

ATTACHMENT JP-4
RUS ENVIRONMENTAL ASSESSMENT
(Continued from Application Part 1)



Photo 1. Representative view of intermittent stream within proposed limits of disturbance, 3 June 2014



Photo 2. Representative view of forested area within proposed limits of disturbance, 6 April 2016



Photo 3. Understory vegetation within central portion of proposed limits of disturbance, 9 May 2014



Photo 4. Mature forest within northern portion of proposed limits of disturbance, 9 May 2014



Photo 5. Recently logged area within southeast portion of limits of disturbance, 13 May 2014



Photo 6. Representative view of proposed borrow area to the west of existing landfill, 13 Dec 2012



Photo 7. Early successional black locust trees in northern portion of limits of disturbance, 23 Oct 2015



Photo 8. Suitable bat habitat located along edge of proposed borrow area, 3 June 2014

SPECIES CONSIDERED AND EVALUATED

Based upon the construction activities outlined above and the resulting disturbance to the existing environment, EKPC evaluated the potential of the project to affect federally-listed threatened or endangered species or critical habitats that are known to occur, or could potentially occur, within the project area. To assess these potential effects, EKPC reviewed available information for the proposed project area, acquired from the following sources:

- U.S. Fish and Wildlife Service (USFWS) – *Information for Planning and Conservation – IPaC* website (<https://ecos.fws.gov/ipac/>), Consultation Code: 04EK1000-2017-SLI-0075, accessed December 2, 2016
- USFWS – *Known Indiana bat habitat in Kentucky and within 20 Miles* maps (June 2016) (https://www.fws.gov/frankfort/indiana_bat_procedures.html)
- USFWS – *Known northern long-eared bat habitat in Kentucky and within 20 Miles* (January 2016) (https://www.fws.gov/frankfort/indiana_bat_procedures.html)
- USFWS – *Map of Quadrangles Containing Known Northern Long-eared Bat Hibernacula &/or Maternity Roost Trees* (Nov. 2016), (http://www.fws.gov/frankfort/indiana_bat_procedures.html)
- Kentucky State Nature Preserves Commission (KSNPC) – *Natural Heritage Program Database, Standard Occurrence Report* for KSNPC-monitored species within ten miles of project area, dated January 24, 2013

Information contained within these resources identifies 10 federally-endangered species and one federally-threatened species known to occur or having the potential to occur in the vicinity or the project area. These species are the Indiana bat (*Myotis sodalis*), gray bat (*M. grisescens*), northern long-eared bat (*M. septentrionalis*), clubshell (*Pleurobema clava*), fanshell mussel (*Cyprogenia stegaria*), orangefoot pimpleback (*Plethobasus cooperianus*), pink mucket (*Lampsilis abrupta*), ring pink (*Obovaria retusa*), rough pigtoe (*Pleurobema plenum*), sheepnose mussel (*Plethobasus cyphus*), and running buffalo clover (*Trifolium stoloniferum*).

Table 1. *Federally-Listed Species Identified in Vicinity of Proposed Spurlock Station Landfill Project Area*

Group	Species	Common name	Legal Status*	Occurrence**	Comments
Mammals	<i>Myotis sodalis</i>	Indiana bat	E	P	Potential to occur in project area
	<i>M. grisescens</i>	gray bat	E	P	Potential to occur in project area
	<i>M. septentrionalis</i>	northern long-eared bat	T	K	Known within 2 miles of project
Freshwater Mussels	<i>Pleurobema clava</i>	clubshell	E	K	Known from Ohio River Watershed
	<i>Cyprogenia stegaria</i>	fanshell	E	K	Known from Ohio River Watershed
	<i>Plethobasus cooperianus</i>	orangefoot pimpleback	E	K	Known from Ohio River Watershed
	<i>Lampsilis abrupta</i>	pink mucket	E	K	Known from Ohio River Watershed
	<i>Obovaria retusa</i>	ring pink	E	P	Potential in Ohio River Watershed
	<i>Pleurobema plenum</i>	rough pigtoe	E	P	Potential in Ohio River Watershed

Group	Species	Common name	Legal Status*	Occurrence**	Comments
	<i>Plethobasus cyphus</i>	sheepnose	E	K	Known from Ohio River Watershed
Plants	<i>Trifolium stoloniferum</i>	running buffalo clover	E	K	Known from within project area

NOTES:

* Key to notations: E = Endangered, T = Threatened, CH = Critical Habitat

**Key to notations: K = Known occurrence record within the vicinity, P = Potential for the species to occur in the project area based upon historic range, proximity to known occurrence records, biological, and physiographic characteristics.

DATA REVIEW & SURVEY METHODS

To determine the likelihood of these species being impacted by the proposed project, EKPC biologist reviewed existing occurrence data, topographic maps, aerial photographs, and conducted field surveys to determine the presence or probable absence of these species in the proposed project area. The Maysville West, Kentucky USGS 7.5 minute topographic quadrangle map and aerial photographs taken in 2016 were reviewed and utilized to create the enclosed project location maps and Indiana Bat Habitat Maps.

The property has been owned by EKPC for many years and numerous surveys have been conducted over this time. EKPC has conducted biological investigations and site visits for projects associated with the landfill on various occasions since 2008. The area in question has been surveyed during multiple site visits by EKPC biologists in May and June of 2014, as well as May, June, and October 2015. The latest field survey was conducted by permitted EKPC biologists Josh Young and Patrick Stein on April 6, 2016, which consisted of making visual observations of existing habitat and site-specific conditions while traversing the proposed project area.

EVALUATED SPECIES INFORMATION***Indiana bat***

A review of existing data provided by the USFWS *Known Indiana Bat Habitat in Kentucky and within 20 Miles* map (June 2016) revealed that there is no known Indiana bat summer habitat in Mason County. However, there are known occurrences for the Indiana bat approximately 16 miles to the west in Bracken County, Kentucky and Clermont County, Ohio. The review of the KSNPC database indicated that Anabat calls identified as Indiana bats have been recorded within one mile of the proposed project. These calls were recorded by EKPC Biologists on August 6 and 7, 2008 while conducting an acoustic survey for a previous expansion project at the site, and identified as Indiana bats by the USFWS provided "MoreNet" filter in accordance with the 2008 survey guidance. Based on the proximity to the known habitat, historic range, biological and physiographic characteristics, and potential acoustic identifications, the USFWS assumes this species has the potential to occur throughout this region of Kentucky. Therefore, any forested areas present in the project area may provide suitable summer roosting and/or foraging habitat for the Indiana bat. Additionally, any caves, rock shelters, or underground mines located in the proposed project area may provide potential Indiana bat winter hibernacula habitat. Any project-related impacts to this summer and/or winter habitat could adversely affect this species; therefore, EKPC survey efforts focused on the identification of suitable Indiana bat habitat.

Suitable summer roosting habitat for the Indiana bat has been defined by the USFWS as live and dead trees with a diameter at breast height (DBH) of five inches or greater that exhibit exfoliating bark, crevices, and/or cracks where Indiana bats could potentially roost. During the field surveys with the project area, approximately 97.13-acres of forested areas containing live shaggy-barked trees and/or dead/damaged trees meeting the definition of suitable Indiana bat summer habitat that could potentially be cleared during landfill construction activities were identified. Of this acreage, 76.1-acres are located within the identified limits of disturbance, 16.03-acres within the forested edges surrounding the borrow areas, and up to 5-acres of impact are anticipated in association with the stream mitigation activities. (see enclosed *Spurlock Landfill Area D Expansion Project - Indiana Bat Habitat Maps*). There were several areas of early successional trees/recently logged areas present in the project area that were not considered to be characteristic of suitable Indiana bat summer roosting habitat because they were predominantly comprised of young live black locust trees that were not large enough and/or lacked typical bat roost sites (refer to photos 5 & 7). In addition, 10-acres of suitable Indiana bat habitat located within the current project boundary were previously mitigated through CMOU dated March 12, 2013 for the Spurlock Landfill Boundary Expansion Project (FWS 2013-B-0282), see bat habitat maps for locations.

As a result of the project area containing tree species and individual trees that could provide suitable summer roosting habitat for the Indiana bat, EKPC is proposing to mitigate the removal of these trees by entering into a Conservation Memorandum of Understanding (CMOU) with your office and contributing to the Imperiled Bat Conservation Fund (IBCF). Details of this agreement are provided in the mitigation discussion on page 14.

Additionally, during all previous activities on the property and the current field survey, no caves, rock shelters, or abandoned underground mines that could provide potential winter habitat for the Indiana bat were discovered within the project area. A review of the USFWS *Known Indiana Bat Habitat in Kentucky and within 20 Miles map* (June 2016) revealed the closest known Indiana bat hibernacula is located over 40 miles southeast of the proposed project area at its closest point. Therefore, no significant adverse effects to the Indiana bat with regards to winter habitat impacts are anticipated.

Northern long-eared bat

On behalf of the USDA Rural Utilities Service (RUS), EKPC has completed the enclosed *Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form* as part of the USFWS streamlined consultation framework for the northern long-eared bat (NLEB). Through this analysis EKPC has determined that the proposed action is consistent with the NLEB final 4(d) rule and the USFWS's January 5, 2016, intra-Service Programmatic Biological Opinion (4(d) BO) on the final 4(d) rule for the NLEB. Per this framework, we believe that the activity is excepted from the incidental take prohibitions in the Final Rule, because the project does not (1) propose impacts to any known NLEB hibernacula; (2) propose the removal of any trees within 0.25 miles of a known NLEB hibernacula; or, (3) propose the removal of any known NLEB occupied maternity roost trees, or any tree removal activities within 150 feet of a known occupied maternity roost tree from June 1 through July 31.

Our findings are based on a review of data obtained from the USFWS *Known northern long-eared bat habitat in Kentucky and within 20 Miles map* (January 2016), USFWS *Map of Quadrangles Containing Known Northern Long-eared Bat Hibernacula &/or Maternity Roost Trees* (Nov. 2016), project area-specific Natural Heritage Program Database, Standard Occurrence Report (KSNPC, 2013), and the results of the previous and current field investigations of the project area, which all indicate there are no known NLEB hibernacula or maternity roost trees in the vicinity of the project area. As a result of our findings, EKPC recommends that the proposed project "May Affect – Not Likely to Adversely Affect" the NLEB, but would not cause prohibited incidental take of NLEBs as defined in the Final 4(d) Rule. We also believe this project adheres to the conservation measures in, and is consistent with those actions evaluated

in the January 5, 2016 programmatic intra-Service consultation for the Final 4(d) Rule and would not require separate consultation.

Gray bat

According to the data sources reviewed by EKPC, gray bats have not been documented but have the potential to occur within the proposed project area. Gray bats roost, breed, rear young, and hibernate in caves, rock shelters, and underground mines year round. Therefore, any of these features that are located in the proposed project area could provide potential winter/summer roosting habitat for the gray bat and impacts to this habitat could adversely affect this species. As previously discussed, none of these features were observed during the field surveys. Based on the absence of suitable winter/summer roosting habitat in the project area, no adverse effects to the gray bat are anticipated with respect to roosting habitat.

Gray bats typically forage for flying aquatic and terrestrial insects over streams, rivers, and lakes. As a result, any of these water features that occur within and in the immediate vicinity of the proposed project area could provide potential gray bat foraging habitat. During the topographic map review and field survey, the proposed project area was examined for streams, rivers, or lakes that could provide potential gray bat foraging habitat. Within the limits of disturbance there is an intermittent stream that will be impacted by the project; however, due to its small size, sporadic flow, and constricted corridor this stream is not considered to represent gray bat foraging habitat. Because the proposed borrow areas have been designed to avoid all impacts to jurisdictional waters and wetlands by placing a 50-foot buffer around these features where no project disturbances would occur there are no impacts to gray bat foraging habitat anticipated. Therefore, no significant adverse effects to gray bat foraging habitat are anticipated within the project area as a result of construction activities.

Although no significant direct effects to gray bat foraging habitat are anticipated from the proposed project, there is potential for indirect impacts to occur downstream given the proximity of the project area to Lawrence and Beasley Creeks. These are larger perennial streams that likely offer adequate foraging habitat for gray bats. To avoid and minimize potential indirect impacts to gray bat foraging habitat associated with water quality degradation from the project, EKPC will prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) that outlines how and where Best Management Practices (BMPs) will be used to prevent or reduce the discharge of pollutants into Waters of the Commonwealth. The goal of this plan is to implement appropriate and adequate erosion prevention measures, sediment control measures, and other site management practices necessary to manage stormwater runoff during the construction period. These practices are aimed primarily at controlling erosion and sediment transport, but also include controls such as good housekeeping practices aimed at other pollutants such as construction chemicals and solid waste. The plan describes the site management practices that will be utilized in order to effectively minimize such discharges for storm events up to and including a 2-year, 24-hour event. Therefore, impacts to water quality are not anticipated from the proposed project and the proposal is not likely to adversely affect gray bat foraging habitat.

Freshwater Mussels

None of the seven federally-listed freshwater mussel species known or having the potential to occur in Mason County (refer to Table 1) have been recorded in the proposed project area. Occurrence data obtained from KSNPC and USFWS indicates two of these species – fanshell (*C. stegaria*) and sheepnose (*P. cyphus*) – are known to have occurred in the Ohio River just upstream from Spurlock Station. Although detailed location data was not available for the remaining five species of endangered mussels identified through the data review, the Ohio River has been shown to offer suitable mussel habitat, and it can therefore be assumed these species may also be present in the vicinity of the proposed project. Therefore, during the topographic map review and field survey, the proposed project area was examined

for streams or rivers that could provide potentially suitable habitat for endangered mussel species. This examination revealed that all of the streams to be possibly impacted by the proposal are small- to medium-sized intermittent and ephemeral streams, which do not provide potential mussel habitat. Therefore, no direct effects to the seven federally-listed freshwater mussel species are anticipated from the proposed construction activities.

Although no freshwater mussels will be directly affected by the proposed project, suitable mussel habitat is ultimately located downstream of the project area in the Ohio River. As previously discussed, to avoid and minimize indirect effects associated with potential water quality degradation from the project, EKPC will prepare and implement a SWPPP that outlines how and where BMPs will be used to prevent or reduce the discharge of pollutants into waters of the Commonwealth during the construction period. Therefore, adverse impacts to water quality are not anticipated, and the proposed project is not likely to adversely affect the identified freshwater mussels.

Plants

Existing occurrence data from the USFWS IPaC database indicates that running buffalo clover has the potential to occur in Mason County. Therefore, EKPC assumed there was potential for this plant species to be present if suitable habitat was identified in the project area. Multiple field investigation over several years were conducted during optimal search months in May and June of 2014, May and June 2015, and April 2016.

The surveys consisted of walking the project area and making visual observations within areas that typically provide suitable habitat for running buffalo clover (i.e., stream banks, bars and terraces, footpaths, dirt roads, and grazed bottomlands). Special attention was given to potential habitat within the identified limits of disturbance and borrow areas, and no plants of this species were found. Although soil and woodland types suitable for running buffalo clover do occur within these areas on toe slopes and lowland terraces, the appropriate disturbance regime is not well developed. There have been no cattle or other livestock on the majority of the site for at least 30 years, and the ground vegetation has become relatively thick within the successional woods and thickets. There is no regular system of dirt roads or trails through the woods, which could provide suitable habitat for the species. The deer population is relatively dense, and there are numerous small deer trails, but these are not generally concentrated enough to form much suitable habitat for running buffalo clover. After multiple efforts to explore the potential habitat for running buffalo clover within the identified limits of disturbance and borrow areas, none was found. Therefore, no adverse effects to running buffalo clover are anticipated from landfill development.

While no running buffalo clover was identified within the proposed landfill or borrow areas, two populations of this federally-listed plant species containing approximately 20 – 25 plants each were identified within the proposed stream mitigation area on May 8, 2015. These newly identified populations are located in the uppermost portions of the Beasley Creek watershed, approximately 900 feet west of South Ripley Road and 1500 feet north of KY 576, see enclosed *Running Buffalo Clover Map*. The two populations are located approximately 50 feet apart on either side of the intermittent Beasley Creek stream channel at the junction of an unnamed, east flowing ephemeral stream. Within this portion of the proposed stream



mitigation area, the adjacent property owner leases the property from EKPC for cattle grazing, which maintains the appropriate disturbance regime required by the species. Approximately 350 feet to the north (downstream) of the identified clover populations there is a fence that prevents the cattle from grazing within the remainder of the stream mitigation area. Without grazing in this area the vegetation has become overgrown and is largely dominated by invasive species (e.g. garlic mustard [*Alliaria petiolata*] and bush honeysuckle) that often form a dense ground cover and eliminate the semi-open habitat required by running buffalo clover. Thorough surveys within this un-grazed portion of the stream mitigation area (north of the cattle fence) failed to identify any additional running buffalo clover populations. Representative photos depicting the habitat difference on either side of the cattle fence are included below.



Un-grazed portion of proposed stream mitigation area



Location of RBC within grazed area of stream mitigation area

During construction activities associated with the proposed stream mitigation project within the Beasley Creek watershed, care will be taken to avoid any direct effects to the identified running buffalo clover populations. Prior to any work commencing, EKPC Biologists will delineate the boundaries of the current running buffalo clover populations and these areas will be clearly marked with orange construction type fencing to ensure no construction activities would occur within these areas. Because the populations will be clearly marked and avoided during construction no direct effects to the running buffalo clover populations are anticipated.

Precautions will also be taken to avoid any indirect effects to the identified running buffalo clover populations. Tree clearing will be minimized within the vicinity of the clover so as not to affect the filtered light conditions currently occurring at the site. Secondly, in order to stabilize the stream banks that have been heavily impacted by the presence of cattle throughout the southern portion of the mitigation area, the proposed mitigation plan would require for the removal of the cattle. However, the cattle grazing within this area are largely responsible for maintaining the appropriate disturbance regime required by the running buffalo clover and there is potential that removal of the cattle would eventually affect the clover populations. Therefore, the final mitigation plan will include stream design and structures that would routinely create overbanking and scouring of the running buffalo clover sites and provide the necessary disturbance required to maintain the species. See enclosed conceptual design drawings prepared by Redwing Ecological Services, Inc. for details of the proposed stream rehabilitation within the running buffalo clover maintenance area. The plans call for redirecting the Intermittent Stream 2 (Beasley Creek) and Ephemeral Stream 5 channels and the installation of structures within these streams that will create overbanking and scouring when the water level reaches $\frac{3}{4}$ bankfull elevation. For

these reasons, no significant indirect effects are anticipated to the known running buffalo clover sites and there is the potential that the stream mitigation project as a whole may increase the amount of suitable habitat located downstream of the cattle fence by removing exotic vegetation and returning the stream flow to more natural conditions.

Federally-Protected Bird Species

In addition to federally-listed species or critical habitats that could be affected by the proposed project, EKPC evaluated the potential for the proposed project to impact federally-protected bird species with respect to the *Migratory Bird Treaty Act* and the *Bald and Golden Eagle Protection Act*. Birds are highly mobile and would take flight when disturbed; thus, direct effects from construction of the landfill are not anticipated. Additionally, the proposed landfill expansion project would not present new barriers or hindrance to movement, but the project would have the potential to impact habitat utilized by federally-protected bird species. EKPC has agreed to limit tree clearing to between October 15 and March 31 as part of the bat CMOU, which would also act as a conservation measure to minimize impacts to bird nests with eggs or juveniles, since nesting in central Kentucky is typically limited to the late spring and early summer months. Additionally, the proposed project area is not located within a major flyway or principal route for migratory birds, and no areas of significant concern were identified during the field survey. Likewise, based on information provided in the IPaC Report, there are no known eagle occurrences within the vicinity of the proposal, and there were no eagles or eagle nests observed within the project area during the field investigations. Therefore, construction of the proposed project is not expected to cause significant adverse impacts to federally-protected migratory birds or eagles.

FOREST-DWELLING BAT CMOU COMPENSATORY MITIGATION CALCULATIONS

As a result of the proposed project area containing tree species and individual trees that could provide suitable roosting habitat for forest-dwelling bat species, EKPC is proposing to mitigate the removal of these trees by entering into a CMOU with your office and contributing to the IBCF. The 97.13 acres of forested habitat identified as suitable roosting habitat that would potentially be impacted by the proposal are located within the proposed landfill limits of disturbance and along the edges of the proposed borrow areas, as depicted on the enclosed *Spurlock Station Landfill Area D Expansion Indiana Bat Habitat Maps*. Due to flexibility in the project schedule, tree clearing activities will be limited to between October 15 and March 31 when the potential Indiana bat habitat would be considered unoccupied. Therefore, the compensatory mitigation is calculated as follows:

Table 2. *Spurlock Station Landfill Area D Expansion Project Forest-Dwelling Bat CMOU Compensatory Mitigation Calculation*

Forest-Dwelling Bat Habitat Type	Impact (acres)	Mitigation Ratio	Current Rate/Acre	IBCF Contribution Amount
Potential (October 15-March 31)	97.13	0.5	\$3,350	\$162,692.75
TOTAL				\$162,692.75

EKPC asks that your office confirm that the contribution amount is correct and prepare the CMOU. After receiving and signing the CMOU, EKPC will contribute the confirmed amount to the IBCF. Please send the prepared CMOU to the attention of signatory:

Mr. Jerry Purvis
 Director of Environmental Affairs
 East Kentucky Power Cooperative
 4775 Lexington Road
 Winchester, KY 40392-0707

As a result of 97.13 acres of lost suitable forest-dwelling bat habitat being mitigated through a contribution to the IBCF, the proposed landfill project is not likely to adversely affect the federally-listed forest-dwelling bat species identified.

RECOMMENDATION FOR DETERMINATION OF EFFECT FINDINGS

Based on existing occurrence data, results of the field survey conducted in the proposed project area, and mitigation undertaken by EKPC for suitable bat habitat, it is not anticipated the proposed project would adversely affect the federally-listed species that occur, or have the potential to occur, within the project area, as outlined below.

Table 3. *Spurlock Station Landfill Area D Expansion Project Recommendations for Determination of Effect Findings*

Common Name	Effects Determination
Indiana bat	Not likely to adversely affect
Northern long-eared bat	Activity Excepted from Take Prohibitions
Gray bat	Not likely to adversely affect
Clubshell	Not likely to adversely affect
Sheepnose	Not likely to adversely affect
Ring pink	Not likely to adversely affect
Pink mucket	Not likely to adversely affect
Orangefoot pimpleback	Not likely to adversely affect
Fanshell	Not likely to adversely affect
Rough pigtoe	Not likely to adversely affect
Running buffalo clover	Not likely to adversely affect
Federally-protected migratory birds and eagles	Not likely to adversely affect

EKPC asks that your office review these recommendations for determination of effect and provide your comments on this project as soon as possible. Please inform EKPC if any other threatened or endangered species or critical habitats should be addressed in regards to the proposed project. If you need any further information or wish to discuss this project, please feel free to contact me at (859) 745-9799 or by email at josh.young@ekpc.coop.

Thank you very much for your assistance in this matter.

Sincerely,



Josh Young
Supervisor, Natural Resources
And Environmental Communications


Enclosures







cc: Jerry Purvis, Joe VonDerHaar, Craig Johnson, Mark Brewer, Patrick Bischoff (EKPC)

ENCLOSURE

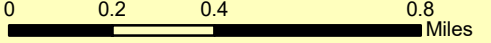
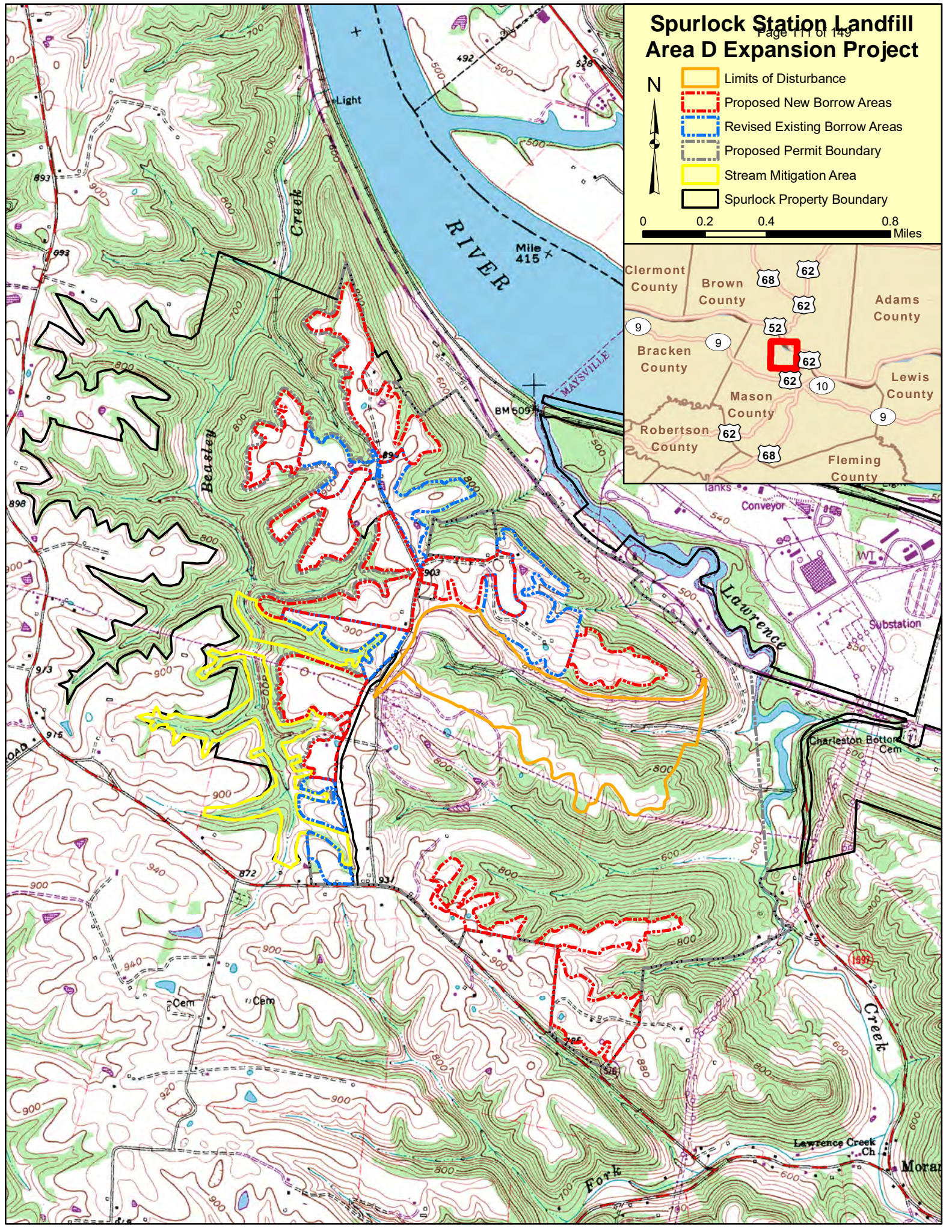
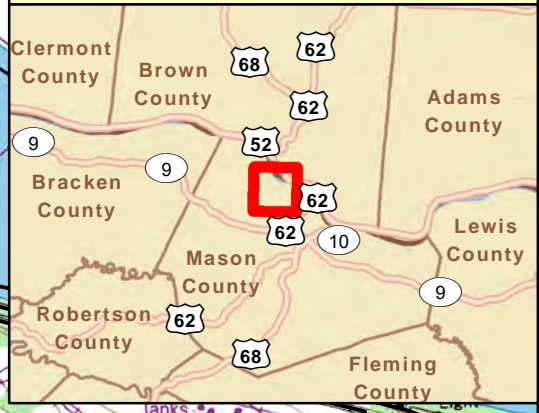
Spurlock Station Landfill Area D Expansion Project

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





-  Limits of Disturbance
-  Proposed New Borrow Areas
-  Revised Existing Borrow Areas
-  Proposed Permit Boundary
-  Stream Mitigation Area
-  Spurlock Property Boundary

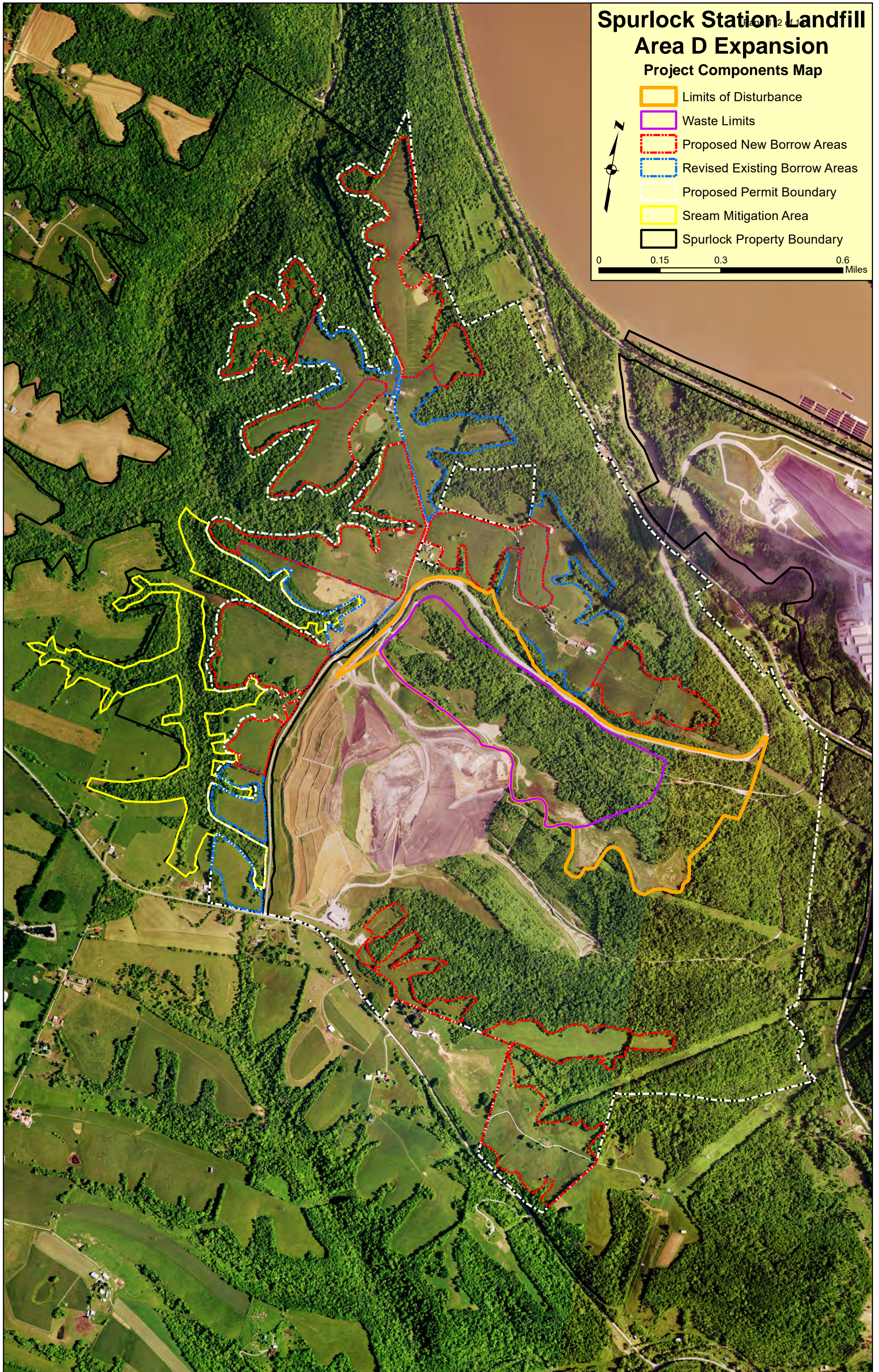
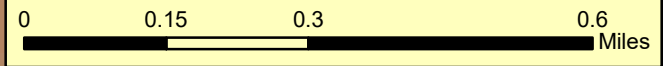
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Spurlock Station Landfill Area D Expansion

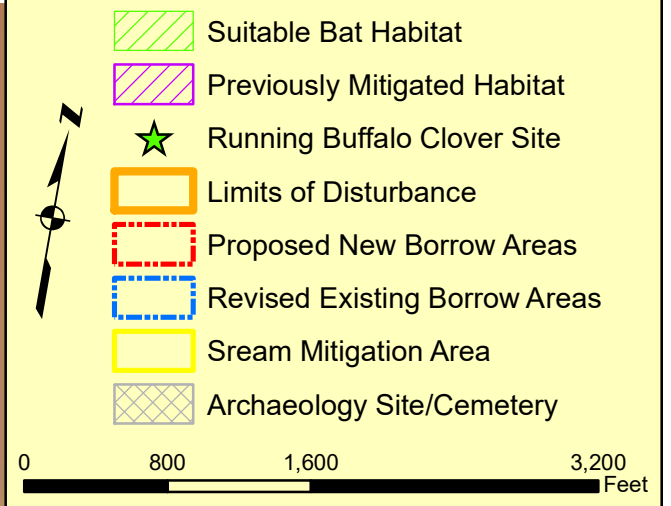
Project Components Map

-  Limits of Disturbance
-  Waste Limits
-  Proposed New Borrow Areas
-  Revised Existing Borrow Areas
-  Proposed Permit Boundary
-  Stream Mitigation Area
-  Spurlock Property Boundary



Spurlock Station Landfill Area D Expansion

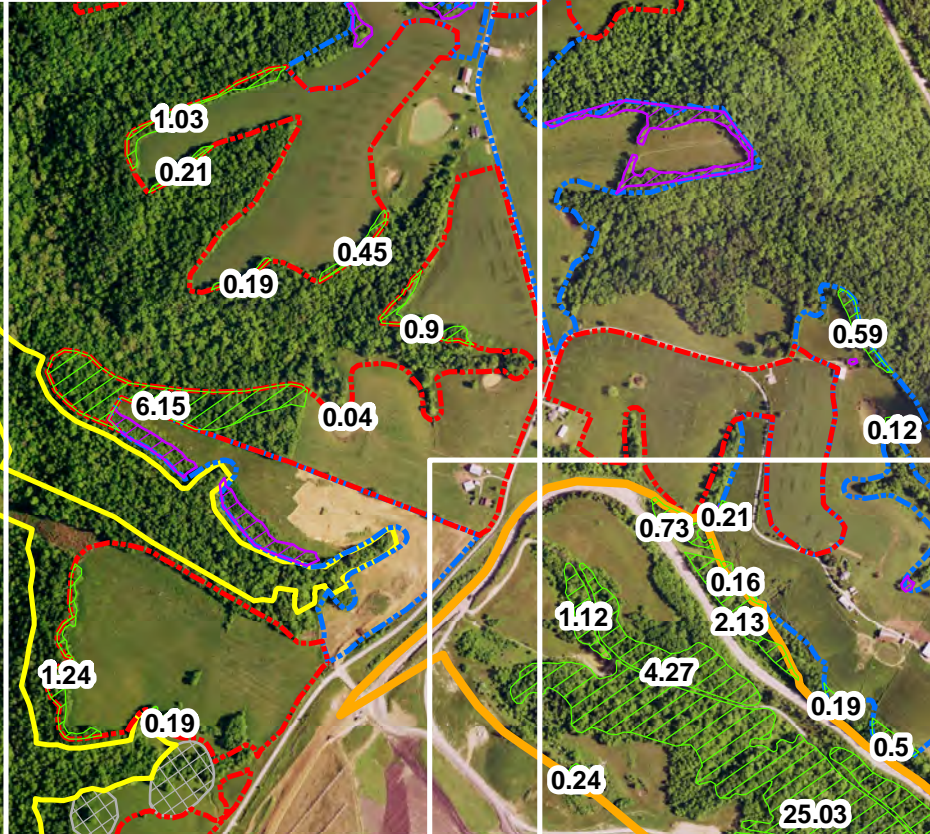
Indiana Bat Habitat Maps Index



Map 1



Map 2











Map 3



Spurlock Station Landfill

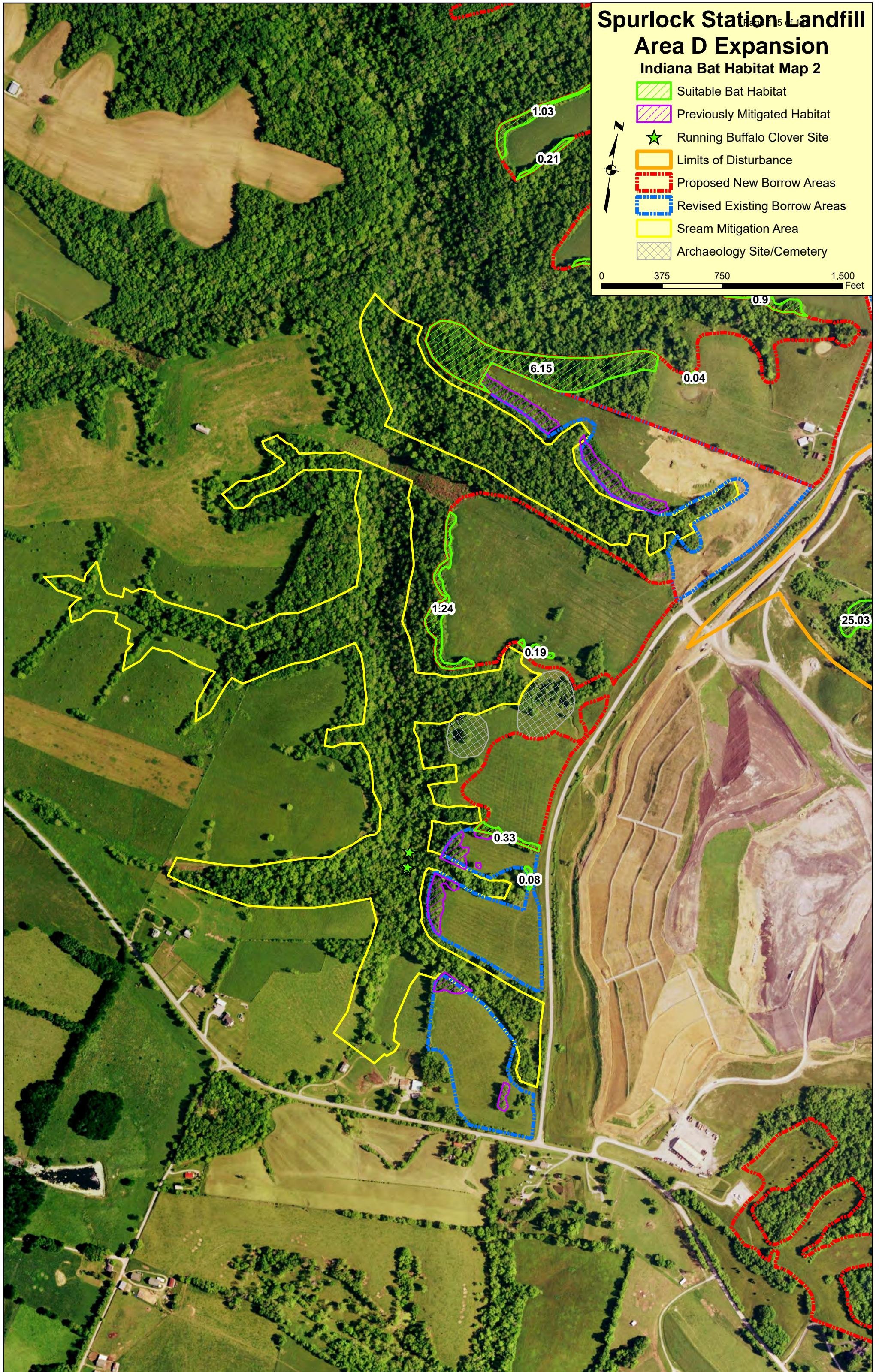
Area D Expansion

Indiana Bat Habitat Map 2

-  Suitable Bat Habitat
-  Previously Mitigated Habitat
-  Running Buffalo Clover Site
-  Limits of Disturbance
-  Proposed New Borrow Areas
-  Revised Existing Borrow Areas
-  Stream Mitigation Area
-  Archaeology Site/Cemetery











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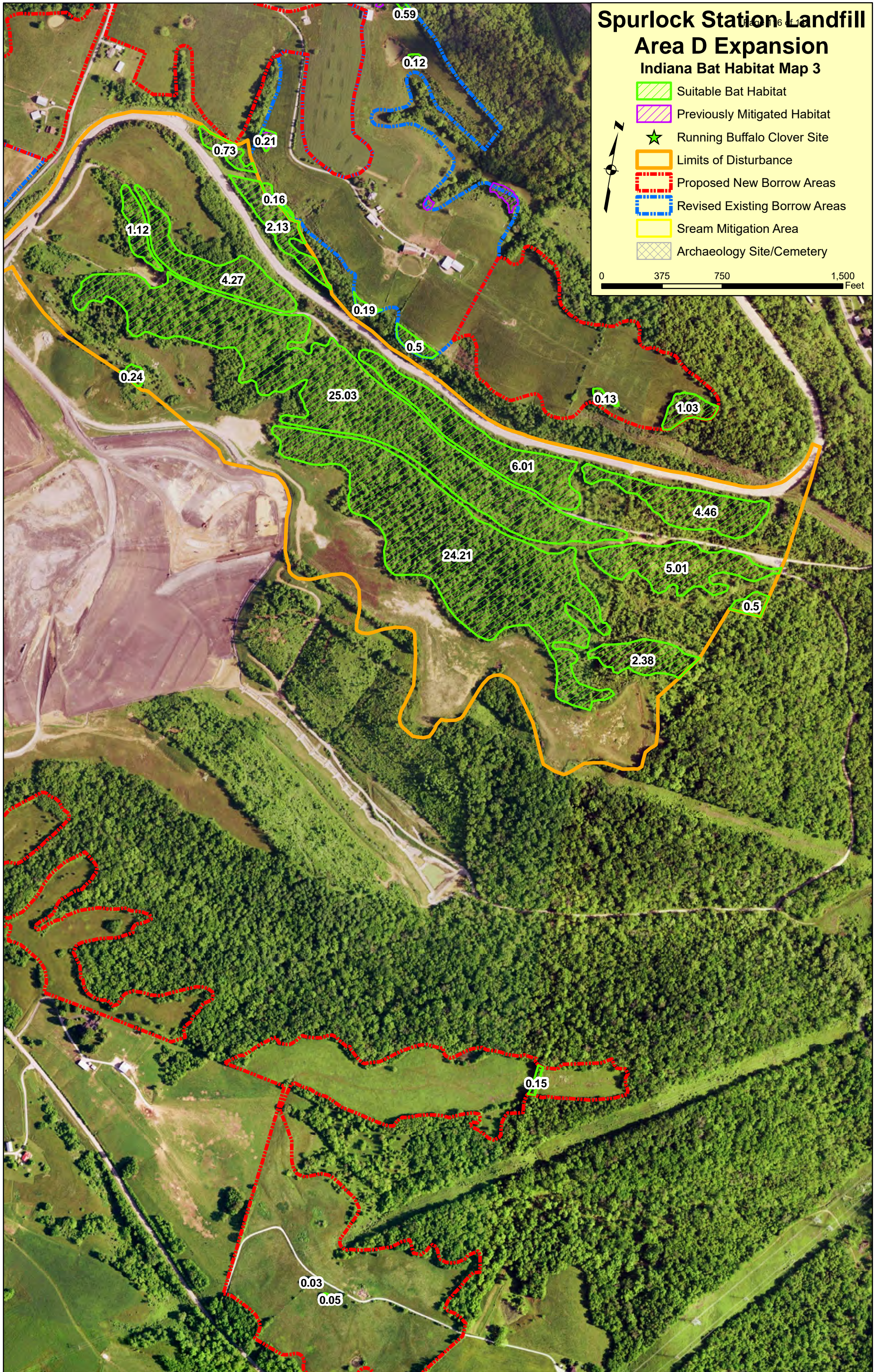
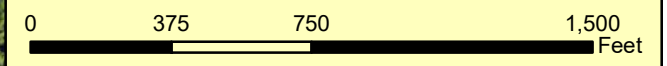


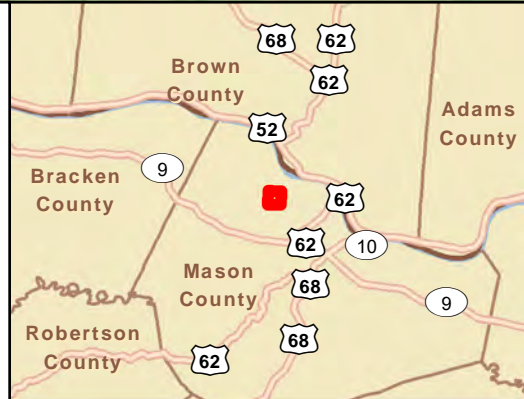
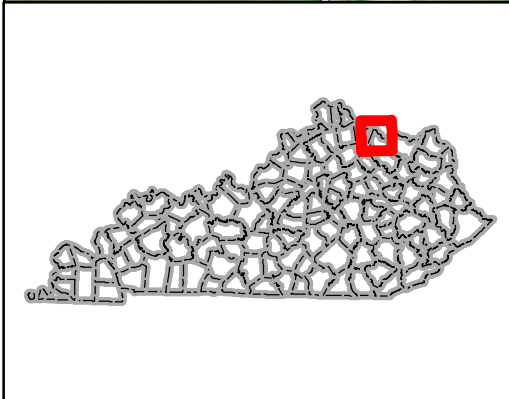
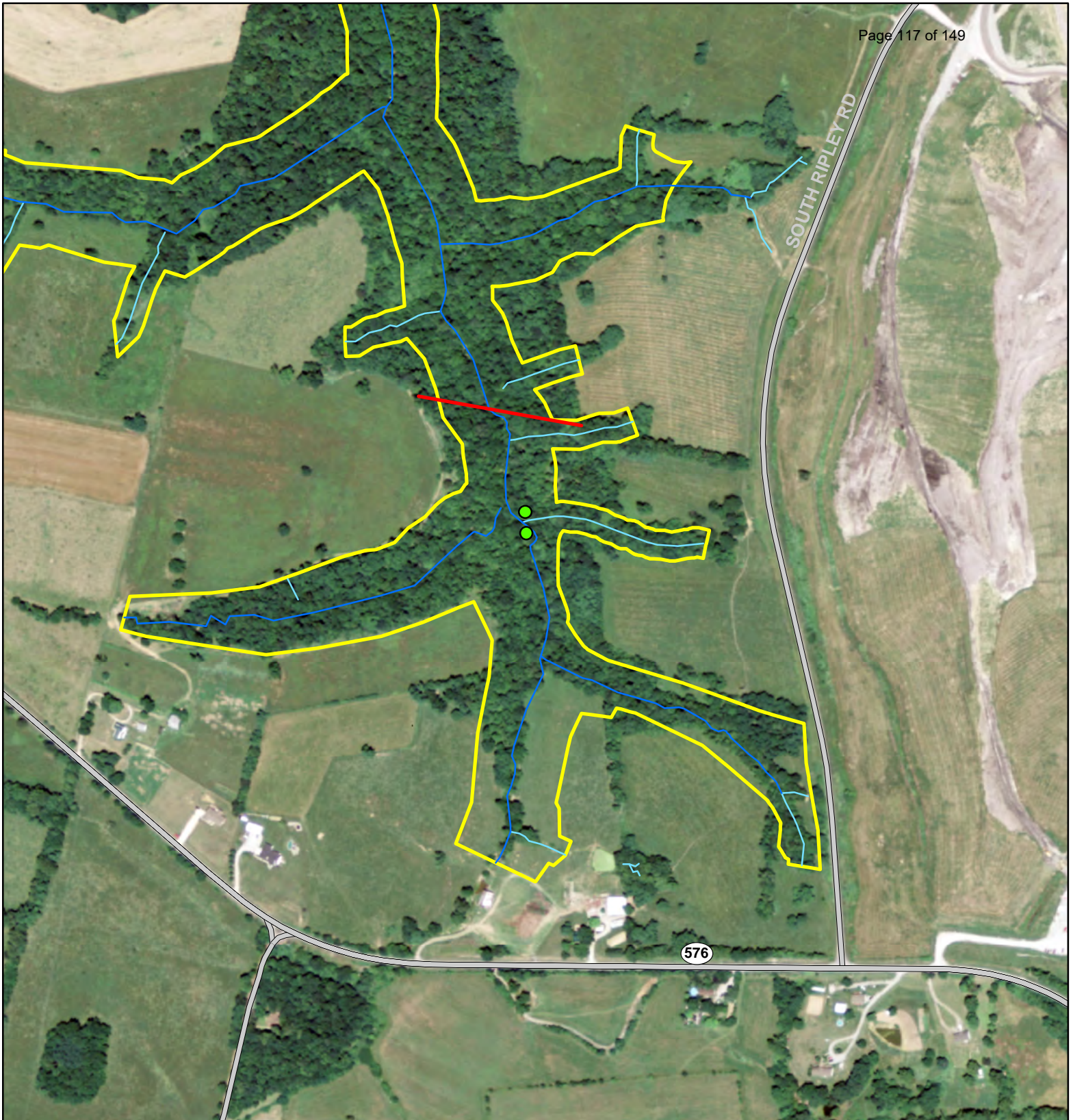
Spurlock Station Landfill

Area D Expansion




Indiana Bat Habitat Map 3

-  Suitable Bat Habitat
-  Previously Mitigated Habitat
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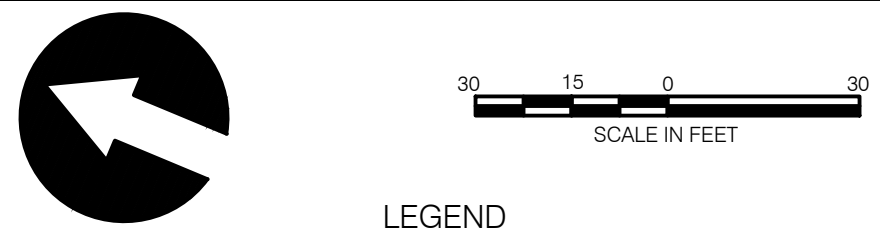




Running Buffalo Clover Map Beasley Creek, Mason Co, KY

-  RBC Locations
-  Cattle Fence Location
-  Stream Mitigation Area

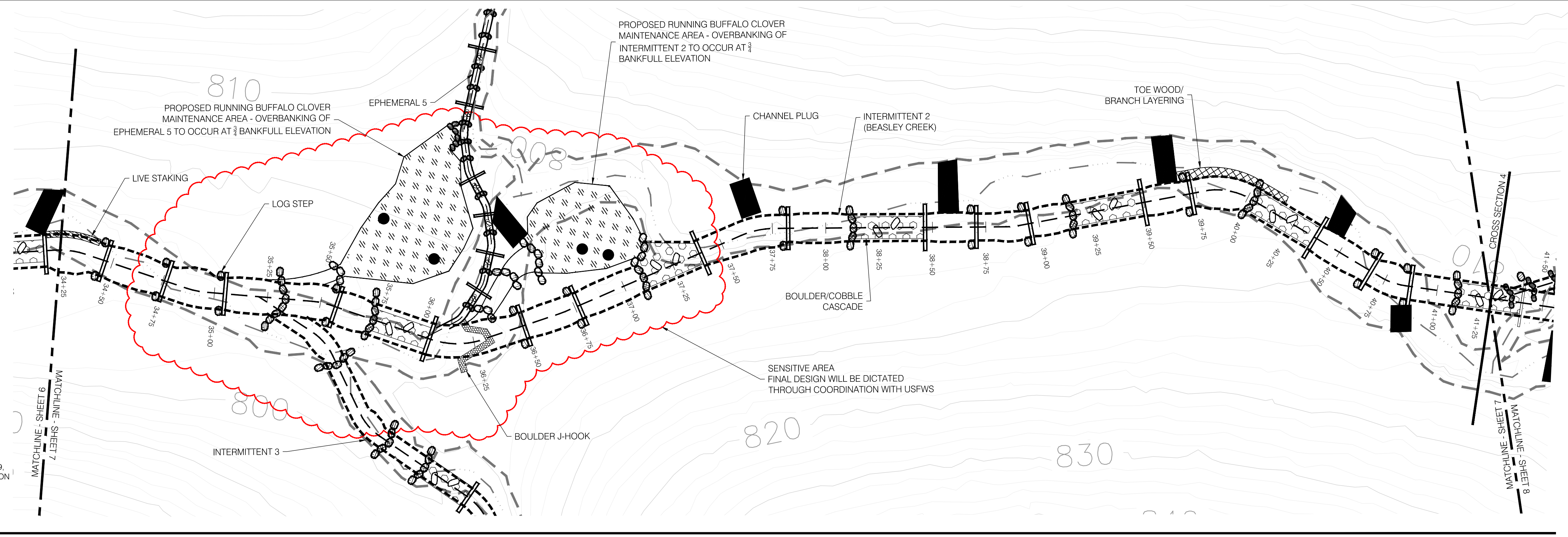
N
0 250 500 1,000 Feet



- LEGEND**
- PROPOSED INTERMITTENT THALWEG
 - PROPOSED INTERMITTENT STREAMBANKS
 - PROPOSED EPHEMERAL THALWEG
 - PROPOSED EPHEMERAL STREAMBANKS
 - PROPOSED BOULDER/COBBLE CASCADE
 - PROPOSED BOULDER J-HOOK
 - PROPOSED LOG STEP
 - PROPOSED CHANNEL PLUG
 - PROPOSED LOG SILL CASCADE
 - PROPOSED BOULDER STEP
 - PROPOSED TOE WOOD/BRANCH LAYERING
 - PROPOSED OVERBANK SCOUR AREA/RUNNING BUFFALO CLOVER MAINTENANCE AREA
 - EXISTING RUNNING BUFFALO CLOVER LOCATION
 - EXISTING STREAMBANKS
 - EXISTING THALWEG
 - EXISTING TWO-FOOT CONTOURS
 - EXISTING TEN-FOOT CONTOURS

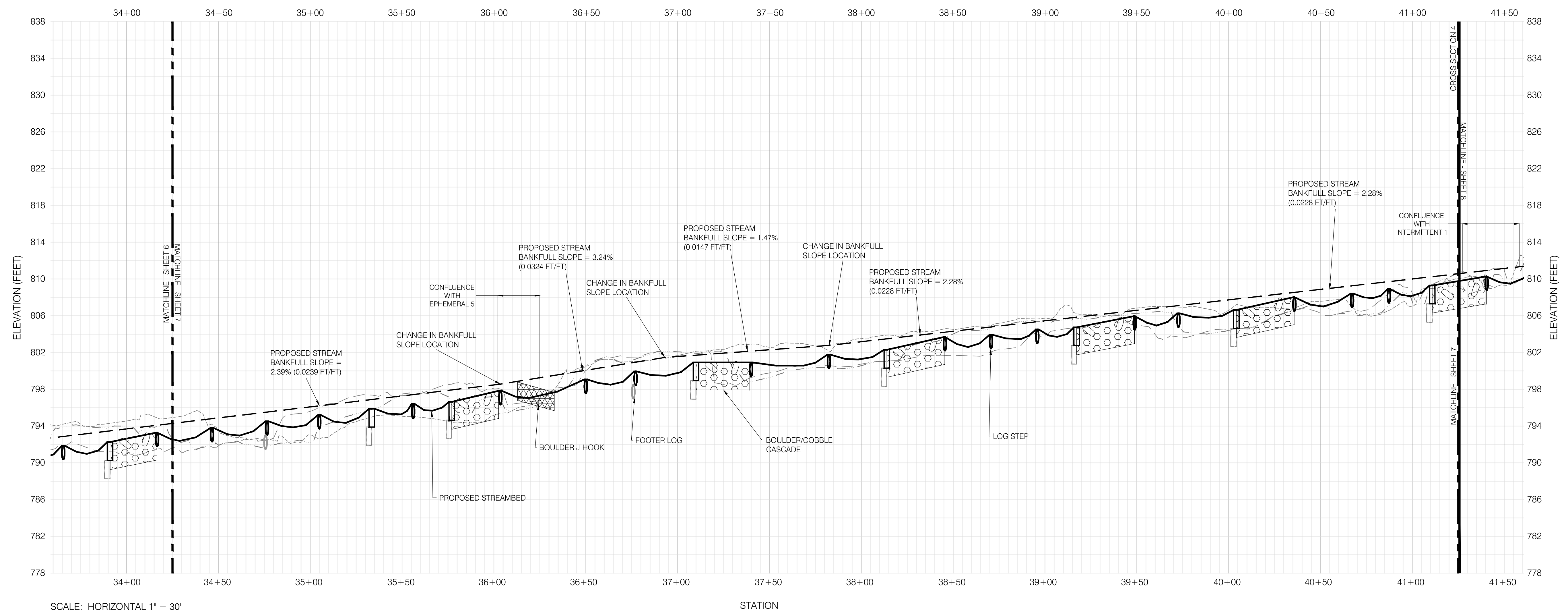
NOTE: JURISDICTIONAL WATER/WETLAND BOUNDARIES WERE DELINEATED AND SURVEYED USING GLOBAL POSITIONING SYSTEM EQUIPMENT BY REDWING WETLAND SCIENTISTS ON DECEMBER 16-20, 2013, JANUARY 8-9, 2014, AND DECEMBER 11, 2014. A PORTION OF THE STUDY AREA WAS PREVIOUSLY DELINEATED BY REDWING ON MARCH 2011 AND WAS RE-EVALUATED DURING THE DECEMBER 2013 FIELD VISIT. THESE BOUNDARIES HAVE BEEN VERIFIED BY THE U.S. ARMY CORPS OF ENGINEERS. USE OF THIS MAP IS FOR PRELIMINARY PLANNING PURPOSES ONLY.

SOURCE: BASE MAP CREATED FROM LIDAR SURVEY PROVIDED BY EAST KENTUCKY POWER COOPERATIVE.



- EXISTING GROUND SURFACE ALONG PROPOSED THALWEG
- EXISTING GROUND SURFACE ALONG PROPOSED LEFT TOP OF BANK
- EXISTING GROUND SURFACE ALONG PROPOSED RIGHT TOP OF BANK

INTERMITTENT 2 (BEASLEY CREEK) REHABILITATION REACH - PROPOSED LONGITUDINAL PROFILE



SCALE: HORIZONTAL 1" = 30'
VERTICAL 1" = 6'

Professional Seal
NOT FOR CONSTRUCTION

QA/QC BY:	BMA	02/04/16
CHECKED BY:	BMA/BDC	02/09/15
DESIGNED BY:	BMA/BDC	02/09/15
DRAWN BY:	BMA/BDC	02/09/15
FILE NAME:	RW-STREAM MITIGATION	
PLOT DATE:	02/04/16	

PLANS PREPARED AND SUBMITTED BY:
REDWING ECOLOGICAL SERVICES, INC.
1139 SOUTH FORKWAY STREET
LOUISVILLE, KENTUCKY 40203
TEL: 502-262-3077
WWW.REDWINGECO.COM

PLANS PREPARED FOR:
EAST KENTUCKY POWER COOPERATIVE
A Touchstone Energy Cooperative

NO.	REVISION	DATE

SHEET INTERMITTENT 2 (BEASLEY CREEK) REHABILITATION REACH -
TITLE: PLANFORM AND LONGITUDINAL PROFILE -
STATIONS 34+25 TO 41+25

PROJECT TITLE:
SPURLOCK POWER STATION
LANDFILL AREA D EXPANSION PROJECT
MASON COUNTY, KENTUCKY

ENGINEERS PROJ. NO.	11-017-01
BUDGET I.D.	
CONTRACT NO.	
RECORD NO.	
DRAWING NO.	

7

CONCEPTUAL DRAFT NOT FOR CONSTRUCTION

P:\2011 Projects\11-017-Spurlock Power Station Landfill Expansion\11-017-01 Stream Mitigation Design & Permitting\011-Stream Mitigation\Planform\011-Stream Mitigation.dwg 2/4/2016 5:29:32 PM Brad Anderson

Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form

Federal agencies should use this form for the optional streamlined consultation framework for the northern long-eared bat (NLEB). This framework allows federal agencies to rely upon the U.S. Fish and Wildlife Service's (USFWS) January 5, 2016, intra-Service Programmatic Biological Opinion (BO) on the final 4(d) rule for the NLEB for section 7(a)(2) compliance by: (1) notifying the USFWS that an action agency will use the streamlined framework; (2) describing the project with sufficient detail to support the required determination; and (3) enabling the USFWS to track effects and determine if reinitiation of consultation is required per 50 CFR 402.16.

This form is not necessary if an agency determines that a proposed action will have no effect to the NLEB or if the USFWS has concurred in writing with an agency's determination that a proposed action may affect, but is not likely to adversely affect the NLEB (i.e., the standard informal consultation process). Actions that may cause prohibited incidental take require separate formal consultation. Providing this information does not address section 7(a)(2) compliance for any other listed species.

Information to Determine 4(d) Rule Compliance:

YES NO

Information to Determine 4(d) Rule Compliance:	YES	NO
1. Does the project occur wholly outside of the WNS Zone ¹ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Have you contacted the appropriate agency ² to determine if your project is near known hibernacula or maternity roost trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Could the project disturb hibernating NLEBs in a known hibernaculum?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Could the project alter the entrance or interior environment of a known hibernaculum?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Does the project remove any trees within 0.25 miles of a known hibernaculum at any time of year?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Would the project cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree from June 1 through July 31.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

You are eligible to use this form if you have answered yes to question #1 **or** yes to question #2 **and** no to questions 3, 4, 5 and 6. The remainder of the form will be used by the USFWS to track our assumptions in BO.

Agency and Applicant³ (Name, Email, Phone No.):

USDA Rural Development – Rural Utilities Services
 Lauren McGee Rayburn, Environmental Scientist
lauren.rayburn@wdc.usda.gov
 (202) 695-2540

East Kentucky Power Cooperative, Inc.
 Josh Young, Environmental Scientist
josh.young@ekpc.coop
 (859) 745-9799

Project Name: Spurlock Station Landfill Area D Expansion Project – IpaC - 04EK1000-2017-SLI-0075

Project Location (include coordinates if known): Mason County, Kentucky, 38.68916°N -83.83603°W

Basic Project Description (provide narrative below or attach additional information): East Kentucky Power Cooperative (EKPC) is seeking to permit the construction, operation, and maintenance of a new cell (Area D) of the existing special waste Spurlock Station landfill. The limits of disturbance directly associated with the proposed Landfill Area D have been identified to encompass approximately 181 acres. Within the limits of disturbance, project activities would include preparation of the site for placement of the landfill liner system and coal combustion residuals material within the proposed waste limits (102 acres), sediment pond to be constructed east of the proposed waste limits (2 acres), and 77

¹ <http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf>

² See <http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html>

³ If applicable - only needed for federal actions with applicants (e.g., for a permit, etc.) who are party to the consultation.

acres of potential ancillary disturbances associated with all required compliance structures. The borrow areas needed to provide the necessary liner and cover requirements were identified on the ridgetops located within the permit boundary just to the north, south, and west of the landfill expansion area. EKPC also proposes to compensate for the permanent stream impacts that would result from the landfill expansion through an on-site stream restoration project within the adjacent 83.9-acre Beasley Creek Mitigation Area. New disturbance activities for construction of the proposed landfill expansion project would be limited to the limits of disturbance and identified soil borrow areas. The proposed project will impact approximately 97.13 acres of suitable bat habitat.

General Project Information	YES	NO
Does the project occur within 0.25 miles of a known hibernaculum?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the project occur within 150 feet of a known maternity roost tree?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the project include forest conversion ⁴ ? (if yes, report acreage below)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Estimated total acres of forest conversion	97.13	
If known, estimated acres ⁵ of forest conversion from April 1 to October 31	0	
If known, estimated acres of forest conversion from June 1 to July 31 ⁶	0	
Does the project include timber harvest? (if yes, report acreage below)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Estimated total acres of timber harvest		
If known, estimated acres of timber harvest from April 1 to October 31		
If known, estimated acres of timber harvest from June 1 to July 31		
Does the project include prescribed fire? (if yes, report acreage below)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Estimated total acres of prescribed fire		
If known, estimated acres of prescribed fire from April 1 to October 31		
If known, estimated acres of prescribed fire from June 1 to July 31		
Does the project install new wind turbines? (if yes, report capacity in MW below)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Estimated wind capacity (MW)		

Agency Determination:

By signing this form, the action agency determines that this project may affect the NLEB, but that any resulting incidental take of the NLEB is not prohibited by the final 4(d) rule.

If the USFWS does not respond within 30 days from submittal of this form, the action agency may presume that its determination is informed by the best available information and that its project responsibilities under 7(a)(2) with respect to the NLEB are fulfilled through the USFWS January 5, 2016, Programmatic BO. The action agency will update this determination annually for multi-year activities.

The action agency understands that the USFWS presumes that all activities are implemented as described herein. The action agency will promptly report any departures from the described activities to the appropriate USFWS Field Office. The action agency will provide the appropriate USFWS Field Office with the results of any surveys conducted for the NLEB. Involved parties will promptly notify the appropriate USFWS Field Office upon finding a dead, injured, or sick NLEB.

Signature:  on behalf of Jane Rosh Date Submitted: 10 January 2017

⁴ Any activity that temporarily or permanently removes suitable forested habitat, including, but not limited to, tree removal from development, energy production and transmission, mining, agriculture, etc. (see page 48 of the BO).

⁵ If the project removes less than 10 trees and the acreage is unknown, report the acreage as less than 0.1 acre.

⁶ If the activity includes tree clearing in June and July, also include those acreage in April to October.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
 Kentucky Ecological Services Field Office
 J C WATTS FEDERAL BUILDING, ROOM 265, 330 WEST
 BROADWAY
 FRANKFORT, KY 40601
 PHONE: (502)695-0468 FAX: (502)695-1024
 URL: www.fws.gov/frankfort/

Consultation Code: 04EK1000-2017-SLI-0075

December 02, 2016

Event Code: 04EK1000-2017-E-00275

Project Name: Spurlock Landfill Expansion Area D Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies federal trust species that may occur within the boundary that you provided in the IPaC application. For this list to most accurately represent the species that may potentially be affected by the proposed project, the boundary that you input into IPaC should represent the entire “action area” of the proposed project by considering all the potential “effects of the action,” including potential direct, indirect, and cumulative effects, to federally-listed species or their critical habitat as defined in 50 CFR 402.02. This includes effects of any “interrelated actions” that are part of a larger action and depend on the larger action for their justification and “interdependent actions” that have no independent utility apart from the action under consideration (e.g.; utilities, access roads, etc.) and future actions that are reasonably certain to occur as a result of the proposed project (e.g.; development in response to a new road).

The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.) to provide information as to whether any proposed or listed species may be present in the area of a proposed action. This is not a concurrence letter; additional consultation with the Service may be required.

We must advise you that our database is a compilation of collection records made available by various individuals and resource agencies available to the Service and may not be all-inclusive. This information is seldom based on comprehensive surveys of all potential habitats and, thus, does not necessarily provide conclusive evidence that species are present or absent at a specific locality. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please contact the

Kentucky Field Office if you need assistance regarding potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and associated information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the ESA is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the ESA and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12. We recommend that Biological Assessments and biological evaluations be submitted to the Kentucky Field Office following the guidance at: <http://www.fws.gov/frankfort/PreDevelopment.html>.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Proposed projects that do not have a federal nexus (non-federal projects) are not subject to the obligations under section 7 of the ESA. However, section 9 of the ESA prohibits certain activities that directly or indirectly affect federally-listed species. These prohibitions apply to all the individuals subject to the jurisdiction of the United States. Non-federal project proponents can request technical assistance from the Service regarding recommendations on how to avoid and/or minimize impacts to listed species. The project proponent can choose to implement these recommendations in the proposed project design to avoid an ESA violation.

In addition to species covered under the Endangered Species Act (ESA), birds covered under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) should be considered during project reviews. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish & Wildlife Service (50 C.F.R. 10.12 and 16 U.S.C.

668(a)). For more information regarding these acts go to:
<http://www.fws.gov/migratorybirds/RegulationsandPolicies.html>.

The MBTA currently has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within a NEPA document (if there is a federal nexus) or a Bird- or Eagle-specific Conservation Plan, or both. Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds to the project-related stressors; proponents should also implement a rigorous plan to monitor the effectiveness of conservation measure. For more information on avian stressors and recommended conservation measures go to: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/BirdHazards.html>.

In addition to MBTA and BGEPA, Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <http://www.fws.gov/migratorybirds/AboutUS.html>.

We appreciate your concern for federal trust species and encourage Federal agencies to include conservation of these species into their project planning. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment



United States Department of Interior
Fish and Wildlife Service

Project name: Spurlock Landfill Expansion Area D Project

Official Species List

Provided by:

Kentucky Ecological Services Field Office
J C WATTS FEDERAL BUILDING, ROOM 265
330 WEST BROADWAY
FRANKFORT, KY 40601
(502) 695-0468
<http://www.fws.gov/frankfort/>

Consultation Code: 04EK1000-2017-SLI-0075

Event Code: 04EK1000-2017-E-00275

Project Type: Landfill

Project Name: Spurlock Landfill Expansion Area D Project

Project Description: Spurlock Power Station, Mason County, KY

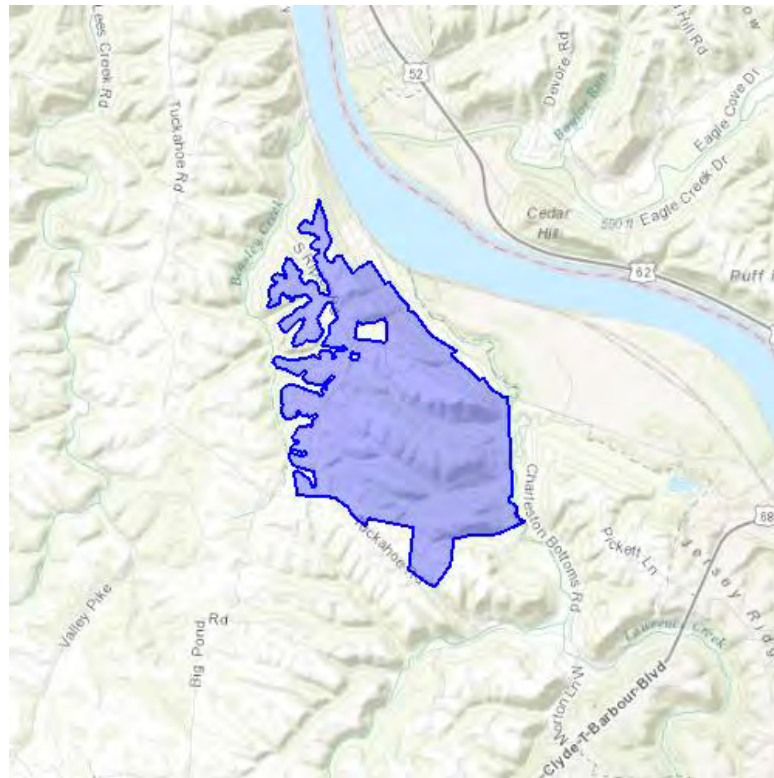
Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.



United States Department of Interior
Fish and Wildlife Service

Project name: Spurlock Landfill Expansion Area D Project

Project Location Map:



Project Coordinates: The coordinates are too numerous to display here.

Project Counties: Mason, KY



United States Department of Interior
Fish and Wildlife Service

Project name: Spurlock Landfill Expansion Area D Project

Endangered Species Act Species List

There are a total of 11 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Clams	Status	Has Critical Habitat	Condition(s)
clubshell (<i>Pleurobema clava</i>) Population: Wherever found; Except where listed as Experimental Populations	Endangered		
fanshell (<i>Cyprogenia stegaria</i>) Population: Wherever found	Endangered		
Orangefoot pimpleback (<i>Plethobasus cooperianus</i>) Population: Wherever found	Endangered		
Pink mucket (<i>Lampsilis abrupta</i>) Population: Wherever found	Endangered		
ring pink (<i>Obovaria retusa</i>) Population: Wherever found	Endangered		
Rough pigtoe (<i>Pleurobema plenum</i>) Population: Wherever found	Endangered		
Sheepnose Mussel (<i>Plethobasus cyphus</i>) Population: Wherever found	Endangered		
Flowering Plants			



United States Department of Interior
Fish and Wildlife Service

Project name: Spurlock Landfill Expansion Area D Project

Running Buffalo clover (<i>Trifolium stoloniferum</i>) Population: Wherever found	Endangered		
Mammals			
Gray bat (<i>Myotis grisescens</i>) Population: Wherever found	Endangered		
Indiana bat (<i>Myotis sodalis</i>) Population: Wherever found	Endangered		
Northern long-eared Bat (<i>Myotis septentrionalis</i>) Population: Wherever found	Threatened		This project would result in take other than incidental take.



United States Department of Interior
Fish and Wildlife Service

Project name: Spurlock Landfill Expansion Area D Project

Critical habitats that lie within your project area

There are no critical habitats within your project area.

Josh Young

From: Miller, Jessica <jessica_miller@fws.gov>
Sent: Friday, February 3, 2017 11:06 AM
To: Josh Young
Subject: Spurlock Expansion Area D

Josh,

I am reviewing your recent correspondence for this project. It appears that there is a decent amount to habitat that you are discounting as suitable for Indiana bats. Do you have some additional representative photos from these areas that you could provide to support this call in our files?

Thanks!
Jessi

--

Jessica Blackwood Miller
Fish & Wildlife Biologist
Kentucky Field Office
U.S. Fish & Wildlife Service
330 W. Broadway, Rm 265
Frankfort, KY 40601
Ph: (502) 695-0468 ext. 104
Fax: (502) 695-1024

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

Josh Young

From: Josh Young
Sent: Friday, February 3, 2017 2:37 PM
To: Miller, Jessica
Cc: Patrick Stein
Subject: RE: Spurlock Expansion Area D
Attachments: Spurlock Landfill Expansion Area D_Non-suitable bat habitat_photos and maps.pdf

Jessi

See attached photos and maps. We had representative photos for the majority of the areas considered not suitable Indiana bat habitat. Please let me know if these are sufficient or if we need to provide additional documentation.

Thanks and have a great weekend!

Josh

From: Miller, Jessica [mailto:jessica_miller@fws.gov]
Sent: Friday, February 03, 2017 11:06 AM
To: Josh Young
Subject: Spurlock Expansion Area D

Josh,

I am reviewing your recent correspondence for this project. It appears that there is a decent amount to habitat that you are discounting as suitable for Indiana bats. Do you have some additional representative photos from these areas that you could provide to support this call in our files?

Thanks!

Jessi

--

Jessica Blackwood Miller
Fish & Wildlife Biologist
Kentucky Field Office
U.S. Fish & Wildlife Service
330 W. Broadway, Rm 265
Frankfort, KY 40601
Ph: (502) 695-0468 ext. 104
Fax: (502) 695-1024

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

Photo 1a. View northwest from existing access road, see Map 3 of 3



Photo 1b. View northwest from existing access road, see Map 3 of 3



Photo 2. View northwest along existing access road, see Map 3 of 3



Photo 3. View to the east-southeast along old roadbed, see Map 3 of 3



Photo 4. View to the northwest within recently logged area, see Map 3 of 3



Photo 5. View to the east-northeast within recently logged area, see Map 3 of 3



Photo 6. View to the west within recently logged area, see Map 3 of 3



Photo 7. View to the north along south side of existing haul road, see Map 3 of 3



Photo 8. View to the south along south side of existing haul road, see Map 3 of 3



Photo 9. View to the northwest on south side of proposed landfill site, see Map 3 of 3



Photo 10. View to the northeast on south side of proposed landfill site, see Map 3 of 3



Photo 11. View to the northeast along edge of proposed southern borrow area, see Map 3 of 3



Photo 12. View to the northwest along western edge of proposed northern borrow area, see Map 1 of 3





Photo 13. View to the east within central portion of proposed northwestern borrow area, see Map 1 of 3



Spurlock Station Landfill

Area D Expansion

Indiana Bat Habitat Map 1

-  Suitable Bat Habitat
-  Previously Mitigated Habitat
-  Running Buffalo Clover Site
-  Limits of Disturbance
-  Proposed New Borrow Areas
-  Revised Existing Borrow Areas
-  Stream Mitigation Area
-  Archaeology Site/Cemetery



0 375 750 1,500 Feet

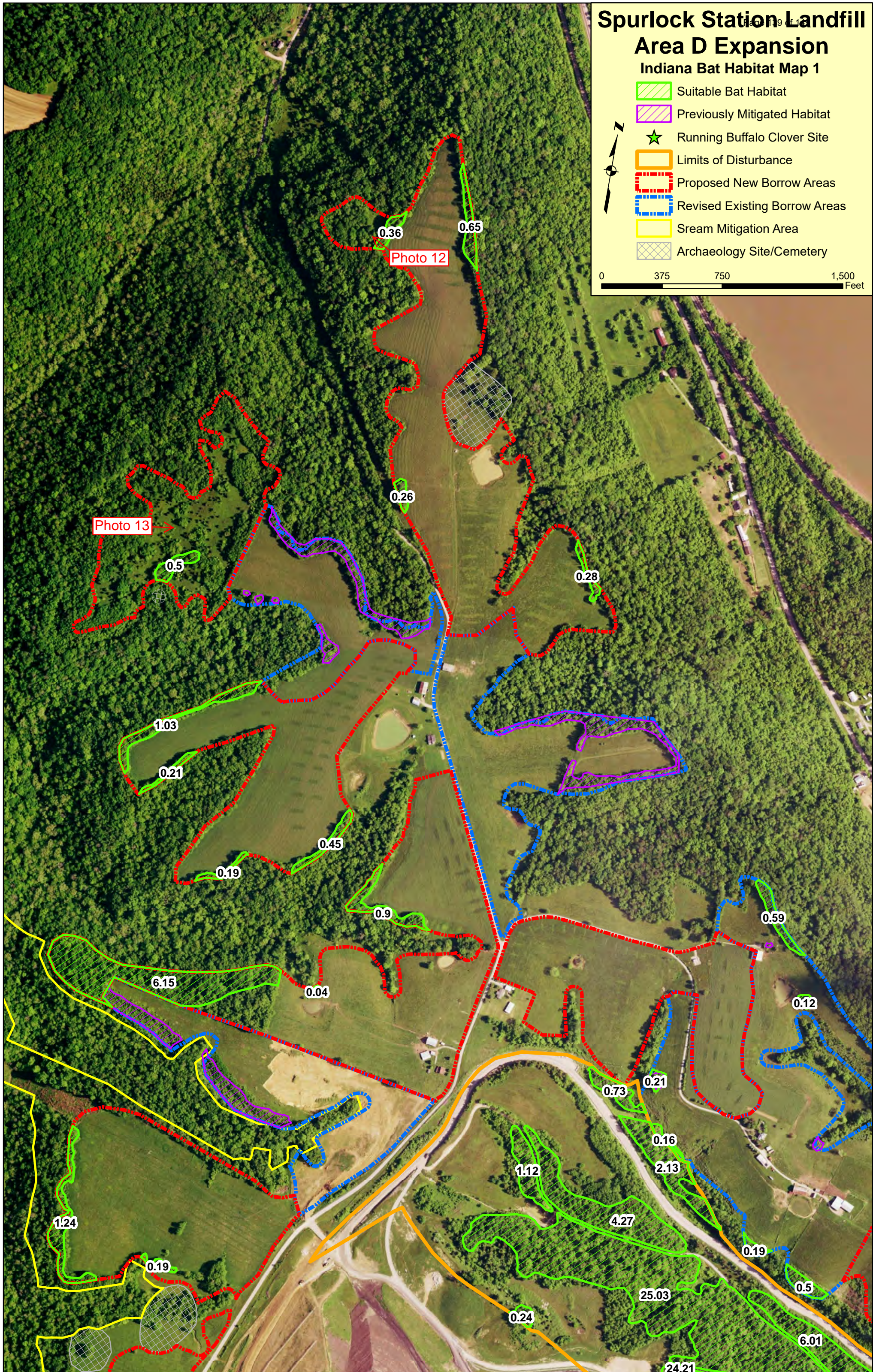


Photo 12

Photo 13

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0.65

0.26

0.5

0.28

1.03

0.21

0.45

0.19

0.9

0.59

6.15

0.04

0.12

0.73

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0.16

2.13

1.12

4.27

0.19

1.24

0.19

0.24

25.03

0.5









24.21

6.01

Spurlock Station Landfill

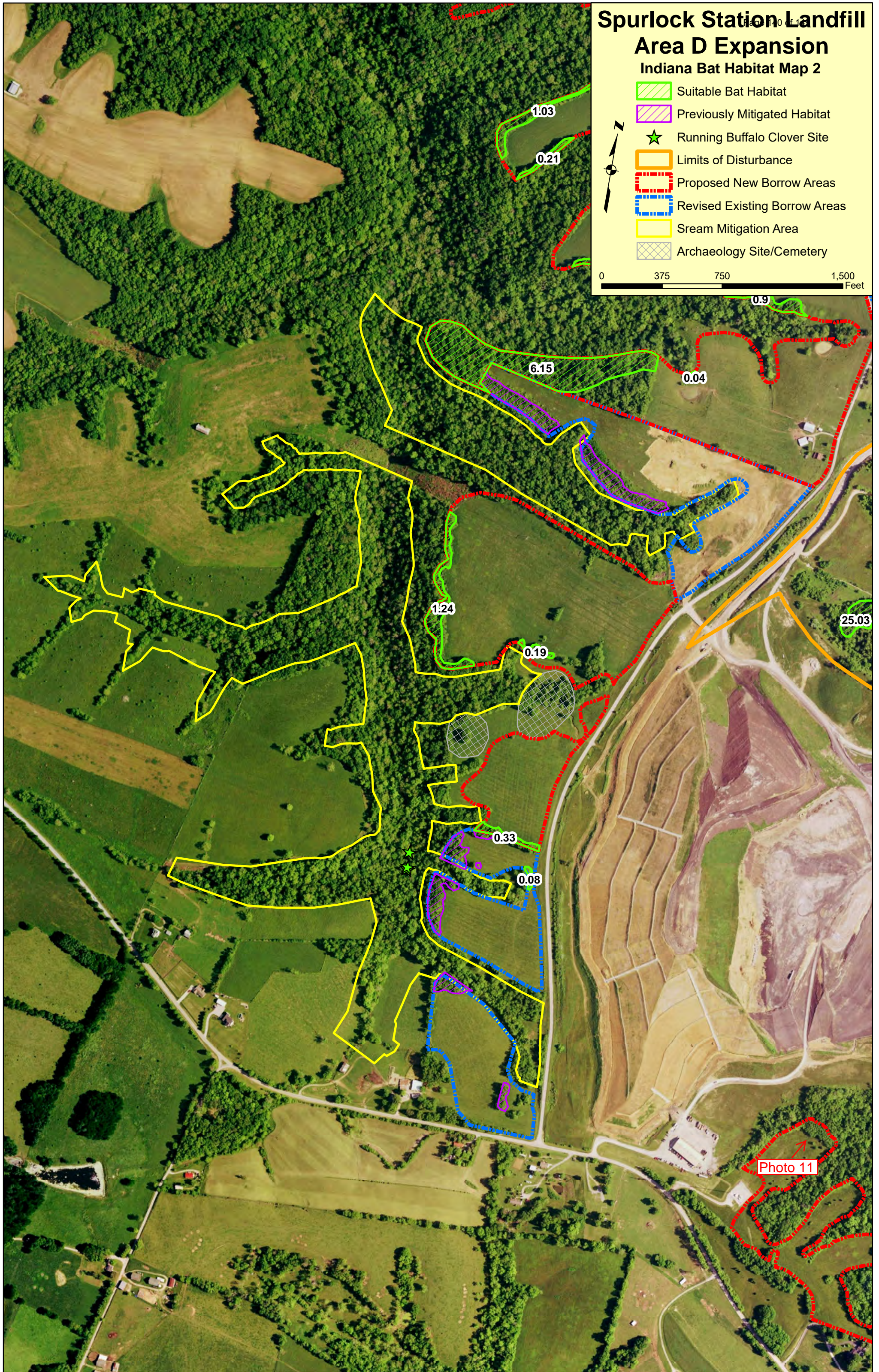
Area D Expansion

Indiana Bat Habitat Map 2

-  Suitable Bat Habitat
-  Previously Mitigated Habitat
-  Running Buffalo Clover Site
-  Limits of Disturbance
-  Proposed New Borrow Areas
-  Revised Existing Borrow Areas
-  Stream Mitigation Area
-  Archaeology Site/Cemetery











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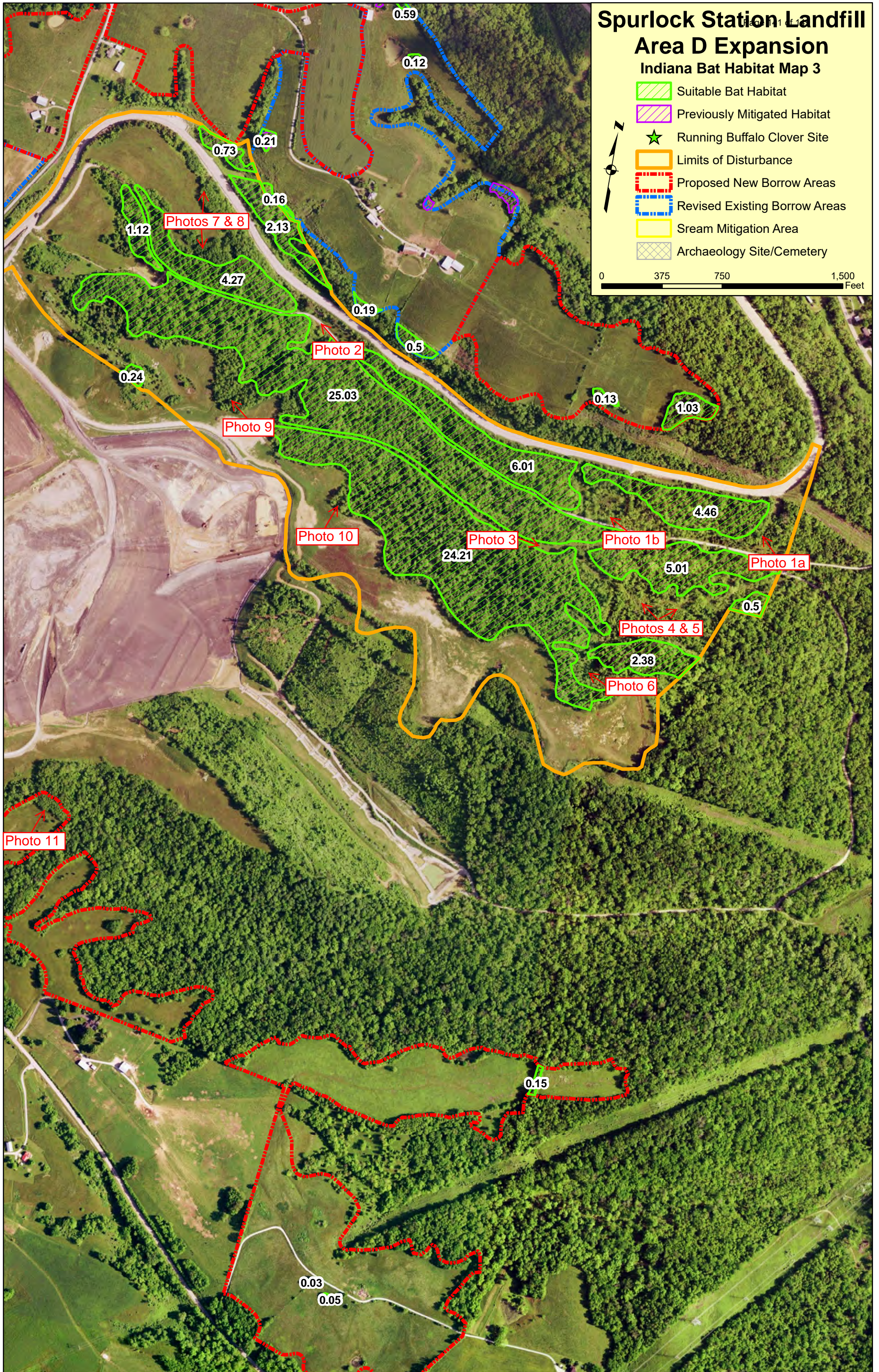
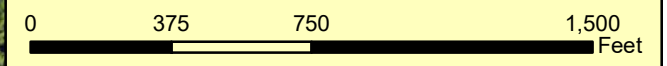


Spurlock Station Landfill

Area D Expansion

Indiana Bat Habitat Map 3

-  Suitable Bat Habitat
-  Previously Mitigated Habitat
-  Running Buffalo Clover Site
-  Limits of Disturbance
-  Proposed New Borrow Areas
-  Revised Existing Borrow Areas
-  Stream Mitigation Area
-  Archaeology Site/Cemetery



Photos 7 & 8

Photo 2

Photo 9

Photo 10

Photo 3

Photo 1b

Photo 1a

Photos 4 & 5

Photo 6

Photo 11

1.12

0.21

0.59

0.12

0.73

0.16

2.13

4.27

0.19

0.5

0.24

25.03

0.13

1.03

6.01

4.46

5.01

0.5

24.21

2.38

0.15

0.03

0.05

Josh Young

From: Miller, Jessica <jessica_miller@fws.gov>
Sent: Monday, February 06, 2017 7:24 AM
To: Josh Young
Subject: bat mitigation & 4(d) instructions

The Kentucky Field Office (KFO) received your request to mitigate for forest-dwelling bat habitat. Fish and Wildlife Service policy for signing Memoranda of Agreement (MOAs) and Memoranda of Understanding (MOUs) has been under review for over a year and was recently completed. As a result of that review, the KFO and the Southeast Regional Office are temporarily unable to sign CMOAs while we seek legal review of them relative to the new MOA/MOU policies. We anticipate the issue to be temporary, but we do not know exactly when it will be remedied. In the interim, we have discussed alternative solutions with our Regional Office for helping you achieve Endangered Species Act (ESA) compliance on projects involving listed forest-dwelling bats in Kentucky (i.e., the Indiana bat and northern long-eared bat). The Interim Compliance Process outlined below would help ensure that your project is handled promptly and that you achieve ESA compliance on your project.

According to our records, this project would comply with the Conservation Measures in the Final 4(d) rule for the northern long-eared bat. By covering any potential take of the northern long-eared bat under the Final 4(d) Rule, the mitigation would only need to account for take of the Indiana bat, and, in this project area, the mitigation contribution would be reduced from that necessary to cover both of the species. On the page below, you will find a link on the right-hand side of the page to a streamlined 4(d) consultation form. This form should be filled out and provided to us to document that the project is covered under the 4(d) rule.

<http://www.fws.gov/midwest/endangered/mammals/nleb/s7.html>

Interim Compliance Process for Projects Requesting a Forest-Dwelling Bat CMOA:

The KFO's 2016 Conservation Strategy for Forest-Dwelling Bats (Conservation Strategy) identifies the types of conservation measures that are appropriate when impacts to known or potential habitat for listed forest-dwelling bats are unavoidable. One of those measures is a voluntary contribution to the Imperiled Bat Conservation Fund (IBCF) to off-set forest losses that occur as a result of project implementation. Under the Interim Compliance Process you may still make that contribution according to the process described in the Conservation Strategy. If you no longer want to make an IBCF contribution or if you do not want to use the Interim Compliance Process, you continue to have all other compliance options available to you, as outlined in the Conservation Strategy.

According to your January 10, 2017 correspondence, the proposed project would involve the removal of 97.13 acres of "potential" Indiana bat habitat from October 15 - March 31. Using the process on pages 20-21 of the Conservation Strategy, the amount of the IBCF contribution would be \$162,692.75*.

* The calculated amount is based on the current average value of farm real estate in Kentucky as reported by the U.S. Department of Agriculture in the Land Values and Cash Rents document. This figure is updated annually around the first week in August. In order to be in compliance with the Conservation Strategy, the contribution provided to the IBCF should be based on the most recent figure. If payment is not made prior to August 2017, please contact the KFO to confirm the most current figure.

If you choose to make a contribution to the IBCF, you should use the same basic procedures as we normally used with the CMOA process. To do this, you should complete the following steps:

1. Mail your IBCF contribution to: Kentucky Natural Lands Trust
c/o Hugh Archer, Executive Director
433 Chestnut Street
Berea, KY 40403

Your contribution should be made via check or money order made payable to Kentucky Natural Lands Trust.

2. You should send a cover letter or memo with your contribution, referencing the Project Proponent's Name, the KFO Project Number (2017-B-0163), and "IBCF Contribution" in the letter or memo or on the check or money order. Additionally, a contact name and address should be included in the letter or memo so that a letter of receipt can be sent.

When we receive notification from the Kentucky Natural Land Trust that your contribution has been received, the KFO will acknowledge the contribution and provide you or the federal action agency a letter explaining that:

- a) We have analyzed the effects of your action already under the 2015 Biological Opinion: Kentucky Field Office's Participation in Conservation Memoranda of Agreement for the Indiana Bat and/or Northern Long-eared Bat (BO), your project adheres to the Conservation Strategy and the conservation measures associated with the Conservation Strategy and BO, and the project is not likely to jeopardize the continued existence of the Indiana bat or result in the destruction or adverse modification of designated critical habitat for the species;
- b) Any incidental take of Indiana bats that will or could result from the forest habitat removal associated with your project would be authorized under the BO; and
- c) The letter from the KFO to you would serve as your documentation that the project is in compliance with the Endangered Species Act for the Indiana bat and would also apply to any involved federal agency action(s), such as any required federal permits or federal funding.

This letter may also contain additional technical assistance and any concurrences or non-concurrences for other federally listed or proposed species or designated critical habitats that may also be affected by your proposed project. On previous projects that were covered by CMOAs, we typically included this information in a cover letter associated with the CMOA, so the Interim Compliance Process is similar to the CMOA process you may have used before. As a result, the only difference between the CMOA process we normally use and the Interim Compliance Process is that there will not be a CMOA signed by both parties.

Please contact me if you have any questions about the Interim Compliance Process. As always, we are available to provide you with any assistance you may need on your proposed project and can answer any questions that action agencies may have regarding the status of the project's ESA compliance.

--

Jessica Blackwood Miller
Fish & Wildlife Biologist
Kentucky Field Office
U.S. Fish & Wildlife Service
330 W. Broadway, Rm 265
Frankfort, KY 40601

Ph: (502) 695-0468 ext. 104
Fax: (502) 695-1024

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

--

Jessica Blackwood Miller
Fish & Wildlife Biologist
Kentucky Field Office
U.S. Fish & Wildlife Service
330 W. Broadway, Rm 265
Frankfort, KY 40601
Ph: (502) 695-0468 ext. 104
Fax: (502) 695-1024

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.



February 17, 2017

Mr. Hugh Archer
Executive Director
Kentucky Natural Lands Trust
433 Chestnut Street
Berea, KY 40403

**RE: East Kentucky Power Cooperative; FWS 2017-B-0163 IBCF Contribution
Spurlock Station Landfill Area D Expansion Project
Mason County, Kentucky**

Dear Mr. Archer,

East Kentucky Power Cooperative, Inc. (EKPC) is using the U.S. Fish and Wildlife Service – Kentucky Field Office’s 2016 Conservation Strategy for Forest-Dwelling Bats Interim Compliance Process to offset forest losses that would potentially impact the federally listed Indiana bat (*Myotis sodalis*) from implementation of the above-referenced project in Mason County, Kentucky. As a part of the Interim Compliance Process, EKPC has agreed to contribute to the Imperiled Bat Conservation Fund (IBCF), and this contribution will fund imperiled bat habitat protection, conservation, restoration, and/or priority monitoring and research projects involving these federally listed species.

Enclosed is EKPC’s contribution of \$162,692.75 to the ICBF – FWS 2017-B-0163. We look forward to receiving proof of payment to the IBCF from your office. Thank you for your efforts in this matter.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Josh Young', is written over a horizontal line.

Josh Young
Supervisor, Natural Resources
& Environmental Communications

Enclosures

cc: Jerry Purvis, Joe VonDerHaar, Greg Culp, Craig Johnson, Mark Brewer, Patrick Bischoff (EKPC)

Josh Young

From: Angie Allman <angie@knlt.org>
Sent: Tuesday, February 21, 2017 1:50 PM
To: Josh Young; Donna Alexander
Cc: Miller, Jessica; DeGarmo, Phil; Lee Andrews
Subject: IBCF Check Received - FWS# 2017-B-0163

Dear Mr. Young:

KNLT received a check for the Imperiled Bat Conservation Fund. Please call me at (859) 986-0744 if you have any questions regarding this check. If you have project specific questions you will need to contact the USFWS staff cc'd on this email. A hard copy of this acknowledgement may be mailed upon request.

East Kentucky Power Cooperative \$162,692.75 FWS# 2017-B-0163

If you are interested in learning more about the Imperiled Bat Conservation Fund, please visit the webpage at <http://knlt.org/ibcf/>.

Sincerely,
Angie

Angie Allman, Development Associate
Kentucky Natural Lands Trust
Protecting, Connecting & Restoring Wildlands
Mailing Address: 433 Chestnut Street, Berea, KY 40403
Office Location: 213A Short Street, Berea
877-367-5658 | KNLT.org



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Kentucky Ecological Services Field Office
 330 West Broadway, Suite 265
 Frankfort, Kentucky 40601
 (502) 695-0468

February 28, 2017

Mr. Josh Young
 East Kentucky Power Cooperative
 P. O. Box 707
 Winchester, Kentucky 40392-0707

RE: FWS 2017-B-0163; East Kentucky Power Cooperative; Spurlock Station Landfill, Area D Expansion; Mason County, Kentucky

Dear Mr. Young:

The U.S. Fish and Wildlife Service (Service) has reviewed recent correspondence regarding this proposed project. East Kentucky Power Cooperative (EKPC) proposes to expand their existing special waste landfill at the Spurlock Station and establish an on-site stream mitigation area to compensate for impacts to streams. The Service offers the following comments in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*).

Indiana Bat (*Myotis sodalis*)

Your January 10, 2017 correspondence indicates that there is no potential winter habitat for this species in the proposed project area. The project area does contain suitable summer roosting habitat. We have received a copy of a February 21, 2017 receipt acknowledging the \$162,692.75 contribution EKPC made to Kentucky Natural Lands Trust for the Imperiled Bat Conservation Fund. The contribution made is the appropriate amount, following the process in the Kentucky Field Office's 2016 *Revised Conservation Strategy for Forest-Dwelling Bats* (Conservation Strategy), to mitigate for the removal of the "potential" Indiana bat habitat for this project as described in your January 10, 2017 correspondence and attachments. Specifically, 97.13 acres of forested habitat removal will occur from October 15 – March 31. This 97.13 acres is in addition to forested habitat removal associated with other activities at the Spurlock site since 2009. The forested habitat removal associated with these past activities and this current activity totals 122.12 acres. The Conservation Strategy requires project-specific evaluation for projects that would result in the loss of more than 100 acres of forest-dwelling bat habitat. The Service has evaluated this project and believes that the take associated with this 122.12 acres of habitat loss at the Spurlock site was analyzed in the 2015 Biological Opinion: *Kentucky Field Office's Participation in Conservation Memoranda of Agreement for the Indiana Bat and/or Northern*

Mr. Josh Young

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Long-eared Bat (KFO BO). We based this on site-specific information, including the following: the forested habitat removal would not sever habitat connectivity on the landscape; the mitigation would not account for take of the northern long-eared bat which has a smaller home range; and results of bat surveys in the past, though no longer valid, did not capture Indiana bats. We, therefore, conclude that the project adheres to the conservation measures associated with the Conservation Strategy and the KFO BO. Through the adherence to the Conservation Strategy, the Service has already analyzed the effects of the action under the KFO BO and has concluded that the project is not likely to jeopardize the continued existence of the Indiana bat or result in the destruction or adverse modification of designated critical habitat for this species. Any incidental take of Indiana bats that will or could result from the forest habitat removal associated with the project is authorized under the KFO BO. If tree clearing must occur during the occupied timeframe (April 1 – October 14), then EKPC should notify the Service in advance of tree clearing to account for the direct adverse effects to Indiana bats that may occur as a result of tree clearing during the occupied timeframe. In addition, if additional forested areas not previously considered are to be removed, then EKPC should coordinate with the Service to determine if additional compensation is necessary to be in ESA compliance.

Northern Long-eared Bat (*Myotis septentrionalis*)

The proposed action is consistent with the northern long-eared bat final 4(d) rule and the Service's January 5, 2016, intra-Service Programmatic Biological Opinion (4(d) BO) on the final 4(d) rule for the northern long-eared bat. The project does not (1) propose impacts to any known northern long-eared bat hibernacula; (2) propose tree clearing within 0.25-mile of a known northern long-eared bat hibernacula; or, (3) propose cutting or destroying known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree from June 1 through July 31. This project may affect the northern long-eared bat; however, there are no effects beyond those previously disclosed in the Service's 4(d) BO. Any taking that may occur incidental to this project is not prohibited under the final 4(d) rule (50 CFR §17.40(o)).

Gray Bat (*Myotis grisescens*)

Your January 10, 2017 correspondence states that there are no caves, rock shelters, or abandoned underground mines in the proposed project area that are likely to provide suitable habitat for the gray bat. Therefore, the proposed project is not likely to impact gray bat hibernacula or roosting habitat. You also state that there are no streams in the landfill expansion area that likely provides suitable foraging habitat for the gray bat. Beasley Creek does provide potential foraging habitat. Because of the temporary nature of the disturbance during construction, any affects to the gray bat resulting from impacts to Beasley Creek are expected to be insignificant. The utilization of the Stormwater Pollution Prevention Plan and BMPs will minimize any indirect impacts to foraging resources downstream of the landfill expansion and borrow areas. Based on this information, the Service would concur with a "may affect – not likely to adversely affect" determination for the gray bat.

Federally-listed Mussel Species

Your January 10, 2017 correspondence states that there is no habitat for these species in the proposed project area. The utilization of the Stormwater Pollution Prevention Plan and BMPs will minimize any indirect impacts to the Ohio River where the species are known to occur or

Mr. Josh Young

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may potentially occur. Based on this information, the Service would concur with a “may affect – not likely to adversely affect” determination for the following species: clubshell (*Pleurobema clava*), fanshell (*Cyprogenia stegaria*), orangefoot pimpleback (*Plethobasus cooperianus*), pink mucket (*Lampsilis abrupta*), ring pink (*Obovaria retusa*), rough pigtoe (*Pleurobema plenum*), and sheepnose (*Plethobasus cyphyus*).

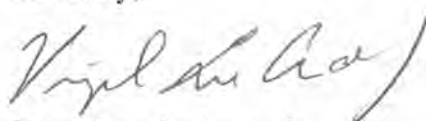
Running Buffalo Clover (*Trifolium stoloniferum*)

Your correspondence states that EKPC biologists conducted pedestrian surveys of potential habitat in the project areas multiple times in May and June 2014, May and June 2015, and April 2016. No running buffalo clover was found in the construction limits of the expansion areas or the borrow areas. Two patches of running buffalo clover was found along Beasley Creek in the proposed mitigation area. These patches are in areas currently grazed by cattle. Prior to the construction of the mitigation, the running buffalo clover patches will be delineated with orange construction fencing to avoid direct impacts to them. Tree clearing will be minimized in these areas as to not disrupt the filtered light conditions currently present there. The stream mitigation will involve removing the cattle from the stream banks, thus eliminating the disturbance conditions that they are creating in the running buffalo clover habitat. The stream restoration design will include structures that would routinely allow stream overbanking and scouring when the water levels reach $\frac{3}{4}$ bankfull elevation. This disturbance is expected to sustain the disturbance conditions in which the running buffalo clover is currently growing. Based on the information available to us, we would concur with a “may affect – not likely to adversely affect” determination for running buffalo clover.

The comments provided in this letter must be reconsidered if: (1) new information reveals that the proposed action may affect listed species in a manner or to an extent not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated.

Thank you again for your request. Your concern for the protection of endangered and threatened species is greatly appreciated. If you have any questions regarding the information that we have provided, please contact Jessica Blackwood Miller at (502) 695-0468 extension 104 or jessica_miller@fws.gov.

Sincerely,



Virgil Lee Andrews, Jr.
Field Supervisor

ATTACHMENT JP-5
401 WATER QUALITY CERTIFICATION

ANDY BESHEAR
GOVERNOR



REBECCA W. GOODMAN
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

ANTHONY R. HATTON
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

May 5, 2020

Mr. Jerry Purvis
East Kentucky Power Cooperative
4775 Lexington Road
Winchester, KY 40391


Re: §401 Water Quality Certification
WQC No: WQC#2017-053-7R2
East KY Power Coop - H L Spurlock Power Station
AI No.: 3004; Activity ID: APE20200002
USACE ID No.: LRL-2015-00329-ksj
Tributary to Lawrence Creek, Beasley Creek and
tributaries
Mason County, Kentucky

Dear Mr. Purvis:

Pursuant to Section 401 of the Clean Water Act (CWA), the Commonwealth of Kentucky certifies it has reasonable assurances that applicable water quality standards under Kentucky Administrative Regulations Title 401, Chapter 10, established pursuant to Sections 301, 302, 303, 304, 306, and 307 of the CWA, will not be violated by the above referenced project provided that the U.S. Army Corps of Engineers authorizes the activity under 33 CFR part 330, and the attached conditions are met.

All future correspondence on this project must reference AI No. **3004**. **The attached document is your official Water Quality Certification; please read it carefully.** Please contact Ms. Joyce Fry by phone at 502-782-6951 or email at joyce.fry@ky.gov if you have any questions.

Sincerely,

 Recoverable Signature

Handwritten signature of Elizabeth M. Harrod in black ink.

Elizabeth Harrod, Supervisor
Water Quality Branch
Kentucky Division of Water

EH:JF
Attachment

COPIES SENT VIA EMAIL:

Kimberly Simpson, USACE: Louisville District (Kimberly.J.Simpson@usace.army.mil)

Lee Andrews, USFWS: Frankfort (kentuckyes@fws.gov)

Neil Guthals, Redwing Ecological Services, Inc.: Louisville (nguthals@redwingeco.com)

Brad Anderson, Redwing Ecological Services, Inc.: Louisville (banderson@redwingeco.com)

Josh Young, EKPC: Winchester (josh.young@ekpc.coop)

Mahtaab Bagherzadeh, KDOW: Frankfort (mahtaab.bagherzadeh@ky.gov)

Danny Fraley, KDOW: Morehead (Daniel.Fraley@ky.gov)

Water Quality Certification
East KY Power Coop - H L Spurlock Power Station
Facility Requirements
Permit Number: WQC#2017-053-7R2
Activity ID No.:APE20200002

ACTV0000000005 (AI# 3004 Landfill) Impacts to intermittent and ephemeral streams and wetland:

Submittal/Action Requirements:

Condition No.	Condition
S-1	EKPC Cooperative shall notify the Division : Due prior to any construction activity. Notify 401 Water Quality Certification Project Manager or Supervisor at least two weeks before the start of construction. [Clean Water Act]
S-2	EKPC shall notify the Division : Due when construction is complete. Notify 401 Water Quality Certification Project Manager or Supervisor no later than two weeks post -construction. [Clean Water Act]

Narrative Requirements:

Condition No.	Condition
T-1	The work approved by this certification shall be limited to: - the construction of a special waste landfill (Landfill Area D) located at East Kentucky Power Cooperative's (EKPC) Spurlock power generating station in Maysville, (Mason Co.) KY at Latitude/Longitude 38.691133, -83.838169. - The project will result in permanent impacts to approximately 5,755 linear ft. of intermittent stream, 6,860 linear ft. ephemeral stream, and 0.048 acre of wetland. [Clean Water Act]
T-2	All work performed under this certification shall adhere to the design and specifications set forth in the following documents: - Application for Construction Across or Along a Stream and/or Water Quality Certification packet dated December 16, 2016; - Modification Request for Stream Mitigation Plan, dated April 12, 2018; - the U.S. Army Corps of Engineers Public Notice No.: LRL-2015-329-kjs. [Clean Water Act]
T-3	EKPC is responsible for preventing degradation of waters of the Commonwealth from soil erosion. An erosion and sedimentation control plan must be designed, implemented, and maintained in effective operating condition at all times during construction. [Clean Water Act]
T-4	The Division of Water reserves the right to modify or revoke this certification should it be determined that the activity is in noncompliance with any condition set forth in this certification. [Clean Water Act]
T-5	If construction does not commence within one year of the date of this letter, this certification will become void. A letter requesting a renewal should be submitted. [Clean Water Act]

Water Quality Certification
East KY Power Coop - H L Spurlock Power Station
Facility Requirements
Permit Number: WQC#2017-053-7R2
Activity ID No.: APE20200002

ACTV0000000005 (AI# 3004 Landfill) Impacts to intermittent and ephemeral streams and wetland:

Narrative Requirements:

Condition No.	Condition
T-6	Other permits from the Division of Water may be required for this activity. If this activity occurs within a floodplain, a Permit to Construct Across or Along a Stream may be required. Please contact the Floodplain Section Supervisor (502-782-6941) for more information. If the project will disturb one acre or more of land, or is part of a larger common plan of development or sale that will ultimately disturb one acre or more of land, a Kentucky Pollution Discharge Elimination System (KPDES) stormwater permit shall be required from the Surface Water Permits Branch. This permit requires the development of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must include erosion prevention and sediment control measures. Contact: Surface Water Permits Branch (SWPB) Support at 502-564-3410 or SWPBsupport@ky.gov. [Clean Water Act]
T-7	Check dams are not allowed within the stream channel. [Clean Water Act]
T-8	Remove all sediment and erosion control measures after re-vegetation has become well-established. [Clean Water Act]



ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

ATTENTION APPLICANT

If your project involves one or more of the following activities, you may need more than one permit from the Kentucky Division of Water.

- *building in a floodplain**
- *road culvert in a stream**
- *streambank stabilization**
- *stream cleanout**
- *utility line crossing a stream**
- *construction sites greater than 1 acre**

- **Construction sites greater than 1 acre will require the filing of a Notice of Intent to be covered under the KPDES General Stormwater Permit. This permit requires the creation of an erosion control plan.**

Contact: Surface Water Permits Branch (SWPB) Support at SWPBsupport@ky.gov

- **Projects that involve filling in the floodplain will require a floodplain construction permit from the Water Resources Branch.**

Contact: Floodplain Management Section Supervisor at (502) 564-3410

- **Projects that involve work IN a stream, such as bank stabilization, road culverts, utility line crossings, and stream alteration will require a floodplain permit and a Water Quality Certification from the Division of Water.**

Contact: Elizabeth Harrod at (502) 782-6700

A complete listing of environmental programs administered by the Kentucky Department for Environmental Protection is available from Director Paul Miller by calling (502) 782-4505.

GENERAL CONDITIONS FOR WATER QUALITY CERTIFICATION

1. The Kentucky Division of Water may require submission of a formal application for an Individual Certification for any project if the project has been determined to likely have a significant adverse effect upon water quality or degrade the waters of the Commonwealth so that existing uses of the water body or downstream waters are precluded.
2. Nationwide permits issued by the U.S. Army Corps of Engineers for projects in Outstanding State Resource Waters, Cold Water Aquatic Habitats, and Exceptional Waters as defined by 401 KAR 10:026 shall require individual water quality certifications.
3. Projects requiring in-stream stormwater detention/retention basins shall require individual water quality certifications.
4. Erosion and sedimentation pollution control plans and Best Management Practices must be designed, installed, and maintained in effective operating condition at all times during construction activities so that violations of state water quality standards do not occur.
5. Sediment and erosion control measures (e.g., check-dams, silt fencing, or hay bales) shall not be placed within surface waters of the Commonwealth, either temporarily or permanently, without prior approval by the Kentucky Division of Water's Water Quality Certification Section. If placement of sediment and erosion control measures in surface waters is unavoidable, placement shall not be conducted in such a manner that may cause instability of streams that are adjacent to, upstream, or downstream of the structures. All sediment and erosion control measures shall be removed and the natural grade restored prior to withdrawal from the site.
6. Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse.
7. To the maximum extent practicable, all in-stream work under this certification shall be performed during low flow.
8. Heavy equipment (e.g. bulldozers, backhoes, draglines, etc.), if required for this project, should not be used or operated within the stream channel. In those instances where such in-stream work is unavoidable, then it shall be performed in such a manner and duration as to minimize re-suspension of sediments and disturbance to the channel, banks, or riparian vegetation.
9. If there are water supply intakes located downstream that may be affected by increased turbidity, the permittee shall notify the operator when work will be performed.
10. Removal of existing riparian vegetation should be restricted to the minimum necessary for project construction.
11. Should stream pollution, wetland impairment, and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms of water pollution), the Kentucky Division of Water shall be notified immediately by calling 800/564-2380.

ATTACHMENT JP-6
ARMY CORP OF ENGINEERS 404 PERMIT

DEPARTMENT OF THE ARMY PERMIT

Permittee: East Kentucky Power Cooperative

Permit Number: LRL-2015-00329

Issuing Office: U.S. Army Engineer District, Louisville

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: To discharge fill material into 5,755 linear feet (1.9 acres) of intermittent stream, 6,860 linear feet (0.8 acre) of ephemeral stream, and 0.05 acre of wetland (W2) for the construction of a Coal Combustion Residual (CCR) landfill and associated infrastructure.

Project Location: In tributaries to Lawrence and Beasley Creeks and adjacent wetlands at the Spurlock Power Station on KY-8 in Maysville, Mason County, Kentucky.

Permit Conditions:

General Conditions:

1. The time limit for completing the authorized activity ends on December 31, 2038. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification from this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished with the terms and conditions of your permit.

Special Conditions:

- (1) The permittee shall comply with the conditions of the Section 401 Water Quality Certification dated 24 July 2018, issued by the Kentucky Division of Water, copy enclosed.
- (2) The permittee shall comply with requirements written in letters dated 13 and 26 March 2013, 29 September 2014, 26 March 2015, 10 August 2015, 29 January 2016, and 12 January 2017, by the Kentucky State Historic Preservation Office to avoid impacts to cultural resources.
- (3) The permittee shall provide proof of purchase of 0.1 acre AMU wetland credit from the Northern Kentucky Mitigation Bank prior to performing work in the wetland on the project site.
- (4) The permittee shall provide proof of purchase of 15,067.50 AMU stream credits from an approved in lieu fee program prior to performing work in streams on the project site.

Further Information:

1. Congressional Authorities. You have been authorized to undertake the activity described above pursuant to:
 - () Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
 - (x) Section 404 of the Clean Water Act (33 U.S.C. 1344).
 - () Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).
2. Limits of this authorization.
 - a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.
 - b. This permit does not grant any property rights or exclusive privileges.
 - c. This permit does not authorize any injury to the property or rights of others.
 - d. This permit does not authorize interference with any existing or proposed Federal project.
3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:
 - a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
 - b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
 - c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
 - d. Design or construction deficiencies associated with the permitted work.
 - e. Damage claims associated with any future modification, suspension, or revocation of this permit.
4. Reliance on Applicant's Data. The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. **Reevaluation of Permit Decision.** This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

- a. You fail to comply with the terms and conditions of this permit.
- b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
- c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measure ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. **Extensions.** General condition I establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give you favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

Jerry Purnis, VP Environmental Affairs *9/5/2018*
(PERMITTEE) (DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

ANTOINETTE R. GANT
Colonel, U.S. Army
District Commander

(DATE)

Kimberly J. Simpson
BY: Kimberly J. Simpson
Senior Project Manager, North
Regulatory Division

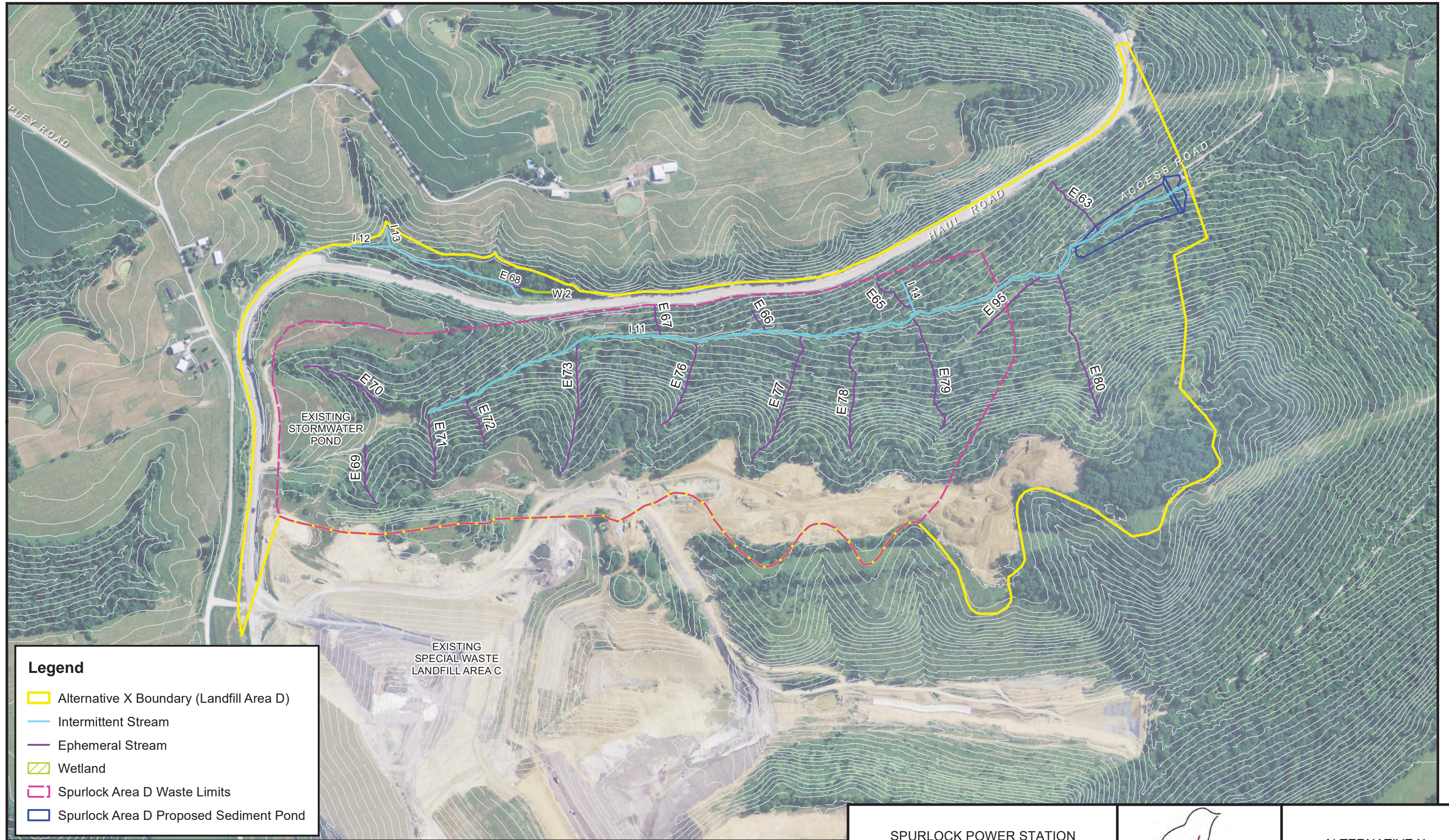
9-12-18

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(TRANSFEREE)

(DATE)

Source: kyrastr.ky.gov, ImageServices, Ky_NAIP_2012_1M; Alternative boundary provided by EKPC; Topographic contours provided by EKPC (LIDAR).



Legend

- Alternative X Boundary (Landfill Area D)
- Intermittent Stream
- Ephemeral Stream
- Wetland
- Spurlock Area D Waste Limits
- Spurlock Area D Proposed Sediment Pond



SPURLOCK POWER STATION
LANDFILL AREA D EXPANSION PROJECT
MASON COUNTY, KENTUCKY

REVISED DATE: 12-15-16 DRAWN BY: EDB



ALTERNATIVE X
(LANDFILL AREA D)

FIGURE 4

P:\2011 Projects\11-017-Spurlock Power Station Landfill Expansion\2015-IP\Figures\IP-Alternative Site X.mxd, 12-15-2016, ebowman

**Table 1: Alternative X (Landfill Area D) Alternative Impacts and Mitigation
Spurlock Power Station Landfill Area D Expansion Project
Mason County, Kentucky**

Feature	Flow Regime / Type	Feature Length/Acreage	Status	Quality	Impacts			Mitigation	AMUs Required for Mitigation Bank	Temporal Loss Multiplier	AMUs Required for ILF Purchase
					Type	Length (ft)	Area (acres)	Quality Multiplier			
I 11	Intermittent	4,705	Jurisdictional	Average	Landfill	4,375	1.657	1.5	6,562.50	20%	7,875.00
I 12	Intermittent	1,090	Jurisdictional	Poor	Landfill	1,075	0.197	1	1,075.00	20%	1,290.00
I 13	Intermittent	540	Jurisdictional	Poor	Landfill	130	0.009	1	130.00	20%	156.00
I 14	Intermittent	175	Jurisdictional	Average	Landfill	175	0.008	1.5	262.50	20%	315.00
Intermittent Total						5,755	1.872	--	8,030.00	--'	9,636.00
E 63	Ephemeral	590	Jurisdictional	Average	Landfill	355	0.012	0.75	266.25	20%	319.50
E 65	Ephemeral	470	Jurisdictional	Average	Landfill	255	0.018	0.75	191.25	20%	229.50
E 66	Ephemeral	415	Jurisdictional	Poor	Landfill	110	0.0038	0.5	55.00	20%	66.00
E 67	Ephemeral	295	Jurisdictional	Poor	Landfill	140	0.008	0.5	70.00	20%	84.00
E 68	Ephemeral	135	Jurisdictional	Poor	Landfill	35	0.002	0.5	17.50	20%	21.00
E 69	Ephemeral	345	Jurisdictional	Average	Landfill	345	0.020	0.75	258.75	20%	310.50
E 70	Ephemeral	500	Jurisdictional	Poor	Landfill	500	0.023	0.5	250.00	20%	300.00
E 71	Ephemeral	345	Jurisdictional	Average	Landfill	345	0.040	0.75	258.75	20%	310.50
E 72	Ephemeral	265	Jurisdictional	Average	Landfill	265	0.012	0.75	198.75	20%	238.50
E 73	Ephemeral	715	Jurisdictional	Average	Landfill	715	0.082	0.75	536.25	20%	643.50
E 76	Ephemeral	485	Jurisdictional	Poor	Landfill	485	0.028	0.5	242.50	20%	291.00
E 77	Ephemeral	755	Jurisdictional	Poor	Landfill	755	0.069	0.5	377.50	20%	453.00
E 78	Ephemeral	665	Jurisdictional	Average	Landfill	665	0.061	0.75	498.75	20%	598.50
E 79	Ephemeral	630	Jurisdictional	Average	Landfill	630	0.051	0.75	472.50	20%	567.00
E 80	Ephemeral	810	Jurisdictional	Average	Landfill	810	0.037	0.75	607.50	20%	729.00
E 95	Ephemeral	450	Jurisdictional	Poor	Landfill	450	0.015	0.5	225.00	20%	270.00
Ephemeral Total						6,860	0.482	--	4,526.25	--	5,431.50
Project Total						12,615	2.354	--	12,556.25	--	15,067.50
Wetland 2	PEM1/PSS1	0.048	Jurisdictional	N/A	Landfill	N/A	0.048	2	0.096	--	--
Project Total						--	0.048	--	0.096	20%	0.115

Notes:

- Totals are only for jurisdictional waters. Isolated waters are not included in mitigation calculation.
- Stream quality and length based on Redwing delineation. Features have been verified by the U.S. Army Corps of Engineers.
- Stream Quality Bluegrass Bioregion:
 - Excellent (RBP score ≥156)
 - Average (142-155)
 - Poor (≤141)



MATTHEW G. BEVIN
GOVERNOR

CHARLES G. SNAVELY
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

AARON B. KEATLEY
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

July 24, 2018

Mr. Jerry Purvis
East Kentucky Power Cooperative
4775 Lexington Road
Winchester, KY 40391

Re: Water Quality Certification # 2017-053-7
East KY Power Coop - H L Spurlock Power Station
AI No.: 3004; Activity ID: APE20160007
USACE ID No.: LRL-2015-329-kjs
Tributary to Lawrence Creek, Beasley Creek and
tributaries
Mason County, Kentucky

Dear Mr. Purvis:

Pursuant to Section 401 of the Clean Water Act (CWA), the Commonwealth of Kentucky certifies it has reasonable assurances that applicable water quality standards under Kentucky Administrative Regulations Title 401, Chapter 10, established pursuant to Sections 301, 302, 303, 304, 306, and 307 of the CWA, will not be violated by the above referenced project provided that the U.S. Army Corps of Engineers authorizes the activity under 33 CFR part 330, and the attached conditions are met.

All future correspondence on this project must reference **AI No. 3004**. **The attached document is your official Water Quality Certification; please read it carefully.** If you should have any questions concerning the conditions of this water quality certification, please contact Ms. Joyce Fry of my staff by calling 502-782-6951.

Sincerely,

A handwritten signature in black ink that reads "Elizabeth Harrod".

Elizabeth Harrod, Supervisor
Water Quality Certification
Kentucky Division of Water

EH:JF
Attachment

COPIES SENT TO:

Kimberly Simpson, USACE: Louisville District (via email: Kimberly.J.Simpson@usace.army.mil)

Lee Andrews, USFWS: Frankfort (via email: kentuckyes@fws.gov)

Neil Guthals, Redwing Ecological Services, Inc.: Louisville (via email: nguthals@redwingeco.com)

Brad Anderson, Redwing Ecological Services, Inc.: Louisville (via email: banderson@redwingeco.com)

Josh Young, EKPC: Winchester (via email: josh.young@ekpc.coop)

Chad Von Gruenigen, KDOW: Frankfort (via email: chad.vongruenigen@ky.gov)

Water Quality Certification
East KY Power Coop - H L Spurlock Power Station
Facility Requirements
Permit Number: WQC#2017-053-7
Activity ID No.: APE20160007

ACTV0000000005 (AI# 3004 Landfill) Impacts to approx. 5,755 linear ft. intermittent stream, 6,860 linear ft. ephemeral stream and 0.048 acre wetland:

Submittal/Action Requirements:

Condition No.	Condition
S-1	East Kentucky Power Cooperative shall submit written notification : Due prior to any construction activity. A copy of the in-lieu fee receipt paid to either the Kentucky Department of Fish and Wildlife Resources Stream and Wetland Restoration program or the Northern Kentucky Stream Restoration Program for 15,067.5 stream Adjusted Mitigation Units (AMUs) and 0.115 wetland AMUs shall be submitted to the Water Quality Certification Section before the beginning of construction. [Clean Water Act]
S-2	East Kentucky Power Cooperative shall notify the Division : Due prior to any construction activity. Notify 401 Water Quality Certification Project Manager or Supervisor at least two weeks before the start of construction. [Clean Water Act]
S-3	East Kentucky Power Cooperative shall notify the Division : Due when construction is complete. Notify 401 Water Quality Certification Project Manager or Supervisor no later than two weeks post-construction. [Clean Water Act]

Narrative Requirements:

Condition No.	Condition
T-1	The work approved by this certification shall be limited to: - the construction of a special waste landfill (Landfill Area D) located at East Kentucky Power Cooperative's (EKPC) Spurlock power generating station in Maysville, (Mason Co.) KY at Latitude/Longitude 38.691133, -83.838169. - The project will result in permanent impacts to approximately 5,755 linear ft. of intermittent stream, 6,860 linear ft. ephemeral stream, and 0.048 acre of wetland. [Clean Water Act]
T-2	All work performed under this certification shall adhere to the design and specifications set forth in the following documents: - Application for Construction Across or Along a Stream and/or Water Quality Certification packet dated December 16, 2016; - Modification Request for Stream Mitigation Plan, dated April 12, 2018; - the U.S. Army Corps of Engineers Public Notice No.: LRL-2015-329-kjs. [Clean Water Act]
T-3	The applicant is responsible for preventing degradation of waters of the Commonwealth from soil erosion. An erosion and sedimentation control plan must be designed, implemented, and maintained in effective operating condition at all times during construction. [Clean Water Act]

Water Quality Certification

East KY Power Coop - H L Spurlock Power Station

Facility Requirements

Permit Number: WQC#2017-053-7

Activity ID No.:APE20160007

Page 2 of 2

ACTV0000000005 (AI# 3004 Landfill) Impacts to approx. 5,755 linear ft. intermittent stream, 6,860 linear ft. ephemeral stream and 0.048 acre wetland:

Narrative Requirements:

Condition No.	Condition
T-4	The Division of Water reserves the right to modify or revoke this certification should it be determined that the activity is in noncompliance with any condition set forth in this certification. [Clean Water Act]
T-5	If construction does not commence within one year of the date of this letter, this certification will become void. A letter requesting a renewal should be submitted. [Clean Water Act]
T-6	Other permits from the Division of Water may be required for this activity. If this activity occurs within a floodplain, a Permit to Construct Across or Along a Stream may be required. Please contact the Floodplain Section Supervisor (502-782-6941) for more information. If the project will disturb one acre or more of land, or is part of a larger common plan of development or sale that will ultimately disturb one acre or more of land, a Kentucky Pollution Discharge Elimination System (KPDES) stormwater permit shall be required from the Surface Water Permits Branch. This permit requires the development of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must include erosion prevention and sediment control measures. Contact: Surface Water Permits Branch (SWPB) Support at 502-564-3410 or SWPBSupport@ky.gov. [Clean Water Act]
T-7	Check dams are not allowed within the stream channel. [Clean Water Act]
T-8	Remove all sediment and erosion control measures after re-vegetation has become well-established. [Clean Water Act]



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DEPARTMENT FOR ENVIRONMENTAL PROTECTION**

ANTHONY R. HATTON
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

ATTENTION APPLICANT

If your project involves one or more of the following activities, you may need more than one permit from the Kentucky Division of Water.

- *building in a floodplain *road culvert in a stream**
- *streambank stabilization *stream cleanout**
- *utility line crossing a stream**
- *construction sites greater than 1 acre**

- **Construction sites greater than 1 acre will require the filing of a Notice of Intent to be covered under the KPDES General Stormwater Permit. This permit requires the creation of an erosion control plan.
Contact: Surface Water Permits Branch (SWPB) Support at SWPBsupport@ky.gov**
- **Projects that involve filling in the floodplain will require a floodplain construction permit from the Water Resources Branch.
Contact: Ron Dutta at (502) 782-6941**
- **Projects that involve work IN a stream, such as bank stabilization, road culverts, utility line crossings, and stream alteration will require a floodplain permit and a Water Quality Certification from the Division of Water.
Contact: Elizabeth Harrod at (502) 782-6700**

A complete listing of environmental programs administered by the Kentucky Department for Environmental Protection is available from Pete Goodmann by calling (502) 782-6956.



GENERAL CONDITIONS FOR WATER QUALITY CERTIFICATION

1. The Kentucky Division of Water may require submission of a formal application for an Individual Certification for any project if the project has been determined to likely have a significant adverse effect upon water quality or degrade the waters of the Commonwealth so that existing uses of the water body or downstream waters are precluded.
2. Nationwide permits issued by the U.S. Army Corps of Engineers for projects in Outstanding State Resource Waters, Cold Water Aquatic Habitats, and Exceptional Waters as defined by 401 KAR 10:026 shall require individual water quality certifications.
3. Projects requiring in-stream stormwater detention/retention basins shall require individual water quality certifications.
4. Erosion and sedimentation pollution control plans and Best Management Practices must be designed, installed, and maintained in effective operating condition at all times during construction activities so that violations of state water quality standards do not occur.
5. Sediment and erosion control measures (e.g., check-dams, silt fencing, or hay bales) shall not be placed within surface waters of the Commonwealth, either temporarily or permanently, without prior approval by the Kentucky Division of Water's Water Quality Certification Section. If placement of sediment and erosion control measures in surface waters is unavoidable, placement shall not be conducted in such a manner that may cause instability of streams that are adjacent to, upstream, or downstream of the structures. All sediment and erosion control measures shall be removed and the natural grade restored prior to withdrawal from the site.
6. Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse.
7. To the maximum extent practicable, all in-stream work under this certification shall be performed during low flow.
8. Heavy equipment (e.g. bulldozers, backhoes, draglines, etc.), if required for this project, should not be used or operated within the stream channel. In those instances where such in-stream work is unavoidable, then it shall be performed in such a manner and duration as to minimize re-suspension of sediments and disturbance to the channel, banks, or riparian vegetation.
9. If there are water supply intakes located downstream that may be affected by increased turbidity, the permittee shall notify the operator when work will be performed.
10. Removal of existing riparian vegetation should be restricted to the minimum necessary for project construction.
11. Should stream pollution, wetland impairment, and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms of water pollution), the Kentucky Division of Water shall be notified immediately by calling 800/564-2380.

EXHIBIT 3
DIRECT TESTIMONY OF
JARRAD BURTON

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF EAST)	
KENTUCKY POWER COOPERATIVE, INC. FOR)	
APPROVAL TO AMEND ITS ENVIRONMENTAL)	
COMPLIANCE PLAN AND RECOVER COSTS	)	CASE NO.
PURSUANT TO ITS ENVIRONMENTAL	)	2024-00109
SURCHARGE, AND FOR THE ISSUANCE OF)	
CERTIFICATE OF PUBLIC CONVENIENCE)	
AND NECESSITY AND OTHER RELIEF)	

**DIRECT TESTIMONY OF JARRAD BURTON
ON BEHALF OF EAST KENTUCKY POWER COOPERATIVE, INC.**

Filed: May 17, 2024

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF EAST)	
KENTUCKY POWER COOPERATIVE, INC.)	
FOR APPROVAL TO AMEND ITS ENVIROMENTAL	)	CASE NO.
COMPLIANCE PLAN AND RECOVER COSTS	)	2024-00109
PURSUANT TO ITS ENVIROMENTAL)	
SURCHARGE, AND FOR THE ISSUANCE OF)	
CERTIFICATE OF PUBLIC CONVENIENCE)	
AND NECESSITY AND OTHER RELIEF)	

VERIFICATION OF JARRAD BURTON

STATE OF KENTUCKY)
COUNTY OF CLARK)

Jarrad Burton, Landfill Program Manager for East Kentucky Power Cooperative, Inc., being duly sworn, states that he has supervised the preparation of his Direct Testimony and certain filing requirements in the above referenced case and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

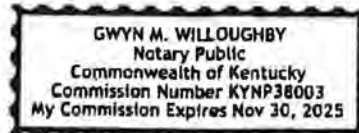
Jarrad Burton

Jarrad Burton

The foregoing Verification was signed, acknowledged and sworn to before me this 14th day of May 2024, by Jarrad Burton.

Gwyn M. Willoughby

Notary Public



1 **I. INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.**

3 A. My name is Jarrad Burton. I am the Landfill Program Manager for East Kentucky Power
4 Cooperative, Inc. ("EKPC"). My business address is 4775 Lexington Road, Winchester,
5 Kentucky 40391.

6 **Q. PLEASE DESCRIBE YOUR EDUCATION AND PROFESSIONAL**
7 **EXPERIENCE.**

8 A. I received a Bachelor's degree in Civil Engineering from the University of Kentucky. I am
9 a licensed professional engineer in the Commonwealth of Kentucky. I worked for the
10 federal government as a civil engineer from 2018 to 2020. I have been employed at EKPC
11 since 2020 as a member of the Engineering and Construction Business Unit.

12 **Q. PLEASE DESCRIBE YOUR DUTIES AS THE LANDFILL PROGRAM**
13 **MANAGER FOR EKPC.**

14 A. I am responsible for overseeing and supporting EKPC's Landfill Management Plan, which
15 includes the planning, design, development of construction documents, management of
16 capital construction projects, and engineering support of all landfill activities. I report
17 directly to EKPC's Manager of Production Engineering, Kyle Shadoan.

18 **Q. HAVE YOU TESTIFIED BEFORE THE KENTUCKY PUBLIC SERVICE**
19 **COMMISSION BEFORE? IF SO, IN WHAT CASES?**

20 A. I have not previously testified before the Commission.

1 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

2 A. The purpose of my testimony is to discuss EKPC's planning, scoping, and engineering
3 efforts for the Hugh L. Spurlock Power Station ("Spurlock") Landfill Area D Phase 3
4 Project ("Project").

5 **Q. ARE YOU SPONSORING ANY ATTACHMENTS?**

6 A. Yes. I am sponsoring the following attachments, which I ask to be incorporated into my
7 testimony by reference:

- 8 • Attachment JB-1 is the EKPC Landfill Management Plan;
- 9 • Attachment JB-2 is the EKPC Board Resolution authorizing the construction of this
10 project
- 11 • Attachment JB-3 are the Preliminary Construction Plans
- 12 • Attachment JB-4 is the Construction Quality Assurance Plan
- 13 • Attachment JB-5 - Supporting Documentation for EKPC's cost to develop, operate,
14 and maintain the Spurlock Landfill
- 15 • Attachment JB-6 - Engineer's Construction Cost Estimate for Area D Phase 3

16 **Q. WERE THE ATTACHMENTS TO YOUR TESTIMONY PREPARED BY YOU OR**
17 **SOMEONE WORKING UNDER YOUR SUPERVISION?**

18 A. Yes.

19 **II. AREA D PHASE 3 OF THE SPURLOCK STATION LANDFILL PROJECT**

20 **Q. PLEASE BRIEFLY DESCRIBE EKPC'S SPURLOCK STATION LANDFILL.**

21 A. Spurlock Station, located in Maysville, KY, is the largest coal-fired electric generating
22 facility owned by EKPC and has been in operation since 1977. In 1982, EKPC received an
23 operational permit for an inert landfill, southwest of the plant site. Since 1982, EKPC has

1 continued to develop Spurlock Landfill under the Commonwealth of Kentucky Energy and
2 Environment Cabinet Division of Waste Management (“KDWM”) inert landfill program,
3 special waste landfill program, and now the Coal Combustion Residuals (“CCR”) Rule
4 CCR program. The landfill began with Area A, and went through two horizontal
5 expansions, Areas B and C. In March of 2019, EKPC was issued an Agreed Order by the
6 KDWM for the development, construction, and operation of a unique, adjacent landfill,
7 Peg’s Hill (Area D) Landfill. The sediment pond for Peg’s Hill Landfill was constructed in
8 2022. The first cell (Peg’s Hill/Area D Phase 1) was constructed in 2023. The second cell
9 (Peg’s Hill/Area D Phase 2) is expected to complete construction in 2024.

10 **Q. PLEASE BRIEFLY DESCRIBE THE SPURLOCK STATION LANDFILL AREA**
11 **D PHASE 3 PROJECT AND ITS OBJECTIVE.**

12 A. The proposed design and construction of the Project for EKPC’s Spurlock’s landfill will
13 provide approximately 4,000,000 additional cubic yards of coal ash capacity and will meet
14 the requirements of the CCR. Environmental compliance and reliability are the key
15 objectives for the Project. Due to projected ash production, a separate project to clean-close
16 the existing ash pond and the conversion of systems to only dry conveyance, Spurlock
17 Landfill will exceed the available volume in the current disposal areas within the next 2.5
18 years. The planning, permitting, and construction of a new area must be timely performed
19 in advance of the predicted landfill capacity depletion to assure that generation will not be
20 interrupted by the lack of a disposal facility. The EKPC-owned and operated special
21 landfill alternative has been evaluated against other alternative disposal sites and found to
22 be the most cost-effective and reliable option by which to meet environmental legal
23 requirements and to keep the Spurlock generating units operating without interruption due

1 to a lack of or inadequate ash disposal facilities. EKPC's Landfill Management Plan
2 requires design and planning for the Spurlock landfill based upon the generation and
3 placement of 1,300,000 cubic yards per year. Historical planning disposal volume has
4 ranged from 1,200,000 cubic yards to 1,800,000 cubic yards. Since joining PJM, the ash
5 disposal quantities have lowered. As a result, a rolling five-year average has been utilized
6 to project capacity needs. The current five-year rolling average for Spurlock Station based
7 off actual disposal volumes from 2019 through 2023 is 1,300,000 cubic yards. An
8 additional 350,000 to 650,000 cubic yards were considered through 2026 to account for
9 the closure of the Spurlock Ash Pond. The total yearly savings using the Spurlock landfill
10 as opposed to sending offsite can be \$48,984,000 per year.

11 **Q. HAVE YOU BEEN INVOLVED IN THE PLANNING, SCOPING AND**
12 **ENGINEERING EFFORTS FOR THE AREA D PHASE 3 SPURLOCK STATION**
13 **LANDFILL PROJECT FROM THE BEGINNING OF THE PROJECT?**

14 A. Yes.

15
16 **Q. PLEASE PROVIDE A DESCRIPTION FOR EACH ELEMENT OF THE**
17 **PROPOSED PROJECT.**

18 A. This project includes the design and construction of Peg's Hill (Area D) Phase 3. The
19 landfill cell will be 31.47 acres and will provide approximately 4,000,000 cubic yards of
20 ash disposal capacity for EKPC's Spurlock Power Station. This will be the third landfill
21 cell constructed in Peg's Hill (Area D) and is projected to provide capacity through 2028.
22 The design and construction will comply with all state and federal regulations and will
23 include a composite liner system (geosynthetic clay and 60-mil HDPE) and a continuous

1 leachate collection system. Additional scope elements of the cell construction include
2 perimeter ditches and drainage features, subgrade preparation, and access roads.

3 **Q. PLEASE EXPLAIN THE NEED FOR THIS PROJECT IN DETAIL.**

4 A. This project is needed to ensure the uninterrupted operation of Spurlock Station which must
5 have sufficient capacity to dispose of CCR at all times. The risk of running out of capacity
6 at Spurlock Landfill has significant financial implications for the operational costs of
7 Spurlock Station.

8 **Q. PLEASE DESCRIBE HOW EKPC MANAGES ITS LANDFILL
9 FACILITIES.**

10 A. EKPC owns, operates, and maintains multiple landfill facilities. The largest landfill in
11 EKPC's generation fleet is the CCR Landfill at Spurlock Station. Since 1982, when
12 Spurlock Station Landfill received an operational permit as an inert landfill, EKPC has
13 continued to manage, develop, construct, and operate Spurlock Station Landfill. In 2013
14 EKPC formalized this management process with the Landfill Management Plan. The Plan
15 outlines goals, processes, and resources to ensure adequate landfill capacity and permit
16 coverage, requirements for design, construction, and quality assurance, and provides
17 operational and maintenance controls and oversight to comply with permit conditions and
18 regulatory requirements. This management process differs from other capital projects that
19 EKPC executes due to the frequency and consistency of landfill cell construction. In lieu
20 of scoping and engineering reports, the Landfill Management Plan prescribes minimum
21 constructed and permitted capacities that will be maintained at all times. This sets a
22 frequency for construction and provides sizing guidance as well. EKPC's Landfill
23 Management Plan is attached as Attachment JB-1.

1 **Q. PLEASE DESCRIBE THE ALTERNATIVES TO THE PROPOSED PROJECT**
2 **THAT WERE CONSIDERED AND WHY THOSE ALTERNATIVES WERE NOT**
3 **SELECTED.**

4 A. During preliminary design of the Area D Phase 3 landfill cell, EKPC evaluated three layout
5 alternatives. Each of the three layouts provided varying horizontal footprints and
6 associated waste capacities. The three layout alternatives were:

- 7 • Design TWASTE V2: 13.17 acre footprint; 2,010,634 cubic yards of waste capacity
- 8 • Design TWASTE V4: 14.8 acre footprint; 2,242.666 cubic yards of waste capacity
- 9 • Design TWASTE OVERLAY: 31.47 acre footprint; 4,081,482 cubic yards of waste
10 capacity

11 Out of the three layout alternatives, the TWASTE OVERLAY was selected as it best meets
12 the size, volume, and operational needs at Spurlock Landfill. A fourth alternative was also
13 considered, one that assumes disposal of Spurlock Station's CCR at an offsite landfill.
14 EKPC evaluated the cost of offsite disposal and the cost was estimated at \$50.00 per cubic
15 yard. This includes the hauling, tipping fee, and disposal fee at the offsite landfill. EKPC
16 directly engaged with Rumpke's landfill located in Georgetown, Ohio to determine the
17 offsite disposal costs. Rumpke quoted a disposal cost of \$38 per ton for the 1,300,000 tons
18 of ash generated by Spurlock Station. EKPC assumes a dry density unit weight of 1.0 tons
19 per cubic yard. Uncompact dry densities can range from 34 to 54 pounds per cubic foot.
20 In addition to the disposal costs, hauling the material from Spurlock Station to Georgetown,
21 Ohio was quoted at approximately \$12 per ton. EKPC's contracted landfill operator,
22 Charah, LLC, provided this haul cost to EKPC. Offsite disposal is not economically viable
23 when compared to EKPC's costs to own and operate its own landfill. EKPC's cost to

1 develop, operate, and maintain Spurlock Landfill in 2023 was estimated at \$12.32 per cubic
2 yard of material (please refer to Attachment JB-5 for supporting documentation). This cost
3 to EKPC includes all permitting, design, construction, maintenance, and contract
4 operations at Spurlock Landfill. If EKPC was forced to place waste offsite due to limited
5 capacity, or elected to dispose of CCR offsite, the annual cost increase to dispose of the
6 CCR waste generated at Spurlock Station, assuming an annual waste production of
7 1,300,000 cubic yards, would be \$48,984,000. Due to the significant cost difference, it is
8 not a viable option for EKPC to pursue the offsite disposal alternative.

9 **Q. PLEASE DESCRIBE WHY THIS PROJECT IS NOT DUPLICATIVE OF ANY**
10 **OTHER SOLUTIONS OR RESOURCES CURRENTLY HELD BY THE UTILITY.**

11 A. The development and construction of the Area D Phase 3 project is consistent with the
12 development guidelines outlined in EKPC's Landfill Management Plan. The Plan provides
13 operational limits on the minimum amount of constructed and permitted landfill capacity
14 at all times. The Plan further outlines risk mitigation components related to environmental
15 and regulatory compliance at EKPC's landfill facilities.

16 The Peg's Hill (Area D) Landfill at Spurlock Station received an Agreed Order,
17 providing environmental and regulatory framework for the development, design,
18 construction, and operation of the landfill from the KDWM in March of 2019. EKPC
19 fulfilled the requirements pursuant to the terms and conditions of the Agreed Order and the
20 KDWM issued a permit on 10/03/2023 increasing the landfill waste boundary and
21 footprint. This Agreed Order is being provided by Jerry Purvis as an attachment to his
22 testimony. The permit for Peg's Hill (Area D) Landfill was required due to the waning

1 disposal capacity in the previously permitted Area C of Spurlock Landfill. The Peg's Hill
2 (Area D) Landfill is the only available on-site construction alternative for Spurlock Station.

3 **Q. WHY WAS A SCOPING REPORT NOT PREPARED FOR THE SPURLOCK**
4 **STATION LANDFILL PEG'S HILL (AREA D) PHASE 3 PROJECT?**

5 A. The scope for the Spurlock (Peg's Hill) Area D Phase 3 project is dictated by the EKPC
6 Landfill Management Plan. The size and capacity are large enough to ensure that Spurlock
7 Station has a minimum storage capacity of two years, ~2,600,000 cubic yards, at all times.
8 Landfill cells are designed to target two to three years of CCR disposal capacity, with the
9 caveat that cells should be constructed in one calendar year.

10 The Agreed Order from the KDWM and the CCR Rule dictate minimum design and
11 construction standards of the landfill cell.

12 The scope for the Spurlock Peg's Hill (Area D) Phase 3 project includes:

- 13 • Earthwork and subgrade development associated with a cell of 31.47 acres in size,
14 providing approximately 4,000,000 cubic yards of capacity
- 15 • Liner system – geosynthetic clay liner and 60-mil HDPE
- 16 • Continuous leachate collection system utilizing geocomposite material and a trunk
17 and branch drainage system Perimeter ditches to control run-on and run-off
18 stormwater

19 **Q. WHAT ARE THE ESTIMATED CONSTRUCTION COSTS FOR EACH**
20 **ELEMENT OF THE PROPOSED PROJECT?**

21 A. The total estimated cost to construct the Area D Phase 3 project is \$24,663,317.34. The
22 estimate is based off the assumption of a single construction contract issued for all labor
23 and materials associated with constructing the landfill cell. Please refer to Attachment

1 JB-6 for the Engineer's Construction Cost Estimate. The major elements of the project
2 have been estimated as follows:

- 3 • Earthwork/Subgrade development - \$5,252,108.60
- 4 • Liner system – geosynthetic clay liner and 60-mil HDPE - \$8,056,499.30
- 5 • Leachate collection system - \$1,840,981.57
- 6 • Perimeter ditches - \$1,492,851.96
- 7 • Ancillary construction activities - \$1,253,921.47

8 In addition to the construction contract, EKPC contracts geotechnical inspection, survey,
9 design engineering, and construction quality assurance engineering. These services are
10 estimated at a total of \$1,550,000.00. Owner's costs, which include EKPC project
11 management and inspection are estimated at \$500,000.00. Supporting construction
12 activities, including the placement of protective ash cover on the liner system and tree
13 clearing, will be completed outside of the construction contract and is estimated at
14 \$1,300,000.00. Lastly, environmental permitting costs and legal fees are estimated at
15 \$200,000.00. There is a 15% owner's contingency that has been applied to all
16 aforementioned costs, representing \$3,216,954.44.

17 **Q. DO YOU BELIEVE THAT THE \$24,663,317 COST ESTIMATE FOR THE AREA**
18 **D PHASE 3 SPURLOCK STATION LANDFILL PROJECT IS A REASONABLE**
19 **ESTIMATE?**

20 A. Yes. The estimate is based on a combination of recent landfill construction bids and
21 actualized landfill construction projects. The estimated cost of the Project is \$21,446,363,
22 plus a contingency of \$3,216,954, for a total authorization of \$24,663,317.

1 **Q. WILL THERE BE ANY ONGOING OPERATIONS AND MAINTENANCE**
2 **EXPENSE FOR THE AREA D PHASE 3 SPURLOCK STATION LANDFILL?**

3 A. Yes, the construction of Area D, Phase 3 will result in operations and maintenance costs of
4 \$242,000 per year. This cost includes the incremental increase in annual general
5 maintenance for the landfill, as well as general environmental engineering consulting,
6 groundwater sampling, operational and environmental inspections.

7 **Q. ARE THERE ANY PUBLIC UTILITIES, CORPORATIONS OR PERSONS**
8 **WITH WHOM THIS PROJECT IS LIKELY TO COMPETE?**

9 A No.

10 **Q. WHAT IS THE TIMELINE FOR COMPLETION OF THE PROJECT?**

11 A. This project is scheduled for full completion in the fourth quarter of 2026. A portion of the
12 landfill is expected to be put into service in the fourth quarter of 2025 with the remaining
13 construction activities completing in 2026.

14 **III. CONCLUSION**

15 **Q. PLEASE SUMMARIZE YOUR TESTIMONY.**

16 A. The Peg's Hill (Area D) Phase 3 landfill cell construction project is a prudent measure and
17 routine business function for EKPC to continue to operate Spurlock Station and keep its
18 generating capacity of 1,346 MW available to EKPC Owner-Members Cooperatives
19 (owner-members). The proposed project presents the most reasonable, least-cost option for
20 continued onsite disposal of CCR byproducts and helps ensure the Station's units may
21 continue to be valuable resources.

22 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

23 A. Yes.

ATTACHMENTS

Attachment JB-1 – EKPC Landfill Management Plan

Attachment JB-2 – EKPC Board Resolution – Spurlock Landfill Area D Phase 3 Construction Project

Attachment JB-3 – Preliminary Area D Phase 3 Construction Plans

Attachment JB-4 – Construction Quality Assurance Plan

Attachment JB-5 – Supporting Documentation for EKPC’s cost to develop, operate, and maintain the Spurlock Landfill

Attachment JB-6 – Engineer’s Construction Cost Estimate for Area D Phase 3

ATTACHMENT JB-1
EKPC LANDFILL MANAGEMENT PLAN



Revision #:	4.0
Origination Date:	February 2013
Effective Date:	March 2024

Program Management Plan Cover Sheet

Title: EKPC Landfill Management Plan

Author(s): Jarrad Burton

Approved by:

Craig Johnson

Craig Johnson, Senior Vice President, Power Production

3/27/2024

Date

Brad Young

Brad Young, Vice President, Engineering & Construction

3/27/2024

Date

Jerry Purvis

Jerry Purvis, Vice President, Environmental Affairs

3/27/2024

Date

EKPC Landfill Management Plan

Prepared by:

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March 2024

Revision 4.0

EKPC Landfill Management Plan

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Attachment A	Facility Maps
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Appendices

Appendix 1	Coal Combustion Residual Rule Quality Assurance Plan
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I. Executive Summary:

In 2013, the East Kentucky Power Cooperative (EKPC) Board approved a Landfill Management Program that dedicated employees, equipment, technology, and budget to efficiently manage EKPC's landfill facilities, while also minimizing environmental and operational risks. This management program has been utilized to develop, operate, and maintain Spurlock, Cooper, Smith, and Hancock Creek landfills. Through these management efforts at each site, the Landfill Management Program has provided significant cost saving benefits to our Owner-members since its inception.

With the promulgation of the Coal Combustion Residual (CCR) Rule in 2015 by the Environmental Protection Agency (EPA), EKPC has taken additional steps and measures to maintain compliance with this federal rule. Significant changes experienced by the CCR Rule include routine 7-day and annual inspections, a host of certification reports for the design, operations, closure and post-closure, location restrictions, and groundwater monitoring related to EKPC's landfills, as well as increased risk from sub-standard construction and operational practices.

The two primary risks to EKPC in regards to the landfill facilities: providing sufficient operational capacity for placement of CCR materials, and maintaining compliance with existing permits and the CCR Rule.

The risk of running out of capacity at either Spurlock or Cooper landfills has significant financial implications on the operational costs of those facilities. For example, if Spurlock Landfill were to run out of capacity and CCR material had to be hauled off-site, Spurlock Station would incur an additional \$48,984,000 per year while another landfill cell is constructed.

Non-compliance with existing Kentucky Division of Waste Management (KDWM) permits and the CCR Rule also bring significant financial risk. At Spurlock Landfill, groundwater contamination could lead to landfill closure and cost an additional \$115,000,000 over a three year period to permit and construct a new landfill. Violations of the Clean Water Act either during construction or operations would result in a fine of up to \$37,500 per day. The CCR Rule utilizes a unique enforcement mechanism for CCR landfills and ash impoundments. Owners of CCR units are required to place a variety of reports, plans, and data on publicly accessible websites. The public, governmental agencies, and third-party interest groups can access the information at any time, and if perceived issues in the posted information exist, these entities can sue the owner of the CCR unit.

This revision to the Landfill Management Plan documents the measures and controls in place to continue to maintain cost effective facilities that provide financial savings to our Owner-Members, while also minimizing risk with Kentucky Division of Waste Management permits and compliance with the CCR Rule.

II. Background:

EKPC owns, operates, and maintains four landfill facilities; three are active and one is inactive. The three active landfills are Spurlock, Cooper, and Smith Landfills. The inactive facility is Hancock Creek Landfill, located at the EKPC Headquarters facility in Winchester. Maps of each facility can be found in Attachment A.

EKPC implemented the Landfill Management Program in 2013 to ensure adequate landfill capacity and permit coverage, provide the highest level of design, construction, and quality assurance during the development of landfill cells, caps, and supporting facilities, and provide operations and maintenance controls and oversight to comply with permit conditions and regulatory requirements. The Landfill Management Plan outlined how EKPC would execute this program, meet the goals listed above, and do so in a manner that provides great financial benefit to the Cooperative.

Beginning in 2013, resources were approved and provided to execute the Plan. A civil engineering position in Production Engineering was created to oversee and support the Landfill Management Program. The engineer is responsible for planning, design, developing construction documents, managing capital construction projects, and providing engineering support on all other landfill activities. An Inspector in Production Engineering was hired to act as daily EKPC representation on capital and maintenance projects. The inspector monitors, confirms, and documents that projects are constructed in accordance with permits, construction documents, and Construction Quality Assurance (CQA) requirements. Finally, civil design drafting software, Civil 3D, was purchased for engineering and design use, annual aerial surveying dollars were dedicated to the budget for capacity and planning purposes, and two four-wheel drive vehicles were purchased for site and project accessibility at the landfills.

Since 2013, EKPC has continued to construct and operate EKPC landfills as required. In that timeframe, five landfill cells have been completed at Spurlock and another will be completed in 2024, one cell was completed at Cooper, and Smith Landfill was permitted and constructed for the ash pond clean closure at Dale Station. These projects have met the regulatory requirements of the Kentucky Division of Waste Management (KDWM) and, after the effective date in 2015, the Coal Combustion Residual (CCR) Rule.

As part of the CCR Rule, EKPC has developed a host of certification reports for the design, operations, closure and post-closure, location restrictions, and groundwater monitoring for active EKPC landfills. Operational changes have also been implemented to comply with the Rule. Specifically, 7-day and annual inspections are executed by contract consultant's at all active landfills. Observations made during inspections identifying action items are tracked through EKPC work order management software. EKPC also utilizes consulting support to assist in the day-to-day oversight of operations at each active landfill. A full breakdown of the CCR Rule

roles and responsibilities can be found in the CCR Rule Quality Assurance Plan (QAP) found in Appendix 1.

Due to changes in the overall management of EKPC landfills, including compliance with the CCR Rule, the Landfill Management Plan has been updated for accuracy. The following Plan will provide a guide for EKPC to continue to effectively operate and maintain environmental compliance at each landfill and act as a reference document for future and current employees involved with landfills at EKPC.

III. Landfill Management Components

a. Facilities

- i.** Spurlock Landfill – Spurlock Station, located in Maysville, KY, is the largest coal-fired electric generating facility owned by EKPC and has been in operation since 1977. In 1982, EKPC received an operational permit for an inert landfill, southwest of the plant site. Since 1982, EKPC has continued to develop Spurlock Landfill under the KDWM inert landfill program, special waste landfill program, and now the CCR program. The landfill began with Area A, and has undergone three horizontal expansions, Areas B, C, and D. Area D (Peg’s Hill) began construction in March of 2022. The sediment pond finished in November 2022 and Phase 1 finished in October 2023. Phase 2 began construction in February 2024 with an expected completion of fall 2024. Phase 3 is expected to finish 2026.
- ii.** Cooper Landfill – The John Sherman Cooper Station is a coal-fired electric generating facility, located in Burnside, KY, that has been in operation since 1964. In 1995, EKPC received a construction permit for the special waste landfill, and in 1996 KDWM issued the final operating permit for the facility. EKPC has disposed dry coal combustion byproducts in the permitted special waste landfill since 1996.
- iii.** Smith Landfill – J.K. Smith Power Station, located in Trapp, KY, has been the site of various actual and proposed electric generation projects since 1979. The 3,272-acre property was originally purchased in 1979 and 1980 with plans to construct two coal-fired steam electrical generating units. The need for the project did not materialize as anticipated and the project was delayed in 1984, and eventually canceled in 1993. EKPC began to construct gas-fired combustion turbines (CTs) at Smith Station to provide peaking generation capacity. Currently there are nine CTs in operation at Smith Station.

In an effort to maintain coal combustion byproduct disposal capacity for the William C Dale Power Station (Dale Station), and also provide backup storage capacity for Cooper and Spurlock Stations, EKPC identified an area at Smith Station to develop a 64-acre site for the construction of a special waste landfill. KDWM issued a construction permit in 2013, and in conjunction

with the clean closure efforts of the ash impoundments at Dale Station, KDWM issued an operating permit for Smith Landfill in 2016.

- iv. Hancock Creek Landfill - Located at EKPC's Headquarters campus in Winchester, KY, Hancock Creek Landfill was permitted and developed to accept coal combustion byproducts from Dale Station. The landfill was initially permitted as an inert landfill with KDWM in 1985. The landfill ceased receiving ash, was capped and closed in 2012, and the post-closure monitoring with KDWM commenced. These post-closure monitoring requirements continue today.

b. Planning

Added generation at Spurlock and the installation of flue gas desulfurization equipment at each station have heightened the need for prudent planning at EKPC landfills. Both Cooper and Spurlock Landfills provide a dramatic savings to EKPC and if landfill capacity were to run out at any time, there would be significant cost increases to operations. A Landfill Cost Comparison outlining the savings is contained in Attachment B. To minimize the risk, EKPC has modified the construction sequence to ensure a minimum capacity of two-years of ash disposal at any given time at each facility. For Spurlock Landfill, the historical planning disposal volume has ranged from 1,200,000 cubic yards to 1,800,000 cubic yards. Since joining PJM, the ash disposal quantities have lowered. As a result, a rolling five year average will be utilized to project capacity needs. Generation projections, two years out, will also be evaluated to ensure planning volumes are appropriate. The Spurlock Ash Pond Closure is expected to increase the disposal volume by anywhere from 350,000 to 650,000 cubic yards per year through 2025. A minimum of two years storage capacity will be maintained at all times, at each facility. To manage constructability concerns, cells are designed to handle between two and four years of capacity. With tight earthwork construction windows in Kentucky, May through November, and the need to complete cells in one calendar year, construction must be started on time to ensure capacity.

In an effort to meet these planning needs, EKPC has developed, and utilizes capacity tracking tools to monitor and plan cell constructions and landfill expansions. Annual aerial surveying is performed to provide a 'point in time' reference for volume calculations. This surveyed surface is then compared to the permitted final fill configuration to provide amount of capacity available. To refine the available space calculation from the time of the survey to time of the calculation, the monthly ash generation totals can then be backed out for each month between the date of calculation and the date of survey. The available capacity is then entered into the Landfill Projection Charts (see Attachment C). This chart is utilized to manage and report landfill capacity. The chart tracks projected ash production, actual ash production, available constructed capacity, and permitted capacity.

c. Permitting/Environmental Compliance

The EKPC Environmental Department is the responsible party for developing and submitting permit applications for all EKPC landfill facilities. Environmental continues to maintain close relationships with KDWM, Kentucky Division of Water, and United States Army Corps of Engineers. EKPC's goal is to provide a minimum of 10-years of permitted capacity at all times.

In 2015, the promulgation of the Coal Combustion Residual (CCR) Rule, changed the landscape for utilities that develop, utilize, and manage landfills and ash ponds that receive coal combustion byproducts. The requirements of the CCR Rule have extended beyond the Federal level and are now being integrated into state permitting programs. Historically, through the Kentucky Division of Waste Management (KDWM), all of EKPC's landfill facilities held Chapter 45 Special-Waste Permits. Those permits required lengthy and thorough KDWM review of permit applications and plans, inspections during construction, and final approval prior to waste placement. KDWM is currently drafting new regulations to replace Chapter 45. The EKPC Environmental Department is working closely with KDWM and the utility community to track regulatory changes and meet EKPC needs. EKPC does not anticipate any changes in the forthcoming regulations to the liner system (currently composite – clay and geomembrane components) or leachate collection design.

In addition to permitting changes, the CCR Rule has resulted in additional operational and reporting requirements. These include, but are not limited to:

- Hosting and Maintaining a Publicly Available Website
- Execute and Document 7-Day and Annual Inspections
- Develop, Sample, and Report Groundwater Monitoring Network
- Provide Plans and Certifications for:
 - o Closure and Post-Closure Care
 - o Run-On/Run-off Control System
 - o Location Restrictions
 - o Fugitive Dust Control

The CCR Quality Assurance Program and plan outlines the roles and responsibilities throughout EKPC Engineering and Environmental. A responsibility breakdown figure can be found in the QAP.

d. Construction

The construction of landfill cells, sediment ponds, and related facilities requires rigorous oversight and conformance to the highest construction standards. EKPC has developed a construction program for landfills that meets these stringent needs.

EKPC provides project management from the Capital Construction and Production Engineering departments. The Project Manager assigned to the project oversees all activities from design through construction. This includes development of contract documents, procurement of engineering design, surveying, geotechnical, construction quality assurance engineering, and construction contracts, oversight of all

forementioned contracts, schedule management, budget management, and coordination with Plant representatives and other EKPC stakeholders.

EKPC also employs a dedicated construction inspector, currently out of the Capital Construction department, to be daily EKPC representation during construction. The inspector position ensures proper construction of the subgrade, composite liner system, and leachate collection system. Daily representation and oversight of the construction contractor is imperative to the success and quality of the construction project. By providing a full-time inspector on site EKPC is able to minimize both long term and short term risk. The inspector minimizes the long term risk by making certain the liner is constructed correctly, providing protection to the environment for the life of the landfill. The inspector will minimize short term risk by making sure the contractor is following all EKPC environmental permits as required. In large excavation projects, such as cells, storm water pollution prevention measures can be difficult and must be tended to at all times. An onsite inspector will make sure the contractor is properly performing these duties; thus, protecting EKPC's KPDES permits and assuring compliance and avoiding fines and penalties. Fines for violation of the Clean Water Act can be up to \$37,500 per day.

e. Risk

Two main risks exist for the continued development and operations of EKPC landfills: maintaining sufficient capacity for CCR disposal operations and compliance with environmental permits and regulated programs.

EKPC's cost to develop, operate, and maintain Spurlock Landfill in 2023 was estimated at \$12.32 per cubic yard of material. This cost to EKPC includes all permitting, design, construction, maintenance, and contract operations at Spurlock Landfill. If EKPC were forced to dispose CCR wastes at an offsite landfill, the cost would increase to approximately \$50.00 per cubic yard. This cost includes the hauling, tipping fee, and disposal fee at an offsite landfill and reflects a discounted disposal fee based on projected quantities.

The financial risk, if sufficient capacity is not maintained, to EKPC is significant. At Spurlock alone the cost increase based off of planned disposal rates would be \$48,984,000 per year.

Coal combustion residual landfills are receiving more public scrutiny in recent years, particularly through the legal enforcement component of the CCR Rule. Now, more than ever, the quality of construction and operations of a CCR landfill is paramount. Risk exposures related to the protection of groundwater, surface water, and air quality exist for all EKPC CCR landfills and are directly tied to the proper execution of construction and operational activities.

The CCR Rule incorporates a unique enforcement mechanism for CCR landfills and ash impoundments. Owners of CCR units are required to place a variety of reports, plans, and data on publicly accessible websites. The public, governmental agencies,

and third-party interest groups can access the information at any time, and if perceived issues in the posted information exist, these entities can sue the owner of the CCR unit.

EKPC is also regulated at the State level through a Kentucky Pollutant Discharge Elimination System (KPDES) Permit for surface water quality, Kentucky Division of Air Quality (KDAQ) Title V Permit for air emissions, and Kentucky Division of Waste Management (KDWM) for landfill design, construction, operations, and groundwater quality.

Each permitting program has associated financial risks for non-compliance. For example, violations of the Clean Water Act, through non-compliance with a KPDES permit, fines can be up to \$37,500 per day. And the fine can be retroactive to the last documented point of compliance.

IV. Landfill Management Plan

The Landfill Management Plan will focus on all five areas of landfill management: Planning, Permitting, Construction, Operations, and CCR Rule Compliance. See Attachment D for a responsibility breakdown for each landfill facility.

a) *Planning*

This Landfill Management Plan proposes methodology to calculate landfill capacity and trend ash production to maintain sufficient permitted and constructed capacity at all times. First, annual aerial surveying will be contracted and performed to provide a “point in time” reference for each active landfill. The current surface of the landfill will be compared against the final design fill configuration surface to provide the amount of capacity available. The capacity available will be input into the Landfill Projection Chart (See Attachment C). This chart will be used as the tool to manage landfill capacity and report landfill capacity. It shows the projected ash production, actual ash production, constructed capacity, and permitted landfill capacity. From this chart a 10 year plan will be set for each facility. The Production Engineering or Construction & Capital Management department will lead all planning efforts, coordinating with the needs of each Station, consulting all stakeholders, and informing stakeholders as needed. Planning for each specific facility is described further below.

- i. *Spurlock Landfill* - At Spurlock Station, the five year rolling average (2019-2023) of 1,300,000 cubic yards of ash is planned to be wasted per year. In addition, through 2026, an additional 350,000 to 650,000 cubic yards per year will be included to account for the closure of the Spurlock Ash Pond. To minimize the risk of losing sufficient capacity for operations at Spurlock, the following guidelines have been established:
 - o Landfill cells will be designed to target two to three years of ash capacity. This will allow cells to be completed in one calendar year.

- Permitting capacity of at least ten years will be maintained at all times.
 - A five year rolling average will be utilized to plan landfill development. A minimum of two years' capacity will be maintained at all times.
 - Project budgets and capital work plan development will be created so that design occurs two calendar years prior to a planned construction. This will allow for more accurate annual budget development. For example, if a landfill cell is planned for 2024, the engineering design component would have to be budgeted for 2022. While the capital work plan may have a +/- 30% estimate at the time of project creation, by having a 100% final design prior to the 2025 budget due date (April 1, 2024), EKPC can refine the constructed cost and accurately reflect the estimated constructed cost in the budget.
 - Constructed capacity, permitted capacity, planned and actual waste quantities are tracked for Spurlock Station to monitor status of the landfill and develop capital projects and work plans.
 - Annual surveys are executed to track volumes placed in the landfill. Volumes provided through the landfill operations contract are also utilized for reporting purposes.
- ii. *Cooper Landfill* – Ash generation at Cooper Station has reduced since EKPC has joined PJM. The historical high in ash processed was 228,091 cubic yards in 2012. From 2019 through 2023, Cooper has processed an average of 52,354 cubic yards of ash. For planning purposes, 80,000 cubic yards per year will be assumed (peak during the 5 year average).
- Landfill cells will be designed to target two to three years of ash capacity. This will allow cells to be completed in one calendar year.
 - Permitting capacity of at least ten years will be maintained at all time.
 - A five year rolling average will be utilized to plan landfill development. A minimum of two years' capacity will be maintained at all times.
 - Project budgets and capital work plan development will be created so that design occurs two calendar years prior to a planned construction. This will allow for more accurate annual budget development.
 - Constructed capacity, permitted capacity, planned and actual waste quantities are tracked for Cooper Station to monitor status of the landfill and develop capital projects and work plans.
 - Annual surveys are executed to track volumes placed in the landfill.
- iii. *Smith Landfill*
- Waste placement is tracked and is required to occur at least once every two years to maintain Smith Landfill as an “active” landfill under the CCR Rule.
 - Smith is permitted to accept CCR waste from Spurlock or Cooper and can act as a backup to either facility in an emergency situation.
- iv. *Hancock Creek Landfill*

- Hancock Creek Landfill is currently in post-closure monitoring with KDWM and was closed prior to the effective date of the CCR Rule.
 - No new additions of CCR is expected at Hancock Creek Landfill
- b) *Permitting:* Permitting the landfills is the responsibility of EKPC Environmental. Environmental's significant permitting experience and relationships with the Kentucky Division of Waste Management, Kentucky Division of Water, and US Army Corps of Engineers are an asset to the management of EKPC landfills. This plan will keep the current policy of providing a minimum of 10 years permitted capacity available at all times. A detailed permit strategy can be found in Attachment E Landfill Permit Phasing.
- c) *Construction:* Construction & Capital Management or Production Engineering will lead construction project efforts at all landfill facilities. All landfill cells and other landfill related projects (ponds, haul roads, etc.) are incorporated into the capital work plan and budget by the engineering groups. The designated Project Manager then sees the project through design and construction. This Project Manager will procure all services required for the construction project, including but not limited to: construction contractor, material purchases, surveying consultant, CQA consultant, and geotechnical inspection. During construction the Project Manager holds weekly progress meetings, coordinates with call stakeholders (contractor, CQA engineer, surveyor, geotechnical inspector, EKPC plant personnel, EKPC environmental, landfill operations) to maintain the success of the project, reviews billing worksheets, initiates the invoicing process through PeopleSoft, reviews as-builts, and establishes asset structure breakdown.

Construction & Capital Management also provides an inspector for construction of landfill cells and landfill related projects. The inspector is on site at all times to monitor construction activities and acts as EKPC's most important CQA measure. By providing a full time inspector, EKPC is able to minimize both long and short terms risks. The inspector minimizes long term risk by making sure the liner is constructed correctly, providing protection to the environment for the life of the landfill. The inspector minimizes short term risk by making sure the contractor is following all EKPC environmental permits as required. In large excavation projects, like landfill cells, storm water pollution prevention measures can be difficult and must be tended to at all times. An onsite inspector will make sure the contractor is properly performing these duties; thus protecting EKPC's KPDES permits and assuring compliance and avoiding fines and penalties. Fines for violation of the Clean Water Act can be up to \$37,500 per day.

- d) *Operations:* Operations of the landfill is currently the responsibility of the Materials Handling Manager/Superintendent at each site. Under this Landfill Management Plan, the day to day operations will stay at this position since they are ultimately responsible for ensuring the silos are emptied daily allowing the plant to continue operating. Also, this person provides a contact point for the contractor operating the landfill. Each facility will have at least one licensed Landfill Operator/Manager at

all times. This licensure is provided through the Kentucky Energy and Environment Cabinet, Department for Environmental Protection.

The Materials Handling Manager/Superintendent will be provided assistance from EKPC Environmental, Construction & Capital Management, and Production Engineering. Construction & Capital Management or Production Engineering will also have a minimum of one engineer licensed as a Landfill Operator/Manager at all times to provide support as needed.

- i. *Spurlock Landfill* – Day to day operations at Spurlock Landfill are executed by a contract operator. The operator is responsible for emptying silos, loading haul trucks, hauling to the landfill, placement and compaction of the CCR materials, implementing and maintaining erosion and sediment controls, maintaining the haul road, and other tasks as outlined in the contract documents.

To help support Spurlock Station in the oversight of the daily operations, Engineering & Construction provides an onsite inspector from the Capital Construction group or a contract consultant, depending on the availability of resources. EKPC engineering conducts a minimum of weekly visits to Spurlock Landfill to ensure that work orders are being completed, fill is occurring appropriately, and operations are following the contract requirements.

- ii. *Cooper Landfill* – Day to day operations at Cooper Landfill are executed by the Cooper Material Handling department, with hauling performed by a contractor. The Material Handling department is responsible for management of CCR materials at the plant, loading CCR materials, coordinating hauling operations with contractor, placing and compacting CCR materials, and maintenance of the landfill and erosion and sediment controls. Maintenance activities include completing all work orders generated either internally or by outside contracts. Production Engineering and Environmental will assist, as required, to determine approaches to address work order items.

To help support Cooper Station, Production Engineering provides fill plans and oversees a consulting contract that provides an onsite engineer at Cooper Landfill a minimum of one day every week.

- iii. *Smith Landfill* – While Smith Landfill remains an active CCR landfill, routine filling does not occur. Smith Plant personnel are responsible for the maintenance of the landfill and erosion and sediment controls. Maintenance activities include completing all work orders generated either internally or by outside contracts. Production Engineering and Environmental will assist, as required, to determine approaches to address work order items.

To help support Smith Station, Production Engineering provides fill plans and oversees a consulting contract that provides an onsite engineer at Smith Landfill a minimum of one day every week.

- iv. *Hancock Creek Landfill* – Hancock Creek Landfill is in post-closure monitoring under the Chapter 45 Special Waste Permit issued by KDWM. Since Hancock Creek did not receive CCR materials after the effective date of the CCR Rule, the landfill does not fall under the CCR Rule regulatory program. The EKPC Headquarters Facility department is responsible for maintenance of the landfill and cap.

General operational items and assistance actions from supporting departments are detailed below.

- Waste Disposal: Only the materials listed in the KDWM permit will be disposed of at EKPC landfill. Any questions can be directed to Environmental.
- Maximum 2 Foot Lifts: The permit provides a maximum lift of 2 feet for proper waste compaction, compacting the waste in any larger lifts is not compliant with our KDWM permit.
- Waste Compaction: To achieve proper compaction the waste must be compacted as soon as it arrives to the working face. A drop in moisture content resulting from stockpiling the material will not allow compaction. 85% Compaction is required in the KDWM permit and must be achieved. Monthly third party density testing (through use of nuclear density gauge) will be conducted by the contractor to provide record of compaction. A monthly compaction report will be provided by the contractor to the Materials Handling Manager/Superintendent.
- Temporary Sediment Controls: Sediment controls are necessary to assure compliance with the Clean Water Act. These controls (rock checks, berms, silt fence, etc.) shall be placed by the contractor wherever necessary to prevent sediment migration into jurisdictional waters. An inspection should be performed by the contractor once a week to ensure proper maintenance of the sediment controls. Any controls that are half full of sediment or more should be cleaned out and placed back into service. Adjoining waters will be watched during rain events to ensure compliance. Environmental will assist with quarterly inspections of all temporary storm water controls, and inspections as needed to ensure compliance.
- Constructed Waste Limits: All waste must be kept within the constructed waste limits. The contractor will be responsible to keep waste within this boundary. Environmental will assist the Materials Handling Superintendent with quarterly inspections that will document if the waste is outside the constructed waste limits.
- Borrow from approved borrow areas: Borrow material for use in the landfill operations must come from an approved borrow area.

- Dust Suppression: The contractor must provide dust suppression on the open landfill and roads to meet the Title V Air Permit and CCR Fugitive Dust Plan.
- Permanent Stormwater Controls: These controls (ditches and ponds) must be maintained to design capacity. When these controls have silted in and no longer provide design capacity, the contractor must clean them out and return the controls to working order. Environmental will monitor and maintain capacity for permanent stormwater controls.
- Haul Roads: The haul roads must be maintained to provide safe access to the working face at all times.
- Long Term Cover Survey: When long term cover is established in an area the contractor must provide their survey data to EKPC. This survey data is needed to submit the CPR to officially close that section of the landfill.
- Positive Drainage: The contractor must maintain positive drainage on all of the waste slopes and the flat top. Any standing water should be addressed with a re-grade of that area.
- Licensed landfill manager/operator: The contractor or EKPC operations must have a landfill manager and operator licensed by the Kentucky Energy and Environment Cabinet (EEC) Department of Environmental Protection (DEP).
- Groundwater Sampling & Submittal: Environmental and Plant Lab will provide assistance and be responsible for the groundwater sampling.
- KPDES Sampling & Submittal: Environmental and Plant Lab will provide assistance and be responsible for the KPDES sampling.
- Quarterly Environmental Inspections: Environmental will provide assistance and document quarterly inspections to ensure compliance with all environmental regulations.

V. Current Resources

The following resources are currently (in full or part) utilized and required to maintain the EKPC Landfill Management Plan. Any change to the allocation of these resources would require revision of the Plan.

Civil Engineer – Engineering and Construction – Landfill Planning, Project Management, CCR Inspections, Landfill Operations Support

Construction & Capital Management Inspector

Two 4-Wheel Drive Vehicles

Civil 3D Drawing Software

Annual Surveying Budget Dollars

Annual Operations Oversight Budget Dollars

Material Handling Supervisor/Manager – Spurlock Station, Cooper Station, Smith Station

Environmental Engineer

Contract Engineer – Engineering and Construction – Landfill Operations Quality Control Support

Contract Engineer – Engineering and Construction – CCR Inspections

Support from Environmental Compliance Department

VI. Revision History

Revision No.	Prepared By	Date of Revision
Revision 1.0	Matt Clark and Mark Brewer	February 2013
Revision 2.0	Patrick Bischoff and Laura LeMaster	May 2019
Revision 3.0	Jarrad Burton and Patrick Bischoff	February 2023
Revision 4.0	Jarrad Burton	March 2024

Attachment A

Facility Maps



COOPER STATION LANDFILL

COOPER STATION

NOTES:

- 1. MAP DATA: GOOGLE



date 8/5/2016
 designed A. MYERS

**EAST KENTUCKY POWER
 COOPERATIVE
 COOPER STATION
 SITE PLAN**

project	-
contract	-
drawing	rev no.
SK - CIVIL - 001	0



Hancock Creek Landfill Location Map
East Kentucky Power Cooperative - Headquarters Campus

0 250 500 1,000
Feet



NOTES:

- 1. MAP DATA: GOOGLE



date 8/5/2016
designed A. MYERS

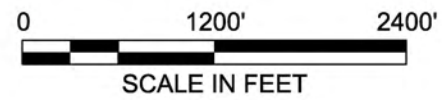
**EAST KENTUCKY POWER
COOPERATIVE
SMITH STATION
SITE PLAN**

project	-
contract	-
drawing	rev no.
SK - CIVIL - 001	0



NOTES:

- 1. MAP DATA: GOOGLE



date 8/5/2016

designed A. MYERS

**EAST KENTUCKY POWER
COOPERATIVE
SPURLOCK STATION
SITE PLAN**

project	-
contract	-
drawing	rev no.
SK - CIVIL - 001	0



NOTES:

- 1. MAP DATA: GOOGLE



date 8/5/2016

designed A. MYERS

**EAST KENTUCKY POWER
COOPERATIVE
SPURLOCK STATION LANDFILL
SITE PLAN**

project	-
contract	-
drawing	rev no.
SK - CIVIL - 002	0

Attachment B
Landfill Cost Comparison

Landfill Cost Comparison

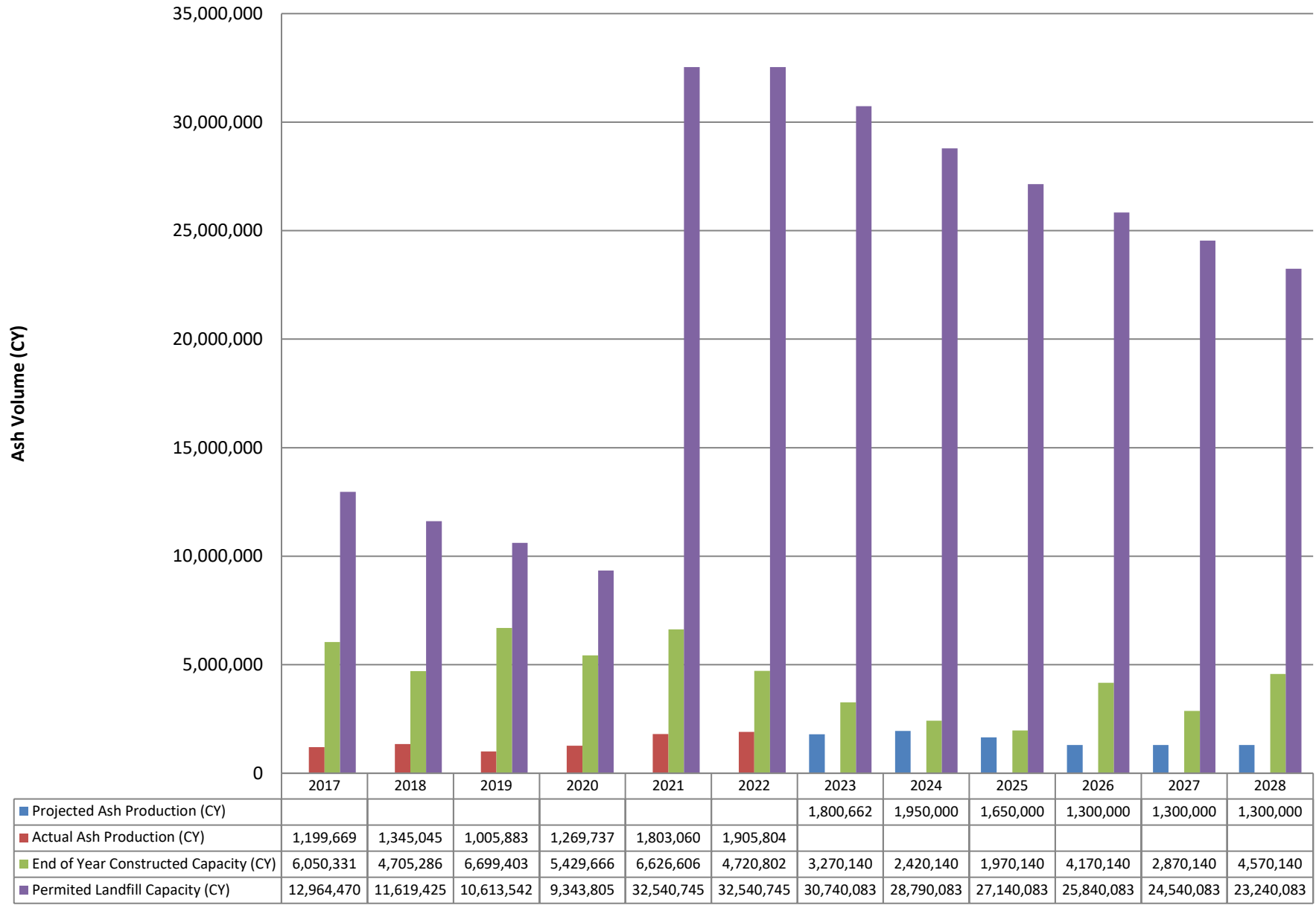
<i>EKPC Power Station</i>	<i>Average Ash Production (tons per Year)</i>	<i>Cost to Develop, Construct, Operate, & Maintain EKPC Landfill (Dollars per ton of Ash)</i>	<i>Cost to Transport & Dispose In Commercial Landfill (Dollars per ton of Ash)</i>	<i>Savings Per Year (Dollars per Year)</i>
Spurlock	1,300,000*	\$12.32	\$50.00	\$48,984,000
Cooper	80,000	\$8.33	\$54.00	\$3,653,600
EKPC Total	1,380,000			\$52,637,600

**Excludes estimated 350,000-650,000 tons per year through 2025 for the Spurlock Ash Pond Closure*

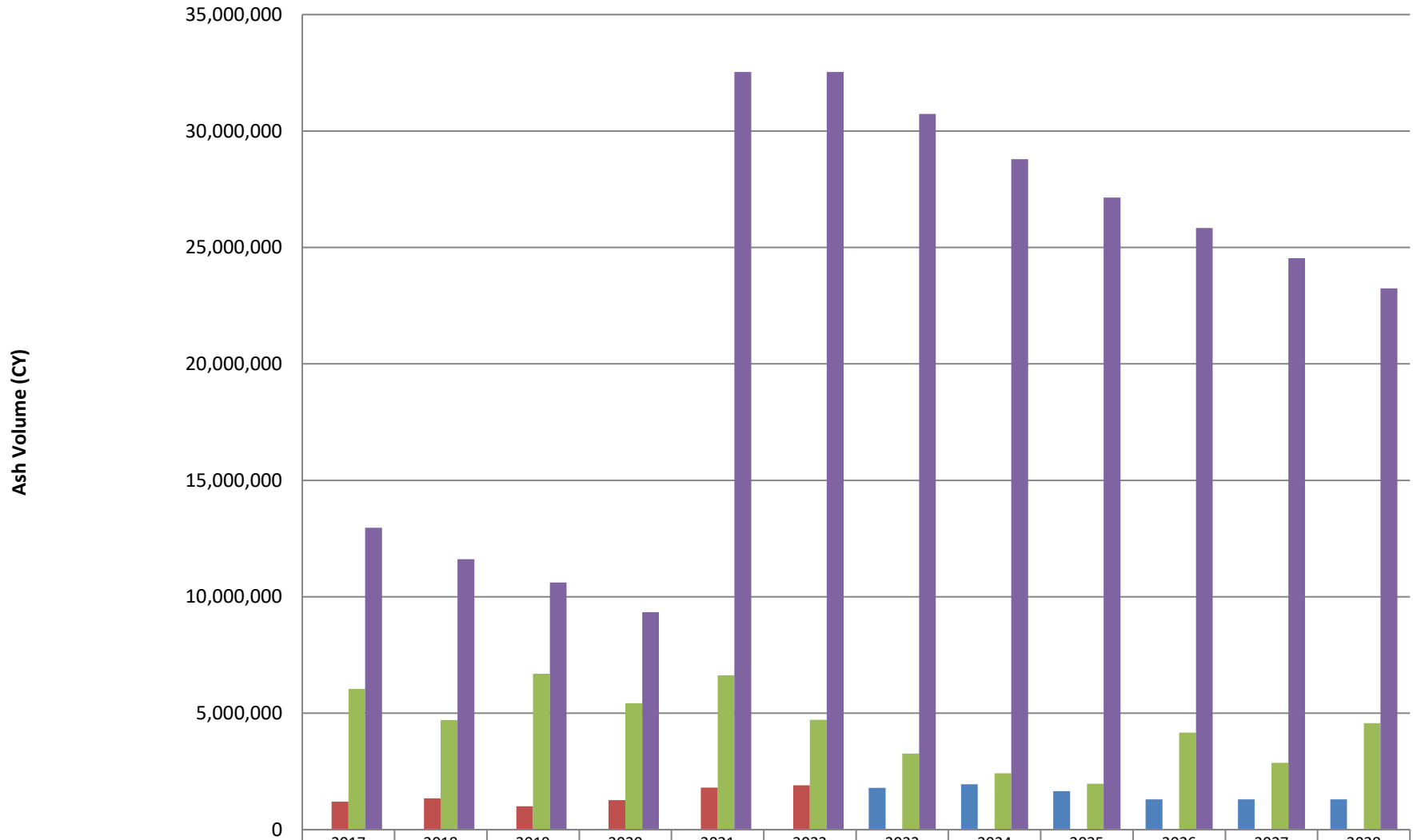
Attachment C

Landfill Projection Charts – Spurlock and Cooper

Spurlock Landfill Projections



Spurlock Landfill Projections



	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Projected Ash Production (CY)							1,800,662	1,950,000	1,650,000	1,300,000	1,300,000	1,300,000
Actual Ash Production (CY)	1,199,669	1,345,045	1,005,883	1,269,737	1,803,060	1,905,804						
End of Year Constructed Capacity (CY)	6,050,331	4,705,286	6,699,403	5,429,666	6,626,606	4,720,802	3,270,140	2,420,140	1,970,140	4,170,140	2,870,140	4,570,140
Permitted Landfill Capacity (CY)	12,964,470	11,619,425	10,613,542	9,343,805	32,540,745	32,540,745	30,740,083	28,790,083	27,140,083	25,840,083	24,540,083	23,240,083

Attachment D

Landfill Management Responsibility Breakdown

Cooper Landfill
 Responsibility Breakdown
 03/21/2024

<i>Planning & Construction</i> Engineering	<i>Operations & Maintenance</i> Power Station	<i>Permitting & Env. Compliance</i> Environmental
<ul style="list-style-type: none"> - Engineering Support for Permitting, Operations, & Maintenance (including fill plans) - Annual Surveying - Provide Available Airspace Volume Calculations - Develop Long Term Construction Plan - Design & Construct Landfill Cells - Provide Inspection for Construction - Provide CQA for Construction - Design & Construction of supporting facilities for landfills (e.g. sediment ponds, roads, etc.) - Oversee Execution of 7-Day & Annual CCR Inspections - Maintain CCR Design Documents <ul style="list-style-type: none"> - Pre-Construction - Post Construction - Run-on/Run-off - Closure/Post-Closure - Budget Support - Operations Procurement Support - Design and Construct Landfill Caps - ARO Closure/Post Closure Estimates 	<ul style="list-style-type: none"> - Daily Hauling - Daily Landfilling - Monthly Compaction Testing - Maintain Landfill: including the working face, haul road, existing cap, and sediment controls - O&M Budget Management <ul style="list-style-type: none"> - Receivers/Invoicing - Budget Development - Coordinate with Third Party hauling contractor as necessary for operations - Complete Operations <ul style="list-style-type: none"> - Loading - Hauling - Placement - Reviews, Monitors, and Closes Inspection Driven Work Orders - Complete SWPPP Inspections 	<ul style="list-style-type: none"> - Permit Landfill - Quarterly Inspections - Groundwater Monitoring <ul style="list-style-type: none"> - Installation - Closure/Abandonment - Sampling - Statistical Analysis - Reporting - KPDES Monitoring - Review of all CCR Documents - Maintain CCR Documents <ul style="list-style-type: none"> - Fugitive Dust - Groundwater Monitoring - Location Restrictions - Environmental Engineering Support for all Elements of Project Lifecycle <ul style="list-style-type: none"> - Review Construction Plans - Oversee Env. Sensitive Activities <ul style="list-style-type: none"> - Provide Recommendations and Options to Maintain Env. Compliance - Perform Env. Inspections and Document Audits as Needed <ul style="list-style-type: none"> - Regularly Monitor all Stormwater Controls - Verify Operations Activities are in Compliance with Permits & Permit Applications - Budget Support for Env. Items

Smith Landfill
 Responsibility Breakdown
 03/21/2024

<i>Planning & Construction</i> Engineering	<i>Operations & Maintenance</i> Power Station	<i>Permitting & Env. Compliance</i> Environmental
<ul style="list-style-type: none"> - Engineering Support for Permitting, Operations, & Maintenance - Annual Surveying as required - Provide Available Airspace Volume Calculations, as required - Develop Long Term Construction Plan - Design & Construct Landfill Cells - Provide Inspection for Construction - Provide CQA for Construction - Design & Construction of supporting facilities for landfills (e.g. sediment ponds, roads, etc.) - Oversee Execution of 7-Day & Annual CCR Inspections - Maintain CCR Design Documents <ul style="list-style-type: none"> - Pre-Construction - Post Construction - Run-on/Run-off - Closure/Post-Closure - Budget Support - Design & Construct Landfill Caps - ARO Closure/Post Closure Estimates 	<ul style="list-style-type: none"> - Maintain Landfill: including the working face, haul road, existing cap, and sediment controls (including weekly inspection reports) -Using Internal Workforce, complete Work Orders generated - Contract with a Third Party Contractor Work Orders that cannot be completed internally, <ul style="list-style-type: none"> - O&M Budget Management - Receivers/Invoicing - Budget Development - Reviews, Monitors, and Closes Inspection Driven Work Orders - Complete SWPPP Inspections 	<ul style="list-style-type: none"> - Permit Landfill - Quarterly Inspections - Groundwater Monitoring <ul style="list-style-type: none"> - Installation - Closure/Abandonment - Sampling - Statistical Analysis - Reporting - KPDES Monitoring - Review of all CCR Documents - Maintain CCR Documents <ul style="list-style-type: none"> - Fugitive Dust - Groundwater Monitoring - Location Restrictions - Environmental Engineering Support for all Elements of Project Lifecycle <ul style="list-style-type: none"> - Review Construction Plans - Oversee Env. Sensitive Activities - Provide Recommendations and Options to Maintain Env. Compliance - Perform Env. Inspections and Document Audits as Needed <ul style="list-style-type: none"> - Regularly Monitor all Stormwater Controls - Verify Operations Activities are in maintenance with Permits & Permit Applications - Budget Support for Env. Items - Coordinate to maintain Smith as an operating Landfill per the CCR Rule

Spurlock Landfill
 Responsibility Breakdown
 03/21/2024

<i>Planning & Construction</i> Engineering	<i>Operations & Maintenance</i> Power Station	<i>Permitting & Env. Compliance</i> Environmental
<ul style="list-style-type: none"> - Engineering Support for Permitting, Operations, & Maintenance - Develop Long Term Construction Plan - Design & Construct Landfill Cells - Provide Inspection for Construction - Provide CQA for Construction - Design & Construction of supporting facilities for landfills (e.g. sediment ponds, roads, etc.) - Design and construct landfill caps - Oversee Execution of 7-Day & Annual CCR Inspections - Enter, Monitor, and Close Inspection Driven Work Orders - Maintain CCR Design Documents <ul style="list-style-type: none"> - Pre-Construction - Post Construction - Run-on/Run-off - Closure/Post-Closure - Annual Surveying including airspace Volume Calculations - ARO Closure/Post Closure Estimates - Capital and Operations Budget Support - Operations Procurement Support including development of the Landfill Management Contract bid package - Provide oversight support for Daily Operations including Loading, Hauling, and Placement 	<ul style="list-style-type: none"> - Daily Hauling - Daily Landfilling - Monthly Compaction Testing - Maintain Landfill: including the working face, haul road, existing cap, and sediment controls - O&M Budget Management <ul style="list-style-type: none"> - Receivers/Invoicing - Budget Development - Oversee Daily Operations including Loading, Hauling, and Placement - Review and Monitor Inspection Driven Work Orders - Review and Comment on Contract and Technical Documents - Contract with a third-party contractor for work orders not completed as part of Landfill Operations contract 	<ul style="list-style-type: none"> - Permit Landfill - Quarterly Inspections - Groundwater Monitoring <ul style="list-style-type: none"> - Installation - Closure/Abandonment - Sampling - Statistical Analysis - Reporting - KPDES Monitoring - Review of all CCR Documents - Maintain CCR Documents <ul style="list-style-type: none"> - Fugitive Dust - Groundwater Monitoring - Location Restrictions - Environmental Engineering Support for all Elements of Project Lifecycle <ul style="list-style-type: none"> - Review Construction Plans - Oversee Env. Sensitive Activities - Provide Recommendations and Options to Maintain Env. Compliance - Perform Env. Inspections and Document Audits as Needed <ul style="list-style-type: none"> - Regularly Monitor all Stormwater Controls - Verify Operations Activities are in Compliance with Permits & Permit Applications - Budget Support for Env. Items - Review, Comment, and Approve Env. Documents Outlined in Contract Documents

Attachment E
Landfill Permit Phasing

Landfill Permit Phasing*

Spurlock Landfill:



Cooper Landfill:



Smith Landfill:



*Permitting is phased to provide a minimum 10 years of capacity available at all times

**Future permitted capacity needs at Cooper Landfill will be re-evaluated as needed

Attachment F

Landfill Departmental/Personnel Responsibility Matrix

Cooper Landfill - Responsibility Matrix

December 4, 2022

Legend	
	Original LF Plan/Pre-CCR
	Post-CCR Rule

Task	Planning and Construction Production Engineering	Operations & Maintenance Spurlock	Permitting & Env. Compliance Environmental
Daily Hauling		Material Handling Superintendent	
Daily Landfilling		Material Handling Superintendent	
Monthly Compaction Testing		Third Party Contractor	
Maintain Landfill; including the working face, haul road, existing cap, and sediment controls		Material Handling Superintendent	
Engineering Support for Permitting, Operations, & Maintenance	Jarrad Burton		
Annual Surveying	Jarrad Burton		
Provide Available Airspace Volume Calculations	Jarrad Burton		
Develop Long Term Construction Plan	Jarrad Burton		
Design & Construct Landfill Cells	Production or Capital Construction Engineer		
Design & Construct Landfill Caps	Production or Capital Construction Engineer		
Provide Inspection for Construction	Capital Construction Inspector Contract Consultant		
Provide CQA for Cell Construction	Production or Capital Construction Engineer		
Design & Construction of Supporting Facilities (e.g. sediment ponds, roads, etc.)	Production or Capital Construction Engineer		
Permit Landfill			John Mautz
Quarterly Inspections			Contract Consultant
Groundwater Monitoring			John Mautz
- Installation			John Mautz
- Closure/Abandonment			John Mautz
- Sampling			Contract Consultant
- Statistical Analysis			Contract Consultant
- Reporting			John Mautz
KPDES Monitoring			Cooper Lab
Environmental Support for all elements of Project Lifecycle (review plans, oversee Env. Sensitive Activities, provide recommendations to maintain compliance)			John Mautz
Perform Env. Inspections and Document Audits as needed			John Mautz
Regularly Monitor all Stormwater Controls			John Mautz
Verify Operation Activities are in compliance with permits and permit applications			John Mautz
Oversee Execution of 7-Day & Annual CCR Inspections	Jarrad Burton		
Maintain CCR Design Documents	Jarrad Burton		
- Pre-Construction	Jarrad Burton		
- Post Construction	Jarrad Burton		

Cooper Landfill - Responsibility Matrix

December 4, 2022

Legend	
	Original LF Plan/Pre-CCR
	Post-CCR Rule

<i>Task</i>	<i>Planning and Construction Production Engineering</i>	<i>Operations & Maintenance Spurlock</i>	<i>Permitting & Env. Compliance Environmental</i>
- Run-on/Run-off	Jarrad Burton		
- Closure/Post-Closure	Jarrad Burton		
Budget Support	Jarrad Burton		
Operations Procurement Support	Jarrad Burton		
Coordinate with Third Party Hauling Contractor		Material Handling Superintendent	
Complete Daily Operations		Material Handling Superintendent	
- Loading		Material Handling Superintendent	
- Hauling		Material Handling Superintendent	
- Placement		Third Party Contractor Material Handling Superintendent	
Reviews, Monitors, and Closes Inspection Driven Work Orders		Material Handling Superintendent	
O&M Budget Management		Contract Consultant Eddie Hudson	
- Receivers/Invoicing		Eddie Hudson	
- Budget Development		Eddie Hudson	
Review of all CCR Documents			John Mautz
Maintain CCR Documents			John Mautz
- Fugitive Dust			John Mautz
- Groundwater Monitoring			John Mautz
- Location Restrictions			John Mautz
Budget Support for Env. Items			John Mautz

Smith Landfill - Responsibility Matrix

February 6, 2023

Legend	
	Original LF Plan/Pre-CCR
	Post-CCR Rule

Task	Planning and Construction Production Engineering	Operations & Maintenance Spurlock	Permitting & Env. Compliance Environmental
Maintain Landfill; including the working face, haul road, existing cap, and sediment controls		Robert Segress	
Engineering Support for Permitting, Operations, & Maintenance	Jarrad Burton		
Annual Surveying	Jarrad Burton		
Provide Available Airspace Volume Calculations	Jarrad Burton		
Develop Long Term Construction Plan	Jarrad Burton		
Design & Construct Landfill Cells	Production or Capital Construction Engineer		
Design & Construct Landfill Caps	Production or Capital Construction Engineer		
Provide Inspection for Construction	Capital Construction Inspector Contract Consultant		
Provide CQA for Cell Construction	Production or Capital Construction Engineer		
Design & Construction of Supporting Facilities (e.g. sediment ponds, roads, etc.)	Production or Capital Construction Engineer		
Permit Landfill			Jessica Dixon
Quarterly Inspections			Contract Consultant
Groundwater Monitoring			Jessica Dixon
- Installation			Jessica Dixon
- Closure/Abandonment			Jessica Dixon
- Sampling			Contract Consultant
- Statistical Analysis			Contract Consultant
- Reporting			Jessica Dixon
KPDES Monitoring			Cooper Lab
Environmental Support for all elements of Project Lifecycle (review plans, oversee Env. Sensitive Activities, provide recommendations to maintain compliance)			Jessica Dixon
Perform Env. Inspections and Document Audits as needed			Jessica Dixon
Regularly Monitor all Stormwater Controls			Jessica Dixon
Verify Operation Activities are in compliance with permits and permit applications			Jessica Dixon
Oversee Execution of 7-Day & Annual CCR Inspections	Jarrad Burton		
Maintain CCR Design Documents	Jarrad Burton		
- Pre-Construction	Jarrad Burton		
- Post Construction	Jarrad Burton		
- Run-on/Run-off	Jarrad Burton		
- Closure/Post-Closure	Jarrad Burton		
Budget Support	Jarrad Burton		

Smith Landfill - Responsibility Matrix

December 5, 2022

Legend	
	Original LF Plan/Pre-CCR
	Post-CCR Rule

<i>Task</i>	<i>Planning and Construction Production Engineering</i>	<i>Operations & Maintenance Spurlock</i>	<i>Permitting & Env. Compliance Environmental</i>
Operations Procurement Support	Jarrad Burton		
Using Internal Work force, complete generated WO		Robert Segress	
Contract with Third Party Contractor any generated Work Orders that cannot be completed internally		Robert Segress Dale Anderson	
Reviews, Monitors, and Closes Inspection Driven Work Orders		Robert Segress Dale Anderson	
O&M Budget Management		Dale Anderson	
- Receivers/Invoicing		Dale Anderson	
- Budget Development		Dale Anderson	
Review of all CCR Documents			Jessica Dixon
Maintain CCR Documents			Jessica Dixon
- Fugitive Dust			Bobby Webb
- Groundwater Monitoring			Jessica Dixon
- Location Restrictions			Jessica Dixon
Coordinate to maintain Smith LF as an operating Landfill per the CCR Rule			Jessica Dixon
Budget Support for Env. Items			Jessica Dixon

Spurlock Landfill - Responsibility Matrix

February 6, 2023

Legend	
	Original LF Plan/Pre-CCR
	Post-CCR Rule

Task	Planning and Construction Production Engineering	Operations & Maintenance Spurlock	Permitting & Env. Compliance Environmental
Daily Hauling		Contract Operator	
Daily Landfilling		Contract Operator	
Monthly Compaction Testing		Contract Operator	
Maintain Landfill; including the working face, haul road, existing cap, and sediment controls		Contract Operator	
Engineering Support for Permitting, Operations, & Maintenance	Jarrad Burton		
Annual Surveying	Jarrad Burton		
Provide Available Airspace Volume Calculations	Jarrad Burton		
Develop Long Term Construction Plan	Jarrad Burton		
Design & Construct Landfill Cells	Jarrad Burton		
Design & Construct Landfill Caps	Jarrad Burton		
Provide Inspection for Construction	Capital Construction Inspector		
Provide CQA for Cell Construction	Contract Consultant Jarrad Burton		
Design & Construction of Supporting Facilities (e.g. sediment ponds, roads, etc.)	Jarrad Burton		
Permit Landfill			John Mautz
Quarterly Inspections			Contract Consultant
Groundwater Monitoring			John Mautz
- Installation			John Mautz
- Closure/Abandonment			John Mautz
- Sampling			Contract Consultant
- Statistical Analysis			Contract Consultant
- Reporting			John Mautz
KPDES Monitoring			Spurlock Lab
Environmental Support for all elements of Project Lifecycle (review plans, oversee Env. Sensitive Activities, provide recommendations to maintain compliance)			John Mautz
Perform Env. Inspections and Document Audits as needed			John Mautz
Regularly Monitor all Stormwater Controls			John Mautz
Verify Operation Activities are in compliance with permits and permit applications			John Mautz
KPDES Monitoring			Spurlock Lab
Oversee Execution of 7-Day & Annual CCR Inspections	Jarrad Burton		
Maintain CCR Design Documents	Jarrad Burton		

Spurlock Landfill - Responsibility Matrix

February 6, 2023

Legend	
	Original LF Plan/Pre-CCR
	Post-CCR Rule

Task	Planning and Construction Production Engineering	Operations & Maintenance Spurlock	Permitting & Env. Compliance Environmental
- Pre-Construction	Jarrad Burton		
- Post Construction	Jarrad Burton		
- Run-on/Run-off	Jarrad Burton		
- Closure/Post-Closure	Jarrad Burton		
Coordinate with Landfill Operator as Required (per contract documents)	Jarrad Burton		
Review and Comment on Contract and Technical Documents	Jarrad Burton		
Budget Support	Jarrad Burton		
Update & Develop Bid Document for Landfill Management Contract	Jarrad Burton		
Procurement Support for Landfill Operations	Jarrad Burton		
Oversight support for Daily Operations including Loading, Hauling, and Placement	Jarrad Burton Capital Construction Inspector Contract Consultant		
Enters/Reviews/Monitors/Closes Inspection Driven Work Orders	Jarrad Burton		
Oversee Daily Operations including Loading, Hauling, and Placement		Greg Culp	
O&M Budget Management		Greg Culp	
- Receivers/Invoicing		Greg Culp	
- Budget Development		Greg Culp	
Review of all CCR Documents			John Mautz
Maintain CCR Documents			John Mautz
- Fugitive Dust			John Mautz
- Groundwater Monitoring			John Mautz
- Location Restrictions			John Mautz
Budget Support for Env. Items			John Mautz
Review and Comment on Env. Documents Outlined in Contract Documents			John Mautz

Appendix 1

Coal Combustion Residual Rule Quality Assurance Plan



CCR Implementation CCR Quality Assurance Program





**EAST KENTUCKY
POWER COOPERATIVE**

A Touchstone Energy[®] Cooperative 

East Kentucky Power Cooperative

March 2023
Revision 3



CCR Implementation CCR Quality Assurance Program

Prepared for

East Kentucky Power Cooperative
Winchester, Kentucky

March 2023
Revision 3

Prepared by

Burns & McDonnell Engineering Company, Inc.
Kansas City, Missouri

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LIST OF TABLES

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Table 1-1 Summary of Tier Requirements 1-1

LIST OF ABBREVIATIONS

<u>Abbreviation</u>	<u>Term/Phrase/Name</u>
BMcD	Burns & McDonnell
CCR	Coal Combustion Residual
CFR	Code of Federal Regulations
CMMS	Computer Maintenance Management System
E&C	Engineering & Construction Shared Services
EKPC	East Kentucky Power Cooperative
EPA	Environmental Protection Agency
IT	Information Technology
P&C	Privileged and Confidential
PR	Public Relations
QA	Quality Assurance
QAP	Quality Assurance Program
RCRA	Resource Conservation and Recovery Act
U.S.C.	United States Code

1.0 INTRODUCTION

On April 17, 2015, the Environmental Protection Agency (EPA) issued the final version of the federal Coal Combustion Residual Rule (CCR Rule) to regulate the disposal of coal combustion residual (CCR) materials generated at coal-fired units. The CCR Rule is administered as part of the Resource Conservation and Recovery Act (RCRA, 42 United States Code [U.S.C.] §6901 et seq.), using the Subtitle D approach.

The intent of this Quality Assurance Program (QAP) is to establish roles and responsibilities for individuals within East Kentucky Power Cooperative's (EKPC's) existing organization in developing and posting the applicable CCR required documentation for compliance with the CCR Rule. The program is intended to be used as a manual process for quality control of CCR Rule compliance documentation that may need to be placed in all or some of the following: the CCR Working Folder (internal), the CCR Operating Record and the CCR public website. This is a partially automated process that uses existing data management systems (or new data management systems) within EKPC's organization. The process flowcharts in Appendix B are meant to be the framework used for a manual process and later developed into an automated process. Appendix A contains a CCR Compliance Hierarchy chart indicating reporting relationships and the flow of CCR compliance documentation within EKPC's organization.

This QAP is not intended to detail out specifics of each individual CCR document requirement but, instead, provide a framework for the overall roles and responsibilities necessary for CCR compliance. Individual CCR Managers will be responsible for understanding details associated with specific CCR plan requirements and provide the necessary information to implement those plans.

There are three tiers described in the program. Posting requirements prescribed in the CCR Rule are indicated in Table 1-1.

Table 1-1 Summary of Tier Requirements

Tier	Required to be in CCR Operating Record	Required to be on CCR Public Website
Tier I	No	No
Tier II	Yes	No
Tier III	Yes	Yes

The three tiers are as follows:

- Tier I - Documents, reports, performance specifications, workflows, or systems to be completed/maintained to support CCR Rule compliance but are not required to be documented in the CCR Operating Record or on the CCR public website.
- Tier II - Documents or reports that are required under the CCR Rule to be in the CCR Operating Record but not required to be on the CCR public website.
- Tier III - Documents or reports that are required under the CCR Rule to provide a notification to the State Director, to be in the CCR Operating Record and placed on the CCR public website within 30 days of placement in the CCR Operating Record.

2.0 DEFINITIONS & TERMS

The following definitions and terms are used throughout this program and are listed below to clarify their meaning in this report.

- Privileged and Confidential (P&C) – Term to indicate that a document, report, or other form of correspondence is prepared by or under the direction of legal counsel and internal to EKPC.
- Qualified Person (Qualified Inspector) – A person or persons trained to recognize by visual observation specific appearances of structural weakness and other conditions that are disrupting or have the potential to disrupt the operation or safety of the CCR unit.
- CCR Working Folder – The CCR Working Folder is an internal EKPC file system with an organized folder structure for supplemental documents related to CCR Rule compliance documentation. These documents are not currently required per the CCR Rule and do not need to be located within the CCR Operating Record. Documents may include (but are not limited to) Draft documents under review and specifications related to CCR compliance.
- CCR Operating Record –The CCR Operating Record is an internal EKPC file system with an organized folder structure for CCR Rule compliance documentation specific to a plant or station owned by EKPC. This folder structure maintains documentation required by the CCR Rule and organizes the documents by their respective EKPC operating station.
- CCR Public Website – The publicly accessible website required by 40 Code of Federal Regulations (CFR) §257.107 which must be titled “CCR Rule Compliance Data & Information.”
- Coal Combustion Residuals –Byproducts from the combustion of coal (including solid fuels classified as anthracite, bituminous, subbituminous, or lignite) for the purpose of generating steam to produce electricity or electricity and other thermal energy by electric utilities and independent power producers. CCR includes fly ash, bottom ash, boiler slag, and flue gas desulfurization materials.
- CCR compliance – Used as short-hand within this document for CCR Rule Compliance.
- Environmental Management System – A framework that aids organizations with the review, evaluation, and improvement of environmental goals and performance. For EKPC, Perillon, an Environmental Health and Safety management software, is used to help with the scheduling of activities in the CCR compliance processes.

3.0 ROLES

Defined within this Section are the Roles of an individual or individuals related to completing the quality process defined herein. Contact information for individuals filling roles defined herein can be found in Appendix D.

- CCR Legal Counsel (Legal) – Refers to EKPC’s legal counsel with members both in-house and contracted. The role of Legal will be to review particular documentation as deemed necessary to maintain CCR compliance. These documents generally fall into the category of significant documents that are generated by a Professional Engineer on a semi-annual, annual, or longer period of time basis; however, there may be other documentation outside of this category deemed necessary for legal review at the discretion of the CCR Executive Sponsor, CCR Engineering Compliance Director, or CCR Environmental Compliance Director.
- Plant – Refers to the station level or plant level within EKPC’s existing organization and will be specific to each individual station. The Plant will be responsible for any remedial actions that are determined as a result of inspections or other CCR Rule documentation. The Plant will also support the Contractor as required for the Contractor to perform their tasks related to CCR compliance.
- CCR Executive Sponsor – Refers to EKPC’s corporate level Executive Sponsor who shall oversee CCR compliance Roles, review contract-term solutions, and review projects required to maintain CCR compliance. The Executive Sponsor will have limited roles in monitoring documents prior to placement in the CCR Operating Record or on the CCR public website and will only perform these roles if specifically requested by the CCR Environmental Compliance Director or the CCR Engineering Compliance Director.
- CCR Environmental Compliance Director – Refers to EKPC’s corporate level Environmental Director who is the lead for CCR compliance documentation that falls within environmental compliance. Environmental compliance is broken into three major categories: groundwater monitoring, fugitive dust emissions, and location restrictions. The CCR Environmental Compliance Director’s role will be to monitor documentation for groundwater monitoring, fugitive dust, and location restrictions prior to placement in the CCR Operating Record or on the CCR public website. Additionally, the CCR Environmental Compliance Director will have roles for monitoring contract-term solutions and projects required to maintain CCR compliance as well as monitoring the procurement of contract services to perform CCR Rule reporting.
- CCR Engineering Compliance Director – Refers to EKPC’s corporate level Engineering Director who is the lead for CCR compliance documentation that falls within the E&C group’s expertise

for maintaining CCR compliance. Engineering compliance is broken into three major categories: closure/post-closure, run-on/run-off/flood design, and design management (inspections). The CCR Engineering Compliance Director's role will be to monitor documentation for closure/post-closure, run-on/run-off/flood design, and inspections prior to placement in the CCR Operating Record or on the CCR public website. Additionally, the CCR Engineering Compliance Director will have roles for monitoring contract-term solutions and projects required to maintain CCR compliance as well as monitoring the procurement of contract services to perform CCR Rule reporting.

- CCR Managers – CCR Managers will be the team lead for the specific CCR compliance process(es) in their area of expertise required to keep EKPC in compliance with the CCR Rule. The individual CCR Managers will perform multiple roles related to CCR compliance which may include (but not be limited to) prompting the Contractor to mobilize for inspections/documentation, coordination between the plant and contractor, reviewing CCR documents before being posted on the CCR Operating Record or CCR public website, requesting reviews from other personnel for CCR documentation, performing inspections, initiating actions to correct deficiencies as noted from CCR documentation (i.e. work orders), performing audits on Contractor performed work, and determining contract-term solutions and projects required to maintain CCR compliance. CCR Managers will work with the CCR Gatekeeper to stay up-to-date on CCR Rule updates and add/revise flow charts within the QA program in order to maintain compliance with the CCR Rule. The following roles are grouped under the title of CCR Managers:

- Design Manager – Refers to the Primary Design Manager who oversees design and construction process and performs landfill and surface impoundment inspections and periodically reviews various inspections' work documents. This individual shall also email drafts of inspections to specified entities listed in the respective flowchart, continually compile draft comments, and determine if the comments have been addressed. Additionally, the Primary Design Manager must update the remedial action log for all sites in the CCR Working Folder and ensure that any related instrument data files from the site are placed in the CCR Working Folder.
- Fugitive Dust Manager – Refers to the Primary Fugitive Dust Manager who evaluates citizen complaints and determines the steps for ensuring that they are addressed appropriately. This individual must determine if additional information on the complaint is needed or if any non-compliance exists. All completed work concerning the complaint must be reported to Public Relations (PR) and saved in the CCR Working Folder and the complaint log. The Primary

- Fugitive Dust Manager must also create and review draft annual fugitive dust reports in the CCR Working Folder and compile feedback from draft reports to update as needed.
- Groundwater Manager – Refers to the Primary Groundwater Manager who oversees the Groundwater Monitoring Program Process, the Detection Monitoring Process, the Assessment Monitoring Process, the Assessment of Corrective Measures Process, the Selection of Remedy Process, the Implementation of the Corrective Action Program, and the Annual Groundwater Monitoring and Corrective Action Report Process. Within these processes, the Primary Groundwater Manager performs a multitude of tasks listed in the related flowcharts pertaining to maintaining groundwater standards, identifying any statistically significant increases, determining the remedial action and remedy, if any, and performing semiannual and annual monitoring to track the success of remedial actions. Within these processes, the Primary Groundwater Manager must review any draft reports and compile comments to be delivered to the appropriate entities.
 - Engineering Manager – Refers to the Primary Engineering Manager who is lead for other managerial roles within the E&C group and, if required, aids in assessing potential corrective measures for groundwater contamination and selecting the remedy and interim measures required to reduce contaminant leaching from CCR unit.
 - Closure Manager - Refers to the Primary Closure Manager who, if required, aids in assessing potential remedial measures for groundwater contamination and selecting the remedy and interim measures required to reduce contaminant leaching from CCR unit. Additionally, this individual is responsible for overseeing the closure and post-closure care requirements of any CCR unit's.
 - Backup Manager(s) – Refers to the secondary, tertiary, etc. roles provided within the same division of responsibility as the Primary Manager who will primarily review draft reports and deliver comments to the Primary Design Manager, and act as team lead for the specific CCR compliance process(es) in their area of expertise to keep EKPC in compliance with the CCR Rule in the absence of the Primary Manager. In the absence of the Primary Manager, the individual Backup Manager(s) will perform multiple roles related to CCR compliance which may include (but not be limited to) prompting the Contractor to mobilize for inspections/documentation, coordination between the plant and contractor, reviewing CCR documents before being posted on the CCR Operating Record or CCR public website, requesting reviews from other personnel for CCR documentation, performing inspections, initiating actions to correct deficiencies as noted from CCR documentation (i.e. work orders), performing audits on Contractor performed work, and determining contract-term solutions

and projects required to maintain CCR compliance. More than one CCR Backup Manager may be provided for specific roles as deemed necessary to maintain CCR compliance in extenuating circumstances.

- Contractor – Refers to contractors or 3rd parties that are not within EKPC’s existing organization. The roles of the Contractor will be to perform work scope(s) specified by contract documents executed between EKPC and the Contractor. The work scopes will be specific to the CCR Rule reporting and documentation requirements. The Contractor will maintain work scope deadlines to provide information to EKPC to maintain CCR Rule compliance.
- Corporate Information and Technology (IT) – Refers to the Information and Technology group within EKPC’s existing organization. Corporate IT will support the CCR Gatekeeper by developing and/or refining automated functions within existing or new data management systems to aid in streamlining the Quality Assurance Program. IT will also be responsible for providing the necessary security permissions inside the EKPC server folder structure to allow read/write access as required to view/enter/modify/remove CCR related documents within the CCR Operating Record.
- Web Services – Refers to the group within EKPC’s existing organization that will develop and maintain the CCR public website.
- CCR Gatekeeper – Refers to the individual within EKPC’s existing organization that will be the overall manager and leader of the QAP related to CCR Rule compliance documentation. Primary responsibilities of the Gatekeeper include placing documentation in the CCR Operating Record and on the CCR public website (if applicable), reviewing documentation prior to being placed in the CCR Operating Record or on the CCR public website, checking CCR Rule updates/changes, override capabilities to move CCR documentation to the next step in the quality process if the CCR Manager is not available to complete their step, and notifying the state or tribal authority when CCR documents have been posted to the CCR Operating Record and on the CCR public website. The Backup Gatekeeper primarily reviews draft reports and delivers comments to the Primary Gatekeeper.
- Engineering and Construction Shared Services (E&C) – Refers to the group within EKPC’s existing organization that will be in charge of maintaining a Computer Maintenance Management System (CMMS) software as it pertains to aiding CCR Rule compliance. E&C will be the primary interface with the CMMS software to modify/adapt the existing work order process to serve the needs of the CCR Rule. When necessary, E&C will produce documentation, from CMMS, that a work order has been completed.

- Public Relations (PR) – Refers to the group within EKPC’s existing organization that will be in charge of contact with the public. PR will be the liaison between the public and the engineering or environmental groups. PR will be responsible for receiving questions/comments/complaints/etc. from the public and directing them to the correct party within EKPC’s organization or addressing them if they are in the public relations area of expertise. PR will also be responsible for contacting the public representative if additional information is required for the engineering or environmental groups to properly address the concern.
- Central Lab – Refers to the group within EKPC’s existing organization that will be in charge of overseeing groundwater analysis.
- Project Manager – Refers to the individual within EKPC’s existing organization that is in charge of an EKPC capital or maintenance project. The Project Manager will be responsible to coordinate and discuss the Project with CCR Managers so as to provide the input necessary for the CCR Managers to update and/or revise CCR documents, as necessary, which are impacted by the Project.
- CCR QAP Team – All CCR managers, gatekeepers, and other parties related to the QAP which shall meet, at minimum, semi-annually to discuss pending and upcoming compliance dates and documentation required for the scheduling process.

4.0 TIER I DOCUMENTS

CCR related documents, reports, performance specifications, workflows, or systems in Tier I include (but are not limited to):

- Internal administrative documents for managing the CCR Public Website
- Performance specifications to hire Contractors for reports, inspections, etc. to remain in CCR Rule compliance
- Automatic and manual processes (data management processes) that aid in CCR Rule compliance and provide the framework for maintaining CCR Rule compliance
- CCR Fugitive Dust Citizen Complaints
- Draft documentation
- Legal and Technical Memos
- Other documents prepared to aid meeting and/or maintaining the requirements in the CCR Rule that are not required to be prepared or maintained under the CCR Rule

Activities associated with Tier I documents will be performed by an EKPC employee or a Contractor if deemed necessary. The CCR Managers or CCR Gatekeeper will oversee each of the activities being performed by EKPC or the Contractor. The applicable CCR Manager or the CCR Gatekeeper will be selected based on their specific area of expertise and the CCR compliance quality assurance hierarchy chart provided in Appendix A. The CCR Environmental Compliance Director or CCR Engineering Compliance Director will approve a Contractor (if deemed necessary) based on the CCR Manager's review and recommendations. The applicable CCR Manager or the CCR Gatekeeper will be responsible to obtain the necessary documents/feedback from the party performing the task as defined by the roles and Appendix B. Documents will be saved outside of the CCR Operating Record in the CCR Working Folder.

Appendix B contains process flowcharts outlining the activities associated with Tier I documents. These are to be used by the CCR Managers or the CCR Gatekeeper to perform the associated tasks and to track the progress of these tasks in order to stay in compliance with the CCR Rule.

5.0 TIER II DOCUMENTS

CCR related documents or reports in Tier II include:

- Inspection Documents
 - 7-day Inspection Reports
 - 30-day Inspection Reports
- Documentation of the Design, Installation, Development, and Decommissioning of any Monitoring Wells, Piezometers, and Other Measurement, Sampling, and Analytical Devices
- Results of Constituent Concentrations per Assessment Monitoring Program
- Documentation Recording Public Meetings to Discuss Corrective Measures Assessment (if required)
- Documenting Surface Impoundment Identification Marker Installation
- Documentation of Remedial Actions

Activities associated with Tier II documents will be performed by an EKPC employee or a Contractor if deemed necessary. The CCR Managers will oversee each of the activities being performed by EKPC or the Contractor. The applicable CCR Manager will be selected based on their specific area of expertise and the CCR compliance quality assurance hierarchy chart provided in Appendix A. The CCR Environmental Compliance Director or CCR Engineering Compliance Director will approve a Contractor (if deemed necessary) based on the CCR Manager's review and recommendations.

Draft documentation associated with Tier II documents will be considered Tier I documentation until the documents have been fully reviewed and approved by the applicable EKPC personnel. The applicable CCR Manager will be responsible to obtain the necessary Draft documentation from the party performing the task. The CCR Manager will save the Draft documentation outside of the CCR Operating Record in the CCR Working Folder and notify the applicable parties inside EKPC's existing organization that the documents are ready for review. The CCR Environmental Compliance Director will advise the CCR Manager if Legal Counsel shall be included in the review process. The CCR Manager will address review comments in the Draft documentation and provide final documentation to the review team. This may require issuing comments to the Contractor performing the scope of work to update and submit final documentation. After the review process has been completed, the CCR Manager will notify the CCR Gatekeeper to place the final documentation in the CCR Operating Record. Draft and final documents shall follow the naming convention as outlined in Section 7.0.

Remedial actions, if any, will be initiated by entry into a CMMS system or equivalent data management process system for remedial action via a work order. The CCR Managers will initiate these work orders to be performed at the Plant level. Once the work order is completed by the Plant, the CCR Manager will document that the remedial action was completed and provide this documentation for the CCR Gatekeeper to place in the CCR Operating Record along with the appropriate CCR documentation that originally initiated the remedial action. If required, the CCR Manager will coordinate with E&C Shared Services to obtain the necessary -remedial action completion documentation indicated above.

Appendix B contains flowcharts outlining the activities associated with Tier II documents. These are to be used by the CCR Managers and the CCR Gatekeeper to perform the associated tasks and to track the progress of these tasks in order to stay in compliance with the CCR Rule.

6.0 TIER III DOCUMENTS

CCR related documents or reports in Tier III include:

- Fugitive Dust Control Documents
 - Fugitive Dust Control Plans
 - Annual Fugitive Dust Control Reports
- Closure/Post-Closure Documents
 - Notice of Intent to Initiate Closure
 - Annual Closure Progress Reports
 - Closure and Post-Closure Plans
 - Notification of Closure Completion
 - Alternative Closure Notification
 - Alternative Closure Annual Progress Reports
 - Time extension for initiating closure
 - Time extension for completing closure
 - Notification of Intent to Close CCR unit
 - Deed Notification
 - Notification of Completion of Post-Closure Care
- Inspection Documents
 - Annual Inspections
 - Initial and Periodic Reports
 - History of Construction
 - Hazard Potential Classification Assessments
 - Structural Stability Assessments
 - Safety Factor Assessments
 - Run-On/Run-Off Control System Plans
 - Inflow Design Flood Control System Plans
 - Emergency Action Plans (significant or high hazard CCR Units)
 - Annual Face-to-Face meeting with local emergency responders (significant or high hazard CCR Units)
- Groundwater Monitoring Documents
 - Groundwater Monitoring System Certification
 - Groundwater Monitoring Report and Corrective Action Reports
 - Certification of Selected Statistical Method(s)

- Notification that an Assessment Monitoring Program has been Established
- Notification Identifying Constituents Exceeding Groundwater Protection Standard
- Notification Stating Assessment of Corrective Measures has been Initiated
- Completed Assessment of Corrective Measures
- Selection of Remedy Semi-Annual Report
- Completion of Remedy
- Construction Documents for existing, new or expansions of CCR units
 - Liner Design and Construction Certifications
 - Documentation of liner type for Existing CCR Surface Impoundments
- Corrective Measures
 - Corrective Measures Taken to Remedy a Deficiency or Release Identified by the CCR Rule's operating requirements
- Retrofit Documents
 - Retrofit Plan
 - Notification of Intent to comply with Alternative Retrofit requirements
 - Annual Retrofit Progress Reports
 - Retrofit Time Extension
 - Notification of Intent to Initiate Retrofit
 - Completion of Retrofit
- Location Restrictions Documents
 - Placement Above the Uppermost Aquifer
 - Wetlands
 - Fault Areas
 - Seismic Impact Zones
 - Unstable Areas

Activities associated with Tier III documents will be performed by an EKPC employee or a Contractor if deemed necessary. The CCR Managers will oversee each of the activities being performed by EKPC or the Contractor. The applicable CCR Manager will be selected based on their specific area of expertise, and the CCR compliance quality assurance hierarchy flowchart provided in Appendix A delineates the chain of command for each role in EKPC's CCR compliance program. The CCR Environmental Compliance Director or CCR Engineering Compliance Director and the CCR Executive Sponsor will approve a Contractor (if deemed necessary) based on the CCR Manager's review and recommendations.

Draft documentation associated with Tier III documents will be considered Tier I documentation until the documents have been fully reviewed and approved by the applicable EKPC personnel. The applicable CCR Manager will be responsible to obtain the necessary Draft work from the party performing the task. The CCR Manager will save the Draft documentation outside of the CCR Operating Record in the CCR Working Folder and notify the applicable parties inside EKPC's existing organization that the documents are ready for review. The CCR Environmental or the CCR Engineering Compliance Director will advise the CCR Manager if Legal Counsel shall be included in the review process. The CCR Manager will issue comments to the Contractor performing the scope of work to update and submit final documentation. After the review process has been completed, the CCR Manager will notify the CCR Gatekeeper to place the final documentation in the CCR Operating Record and on the CCR public website and notify the State Director and/or Tribal Authority that the CCR compliance documentation has been placed in the CCR Operating Record and on the CCR public website. Draft and final documents shall follow the naming convention as outlined in Section 7.0.

Work orders, if any, will be initiated by entry into the CMMS system or equivalent data management process system for any remedial or corrective action via a work order. The CCR Managers will initiate these work orders to be performed at the Plant level. Once the work order is completed by the Plant, the CCR Manager will document that the work order was completed and provide this documentation for the CCR Gatekeeper to place in the CCR Operating Record along with the appropriate CCR documentation that originally initiated the remedial action. If required, the CCR Manager will coordinate with E&C to obtain the necessary completion documentation indicated above. Remedial actions shall not be placed on the CCR public website unless specifically identified as a Tier III document in the process flowcharts found in Appendix B. Some remedial actions may require contract-term solutions that the CCR Managers will bring to the attention of the CCR Executive Sponsor, the CCR Environmental Compliance Director, and/or the CCR Engineering Compliance Director so that a solution can be determined prior to initiating a work order or procuring contract services to perform the work.

Appendix B contains flowcharts outlining the activities associated with Tier III documents. These are to be used by the CCR Managers and the CCR Gatekeeper to perform the associated tasks and to track the progress of these tasks in order to stay in compliance with the CCR Rule.

7.0 DATA ORGANIZATION AND NAMING CONVENTIONS

Data organization is a critical function in the QAP process in order to ensure documentation is maintained for internal use or for CCR Rule compliance. The tiers discussed in this program document and shown in the process flowcharts located in Appendix B indicate folder structures and electronic mailboxes in which various documents will be saved or sent to throughout steps of each process. Tables containing information and file system permissions for these folder structures and electronic mailboxes can be found in Appendix C.

Naming conventions for Tier II and Tier III documents are to follow the standard naming convention noted below. This standardization is intended to allow for easy organization of documentation that has to be placed in the CCR Operating Record or on the CCR public website.

- Naming convention standard:
 - Location_Unit_Date of Document/Report_Document/Report type
- Example naming convention:
 - Spurlock_Ash Pond_20151019_7-Day Inspection Report

Tier I documentation will not have a standard naming convention since this documentation will be for various internal purposes that EKPC requires. If deemed necessary, EKPC will mutually agree upon the naming of any of these documents and provide this information to the Contractor if one has been hired to perform the scope of work. However, Tier I documentation that is a Draft version of Tier II and Tier III documentation shall follow the same naming convention noted above but add “Draft” prior to the standard.

- Example Draft naming convention:
 - Draft_Spurlock_Ash Pond_20151019_7-Day Inspection Report

Subject line naming conventions for electronic mail correspondence related to the development and final submittal of Tier II and Tier III documentation are to follow the standard naming convention noted below. The standardization is intended to allow for easy organization of correspondence between EKPC and the Contractor performing the scope of work related to documents necessary to maintain CCR Rule

compliance. Electronic mail correspondence related to Draft documentation shall follow the same naming convention except that “Draft” shall be included as indicated below.

- Subject line naming convention standard:
 - CCR – Location_Unit_Date of Document/Report_Document/Report type
- Example subject line naming convention:
 - CCR – DRAFT_Cooper_Landfill_20151021_7-Day Inspection Report
 - CCR – Spurlock_Ash Pond_20151019_7-Day Inspection Report

CCR compliance documentation placed in the CCR Operating Record and on the CCR public website can be removed after five years. The CCR Gatekeeper shall review the CCR Operating Record and CCR public website on an annual basis to determine if removal of any CCR compliance documentation is allowed to be performed. The CCR Gatekeeper will consult with the CCR Environmental Compliance Director and the CCR Engineering Compliance Director to determine if the CCR compliance documentation should be removed pursuant to the CCR Rule or if the documentation is necessary to remain. Based on that determination, the CCR Gatekeeper shall remove necessary documentation from the CCR Operating Record and the CCR public website. Prior to removal of any documentation from the CCR Operating Record, the CCR Gatekeeper will archive the historical documentation in a separate file retention system outside the CCR Operating Record and the CCR Working Folder deemed necessary by the CCR Environmental Compliance Director or the CCR Engineering Compliance Director.

8.0 SCHEDULING

Appendix B provides process flowcharts for the CCR compliance processes. Within these process flowcharts are expected durations and/or specific dates to aid in the scheduling of activities for individual CCR Managers as well as other Roles as defined in Section 3.0. Scheduling may require prior planning as some documentation will take longer to generate than others, which has been indicated in the process flowcharts. Additional process flowcharts may be required in revisions to this manual to allow for CCR Rule changes or EKPC internal changes.

As part of the scheduling process, the CCR Gatekeeper, along with legal oversight, tracks CCR compliance dates and when subsequent documentation is required to be placed into the CCR Operating Record. The CCR Gatekeeper uses an environmental management system, such as Perillon, to do so. This process fits the specific needs of multiple CCR Units and their current, but separate and unique, CCR compliance requirements. As additional requirements are implemented, Perillon will be updated to reflect the necessary scheduling dates. The CCR Gatekeeper will implement, at a minimum, semi-annual meetings with the entire CCR QAP team to discuss the pending and upcoming compliance dates and documentation required.

Appendix E contains a glossary of CCR documents. This glossary contains three groups of documents:

- Scope of work documents and supplements used to procure services to perform inspections/assessments/reports/etc. to comply with the CCR Rule
- CCR Rule compliance documents that are to be reviewed and/or revised periodically to comply with the CCR Rule
- Procedural documents used to track and outline processes necessary to comply with the CCR Rule

This glossary is intended to be used as a reference to review how various documents are to be used and when they should be used in order to comply with the CCR Rule. The glossary is designed to track revisions to the native documents to verify the current revisions are always used. Additionally, the glossary is intended to identify specific CCR Working Folder documents that assist in CCR Rule compliance.

9.0 QUALIFICATIONS

The CCR Rule requires that either a qualified person or a professional engineer perform specific tasks associated with CCR Rule compliance. A qualified person does not have to be a professional engineer. However, some training must be provided to the individual(s) responsible for performing the activity. CCR compliance plans/programs have been developed to include qualifications for a qualified person in the context of the specific plans/programs. In the absence of a CCR compliance plan/program, the following qualifications shall be used as guidance.

- A qualified person for the purposes of inspections is intended to mean an individual who:
 - Recognizes specific appearances of structural weakness and other conditions which are disrupting or have the potential to disrupt the operation or safety of the CCR unit by visual observation.
 - Is competent in items relating to CCR unit investigation and operation for the type of CCR unit being inspected.
 - Understands the effects of adverse CCR unit incidents and failures and potential causes of failures.
 - Is qualified by education, technical knowledge and experience to make the specific technical certifications
- For documents required by the CCR Rule to be sealed by a professional engineer, the engineer must be licensed in the Commonwealth of Kentucky and have qualifications for similar work.
- For tasks to be performed by a surveyor:
 - Topographic surveys shall be performed by a licensed professional surveyor in the Commonwealth of Kentucky
 - Bathymetric surveys shall be performed by or under the direction of a licensed professional surveyor in the Commonwealth of Kentucky.

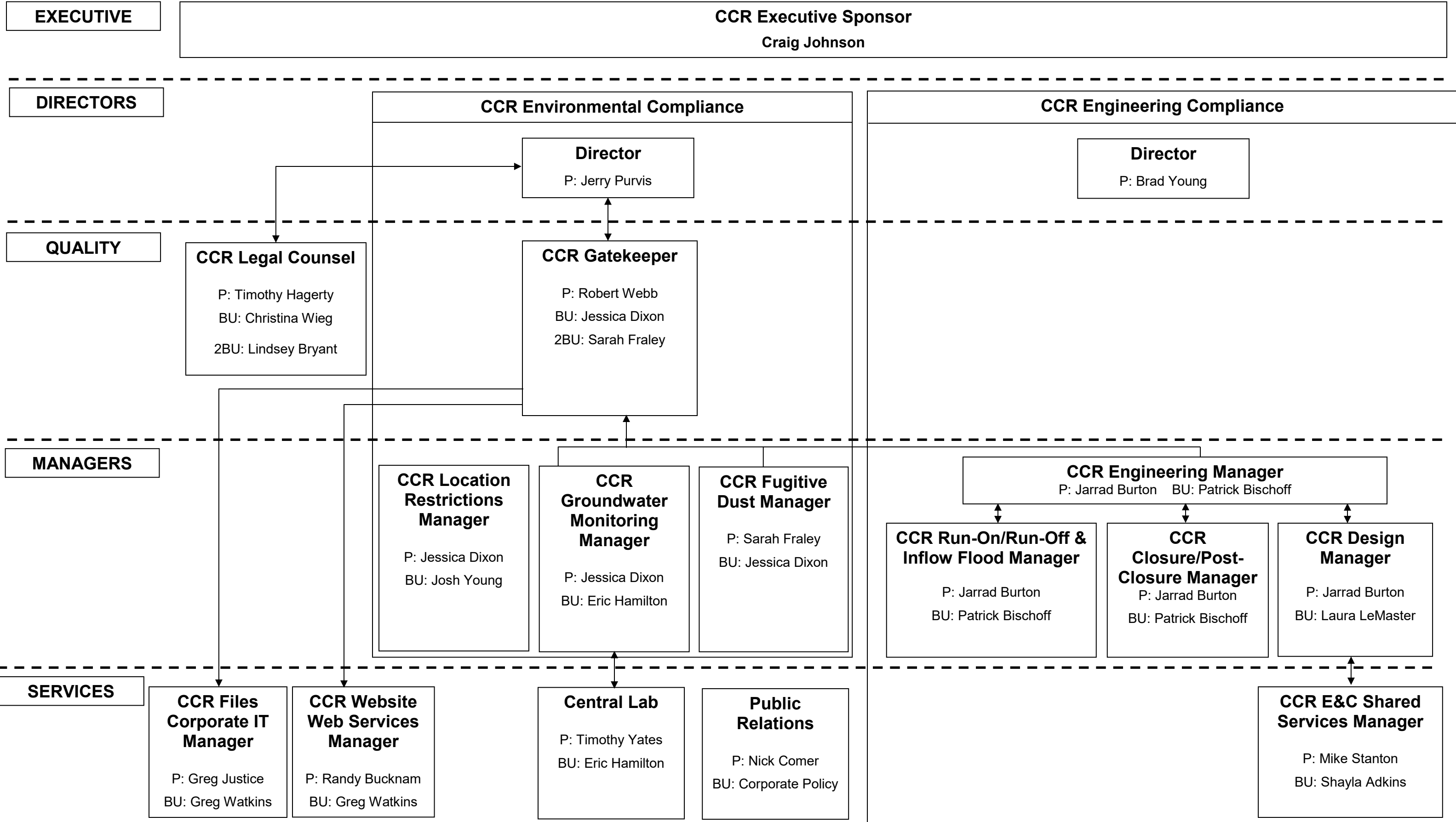
10.0 PROGRAM ASSESSMENT

On an annual basis, the CCR Gatekeeper will meet with the CCR Environmental Compliance Director, the CCR Engineering Compliance Director, and the CCR Managers to review the existing Quality Assurance Program to identify any needed changes. If any action items are identified, they will be incorporated by the CCR Gatekeeper and included in the record of revisions and updates in Section 11.0. Finally, the CCR Gatekeeper will redistribute the updated Quality Assurance Program to each of the EKPC personnel filling the Roles as defined in this document.

APPENDIX A – CCR COMPLIANCE QUALITY ASSURANCE HIERARCHY CHART

CCR Compliance Quality Assurance Hierarchy Chart

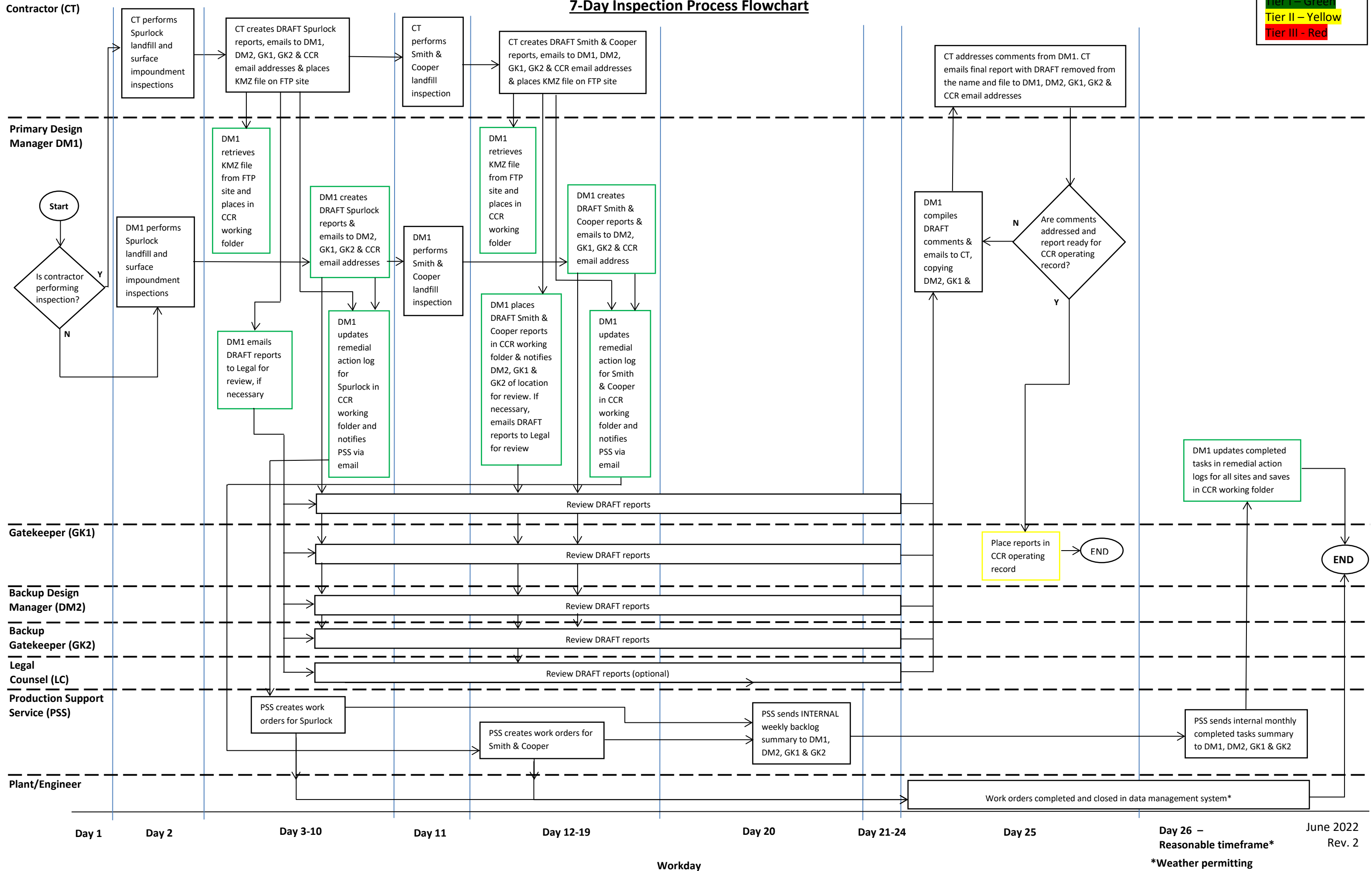
P: Primary
 BU: Backup
 2BU: Second Backup



APPENDIX B – PROCESS FLOWCHARTS

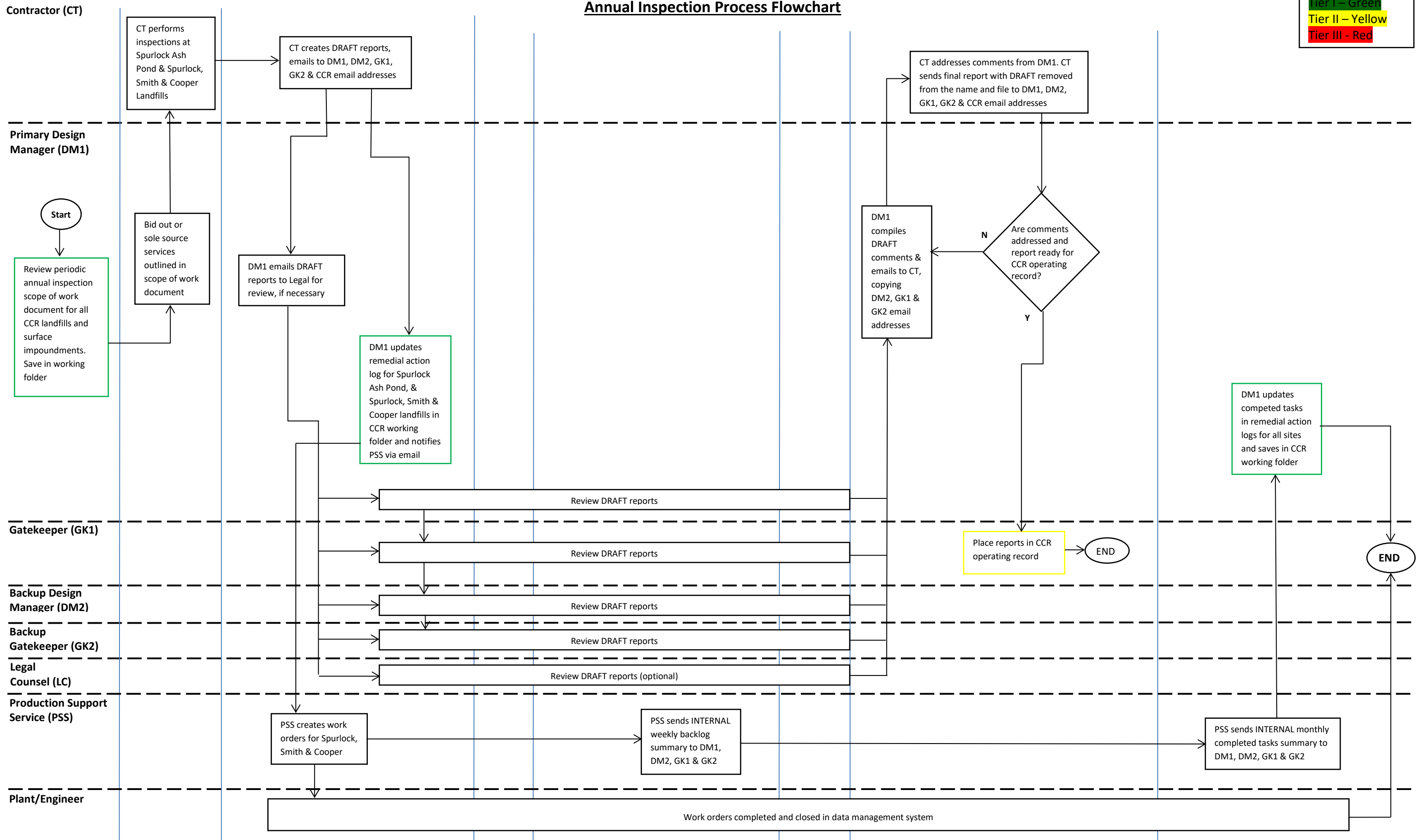
7-Day Inspection Process Flowchart

Tier I – Green
 Tier II – Yellow
 Tier III – Red



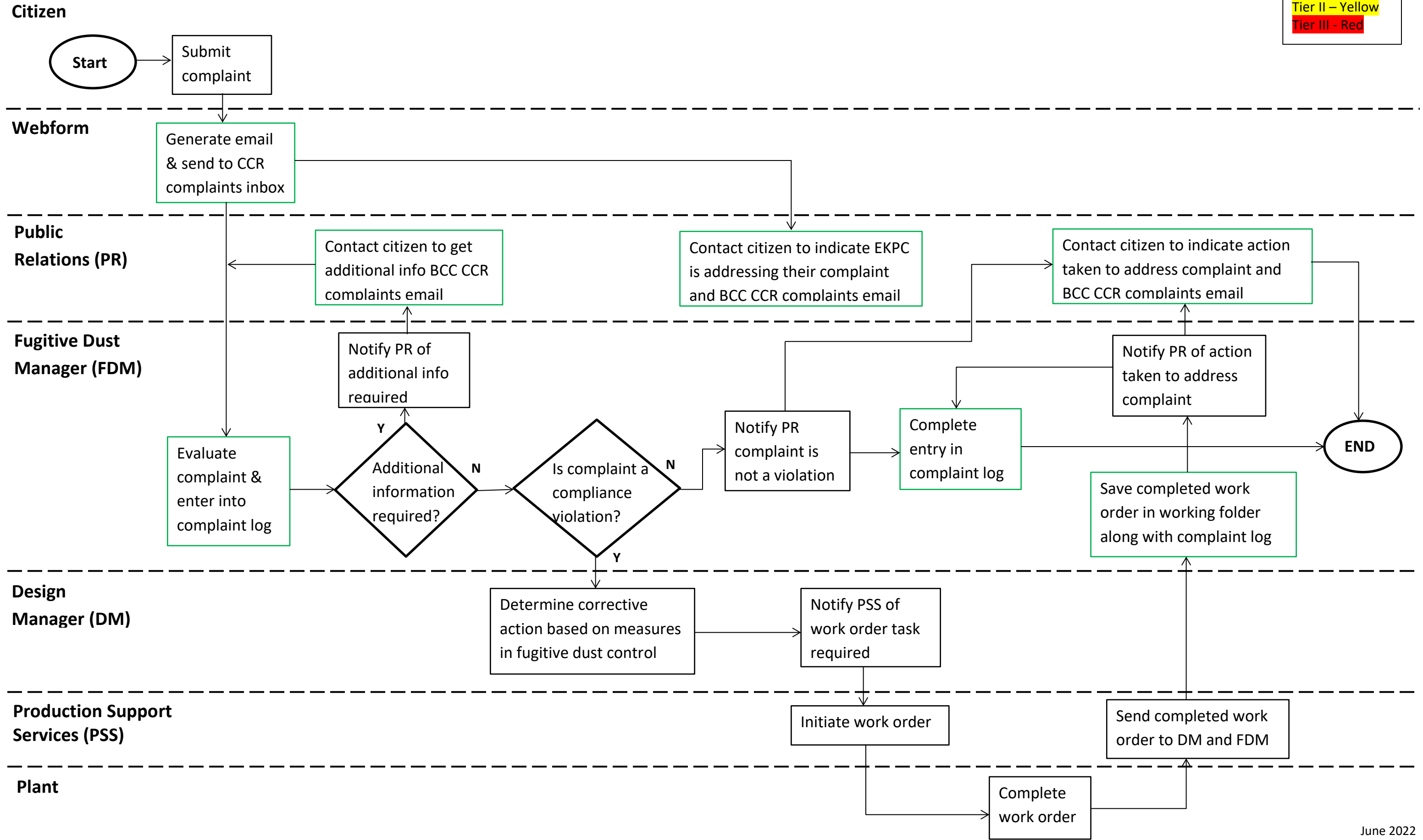
Annual Inspection Process Flowchart

Tier I – Green
Tier II – Yellow
Tier III - Red



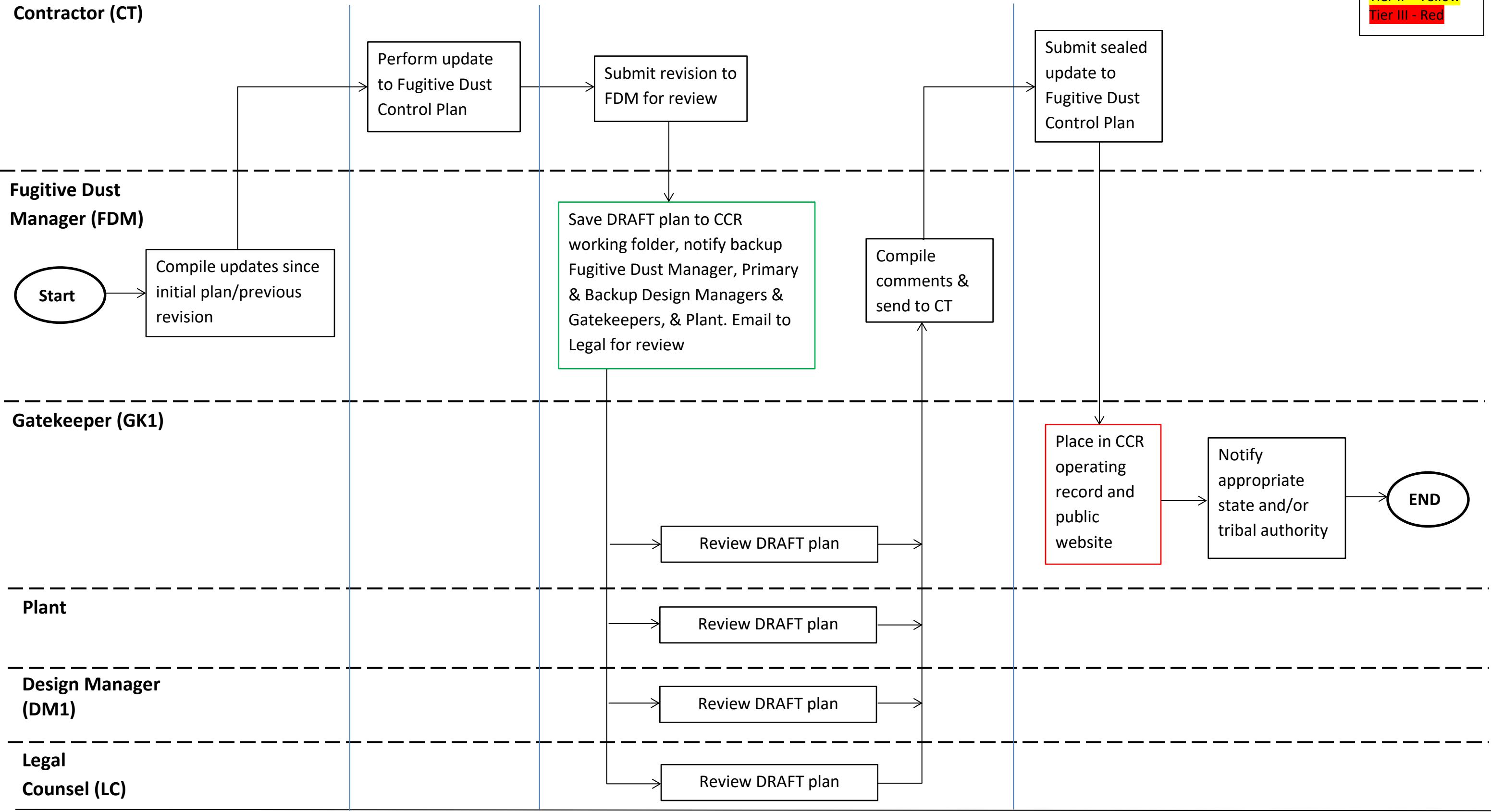
Fugitive Dust (FD) Citizen Complaint Flowchart

Tier I – Green
Tier II – Yellow
Tier III – Red



Amendment to Fugitive Dust Control Plan Process Flowchart*

Tier I – Green
Tier II – Yellow
Tier III - Red

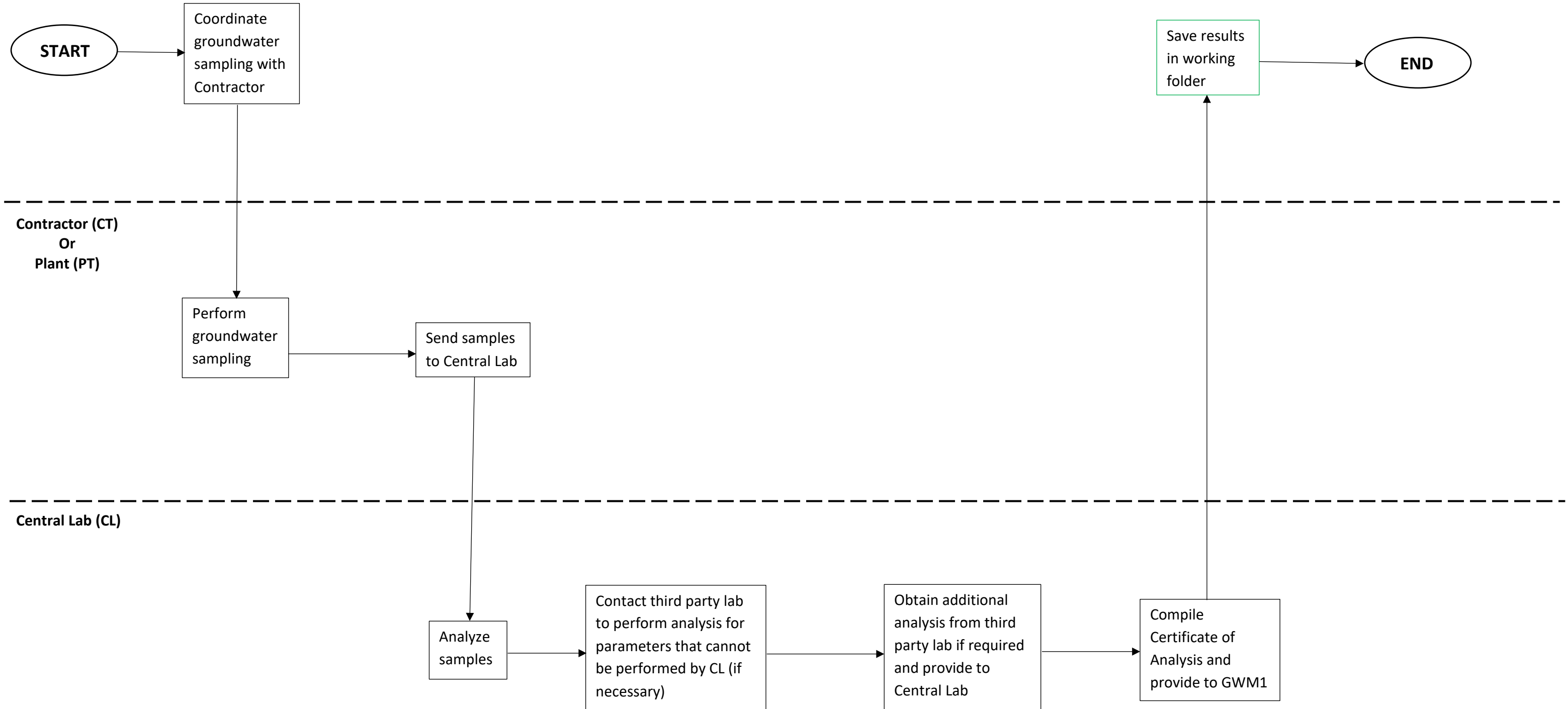


*If condition at plant changes substantially affecting the written fugitive dust control plan in effect

Groundwater Monitoring Sampling and Analysis Outline Flowchart¹

Tier I – Green
Tier II – Yellow
Tier III - Red

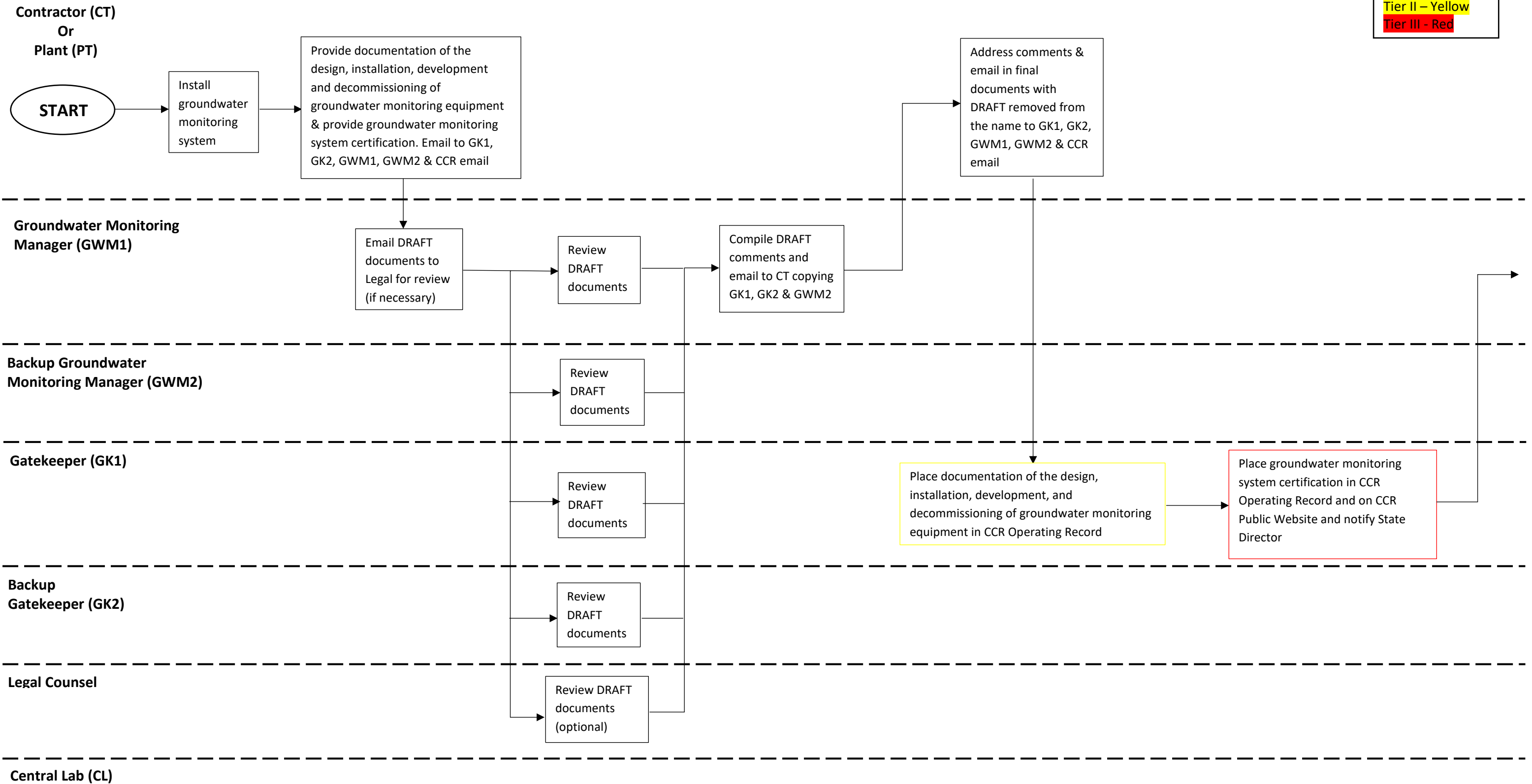
Groundwater Monitoring Manager (GWM1)



¹ This is an overview of the process. Specific groundwater processes can be found on subsequent and more detailed flowcharts.

Establishing Groundwater Monitoring Program Process Flowchart (Pg. 1)

Tier I – Green
Tier II – Yellow
Tier III - Red

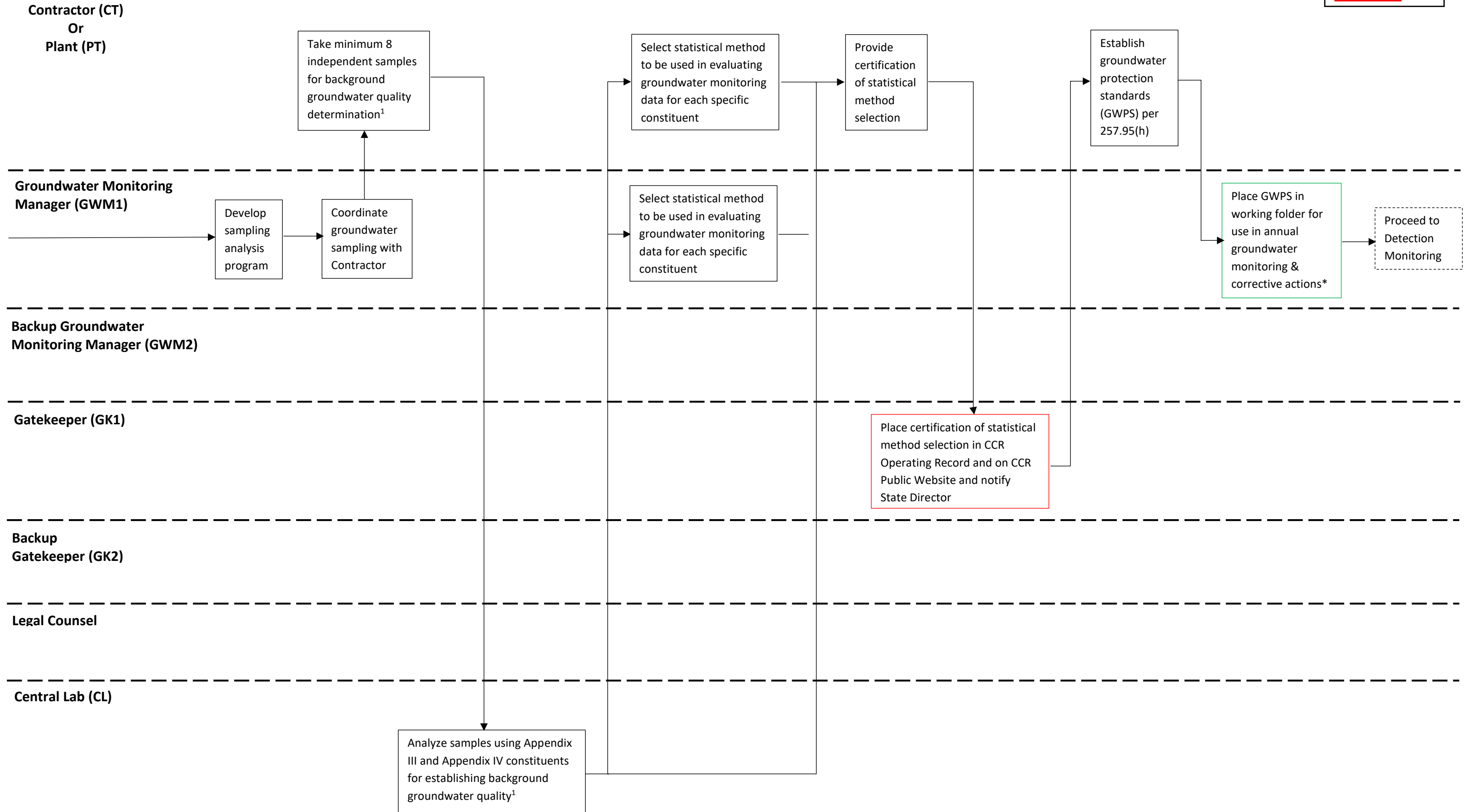


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¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

Establishing Groundwater Monitoring Program Process Flowchart (Pg. 2)

Tier I – Green
Tier II – Yellow
Tier III - Red

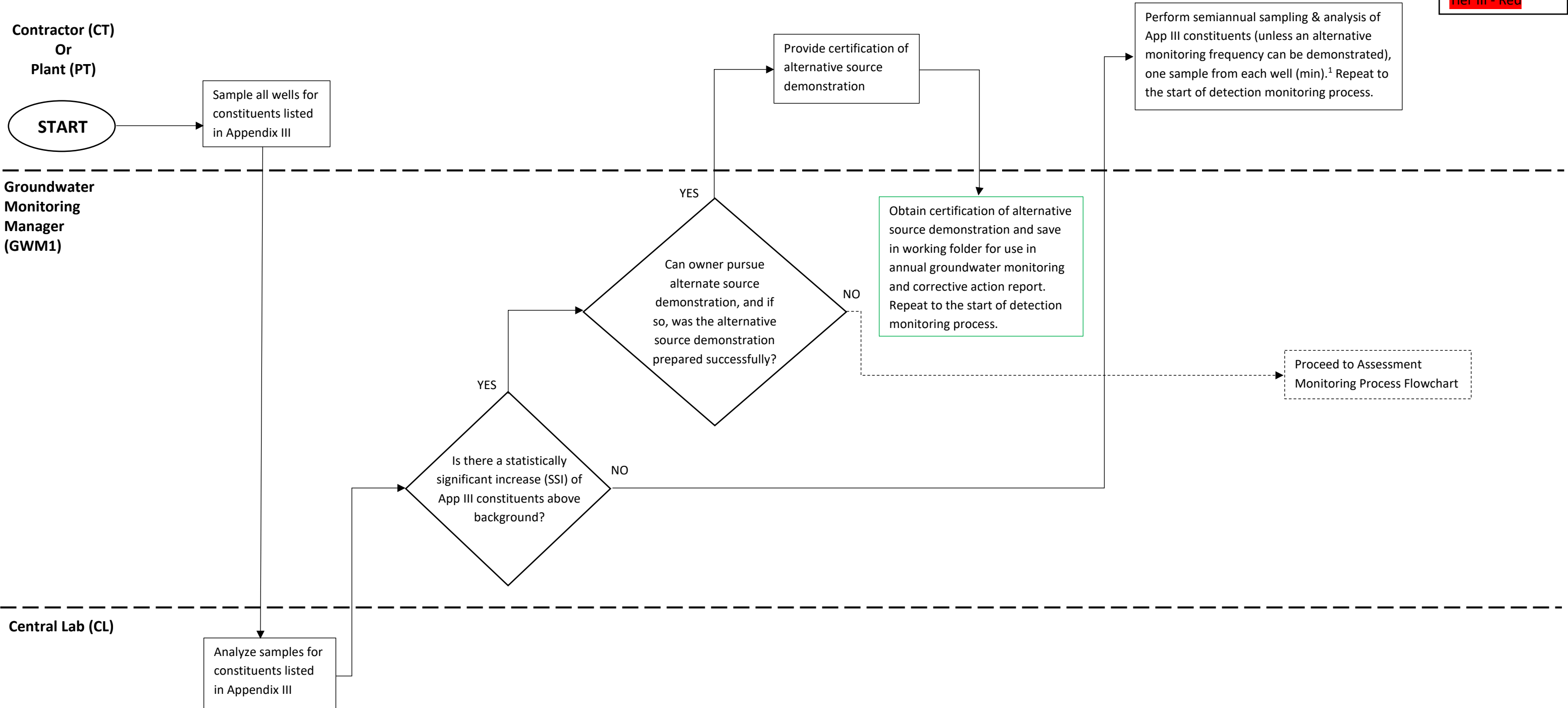


¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

***Does not have to be initiated prior to proceeding to detection monitoring**

Detection Monitoring Process Flowchart

Tier I – Green
Tier II – Yellow
Tier III - Red



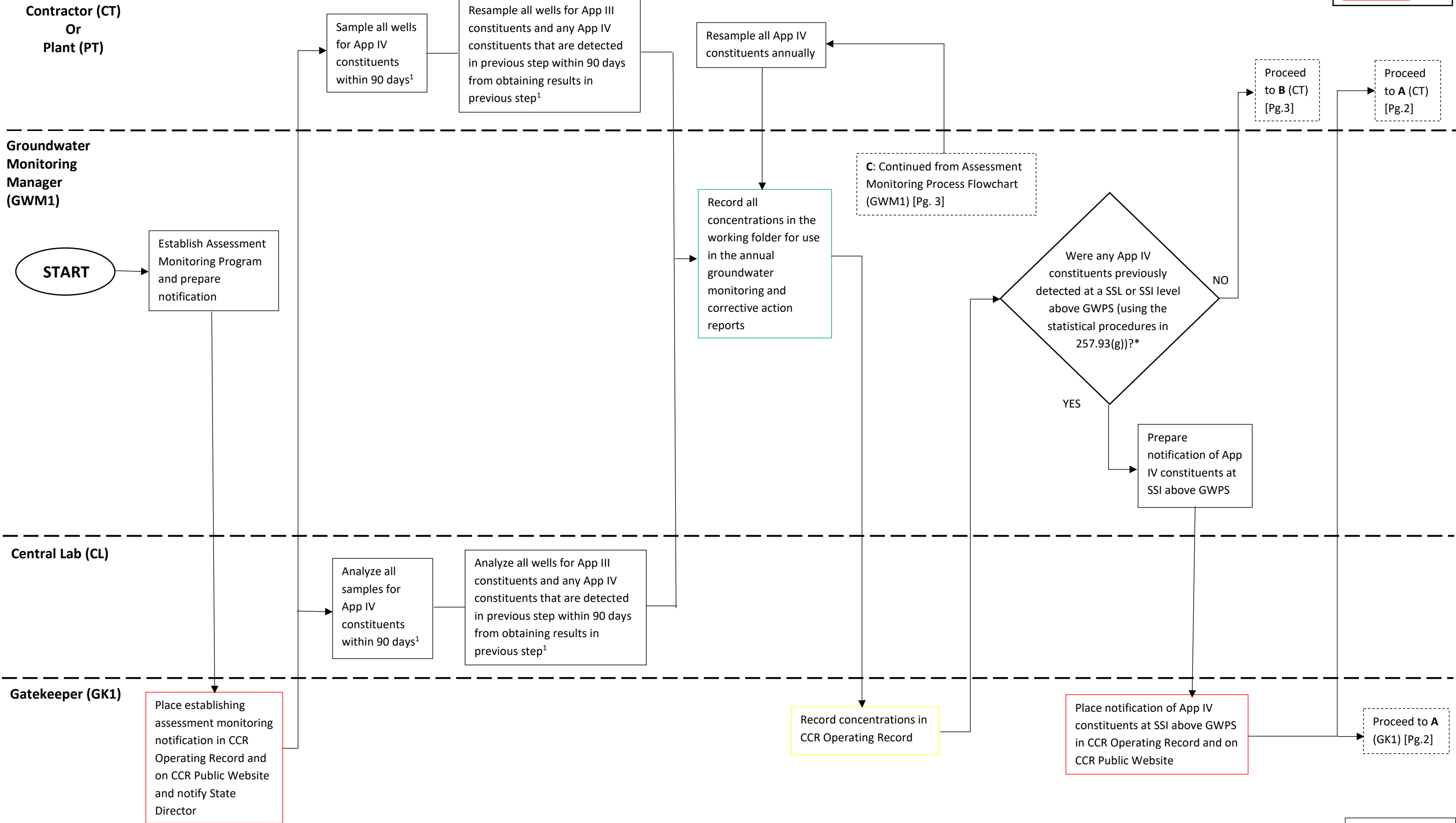
¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

*SSL: Statistically Significant Increase

June 2022
Rev. 2

Assessment Monitoring Process Flowchart (Pg. 1)

Tier I – Green
 Tier II – Yellow
 Tier III - Red



¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

*Established prior to comparison

Assessment Monitoring Process Flowchart (Pg. 2)

Tier I – Green
Tier II – Yellow
Tier III - Red

Contractor (CT)

A: Continued from (CT) [Pg.1]

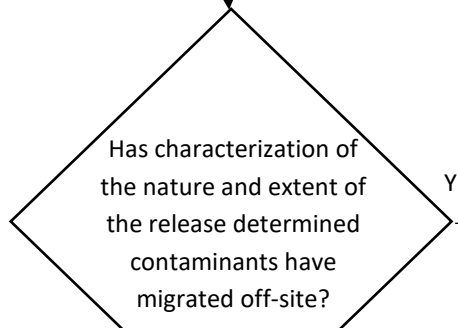
Characterize the nature and extent of the release per 257.95(g)(1)

Provide certification of alternative source demonstration

Public Relations (PR)

Notify all persons who own the land or reside on the land that directly overlies any part of the plume of contamination.

Groundwater Monitoring Manager (GWM1)



Prepare notification of all persons who own land or reside on the land that directly overlies any part of the plume of contamination

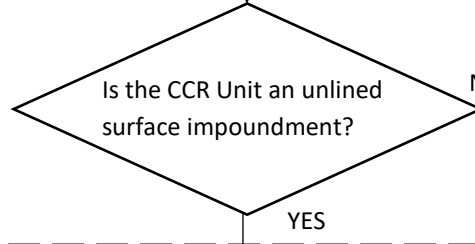
Obtain certification of alternative source demonstration and include in annual groundwater monitoring and corrective action report

Gatekeeper (GK1)

A: Continued from (GK1) [Pg.1]

Place notification for all persons who own land or reside on the land that directly overlies any part of the plume of contamination in CCR operating record and on CCR public website

Engineering Manager (EM1)



Proceed to Assessment of Corrective Measures Process Flowchart

Closure Manager (CM1)

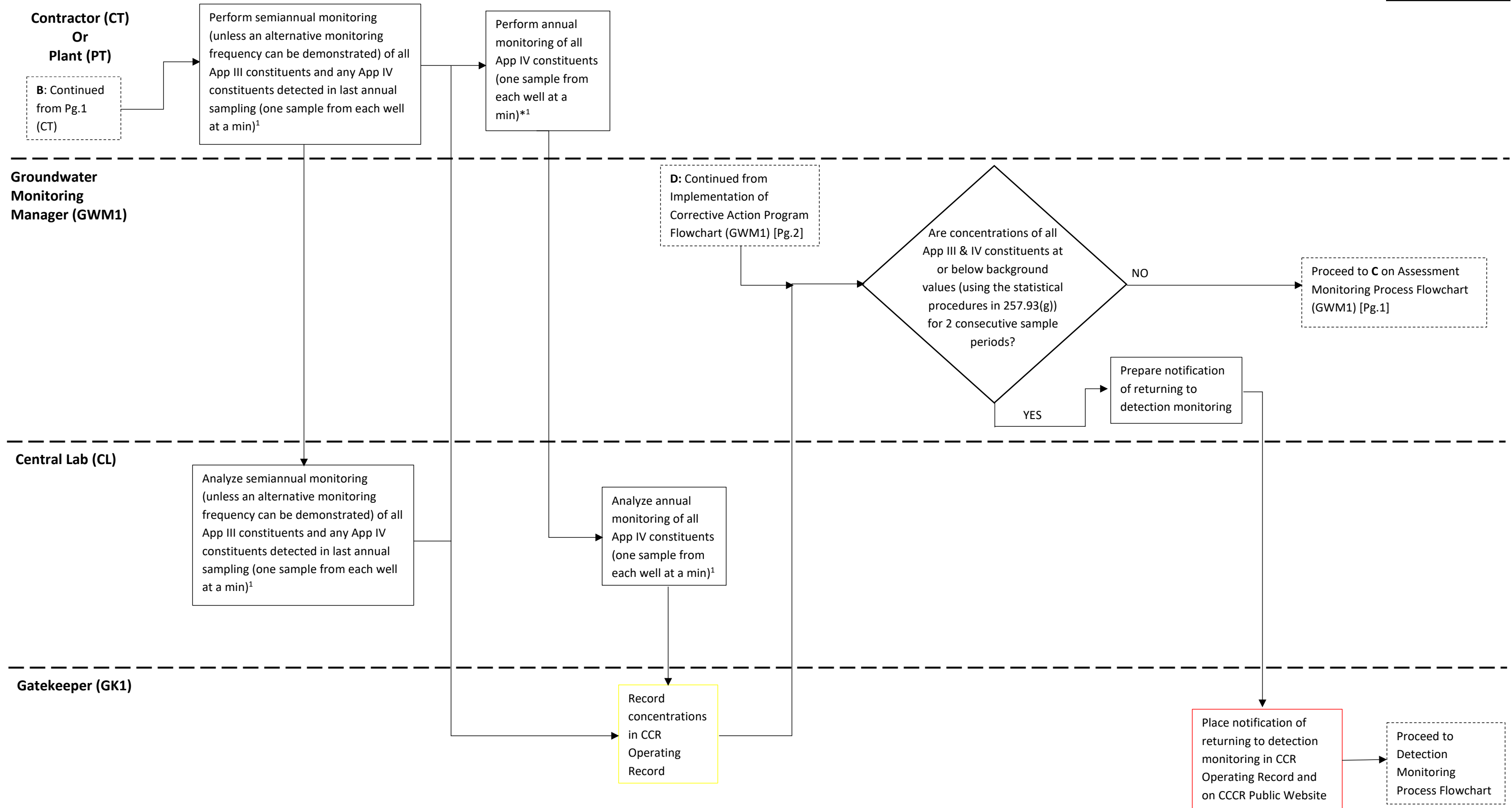
Close unlined surface impoundment per 257.101(a) and place notification in CCR Operating Record and on CCR Public Website and notify SD

¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

***SSL: Statistically Significant Level**

Assessment Monitoring Process Flowchart (Pg. 3)

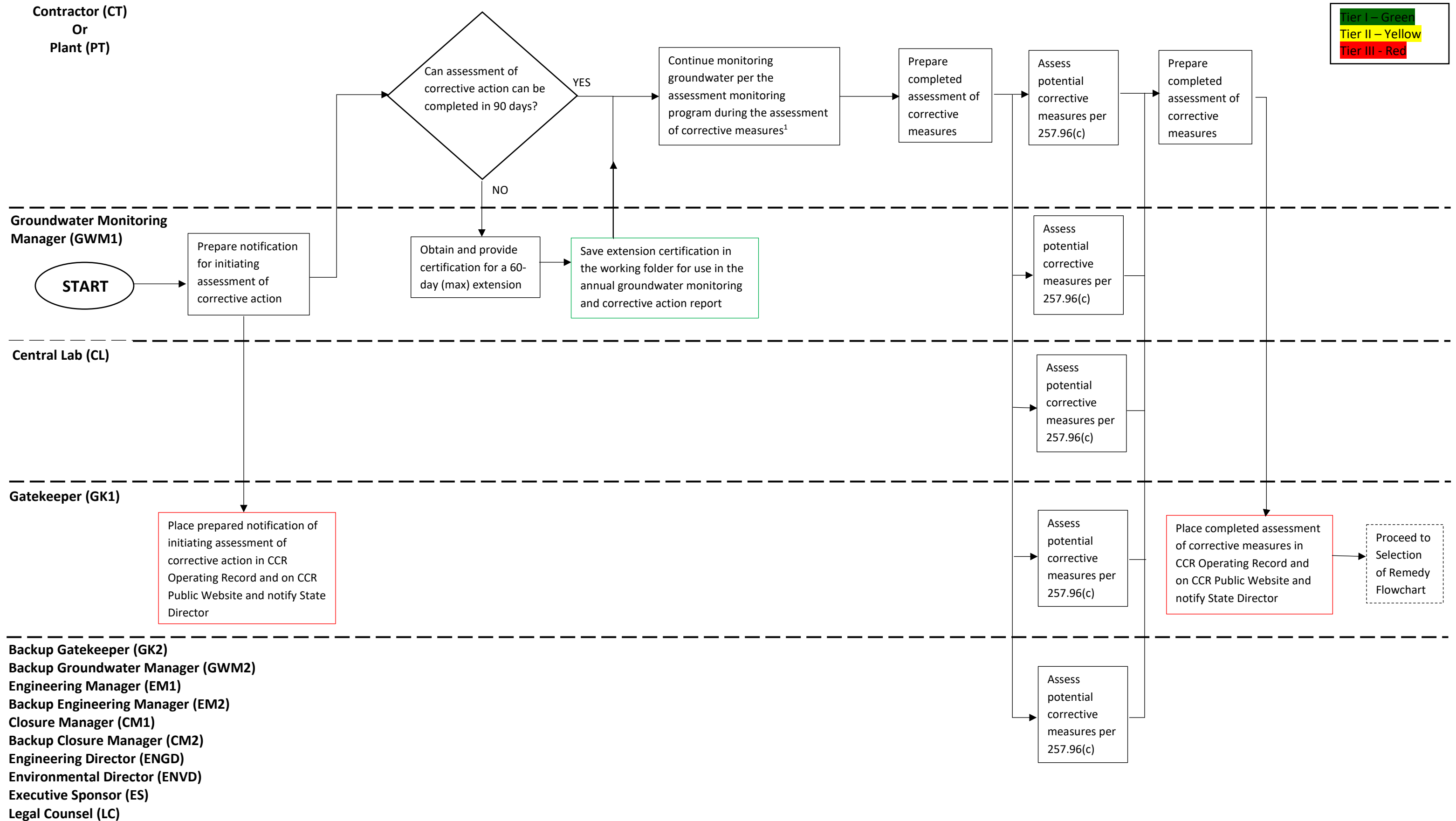
Tier I – Green
Tier II – Yellow
Tier III - Red



¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

***This occurs after the results of every two semi-annual events are analyzed for SSIs/SSLs**

Assessment of Corrective Measures Process Flowchart



¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

Selection of Remedy Process Flowchart

Tier I – Green
Tier II – Yellow
Tier III - Red

Groundwater Monitoring Manager (GWM1)

START

Hold a public meeting with interested and affected parties to discuss results of remedial measures assessment at least 30 days prior to selecting a remedy

Public Relations (PR)

Hold a public meeting with interested and affected parties to discuss results of remedial measures assessment at least 30 days prior to selecting a remedy

Gatekeeper (GK1)

Place public meeting minutes in CCR Operating Record

Place semiannual remedy selection/design progress report in CCR Operating Record and on CCR Public Website

Select remedy

Select remedy

Place final remedy report and certification in CCR operating record and on CCR public website

Proceed to Implementation of the Corrective Action Program Flowchart

Contractor (CT)

Prepare semiannual remedy selection/design progress report

Review comments and revise report

Prepare and certify final report describing remedy and how it meets standards per 257.97 (b), (c), and (d).

Backup Gatekeeper (GK2)
Backup Groundwater Manager (GWM2)
Engineering Manager (EM1)
Backup Engineering Manager (EM2)
Closure Manager (CM1)
Backup Closure Manager (CM2)
Engineering Director (ENGD)
Environmental Director (ENVD)
Executive Sponsor (ES)
Legal Counsel (LC)

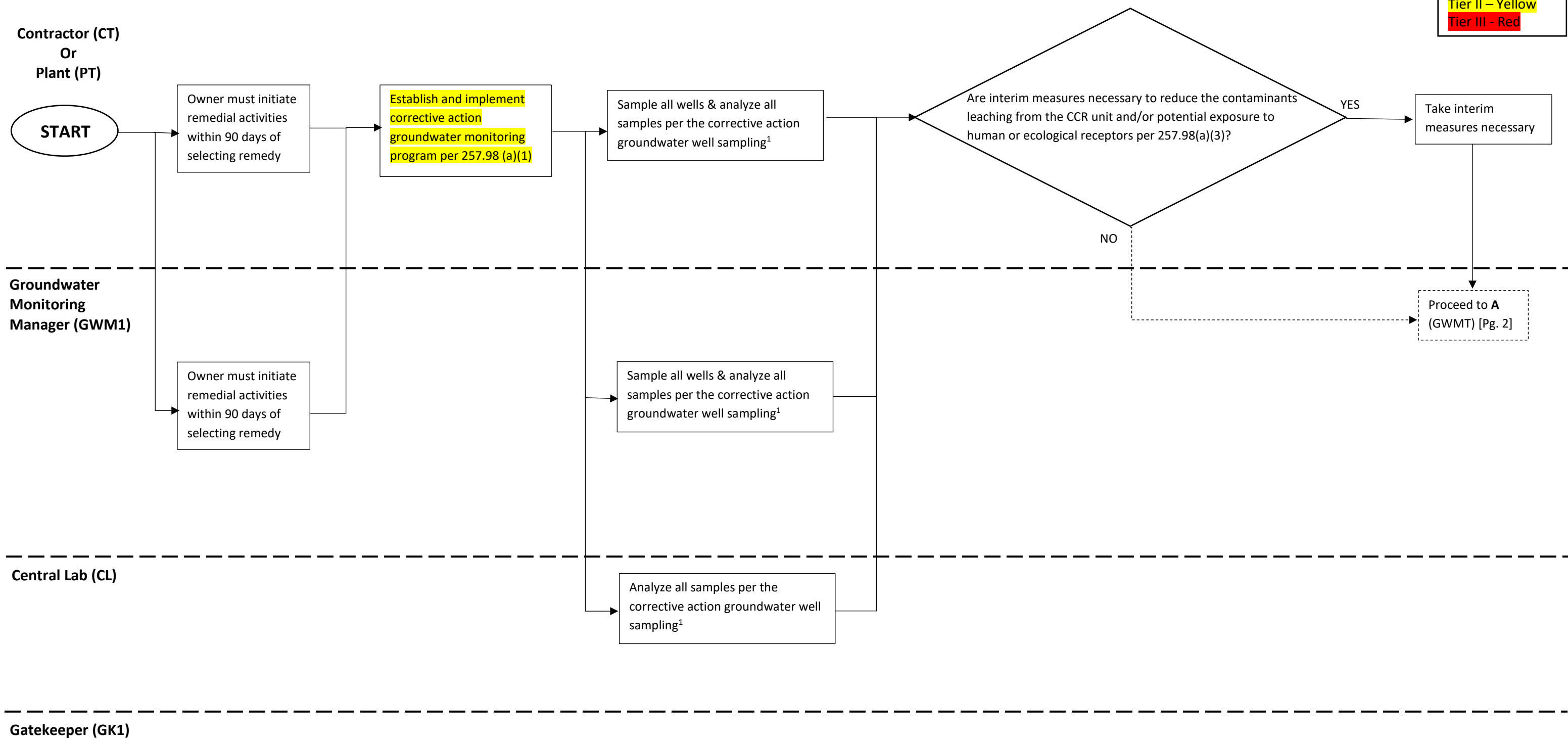
Review each report and make comments

Select remedy

¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

Implementation of the Corrective Action Program (Pg. 1)

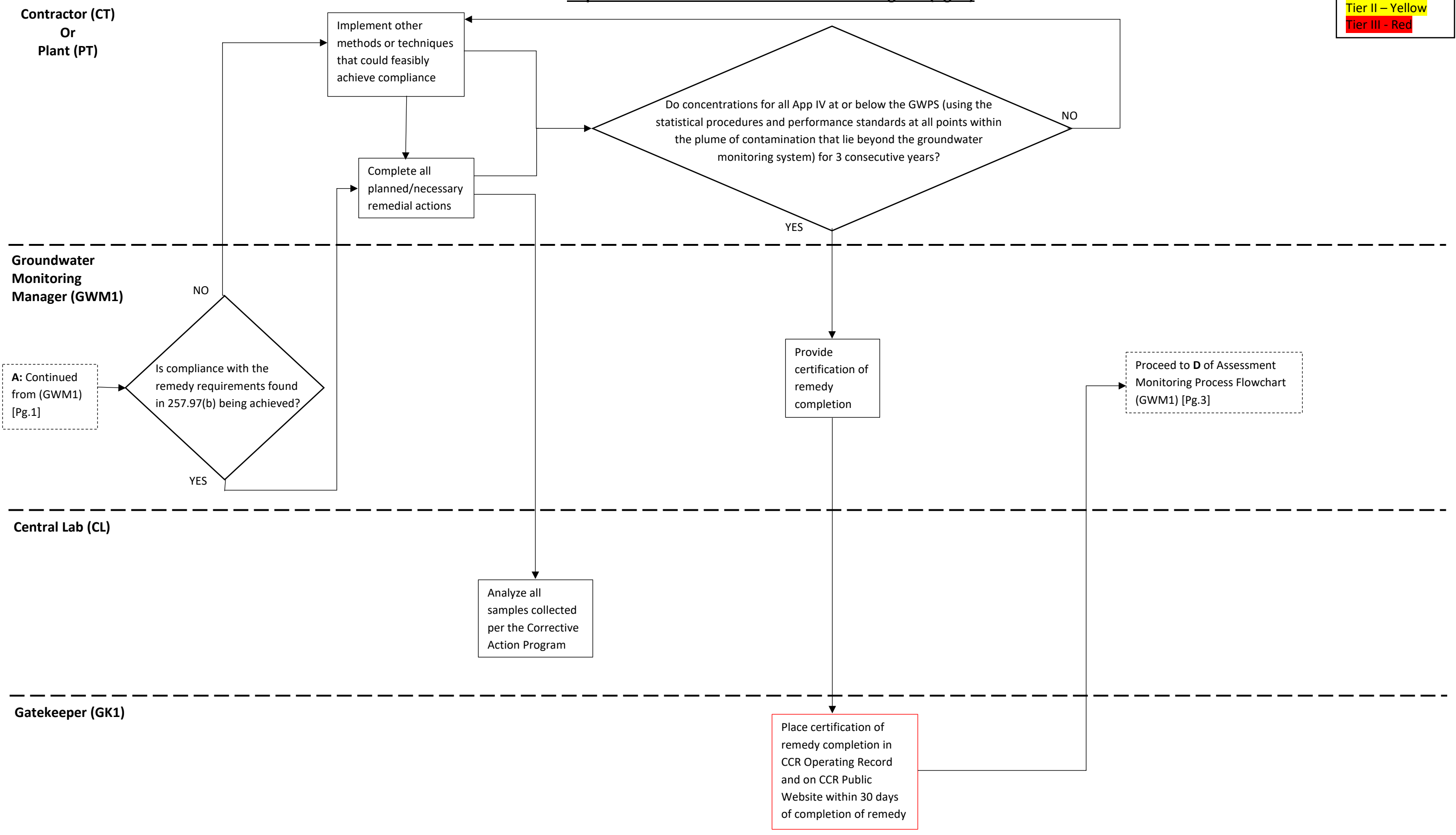
Tier I – Green
Tier II – Yellow
Tier III - Red



¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

Implementation of the Corrective Action Program (Pg. 2)

Tier I – Green
Tier II – Yellow
Tier III - Red

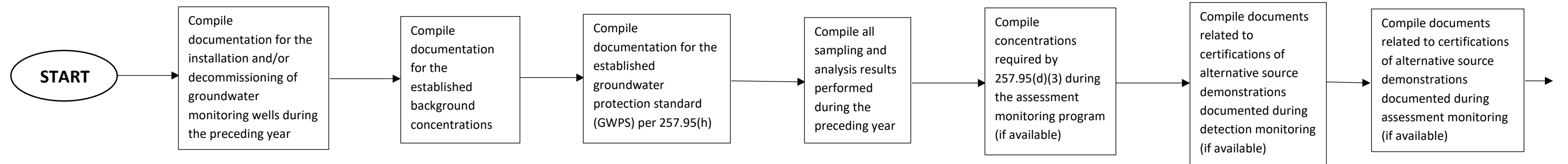


¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

Annual Groundwater Monitoring and Corrective Actions Report Process Flowchart (Pg. 1)

Tier I – Green
Tier II – Yellow
Tier III - Red

Groundwater Monitoring Manager (GWM1)



Gatekeeper (GK1)

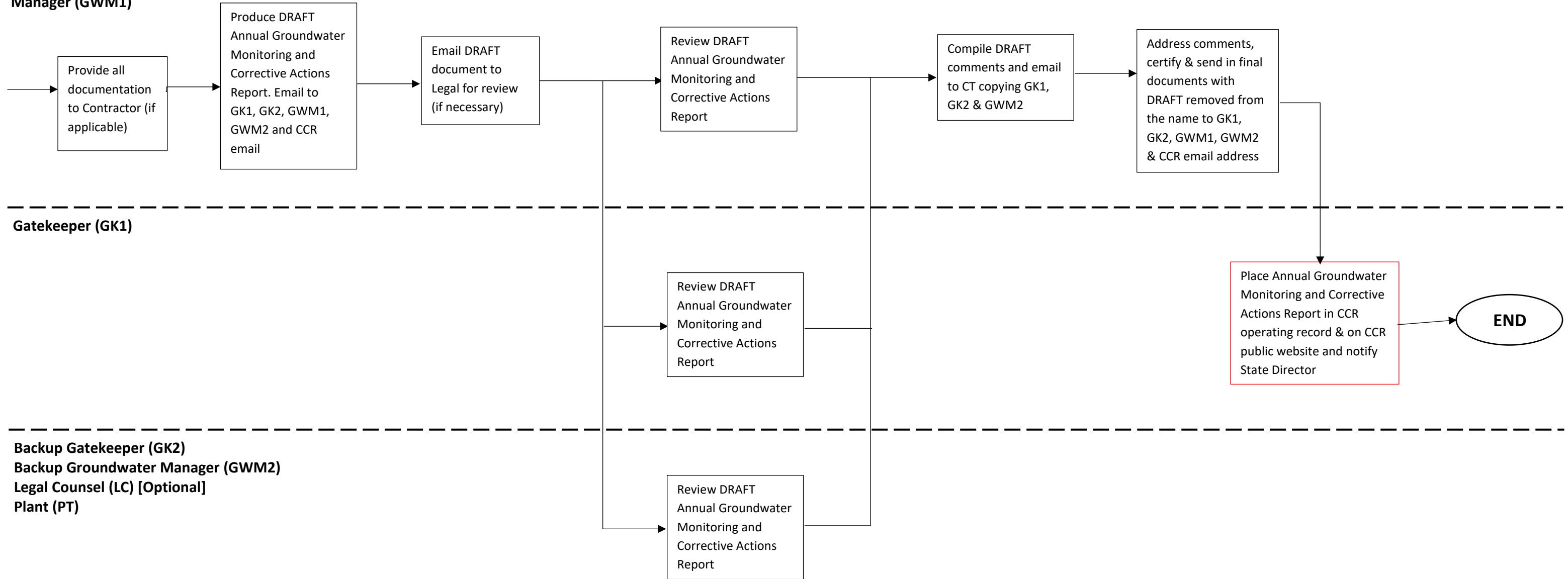
Backup Gatekeeper (GK2)
Backup Groundwater Manager (GWM2)
Legal Counsel (LC)
Plant (PT)

¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

Annual Groundwater Monitoring and Corrective Actions Report Process Flowchart (Pg. 2)

Tier I – Green
Tier II – Yellow
Tier III – Red

Groundwater Monitoring Manager (GWM1)



Gatekeeper (GK1)

**Backup Gatekeeper (GK2)
Backup Groundwater Manager (GWM2)
Legal Counsel (LC) [Optional]
Plant (PT)**

¹ For detailed tasks related to groundwater sampling and analysis, refer to Groundwater Sampling & Analysis Process Flowchart

APPENDIX C – FILE SYSTEM PERMISSIONS

CCR OPERATING RECORD		CCR WORKING FOLDER	
H:\CCR Rule Operating Record		H:\CCR Working Folder	
Read/Write Permission	Read Only Permission	Read/Write Permission	Read Only Permission
Jerry Purvis	Brad Young	Robert Webb	Craig Johnson
Robert Webb	Jarrad Burton	Patrick Bischoff	Jerry Purvis
Sarah Fraley	Matt Clark	Jarrad Burton	Brad Young
Jessica Dixon	Joe VonDerHaar	Matt Clark	David Meade
	Troy Lovell	Jessica Dixon	Josh Young
	Spencer Barrett	Laura LeMaster	Brad Young
	Greg Culp	Timothy Yates	David Samford
	John Warren	Eric Hamilton	
	Phillip Duncan	Jared Daugherty	
	Shawn Goad	Sarah Fraley	
	David Samford		
	Eric Hamilton		
	Patrick Bischoff		
	Craig Johnson		

CCR WORK ORDERS

H:\CCR Working Folder\CCR WO's

Read/Write Permission	Read Only Permission
Jerry Purvis	Brad Young
Robert Webb	David Meade
Patrick Bischoff	Matt Clark
Sarah Fraley	Joe VonDerHaar
Mike Stanton	Troy Lovell
Shayla Atkins	Spencer Barrett
Wes Truesdale	Greg Culp
Jarrad Burton	John Warren
Jessica Dixon	Phillip Duncan
Eric Hamilton	Rick Merritt
Laura LeMaster	

CCR ELECTRONIC MAILBOX		CCR FUGITIVE DUST CITIZEN COMPLAINTS ELECTRONIC MAILBOX	
Size: 500MB		Size: 500MB	
CCR@ekpc.coop		CCRcomplaints@ekpc.coop	
Full Permission	Read Only Permission	Full Permission	Read Only Permission
Robert Webb	Craig Johnson	Robert Webb	Craig Johnson
Patrick Bischoff	Jerry Purvis	Patrick Bischoff	Jerry Purvis
Jarrad Burton	Brad Young	Jarrad Burton	Brad Young
Jessica Dixon	David Meade	Jessica Dixon	David Meade
Laura LeMaster	Sarah Fraley	Laura LeMaster	Sarah Fraley
	David Smart		Nick Comer
	Matt Clark		David Smart
	Eric Hamilton		Matt Clark

CCR FTP SITE
External User Access
Site: ftp://ekpc.coop
User: CCRFTP
Password: P0werUP&D0wn
Internal User Access
\\webserver\ccrftp

APPENDIX D – CONTACT INFORMATION

Role	Principal Contact & Email Address	Address	Office telephone number	Alternate telephone numbers
East Kentucky Power Cooperative				
CCR Executive Sponsor	Craig Johnson craig.johnson@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9427	859-746-1418
CCR Environmental Compliance Director	Jerry Purvis jerry.purvis@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9244	859-595-5246
CCR Engineering Compliance Director	Brad Young brad.young@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9287	859-595-9097
CCR Gatekeeper	Robert Webb robert.webb@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9219	859-749-4902
CCR Groundwater Monitoring Manager/Gatekeeper Primary Backup/ Fugitive Dust Backup Manager/Location Restrictions Manager	Jessica Dixon jessica.dixon@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9345	859-644-2748
CCR Fugitive Dust Manager/Gatekeeper Secondary Backup	Sarah Fraley sarah.fraley@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9621	502-319-1552
CCR Engineering/Location Restrictions & Design/Closure/Post-Closure/Run-On/Run-Off Manager	Jarrad Burton jarrad.burton@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9317	606-359-1912
CCR Engineering/ Closure/Post-Closure/Run-On/Run-Off Backup Manager	Patrick Bischoff patrick.bischoff@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9693	859-229-4684
CCR Location Restrictions & Design Backup Manager	Laura LeMaster laura.lemaster@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9234	859-983-0308
CCR Groundwater Monitoring Backup Manager/Central Lab Backup	Eric Hamilton eric.hamilton@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9403	859-595-3867
Central Lab Primary	Timothy Yates tim.yates@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9273	859-808-0866

Role	Principal Contact & Email Address	Address	Office telephone number	Alternate telephone numbers
East Kentucky Power Cooperative				
CCR Location Restrictions Backup Manager	Josh Young josh.young@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9799	859-749-0553
CCR E& C Shared Services Manager	Mike Stanton mike.stanton@ekpc.coop	4775 Lexington Road Winchester, KY 40391	--	--
CCR E&C Shared Services Backup Manager	Shayla Adkins shayla.adkins@ekpc.coop	4775 Lexington Road Winchester, KY 40391	--	--
CCR Corporate IT Manager	Gregory Justice	4775 Lexington Road Winchester, KY 40391	859-745-9341	--
CCR Web Services Manager	Randy Bucknam randy.bucknam@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9410	859-595-4547
CCR Web Services Backup Manager Corporate IT Backup Manager	Greg Watkins greg.watkins@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9356	--
Public Relations Primary	Nick Comer nick.comer@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9450	--
CCR Compliance Legal Counsel	David Smart david.smart@ekpc.coop	4775 Lexington Road Winchester, KY 40391	859-745-9237	859-317-3576
Spurlock Station Primary Contact	Greg Culp greg.culp@ekpc.coop	301 W 2nd St Maysville, KY 41056	606-883-3165 ext. 387	606-375-6887
Spurlock Station Backup Contact	Jacob Bevins jacob.bevins@ekpc.coop	301 W 2nd St Maysville, KY 41056	606-883-3165 ext. 259/265	606-584-6936
Spurlock Station Emergency Contact	Control Room	301 W 2nd St Maysville, KY 41056	606-883-3165 ext. 600	--
JK Smith Station Primary Contact	John Warren john.warren@ekpc.coop	12145 Irvine Rd Winchester, KY 40391	859-745-4157 ext. 6240	859-745-6240
JK Smith Station Backup Contact	Keith McCoy keith.mccoy@ekpc.coop	12145 Irvine Rd Winchester, KY 40391	859-745-4157 ext. 6325	859-771-3818
JK Smith Station Emergency Contact	Plant Operator	12145 Irvine Rd Winchester, KY 40391	859-745-4157 ext. 6310	--
Cooper Station Primary Contact	Phillip Duncan phillip.duncan@ekpc.coop	Cooper Power Plant Rd Somerset, KY 42501	606-561-4138 ext. 7214	606-271-4873
Cooper Station Backup Contact	Shawn Goad shawn.goad@ekpc.coop	Cooper Power Plant Rd Somerset, KY 42501	606-561-4138 ext. 7231	606-271-2366
Cooper Station Emergency Contact	Control Room	Cooper Power Plant Rd Somerset, KY 42501	606-561-4138	Dial 0 from Plant Phone

Role	Principal Contact & Email Address	Address	Office telephone number	Alternate telephone numbers
Frost Brown Todd LLC				
Legal Counsel Associate	Timothy Hagerty thagerty@fbtlaw.com	400 West Market Street 32nd Floor Louisville, KY 40202-3363	502-568-0268	502-558-7990
Legal Counsel Associate	Christina Wieg cwieg@fbtlaw.com	One Columbus Center 10 West Broad Street, Suite 2300 Columbus, OH 43215-3484	614-559-7219	740-385-0160

APPENDIX E – CCR DOCUMENT GLOSSARY

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
30-Day Inspection Checklist (Surface Impoundment Instrumentation)	CCR Surface Impoundment 30-day Checklist.docx	Included in the 30-day inspection scope of work to be used as the checklist to perform the instrumentation inspection at a CCR Surface Impoundment	30-day inspections are to be kept in the CCR Operating Record	X	X	
30-Day Inspection Scope of Work	Scope of Work CCR Surface Impoundment 30-Day Inspection.doc	Used to procure services to perform 30-day instrumentation inspections at CCR Surface Impoundments		X		
5-Year Structural Integrity Assessment CCR Compliance Summary (Initial)	CCR Compliance Summary Initial Structural Integrity Assessment.docx	Included in the Initial Structural Integrity Assessment scope of work to be used in the Assessment Report as a summary table in the first section of the report	This document was only used for the Initial Structural Integrity Assessment at the Spurlock Ash Pond prior to full implementation of all CCR Rule Procedures	X		
5-Year Structural Integrity Assessment CCR Compliance Summary (Periodic)	CCR Compliance Summary Structural Integrity Assessment Report.docx	Included in the Periodic 5-Year Structural Integrity Assessment scope of work to be used in the Assessment Report as a summary table in the first section of the report	CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
5-Year Structural Integrity Assessment Scope of Work (Initial)	Scope of Work CCR Unit Initial Structural Integrity Assessment.doc	Used to procure services to perform the Initial Structural Integrity Assessment at the Spurlock Ash Pond (Surface Impoundment)	This scope of work was only used for the Initial Structural Integrity Assessment at the Spurlock Ash Pond (Surface Impoundment) prior to full implementation of all CCR Rule Procedures. It only contains the scope of work for the Structural Stability Assessment and Safety Factor Assessment (i.e. no other 5-year CCR requirements)	X		

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
5-Year Structural Integrity Assessment Scope of Work (Periodic)	Scope of Work CCR Unit Structural Integrity Assessment Report.doc	Used to procure services to perform the Periodic 5-Year Structural Integrity Assessment at CCR Surface Impoundments and CCR Landfills. These services include all requirements for the Annual Inspection at CCR Surface Impoundments and CCR Landfills since the 5-Year Assessment counts as the Annual Inspection when the Annual inspection is required in the same year.	<p>This scope of work document was prepared for EKPC to procure a single contractor to perform all subsequent services required by the CCR Rule to be performed every 5-Years at EKPC's fleet of Surface Impoundments and Landfills.</p> <p>Services included in this scope include:</p> <p>For Surface Impoundments: inspection, evaluation, hazard potential classification assessment, structural stability assessment, safety factor assessment, review emergency action plan (if applicable), review inflow design flood control system plan, and review history of construction.</p> <p>For Landfills: inspection, evaluation, and review run-on and run-off control system plans</p> <p>CCR Engineering Manager must ensure that the most recent version of the document is in the working folder</p>	X		
7-Day Inspection Checklist (Landfill)	CCR Landfill 7-day Checklist.docx	Included in the 7-day and Annual Inspection scope of work documents to be used as the checklist to perform the inspections at a CCR Landfill	<p>7-day inspections are to be kept in the CCR Operating Record</p> <p>Documents are differentiated between landfill and surface impoundment within the working folder.</p>	X	X	
7-Day Inspection Checklist (Surface Impoundment)	CCR Surface Impoundment 7-day Checklist.docx	Included in the 7-day and Annual Inspection scope of work documents to be used as the checklist to perform the inspections at a CCR Surface Impoundment	7-day inspections are to be kept in the CCR Operating Record	X	X	
7-Day Inspection Scope of Work	Scope of Work CCR Unit 7-Day Inspection.doc	Used to procure services to perform 7-day inspections at CCR Surface Impoundments and CCR Landfills		X		
Aerial CADD File Index	Aerial_File_Index.xlsx	This file is used to track the Aerial CADD files, Aerial Imagery, and the CCR Documents each Aerial pdf is used as an Appendix	CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Aerial CADD File (Cooper Landfill)	SK-Cooper.dgn	This Aerial file is used as an Appendix in various CCR Documents	This is a generic Aerial of the Landfill and the Station CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Aerial CADD File (Cooper Landfill GW)	SK-Cooper-GW.dgn	This Aerial file is used as an Appendix in the GMP and SAP documents	This Aerial is used to indicate the various monitoring points and piezometers at the Site. CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Aerial CADD File (Smith Landfill)	SK-Smith.dgn	This Aerial file is used as an Appendix in various CCR Documents	This is a generic Aerial of the Landfill and the Station CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Aerial CADD File (Smith Landfill GW)	SK-Smith-GW.dgn	This Aerial file is used as an Appendix in the GMP and SAP documents	This Aerial is used to indicate the various monitoring points at the Site CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Aerial CADD File (Spurlock Station)	SK-Spurlock.dgn	This Aerial file is used as an Appendix in various CCR Documents	This is a generic Aerial of the Station indicating various CCR or Non-CCR Surface Impoundments. CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Aerial CADD File (Spurlock Surface Impoundment)	SK-Spurlock-Ash-Pond.dgn	This Aerial file is used as an Appendix in various CCR Documents	This is a generic Aerial of the CCR Surface Impoundment and the Station CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Aerial CADD File (Spurlock Surface Impoundment Instrumentation)	SK-Spurlock-Ash-Pond-2.dgn	This Aerial file is used as an Appendix in various CCR Documents	This Aerial indicates the various instrumentation located around the CCR Surface Impoundment CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Aerial CADD File (Spurlock Surface Impoundment Instrumentation)	SK-Spurlock-Ash-Pond-3.dgn	This Aerial file is used as an Appendix in various CCR Documents	This Aerial indicates the various instrumentation located around the CCR Surface Impoundment and includes the Piezometers installed in 2015 CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Aerial CADD File (Spurlock Surface Impoundment GW)	SK-Spurlock-Ash-Pond-GW.dgn	This Aerial file is used as an Appendix in the GMP and SAP documents	This Aerial is used to indicate the various monitoring points located around the CCR Surface Impoundment CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Aerial CADD File (Spurlock Landfill 1)	SK-Spurlock-Landfill.dgn	This Aerial file is used as an Appendix in various CCR Documents	This is a generic Aerial of the Landfill and the Station CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Aerial CADD File (Spurlock Landfill 2)	SK-Spurlock-Landfill-2.dgn	This Aerial file is used as an Appendix in various CCR Documents	This is a generic Aerial of the Landfill. CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Aerial CADD File (Spurlock Landfill GW)	SK-Spurlock-Landfill-GW.dgn	This Aerial file is used as an Appendix in the GMP and SAP documents	This Aerial is used to indicate the various monitoring points located around the Landfill CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Annual Closure Progress Report	Dale_Ash Ponds 2,3,4_20161114_Annual Closure Progress Report.pdf	Used to document the closure status of the CCR Surface Impoundments at Dale Station		X		
Annual Fugitive Dust Control Report (Cooper Landfill)	Annual Fugitive Dust Control Report	Used to document the actions taken to control CCR fugitive dust, record all citizen complaints related to fugitive dust, and any corrective measures taken	To be completed 14 months after placing initial fugitive dust control plans in the CCR Operating Record and Annually thereafter. Reference the Power Plant's specific Fugitive Dust Plan for additional information CCR Fugitive Dust Manager must ensure that the most recent version of the document is in the working folder	X	X	X

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Annual Fugitive Dust Control Report (Smith Landfill)	Annual Fugitive Dust Control Report	Used to document the actions taken to control CCR fugitive dust, record all citizen complaints related to fugitive dust, and any corrective measures taken	To be completed 14 months after placing initial fugitive dust control plans in the CCR Operating Record and Annually thereafter. Reference the Power Plant's specific Fugitive Dust Plan for additional information CCR Fugitive Dust Manager must ensure that the most recent version of the document is in the working folder	X	X	X
Annual Fugitive Dust Control Report (Spurlock Landfill)	Annual Fugitive Dust Control Report	Used to document the actions taken to control CCR fugitive dust, record all citizen complaints related to fugitive dust, and any corrective measures taken	To be completed 14 months after placing initial fugitive dust control plans in the CCR Operating Record and Annually thereafter. Reference the Power Plant's specific Fugitive Dust Plan for additional information CCR Fugitive Dust Manager must ensure that the most recent version of the document is in the working folder	X	X	X
Annual Fugitive Dust Control Report (Spurlock Surface Impoundment)	Annual Fugitive Dust Control Report	Used to document the actions taken to control CCR fugitive dust, record all citizen complaints related to fugitive dust, and any corrective measures taken	To be completed 14 months after placing initial fugitive dust control plans in the CCR Operating Record and Annually thereafter. Reference the Power Plant's specific Fugitive Dust Plan for additional information CCR Manager must ensure that the most recent version of the document is in the working folder	X	X	X
Annual Inspection CCR Compliance Summary (Initial)	CCR Compliance Summary Initial Annual Report.docx	Included in the Initial Annual Inspection scope of work to be used in the Inspection Report as a summary table in the first section of the report	This document was only used for the Initial Annual Inspection at the Spurlock Ash Pond prior to full implementation of all CCR Rule Procedures	X		
Annual Inspection CCR Compliance Summary (Periodic)	CCR Compliance Summary Annual Report.docx	Included in the Initial Annual Inspection scope of work to be used in the Inspection Report as a summary table in the first section of the report	CCR Engineering Manager must ensure that the most recent version of the document is in the working folder	X		
Annual Inspection Scope of Work (Initial)	Scope of Work CCR Unit Initial Annual Inspection.doc	Used to procure services to perform the Initial Annual Inspection at the Spurlock Ash Pond (Surface Impoundment)	This scope of work was only used for the Initial Annual Inspection at the Spurlock Ash Pond (Surface Impoundment) prior to full implementation of all CCR Rule Procedures. It also included the scope of work for providing the Initial Hazard Potential Classification Assessment	X		

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Annual Inspection Scope of Work (Periodic)	Scope of Work CCR Unit Periodic Annual Inspection.doc	Used to procure services to perform the Periodic Annual Inspection at CCR Surface Impoundments and CCR Landfills	This scope of work document was prepared for EKPC to procure a single contractor to perform the subsequent annual inspections at EKPC's fleet of Surface Impoundments and Landfills. This document shall be used to procure services prior to requiring posting of the subsequent Annual Inspections in the CCR Operating Record CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X		
Annual Inspection Scope of Work (Periodic [Ash Pond Only])	Scope of Work CCR Surface Impoundment Periodic Annual Inspection.doc	Used to procure services to perform the Periodic Annual Inspection at CCR Surface Impoundments	This scope of work document was prepared for EKPC to procure a contractor to perform the subsequent annual inspections at EKPC's fleet of Surface Impoundments. This document shall be used to procure services prior to requiring posting of the subsequent Annual Inspections in the CCR Operating Record CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X		
Annual Inspection (Cooper Landfill)	Cooper_Landfill_20160114_Annual CCR Inspection Report.docx	Used to document the annual inspection at the CCR Unit	Initial annual inspection performed by BMcD with subsequent annual inspections performed by Contractor CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Annual Inspection (Smith Landfill)	Smith_Landfill_20160114_Annual CCR Inspection Report.docx	Used to document the annual inspection at the CCR Unit	Initial annual inspection performed by BMcD with subsequent annual inspections performed by Contractor CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Annual Inspection (Spurlock Landfill)	Spurlock_Landfill_20160114_Annual CCR Inspection Report.docx	Used to document the annual inspection at the CCR Unit	Initial annual inspection performed by BMcD with subsequent annual inspections performed by Contractor CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X	X	X

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Annual Inspection (Spurlock Surface Impoundment)	Spurlock 2015 CCR Unit Initial Annual Inspection Report_FINAL_20151228_MB.pdf	Used to document the annual inspection at the CCR Unit	Initial annual and subsequent annual inspections performed by Contractor CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
CCR Inspection Training Recommendation	EKPC CCR Inspection Training Recommendation Letter.pdf	This letter was provided by Burns and McDonnell as an evaluation of training recommendations for a qualified person as defined by the CCR Rule		X		
Certification of the Selection of Statistical Method for Groundwater Monitoring Plan (Cooper Landfill)	Cooper_Landfill_20190309_Statistical Method Selection & Certification	Used to document the selection of a statistical method certification for groundwater monitoring		X	X	X
Certification of the Selection of Statistical Method for Groundwater Monitoring Plan (Pegs Hill Landfill)	Pegs Hill_Landfill_20191017_Statistical Method Selection & Certification	Used to document the selection of a statistical method certification for groundwater monitoring		X	X	X
Certification of the Selection of Statistical Method for Groundwater Monitoring Plan (Smith Landfill)	Smith_Landfill_20190620_Statistical Method Selection & Certification	Used to document the selection of a statistical method certification for groundwater monitoring		X	X	X
Certification of the Selection of Statistical Method for Groundwater Monitoring Plan (Spurlock Ash Pond)	Spurlock_Ash Pond_20171010_Statistical Method Selection & Certification	Used to document the selection of a statistical method certification for groundwater monitoring		X	X	X
Certification of the Selection of Statistical Method for Groundwater Monitoring Plan (Spurlock Landfill)	20190620_Statistical Method Selection & Certification	Used to document the selection of a statistical method certification for groundwater monitoring		X	X	X
Closure Plan (Cooper)	Cooper Landfill Closure Plan.docx	Used to document the steps necessary to close the CCR Landfill at the Cooper Power Plant at any point during the active life of the CCR Unit	This document does not have to be revised unless there is a change to the CCR Unit that would substantially affect the written plan or unanticipated events occur which necessitate a revision to the plan	X	X	X
Closure Plan (Smith)	Smith Landfill Closure Plan.docx	Used to document the steps necessary to close the CCR Landfill at the J.K. Smith Power Plant at any point during the active life of the CCR Unit	This document does not have to be revised unless there is a change to the CCR Unit that would substantially affect the written plan or unanticipated events occur which necessitate a revision to the plan	X	X	X
Closure Plan (Spurlock Ash Pond)	Spurlock Ash Pond Closure Plan.docx	Used to document the steps necessary to close the CCR surface impoundment at the Spurlock Power Plant at any point during the active life of the CCR Unit	This document does not have to be revised unless there is a change to the CCR Unit that would substantially affect the written plan or unanticipated events occur which necessitate a revision to the plan	X	X	X

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Closure Plan (Spurlock Landfill)	Spurlock Landfill Closure Plan.docx	Used to document the steps necessary to close the CCR Landfill at the Spurlock Power Plant at any point during the active life of the CCR Unit	This document does not have to be revised unless there is a change to the CCR Unit that would substantially affect the written plan or unanticipated events occur which necessitate a revision to the plan	X	X	X
Data Management and Public Website Recommendation	EKPC CCR - Data Management and Public Website_Final.pdf	Recommendation performed by Burns and McDonnell to initiate CCR document management		X		
Demonstration for a Site-Specific Alternative of Closure Deadline (Spurlock Ash Pond)	Spurlock_Ash Pond_20201130_Alt Closure Extension Demonstration_Rev 2B	Used as a demonstration for when the facility is required to provide detailed information regarding the process the facility is undertaking to develop the alternative capacity.		X	X	X
Emergency Action Plan (Spurlock Surface Impoundment)	EAP - Spurlock Ash Pond Tracked Changes 2016.doc	Emergency Action Plan for the Spurlock CCR Surface Impoundment	The EAP is not required by the CCR Rule since the Surface Impoundment has been classified as a Low-Hazard Potential Surface Impoundment. However, Burns and McDonnell provided Rev. 5 recommendations on April 19, 2016 to bring the EAP in-line with new CCR Recommendations in case the EAP is required by the CCR Rule at a later date	X		
Fugitive Dust Citizen's Complaint Log	EKPC CCR Rule Fugitive Dust Citizen Complaint Log.xlsx	Used to log citizen's complaints relative to fugitive dust at any of the facilities	Located in the CCR Working Folder. Also included as an Appendix to the Quality Assurance Program. Fugitive Dust Manager to keep this log up-to-date	X		
Fugitive Dust Plan (Cooper)	Cooper Fugitive Dust Control Plan.docx	Used to document the Fugitive Dust Plan at the Cooper Power Plant	Amend and certify this document whenever there is a change in conditions that would substantially affect the written plan CCR Fugitive Dust Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Fugitive Dust Plan (Smith)	Smith Fugitive Dust Control Plan.docx	Used to document the Fugitive Dust Plan at the J.K. Smith Power Plant	Amend and certify this document whenever there is a change in conditions that would substantially affect the written plan CCR Fugitive Dust Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Fugitive Dust Plan (Spurlock)	Spurlock Fugitive Dust Control Plan.docx	Used to document the Fugitive Dust Plan at the Spurlock Power Plant	Amend and certify this document whenever there is a change in conditions that would substantially affect the written plan CCR Fugitive Dust Manager must ensure that the most recent version of the document is in the working folder.	X	X	X

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Groundwater Monitoring Plan (Cooper Landfill)	Cooper Landfill Groundwater Monitoring Plan.docx	This document establishes the groundwater sampling and well installation procedures and requirements to be used when monitoring groundwater at the Cooper Power Plant CCR Landfill	This document will serve as the Groundwater Monitoring System Certification, be sealed, and placed in the CCR Operating Record and on the CCR public website CCR GM Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Groundwater Monitoring Plan (Pegs Hill Landfill)	Pegs Hill Landfill Groundwater Monitoring Plan.docx	This document establishes the groundwater sampling and well installation procedures and requirements to be used when monitoring groundwater at the Spurlock Power Plant Pegs Hill CCR Landfill	This document will serve as the Groundwater Monitoring System Certification, be sealed, and placed in the CCR Operating Record and on the CCR public website CCR GM Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Groundwater Monitoring Plan (Smith Landfill)	Smith Landfill Groundwater Monitoring Plan.docx	This document establishes the groundwater sampling and well installation procedures and requirements to be used when monitoring groundwater at the J.K. Smith Power Plant CCR Landfill	This document will serve as the Groundwater Monitoring System Certification, be sealed, and placed in the CCR Operating Record and on the CCR public website CCR GM Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Groundwater Monitoring Plan (Spurlock Ash Pond)	Spurlock Ash Pond Groundwater Monitoring Plan.docx	This document establishes the groundwater sampling and well installation procedures and requirements to be used when monitoring groundwater at the Spurlock Power Plant CCR surface impoundment	This document will serve as the Groundwater Monitoring System Certification, be sealed, and placed in the CCR Operating Record and on the CCR public website CCR GM Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Groundwater Monitoring Plan (Spurlock Landfill)	Spurlock Landfill Groundwater Monitoring Plan.docx	This document establishes the groundwater sampling and well installation procedures and requirements to be used when monitoring groundwater at the Spurlock Power Plant CCR Landfill	This document will serve as the Groundwater Monitoring System Certification, be sealed, and placed in the CCR Operating Record and on the CCR public website CCR GM Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Groundwater Monitoring System Design and Construction Certification (Cooper Landfill)	Cooper_Landfill_20171017_Groundwater Monitoring System Certification	Used to document the certification of groundwater monitoring system		X	X	X

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Groundwater Monitoring System Design and Construction Certification (Pegs Hill Landfill)	Pegs Hill_Landfill_20210524_Groundwater Monitoring System Certification	Used to document the certification of groundwater monitoring system		X	X	X
Groundwater Monitoring System Design and Construction Certification (Smith Landfill)	Smith_Landfill_20171017_Groundwater Monitoring System Certification	Used to document the certification of groundwater monitoring system		X	X	X
Groundwater Monitoring System Design and Construction Certification (Spurlock Ash Pond)	Spurlock_Ash Pond_20171017_Groundwater Monitoring System Certification	Used to document the certification of groundwater monitoring system		X	X	X
Groundwater Monitoring System Design and Construction Certification (Spurlock Landfill)	Spurlock_Landfill_20171017_Groundwater Monitoring System Certification	Used to document the certification of groundwater monitoring system		X	X	X
Groundwater Monitoring Well Installation Specification	EKPC CCR Groundwater Monitoring Well Installation Specification.docx	This document is used to procure services to install groundwater monitoring wells at a CCR Unit		X		
Hazard Potential Classification - Initial (Spurlock Surface Impoundment)	Spurlock 2015_Hazard Potential Classification Assessment_REV 0_032416_Fi....pdf	Used to document the Hazard Potential Classification at the CCR Surface Impoundment	Initial Hazard Potential Classification performed by S&ME	X	X	X
Hazard Potential Classification - Periodic (Spurlock Surface Impoundment)	Spurlock 2015_Hazard Potential Classification Assessment.pdf	Used to document the Hazard Potential Classification at the CCR Surface Impoundment	Periodic Hazard Potential Classification performed by S&ME CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
History of Construction (Spurlock Ash Pond)	CCR Compliance History of Construction Spurlock Ash Pond.docx	Used to document the history of construction of the Spurlock Ash Pond	This document shall be completed and placed in the CCR Operating Record no later than October 17, 2016. It shall also be provided to the Contractors performing the Annual Inspection and 5-Year Structural Integrity Assessment Reports for them to review and update if required	X	X	X
History of Construction Guidelines	CCR Compliance History of Construction Guidelines.docx	Used to provide guidance to EKPC or any contractor hired to review the History of Construction of the Spurlock Ash Pond	Included in the scope of work for the Annual and 5-Year Structural Integrity Assessments at the Spurlock Ash Pond for the Contractor to use in reviewing and updating the History of Construction Document if necessary	X		
Hydrogeological Investigation Scope of Work	EKPC Hydrogeologic Scope of Work.docx	Used to procure services to perform a Hydrogeological Investigation at a CCR Unit to determine adequate groundwater monitoring points		X		
Hydrogeological Investigation (Cooper Station Landfill)	FINAL - Tt Cooper Station Landfill CCR Report 9-21-16.pdf	Investigation performed by Tetra Tech to determine groundwater monitoring points at the CCR Unit		X		
Hydrogeological Investigation (Smith Station Landfill)	FINAL DRAFT - Tt Smith Station Landfill CCR Report - March 21 2016 with Attachments.pdf	Investigation performed by Tetra Tech to determine groundwater monitoring points at the CCR Unit		X		

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Hydrogeological Investigation (Spurlock Station Landfill)	FINAL DRAFT - Tt Spurlock Landfill CCR Report - March 21 2016 with Attachments.pdf	Investigation performed by Tetra Tech to determine groundwater monitoring points at the CCR Unit		X		
Hydrogeological Investigation (Spurlock Station Surface Impoundment)	FINAL DRAFT - Tt Spurlock Ash Pond CCR Report - March 21 2016 and Attachments.pdf	Investigation performed by Tetra Tech to determine groundwater monitoring points at the CCR Unit		X		
Identification Marker Scope of Work (CCR Surface Impoundment)	FINAL SOW - EKPC CCR Identification Marker.doc	This document is used to procure services to install an Identification Marker at a CCR Surface Impoundment pursuant to the CCR Rule		X		
Inflow Design Flood Control System Plan (Spurlock Ash Pond)	Spurlock Ash Pond Inflow Design Flood Control System Plan.docx	Used to document that the existing CCR Surface Impoundment at the Spurlock Power Plant has an inflow design flood control system designed, constructed, operated, and maintained to meet the requirements of the CCR Rule	This document shall be amended at any time there are changes to the Surface Impoundment that affect the plan. The plan is also required to be reviewed every 5-years and has been included in the Periodic 5-Year Structural Assessment Scope of Work Document CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Intent to Initiate Closure (Dale Surface Impoundments)	Dale_Ash Ponds 2,3,4_20151016_Intent to Initiate Closure.docx	Used to document the intent to initiate closure of CCR Surface Impoundments at Dale Station	Note that it was recommended to stay in the CCR Operating Record and CCR public website following changes to the CCR Rule in Fall 2016	X	X	X
Liner Construction	Spurlock Ash Pond Liner Construction.docx	Used to document the liner construction at the existing CCR surface impoundment at the Spurlock Power Plant		X	X	X
Location Restrictions (Cooper Landfill)	Cooper Landfill Location Restrictions.docx	Used to demonstrate location restrictions at the existing CCR Landfill at the Cooper Power Plant		X	X	X
Location Restrictions (Pegs Hill Landfill)	Pegs Hill_Landfill_20170727_Location Restriction & Design Demonstration Report.docx	Used to demonstrate location restrictions at the existing CCR Landfill at the Spurlock Power Plant - Pegs Hill Landfill		X	X	X
Location Restrictions (Smith Landfill)	Smith Landfill Location Restrictions.docx	Used to demonstrate location restrictions at the existing CCR Landfill at the J.K. Smith Power Plant		X	X	X
Location Restrictions (Spurlock Landfill)	Spurlock Landfill Location Restrictions.docx	Used to demonstrate location restrictions at the existing CCR Landfill at the Spurlock Power Plant		X	X	X
Location Restrictions (Spurlock Ash Pond)	Spurlock_Ash Pond_20181010_Location Restrictions Demonstrations	Used to demonstrate location restrictions at the existing CCR Ash Pond at the Spurlock Power Plant		X	X	X
Location Restrictions Scope of Work	Scope of Work CCR Unit Location Restrictions.docx	Used to procure services to perform the Location Restrictions at the Spurlock Ash Pond	Shall be reviewed and used to procure services two to three months prior to posting the Location Restrictions to the CCR Operating Record. The CCR Rule deadline for this document is October 17, 2018	X		

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Notification of Establishing Assessment Monitoring for Groundwater Monitoring (Spurlock Impoundment)	Spurlock_AshPond_20180815_Notification of Establishing Assessment Monitoring for Spurlock Impoundment	Used to document the notification that an assessment monitoring programs has been established		X	X	X
Notification Template	CCR Notification Template.docx	Used to send notifications to the appropriate state and/or tribal authority when a CCR compliance document has been posted to the CCR Public Website and/or the CCR Operating Record		X		
Pre-Construction Design and Construction Certification (Pegs Hill Landfill)	Pegs Hill_Landfill_20170727_Location Restriction & Design Demonstration Report.docx	Used to document the design certification for new units or lateral expansions on existing units at Pegs Hill Landfill		X	X	X
Pre-Construction Design and Construction Certification for Area C Phase 3 (Spurlock Landfill)	Spurlock_Landfill_20160607_Pre-Construction Design and Construction Certification for Area C Phase 3	Used to document the design certification for new units or lateral expansions on existing units at Spurlock Landfill		X	X	X
Pre-Construction Design and Construction Certification for Area C Phase 4 (Spurlock Landfill)	Spurlock_Landfill_20180712_Pre-Construction Design and Construction Certifications for AreaC Phase4	Used to document the design certification for new units or lateral expansions on existing units at Spurlock Landfill		X	X	X
Pre-Construction Design and Construction Certification for Area C Phase 5 (Spurlock Landfill)	Spurlock_Landfill_20210324_Pre-Construction Design and Construction Certifications_Area C Phase 5	Used to document the design certification for new units or lateral expansions on existing units at Spurlock Landfill		X	X	X
Post-Closure Plan (Cooper Landfill)	Cooper Landfill Post Closure Plan.docx	Used to document the post-closure care and maintenance procedures for the CCR Landfill at the Cooper Power Plant as well as the planned use for the property during the post-closure care period	This document does not have to be revised unless there is a change to the CCR Unit that would substantially affect the written plan or unanticipated events occur which necessitate a revision to the plan	X	X	X
Post-Closure Plan (Smith Landfill)	Smith Landfill Post Closure Plan.docx	Used to document the post-closure care and maintenance procedures for the CCR Landfill at the J.K. Smith Power Plant as well as the planned use for the property during the post-closure care period	This document does not have to be revised unless there is a change to the CCR Unit that would substantially affect the written plan or unanticipated events occur which necessitate a revision to the plan	X	X	X
Post-Closure Plan (Spurlock Landfill)	Spurlock Landfill Post Closure Plan.docx	Used to document the post-closure care and maintenance procedures for the CCR Landfill at the Spurlock Power Plant as well as the planned use for the property during the post-closure care period	This document does not have to be revised unless there is a change to the CCR Unit that would substantially affect the written plan or unanticipated events occur which necessitate a revision to the plan	X	X	X

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Post-Closure Plan (Spurlock Ash Pond)	Spurlock Ash Pond Post Closure Plan.docx	Used to document the post-closure care and maintenance procedures for the CCR Surface Impoundment at the Spurlock Power Plant as well as the planned use for the property during the post-closure care period	This document does not have to be revised unless there is a change to the CCR Unit that would substantially affect the written plan or unanticipated events occur which necessitate a revision to the plan	X	X	X
Post-Construction Design and Construction Certifications for Area C Phase 3 (Spurlock Landfill)	Spurlock_Landfill_20180131_Post-Construction Design and Construction Certifications for Area C Phase 3	Used to document the post-construction design certification for new units or lateral expansions on existing units at Spurlock Landfill		X	X	X
Post-Construction Design and Construction Certifications for Area C Phase 3-B (Spurlock Landfill)	Spurlock_Landfill_20181023_Post-Construction Design and Construction Certification_Area C Phase 3-B	Used to document the post-construction design certification for new units or lateral expansions on existing units at Spurlock Landfill		X	X	X
Post-Construction Design and Construction Certifications for Area C Phase 3-C (Spurlock Landfill)	Spurlock_Landfill_20190607_Post-Construction Design and Construction Certification_Area C Phase 3-C	Used to document the post-construction design certification for new units or lateral expansions on existing units at Spurlock Landfill		X	X	X
Post-Construction Design and Construction Certifications for Area C Phase 3-D (Spurlock Landfill)	Spurlock_Landfill_20191206_Post-Construction Design and Construction Certification_Area C Phase 3-D	Used to document the post-construction design certification for new units or lateral expansions on existing units at Spurlock Landfill		X	X	X
Post-Construction Design and Construction Certifications for Area C Phase 4-A (Spurlock Landfill)	Spurlock_Landfill_20200728_Post-Construction Design and Construction Certification_Area C Phase 4-A	Used to document the post-construction design certification for new units or lateral expansions on existing units at Spurlock Landfill		X	X	X
Post-Construction Design and Construction Certifications for Area C Phase 4-B (Spurlock Landfill)	Spurlock_Landfill_20210209_Post-Construction Design and Construction Certification_Area C Phase 4-B	Used to document the post-construction design certification for new units or lateral expansions on existing units at Spurlock Landfill		X	X	X
Post-Construction Design and Construction Certifications for Area C Phase 4-C (Spurlock Landfill)	Spurlock_Landfill_20210701_Post-Construction Design and Construction Certifications_Area C Phase 4-C	Used to document the post-construction design certification for new units or lateral expansions on existing units at Spurlock Landfill		X	X	X
Post-Construction Design and Construction Certifications for Area C Phase 4-C (Spurlock Landfill)	Spurlock_Landfill_20211130_Post-Construction Design and Construction Certification_AreaC Phase 5-A	Used to document the post-construction design certification for new units or lateral expansions on existing units at Spurlock Landfill		X	X	X
Quality Assurance Program	Quality Assurance Program.docx	Used to outline the procedures used to comply with the CCR Rule	This is a living document and should be reviewed each year and revised as necessary to meet EKPC's needs pertaining to CCR compliance CCR GateKeeper must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Contacts List	QAP Contacts.docx	Used as an Appendix to the QAP document to record the contact information for all individuals filling the Roles outlined in the QAP	CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Document Glossary	QAP Document Glossary.xlsx	Used as an Appendix to the QAP document to track the various documents created to bring EKPC in compliance with the CCR Rule	CCR Managers must ensure that the most recent version of the document is in the working folder.	X		

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Quality Assurance Program File System Permissions	QAP File System Permissions.docx	Used as an Appendix to the QAP document to record the employees within EKPC's infrastructure as well as any outside contractors who have permission to access or modify data located inside EKPC's file systems. This also includes access information for the CCR FTP site	CCR Gate Keeper must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Hierarchy Chart	QAP Hierarchy.docx	Used as an Appendix to the QAP document to indicate the CCR organizational hierarchy and flow of information related to CCR compliance documentation	CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (30-Day Inspection)	QAP Flowchart 30-Day Inspection.docx	Used to outline the Tasks and Responsible Roles for the 30-day inspection procedure for CCR surface impoundments	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (7-Day Inspection)	QAP Flowchart 7-Day Inspection.docx	Used to outline the Tasks and Responsible Roles for the 7-day inspection procedure for CCR landfills and surface impoundments	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (Annual Fugitive Dust Control Report)	QAP Flowchart Fugitive Dust.docx	Used to outline the Tasks and Responsible Roles for preparing the annual fugitive dust control report	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (Annual Groundwater Monitoring and Corrective Actions Report)	QAP Flowchart Groundwater Monitoring.docx	Used to outline the Tasks and Responsible Roles for preparing the annual groundwater monitoring and corrective actions report for a CCR Unit	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (Annual Inspection)	QAP Flowchart Annual Inspection.docx	Used to outline the Tasks and Responsible Roles for the Annual inspection procedure for CCR Landfills and surface impoundments	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Quality Assurance Program Process Flowchart (Assessment Monitoring)	QAP Flowchart Groundwater Monitoring.docx	Used to outline the Tasks and Responsible Roles for the Assessment Monitoring Procedures at a CCR Unit	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (Assessment of Corrective Measures)	QAP Flowchart Groundwater Monitoring.docx	Used to outline the Tasks and Responsible Roles for the Assessment of Corrective Measures at a CCR Unit	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (Detection Monitoring)	QAP Flowchart Groundwater Monitoring.docx	Used to outline the Tasks and Responsible Roles for the Detection Monitoring Procedures at a CCR Unit	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (Establishing Groundwater Monitoring Program)	QAP Flowchart Groundwater Monitoring.docx	Used to outline the Tasks and Responsible Roles for establishing the groundwater monitoring program at a CCR Unit	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (Fugitive Dust Citizen Complaints)	QAP Flowchart Fugitive Dust.docx	Used to outline the Tasks and Responsible Roles for documenting and responding to citizen's complaints relative to fugitive dust at any of the facilities	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (Fugitive Dust Control Plan Amendment)	QAP Flowchart Fugitive Dust.docx	Used to outline the Tasks and Responsible Roles for amending the fugitive dust control plan at any of the facilities	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (Groundwater Sampling and Analysis)	QAP Flowchart Groundwater Monitoring.docx	Used to outline the Tasks and Responsible Roles for typical groundwater sampling and analysis procedures at any CCR Unit	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Quality Assurance Program Process Flowchart (Implementation of Corrective Action Program)	QAP Flowchart Groundwater Monitoring.docx	Used to outline the Tasks and Responsible Roles for the Implementation of Corrective Action Program at a CCR Unit	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Quality Assurance Program Process Flowchart (Selection of Remedy)	QAP Flowchart Groundwater Monitoring.docx	Used to outline the Tasks and Responsible Roles for the Selection of Remedy at a CCR Unit	This is a living document that should be reviewed and revised any time the procedure is modified to fit EKPC's needs CCR Managers must ensure that the most recent version of the document is in the working folder.	X		
Remedial Action Log (Cooper Station)	EKPC CCR Cooper Inspection Remedial Action Log.xlsx	This log is to be used in conjunction with routine inspections in order to coordinate inspection observations with plant maintenance activities. This log is updated by both the Design Manager and Production Support Services as inspections and maintenance are performed	This log is only used for the Cooper Landfill	X		
Remedial Action Log (Smith Station)	EKPC CCR Smith Inspection Remedial Action Log.xlsx	This log is to be used in conjunction with routine inspections in order to coordinate inspection observations with plant maintenance activities. This log is updated by both the Design Manager and Production Support Services as inspections and maintenance are performed	This log is only used for the Smith Landfill	X		
Remedial Action Log (Spurlock Station)	EKPC CCR Spurlock Inspection Remedial Action Log.xlsx	This log is to be used in conjunction with routine inspections in order to coordinate inspection observations with plant maintenance activities. This log is updated by both the Design Manager and Production Support Services as inspections and maintenance are performed	There are two tabs in this log; one for the Spurlock Ash Pond and one for the Spurlock Landfill	X		
Run-On/Run-Off Control System Plan (Cooper Landfill)	Cooper Landfill Run-On/Run-Off Control System Plan.docx	Used to document that the existing CCR Landfill at the Cooper Power Plant has a run-on/run-off control system designed and constructed to meet the requirements of the CCR Rule	This document shall be amended at any time there are changes to the Landfill that affect the plan. The plan is also required to be reviewed every 5-years and has been included in the Periodic 5-Year Structural Assessment Scope of Work Document CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X	X	X

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Run-On/Run-Off Control System Plan (Smith Landfill)	Smith Landfill Run-On/Run-Off Control System Plan.docx	Used to document that the existing CCR Landfill at the J.K. Smith Power Plant has a run-on/run-off control system designed and constructed to meet the requirements of the CCR Rule	This document shall be amended at any time there are changes to the Landfill that affect the plan. The plan is also required to be reviewed every 5-years and has been included in the Periodic 5-Year Structural Assessment Scope of Work Document CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Run-On/Run-Off Control System Plan (Spurlock Landfill)	Spurlock Landfill Run-On/Run-Off Control System Plan.docx	Used to document that the existing CCR Landfill at the Spurlock Power Plant has a run-on/run-off control system designed and constructed to meet the requirements of the CCR Rule	This document shall be amended at any time there are changes to the Landfill that affect the plan. The plan is also required to be reviewed every 5-years and has been included in the Periodic 5-Year Structural Assessment Scope of Work Document CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Safety Factor Assessment - Initial (Spurlock Surface Impoundment)	Spurlock_Ash Pond_20161031_Initial Safety Factor Assessment.pdf	Used to document the Safety Factor Assessment at the CCR Surface Impoundment	Initial Safety Factor Assessment performed by Contractor	X	X	X
Safety Factor Assessment - Periodic (Spurlock Surface Impoundment)	Spurlock_Ash Pond_20161031_Periodic Safety Factor Assessment.pdf	Used to document the Safety Factor Assessment at the CCR Surface Impoundment	Periodic Safety Factor Assessment performed by Contractor	X	X	X
Sampling and Analysis Plan (Cooper Landfill)	Cooper Landfill Sampling and Analysis Plan.docx	Used to outline the procedures for the collection of groundwater samples, sample handling, field documentation, and quality control at the Cooper Power Plant CCR Landfill		X		
Sampling and Analysis Plan (Smith Landfill)	Smith Landfill Sampling and Analysis Plan.docx	Used to outline the procedures for the collection of groundwater samples, sample handling, field documentation, and quality control at the J.K. Smith Power Plant CCR Landfill		X		
Sampling and Analysis Plan (Spurlock Ash Pond)	Spurlock Ash Pond Sampling and Analysis Plan.docx	Used to outline the procedures for the collection of groundwater samples, sample handling, field documentation, and quality control at the Spurlock Power Plant CCR surface impoundment		X		
Sampling and Analysis Plan (Spurlock Landfill)	Spurlock Landfill Sampling and Analysis Plan.docx	Used to outline the procedures for the collection of groundwater samples, sample handling, field documentation, and quality control at the Spurlock Power Plant CCR Landfill		X		
Schedule - CCR Compliance (Cooper Landfill)	WORKING - EKPC CCR Compliance Schedule - Cooper Landfill.pdf	Used to outline tasks associated with bringing the CCR Unit into compliance with the CCR Rule		X		
Schedule - CCR Compliance (Dale Surface Impoundments)	WORKING - EKPC CCR Compliance Schedule - Dale Ash Ponds 2, 3 & 4.pdf	Used to outline tasks associated with bringing the CCR Units into compliance with the CCR Rule		X		

Glossary of CCR Documents


Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Schedule - CCR Compliance (Deliverables)	WORKING - EKPC CCR Compliance Schedule - Deliverables.pdf	Used to outline (at a high level) deliverables necessary to bring EKPC into compliance with the CCR Rule		X		
Schedule - CCR Compliance (Smith Landfill)	WORKING - EKPC CCR Compliance Schedule - Smith Landfill.pdf	Used to outline tasks associated with bringing the CCR Unit into compliance with the CCR Rule		X		
Schedule - CCR Compliance (Spurlock Coal Pile Runoff Pond)	WORKING - EKPC CCR Compliance Schedule - Spurlock Coal Pile Run-Off Pond.pdf	Used to outline tasks associated with bringing the Unit into compliance with the CCR Rule		X		
Schedule - CCR Compliance (Spurlock Gypsum Pile)	WORKING - EKPC CCR Compliance Schedule - Spurlock Gypsum Pile.pdf	Used to outline tasks associated with bringing the Unit into compliance with the CCR Rule		X		
Schedule - CCR Compliance (Spurlock Landfill)	WORKING - EKPC CCR Compliance Schedule - Spurlock Landfill.pdf	Used to outline tasks associated with bringing the CCR Unit into compliance with the CCR Rule		X		
Schedule - CCR Compliance (Spurlock Surface Impoundment)	WORKING - EKPC CCR Compliance Schedule - Spurlock Ash Pond.pdf	Used to outline tasks associated with bringing the CCR Unit into compliance with the CCR Rule		X		
Structural Integrity Assessment - Initial (Spurlock Surface Impoundment)	Spurlock_Ash Pond_20161031_Initial Structural Stability Assessment.pdf	Used to document the structural integrity assessment of the CCR Surface Impoundment	Initial Structural Integrity Assessment performed by Stantec	X	X	X
Structural Integrity Assessment - Periodic (Spurlock Surface Impoundment)	Spurlock_Ash Pond_20161031_Periodic Structural Stability Assessment.pdf	Used to document the structural integrity assessment of the CCR Surface Impoundment	Periodic Structural Integrity Assessment performed by Stantec CCR Engineering Manager must ensure that the most recent version of the document is in the working folder.	X	X	X
Subsurface Investigation Scope of Work	EKPC - CCR Compliance Landfill Subsurface Technical Scope of Work - Rev0.pdf	Used to procure services to perform a subsurface investigation at the CCR Landfill Sites		X		
Survey (Cooper Landfill)	cooper ash landfill lr-11_15.pdf	This survey was performed to determine the volume of CCR material in the Landfill for use in the Annual Inspection Document required by the CCR Rule		X		
Survey (Spurlock Landfill)	spurlock landfill lr-11_15.pdf	This survey was performed to determine the volume of CCR material in the Landfill for use in the Annual Inspection Document required by the CCR Rule		X		
Well Data	EKPC CCR RULE WELL DATA.pdf	Information on the pumps installed at the groundwater monitoring wells	Smith Landfill, Spurlock Landfill, Spurlock Surface Impoundment	X		
Well Locations (Smith Landfill)	Smith Landfill Wells Lat Long.csv	Contains the latitude and longitude for the groundwater monitoring wells installed at the CCR Unit		X		
Well Locations (Spurlock Landfill)	Spurlock Landfill Wells Lat Long.csv	Contains the latitude and longitude for the groundwater monitoring wells installed at the CCR Unit		X		
Well Locations (Spurlock Surface Impoundment)	Spurlock Ash Pond Wells Lat Long.csv	Contains the latitude and longitude for the groundwater monitoring wells installed at the CCR Unit		X		

Glossary of CCR Documents

Description	Original Document File Name	Use	Commentary	File Location		
				Working Folder	Operating Record	CCR Website
Well Records (Smith Landfill)	Final Draft - Smith Station Landfill CCR Report Dec 2 2016 - Well Drilling & Development Forms.pdf	Documents prepared by Tetrattech to record the installation of groundwater monitoring wells at the CCR Unit		X		
Well Records (Spurlock Landfill)	FINAL DRAFT - Tt Spurlock Landfill CCR Report - Drilling & Development Forms.pdf	Documents prepared by Tetrattech to record the installation of groundwater monitoring wells at the CCR Unit		X		
Well Records (Spurlock Surface Impoundment)	Final Draft - Tt Spurlock Ash Pond CCR Report - Drilling & Development Forms.pdf	Documents prepared by Tetrattech to record the installation of groundwater monitoring wells at the CCR Unit		X		



Burns & McDonnell World Headquarters
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Kansas City, MO 64114
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ATTACHMENT JB-2
EKPC BOARD RESOLUTION
AREA D PHASE 3

**FROM THE MINUTE BOOK OF PROCEEDINGS
OF THE BOARD OF DIRECTORS OF
EAST KENTUCKY POWER COOPERATIVE, INC.**

At a regular meeting of the Board of Directors of East Kentucky Power Cooperative, Inc. held at the Headquarters Building, 4775 Lexington Road, located in Winchester, Kentucky, on Tuesday, April 16, 2024 at 9:30 a.m., EDT, the following business transacted:

Approval of the Spurlock Landfill Area D Phase 3 Construction Project

After review of the applicable information, Boris Haynes made a motion for approval of the Spurlock Landfill Area D Phase 3 construction project, seconded by George Maddox, and passed by the full Board to approve the following:

Whereas, the proposed design and construction of the Landfill Area D Phase 3 Project (“the Project”) for East Kentucky Power Cooperative, Inc.’s (“EKPC”) Hugh L. Spurlock Power Station (“Spurlock”) will provide approximately 4,000,000 additional cubic yards of coal ash capacity and will meet the requirements of the Coal Combustion Residuals (“CCR”) Rule;

Whereas, Environmental compliance and reliability are the key objectives for the Project;

Whereas, The EKPC-owned and operated special landfill alternative has been evaluated against other alternative disposal sites and found to be the most cost-effective and reliable option by which to meet environmental legal requirements and to keep the Spurlock generating units operating without interruption due to a lack of or inadequate ash disposal facilities;

Whereas, the estimated cost of the Project is \$21,446,363, plus a contingency of \$3,216,954, for a total authorization of \$24,663,317; now, therefore, be it

Resolved, The EKPC Board of Directors (“the Board”) hereby authorizes the President and Chief Executive Officer, or designee, to fully implement the Project at a total estimated cost of \$24,663,317, including contingency, in accordance with the 2024 – 2026 Rural Utilities Service (“RUS”)-required EKPC Three Year Construction Work Plan and approved EKPC Budget; and

Resolved. The Board hereby further authorizes Staff to execute the necessary contracts for equipment or services, to apply for and borrow funds from RUS and other lenders, request any needed authorization for financing or rate recovery from the Kentucky Public Service Commission (“KPSC”), and to use general funds for the Project, until such time as RUS or other loan funds become available; and

Resolved. The Board hereby further authorizes the President and Chief Executive Officer, or designee, to apply for required or advisable certificates, permits, and approvals with regulatory and environmental agencies of the Commonwealth of Kentucky and the United States Federal Government or other entities, including a Certificate of Public Convenience and Necessity (“CPCN”) and rate recovery via the Environmental Surcharge for the Project and to take any other actions, necessary or desirable, to assure that full project implementation is achieved.

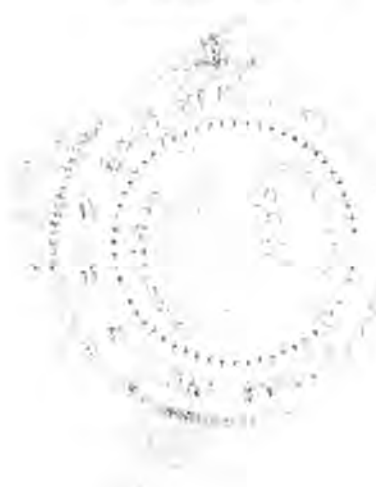
The foregoing is a true and exact copy of a resolution passed at a meeting called pursuant to proper notice at which a quorum was present and which now appears in the Minute Book of Proceedings of the Board of Directors of the Cooperative, and said resolution has not been rescinded or modified.

Witness my hand and seal this 16th day of April 2024.



Randy Sexton, Secretary

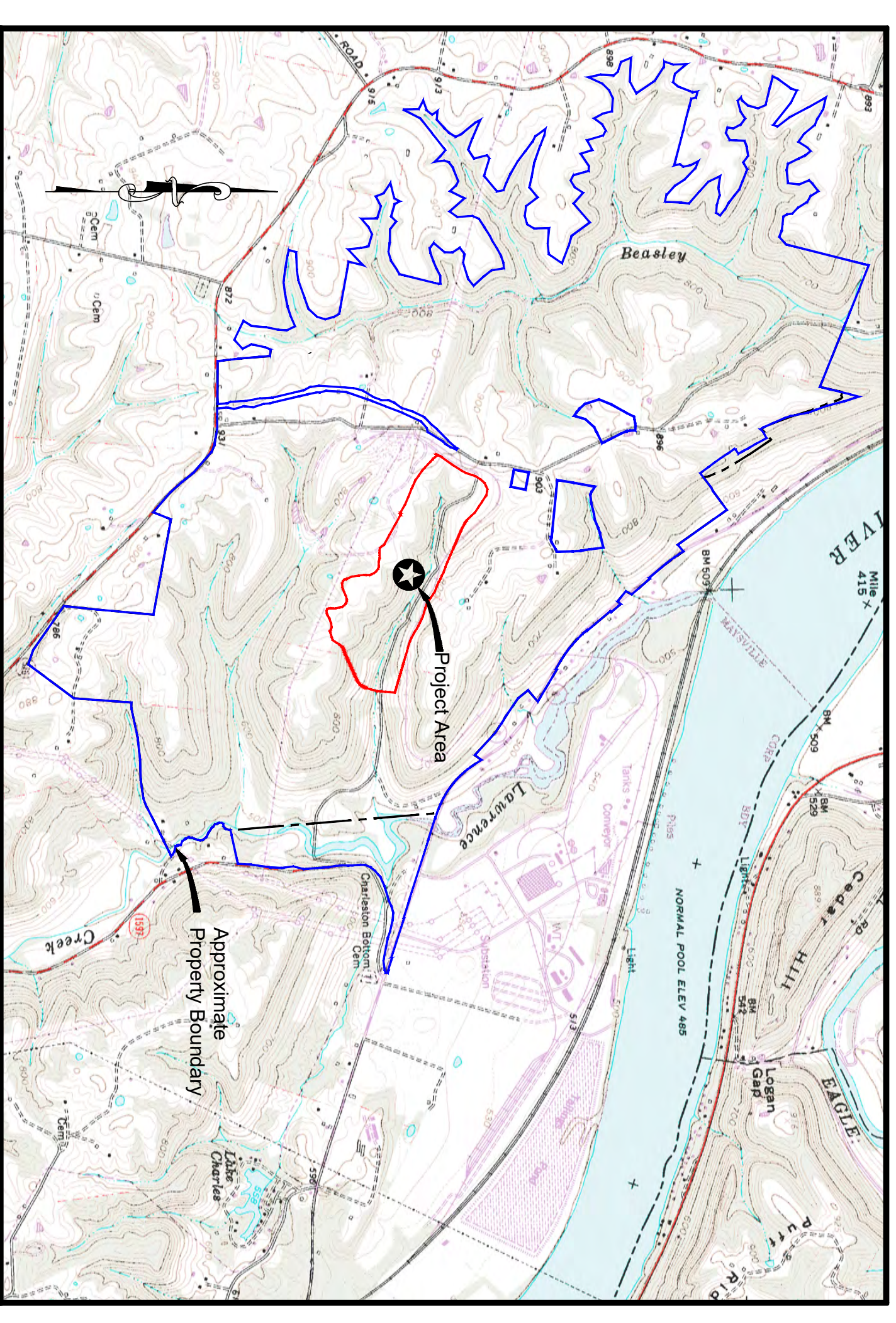
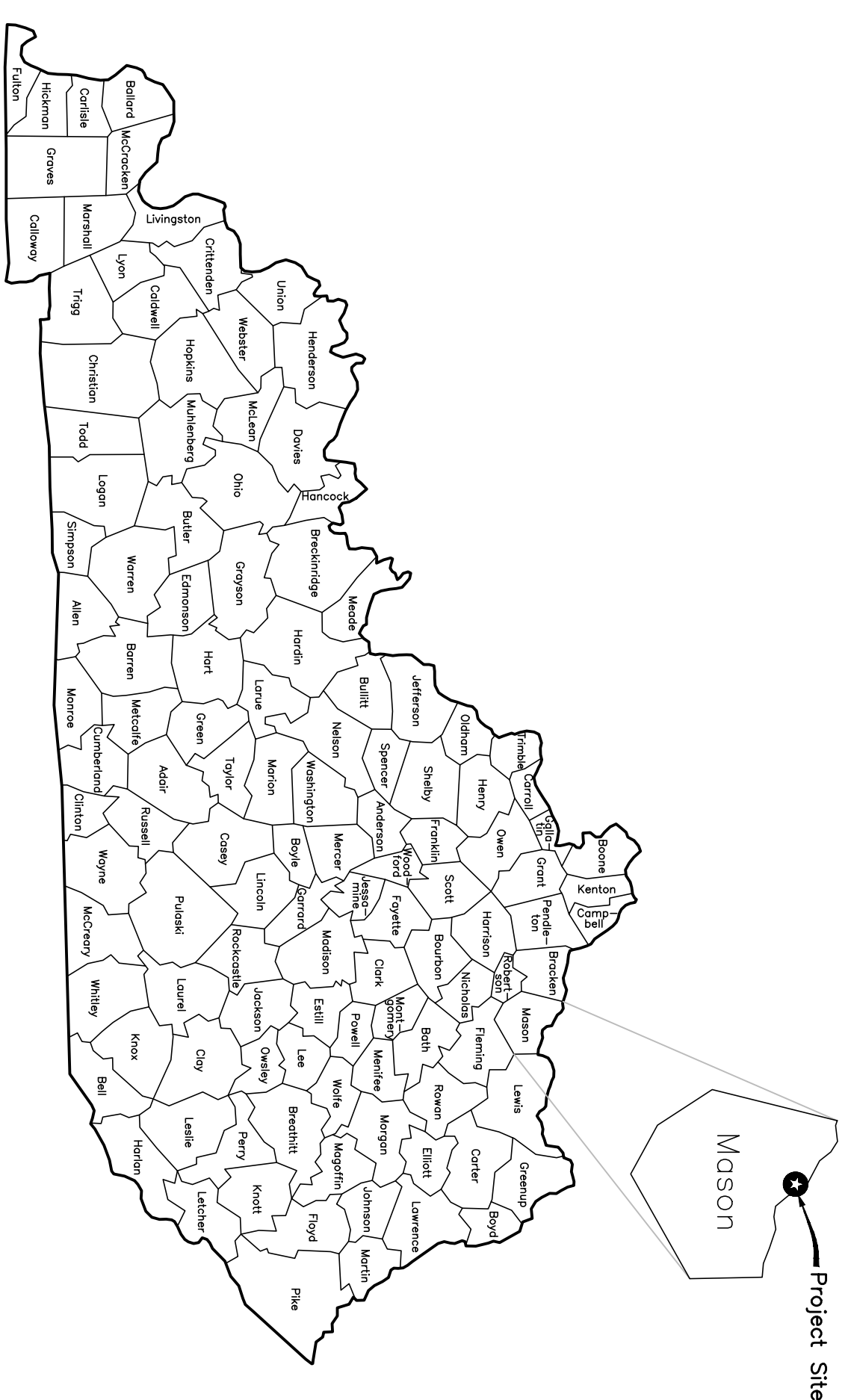
Corporate Seal



ATTACHMENT JB-3
PRELIMINARY CONSTRUCTION PLANS
MAPS, PLANS, SPECIFICATIONS AND
DRAWINGS PURSUANT TO
807 KAR 5:001 SECTION 15(2)(d)(1)

PHASE 3 DESIGN PLANS AT EAST KENTUCKY POWER COOPERATIVE, PEGS HILL LANDFILL MASON COUNTY, KENTUCKY PERMIT NO. 081-00005 APRIL 2024

DESCRIPTION	SHEET NO.
TITLE SHEET	1
GENERAL SITE LAYOUT	2
DEMOLITION / STORMWATER MANAGEMENT PLAN	3
UNDERDRAIN PLAN	4
SUBGRADE STAKING PLAN	5
SUBGRADE ISOPACH	6
SOIL LINER STAKING PLAN	7
LEACHATE COLLECTION SYSTEM & GEOSYNTHETICS PLAN	8
DETAILS	9-13



LOCATION MAP
SCALE: 1"=2000'

Prepared For:



East Kentucky Power Cooperative
4775 Lexington Road
P.O. Box 707
Winchester, Kentucky 40392-0707

Prepared By:

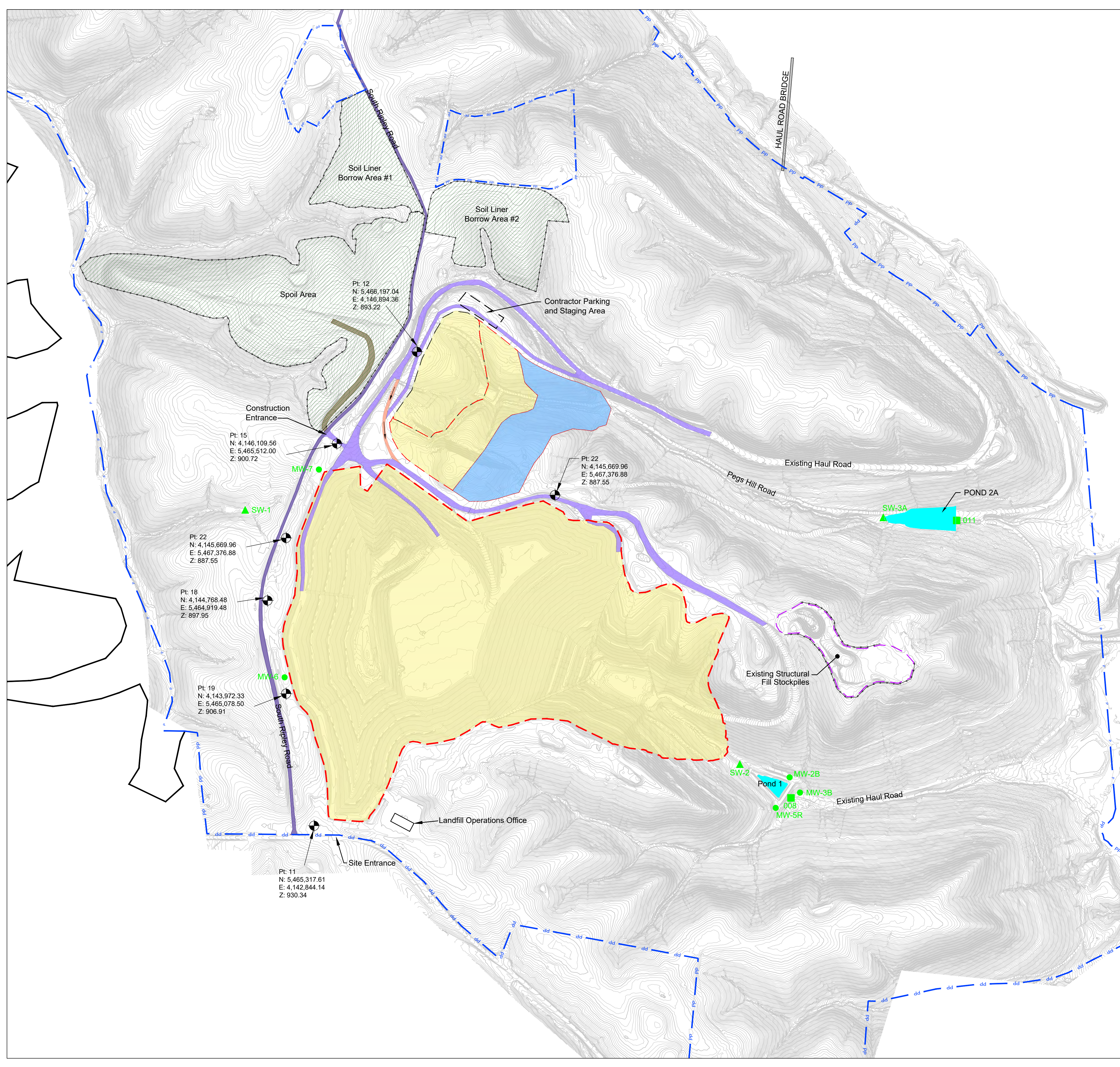


KENVIRONS
Civil & Environmental Engineers
770 Wilkinson Blvd. - Frankfort, Kentucky 40601 502.695-4357

NOT FOR CONSTRUCTION
DRAFT

DN/DC:	DATE:
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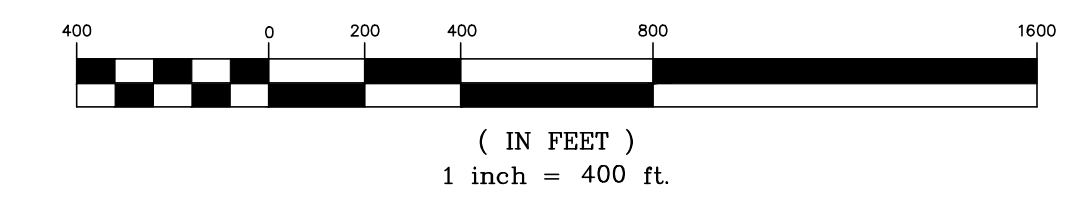
LEGEND

- Existing Contours
- Tree Line
- Tree
- Utility Pole
- ☉ Drain
- Fence
- Spot Elevation
- Existing Access Road
- Approximate Property Boundary
- Approximate Permit Boundary
- Approximate Property & Permit Boundary
- Previously Constructed Liner Area
- Proposed, Phase 3
- Soil Liner Borrow Area
- Permanent Survey Marker
- Groundwater Monitoring Well
- Surface Water Monitoring Point
- KPDES Monitoring Point
- Proposed Silt Fence
- Paved 1-Way Shared Haul Road
- Paved 2-Way Shared Haul Road
- County Road
- Unpaved 2-Way Shared Haul Road
- Unpaved 2-Way Haul Road
- 1 Lane Shared Haul Road Bridge

NOTES

1. Contractor may only perform tree clearing activities within the identified borrow area(s) between October 15th and March 31st.
2. Grading of Borrow Areas shall maintain positive drainage without any standing water. Proper sediment control shall be used to prohibit the migration of sediments per the site's existing Stormwater Pollution Prevention Plan (SWP3). All disturbed areas shall be re-vegetated to a minimum of 90% vegetative growth.
3. Sediment controls shown are minimum required controls. Contractor shall be responsible for providing and maintaining as many structures as needed to eliminate the migration of sediment offsite and/or into Waters of the Commonwealth. This is incidental to construction activities and therefore the responsibility of the Contractor to provide at no expense to EKPC beyond those items addressed on the Bid Schedule.
4. No equipment allowed on existing ditches.
5. All horizontal coordinates listed are projected in NAD83 State Plane Kentucky Single Zone (US Foot). Elevation data is based on the NAVD88 vertical datum.
6. Topography from Aerial Surveys performed in 2018 by GRW with EKPC 10-30-23 Topo.
7. Contractor shall phase construction activities in a manner to not disrupt any material hauling to the active landfill area. This will include completion of the cell liner area where current haul routes exist and providing temporary haul roads/ modifications where necessary.

GRAPHIC SCALE

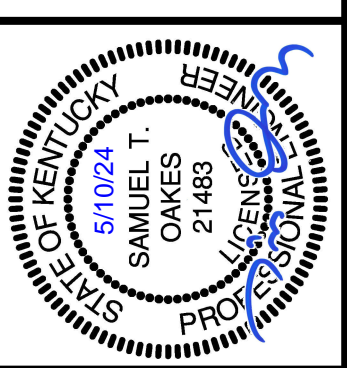


**NOT FOR CONSTRUCTION
DRAFT**

GENERAL SITE LAYOUT

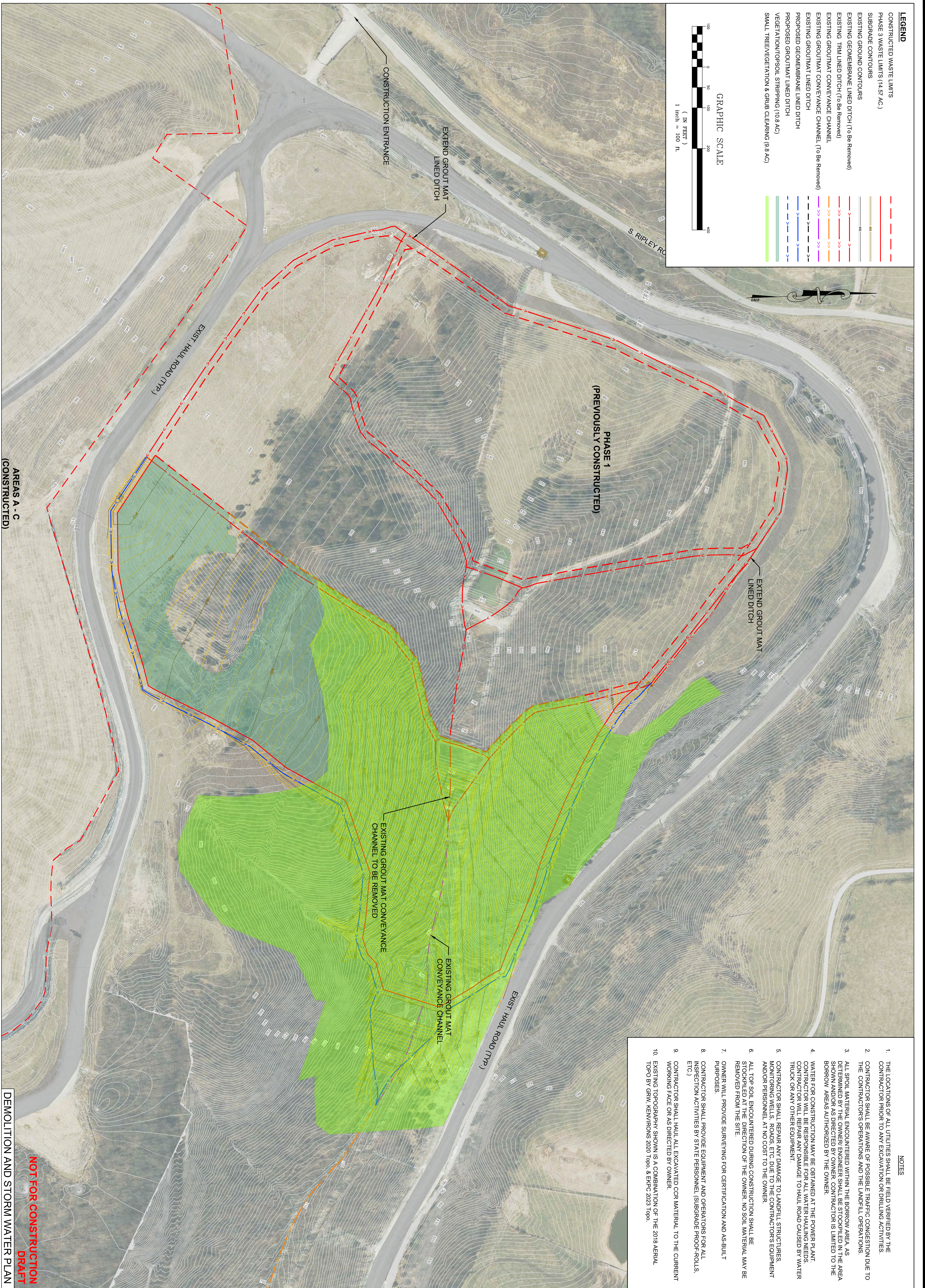


**PEGS HILL LANDFILL
MASON COUNTY, KENTUCKY
PHASE 3
CONSTRUCTION PLANS**



DRAWN BY: MAS	CHECKED BY: SMO
DATE: APRIL 2024	SCALE: AS NOTED
REVISIONS:	





LEGEND

- CONSTRUCTED WASTE LIMITS (14.57 AC.)
- SUBGRADE CONTOURS
- EXISTING GROUND CONTOURS
- EXISTING GEOMEMBRANE LINED DITCH (To Be Removed)
- EXISTING TM LINED DITCH (To Be Removed)
- EXISTING GROUT MAT CONVEYANCE CHANNEL
- EXISTING GROUT MAT CONVEYANCE CHANNEL (To Be Removed)
- EXISTING GROUT MAT LINED DITCH
- PROPOSED GEOMEMBRANE LINED DITCH
- PROPOSED GROUT MAT LINED DITCH
- VEGETATION/TOPSOIL STRIPPING (10.8 AC)
- SMALL TREE/VEGETATION & GRUB CLEARING (9.8 AC)

GRAPHIC SCALE
 1 inch = 100 ft

NOTES

- THE LOCATIONS OF ALL UTILITIES SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO ANY EXCAVATION OR DRILLING ACTIVITIES.
- CONTRACTOR SHALL BE AWARE OF POSSIBLE TRAFFIC CONGESTION DUE TO THE CONTRACTOR'S OPERATIONS AND THE LANDFILL OPERATIONS.
- ALL SPILL MATERIAL ENCOUNTERED WITHIN THE BORROW AREA AS SHOWN AND/OR AS DIRECTED BY OWNER. CONTRACTOR IS LIMITED TO THE BORROW AREAS AUTHORIZED BY THE OWNER.
- WATER FOR CONSTRUCTION MAY BE OBTAINED AT THE POWER PLANT. CONTRACTOR WILL BE RESPONSIBLE FOR ALL WATER HAULING NEEDS. CONTRACTOR WILL REPAIR ANY DAMAGE TO HAUL ROAD CAUSED BY WATER TRUCK OR ANY OTHER EQUIPMENT.
- CONTRACTOR SHALL REPAIR ANY DAMAGE TO ANTIPILE STRUCTURES, MONITORING WELLS, ROADS, ETC. DUE TO THE CONTRACTOR'S EQUIPMENT AND/OR PERSONNEL AT NO COST TO THE OWNER.
- ALL TOP SOIL ENCOUNTERED DURING CONSTRUCTION SHALL BE STOCKPILED AT THE DIRECTION OF THE OWNER. NO SOIL MATERIAL MAY BE REMOVED FROM THE SITE.
- OWNER WILL PROVIDE SURVEYING FOR CERTIFICATION AND AS-BUILT PURPOSES.
- CONTRACTOR SHALL PROVIDE EQUIPMENT AND OPERATORS FOR ALL INSPECTION ACTIVITIES BY STATE PERSONNEL (SUBGRADE PROOF-ROLLS, ETC.)
- CONTRACTOR SHALL HAUL ALL EXCAVATED OCR MATERIAL TO THE CURRENT WORKING FACE OR AS DIRECTED BY OWNER.
- EXISTING TOPOGRAPHY SHOWN IS A COMBINATION OF THE 2018 AERIAL PHOTO BY GWM, KENVIRONS 2020 1999, & EPC-2023 1099.

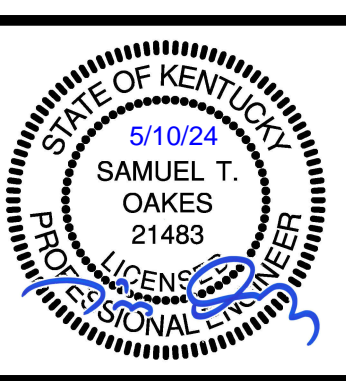
- NOTES**
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DEMOLITION AND STORM WATER PLAN

NOT FOR CONSTRUCTION DRAFT

KENVIRONS
Civil & Environmental Engineers

DRAWN BY: MAS
 CHECKED BY: SMR
 CHECKED BY: STO
 DATE: APRIL 2024
 SCALE: AS NOTED
 REVISIONS



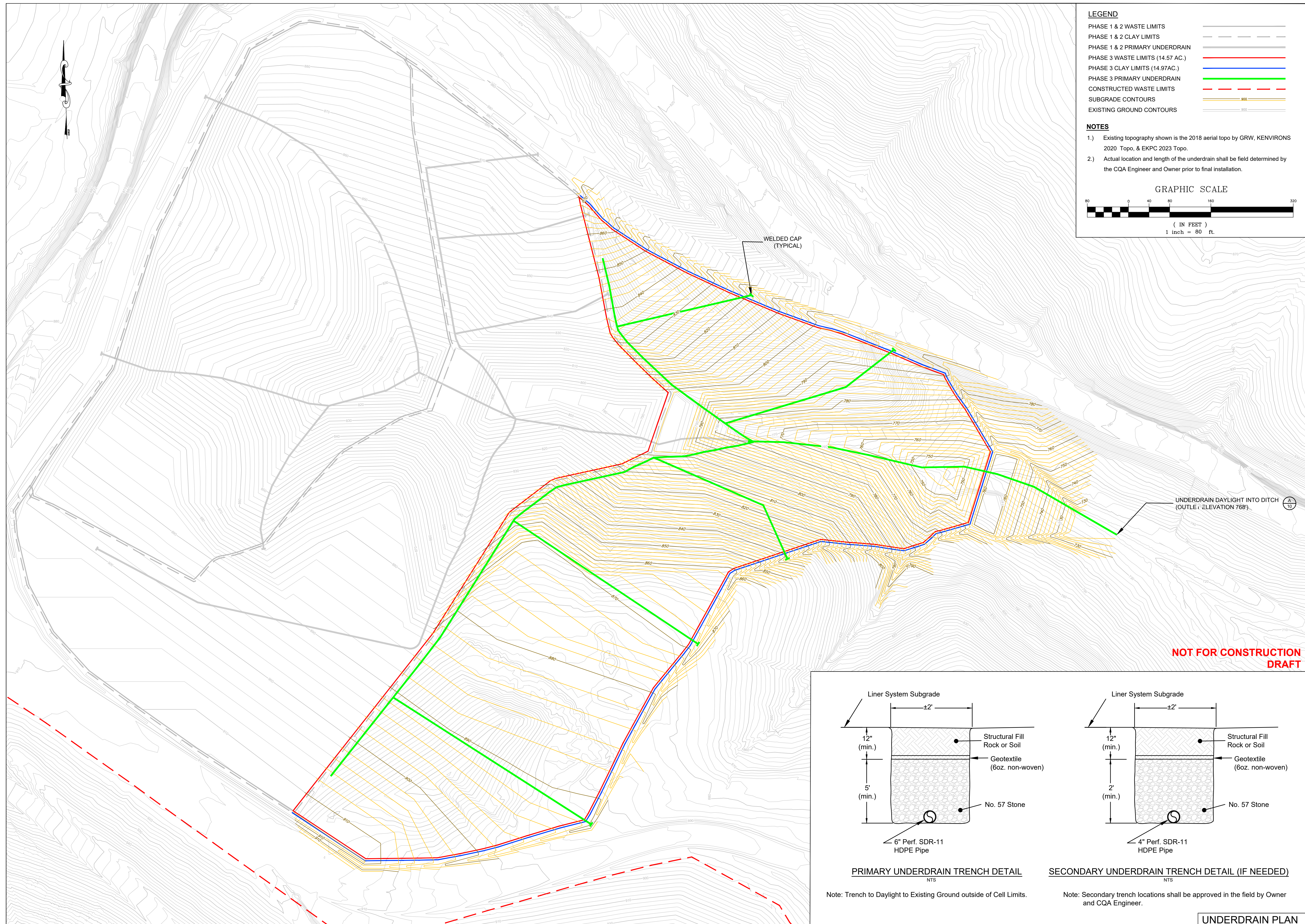
PEGS HILL LANDFILL
MASON COUNTY, KENTUCKY
PHASE 3
CONSTRUCTION PLANS



PROJECT NO.
2023123

SHEET NO.
3 of 13

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LEGEND

- PHASE 1 & 2 WASTE LIMITS
- PHASE 1 & 2 CLAY LIMITS
- PHASE 1 & 2 PRIMARY UNDERDRAIN
- PHASE 3 WASTE LIMITS (14.57 AC.)
- PHASE 3 CLAY LIMITS (14.97AC.)
- PHASE 3 PRIMARY UNDERDRAIN
- CONSTRUCTED WASTE LIMITS
- SUBGRADE CONTOURS
- EXISTING GROUND CONTOURS

NOTES

- Existing topography shown is the 2018 aerial topo by GRW, KENVIRONS 2020 Topo, & EKPC 2023 Topo.
- Actual location and length of the underdrain shall be field determined by the CQA Engineer and Owner prior to final installation.

GRAPHIC SCALE

(IN FEET)
1 inch = 80 ft.

NOT FOR CONSTRUCTION DRAFT

PRIMARY UNDERDRAIN TRENCH DETAIL
NTS

Note: Trench to Daylight to Existing Ground outside of Cell Limits.

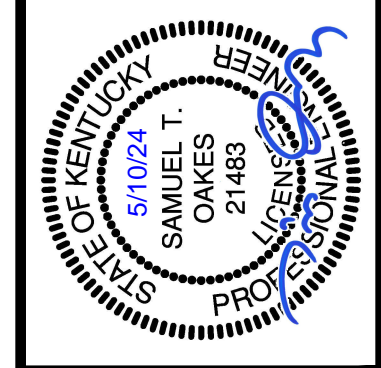
SECONDARY UNDERDRAIN TRENCH DETAIL (IF NEEDED)
NTS

Note: Secondary trench locations shall be approved in the field by Owner and CQA Engineer.

UNDERDRAIN PLAN

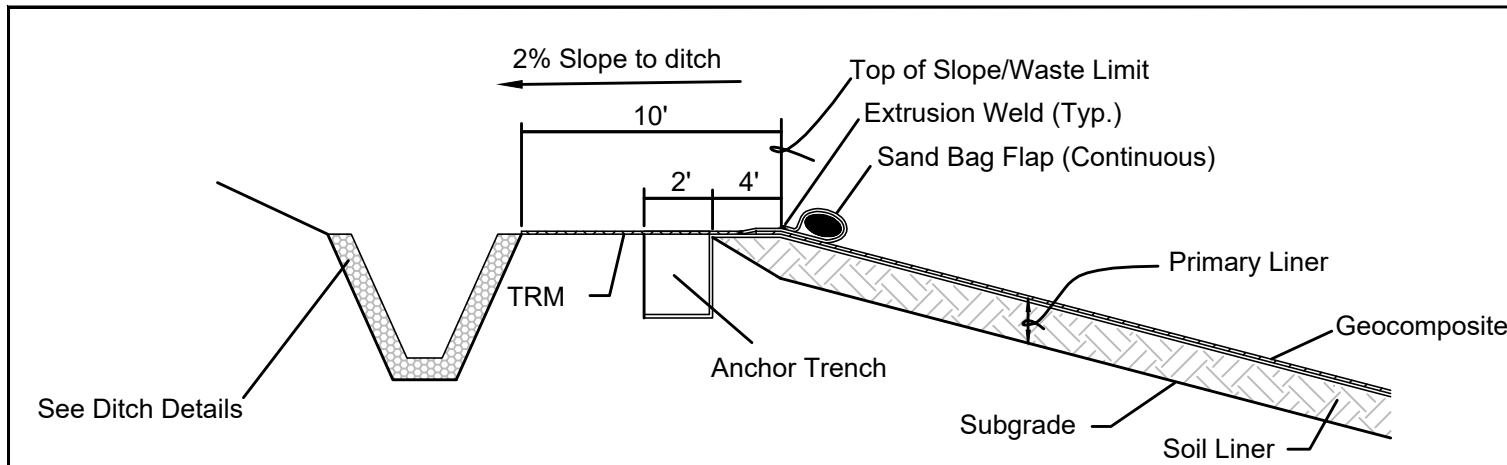


PEGS HILL LANDFILL
MASON COUNTY, KENTUCKY
PHASE 3
CONSTRUCTION PLANS



DRAWN BY: MAS
CHECKED BY: SMR
DATE: APRIL 2024
SCALE: AS NOTED
REVISIONS

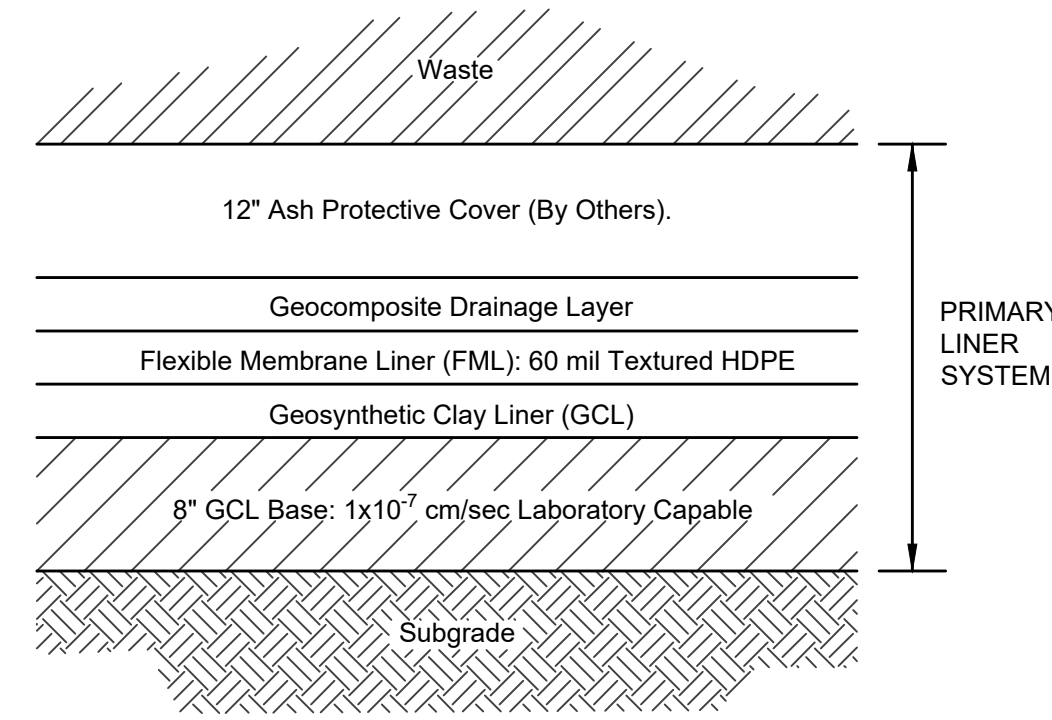




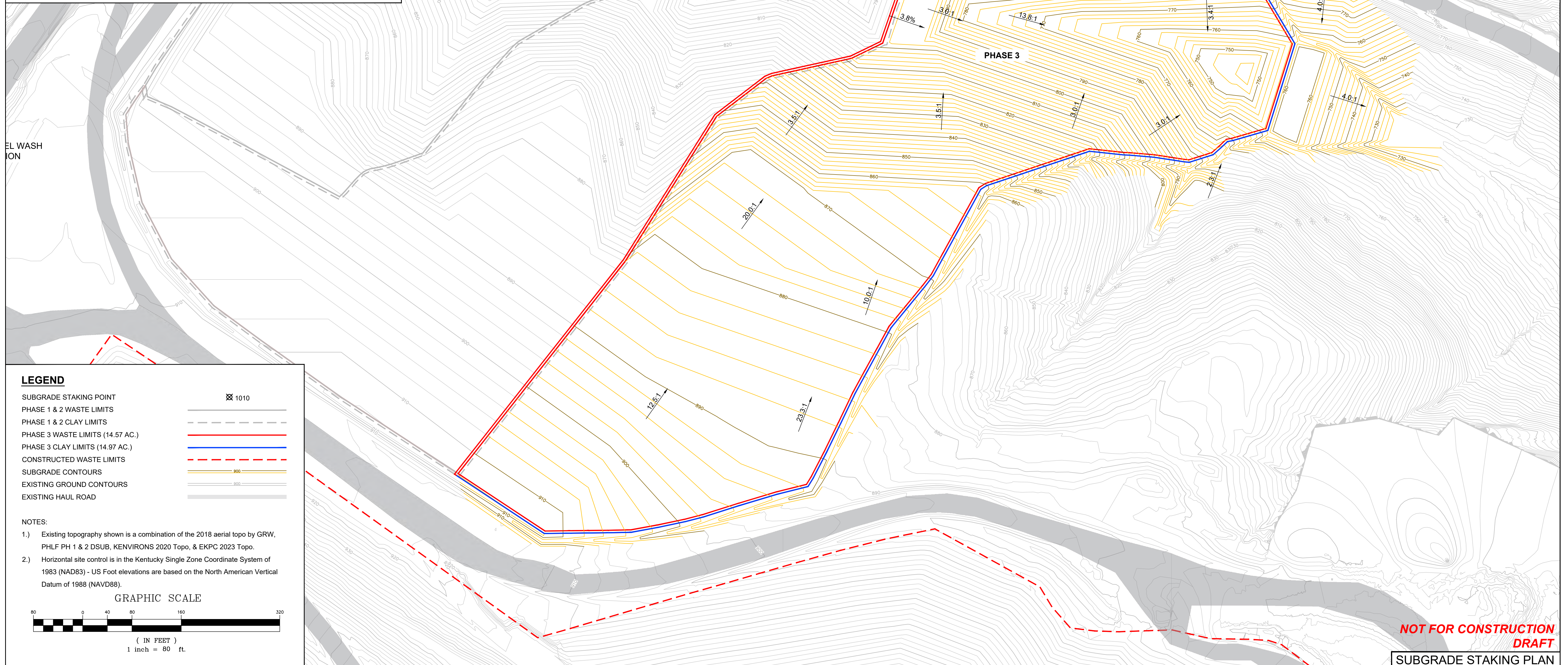
NOTES

1. The 10' run out shall be sloped (high to low) from top of slope to the ditch (2%).
2. Sand bag flap width is 7'

PERMANENT WASTE LIMIT - LINER END TREATMENT
N.T.S.



LINER SYSTEM DESIGN
N.T.S.



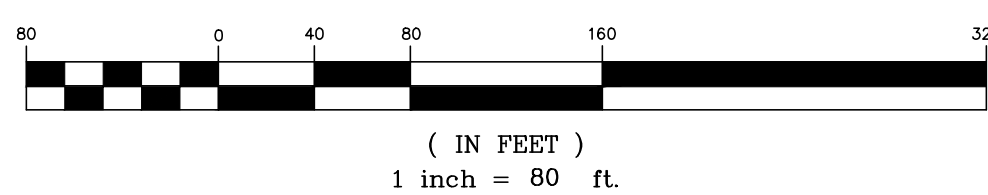
LEGEND

- SUBGRADE STAKING POINT ⊗ 1010
- PHASE 1 & 2 WASTE LIMITS ---
- PHASE 1 & 2 CLAY LIMITS ---
- PHASE 3 WASTE LIMITS (14.57 AC.) ---
- PHASE 3 CLAY LIMITS (14.97 AC.) ---
- CONSTRUCTED WASTE LIMITS ---
- SUBGRADE CONTOURS ---
- SUBGRADE CONTOURS ---
- EXISTING GROUND CONTOURS ---
- EXISTING HAUL ROAD ---

NOTES:

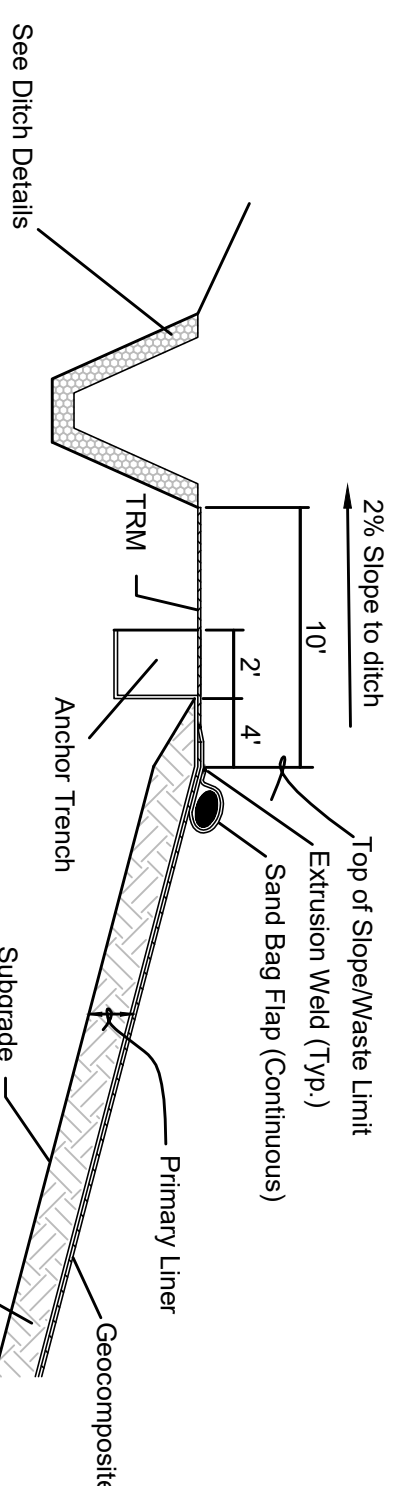
- 1.) Existing topography shown is a combination of the 2018 aerial topo by GRW, PHLF PH 1 & 2 DSUB, KENVIRONS 2020 Topo, & EKPC 2023 Topo.
- 2.) Horizontal site control is in the Kentucky Single Zone Coordinate System of 1983 (NAD83) - US Foot elevations are based on the North American Vertical Datum of 1988 (NAVD88).

GRAPHIC SCALE



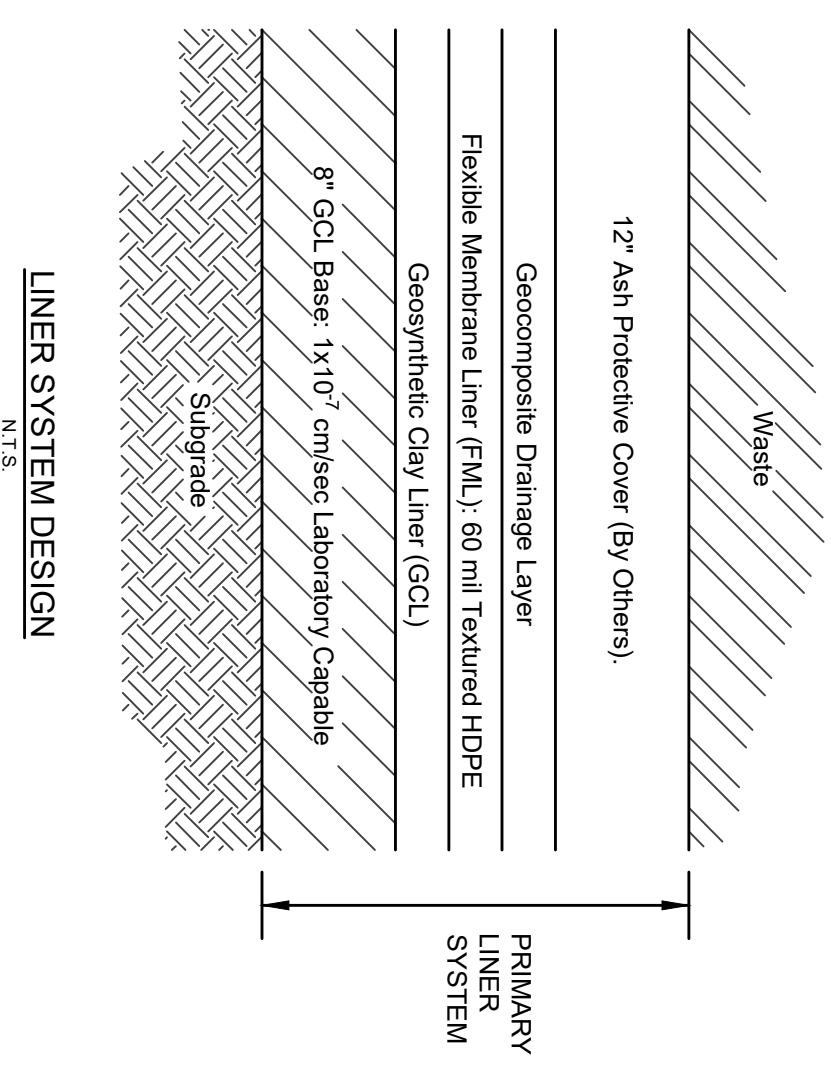
NOT FOR CONSTRUCTION
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SUBGRADE STAKING PLAN



- NOTES**
1. The 10' run out shall be sloped (high to low) from top of slope to the ditch (2%).
 2. Sand bag flap width is 7'.

PERMANENT WASTE LIMIT - LINER END TREATMENT
N.T.S.



LINER SYSTEM DESIGN
N.T.S.

LEGEND

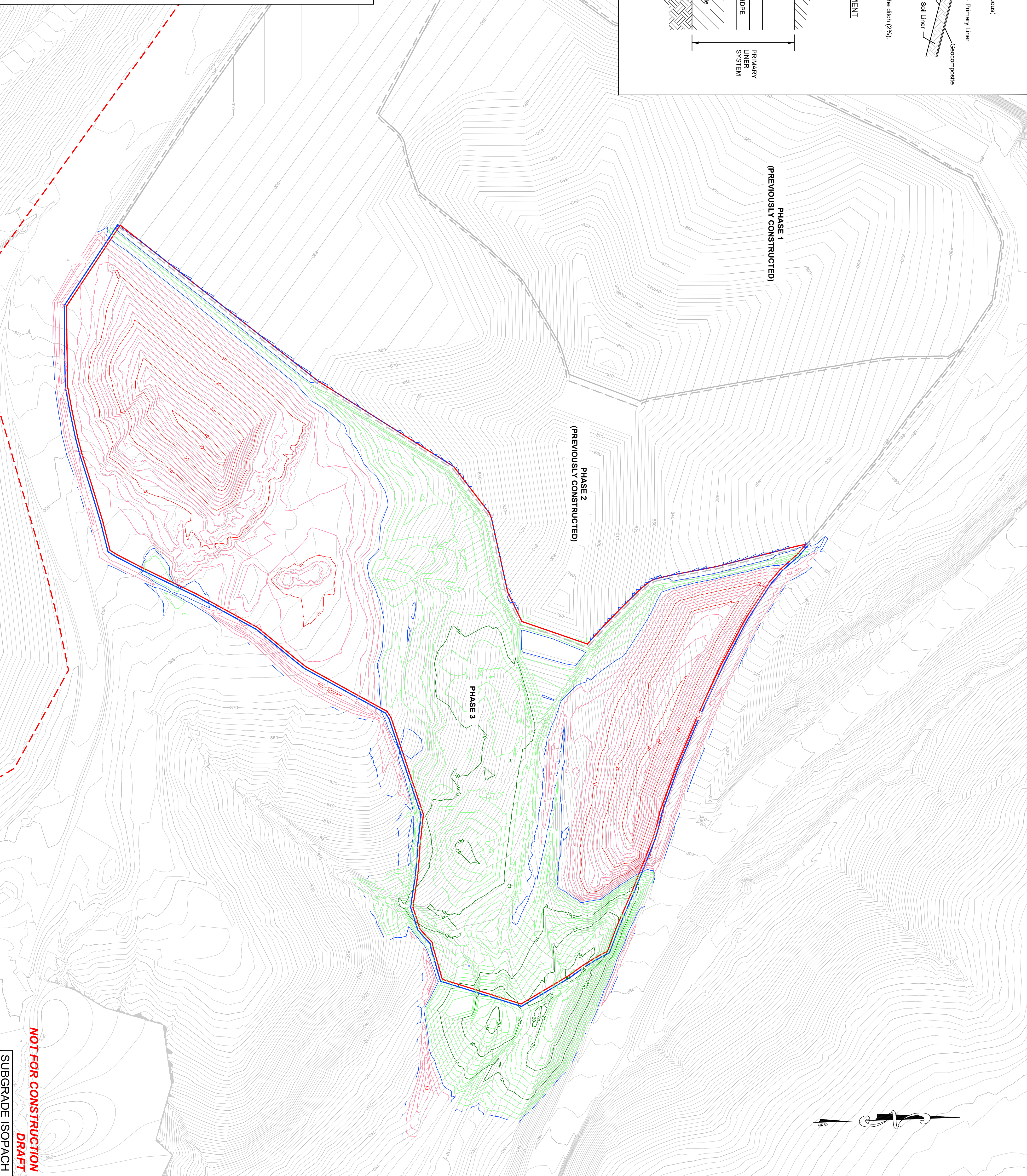
PHASE 1 & 2 WASTE LIMITS
 PHASE 1 & 2 CLAY LIMITS
 PHASE 3 WASTE LIMITS (14.57 AC.)
 PHASE 3 CLAY LIMITS (14.97 AC.)
 CONSTRUCTED WASTE LIMITS
 ISOPACH ZERO CUT/FILL CONTOURS
 ISOPACH CUT CONTOURS
 ISOPACH FILL CONTOURS
 EXISTING GROUND CONTOURS

SUBGRADE CONSTRUCTION VOLUMES
 APPROXIMATE SUBGRADE CUT VOLUME: 175,612 CY
 APPROXIMATE SUBGRADE FILL VOLUME: 108,947 CY
 APPROXIMATE T.O.R. CUT VOLUME: 90,812 CY
 APPROXIMATE SOIL CUT VOLUME: 84,800 CY

NOTES:

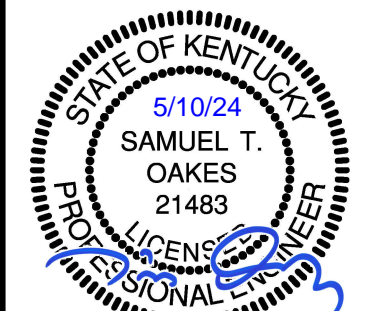
- 1.) Existing topography shown is a combination of the 2018 aerial topo by GRW, KENVIRONS 2020 Topo, & ERPC 2023 Topo.
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GRAPHIC SCALE
 (IN FEET)
 1 inch = 80 ft.



NOT FOR CONSTRUCTION
DRAFT
 SUBGRADE ISOPACH

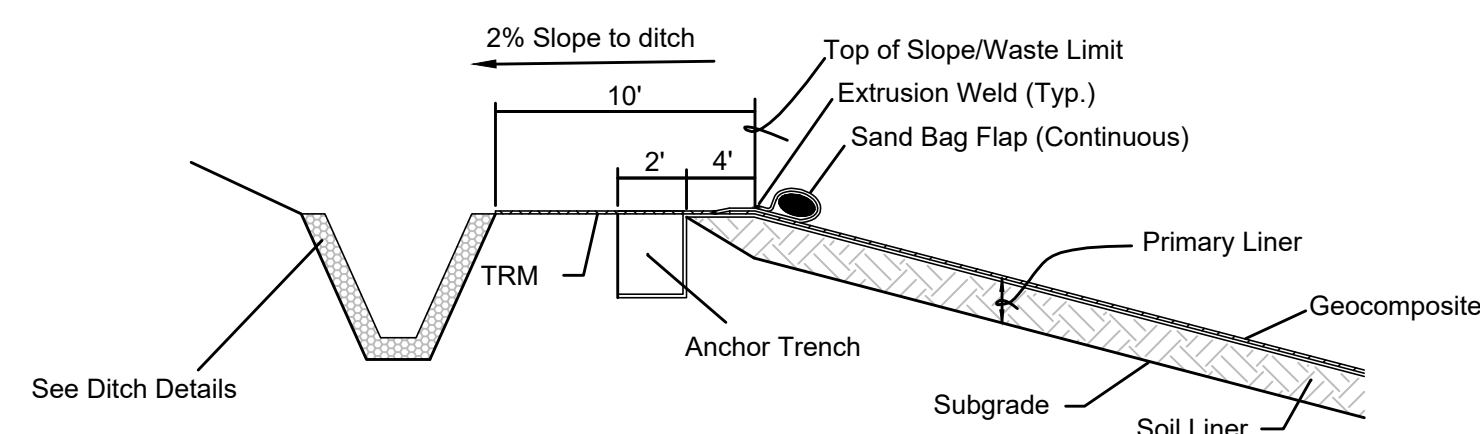
DRAWN BY: MAS
 CHECKED BY: STO
 DATE: APRIL 2024
 SCALE: AS NOTED
 REVISIONS



PEGS HILL LANDFILL
MASON COUNTY, KENTUCKY
PHASE 3
CONSTRUCTION PLANS



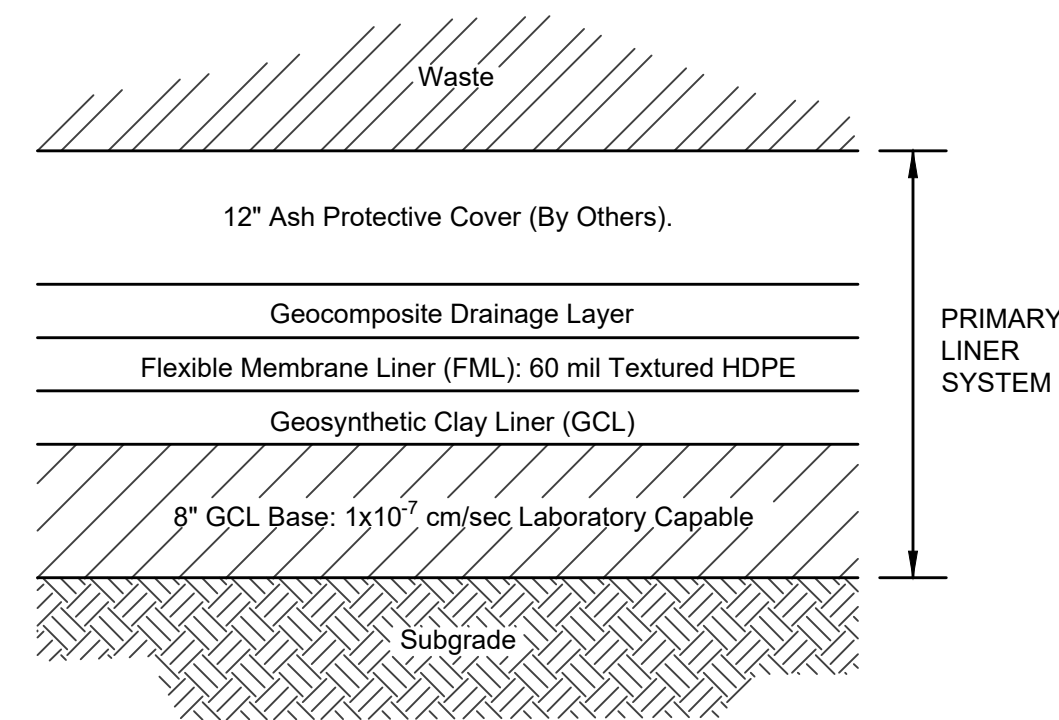
PROJECT NO.
 2023123
 SHEET NO.
 6 of 13



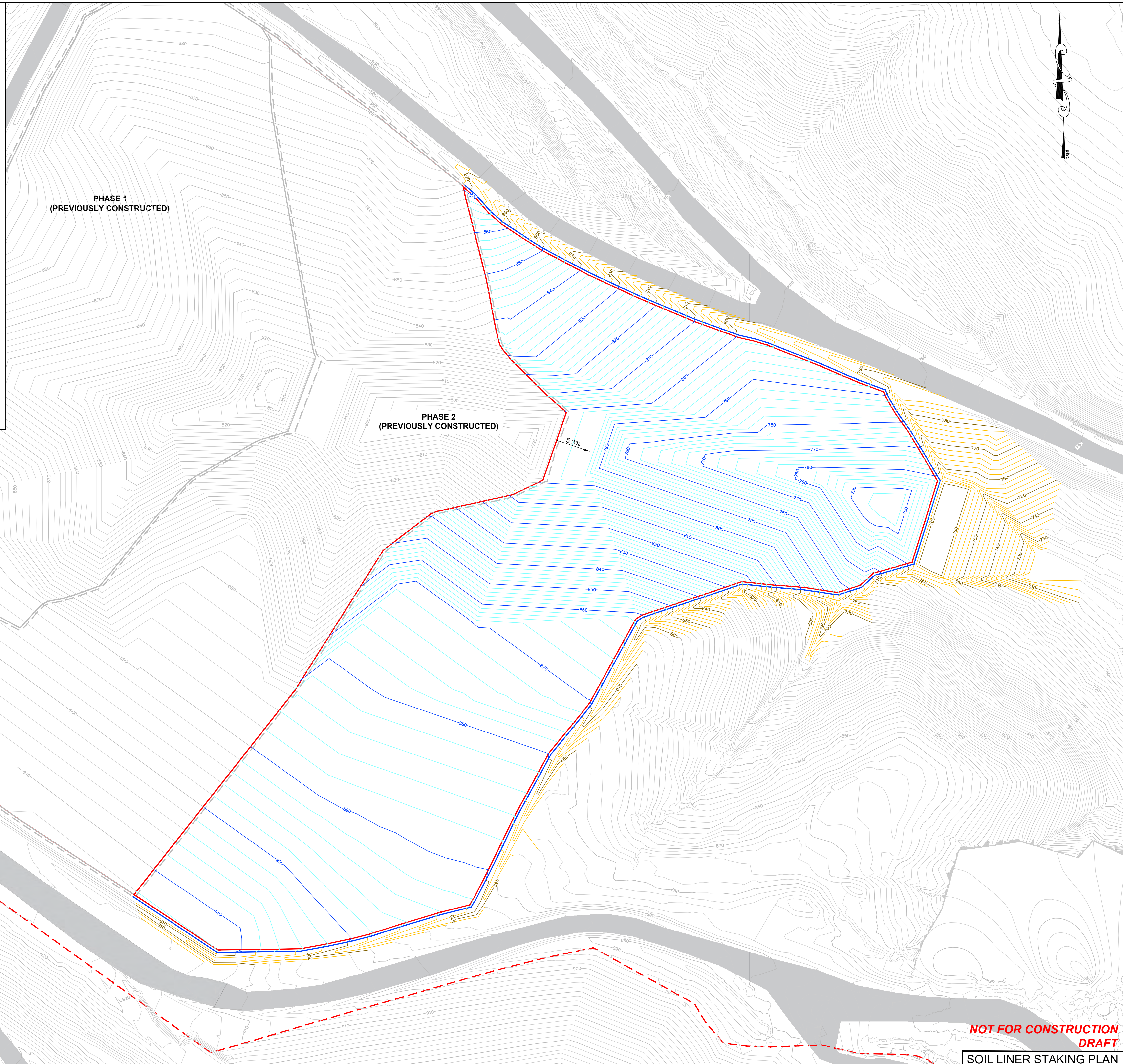
NOTES

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2. Sand bag flap width is 7'

PERMANENT WASTE LIMIT - LINER END TREATMENT
N.T.S.



LINER SYSTEM DESIGN
N.T.S.



LEGEND

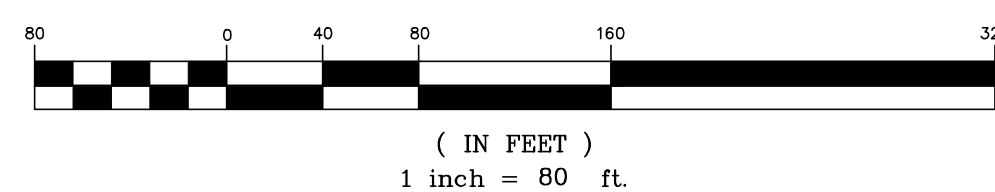
- SOIL LINER STAKING POINT
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- CONSTRUCTED WASTE LIMITS
- SOIL LINER CONTOURS
- SUBGRADE CONTOURS
- EXISTING GROUND CONTOURS
- EXISTING HAUL ROAD

SOIL LINER CONSTRUCTION QUANTITIES
APPROXIMATE SOIL LINER FILL VOLUME: 15,616 CY

NOTES:

- 1.) Existing topography shown is a combination of the 2018 aerial topo by GRW, PHLF PH 2 & 3 DCCLAY, KENVIRONS 2020 Topo, & EKPC 2023 Topo.
- 2.) Horizontal site control is in the Kentucky Single Zone Coordinate System of 1983 (NAD83) - US Foot elevations are based on the North American Vertical Datum of 1988 (NAVD88).

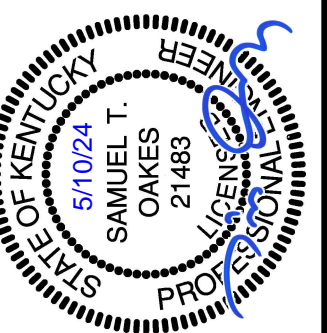
GRAPHIC SCALE



NOT FOR CONSTRUCTION
DRAFT
SOIL LINER STAKING PLAN



PEGS HILL LANDFILL
MASON COUNTY, KENTUCKY
PHASE 3
CONSTRUCTION PLANS

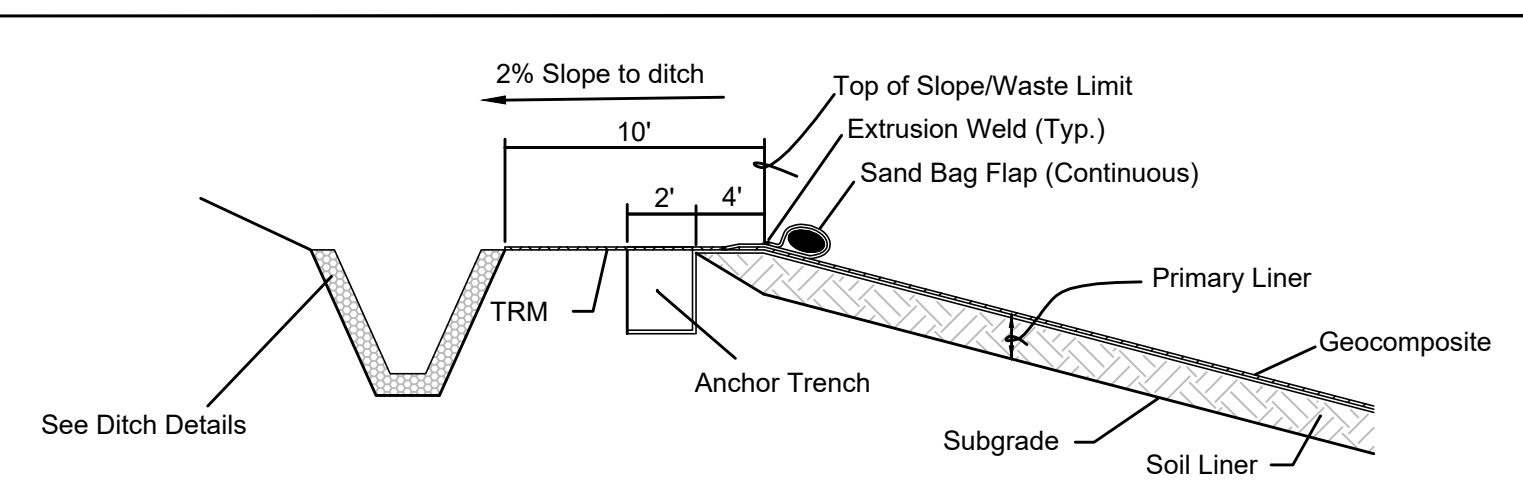
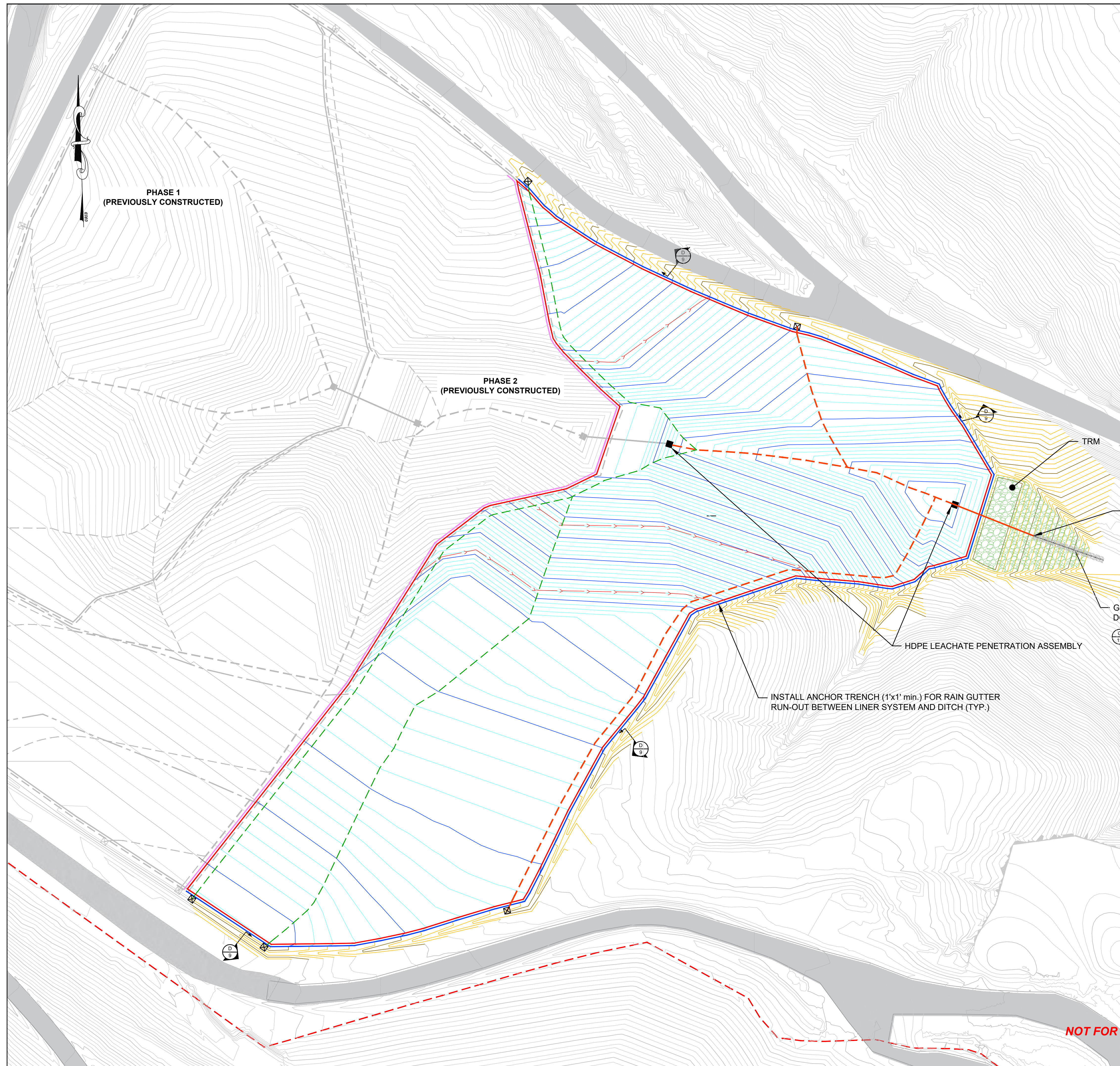


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CHECKED BY: SMR	
DATE: APRIL 2024	
SCALE: AS NOTED	

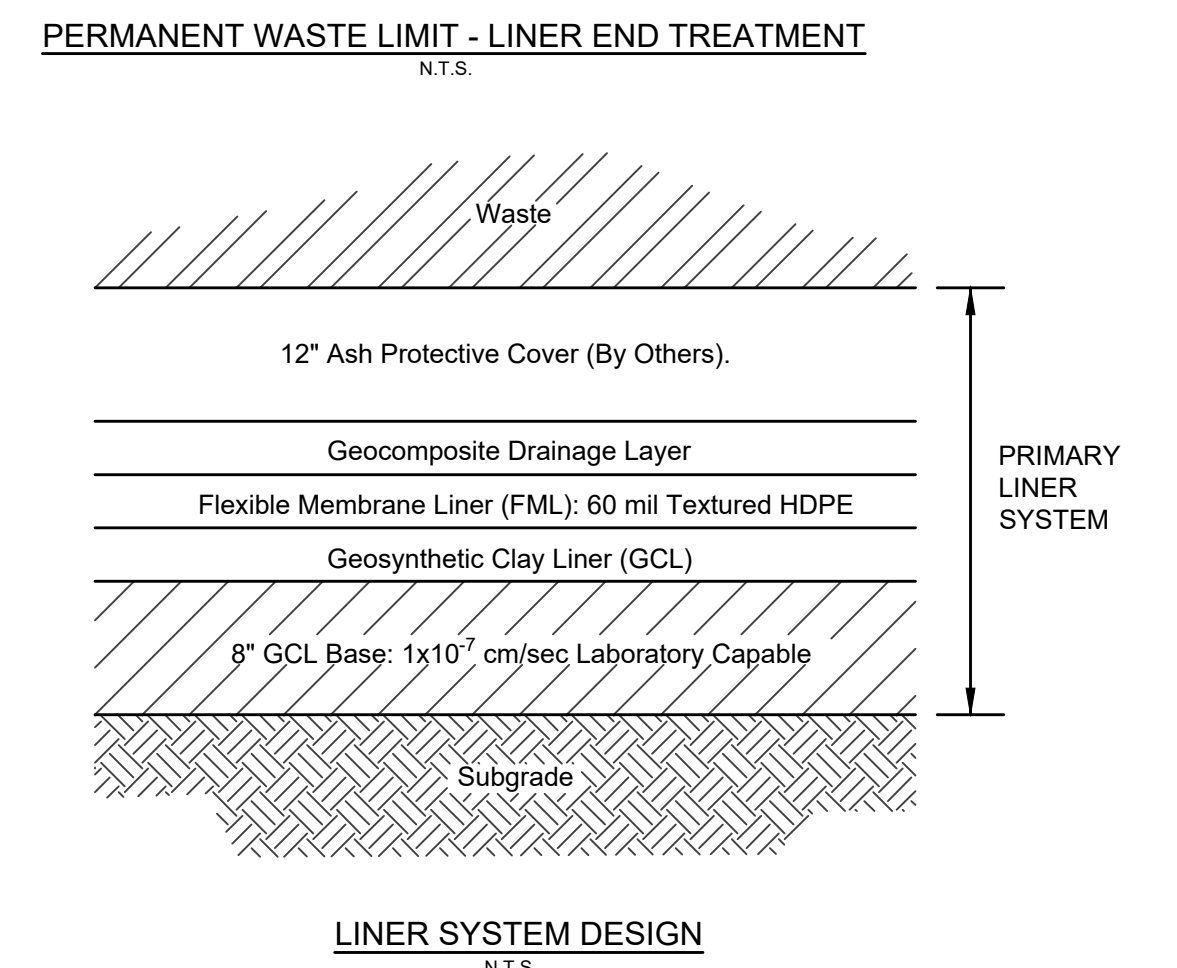


PROJECT NO.
2023123
SHEET NO.
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N:\P\2023\123PHLF PHASE 3 P1 CONSTRUCTION PLANS\06_GEOSYNTHETICS & LEACHATE COLLECTION.dwg, 2/16/24, 5/1/2024 11:16:04 AM, IAS



- NOTES**
1. The 10' run out shall be sloped (high to low) from top of slope to the ditch (2%).
 2. Sand bag flap width is 7'



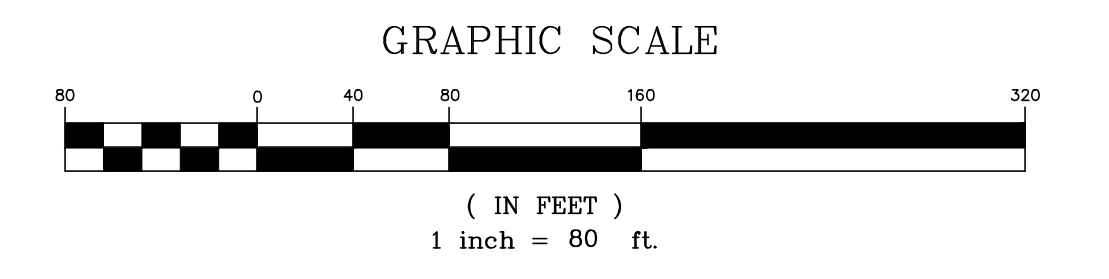
GEOSYNTHETICS TABLE

GCL	719,261 SF
FML (SEE NOTE 3)	771,489 SF
GEOCOMPOSITE	705,847 SF
RAIN GUTTERS	2,075 LF
RAIN FLAPS	1,400 LF
SANDBAG FLAPS	2,916 LF
FML CONTAINMENT FLAP	1,590 LF

LEGEND

LEACHATE PIPE CLEANOUT		EXISTING	
4" LEACHATE COLLECTION PIPE		PERFORATED	
8" LEACHATE COLLECTION PIPE		PERFORATED	
EXISTING 4" LEACHATE COLLECTION PIPE		PERFORATED	
EXISTING 8" LEACHATE COLLECTION PIPE		PERFORATED	
RAIN GUTTER		PERFORATED	
CONTAINMENT FLAP		PERFORATED	
RAIN FLAP		PERFORATED	
PHASE 1 & 2 WASTE LIMITS		PERFORATED	
PHASE 1 & 2 CLAY LIMITS		PERFORATED	
PHASE 3 WASTE LIMITS (14.57 AC.)		PERFORATED	
PHASE 3 CLAY LIMITS (14.97 AC.)		PERFORATED	
CONSTRUCTED WASTE LIMITS		PERFORATED	
SOIL LINER CONTOURS		PERFORATED	
SUBGRADE CONTOURS		PERFORATED	
EXISTING GROUND CONTOURS		PERFORATED	
EXISTING HAUL ROAD		PERFORATED	

- NOTES:**
- 1.) Existing topography shown is a combination of the 2018 aerial topo by GRW, KENVIRONS 2020 Topo, & EKPC 2023 Topo.
 - 2.) Horizontal site control is in the Kentucky Single Zone Coordinate System of 1983 (NAD83) - US Foot elevations are based on the North American Vertical Datum of 1988 (NAVD88).
 - 3.) FML quantity includes rain gutters, rain flaps, sandbag flaps, containment flap, and 15% waste/overlap/anchor trench.

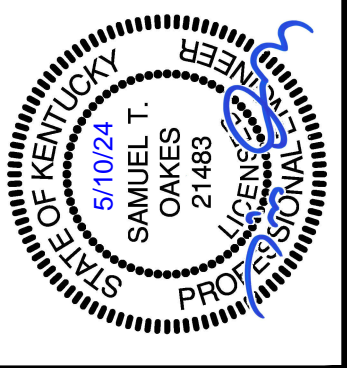


**NOT FOR CONSTRUCTION
DRAFT**

LEACHATE COLLECTION SYSTEM & GEOSYNTHETICS PLAN



PEGS HILL LANDFILL
MASON COUNTY, KENTUCKY
PHASE 3
CONSTRUCTION PLANS

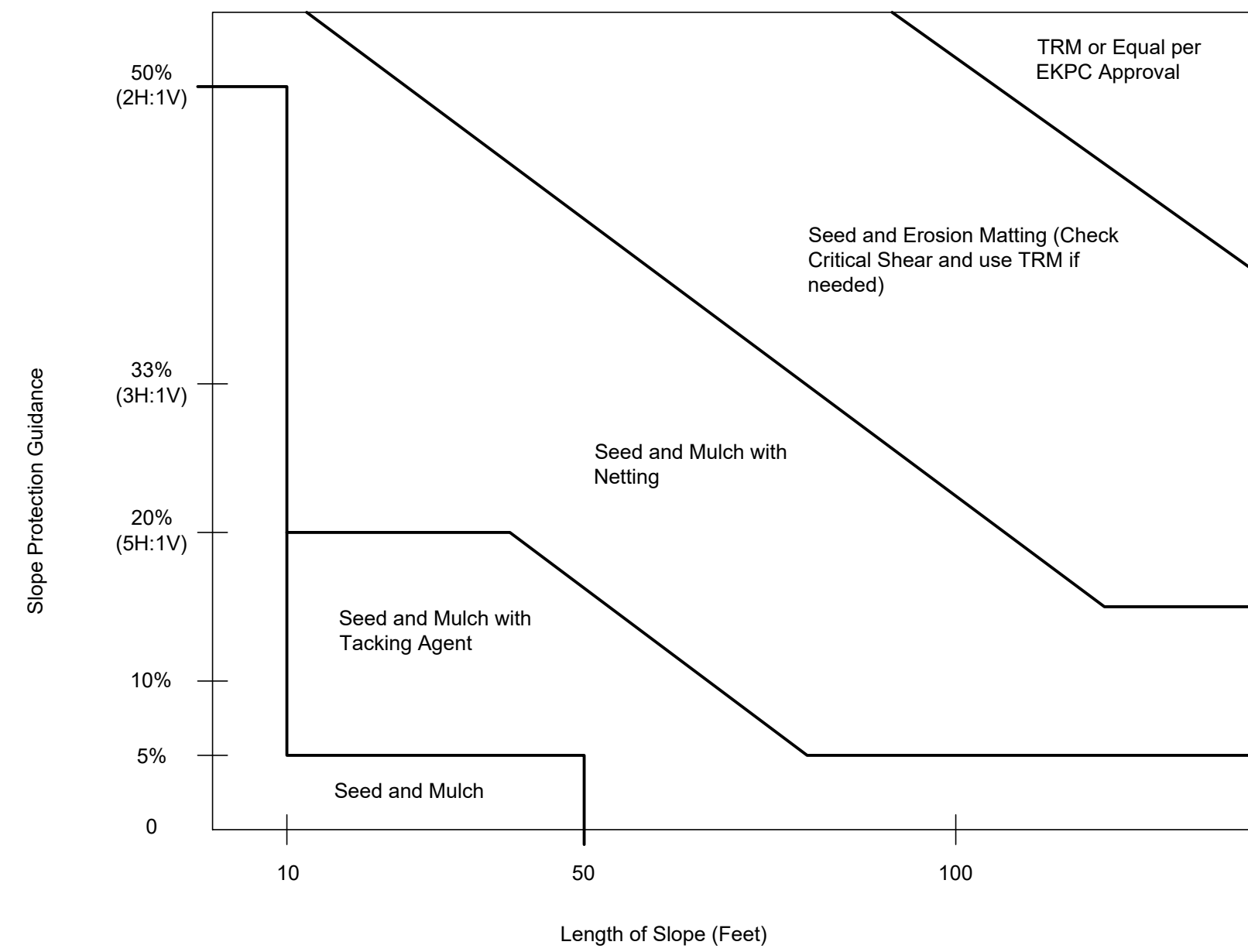


REVISIONS

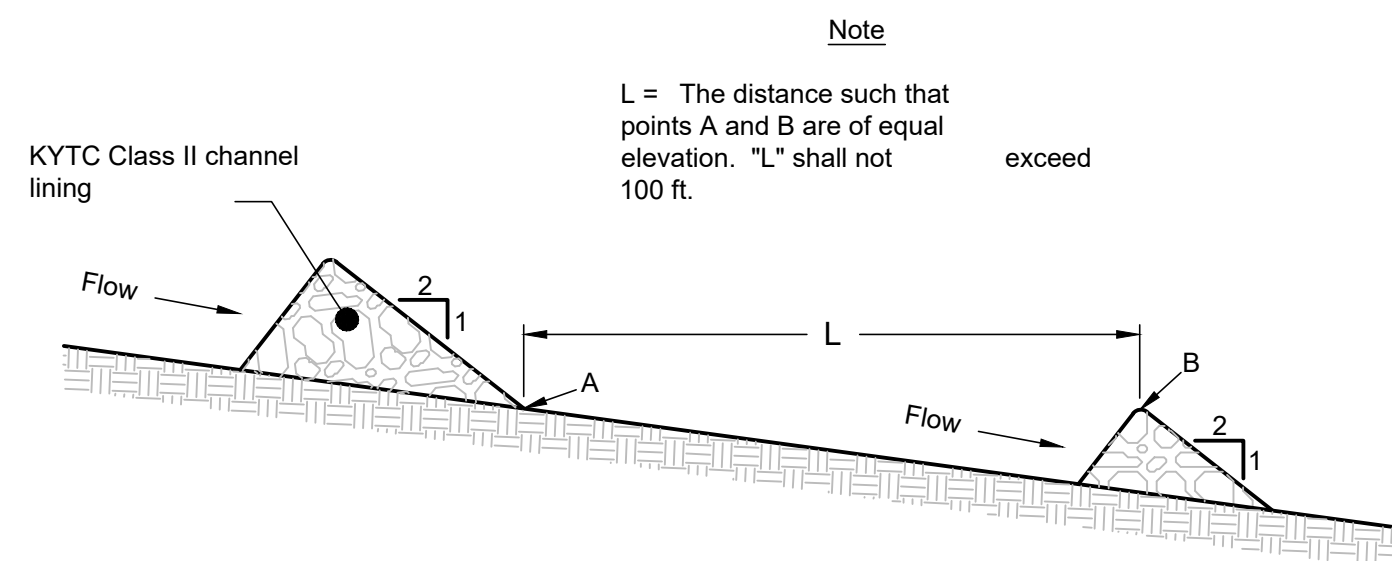
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2	4/10/2024	AS	DATE: APRIL 2024
3	AS NOTED	AS	SCALE: AS NOTED



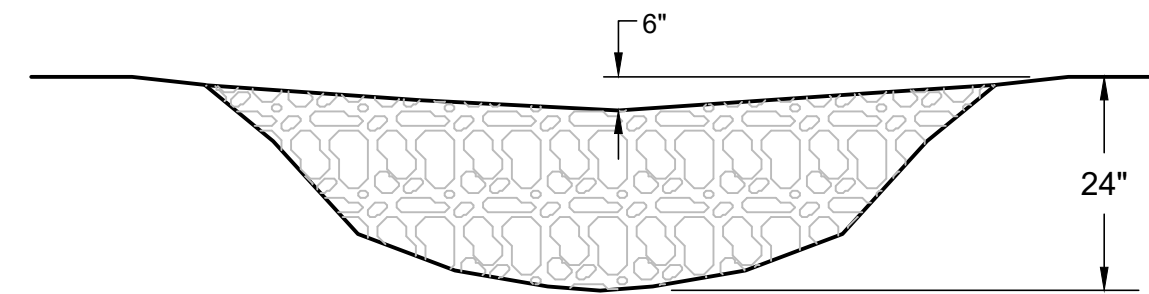
PROJECT NO.
2023123
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SLOPE PROTECTION GUIDANCE
N.T.S. (A) 9



ROCK CHECK SPACING DIAGRAM



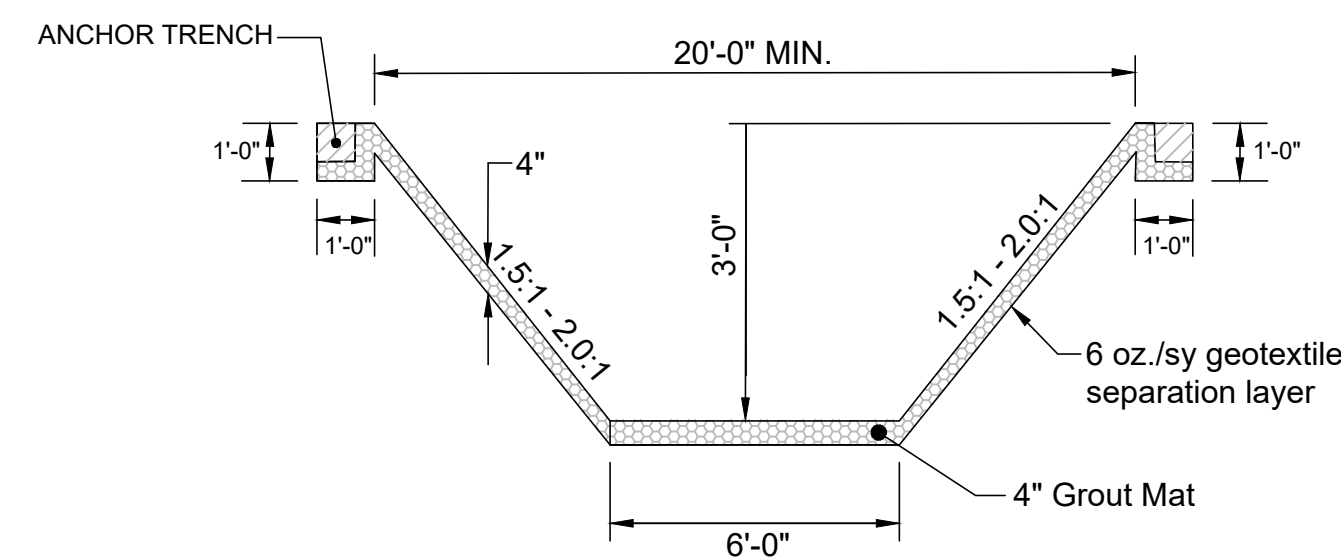
CROSS SECTION

TEMPORARY SILT CHECK
N.T.S. (B) 9

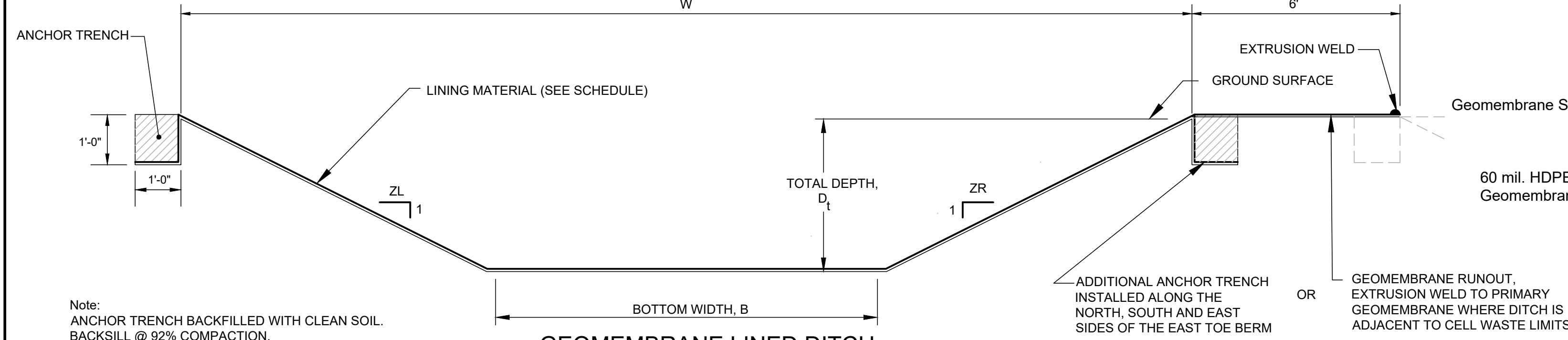
DITCH SCHEDULE

CHANNEL DESCRIPTIONS	CHANNEL IDENTIFICATION	AVERAGE BOTTOM SLOPE FT/FT	TOTAL DEPTH (FT) D _t (MIN.)	BOTTOM WIDTH B(FT)	SIDE SLOPE ZL / ZR	LINING MATERIAL	DITCH WIDTH, W (FT.)
PERMANENT PERIMETER DITCH	DITCH TYPE 1	VARIES	3.3	6.0	1.5-2.0 / 1.5-2.0	GROUT MAT	20
TEMPORARY PERIMETER DITCH	DITCH TYPE 2	VARIES	3.0	3.0	1.5 / 1.5	GEOMEMBRANE	12
TEMPORARY CONTAINMENT BERM DITCH	DITCH TYPE 3	1.0%	2.0	2.0	1.5 / 1.5	GEOMEMBRANE	8

TRM: (TURF REINFORCEMENT MATTING) SEMI-PERMANENT SYNTHETIC EROSION CONTROL MATTING WHICH GRASS WILL GROW THROUGH WITH MINIMUM LONG-TERM SHEAR STRESS 6-LB/SF. TRM SHALL BE PURCHASED AND INSTALLED BY EARTHWORKS CONTRACTOR. ONLY OUTSIDE OF ROCK CUT.
DITCH PROTECTION: 24" GROUTED CLASS II CHANNEL LINING WITH 3" LOW STRENGTH CONCRETE OR GROUT (2,000 psi). GROUT/CONCRETE TO COMPLETELY COVER AND SEAL TOP OF CHANNEL LINING WITHOUT VOIDS, HOLES OR DEPRESSIONS. SEE SHEET 10 FOR DITCH TYPE 5 DETAILS.



PERMANENT PERIMETER DITCH



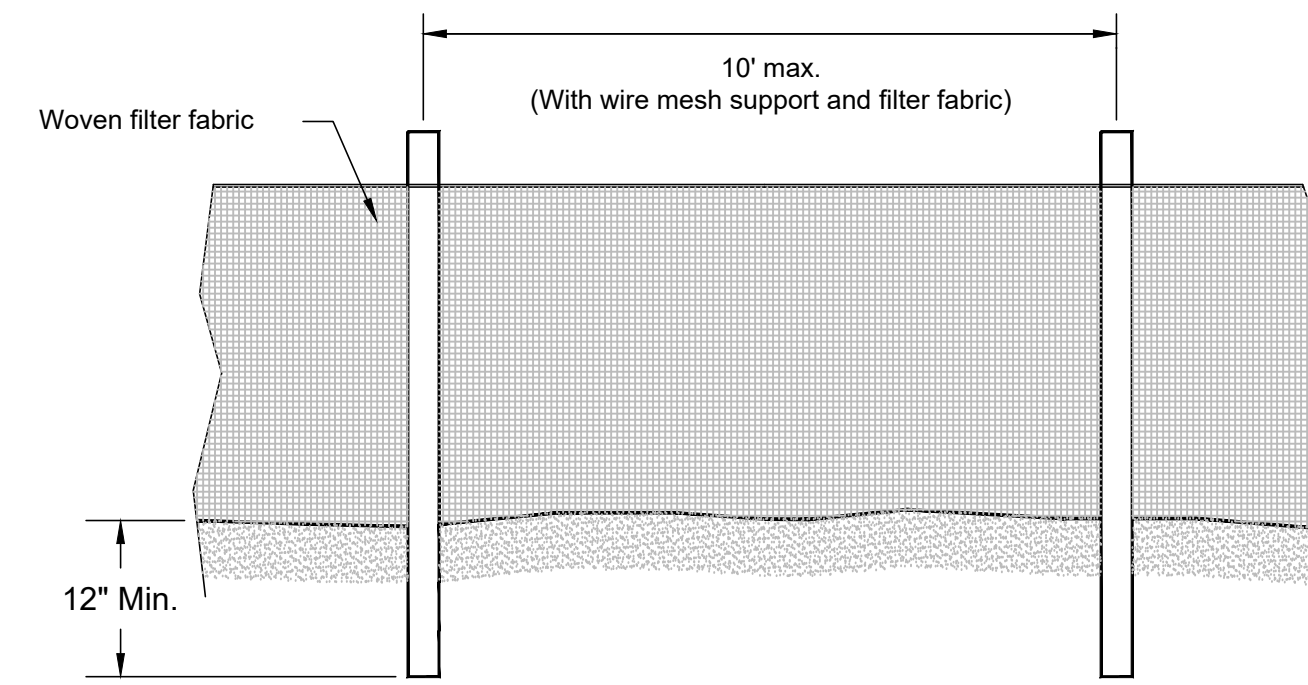
GEOMEMBRANE LINED DITCH SECTION VIEW A-A

Note: ANCHOR TRENCH BACKFILLED WITH CLEAN SOIL. BACKSILL @ 92% COMPACTION.

Item Description

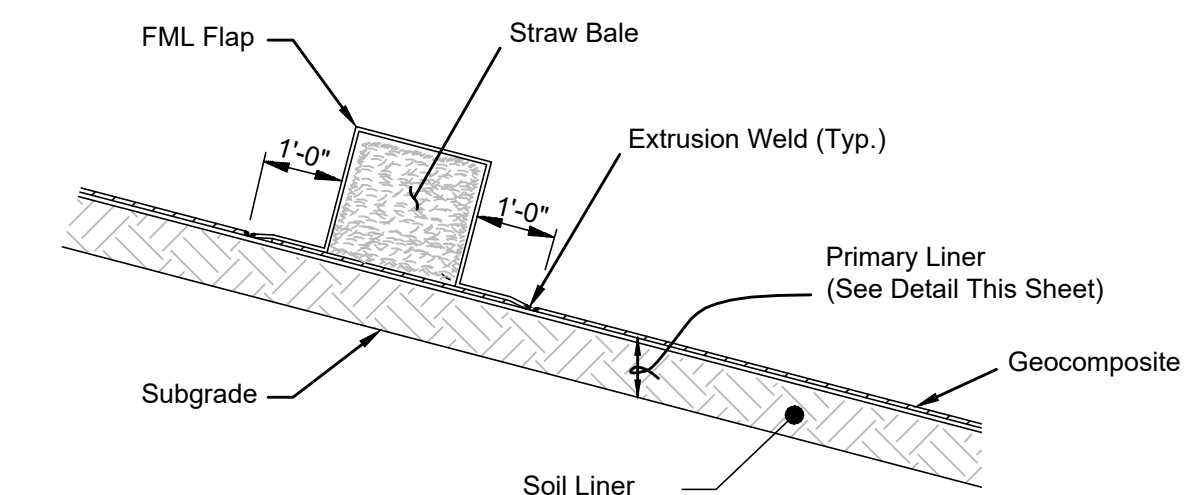
Ditch Type 2 & 3 - (linear Feet) This unit includes all installation costs associated with the transportation, placement and installation of the 60 mil Textured HDPE geomembrane channel lining. Compensation shall be based on the calculated quantities as provided. Geomembrane supplied by owner. Ditch excavation or embankment to achieve ditch subgrade is included in excavation and/or embankment quantities.

TYPICAL SURFACE WATER DITCH- GEOMEMBRANE LINED
N.T.S. (D) 9

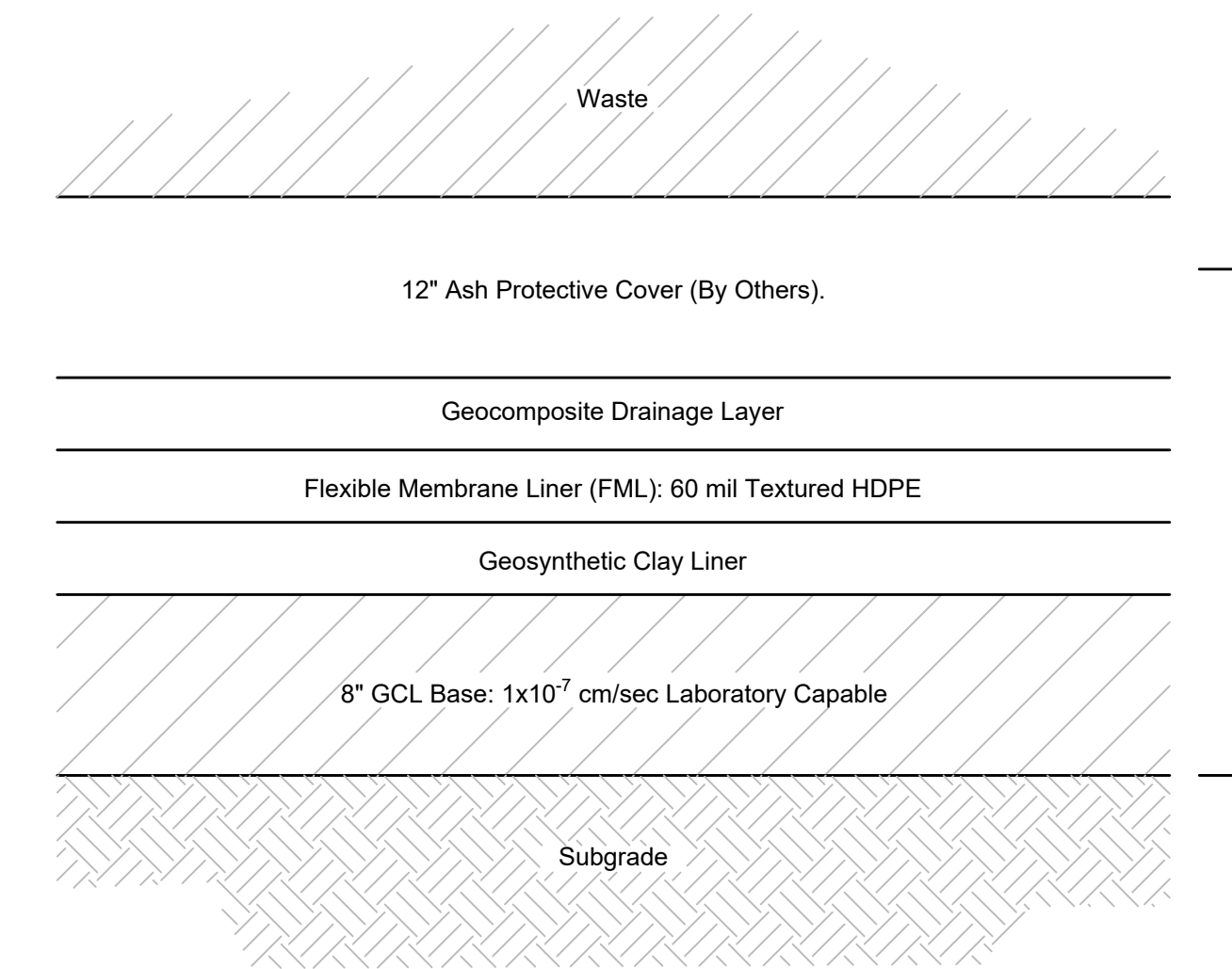


- Notes**
- Filter fabric shall be purchased in a continuous roll and cut to the length of the barrier. When joints cannot be avoided, filter fabric shall be spliced together only at a post with 3 ft. (min.) overlap, and securely sealed.
 - Posts shall be spaced at 6 ft. intervals in areas of rapid runoff.
 - Posts shall be at least 5 ft. in length.
 - Steel posts shall have projections for fastening wire and fabric.
 - Wood posts shall be 2 inches by 2 inches or equivalent. Steel posts shall be 1.33 lbs per linear foot.
 - A wire mesh support fence shall be fastened securely to the up-slope side of the posts using heavy duty wire staples at least 1 inch in length, wire ties or hog rings. The wire shall extend into the trench a minimum of 2 inches and shall not extend more than 36 inches above the original ground surface.
 - Washed stone shall be used to bury skirt when silt fence is used adjacent to a channel, creek, or pond.
 - Turn silt fence up-slope at ends.

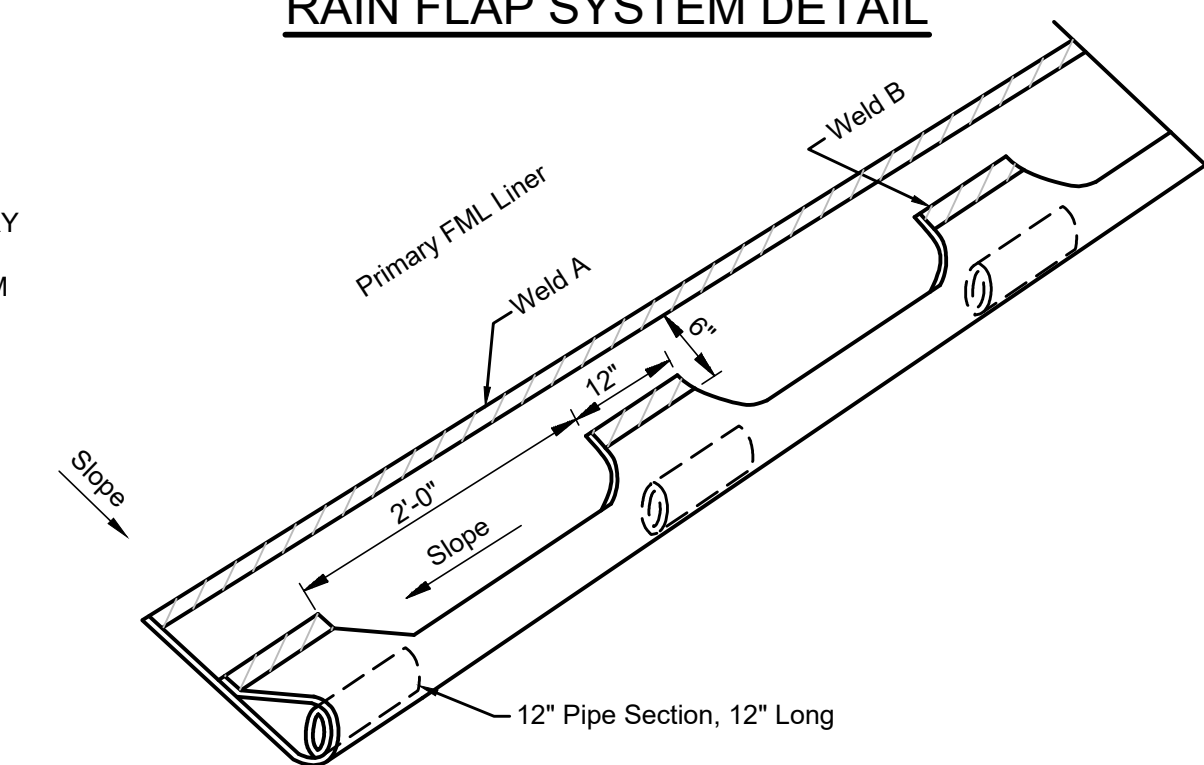
SILT FENCE
N.T.S. (C) 9



RAIN FLAP SYSTEM DETAIL

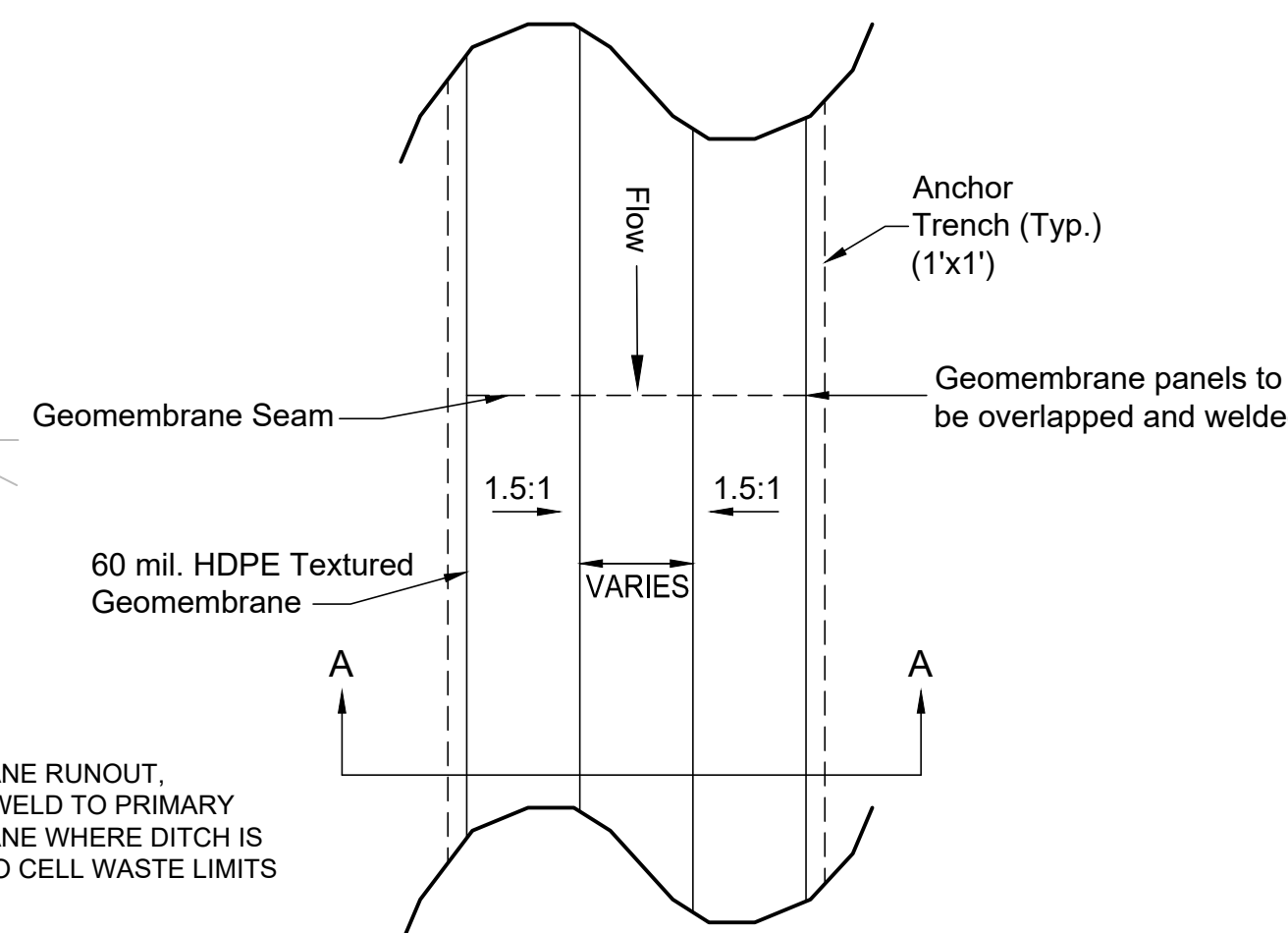


LINER SYSTEM DESIGN



- Note:**
- Contractor to provide anchor trench between liner system and ditch to support rain gutter. Min. anchor trench dimensions 1'x1'.

RAIN GUTTER SYSTEM DETAIL



GEOMEMBRANE DITCH PLAN VIEW

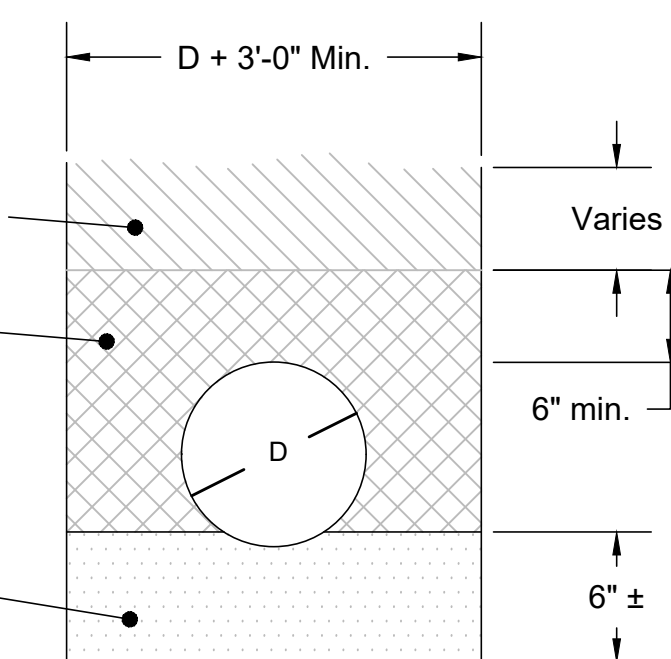
Note: If ditch subgrade consists of in-situ rock, Contractor shall place a 16-oz. non-woven geotextile between the rock subgrade and geomembrane. Geotextile material to be supplied by owner, as needed.

Legend

- Embankment
- Soil Embankment
- Final Backfill (As Necessary)

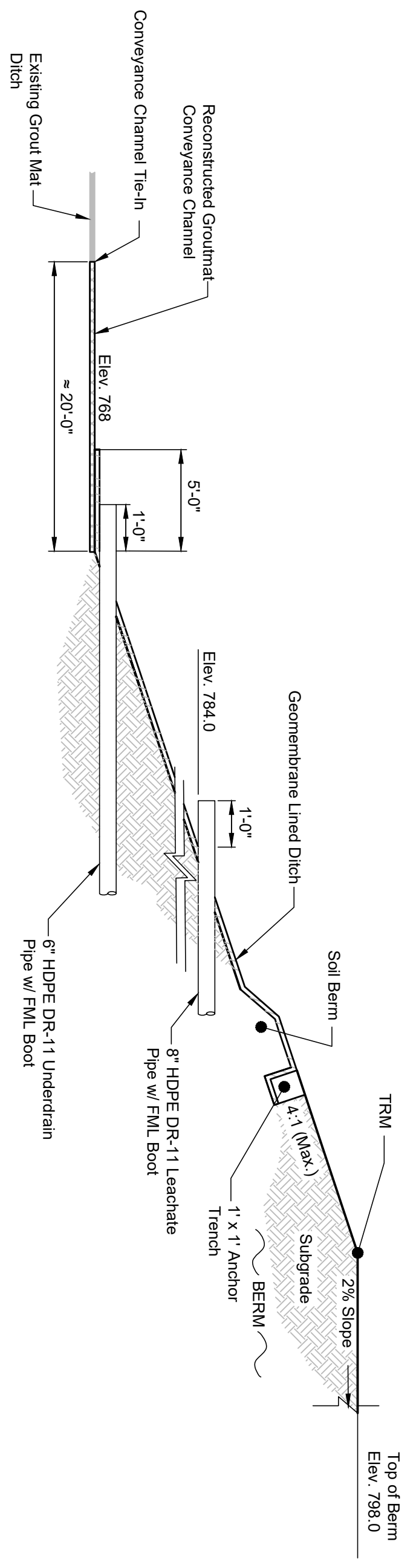
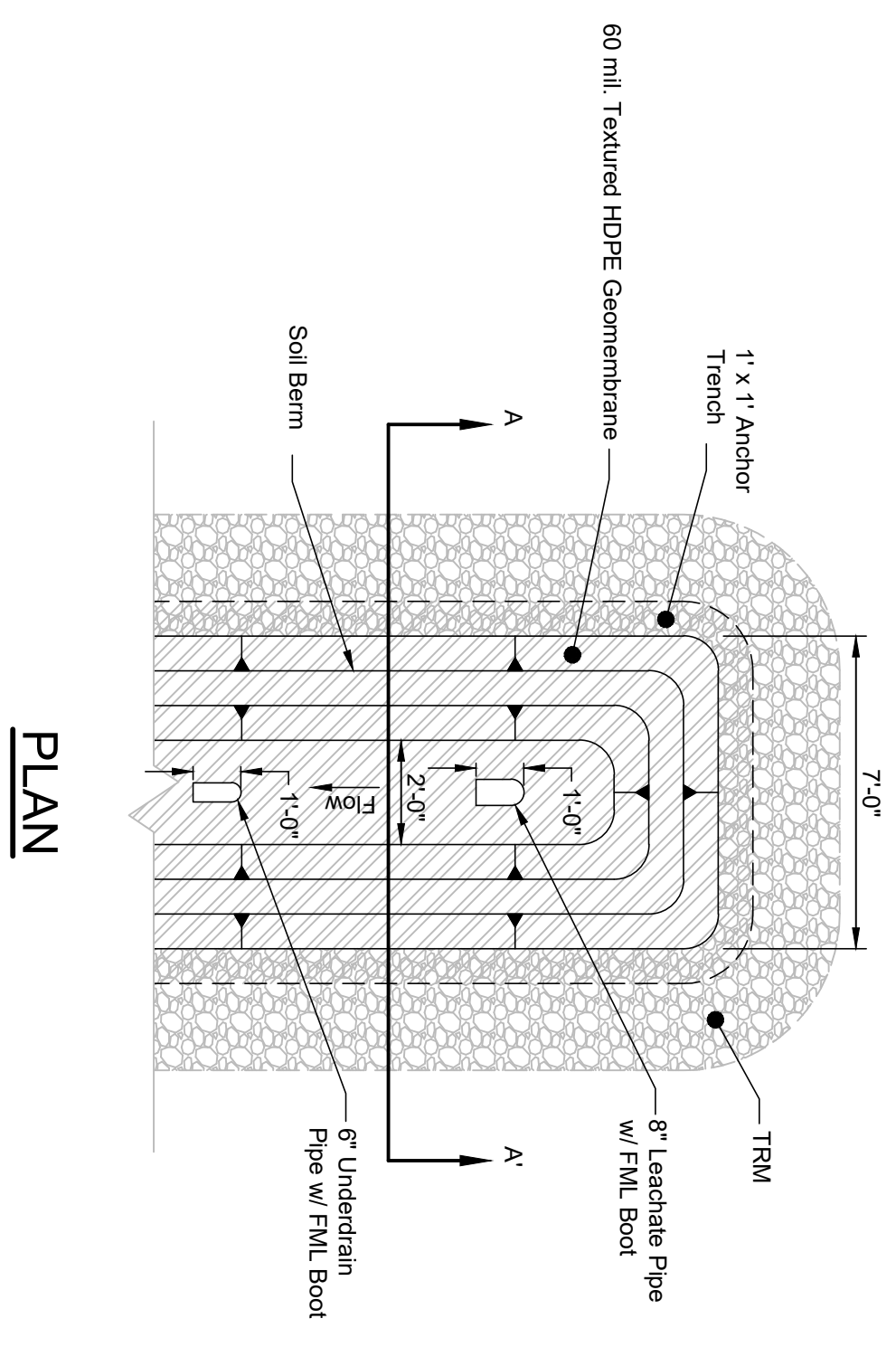
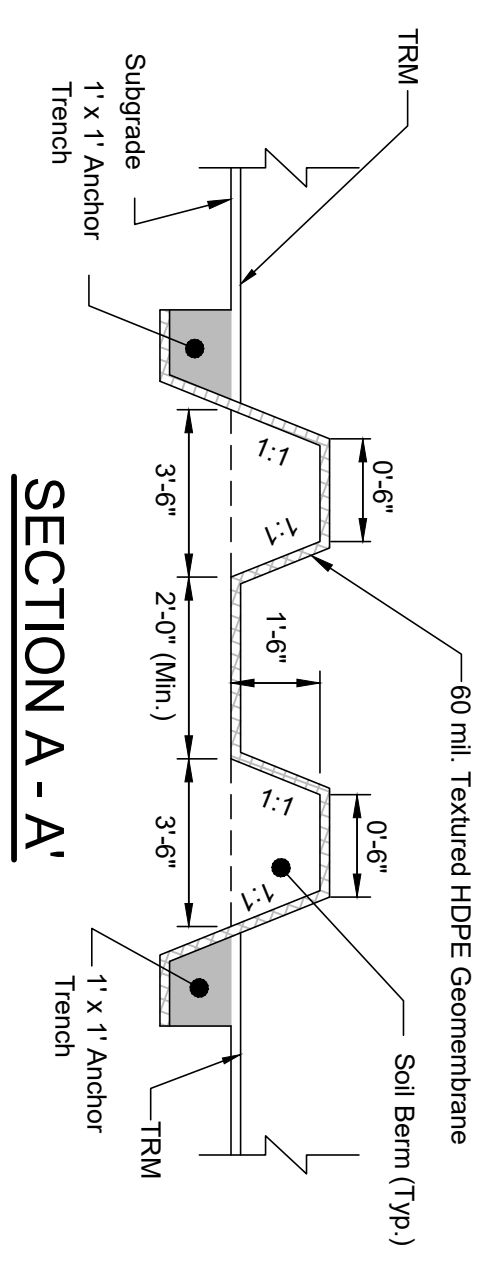
Soil embankment to be free of rocks or other deleterious material larger than 2" in any dimension. To extend no less than 6" above the top of pipe.

Coarse Sand Bedding or No. 9 or 11 Stone

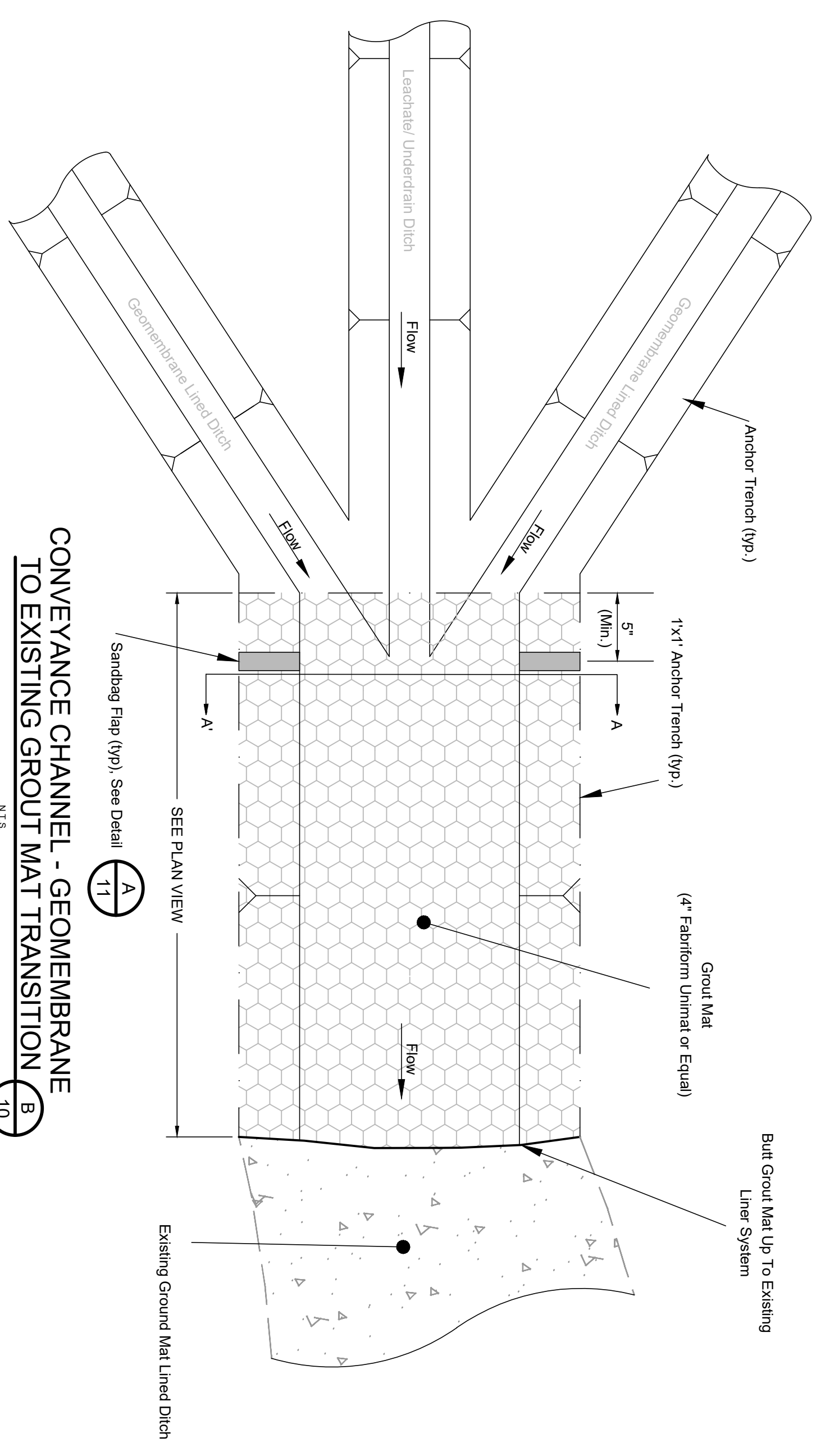
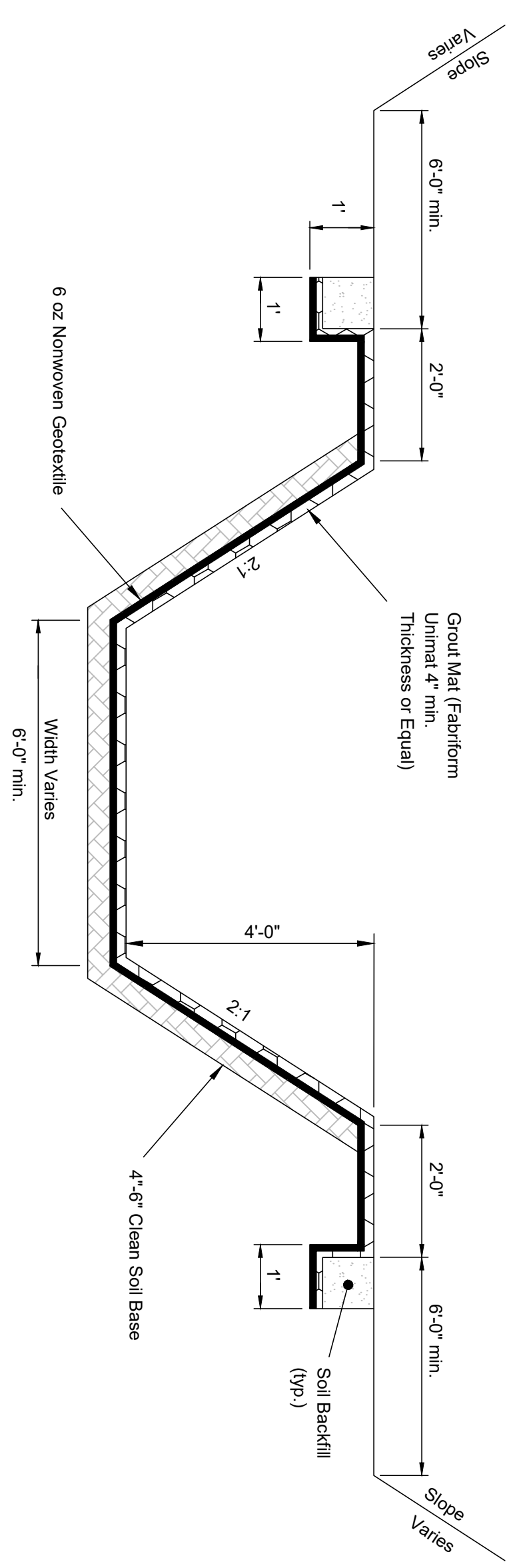


TYPICAL PIPE TRENCH DETAIL

NOT FOR CONSTRUCTION DRAFT



UNDERDRAIN & LEACHATE PIPE TERMINATION DETAIL



CONVEYANCE CHANNEL - GEOMEMBRANE TO EXISTING GROUNMAT TRANSITION

- 1. Reconstructed Existing Grounmat Conveyance Ditch Section Removed During Demolition Construction Activities for Phase 2.

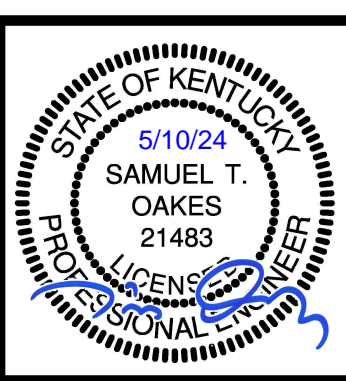
Note

NOT FOR CONSTRUCTION DRAFT

DETAILS



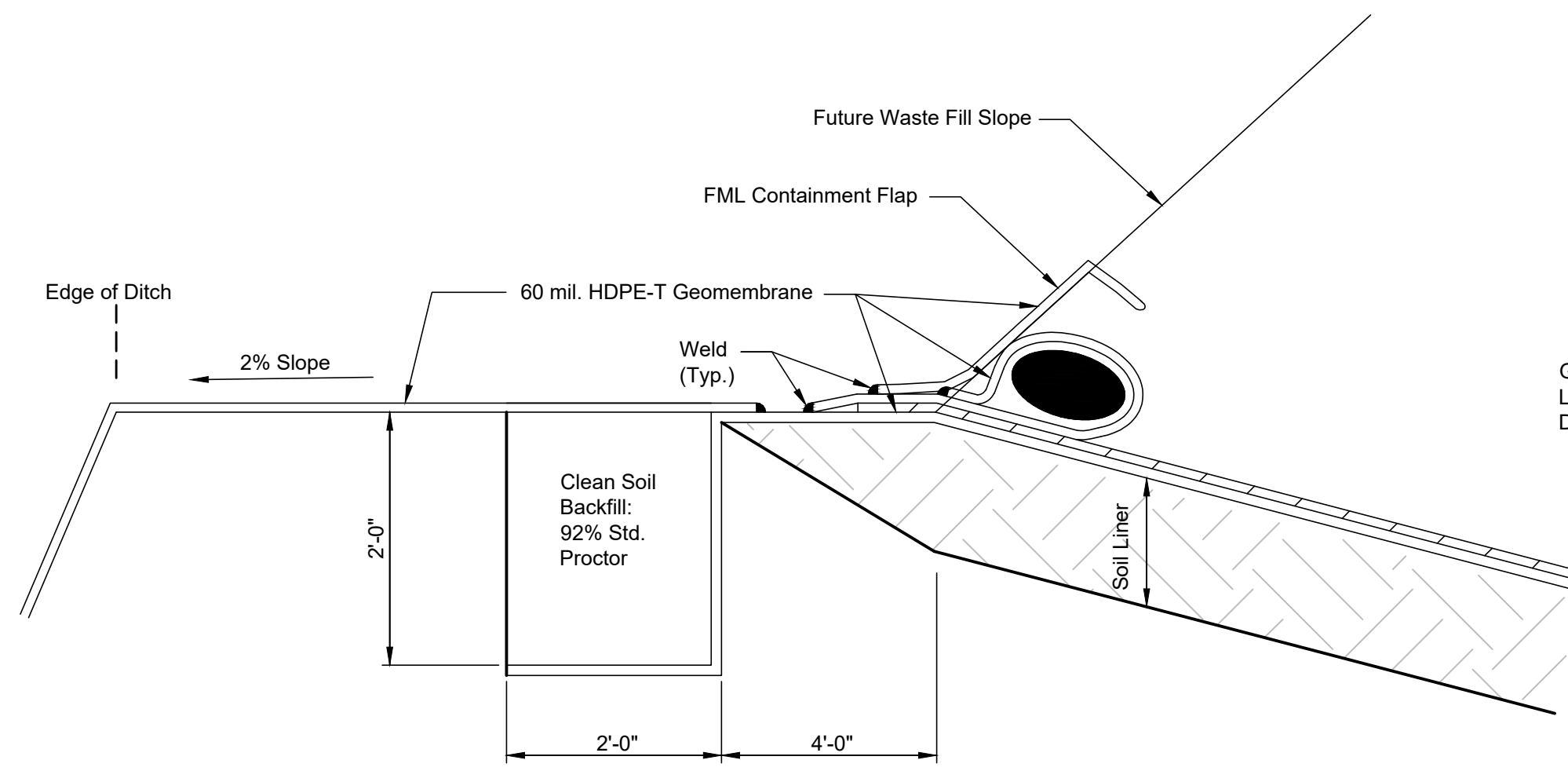
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CHECKED BY: STO
CHECKED BY: SMR
DATE: APRIL 2024
SCALE: AS NOTED
REVISIONS



PEGS HILL LANDFILL
MASON COUNTY, KENTUCKY
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CONSTRUCTION PLANS



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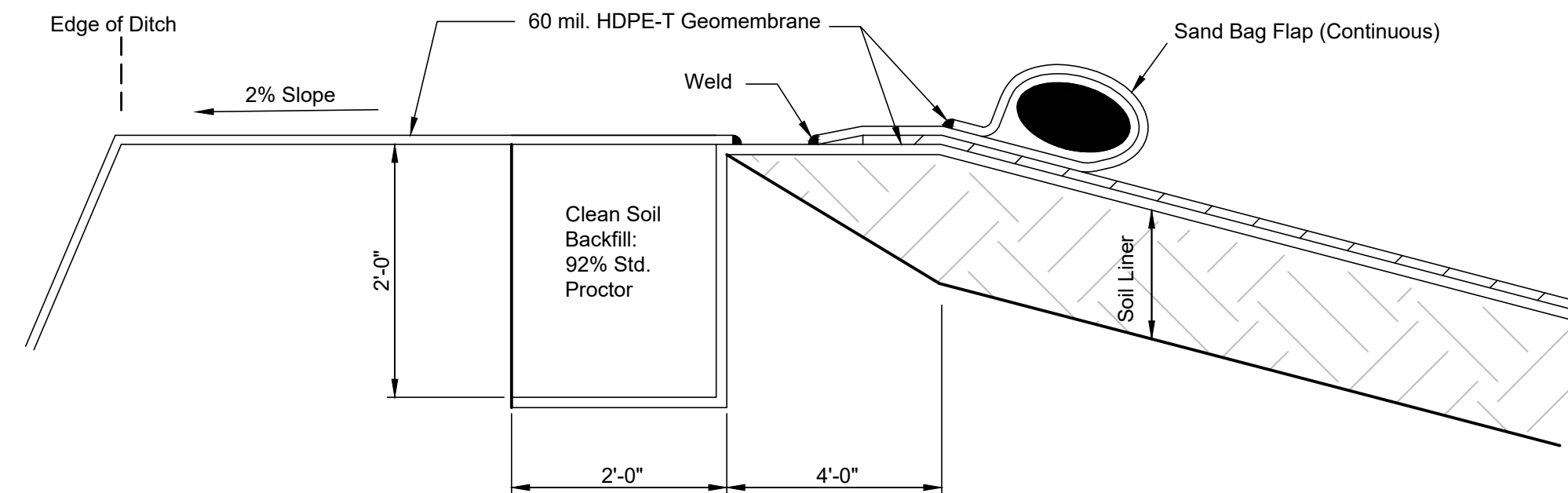


CONTAINMENT FLAP DETAIL

A
11

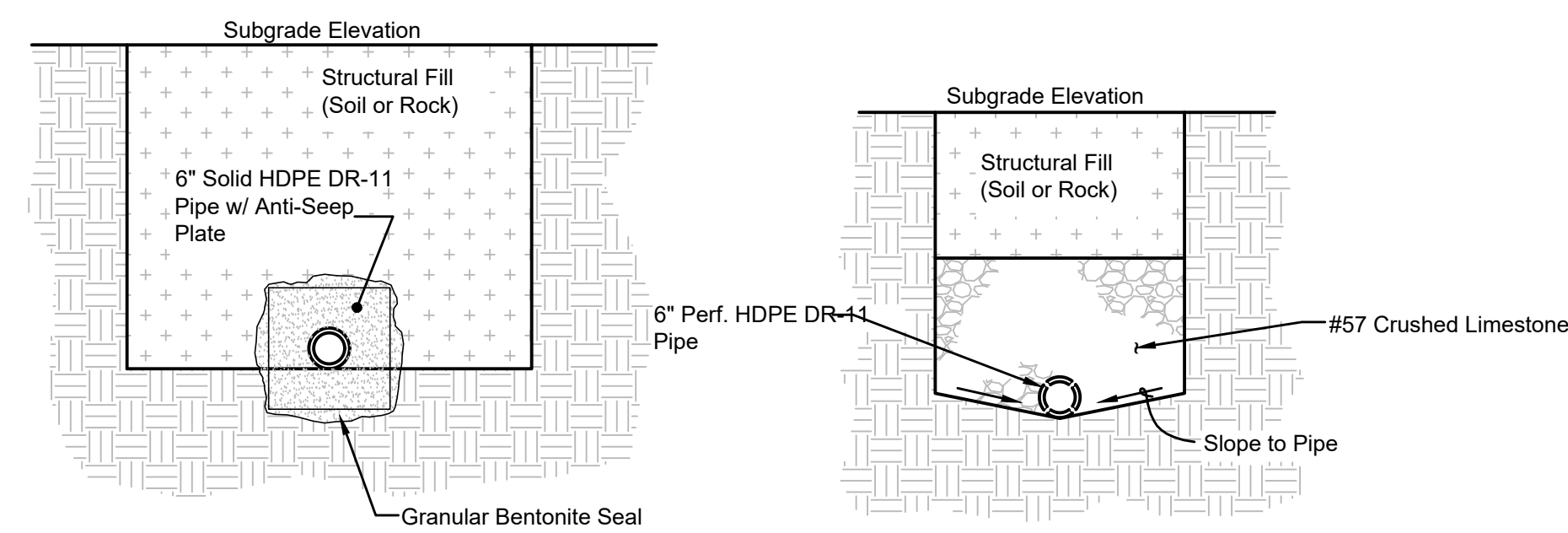
Notes

1. Containment Flap is a total of 7 ft. wide.
2. Flap shall be folded and sand bagged at waste limits.



ANCHOR TRENCH DETAIL

D
11

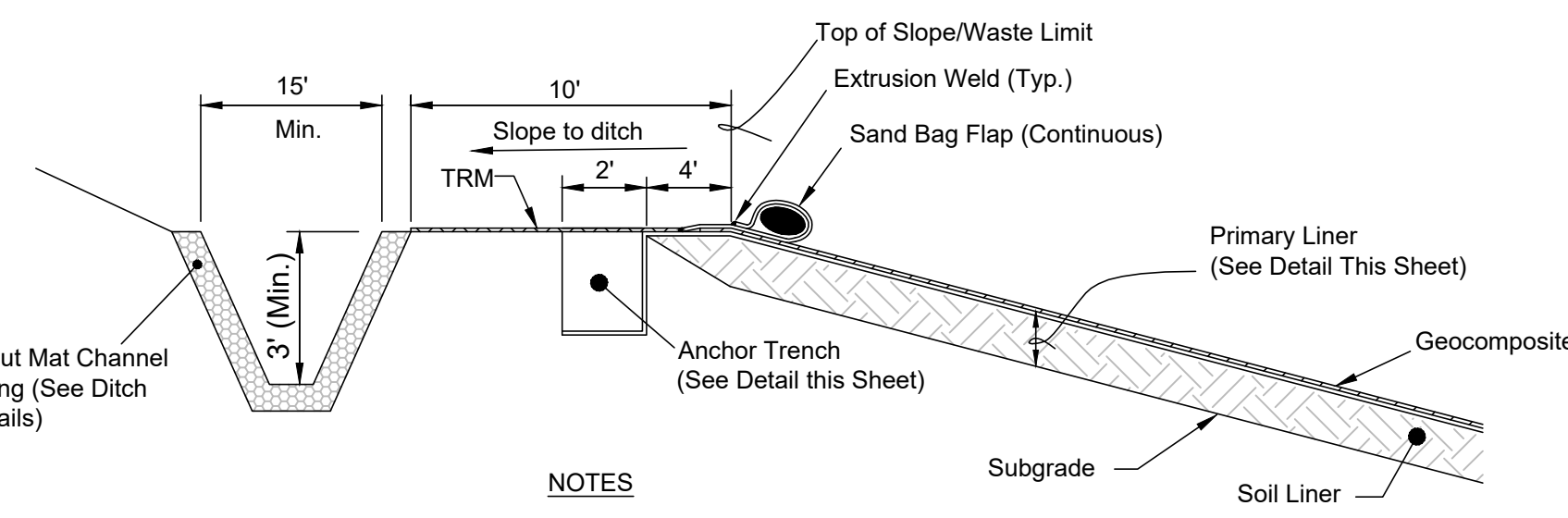


VIEW A-A'

VIEW B-B'

UNDERDRAIN TERMINATION DETAIL (UPGRADIENT)

G
11

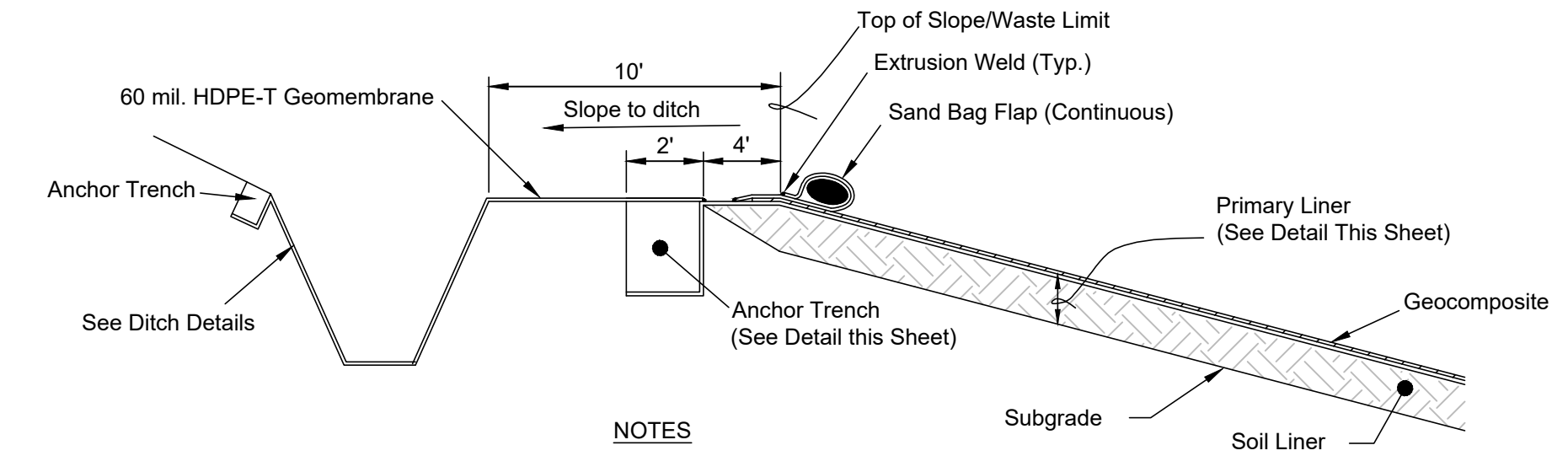


PERMANENT WASTE LIMIT - LINER END TREATMENT

B
11

NOTES

1. The 10' run out shall be sloped (high to low) from top of slope to the ditch (2%).
2. Sand bag flap width is 7'

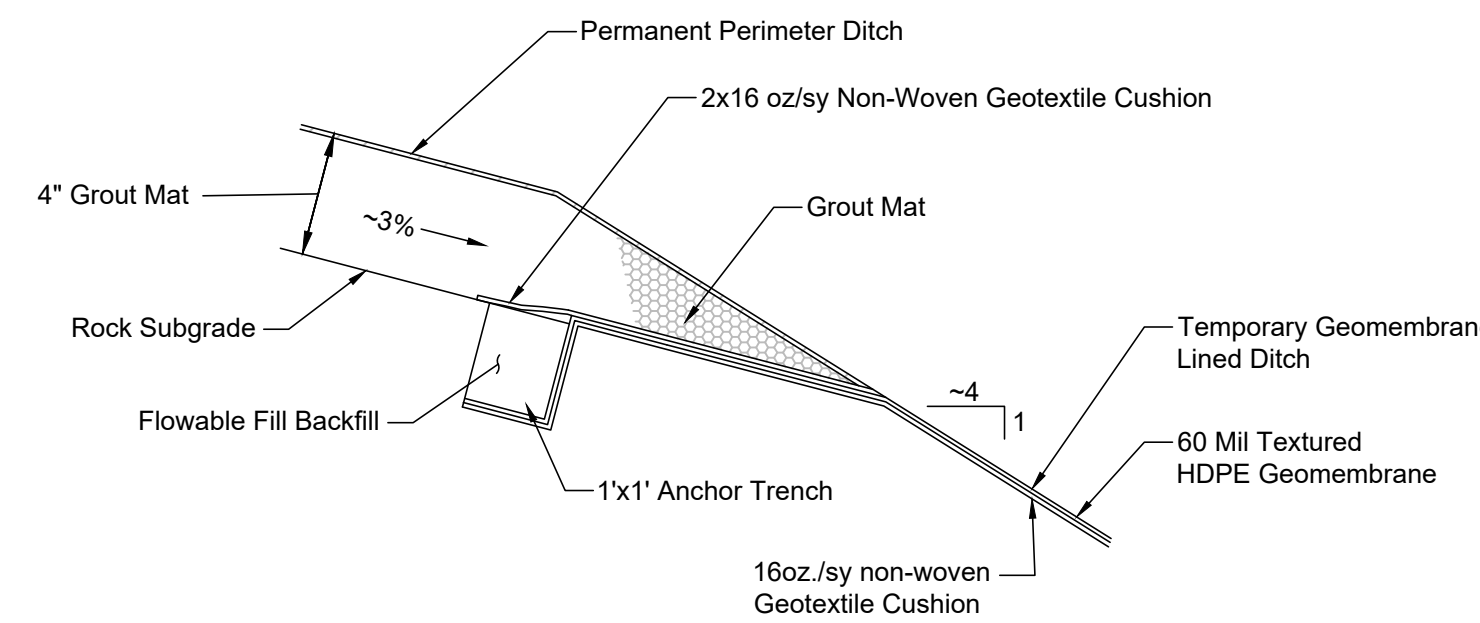


TEMPORARY WASTE LIMIT LINER END TREATMENT

C
11

NOTES

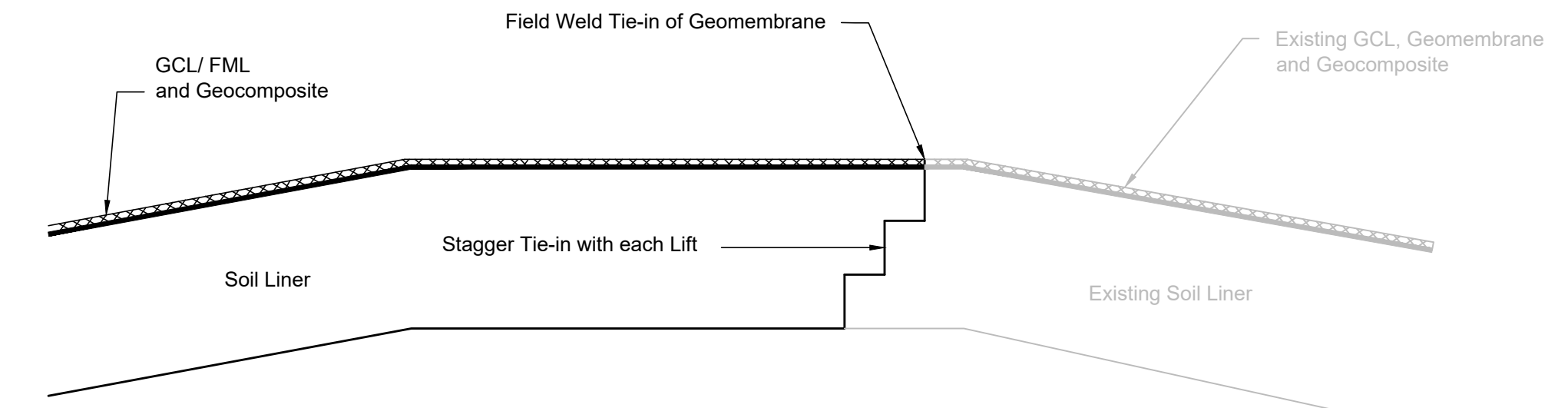
1. The 10' run out shall be sloped (high to low) from top of slope to the ditch (2%).
2. Sand bag flap width is 7'



PERMANENT PERIMETER DITCH TO GEOMEMBRANE DITCH TRANSITION

E
11

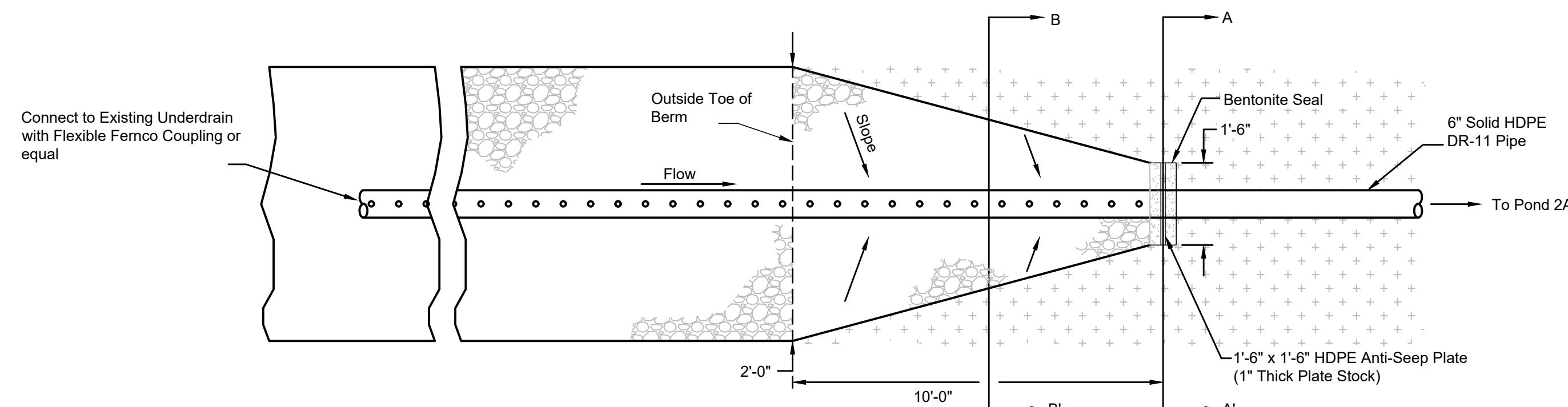
NOTES



GEOSYNTHETIC LINER TIE-IN DETAIL

F
11

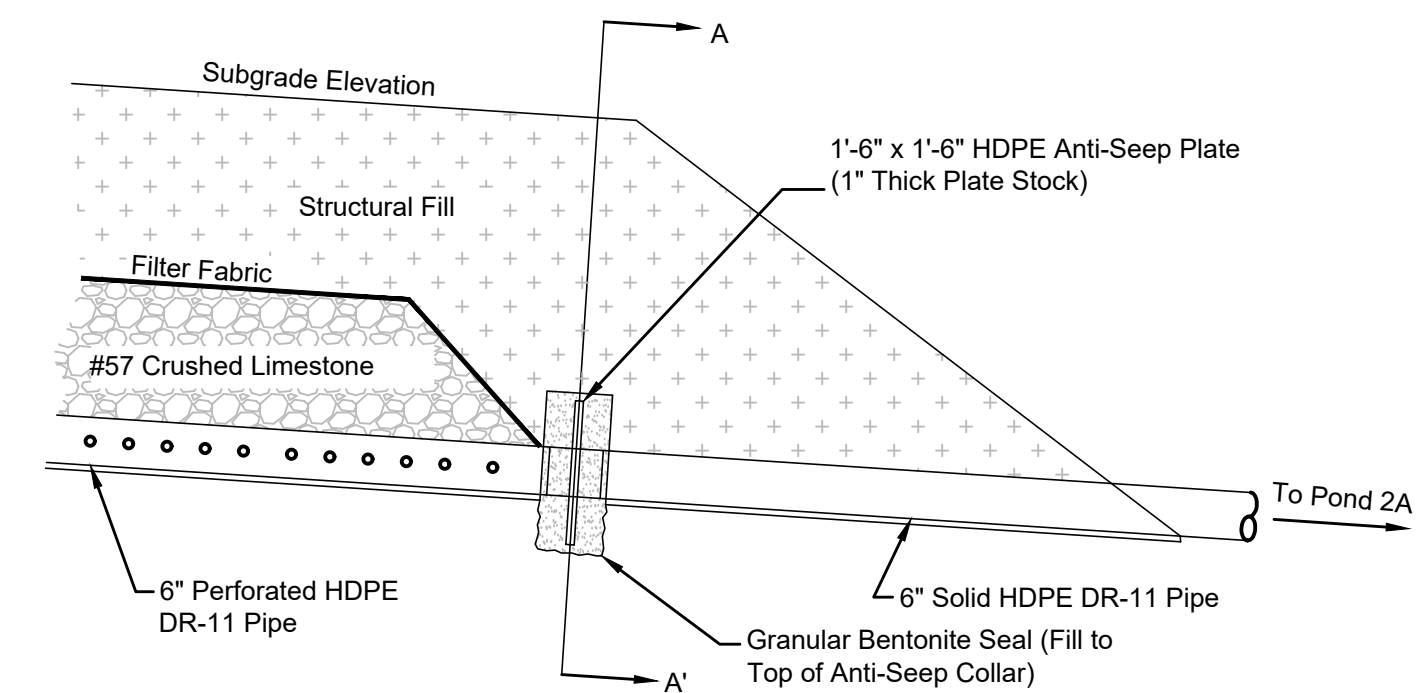
NOTES



UNDERDRAIN PIPE FLOW TRANSITION DETAIL

H
11

NOTES



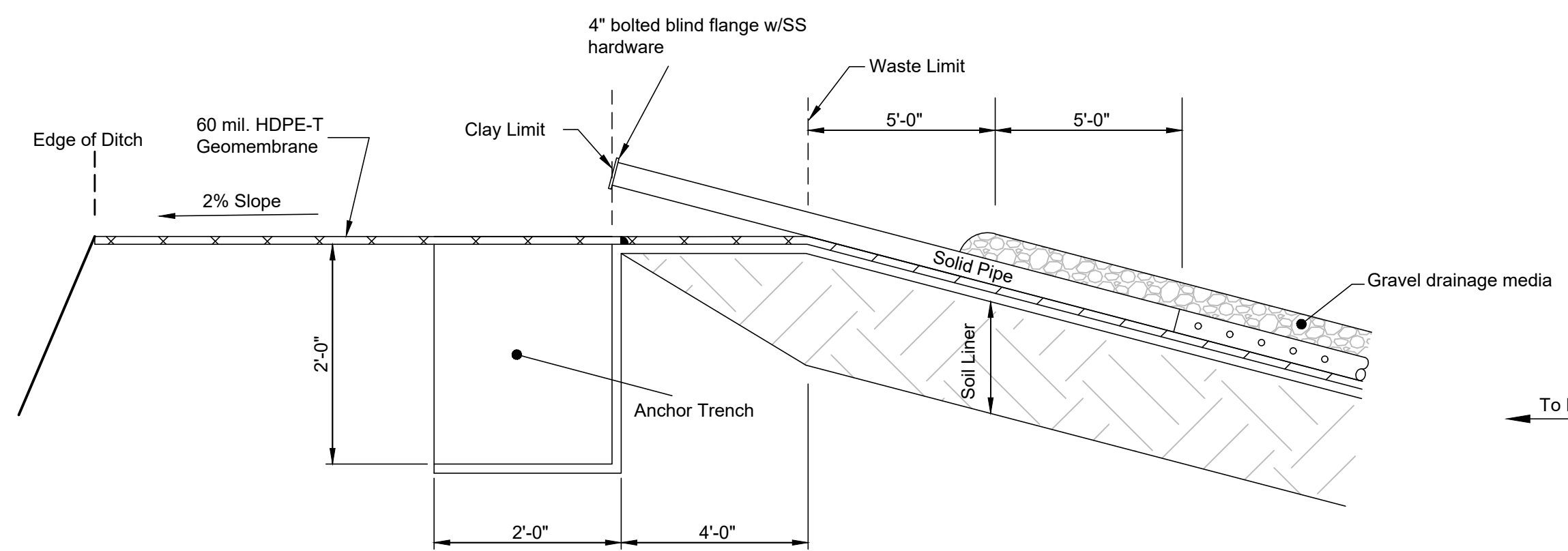
PRIMARY UNDERDRAIN TRENCH DETAIL

I
11

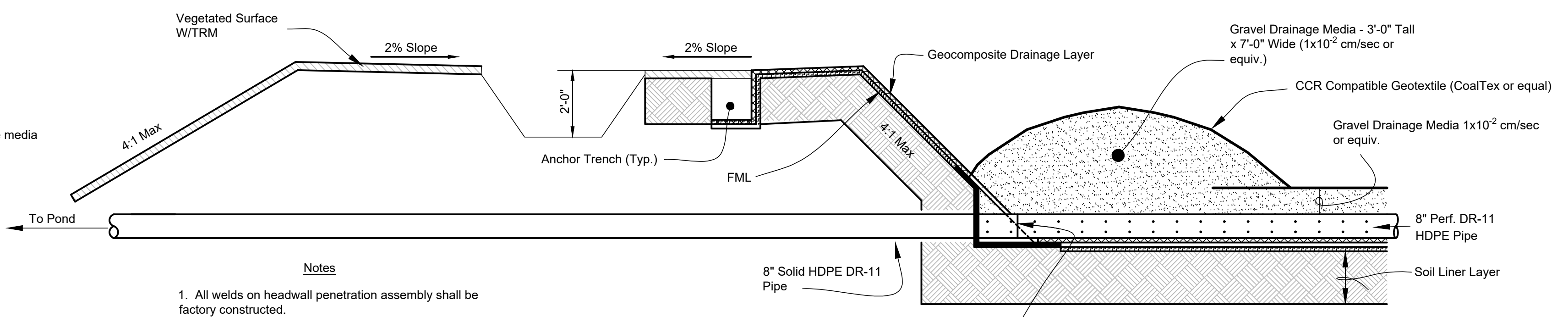
NOTES

NOT FOR CONSTRUCTION DRAFT

DETAILS

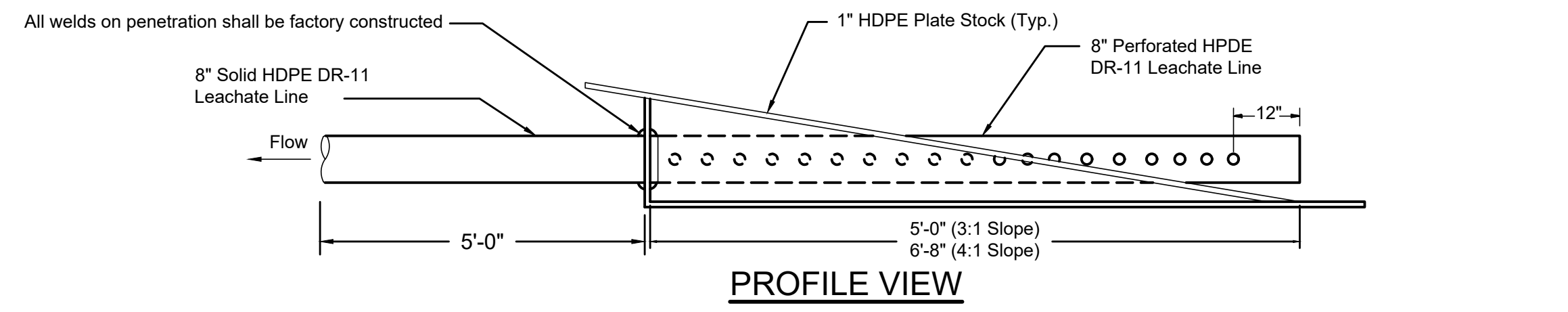


LEACHATE PIPE CLEANOUT DETAIL (A)
N.T.S.

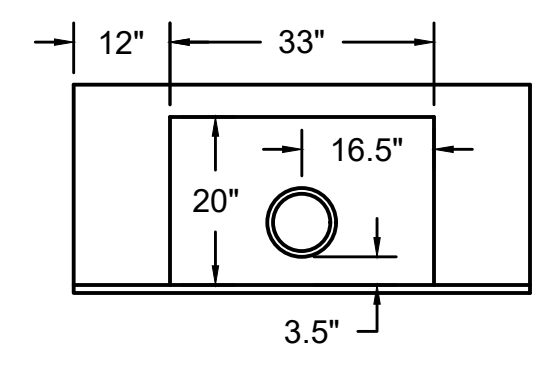


- Notes**
- All welds on headwall penetration assembly shall be factory constructed.
 - FML and geocomposite to end at Flange. FML shall be field welded to HDPE Flange. Extrusion Weld shall receive non-destructive testing.
 - All leachate piping shall be cleaned and/or flushed and accepted by the Owner prior to placing leachate collection system into service.
 - 8" perforated leachate collection line shall be connected to the headwall penetration assembly stub out pipe by butt-fusion welding or electrofusion coupling.

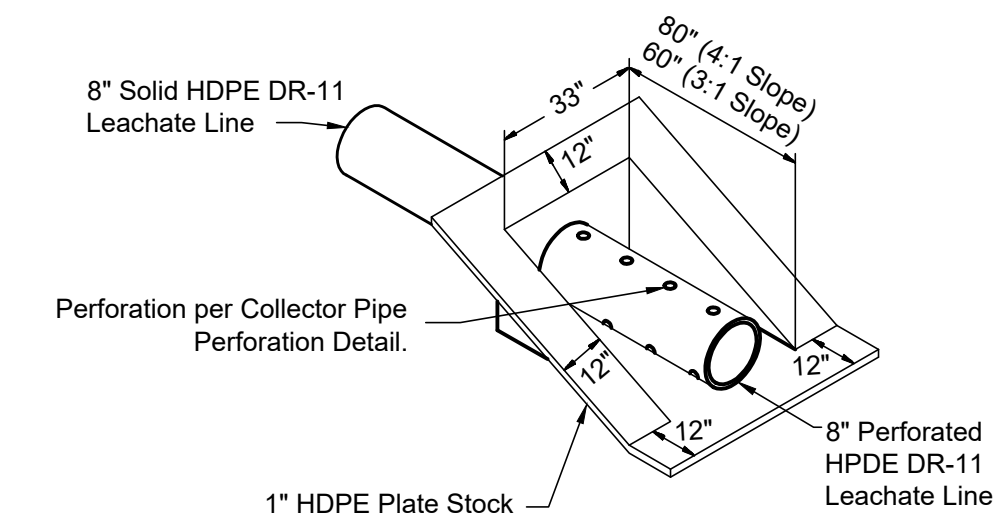
HEADWALL PENETRATION AND TOE DETAIL (B)
N.T.S.



PROFILE VIEW

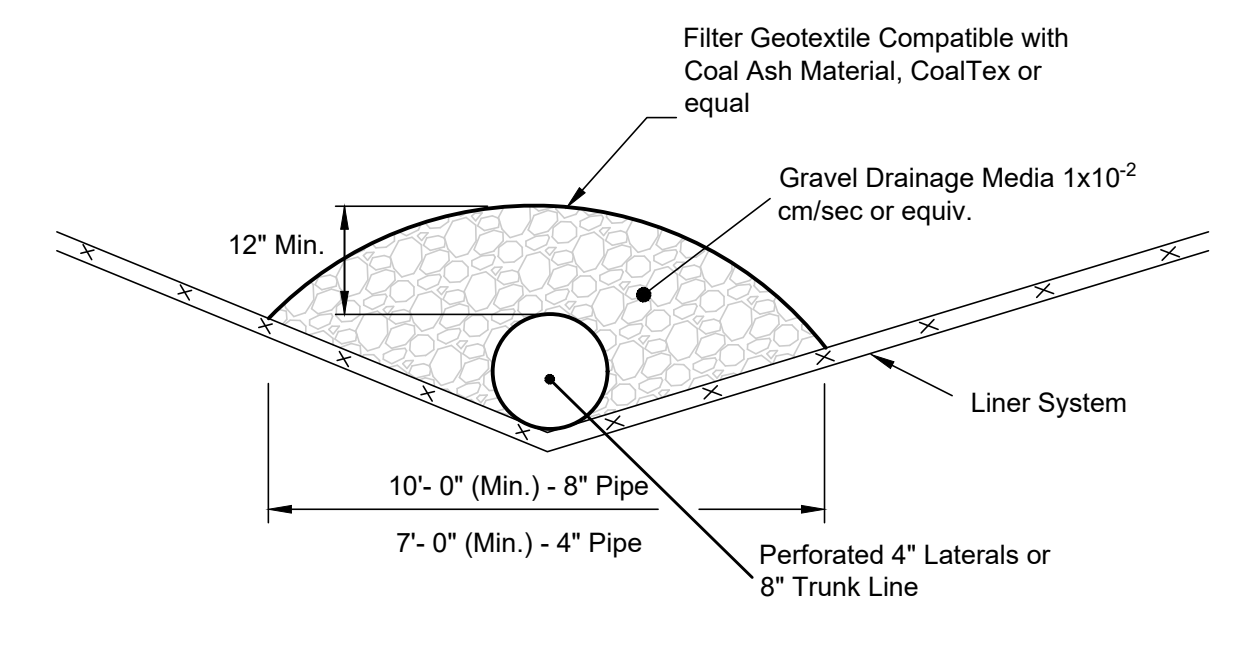


INLET VIEW

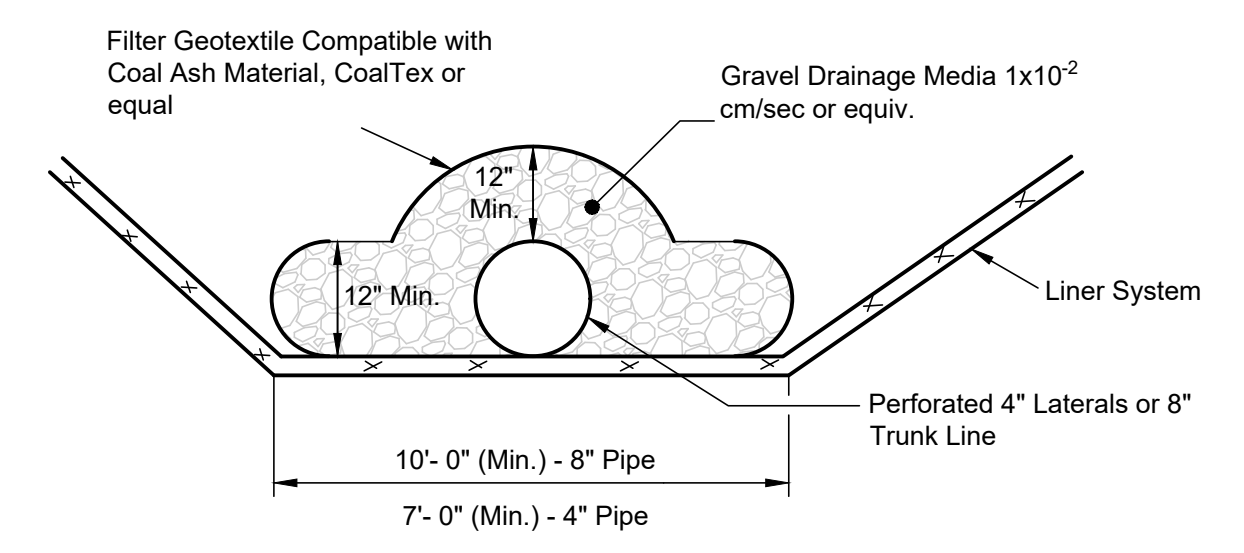


ISOMETRIC VIEW

HEADWALL PENETRATION ASSEMBLY (C)
N.T.S.



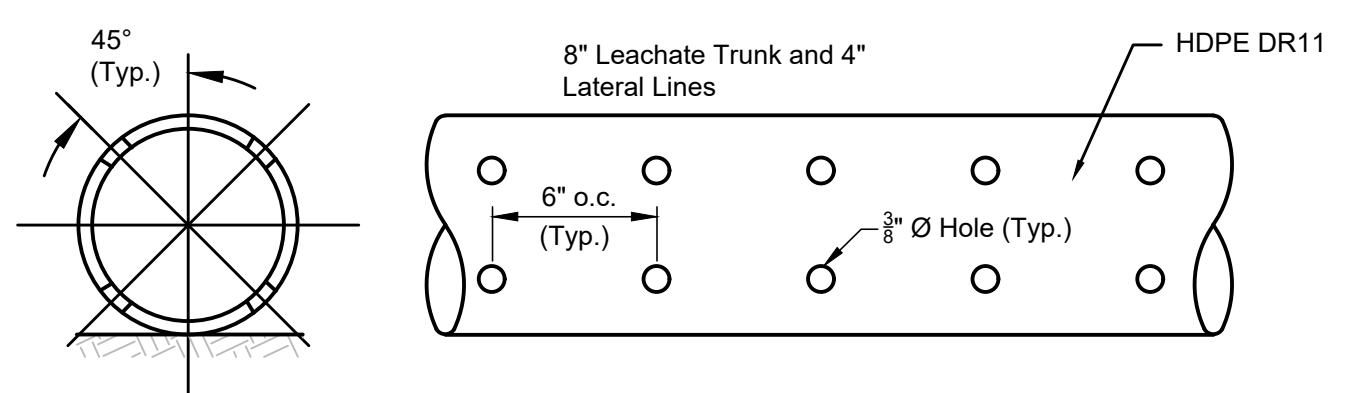
TRIANGULAR SHAPED AND BENCH DRAINAGE PATHWAY (D)
N.T.S.



TRAPEZOIDAL SHAPED DRAINAGE PATHWAY (E)
N.T.S.

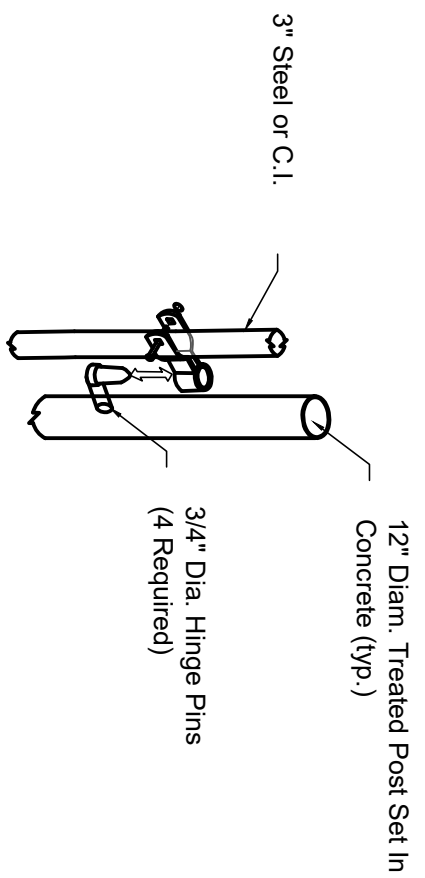
- Notes**
- All Gravel shall be placed with equipment that will not exceed ground pressure of 5 psi and must be approved prior to use by the Owner and Engineer.
 - Drainage media shall be completely encased inside the geotextile. The geotextile seam shall be sewn or fusion welded. CoalTex geotextile (or equal) shall be placed so the non-woven side will be in contact with the CCR waste.

LEACHATE COLLECTION PIPE DETAIL (F)
N.T.S.

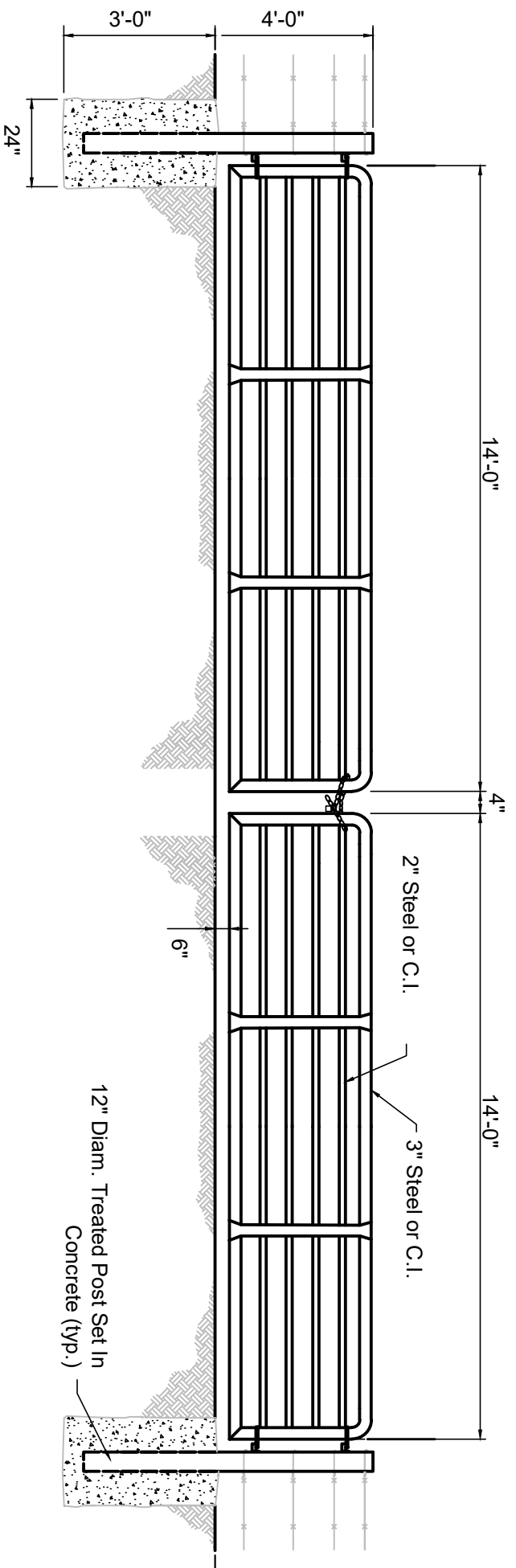


COLLECTION PIPE PERFORATION DETAIL (F)
N.T.S.

**NOT FOR CONSTRUCTION
DRAFT
DETAILS**

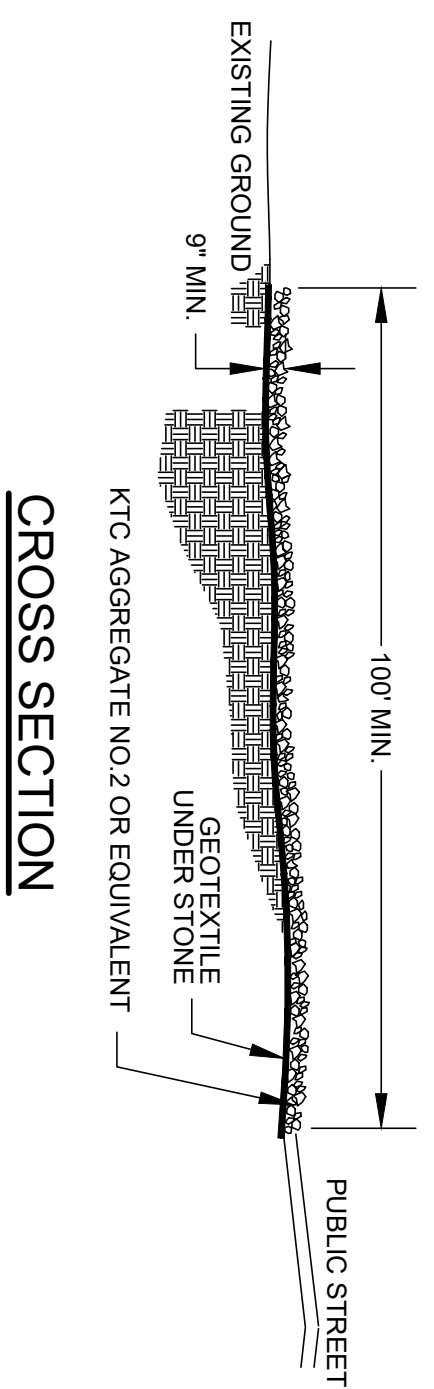


HINGE DETAIL
N.T.S.

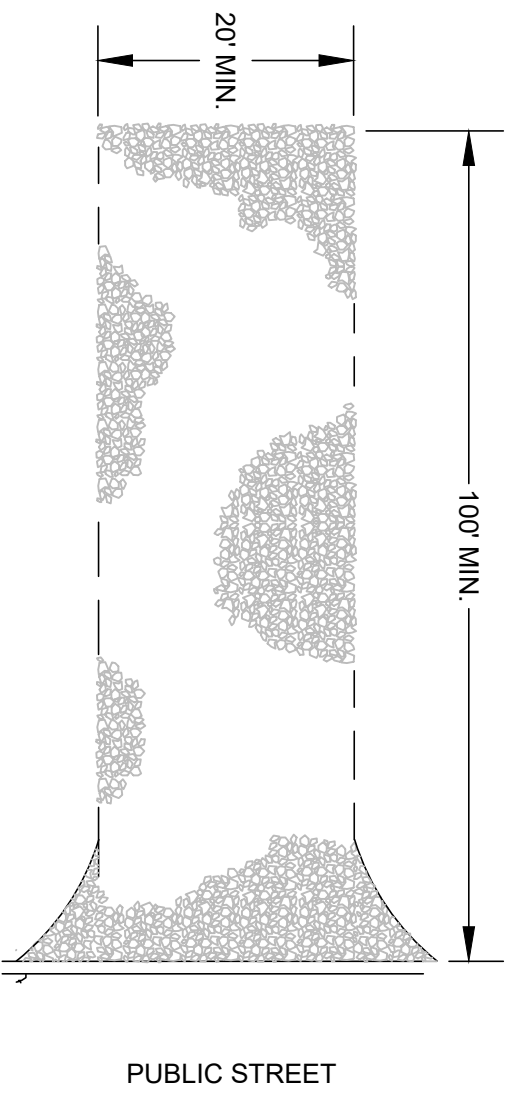


CONSTRUCTION ENTRANCE GATE DETAIL
N.T.S.

(A)
13



CROSS SECTION



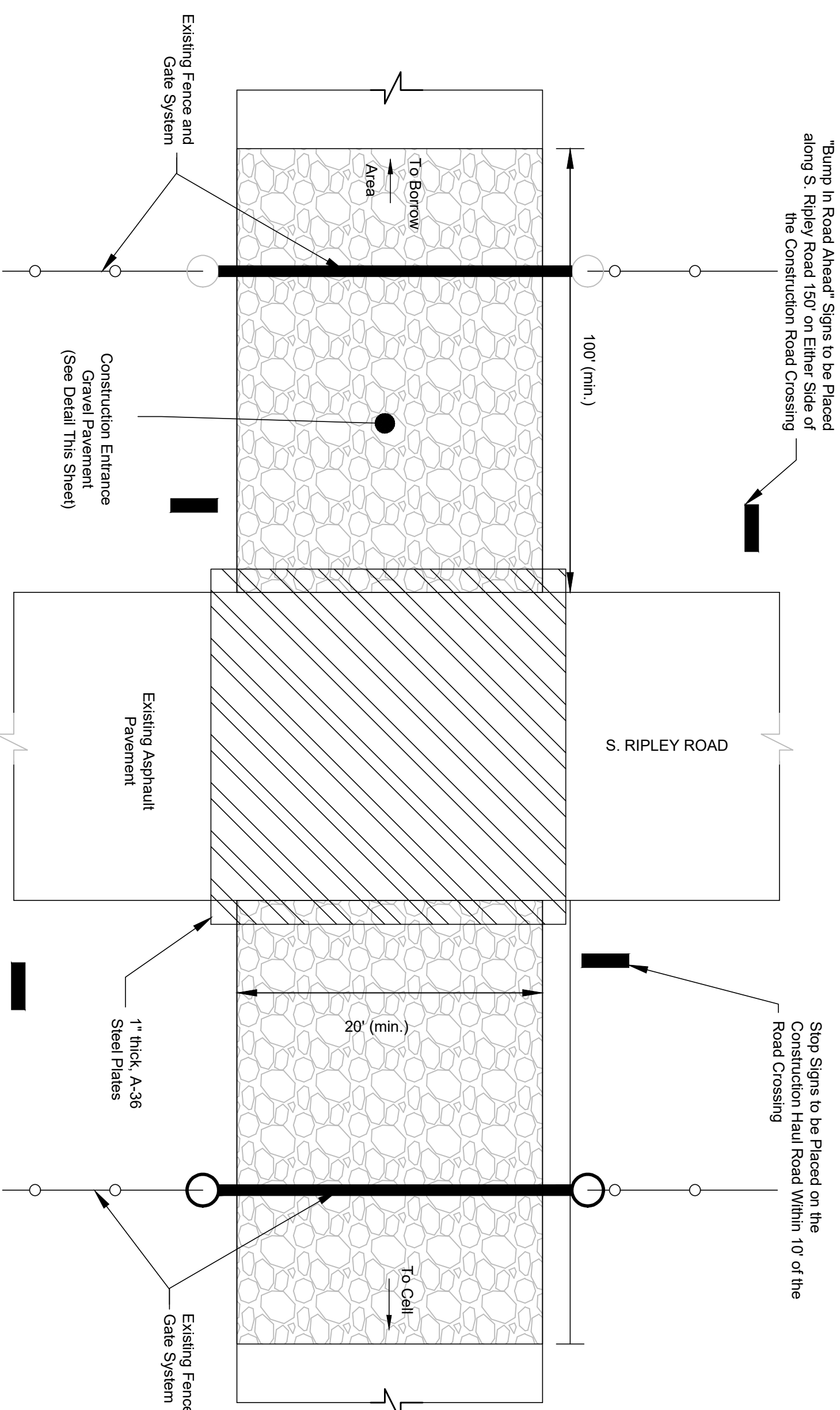
PLAN VIEW

NOTES

1. A STABILIZED ENTRANCE PAD OF CRUSHED STONE SHALL BE LOCATED WHERE TRAFFIC WILL ENTER OR LEAVE THE CONSTRUCTION SITE ONTO A PUBLIC STREET.
2. SOIL STABILIZATION FABRIC SHALL BE USED AS A BASE FOR THE CONSTRUCTION ENTRANCE.
3. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOODING OF SEDIMENT ONTO PUBLIC STREETS OR EXISTING PAVEMENT. THIS MAY REQUIRE PERIODIC MAINTENANCE AND REPAIRS UNDER VARYING CONDITIONS WARRANTY AND REPAIR OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
4. ANY SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC STREETS OR INTO A PUBLIC STREET, WHEN WASHING IS REQUIRED, IT SHALL BE DONE IN AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN.

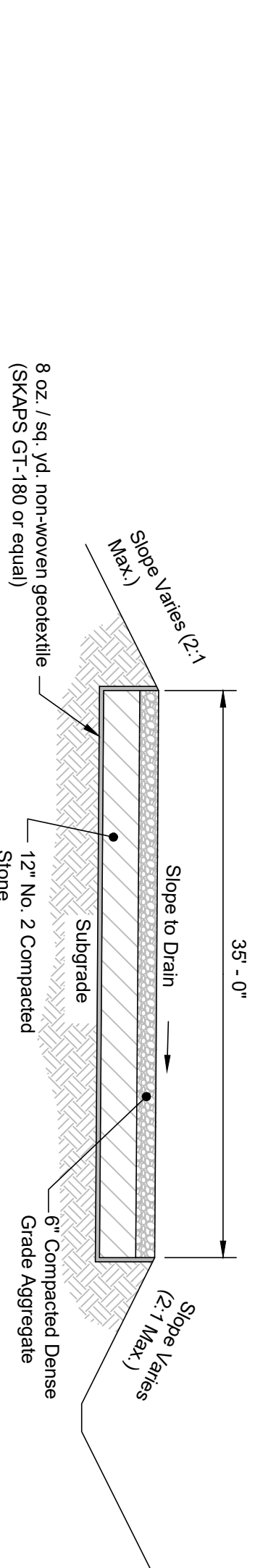
CONSTRUCTION ENTRANCE - GRAVEL PAVEMENT
N.T.S.

(B)
13



COUNTY ROAD CROSSING DETAIL
N.T.S.

(C)
13



HAUL ROAD DETAIL
N.T.S.

(D)
13

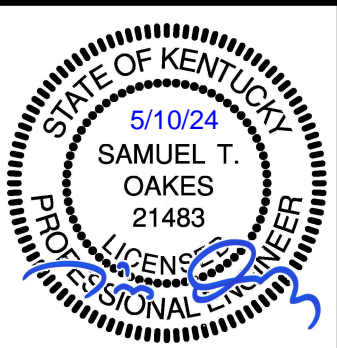
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DETAILS



KENVIRONS
Civil & Environmental Engineers

DRAWN BY: MAS
CHECKED BY: SMR
CHECKED BY: STO
DATE: APRIL 2024
SCALE: AS NOTED
REVISIONS



PEGS HILL LANDFILL
MASON COUNTY, KENTUCKY
PHASE 3
CONSTRUCTION PLANS



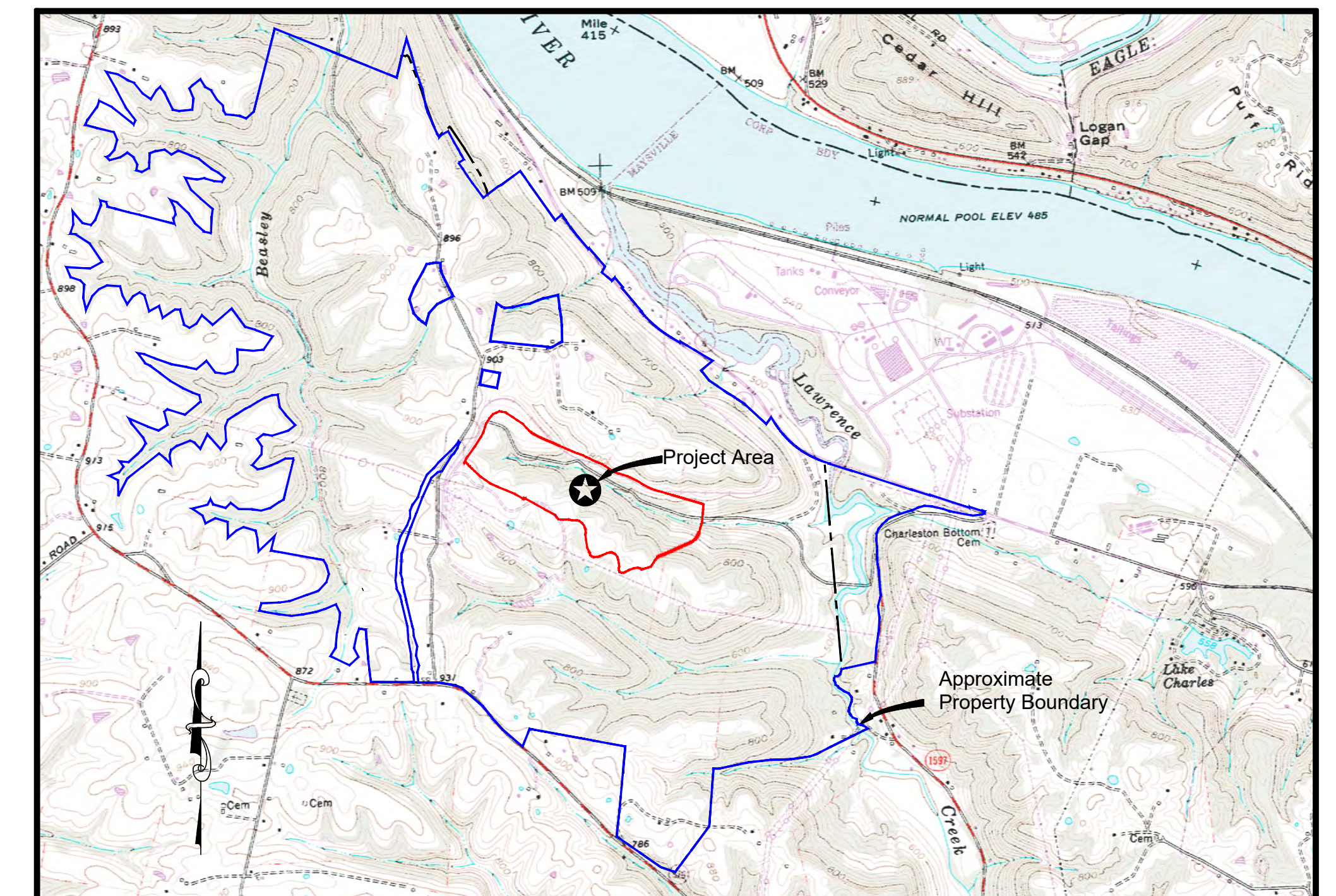
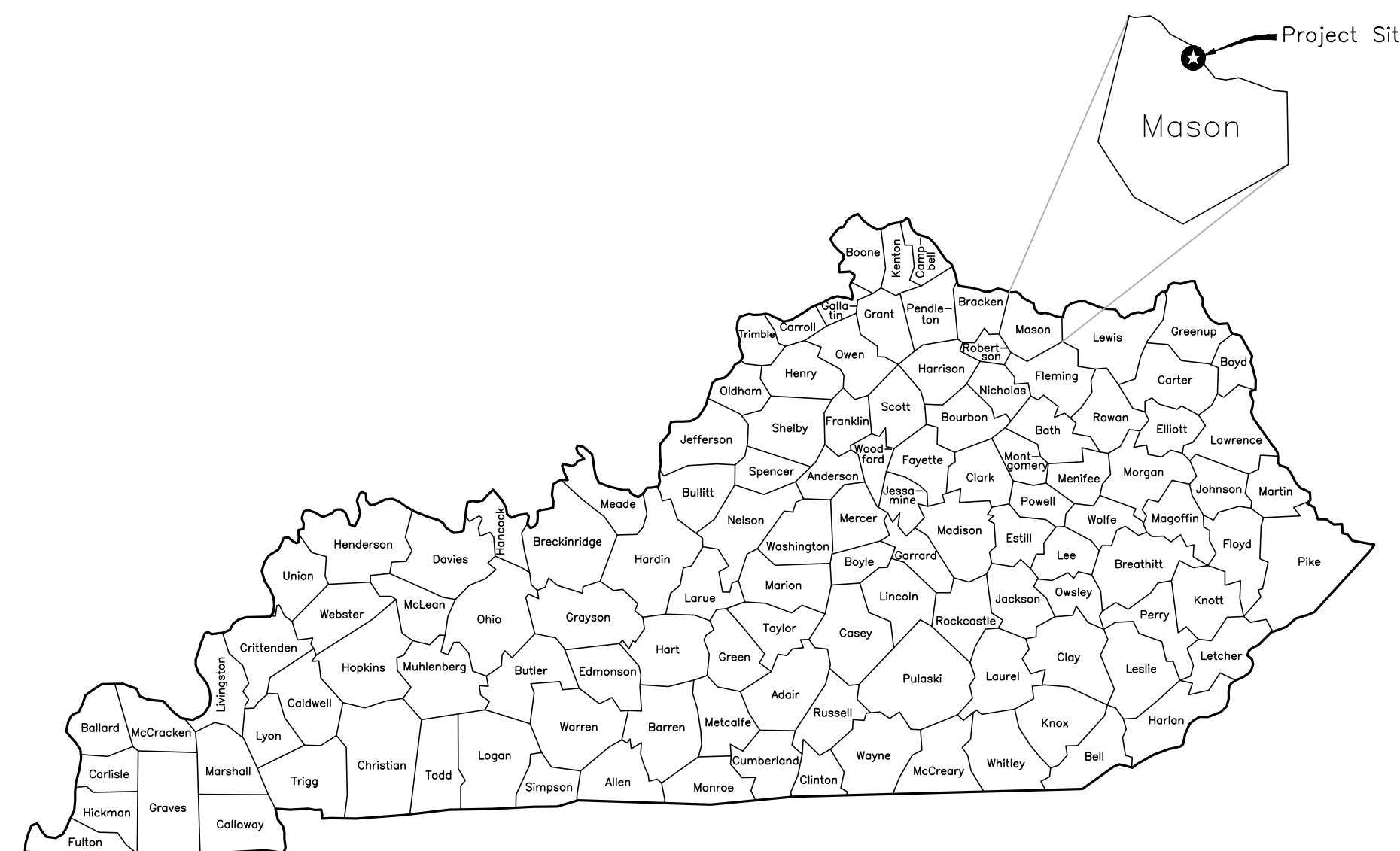
PROJECT NO.
2023123

SHEET NO.
13 of 13

PHASE 3 PART 2 DESIGN PLANS AT EAST KENTUCKY POWER COOPERATIVE, INC. PEGS HILL LANDFILL MASON COUNTY, KENTUCKY PERMIT NO. 081-00005 MAY 2024

INDEX OF SHEETS

DESCRIPTION	SHEET NO.
TITLE SHEET	1
GENERAL SITE LAYOUT	2
DEMOLITION / STORMWATER MANAGEMENT PLAN	3
SUBGRADE STAKING PLAN	4
SUBGRADE ISOPACH	5
SOIL LINER STAKING PLAN	6
LEACHATE COLLECTION SYSTEM & GEOSYNTHETICS PLAN	7
DETAILS	8-11



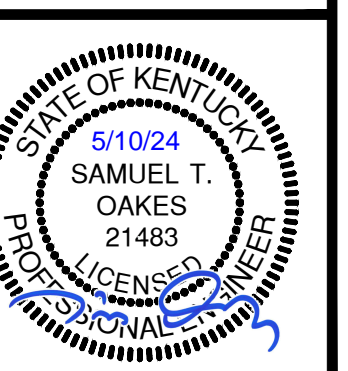
LOCATION MAP
SCALE: 1"= 2000'

Prepared For:



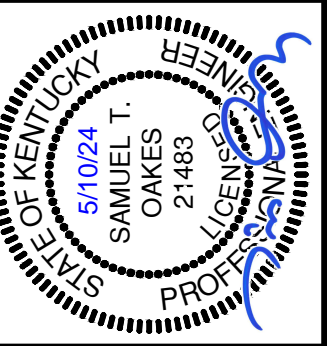
East Kentucky Power Cooperative
4775 Lexington Road
P.O. Box 707
Winchester, Kentucky 40392-0707

Prepared By:

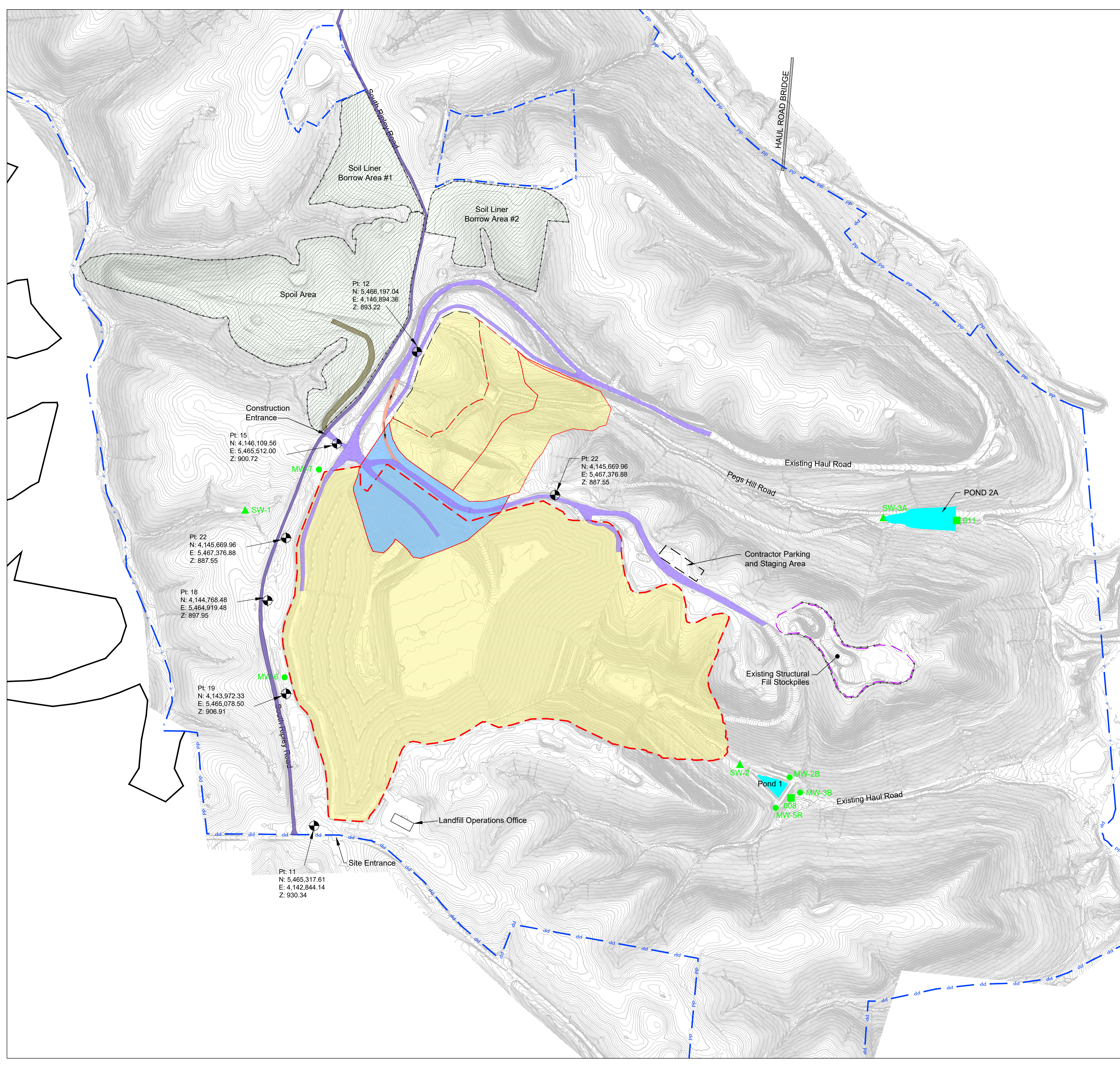


**NOT FOR CONSTRUCTION
DRAFT**

QA/QC: _____ DATE: _____



DRAWN BY: MAS
CHECKED BY: SMO
DATE: MAY 2024
SCALE: AS NOTED
REVISIONS:



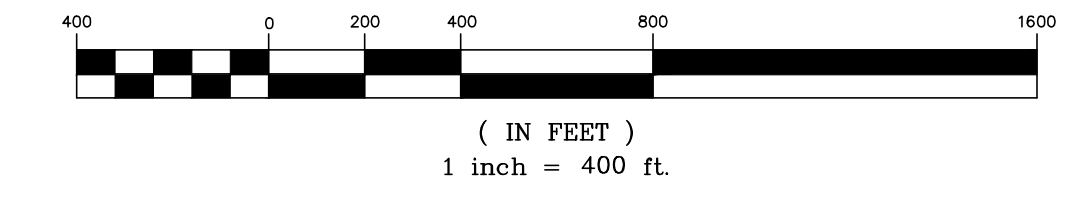
LEGEND

- Existing Contours
- Tree Line
- Tree
- Utility Pole
- Drain
- Fence
- Spot Elevation
- Existing Access Road
- Approximate Property Boundary
- Approximate Permit Boundary
- Approximate Property & Permit Boundary
- Previously Constructed Liner Area
- Proposed, Phase 3 Part 2
- Soil Liner Borrow Area
- Permanent Survey Marker
- Groundwater Monitoring Well
- Surface Water Monitoring Point
- KPDES Monitoring Point
- Proposed Silt Fence
- Paved 1-Way Shared Haul Road
- Paved 2-Way Shared Haul Road
- County Road
- Unpaved 2-Way Shared Haul Road
- Unpaved 2-Way Haul Road
- 1 Lane Shared Haul Road Bridge

NOTES

1. Contractor may only perform tree clearing activities within the identified borrow area(s) between October 15th and March 31st.
2. Grading of Borrow Areas shall maintain positive drainage without any standing water. Proper sediment control shall be used to prohibit the migration of sediments per the site's existing Stormwater Pollution Prevention Plan (SWP3). All disturbed areas shall be re-vegetated to a minimum of 90% vegetative growth.
3. Sediment controls shown are minimum required controls. Contractor shall be responsible for providing and maintaining as many structures as needed to eliminate the migration of sediment offsite and/or into Waters of the Commonwealth. This is incidental to construction activities and therefore the responsibility of the Contractor to provide at no expense to EKPC beyond those items addressed on the Bid Schedule.
4. No equipment allowed on existing ditches.
5. All horizontal coordinates listed are projected in NAD83 State Plane Kentucky Single Zone (US Foot). Elevation data is based on the NAVD88 vertical datum.
6. Topography from Aerial Surveys performed in 2018 by GRW with EKPC 10-30-23 Topo.
7. Contractor shall phase construction activities in a manner to not disrupt any material hauling to the active landfill area. This will include completion of the cell liner area where current haul routes exist and providing temporary haul roads/ modifications where necessary.

GRAPHIC SCALE



**NOT FOR CONSTRUCTION
DRAFT**

GENERAL SITE LAYOUT

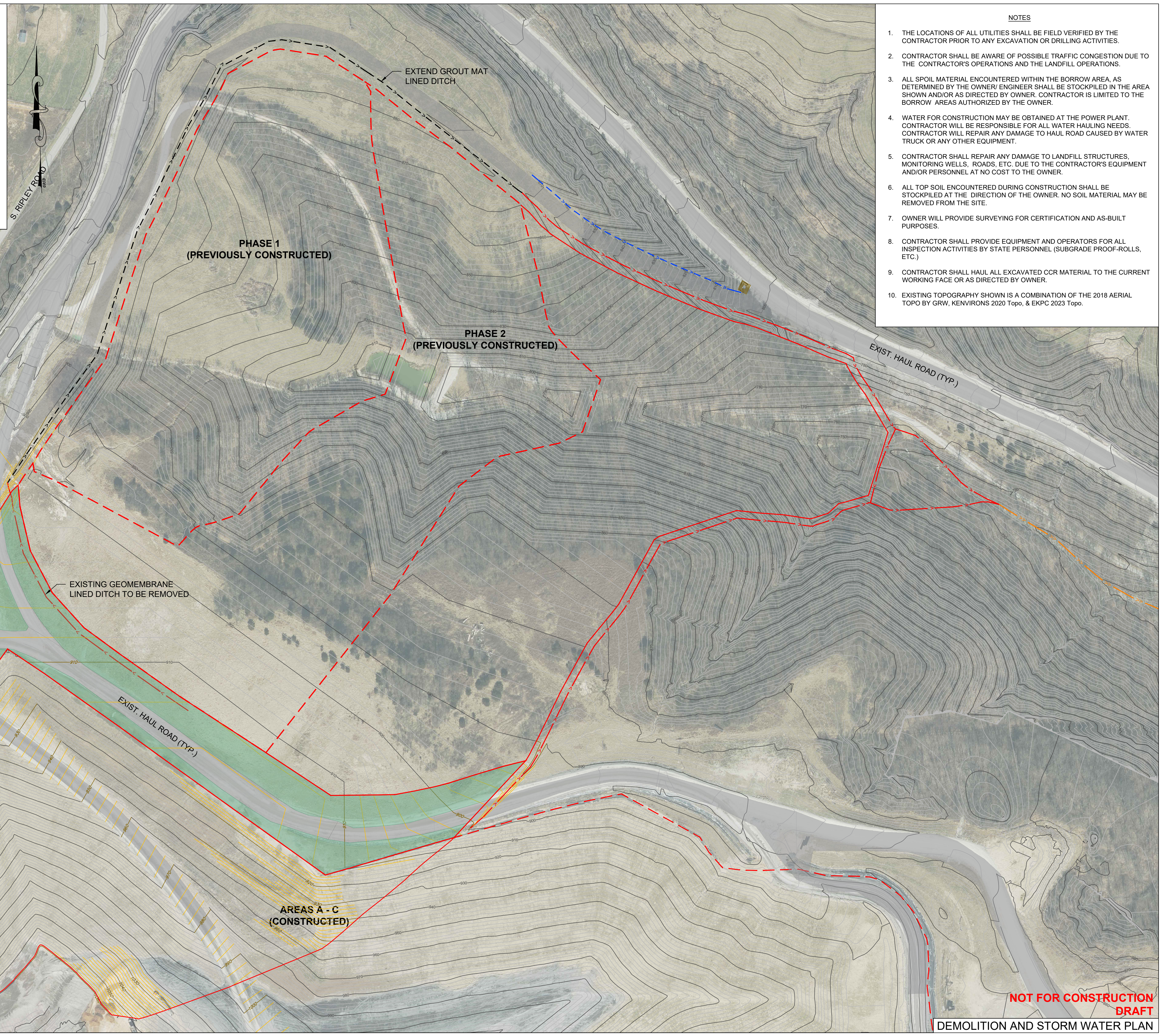
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LEGEND

- CONSTRUCTED WASTE LIMITS ---
- PHASE 3, PART 2 WASTE LIMITS (14.57 AC.) ---
- SUBGRADE CONTOURS ---
- EXISTING GROUND CONTOURS ---
- EXISTING GEOMEMBRANE LINED DITCH (To Be Removed) >>>
- EXISTING GROU/MAT CONVEYANCE CHANNEL >>>
- EXISTING GROU/MAT LINED DITCH >>>
- PROPOSED GEOMEMBRANE LINED DITCH >>>
- PROPOSED GROU/MAT LINED DITCH >>>
- VEGETATION/TOPSOIL STRIPPING (3.9 AC) ---

GRAPHIC SCALE

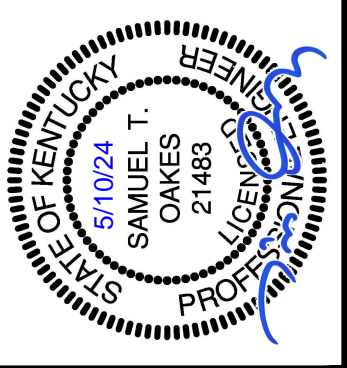
(IN FEET)
1 inch = 100 ft.



- NOTES**
1. THE LOCATIONS OF ALL UTILITIES SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO ANY EXCAVATION OR DRILLING ACTIVITIES.
 2. CONTRACTOR SHALL BE AWARE OF POSSIBLE TRAFFIC CONGESTION DUE TO THE CONTRACTOR'S OPERATIONS AND THE LANDFILL OPERATIONS.
 3. ALL SPOIL MATERIAL ENCOUNTERED WITHIN THE BORROW AREA, AS DETERMINED BY THE OWNER/ ENGINEER SHALL BE STOCKPILED IN THE AREA SHOWN AND/OR AS DIRECTED BY OWNER. CONTRACTOR IS LIMITED TO THE BORROW AREAS AUTHORIZED BY THE OWNER.
 4. WATER FOR CONSTRUCTION MAY BE OBTAINED AT THE POWER PLANT. CONTRACTOR WILL BE RESPONSIBLE FOR ALL WATER HAULING NEEDS. CONTRACTOR WILL REPAIR ANY DAMAGE TO HAUL ROAD CAUSED BY WATER TRUCK OR ANY OTHER EQUIPMENT.
 5. CONTRACTOR SHALL REPAIR ANY DAMAGE TO LANDFILL STRUCTURES, MONITORING WELLS, ROADS, ETC. DUE TO THE CONTRACTOR'S EQUIPMENT AND/OR PERSONNEL AT NO COST TO THE OWNER.
 6. ALL TOP SOIL ENCOUNTERED DURING CONSTRUCTION SHALL BE STOCKPILED AT THE DIRECTION OF THE OWNER. NO SOIL MATERIAL MAY BE REMOVED FROM THE SITE.
 7. OWNER WILL PROVIDE SURVEYING FOR CERTIFICATION AND AS-BUILT PURPOSES.
 8. CONTRACTOR SHALL PROVIDE EQUIPMENT AND OPERATORS FOR ALL INSPECTION ACTIVITIES BY STATE PERSONNEL (SUBGRADE PROOF-ROLLS, ETC.)
 9. CONTRACTOR SHALL HAUL ALL EXCAVATED CCR MATERIAL TO THE CURRENT WORKING FACE OR AS DIRECTED BY OWNER.
 10. EXISTING TOPOGRAPHY SHOWN IS A COMBINATION OF THE 2018 AERIAL TOPO BY GRW, KENVIRONS 2020 Topo, & EKPC 2023 Topo.



PEGS HILL LANDFILL
MASON COUNTY, KENTUCKY
PHASE 3 PART 2
CONSTRUCTION PLANS



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CHECKED BY: STO
DATE: MAY 2024
SCALE: AS NOTED
REVISIONS

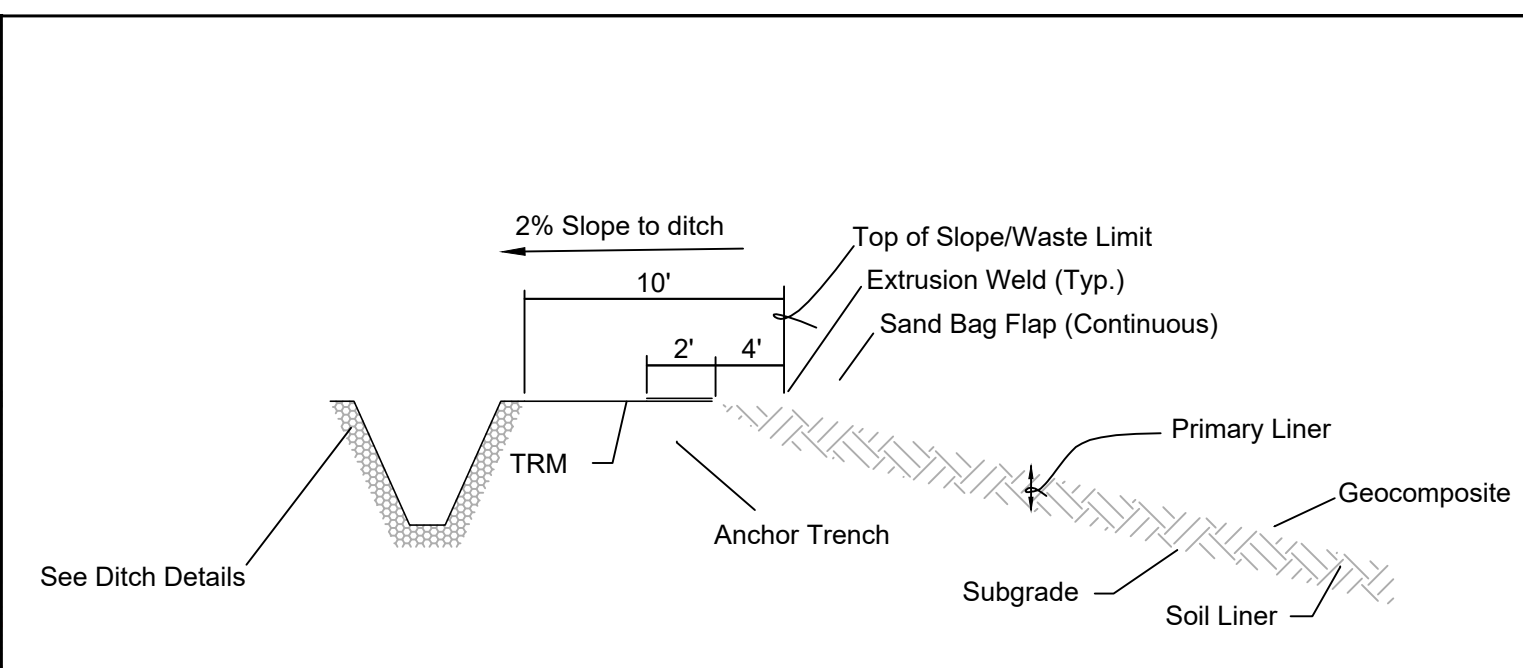
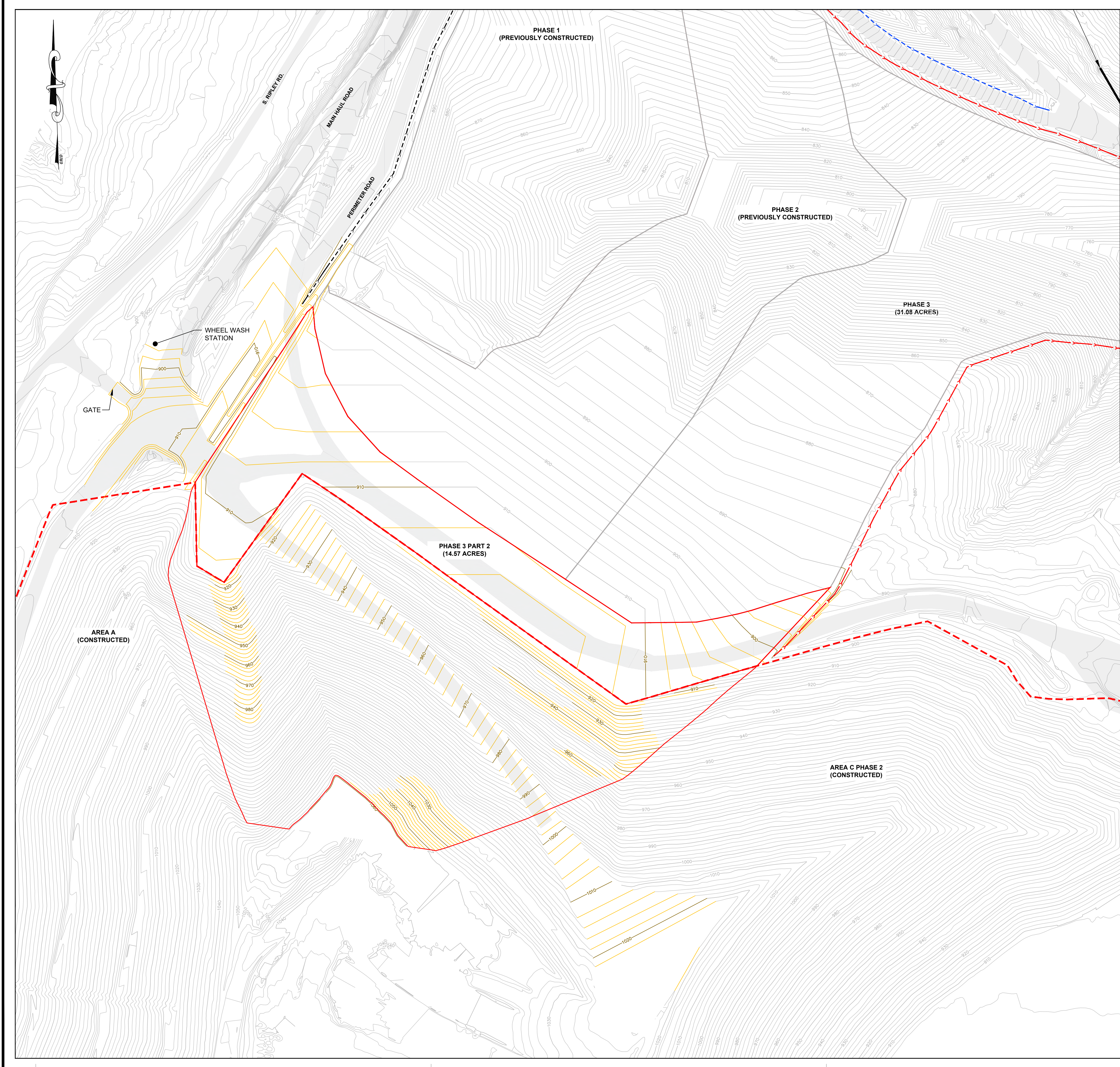
KENVIRONS
Civil & Environmental Engineers



PROJECT NO. 2023123
SHEET NO. 3 of 11

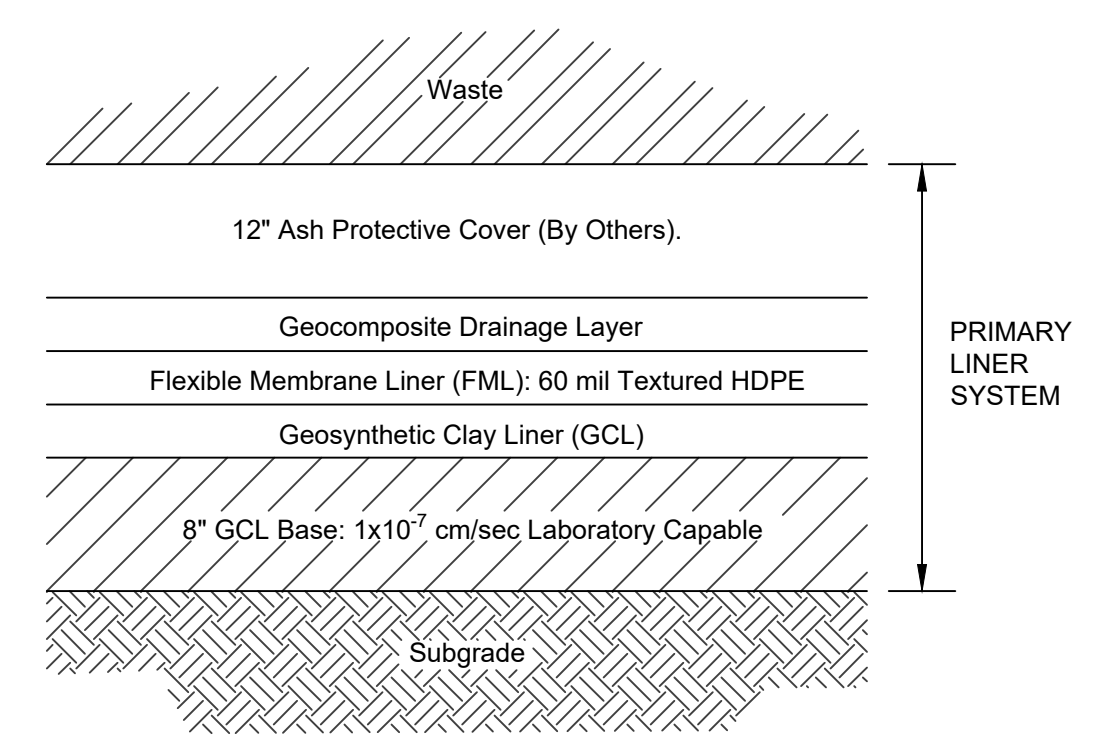
NOT FOR CONSTRUCTION
DRAFT
DEMOLITION AND STORM WATER PLAN

N:\P0203123\PHASE 3 PART 2 OVERLAY CONSTRUCTION PLANS\DEMOLITION & SURFACE WATER PLAN.dwg, 5/10/2024 3:55:52 PM



- NOTES**
1. The 10' run out shall be sloped (high to low) from top of slope to the ditch (2%).
 2. Sand bag flap width is 7'

PERMANENT WASTE LIMIT - LINER END TREATMENT
N.T.S.

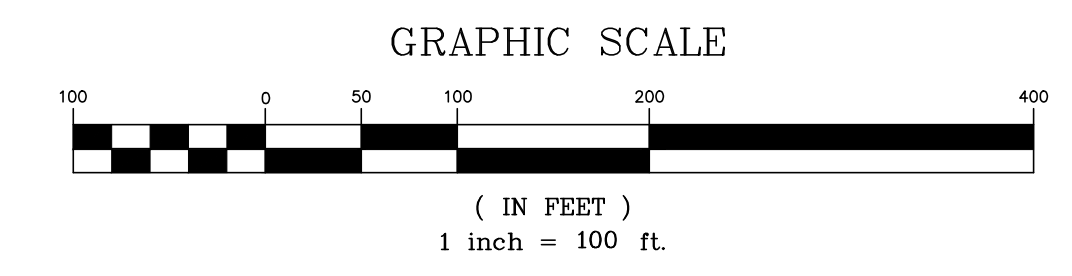


LINER SYSTEM DESIGN
N.T.S.

LEGEND

- PHASE 1, 2 & 3 WASTE LIMITS
- PHASE 3 PART 2 WASTE LIMITS (14.57 AC.)
- CONSTRUCTED WASTE LIMITS (SPURLOCK LANDFILL)
- PHASE 3 PART 2 SUBGRADE CONTOURS
- EXISTING GROUND CONTOURS EXISTING ROAD
- EXISTING GEOMEMBRANE LINED DITCH (To Be Removed)
- EXISTING GROUTMAT CONVEYANCE CHANNEL
- EXISTING GROUTMAT LINED DITCH
- PROPOSED GEOMEMBRANE LINED DITCH
- PROPOSED GROUTMAT LINED DITCH

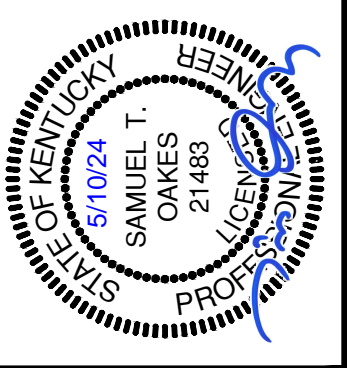
- NOTES:**
- 1.) Existing topography shown is the 12-07-23 aerial topo by MIKON
 - 2.) Horizontal site control is in the Kentucky Single Zone Coordinate System of 1983 (NAD83) - US Foot elevations are based on the North American Vertical Datum of 1988 (NAVD88).



PHASE 3 PART 2 SUBGRADE



PEGS HILL LANDFILL
MASON COUNTY, KENTUCKY
PHASE 3 PART 2
CONSTRUCTION PLANS



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SCALE: AS NOTED
REVISIONS

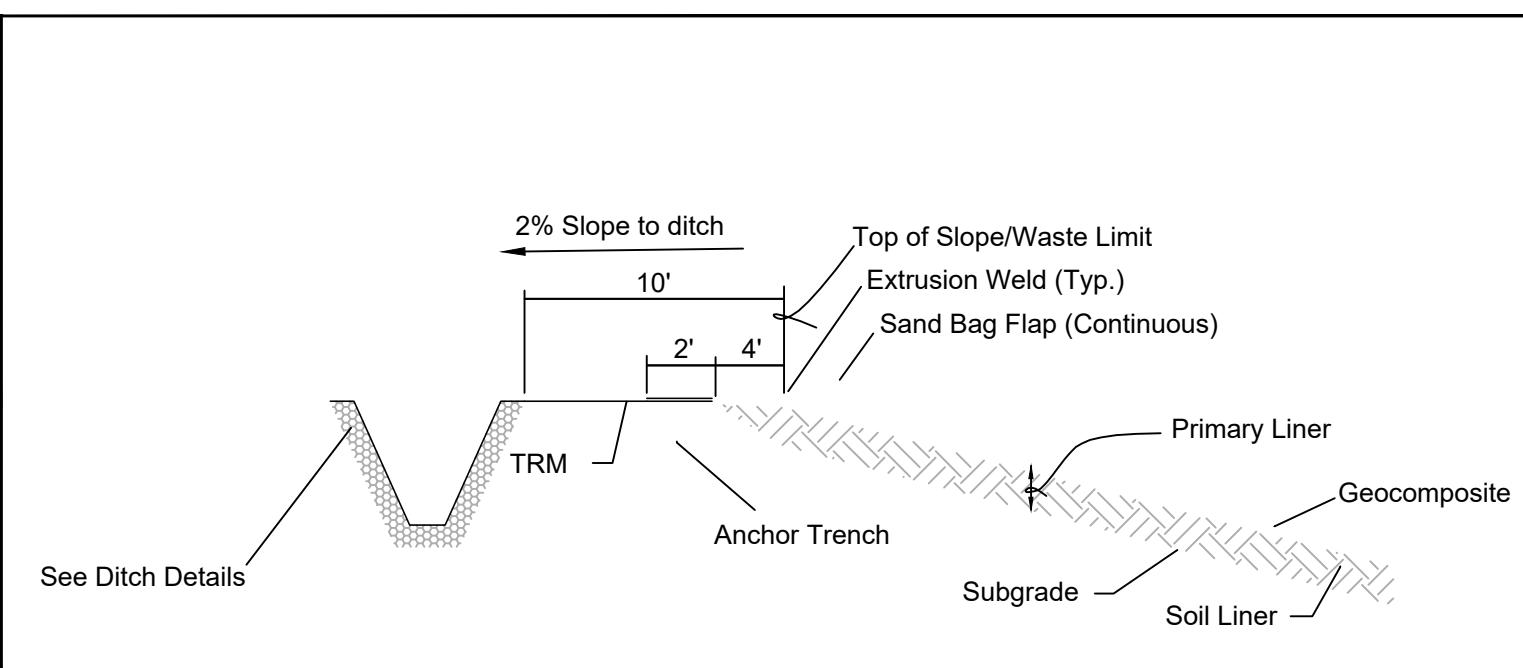
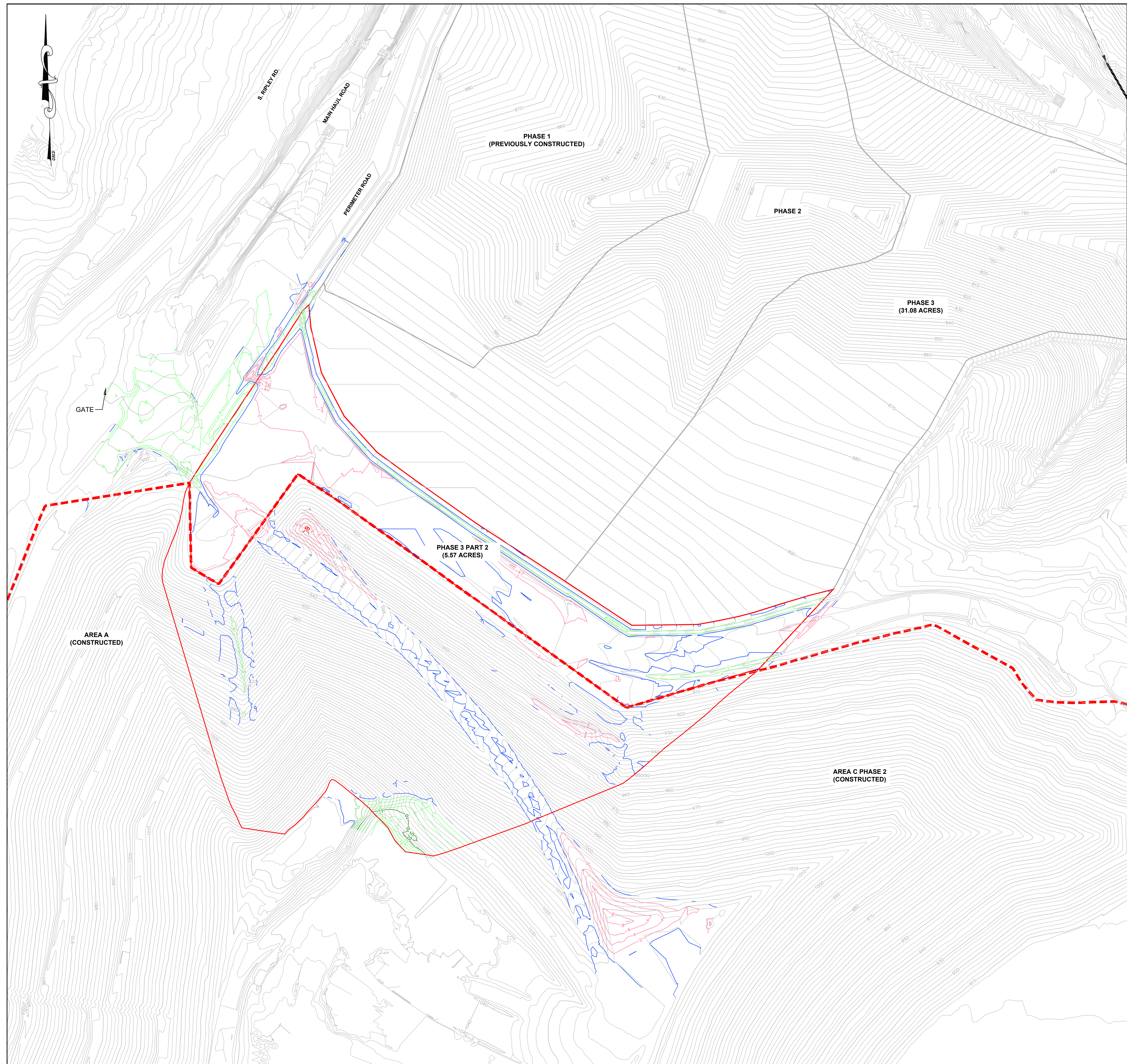
KENVIRONS
Civil & Environmental Engineers



PROJECT NO.
2023123

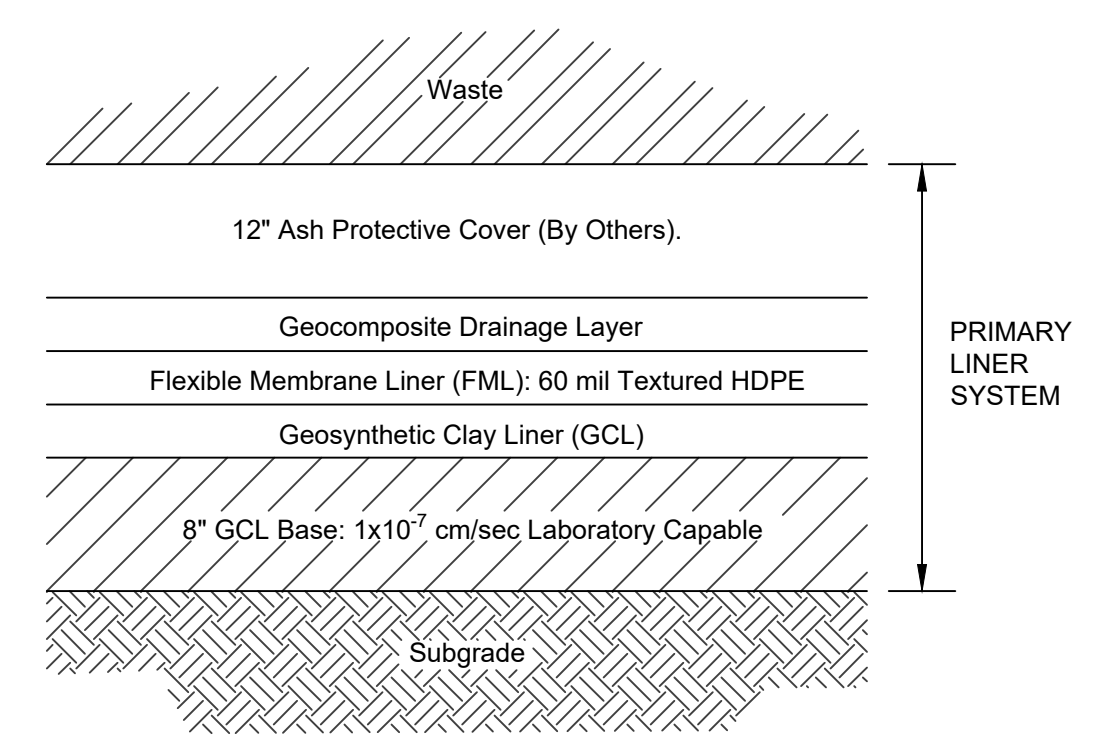
SHEET NO.
4 of 11

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- NOTES**
1. The 10' run out shall be sloped (high to low) from top of slope to the ditch (2%).
 2. Sand bag flap width is 7'

PERMANENT WASTE LIMIT - LINER END TREATMENT
N.T.S.



LINER SYSTEM DESIGN
N.T.S.

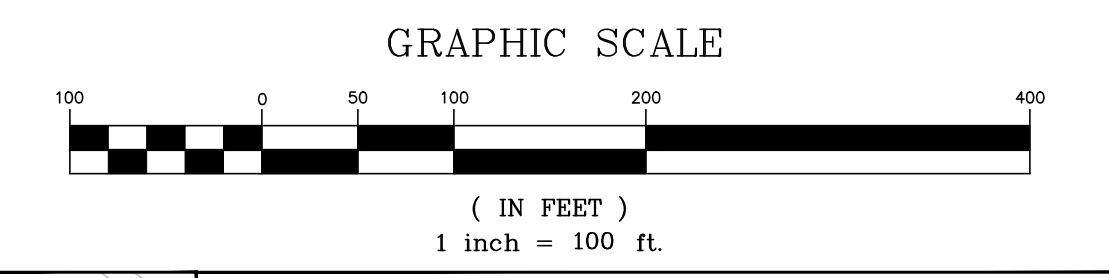
**NOT FOR CONSTRUCTION
DRAFT**

LEGEND

- PHASE 1 & 2 WASTE LIMITS
- PHASE 3 WASTE LIMITS (31.08 AC.)
- CONSTRUCTED WASTE LIMITS (SPURLOCK LANDFILL)
- EXISTING GROUND CONTOURS
- ISOPACH FILL CONTOURS
- ISOPACH CUT CONTOURS
- ISOPACH ZERO CONTOUR
- EXISTING ROAD

SUBGRADE CONSTRUCTION VOLUMES
 APPROXIMATE SUBGRADE CUT VOLUME: 17,006 CY
 APPROXIMATE SUBGRADE FILL VOLUME: 19,876 CY

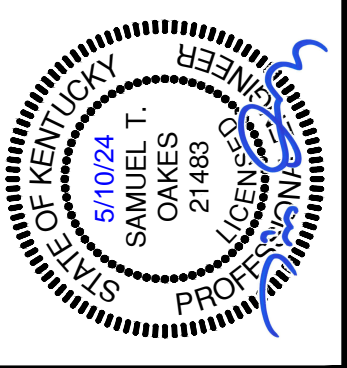
- NOTES:**
- 1.) Existing topography shown is the 2018 aerial topo by GRW merged with SPLF Ph. 5 Fill Plan, PHLF Ph. 2 Fill Plan & PHLF Ph. 3 Soil Liner.
 - 2.) Horizontal site control is in the Kentucky Single Zone Coordinate System of 1983 (NAD83) - US Foot elevations are based on the North American Vertical Datum of 1988 (NAVD88).



PHASE 3 PART 2 SUBGRADE ISOPACH



PEGS HILL LANDFILL
 MASON COUNTY, KENTUCKY
 PHASE 3 PART 2
 CONSTRUCTION PLANS



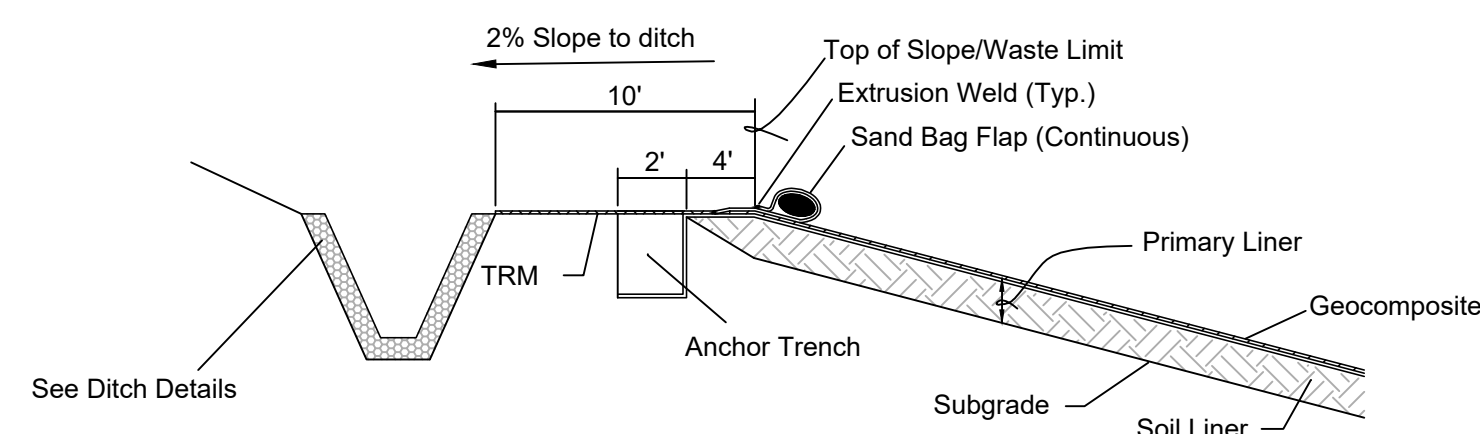
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CHECKED BY: STO
DATE: MAY 2024
SCALE: AS NOTED
REVISIONS

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PROJECT NO.
2023123
 SHEET NO.
5 of 11

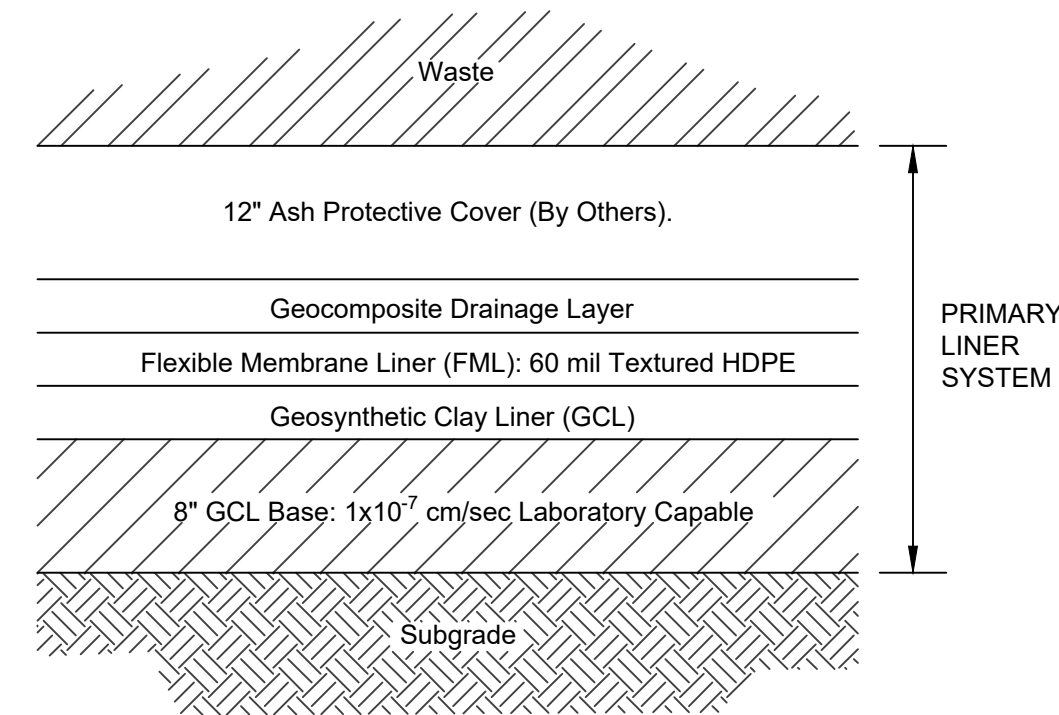
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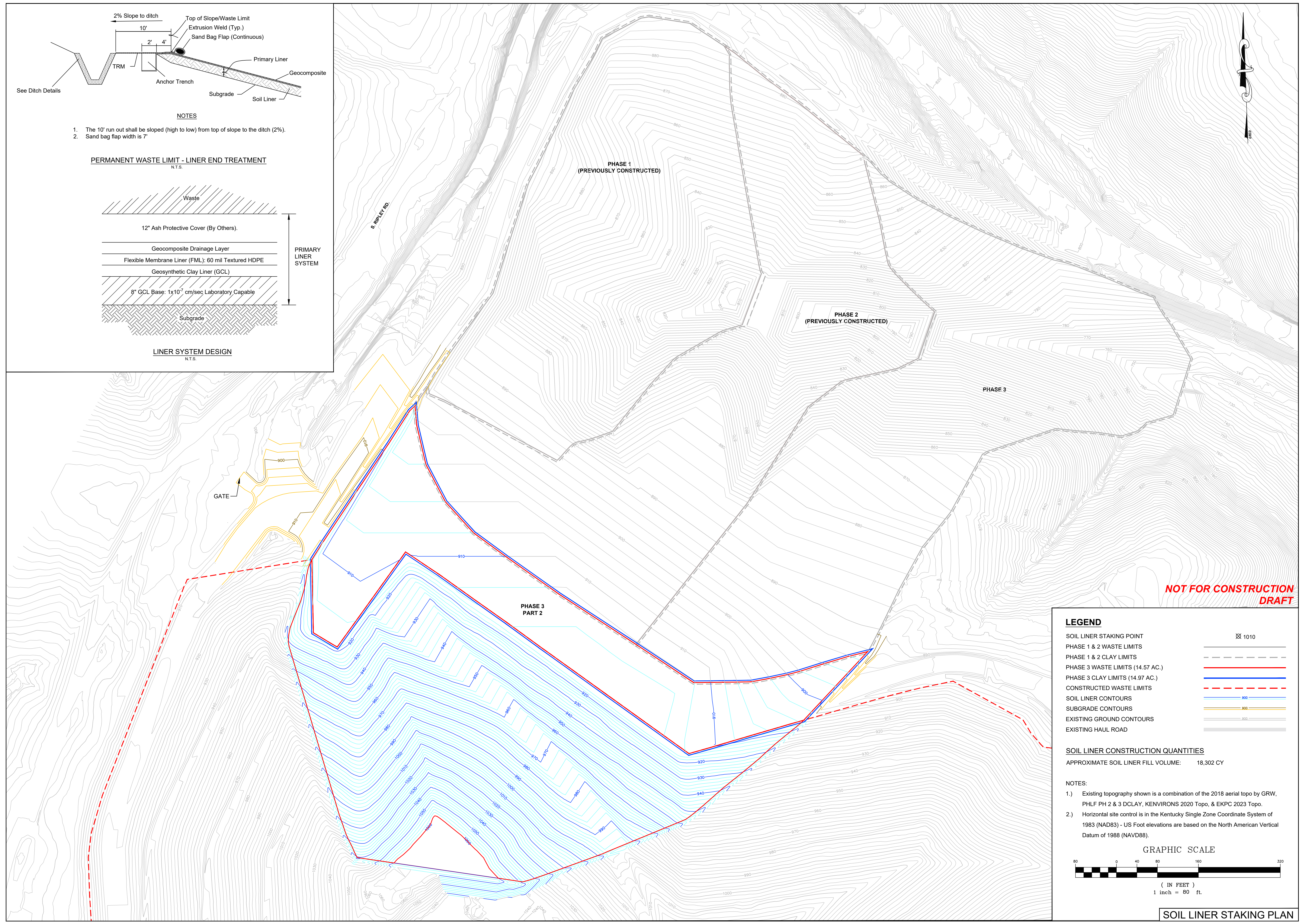
NOTES

1. The 10' run out shall be sloped (high to low) from top of slope to the ditch (2%).
2. Sand bag flap width is 7'

PERMANENT WASTE LIMIT - LINER END TREATMENT
N.T.S.



LINER SYSTEM DESIGN
N.T.S.

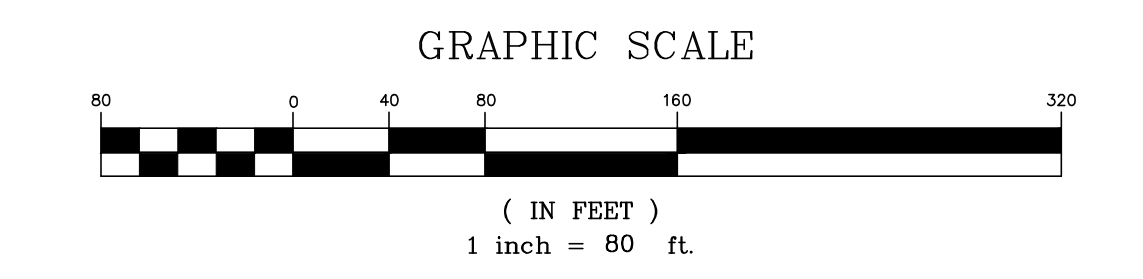


LEGEND

SOIL LINER STAKING POINT	⊗ 1010
PHASE 1 & 2 WASTE LIMITS	--- (dashed line)
PHASE 1 & 2 CLAY LIMITS	--- (dotted line)
PHASE 3 WASTE LIMITS (14.57 AC.)	— (solid red line)
PHASE 3 CLAY LIMITS (14.97 AC.)	— (solid blue line)
CONSTRUCTED WASTE LIMITS	- - - (dashed red line)
SOIL LINER CONTOURS	— (solid blue line)
SUBGRADE CONTOURS	— (solid yellow line)
EXISTING GROUND CONTOURS	— (solid grey line)
EXISTING HAUL ROAD	— (dashed grey line)

SOIL LINER CONSTRUCTION QUANTITIES
APPROXIMATE SOIL LINER FILL VOLUME: 18,302 CY

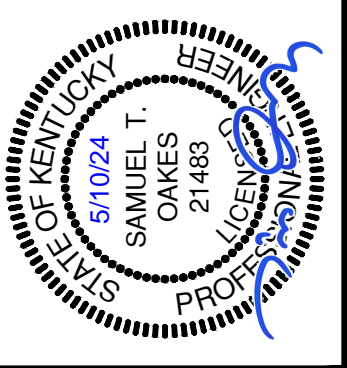
- NOTES:**
- 1.) Existing topography shown is a combination of the 2018 aerial topo by GRW, PHLF PH 2 & 3 DCLAY, KENVIRONS 2020 Topo, & EKPC 2023 Topo.
 - 2.) Horizontal site control is in the Kentucky Single Zone Coordinate System of 1983 (NAD83) - US Foot elevations are based on the North American Vertical Datum of 1988 (NAVD88).



SOIL LINER STAKING PLAN



PEGS HILL LANDFILL
MASON COUNTY, KENTUCKY
PHASE 3 PART 2
CONSTRUCTION PLANS



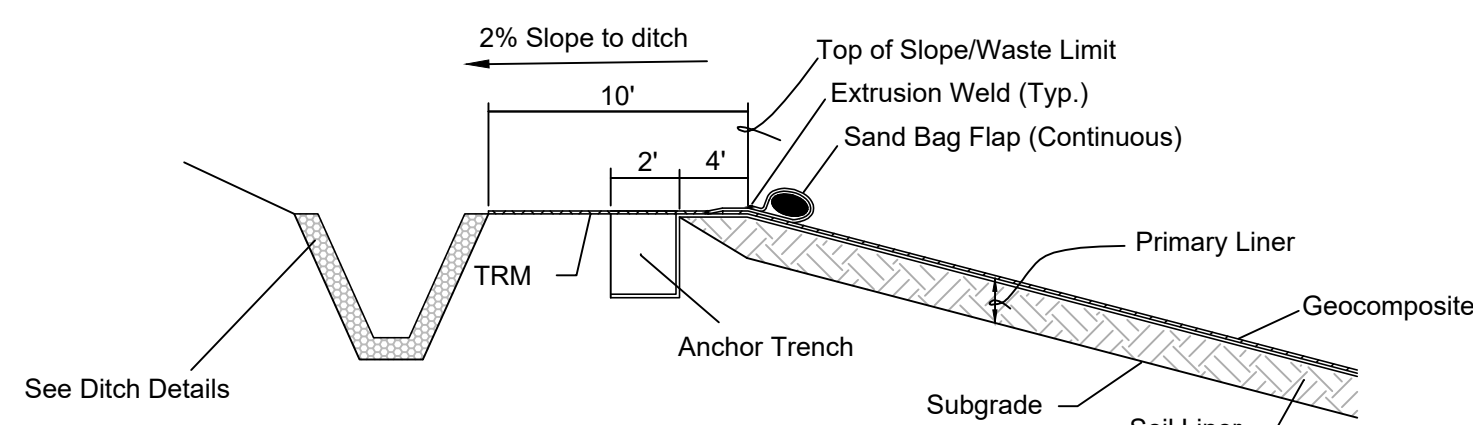
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CHECKED BY: STO	
DATE: MAY 2024	
SCALE: AS NOTED	

KENVIRONS
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2023123
SHEET NO.
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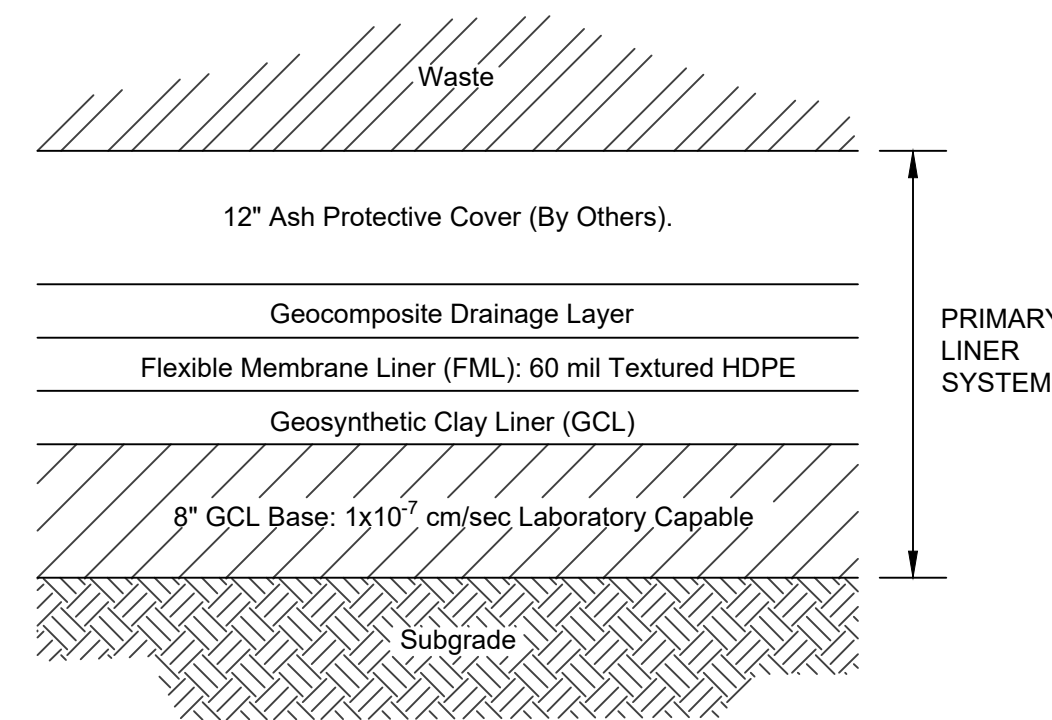
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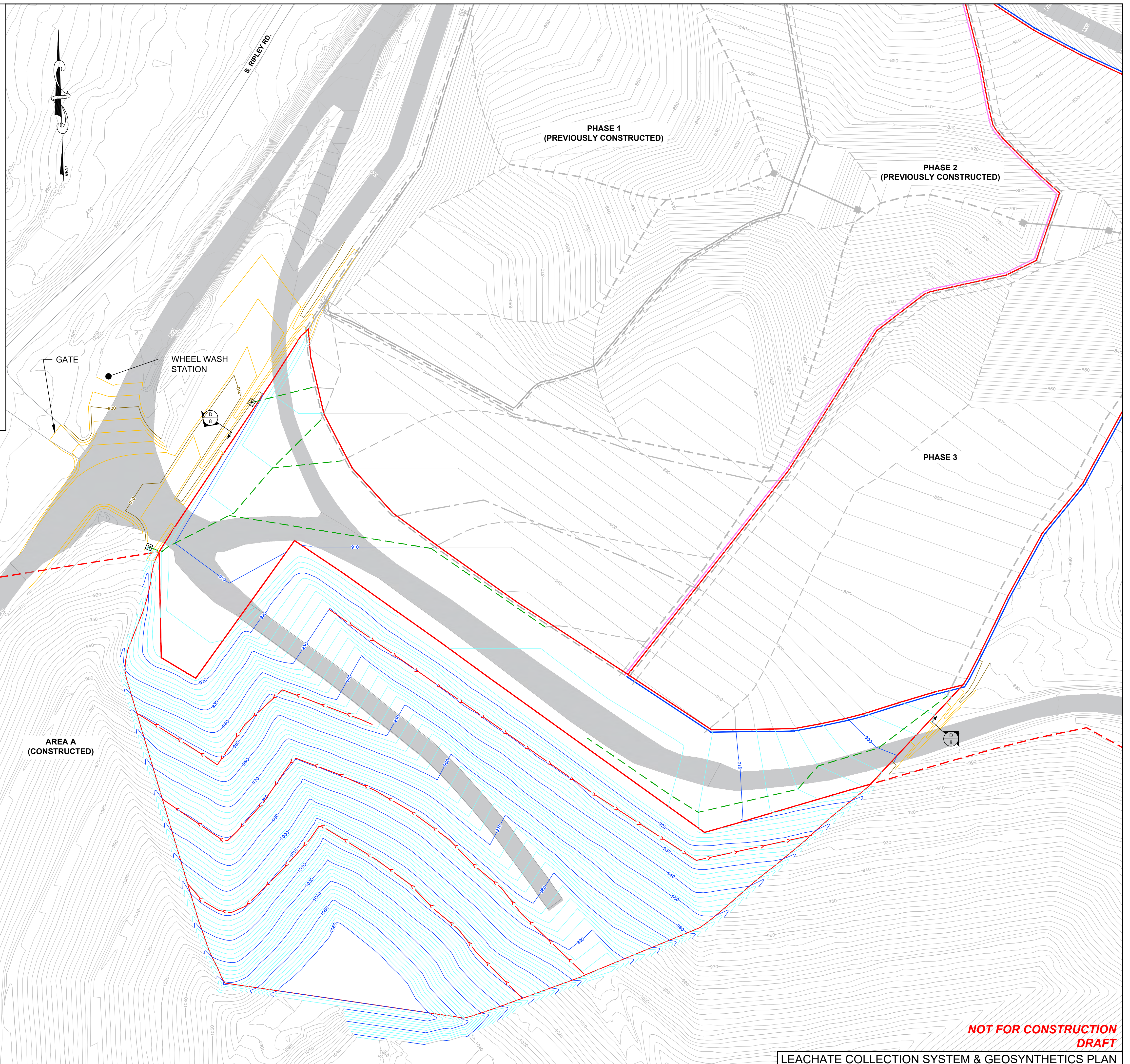
NOTES

1. The 10' run out shall be sloped (high to low) from top of slope to the ditch (2%).
2. Sand bag flap width is 7'

PERMANENT WASTE LIMIT - LINER END TREATMENT
N.T.S.



LINER SYSTEM DESIGN
N.T.S.



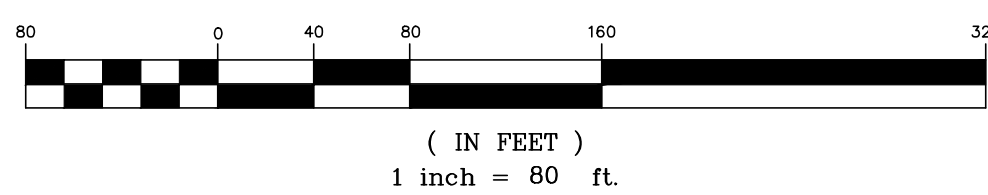
LEGEND

LEACHATE PIPE CLEANOUT		
4" LEACHATE COLLECTION PIPE		
8" LEACHATE COLLECTION PIPE		
EXISTING 4" LEACHATE COLLECTION PIPE		
EXISTING 8" LEACHATE COLLECTION PIPE		
RAIN GUTTER		
CONTAINMENT FLAP		
RAIN FLAP		
PHASE 1 & 2 WASTE LIMITS		
PHASE 1 & 2 CLAY LIMITS		
PHASE 3 WASTE LIMITS (14.57 AC.)		
PHASE 3 CLAY LIMITS (14.97 AC.)		
CONSTRUCTED WASTE LIMITS		
SOIL LINER CONTOURS		
SUBGRADE CONTOURS		
EXISTING GROUND CONTOURS		
EXISTING HAUL ROAD		

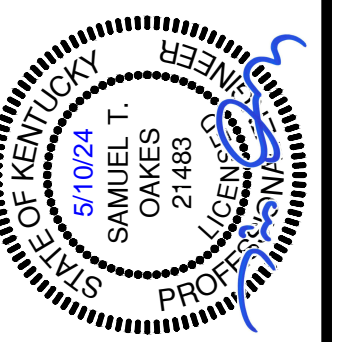
NOTES:

1. Existing topography shown is a combination of the 2018 aerial topo by GRW, KENVIRONS 2020 Topo, & EKPC 2023 Topo.
2. Horizontal site control is in the Kentucky Single Zone Coordinate System of 1983 (NAD83) - US Foot elevations are based on the North American Vertical Datum of 1988 (NAVD88).
3. FML quantity includes rain gutters, rain flaps, sand bag flaps, containment flap, and 15% waste/overlap/anchor trench.

GRAPHIC SCALE



PEGS HILL LANDFILL
MASON COUNTY, KENTUCKY
PHASE 3 PART 2
CONSTRUCTION PLANS



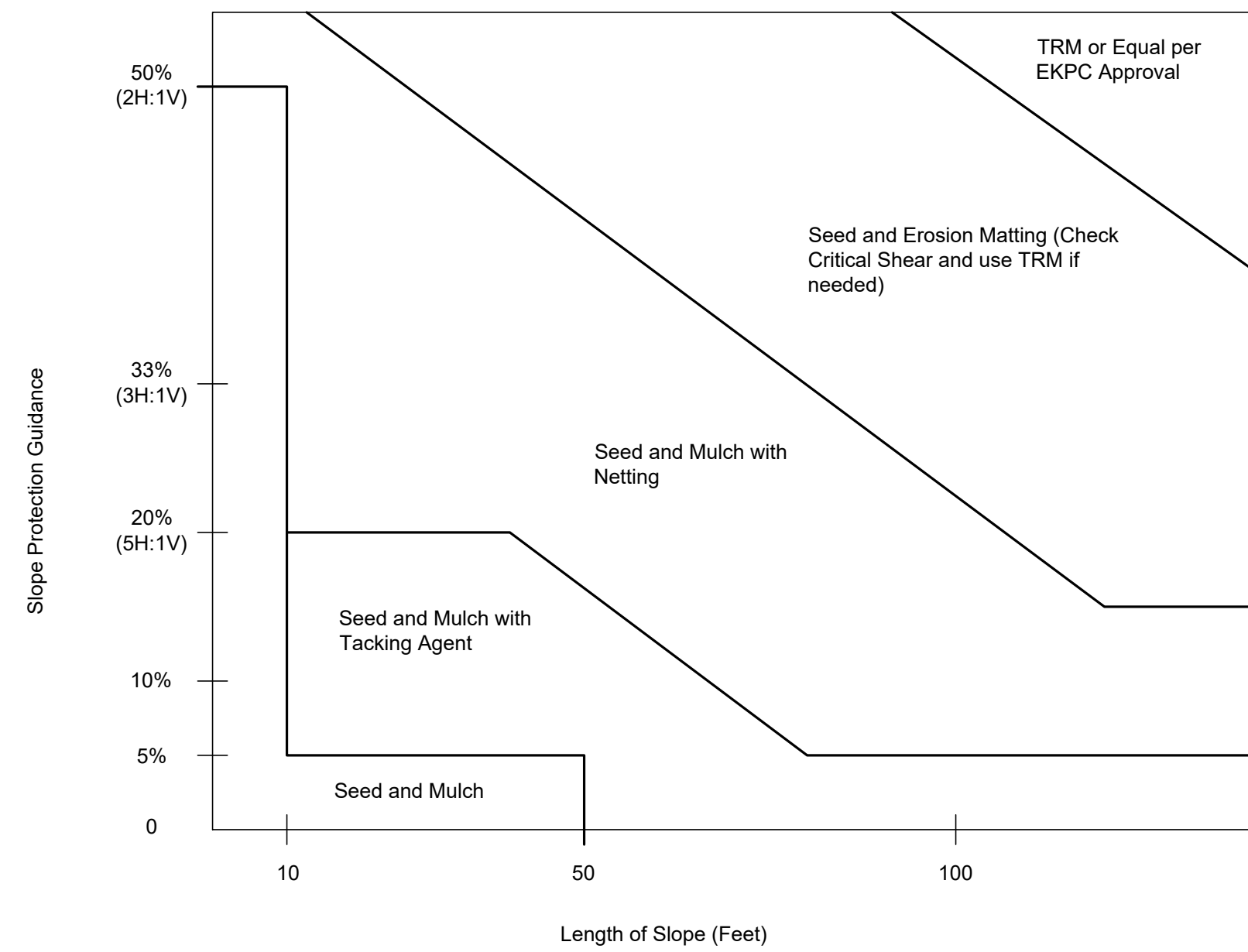
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CHECKED BY: STO
DATE: MAY 2024
SCALE: AS NOTED
REVISIONS



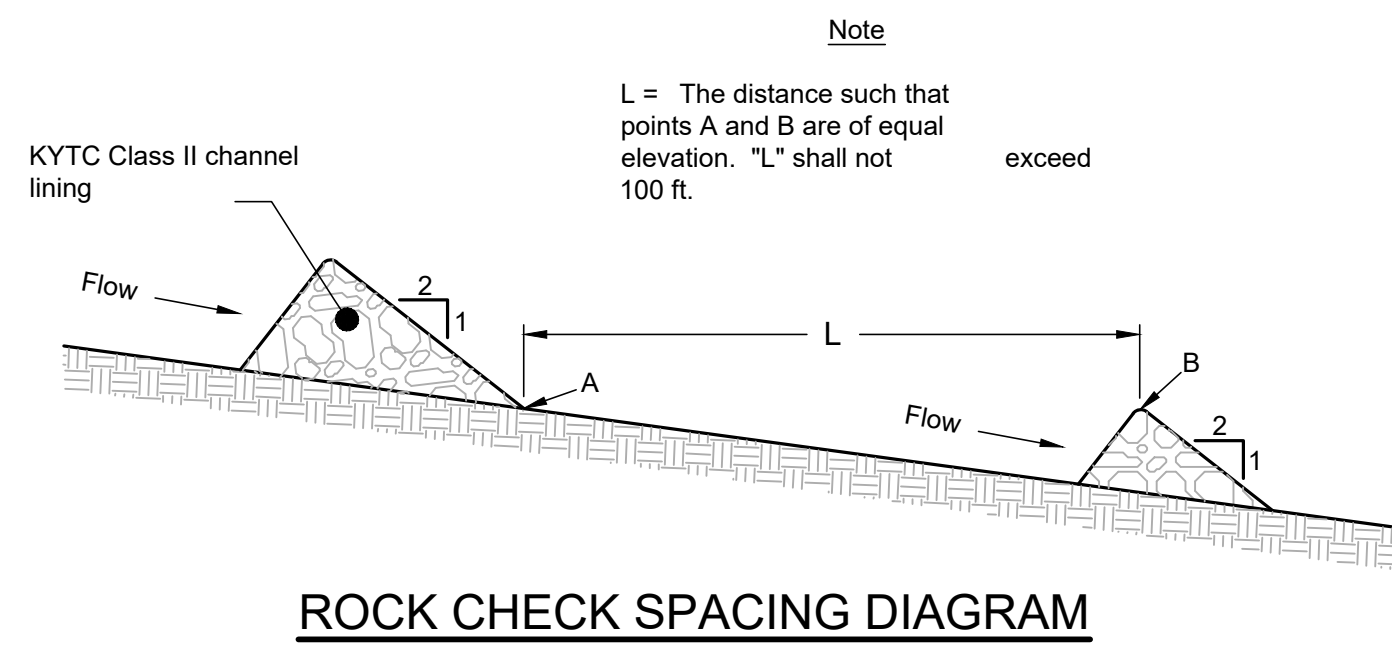
PROJECT NO.
2023123
SHEET NO.
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LEACHATE COLLECTION SYSTEM & GEOSYNTHETICS PLAN

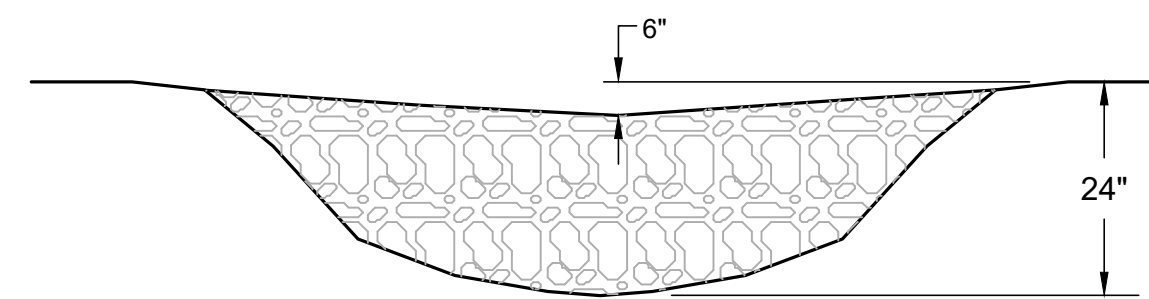
**NOT FOR CONSTRUCTION
DRAFT**



SLOPE PROTECTION GUIDANCE
N.T.S. (A) 8



ROCK CHECK SPACING DIAGRAM



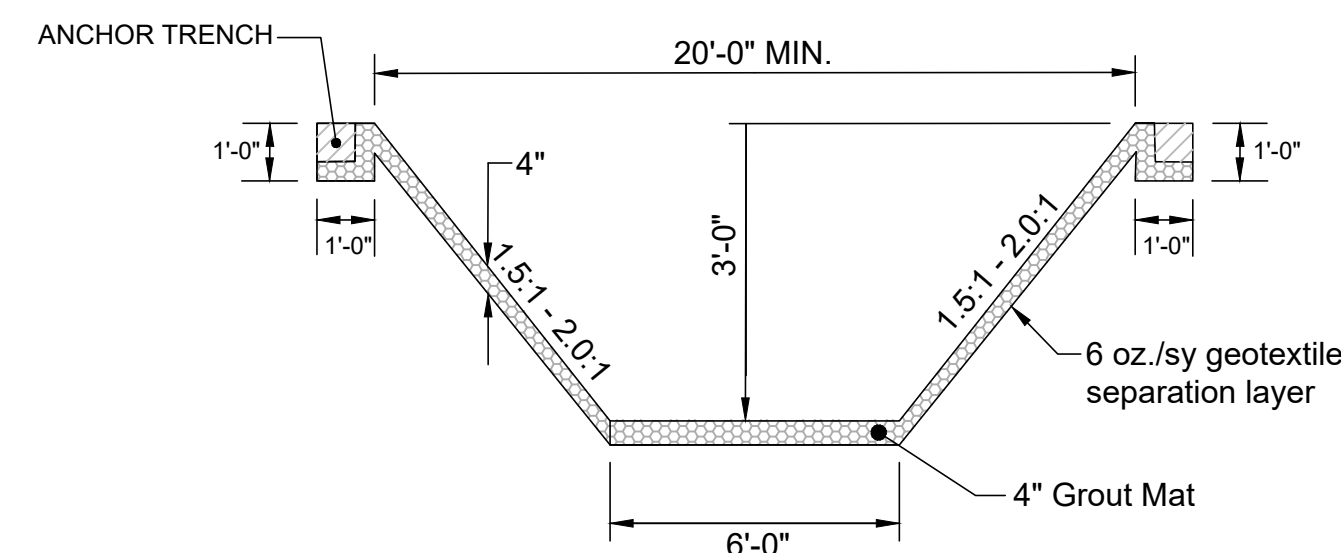
CROSS SECTION

TEMPORARY SILT CHECK
N.T.S. (B) 8

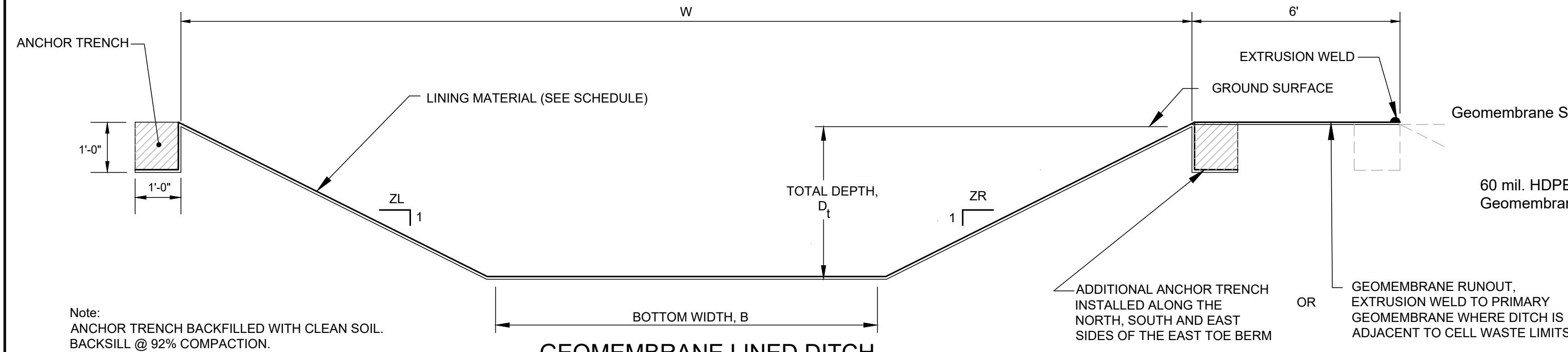
DITCH SCHEDULE

CHANNEL DESCRIPTIONS	CHANNEL IDENTIFICATION	AVERAGE BOTTOM SLOPE FT/FT	TOTAL DEPTH (FT) D _T (MIN.)	BOTTOM WIDTH B(FT)	SIDE SLOPE ZL / ZR	LINING MATERIAL	DITCH WIDTH, W (FT.)
PERMANENT PERIMETER DITCH	DITCH TYPE 1	VARIES	3.3	6.0	1.5-2.0 / 1.5-2.0	GROUT MAT	20
TEMPORARY PERIMETER DITCH	DITCH TYPE 2	VARIES	3.0	3.0	1.5 / 1.5	GEOMEMBRANE	12
TEMPORARY CONTAINMENT BERM DITCH	DITCH TYPE 3	1.0%	2.0	2.0	1.5 / 1.5	GEOMEMBRANE	8

TRM: (TURF REINFORCEMENT MATTING) SEMI-PERMANENT SYNTHETIC EROSION CONTROL MATTING WHICH GRASS WILL GROW THROUGH WITH MINIMUM LONG-TERM SHEAR STRESS 6-LB/SF. TRM SHALL BE PURCHASED AND INSTALLED BY EARTHWORKS CONTRACTOR. ONLY OUTSIDE OF ROCK CUT.
DITCH PROTECTION: 24" GROUTED CLASS II CHANNEL LINING WITH 3" LOW STRENGTH CONCRETE OR GROUT (2,000 psi). GROUT/CONCRETE TO COMPLETELY COVER AND SEAL TOP OF CHANNEL LINING WITHOUT VOIDS, HOLES OR DEPRESSIONS. SEE SHEET 10 FOR DITCH TYPE 5 DETAILS.



PERMANENT PERIMETER DITCH
N.T.S.



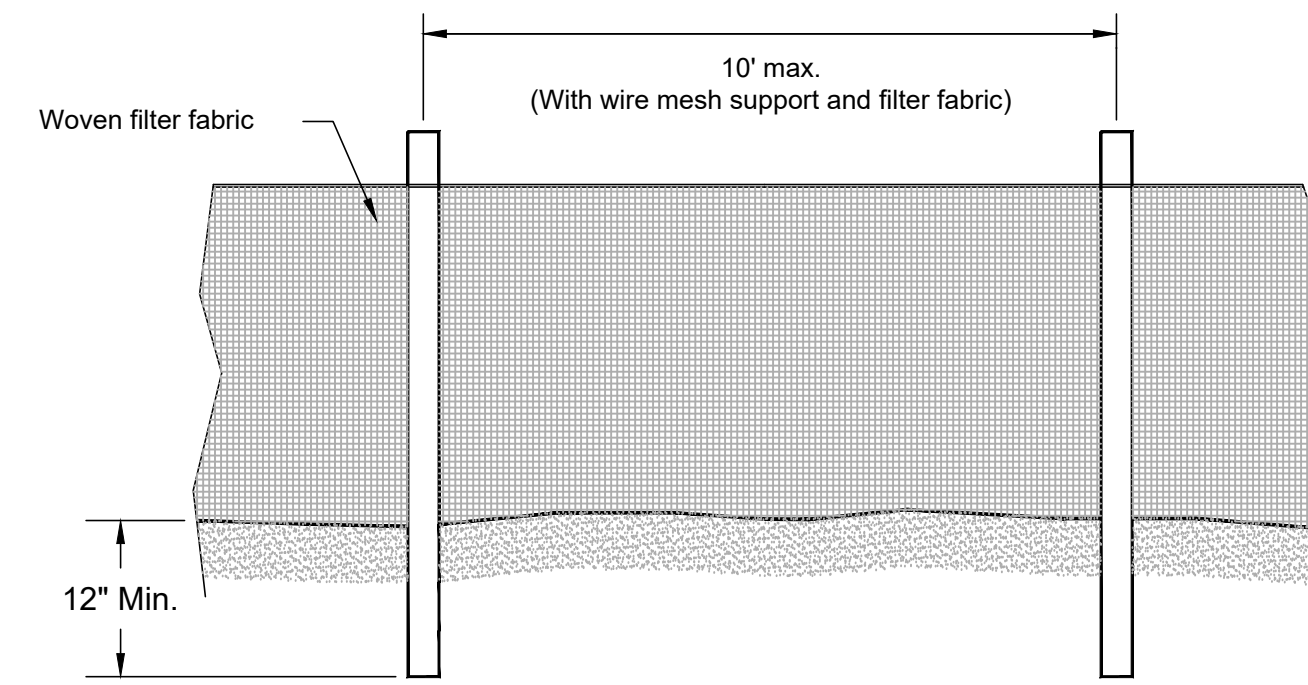
GEOMEMBRANE LINED DITCH SECTION VIEW A-A

Note: ANCHOR TRENCH BACKFILLED WITH CLEAN SOIL. BACKSILL @ 92% COMPACTION.

Item Description

Ditch Type 2 & 3 - (linear Feet) This unit includes all installation costs associated with the transportation, placement and installation of the 60 mil Textured HDPE geomembrane channel lining. Compensation shall be based on the calculated quantities as provided. Geomembrane supplied by owner. Ditch excavation or embankment to achieve ditch subgrade is included in excavation and/or embankment quantities.

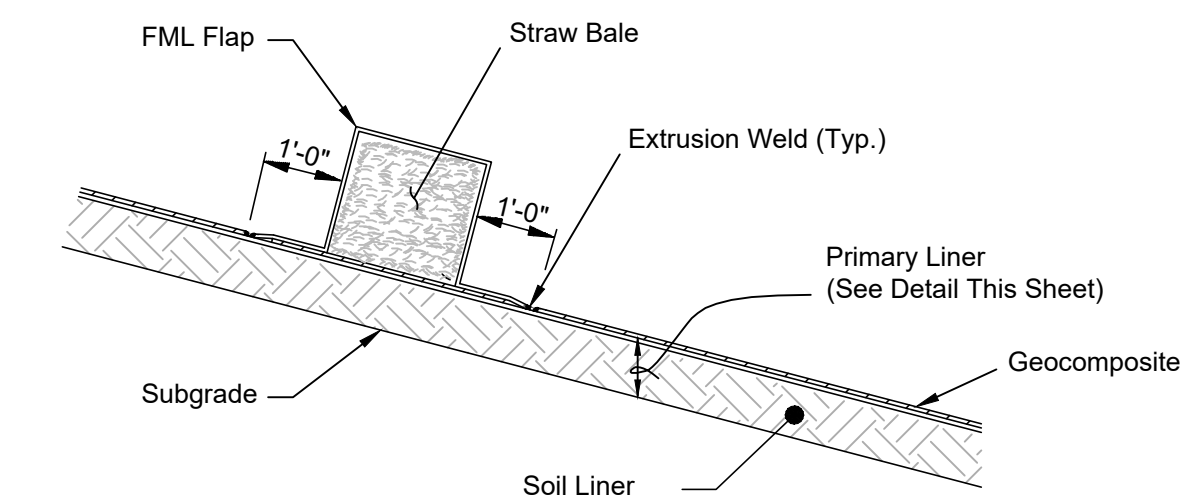
TYPICAL SURFACE WATER DITCH- GEOMEMBRANE LINED
N.T.S. (D) 8



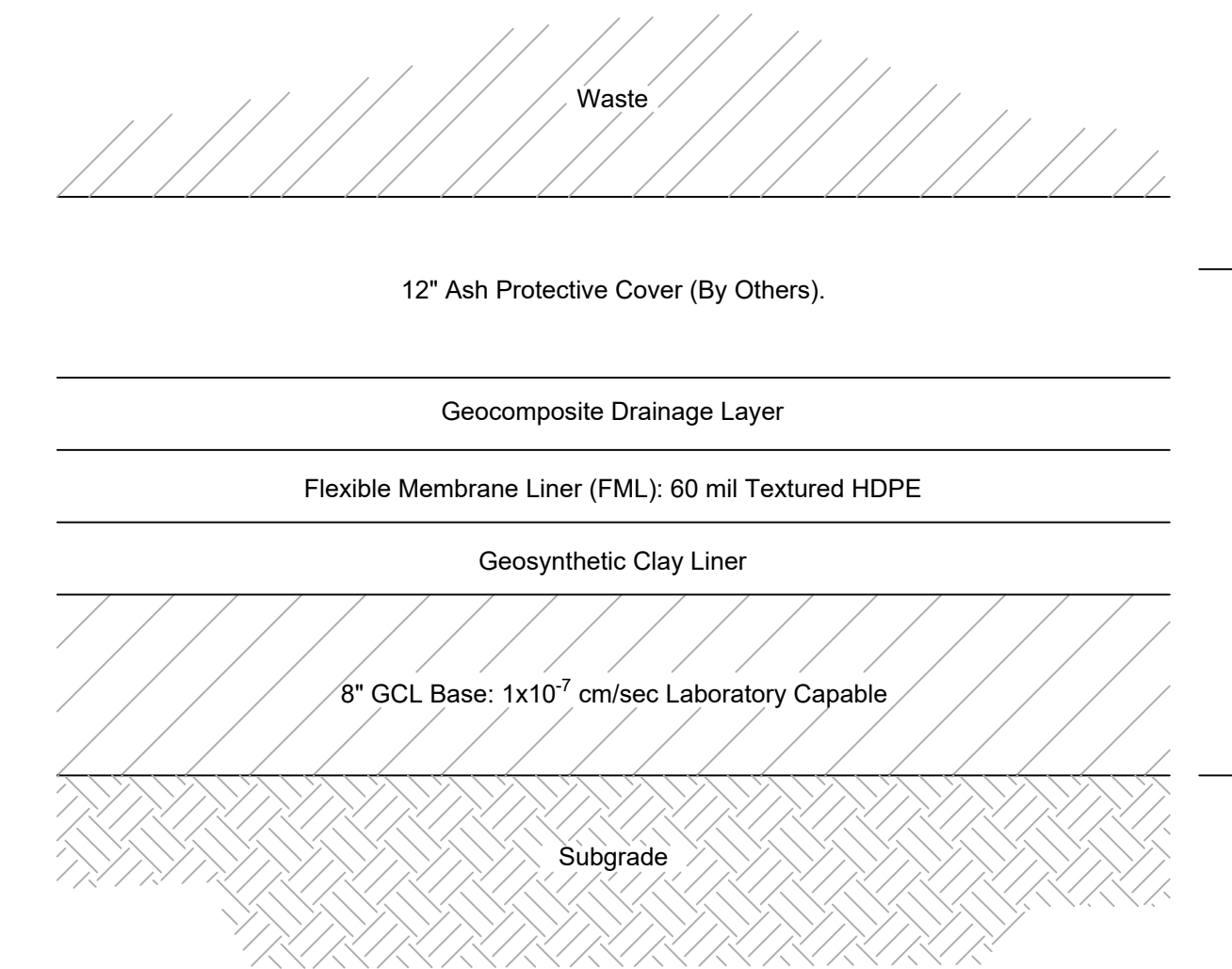
Notes

- Filter fabric shall be purchased in a continuous roll and cut to the length of the barrier. When joints cannot be avoided, filter fabric shall be spliced together only at a post with 3 ft. (min.) overlap, and securely sealed.
- Posts shall be spaced at 6 ft. intervals in areas of rapid runoff.
- Posts shall be at least 5 ft. in length.
- Steel posts shall have projections for fastening wire and fabric.
- Wood posts shall be 2 inches by 2 inches or equivalent. Steel posts shall be 1.33 lbs per linear foot.
- A wire mesh support fence shall be fastened securely to the up-slope side of the posts using heavy duty wire staples at least 1 inch in length, wire ties or hog rings. The wire shall extend into the trench a minimum of 2 inches and shall not extend more than 36 inches above the original ground surface.
- Washed stone shall be used to bury skirt when silt fence is used adjacent to a channel, creek, or pond.
- Turn silt fence up-slope at ends.

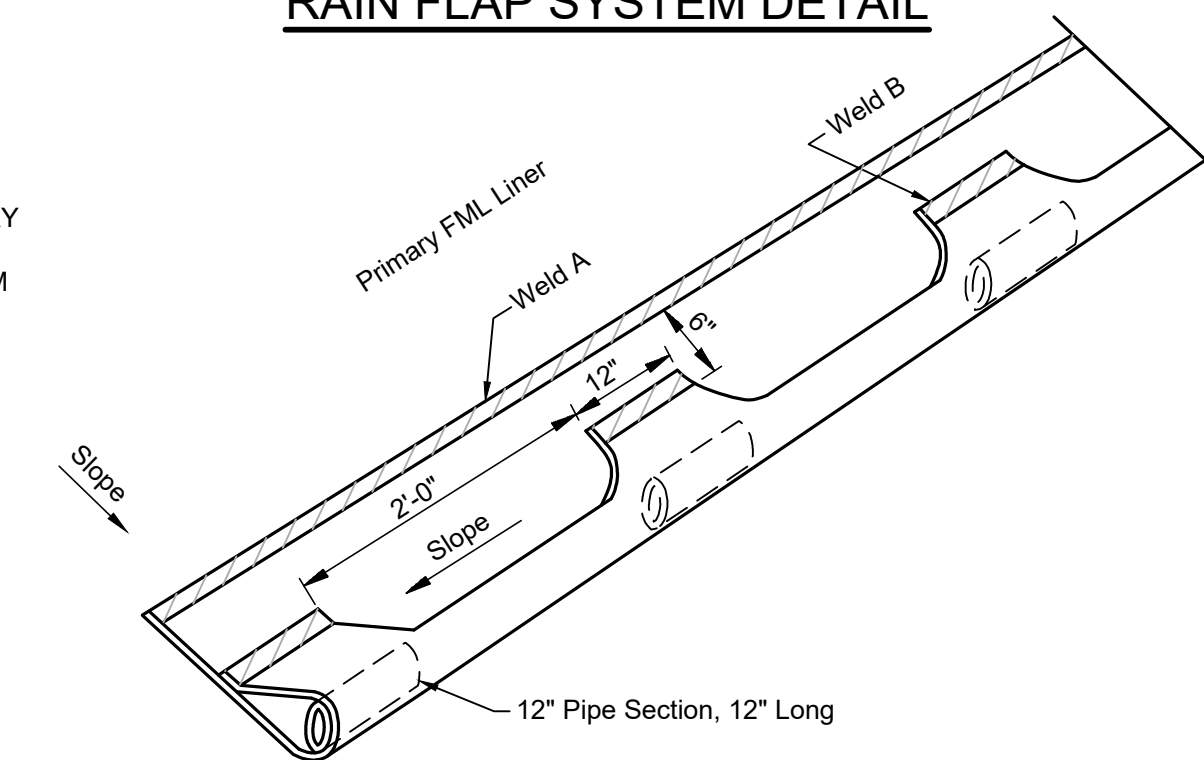
SILT FENCE
N.T.S. (C) 8



RAIN FLAP SYSTEM DETAIL

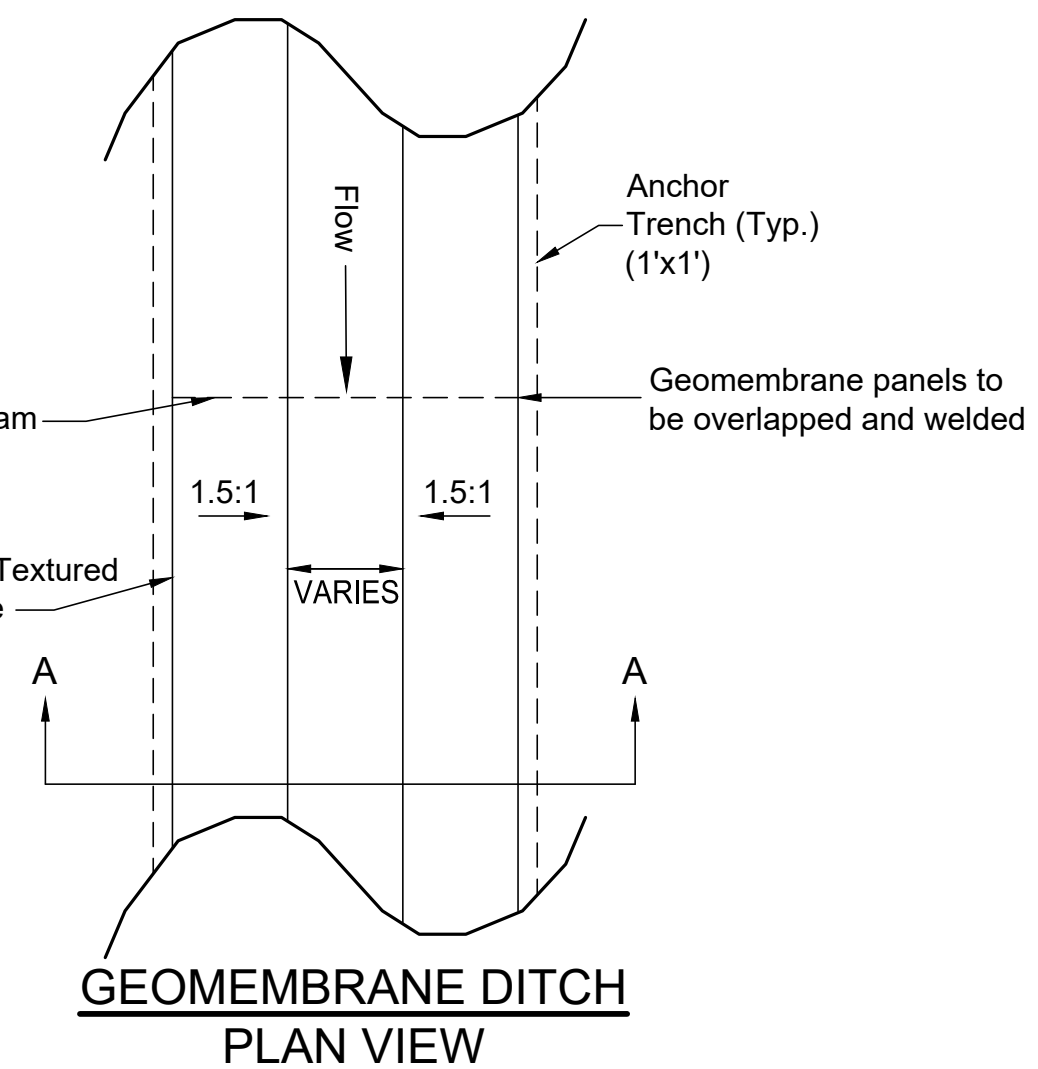


LINER SYSTEM DESIGN
N.T.S. (E) 8



Note: Contractor to provide anchor trench between liner system and ditch to support rain gutter. Min. anchor trench dimensions 1'x1'.

RAIN GUTTER SYSTEM DETAIL
N.T.S. (F) 8

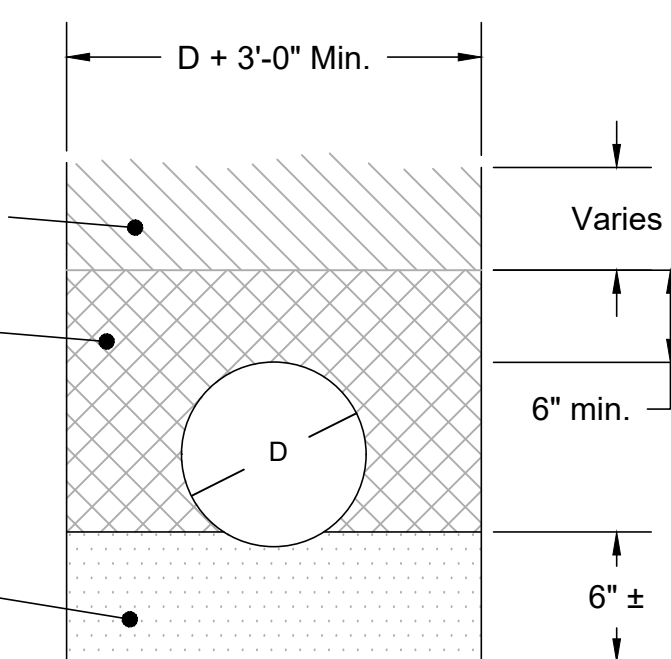


GEOMEMBRANE DITCH PLAN VIEW

Note: If ditch subgrade consists of in-situ rock, Contractor shall place a 16-oz. non-woven geotextile between the rock subgrade and geomembrane. Geotextile material to be supplied by owner, as needed.

Legend

- Embankment
- Soil Embankment
- Final Backfill (As Necessary)
- Soil embankment to be free of rocks or other deleterious material larger than 2" in any dimension. To extend no less than 6" above the top of pipe.
- Coarse Sand Bedding or No. 9 or 11 Stone

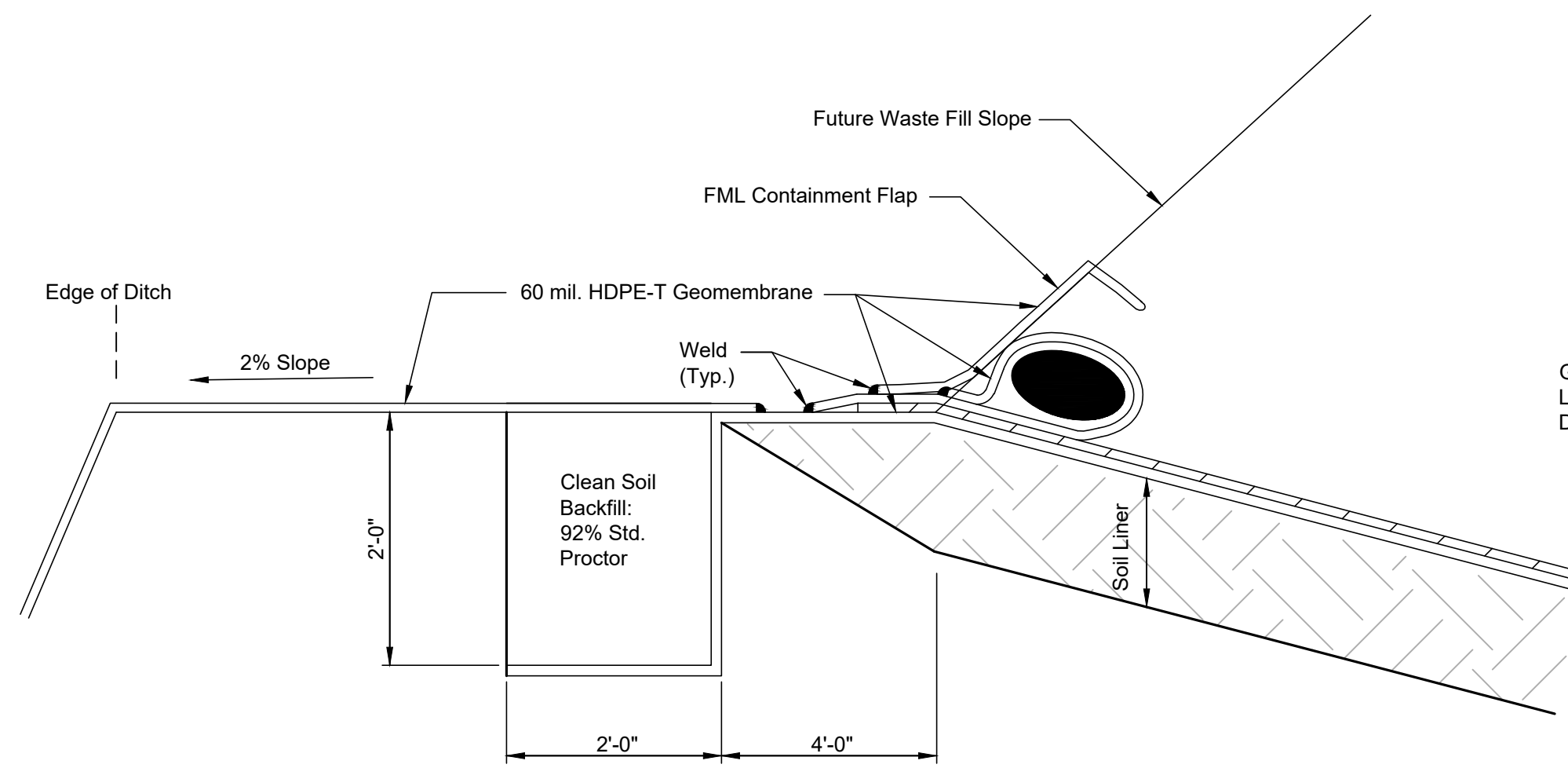


Note: This Detail applies to all Storm Water Drainage Pipes

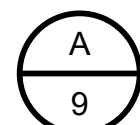
TYPICAL PIPE TRENCH DETAIL
N.T.S. (G) 8

NOT FOR CONSTRUCTION DRAFT

DETAILS

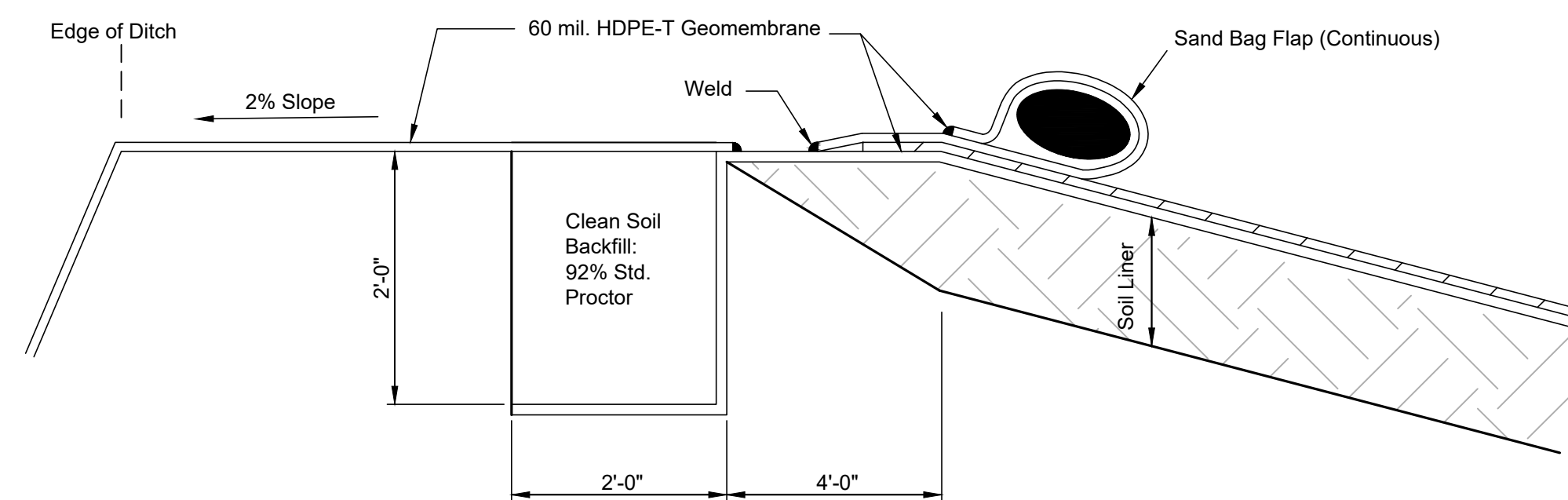


CONTAINMENT FLAP DETAIL

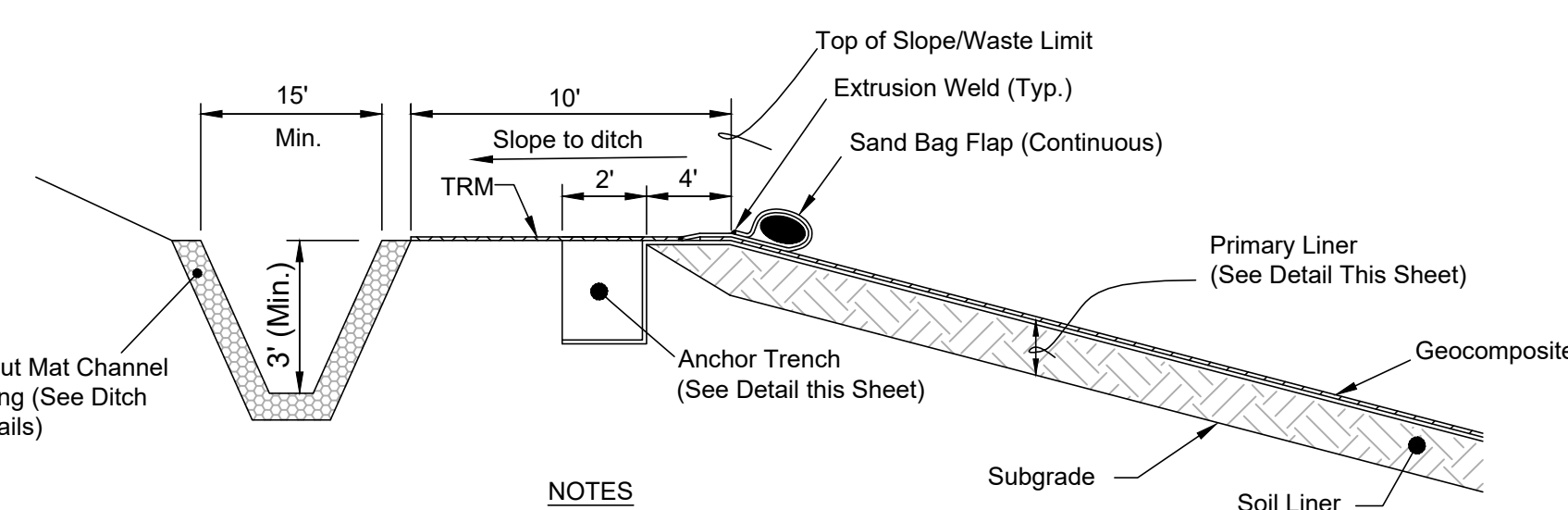
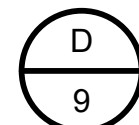


Notes

1. Containment Flap is a total of 7 ft. wide.
2. Flap shall be folded and sand bagged at waste limits.



ANCHOR TRENCH DETAIL

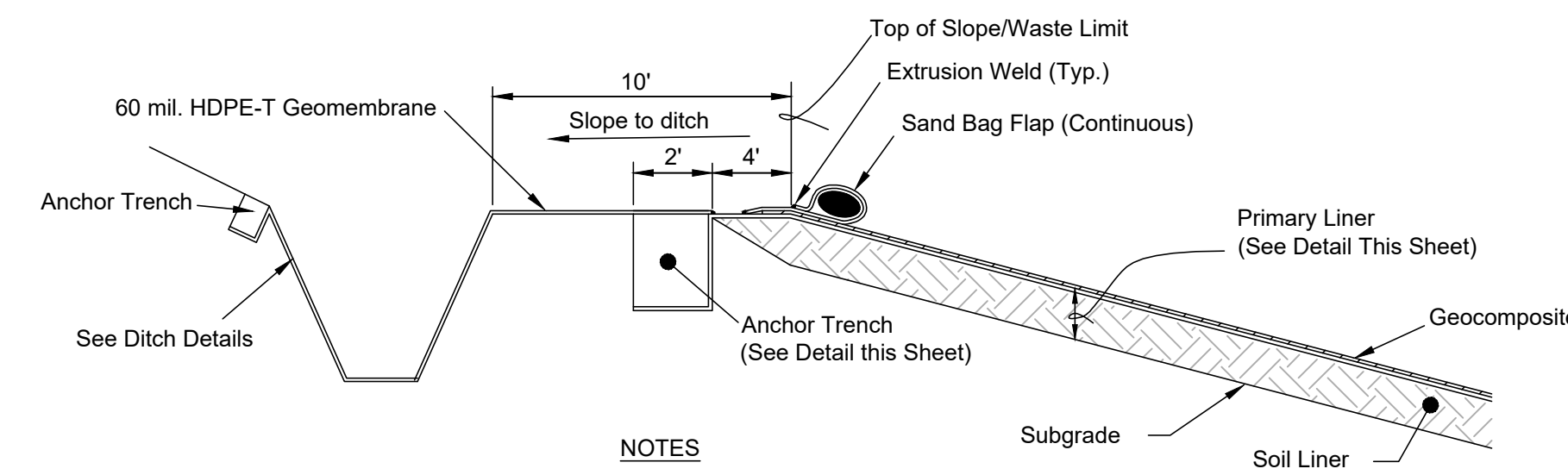
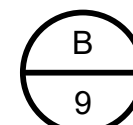


NOTES

1. The 10' run out shall be sloped (high to low) from top of slope to the ditch (2%).
2. Sand bag flap width is 7'

PERMANENT WASTE LIMIT - LINER END TREATMENT

N.T.S.

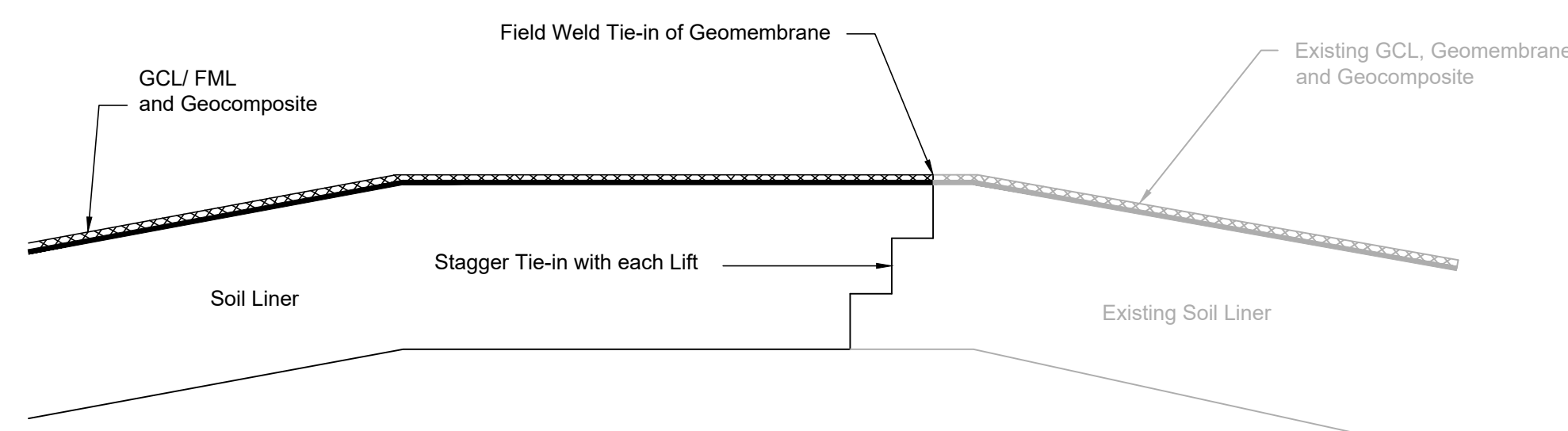
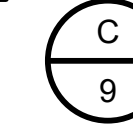


NOTES

1. The 10' run out shall be sloped (high to low) from top of slope to the ditch (2%).
2. Sand bag flap width is 7'

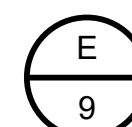
TEMPORARY WASTE LIMIT LINER END TREATMENT

N.T.S.

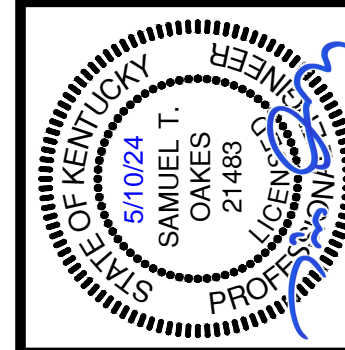


GEOSYNTHETIC LINER TIE-IN DETAIL

N.T.S.



PEGS HILL LANDFILL
MASON COUNTY, KENTUCKY
PHASE 3 PART 2
CONSTRUCTION PLANS



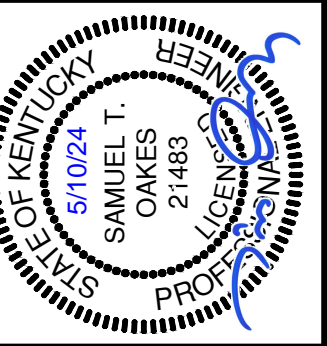
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CHECKED BY: SMR	
DATE: MAY 2024	
SCALE: AS NOTED	



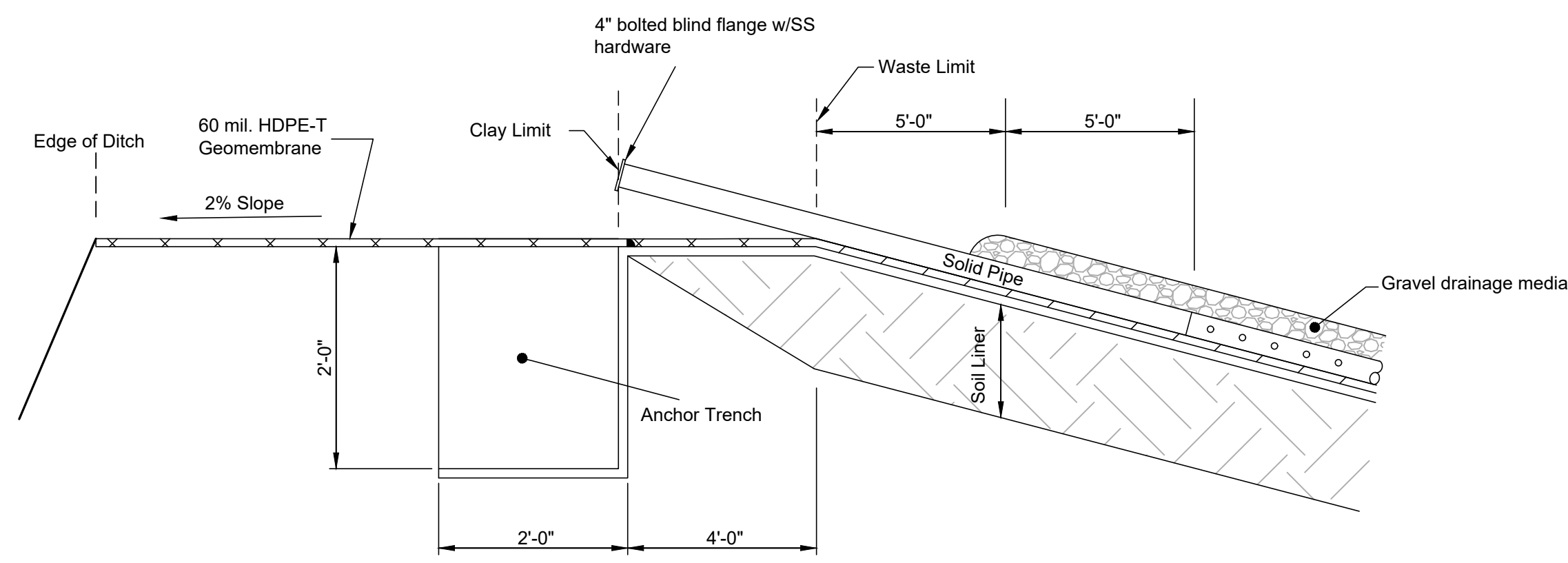
PROJECT NO.
 2023123
 SHEET NO.
 9 of 11

NOT FOR CONSTRUCTION
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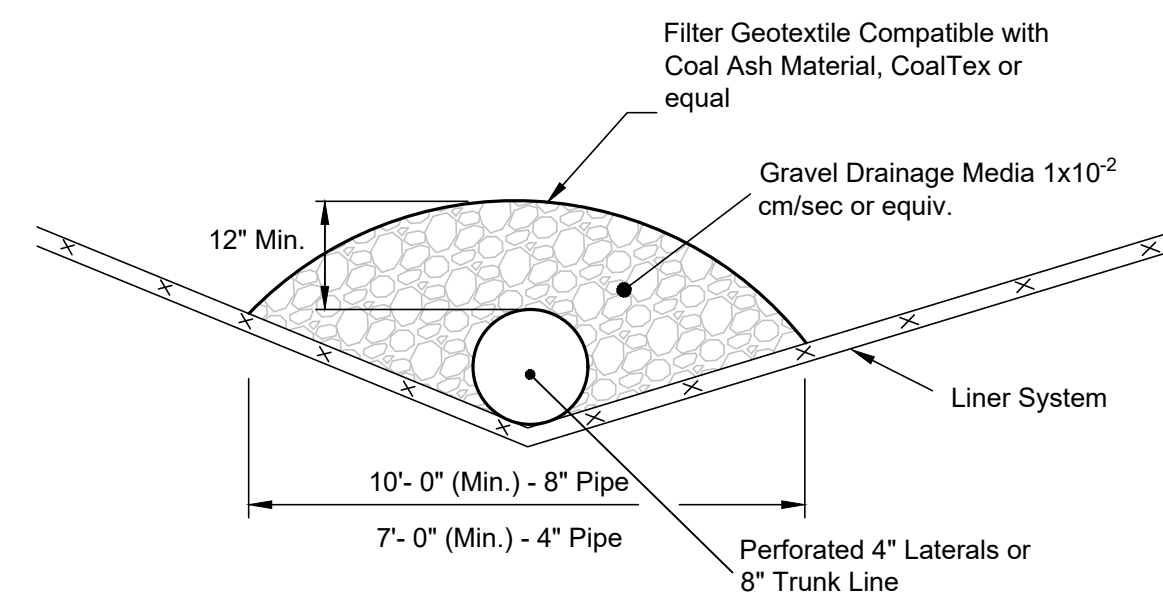
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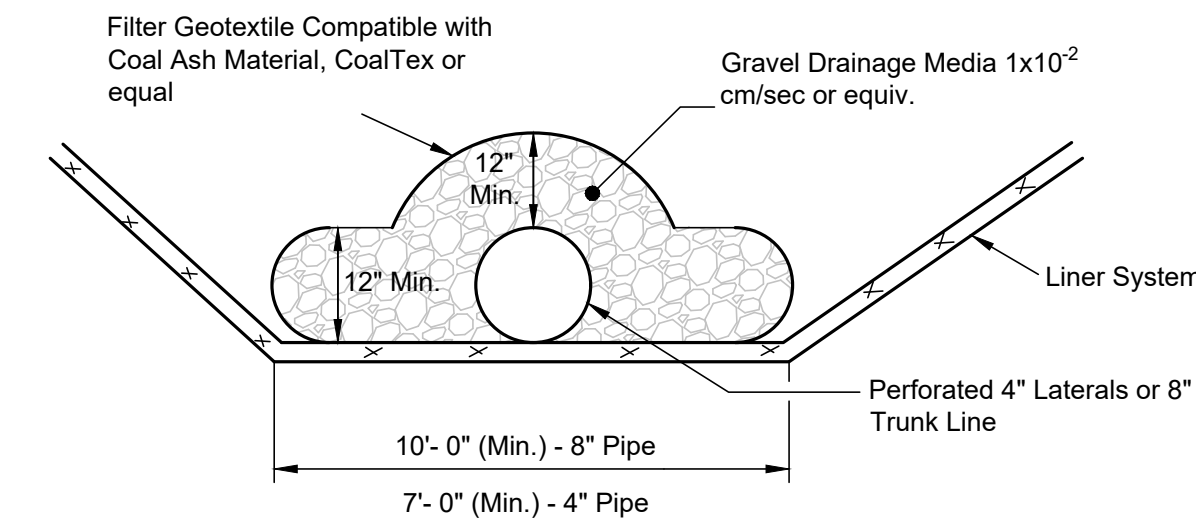
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DATE: MAY 2024	
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REVISIONS	



LEACHATE PIPE CLEANOUT DETAIL (A/10)
N.T.S.



TRIANGULAR SHAPED AND BENCH DRAINAGE PATHWAY (B/10)
N.T.S.

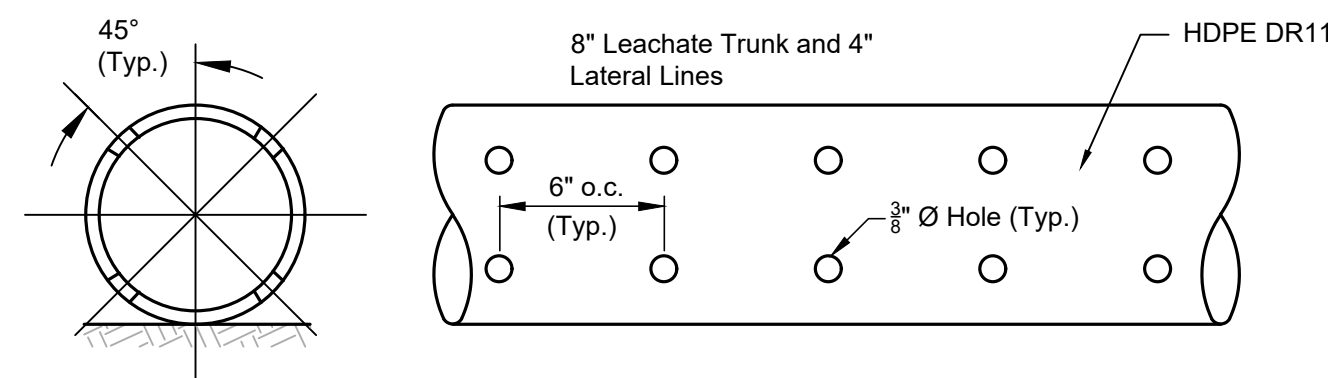


TRAPEZOIDAL SHAPED DRAINAGE PATHWAY (C/10)
N.T.S.

Notes

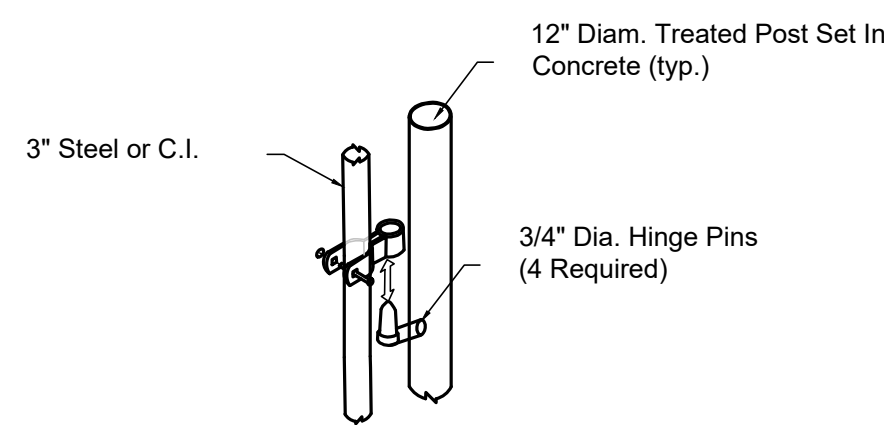
- All Gravel shall be placed with equipment that will not exceed ground pressure of 5 psi and must be approved prior to use by the Owner and Engineer.
- Drainage media shall be completely encased inside the geotextile. The geotextile seam shall be sewn or fusion welded. CoalTex geotextile (or equal) shall be placed so the non-woven side will be in contact with the CCR waste.

LEACHATE COLLECTION PIPE DETAIL
N.T.S.

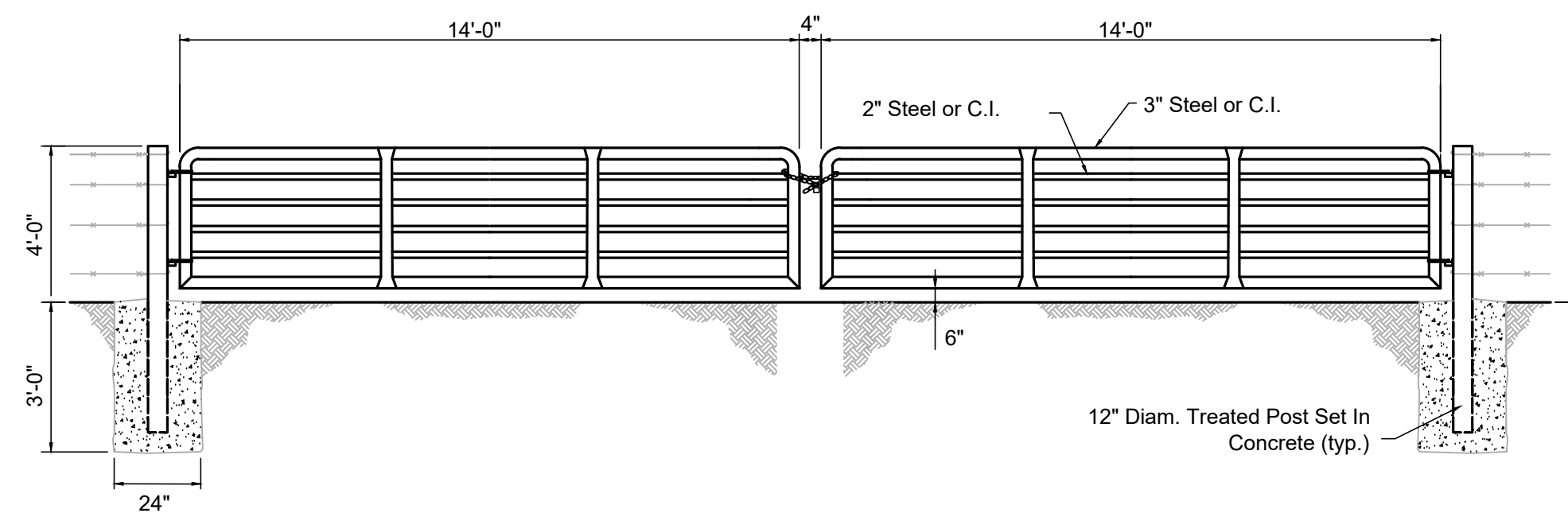


COLLECTION PIPE PERFORATION DETAIL (D/10)
N.T.S.

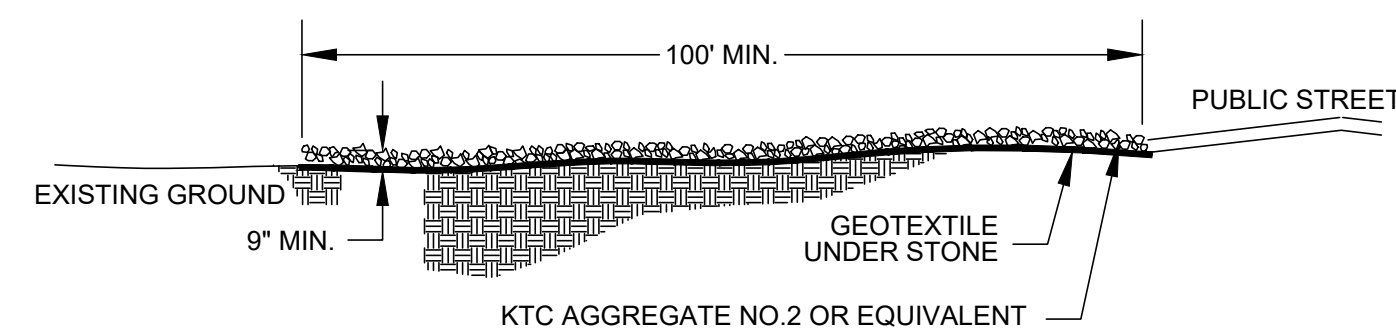
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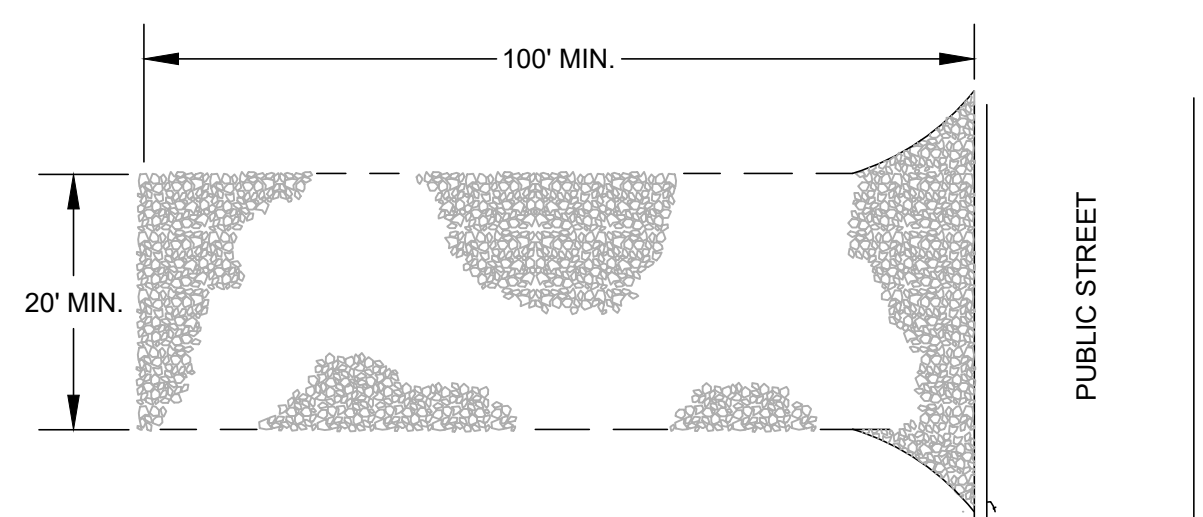
HINGE DETAIL
N.T.S.



CONSTRUCTION ENTRANCE GATE DETAIL (A)
N.T.S. 11



CROSS SECTION

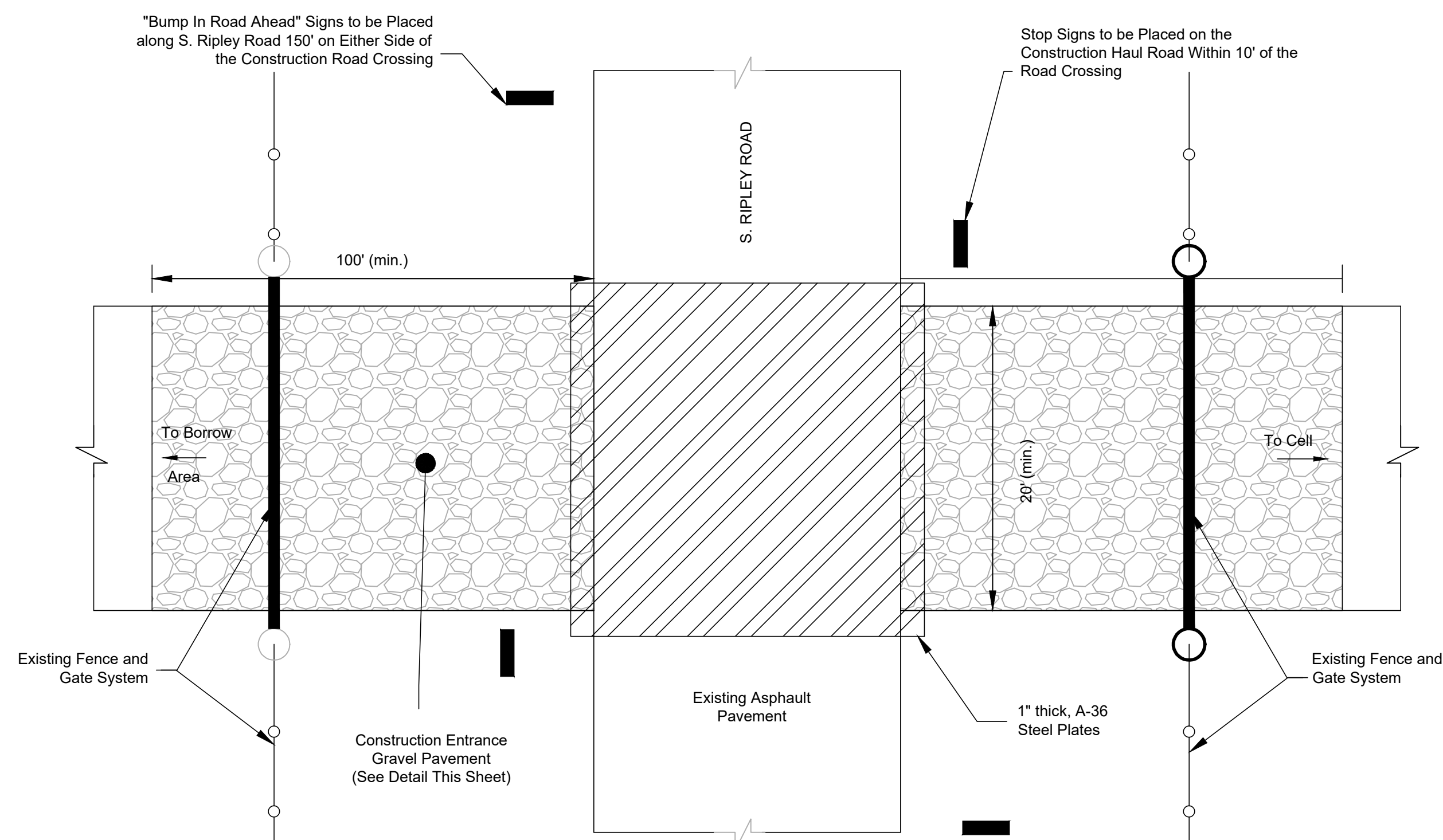


PLAN VIEW

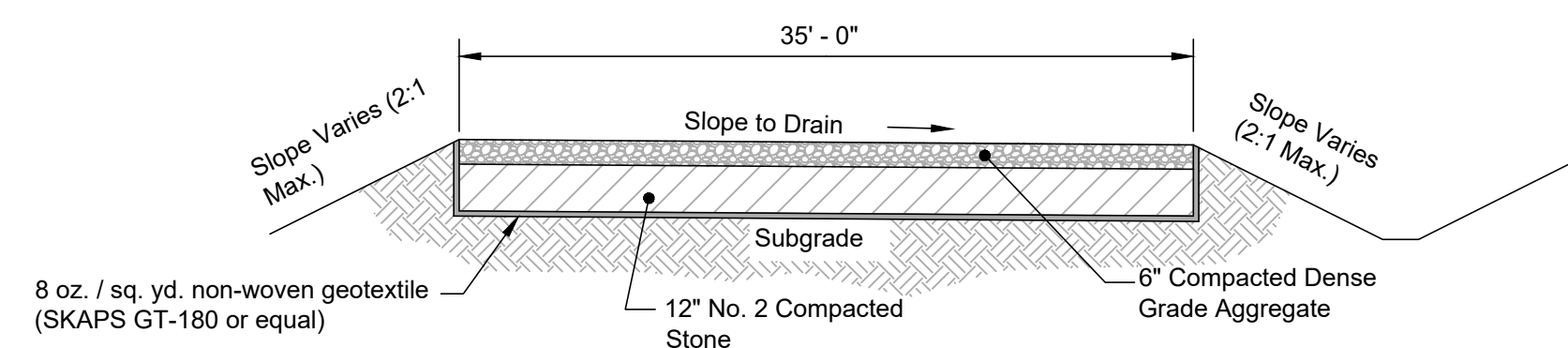
NOTES

1. A STABILIZED ENTRANCE PAD OF CRUSHED STONE SHALL BE LOCATED WHERE TRAFFIC WILL ENTER OR LEAVE THE CONSTRUCTION SITE ONTO A PUBLIC STREET.
2. SOIL STABILIZATION FABRIC SHALL BE USED AS A BASE FOR THE CONSTRUCTION ENTRANCE.
3. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC STREETS OR EXISTING PAVEMENT. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS WARRANT AND REPAIR OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
4. ANY SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC STREETS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
5. WHEN APPROPRIATE, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTERING A PUBLIC STREET. WHEN WASHING IS REQUIRED, IT SHALL BE DONE IN AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN.

CONSTRUCTION ENTRANCE - GRAVEL PAVEMENT (B)
N.T.S. 11



COUNTY ROAD CROSSING DETAIL (C)
N.T.S. 11



HAUL ROAD DETAIL (D)
N.T.S. 11

ATTACHMENT JB-4
CONSTRUCTION QUALITY ASSURANCE
PLAN

East Kentucky Power Cooperative, Inc.

**QAQC PLAN
for the
Peg's Hill Landfill - Phase 3
Spurlock Power Station**

May 2024

CONSTRUCTION QUALITY CONTROL PLAN

1.0 PURPOSE AND SCOPE

This document is a site and project specific Construction Quality Control Plan (Plan) that addresses construction of the bottom liner system, final cap system, and sediment ponds for all landfill development. The purpose of this Plan is to ensure that elements of the landfill are constructed in a manner that meets or exceeds all applicable design criteria, permit conditions, and technical specifications. This Plan should be considered to represent the minimum quality control requirements for landfill development. Initial sections of this Plan present the responsibilities and authority of each participant, as well as quality control personnel assignments. Sections presenting construction quality control activities follow.

2.0 RESPONSIBILITY AND AUTHORITY

2.1 Owner

The Owner is responsible for the facility and for implementing the Construction Quality Control Plan. The Owner shall be responsible for overall management of construction activities to include but not be limited to contracting, administration, and retaining the services of qualified professionals as required during the life of the facility. In addition, the Owner shall approve any design and/or quality control revisions and administer related permit modifications.

2.2 Permitting Agency

The landfill will operate under a permit issued by the Kentucky Division of Waste Management. The Kentucky Division of Waste Management (KDWM) will review all Quality Assurance and Quality Control (QA/QC) documentation during and/or after construction to verify conformance with the permit conditions, permitted engineering drawings, and applicable regulations.

2.3 Design Engineer

The Design Engineer will be a professional engineer licensed in Kentucky. Responsibilities of the Design Engineer include construction drawing preparation as well as development of the Construction Quality Control Plan.

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2.4 QA/QC Engineer

The QA/QC Engineer shall be a registered professional engineer licensed in Kentucky. The QA/QC Engineer is responsible for executing this Plan during construction activities. Responsibilities of the QA/QC Engineer shall include management of construction monitoring, testing, and related documentation. The QA/QC Engineer shall provide field personnel to sample, test, inspect, and document construction materials and monitor activities during landfill development. Construction materials include all geosynthetic and earthen materials used for landfill development. Construction activities include construction of the bottom liner system, final cap system, and sediment ponds.

3.0 BOTTOM LINER AND FINAL CAP SYSTEMS CONSTRUCTION QUALITY CONTROL

3.1 Pre-Construction Meeting

Prior to construction, a pre-construction meeting shall be held to discuss project activities with all participants.

3.2 Construction Activities

Bottom liner system construction includes excavation and structural fill material (soil, shale or rock) placement where needed to achieve required subgrade elevations. Once subgrade preparation is complete, bottom liner system construction activities may include one or more of the following: placement of soil liner material, geosynthetic clay liner, flexible membrane liner, drainage layer and piping associated with a leachate collection system. Final cap system construction includes grading of existing waste and/or cover material, placement of additional cover material (as needed), placement of a flexible membrane liner, installing a drainage layer (as needed), and placement of vegetative cover.

3.3 Excavation

1. Top soil and/or vegetation shall be removed from the existing ground surface (clear and grub) prior to excavation.
2. After excavation to design subgrade elevations has been achieved, the QA/QC Engineer and Kentucky Division of Waste Management personnel shall inspect the finished subgrade surface. The Earthwork Contractor shall proof roll the subgrade surface using a four (4) tire, 100,000 lb. (min.) loaded scraper or approved equal. The QA/QC Engineer shall identify areas that require additional work (i.e. soft material areas). Such areas will be reworked; soft materials removed and backfilled with structural fill and proof rolled again until a passing result is obtained.

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3. The QA/QC Engineer or his representative will visually inspect the finished subgrade surface for seeps. In the event that a significant seep, as determined by the QA/QC Engineer, is encountered, an underdrain system will be installed as shown in the engineering plans.

3.4 Structural Fill

3.4.1 Existing Ground Preparation

1. Top soil and/or vegetation shall be removed from the existing ground surface (clear and grub) prior to structural fill material placement.
2. Once clear and grub activities are finished the QA/QC Engineer or his representative will visually inspect the exposed ground surface. The ground surface will be evaluated for the suitability for structural fill material placement. The Earthwork Contractor shall proof roll the subgrade surface using a 4 tire, 100,000 lb. (min.) loaded scraper or approved equal. The QA/QC Engineer shall identify areas that require additional work (i.e. soft material areas). Such areas will be reworked; soft materials removed and backfilled with structural fill and proof rolled again until a passing result is obtained.
3. The QA/QC Engineer or his representative will visually inspect the exposed ground surface for seeps. In the event that a significant seep, as determined by the QA/QC Engineer, is encountered, an underdrain system will be installed as shown in the engineering plans.

3.4.2 Soil Structural Fill Material

1. Soil material shall be substantially free of organic material. All soil material used shall be soils that classify as CH, CL, MH, ML, CL-ML, SC or SM-SC according to the unified soil classification system. The material shall contain no stones whose largest dimension exceeds twelve (12) inches. All soil material proposed for use as structural fill shall receive prior approval of the QA/QC Engineer.
2. The distribution and gradation of material throughout the Zone shall be such that the Zone will be free from lenses, pockets, streaks or layers of material differing substantially in texture or gradation from the surrounding material. The combined excavation and placing operations shall be such that the material being compacted in the Zone will be blended sufficiently to secure the best practicable degree of compaction and stability. Successive loads of material shall be placed on the fill so as to produce the best practicable distribution of the material.
3. The thickness of the layers before compaction with rollers shall not be more than eighteen (18) inches or twelve (12) inches after compaction. No material placed by

QAQC PLAN

dumping in piles or windrows shall be incorporated in a fill layer in that position, but shall be moved and spread by blading or similar approved methods.

4. The following laboratory tests and classification shall be performed on representative samples of the soil structural fill material being utilized:

Table 1 – Soil Structural Fill Material Testing

Test	Test Method	Frequency
Natural Moisture Content	ASTM D2216	1 Test per Soil Type or Each Change in Material Type
Particle Size Distribution	ASTM D422	1 Test per Soil Type or Each Change in Material Type
Atterberg Limits	ASTM D4318	1 Test per Soil Type or Each Change in Material Type
Soil Classification	ASTM D2487	1 Test per Soil Type or Each Change in Material Type
Specific Gravity	ASTM D854	1 Test per Soil Type or Each Change in Material Type
Standard Proctor	ASTM D698	1 Test per Soil Type or Each Change in Material Type

3.4.3 Shale Structural Fill Material

1. Shale structural fill material shall consist of soil-like shale and intermediate shale with a Slake Durability Index of less than 95. In addition, shale material shall include friable sandstone, weathered rock, or similar materials. Large rock fragments or limestone/sandstone slabs with any dimension greater than twelve (12) inches shall be broken down and included in the shale material or removed. All shale material proposed for use as structural fill shall receive prior approval of the QA/QC Engineer.
2. Shale material shall be placed in twelve (12) inch maximum loose lifts to the full width of the cross-section. Each lift shall be bladed as required prior to compaction to ensure uniform layer thickness. Large rock fragments or limestone/sandstone slabs having any dimension greater than twelve (12) inches shall be removed from the layer to be compacted, or broken down and then incorporated into the lift.
3. The following laboratory test shall be performed on representative samples of the soil structural fill material being utilized:

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Table 2 – Shale Structural Fill Material Testing

Test	Test Method	Frequency
Slake Durability Index	ASTM D4644	1 Test per Material Type

3.4.4 Rock Structural Fill Material

1. Rock material shall be placed as a zoned fill which includes a lower zone located up to within approximately two (2) feet below subgrade and an upper zone comprising the last two (2) feet below subgrade.
2. The lower zone of fill shall be constructed primarily of durable rock placed in maximum two (2) foot lifts with maximum boulder dimensions of approximately two (2) feet. The fill shall be placed into final position by blading or dozing in a manner that will minimize voids, pockets and bridging.
3. The upper zone of fill shall be constructed primarily of select, well graded rock or random earth and bedrock material with maximum dimensions of one (1) foot. The presence of fines within the upper zone is required to “choke” the voids present within the lower zone which will minimize potential downward migration of the overlying soil material.
4. The two (2) foot upper zone shall be placed by blading or dozing the select material into uniform twelve (12) inch lifts (to minimize voids, pockets and bridging) and then compacting the material with a sheepsfoot or tamping foot roller. It may be necessary to adjust the moisture content of the select material prior to final compaction operations depending on specific composition of the material.
5. In areas where fill depths are less than five (5) feet, all fill shall be constructed as outlined herein for the upper zone.
6. Areas of rock fill that form an outside slope of the landfill shall be constructed with the upper four (4) inches composed of vegetative soil. This material shall be seeded and mulched once construction is complete in accordance with the contract drawings and specifications.

3.4.5 Moisture Control

Soil Structural Fill Material

1. During compaction operations the surface of the fill and the materials being placed shall receive an amount of water necessary to achieve compaction to 92% of its maximum dry density as determined by ASTM D698.

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Shale Structural Fill Material

1. If shale material is dry, water shall be applied to accelerate the slaking action (breakdown) and to facilitate compaction. The water shall be distributed by an approved method which provides uniform application of the required quantity of water. The water shall be uniformly incorporated throughout the entire lift by a multiple gang disk meeting the requirements of this specification. The amount of water shall be that required to achieve a compaction to 92% of its maximum dry density as determined by ASTM D698.

Rock Structural Fill Material

1. Moisture control will not be required for rock embankment.

3.4.6 Compaction Equipment

Soil or Shale Structural Fill Material

1. These fill materials shall be compacted with a sheepsfoot / tamping foot compactor. The rollers shall be operated at speeds of no more than five (5) miles per hour.

3.4.7 Compaction Requirements

Soil Structural Fill Material

1. After each layer of soil fill has been placed, spread, and contains the required moisture, it shall be compacted by passing a tamping foot roller over the entire surface of the layer a sufficient number of times to obtain the specified density. A minimum of four (4) passes shall be required.
2. Adjustments in the compactive effort shall be made on the basis of field density determinations made as the construction progresses. Vibrating rollers shall not be used to compact soil.
3. Soil fill material shall be compacted to 92 percent of its maximum dry density as determined by ASTM D698. In-place moisture shall be within -5% below to 2% above optimum moisture as determined by ASTM D698. In-place material not meeting these specifications shall be reworked until satisfactory results are obtained.
4. Field compaction tests, utilizing the nuclear method outlined in ASTM D2922 or other methods, will be performed as the construction proceeds.

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Shale Structural Fill Material

1. Shale material shall receive a minimum of three (3) passes with a static roller followed by blading and a minimum of two (2) passes with a vibratory roller. The rollers shall not exceed five (5) miles per hour during these passes. Each fill layer shall be compacted to a minimum of 92 percent of maximum dry density as determined by ASTM D698. The number of passes will, at the direction of the QA/QC Engineer, be adjusted upward if necessary to obtain 92 percent of maximum dry density.
2. Field compaction tests, utilizing the nuclear method outlined in ASTM D2922 or other methods, will be made as the construction proceeds.

Rock Structural Fill Material

1. See Section 3.4.4 of this Plan.

3.4.8 Proof Roll

1. After structural fill material has been placed to the design subgrade elevations shown in the engineering drawings, the QA/QC Engineer and Division of Waste Management personnel shall inspect the top of the subgrade surface. The Earthwork Contractor shall proof roll the subgrade surface using a 4 tire, 100,000 lb. (min.) loaded scraper or approved equal. The QA/QC Engineer shall identify areas that require additional work (i.e. soft material areas). Such areas will be reworked; soft materials removed and backfilled with structural fill and proof rolled again until a passing result is obtained.

3.4.9 Surveying

1. Sufficient survey control referenced to existing site control will be taken to show the finished elevations of the subgrade and used as a reference for the various layers of the bottom liner system. Sufficient data will be available to create a computer model of the finished surface.

3.5 Soil Liner Material

3.5.1 24" Soil Liner Layer (Low Permeable Soil)

1. Soil material shall be free of organic material, tree roots, wood, or other decayable material and rocks no larger than one 3/4 inch in diameter on the final surface and two (2) inches for all lower lifts. Soil liner material not meeting the rock size limits above, shall be processed to remove oversized rocks. The process method shall be

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approved by the Engineer. The KDWM will be notified prior to the start of soil liner processing.

2. Low permeability soil material shall have a maximum remolded coefficient of permeability of 1×10^{-7} centimeters per second based on permeability testing per ASTM D5084. The soil shall be compacted to a minimum of ninety-two (92) percent of the standard proctor density at moisture content at or above optimum moisture content as determined by ASTM D698 unless a modified proctor is used. But in no case shall the dry density or moisture content be less than specified by the laboratory testing of the soil being utilized.
3. Compaction shall be performed by properly controlling the moisture content, lift thickness, and other necessary details to obtain the density, moisture and permeability characteristics. During construction, the moisture content of the soil shall be maintained.
4. The following laboratory tests and classification shall be performed on representative samples of the low permeable soil material being utilized:

Table 3 – Low Permeable Soil Material Testing

Test	Test Method	Frequency
Natural Moisture Content	ASTM D2216	1 Test per 2,000 cy or Each Change in Material Type
Particle Size Distribution	ASTM D422	1 Test per 2,000 cy or Each Change in Material Type
Atterberg Limits	ASTM D4318	1 Test per 2,000 cy or Each Change in Material Type
Soil Classification	ASTM D2487	1 Test per 10,000 cy or Each Change in Material Type
Specific Gravity	ASTM D854	1 Test per 10,000 cy or Each Change in Material Type
Permeability	ASTM D5084	1 Test per 20,000 cy or Each Change in Material Type
Standard Proctor	ASTM D698	1 Test per 20,000 cy or Each Change in Material Type

5. All low permeable soil material shall be placed in lifts not to exceed six (6) inches compacted.
6. Sufficient survey control will be taken to show finished elevations of the placed low permeable soil material. Sufficient data will be available to create a computer model of the finished surface.

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7. At least nine (9) moisture and density tests per acre per lift of soil material placed will be performed in the field using a nuclear density apparatus.
8. This Plan will assure that the layers of the homogeneous low permeability soil material are compacted using compactors with full depth penetrating feet to obtain the required density and moisture. The feet length shall be one (1) inch longer than the loose soil layer thickness.
9. Smooth rollers may be used at the end of each work period to seal the surface from rain infiltration.

3.5.2 8" Soil Liner Layer (GCL Base)

1. The soil materials utilized shall be capable of achieving 1×10^{-7} centimeters per second based on permeability testing per ASTM D5084. The soil materials shall be compacted to a minimum dry density of 92 percent of the standard proctor density as determined by ASTM D698 unless a modified proctor is used.
2. Compaction shall be performed by properly controlling the moisture content, lift thickness and other necessary details to obtain the density and moisture requirements.
3. The following laboratory tests and classification shall be performed on representative samples of the GCL base soil material being utilized:

Table 4 – GCL Base Material Testing

Test	Test Method	Frequency
Standard Proctor	ASTM D698	1 Test per 20,000 cy or Each Change in Material Type

4. All GCL base soil material shall be placed in one (1) lift if the material particle size is 1-inch or less. The soil liner will be placed in two (2) lifts if the material is processed (screened) for 2-inch minus and 1-inch minus separately.
5. Soil material shall be free of organic material, tree roots, wood, or other decayable material and rocks larger than two (2) inches in diameter. In addition, the top surface of the soil liner shall be free of rocks greater than one (1) inch in diameter. Soil material not meeting the rock size limits above, shall be processed to remove oversized rocks. The process method shall be approved by the QA/QC Engineer. The KDWM will be notified prior to the start of soil liner processing.

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- Sufficient survey control will be taken to show the finished elevations of the liner base and used as a reference for the various layers of the liner. Sufficient data will be available to create a computer model of the finished surface.
- At least nine (9) moisture / density tests per acre per lift of soil material placed will be performed in the field using a nuclear density apparatus.

3.6 Geosynthetic Clay Liner

3.6.1 Products

The geosynthetic clay liner (GCL) shall consist of a layer of pure sodium bentonite clay encapsulated between two (2) polypropylene geotextiles, one (1) woven and one (1) non-woven. Equivalent material as determined by the QA/QC Engineer maybe used with KDWM approval.

3.6.2 Pre-Construction QA/QC Requirements

- The manufacturer will provide the QA/QC Engineer with a list of guaranteed properties for each GCL component. The manufacturer will also provide the Owner and the QA/QC Engineer with a written certification that the materials delivered have properties which meet or exceed all values guaranteed for that type of material.
- The manufacturer shall submit a certification that all rolls delivered meet the following specifications at a minimum:

Table 5 – GCL Manufacturer Quality Control Testing

Test	Test Method	Test Value
Bentonite Content ¹	ASTM D5993 (at 0% moisture)	≥ 0.75 lb / sf
Bentonite Swell Index	ASTM D5890	24 ml / 2g
Hydraulic Conductivity	ASTM D5887	≤ 3.0 X 10 ⁻⁹ cm/sec
Peel Strength	ASTM D6496	2.1 lb / in
Moisture Content	ASTM D5993	35 % (max.)
Grab Tensile	ASTM D6768	23 lb / in

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Notes:

1 – GCL shall be compatible with CCR waste.

2 – Values shown are minimum values based on GRI-GCL3. Final MQA values will be based on actual GCL model selected for installation. See specifications.

3.6.3 Packaging, Storage, and Handling

1. The GCL shall be wound around a cardboard core to facilitate handling. The core is not intended to support the roll for lifting but should be sufficiently strong to prevent collapse during transit. The manufacturer will identify all rolls with the following information:
 - a. Manufacturer's name;
 - b. Product identification;
 - c. Lot number;
 - d. Roll number; and,
 - e. Roll dimensions.
2. All rolls shall be labeled and bagged in packaging that is resistant to photodegradation by ultraviolet (UV) light.
3. A dedicated storage area shall be selected at the job site that is level, dry, well-drained, and away from high traffic areas.
4. All stored GCL materials and accessory bentonite (if applicable) must be covered with plastic sheeting or tarpaulin until their installation. All materials will be inspected prior to use. Any unsuitable material encountered will be replaced or repaired.

3.6.4 Construction QA/QC Requirements

1. The QA/QC Engineer will examine all manufacturer certifications to ensure that the property values listed on the certifications meet or exceed those specified for the GCL. Any deviations will be reported to the Owner.
2. Upon manufacturing or delivery of the GCL, the QA/QC Engineer or his representative will inspect the material. The following conformance tests may be performed:

Table 6 – GCL Conformance Testing

Test	Test Method	Test Value
Bentonite Content	ASTM D5993	≥ 0.75 lb / sf @ 0% moisture
Bentonite Swell Index	ASTM D5890	24 ml / 2g

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Grab Tensile	ASTM D6768	23 lb / in
Peel Strength	ASTM D6496	2.1 lb / in

Notes:

1 – GCL shall be compatible with CCR waste.

2 – Values shown are minimum values based on GRI-GCL3. Final minimum conformance values will be based on actual GCL model selected for installation. See specifications.

3 – CCR compatibility testing shall be conducted using ASTM D6766 (tested out to full termination criteria) using a site specific leachate sample.

The testing frequency of the GCL shall be taken at a minimum rate of one (1) per lot or one (1) per 100,000 square feet, whichever is the most frequent. The QA/QC Engineer will examine all results from laboratory conformance testing and will report any nonconformance to the Owner.

If revisions to ASTM, GRI specifications or other test procedures used in manufacturer quality assurance or construction conformance testing occurs, the CQA Engineer shall incorporate the changes into the project's CQA program.

3.6.5 Deployment

1. The surface upon which the GCL is to be installed shall be smooth and free of debris, roots, sticks, and rocks larger than one (1) inch in any dimension. The level of compaction shall be such that no rutting is caused by installation equipment or other construction vehicles.
2. Immediately prior to GCL deployment, the soil liner material shall be final-graded to fill in all voids or cracks and then smooth-rolled to provide the best practicable surface for the GCL. At completion of this activity, no sharp irregularities or abrupt elevation changes shall exist in the soil liner material.
3. All GCL seams shall be formed in accordance with manufacturer's recommendations. The edges of GCL panels will be adjusted to smooth out wrinkles, creases, or "fishmouths". GCL panel overlaps will be "shingled" so as to prevent flow into the seam.

3.6.6 Damage Repair

1. Any damage in the form of cuts or tears in the GCL, shall be identified and repaired by the installer by cutting a patch from unused GCL and placing it over the affected area.
2. The damaged area should be cleaned of all dirt and debris. A patch of GCL shall be cut to fit over the damaged area and to extend one foot in all directions around it.

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Accessory bentonite shall then be placed around the perimeter of the affected area at the rate of one-half (1/2) pound per lineal foot and the patch shall be placed over the damage. The patch shall be heat bonded to the GCL panel to keep the patch in position during further geosynthetics installation.

3.7 Flexible Membrane Liner

3.7.1 Products

The flexible membrane liner (FML) to be used in the bottom liner system will be textured 60-mil High Density Polyethylene (HDPE). The final cap system will contain either textured 40-mil HDPE or textured 40-mil Linear Low Density Polyethylene (LLDPE) flexible membrane liner.

The flexible membrane liner material shall have a demonstrated hydraulic conductivity less than 1×10^{-12} centimeters per second and chemical and physical resistance not adversely affected by waste placement or leachate generated. The manufacturer shall submit a certification to ensure chemical compatibility of the liner material chosen.

3.7.2 Pre-Construction QA/QC Requirements

1. Origin and identification of the raw materials used to manufacture the FML;
2. Copies of quality control certificates issued by the producer of the raw materials used to manufacture the FML; and
3. Reports of tests conducted to verify the quality of the raw materials used to manufacture the FML shall be issued to the QA/QC Engineer. The properties to test shall include, at a minimum: density and percent carbon black. Testing and testing frequencies should conform to Geosynthetic Research Institute (GRI) Standard GRI-GM13 for HDPE FML and GRI-GM17 for LLDPE FML. These standards are generally reviewed for revisions on a periodic basis, thus, the standards are updated often. GRI is the current industry standard and the most recently adopted version of GRI-GM13 and GRI-GM17 should be followed as long as no conflict exists between the GRI standard and the Kentucky Administrative Regulations (KAR). The KAR will govern in the event of a conflict. If revisions to GRI, ASTM or other standards occur, no modification will be required by the Kentucky Division of Waste Management.
4. The FML manufacturer shall submit certification on all rolls for the following properties, in addition to the pertinent GRI-GM standards:

Table 7 – FML Manufacturer Quality Control Testing

Test	Test Method	Test Value
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Permeability	ASTM E96	$\leq 1 \times 10^{-12}$ cm/sec
Chemical Compatibility	EPA 9090	No significant change in properties

3.7.3 Packaging, Storage, and Handling

1. The geomembrane shall be shipped rolled. Folded or otherwise creased liner will not be accepted. The liner shall be marked and tagged with the following information:
 - a. Manufacturer's Name
 - b. Roll Length
 - c. Gross Weight
 - d. Inspected By
 - e. Date of Manufacture
 - f. Resin Lot Number
 - g. Roll Width
2. A dedicated storage area shall be selected at the job site that is level, dry, well-drained, and away from high traffic areas. The ground surface will be suitably prepared such that no stones or other rough objects which could damage the FML are present.
3. Unloading of rolls at the job site will be performed so that no damage to the FML occurs. Pushing, sliding, or dragging of FML rolls shall not be permitted.
4. If storage of FML rolls at the job site is longer than six (6) months, a sacrificial covering or temporary shelter will be provided for protection against precipitation, ultraviolet exposure, and accidental damage.

3.7.4 Construction QA/QC Requirements

1. The QA/QC Engineer will verify that certificates have been provided by the FML manufacturer which include all rolls and that each certificate identifies the roll related to it. The QA/QC Engineer will review the certificates and verify that the manufacturer certified roll properties meet the specifications.
2. Upon manufacturing the rolls of FML, the QA/QC Engineer or its designee will ensure that samples are removed and forwarded to a qualified laboratory for conformance testing. The following conformance test procedures may be completed as follows:

Table 8 – 60-mil Textured HDPE FML Conformance Testing

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Properties	Test Method	Test Value
Thickness mils	ASTM D5994	60-mil (min. avg.)
Density (min. avg.)	ASTM D1505 / ASTM D792	0.940 g/cc
Asperity Height	ASTM D7466	16-mil (min. avg.)
Tensile Properties (min. avg.) yield strength break strength yield elongation break elongation	ASTM D6693 Type IV	126 lb/in. 90 lb/in. 12% 100%
Tear Resistance (min. ave.)	ASTM D1004	42 lb
Puncture Resistance (min. ave.)	ASTM D4833	108 lb
Carbon Black Content (range)	ASTM D4218	2.0 - 3.0 %
Carbon Black Dispersion	STM D5596	See Note 1

Notes:

1. Carbon black dispersion (only near spherical agglomerates) for 10 different views: 9 in categories 1 or 2 and 1 in category 3.

Table 9 – 40-mil Textured LLDPE FML Conformance Testing

Properties	Test Method	Test Value
Thickness mils (min)	ASTM D5994	40-mil (min. avg.)
Density g/ml (max.)	ASTM D1505 / ASTM D792	0.939
Asperity Height	ASTM D7466	16-mil (min. avg.)
Tensile Properties (min. avg.) break strength - lb/in. break elongation - %	ASTM D6693 Type IV	60 250
Tear Resistance - lb (min. avg.)	ASTM D1004	22
Puncture Resistance - lb (min. avg.)	ASTM D4833	44
Carbon Black Content - %	ASTM D4218	2.0-3.0
Carbon Black Dispersion	ASTM D5596	See Note 1

Notes:

1. Carbon black dispersion (only near spherical agglomerates) for 10 different views: 9 in categories 1 or 2 and 1 in category 3.
 - a. Samples will be taken across the entire width of the roll and will not include the first outer wrap. The QA/QC Engineer or his designee will mark the machine direction on the samples with an arrow.
 - b. Unless otherwise specified, samples will be taken at a rate of one per lot or one per 100,000 square feet whichever is the most frequent.

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- c. Test results will be examined by the QA/QC Engineer and any results in non-conformance with the specifications will be reported to the Owner immediately.
 - d. The liner material may also be tested at the manufacturing site prior to delivery to the landfill.
 - e. The FML installer shall submit copies of proposed panel layout drawings to the QA/QC Engineer for review prior to actual installation.
 - f. If revisions to ASTM, GRI or other test procedures used in construction conformance testing occurs, the CQA Engineer shall incorporate the changes into the project's CQA program.
3. Quality control testing performed in the field by the FML installer under the supervision of the QA/QC Engineer or his representative shall assure conformity of the FML installation with the engineering plans, reports, and specifications submitted in accordance with the following requirements:
- A. Prequalification Test Seams:
 1. Test seams shall be prepared and tested by the Geomembrane Installer to verify that seaming parameters (speed, temperature, and pressure of welding equipment) are adequate.
 2. Test seams shall be made by each welding technician for each welding machine and for each type of weld (smooth liner to smooth liner, smooth liner to textured liner, textured liner to textured liner and extrusion welding) to be performed by that technician and machine. The test seams shall then be tested in accordance with ASTM D6392 at the beginning of each seaming period. Test seaming shall be performed under the same conditions and with the same equipment and operator combination as production seaming. The test seam shall be approximately 3.3 meters (10 feet) long for fusion welding and one (1) meter (three (3) feet) long for extrusion welding with the seam centered lengthwise. At a minimum, tests seams should be made by each technician one (1) time every four (4) to six (6) hours; additional tests may be required with changes in environmental conditions and if/when machine settings change.
 3. Six (6) 25-mm (one (1)-inch) wide specimens shall be die-cut by the Geomembrane Installer from each end of the test seam. These specimens shall be tested by the Geomembrane Installer using a field tensiometer testing both tracks for peel strength (three (3) tests) and also for shear

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strength (three (3) tests). Each specimen should fail in the parent material and not in the weld, "Film Tear Bond" (F.T.D. failure). Seam separation equal to or greater than 25% of the track width shall be considered a failing test.

4. The minimum acceptable seam strength values to be obtained for all specimens tested are listed in this Section. All specimens shall pass for the test seam to be a passing seam.
5. If a test seam fails, an additional test seam shall be immediately conducted. If the additional test seam fails, the seaming apparatus shall be rejected and not used for production seaming until the deficiencies are corrected and a successful test seam can be produced.
6. A sample from each test seam shall be labeled. The label shall indicate the date, ambient temperature, number of the seaming unit, technician performing the test seam and pass or fail description. The sample shall then be given to the COMPANY's Representative for archiving.

B. Field Seam Non-Destructive Testing:

1. All field seams shall be non-destructively tested by the Geomembrane Installer over the full seam length before the seams are covered. Each seam shall be numbered or otherwise designated. The location, date, test unit, name of tester and outcome of all non-destructive testing shall be recorded and submitted to the COMPANY's Representative.
2. Testing should be done as the seaming work progresses, not at the completion of all field seaming, unless agreed to in advance by the COMPANY's Representative. All defects found during testing shall be numbered and marked immediately after detection. All defects found should be repaired, retested and remarked to indicate acceptable completion of the repair.
3. Non-destructive testing shall be performed using vacuum box, air pressure, or spark testing equipment.
4. Non-destructive tests shall be performed by experienced technicians familiar with the specified test methods. The Geomembrane Installer shall demonstrate to the COMPANY's Representative all test methods to verify the test procedures are valid.
5. Extrusion seams shall be vacuum box tested by the Geomembrane Installer in accordance with ASTM D4437 and ASTM D5641. The vacuum chamber method consists of using a box with a transparent top that is placed over the seam that has been coated with a water soap solution. A vacuum of

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three (3) pounds per square inch is developed in the box. When a leak is encountered, the solution placed over the seam is observed to bubble indicating the presence of air traveling through the seam and a drop in vacuum pressure is indicated on the test apparatus. Should a leak be encountered, (a drop of vacuum pressure in excess of 0.5 PSIG and/or bubbles are observed) the area shall be resealed and retested until the sealed area passes testing. COMPANY's REPRESENTATIVE shall observe all tests and record test locations, test unit number, name of tester, and the results of such testing and report all test results to the COMPANY's REPRESENTATIVE. The COMPANY's REPRESENTATIVE shall inform the geomembrane Installer of any required repairs.

6. Double Fusion seams with an enclosed channel shall be air pressure tested by the Geomembrane Installer in accordance with ASTM D 5820 and ASTM D4437. The pressurized dual seam method consists of injecting pressurized air into the air channel that results from seam construction. The air channel shall be inflated using a hypodermic needle and pressurized to 30 pounds per square inch for a period of five (5) minutes. If the pressure drop is within tolerances listed in section "b" below, the seam is accepted. The air channel shall be punctured at the end opposite of the test site to determine complete seam testing. Should an unacceptable pressure drop occur, the distance of seam tested will be halved until the defect is located. When the defect is located, the area will be resealed and retested until the sealed area passes testing. COMPANY's REPRESENTATIVE shall observe and record all test locations, test unit number, name of tester, and the results of such testing and shall report all test results to the COMPANY's REPRESENTATIVE. The COMPANY's REPRESENTATIVE shall inform the geomembrane Installer of any required repairs.
 - a. Equipment for testing double fusion seams shall be comprised of but not limited to: an air pump equipped with a pressure gauge capable of generating and sustaining a pressure of 210 kPa (30 psig), mounted on a cushion to protect the geomembrane; and a manometer equipped with a sharp hollow needle or other approved pressure feed device.
 - b. The Testing activities shall be performed by the Geomembrane Installer. Both ends of the seam to be tested shall be sealed and a needle or other approved pressure feed device inserted into the tunnel created by the double wedge fusion weld. The air pump shall be adjusted to a pressure of 210 kPa (30 psig), and the valve closed.

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Allow two (2) minutes for the injected air to come to equilibrium in the channel, and sustain pressure for five (5) minutes. The seam is considered leak tight if pressure loss does not exceed the following: 40-mil material – 28 kPa (4 psig), 60-mil material – 21 kPa (3 psig), 80-mil material – 14 kPa (2 psig) after this five (5)-minute period. Release pressure from the opposite end verifying pressure drop on needle to ensure testing of the entire seam. The needle or other approved pressure feed device shall be removed and the feed hole sealed.

- c. If loss of pressure exceeds 28 kPa (4 psig) during the testing period or pressure does not stabilize, the faulty area shall be located, repaired and retested by the Geomembrane Installer.
- d. Results of the pressure testing shall be recorded on the liner at the seam tested and on a pressure testing record.

C. Destructive Field Seam Testing:

1. Destructive seam testing shall be conducted on the finished production seam at the rate of one test per 500 feet of seam length. Destructive seam tests shall be conducted on samples taken from the production seam. Sample locations shall be patched by seaming a section of liner material into the area voided during the sample collection. The patch shall be nondestructively tested in accordance with the plans and specifications.
2. Samples shall be 45 inches in length and 12 inches in width with the 45-inch dimension along the seam length. Samples shall be prepared by cutting the sample with a die into one (1) inch wide coupons for testing.
3. Samples shall be subdivided into three (3) equal lots. One lot shall be submitted to a state-approved laboratory for testing, one lot shall be tested at the site, and the third lot shall be retained by the COMPANY's REPRESENTATIVE for the COMPANY/Operator. Each subplot of samples shall be further divided into 10 coupons. Five (5) of these 10 coupons shall be tested for shear and five (5) of these 10 coupons shall be tested for peel.
4. Each lot of samples shall be tested for shear and peel to determine the acceptability of the seam. Peel and shear testing shall be conducted by the use of ASTM Test Method D6392. Each coupon shall be of the dimensions of one (1) inch in width and of sufficient length to be placed in the testing mechanism.
 - a. The acceptable shear strength of the constructed seam shall be 95%

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- of the specified minimum yield strength of the geomembrane. The film tear bond (FTB) shall occur within the unseamed sheet material rather than along the seam.
- b. The acceptable peel strength of a fusion welded seam shall be 72% of the specified minimum yield strength of the geomembrane. The acceptable peel strength of an extrusion welded seam shall be 62% of the specified minimum yield strength of the geomembrane. The FTB shall occur within the unseamed sheet material rather than along the seam. Seam integrity requirements described above are based on GRI-GM19 (HDPE) and GRI-GM17 (LLDPE) specifications, which will be used to determine seam acceptability.
5. The allowable failure of seam testing shall be one (1) coupon failure per lot of five. The allowable failure rate shall apply to each lot of five (5) coupons and shall not be applied as an average over quantities of coupon lots. Should more than one (1) failure occur in a given coupon lot, the seam shall be repaired or reconstructed as specified herein.
 6. If more than the allowable variances should occur in the destructive seam testing, the COMPANY's REPRESENTATIVE shall ensure that the seam is reconstructed between the location of the sample which failed and the location of the next acceptable sample or the welding path is retraced to an intermediate location at least 10 feet from the location of the sample which failed the test, and a second sample is taken for an additional field test. Should the second sample pass the required testing, the seam shall be reconstructed between the location of the second test and the original sampled location. If the second sample fails the required testing, the procedure shall be repeated. All acceptable seams shall lie between two (2) locations where samples passed the required test procedures and shall include one (1) test location along the reconstructed seam. Seam reconstruction shall consist of extrusion welding a 1-foot wide strip of geomembrane over the failed seam.

3.7.5 Deployment

1. No horizontal seams are allowed within five (5) feet of the toe of the slope.
2. Unroll only those factory-packaged sections which are to be anchored or seamed together in one day. Panels should be positioned with the overlap recommended by the manufacturer, but not less than two (2) inches.

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3. After panels are initially in place, remove as many wrinkles as possible. Unroll several panels and allow the liner to "relax" before beginning field seaming. The purpose of this is to make the edges which are to be bonded as smooth and free of wrinkles as possible.
4. Once panels are in-place and smooth, commence field seaming operations.
5. No support equipment used by any contractor shall be allowed on the geomembrane. Personnel working on the geomembrane shall not smoke, wear damaging shoes or engage in any activity which damages the geomembrane.
6. The anchor trench shall be excavated, backfilled and compacted. Care should be taken when backfilling the trench to prevent any damage to the geomembrane.

3.7.6 Damage Repair

1. Any damage to the FML shall be repaired by the installer. Repairs will be performed in accordance with manufacturer's recommendations. Acceptable repair procedures include, but are not limited to:
 - a. Patching – used to repair holes and tears;
 - b. Grind and Reweld – used to repair small sections of extrusion welded seams;
 - c. Spot Welding – used to repair small minor, localized flaws;
 - d. Capping – used to repair failed seams.
2. All surfaces must be clean and dry at the time of repair. All patches shall extend at least four (4) inches beyond the edge of the defect, and all patches must have rounded corners.
3. All FML repairs shall be non-destructively tested. Repairs which pass non-destructive testing shall be deemed acceptable.

3.8 Synthetic Drainage Layer (Geocomposite)

3.8.1 Products

1. The manufacturer and installer of the geocomposite materials shall provide proof of experience on similar projects. The manufacturer and installer will be subject to approval by the Owner.
2. All geocomposite materials will have a non-woven geotextile material heat bonded to both sides of the geonet and a minimum permeability of 1×10^{-3} cm/sec if utilized in the final cap system as a drainage layer or 1×10^{-2} cm/sec if used in the bottom liner system as a drainage layer.

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3. All geocomposite materials shall retain their structure during handling, placement, and long-term service.
4. All geocomposite materials shall be capable of withstanding outdoor exposure for a minimum of twenty (20) days with no measurable deterioration.

3.8.2 Pre-Construction QA/QC Requirements

1. The manufacturer will provide the Owner and QA/QC Engineer with a list of guaranteed properties for the type of geocomposite to be supplied. The manufacturer will also provide the Owner and QA/QC Engineer with a written certification that the materials delivered have properties which meet or exceed all values guaranteed for that type of geocomposite material.
2. Manufacturer certifications and testing:
 - a. Origin and identification of the raw materials used to manufacture the geocomposite.
 - b. Copies of quality control certificates issued by the producer of the raw materials used to manufacture the geocomposite.
 - c. Reports of tests conducted to verify the quality of the raw materials used to manufacture the geocomposite and tests conducted on the final product after the manufacturing process is complete.
 - d. The following tests in addition to the items above will be certified by the manufacturer:

Table 10 – Geocomposite Manufacturer Quality Control Testing

Test	Test Method	Test Value
Geonet Component Thickness	ASTM D5199	See Note 1
Density of Geonet Component	ASTM D1505	≥ 0.92 g / cm
Ply Adhesion	ASTM D7005	≥ 1 lb / in
Transmissivity (3:1 slopes)	ASTM D4716	$\geq 1.39 \times 10^{-4}$ m ² /sec
Transmissivity (5% slopes)		$\geq 4.96 \times 10^{-4}$ m ² /sec
Transmissivity (2.2% slope)		$\geq 7.55 \times 10^{-4}$ m ² /sec

Notes:

1. Geonet thickness may vary dependent upon the gradient and load required.
2. See Specifications for gradient and loading requirements.

3.8.3 Packaging, Storage, and Handling

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1. Geocomposite shall be supplied in rolls wrapped in relatively impermeable and opaque protective covers.
2. Geocomposite rolls shall be labeled with the following information.
 - a. manufacturer's name;
 - b. product identification;
 - c. lot or batch number;
 - d. roll number; and
 - e. roll dimensions.
3. Handling of geocomposite rolls shall be done in a manner such that damage does not occur to the material or its protective wrapping.
4. A dedicated storage area shall be selected at the job site that is level, dry, well-drained, and away from high traffic areas. The geocomposite rolls shall be elevated off of the ground.
 5. If storage of geocomposite rolls at the job site is longer than six (6) months, a sacrificial covering or temporary shelter will be provided for protection against precipitation, ultraviolet exposure, and accidental damage.

3.8.4 Construction QA/QC Requirements

1. The QA/QC Engineer will examine all manufacturer certifications to ensure that the property values listed on the certifications meet or exceed those specified for the particular type of geocomposite. Any deviations will be reported to the Owner.
2. Upon manufacturing or delivery of the geocomposite, the QA/QC Engineer or his designee will inspect the material. Should any doubt arise regarding the compliance of the material, samples will be removed and forwarded to the approved laboratory for testing to verify conformance to both the specifications and the list of guaranteed properties.
3. Geocomposite materials will be inspected at the job site for damage. Any damaged geocomposite will either be rejected or repaired at the discretion of the QA/QC Engineer.
4. The following conformance test procedures tests may be performed on the geocomposite:

Table 11 – Geocomposite Conformance Testing

Test	Test Method	Test Value
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Geonet Component Thickness	ASTM D5199	See Note 1
Density of Geonet Component	ASTM D1505	$\geq .92 \text{ g / cm}$
Ply Adhesion	ASTM D7005	$\geq 1 \text{ lb / in}$
Transmissivity (3:1 slopes)	ASTM D4716	$\geq 1.39 \times 10^{-4} \text{ m}^2/\text{sec}$
Transmissivity (5% slopes)		$\geq 4.96 \times 10^{-4} \text{ m}^2/\text{sec}$
Transmissivity (2.2% slope)		$\geq 7.55 \times 10^{-4} \text{ m}^2/\text{sec}$

Notes:

1. Geonet thickness may vary dependent upon the gradient and load required.
 - a. The testing frequency of the geocomposite shall be taken at a minimum rate of one (1) per lot or one per 100,000 square feet, whichever is the most frequent.
 - b. The QA/QC Engineer will examine all results from laboratory conformance testing and will report any nonconformance to the Owner.
 - c. If revisions to ASTM, GRI or other testing procedures used in construction conformance testing occurs, no modifications will be required by the Kentucky Division of Waste Management.

3.8.5 Deployment

1. The Contractor shall handle all geocomposite in such a manner as to ensure the geocomposite drainage layers are not damaged in any way.
2. The Contractor shall take any necessary precautions to prevent damage to underlying layers during placement of the geocomposite.
3. In the presence of wind, all geocomposite shall be weighted with sandbags or the equivalent. Such sandbags shall be installed during placement and shall remain until replaced with cover material.
4. On side slopes, the geocomposite shall be secured in the anchor trench and then rolled down the slope in such a manner as to continually keep the geocomposite in tension.
5. If necessary, the geocomposite shall be positioned by hand after being unrolled to minimize wrinkles.
6. Care shall be taken during placement of geocomposite not to entrap dirt or excessive dust in the geocomposite that could cause clogging of the drainage system, and/or stones that could damage the adjacent liner. If dirt or excessive dust is entrapped in the geocomposite, it should be cleaned prior to placement of the

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next material on top of it. Care shall be exercised when handling sandbags, to prevent rupture or damage of the sandbags.

7. Geocomposite shall only be cut using Manufacturer's recommended procedures.
8. Unless otherwise specified, geocomposite shall not be welded to liners.
9. Tools shall not be left on, in, or under the geocomposite.
10. After unwrapping the geocomposite from its opaque cover, the geocomposite shall not be left exposed for a period in excess of twenty (20) days unless a longer exposure period is approved by the QA/QC Engineer, based on a formal demonstration from the Contractor that the geotextile component of the geocomposite is stabilized against U.V. degradation for a period in excess of twenty (20) days.

3.8.6 Damage Repair

1. Any holes or tears in the geocomposite shall be repaired by placing a patch extending two (2) feet beyond the edges of the hole or tear. The patch shall be secured by tying fasteners through the bottom geotextile and the geonet of the patch, and through the top geotextile and geonet on the slope. The patch shall be secured every six (6) inches with approved tying devices. The top geotextile component of the patch shall be heat sealed to the top geotextile of the geocomposite needing repair. If the hole or tear width across the roll is more than fifty (50) percent of the width of the roll, the damaged area shall be cut out and the two portions of the geonet shall be joined in accordance with manufacturer's recommendations.

3.9 Granular Drainage Layer

3.9.1 Products

1. The granular drainage material used in the leachate collection system shall consist of hard, clean, granular, durable materials. Granular drainage material shall be free of any metals, roots, trees, stumps, concrete, construction debris, other organic matter and deleterious materials and coatings.
2. Granular drainage materials may vary depending on the types of materials available at the time of each construction project. The KDWM shall pre-approve the granular drainage material prior to its use.

3.9.2 Pre-Construction QA/QC Requirements

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1. The following laboratory test shall be performed on representative samples of the granular drainage material being utilized:

Table 12 – Granular Drainage Material Testing

Test	Test Method	Test Value
Permeability	ASTM D2434	$\geq 1 \times 10^{-2}$ cm/sec
Particle Size Analysis	ASTM C136	$\leq 5\%$ Passing No. 200 sieve

- a. The largest particle size shall be no larger than two (2) inches in the largest dimension unless approved by the Owner or QA/QC Engineer.
 - b. The testing frequency of the granular drainage material shall be taken at a minimum rate of one (1) test per material type and source.
2. All granular drainage material laboratory analysis shall be submitted to the KDWM during or prior to the pre-construction meeting for each construction project the material is utilized.

3.9.3 Material Placement

1. Granular drainage material shall be placed in a manner not to damage any adjacent geosynthetic materials. Placement procedures shall be approved by the Owner or QA/QC Engineer prior to material placement.
2. Granular drainage material shall be placed with low ground pressure (LGP) dozers and access ramp / back dumping techniques.
3. Granular drainage material shall be placed in a minimum one (1) foot thick lift. Material shall be placed in a manner that does not shift leachate collection pipes or stress the FML. No compaction or moisture control is required. LGP dozers (CAT D6 dozer or smaller) shall operate on a minimum one (1) foot thickness of drainage media at all times. All other equipment that will travel over the drainage media shall be pre-approved by the Owner and CQA Engineer.
4. Drainage media shall be placed beginning at the base of slopes and proceed up slope. Under no condition shall material placed of the bottom liner system be deployed down slope.

3.10 Geotextile

3.10.1 Products

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1. All geotextiles shall be nonwoven needle punched synthetic fabric consisting only of continuous filament polyester or polypropylene manufactured in a manner approved by the QA/QC Engineer and Owner. The geotextiles shall be inert and unaffected by long-term exposure to constituents found in the landfill leachate.

3.10.2 Pre-Construction QA/QC Requirements

1. The geotextile manufacturer shall be responsible for the production and delivery of geotextile rolls and shall be a well-established firm with more than two (2) years experience in the manufacture of geotextiles. The manufacturer shall submit a statement to the QA/QC Engineer listing:
 - a. Certified minimum property values of the proposed geotextiles and the tests used to determine those properties.
 - b. Production capacity available and projected delivery dates for this project.
2. Manufacturer certifications and testing:
 - a. Origin and identification of the raw materials used to manufacture the geocomposite.
 - b. Copies of quality control certificates issued by the producer of the raw materials used to manufacture the geocomposite.
 - c. Reports of tests conducted to verify the quality of the raw materials used to manufacture the geocomposite and tests conducted on the final product after the manufacturing process is complete.
 - d. The following tests in addition to the items above will be certified by the manufacturer:

Table 13 – Geotextile Manufacturer Quality Control Testing

Test	Test Method	Frequency
Mass per Unit Area	ASTM D5261	Every 100,000 ft ²
Grab Tensile Strength	ASTM D4632	Every 100,000 ft ²
Grab Tensile Elongation	ASTM D4632	Every 100,000 ft ²
Trapezoidal Tear Strength	ASTM D4533	Every 400,000 ft ²
Puncture Strength	ASTM D4833	Every 400,000 ft ²
UV Resistance	ASTM D7238	Certified

3.10.3 Packaging, Storage, and Handling

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1. Geotextile shall be supplied in rolls wrapped in relatively impermeable and opaque protective covers.
2. Geotextile rolls shall be labeled with the following information.
 - a. manufacturer's name;
 - b. product identification;
 - c. lot or batch number;
 - d. roll number; and
 - e. roll dimensions.
3. Handling of geotextile rolls shall be done in a manner such that damage does not occur to the material or its protective wrapping.
4. A dedicated storage area shall be selected at the job site that is level, dry, well-drained, and away from high traffic areas. The geotextile rolls shall be elevated off of the ground.
5. If storage of geotextile rolls at the job site is longer than six (6) months, a sacrificial covering or temporary shelter will be provided for protection against precipitation, ultraviolet exposure, and accidental damage.

3.10.4 Construction QA/QC Requirements

1. The QA/QC Engineer will examine all manufacturer certifications to ensure that the property values listed on the certifications meet or exceed those specified for the particular type of geotextile. Any deviations will be reported to the Owner.
2. Upon manufacturing or delivery of the geotextile, the QA/QC Engineer or his designee will inspect the material. Should any doubt arise regarding the compliance of the material, samples will be removed and forwarded to the approved laboratory for testing to verify conformance to both the specifications and the list of guaranteed properties.
3. Geotextile material will be inspected at the job site for damage. Any damaged material will either be rejected or repaired at the discretion of the QA/QC Engineer.
4. The following conformance test procedures tests may be performed on the geotextile:

Table 14 – Geotextile Conformance Testing

QAQC PLAN

Test	Test Method	Frequency
Mass per Unit Area	ASTM D5261	Every 100,000 ft ²
Grab Tensile Strength	ASTM D4632	Every 100,000 ft ²
Grab Tensile Elongation	ASTM D4632	Every 100,000 ft ²
Trapezoidal Tear Strength	ASTM D4533	Every 400,000 ft ²
Puncture Strength	ASTM D4833	Every 400,000 ft ²
UV Resistance	ASTM D7238	Certified

- a. The QA/QC Engineer will examine all results from laboratory conformance testing and will report any nonconformance to the Owner.
- b. If revisions to ASTM, GRI or other testing procedures used in construction conformance testing occurs, the CQA Engineer shall incorporate the changes into the project's CQA program.

3.10.5 Deployment

1. The geotextile material shall be handled in such a manner as to ensure it is not damaged in any way.
2. The Contractor shall take any necessary precautions to prevent damage to underlying layers during placement of the geotextile.
3. After unwrapping the geotextile from its opaque cover, the geotextile shall not be left exposed for a period in excess of twenty (20) days unless a longer exposure period is approved by the CQA Representative, based on a formal demonstration from the Contractor that the geotextile is stabilized against U.V. degradation for the proposed period of exposure. If white colored geotextile is used, precautions shall be taken against "snowblindness" of personnel.
4. The Contractor shall take care not to entrap stones, excessive dust, or moisture in the geotextile during placement.
5. The Contractor shall weight all geotextiles with sandbags, or the equivalent, in the presence of wind. Such sandbags shall be installed during placement and shall remain until replaced with protective soil cover or other components of the bottom liner system.
6. The Contractor shall examine the entire geotextile surface after installation to ensure that no potentially harmful foreign objects are present. The Contractor shall remove any such foreign objects and shall replace any damaged geotextile.

3.10.6 Damage Repair

QAQC PLAN

1. On slopes steeper than five (5) horizontal to one (1) vertical, a patch made from the same geotextile shall be double seamed into place (with each seam one-half (1/2) inch apart and no closer than two (2) inches from any edge). Should any tear exceed ten (10) percent of the width of the roll, that roll shall be removed from the slope and replaced with new material.
2. On slopes flatter than or equal to five (5) horizontal to one (1) vertical, a patch made from the same geotextile shall be spot-seamed in place with a minimum of two (2) feet overlap in all directions.
3. Care shall be taken to remove any soil or other material which may have penetrated the torn geotextile.

3.11 Direct Shear Testing

Direct shear testing shall be performed on the interface identified in the stability analysis report as providing the lowest friction resistance prior to liner system construction when the following applies:

1. Initial liner construction project after issuance of permit.
2. Change in product (change in manufacturing process).
3. Change in product brand from initial testing.

Frequency of direct shear testing may be increased at the direction of the Owner, Design Engineer or QA/QC Engineer. The materials tested shall be representative of the actual materials to be used during construction.

3.12 Final Cap Vegetative Soil Layer

1. The material used in the vegetative soil layer shall consist of general materials with horticultural value (this may be soil, shale or combination thereof). The material may be mixed with alternative materials (sewage sludge and compost) but will not exceed 25 percent of the total volume of the vegetative soil layer. The soil layer used will sustain vegetative growth and prevent root penetration of the underlying geosynthetic layers.
2. Soil material may consist of on-site soils that are free of refuse or debris. Rocks greater than six (6) inches in size shall be minimized; soil material not meeting the rock size limits above shall be processed to remove over-sized rocks. The process method shall be approved by the QA/QC Engineer. The Kentucky Division of Waste Management will be notified prior to the start of vegetative material processing.

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3. The vegetative soil layer shall be uniformly placed and spread into loose lifts as specified by the QA/QC Engineer.
4. Final grades of vegetative soil layer shall be at or above the minimum required thickness of twenty four (24) inches.
5. Sufficient survey control will be taken to show the finished elevations of the vegetative soil layer. Sufficient data will be available to create cross-sections.
6. The appropriate seed mixture as specified in Attachment 47 shall be placed on the prepared surface at the rate outlined in Attachment 47. Composite

representative soil samples may be collected for analysis prior to the seeding phase. Soil amendments, if necessary, will be applied per the results of the testing.
7. Mulching material shall be evenly placed over all seeded areas. Mulch shall be hay, straw, or similar materials applied at the approximate rate of 1.5 tons / acre immediately following seeding. In addition, mulch mat may be placed over seeded areas.

4.0 SEDIMENT POND CONSTRUCTION QUALITY CONTROL

4.1 Pre-Construction Meeting

Prior to construction, a pre-construction meeting shall be held to discuss project activities with all participants.

4.2 Construction Activities

Sediment pond construction includes excavation and structural fill material (soil or shale) placement where needed to achieve required subgrade elevations. Once subgrade preparation is complete, construction activities may include one or more of the following: placement of structural fill material (pond dam construction), soil liner material, geosynthetic clay liner, flexible membrane liner, and granular materials. In addition, principal and emergency spillways will be constructed in accordance with the engineering drawings.

4.3 Excavation

1. Top soil and/or vegetation shall be removed from the existing ground surface (clear and grub) prior to excavation.
2. After excavation to design subgrade elevations has been achieved, the QA/QC Engineer shall inspect the finished subgrade surface. The Earthwork Contractor shall proof roll the subgrade surface (only where embankment will be placed to

QAQC PLAN

construct the dam) using a four (4) tire, 100,000 lb. (min.) loaded scraper or approved equal. The QA/QC Engineer shall identify areas that require additional work (i.e. soft material areas). Such areas will be reworked; soft materials removed and backfilled with structural fill and proof rolled again until a passing result is obtained.

3. The QA/QC Engineer or his representative will visually inspect the finished subgrade surface for seeps. In the event that a significant seep, as determined by the QA/QC Engineer, is encountered, an underdrain system will be installed as shown in the engineering plans for ponds that will receive a liner system or if a seep is encountered in the location where the dam will be constructed.

4.4 Structural Fill

4.4.1 Existing Ground Preparation

1. Top soil and/or vegetation shall be removed from the existing ground surface (clear and grub) prior to structural fill material placement.
2. Once clear and grub activities are finished the QA/QC Engineer or his representative will visually inspect the exposed ground surface. The ground surface will be evaluated for the suitability for structural fill material placement. The Earthwork Contractor shall proof roll the subgrade surface using a 4 tire, 100,000 lb. (min.) loaded scraper or approved equal. The QA/QC Engineer shall identify areas that require additional work (i.e. soft material areas). Such areas will be reworked; soft materials removed and backfilled with structural fill and proof rolled again until a passing result is obtained.
3. The QA/QC Engineer or his representative will visually inspect the exposed ground surface for seeps. In the event that a significant seep, as determined by the QA/QC Engineer, is encountered, an underdrain system will be installed as shown in the engineering plans.

4.4.2 Soil Structural Fill Material

1. Soil material shall be substantially free of organic material. All soil material used shall be soils that classify as CH, CL, MH, ML, CL-ML, SC or SM-SC according to the unified soil classification system. The material shall contain no stones whose largest dimension exceeds six (6) inches. All soil material proposed for use as structural fill shall receive prior approval of the QA/QC Engineer.
2. The distribution and gradation of material throughout the Zone shall be such that the Zone will be free from lenses, pockets, streaks or layers of material differing substantially in texture or gradation from the surrounding material. The combined

QAQC PLAN

excavation and placing operations shall be such that the material being compacted in the Zone will be blended sufficiently to secure the best practicable degree of compaction and stability. Successive loads of material shall be placed on the fill so as to produce the best practicable distribution of the material.

3. The thickness of the layers before compaction with rollers shall not be more than nine (9) inches. No material placed by dumping in piles or windrows shall be incorporated in a fill layer in that position, but shall be moved and spread by blading or similar approved methods.
4. The following laboratory tests and classification shall be performed on representative samples of the soil structural fill material being utilized:

Table 15 – Soil Structural Fill Material Testing (Sediment Ponds)

Test	Test Method	Frequency
Natural Moisture Content	ASTM D2216	1 Test per Soil Type or Each Change in Material Type
Particle Size Distribution	ASTM D422	1 Test per Soil Type or Each Change in Material Type
Atterberg Limits	ASTM D4318	1 Test per Soil Type or Each Change in Material Type
Soil Classification	ASTM D2487	1 Test per Soil Type or Each Change in Material Type
Standard Proctor	ASTM D698	1 Test per Soil Type or Each Change in Material Type

4.4.3 Shale Structural Fill Material

1. Shale structural fill material shall consist of soil-like shale and intermediate shale with a Slake Durability Index of less than 95. In addition, shale material may include friable sandstone, weathered rock, or similar materials. Large rock fragments or limestone/sandstone slabs with any dimension greater than six (6) inches shall be broken down and included in the shale material or removed. All shale material proposed for use as structural fill shall receive prior approval of the QA/QC Engineer.
2. Shale material shall be placed in six (6) inch maximum compacted lifts to the full width of the cross-section. Each lift shall be bladed as required prior to compaction to ensure uniform layer thickness. Large rock fragments or limestone/sandstone slabs having any dimension greater than six (6) inches shall be removed from the layer to be compacted, or broken down and then incorporated into the lift.

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3. The following laboratory test shall be performed on representative samples of the soil structural fill material being utilized:

Table 16 – Shale Structural Fill Material Testing (Sediment Ponds)

Test	Test Method	Frequency
Slake Durability Index	ASTM D4644	1 Test per Material Type

4.4.4 Moisture Control

Soil Structural Fill Material

1. During compaction operations the surface of the fill and the materials being placed shall receive an amount of water necessary to achieve compaction to 95% of its maximum dry density as determined by ASTM D698.

Shale Structural Fill Material

1. If shale material is dry, water shall be applied to accelerate the slaking action (breakdown) and to facilitate compaction. The water shall be distributed by an approved method which provides uniform application of the required quantity of water. The water shall be uniformly incorporated throughout the entire lift by a multiple gang disk meeting the requirements of this specification. The amount of water shall be that required to achieve a compaction to 95% of its maximum dry density as determined by ASTM D698.

4.4.5 Compaction Equipment

Soil or Shale Structural Fill Material

1. These fill materials shall be compacted with a sheepsfoot / tamping foot compactor. The rollers shall be operated at speeds of no more than five (5) miles per hour.

4.4.6 Compaction Requirements

Soil Structural Fill Material

1. After each layer of soil fill has been placed, spread, and contains the required moisture, it shall be compacted by passing a tamping foot roller over the entire surface of the layer a sufficient number of times to obtain the specified density. A minimum of four (4) passes shall be required.

QAQC PLAN

2. Adjustments in the compactive effort shall be made on the basis of field density determinations made as the construction progresses. Vibrating rollers shall not be used to compact soil.
3. Soil fill material shall be compacted to 95 percent of its maximum dry density as determined by ASTM D698. In-place moisture shall be within -4% below to 2% above optimum moisture as determined by ASTM D698. In-place material not meeting these specifications shall be reworked until satisfactory results are obtained.
4. Field compaction tests, utilizing the nuclear method outlined in ASTM D2922 or other methods, will be performed as the construction proceeds.

Shale Structural Fill Material

1. Shale material shall receive a minimum of three (3) passes with a static roller followed by blading and a minimum of two (2) passes with a vibratory roller. The rollers shall not exceed three (3) miles per hour during these passes. Each fill layer shall be compacted to a minimum of 95 percent of maximum dry density as determined by ASTM D698. The number of passes will, at the direction of the QA/QC Engineer, be adjusted upward if necessary to obtain 95 percent of maximum dry density.
2. Field compaction tests, utilizing the nuclear method outlined in ASTM D2922 or other methods, will be made as the construction proceeds.

4.4.7 Surveying

1. Sufficient survey control referenced to existing site control will be taken to show the finished elevations of the pond and used as a reference for the various layers of the pond liner system (where applicable) and spillways. Sufficient data will be available to create a computer model of each finished surface.

4.5 Soil Liner

4.5.1 6" Soil Layer

1. Soil material shall be substantially free of organic material. All soil material used shall be soils that classify as CH, CL, MH, ML, CL-ML, SC or SM-SC according to the unified soil classification system. All soil material proposed for use shall receive prior approval of the QA/QC Engineer. The soil materials shall be compacted to a minimum dry density of 92 percent of the standard proctor density as determined by ASTM D698 unless a modified proctor is used.

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2. Compaction shall be performed by properly controlling the moisture content, lift thickness and other necessary details to obtain the density and moisture requirements.
3. The following laboratory tests and classification shall be performed on representative samples of the soil material being utilized:

Table 17 – Soil Liner Material Testing (Sediment Ponds)

Test	Test Method	Frequency
Standard Proctor	ASTM D698	1 Test per 20,000 cy or Each Change in Material Type

4. All soil material shall be placed in one (1) lift.
5. Soil material shall be free of organic material, tree roots, wood, or other decayable material and rocks larger than two (2) inches in diameter. In addition, the top surface of the soil liner shall be free of rocks greater than one (1) inch in diameter. Soil material not meeting the rock size limits above, shall be processed to remove oversized rocks. The process method shall be approved by the QA/QC Engineer. The KDWM will be notified prior to the start of soil processing.
6. Sufficient survey control will be taken to show the finished elevations of the 6” soil layer and used as a reference for the various layers of the pond liner system. Sufficient data will be available to create a computer model of the finished surface.
7. At least nine (9) moisture / density tests per acre per lift of soil material placed will be performed in the field using a nuclear density apparatus.

4.6 Geosynthetic Clay Liner

1. If geosynthetic clay liner is utilized in the sediment ponds, it will be installed in accordance with Section 3.6 of this Plan.

4.7 Flexible Membrane Liner

1. If flexible membrane liner is utilized in the sediment ponds it will be textured 60-mil HDPE. Materials and installation will be in accordance with Section 3.7 of this Plan.

4.8 Geotextile

1. If geotextile is utilized in the sediment ponds, it will be installed in accordance with Section 3.10 of this Plan.

4.9 Principal / Emergency Spillway and Granular Materials

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1. Pipe for the principal spillway shall be 16 gauge (min.) steel Ultra Flo Aluminized Storm Sewer Pipe (smooth interior) or equivalent meeting the requirements of AASHTO M-36. Pipe for the riser shall be 16 gauge (min.) Aluminized steel corrugated pipe or equivalent. At a minimum, shop fabricated seams and perforations (where applicable) shall be shop coated with a zinc coating on both sides to at least millage of the undisturbed coating.
2. Concrete shall be Class A concrete as per section 601, concrete, of the Kentucky Department of Transportation, "Standard Specification for Road and Bridge Construction", current edition.
3. Granular materials and channel lining used over geosynthetic materials or to armor the emergency spillway and embankment slope downstream of the principal spillway shall be durable rock as determined by Slake Durability Index testing or equivalent procedures. Stones of smaller sizes shall be permissible for use in filling voids in the upper surface and dressing the slope. Individual rock fragments shall be dense, sound, and free from cracks, seams, and other defects conducive to accelerated weathering.

5.0 INSPECTIONS

5.1 Random Inspections

1. During bottom liner system, final cap system, and sediment pond construction activities the QA/QC Engineer will personally conduct random inspections to check on QA/QC field personnel, contractors, and other elements of construction.

5.2 Final Inspection

1. Upon completion of bottom liner system, final cap system, and sediment pond construction activities the QA/QC Engineer will personally conduct a final inspection for the certification required by 401 KAR 45:030 Section 9(11)(d).

6.0 QA/QC DOCUMENTATION

6.1 Documentation

Complete QA/QC documentation will be maintained and organized by the QA/QC Engineer during all construction projects. The documentation may include the following:

1. Construction activities summary
2. Earthen materials conformance testing
3. Geosynthetic material manufacturers' quality assurance information
4. Geosynthetic material conformance testing information

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5. QA/QC field technician observation logs and test data sheets
6. As-built drawings and record survey information
7. Contractor submittals
8. Photographic documentation
9. Design and/or specification changes

6.1.1 Field Observations

Construction related field observations, testing, and related documentation will be generated by QA/QC personnel in accordance with the requirements provided in this Plan and project specifications. Field observations and testing results will be recorded on forms similar to the example forms contained in Appendix A of this Plan.

6.2 Construction Progress Reports

At the completion of each landfill construction project, the QA/QC Engineer will prepare a Construction Progress Report which includes the QA/QC documentation and other relevant information required by the KDWM.

The Construction Progress Report will be certified by the QA/QC Engineer and submitted to the Owner. The Owner will submit the Construction Progress Report to the Kentucky Division of Waste Management in accordance with 401 KAR 45:030 Section 9(11)(d). When signing the Construction Progress Report the Owner will make the following certification: "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for such violations"

ATTACHMENT JB-5

**SUPPORTING DOCUMENTATION FOR
EKPC'S COST TO DEVELOP, OPERATE
AND MAINTAIN SPURLOCK LANDFILL**

Cost for Spurlock Landfill Capacity:		
Spurlock Projected Airspace (CY)		4,000,000
Bat Fees		\$5,000.00
404 in-lieu fee		\$0
Engineering Permitting Fees		\$20,000
Cost of Spurlock Landfill Construction		\$24,663,317.00
Land Cost*		\$50,000
OC		\$200,000
Closure		\$3,420,000
Cost per CY		\$7.09
Cost to Haul and Place Ash & Operate Ash Landfill (CY)		\$5.23
Total Cost of Ash (CY)		<u>\$12.32</u>

ATTACHMENT JB-6
ENGINEERING CONSTRUCTION COST
ESTIMATE FOR AREA D PHASE 3

Unit #	Construction Material	UOM	Quantity	Labor Cost per Unit	Material Cost per Unit	Total Cost per Unit	Extended Cost
1	Mobilization/Demobilization	LS	2	\$419,371.73	\$6,025.44	\$425,397.17	\$850,794.34
2	Construction Staking	LS	2	\$74,870.26	\$0.00	\$74,870.26	\$149,740.52
3	Small Tree/Vegetation Clear & Grub (Cell)	AC	6	\$15,041.89	\$0.00	\$15,041.89	\$90,251.31
4	Vegetation/Topsoil Stripping (Cell)	AC	30	\$23,355.31	\$0.00	\$23,355.31	\$700,659.38
SUBGRADE QUANTITIES							
5	Cut (General Excavation)	CY	251,324	\$5.03	\$0.00	\$5.03	\$1,264,804.78
6	Cut (Rock Excavation - Estimated)	CY	10,000	\$28.95	\$0.00	\$28.95	\$289,542.00
7a	Fill (Embankment) from Within Cell	CY	131,671	\$4.25	\$0.00	\$4.25	\$559,794.87
7b	Waste from Within Cell to fix ditch, including fill placement	CY	169,653	\$7.00	\$0.00	\$7.00	\$1,187,571.00
8	Underdrain (Includes trenching, piping, fittings, bedding, stone, fabric, and backfill)	LF	3,000	\$36.12	\$28.59	\$64.71	\$194,119.40
9	Undercut (if needed, includes excavation and embankment)	CY	10,000	\$18.90	\$0.00	\$18.90	\$189,033.33
CLAY BORROW AREA							
10	Vegetation/Topsoil Stripping (No tree clearing required)	AC	15	\$7,024.86	\$0.00	\$7,024.86	\$105,372.96
11	Regrade (at project completion)	AC	15	\$7,729.65	\$0.00	\$7,729.65	\$115,944.72
12	Seeding & Mulching	AC	15	\$2,154.47	\$1,909.68	\$4,064.15	\$60,962.18
13	Road Crossing (Includes all labor, materials, equipment etc. to install the crossing as shown in the Construction Drawings)	LS	2	\$11,239.34	\$30,257.45	\$41,496.79	\$82,993.57
LINER SYTEM							
14	8" GCL Base Soil Liner (Place & Compact)	CY	37,429	\$20.16	\$0.00	\$20.16	\$754,667.16
15	GCL Base Soil Liner Screening	CY	37,429	\$28.99	\$0.00	\$28.99	\$1,085,068.16
16	Anchor Trench (Incl. excavation & backfill)	LF	7,000	\$17.77	\$0.00	\$17.77	\$124,358.97
17	Anchor Trench Rock Excavation	CY	300	\$135.60	\$0.00	\$135.60	\$40,681.40
18	Geosynthetic Clay Liner	SF	1,515,888	\$0.30	\$1.13	\$1.43	\$2,173,480.21
19	60 mil HDPE-T Geomembrane Liner (Incl. anchor trench)	SF	1,667,477	\$0.34	\$0.52	\$0.86	\$1,439,254.81
20	Geocomposite	SF	1,515,888	\$0.34	\$0.75	\$1.08	\$1,638,220.16
21	Rain Gutters (Incl. pipe segments, install, et al)	LF	4,000	\$18.04	\$14.92	\$32.95	\$131,809.73
22	Rain Flap (includes straw bales)	LF	3,000	\$16.48	\$5.20	\$21.68	\$65,045.30
23	Sand Bag Flap (includes sand bags & sand)	LF	6,000	\$22.60	\$5.67	\$28.27	\$169,637.80
24	FML Containment Flap	LF	3,600	\$14.77	\$4.40	\$19.17	\$69,002.16
LEACHATE SYSTEM							
25	4" HDPE DR-11 Perforated Pipe	LF	6,000	\$29.40	\$5.97	\$35.37	\$212,202.40
26	4" HDPE DR-11 Solid Pipe	LF	270	\$24.08	\$6.26	\$30.34	\$8,191.28
27	8" HDPE DR-11 Perforated Pipe	LF	4,600	\$33.34	\$18.62	\$51.96	\$239,012.32
28	8" HDPE DR-11 Solid Pipe	LF	300	\$32.33	\$20.91	\$53.24	\$15,971.89
29	4" Cleanout	EA	8	\$831.97	\$185.28	\$1,017.26	\$8,138.05
30	HDPE Penetration Assembly (includes materials & install)	LS	4	\$3,734.97	\$5,243.53	\$8,978.49	\$35,913.98
31	Granular Drainage Media (washed river gravel)	CY	3,900	\$96.24	\$109.08	\$205.32	\$800,729.15
32	Geotextile (CoalTex or Equal)	SF	225,000	\$1.17	\$1.14	\$2.31	\$520,822.50
SURFACE WATER DITCH ARMORING							
33	Ditch Type 1 (includes geotextile and grout/concrete), excavation included in subgrade quantities	LF	3,350	\$218.11	\$97.97	\$316.08	\$1,058,861.30
34	Ditch Type 2 (includes geomembrane installation & anchor trench), excavation included in subgrade quantities	LF	4,000	\$57.94	\$14.01	\$71.95	\$287,801.47

35	Ditch Type 3: 60 mil HDPE-T Geomembrane Liner	SF	2,760	\$17.74	\$3.80	\$21.54	\$59,457.76
DITCH DEMOLITION/REPAIR							
36a	Ditch Type 5 - Grout Mat Demolition and Repair (Fabriform 4" Filterpoint or equal)	LF	475	\$58.73	\$5.37	\$64.10	\$30,449.26
36b	Geomembrane Lined Ditch Removal	LF	2,050	\$22.74	\$0.72	\$23.46	\$48,088.83
36c	TRM Lined Ditch Removal	LF	400	\$15.08	\$5.40	\$20.48	\$8,193.35
BERM SLOPE PROTECTION							
37	Berm Slope Protection - Veg. & TRM	SF	10,000	\$0.93	\$0.33	\$1.26	\$12,554.67
38	Seeding/Slope Protection - Veg. & Mulch	SF	67,500	\$0.22	\$0.09	\$0.31	\$20,945.25
39	Permanent End Treatment Slope Protection - Veg. & TRM	SF	4,400	\$1.00	\$0.33	\$1.33	\$5,837.92
ALTERNATES							
40	ALTERNATE TO ITEM 6 Cut (Rock Removal - Blasting - Estimated)*	CY	40,000	\$14.53	\$1.13	\$15.66	\$626,592.00
A	Liner Remobilization	EA	7	\$51,969.90	\$0.00	\$51,969.90	\$363,789.30

Total	\$17,896,362.90
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EXHIBIT 4
DIRECT TESTIMONY OF
THOMAS STACHNIK

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF EAST)	
KENTUCKY POWER COOPERATIVE, INC. FOR)	
APPROVAL TO AMEND ITS ENVIRONMENTAL)	
COMPLIANCE PLAN AND RECOVER COSTS	)	CASE NO.
PURSUANT TO ITS ENVIRONMENTAL	)	2024-00109
SURCHARGE, AND FOR THE ISSUANCE OF)	
CERTIFICATE OF PUBLIC CONVENIENCE)	
AND NECESSITY AND OTHER RELIEF)	

DIRECT TESTIMONY OF THOMAS J. STACHNIK
VICE PRESIDENT OF FINANCE AND TREASURER
ON BEHALF OF EAST KENTUCKY POWER COOPERATIVE, INC.

Filed: May 17, 2024

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF EAST)	
KENTUCKY POWER COOPERATIVE, INC.)	
FOR APPROVAL TO AMEND ITS ENVIROMENTAL	)	CASE NO.
COMPLIANCE PLAN AND RECOVER COSTS	)	2024-00109
PURSUANT TO ITS ENVIROMENTAL)	
SURCHARGE, AND FOR THE ISSUANCE OF)	
CERTIFICATE OF PUBLIC CONVENIENCE)	
AND NECESSITY AND OTHER RELIEF)	

VERIFICATION OF THOMAS J. STACHNIK

STATE OF KENTUCKY)
)
COUNTY OF CLARK)

Thomas J. Stachnik, Vice President of Finance and Treasurer for East Kentucky Power Cooperative, Inc., being duly sworn, states that he has supervised the preparation of his Direct Testimony and certain filing requirements in the above referenced case and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

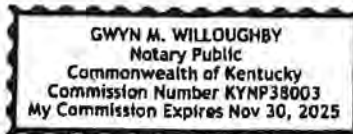
Thomas J. Stachnik

Thomas J. Stachnik

The foregoing Verification was signed, acknowledged and sworn to before me this 14th day of May 2024, by Thomas J. Stachnik.

Gwyn M. Willoughby

Notary Public



1 **I. INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.**

3 A. My name is Thomas J. Stachnik. I am the Vice President and Treasurer for East Kentucky
4 Power Cooperative, Inc. (“EKPC”). My business address is 4775 Lexington Road,
5 Winchester, Kentucky 40391.

6 **Q. PLEASE DESCRIBE YOUR EDUCATION AND EXPERIENCE.**

7 A. I have a Bachelor’s degree in Chemical Engineering from the University of Illinois and an
8 MBA from the University of Chicago; additionally, I hold the Chartered Financial Analyst
9 and Certified Treasury Professional designations. Prior to establishing a career in finance,
10 I enjoyed work as a chemical engineer for approximately ten (10) years. I worked in the
11 Treasury Department of Brown-Forman Corporation for thirteen (13) years before
12 assuming my current role at EKPC in August 2015.

13 **Q. PLEASE DESCRIBE YOUR DUTIES AS VICE PRESIDENT AND TREASURER
14 FOR EKPC.**

15 A. I am responsible for the management and direction of the treasury area including
16 borrowing, investing, and cash management. I also oversee the financial forecasting,
17 budgeting, and risk management functions. I report directly to EKPC’s Executive Vice
18 President and Chief Financial Officer, Mr. Cliff Scott.

19 **Q. HAVE YOU TESTIFIED BEFORE THE KENTUCKY PUBLIC SERVICE
20 COMMISSION BEFORE? IF SO, IN WHAT CASES?**

21 A. I have provided written testimony pertaining to financing issues in several cases, including
22 Case No. 2017-00376 (Coal Combustion Residuals and Effluent Limitation Guidelines
23 “CCR/ELG”), Case No. 2018-00292 (Bluegrass Dual Fuel) and Case No. 2021-00103

1 (EKPC Application for General Adjustment of Rates) I have also assisted in the
2 preparation of financing applications and responded to the respective data requests in Case
3 No. 2016-00116 (Refinancing of the Credit Facility), Case No. 2018-00115 (Private
4 Placement Financing) and Case No. 2021-00473 (Credit Facility Refinancing)

5 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

6 A. The purpose of my testimony is to discuss EKPC's plans to finance the Spurlock Station
7 Landfill Peg's Hill (Area D) Phase 3 Project. I will also discuss the calculation of EKPC's
8 weighted average cost of debt associated with the debt issuances related to its Compliance
9 Plan.

10 **Q. ARE YOU SPONSORING ANY ATTACHMENTS?**

11 A. Yes, Attachment TJS-1, which describes the determination of rate of return on
12 environmental compliance rate base.

13 **Q. WERE THE ATTACHMENTS TO YOUR TESTIMONY PREPARED BY YOU OR
14 SOMEONE WORKING UNDER YOUR SUPERVISION?**

15 A. Yes.

16 **II. FINANCING SPURLOCK PEG'S HILL (AREA D) PHASE 3 LANDFILL**
17 **PROJECT**

18 **Q. PLEASE DESCRIBE HOW EKPC WILL FINANCE THE PEG'S HILL (AREA D)
19 PHASE 3 OF THE SPURLOCK STATION LANDFILL.**

20 A. Initially any expenditures related to the project will be funded by general corporate cash
21 and borrowings on the Revolving Credit Facility. EKPC will replace any temporary
22 financing with long-term debt issued under the existing trust indenture from the Rural
23 Utilities Service or other lenders.

1 **Q. WILL THIS RESULT IN A MATERIAL EFFECT ON EKPC'S FINANCIAL**
2 **POSITION?**

3 A. No.

4 **III. EKPC'S WEIGHTED AVERAGE COST OF DEBT ASSOCIATED WITH DEBT**
5 **ISSUANCE RELATED TO THE COMPLIANCE PLAN**

6 **Q. WHAT WILL EKPC'S WEIGHTED AVERAGE COST OF DEBT ASSOCIATED**
7 **WITH THE DEBT ISSUANCE RELATED TO THE PROJECTS IN THE**
8 **COMPLIANCE PLAN?**

9 A. The weighted average cost of debt related to these projects is 4.396%.

10 **Q. WHAT RATE OF RETURN WOULD YOU PROPOSE FOR ENVIRONMENTAL**
11 **COMPLIANCE PROJECTS?**

12 A. Applying the 1.475 TIER determined in the 2021 rate case to the weighted average cost of
13 debt above the results in a proposed rate of return of 6.484%. The facts in that case
14 supporting that the 1.475 TIER is fair, just and reasonable still apply.

15 **IV. CONCLUSION**

16 **Q. PLEASE SUMMARIZE YOUR TESTIMONY.**

17 A. The proposed project in this plan will be initially funded with general corporate cash and
18 available credit facility capacity, and costs of capital expenditures will be replaced with
19 long-term debt. A rate of return of 6.484% on the Environmental Compliance rate base is
20 proposed.

21 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

22 A. Yes.

23

ATTACHMENT TJS-1
DETERMINATION OF RATE OF RETURN
ON ENVIRONMENTAL COMPLIANCE
RATE BASE

ATTACHMENT TJS-1 IS AN EXCEL
SPREADSHEET IS UPLOADED
SEPARATELY INTO THE
ELECTRONIC FILING SYSTEM

EXHIBIT 5
NOTICE OF INTENT

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF EAST)	
KENTUCKY POWER COOPERATIVE, INC. FOR)	
APPROVAL TO AMEND ITS ENVIRONMENTAL)	
COMPLIANCE PLAN AND RECOVER COSTS	)	CASE NO.
PURSUANT TO ITS ENVIRONMENTAL	)	2024-00109
SURCHARGE, AND FOR THE ISSUANCE OF A)	
CERTIFICATE OF PUBLIC CONVENIENCE)	
AND NECESSITY AND OTHER RELIEF)	

EAST KENTUCKY POWER COOPERATIVE, INC.'S
NOTICE OF INTENT

Comes now East Kentucky Power Cooperative, Inc. (“EKPC”), by counsel, and hereby gives notice to the Kentucky Public Service Commission (“Commission”), pursuant to KRS 278.183(2) of its intent to file an Application under KRS 278.183. This Application will request approval of the following: an amended Environmental Compliance Plan, cost recovery through the Environmental Surcharge Mechanism, and a Certificate of Public Convenience and Necessity for a project contained in the Environmental Compliance Plan.

This 17th day of April, 2024.

Respectfully submitted,

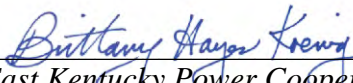


L. Allyson Honaker
Brittany Hayes Koenig
Honaker Law Office, PLLC
1795 Alysheba Way, Suite 6202
Lexington, KY 40509
Telephone (859) 368-8803
allyson@hloky.com
brittany@hloky.com

Counsel for East Kentucky Power Cooperative, Inc.

CERTIFICATE OF SERVICE

This is to certify that foregoing was submitted electronically to the Commission on April 17, 2024 and that there are no parties that have been excused from electronic filing. Pursuant to prior Commission orders, no paper copies of this filing will be submitted.




Counsel for East Kentucky Power Cooperative, Inc.

EXHIBIT 6
NOTICE TO OWNER-MEMBERS

MEMORANDUM

TO: Member System CEO's

FROM: Anthony S. Campbell 

DATE: May 17, 2024

SUBJECT: Notice of Amendment to EKPC Environmental Compliance Plan and Environmental Surcharge Mechanism

Following a recommendation from its Strategic Issues Committee, the Board of East Kentucky Power Cooperative, Inc. ("EKPC"), during its regularly scheduled Board Meeting on Tuesday, April 16, 2024, authorized the submittal of an application to the Kentucky Public Service Commission ("Commission") for approval to amend its Environmental Compliance Plan and Environmental Surcharge Mechanism. On April 17, 2024, EKPC gave notice to the Commission of its intent to file an Application for Approval of an Amendment to its Environmental Compliance Plan and Environmental Surcharge Mechanism. The notice also indicated EKPC would be seeking a Certificate of Public Convenience and Necessity ("CPCN"). EKPC plans to file this Application on or after Friday, May 17, 2024.

The amendment will enable EKPC to recover costs associated with the installation of a landfill facility at the Spurlock Station that are necessary to comply with federal regulations like the Disposal of Coal Combustion Residuals from Electric Utilities Rule. This facility is under development and construction of the facility is expected to be completed by 2025.

EKPC's largest coal-fired electric generation facility is the Spurlock Station. The four electric generation units began commercial operation between 1977 and 2009. EKPC has already heavily invested in environmental control equipment at the Spurlock Station. The four units at the Spurlock Station are among the least-expensive electric generation units in the EKPC fleet and have a high availability factor.

With the proposed environmental compliance plan amendment, EKPC is seeking to add one project to the plan. EKPC is seeking a CPCN for this project – Area D, Phase 3 at the Spurlock Landfill. This project will preserve the long-term usefulness of the Spurlock Station. The total estimated capital cost of this project is \$24.7 million.

Pursuant to KRS 278.183(2), the Commission must issue its decision on the proposed compliance plan amendment and revisions to the surcharge mechanism within six months of the filing of the application. If EKPC files its application by May 17, 2024 and it is accepted as filed, a decision on the application could be expected by November 17, 2024. If the application is approved, cost recovery for the amendment could begin with the first monthly surcharge filing submitted after November 17, 2024.

EKPC's surcharge mechanism, as well as the Member Systems' surcharge pass-through mechanism, reflect formula-based calculations that are prepared each month to provide for

the recovery of actual environmental compliance costs incurred during the period. EKPC's surcharge factor and the Member Systems' surcharge pass-through factors are billed to customers using the percentage of revenues approach. Thus there are no present or proposed rates associated with this application. In addition, EKPC's rate schedules do not directly correspond to retail customer classifications. Consequently, a determination of the change in the surcharge amounts billed, the percentage change, and the effect on the average bills for all customer classifications is not possible.

If approved, construction would be completed in 2025. The estimated annual revenue requirement and expected increase in the environmental surcharge at the wholesale level and retail level for the years 2025 through 2028 are shown in the table below. For illustrative purposes, EKPC has also approximated the impact on an average monthly residential bill reflecting a monthly usage of 1,125 kWh. However, this approximation reflects EKPC's best estimate of the impact and is not based on an analysis of residential billing information.

Calendar Year Ending	Estimated Annual Revenue Requirement	Percentage Increase Wholesale	Percentage Increase Retail	Estimated Increase in Average Residential Monthly Bill
2025	\$1,610,563	0.15%	0.11%	\$0.11
2026	\$2,768,511	0.26%	0.19%	\$0.18
2027	\$2,707,717	0.25%	0.18%	\$0.18
2028	\$2,646,924	0.25%	0.18%	\$0.17

Once it is filed, a person may examine this Application at the offices of EKPC located at 4775 Lexington Road, Winchester, Kentucky. This Application may also be examined at the offices of the Commission located at 211 Sower Boulevard, Frankfort, Kentucky, Monday through Friday, 8:00 a.m. to 4:30 p.m., or through the Commission's Web site at <http://psc.ky.gov>. Any comments regarding this Application may be submitted to the Commission through its Web site or by mail to Public Service Commission, P. O. Box 615, Frankfort, Kentucky 40602.

The estimated impacts contained in this notice are based on the environmental compliance plan amendment as proposed by EKPC but the Commission may order an environmental compliance plan that differs from the proposed environmental compliance plan and resulting estimated impacts contained in this notice.

A person may submit a timely written request for intervention to the Public Service Commission, P. O. Box 615, Frankfort, Kentucky 40602, establishing the grounds for the request including the status and interest of the party. If the Commission does not receive a written request for intervention within thirty (30) days of the initial publication or mailing of the notice, the Commission may take final action on the Application.

EXHIBIT 7
DIRECT TESTIMONY OF
JACOB WATSON

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF EAST)	
KENTUCKY POWER COOPERATIVE, INC. FOR)	
APPROVAL TO AMEND ITS ENVIRONMENTAL)	
COMPLIANCE PLAN AND RECOVER COSTS	)	CASE NO.
PURSUANT TO ITS ENVIRONMENTAL	)	2024-00109
SURCHARGE, AND FOR THE ISSUANCE OF)	
CERTIFICATE OF PUBLIC CONVENIENCE)	
AND NECESSITY AND OTHER RELIEF)	

DIRECT TESTIMONY OF JACOB WATSON
ON BEHALF OF EAST KENTUCKY POWER COOPERATIVE, INC.

Filed: May 17, 2024

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF EAST)	
KENTUCKY POWER COOPERATIVE, INC.)	
FOR APPROVAL TO AMEND ITS ENVIROMENTAL	)	CASE NO.
COMPLIANCE PLAN AND RECOVER COSTS	)	2024-00109
PURSUANT TO ITS ENVIROMENTAL)	
SURCHARGE, AND FOR THE ISSUANCE OF)	
CERTIFICATE OF PUBLIC CONVENIENCE)	
AND NECESSITY AND OTHER RELIEF)	

VERIFICATION OF JACOB WATSON

STATE OF KENTUCKY)
COUNTY OF CLARK)

Jacob Watson, Pricing Manager for East Kentucky Power Cooperative, Inc., being duly sworn, states that he has supervised the preparation of his Direct Testimony and certain filing requirements in the above referenced case and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

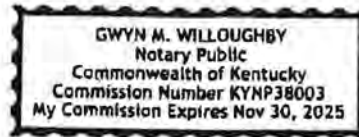
Jacob Watson

Jacob Watson

The foregoing Verification was signed, acknowledged and sworn to before me this 14th day of May 2024, by Jacob watson.

Gwyn M. Willoughby

Notary Public



1 **I. INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS.**

3 A. My name is Jacob Watson and I am the Pricing Manager for East Kentucky Power
4 Cooperative, Inc. (“EKPC”). My business address is 4775 Lexington Road,
5 Winchester, Kentucky 40391.

6 **Q. PLEASE STATE YOUR EDUCATION AND PROFESSIONAL**
7 **EXPERIENCE.**

8 A. I received a B.S. degree in Accounting, from the University of the Cumberland in
9 2011, an MBA from the University of the Cumberland in 2014, and a Ph.D. in
10 Business Administration with a concentration in Accounting from the University
11 of the Cumberland in 2021. I am also a Certified Fraud Examiner. Professional
12 experience includes: Financial Analyst for Pepsi MidAmerica, and Internal Auditor
13 for Farmers Capital Bank Corporation. For the last nine years I have been at East
14 Kentucky Power Cooperative having worked as an Accountant, Sr. Load Forecast
15 Analyst, and I am currently the Pricing Manger.

16 **Q. PLEASE PROVIDE A BRIEF DESCRIPTION OF YOUR DUTIES AT**
17 **EKPC.**

18 A. As Pricing Manager, I am responsible for rate-making activities which include
19 designing and developing wholesale and retail electric rates and developing pricing
20 concepts and methodologies. I report directly to the Director of Regulatory and
21 Compliance Services, Mr. Chris Adams.

22 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE COMMISSION?**

1 A. I adopted Isaac Scott’s testimony in Case No. 2023-00009.¹

2 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**
3 **PROCEEDING?**

4 A. The purpose of my testimony is to describe the cost of constructing improvements
5 to the Hugh L. Spurlock Generation Station (“Spurlock Station”) that will enable
6 EKPC to comply with applicable environmental statutes and regulations. In
7 addition, I will discuss how EKPC’s Environmental Compliance Plan will be
8 implemented on a monthly basis and the rate impact at the wholesale and retail
9 levels. Finally, I will describe the proposed revisions to EKPC’s monthly
10 environmental surcharge reporting forms.

11 **II. SPONSORED ATTACHMENTS**

12 **Q. ARE YOU SPONSORING ANY ATTACHMENTS TO YOUR**
13 **TESTIMONY?**

14 A. Yes. I am sponsoring the following attachments, which I ask be incorporated into
15 my testimony by reference:

- 16 • Attachment JRW-1: A schedule showing the current Environmental
17 Compliance Plan and the addition of the 2024 plan projects proposed in this
18 Application.
- 19 • Attachment JRW-2: A sample copy of the monthly environmental
20 surcharge reporting formats which reflect the inclusion of the 2024 plan
21 projects. See *Excel filename “Attachment JRW-2 – Reporting Formats*

¹ *In the Matter of: An Electronic Examination of the Application of the Fuel Adjustment Clause of East Kentucky Power Cooperative, Inc. From November 1, 2020 Through October 31, 2022, Order, Case No. 2023-00009, (Ky. P.S.C. May 6, 2024).*

1 *CLEAN.xlsx*” and “Attachment JRW-2 – Reporting Formats
2 *REDLINED.xlsx*”.

3 • Attachment JRW-3: An estimate of revenue increases resulting from the
4 inclusion of the 2024 plan projects and the estimated bill impact on retail
5 residential customers. See *Excel filename “Attachment JRW-3 –*
6 *Residential Impact.xlsx*”.

7 • Attachment JRW-4: Board of Directors’ Resolution authorizing the
8 amendment to the environmental compliance plan and seeking surcharge
9 recovery.

10 **III. CURRENT ENVIRONMENTAL COMPLIANCE PLAN**

11 **AND THE 2024 PLAN PROJECT**

12 **Q. PLEASE PROVIDE A BRIEF DESCRIPTION OF EKPC’S CURRENT**
13 **ENVIRONMENTAL COMPLIANCE PLAN.**

14 A. EKPC has one project in its Environmental Compliance Plan for 2024. Attachment
15 JRW-1 lists each of the projects, the pollutant or waste/by-product to be controlled,
16 the control facility, the generating station, the applicable environmental regulation
17 addressed by the project, the applicable environmental permit, the completion date
18 of the project, and the project cost. Projects 1 through 4 were approved by the
19 Commission in Case No. 2004-00321.² Projects 5 through 10 were approved by

² See *In the Matter of Application of East Kentucky Power Cooperative, Inc. for Approval of an Environmental Compliance Plan and Authority to Implement an Environmental Surcharge*, Order, Case No. 2004-00321, (Ky. P.S.C., Mar. 17, 2005).

1 the Commission in Case No. 2008-00115.³ Projects 7 through 9 were amended by
2 and Projects 11 through 13 were approved by the Commission in Case No. 2010-
3 00083.⁴ Project 14 was approved by the Commission in Case No. 2013-00259.⁵
4 Project 15 was approved by the Commission in Case No. 2014-00252.⁶ Project 16
5 was approved by the Commission in Case No. 2017-00376.⁷ Project 12 was
6 amended by and Projects 17 through 26 were approved by the Commission in Case
7 No. 2018-00270.⁸ Projects 1, 3, 4, 9, 11, 12, 15, 16 were amended, and Projects 27
8 through 41 were approved, by the Commission in Case No. 2023-00177.⁹

³ See *In the Matter of Application of East Kentucky Power Cooperative, Inc. for Approval of an Amendment to Its Environmental Compliance Plan and Environmental Surcharge*, Order, Case No. 2008-00115, (Ky. P.S.C., Sep. 29, 2008). (“2008 Environmental Compliance Plan Amendment”)

⁴ See *In the Matter of Application of East Kentucky Power Cooperative, Inc. for Approval of an Amendment to Its Environmental Compliance Plan and Environmental Surcharge*, Order, Case No. 2010-00083, (Ky. P.S.C., Sep. 24, 2010).

⁵ See *In the Matter of Application of East Kentucky Power Cooperative, Inc. for a Certificate of Public Convenience and Necessity for Alteration of Certain Equipment at the Cooper Station and Approval of a Compliance Plan Amendment for Environmental Surcharge Cost Recovery*, Order, Case No. 2013-00259, (Ky. P.S.C., Feb. 20, 2014).

⁶ See *In the Matter of Application of East Kentucky Power Cooperative, Inc. for a Certificate of Public Convenience and Necessity for Construction of an Ash Landfill at J.K. Smith Station, the Removal of Impounded Ash from William C. Dale Station for Transport to J.K. Smith and Approval of a Compliance Plan Amendment for Environmental Surcharge Recovery*, Order, Case No. 2014-00252, (Ky. P.S.C., Mar. 6, 2015).

⁷ See *In the Matter of Application of East Kentucky Power Cooperative, Inc. for Approval to Amend Its Environmental Compliance Plan and Recover Costs Pursuant to Its Environmental Surcharge, Settlement of Certain Asset Retirement Obligations and Issuance of a Certificate of Public Convenience and Necessity and Other Relief*, Order, Case No. 2017-00376, (Ky. P.S.C., May 18, 2018).

⁸ See *In the Matter of Application of East Kentucky Power Cooperative, Inc. for Approval to Amend Its Environmental Compliance Plan and Recover Costs Pursuant to Its Environmental Surcharge, and for the Issuance of a Certificate of Public Convenience and Necessity*, Order, Case No. 2018-00270, (Ky. P.S.C., Apr. 1, 2019).

⁹ See *In the Matter of Application of East Kentucky Power Cooperative, Inc. for Approval to Amend Its Environmental Compliance Plan and Recover Costs Pursuant to Its Environmental Surcharge, and for the Issuance of Certificates of Public Convenience and Necessity and Other Relief*, Order, Case No. 2023-00177, (Ky. P.S.C., Jan. 11, 2024).

1 **Q. PLEASE DESCRIBE THE ESTIMATED COST OF THE 2024 PLAN**
2 **PROJECT.**

3 A. EKPC estimates the total cost of the Spurlock Landfill, Peg’s Hill (Area D) Phase
4 3 project in the 2024 plan at \$24.7 million. EKPC is seeking a Certificate of Public
5 Convenience and Necessity (“CPCN”) for this project.

6 **IV. SURCHARGE MECHANISM AND THE 2024 PLAN PROJECT**

7 **Q. DOES THE 2024 PLAN PROJECT MEET THE REQUIREMENTS OF KRS**
8 **278.183, AND THUS QUALIFY FOR ENVIRONMENTAL SURCHARGE**
9 **RECOVERY?**

10 A. Yes. I am not an attorney, of course, and cannot make any statements that would
11 be construed to be legal conclusions, but based upon the facts as I know them and
12 my own plain readings of KRS 278.183, the proposed project satisfies the statutory
13 requirements and therefore qualifies for environmental surcharge recovery.

14 **Q. PLEASE DISCUSS HOW THE 2024 PLAN PROJECT WOULD BE**
15 **REFLECTED IN EKPC’S ENVIRONMENTAL SURCHARGE**
16 **MECHANISM.**

17 A. The expenditures under the 2024 plan project falls into one specific category: the
18 construction of additional facilities at the Spurlock Station. For the construction of
19 the additional facilities, EKPC is proposing that it be permitted to earn a return on
20 the monthly Construction Work in Progress (“CWIP”) balance. This request is
21 consistent with the treatment approved in Case No. 2008-00115.¹⁰ Upon
22 completion, EKPC is proposing that it be permitted to begin recovery of

¹⁰ 2008 Environmental Compliance Plan.

1 depreciation, return, insurance expense, taxes, and operation and maintenance
2 expenses associated with the 2024 plan project.

3 **V. BESF AND RATE ES TARIFF REVISION**

4 **Q. WILL INCLUSION OF THE 2024 PLAN PROJECT IN EKPC'S**
5 **APPROVED ENVIRONMENTAL SURCHARGE COMPLIANCE PLAN**
6 **REQUIRE ANY REVISIONS TO EKPC'S RATE ES-ENVIRONMENTAL**
7 **SURCHARGE?**

8 A. No. EKPC has determined that an updated BESF will not need to be reflected in
9 the Rate ES – Environmental Surcharge tariff.

10 **Q. WILL THE 2024 PLAN PROJECT RESULT IN THE EARLY**
11 **RETIREMENT OR ABANDONMENT OF ANY EXISTING UTILITY**
12 **PLANT ASSETS PRIOR TO THE EXPECTED RETIREMENT DATE OF**
13 **THE ASSETS?**

14 A. EKPC does not believe the 2024 plan project will result in an early retirement or
15 abandonment of existing utility plant assets prior to the expected retirement date of
16 the assets.

17 **Q. WILL THE 2024 PLAN PROJECT RESULT IN AN AMOUNT TO BE**
18 **RECOGNIZED IN THE BESF COMPONENT OF THE SURCHARGE**
19 **MECHANISM?**

20 A. No. The project included in the 2024 plan is contingent upon approval of a CPCN
21 requested in this application.

1 **VI. CUSTOMER BILL IMPACT**

2 **Q. PLEASE DESCRIBE HOW THE INCLUSION OF THE 2024 PLAN**
3 **PROJECTS IN EKPC’S ENVIRONMENTAL SURCHARGE WILL**
4 **IMPACT THE BILLS OF EKPC’S WHOLESALE OWNER-MEMBERS**
5 **AND THE OWNER-MEMBERS’ RETAIL CUSTOMERS.**

6 A. The Spurlock Landfill, Peg’s Hill (Area D) Phase 3 portion of Project No. 40 is
7 expected to be completed and in service by the end of 2025. EKPC has estimated
8 the annual revenue requirements as of the end of the calendar years 2025 through
9 2028. EKPC chose these dates to reflect the impacts of the 2024 plan project on
10 the surcharge approximately one, two, three, and four years after the approval date.
11 The table below shows the estimated annual revenue requirement, the approximate
12 increase in the environmental surcharge for all customer classes at wholesale, the
13 approximate increase passed through to retail customers, and the estimated increase
14 in an average residential customer’s monthly bill.¹¹ The calculation of these
15 estimates is provided in Attachment JRW-3.

Calendar Year Ending	Estimated Annual Revenue Requirement	Percentage Increase Wholesale	Percentage Increase Retail	Estimated Increase in Average Residential Monthly Bill
2025	\$1,610,563	0.15%	0.11%	\$0.11
2026	\$2,768,511	0.26%	0.19%	\$0.18
2027	\$2,707,717	0.25%	0.18%	\$0.18
2028	\$2,646,924	0.25%	0.18%	\$0.17

16 **Q. WHEN DOES EKPC REQUEST THIS NEW RATE GO INTO EFFECT?**

¹¹ EKPC’s rate schedules do not directly correspond to retail customer classifications. For illustrative purposes, I have approximated the impact on an average monthly residential bill reflecting a monthly usage of 1,125 kWh. This approximation reflects a best estimate of the impact and is not based on an analysis of residential billing information.

1 A. If this request is approved, EKPC will seek to implement this change on the first
2 day of the expense month following an Order.

3 **VII. MONTHLY REPORTING FORMATS**

4 **Q. WILL ANY REVISIONS TO THE MONTHLY ENVIRONMENTAL**
5 **SURCHARGE REPORTING FORMS BE NECESSARY?**

6 A. Yes. The proposed revision to the monthly reporting formats is shown in
7 Attachment JRW-2. EKPC believes that some revisions to the monthly
8 environmental surcharge reporting formats will be needed. EKPC is proposing the
9 following revision:

- 10 • ES Form 2.1 – EKPC is proposing to add Phase 3 to project 40.

11 **Q. DID EKPC PROVIDE ADVANCED NOTICE OF ITS INTENT TO FILE AN**
12 **APPLICATION TO AMEND ITS ENVIRONMENTAL COMPLIANCE**
13 **PLAN AND ENVIRONMENTAL SURCHARGE?**

14 A. Yes. Pursuant to KRS 278.183(2), EKPC has given at least thirty (30) days’
15 advanced notice of its intent to file its Application to amend its Environmental
16 Compliance Plan and Environmental Surcharge. On April 17, 2024, EKPC
17 provided such notice to the Commission, a copy of which is attached as Exhibit 5
18 to the Application submitted by EKPC in this matter. EKPC’s also provided notice
19 to its owner-members on or about May 17, 2024, which notice is attached as Exhibit
20 6 to the Application submitted by EKPC in this matter.

21 **Q. PLEASE SUMMARIZE YOUR TESTIMONY.**

22 A. Based on its understanding of KRS 278.183, EKPC believes the costs of the 2024
23 plan project is eligible for, and should be recovered through, the environmental

1 surcharge. EKPC is requesting that during construction it be allowed to earn a
2 return on the appropriate balance of CWIP. EKPC further requests that the rate of
3 return utilized to determine that return be the rate of return established for its other
4 environmental compliance plan projects. EKPC has determined an update to the
5 BESF is not needed for the project in the 2024 plan. EKPC has described the impact
6 the 2024 plan project would have on retail residential customers' bills. I
7 recommend that the Commission approve EKPC's request to amend its
8 Environmental Compliance Plan to include the 2024 plan project and include the
9 2024 plan project for recovery through the surcharge mechanism.

10 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

11 A. Yes.

ATTACHMENT JRW-1
SCHEDULE OF CURRENT
ENVIRONMENTAL COMPLIANCE PLAN
AND PROJECT AMENDMENT/ADDITION

ATTACHMENT JRW-1 IS AN
EXCEL SPREADSHEET IS
UPLOADED SEPARATELY INTO
THE ELECTRONIC FILING
SYSTEM

ATTACHMENT JRW-2
SAMPLE COPY OF THE MONTHLY
ENVIRONMENTAL SURCHARGE
REPORTING FORMATS WHICH REFLECT
INCLUSION OF THE
AMENDED/ADDITIONAL PROJECT

ATTACHMENT JRW-2 IS AN
EXCEL SPREADSHEET IS
UPLOADED SEPARATELY INTO
THE ELECTRONIC FILING
SYSTEM

ATTACHMENT JRW-3
ESTIMATE OF REVENUE INCREASE AND
ESTIMATED BILL IMPACT

ATTACHMENT JRW-3 IS AN
EXCEL SPREADSHEET IS
UPLOADED SEPARATELY INTO
THE ELECTRONIC FILING
SYSTEM

ATTACHMENT JRW-4
EKPC BOARD RESOLUTION
APPROVAL TO AMEND
ENVIRONMENTAL COMPLIANCE PLAN
AND SEEK TO RECOVER COSTS
ASSOCIATED WITH SPECIFICALLY
IDENTIFIED PROJECT

**FROM THE MINUTE BOOK OF PROCEEDINGS
OF THE BOARD OF DIRECTORS OF
EAST KENTUCKY POWER COOPERATIVE, INC.**

At a regular meeting of the Board of Directors of East Kentucky Power Cooperative, Inc. held at the Headquarters Building, 4775 Lexington Road, located in Winchester, Kentucky, on Tuesday, April 16, 2024 at 9:30 a.m., EDT, the following business transacted:

Approve the Amendment to Environmental Surcharge Compliance Plan

After review of the applicable information, Boris Haynes made a motion for approval of the amendment to Environmental Surcharge Compliance Plan, seconded by Wayne Stratton, and passed by the full Board to approve the following:

Whereas, in support of East Kentucky Power Cooperative, Inc.'s ("EKPC") coal-fired generation units, the following project ("the Identified Project") has been completed, is in progress, or has been approved for implementation to meet the requirements of the federal Clean Air Act: Spurlock Landfill Area D Phase 3 Construction Project;

Whereas, following Kentucky Public Service Commission approval by Order in March 2005, EKPC and its Owner-Member Cooperatives implemented the Environmental Surcharge beginning in July 2005;

Whereas, the Environmental Surcharge mechanism was adopted by the Kentucky General Assembly in 1992, was effective January 1, 1993, and has been a means to allow recovery of costs incurred by electric utilities in Kentucky to meet federal Clean Air Act requirements at coal-fired generation power plants;

Whereas, the investment associated with the Identified Project, totaling \$24,663,317, is subject to recovery under the Environmental Surcharge mechanism

Whereas, PSC approval of an amendment to the Environmental Surcharge Compliance Plan would result in EKPC's recovery of additional costs associated with meeting federal Clean Air Act requirements and increase annual revenue requirements by an estimated \$2.4 million, on average, over calendar years 2025 through 2028; now, therefore, be it

Resolved, the Board hereby authorizes the submittal of an application to the PSC for an amendment to the Environmental Surcharge Compliance Plan to include the Identified Project and to seek recovery of associated costs per the Environmental Surcharge mechanism.

The foregoing is a true and exact copy of a resolution passed at a meeting called pursuant to proper notice at which a quorum was present and which now appears in the Minute Book of Proceedings of the Board of Directors of the Cooperative, and said resolution has not been rescinded or modified.

Witness my hand and seal this 16th day of April 2024.



Randy Sexton, Secretary

Corporate Seal