

4609

Permit (1# 15,000 GPD's Permit)

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# **SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN**

## **ABOVEGROUND STORAGE TANKS DUAL AXIS RADIOGRAPHIC HYDRODYNAMIC TEST FACILITY TA-15**

**Los Alamos National Laboratory**

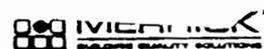
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In Conjunction with  
Los Alamos National Laboratory  
Water Quality and Hydrology Group (ESH-18)

**Revision 2: February 2002**



15990



## TABLE OF CONTENTS

Table of Contents.....	i
Certifications.....	ii
Plan Review Page.....	iv
<b>1. INTRODUCTION.....</b>	<b>1</b>
1.1. DEFINITIONS.....	1
1.2. FACILITY DESCRIPTION.....	1
1.3. SPILL HISTORY AND POTENTIAL SPILL PREDICTIONS.....	1
<b>2. ABOVEGROUND STORAGE TANKS AND SECONDARY CONTAINMENT.....</b>	<b>2</b>
2.1. FACILITY DRAINAGE.....	3
2.2. SECONDARY CONTAINMENT DRAINAGE OPERATIONS.....	3
2.3. INTEGRITY TESTING AND INSPECTIONS.....	3
2.4. FAIL-SAFE ENGINEERING.....	4
2.5. FACILITY TRANSFER OPERATIONS.....	4
<b>3. SPCC PLAN REQUIREMENTS.....</b>	<b>6</b>
3.1. INSPECTIONS, RECORDKEEPING AND PLAN AMENDMENTS.....	6
3.2. SECURITY.....	6
3.3. TRAINING.....	6
3.4. SPILL RESPONSE & REPORTING.....	7
Appendix A	Storm Water Discharge Records
Appendix B	Inspection Form and Completed Inspections
Appendix C	Spill Records
Appendix D	Employee Training Records
Appendix E	Facility Owner/Operator and Contacts
Appendix F	Certification of the Applicability of the Substantial Harm Criteria
Appendix G	Miscellaneous Information

**CERTIFICATION**

This Plan was developed pursuant to provisions of the federal regulation for oil pollution prevention for bulk storage facilities - 40 CFR Part 112. Its purpose is to provide spill prevention and response measures to prevent the pollution of navigable waters from oil related spills.

In accordance with 40 CFR Part 112.3 (d), this plan has been reviewed and certified by a Registered Professional Engineer (PE). By means of this certification, the engineer, having examined the facility and being familiar with the provisions of this regulation, verifies that this Plan has been prepared in accordance with good engineering practices.

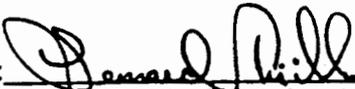
Certified by:           M. E. Smith            
Michael Smith  
Registered Professional Engineer

Date: 2/28/2002

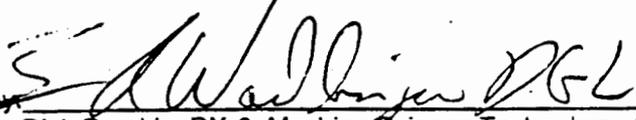


**Management Approval**

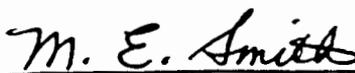
In accordance with 40 CFR Part 112.7, this plan has the full approval of management at a level with authority to commit the necessary resources.

Approved by:   
Leonard Trujillo, DX-8, Accelerator Construction, Group Leader

Date: 2-28-02

Approved by:   
Dick Boudrie, DX-6, Machine Science Technology, Group Leader

Date: 2/28/02

Reviewed by:   
Michael Smith, DX-DO, Deputy Facility Manager for ES&H

Date: 2/28/2002

Reviewed by:   
Harvey Decker, DX-DO/ESH-18, ES&H Generalist

Date: 2-28-02



## **1. INTRODUCTION**

The Spill Prevention Control and Countermeasure (SPCC) Plan is a requirement of the Oil Pollution Prevention regulation, 40 CFR Part 112. Its intention is to prevent oil related spills from polluting navigable waters of the U.S. through the implementation of adequate prevention and response measures. This Plan has been developed to meet regulatory requirements under the jurisdiction of the United States Environmental Protection Agency (EPA) and surface water protection requirements established by the New Mexico Environment Department (NMED).

This SPCC Plan addresses the two aboveground storage tanks (ASTs), and associated piping, that are part of the Dual Axis Radiographic Hydrotest (DARHT) Facility at TA-15. This Plan is the second revision of the November 1998 Plan.

### **1.1. Definitions**

See the latest edition of 40 CFR Part 112.2 or check the following web address;  
[http://www.access.gpo.gov/nara/cfr/waisidx\\_00/40cfr112\\_00.html](http://www.access.gpo.gov/nara/cfr/waisidx_00/40cfr112_00.html).

### **1.2. Facility Description**

The DARHT Facility provides an enhanced high-resolution radiography capability to perform hydrodynamic tests and dynamic experiments. Located on the hillside east of the firing point, approximately 100 feet from the building, are two 12,000 gallon ASTs within a secondary containment unit. As part of a closed-loop transfer system, the ASTs provide storage for electrical insulating oil used in the experimental equipment within the DARHT Facility. These tanks were brought into service in November 1998.

The DARHT facility is located to the north of the confluence of Canon de Valle and Water Canyon which drains to the Rio Grande approximately 7 miles away. This facility is operated by the Dynamic Experimentation Machine Science and Technology Group (DX-6).

Future DARHT facilities are not expected to impact the ASTs and this SPCC.

### **1.3. Spill History and Potential Spill Predictions**

There have been no reportable oil spills at the DARHT facility.

Potential spills and a prediction of their discharge quantity and direction include:

- A rupture or leak of an AST could discharge 12,000 gallons to the containment area.
- A rupture or leak in the transfer piping could discharge less than 1,000 gallons to the containment area.
- A rupture or leak in the Marx Generator or associated piping could discharge up to 19,000 gallons into the indoor containment area.
- A rupture or leak in any container in the accelerator halls and power supply rooms could discharge at most 7,200 gallons into the industrial storage waste tank.

## 2. ABOVEGROUND STORAGE TANKS AND SECONDARY CONTAINMENT

Containment and/or diversionary structures to prevent an oil discharge are in place for the ASTs and associated equipment. The ASTs are located within a concrete secondary containment unit measuring 28 ft wide x 49 ft long with walls ranging in height from 2-15 ft, as shown below. The ASTs material and construction are compatible with their contents. The concrete secondary containment unit is sufficiently impervious to contain oil.

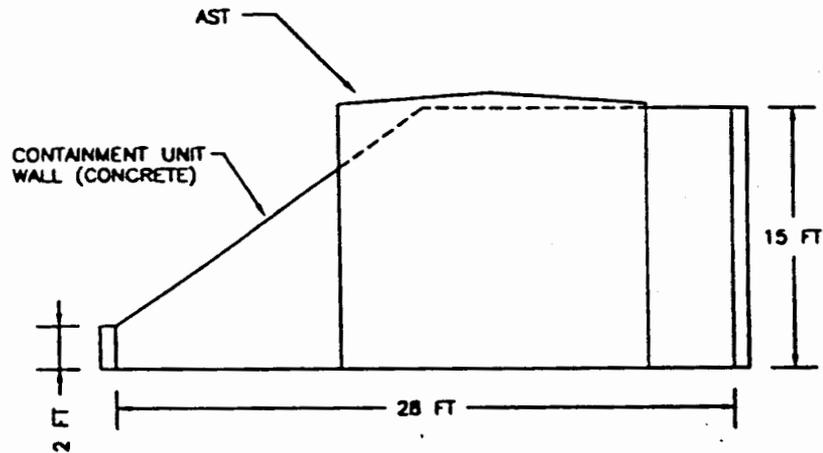


Figure 1—Profile View.

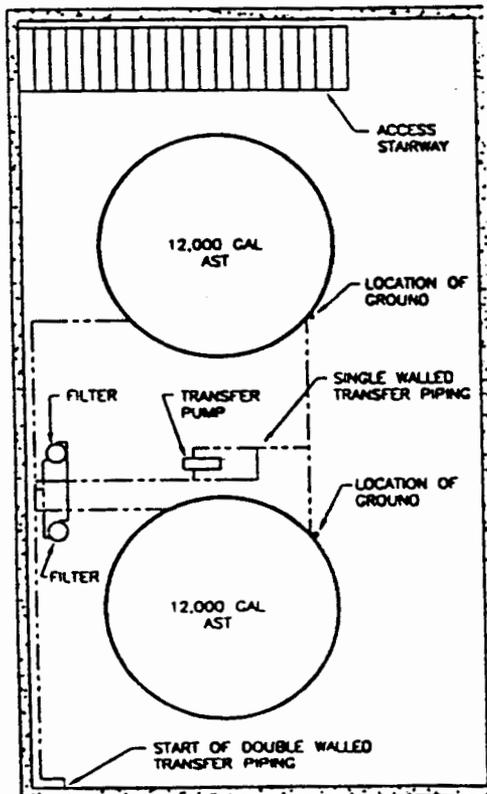


Figure 2- Plan View.



Photo 1: ASTs and Secondary Containment

Available storage capacity of the AST concrete secondary containment is approximately 15,900 gallons. This volume provides storage capacity for the entire contents of a single AST plus an additional 30% freeboard for precipitation accumulations. The transfer piping running underground between the containment unit and the DARHT operational structures is double walled. There are no buried or partially buried oil storage tanks at the facility.

Secondary containment is also provided for the indoor equipment. Because each container in the accelerator hall and power supply rooms is independently valved off and is filled or emptied independently, the largest single-unit spill would be limited to 7,200 gallons. All building drains in the accelerator hall and power supply rooms are connected to a 10,000-gallon, double-walled industrial waste storage tank via double-walled piping. The waste tank, which is equipped with liquid level sensors, a hydrostatic tank monitoring system, and a concrete anchor pad, would completely contain a single-unit spill.

In the event of a spill from the 19,000 Marx tank, oil would flow into the Marx Tank room, which acts as the Marx Tank secondary containment unit. If all 19,000 gallons were to be spilled into the 22 ft by 68 ft room, the oil would rise to a height of 30 inches. A fully enclosed stairway is located on the south side of the basement to provide access from the outdoors and on the north to the accelerator hall. All piping associated with the Marx tank is contained in the room, and a spill from the piping would be contained within the room.

## **2.1. Facility Drainage**

Stormwater in the AST secondary containment structure will typically be left to evaporate. Occasionally, the secondary containment unit must be drained to ensure both personnel safety and proper equipment operation. On the east side of the secondary containment unit is a manual discharge valve to release such accumulations. Attached to the valve is a four (4)-inch PVC drain line that discharges to the north into an existing storm drain. The storm drain discharges to a tributary of Canon de Valle, which drains to Water Canyon. Discharge operations will be conducted as described below in Section 2.2.

## **2.2. Secondary Containment Drainage Operations**

Storm water accumulated in secondary containment structures must meet federal and state water quality standards prior to being released. The following steps will be used for secondary containment discharge operations:

- Visually inspect to ensure that the water does not have an oil sheen and will not cause a harmful discharge
- Notify ESH-18 at 665-4752 to obtain samples for testing of contaminants and pH
- Obtain results of samples tested to insure that discharge meets requirements and to obtain authorization for release
- Open and reseal the valve under responsible supervision
- Keep adequate records of each drainage operation; include the time, date and employee who performed the operation. Keep records in Appendix A in accordance with Section 3.1

## **2.3. Integrity Testing and Inspections**

40 CFR Part 112, Section 7(2)(vi) states, "Aboveground tanks should be subject to periodic integrity testing, taking into account tank design and using such techniques as hydrostatic testing, visual inspection or a system of non-destructive shell thickness testing." Integrity testing incorporates both visual and internal inspection to determine the structural integrity of a storage tank, its associated piping, and its support structures.

In accordance with API 653, a formal visual external inspection shall be performed by a qualified inspector at least every five years. Either an in-service ultrasonic thickness measurement shall be made at intervals not to exceed every five years, or an internal inspection of the tank shall be made at intervals not to exceed 20 years.

Records of integrity testing shall include all examinations and tests, conditions found, thickness measurements, settlement measurements, repairs/alterations, and recommendations. Inspection records are retained in Appendix B of this document in accordance with Section 3.1.

In addition to the integrity testing of the AST, walk around inspections and spill control material inventories to be performed are outlined below.

**WALK AROUND INSPECTIONS:** Walk-around inspections are monthly visual inspections conducted by a DX-6 line manager. These inspections are recorded and retained in Appendix A in accordance with Section 3.1. Any leaks or potential problems shall be brought to the attention of the Field Operator's staff to evaluate the need for response and make any necessary corrections.

Aboveground Storage Tanks: The AST shall undergo monthly visual walk-around inspections to observe the conditions of the tank shells, tank content volumes, foundations and supports, piping, secondary containment, pumps, valves, oil, ground wires, sumps, gauges, and general good housekeeping practices.

Marx Generator: The Marx Generator and the facility in which it is housed shall undergo monthly visual walk-around inspections to observe changes in the conditions of gaskets, secondary containment, any previously identified leaks, new leaks, and potential problems.

#### **SPILL CONTROL MATERIAL INVENTORY**

Spill control material stores shall be inventoried annually to assure that the proper materials are available in sufficient quantity and of sufficient quality to minimize the spread of oil products in the case of a spill prior to the arrival of response teams.

In addition to the regularly scheduled walk-around inspections, the ASTs, associated piping, and containment unit shall be inspected for shrapnel damage after each open-air test. General operator observations are also made by employees involved in the material handling and system operation of an SPCC location. Operator observation involves a check for leaks, secondary containment condition, and the general safety condition of the site. Records of these inspections are not kept unless a problem is found. In the event of a problem, the deficiency is documented and corrective action is taken.

## **2.4. Fail-Safe Engineering**

Internal heating coils are not used. The ASTs are equipped with level monitors that provide level status to the facility status panel. The liquid level sensors shall be regularly tested to insure proper operation. Single walled transfer piping and a transfer pump are located between the two ASTs. At several locations this piping is equipped with manual valves. Pressure gages are attached to the piping connected to the transfer pump.

Discharge facilities will be inspected regularly. Visible oil leaks will be promptly corrected. Leaks and corrective actions will be recorded in Appendix C. There are no mobile or portable oil storage tanks.

## **2.5. Facility Transfer Operations**

Oil is transferred to the ASTs for filtration or when equipment is being serviced. The transfer piping running underground between the containment unit and the DARHT operational structures is double walled to protect against corrosion and to provide secondary containment. Above

ground single walled transfer piping and a transfer pump are located within the secondary containment.

Piping transfer operation is guided by the following:

- Out of service pipes are capped and marked with origin
- Pipe supports do not lead to abrasion or corrosion, allow for normal expansion and contraction, and minimize sagging
- Monthly inspection of the aboveground piping, valves, and equipment is performed
- Vehicles do not have access to the area where aboveground piping is located

This facility is not a tank car or tank truck loading and unloading facility.

### **3. SPCC PLAN REQUIREMENTS**

The Facility Manager (FM) is accountable for SPCC requirements applicable to this facility. The FM has responsibility for developing, implementing, enforcing, and maintaining the SPCC Plan requirements. The FM may delegate these duties to a qualified individual. For the DARHT Project, the DX-6 Group Leader has responsibility for developing, implementing, enforcing, and maintaining the SPCC Plan requirements. The DX-6 Group Leader's responsibilities include ensuring that recordkeeping, Plan amendments, training, spill response and reporting, and inspections are properly completed and submitted to the FM. The complete SPCC Plan shall be maintained at the DARHT facility, building TA-15-312.

#### **3.1. Inspections, Recordkeeping and Plan Amendments**

Written inspection procedures are included in Section 2.3. Inspection records state when inspections were done, who conducted the inspection, what areas were inspected, what problems were found, what steps were taken to correct problems, and who was notified about any problems found. The inspection will be signed by the appropriate supervisor or inspector. A sample inspection form is included in Appendix B.

In the event of a spill, the spill tracking form will be used to describe the spill, corrective actions taken, and plans for preventing recurrence. If the spill causes a change in design, construction, operation, or maintenance, this Plan will be amended as necessary. A spill tracking form is included in Appendix C, and copies of spill reports will be retained in Appendix C.

Signed inspection records, integrity test records, spill reports, and other applicable data and documentation will be kept with the Plan and retained for a period of three years.

The SPCC Plan will be amended whenever there is a change in facility design, construction, operation or maintenance that materially affects the facility's potential for the discharge. Such amendments shall be fully implemented as soon as possible, but not later than six months after such change occurs. At a minimum, this SPCC Plan will be reviewed and updated every three years. These amendments will be certified by a Professional Engineer. Amendments that do not reflect a change in facility design, construction, operation or maintenance that materially affects the facility's potential for the discharge do not need to be certified by a Professional Engineer.

#### **3.2. Security**

The DARHT Project area, including all DARHT equipment and starter controls, is located within TA-15, which is enclosed by a fence and restricted to authorized personnel and individuals escorted by badged personnel. Pumps and flow and drain valves will be padlocked when not in operation. Above ground piping is capped or blank flanged when not in service or in standby service for an extended period of time. Lighting adequate to detect spills at night is located within the secondary containment unit.

#### **3.3. Training**

The DX-6 Group Leader and operators are responsible for properly instructing their personnel in the operation and maintenance of equipment to prevent the discharge of oil. Employee training programs instill in personnel, at all levels of responsibility, a complete understanding of the following:

- operations and maintenance of equipment
- the SPCC program
- procedures for operator observation inspections
- site safety hazards

- practices for preventing spills
- procedures for responding properly and rapidly to spills
- protocol used to report spills
- spill events or failures, malfunctioning components, and recently developed precautionary measures
- additional applicable pollution control laws, rules, and regulations

Employee training is conducted at least annually, and more often when needed, to ensure adequate understanding of the goals and objectives of the SPCC program and the individual responsibilities of each involved employee. Topics may also be covered during routine employee meetings. Training activities are documented in accordance with LANL's Training Standard LS113-09.0, *Training Documentation*, in the Employee Development System (EDS), which automatically tracks the annual retraining dates, and/or in Appendix D of this SPCC Plan. Informal briefings are documented by recording the attendance and maintaining the meeting roster in Appendix D. These meetings are not recorded in EDS.

### **3.4. Spill Response & Reporting**

To achieve effective spill response, employees receive training in response procedures. Personnel involved with facility operations are instructed on safety precautions, initial spill response procedures, and how to use available spill cleanup materials. The DX-6 Group Leader is the designated person responsible for oil spill prevention at the facility, including training programs and spill control equipment. In addition to annual training, periodic spill prevention briefings will be conducted.

In the event of a spill, DX-6 will notify the FMU 67 Facility Manager and will provide the FM with a copy of the completed spill report. The LANL Emergency Management & Response (EM&R) Office will be notified if a spill cannot be easily controlled with the materials on hand, threatens to escape the facility or enter the environment, additional resources are needed, an unidentified hazard exists, injuries have occurred, fire protection is needed, or if operational or facility personnel are not adequately trained in the use of spill control equipment or are not confident in their ability to carry out spill response activities. They may also be notified if the DX Officer/Facility Manager Designee (FMR) determines that the situation warrants such action. EM&R, which has been appointed by the Laboratory Director as the organization responsible for emergency management at LANL, may be contacted at 667-6211 or, after hours, at 667-7080. In such an event, the 24-hour on-call Facility Manager Designee (FMD) must also be notified at 104-2926 or 664-2926. *If fire or explosion is present, or if the potential for such exists, the situation must be reported by dialing 911 or activating a fire pull box.*

Spills shall be reported in accordance with LANL LIR 402-130-01.0, Abnormal Events. Spill events in excess of one quart will also be documented in Appendix C of the SPCC Plan. Required LANL spill reports will be completed by the organization responsible for overseeing site operations, and copies of the reports will be maintained by both the responsible organization and the LANL Water Quality & Hydrology Group, ESH-18. The federal reporting of spill events is the responsibility of ESH-18, and the determination for such notification will be made by ESH-18 and the EM&R Office in accordance with Laboratory and DOE policies and federal and state regulatory reporting requirements.

# Appendix A

## Storm Water Discharge Records

## Storm Water Discharge Record

Location: \_\_\_\_\_

Date: \_\_\_\_\_

Name: \_\_\_\_\_

Time: \_\_\_\_\_

ESH-18 notified to obtain authorization for release

Was testing required prior to release? \_\_\_ Yes \_\_\_ No

Valve/pump relocked

Describe visual inspection of water and any oil sheen:

Signature: \_\_\_\_\_

## **Appendix B**

### **Inspection Form and Completed Inspections**

# Los Alamos

Los Alamos National Laboratory

Los Alamos, New Mexico 87545

## WALK-AROUND INSPECTION FORM

ABOVEGROUND TANKS  
ASSOCIATED PIPING &  
MARX GENERATOR

### General Site Information

Inspection Date:		Inspector:	
Technical Area:		Structure #:	
Tank Contents:		Capacity Tank:	
Adequate lighting:	Yes <input type="checkbox"/> No <input type="checkbox"/>	Is facility fenced?	Yes <input type="checkbox"/> No <input type="checkbox"/>

### Storage Unit Condition

Describe general condition of tank and support structure, valves, and/or piping (signs of rust, leakage, tank residing in water, cracks in foundation, no labels, etc.):	
Any change in tank content's volume?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Grounding Wires:	Adequate <input type="checkbox"/> Inadequate <input type="checkbox"/> N/A <input type="checkbox"/>
Level Gauge:	Adequate <input type="checkbox"/> Inadequate <input type="checkbox"/> N/A <input type="checkbox"/>
Liquid Level Alarm System:	Adequate <input type="checkbox"/> Inadequate <input type="checkbox"/> N/A <input type="checkbox"/>
Foundation Condition:	Good <input type="checkbox"/> Poor <input type="checkbox"/> N/A <input type="checkbox"/>
Flanges, Valves, Nozzles and Piping:	Good <input type="checkbox"/> Poor <input type="checkbox"/> N/A <input type="checkbox"/>
Ladders or Stairs:	Good <input type="checkbox"/> Poor <input type="checkbox"/> N/A <input type="checkbox"/>
Transfer Pump:	Good <input type="checkbox"/> Poor <input type="checkbox"/> N/A <input type="checkbox"/>

### Secondary Containment Condition

Describe general condition of containment unit (storm water accumulation, presence of oil or other material, signs of damage, leaks, cracks, erosion, status/condition of discharge valve, etc.):	
Storm water discharge valve:	Locked <input type="checkbox"/> Unlocked <input type="checkbox"/> No valve <input type="checkbox"/>
Sump? (if yes, describe in comments below):	Yes <input type="checkbox"/> No <input type="checkbox"/>
Containment liner (for earthen berms):	Good <input type="checkbox"/> Poor <input type="checkbox"/> No liner <input type="checkbox"/>
Storm Water Accumulation in Containment Unit:	Yes <input type="checkbox"/> No <input type="checkbox"/>
Oil accumulation in dike or collection sump:	Yes <input type="checkbox"/> No <input type="checkbox"/>

### Marx Generator Condition

Describe general condition of Marx Generator (changes in the conditions of gaskets; any previously identified leaks, new leaks and potential problems; secondary containment condition; etc.):	
--	--

Comments:

Items Requiring Corrective Actions:

Corrective actions taken (give dates):

Inspector's signature:

Date:

# Appendix C

## Spill Records



## **Appendix D**

### **Employee Training Records**

## Appendix E

### Facility Owner/Operator and Contacts

#### Facility Owner

DX Division  
University of California (UC)  
Los Alamos National Laboratory  
Los Alamos, NM 87545

#### Facility Owner Contacts

<i>Name</i>	<i>Phone</i>	<i>Pager</i>	<i>Title</i>
Tom Alexander	667-6471		Facility Manager
Harvey Decker	667-1616	104-7568	ES&H Generalist

#### Facility Operator

Dynamic Experimentation  
Machine Science and Technology (DX-6)  
University of California (UC)  
Los Alamos National Laboratory

#### Facility Operator Contacts

<i>Name</i>	<i>Phone</i>	<i>Title</i>
Leonard Trujillo	667-2849	Group Leader
Richard Boudrie	665-5833	Group Leader

## **Appendix F**

### **Certification of the Applicability of the Substantial Harm Criteria**

## CERTIFICATION OF THE APPLICABILITY OF THE SUBSTANTIAL HARM CRITERIA

Facility Name: DARHT

Facility Address: TA-15-312

1. Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

Yes  No

2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area?

Yes  No

3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in accordance with EPA 40 CFR 112, App. C) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?

For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's "Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments" and the applicable Area Contingency Plan.

Yes  No

4. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in accordance with EPA 40 CFR 112, App. C) such that a discharge from the facility would shut down a public drinking water intake?

Yes  No

5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a re-portable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?

Yes  No

### CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

M. E. Smith  
Name (please type or print)

M. E. Smith

Signature

Deputy Facility Manager  
Title

2/28/2002

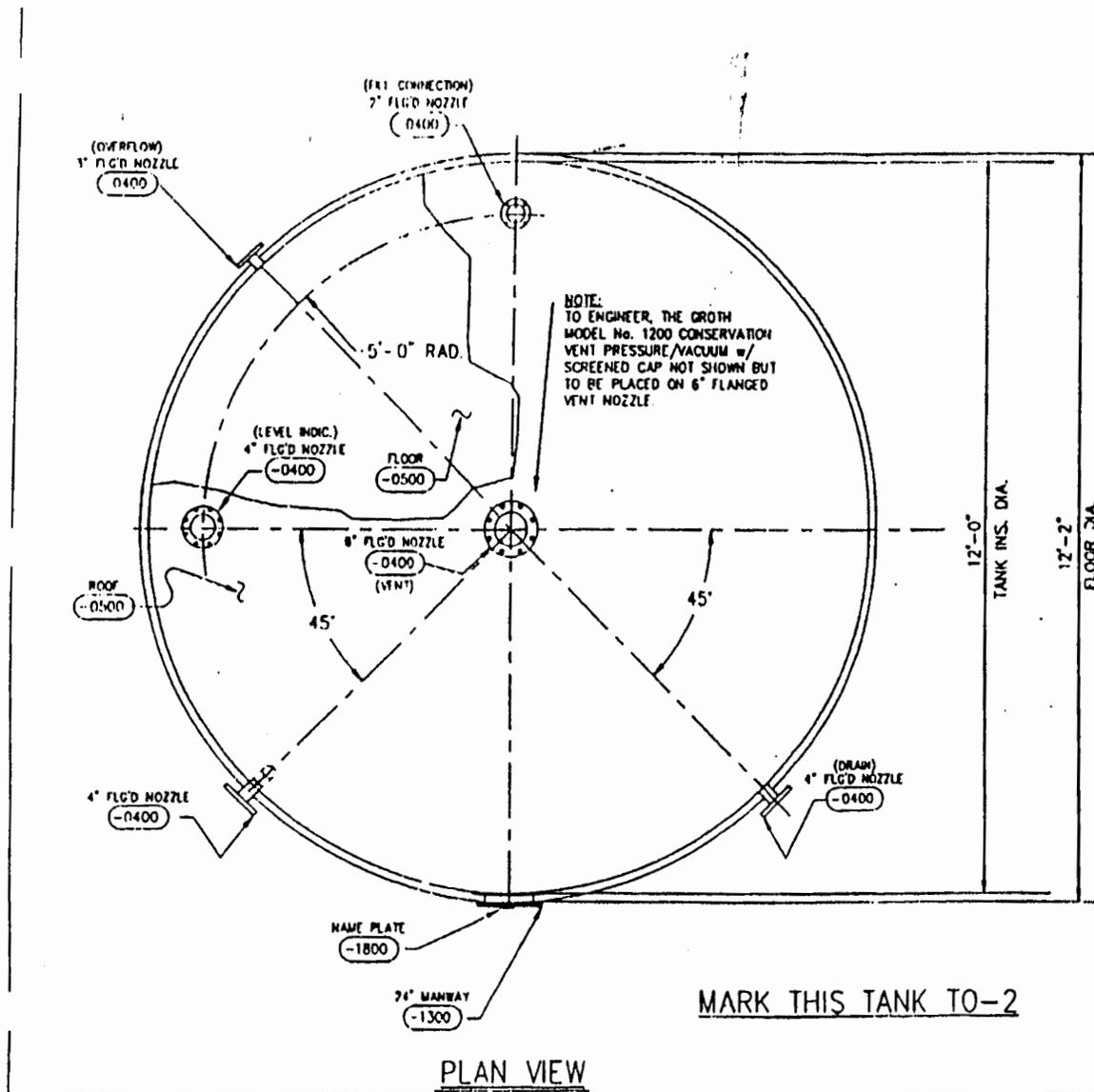
Date

# Appendix G

## Miscellaneous Information



DARHT  
SPCC PLAN



REF. ARC DIMN: ON OUTSIDE OF TANK  
 45° = 4'-8 5/8" ON ARC  
 90° = 0' 5 1/4" ON ARC  
 180° = 18'-10 1/2" ON ARC

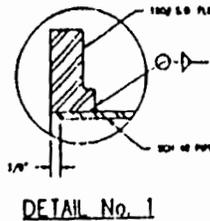
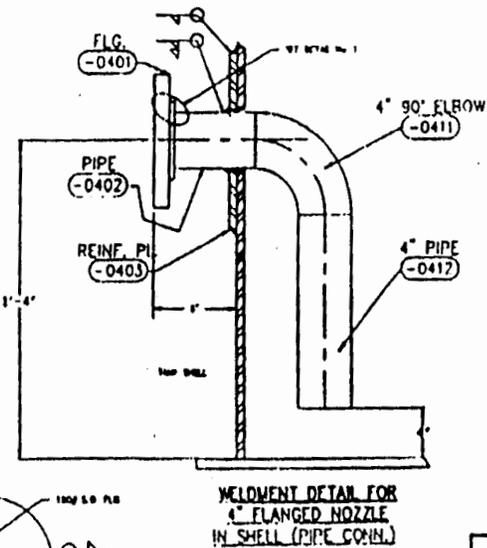
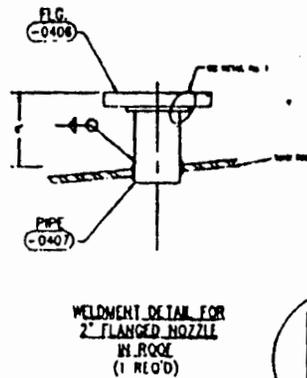
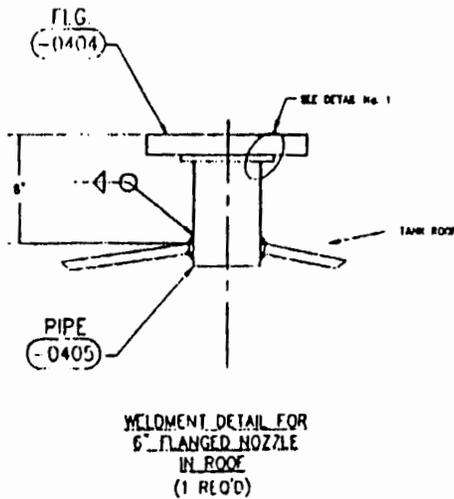
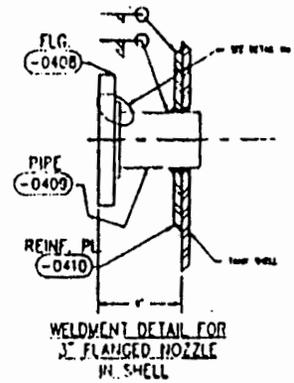
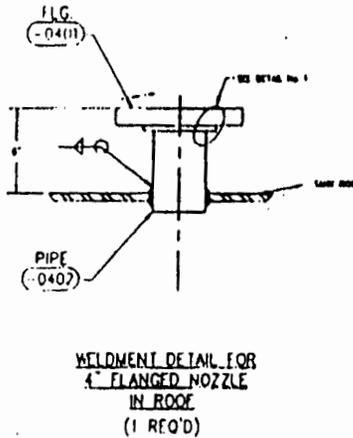
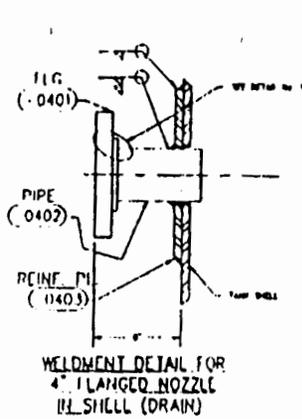
- NOTES:**
- FOR GENERAL NOTES, PAINT SCHEDULE, ABBREVIATION, WELDING SYMBOLS, AND WELDING DETAILS SEE DWG No. 750-0100
  - FOR LIST OF APPURTENANCES OR COMPONENTS, SEE COVER SHEET.
  - FINAL LOCATION OF APPURTENANCES TO BE DETERMINED BY THE FIELD ENGINEER.
  - D & R TANK RESERVES THE RIGHT TO ALTER THE FINAL DESIGN FULLY COMPLYING WITH THE GOVERNING SPECIFICATIONS.

○ DENOTES THE COMPONENT USING THE LAST FOUR DIGITS OF THAT DRAWING NUMBERS

FILENAME  
T01FY\49810.000

PUBLICATION NUMBER <b>97-14981</b>	REV	DATE	BY	DESCRIPTION
	<b>D &amp; R TANK CO.</b> 1210 PROSPERITY - SE ALBUQUERQUE, NM 87103 PHONE 505/873-1181 FAX 505/877-6546			
	CUSTOMER		LOS ALAMOS NATIONAL LABORATORY LOS ALAMOS, NEW MEXICO	
	TITLE:		12,000 GALLON OIL STORAGE STANDPIPE: 12' DIA. x 15' HT. 12F	
DATE	5-13-97	SCALE	NONE	FIG. NO.
APP'D BY		CHECKED BY		<b>4981-0300</b>

DARHT  
SPCC PLAN



ITEM NO.	QTY	DESCRIPTION
-0401	3	4" - 150# S.O. RF. FLANGE
-0402	3	4" SCH 40 BLK. PIPE ASS. 7" LG.
-0403	2	3/16" THK. U.S. PLATE 4 5/8" LD. x 1'0" OD
-0404	1	6" - 150# S.O. RF. FLANGE
-0405	1	6" SCH 40 BLK. PIPE ASS. 7" LG.
-0406	1	2" - 150# S.O. RF. FLANGE
-0407	1	2" SCH 40 BLK. PIPE 7" LG.
-0408	1	3" - 150# S.O. RF. FLANGE
-0409	1	3" SCH 40 BLK. PIPE ASS. 7" LG.
-0410	1	3/16" THK. U.S. PLATE 4 5/8" LD. x 1'0" OD
-0411	1	4" - 90° L.R. WELD ELBOW
-0412	1	4" SCH 40 BLK. PIPE ASS. 8" LG.

TOTAL WEIGHT: 98#

- NOTES:
- FOR GENERAL NOTES, PAINT SCHEDULE, ABBREVIATIONS & WELDING SYMBOLS, SEE DWG. No. -0100.
  - FOR LOCATION OF SUB-ASSEMBLYS OR COMPONENTS ON TANK, SEE DWG. No. -0200 AND No. -0300.

D & R TANK CO.  
1218 PROSPERITY - SE ALBUQUERQUE, NEW MEX  
PHONE 345/873-1101 FAX 345/877-64

CUSTOMER: LOS ALAMOS NATIONAL LABORATORY  
LOS ALAMOS, NEW MEXICO  
STANDPIPE: 12" DIA. x 15' HT.

TITLE: FLANGED NOZZLE DETAILS

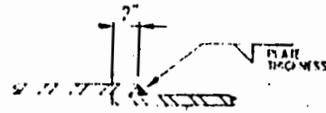
DATE: 5-13-97 BY: MOK

97-14981

FILENAME: FOLEY\49810400

4981-041

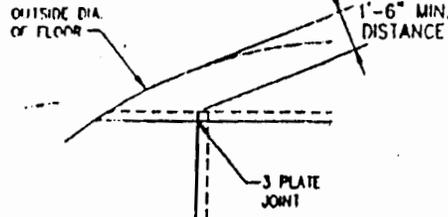
DARHT  
SPCC PLAN



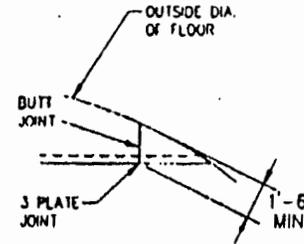
TYPICAL LAP JOINT  
(DETAIL NOT USED)



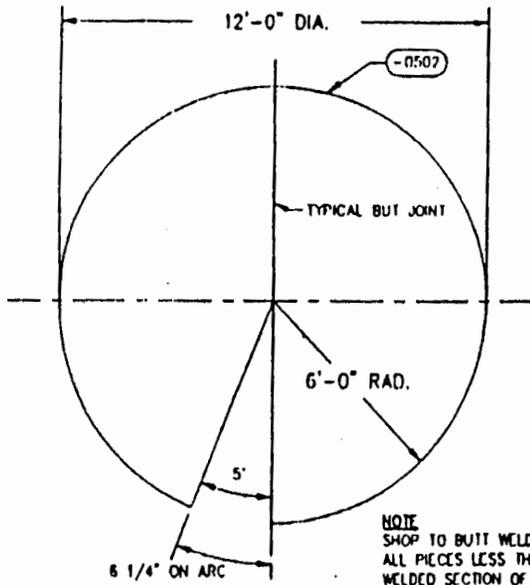
TYPICAL BUTT JOINT



DETAIL No. 1  
(DETAIL NOT USED)

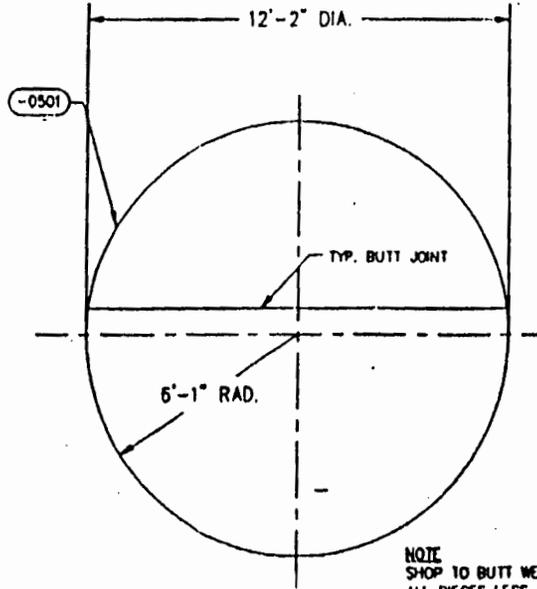


DETAIL No. 2  
(DETAIL NOT USED)



PLAN LAYOUT OF ROOF

NOTE  
SHOP TO BUTT WELD BOTH SIDES  
ALL PIECES LESS THAN 1'-6" WIDE  
WELDED SECTION OF PLATE NOT TO  
EXCEED 8'-0" WIDE.



PLAN LAYOUT OF FLOOR

NOTE  
SHOP TO BUTT WELD BOTH SIDES  
ALL PIECES LESS THAN 1'-6" WIDE  
WELDED SECTION OF PLATE NOT TO  
EXCEED 8'-0" WIDE

FILENAME  
FOLEY\_49810500

REV	DATE	BY	DESCRIPTION
-0501			1/4" THK. M.S. PLATE A 36 113 SO. FT.
-0502			1/16" THK. M.S. PLATE A 36 113 SO. FT.

TOTAL WEIGHTS:  
FLOOR - 1,185 lbs.  
ROOF - 866 lbs.

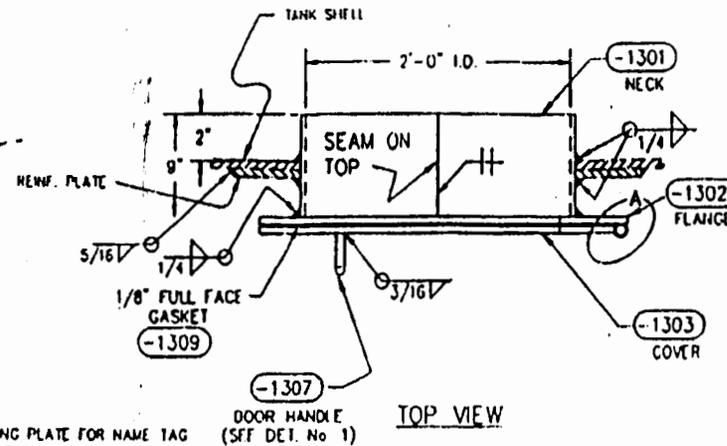
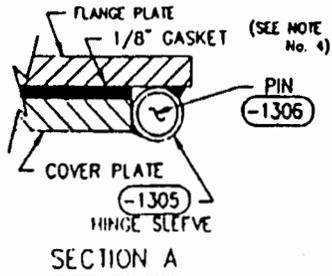
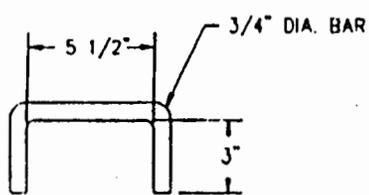
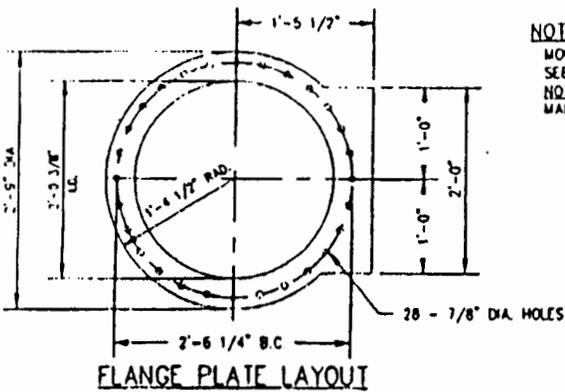
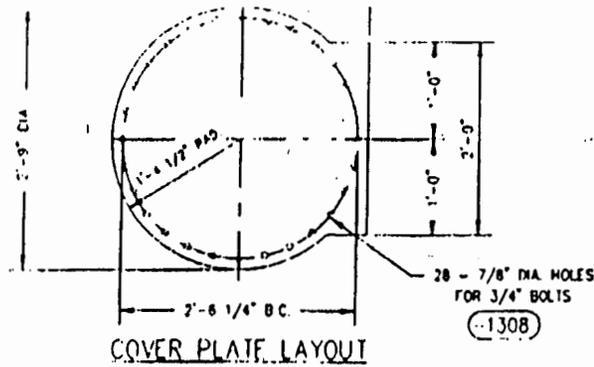
- NOTES:
- FOR GENERAL NOTES, PAINT SCHEDULE, ABBREVIATIONS & WELDING SYMBOLS, SEE DWG. No. -0107.
  - FOR LOCATION OF SUB-ASSEMBLY'S OR COMPONENTS ON TANK, SEE DWG. No. -0701 AND No. -0300.
  - LAYOUT FLOOR & ROOF WITH MINIMUM PLATE DROP AND WASTE.
  - TACK WELD JOINT DURING LAYOUT, GRIND OFF WELD BEFORE SHIPMENT.
  - DO NOT PAINT LAP JOINTS DURING SHOP PAINTING.

REV	DATE	BY	DESCRIPTION
<b>D &amp; R TANK CO.</b> 1218 PROSPERITY - SE ALBUQUERQUE, NM 8710 PHONE 303/873-1111 FAX 303/877-634			
CUSTOMER: LOS ALAMOS NATIONAL LABORATOR LOS ALAMOS, NEW MEXICO STANDARD: 12' DIA. x 15' HI.			
<b>TITLE: FLOOR &amp; ROOF LAYOUT</b>			
DATE	5-13-87	SCALE	NONE
NO.	J	REV.	1
			<b>4981-050</b>

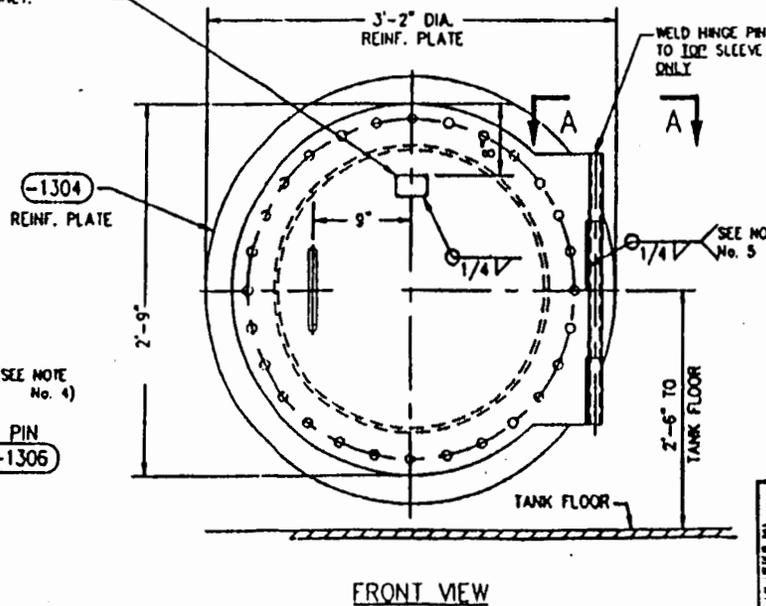
97-14981



DARHT  
SPCC PLAN



NOTE:  
MOUNTING PLATE FOR NAME TAG  
SEE DWG. No. -1800 FOR DETAILS  
NOTE APPLY TO ONE SHELL  
MANWAY ONLY.



FILENAME  
FOLEY\49811300

QTY	DESCRIPTION
1	1/4" THK M.S. PLATE (ROLL) 9" x 6'-4 1/2"
1	1/4" THK M.S. PLATE (CUT) 2'-9" x 2'-10"
1	1/4" THK M.S. PLATE (CUT) 2'-0" x 2'-9"
1	3/16" THK M.S. PLATE (CUT) 2'-0 3/4" I.D. x 3'-2"
4	3/4" SCH 40 BLK. PIPE 6" LG.
1	3/4" DIA. H.R. BAR 2'-0" LG.
1	3/4" DIA. H.R. BAR 1'-0" LG.
28	3/4" x 1 1/2" LG. HEX BOLTS (GRADE 5) W/ NUTS
1	1/8" THK NEOPRENE GASKET (FULL FACE) 33" O.D.

TOTAL WEIGHT: 185#

NOTES:

- FOR GENERAL NOTES, PAINT SCHEDULE, ABBREVIATIONS & WELDING SYMBOLS, SEE DWG. No. -0100.
- FOR LOCATION OF SUB-ASSEMBLY'S OR COMPONENTS ON TANK, SEE DWG. No. -0200 AND No. -0300.
- TACK WELD FLANGE & COVER PLATES TOGETHER TO PUNCH BOLT HOLES.
- USE 1/8" THICK GASKET MATERIAL AND BOLT FLANGE & COVER TOGETHER BEFORE WELDING HINGE SLEEVES.
- WELD EVERY OTHER SLEEVE TO COVER AND ALTERNATE SLEEVE TO FLANGE.
- QUANTITIES ON MATERIAL LIST ARE FOR 1 UNIT. 1 - UNIT IS REQUIRED.

REV	DATE	DESCRIPTION
1		

D & R TANK CO.  
1310 PROSPERITY - DE ALBUQUERQUE, NM 87111  
PHONE 365/873-1111 FAX 365/877-6511

CUSTOMER: LOS ALAMOS NATIONAL LABORATORY  
LOS ALAMOS, NEW MEXICO  
SIANOPIPE: 12" DIA x 15' III

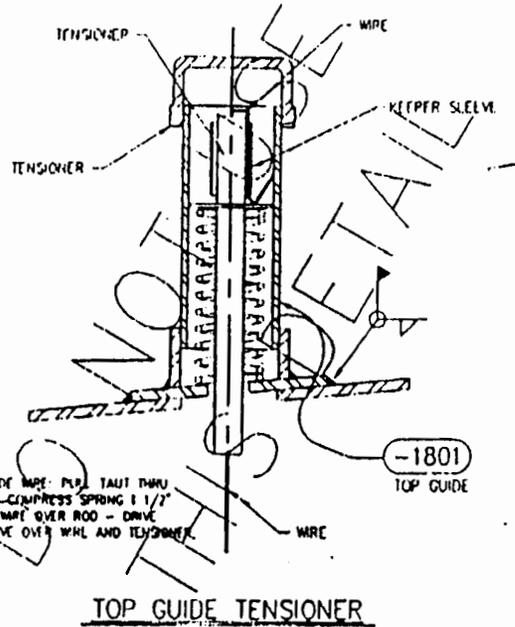
TITLE: 24" DIA. SHELL MANWAY  
(1 - RECD)

DATE: 5-13-97  
DRAWN BY: J  
CHECKED BY: J

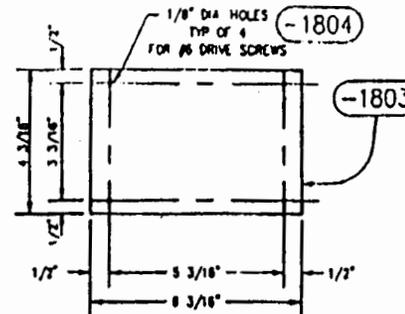
FIG. NO.  
4981-1301

97-14981

DARHT  
SPCC PLAN



TO THE SHOP  
TWO TAGS ARE REQUIRED  
ONE AS SHOWN AND ONE  
MARKED TO-1.



(FOR NAME TAG)  
SEE DWG. No. -1300 FOR LOCATION

API STANDARD 12F		
APPROX	<input type="checkbox"/> NEW COMPLETED	<input type="checkbox"/> NEW
EDISON	<input type="checkbox"/> REWORK NO	<input type="checkbox"/> OK
NORMAL DIMENSION	<input type="checkbox"/> NORMAL HEIGHT	<input type="checkbox"/> REZ
NORMAL CAPACITY	<input type="checkbox"/> DESIGN LIQUID LEVEL	<input type="checkbox"/> REZ
DESIGN SPECIFIC GRAVITY	<input type="checkbox"/> MAX OPERATING TEMP	<input type="checkbox"/> REZ
DESIGN PRESSURE	<input type="checkbox"/> PARALLEL SURFACE DELT	<input type="checkbox"/> REZ
MANUFACTURER'S SERIAL NO	<input type="checkbox"/> PURCHASER'S PART NO	<input type="checkbox"/> REZ
FABRICATED BY	<input type="checkbox"/> CALL TO BE	
ERECTED BY	<input type="checkbox"/> CALL TO BE	
DATE COMPLETION	DATE	
TIME	1/4" DIA. DIA	

NAME PLATE

NOTE:

TO CREW WHO STERILIZE AND FINISH TANK, BEFORE  
ATTACHING NAME TAG TO MOUNTING PLATE BE SURE  
TO REMOVE DIRT AND EXCESS PAINT FROM HOLES  
IN MOUNTING PLATE. ATTACH NAME TAG WITH 4 -  
#6 x 1/4" DRIVE SCREW. TAKE CARE NOT TO  
DAMAGE NAME TAG.

FILENAME:  
FOLEY\49811800

MATERIAL LIST

QTY	DESCRIPTION
-1801	2 TOP GUIDE TENSIONER
-1802	TANK PRODUCTS TOP GUIDE WIRE TENSIONER
-1803	1 NAME PLATE BRACKET
-1804	4 5/16" THK. M.S. PLATE 4 3/16" x 6 3/16"
-1805	1 #6 x 1/4" LG. ZINC PLATED DRIVE SCREWS D & R TANK CO. TANK IDENTIFICATION PLATE

TOTAL WEIGHT: 5/

NOTES:

- FOR GENERAL NOTES, PAINT SCHEDULE, ABBREVIATIONS & WELDING SYMBOLS, SEE DWG. No. -0100.
- FOR LOCATION OF SUB-ASSEMBLY OR COMPONENTS ON TANK, SEE DWG. No. -0200 AND No. -0300.
- FILL IN INFORMATION ON NAME TAG IN SHOP BEFORE SHIPPING.

REV	DATE	DESCRIPTION
1		D & R TANK CO. 1218 PROPERTY - SE ALBUQUERQUE, NM 87 PHONE 505/873-1181 FAX 505/877-6
CUSTOMER: LOS ALAMOS NATIONAL LABORATORY LOS ALAMOS, NEW MEXICO STANDPIPE: 12" DIA. x 15' HT.		
TITLE: MISCELLANEOUS DETAILS TOP GUIDE NAME PLATE AND NAME PLATE BRACKET		
DATE	SCALE	DRWG NO.
5-13-97	NONE	4981-1800
REV. BY	APP. BY	
J		

97-14981