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OCT 09 2000 STA 4 (5)	ENGINEERING DATA TRANSMITTAL	Page 1 of 1 1. EDT 629829
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2. To: (Receiving Organization) Distribution	3. From: (Originating Organization) CSB Subproject	4. Related EDT No.: N/A
5. Proj./Prog./Dept./Div.: SNF/CSB	6. Design Authority/ Design Agent/Cog. Engr.: S. A. Krieg	7. Purchase Order No.: N/A
8. Originator Remarks: For approval and release. USQ screen required.		9. Equip./Component No.: N/A
		10. System/Bldg./Facility: CSB/212H/200E
11. Receiver Remarks: 11A. Design Baseline Document? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No USQ Tracking Number: <u>CSB-00-1281</u>		12. Major Assm. Dwg. No.: N/A
		13. Permit/Permit Application No.: N/A
		14. Required Response Date: N/A

15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Approval Designator	Reason for Trans- mittal	Originator Dispo- sition	Receiver Dispo- sition
1	SNF-7036	N/A	0	Canister Storage Building Receiving Pit Modification Informal Design Verification	Q	1, 2	1	1

16. KEY									
Approval Designator (F)		Reason for Transmittal (G)				Disposition (H) & (I)			
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)		1. Approval 2. Release 3. Information 4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)				1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged			

17. SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)											
(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN
1		CSB Design Authority	S. A. Krieg	<i>S. A. Krieg</i>	9/21/00	1	/	Ops	O. M. Serrano	<i>O. M. Serrano</i>	
		Design Agent									
		Cog. Eng.									
1	/	Cog. Mgr.	G. D. Bazinet	<i>G. D. Bazinet</i>	10/6/00						
1	/	QA	S. S. Moss	<i>Stephen S. Moss</i>	9-28-2000						
		Safety									
		Environ.									

18. S. B. Harrington <i>S. B. Harrington</i> 9-26-00 Signature of EDT Originator	19. N/A Authorized Representative for Receiving Organization	20. G. D. Bazinet <i>G. D. Bazinet</i> 10/6/00 Design Authority Cognizant Manager	21. DOE APPROVAL (if required) Ctrl. No. <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/comments <input type="checkbox"/> Disapproved w/comments N/A
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DISTRIBUTION SHEET

To Distribution	From CSB Subproject	Page 1 of 1
		Date 10/6/00
Project Title/Work Order SNF-7036, Rev. 0 Canister Storage Building Receiving Pit Modification Informal Design Verification		EDT No 629829
		ECN No. N/A

Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
G. D. Bazinet	S8-06	X			
L. J. Garvin	S8-07	X			
S. A. Krieg	S8-05	X			
S. S. Moss	S8-07	X			
O. M. Serrano	S2-44	X			
H CSB Project Files (2)	S8-05	X			
Central Files	B1-07	X			

Canister Storage Building Receiving Pit Modification Informal Design Verification

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Project Hanford Management Contractor for the
U.S. Department of Energy under Contract DE-AC06-96RL13200

Fluor Hanford
P.O. Box 1000
Richland, Washington

SNF-7036
Revision 0
EDT 629829

Canister Storage Building Receiving Pit Modification Informal Design Verification

Project No: W-379

Document Type: DC

Division: SNF

S. A. Krieg
FH


Total Pages: 16

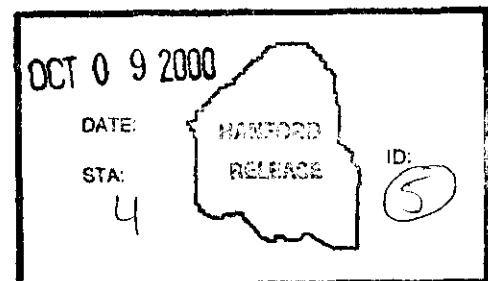
Date Published
September 2000

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Project Hanford Management Contractor for the
U.S. Department of Energy under Contract DE-AC06-96RL13200

Fluor Hanford
P.O. Box 1000
Richland, Washington


Release Approval 10/9/00
Date



Approved for public release; further dissemination unlimited

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Canister Storage Building Receiving Pit Modification Informal Design Verification

The design for modifications to the CSB Cask Receiving pit guides was verified by the informal design verification (meeting) method on August 9, 2000. The invited list of attendees and the meeting attendance sheet are included in attachment 1.

The design modifications that were reviewed are documented in ECN 654484 (attachment 2). The requirement that the design is to be verified against is to ***“center the transportation cask sufficiently to allow installation of the guide funnel on the cask (+/- 0.25 inches or less)”***.

The alternatives considered are detailed in attachment 3. Alternative number 4, ***“Modify The Pit Guides”***, was determined to be the preferred alternative primarily due to considerations of simplicity, reliability, and low cost. Alternative 1, ***“Rotate the impact Absorber 180°”***, was successfully performed but was considered a temporary fix that was not acceptable for a long term operational mode.

The requirement to position the receiving crane accurately enough to lower the transportation cask into the pit with the redesigned guides was discussed and considered to be achievable without undue effort from the operator.

The tolerance on the OD of the transfer cask was discussed (+/- 1/8”) relative to the clearance with the guides. As-built dimensions for the cask OD will be looked at to verify sufficient clearance exists with the maximum cask OD. The final design thickness of the shims under the guides will be based on the as-built cask OD dimensions and field measurements between the pit guides.

The need for a “plastic” cover for the guides was discussed and deemed unnecessary. Thermal growth of the cask OD was calculated at 3-5 mils and considered insignificant.

The possibility of reducing the OD of the guide funnel was reviewed but this was considered impractical due to the requirement for the MCO to miss the edge of the funnel in case of a MCO drop.

One of the transportation casks have the lift trunions installed 3/8” off center. This is not expected to present a problem, but needs to be verified.

Operations personnel were not in attendance to discuss the method for lowering the cask into the pit, however it was the consensus of those who observed the lowering operation performed by startup that it is operationally viable. The proposed design will be presented to Operations for review prior to issuance of the ECN.

The final conclusion of the attendees is that the design meets the requirement “center the cask sufficiently to allow installation of the guide funnel.”

Rec Pit design verif.doc

ATTACHMENT 1

CSB Cask Receiving Pit Modification

Design Verification Meeting

RECEIVING PIT DESIGN VERIFICATION

8/9/00

<u>NAME</u>	<u>DIVISION</u>	<u>PHONE NO.</u>
GENE HOCT	CSB ENGR	373-4335
SA. Kirog ↙	CSB DH	376-0931
Dm. Black	CSB ENGR	372-2543
Dm Cherauff	Asst/Trans DA &	376-6230
SS MOSS	CSB Cag CSB QA	372-2386
JERRY BAZINET	CSB Engineering	376-3059
RONALD JABLONSKI	STRUCTURAL	376-6183
Jim MORTIMER	CONSTRUCTION	372-2975

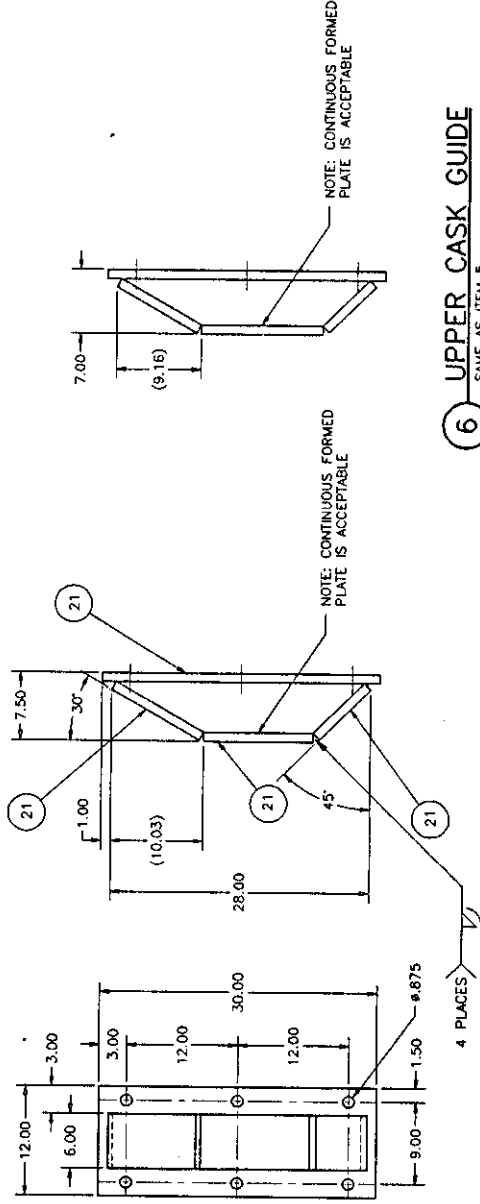
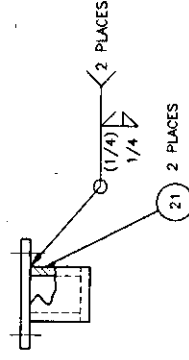
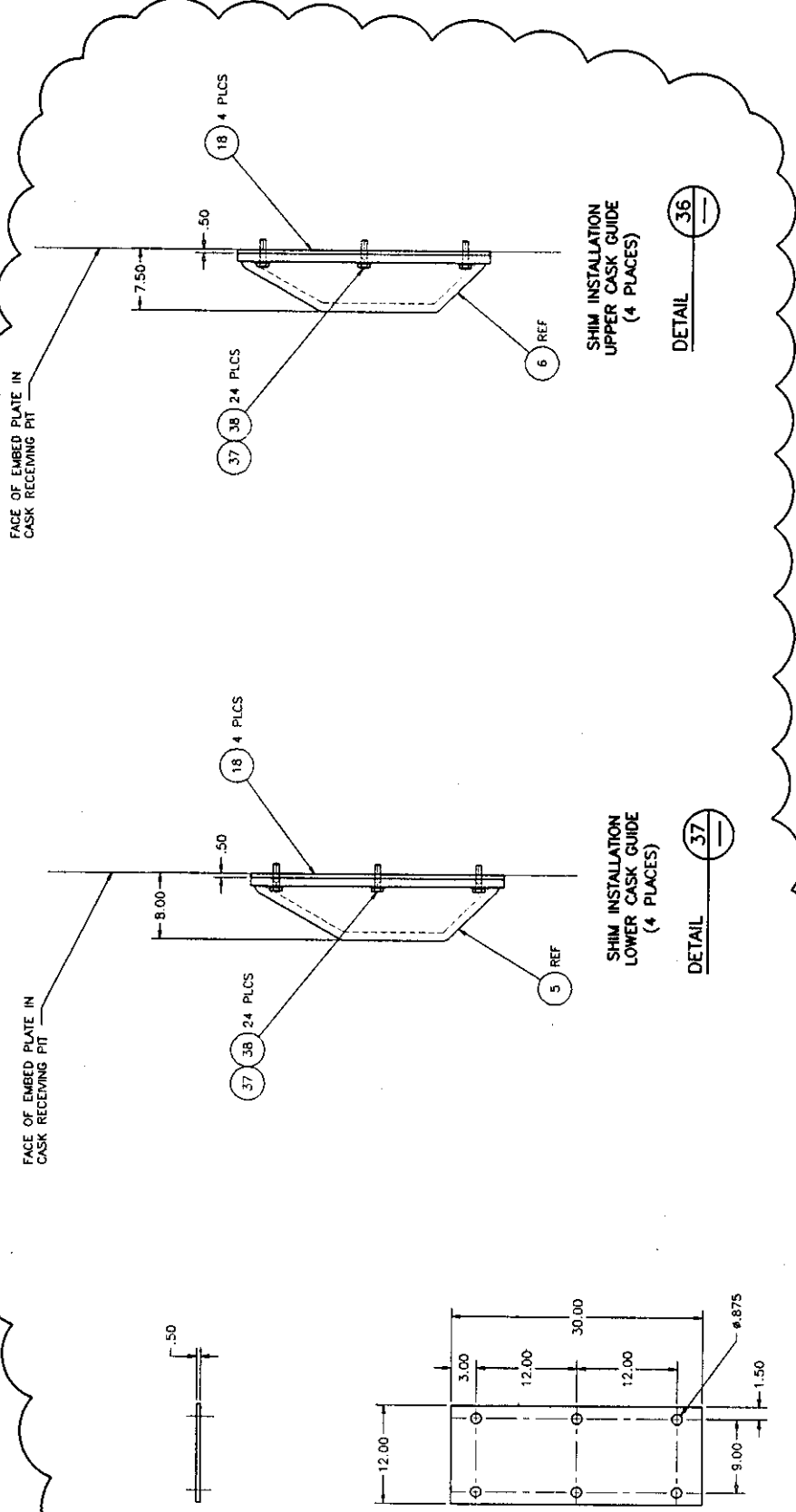
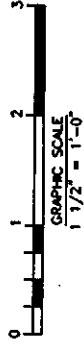
ATTACHMENT 2

Design Modifications Reviewed

2. ECN Category (mark one) Supplemental <input type="checkbox"/> Direct Revision <input checked="" type="checkbox"/> Change ECN <input type="checkbox"/> Temporary <input type="checkbox"/> Standby <input type="checkbox"/> Supersedure <input type="checkbox"/> Cancel/Void <input type="checkbox"/>	3. Originator's Name, Organization, MSIN, and Telephone No. Gene Holt, CSB Engineering, S8-08 373-4335		4. USQ Required? <input type="checkbox"/> Yes <input type="checkbox"/> No	5. Date 8/9/00
	6. Project Title/No./Work Order No. Project W-379		7. Bldg./Sys./Fac.No. 212H/200E/CSB	8. Approval Designator
	9. Document Numbers Changed by this ECN (includes sheet no. and rev.) H-2-120908 Sh1 Rev 3 H-2-120908 Sh4 Rev 3		10. Related ECN No(s). NA	11. Related PO No. NA
12a. Modification Work <input checked="" type="checkbox"/> Yes (fill out Blk. 12b) <input type="checkbox"/> No (NA Blks. 12b, 12c, 12d)	12b. Work Package No.	12c. Modification Work Complete Design Authority/Cog. Engineer Signature & Date	12d. Restored to Original Condition (Temp. or Standby ECN only) Design Authority/Cog. Engineer Signature & Date	
13a. Description of Change Modify Cask guides in the Cask Receiving Pit to provide more accurate centering of the shipping cask as it is lowered into place. This accuracy is necessary to guarantee the required alignment between the cask opening in the shield hatch assembly and the MCO Guide. The modification will require adding a 1/2" shim plate behind each of the 8 cask guides.				
13b. Design Baseline Document? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
14a. Justification (mark one) Criteria Change <input type="checkbox"/> Design Improvement <input type="checkbox"/> Environmental <input type="checkbox"/> Facility Deactivation <input type="checkbox"/> As-Found <input type="checkbox"/> Facilitate Const <input type="checkbox"/> Const. Error/Omission <input type="checkbox"/> Design Error/Omission <input type="checkbox"/>				
14b. Justification Details				
15. Distribution (include name, MSIN, and no. of copies)			RELEASE STAMP	

NOTES:

1. FOR NOTES AND PARTS LIST SEE SHEET 1.
2. FOR GENERAL NOTES AND LEGEND SEE DWG H-2-125151.

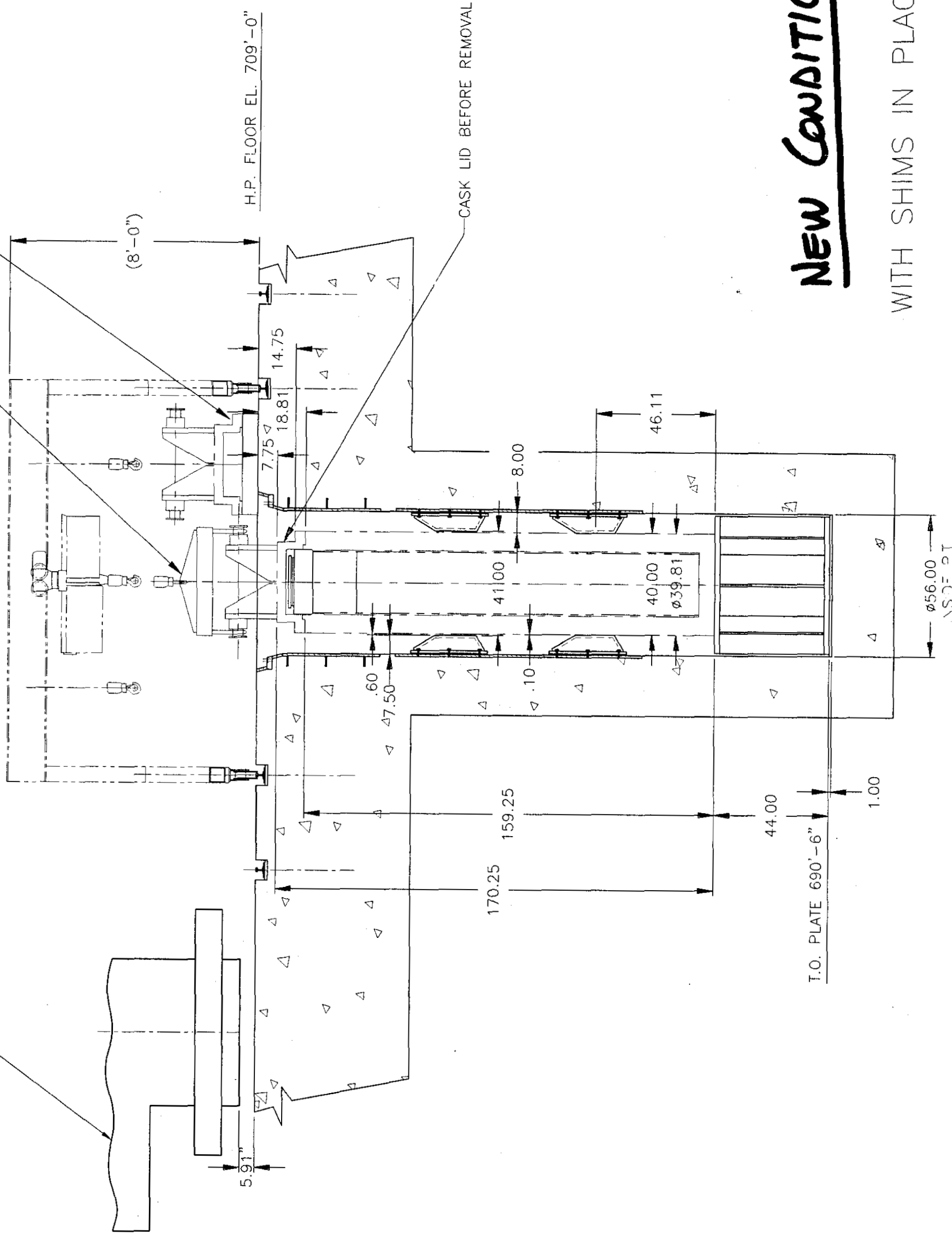
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MHM BY OTHERS
(REF)

SNF-7036 REV 0

BOTTOM OF MHM
MAIN GIRDER

LID LIFTING DEVICE BY OTHERS (REF)
CASK LID AFTER REMOVAL
ON STAND



NEW CONDITION

WITH SHIMS IN PLACE



WITHOUT SHIMS IN PLACE



FLUOR DANIEL

DUKE ENGINEERING & SERVICES HANFORD, INC.
SNF Canister Storage Building
FDI Contract 804602

ECN-

REV

DISCIPLINE

PACKAGE
NO.
SNF CSB

PAGE

DESIGN CHANGE NOTICE

PREPARED BY: _____

DATE: _____

DISCIPLINE ENGINEER: _____

DATE: _____

CADCODE: _____

CADFILE: _____

SECTION 6: CONSTRUCTION DOCUMENTS AFFECTED

DOCUMENT NO. SH/PAGE REV NO. DESCRIPTION OF CHANGE

SS
SS
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SS

A

A

PARTS/MATERIAL LIST									
QTY REQD	QTY REQD	QTY REQD	QTY REQD	QTY REQD	QTY REQD	QTY REQD	QTY REQD	QTY REQD	QTY REQD
110	100	090	080	070	060	050	040	030	020
010	000	000	000	000	000	000	000	000	000
PART/DASH NUMBER	NOMENCLATURE/DESCRIPTION					MATERIAL/REFERENCE		SHEET	ITEM NO.
-010	LINER EMBED ASSEMBLY							1	1
-020	PIPING TRENCH COVER ASSEMBLY							3	2
-030	SHIELD HATCH ASSEMBLY							2	3
-040	SHIELD HATCH RING							2	4
-050	LOWER CASK GUIDE							4	5
-060	UPPER CASK GUIDE							4	6
-080	SHIELD HATCH PLATE							5	8
-090	ELECTRICAL BOX COVER ASSEMBLY							3	9
-100	SEAL RING							2	10
									11
	O-RING #29.00 CROSS SECTION #3/8					ETHYLENE PROPYLENE ASTM D2000-M5CA510		2	12
	O-RING #63.00 CROSS SECTION #3/8					ETHYLENE PROPYLENE ASTM D2000-M5CA510		1	13
	O-RING #61.00 CROSS SECTION #3/8					ETHYLENE PROPYLENE ASTM D2000-M5CA510		1	14
	O-RING #44.00 CROSS SECTION #3/8					ETHYLENE PROPYLENE ASTM D2000-M5CA510		2	15
	O-RING #40.00 CROSS SECTION #3/8					ETHYLENE PROPYLENE ASTM D2000-M5CA510		2	16
	NELSON HEADED WELD STUD, #1/2 X 4 1/8 L					ASTM-A108 OR-C-1010/C-1020		2	17
	PLATE 1/2" THK					ASTM A36 CS			18
	PLATE 10" THK					ASTM A36 CS			19
	ROD #4.00					ASTM A36 CS			20
	PLATE 1" THK					ASTM A36 CS			21
	PLATE 2" THK					ASTM A36 CS			22
	1/4" THK DIAMOND FLOOR PLATE					ASTM A36 CS			23
	BAR 1/4" X 1 1/2"					ASTM A36 CS			24
	ROUND #1/2"					ASTM A36 CS			25
	PLATE 2" THK					ASTM/ASME A240 TYPE 304/316			26
	GASKET 1/8 THK					NEOPRENE ASTM D2000-BC-520		2	27
	PIPE TRENCH COVER ASSEMBLY							5	28
	CL-10000-SHR-3					SWIVEL HOIST RING		CARR LANE	2
	FBB-179, EDP 06-B431					HINGE 4 1/2 X 4 1/2, PLAIN, NO HOLES		STANLEY	30
						QUICK CONNECT STEM (1/4 MALE NPT)		SWAGelok SS-QT4-D-4PM	2
									32
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									37
									38

CSB CASK RECEIVING PIT ALTERNATIVES

When the Transportation Cask is placed in the cask receiving pit, it does not remain centered sufficiently to allow installation of the guide funnel. When installed in the pit, the cask "tilts" toward the South-East and rests against the upper pit guides. Initial measurements indicate that the bottom of the pit is sloped toward the South-East and that the impact absorber is out of parallel by approximately 1/8 inch. The impact absorber was installed with the low side also to the South-East.

As a temporary "fix" to allow continuation of startup testing, the impact absorber was rotated 180° to allow the non-parallelism of the impact absorber to counteract the slope in the bottom of the pit. This resulted in successful installation of the cask and guide funnel on 7/20/00.

A permanent fix requires a method to assure that the top of the Transportation Cask is sufficiently centered to allow installation of the guide funnel. A number of options to accomplish this were considered. These options are listed below.

1. Rotate the Impact Absorber 180°

Rotate the impact absorber 180° to allow the non-parallelism of the absorber to cancel out the slope in the bottom of the pit. This allows the bottom of the cask to sit "level" and results in the top of the cask remaining centered in the pit (assuming the cask is lowered into the pit on center-line).

2. Install Leveling Screws on the Bottom of the Impact Absorber

Install leveling screws on the bottom of the impact absorbers so the top of the impact absorber can be "leveled". This allows the bottom of the cask to sit "level" and results in the top of the cask remaining centered in the pit (assuming the cask is lowered into the pit on center-line).

3. Shim/Grout Under the Impact Absorber

Install Shims or grout under the impact absorber so the top of the absorber is "level". This allows the bottom of the cask to sit "level" and results in the top of the cask remaining centered in the pit (assuming the cask is lowered into the pit on center-line).

4. Modify the Pit Guides

Modify the 4 (or 8) existing pit guides so they hold the cask centered sufficiently to install the guide funnel. Consider the use of "plastic" material on the surface of the guides to reduce friction and galling.