

K. SINGH & ASSOCIATES, INC.

Engineers and Environmental Management Consultants

1135 Legion Drive, Elm Grove, WI 53122 (414) 821 - 1171 FAX (414) 821 - 1174

October 16, 1992

Mr. Roger Klett
Wisconsin Department of Natural Resources
2300 N Dr. Martin Luther King, Jr. Drive
P.O. Box 12436
Milwaukee, WI 53212

Job # 2096

Subject: Technical Specifications for Installing Leachate Collection System
Sanitary Transfer and Landfill
Delafield, Wisconsin

Dear Mr. Klett:

Enclosed please find a report on technical specifications for installing one 10,000 gallon leachate tank and transfer pipes at the referenced site. This report also includes technical and material specifications for constructing a leachate loading facility.

We would like to install the leachate tank and associated piping by November 15, 1992. The construction of loading zone may require additional funds which was not included in our original proposal.

We will appreciate your prompt review. Please call us, if you have any questions regarding this submittal.

Sincerely,

K. SINGH & ASSOCIATES, INC.

Raghu B. Singh
Raghu B. Singh, Ph.D.
Project Scientist

Daniel J. Mueller
Daniel J. Mueller
Project Manager

CC: Marie Stewart, SW/3, WDNR, Madison

RECEIVED

OCT 19 1992

D.N.R. SED Hqtrs.
Milwaukee, WI

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SECTION I. INTRODUCTION

1.1 FACILITY BACKGROUND

The Walter N. Nickel Trust owns and operated the Sanitary Transfer and Landfill, Inc. as municipal solid waste disposal facility in the City of Delafield, Wisconsin. Reportedly, the landfill was started in 1969. Wisconsin Department of Natural Resources issued license number 719 to the landfill.

Sanitary Transfer and Landfill is located in Sections 22 and 27, Township 7 North, Range 18 East, in the City of Delafield, Waukesha County, Wisconsin. The landfill is 35 acres in area and is surrounded by Interstate HWY 94 to north; residential houses to northwest, southwest, south, and southeast. An industrial park is located toward northeast corner of the landfill. The location of the landfill is shown on Figure 1.

1.2 PROJECT BACKGROUND

The landfill was closed in September 1982. The final cover consisted of 2 feet of compacted clay and 6 inches of topsoils. The landfill has been under postclosure monitoring and maintenance by the owner and Wisconsin Department of Natural Resources (WDNR).

Wisconsin Department of Natural Resources retained K. Singh & Associates, Inc. in June 1992 for postclosure monitoring and maintenance of Sanitary Transfer and Landfill, Delafield. Post-closure maintenance and monitoring consists of maintenance of the clay cover, mowing of grass, pumping of leachate, and groundwater and methane gas monitoring. Nine on-site monitoring wells are monitored semi-annually in the month of June. In addition twenty three off-site wells are also monitored. One well is monitored annually and rest are either monitored quarterly or semi-annually. Gas monitoring is conducted in September.

The site was surveyed by Uttech Land Surveying of Beaver Dam, Wisconsin in September 1992. The site survey map is included in Exhibit A. The survey map shows location and elevations of groundwater monitoring wells, leachate collection manhole, leachate collection tanks, and gas probes.

The landfill has methane gas monitoring wells which are also monitored periodically. The access road is maintained by a subcontractor of K. Singh & Associates, Inc. In addition, the landfill is mowed and maintained by a subcontractor, Vydrzal Services, Inc., Ixonia, Wisconsin, in a manner acceptable to WDNR.

In addition to on-site and off-site wells, one leachate manhole is also monitored semi-annually. The leachate manhole is located at the southeast corner of the landfill. The leachate from the leachate manhole is pumped into a 6,000 gallon storage tank. Reportedly, this tank fills up within 12 to 14 hours in winter months and 5 to 6 hours in spring months. Leachate from 6,000 gallon tank is sent to a 2,000 gallon tank through gravity. A manual valve is used to open and close 6,000 gallon holding tank. The approximate location of tanks and leachate collection manhole are shown on Figure 2.

Leachate from 2,000 gallon tank is pumped daily by a subcontractor, Kenway Co., Milwaukee, Wisconsin, of K. Singh & Associates, Inc. The manual valve of 6,000 gallon

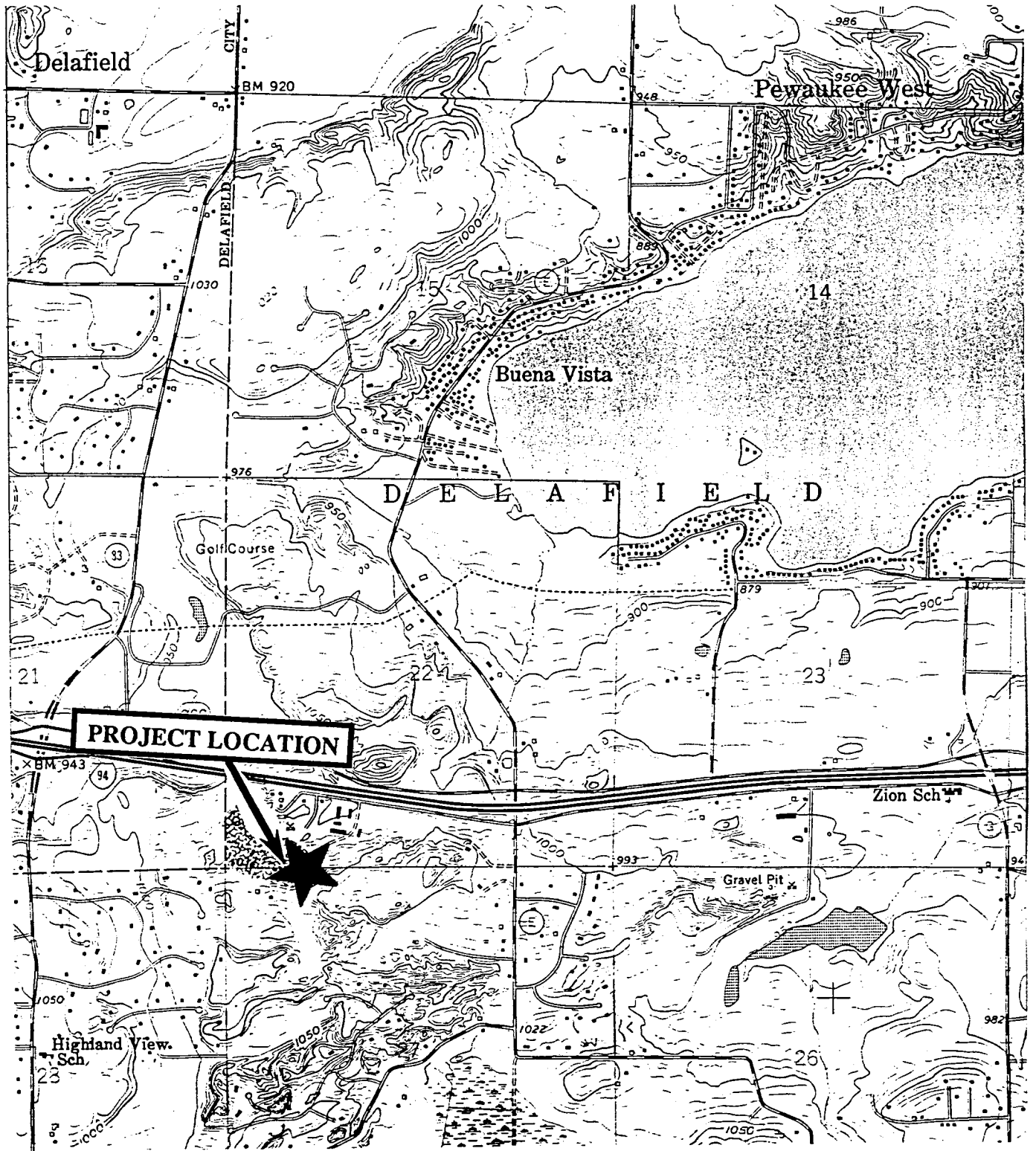


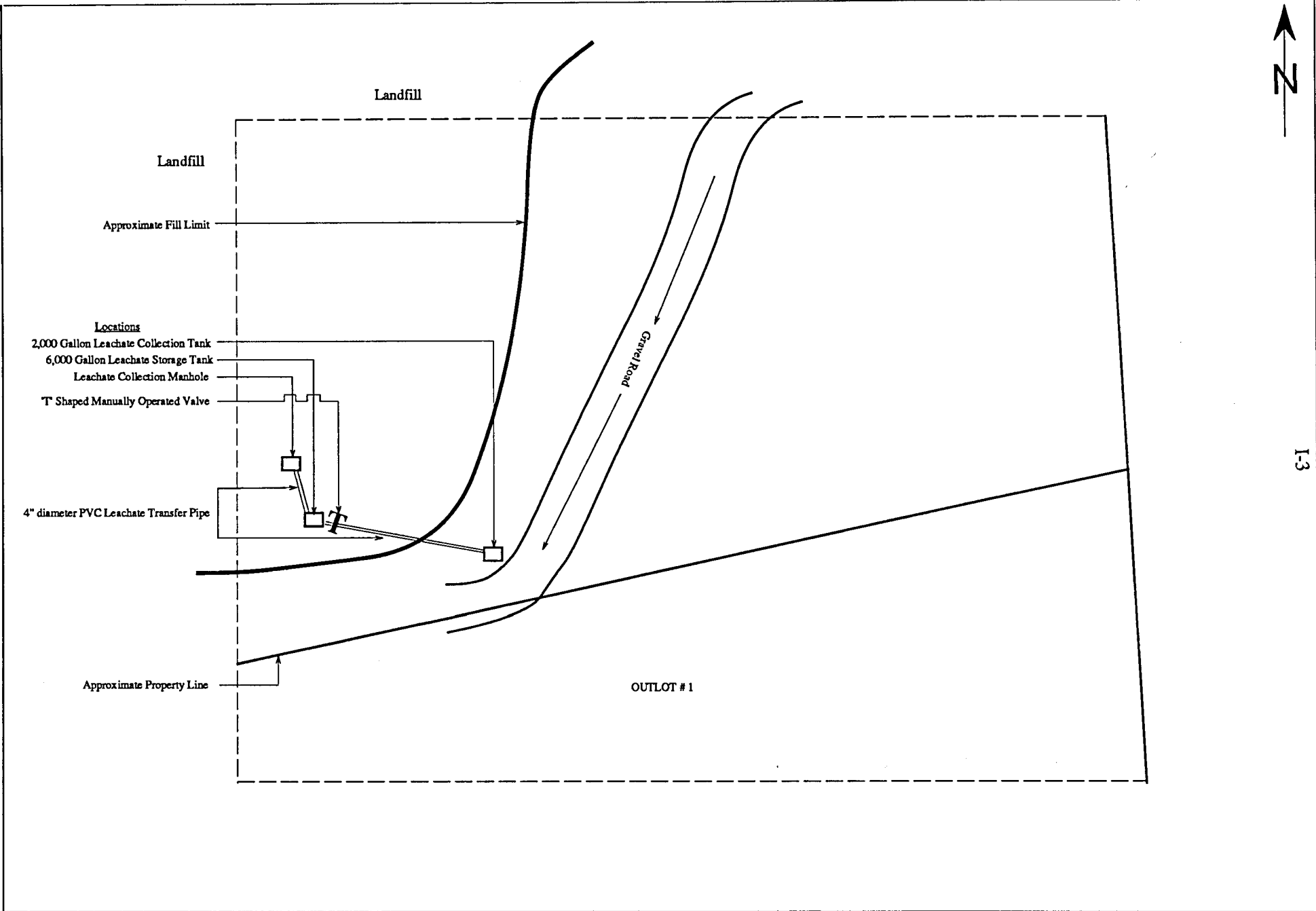
Figure 1. Project Location Map

Scale: 1" = 2000'

K. SINGH & ASSOCIATES, INC.



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Project Location
Sanitary Transfer and Landfill
Delafield, Wisconsin 53018

Engineer
K. SINGH & ASSOCIATES, INC.,
Engineers & Environmental Management Consultants
1135 Legion Drive, Elm Grove, Wisconsin 53122, (414) 821-1171

Figure 2. Locations of Leachate Manhole and Existing 2,000 Gallon Tank				
DATE	DRAWN BY	REVISIONS BY	DATE	PROJECT NO.
September 18, 1992	R. B. S.	R. B. S.	09/18/92	2096
SCALE		CHECKED BY	R. B. S.	SHEET NO.
0' 50' 100'		D. J. M.	R. B. S.	ONE

tank is opened to allow leachate flow into 2,000 gallon tank. From this tank the leachate is pumped to a 6,000 gallon tanker. After the tanker is full, the manual valve is closed to prevent overflow of 2,000 gallon tank. The leachate is disposed of to the City of Waukesha Wastewater Treatment Plant. Approximately, 6,000 gallon leachate is pumped daily Monday through Friday.

The leachate is not pumped on weekends and holidays. In order to avoid accumulation and overflow of leachate in / from storage tanks, an additional 10,000 gallon leachate collection tank is proposed to be installed. This tank will mitigate overflow of leachate from the tank. It is also possible to reduce pumping during weekends and holidays.

Ms. Marie Stewart of Wisconsin Department of Natural Resources sent a letter to K. Singh & Associates, Inc., on April 22, 1992 about preparing a technical specification for installation of a 10,000 gallon leachate collection tank (1). The technical specifications for upgrading the leachate collection system is prepared in response to the agreement reached between the WDNR and K. Singh & Associates, Inc. in June 1992.

1.3 SCOPE OF WORK

The scope of services are as follows:

1. Prepare technical specifications and design details for installing one 10,000 gallon double walled steel tank with cathodic protection;
2. Prepare technical specifications and construction details for the loading area; and
3. Integrity testing of the existing 2,000 gallon tank.

1.4 REPORT ORGANIZATION

This report is organized into six sections. Section I describes facility description, project background, purpose and scope, and report organization. Section II includes regulatory and technical consideration of leachate collection system and comprises of design considerations and material specifications for the construction of loading area. Section III describes conclusions. Sections IV, V, and VI include references, appendix, and exhibit respectively.

SECTION II. LEACHATE COLLECTION SYSTEM

2.1 REGULATORY CONSIDERATIONS

Wisconsin Administrative Code, NR 504.05 (6) describes leachate collection systems for landfills and their construction (2). This subsection deals design features regarding installation of the leachate collection systems. The leachate collection system will be installed as per those features established by WDNR. The regulatory requirements are discussed in the following sections.

2.2 TECHNICAL SPECIFICATIONS

The technical specifications includes design and construction specifications for 10,000 gallon leachate holding tank and associated leachate transfer piping, control (s) / valve (s), and material specifications. This will also include technical and material specifications required for the proposed loading area.

2.2.1 DESIGN AND CONSTRUCTION OF TANK

A 10,000 gallon, 21' long x 9' diameter leachate collection steel tank will be supplied by Lannon Tank Corporation, Lannon, Wisconsin. The tank will be of double wall construction built to UL and STI Standards. The tank interior will be built out of 1/4" thick plate and the outer wrap will be made of 3/16" thick plate. The tank will have cathodic protection, interior coating, exterior Urethane coating per UL 58 and STI Specifications. One 24" diameter manhole, one 6" 150 # Flange inlet, and innerstitial monitoring ports will also be included in the tank. Details about leachate collection tank is included in Appendix A.

2.2.2 TANK INSTALLATION METHOD

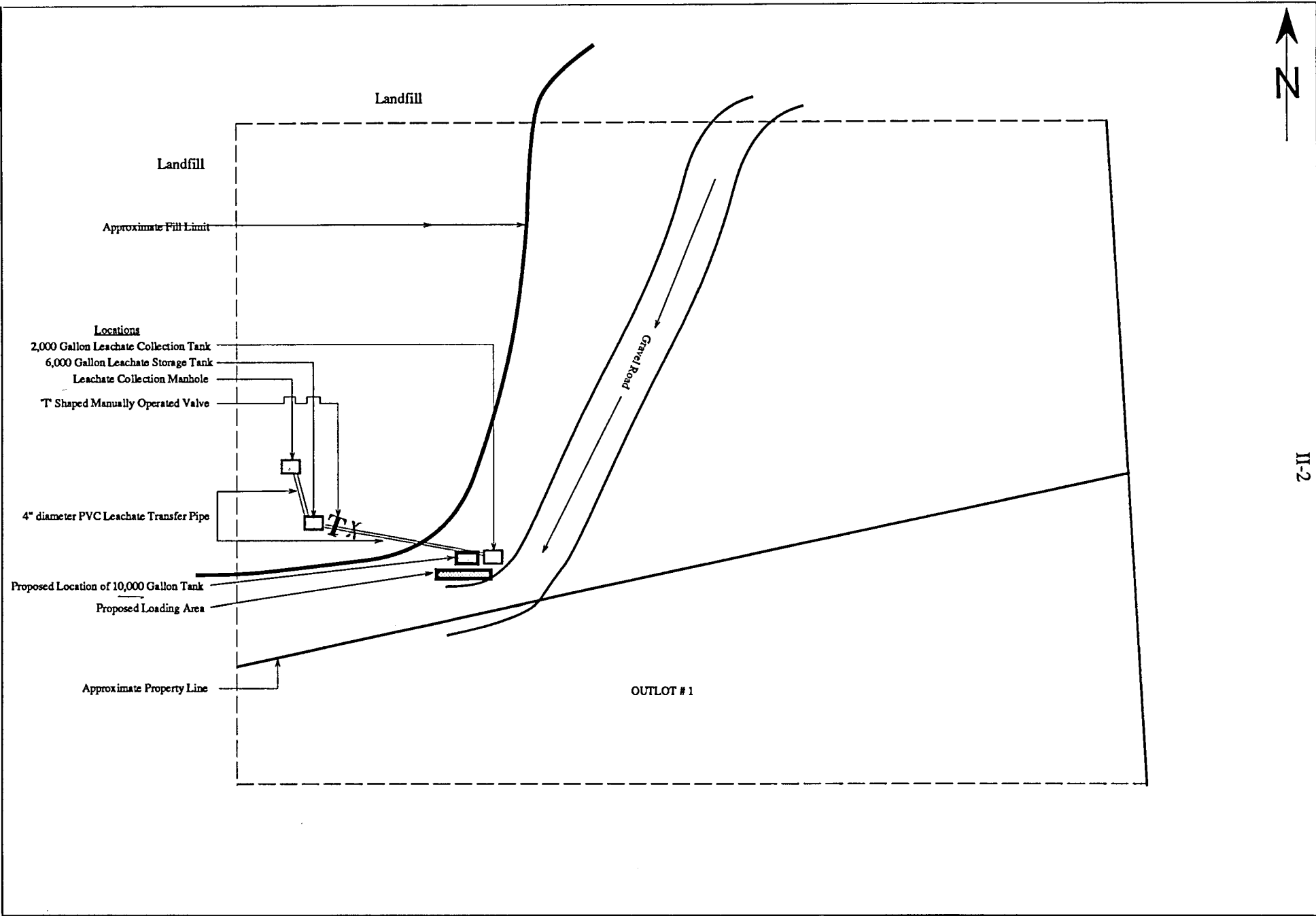
The leachate collection tank system will be installed using the method recommended by American Petroleum Institute for the installation of underground petroleum storage systems (3). The proposed locations for installing 10,000 gallon tanks are shown on Figure 3. The tank and leachate transfer pipes will be installed by Vydrzal Services, Inc., Ixonia, Wisconsin.

A 23 feet by 11 feet sloped excavation will be constructed to install the 10,000 gallon leachate collection tank. This excavation will be deep enough to provide for a sand bedding depth of at least 12 inches below the bottom of the tank. Sand bedding will be placed on 3' thick poured in-place concrete mat with # 4 bars 1' O.C. in each direction. Backfill consisting of a mixture of pea gravel and # 1 coarse aggregate will be placed on the top of the sand bedding. The backfill will be 1' above the top of the tank. The paving above the backfill will be made of 6 inches of reinforced concrete. A top view of the proposed tank and loading pad is shown on Figure 4. A cross-sectional view of the proposed leachate tank, transfer piping, and loading area is shown on Figure 5.

Leachate weight, tank weight, the type of the tank cover (backfill and paving), and the height of water around the tank all have an effect on whether a tank will float. To prevent floating of the leachate collection tank it will be anchored in place by a rubber coated steel hold down strips in the concrete slab on either side of the tank.



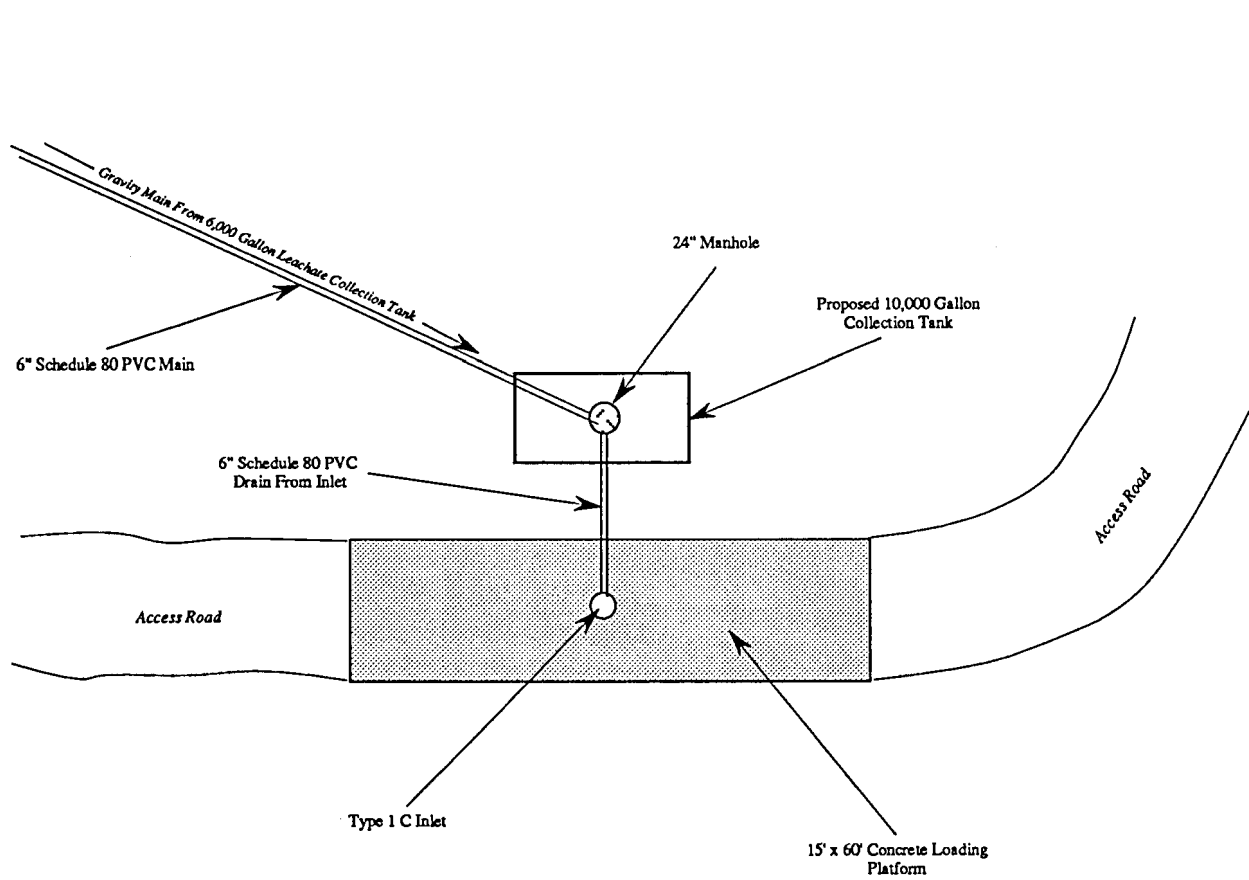
11-2



Project Location
Sanitary Transfer and Landfill
Delafield, Wisconsin 53018

Engineer
K. SINGH & ASSOCIATES, INC.,
Engineers & Environmental Management Consultants
1135 Legion Drive, Elm Grove, Wisconsin 53122, (414) 821-1171

Figure 3. Proposed Location of 10,000 Gallon Holding Tank / Loading Area				
DATE	DRAWN BY	REVISIONS BY	DATE	PROJECT NO.
September 18, 1992	R. B. S.			2096
SCALE	CHECKED BY	R. B. S.	09/18/92	SHEET NO.
0' 50' 100'	D. J. M.	R. B. S.	09/18/92	ONE



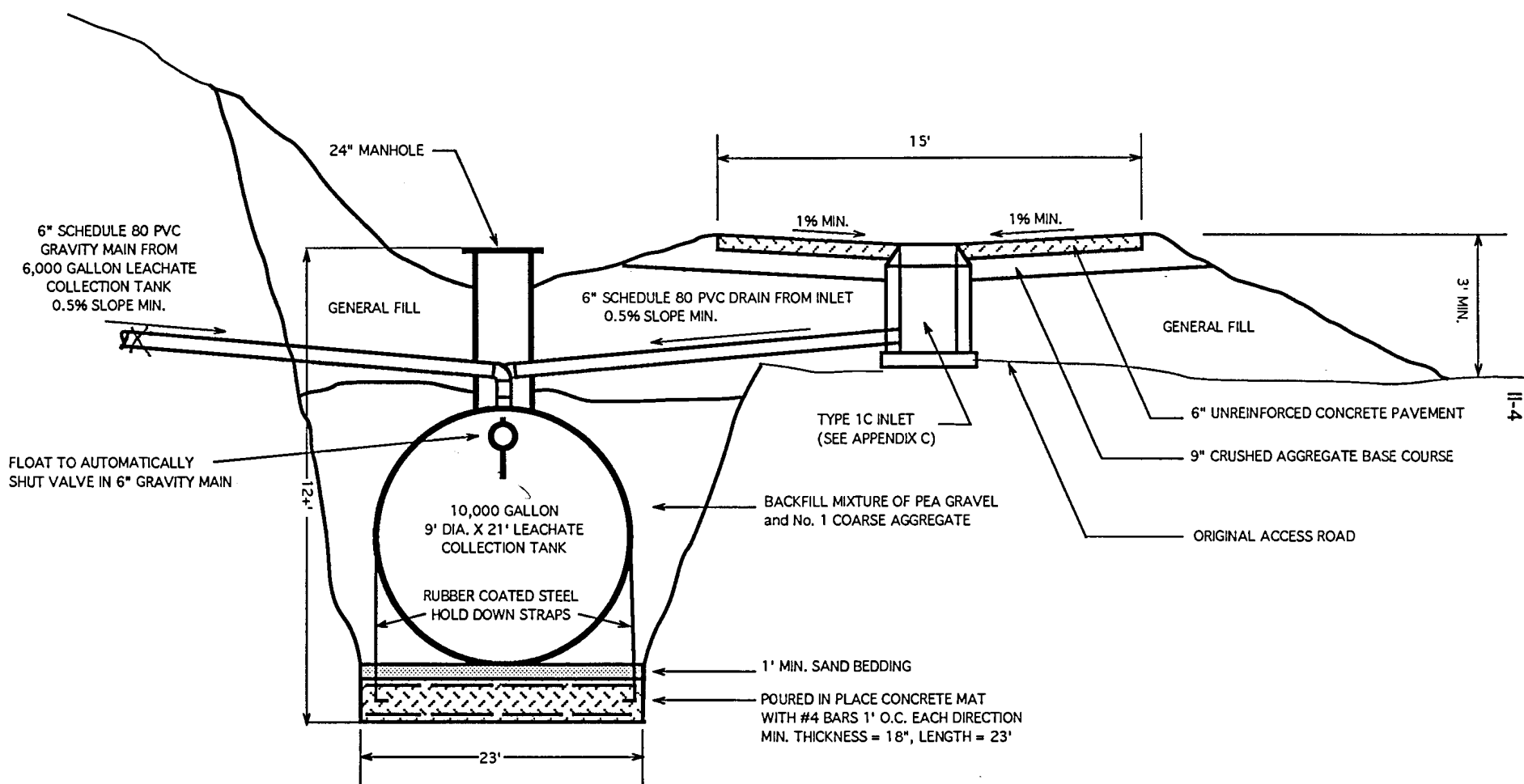
II-3

Project Location
SANITARY TRANSFER AND LANDFILL
 Delafield, Wisconsin

ENGINEER
K. SINGH & ASSOCIATES, INC.
 ENGINEERS & ENVIRONMENTAL MANAGEMENT CONSULTANTS
 1135 LEGION DRIVE, ELM GROVE WISCONSIN - 53122 414-821-1171

Figure 4: Top View of Proposed Leachate Collection Tank

DATE September 9, 1992	DRAWN BY D.M.	REVISIONS	BY	DATE	PROJECT NO. 2096
SCALE 1" = 20'	CHECKED BY				SHEET NO. 1



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Project Location
SANITARY TRANSFER AND LANDFLL
 Delafield, Wisconsin 53018

Engineer
K. SINGH & ASSOCIATES, INC.,
 Engineers & Environmental Management Consultants
 1135 Legion Drive, Elm Grove, Wisconsin 53122, (414) 821-1171

Fig. 5. Cross Section of Proposed Leachate Tank, Transfer Piping, and Loading Area

DATE September 9, 1992	DRAWN BY A.E.R.	REVISIONS BY	DATE	PROJECT NO. 2096
SCALE 0 2.5' 5'	CHECKED BY			SHEET NO. ONE

2.2.3 INSTALLATION OF LEACHATE TRANSFERS LINES

The minimum slope on all leachate collection pipes shall be 0.5%. The overall slope of the leachate collection lines and clay-lined base shall be toward the perimeter of the facility. Schedule PVC pipes of minimum 6 inches diameter shall be used for all leachate collection or transfer. All leachate collection lines shall have cleanout access points installed on both ends of each line. The maximum length of the line shall be minimized to take into account the capabilities of the available cleanout equipment. The leachate line shall be designed so that the entire line does not exceed the capabilities of the cleanout device in one direction.

A minimum depth of 6 inches of pea gravel shall be placed in the trenches prior to installation of the leachate pipes. After the pipes have been properly installed, the remaining backfill will be placed such that a minimum of 6 inches of material exists above the top of the pipe and within the trenches. A geotextile shall be used to line the base and sidewalls of all leachate collection trenches. If the particle size of the drainage blanket is significantly less than the collection trench bedding, a properly designed graded soil filter or geotextile shall be utilized to minimize the migration of the drainage blanket material into the collection trenches. Properly sized geotextiles shall be used at all interfaces of granular and fine-grained soil where the potential for piping or migration of fines exists.

Leachate lines, manholes and other engineering structures shall not penetrate the liner in the vertical direction. Leachate transfer lines may penetrate the liner in the horizontal direction only. The number of liner penetrations shall be kept to a minimum.

Any leachate line that penetrates a clay liner shall have an antiseep collar around it. A minimum of 5 feet of compacted silty clay / clayey silt shall be placed around the collar in all directions.

All leachate lines transporting leachate out of the facility will be constructed with valves so the flow of leachate can be controlled. The valve will be compatible with the leachate and be capable of being operated from the ground surface.

All leachate transfer lines located outside of the clay-lined area shall be designed to assure groundwater protection by being fully encased in at least 2 feet of clay, through the use of double-cased pipe.

2.2.4 BEDDING MATERIALS

The bedding material utilized in backfilling the leachate collection system shall have a uniformity coefficient of less than four, a maximum particle diameter of 2 inches, a maximum of 5% material which passes # 4 sieve and consist of rounded to subangular gravel. The bedding material will be used as shown on on Figure 4. A proposal for installing tank, leachate transfer pipes and bedding material is included in Appendix A.

2.2.5 FIELD TESTING OF LEACHATE TANK SYSTEM

The leachate tank system, 10,000 gallon tank and transfer piping, will be tested using pressure test. The testing will be performed by a certified tank tester. A tank tightness test will be

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conducted before the tank installation. All factory bungs will be removed from the tank, and a pipe-thread sealant certified for petroleum service will be applied to them. The bungs will be then replaced and tightened to ensure that no air is released during testing. Any temporary bungs will be replaced with solid bungs. Care will be taken to avoid cross-threading when the bungs are replaced. A compressed air source will be applied to raise the internal tank pressure to between 3 and 5 pounds per square inch gauge. A pressure gauge with a maximum range of 10-15 pounds per square inch gauge will be used to confirm proper pressurization. Prior to pressurization, the external surface of the tank will be inspected for defects. When the internal pressure is achieved, the compressed air source will be disconnected from the tank, and the entire tank shell, as well as all seams, bungs, and manholes will be uniformly coated and recoated as necessary with soap solution. Leaks will be detected by the presence of bubbles. If bubbles are observed around fittings, the fittings will be checked for tightness and repaired as necessary. If leaks are detected in seams or the shell, the supplier will make a note of it. When the inspection is complete, the air pressure will be released.

An air pressure test of underground product-handling piping and associated valves and fittings will be conducted prior to allowing leachate flow and covering with the backfill. The piping will be pressurized with compressed air to 150 percent of the maximum system operating pressure (or a minimum of 50 pounds per square inch gauge) for one hour. All valves, fittings, and surfaces will be coated with a soap solution and inspected for bubbles. Leaks, if detected, will be repaired. Extreme care will be exercised in conducting the pipe tightness test.

2.3 CONTROL DEVICE

Means shall be provided to monitor the tank and sump within the secondary containment system. An automatic shutt-on / shutt-off valve shall be put in the inlet of new 10,000 gallon tank. Controls shall be installed by Miller Electric, Delafield, Wisconsin.

Miller electric will install an electrically operated flanged ball valve manufactured by ASHI American. Its specifications are included in Appendix A.

2.4 FATE OF EXISTING TANK

Existing 2,000 gallon tank will be left in place to store bleeder water. The bleeder water enters the tank through existing bleeder lines. This stored water is proposed to be pumped in conjunction with leachate pumping.

2.5 LOADING PLATFORM

Measures will be taken to prevent accidental discharges at the leachate loadout facility from entering groundwater or surface water. The leachate loading station will consist of a paved concrete pad sloped to an inlet to direct all spills back into the leachate holding tank.

2.5.1 MATERIAL SPECIFICATIONS

The loadout facility shall consist of a 6" concrete slab 60' long and 15' wide that rests on 9" of compacted crushed aggregate base course. The concrete shall achieve a seven day strength of

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4,000 psi . The slab's surface will slope at not less than 1% from all directions to a type 1C inlet constructed at the geometric center of the slab. Three equally spaced transverse contraction joints shall be sawed to a depth of 1-1/2" the entire width of the slab. A 6" schedule 80 PVC pipe will run from the bottom of the inlet into the top of the new 10,000 gallon tank. The loadout facility's finished surface will be constructed at least 3' above the existing access road and can be connected to the existing access road by means of a gravel ramp. But, because the existing access road is reported to have a history of flooding and also has slopes exceeding 10%, it shall be reconstructed in compliance with NR 504.05(10c-d). The design details are shown on Figure 4.

2.5.2 SURFACE WATER CONTROL

The loading platform will have a minimum inward surface slope of 1 %. Surface water generated through rain and leachate spillage during pumping will enter the leachate holding tank.

2.5.3 SAFETY CONSIDERATIONS

The excavation area for tank installation will be sloped to mitigate wall caving. Excavation work shall be consistent with OSHA regulations.

2.5.4 OTHER CONSIDERATIONS

The excavation for the tank installation will be performed in natural soils outside the fill area. Soils generated during excavation will be spread on the landfill at places where soil settlement is observed.

If waste is encountered during excavation, the excavation will be moved to the natural soils. The encountered waste will be capped with clay upon approval from the Project Manager.

2.6 EFFECT OF PROPOSED SANITARY SEWER

Plans are being laid to provide sanitary sewer service to the industrial park adjacent to the landfill in the northeast. Providing the means to pump landfill leachate directly into a sanitary sewer may be cost effective because it would likely lower operation and maintenance costs. The possibility of using this option would also affect the extent to which the reconstruction of the existing access road and loadout facility is feasible.

2.7 SCHEDULE

The scedule for the installation of tank and associated piping will depend on the approval from WDNR and concerned parties. However, the tentative schedule is as follows:

- | | |
|----------------------------|------------------|
| 1. Tank Construction..... | October 30, 1992 |
| 2. Valve Construction..... | October 30, 1992 |

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3.	Excavation Starting.....	November 1, 1992
4.	Excavation Completing.....	November 5, 1992
5.	Tank Installation.....	November 15, 1992
6.	Electrical Controls.....	November 20, 1992
7.	Operation.....	November 28, 1992

SECTION III. CONCLUSIONS

A Technical Specification for installing leachate collection system has been prepared. The specification includes description about leachate system, controls, and loading zone. Our conclusions regarding the technical specifications for installing leachate collection tanks are as follows:

1. The tank will meet the requirement as set forth by WDNR. There is a 4 inches' diameter leachate transfer pipe connecting 2,000 gallon tank with the leachate manhole and 6,000 gallon existing tank. A variance may be required to use same diameter pipes. This will save cost for pipe as well as one valve in the outlet of existing 2,000 gallon tank.
2. The control will have automatic electrically controlled valve at the inlet of the new tank. A variance for installing high level alarm annunciator and a telecommunicator with an automatic shut-off valve is requested. These items are not included in our budget.
3. The feasibility of connecting the existing leachate system with the proposed sanitary sewer may be explored.

SECTION IV. REFERENCES

1. Proposal for Environmental Management Services, Sanitary Transfer and Landfill, Delafield, Wisconsin, prepared for Wisconsin Department of Natural Resources, Madison, February 17, 1992.
2. Final comments / Revised Scope of Work for the Sanitary Transfer and Landfill, Delafield, WDNR, submitted to K. Singh & Associates, Inc., April 22, 1992.
3. Landfill Location, Performance, and Design Criteria, Environmental Protection / Solid and Hazardous Waste Management, Department of Natural Resources, Wisconsin Administrative Code, Chapter NR 504, No. 437, May 1992.
4. Installation of Underground Petroleum Storage Tanks; American Petroleum Institute, Fourth Edition, November 1987.

Appendix A
Tank and Material Specifications

1476

Lannon Tank

C O R P O R A T I O N
20134 MAIN ST. • P. O. BOX 516
LANNON, WI 53046
(414) 251-7890
FAX (414) 251-0484



AUG 28 1992

PLEASE INDICATE THIS NUMBER WHEN ORDERING

Mr. Raghu Singh
Singh & Associates, Inc.
1135 Legion Drive
Elm Grove, Wi., 53122

DATE	August 26, 1992
YOUR INQUIRY DATED	
PROPOSED SHIPPING DATE	
TERMS	F.O.B.
1%-10, N-30 days	Delafield, Wi
SALESPERSON	
TO BE SHIPPED VIA	PPD. OR COLL.

Here is our quotation on the goods named, subject to the conditions noted:

CONDITIONS: The prices and terms on this quotation are not subject to verbal changes or other agreements unless approved in writing by the Home Office of the Seller. All quotations and agreements are contingent upon strikes, accidents, fires, availability of materials and all other causes beyond our control. Prices are based on costs and conditions existing on date of quotation and are subject to change by the Seller before final acceptance.

Typographical and stenographic errors subject to correction. Purchaser agrees to accept either overage or shortage not in excess of ten percent to be charged for pro-rata. Purchaser assumes liability for patent and copyright infringement when goods are made to Purchaser's specifications. When quotation specifies material to be furnished by the purchaser, ample allowance must be made for reasonable spoilage and material must be of suitable quality to facilitate efficient production.

Conditions not specifically stated herein shall be governed by established trade customs. Terms inconsistent with those stated herein which may appear on Purchaser's formal order will not be binding on the Seller.

QUANTITY	DESCRIPTION	PRICE	AMOUNT
1	<p>10,000 gallon, 9' dia. x 21' long Leachate Tank</p> <p>Please note: The above tank will be of double wall construction built to UL and STI standards and registered with the Steel Tank Institute. A 30 year warranty will be provided on the tank through STICO Insurance Co.</p> <p>Included in the price will be:</p> <ul style="list-style-type: none"> A) Cathodic Protection B) Interior Coating C) Exterior Urethane coating per UL 58 and STI Specifications D) One (1) 24" dia. manhole E) One (1) 6" 150# Flange (inlet) F) Innerstitial monitoring ports <p>Interior tank to be built out of 1/4" thick plate and the outer wrap will be out of 3/16" thick plate.</p> <p>See attached paint spec for interior coating and the Steel Tank Institute information.</p> <p>Price is plus Wis. Sales Tax if applicable</p>		\$15,900.00

Ken Stowell

BY

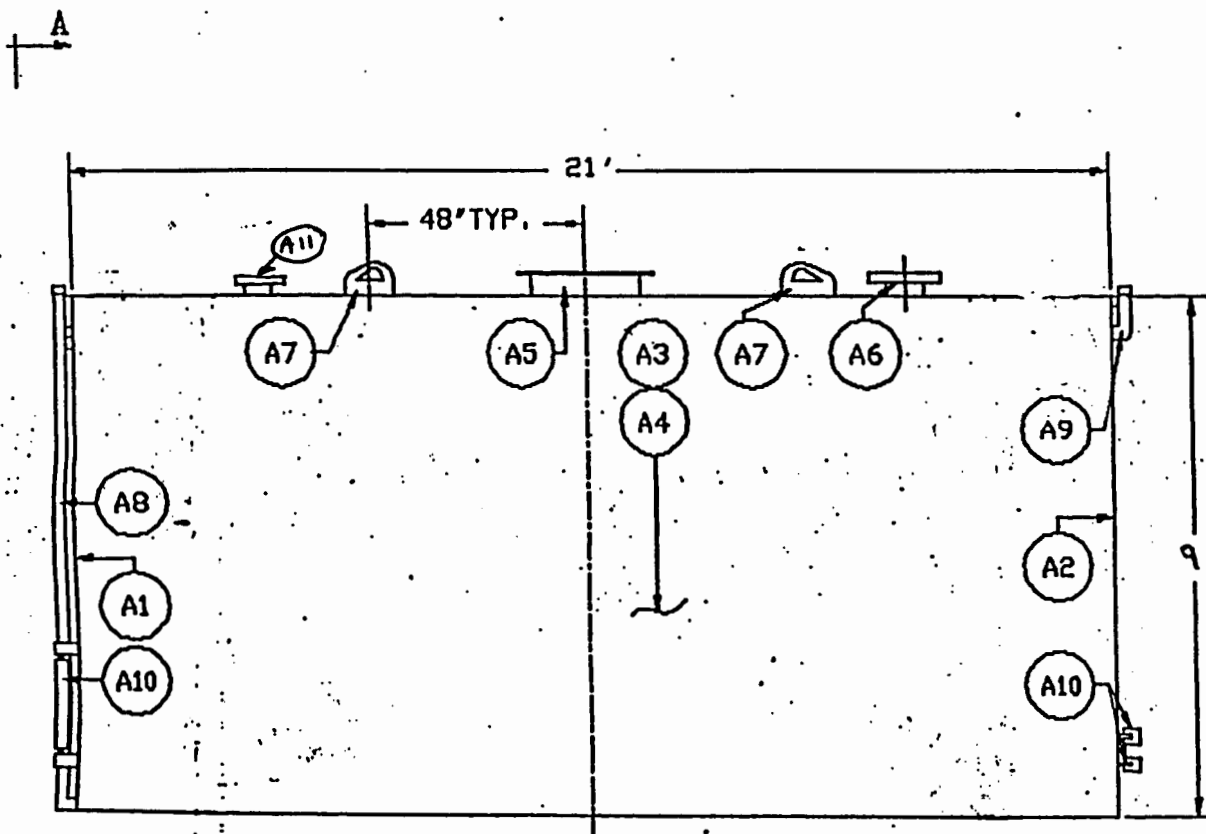
QUOTE VALID FOR 30 DAYS.

Interior Coating
DEVCHEM 253

**SPECIFIC RESISTANCE
FOR
IMMERSION**

Ammonia
Sodium Hydroxide - 180°F
Trisodium Phosphate
Sodium Hypochlorite
Crude Oil, Sour
Detergent Solutions
Fertilizer Solutions
Formaldehyde
Ferric Sulfate
Oil, Cutting
Oil, Motor
Oil, Vegetable
Sewage
Urine
Water; Fresh, Salt (up to 180°F)
Ethanol
Ethylene Glycol
Gasoline, Unleaded, Super unleaded
Kerosene
Methanol
Naptha, Aromatic
Solvents
Alcohol
Lye
Lauric Acid
Lactic Acid
Sulphur
Battery Acid
Hexanoic Acid (Caproic acid)
Gluconic Acid
Boric Acid
Citric Acid
Brine

FRONT VIEW



High level alarm


*DNR
Sh. 504*

BILL OF MATERIALS

ITEM	QUAN.	DESCRIPTION
A1	2	Ø8 3/4" O.D. OUTER HEAD 7GA. THK.
A2	2	Ø8 1/2" O.D. INNER HEAD 1/4 GA. THK.
A3	1	Ø8 3/4" O.D. OUTER SHELL 7GA. THK.
A4	1	Ø8 1/2" O.D. INNER SHELL 1/4 GA. THK.
A5	1	24" DIA. HANWAY
A6	1	6"-150# FLANGE (Inlet)
A7	2	LIFTING LUG.
A8	1	2" BOTTOM PIPE MONITOR
A9	1	2" TOP PIPE MONITOR
A10	4	10# ANODE W/ (2) PLATE TABS
A11	1	4"-150# FLANGE (Vent)

NOTES

- TANK TO BE BUILT IN ACCORDANCE TO ST1-P3 SPEC'S.
- INTERIOR OF TANK TO BE DOUBLE BUTT WELDED, BLASTED, AND COATED WITH ^{DEVCON 253}
- EXTERIOR OF TANK TO BE BLASTED, THEN COATED WITH CORROCOTE II
- TEST INNER TANK TO 8 TO 7 PSI PRIOR TO COATING
- DESIGN PRESSURE OF TANK IS ATMOSPHERIC
- MAXIMUM OPERATING TEMPERATURE = 130°
- TEST TANK INTERSTITIAL SPACE UNDER 15" H.O., VAC PRIOR TO COATING

APPROVED BY	 LANNON TANK STEEL TANK FABRICATIONS 23134 MAIN STREET LANNON, WISCONSIN 53046	
CHECKED BY		
P.O. NO.	CUSTOMER <i>McKels Land Fill</i>	DATE 4/16/92
DRAWING NO. 9222A	DESCRIPTION 9'x21' 8000 GALLON	DRAWN BY P. D. S.

FAX TRANSMITTAL FORM

Origination

646-2711

Date / Time Sent

10/9/92

Number of Pages Transmitted

Including Cover Sheet: 2

Destination:

Addressee

Raghu Singh

Company

K. Singh & Associates Inc

Telecopy No. _____

Description of Transmitted Documents:

Price Proposal for Instalation of
10,000 Gal Tank.

--- Raghu

We must address the problem of construction
Interfering with daily Pumping operation of Lechate!
I-estimate construction time total (Poss 2 week).
Concrete Must Cure for Min 7 Days Before
Truck Traffic.

Thanks

Bob Vydzel

Proposal

VYDRZAL SERVICES INC.
W398 N8756 AMBER LA.
IXONIA, WI. 53036

No. _____

Page No. 1 of 1

Proposal Submitted to K. Singh & Associates		Phone	Date 10/18/92
Street 1135 Legion Dr.		Job Name 10,000 Gal Storage Tank	
City Elm Grove Wi	State WI	Zip Code 53122	Job Location Sanitary Landfill Debatfield
Submitted by Bob Vydrzal	Date of Plans 9/9/92		Job Phone

We hereby submit specifications and estimates for:

This Proposal Does Not Include The Cost of Tank or 24" ManHole.

Excavate for Tank, Install Concrete Mat, Sand, Tank, Backfill as per Spec on Plan Dated 9/9/92, Inc Set Tank.

Fill area, Base Course, Concrete Loading Slab (with Fiber Mesh)

Including Catch Basin & Pipe To Tank as per Plan Dated 9/9/92

Construct Access Road from Slab to Hatch Road using Fill from Water Retention Pond. Gravel from Slab to Existing Gravel.

Pipe from Manual Shut off at Top Tank To New Tank

Using 4" or 6" Schedule 80 PVC, Backfill with Granular Material.

Back Fill Road on landfill side with Dirt & Grade, Seed & Mulch.

In Cludes 2- 6" x 25' Cross Culverts under New Access Road.

We Propose hereby to furnish material and labor - complete in accordance with above specifications, for the sum of:

Request Payment In 30day of Invoice To Satisfy Dollars (\$ 18,817.00)

Concrete Sub & Material Suppliers!

Project To Be Invoiced Immediately Upon Completion (To P. U. R.)

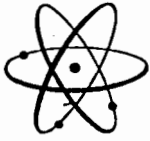
All material is guaranteed to be as specified. All work to be completed in a substantial workmanlike manner according to specifications submitted, per standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado and other necessary insurance. Our workers are fully covered by Workman's Compensation Insurance.

Authorized Signature *Bob Vydrzal*

Note: This proposal may be withdrawn by us if not accepted within 20 days.

Acceptance of Proposal - The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Signature _____



DATE: 10/1/92

TO: K. SINGH + ASSOC. INC.

FROM: BRIAN

Miller ELECTRIC SERVICE

Fax: 414-646-3856

646-8813

NUMBER OF COPIES SENT INCLUDING THIS COPY: 1

COMMENTS: ELECTRIC VALVE: FLANGED BALL VALVE

6" OR 4"

MFG.: ASAHE AMERICAN

CLOSING SPEED: 7.5 SECONDS

RATING: 150 LB

FLANGED ENDS

ENERGIZE OPEN

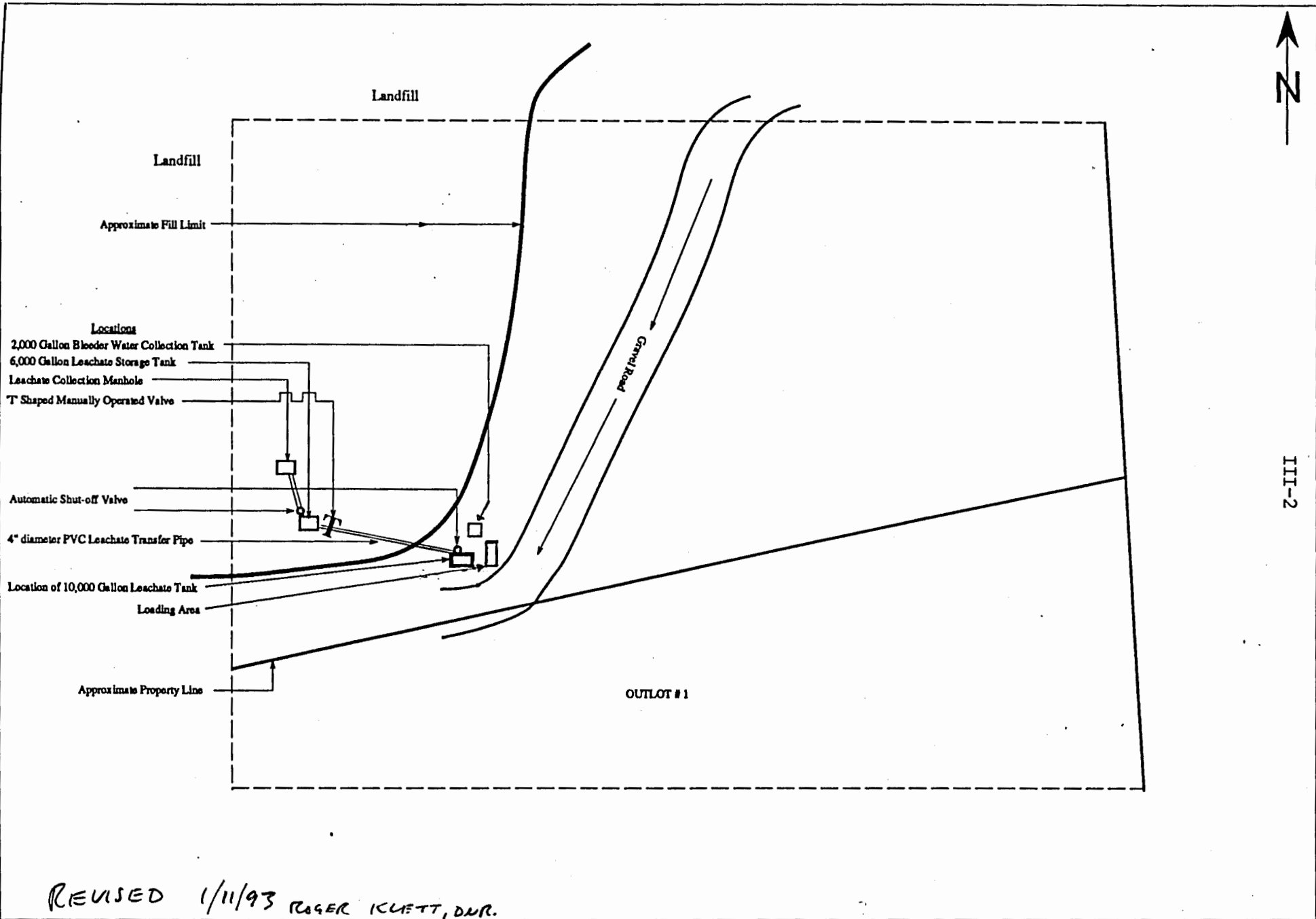
DE-ENERGIZE CLOSE

4" PORTS ON BALL VALVE

1.3 AMP. DRAW.

REPLY:

**Exhibit A
Site Survey Map**



III-2

REVISED 1/11/93 ROGER KLUETT, DMR.

<p>Project Location Sanitary Transfer and Landfill Delafield, Wisconsin 53018</p>	<p>Engineer K. SINGH & ASSOCIATES, INC., Engineers & Environmental Management Consultants 1135 Legion Drive, Elm Grove, Wisconsin 53122, (414) 821-1171</p>	<p>Figure 3 Site Plan of Leachate Collection System</p>				
		<p>DATE September 18, 1992</p>	<p>DRAWN BY R. B. S.</p>	<p>REVISIONS BY R. B. S.</p>	<p>DATE 09/18/92</p>	<p>PROJECT NO. 2086</p>
		<p>SCALE 0' 50' 100'</p>	<p>CHECKED BY D. J. M.</p>	<p>R. B. S.</p>	<p>09/18/92</p>	<p>SHEET NO. ONE</p>