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BBL
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

May 23, 2000

Mr. Tom Kendzierski
Wisconsin Department of Natural Resources
WDNR Service Center
810 W. Maple
Spooner, Wisconsin 53702

RE: CAMU Application
Koppers Industries, Inc. Facility
Superior, Wisconsin
EPA ID No. WID 006 179 493

Dear Mr. Kendzierski:

On behalf of Beazer East, Inc. ("Beazer"), Blasland, Bouck and Lee, Inc. ("BBL") is submitting with this letter a Corrective Action Management Unit ("CAMU") application for the Koppers Industries, Inc. ("KII") facility in Superior, Wisconsin. The attached CAMU application, entitled "Request for Modification of the Closure and Long-Term Care Plan Approval and Corrective Action Management Unit ("CAMU") Demonstration", provides the conceptual design for the CAMU, justification for the CAMU, and a post-closure plan for the CAMU. It is our understanding that the Wisconsin Department of Natural Resources ("WDNR") has authority to determine the applicability of the CAMU designation at a facility under its jurisdiction. Therefore, Beazer requests your guidance toward and review of our CAMU application.

As you are aware, Beazer has been working toward site-wide corrective action at the KII Superior facility and has completed a Resource Conservation and Recovery Act ("RCRA") Facility Investigation ("RFI") Report for the facility. Beazer has also recently completed a Supplemental Investigation of Surface Water and Streambed Sediment in the Outfall 001 drainage and Crawford Creek, and a RFI of deep bedrock at the facility. Within the RFI, Beazer has set forth corrective action objectives ("CAOs") for soils, groundwater and sediments associated with the site. It is expected that corrective action to achieve some of the CAOs will consist of consolidation and management of remediation wastes. Beazer is proposing that a CAMU be used to consolidate soil and, potentially, sediment associated with proposed corrective measures. To implement corrective measures in a timely fashion, Beazer wishes to pursue the CAMU under the existing regulatory framework.

Beazer has initiated discussions with KII to resolve potential issues related to storm water management and deed restrictions. Beazer will be moving to resolve these issues within the next several months.

As you know, the CAMU settlement agreement was filed February 11, 2000, and proposed regulations are expected to be issued on August 7, 2000; it is our understanding that "grandfather" applications are due 90 days thereafter, or by November 5, 2000. To meet this deadline, Beazer is proposing a schedule that should allow WDNR to deem the CAMU application at the KII Superior facility "substantially complete" and "substantially in the approval process", as those determinations apply to the "grandfathering" of CAMUs under the current legislation. The following schedule is presented for your review and comment.

600 Waterfront Drive • Pittsburgh, PA 15222-4741
Tel (412) 231-6624 • Fax (412) 231-6147 • www.bbl-inc.com • offices nationwide

May 19: Submittal of the CAMU application (attached). The CAMU application presents the framework for the CAMU designation, including a summary of site activities conducted to date and the CAMU Demonstration. The CAMU Demonstration provides the conceptual design and support for the seven decision criteria identified in NR 636.40(3).

Week of May 22: Meeting with Beazer and WDNR to review the purpose and intent of receiving the CAMU determination prior to the "grandfathering" deadline. This meeting will establish a framework to determine the steps and final schedule required to allow WDNR to grant the CAMU under the current legislation.

Week of July 10: Meeting between WDNR and Beazer to discuss the Request for Modification of the Closure and Long-Term Care Plan Approval and CAMU Demonstration. Specifically, this meeting will be used to discuss whether WDNR can make a determination that the CAMU application is deemed "substantially complete", and to discuss additional information requirements that may be required to allow WDNR to determine that the application in "substantially complete". It is anticipated that at the conclusion of this meeting, the CAMU application can be deemed "substantially in the approval process".

Week of August 21: Submittal of revised CAMU application. The revised Request for Modification of the Closure and Long-Term Care Plan Approval and CAMU Demonstration will include information discussed in the July 10 meeting. It is anticipated that this submittal will be sufficient for WDNR to make the determination that the CAMU application is "substantially complete".

Week of September 18: A meeting between Beazer and WDNR to confirm that the application has been accepted for "grandfathering" under the existing CAMU regulations.

Beazer requests that WDNR begin review and comment on the attached Request for Modification of the Closure and Long-Term Care Plan Approval and CAMU Demonstration. We also request that you comment on this schedule. I will call you within one week to discuss this schedule and to establish our first meeting.

If you have any questions, please contact me at 412-231-6624, ext. 570.

Sincerely,

BLASLAND, BOUCK & LEE, INC.

Robert J. Anderson, P.G.
Associate
WI PG-1037

cc: Jane Patarcity – Beazer
W. Giarla – Beazer
L. Hyde – KII

#02 16 000 484

REPORT

Request for Modification of the Closure and Long-Term Care Plan Approval and Corrective Action Management Unit ("CAMU") Demonstration

Koppers Industries, Inc.
Superior, Wisconsin Facility
WID 006 179 493

Beazer East, Inc.
Pittsburgh, Pennsylvania

May 2000

BBL
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

Table of Contents

Figures

1 Introduction

Beazer East, Inc. ("Beazer") is submitting this Request for Modification of the Closure and Long-Term Care Plan Approval ("Request for Modification") and Corrective Action Management Unit ("CAMU") Demonstration for the Koppers Industries, Inc. ("KII") wood treating facility ("facility") in Superior, Wisconsin to incorporate the requirements of a CAMU. The CAMU will be used to manage remediation wastes generated during corrective action implementation at the facility. This Request for Modification is a Class 2 Modification, and was prepared in accordance with the requirements of the Wisconsin Administrative Code, Chapters NR 680 and NR 636.

The purpose of this document is to provide the necessary information for the WDNR to designate a CAMU in the former land farm area, where the engineered containment area is proposed to be constructed (further discussed in Section 3). The designation will facilitate relocation (consolidation) and effective management of these materials without triggering RCRA requirements that would otherwise be potentially applicable. The documentation to support regulatory approval of a CAMU designation is provided in Section 3 of this report.

Numerous investigations, which are described in Section 2 of this document, have been performed to determine the need for corrective action at the facility. A Phase III Resource Conservation and Recovery Act ("RCRA") Facility Investigation ("RFI") report was submitted to the Wisconsin Department of Natural Resources ("WDNR") in June 1997. This report provided the results of the investigation, corrective action objectives ("CAOs") and recommendations for a Corrective Measures Study ("CMS") for on-site soil and groundwater. It is anticipated that one component of corrective action at the facility may be consolidation and long-term management of soil and possibly sediments in an on-site engineered containment area. This proposed corrective action approach is being developed to address current and future potential exposures and risks associated with the facility.

To facilitate implementation of this component of the proposed corrective action approach without triggering RCRA requirements that may otherwise result in a less efficient and cost-effective remedy, this Request for Modification has been prepared to provide the necessary information to support the establishment of a CAMU. This Request for Modification provides support for the criteria listed in the Wisconsin Administrative Code, Chapter NR 636, and includes a CAMU Demonstration Report and conceptual design.

Section 1 of this Request for Modification presents the facility background, regulatory history and CAOs. A brief summary of previous investigations is provided in Section 2. The CAMU justification is provided in Section 3. Section 4 provides the Post-Closure Plan and Groundwater Monitoring Plan ("GMP").

1.1 Facility Description and History

The KII Superior, Wisconsin wood treating facility is located in a rural, sparsely-populated setting in Douglas County, approximately five miles southeast of the town of Superior at the junction of County Roads A and Z. The facility property is approximately 112 acres and is zoned for industrial use. As shown on Figure 1, the eastern property boundary parallels County Road A, and the northern property boundary parallels Hammond Avenue. Railroad tracks lie immediately to the north, west and south of the facility. The office and wood treating operations are located near the northern end of the property. The majority of the remainder of the property is used for the storage of treated and untreated wood, or is unused.

The facility produces pressure-treated railroad cross ties, bridge timbers, switch ties and crossing panels using creosote with a number 6 fuel oil carrier. Pentachlorophenol with a petroleum oil carrier was used as a preservative from 1955 through 1979.

The facility, which has been in operation since 1928, was constructed by the National Lumber and Creosoting Company. In 1938, the facility was acquired by the Wood Preserving Corporation, and on November 1, 1944, the deed was transferred to the Koppers Company, Inc. On June 16, 1988, the Koppers Company, Inc. was acquired by BNS, a subsidiary of Beazer PLC. Through a series of corporate name changes, the company name was changed to Beazer East, Inc. In December 1988, the facility was purchased by KII. Beazer retained the responsibility for environmental liabilities existing at the time of the sale to KII.

1.2 Regulatory History

In 1982, two clay-lined RCRA-regulated surface impoundments were put into operation to store wastewater from the wood treating process. K001 sludge (bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote) was generated and stored in the RCRA-regulated surface impoundments.

The United States Environmental Protection Agency ("EPA") administered the RCRA activities at the facility prior to January 1986. On January 31, 1986, the State of Wisconsin received authorization to administer the RCRA hazardous waste program, although EPA continued to administer the Hazardous and Solid Waste Amendments ("HSWA") regulatory requirements. The State of Wisconsin received authorization to administer HSWA in April 1992. On October 24, 1996, the Wisconsin Department of Natural Resources ("WDNR") issued a Conditional Closure and Long-Term Care Plan Approval Modification for the facility, which provided requirements for the site-wide corrective action activities. EPA sent a letter to Beazer (February 13, 1997) outlining the requirements to fully transfer the HSWA portion of the facility to WDNR pursuant to a minor permit modification.

In December 1981, a RCRA interim status groundwater detection monitoring network was installed around the RCRA-regulated surface impoundments. A Closure and Post-Closure Plan for the RCRA surface impoundments was submitted to WDNR on August 28, 1987. WDNR issued the Closure and Long-Term Care Plan Approval to the facility on October 1, 1987. EPA issued the HSWA portion of the permit, which included conditions related to performing a RCRA Facility Investigation ("RFI") at the facility, on September 30, 1988. The WDNR issued a Hazardous Waste Facility Operation License ("license") on December 21, 1990, which is effective for 30 years, expiring on September 30, 2020. The license incorporates the conditions of the Closure and Long-Term Care Plan Approval and all subsequent modifications. On September 20, 1995, WDNR issued a minor modification to the Closure and Long-Term Care Plan Approval to incorporate provisions for site-wide corrective action under the state's HSWA authority.

A RCRA Facility Assessment ("RFA") was conducted during 1987 and 1988 by the EPA and reported in June 1988. Several phases of a RCRA Facility Investigation (RFI) have been undertaken at the facility since January 1989 to satisfy permit requirements. The results of the RFI were presented in the RCRA Facility Investigation Report (Fluor Daniel GTI, June 1997). Section 2 presents a brief summary of previous findings at the facility.

1.3 Corrective Action Objectives

In accordance with Chapters NR 720 (soil cleanup standards) and NR 140 (groundwater standards) of the Wisconsin Administrative Code, risk-based corrective action objectives ("CAOs") have been established for the site. Generic CAOs for soils listed in NR 720 require remediation of soil contamination that results in restoration of the environment to the extent practicable, minimizes harmful effects to lands and waters of the state, and protects public health and the environment. Generic CAOs for groundwater listed in NR 140 address constituents exceeding

Preventive Action Limits ("PALs") or Enforcement Standards ("ES"), including whether a PAL or ES will be exceeded at the facility boundary.

Site-specific CAOs were established based on the results of previous investigations. These investigations, which are summarized in Section 2 of this document, show that the potential for exposure to site-related constituents is posed primarily by contact with surface soils. Because the clay beneath the site acts as an aquitard, the likelihood of potential exposure to groundwater containing site-related constituents is low. The site-specific CAOs, which are provided in the following sections, were provided in the RFI Report (June 1997).

1.3.1 Soil

The CAOs for soil are to:
1. Mitigate direct contact by potential receptors to surface soils containing site-related constituents at concentrations that may affect human health; and
2. Minimize the potential for off-site migration of site-related constituents through dissolved-phase transport (groundwater), or through erosion, entrainment in surface water, and off-site migration of soils containing site-related constituents via surface water.

1.3.2 Groundwater

The CAO for groundwater is to:
1. Ensure, through groundwater monitoring at the downgradient property boundary, that site-related constituents are not migrating off-site.

2 Summary of Previous Investigations and Evaluations

This section provides a summary of the previous investigations and evaluations that have been conducted at the facility. Because numerous investigations have been performed and reports prepared, the summary presented in this section focuses on information that is pertinent to the development of this Request for Modification and CAMU Demonstration Report. A more complete summary of all site investigations is presented in the previously referenced Phase III RFI Report.

2.1 Previous Site Investigations

From 1981 to the present, various investigations have been performed at the facility. Prior to 1987, investigation activities at the facility were related to groundwater detection monitoring and groundwater quality assessments for the RCRA impoundments. In 1987, site-wide corrective action investigation activities began with the EPA's RCRA Facility Assessment, followed by RFI activities conducted by Beazer. A list of investigations that have been performed pursuant to RCRA requirements since 1981 is provided in this section.

- In December 1981, Koppers installed wells as part of the RCRA interim status groundwater detection monitoring program.

- GAI Consultants (GAI) was retained by Koppers Company, Inc. to assess groundwater hydrology and quality relative to the integrity of the clay liner for the two RCRA-regulated surface impoundments, and the stability of the dikes surrounding the impoundments. During June and July of 1984, GAI installed eleven L-series wells around the perimeter of the impoundments. This information was submitted as an attachment with a Part-B Permit Application under RCRA. The results of this investigation stated that the impoundments were stable as constructed.

- Woodward Clyde Consultants was retained by Koppers Company, Inc. to define the general subsurface geology and groundwater hydrology in the vicinity of the RCRA surface impoundments during September and October 1985.

- In August and September 1986, Woodward Clyde modified the existing groundwater monitoring network at the site.

- In April 1987, Keystone Environmental Resources, Inc. (Keystone) was retained by Koppers Company, Inc. to perform a hydrogeologic investigation in the RCRA-regulated surface impoundment area.

- In December 1987, Keystone performed slug tests on ten wells monitoring the clay unit in the vicinity of the two RCRA-regulated surface impoundments.

- In April 1988, Keystone installed a well to monitor the sand unit at boring location R-5D. The sand unit was not encountered at that drilling location and the boring was grouted upon completion.

- In August 1988, Keystone performed a soil sampling and impoundment subgrade evaluation to support closure of the two RCRA surface impoundments. In conjunction with these activities, ten surface soil samples were collected from the sprayfield on August 4 and 5, 1988.

- In November 1988, Wisconsin Test Drilling, Inc. (WTD) installed wells to replace some of the wells that had been decommissioned for closure of the RCRA surface impoundments. WTD also installed well MW-2S in November 1989.

- In 1987 and 1988, a RCRA Facility Assessment (RFA) was conducted at the facility under the direction of EPA Region V.

- A Phase I RFI, which included groundwater, soil, surface water and sediment sampling activities required by the RFA and Phase I RFI Work Plan, was performed during July 1990 through October 1990 and reported in a Phase II RFI Report of Findings.

- A Phase III RFI Work Plan was submitted to WDNR and EPA in August 1993. As part of the Phase III RFI, cone penetrometer testing was performed in October 1994 and January and February 1995. Results of the cone penetrometer testing were reported to WDNR and EPA in an Interim Letter Report (July 1995).

- During June 1995, Groundwater Technology, Inc. installed additional wells and abandoned other wells around the closed RCRA surface impoundments to establish a monitoring program consisting of A-level (shallow water table) wells and C-level (sand unit) wells. The B-level (saturated clay) wells were determined to be duplicative of the shallow clay conditions already monitored by A-level wells. Also, a replacement well for W-12C was installed because this well was suspected of having a leaking annulus.

- From October through December 1996, the Phase III RFI field work was performed. Results were reported in the Phase III RCRA Facility Investigation Report (June 1997).

- In 1996, surface water, sediment and floodplain soils were collected from areas associated with Outfall 001 and Crawford Creek as part of the preliminary surface water and streambed sediment investigation. Results are presented in the Preliminary Characterization Report (March 1997).

- A Supplemental Investigation Work Plan, Surface Water and Streambed Sediment (May 1998) was implemented during the summer of 1999 to further characterize surface water and sediments in the Outfall 001 ditch and Crawford Creek. Results will be presented to WDNR in the Supplemental Surface Water and Streambed Sediment Investigation Report (May 2000).

- Three monitoring wells were installed into bedrock beneath the site in November 1999 to determine whether constituents of interest had migrated to bedrock through conduits potentially created by old water production wells at the facility. The results of this investigation are pending.

A summary of the results of previous investigations is presented in the following paragraphs.

The geology beneath the site consists of approximately 175 feet of clay. Surficial fill is present in the land farm and drip track area, while a thin soil layer is present in the landfill and closed surface impoundments areas. Within the clay, at depths varying between 35 and 50 feet below ground surface, are discontinuous sand lenses. The Superior Sandstone underlies the facility at approximately 175 feet below the ground surface.

Groundwater is present in a semiconfined state within the clay aquitard, and in a confined state within the discontinuous sand lenses. Because of the clay at the facility, it is difficult to create groundwater contour and flow maps. However, based on groundwater elevation data, it appears that a groundwater divide, trending approximately

east to west, is present in the vicinity of the closed surface impoundments. To the north of the divide, groundwater head elevations indicate that groundwater flows to the north. South of the divide, groundwater appears to flow to the southeast. Potentiometric elevations of groundwater in monitoring wells in the discontinuous sand lenses show a flow component in a northerly direction, at a very low gradient. A downward vertical gradient is present within the clay layer.

Six potential source areas have been identified at the facility, including the wood treating area, the closed non-RCRA surface impoundments, the lead track landfill, the drip track areas, the former unlined land farm area, and the straw bales area. All of these areas are inactive with the exception of the treating area and the drip track area; there is no longer a continuing source of potential constituents in any of these areas. The results of sampling show that constituents in soil and groundwater from each of these areas are localized, and are limited in areal and vertical extent because of the clay beneath the site. Unsaturated soils, which are limited to the upper two to four feet because of the shallow nature of groundwater at the facility, are affected by site-related constituents beneath the each of these six areas. Constituents in soil appear to be limited to the boundary of each of these areas. No action is anticipated for either the former surface impoundments, because they have been closed and are the subject of ongoing groundwater monitoring, or the northern drip track, because it is an operating unit, which has been engineered and reconstructed, and is subject to Subpart W of the RCRA regulations.

Groundwater within the clay aquitard of the land farm, treating area, closed surface impoundments, and straw bale area contains site-related constituents, primarily polynuclear aromatic hydrocarbons ("PAHs"), at shallow depths. Groundwater within discontinuous sand lenses was found to be unaffected by site-related constituents, with the exception of isolated areas near the treating area and closed surface impoundments. Site-related constituents have not migrated beyond the facility boundary. Residential wells in the area were identified and sampled, with results showing that these wells are not affected by the facility.

2.2 Risk Assessment

A Technical Memorandum ("Memorandum") on Soil Risk Procedures was submitted to WDNR in December 1996. The Memorandum proposed a procedure for establishing a site-specific, risk-based cleanup level for site-related constituents, in compliance with the Wisconsin Administrative Code, Chapter NR 720. The purpose of the Memorandum was to develop a single residual contaminant level for total PAHs that would be protective of direct contact, migration to groundwater, and migration to surface water pathways. WDNR provided comments on the Memorandum on February 4, 1999. On April 28, 1999, Beazer submitted a revised Memorandum to WDNR. WDNR is currently reviewing the revised Memorandum. Corrective action at the facility will be based on site-specific cleanup levels established using procedures described in the final Memorandum.

2.3 Corrective Measures Study

A Corrective Measures Study ("CMS") for the facility has not yet been performed. Based on the results of the Phase III RFI, a streamlined, focussed CMS will be performed. The hydraulic properties of the facility, combined with the limited extent of constituents detected in groundwater, support the decision that a CMS for groundwater is not necessary. Downgradient sentinel well monitoring in the sand lenses may be performed to ensure that PALs or ESs are not exceeded at the downgradient property boundary. The CMS will therefore be focused on achieving the CAOs for soil. A focused CMS is warranted because of the limited extent of site-related constituents in soil at the facility, the availability of standard engineering solutions demonstrated to preclude direct contact with

constituents within shallow soil, and the implementability of institutional controls to mitigate contact with affected soils on-site. A focused CMS, consistent with the RCRA corrective action process, will allow us to expeditiously implement corrective action.
Beazer anticipates that corrective action at the facility will consist of excavation of affected soils and consolidation of them in an engineered unit to achieve the CAOs. The engineered containment area is proposed to be constructed over an area of the facility, the former land farm, where site-related constituents have been detected in soil. A CAMU will allow implementation of corrective action, including management of remediation wastes, without invoking the RCRA requirements that would otherwise be potentially applicable.

The proposed CAMU approach consists of the measures listed below.

- Construction of an engineered containment area on top of the inactive former land farm area (Figure 2).
- Excavation of impacted soils within a specific portion of the wood treating area, lead track landfill, areas surrounding the drip tracks, and the straw bales area and consolidation of those soils in the engineered containment area.
- Placement of additional materials (i.e., potential excess soils, concrete tank supports, other materials associated with corrective action in the process area, and potential sediments) into the engineered containment area.
- Covering of the engineered containment area.
- Long-term groundwater monitoring in accordance with the proposed GMP.
- Institutional controls.

One component of the proposed remedial approach described above is the construction of an engineered containment area to provide long-term containment of soils and sediments. The proposed conceptual design of the engineered containment area is presented in Section 3.2 of this report. Approximate volumes of material that may be placed in the CAMU have been estimated for purposes of the conceptual CAMU design based on the results of previous investigations performed at the facility and the CAOs established for Corrective Action at the facility. Areas potentially requiring corrective action and final volumes may be modified based on the results of the final risk assessment and CMS for the facility. It is anticipated that the following materials will be consolidated and contained within the engineered containment area:

- Approximately 9,000 cubic yards (cy) of soil from the vicinity of the wood treating area, including soil and miscellaneous material from the former pentachlorophenol tank farm area (including excess soils, concrete tank supports, and associated materials);
- Approximately 1,160 cy of soil from the southern-most drip track area;
- Approximately 725 cy of soil from the straw bales area;
- Approximately 2,930 cy of material (soil, ties and banding) from the lead track landfill; and
- Approximately 2,070 cy of sediments from the Outfall 001 drainage ditch and Crawford Creek.

3 CAMU Demonstration

3.1 CAMU Definition

The WDNR has promulgated specific provisions to expedite corrective actions at RCRA facilities. Two units created under Chapter NR 636 of the Wisconsin Administrative Code, CAMUs and Temporary Units (TUs), have been designated to facilitate the implementation of cost-effective corrective action at RCRA facilities. The CAMU, as defined in NR 636.03 and NR 600.03, is:

- "...an area within a facility that is designated by the department under NR 636 for the purpose of implementing corrective action requirements under s. NR 635.17 and s. 291.37, Stats. A CAMU shall only be used for the management of remediation wastes pursuant to implementing such corrective action requirements at the facility."

Further CAMU provisions set forth in NR 636.40 include those listed below.

- NR 636.40(1)(a) – "Placement of remediation wastes into or within a CAMU does not constitute land disposal of hazardous wastes."

- NR 636.40(1)(b) – "Consolidation or placement of remediation wastes into or within a CAMU does not constitute creation of a unit subject to minimum technology requirements."

3.2 CAMU Conceptual Design

The CAMU is intended to provide long-term containment of the materials that will be generated during corrective action at the Superior, Wisconsin facility. The current estimate of the volume of material to be consolidated is approximately 16,000 cubic yards (estimated remediation material volume is a "neat" value and does not take into account volume changes due to bulking or "fluffing" of excavated materials). The engineered containment area is proposed to be constructed such that it will include the existing area of the land farm area when completed. Figure 2 shows the areal configuration of the proposed CAMU, in accordance with the Wisconsin Administrative Code, Chapter NR 636.40(5). This conceptual design, as presented on Figure 3, has an estimated materials storage capacity of 19,000 cubic yards. The proposed engineered containment area also has the flexibility to accommodate additional material volume should remediation activities warrant such a need. The conceptual design of the CAMU provides the flexibility to allow the capacity to be expanded to an estimated volume of approximately 78,000 cubic yards by increasing the slope of the placed material (Figure 4).

3.2.1 CAMU Construction

The engineered containment area would be constructed by creating approximately 3-foot high berms surrounding the former land farm area. Based on the actual bearing capacity of the underlying soils, a geo-grid or geotextile material may be required on top of the subgrade to provide additional support, prior to the placement of any materials. Note that the perimeter of the former land farm area is based on previous survey data and the actual location of the CAMU berm perimeter may differ slightly from the conceptual design location.

It has been noted that the existing subgrade has been classified as a clayey soil with very low permeability. This will result in minimal groundwater contact with the remediation material placed in the engineered containment area.

Consequently, groundwater is not expected to be a potential migration pathway that may result in human or environmental exposure to site-related constituents from the consolidated materials. The soil in the former land farm area, which is the proposed location of the engineered containment area, has been shown to contain site-related constituents. The material to be placed in the CAMU is expected to have similar physical and chemical characteristics as the underlying soils. In light of these facts, and the presence of 175 feet of clay beneath the facility, neither a base liner system nor a leachate collection system are necessary as part of the engineered containment area conceptual design.

3.2.2 Placement of Remediation Materials

Once the subgrade of the containment area is prepared, soil and sediments will be excavated, dewatered and stabilized (as necessary), and transported to the engineered containment area to be placed and consolidated. The configuration would have sideslopes ranging from 5% (19,000 cubic yard volume) to 25% (78,000 cubic yard volume), as shown on Figures 3 and 4. Based on the surface area and anticipated volume of materials, the placed and consolidated materials would extend a height of 9 feet above the base of the engineered containment area (5% sideslopes/19,000 cubic yard volume). The material placement could potentially extend to a height of approximately 45 feet above the base of the engineered containment area if the 25% sideslope/78,000 cubic yard volume is utilized. Materials containing site-related constituents placed in the CAMU are not expected to be exposed during rainfall events. However, stormwater runoff will be controlled during the period of active placement by collecting runoff in a temporary basin. The storm water will be analyzed, and if site-related constituents are below applicable standards, the water will be discharged to the site drainage. If site-related constituents are in excess of applicable standards, the water will be trucked to the Superior POTW for treatment. It is not anticipated that the CAMU will be inactive for any duration during corrective action. However, if events dictate an extended period of remediation inactivity, placed waste materials will be protected with a temporary soil cover. The temporary cover will consist of a 12-inch soil layer that will be seeded with quick-germinating vegetative material. The vegetation is intended to provide erosion control for the temporary cover layer.

3.2.3 CAMU Cover System

Following the consolidation of the remediation materials, a cover system would be constructed. The cover system will consist of a 24-inch vegetative cover layer composed of locally available low-permeable clayey soil (Figure 5). The vegetative cover layer is intended to promote runoff, minimize infiltration, and minimize soil erosion. The seed mixture used will be a native perennial grass that is a good sod-former (commonly used for erosion control), establishes growth rapidly, and grows in both warm and cold seasons. Straw or hay would be used as mulch to provide seed protection and temporary erosion control. Stormwater runoff from the completed CAMU will be controlled and directed through the use of diversions, swales, and/or ditches. Alternative drainage constructs and techniques may be required based on actual site conditions and material properties. The runoff water-flow will be directed south and will tie into the existing runoff paths.

3.2.4 Final Design Considerations

The components and design of the final cover system will be developed during the remedial design. Specific design considerations for the engineered containment area will include, but are not be limited to, bearing capacity of the underlying materials, settlement and consolidation of remediation materials, potential for gas generation, climate,

and maintenance requirements. Regardless of the actual engineered containment area design, the specific design and performance objectives, including the following, would be addressed: minimizing the potential for human or environmental exposure to the consolidated materials; minimizing off-site migration of site-related constituents in surface water; and ease of long-term maintenance. These objectives, as well as applicable requirements of WDNR and sound engineering design, would be considered in the development of the final cover design.

A detailed design document will be prepared and submitted to WDNR following approval of this Request for Modification.

3.3 Material Characterization

Materials to be consolidated and contained in the CAMU may contain hazardous wastes F032 and F034. F032 waste is described as wastewaters, process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use, or have previously used, chlorophenolic formulations. F034 waste is described as wastewaters, process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use creosote formulations.

On May 12, 1997 (62 Federal Register 25998), the EPA promulgated treatment standards for listed wastes F032 and F034, which precluded these wastes from being land disposed subsequent to May 12, 1999. Therefore, soils and sediments potentially containing F032 or F034 wastes may not be land disposed without meeting treatment standards under the RCRA Land Disposal Restrictions ("LDRs"). On May 26, 1998, EPA promulgated the final rule for the Phase IV Land Disposal Restrictions (63 Federal Register 28602), which included treatment standards for contaminated soil that is restricted from land disposal. Contaminated soil generated as a result of remediation activities must meet these treatment standards prior to land disposal. However, to expedite corrective action, these sediments and soils may be placed in a landfill without meeting treatment standards if a CAMU is designated.

3.4 CAMU Justification

The proposed corrective action approach (summarized in Section 2.3 of this Request for Modification), includes consolidation and long-term management of affected soils and sediments in an engineered containment area. This proposed corrective action approach is protective, reliable and cost-effective. Because the excavated soils and sediments that would be stored in the engineered containment area are remediation wastes that would be subject to RCRA Subtitle C regulations, designation of a CAMU is required to cost-effectively and practicably meet applicable regulatory requirements and to achieve the CAOs established for the facility. The CAMU designation required for a specific portion of the facility is appropriate under the reasoning described in the preamble to the final CAMU regulations (58 Federal Register 8658), and summarized below.

- "These provisions were designed to reduce or eliminate certain waste management requirements of the current RCRA subtitle C regulations, which, when applied to remediation wastes, impede the ability of the Agency to select and implement reliable, protective, and cost-effective remedies at RCRA facilities."

- "The final CAMU provisions....are intended to provide even greater flexibility for decisionmakers in implementing protective, reliable, and cost-effective remedies."

Subsequent to promulgation of the final CAMU regulations (February 16, 1993), the EPA expanded upon the description of the purpose of CAMUs, further supporting the appropriateness of a CAMU designation at the facility, including the following:

- "Program implementors and facility owners/operators have long recognized that certain RCRA Subtitle C hazardous waste requirements can significantly complicate or delay cleanups when applied to remediation wastes. To address this problem, EPA promulgated regulations for corrective action management units (58 FR 8658, February 16, 1993). The CAMU Rule provides relief from specific RCRA standards that can preclude desirable remediation options or unnecessarily add to the cost of remedies..." (61 Federal Register 19437).

Here it is clear the CAMU satisfies EPA's requirements for a CAMU and purposes of a CAMU. The wastes being managed are RCRA listed hazardous wastes, but they are strictly remediation wastes. Beazer is conducting the remediation at the Superior site pursuant to the corrective action section of a RCRA Post Closure Care Permit under the oversight of WDNR. In light of the LDRs applicable to these wastes, it is obvious that the RCRA Subtitle C requirements will complicate, delay and render more costly the cleanup at Superior. Clearly, the most cost-effective protective remedy for the Superior remediation wastes is to contain them on-site. However, WDNR's ability to select the on-site containment remedy will be impeded by the RCRA Subtitle C requirements in the absence of a ACMU. The CAMU here will give WDNR the flexibility to select this protective, cot-effective remedial option.

The proposed CAMU encompasses the entire land farm area (Figure 1). This will allow for variability in the volume of soil and sediment to be consolidated, as well as soil bearing capacity limitations within this area. Incorporation of the entire land farm area within the CAMU is consistent with NR 636.40.

WDNR has promulgated seven decision-making factors for designating a CAMU. These factors are identified in Chapter NR 636.40(3)(a through g), and are described in the following subsections. Each of the following subsections provides information in support of designating a CAMU at the facility and to fulfill the regulatory requirements set forth in Chapter NR 636.

3.4.1 Implementation of Reliable, Effective, Protective and Cost-Effective Remedy

The implementation of the engineered containment area would be reliable both in the short and long term. In the short term, the remedy could be reliably designed and constructed. The materials, equipment, and technologies required to implement the proposed containment area are well proven and commonly practiced. The reliability of the engineered containment area over the long term could be maintained through detailed engineering design and construction, long-term maintenance, regular inspections, and performance of repairs, as required. The long-term reliability would also be maintained by performing groundwater monitoring to identify and evaluate groundwater impacts, if any, potentially attributable to the engineered containment area.

Implementing the proposed remedial approach, which includes the consolidation and containment of impacted soils and sediments in an engineered containment area to be constructed within a CAMU, would provide an appropriate balance between effectiveness and costs. To manage the remediation wastes without the designation of a CAMU would require additional measures and substantially greater costs to address LDRs and minimum technological requirements ("MTRs"). The additional costs associated with these measures are significant and would not provide

a proportional increase in the overall effectiveness of the remedial approach. Implementation of the on-site remedy could also be accomplished promptly.

The USEPA has recognized that subjecting remediation wastes to MTRs, as well as other RCRA hazardous waste disposal requirements, unduly limits the flexibility of the agency in choosing a practicable, protective, and cost-effective remedy, as presented in the preamble to the final CAMU regulations (58 Federal Register 8658):

- "EPA has found that subtitle C regulations, when applied to remediation wastes, can act as a disincentive to more protective remedies, and can limit the flexibility of a regulatory decision maker in choosing the most practicable remedy at a specific site."; and

- "The decision maker's goal in each case is to select a remedy that is fully protective, yet that reflects the technical and practical realities of the site. In addressing this situation, the decisionmaker needs the flexibility to consider a full range of strategies so that one may be selected that promptly and effectively addresses the problem. EPA believes that constraining this range of strategies by requiring compliance with subtitle C standards for wastes "generated" during remediation can often lead to remedies that are not cost-effective...."

Implementation of the engineered containment area (to be designated as a CAMU), would achieve each of the CAOs for the facility.

3.4.2 Protective of Human Health and the Environment

The CAMU would be protective of human health and the environment by reducing the potential for human and environmental exposure to site-related constituents and minimizing the potential for impacted media to migrate from the facility.

Over the short term, implementation of any remedy for remediation wastes other than in situ treatment would present a potential increased risk of human and environmental exposure to site-related constituents. The potential increased risk of exposure would result from the various materials excavation and handling activities that are required for both the on-site containment and off-site treatment or disposal remedies. These activities increase the potential for exposure via direct contact, ingestion, and inhalation of dust or volatilized constituents, mainly by construction workers. The potential also exists for increased worker safety concerns associated with, for example, the operation of heavy equipment. Such increased short-term risks are common to any remedial alternative that includes excavation, materials handling or processing. However, engineering controls and precautionary measures would be implemented to effectively minimize potential short-term risks. Potential short-term exposure and safety issues would also be minimized by the relatively short remedial action construction period for on-site containment, which is anticipated to be approximately six months. Also, with on-site containment, potential risks are reduced by eliminating the need to transport materials containing hazardous wastes on public roadways over long distances.

To minimize potential risk during excavation and consolidation activities, the following precautions would be taken:

- Prudent safety procedures and appropriate personal protective equipment would be employed by workers implementing the proposed remedial approach;

- Dust emissions would be controlled (if and as necessary), through the use of water sprays, reduced vehicle speeds, and covering of stockpiles;

- A site-specific Health and Safety Plan (HASP) would be implemented for corrective action, and would include information such as standard safety procedures, PPE requirements, and emergency procedures.

In the long term, the proposed remedial approach would fully achieve each of the CAOs established for protecting human health and the environment. The engineered containment area would be covered to provide long-term protection of human health and the environment by minimizing the potential for the consolidated soils and sediments to result in human or environmental exposure. The effectiveness of the engineered containment area would be maintained in the long term through institutional controls, deed restrictions, and periodic inspections and maintenance, as required.

3.4.3 Inclusion of Unaffected Areas in the CAMU

No unaffected areas are proposed to be included within the CAMU. The CAMU is proposed to be designated within the former land farm area, effectively minimizing the on-site areas to be managed in the long term.

Based on the conceptual design presented in Section 2 of this Request for Modification, placing a CAMU on the former land farm area will provide sufficient volume to accommodate consolidation of affected media within the proposed engineered containment area. Therefore, the CAMU will not include any unaffected areas of the facility. In addition, establishing the engineered containment area on top of the former land farm area will minimize the number of on-site locations used for long-term management of impacted materials, and consolidate impacted soils and sediments into a smaller, discrete area of the facility.

3.4.4 Minimization of Future Releases

The engineered containment area, as conceptually designed (including perimeter soil berms and cover system), would effectively mitigate the potential for releases to the environment. After completing the construction of the engineered containment area, post-closure maintenance activities would be conducted to ensure the integrity of the engineered containment area. These activities would include, but may not be limited to, periodic maintenance of the vegetative cover and berm, and repair of the final cover system, as needed, and long-term groundwater monitoring to detect whether any unacceptable releases have occurred from the CAMU.

3.4.5 Expedite Timing of Corrective Action

Designation of the engineered containment area as a CAMU would facilitate implementation of a prompt and effective remedial action at the facility. Because designation of a CAMU would not trigger LDRs or MTRs, implementation could immediately follow approval of the detailed design. Additional measures to meet the LDR or MTR requirements (e.g., treatment of the impacted soils and sediments prior to consolidation within the engineered containment area) would not be necessary. In addition, implementing the engineered containment area as a CAMU would not involve the often lengthy and expensive process of obtaining the appropriate approvals and permits that may be required for hazardous waste management and treatment. Furthermore, all of the components of the proposed remedy have been previously implemented at the facility (e.g., in the closure of the RCRA surface impoundments) and at other similar sites, and they only require the use of standard construction equipment and

techniques. This remedy would not involve the evaluation and design of potential treatment technologies or the performance of pilot and treatability studies. Accordingly, the remedial action construction period is anticipated to be relatively short, approximately six months.

3.4.6 Reduction of Mobility, Toxicity or Volume of Impacted Media

Implementation of the proposed engineered containment area to provide long-term consolidation and containment of impacted soils and sediments will reduce the mobility of site-related constituents. This reduction would be achieved by removing and containing impacted soils and sediments within an engineered containment system. Excavation and consolidation of impacted soils and sediments beneath an engineered barrier will minimize the long-term potential for erosion, resuspension and downstream migration of soils containing site-related constituents. Excavation and consolidation of the soils would minimize the potential for migration of these materials via surface water runoff, dust generation, or volatilization.

Each of the components of the proposed containment area would be designed to mitigate potential releases to the environment. The final cover system would protect the impacted soils and sediments from contact with precipitation and surface water runoff. The final cover system would also provide a barrier to prevent humans and environmental receptors from potential contact with the impacted soils and sediments.

3.4.7 Minimization of Affected Area

The engineered containment area will be designed to provide an area for long-term containment of impacted soils and sediments from specified areas within or adjacent to the facility. As impacted soils and sediments are excavated, transported, and consolidated in the engineered containment area, the total area of impacted soils and sediments at the facility would be substantially reduced.

Implementation of the proposed remedial approach would consolidate remediation wastes (approximately 13,840 cy of soil from the wood treating area, straw bales area and drip track area, and approximately 2,070 cy of sediments from the Outfall 001 drainage ditch and Crawford Creek) into a smaller discrete area of the facility. Furthermore, as discussed above in Section 3.4.3, no unaffected areas are proposed to be included within the CAMU. The CAMU is proposed to be designated within the area of the former land farm area at the facility, minimizing the on-site areas to be managed in the long term.

4 Post-Closure Plan

A post-closure plan for a designated CAMU is required under NR Chapter 636.04(5)(d). Post-closure activities would commence following closure of the engineered containment area (completion of the final cover system), and would include site security, periodic maintenance of final cover system, groundwater monitoring, institutional controls and deed restrictions.

4.1 Site Security and Periodic Maintenance

Inspection of the site security measures and periodic maintenance of the final cover system would be conducted, as necessary, to ensure conditions are protective of human health and the environment. Specific measures will be specified in the final design document. The final cover system will be maintained to control water and windborne erosion. For example, any unvegetated areas would be seeded and mulched, and any visible erosion would also be repaired. Problems with ponding water resulting from subsidence would be appropriately corrected by regrading or placement of additional cover materials.

General site inspections of the engineered containment area would be conducted periodically and any noted deficiencies would be corrected as soon as possible. Items to be noted during the periodic inspections, include, but would not be limited to, the following:

- Final cover system conditions;
- Signs of excessive erosion;
- Ponding;
- Disturbances to the cap due to settling; and
- Evidence of unauthorized access or disturbance.

4.2 Groundwater Monitoring

The proposed corrective action approach will include long-term post-remediation groundwater monitoring. A groundwater monitoring plan ("GMP") will be prepared to address groundwater monitoring requirements associated with the proposed CAMU. The proposed GMP will describe groundwater monitoring to satisfy requirements associated with the proposed CAMU, as specified by Chapter NR 636.40(5)(c). It is expected that groundwater monitoring will be performed on a site-wide basis, to determine that corrective action objectives are achieved. Groundwater will be sampled in conjunction with site-wide corrective action monitoring performed for the facility. Analytical parameters and methods will be the same as those provided in the document entitled "Groundwater Monitoring Sampling and Analysis Plan" (GTI, October 1997).

The groundwater monitoring network for the CAMU will include monitoring wells located in the discontinuous sand lenses (the C-Zone) at the downgradient property boundary, as described in the RFI Report (June 1987). Previous investigations have shown that sand lenses are not present in the land-farm vicinity of the facility (Phase III RFI Report, June 1997). Based on site-wide historical groundwater monitoring elevation data, the hydraulic gradient appears to be from south to north in the former land farm area and throughout the facility. The

downgradient wells are intended to detect site-related constituents that may migrate beyond the property boundary in excess of PALs or ESs.

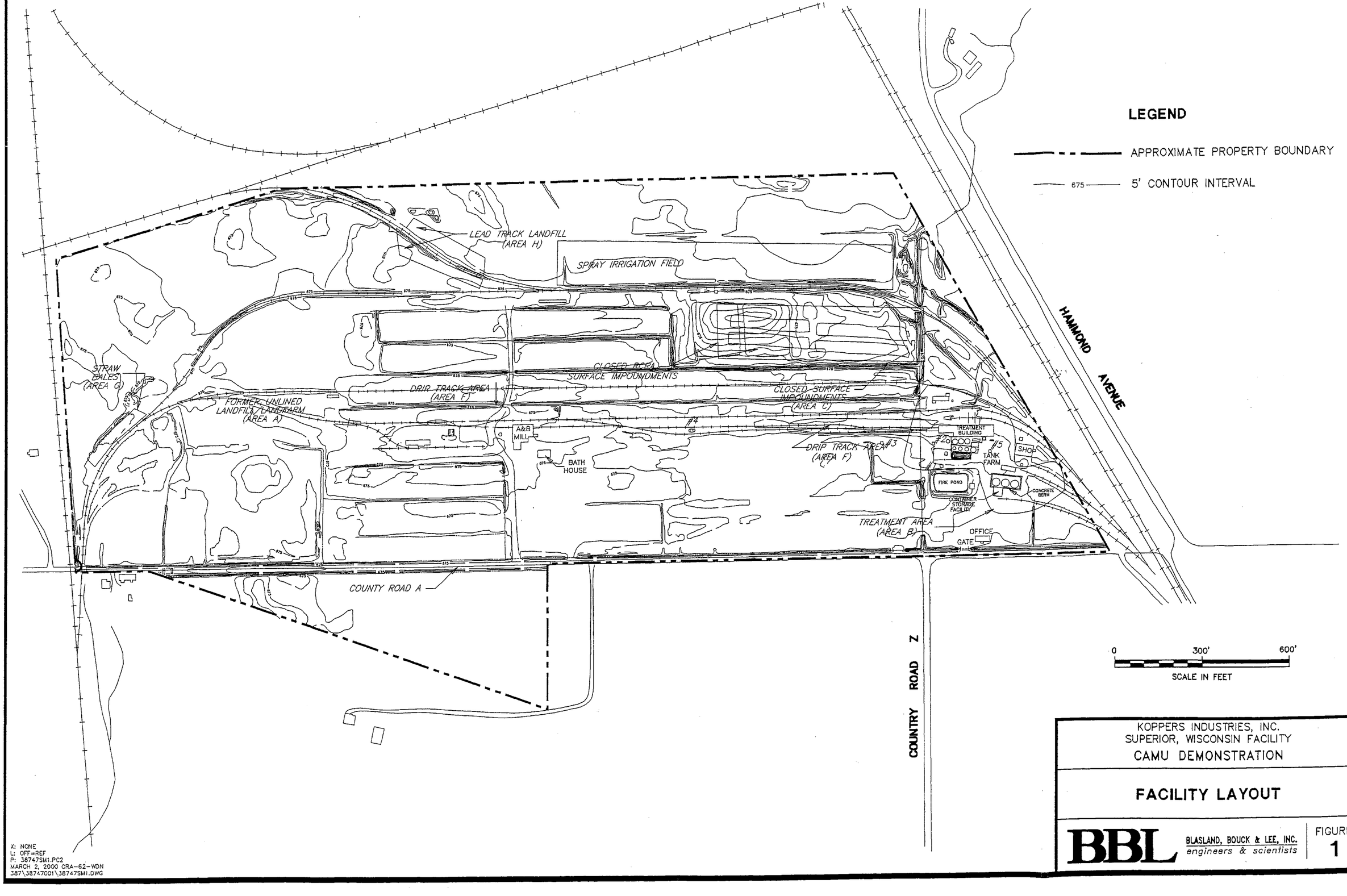
Currently, three monitoring wells are in the former land farm area: W-13A, W-14A, and W-14B (see Figure 6). These wells are in the center of the area proposed for the CAMU and will be abandoned prior to construction of the engineered containment system.

Results of groundwater monitoring for the CAMU will be incorporated into the annual groundwater monitoring report currently submitted to WDNR for the closed RCRA surface impoundments.

4.3 Institutional Controls and Deed Restrictions

In addition to the above post-closure activities, institutional controls and deed restrictions would be established to be protective of human health and the environment in the long term. Institutional controls and deed restrictions would be established to achieve the following objectives:

- Limit intrusive activities in the engineered containment area;
- Indicate the need for proper protective measures during future excavations; and
- Limit future use of portions of the Site to industrial operations.



KOPPERS INDUSTRIES, INC.
SUPERIOR, WISCONSIN FACILITY
CAMU DEMONSTRATION

FACILITY LAYOUT

BBL BLASLAND, BOUCK & LEE, INC. *engineers & scientists*

FIGURE 1

X: NONE
L: OFF=REF
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MARCH 2, 2000 CRA-62-WDN
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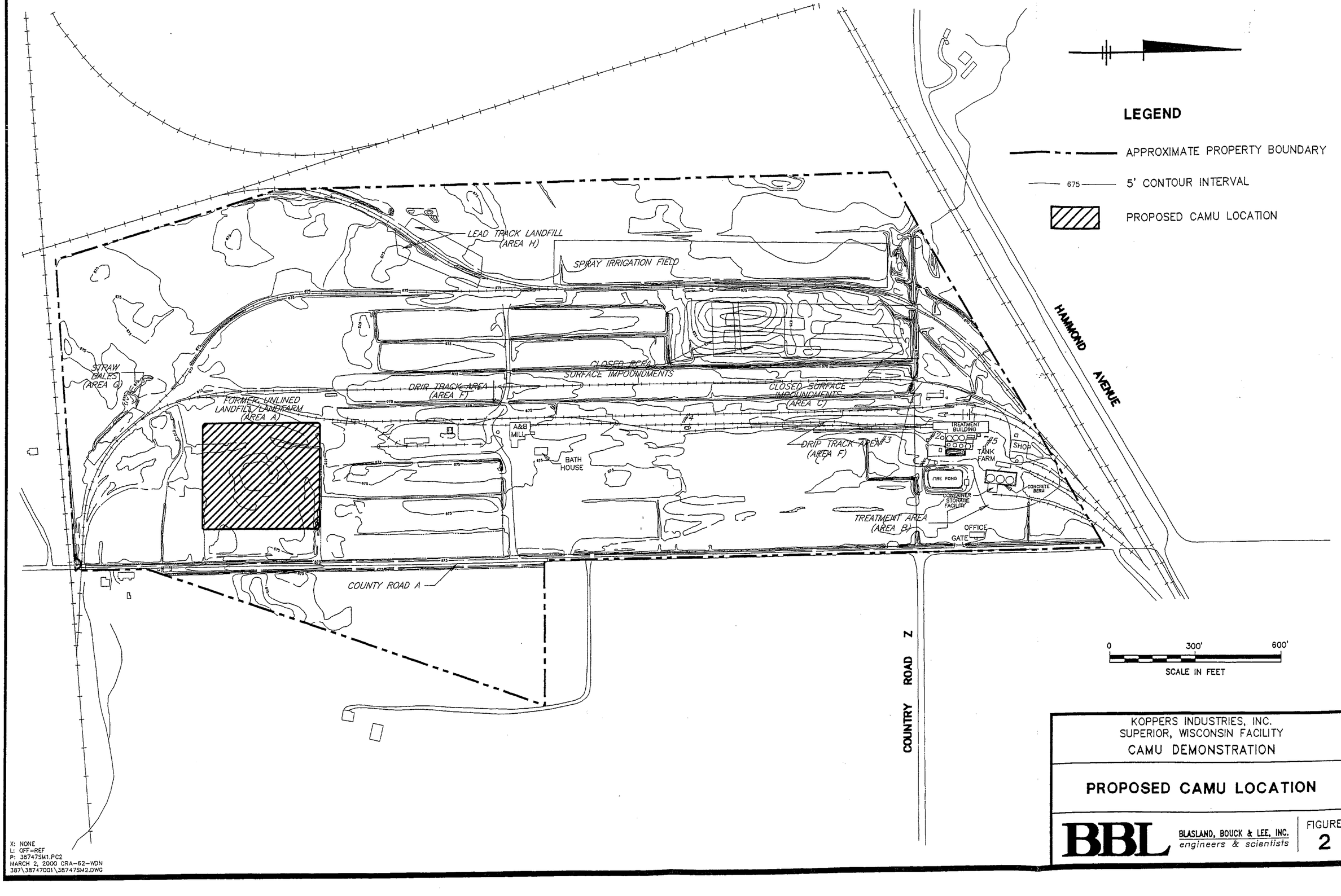

KOPPERS INDUSTRIES, INC.
SUPERIOR, WISCONSIN FACILITY
CAMU DEMONSTRATION

PROPOSED CAMU LOCATION

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FIGURE 2

X: NONE
L: OFF=REF
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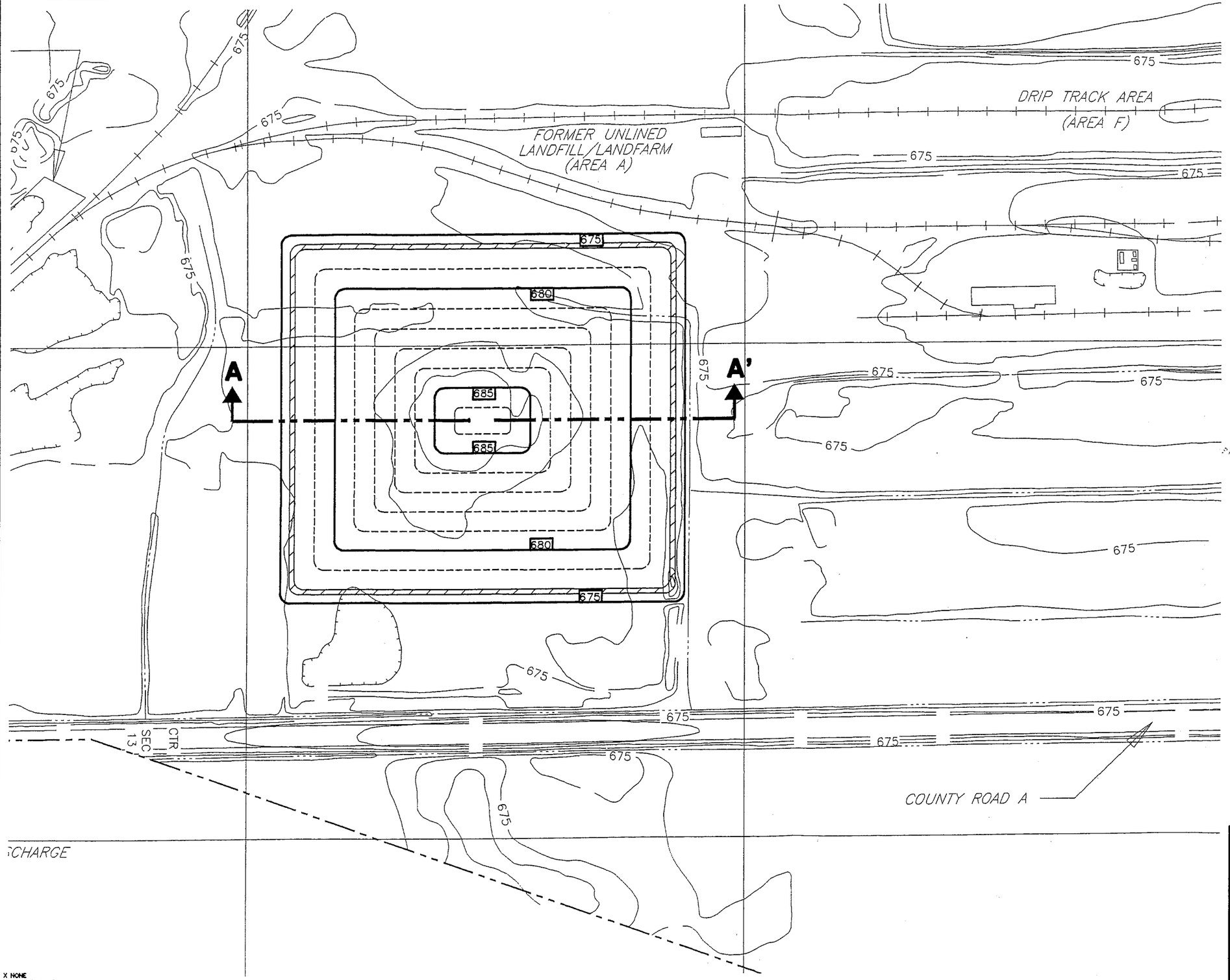

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- 675 — EXISTING CONTOUR
- 690 — PROPOSED 5' CONTOUR INTERVAL
- PROPOSED 1' CONTOUR INTERVAL
- PROPOSED BERM
- A A' CROSS-SECTION LOCATION

50' 0 50' 100'
SCALE IN FEET

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SUPERIOR, WISCONSIN FACILITY

CAMU DEMONSTRATION

CONCEPTUAL CAMU DESIGN (5% FINAL GRADE SLOPE)

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FIGURE 3

X NONE
E MANAGER: SSLOPE
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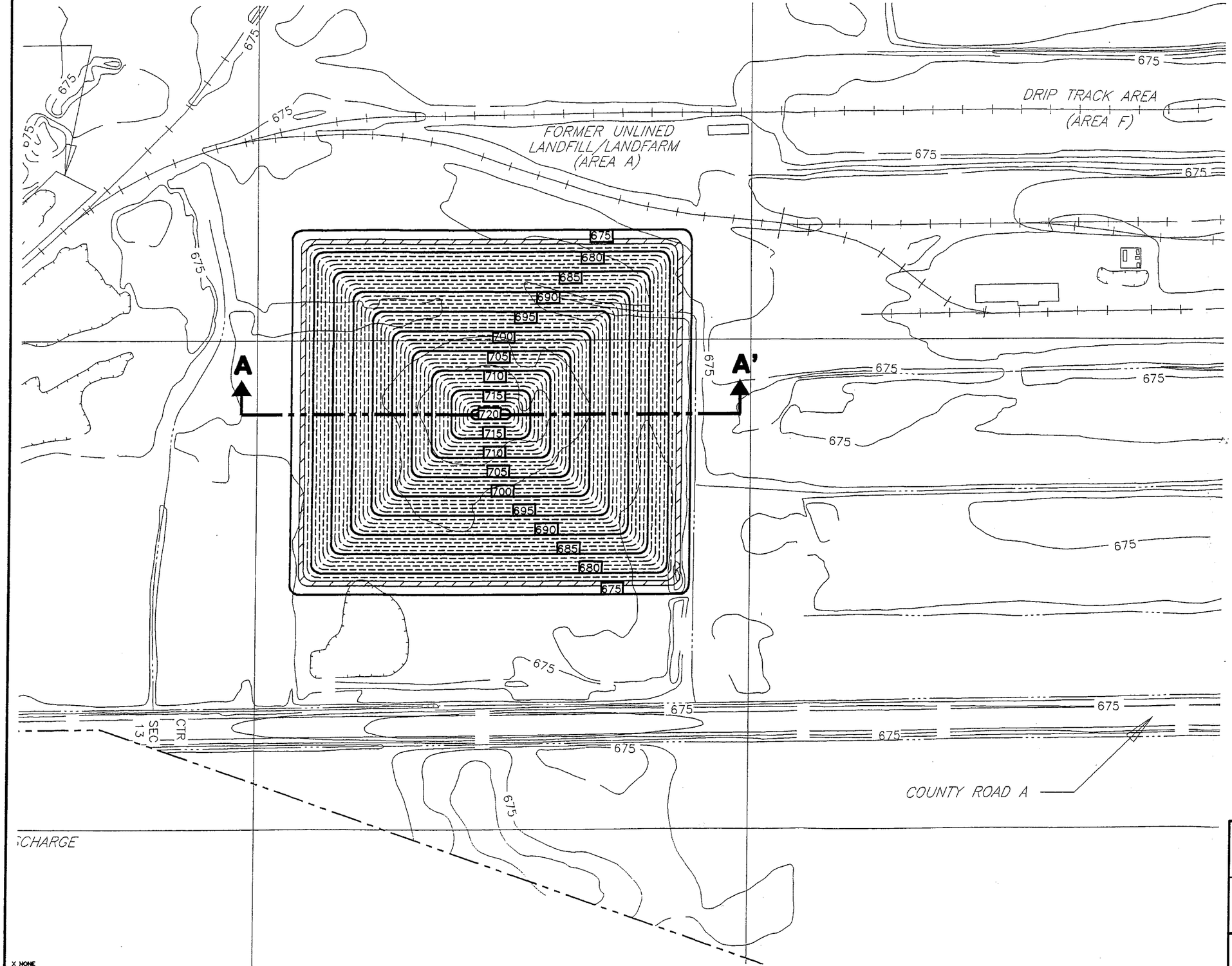

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- 675 EXISTING CONTOUR
- 690 PROPOSED 5' CONTOUR INTERVAL
- PROPOSED 1' CONTOUR INTERVAL
- PROPOSED BERM
- A A' CROSS-SECTION LOCATION

50' 0 50' 100'
SCALE IN FEET

KOPPERS INDUSTRIES INC.
SUPERIOR, WISCONSIN FACILITY

CAMU DEMONSTRATION

CONCEPTUAL CAMU DESIGN (25% FINAL GRADE SLOPE)

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 4

X NONE
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MARCH 2, 2000 CRA-62-WON
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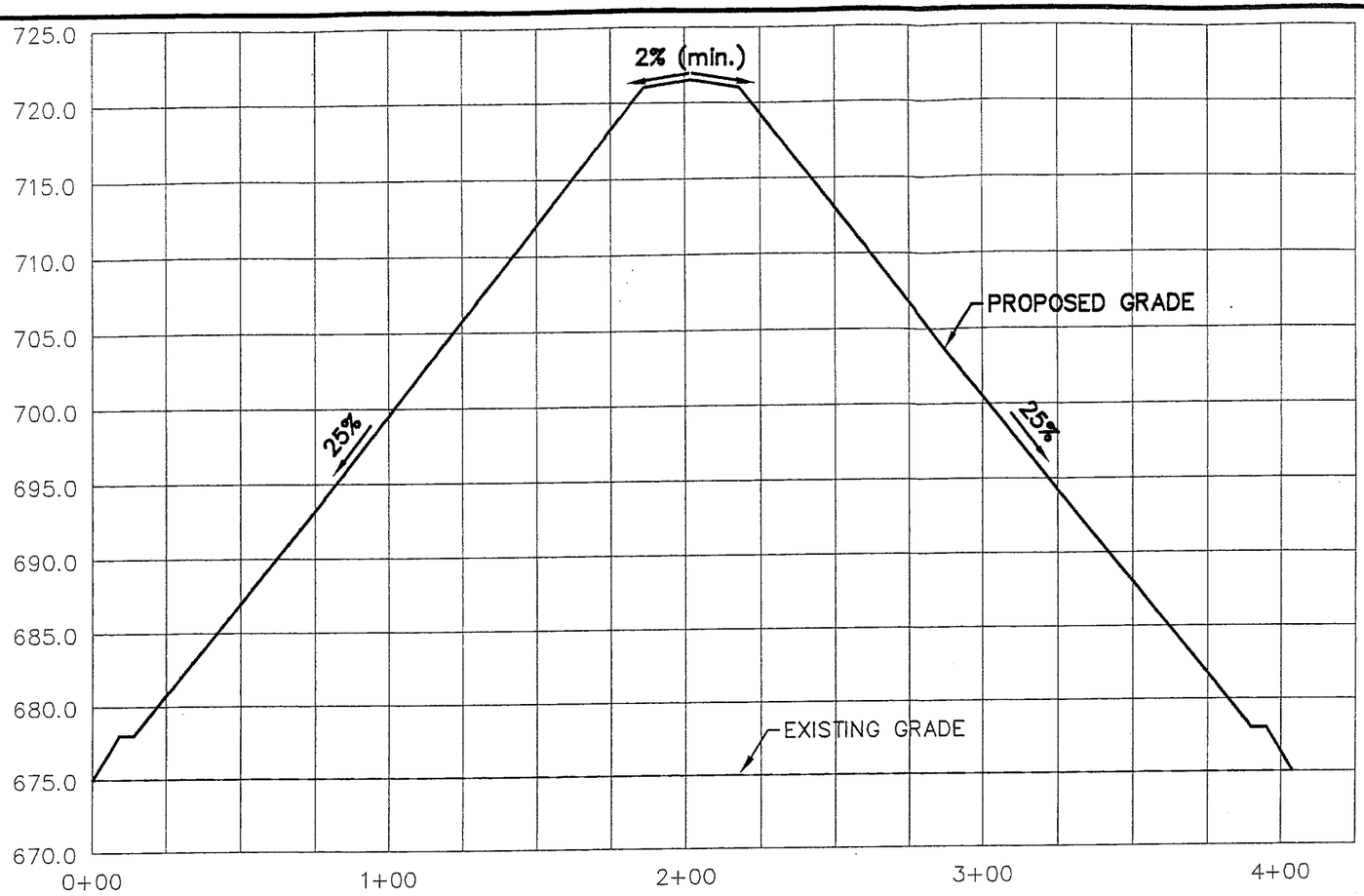
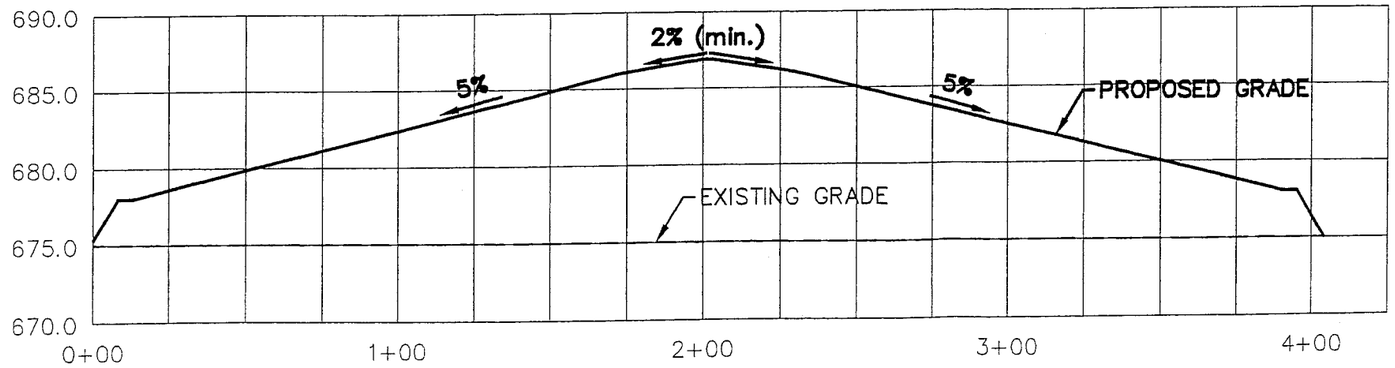


25% SLOPE CONCEPTUAL CAMU DESIGN



5% SLOPE CONCEPTUAL CAMU DESIGN

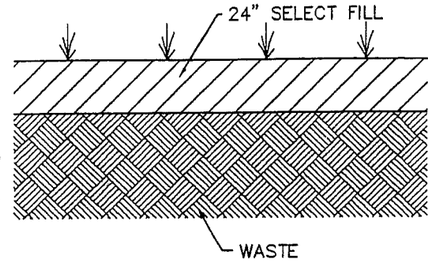
CROSS-SECTIONS

0 10' 20'

VERTICAL SCALE 1" = 10'

0 50' 100'

HORIZONTAL SCALE 1" = 50'



TYPICAL CAP LINER SYSTEM

NOT TO SCALE

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CAMU DEMONSTRATION

CONCEPTUAL CAMU DESIGN (CROSS-SECTIONS)

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FIGURE 5

X NONE
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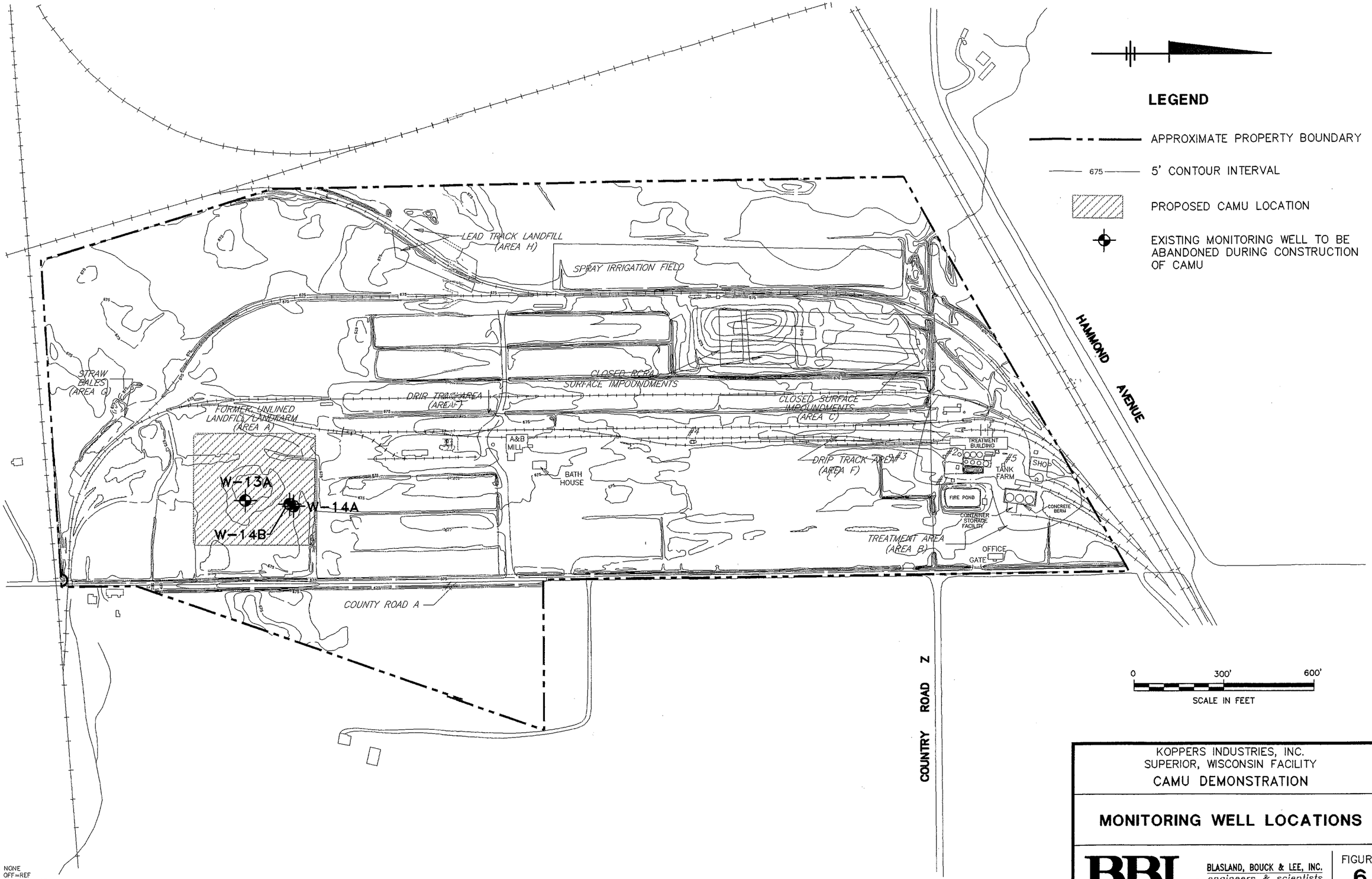

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CAMU DEMONSTRATION

MONITORING WELL LOCATIONS

BBL BLASLAND, BOUCK & LEE, INC. *engineers & scientists*

FIGURE 6

X: NONE
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APRIL 25, 2000 CRA-62-WON
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