

**PHASE I  
PROGRESS REPORT  
ENGINEERING DESIGN AND  
PERMIT APPLICATION  
RESTRICTED SOLID WASTE LANDFILL**

**NOVEMBER 11, 1991**

**PREPARED FOR  
DODGE DIVISION OF  
RELIANCE ELECTRIC COMPANY  
MISHAWAKA, INDIANA**

**PREPARED BY  
EIS ENVIRONMENTAL ENGINEERS, INC.  
1701 NORTH IRONWOOD DRIVE  
SOUTH BEND, INDIANA**

Phase I of the project includes the collection of available information required for the Type III restricted waste disposal facility permit applications. This includes an evaluation of water well logs, determination of the sites status with regard to wetlands, floodways and zoning. In addition a topographic site plan will be prepared.

An evaluation of approximately 263 Indiana Department of Natural Resources water well logs and preparation of preliminary geologic cross sections was completed (copies attached).

### GEOLOGY/HYDROGEOLOGY

The evaluation of the DNR water well logs indicates the following:

- There appears to be surficial clayey units south and west of the site. The data are inconclusive regarding whether these units are present at the site. A preliminary site visit indicated that some clayey or silty sediment is present near the surface at the site in areas of high elevations.
- Unsaturated sand and gravel deposits 55' to 110' thick underlie the site. These sands are stratigraphically higher than the sand and gravel deposits associated with the St. Joseph River Basin to the north.
- Clay is present below the sand and gravel at depths of 30' (below base of ravine) to 110' (below fill surface). A large volume of unsaturated sand overlying the clay would have to be excavated in order to reach that clay. The clay ranges in thickness from about 15' to 60'. It is unknown whether groundwater may be present at or near the surface of the clay which could make excavation difficult or impossible. The value of this clay as cover or liner material is therefore highly questionable. The clay unit shows evidence of interbedded sand and gravel units and possible lateral discontinuities. The static water levels are generally at or within 10' below the elevation of the upper surface of the clay.
- A sand unit below this clay is the primary aquifer for the site area. Most of the wells are completed in this unit which varies from about 2' to greater than 70' in thickness. This sand unit appears to correlate with, and connect to, the St. Joseph River Basin outwash deposits to the north.
- The clay unit underlying the upper unsaturated sands appears to be absent north of the site. This would allow direct contact between these sands and the lower sands of the primary aquifer.
- Below the aquifer sands is deep clay which is most likely till, approximately 35 to 40 feet thick which overlies shale bedrock at depths of 177' to 250' below grade.

- Groundwater flow directions in the deep aquifer reportedly range from N 20° W to N 30° E. The aquifer unit in the site area is part of the Hilltop Aquifer System which is typified by sand and gravel units which make up 60 to 100 percent of the strata penetrated by wells. The sand sand rich St. Joseph Aquifer System lies to the north and the clay rich Nappanee Aquifer System lies to the east, south and west. A poorly defined band of sand and gravel, often more than 100' thick extends north to south through the Hilltop Aquifer System. Clay units reportedly thicken up to 40' east and west of the Hilltop Aquifer System. The Indiana Department of Natural Resources reports that the Hilltop Aquifer is susceptible to groundwater contamination.

### **WETLANDS**

A preliminary site inspection was made to determine whether conditions existed that could justify the designation as a jurisdictional wetland. A letter was submitted to the U.S. Army Corps of Engineers stating that EIS ~~did not believe~~ that no jurisdictional wetlands exist at the site and asking the Corps opinion (copy attached).

### **FLOODWAYS**

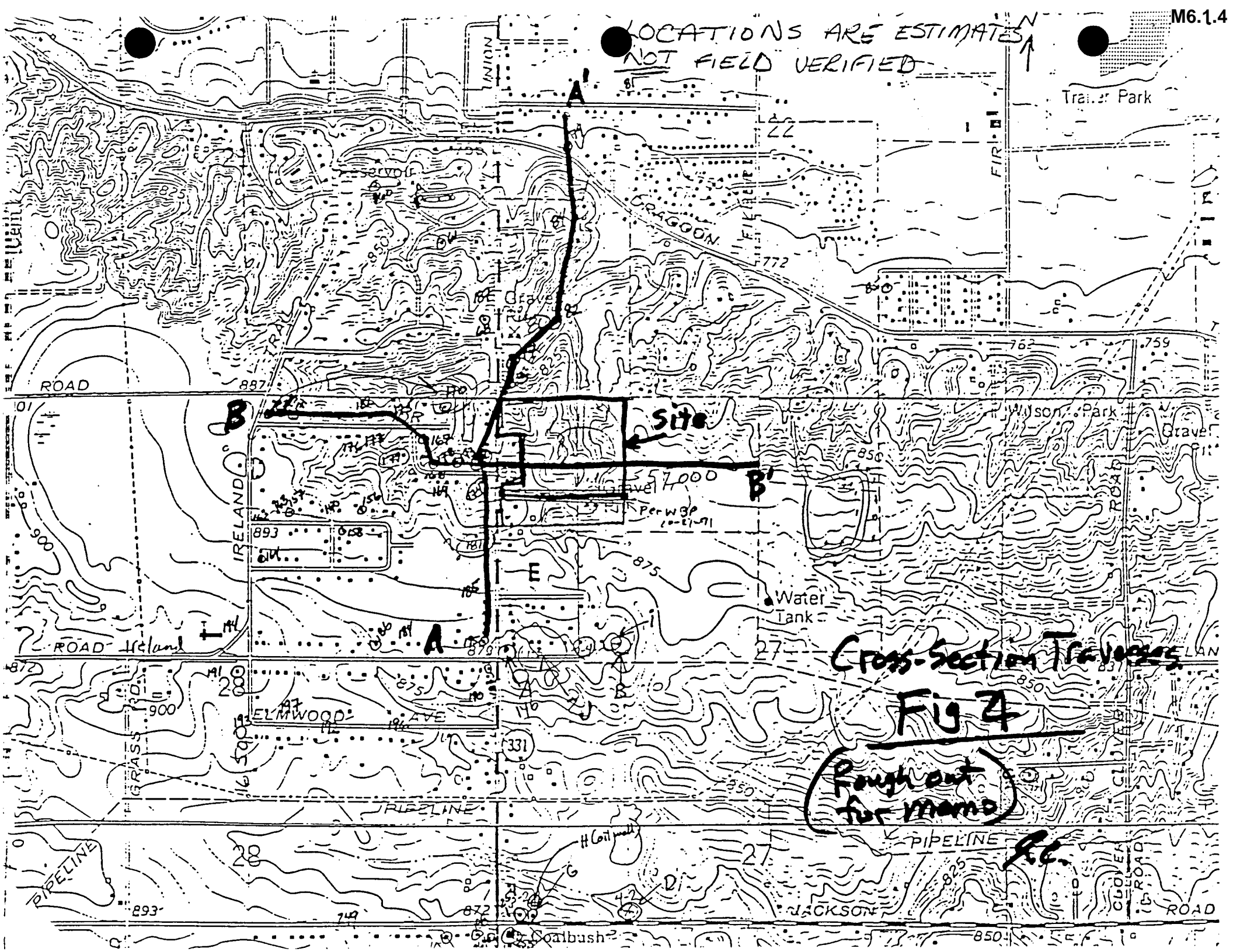
The site surface elevations range from 802 feet (NGVD) at the bottom of the ravine to 875 feet (NGVD) near the southwest entrance. The 100 year flood limit for the St. Joseph River located about 1.75 miles north of the site is approximately 702 feet (NGVD). The site is approximately 100 to 173 feet above the 100 year flood event.

### **SITE MAP**

There were no existing aerial surveys that could be used to prepare the topographic site map. A site plan will be prepared from new photogrammetry. The aerial photogrammetry will be completed during the period of November 11 and November 12, 1991 depending on the weather. The site plan will be prepared from that survey.

LOCATIONS ARE ESTIMATES  
NOT FIELD VERIFIED

Trailer Park



Cross-Section Traverses

Fig 4

Rough out  
for memo

RC

**CLIENT FILE**

October 29, 1991

Mr. John Richardson  
U.S. Army Corps of Engineers  
6910 N. Gummwood Road  
Granger, IN 46530

Dear Mr. Richardson:

EIS Environmental Engineers, Inc., (EIS) is presently evaluating a site for potential development as a foundry waste landfill. The site is located in St. Joseph County just east of Highway 331 approximately 0.6 miles south of Dragoon Trail. I have enclosed copies of the SCS Map and an areal photo with the site location delineated on each.

Based on our inspection of the site, we believe that no jurisdictional wetlands exist on the site. The low areas on the site are characterized by sandy, well drained soils; upland woodland growth; and hydrology limited to surface runoff coincident with heavy rainfall.

Please advise us of the Corps' opinion concerning this site. If you would like to inspect the site, you may do so at your convenience. It is not necessary to notify EIS or the property owner. Because this project is in the early, site evaluation phase, we ask that this information remain confidential.

Please call me or H. Stephen Nye, P.E., with any questions.

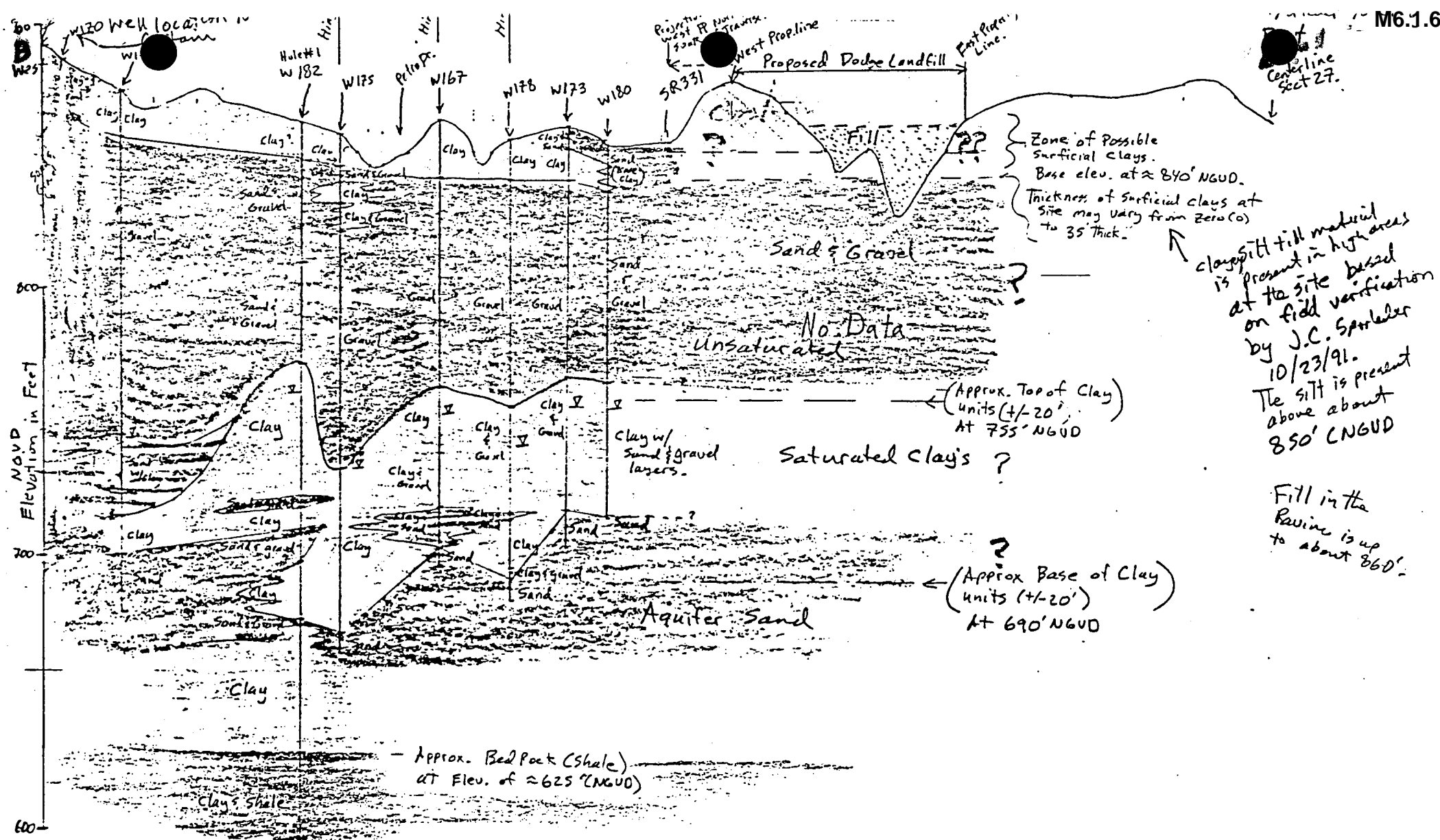
Sincerely,

EIS ENVIRONMENTAL ENGINEERS, INC.

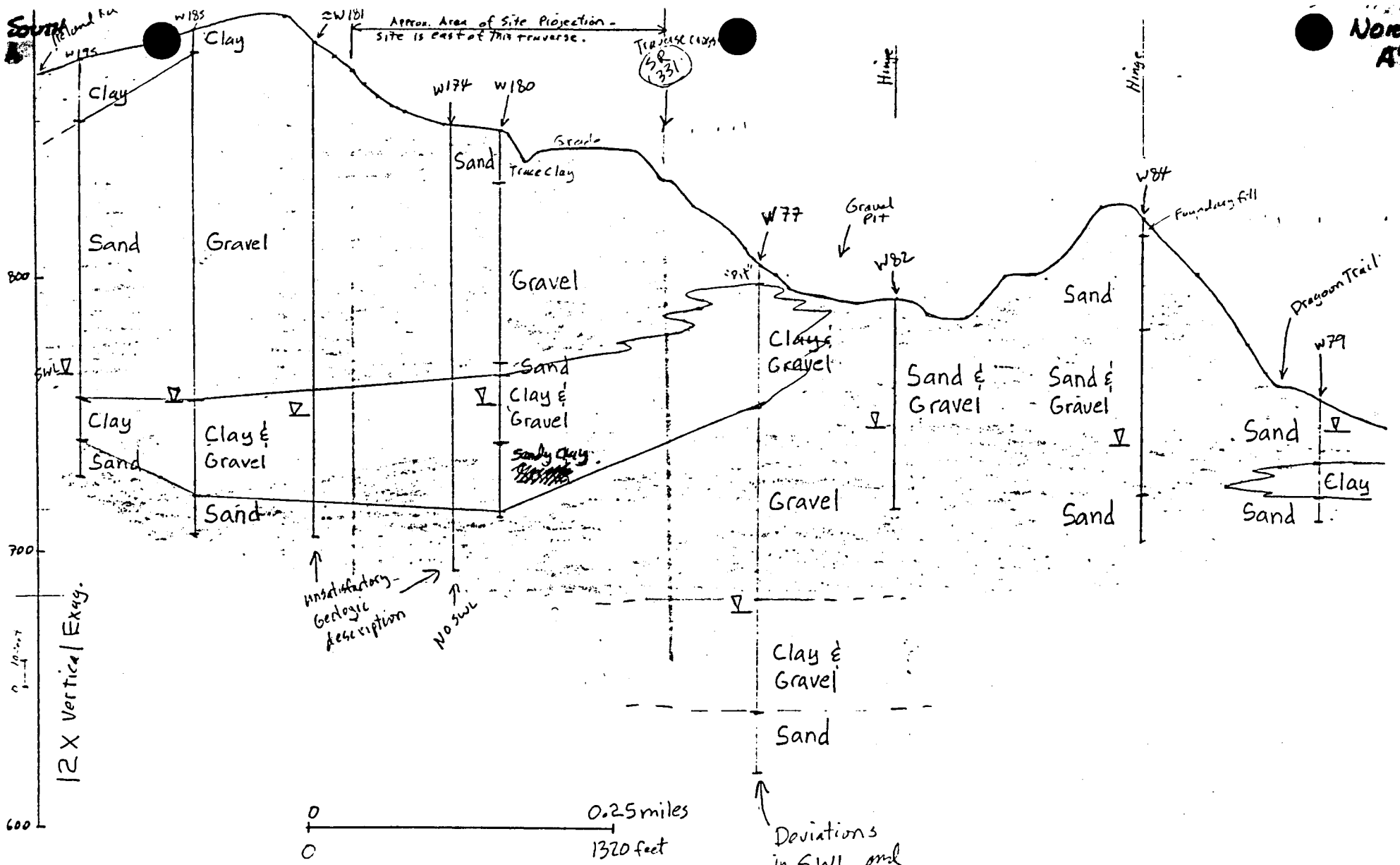
A handwritten signature in cursive script that reads "Wanada Baxter-Potter".

Wanada Baxter-Potter  
Project Engineer

WBP/lah



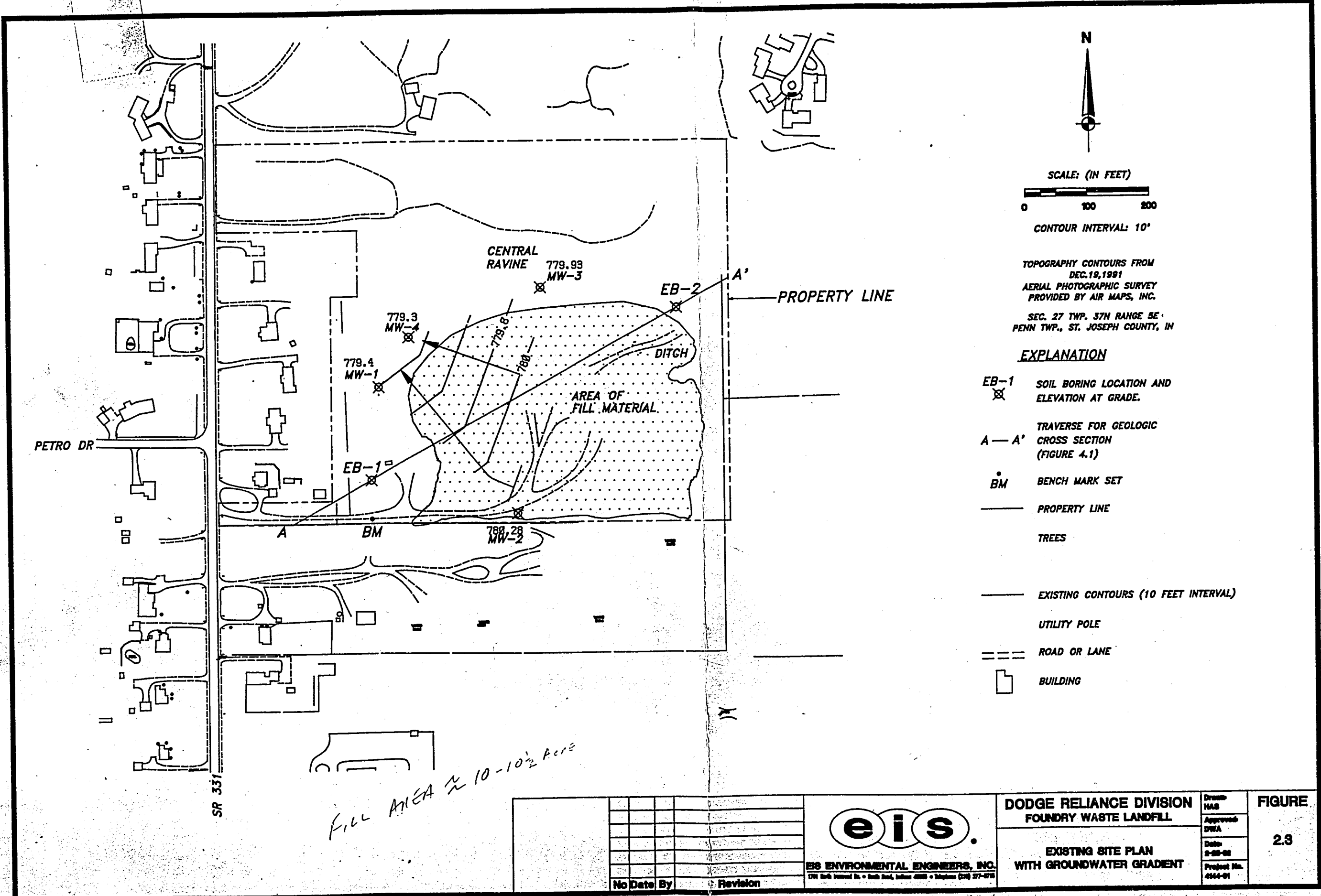
Note: Well locations from DNR are approximate.



- Clay
- Sand and Gravel

Deviations  
in SWL and  
"Clay" layer  
suggest this  
boring log might  
be inaccurate.

Approximate well locations



No	Date	By	Revision

**eis**  
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 1701 North Terminal Dr. • South Bend, Indiana 46608 • Telephone (317) 377-8718

**DODGE RELIANCE DIVISION**  
**FOUNDRY WASTE LANDFILL**

**EXISTING SITE PLAN**  
**WITH GROUNDWATER GRADIENT**

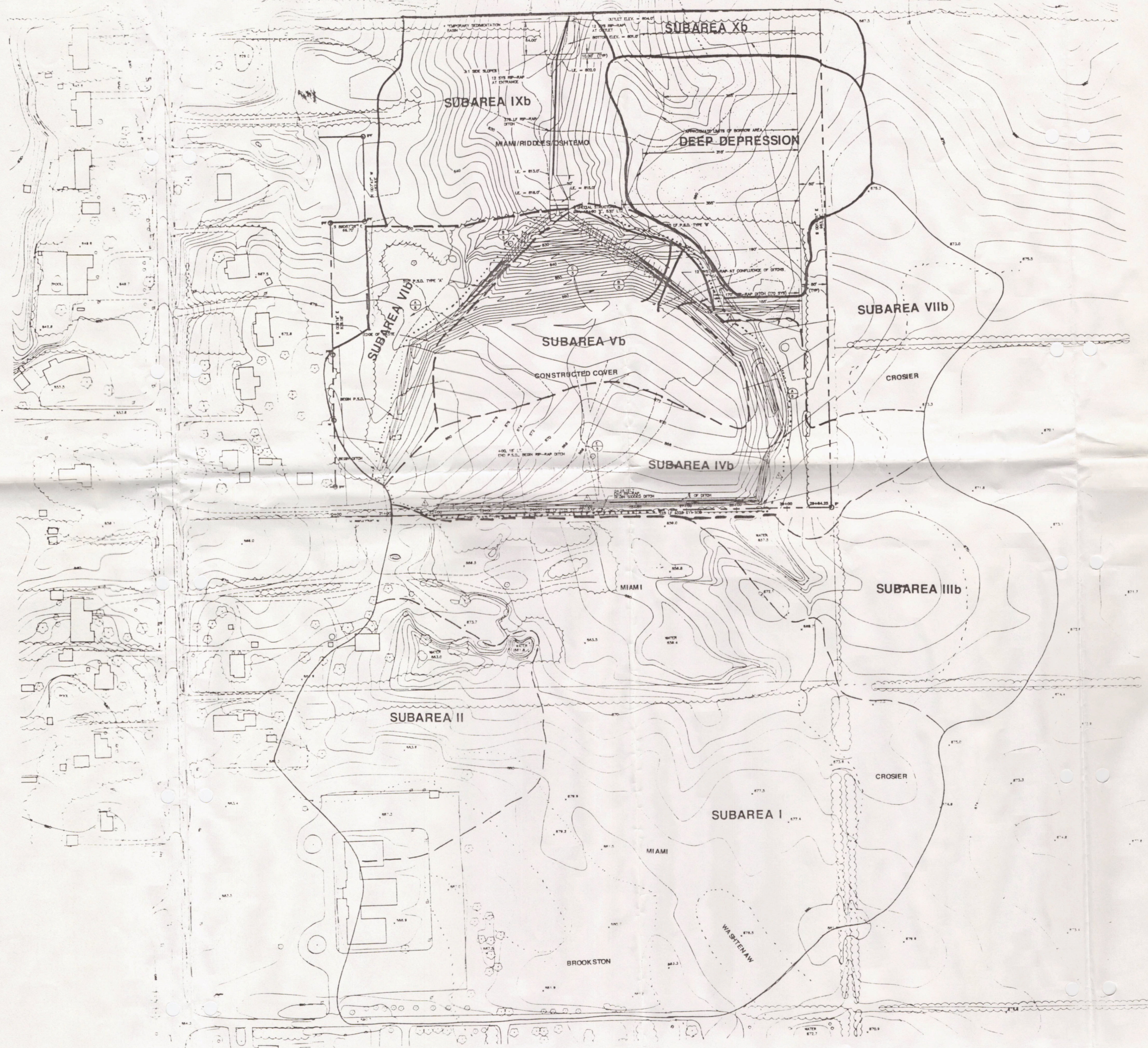
Drawn  
 HAS  
 Approved  
 DWA  
 Date  
 2-28-02  
 Project No.  
 4544-01

**FIGURE**  
**2.3**



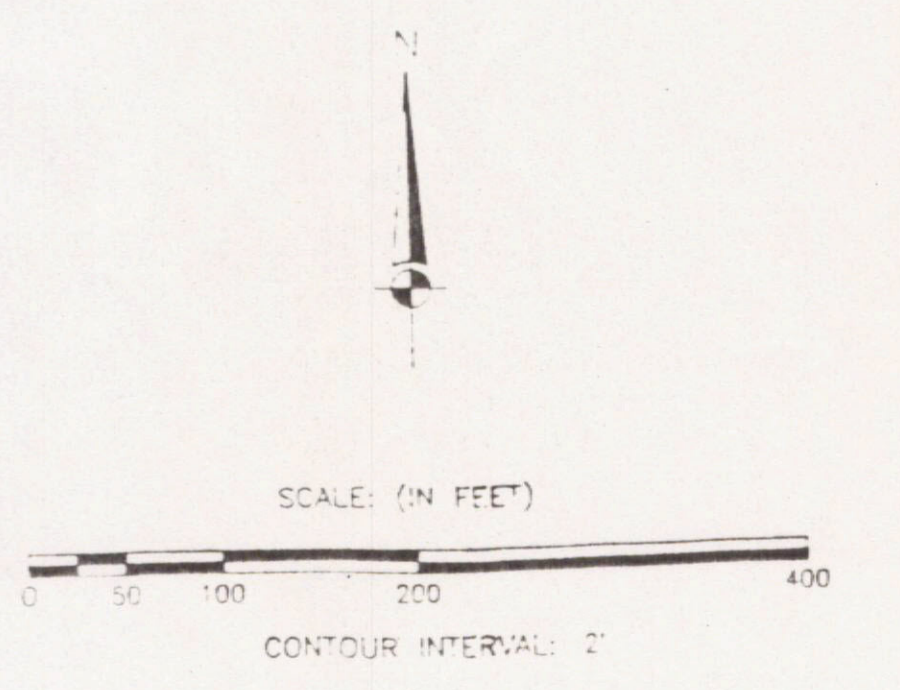




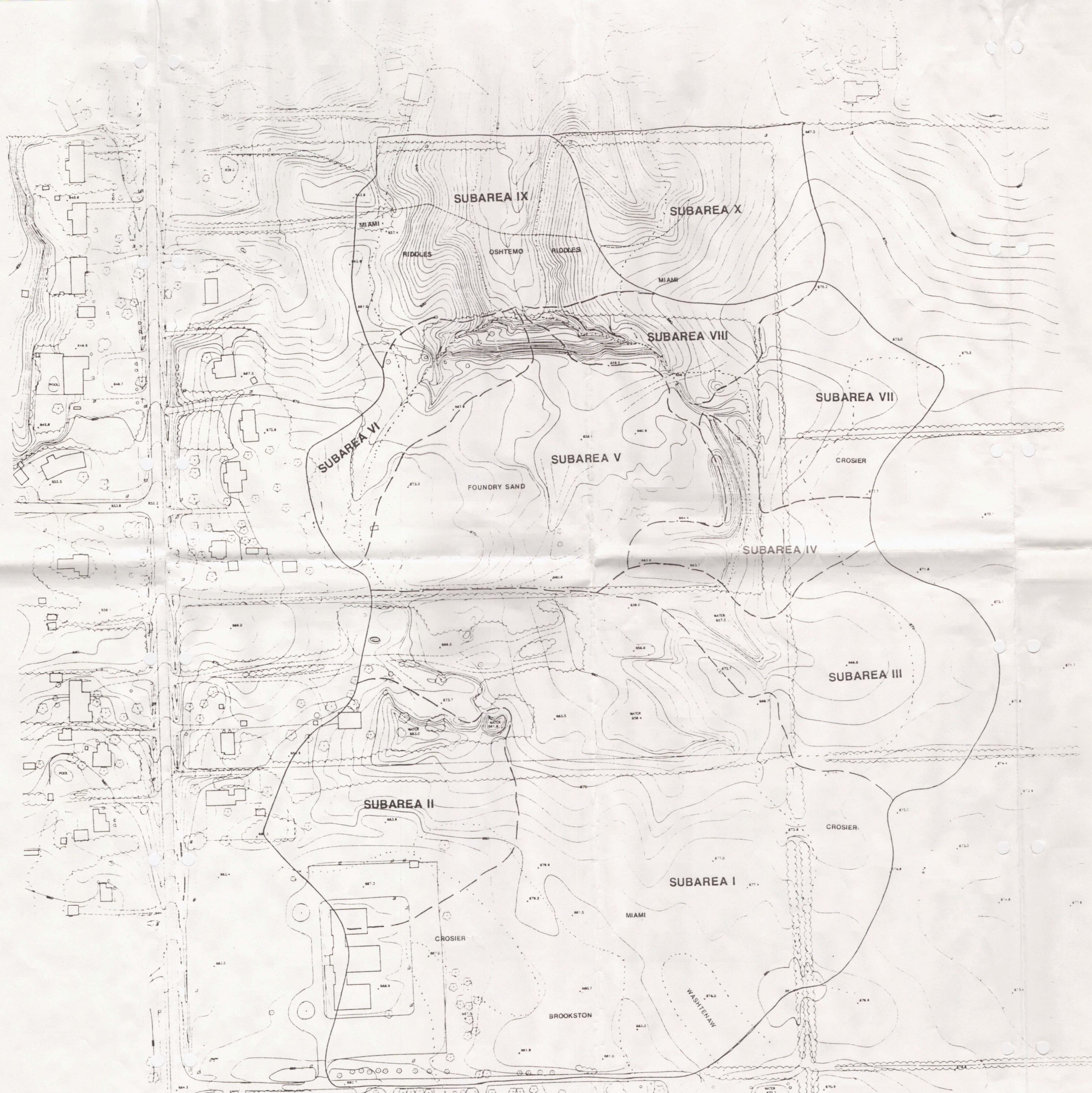


**DODGE MONOFILL  
POST-CONSTRUCTION DRAINAGE**

EIS ENVIRONMENTAL ENGINEERS, INC.  
WORKING DOCUMENT PREPARED FOR INTERNAL USE







**DODGE MONOFILL  
PRE-CONSTRUCTION DRAINAGE**

EIS ENVIRONMENTAL ENGINEERS, INC.  
WORKING DOCUMENT PREPARED FOR INTERNAL USE

