ALLIANT ENERGY
Wisconsin Power and Light Company
Nelson Dewey Generating Station

CCR SURFACE IMPOUNDMENT

HISTORY OF CONSTRUCTION

Report Issued: September 20, 2016
Revision 0

HARD HAT SERVICES™
Engineering, Construction and Management Solutions

EXECUTIVE SUMMARY

This History of Construction (Report) is prepared in accordance with the requirements of the United States Environmental Protection Agency (USEPA) published Final Rule for Hazardous and Solid Waste Management System – Disposal of Coal Combustion Residual (CCR) from Electric Utilities (40 CFR Parts 257 and 261, also known as the CCR Rule) published on April 17, 2015 and effective October 19, 2015.

This Report documents the construction history of each CCR unit at Nelson Dewey Generating Station in Cassville, Wisconsin in accordance with §257.73(c) of the CCR Rule. For purposes of this Report, the term "CCR unit" only refers to existing CCR surface impoundments.

Primarily, this Report is focused on providing history of construction information for each CCR surface impoundment to the extent feasible, provided that such information is reasonably and readily available.

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1 INTRODUCTION

The owner/operator of the CCR unit must provide a history of construction for the existing CCR surface impoundment at Nelson Dewey Generating Station (NED) in Cassville, Wisconsin in accordance with §257.73(c)(1) of the CCR Rule. Hard Hat Services, on behalf of Wisconsin Power and Light Company, has provided history of construction information for the existing CCR surface impoundment to the extent feasible, provided that such information is reasonably and readily available.

1.1 CCR Rule Applicability

The CCR Rule requires that an owner/operator of the CCR unit must provide a history of construction for existing CCR surface impoundments with a height of 5 feet or more and a storage volume of 20 acre-feet or more (§257.73(b)(1)); or the existing CCR surface impoundment has a height of 20 feet or more (§257.73(b)(2)).

1.2 History of Construction Applicability

NED has one existing CCR surface impoundment, which meets the requirements of §257.73(b)(1) and/or §257.73(b)(2), identified as the NED Slag Pond.

Wisconsin Power and Light Company also has one inactive CCR surface impoundment, the NED WPDES Pond. The NED WPDES Pond will be handled under a separate transmittal in accordance with the CCR Rule, if needed, and is not discussed further herein.

2 FACILITY DESCRIPTION

The following sub-sections provide a general facility description.

2.1 Name and Address - §257.73(c)(1)(i)

Included below is the name and address of the owner/operator of the CCR unit, name of the CCR unit, and state identification number for the CCR Unit (if one has been assigned by the state).

Owner/Operator Name and Address:

Wisconsin Power and Light Company (*an Alliant Energy Company*)
Nelson Dewey Generating Station
11999 County Highway VV
Cassville, WI 53806

The name of the CCR Unit located at NED is the NED Slag Pond. No state identification number has been assigned to the CCR unit at NED.

2.2 General Facility History

NED is located north of the City of Cassville, Wisconsin on the Mississippi River in Grant County. Figure 1 provides both a topographic map and an aerial photograph of the NED facility location, with the approximate property boundary of the facility identified.

NED, originally owned/operated by the Wisconsin Power and Light Company, initiated facility operations in 1959. At the time of initial operations NED was a fossil–fueled electric generating station that consisted of one steam electric generating unit (Unit 1) which at the time used bituminous coal as its fuel source. The initial steam electric generating unit at NED had a nameplate rating of 100 Megawatts (MW). The original CCR surface impoundment, identified as an ash disposal area in historical documents, was constructed at the time of initial facility operations and was located northwest of the generating plant. Historical drawings that identify the location of the ash disposal area are provided in Appendix F.

The CCR that was produced from the burning of coal included slag and fly ash. Unit 1 consisted of three cyclone furnaces. The cyclone furnaces would burn the coal and produce molten bottom ash. The molten bottom ash, once removed from the cyclone furnaces, would be quenched in water which produced the slag. The slag would then be sluiced out to the ash disposal area. At the time, the fly ash that was produced was not recovered as it would get carried from the boiler furnace as part of the flue gas.

In 1962, a second steam electric generating unit (Unit 2) was constructed and initiated operations. Unit 2 had a nameplate rating of 100 MW. Similar to Unit 1, Unit 2 consisted of three cyclone furnaces. The slag that was produced from Unit 2 was sluiced to the ash disposal area. The fly ash that was produced was not recovered as it would get carried from the boiler furnace as part of the flue gas. The CCR that was produced at NED was handled in this manner until 1973.

In 1973, the electrostatic precipitators for Unit 1 and Unit 2 were constructed. With the construction of the electrostatic precipitators, fly ash from Unit 1 and Unit 2 was electrostatically precipitated and collected. At this time, the fly ash was sluiced to the ash disposal area. The sluiced fly ash was not intermixed with the sluiced slag. The two forms of CCR were kept separated by an interior berm with slag sluiced to the south of the berm (area presently identified as the NED Slag Pond) and fly ash sluiced north of the berm (area presently identified as the closed ash landfill).

Approximately 8,355,000 tons of coal had been consumed between 1959 and 1976, as reported in an Ash Disposal Feasibility Report[1] dated June 17, 1976. During that time, an average of approximately 135 tons of CCR was produced on a daily basis. The average production of CCR on an annual basis was approximately 49,000 tons. Approximately 80% of the CCR was comprised of slag while the other 20% was comprised of fly ash.

[1] Physical Site Description and Ash Disposal Feasibility Report, Nelson Dewey Generating Station, June 17, 1976, Warzyn Engineering and Service Company, Inc.

As documented in a Department of the Army Public Notice[2] dated July 23, 1976, the Wisconsin Department of Natural Resources (WDNR) directed NED to remove the slag which had been accumulating since the generating plant went into operation in 1959. At the time, the most feasible method of removing the large quantity of slag was by barge. In order to comply with the WDNR directive, a barge loading slip was constructed south of the ash disposal area along the shore of the Mississippi River. Initially, a screening plant, hopper, and conveyor system was used to load the slag into the barges. The slag was then hauled off-site for beneficial reuse. Figures identifying the proposed design of the barge loading slip are provided in Appendix F. Additional discussions on historical operations and handling of the slag at NED is provided in further detail throughout Section 3.

In 1977, NED was provided authorization to proceed with the construction of an ash disposal facility (formerly identified as the ash disposal area in historical documents), as well as construction of enclosing embankments. As documented in a Department of the Army Permit Notification[3] dated October 05, 1977, approximately 1,000 feet of existing embankment, located south of the ash disposal area, was raised approximately three feet to an elevation of 625 (feet above mean sea level). Additionally, approximately 2,600 feet of new enclosing embankments, located west and north of the ash disposal area, were constructed to the same elevation. Figures identifying the proposed embankment construction and improvements are provided in Appendix F. Additional discussions on the embankment modifications is provided in further detail throughout Section 3.

An Ash Disposal Facility Plan of Operation[4] dated March 29, 1978 was prepared to go along with the newly constructed ash disposal facility which was to consist of a series of infiltration basins. The general plan of operation for the ash disposal facility included

[2] Department of the Army Public Notice, Nelson Dewey Generating Station, July 23, 1976, Rock Island District Corps of Engineers
[3] Department of the Army Permit Notification, Nelson Dewey Generating Station, October 05, 1977, Rock Island District Corps of Engineers
[4] Final Design Engineering and Plan of Operation Ash Disposal Facility, Nelson Dewey Generating Station, March 29, 1978, Warzyn Engineering and Service Company, Inc.

procedures for fly ash and slag disposal and/or storage and removal, wastewater disposal, general operations, and final abandonment. The plan of operation identified the process for sluicing fly ash to the ash disposal facility. Additional discussions on historical operations and handling of the CCR at NED is provided in further detail throughout Section 3.

In 1995, NED modified the Ash Disposal Facility Plan of Operation. As documented in a Plan Modification to the Plan of Operation[5] dated October 1995, the fly ash handling operations at NED were modified from a sluicing operation to a dry fly ash method of placement. The dry fly ash was transported via over-the-road haul truck and placed in the ash disposal facility. The dry fly ash was covered with a temporary geomembrane cover and eventually with a final cover system upon reaching closure grades. Additional discussions on the modification of fly ash handling operations, as well as discussions on the phased closure of the ash disposal facility, is provided in further detail throughout Section 3.

From 1959 to 1998 the owner/operator of NED was the Wisconsin Power and Light Company. In 1998, a three-way merger was completed between IES Industries, Interstate Power Company, and Wisconsin Power and Light Company forming Interstate Energy Corporation. In 1999, Interstate Energy Corporation changed its name to Alliant Energy Corporation.

As NED exists today, the generating plant consists of two steam electric generating units. Both units were retired in 2015 as NED ceased facility operations. Prior to the facility ceasing operations, sub-bituminous coal was the primary fuel for producing steam. The burning of coal at NED produced two types of CCR, which included slag and fly ash. CCR operations at NED included slag being sluiced to what is now identified as the NED Slag Pond, which is the only existing CCR surface impoundment present at NED. The slag was dredged from the NED Slag Pond on a regular basis and temporarily stockpiled

[5] Plan Modification To The Plan of Operation, Nelson Dewey Generating Station, October 1995, RMT, Inc.

adjacent to the existing CCR surface impoundment for dewatering prior to transporting off-site via over-the-road haul truck for beneficial reuse. Prior to October 19, 2015, dredging and dewatering activities were relocated to an area within the NED Slag Pond and remained there until the retirement of the generating units. No stockpiling outside of the NED Slag Pond has occurred on or after October 19, 2015. The fly ash produced at NED was collected by the electrostatic precipitators and conveyed to the on-site fly ash storage silo. The fly ash produced at NED was transported off-site via over-the-road haul truck for beneficial reuse.

3 HISTORY OF CONSTRUCTION - §257.73(c)(1)

This Report documents the history of construction information for each existing CCR surface impoundment to the extent feasible, provided that such information is reasonably and readily available. The following activities were completed in order to reasonably collect and assemble the readily available history of construction information:

- File review at the local regulatory agency;
- Historical aerial photography review;
- Historical topography review;
- Onsite design drawing, specification, and report review;
- Electronic design drawing, specification, and report review; and
- Interview(s) with onsite personnel with historical knowledge of the existing CCR surface impoundment.

3.1 NED Slag Pond

The following subsections are intended to meet the requirements of the CCR Rule §257.73(c)(1) for the NED Slag Pond.

3.1.1 CCR Unit Location - §257.73(c)(1)(ii)

The NED Slag Pond is located northwest of the generating plant and south of the on-site closed ash landfill. The location of the NED Slag Pond, in reference to the surrounding topography, is identified on both a USGS 7 ½ minute topographic quadrangle map and aerial photograph on Figure 1. The location of the NED Slag Pond, in reference to the immediate surroundings within the NED property, is identified on Figure 2.

3.1.2 Statement of Purpose - §257.73(c)(1)(iii)

As of December 31, 2015 NED ceased generation operations and thus the NED Slag Pond ceased being a primary receiver of sluiced CCR and process flows from the generating plant. Presently, the NED Slag Pond is a primary receiver of storm water runoff from the on-site closed ash landfill located north of the CCR unit, as well as storm water runoff from the former slag handling areas located south and east of the CCR unit. The storm water that accumulates in the NED Slag Pond no longer discharges through the existing

hydraulic structure located in the southwest corner of the CCR unit, as it either exfiltrates into the ground or evaporates.

Prior to the facility ceasing generation operations, the NED Slag Pond was a primary receiver of sluiced CCR (slag). The slag was sluiced from the generating plant to the east end of the NED Slag Pond where the majority of the CCR was recovered. A dozer was utilized to push the CCR to the south towards an excavator for dredging. The dredged CCR was stockpiled adjacent to the NED Slag Pond for dewatering. Prior to October 19, 2015, dredging and dewatering activities were relocated to an area within the NED Slag Pond and remained there until the retirement of the generating units. No stockpiling outside of the NED Slag Pond has occurred on or after October 19, 2015. Once dewatered, the CCR was then transported off-site for beneficial reuse.

In addition to sluiced CCR, the NED Slag Pond was also a primary receiver of process flows from the generating plant. The process flows included wastewater periodically pumped from the Wisconsin Pollution Discharge Elimination System (WPDES) Pond and flows associated with the seal well sump pumps. Flows from the seal well sump pumps included soot blowers, air compressors, boiler blowdown, Unit 1 and Unit 2 floor sumps, oil and hydrogen coolers and demineralization/reverse osmosis multi-media units.

The water used to sluice CCR to the NED Slag Pond, as well as water from process flows, discharged into the east end of the NED Slag Pond. The water flowed from the east end to the west end of the CCR unit. The southwest corner of the NED Slag Pond consists of the facility's WPDES Outfall 002. The outfall structure consists of a notched weir that discharges into a thirty inch diameter reinforced concrete pipe (RCP). The water flowed through the WPDES Outfall 002, under the adjacent access road along the west side of the NED Slag Pond, and discharged into a riprap lined swale that flowed to the southwest into the Mississippi River.

3.1.3 Physical Layout Information - §257.73(c)(1)(iv)

As identified in an Inflow Flood Control Plan[6] prepared for NED in accordance with §257.82 of the CCR Rule, the NED Slag Pond has a watershed of approximately 20 acres. The drainage area includes the on-site closed ash landfill located to the north of the NED Slag Pond, as well as the former slag handling areas located to the south and east of the NED Slag Pond.

As discussed in an Annual Inspection Report[7] prepared for NED in accordance with §257.83 of the CCR Rule, the NED Slag Pond is incised except for along the west embankment and southeast corner of the CCR unit. The west embankment of the NED Slag Pond has a height of approximately 18 feet from the crest to the toe of the downstream slope of the embankment at its greatest height. The interior storage depth of the NED Slag Pond is approximately 10 feet. The total volume of impounded CCR and water within the NED Slag Pond is approximately 75,000 cubic yards.

3.1.4 Foundation and Abutment Properties - §257.73(c)(1)(v)

As identified in an Ash Disposal Feasibility Report[8] dated June 1976, the NED Slag Pond (formerly identified as the ash disposal area) is confined within the bottomlands adjacent to the Mississippi River on the west, and the cliff-forming Platteville dolomite to the east. Deep steep-sided valleys (usually flat-bottomed) separated by narrow rolling ridges are typical of this area. Deep bedrock valleys often are present below the flat bottomed streams of southwest Wisconsin, a result of lower water levels during periods of glaciation. The subsoils generally consist of CCR, glacio-fluvial deposits (outwash sand and gravel), and alluvial deposits (sands and silts). The alluvial deposits form a relatively thin veneer over the thicker underlying outwash deposits. The total thickness of the sand and gravel deposits is about 150 feet. The Prairie du Chien dolomite is the underlying bedrock at NED. The dolomite rock, encountered by a Village of Cassville well, was

[6] Inflow Flood Control Plan, Nelson Dewey Generating Station, 2016, Hard Hat Environmental Services
[7] Annual Inspection Report, Nelson Dewey Generating Station, 2016, Hard Hat Environmental Services
[8] Physical Site Description and Ash Disposal Feasibility Report, Nelson Dewey Generating Station, June 17, 1976, Warzyn Engineering and Service Company, Inc.

identified after penetrating 160 feet of unconsolidated sand and gravel. The thickness of the bedrock at the well location was approximately 240 feet.

In 1957, deep soil borings were installed at NED prior to construction of the generating plant. The locations of the installed soil borings, as well as the soil boring logs, are enclosed in Appendix D. In 2011, soil borings were installed in the area of the NED Slag Pond along the west and south embankments (Appendix E) in order to determine the types of soil present in the embankments and foundation. The soil boring logs are enclosed in Appendix E.

As identified in an Ash Pond Slope Stability and Hydraulic Analysis[9] dated June 2011, the soil borings indicate that below the embankments consists of native sand (poorly and well-graded) below surface fill at a depth of eleven to eighteen feet. This is consistent with the United States Geological Survey (USGS) Grant County Wisconsin Soil Survey that describes Sparta loamy fine sand and Arenzville silt loam surface soils in the area of NED.

3.1.5 Historical Construction and Use - §257.73(c)(1)(vi)

The NED Slag Pond (formerly identified as part of the ash disposal area in historical documents) was constructed at the time of initial facility operations in 1959 in an area located northwest of the generating plant. There are no known historical drawings that identify the initial layout of the ash disposal area, however, drawings obtained from a Secretary of the Army authorization letter[10] dated March 20, 1957 identifies the proposed construction of the power station and dock facilities. The drawings of the proposed construction are included in Appendix A.

There are no known reasonably and readily available documents that detail the method of site preparation and construction of each zone of the NED Slag Pond (formerly

[9] Ash Pond Slope Stability and Hydraulic Analysis, Nelson Dewey Generating Station, June 27, 2011, Aether DBS
[10] Secretary of the Army Authorization Letter, Nelson Dewey Generating Station, March 20, 1957, Rock Island District Corps of Engineers

identified as part of the ash disposal area) at the time of initial facility operations. The first known readily available drawings that identify the ash disposal area at NED was identified in an Ash Disposal Feasibility Report[11] dated June 1976 (Appendix F). In addition to the drawings, the Ash Disposal Feasibility Report provides a summary of the historical operations and handling of CCR at NED from initial facility operations in 1959 to 1976.

The CCR that was produced from the burning of coal included slag and fly ash. The slag that was produced was sluiced out to the ash disposal area. The fly ash that was produced was not recovered as it would get carried from the boiler furnace as part of the flue gas. The CCR that was produced from Unit 1 and Unit 2 was handled in this manner until 1973. In 1973, the electrostatic precipitators for Unit 1 and Unit 2 were constructed. With the construction of the electrostatic precipitators, fly ash from Unit 1 and Unit 2 was electrostatically precipitated and collected. At this time, the fly ash was sluiced to the ash disposal area. The sluiced fly ash was not intermixed with the sluiced slag. The two CCR products were kept separated by an interior berm with slag sluiced to the south side of the berm (presently identified as the NED Slag Pond) and fly ash sluiced north of the berm (presently identified as the closed ash landfill).

As documented in a Department of the Army Public Notice[12] dated July 23, 1976, the WDNR directed NED to remove the slag which had been accumulating since the generating plant went into operation in 1959. At the time, the most feasible method of removing the large quantity of slag was by barge. In order to comply with the WDNR directive, a barge loading slip was constructed south of the ash disposal area along the shore of the Mississippi River. Initially, a screening plant, hopper, and conveyor system was used to load the slag into the barges. The slag was then hauled off-site for beneficial

[11] Physical Site Description and Ash Disposal Feasibility Report, Nelson Dewey Generating Station, June 17, 1976, Warzyn Engineering and Service Company, Inc.
[12] Department of the Army Public Notice, Nelson Dewey Generating Station, July 23, 1976, Rock Island District Corps of Engineers

reuse. Figures identifying the proposed design of the barge loading slip are provided in Appendix F.

In 1977, NED was provided authorization to proceed with the construction of an ash disposal facility (formerly identified as the ash disposal area in historical documents), as well as construction of enclosing embankments. As documented in a Department of the Army Permit Notification[13] dated October 05, 1977, approximately 1,000 feet of existing embankment, located south of the ash disposal area, was raised approximately three feet to an elevation of 625. Additionally, approximately 2,600 feet of new enclosing embankments, located west and north of the ash disposal area, were constructed to the same elevation. The embankments were constructed of a compacted soil-slag mixture. A part of the perimeter embankment, located south of the ash disposal facility, received riprap placement to protect the embankment from river erosion during high water. Approximately 52,000 cubic yards of material was needed for the construction of the exterior embankments. The interior embankments that were constructed consisted of a soil-slag mixture as well. Figures identifying the proposed embankment construction and improvements are provided in Appendix F.

An Ash Disposal Facility Plan of Operation[14] dated March 29, 1978 was prepared to go along with the newly constructed ash disposal facility which was to consist of a series of infiltration basins. The general plan of operation for the ash disposal facility included procedures for fly ash and slag disposal and/or storage and removal, wastewater disposal, general operations, and final abandonment. The plan of operation identified the process for sluicing fly ash to the ash disposal facility. The fly ash was to be sluiced three times per day to an existing primary settling basin via one ten-inch diameter sluice pipe. The three discharge periods were to be approximately three hours in duration each. The discharge rate was to be approximately 2,000 gallons per minute. The effluent from

[13] Department of the Army Permit Notification, Nelson Dewey Generating Station, October 05, 1977, Rock Island District Corps of Engineers

[14] Final Design Engineering and Plan of Operation Ash Disposal Facility, Nelson Dewey Generating Station, March 29, 1978, Warzyn Engineering and Service Company, Inc.

the primary settling basin was to be discharged to a slag settling/infiltration basin (presently identified as the NED Slag Pond). The plan of operation also identified the handling of slag at NED. The slag was to be sluiced three times per day to the slag settling/infiltration basin. Slag removed from the slag settling/infiltration basin was to be conveyed directly to transport vehicles or stockpiled on-site. Final disposal of slag on-site was to take place only during berm construction, fly ash covering, and during phase abandonment and final abandonment operations. At the time, water used to sluice the slag to the slag settling/infiltration basin was to be assimilated by the basin by means of infiltration through the basin floor. In the event that the inflow exceeded the infiltration, the water in the slag settling/infiltration basin would discharge to the river via an overflow weir. The initial hydraulic structure associated with the slag settling/infiltration basin consisted of a thirty inch diameter RCP. The hydraulic structure discharged to the southwest of the slag settling/infiltration basin into a swale that flowed to the southwest into the Mississippi River. From 1978 to 1995 CCR at NED was generally handled in this manner. Drawings of the initial configurations of the slag settling/infiltration basin and hydraulic structure are provided in Appendix F.

In 1995, NED modified the Ash Disposal Facility Plan of Operation. As documented in a Plan Modification to the Plan of Operation[15] dated October 1995, the fly ash handling operations at NED were modified from a sluicing operation to a dry fly ash method of placement. The dry fly ash was transported via over-the-road haul truck and placed in the ash disposal facility. The dry fly ash was covered with a temporary geomembrane cover and eventually with a final cover system upon reaching closure grades.

In 1996, NED completed the first phase of the closed ash landfill final cover system. The northern portion of the ash disposal facility received placement of a final cover system, which included a 6-inch sand grading layer, a geo-composite clay liner (GCL), 24 inches of silty-sand loam, and 6 inches of topsoil. In 1997, NED completed the second phase of

[15] Plan Modification to the Plan of Operation, Nelson Dewey Generating Station, October 1995, RMT, Inc.

the closed ash landfill final cover system, which included the area in the southeastern portion of the ash disposal facility located north of the slag settling/infiltration basin. In 1999, NED completed the third phase of the closed ash landfill final cover system, which included the central western portion of the ash disposal facility. In 2001, NED completed the fourth and final phase of the closed ash landfill final cover system, which included the southwest portion of the ash disposal facility located north of the slag settling/infiltration basin.

The closed ash landfill effectively reduced the size of the CCR Unit to the current layout of the NED Slag Pond, as shown on Figure 2.

The following list provides a general overview of known modifications associated with the NED Slag Pond since construction of the existing CCR surface impoundment.

- The slag settling/infiltration basin was re-identified as the NED Slag Pond. The timeframe of this modification has not been documented, but is likely when NED changed to a dry fly ash handling system.

- The hydraulic structure associated with the NED Slag Pond was listed with the State of Wisconsin in the facilities Wisconsin Pollutant Discharge Elimination System (WPDES) Permit as WPDES Outfall 002. The timeframe of this modification has not been documented.

- A flow meter was installed at the location of the hydraulic structure that is associated with WPDES Outfall 002. The timeframe of this modification has not been documented.

- In 2001, NED constructed an ash storage pad located along the crest of the south embankment of the NED Slag Pond. The ash storage pad, constructed of asphalt, was utilized to allow the slag stockpile to dewater and drain back into the NED Slag Pond via two 12-inch ductile iron pipes. The slag, once dewatered, would

then be loaded into over-the-road haul trucks and hauled off-site for beneficial reuse. Drawings of the proposed ash storage pad are provided in Appendix F.

- In 2011, NED completed an Ash Pond Slope Stability and Hydraulic Analysis[16] in order to evaluate the NED Slag Pond under a 100-year storm flow, as well as for static, and seismic, induced slope stability. The analysis determined the west embankment of the NED Slag Pond had factors of safety greater than the standard acceptable factors of safety for rapid drawdown, static induced slope stability, and seismic induced slope stability.

- In 2012, a Final Assessment of Dam Safety of Coal Combustion Surface Impoundments[17] report was prepared for the United States Environmental Protection Agency (USEPA), which summarized a dam assessment that was completed in 2011. The recommendations from the report included protecting the embankments of the NED Slag Pond from wave action erosion. In 2013, NED installed erosion protection along the upstream slope of the west embankment, as well as along the western portion of the upstream slope of the south embankment of the NED Slag Pond. Drawings identifying the areas where slope protection was installed are provided in Appendix F.

Historical aerial photographs (Appendix B) and historical topographic maps (Appendix C) identify the topographic changes to the NED Slag Pond that have occurred since the time of initial facility operations.

3.1.6 Structures, Appurtenances, and Operations- §257.73(c)(1)(vii)

Detailed dimensional drawings of the NED Slag Pond that were reasonably and readily available are identified below. The detailed dimensional drawings were obtained from

[16] Slope Stability & Hydraulic Analysis Report, Nelson Dewey Generating Station, May 29, 2015, Revision 1.1, Hard Hat Environmental Services

[17] Final Assessment of Dam Safety of Coal Combustion Surface Impoundments, Nelson Dewey Generating Station, December 27, 2012, GZA GeoEnvironmental Inc.

various designs, plans, and reports that were assembled during the historical information review.

- Proposed Power Station and Dock Facilities (1955) – Drawings prepared by Sargent & Lundy provide proposed layout of NED generating plant and dock facilities as part of an application for permit from the United States Army Corps of Engineers (Appendix A).

- Soil Borings Location Plan & Sections (1957) - Drawing prepared by Sargent & Lundy provides historical soil boring locations and soil boring logs that were completed at NED prior to construction of the generating plant and ash disposal area (Appendix D).

- Feasibility Study - Ash Disposal Facility (1976) – Drawings prepared by Warzyn Engineering provide first known layout of ash disposal area, as well as location of additional soil borings completed in 1976 (Appendix F).

- Proposed Barge Loading Slip (1976) – Drawings provide details of the proposed construction of the barge loading slip located south of the NED Slag Pond (Appendix F).

- Proposed Ash Disposal Facility Berm Construction (1977) – Drawings prepared by Warzyn Engineering provide details of the proposed berm perimeter berm construction, modifications, and enhancements for the ash disposal facility (Appendix F).

- Ash Disposal Facility Plan of Operation (1978) – Drawings prepared by Warzyn Engineering provide details of the active and proposed ash disposal facility, as well as details of the initial hydraulic structure associated with the NED Slag Pond. Note, drawings identifying proposed final topography of ash disposal facility were later revised in 1995 (Appendix F).

- Ash Disposal Facility (1987) – Drawing prepared by Warzyn Engineering provides details of the ash disposal facility layout in 1987 (Appendix F).

- Ash Disposal Facility (1994) – Drawings prepared by RMT provide details of the existing conditions of the ash disposal facility in 1994 (Appendix F).

- Ash Disposal Facility – Modified Plan of Operations (1995) – Drawings prepared by RMT provide details of the proposed plan of modified operations for the ash disposal facility in 1995 (Appendix F.

- Ash Storage Pad (2001) – Drawings prepared by BT^2 provide details of the proposed ash storage pad to be constructed south of the NED Slag Pond (Appendix F).

- NED Slag Pond Bathymetric Survey (2006) – Drawing prepared by BT^2 provide details of the NED Slag Pond bathymetry (Appendix F).

- NED Slag Pond Soil Boring Map (2011) – Drawing prepared by Hard Hat Services provides locations of the soil borings that were installed along the west and south embankment of the NED Slag Pond (Appendix E).

- NED Slag Pond Erosion Protection (2013) – Drawings prepared by SCS Engineers provide details of the installation of erosion protection along the upstream slope of the west embankment and upstream slope of the western portion of the south embankment (Appendix F).

3.1.7 Instrumentation - §257.73(c)(1)(viii)

Instrumentation used to support the operation of the NED Slag Pond consists of a flow meter that monitors the discharge through WPDES Outfall 002. The instrumentation is located in the southwest corner of the NED Slag Pond.

3.1.8 Area-Capacity Curve - §257.73(c)(1)(ix)

An area-capacity curve identifies the relationship between the surface area of the existing CCR surface impoundment and an elevation, which corresponds to an available storage capacity. After review of readily available historical documents there is no readily available information regarding area-capacity curves for the NED Slag Pond.

3.1.9 Spillway and Diversion Features - §257.73(c)(1)(x)

The NED Slag Pond is equipped with one 30-inch diameter RCP located in the southwest corner of the CCR unit. The hydraulic structure is constructed of non-erodible material and designed to carry sustained flows. Additional information regarding the hydraulic capacity of the hydraulic structure associated with the NED Slag Pond is provided in the Inflow Flood Control Plan[18].

3.1.10 Construction Specifications, Surveillance, Maintenance, and Repair - §257.73(c)(1)(xi)

NED implements a Site-Specific Inspection and Maintenance (I&M) Plan[19], in accordance with an Alliant Energy I&M Plan[20]. The Site-Specific I&M Plan has been implemented at NED in order to identify the factors which may affect the long-term stability of the existing CCR surface impoundment. The Site-Specific I&M Plan identifies existing operation and maintenance activities, and identifies the inspection, monitoring, maintenance, and recordkeeping requirements as outlined in the Alliant Energy I&M Plan in order to maintain the integrity of the existing CCR surface impoundment.

Visual inspections of the NED Slag Pond are completed in accordance with §257.83 of the CCR Rule. At intervals not exceeding seven days, the NED Slag Pond is visually inspected for any appearances of structural weakness or other conditions which are disrupting or have the potential to disrupt the operation or safety of the existing CCR surface impoundment. In addition to seven-day inspections, NED conducts event-related inspections which may include inspections following storm events, seismic

[18] Inflow Flood Control Plan, Nelson Dewey Generating Station, 2016, Hard Hat Environmental Services
[19] Inspection and Maintenance (I&M) Plan, Nelson Dewey Generating Station, October 2015, Version 2.0-Revision 0.0
[20] Inspection and Maintenance (I&M) Plan, Alliant Energy, September 2015, Version 2.0-Revision 0.0

events, major maintenance activities, as well as other unusual events. Annual inspections are conducted by a qualified Professional Engineer (P.E.) who is familiar with the requirements of the CCR Rule, the Alliant Energy I&M Plan, the NED Site-Specific I&M Plan, and other facility specific information pertaining to the existing CCR surface impoundment.

Maintenance activities that are completed at NED may include routine maintenance, event-related maintenance, and long-term maintenance. Routine maintenance activities may include management of vegetation (or other forms of slope protection), tree and sapling removal, reseeding of disturbed vegetated areas, removal of debris from collection and diversion channels, and repair of eroded areas. Event-related maintenance activities may include maintenance after unusual events such as heavy rainfall, periods of very high winds, or seismic activity. Maintenance may include repair of eroded areas or removal of damaged vegetation. Long-term maintenance activities are identified as part of the ongoing inspection program, through the annual inspections, or through other engineering evaluations and may include larger remediation activities.

3.1.11 Structural Instability Records - §257.73(c)(1)(xii)

After review of readily available historical documents there are no known records of structural instability associated with the NED Slag Pond that were identified.

4 CHANGES TO THE HISTORY OF CONSTRUCTION

If there is a significant change to any information compiled within the Report, the owner or operator of the CCR unit must update the relevant information and place into the facility's operating record as required by §257.105(f)(g).

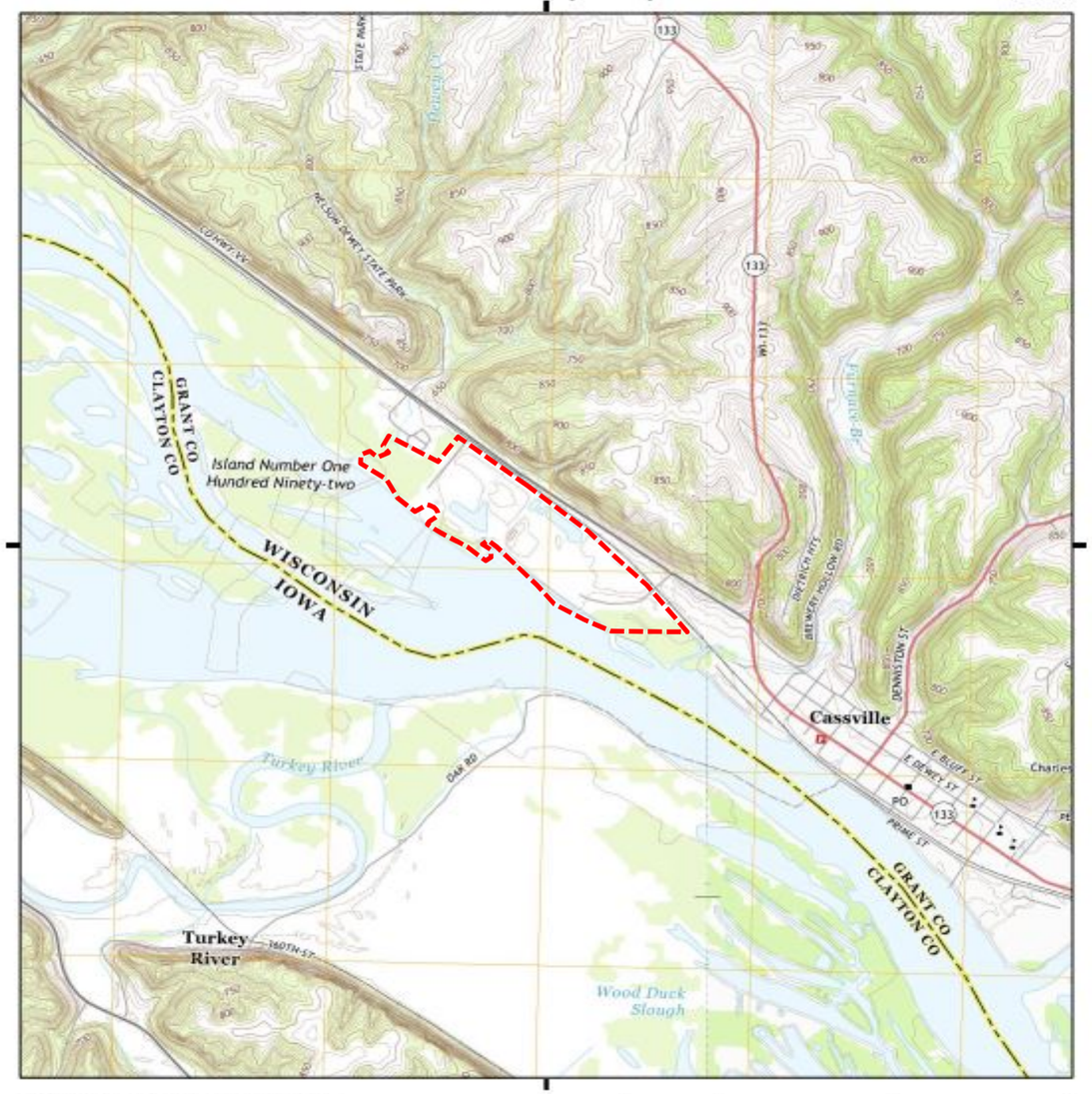
FIGURES

Alliant Energy
Wisconsin Power and Light Company
Nelson Dewey Generating Station
Cassville, Wisconsin

History of Construction

Historical Topo Map

2013



This report includes information from the following map sheet(s).

NW N NE
W E
SW S SE

TP, Turkey River, 2013, 7.5-minute

SE, Cassville, 2013, 7.5-minute

Miles 0.25 0.5 1 1.5

SITE NAME: Nelson Dewey Generating Station
ADDRESS: 11999 County Highway VV
Cassville, WI 53806
CLIENT: Environmental Site Assessors

N

4555570 - 11 page 4

Historical Aerial Photo 5/30/2015

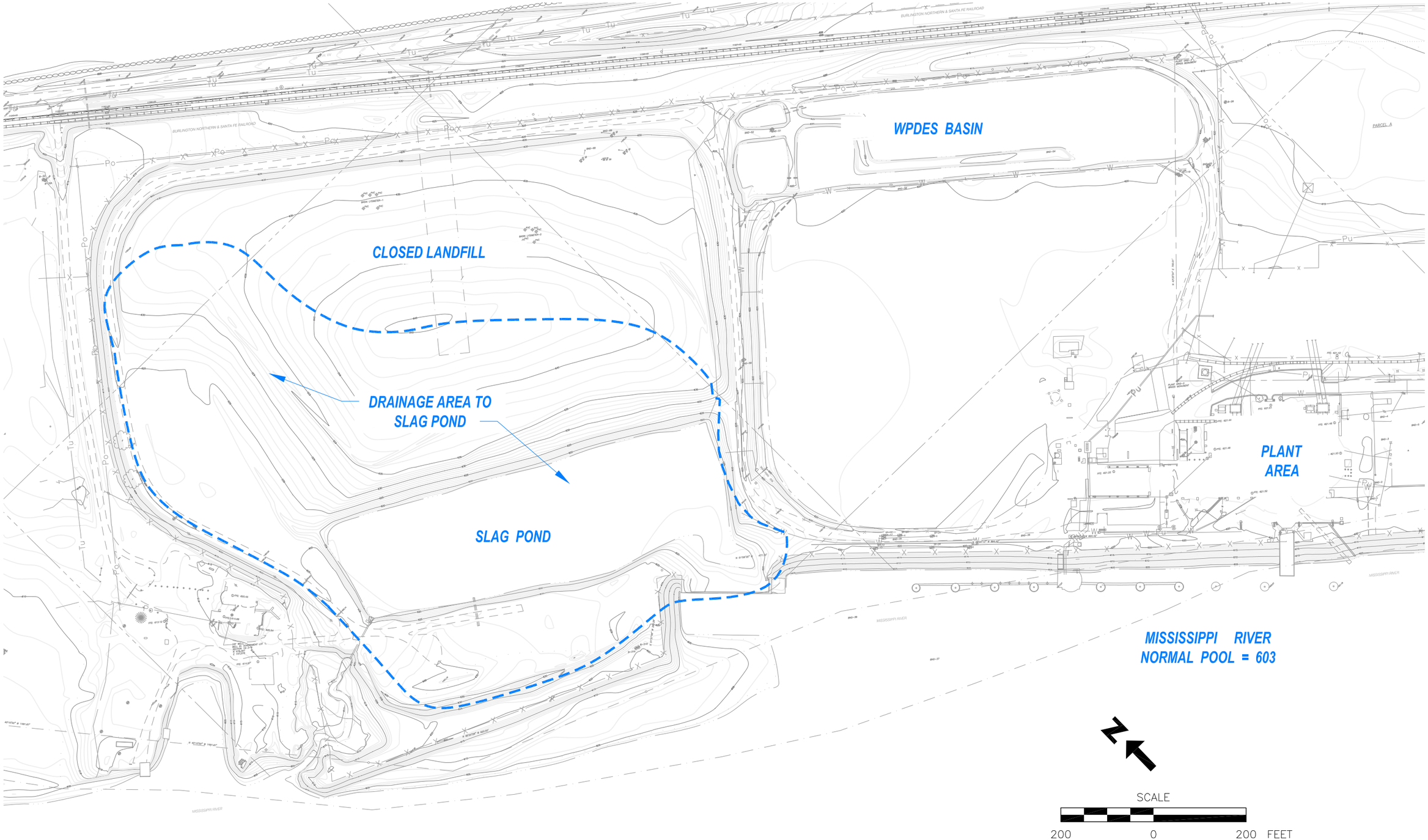
Approximate Property Boundary

HARD HAT SERVICES™
Engineering, Construction and Management Solutions

Site Location
Nelson Dewey Generating Station
Wisconsin Power and Light Company

Drawing
Figure 1

Date
7/13/2016



REV	DATE	BY	DESCRIPTION
5			
4			
3			
2			
1			

hard hat™ SERVICES

SCALE:	AS SHOWN
DATE:	8-22-16
DRAWN BY:	JFD
CHKD BY:	TJH
APRVD BY:	MWL

CLIENT / LOCATION

WISCONSIN POWER AND LIGHT
NELSON DEWEY GENERATING STATION
CASSVILLE, WISCONSIN

DRAWING DESCRIPTION

History of Construction

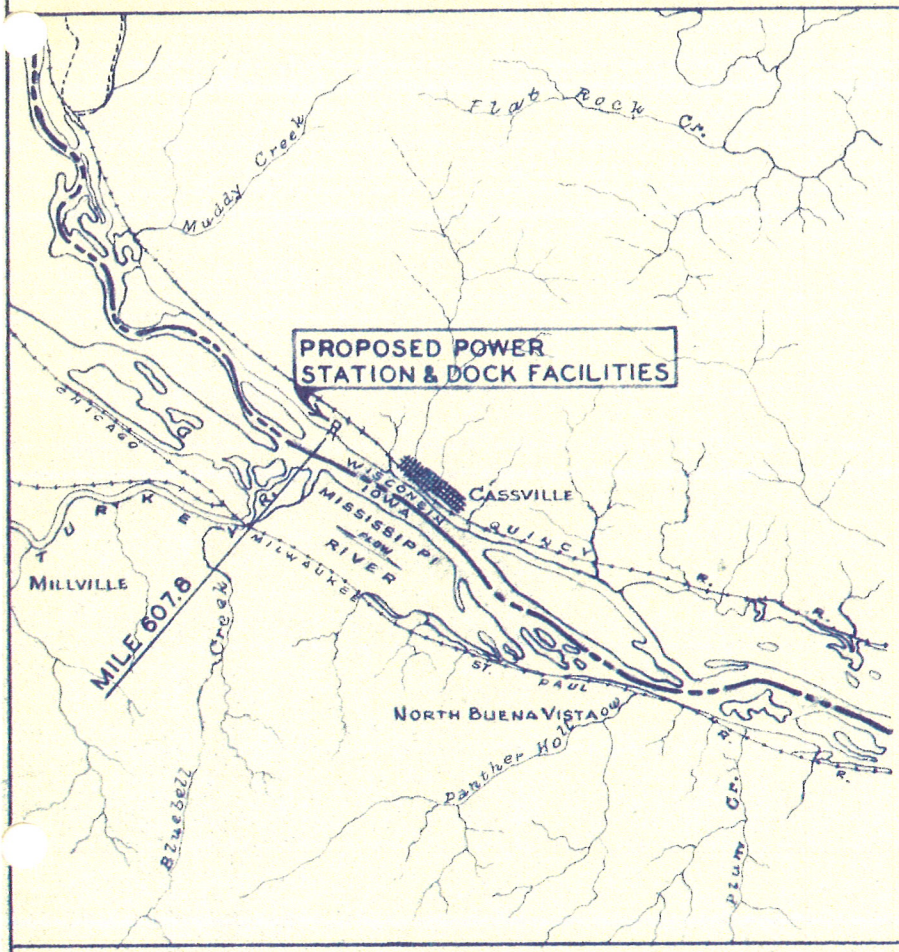
SITE PLAN

JOB	154.018.012.007
SHT.	2
DWG.	154018012-IFC

APPENDIX A – Proposed Power Station and Dock Facilities Drawings - 1955

Alliant Energy
Wisconsin Power and Light Company
Nelson Dewey Generating Station
Cassville, Wisconsin

History of Construction



COPIED FROM UNITED STATES DEPT. OF THE INTERIOR GEOLOGICAL SURVEY.

IOWA-WISCONSIN, ELKADER QUADRANGLE DATED 1898, AND WISCONSIN-IOWA ILLINOIS LANCASTER QUADRANGLE, DATED 1904.

LOCATION PLAN

0 1 2
SCALE IN MILES

NORTH

NOTE:

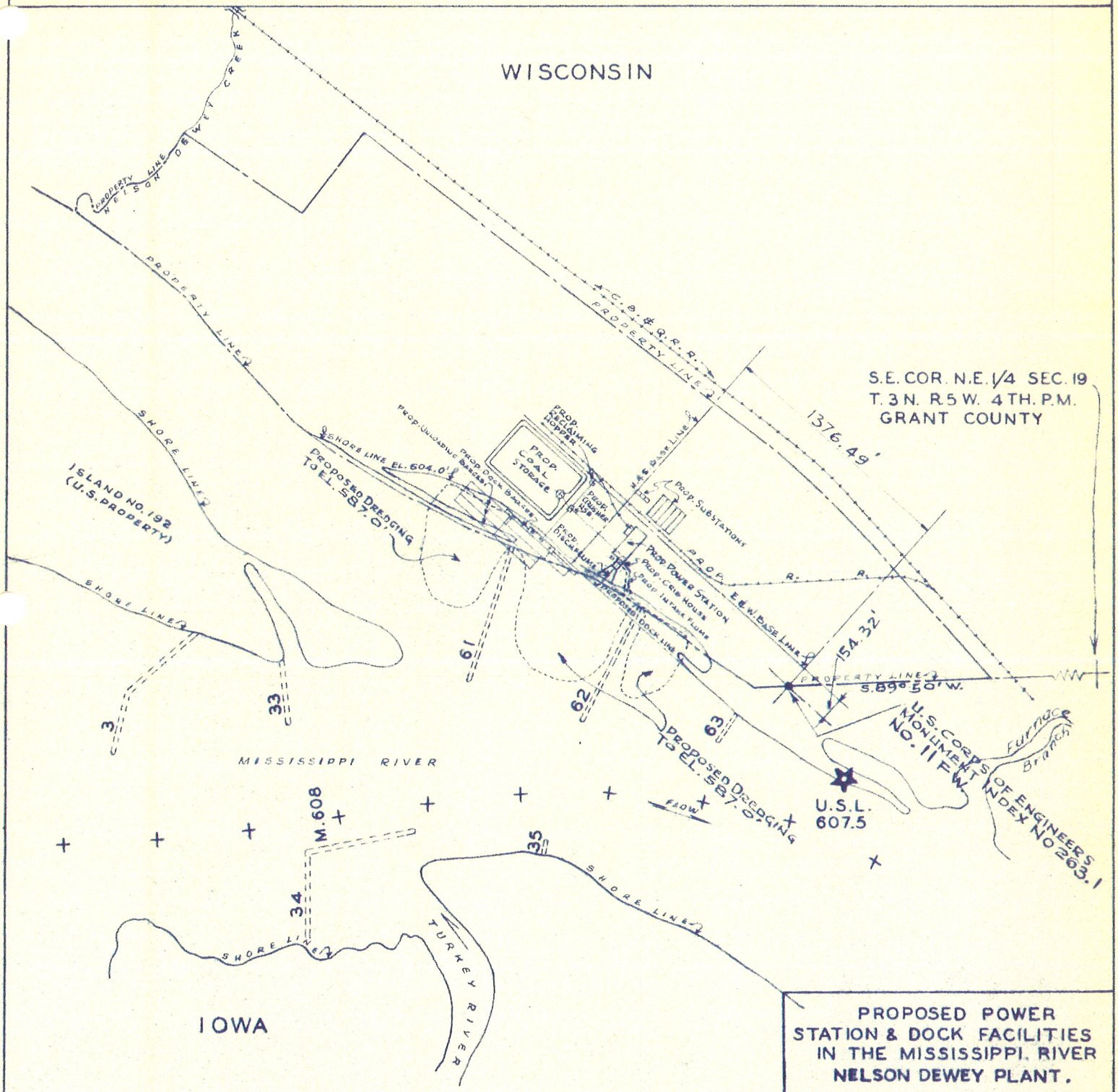
1. MILEAGE IS MEASURED FROM THE OHIO RIVER
2. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL DATUM (1912)
3. SOUNDINGS ARE IN FEET BELOW FLAT POOL NO.11 EL. 603.0

PROPOSED POWER STATION & DOCK FACILITIES IN THE MISSISSIPPI RIVER NELSON DEWEY PLANT.

CASSVILLE, WIS.

APPLICATION FOR PERMIT
DATED AUGUST 15 1955
WISCONSIN POWER & LIGHT CO.
CASSVILLE, WISCONSIN.

SCALE As Noted	SARGENT & LUNDY ENGINEERS CHICAGO.
DRAWN J.A. Montes	
APPROVED W.H.M.	
DATE 8-8-56	
REVISED	JOB NO. 2358 / SHEET 1 OF 4



SITUATION PLAN

0 100 300 800

SCALE IN FEET

NORTH

PROPOSED POWER STATION & DOCK FACILITIES IN THE MISSISSIPPI RIVER

NELSON DEWEY PLANT.

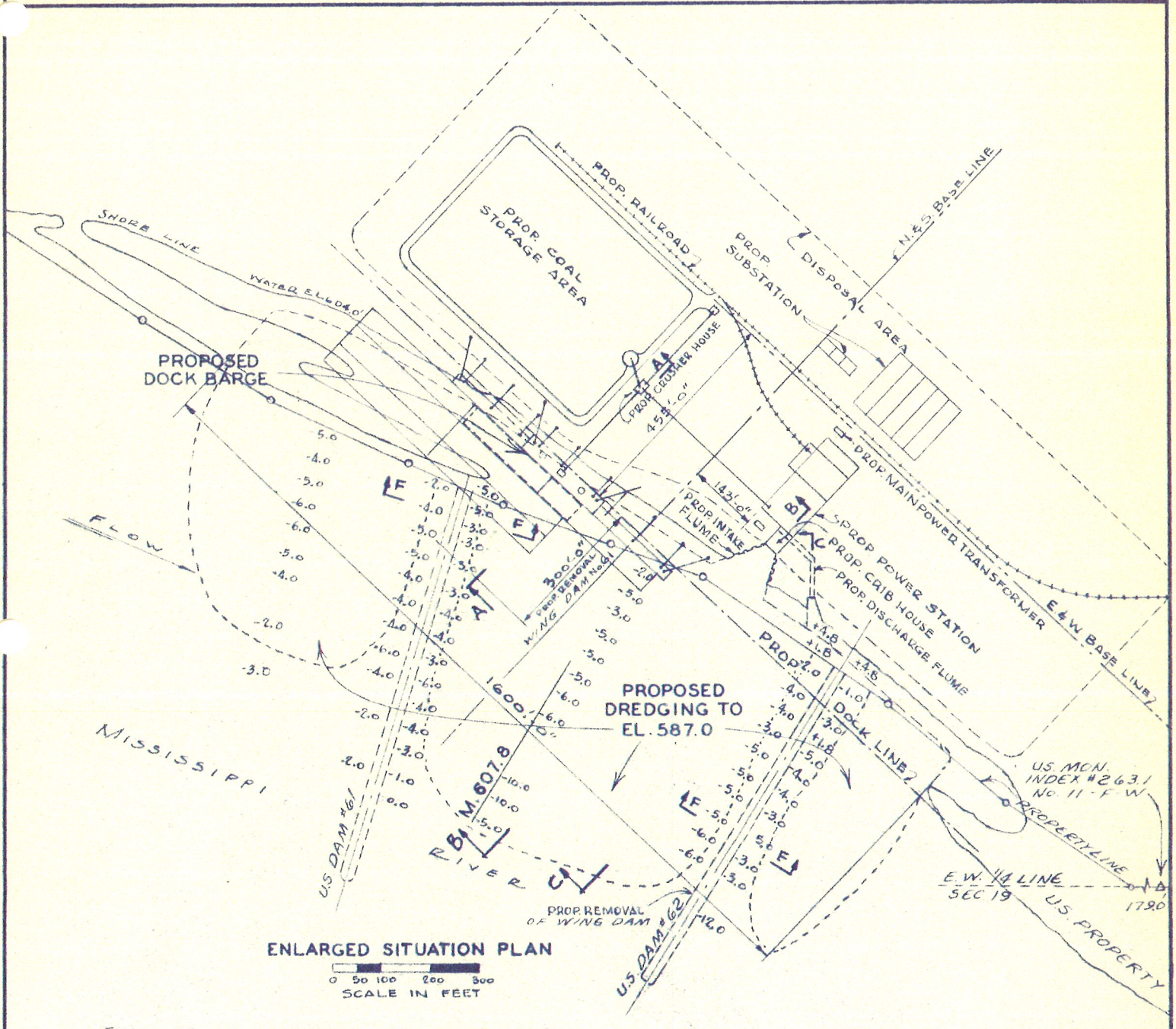
CASSVILLE, WIS.

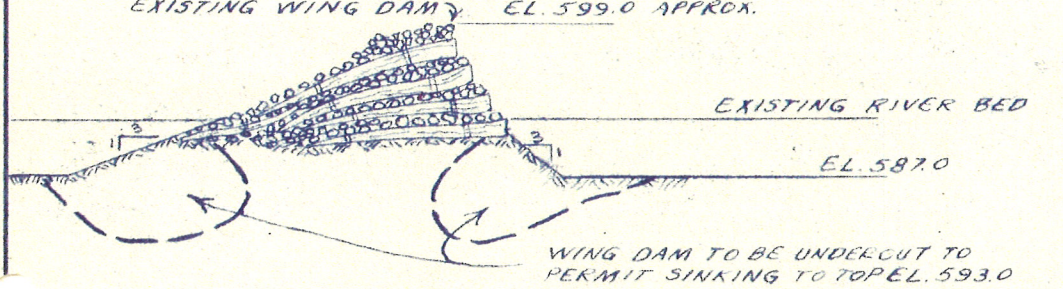
APPLICATION FOR PERMIT DATED AUGUST 15, 1955.

WISCONSIN POWER & LIGHT CO.

CASSVILLE, WISCONSIN.

SCALE AS SHOWN	SARGENT & LUNDY ENGINEERS CHICAGO.
DRAWN J.A.M.	
APPROVED H.H.M.	
DATE 8-8-55	
REVISED	JOB NO. 2358 / SHEET 2 OF 4





SECTION F-F

0 1 2 4 6 8 10
SCALE IN FEET

NORTH

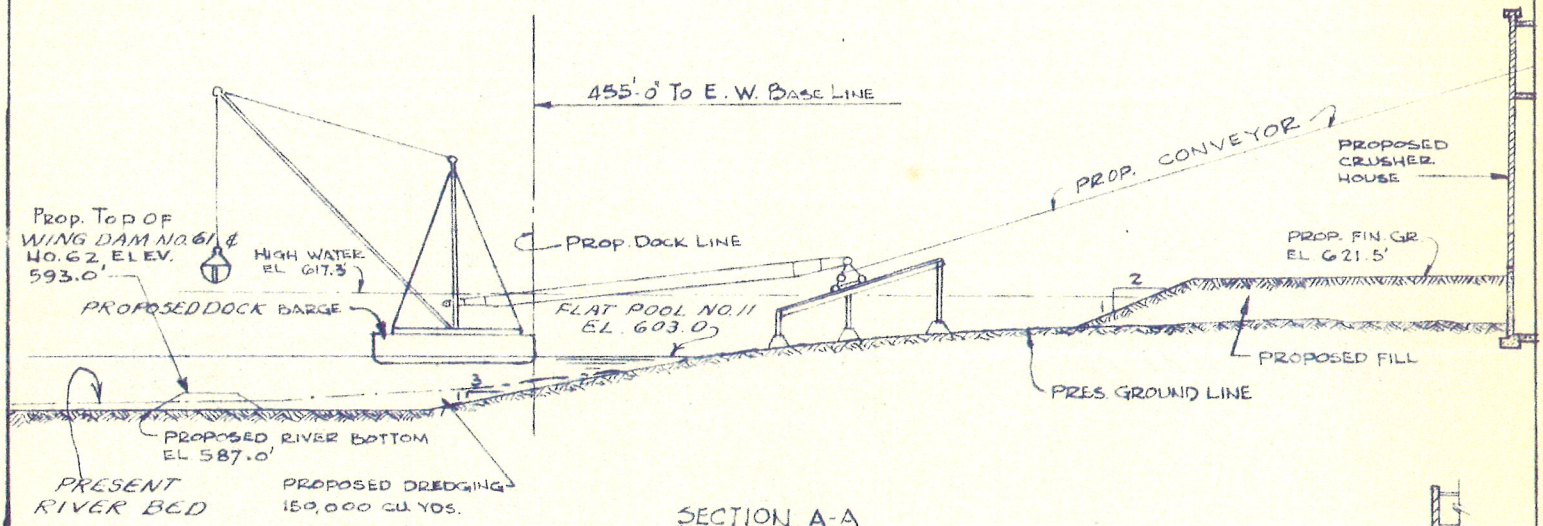
PROPOSED POWER STATION & DOCK FACILITIES IN THE MISSISSIPPI RIVER NELSON DEWEY PLANT.

CASSVILLE, WIS.

APPLICATION FOR PERMIT DATED AUGUST, 15, 1955.

WISCONSIN POWER & LIGHT CO.
CASSVILLE WISCONSIN

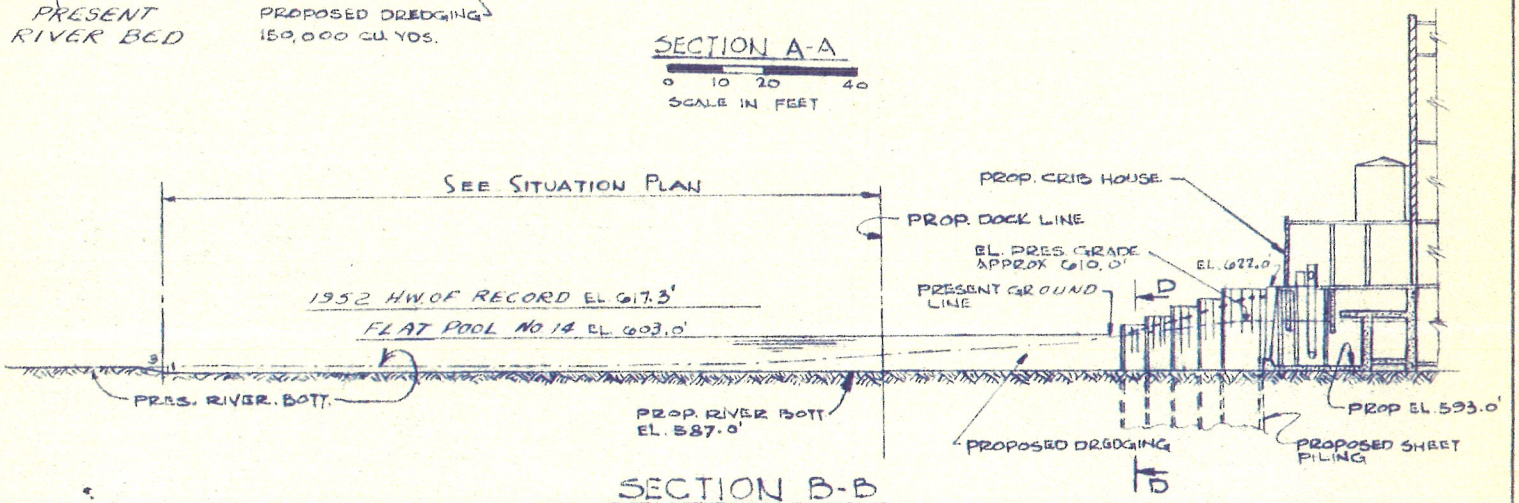
SCALE AS NOTED	SARGENT & LUNDY ENGINEERS CHICAGO
DRAWN GOODELL	
APPROVED H.H.M.	
DATE 8-8-55	
REVISED	JOB No. 2358 / SHEET No. 3 OF 4



SECTION A-A

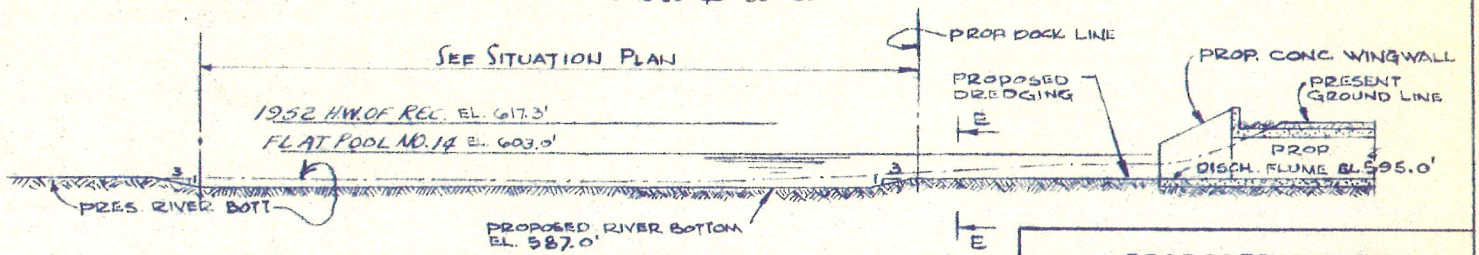
0 10 20 40

SCALE IN FEET



SECTION B-B

0 10 20 40 60 80



SECTION C-C

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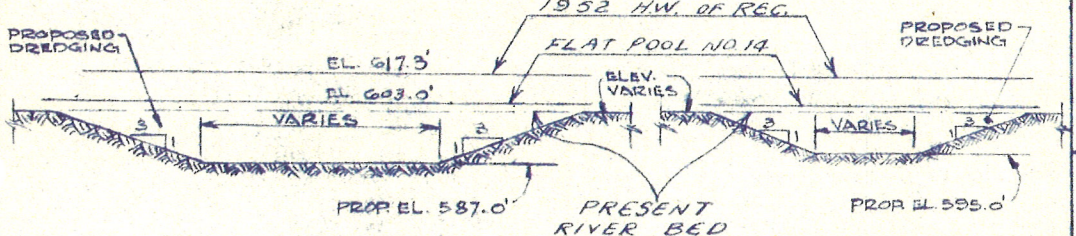
SCALE IN FEET



SECTION D-D

0 10 20 40 60 80

SCALE IN FEET

SECTION E-E

0 10 20 40 60 80

SCALE IN FEET

PROPOSED POWER STATION & DOCK FACILITIES IN THE MISSISSIPPI RIVER

NELSON DEWEY PLANT.

CASSVILLE, WIS.

APPLICATION FOR PERMIT DATED AUGUST 15, 1955.

WISCONSIN POWER & LIGHT CO.

CASSVILLE, WISCONSIN

SCALE AS NOTED	SARGENT & LUNDY ENGINEERS CHICAGO
DRAWN R. URBANSKI	
APPROVED H.H.M.	
DATE 8-8-55	
REVISED	JOB NO. 2358 / SHEET 40F 4

APPENDIX B – EDR Historical Aerial Photograph Package

Alliant Energy
Wisconsin Power and Light Company
Nelson Dewey Generating Station
Cassville, Wisconsin

History of Construction

Nelson Dewey Generating Station
11999 County Highway VV
Cassville, WI 53806

Inquiry Number: 4555570.12
March 08, 2016

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Date EDR Searched Historical Sources:

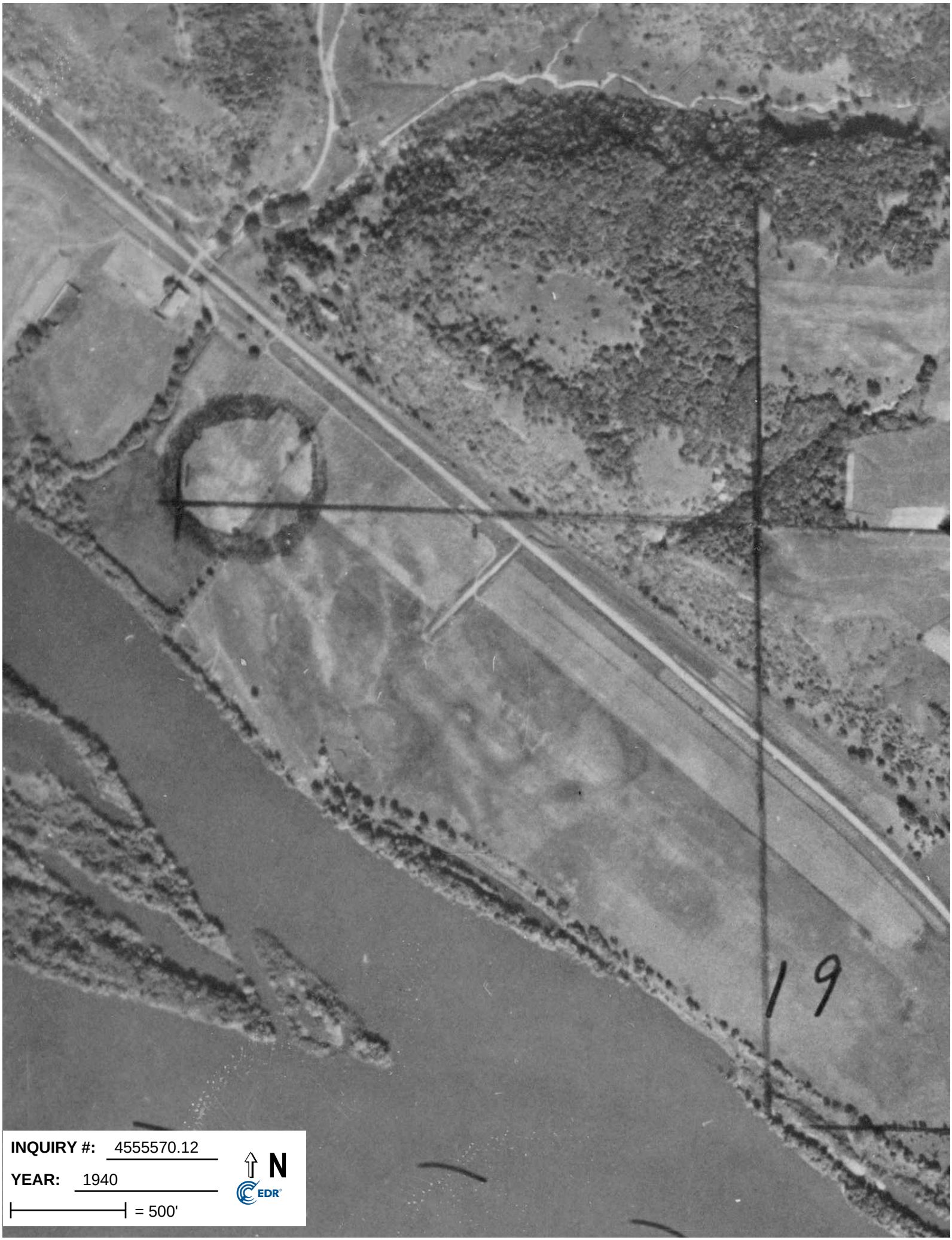
Aerial Photography March 08, 2016

Target Property:

11999 County Highway VV
Cassville, WI 53806

Year	Scale	Details	Source
1940	Aerial Photograph. Scale: 1"=500'	Flight Date: October 09, 1940	EDR
1940	Aerial Photograph. Scale: 1"=500'	Flight Date: October 09, 1940	EDR
1954	Aerial Photograph. Scale: 1"=500'	Flight Date: May 14, 1954	EDR
1954	Aerial Photograph. Scale: 1"=500'	Flight Date: May 14, 1954	EDR
1990	Aerial Photograph. Scale: 1"=750'	Flight Date: March 27, 1990	EDR
1994	Aerial Photograph. Scale: 1"=500'	DOQQ - acquisition dates: April 17, 1994	USGS/DOQQ
1994	Aerial Photograph. Scale: 1"=500'	DOQQ - acquisition dates: April 17, 1994	USGS/DOQQ
1999	Aerial Photograph. Scale: 1"=750'	Flight Date: April 25, 1999	EDR
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	USDA/NAIP
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	USDA/NAIP
2006	Aerial Photograph. Scale: 1"=500'	Flight Year: 2006	USDA/NAIP
2006	Aerial Photograph. Scale: 1"=500'	Flight Year: 2006	USDA/NAIP
2007	Aerial Photograph. Scale: 1"=500'	Flight Year: 2007	USDA/NAIP
2007	Aerial Photograph. Scale: 1"=500'	Flight Year: 2007	USDA/NAIP
2008	Aerial Photograph. Scale: 1"=500'	Flight Year: 2008	USDA/NAIP
2008	Aerial Photograph. Scale: 1"=500'	Flight Year: 2008	USDA/NAIP
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	USDA/NAIP
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	USDA/NAIP
2010	Aerial Photograph. Scale: 1"=500'	Flight Year: 2010	USDA/NAIP

Year	*Scale*	*Details*	*Source*
2010	Aerial Photograph. Scale: 1"=500'	Flight Year: 2010	USDA/NAIP
2011	Aerial Photograph. Scale: 1"=500'	Flight Year: 2011	USDA/NAIP
2011	Aerial Photograph. Scale: 1"=500'	Flight Year: 2011	USDA/NAIP



INQUIRY #: 4555570.12

YEAR: 1940

= 500'

N

EDR

INQUIRY #: 4555570.12

YEAR: 1940

= 500'

N

EDR


INQUIRY #: 4555570.12
YEAR: 1954
= 500'
N
EDR


INQUIRY #: 4555570.12
YEAR: 1954
= 500'
N
EDR

INQUIRY #: 4555570.12

YEAR: 1990

= 750'

N

EDR


INQUIRY #: 4555570.12
YEAR: 1994
= 500'
N
EDR


INQUIRY #: 4555570.12
YEAR: 1994
= 500'
N
EDR


INQUIRY #: 4555570.12
YEAR: 1999
= 750'
N
EDR


INQUIRY #: 4555570.12
YEAR: 2005
= 500'
N
EDR


INQUIRY #: 4555570.12
YEAR: 2005
= 500'
N
EDR


INQUIRY #: 4555570.12
YEAR: 2006
= 500'
N
EDR


INQUIRY #: 4555570.12
YEAR: 2006
= 500'
N
EDR


INQUIRY #: 4555570.12
YEAR: 2007
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N
EDR


INQUIRY #: 4555570.12
YEAR: 2007
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EDR


INQUIRY #: 4555570.12
YEAR: 2008
= 500'
N
EDR


INQUIRY #: 4555570.12
YEAR: 2008
= 500'
N
EDR


INQUIRY #: 4555570.12
YEAR: 2009
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EDR


INQUIRY #: 4555570.12
YEAR: 2009
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EDR


INQUIRY #: 4555570.12
YEAR: 2010
= 500'
N
EDR


INQUIRY #: 4555570.12
YEAR: 2010
= 500'
N
EDR


INQUIRY #: 4555570.12
YEAR: 2011
= 500'
N
EDR


INQUIRY #: 4555570.12
YEAR: 2011
= 500'
N
EDR

APPENDIX C – EDR Historical Topographic Map Report

Alliant Energy
Wisconsin Power and Light Company
Nelson Dewey Generating Station
Cassville, Wisconsin

History of Construction

Nelson Dewey Generating Station
11999 County Highway VV
Cassville, WI 53806

Inquiry Number: 4555570.11
March 04, 2016

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

03/04/16

Site Name:
Nelson Dewey Generating Stat
11999 County Highway VV
Cassville, WI 53806
EDR Inquiry # 4555570.11

Client Name:
Environmental Site Assessors
932 North Wright Street, Suite 1(
Naperville, IL 60563
Contact: Mark W Loerop

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Environmental Site Assessors were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

Site Name:	Nelson Dewey Generating Stat
Address:	11999 County Highway VV
City,State,Zip:	Cassville, WI 53806
P.O.#	154.018.012.007
Project:	NED Historical Docs

Coordinates:

Latitude:	42.723024 42° 43' 23" North
Longitude:	-91.008559 -91° 0' 31" West
UTM Zone:	Zone 15 North
UTM X Meters:	663048.92
UTM Y Meters:	4731980.68
Elevation:	620.00' above sea level

Maps Provided:

2013
1978, 1980
1955, 1957
1900, 1902

Topo Sheet Thumbnails

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2013 Source Sheets

Cassville
2013
7.5-minute, 24000

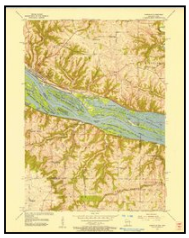
Turkey River
2013
7.5-minute, 24000

1978, 1980 Source Sheets

Cassville
1978
7.5-minute, 24000
Photo Inspected 1978
Aerial Photo Revised 1954

Turkey River
1980
7.5-minute, 24000
Photo Revised 1980
Aerial Photo Revised 1978

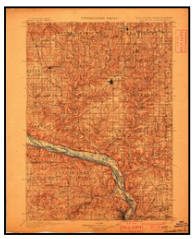
1955, 1957 Source Sheets



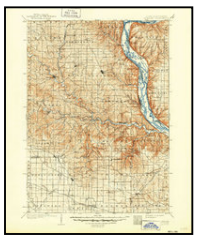
Cassville
1955
7.5-minute, 24000
Aerial Photo Revised 1954

Turkey River
1957
7.5-minute, 24000
Aerial Photo Revised 1954

1900, 1902 Source Sheets



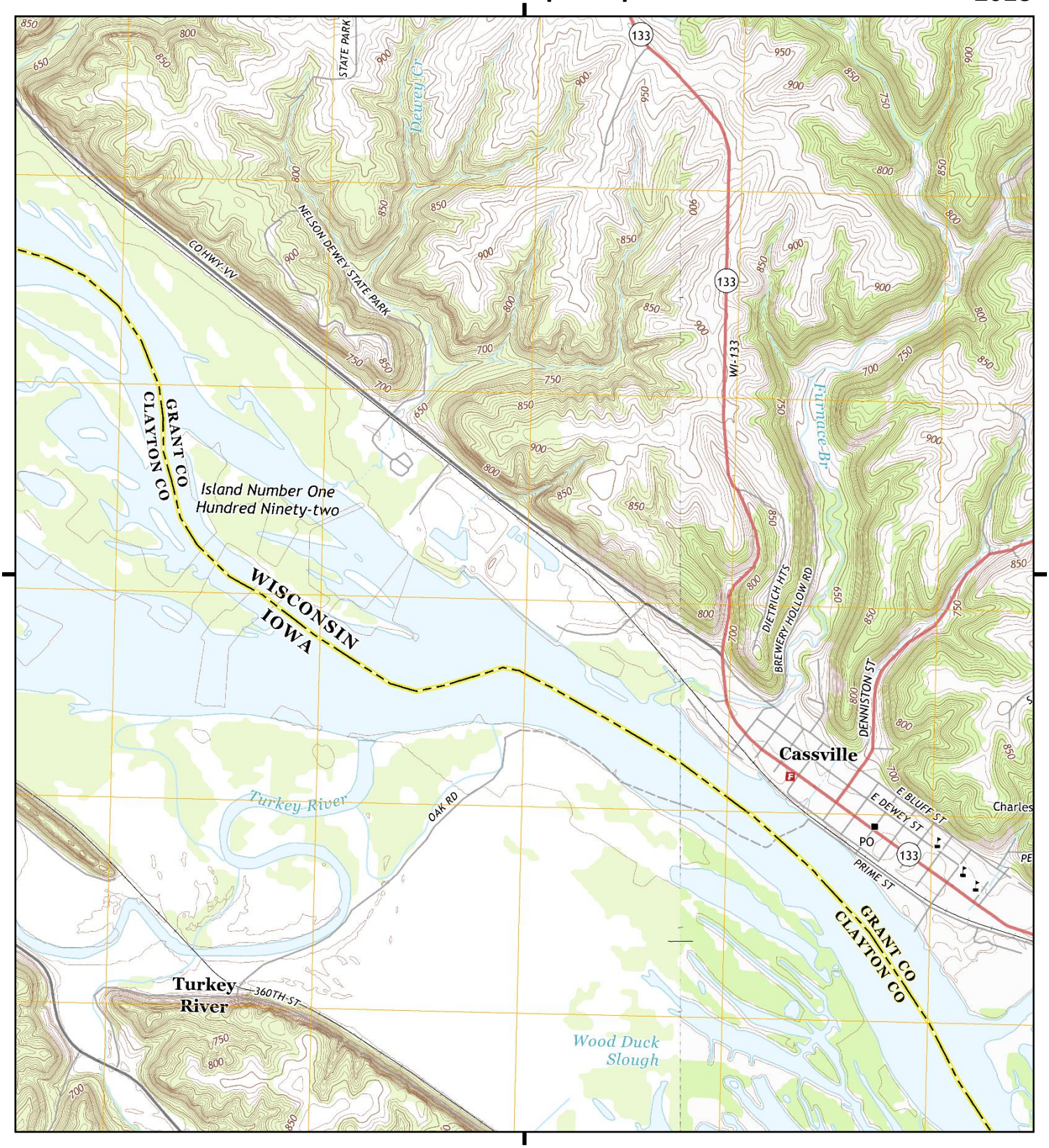
Lancaster
1900
30-minute, 125000



Elkader
1902
30-minute, 125000

Historical Topo Map

2013



This report includes information from the following map sheet(s).

Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Turkey River, 2013, 7.5-minute

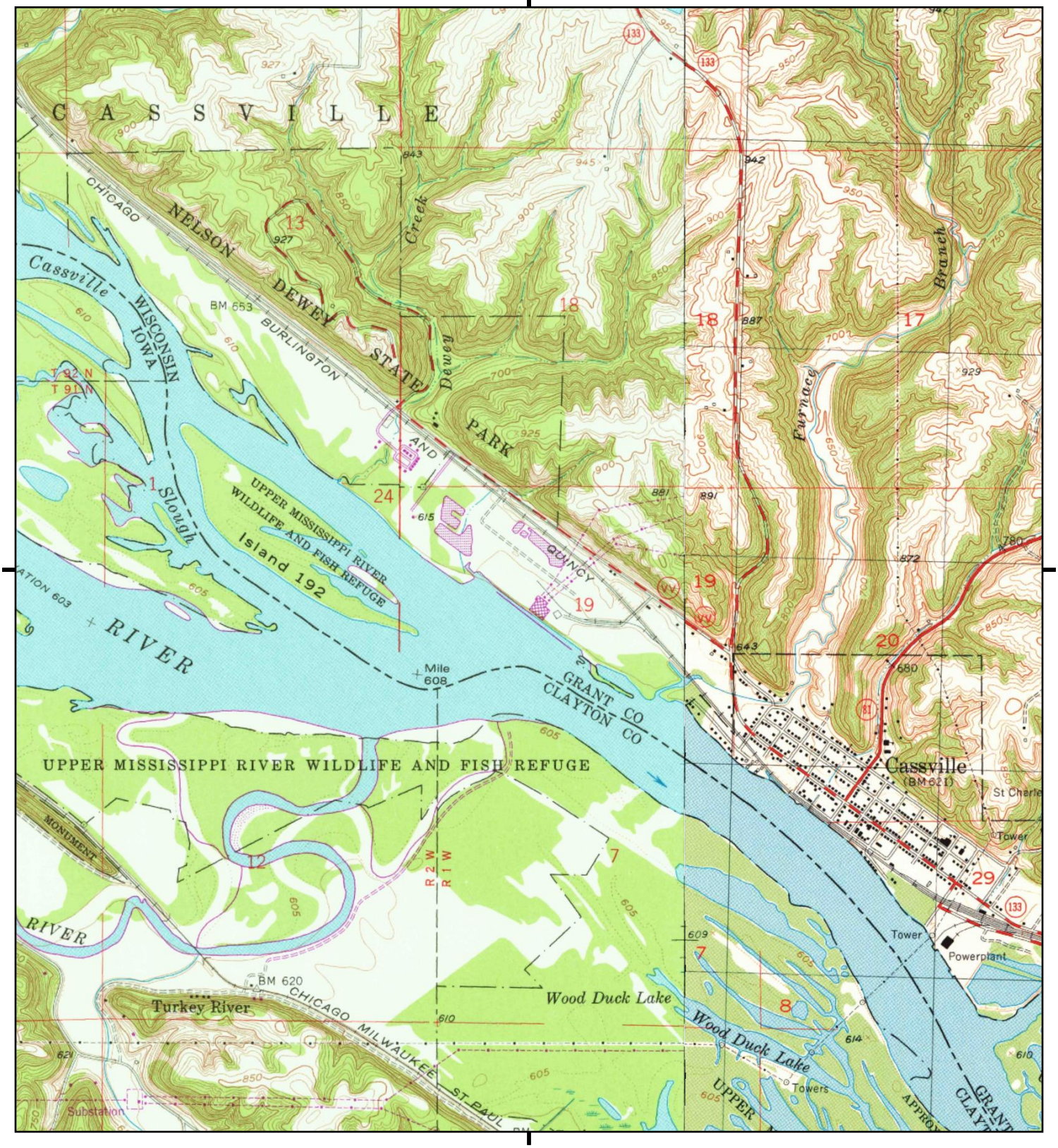
SE, Cassville, 2013, 7.5-minute

SITE NAME: Nelson Dewey Generating Station
ADDRESS: 11999 County Highway VV
Cassville, WI 53806
CLIENT: Environmental Site Assessors

N

Historical Topo Map

1978, 1980



This report includes information from the following map sheet(s).

Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Turkey River, 1980, 7.5-minute

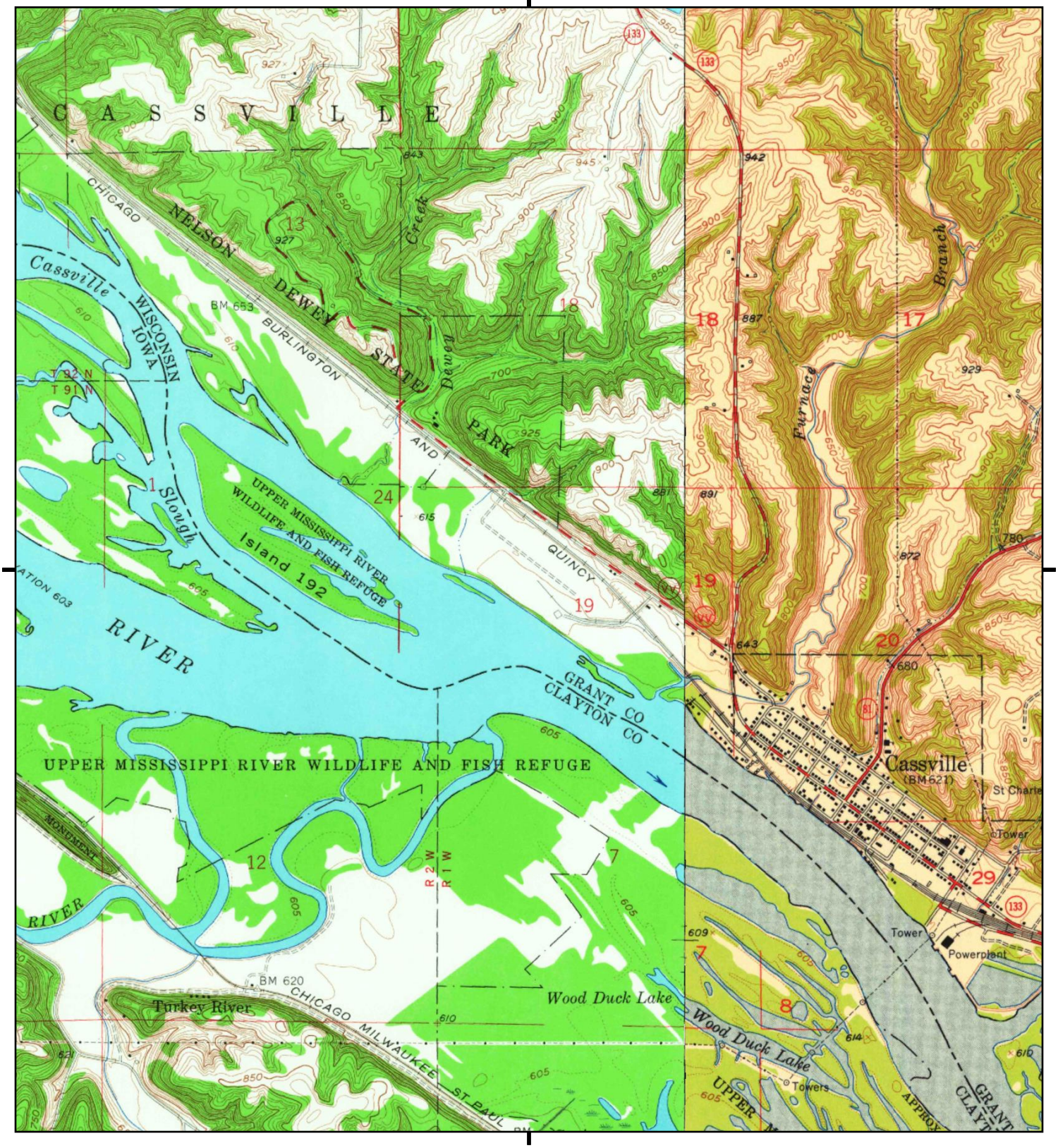
SE, Cassville, 1978, 7.5-minute

SITE NAME: Nelson Dewey Generating Station
ADDRESS: 11999 County Highway VV
Cassville, WI 53806
CLIENT: Environmental Site Assessors

N

Historical Topo Map

1955, 1957



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NW N NE
W E
SW S SE

TP, Turkey River, 1957, 7.5-minute

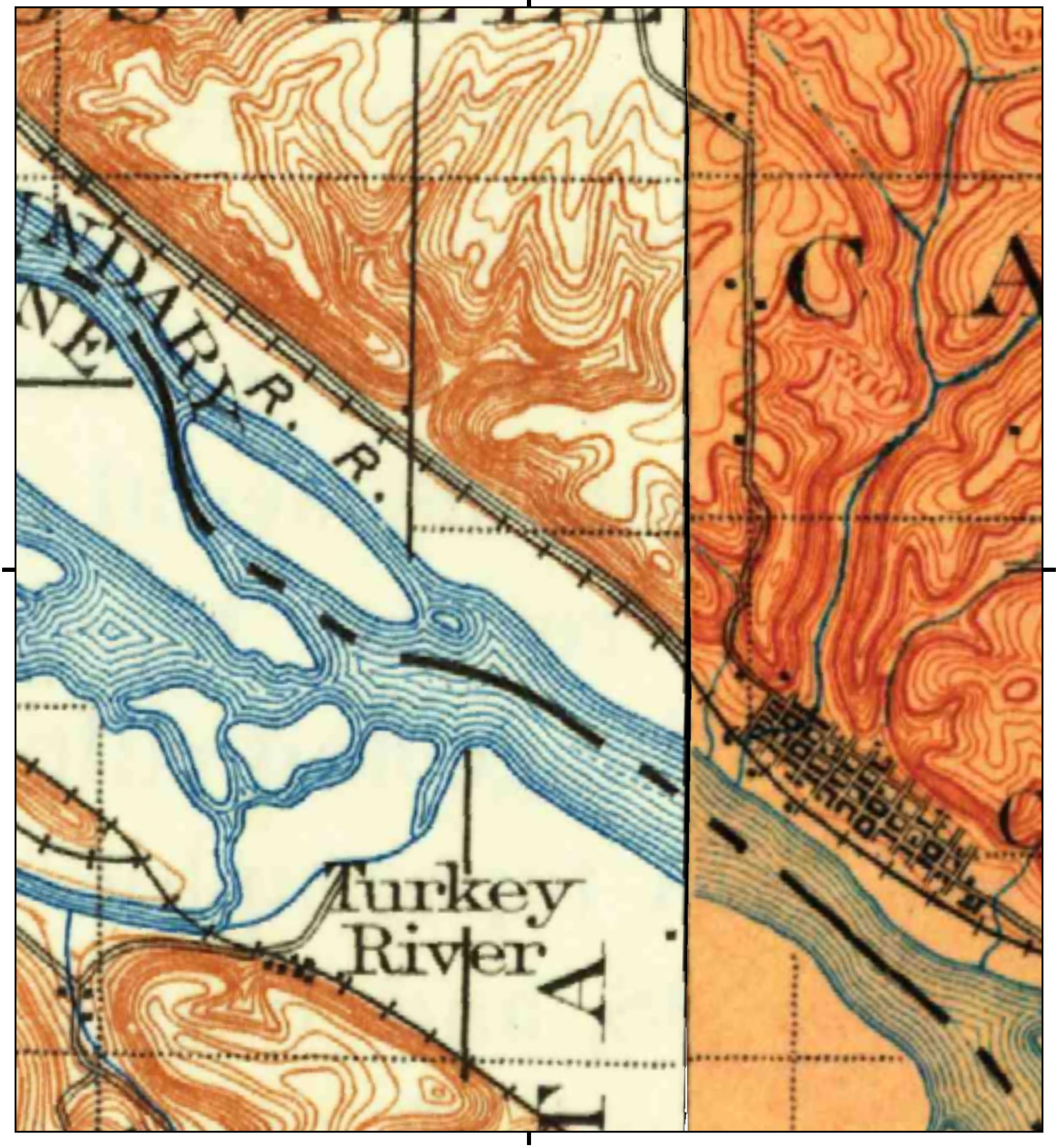
SE, Cassville, 1955, 7.5-minute

SITE NAME: Nelson Dewey Generating Station
ADDRESS: 11999 County Highway VV
Cassville, WI 53806
CLIENT: Environmental Site Assessors

N

Historical Topo Map

1900, 1902



This report includes information from the following map sheet(s).

Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Elkader, 1902, 30-minute

E, Lancaster, 1900, 30-minute

SITE NAME: Nelson Dewey Generating Station
ADDRESS: 11999 County Highway VV
Cassville, WI 53806
CLIENT: Environmental Site Assessors

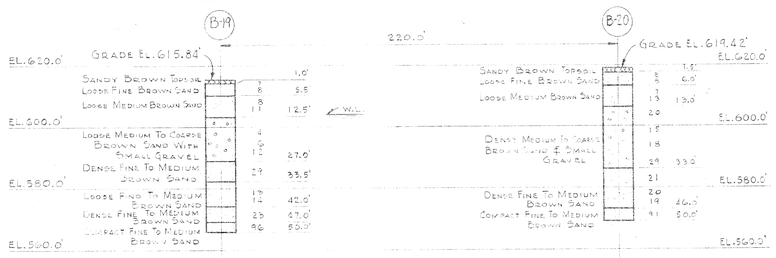
N

APPENDIX D – Soil Borings - 1957

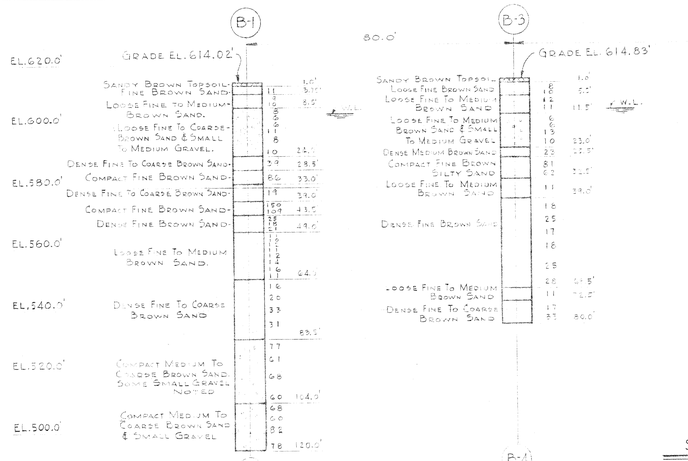
Alliant Energy
Wisconsin Power and Light Company
Nelson Dewey Generating Station
Cassville, Wisconsin

History of Construction

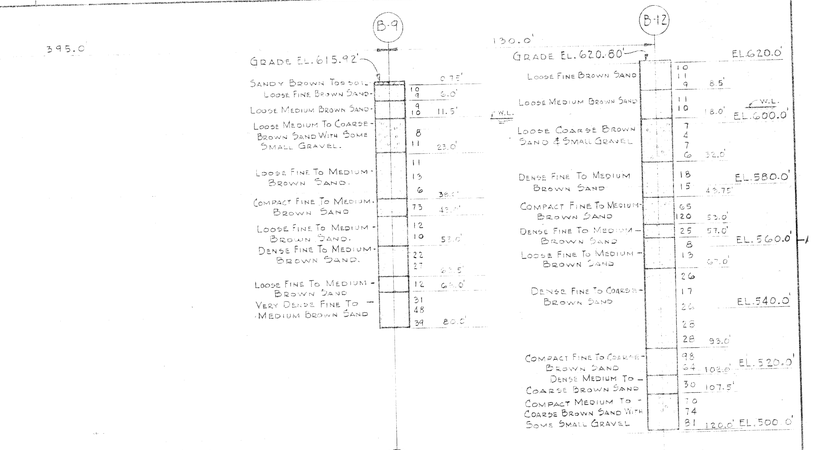
S-8

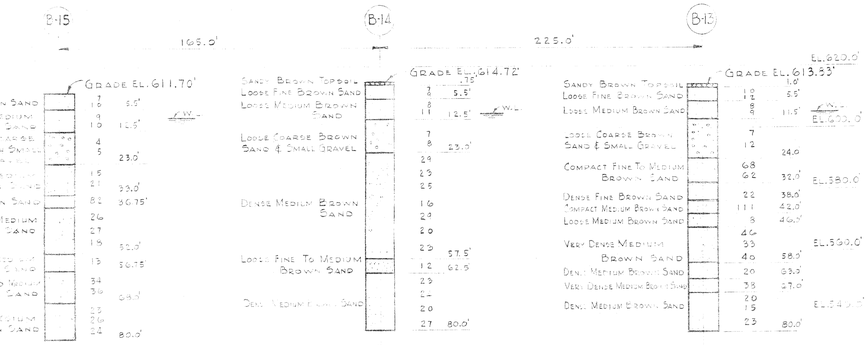


SECTION D-D
(SWITCH YARD)

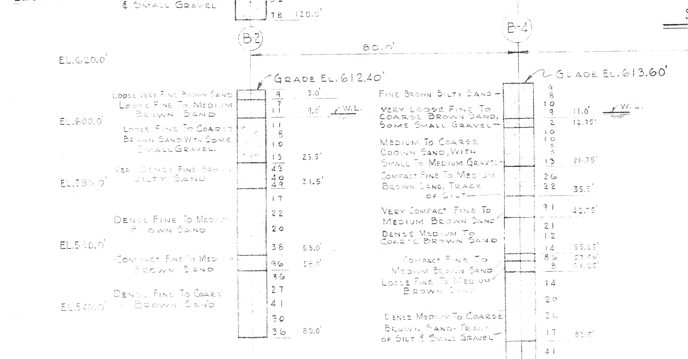


SECTION A-A
(TURBINE ROOM)
395.0'

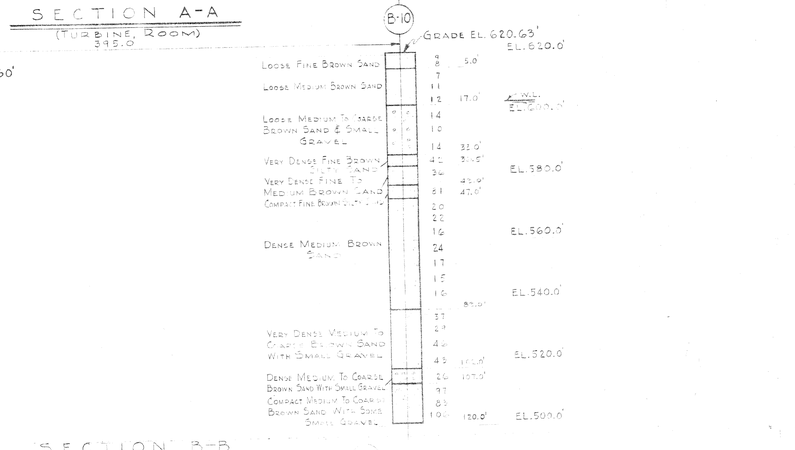


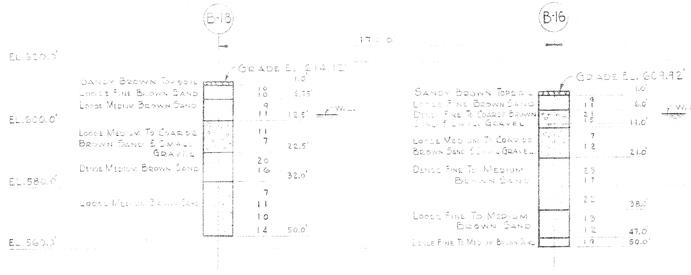


SECTION E-E
(COAL CONVEYORS)

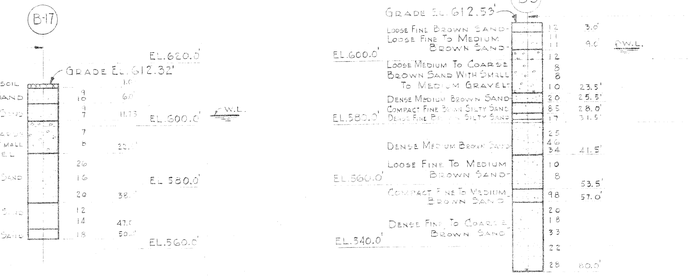


SECTION B-B
(BOILER ROOM)
395.0'

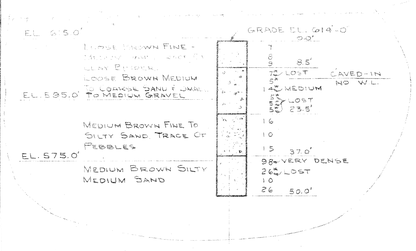


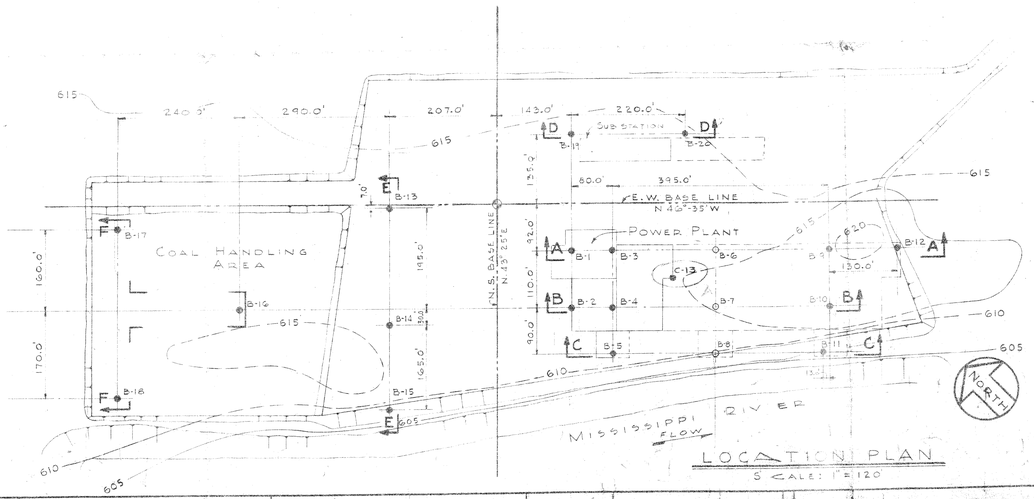


SECTION F-F
(COAL HANDLING AREA)



SECTION C-C
(COAL HOUSE)





LOCATION PLAN
SCALE: 1"=120'

NOTES

1. BORINGS B-6, B-7, & B-8 (INDICATED THUS ⊕) WERE ORIGINALLY CALLED FOR, BUT NOT MADE IN THE FIELD AT THE DIRECTION OF SARGENT & LUNDY.
2. FIGURES IMMEDIATELY TO THE RIGHT OF THE SOIL LOG INDICATE NUMBER OF BLOWS REQUIRED TO DRIVE THE STANDARD SAMPLING SPOON 12 INCHES WITH A 140 LB. HAMMER FALLING 30 INCHES.

REFERENCE DRAWINGS

M-2 - DEVELOPMENT PLAN

REVISIONS		
1-25-57	N.T.	DRWG. S-4 & S-5
5-15-57		PILING SUPS.
5-29-57	N.T.R.	PLUMB. & CONST.
7-1-57		BUILDING DIRS.
8-26-57		B.O.R. CONTRACT
6-1-60		UNIT NO. 1 BUILDING DIRS.
A		UNIT NO. 2 DIRS.
		UNIT NO. 2 DIRS. & COAL CONV. AUX.

SOIL BORINGS LOCATION PLAN & SECTIONS NELSON DEWEY GEN. STATION WISCONSIN POWER & LIGHT CO. CASSVILLE, WISCONSIN

SCALE: VERT. 1"=20' HORIZ. NO SCALE & AS NOTED
DRAWN W. EHRENWERTH
DATE JANUARY 25, 1957
CHECKED NIL RASMUSSEN 5-20-57
APPROVED E.J. Sandmeyer

SARGENT & LUNDY ENGINEERS
CHICAGO, ILLINOIS

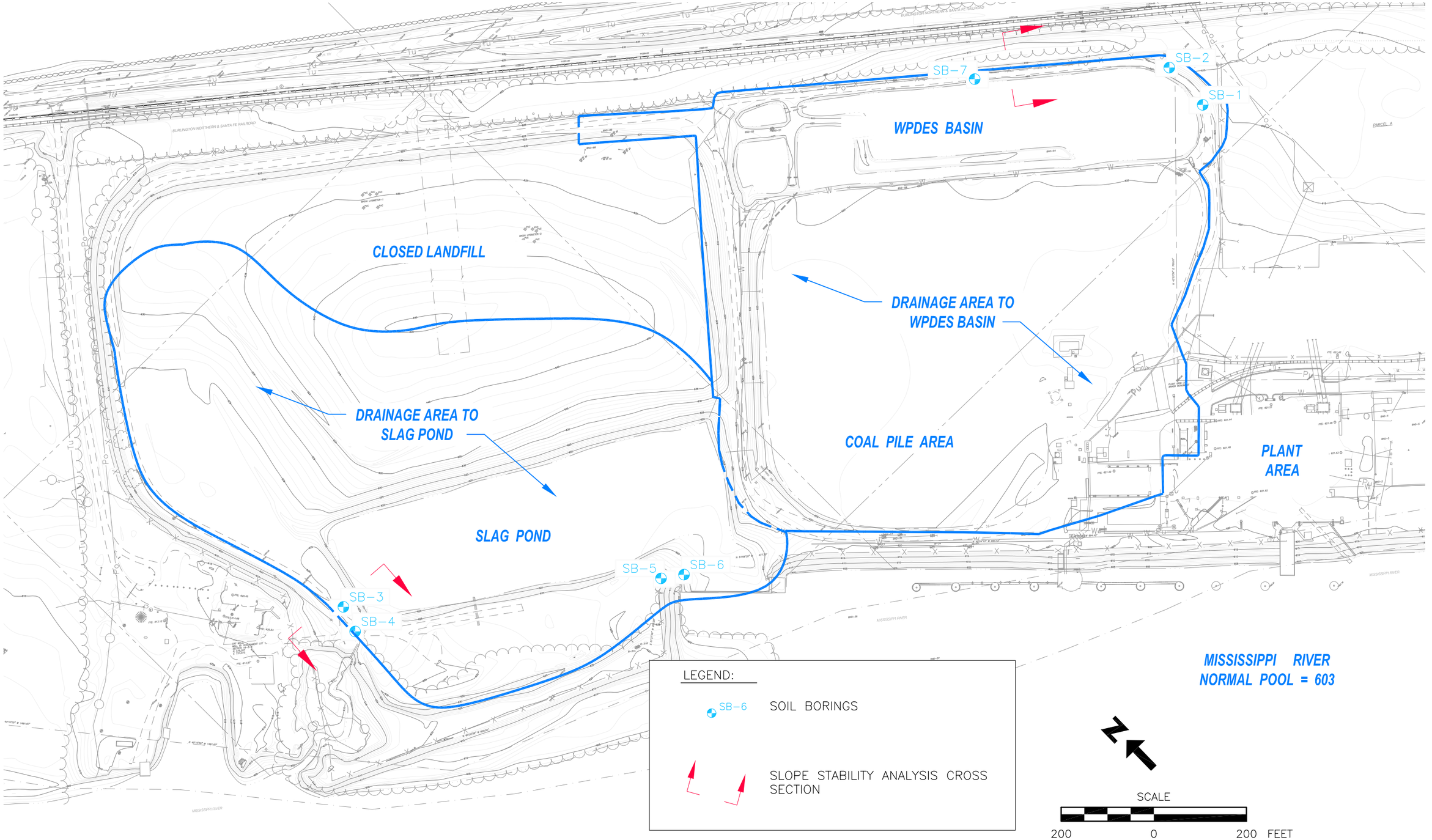
JOB NO.	JOB NO.	JOB NO.	JOB NO.
2550			
2816			

DRAWING NO. B-5

APPENDIX E – Geoprobe Soil Borings - 2011

Alliant Energy
Wisconsin Power and Light Company
Nelson Dewey Generating Station
Cassville, Wisconsin

History of Construction



REV	DATE	BY	DESCRIPTION
5			
4			
3			
2			
1			

aetherdbs
www.aetherdbs.com

SCALE:	AS SHOWN
DATE:	03-17-2011
DRAWN BY:	MM
CHKD. BY:	TCW
APPROVED:	03-17-2011

CLIENT / LOCATION
WISCONSIN POWER AND LIGHT
NELSON DEWEY GENERATING STATION
CASSVILLE, WISCONSIN

DRAWING DESCRIPTION
SITE PLAN

JOB 154
SHT. FIGURE 1
DWG. SITE PLAN

CABENO

Environmental Field Services, LLC

BORING LOG

CLIENT: Aether dbs

COORDINATES: *N NOT SURVEYED* *E NOT SURVEYED*

PROJECT: Cassville, WI

BORING NO.: *SB1*

DEPTH TO WATER WHILE DRILLING	SAMPLE NO. AND TYPE	SAMPLE RECOVERY	SAMPLE INFROMATION	POCKET PENETROMETER (TSF)	CONSISTENCY vs. DEPTH	DEPTH IN FEET	PROFILE	DESCRIPTION
								LOGGED BY: *John Noyes* **EDITED BY:** *John Noyes* **CHECKED BY:** *Mark Loerop* **DATE BEGAN:** *02-24-11* **DATE FINISHED:** *02-24-11* **GROUND SURFACE ELEVATION:**
	SP1	4.5'/5'				0		GRAVEL; yellowish-brown; well graded; fine to coarse grained; wet/frozen. (Fill) SAND; yellowish brown to orange; poorly graded; fine grained; moist; some silt & clay. (SP)
	SP2	4'/5'				-5		
⊻				1.5 2.0		-10		CLAY; black; low to high plasticity; moist; trace organics. (CL) SAND; brown; poorly graded; fine grained; wet; trace to some silt. (SP)
	SP3	3.8'/5'				-15		@ 15.5' grades well graded; fine to coarse grained. (SW) @ 16' grades very loose, flowing sand like consistency.
	SP4	2.5'/2.5'				-20		Bottom of boring @ 17.5'. Boring advanced W/ Geoprobe Model 6610DT using 60-inch Macrocore sampling system. Boring backfilled to groundsurface w/ bentonite chips on 2-24-11.

CABENO

Environmental Field Services, LLC

BORING LOG

CLIENT: Aether dbs

COORDINATES: *N NOT SURVEYED* *E NOT SURVEYED*

PROJECT: Cassville, WI

BORING NO.: *SB2*

DEPTH TO WATER WHILE DRILLING	SAMPLE NO. AND TYPE	SAMPLE RECOVERY	SAMPLE INFROMATION	POCKET PENETROMETER (TSF)	CONSISTENCY vs. DEPTH	DEPTH IN FEET	PROFILE	DESCRIPTION
▽	SP1	4.5'/5'		1.75		0		GRAVEL; yellowish-brown; well graded; fine to coarse grained; wet/frozen. (Fill)
								SAND; yellowish brown to orange; poorly graded; fine grained; moist; some silt & clay. (SP)
	SP2	2'/5'				-5		
						-10		CLAY; black; low to high plasticity; moist; trace organics. (CL)
	SP3	3.5'/5'						SAND; brown; well graded; fine to coarse grained; wet; trace to some silt. (SW)
						-15		@ 15' grades very loose, flowing sand like consistency.
	SP4	1'/5'						
						-20		Bottom of boring @ 20.0'. Boring advanced W/ Geoprobe Model 6610DT using 60-inch Macrocore sampling system. 1" PVC temp well w/ 5' screen placed in open hole. W.L. checked ~3hrs after drilling = 13.2'bgs. PVC was removed and boring backfilled to groundsurface w/ bentonite chips on 2-24-11.
						-25		

LOGGED BY: *John Noyes*

EDITED BY: *John Noyes*

CHECKED BY: *Mark Loerop*

DATE BEGAN: *02-24-11*

DATE FINISHED: *02-24-11*

GROUND SURFACE ELEVATION:

CABENO

Environmental Field Services, LLC

BORING LOG

CLIENT: Aether dbs

COORDINATES: *N NOT SURVEYED* *E NOT SURVEYED*

PROJECT: Cassville, WI

BORING NO.: *SB3*

DEPTH TO WATER WHILE DRILLING	SAMPLE NO. AND TYPE	SAMPLE RECOVERY	SAMPLE INFROMATION	POCKET PENETROMETER (TSF)	CONSISTENCY vs. DEPTH	DEPTH IN FEET	PROFILE	DESCRIPTION
								LOGGED BY: *John Noyes* **EDITED BY:** *John Noyes* **CHECKED BY:** *Mark Loerop* **DATE BEGAN:** *02-24-11* **DATE FINISHED:** *02-24-11* **GROUND SURFACE ELEVATION:**
	SP1	2.5'/5'				0		GRAVEL; yellowish-brown; well graded; fine to coarse grained; wet/frozen. (Fill)
								ASH (slag-); black; well graded; fine to coarse grained; angulat to sub-angular; dry to moist. (Fill)
	SP2	4'/5'				-5		
						-10		
	SP3	5'/5'						
▽	SP4	5'/5'				-15		
						-20		SAND; gray; poorly graded; fine grained; wet; trace silt. (SP)
						-25		Bottom of boring @ 20.0'. Boring advanced W/ Geoprobe Model 6610DT using 60-inch Macrocore sampling system. Backfilled to groundsurface w/ bentonite chips on 2-24-11.

CABENO

Environmental Field Services, LLC

BORING LOG

CLIENT: Aether dbs

COORDINATES: *N NOT SURVEYED* *E NOT SURVEYED*

PROJECT: Cassville, WI

BORING NO.: *SB4*

DEPTH TO WATER WHILE DRILLING	SAMPLE NO. AND TYPE	SAMPLE RECOVERY	SAMPLE INFROMATION	POCKET PENETROMETER (TSF)	CONSISTENCY vs. DEPTH	DEPTH IN FEET	PROFILE	DESCRIPTION
	SP1	2.5'/5'				0		GRAVEL; yellowish-brown; well graded; fine to coarse grained; wet/frozen. (Fill)
								ASH (slag-); black; well graded; fine to coarse grained; angulat to sub-angular; dry to moist. (Fill)
	SP2	4'/5'				-5		
						-10		
	SP3	5'/5'						
▽						-15		SAND; gray; poorly graded; fine grained; wet; trace silt and organic matter. (SP)
	SP4	5'/5'						
						-20		Bottom of boring @ 20.0'. Boring advanced W/ Geoprobe Model 6610DT using 60-inch Macrocore sampling system. 1" PVC temp well w/ 5' screen placed in open hole. W.L. checked ~1hr after drilling = dry. PVC was removed and boring backfilled to groundsurface w/ bentonite chips on 2-24-11.
						-25		

LOGGED BY: *John Noyes*

EDITED BY: *John Noyes*

CHECKED BY: *Mark Loerop*

DATE BEGAN: *02-24-11*

DATE FINISHED: *02-24-11*

GROUND SURFACE ELEVATION:

CABENO

Environmental Field Services, LLC

BORING LOG

CLIENT: Aether dbs

COORDINATES: *N NOT SURVEYED* *E NOT SURVEYED*

PROJECT: Cassville, WI

BORING NO.: *SB5*

DEPTH TO WATER WHILE DRILLING	SAMPLE NO. AND TYPE	SAMPLE RECOVERY	SAMPLE INFROMATION	POCKET PENETROMETER (TSF)	CONSISTENCY vs. DEPTH	DEPTH IN FEET	PROFILE	DESCRIPTION
								LOGGED BY: *John Noyes* **EDITED BY:** *John Noyes* **CHECKED BY:** *Mark Loerop* **DATE BEGAN:** *02-24-11* **DATE FINISHED:** *02-24-11* **GROUND SURFACE ELEVATION:**
	SP1	3'/5'				0		ASH (slag-); black; well graded; fine to coarse grained; angulat to sub-angular; dry to moist. (Fill)
	SP2	3'/5'				-5		
	SP3	4'/5'				-10		
▽	SP4	5'/5'				-15		SAND; brown; poorly graded; fine grained; wet; trace silt and organic matter. (SP)
						-20		Bottom of boring @ 20.0'. Boring advanced W/ Geoprobe Model 6610DT using 60-inch Macrocore sampling system. Boring backfilled to groundsurface w/ bentonite chips on 2-24-11.
						-25		

CABENO

Environmental Field Services, LLC

BORING LOG

CLIENT: Aether dbs

COORDINATES: *N NOT SURVEYED* *E NOT SURVEYED*

PROJECT: Cassville, WI

BORING NO.: *SB6*

DEPTH TO WATER WHILE DRILLING	SAMPLE NO. AND TYPE	SAMPLE RECOVERY	SAMPLE INFROMATION	POCKET PENETROMETER (TSF)	CONSISTENCY vs. DEPTH	DEPTH IN FEET	PROFILE	DESCRIPTION
								LOGGED BY: *John Noyes* **EDITED BY:** *John Noyes* **CHECKED BY:** *Mark Loerop* **DATE BEGAN:** *02-24-11* **DATE FINISHED:** *02-24-11* **GROUND SURFACE ELEVATION:**
	SP1	3'/5'				0		ASH (slag-); black; well graded; fine to coarse grained; angulat to sub-angular; dry to moist. (Fill)
	SP2	3'/5'				-5		
	SP3	3'/5'				-10		
▽						-15		
	SP4	5'/5'				-20		SAND; brown; poorly graded; fine grained; wet; trace silt and organic matter. (SP)
						-25		Bottom of boring @ 20.0'. Boring advanced W/ Geoprobe Model 6610DT using 60-inch Macrocore sampling system. Boring backfilled to groundsurface w/ bentonite chips on 2-24-11.

CABENO

Environmental Field Services, LLC

BORING LOG

CLIENT: Aether dbs

COORDINATES: *N NOT SURVEYED* / *E NOT SURVEYED*

PROJECT: Cassville, WI

BORING NO.: *SB7*

DEPTH TO WATER WHILE DRILLING	SAMPLE NO. AND TYPE	SAMPLE RECOVERY	SAMPLE INFROMATION	POCKET PENETROMETER (TSF)	CONSISTENCY vs. DEPTH	DEPTH IN FEET	PROFILE	DESCRIPTION
								LOGGED BY: *John Noyes* **EDITED BY:** *John Noyes* **CHECKED BY:** *Mark Loerop* **DATE BEGAN:** *02-24-11* **DATE FINISHED:** *02-24-11* **GROUND SURFACE ELEVATION:**
	SP1	2'/5'				0		GRAVEL; yellowish-brown; well graded; fine to coarse grained; wet/frozen. (Fill)
								SILT; black to dark gray; non-plastic; trace to some sand, gravel & slag. (Fill)
	SP2	5'/5'				-5		
						-10		
	SP3	4'/5'		2.25 2.25 2.0				CLAY; brown; low to high plasticity; stiff; moist. (CL)
						-15		SAND; reddish orange; well graded; fine to coarse grained; wet; some gravels. (SW)
▽	SP4	1'/5'						
						-20		Bottom of boring @ 20.0'. Boring advanced W/ Geoprobe Model 6610DT using 60-inch Macrocore sampling system. Boring backfilled to groundsurface w/ bentonite chips on 2-24-11.
						-25		

APPENDIX F – NED Slag Pond Drawings

Alliant Energy
Wisconsin Power and Light Company
Nelson Dewey Generating Station
Cassville, Wisconsin

History of Construction

E1,728,000
E1,729,000
E1,730,000
N 268,000
N 266,000
N265,000

TRUE

NOTE: BORINGS 14 → 18 PLACED ADJACENT TO PREVIOUS BORINGS WHICH THEY REPLACE AS CLOSE AS PRACTICAL.

FLOODWAY LINE

℄ NELSON DEWEY CREEK PROPERTY LINE

LEASED TO BERNHARDT BROS.

FLOODPLAIN LIMITS

FLOODPLAIN LIMITS

Pile (COAL)

BENCHMARK-STEEL BOLT IN 12" CONCRETE MONUMENT ELEV. 621.8

FARM WELL

MISSISSIPPI River

Elev. 607.5

DREDGED AREA

DREDGED AREA

DREDGED AREA

JETTY # 61

JETTY # 62

Face

Face

Toe

Toe

B#1 B#2 B#3 B#3A B#3B (ASH) B#3B B#4 B#5 B#6 B#7 B#8 B#9 B#10 B#12 B#13 B#14 B#15 B#16 B#17 B#18

P#1 P#13 P#14 P#15 P#16 P#17

14 15 16 17 18 19 20 21 22

GENERAL NOTES:

1. TOPOGRAPIC INFORMATION IS BASED ON AERIAL SURVEY PERFORMED BY AERO-METRIC ENGINEERING INC., SHEBOYGAN, WISCONSIN. DATE OF PHOTOGRAPHY IS 2-26-75
2. SITE BENCHMARK IS AS ESTABLISHED BY SARGENT AND LUNDY ENGINEERS, CHICAGO, ILLINOIS, DURING INITIAL DEVELOPMENT OF POWER PLANT. IT IS AN IRON BOLT SET IN 12" DIAM. CONCRETE MONUMENT NORTHWEST OF THE POWER PLANT AT ELEV. 621.8
3. INITIAL POINT OF GRID SYSTEM IS A BRASS CAP SET IN A 12" DIAMETER CONCRETE MONUMENT 100' NORTHWEST OF THE POWERPLANT. N-S BASELINE IS N43°-25'E; E-W BASELINE IS N46°-35'W.
4. LOCATION OF FLOODWAY & FLOODPLAIN LINES IS PER VILLAGE OF CASSVILLE ZONING ORDINANCE.

LEGEND

- P#1 — BORING PERFORMED BY SARGENT AND LUNDY, 1957
- B#1 — BORING PERFORMED BY WARZYN ENG. INC., DEC. 1975 - JAN. 1976
- X — X — FENCE
- PROPERTY LINE
- TREES
- 613.5 — SPOT ELEVATION
- 620 — EXISTING CONTOUR
- I — I — FLOODWAY LINE
- FLOODPLAIN LIMITS
- EXISTING BUILDING
- BASELINE AND BENCHMARK MONUMENT

0 200 400 600 800 1000

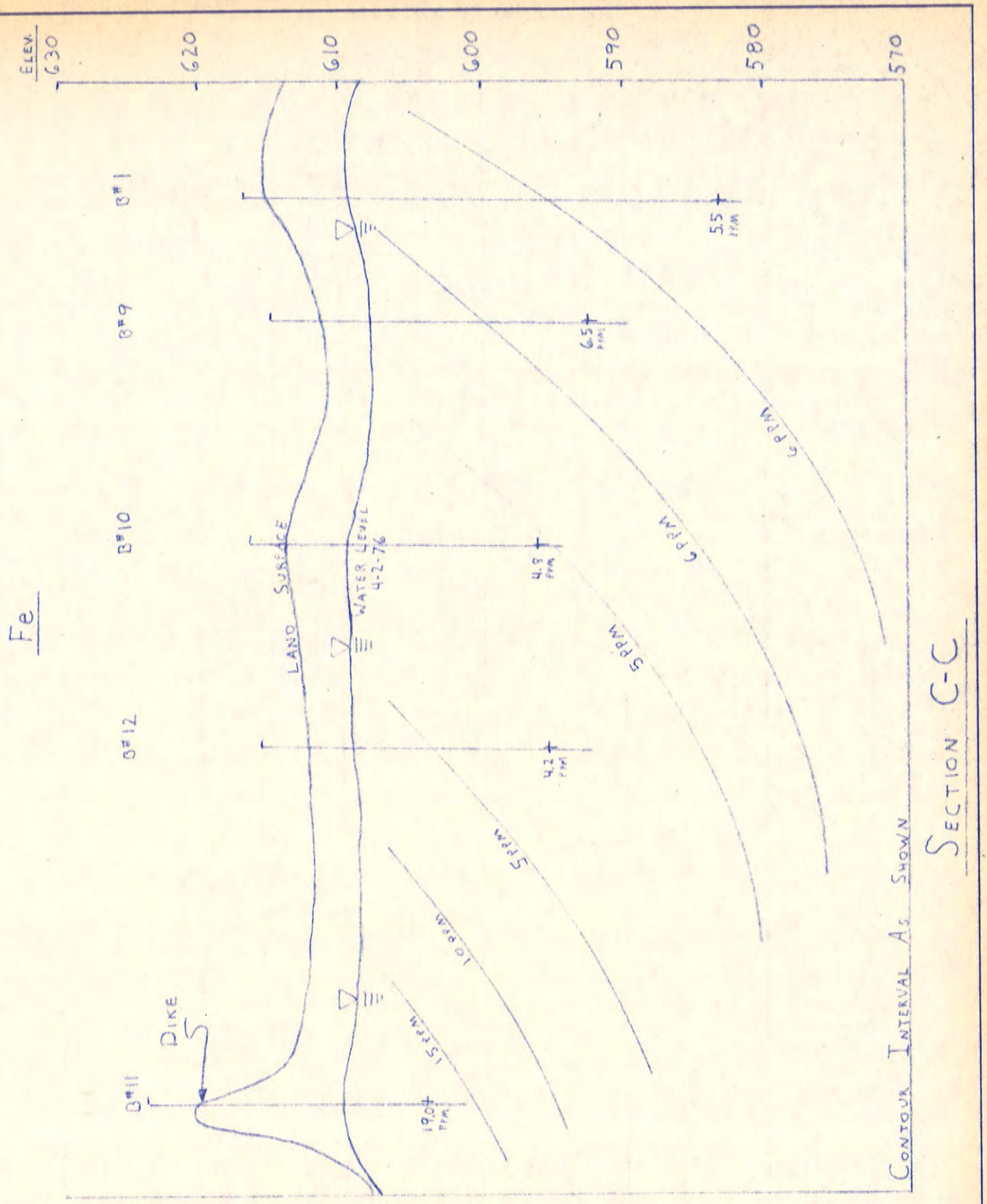
SCALE 1" = 200'

NO.	BY	DATE	REVISION

WARZYN ENGINEERING AND SERVI
MADISON *Consulting Engineers*

FEASIBILITY STUDY-ASH DISPOSAL
NELSON DEWEY GENERATING S
WISCONSIN POWER AND LIGHT CO
PART OF SECTION 19 T. 3 N. - R.
CASSVILLE GRANT COUNTY WI

DRAWN DGW | CHECKED | SCALE 1" = 200'



SCALE

VERTICAL 1" = 10'

HORIZONTAL 1" = 200'

DATE OF SAMPLING 4-19-76

SEE DRAWING C-6299-13 FOR LOCATION OF SECTION

WARZYN ENGINEERING AND SERVICE COMPANY, INC.

MADISON Consulting Engineers WISCONSIN

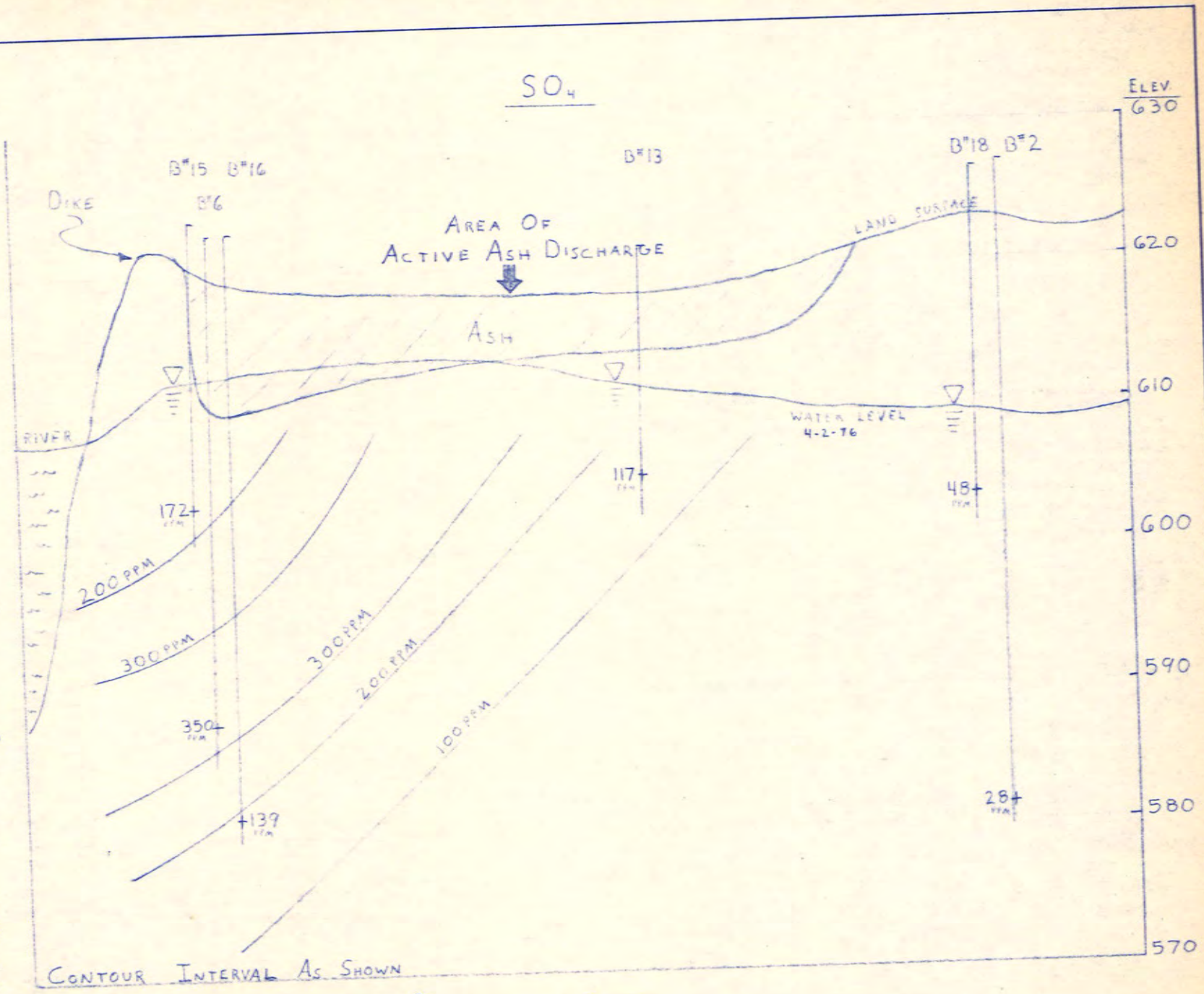
IRON CONCENTRATION (PPM)

ASH DISPOSAL FACILITY

W.P.& L. - NELSON DEWEY STATION

CASSVILLE, WISCONSIN

DWN CGK	CHK'D DRV	APP'D C K	DATE 6/15/76	C 6299 A-32



SCALE
VERTICAL 1" = 10'
HORIZONTAL 1" = 200'

SEE DRAWING C-6299-13 FOR LOCATION OF SECTION

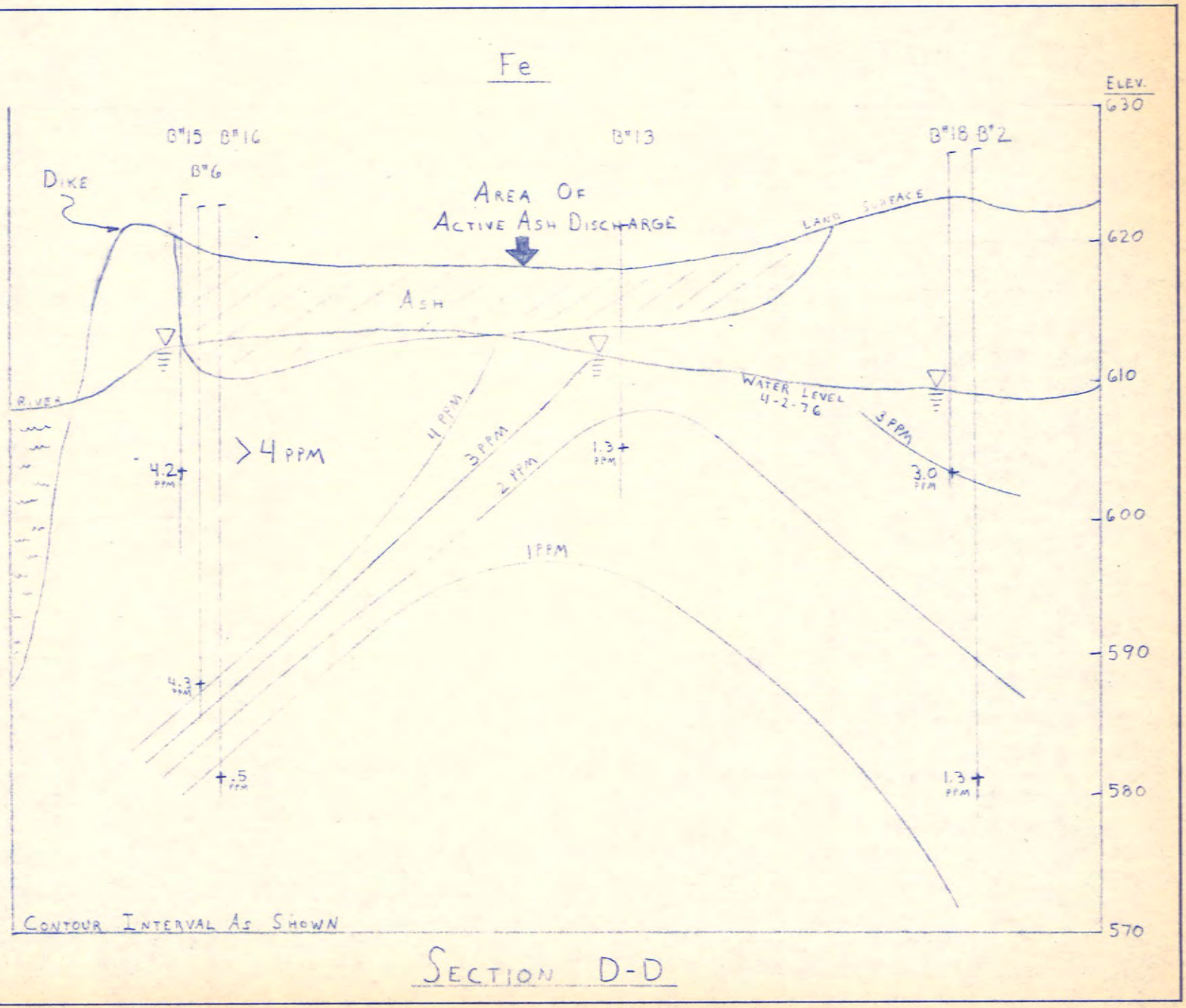
DATE OF SAMPLING 4-19-76

DWN CGK | CHK'D DRV | APP'D CK | DATE 6/15/76

WARZYN ENGINEERING AND SERVICE COMPANY, INC.
MADISON WISCONSIN
Consulting Engineers

SULFATE CONCENTRATION (PPM)
ASH DISPOSAL FACILITY
WPSL - NELSON DEWEY STATION
CASSVILLE WISCONSIN

C-6299 A-33



SECTION D-D

SCALE
VERTICAL 1" = 10'
HORIZONTAL 1" = 200'

SEE DRAWING C-6299-13
FOR LOCATION OF SECTION

DATE OF SAMPLING 4-19-76

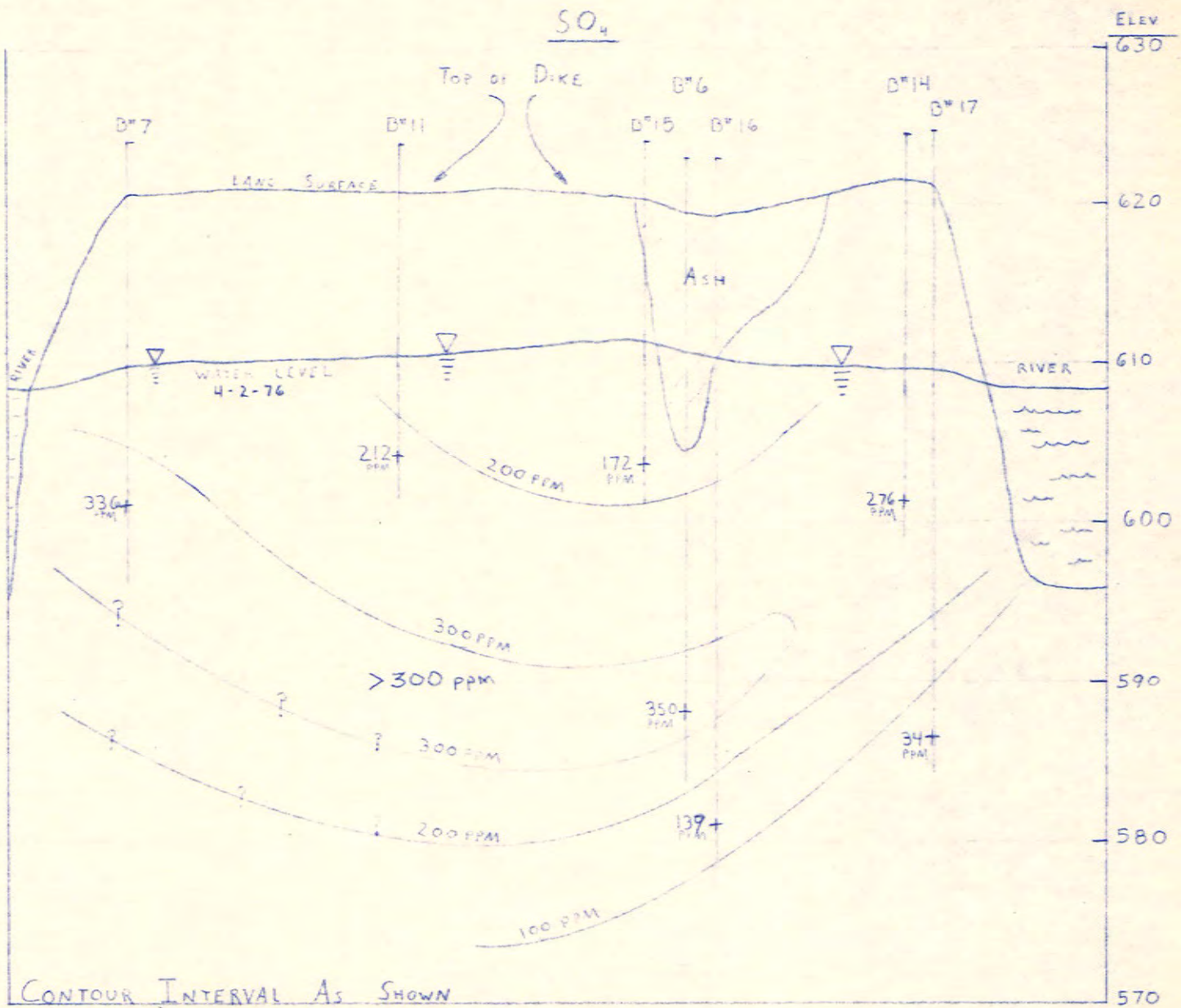
DWN C@K | CHK'D DRV | APP'D C | DATE 6/15/76

WARZYN ENGINEERING AND SERVICE COMPANY, INC.
MADISON Consulting Engineers WISCONSIN

IRON CONCENTRATION (PPM)

ASH DISPOSAL FACILITY
W.P.& L. NELSON DEWEY STATION
CASSVILLE, WISCONSIN

C6299 A-34



SECTION B-B

SCALE
VERTICAL 1"=10'
HORIZONTAL 1"=200'

SEE DRAWING C-6299-13 FOR LOCATION OF SECTION

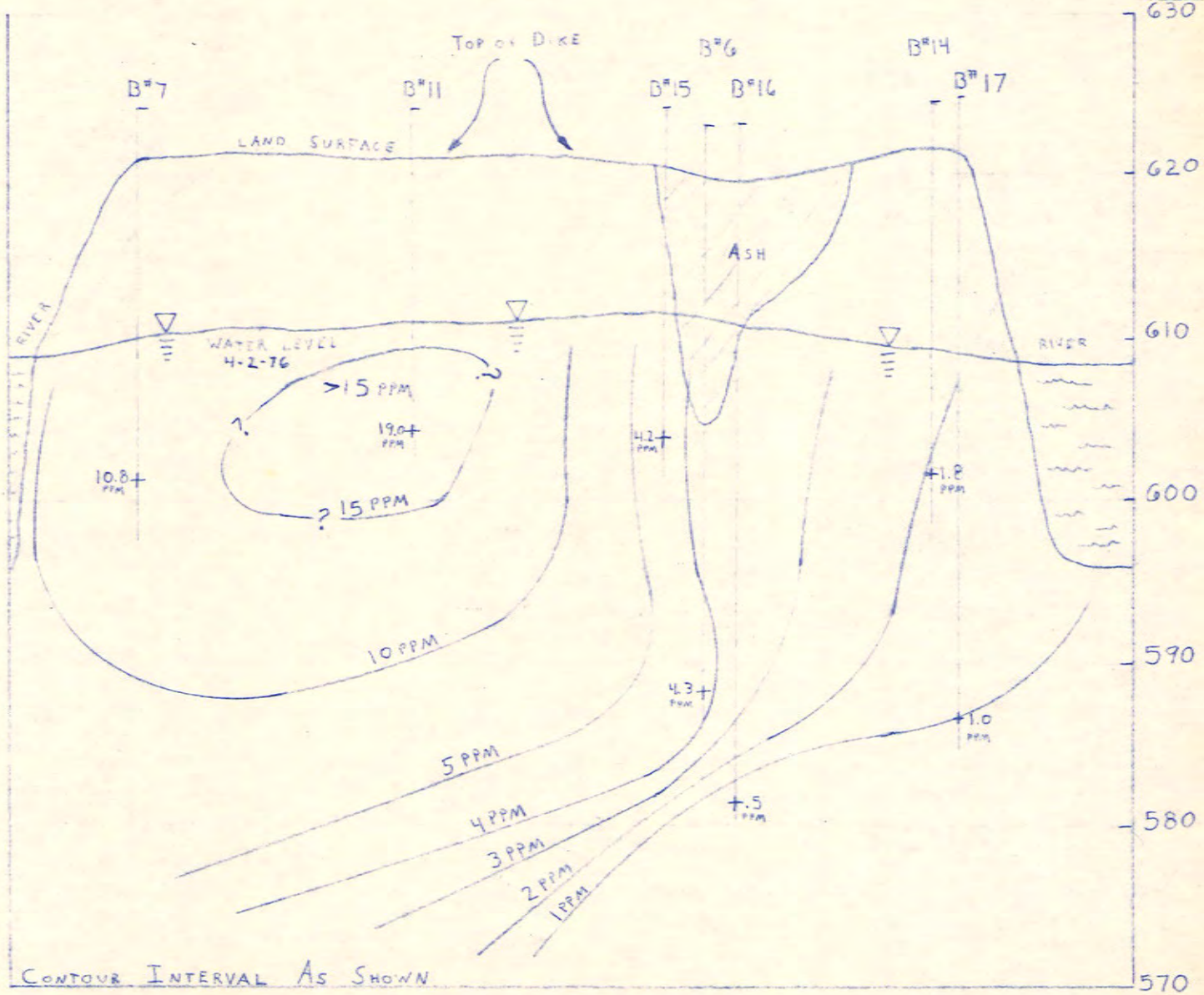
DATE OF SAMPLING 4-19-76

WARZYN ENGINEERING AND SERVICE COMPANY, INC.
MADISON Consulting Engineers WISCONSIN

SULFATE CONCENTRATION (PPM)
ASH DISPOSAL FACILITY
WP&L - NELSON DEWEY STATION
CASSVILLE, WISCONSIN

DWN	CHK'D	APP'D	DATE
CBK	DRV	CR	6/15/76

C-6299 A-29



SECTION B-B

SCALE
VERTICAL 1" = 10'
HORIZONTAL 1" = 200'

SEE DRAWING C-6299-13
FOR LOCATION OF SECTION

DATE OF SAMPLING 4-19-76

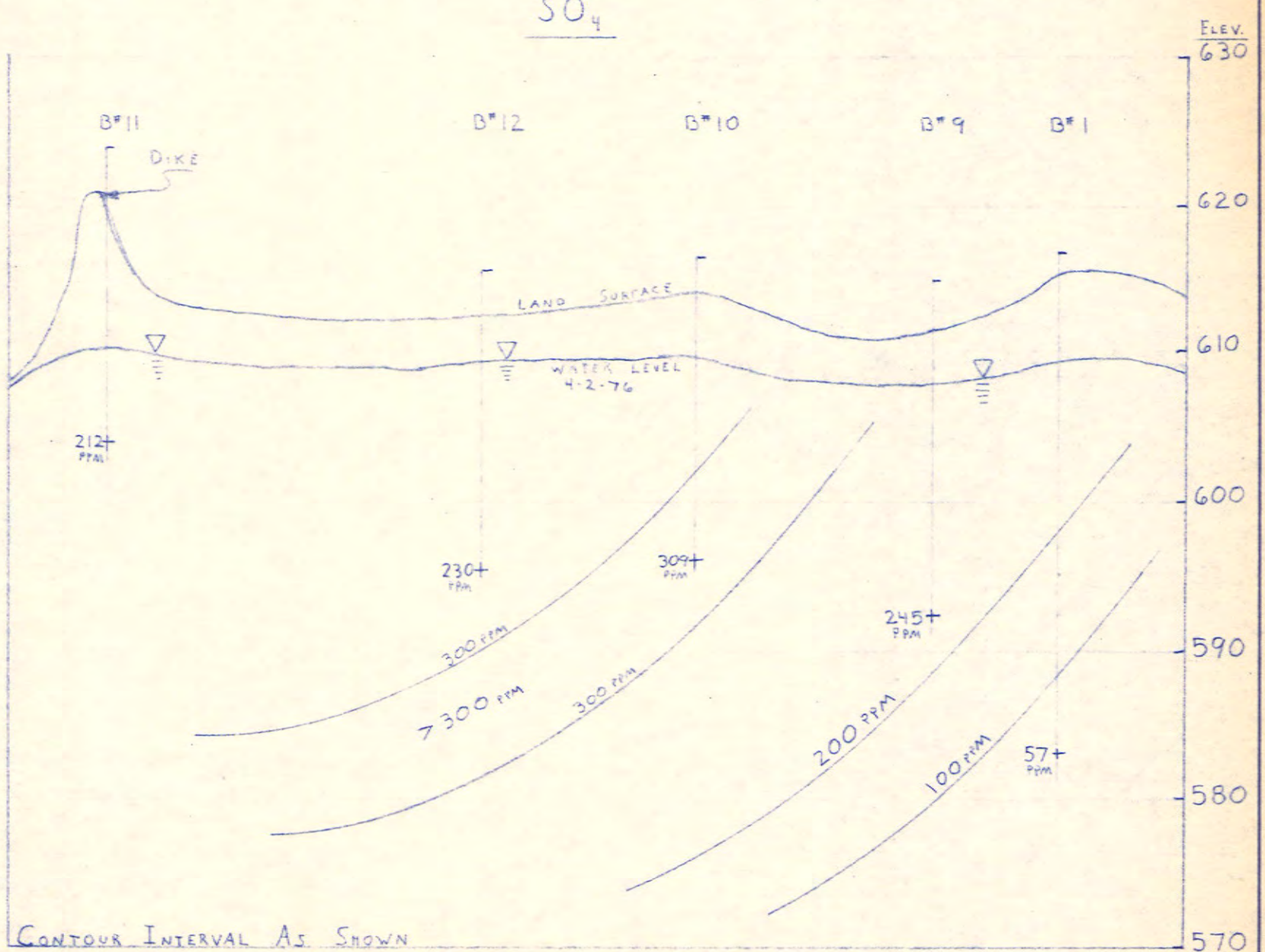
DWN C@K | CHK'D DRV | APP'D CX

WARZYN ENGINEERING AND SERVICE COMPANY, INC.
MADISON Consulting Engineers WISCONSIN

IRON CONCENTRATION (PPM)

ASH DISPOSAL FACILITY
W.P.& L. - NELSON DEWEY STATION
CASSVILLE, WISCONSIN

DATE 6/15/76 | C-6299 A-30



SECTION C-C

SCALE
VERTICAL 1" = 10'
HORIZONTAL 1" = 200'

SEE DRAWING C-6299-13
FOR LOCATION OF SECTION

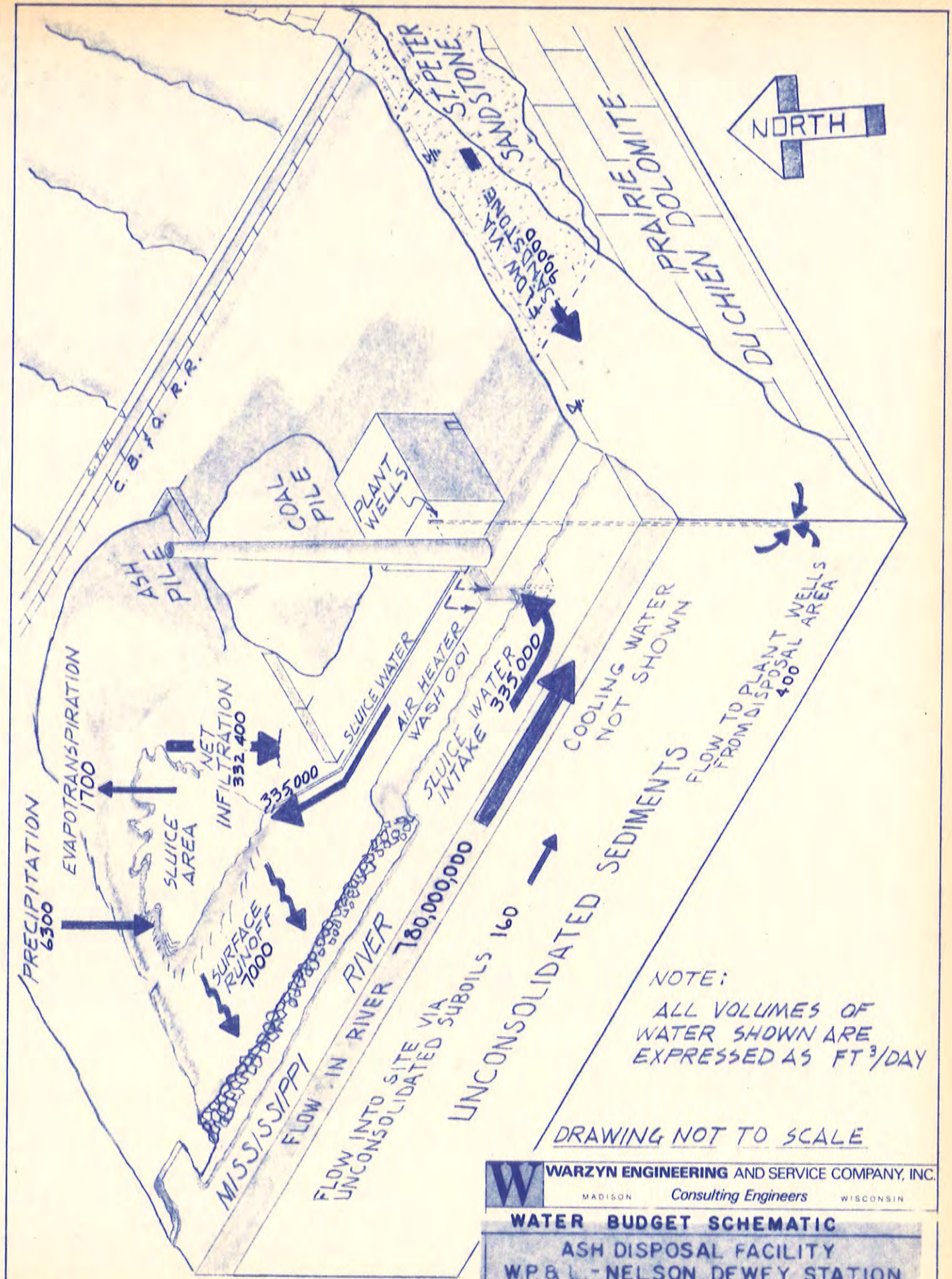
DATE OF SAMPLING 4-19-76

WARZYN ENGINEERING AND SERVICE COMPANY, INC.
MADISON Consulting Engineers WISCONSIN

SULFATE CONCENTRATION (PPM)
ASH DISPOSAL FACILITY
WPSL-NELSON DEWEY STATION
CASSVILLE WISCONSIN

DWN	CHK'D	APP'D	DATE
C@K	DRV	CK	6/15/76

C-6299 A31

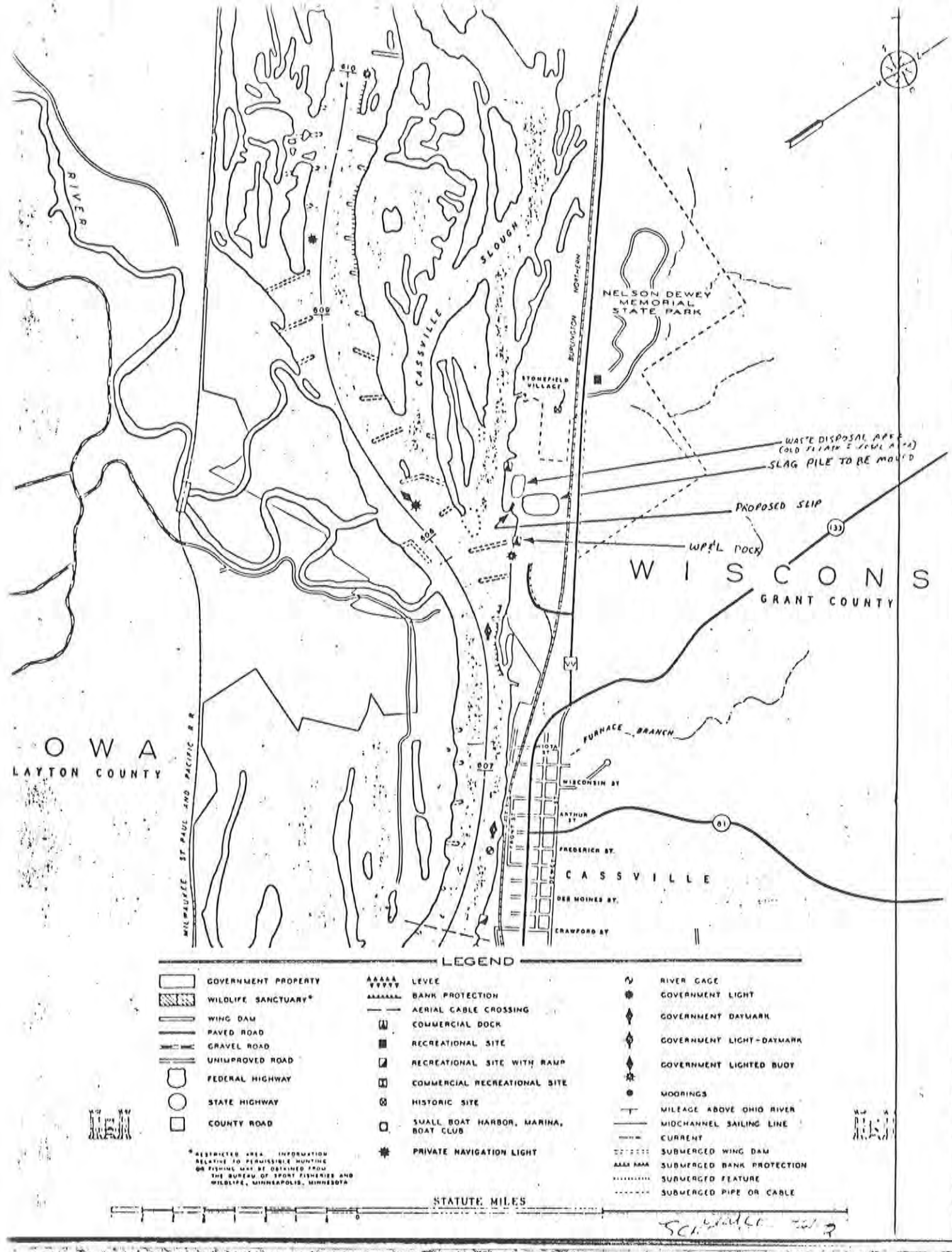


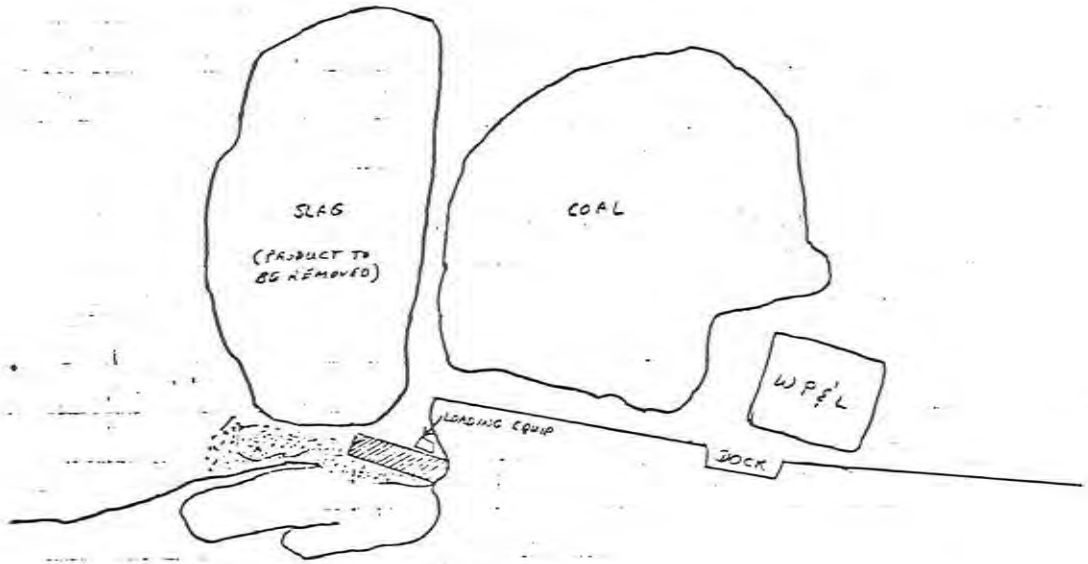
WARZYN ENGINEERING AND SERVICE COMPANY, INC.
MADISON Consulting Engineers WISCONSIN

WATER BUDGET SCHEMATIC

ASH DISPOSAL FACILITY
WP&L - NELSON DEWEY STATION
CASSVILLE, WISCONSIN

DWN SGW	CHK'D DRV	APP'D CL	DATE 6/15/76	C-6299-A28

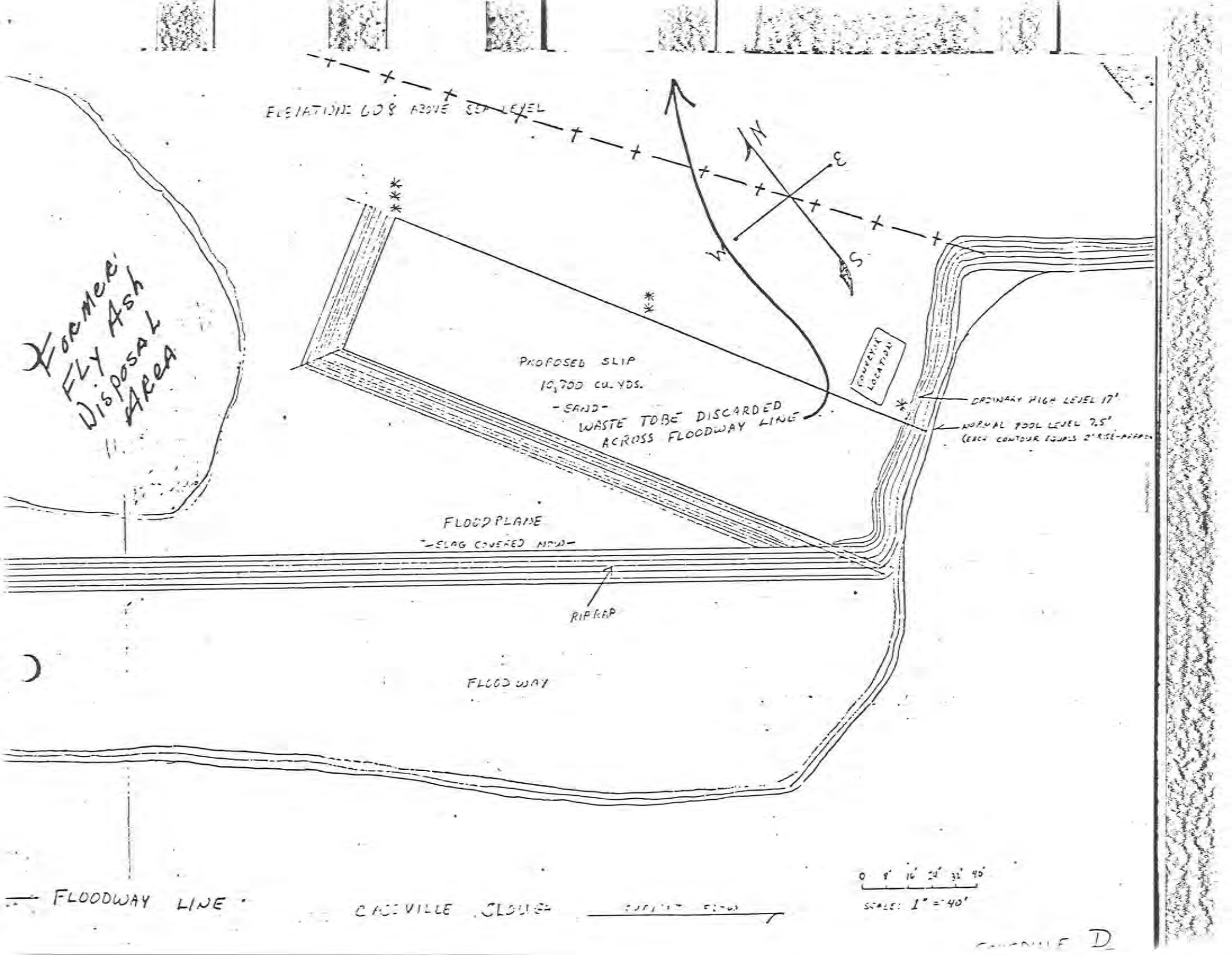

RIVER
CASSVILLE SLOUGH
NELSON DEWEY MEMORIAL STATE PARK
STONEFIELD VILLAGE
WASTE DISPOSAL AREA (COLD PLAIN EXCAVATION)
SLAG PILE TO BE MOVED
PROPOSED SLIP
WP&L DOCK
WISCONS
GRANT COUNTY
OWA
LAYTON COUNTY
FURNACE BRANCH
WISCONSIN ST
ARTHUR ST
FREDERICK ST
CASSVILLE
DES MOINES ST
CRAWFORD ST
MILWAUKEE ST PAUL AND PACIFIC R R
LEGEND
GOVERNMENT PROPERTY
WILDLIFE SANCTUARY*
WING DAM
PAVED ROAD
GRAVEL ROAD
UNIMPROVED ROAD
FEDERAL HIGHWAY
STATE HIGHWAY
COUNTY ROAD
LEVEE
BANK PROTECTION
AERIAL CABLE CROSSING
COMMERCIAL DOCK
RECREATIONAL SITE
RECREATIONAL SITE WITH RAMP
COMMERCIAL RECREATIONAL SITE
HISTORIC SITE
SMALL BOAT HARBOR, MARINA, BOAT CLUB
PRIVATE NAVIGATION LIGHT
RIVER GAGE
GOVERNMENT LIGHT
GOVERNMENT DAYMARK
GOVERNMENT LIGHT-DAYMARK
GOVERNMENT LIGHTED BUOY
MOORINGS
MILEAGE ABOVE OHIO RIVER
MIDCHANNEL SAILING LINE
CURRENT
SUBMERGED WING DAM
SUBMERGED BANK PROTECTION
SUBMERGED FEATURE
SUBMERGED PIPE OR CABLE
* RESTRICTED AREA - INFORMATION RELATIVE TO PERMISSIBLE HUNTING OR FISHING MAY BE OBTAINED FROM THE BUREAU OF SPORT FISHERIES AND WILDLIFE, MINNEAPOLIS, MINNESOTA
STATUTE MILES

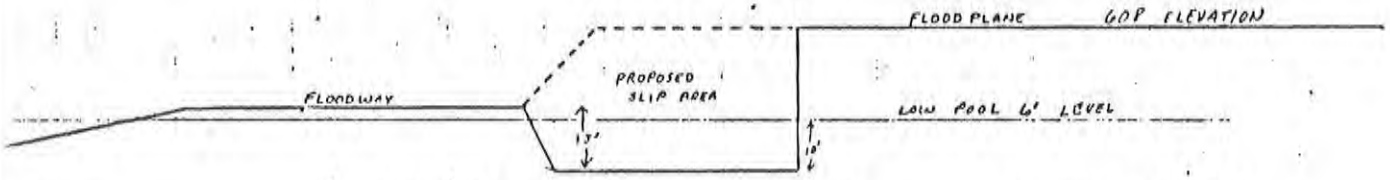


PROPOSED SLIP SITE

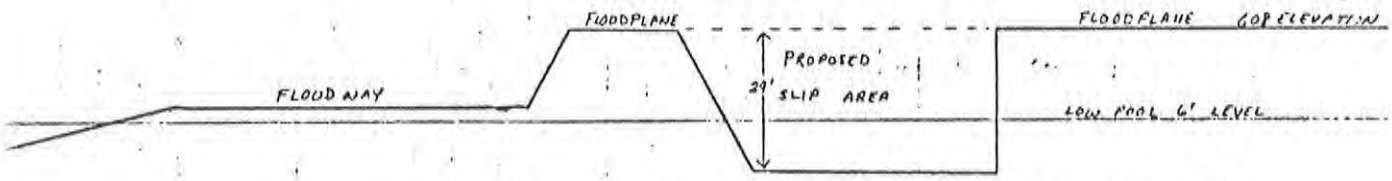
WASTE DISPOSAL AREA FROM SLIP

SCHEDULE # 4

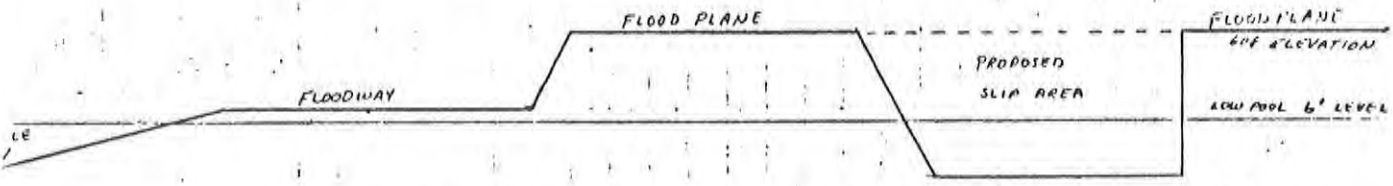

ELEVATIONS ARE ABOVE SEA LEVEL
Former Fly Ash Disposal Area
PROPOSED SLIP
10,700 CU. YDS.
- SAND -
WASTE TO BE DISCARDED ACROSS FLOODWAY LINE
CONVEYOR LOCATION
ORDINARY HIGH LEVEL 17'
NORMAL POOL LEVEL 7.5'
(EACH CONTOUR EQUALS 2' RISE-APPROX.)
FLOOD PLAINE
- SLAG COVERED NOW -
RIPRAP
FLOOD WAY
FLOODWAY LINE
CAHOKIA SLOUGH
0 8' 16' 24' 32' 40'
SCALE: 1" = 40'
D



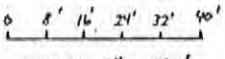
CROSS SECTION POINT * ON SCHEDULE (ENTRANCE TO SLIP)



CROSS SECTION POINT ** ON SCHEDULE (CENTER OF SLIP)

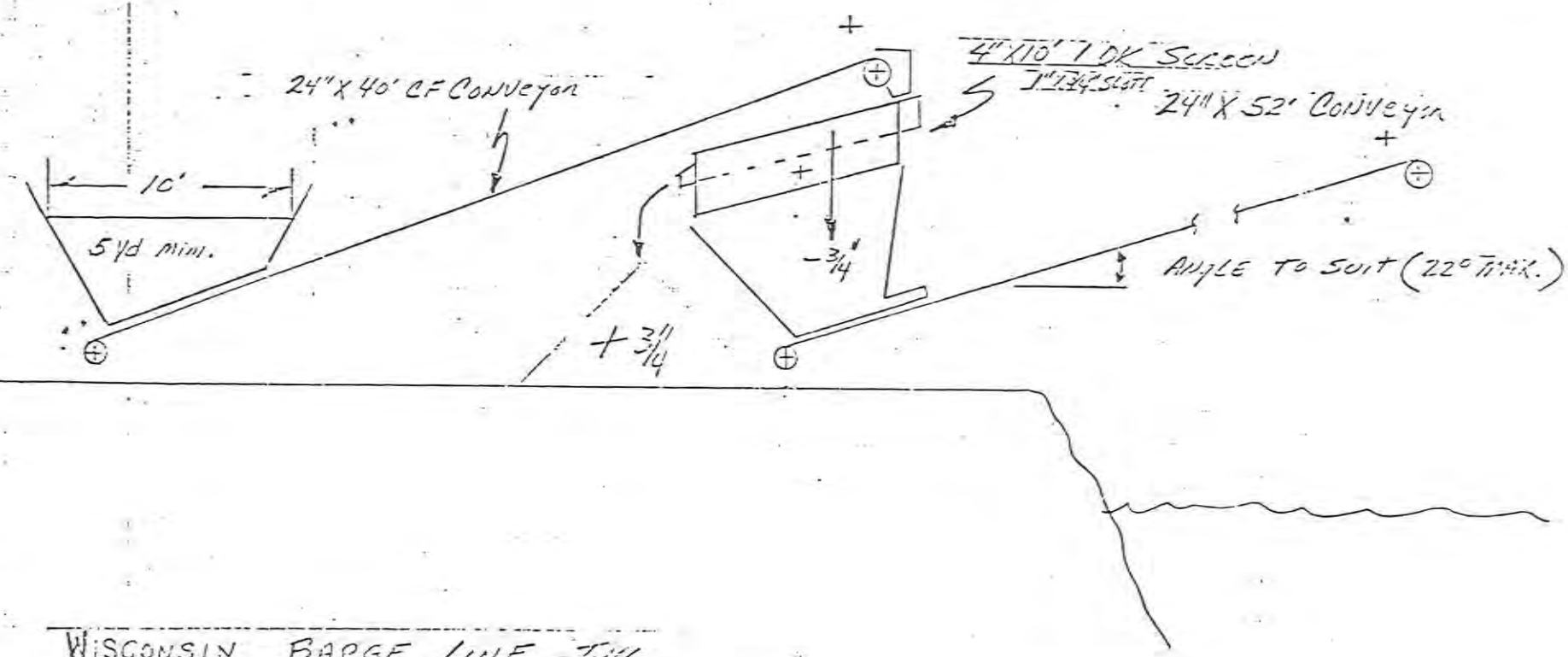


CROSS SECTION POINT *** ON SCHEDULE (END OF SLIP)



SCALE: 1" = 40'

SCHEDULE #6



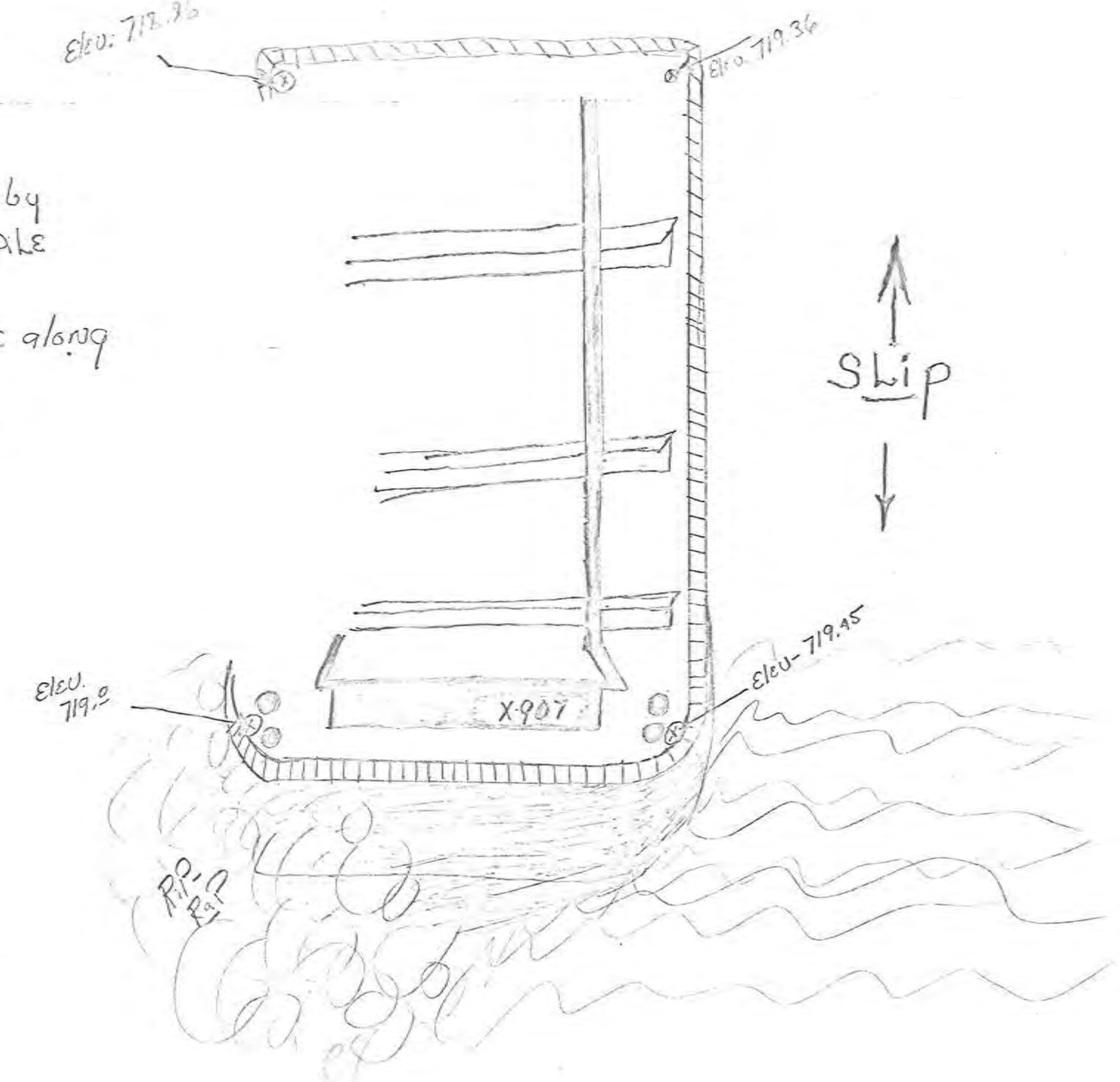
WISCONSIN BARGE LINE, INC

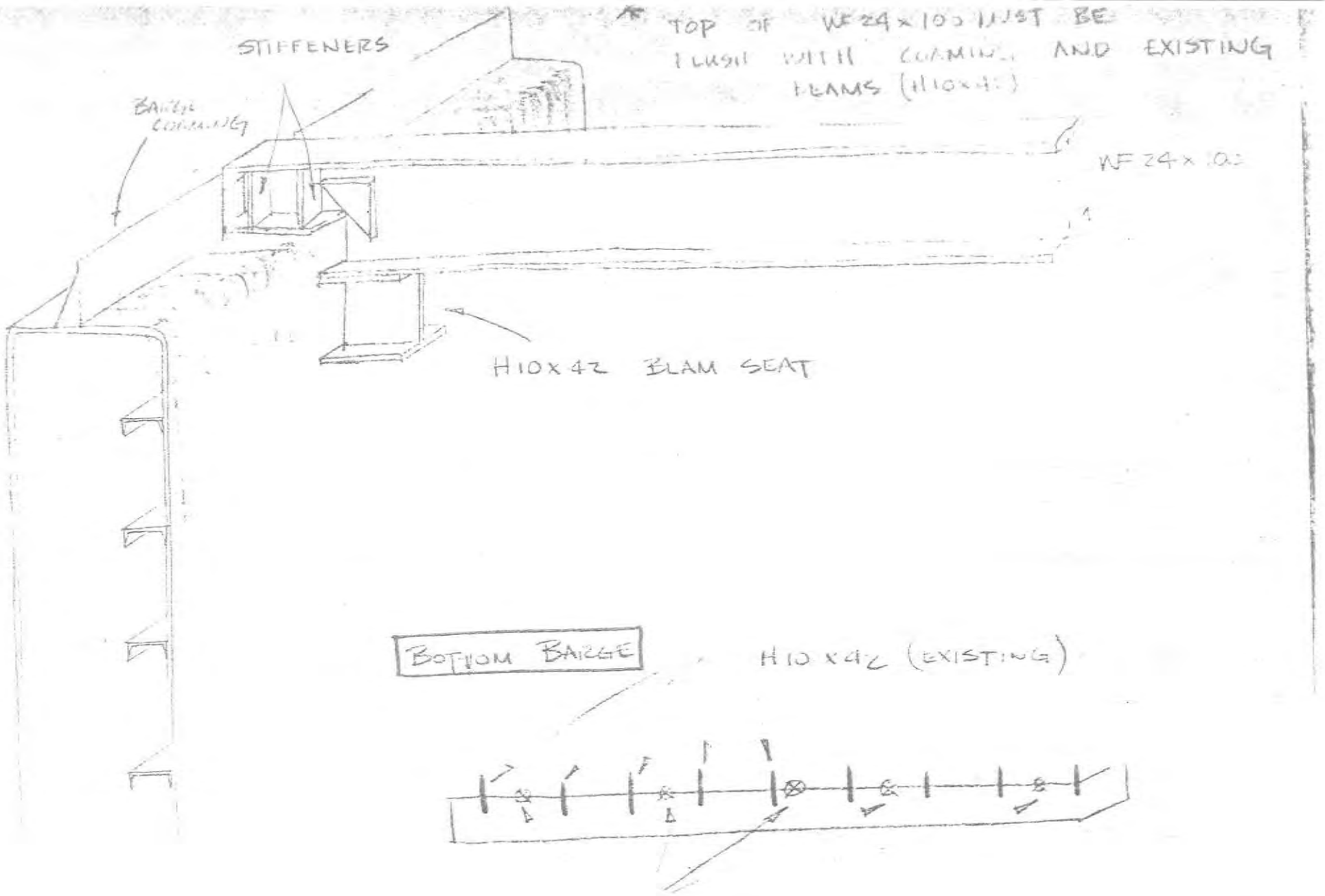
SCHEDULE #7

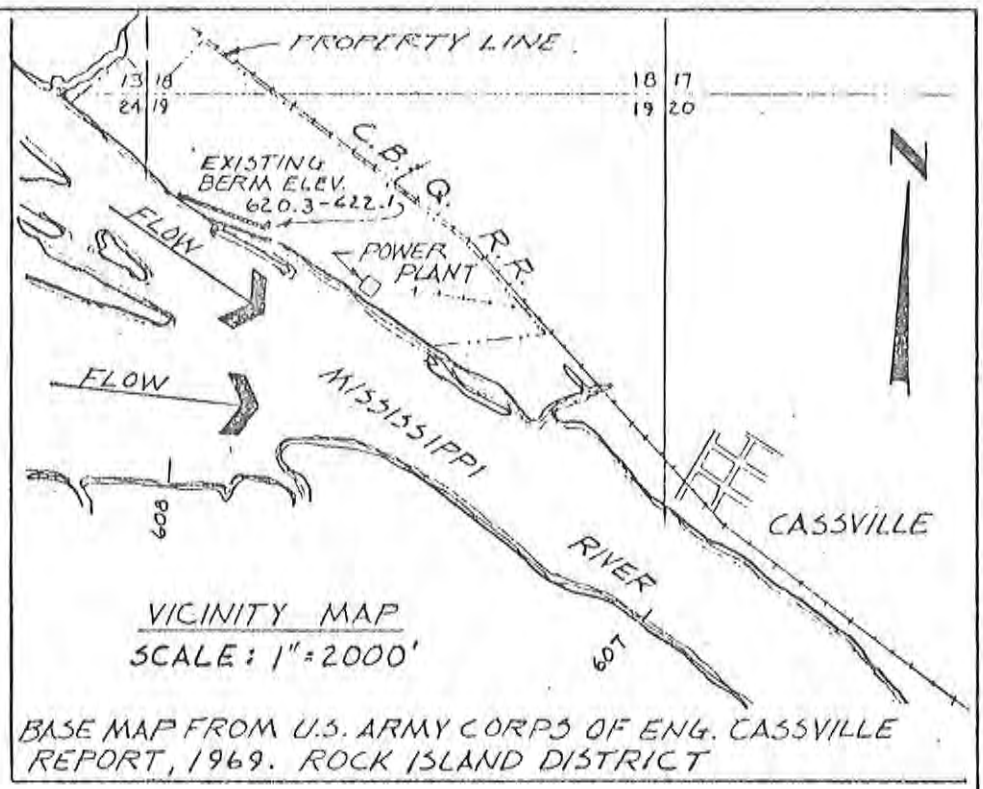
UNIVERSAL ENGR. Corp

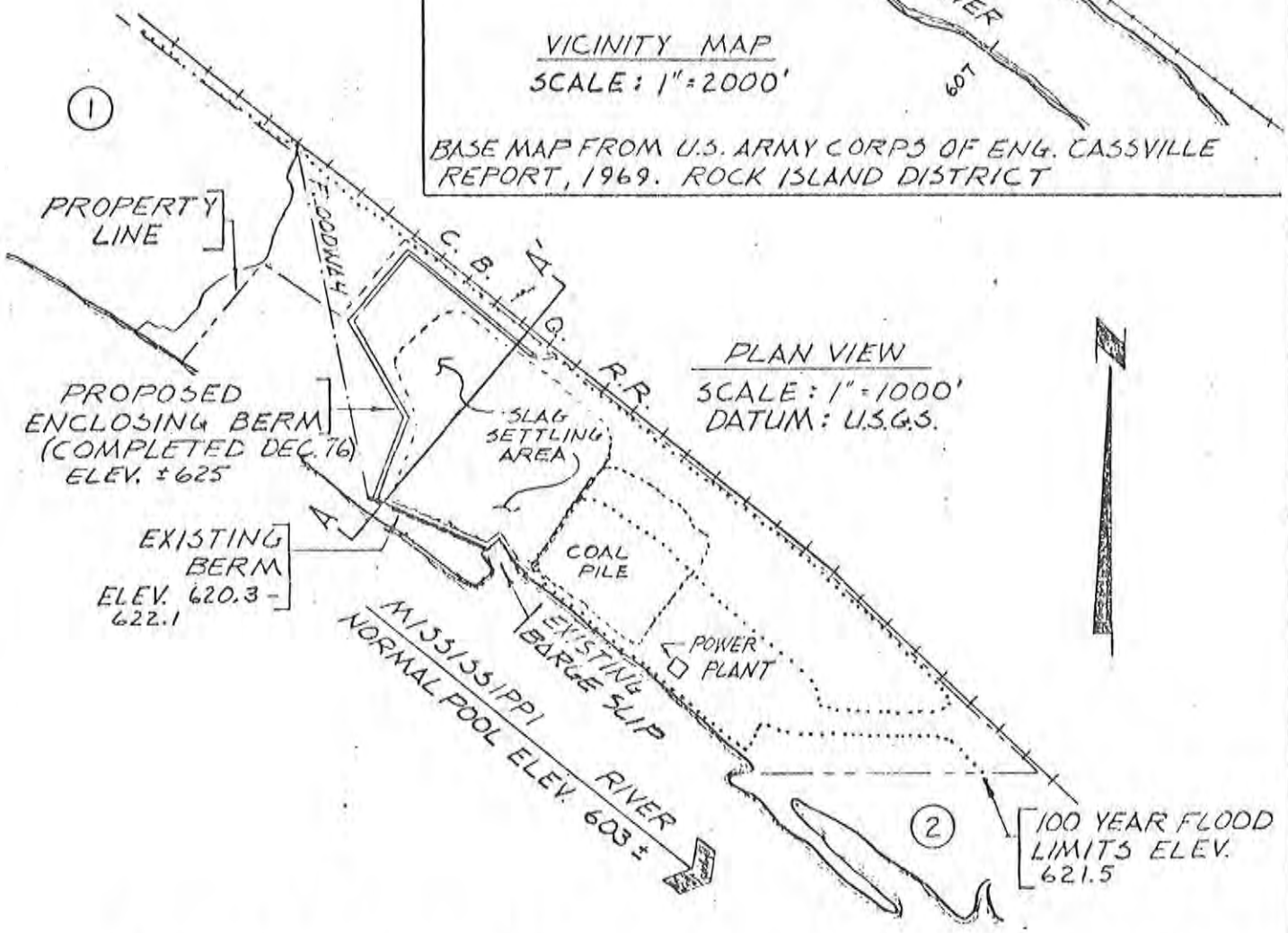
CL 4-1-71

Note: Elev. of pile by
Sand stock pile
630.0
Elev. of pile along
Tree line
633.9




STIFFENERS
BARGE COAMING
TOP OF WF 24 x 100 MUST BE FLUSH WITH COAMING AND EXISTING BEAMS (H10x42)
WF 24 x 100
H10X42 BEAM SEAT
BOTTOM BARGE
H10 X42 (EXISTING)
5 WF 24 x 100 (OPTIONAL SUGGESTION)



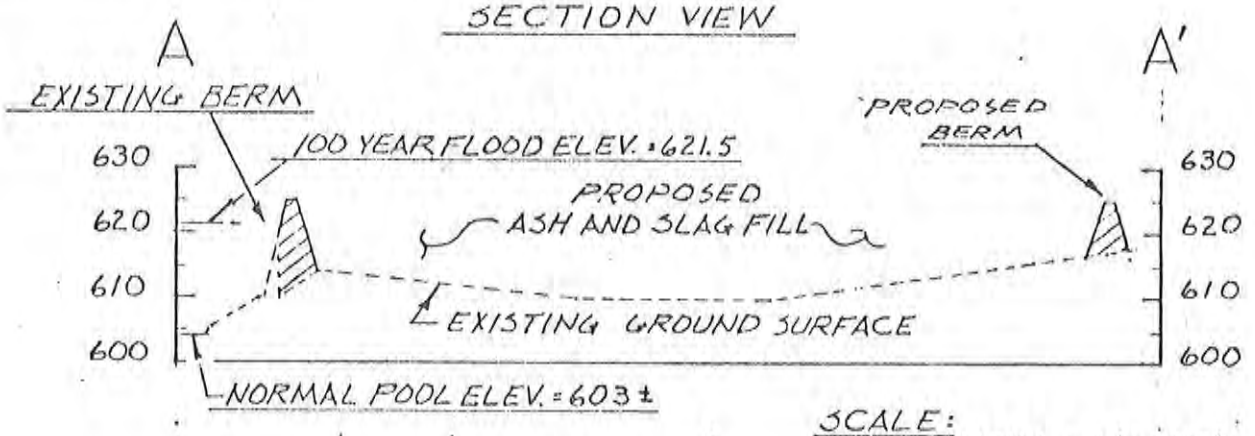


See Sheet 2 of 2 for General Notes.

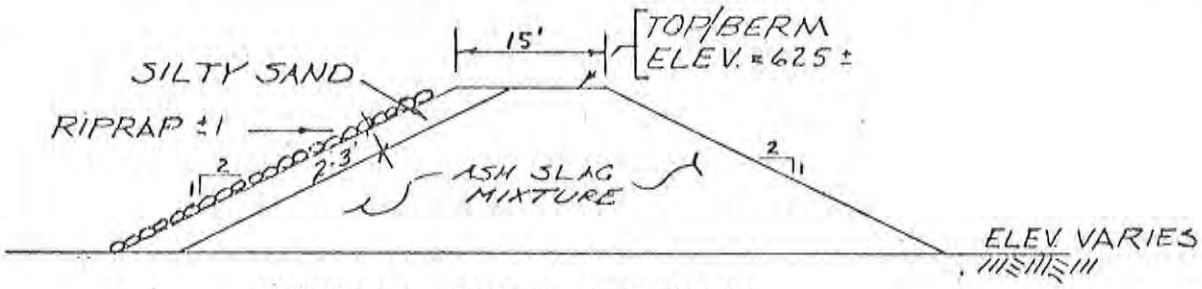
WARZYN ENGINEERING AND SERVICE COMPANY, INC
MADISON Consulting Engineers WISCONSIN

DWN SGW	CHK'D TMS	APP'D RWT	DATE 5-6-77	C-6299-A35

SECTION VIEW



SCALE:
HORIZONTAL = 1" = 300'
VERTICAL = 1" = 30'



TYPICAL BERM SECTION
SCALE: 1" = 20'

Purpose: Enclose area for settling pond and slag disposal

Datum: USGS

Adjacent Property Owners:

1. Wisconsin State Historical Society
2. Village of Cassville

Notes:

1. Approximately 52,000 c.y. of material needed for exterior berm construction
2. Approximately 56,000 c.y. of slag & ash to be disposed of yearly.
3. Approximately 55,000 c.y. of fill needed for final cover.
4. Volumes are based on preliminary engineering estimate.

Proposed berm construction and disposal of power plant slag & ash

In Mississippi River, Pool II

Near Cassville, Wis. (River Mile 608)

County of Grant State of Wisconsin

Application by Wisconsin Power and Light Company

WARZYN ENGINEERING AND SERVICE COMPANY, INC
MADISON Consulting Engineers WISCONSIN

DWN SGW	CHK'D TMS	APP'D RWT	DATE 5-6-77	C 6299-A??

7-28-77

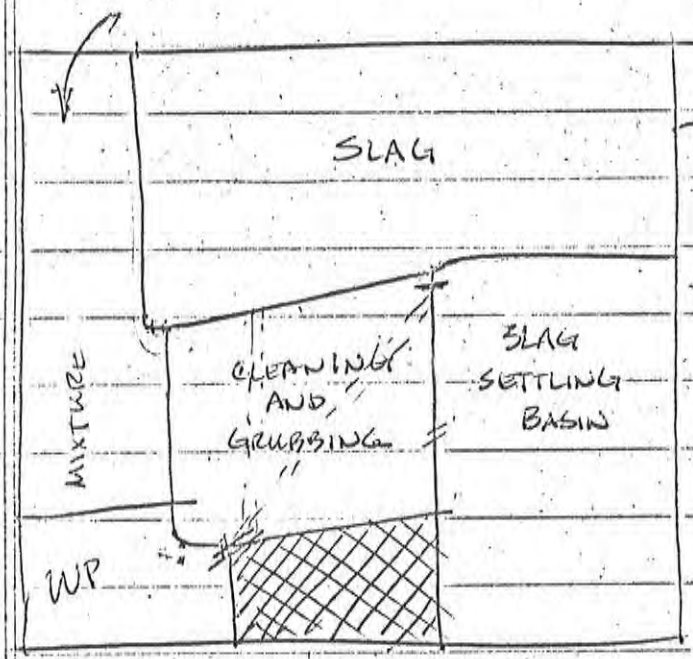
Bl

Brian Jansen

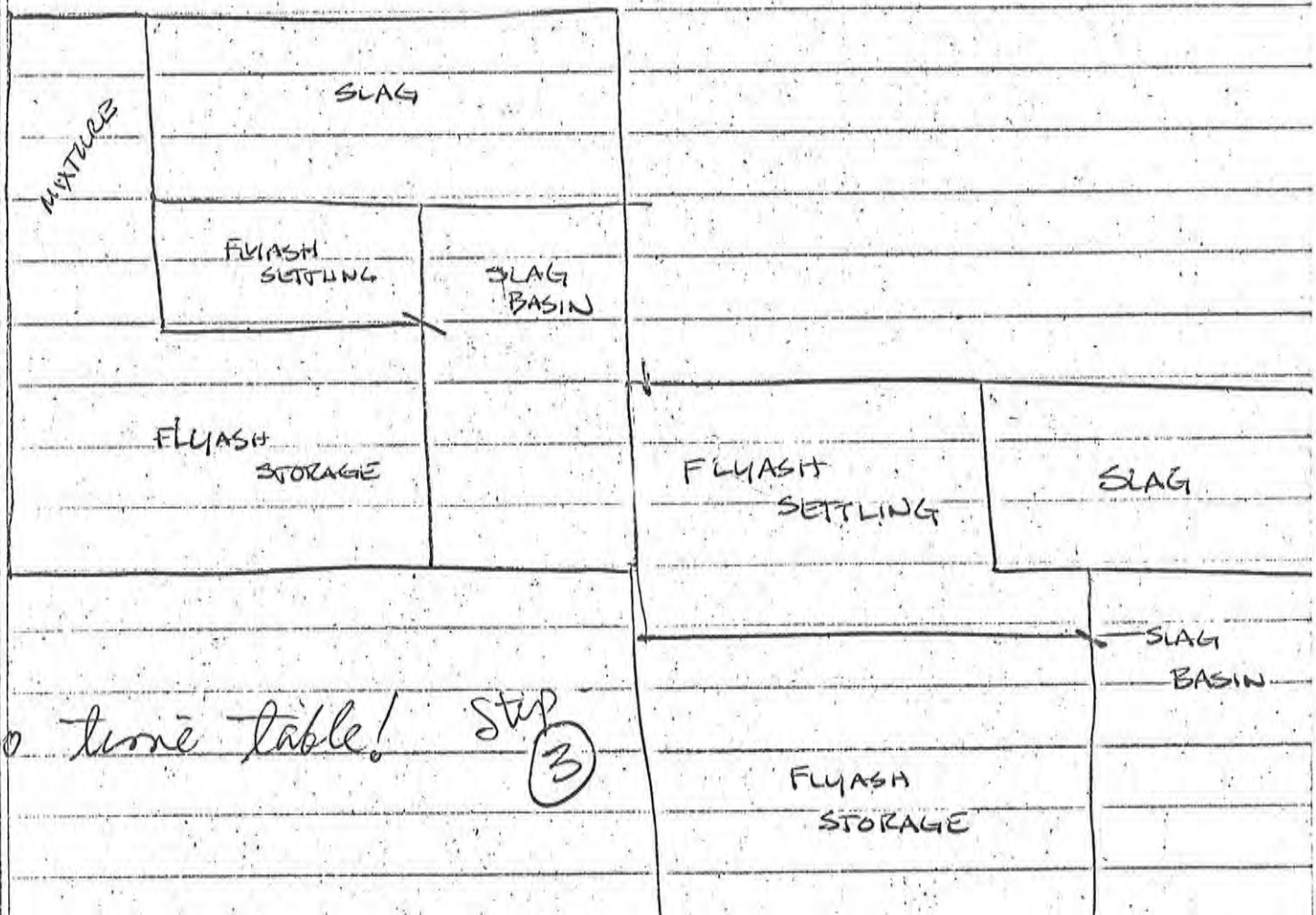
Brian Trower

Dick Vorpahl.

Step (1)



Step (2)



No time table!

Step (3)

7-28-77

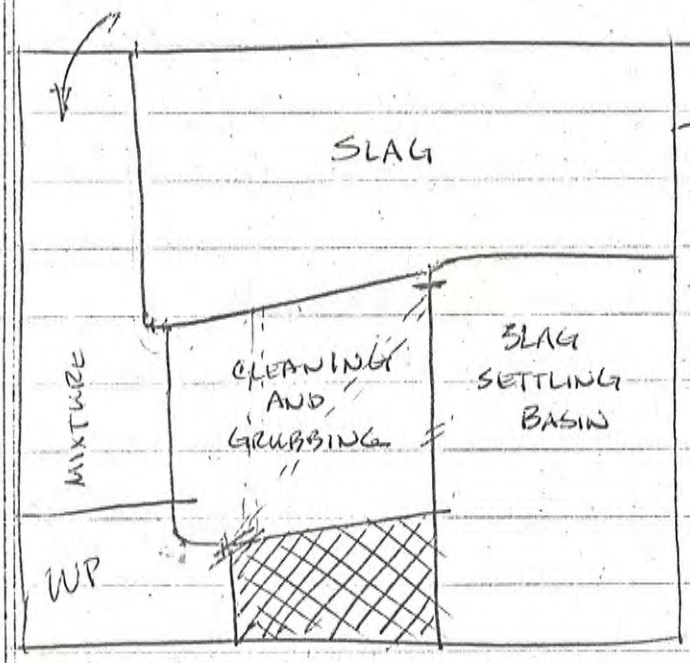
BL -

Brian Jansen

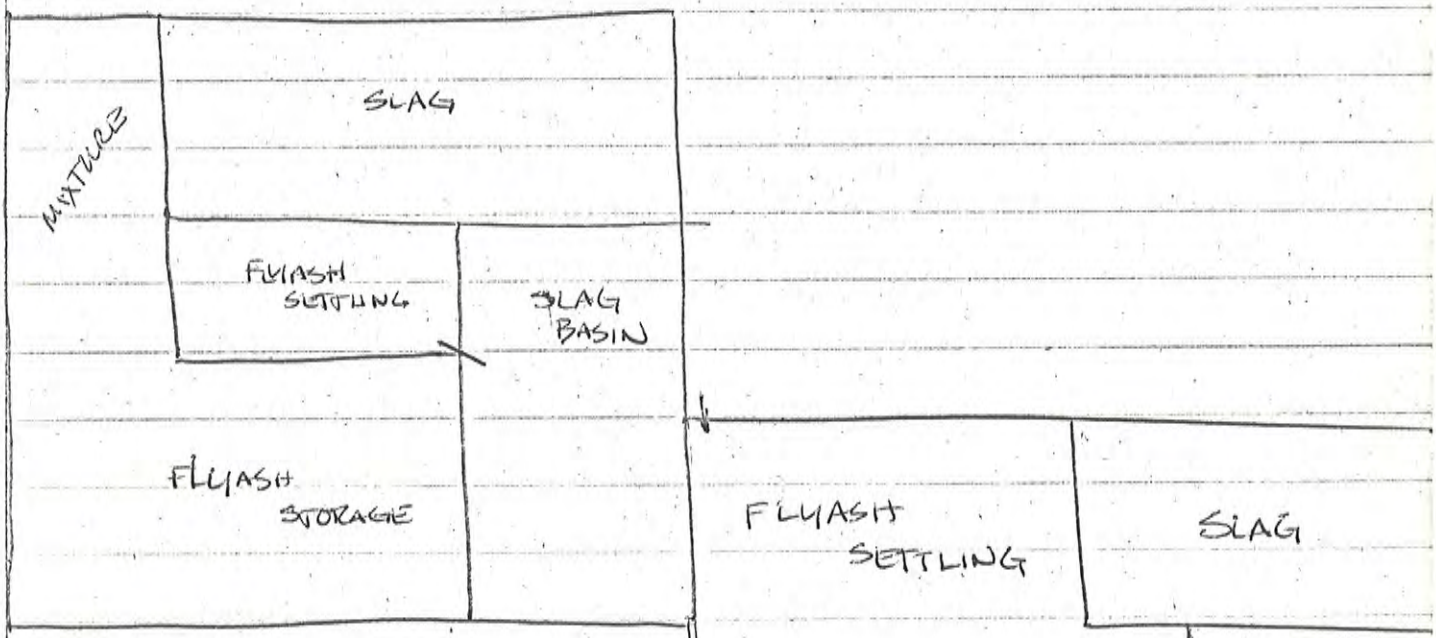
Brian Trower

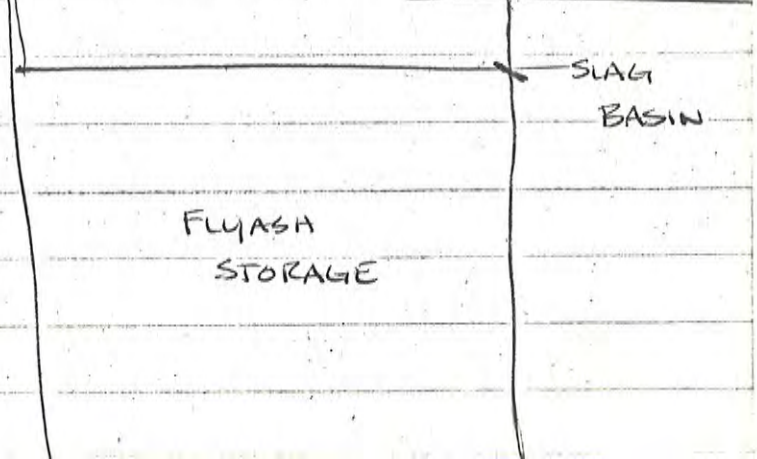
Dick Vorpahl.

Step (1)

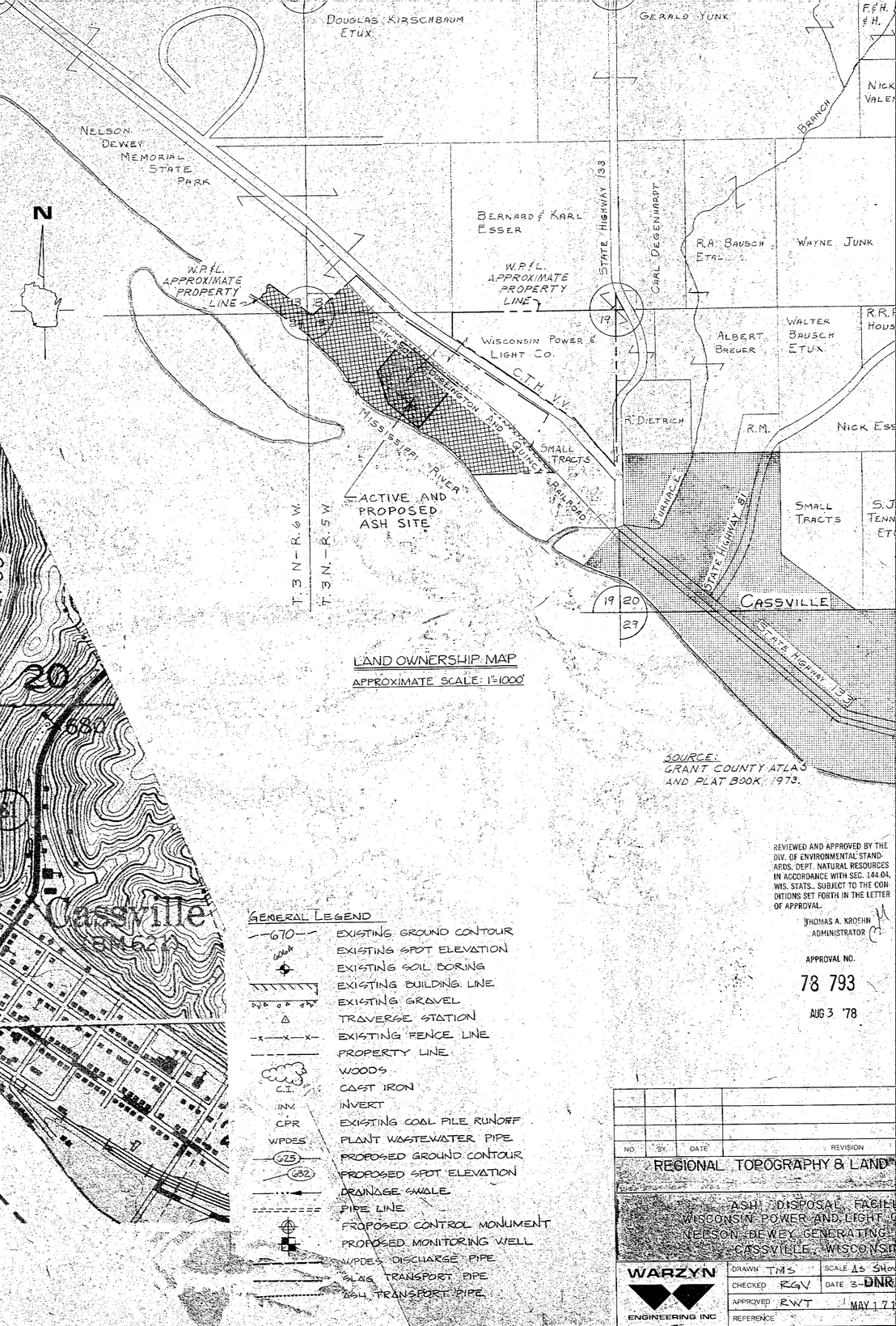


Step (2)





No time table! Step (3)



SOURCE:
GRANT COUNTY ATLAS
AND PLAT BOOK, 1973.

REVIEWED AND APPROVED BY THE DIV. OF ENVIRONMENTAL STANDARDS, DEPT. NATURAL RESOURCES IN ACCORDANCE WITH SEC. 144.04, WIS. STATS., SUBJECT TO THE CONDITIONS SET FORTH IN THE LETTER OF APPROVAL.

THOMAS A. KROEHN
ADMINISTRATOR

APPROVAL NO.

78 793

AUG 3 '78

GENERAL LEGEND

- 670 — EXISTING GROUND CONTOUR
- 604ok EXISTING SPOT ELEVATION
- EXISTING SOIL BORING
- EXISTING BUILDING LINE
- EXISTING GRAVEL
- TRAVERSE STATION
- EXISTING FENCE LINE
- PROPERTY LINE
- WOODS
- C.I. CAST IRON
- INV. INVERT
- CPR EXISTING COAL PILE RUNOFF
- WPDES PLANT WASTEWATER PIPE
- 625 PROPOSED GROUND CONTOUR
- 632 PROPOSED SPOT ELEVATION
- DRAINAGE SWALE
- PIPE LINE
- PROPOSED CONTROL MONUMENT
- PROPOSED MONITORING WELL
- WPDES DISCHARGE PIPE
- SLAG TRANSPORT PIPE
- ASH TRANSPORT PIPE

NO.	BY	DATE	REVISION

REGIONAL TOPOGRAPHY & LAND

ASH DISPOSAL FACIL
WISCONSIN POWER AND LIGHT
NELSON DEWEY GENERATING
CASSVILLE, WISCONSIN

WARZYN ENGINEERING INC

DRAWN	TMS	SCALE 1:1 Sho
CHECKED	RGV	DATE 3-DNR
APPROVED	RWT	MAY 17
REFERENCE		

GENERAL NOTES

1) BASE MAP FOR DRAWINGS SHEET 2 OF 10 THRU SHEET 7 OF 10 BASED ON INFORMATION OBTAINED FROM DRAWINGS PREPARED BY SARGENT & LUNDY, ENGINEERS, CHICAGO, ILLINOIS, DATED 11/61 AND FROM TOPOGRAPHIC SURVEYS PERFORMED BY WARZYN ENGINEERING, INC. DATED 1/76 AND 8/77.

2) PROJECT GRID SYSTEM SHOWN ON THE DRAWINGS BASED ON NELSON DEWEY PLANT GRID SYSTEM. CONCRETE MONUMENTS FOR PLANT GRID SYSTEM ARE SHOWN ON SHEET 2 OF 10.

3) PROJECT BENCHMARK IS TOP OF STAINLESS STEEL BOLT ON CONCRETE MONUMENT GRID 0+00N, 0+00E AS SHOWN ON SHEET 2 OF 10. ELEVATION = 621.88

4) ALL WORK DONE DURING AND AFTER ASH DISPOSAL OPERATIONS SHALL CONFORM TO THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES SOLID WASTE MANAGEMENT RULES, WISCONSIN ADMINISTRATIVE CODE NR 151.

MUDDY HOLLOW ROAD

C.B.&Q. RR. DOUBLE TRACK

INV.=617.6

GRID MONUMENT 0+00W

TRUE NORTH

GRID NORTH

EXISTING PERIMETER BERM

BERM

WOODS

ELEV. 619±

10" S.P.E.

ROAD

PUMP STATION

610 RETENTION BASIN

SETTLING

SETTLING

INFILTRATION

EXISTING PLANT WASTE WATER BASINS

INVERT-616.9

B-20

GRID SYSTEM CONCRETE MONUMENT-0+00N, 0+00E AND PROJECT BENCHMARK-ELEVATION = 621.88

WIS. POWER & LIGHT CO. NELSON DEWEY PLANT

B-19

B-21

VALVE PIT

WPDES

610

620

630

ELEV. 608±

ELEV. 608±

ELEV. 608±

B-13A

B-13

B-14

B-10

B-9

B-12

B-8

B-5

B-15

B-16

B-11

B-7

T.P.#1

T.P.#2

T.P.#3

T.P.#4

TOP OF SLOPE

COVER SOIL STOCKPILE

COVER SOIL STOCKPILE

BARGE SLIP

EXISTING PERIMETER BERM

ASH SLAG

WPDES

MISSISSIPPI RIVER

10+00N

8+00N

6+00N

4+00N

2+00N

0+00N

2+00S

4+00S

6+00S

8+00S

26+00W

24+00W

22+00W

20+00W

18+00W

16+00W

14+00W

12+00W

10+00W

8+00W

6+00W

4+00W

2+00W

0+00

2+00E

LEGEND

- EXISTING FLYASH & SLAG SETTLING AREA
- EXISTING INFILTRATION AREA
- EXISTING SLAG PILE
- TEST PIT

REVIEWED AND APPROV
DIV. OF ENVIRONMENTA
ARDS, DEPT. NATURAL R
IN ACCORDANCE WITH S
WIS. STATS. SUBJECT T
DITIONS SET FORTH IN T
OF APPROVAL.

THOMAS A. KR
ADMINISTRA

APPROVAL NO.

78 793

AUG 3 '78

NO.	BY	DATE	REVISIONS

EXISTING SITE TOPOGRA

ASH DISPOSAL FACILITY
WISCONSIN POWER AND LIGHT CO.
NELSON DEWEY GENERATING
CASSVILLE, WISCONSIN

WARZYN

DRAWN	TEP	SCALE 1" = 100'
CHECKED	RGV	DATE 3-29-78
APPROVED	RWT	

DNR

NOTES:

1) REMOVE FLYASH DEPOSITS IN THIS AREA (EXCLUDING BASIN ①) AND DISPOSE OF WEST OF GRID LINE 1+00N TO THE GRADES SHOWN (WITH ALLOWANCE FOR FINAL COVER) ON SHEET 4 OF 10.

2) EXCAVATE TO ELEVATION 608 USING SOIL FOR FINAL COVER AS PHASE I PROGRESSES (26000 C.Y. REQUIRED). STOCKPILE SOIL TEMPORARILY AS SHOWN FOR FINAL ABANDONMENT OF PHASE II.

3) STOCKPILE REMAINING SOIL (8200 C.Y.) AS SHOWN ON SHEET 4 OF 10 FOR USE AS FINAL COVER FOR PHASES III & IV.

4) UTILIZE ALL FLYASH BASINS ACCORDING TO SEQUENCE SHOWN.

10+00N
8+00N
6+00N
4+00N
2+00N
0+00N
2+00S
4+00S
6+00S
8+00S
10+00W
12+00W
14+00W
16+00W
18+00W
20+00W
22+00W
24+00W
2+00E
4+00E
6+00E
8+00E
10+00E

MUDDY HOLLOW ROAD

C.B. & Q. RR DOUBLE TRACK

PHASE I

PHASE II

PHASE III

PHASE IV

CONSTRUCT MONITORING WELL #20
5+00N 24+50W

4+90N 20+00W

REMOVE EXISTING BERM AS REQUIRED

INLET FLYASH VIA OPEN CHANNEL TO BASINS ① THRU ⑤

ABANDON 4" ∅ PIPE

5+80N 12+00W

CPR 12" C.I. PIPE INV. = 610.8

EXISTING PLANT WASTE WATER BASINS

PUMP STATION

INV. = 615.5

INV. = 618.0

SETTLING

SETTLING

INFILTRATION

APPROX. SETTLING BASIN LIMITS CONSTRUCT SLAG BERMS

① ② ③ ④ ⑤

CONSTRUCT WELL #25
1+30N 20+00W

WOODS

TEMPORARY STOCKPILE AREA

SLAG

SLAG

BERM

WOODS

1+75N 15+95W

PROVIDE DISCHARGE PIPES TO INFILTRATION BASIN FOR BASINS ① THRU ⑤ OUTLET ELEV. = 620.0

PRIMARY INFILTRATION BASIN - PHASE II

1+60S 15+00W

CONSTRUCT 10" ∅ OUTFLOW PIPE

INV. = 615.0

COAL SLAG SETTLING/INFILTRATION BASIN

2+60S 18+10W

3+50S 20+00W

NOTE:
SOIL FROM ELEVATION 608 TO 605 SHALL BE SAMPLED IN SECONDARY/SETTLING/INFILTRATION SLAG BASIN FOR P200 CONTENT TO REMOVE ALL SOILS WITH P200 GREATER THAN 5%.

CONSTRUCT OUTFALL STRUCTURE. SEE PLAN AND DETAILS SHEET 10 OF 10.

CONSTRUCT CONTROL MONUMENT (4 TYP.) SEE DETAIL ON SHEET 9 OF 10

CONSTRUCT MONITORING WELLS #23 & #24

5+00S 11+30W

5+00S 12+00W

PROVIDE HEAVY RIPRAP (TYP.)

STOCKPILE AREA FOR COAL SLAG. UTILIZE AS REQUIRED. MAXIMUM STORAGE VOLUME 35000 C.Y.

EXISTING WELL #7

8+17S 18+29W

MISSISSIPPI RIVER

TRUE NORTH

GRID NORTH

WASTE SOIL FR... PRIMARY INFILTR... BASIN IN THIS A... SPREAD TO UNI... DEPTH AND SLO... PROMOTE POSIT... DRAINAGE.

REVIEWED AND APPROVED BY THE DIV. OF ENVIRONMENTAL STANDARDS, DEPT. NATURAL RESOURCES IN ACCORDANCE WITH SEC. 144.04 WIS. STATS., SUBJECT TO THE CONDITIONS SET FORTH IN THE LETTER OF APPROVAL.

THOMAS A. KROENN
ADMINISTRATOR

APPROVAL NO.
78 793

DATE 4/18

WIS. POWER & LIGHT CO.
NELSON DEWEY PLANT

VALVE PIT

ROUTE PLANT WASTEWATER PIPE TO SECONDARY BASIN

ROUTE SLAG TRANSPORT PIPE TO SLAG BASIN

SEE SHEET 1 OF 10 FOR GENERAL LEGEND
SEE SHEET 2 OF 10 FOR GENERAL NOTES

NO.	BY	DATE	REVISION

INITIAL SITE PREPARAT...

ASH DISPOSAL FACILITY
WISCONSIN POWER AND LIGHT CO...
NELSON DEWEY GENERATING ST...
CASSVILLE, WISCONSIN

WARZYN ENGINEERING INC.

DRAWN SEE | SCALE 1"=100'
CHECKED EGV | DATE DNR 4/...
APPROVED EWT | MAY 1, 1978

NOTES

1. MOVE EXISTING SLAG TO BARGE SLIP.
2. REMOVE EXISTING FLYASH/SLAG MIX AND DISPOSE OF IN PHASE I AREA. EXCAVATE TO ELEVATION 608 AND USE AS FINAL COVER AS PHASE II PROGRESSES (18,000 CUBIC YARDS REQUIRED)
3. STOCKPILE REMAINING (18,700 CUBIC YARDS) SOIL FOR PHASES III & IV. FINAL COVER AS SHOWN.
4. UTILIZE ALL FLYASH BASINS ACCORDING TO SEQUENCE SHOWN.

TRUE NORTH
GRID NORTH

MUDDY HOLLOW ROAD

C.B.&Q.R.R. DOUBLE TRACK

PHASE II

PHASE I

PROVIDE 10" FLYASH TRANSPORT PIPE. CONSTRUCT INLET FOR BASINS ① THRU ④ AS REQUIRED.

PROVIDE 12" CMP WITH ENDWALLS INV.=624.0 DISCH.=623.5

APPROX. SETTLING BASIN LIMITS

SETTLING

INFILTRATION

ABANDON FLYASH DISCHARGE PIPE

PHASE III

PROVIDE DISCHARGE PIPES TO INFILTRATION BASIN FOR BASINS ① THRU ④ OUTLET EL. 620.0

CONSTRUCT DRAINAGE SWALE. SEE TYPICAL DETAIL SHT. 8 OF 10

PRIMARY INFILTRATION BASIN PHASE II

INV. 615.0

REMOVE STOCKPILED SLAG & COMPLETE SLAG BASIN TO LINES SHOWN

CONSTRUCT 10" ø OUTFLOW PIPE

INV.=615.0

WEIR

WIS. POWER & LIGHT CO. NELSON DEWEY PLANT

PROVIDE 12" CMP WITH ENDWALLS INV.=624.0 DISCH.=623.5

STOCKPILE REMAINING SOIL FROM PHASE I & II EXCAVATION (34,000 C.Y.) OVER DISPOSED FLYASH. UTILIZE FOR FINAL COVER DURING PHASE III & IV.

SLAG SETTLING/INFILTRATION BASIN

LIMITS OF FINAL COVER

BARGE SLIP

SLAG STOCKPILE AREA

PROVIDE 12" CMP WITH ENDWALLS INV.=624.0 DISCH.=623.5 PROVIDE SOD FLUME ENTIRE LENGTH OF BERM SLOPE (TYPICAL)

MISSISSIPPI RIVER

SEE SHEET 1 OF 10 FOR GENERAL LEGEND
SEE SHEET 2 OF 10 FOR GENERAL NOTES

REVIEWED AND APPROVED BY THE DIV. OF ENVIRONMENTAL STANDARDS, DEPT. NATURAL RESOURCES IN ACCORDANCE WITH SEC. 144.04 WIS. STATS.; SUBJECT TO THE CONDITIONS SET FORTH IN THE LETTER OF APPROVAL.

THOMAS A. KROSIN
ADMINISTRATOR

APPROVAL NO.
78 793
AUG 3 '78

NO.	BY	DATE	REVISION

PHASE I ABANDONMENT - SITE PREPARAT

ASH DISPOSAL FACILITY
WISCONSIN POWER AND LIGHT CO.
NELSON DEWEY GENERATING ST
CASSVILLE, WISCONSIN

WARZYN

DRAWN [illegible] DATE [illegible]
CHECKED PAV DATE [illegible]
APPROVED RWT DNR [illegible]

MUDDY HOLLOW ROAD

C. B. & Q. RR DOUBLE TRACK

CONSTRUCT DRAINAGE SWALE SEE DETAIL SHEET 8 OF 10

LIMITS OF FINAL COVER

PUMP STATION

610 RETENTION BASIN

SETTLING

INFILTRATION

PHASE III

PHASE II

INVERT

WELL #26

WELL #25

WELL #7

CONSTRUCT DISCHARGE PIPES TO INFILTRATION BASIN FOR SAGINS ① THRU ④ OUTLET ELEV. - 620.0

PRIMARY INFILTRATION BASIN - PHASE III

APPROX. SETTLING BASIN LIMITS

COVER SOIL STOCKPILE AREA

SLAG SETTLING / INFILTRATION BASIN

SLAG STOCKPILE AREA

EDGE SLIP

PROPOSED LOCATION FOR SLAG TRANSPORT WATER RECIRCULATION BASIN. CONSTRUCT AS REQUIRED.

ROUTE FLYASH TRANSPORT PIPE AS SHOWN. CONSTRUCT INLETS FOR BASINS ① THRU ④ AS REQUIRED.

WIS. POWER & LIGHT CO. NELSON DEWEY PLANT

MISSISSIPPI RIVER

TRUE NORTH

GRID NORTH

15° 54' E

NOTES:

1) MOVE EXISTING SLAG TO BARGE SLIP.

2) EXCAVATE TO ELEVATION 608 AND USE AS REQUIRED FOR FINAL COVER FOR PHASE III (17,900 C.Y. REQ'D.) OBTAIN COVER SOIL AS NECESSARY FOR ABANDONMENT FROM STOCKPILE SHOWN ON SHEET 4 OF 10.

3) UTILIZE ALL ASH BASINS ACCORDING TO SEQUENCE SHOWN.

SEE SHEET 1 OF 10 FOR GENERAL LEGEND
SEE SHEET 2 OF 10 FOR GENERAL NOTES

REVIEWED AND APPROVED
DIV. OF ENVIRONMENTAL
ARDS, DEPT. NATURAL RE
IN ACCORDANCE WITH SE
WIS. STATS. SUBJECT TO
DITIONS SET FORTH IN TH
OF APPROVAL.

THOMAS A. KRO
ADMINISTRAT

APPROVAL NO.

78 793

AUG 3 '78

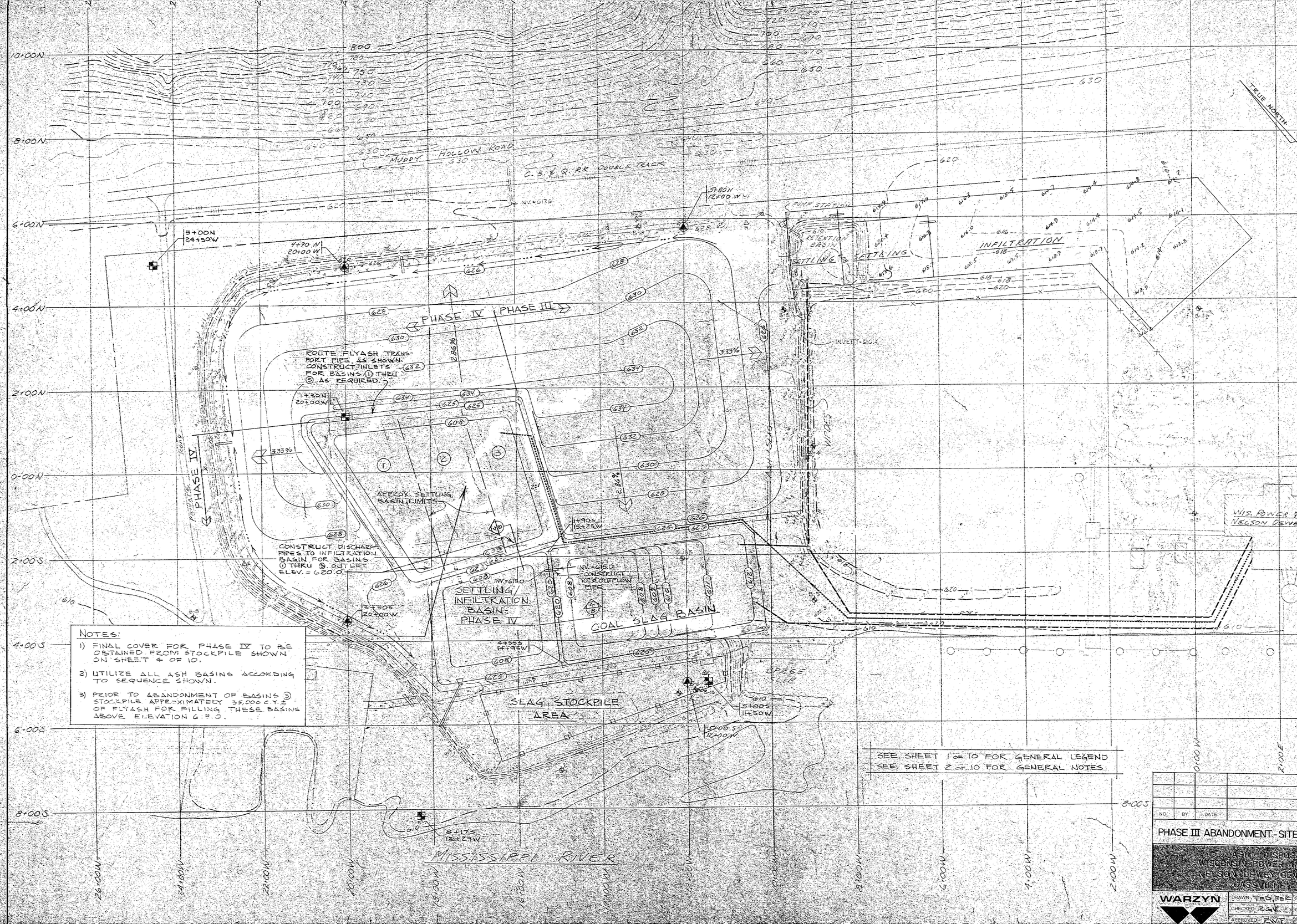
NO.	BY	DATE	REVISION

PHASE II ABANDONMENT - SITE PREPARATION

ASH DISPOSAL FACILITY
WISCONSIN POWER AND LIGHT COMP
NELSON DEWEY GENERATING STA
CASSVILLE, WISCONSIN

WARZYN

DRAWN TBD SEC. SCALE 1"=100'
CHECKED RGV DATE 3-27-78
APPROVED DNR



NOTES:

1) FINAL COVER FOR PHASE IV TO BE OBTAINED FROM STOCKPILE SHOWN ON SHEET 4 OF 10.

2) UTILIZE ALL ASH BASINS ACCORDING TO SEQUENCE SHOWN.

3) PRIOR TO ABANDONMENT OF BASINS ③ STOCKPILE APPROXIMATELY 35,000 C.Y.± OF FLYASH FOR FILLING THESE BASINS ABOVE ELEVATION 618.0.

SEE SHEET 1 OF 10 FOR GENERAL LEGEND
SEE SHEET 2 OF 10 FOR GENERAL NOTES.

REVIEWED AND APPROVED
DIV. OF ENVIRONMENTAL
ARDS, DEPT. NATURAL RE
IN ACCORDANCE WITH SE
WIS. STATS. SUBJECT TO
DITIONS SET-FORTH IN TH
OF APPROVAL.
THOMAS A. KN
ADMINISTRAT
APPROVAL NO.
78 793
AUG. 3 '78

NO.	BY	DATE	REVISION

PHASE III ABANDONMENT - SITE PREPARATION

ASH DISPOSAL FACILITY
WISCONSIN POWER AND LIGHT COMP
NELSON DEWEY GENERATING STA
CASSVILLE, WISCONSIN

WARZYN

DRAWN	T.E.D., E.E.	SCALE	1"=100'
CHECKED	R.G.V.	DATE	DNR 7-78
APPROVED	R.V.T.		

MUDDY HOLLOW ROAD

C. B. & Q. RR DOUBLE TRACK

10+00 N

8+00 N

6+00 N

4+00 N

2+00 N

0+00 N

2+00 S

4+00 S

6+00 S

8+00 S

4+90 N
20+00 W

5+80 N
12+00 W

3+50 S
20+00 W

5+00 S
12+00 W

2.86%

3.33%

3.33%

2.86%

618 RETENTION BASIN

PUMP STATION

LIMITS OF FINAL COVER

GARAGE SCALE

MISSISSIPPI RIVER

WPDES

WIS. POWER & LIGHT CO.
NELSON DEWEY PLANT

TRUE NORTH

GRID NORTH

9°22'

SEE SHEET 1 OF 10 FOR GENERAL LEGEND
SEE SHEET 2 OF 10 FOR GENERAL NOTES

REVIEWED AND APPROVED BY
DIV. OF ENVIRONMENTAL STA
ARDS, DEPT. NATURAL RESO
IN ACCORDANCE WITH SEC. 1
WIS. STATS. SUBJECT TO TH
DITIONS SET FORTH IN THE L
OF APPROVAL.

THOMAS A. K
ADMINISTRATOR

APPROVAL NO.

78 793

AUG 3 '78

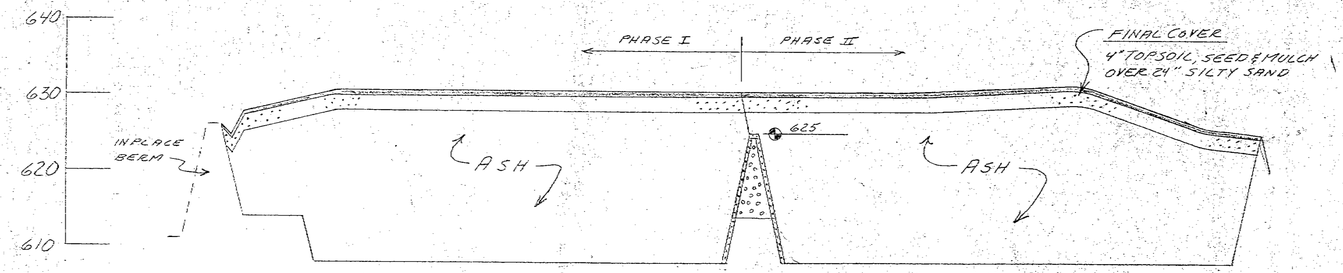
NO.	BY	DATE	REVISION

PROPOSED FINAL TOPOGRAP

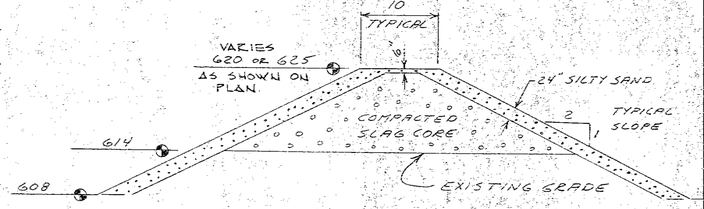
ASH DISPOSAL FACILI
WISCONSIN POWER AND LIGHT CO
NELSON DEWEY GENERATING S
CASSVILLE, WISCONSIN

WARZYN ENGINEERING INC.

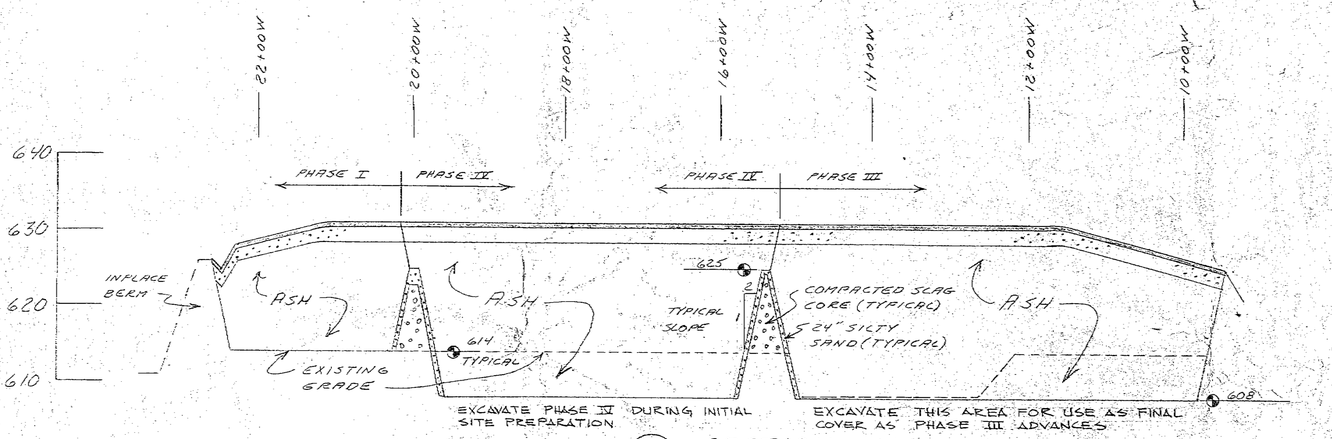
DRAWN	FED	SCALE	1"=100'
CHECKED	RGV	DATE	DEC 78
APPROVED	RWT		MAY 17 1978



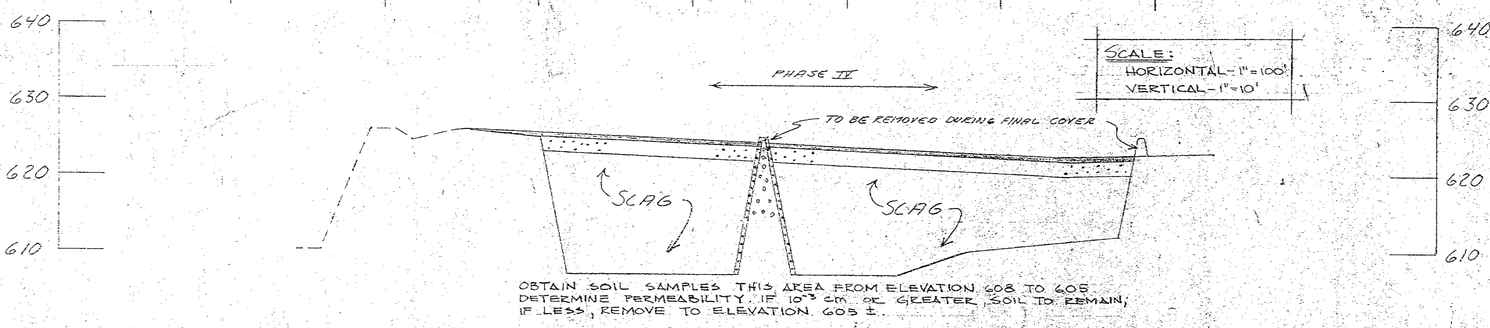
1/8 SECTION



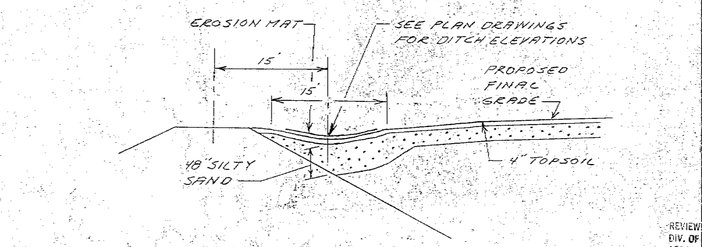
4/8 SECTION THRU TYPICAL BERM
SCALE: 1" = 10'



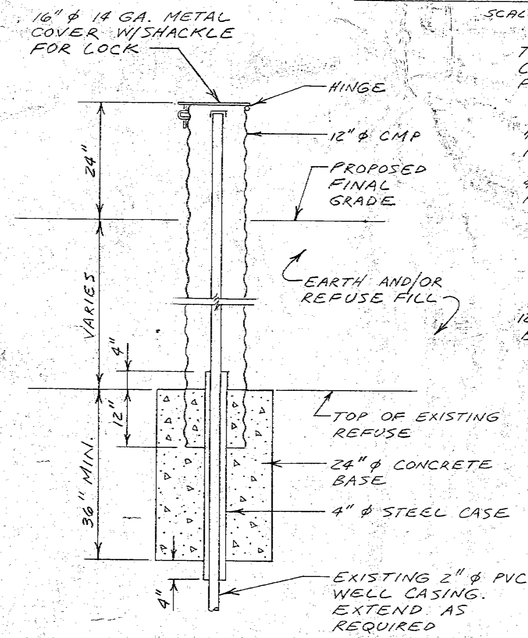
2/8 SECTION



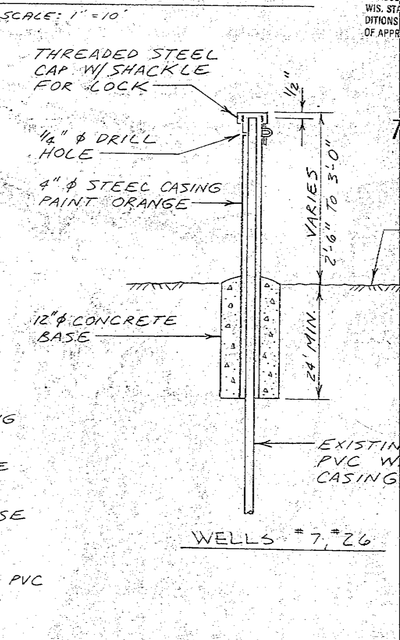
3/8 SECTION



TYPICAL SECTION THRU DRAINAGE SWALE
SCALE: 1" = 10'



WELL #25



WELLS #7, #26

MONITORING WELL PROTECTION DETAILS
NOT TO SCALE

NO.	BY	DATE	REVISION

TYPICAL CROSS SECTIONS & D

ASH DISPOSAL FACILI
WISCONSIN POWER AND LIGHT C
NELSON DEWEY GENERATING S
CASSVILLE, WISCONSIN

WARZYN ENGINEERING INC

DRAWN TED	SCALE AS SHOW
CHECKED RGV	DATE JAN 78
APPROVED RWT	MAY 17 1978

REVIEW
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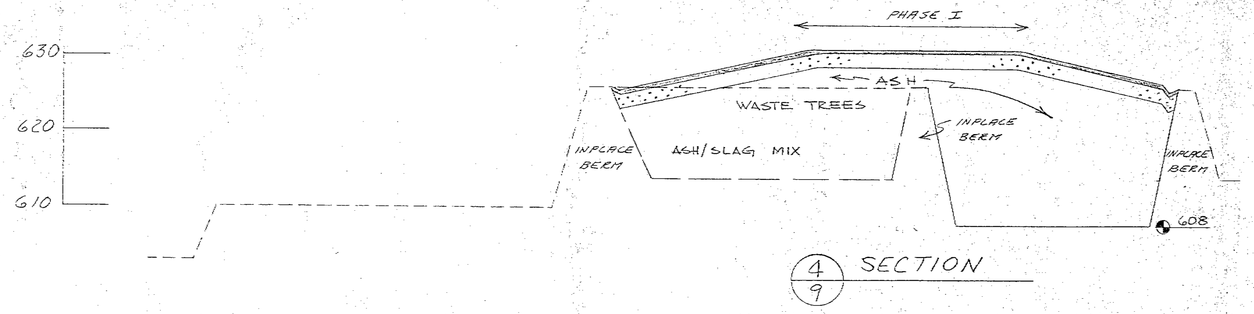
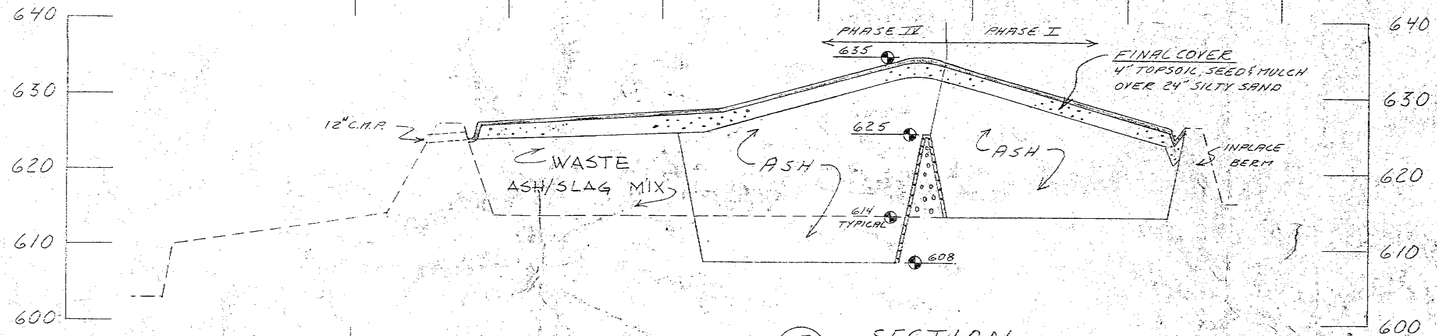
DITIONS
OF APPR

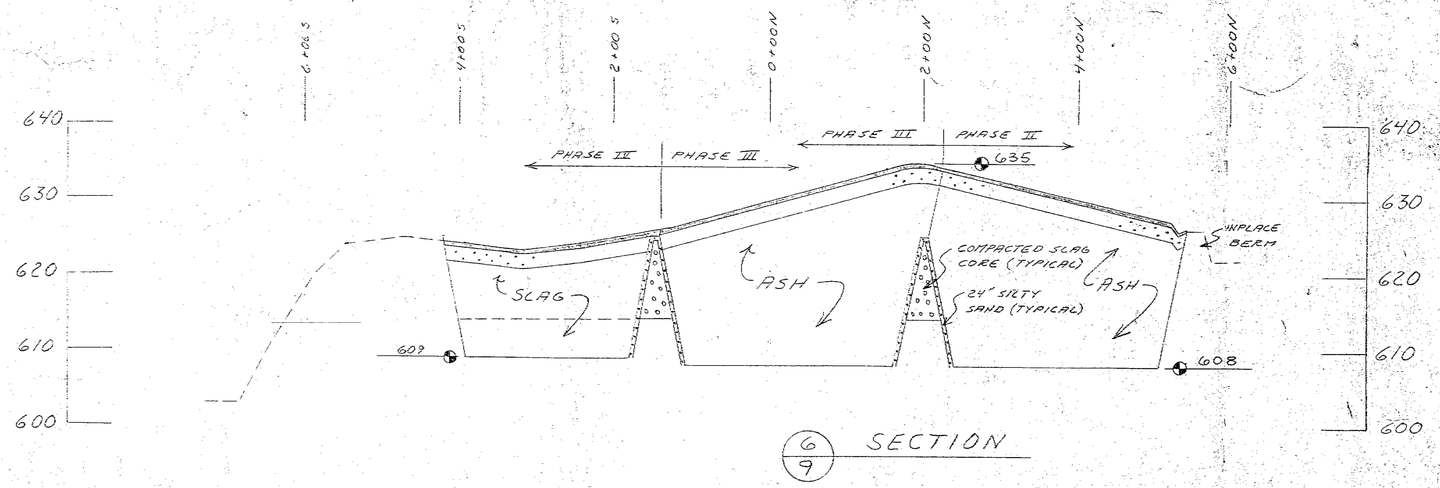


4/9 SECTION

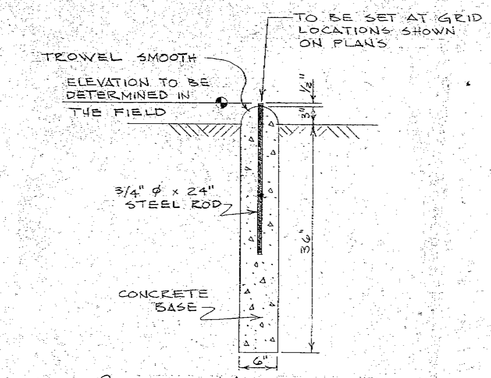


5/9 SECTION

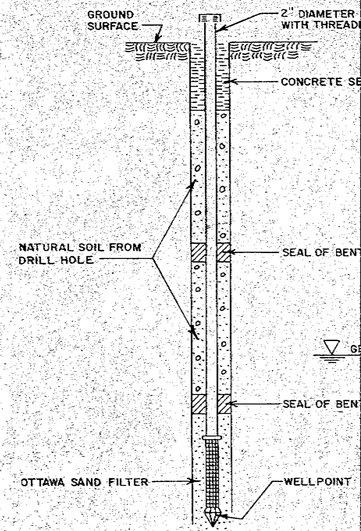
SCALE:
HORIZONTAL - 1" = 100'
VERTICAL - 1" = 10'



6/9 SECTION



CONTROL MONUMENT DETAIL
NO SCALE



SAMPLING WELL DETAI
NO SCALE

REVIEWED AND APPR
DIV. OF ENVIRONME
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IN ACCORDANCE WI
WIS. STATS., SUBJEC
DITIONS SET FORTH
OF APPROVAL.
THOMAS
ADMINIS
APPROVAL
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NO.	BY	DATE	REVISION

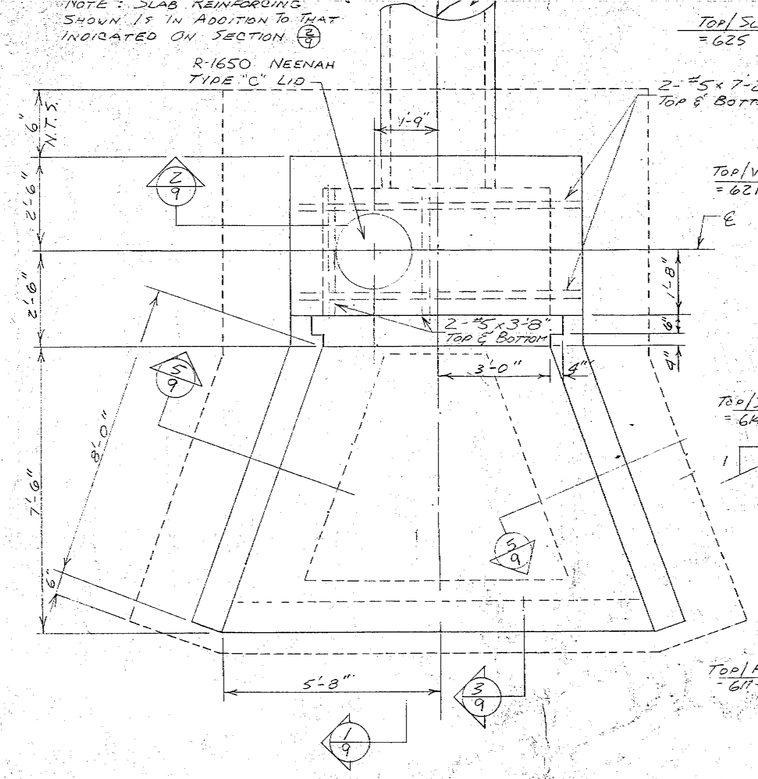
TYPICAL CROSS SECTIONS & DE

ASH DISPOSAL FACILI
WISCONSIN POWER AND LIGHT C
NELSON DEWEY GENERATING S
CASSVILLE, WISCONSIN

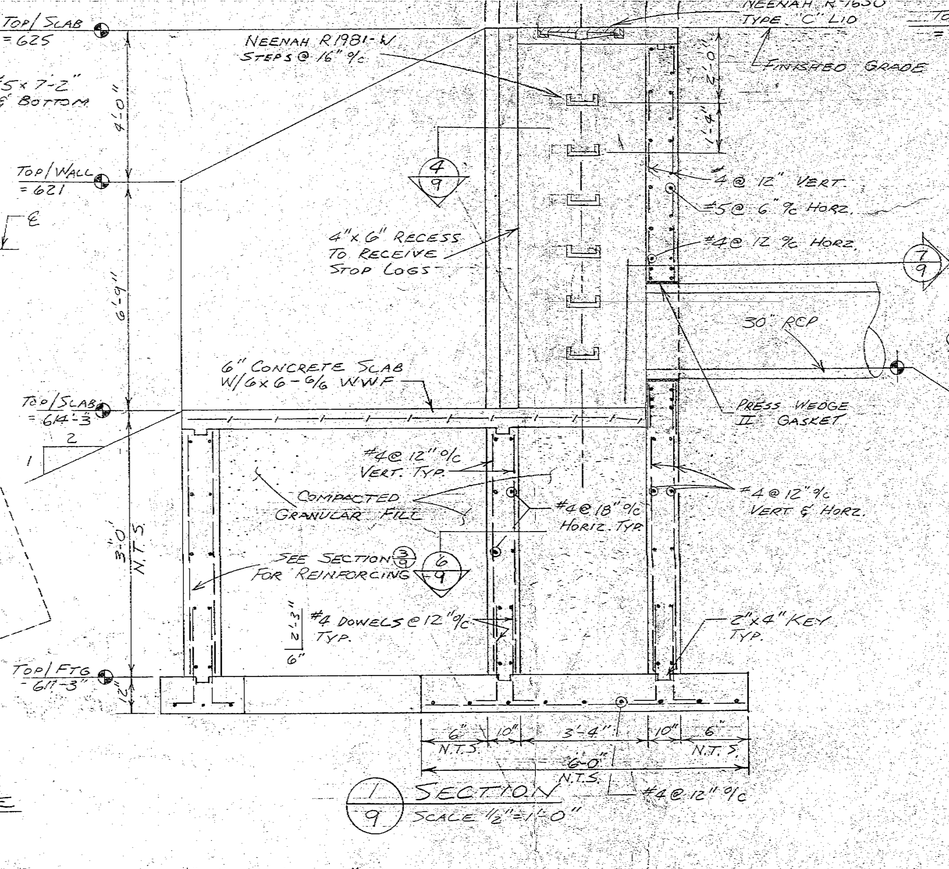
WARZYN

DRAWN TED	SCALE AS SHOW
CHECKED EGV	DNR-29-78
APPROVED EWT	MAY 1 7 1979

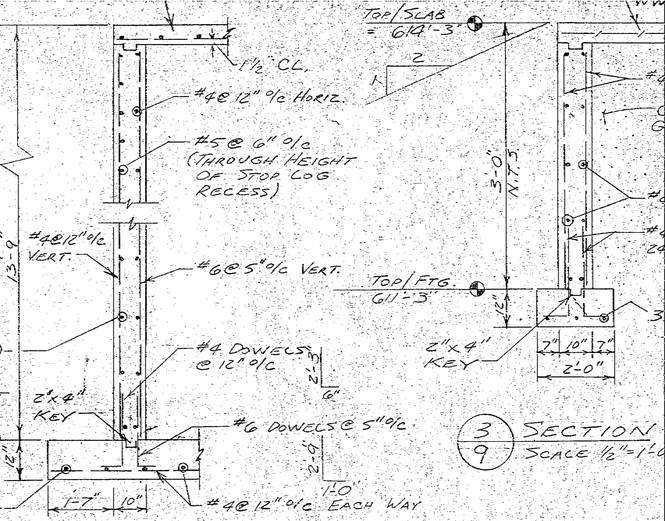
NOTE: SLAB REINFORCING SHOWN IS IN ADDITION TO THAT INDICATED ON SECTION 2/9



PLAN VIEW - OUTFALL STRUCTURE
SCALE: 1/2" = 1'-0"



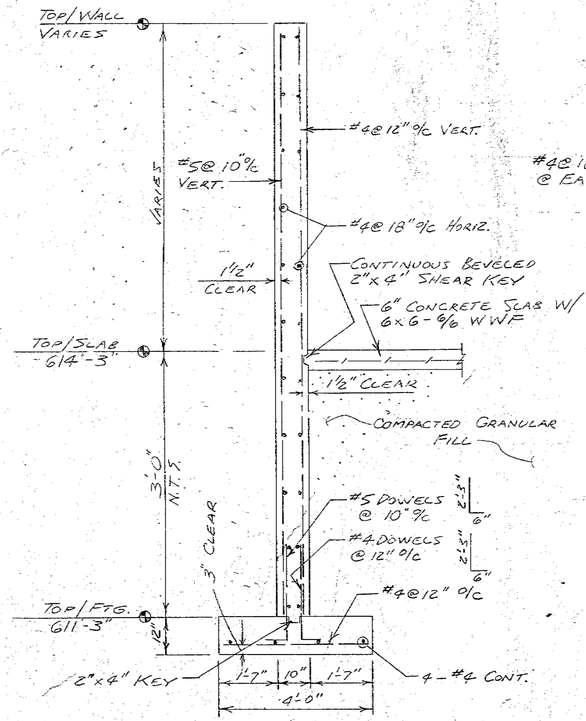
1/9 SECTION
SCALE 1/2" = 1'-0"



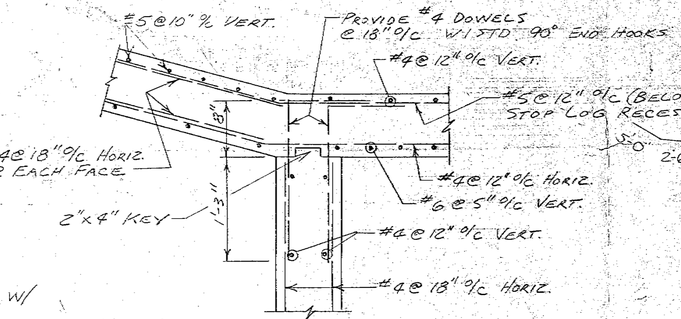
2/9 SECTION
SCALE 1/2" = 1'-0"

3/9 SECTION
SCALE 1/2" = 1'-0"

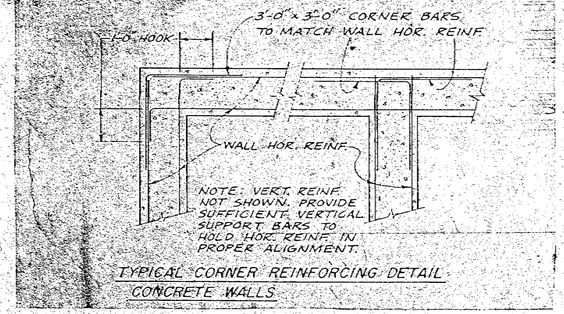
4/9 SECTION
SCALE 1" = 1'-0"



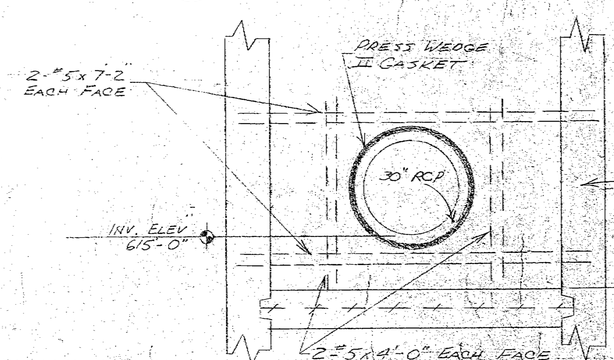
5/9 SECTION
SCALE 1/2" = 1'-0"



6/9 SECTION
SCALE 1"=1'-0"



TYPICAL CORNER REINFORCING DETAIL
CONCRETE WALLS



7/9 SECTION
SCALE: NONE

NOTE:
REINFORCING SHOWN IS IN ADDITION TO THAT INDICATED ON SECTION 1/9
SEE SECTION 2/9 FOR WALL REINFORCING TYP.

NOTES

1) MINIMUM CONCRETE COMPRESSIVE STRENGTH @
2) REINFORCING BARS: ASTM A-615 GRADE 60
3) WELDED STEEL WIRE FABRIC: ASTM A 185 60,000 PSI
4) FILL MATERIAL SHALL BE FREE DRAINING (LESS PASSING #200 SIEVE) GRANULAR MATERIAL
5) UNDER SLAB FILL SHALL BE COMPACTED TO 9 MAXIMUM DRY DENSITY, ASTM D1557
6) N.T.S. WHERE SHOWN INDICATES DRAWING NOT

NO.	BY	DATE	REVISION

OUTFALL STRUCTURAL PLAN & D

ASH DISPOSAL FACILI
WISCONSIN POWER AND LIGHT C
NELSON DEWEY GENERATING
CASSVILLE, WISCONSIN

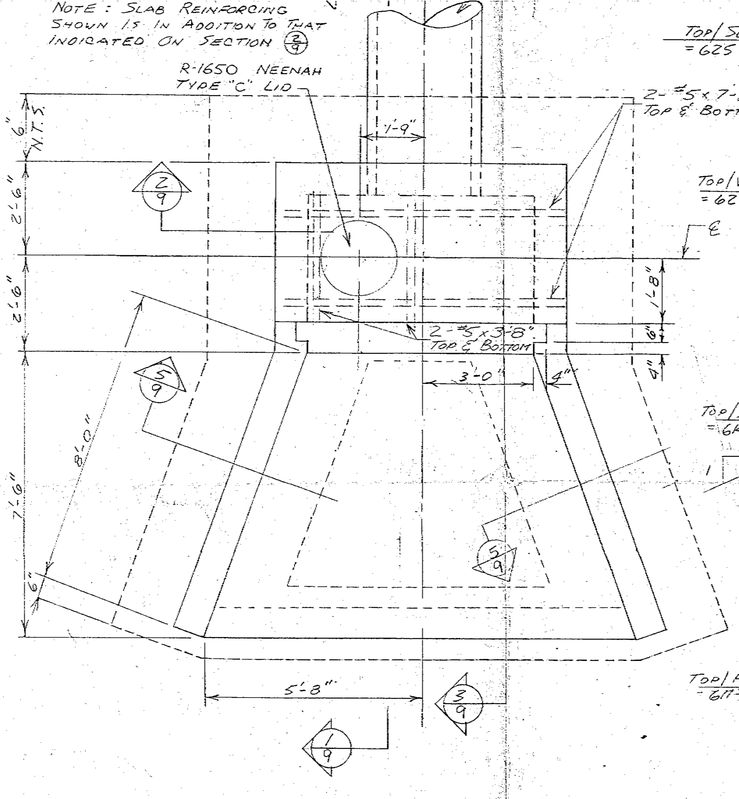
WARZYN ENGINEERING INC

DRAWN	GBH
CHECKED	RAJ
APPROVED	RWT
REFERENCE	
SCALE	AS SHO
DATE	2-7-

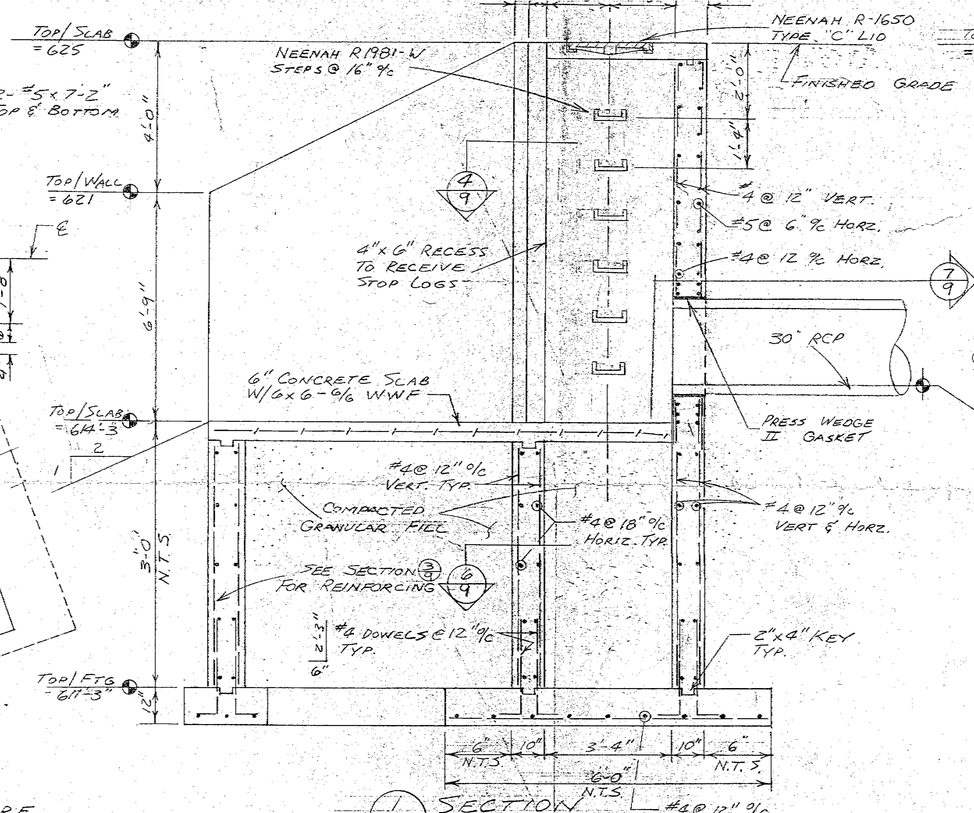
DNR

MAY 17 1978

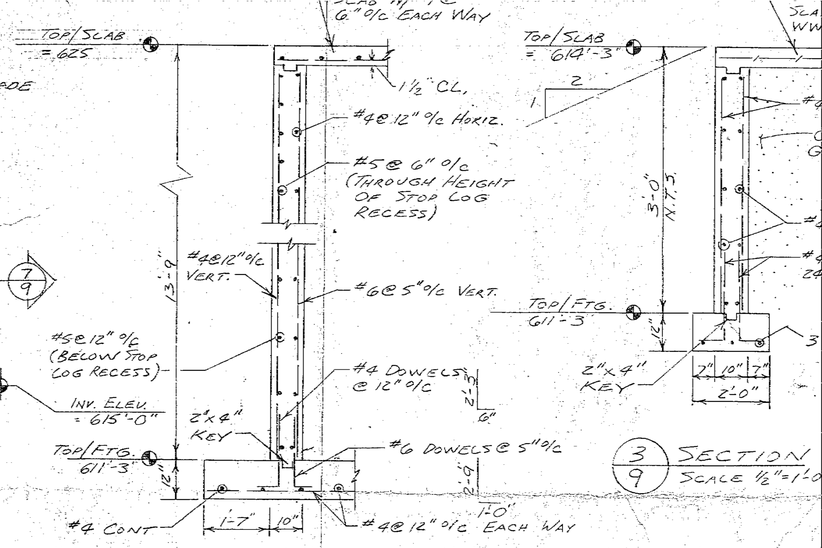
NOTE: SLAB REINFORCING SHOWN IS IN ADDITON TO THAT INDICATED ON SECTION 2/9



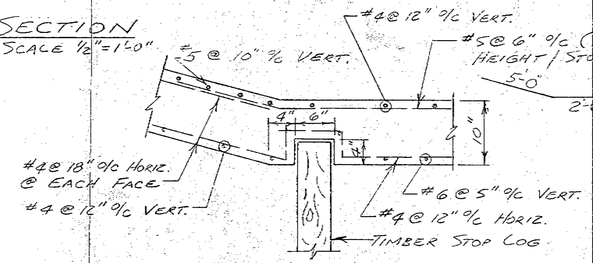
PLAN VIEW-OUTFALL STRUCTURE
SCALE: 1/2" = 1'-0"



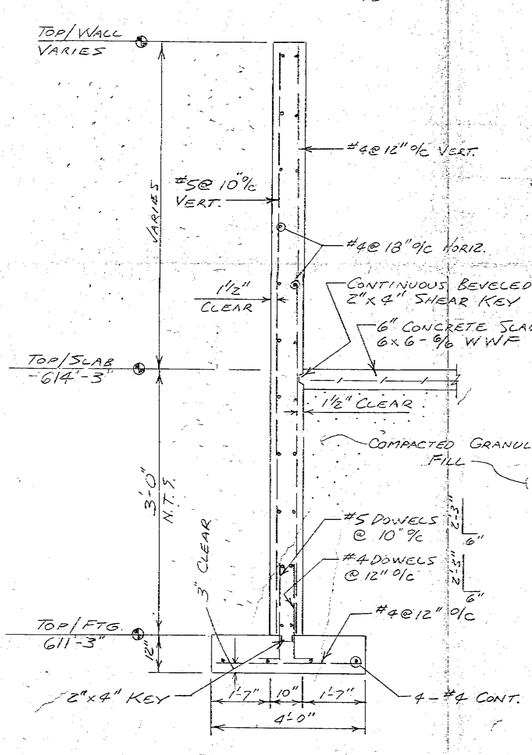
1/9 SECTION
SCALE 1/2"=1'-0"



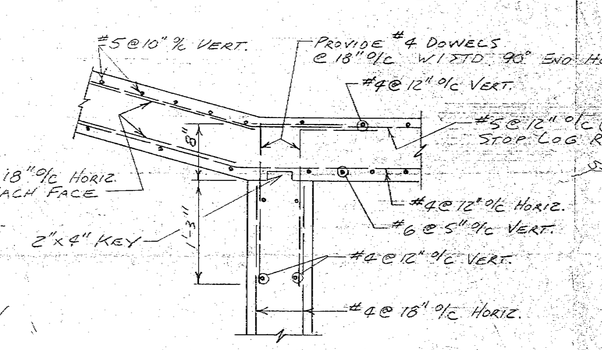
2/9 SECTION
SCALE 1/2"=1'-0"



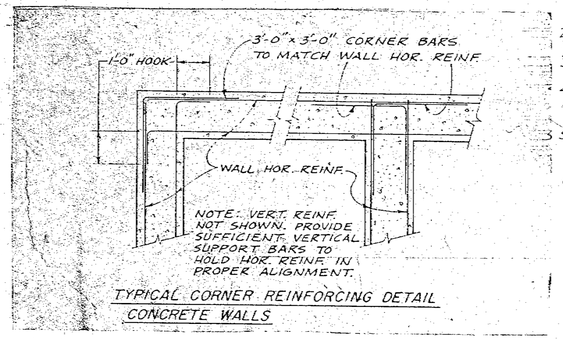
4/9 SECTION
SCALE 1"=1'-0"



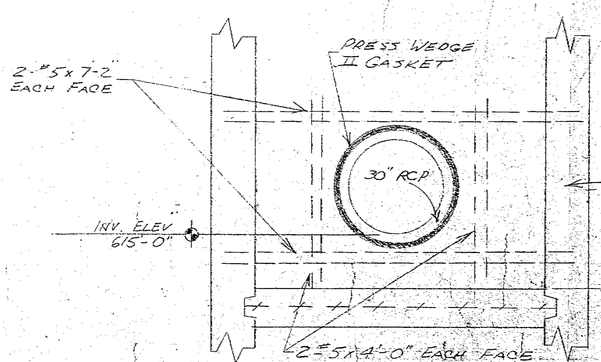
5/9 SECTION
SCALE 1/2"=1'-0"



6/9 SECTION
SCALE 1"=1'-0"



TYPICAL CORNER REINFORCING DETAIL
CONCRETE WALLS



7/9 SECTION
SCALE: NONE

NOTE:
REINFORCING SHOWN IS IN ADDITION TO THAT INDICATED ON SECTION 4/9
SEE SECTION 2/9 FOR WALL REINFORCING TYP.

NOTES

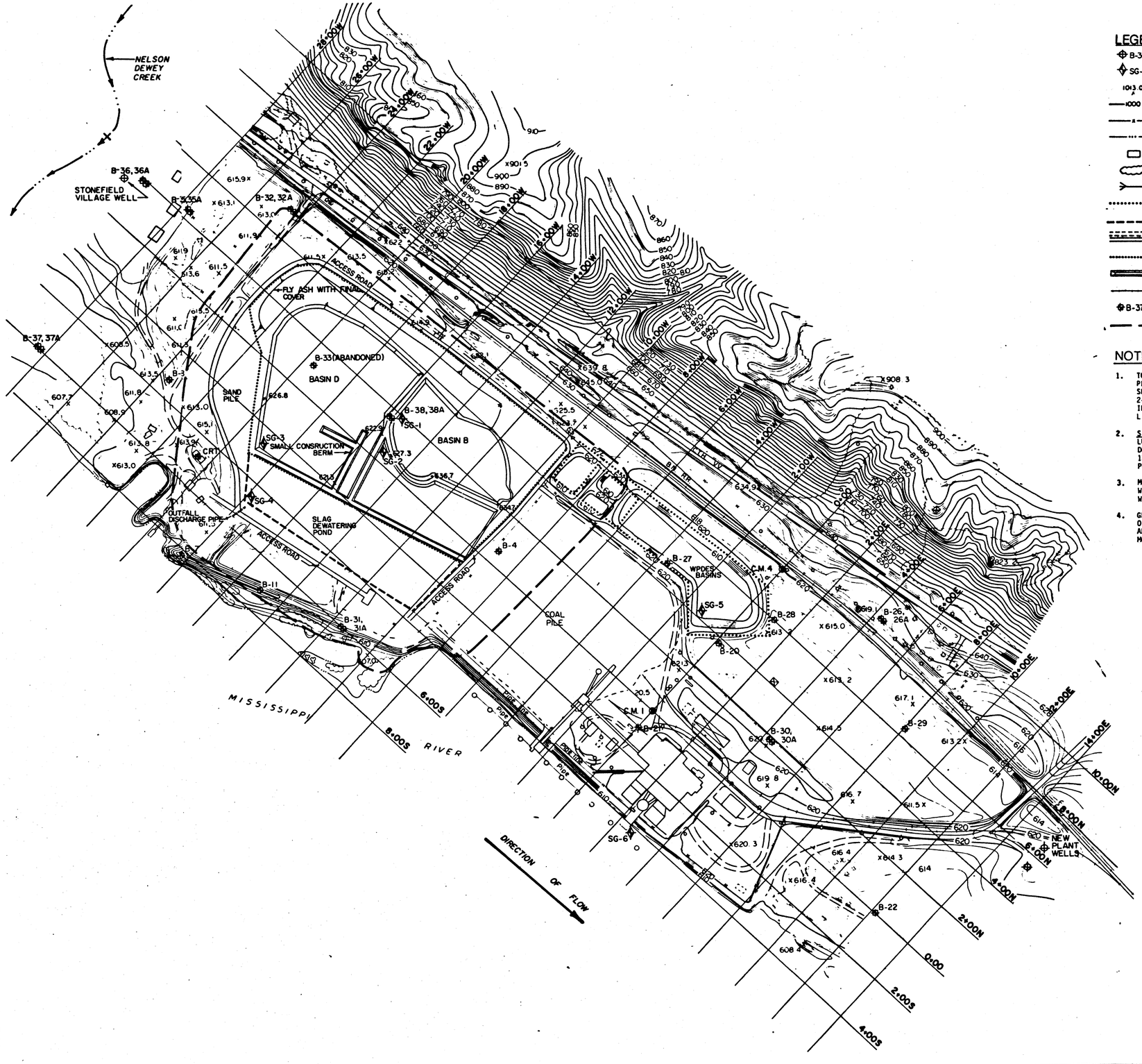
1) MINIMUM CONCRETE COMPRESSIVE STRENGTH @ 2
2) REINFORCING BARS: ASTM A-615 GRADE 60
3) WELDED STEEL WIRE FABRIC: ASTM A-185 60,000 PSI
4) FILL MATERIAL SHALL BE FREE DRAINING (LESS PASSING #200 SIEVE) GRANULAR MATERIAL
5) UNDER SLAB FILL SHALL BE COMPACTED TO 95 MAXIMUM DRY DENSITY, ASTM D1557
6) N.T.S. WHERE SHOWN INDICATES DRAWING NOT

NO.	BY	DATE	REVISION

OUTFALL STRUCTURAL PLAN & DE
ASH DISPOSAL FACILIT
WISCONSIN POWER AND LIGHT CO
NELSON DEWEY GENERATING S
CASSVILLE, WISCONSIN

WARZYN

DRAWN GBH	SCALE AS SHOWN
CHECKED RAJ	DATE 3-27-78
APPROVED RWT	



LEGEND

- B-36,36A — WATER SUPPLY WELL LOCATION AND NUMBER
- SG-6 — STAFF GAUGE LOCATION AND NUMBER
- 1013.0 — EXISTING SPOT ELEVATION
- 1000 — EXISTING GROUND CONTOUR
- EXISTING FENCE LINE
- EDGE OF WATER
- EXISTING BUILDING
- EXISTING TREES AND SHRUBS
- DIRECTION OF SLOPE
- WPDES BASINS
- SLAG DEWATERING POND
- ACCESS ROAD
- APPROX. LIMITS OF FILL
- BERM LOCATIONS
- RAILROAD TRACKS
- B-37,37A — GROUNDWATER MONITORING WELL LOCATION AND NUMBER.
- DESIGN MANAGEMENT ZONE BOUNDARY

NOTES

1. TOPOGRAPHIC INFORMATION IS BASED ON AERIAL SURVEY PERFORMED BY AERO-METRIC ENGINEERING INC., SHEYBOYGAN, WISCONSIN. DATE OF PHOTOGRAPHY IS 2-26-75. BASIN AREA OF MAP UPDATED BY WARZYN ENGINEERING INC. BASED ON INFORMATION PROVIDED BY WISCONSIN POWER AND LIGHT.
2. SITE BENCHMARK IS AS ESTABLISHED BY SARGENT AND LUNDY ENGINEERS, CHICAGO, ILLINOIS, DURING INITIAL DEVELOPMENT OF POWER PLANT. IT IS AN IRON BOLT SET IN A 12" DIA. CONCRETE MONUMENT NORTHWEST OF THE POWER PLANT AT ELEV. 621.8.
3. MONITORING WELLS B-32A, B-36,36A, B37,37A, B-38 AND B-38A WERE INSTALLED BY EXPLORATION TECHNOLOGY, INC. ALL OTHER WELLS WERE INSTALLED BY WARZYN ENGINEERING INC.
4. GRID SYSTEM IS PARALLEL AND AND PERPENDICULAR TO THE 0+00W LINE PASSING THROUGH CONTROL MONUMENTS C.M. 1 AND C.M. 4 WITH THE 0+00N LINE PASSING THROUGH CONTROL MONUMENT C.M. 1 AS SHOWN ON THIS DRAWING.

Checked by AJS
Drawn By JC
Designed By:
Approved By: Ron Quinn
Date 11/9/87
Reference:
Scale: 1" = 400'

Date - By - App'd

WARZYN
WARZYN ENGINEERING INC.
Madison • Milwaukee
Minneapolis Chicago
Detroit

Revisions

SITE LOCATION MAP

ASH DISPOSAL FACILITY
WISCONSIN POWER AND LIGHT COMPANY
NELSON DEWEY GENERATING STATION
CASSVILLE, WISCONSIN

Printed
Sheet Number 1 OF 1
Project Number 30116-B1
WARZYN

AMERICAN BLUE PRINT INC. MPLS
Acetate
Mylar
Vellum
Screen

SEEDED AREA

SEEDED AREA

SAND FILLED

WESTERN BASIN

EASTERN BASIN

X 633.43 '
X 637.48 '
X 638.16
X 635.39 '
X 636.21
X 635.61 '
X 636.78 '
X 632.77 '
X 633.47 '
X 635.38 '
X 635.43 '
X 638.48 '
X 637.34 '
X 618.45 '
X 617.42
X 618.13 '
X 617.61 '
X 621.31 '
X 616.3
X 633.15
X 633.51 '
X 632.75 '
X 629.23 '
X 630.18 '
X 629.59 '
X 630.43 '
X 629.45 '
X 616.66 '
X 619.50 '
X 620.31 '
X 616.23 '
X 609.80 '

N

BASELINE NORTH

SCALE
0 100 200

SCALE: 1" = 100'

NELSON DEWEY
ASH HANDLING AREA

APRIL 5, 1994

LANDFILL TOPOGRAPHY

FIGURE 2

MATERIALS - STORED TABLES

NELSON DEWEY GENERATING STATION

MATERIALS STORED OUTDOORS

ITEM NO.*	DESCRIPTION
1	20,000-GALLON #2 FUEL OIL TANK
2	30-GALLON GASOLINE TANK
6	SUBSTATION
7	MAIN POWER TRANSFORMER #1 AND AUXILIARY TRANSFORMER
8	MAIN POWER TRANSFORMER #2 AND AUXILIARY TRANSFORMER
10	2,000-GALLON SULFURIC ACID BULK TANK
12A	(1) 2,000-GALLON AND (1) 5,000-GALLON DUST SUPPRESSANT TANKS
12B	5,000-GALLON DUST SUPPRESSANT TANK
24	COAL PILE

MATERIALS STORED INDOORS (NOT SHOWN ON DRAWING)

ITEM NO.*	DESCRIPTION	LOCATION
3	CHEMICAL DRUM STORAGE FOR NAPHTHA, INSECTICIDE, AND OIL OR SOLVENT	GENERATING STATION
4	#1 TURBINE LUBE OIL SYSTEM AND TANKS	GENERATING STATION
5	#2 TURBINE LUBE OIL SYSTEM AND TANK	GENERATING STATION
9	PARTS DEGREASER	GENERATING STATION
11	MISCELLANEOUS FLOOR CLEANING SUPPLIES AND WATER TREATMENT CHEMICALS	GENERATING STATION
12C	250-GALLON DUST SUPPRESSANT TANK	GENERATING STATION
13	DRY CAUSTIC DRUM	GENERATING STATION
14	MISCELLANEOUS CHEMICALS, INCLUDING AMINE, HYDRAZINE, AND SODIUM PHOSPHATE	GENERATING STATION
15	WATER TREATMENT CHEMICALS	GENERATING STATION
16	MISCELLANEOUS CHEMICALS, INCLUDING AMINE, DISPERSANT, FORMALDEHYDE, AND PHOSPHATES	GENERATING STATION
17	LABORATORY SUMP TANK	GENERATING STATION
18	WASTE SOLVENT	HAZARDOUS WASTE STORAGE BUILDING
19	250-GALLON TANK AND MISCELLANEOUS 55-GALLON DRUMS WASTE OIL	VEHICLE MAINT./TRACTOR HOUSE
20	MISCELLANEOUS DRUMS OIL, GREASE AND ANTI-FREEZE	VEHICLE MAINT./TRACTOR HOUSE

UNDERGROUND STORAGE TANKS

ITEM NO.*	DESCRIPTION
21	5,000-GALLON WASTE OIL
22	1,000-GALLON DIESEL FUEL
23	500-GALLON GASOLINE

CASSVILLE RIVER TERMINAL

MATERIALS STORED OUTDOORS

ITEM NO.*	DESCRIPTION
1	300-GALLON FUEL OIL TANKS
2	500-GALLON STEEL GASOLINE TANK
3	8,000-GALLON WASTE OIL TANK
4	DRAINED OIL DRUMS (APPROX. 100 TO 150 DRUMS)

* FOR ADDITIONAL DETAIL REGARDING STORED MATERIALS, REFER TO THE CORRESPONDING NUMERIC ITEM NUMBER ON THE SWPPP TABLE FOR THE NELSON DEWEY GENERATING STATION.

NELSON DEWEY GENERATING STATION

MATERIALS STORED OUTDOORS

ITEM NO.*	DESCRIPTION
1	20,000-GALLON #2 FUEL OIL TANK
2	30-GALLON GASOLINE TANK
6	SUBSTATION
7	MAIN POWER TRANSFORMER #1 AND AUXILIARY TRANSFORMER
8	MAIN POWER TRANSFORMER #2 AND AUXILIARY TRANSFORMER
10	2,000-GALLON SULFURIC ACID BULK TANK
12A	(1) 2,000-GALLON AND (1) 5,000-GALLON DUST SUPPRESSANT TANKS
12B	5,000-GALLON DUST SUPPRESSANT TANK

MATERIALS STORED INDOORS (NOT SHOWN ON DRAWING)

ITEM NO.*	DESCRIPTION	LOCATION
3	CHEMICAL DRUM STORAGE FOR NAPHTHA, INSECTICIDE, AND OIL OR SOLVENT	GENERATING STATION
4	#1 TURBINE LUBE OIL SYSTEM AND TANKS	GENERATING STATION
5	#2 TURBINE LUBE OIL SYSTEM AND TANK	GENERATING STATION
9	PARTS DEGREASER	GENERATING STATION
11	MISCELLANEOUS FLOOR CLEANING SUPPLIES AND WATER TREATMENT CHEMICALS	GENERATING STATION
12C	250-GALLON DUST SUPPRESSANT TANK	GENERATING STATION
13	DRY CAUSTIC DRUM	GENERATING STATION
14	MISCELLANEOUS CHEMICALS, INCLUDING AMINE, HYDRAZINE, AND SODIUM PHOSPHATE	GENERATING STATION
15	WATER TREATMENT CHEMICALS	GENERATING STATION
16	MISCELLANEOUS CHEMICALS, INCLUDING AMINE, DISPERSANT, FORMALDEHYDE, AND PHOSPHATES	GENERATING STATION
17	LABORATORY SUMP TANK	GENERATING STATION
18	WASTE SOLVENT	HAZARDOUS WASTE STORAGE BUILDING
19	250-GALLON TANK AND MISCELLANEOUS 55-GALLON DRUMS WASTE OIL	VEHICLE MAINT./TRACTOR HOUSE
20	MISCELLANEOUS DRUMS OIL, GREASE AND ANTI-FREEZE	VEHICLE MAINT./TRACTOR HOUSE

UNDERGROUND STORAGE TANKS

ITEM NO.*	DESCRIPTION
21	5,000-GALLON WASTE OIL
22	1,000-GALLON DIESEL FUEL
23	500-GALLON GASOLINE

CASSVILLE RIVER TERMINAL

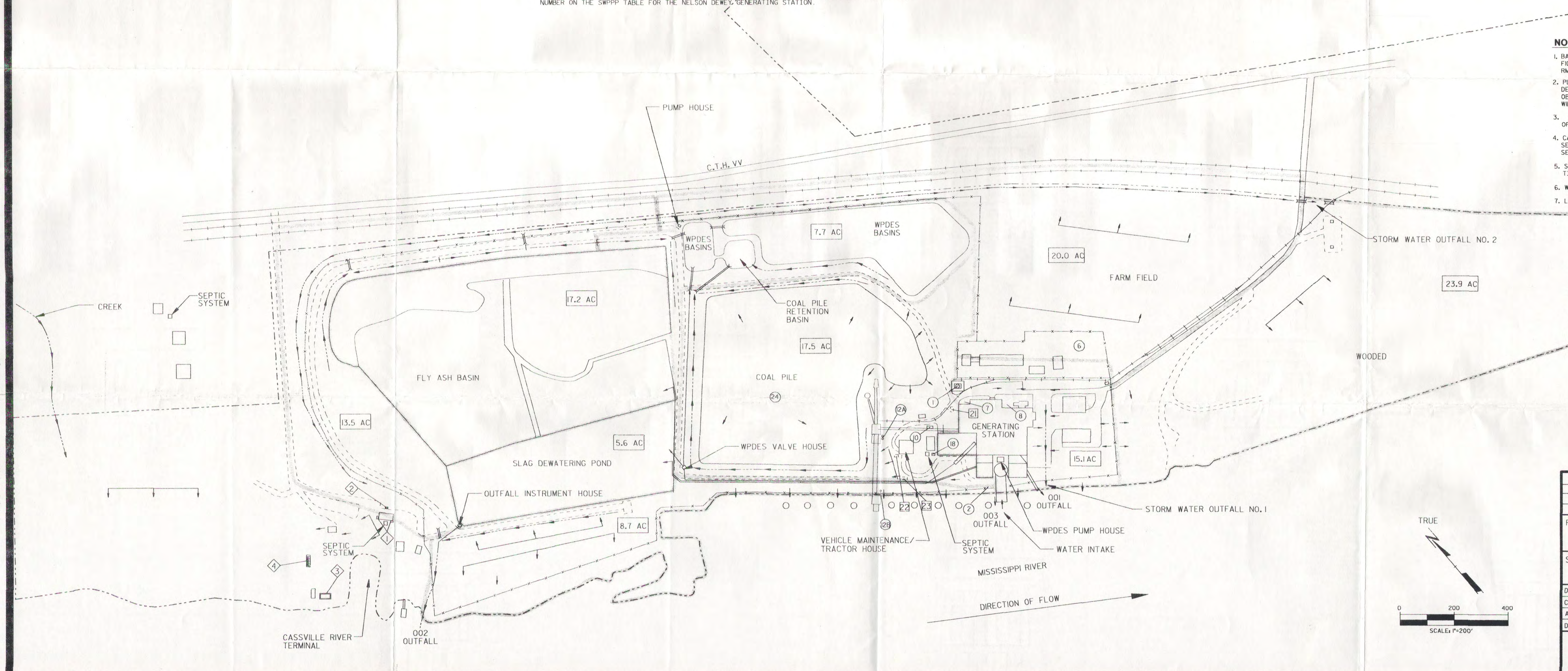
MATERIALS STORED OUTDOORS

ITEM NO.*	DESCRIPTION
1	300-GALLON FUEL OIL TANKS
2	500-GALLON STEEL GASOLINE TANK
3	8,000-GALLON WASTE OIL TANK
4	DRAINED OIL DRUMS (APPROX. 100 TO 150 DRUMS)

* FOR ADDITIONAL DETAIL REGARDING STORED MATERIALS, REFER TO THE CORRESPONDING NUMERIC ITEM NUMBER ON THE SWPPP TABLE FOR THE NELSON DEWEY GENERATING STATION.

LEGEND

- APPROXIMATE PROPERTY LINE
- FENCE
- DRAINAGE DITCH
- RAILROAD
- PAVED ROAD
- UNPAVED ROAD
- DIRECTION OF RUNOFF
- CULVERT
- BUILDING
- DRAINAGE AREA BOUNDARY
- PROCESS WASTE DISCHARGE PIPE
- 7.7 AC — DRAINAGE AREA (SIZE IN ACRES)
- 6 & 4 — LABELED ITEMS REFERING TO MATERIALS STORED TABLES
- 2 — UNDERGROUND STORAGE TANK AND DISCRIPTOR



NOTES

1. BASE MAP OBTAINED FROM RMT FILE:(WP&L 1831.05 JANUARY,1993). FIGURE PREPARED FOR WP&L STORMWATER MANAGEMENT PLAN BY RMT (1994).
2. PLANT FACILITIES, STRUCTURES, ROADS, AND DRAINAGE PATTERNS DEPICT APPROXIMATE EXISTING CONDITIONS BASED ON FIELD OBSERVATIONS ON APRIL 20-21, 1993 ACUAL SIZE AND LOCATIONS WILL VARY FROM DRAWING REPRESENTATION.
3. LABELED ITEMS REPRESENT APPROXIMATE LOCATIONS OF STORED MATERIALS. SEE TABLE FOR DESCRIPTIONS.
4. CASSVILLE RIVER TERMINAL OPERATES A BARGE CLEANING AND REPAIR SERVICE ON WP&L PROPERTY. STORED MATERIALS ARE LISTED SEPARATELY AND ARE LAEBLED BY ◇
5. SITE LOCATION: SW 1/4, OF NE 1/4, SECTION 19, T3N, R5E, GRANT COUNTY, WISCONSIN.
6. WASTEWATER WPDES NUMBER WI0002381.
7. LOCATIONS OF SEPTIC SYSTEMS ARE APPROXIMATE.

NO.	BY	DATE	REVISION	APP'D.
3.				
2.				
1.				

PROJECT: **WISCONSIN POWER & LIGHT CO. NELSON DEWEY GENERATING STATION**

SHEET TITLE: **STORM WATER DRAINAGE PLAN AND POTENTIAL ON-SITE SOURCES OF CONTAMINATION**

DRAWN BY: DPR	SCALE: 1"=200'	PROJ. NO. 2767.03
CHECKED BY:		FILE NO. EXISTING.PLT
APPROVED BY: MCM	DATE PRINTED: OCT 31 1994	M-500
DATE: OCTOBER 1994		

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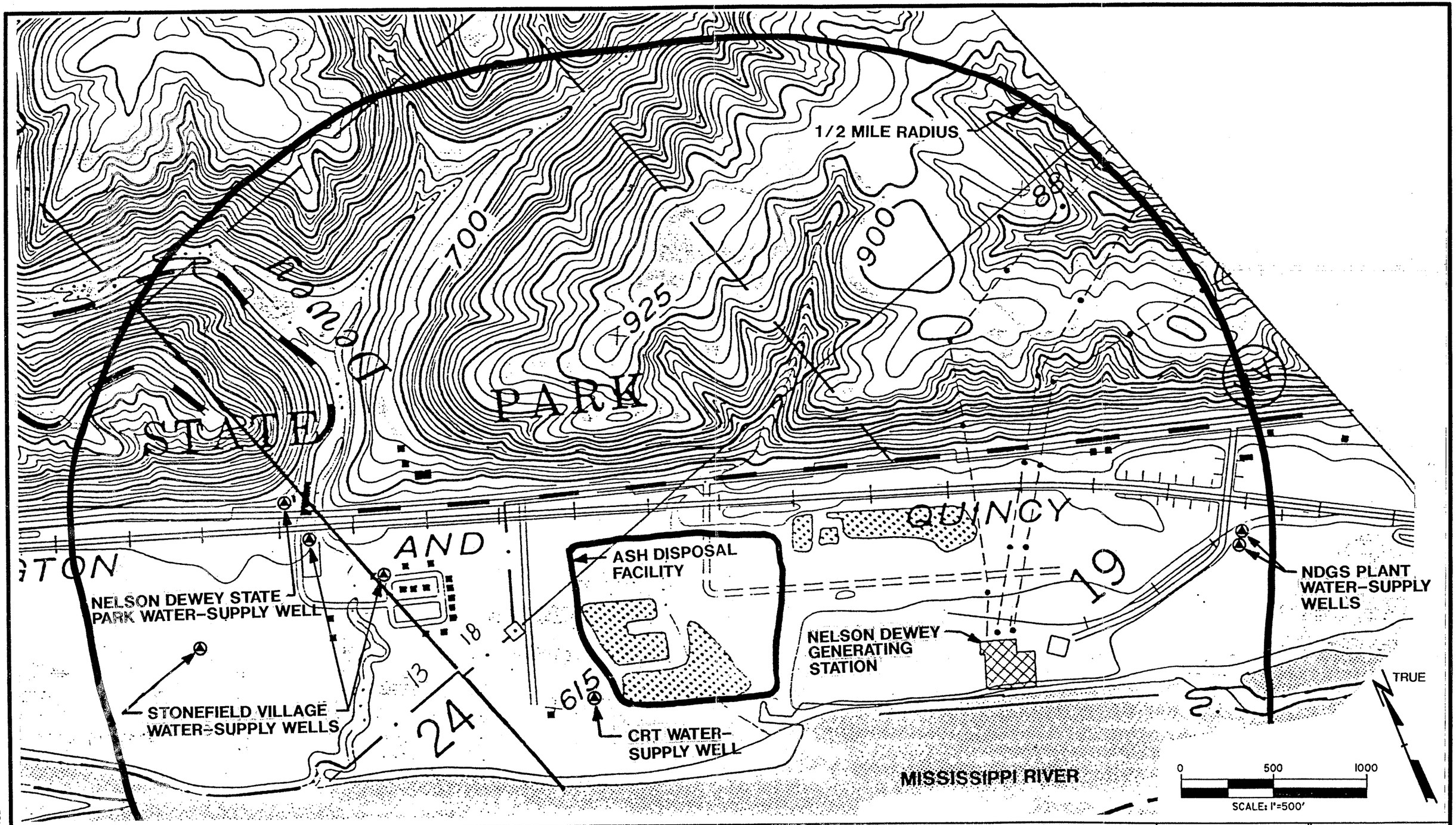
Madison, WI 53708-8923
Phone: 608-831-4444

RMT COMPUTER AIDED DESIGN & DRAFTING

FIGURE 2



LEGEND

▲ APPROXIMATE LOCATION OF WATER SUPPLY WELLS

LOCATION OF WATER SUPPLY WELLS WITHIN 1/2 MILE OF THE ASH DISPOSAL FACILITY

BASE MAP= TURKEY RIVER USGS TOPOGRAPHIC QUADRANGLE MAP

RMT, INC.

Dsn.By:	DJW
Approved By:	ELM
Date:	OCTOBER 1994
Proj.#:	2767.03
File #:	2767ASH.DGN

OCT 31 1994

FIGURE 3

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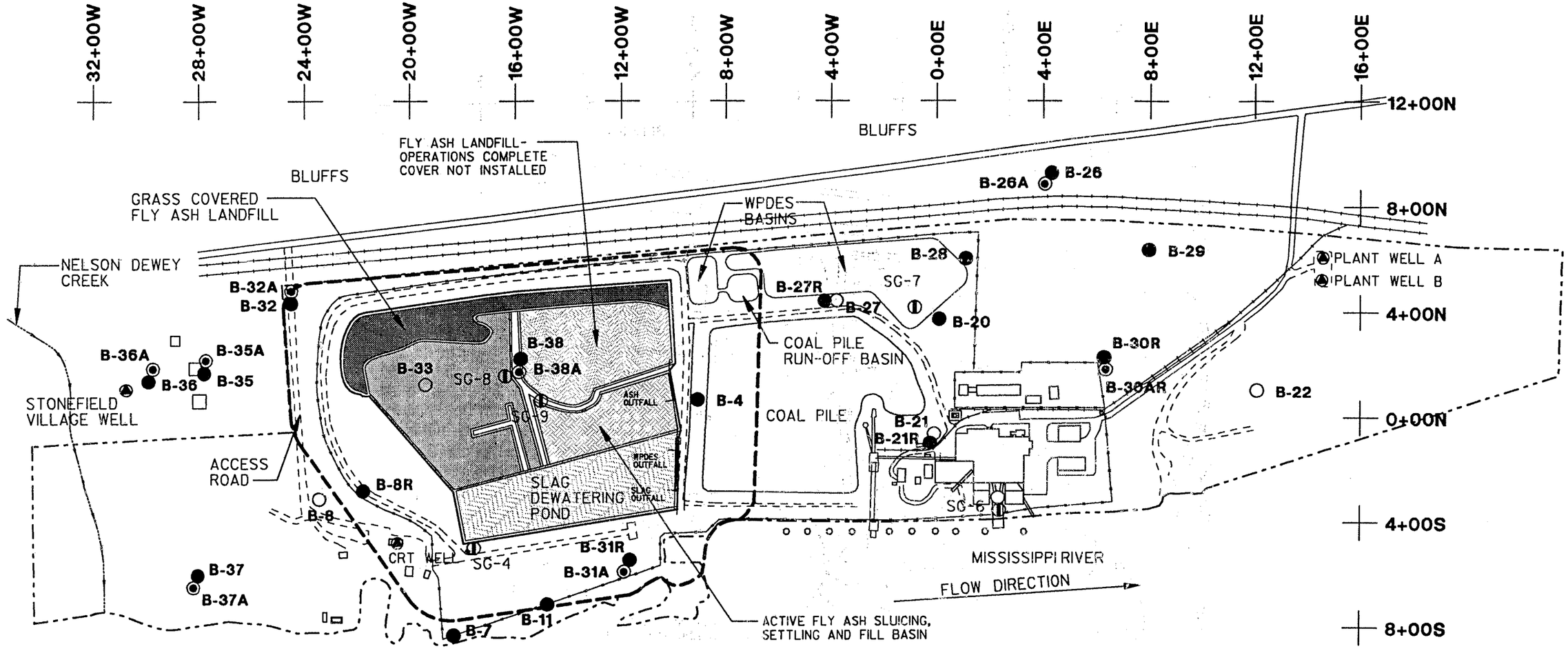

LEGEND

● B-28	WATER TABLE OBSERVATION WELL
◉ B-28A	PIEZOMETER
○ B-33	ABANDONED WELL
◭ CRT WELL	WATER SUPPLY WELL
◧ SG-4	STAFF GAUGE
———	APPROXIMATE LIMITS OF LICENSED LANDFILL
+++++	RAILROAD TRACK
= = = =	ROAD
— · — · —	PROPERTY LINE
— — — —	DESIGN MANAGEMENT ZONE
+ 0+00S	LOCAL GRID
□	BUILDINGS
o	PILINGS

NOTES

1. BASE MAP WELLHEAD LOCATIONS SURVEYED BY SCHMITT ENGINEERING IN OCTOBER 1993.
2. OTHER SITE INFORMATION PROVIDED BY WP&L.

TRUE

0 400 800

SCALE: 1"=400'

WISCONSIN POWER & LIGHT
NELSON DEWEY GENERATING STATION
EXISTING CONDITIONS
OCTOBER 1993

RMT, INC.

Dwn.By	CDH
Approved By	ELM
Date	OCTOBER 1994
Proj.#	2767.03
File #	2767030LDGN

OCT 31 1994

FIGURE 4

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User = Unknown
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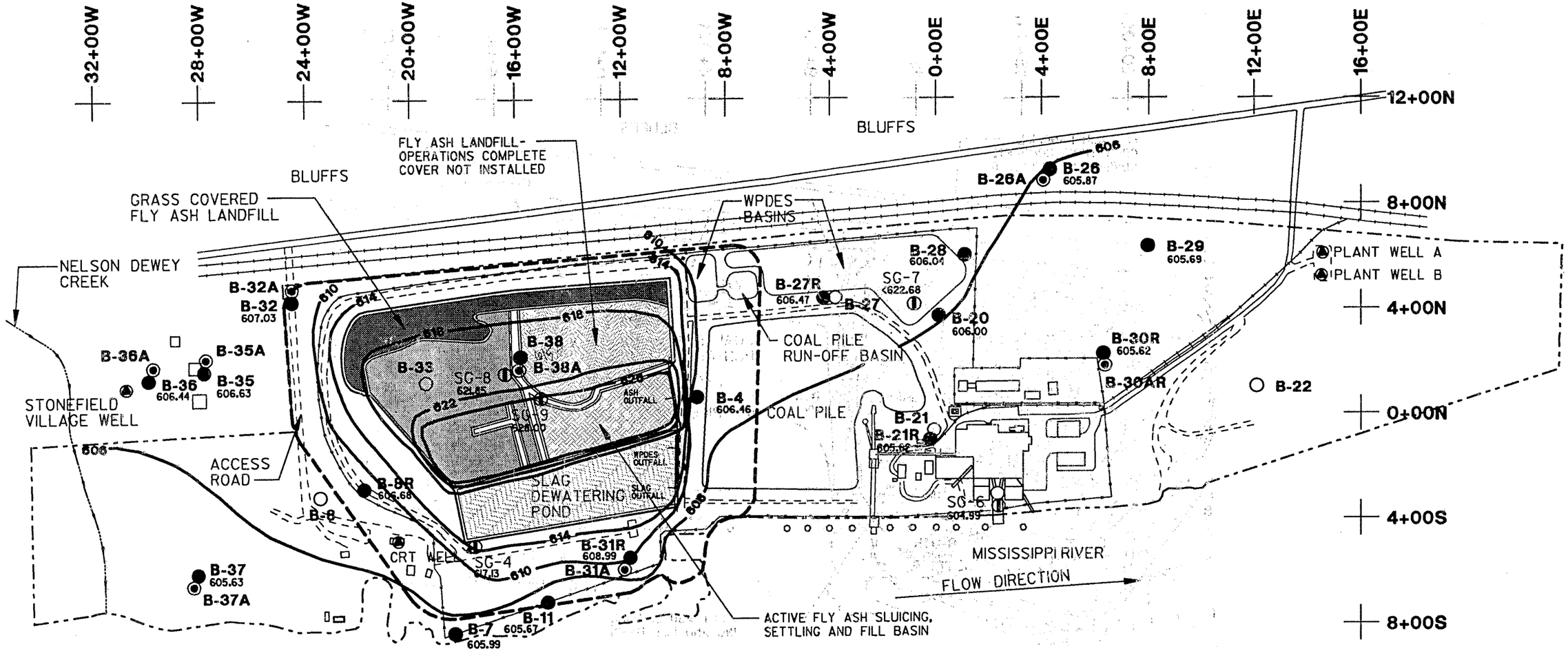

605=MEAN POOL ELEVATION

LEGEND

- B-28 — WATER TABLE OBSERVATION WELL
- B-28A — PIEZOMETER
- B-33 — ABANDONED WELL
- CRT WELL — WATER SUPPLY WELL
- SG-4 — STAFF GAUGE
- 605 — WATER TABLE CONTOUR (4 FOOT CONTOUR INTERVAL)
- APPROXIMATE LIMITS OF LICENSED LANDFILL
- RAILROAD TRACK
- ROAD
- PROPERTY LINE
- DESIGN MANAGEMENT ZONE
- 8+00S — LOCAL GRID
- BUILDINGS
- PILINGS

NOTES

1. WELLHEAD ELEVATIONS AND LOCATIONS FROM SURVEY BY SCHMITT ENGINEERING, OCTOBER 1993.

TRUE

0 400 800

SCALE: 1"=400'

WISCONSIN POWER & LIGHT
NELSON DEWEY GENERATING STATION
WATER TABLE
NOVEMBER 2, 1993

Dwn.By	DJW
Approved By	ELM
Date	OCTOBER 1994
Proj.#	2767.03
File #	27670306.DGN

RMT, INC.

OCT 31 1994

FIGURE 6

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Plot Date = Fri Oct 21 08:23:26 1994
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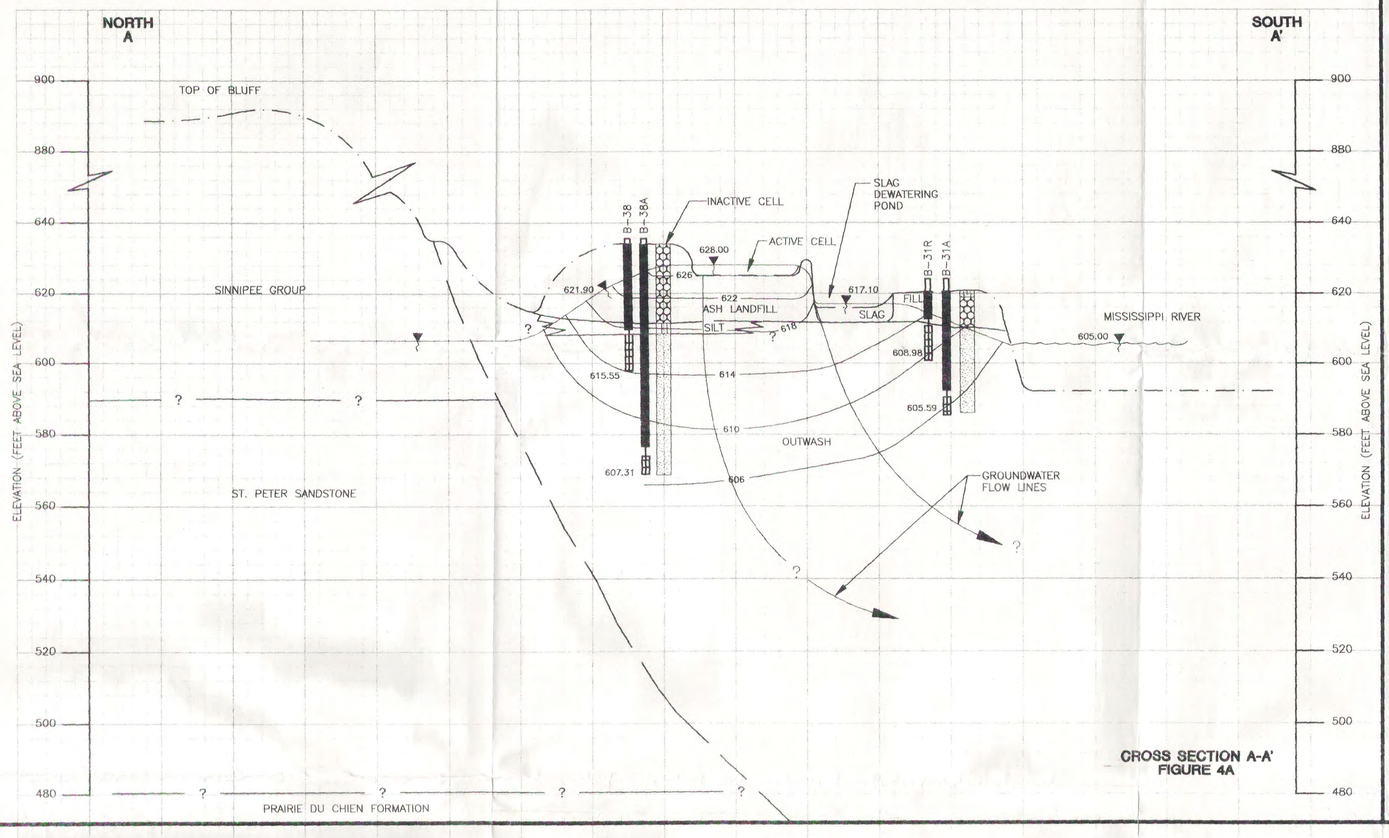
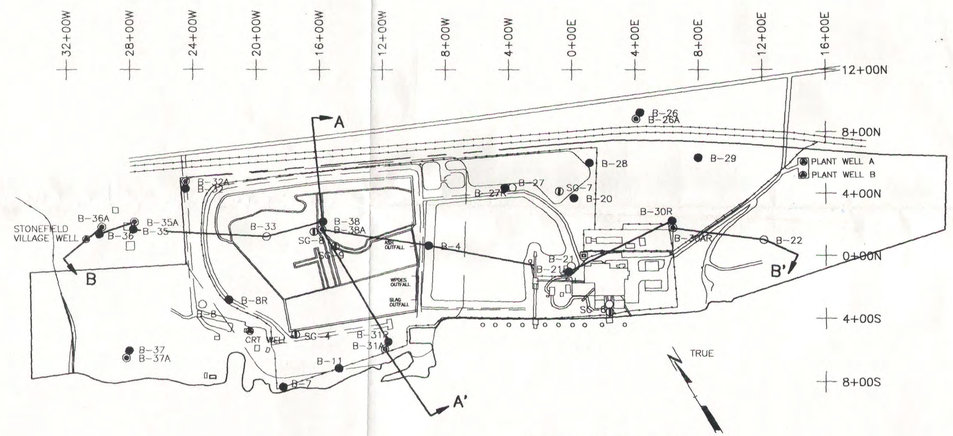
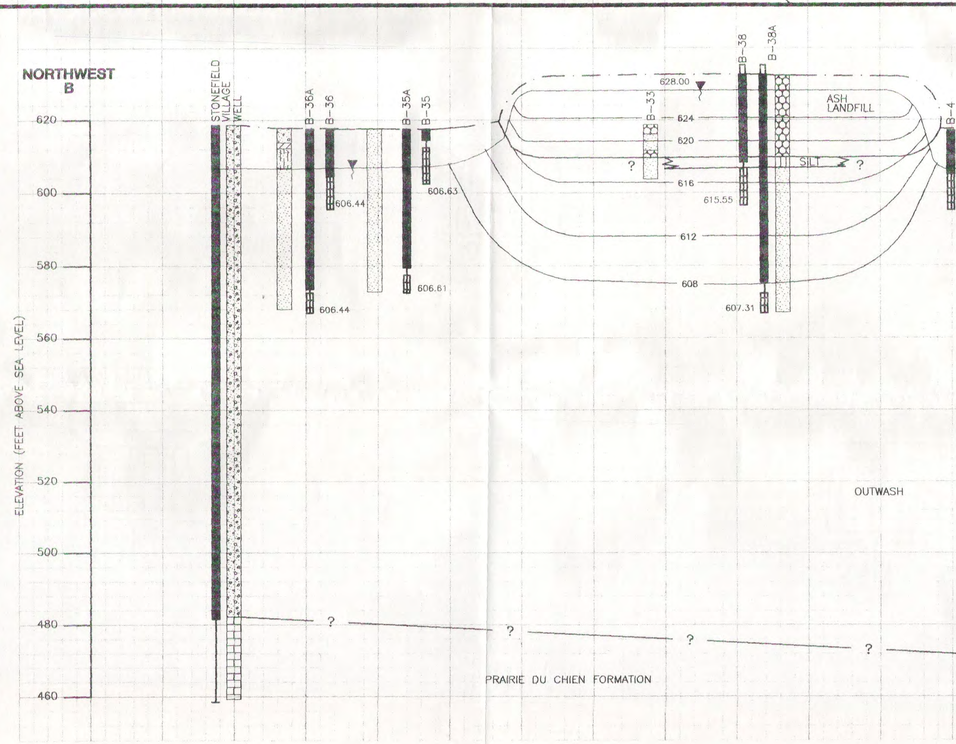


CROSS SECTION A-A'
FIGURE 4A



GEOLOGIC CROSS SECTION LOCATOR



CROSS SECTION B-B'
FIGURE 4B

LEGEND

- FILL
- LEAN CLAY
- SILT
- SILTY SAND (SM)
- WELL GRADED SAND WITH GRAVEL (SW-SM)
- WELL GRADED SAND
- DOLOMITE
- EXISTING GROUND SURFACE
- WATER TABLE (NOVEMBER 2, 1993)
- EQUIPOTENTIAL CONTOUR (4 FOOT CONTOUR INTERVAL)

WELL CONSTRUCTION

- BENTONITE
- SCREEN

NOTES

1. BORING LOGS ARE INCLUDED IN APPENDIX C.
2. WELL LOCATIONS AND ELEVATIONS ARE BASED ON DATA FROM OCTOBER 1993 SURVEY BY SCHMITT ENGINEERING.
3. WELLS B-22, B-33 AND B-30A HAVE BEEN ABANDONED. WELL CONSTRUCTION DETAILS ARE SHOWN FOR B-30AR, WHICH REPLACED B-30A. BORING LOG NOT AVAILABLE FOR B-4.
4. RIVER BATHYMETRY FROM U.S. ARMY CORPS OF ENGINEERS SEPTEMBER 1993 SOUNDINGS.

NO.	BY	DATE	REVISION	APP'D.
3.				
2.				
1.				

PROJECT:
WP&L NELSON DEWEY GENERATING STATION CASSVILLE, WISCONSIN

SHEET TITLE:
ECA REPORT
EQUIPOTENIAL CROSS SECTIONS (NOVEMBER 2, 1993)

DRAWN BY: TBM	SCALE: VERTICAL: 1"=20' HORIZONTAL: 1"=200'	PROJ. NO. 2767.03	
CHECKED BY:		FILE NO. 27670307	
APPROVED BY:	DATE PRINTED: OCT 31 1994	**FIGURE 7**	
DATE: OCTOBER 1994			

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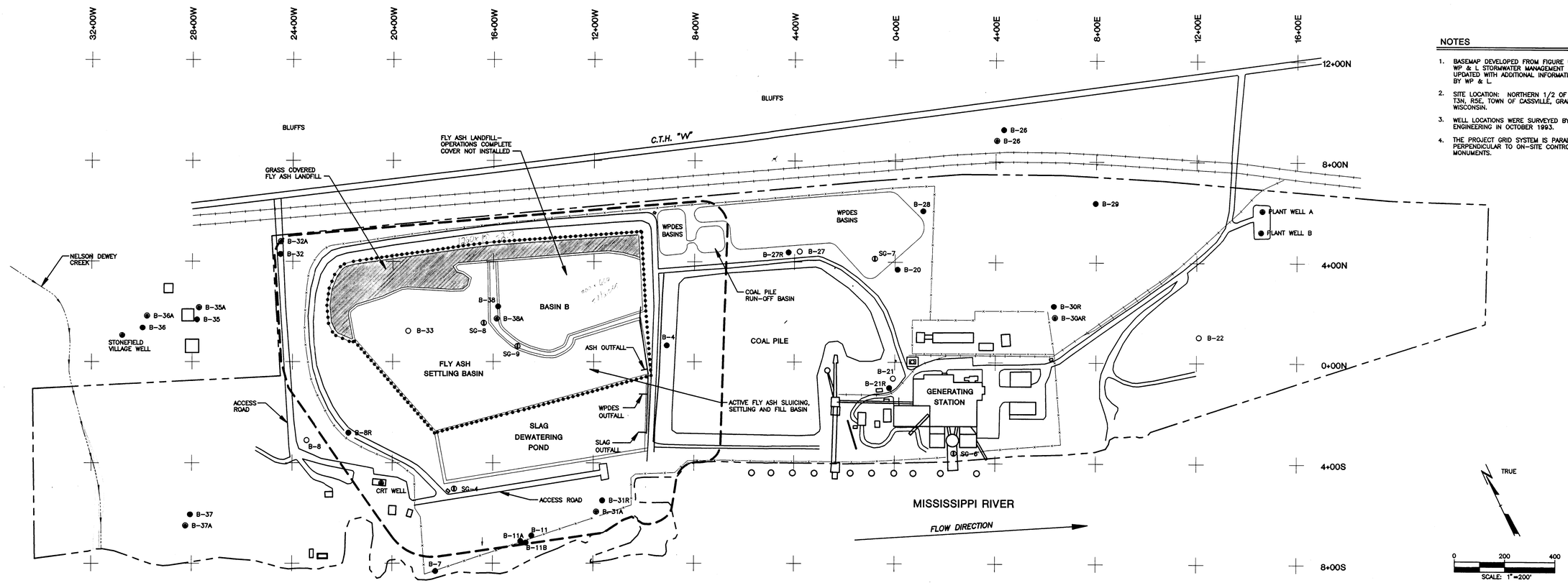

LEGEND

● B-28	WATER TABLE OBSERVATION WELL
◉ B-28A	PIEZOMETER
○ B-33	ABANDONED WELL
◉ CRT WELL	WATER SUPPLY WELL
Φ SG-1	STAFF GAUGE
• • • • • • • • •	APPROXIMATE LIMITS OF LICENSED LANDFILL
	RAILROAD TRACK
	ROAD
	PROPERTY LINE
+ 12+00N	PROJECT GRID SYSTEM
	BUILDINGS
	PILINGS
	DESIGN MANAGEMENT ZONE

NOTES

1. BASEMAP DEVELOPED FROM FIGURE UTILIZED IN WP & L STORMWATER MANAGEMENT PLAN AND UPDATED WITH ADDITIONAL INFORMATION PROVIDED BY WP & L.
2. SITE LOCATION: NORTHERN 1/2 OF SECTION 19, T3N, R5E, TOWN OF CASSVILLE, GRANT COUNTY, WISCONSIN.
3. WELL LOCATIONS WERE SURVEYED BY SCHMITT ENGINEERING IN OCTOBER 1993.
4. THE PROJECT GRID SYSTEM IS PARALLEL AND PERPENDICULAR TO ON-SITE CONTROL MONUMENTS.

NOTE: THESE PLANS ARE ACCOMPANIED BY A REPORT OF THE SAME TITLE. THESE DOCUMENTS ARE INTERRELATED AND INTENDED TO BE USED AND REVIEWED TOGETHER. THESE DOCUMENTS ARE INTENDED TO BE USED FOR REGULATORY PURPOSES ONLY.

NOT FOR CONSTRUCTION

NO.	BY	DATE	REVISION	APP'D.
3.				
2.				
1.				

PROJECT: PLAN MODIFICATION
WP & L - NED ASH DISPOSAL FACILITY
CASSVILLE, WISCONSIN

SHEET TITLE: SITE LAYOUT

DRAWN BY: RBN	SCALE: 1"=200'	PROJ. NO. 3902.01
CHECKED BY: TDH		FILE NO. 39020103
APPROVED BY: CM	DATE PRINTED: OCT 05 1995	SHEET 1 OF 6
DATE: OCTOBER 1995		

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Plot File = K:\PLTVACAD\39020103.PRF
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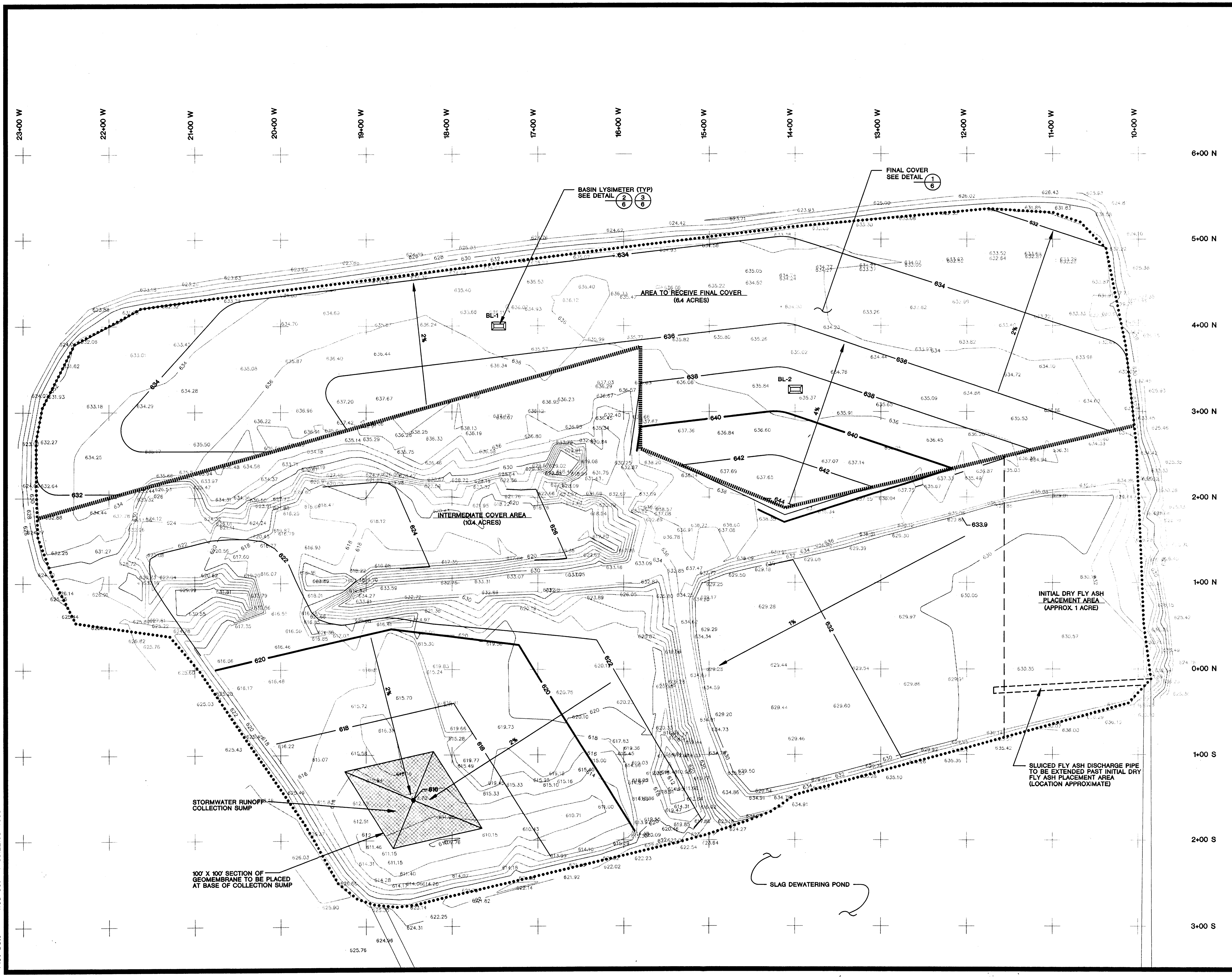

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Plot Date = Wed Oct 4 09:22:08 1995

LEGEND

(hatched line)	LIMITS OF AREA TO BE PREPARED FOR FINAL COVER PLACEMENT
●	PROPOSED DRAINAGE SUMP LOCATION
●●●●●●●●	APPROXIMATE LIMITS OF LICENSED LANDFILL
— 640 —	PROPOSED 10' CONTOUR
— 634 —	PROPOSED 2' CONTOUR
633.9	PROPOSED SPOT ELEVATION
— 620 —	EXISTING 10' CONTOUR
— 634 —	EXISTING 2' CONTOUR
BL-2	PROPOSED BASIN LYSIMETER LOCATION AND NUMBER
2%	PERCENT SLOPE AND DIRECTION

NOTES

1. BASEMAP DEVELOPED FROM AERIAL SURVEY PROVIDED BY WP & L . DATE OF SURVEY: APRIL 5, 1994.
2. ELEVATIONS ARE USGS DATUM AND ARE BASED ON ON-SITE MONUMENTS.
3. THE PROJECT GRID SYSTEM IS PARALLEL AND PERPENDICULAR TO ON-SITE CONTROL MONUMENTS
4. CONTOURS IN THE FINAL COVER PLACEMENT AREA REPRESENT THE TOP OF THE FINAL COVER LAYER PLACEMENT.
5. THE REMAINDER OF THE SITE WILL RECEIVE INTERMEDIATE COVER, EXCLUDING THE INITIAL DRY ASH PLACEMENT AREA. THE ENTIRE INTERMEDIATE COVER AREA WILL BE GRADED TO PROVIDE POSITIVE DRAINAGE TO THE STORMWATER COLLECTION SUMP.

CONSTRUCTION QUANTITIES

FINAL COVER AREA (NORTHERN PORTION)	VOLUME/AREA
AREA	6.4 ACRES
TOPSOIL	5,150 CY
GENERAL FILL	20,600 CY
GEOCOMPOSITE CLAY LINER	30,900 CY
EXCAVATION TO BASE OF FINAL COVER	19,370 CY
FILL TO BASE OF FINAL COVER	1,950 CY
INTERMEDIATE COVER AREA (REMAINDER OF SITE)	**VOLUME/AREA**
AREA	10.4 ACRES
EXCAVATION TO INTERMEDIATE GRADES	11,300 CY
FILL TO INTERMEDIATE GRADES	12,100 CY
GENERAL FILL	33,600 CY
TOPSOIL	8,400 CY
ACTIVE FILL AREA (DRY FLY ASH)	**VOLUME/AREA**
AREA	1 ACRE

0 50 100
SCALE: 1"=50'

NOTE: THESE PLANS ARE ACCOMPANIED BY A REPORT OF THE SAME TITLE. THESE DOCUMENTS ARE INTERRELATED AND INTENDED TO BE USED AND REVIEWED TOGETHER. THESE DOCUMENTS ARE INTENDED TO BE USED FOR REGULATORY PURPOSES ONLY.

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NO.	BY	DATE	REVISION	APP'D.
3.				
2.				
1.				

PROJECT: PLAN MODIFICATION
WP & L - NED ASH DISPOSAL FACILITY
CASSVILLE, WISCONSIN

SHEET TITLE: SITE PREPARATION

DRAWN BY: RPR	SCALE:	PROJ. NO. 3902.01
CHECKED BY: 72G	1" = 50'	FILE NO. 39020104
APPROVED BY: -DM	DATE PRINTED:	SHEET 2 OF 6
DATE: OCTOBER 1995	OCT 05 1995	

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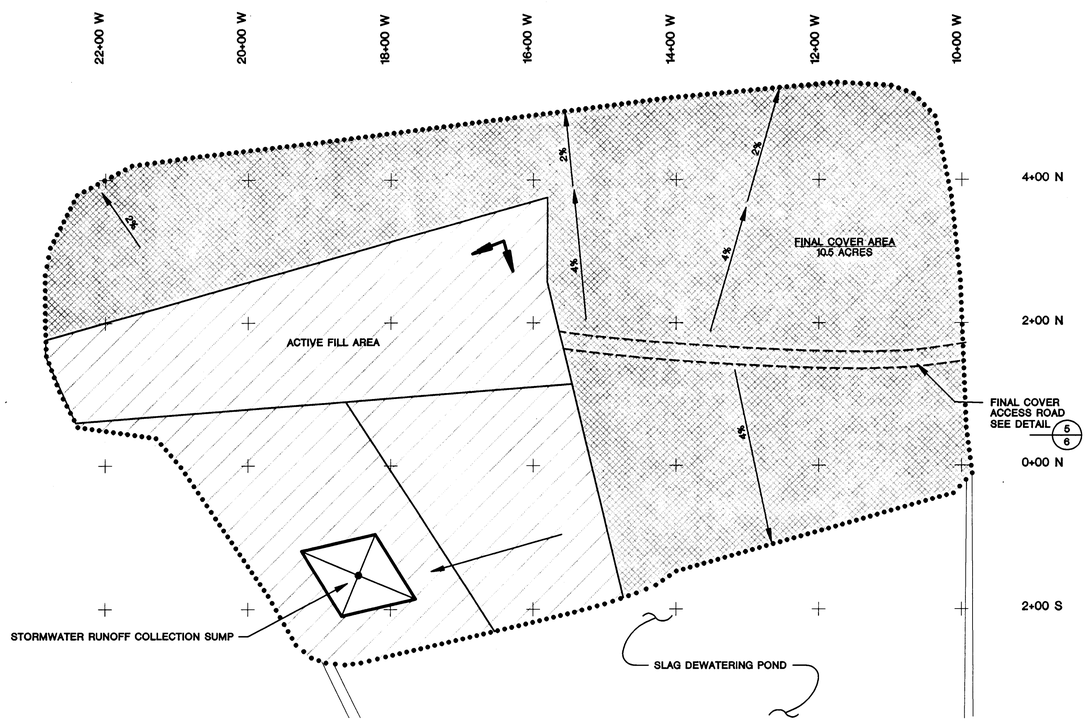
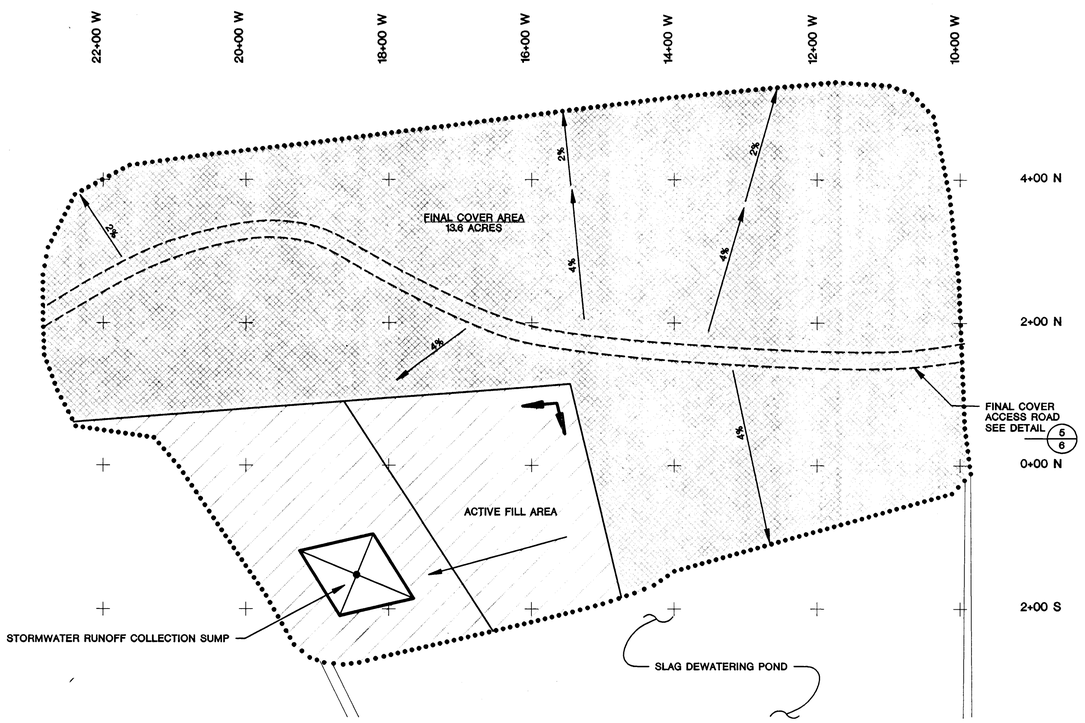
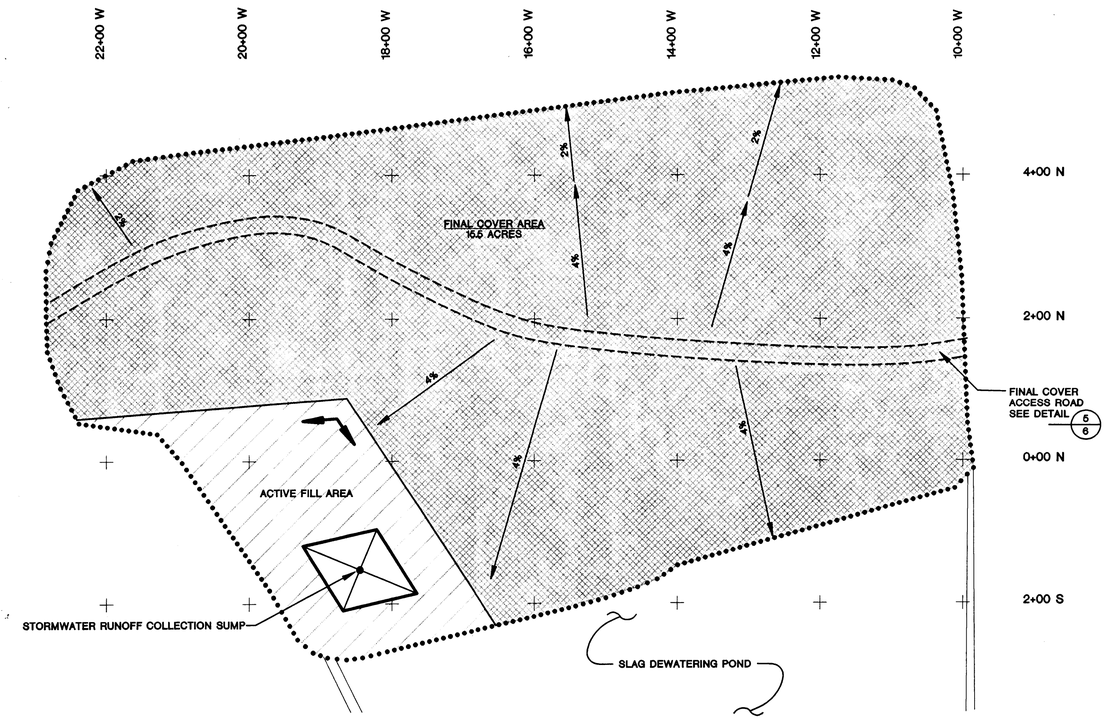


CLOSURE SCHEMATIC - YEAR 2000



CLOSURE SCHEMATIC - YEAR 2004



CLOSURE SCHEMATIC - YEAR 2008

LEGEND

- PROPOSED STORMWATER RUNOFF COLLECTION SUMP
- APPROXIMATE LIMITS OF LICENSED LANDFILL
- AREA TO RECEIVE INTERMEDIATE COVER
- FINAL COVER AREA
- ALL-WEATHER ACCESS ROAD
- DIRECTION OF WASTE PLACEMENT
- 2% PERCENT SLOPE AND DIRECTION

NOTES

1. INITIAL SITE CLOSURE WILL INCLUDE FINAL COVER PLACEMENT ON THE NORTHERN SIDESLOPE (APPROXIMATELY 6.4 ACRES) AS SHOWN ON PLAN SHEET 2.
2. REFER TO SUBSECTION 4.4.3 OF THE REPORT FOR A BRIEF DISCUSSION OF THE PHASED CONSTRUCTION.

TRUE

0 100 200

SCALE: 1"=100'

NOTE: THESE PLANS ARE ACCOMPANIED BY A REPORT OF THE SAME TITLE. THESE DOCUMENTS ARE INTERRELATED AND INTENDED TO BE USED AND REVIEWED TOGETHER. THESE DOCUMENTS ARE INTENDED TO BE USED FOR REGULATORY PURPOSES ONLY.

NOT FOR CONSTRUCTION

NO.	BY	DATE	REVISION	APP'D.
3.				
2.				
1.				

PROJECT:
PLAN MODIFICATION
WP & L - NED ASH DISPOSAL FACILITY
CASSVILLE, WISCONSIN

SHEET TITLE:
PHASED CLOSURE SCHEMATICS

DRAWN BY: RPR	SCALE: 1"=100'	PROJ. NO. 3902.01
CHECKED BY: TCH		FILE NO. 39020108
APPROVED BY: [illegible]	DATE PRINTED: OCT 05 1995	SHEET 3 OF 6
DATE: OCTOBER 1995		

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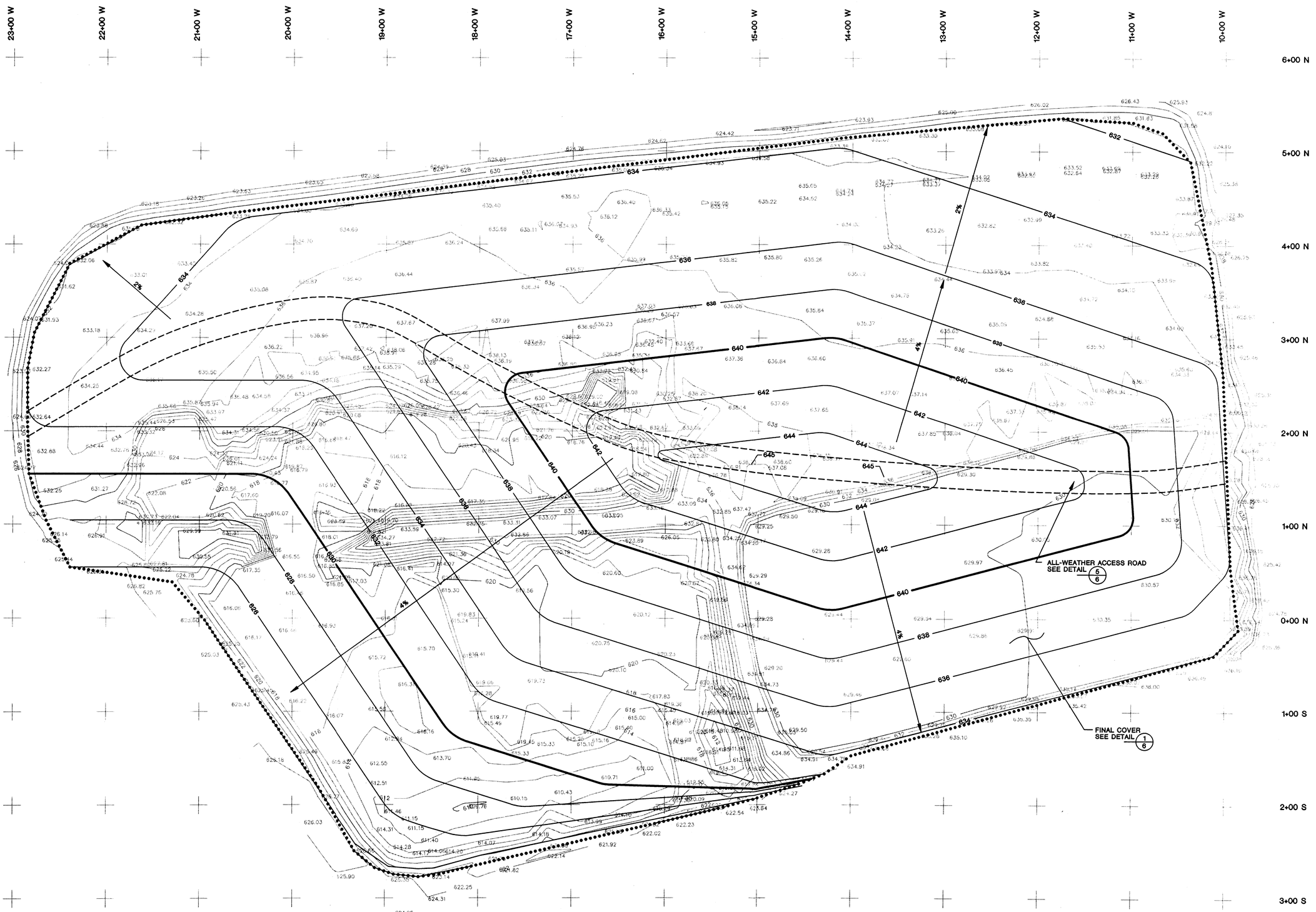

LEGEND

- APPROXIMATE LIMITS OF LICENSED LANDFILL
- 630 — PROPOSED 10' CONTOUR
- 632 — PROPOSED 2' CONTOUR
- 645 — PROPOSED SPOT ELEVATION
- 620 — EXISTING 10' CONTOUR
- 634 — EXISTING 2' CONTOUR
- 633.32 — EXISTING SPOT ELEVATION
- 2% — PERCENT SLOPE AND DIRECTION

NOTES

1. BASEMAP DEVELOPED FROM AERIAL SURVEY PROVIDED BY WP & L . DATE OF SURVEY: APRIL 5, 1994.
2. ELEVATIONS ARE USGS DATUM AND ARE BASED ON ON-SITE MONUMENTS.
3. THE PROJECT GRID SYSTEM IS PARALLEL AND PERPENDICULAR TO ON-SITE CONTROL MONUMENTS.
4. PROPOSED CONTOURS REPRESENT THE TOP OF THE FINAL COVER LAYER.

CONSTRUCTION QUANTITIES

FINAL COVER AREA	VOLUME/AREA
AREA	17.8 ACRES
TOPSOIL	14,500 CY
GENERAL FILL	58,000 CY
GEOCOMPOSITE CLAY LINER	29,000 SY

TRUE

0 50 100

SCALE: 1"=50'

NOTE: THESE PLANS ARE ACCOMPANIED BY A REPORT OF THE SAME TITLE. THESE DOCUMENTS ARE INTERRELATED AND INTENDED TO BE USED AND REVIEWED TOGETHER. THESE DOCUMENTS ARE INTENDED TO BE USED FOR REGULATORY PURPOSES ONLY.

NOT FOR CONSTRUCTION

NO.	BY	DATE	REVISION	APP'D.
3.				
2.				
1.				

PROJECT: PLAN MODIFICATION
WP & L - NED ASH DISPOSAL FACILITY
CASSVILLE, WISCONSIN

SHEET TITLE: FINAL GRADES

DRAWN BY: RPR	SCALE: 1" = 50'	PROJ. NO. 3902.01
CHECKED BY: TCH		FILE NO. 39020105
APPROVED BY: C.M.	DATE PRINTED: OCT 05 1995	SHEET 4 OF 6
DATE: OCTOBER 1995		

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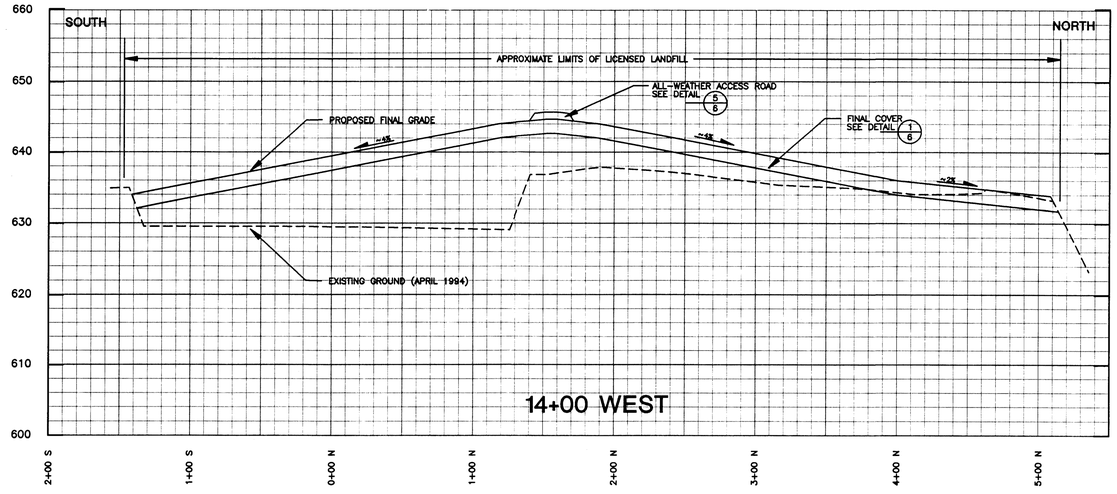
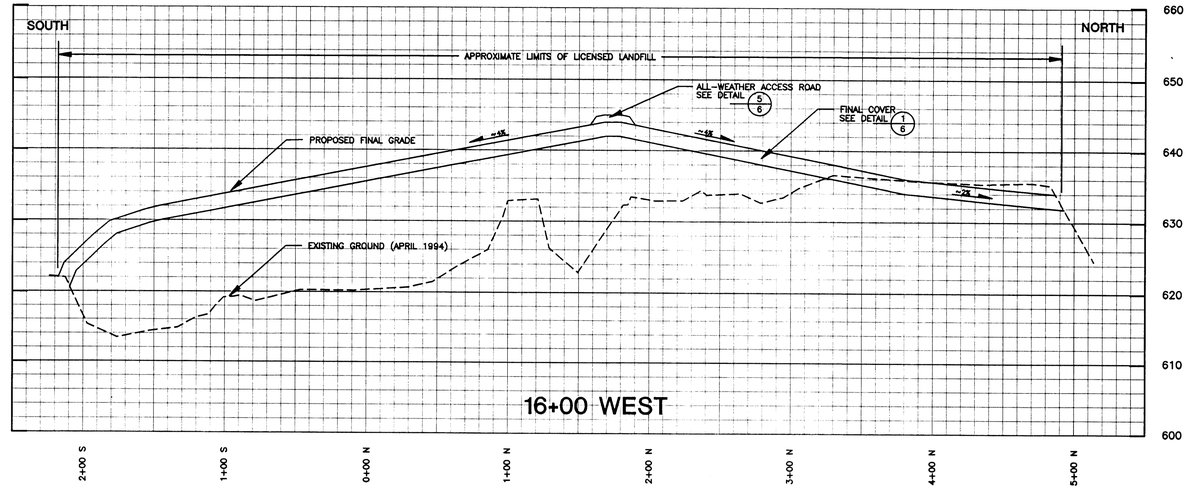
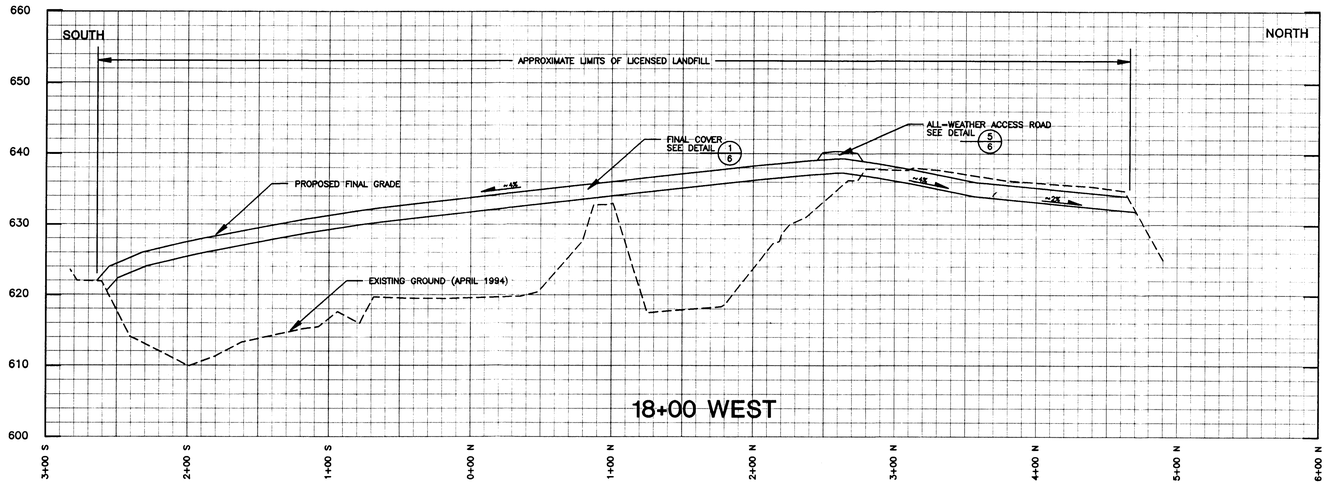
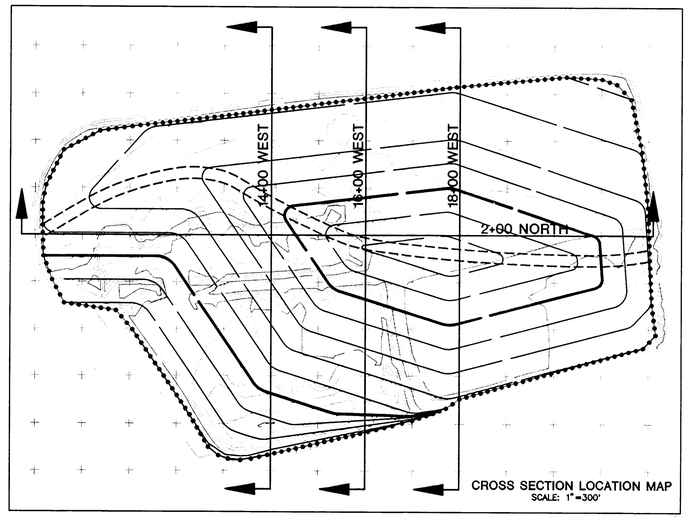
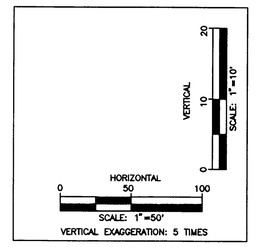
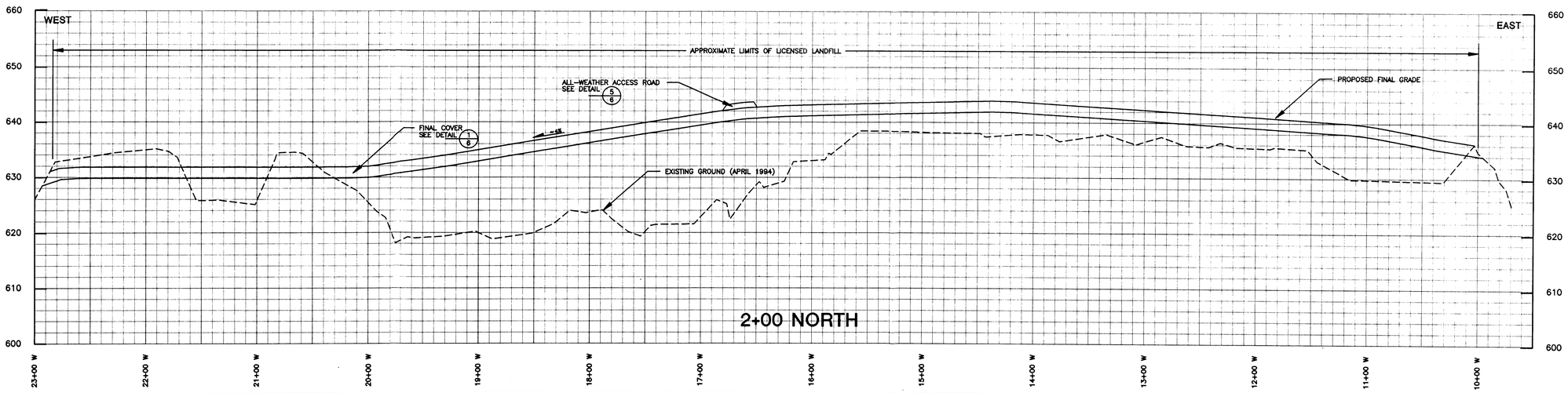












NOTES

1. REFER TO PLAN SHEETS 1 AND 2 FOR NOTES REGARDING EXISTING CONDITIONS.
2. SILT FENCING AND DIVERSION BERMS WILL BE ADDED TO DIRECT SURFACE WATER RUNOFF AWAY FROM THE ACTIVE FILLING AREA.

NOTE: THESE PLANS ARE ACCOMPANIED BY A REPORT OF THE SAME TITLE. THESE DOCUMENTS ARE INTERRELATED AND INTENDED TO BE USED AND REVIEWED TOGETHER. THESE DOCUMENTS ARE INTENDED TO BE USED FOR REGULATORY PURPOSES ONLY.

NOT FOR CONSTRUCTION

NO.	BY	DATE	REVISION	APP'D.
3.				
2.				
1.				

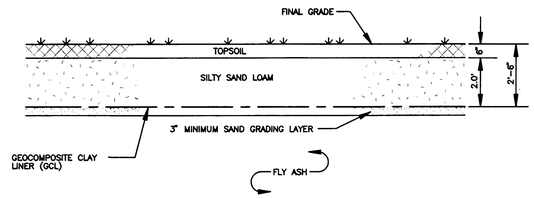
PROJECT: PLAN MODIFICATION
WP & L - NED ASH DISPOSAL FACILITY
CASSVILLE, WISCONSIN

SHEET TITLE: ENGINEERING CROSS SECTIONS
14+00 W, 16+00 W, 18+00 W, 2+00 N

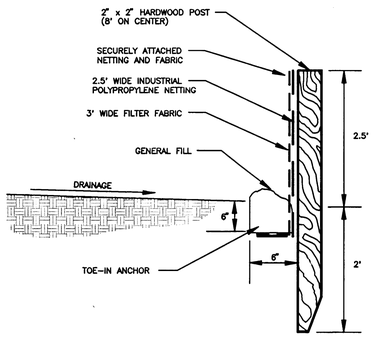
DRAWN BY: RPR	SCALE: AS SHOWN	PROJ. NO. 3902.01
CHECKED BY: TEH		FILE NO. 39020106
APPROVED BY: DCM	DATE PRINTED: 10/05/1995	SHEET 5 OF 6
DATE: OCTOBER 1995		

RMT, INC.
744 Heartland Trail
Madison, WI 53717-1934
P.O. Box 8923
Madison, WI 53708-8923
Phone: 608/831-4444

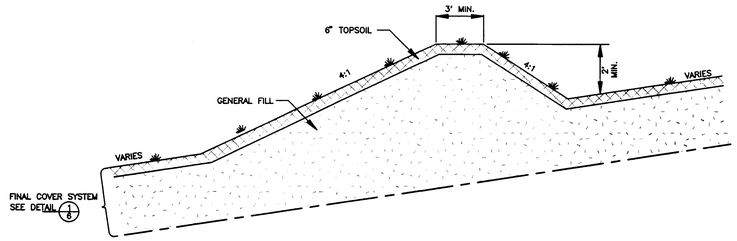
Drawing File = x:\03902\01\39020106
Project File = K:\PROJECT\39020106.PRF
SCALE File = 500000.000000
Plot Date = Wed Oct 4 09:09:34 1995



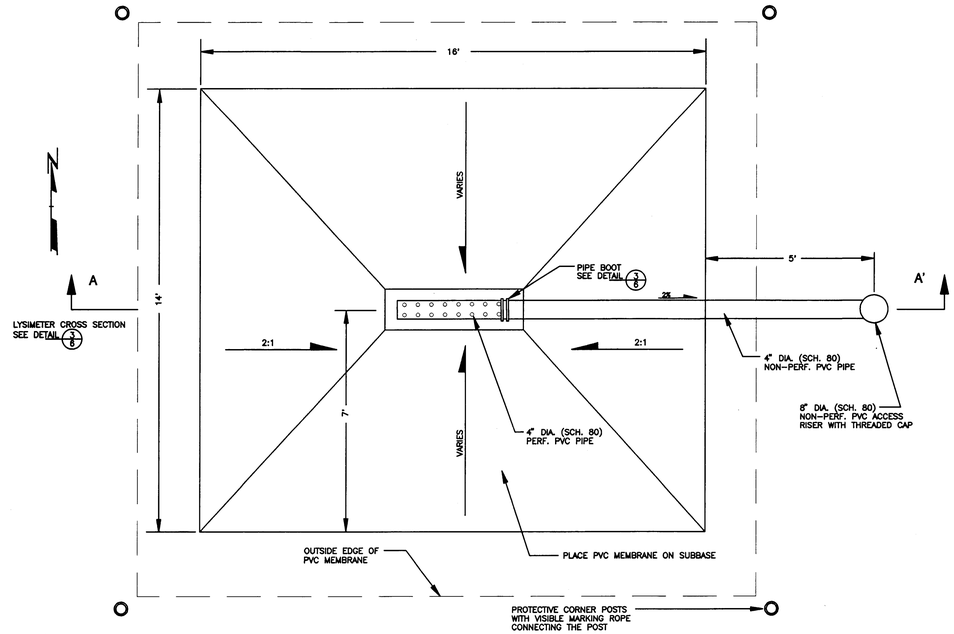
1/6 FINAL COVER
(NOT TO SCALE)



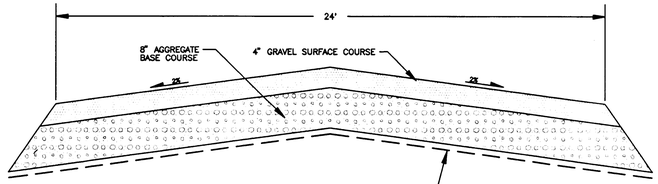
4/6 SEDIMENT CONTROL (SILT) FENCE
(NOT TO SCALE)



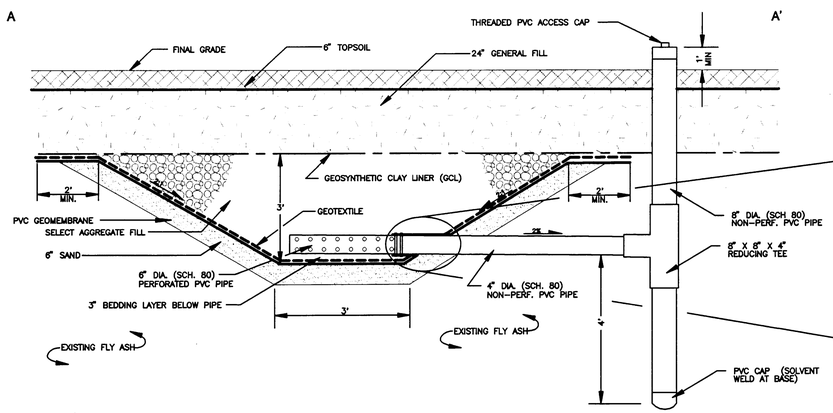
6/6 SURFACE WATER DIVERSION BERM
(NOT TO SCALE)



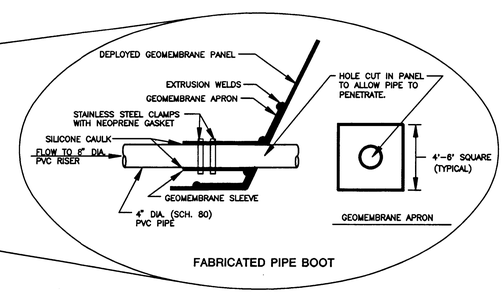
2/6 BASIN LYSIMETER-PLAN VIEW
NOT TO SCALE



5/6 ALL-WEATHER ACCESS ROAD
(NOT TO SCALE)



3/6 SECTION THROUGH BASIN LYSIMETER
(NOT TO SCALE)



FABRICATED PIPE BOOT

NOTE: THESE PLANS ARE ACCOMPANIED BY A REPORT OF THE SAME TITLE. THESE DOCUMENTS ARE INTERRELATED AND INTENDED TO BE USED AND REVIEWED TOGETHER. THESE DOCUMENTS ARE INTENDED TO BE USED FOR REGULATORY PURPOSES ONLY.

NOT FOR CONSTRUCTION

NO.	BY	DATE	REVISION	APP'D.
3.				
2.				
1.				

PROJECT: PLAN MODIFICATION
WP & L - NED ASH DISPOSAL FACILITY
CASSVILLE, WISCONSIN

SHEET TITLE: DETAILS

DRAWN BY: RPR	SCALE: AS SHOWN	PROJ. NO. 3902.01
CHECKED BY: TEM		FILE NO. 39020107
APPROVED BY: TEM	DATE PRINTED: OCT 05 1995	SHEET 6 OF 6
DATE: OCTOBER 1995		

RMT, INC.
744 Heartland Trail
Madison, WI 53717-1934
P.O. Box 8923
Madison, WI 53708-8923
Phone: 608/831-4444

Drawing File = K:\03902\01\39020107
Plot File = K:\CTB\39020107.PRF
SCALE = 1000000.000000
Plot Date = Wed Oct 4 09:06:09 1995

NOTES

1. SITE LOCATION: NORTHERN 1/2 OF SECTION 19, T3N, R5E, TOWN OF CASSVILLE, GRANT COUNTY.
2. THE PROJECT GRID SYSTEM IS PARALLEL AND PERPENDICULAR TO ON-SITE CONTROL MONUMENTS.
3. SITE PLAN DEVELOPED AND MODIFIED BY BT², INC. FROM SITE LAYOUT MAP DEVELOPED BY RMT, INC. AND INCLUDED IN THE PLAN MODIFICATION PREPARED BY RMT IN OCTOBER 1995.

LEGEND

- CRT WELL
- WATER SUPPLY WELL
- APPROXIMATE LIMITS OF LICENSED LANDFILL
- RAILROAD TRACK
- ROAD
- APPROXIMATE PROPERTY LINE
- +12+00N PROJECT GRID SYSTEM
- BUILDINGS
- PILINGS

32+00W 28+00W 24+00W 20+00W 16+00W 12+00W 8+00W 4+00W 0+00E 4+00E 8+00E 12+00E 16+00E

12+00N

BLUFFS

BLUFFS

C.T.H. "V V"

WPDES BASINS

8+00N

PLANT WELL A

PLANT WELL B

4+00N

NELSON DEWEY CREEK

1996 FINAL COVER AREA (PHASE 1)

1999 COVER AREA (PHASE 3)

1997 FINAL COVER AREA (PHASE 2)

ACTIVE AREA

INTERIM COVER AREA

SLAG DEWATERING POND

SLAG POND INFLUENT

WPDES OUTFALL

COAL PILE

GENERATING STATION

0+00N

STONEFIELD VILLAGE WELL

TEMPORARY STOCKPILE LOCATIONS (DREDGE MATERIAL)

ACCESS ROAD

2001 Final Cover Area

CRT WELL

RIVER TERMINAL LOCATION (DREDGE MATERIAL UNLOADING LOCATION)

ACCESS ROAD

4+00S

TRUE

MISSISSIPPI RIVER

FLOW DIRECTION

0 200 400

SCALE: 1"=400'

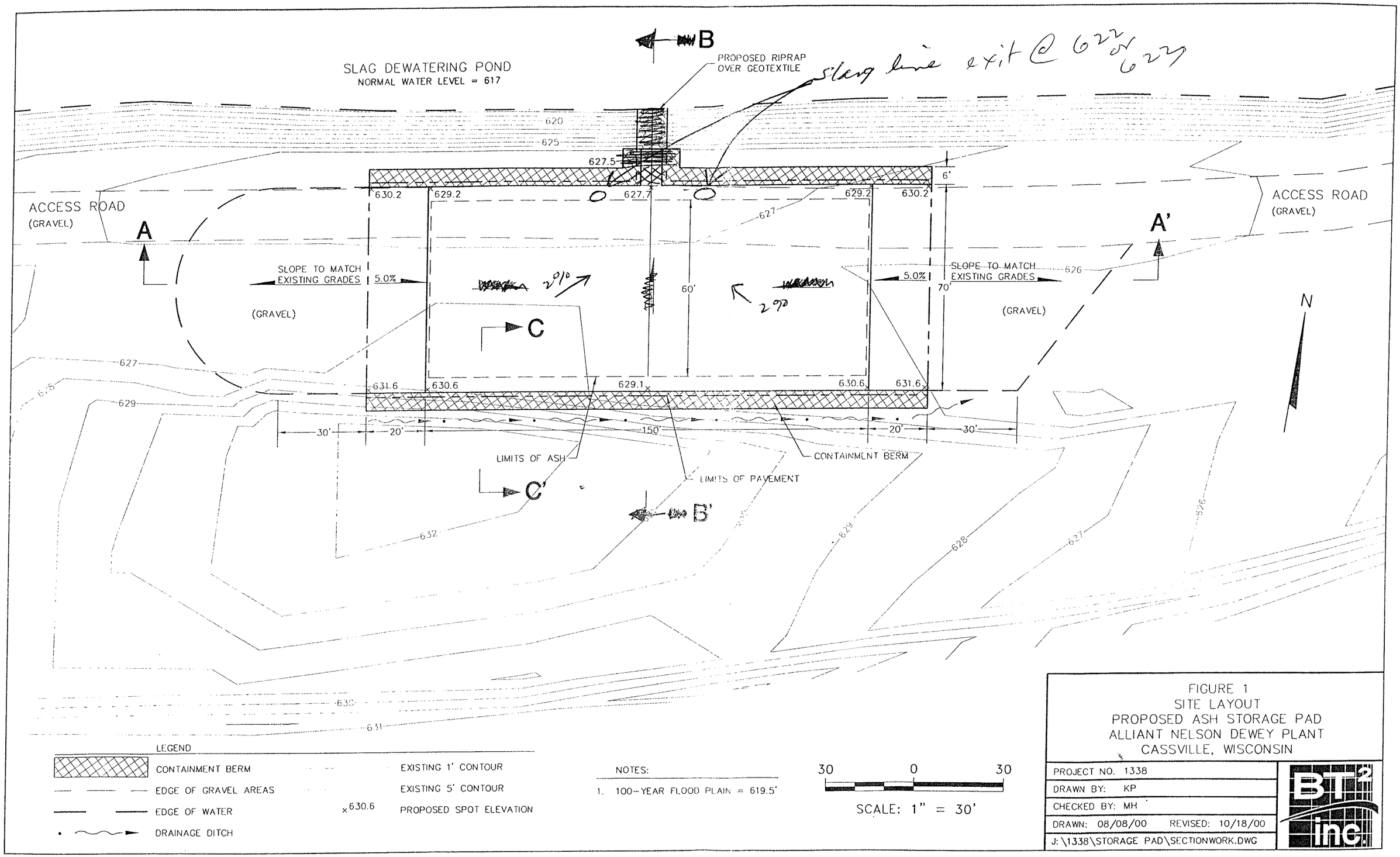
8+00S

PROPOSED ASH STORAGE PAD

FIGURE 1
SITE PLAN
ASH STORAGE PAD
ALLIANT NELSON DEWEY PLANT
CASSVILLE, WISCONSIN

PROJECT NO. 1338	
DRAWN BY: KP/CS.	
CHECKED BY: DN/MH	
DRAWN: 10/95	REVISED: 08/08/00
J:\1338\ASH PAD\SITEPLAN.DWG	

BT² inc.



LEGEND

- CONTAINMENT BERM
- EDGE OF GRAVEL AREAS
- EDGE OF WATER
- DRAINAGE DITCH
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- x630.6 PROPOSED SPOT ELEVATION

NOTES:

1. 100-YEAR FLOOD PLAIN = 619.5'

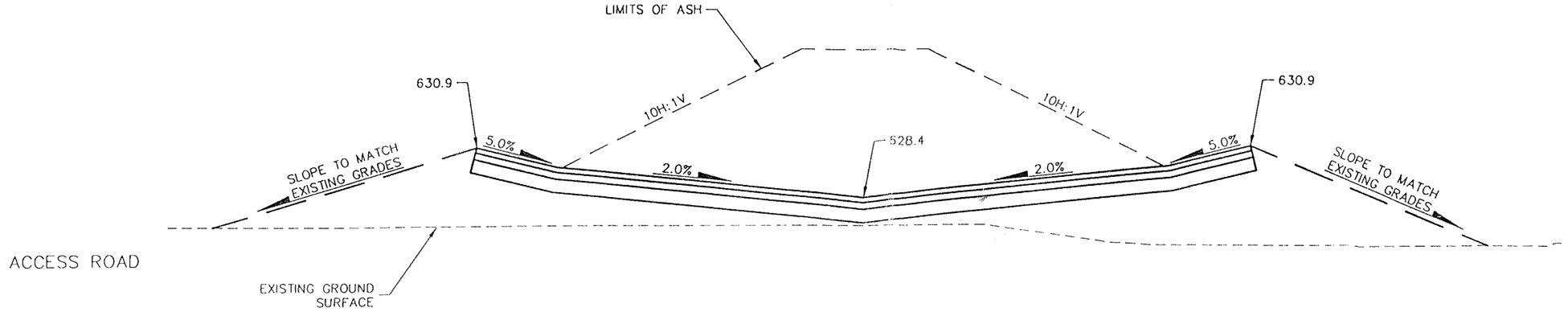
30 0 30

SCALE: 1" = 30'

FIGURE 1
SITE LAYOUT
PROPOSED ASH STORAGE PAD
ALLIANT NELSON DEWEY PLANT
CASSVILLE, WISCONSIN

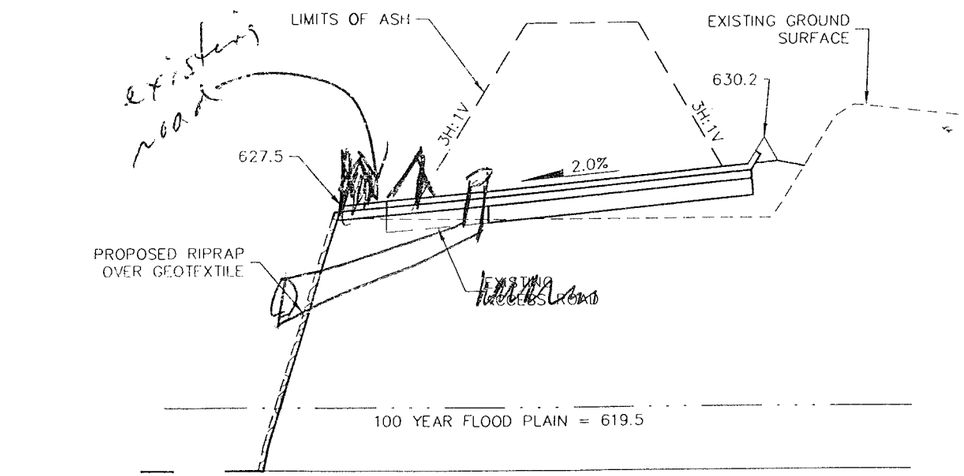
PROJECT NO. 1338	
DRAWN BY: KP	
CHECKED BY: MH	
DRAWN: 08/08/00	REVISED: 10/18/00
J:\1338\STORAGE PAD\SECTIONWORK.DWG	

BT² inc.



CROSS SECTION A-A'

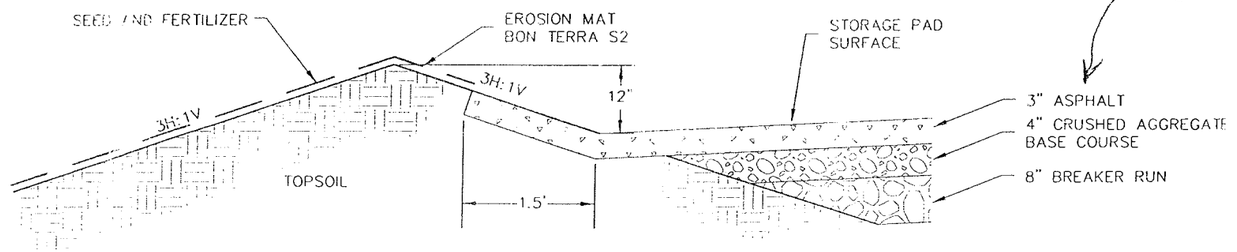
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 6'
VERTICAL EXAGGERATION: 5X



CROSS SECTION B-B'

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 6'
VERTICAL EXAGGERATION: 5X

May be modified based on final pavement design

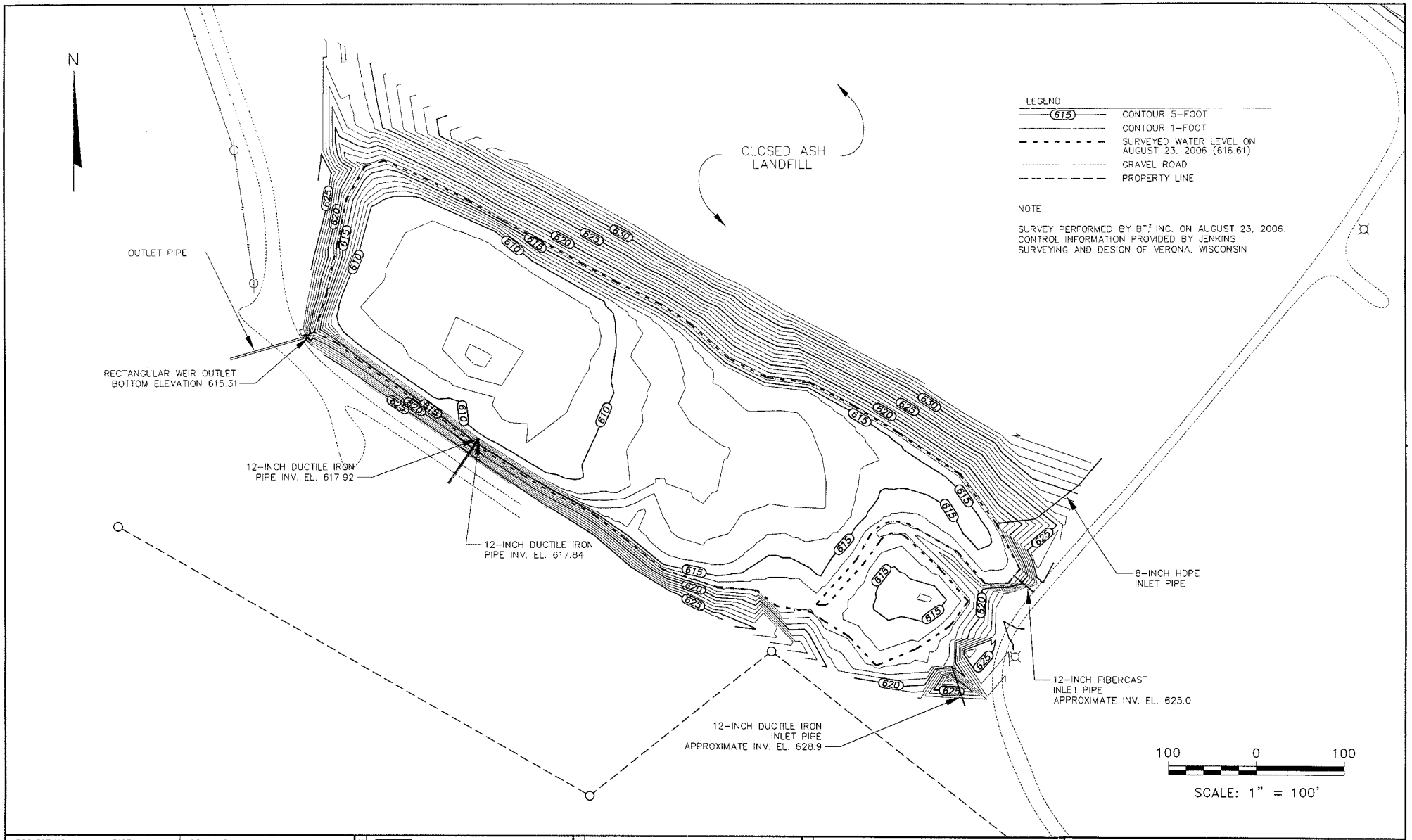


CROSS SECTION C-C'

NOT TO SCALE

FIGURE 2
CROSS SECTIONS
PROPOSED ASH STORAGE PAD
ALLIANT NELSON DEWEY PLANT
CASSVILLE, WISCONSIN

PROJECT NO. 1338	
DRAWN BY: KP	
CHECKED BY: MH	
DRAWN: 08/08/00 REVISED: 10/18/00	
J:\1338\STORAGE PAD\SECTIONWORK.DWG	



PROJECT NO:	3197	DRAWN BY:	TR
DRAWN:	08/29/06	CHECKED BY:	SC
REVISED:	09/05/06	APPROVED BY:	

ENGINEER: BT² Inc.
2830 DAIRY DRIVE
MADISON, WI 53718-6751
PHONE: (608) 224-2830
FAX: (608) 224-2839

CLIENT: ALLIANT ENERGY
ALLIANT ENERGY NELSON DEWEY ENERGY CENTER
11999 CTH VV
CASSVILLE, WISCONSIN

SITE: ALLIANT NELSON DEWEY
11999 CTH VV
CASSVILLE, WISCONSIN

SLAG POND TOPOGRAPHIC SURVEY

SHEET 2 OF 22

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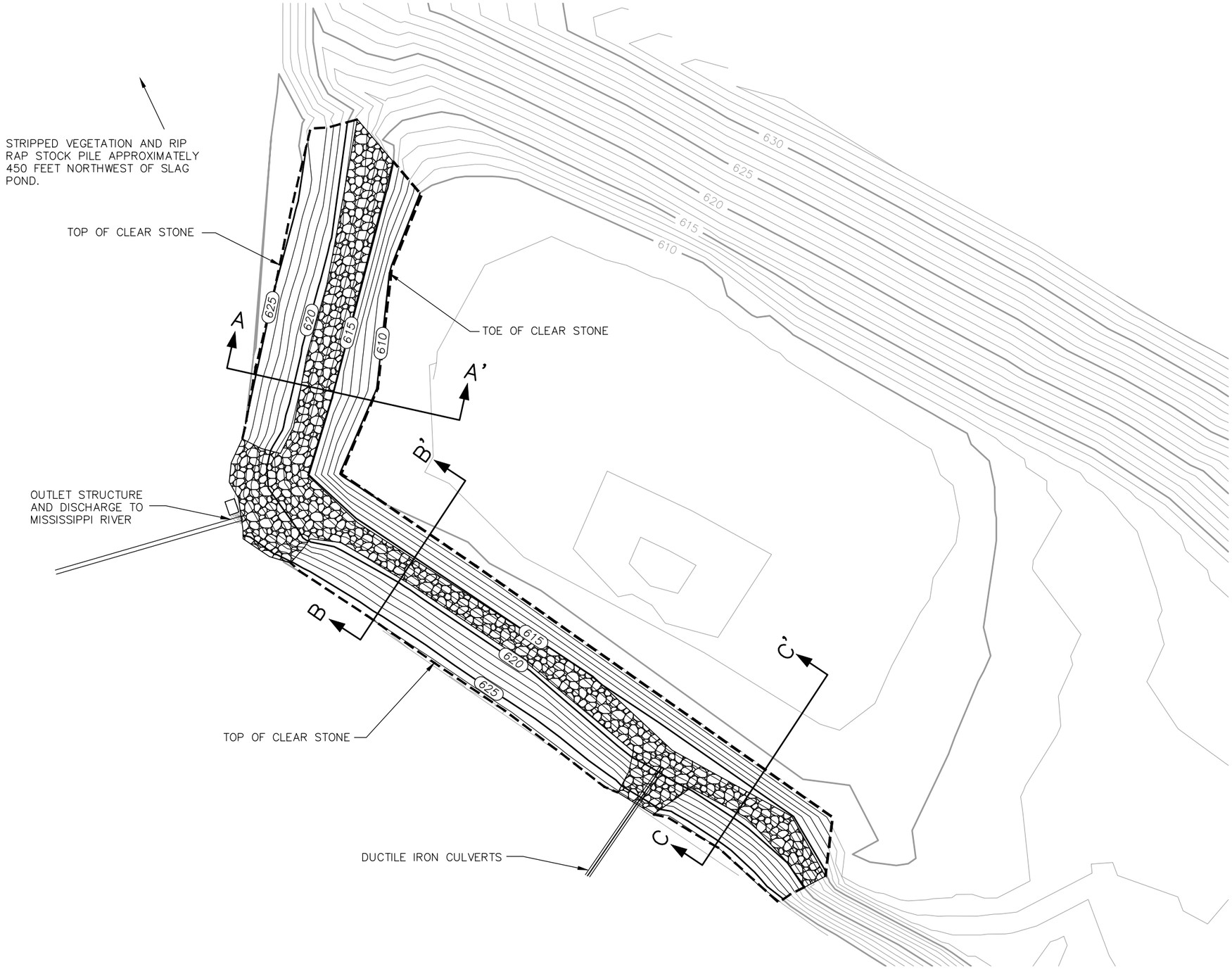


LEGEND

- 625 — EXISTING 5–FOOT CONTOUR
- EXISTING 1–FOOT CONTOUR
- 615 — CONSTRUCTED 5–FOOT CONTOUR
- CONSTRUCTED 1–FOOT CONTOUR
- CONSTRUCTION LIMITS
- RIPRAP

NOTES:

1. EXISTING CONDITIONS SURVEY PERFORMED BY BT2, INC. ON AUGUST 23, 2006 AND SCS ENGINEERS ON OCTOBER 30, 2013.
2. CONSTRUCTION DOCUMENTATION SURVEY PERFORMED BY SCS ENGINEERS ON NOVEMBER 26, 2013.
3. SEE FIGURE 2 FOR CROSS SECTIONS.

N

50 0 50

SCALE: 1" = 50'

PROJECT NO.	25213193	DRAWN BY:	BJM/JB
DRAWN:	11/20/13	CHECKED BY:	PEG
REVISED:	12/12/13	APPROVED BY:	

ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718–6751
PHONE: (608) 224–2830

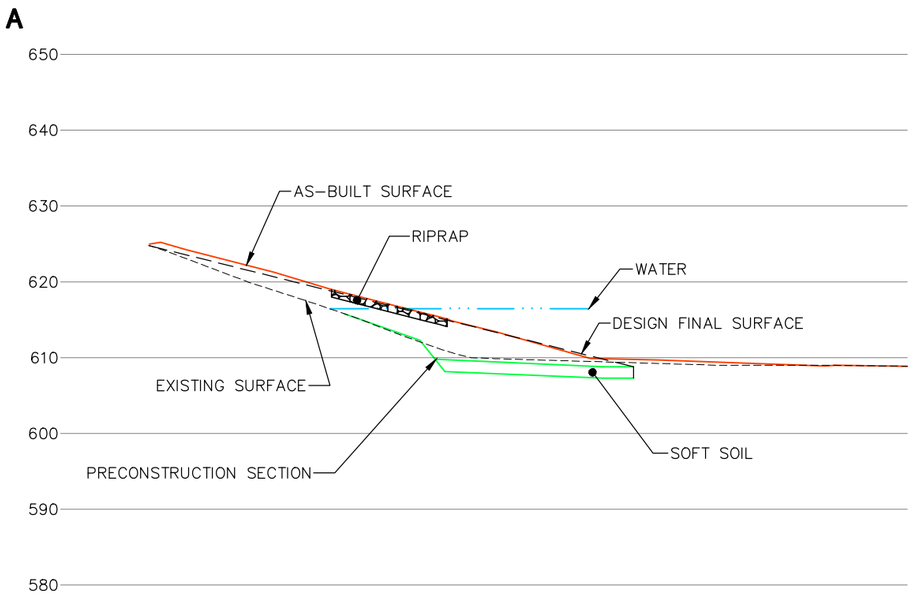
CLIENT: WISCONSIN POWER AND LIGHT CO.
NELSON DEWEY GENERATING STATION
11999 COUNTY HIGHWAY VV
CASSVILLE WI, 53806

SITE: CONSTRUCTION DOCUMENTATION
SLAG POND
EROSION CONTROL IMPROVEMENTS

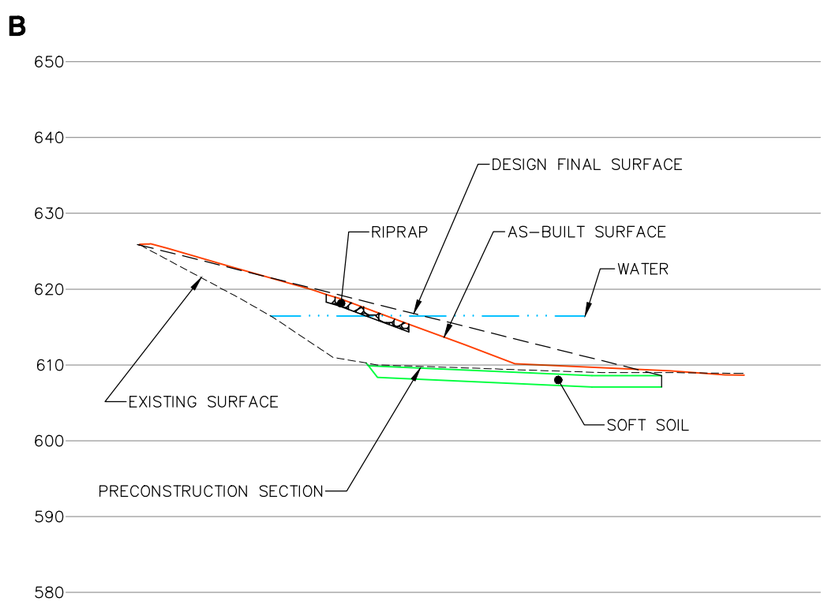
FINAL CONDITIONS

FIGURE 1

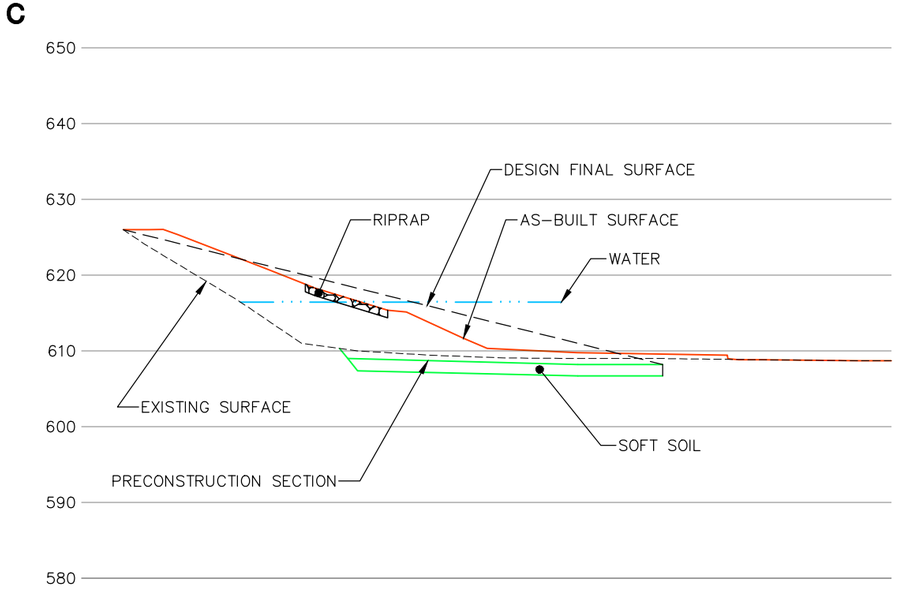
I:\25213193\Drawings-General\Nelson Dewey Quantities.dwg, 12/12/2013 4:10:44 PM



SECTION A-A'
SCALE: 1" = 20'



SECTION B-B'
SCALE: 1" = 20'



SECTION C-C'
SCALE: 1" = 20'

NOTES:

1. EXISTING SURFACE BASED ON HARD HAT SERVICES DESIGN PLAN SET, SHEET G-2.
2. PRECONSTRUCTION SURFACE BASED ON DATA COLLECTED BY WAMSLEY EXCAVATING AND QUARRY PRODUCTS DURING THE OCTOBER 2013 PRECONSTRUCTION PROJECT EVALUATION.
3. DESIGN FINAL SURFACE BASED ON HARD HAT SERVICES DESIGN PLAN SET, SHEET C-1.
4. AS-BUILT SURFACE BASED ON CONSTRUCTION DOCUMENTATION SURVEY PERFORMED BY SCS ENGINEERS ON NOVEMBER 26, 2013.

PROJECT NO.	25213193	DRAWN BY:	BJM/JB
DRAWN:	11/20/13	CHECKED BY:	PEG
REVISED:	12/12/13	APPROVED BY:	

ENGINEER
SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

CLIENT
WISCONSIN POWER AND LIGHT CO.
NELSON DEWEY GENERATING STATION
11999 COUNTY HIGHWAY VV
CASSVILLE WI, 53806

SITE
CONSTRUCTION DOCUMENTATION
SLAG POND
EROSION CONTROL IMPROVEMENTS

CROSS SECTIONS

FIGURE
2

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