

**HISTORY OF CONSTRUCTION  
FORMER ASH BASIN  
POWERTON STATION  
APRIL 2018**

Geosyntec Consultants (Geosyntec) prepared this history of construction report for the Former Ash Basin (FAB) located at the Powerton Station (Site) in Pekin, Illinois, which is owned and operated by Midwest Generation LLC (Midwest Generation). This history of construction report addresses the requirements of the Coal Combustion Residuals (CCR) Rule codified in the Code of Federal Regulations Title 40, Part 257, Subpart D. These regulations were published in the Federal Register on 17 April 2015, became effective on 19 October 2015, and were amended on 05 August 2016. This report identifies and addresses the specific requirements of §257.73(c) of the CCR Rule regarding preparing a history of construction report for the history of construction through 13 April 2018 for the FAB.

This Report was prepared by Ms. Beth Pittaway and reviewed in accordance with Geosyntec's internal review policy by Mr. Michael Houlihan and Mr. Jesse Varsho, P.E., P.G. Mr. Varsho is a registered Professional Engineer in the State of Illinois.

**1. CCR Rule Requirements for History of Construction**

History of construction requirements for inactive CCR surface impoundments are included in the structural integrity criteria presented in §257.73 of the CCR Rule. The preamble of the CCR Rule (Page 21380) states that the history of construction for inactive CCR surface impoundments is required to include information only to the extent available and that only factual documentation, not anecdotal or speculative information, is to be included. Additionally, the preamble states that no new information should be generated to satisfy the requirements of §257.73(c).

**2. History of Construction**

**2.1 Owner and Unit Identification - §257.73 (c)(1)(i)**

Unit Name:	Former Ash Basin
NPDES ID Number:	IL0002232-001
Owner/Operator:	Midwest Generation 804 Carnegie Center Princeton, NJ 08540

## **2.2 Unit Location on USGS Map – §257.73 (c)(1)(ii)**

The Site is located south of the Illinois River in the Pekin, Illinois. Figure 1 presents the location of the FAB on a 7.5-minute United States Geological Survey (USGS) topographic quadrangle map.

## **2.3 Purpose of the CCR Units – §257.73 (c)(1)(iii)**

The FAB is an inactive CCR surface impoundment which was historically used for bottom ash disposal. It is estimated that the FAB stopped receiving CCRs by the 1970s. In 2010, a berm was constructed across the FAB to support a rail line to the Site's generating units. The two resulting impoundment areas are referred to as the North Pond and the South Pond as shown in Figure 2.

## **2.4 Name and Size of the Watershed – §257.73 (c)(1)(iv)**

The FAB is located in the Pekin Lake – Illinois River subwatershed (HUC12 071300030304), which is approximately 28,847 acres in size (USGS, 2015).

## **2.5 Description of Foundation– §257.73 (c)(1)(v)**

The FAB was constructed with fill embankments on the north, east and west sides. The south side of the FAB is currently incised. Because no in-situ or native materials provide lateral structural support for the embankments, the basins do not contain abutments. The remainder of this section addresses the foundation materials for the FAB.

Foundation materials in the vicinity of the FAB generally consists of an interlayering of sandy and clayey units (KPRG, 2005, Patrick Engineering, 2011, Geosyntec, 2016). Publicly available geologic information shows that the Site is underlain by approximately 100 to 125 feet of alluvial sands and gravels with some minor clay (Patrick Engineering, 2011). Logs from wells installed in the embankments of the FAB, indicate silt and clay layers under the embankment fill (Patrick Engineering, 2011; Geosyntec, 2016). Within the vicinity of the FAB, well logs, boring logs, and CPT soundings show the thickness of the silt and clay layers ranging from 16 to 20 feet with approximately 34 to 43 feet of medium dense poorly graded sand and gravel underneath (Patrick Engineering 2011, Geosyntec, 2016).

## **2.6 Description of the Materials, Methods, and Dates of Construction - §257.73 (c)(1)(vi)**

At the time of this report, the type, size, range, and physical and engineering properties of the materials used in constructing each zone or stage of the FAB, the method of site preparation and construction of each zone of the unit, and the approximate dates of construction of each successive stage of construction of the unit, is unavailable mainly due to the age of the FAB. No as-built

construction drawings or construction completion reports detailing the actual materials and methods used for the original construction of the FAB were available for this report.

The railroad berm added in 2010 was constructed from CCR material. Figure 3 shows the typical rail cross section at the FAB. No additional material or methods descriptions were available for this report.

## **2.7 Drawings - §257.73 (c)(1)(vii)**

With the exception of Figure 3 for the railway crossing, construction drawings relevant to the design, construction, operation, and maintenance of the FAB were not available for this report due to the age of the FAB.

## **2.8 Instrumentation - §257.73 (c)(1)(viii)**

No instrumentation exists on the FAB.

## **2.9 Area-Capacity Curve - §257.73 (c)(1)(ix)**

Area-capacity curves for the remaining FAB capacity is included as Figure 4. Without original construction drawings, the area-capacity curve could not be developed for the estimated in-place 500,000 yd<sup>3</sup> of CCR.

## **2.10 Spillway Description and Calculations - §257.73 (c)(1)(x)**

The FAB does not include any spillways or diversion design features.

## **2.11 Construction Specifications and Provisions for Surveillance, Maintenance and Repair - §257.73 (c)(1)(xi)**

The FAB is an inactive CCR surface impoundment and does not have any construction specifications or provisions for surveillance, maintenance, or repair.

## **2.12 Record of Any Structural Instability - §257.73 (c)(1)(xii)**

Based on our discussions with Site staff and review of the construction documentation provided herein, there are no records or knowledge of structural instability for the FAB.

Former Ash Basin, Powerton Station  
History of Construction Report  
April 2018

### **3. *References***

Geosyntec, 2016. Soil Properties Calculation, Ash Surge Basin and Bypass Basin, Powerton Station. October.

KPRG and Associates, Inc., 2005. Geotechnical Analysis of Soil Surrounding Settling Basins/Ponds, KPRG Project No. 15805, October.

Patrick Engineering, 2011. Hydrogeological Assessment Report, Powerton Generating Station, Pekin, Illinois, Patrick Project No. 21053.070, February.

USGS (2015). "Watershed Boundary Dataset," accessed via The National Map, <http://viewer.nationalmap.gov/viewer/nhd.html?p=nhd>, accessed 1 February 2016.

### Attachments

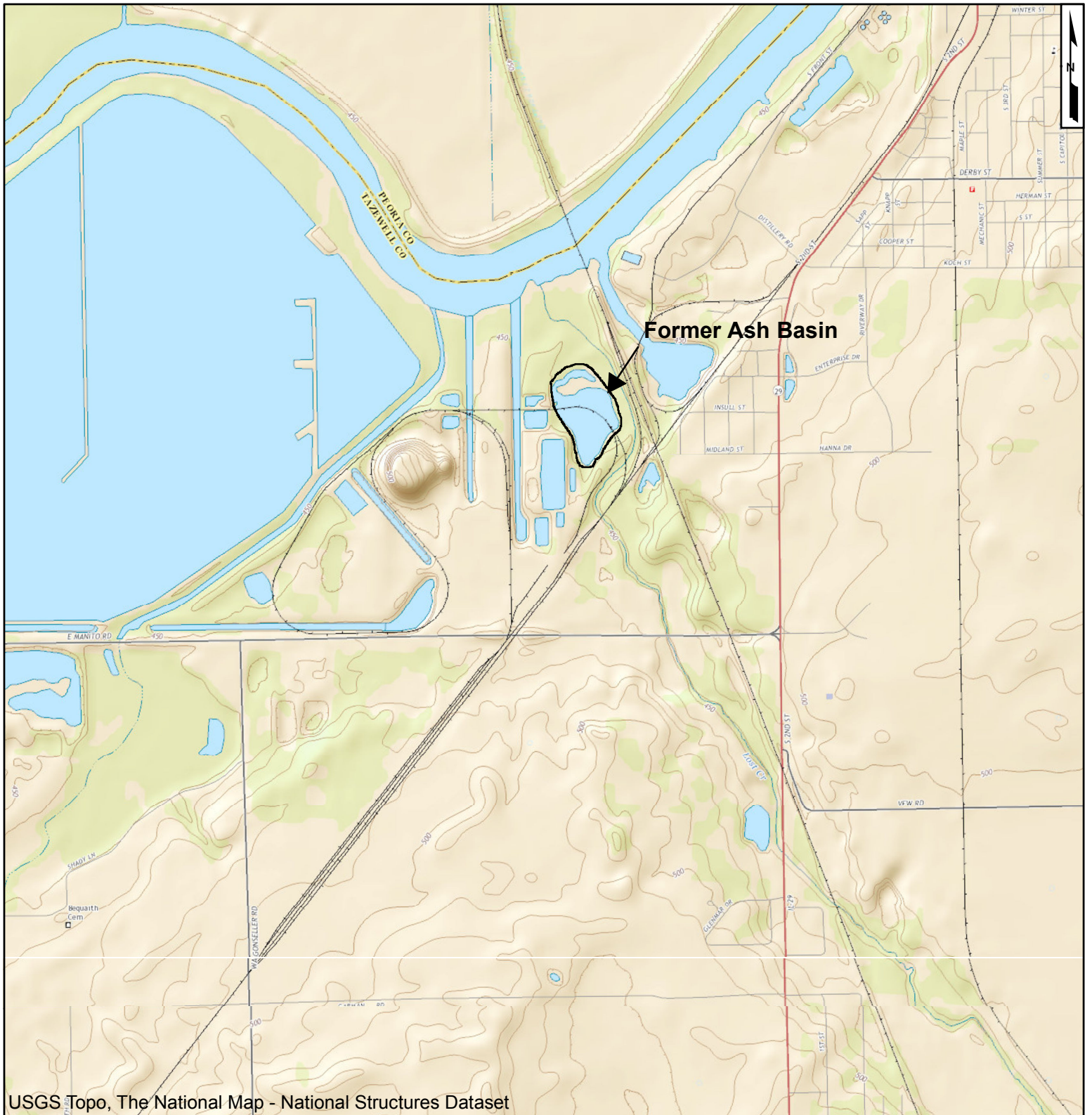
Figure 1 – Site Location

Figure 2 – North and South Pond Detail

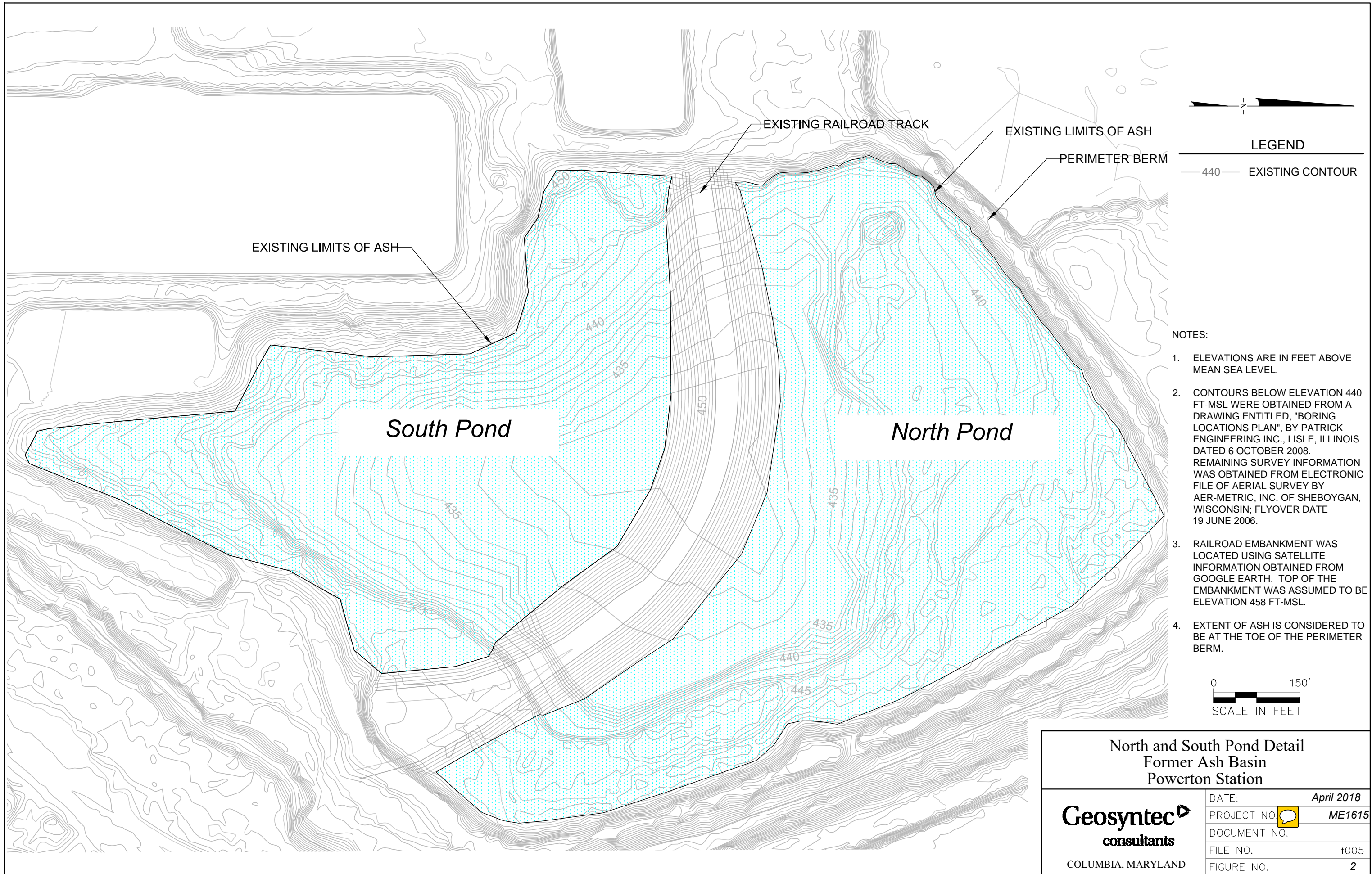
Figure 3 – Rail Layout Cross Section

Figure 4 – Area-Capacity Curve

## FIGURES



2,000    1,000    0    2,000 Feet 	
<b>Site Location</b> Former Ash Basin Powerton Station Pekin, IL	
Columbia, MD	April 2018
<b>Figure</b> <b>1</b>	



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**LEGEND**

— 440 — EXISTING CONTOUR

- NOTES:**
1. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL.
  2. CONTOURS BELOW ELEVATION 440 FT-MSL WERE OBTAINED FROM A DRAWING ENTITLED, "BORING LOCATIONS PLAN", BY PATRICK ENGINEERING INC., LISLE, ILLINOIS DATED 6 OCTOBER 2008. REMAINING SURVEY INFORMATION WAS OBTAINED FROM ELECTRONIC FILE OF AERIAL SURVEY BY AER-METRIC, INC. OF SHEBOYGAN, WISCONSIN; FLYOVER DATE 19 JUNE 2006.
  3. RAILROAD EMBANKMENT WAS LOCATED USING SATELLITE INFORMATION OBTAINED FROM GOOGLE EARTH. TOP OF THE EMBANKMENT WAS ASSUMED TO BE ELEVATION 458 FT-MSL.
  4. EXTENT OF ASH IS CONSIDERED TO BE AT THE TOE OF THE PERIMETER BERM.



**North and South Pond Detail  
Former Ash Basin  
Powerton Station**



COLUMBIA, MARYLAND

DATE:	April 2018
PROJECT NO.	ME1615
DOCUMENT NO.	
FILE NO.	f005
FIGURE NO.	2

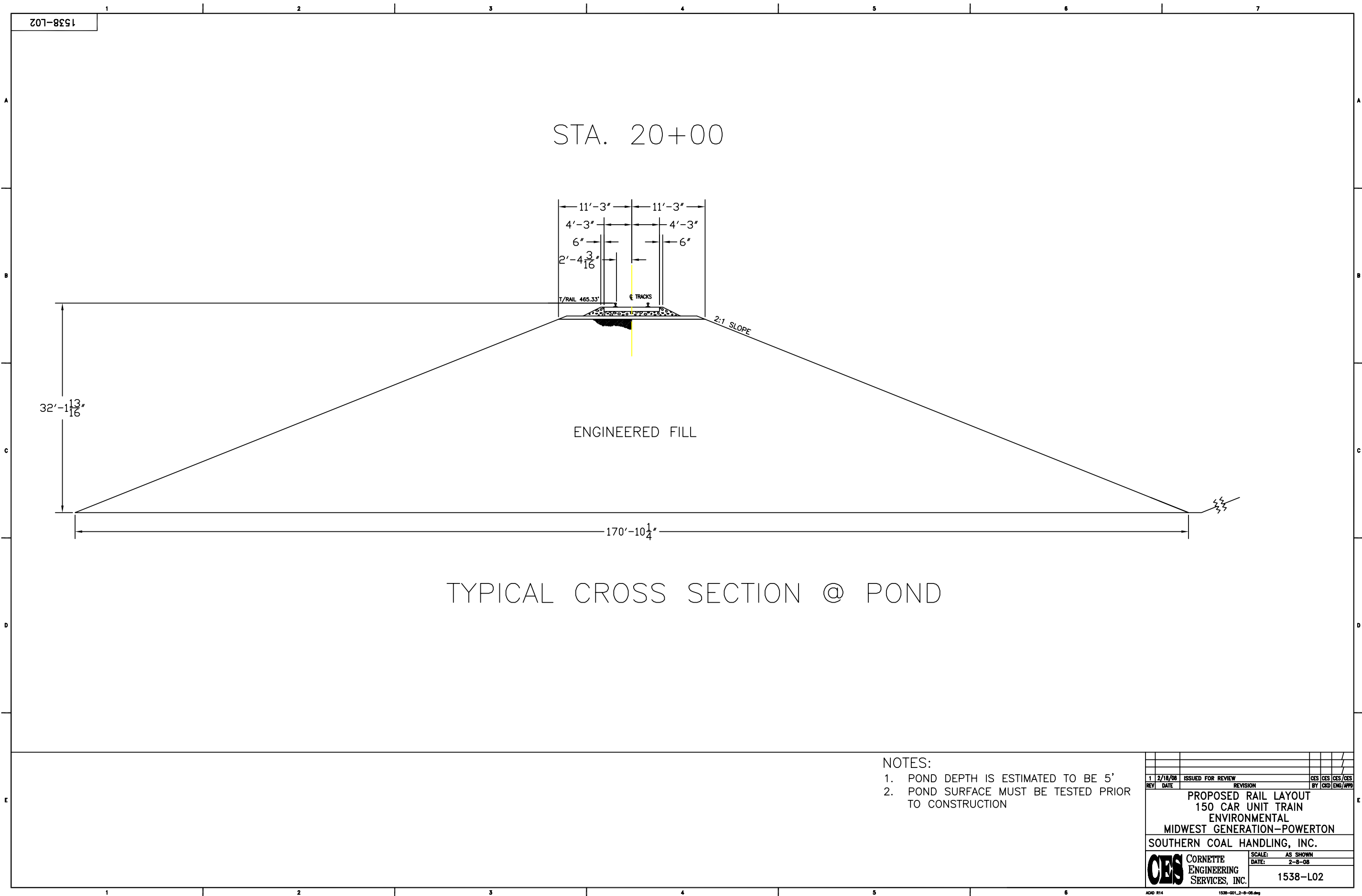
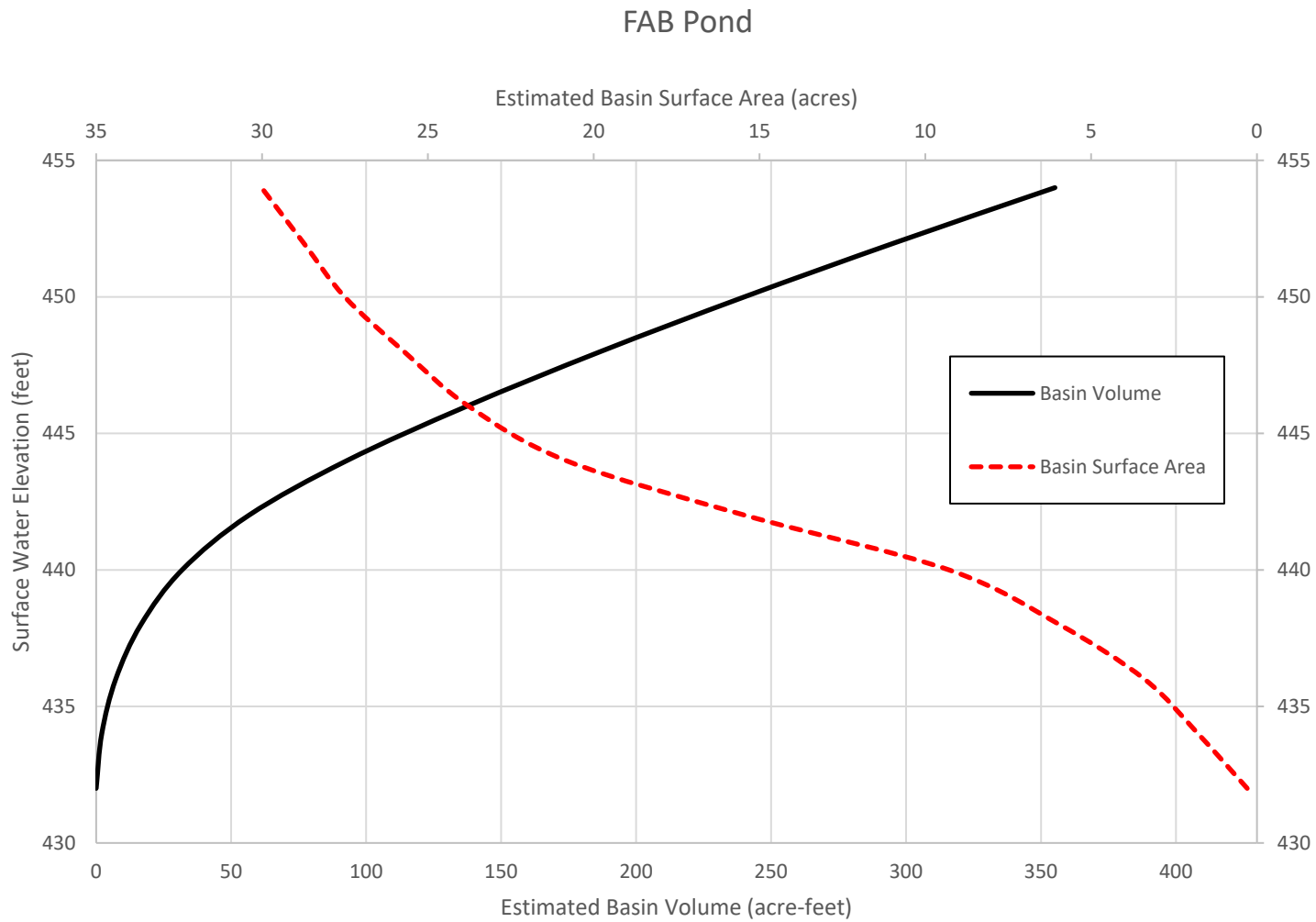


FIGURE 3 - RAIL LAYOUT CROSS SECTION



**Note:**

(1) Basin volume shown is remaining volume only. Approx. 500,000 yd<sup>3</sup> of CCR is placed below noted elevations.

 Geosyntec consultants
April 2018
ME1615

AREA-CAPACITY CURVE FORMER ASH BASIN POWERTON STATION PEKIN, ILLINOIS
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<b>FIGURE</b> <b>4</b>
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