTRUCTION EXIT PAD
- CD — CHECK DAM
- RD — ROCK FILTER DAM
- MU — MULCHING
- TS — TEMPORARY SEEDING
- PS — PERMANENT SEEDING
- SB — COMPOSITE FILTER SOCK
- TSC — TOPSOILING
- — X — CHAIN LINK FENCE
- RUNOFF DIRECTION

NOTES

1. CONTRACTOR SHALL BE AWARE OF AND FOLLOW THE OWNER'S CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN FOR THE PROJECT.
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4. DRAINAGE BASIN EXTENDS BEYOND EXTENTS OF DRAWING.
5. THE CONTRACTOR SHALL COMPLY WITH THE ALABAMA NATIONAL DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT, AND ALL OTHER APPLICABLE CODES, ORDINANCES, RULES, REGULATIONS, AND LAWS OF LOCAL, MUNICIPAL, STATE OR FEDERAL AUTHORITIES HAVING JURISDICTION.
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12. ANY DISTURBED NON-ASH SURFACES LEFT EXPOSED FOR GREATER THAN 10 DAYS SHALL BE SEEDED WITH TEMPORARY GRASS.
13. SILT FENCE MAY BE SUBSTITUTED LOCALLY WITH COMPOSITE FILTER SOCK WHERE GROUND CONDITIONS PROHIBIT THE PROPER INSTALLATION OF SILT FENCE.

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0 100 200
1" = 100' FEET

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
A	2019/02/28	100% DESIGN SUBMITTAL	MTC	AVR	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES
Southern Company — Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
CONSTRUCTION □EST MANAGEMENT □RACTICES □LAN □HASE A □DREDGING AND INITIAL □ERIMETER CONTROLS □OF □

ALABAMA REGISTERED PROFESSIONAL ENGINEER No. 20266 WILLIAM R SULLIVAN
Feb 28, 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	MTC
PREPARED	AVR
CHECKED	ARF
REVIEWED/APPROVED	WRS

PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	ES-01

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ARCH D

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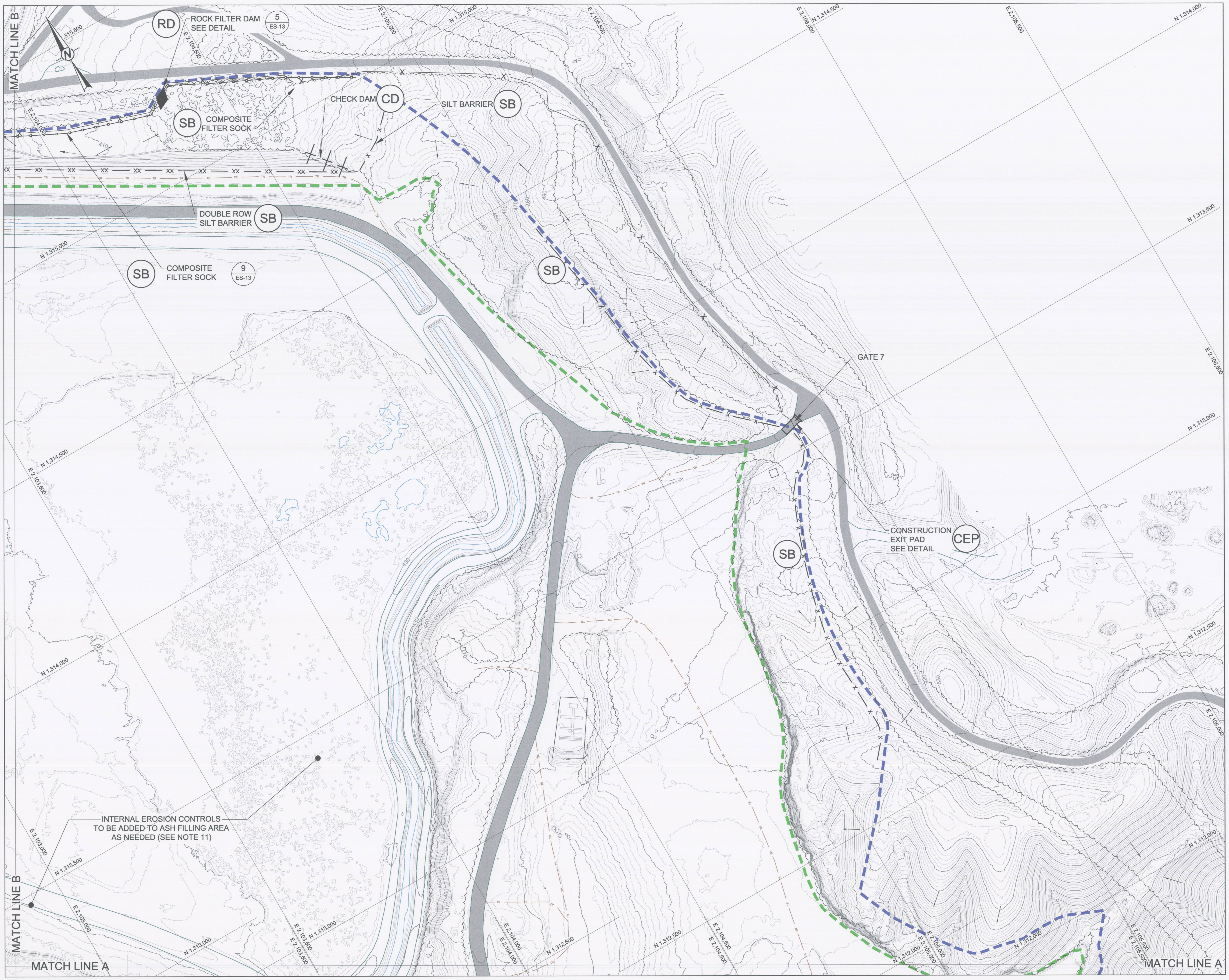

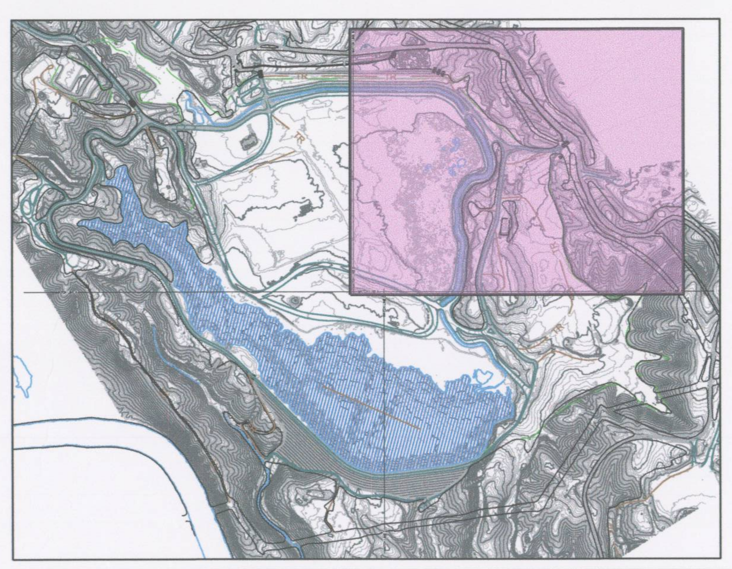

0 100 200
1" = 100' FEET

LEGEND

420	EXISTING CONTOURS
380	BATHYMETRY CONTOURS
	ESTIMATED CCR LIMITS
	LIMITS OF DISTURBANCE
	WATER SURFACE
SB — x —	TYPE A SILT FENCE (SEE NOTE 9)
SB — xx —	DOUBLE TYPE A SILT FENCE (SEE NOTE 10)
DI	DIVERSION CHANNEL
CEP	CONSTRUCTION EXIT PAD
CD	CHECK DAM
RD	ROCK FILTER DAM
MU	MULCHING
TS	TEMPORARY SEEDING
PS	PERMANENT SEEDING
SB	COMPOSITE FILTER SOCK
TSO	TOPSOILING
— X —	CHAIN LINK FENCE
	RUNOFF DIRECTION

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A	2019/02/28	100% DESIGN SUBMITTAL	MTC	AVR	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES
Southern Company | Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
CONSTRUCTION □EST MANAGEMENT □RACTICES □LAN
□HASE A □DREDGING AND INITIAL □ERIMETER CONTROLS □OF □

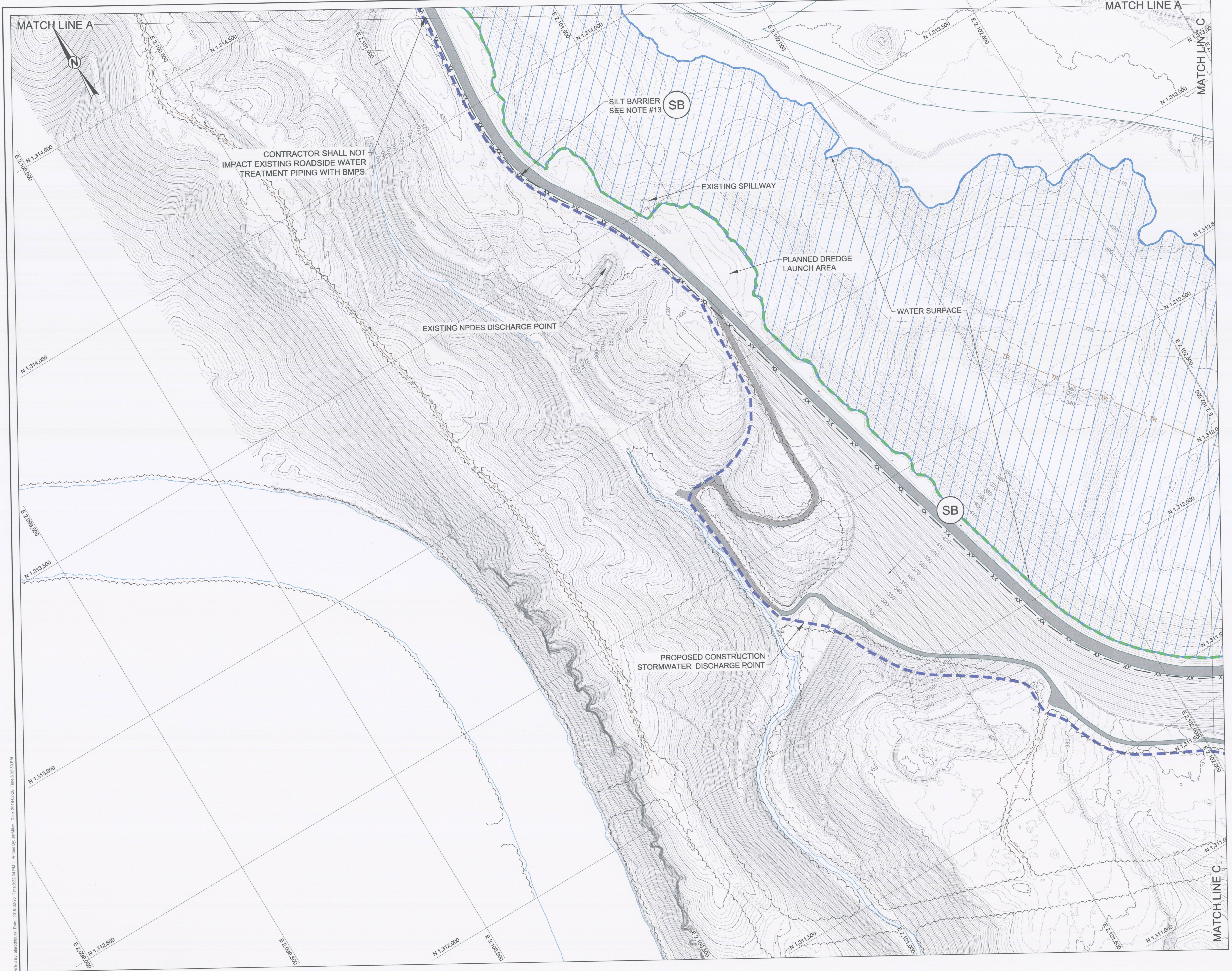
CONSULTANT
GOLDER

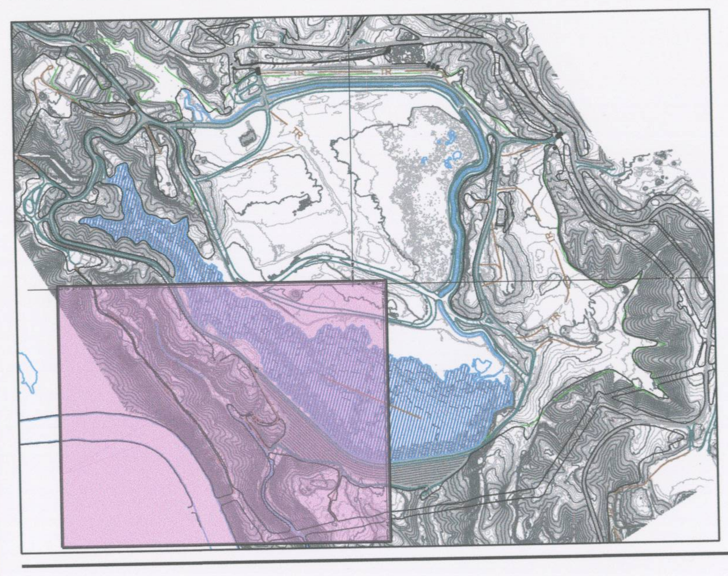
YYYY-MM-DD	2019/02/28
DESIGNED	MTC
PREPARED	AVR
CHECKED	ARF
REVIEWED/APPROVED	WRS

ALABAMA REGISTERED No. 20366 PROFESSIONAL ENGINEER WILLIAM R. SULLIVAN
Feb 28 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20366

PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	ES-02

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ARCH D





LEGEND

420	EXISTING CONTOURS
380	BATHYMETRY CONTOURS
	ESTIMATED CCR LIMITS
	LIMITS OF DISTURBANCE
	WATER SURFACE
SB — x —	TYPE A SILT FENCE (SEE NOTE 9)
SB — xx —	DOUBLE TYPE A SILT FENCE (SEE NOTE 10)
DI	DIVERSION CHANNEL
CEP	CONSTRUCTION EXIT PAD
CD	CHECK DAM
RD	ROCK FILTER DAM
MU	MULCHING
TS	TEMPORARY SEEDING
PS	PERMANENT SEEDING
SB	COMPOSITE FILTER SOCK
TSG	TOPSOILING
— X —	CHAIN LINK FENCE
	RUNOFF DIRECTION

NOTES

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0 100 200
1" = 100' FEET

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
	2019/02/28	100% DESIGN SUBMITTAL	MTC	AVR	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES
Southern Company
Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN
PHASE A DREDGING AND INITIAL PERIMETER CONTROLS (OF)

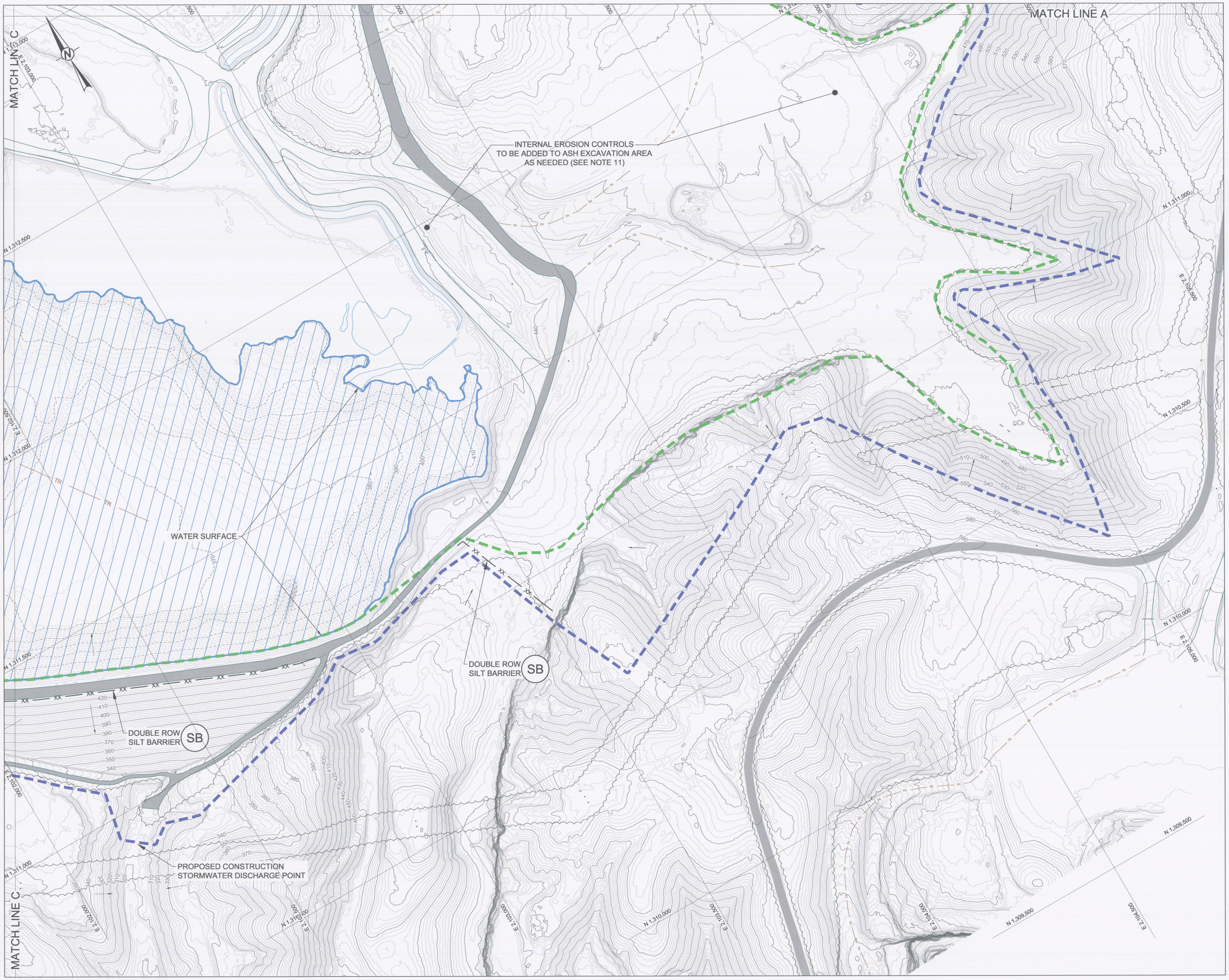
CONSULTANT
GOLDER

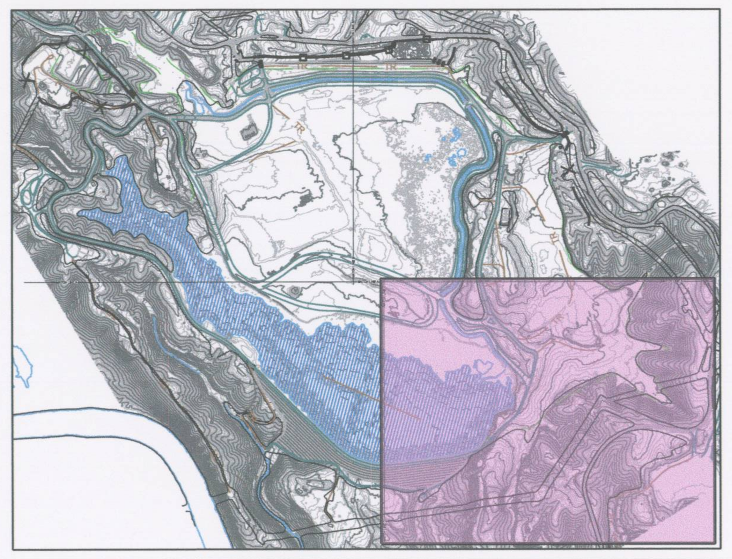
YYYY-MM-DD	2019/02/28
DESIGNED	MTC
PREPARED	AVR
CHECKED	ARF
REVIEWED/APPROVED	WRS

ALABAMA REGISTERED PROFESSIONAL ENGINEER No. 20266 WILLIAM R. SULLIVAN
Feb 28 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

PROJECT NO.	SCS REF	REV.	DRAWING
1792705	MIL17010	0	ES-03

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ARCH D





0 100 200
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LEGEND

420	EXISTING CONTOURS
380	BATHYMETRY CONTOURS
	ESTIMATED CCR LIMITS
	LIMITS OF DISTURBANCE
	WATER SURFACE
SB — X —	TYPE A SILT FENCE (SEE NOTE 9)
SB — XX —	DOUBLE TYPE A SILT FENCE (SEE NOTE 10)
DI	DIVERSION CHANNEL
CEP	CONSTRUCTION EXIT PAD
CD	CHECK DAM
RD	ROCK FILTER DAM
MU	MULCHING
TS	TEMPORARY SEEDING
PS	PERMANENT SEEDING
SB	COMPOSITE FILTER SOCK
TSO	TOPSOILING
— X —	CHAIN LINK FENCE
	RUNOFF DIRECTION

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CLIENT
SOUTHERN COMPANY SERVICES

Southern Company | Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
CONSTRUCTION □EST MANAGEMENT □RACTICES □LAN
□HASE A □DREDGING AND INITIAL □ERIMETER CONTROLS □OF □

CONSULTANT

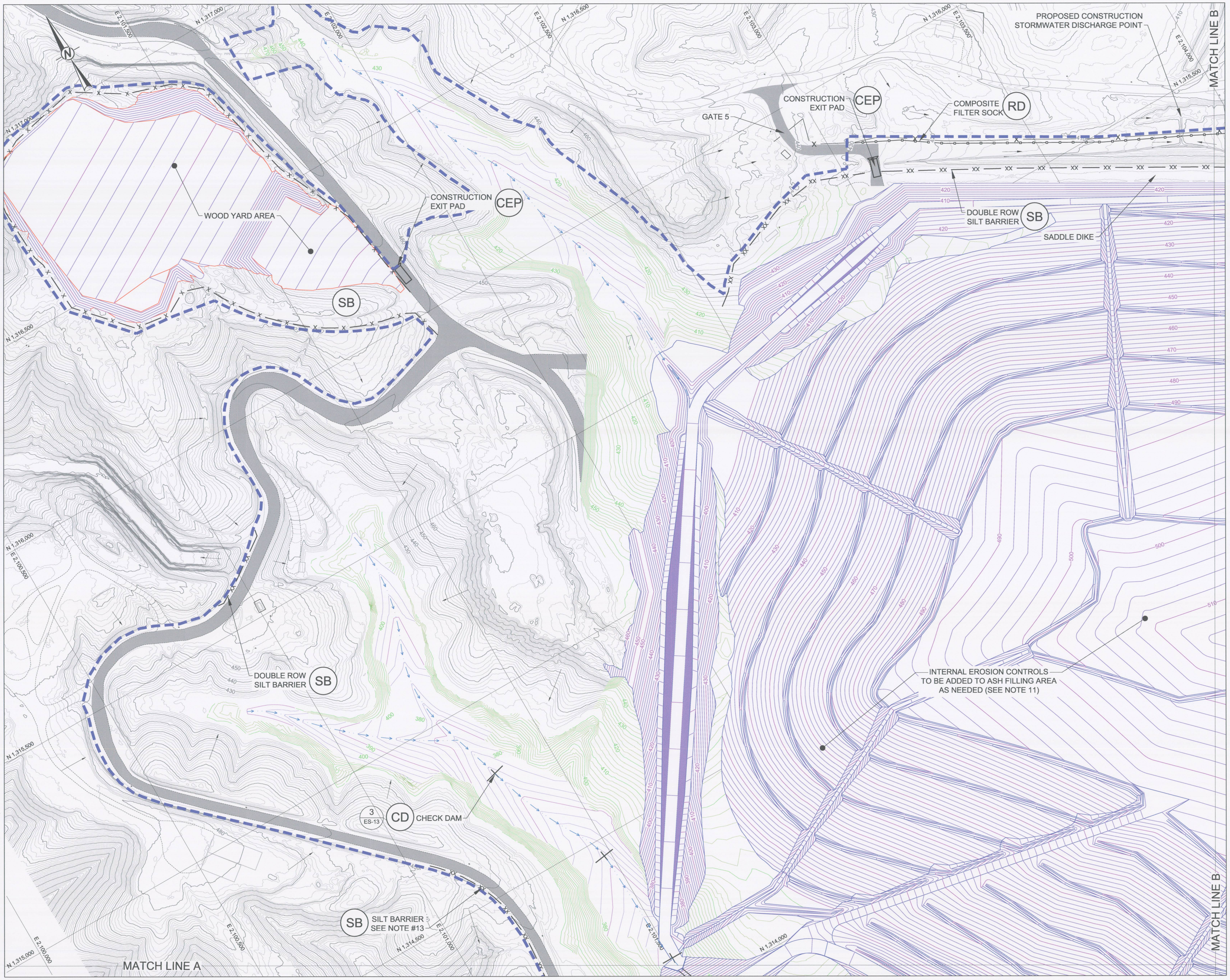
GOLDER

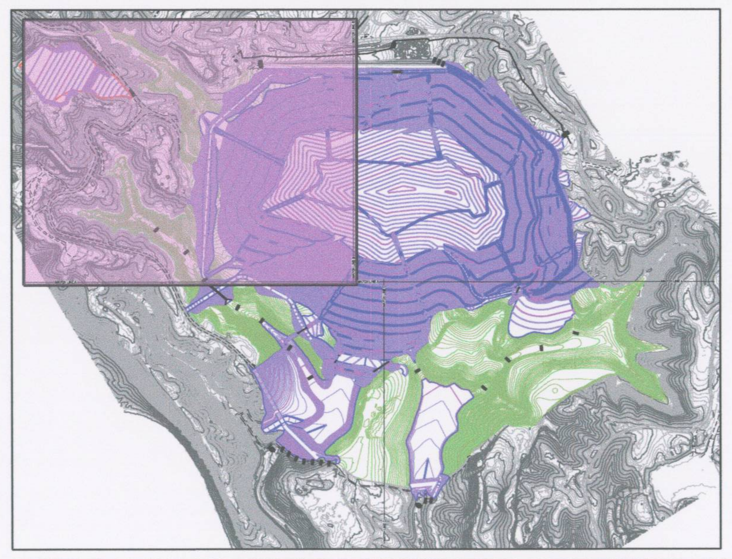
YYYY-MM-DD	2019/02/28
DESIGNED	MTC
PREPARED	AVR
CHECKED	ARF
REVIEWED/APPROVED	WRS

PROJECT NO. 1792705 | SCS REF MIL17010 | REV. 0 | DRAWING ES-04

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN
Feb 28 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

□E□ MA□





1" = 100'
0 100 200 FEET

LEGEND

420	EXISTING CONTOURS
380	BATHYMETRY CONTOURS
440	PROPOSED CONTOURS FILL AREAS
400	PROPOSED CONTOURS EXCAVATED AREAS
	ESTIMATED CCR LIMITS
	LIMITS OF DISTURBANCE
	CHANNEL
SB — X —	TYPE A SILT FENCE (SEE NOTE 9)
SB — XX —	DOUBLE TYPE A SILT FENCE (SEE NOTE 10)
CEP	CONSTRUCTION EXIT PAD
CD	CHECK DAM
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A	2019/02/28	100% DESIGN SUBMITTAL	MTC	AVR	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES
Southern Company · Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

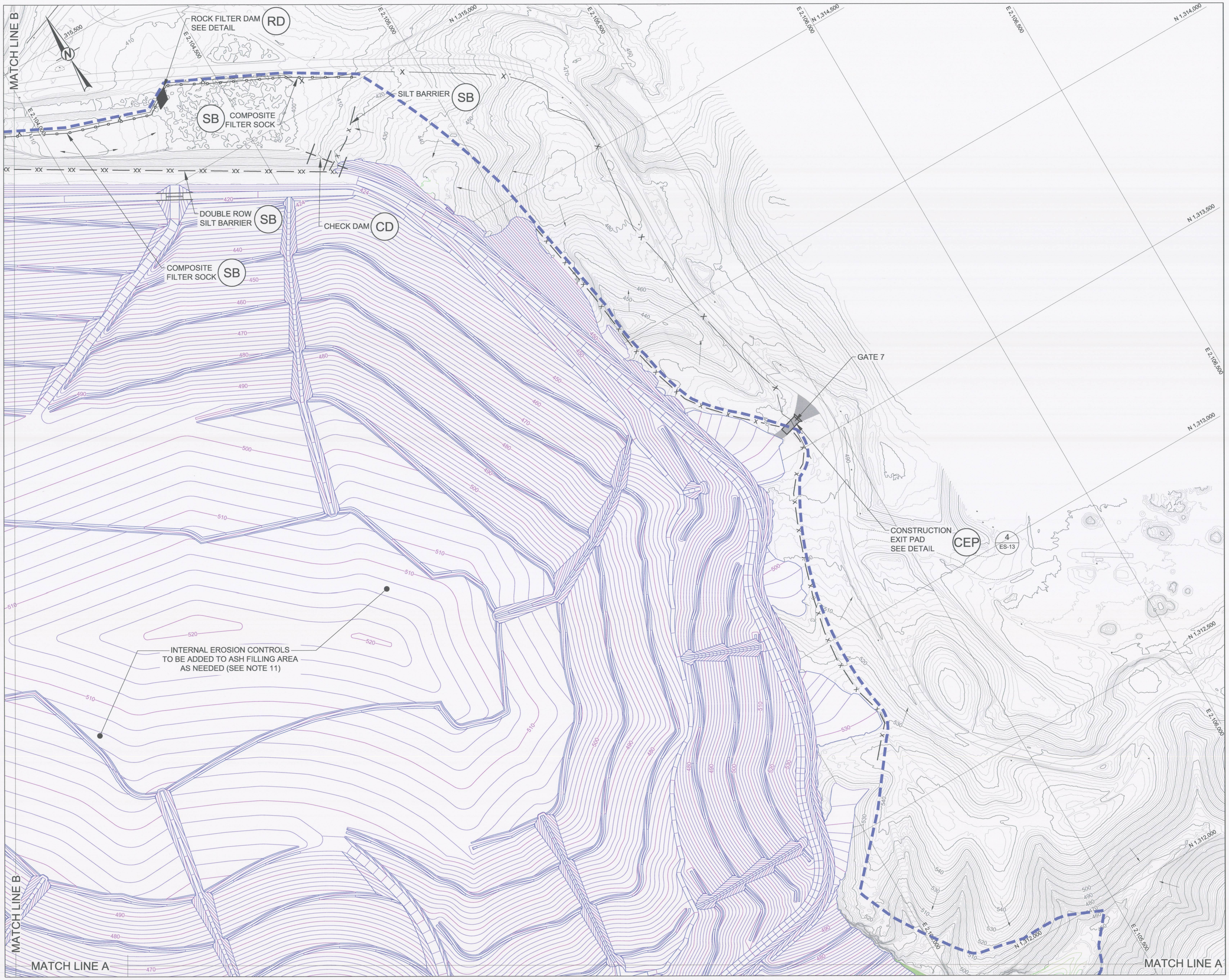
TITLE
CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN
PHASE ☐ FINAL GRADING ☐ OF ☐

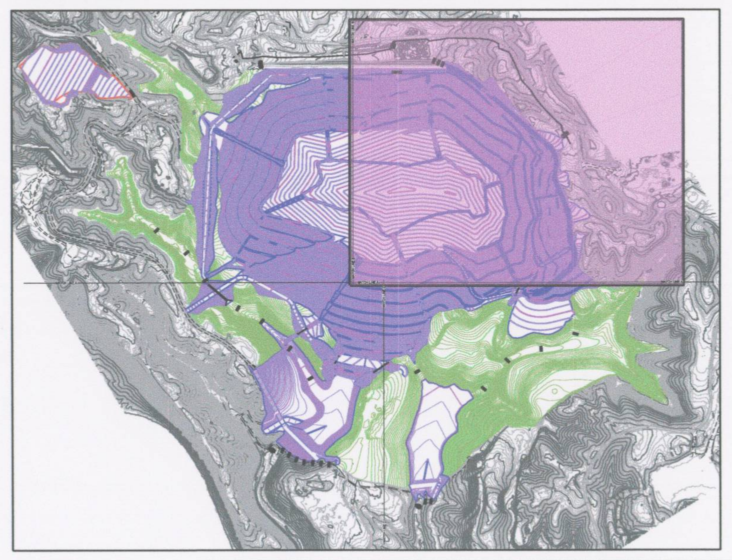
CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	MTC
PREPARED	AVR
CHECKED	ARF
REVIEWED/APPROVED	WRS

ALABAMA REGISTERED PROFESSIONAL ENGINEER No. 20266 WILLIAM R. SULLIVAN
Feb 28, 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	ES-05





0 100 200
1" = 100' FEET

LEGEND

- EXISTING CONTOURS
- BATHYMETRY CONTOURS
- PROPOSED CONTOURS FILL AREAS
- PROPOSED CONTOURS EXCAVATED AREAS
- ESTIMATED CCR LIMITS
- LIMITS OF DISTURBANCE
- CHANNEL
- SB — TYPE A SILT FENCE (SEE NOTE 9)
- SB — DOUBLE TYPE A SILT FENCE (SEE NOTE 10)
- CEP — CONSTRUCTION EXIT PAD
- CD — CHECK DAM
- RD — ROCK FILTER DAM
- MU — MULCHING
- TS — TEMPORARY SEEDING
- PS — PERMANENT SEEDING
- SB — COMPOSITE FILTER SOCK
- TSO — TOPSOILING
- CHAIN LINK FENCE
- RUNOFF DIRECTION

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SOUTHERN COMPANY SERVICES
Southern Company | Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
CONSTRUCTION □EST MANAGEMENT □RACTICES □LAN □HASE □ □FINAL GRADING □OF □

CONSULTANT
GOLDER

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CHECKED	ARF
REVIEWED/APPROVED	WRS

PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING ES-06

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R. SULLIVAN
Feb 28, 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

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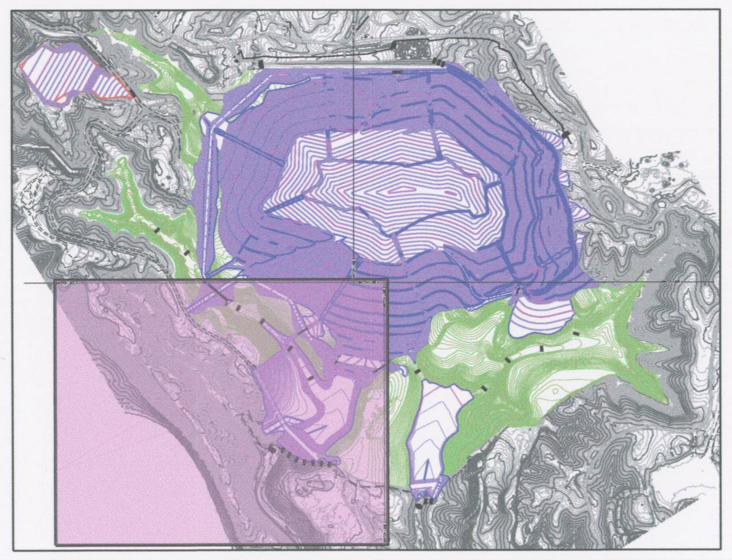

LEGEND

- 420 EXISTING CONTOURS
- 380 BATHYMETRY CONTOURS
- 440 PROPOSED CONTOURS FILL AREAS
- 400 PROPOSED CONTOURS EXCAVATED AREAS
- ESTIMATED CCR LIMITS
- LIMITS OF DISTURBANCE
- CHANNEL
- SB — X — TYPE A SILT FENCE (SEE NOTE 9)
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- CEP CONSTRUCTION EXIT PAD
- CD CHECK DAM
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ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN

Feb 28 2019

WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

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CLIENT
SOUTHERN COMPANY SERVICES

Southern Company — Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
CONSTRUCTION □EST MANAGEMENT □RACTICES □LAN □HASE □ □FINAL GRADING □OF □

CONSULTANT
GOLDER

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CHECKED	ARF
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PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	ES-07

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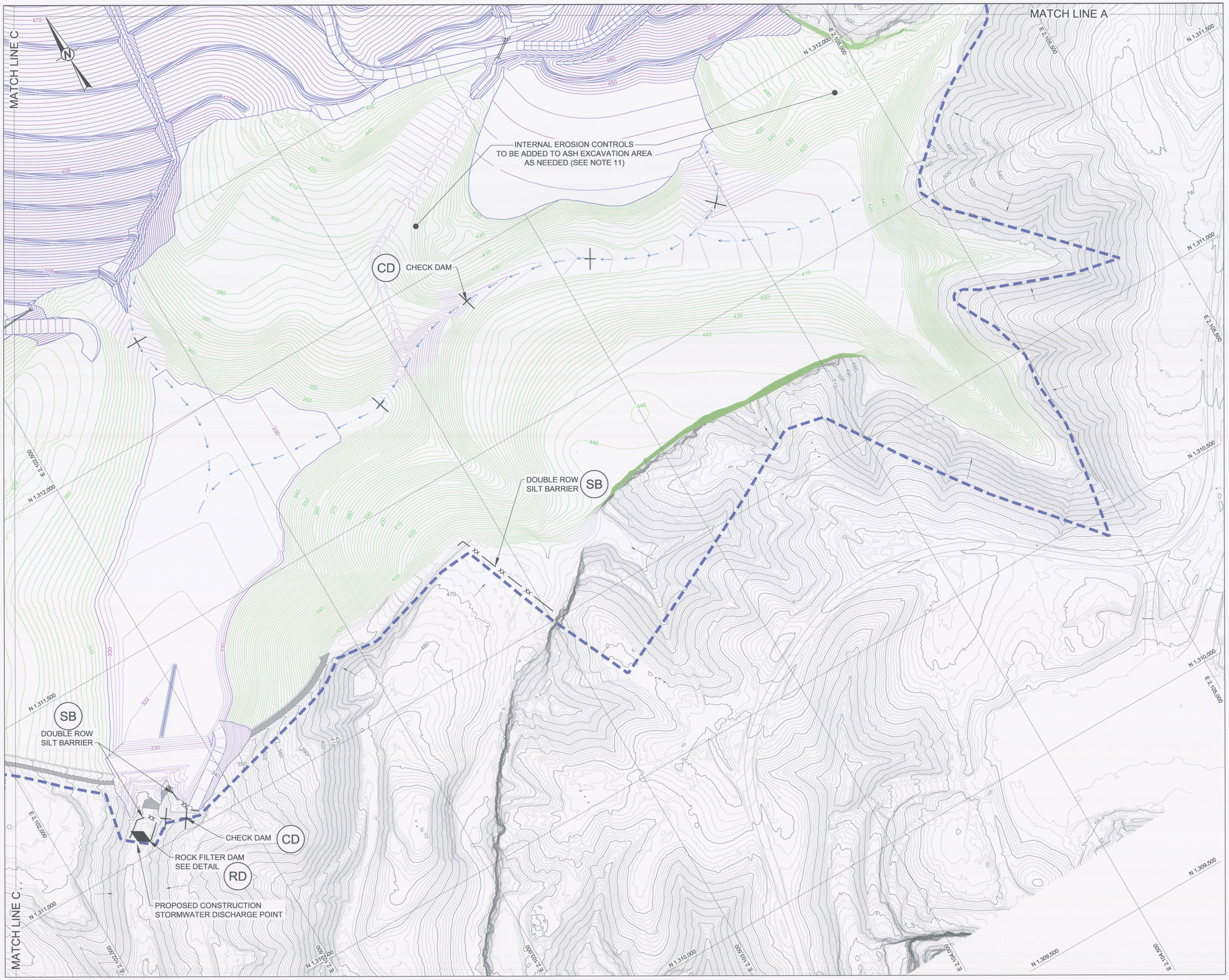

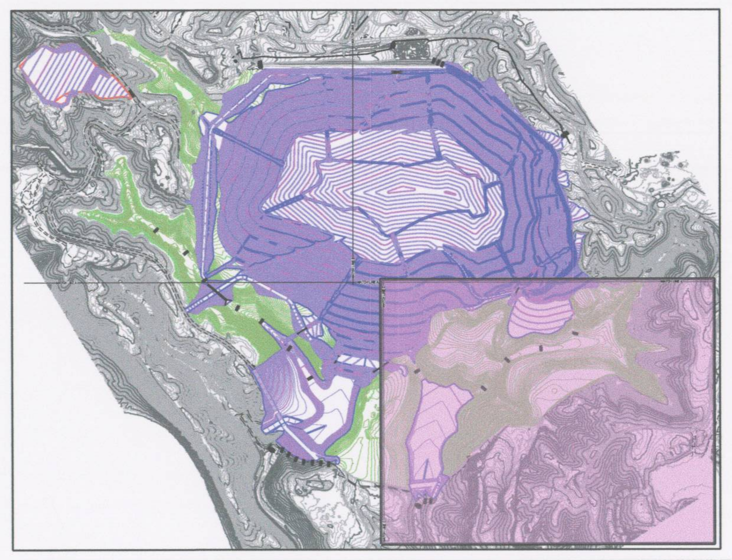

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420	EXISTING CONTOURS
380	BATHYMETRY CONTOURS
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	CHANNEL
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CD	CHECK DAM
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ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN

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WILLIAM R. SULLIVAN
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Alabama Power

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DESIGN PLANS

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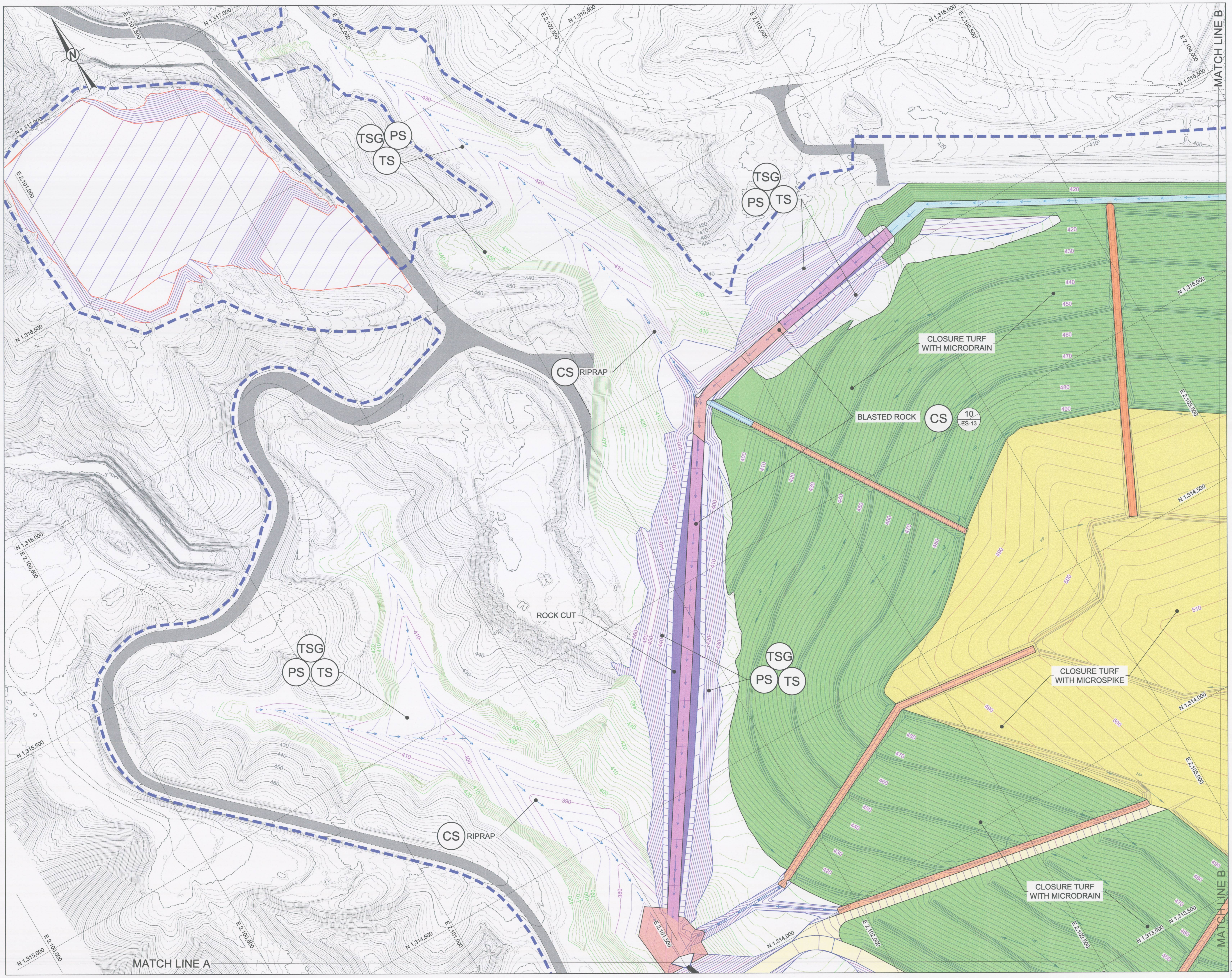
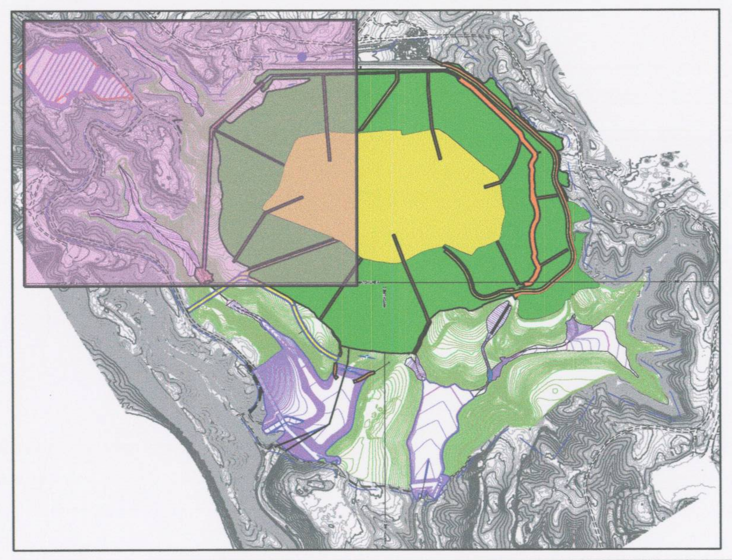
PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING ES-08





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- SB COMPOSITE FILTER SOCK
- DI DIVERSION CHANNEL
- OP OULET PROTECTION
- CS CHANNEL STABILIZATION
- X CHAIN LINK FENCE
- RUNOFF DIRECTION
- HYDRO TURF OVER MICRODRAIN
- CLASS I RIP RAP CHANNEL OVER CLOSURE TURF (NO INFILL) BOTTOM
- ROCK LINED CHANNEL
- ARTICULATED CONCRETE BLOCK CHANNEL
- ROAD
- CLOSURE TURF OVER MICRODRAIN
- CLOSURE TURF WITH MICROSPIKE
- CLASS 3 RIPRAP CHANNEL BOTTOM

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DESIGN PLANS

TITLE
CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN
PHASE C FINAL STABILIZATION 1 OF 2

ALABAMA REGISTERED PROFESSIONAL ENGINEER No. 20260 WILLIAM R. SULLIVAN
Feb 28 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20260

CONSULTANT	YYYY-MM-DD	2019/02/28
GOLDER	DESIGNED	MTC
	PREPARED	AVR
	CHECKED	ARF
	REVIEWED/APPROVED	WRS

PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	ES-09

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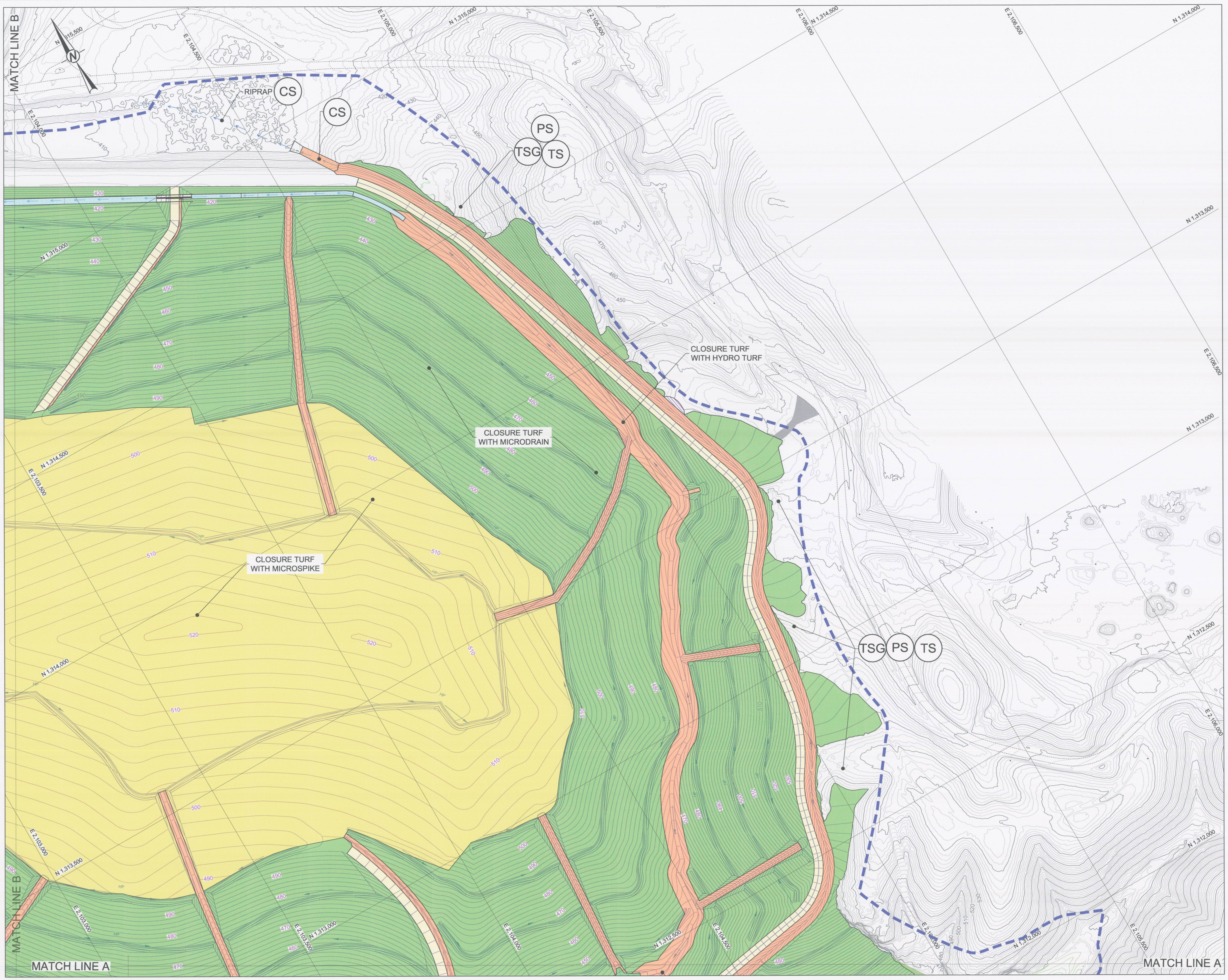

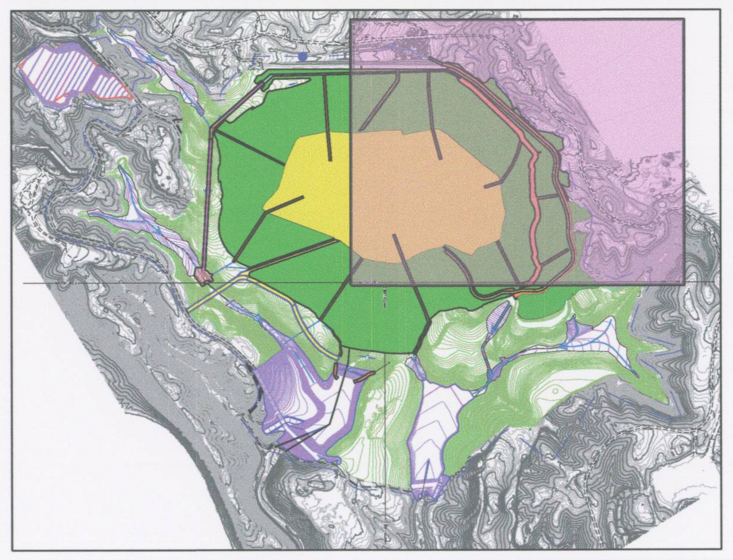

LEGEND

420	EXISTING CONTOURS
380	BATHYMETRY CONTOURS
440	PROPOSED CONTOURS FILL AREAS
400	PROPOSED CONTOURS EXCAVATED AREAS
	ESTIMATED CCR LIMITS
	LIMITS OF DISTURBANCE
	CHANNEL
TSG	TOPSOILING
CEP	CONSTRUCTION EXIT PAD
CD	CHECK DAM
RD	ROCK FILTER DAM
MU	MULCHING
TS	TEMPORARY SEEDING
PS	PERMANENT SEEDING
SB	COMPOSITE FILTER SOCK
DI	DIVERSION CHANNEL
OP	OULET PROTECTION
CS	CHANNEL STABILIZATION
X	CHAIN LINK FENCE
	RUNOFF DIRECTION
	HYDRO TURF OVER MICRODRAIN
	CLASS I RIP RAP CHANNEL OVER CLOSURE TURF (NO INFILL) BOTTOM
	ROCK LINED CHANNEL
	ARTICULATED CONCRETE BLOCK CHANNEL
	ROAD
	CLOSURE TURF OVER MICRODRAIN
	CLOSURE TURF WITH MICROSPIKE
	CLASS 3 RIPRAP CHANNEL BOTTOM

NOTES

1. CONTRACTOR SHALL BE AWARE OF AND FOLLOW THE OWNER'S CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN FOR THE PROJECT.
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REFERENCES

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0 100 200
1" = 100' FEET

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN

Feb. 28, 2019

WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

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CLIENT
SOUTHERN COMPANY SERVICES

Southern Company | Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
CONSTRUCTION □EST MANAGEMENT □RACTICES □LAN
□HASE C □FINAL STA□ILI□ATION □OF □

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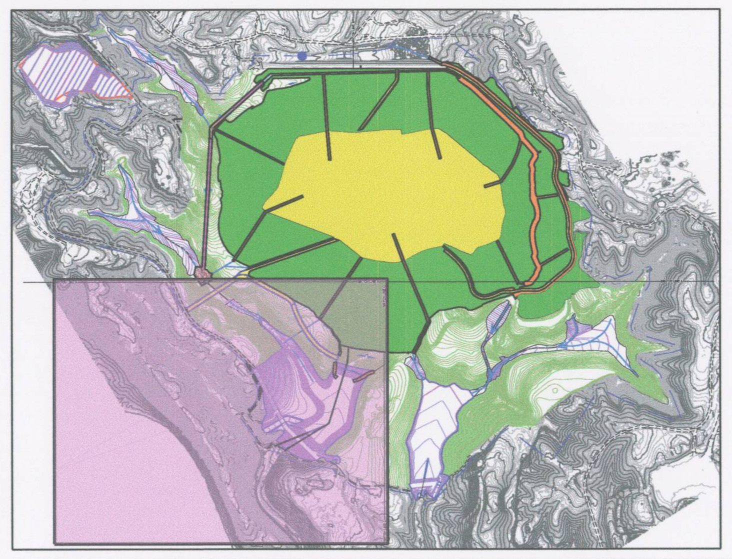

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- ESTIMATED CCR LIMITS
- LIMITS OF DISTURBANCE
- CHANNEL
- TSG TOPSOILING
- CEP CONSTRUCTION EXIT PAD
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PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING ES-11

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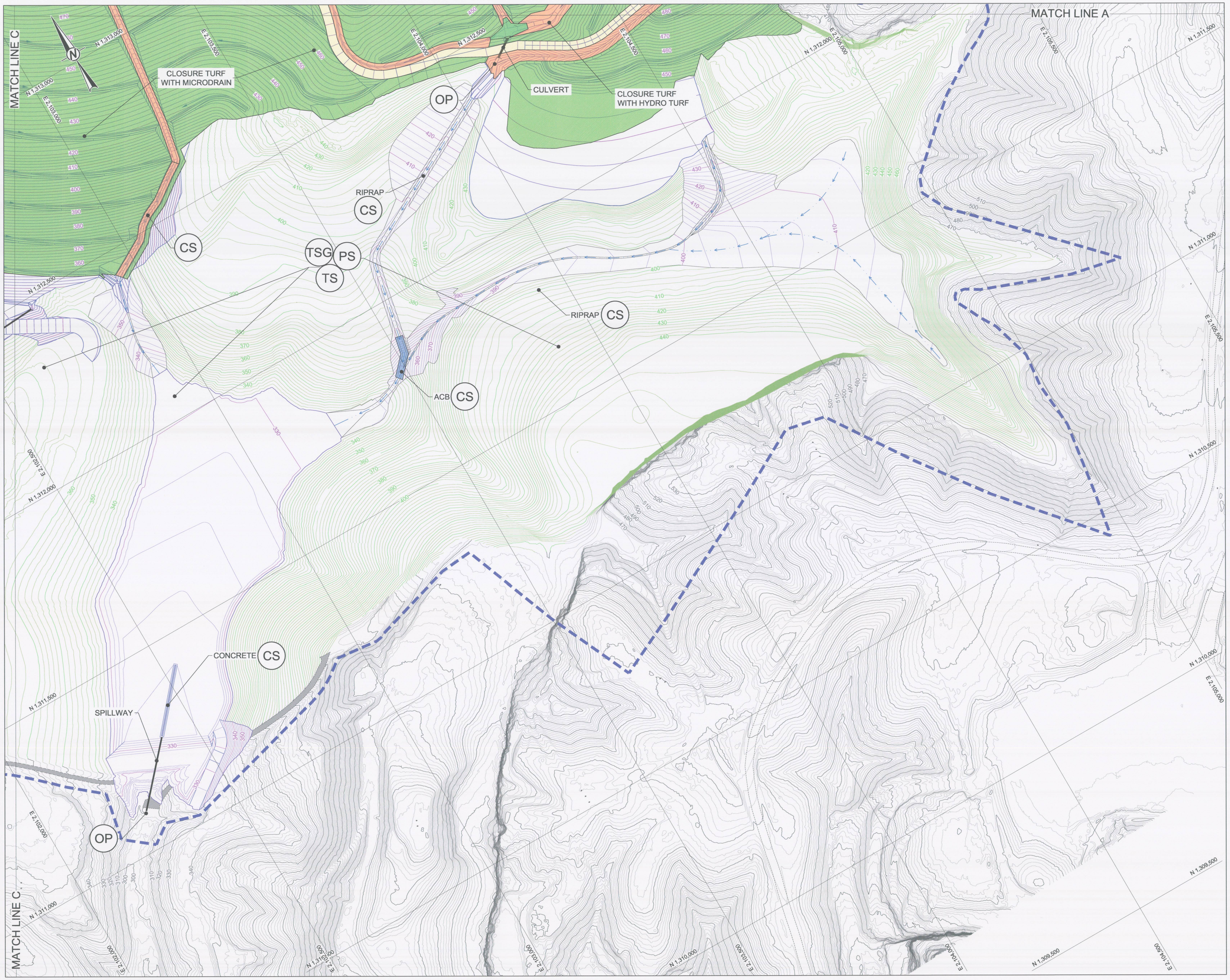

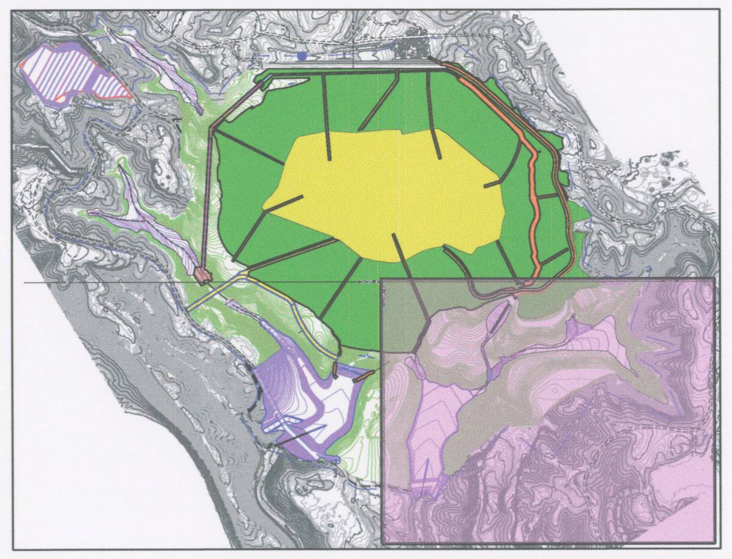

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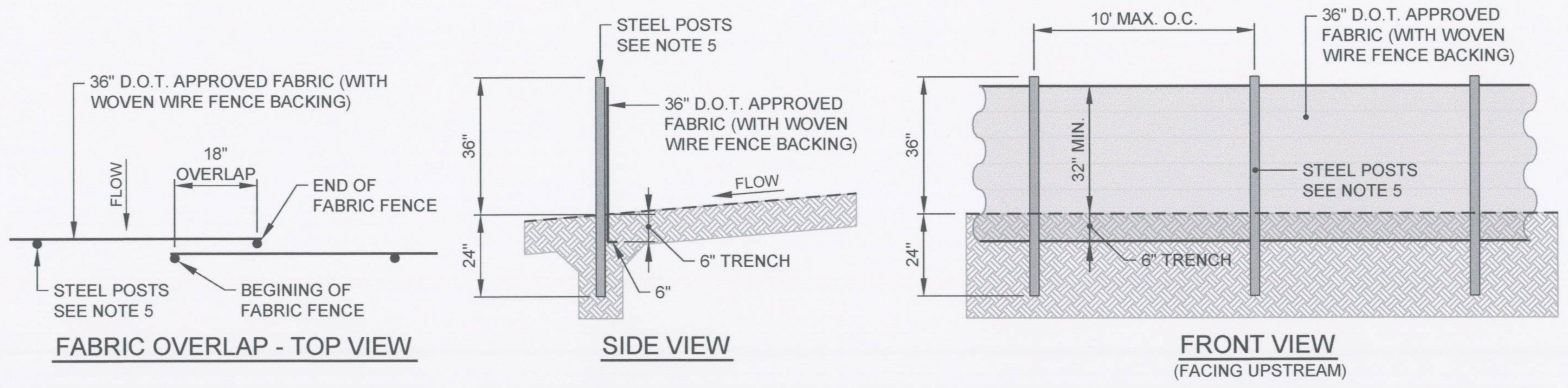

SEDIMENT BARRIER NOTES

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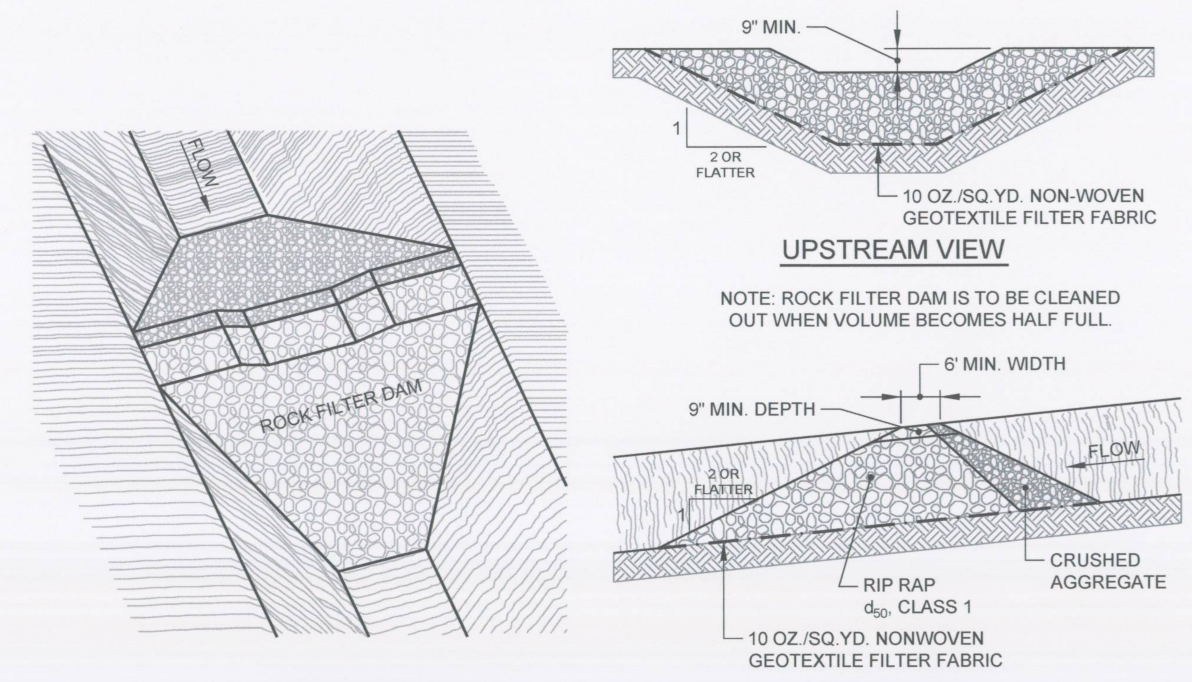
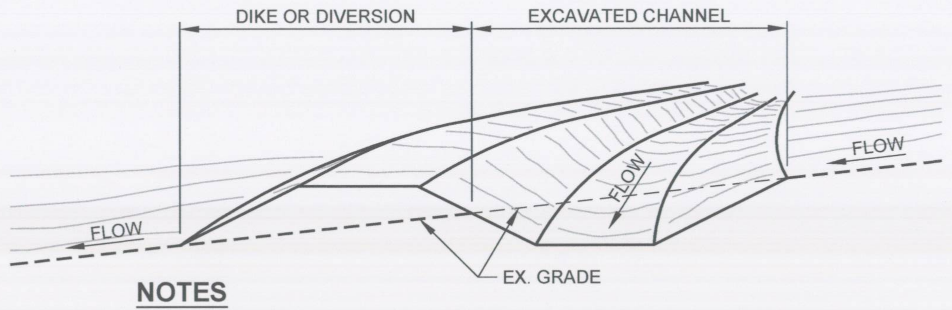
2. SEDIMENT SHALL BE REMOVED ONCE IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE BARRIER.
3. SEDIMENT BARRIERS SHALL BE REPLACED WHENEVER THEY HAVE DETERIORATED TO SUCH AN EXTENT THAT THE EFFECTIVENESS OF THE PRODUCT IS REDUCED (APPROXIMATELY SIX MONTHS) OR THE HEIGHT OF THE PRODUCT IS NOT MAINTAINING 80% OF ITS PROPERLY INSTALLED HEIGHT.
4. TEMPORARY SEDIMENT BARRIERS SHALL REMAIN IN PLACE UNTIL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED. ALL SEDIMENT ACCUMULATED AT THE BARRIER SHALL BE REMOVED AND PROPERLY DISPOSED OF BEFORE THE BARRIER IS REMOVED.
5. POSTS SHALL BE STEEL, AS DESCRIBED IN THE ALABAMA HANDBOOK TABLE SB-2.

SCALE N.T.S. 1 ES-13 SILT BARRIER (SB)



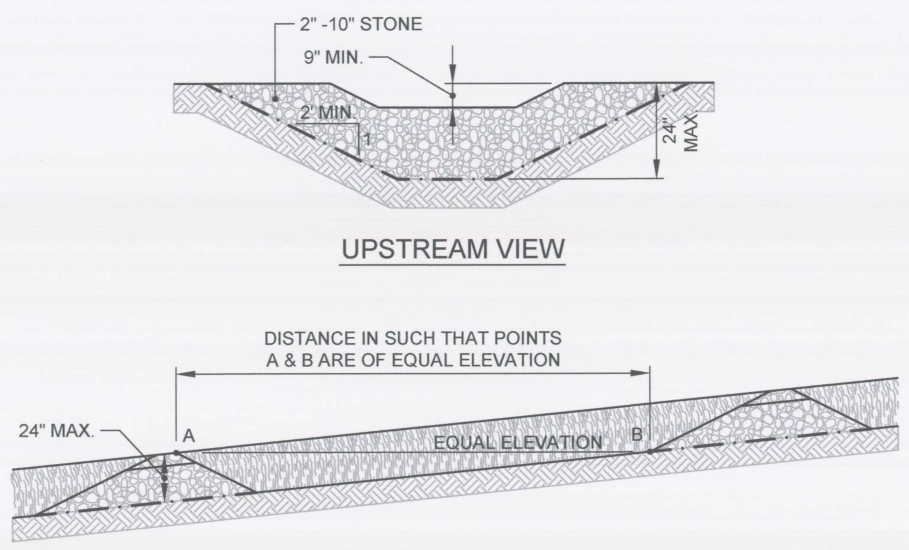
SCALE N.T.S. 5 ES-13 ROCK DAM (RD)



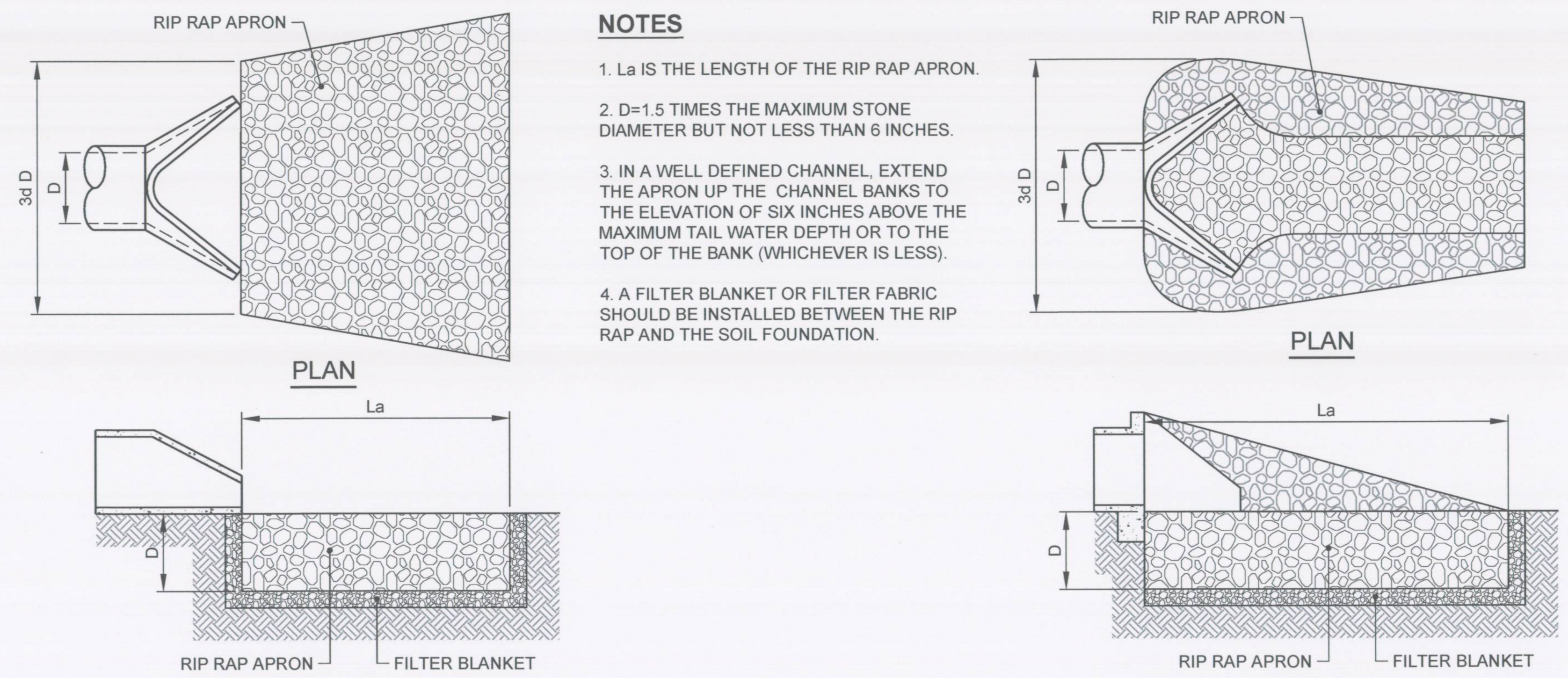
NOTES

1. REMOVE TREES, BRUSH, STUMPS AND OTHER OBJECTIONABLE MATERIAL.
2. EXCAVATE NARROW, DEEP CHANNELS ON STEEPS AND BROAD, SHALLOW CHANNELS ON GENTLE SLOPES. SIDE SLOPES SHOULD BE 2:1 OR FLATTER. CHANNEL CROSS-SECTION SHOULD BE TRAPEZOIDAL OR PARABOLIC IN SHAPE.
3. COMPACT ALL FILLS.
4. ADEQUATE OUTLET MUST BE PRESENT.
5. STABILIZE CHANNEL AND OUTLET WITH VEGETATION (MULCH REQUIRED FOR ALL SEEDED OR SPRIGGED CHANNELS), RIP RAP, OR PAVEMENT.
6. DISPOSE OF AND/OR STABILIZED UNNEEDED EXCAVATED MATERIAL.

SCALE N.T.S. 2 ES-13 DIVERSION (DV)



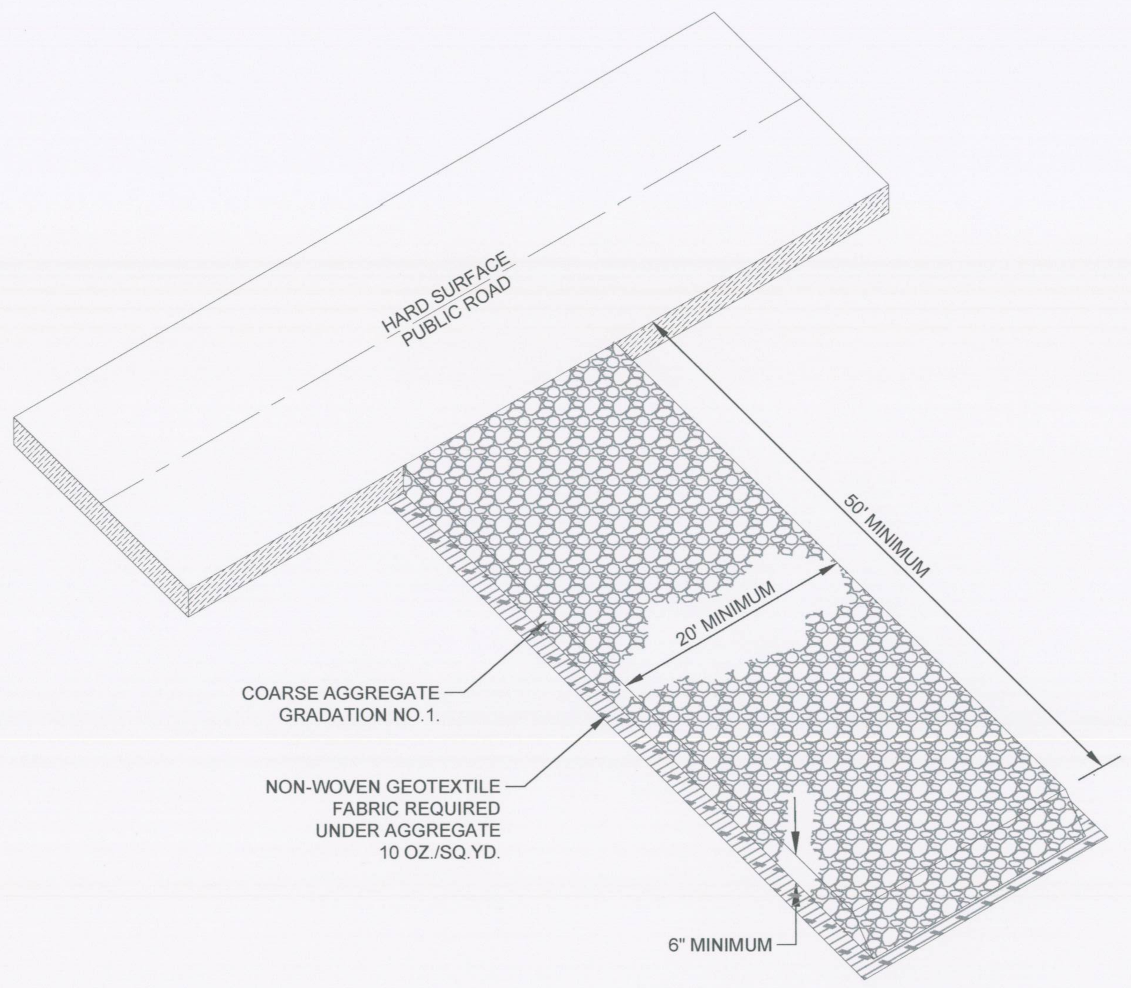
SCALE N.T.S. 3 ES-13 CHECK DAM (CD)



NOTES

1. La IS THE LENGTH OF THE RIP RAP APRON.
2. D=1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6 INCHES.
3. IN A WELL DEFINED CHANNEL, EXTEND THE APRON UP THE CHANNEL BANKS TO THE ELEVATION OF SIX INCHES ABOVE THE MAXIMUM TAIL WATER DEPTH OR TO THE TOP OF THE BANK (WHICHEVER IS LESS).
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIP RAP AND THE SOIL FOUNDATION.

SCALE N.T.S. 6 ES-13 OUTLET PROTECTION (OP)



SCALE N.T.S. 4 ES-13 CONSTRUCTION EXIT PAD (CEP)

SITE PREPARATION AND SOIL AMENDMENTS
Complete grading and shaping before applying soil amendments if needed to provide a surface on which e□uipment can safely and efficiently be used to apply soil amendments and accomplish seedbed preparation and seeding.
Lime
Apply lime according to soil test recommendations. If a soil test is not available, use 1 ton of agricultural limestone or e□uivalent per acre on coarse textured soils and 2 tons per acre on fine textured soils. Do not apply lime to al□aline soils or to areas which have been limed during the preceding 2 years. Other liming materials that may be selected should be provided in amounts that provide e□ual value to the criteria listed for agricultural lime or be used in combination with agricultural limestone or Selma chal□to provide e□uivalent values to agricultural limestone.
Fertilizer
Apply fertilizer according to soil test results. If a soil test is not available, apply 8-24-24 fertilizer.
When vegetation has emerged to a stand and is growing, 30 to 40 lbs/acre (approximately 0.8 lbs/1000 ft2) of additional nitrogen fertilizer should be applied.
Note: Fertilizer can be blended to meet exact fertilizer recommendations. Ta□e soil test recommendations to local fertilizer dealer for bul□fertilizer blends. This may be more economical than bagged fertilizer.

Table TS-I Commonly Used Plants for Temporary Cover

Species	Seeding Rate/AC PLS	North	Central	South
			Seeding Dates	
Millet, Browntop or German	40 lbs	Apr1-Aug 1	Apr1- Aug 15	Apr 1-Aug 15
Rye	3 bu	Sep I-Nov 15	Sep 15-Nov 15	Sep 15-Nov 15
Ryegrass	30 lbs	Aug I-Sep 15	Sep I-Oct 15	Sep 1-Oct 15
Sorghum-Sudan Hybrids	40 lbs	May I-Aug 1	Apr 15-Aug 1	Apr I-Aug 15
Sudangrass	40 lbs	May I-Aug I	Apr 15-Aug	Apr I-Aug 15
Wheat	3 bu	Sep I-Nov 1	Sep 15-Nov 15	Sep 15-Nov 15
Common Bermudagrass	10 lbs	Apr 1-July 1	Mar 15-July 15	Mar 1-July 15
Crimson Clover	10lbs	Sept 1-Nov 1	Sept 1-Nov 1	Sept 1-Nov 1

PLS means pure live seed and is used to adjust seeding rates. For example, to plant 10 lbs PLS of a species with germination of 80% and purity of 90%, PLS= 0.8X 0.9 = 72%. 10 lbs PLS = 10/0.72 = 13.9 lbs of the species to be planted.

7 ES-13 TEMPORARY SEEDING

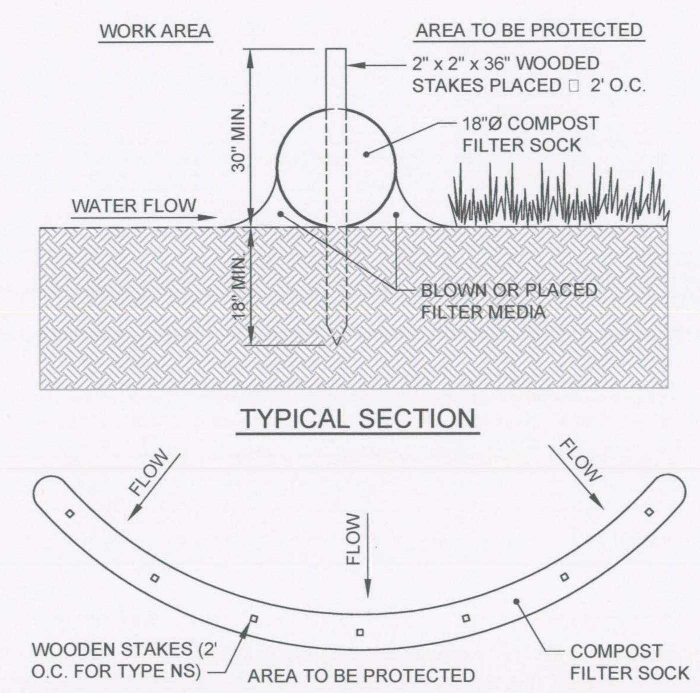
PLANT NUTRIENTS
Commercial grade fertilizers that comply with current Alabama Fertilizer Laws should be used to supply nutrients re□uired to establish vegetation.
Lime and fertilizer needs should be determined by soil tests. Soil testing is performed by the Auburn University Soil Testing Laboratory and provides recommendations based on field tests on Alabama soils. The local county Cooperative Extension Service can provide information on obtaining soil tests. Commercial laboratories that ma□e recommendations based on soil analysis may be used.
When soil tests are not available, use the following rates for application of soil amendments.
Sandy soils: Use 1 ton/acre (exception on sandy soils – if the cover will be tall fescue and clover) use 2 tons/acre.
Clayey soils: 2 tons/acre.
(Do not apply lime to al□aline soils).
Grasses alone: Use 400 lbs/acre of 8-24-24 or the e□uivalent. Apply 30 lbs of additional nitrogen when grass has emerged and begun growth (approximately 0.8lbs/1000 ft2).
Grass-legume mixtures: Use 800 to 1200 lbs/acre of 5-10-10 or the e□uivalent.
Legumes Alone: Use 400 to 600 lbs/acre of 0-20-20 or the e□uivalent.
Note: Fertilizer can be blended to meet exact fertilizer recommendations. Ta□e soil test recommendations to local fertilizer dealer for bul□fertilizer blends. This may be more economical than bagged fertilizer

Table PS-1 Commonly used Plants for Permanent Cover with Seeding Rates and Dates

Species	Seeding Rates/Ac PLS	North	Central	South
			Seeding Dates	
Bahiagrass, Pensacola	40 lbs	--	Mar 1-Jul y 1	Feb 1-Nov 1
Bermudagrass, Common	10 lbs	Apr 1-July 1	Mar 15-July 15	Mar 1-July 15
Bahiagrass, Pensacola Bermudagrass, Common	30 lbs 5 lbs	--	Mar 1-July 1	Mar 1-July 15
Bermudagrass, Hybrid (Lawn Types)	Solid Sod	Anytime	Anytime	Anytime
Bermudagrass, Hybrid (Lawn Types)	Sprigs 1/sq ft	Mar 1-Aug 1	Mar 1-Aug 1	Feb 15 - Sep 1
Fescue, Tall	40-50 lbs	Sep 1-Nov 1	Sep 1-Nov 1	--
Sericea	40-60 lbs	Mar 15-July 15	Mar 1-July 15	Feb 15 -July 15
Sericea & Common Bermudagrass	40 lbs 10 lbs	Mar 15 -July 15	Mar 1-July 15	Feb 15-July 15
Switchgrass, Alamo	4 lbs	Apr 1-Jun 15	Mar 15-Jun 15	Mar 15-June 15

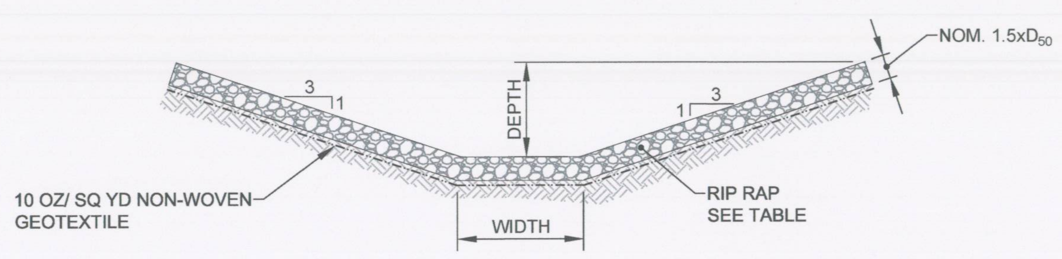
PLS means pure live seed and is used to adjust seeding rates. For example, to plant 10 lbs PLS of a species with germination of 80% and purity of 90%, PLS= 0.8X 0.9 = 72%. 10 lbs PLS = 10/0.72 = 13.9 lbs of the species to be planted.

8 ES-13 PERMANENT SEEDING



NOTE
COMPOSITE FILTER SOCK SHALL BE INSTALLED INSIDE AND AGAINST EXISTING CHAIN LINK FENCE.

SCALE N.T.S. 9 ES-13 COMPOSITE FILTER SOCK (SB)



Reach	Typical Slope	Width	Depth	Riprap	D50
	(ft/ft)	(feet)	(feet)	Class	(inches)
RR1	0.05	10	3	3	18
RR2A	0.14	5	2	1	11
RR2B	0.05	10	2	1	11
RR3A	0.15	10	2	3	18
RR4	0.02	10	2	1	11
RR5A	0.05	15	3	3	18
RR5B	0.01	15	3	3	18
RR6	0.03	5	2	1	11
RR7	0.04	5	2	1	11
RR8	0.03	5	2	1	11
RR9A	0.18	10	2	3	18
RR9B	0.03	10	2	1	11
RR10A	0.17	10	2	3	18
RR10B	0.02	10	2	1	11

NOTE: THIS DETAIL AND TABLE ARE ALSO PLACED ON SHEET D-10. SEE FIGURE SHEET D-06 FOR REACH LOCATIONS.

10 D-10 RIP-RAP CHANNEL DETAIL AND TABLE

0 5 10
1" = 5' FEET

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
0	2019/02/28	100% DESIGN SUBMITTAL	MTC	AVR	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES

Southern Company
Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
CONSTRUCTION □EST MANAGEMENT □RACTICES □LAN
CONSTRUCTION DETAILS

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN
Feb. 28, 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

ONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	MTC
PREPARED	AVR
CHECKED	ARF
REVIEWED / APPROVED	WRS

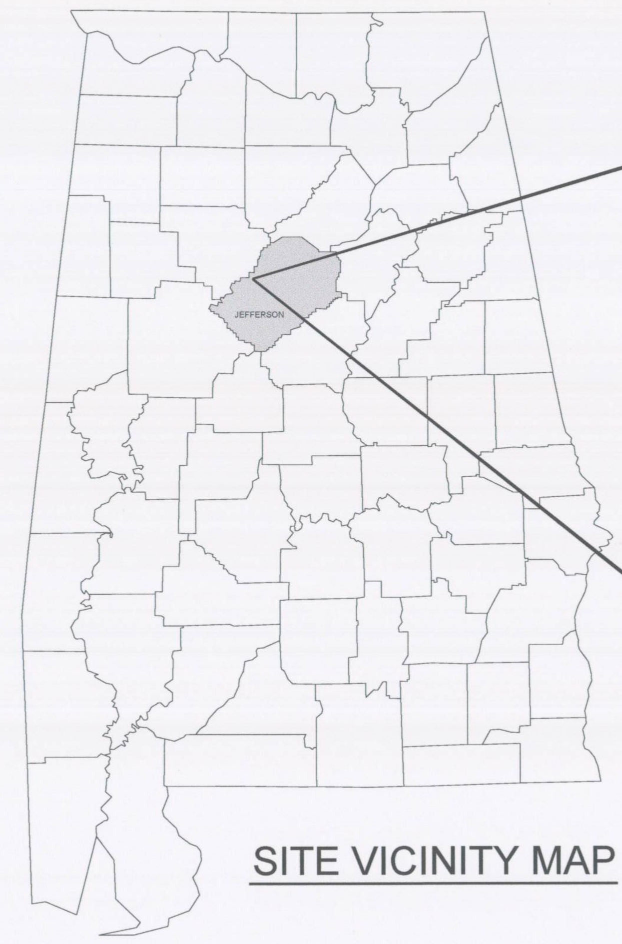
ROJECT NO. 1792705
SCS REF. MIL17010
REV. 0
DRAWING ES-13

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ARCH D

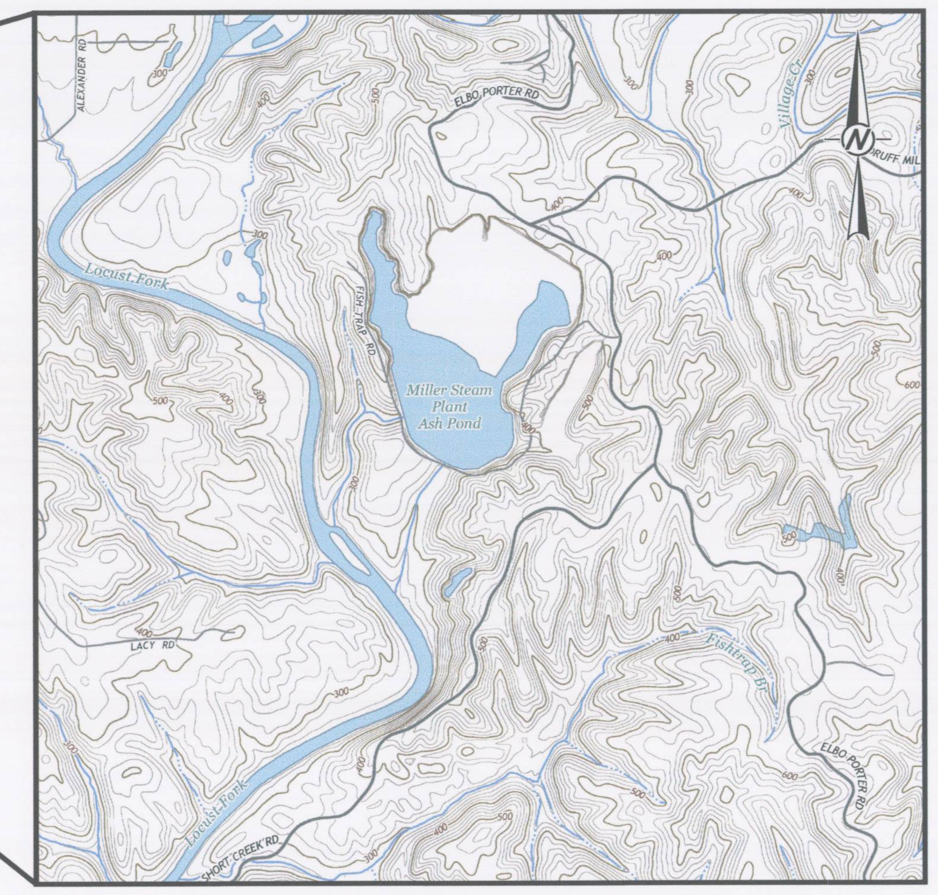
SOUTHERN COMPANY / ALABAMA POWER
PLANT MILLER
ASH POND CLOSURE DESIGN PLANS
JEFFERSON COUNTY, ALABAMA
FEBRUARY 2019

LIST OF DRAWINGS

GENERAL	
G-01	TITLE SHEET
G-02	EXISTING CONDITIONS PLAN - AERIAL
G-03	EXISTING CONDITIONS PLAN - TOPOGRAPHY
G-04	ESTIMATED BOTTOM OF ASH
G-05	DEMOLITION, RELOCATION, AND BLASTING PLAN
CLOSURE DESIGN	
D-01	FINAL COVER AND RESTORATION AREA GRADING
D-02	EXCAVATION PLAN
D-03	PROFILES AND SECTIONS - 1 OF 2
D-04	PROFILES AND SECTIONS - 2 OF 2
D-05	SURFACE WATER MANAGEMENT - PLAN OVERVIEW
D-06	SURFACE WATER MANAGEMENT - PLAN 1 of 4
D-07	SURFACE WATER MANAGEMENT - PLAN 2 OF 4
D-08	SURFACE WATER MANAGEMENT - PLAN 3 OF 4
D-09	SURFACE WATER MANAGEMENT - PLAN 4 OF 4
D-10	MISCELLANEOUS DETAILS
D-11	BUTTRESS DRAINAGE SYSTEM
D-12	SEEPAGE COLLECTION SUMP DETAILS
D-13	MAXIMUM EXCAVATION PRIOR TO ACHIEVING GROUNDWATER CONTROL LEVELS
D-14	EXCAVATION LIMITS AND GROUNDWATER CONTROL LEVELS
D-15	DREDGING AND EXCAVATION SEQUENCE FOR SECTIONS RC AND RD
D-16	WIRE MESH DRAPE FOR CHANNEL CUT
SURFACE WATER MANAGEMENT DETAILS	
SW-01	SURFACE WATER MANAGEMENT DETAILS - 1 OF 7
SW-02	SURFACE WATER MANAGEMENT DETAILS - 2 OF 7
SW-03	SURFACE WATER MANAGEMENT DETAILS - 3 OF 7
SW-04	SURFACE WATER MANAGEMENT DETAILS - 4 OF 7
SW-05	SURFACE WATER MANAGEMENT DETAILS - 5 OF 7
SW-06	SURFACE WATER MANAGEMENT DETAILS - 6 OF 7
SW-07	SURFACE WATER MANAGEMENT DETAILS - 7 OF 7
EROSION AND SEDIMENTATION CONTROL	
ES-01	CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN (PHASE A) 1 OF 4
ES-02	CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN (PHASE A) 2 OF 4
ES-03	CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN (PHASE A) 3 OF 4
ES-04	CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN (PHASE A) 4 OF 4
ES-05	CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN (PHASE B) 1 OF 4
ES-06	CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN (PHASE B) 2 OF 4
ES-07	CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN (PHASE B) 3 OF 4
ES-08	CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN (PHASE B) 4 OF 4
ES-09	CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN (PHASE C) 1 OF 4
ES-10	CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN (PHASE C) 2 OF 4
ES-11	CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN (PHASE C) 3 OF 4
ES-12	CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN (PHASE C) 4 OF 4
ES-13	CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN DETAILS
CONTROL PLANS	
CP-01	CONTROL PLAN - 1 OF 23
CP-02	CONTROL PLAN - 2 OF 23
CP-03	CONTROL PLAN - 3 OF 23
CP-04	CONTROL PLAN - 4 OF 23
CP-05	CONTROL PLAN - 5 OF 23
CP-06	CONTROL PLAN - 6 OF 23
CP-07	CONTROL PLAN - 7 OF 23
CP-08	CONTROL PLAN - 8 OF 23
CP-09	CONTROL PLAN - 9 OF 23
CP-10	CONTROL PLAN - 10 OF 23
CP-11	CONTROL PLAN - 11 OF 23
CP-12	CONTROL PLAN - 12 OF 23
CP-13	CONTROL PLAN - 13 OF 23
CP-14	CONTROL PLAN - 14 OF 23
CP-15	CONTROL PLAN - 15 OF 23
CP-16	CONTROL PLAN - 16 OF 23
CP-17	CONTROL PLAN - 17 OF 23
CP-18	CONTROL PLAN - 18 OF 23
CP-19	CONTROL PLAN - 19 OF 23
CP-20	CONTROL PLAN - 20 OF 23
CP-21	CONTROL PLAN - 21 OF 23
CP-22	CONTROL PLAN - 22 OF 23
CP-23	CONTROL PLAN - 23 OF 23
CP-24	CONTROL POINT TABLES - 1 OF 2
CP-25	CONTROL POINT TABLES - 2 OF 2



SITE VICINITY MAP



REF: USGS 7.5 MINUTE SERIES TOPOGRAPHIC QUADRANGLE

SITE LOCATION MAP

0 2000 4000
1" = 2000' FEET

CONTACT INFORMATION

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ATLANTA, GA 30341
TELEPHONE: 770 / 496-1893

OWNER'S REPRESENTATIVE
EMILY CHATHAM
SOUTHERN COMPANY SERVICES
3535 COLONNADE PKWY
BIRMINGHAM, AL 35243
TELEPHONE: 205 / 992-5745

PREPARED BY

GOLDER

PREPARED FOR

Southern Company
Alabama Power

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
0	2019/02/28	100% DESIGN SUBMITTAL	CCP	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
TITLE SHEET

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R. SULLIVAN
Feb 28, 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

CONSULTANT GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	CCP
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	G-01

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ARCH D

Path: \\atlanta\cadd\Southern Company\Plant Miller\1792705 Closure Design\01_Civil\Production\ | File Name: 1792705-G-02 - EXISTING CONDITIONS PLAN - AERIAL.dwg | Last Edited By: alerodriguez Date: 2019-02-28 Time:5:54:10 PM | Printed By: JaMiller Date: 2019-02-28 Time:6:07:41 PM

LEGEND

- ESTIMATED CCR LIMITS
- DRAINAGE BASIN (SEE NOTE 2)
- PROPERTY LINE
- MONITORING WELL
- GAS LINE EASEMENT

NOTES

1. "ESTIMATED CCR LIMITS" INDICATES THE ESTIMATED OUTER EXTENT OF THE CCR TO BE ADDRESSED IN THE CLOSURE PROJECT. LOCATIONS OF HIGH-LYING NATURAL GROUND WHERE NO CCR IS PRESENT EXIST WITHIN THESE ESTIMATED LIMITS.
2. DRAINAGE BASIN EXTENDS BEYOND EXTENTS OF DRAWING.

REFERENCES

1. AERIAL PHOTOGRAPHY PROVIDED BY SOUTHERN COMPANY SERVICES, FEBRUARY 2018.

0 200 400
1" = 200' FEET

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
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PROJECT
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ASH POND CLOSURE
DESIGN PLANS

TITLE
E⎕ISTING CONDITIONS ⎕LAN ⎕AERIAL

ALABAMA REGISTERED No. 20090 PROFESSIONAL ENGINEER WILLIAM R. SULLIVAN
Feb 28, 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20090

CONSULTANT
GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	CCP
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING G-02

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ARCH D

LEGEND	
420	EXISTING CONTOURS
380	BATHYMETRY CONTOURS
	ASH POND FREE WATER
	ESTIMATED CCR LIMITS
	DRAINAGE BASIN (SEE NOTE 3)
	GAS LINE EASEMENT
	PROPERTY LINE
	MONITORING WELL
	CONTROL MONUMENT
	EXISTING ROAD

NOTES
1. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL, NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1988. COORDINATES CORRESPOND TO ALABAMA WEST COORDINATE SYSTEM, NORTH AMERICAN DATUM (NAD) 1983.
2. "ESTIMATED CCR LIMITS" INDICATES THE ESTIMATED OUTER EXTENT OF THE CCR TO BE ADDRESSED IN THE CLOSURE PROJECT. LOCATIONS OF HIGH-LYING NATURAL GROUND WHERE NO CCR IS PRESENT EXIST WITHIN THESE ESTIMATED LIMITS.
3. DRAINAGE BASIN EXTENDS BEYOND EXTENTS OF DRAWING.

REFERENCES
1. EXISTING TOPOGRAPHY PROVIDED BY SOUTHERN COMPANY SERVICES, FEBRUARY 2018.
2. BATHYMETRY DATA PROVIDED BY SOUTHERN COMPANY SERVICES, DATED AUGUST 2018.

0 200 400
1" = 200' FEET

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
A	2019/02/28	100% DESIGN SUBMITTAL	CCP	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES
Southern Company
Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
EXISTING CONDITIONS PLAN - TOPOGRAPHY

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Feb 28 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

CONSULTANT
GOLDER

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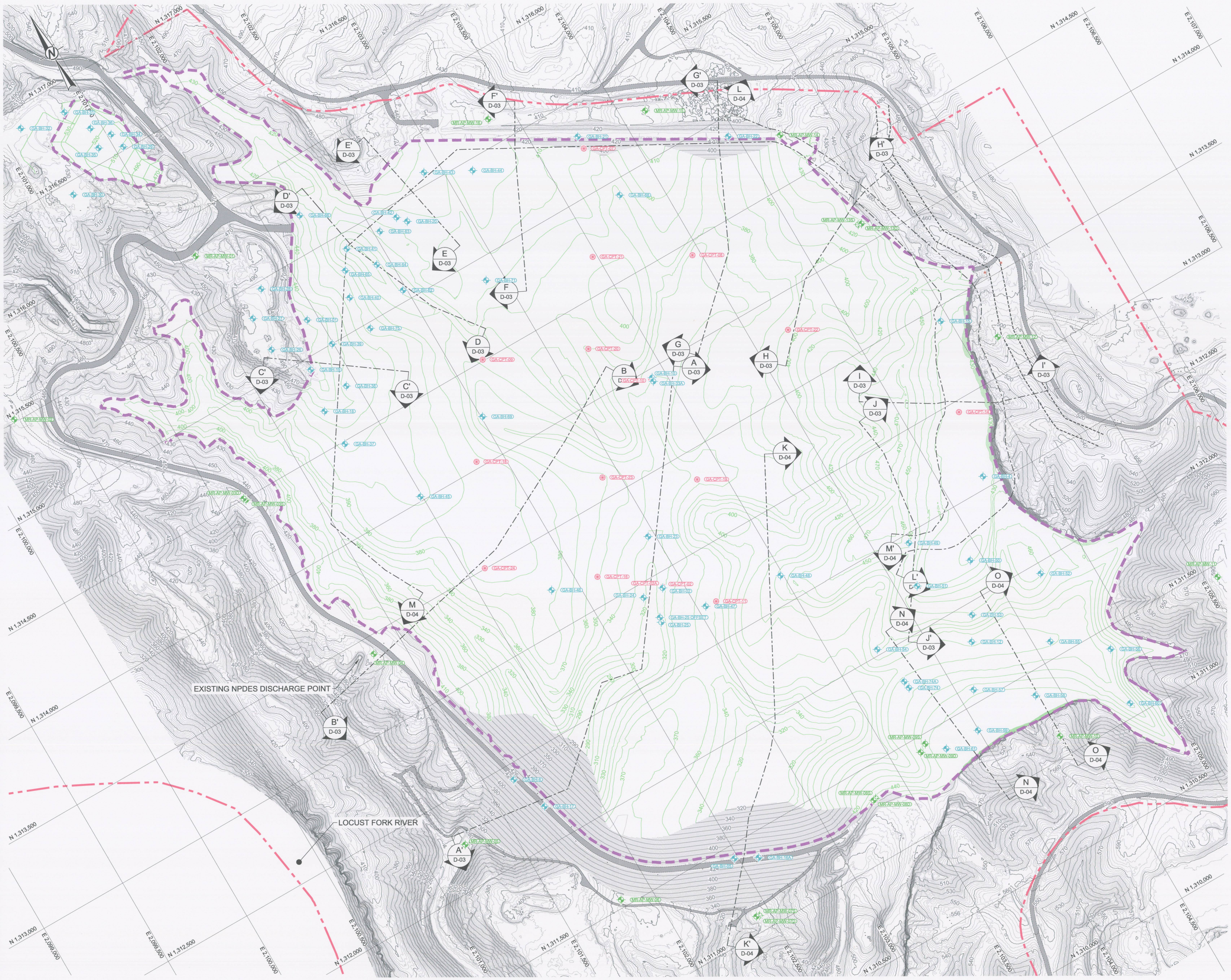
PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	G-03

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ARCH D



LEGEND

420	EXISTING CONTOURS
420	ESTIMATED BOTTOM OF ASH CONTOURS
	ESTIMATED CCR LIMITS
	PROPERTY LINE
	GAS LINE EASEMENT
	MONITORING WELLS
	BORINGS
	CPT
	EXISTING ROAD

NOTES

1. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL, NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1988. COORDINATES CORRESPOND TO ALABAMA WEST COORDINATE SYSTEM, NORTH AMERICAN DATUM (NAD) 1983.

2. "ESTIMATED CCR LIMITS" INDICATES THE ESTIMATED OUTER EXTENT OF THE CCR TO BE ADDRESSED IN THE CLOSURE PROJECT. LOCATIONS OF HIGH-LYING NATURAL GROUND WHERE NO CCR IS PRESENT EXIST WITHIN THESE ESTIMATED LIMITS.

REFERENCES

1. EXISTING TOPOGRAPHY PROVIDED BY SOUTHERN COMPANY SERVICES, FEBRUARY 2018.
2. TOPOGRAPHY FOR THE OLD STRIP MINE AREA PROVIDED BY SOUTHERN COMPANY SERVICES, DATED OCTOBER 10, 2006
3. BOTTOM OF ASH TOPOGRAPHY TAKEN FROM USGS, SYLVAN SPRINGS, 1971 QUADRANGLE. TOPOGRAPHY WAS INTERPRETED BETWEEN 20 FOOT CONTOURS AND ADJUSTED BASED ON GEOTECHNICAL INVESTIGATION DATA BY GOLDER ASSOCIATES INC FROM 2017 & 2018 INVESTIGATIONS.

0 200 400
1" = 200' FEET

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN

Feb 28, 2019

WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
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Southern Company | Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
ESTIMATED □OTTOM OF ASH

CONSULTANT
GOLDER

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PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING G-04

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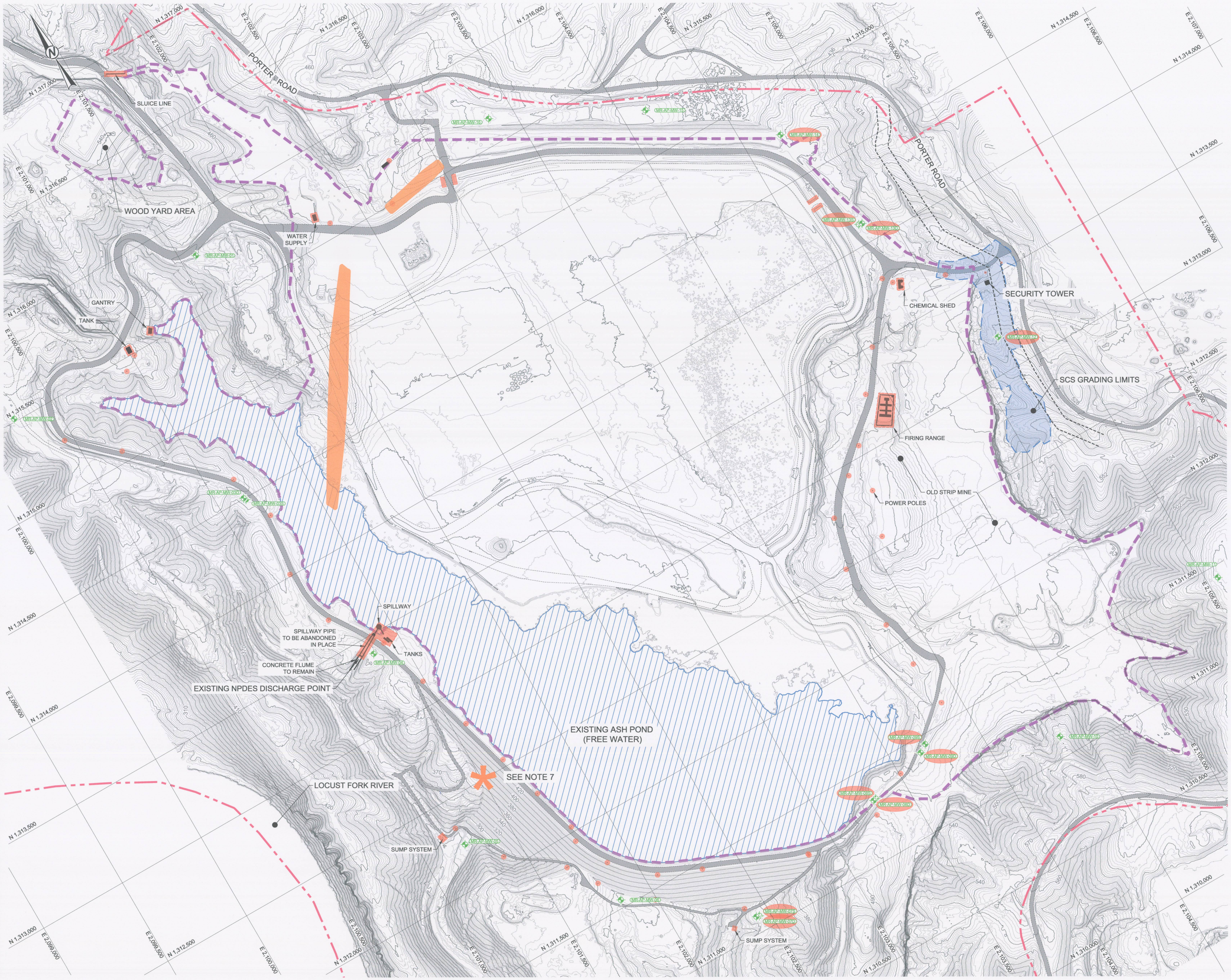

LEGEND

- EXISTING CONTOURS
- ASH POND FREE WATER
- POTENTIAL BLASTING AREA (SEE NOTE 3)
- SCS GRADING LIMITS
- RELOCATE, DEMOLISH OR ABANDON
- ESTIMATED CCR LIMITS
- PROPERTY LINE
- EXISTING POWER POLES TO BE RELOCATED
- MW-5S MONITORING WELLS (TO BE ABANDONED / RELOCATED BY OTHERS)
- MR-AP-MW-06 MONITORING WELL (TO REMAIN POST CLOSURE)
- GAS LINE EASEMENT
- EXISTING ROAD

NOTES

1. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL, NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1988. COORDINATES CORRESPOND TO ALABAMA WEST COORDINATE SYSTEM, NORTH AMERICAN DATUM (NAD) 1983.
2. "ESTIMATED CCR LIMITS" INDICATES THE ESTIMATED OUTER EXTENT OF THE CCR TO BE ADDRESSED IN THE CLOSURE PROJECT. LOCATIONS OF HIGH-LYING NATURAL GROUND WHERE NO CCR IS PRESENT EXIST WITHIN THESE ESTIMATED LIMITS.
3. THIS SHADED AREA IS WHERE ROCK EXCAVATION IS REQUIRED, INCLUDING BLASTING. OTHER AREAS MAY ALSO REQUIRE ROCK EXCAVATION.
4. ALL ITEMS IDENTIFIED AS EITHER REQUIRING RELOCATION, DEMOLITION, OR ABANDONMENT TO BE CONFIRMED BY ALABAMA POWER COMPANY.
5. MONITORING WELLS TO BE RELOCATED IN COORDINATION WITH SOUTHERN COMPANY SERVICES AND ALABAMA POWER COMPANY.
6. OUTLINE OF SCS GRADING PROVIDED BY SCS ON SEPTEMBER 26, 2018
7. INDICATES AREA WHERE ROCK EXCAVATION MAY BE REQUIRED, AND POTENTIALLY BLASTING. CONDITIONS TO BE EVALUATED AS EXCAVATION PROGRESSES AND FREE WATER IS DRAWN DOWN.

REFERENCES

1. EXISTING TOPOGRAPHY PROVIDED BY SOUTHERN COMPANY SERVICES, FEBRUARY 2018.

0 200 400
1" = 200' FEET

ALABAMA REGISTERED PROFESSIONAL ENGINEER
Feb 28 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
0	2019/02/28	100% DESIGN SUBMITTAL	ARF	CCP	ARF	WRS

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SOUTHERN COMPANY SERVICES

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PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
DEMOLITION RELOCATION AND LASTING LAN

CONSULTANT
GOLDER

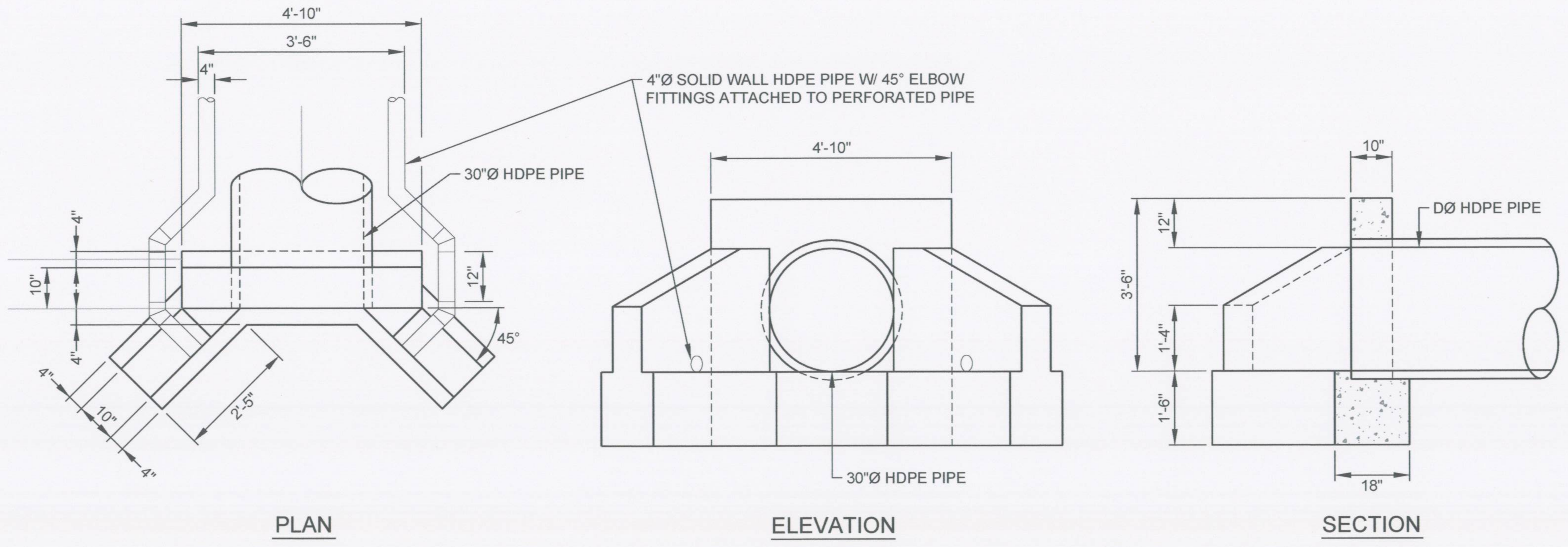
YYYY-MM-DD	2019/02/28
DESIGNED	ARF
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	G-05

0 1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ARCH D

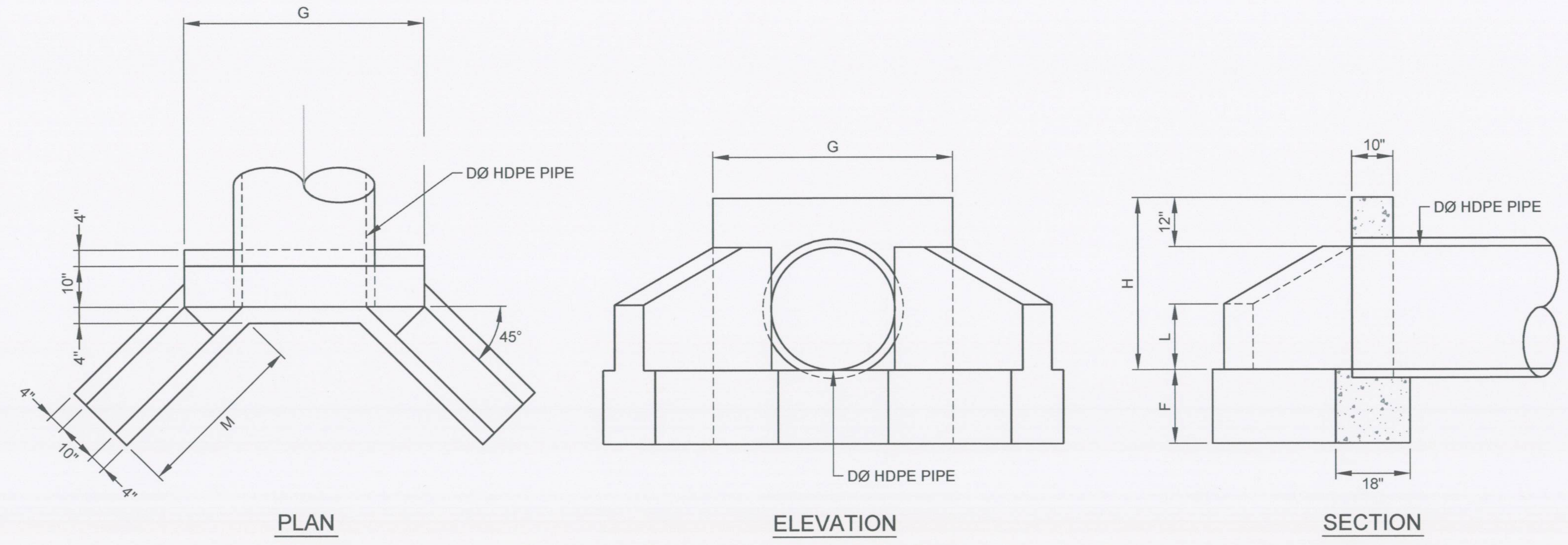
NOTES

1. ALL CONCRETE TO BE CLASS 4000. ALL REINFORCEMENT SHALL BE GRADE 60.
2. ALL EXPOSED EDGES SHALL HAVE A ONE INCH CHAMFER.
3. REBAR SHALL HAVE 2 INCHES OF CONCRETE COVER WHEN FORMED AND 3 INCHES OF CONCRETE COVER WHEN CONSTRUCTED AGAINST SOIL OR ROCK.
4. THE PRECAST CONCRETE END SECTIONS ARE LIMITED TO 0° THRU 15° SKEW.
5. FOR SPECIFIC INSTALLATION PROCEDURES, CONTACT THE PRECAST END SECTION VENDOR.



1 SW-01 PRIMARY SPILLWAY OUTLET HEADWALL

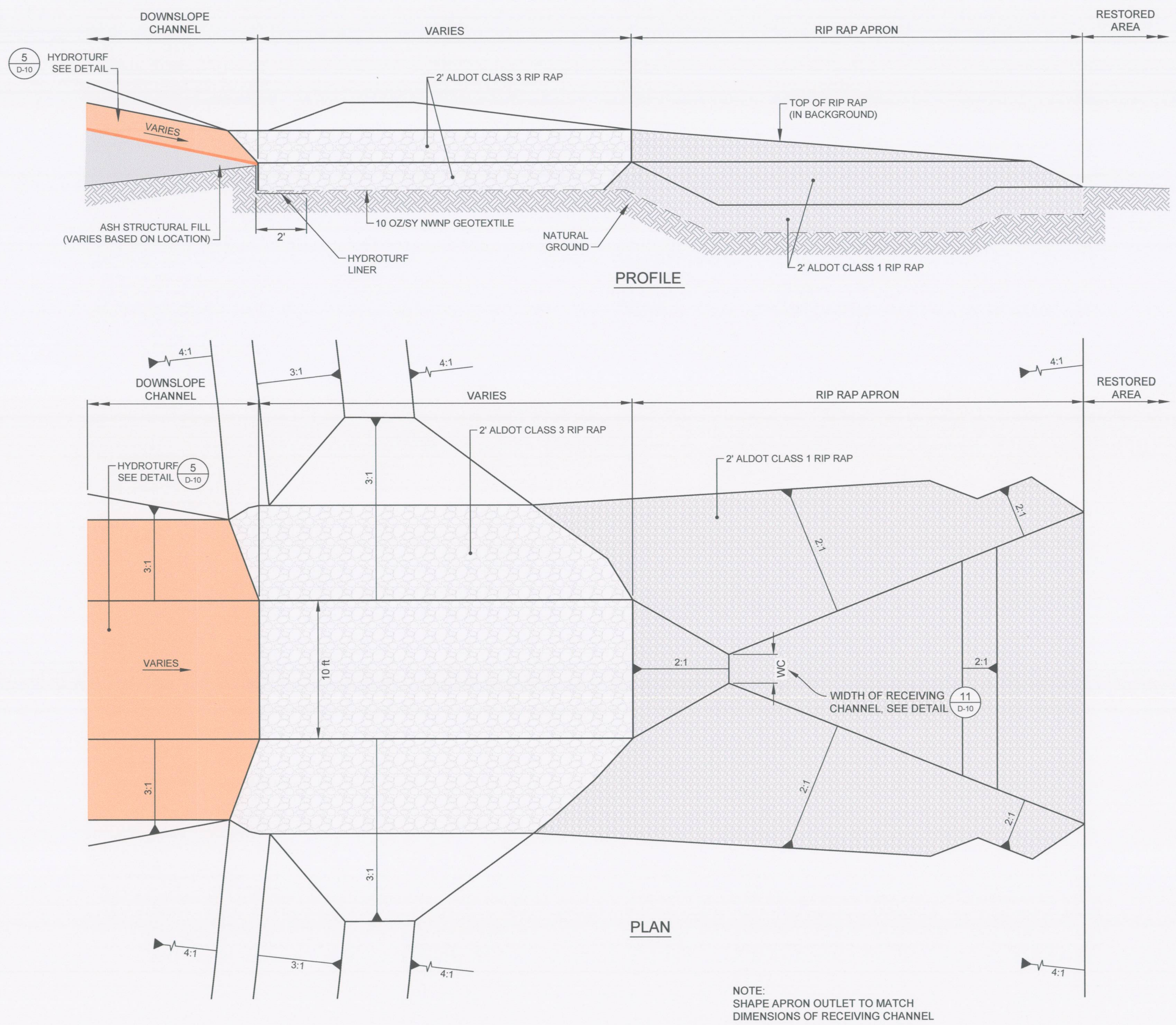
0 2 4 FEET 1" = 2'



2 SW-01 PIPE CULVERT HEADWALL DETAIL

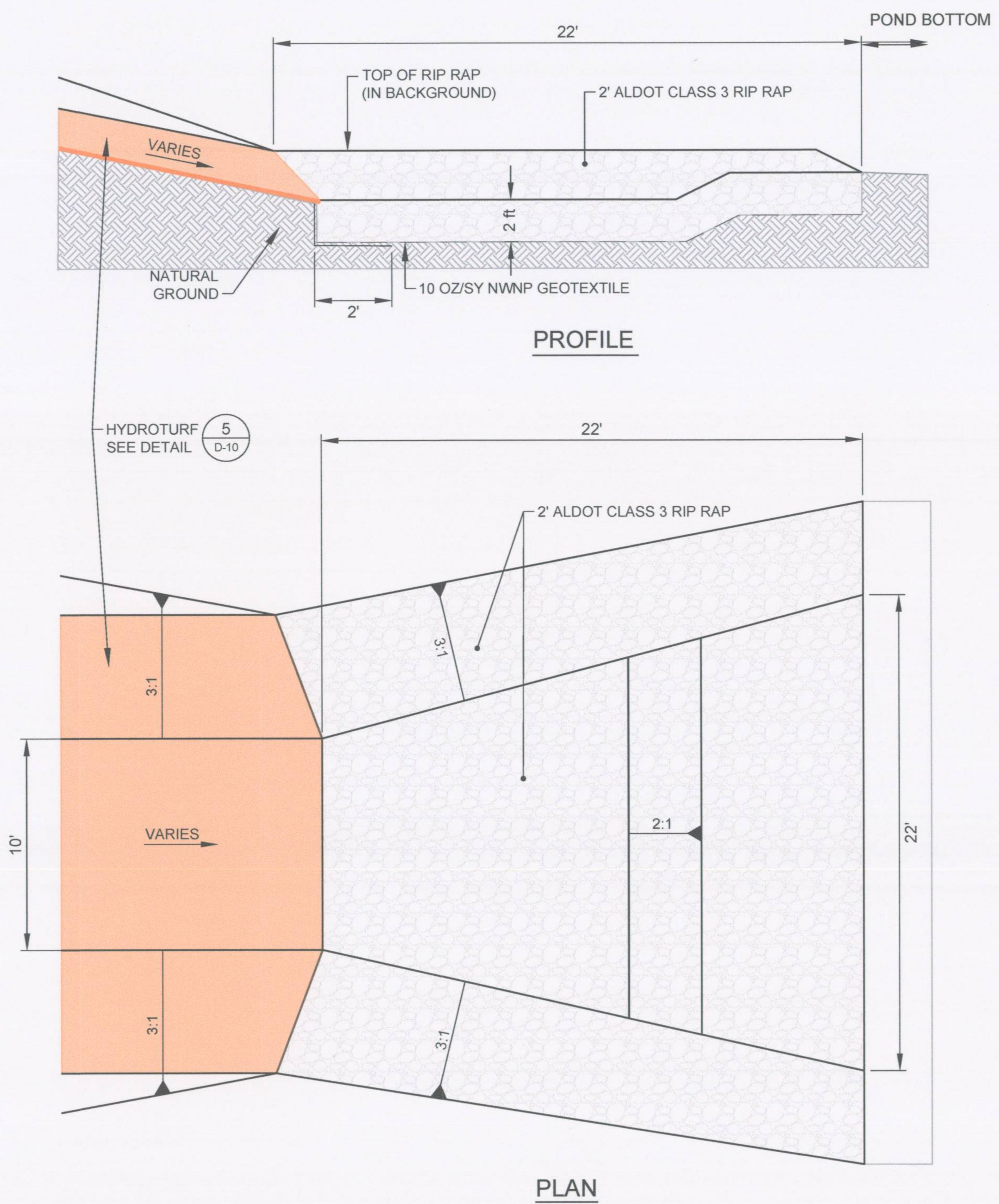
0 2 4 FEET 1" = 2'

DIMENSION (2:1 SLOPE)						
OPENING		WALL			FOOTING	
D	AREA SQ. FT.	H	G	L	M	F
30"	4.9	3'-6"	4'-10"	1'-9"	2'-5"	1'-6"
36"	7.1	4'-0"	5'-4"	2'-0"	2'-11"	1'-8"



3 SW-01 DOWNSLOPE OUTLET PROTECTION TO RESTORED CHANNEL

0 5 10 FEET 1" = 5'



4 SW-01 GROIN CHANNEL RIP RAP OUTLET PROTECTION

0 5 10 FEET 1" = 5'

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
△	2019/02/28	100% DESIGN SUBMITTAL	MC	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES

Southern Company
Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

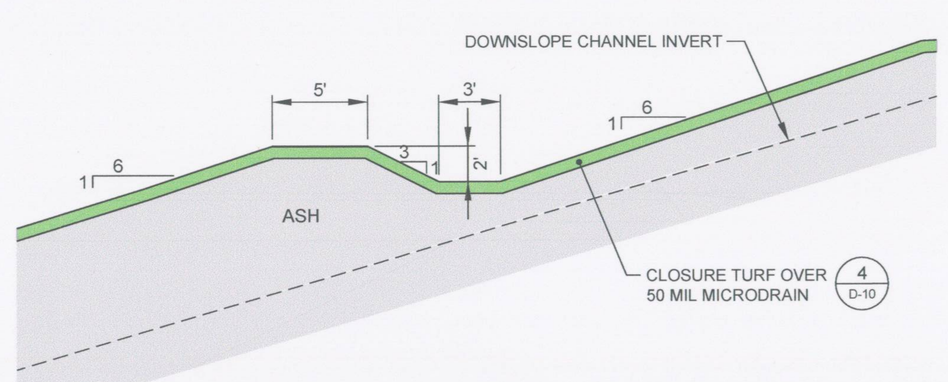
TITLE
SURFACE WATER MANAGEMENT DETAILS
SHEET ☐ OF 7

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN
Feb 28 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

CONSULTANT
GOLDER

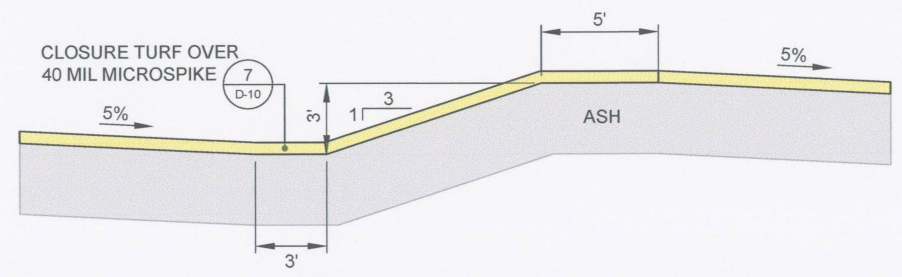
YYYY-MM-DD	2019/02/28
DESIGNED	MC
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING SW-01



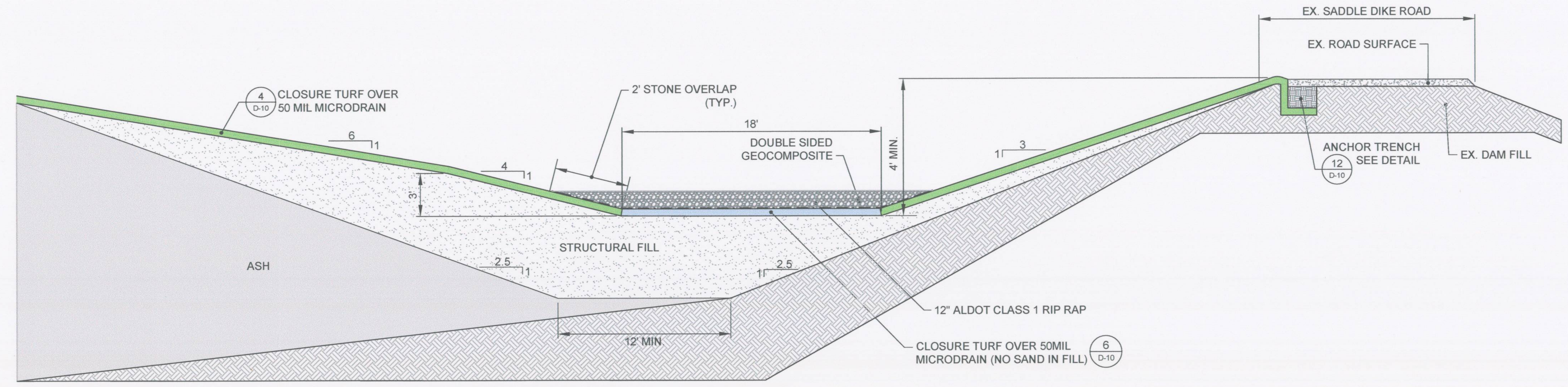
2 SW-02 TYPICAL BENCH DETAIL

0 5 10
1" = 5' FEET



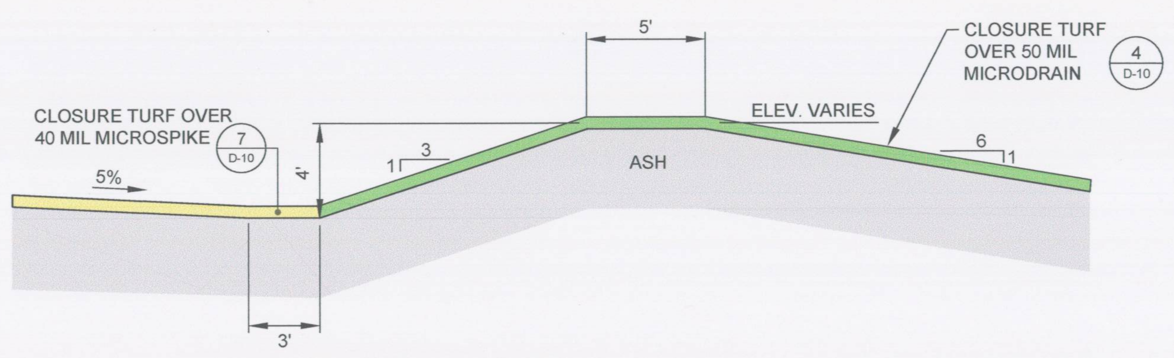
12 SW-02 TOP DECK CHANNEL DETAIL

0 5 10
1" = 5' FEET



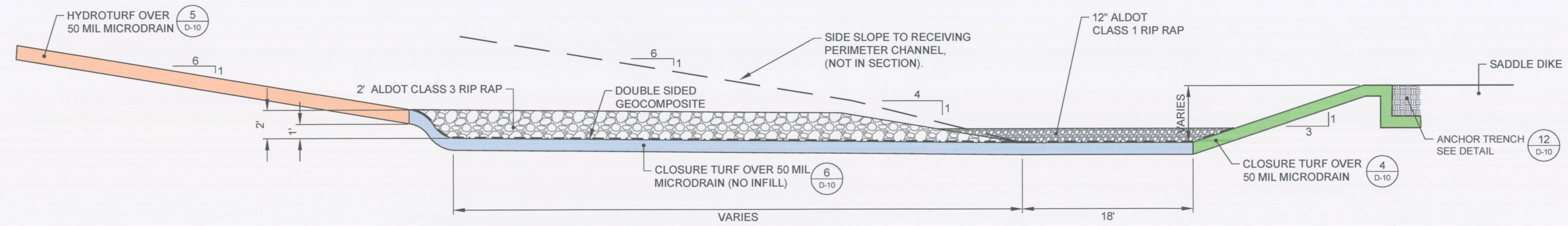
8 SW-02 SADDLE DIKE ROAD & PERIMETER CHANNEL DETAIL (CHANNEL SLOPE BELOW 3%)

0 5 10
1" = 5' FEET



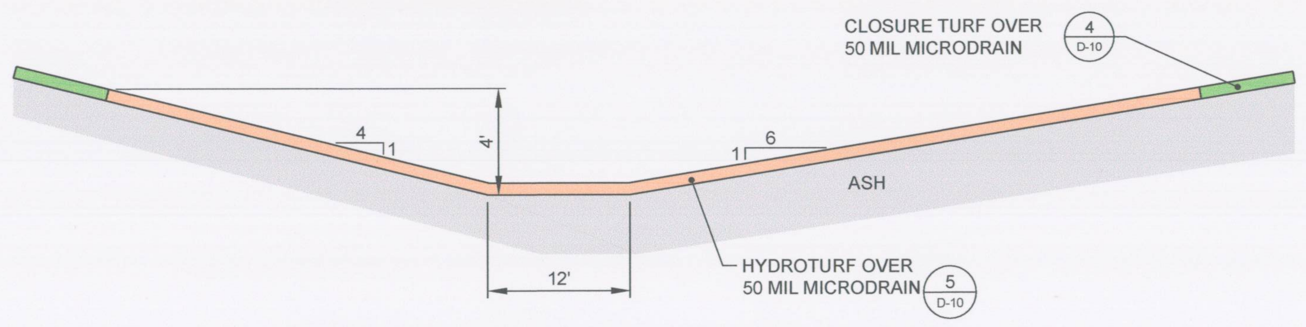
3 SW-02 TOP OF SLOPE DIVERSION DETAIL

0 5 10
1" = 5' FEET



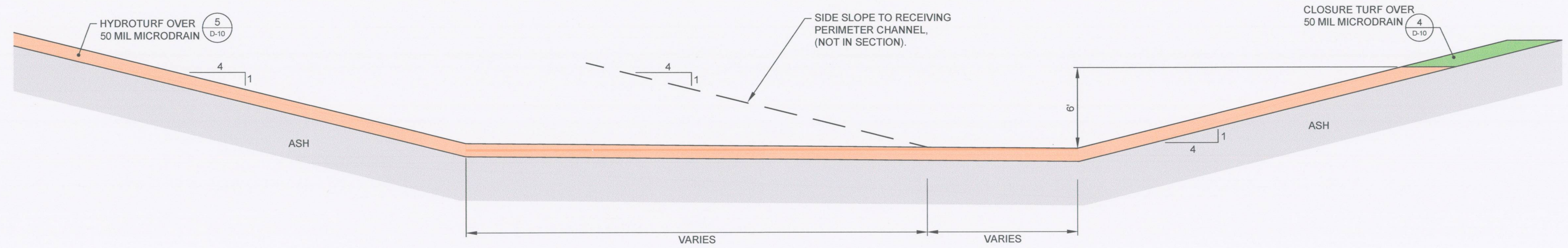
9 SW-02 TYPICAL TERMINATION OF DOWNSLOPE CHANNEL TO RIP RAP LINED PERIMETER CHANNEL

0 5 10
1" = 5' FEET



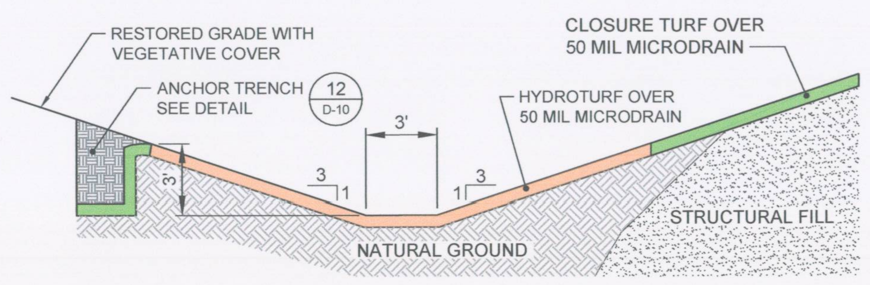
4 SW-02 PERIMETER CHANNEL CROSS SECTION (CHANNEL SLOPE AT OR ABOVE 3%)

0 5 10
1" = 5' FEET



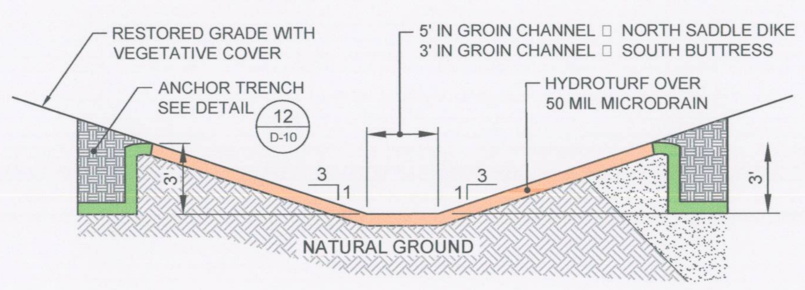
10 SW-02 TYPICAL TERMINATION OF DOWNSLOPE CHANNEL AT HYDROTURF LINED PERIMETER CHANNEL

0 5 10
1" = 5' FEET



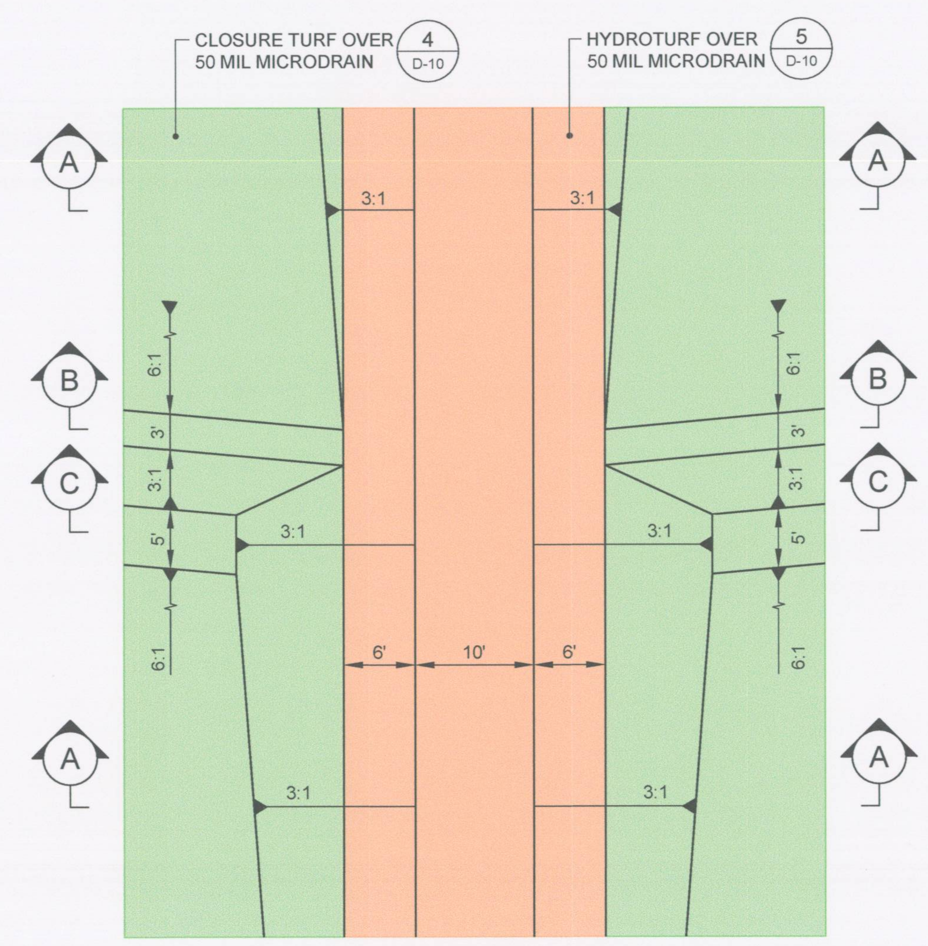
5 SW-02 GROIN CHANNEL ADJACENT TO CLOSURE TURF DETAIL

0 5 10
1" = 5' FEET



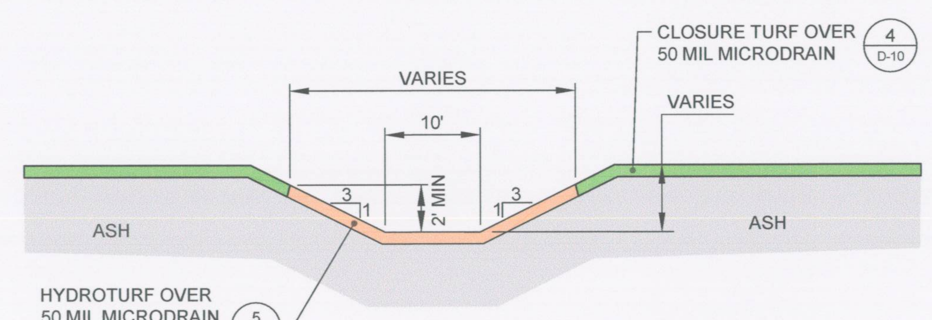
6 SW-02 GROIN CHANNEL ADJACENT TO RESTORED GRADE DETAIL

0 5 10
1" = 5' FEET

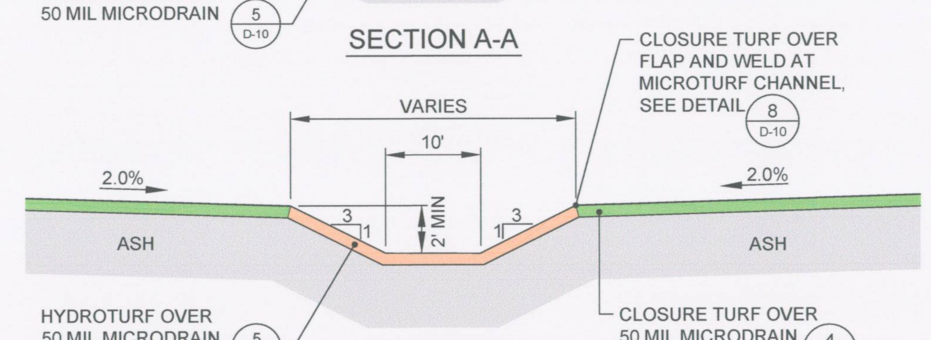


PLAN

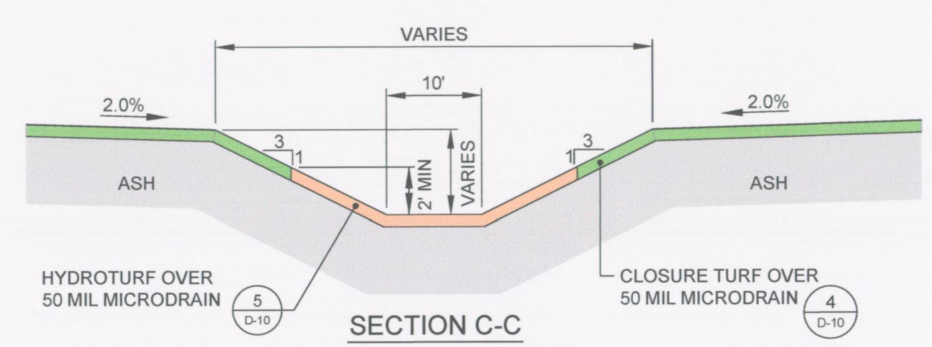
0 10 20
1" = 10' FEET



SECTION A-A



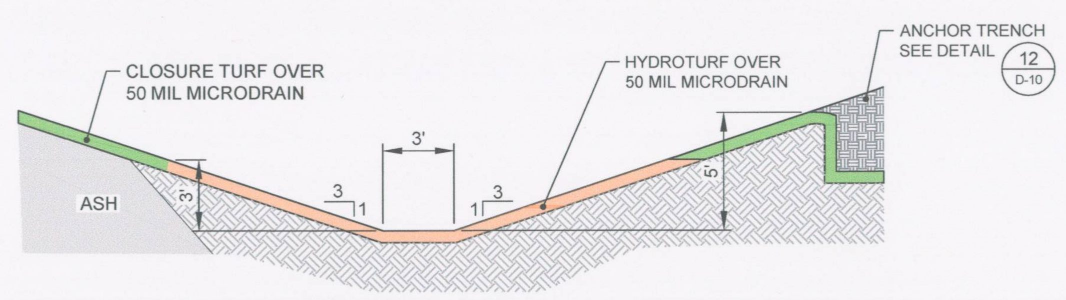
SECTION B-B



SECTION C-C

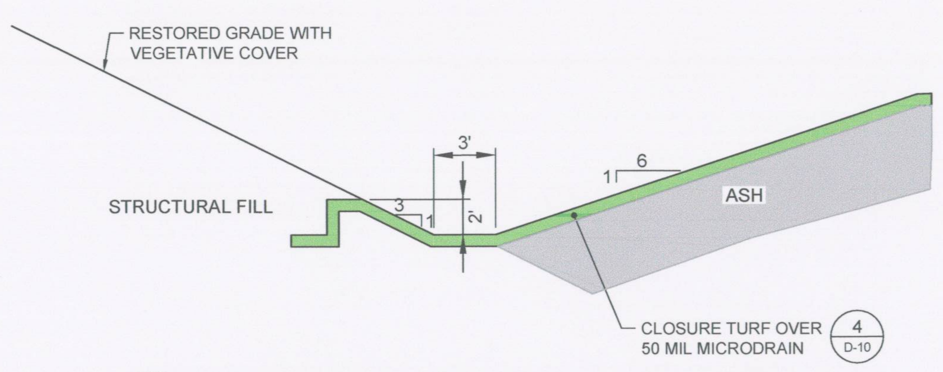
0 5 10
1" = 5' FEET

1 SW-02 DOWNSLOPE CHANNEL & BENCH DETAIL



7 SW-02 DOWNSLOPE GROIN CHANNEL DETAIL

0 5 10
1" = 5' FEET



11 SW-02 GROIN CHANNEL AT CLOSURE TURF TERMINATION

0 5 10
1" = 5' FEET

NOTES
1. DOUBLE-SIDED GEOCOMPOSITE INCLUDES 200 MIL GEONET AND 8 OZ/SY NON-WOVEN GEOTEXTILE ON EACH SIDE.
2. NWNP = NON-WOVEN NEEDLE PUNCHED

ALABAMA REGISTERED PROFESSIONAL ENGINEER No. 20290 WILLIAM R. SULLIVAN

Feb 28 2019

WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20290

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
⚠	2019/02/28	100% DESIGN SUBMITTAL	JG	CCP	ARF	WRS

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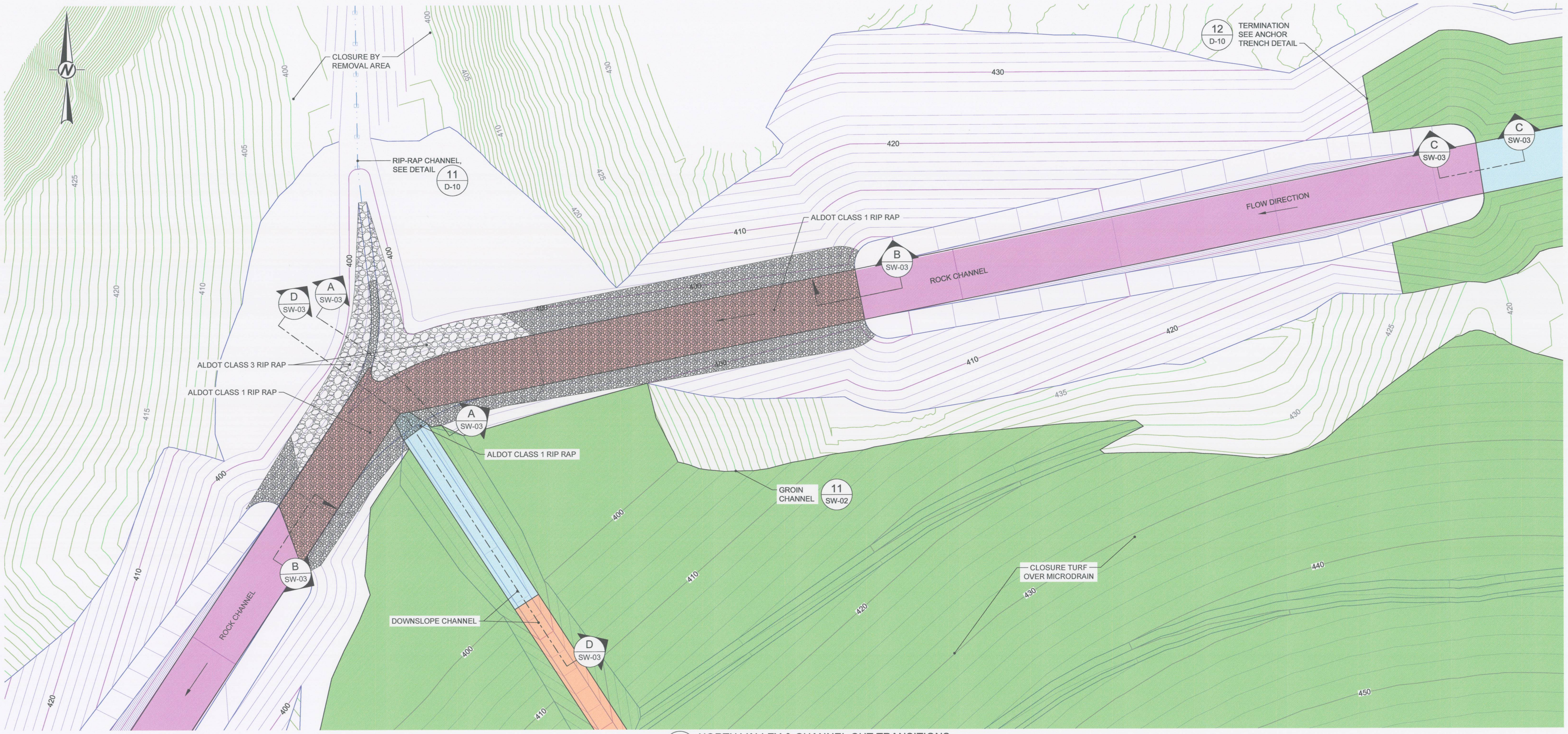
PROJECT NO. 1792705 | SCS REF MIL17010 | REV. 0 | DRAWING SW-02



1 SW-03 NORTH VALLEY & CHANNEL CUT TRANSITIONS

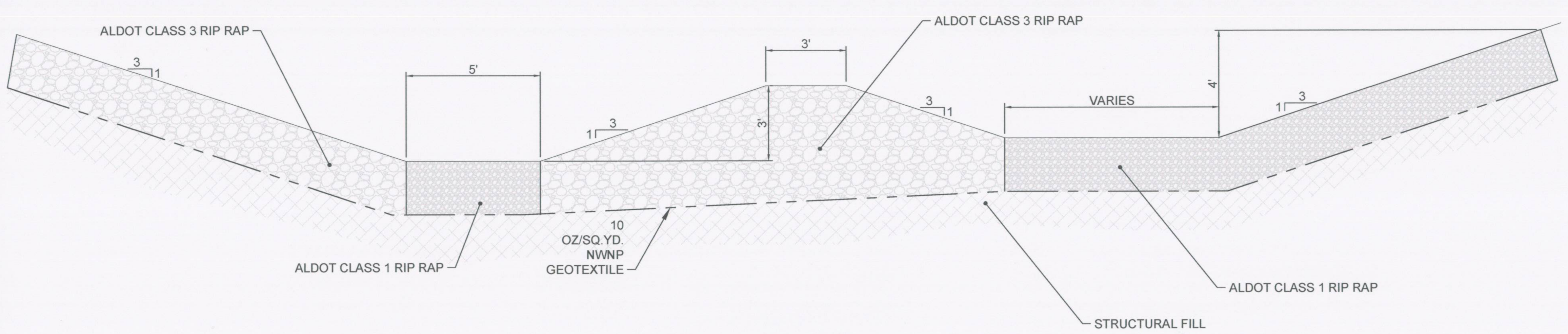
0 30 60 FEET
1" = 30'

LEGEND

425	EXISTING CONTOURS
380	PROPOSED GRADING CONTOURS
425	CLOSURE BY REMOVAL CONTOURS
	RESTORATION CHANNEL
	RIP RAP OVER CLOSURE TURF (NO INFILL)
	ROCK CHANNEL
	HYDROTURF OVER MICRODRAIN
	CLOSURE TURF OVER MICRODRAIN
	RIP RAP CHANNEL BOTTOM

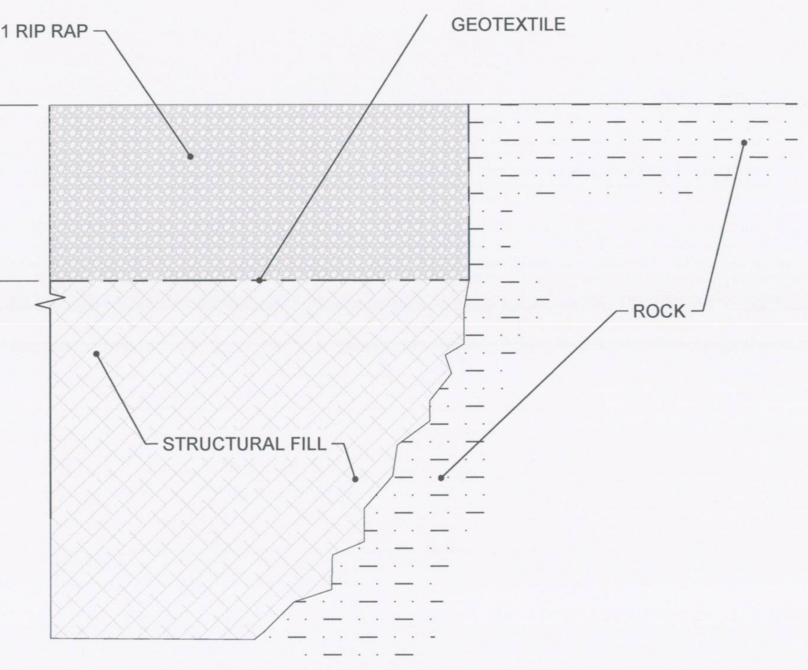
NOTES

1. GRADING IN AREA SHOWN AS RIP RAP CHANNEL BOTTOM REPRESENTS TOP OF RIP RAP.
2. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL, NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1988. COORDINATES CORRESPOND TO ALABAMA WEST COORDINATE SYSTEM, NORTH AMERICAN DATUM (NAD) 1983.
3. NWNP = NON-WOVEN NEEDLE PUNCHED



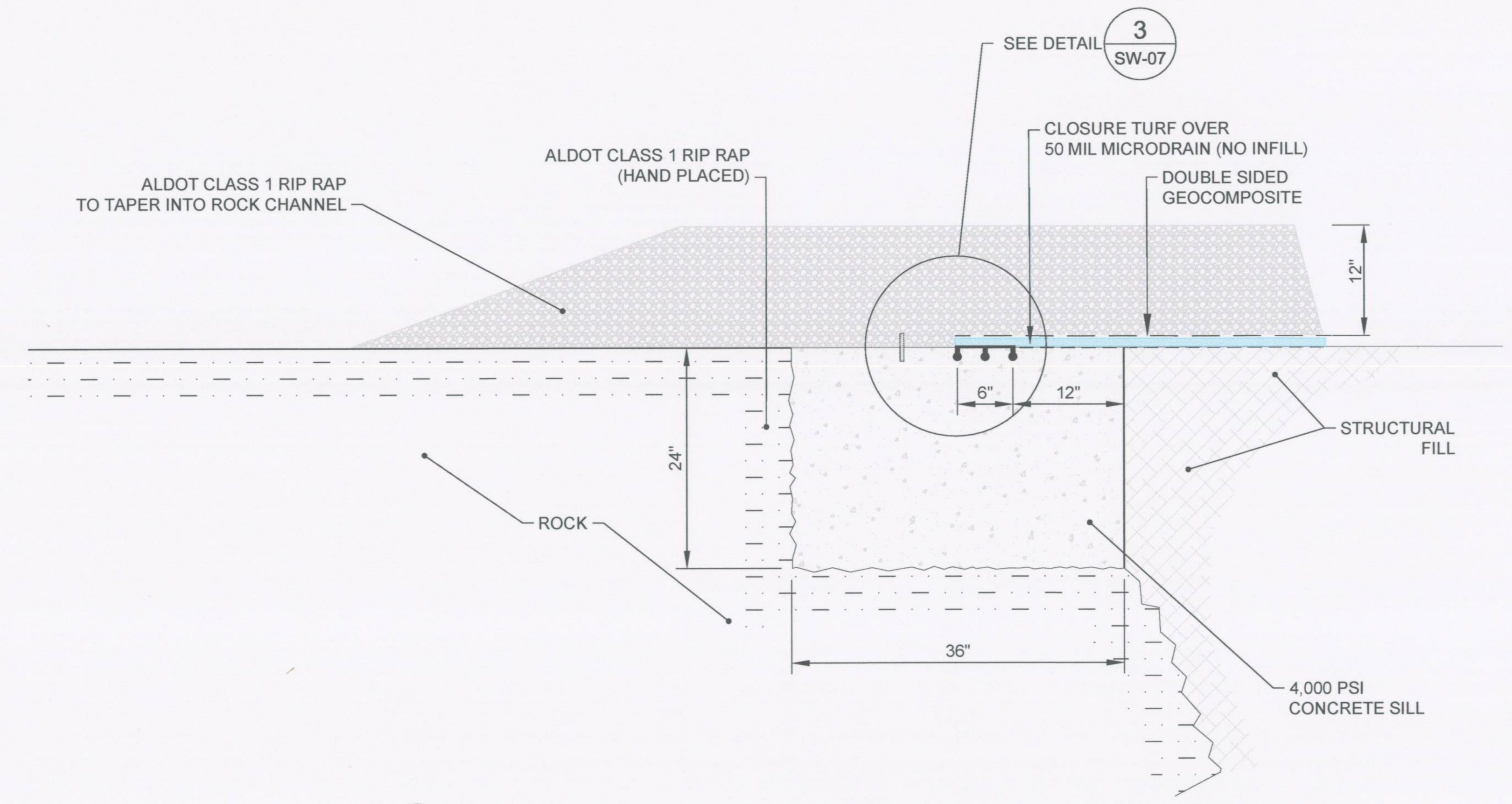
A SW-03 CROSS SECTION A-A

0 3 6 FEET
1" = 3'



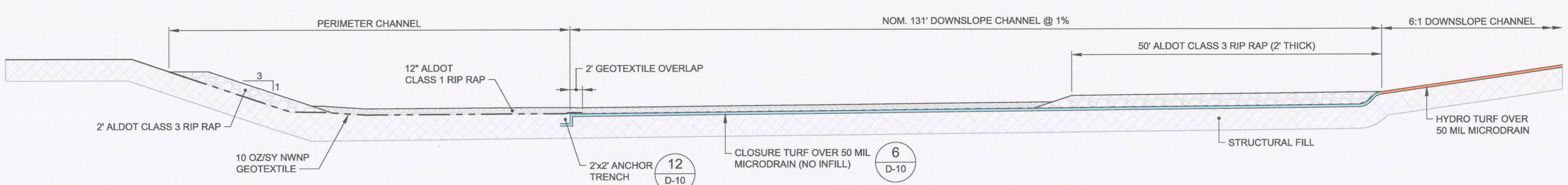
B SW-03 CROSS SECTION B-B

0 1 2 FEET
1" = 1'



C SW-03 CLOSURE TURF TO ROCK CHANNEL TRANSITION CROSS SECTION C-C

0 1 2 FEET
1" = 1'



D SW-03 NORTH DOWNSLOPE CHANNEL CROSS SECTION D-D

0 10 20 FEET
1" = 10'

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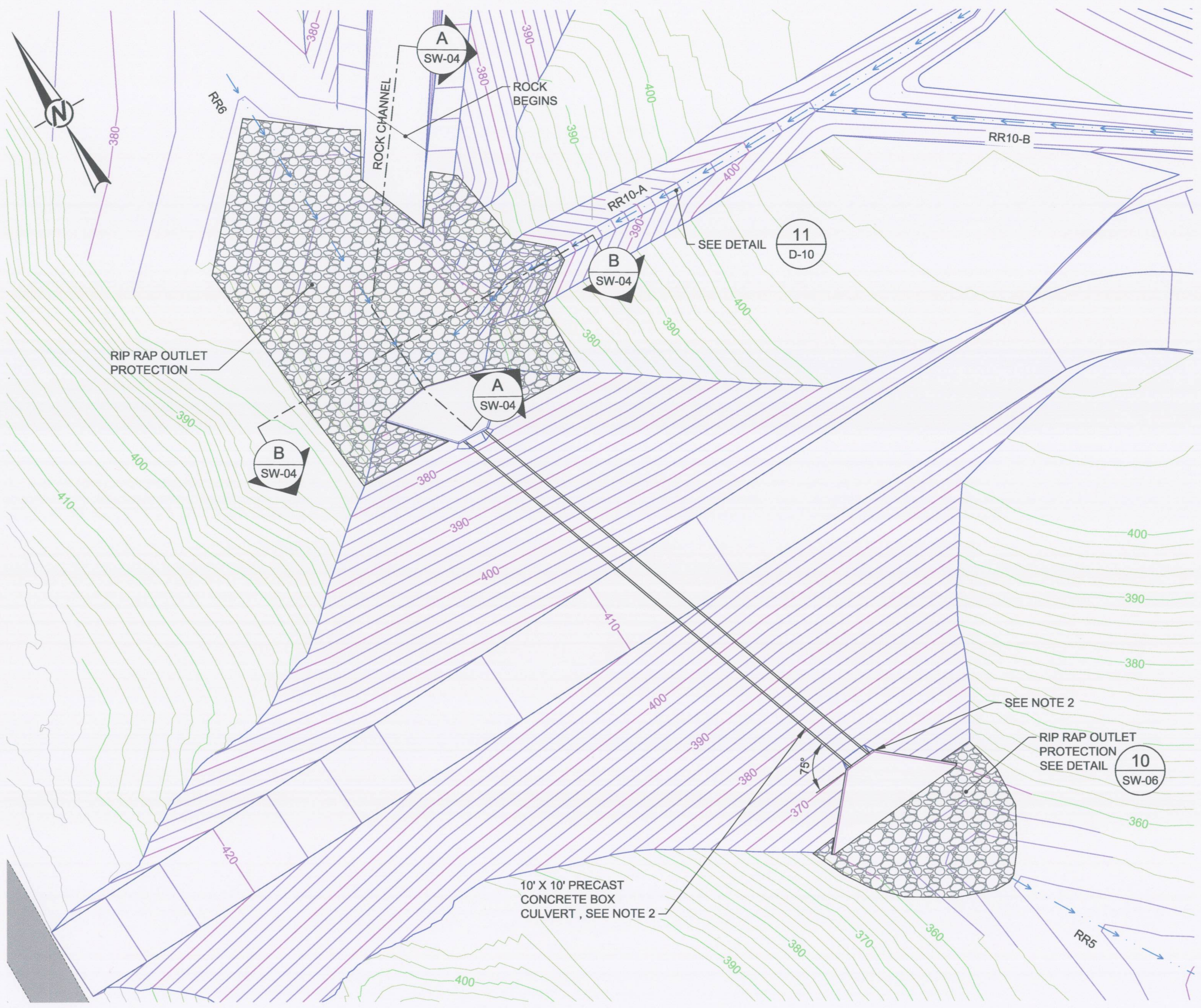
CHECKED	ARF
REVIEWED / APPROVED	WRS

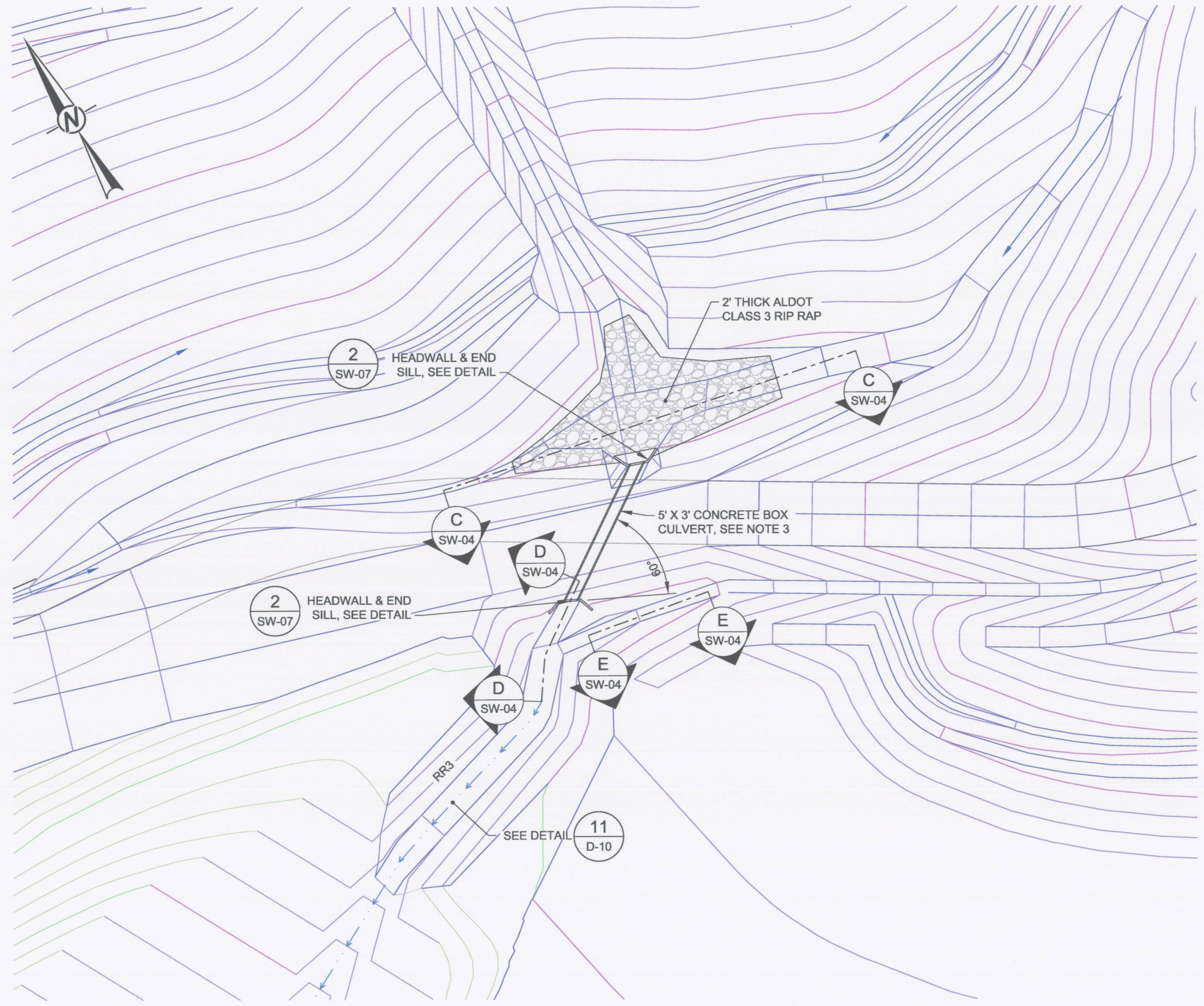
ALABAMA REGISTERED PROFESSIONAL ENGINEER No. 20266 WILLIAM R. SULLIVAN
Feb 28, 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	SW-03



1 SW-04 ACCESS ROAD CULVERT PLAN VIEW

0 40 80
1" = 40' FEET



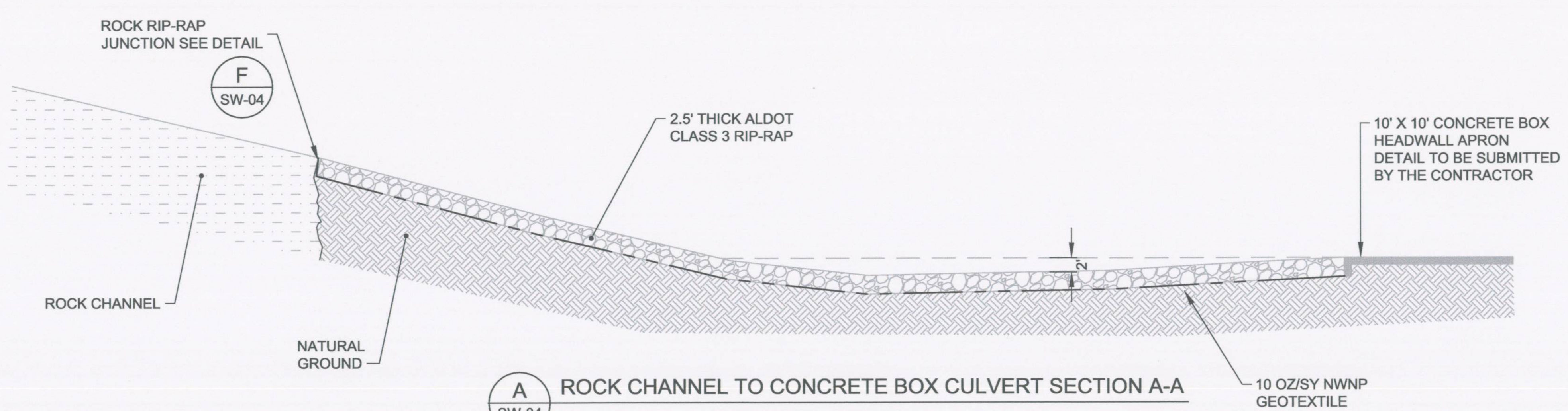
2 SW-04 SOUTH PERIMETER CHANNEL TERMINATION PLAN VIEW

0 30 60
1" = 30' FEET

LEGEND

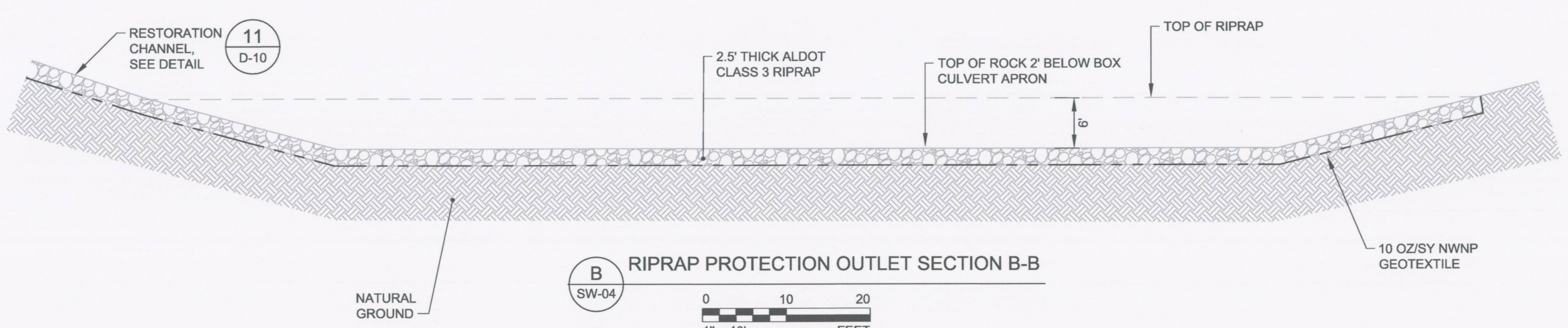
425	EXISTING CONTOURS
380	PROPOSED GRADING CONTOURS
425	CLOSURE BY REMOVAL CONTOURS
	RESTORATION CHANNEL

NOTES
1. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL, NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1988. COORDINATES CORRESPOND TO ALABAMA WEST COORDINATE SYSTEM, NORTH AMERICAN DATUM (NAD) 1983.
2. 10'X10' PRECAST CONCRETE BOX CULVERT, WING WALLS, AND APRON TO BE DESIGNED BY OTHERS, AND APPROVED BY CONSTRUCTION MANAGER. CONTRACTOR TO PROVIDE DRAWINGS SEALED BY PROFESSIONAL ENGINEER.
3. 5'X3' PRECAST CONCRETE BOX CULVERT, WING WALLS, AND APRON TO BE DESIGNED BY OTHERS, AND APPROVED BY CONSTRUCTION MANAGER. CONTRACTOR TO PROVIDE DRAWINGS SEALED BY PROFESSIONAL ENGINEER.



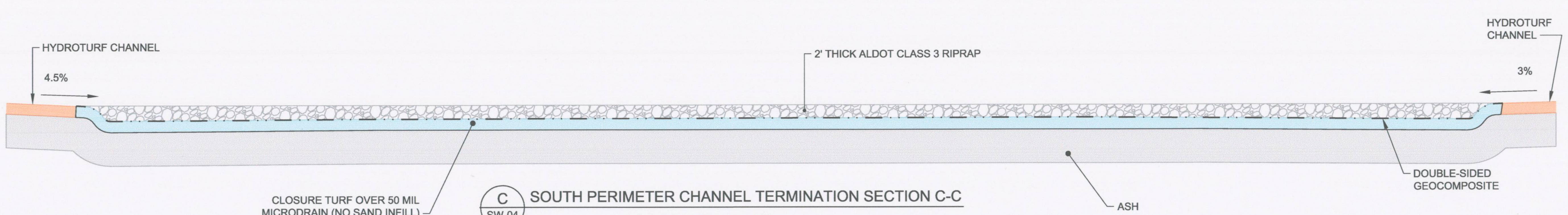
A SW-04 ROCK CHANNEL TO CONCRETE BOX CULVERT SECTION A-A

0 10 20
1" = 10' FEET



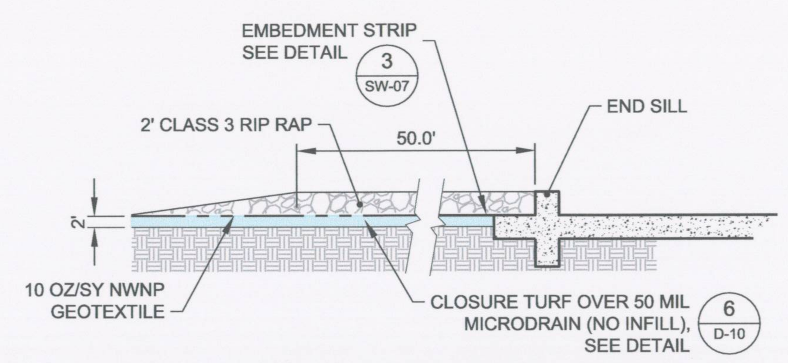
B SW-04 RIPRAP PROTECTION OUTLET SECTION B-B

0 10 20
1" = 10' FEET



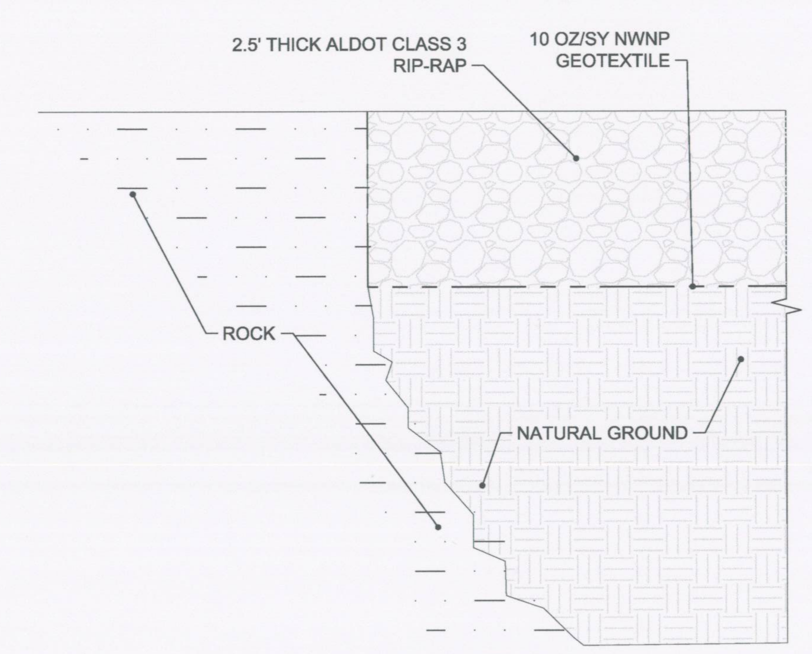
C SW-04 SOUTH PERIMETER CHANNEL TERMINATION SECTION C-C

0 10 20
1" = 10' FEET



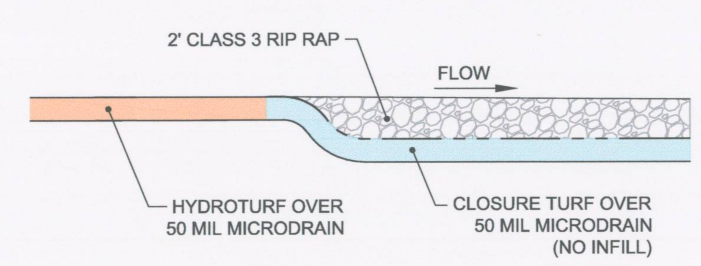
D SW-04 RIP RAP AT 5' X 3' HEADWALL SECTION D-D

0 5 10
1" = 5' FEET



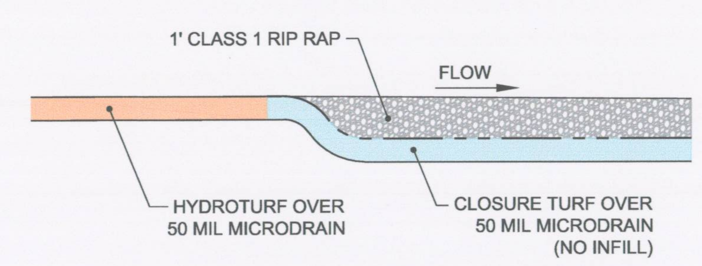
F SW-04 ROCK RIP-RAP JUNCTION DETAIL

0 1 2
1" = 1' FEET



E SW-04 CHANNEL TRANSITION TO RIP RAP

0 5 10
1" = 5' FEET



G SW-04 CHANNEL TRANSITION TO RIP RAP

0 5 10
1" = 5' FEET

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△	02/28/2019	100% DESIGN SUBMITTAL	MC	CCP	ARF	WRS

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GOLDER

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REVIEWED / APPROVED	WRS

PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING SW-04

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R. SULLIVAN
Feb 28, 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

NOTE (S)

1. PIPE PROFILE SHOWN MATCHED NORTH POND PRINCIPAL SPILLWAY, STONE DRAIN AND PERFORATED PIPE CONFIGURATION APPLICABLE TO BOTH NORTH AND SOUTH POND PRIMARY SPILLWAY.

NOTE (S)

1. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL, NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1988. COORDINATES CORRESPOND TO ALABAMA WEST COORDINATE SYSTEM, NORTH AMERICAN DATUM (NAD) 1983.

REFERENCE (S)

1. TOPOGRAPHY PROVIDED BY SOUTHERN COMPANY SERVICES, FEBRUARY 2018.

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A	02/28/2019	100% DESIGN SUBMITTAL	MC	CCP	ARF	WRS

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GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	MC
PREPARED	CCP
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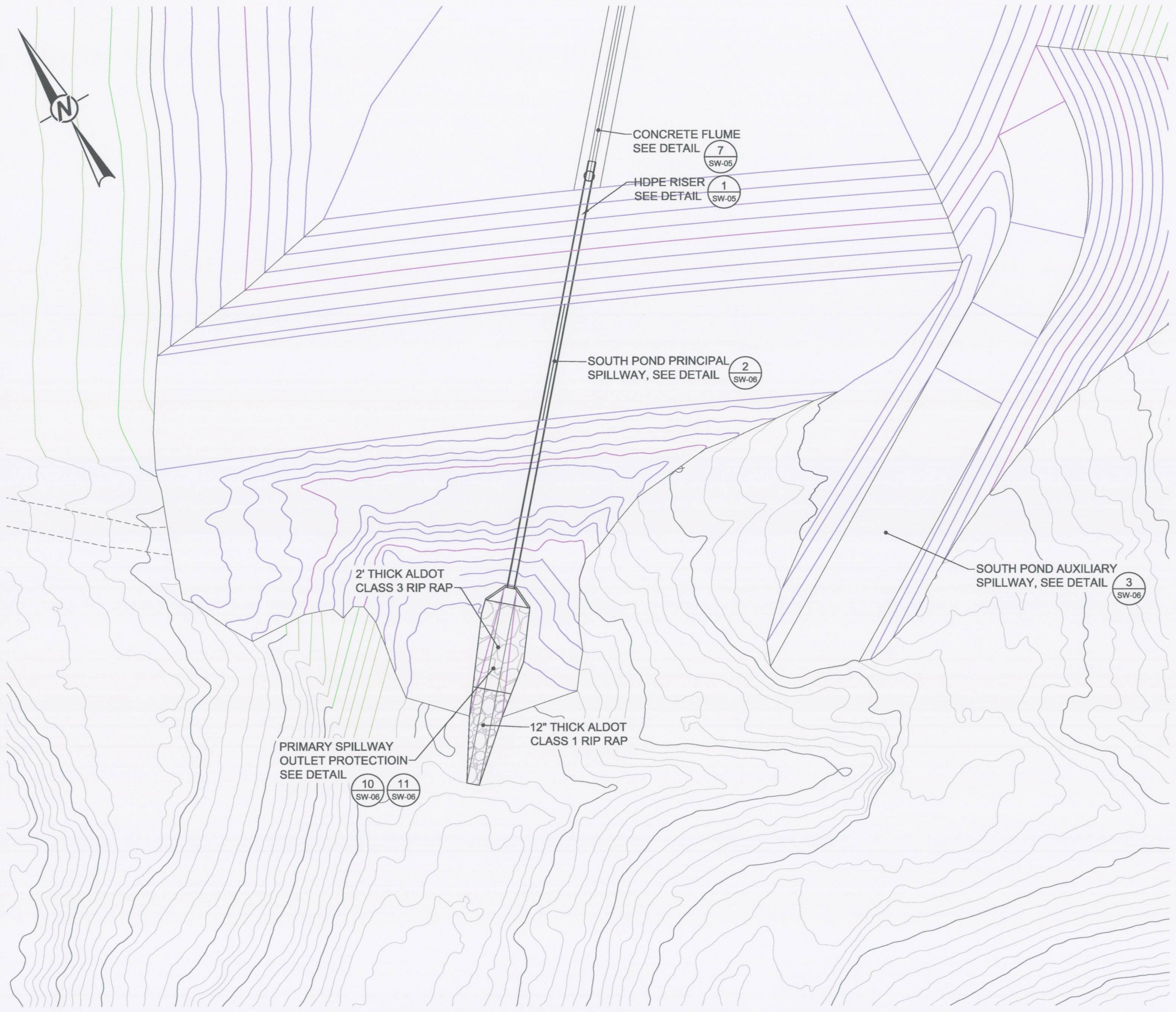
REVIEWED / APPROVED	WRS

PROJECT NO. 1792705 | SCS REF. MIL17010 | REV. 0 | DRAWING SW-05

ALABAMA REGISTERED No. 20260 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN
Feb 28 2019
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20260



1 SW-06 SOUTH POND SPILLWAY PLAN VIEW

0 30 60
1" = 30' FEET

LEGEND

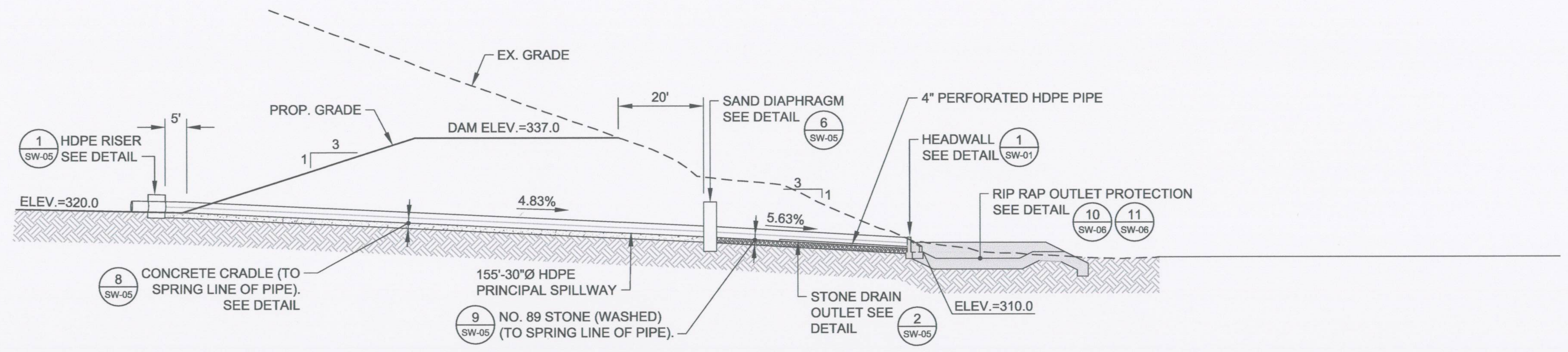
425	EXISTING CONTOURS
380	PROPOSED GRADING CONTOURS
425	CLOSURE BY REMOVAL CONTOURS

NOTE (S)

1. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL, NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1988. COORDINATES CORRESPOND TO ALABAMA WEST COORDINATE SYSTEM, NORTH AMERICAN DATUM (NAD) 1983.

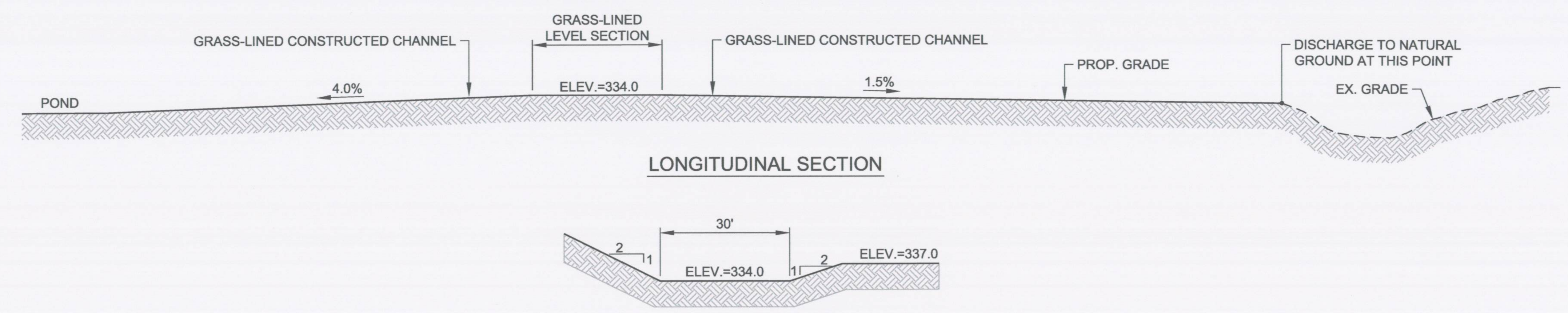
REFERENCE (S)

1. TOPOGRAPHY PROVIDED BY SOUTHERN COMPANY SERVICES, FEBRUARY 2018.



2 SW-06 SOUTH POND PRINCIPAL SPILLWAY PROFILE

0 20 40
1" = 20' FEET

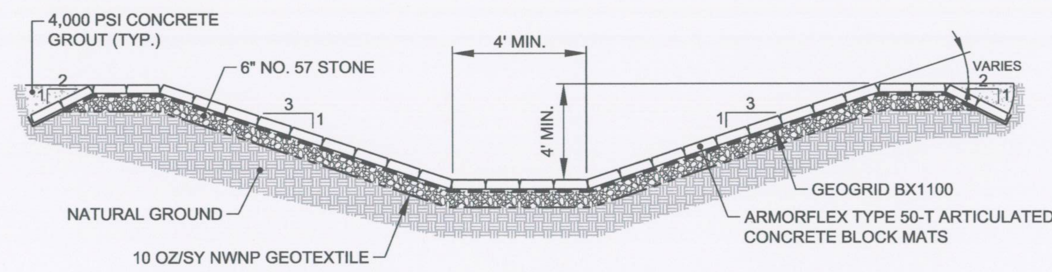


LONGITUDINAL SECTION

LATERAL SECTION

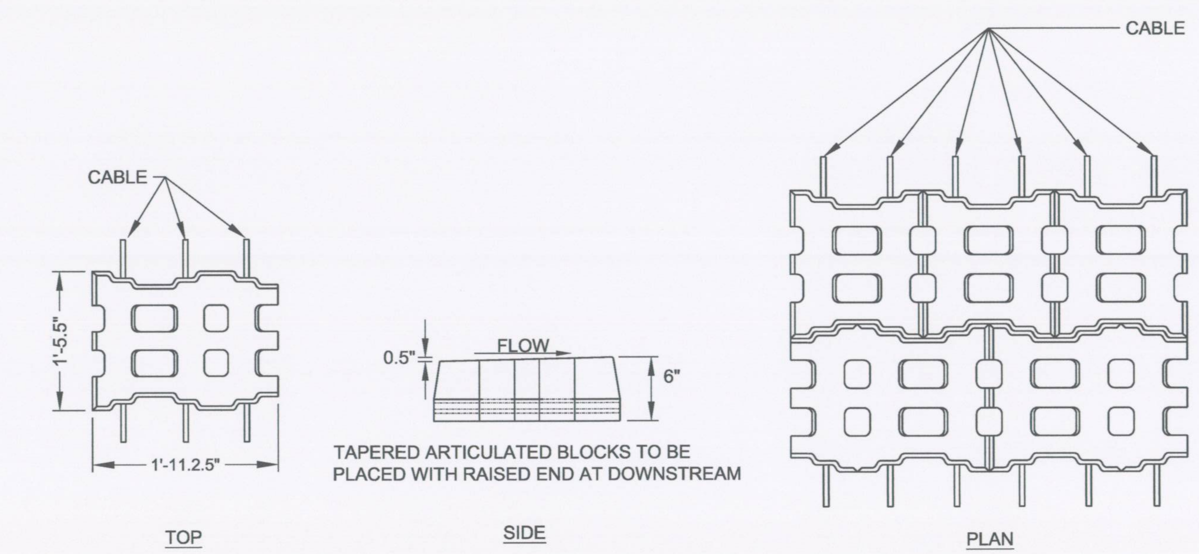
3 SW-06 SOUTH POND AUXILIARY SPILLWAY SECTIONS

0 20 40
1" = 20' FEET



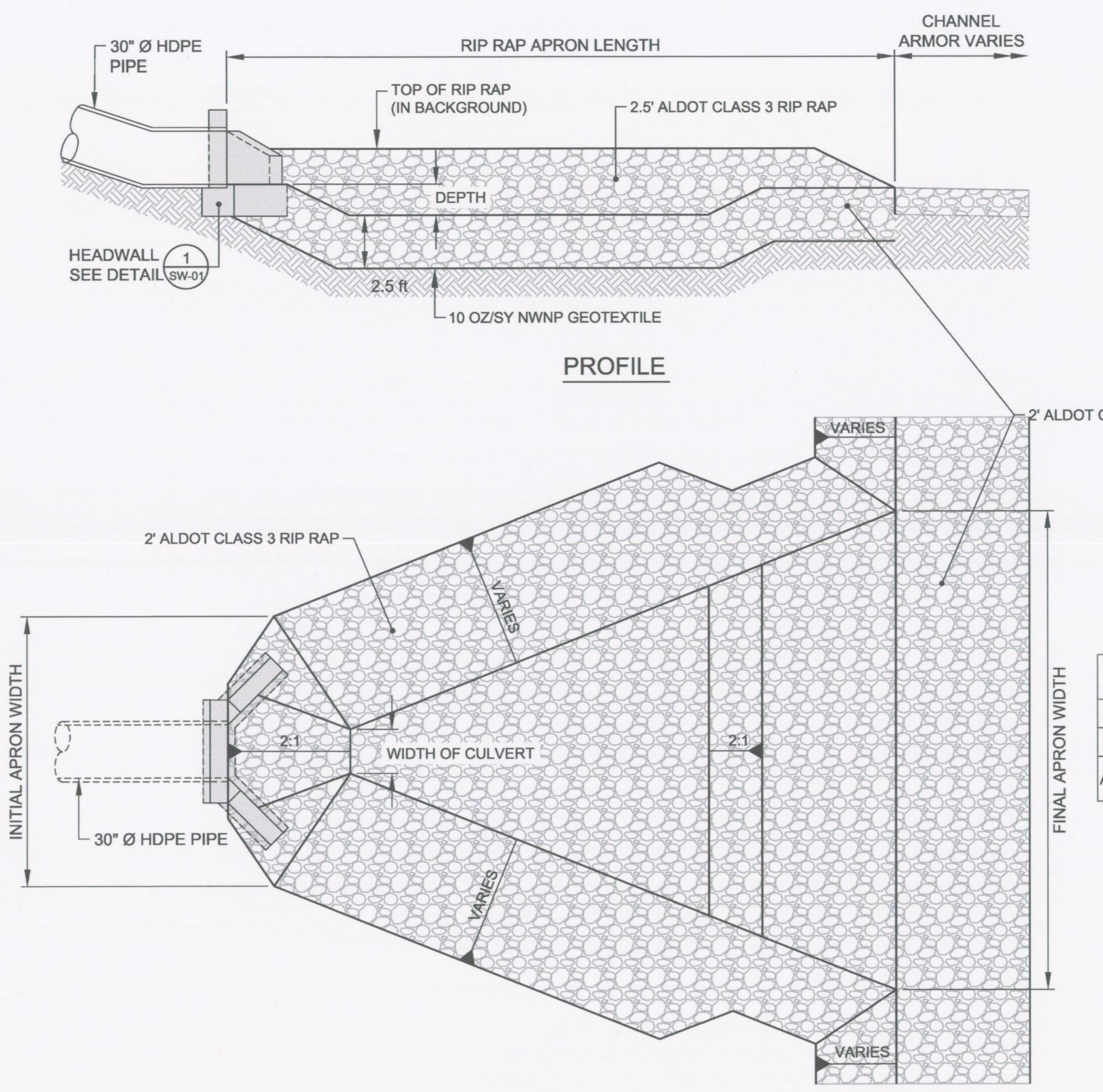
4 SW-06 ARTICULATED CONCRETE BLOCK CHANNEL SECTION

NTS



5 SW-06 ARMORFLEX 50-T BLOCK ORIENTATION

NTS



PLAN

10 SW-06 PRIMARY SPILLWAY RIP RAP OUTLET PROTECTION

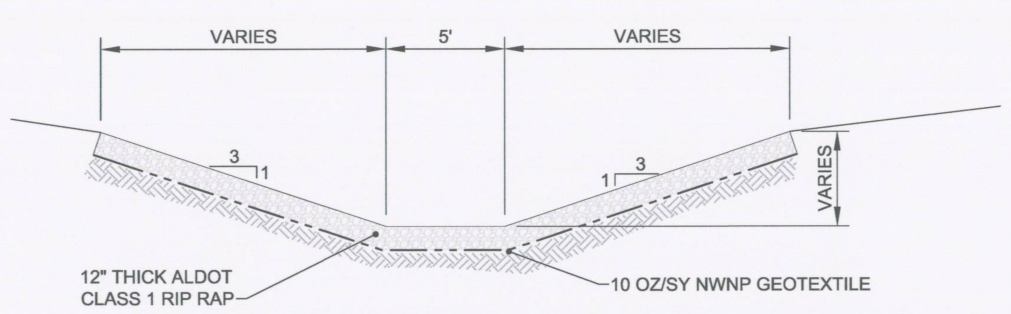
0 5 10
1" = 5' FEET

	CULVERT WIDTH	APRON WIDTH	POOL LENGTH	APRON LENGTH	DEPTH
AT SOUTH POND	2.5	□	15	5	1.5
AT NORTH POND	2.5	22	15	5	1.5
AT 10'x10' CULVERT	10	40	25	5	2

□ SEE DETAIL 11 SW-06

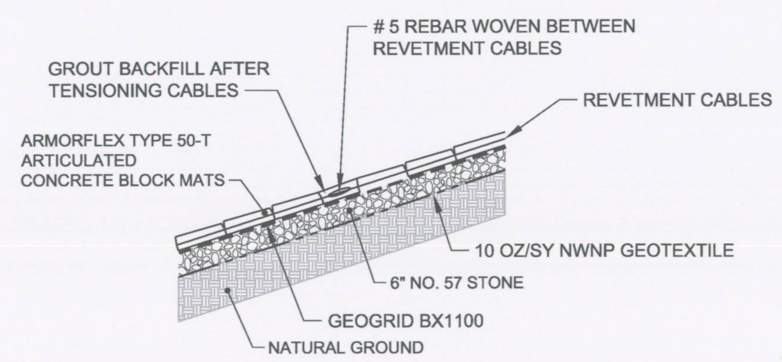
NOTE (S)

1. PLAN VIEW CORRESPONDS TO NORTH POND OUTLET ONLY. RIP RAP EXTENT SHALL BE SHAPED TO CHANNEL CROSS-SECTION AS SHOWN IN DETAIL 11 SW-06



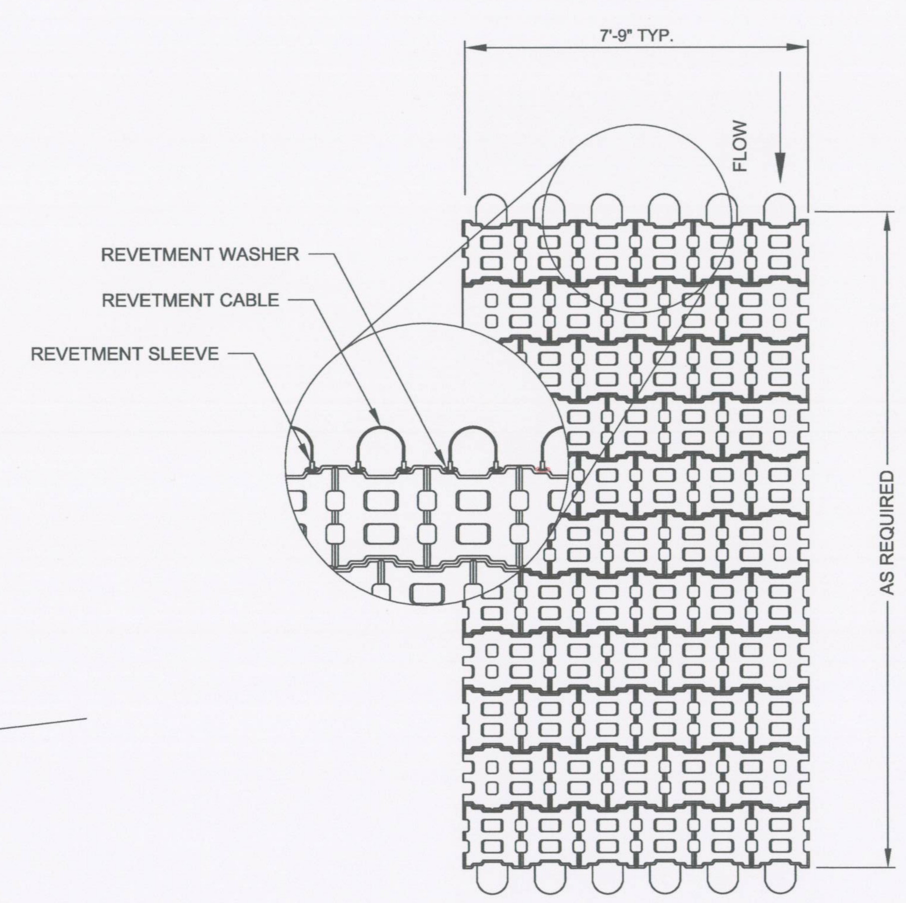
11 SW-06 SOUTH STORMWATER POND OUTLET CHANNEL DETAIL

0 5 10
1" = 5' FEET



7 SW-06 MAT JOINT DETAIL

NTS

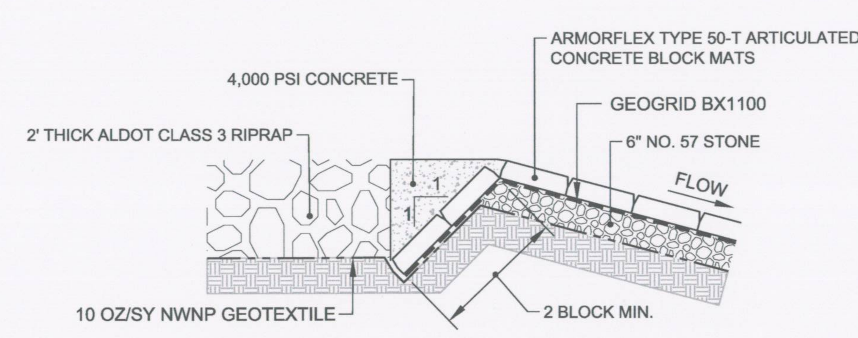


9 SW-06 ARMORFLEX 50-T BLOCK 1.5 MAT

NTS

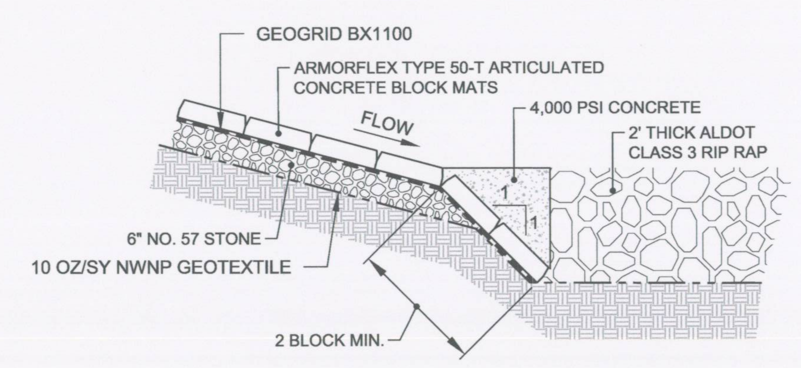
NOTE

ARTICULATING CONCRETE BLOCK SHALL BE INSTALLED ACCORDING TO ALL MANUFACTURE SPECIFICATIONS.



8 SW-06 RIP RAP TO ARTICULATED CONCRETE BLOCK TRANSITION

NTS



6 SW-06 ARTICULATED CONCRETE BLOCK TO RIP RAP TRANSITION

NTS

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SURFACE WATER MANAGEMENT DETAILS
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ALABAMA REGISTERED No. 20260 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN

Feb 28 2019

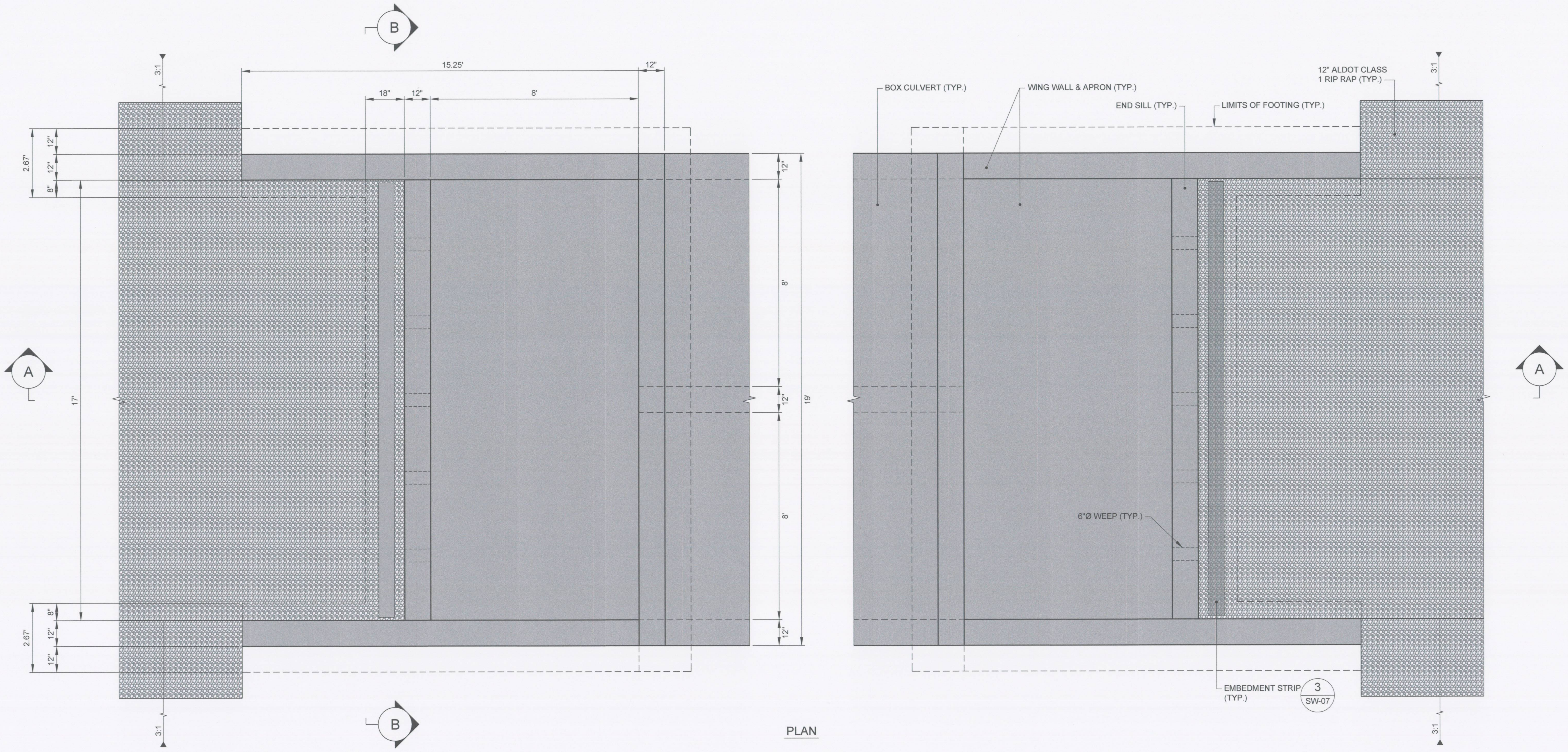
WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20260

CONSULTANT
GOLDER

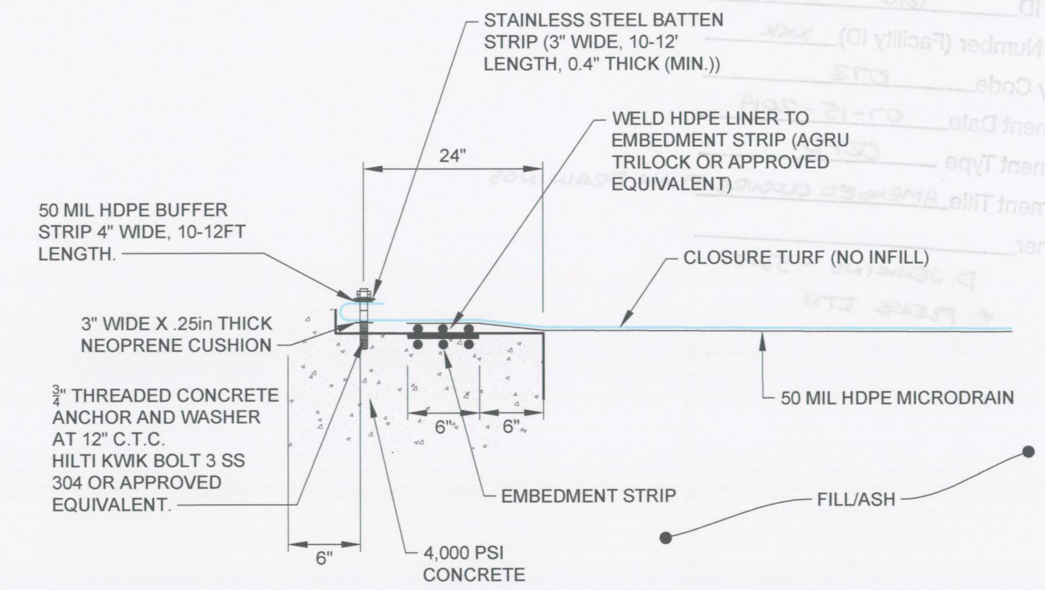
YYYY-MM-DD	2019/02/28
DESIGNED	MC
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO. 1792705   SCS REF. MIL17010   REV. 0   DRAWING SW-06

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ARCH D



PLAN



3 SW-07 EMBEDMENT STRIP DETAIL

NTS

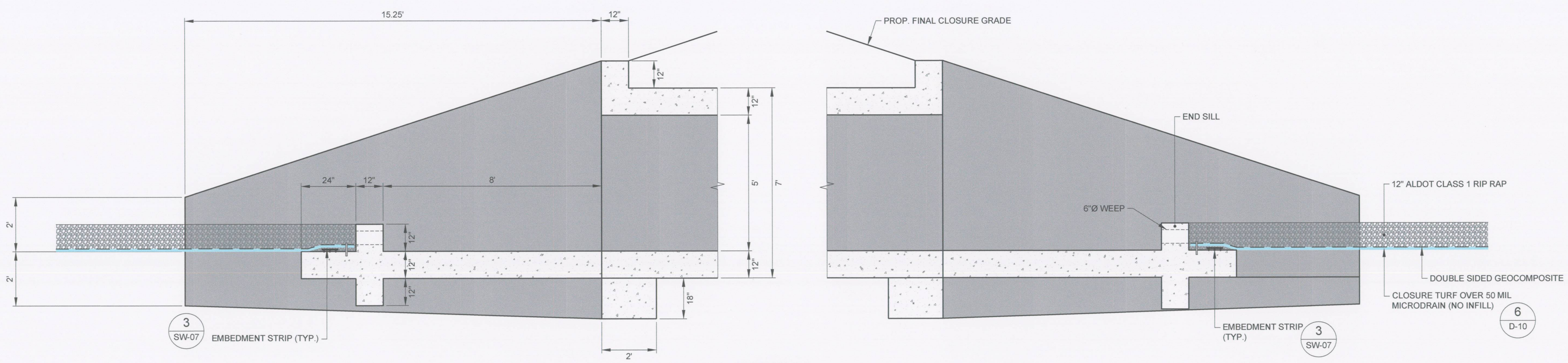
NOTES

1. DOUBLE 8' x 5' BOX CULVERT, WING WALLS AND APRON TO BE CONSTRUCTED WITH STRAIGHT ZERO DEGREE WING WALLS, END SILL AND 8 FOOT PRE-CAST APRON.

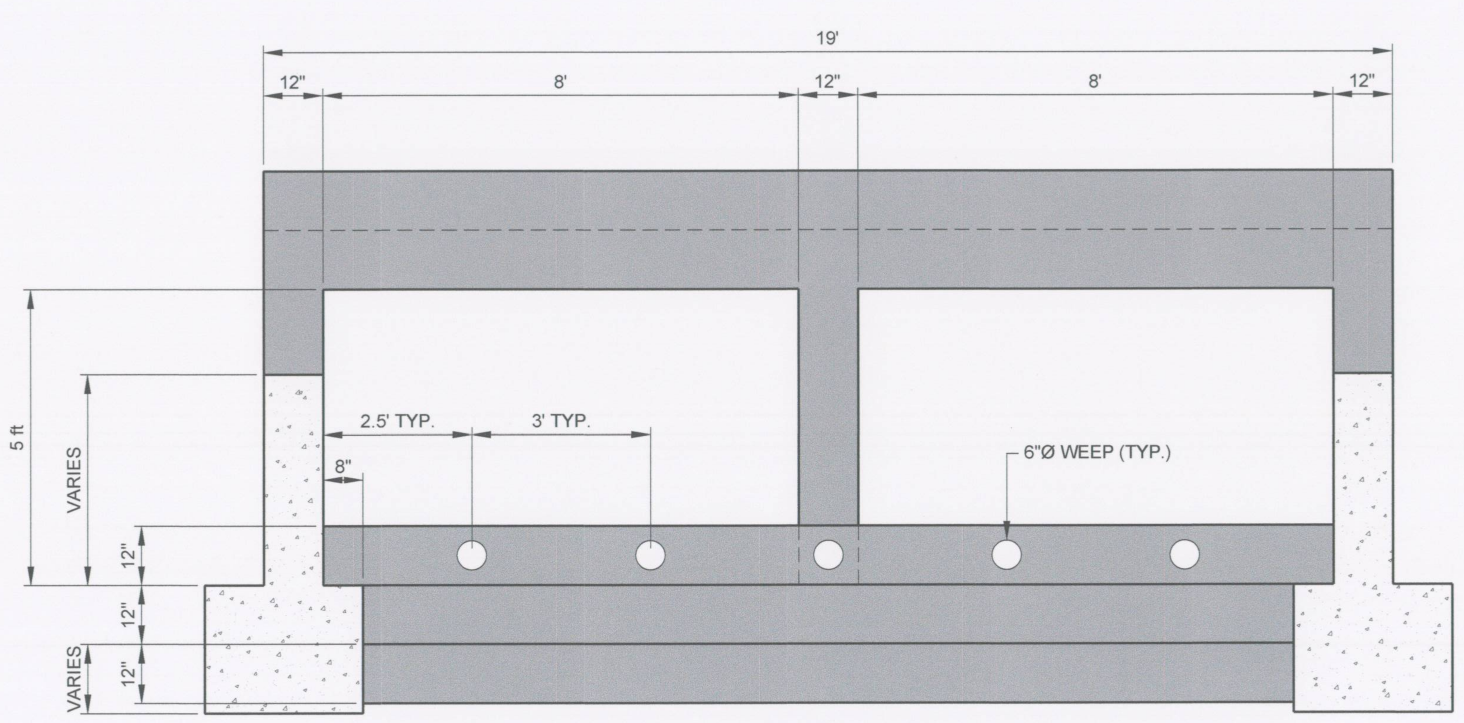
2. EMBEDMENT STRIPS FOR ANY PRE-CAST STRUCTURES SHALL BE PRE-INSTALLED AT THE TIME OF CASTING.

3. DOUBLE-SIDED GEOCOMPOSITE INCLUDES 200 MIL GEONET AND 8 OZ/SY NON-WOVEN GEOTEXTILE ON EACH SIDE.

4. DETAIL SHOWN FOR ILLUSTRATIVE PURPOSES. DOUBLE 8' x 5' AND SINGLE 5' x 3' BOX CULVERTS, WING WALL AND APRONS TO BE DESIGNED BY OTHERS, AND APPROVED BY CONSTRUCTION MANAGER. CONTRACTOR TO PROVIDE DRAWINGS SEALED BY A PROFESSIONAL ENGINEER.



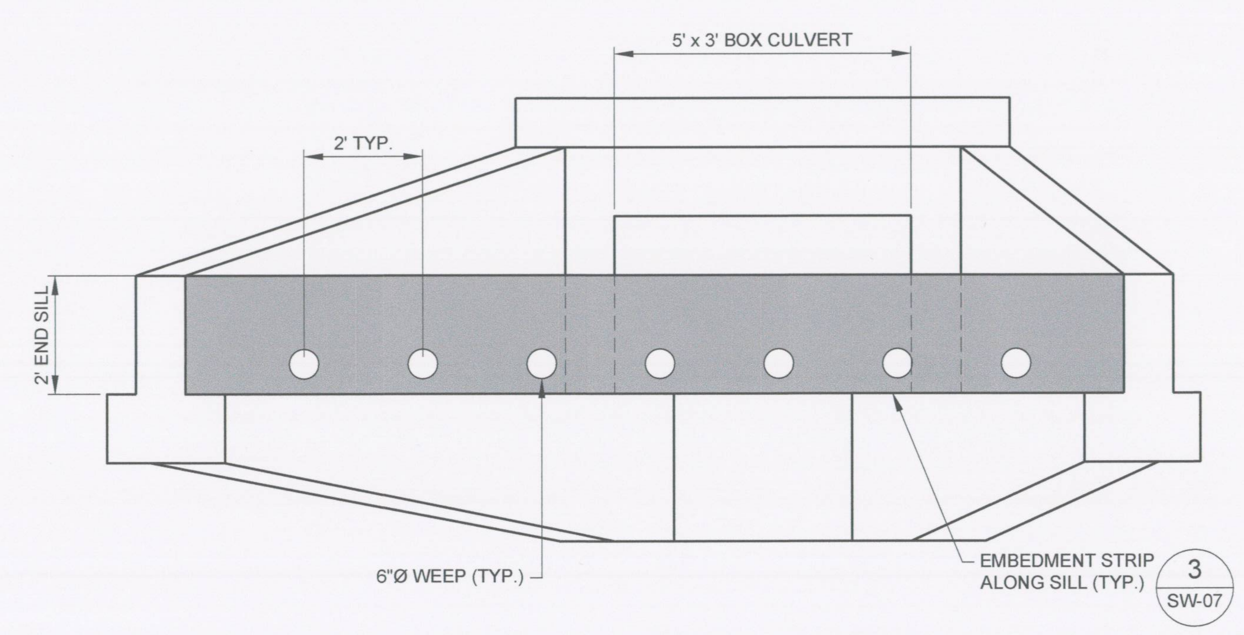
SECTION A-A



SECTION B-B

1 SW-07 8' x 5' DOUBLE BARREL CONCRETE BOX CULVERT

0 2 4 FEET 1" = 2'



2 SW-07 5' x 3' BOX CULVERT ELEVATION

0 2 4 FEET 1" = 2'

REV	DATE	REVISION DESCRIPTION	DES	PREP	CHK	RVW
A	2019/02/28	100% DESIGN SUBMITTAL	MC	CCP	ARF	WRS

CLIENT
SOUTHERN COMPANY SERVICES

Southern Company | Alabama Power

PROJECT
PLANT MILLER
ASH POND CLOSURE
DESIGN PLANS

TITLE
SURFACE WATER MANAGEMENT DETAILS
SHEET 7 OF 7

ALABAMA REGISTERED No. 20266 PROFESSIONAL ENGINEER WILLIAM R SULLIVAN

Feb 28, 2019

WILLIAM R. SULLIVAN
ALABAMA PROFESSIONAL ENGINEER
CERTIFICATE NUMBER 20266

CONSULTANT

GOLDER

YYYY-MM-DD	2019/02/28
DESIGNED	MC
PREPARED	CCP
CHECKED	ARF
REVIEWED / APPROVED	WRS

PROJECT NO.	SCS REF.	REV.	DRAWING
1792705	MIL17010	0	SW-07

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ARCH D