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9828-TF-0008
REVISION 0

HANFORD WASTE VITRIFICATION PLANT PROJECT

RELOCATABLE LATRINE FACILITY

HOLDING TANK SYSTEM

FINAL ENGINEERING REPORT

AND

OPERATION AND MAINTENANCE MANUAL

Prepared By:

UE&C-Catalytic Inc.



7-1-93

EXPIRES 11/18/94

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1.0 INTRODUCTION

UE&C-Catalytic (UCAT) is the prime contractor to the U.S. Department of Energy for construction of the Hanford Waste Vitrification Plant (HWVP). The HWVP Project is located at the west boundary of the 200 East area within the Hanford site.

In order to support construction activities, a trailer village has been established to house construction management personnel at the HWVP site. Establishment of this village has created the need to provide a latrine facility for the use of personnel located in the village.

2.0 SYSTEM DESCRIPTION

The HWVP Relocatable Latrine Facility (RLF) Holding Tank System consists of a trailer (MO-730) divided into men's and women's restrooms. Fixtures which drain into the holding tank system include ten toilets, three urinals, six sinks and four self-contained sinks. The water supply is provided by a tie-in to the Hanford Site raw water system. Sinks supplied with raw water are clearly identified with non-potable water warning signs. The self-contained sinks are filled with potable water.

The latrine trailer is connected to a holding tank via a 4" diameter drain line. The holding tank is a precast concrete vault (Utility Vault Company Model 814-LA) providing a nominal volume of 5,440 gallons and a working volume of 4,500 gallons. The vault is lined with a 30-mil reinforced polyethylene liner (PPL 30) to assure a leak tight installation.

The holding tank is equipped with an alarm system which activates at a level of 2,000 gallons and again at a level of 4,000 gallons. Both visual and audible alarms are provided at each level. At the 4,000-gallon level, a key is required to deactivate the audible alarm. The visual alarms do not deactivate until the holding tank level is lowered below the set point.

A metal splash pan which drains into the holding tank is provided to permit pumping of the holding tank. The splash pan includes a ten-inch diameter opening for suction hose access. The tank will generally be pumped when the 2,000-gallon alarm is activated.

Details of the holding tank installation and alarm system are shown on drawing SK-C920-12 (Appendix A).

3.0 FLOW CALCULATIONS

The Relocatable Latrine Facility Holding Tank System is designed to support a maximum population of 200 personnel. This population is not

anticipated to occur until early 1994, and will continue until early 1995, at which time other sewage handling systems are planned to be in service.

<u>Projected Population</u>			
<u>7/93</u>	<u>10/93</u>	<u>1/94</u>	<u>4/94</u>
70	90	120	200

Self-contained portable toilets are also available in the trailer village, as well as throughout the site, and will continue to be provided after the relocatable latrine facility is placed into service.

EPA Design Manual EPA-625/1-80-012, Table 4-6, provides typical wastewater flows for commercial sources. For both office and industrial buildings, the flow range is 7.9 - 17.2 gpd/employee with a typical flow of 14.5 gpd/employee. A value of 15 gpd/employee has been utilized in calculating wastewater flow for the RLF.

Daily wastewater flow at peak population is calculated as follows:

$$\begin{aligned} \text{Flow} &= (200 \text{ Employees}) (15 \text{ gpd/Employee}) \\ &= 3,000 \text{ gpd} \end{aligned}$$

At peak population, the holding tank will require daily pumping to maintain a level below 4,000 gallons.

4.0 OPERATION, MAINTENANCE AND INSPECTION

The UCAT Manager of Facilities and Services is responsible for operation, maintenance and inspection of the RLF. The Department of Energy, Richland (DOE-RL), assumes ultimate responsibility for the RLF holding tank system as detailed in the Memorandum of Understanding co-signed by DOE-RL and the Washington State Department of Health. A copy of this Memorandum of Understanding can be found in Appendix K.

4.1 Operation

As noted in Section 2.0, System Description, the RLF Holding Tank System requires periodic pumping to remove stored waste. The pumping frequency is dependent upon facility use. The 2,000-gallon alarm will be utilized as an indication of when pumping is required.

A contract has been established with Waste Management of Kennewick (Appendix H) to pump the holding tank on a "will call" basis. When the 2,000-gallon alarm is activated, the UCAT Property Manager will contact Waste Management of Kennewick to request pumping of the holding tank.

In the unlikely event the tank level reaches 4,000 gallons, a second visual and audible alarm will activate. Deactivation of the audible alarm requires a key which is under the control of the UCAT Security Manager. Should the 4,000-gallon alarm activate, the UCAT Security Manager will close the RLF until the holding tank level can be lowered. The 4,000-gallon level provides a 500-gallon buffer to the leak tested level of the tank.

If at any time during RLF operation the integrity of the holding tank comes into question, either by observed leakage or unexplained decreases in tank level, the Manager of Facilities Services will close the RLF. The UCAT Manager of Safety, Environmental and Health and the Manager of Engineering Operations will investigate the problem and provide resolution, including retest of the holding tank system if deemed appropriate, prior to reopening the facility.

In case of RLF closure, self-contained portable toilets are available in the trailer village and throughout the HWVP site. Depending upon employee population at the time of closure, additional portable units can also be provided.

Access for the pump truck is available around the tank perimeter. The tank is protected from traffic by a series of barricade posts. A splash pan with 10" diameter access port is utilized for suction hose access during pumping. The splash pan drains into the holding tank.

4.2 Maintenance

Due to the nature of the RLF Holding Tank System, maintenance needs are generally restricted to the latrine facility (MO-730) and the holding tank level alarm system. The UCAT Manager of Facilities and Services will arrange for maintenance on an as needed basis. Spare parts information for the level alarm system is provided in Appendix I.

4.3 Inspection

The UCAT Manager of Facilities and Services will ensure periodic inspections of the RLF Holding Tank System are performed at the frequencies indicated on the Inspection Record Form (Appendix J), and will arrange for repairs as necessary. The estimated volume of waste pumped will also be recorded.

Completed Inspection Forms will be submitted on a quarterly basis to Westinghouse Hanford Company (WHC) Air and Water Permits Function (AWP) (Mail Stop H6-25). WHC AWP will provide copies to the Department of Health.

5.0 REFERENCES

- 5.1 DOH, 1991, *Guidelines for Holding Tank Sewage Systems*, Washington State Department of Health, Environmental Health Programs, Technical Review Committee, Olympia, Washington.
- 5.2 EPA, 1980, *Design Manual On-Site Wastewater Treatment and Disposal Systems*, EPA 625/1-80-012, U. S. Environmental Protection Agency, Washington, D. C.

6.0 SUPPORTING DOCUMENTS

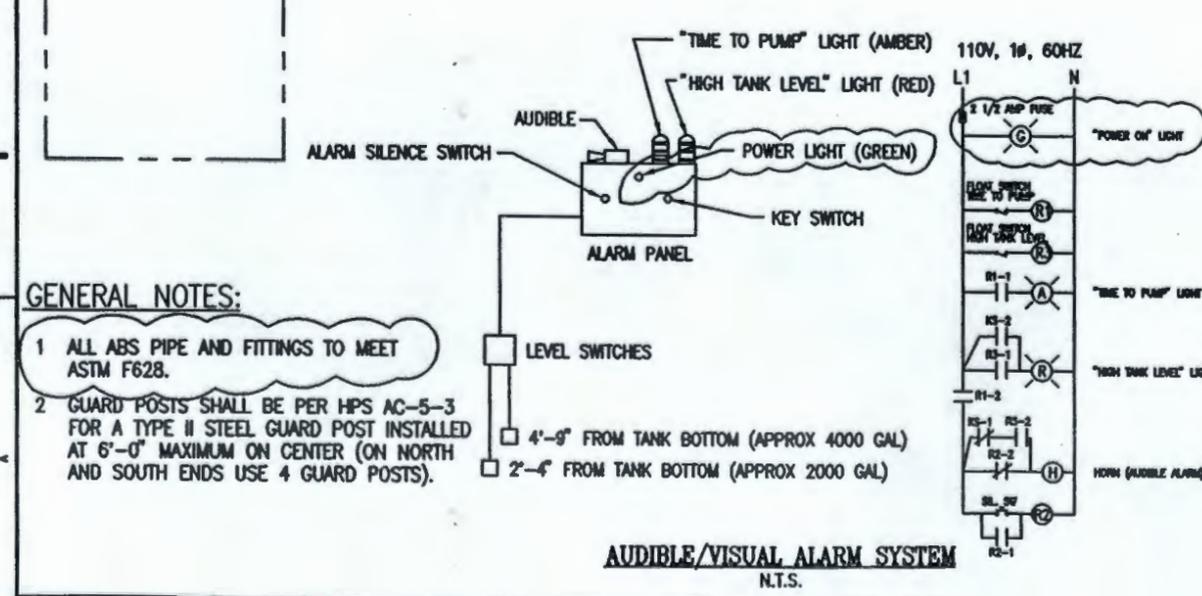
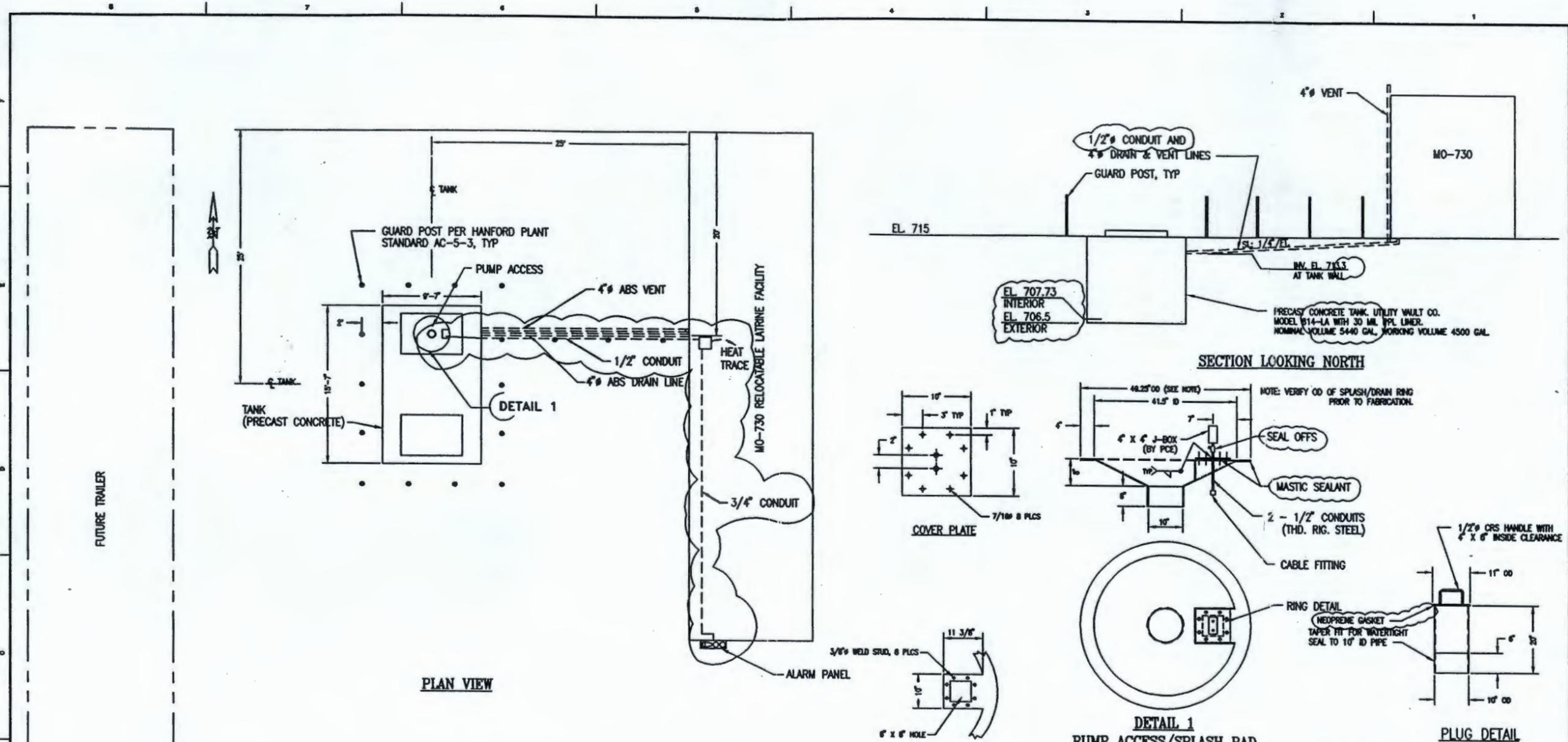
- Appendix A - Drawing SK-C920-12, Revision 1, Relocatable Latrine Facility Sewage System Holding Tank
- Appendix B - Holding Tank Installation Instructions
- Appendix C - Precast Concrete Vault Information
- Appendix D - 30-mil Liner Information
- Appendix E - Leak Test Verification
- Appendix F - Certification of Inspection and Installation of Larger On-site Sewage Systems
- Appendix G - Background Information
- Appendix H - Holding Tank Pumping Contract
- Appendix I - Spare Parts Information
- Appendix J - Inspection Record Form
- Appendix K - Memorandum of Understanding between Department of Energy - Richland and Washington State Department of Health

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Revision 0

APPENDIX A

DRAWING SK-C920-12, REVISION 1

**RELOCATABLE LATRINE FACILITY
SEWAGE SYSTEM HOLDING TANK**



- GENERAL NOTES:**
- 1 ALL ABS PIPE AND FITTINGS TO MEET ASTM F628.
 - 2 GUARD POSTS SHALL BE PER HPS AC-5-3 FOR A TYPE II STEEL GUARD POST INSTALLED AT 6'-0" MAXIMUM ON CENTER (ON NORTH AND SOUTH ENDS USE 4 GUARD POSTS).

SEQUENCE OF OPERATION

A RISE IN TANK LEVEL ACTIVATES "TIME TO PUMP" FLOAT SWITCH WHICH ENERGIZES RELAY R1. CONTACTS R1-1 CLOSE AND ACTIVATE "TIME TO PUMP" LIGHT. CONTACTS R1-2 ALSO CLOSE AND ACTIVATE THE HORN THROUGH NORMALLY CLOSED CONTACTS OF RELAY R2. ACTIVATION OF THE SILENCE SWITCH ENERGIZES RELAY R2. RELAY R2 CONTACTS SILENCE THE HORN BY OPENING NORMALLY CLOSED CONTACTS R2-2 AND CLOSING CONTACTS R2-1 TO LATCH RELAY R2 IN THE ENERGIZED POSITION.

A CONTINUED RISE IN TANK LEVEL WILL ACTIVATE THE "HIGH TANK LEVEL" FLOAT SWITCH WHICH ENERGIZES RELAY R3. CONTACTS R3-1 CLOSE TO ENERGIZE "HIGH TANK LEVEL" LIGHT. CONTACTS R3-2 CLOSE TO RE-ACTIVATE HORN WHICH CANNOT BE SILENCED BY SILENCE SWITCH IF THE KEY SWITCH IS MOVED TO THE "SILENCE" POSITION. CONTACTS R3-1 OPEN SILENCING THE HORN. CONTACTS R3-2 CLOSE AND THE LIGHT REMAINS ON.

A DROP IN TANK LEVEL FROM THE "HIGH TANK LEVEL" POSITION WILL OPEN THE FLOAT SWITCH CONTACTS DE-ENERGIZING RELAY R3 AND SILENCING THE HORN. A CONTINUED DROP IN TANK LEVEL WILL OPEN THE "TIME TO PUMP" FLOAT SWITCH DE-ENERGIZING RELAY R1. THE INDICATOR LIGHT, AND RESETTING ALARM HORN CIRCUIT. IF THE KEY SWITCH HAS BEEN MOVED TO THE "SILENCE" POSITION, IT WILL REQUIRE RESTORATION TO THE "NORMAL" POSITION IN ORDER TO RESET THE "HIGH TANK LEVEL" LIGHT.

DESIGN CRITERIA

LOADS:
 15 GAL/PERSON/SHIFT
 200 PEOPLE/SHIFT
 1 SHIFT/DAY

CALCULATION:
 VOLUME GENERATED = 15 GAL/PERSON X 200 PERSON/DAY
 VOL. GEN. = 3000 GAL/DAY

U.S. DEPARTMENT OF ENERGY
 FIELD OFFICE, RICHLAND
 DE-AC05-80RL11709

Westinghouse
 A Raychem Company

**RELOCATABLE LATRINE FACILITY
 SEWAGE SYSTEM
 HOLDING TANK**

1	7-28-81	INCORPORATE AS-BUILT INFORMATION	PK	LD	GL
2	8-28-81	REVISED	PK	LD	GL
3	9-28-81	REVISED	PK	LD	GL
4	10-28-81	REVISED	PK	LD	GL
5	11-28-81	REVISED	PK	LD	GL
6	12-28-81	REVISED	PK	LD	GL

SK-2012A 20-20AC0211.C2-55 SK-C920-12 1 1 1

APPENDIX B

HOLDING TANK INSTALLATION INSTRUCTIONS

- SUBCONTRACT U92-C130-01-5012,
SCN NO. 31, REV. 1, ATTACHMENT NO. 1
(REV. 1)
- HANFORD PLANT STANDARD AC-5-3, REV. 7

SUBCONTRACT U92-C130-01-5002
SCN NO. 31, REV. 1

Attachment No. 1, Rev. 1

I. LATRINE FACILITY HOLDING TANK

1. Provide labor and equipment for the following items:

- a. Excavation required for tank installation. Excavation slopes shall be no steeper than 1½:1. Maintain minimum 5'-0" distance from top of slope to adjacent trailers.
- b. Provide a minimum of 3" sand bed under vault compacted to 90% relative density.
- c. When released by the buyer, backfill and compact excavated material around tank. Compaction density shall be 90% for all backfill. All field density tests may be performed utilizing ASTM D2922. | *
- d. Unload and install buyer furnished 5,000-gallon holding tank. Tank installation consists of stacking precast units. Gasket seals shall be installed at joints. Units shall be installed level so that gasket contact is continuous. Vault details and weights are included in Attachment A. Only two riser sections will be utilized, one 48" and one 30." Subcontractor is advised that the base and largest riser section each weigh approximately 1,000 pounds more than indicated on the attached literature. | *
- e. Deleted - see paragraph j. | *
- f. Remove cable pulling irons and metal straps from base section of concrete vault. Removal may be by grinding, burning or cutting and shall be flush with the concrete surface. Fill the sump in the base section with sand to provide a uniform surface. Sand may be obtained from Pit 29 and shall be free of rocks and foreign matter. | #
- g. Install two 4" diameter PVC lines into the vault through existing openings. Rework opening, if required, and grout lines in place. Extend lines a minimum of 12" into the vault.
- h. Remove the two pre-cast cover blocks and the vault top slab. Remove sealant from the joints. Install the Buyer-furnished 30 mil PPL liner into the vault. Drape the top of the liner over the riser/top slab joint. Connect the boot to the 4" PVC lines.
- i. Reinstall the top slab and cover blocks. Install Buyer-furnished gasket seals at all joints. Gasket seal shall be placed on top of liner at riser/top slab joint.
- j. Test the assembled vault assembly. Plug the two (2) 4" PVC lines and fill vault assembly with water to approximately 1" below | #

* REVISED

ADDED

ORIGINAL

MR C130-01-5002
Rev. 68
Attachment
Page 2 of 3

riser/top slap joint. The Subcontractor shall notify its UCAT Technical Representative immediately prior to filling. Upon completion of filling the tank, a minimum 30-hour test period shall begin (Reference Paragraph 4a). Backfilling shall not begin until directed by UCAT. The Subcontractor shall provide pumping service, ~~off-site~~ transportation and approved disposal of the test water.

2. Provide labor, material and equipment for:

- a. 4-inch PVC drain and vent lines including excavation, sand bedding, and backfill.
- b. Connection of piping line at trailer and tank including clean-outs to meet Uniform Plumbing Code requirements.
- c. Guard posts at tank perimeter
- d. Fabricate and install the pump access/splash pad on top of vault

3. Items Not Included in Work Scope:

- a. Installation of alarm system
- b. Conduit except that shown on the splash pad
- c. Cable fittings

4. Hold Points:

A thirty (30)-hour minimum hold shall be initiated upon completion of filling the tank with water for leak testing and prior to backfilling. Backfilling shall commence at the direction of the UCAT Engineer (Reference paragraph 1j).

APPLICABLE DOCUMENTS

1. UCAT SK-C920-12, sheet 1, Rev. 0.
2. Attachment A (3 pages) - Utility Vault Company, Vault No. 814LA diagrams.
3. Memorandum from Jim Jones on vault delivery (2 pages).
4. Hanford Plant Standard AC-5-3.

SCHEDULE

1. Complete excavation prior to April 5, 1993.
2. Vault delivery to site - April 5, 1993. Crane required on April 5, 1993 to set vault sections when delivered.

3. Liner will be available April 27, 1993. Complete liner installation and fill tank for test by April 29, 1993. | *
4. Complete all work by May 7, 1993. | *

DOCUMENTATION REQUIREMENTS

Compaction Tests:

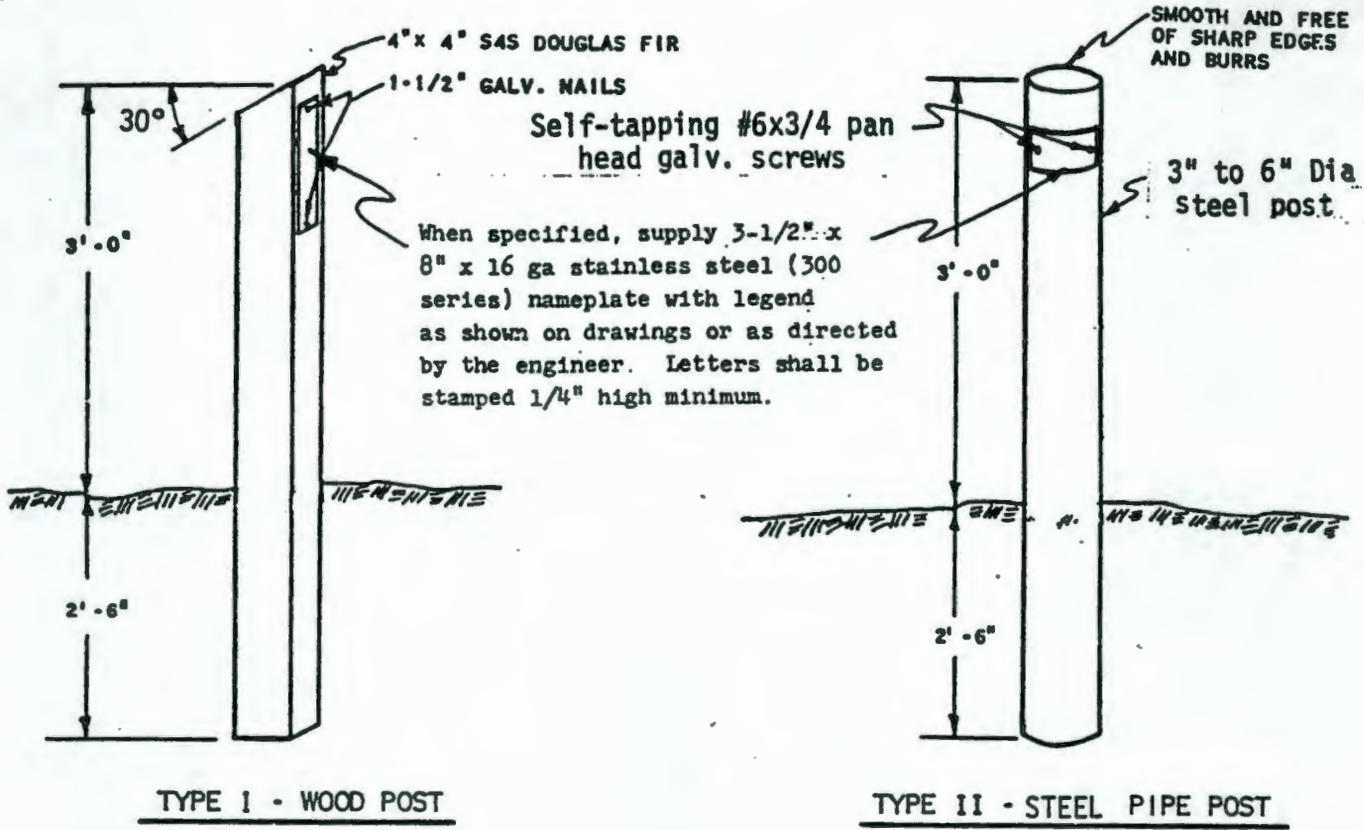
1. One test at bottom of excavation.
2. One test on each 8" lift of backfill.
3. One test at pipe burial section.

II. SUPPLIER DISPOSITION REQUEST

Incorporate SDR No. 237 which clarifies the requirement for providing steel breakaway signs rather than sign posts set in concrete.

Except as changed herein, all other terms, conditions and requirements of the original Subcontract and preceding Subcontract Change Notices and Modifications remain the same.

(END OF ATTACHMENT)



TYPE I - WOOD POST

TYPE II - STEEL PIPE POST

NOTES

1. Wood post shall be Douglas Fir, WCLB, Light Framing-Construction Grade.
2. Wood posts shall be butt treated to 4 inches above ground line with pentachlorophenol in heavy solvent, or full length pressure-treated with ammoniacal copper arsenite per American Wood Preservers' Association Standards C2, P5, P8 and P9.
3. Prior to painting, steel posts shall be thoroughly wirebrushed to remove all dirt, rust, and other foreign material. Oil, grease, and similar substances shall be removed with solvents prior to wirebrushing.
4. Paint aboveground portion of each post one prime coat and two finish coats yellow enamel. Yellow color shall be as defined in ANSI Z53.1, Safety Color Code for Marking Physical Hazards. Primer and paint materials shall conform to the following Federal Specifications:

Primer for metal posts	TT-P-645
Primer for wood posts	TT-P-25
Finish enamel	TT-E-497, Class A
5. Backfill shall be firmly compacted.

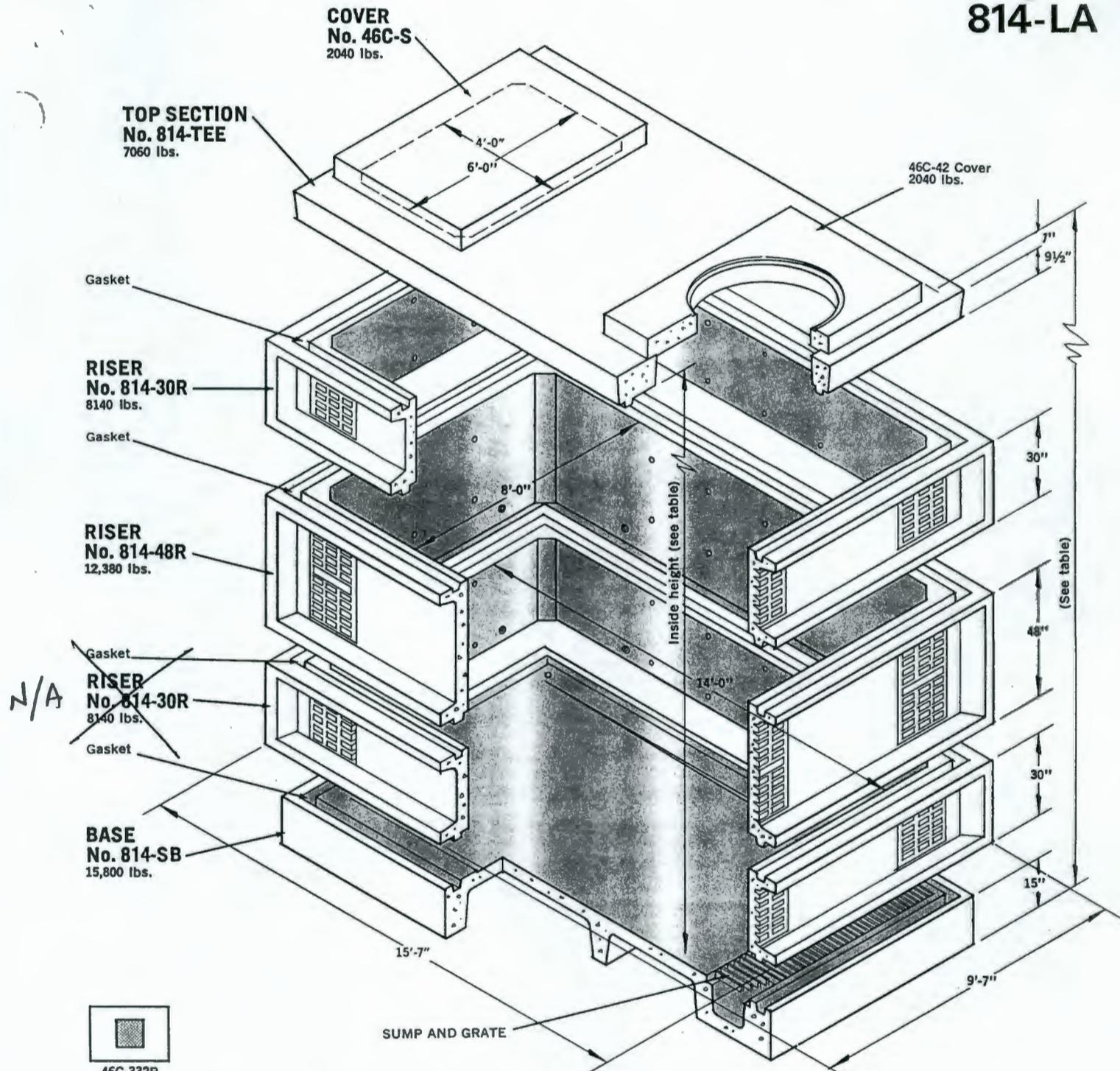
Description of Revision		HANFORD PLANT STANDARDS		Number
Revised Details and Notes		DOE - RICHLAND, WASHINGTON		
Prep. or Rev. by <i>IMA Garcia</i>	Orig. Issue Date 10-19-59	ARCHITECTURAL-CIVIL STANDARD	AC-5-3	
Approved <i>[Signature]</i> DOE	Date 2-1-79	SINGLE POST MARKER OR GUARD POST	Revision No. 7	

9828-TF-0008
Revision 0

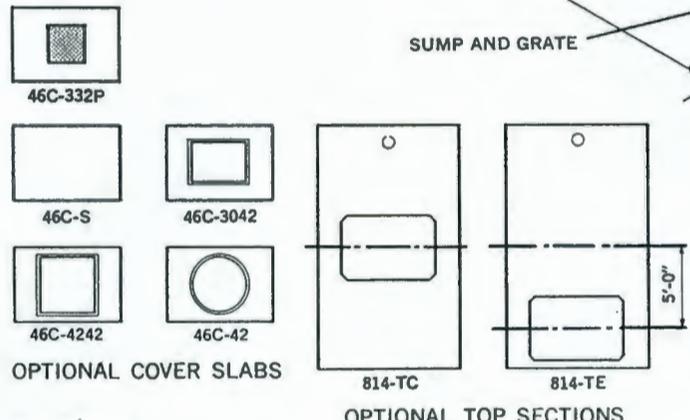
APPENDIX C

PRECAST CONCRETE VAULT INFORMATION

UTILITY VAULT COMPANY MODEL 814-LA



N/A



Vault No.	Inside Height	814-30R Risers	814-48R Risers	Outside Height	Total Weight
814-76	7'-6"	3		10'-2"	50,720 lbs.
814-80	8'-0"		2	10'-8"	51,060 lbs.
814-90	9'-0"	2	1	11'-8"	54,960 lbs.
814-10	10'-0"	4		12'-8"	58,860 lbs.
814-12	12'-0"		3	14'-8"	63,440 lbs.

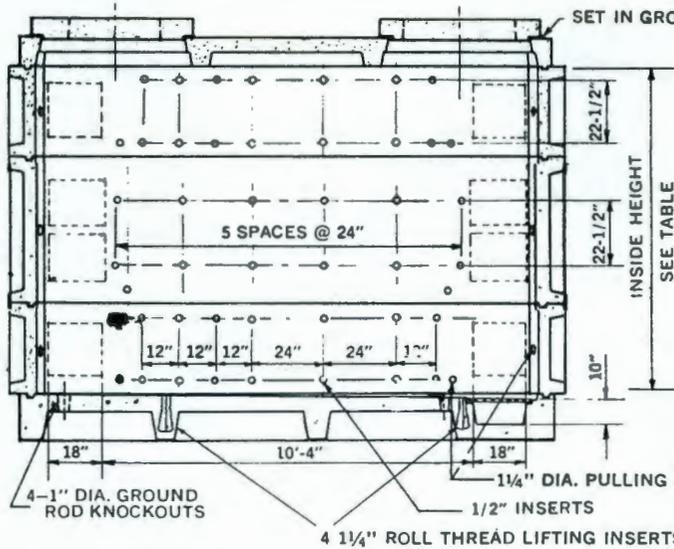
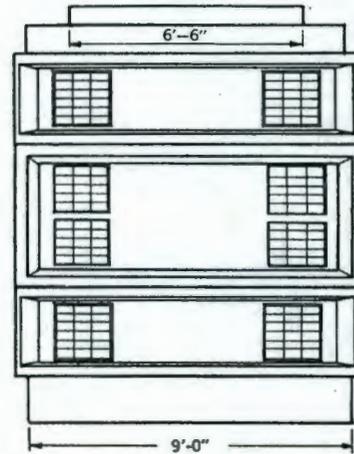
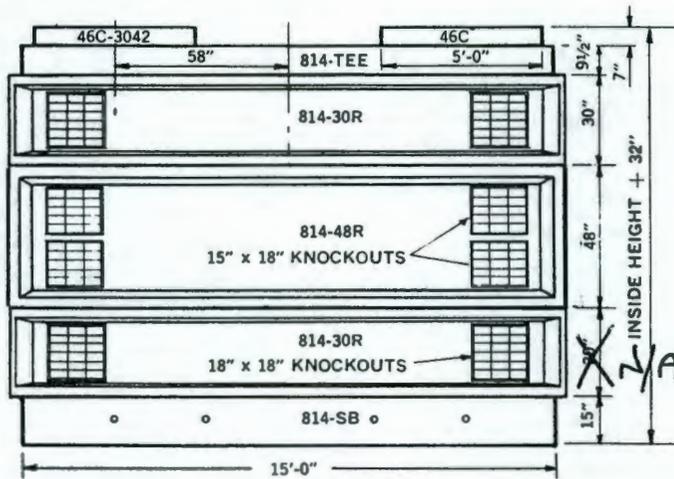
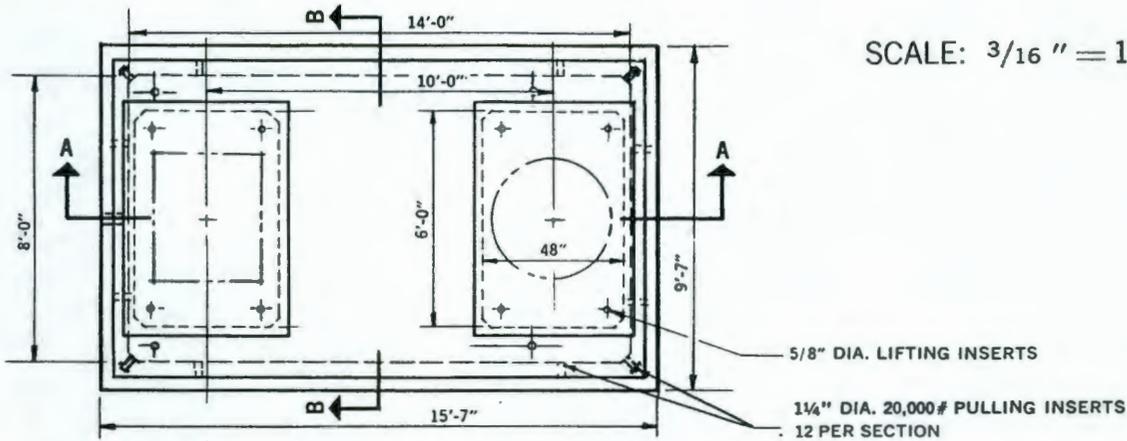
Any combination of 30" risers or 48" risers may be used to achieve desired height.
 Special blockouts can be furnished for intercepting existing ducts. See ordering instructions.
 For details see reverse side.



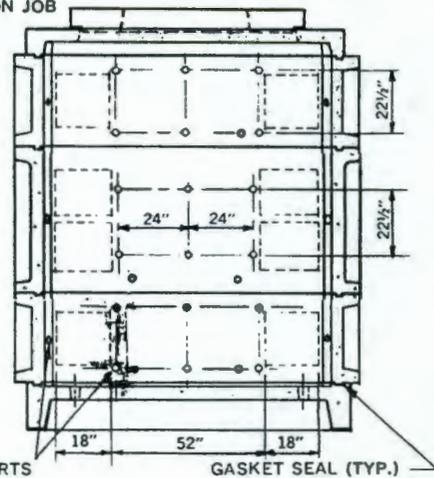
UTILITY VAULT CO.

814-LA

SCALE: $\frac{3}{16}'' = 1'-0''$



SET IN GROUT ON JOB

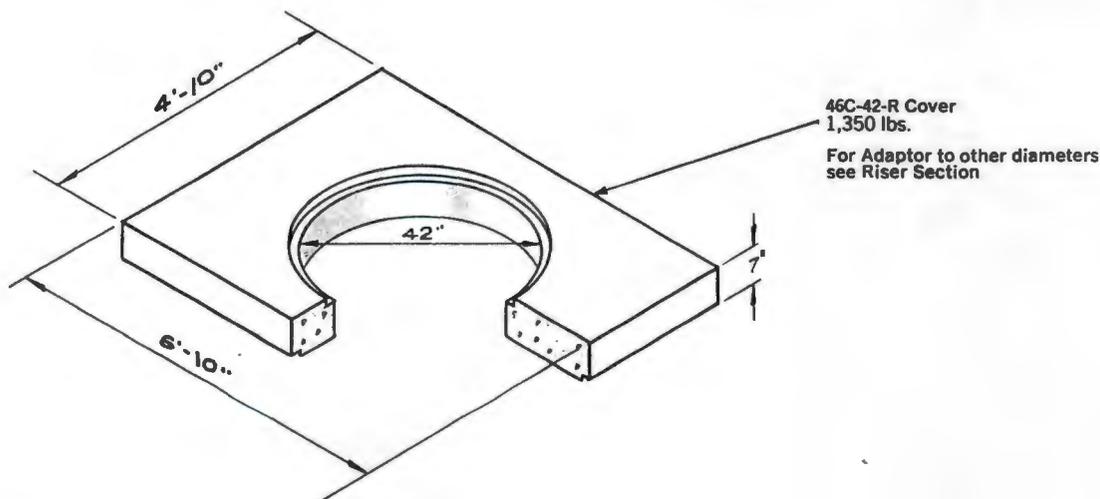


SECTION A-A

SECTION B-B

46-C

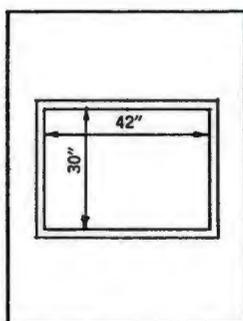
Access Cover Slabs for use with 814-LA Vault



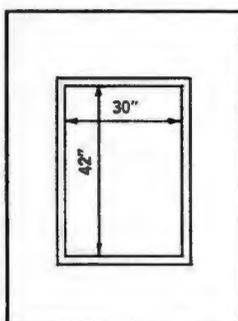
OPTIONAL CONCRETE COVERS



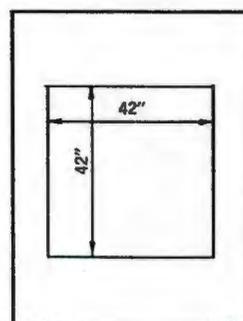
46C-S
Solid Cover
2040 lbs.



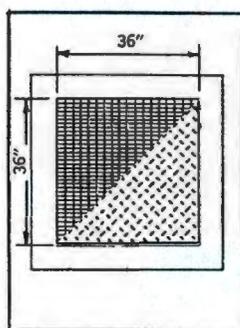
46C-3042-A
Rect. Opening
1,490 lbs.



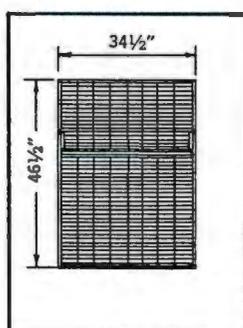
46C-3042-B
Rect. Opening
1,490 lbs.



46C-4242
Square Opening
1,270 lbs.



46C-332
Hinged and Spring
Locked Chevron Grate
1,440 lbs.



46C-332P
Hinged and Spring
Locked Steel Plate
1,430 lbs.

46C-3042HG
Entrance Hatch with
3042HG Traffic Grate
1,770 lbs.

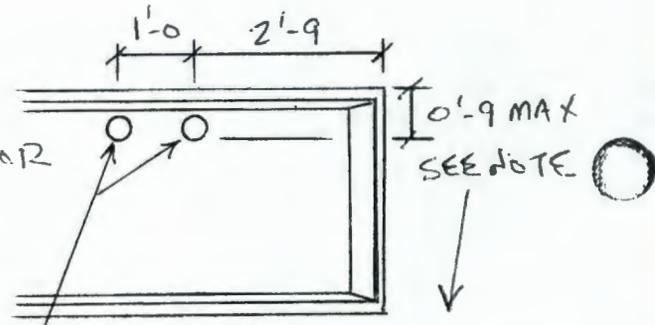
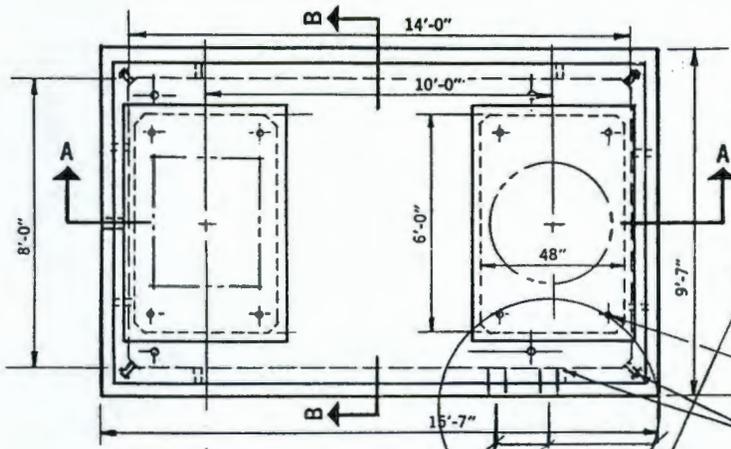
For Rectangular Risers, see Riser Section.

For details and specifications of Gratings, see Grating Section.



UTILITY VAULT CO.

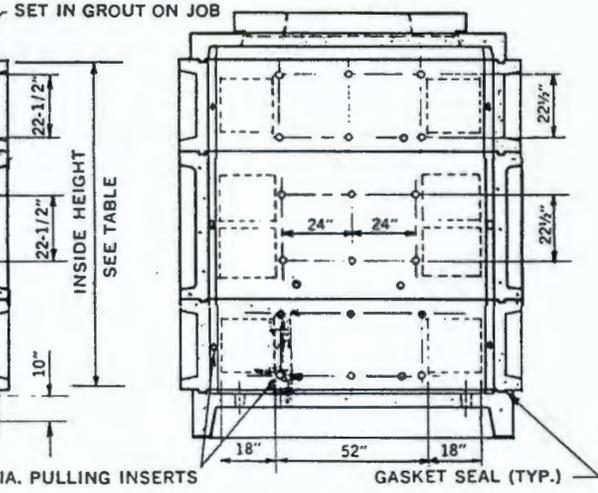
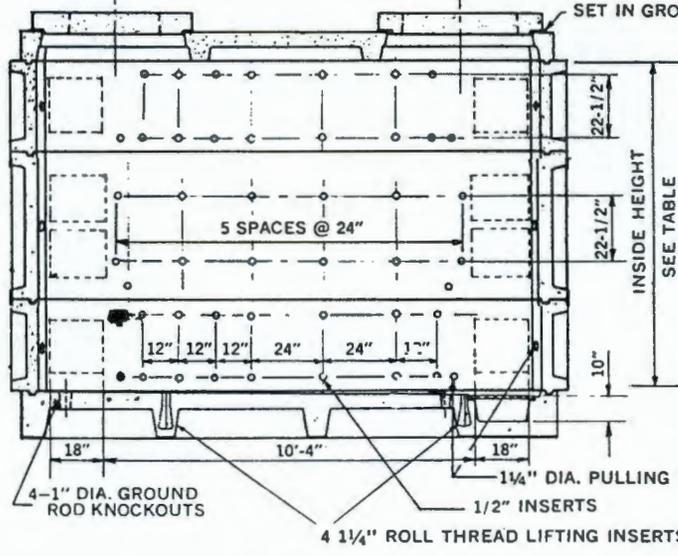
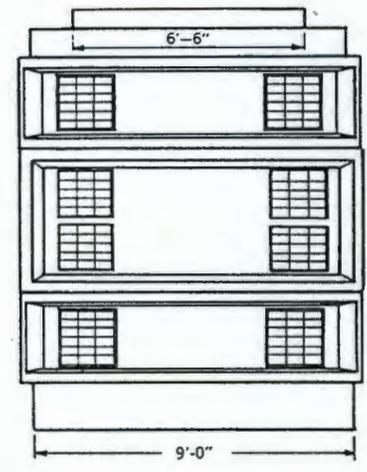
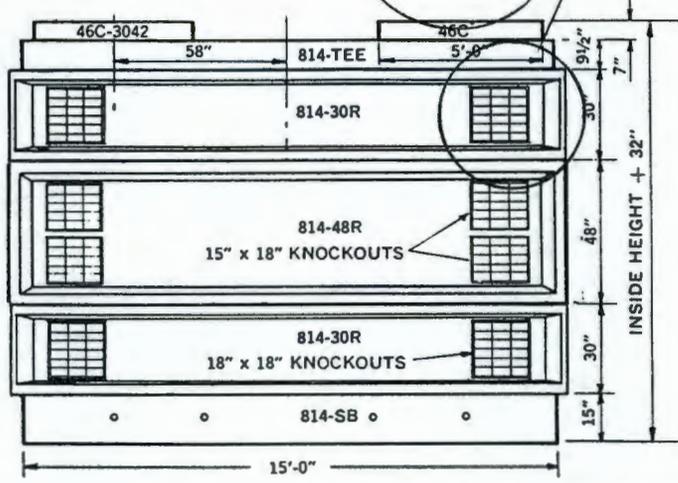
814-LA



PROVIDE 2 SLEEVES TO ACCEPT 4" ϕ SCHED 80 PVC PIPE (SOLVENT WELD) LOCATE SLEEVES AS CLOSE AS POSSIBLE TO TOP OF 30" RISER SECTION

5/8" DIA. LIFTING INSERTS

1 1/4" DIA. 20,000# PULLING INSERTS 12 PER SECTION



SECTION A-A

SECTION B-B

SLEEVE LOCATIONS

3-23-93 *ell*



UTILITY VAULT COMPANY, INC.

P.O. Box 568 - 2806 A Street S.E.
Auburn, Washington 98071 • (206) 839-3500
FAX (206) 735-4201

March 23, 1993

Jim Jones
Jim Jones
UE & C - Catalytic Inc.
P. O. Box 10
Richland, Washington 99352

G.L. LeVan

RE: HWVP - Hanford Project
Richland, Washington
814-LA Precast Concrete vault

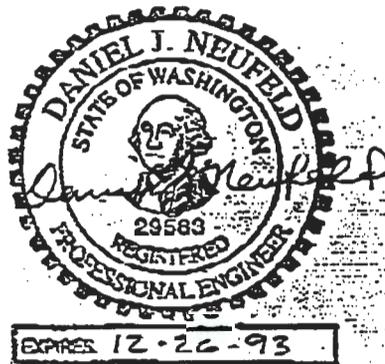
Dear Mr. Jones,

This letter certifies that the 814-LA precast concrete vault for the above referenced project is intended for burial with the top slab at grade. It has been designed to meet ACI-318-89 and ASTM C857 codes using AASHTO H-20 (16 KIP) wheel loading.

Please do not hesitate to call should you have any further questions.

Very truly yours,

Daniel J. Neufeld
Daniel J. Neufeld, P.E.



DN:st



UTILITY VAULT COMPANY VAULT INSTALLATION GUIDE

NOTICE TO CUSTOMER

We reserve the right to refuse delivery if, in the opinion of a Utility Vault representative, the preparation of the site is not within our standards.

Clear access to the site and a suitable surface area adjacent to the excavation is required. The delivery truck must be able to pull up next to or back up to the excavation. Also, company equipment cannot be pushed or pulled to the excavation. If the delivery operator decides proper access has not been provided, he will set the vault aside or refuse delivery.

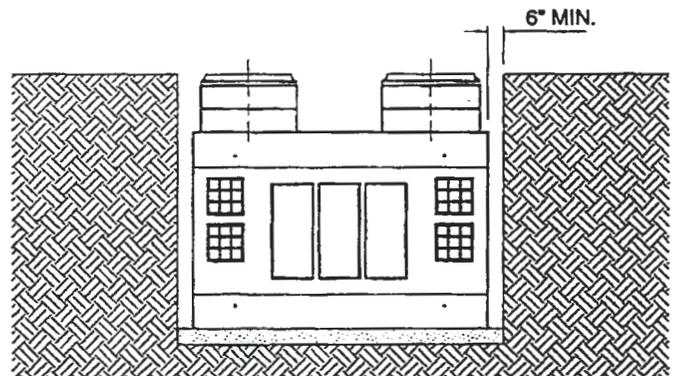
Traffic control shall be the responsibility of the Contractor or Customer.

The information within this guide covers the main aspects of the installation and is not a detailed "How To" manual. See ASTM specification C 891 "Installation of Underground Precast Concrete Utility Structures" for additional details. The Contractor or Customer is still responsible to meet all Codes and Regulations of each vault installation.

EXCAVATION SIZE AND CLEARANCE

Size - The excavation must allow for the overall dimensions of a completely assembled vault. When figuring the dimensions, include space for the added height of risers, frame and cover, and bedding material. Bedding material must cover the entire bottom of the excavation to a depth of 3" to 6", and be graded level. It is a good practice to set sectional vaults 2" to 3" deeper than required, then bring frame and cover up to grade with grout.

Clearance - At least 6" should be provided on all sides. This provides enough clearance to install vault sections. It also makes it easier to correctly backfill around the vault. Remember to allow extra room for deep sump protrusions or corbelled vaults.



Adequate Planning. Note that excavation plans allow for assembled height plus bedding material and proper clearance on all sides.

SHORING REQUIREMENTS

If the excavation site soil is unstable or saturated, shoring is required. It is the customers responsibility to meet the Safety Codes and Regulations for shoring the excavation.

(509) 377-1939

BEDDING PREPARATION

Bedding material - sand, crushed rock, pea gravel or approved native soil are good bedding materials. The bedding material must completely cover the bottom of the excavation. It should also be screeded level and compacted.

Standing water - use pumps as necessary to prevent water from collecting in the excavation. Extra size excavation may be required to allow pumps to be operated during all phases of setting.

PLANT LOCATIONS:

ROAD/ FIELD
GUY MOUNT

Auburn, Washington • Wilsonville, Oregon • Pleasanton, California • Fontana, California • Chandler, Arizona
(206) 839-3500 (503) 682-2844 (415) 846-8183 (714) 350-2675 (602) 963-2678

VAULT INSTALLATION (SECTIONAL VAULTS)

Base - With the excavation prepared, the base section can be installed. Check the base for correct level at the keyway. Once the base is set and level, install the gasket material making sure the keyway is free of dirt and rocks.

Center - Install the center section next by securing the lift straps to the bottom inserts. **Do not lift from top inserts.** It is important that the sections interlock to ensure the structural integrity of the vault. Install gasket material for the top section.

Top - Use proper lifting gear to hoist the top. Be sure to place top on vault with the access opening(s) in the correct location. The top should interlock and seal.

Risers - Gasket material for grade rings and risers is installed at the outer edge of the keyway.

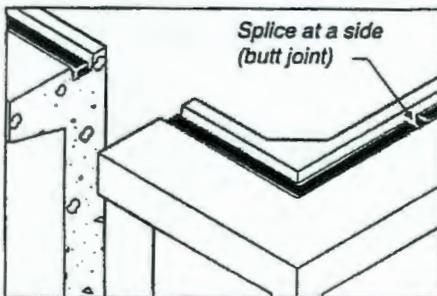
Customer installed Vaults - Use proper lifting gear when installing vault.

When installing vault sections that have four lift point locations, use four-way cable rigging with cables being of equal length - Do not lift by less than four cables.

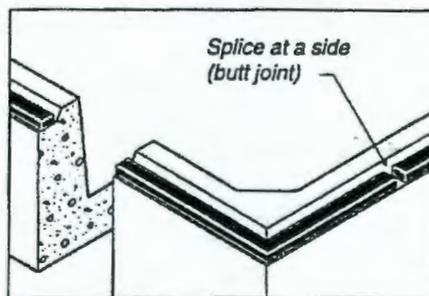
GASKET MATERIAL

Keyways must be free of dirt, rocks, and water. Rocks and dirt prevent the vault sections from seating and sealing properly. Standing water prevents visual inspection of proper seating. Remove all protective paper

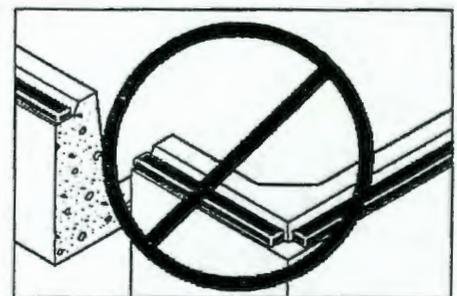
from gasket material. Splice gasket material away from corners. Corner splicing will not seal properly.



Grooved keyways - Install gasket material in keyway groove. Note that splice is correctly placed at a side location, not at a corner.



Standard keyways - Install gasket material at the outer edge of the keyway. Gasket should be continuous around corners.



Incorrect gasket installation - Do not splice gasket at a corner, gasket should be continuous around corners. Also, do not overlap gasket at splice.

BACKFILLING

Do not backfill until the vault is completely assembled. Sectional vaults receive part of their strength from the interlocking keyways, backfilling before vault is completely assembled could weaken the structural integrity of the vault. Good backfill material consists of sand, pea gravel, crushed rock, approved native soil or select well-graded material that is free of large rocks, and is not saturated with water.

Do not backfill one side at a time. Uneven pressure from this, or large rocks, can cause the vault to fail. Add backfill material in lifts evenly to all sides. Compact the backfill material as you go. This will prevent voids from forming.

GENERAL

Vaults designed for use as an oil water separator or detention system must be backfilled properly prior to filling vault with water.

For further details contact a Utility Vault representative.

Only use the knockout areas provided on vault for conduit and pipe penetrations. A blockout in any other area could weaken the structural integrity of the vault.

APPENDIX D

30-MIL LINER INFORMATION

- **PURCHASE ORDER U93-F-80515**
- **PPL 30 CONTAINMENT MEMBRANE DATA**

UE&C - Catalytic

A Raytheon Company

PURCHASE ORDER

PAGE NO. 1 of 4	REQUISITION F-80515	ACCOUNT NO. 1LK005001X	ORDER NO. U93-F-80515	S/R NO.	DATE 4/21/93
Seller ACF West, Inc. 8951 SE 76th Drive Portland, OR 97206 Attn: Mark Leonard			DIRECT ALL CORRESPONDENCE TO: UE&C-Catalytic Inc. (UCAT) P.O. Box 10 Richland, WA 99352 Attn: B.J. Samsow (509) 377-1976 FAX (509) 377-1939		
REQUIRED DELIVERY 4/23/93	PROMISED DELIVERY 4/26/93	FOB POINT Portland, OR	TERMS Net 30 Days	SHIPPING POINT Portland, OR	

SHIP TO: UE&C-Catalytic Inc., WNP-1, Building 52
 (Approx. 12 miles north of Richland)
 Richland, WA 99352

BC: DL/A/-AC/A/L06
 sc: N/A

SHIP VIA: FEDEX Collect

MARK FOR: J.G.Tuel/M.Clark

Title: HANFORD WASTE VITRIFICATION PLANT (HWVP) PROJECT, RICHLAND, WA
 Prime Contract: DE-AC06-90R11706, Department of Energy-Field Office, Richland

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL PRICE
1	1 ea	This Purchase Order is issued pursuant to our Request for Quote dated 4/19/93. <u>Materials/Services to be Furnished</u> The Seller shall furnish a 30ml PPL Liner in strict accordance with the applicable documents and all other requirements referenced and/or contained herein. Liner, 30 ml PPL to be fabricated in accordance with Sketch 039-FSK-00 and includes two (2) boots fabricated to seal around incoming pipes.	348.00	348.00

SPECIAL INSTRUCTIONS

1. THIS ORDER IS SUBJECT TO TERMS, CONDITIONS, AND REQUIREMENTS REFERENCED AND/OR CONTAINED HEREIN.
2. PLEASE RETURN THE ACKNOWLEDGEMENT COPY OF THIS ORDER TO THE UCAT BUYER IDENTIFIED ABOVE. PERFORMANCE OF ANY PORTION OF WORK HEREUNDER WILL CONSTITUTE ACCEPTANCE OF ALL PROVISIONS OF THIS ORDER.
3. THE ORDER NUMBER MUST BE SHOWN ON ALL PACKAGES, PACKING LISTS, SHIPPING PAPERS, AND INVOICES.

UE&C-Catalytic Inc.
 Procurement Department

BY

B.J. Samsow
 B.J. Samsow, Buyer

UE&C - Catalytic

A Raytheon Company

PURCHASE ORDER

PAGE NO. 2 of 4	SELLER ACF West, Inc.	ORDER NO. U93-F-80515	S/R NO.
--------------------	--------------------------	--------------------------	---------

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL PRICE
		<ul style="list-style-type: none">• Confirming our verbal order of 4/20/93 to Mark Leonard. <u>"Do Not Duplicate"</u>• Total Firm Price of Order (which is not subject to escalation and includes all applicable taxes, except for Washington State Sales Tax)		<u>\$348.00</u>

UE&C - Catalytic

A Raytheon Company

PURCHASE ORDER

PAGE NO. 3 of 4	SELLER ACF West, Inc.	ORDER NO. U93-F-80515	S/R NO.
--------------------	--------------------------	--------------------------	---------

Special Conditions (SC)

SC.1 Applicable Documents

The following terms and conditions are hereby incorporated and are made part of this Order.

(a) Business

(1) UCAT 9828-PR0036-06/03/92-RO "Terms and Conditions"

(b) Drawings

(1) Sketch 039-FSK-00

SC.2 Alterations

The following alterations have been mutually agreed to by the parties hereto and are hereby incorporated into this Order.

(a) Seller's Representations and Certifications - Verbal.

SC.3 Delivery/Performance Requirements

(a) The Seller shall commence work immediately upon receipt of this purchase notification of order and shall complete delivery of all items/work described herein on or before 4/26/93.

(b) The Seller shall ship Federal Express Collect in accordance with Shipping Instructions attached.

General Conditions (GC)

GC-1 Billing Instructions

(a) Invoicing shall comply with the pricing terms of this Order, and shall be submitted in triplicate (original and two copies) to:

Accounts Payable
UE&C-Catalytic Inc.
P.O. Box 10
Richland, WA 99352

(b) Washington State Tax (if applicable) shall be billed as a separate item on the invoice.

GC-2 Taxes

(a) This Order includes all applicable Federal, State, and Local Taxes pursuant to Clause 11.0 of the terms and conditions except those applicable Washington State Sales Taxes which shall be stated as a separate item on the Seller's invoice(s).

UE&C - Catalytic

A Raytheon Company

PURCHASE ORDER

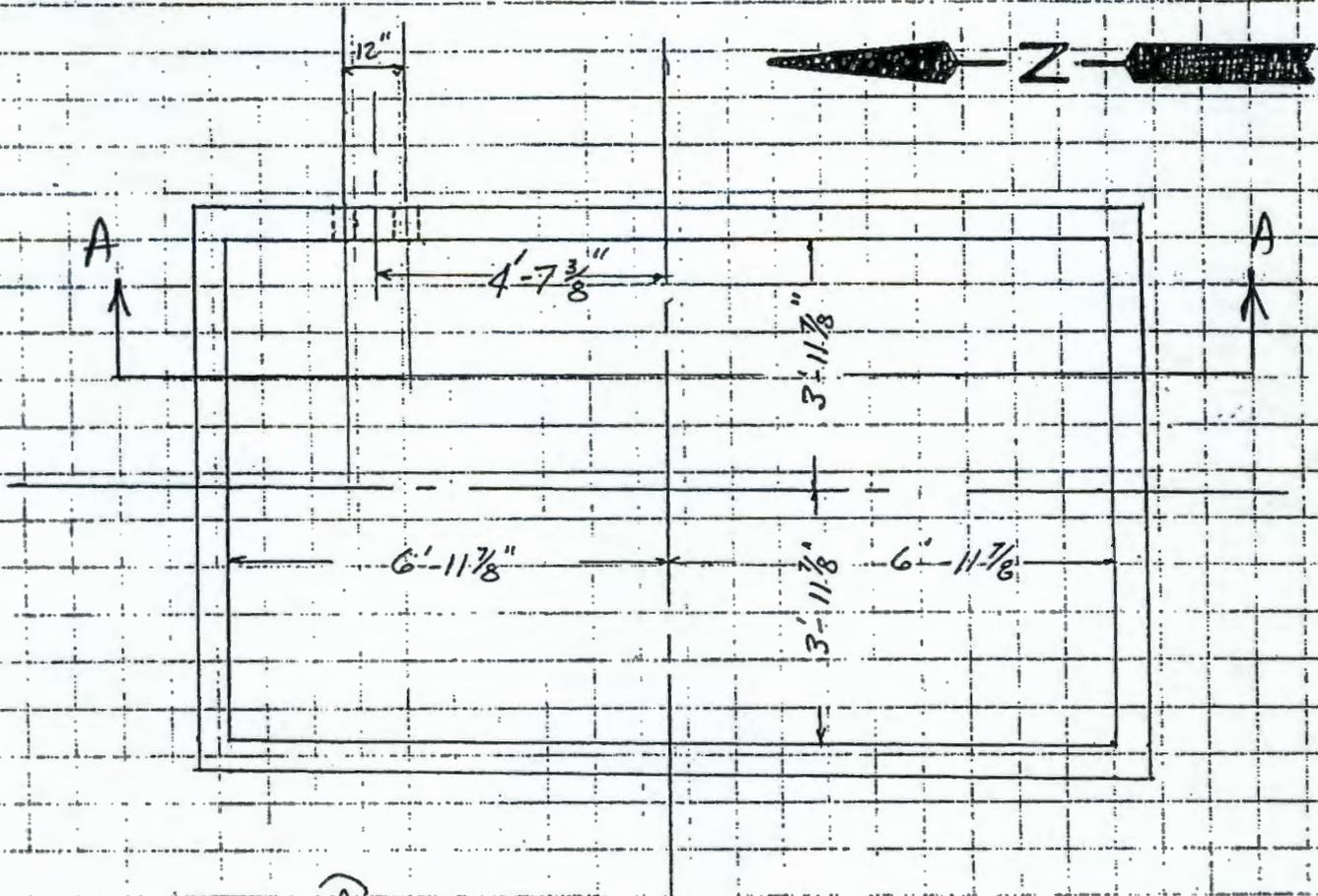
PAGE NO. 4 of 4	SELLER ACF West, Inc.	ORDER NO. U93-F-80515	S/R NO.
---------------------------	---------------------------------	---------------------------------	----------------

- (b) UE&C-Catalytic Inc. hereby agrees to either pay the amount of such invoiced taxes, to the Seller, or to provide the Seller evidence necessary to sustain an exemption of said tax.

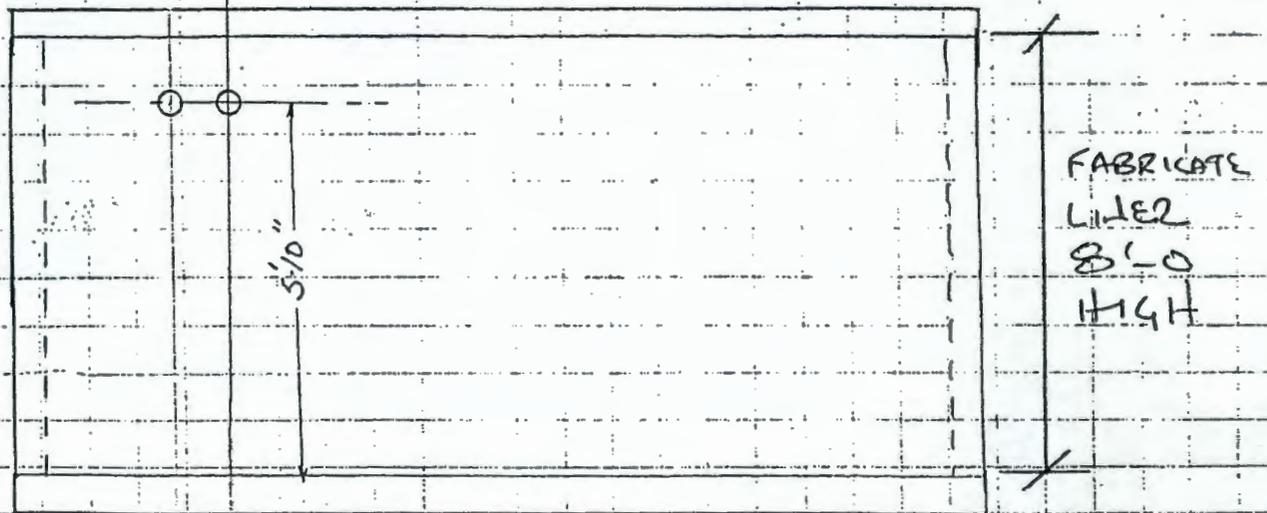
GC-3 Communications

Except for invoices all correspondence and communications concerning this Order and/or the requirements thereof should be in writing, addressed to the responsible Buyer, at the address shown on page one (1) of this Order.

*****LAST ITEM OF PURCHASE ORDER*****



PLAN VIEW
 $5\frac{1}{8}"$ (TYP) ← 4" PVC PIPE



SECT. A-A
 INTERIOR MEASUREMENTS OF LATRINE HOLDING TANK



8951 SE 76th Drive Portland, OR 97208

(503) 771-5115 (800) 878-5115 FAX: (503) 771-1161

PPL 30 CONTAINMENT MEMBRANE LOW TEMPERATURE - HYDROCARBON STABLE

DESCRIPTION	12X10 + 12X10 1800 d and 1500 d. HDPE TAPES COATED ON 4 SIDES WITH POLYETHYLENE	
MANUFACTURING FACILITY	SPRINGFIELD, OHIO	
FABRICATION FACILITY	BEND, OREGON	
WAREHOUSE FACILITIES	BEND, OREGON - ANCHORAGE, ALASKA	
WEIGHT PER YD2	15.40 OZ.	ASTM D 1910
NOMINAL THICKNESS	30 MILS +/- 1	
TENSILE STRENGTH (GRAB METHOD)	WARP 543LBS. WEFT 471LBS.	ASTM D 1682
ELONGATION TO TO BREAK	WARP 29% WEFT 32%	
TEAR STRENGTH (TONGUE METHOD)	WARP 66 LBS/INCH WEFT 101LBS/INCH	ASTM D 1682
BURSTING STRENGTH (MULLEN)	925 PSI	ASTM D 751-79
HYDROSTATIC RESISTANCE	750 PSI	ASTM D 751-79
PUNCTURE RESISTANCE TEST PERFORMED WITH 1" STEEL BALL TIPPED PROBE	770 PSI	ASTM D 751
MOISTURE VAPOR TRANSMISSION	1.415 GRAMS/M2/24 HRS	ASTM E 96
LOW TEMPERATURE (COLD CRACK)	-65	ASTM D 2136

PPL 30

FLEX/ABRASION	NO DAMAGE TO SCRIM BUT AFTER 2800 CYCLES BLACK COATING WAS WORN AWAY.	ASTM D 3885
---------------	--	-------------

DIMENSIONAL STABILITY STABILITY @ 212 F FOR 1 HOUR	EDGE WARP -8.3 WEFT -8.59 CENTER WARP -8.5 WEFT -8.50	ASTM D 1204
--	--	-------------

ENVIRONMENTAL RESISTANCE

ACCELERATED WEATHERING, U.V.	MORE THAN 80% OF STRENGTH RETAINED AFTER 2000 HOURS	ASTM G 53 84
------------------------------	--	--------------

Q.U.V. 8 HOURS UV 60 C / 4 HOURS CONDENSATION 50 C.

CARBON BLACK CONTENT	3 %
CARBON BLACK DISPERSION	A-1

HYDROCARBON RESISTANCE

CRUDE OIL 30 DAYS @ 73 F	WARP 517 LBS. WEFT 468 LBS.	ASTM D 751
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SAE 40 WT MOTOR OIL 30 DAYS @ 73 F	WARP 539 LBS. WEFT 462 LBS.	ASTM D 751
---------------------------------------	--------------------------------	------------

DIESEL 30 DAYS @ 73 F	WARP 554 LBS. WEFT 487 LBS.	ASTM D 751
--------------------------	--------------------------------	------------

GASOLINE 30 DAYS @ 73 F	WARP 546 LBS. WEFT 471 LBS.	ASTM D 751
----------------------------	--------------------------------	------------

SALT WATER 30 DAYS @ 73 F	WARP 529 LBS. WEFT 455 LBS.	ASTM D 751
------------------------------	--------------------------------	------------

SOIL BURIAL 30 DAYS @ 30C 95% REL. HUMIDITY	WARP 543 LBS. WEFT 459 LBS.	ASTM D 3083 76
---	--------------------------------	----------------

ALL DATA IS DRAWN FROM U.S. TESTING AND PRECISION LABORATORIES AND IS AVAILABLE ON REQUEST.

9828-TF-0008
Revision 0

APPENDIX E

LEAK TEST VERIFICATION

LEAK TEST VERIFICATION

HWVP RELOCATABLE LATRINE FACILITY
SEWAGE HOLDING TANK

During the period of May 11 through May 14, 1993, a leak test was performed on the HWVP relocatable latrine facility sewage holding tank. The tank is a precast concrete unit lined with a 30-mil reinforced polyethylene liner. The leak test was performed prior to placing backfill around the tank.

The tank was tested at a volume of approximately 4,500 gallons as agreed to by George B. Schlender of the Department of Health during a site inspection of the tank installation on May 11. This level provides a 500-gallon buffer above the second high level alarm.

The test level was established at 3:00 p.m., on May 11, 1993 and was monitored periodically during the test period. The level remained unchanged throughout the test period, which ended at 9:00 a.m., on May 14, 1993, a total of 66 hours. No leaks from the lined tank were observed during this period.

The tank is considered watertight.



G. L. LeVan
June 3, 1993



EXPIRES 11/18/94

9828-TF-0008
Revision 0

APPENDIX F

**CERTIFICATION OF INSPECTION AND
INSTALLATION OF LARGER ON-SITE
SEWAGE SYSTEMS**

CERTIFICATION OF INSPECTION AND INSTALLATION OF LARGER ON-SITE SEWAGE SYSTEMS

The following regulation applies: WAC 246-272-080 Within sixty days following the completion of and prior to the use of any project or portion thereof for which plans and specifications have received the approval of the Secretary, certification shall be made to the Secretary and signed by a professional engineer that the project was inspected by him or his authorized agent and that it was constructed in accordance with the plans and specifications approved by the Secretary.

Instructions:

- (a) If a project is being completed in stage construction, attach a map and description of project being certified as completed as approved on date given below.
- (b) As future portions of staged construction projects are completed, each must be certified as required by WAC 246-272-080.
- (c) Additional certification forms are available upon request from DOH offices listed below.

U.S. Department of Energy

Name of Sewer System
Environmental Assurance, Permits & Policy
Richland Field Office - M.S. A5-15

Mailing Address

Richland WA 99352
 City State Zip

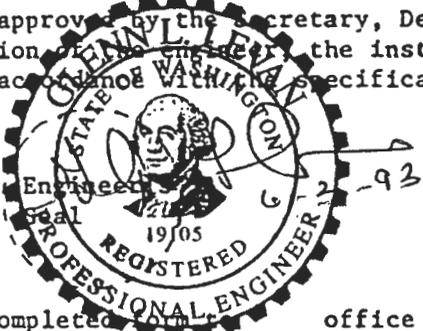
Date Plans and Specifications
 Approved by Department of Health
March 24, 1993

Date Project or Portions Thereof
 Completed
6-1-93

PROJECT NAME AND DESCRIPTIVE TITLE:

Project "HWVP Relocatable Latrine Facility" Sewage Holding Tank System, Plans, Specifications, and Preliminary Report, Design Flow 3,000 GPD

The undersigned engineer or his authorized agent has inspected the above-described project, which as to layout, size and type of pipe, valves and materials, and other designed physical facilities has been constructed in accordance with the plans and specifications approved by the Secretary, Department of Health, and in the opinion of the undersigned the installation and testing of the system was carried out in accordance with the specifications approved by the Secretary for the project.



GLL
 Engineer
6-3-93
 Date

Please return completed form to _____ office checked below.

EXPIRES 11/18/94
 Seattle Regional Office
 Health Services Division
 Water Supply and Waste Section
 Smith Tower, Mail Stop B 17-9
 Seattle, Washington 98104

Olympia Regional Office
 Health Services Division
 Water Supply and Waste Section
 Mail Stop LD-11
 Olympia, Washington 98504

Spokane Regional Office
 West 924 Sinto
 Spokane, Washington 99201

BENTON COUNTY

APPENDIX G

BACKGROUND INFORMATION

- TELECON 88300-93-046 DOCUMENTATION REQUIREMENTS
- DOH LETTER DATED 3/24/93 APPROVAL TO INSTALL SYSTEM
- TELECON 88300-93-058 SPLASH PAN CHANGE
CALCULATION REQUIREMENTS
LEAK TEST REQUIREMENTS
- TELECON 88300-93-068 LEAK TEST LEVEL
- MEETING MINUTES 88300-93-079 DOH SITE INSPECTION
LEAK TEST LEVEL
- DOH LETTER DATED 6/14/93 APPROVAL TO USE SYSTEM
- DOH MEMO DATED 6/17/93 DOCUMENTATION SUBMITTAL EXTENSION

TELEPHONE CONFERENCE MEMORANDUM

Company: Westinghouse Hanford Company Address: Richland, Washington

[] INCOMING [X] OUTGOING DATE: March 16, 1993 TIME: 10:00am

WITH: Mr. E. A. Brown OF: DOH PHONE: 509-456-2754

WITH: Mr. K. A. Giese OF: WHC PHONE: 376-8301

Copies to:	Name	Address
	C. A. Augustine	G6-02
	D. G. Baide	G6-16
	D. A. Burris	N1-04
	M. J. Clark	X2-01
	J. E. Couey	A5-10
	J. H. Larue	G6-16
	R. L. Long	A5-10
	R. W. Oldham	H6-25
	F. D. Pettit	N1-04
	A. L. Rodriguez	A5-15
	J. E. Turnbaugh	H6-25
	EDMC	H6-08
	ETS	H4-18
	KAG/File/LB	H6-25

Subject: PROVISIONAL APPROVAL TO START OPERATING THE SEPTIC HOLDING TANK SYSTEM AT THE HANFORD WASTE VITRIFICATION PLANT CONSTRUCTION SITE

Air & Water Permits K. A. Giese *Ka Giese* 376-8301

 Department Signature 3-22-93 Telephone #

Summary of Conference:

Mr. K. A. Giese and Ms. E. A. Brown discussed the items necessary for the State of Washington Department of Health (DOH) to grant a provisional approval to commence operation of the septic holding tank system at the Hanford Waste Vitrification Plant (HWVP) construction site.

For the provisional approval, DOH will:

- Need a copy of the pumping contract with Waste Management of Kennewick
- Need a signed copy of the MOU. The MOU is currently being revised at RL
- Require that a second level alarm be installed on the septic holding tank.

DOH will provide a letter to RL with the terms and conditions of the provisional approval. The provisional approval letter will contain the contingency that all documentation for approval must be submitted to DOH within ninety days following the granting of provisional approval. The documentation must be signed and stamped by a professional engineer registered in the State of Washington. The documentation that must be submitted to DOH is as follows:

- Operations and Maintenance Manual
- Final Engineering Report. UCAT needs to expand the discussion on how many months the septic holding tank system will be handling the peak flow load
- Plans and Specifications. On the plans and specifications, the UPC should not be referenced. Instead, use EPA Design Manual EPA-625/1-80-012, "Onsite Wastewater Treatment and Disposal Systems"; and/or use "Design Guidelines for Larger On-Site Sewage Systems with Design Flows of Greater than 3,500 Gallons Per Day," DOH and Ecology, 1987
- Certification Form. This will certify that the "Installation and testing of the system was carried out in accordance with the specifications approved by the Secretary for the project." For this project, it will include certification that the professional engineer witnessed and verified the leak test. Specifics of the leak test will be included in the DOH provisional approval letter.

DOH stated that they are allowing a smaller tank installation at this site for two reasons:

1. The peak employee flow to the septic holding tank will not take place until 1994.
2. The location of the project, and the scrutiny placed on the HWVP Site should help insure that the tank will be monitored closely.

DOH made it very clear that the system at HWVP will be treated as an exception, and that all future septic holding tank installations on the Hanford site must follow the "Guidelines for Holding Tank Sewage Systems," DOH Environmental Health Programs Technical Review Committee, December 1991.



STATE OF WASHINGTON
DEPARTMENT OF HEALTH

West 924 Sinto Avenue • Spokane, Washington 99201-2595 • FAX (509) 456-2997

March 24, 1993

ATTN: Ms. A.L. Rodriguez
U.S. Department of Energy
Environmental Assurance, Permits & Policy
Richland Field Office
M.S. A5-15
Richland, WA 99352

93-JSH-0001

RE: Project "HWVP Relocatable Latrine Facility" Sewage Holding Tank System, Plans, Specifications and Preliminary Report, Design Flow 3,000 GPD

Dear Ms. Rodriguez:

The plans, specifications, and subject report for the above project received in this office March 12, 1993 with additional information received March 23, 1993 have been reviewed and, in accordance with the provisions of WAC 246-272 are hereby **APPROVED**.

PROVIDED:

- 1) A leak test on the holding tank shall be performed after installation prior to backfill of the tank. The tank shall be filled to the top and allowed to sit for 24 hours. The level in the tank shall then be measured. The tank shall sit for an additional 6 hours and the level in the tank measured again. All leaks in the tank shall be repaired and the tank shall be considered watertight prior to backfill. A licensed engineer shall verify that the tank is watertight and submit verification to the Department of Health.
- 2) Department of Health shall be notified to perform a final inspection of the tank prior to use of the system, however the tank may be backfilled prior to the final inspection.
- 3) An Agreement/Memorandum of Understanding between DOH and U.S. Department of Energy, Field Office-Richland (referred to as RL) shall be in effect within 90 days of this approval date. Department of Health shall hold RL responsible for management of the holding tank system until the formal MOU is executed.
- 4) Plans, Specifications, an Engineering Report, and an Operation and Maintenance Manual stamped by a licensed engineer shall be submitted to the Department of Health within 90 days of this approval date.



Ms. A.L. Rodriguez
March 24, 1993
Page 2

As required in WAC 246-272-080 - Within sixty days following the completion of and prior to the use of the above project or portions thereof, the attached Certification must be completed by a professional engineer and returned to this department.

WAC 246-272-080 provides that if the certification of completion has not been submitted within two years of the date of this letter, this approval will become null and void unless you take action at that time to arrange for an extension of the approval period in the manner prescribed.

Regulations establishing a schedule of fees for review of planning, engineering and construction documents were adopted July 1, 1987. (WAC 246-272-990). An itemized bill will be sent at a later date.

Sincerely,



Lisa Brown, P.E.
Environmental Engineer
Larger On-Site Systems
(509) 456-2754

cc: Ecology Nuclear Waste, Dave Jansen
Ecology Nuclear and Mixed Waste Management, Jerry Hensley
Westinghouse Hanford, Rick Oldham
Westinghouse Hanford, Ken Giese
UE&C-Catalytic, Mr. Dean Pettit
Benton-Franklin County Health District
State Health

CERTIFICATION OF INSPECTION AND INSTALLATION OF LARGER ON-SITE SEWAGE SYSTEMS

The following regulation applies: WAC 246-272-080- Within sixty days following the completion of and prior to the use of any project or portion thereof for which plans and specifications have received the approval of the Secretary, certification shall be made to the Secretary and signed by a professional engineer that the project was inspected by him or his authorized agent and that it was constructed in accordance with the plans and specifications approved by the Secretary.

Instructions:

- (a) If a project is being completed in stage construction, attach a map and description of project being certified as completed as approved on date given below.
- (b) As future portions of staged construction projects are completed, each must be certified as required by WAC 246-272-080.
- (c) Additional certification forms are available upon request from DOH offices listed below.

<i>U.S. Department of Energy</i>			
Name of Sewer System <i>Environmental Assurance, Permits & Policy Richland Field Office - M.S. A5-15</i>			Date Plans and Specifications Approved by Department of Health
Mailing Address			<u>March 24, 1993</u>
<i>Richland</i>	<i>WA</i>	<i>99352</i>	Date Project or Portions Thereof Completed
City	State	Zip	

PROJECT NAME AND DESCRIPTIVE TITLE:

Project "HWVP Relocatable Latrine Facility" Sewage Holding Tank System, Plans, Specifications, and Preliminary Report, Design Flow 3,000 GPD

The undersigned engineer or his authorized agent has inspected the above-described project, which as to layout, size and type of pipe, valves and materials, and other designed physical facilities has been constructed in accordance with the plans and specifications approved by the Secretary, Department of Health, and in the opinion of the engineer, the installation and testing of the system was carried out in accordance with the specifications approved by the Secretary for the project.



	Engineer
	Date

Please return completed form to _____ office checked below.

Seattle Regional Office
Health Services Division
Water Supply and Waste Section
Smith Tower, Mail Stop B 17-9
Seattle, Washington 98104

Olympia Regional Office
Health Services Division
Water Supply and Waste Section
Mail Stop LD-11
Olympia, Washington 98504

Spokane Regional Office

West 924 Sinto
Spokane, Washington 99201

BENTON COUNTY

TELEPHONE CONFERENCE MEMORANDUM

Company: Westinghouse Hanford Company

Address: Richland, Washington

[] INCOMING [X] OUTGOING DATE: April 1, 1993

TIME: 2:30pm

WITH: Mr. E. A. Brown

OF: DOH

PHONE: 509-456-2754

WITH: Mr. K. A. Giese

OF: WHC

PHONE: 376-8301

Copies to:

Name

Address

C. A. Augustine	G6-02
D. G. Baide	G6-16
D. A. Burris	N1-04
M. J. Clark	X2-01
J. E. Couey	A5-10
J. H. Larue	G6-16
R. L. Long	A5-10
R. W. Oldham	H6-25
F. D. Pettit	N1-04
A. L. Rodriguez	A5-15
J. E. Turnbaugh	H6-25
EDMC	H6-08
ETS	H4-18
KAG/File/LB	H6-25

UC & C-CATALYTIC
RECEIVED

MAY 06 1993

93-WH-0199

Subject: PROVISIONAL APPROVAL TO START OPERATING THE SEPTIC HOLDING TANK SYSTEM AT THE HANFORD WASTE VITRIFICATION PLANT CONSTRUCTION SITE

Air & Water Permits

K. A. Giese

K.A. Giese 4-5-93

376-8301

Department

Signature

Telephone #

Summary of Conference:

Mr. K. A. Giese met with UCAT personnel to discuss the content of the various documents that must be assembled and submitted to the State of Washington Department of Health (DOH) for approval of the septic holding tank system at the HWVP construction site. During the discussion, system design issues and document content issues were raised. Mr. Giese called Ms. E. A. (Lisa) Brown of DOH to clarify these issues.

- ISSUE: Can a metal splash plate be used for the catch basin around the pumping access port?

DOH: A metal dish is acceptable as long as it meets the intent and purpose that a concrete dish would provide. The metal dish must be attached such that there will be no leakage onto the top of the septic holding tank during pumping or wash-down operations.

- **ISSUE:** Are detailed design calculations necessary?

DOH: Calculations which show the daily flow are required. However, because this system does not meet the volume capacity requirements as stated in the Holding Tank Guidelines, then no further design calculations are necessary. Along with the design calculations there must be statements on:

- The daily design flow
- The anticipated schedule for peak loading of the septic holding tank system
- Emphasizing that there will be "no peak loading until 1994"
- Emphasizing that "san-itation systems are still in use at the site"

- **ISSUE:** According to the Holding Tank Guidelines, Page 9 Chapter V (G) "Overflow Provisions," the septic holding tank system must be leak tight to the elevation of the lowest fixture served. Should the leak test on the tank be considered a leak test on the piping from the latrine trailer as well?

DOH: The real intent of the leak test provision is to leak test the tank. DOH does not want sewage leaking while the septic holding tank is in service. DOH wants to insure that the tank is watertight. The inlet pipe to the septic holding tank can be plugged at the tank in order to perform the leak test.

- **ISSUE:** Can the engineering report, plans and specifications, and the O&M manual be submitted together to DOH?

DOH: All documents can be submitted together as one package.

Concurrence:

State of Washington Department of Health

Risa Skown

4/19/93

88300-93-068

TELEPHONE CONFERENCE MEMORANDUM

Company: Westinghouse Hanford Company Address: Richland, Washington

[] INCOMING [X] OUTGOING DATE: April 1, 1993 TIME: 2:30pm

WITH: Mr. G. B. Schlender OF: DOH PHONE: (509)-456-2490

WITH: Mr. K. A. Giese OF: WHC PHONE: 376-8301

Copies to:

Name	Address
D. A. Burris	N1-04
J. Carolia	G1-01
J. H. Larue	G6-16
G. L. Levan	N1-04
S. J. Lijek	A4-35
R. W. Oldham	H6-25
A. L. Rodriguez	A5-15
J. E. Turnbaugh	H6-25
EDMC	H6-08
ETS	H4-18
KAG/File/LB	H6-25

Subject: LEAK TEST FOR THE SEPTIC HOLDING TANK SYSTEM AT THE HANFORD WASTE VITRIFICATION CONSTRUCTION SITE PLANT

Air & Water Permits K. A. Giese *K. A. Giese 4-28-93* 376-8301

Department Signature Telephone #

Summary of Conference:

Mr. K. A. Giese asked Mr. Schlender about the necessary water level height for a leak test for the concrete septic holding tank at the Hanford Waste Vitrification Plant construction site. Mr. Giese asked if the water level in the tank for a leak test could be several inches below the top joint of the tank. The top joint in the tank is the contact surface between the top edge of the tank and the cover block. Mr. Schlender stated that a leak test, where the water level is several inches short of this top joint is acceptable.

Mr. Giese informed Mr. Schlender that UCAT is considering the possibility of installing leak prevention inside the tank. Two options under consideration by UCAT are a liner and a liquid membrane. Mr. Schlender stated that either option is satisfactory.

Concurrence: State of Washington Department of Health

George Schlender

George Schlender, DOH

4/28/93

Date

MEETING MINUTES

Subject: SITE INSPECTION BY THE STATE OF WASHINGTON DEPARTMENT OF HEALTH FOR SEVERAL SEPTIC SYSTEM PROJECTS ON THE HANFORD SITE

TO:	D. G. Baide G6-16	BUILDING:	Hanford Site
	J. H. Larue G6-16		
	G. L. Levan N1-04		
	S. J. Lijek A4-35		
	R. W. Oldham H6-25		
	A. L. Rodriguez A5-15	Attendees:	G. B. Schlender, DOH
	J. E. Turnbaugh H6-25		K. A. Giese, WHC
cc:	EDMC H6-08		
	KAG/File/LB H6-25		

FROM: K. A. Giese *K. A. Giese 6-1-93* CHAIRMAN: K. A. Giese

Dept-Operation-Component	Area	Shift	Meeting Date	Number Attending
Air & Water Permits	RCHN	Day	May 11, 1993	2

Background

Mr. K. A. Giese accompanied Mr. G. B. Schlender for two pit tests and a site inspection on the Hanford site. The pit tests were for the septic system installation at the WRAP facility (Project W-026), and for the septic system upgrade at the 100K Area. The inspection was for Project B-595 "Holding Tanks to Support Construction Personnel for the Hanford Waste Vitrification Plant Construction."

Project W-026 Septic System

Four test pits were dug and the soil was examined by Mr. Schlender. A sample was collected and sent to the 2101M Laboratory for sieve analysis.

100K Septic System Upgrade

Four test pits were dug, and the soil was examined by Mr. Schlender. The soil had many large cobbles. A sample was collected and sent to the 2101M Laboratory for sieve analysis.

Project 8-595 Septic Holding Tank

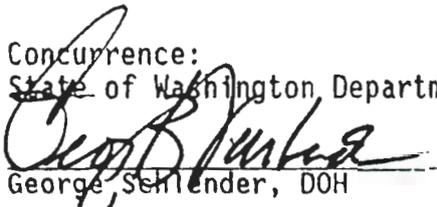
The purpose of the inspection was to view the installation of the septic holding tank and the two minor leaks. Mr. Giese and UCAT personnel explained to Mr. Schlender the history of the leakage at the septic holding tank.

- The septic holding tank was initially installed and leak tested. Leakage was observed in several locations.
- The septic holding tank was fitted with a liner to prevent leakage.
- The septic holding tank was leak tested. Leaks were still detected.
- Tests were performed by filling the tank several times with dye color added to the water to trace for leaks.
- The conclusion was that the leakage originated in the area where the inlet piping enters the septic holding tank.

Mr. Giese asked Mr. Schlender if an acceptable leakage test would be to fill the septic holding tank to a level that is about one foot below the inlet pipe entrance. This level would represent the 4,000 gallon level. The initial alarm is set at 2,000 gallons. This initial alarm signals that it is time to pump the tank. The high level alarm switch would be set at 4,000 gallons. This high level alarm has both a beacon light and an audible horn. After the high level alarm would sound, there is still a 700 gallon buffer before the inlet piping level is reached. Mr. Schlender stated that filling the septic holding tank to the 4,000 gallon level for a leak test would be acceptable.

Mr. Schlender stated that after the leak test was passed, that the tank could be backfilled and the system put into operation. This septic holding tank system could be put into service with the understanding that the permit application package will be submitted to State of Washington Department of Health before the 90-day provisional approval expires. The 90-day provisional approval to install the septic holding tank system started on March 24, 1993.

Concurrence:
State of Washington Department of Health


George Schlender, DOH

6/15/93
Date

FROM: DEPT HEALTH-SPOKANE

TO: 509 376 2816

JUN 14, 1993 10:48AM #830 P.02



STATE OF WASHINGTON
DEPARTMENT OF HEALTH

West 924 Sinto Avenue • Spokane, Washington 99201-2595 • FAX (509) 456-2997

June 14, 1993

ATTN: Ms. A.L. Rodriguez
U.S. Department of Energy
Environmental Assurance, Permits & Policy
Richland Field Office
M.S. A5-15
Richland, WA 99352

RE: "HWVP Relocatable Latrine Facility" Sewage Holding Tank
System, Design Flow 3,000 GPD

Dear Ms. Rodriguez:

A copy of the "Certification of Inspection and Installation" form and the Leak Test Verification for the above referenced project were received in this office today via facsimile. Authorization to use the holding tank system is hereby granted.

Please transmit the referenced documents as soon as possible.

Sincerely,

Lisa Brown

Lisa Brown, P.E.
Environmental Engineer
Larger On-Site Systems
(509) 456-2754

cc: Ecology Nuclear Waste, Dave Jansen
Ecology Nuclear and Mixed Waste Management, Jerry Hensley
Westinghouse Hanford, Rick Oldham
Westinghouse Hanford, Ken Giese
UE&C-Catalytic, Mr. Dean Pettit
Benton-Franklin County Health District
State Health

FROM: DEPT HEALTH-SPOKANE

TO:

509 376 2816

JUN 17, 1993 1:08PM #880 P.02

June 17, 1993

TO: Ken Giese, Westinghouse

FROM: Lisa Brown, DOH

SHT. 2 APPLICABLE
TO HWVP HOLDING
TANK

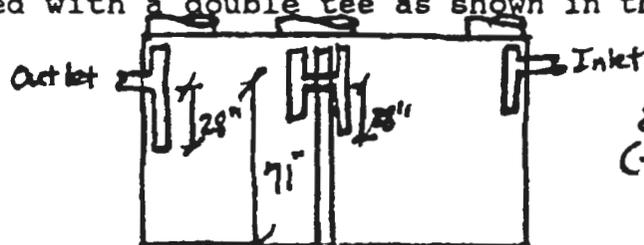
RE: C-018H Permanent On-Site Wastewater Disposal System Septic Tank and HWVP Holding Tank System

Ken,

Referring to C-018H:

I quickly reviewed the septic tank plan and section views for the C-018H 3,000 gallon tank. The contractor needs to be aware of the following comments prior to installation of the tank:

- 1) The risers need to be located above the sanitary tees.
- 2) The elbow in the internal compartmental wall needs to be replaced with a double tee as shown in the sketch below



28" w/ liquid depth = 71"
(this equates to 40%)

- 3) A riser needs to be installed above the compartmental wall double tee.
- 4) The top of the sanitary tees need to extend within 2" of the top underside of the tank to allow for adequate scum storage in the tank.
- 5) Outlet side of the tees need to extend to 28" depth in lieu of 24" as shown. Additionally, when the compartmental elbow is replaced with a double compartmental tee dimension currently shown as 18" needs to be 28".
- 6) All sanitary tees need to be PVC.
- 7) Bituminous coating shall not be used on the interior of the tank. A concrete sealer may be used instead (i.e., Thorough Seal, etc.)
- 8) Tanks shall be leak tested.

9) Pre-cast tanks need to be approved for use in Benton County. Please contact the Benton-Franklin Health District for

FROM: DEPT HEALTH-SPOKANE

TO:

509 376 2816

JUN 17, 1993 1:08PM #880 P.03

Ken Giese
July 17, 1993
Page 2

Referring to HWVP Holding Tank System:

1) Per our phone conversation today, an extension to July 15, 1993 for submittal of the Plans, Specifications, an Engineering Report and an Operation and Maintenance Manual stamped by a licensed engineer is hereby granted. (Refer to Provision #4 of the Approval letter dated March 24, 1993)

Lisa Brown

APPENDIX H

HOLDING TANK PUMPING CONTRACT

PURCHASE ORDER U92-C-30102, SUPPLEMENT #5

Note: The subject pumping contract is written on a fiscal year basis and expires on September 30, 1993. This is standard practice for contracts on the HWVP Project in order to comply with annual funding guidance. It is planned to have a contract in place for the next fiscal year prior to expiration of the existing contract.

UE&C - Catalytic

A Raytheon Company

001X

PURCHASE ORDER

PAGE NO. 1 of 3	REQUISITION C-30102 R#5	ACCOUNT NO. 1LD065000X	ORDER NO. U92-C-30102	S/R NO. S #5	DATE 03/22/93
Seller Waste Management of Kennewick P.O. Box 6088 Kennewick, WA 99336 Attn: Rod McCoy			DIRECT ALL CORRESPONDENCE TO: UE&C-Catalytic Inc. (UCAT) P.O. Box 10 Richland, WA 99352 Attn: B.J. Samsow (509) 377-1976 FAX (509) 377-1939		
REQUIRED DELIVERY N/A	PROMISED DELIVERY As Required	FOB POINT Jobsite	TERMS Net 30 days	SHIPPING POINT Kennewick, WA	

SHIP TO: UE&C-Catalytic Inc. Hanford Site, 200 East
 (Approx. 25 miles north of Richland)
 Richland, WA 99352

BC: DL/L/X/C3/A/L01
 sc: N/A

SHIP VIA:

MARK FOR:

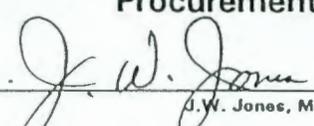
Title: HANFORD WASTE VITRIFICATION PLANT (HWVP) PROJECT, RICHLAND, WA
 Prime Contract: DE-AC06-90RL11706, Department of Energy-Field Office, Richland

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL PRICE
5	54 each	This Supplement #5 is issued to incorporate into the Purchase Order, the following additional scope of work: A. <u>Add Item 5</u> Drain/pump on a "will-call" basis, one (1) UCAT 5000 gallon sewage tank. The estimate of twice per week is anticipated. (See 1.2 below). 27 weeks x 2 = 54 Total Estimated Not-To-Exceed Amount thru 09/30/93		

SPECIAL INSTRUCTIONS

- THIS ORDER IS SUBJECT TO TERMS, CONDITIONS, AND REQUIREMENTS REFERENCED AND/OR CONTAINED HEREIN.
- PLEASE RETURN THE ACKNOWLEDGEMENT COPY OF THIS ORDER TO THE UCAT BUYER IDENTIFIED ABOVE. PERFORMANCE OF ANY PORTION OF WORK HEREUNDER WILL CONSTITUTE ACCEPTANCE OF ALL PROVISIONS OF THIS ORDER.
- THE ORDER NUMBER MUST BE SHOWN ON ALL PACKAGES, PACKING LISTS, SHIPPING PAPERS, AND INVOICES.

UE&C-Catalytic Inc.
 Procurement Department

BY 
 J.W. Jones, Manager of Purchasing

UE&C - Catalytic

A Raytheon Company

PURCHASE ORDER

PAGE NO. 2 of 3	SELLER Waste Management of Kennewick	ORDER NO. U92-C-30102	S/R NO. S #5
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ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL PRICE
		<p>B. <u>Add the following to the Original P.O.:</u></p> <p>1.2 <u>Scope of Work - Supp. #5</u></p> <p>a. Drainage of Sewage Tank</p> <p>The Subcontractor shall pump/drain one (1) 5000 gal. sewage tank as requested by the UCAT Technical Representative at the Hanford Area 200 East Site.</p> <p>The UCAT 5000 gallon sewage tank is located underground at the Latrine Trailer, MO-730, at the HWVP office complex.</p> <p>b. <u>Commencement, Prosecution, and Payments - Supp. #5</u></p> <p>1. This additional scope of work on the HWVP site shall be effective on the date of this Supplement #5 and shall be performed at the request of the Technical Representative at the site. The Purchase Order shall be complete on September 30, 1993 or such earlier date as directed by the Buyer.</p>		

PAGE NO. 3 of 3	SELLER Waste Management of Kennewick	ORDER NO. U92-C-30102	S/R NO. S #5
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ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL PRICE
		<p>2. It is anticipated that drainage of the tank will be required twice a week. The Buyer will notify the Subcontractor one day in advance of the necessity for pumping. The driver shall perform the work and will provide the Buyer with a "Service Ticket" after pumping the tank.</p> <p>3. Sewage disposal shall be by the Seller in accordance with local Health Department regulations. Any spill of sewage at the project site will be reported to the Buyer immediately. The Seller shall be responsible for spill remediation.</p> <p>4. The "LIMITATION OF FUNDS" provision of this Order is revised to change the total price:</p> <p style="margin-left: 40px;"><u>From:</u> <u>To:</u></p> <p>Total Amount of Original P.O. including Supp. #1, #2, #3 and #4</p> <p>Total Amount of Supp. #5</p> <p>Total Amount of Original P.O. including all Supps.</p> <p>"Except as changed/modified herein, all other terms, conditions, provisions and requirements of the original Order/Subcontract and preceding supplements/modifications, remain the same."</p>		

APPENDIX I

SPARE PARTS INFORMATION

HWVP RELOCATABLE LATRINE FACILITY
HOLDING TANK ALARM SYSTEM

SPARE PARTS INFORMATION

Federal Signal Mod. #141 Strobe Light, Red, 120V

Federal Signal Mod. #141 Strobe Light, Amber 120V

Federal Signal Mod. A-6 6" Bell or Gong

Federal Signal Mod. #500, 120V Audible Bell

Square D Class 8501, Type NR61 - 11-Pin Relay Base, 120V

Square D Class 8501, Type KP13V20 3-PDT 120V Relay

ITE 7-Pt. Ground Bus

Terminal Block Rail

Allen-Bradley 1492 Style CA Terminal Block

Allen-Bradley Term. Block End Stop

Allen-Bradley Term. Block End Plate

Gould Shamut 250V 30A Single Fuse Holder

Gould Shamut 250V TRM 2½-Amp. Fuse

Square D, Type DA-11 Contact Block w/1 n/o and 1 n/c

Square D, Class 9001, Type D3LA0M05, Key Switch

Square D, Class 9001, Type D3A1GRM05, Pushbutton Momentary Switch

Allen-Bradley 800T - P16 120V Pilot Light w/755-1866 Lamp

Allen-Bradley Green Lense

Wiegmann 20 x 20 x 8" NEMA 3R J-Box with hinged door and back plate

S. J. Electro, Model #10JSDIWP Float Switch

APPENDIX J

INSPECTION RECORD FORM

NOTE: Sample form - Other formats may be utilized provided all information shown is included.

9828-TF-0008
Revision 0

APPENDIX K

MEMORANDUM OF UNDERSTANDING

BETWEEN

DEPARTMENT OF ENERGY - RICHLAND

AND

WASHINGTON STATE DEPARTMENT OF HEALTH

9828-TF-0008
Revision 0

THE MEMORANDUM OF UNDERSTANDING (MOU)

WILL BE INSERTED UPON FORMAL SIGNING

BY BOTH DOE-RL AND WASHINGTON STATE DOH

(REMOVE THIS SHEET UPON INSERTION OF THE MOU)