

# **2018 LANDFILL CELL LINER AND LEACHATE COLLECTION DESIGN CERTIFICATION**

**November 2018**

*Prepared for:*



H.W. Pirkey Power Plant  
2400 FM 3251  
Hallsville, Texas 75650

*Prepared by:*



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LINER AND LEACHATE COLLECTION DESIGN CERTIFICATION**

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**LIST OF EXHIBITS**

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Site Location Map  
Plant and CCR Unit Map  
Site Layout Map  
2018 Landfill Cell Details

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## **Introduction and Purpose**

The H.W. Pirkey Power Plant, operated by Southwestern Electric Power Company (SWEPCO), is proposing to construct a landfill expansion cell in 2018. As required in section 40 CFR 257.70 (e), the purpose of this report is to certify that the requirements of § 257.70 for the liner and leachate collection and removal system have been met for the 2018 Landfill Cell project. SWEPCO is a unit of American Electric Power (AEP).

## **Facility Location Description**

SWEPCO owns and operates a coal-fired power plant (H.W. Pirkey Power Plant), which is located approximately 5.9 miles southeast of Hallsville in Harrison County, Texas. The power plant produces up to 700 Megawatts (MW) of electrical power utilizing local lignite from the Sabine Mining Company. The existing landfill is used for disposal of scrubber sludge, fly ash, bottom ash, and other byproducts from the coal-fired power plant. The waste materials are considered non-hazardous. A Site Location Map, as well as a Plant and CCR Unit Map have been included for reference at the end of this report.

## **2018 Landfill Cell Design Criteria for New CCR Lateral Expansion: (§ 257.70)**

The existing Pirkey Landfill consists of several cells that have been constructed periodically over the last thirty plus years. Several of the cells have already been capped, and the most recent cell was constructed in 2015 (please refer to the Site Layout Map). All new cells must consist of a composite liner system and leachate collection and removal system. The details of these systems have been included on the last page of this document, entitled 2018 Landfill Cell Details. As per § 257.70, all new CCR landfills and any lateral expansions must be designed, constructed, operated, and maintained with a composite liner system and a leachate collection and removal system.

### ***Composite Liner System Requirements: § 257.70 (b) (1-4)***

The composite liner system for the 2018 Landfill Cell consists of an upper and lower component. The upper component consists of a 60 mil HDPE geomembrane, and the lower component consists of a 2-foot compacted clay liner system with a hydraulic conductivity of no more than  $1 \times 10^{-7}$  cm/sec. The upper component will be installed in direct and uniform contact with the lower component. The composite liner system meets all the requirements as outlined in § 257.70 (b) (1-4).

### ***Leachate Collection and Removal System § 257.70 (d) (1-3)***

The leachate collection and removal system for the 2018 Landfill Cell consists of a 2-foot thick leachate drainage layer above the 60-mil HPDE liner. The purpose of this system will be to collect and remove leachate from the landfill during the active life and post-closure care period. On-site materials will be used for protective cover over the leachate drainage layer. Leachate pipes will be installed in the low areas of the liner system to remove the leachate from the leachate drainage layer. The trenches around these leachate pipes will be backfilled with coarse aggregate and wrapped with filter fabric. Chimney drains will be installed into the leachate piping to better drain the landfill during its active life. The leachate collection piping will also be made from HDPE material. The leachate collection and removal system meets all the requirements as outlined in § 257.70 (d) (1-3).

## **Summary**

SWEPCO owns and operates a landfill at the H.W. Pirkey Power Plant and is proposing to construct a landfill expansion cell in 2018. As outlined in this report, the liner and leachate collection and removal system for this landfill expansion meets the requirements of §257.70.

**Certification**

By means of this certification, I attest that (i) this report was prepared by me or under my direct supervision, (ii) I am a duly Licensed Professional Engineer in the State of Texas, and (iii) the design of the composite liner and the leachate collection and removal system for the 2018 Landfill Cell meets the requirements as set forth in 40 CFR 257.70.

Lane Roberts

\_\_\_\_\_  
Printed Name of Registered Professional Engineer

*Lane Roberts*

\_\_\_\_\_  
Signature

105135                      Texas                      11-9-2018

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Registration No.              Registration State              Date

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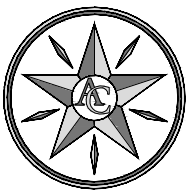
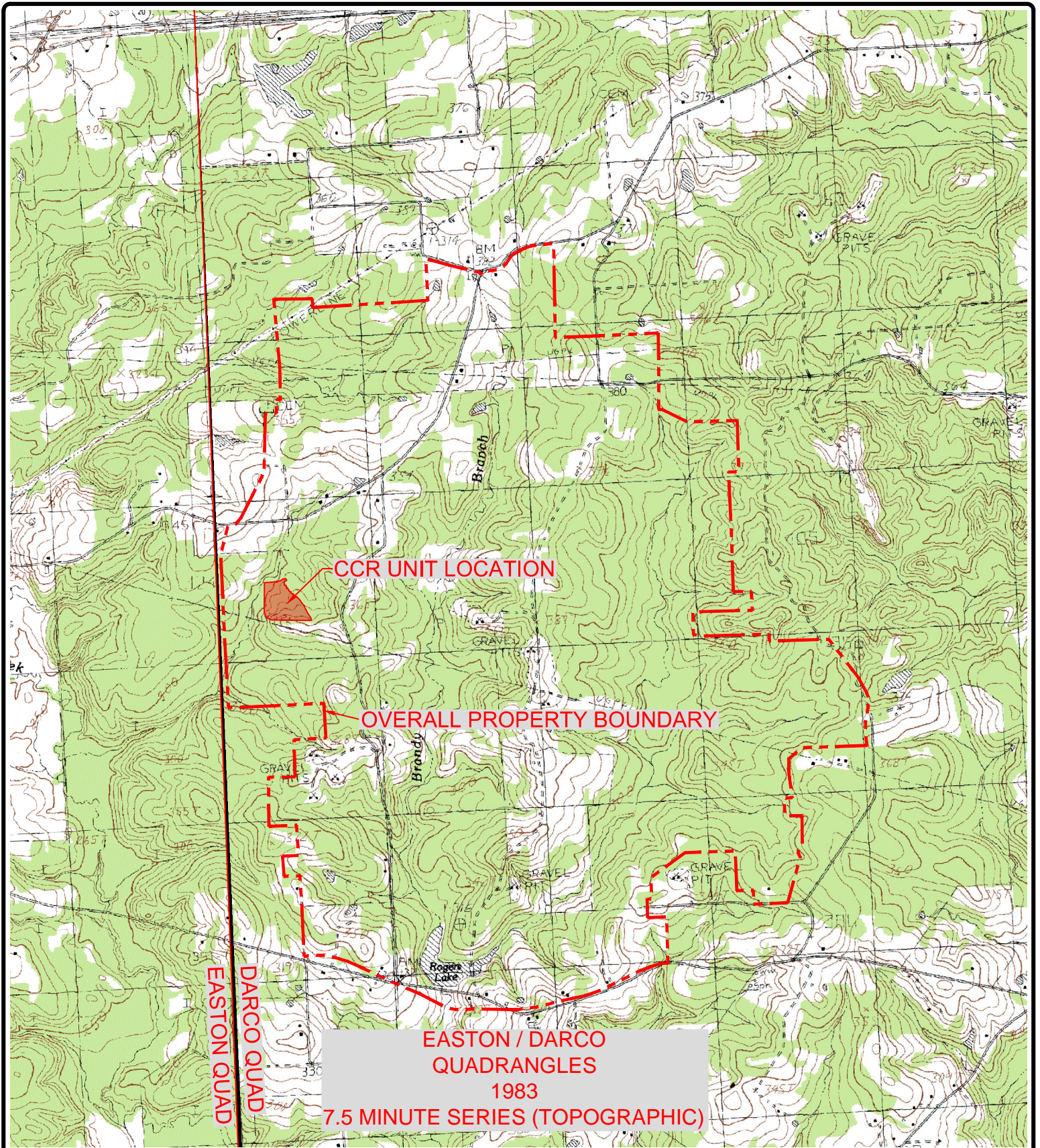
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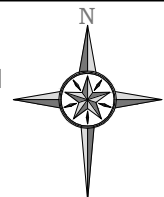
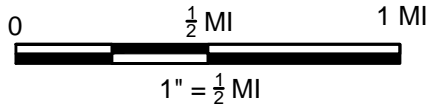


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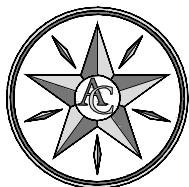
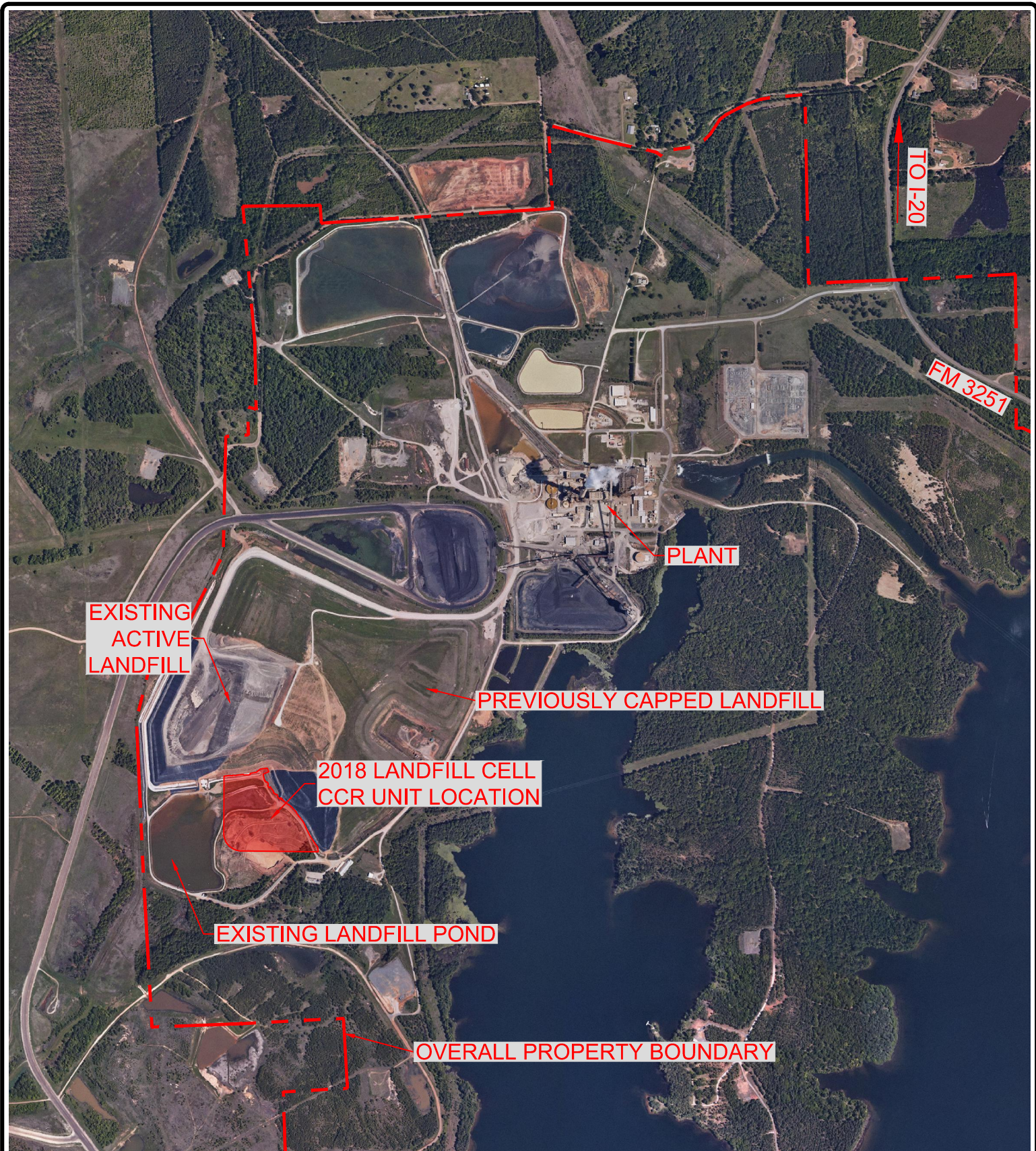


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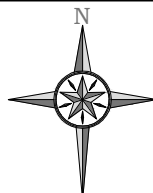
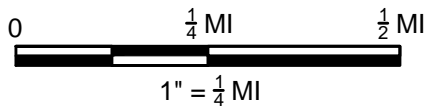


2018 LANDFILL  
 SITE LOCATION  
 MAP



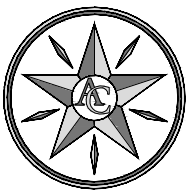
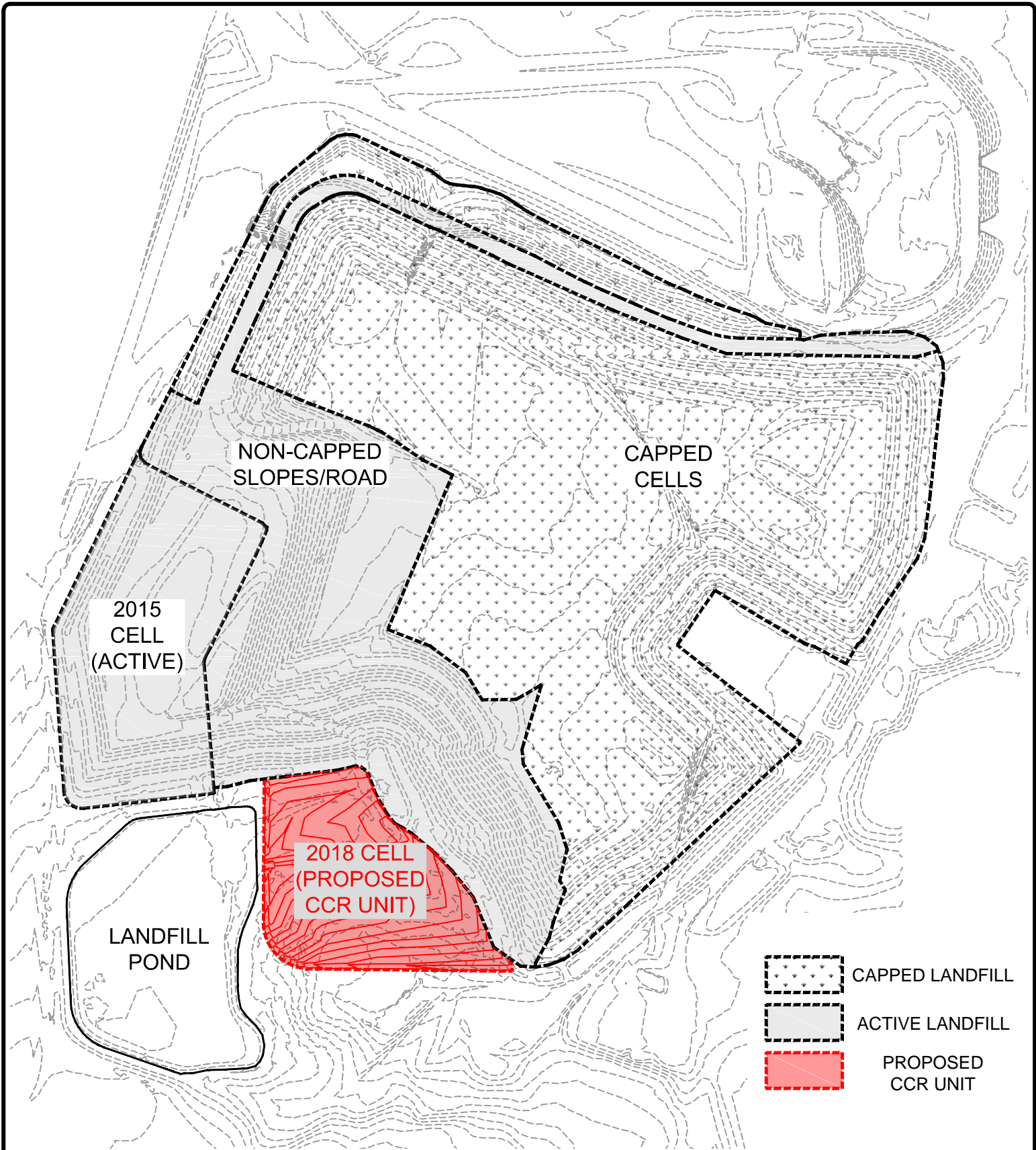


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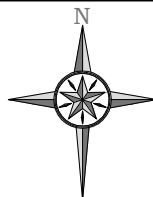
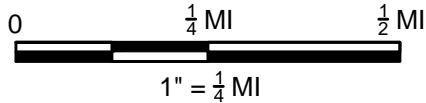


2018 LANDFILL  
 PLANT AND  
 CCR UNIT MAP

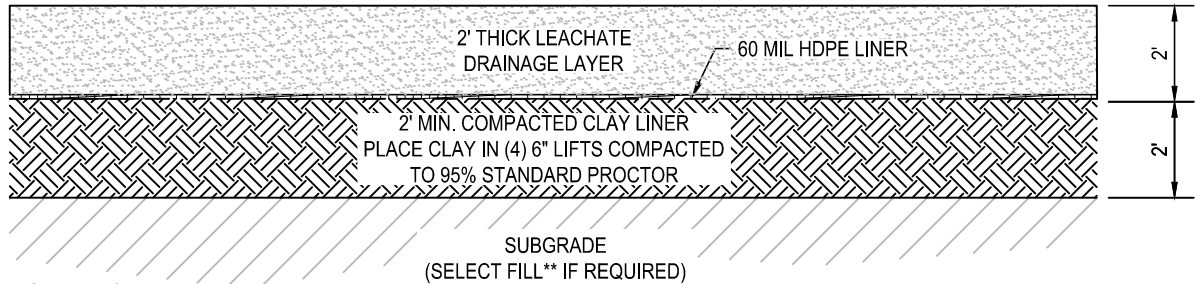




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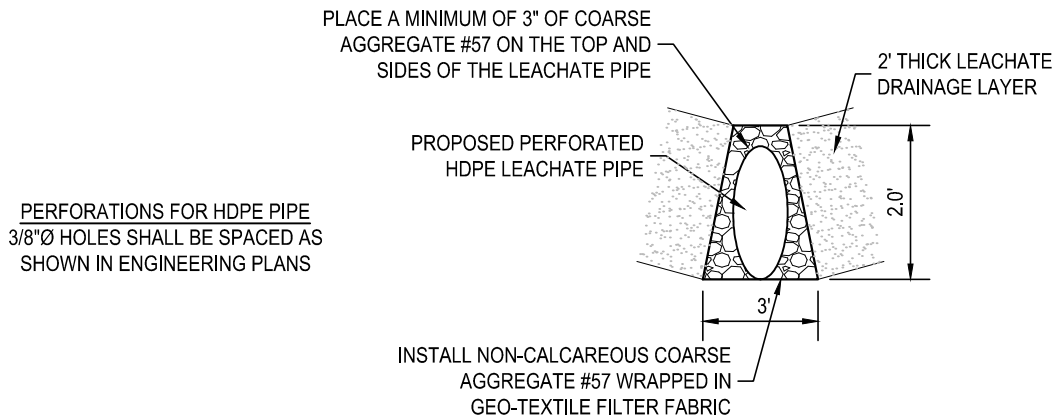
2018 LANDFILL  
 SITE LAYOUT  
 MAP



\*\*SELECT FILL TO BE PLACED IN 8" MAX LIFTS AND COMPACTED TO 95% OF STANDARD PROCTOR

**COMPOSITE LINER DETAIL**

NOT TO SCALE



**LEACHATE PIPE DETAIL**

NOT TO SCALE



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2018 LANDFILL  
CELL DETAILS