JUL 24 1998

ENGINEERING DATA TRANSMITTAL

Page 1 of 1
1. EDT 622224

2. To: (Receiving Organization) Distribution		3. From: (Originating Organization) TWRS Projects/SST Retrieval		4. Related EDT No.: n/a	
5. Proj./Prog./Dept./Div.: D299/ W-320 TWRS/TCPN # D2MA1		6. Design Authority/ Design Agent/Cog. Engr.: JW Bailey, NHC		7. Purchase Order No.: n/a	
8. Originator Remarks: For approval and release of a new supporting document. This document has been generated to ensure retrievability of the Project W-320 "Civil/Structural Calculations, Vol. 6".				9. Equip./Component No.: n/a	
				10. System/Bldg./Facility: 241-C-106	
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				13. Permit/Permit Application No.: n/a	
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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 Design- ator	Reason for Trans- mittal	Orig- inator Dispo- sition	Receiv- er Dispo- sition
1	HNF-2466	-	0	Project W-320, 241-C-106 Sluicing, Civil/Structural Calculations, Vol. 6	NA			-

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
2	1	Design Authority	JW Bailey	7/24/98	S2-48						
		Design Agent	MC Davenport	7/19/98							
2	1	Cog. Eng.	CE Groves	7/24/98	S2-48						
2	1	Cog. Mgr	JW Bailey	7/24/98	S2-48						
		QA									
		Safety									
		Env.									
18. MC Davenport C.E. Groves Signature of EDT Originator		19. Authorized Representative Date for Receiving Organization				20. JW Bailey Signature Design Authority/ Cognizant Manager		21. DOE APPROVAL (if required) Ctrl. No. ☐ Approved ☐ Approved w/comments ☐ Disapproved w/comments			

BD-7400-172-2 (05/96) GEF097

BD-7400-172-1

Project W-320, 241-C-106 Sluicing Civil/Structural Calculations, Vol. 6

John W. Bailey

Numatec Hanford Co., Richland, WA 99352

U.S. Department of Energy Contract DE-AC09-96RL13200

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Key Words: W-320, Sluicing, Tank 241-C-106, Tank 241-AY-102, WRSS, calculations, civil/structural.

Abstract: This supporting document has been prepared to make the FDNW calculations for Project W-320, readily retrievable.

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[Signature]
Release/Approval

7/24/98
Date

Approved for Public Release

Project W-320, 241-C-106 Sluicing Civil/Structural Calculations, Vol. 6

TABLE OF CONTENTS

Calc. No.	Title	Page
W320-24-015	241-C-106, Dome Load Summary Report	A-i
W320-24-016	Sluice Pit AY-02E Analysis	B-i
W320-24-017	Pump Pit AY-02A Analysis and Cover Block Design	C-i
W320-24-018	241-AY-102, Dome Load Summary Report	D-i

W320-24-015

241-C-106, Dome Load Summary Report

HNF-2466, Rev.0
Page A-1

Subject Calculation No. W320-24-015

Page ii of iii[illegible]

DESIGN VERIFICATION SCREENING CRITERIA

Project/Document No. W-320 / W-320-24-015

When the design or design change affects hardware, formal design verification must be performed if one or more of the following questions must be answered affirmatively (YES).

YES	NO	
<u> </u>	<u> ✓ </u>	1. Does the design or design change involved meet the established criteria to be considered Safety Class 1 or 2?
<u> </u>	<u> ✓ </u>	2. Does this design or design change cause or permit changes to Safety Class 1 or 2 instrument or alarm setpoints outside of previously approved operational limits?
<u> </u>	<u> ✓ </u>	3. Does this design or design change significantly affect the nuclear safety consequences of a malfunction or failure of the structure, system, or component?
<u> </u>	<u> ✓ </u>	4. Does this design or design change involve or change design that has previously undergone formal design verification?

Reid D. Smith
Assigned Lead Engineer

7/28/95
Date

Reid D. Smith
Responsible Discipline Manager

7/28/95
Date

Original Design Package Distribution:

Project Manager
Design Verification Officer
Engineering Document Control

Design Change Distribution:

Attach to Engineering Change Notice

DESIGN ANALYSIS

Client WHC

Subject 241-C-106, Dome Load Summary Report

WO/Job No. ER4319/W-320

Date 6-1-94

Checked 7/25/95

Revised

By J.R. Booth

By [Signature]

By

Location Tank 241-C-106, C-Farm, 200E

OBJECTIVE:

The purpose of this calculation is to conservatively estimate the weight of equipment and structures being added over Tank 241-C-106 as a result of Project W-320 and combine these weights with the estimated weights of existing structures and equipment as calculated in Attachment 1 (Calc. No. ER4086-C001). The combined weights will be compared to the allowable live load limit set in the OSD of 200,000 lbf to provide a preliminary assesment of loading conditions above Tank 241-C-106. This calculation is not intended as a structural analysis or evaluation of the tank dome.

CRITERIA:

1. Functional Design Criteria for Tank 241-C-106 Waste Retrieval, Project W-320; Document No. WHC-SD-W320-FDC-001, Rev. 2.
2. Operating Specification for Single-Shell Tanks; Document No. OSD-T-151-00013, Rev. D-1.

GIVEN DATA:

1. Weight of existing Pits over Tank C-106 per Calc. No. ER-4086-C001.
2. Design input from calculations prepared by the W-320 staff and summarized on the spreadsheet.
3. Surface elevation = 645.00'.

ASSUMPTIONS:

1. Soil Weight = 120 pcf.
2. Concrete Weight = 150 pcf.
3. Only loads on or within a 20' perimeter around the tank C-106 will be included to act on the dome.

METHOD USED:

Hand Calculation

REFERENCES:

1. American Institute of Steel Construction, Load and Resistance Factor Design (LRFD), First Edition.
2. Calc. No. ER4086-C001, Net Weight Determination Above Tank Dome, Project W-320.
3. Report, "Tank 241-C-106 Sluicing Dome Loads and Civil Utility Interface Tanks 241-C-106 and 241-AY-102". Prepared by Kaiser Engineers Hanford (ICF KH), Document No. W302-LR-TD-291, September 1993.
4. Tank 241-SY-101 Dome Loading Control Document. Doc. No. WHC-SD-WM-TA-141..
5. Calc. No. W320-24-014, Process Building and Equipment Skid Foundation.

DESIGN ANALYSIS

Client WHC

Subject 241-C-106, Dome Load Summary Report

Location Tank 241-C-106, C-Farm, 200E

WO/Job No. ER4319/W-320

Date 6-1-94

Checked 7/25/95

Revised 6/14/96

By J.R. Booth *JR*

By *R.D. Smith*

By *R.D. Smith*

CONCLUSION:

The total cumulative net live load on the dome of C-106 tank based on existing systems/structures, sluicing project systems/structures and maximum expected construction surcharge is not expected to exceed approx 92% of the existing program/administrative controls for dome loading which is currently set at 100 tons maximum concentrated over a 10-ft radius. The live loads imposed on C-106 are not concentrated within a 10-ft radius on the surface, but are distributed over a 57.5 -ft radius, thus the uniform live load as a result of approaching 92% of the live load limit is considerably less than the program/administrative limit of approx. 0.32 ton/sq ft. The maximum concentrated live load on the dome is expected from the Process building which yields a uniform live load effect in the range of 0.1 tons/sq ft, which is approx 1/3 of the limit.

with 6/2

DESIGN ANALYSIS

Client WHC

Subject 241-C-106, Dome Load Summary Report

Location Tank 241-C-106, C-Farm, 200E

WO/Job No. ER4319/W-320

Date 6-1-94

Checked 7/25/95

Revised u/u/a

By J. R. Booth

By

By

Weight of Sluicing Pit, Covers, and Equipment

1. Sluicing Pit:
146298+397+83-144210=2568 lbs (Attach. 1, pg. A-6)
2. New Cover Blocks: An average of 7-1/2" additional thickness of concrete is required. To account for higher ratio of steel embedments a 10% weight increase factor is used.
[(12 ft)(12.5)(.625)](150 pcf)(1.10) = 15469 lbs (H-2-818450, SH 2)
3. Approximate weight of Jumper Assemblies:
C-06C-6-A = 325 lbs (H-2-818515)
C-06C-8-B = 185 lbs (H-2-818516)
C-06C-7-(DRAIN)=120 lbs (H-2-818513)
Total = 325+185+120 = 630 lbs
4. Weight of Sluicer Assembly and Drive Assembly:
Sluicer Drive Assembly = 1600 lbs (H-2-818550, SH-5)
Sluicer Assembly = 1700 lbs (H-2-818551, SH-1)
Total=1600+1700=3300 lbs
5. Plug Weight Adjustments: H-2-818450 SH3
Slot, approx = [1.83*.67*.5]cu ft*150 lb/cu ft = -92 lbs
Slot Plug = 460 lbs
Total = [460] lb - [92] lb = 368 lbs
6. Total for Sluice Pit:
2568+15469+630+3300+368 = 22335 lbs

with 6/2

with 6/25

with 6/2

DESIGN ANALYSIS

Client WHC

Subject 241-C-106, Dome Load Summary Report

Location Tank 241-C-106, C-Farm, 200E

WO/Job No. ER4319/W-320

Date 6-1-94

Checked **7/25/95**Revised **6/14/96**By J.R. Booth **RRB**By **Red Davidson**By **Red Davidson**Weight of Pump Pit, Covers, and Equipment

1. Pump Pit:
 $235455 + 769 + 397 + 86 - 269870 = -33163$ lbs (Attach. 1, pg. A-8)
2. New Cover Blocks: An average of 7-1/2" additional thickness of concrete is required. To account for higher ratio of steel embedments a 10% weight increase factor is used.
 $[(16 \text{ ft})(18.5)(.625)](150 \text{ pcf})(1.10) = 30525$ lbs (H-2-818448, SH 2)
3. Approximate weight of Jumper Assemblies in pit:
06A-A-9 = 675 lbs (H-2-818505, SH-1)
C-06A-8 -(DRAIN) = 122 lbs (H-2-818512)
Total: $675 + 122 = 797$ lbs
4. Equipment:
Booster Pump: 1000 lbs(pump) + 2250 lbs(motor) + 500 lbs(misc) = 3750 lbs (H-2-818508, SH1)
Winch/Immersible Pump: 5480 lbs (H-2-818495)
Total: $3750 + 5480 = 9230$ lbs
5. Plug /Penetration Weight Adjustments: H-2-818448 SH 2
Pump Penetration, approx = $\pi/4[3.7^2 \text{avg} * 1.0 + 2.875^2 * 1.56] \text{cu ft} * 150 \text{lb/cu ft}$
= -3132 lbs
Slots, approx = $[2.75 * .67 * .67 + 2.33 * .67 * .5] \text{cu ft} * 150 \text{ lb/cu ft} = -302$ lbs
Riser slot, approx = $[1.75 * 2.125 * .58] \text{cu ft} * 150 \text{ lb/cu ft} = -324$ lbs
Slot Plugs = $[653 + 590] \text{ lb} = 1243$ lbs
Pump Penetration Plug = 7000 lbs
Total = $[7000 + 1243] \text{ lb} - [3132 + 302 + 324] \text{ lb} = 4485$ lbs
6. Toal for Pump Pit:
 $-33163 + 30525 + 797 + 9230 + 4485 = 11874$ lbs

w Jm
6/2

DESIGN ANALYSIS

Client WHC

Subject 241-C-106, Dome Load Summary Report

Location Tank 241-C-106, C-Farm, 200E

WO/Job No. ER4319/W-320

Date 6-1-94

Checked *7/25/95*

Revised *6/14/96*

By J.R. Booth *DRB*

By *[Signature]*

By *[Signature]*

Weight of Heel Pit, Replacement Covers, and Equipment

1. Heel Pit: (W/O covers - displaced soil, Attachment 1, Pg A-7)
 $[12 \times 9 \times 6.11 - 9.75 \times 6.75 \times 2 - 9 \times 6 \times 2.25 - \pi/4(26/12)^2 \times 1.86]150$
pcf - [50026] = 9959 lbs
2. Replacement Covers, ERS
H-2-820725, 5600 lbs + H-2-820729, 3750 lbs = 9350 lbs
3. Exst Equip:
Heel Jet Pump, est 1000 lbs + riser, 238 lbs = 1238 lbs

Total = 9959 + 9350 + 1238 = 20547 lbs

WJH
6/25/96

DESIGN ANALYSIS

Client WHC

Subject 241-C-106, Dome Load Summary Report

Location Tank 241-C-106, C-Farm, 200E

WO/Job No. ER4319/W-320

Date 6-1-94

Checked 7/25/95

Revised

By J.R. Booth *JRB*

By *R.D. Davidson*

By

Weight of Instrument Enclosure Foundation

1. Weight of Filled in Concrete Foundation - Displace Soil: (H-2-41918).
 - a. [(7.33' x 3.33' x 3.17') 150 pcf = 11607 lbs
 - b. (7.33' x 3.33' x 2.5') 120 pcf = 7323 lbs
 - c. Total: 11607 - 7323 = 4284 lbs

Note: From observation of a photo dated June 1991, the Instrument Enclosure is no longer present and the Foundation has been filled. It is conservatively assumed to be filled with concrete.

DESIGN ANALYSIS

Client WHC

Subject 241-C-106, Dome Load Summary Report

Location Tank 241-C-106, C-Farm, 200E

WO/Job No. ER4319/W-320

Date 6-1-94

Checked 7/25/95

Revised

By J.R. Booth *ARB*
By *Redmond*
By

Weight of Existing 16" Diameter Exhaust Duct and Footing

1. 16" Dia. Duct Spool: (H-2-93797, sh. 2)
 - a. From half way between footing of Detail 4 to footing adjacent to Sluice Pit:
 $((27 + 7)/2) + 6 = 23 \text{ ft}$
 $(23 \text{ ft})(62.6 \text{ lb/ft}) = 1440 \text{ lbs}$
2. Weight of Pipe Support Footing: (H-2-93797, sh. 2 & H-2-93800)
Detail F: Concrete pad next to Sluice Pit
 $(7' \times 7' \times 4')150 \text{ pcf} = 29400 \text{ lbs}$
Displaced Soil: $(7' \times 7' \times 2.5')120 \text{ pcf} = 14700 \text{ lbs}$
3. Total
 $29400 - 14700 + 1440 = 16140 \text{ lbs}$

DESIGN ANALYSIS

Client WHC

Subject 241-C-106, Dome Load Summary Report

WO/Job No. ER4319/W-320

Date 6-1-94

By J.R. Booth *JRB*Checked *7/25/95*By *Redmond*

Location Tank 241-C-106, C-Farm, 200E

Revised

By

Weight of Existing Hatchway (DWG File 73550)

1. Weight of Hatchway Concrete: Weight of concrete minus pit and trunk opening.
 $[(7.75' \times 5.25' \times 13.69') + (0.5 \times 4.25' \times 1.73' \times 7.25')] + (0.5 \times 7.25' \times 2.94' \times 4') + (3.02 \times 7.25 \times 4) - (3.25 \times 5.75 \times 10.75) - (\pi/4 \times 2^2 \times 6.5)] 150 \text{ pcf} = 73885 \text{ lbs.}$
2. Weight of Weather Cover: (H-2-41785) Insignificant.
3. Weight of displaced soil:
 $[(7.75' \times 5.25' \times 13.69') + (0.5 \times 4.25' \times 1.73' \times 7.25')] + (0.5 \times 7.25' \times 2.94' \times 4') + (3.02 \times 7.25 \times 4)] 120 \text{ pcf} = 85665 \text{ lbs}$
4. Weight of adjacent Exhaust Foundation (H-2-41828)
 - a. Concrete Weight: $(4.625' \times 2.542' \times 4.5') 150 \text{ pcf} = 7936 \text{ lbs}$
 - b. Displaced Soil: $(3.5' \times 2.542 \times 4.625) 120 \text{ pcf} = 4938 \text{ lbs}$
 - c. Exhaust stack has been removed, only the foundation remains.
5. Total
 $73885 - 85665 + 7936 - 4938 = -8782 \text{ lbs}$

DESIGN ANALYSIS

Client WHC

Subject 241-C-106, Dome Load Summary Report

WO/Job No. ER4319/W-320

Date 6-1-94

By J.R. Booth *JRB*

Checked 7/25/95

By *Red Samal*

Location Tank 241-C-106, C-Farm, 200E

Revised 6/14/96

By *Red Samal*Weight of Process Building

1. Weight of bldg (5000 lbs) + Skid(55,000 lbs) + Fdn(86,250 lbs) = 146,250 lbs (Ref 5) *WJM*
6/25/96
2. Weight of Displaced Soil:
6" Curb: $[2(0.5' \times 0.83' \times 15.0') + 2(0.5 \times 0.83 \times 23.3')]$ 120pcf = 3815 lbs
Slab: $(1' \times 15' \times 25')$ 120pcf = 45000 lbs
Foundation Wall: $[2(2.5' \times 1' \times 15') + 2(2.5' \times 1' \times 23.33')]$ 120pcf = 22998 lbs
Total: 3815 + 45000 + 22998 = 71,813 lbs
3. Total: 146,250 - 71,813 = 74,437 lbs *WJM*
6/25/96

Note: Skid wt above is based on the as-built lifted weight as reflected in ECN W-320-351. An additional 1000 lbs is expected to be added (misc. equip) when skid is in place. Crane surcharge load envelopes this additional load not accounted for in summary table.

Weight of Miscellaneous Pads Over C-106

1. (H-2-818427 & H-2-818458, SH-3).
- a. Instr TB Pad: $2(3' \times 3' \times 0.667)$ 150 pcf = 1801 lbs
Displaced Soil: $2(3' \times 3' \times 0.5)$ 120 pcf = 1080 lbs
Sub-Total = 1801 - 1080 = 721 lbs
- b. Hydraulic Power Supply Pad: $(4' \times 4' \times 0.42)$ 150 pcf = 1008 lbs
Displaced Soil: $(4' \times 4' \times 0.25)$ 120 pcf = 480 lbs
Sub-Total: 1008 - 480 = 528 lbs
- c. Purgemeter Pad: $(2' \times 2' \times 0.42)$ 150 pcf = 252 lbs
Displaced Soil: $(2' \times 2' \times 0.25)$ 120 pcf = 120 lbs
Sub-Total: 252 - 120 = 132 lbs
- d. CCTV Pad: $(6.5' \times 4' \times 0.667)$ 150 pcf = 2601 lbs
Displaced Soil: $(6.5' \times 4' \times 0.5)$ 120 pcf = 1560 lbs
Sub-Total: 2601 - 1560 = 1041 lbs
- e. Intake Air Filter Pad: 9278 lbs (Calc. No. W320-24-020, pg. 6)
Displaced Soil: $(8.5' \times 9' \times 0.5)$ 120 pcf = 4590 lbs
Sub-Total: 9278 - 4590 = 4688 lbs
- f. Power TB Pad: $(4.5' \times 3' \times 0.667)$ 150 pcf = 1351 lbs
Displaced Soil: $(4.5' \times 3' \times 0.5)$ 120 pcf = 810 lbs
Sub-Total: 1351 - 810 = 541 lbs
- WJM*
6/25/96

Net Pad Wt: 721+528+132+1041+4688+541 = 7651 lbs

Misc Equip/Panel Wt: est 1000 lbs

Total = 7651 + 1000 = 8651 lbs

DESIGN ANALYSIS

Client WHC

Subject 241-C-106, Dome Load Summary Report

Location Tank 241-C-106, C-Farm, 200E

WO/Job No. ER4319/W-320

Date 6-1-94

Checked **7/25/95**Revised **6/14/96**By J.R. Booth **DRB**By **Redmond**By **Redmond**Weight of Transfer Lines

Determine weight of Transfer Lines over tank: (See dwg. H-2-818427, sh-1)

Length of Line to Sluice Pit = 76 ft

WT./ft of 4" steel line = 10.79 lb/ft

WT./ft of 6" encasement = 18.97 lb/ft

 $76 \text{ ft} * (10.79 \text{ lb/ft} + 18.97 \text{ lb/ft}) = 2262 \text{ lb}$

Length of Line to Pump Pit = 62 ft

WT./ft of 4" steel line = 10.79 lb/ft

WT./ft of 6" encasement = 18.97 lb/ft

 $62 \text{ ft} * (10.79 \text{ lb/ft} + 18.97 \text{ lb/ft}) = 1846 \text{ lb}$

Total = 2262 + 1846 = 4108 lb

Note: Weight of liquids in Transfer Lines not included since weight of displaced soil more than balances the difference.

Weight of Crane Load Surcharge: At 20 ft Boundary

A surcharge will be added to the dome load summary as recommended in Ref. 3. Instead of adding a 28 Ton crane load acting directly over the tank, a 150 Ton Linkbelt crane, with its inside track loading the tank dome at a 90 degree orientation, with the closet track to the tank centered on the 20 ft LCEA boundary around the tank will be added similar to Ref. 3, page 7.

Based on an expected maximum lifted load of 55,000 lbs for the Process Bldg skid, the surcharge load imposed on the dome using the same methodology in Ref 4 (Page A-11, A-17) would be approx $330,690/295,190 \times 13,892 \text{ lbs} = 15,563 \text{ lbs}$.

Transfer Line Berm Weight: Profile A, ECN W-320-217Soil: approx $(1.2 \text{ sq ft} \times 62') 120 \text{ pcf} = 8928 \text{ lbs}$ Stabilization: approx $(3.75' \times .25' \times 62') 100 \text{ pcf} = 5,813 \text{ lbs}$ Total: $8928 + 5,813 = 14,741 \text{ lbs}$

WJh

1

6/25/96

DESIGN ANALYSIS

Client WHC

Subject 241-C-106, Dome Load Summary Report

WO/Job No. ER4319/W-320

Date 6-1-94

Checked **7/25/95**

Revised **7/25/95**

By J.R. Booth **283**

By **[Signature]**

By **[Signature]**

Location Tank 241-C-106, C-Farm, 200E

TANK 241-C-106 DOME LOAD SUMMARY
lb

Weight of Sluicing Pit, Covers, and Equipment

Weight of Sluice Pit - displaced soil (ref. calc. ER-4086-C001)

2568

Additional weight of New Concrete Cover Blocks (H-2-818450 sh2)

15469

Weight of Piping Arrangement in pit (H-2-818526 sh1)

630

Weight of New Sluicer Assembly and Drive Assembly (H-2-818549)

3300

Plug Weight Adjustments

368

Total for Sluice Pit

22335

Weight of Pump Pit, Covers, and Equipment

Weight of Pump Pit - displaced soil (ref. calc. ER-4086-C001)

-33163

Additional weight of New Concrete Cover Blocks (H-2-818448 sh2)

30525

Weight of Piping Arrangement in pit (H-2-818524 sh1)

797

Weight of Equipment:

9230

Plug/Penetration Weight Adjustments

4485

Total for Pump Pit

11874

Weight of Heel Pit and Equipment

Weight of Heel Pit - displaced soil (ref. calc. ER-4086-C001)

9959

Replacement Covers (H-2-820725, H-2-820729)

9350

Exst. Equipment

1238

Total for Heel Pit

20547

Weight of Instrument Enclosure (H-2-42262)

4284

Weight of existing Concrete Pipe Trench (ref. calc. ER-4086-C001)

neglect

(Displaced soil weight exceeds enclosure weight)

Weight of existing 16" Dia. Exhaust Dust, see pg. 7 of calc. (H-2-93797 sh2)

16140

Weight of existing Hatch Way & Exhaust Stack FDN (H-2-41828)

-8782

Weight of New Process Building (H-2-818451)

74437

(Including full wt. of Process Building Conservative)

Miscellaneous Concrete Pads (H-2-818427)

8651

Weight of Transfer Lines

4108

Weight of Transfer Line Berm

14,741

Weight of Crane Surcharge Load

15563

Total Live Load on Tank Dome & Exclusion Area (lbs)

183,898

**KAISER ENGINEERS
HANFORD****CALCULATION IDENTIFICATION AND INDEX**Page i of iiiDate 8-12-93

is sheet shows the status and description of the attached Design Analysis sheets.

Discipline Civil WO/Job No. ER4086/W320 Calculation No. ER4086-C001
 Project No. & Name W320 Tank 241-C-106 Sluicing
 Calculation Item Net Weight Determination Above Tank Dome

These calculations apply to:

Dwg. No. _____ Rev. No. _____

Dwg. No. _____ Rev. No. _____

Other (Study, CDRI) Phase III Advanced Engineering Study on Dome Loads/
 Civil Utility Interface Rev. No. 0

The status of these calculations is:

*Calc. No. W320-24-015
 Attachment 1
 Page A1 of A10*

☒ Preliminary Calculations☐ Final Calculations☐ Check Calculations (On Calculation Dated _____)☐ Void Calculation (Reason Voided _____)

incorporated in Final Drawings?

☐ Yes ☒ No

This calculation verified by independent "check" calculations?

☐ Yes ☒ No

Original and Revised Calculation Approvals:

	Rev. 0 Signature/Date	Rev. 1 Signature/Date	Rev. 2 Signature/Date
Originator	<i>[Signature]</i> 8/10/93		
Checked by	<i>[Signature]</i> 8/29/93		
Approved by			
Checked Against Approved Vendor Data			

INDEXDesign Analysis
Page No.Description

1-2 Objective, Design Inputs
3-7 Calculations

Subject Calculation No. ER4086-C001

Page ii of iii[illegible]

DESIGN VERIFICATION SCREENING CRITERIA

Project/Document No. W320/ER4086-C001

When the design or design change affects hardware, formal design verification must be performed if one or more of the following questions must be answered affirmatively (YES).

YES

NO

<u> </u>	<u> X </u>	1. Does the design or design change involved meet the established criteria to be considered Safety Class 1 or 2?
<u> </u>	<u> X </u>	2. Does this design or design change cause or permit changes to Safety Class 1 or 2 instrument or alarm setpoints outside of previously approved operational limits?
<u> </u>	<u> X </u>	3. Does this design or design change significantly affect the nuclear safety consequences of a malfunction or failure of the structure, system, or component?
<u> </u>	<u> X </u>	4. Does this design or design change involve or change design that has previously undergone formal design verification?

Assigned Lead Engineer

8/12/93

Date

Responsible Discipline Manager

Date

Original Design Package Distribution:

Project Manager

Design Verification Officer

Engineering Document Control

Design Change Distribution:

Attach to Engineering Change Notice

DESIGN ANALYSIS

Client WHC

WO/Job No. ER4086

Subject NET WEIGHT DETERMINATION ABOVE TANK
DOME

Date 8-12-93

By RW DAVIDSON

Checked 8/25/93

By J.R. Barth

Location 241-C-106

Revised

By

OBJECTIVE:

To determine the net weight of existing/new equipment and structures located above and around the tank dome of 241-C-106.

DESIGN INPUTS:

Criteria:

- Functional Design Criteria " Tank 241-C-106 Waste Retrieval, Project W-320" Document No. WHC-SD-W320-FDC-001, Rev 0, June 1993.
- Operating Specification for Single-Shell Tanks Document No. OSD-T-151-00013, Rev D-

Known Data:

- Preliminary Calculation for Concrete Cover Blocks & Anchors, Calc. No. W320-24-001(ER3799)
- Preliminary Calculation for Enclosure Footings, Calc No. W320-24-002. (ER3799)
- Surface Elevation 645'-0"
- Soil cover 5.67 ft

Assumptions:

- Soil weight 120 pcf
- Concrete weight 150 pcf
- Heavy equipment access and location of new pits/heavy shielded skids around perimeter of tank will be limited to insure excessive surcharge loads are not transferred to tank dome and walls. (20-ft exclusion area to be used)
- New equipment loads are estimated.
- Liner plate thickness 1/2" (Conserv.), however, WHC has indicated that a pit coating will be used in place of liner plates

Method Used:

- Determine net load of existing pits, encasements and new structures, footings resulting from displaced soil above dome.

DESIGN ANALYSIS

Client WHC

WO/Job No. ER4086

Subject NET WEIGHT DETERMINATION ABOVE TANK
DOME

Date 8-12-93

By RW DAVIDSON

Location 241-C-106

Checked 8/25/93

By J.R. Booth

Revised

By

References:

1. Report, "Tank 241-C-106 Sluicing, Project W-320," prepared by Kaiser Engineers Hanford, Document No. WHC-SD-WM-234, Rev 2, May 1993.
2. Engineering Study, "Single Tank Interim Cover Study," prepared by Whestinghouse Hanford Company, Document No. WHC-SD-ES-165, Rev 0, Jan 1992.
3. Report, " Tank Farm Riser Usage & Pit Modifications, 241-C-106 & 241-AY-102," prepared by Kaiser Engineers Hanford, Document No. W320ER1, September 1993.

Uncertainties:

- Some of the equipment weights have been estimated. During definitive design a final load summary table will be prepared.

Conclusion:

Net dome loading for existing pits, enclosures, new structures, footings & equipment has been determined.

DESIGN ANALYSIS

Client WHC

Subject NET WEIGHT DETERMINATION ABOVE TANK
DOME

Location 241-C-106

WO/Job No. ER4086

Date 8-12-93

Checked 8/25/93

Revised

By RW DAVIDSON

By *GR Barth*

By

SLUICING PIT WEIGHT DETERMINATION: REF H-2-41344, H-2-41369, H-2-41318

The sluicing pit floor, walls and cover slabs form a reinforced concrete structure 12 ft long, 11.5 ft wide and approximately 10.96 ft tall. There is a central cavity 9 ft long and 8.5 ft wide and approximately 7 ft tall. There is a hole 12 inch in diameter and a hole 4 inch in diameter through the pit floor. Both holes extend from a average finish floor elevation of 638'-2 1/4" to a bottom excavation elevation of 636'-3 1/2" (1.9 ft). The finish grade elevation and bottom of tank elevation for C-106 are 2 ft lower than what dwgs show, thus the elevations have been adjusted accordingly. The risers extend approximately 8'-0" below finish pit floor. Concrete weighs 150 pcf. The weight of the pit structure is thus:

$$150[12*11.5*10.96 - 9*8.5*7 - \pi/4*12*1.9 - \pi/4*(4/12)^2*1.9] = 146,298 \text{ lbf.}$$

The weight of the displaced soil is:

Note: Fin Grade = 645 ft & Bot of Excav = 636'-3 1/2"

$$120[12*11.5*8.708] = 144,210 \text{ lbf.}$$

The weight of other pit equip. is:

Risers, 12 inch dia. = 8 ft*49.56 plf = 396.5 lbf.
4 inch dia. = 8 ft*10.29 plf = 82.3 lbf.

New sluicer, est 2000 lbf

New Liner Plate, est 1/2 inch thk w/ 1 ft space btwn pit walls all round

$$\text{Liner Plate Wt} = 20.4[7*7*2 + 6.5*7*2 + 7*6.5] = 4,784 \text{ lbf.}$$

Total Wt, est = 7263 lbf.

The Net Loading on the Tank is:

146,298 lbf + 7263 lbf - 144,210 lbf = 9351 lbf
Model the (sluicer + vault) effect as a soil pressure plus a concentrated load of 10,000 lbf.

DESIGN ANALYSIS

sent WHC
Subject NET WEIGHT DETERMINATION ABOVE TANK
 DOME
Location 241-C-106

WO/Job No. ER4086
Date 8-12-93
Checked 8/25/93
Revised

By RW DAVIDSON
By *JR Booth*
By

HEEL PIT WEIGHT DETERMINATION: REF H-2-41345, H-2-41368

The heel pit floor, walls and cover slabs form a reinforced concrete structure 12 ft long, 9 ft wide and approximately 6.11 ft tall. Project W-320 waste retrieval will modify height of pit cavity by adding an estimated 3 ft to wall height. The modified central cavity will be 9 ft long, 6 ft wide and 5.25 ft tall. There is a hole 26 inches in diameter through the pit floor. The hole extends from an average finish floor elevation of 643'-0" to a bottom excavation elevation of 641'-1 5/8". (1.86 ft) The finish grade elevation and bottom of tank elevation for C-106 are 2 ft lower than what dwgs show, thus the elevations have been adjusted accordingly. The riser extends through the pit floor to top of tank dome, approximately 3.42 ft. Concrete weighs 150 pcf.
The weight of the modified pit structure is:

$$150[12*9*9.11 - 9*6*5.25 - \pi/4(26/12)^2*1.86] = 104,028 \text{ lbf.}$$

he weight of the displaced soil is:

$$\text{Fin. Grade} = 645'-0" \text{ \& Bot. of Excavation} = 641'-1 \frac{5}{8}"$$

$$120[12*9*3.86] = 50,026 \text{ lbf.}$$

The weight of other pit equipment is:

$$\text{Riser, 26 inch dia. } 3.42 * 69.43 \text{ plf (1/4" plate)} = 237.5 \text{ lbf.}$$

$$\text{New Heel Pump, est} = 1000 \text{ lbf.}$$

$$\text{Liner Plate, est 1/2 inch thk w/ 1 ft separation around pit walls,}$$

$$\text{Plate wt.} = 20.4[7*5.25*2 + 4*5.25*2 + 7*4] = 2927 \text{ lbf.}$$

$$\text{Total, est} = 237.5 + 1000 + 2927 = 4165 \text{ lbf.}$$

The Net Loading on the Tank is:

$$104,028 \text{ lbf} + 4165 \text{ lbf} - 50,026 \text{ lbf} = 58,167 \text{ lbf.}$$

Model (Heel Pump + Vault) as a soil pressure plus a concentrated load of 58,500 lbf.

DESIGN ANALYSIS

Client WHC

WO/Job No. ER4086

Subject NET WEIGHT DETERMINATION ABOVE TANK
DOME

Date 8-12-93

By RW DAVIDSON

Checked 8/25/93

By JR Booth

Location 241-C-106

Revised

By

PUMP PIT WEIGHT DETERMINATION: REF H-2-41343, H-2-41370, REFERENCE 3 - APPENDIX A

The pump pit floor, walls and cover slabs form a reinforced concrete structure 18 ft long, 14 ft wide and approximately 9.71 ft tall. The central cavity is 14.54 ft long and 11 ft wide and approximately 5.84 ft tall.

There is a hole 42 inch in diameter, 12 inch and 4 inch through the pit floor. These holes extend from an average finish floor elevation of 638.156' to a bottom excavation elevation of 636'-3 1/2" (1.86 ft). The risers extend approximately 8 ft below the finished pit floor. The finish grade elevation and bottom of tank elevation for C-106 are 2 ft lower than what dwg show, thus the appropriate elevations have been adjusted accordingly.

The bracket extension on the north wall is 18 ft long, 0.583 ft wide and approx. 3 ft deep. The bracket extension on the south wall is 18 ft long, 0.92 ft wide and approx 3.17 ft deep.

The riser port cavity in the west wall is 12 inch diameter and 9.71 ft tall.

Concrete weighs 150 pcf. The weight of the pit structure is:

$$150[18*14*9.71 + 18*.583*3 + 18*.92*3.17 - 14.54*11*5.84 - \pi/4(42/12)^2*1.86 - \pi/4(1)^2*1.86 - \pi/4(4/12)^2*1.86 - \pi/4(1)^2*9.71] = 235,455 \text{ lbf.}$$

The weight of displaced soil is:

$$\text{Fin. Grade} = 645' \text{ \& Bot. of Excav.} = 636'-3 \frac{1}{2}"$$

$$120[18*14*8.71 + 1.5*18*2] = 269,870 \text{ lbf.}$$

The weight of other pit equip. is:

$$\begin{aligned} \text{Risers, 42 inch dia.} &= 8 * 96.13 \text{ plf}(1/4" \text{ plate}) = 769 \text{ lbf. (36 in)} \\ 12 \text{ inch dia.} &= 8 * 49.56 \text{ plf} = 397 \text{ lbf.} \\ 4 \text{ inch dia.} &= 8 * 10.79 \text{ plf} = 86 \text{ lbf} \end{aligned}$$

New Sluicer, est 2000 lbf.

New Submersible Pump, est 7000 lbf.

Dipleg, est 500 lbf

$$\text{New Liner, } 20.4[12.54*5.84*2 + 9*5.84*2 + 12.54*9] = 7438 \text{ lbf}$$

$$\text{Total wt.} = 18,190 \text{ lbf}$$

$$\text{Net Loading on Tank} = 235,455 \text{ lbf} + 18,190 \text{ lbf} - 269,870 \text{ lbf} = - 16,225 \text{ lbf}$$

DESIGN ANALYSIS

Sent WHC

Subject NET WEIGHT DETERMINATION ABOVE TANK
DOME

Location 241-C-106

WO/Job No. ER4086

Date 8-12-93

Checked 8/25/93

Revised

By RW DAVIDSON

By JR Booth

By

SHIELDING ENCLOSURE WEIGHT DETERMINATION: REF CALC W320-24-001 REV 1/W320-24-002 REV 0

The above grade enclosure at 241-C-106 is assumed to run from the east wall of pump pit 06A, at perimeter of tank, to the new valve pit, which will be located on boundary of a 20 ft load exclusion zone around the perimeter of the tank. The weight of a 20 ft section of the enclosure will be used and applied as a concentrated load on the dome of the tank.

Similarly, the above grade enclosure at 241-AY-102 is assumed terminate at the perimeter of the tank near sluice pit 02B. The enclosure is 15 ft long, 6.833 ft wide and 3.333 ft tall. The central cavity is 15 ft long, 2.5 ft wide and 1.167 ft tall. The footings are 8.5 ft long, 4.5 ft wide and 2.5 ft thk and are located at 15 ft intervals. Top of footings are assumed to be at grade.

The enclosure weight is:

$$150[15 \times 6.833 \times 3.333 - 15 \times 2.5 \times 1.167] = 44,678 \text{ lbf. (15 ft length)}$$

The footing weight is:

$$150[8.5 \times 4.5 \times 2.5] = 14,344 \text{ lbf. (each footing)}$$

The weight of displaced soil is:

$$120[8.5 \times 4.5 \times 2.5] = 11,475 \text{ lbf. (for each footing)}$$

Determine net weight on tank dome:

Use weight of a 15 ft enclosure section and 50% of adjoining section since two footings are located within a 20-ft length

The contributing load on dome is:

$$= 44,678 \times 1.5 + 14,344 \times 2 - 11,475 \times 2 = 72,755 \text{ lbf}$$

KAISER ENGINEERS
HANFORD

Calc. No. ER4086-C001

Revision 0

Page No. 7 of 7

DESIGN ANALYSIS

Client WHC

WO/Job No. ER4086

Subject NET WEIGHT DETERMINATION ABOVE TANK
DOME

Date 8-12-93

By RW DAVIDSON

Location 241-C-106

Checked 8/25/93

By *GR Booth*

Revised

By

EXISTING PIPE ENCASUREMENT WEIGHT DETERMINATION: REF H-2-41283, H-2-41286

Section 101-101:

The overall dimensions of encasement are 3.333 ft wide and 2.375 ft tall. The cavity is 2 ft wide and 1.0417 ft tall. The approximate length of encasement is 139.4 ft. ie [50.5 + 10.599 + 19.08 + 36 + 23.22]. Displaced soil is based on a 3.333 ft width and a estimated submerged depth of 1.7083 ft. The finished grade elevation is 645 ft.

Enclosure Wt. = $150[(3.333 * 2.375) - (2 * 1.0417)] = 875 \text{ lb/ft length}$ Displaced Soil Wt. = $120[3.333 * 1.7083] = 683 \text{ lbf/ft length}$ Net Dome Load on Tank Dome = $139.4[875 - 683] = 26,765 \text{ lbf}$ Section 103-103:

The overall dimensions of the encasement are 5.167 ft wide and 2.375 ft tall. The cavity is 3.833 ft wide and 1.0417 ft tall. The approximate length of encasement is 4.71 ft. Displaced soil is based on a 5.167 ft width and a submerged depth of 1.7083 ft. Finished grade is 645 ft.

Enclosure Wt. = $150[5.167 * 2.375 - 3.833 * 1.0417] = 1242 \text{ lb/ft length}$ Displaced Soil Wt. = $120[5.167 * 1.7083] = 1059 \text{ lb/ft length}$ Net Dome Load on Tank Dome = $4.71[1242 - 1059] = 862 \text{ lbf}$ Section 104-104:

The overall dimensions of encasement are 8.5 ft wide and 2.7083 ft tall. The cavity is 7.167 ft wide and 1.0417 ft tall. The approximate length of encasement is 3.792 ft. Displaced soil is based on a 8.5 ft width and a estimated submerged depth of 1.875 ft. Finished grade elevation is 645 ft.

Enclosure Wt. = $150[8.5 * 2.7083 - 7.167 * 1.0417] = 2333 \text{ lb/ft length}$ Displaced soil Wt. = $120[8.5 * 1.875] = 1913 \text{ lb/ft length}$ Net Dome Load on Tank Dome = $3.792[2333 - 1913] = 1593 \text{ lbf}$ Total Load on Dome = $[26,765 + 862 + 1593] = 29,220 \text{ lbf}$

W320-24-016

Sluice Pit AY-02E Analysis

ICF Kaiser Hanford Company

INTEROFFICE MEMORANDUM

TO C. B. Organ E6-01
Design Verification Officer

DATE August 14, 1995

FROM G. L. Hopkins G3-17

COPIES TO R. W. Davidson S3-07
M. A. Haq G3-17
M. S. Ruben E6-46
Eng Doc Control G3-11

JOB NO. ER4319

SUBJECT REVISION OF STRUCTURAL ANALYSIS OF SLUICING PIT AY-02E

REFERENCES 1. Design Calculation Numbers W320-24-016 and -017, Rev. 1.0
2. InterOffice Memo to C. B. Organ from G. L. Hopkins, "Structural Analysis of Sluicing Pit AY-02E," dated March 31, 1995.

This memo and attached form KEH 1980.00 (16/91) are to perform a design verification of revised subject calculations. This design verification is in accordance with "Design Review Method" as defined by ICF Kaiser Hanford Company (ICF KH) Procedure ES 7, Rev. 3, Section 6.2.

Responses to the questions of Section 6.2.1.4 of Procedure ES 7 are as follows:

- 1) Were the design inputs correctly selected?
YES This conclusion is based on the review of the original calculations.
- 2) Were all necessary conditions considered in the design?
YES
- 3) Are required assumptions adequately described? Are sources identified reasonable for the design?
YES
- 4) Was appropriate design method used?
YES
- 5) Where necessary, are the assumptions reverified when the design is complete?
YES

HNF-2466, Rev. 0
Page B-1

WORKING TOWARD VPP "STAR" STATUS THROUGH EMPLOYEE INVOLVEMENT

ICF Kaiser Hanford Company

INTEROFFICE MEMORANDUM

C. B. Organ

E6-01

2

August 14, 1995

- 6) Were the design inputs correctly incorporated?

YES

- 7) Is the design output reasonable compared to the design input?

YES

- 8) Are necessary design input and verification requirements for interfacing organizations specified in design documents or in supporting procedures or instructions?

YES

- 9) Was the applicable Hanford Plant Standards (HPS) followed? If not, is documented approval included from DOE-RL?

YES SDC 4.1, Rev. 12 was followed.

Date: 02/22/1995

This sheet shows the status and description of the attached Design Analysis sheets.

Discipline *Civil/Structural*

WO/Job No. **ER 4319/W320**

Calculation No. **W320-24-016**Project No. & Name **W320 Tank 241-C-106 Sluicing**

Calculation Item *Sluice Pit AY-02E Analysis.*

These calculations apply to:

Dwg. No. *H-2-818454* shts 1,2,3 and 4.

Rev. No. 1/1/1/1

Dwg. No.

Rev. No.

Other (Study, CDR) N/A

Rev. No. *N/A*

The status of these calculations is:

▮ Preliminary Calculations

[X] Final Calculations

Check Calculations (On Calculation Dated)

Void Calculation (Reason Voided)

Incorporated in Final Drawings?

☒ Yes ☐ No

This calculation verified by independent "check" calculations?

☐ Yes ☒ No

Original and Revised Calculation Approvals:

	Rev. 0 Signature/Date	Rev. 1 Signature/Date	Rev. 2 Signature/Date
Originator	John W. Funk 02/22/95	James R. Booth 8/8/95	Ronald W. Davidson 3/1/96 Michael B. Lasota 3/14/97
Checked by	James R. Booth 3/8/95	Ronald W. Davidson 8/9/95	William J. Magruder 4/2/96 Ronald W. Davidson 3/25/97
Approved by	Ronald W. Davidson 3/10/95	Ronald W. Davidson 8/9/95	Ronald W. Davidson 3/25/97
Checked Against Approved Vendor Data			

INDEX

Design Analysis
Page No.

Description

1	Objective, Criteria, Methods, References, Assumptions, Conclusions.
2-17	Calculation.
ATTACH 1	Pipe Loads.
ATTACH 2	Seismic Computer Analysis
ATTACH 3	Static Computer Analysis.
ATTACH 4	CGI for Nonshrink Epoxy Grout.
ATTACH 5	Verification of frequency (rigid range).
ATTACH 6	Revised Encasement, Pipe and Jumper loads.

FLUOR DANIEL
NOTRHWEST INC

**CALCULATION IDENTIFICATION AND
INDEX**

Continuation Sheet

Page ii of iii

Date

02/22/1995

Discipline *Civil/Structural*

WO/Job No. *ER 4319/W320*

Calculation No. *W320-24-016*

	Rev. 0 Signature/Date	Rev. 1 Signature/Date	Rev. 2 Signature/Date
Originator	John W. Funk 02/22/95	James R. Booth 8/8/95	Ronald W. Davidson 3/1/96 Michael B. Lasota 3/14/97
Checked by	James R. Booth 3/8/95	Ronald W. Davidson 8/9/95	William J. Magruder 4/2/96 Ronald W. Davidson 3/25/97

INDEX

Design Analysis
Page No.

Description

REVISION

Revision No.

Description

0	Initial issue
1	Added sheet 5a and Attachment 2.
2	Conclusion expanded on page 15 to provide reference to calc W320-24-032 for re-analysis of cover blocks based on ECN-W320-173 and address final piping/jumper loads. Added pages 3a and 4a in Attachment 6. Revised pages 9 thru 12, replaced page 5, added page 4b in Attachment 6.

DESIGN VERIFICATION RECORD

Project/Document Number W320 TANK GLUING PT AY-02E CALCS W320-24-016,
017 REV 1.0

Prepared By G.L. Hopkins ; _____ ; _____
(Print) (Print) (Print)

Verifier Name G.L. Hopkins Initial GLH Date 8-14-95
(Print)

Verifier Name _____ Initial _____ Date _____
(Print)

Verifier Name _____ Initial _____ Date _____
(Print)

Formal Design Verification is determined to be necessary per the Design Verification Screening Criteria and was performed by the following method(s).

1. Alternate Calculation Method YES ☒ NO (Circle One)
 Calculation Number _____ Revision _____

2. Testing Method YES ☒ NO (Circle One)
 Test Number _____ Revision _____
 Test Title _____

3. Identical Method YES ☒ NO (Circle One)
 Document Number _____ Revision _____
 Title _____ Date _____

4. Design Review Method ☒ YES NO (Circle One)
 Design Review Chairman G.L. Hopkins
 Finding or Attached Memo Report Number SEE ATTACHED IOM OF
8-14-95 FROM G.L. HOPKINS TO C.B. ORGAN.
 Date _____

Formal design verification is complete and acceptable:

Design Verification Officer C.B. Organ Date 8/14/95

ATTACH ALL DOCUMENTATION

1 VERIFICATION CONDUCTED.

ICF Kaiser Hanford Company

INTEROFFICE MEMORANDUM

TO C. B. Organ E6-01
Design Verification Officer

DATE March 31, 1995

FROM G. L. Hopkins G3-17

COPIES TO J. R. Booth S3-07
R. W. Davidson S3-07
M. A. Haq G3-17
M. S. Ruben E6-46
Eng Doc Control G3-11

JOB NO. ER4319

SUBJECT STRUCTURAL ANALYSIS OF SLUICING PIT AY-02E

REFERENCES 1. Design Calculation Number W320-24-016
2. H-2-818454 Sht 1/2, H-2-818453 Sht 1/2 Plans, Sect & Details

This memo and attached form KEH 1980.00 (06/91) are in response to your IOM of February 9, 1995, to perform a design verification for the subject project. This design verification is in accordance with "Design Review Method" as define by ICF Kaiser (ICF KH) procedure ES 7, Rev. 3, Section 6.2.

Responses to the questions of Section 6.2.1.4 of procedure ES 7 are as follows:

- 1) Were the design inputs correctly selected?
YES This conclusion is based on the review of the following document: FDC Rev 2 Tank 241-C-106 Sluicing, Definitive Design.
- 2) Were all necessary conditions considered in the design?
YES
- 3) Are required assumptions adequately described? Are sources identified reasonable for the design?
YES
- 4) Was appropriate design method used?
YES
- 5) Where necessary, are the assumptions reverified when the design is complete?
YES

ICF Kaiser Hanford Company

INTEROFFICE MEMORANDUM

C. B. Organ

E6-01

2

March 27, 1995

- 6) Were the design inputs correctly incorporated?

YES

- 7) Is the design output reasonable compared to the design input?

YES

- 8) Are necessary design input and verification requirements for interfacing organizations specified in design documents or in supporting procedures or instructions?

YES

- 9) Was the applicable Hanford Plant Standards (HPS) followed? If not, is documented approval included from DOE-RL?

YES SDC 4.1, Rev. 12 was followed.

DESIGN VERIFICATION RECORD

Project/Document Number W320 TANK SLUICING - CALC # W-320-24-014

Prepared By G.L. HOPKINS : _____ : _____
(Print) (Print) (Print)

Verifier Name G.L. HOPKINS Initial GLH Date 3-31-95
(Print)

Verifier Name _____ Initial _____ Date _____
(Print)

Verifier Name _____ Initial _____ Date _____
(Print)

Formal Design Verification is determined to be necessary per the Design Verification Screening Criteria and was performed by the following method(s).

1. Alternate Calculation Method YES ☒ NO (Circle One)
Calculation Number _____ Revision _____

2. Testing Method YES ☒ NO (Circle One)
Test Number _____ Revision _____
Test Title _____

3. Identical Method YES ☒ NO (Circle One)
Document Number _____ Revision _____
Title _____ Date _____

4. Design Review Method ☒ YES NO (Circle One)
Design Review Chairman G.L. HOPKINS
Finding or Attached Memo Report Number SEE ATTACHED ID# OF 3-31-95
FROM G.L. HOPKINS TO C.B. ORGAN
Date 3-31-95

Formal design verification is complete and acceptable:

Design Verification Officer CB Date 3/31/95

ATTACH ALL DOCUMENTATION REI

HNF-2466, Rev.0
Page B-8

VERIFICATION CONDUCTED.

KEH-1980.00 (06/91)

CALCULATION CROSS INDEX (Typical)

Subject Calculation No. _____

Page ii of iii[illegible]

DESIGN VERIFICATION SCREENING CRITERIA

Project/Document No. W320-24-016

When the design or design change affects hardware, formal design verification must be performed if one or more of the following questions must be answered affirmatively (YES).

YES	NO	
<u>✓</u>	<u> </u>	1. Does the design or design change involved meet the established criteria to be considered Safety Class 1 or 2?
<u> </u>	<u>✓</u>	2. Does this design or design change cause or permit changes to Safety Class 1 or 2 instrument or alarm setpoints outside of previously approved operational limits?
<u> </u>	<u>✓</u>	3. Does this design or design change significantly affect the nuclear safety consequences of a malfunction or failure of the structure, system, or component?
<u> </u>	<u>✓</u>	4. Does this design or design change involve or change design that has previously undergone formal design verification?

Assigned Lead Engineer

3/12/95
Date

Responsible Discipline Manager

3/12/95
Date

Original Design Package Distribution:

Project Manager
Design Verification Officer
Engineering Document Control

Design Change Distribution:

Attach to Engineering Change Notice

DESIGN VERIFICATION SCREENING CRITERIA

Calculation
Project/Document No. W320-24-016 Rev 2
(Rev 2 changes only)

When the design or design change affects hardware, independent design verification must be performed if one or more of the following questions must be answered affirmatively (YES).
Revision 2 added references to another calculation for the coverblocks and incorporated final piping loads which did not change the original analysis. See conclusion on page 15.

1. Does the design or design change involved meet the established criteria to be considered Safety Class?

YES ☒ NO ☐

2. Does this design or design change cause or permit changes to Safety Class instrument or alarm setpoints outside of previously approved operational limits?

YES ☒ NO ☐

3. Does this design or design change significantly affect the nuclear or environmental safety consequences of a malfunction or failure of the structure, system, or component?

YES ☒ NO ☐

4. Does this design or design change involve or change design that has previously undergone formal design verification?

YES ☒ NO ☐

Assigned Lead Engineer

Ann D. Langston

Date

4/20/98

Engineering Manager

William R. C.

Date

4/20/98

Original Design Package Distribution:

Design Change Distribution:

Project Manager

Engineering Manager

Technical Document Control

DESIGN ANALYSIS

Client: WHC
Subject: Sluice Pit Ay-02E Analysis

WO/Job No. W-320 /ER4319
Date: 02/22/95 By: JW FUNK
Checked: 3/8/95 By: JRB
Revised: By:

Location: 241-AY-102 Tank

OBJECTIVE: The purpose of this evaluation is to determine that the existing walls of 241-AY-102 Sluice Pit are adequately designed to take the new pipe loads, jumper loads, seismic loads and also existing soil loads without affecting the structural integrity of the pit. The loads will be divided into two cases; static plus sluicing operation and static plus sluicing operation plus design base earthquake. The two cases will be analyzed to determine the worst condition. These pit walls will be analyzed as the worst case at AY-102 Tank. The cover blocks will also be evaluated for adequate reinforcement for equipment weight, self weight, snow load, seismic loads and hole penetrations.

CRITERIA: The criteria for evaluation of pit walls is outlined in SDC 4.1 Rev 11. The walls and cover blocks will be analyzed as Safety Class 1 structures.

Functional Design Criteria(FDC) for Tank 241-C-106 Waste Retrieval,
Project W-320 Rev2

METHODS: MATHCAD 4.0 (A474) was used for load case calculations, modulus of elasticity calculations and evaluation of the pit walls.

IMAGES 3D Rev 2.0 was used for analysis of the pit walls.

REFERENCES:

1. SDC 4.1 REV 11
2. UBC 1994
3. ASCE 7-93, Minimum Design Loads for Buildings and Other Structures
4. ACI 318-94
5. ACI 349-94
6. ASCE 4-86, Seismic Analysis of Safety Related Nuclear Structures
7. Foundation Engineering Handbook, Yang and Fang, 2nd Edition
8. Reinforced Concrete Design, Wang and Salmon, 2nd Edition
9. U.S. Nuclear Regulatory Commission NUREG-0800, 3.7.2-Seismic System Analysis
10. UCRL-15910
11. Soils Report W320, Shannon and Wilson, April 1994
12. H-2-64322, SH-1 FDR (FC) & (Fg).

ASSUMPTIONS:

1. Due to relatively small overall dimensions of the pit, and a thick (12") reinforced concrete walls, rigid response of the pit is assumed. As a consequence the ground acceleration is used as a seismic input.

CONCLUSION: FLUID PRESSURE NOT ADDRESSED SINCE WATER TABLE DEPTH AT 200 FT. BELOW THE GROUND SURFACE. (REF. 11, pg. 11)
See page 12 and 15 of this calculation.

DESIGN ANALYSIS

Calc. No. W320-24-016
Revision 0
Page No. 2 of 17

Client: WHC
Subject: Sluice Pit AY-02E Analysis
Location: 241-AY-102 Tank

WO/Job No. W-320 /ER4319
Date: 02/22/95 By: JW FUNK
Checked: 3/8/95 By: JRB
Revised: By:

***** An evaluation will be performed on the south wall of the sluice pit. This wall was determined to be the most critical wall of the sluice and pump pits. This was determined by pipe loads being greatest on this pit wall (SEE pg 5 this calc). *****

The existing walls are Safety Class 1 therefore this analysis on the walls must be equivalent. An equivalent static evaluation will be used in lieu of a dynamic analysis for a simplified but conservative approach. For the equivalent static force method use a 1.5 coefficient for the seismic loads (REF 9). This factor will be applied in the static analysis (ATTACHMENT 2) when load factors are used to combine plate stresses. The factor is applied there to increase all seismic forces by 1.5 coefficient. Since the concrete pit is a rigid unit, the peak ground response of 0.2g will be used for the pit. Since the cover blocks are not rigidly attached to the pit, the peak response spectra acceleration at 10% damping was used.

SLUICE PIT SOUTH WALL ANALYSIS

HNF-2466, Rev. 0
Page B-13

0.2g

DESIGN ANALYSIS

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Revised: By:

Location: 241-AY-102 Tank

LOAD CASE 1 -Self Weight

For calculations use lateral acceleration of 0.2g. (REF 1)

LOAD CASE 2 -Seismic Soil Pressure (REF 6, pg.38)

$$\alpha_H := 0.2 \quad C_v := 0.87 \quad \text{For Poisson's ratio} = 0.2$$

$$H := 8.00\text{-ft} \quad \gamma := 132 \frac{\text{lb}}{\text{ft}^3} \quad (\text{REF 11, TBL 2})$$

$$F_r := \alpha_H C_v \gamma H^2$$

$$F_r = 1469.95 \frac{\text{lb}}{\text{ft}}$$

$$F_r = \frac{p_e \cdot H}{2} \quad p_e := \frac{2 \cdot F_r}{H} \quad p_e = 2.55 \cdot \text{psi}$$

LOAD CASE 3 -Lateral Earth Pressure (REF 7, pg. 452)

$$K_a := 0.22 \quad (\text{REF 11, TBL 2})$$

$$p := K_a \cdot \gamma \cdot H \quad p = 1.61 \cdot \text{psi}$$

LOAD CASE 4 -Seismic Cover Block Load

Weight of Cover Blocks (See pg 16 and 17)

$$z := 0.33$$

Response Spectra Acceleration (REF 1, pg. 23)
@ 10% Damping (REF 10, pg 4-13)

$$w_1 := 10635 \text{ lbs} \quad w_2 := 7825 \text{ lbs}$$

$$F_{H1} := z \cdot w_1 \quad F_{H1} = 3509.55 \text{ lbs} \quad F_{H2} := z \cdot w_2 \quad F_{H2} = 2582.25 \text{ lbs}$$

$$F_{V1} := \frac{2}{3} \cdot F_{H1} \quad F_{V1} = 2339.7 \text{ lbs} \quad F_{V2} := \frac{2}{3} \cdot F_{H2} \quad F_{V2} = 1721.5 \text{ lbs}$$

DESIGN ANALYSIS

Calc. No. W320-24-016
Revision 0
Page No. 4 of 17

Client: WHC
Subject: Sluice Pit AY-02E Analysis

Location: 241-AY-102 Tank

WO/Job No. W-320 /ER4319

Date: 02/22/95

By: JW FUNK

Checked: 3/8/95

By: JRB / Rm

Revised:

By:

3/30/95

Horizontal seismic loads from the cover blocks will be disregarded since the combination of the self weight, seismic soil pressure, lateral earth pressure, overburden pressure and pipe and jumper loads are more conservative than the combination of the reactive earth pressure and the horizontal cover block loads during a seismic event. The wall acts as a plate fixed on three sides under soil and pipe loads which is also more conservative than the wall acting as a plate fixed on three sides and pinned on the other side under the cover block loads and reactive earth pressure.

Assume that the vertical cover block loads will act as three concentrated loads on the wall. The load will act half at each end of the cover block.

LOAD CASE 5 - Overburden Pressure

$$\text{Surcharge: } f = 200 \frac{\text{psf}}{\text{ft depth}} \quad (\text{REF 2, TBL 29-B})$$

$$f = 1.389 \frac{\text{psi}}{\text{in depth}}$$

LOAD CASE 6 - Operating Pipe and Jumper Loads See pg 5.

LOAD CASE 7 - Seismic Pipe and Jumper Loads See pg 5.

LOAD CASE 8 - Cover Block Dead Load See pg 16 and 17.

$$\text{Load at node 109: } \frac{10634.38}{4} = 2658.59 \quad \text{Say 2660 lbs}$$

$$\text{Load at node 115: } \frac{10634.38}{4} + \frac{7824.48}{4} = 4614.72 \quad \text{Say 4620 lbs}$$

$$\text{Load at node 120: } \frac{7824.48}{4} = 1956.12 \quad \text{Say 1960 lbs}$$

FINAL STATEMENT FOR LOAD CASES 3 & 5:

Using the value of active pressure ($K_a = 0.22$) based on reference 11 to determine the lateral earth pressure on the pit wall versus values in SDC 4.1 R11 is offset by load case 5 which assumes a UBC maximum value of 200 psf/ft of depth for lateral surcharge effects on pit wall. In fact, the allowable uniform live loading on AY -102 is limited to a maximum of $q = 40$ psf, which would add ($K_a \cdot q$) additional pressure in the active case on the pit wall. The combined effect of load case 3 and 5 as defined is approximately equivalent to specifying a K_o value of 0.7 for the static case combined with allowable surcharge at Ay-Farm.

DESIGN ANALYSIS

Calc. No. W320-24-016

Revision No.: 2

Page No. 5 of

Client NHC
Subject Sluice Pit AY-02E Analysis

WO/Job No.
Date: 3/14/97
Checked:
Revised:

W320/ER4319
By: M.B. Lasota
By: R.W. Davidson
By:

Location 241-AY-102 Tank

U-2 OPERATING LOADS 241-AY-02E Sluice Pit

	F _x lbf	F _y lbf	F _z lbf	M _x in-lbf	M _y in-lbf	M _z in-lbf
Pipe rev. 0	499	77	859	1284	28656	60
Pipe rev. 1	67	633	964	972	33396	36
Encasement	0	0	2782	0	0	0
Jumper rev. 0	266	852	208	6156	972	4620
Jumper rev. 1	116	1222	300	6912	1164	1308
Jumper rev. 2	125	865	157	5388	756	4644
Total rev. 0	765	929	3849	7440	29628	4680
Total rev. 1	183	1855	4046	7884	34560	1344
Total rev. 2	192	1496	3903	6360	34152	4680
Total rev1/rev0	0.24	2.00	1.05	1.06	1.17	0.29
Total rev2/rev0	0.25	1.61	1.01	0.85	1.15	1.00

U-2 SEISMIC LOADS 241-AY-02E Sluice Pit

	F _x lbf	F _y lbf	F _z lbf	M _x in-lbf	M _y in-lbf	M _z in-lbf
Encasement	0	0	2938	0	0	0
Jumper rev. 0	756	973	1249	6072	7320	5556
Jumper rev. 1	102	373	148	2280	1308	1032
Jumper rev. 2	102	86	125	1128	636	816
Total rev. 0	756	973	4187	6072	7320	5556
Total IMAGES	765	929	3849	7440	29630	4680
Total rev. 1	102	373	3086	2280	1308	1032
Total rev. 2	102	86	3063	1128	636	816
Total rev1/IMAGES	0.13	0.40	0.80	0.31	0.04	0.22
Total rev2/IMAGES	0.13	0.09	0.80	0.15	0.02	0.17

DESIGN ANALYSIS

Client: WHC
Subject: Sluice Pit AY-02E Analysis

Location: 241-AY-102 Tank

WO/Job No. W-320/ER4319
Date: 02/22/95 By: JW FUNK
Checked: 3/9/95 By: gRB
Revised: By:

MODULUS OF ELASTICITY FOR CRACKED TRANSFORMED SECTION ($h=7.63'$)

From dwg H-2-64322, sht 1, rev 3, $f_c' = 3000 \text{ psi}$, therefore use 2800 psi conservatively.

$$A_{s4} := 0.2 \text{ in}^2 \quad A_{s5} := 0.31 \text{ in}^2$$

$$E_s := 29 \cdot 10^6 \quad A_{sav} := \frac{A_{s4} + A_{s5}}{2} \quad A_{sav} = 0.26 \text{ in}^2 \quad f_c := 2800 \text{ psi}$$

$$E_c := 57000 \cdot \sqrt{f_c} \quad E_c = 3.02 \cdot 10^6 \text{ psi}$$

$$n := \frac{E_s}{E_c} \quad n = 9.61$$

$$A_{stp} := (n - 1) \cdot A_{sav}$$

$$A_{sbt} := (n) \cdot A_{sav}$$

$$A_{stp} = 2.2 \text{ in}^2$$

$$A_{sbt} = 2.45 \text{ in}^2$$

Locate Neutral Axis

$$12 \cdot \frac{x^2}{2} + 2.2 \cdot (x - 1.75) = 2.45(5.88 - x)$$

$$6 \cdot x^2 + 4.65 \cdot x - 18.26 = 0 \quad \text{Guess} \quad x := 2$$

$$\text{root}[(6 \cdot x^2 + 4.65 \cdot x) - 18.26, x] = 1.4 \text{ in}$$

DESIGN ANALYSIS

Client: WHC
Subject: Sluice Pit AY-02E Analysis

Location: 241-AY-102 Tank

WO/Job No. W-320 /ER4319
Date: 02/22/95 By: JW FUNK
Checked: 3/8/95 By: *ARB*
Revised: By:

Determine Moment of Inertia

$$I_e = \frac{b \cdot h^3}{3} + A \cdot d^2 \quad t := 7.63 \text{ in} \quad (\text{Wall Thickness})$$

$$I_e := \frac{1}{3} \cdot 12 \cdot 1.4^3 + 2.2 \cdot (1.4 - 1.75)^2 + 2.45 \cdot (5.88 - 1.4)^2$$

$$I_e = 60.42 \text{ in}^4$$

$$E_c I_e = E_{eq} I_s \quad I_s = \frac{b \cdot h^3}{12} \quad b = 12 \quad I_s = t^3$$

$$E_{eq} := \frac{E_c I_e}{t^3}$$

$$E_{eq} = 4.1 \cdot 10^5 \text{ psi} \quad \text{for } h = 7.63''$$

MODULUS OF ELASTICITY FOR CRACKED TRANSFORMED SECTION (h=12")

Steel area is same as 7.63" wall

Locate Neutral Axis

$$\frac{12 \cdot x^2}{2} + 2.2 \cdot (x - 1.75) = 2.45 \cdot (10.25 - x)$$

$$6 \cdot x^2 + 4.65 \cdot x - 28.96 = 0$$

$$\text{root}[(6 \cdot x^2 + 4.65 \cdot x) - 28.96, x] = 1.84 \text{ in}$$

Determine Moment of Inertia

$$I_e = \frac{b \cdot h^3}{3} + A \cdot d^2 \quad t_2 := 12 \text{ in} \quad (\text{Wall Thickness})$$

$$I_e := \frac{1}{3} \cdot 12 \cdot 1.84^3 + 2.2 \cdot (1.84 - 1.75)^2 + 2.45 \cdot (10.25 - 1.84)^2$$

$$I_e = 198.22 \text{ in}^4$$

$$E_{eq} := \frac{E_c I_e}{t_2^3}$$

$$E_{eq} = 3.46 \cdot 10^5 \text{ psi} \quad \text{for } h = 12.0''$$

DESIGN ANALYSIS

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WO/Job No. W-320 /ER4319
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Checked: 3/8/95 By: JRB
Revised: By:

COMPUTER ANALYSIS

An equivalent static analysis will be performed on the critical sluice pit wall using the following load combinations:

1. $U = 1.4 D + 1.7 H + 1.7 R_o$ (REF 5, pg 31)
2. $U = D + H + R_o + E_{ss}$ (REF 5, pg 31)

*****The loads that were used were the transfer pipe load at nozzle U-2 and the jumper load at nozzle U-2. The pipe and jumper loads acting on the wall were broken up into two classifications operating(thermal) and seismic loads(See pg 5). The operating load component acts with the lateral earth pressure, overburden pressure and cover block loads in a static case. The seismic component acts with the amplified self weight, seismic soil pressure, lateral earth pressure, operating reactions, cover block loads and overburden pressure in a seismic case. The two cases were analyzed on IMAGES 3D Rev 2.0 (ATTACHMENT 2 and ATTACHMENT 3) and the seismic case generated the highest stresses in the wall and will be analyzed in this calculation.*****

DESIGN ANALYSIS

Client: WHC
Subject: Sluice Pit AY-02E Analysis
Location: 241-AY -102 Tank

WO/Job No.: W-320/ER4319
Date: 02/22/95 By: JW FUNK
Checked: By: R.W. Davidson
Revised: 3/17/97 By: M.B. Lasota *[Signature]*

EVALUATION OF STRESS IN WALL (h=7.63")

$$\sigma_x := 199.8 \text{ psi} \quad \text{Plate \# 110 from ATTACH 2, pg 64.}$$

$$\sigma_y := 61.4 \text{ psi} \quad \text{Plate \# 110 from ATTACH 2, pg 64.}$$

$$\tau_{xz} := 50.3 \text{ psi} \quad \text{Plate \# 110 from ATTACH 2, pg 64.}$$

Bending moments for 1' wide strip of wall.

$$b := 12 \text{ in} \quad h := 7.63 \text{ in}$$

$$S_x := \frac{b \cdot h^2}{6} \quad S_x = 116.43 \cdot \text{in}^3 \quad S_y := S_x \quad S_y = 116.43 \cdot \text{in}^3$$

$$M_x := \sigma_x \cdot S_x \quad M_x = 23263.47 \cdot \text{in} \cdot \text{lb} \quad M_y := \sigma_y \cdot S_y \quad M_y = 7149.04 \cdot \text{in} \cdot \text{lb}$$

$$V := \tau_{xz} \cdot b \cdot h \quad V = 4605.47 \cdot \text{lb}$$

The wall was analyzed utilizing IMAGES 3D program. Both runs i.e. NY36220 - Seismic Analysis of Pit Wall and ON43317 - Static Analysis of Pit Wall are based on linear stress-strain dependence hence analyses are linear-elastic. Stresses in the wall are therefore proportional to the load magnitude. As a result of the revision 2, loads resulting in plate Membrane stress and Bending stress increased by a maximum factor of 1.61 (see page 5 of the calculations - Fy component) whereas the loads resulting in shear stress increased by a maximum factor of 1.153. The next step in simplified evaluation is to increase ultimate loads by respective factors and compare them to section capacity.

Check Horizontal Reinforcement

$$M_u := M_x \quad M_u = 1.94 \cdot \text{ft} \cdot \text{kips} \quad f_c := 2800 \text{ psi} \quad f_y := 40000 \text{ psi}$$

$$M_{uadj} := 1.61 \cdot M_u \quad M_{uadj} = 3.12 \cdot \text{ft} \cdot \text{kips}$$

From dwg H-2-64322, sht 1, rev 3, $f_y = 40000 \text{ psi}$.

$$d := h - 1.5 \text{ in} - 0.5 \text{ in} \cdot \frac{1}{2} \quad d = 5.88 \text{ in} \quad \beta_1 := 0.85$$

$$A_s := 0.31 \cdot \text{in}^2 \quad a := \frac{A_s \cdot f_y}{0.85 \cdot f_c \cdot b} \quad a = 0.43 \text{ in} \quad \phi := 0.9$$

$$M_{max} := \phi A_s f_y \left(d - \frac{a}{2} \right) \quad M_{max} = 5.27 \cdot \text{ft} \cdot \text{kips} > M_{uadj} = 3.12 \cdot \text{ft} \cdot \text{kips} \quad \therefore \text{OK}$$

Reinforcement is adequate in one face therefore a doubly reinforced analysis is not necessary.

DESIGN ANALYSIS

Client: WHC
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WO/Job No.:
Date: 02/22/95
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Revised: 3/17/97

W-320/ER4319
By: JW FUNK
By: R.W. Davidson
By: M.B. Lasota *Mpl*

Location: 241-AY -102 Tank

Check Vertical Reinforcement

$$M_u := M_y \quad M_u = 0.6 \cdot \text{ft} \cdot \text{kips} \quad f_c = 2800 \cdot \text{psi} \quad f_y = 40000 \cdot \text{psi}$$

$$M_{uadj} := 1.61 \cdot M_u \quad M_{uadj} = 0.96 \cdot \text{ft} \cdot \text{kips}$$

From dwg H-2-64322, sht 1, rev 3, $f_y = 40000 \text{ psi}$.

$$d := h - 1.5 \cdot \text{in} - 0.5 \cdot \text{in} \cdot \frac{1}{2} \quad d = 5.88 \cdot \text{in} \quad \beta_1 := 0.85$$

$$A_s := 0.20 \cdot \text{in}^2 \quad a := \frac{A_s \cdot f_y}{0.85 \cdot f_c \cdot b} \quad a = 0.28 \cdot \text{in} \quad \phi := 0.9$$

$$M_{max} := \phi A_s f_y \left(d - \frac{a}{2} \right) \quad M_{max} = 3.44 \cdot \text{ft} \cdot \text{kips} > M_{uadj} = 0.96 \cdot \text{ft} \cdot \text{kips} \quad \therefore \text{OK}$$

Reinforcement is adequate in one face therefore a doubly reinforced analysis is not necessary.

Check Wall Shear

$$b = 12 \cdot \text{in} \quad d = 5.88 \cdot \text{in} \quad f_c = 2800 \cdot \text{psi}$$

$$V_{adj} := 1.153 \cdot V \quad V_{adj} = 5310.1 \cdot \text{lb} \cdot \text{ft}$$

$$V_c := 0.85 \cdot 2 \cdot \sqrt{f_c \cdot \text{psi} \cdot b \cdot d} \quad V_c = 6347.26 \cdot \text{lb} \cdot \text{ft} > V_{adj} = 5310.1 \cdot \text{lb} \cdot \text{ft} \quad \therefore \text{OK}$$

EVALUATION OF STRESS IN WALL (h=12")

$$\sigma_x := 252.0 \cdot \text{psi} \quad \text{Plate \# 99 from ATTACH 2, pg 64.}$$

$$\sigma_y := 78.2 \cdot \text{psi} \quad \text{Plate \# 6 from ATTACH 2, pg 57.}$$

$$\tau_{xz} := 68.0 \cdot \text{psi} \quad \text{Plate \# 99 from ATTACH 2, pg 64.}$$

DESIGN ANALYSIS

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W-320/ER4319
By: JW FUNK
By: R.W. Davidson
By: M.B. Lasota

Location: 241-AY -102 Tank

Bending moments for 1' wide strip of wall.

$$b := 12 \cdot \text{in} \quad h := 12 \cdot \text{in}$$

$$S_x := \frac{b \cdot h^2}{6} \quad S_x = 288 \cdot \text{in}^3 \quad S_y := S_x \quad S_y = 288 \cdot \text{in}^3$$

$$M_x := \sigma_x \cdot S_x \quad M_x = 72576 \cdot \text{in} \cdot \text{lb} \quad M_y := \sigma_y \cdot S_y \quad M_y = 22521.6 \cdot \text{in} \cdot \text{lb}$$

$$V := \tau_{xz} \cdot b \cdot h \quad V = 9792 \cdot \text{lb}$$

Check Horizontal Reinforcement.

$$M_u := M_x \quad M_u = 6.05 \cdot \text{ft} \cdot \text{kips} \quad f_c = 2800 \cdot \text{psi} \quad f_y = 40000 \cdot \text{psi}$$

$$M_{uadj} := 1.61 \cdot M_u \quad M_{uadj} = 9.74 \cdot \text{ft} \cdot \text{kips}$$

From dwg H-2-64322, sht 1, rev 3, $f_y = 40000 \text{ psi}$.

$$d := h - 1.5 \cdot \text{in} - 0.5 \cdot \text{in} \cdot \frac{1}{2} \quad d = 10.25 \cdot \text{in} \quad \beta_1 = 0.85$$

$$A_s := 0.31 \cdot \text{in}^2 \quad a := \frac{A_s \cdot f_y}{0.85 \cdot f_c \cdot b} \quad a = 0.43 \cdot \text{in} \quad \phi = 0.9$$

$$M_{max} := \phi \cdot A_s \cdot f_y \cdot \left(d - \frac{a}{2} \right) \quad M_{max} = 9.33 \cdot \text{ft} \cdot \text{kips}$$

$$\frac{M_{uadj}}{M_{max}} = 1.04$$

The adjusted ultimate moment is about 4% higher than the maximum permissible moment at the section, however the adjusted moment was obtained by increase of the all loads uniformly by the factor of 1.61. Exclusive of the increase are: Self Weight, Seismic Soil Pressure, Lateral Earth Pressure, Seismic Cover Block Load and Overburden Pressure, which are a significant contributors to the Ultimate Moment. Based on the above and the fact that the compression reinforcement has been ignored the Wall is capable of safely resisting Design Loads.

Check Vertical Reinforcement

$$M_u := M_y \quad M_u = 1.88 \cdot \text{ft} \cdot \text{kips} \quad f_c = 2800 \cdot \text{psi} \quad f_y = 40000 \cdot \text{psi}$$

$$M_{uadj} := 1.61 \cdot M_u \quad M_{uadj} = 3.02 \cdot \text{ft} \cdot \text{kips}$$

DESIGN ANALYSIS

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W-320/ER4319
By: JW FUNK
By: R.W. Davidson
By: M.B. Lasota *guc*

Location: 241-AY -102 Tank

From dwg H-2-64322, sht 1, rev 3, $f_y = 40000$ psi.

$$d := h - 1.5 \cdot in - 0.5 \cdot in - \frac{1}{2} \quad d = 10.25 \cdot in \quad \beta_1 = 0.85$$

$$A_s := 0.2 \cdot in^2 \quad a := \frac{A_s \cdot f_y}{0.85 \cdot f_c \cdot b} \quad a = 0.28 \cdot in$$

$$M_{max} := \phi A_s f_y \left(d - \frac{a}{2} \right) \quad M_{max} = 6.07 \cdot ft \cdot kips > M_{adj} = 3.02 \cdot ft \cdot kips \quad \therefore OK$$

Reinforcement is adequate in one face therefore a doubly reinforced analysis is not necessary.

Check Wall Shear

$$b := 12 \cdot in \quad d := 12 \cdot in \quad f_c = 2800 \cdot psi$$

$$V_{adj} := 1.153 \cdot V \quad V_{adj} = 11290 \cdot lbf$$

$$V_c := 0.85 \cdot 2 \cdot \sqrt{f_c \cdot psi} \cdot b \cdot d \quad V_c = 12954 \cdot lbf > V_{adj} = 11290 \cdot lbf \quad \therefore OK$$

Conclusion: The walls of the Sluicing Pit are capable to carry all additional loads from the piping and jumper loads when subjected to a earthquake.

DESIGN ANALYSIS

Client: WHC

Subject: Sluice Pit AY-02E Analysis

Location: 241-AY -102 Tank

WO/Job No. W-320/ER4319

Date: 8/1/95

By: J.R. Booth

Checked: 8/1/95

By: R. D. Dorman

Revised:

By:

Revision 1 Objective: The purpose of this revision is to perform an analysis of the new concrete cover blocks required as a result of the size of the Booster Pump. This portion of the calculation supports the Cover Block drawings shown on H-2-818454, Sh. 2-4.

DESIGN LOADS

Dead Load:

$$w_d := (4.5\text{-ft} \cdot 2.6\text{-ft}) \cdot 150 \frac{\text{lb}}{\text{ft}^3}$$

Assumed weight per lineal foot of cover block.
(Conservative)

$$w_d = 1.76 \frac{\text{kip}}{\text{ft}}$$

Live Load:

$$w_l := (4.5\text{-ft}) \cdot 50 \frac{\text{lb}}{\text{ft}^2}$$

$$w_l = 0.23 \frac{\text{kip}}{\text{ft}}$$

Seismic Load:

An equivalent static evaluation will be used in lieu of a dynamic analysis for a simplified but conservative approach. The lateral cover block load must be multiplied by 1.5 per reference 9. In the equivalent static evaluation the fundamental frequency is not calculated but is assumed to be such that the response acceleration is the peak of the response spectrum.

$$z := 0.33$$

Response Spectra Acceleration (REF 1, pg 35)
@ 10% Damping (Conservative)

$$F := 1.5 \cdot z \cdot w_d$$

$$F = 0.87 \frac{\text{kip}}{\text{ft}}$$

The vertical seismic load is 2/3 of the horizontal load(REF 1).

$$w_e := \frac{2}{3} F$$

$$w_e = 0.58 \frac{\text{kip}}{\text{ft}}$$

Environmental Loads: Ashfall loading and snow loading will be combined as stated in SDC 4.1, Rev. 11, page 8 and substituted for tornado loads as stated in the SDC and ACI 349, sec 9.2.1, load case 5. By inspection, a wind blown object as described in SDC 4.1 will not penetrate the cover block.

Ashfall loading = 24 psf

Snow loading = 20 psf

$$w_a := \left[(24 + 20) \frac{\text{lb}}{\text{ft}^2} \right] \cdot 4.5\text{-ft}$$

HNF-2466, Rev.0
Page B-24

$$w_a = 0.2 \frac{\text{kip}}{\text{ft}}$$

Combined distributed load from ashfall and snow.

DESIGN ANALYSIS

Client: WHC

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Location: 241-AY-102 Tank

WO/Job No. W-320/ER4319

Date: 8/1/95

By: J.R. Booth

Checked: *gaps*By: *J.R. Booth*

Revised:

By:

Combined Loading: The following load cases were determined to be valid load combinations from ACI 349, sec 9.2.1 which will be compared to determine the highest Ultimate Moment.

L := 8.5-ft

$$M_{u1} := 1.4 \cdot \left(\frac{w_d L^2}{8} \right) + 1.7 \cdot \left(\frac{w_l L^2}{8} \right)$$

Controls

$$M_{u1} = 25.64 \cdot \text{kip} \cdot \text{ft}$$

$$M_{u2} := \frac{w_d L^2}{8} + \frac{w_l L^2}{8} + \frac{w_e L^2}{8}$$

$$M_{u2} = 23.11 \cdot \text{kip} \cdot \text{ft}$$

$$M_{u3} := \frac{w_d L^2}{8} + \frac{w_l L^2}{8} + \frac{w_a L^2}{8}$$

$$M_{u3} = 19.67 \cdot \text{kip} \cdot \text{ft}$$

$$M_u := \frac{M_{u1}}{\text{kip} \cdot \text{ft}}$$

Unitless numbers required for using ACI SP-17 Design Handbook.

$$M_u = 25.64 \quad \text{kip} \cdot \text{ft}$$

Cover block will be designed as a simply supported beam supported only on two sides.

Determine required flexural reinforcement:

$$f_c := 4000 \quad \text{psi} \quad f_y := 60000 \quad \text{psi}$$

$$h := 15.5 \quad \text{in} \quad d := h - (1.5 + 0.375)$$

Assume #6 bars and take depth of beam at blockout.
See H-2-818454, sh. 4.

$$d = 13.63 \quad \text{in}$$

$$b := 4.5 \cdot 12$$

$$b = 54 \quad \text{in}$$

Width of beam

$$F := \frac{b \cdot d^2}{12000}$$

$$F = 0.84$$

$$K_n := \frac{M_u}{F}$$

$$K_n = 30.7$$

$$\text{Use } K_n := 175$$

$$a_n := 4.37$$

$$A_s := \frac{M_u}{d \cdot a_n}$$

$$A_s = 0.43$$

DESIGN ANALYSIS

Calc. No. W320-24-016

Revision **12**

Page No. 15 of 17

Client: WHC
Subject: Cover Block Design

Location: 241-AY-102 Tank

WO/Job No. W-320/ER4319

Date: 8/1/95

By: J.R. Booth

Checked: 8/1/95

By: *[Signature]*

Revised: 3/1/96

By: *[Signature]*

$$A_{smin} := .0033 \cdot b \cdot d$$

$$A_{smin} = 2.43 \text{ in}^2$$

Controls. Use 8-#5 bars.

$$A_s = 2.45 \text{ in}^2$$

Area of flexural reinforcement of 8-#5 bars.

Determine reinforcing requirements for shear.

$$V_u := 1.4 \cdot \frac{w_d \cdot L}{2} + 1.7 \cdot \frac{w_l \cdot L}{2}$$

$$V_u = 12.07 \text{ kip}$$

Allowable Shear:

$$V_c := 2 \cdot \sqrt{f_c} \cdot b \cdot d$$

$$V_c = 93065.83 \text{ lbs}$$

$$\phi := 0.85$$

$$V_n := \frac{\phi \cdot V_c}{1000}$$

$$V_n = 79.11 \text{ kip}$$

$$0.5 \cdot V_n = 39.55$$

Since $V_u < 0.5 \cdot V_n$ Design for shear reinforcement not required per ACI 349, sec. 11.5.5.1.

Development Length: Development length for number 5 bars in tension is 12 inches. Bars will be extended at least 12 inches past critical sections over the blockout on the key block of pit AY-02E.

Conclusion: Bar sizes and spacing will be similar for both new cover blocks at the Sluice Pit AY-02E since the design presented here represents the worst case of the two cover blocks. Reference H-2-818454, Sh. 2,3,4, &5.

See Calculation W320-24-032 for re-analysis of SC 3 cover blocks for Sluice Pit AY-02E based on top hat modifications provided in ECN W-320-173. Calculation W320-24-016, Rev 0 for Sluice Pit AY-02E adequately envelopes changes provided in ECN W-320-173. The final piping/jumper loads provided in Attachment 6, Page 3a & 4a are also adequately enveloped by Rev. 0 of this analysis. No further analysis is required.

2
WJB
4/2/96
12
PJO
10/2/96

DESIGN ANALYSIS

Client: WHC

Subject: Sluice Pit AY-02E Analysis

Location: 241-AY-102 Tank

WO/Job No. W-320/ER4319

Date: 8/1/95

Checked: *8/1/95*

Revised:

By: J.F. Booth

By:

By:

WEIGHT OF COVER BLOCKS

KEY BLOCK

SAY CONCRETE WEIGHS 150 LBS PER CUBIC FOOT.

$$A_1 := (5.9\text{ ft}) \cdot (0.6\text{ ft}) \cdot (8.5\text{ ft})$$

$$A_2 := (4.4\text{ ft}) \cdot (2\text{ ft}) \cdot (7.5\text{ ft})$$

$$A_1 = 30.09 \cdot \text{ft}^3$$

$$A_2 = 66 \cdot \text{ft}^3$$

$$WT_1 := A_1 \cdot 150 \frac{\text{lb}}{\text{ft}^3}$$

$$WT_2 := A_2 \cdot 150 \frac{\text{lb}}{\text{ft}^3}$$

$$WT_1 = 4513.5 \cdot \text{lb}$$

$$WT_2 = 9900 \cdot \text{lb}$$

$$WT_{\text{key}} := WT_1 + WT_2$$

$$WT_{\text{key}} = 14413.5 \cdot \text{lb}$$

DESIGN ANALYSIS

Client: WHC
 Subject: Sluice Pit Ay-02E Analysis
 Location: 241-AY-102 Tank

WO/Job No. W-320/ER4319

Date: 8/1/95

Checked: *8/1/95*

Revised:

Calc. No. W320-24-016

Revision 1

Page No. 17 of 17

By: J.R. Rooth

By:

By:

BLOCK 2

$$A_1 := (4.6\text{-ft}) \cdot (0.6\text{-ft}) \cdot (8.5\text{-ft})$$

$$A_1 = 23.46 \cdot \text{ft}^3$$

$$WT_1 := A_1 \cdot 150 \cdot \frac{\text{lb}}{\text{ft}^3}$$

$$WT_1 = 3519 \cdot \text{lb}$$

$$A_2 := (2\text{-ft}) \cdot (4\text{-ft}) \cdot (6.5\text{-ft})$$

$$A_2 = 52 \cdot \text{ft}^3$$

$$WT_2 := A_2 \cdot 150 \cdot \frac{\text{lb}}{\text{ft}^3}$$

$$WT_2 = 7800 \cdot \text{lb}$$

$$WT_{\text{block}} := WT_1 + WT_2$$

$$WT_{\text{block}} = 11319 \cdot \text{lb}$$

Client: WHC

Subject: Sluice Pit AY-02E Analysis

Location: 241-AY-102 Tank

WO/Job No. W-320 /ER4319

Date: 02/22/95

By: JW FUNK

Checked: 3/4/95

By: JRB

Revised:

By:

ATTACHMENT 1

Pipe and Jumper Loads

2 pgs including this pg

ICF KAISER
HANFORD COMPANY

Calc. No. W-320-27-029

Revision No. 0
 Page No. 2 of 2

DESIGN ANALYSIS

Client WESTINGHOUSE HANFORD CO.
 Subject AY FARM JUMPER STRESS ANALYSIS
 PROJECT W-320 WASTE RETRIEVAL for TANK 241-C-106
 Location C TANK FARM 200 EAST AREA

WO/Job No. ER4319
 Date 2/23/95
 Checked
 Revised

Filename U9-A.xls
 By D. L. STONE
 By M. M. AHMED
 By

ANCHOR LOADS AT PIT WALLS

Nozzle: U9 U-2 Location: 241-AY-02E SluicePit	Pipe Loads	Pipe Length (#2) (in.)	Friction Forces (#3) (lb/in)	Fx (lbs)	Fy (lbs)	Fz (lbs)	Mx (in-lb)	My (in-lb)	Mz (in-lb)
(Outside Pit)	Inner Pipe								
Identification: W-320	(Seismic) (*1)			0	0	0	0	0	0
Supernate Transfer Line Nozzle	(Thermal) (*1)			-499	-77	859	-1284	28656	-60
Node #: A168	Encasement								
Orientation:	(Seismic) (*4)	L = 120	F1 = 24.48			2938			
	(Thermal) (*5)	L = 120	F2 = 23.18			2782			
	Absolute Sum			6218	77	6578	1284	28656	60

(Inside Pit)	Jumper Loads								
Identification: Jumper U9-A (U-2)	(Seismic) (*6)			756	973	1249	6072	7320	5556
Dwg. H-2-818503	(Thermal) (*6)			266	-852	208	-6156	-972	4620
Node #: B11									
Orientation:	Absolute Sum			1022	1825	1457	12228	8292	10176

- (*1) (Ref. Autopipe Calc. # W-320-27-013)
 (*2) Length of pipe immediately preceding anchor. (Ref. DWG # ES-320-M07)
 (*3) For underground pipe. (Ref. STAB Calc. # W-320-27-014)
 (*4) $LOAD = F1 \times L$
 (*5) $LOAD = F2 \times L$
 (*6) (Ref. Autopipe Calc. # W-320-27-029)

Filename: A02E-JS

DESIGN ANALYSIS

Calc. No. W320-24-016
Revision 0
Page No. 1 of 71

Client: WHC
Subject: Sluice Pit AY-02E Analysis

WO/Job No. W-320 /ER4319
Date: 02/22/95 By: JW FUNK
Checked: By:
Revised: By:

Location: 241-AY-102 Tank

ATTACHMENT 2

Seismic Analysis of Pit Wall

71 pgs including this pg

IMAGES-3D

Ver. 2.0

Geometry Plot

Wireframe Plot

3/ 8/95

7:47:10

Attach. 2
W320-24-016
Pg. 2 of 71

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MATERIAL PROPERTIES

Material No	Modulus of Elasticity	Weight Density	Coeff of Thermal Exp.	Poisson's Ratio	Shear Web Modulus
1	3.46000E+05	8.68000E-02	5.50000E-06	2.50E-01	0.00000E+00
2	4.10000E+05	8.68000E-02	5.50000E-06	2.50E-01	0.00000E+00

NODE COORDINATES

Node	X-Coord.	Y-Coord.	Z-Coord.
1	6.00000E+00	0.00000E+00	0.00000E+00
2	1.80000E+01	0.00000E+00	0.00000E+00
3	2.80000E+01	0.00000E+00	0.00000E+00
4	3.80000E+01	0.00000E+00	0.00000E+00
5	4.80000E+01	0.00000E+00	0.00000E+00
6	5.80000E+01	0.00000E+00	0.00000E+00
7	6.80000E+01	0.00000E+00	0.00000E+00
8	7.70000E+01	0.00000E+00	0.00000E+00
9	8.60000E+01	0.00000E+00	0.00000E+00
10	9.40000E+01	0.00000E+00	0.00000E+00
11	1.01000E+02	0.00000E+00	0.00000E+00
12	1.08000E+02	0.00000E+00	0.00000E+00
13	6.00000E+00	1.00000E+01	0.00000E+00
14	1.80000E+01	1.00000E+01	0.00000E+00
15	2.80000E+01	1.00000E+01	0.00000E+00
16	3.80000E+01	1.00000E+01	0.00000E+00
17	4.80000E+01	1.00000E+01	0.00000E+00
18	5.80000E+01	1.00000E+01	0.00000E+00
19	6.80000E+01	1.00000E+01	0.00000E+00
20	7.70000E+01	1.00000E+01	0.00000E+00
21	8.60000E+01	1.00000E+01	0.00000E+00
22	9.40000E+01	1.00000E+01	0.00000E+00
23	1.01000E+02	1.00000E+01	0.00000E+00
24	1.08000E+02	1.00000E+01	0.00000E+00
25	6.00000E+00	2.00000E+01	0.00000E+00
26	1.80000E+01	2.00000E+01	0.00000E+00
27	2.80000E+01	2.00000E+01	0.00000E+00
28	3.80000E+01	2.00000E+01	0.00000E+00
29	4.80000E+01	2.00000E+01	0.00000E+00

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Node	X-Coord.	Y-Coord.	Z-Coord.
30	5.80000E+01	2.00000E+01	0.00000E+00
31	6.80000E+01	2.00000E+01	0.00000E+00
32	7.70000E+01	2.00000E+01	0.00000E+00
33	8.60000E+01	2.00000E+01	0.00000E+00
34	9.40000E+01	2.00000E+01	0.00000E+00
35	1.01000E+02	2.00000E+01	0.00000E+00
36	1.08000E+02	2.00000E+01	0.00000E+00
37	6.00000E+00	3.00000E+01	0.00000E+00
38	1.80000E+01	3.00000E+01	0.00000E+00
39	2.80000E+01	3.00000E+01	0.00000E+00
40	3.80000E+01	3.00000E+01	0.00000E+00
41	4.80000E+01	3.00000E+01	0.00000E+00
42	5.80000E+01	3.00000E+01	0.00000E+00
43	6.80000E+01	3.00000E+01	0.00000E+00
44	7.70000E+01	3.00000E+01	0.00000E+00
45	8.60000E+01	3.00000E+01	0.00000E+00
46	9.40000E+01	3.00000E+01	0.00000E+00
47	1.01000E+02	3.00000E+01	0.00000E+00
48	1.08000E+02	3.00000E+01	0.00000E+00
49	6.00000E+00	4.00000E+01	0.00000E+00
50	1.80000E+01	4.00000E+01	0.00000E+00
51	2.80000E+01	4.00000E+01	0.00000E+00
52	3.80000E+01	4.00000E+01	0.00000E+00
53	4.80000E+01	4.00000E+01	0.00000E+00
54	5.80000E+01	4.00000E+01	0.00000E+00
55	6.80000E+01	4.00000E+01	0.00000E+00
56	7.70000E+01	4.00000E+01	0.00000E+00
57	8.60000E+01	4.00000E+01	0.00000E+00
58	9.40000E+01	4.00000E+01	0.00000E+00
59	1.01000E+02	4.00000E+01	0.00000E+00
60	1.08000E+02	4.00000E+01	0.00000E+00
61	6.00000E+00	5.00000E+01	0.00000E+00
62	1.80000E+01	5.00000E+01	0.00000E+00
63	2.80000E+01	5.00000E+01	0.00000E+00
64	3.80000E+01	5.00000E+01	0.00000E+00
65	4.80000E+01	5.00000E+01	0.00000E+00
66	5.80000E+01	5.00000E+01	0.00000E+00
67	6.80000E+01	5.00000E+01	0.00000E+00
68	7.70000E+01	5.00000E+01	0.00000E+00
69	8.60000E+01	5.00000E+01	0.00000E+00
70	9.40000E+01	5.00000E+01	0.00000E+00
71	1.01000E+02	5.00000E+01	0.00000E+00

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Node	X-Coord.	Y-Coord.	Z-Coord.
72	1.08000E+02	5.00000E+01	0.00000E+00
73	6.00000E+00	5.90000E+01	0.00000E+00
74	1.80000E+01	5.90000E+01	0.00000E+00
75	2.80000E+01	5.90000E+01	0.00000E+00
76	3.80000E+01	5.90000E+01	0.00000E+00
77	4.80000E+01	5.90000E+01	0.00000E+00
78	5.80000E+01	5.90000E+01	0.00000E+00
79	6.80000E+01	5.90000E+01	0.00000E+00
80	7.70000E+01	5.90000E+01	0.00000E+00
81	8.60000E+01	5.90000E+01	0.00000E+00
82	9.40000E+01	5.90000E+01	0.00000E+00
83	1.01000E+02	5.90000E+01	0.00000E+00
84	1.08000E+02	5.90000E+01	0.00000E+00
85	6.00000E+00	6.80000E+01	0.00000E+00
86	1.80000E+01	6.80000E+01	0.00000E+00
87	2.80000E+01	6.80000E+01	0.00000E+00
88	3.80000E+01	6.80000E+01	0.00000E+00
89	4.80000E+01	6.80000E+01	0.00000E+00
90	5.80000E+01	6.80000E+01	0.00000E+00
91	6.80000E+01	6.80000E+01	0.00000E+00
92	7.70000E+01	6.80000E+01	0.00000E+00
93	8.60000E+01	6.80000E+01	0.00000E+00
94	9.40000E+01	6.80000E+01	0.00000E+00
95	1.01000E+02	6.80000E+01	0.00000E+00
96	1.08000E+02	6.80000E+01	0.00000E+00
97	6.00000E+00	7.60000E+01	0.00000E+00
98	1.80000E+01	7.60000E+01	0.00000E+00
99	2.80000E+01	7.60000E+01	0.00000E+00
100	3.80000E+01	7.60000E+01	0.00000E+00
101	4.80000E+01	7.60000E+01	0.00000E+00
102	5.80000E+01	7.60000E+01	0.00000E+00
103	6.80000E+01	7.60000E+01	0.00000E+00
104	7.70000E+01	7.60000E+01	0.00000E+00
105	8.60000E+01	7.60000E+01	0.00000E+00
106	9.40000E+01	7.60000E+01	0.00000E+00
107	1.01000E+02	7.60000E+01	0.00000E+00
108	1.08000E+02	7.60000E+01	0.00000E+00
109	6.00000E+00	8.40000E+01	0.00000E+00
110	1.80000E+01	8.40000E+01	0.00000E+00
111	2.80000E+01	8.40000E+01	0.00000E+00
112	3.80000E+01	8.40000E+01	0.00000E+00
113	4.80000E+01	8.40000E+01	0.00000E+00

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Node	X-Coord.	Y-Coord.	Z-Coord.
114	5.80000E+01	8.40000E+01	0.00000E+00
115	6.80000E+01	8.40000E+01	0.00000E+00
116	7.70000E+01	8.40000E+01	0.00000E+00
117	8.60000E+01	8.40000E+01	0.00000E+00
118	9.40000E+01	8.40000E+01	0.00000E+00
119	1.01000E+02	8.40000E+01	0.00000E+00
120	1.08000E+02	8.40000E+01	0.00000E+00
121	4.50000E+00	9.00000E+01	0.00000E+00
122	1.80000E+01	9.00000E+01	0.00000E+00
123	2.80000E+01	9.00000E+01	0.00000E+00
124	3.80000E+01	9.00000E+01	0.00000E+00
125	4.80000E+01	9.00000E+01	0.00000E+00
126	5.80000E+01	9.00000E+01	0.00000E+00
127	6.80000E+01	9.00000E+01	0.00000E+00
128	7.70000E+01	9.00000E+01	0.00000E+00
129	8.60000E+01	9.00000E+01	0.00000E+00
130	9.40000E+01	9.00000E+01	0.00000E+00
131	1.01000E+02	9.00000E+01	0.00000E+00
132	1.09500E+02	9.00000E+01	0.00000E+00
133	3.00000E+00	9.60000E+01	0.00000E+00
134	1.80000E+01	9.60000E+01	0.00000E+00
135	2.80000E+01	9.60000E+01	0.00000E+00
136	3.80000E+01	9.60000E+01	0.00000E+00
137	4.80000E+01	9.60000E+01	0.00000E+00
138	5.80000E+01	9.60000E+01	0.00000E+00
139	6.80000E+01	9.60000E+01	0.00000E+00
140	7.70000E+01	9.60000E+01	0.00000E+00
141	8.60000E+01	9.60000E+01	0.00000E+00
142	9.40000E+01	9.60000E+01	0.00000E+00
143	1.01000E+02	9.60000E+01	0.00000E+00
144	1.11000E+02	9.60000E+01	0.00000E+00
145	1.50000E+00	1.02000E+02	0.00000E+00
146	1.80000E+01	1.02000E+02	0.00000E+00
147	2.80000E+01	1.02000E+02	0.00000E+00
148	3.80000E+01	1.02000E+02	0.00000E+00
149	4.80000E+01	1.02000E+02	0.00000E+00
150	5.80000E+01	1.02000E+02	0.00000E+00
151	6.80000E+01	1.02000E+02	0.00000E+00
152	7.70000E+01	1.02000E+02	0.00000E+00
153	8.60000E+01	1.02000E+02	0.00000E+00
154	9.40000E+01	1.02000E+02	0.00000E+00
155	1.01000E+02	1.02000E+02	0.00000E+00

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Node	X-Coord.	Y-Coord.	Z-Coord.
156	1.12500E+02	1.02000E+02	0.00000E+00
157	0.00000E+00	1.08000E+02	0.00000E+00
158	1.80000E+01	1.08000E+02	0.00000E+00
159	2.80000E+01	1.08000E+02	0.00000E+00
160	3.80000E+01	1.08000E+02	0.00000E+00
161	4.80000E+01	1.08000E+02	0.00000E+00
162	5.80000E+01	1.08000E+02	0.00000E+00
163	6.80000E+01	1.08000E+02	0.00000E+00
164	7.70000E+01	1.08000E+02	0.00000E+00
165	8.60000E+01	1.08000E+02	0.00000E+00
166	9.40000E+01	1.08000E+02	0.00000E+00
167	1.01000E+02	1.08000E+02	0.00000E+00
168	1.14000E+02	1.08000E+02	0.00000E+00

PLATE ELEMENT CONNECTIVITY

Plate No.	Nodes			Mat				Shear Web	Aspect	Plate
	I	J	K	L No.	Thickness	Area	Thickness	Ratio	Type	
QUAD 1	1	2	14	13	1	1.200E+01	1.200E+02	1.200E+00	M+B	
QUAD 2	2	3	15	14	1	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 3	3	4	16	15	1	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 4	4	5	17	16	1	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 5	5	6	18	17	1	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 6	6	7	19	18	1	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 7	7	8	20	19	1	1.200E+01	9.000E+01	9.000E-01	M+B	
QUAD 8	8	9	21	20	1	1.200E+01	9.000E+01	9.000E-01	M+B	
QUAD 9	9	10	22	21	1	1.200E+01	8.000E+01	8.000E-01	M+B	
QUAD 10	10	11	23	22	1	1.200E+01	7.000E+01	7.000E-01	M+B	
QUAD 11	11	12	24	23	1	1.200E+01	7.000E+01	7.000E-01	M+B	
QUAD 12	13	14	26	25	1	1.200E+01	1.200E+02	1.200E+00	M+B	
QUAD 13	14	15	27	26	1	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 14	15	16	28	27	1	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 15	16	17	29	28	1	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 16	17	18	30	29	1	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 17	18	19	31	30	1	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 18	19	20	32	31	1	1.200E+01	9.000E+01	9.000E-01	M+B	
QUAD 19	20	21	33	32	1	1.200E+01	9.000E+01	9.000E-01	M+B	
QUAD 20	21	22	34	33	1	1.200E+01	8.000E+01	8.000E-01	M+B	
QUAD 21	22	23	35	34	1	1.200E+01	7.000E+01	7.000E-01	M+B	

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CHECK GEOMETRY

Version 2.0 07/01/90

Plate No.		Nodes			Mat L No.	Thickness	Area	Shear Web Thickness	Aspect Ratio	Plate Type
		I	J	K						
QUAD	22	23	24	36	35	1	1.200E+01	7.000E+01	7.000E-01	M+B
QUAD	23	25	26	38	37	1	1.200E+01	1.200E+02	1.200E+00	M+B
QUAD	24	26	27	39	38	1	1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	25	27	28	40	39	1	1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	26	28	29	41	40	1	1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	27	29	30	42	41	1	1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	28	30	31	43	42	1	1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	29	31	32	44	43	1	1.200E+01	9.000E+01	9.000E-01	M+B
QUAD	30	32	33	45	44	1	1.200E+01	9.000E+01	9.000E-01	M+B
QUAD	31	33	34	46	45	1	1.200E+01	8.000E+01	8.000E-01	M+B
QUAD	32	34	35	47	46	1	1.200E+01	7.000E+01	7.000E-01	M+B
QUAD	33	35	36	48	47	1	1.200E+01	7.000E+01	7.000E-01	M+B
QUAD	34	37	38	50	49	1	1.200E+01	1.200E+02	1.200E+00	M+B
QUAD	35	38	39	51	50	1	1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	36	39	40	52	51	1	1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	37	40	41	53	52	1	1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	38	41	42	54	53	1	1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	39	42	43	55	54	1	1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	40	43	44	56	55	1	1.200E+01	9.000E+01	9.000E-01	M+B
QUAD	41	44	45	57	56	1	1.200E+01	9.000E+01	9.000E-01	M+B
QUAD	42	45	46	58	57	1	1.200E+01	8.000E+01	8.000E-01	M+B
QUAD	43	46	47	59	58	1	1.200E+01	7.000E+01	7.000E-01	M+B
QUAD	44	47	48	60	59	1	1.200E+01	7.000E+01	7.000E-01	M+B
QUAD	45	49	50	62	61	1	1.200E+01	1.200E+02	1.200E+00	M+B
QUAD	46	50	51	63	62	1	1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	47	51	52	64	63	1	1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	48	52	53	65	64	1	1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	49	53	54	66	65	1	1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	50	54	55	67	66	1	1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	51	55	56	68	67	1	1.200E+01	9.000E+01	9.000E-01	M+B
QUAD	52	56	57	69	68	1	1.200E+01	9.000E+01	9.000E-01	M+B
QUAD	53	57	58	70	69	1	1.200E+01	8.000E+01	8.000E-01	M+B
QUAD	54	58	59	71	70	1	1.200E+01	7.000E+01	7.000E-01	M+B
QUAD	55	59	60	72	71	1	1.200E+01	7.000E+01	7.000E-01	M+B
QUAD	56	61	62	74	73	1	1.200E+01	1.080E+02	1.333E+00	M+B
QUAD	57	62	63	75	74	1	1.200E+01	9.000E+01	1.111E+00	M+B
QUAD	58	63	64	76	75	1	1.200E+01	9.000E+01	1.111E+00	M+B
QUAD	59	64	65	77	76	1	1.200E+01	9.000E+01	1.111E+00	M+B
QUAD	60	65	66	78	77	1	1.200E+01	9.000E+01	1.111E+00	M+B
QUAD	61	66	67	79	78	1	1.200E+01	9.000E+01	1.111E+00	M+B
QUAD	62	67	68	80	79	1	1.200E+01	8.100E+01	1.000E+00	M+B

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Version 2.0 07/01/90

Plate No.	Nodes			Mat No.	Thickness	Area	Shear Web Thickness	Aspect Ratio	Plate Type
	I	J	K						
QUAD 63	68	69	81	80	1 1.200E+01	8.100E+01		1.000E+00	M+B
QUAD 64	69	70	82	81	1 1.200E+01	7.200E+01		8.889E-01	M+B
QUAD 65	70	71	83	82	1 1.200E+01	6.300E+01		7.778E-01	M+B
QUAD 66	71	72	84	83	1 1.200E+01	6.300E+01		7.778E-01	M+B
QUAD 67	73	74	86	85	1 1.200E+01	1.080E+02		1.333E+00	M+B
QUAD 68	74	75	87	86	1 1.200E+01	9.000E+01		1.111E+00	M+B
QUAD 69	75	76	88	87	1 1.200E+01	9.000E+01		1.111E+00	M+B
QUAD 70	76	77	89	88	1 1.200E+01	9.000E+01		1.111E+00	M+B
QUAD 71	77	78	90	89	1 1.200E+01	9.000E+01		1.111E+00	M+B
QUAD 72	78	79	91	90	1 1.200E+01	9.000E+01		1.111E+00	M+B
QUAD 73	79	80	92	91	1 1.200E+01	8.100E+01		1.000E+00	M+B
QUAD 74	80	81	93	92	1 1.200E+01	8.100E+01		1.000E+00	M+B
QUAD 75	81	82	94	93	1 1.200E+01	7.200E+01		8.889E-01	M+B
QUAD 76	82	83	95	94	1 1.200E+01	6.300E+01		7.778E-01	M+B
QUAD 77	83	84	96	95	1 1.200E+01	6.300E+01		7.778E-01	M+B
QUAD 78	85	86	98	97	1 1.200E+01	9.600E+01		1.500E+00	M+B
QUAD 79	86	87	99	98	1 1.200E+01	8.000E+01		1.250E+00	M+B
QUAD 80	87	88	100	99	1 1.200E+01	8.000E+01		1.250E+00	M+B
QUAD 81	88	89	101	100	1 1.200E+01	8.000E+01		1.250E+00	M+B
QUAD 82	89	90	102	101	1 1.200E+01	8.000E+01		1.250E+00	M+B
QUAD 83	90	91	103	102	1 1.200E+01	8.000E+01		1.250E+00	M+B
QUAD 84	91	92	104	103	1 1.200E+01	7.200E+01		1.125E+00	M+B
QUAD 85	92	93	105	104	1 1.200E+01	7.200E+01		1.125E+00	M+B
QUAD 86	93	94	106	105	1 1.200E+01	6.400E+01		1.000E+00	M+B
QUAD 87	94	95	107	106	1 1.200E+01	5.600E+01		8.750E-01	M+B
QUAD 88	95	96	108	107	1 1.200E+01	5.600E+01		8.750E-01	M+B
QUAD 89	97	98	110	109	1 1.200E+01	9.600E+01		1.500E+00	M+B
QUAD 90	98	99	111	110	1 1.200E+01	8.000E+01		1.250E+00	M+B
QUAD 91	99	100	112	111	1 1.200E+01	8.000E+01		1.250E+00	M+B
QUAD 92	100	101	113	112	1 1.200E+01	8.000E+01		1.250E+00	M+B
QUAD 93	101	102	114	113	1 1.200E+01	8.000E+01		1.250E+00	M+B
QUAD 94	102	103	115	114	1 1.200E+01	8.000E+01		1.250E+00	M+B
QUAD 95	103	104	116	115	1 1.200E+01	7.200E+01		1.125E+00	M+B
QUAD 96	104	105	117	116	1 1.200E+01	7.200E+01		1.125E+00	M+B
QUAD 97	105	106	118	117	1 1.200E+01	6.400E+01		1.000E+00	M+B
QUAD 98	106	107	119	118	1 1.200E+01	5.600E+01		8.750E-01	M+B
QUAD 99	107	108	120	119	1 1.200E+01	5.600E+01		8.750E-01	M+B
QUAD 100	109	110	122	121	2 7.630E+00	7.650E+01		2.109E+00	M+B
QUAD 101	110	111	123	122	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD 102	111	112	124	123	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD 103	112	113	125	124	2 7.630E+00	6.000E+01		1.667E+00	M+B

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CHECK GEOMETRY

Version 2.0 07/01/90

Plate No.	Nodes			Mat L	No.	Thickness	Area	Shear Web Thickness	Aspect Ratio	Plate Type
	I	J	K							
QUAD	104	113	114	126	125	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD	105	114	115	127	126	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD	106	115	116	128	127	2 7.630E+00	5.400E+01		1.500E+00	M+B
QUAD	107	116	117	129	128	2 7.630E+00	5.400E+01		1.500E+00	M+B
QUAD	108	117	118	130	129	2 7.630E+00	4.800E+01		1.333E+00	M+B
QUAD	109	118	119	131	130	2 7.630E+00	4.200E+01		1.167E+00	M+B
QUAD	110	119	120	132	131	2 7.630E+00	4.650E+01		1.282E+00	M+B
QUAD	111	121	122	134	133	2 7.630E+00	8.550E+01		2.357E+00	M+B
QUAD	112	122	123	135	134	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD	113	123	124	136	135	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD	114	124	125	137	136	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD	115	125	126	138	137	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD	116	126	127	139	138	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD	117	127	128	140	139	2 7.630E+00	5.400E+01		1.500E+00	M+B
QUAD	118	128	129	141	140	2 7.630E+00	5.400E+01		1.500E+00	M+B
QUAD	119	129	130	142	141	2 7.630E+00	4.800E+01		1.333E+00	M+B
QUAD	120	130	131	143	142	2 7.630E+00	4.200E+01		1.167E+00	M+B
QUAD	121	131	132	144	143	2 7.630E+00	5.550E+01		1.530E+00	M+B
QUAD	122	133	134	146	145	2 7.630E+00	9.450E+01		2.605E+00	M+B
QUAD	123	134	135	147	146	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD	124	135	136	148	147	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD	125	136	137	149	148	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD	126	137	138	150	149	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD	127	138	139	151	150	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD	128	139	140	152	151	2 7.630E+00	5.400E+01		1.500E+00	M+B
QUAD	129	140	141	153	152	2 7.630E+00	5.400E+01		1.500E+00	M+B
QUAD	130	141	142	154	153	2 7.630E+00	4.800E+01		1.333E+00	M+B
QUAD	131	142	143	155	154	2 7.630E+00	4.200E+01		1.167E+00	M+B
QUAD	132	143	144	156	155	2 7.630E+00	6.450E+01		1.778E+00	M+B
QUAD	133	145	146	158	157	2 7.630E+00	1.035E+02		2.853E+00	M+B
QUAD	134	146	147	159	158	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD	135	147	148	160	159	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD	136	148	149	161	160	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD	137	149	150	162	161	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD	138	150	151	163	162	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD	139	151	152	164	163	2 7.630E+00	5.400E+01		1.500E+00	M+B
QUAD	140	152	153	165	164	2 7.630E+00	5.400E+01		1.500E+00	M+B
QUAD	141	153	154	166	165	2 7.630E+00	4.800E+01		1.333E+00	M+B
QUAD	142	154	155	167	166	2 7.630E+00	4.200E+01		1.167E+00	M+B
QUAD	143	155	156	168	167	2 7.630E+00	7.350E+01		2.026E+00	M+B

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CHECK GEOMETRY

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RESTRAINTS

Node No	Global/Local	Restraint Directions
1	GLOBAL	X Y Z RX RY RZ
2	GLOBAL	X Y Z RX RY RZ
3	GLOBAL	X Y Z RX RY RZ
4	GLOBAL	X Y Z RX RY RZ
5	GLOBAL	X Y Z RX RY RZ
6	GLOBAL	X Y Z RX RY RZ
7	GLOBAL	X Y Z RX RY RZ
8	GLOBAL	X Y Z RX RY RZ
9	GLOBAL	X Y Z RX RY RZ
10	GLOBAL	X Y Z RX RY RZ
11	GLOBAL	X Y Z RX RY RZ
12	GLOBAL	X Y Z RX RY RZ
13	GLOBAL	X Y Z RX RY RZ
24	GLOBAL	X Y Z RX RY RZ
25	GLOBAL	X Y Z RX RY RZ
36	GLOBAL	X Y Z RX RY RZ
37	GLOBAL	X Y Z RX RY RZ
48	GLOBAL	X Y Z RX RY RZ
49	GLOBAL	X Y Z RX RY RZ
60	GLOBAL	X Y Z RX RY RZ
61	GLOBAL	X Y Z RX RY RZ
72	GLOBAL	X Y Z RX RY RZ
73	GLOBAL	X Y Z RX RY RZ
84	GLOBAL	X Y Z RX RY RZ
85	GLOBAL	X Y Z RX RY RZ
96	GLOBAL	X Y Z RX RY RZ
97	GLOBAL	X Y Z RX RY RZ
108	GLOBAL	X Y Z RX RY RZ
109	GLOBAL	X Y Z RX RY RZ
120	GLOBAL	X Y Z RX RY RZ
121	GLOBAL	X Y Z RX RY RZ
132	GLOBAL	X Y Z RX RY RZ
133	GLOBAL	X Y Z RX RY RZ
144	GLOBAL	X Y Z RX RY RZ
145	GLOBAL	X Y Z RX RY RZ
156	GLOBAL	X Y Z RX RY RZ
157	GLOBAL	X Y Z RX RY RZ
168	GLOBAL	X Y Z RX RY RZ

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SOLVE DISPLACEMENTS Version 2.0 07/01/90

LOAD CASE 1

SELF WEIGHT

GRAVITY LOADING

Direction	Gravity Factor	Load Factor
X	.0000E+00	.1000E+01
Y	.0000E+00	.1000E+01
Z	.2000E+00	.1000E+01

INERTIA LOADING

Direction	Translational Accel.	Rotational Accel.	Rotational Velocity	Origin
X	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Y	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Z	.0000E+00	.0000E+00	.0000E+00	.0000E+00

Gravity Acceleration = .3864E+03

REFERENCE TEMPERATURE = .0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

L O A D C A S E 2
 SEISMIC SOIL PRESSURE

GRAVITY LOADING

Direction	Gravity Factor	Load Factor
-----	-----	-----
X	.0000E+00	.1000E+01
Y	.0000E+00	.1000E+01
Z	.0000E+00	.1000E+01

INERTIA LOADING

Direction	Translational Accel.	Rotational Accel.	Rotational Velocity	Origin
-----	-----	-----	-----	-----
X	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Y	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Z	.0000E+00	.0000E+00	.0000E+00	.0000E+00

Gravity Acceleration = .3864E+03

REFERENCE TEMPERATURE = .0000E+00

PLATE TEMPERATURES/PRESSURES

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
-----	-----	-----	-----	-----
1	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.0000E+00	.0000E+00	.2656E+00	.2656E+00
2	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.0000E+00	.0000E+00	.2656E+00	.2656E+00
3	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.0000E+00	.0000E+00	.2656E+00	.2656E+00
4	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.0000E+00	.0000E+00	.2656E+00	.2656E+00
5	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.0000E+00	.0000E+00	.2656E+00	.2656E+00
6	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.0000E+00	.0000E+00	.2656E+00	.2656E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

L O A D C A S E 2

SEISMIC SOIL PRESSURE

Plate/Temp Plate/Pressure Plate/Lat. load	Node1 Node1 Side	Node2 Node2 Dir.	Node3 Node3 Node1	Node4 Node4 Node2
7	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.0000E+00	.0000E+00	.2656E+00	.2656E+00
8	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.0000E+00	.0000E+00	.2656E+00	.2656E+00
9	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.0000E+00	.0000E+00	.2656E+00	.2656E+00
10	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.0000E+00	.0000E+00	.2656E+00	.2656E+00
11	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.0000E+00	.0000E+00	.2656E+00	.2656E+00
12	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2656E+00	.2656E+00	.5313E+00	.5313E+00
13	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2656E+00	.2656E+00	.5313E+00	.5313E+00
14	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2656E+00	.2656E+00	.5313E+00	.5313E+00
15	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2656E+00	.2656E+00	.5313E+00	.5313E+00
16	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2656E+00	.2656E+00	.5313E+00	.5313E+00
17	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2656E+00	.2656E+00	.5313E+00	.5313E+00
18	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2656E+00	.2656E+00	.5313E+00	.5313E+00
19	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2656E+00	.2656E+00	.5313E+00	.5313E+00
20	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2656E+00	.2656E+00	.5313E+00	.5313E+00
21	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2656E+00	.2656E+00	.5313E+00	.5313E+00
22	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2656E+00	.2656E+00	.5313E+00	.5313E+00
23	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.5313E+00	.5313E+00	.7969E+00	.7969E+00
24	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.5313E+00	.5313E+00	.7969E+00	.7969E+00
25	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.5313E+00	.5313E+00	.7969E+00	.7969E+00
26	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.5313E+00	.5313E+00	.7969E+00	.7969E+00

HNF-2466, Rev. 0

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Version 2.0 07/01/90

L O A D C A S E 2
 SEISMIC SOIL PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
27	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.5313E+00	.5313E+00	.7969E+00	.7969E+00
28	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.5313E+00	.5313E+00	.7969E+00	.7969E+00
29	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.5313E+00	.5313E+00	.7969E+00	.7969E+00
30	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.5313E+00	.5313E+00	.7969E+00	.7969E+00
31	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.5313E+00	.5313E+00	.7969E+00	.7969E+00
32	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.5313E+00	.5313E+00	.7969E+00	.7969E+00
33	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.5313E+00	.5313E+00	.7969E+00	.7969E+00
34	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7969E+00	.7969E+00	.1063E+01	.1063E+01
35	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7969E+00	.7969E+00	.1063E+01	.1063E+01
36	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7969E+00	.7969E+00	.1063E+01	.1063E+01
37	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7969E+00	.7969E+00	.1063E+01	.1063E+01
38	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7969E+00	.7969E+00	.1063E+01	.1063E+01
39	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7969E+00	.7969E+00	.1063E+01	.1063E+01
40	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7969E+00	.7969E+00	.1063E+01	.1063E+01
41	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7969E+00	.7969E+00	.1063E+01	.1063E+01
42	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7969E+00	.7969E+00	.1063E+01	.1063E+01
43	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7969E+00	.7969E+00	.1063E+01	.1063E+01
44	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7969E+00	.7969E+00	.1063E+01	.1063E+01
45	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1063E+01	.1063E+01	.1328E+01	.1328E+01
46	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1063E+01	.1063E+01	.1328E+01	.1328E+01

HNF-2466, Rev. 0

Page B-45

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SOLVE DISPLACEMENTS

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L O A D C A S E 2

SEISMIC SOIL PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
47	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1063E+01	.1063E+01	.1328E+01	.1328E+01
48	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1063E+01	.1063E+01	.1328E+01	.1328E+01
49	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1063E+01	.1063E+01	.1328E+01	.1328E+01
50	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1063E+01	.1063E+01	.1328E+01	.1328E+01
51	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1063E+01	.1063E+01	.1328E+01	.1328E+01
52	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1063E+01	.1063E+01	.1328E+01	.1328E+01
53	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1063E+01	.1063E+01	.1328E+01	.1328E+01
54	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1063E+01	.1063E+01	.1328E+01	.1328E+01
55	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1063E+01	.1063E+01	.1328E+01	.1328E+01
56	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1328E+01	.1328E+01	.1567E+01	.1567E+01
57	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1328E+01	.1328E+01	.1567E+01	.1567E+01
58	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1328E+01	.1328E+01	.1567E+01	.1567E+01
59	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1328E+01	.1328E+01	.1567E+01	.1567E+01
60	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1328E+01	.1328E+01	.1567E+01	.1567E+01
61	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1328E+01	.1328E+01	.1567E+01	.1567E+01
62	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1328E+01	.1328E+01	.1567E+01	.1567E+01
63	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1328E+01	.1328E+01	.1567E+01	.1567E+01
64	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1328E+01	.1328E+01	.1567E+01	.1567E+01
65	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1328E+01	.1328E+01	.1567E+01	.1567E+01
66	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1328E+01	.1328E+01	.1567E+01	.1567E+01

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SEISMIC SOIL PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
67	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1567E+01	.1567E+01	.1806E+01	.1806E+01
68	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1567E+01	.1567E+01	.1806E+01	.1806E+01
69	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1567E+01	.1567E+01	.1806E+01	.1806E+01
70	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1567E+01	.1567E+01	.1806E+01	.1806E+01
71	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1567E+01	.1567E+01	.1806E+01	.1806E+01
72	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1567E+01	.1567E+01	.1806E+01	.1806E+01
73	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1567E+01	.1567E+01	.1806E+01	.1806E+01
74	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1567E+01	.1567E+01	.1806E+01	.1806E+01
75	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1567E+01	.1567E+01	.1806E+01	.1806E+01
76	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1567E+01	.1567E+01	.1806E+01	.1806E+01
77	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1567E+01	.1567E+01	.1806E+01	.1806E+01
78	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1806E+01	.1806E+01	.2019E+01	.2019E+01
79	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1806E+01	.1806E+01	.2019E+01	.2019E+01
80	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1806E+01	.1806E+01	.2019E+01	.2019E+01
81	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1806E+01	.1806E+01	.2019E+01	.2019E+01
82	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1806E+01	.1806E+01	.2019E+01	.2019E+01
83	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1806E+01	.1806E+01	.2019E+01	.2019E+01
84	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1806E+01	.1806E+01	.2019E+01	.2019E+01
85	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1806E+01	.1806E+01	.2019E+01	.2019E+01
86	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1806E+01	.1806E+01	.2019E+01	.2019E+01

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L O A D C A S E 2

SEISMIC SOIL PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node2	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
87	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1806E+01	.1806E+01	.2019E+01	.2019E+01
88	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1806E+01	.1806E+01	.2019E+01	.2019E+01
89	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2019E+01	.2019E+01	.2231E+01	.2231E+01
90	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2019E+01	.2019E+01	.2231E+01	.2231E+01
91	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2019E+01	.2019E+01	.2231E+01	.2231E+01
92	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2019E+01	.2019E+01	.2231E+01	.2231E+01
93	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2019E+01	.2019E+01	.2231E+01	.2231E+01
94	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2019E+01	.2019E+01	.2231E+01	.2231E+01
95	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2019E+01	.2019E+01	.2231E+01	.2231E+01
96	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2019E+01	.2019E+01	.2231E+01	.2231E+01
97	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2019E+01	.2019E+01	.2231E+01	.2231E+01
98	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2019E+01	.2019E+01	.2231E+01	.2231E+01
99	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2019E+01	.2019E+01	.2231E+01	.2231E+01
100	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2231E+01	.2231E+01	.2391E+01	.2391E+01
101	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2231E+01	.2231E+01	.2391E+01	.2391E+01
102	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2231E+01	.2231E+01	.2391E+01	.2391E+01
103	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2231E+01	.2231E+01	.2391E+01	.2391E+01
104	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2231E+01	.2231E+01	.2391E+01	.2391E+01
105	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2231E+01	.2231E+01	.2391E+01	.2391E+01
106	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2231E+01	.2231E+01	.2391E+01	.2391E+01

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L O A D C A S E 2

SEISMIC SOIL PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
-----	-----	-----	-----	-----
107	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2231E+01	.2231E+01	.2391E+01	.2391E+01
108	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2231E+01	.2231E+01	.2391E+01	.2391E+01
109	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2231E+01	.2231E+01	.2391E+01	.2391E+01
110	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2231E+01	.2231E+01	.2391E+01	.2391E+01
111	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2391E+01	.2391E+01	.2550E+01	.2550E+01
112	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2391E+01	.2391E+01	.2550E+01	.2550E+01
113	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2391E+01	.2391E+01	.2550E+01	.2550E+01
114	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2391E+01	.2391E+01	.2550E+01	.2550E+01
115	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2391E+01	.2391E+01	.2550E+01	.2550E+01
116	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2391E+01	.2391E+01	.2550E+01	.2550E+01
117	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2391E+01	.2391E+01	.2550E+01	.2550E+01
118	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2391E+01	.2391E+01	.2550E+01	.2550E+01
119	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2391E+01	.2391E+01	.2550E+01	.2550E+01
120	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2391E+01	.2391E+01	.2550E+01	.2550E+01
121	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2391E+01	.2391E+01	.2550E+01	.2550E+01

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LOAD CASE 3

LATERAL EARTH PRESSURE

GRAVITY LOADING

Direction	Gravity Factor	Load Factor
X	.0000E+00	.1000E+01
Y	.0000E+00	.1000E+01
Z	.0000E+00	.1000E+01

INERTIA LOADING

Direction	Translational Accel.	Rotational Accel.	Rotational Velocity	Origin
X	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Y	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Z	.0000E+00	.0000E+00	.0000E+00	.0000E+00

Gravity Acceleration = .3864E+03

REFERENCE TEMPERATURE = .0000E+00

PLATE TEMPERATURES/PRESSURES

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
1	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1610E+01	.1610E+01	.1442E+01	.1442E+01
2	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1610E+01	.1610E+01	.1442E+01	.1442E+01
3	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1610E+01	.1610E+01	.1442E+01	.1442E+01
4	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1610E+01	.1610E+01	.1442E+01	.1442E+01
5	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1610E+01	.1610E+01	.1442E+01	.1442E+01
6	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1610E+01	.1610E+01	.1442E+01	.1442E+01

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L O A D C A S E 3

LATERAL EARTH PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
7	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1610E+01	.1610E+01	.1442E+01	.1442E+01
8	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1610E+01	.1610E+01	.1442E+01	.1442E+01
9	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1610E+01	.1610E+01	.1442E+01	.1442E+01
10	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1610E+01	.1610E+01	.1442E+01	.1442E+01
11	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1610E+01	.1610E+01	.1442E+01	.1442E+01
12	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1442E+01	.1442E+01	.1275E+01	.1275E+01
13	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1442E+01	.1442E+01	.1275E+01	.1275E+01
14	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1442E+01	.1442E+01	.1275E+01	.1275E+01
15	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1442E+01	.1442E+01	.1275E+01	.1275E+01
16	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1442E+01	.1442E+01	.1275E+01	.1275E+01
17	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1442E+01	.1442E+01	.1275E+01	.1275E+01
18	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1442E+01	.1442E+01	.1275E+01	.1275E+01
19	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1442E+01	.1442E+01	.1275E+01	.1275E+01
20	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1442E+01	.1442E+01	.1275E+01	.1275E+01
21	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1442E+01	.1442E+01	.1275E+01	.1275E+01
22	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1442E+01	.1442E+01	.1275E+01	.1275E+01
23	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1275E+01	.1275E+01	.1107E+01	.1107E+01
24	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1275E+01	.1275E+01	.1107E+01	.1107E+01
25	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1275E+01	.1275E+01	.1107E+01	.1107E+01
26	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1275E+01	.1275E+01	.1107E+01	.1107E+01

HNF-2466, Rev. 0

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L O A D C A S E 3

LATERAL EARTH PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node2	Node3	Node4	
Plate/Lat. load	Side	Dir.	Node1	Node2
27	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1275E+01	.1275E+01	.1107E+01	.1107E+01
28	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1275E+01	.1275E+01	.1107E+01	.1107E+01
29	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1275E+01	.1275E+01	.1107E+01	.1107E+01
30	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1275E+01	.1275E+01	.1107E+01	.1107E+01
31	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1275E+01	.1275E+01	.1107E+01	.1107E+01
32	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1275E+01	.1275E+01	.1107E+01	.1107E+01
33	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1275E+01	.1275E+01	.1107E+01	.1107E+01
34	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1107E+01	.1107E+01	.9392E+00	.9392E+00
35	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1107E+01	.1107E+01	.9392E+00	.9392E+00
36	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1107E+01	.1107E+01	.9392E+00	.9392E+00
37	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1107E+01	.1107E+01	.9392E+00	.9392E+00
38	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1107E+01	.1107E+01	.9392E+00	.9392E+00
39	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1107E+01	.1107E+01	.9392E+00	.9392E+00
40	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1107E+01	.1107E+01	.9392E+00	.9392E+00
41	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1107E+01	.1107E+01	.9392E+00	.9392E+00
42	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1107E+01	.1107E+01	.9392E+00	.9392E+00
43	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1107E+01	.1107E+01	.9392E+00	.9392E+00
44	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1107E+01	.1107E+01	.9392E+00	.9392E+00
45	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.9392E+00	.9392E+00	.7715E+00	.7715E+00
46	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.9392E+00	.9392E+00	.7715E+00	.7715E+00

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L O A D C A S E 3
 LATERAL EARTH PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
----	-----	-----	-----	-----
47	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.9392E+00	.9392E+00	.7715E+00	.7715E+00
48	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.9392E+00	.9392E+00	.7715E+00	.7715E+00
49	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.9392E+00	.9392E+00	.7715E+00	.7715E+00
50	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.9392E+00	.9392E+00	.7715E+00	.7715E+00
51	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.9392E+00	.9392E+00	.7715E+00	.7715E+00
52	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.9392E+00	.9392E+00	.7715E+00	.7715E+00
53	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.9392E+00	.9392E+00	.7715E+00	.7715E+00
54	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.9392E+00	.9392E+00	.7715E+00	.7715E+00
55	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.9392E+00	.9392E+00	.7715E+00	.7715E+00
56	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7715E+00	.7715E+00	.6205E+00	.6205E+00
57	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7715E+00	.7715E+00	.6205E+00	.6205E+00
58	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7715E+00	.7715E+00	.6205E+00	.6205E+00
59	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7715E+00	.7715E+00	.6205E+00	.6205E+00
60	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7715E+00	.7715E+00	.6205E+00	.6205E+00
61	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7715E+00	.7715E+00	.6205E+00	.6205E+00
62	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7715E+00	.7715E+00	.6205E+00	.6205E+00
63	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7715E+00	.7715E+00	.6205E+00	.6205E+00
64	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7715E+00	.7715E+00	.6205E+00	.6205E+00
65	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7715E+00	.7715E+00	.6205E+00	.6205E+00
66	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7715E+00	.7715E+00	.6205E+00	.6205E+00

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L O A D C A S E 3

LATERAL EARTH PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
67	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.6205E+00	.6205E+00	.4696E+00	.4696E+00
68	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.6205E+00	.6205E+00	.4696E+00	.4696E+00
69	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.6205E+00	.6205E+00	.4696E+00	.4696E+00
70	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.6205E+00	.6205E+00	.4696E+00	.4696E+00
71	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.6205E+00	.6205E+00	.4696E+00	.4696E+00
72	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.6205E+00	.6205E+00	.4696E+00	.4696E+00
73	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.6205E+00	.6205E+00	.4696E+00	.4696E+00
74	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.6205E+00	.6205E+00	.4696E+00	.4696E+00
75	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.6205E+00	.6205E+00	.4696E+00	.4696E+00
76	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.6205E+00	.6205E+00	.4696E+00	.4696E+00
77	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.6205E+00	.6205E+00	.4696E+00	.4696E+00
78	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.4696E+00	.4696E+00	.3354E+00	.3354E+00
79	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.4696E+00	.4696E+00	.3354E+00	.3354E+00
80	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.4696E+00	.4696E+00	.3354E+00	.3354E+00
81	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.4696E+00	.4696E+00	.3354E+00	.3354E+00
82	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.4696E+00	.4696E+00	.3354E+00	.3354E+00
83	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.4696E+00	.4696E+00	.3354E+00	.3354E+00
84	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.4696E+00	.4696E+00	.3354E+00	.3354E+00
85	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.4696E+00	.4696E+00	.3354E+00	.3354E+00
86	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.4696E+00	.4696E+00	.3354E+00	.3354E+00

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L O A D C A S E 3

LATERAL EARTH PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
87	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.4696E+00	.4696E+00	.3354E+00	.3354E+00
88	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.4696E+00	.4696E+00	.3354E+00	.3354E+00
89	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.3354E+00	.3354E+00	.2013E+00	.2013E+00
90	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.3354E+00	.3354E+00	.2013E+00	.2013E+00
91	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.3354E+00	.3354E+00	.2013E+00	.2013E+00
92	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.3354E+00	.3354E+00	.2013E+00	.2013E+00
93	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.3354E+00	.3354E+00	.2013E+00	.2013E+00
94	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.3354E+00	.3354E+00	.2013E+00	.2013E+00
95	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.3354E+00	.3354E+00	.2013E+00	.2013E+00
96	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.3354E+00	.3354E+00	.2013E+00	.2013E+00
97	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.3354E+00	.3354E+00	.2013E+00	.2013E+00
98	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.3354E+00	.3354E+00	.2013E+00	.2013E+00
99	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.3354E+00	.3354E+00	.2013E+00	.2013E+00
100	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2013E+00	.2013E+00	.1006E+00	.1006E+00
101	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2013E+00	.2013E+00	.1006E+00	.1006E+00
102	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2013E+00	.2013E+00	.1006E+00	.1006E+00
103	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2013E+00	.2013E+00	.1006E+00	.1006E+00
104	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2013E+00	.2013E+00	.1006E+00	.1006E+00
105	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2013E+00	.2013E+00	.1006E+00	.1006E+00
106	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2013E+00	.2013E+00	.1006E+00	.1006E+00

HNF-2466, Rev. 0

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L O A D C A S E 3

LATERAL EARTH PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
-----	-----	-----	-----	-----
107	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2013E+00	.2013E+00	.1006E+00	.1006E+00
108	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2013E+00	.2013E+00	.1006E+00	.1006E+00
109	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2013E+00	.2013E+00	.1006E+00	.1006E+00
110	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2013E+00	.2013E+00	.1006E+00	.1006E+00
111	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1006E+00	.1006E+00	.1110E-15	.1110E-15
112	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1006E+00	.1006E+00	.1110E-15	.1110E-15
113	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1006E+00	.1006E+00	.1110E-15	.1110E-15
114	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1006E+00	.1006E+00	.1110E-15	.1110E-15
115	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1006E+00	.1006E+00	.1110E-15	.1110E-15
116	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1006E+00	.1006E+00	.1110E-15	.1110E-15
117	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1006E+00	.1006E+00	.1110E-15	.1110E-15
118	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1006E+00	.1006E+00	.1110E-15	.1110E-15
119	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1006E+00	.1006E+00	.1110E-15	.1110E-15
120	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1006E+00	.1006E+00	.1110E-15	.1110E-15
121	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1006E+00	.1006E+00	.1110E-15	.1110E-15

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L O A D C A S E 4
 SEISMIC COVER BLOCK LOAD

GRAVITY LOADING

Direction	Gravity Factor	Load Factor
X	.0000E+00	.1000E+01
Y	.0000E+00	.1000E+01
Z	.0000E+00	.1000E+01

INERTIA LOADING

Direction	Translational Accel.	Rotational Accel.	Rotational Velocity	Origin
X	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Y	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Z	.0000E+00	.0000E+00	.0000E+00	.0000E+00

Gravity Acceleration = .3864E+03

CONCENTRATED LOADS

Node	Fx	Fy	Fz	Mx	My	Mz
109	.0000E+00	-.5850E+03	.0000E+00	.0000E+00	.0000E+00	.0000E+00
115	.0000E+00	-.1016E+04	.0000E+00	.0000E+00	.0000E+00	.0000E+00
120	.0000E+00	-.4310E+03	.0000E+00	.0000E+00	.0000E+00	.0000E+00

REFERENCE TEMPERATURE = .0000E+00

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LOAD CASE 5

OVERBURDEN PRESSURE

GRAVITY LOADING

Direction	Gravity Factor	Load Factor
X	.0000E+00	.1000E+01
Y	.0000E+00	.1000E+01
Z	.0000E+00	.1000E+01

INERTIA LOADING

Direction	Translational Accel.	Rotational Accel.	Rotational Velocity	Origin
X	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Y	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Z	.0000E+00	.0000E+00	.0000E+00	.0000E+00

Gravity Acceleration = .3864E+03

REFERENCE TEMPERATURE = .0000E+00

PLATE TEMPERATURES/PRESSURES

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
1	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
2	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
3	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
4	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
5	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
6	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01

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OVERBURDEN PRESSURE LOAD CASE 5

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
----	-----	-----	-----	-----
7	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
8	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
9	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
10	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
11	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
12	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
13	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
14	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
15	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
16	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
17	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
18	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
19	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
20	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
21	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
22	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
23	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
24	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
25	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
26	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

L O A D C A S E 5

OVERBURDEN PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
27	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
28	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
29	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
30	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
31	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
32	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
33	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
34	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
35	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
36	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
37	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
38	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
39	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
40	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
41	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
42	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
43	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
44	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
45	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
46	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01

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L O A D C A S E 5

OVERBURDEN PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node2	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
47	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
48	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
49	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
50	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
51	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
52	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
53	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
54	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
55	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
56	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
57	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
58	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
59	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
60	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
61	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
62	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
63	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
64	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
65	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
66	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01

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LOAD CASE 5

OVERBURDEN PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. Load	Side	Dir.	Node1	Node2
67	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
68	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
69	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
70	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
71	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
72	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
73	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
74	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
75	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
76	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
77	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
78	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
79	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
80	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
81	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
82	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
83	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
84	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
85	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
86	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01

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L O A D C A S E 5

OVERBURDEN PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
87	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
88	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
89	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
90	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
91	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
92	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
93	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
94	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
95	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
96	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
97	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
98	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
99	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
100	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
101	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
102	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
103	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
104	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
105	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
106	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01

HNF-2466, Rev. 0

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L O A D C A S E 5

OVERBURDEN PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
-----	-----	-----	-----	-----
107	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
108	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
109	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
110	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
111	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
112	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
113	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
114	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
115	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
116	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
117	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
118	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
119	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
120	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
121	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

L O A D C A S E 6
 OPERATING PIPE AND JUMPER LOADS

GRAVITY LOADING

Direction	Gravity Factor	Load Factor
-----	-----	-----
X	.0000E+00	.1000E+01
Y	.0000E+00	.1000E+01
Z	.0000E+00	.1000E+01

INERTIA LOADING

Direction	Translational Accel.	Rotational Accel.	Rotational Velocity	Origin
-----	-----	-----	-----	-----
X	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Y	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Z	.0000E+00	.0000E+00	.0000E+00	.0000E+00

Gravity Acceleration = .3864E+03

CONCENTRATED LOADS

Node	Fx	Fy	Fz	Mx	My	Mz
-----	-----	-----	-----	-----	-----	-----
94	.7650E+03	.9290E+03	.3849E+04	.7440E+04	.2963E+05	.4680E+04

REFERENCE TEMPERATURE = .0000E+00

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SOLVE DISPLACEMENTS

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L O A D C A S E 7
 SEISMIC PIPE AND JUMPER LOADS

GRAVITY LOADING

Direction	Gravity Factor	Load Factor
X	.0000E+00	.1000E+01
Y	.0000E+00	.1000E+01
Z	.0000E+00	.1000E+01

INERTIA LOADING

Direction	Translational Accel.	Rotational Accel.	Rotational Velocity	Origin
X	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Y	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Z	.0000E+00	.0000E+00	.0000E+00	.0000E+00

Gravity Acceleration = .3864E+03

CONCENTRATED LOADS

Node	Fx	Fy	Fz	Mx	My	Mz
94	.7560E+03	.9730E+03	.4187E+04	.6072E+04	.7320E+04	.5556E+04

REFERENCE TEMPERATURE = .0000E+00

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LOAD CASE 8
 COVER BLOCK DEAD LOAD

GRAVITY LOADING

Direction	Gravity Factor	Load Factor
X	.0000E+00	.1000E+01
Y	.0000E+00	.1000E+01
Z	.0000E+00	.1000E+01

INERTIA LOADING

Direction	Translational Accel.	Rotational Accel.	Rotational Velocity	Origin
X	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Y	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Z	.0000E+00	.0000E+00	.0000E+00	.0000E+00

Gravity Acceleration = .3864E+03

CONCENTRATED LOADS

Node	Fx	Fy	Fz	Mx	My	Mz
109	.0000E+00	.2660E+04	.0000E+00	.0000E+00	.0000E+00	.0000E+00
115	.0000E+00	.4620E+04	.0000E+00	.0000E+00	.0000E+00	.0000E+00
120	.0000E+00	.1960E+04	.0000E+00	.0000E+00	.0000E+00	.0000E+00

REFERENCE TEMPERATURE = .0000E+00

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LOAD CASE 1

SELF WEIGHT

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
1	.0000E+00	.0000E+00	.6250E+01	.0000E+00	.0000E+00	.0000E+00
2	.0000E+00	.0000E+00	.1146E+02	.0000E+00	.0000E+00	.0000E+00
3	.0000E+00	.0000E+00	.1042E+02	.0000E+00	.0000E+00	.0000E+00
4	.0000E+00	.0000E+00	.1042E+02	.0000E+00	.0000E+00	.0000E+00
5	.0000E+00	.0000E+00	.1042E+02	.0000E+00	.0000E+00	.0000E+00
6	.0000E+00	.0000E+00	.1042E+02	.0000E+00	.0000E+00	.0000E+00
7	.0000E+00	.0000E+00	.9895E+01	.0000E+00	.0000E+00	.0000E+00
8	.0000E+00	.0000E+00	.9374E+01	.0000E+00	.0000E+00	.0000E+00
9	.0000E+00	.0000E+00	.8854E+01	.0000E+00	.0000E+00	.0000E+00
10	.0000E+00	.0000E+00	.7812E+01	.0000E+00	.0000E+00	.0000E+00
11	.0000E+00	.0000E+00	.7291E+01	.0000E+00	.0000E+00	.0000E+00
12	.0000E+00	.0000E+00	.3646E+01	.0000E+00	.0000E+00	.0000E+00
13	.0000E+00	.0000E+00	.1250E+02	.0000E+00	.0000E+00	.0000E+00
14	.0000E+00	.0000E+00	.2292E+02	.0000E+00	.0000E+00	.0000E+00
15	.0000E+00	.0000E+00	.2083E+02	.0000E+00	.0000E+00	.0000E+00
16	.0000E+00	.0000E+00	.2083E+02	.0000E+00	.0000E+00	.0000E+00
17	.0000E+00	.0000E+00	.2083E+02	.0000E+00	.0000E+00	.0000E+00
18	.0000E+00	.0000E+00	.2083E+02	.0000E+00	.0000E+00	.0000E+00
19	.0000E+00	.0000E+00	.1979E+02	.0000E+00	.0000E+00	.0000E+00
20	.0000E+00	.0000E+00	.1875E+02	.0000E+00	.0000E+00	.0000E+00
21	.0000E+00	.0000E+00	.1771E+02	.0000E+00	.0000E+00	.0000E+00
22	.0000E+00	.0000E+00	.1562E+02	.0000E+00	.0000E+00	.0000E+00
23	.0000E+00	.0000E+00	.1458E+02	.0000E+00	.0000E+00	.0000E+00
24	.0000E+00	.0000E+00	.7291E+01	.0000E+00	.0000E+00	.0000E+00
25	.0000E+00	.0000E+00	.1250E+02	.0000E+00	.0000E+00	.0000E+00
26	.0000E+00	.0000E+00	.2292E+02	.0000E+00	.0000E+00	.0000E+00
27	.0000E+00	.0000E+00	.2083E+02	.0000E+00	.0000E+00	.0000E+00
28	.0000E+00	.0000E+00	.2083E+02	.0000E+00	.0000E+00	.0000E+00
29	.0000E+00	.0000E+00	.2083E+02	.0000E+00	.0000E+00	.0000E+00
30	.0000E+00	.0000E+00	.2083E+02	.0000E+00	.0000E+00	.0000E+00
31	.0000E+00	.0000E+00	.1979E+02	.0000E+00	.0000E+00	.0000E+00
32	.0000E+00	.0000E+00	.1875E+02	.0000E+00	.0000E+00	.0000E+00
33	.0000E+00	.0000E+00	.1771E+02	.0000E+00	.0000E+00	.0000E+00
34	.0000E+00	.0000E+00	.1562E+02	.0000E+00	.0000E+00	.0000E+00
35	.0000E+00	.0000E+00	.1458E+02	.0000E+00	.0000E+00	.0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

L O A D C A S E 1

SELF WEIGHT

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
36	.0000E+00	.0000E+00	.7291E+01	.0000E+00	.0000E+00	.0000E+00
37	.0000E+00	.0000E+00	.1250E+02	.0000E+00	.0000E+00	.0000E+00
38	.0000E+00	.0000E+00	.2292E+02	.0000E+00	.0000E+00	.0000E+00
39	.0000E+00	.0000E+00	.2083E+02	.0000E+00	.0000E+00	.0000E+00
40	.0000E+00	.0000E+00	.2083E+02	.0000E+00	.0000E+00	.0000E+00
41	.0000E+00	.0000E+00	.2083E+02	.0000E+00	.0000E+00	.0000E+00
42	.0000E+00	.0000E+00	.2083E+02	.0000E+00	.0000E+00	.0000E+00
43	.0000E+00	.0000E+00	.1979E+02	.0000E+00	.0000E+00	.0000E+00
44	.0000E+00	.0000E+00	.1875E+02	.0000E+00	.0000E+00	.0000E+00
45	.0000E+00	.0000E+00	.1771E+02	.0000E+00	.0000E+00	.0000E+00
46	.0000E+00	.0000E+00	.1562E+02	.0000E+00	.0000E+00	.0000E+00
47	.0000E+00	.0000E+00	.1458E+02	.0000E+00	.0000E+00	.0000E+00
48	.0000E+00	.0000E+00	.7291E+01	.0000E+00	.0000E+00	.0000E+00
49	.0000E+00	.0000E+00	.1250E+02	.0000E+00	.0000E+00	.0000E+00
50	.0000E+00	.0000E+00	.2292E+02	.0000E+00	.0000E+00	.0000E+00
51	.0000E+00	.0000E+00	.2083E+02	.0000E+00	.0000E+00	.0000E+00
52	.0000E+00	.0000E+00	.2083E+02	.0000E+00	.0000E+00	.0000E+00
53	.0000E+00	.0000E+00	.2083E+02	.0000E+00	.0000E+00	.0000E+00
54	.0000E+00	.0000E+00	.2083E+02	.0000E+00	.0000E+00	.0000E+00
55	.0000E+00	.0000E+00	.1979E+02	.0000E+00	.0000E+00	.0000E+00
56	.0000E+00	.0000E+00	.1875E+02	.0000E+00	.0000E+00	.0000E+00
57	.0000E+00	.0000E+00	.1771E+02	.0000E+00	.0000E+00	.0000E+00
58	.0000E+00	.0000E+00	.1562E+02	.0000E+00	.0000E+00	.0000E+00
59	.0000E+00	.0000E+00	.1458E+02	.0000E+00	.0000E+00	.0000E+00
60	.0000E+00	.0000E+00	.7291E+01	.0000E+00	.0000E+00	.0000E+00
61	.0000E+00	.0000E+00	.1187E+02	.0000E+00	.0000E+00	.0000E+00
62	.0000E+00	.0000E+00	.2177E+02	.0000E+00	.0000E+00	.0000E+00
63	.0000E+00	.0000E+00	.1979E+02	.0000E+00	.0000E+00	.0000E+00
64	.0000E+00	.0000E+00	.1979E+02	.0000E+00	.0000E+00	.0000E+00
65	.0000E+00	.0000E+00	.1979E+02	.0000E+00	.0000E+00	.0000E+00
66	.0000E+00	.0000E+00	.1979E+02	.0000E+00	.0000E+00	.0000E+00
67	.0000E+00	.0000E+00	.1880E+02	.0000E+00	.0000E+00	.0000E+00
68	.0000E+00	.0000E+00	.1781E+02	.0000E+00	.0000E+00	.0000E+00
69	.0000E+00	.0000E+00	.1682E+02	.0000E+00	.0000E+00	.0000E+00
70	.0000E+00	.0000E+00	.1484E+02	.0000E+00	.0000E+00	.0000E+00
71	.0000E+00	.0000E+00	.1385E+02	.0000E+00	.0000E+00	.0000E+00
72	.0000E+00	.0000E+00	.6927E+01	.0000E+00	.0000E+00	.0000E+00
73	.0000E+00	.0000E+00	.1125E+02	.0000E+00	.0000E+00	.0000E+00
74	.0000E+00	.0000E+00	.2062E+02	.0000E+00	.0000E+00	.0000E+00
75	.0000E+00	.0000E+00	.1875E+02	.0000E+00	.0000E+00	.0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

LOAD CASE 1

SELF WEIGHT

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
76	.0000E+00	.0000E+00	.1875E+02	.0000E+00	.0000E+00	.0000E+00
77	.0000E+00	.0000E+00	.1875E+02	.0000E+00	.0000E+00	.0000E+00
78	.0000E+00	.0000E+00	.1875E+02	.0000E+00	.0000E+00	.0000E+00
79	.0000E+00	.0000E+00	.1781E+02	.0000E+00	.0000E+00	.0000E+00
80	.0000E+00	.0000E+00	.1687E+02	.0000E+00	.0000E+00	.0000E+00
81	.0000E+00	.0000E+00	.1594E+02	.0000E+00	.0000E+00	.0000E+00
82	.0000E+00	.0000E+00	.1406E+02	.0000E+00	.0000E+00	.0000E+00
83	.0000E+00	.0000E+00	.1312E+02	.0000E+00	.0000E+00	.0000E+00
84	.0000E+00	.0000E+00	.6562E+01	.0000E+00	.0000E+00	.0000E+00
85	.0000E+00	.0000E+00	.1062E+02	.0000E+00	.0000E+00	.0000E+00
86	.0000E+00	.0000E+00	.1948E+02	.0000E+00	.0000E+00	.0000E+00
87	.0000E+00	.0000E+00	.1771E+02	.0000E+00	.0000E+00	.0000E+00
88	.0000E+00	.0000E+00	.1771E+02	.0000E+00	.0000E+00	.0000E+00
89	.0000E+00	.0000E+00	.1771E+02	.0000E+00	.0000E+00	.0000E+00
90	.0000E+00	.0000E+00	.1771E+02	.0000E+00	.0000E+00	.0000E+00
91	.0000E+00	.0000E+00	.1682E+02	.0000E+00	.0000E+00	.0000E+00
92	.0000E+00	.0000E+00	.1594E+02	.0000E+00	.0000E+00	.0000E+00
93	.0000E+00	.0000E+00	.1505E+02	.0000E+00	.0000E+00	.0000E+00
94	.0000E+00	.0000E+00	.1328E+02	.0000E+00	.0000E+00	.0000E+00
95	.0000E+00	.0000E+00	.1240E+02	.0000E+00	.0000E+00	.0000E+00
96	.0000E+00	.0000E+00	.6198E+01	.0000E+00	.0000E+00	.0000E+00
97	.0000E+00	.0000E+00	.9999E+01	.0000E+00	.0000E+00	.0000E+00
98	.0000E+00	.0000E+00	.1833E+02	.0000E+00	.0000E+00	.0000E+00
99	.0000E+00	.0000E+00	.1667E+02	.0000E+00	.0000E+00	.0000E+00
100	.0000E+00	.0000E+00	.1667E+02	.0000E+00	.0000E+00	.0000E+00
101	.0000E+00	.0000E+00	.1667E+02	.0000E+00	.0000E+00	.0000E+00
102	.0000E+00	.0000E+00	.1667E+02	.0000E+00	.0000E+00	.0000E+00
103	.0000E+00	.0000E+00	.1583E+02	.0000E+00	.0000E+00	.0000E+00
104	.0000E+00	.0000E+00	.1500E+02	.0000E+00	.0000E+00	.0000E+00
105	.0000E+00	.0000E+00	.1417E+02	.0000E+00	.0000E+00	.0000E+00
106	.0000E+00	.0000E+00	.1250E+02	.0000E+00	.0000E+00	.0000E+00
107	.0000E+00	.0000E+00	.1167E+02	.0000E+00	.0000E+00	.0000E+00
108	.0000E+00	.0000E+00	.5833E+01	.0000E+00	.0000E+00	.0000E+00
109	.0000E+00	.0000E+00	.7483E+01	.0000E+00	.0000E+00	.0000E+00
110	.0000E+00	.0000E+00	.1364E+02	.0000E+00	.0000E+00	.0000E+00
111	.0000E+00	.0000E+00	.1231E+02	.0000E+00	.0000E+00	.0000E+00
112	.0000E+00	.0000E+00	.1231E+02	.0000E+00	.0000E+00	.0000E+00
113	.0000E+00	.0000E+00	.1231E+02	.0000E+00	.0000E+00	.0000E+00
114	.0000E+00	.0000E+00	.1231E+02	.0000E+00	.0000E+00	.0000E+00
115	.0000E+00	.0000E+00	.1169E+02	.0000E+00	.0000E+00	.0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

LOAD CASE 1

SELF WEIGHT

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
116	.0000E+00	.0000E+00	.1108E+02	.0000E+00	.0000E+00	.0000E+00
117	.0000E+00	.0000E+00	.1046E+02	.0000E+00	.0000E+00	.0000E+00
118	.0000E+00	.0000E+00	.9230E+01	.0000E+00	.0000E+00	.0000E+00
119	.0000E+00	.0000E+00	.8714E+01	.0000E+00	.0000E+00	.0000E+00
120	.0000E+00	.0000E+00	.4407E+01	.0000E+00	.0000E+00	.0000E+00
121	.0000E+00	.0000E+00	.5365E+01	.0000E+00	.0000E+00	.0000E+00
122	.0000E+00	.0000E+00	.9338E+01	.0000E+00	.0000E+00	.0000E+00
123	.0000E+00	.0000E+00	.7947E+01	.0000E+00	.0000E+00	.0000E+00
124	.0000E+00	.0000E+00	.7947E+01	.0000E+00	.0000E+00	.0000E+00
125	.0000E+00	.0000E+00	.7947E+01	.0000E+00	.0000E+00	.0000E+00
126	.0000E+00	.0000E+00	.7947E+01	.0000E+00	.0000E+00	.0000E+00
127	.0000E+00	.0000E+00	.7550E+01	.0000E+00	.0000E+00	.0000E+00
128	.0000E+00	.0000E+00	.7153E+01	.0000E+00	.0000E+00	.0000E+00
129	.0000E+00	.0000E+00	.6755E+01	.0000E+00	.0000E+00	.0000E+00
130	.0000E+00	.0000E+00	.5961E+01	.0000E+00	.0000E+00	.0000E+00
131	.0000E+00	.0000E+00	.6159E+01	.0000E+00	.0000E+00	.0000E+00
132	.0000E+00	.0000E+00	.3378E+01	.0000E+00	.0000E+00	.0000E+00
133	.0000E+00	.0000E+00	.5961E+01	.0000E+00	.0000E+00	.0000E+00
134	.0000E+00	.0000E+00	.9934E+01	.0000E+00	.0000E+00	.0000E+00
135	.0000E+00	.0000E+00	.7947E+01	.0000E+00	.0000E+00	.0000E+00
136	.0000E+00	.0000E+00	.7947E+01	.0000E+00	.0000E+00	.0000E+00
137	.0000E+00	.0000E+00	.7947E+01	.0000E+00	.0000E+00	.0000E+00
138	.0000E+00	.0000E+00	.7947E+01	.0000E+00	.0000E+00	.0000E+00
139	.0000E+00	.0000E+00	.7550E+01	.0000E+00	.0000E+00	.0000E+00
140	.0000E+00	.0000E+00	.7153E+01	.0000E+00	.0000E+00	.0000E+00
141	.0000E+00	.0000E+00	.6755E+01	.0000E+00	.0000E+00	.0000E+00
142	.0000E+00	.0000E+00	.5961E+01	.0000E+00	.0000E+00	.0000E+00
143	.0000E+00	.0000E+00	.6755E+01	.0000E+00	.0000E+00	.0000E+00
144	.0000E+00	.0000E+00	.3974E+01	.0000E+00	.0000E+00	.0000E+00
145	.0000E+00	.0000E+00	.6557E+01	.0000E+00	.0000E+00	.0000E+00
146	.0000E+00	.0000E+00	.1053E+02	.0000E+00	.0000E+00	.0000E+00
147	.0000E+00	.0000E+00	.7947E+01	.0000E+00	.0000E+00	.0000E+00
148	.0000E+00	.0000E+00	.7947E+01	.0000E+00	.0000E+00	.0000E+00
149	.0000E+00	.0000E+00	.7947E+01	.0000E+00	.0000E+00	.0000E+00
150	.0000E+00	.0000E+00	.7947E+01	.0000E+00	.0000E+00	.0000E+00
151	.0000E+00	.0000E+00	.7550E+01	.0000E+00	.0000E+00	.0000E+00
152	.0000E+00	.0000E+00	.7153E+01	.0000E+00	.0000E+00	.0000E+00
153	.0000E+00	.0000E+00	.6755E+01	.0000E+00	.0000E+00	.0000E+00
154	.0000E+00	.0000E+00	.5961E+01	.0000E+00	.0000E+00	.0000E+00
155	.0000E+00	.0000E+00	.7351E+01	.0000E+00	.0000E+00	.0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

L O A D C A S E 1

SELF WEIGHT

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
156	.0000E+00	.0000E+00	.4570E+01	.0000E+00	.0000E+00	.0000E+00
157	.0000E+00	.0000E+00	.3477E+01	.0000E+00	.0000E+00	.0000E+00
158	.0000E+00	.0000E+00	.5464E+01	.0000E+00	.0000E+00	.0000E+00
159	.0000E+00	.0000E+00	.3974E+01	.0000E+00	.0000E+00	.0000E+00
160	.0000E+00	.0000E+00	.3974E+01	.0000E+00	.0000E+00	.0000E+00
161	.0000E+00	.0000E+00	.3974E+01	.0000E+00	.0000E+00	.0000E+00
162	.0000E+00	.0000E+00	.3974E+01	.0000E+00	.0000E+00	.0000E+00
163	.0000E+00	.0000E+00	.3775E+01	.0000E+00	.0000E+00	.0000E+00
164	.0000E+00	.0000E+00	.3576E+01	.0000E+00	.0000E+00	.0000E+00
165	.0000E+00	.0000E+00	.3378E+01	.0000E+00	.0000E+00	.0000E+00
166	.0000E+00	.0000E+00	.2980E+01	.0000E+00	.0000E+00	.0000E+00
167	.0000E+00	.0000E+00	.3874E+01	.0000E+00	.0000E+00	.0000E+00
168	.0000E+00	.0000E+00	.2484E+01	.0000E+00	.0000E+00	.0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

LOAD CASE 2
 SEISMIC SOIL PRESSURE

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
1	.0000E+00	.0000E+00	.2656E+01	.0000E+00	.0000E+00	.0000E+00
2	.0000E+00	.0000E+00	.4870E+01	.0000E+00	.0000E+00	.0000E+00
3	.0000E+00	.0000E+00	.4427E+01	.0000E+00	.0000E+00	.0000E+00
4	.0000E+00	.0000E+00	.4427E+01	.0000E+00	.0000E+00	.0000E+00
5	.0000E+00	.0000E+00	.4427E+01	.0000E+00	.0000E+00	.0000E+00
6	.0000E+00	.0000E+00	.4427E+01	.0000E+00	.0000E+00	.0000E+00
7	.0000E+00	.0000E+00	.4206E+01	.0000E+00	.0000E+00	.0000E+00
8	.0000E+00	.0000E+00	.3984E+01	.0000E+00	.0000E+00	.0000E+00
9	.0000E+00	.0000E+00	.3763E+01	.0000E+00	.0000E+00	.0000E+00
10	.0000E+00	.0000E+00	.3320E+01	.0000E+00	.0000E+00	.0000E+00
11	.0000E+00	.0000E+00	.3099E+01	.0000E+00	.0000E+00	.0000E+00
12	.0000E+00	.0000E+00	.1549E+01	.0000E+00	.0000E+00	.0000E+00
13	.0000E+00	.0000E+00	.1594E+02	.0000E+00	.0000E+00	.0000E+00
14	.0000E+00	.0000E+00	.2922E+02	.0000E+00	.0000E+00	.0000E+00
15	.0000E+00	.0000E+00	.2656E+02	.0000E+00	.0000E+00	.0000E+00
16	.0000E+00	.0000E+00	.2656E+02	.0000E+00	.0000E+00	.0000E+00
17	.0000E+00	.0000E+00	.2656E+02	.0000E+00	.0000E+00	.0000E+00
18	.0000E+00	.0000E+00	.2656E+02	.0000E+00	.0000E+00	.0000E+00
19	.0000E+00	.0000E+00	.2523E+02	.0000E+00	.0000E+00	.0000E+00
20	.0000E+00	.0000E+00	.2391E+02	.0000E+00	.0000E+00	.0000E+00
21	.0000E+00	.0000E+00	.2258E+02	.0000E+00	.0000E+00	.0000E+00
22	.0000E+00	.0000E+00	.1992E+02	.0000E+00	.0000E+00	.0000E+00
23	.0000E+00	.0000E+00	.1859E+02	.0000E+00	.0000E+00	.0000E+00
24	.0000E+00	.0000E+00	.9297E+01	.0000E+00	.0000E+00	.0000E+00
25	.0000E+00	.0000E+00	.3188E+02	.0000E+00	.0000E+00	.0000E+00
26	.0000E+00	.0000E+00	.5844E+02	.0000E+00	.0000E+00	.0000E+00
27	.0000E+00	.0000E+00	.5313E+02	.0000E+00	.0000E+00	.0000E+00
28	.0000E+00	.0000E+00	.5313E+02	.0000E+00	.0000E+00	.0000E+00
29	.0000E+00	.0000E+00	.5313E+02	.0000E+00	.0000E+00	.0000E+00
30	.0000E+00	.0000E+00	.5313E+02	.0000E+00	.0000E+00	.0000E+00
31	.0000E+00	.0000E+00	.5047E+02	.0000E+00	.0000E+00	.0000E+00
32	.0000E+00	.0000E+00	.4781E+02	.0000E+00	.0000E+00	.0000E+00
33	.0000E+00	.0000E+00	.4516E+02	.0000E+00	.0000E+00	.0000E+00
34	.0000E+00	.0000E+00	.3984E+02	.0000E+00	.0000E+00	.0000E+00
35	.0000E+00	.0000E+00	.3719E+02	.0000E+00	.0000E+00	.0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

L O A D C A S E 2

SEISMIC SOIL PRESSURE

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
36	.0000E+00	.0000E+00	.1859E+02	.0000E+00	.0000E+00	.0000E+00
37	.0000E+00	.0000E+00	.4781E+02	.0000E+00	.0000E+00	.0000E+00
38	.0000E+00	.0000E+00	.8766E+02	.0000E+00	.0000E+00	.0000E+00
39	.0000E+00	.0000E+00	.7969E+02	.0000E+00	.0000E+00	.0000E+00
40	.0000E+00	.0000E+00	.7969E+02	.0000E+00	.0000E+00	.0000E+00
41	.0000E+00	.0000E+00	.7969E+02	.0000E+00	.0000E+00	.0000E+00
42	.0000E+00	.0000E+00	.7969E+02	.0000E+00	.0000E+00	.0000E+00
43	.0000E+00	.0000E+00	.7570E+02	.0000E+00	.0000E+00	.0000E+00
44	.0000E+00	.0000E+00	.7172E+02	.0000E+00	.0000E+00	.0000E+00
45	.0000E+00	.0000E+00	.6773E+02	.0000E+00	.0000E+00	.0000E+00
46	.0000E+00	.0000E+00	.5977E+02	.0000E+00	.0000E+00	.0000E+00
47	.0000E+00	.0000E+00	.5578E+02	.0000E+00	.0000E+00	.0000E+00
48	.0000E+00	.0000E+00	.2789E+02	.0000E+00	.0000E+00	.0000E+00
49	.0000E+00	.0000E+00	.6375E+02	.0000E+00	.0000E+00	.0000E+00
50	.0000E+00	.0000E+00	.1169E+03	.0000E+00	.0000E+00	.0000E+00
51	.0000E+00	.0000E+00	.1063E+03	.0000E+00	.0000E+00	.0000E+00
52	.0000E+00	.0000E+00	.1063E+03	.0000E+00	.0000E+00	.0000E+00
53	.0000E+00	.0000E+00	.1063E+03	.0000E+00	.0000E+00	.0000E+00
54	.0000E+00	.0000E+00	.1063E+03	.0000E+00	.0000E+00	.0000E+00
55	.0000E+00	.0000E+00	.1009E+03	.0000E+00	.0000E+00	.0000E+00
56	.0000E+00	.0000E+00	.9563E+02	.0000E+00	.0000E+00	.0000E+00
57	.0000E+00	.0000E+00	.9031E+02	.0000E+00	.0000E+00	.0000E+00
58	.0000E+00	.0000E+00	.7969E+02	.0000E+00	.0000E+00	.0000E+00
59	.0000E+00	.0000E+00	.7438E+02	.0000E+00	.0000E+00	.0000E+00
60	.0000E+00	.0000E+00	.3719E+02	.0000E+00	.0000E+00	.0000E+00
61	.0000E+00	.0000E+00	.7520E+02	.0000E+00	.0000E+00	.0000E+00
62	.0000E+00	.0000E+00	.1379E+03	.0000E+00	.0000E+00	.0000E+00
63	.0000E+00	.0000E+00	.1253E+03	.0000E+00	.0000E+00	.0000E+00
64	.0000E+00	.0000E+00	.1253E+03	.0000E+00	.0000E+00	.0000E+00
65	.0000E+00	.0000E+00	.1253E+03	.0000E+00	.0000E+00	.0000E+00
66	.0000E+00	.0000E+00	.1253E+03	.0000E+00	.0000E+00	.0000E+00
67	.0000E+00	.0000E+00	.1191E+03	.0000E+00	.0000E+00	.0000E+00
68	.0000E+00	.0000E+00	.1128E+03	.0000E+00	.0000E+00	.0000E+00
69	.0000E+00	.0000E+00	.1065E+03	.0000E+00	.0000E+00	.0000E+00
70	.0000E+00	.0000E+00	.9400E+02	.0000E+00	.0000E+00	.0000E+00
71	.0000E+00	.0000E+00	.8773E+02	.0000E+00	.0000E+00	.0000E+00
72	.0000E+00	.0000E+00	.4387E+02	.0000E+00	.0000E+00	.0000E+00
73	.0000E+00	.0000E+00	.8463E+02	.0000E+00	.0000E+00	.0000E+00
74	.0000E+00	.0000E+00	.1552E+03	.0000E+00	.0000E+00	.0000E+00
75	.0000E+00	.0000E+00	.1410E+03	.0000E+00	.0000E+00	.0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

LOAD CASE 2
 SEISMIC SOIL PRESSURE

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
76	.0000E+00	.0000E+00	.1410E+03	.0000E+00	.0000E+00	.0000E+00
77	.0000E+00	.0000E+00	.1410E+03	.0000E+00	.0000E+00	.0000E+00
78	.0000E+00	.0000E+00	.1410E+03	.0000E+00	.0000E+00	.0000E+00
79	.0000E+00	.0000E+00	.1340E+03	.0000E+00	.0000E+00	.0000E+00
80	.0000E+00	.0000E+00	.1269E+03	.0000E+00	.0000E+00	.0000E+00
81	.0000E+00	.0000E+00	.1199E+03	.0000E+00	.0000E+00	.0000E+00
82	.0000E+00	.0000E+00	.1058E+03	.0000E+00	.0000E+00	.0000E+00
83	.0000E+00	.0000E+00	.9873E+02	.0000E+00	.0000E+00	.0000E+00
84	.0000E+00	.0000E+00	.4937E+02	.0000E+00	.0000E+00	.0000E+00
85	.0000E+00	.0000E+00	.9167E+02	.0000E+00	.0000E+00	.0000E+00
86	.0000E+00	.0000E+00	.1681E+03	.0000E+00	.0000E+00	.0000E+00
87	.0000E+00	.0000E+00	.1528E+03	.0000E+00	.0000E+00	.0000E+00
88	.0000E+00	.0000E+00	.1528E+03	.0000E+00	.0000E+00	.0000E+00
89	.0000E+00	.0000E+00	.1528E+03	.0000E+00	.0000E+00	.0000E+00
90	.0000E+00	.0000E+00	.1528E+03	.0000E+00	.0000E+00	.0000E+00
91	.0000E+00	.0000E+00	.1451E+03	.0000E+00	.0000E+00	.0000E+00
92	.0000E+00	.0000E+00	.1375E+03	.0000E+00	.0000E+00	.0000E+00
93	.0000E+00	.0000E+00	.1299E+03	.0000E+00	.0000E+00	.0000E+00
94	.0000E+00	.0000E+00	.1146E+03	.0000E+00	.0000E+00	.0000E+00
95	.0000E+00	.0000E+00	.1069E+03	.0000E+00	.0000E+00	.0000E+00
96	.0000E+00	.0000E+00	.5347E+02	.0000E+00	.0000E+00	.0000E+00
97	.0000E+00	.0000E+00	.9690E+02	.0000E+00	.0000E+00	.0000E+00
98	.0000E+00	.0000E+00	.1776E+03	.0000E+00	.0000E+00	.0000E+00
99	.0000E+00	.0000E+00	.1615E+03	.0000E+00	.0000E+00	.0000E+00
100	.0000E+00	.0000E+00	.1615E+03	.0000E+00	.0000E+00	.0000E+00
101	.0000E+00	.0000E+00	.1615E+03	.0000E+00	.0000E+00	.0000E+00
102	.0000E+00	.0000E+00	.1615E+03	.0000E+00	.0000E+00	.0000E+00
103	.0000E+00	.0000E+00	.1534E+03	.0000E+00	.0000E+00	.0000E+00
104	.0000E+00	.0000E+00	.1453E+03	.0000E+00	.0000E+00	.0000E+00
105	.0000E+00	.0000E+00	.1373E+03	.0000E+00	.0000E+00	.0000E+00
106	.0000E+00	.0000E+00	.1211E+03	.0000E+00	.0000E+00	.0000E+00
107	.0000E+00	.0000E+00	.1130E+03	.0000E+00	.0000E+00	.0000E+00
108	.0000E+00	.0000E+00	.5652E+02	.0000E+00	.0000E+00	.0000E+00
109	.0000E+00	.0000E+00	.9470E+02	.0000E+00	.0000E+00	.0000E+00
110	.0000E+00	.0000E+00	.1722E+03	.0000E+00	.0000E+00	.0000E+00
111	.0000E+00	.0000E+00	.1549E+03	.0000E+00	.0000E+00	.0000E+00
112	.0000E+00	.0000E+00	.1549E+03	.0000E+00	.0000E+00	.0000E+00
113	.0000E+00	.0000E+00	.1549E+03	.0000E+00	.0000E+00	.0000E+00
114	.0000E+00	.0000E+00	.1549E+03	.0000E+00	.0000E+00	.0000E+00
115	.0000E+00	.0000E+00	.1472E+03	.0000E+00	.0000E+00	.0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

LOAD CASE 2
 SEISMIC SOIL PRESSURE

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
116	.0000E+00	.0000E+00	.1395E+03	.0000E+00	.0000E+00	.0000E+00
117	.0000E+00	.0000E+00	.1317E+03	.0000E+00	.0000E+00	.0000E+00
118	.0000E+00	.0000E+00	.1162E+03	.0000E+00	.0000E+00	.0000E+00
119	.0000E+00	.0000E+00	.1102E+03	.0000E+00	.0000E+00	.0000E+00
120	.0000E+00	.0000E+00	.5596E+02	.0000E+00	.0000E+00	.0000E+00
121	.0000E+00	.0000E+00	.9694E+02	.0000E+00	.0000E+00	.0000E+00
122	.0000E+00	.0000E+00	.1687E+03	.0000E+00	.0000E+00	.0000E+00
123	.0000E+00	.0000E+00	.1434E+03	.0000E+00	.0000E+00	.0000E+00
124	.0000E+00	.0000E+00	.1434E+03	.0000E+00	.0000E+00	.0000E+00
125	.0000E+00	.0000E+00	.1434E+03	.0000E+00	.0000E+00	.0000E+00
126	.0000E+00	.0000E+00	.1434E+03	.0000E+00	.0000E+00	.0000E+00
127	.0000E+00	.0000E+00	.1363E+03	.0000E+00	.0000E+00	.0000E+00
128	.0000E+00	.0000E+00	.1291E+03	.0000E+00	.0000E+00	.0000E+00
129	.0000E+00	.0000E+00	.1219E+03	.0000E+00	.0000E+00	.0000E+00
130	.0000E+00	.0000E+00	.1076E+03	.0000E+00	.0000E+00	.0000E+00
131	.0000E+00	.0000E+00	.1113E+03	.0000E+00	.0000E+00	.0000E+00
132	.0000E+00	.0000E+00	.6108E+02	.0000E+00	.0000E+00	.0000E+00
133	.0000E+00	.0000E+00	.5433E+02	.0000E+00	.0000E+00	.0000E+00
134	.0000E+00	.0000E+00	.9178E+02	.0000E+00	.0000E+00	.0000E+00
135	.0000E+00	.0000E+00	.7491E+02	.0000E+00	.0000E+00	.0000E+00
136	.0000E+00	.0000E+00	.7491E+02	.0000E+00	.0000E+00	.0000E+00
137	.0000E+00	.0000E+00	.7491E+02	.0000E+00	.0000E+00	.0000E+00
138	.0000E+00	.0000E+00	.7491E+02	.0000E+00	.0000E+00	.0000E+00
139	.0000E+00	.0000E+00	.7116E+02	.0000E+00	.0000E+00	.0000E+00
140	.0000E+00	.0000E+00	.6742E+02	.0000E+00	.0000E+00	.0000E+00
141	.0000E+00	.0000E+00	.6367E+02	.0000E+00	.0000E+00	.0000E+00
142	.0000E+00	.0000E+00	.5618E+02	.0000E+00	.0000E+00	.0000E+00
143	.0000E+00	.0000E+00	.6182E+02	.0000E+00	.0000E+00	.0000E+00
144	.0000E+00	.0000E+00	.3560E+02	.0000E+00	.0000E+00	.0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

L O A D C A S E 3
 LATERAL EARTH PRESSURE

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
1	.0000E+00	.0000E+00	.4662E+02	.0000E+00	.0000E+00	.0000E+00
2	.0000E+00	.0000E+00	.8548E+02	.0000E+00	.0000E+00	.0000E+00
3	.0000E+00	.0000E+00	.7770E+02	.0000E+00	.0000E+00	.0000E+00
4	.0000E+00	.0000E+00	.7770E+02	.0000E+00	.0000E+00	.0000E+00
5	.0000E+00	.0000E+00	.7770E+02	.0000E+00	.0000E+00	.0000E+00
6	.0000E+00	.0000E+00	.7770E+02	.0000E+00	.0000E+00	.0000E+00
7	.0000E+00	.0000E+00	.7382E+02	.0000E+00	.0000E+00	.0000E+00
8	.0000E+00	.0000E+00	.6993E+02	.0000E+00	.0000E+00	.0000E+00
9	.0000E+00	.0000E+00	.6605E+02	.0000E+00	.0000E+00	.0000E+00
10	.0000E+00	.0000E+00	.5828E+02	.0000E+00	.0000E+00	.0000E+00
11	.0000E+00	.0000E+00	.5439E+02	.0000E+00	.0000E+00	.0000E+00
12	.0000E+00	.0000E+00	.2720E+02	.0000E+00	.0000E+00	.0000E+00
13	.0000E+00	.0000E+00	.8654E+02	.0000E+00	.0000E+00	.0000E+00
14	.0000E+00	.0000E+00	.1587E+03	.0000E+00	.0000E+00	.0000E+00
15	.0000E+00	.0000E+00	.1442E+03	.0000E+00	.0000E+00	.0000E+00
16	.0000E+00	.0000E+00	.1442E+03	.0000E+00	.0000E+00	.0000E+00
17	.0000E+00	.0000E+00	.1442E+03	.0000E+00	.0000E+00	.0000E+00
18	.0000E+00	.0000E+00	.1442E+03	.0000E+00	.0000E+00	.0000E+00
19	.0000E+00	.0000E+00	.1370E+03	.0000E+00	.0000E+00	.0000E+00
20	.0000E+00	.0000E+00	.1298E+03	.0000E+00	.0000E+00	.0000E+00
21	.0000E+00	.0000E+00	.1226E+03	.0000E+00	.0000E+00	.0000E+00
22	.0000E+00	.0000E+00	.1082E+03	.0000E+00	.0000E+00	.0000E+00
23	.0000E+00	.0000E+00	.1010E+03	.0000E+00	.0000E+00	.0000E+00
24	.0000E+00	.0000E+00	.5048E+02	.0000E+00	.0000E+00	.0000E+00
25	.0000E+00	.0000E+00	.7647E+02	.0000E+00	.0000E+00	.0000E+00
26	.0000E+00	.0000E+00	.1402E+03	.0000E+00	.0000E+00	.0000E+00
27	.0000E+00	.0000E+00	.1275E+03	.0000E+00	.0000E+00	.0000E+00
28	.0000E+00	.0000E+00	.1275E+03	.0000E+00	.0000E+00	.0000E+00
29	.0000E+00	.0000E+00	.1275E+03	.0000E+00	.0000E+00	.0000E+00
30	.0000E+00	.0000E+00	.1275E+03	.0000E+00	.0000E+00	.0000E+00
31	.0000E+00	.0000E+00	.1211E+03	.0000E+00	.0000E+00	.0000E+00
32	.0000E+00	.0000E+00	.1147E+03	.0000E+00	.0000E+00	.0000E+00
33	.0000E+00	.0000E+00	.1083E+03	.0000E+00	.0000E+00	.0000E+00
34	.0000E+00	.0000E+00	.9559E+02	.0000E+00	.0000E+00	.0000E+00
35	.0000E+00	.0000E+00	.8922E+02	.0000E+00	.0000E+00	.0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

LOAD CASE 3

LATERAL EARTH PRESSURE

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
36	.0000E+00	.0000E+00	.4461E+02	.0000E+00	.0000E+00	.0000E+00
37	.0000E+00	.0000E+00	.6641E+02	.0000E+00	.0000E+00	.0000E+00
38	.0000E+00	.0000E+00	.1218E+03	.0000E+00	.0000E+00	.0000E+00
39	.0000E+00	.0000E+00	.1107E+03	.0000E+00	.0000E+00	.0000E+00
40	.0000E+00	.0000E+00	.1107E+03	.0000E+00	.0000E+00	.0000E+00
41	.0000E+00	.0000E+00	.1107E+03	.0000E+00	.0000E+00	.0000E+00
42	.0000E+00	.0000E+00	.1107E+03	.0000E+00	.0000E+00	.0000E+00
43	.0000E+00	.0000E+00	.1052E+03	.0000E+00	.0000E+00	.0000E+00
44	.0000E+00	.0000E+00	.9962E+02	.0000E+00	.0000E+00	.0000E+00
45	.0000E+00	.0000E+00	.9408E+02	.0000E+00	.0000E+00	.0000E+00
46	.0000E+00	.0000E+00	.8302E+02	.0000E+00	.0000E+00	.0000E+00
47	.0000E+00	.0000E+00	.7748E+02	.0000E+00	.0000E+00	.0000E+00
48	.0000E+00	.0000E+00	.3874E+02	.0000E+00	.0000E+00	.0000E+00
49	.0000E+00	.0000E+00	.5635E+02	.0000E+00	.0000E+00	.0000E+00
50	.0000E+00	.0000E+00	.1033E+03	.0000E+00	.0000E+00	.0000E+00
51	.0000E+00	.0000E+00	.9392E+02	.0000E+00	.0000E+00	.0000E+00
52	.0000E+00	.0000E+00	.9392E+02	.0000E+00	.0000E+00	.0000E+00
53	.0000E+00	.0000E+00	.9392E+02	.0000E+00	.0000E+00	.0000E+00
54	.0000E+00	.0000E+00	.9392E+02	.0000E+00	.0000E+00	.0000E+00
55	.0000E+00	.0000E+00	.8922E+02	.0000E+00	.0000E+00	.0000E+00
56	.0000E+00	.0000E+00	.8453E+02	.0000E+00	.0000E+00	.0000E+00
57	.0000E+00	.0000E+00	.7983E+02	.0000E+00	.0000E+00	.0000E+00
58	.0000E+00	.0000E+00	.7044E+02	.0000E+00	.0000E+00	.0000E+00
59	.0000E+00	.0000E+00	.6574E+02	.0000E+00	.0000E+00	.0000E+00
60	.0000E+00	.0000E+00	.3287E+02	.0000E+00	.0000E+00	.0000E+00
61	.0000E+00	.0000E+00	.4429E+02	.0000E+00	.0000E+00	.0000E+00
62	.0000E+00	.0000E+00	.8120E+02	.0000E+00	.0000E+00	.0000E+00
63	.0000E+00	.0000E+00	.7382E+02	.0000E+00	.0000E+00	.0000E+00
64	.0000E+00	.0000E+00	.7382E+02	.0000E+00	.0000E+00	.0000E+00
65	.0000E+00	.0000E+00	.7382E+02	.0000E+00	.0000E+00	.0000E+00
66	.0000E+00	.0000E+00	.7382E+02	.0000E+00	.0000E+00	.0000E+00
67	.0000E+00	.0000E+00	.7013E+02	.0000E+00	.0000E+00	.0000E+00
68	.0000E+00	.0000E+00	.6644E+02	.0000E+00	.0000E+00	.0000E+00
69	.0000E+00	.0000E+00	.6275E+02	.0000E+00	.0000E+00	.0000E+00
70	.0000E+00	.0000E+00	.5536E+02	.0000E+00	.0000E+00	.0000E+00
71	.0000E+00	.0000E+00	.5167E+02	.0000E+00	.0000E+00	.0000E+00
72	.0000E+00	.0000E+00	.2584E+02	.0000E+00	.0000E+00	.0000E+00
73	.0000E+00	.0000E+00	.3351E+02	.0000E+00	.0000E+00	.0000E+00
74	.0000E+00	.0000E+00	.6143E+02	.0000E+00	.0000E+00	.0000E+00
75	.0000E+00	.0000E+00	.5585E+02	.0000E+00	.0000E+00	.0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

L O A D C A S E 3

LATERAL EARTH PRESSURE

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
76	.0000E+00	.0000E+00	.5585E+02	.0000E+00	.0000E+00	.0000E+00
77	.0000E+00	.0000E+00	.5585E+02	.0000E+00	.0000E+00	.0000E+00
78	.0000E+00	.0000E+00	.5585E+02	.0000E+00	.0000E+00	.0000E+00
79	.0000E+00	.0000E+00	.5305E+02	.0000E+00	.0000E+00	.0000E+00
80	.0000E+00	.0000E+00	.5026E+02	.0000E+00	.0000E+00	.0000E+00
81	.0000E+00	.0000E+00	.4747E+02	.0000E+00	.0000E+00	.0000E+00
82	.0000E+00	.0000E+00	.4189E+02	.0000E+00	.0000E+00	.0000E+00
83	.0000E+00	.0000E+00	.3909E+02	.0000E+00	.0000E+00	.0000E+00
84	.0000E+00	.0000E+00	.1955E+02	.0000E+00	.0000E+00	.0000E+00
85	.0000E+00	.0000E+00	.2423E+02	.0000E+00	.0000E+00	.0000E+00
86	.0000E+00	.0000E+00	.4443E+02	.0000E+00	.0000E+00	.0000E+00
87	.0000E+00	.0000E+00	.4039E+02	.0000E+00	.0000E+00	.0000E+00
88	.0000E+00	.0000E+00	.4039E+02	.0000E+00	.0000E+00	.0000E+00
89	.0000E+00	.0000E+00	.4039E+02	.0000E+00	.0000E+00	.0000E+00
90	.0000E+00	.0000E+00	.4039E+02	.0000E+00	.0000E+00	.0000E+00
91	.0000E+00	.0000E+00	.3837E+02	.0000E+00	.0000E+00	.0000E+00
92	.0000E+00	.0000E+00	.3635E+02	.0000E+00	.0000E+00	.0000E+00
93	.0000E+00	.0000E+00	.3433E+02	.0000E+00	.0000E+00	.0000E+00
94	.0000E+00	.0000E+00	.3029E+02	.0000E+00	.0000E+00	.0000E+00
95	.0000E+00	.0000E+00	.2827E+02	.0000E+00	.0000E+00	.0000E+00
96	.0000E+00	.0000E+00	.1414E+02	.0000E+00	.0000E+00	.0000E+00
97	.0000E+00	.0000E+00	.1610E+02	.0000E+00	.0000E+00	.0000E+00
98	.0000E+00	.0000E+00	.2952E+02	.0000E+00	.0000E+00	.0000E+00
99	.0000E+00	.0000E+00	.2683E+02	.0000E+00	.0000E+00	.0000E+00
100	.0000E+00	.0000E+00	.2683E+02	.0000E+00	.0000E+00	.0000E+00
101	.0000E+00	.0000E+00	.2683E+02	.0000E+00	.0000E+00	.0000E+00
102	.0000E+00	.0000E+00	.2683E+02	.0000E+00	.0000E+00	.0000E+00
103	.0000E+00	.0000E+00	.2549E+02	.0000E+00	.0000E+00	.0000E+00
104	.0000E+00	.0000E+00	.2415E+02	.0000E+00	.0000E+00	.0000E+00
105	.0000E+00	.0000E+00	.2281E+02	.0000E+00	.0000E+00	.0000E+00
106	.0000E+00	.0000E+00	.2013E+02	.0000E+00	.0000E+00	.0000E+00
107	.0000E+00	.0000E+00	.1878E+02	.0000E+00	.0000E+00	.0000E+00
108	.0000E+00	.0000E+00	.9392E+01	.0000E+00	.0000E+00	.0000E+00
109	.0000E+00	.0000E+00	.9035E+01	.0000E+00	.0000E+00	.0000E+00
110	.0000E+00	.0000E+00	.1647E+02	.0000E+00	.0000E+00	.0000E+00
111	.0000E+00	.0000E+00	.1487E+02	.0000E+00	.0000E+00	.0000E+00
112	.0000E+00	.0000E+00	.1487E+02	.0000E+00	.0000E+00	.0000E+00
113	.0000E+00	.0000E+00	.1487E+02	.0000E+00	.0000E+00	.0000E+00
114	.0000E+00	.0000E+00	.1487E+02	.0000E+00	.0000E+00	.0000E+00
115	.0000E+00	.0000E+00	.1413E+02	.0000E+00	.0000E+00	.0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

L O A D C A S E 3

LATERAL EARTH PRESSURE

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
116	.0000E+00	.0000E+00	.1338E+02	.0000E+00	.0000E+00	.0000E+00
117	.0000E+00	.0000E+00	.1264E+02	.0000E+00	.0000E+00	.0000E+00
118	.0000E+00	.0000E+00	.1115E+02	.0000E+00	.0000E+00	.0000E+00
119	.0000E+00	.0000E+00	.1052E+02	.0000E+00	.0000E+00	.0000E+00
120	.0000E+00	.0000E+00	.5318E+01	.0000E+00	.0000E+00	.0000E+00
121	.0000E+00	.0000E+00	.4000E+01	.0000E+00	.0000E+00	.0000E+00
122	.0000E+00	.0000E+00	.7019E+01	.0000E+00	.0000E+00	.0000E+00
123	.0000E+00	.0000E+00	.6038E+01	.0000E+00	.0000E+00	.0000E+00
124	.0000E+00	.0000E+00	.6038E+01	.0000E+00	.0000E+00	.0000E+00
125	.0000E+00	.0000E+00	.6038E+01	.0000E+00	.0000E+00	.0000E+00
126	.0000E+00	.0000E+00	.6038E+01	.0000E+00	.0000E+00	.0000E+00
127	.0000E+00	.0000E+00	.5736E+01	.0000E+00	.0000E+00	.0000E+00
128	.0000E+00	.0000E+00	.5434E+01	.0000E+00	.0000E+00	.0000E+00
129	.0000E+00	.0000E+00	.5132E+01	.0000E+00	.0000E+00	.0000E+00
130	.0000E+00	.0000E+00	.4528E+01	.0000E+00	.0000E+00	.0000E+00
131	.0000E+00	.0000E+00	.4604E+01	.0000E+00	.0000E+00	.0000E+00
132	.0000E+00	.0000E+00	.2490E+01	.0000E+00	.0000E+00	.0000E+00
133	.0000E+00	.0000E+00	.7170E+00	.0000E+00	.0000E+00	.0000E+00
134	.0000E+00	.0000E+00	.1220E+01	.0000E+00	.0000E+00	.0000E+00
135	.0000E+00	.0000E+00	.1006E+01	.0000E+00	.0000E+00	.0000E+00
136	.0000E+00	.0000E+00	.1006E+01	.0000E+00	.0000E+00	.0000E+00
137	.0000E+00	.0000E+00	.1006E+01	.0000E+00	.0000E+00	.0000E+00
138	.0000E+00	.0000E+00	.1006E+01	.0000E+00	.0000E+00	.0000E+00
139	.0000E+00	.0000E+00	.9559E+00	.0000E+00	.0000E+00	.0000E+00
140	.0000E+00	.0000E+00	.9056E+00	.0000E+00	.0000E+00	.0000E+00
141	.0000E+00	.0000E+00	.8553E+00	.0000E+00	.0000E+00	.0000E+00
142	.0000E+00	.0000E+00	.7547E+00	.0000E+00	.0000E+00	.0000E+00
143	.0000E+00	.0000E+00	.8176E+00	.0000E+00	.0000E+00	.0000E+00
144	.0000E+00	.0000E+00	.4654E+00	.0000E+00	.0000E+00	.0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

L O A D C A S E 4
SEISMIC COVER BLOCK LOAD

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
109	.0000E+00	-.5850E+03	.0000E+00	.0000E+00	.0000E+00	.0000E+00
115	.0000E+00	-.1016E+04	.0000E+00	.0000E+00	.0000E+00	.0000E+00
120	.0000E+00	-.4310E+03	.0000E+00	.0000E+00	.0000E+00	.0000E+00

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Version 2.0 07/01/90

LOAD CASE 5

OVERBURDEN PRESSURE

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
1	.0000E+00	.0000E+00	.4167E+02	.0000E+00	.0000E+00	.0000E+00
2	.0000E+00	.0000E+00	.7640E+02	.0000E+00	.0000E+00	.0000E+00
3	.0000E+00	.0000E+00	.6945E+02	.0000E+00	.0000E+00	.0000E+00
4	.0000E+00	.0000E+00	.6945E+02	.0000E+00	.0000E+00	.0000E+00
5	.0000E+00	.0000E+00	.6945E+02	.0000E+00	.0000E+00	.0000E+00
6	.0000E+00	.0000E+00	.6945E+02	.0000E+00	.0000E+00	.0000E+00
7	.0000E+00	.0000E+00	.6598E+02	.0000E+00	.0000E+00	.0000E+00
8	.0000E+00	.0000E+00	.6251E+02	.0000E+00	.0000E+00	.0000E+00
9	.0000E+00	.0000E+00	.5903E+02	.0000E+00	.0000E+00	.0000E+00
10	.0000E+00	.0000E+00	.5209E+02	.0000E+00	.0000E+00	.0000E+00
11	.0000E+00	.0000E+00	.4862E+02	.0000E+00	.0000E+00	.0000E+00
12	.0000E+00	.0000E+00	.2431E+02	.0000E+00	.0000E+00	.0000E+00
13	.0000E+00	.0000E+00	.8334E+02	.0000E+00	.0000E+00	.0000E+00
14	.0000E+00	.0000E+00	.1528E+03	.0000E+00	.0000E+00	.0000E+00
15	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
16	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
17	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
18	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
19	.0000E+00	.0000E+00	.1320E+03	.0000E+00	.0000E+00	.0000E+00
20	.0000E+00	.0000E+00	.1250E+03	.0000E+00	.0000E+00	.0000E+00
21	.0000E+00	.0000E+00	.1181E+03	.0000E+00	.0000E+00	.0000E+00
22	.0000E+00	.0000E+00	.1042E+03	.0000E+00	.0000E+00	.0000E+00
23	.0000E+00	.0000E+00	.9723E+02	.0000E+00	.0000E+00	.0000E+00
24	.0000E+00	.0000E+00	.4862E+02	.0000E+00	.0000E+00	.0000E+00
25	.0000E+00	.0000E+00	.8334E+02	.0000E+00	.0000E+00	.0000E+00
26	.0000E+00	.0000E+00	.1528E+03	.0000E+00	.0000E+00	.0000E+00
27	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
28	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
29	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
30	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
31	.0000E+00	.0000E+00	.1320E+03	.0000E+00	.0000E+00	.0000E+00
32	.0000E+00	.0000E+00	.1250E+03	.0000E+00	.0000E+00	.0000E+00
33	.0000E+00	.0000E+00	.1181E+03	.0000E+00	.0000E+00	.0000E+00
34	.0000E+00	.0000E+00	.1042E+03	.0000E+00	.0000E+00	.0000E+00
35	.0000E+00	.0000E+00	.9723E+02	.0000E+00	.0000E+00	.0000E+00

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Version 2.0 07/01/90

LOAD CASE 5

OVERBURDEN PRESSURE

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
36	.0000E+00	.0000E+00	.4862E+02	.0000E+00	.0000E+00	.0000E+00
37	.0000E+00	.0000E+00	.8334E+02	.0000E+00	.0000E+00	.0000E+00
38	.0000E+00	.0000E+00	.1528E+03	.0000E+00	.0000E+00	.0000E+00
39	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
40	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
41	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
42	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
43	.0000E+00	.0000E+00	.1320E+03	.0000E+00	.0000E+00	.0000E+00
44	.0000E+00	.0000E+00	.1250E+03	.0000E+00	.0000E+00	.0000E+00
45	.0000E+00	.0000E+00	.1181E+03	.0000E+00	.0000E+00	.0000E+00
46	.0000E+00	.0000E+00	.1042E+03	.0000E+00	.0000E+00	.0000E+00
47	.0000E+00	.0000E+00	.9723E+02	.0000E+00	.0000E+00	.0000E+00
48	.0000E+00	.0000E+00	.4862E+02	.0000E+00	.0000E+00	.0000E+00
49	.0000E+00	.0000E+00	.8334E+02	.0000E+00	.0000E+00	.0000E+00
50	.0000E+00	.0000E+00	.1528E+03	.0000E+00	.0000E+00	.0000E+00
51	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
52	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
53	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
54	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
55	.0000E+00	.0000E+00	.1320E+03	.0000E+00	.0000E+00	.0000E+00
56	.0000E+00	.0000E+00	.1250E+03	.0000E+00	.0000E+00	.0000E+00
57	.0000E+00	.0000E+00	.1181E+03	.0000E+00	.0000E+00	.0000E+00
58	.0000E+00	.0000E+00	.1042E+03	.0000E+00	.0000E+00	.0000E+00
59	.0000E+00	.0000E+00	.9723E+02	.0000E+00	.0000E+00	.0000E+00
60	.0000E+00	.0000E+00	.4862E+02	.0000E+00	.0000E+00	.0000E+00
61	.0000E+00	.0000E+00	.7917E+02	.0000E+00	.0000E+00	.0000E+00
62	.0000E+00	.0000E+00	.1452E+03	.0000E+00	.0000E+00	.0000E+00
63	.0000E+00	.0000E+00	.1320E+03	.0000E+00	.0000E+00	.0000E+00
64	.0000E+00	.0000E+00	.1320E+03	.0000E+00	.0000E+00	.0000E+00
65	.0000E+00	.0000E+00	.1320E+03	.0000E+00	.0000E+00	.0000E+00
66	.0000E+00	.0000E+00	.1320E+03	.0000E+00	.0000E+00	.0000E+00
67	.0000E+00	.0000E+00	.1254E+03	.0000E+00	.0000E+00	.0000E+00
68	.0000E+00	.0000E+00	.1188E+03	.0000E+00	.0000E+00	.0000E+00
69	.0000E+00	.0000E+00	.1122E+03	.0000E+00	.0000E+00	.0000E+00
70	.0000E+00	.0000E+00	.9897E+02	.0000E+00	.0000E+00	.0000E+00
71	.0000E+00	.0000E+00	.9237E+02	.0000E+00	.0000E+00	.0000E+00
72	.0000E+00	.0000E+00	.4618E+02	.0000E+00	.0000E+00	.0000E+00
73	.0000E+00	.0000E+00	.7501E+02	.0000E+00	.0000E+00	.0000E+00
74	.0000E+00	.0000E+00	.1375E+03	.0000E+00	.0000E+00	.0000E+00
75	.0000E+00	.0000E+00	.1250E+03	.0000E+00	.0000E+00	.0000E+00

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LOAD CASE 5

OVERBURDEN PRESSURE

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
76	.0000E+00	.0000E+00	.1250E+03	.0000E+00	.0000E+00	.0000E+00
77	.0000E+00	.0000E+00	.1250E+03	.0000E+00	.0000E+00	.0000E+00
78	.0000E+00	.0000E+00	.1250E+03	.0000E+00	.0000E+00	.0000E+00
79	.0000E+00	.0000E+00	.1188E+03	.0000E+00	.0000E+00	.0000E+00
80	.0000E+00	.0000E+00	.1125E+03	.0000E+00	.0000E+00	.0000E+00
81	.0000E+00	.0000E+00	.1063E+03	.0000E+00	.0000E+00	.0000E+00
82	.0000E+00	.0000E+00	.9376E+02	.0000E+00	.0000E+00	.0000E+00
83	.0000E+00	.0000E+00	.8751E+02	.0000E+00	.0000E+00	.0000E+00
84	.0000E+00	.0000E+00	.4375E+02	.0000E+00	.0000E+00	.0000E+00
85	.0000E+00	.0000E+00	.7084E+02	.0000E+00	.0000E+00	.0000E+00
86	.0000E+00	.0000E+00	.1299E+03	.0000E+00	.0000E+00	.0000E+00
87	.0000E+00	.0000E+00	.1181E+03	.0000E+00	.0000E+00	.0000E+00
88	.0000E+00	.0000E+00	.1181E+03	.0000E+00	.0000E+00	.0000E+00
89	.0000E+00	.0000E+00	.1181E+03	.0000E+00	.0000E+00	.0000E+00
90	.0000E+00	.0000E+00	.1181E+03	.0000E+00	.0000E+00	.0000E+00
91	.0000E+00	.0000E+00	.1122E+03	.0000E+00	.0000E+00	.0000E+00
92	.0000E+00	.0000E+00	.1063E+03	.0000E+00	.0000E+00	.0000E+00
93	.0000E+00	.0000E+00	.1004E+03	.0000E+00	.0000E+00	.0000E+00
94	.0000E+00	.0000E+00	.8855E+02	.0000E+00	.0000E+00	.0000E+00
95	.0000E+00	.0000E+00	.8265E+02	.0000E+00	.0000E+00	.0000E+00
96	.0000E+00	.0000E+00	.4132E+02	.0000E+00	.0000E+00	.0000E+00
97	.0000E+00	.0000E+00	.6667E+02	.0000E+00	.0000E+00	.0000E+00
98	.0000E+00	.0000E+00	.1222E+03	.0000E+00	.0000E+00	.0000E+00
99	.0000E+00	.0000E+00	.1111E+03	.0000E+00	.0000E+00	.0000E+00
100	.0000E+00	.0000E+00	.1111E+03	.0000E+00	.0000E+00	.0000E+00
101	.0000E+00	.0000E+00	.1111E+03	.0000E+00	.0000E+00	.0000E+00
102	.0000E+00	.0000E+00	.1111E+03	.0000E+00	.0000E+00	.0000E+00
103	.0000E+00	.0000E+00	.1056E+03	.0000E+00	.0000E+00	.0000E+00
104	.0000E+00	.0000E+00	.1000E+03	.0000E+00	.0000E+00	.0000E+00
105	.0000E+00	.0000E+00	.9445E+02	.0000E+00	.0000E+00	.0000E+00
106	.0000E+00	.0000E+00	.8334E+02	.0000E+00	.0000E+00	.0000E+00
107	.0000E+00	.0000E+00	.7778E+02	.0000E+00	.0000E+00	.0000E+00
108	.0000E+00	.0000E+00	.3889E+02	.0000E+00	.0000E+00	.0000E+00
109	.0000E+00	.0000E+00	.5938E+02	.0000E+00	.0000E+00	.0000E+00
110	.0000E+00	.0000E+00	.1080E+03	.0000E+00	.0000E+00	.0000E+00
111	.0000E+00	.0000E+00	.9723E+02	.0000E+00	.0000E+00	.0000E+00
112	.0000E+00	.0000E+00	.9723E+02	.0000E+00	.0000E+00	.0000E+00
113	.0000E+00	.0000E+00	.9723E+02	.0000E+00	.0000E+00	.0000E+00
114	.0000E+00	.0000E+00	.9723E+02	.0000E+00	.0000E+00	.0000E+00
115	.0000E+00	.0000E+00	.9237E+02	.0000E+00	.0000E+00	.0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

LOAD CASE 5

OVERBURDEN PRESSURE

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
116	.0000E+00	.0000E+00	.8751E+02	.0000E+00	.0000E+00	.0000E+00
117	.0000E+00	.0000E+00	.8265E+02	.0000E+00	.0000E+00	.0000E+00
118	.0000E+00	.0000E+00	.7292E+02	.0000E+00	.0000E+00	.0000E+00
119	.0000E+00	.0000E+00	.6910E+02	.0000E+00	.0000E+00	.0000E+00
120	.0000E+00	.0000E+00	.3507E+02	.0000E+00	.0000E+00	.0000E+00
121	.0000E+00	.0000E+00	.5625E+02	.0000E+00	.0000E+00	.0000E+00
122	.0000E+00	.0000E+00	.9792E+02	.0000E+00	.0000E+00	.0000E+00
123	.0000E+00	.0000E+00	.8334E+02	.0000E+00	.0000E+00	.0000E+00
124	.0000E+00	.0000E+00	.8334E+02	.0000E+00	.0000E+00	.0000E+00
125	.0000E+00	.0000E+00	.8334E+02	.0000E+00	.0000E+00	.0000E+00
126	.0000E+00	.0000E+00	.8334E+02	.0000E+00	.0000E+00	.0000E+00
127	.0000E+00	.0000E+00	.7917E+02	.0000E+00	.0000E+00	.0000E+00
128	.0000E+00	.0000E+00	.7501E+02	.0000E+00	.0000E+00	.0000E+00
129	.0000E+00	.0000E+00	.7084E+02	.0000E+00	.0000E+00	.0000E+00
130	.0000E+00	.0000E+00	.6251E+02	.0000E+00	.0000E+00	.0000E+00
131	.0000E+00	.0000E+00	.6459E+02	.0000E+00	.0000E+00	.0000E+00
132	.0000E+00	.0000E+00	.3542E+02	.0000E+00	.0000E+00	.0000E+00
133	.0000E+00	.0000E+00	.3021E+02	.0000E+00	.0000E+00	.0000E+00
134	.0000E+00	.0000E+00	.5105E+02	.0000E+00	.0000E+00	.0000E+00
135	.0000E+00	.0000E+00	.4167E+02	.0000E+00	.0000E+00	.0000E+00
136	.0000E+00	.0000E+00	.4167E+02	.0000E+00	.0000E+00	.0000E+00
137	.0000E+00	.0000E+00	.4167E+02	.0000E+00	.0000E+00	.0000E+00
138	.0000E+00	.0000E+00	.4167E+02	.0000E+00	.0000E+00	.0000E+00
139	.0000E+00	.0000E+00	.3959E+02	.0000E+00	.0000E+00	.0000E+00
140	.0000E+00	.0000E+00	.3750E+02	.0000E+00	.0000E+00	.0000E+00
141	.0000E+00	.0000E+00	.3542E+02	.0000E+00	.0000E+00	.0000E+00
142	.0000E+00	.0000E+00	.3125E+02	.0000E+00	.0000E+00	.0000E+00
143	.0000E+00	.0000E+00	.3438E+02	.0000E+00	.0000E+00	.0000E+00
144	.0000E+00	.0000E+00	.1979E+02	.0000E+00	.0000E+00	.0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

LOAD CASE 6
OPERATING PIPE AND JUMPER LOADS

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
94	.7650E+03	.9290E+03	.3849E+04	.7440E+04	.2963E+05	.4680E+04

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

L O A D C A S E 7
SEISMIC PIPE AND JUMPER LOADS

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
94	.7560E+03	.9730E+03	.4187E+04	.6072E+04	.7320E+04	.5556E+04

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

L O A D C A S E 8

COVER BLOCK DEAD LOAD

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
109	.0000E+00	.2660E+04	.0000E+00	.0000E+00	.0000E+00	.0000E+00
115	.0000E+00	.4620E+04	.0000E+00	.0000E+00	.0000E+00	.0000E+00
120	.0000E+00	.1960E+04	.0000E+00	.0000E+00	.0000E+00	.0000E+00

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COMBINE RESULTS

Version 2.0 07/01/90

Combined Plate Stresses

Load Combination Method

$$1.5*(f[1,1]+f[1,2]+f[1,4]+f[1,7])+f[1,3]+f[1,5]+f[1,6]+f[1,8]$$

Plate		Sigma-X	Sigma-Y	Tau-XY	Tau-XZ	Tau-YZ

1	T	-1.020E+01	-1.193E+01	-6.588E+00		
1	M	3.824E-01	4.722E-01	2.524E-01	3.651E-01	8.608E-01
1	B	1.096E+01	1.287E+01	7.093E+00		
2	T	-8.967E+00	-2.980E+01	-1.105E+01		
2	M	3.774E-01	1.047E+00	3.799E-01	-8.489E-01	5.279E+00
2	B	9.721E+00	3.190E+01	1.181E+01		
3	T	-1.034E+01	-4.833E+01	-1.119E+01		
3	M	3.951E-01	1.437E+00	4.348E-01	-1.275E+00	1.170E+01
3	B	1.113E+01	5.120E+01	1.206E+01		
4	T	-1.232E+01	-6.483E+01	-7.842E+00		
4	M	4.033E-01	1.782E+00	4.209E-01	-1.079E+00	1.644E+01
4	B	1.312E+01	6.840E+01	8.684E+00		
5	T	-1.361E+01	-7.413E+01	-2.598E+00		
5	M	3.960E-01	2.046E+00	3.383E-01	-4.164E-01	1.891E+01
5	B	1.440E+01	7.822E+01	3.275E+00		
6	T	-1.351E+01	-7.389E+01	3.316E+00		
6	M	3.733E-01	2.177E+00	1.921E-01	3.969E-01	1.876E+01
6	B	1.426E+01	7.824E+01	-2.932E+00		
7	T	-1.225E+01	-6.490E+01	8.431E+00		
7	M	3.457E-01	2.135E+00	1.568E-02	1.018E+00	1.619E+01
7	B	1.294E+01	6.916E+01	-8.400E+00		
8	T	-1.061E+01	-4.982E+01	1.160E+01		
8	M	3.199E-01	1.900E+00	-1.516E-01	1.221E+00	1.171E+01
8	B	1.125E+01	5.362E+01	-1.191E+01		
9	T	-9.529E+00	-3.310E+01	1.203E+01		
9	M	3.091E-01	1.507E+00	-2.701E-01	9.317E-01	6.323E+00
9	B	1.015E+01	3.611E+01	-1.257E+01		
10	T	-9.611E+00	-1.961E+01	9.549E+00		
10	M	3.191E-01	1.028E+00	-3.062E-01	3.289E-01	1.526E+00
10	B	1.025E+01	2.166E+01	-1.016E+01		
11	T	-1.113E+01	-8.585E+00	5.831E+00		
11	M	3.653E-01	4.379E-01	-2.697E-01	-5.709E-01	-2.759E-01
11	B	1.186E+01	9.461E+00	-6.371E+00		
12	T	-2.538E+01	-1.002E+01	-1.153E+01		
12	M	7.654E-01	4.678E-01	4.007E-01	4.085E+00	-6.109E-01
12	B	2.691E+01	1.096E+01	1.233E+01		

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COMBINE RESULTS

Version 2.0 07/01/90

Combined Plate Stresses

Plate		Sigma-X	Sigma-Y	Tau-XY	Tau-XZ	Tau-YZ
-----		-----	-----	-----	-----	-----
13	T	-8.368E+00	-1.316E+01	-1.745E+01		
13	M	5.969E-01	9.569E-01	4.272E-01	1.303E+00	2.095E+00
13	B	9.562E+00	1.507E+01	1.831E+01		
14	T	8.544E-01	-1.848E+01	-1.802E+01		
14	M	4.909E-01	1.413E+00	4.822E-01	-1.137E-01	7.722E+00
14	B	1.274E-01	2.131E+01	1.899E+01		
15	T	6.250E+00	-2.406E+01	-1.286E+01		
15	M	3.813E-01	1.823E+00	4.824E-01	-5.646E-01	1.154E+01
15	B	-5.488E+00	2.770E+01	1.383E+01		
16	T	8.769E+00	-2.767E+01	-4.605E+00		
16	M	2.629E-01	2.160E+00	4.081E-01	-3.045E-01	1.354E+01
16	B	-8.243E+00	3.199E+01	5.421E+00		
17	T	8.934E+00	-2.803E+01	4.895E+00		
17	M	1.585E-01	2.359E+00	2.538E-01	1.538E-01	1.343E+01
17	B	-8.618E+00	3.275E+01	-4.388E+00		
18	T	6.547E+00	-2.527E+01	1.324E+01		
18	M	9.646E-02	2.351E+00	4.320E-02	3.038E-01	1.134E+01
18	B	-6.354E+00	2.998E+01	-1.315E+01		
19	T	1.023E+00	-2.051E+01	1.855E+01		
19	M	1.188E-01	2.106E+00	-1.806E-01	-1.681E-01	7.651E+00
19	B	-7.856E-01	2.472E+01	-1.891E+01		
20	T	-7.712E+00	-1.559E+01	1.944E+01		
20	M	2.221E-01	1.655E+00	-3.726E-01	-1.300E+00	3.088E+00
20	B	8.156E+00	1.890E+01	-2.019E+01		
21	T	-1.835E+01	-1.218E+01	1.563E+01		
21	M	4.080E-01	1.085E+00	-4.982E-01	-2.776E+00	-1.229E+00
21	B	1.917E+01	1.436E+01	-1.663E+01		
22	T	-3.143E+01	-1.035E+01	1.110E+01		
22	M	6.601E-01	4.910E-01	-5.896E-01	-4.686E+00	-1.590E+00
22	B	3.275E+01	1.133E+01	-1.228E+01		
23	T	-4.471E+01	-1.171E+01	-1.390E+01		
23	M	9.715E-01	4.751E-01	5.533E-01	1.059E+01	-1.642E+00
23	B	4.665E+01	1.266E+01	1.501E+01		
24	T	-1.085E+01	-4.448E+00	-2.136E+01		
24	M	8.053E-01	9.092E-01	5.797E-01	6.820E+00	-2.798E-01
24	B	1.246E+01	6.266E+00	2.252E+01		
25	T	9.432E+00	-9.895E-01	-2.227E+01		
25	M	6.309E-01	1.375E+00	6.269E-01	4.240E+00	4.615E+00
25	B	-8.170E+00	3.740E+00	2.352E+01		
26	T	2.223E+01	3.510E-01	-1.627E+01		
26	M	4.465E-01	1.852E+00	6.384E-01	2.274E+00	7.735E+00
26	B	-2.133E+01	3.354E+00	1.755E+01		

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COMBINE RESULTS

Version 2.0 07/01/90

Combined Plate Stresses

Plate		Sigma-X	Sigma-Y	Tau-XY	Tau-XZ	Tau-YZ
27	T	2.877E+01	3.589E-01	-6.344E+00		
27	M	2.565E-01	2.282E+00	5.664E-01	6.883E-01	9.412E+00
27	B	-2.826E+01	4.206E+00	7.476E+00		
28	T	2.936E+01	-5.936E-01	5.279E+00		
28	M	7.660E-02	2.580E+00	3.750E-01	-9.114E-01	9.432E+00
28	B	-2.921E+01	5.753E+00	-4.529E+00		
29	T	2.376E+01	-2.168E+00	1.583E+01		
29	M	-1.971E-02	2.655E+00	8.359E-02	-2.762E+00	7.808E+00
29	B	-2.380E+01	7.477E+00	-1.566E+01		
30	T	1.102E+01	-4.319E+00	2.288E+01		
30	M	-1.621E-02	2.432E+00	-2.722E-01	-4.946E+00	4.721E+00
30	B	-1.106E+01	9.183E+00	-2.343E+01		
31	T	-8.150E+00	-7.158E+00	2.447E+01		
31	M	1.553E-01	1.942E+00	-6.146E-01	-7.331E+00	6.404E-01
31	B	8.461E+00	1.104E+01	-2.570E+01		
32	T	-3.128E+01	-1.092E+01	1.998E+01		
32	M	3.992E-01	1.300E+00	-8.649E-01	-9.558E+00	-3.370E+00
32	B	3.208E+01	1.352E+01	-2.171E+01		
33	T	-5.794E+01	-1.559E+01	1.412E+01		
33	M	7.196E-01	5.947E-01	-1.008E+00	-1.192E+01	-2.596E+00
33	B	5.938E+01	1.678E+01	-1.613E+01		
34	T	-6.672E+01	-1.576E+01	-1.381E+01		
34	M	1.113E+00	4.655E-01	6.812E-01	1.638E+01	-2.215E+00
34	B	6.895E+01	1.669E+01	1.517E+01		
35	T	-1.563E+01	-1.389E+00	-2.157E+01		
35	M	9.690E-01	8.473E-01	7.421E-01	1.149E+01	-1.793E+00
35	B	1.757E+01	3.084E+00	2.305E+01		
36	T	1.586E+01	-7.718E+00	-2.283E+01		
36	M	7.923E-01	1.323E+00	8.210E-01	7.785E+00	2.455E+00
36	B	-1.427E+01	-5.073E+00	2.448E+01		
37	T	3.620E+01	1.359E+01	-1.707E+01		
37	M	5.738E-01	1.873E+00	8.535E-01	4.587E+00	5.127E+00
37	B	-3.505E+01	-9.847E+00	1.878E+01		
38	T	4.691E+01	1.615E+01	-7.403E+00		
38	M	3.417E-01	2.411E+00	7.760E-01	1.642E+00	6.678E+00
38	B	-4.623E+01	-1.133E+01	8.955E+00		
39	T	4.848E+01	1.511E+01	4.046E+00		
39	M	1.324E-01	2.865E+00	5.700E-01	-1.450E+00	7.029E+00
39	B	-4.822E+01	-9.379E+00	-2.906E+00		
40	T	4.042E+01	1.048E+01	1.479E+01		
40	M	-8.136E-02	3.084E+00	1.757E-01	-5.044E+00	5.975E+00
40	B	-4.059E+01	-4.311E+00	-1.444E+01		

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COMBINE RESULTS

Version 2.0 07/01/90

Combined Plate Stresses

Plate		Sigma-X	Sigma-Y	Tau-XY	Tau-XZ	Tau-YZ
-----		-----	-----	-----	-----	-----
41	T	2.130E+01	3.265E+00	2.307E+01		
41	M	-8.499E-02	2.966E+00	-3.447E-01	-9.073E+00	3.353E+00
41	B	-2.147E+01	2.666E+00	-2.376E+01		
42	T	-9.575E+00	-5.457E+00	2.590E+01		
42	M	-1.233E-02	2.446E+00	-9.073E-01	-1.314E+01	-5.975E-01
42	B	9.550E+00	1.035E+01	-2.772E+01		
43	T	-4.685E+01	-1.434E+01	2.193E+01		
43	M	3.561E-01	1.669E+00	-1.337E+00	-1.656E+01	-4.728E+00
43	B	4.756E+01	1.768E+01	-2.460E+01		
44	T	-9.063E+01	-2.370E+01	1.591E+01		
44	M	7.185E-01	7.213E-01	-1.541E+00	-1.956E+01	-3.306E+00
44	B	9.207E+01	2.515E+01	-1.900E+01		
45	T	-8.855E+01	-2.103E+01	-1.286E+01		
45	M	1.187E+00	4.257E-01	7.692E-01	2.123E+01	-2.418E+00
45	B	9.092E+01	2.188E+01	1.440E+01		
46	T	-2.169E+01	-2.082E+00	-2.030E+01		
46	M	1.097E+00	7.426E-01	8.771E-01	1.549E+01	-2.556E+00
46	B	2.388E+01	3.567E+00	2.205E+01		
47	T	2.049E+01	1.089E+01	-2.164E+01		
47	M	9.527E-01	1.226E+00	1.013E+00	1.080E+01	1.097E+00
47	B	-1.858E+01	-8.442E+00	2.366E+01		
48	T	4.792E+01	2.011E+01	-1.638E+01		
48	M	7.415E-01	1.870E+00	1.097E+00	6.563E+00	3.391E+00
48	B	-4.644E+01	-1.637E+01	1.857E+01		
49	T	6.243E+01	2.515E+01	-7.713E+00		
49	M	4.843E-01	2.583E+00	1.019E+00	2.617E+00	4.824E+00
49	B	-6.146E+01	-1.999E+01	9.751E+00		
50	T	6.516E+01	2.521E+01	2.137E+00		
50	M	2.874E-01	3.141E+00	7.358E-01	-1.353E+00	5.591E+00
50	B	-6.459E+01	-1.893E+01	-6.656E-01		
51	T	5.667E+01	2.007E+01	1.163E+01		
51	M	1.982E-01	3.629E+00	4.421E-01	-5.870E+00	5.849E+00
51	B	-5.628E+01	-1.281E+01	-1.075E+01		
52	T	3.268E+01	8.189E+00	1.948E+01		
52	M	-2.785E-01	3.764E+00	-2.834E-01	-1.249E+01	4.235E+00
52	B	-3.324E+01	-6.612E-01	-2.004E+01		
53	T	-7.080E+00	-6.179E+00	2.546E+01		
53	M	-3.700E-02	3.319E+00	-1.199E+00	-1.930E+01	4.173E-01
53	B	7.006E+00	1.282E+01	-2.786E+01		
54	T	-6.368E+01	-2.085E+01	2.326E+01		
54	M	3.483E-02	2.258E+00	-1.883E+00	-2.532E+01	-4.654E+00
54	B	6.375E+01	2.537E+01	-2.703E+01		

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COMBINE RESULTS

Version 2.0 07/01/90

Combined Plate Stresses

Plate		Sigma-X	Sigma-Y	Tau-XY	Tau-XZ	Tau-YZ
55	T	-1.275E+02	-3.432E+01	1.834E+01		
55	M	7.230E-01	9.979E-01	-2.322E+00	-2.923E+01	-3.762E+00
55	B	1.290E+02	3.632E+01	-2.298E+01		
56	T	-1.084E+02	-2.650E+01	-1.206E+01		
56	M	1.163E+00	3.618E-01	8.055E-01	2.523E+01	-2.404E+00
56	B	1.107E+02	2.723E+01	1.367E+01		
57	T	-2.769E+01	-4.659E+00	-1.882E+01		
57	M	1.137E+00	5.980E-01	9.428E-01	1.880E+01	-2.755E+00
57	B	2.996E+01	5.855E+00	2.071E+01		
58	T	2.392E+01	1.091E+01	-1.981E+01		
58	M	1.096E+00	1.064E+00	1.145E+00	1.321E+01	4.452E-01
58	B	-2.173E+01	-8.778E+00	2.210E+01		
59	T	5.739E+01	2.254E+01	-1.475E+01		
59	M	9.223E-01	1.812E+00	1.335E+00	8.124E+00	2.331E+00
59	B	-5.554E+01	-1.891E+01	1.742E+01		
60	T	7.491E+01	2.997E+01	-6.864E+00		
60	M	6.401E-01	2.780E+00	1.290E+00	3.491E+00	3.514E+00
60	B	-7.363E+01	-2.441E+01	9.444E+00		
61	T	7.824E+01	3.271E+01	1.366E+00		
61	M	4.269E-01	3.636E+00	8.281E-01	-8.778E-01	4.332E+00
61	B	-7.738E+01	-2.544E+01	2.906E-01		
62	T	6.986E+01	2.981E+01	8.176E+00		
62	M	6.007E-01	3.719E+00	2.580E-01	-5.006E+00	5.700E+00
62	B	-6.866E+01	-2.237E+01	-7.660E+00		
63	T	4.920E+01	2.265E+01	1.573E+01		
63	M	1.007E+00	4.736E+00	6.290E-01	-1.072E+01	9.385E+00
63	B	-4.718E+01	-1.318E+01	-1.448E+01		
64	T	-4.099E+00	-1.348E+00	1.847E+01		
64	M	-1.324E+00	4.875E+00	-1.145E+00	-2.819E+01	6.035E+00
64	B	1.452E+00	1.110E+01	-2.076E+01		
65	T	-6.662E+01	-2.596E+01	2.417E+01		
65	M	-8.634E-03	3.401E+00	-2.821E+00	-3.499E+01	-1.871E+00
65	B	6.660E+01	3.276E+01	-2.981E+01		
66	T	-1.719E+02	-4.710E+01	2.409E+01		
66	M	3.629E-01	1.145E+00	-3.222E+00	-4.481E+01	-1.869E+00
66	B	1.726E+02	4.939E+01	-3.054E+01		
67	T	-1.264E+02	-3.165E+01	-1.178E+01		
67	M	9.996E-01	2.721E-01	7.921E-01	2.905E+01	-2.151E+00
67	B	1.284E+02	3.219E+01	1.337E+01		
68	T	-3.277E+01	-7.469E+00	-1.772E+01		
68	M	1.043E+00	4.597E-01	9.440E-01	2.159E+01	-2.368E+00
68	B	3.485E+01	8.387E+00	1.961E+01		

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COMBINE RESULTS

Version 2.0 07/01/90

Combined Plate Stresses

Plate		Sigma-X	Sigma-Y	Tau-XY	Tau-XZ	Tau-YZ
69	T	2.689E+01	9.582E+00	-1.813E+01		
69	M	1.089E+00	8.339E-01	1.123E+00	1.498E+01	3.996E-01
69	B	-2.471E+01	-7.915E+00	2.038E+01		
70	T	6.550E+01	2.235E+01	-1.280E+01		
70	M	1.206E+00	1.579E+00	1.490E+00	9.180E+00	1.694E+00
70	B	-6.308E+01	-1.919E+01	1.578E+01		
71	T	8.519E+01	3.148E+01	-4.844E+00		
71	M	7.977E-01	3.000E+00	1.715E+00	4.116E+00	2.428E+00
71	B	-8.360E+01	-2.548E+01	8.274E+00		
72	T	8.860E+01	3.708E+01	2.942E+00		
72	M	3.657E-01	4.446E+00	9.266E-01	-4.121E-01	2.956E+00
72	B	-8.787E+01	-2.819E+01	-1.089E+00		
73	T	7.898E+01	3.905E+01	8.564E+00		
73	M	7.523E-01	4.708E+00	-4.768E-01	-4.087E+00	3.615E+00
73	B	-7.747E+01	-2.964E+01	-9.518E+00		
74	T	6.262E+01	3.852E+01	1.348E+01		
74	M	2.275E+00	2.498E+00	-7.312E-01	-4.989E+00	8.236E+00
74	B	-5.807E+01	-3.352E+01	-1.494E+01		
75	T	6.699E+01	3.682E+01	3.004E+01		
75	M	4.804E+00	8.352E+00	3.697E+00	6.878E+00	2.613E+01
75	B	-5.738E+01	-2.012E+01	-2.265E+01		
76	T	-1.072E+02	-6.719E+00	4.992E+01		
76	M	-4.609E+00	6.571E+00	-3.985E+00	-5.925E+01	1.667E+01
76	B	9.801E+01	1.986E+01	-5.789E+01		
77	T	-2.258E+02	-4.424E+01	2.245E+01		
77	M	-2.842E+00	-2.846E-01	-3.329E+00	-5.783E+01	-3.235E+00
77	B	2.201E+02	4.367E+01	-2.910E+01		
78	T	-1.429E+02	-3.526E+01	-1.165E+01		
78	M	6.858E-01	1.818E-01	7.505E-01	3.339E+01	-1.306E+00
78	B	1.443E+02	3.562E+01	1.315E+01		
79	T	-3.677E+01	-8.364E+00	-1.743E+01		
79	M	7.727E-01	3.181E-01	8.765E-01	2.382E+01	-1.029E+00
79	B	3.832E+01	9.000E+00	1.918E+01		
80	T	3.032E+01	8.602E+00	-1.731E+01		
80	M	9.237E-01	7.154E-01	1.040E+00	1.601E+01	8.489E-01
80	B	-2.847E+01	-7.171E+00	1.939E+01		
81	T	7.238E+01	2.023E+01	-1.156E+01		
81	M	1.107E+00	1.068E+00	1.205E+00	9.743E+00	1.253E+00
81	B	-7.017E+01	-1.809E+01	1.397E+01		
82	T	9.490E+01	2.946E+01	-2.440E+00		
82	M	1.651E+00	2.769E+00	2.275E+00	4.405E+00	1.403E+00
82	B	-9.160E+01	-2.393E+01	6.990E+00		

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COMBINE RESULTS

Version 2.0 07/01/90

Combined Plate Stresses

Plate		Sigma-X	Sigma-Y	Tau-XY	Tau-XZ	Tau-YZ
83	T	9.753E+01	3.750E+01	6.501E+00		
83	M	-2.127E-02	6.218E+00	1.787E+00	-2.900E-01	1.421E+00
83	B	-9.758E+01	-2.507E+01	-2.928E+00		
84	T	8.702E+01	4.128E+01	1.222E+01		
84	M	1.683E-01	6.147E+00	-2.013E+00	-4.002E+00	1.306E+00
84	B	-8.668E+01	-2.899E+01	-1.625E+01		
85	T	7.132E+01	3.963E+01	1.960E+01		
85	M	2.621E+00	3.341E+00	-3.028E+00	-3.849E+00	-2.771E+00
85	B	-6.608E+01	-3.294E+01	-2.565E+01		
86	T	7.599E+01	6.220E+01	-2.506E+00		
86	M	3.710E+00	-4.347E+00	-1.557E+00	8.172E+00	-3.619E+01
86	B	-6.857E+01	-7.090E+01	-6.087E-01		
87	T	-1.119E+02	1.730E+01	-1.166E+01		
87	M	-6.246E+00	-5.891E+00	-9.926E+00	-6.794E+01	-3.270E+01
87	B	9.942E+01	-2.908E+01	-8.192E+00		
88	T	-2.508E+02	-4.950E+01	-2.265E+00		
88	M	-4.546E+00	6.788E-01	-5.334E+00	-6.779E+01	1.068E-01
88	B	2.417E+02	5.085E+01	-8.402E+00		
89	T	-1.588E+02	-3.485E+01	-1.109E+01		
89	M	1.505E-01	8.486E-02	6.777E-01	3.750E+01	5.638E-01
89	B	1.591E+02	3.502E+01	1.245E+01		
90	T	-3.582E+01	-4.042E+00	-1.897E+01		
90	M	3.836E-01	2.602E-01	7.366E-01	2.614E+01	1.452E+00
90	B	3.659E+01	4.562E+00	2.045E+01		
91	T	3.391E+01	7.787E+00	-1.582E+01		
91	M	5.750E-01	4.809E-01	8.895E-01	1.796E+01	1.478E+00
91	B	-3.276E+01	-6.825E+00	1.760E+01		
92	T	7.782E+01	1.804E+01	-1.002E+01		
92	M	7.387E-01	1.230E+00	1.109E+00	1.108E+01	1.029E+00
92	B	-7.634E+01	-1.558E+01	1.224E+01		
93	T	1.014E+02	2.306E+01	-2.183E+00		
93	M	1.120E+00	5.495E-01	1.173E+00	4.597E+00	7.318E-01
93	B	-9.919E+01	-2.196E+01	4.529E+00		
94	T	1.067E+02	3.537E+01	1.083E+01		
94	M	1.615E+00	9.485E+00	4.824E+00	-1.659E+00	3.759E-01
94	B	-1.035E+02	-1.640E+01	-1.177E+00		
95	T	9.665E+01	3.622E+01	1.027E+01		
95	M	1.555E+00	9.707E+00	-5.539E+00	-7.057E+00	-8.620E-01
95	B	-9.354E+01	-1.681E+01	-2.135E+01		
96	T	7.268E+01	2.789E+01	1.921E+01		
96	M	6.534E-01	2.191E-01	-1.595E+00	-1.291E+01	-6.629E+00
96	B	-7.137E+01	-2.745E+01	-2.240E+01		

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COMBINE RESULTS

Version 2.0 07/01/90

Combined Plate Stresses

Plate		Sigma-X	Sigma-Y	Tau-XY	Tau-XZ	Tau-YZ
97	T	7.841E+00	1.016E+01	2.224E+01		
97	M	6.350E-03	-1.033E+00	-1.739E+00	-3.289E+01	-9.065E+00
97	B	-7.828E+00	-1.222E+01	-2.571E+01		
98	T	-8.921E+01	-1.589E+01	1.038E+01		
98	M	1.924E-01	-2.448E+00	-3.669E+00	-5.206E+01	-4.861E+00
98	B	8.959E+01	1.100E+01	-1.771E+01		
99	T	-2.520E+02	-5.680E+01	-6.069E+00		
99	M	-3.513E+00	-1.964E+00	-5.888E+00	-6.804E+01	-1.480E+00
99	B	2.449E+02	5.287E+01	-5.708E+00		
100	T	-1.340E+02	-4.037E+01	-1.965E+01		
100	M	-4.180E-01	2.557E-01	7.544E-01	3.422E+01	6.001E+00
100	B	1.332E+02	4.088E+01	2.116E+01		
101	T	-2.372E+01	-7.916E+00	-2.235E+01		
101	M	-1.214E-02	1.883E-01	9.437E-01	2.322E+01	3.192E+00
101	B	2.369E+01	8.293E+00	2.424E+01		
102	T	3.279E+01	2.032E+01	-1.768E+01		
102	M	2.978E-01	7.074E-01	1.183E+00	1.653E+01	2.006E+00
102	B	-3.220E+01	-1.890E+01	2.004E+01		
103	T	7.074E+01	3.737E+01	-1.089E+01		
103	M	5.488E-01	1.020E+00	1.644E+00	1.039E+01	8.763E-01
103	B	-6.964E+01	-3.533E+01	1.418E+01		
104	T	9.120E+01	4.993E+01	-1.201E+00		
104	M	2.693E-01	3.649E+00	1.735E+00	4.220E+00	4.632E-01
104	B	-9.066E+01	-4.263E+01	4.670E+00		
105	T	9.605E+01	4.352E+01	1.519E+01		
105	M	2.915E-01	-6.718E+00	6.513E+00	-1.974E+00	-3.005E-01
105	B	-9.547E+01	-5.695E+01	-2.162E+00		
106	T	8.689E+01	4.109E+01	1.170E+01		
106	M	-1.727E-02	-6.924E+00	-7.094E+00	-8.210E+00	-2.350E+00
106	B	-8.693E+01	-5.494E+01	-2.589E+01		
107	T	5.796E+01	3.501E+01	2.248E+01		
107	M	-3.578E-01	2.665E+00	-2.139E+00	-1.764E+01	-3.935E+00
107	B	-5.868E+01	-2.968E+01	-2.676E+01		
108	T	6.042E+00	1.745E+00	1.932E+01		
108	M	6.837E-02	-8.807E-01	-2.958E+00	-2.954E+01	-1.560E+00
108	B	-5.906E+00	-3.507E+00	-2.523E+01		
109	T	-7.762E+01	-3.669E+01	1.570E+01		
109	M	-8.693E-01	-1.651E+00	-3.884E+00	-4.034E+01	4.128E+00
109	B	7.588E+01	3.339E+01	-2.347E+01		
110	T	-1.998E+02	-6.095E+01	1.251E+01		
110	M	-2.005E+00	2.444E-01	-4.933E+00	-5.033E+01	9.969E+00
110	B	1.958E+02	6.144E+01	-2.237E+01		

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COMBINE RESULTS

Version 2.0 07/01/90

Combined Plate Stresses

Plate		Sigma-X	Sigma-Y	Tau-XY	Tau-XZ	Tau-YZ
111	T	-1.306E+02	-3.230E+01	-1.178E+01		
111	M	-9.755E-01	1.269E-01	5.391E-01	2.067E+01	4.230E+00
111	B	1.286E+02	3.255E+01	1.286E+01		
112	T	-2.083E+01	3.247E-01	-7.149E+00		
112	M	-5.048E-01	1.152E-01	7.109E-01	1.292E+01	1.011E+00
112	B	1.982E+01	-9.436E-02	8.571E+00		
113	T	3.462E+01	1.814E+01	-8.658E+00		
113	M	-7.639E-02	3.796E-01	1.007E+00	9.483E+00	-1.821E+00
113	B	-3.478E+01	-1.738E+01	1.067E+01		
114	T	7.477E+01	3.105E+01	-5.452E+00		
114	M	3.277E-01	1.194E+00	1.352E+00	6.107E+00	-2.670E+00
114	B	-7.411E+01	-2.866E+01	8.155E+00		
115	T	9.652E+01	3.757E+01	2.428E+00		
115	M	-1.240E-01	1.126E+00	2.899E+00	2.701E+00	-3.204E+00
115	B	-9.676E+01	-3.532E+01	3.370E+00		
116	T	1.036E+02	3.485E+01	1.048E+01		
116	M	2.196E+00	-3.245E+00	3.304E+00	-7.121E-01	-3.878E+00
116	B	-9.917E+01	-4.133E+01	-3.873E+00		
117	T	9.094E+01	2.960E+01	9.347E+00		
117	M	2.072E+00	-3.596E+00	-3.254E+00	-4.902E+00	-4.736E+00
117	B	-8.680E+01	-3.679E+01	-1.586E+01		
118	T	5.515E+01	2.068E+01	8.598E+00		
118	M	-5.084E-01	3.727E-01	-3.305E+00	-1.066E+01	-4.550E+00
118	B	-5.617E+01	-1.993E+01	-1.521E+01		
119	T	-6.913E-01	7.330E-01	3.000E+00		
119	M	-3.160E-01	6.093E-02	-2.552E+00	-1.668E+01	-1.867E+00
119	B	5.940E-02	-6.111E-01	-8.103E+00		
120	T	-7.182E+01	-2.067E+01	-2.677E+00		
120	M	-7.535E-01	-9.015E-01	-3.347E+00	-2.159E+01	4.314E+00
120	B	7.031E+01	1.887E+01	-4.016E+00		
121	T	-1.807E+02	-4.615E+01	7.321E+00		
121	M	-2.050E+00	4.020E-01	-3.623E+00	-2.676E+01	7.554E+00
121	B	1.766E+02	4.696E+01	-1.457E+01		
122	T	-1.193E+02	-2.434E+01	-9.253E+00		
122	M	-1.646E+00	2.076E-02	3.335E-01	1.549E+01	3.774E+00
122	B	1.160E+02	2.438E+01	9.920E+00		
123	T	-2.626E+01	2.016E+00	-7.444E+00		
123	M	-1.137E+00	1.828E-02	4.477E-01	1.129E+01	1.405E-01
123	B	2.399E+01	-1.979E+00	8.339E+00		
124	T	3.281E+01	1.029E+01	-9.676E+00		
124	M	-5.187E-01	2.274E-01	6.126E-01	8.946E+00	-3.451E+00
124	B	-3.384E+01	-9.835E+00	1.090E+01		

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COMBINE RESULTS

Version 2.0 07/01/90

Combined Plate Stresses

Plate		Sigma-X	Sigma-Y	Tau-XY	Tau-XZ	Tau-YZ
125	T	7.512E+01	1.692E+01	-6.049E+00		
125	M	7.725E-02	5.760E-01	1.277E+00	5.744E+00	-3.887E+00
125	B	-7.497E+01	-1.577E+01	8.603E+00		
126	T	9.965E+01	2.024E+01	1.774E+00		
126	M	1.297E+00	3.232E-01	2.322E+00	2.456E+00	-4.492E+00
126	B	-9.705E+01	-1.959E+01	2.870E+00		
127	T	1.054E+02	1.888E+01	8.778E+00		
127	M	2.950E+00	-1.265E+00	1.704E+00	-1.077E+00	-4.862E+00
127	B	-9.950E+01	-2.141E+01	-5.371E+00		
128	T	9.001E+01	1.514E+01	1.050E+01		
128	M	2.998E+00	-1.429E+00	-1.432E+00	-5.223E+00	-4.896E+00
128	B	-8.401E+01	-1.800E+01	-1.337E+01		
129	T	5.072E+01	9.081E+00	8.878E+00		
129	M	1.294E+00	-7.535E-02	-2.471E+00	-1.002E+01	-4.129E+00
129	B	-4.813E+01	-9.232E+00	-1.382E+01		
130	T	-7.748E+00	-6.227E-02	3.698E+00		
130	M	-2.103E-01	8.962E-02	-2.257E+00	-1.415E+01	-2.143E+00
130	B	7.327E+00	2.415E-01	-8.213E+00		
131	T	-7.355E+01	-9.971E+00	-6.731E-01		
131	M	-1.391E+00	-3.993E-01	-2.522E+00	-1.597E+01	3.764E+00
131	B	7.077E+01	9.173E+00	-4.370E+00		
132	T	-1.537E+02	-3.195E+01	5.486E+00		
132	M	-2.928E+00	2.283E-01	-2.569E+00	-1.801E+01	6.424E+00
132	B	1.478E+02	3.240E+01	-1.063E+01		
133	T	-1.077E+02	-1.539E+01	-4.684E+00		
133	M	-2.430E+00	-7.260E-02	1.408E-01	9.623E+00	2.839E+00
133	B	1.029E+02	1.524E+01	4.965E+00		
134	T	-3.261E+01	3.262E+00	-8.118E+00		
134	M	-1.831E+00	1.783E-02	1.205E-01	1.726E+01	6.465E-01
134	B	2.895E+01	-3.226E+00	8.359E+00		
135	T	3.045E+01	2.401E+00	-8.335E+00		
135	M	-1.261E+00	4.163E-02	2.161E-01	1.403E+01	-1.661E+00
135	B	-3.297E+01	-2.318E+00	8.767E+00		
136	T	7.491E+01	4.742E+00	-5.508E+00		
136	M	-6.386E-02	1.145E-01	5.395E-01	9.019E+00	-1.692E+00
136	B	-7.504E+01	-4.513E+00	6.587E+00		
137	T	1.009E+02	5.583E+00	1.708E-01		
137	M	2.262E+00	5.624E-02	9.905E-01	3.037E+00	-2.134E+00
137	B	-9.639E+01	-5.470E+00	1.810E+00		
138	T	1.072E+02	5.270E+00	5.489E+00		
138	M	4.818E+00	-2.313E-01	6.918E-01	-3.602E+00	-2.200E+00
138	B	-9.754E+01	-5.733E+00	-4.106E+00		

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COMBINE RESULTS

Version 2.0 07/01/90

Combined Plate Stresses

Plate		Sigma-X	Sigma-Y	Tau-XY	Tau-XZ	Tau-YZ
139	T	9.032E+01	4.085E+00	8.133E+00		
139	M	5.131E+00	-2.662E-01	-5.188E-01	-9.899E+00	-1.950E+00
139	B	-8.005E+01	-4.617E+00	-9.171E+00		
140	T	4.873E+01	2.194E+00	8.185E+00		
140	M	3.003E+00	-2.809E-02	-1.001E+00	-1.500E+01	-1.290E+00
140	B	-4.272E+01	-2.250E+00	-1.019E+01		
141	T	-1.201E+01	-8.501E-01	5.623E+00		
141	M	4.657E-01	1.231E-02	-9.244E-01	-1.819E+01	-7.338E-01
141	B	1.294E+01	8.747E-01	-7.472E+00		
142	T	-7.644E+01	-8.809E-01	3.777E+00		
142	M	-1.782E+00	-6.848E-02	-9.678E-01	-1.778E+01	2.727E+00
142	B	7.287E+01	7.440E-01	-5.712E+00		
143	T	-1.328E+02	-1.761E+01	1.100E+00		
143	M	-5.146E+00	-5.956E-02	-1.236E+00	-7.258E+00	3.942E+00
143	B	1.225E+02	1.750E+01	-3.572E+00		

Client: WHC

Subject: Sluice Pit AY-02E Analysis

Location: 241-AY-102 Tank

WO/Job No. W-320 /ER4319

Date: 02/22/95

Checked: 3/8/95

Revised:

By: JW FUNK

By: *grb*

By:

ATTACHMENT 3

Static Analysis of Pit Wall

50 pgs including this pg

IMAGES-3D Ver. 2.0 Geometry Plot

Wireframe Plot

3/ 8/95
7:47:10

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CHECK GEOMETRY

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MATERIAL PROPERTIES

Material No	Modulus of Elasticity	Weight Density	Coeff of Thermal Exp.	Poisson's Ratio	Shear Web Modulus
1	3.46000E+05	8.68000E-02	5.50000E-06	2.50E-01	0.00000E+00
2	4.10000E+05	8.68000E-02	5.50000E-06	2.50E-01	0.00000E+00

NODE COORDINATES

Node	X-Coord.	Y-Coord.	Z-Coord.
1	6.00000E+00	0.00000E+00	0.00000E+00
2	1.80000E+01	0.00000E+00	0.00000E+00
3	2.80000E+01	0.00000E+00	0.00000E+00
4	3.80000E+01	0.00000E+00	0.00000E+00
5	4.80000E+01	0.00000E+00	0.00000E+00
6	5.80000E+01	0.00000E+00	0.00000E+00
7	6.80000E+01	0.00000E+00	0.00000E+00
8	7.70000E+01	0.00000E+00	0.00000E+00
9	8.60000E+01	0.00000E+00	0.00000E+00
10	9.40000E+01	0.00000E+00	0.00000E+00
11	1.01000E+02	0.00000E+00	0.00000E+00
12	1.08000E+02	0.00000E+00	0.00000E+00
13	6.00000E+00	1.00000E+01	0.00000E+00
14	1.80000E+01	1.00000E+01	0.00000E+00
15	2.80000E+01	1.00000E+01	0.00000E+00
16	3.80000E+01	1.00000E+01	0.00000E+00
17	4.80000E+01	1.00000E+01	0.00000E+00
18	5.80000E+01	1.00000E+01	0.00000E+00
19	6.80000E+01	1.00000E+01	0.00000E+00
20	7.70000E+01	1.00000E+01	0.00000E+00
21	8.60000E+01	1.00000E+01	0.00000E+00
22	9.40000E+01	1.00000E+01	0.00000E+00
23	1.01000E+02	1.00000E+01	0.00000E+00
24	1.08000E+02	1.00000E+01	0.00000E+00
25	6.00000E+00	2.00000E+01	0.00000E+00
26	1.80000E+01	2.00000E+01	0.00000E+00
27	2.80000E+01	2.00000E+01	0.00000E+00
28	3.80000E+01	2.00000E+01	0.00000E+00
29	4.80000E+01	2.00000E+01	0.00000E+00

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Node	X-Coord.	Y-Coord.	Z-Coord.
30	5.80000E+01	2.00000E+01	0.00000E+00
31	6.80000E+01	2.00000E+01	0.00000E+00
32	7.70000E+01	2.00000E+01	0.00000E+00
33	8.60000E+01	2.00000E+01	0.00000E+00
34	9.40000E+01	2.00000E+01	0.00000E+00
35	1.01000E+02	2.00000E+01	0.00000E+00
36	1.08000E+02	2.00000E+01	0.00000E+00
37	6.00000E+00	3.00000E+01	0.00000E+00
38	1.80000E+01	3.00000E+01	0.00000E+00
39	2.80000E+01	3.00000E+01	0.00000E+00
40	3.80000E+01	3.00000E+01	0.00000E+00
41	4.80000E+01	3.00000E+01	0.00000E+00
42	5.80000E+01	3.00000E+01	0.00000E+00
43	6.80000E+01	3.00000E+01	0.00000E+00
44	7.70000E+01	3.00000E+01	0.00000E+00
45	8.60000E+01	3.00000E+01	0.00000E+00
46	9.40000E+01	3.00000E+01	0.00000E+00
47	1.01000E+02	3.00000E+01	0.00000E+00
48	1.08000E+02	3.00000E+01	0.00000E+00
49	6.00000E+00	4.00000E+01	0.00000E+00
50	1.80000E+01	4.00000E+01	0.00000E+00
51	2.80000E+01	4.00000E+01	0.00000E+00
52	3.80000E+01	4.00000E+01	0.00000E+00
53	4.80000E+01	4.00000E+01	0.00000E+00
54	5.80000E+01	4.00000E+01	0.00000E+00
55	6.80000E+01	4.00000E+01	0.00000E+00
56	7.70000E+01	4.00000E+01	0.00000E+00
57	8.60000E+01	4.00000E+01	0.00000E+00
58	9.40000E+01	4.00000E+01	0.00000E+00
59	1.01000E+02	4.00000E+01	0.00000E+00
60	1.08000E+02	4.00000E+01	0.00000E+00
61	6.00000E+00	5.00000E+01	0.00000E+00
62	1.80000E+01	5.00000E+01	0.00000E+00
63	2.80000E+01	5.00000E+01	0.00000E+00
64	3.80000E+01	5.00000E+01	0.00000E+00
65	4.80000E+01	5.00000E+01	0.00000E+00
66	5.80000E+01	5.00000E+01	0.00000E+00
67	6.80000E+01	5.00000E+01	0.00000E+00
68	7.70000E+01	5.00000E+01	0.00000E+00
69	8.60000E+01	5.00000E+01	0.00000E+00
70	9.40000E+01	5.00000E+01	0.00000E+00
71	1.01000E+02	5.00000E+01	0.00000E+00

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Node	X-Coord.	Y-Coord.	Z-Coord.
72	1.08000E+02	5.00000E+01	0.00000E+00
73	6.00000E+00	5.90000E+01	0.00000E+00
74	1.80000E+01	5.90000E+01	0.00000E+00
75	2.80000E+01	5.90000E+01	0.00000E+00
76	3.80000E+01	5.90000E+01	0.00000E+00
77	4.80000E+01	5.90000E+01	0.00000E+00
78	5.80000E+01	5.90000E+01	0.00000E+00
79	6.80000E+01	5.90000E+01	0.00000E+00
80	7.70000E+01	5.90000E+01	0.00000E+00
81	8.60000E+01	5.90000E+01	0.00000E+00
82	9.40000E+01	5.90000E+01	0.00000E+00
83	1.01000E+02	5.90000E+01	0.00000E+00
84	1.08000E+02	5.90000E+01	0.00000E+00
85	6.00000E+00	6.80000E+01	0.00000E+00
86	1.80000E+01	6.80000E+01	0.00000E+00
87	2.80000E+01	6.80000E+01	0.00000E+00
88	3.80000E+01	6.80000E+01	0.00000E+00
89	4.80000E+01	6.80000E+01	0.00000E+00
90	5.80000E+01	6.80000E+01	0.00000E+00
91	6.80000E+01	6.80000E+01	0.00000E+00
92	7.70000E+01	6.80000E+01	0.00000E+00
93	8.60000E+01	6.80000E+01	0.00000E+00
94	9.40000E+01	6.80000E+01	0.00000E+00
95	1.01000E+02	6.80000E+01	0.00000E+00
96	1.08000E+02	6.80000E+01	0.00000E+00
97	6.00000E+00	7.60000E+01	0.00000E+00
98	1.80000E+01	7.60000E+01	0.00000E+00
99	2.80000E+01	7.60000E+01	0.00000E+00
100	3.80000E+01	7.60000E+01	0.00000E+00
101	4.80000E+01	7.60000E+01	0.00000E+00
102	5.80000E+01	7.60000E+01	0.00000E+00
103	6.80000E+01	7.60000E+01	0.00000E+00
104	7.70000E+01	7.60000E+01	0.00000E+00
105	8.60000E+01	7.60000E+01	0.00000E+00
106	9.40000E+01	7.60000E+01	0.00000E+00
107	1.01000E+02	7.60000E+01	0.00000E+00
108	1.08000E+02	7.60000E+01	0.00000E+00
109	6.00000E+00	8.40000E+01	0.00000E+00
110	1.80000E+01	8.40000E+01	0.00000E+00
111	2.80000E+01	8.40000E+01	0.00000E+00
112	3.80000E+01	8.40000E+01	0.00000E+00
113	4.80000E+01	8.40000E+01	0.00000E+00

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Node	X-Coord.	Y-Coord.	Z-Coord.
114	5.80000E+01	8.40000E+01	0.00000E+00
115	6.80000E+01	8.40000E+01	0.00000E+00
116	7.70000E+01	8.40000E+01	0.00000E+00
117	8.60000E+01	8.40000E+01	0.00000E+00
118	9.40000E+01	8.40000E+01	0.00000E+00
119	1.01000E+02	8.40000E+01	0.00000E+00
120	1.08000E+02	8.40000E+01	0.00000E+00
121	4.50000E+00	9.00000E+01	0.00000E+00
122	1.80000E+01	9.00000E+01	0.00000E+00
123	2.80000E+01	9.00000E+01	0.00000E+00
124	3.80000E+01	9.00000E+01	0.00000E+00
125	4.80000E+01	9.00000E+01	0.00000E+00
126	5.80000E+01	9.00000E+01	0.00000E+00
127	6.80000E+01	9.00000E+01	0.00000E+00
128	7.70000E+01	9.00000E+01	0.00000E+00
129	8.60000E+01	9.00000E+01	0.00000E+00
130	9.40000E+01	9.00000E+01	0.00000E+00
131	1.01000E+02	9.00000E+01	0.00000E+00
132	1.09500E+02	9.00000E+01	0.00000E+00
133	3.00000E+00	9.60000E+01	0.00000E+00
134	1.80000E+01	9.60000E+01	0.00000E+00
135	2.80000E+01	9.60000E+01	0.00000E+00
136	3.80000E+01	9.60000E+01	0.00000E+00
137	4.80000E+01	9.60000E+01	0.00000E+00
138	5.80000E+01	9.60000E+01	0.00000E+00
139	6.80000E+01	9.60000E+01	0.00000E+00
140	7.70000E+01	9.60000E+01	0.00000E+00
141	8.60000E+01	9.60000E+01	0.00000E+00
142	9.40000E+01	9.60000E+01	0.00000E+00
143	1.01000E+02	9.60000E+01	0.00000E+00
144	1.11000E+02	9.60000E+01	0.00000E+00
145	1.50000E+00	1.02000E+02	0.00000E+00
146	1.80000E+01	1.02000E+02	0.00000E+00
147	2.80000E+01	1.02000E+02	0.00000E+00
148	3.80000E+01	1.02000E+02	0.00000E+00
149	4.80000E+01	1.02000E+02	0.00000E+00
150	5.80000E+01	1.02000E+02	0.00000E+00
151	6.80000E+01	1.02000E+02	0.00000E+00
152	7.70000E+01	1.02000E+02	0.00000E+00
153	8.60000E+01	1.02000E+02	0.00000E+00
154	9.40000E+01	1.02000E+02	0.00000E+00
155	1.01000E+02	1.02000E+02	0.00000E+00

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Node	X-Coord.	Y-Coord.	Z-Coord.
156	1.12500E+02	1.02000E+02	0.00000E+00
157	0.00000E+00	1.08000E+02	0.00000E+00
158	1.80000E+01	1.08000E+02	0.00000E+00
159	2.80000E+01	1.08000E+02	0.00000E+00
160	3.80000E+01	1.08000E+02	0.00000E+00
161	4.80000E+01	1.08000E+02	0.00000E+00
162	5.80000E+01	1.08000E+02	0.00000E+00
163	6.80000E+01	1.08000E+02	0.00000E+00
164	7.70000E+01	1.08000E+02	0.00000E+00
165	8.60000E+01	1.08000E+02	0.00000E+00
166	9.40000E+01	1.08000E+02	0.00000E+00
167	1.01000E+02	1.08000E+02	0.00000E+00
168	1.14000E+02	1.08000E+02	0.00000E+00

PLATE ELEMENT CONNECTIVITY

Plate No.	Nodes			Mat		Area	Shear Web Thickness	Aspect Ratio	Plate Type
	I	J	K	L	No. Thickness				
QUAD	1	1	2	14	13	1 1.200E+01	1.200E+02	1.200E+00	M+B
QUAD	2	2	3	15	14	1 1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	3	3	4	16	15	1 1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	4	4	5	17	16	1 1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	5	5	6	18	17	1 1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	6	6	7	19	18	1 1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	7	7	8	20	19	1 1.200E+01	9.000E+01	9.000E-01	M+B
QUAD	8	8	9	21	20	1 1.200E+01	9.000E+01	9.000E-01	M+B
QUAD	9	9	10	22	21	1 1.200E+01	8.000E+01	8.000E-01	M+B
QUAD	10	10	11	23	22	1 1.200E+01	7.000E+01	7.000E-01	M+B
QUAD	11	11	12	24	23	1 1.200E+01	7.000E+01	7.000E-01	M+B
QUAD	12	13	14	26	25	1 1.200E+01	1.200E+02	1.200E+00	M+B
QUAD	13	14	15	27	26	1 1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	14	15	16	28	27	1 1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	15	16	17	29	28	1 1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	16	17	18	30	29	1 1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	17	18	19	31	30	1 1.200E+01	1.000E+02	1.000E+00	M+B
QUAD	18	19	20	32	31	1 1.200E+01	9.000E+01	9.000E-01	M+B
QUAD	19	20	21	33	32	1 1.200E+01	9.000E+01	9.000E-01	M+B
QUAD	20	21	22	34	33	1 1.200E+01	8.000E+01	8.000E-01	M+B
QUAD	21	22	23	35	34	1 1.200E+01	7.000E+01	7.000E-01	M+B

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CHECK GEOMETRY

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Plate No.	Nodes				Mat L No.	Thickness	Area	Shear Web Thickness	Aspect Ratio	Plate Type
	I	J	K							
QUAD 22	23	24	36	35	1	1.200E+01	7.000E+01		7.000E-01	M+B
QUAD 23	25	26	38	37	1	1.200E+01	1.200E+02		1.200E+00	M+B
QUAD 24	26	27	39	38	1	1.200E+01	1.000E+02		1.000E+00	M+B
QUAD 25	27	28	40	39	1	1.200E+01	1.000E+02		1.000E+00	M+B
QUAD 26	28	29	41	40	1	1.200E+01	1.000E+02		1.000E+00	M+B
QUAD 27	29	30	42	41	1	1.200E+01	1.000E+02		1.000E+00	M+B
QUAD 28	30	31	43	42	1	1.200E+01	1.000E+02		1.000E+00	M+B
QUAD 29	31	32	44	43	1	1.200E+01	9.000E+01		9.000E-01	M+B
QUAD 30	32	33	45	44	1	1.200E+01	9.000E+01		9.000E-01	M+B
QUAD 31	33	34	46	45	1	1.200E+01	8.000E+01		8.000E-01	M+B
QUAD 32	34	35	47	46	1	1.200E+01	7.000E+01		7.000E-01	M+B
QUAD 33	35	36	48	47	1	1.200E+01	7.000E+01		7.000E-01	M+B
QUAD 34	37	38	50	49	1	1.200E+01	1.200E+02		1.200E+00	M+B
QUAD 35	38	39	51	50	1	1.200E+01	1.000E+02		1.000E+00	M+B
QUAD 36	39	40	52	51	1	1.200E+01	1.000E+02		1.000E+00	M+B
QUAD 37	40	41	53	52	1	1.200E+01	1.000E+02		1.000E+00	M+B
QUAD 38	41	42	54	53	1	1.200E+01	1.000E+02		1.000E+00	M+B
QUAD 39	42	43	55	54	1	1.200E+01	1.000E+02		1.000E+00	M+B
QUAD 40	43	44	56	55	1	1.200E+01	9.000E+01		9.000E-01	M+B
QUAD 41	44	45	57	56	1	1.200E+01	9.000E+01		9.000E-01	M+B
QUAD 42	45	46	58	57	1	1.200E+01	8.000E+01		8.000E-01	M+B
QUAD 43	46	47	59	58	1	1.200E+01	7.000E+01		7.000E-01	M+B
QUAD 44	47	48	60	59	1	1.200E+01	7.000E+01		7.000E-01	M+B
QUAD 45	49	50	62	61	1	1.200E+01	1.200E+02		1.200E+00	M+B
QUAD 46	50	51	63	62	1	1.200E+01	1.000E+02		1.000E+00	M+B
QUAD 47	51	52	64	63	1	1.200E+01	1.000E+02		1.000E+00	M+B
QUAD 48	52	53	65	64	1	1.200E+01	1.000E+02		1.000E+00	M+B
QUAD 49	53	54	66	65	1	1.200E+01	1.000E+02		1.000E+00	M+B
QUAD 50	54	55	67	66	1	1.200E+01	1.000E+02		1.000E+00	M+B
QUAD 51	55	56	68	67	1	1.200E+01	9.000E+01		9.000E-01	M+B
QUAD 52	56	57	69	68	1	1.200E+01	9.000E+01		9.000E-01	M+B
QUAD 53	57	58	70	69	1	1.200E+01	8.000E+01		8.000E-01	M+B
QUAD 54	58	59	71	70	1	1.200E+01	7.000E+01		7.000E-01	M+B
QUAD 55	59	60	72	71	1	1.200E+01	7.000E+01		7.000E-01	M+B
QUAD 56	61	62	74	73	1	1.200E+01	1.080E+02		1.333E+00	M+B
QUAD 57	62	63	75	74	1	1.200E+01	9.000E+01		1.111E+00	M+B
QUAD 58	63	64	76	75	1	1.200E+01	9.000E+01		1.111E+00	M+B
QUAD 59	64	65	77	76	1	1.200E+01	9.000E+01		1.111E+00	M+B
QUAD 60	65	66	78	77	1	1.200E+01	9.000E+01		1.111E+00	M+B
QUAD 61	66	67	79	78	1	1.200E+01	9.000E+01		1.111E+00	M+B
QUAD 62	67	68	80	79	1	1.200E+01	8.100E+01		1.000E+00	M+B

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CHECK GEOMETRY

Version 2.0 07/01/90

Plate No.	Nodes			Mat No.	Thickness	Area	Shear Web Thickness	Aspect Ratio	Plate Type
	I	J	K						
QUAD 63	68	69	81	80	1 1.200E+01	8.100E+01		1.000E+00	M+B
QUAD 64	69	70	82	81	1 1.200E+01	7.200E+01		8.889E-01	M+B
QUAD 65	70	71	83	82	1 1.200E+01	6.300E+01		7.778E-01	M+B
QUAD 66	71	72	84	83	1 1.200E+01	6.300E+01		7.778E-01	M+B
QUAD 67	73	74	86	85	1 1.200E+01	1.080E+02		1.333E+00	M+B
QUAD 68	74	75	87	86	1 1.200E+01	9.000E+01		1.111E+00	M+B
QUAD 69	75	76	88	87	1 1.200E+01	9.000E+01		1.111E+00	M+B
QUAD 70	76	77	89	88	1 1.200E+01	9.000E+01		1.111E+00	M+B
QUAD 71	77	78	90	89	1 1.200E+01	9.000E+01		1.111E+00	M+B
QUAD 72	78	79	91	90	1 1.200E+01	9.000E+01		1.111E+00	M+B
QUAD 73	79	80	92	91	1 1.200E+01	8.100E+01		1.000E+00	M+B
QUAD 74	80	81	93	92	1 1.200E+01	8.100E+01		1.000E+00	M+B
QUAD 75	81	82	94	93	1 1.200E+01	7.200E+01		8.889E-01	M+B
QUAD 76	82	83	95	94	1 1.200E+01	6.300E+01		7.778E-01	M+B
QUAD 77	83	84	96	95	1 1.200E+01	6.300E+01		7.778E-01	M+B
QUAD 78	85	86	98	97	1 1.200E+01	9.600E+01		1.500E+00	M+B
QUAD 79	86	87	99	98	1 1.200E+01	8.000E+01		1.250E+00	M+B
QUAD 80	87	88	100	99	1 1.200E+01	8.000E+01		1.250E+00	M+B
QUAD 81	88	89	101	100	1 1.200E+01	8.000E+01		1.250E+00	M+B
QUAD 82	89	90	102	101	1 1.200E+01	8.000E+01		1.250E+00	M+B
QUAD 83	90	91	103	102	1 1.200E+01	8.000E+01		1.250E+00	M+B
QUAD 84	91	92	104	103	1 1.200E+01	7.200E+01		1.125E+00	M+B
QUAD 85	92	93	105	104	1 1.200E+01	7.200E+01		1.125E+00	M+B
QUAD 86	93	94	106	105	1 1.200E+01	6.400E+01		1.000E+00	M+B
QUAD 87	94	95	107	106	1 1.200E+01	5.600E+01		8.750E-01	M+B
QUAD 88	95	96	108	107	1 1.200E+01	5.600E+01		8.750E-01	M+B
QUAD 89	97	98	110	109	1 1.200E+01	9.600E+01		1.500E+00	M+B
QUAD 90	98	99	111	110	1 1.200E+01	8.000E+01		1.250E+00	M+B
QUAD 91	99	100	112	111	1 1.200E+01	8.000E+01		1.250E+00	M+B
QUAD 92	100	101	113	112	1 1.200E+01	8.000E+01		1.250E+00	M+B
QUAD 93	101	102	114	113	1 1.200E+01	8.000E+01		1.250E+00	M+B
QUAD 94	102	103	115	114	1 1.200E+01	8.000E+01		1.250E+00	M+B
QUAD 95	103	104	116	115	1 1.200E+01	7.200E+01		1.125E+00	M+B
QUAD 96	104	105	117	116	1 1.200E+01	7.200E+01		1.125E+00	M+B
QUAD 97	105	106	118	117	1 1.200E+01	6.400E+01		1.000E+00	M+B
QUAD 98	106	107	119	118	1 1.200E+01	5.600E+01		8.750E-01	M+B
QUAD 99	107	108	120	119	1 1.200E+01	5.600E+01		8.750E-01	M+B
QUAD 100	109	110	122	121	2 7.630E+00	7.650E+01		2.109E+00	M+B
QUAD 101	110	111	123	122	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD 102	111	112	124	123	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD 103	112	113	125	124	2 7.630E+00	6.000E+01		1.667E+00	M+B

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Version 2.0 07/01/90

Plate No.	Nodes			Mat L	Thickness	Area	Shear Web Thickness	Aspect Ratio	Plate Type
	I	J	K						
QUAD 104	113	114	126	125	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD 105	114	115	127	126	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD 106	115	116	128	127	2 7.630E+00	5.400E+01		1.500E+00	M+B
QUAD 107	116	117	129	128	2 7.630E+00	5.400E+01		1.500E+00	M+B
QUAD 108	117	118	130	129	2 7.630E+00	4.800E+01		1.333E+00	M+B
QUAD 109	118	119	131	130	2 7.630E+00	4.200E+01		1.167E+00	M+B
QUAD 110	119	120	132	131	2 7.630E+00	4.650E+01		1.282E+00	M+B
QUAD 111	121	122	134	133	2 7.630E+00	8.550E+01		2.357E+00	M+B
QUAD 112	122	123	135	134	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD 113	123	124	136	135	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD 114	124	125	137	136	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD 115	125	126	138	137	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD 116	126	127	139	138	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD 117	127	128	140	139	2 7.630E+00	5.400E+01		1.500E+00	M+B
QUAD 118	128	129	141	140	2 7.630E+00	5.400E+01		1.500E+00	M+B
QUAD 119	129	130	142	141	2 7.630E+00	4.800E+01		1.333E+00	M+B
QUAD 120	130	131	143	142	2 7.630E+00	4.200E+01		1.167E+00	M+B
QUAD 121	131	132	144	143	2 7.630E+00	5.550E+01		1.530E+00	M+B
QUAD 122	133	134	146	145	2 7.630E+00	9.450E+01		2.605E+00	M+B
QUAD 123	134	135	147	146	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD 124	135	136	148	147	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD 125	136	137	149	148	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD 126	137	138	150	149	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD 127	138	139	151	150	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD 128	139	140	152	151	2 7.630E+00	5.400E+01		1.500E+00	M+B
QUAD 129	140	141	153	152	2 7.630E+00	5.400E+01		1.500E+00	M+B
QUAD 130	141	142	154	153	2 7.630E+00	4.800E+01		1.333E+00	M+B
QUAD 131	142	143	155	154	2 7.630E+00	4.200E+01		1.167E+00	M+B
QUAD 132	143	144	156	155	2 7.630E+00	6.450E+01		1.778E+00	M+B
QUAD 133	145	146	158	157	2 7.630E+00	1.035E+02		2.853E+00	M+B
QUAD 134	146	147	159	158	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD 135	147	148	160	159	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD 136	148	149	161	160	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD 137	149	150	162	161	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD 138	150	151	163	162	2 7.630E+00	6.000E+01		1.667E+00	M+B
QUAD 139	151	152	164	163	2 7.630E+00	5.400E+01		1.500E+00	M+B
QUAD 140	152	153	165	164	2 7.630E+00	5.400E+01		1.500E+00	M+B
QUAD 141	153	154	166	165	2 7.630E+00	4.800E+01		1.333E+00	M+B
QUAD 142	154	155	167	166	2 7.630E+00	4.200E+01		1.167E+00	M+B
QUAD 143	155	156	168	167	2 7.630E+00	7.350E+01		2.026E+00	M+B

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CHECK GEOMETRY

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RESTRAINTS

Node No	Global/Local	Restraint Directions
1	GLOBAL	X Y Z RX RY RZ
2	GLOBAL	X Y Z RX RY RZ
3	GLOBAL	X Y Z RX RY RZ
4	GLOBAL	X Y Z RX RY RZ
5	GLOBAL	X Y Z RX RY RZ
6	GLOBAL	X Y Z RX RY RZ
7	GLOBAL	X Y Z RX RY RZ
8	GLOBAL	X Y Z RX RY RZ
9	GLOBAL	X Y Z RX RY RZ
10	GLOBAL	X Y Z RX RY RZ
11	GLOBAL	X Y Z RX RY RZ
12	GLOBAL	X Y Z RX RY RZ
13	GLOBAL	X Y Z RX RY RZ
24	GLOBAL	X Y Z RX RY RZ
25	GLOBAL	X Y Z RX RY RZ
36	GLOBAL	X Y Z RX RY RZ
37	GLOBAL	X Y Z RX RY RZ
48	GLOBAL	X Y Z RX RY RZ
49	GLOBAL	X Y Z RX RY RZ
60	GLOBAL	X Y Z RX RY RZ
61	GLOBAL	X Y Z RX RY RZ
72	GLOBAL	X Y Z RX RY RZ
73	GLOBAL	X Y Z RX RY RZ
84	GLOBAL	X Y Z RX RY RZ
85	GLOBAL	X Y Z RX RY RZ
96	GLOBAL	X Y Z RX RY RZ
97	GLOBAL	X Y Z RX RY RZ
108	GLOBAL	X Y Z RX RY RZ
109	GLOBAL	X Y Z RX RY RZ
120	GLOBAL	X Y Z RX RY RZ
121	GLOBAL	X Y Z RX RY RZ
132	GLOBAL	X Y Z RX RY RZ
133	GLOBAL	X Y Z RX RY RZ
144	GLOBAL	X Y Z RX RY RZ
145	GLOBAL	X Y Z RX RY RZ
156	GLOBAL	X Y Z RX RY RZ
157	GLOBAL	X Y Z RX RY RZ
168	GLOBAL	X Y Z RX RY RZ

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

LOAD CASE 1

LATERAL EARTH PRESSURE

GRAVITY LOADING

Direction	Gravity Factor	Load Factor
-----	-----	-----
X	.0000E+00	.1000E+01
Y	.0000E+00	.1000E+01
Z	.0000E+00	.1000E+01

INERTIA LOADING

Direction	Translational Accel.	Rotational Accel.	Rotational Velocity	Origin
-----	-----	-----	-----	-----
X	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Y	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Z	.0000E+00	.0000E+00	.0000E+00	.0000E+00

Gravity Acceleration = .3864E+03

REFERENCE TEMPERATURE = .0000E+00

PLATE TEMPERATURES/PRESSURES

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
-----	-----	-----	-----	-----
1	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1610E+01	.1610E+01	.1442E+01	.1442E+01
2	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1610E+01	.1610E+01	.1442E+01	.1442E+01
3	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1610E+01	.1610E+01	.1442E+01	.1442E+01
4	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1610E+01	.1610E+01	.1442E+01	.1442E+01
5	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1610E+01	.1610E+01	.1442E+01	.1442E+01
6	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1610E+01	.1610E+01	.1442E+01	.1442E+01

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L O A D C A S E 1

LATERAL EARTH PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
7	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1610E+01	.1610E+01	.1442E+01	.1442E+01
8	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1610E+01	.1610E+01	.1442E+01	.1442E+01
9	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1610E+01	.1610E+01	.1442E+01	.1442E+01
10	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1610E+01	.1610E+01	.1442E+01	.1442E+01
11	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1610E+01	.1610E+01	.1442E+01	.1442E+01
12	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1442E+01	.1442E+01	.1275E+01	.1275E+01
13	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1442E+01	.1442E+01	.1275E+01	.1275E+01
14	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1442E+01	.1442E+01	.1275E+01	.1275E+01
15	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1442E+01	.1442E+01	.1275E+01	.1275E+01
16	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1442E+01	.1442E+01	.1275E+01	.1275E+01
17	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1442E+01	.1442E+01	.1275E+01	.1275E+01
18	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1442E+01	.1442E+01	.1275E+01	.1275E+01
19	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1442E+01	.1442E+01	.1275E+01	.1275E+01
20	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1442E+01	.1442E+01	.1275E+01	.1275E+01
21	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1442E+01	.1442E+01	.1275E+01	.1275E+01
22	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1442E+01	.1442E+01	.1275E+01	.1275E+01
23	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1275E+01	.1275E+01	.1107E+01	.1107E+01
24	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1275E+01	.1275E+01	.1107E+01	.1107E+01
25	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1275E+01	.1275E+01	.1107E+01	.1107E+01
26	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1275E+01	.1275E+01	.1107E+01	.1107E+01

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L O A D C A S E 1
 LATERAL EARTH PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
----	----	----	----	----
27	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1275E+01	.1275E+01	.1107E+01	.1107E+01
28	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1275E+01	.1275E+01	.1107E+01	.1107E+01
29	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1275E+01	.1275E+01	.1107E+01	.1107E+01
30	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1275E+01	.1275E+01	.1107E+01	.1107E+01
31	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1275E+01	.1275E+01	.1107E+01	.1107E+01
32	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1275E+01	.1275E+01	.1107E+01	.1107E+01
33	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1275E+01	.1275E+01	.1107E+01	.1107E+01
34	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1107E+01	.1107E+01	.9392E+00	.9392E+00
35	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1107E+01	.1107E+01	.9392E+00	.9392E+00
36	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1107E+01	.1107E+01	.9392E+00	.9392E+00
37	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1107E+01	.1107E+01	.9392E+00	.9392E+00
38	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1107E+01	.1107E+01	.9392E+00	.9392E+00
39	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1107E+01	.1107E+01	.9392E+00	.9392E+00
40	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1107E+01	.1107E+01	.9392E+00	.9392E+00
41	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1107E+01	.1107E+01	.9392E+00	.9392E+00
42	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1107E+01	.1107E+01	.9392E+00	.9392E+00
43	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1107E+01	.1107E+01	.9392E+00	.9392E+00
44	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1107E+01	.1107E+01	.9392E+00	.9392E+00
45	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.9392E+00	.9392E+00	.7715E+00	.7715E+00
46	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.9392E+00	.9392E+00	.7715E+00	.7715E+00

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L O A D C A S E 1
 LATERAL EARTH PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
47	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.9392E+00	.9392E+00	.7715E+00	.7715E+00
48	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.9392E+00	.9392E+00	.7715E+00	.7715E+00
49	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.9392E+00	.9392E+00	.7715E+00	.7715E+00
50	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.9392E+00	.9392E+00	.7715E+00	.7715E+00
51	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.9392E+00	.9392E+00	.7715E+00	.7715E+00
52	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.9392E+00	.9392E+00	.7715E+00	.7715E+00
53	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.9392E+00	.9392E+00	.7715E+00	.7715E+00
54	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.9392E+00	.9392E+00	.7715E+00	.7715E+00
55	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.9392E+00	.9392E+00	.7715E+00	.7715E+00
56	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7715E+00	.7715E+00	.6205E+00	.6205E+00
57	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7715E+00	.7715E+00	.6205E+00	.6205E+00
58	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7715E+00	.7715E+00	.6205E+00	.6205E+00
59	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7715E+00	.7715E+00	.6205E+00	.6205E+00
60	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7715E+00	.7715E+00	.6205E+00	.6205E+00
61	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7715E+00	.7715E+00	.6205E+00	.6205E+00
62	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7715E+00	.7715E+00	.6205E+00	.6205E+00
63	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7715E+00	.7715E+00	.6205E+00	.6205E+00
64	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7715E+00	.7715E+00	.6205E+00	.6205E+00
65	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7715E+00	.7715E+00	.6205E+00	.6205E+00
66	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.7715E+00	.7715E+00	.6205E+00	.6205E+00

HNF-2466, Rev. 0

Page B-114

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L O A D C A S E 1

LATERAL EARTH PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
-----	-----	-----	-----	-----
67	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.6205E+00	.6205E+00	.4696E+00	.4696E+00
68	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.6205E+00	.6205E+00	.4696E+00	.4696E+00
69	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.6205E+00	.6205E+00	.4696E+00	.4696E+00
70	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.6205E+00	.6205E+00	.4696E+00	.4696E+00
71	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.6205E+00	.6205E+00	.4696E+00	.4696E+00
72	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.6205E+00	.6205E+00	.4696E+00	.4696E+00
73	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.6205E+00	.6205E+00	.4696E+00	.4696E+00
74	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.6205E+00	.6205E+00	.4696E+00	.4696E+00
75	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.6205E+00	.6205E+00	.4696E+00	.4696E+00
76	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.6205E+00	.6205E+00	.4696E+00	.4696E+00
77	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.6205E+00	.6205E+00	.4696E+00	.4696E+00
78	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.4696E+00	.4696E+00	.3354E+00	.3354E+00
79	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.4696E+00	.4696E+00	.3354E+00	.3354E+00
80	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.4696E+00	.4696E+00	.3354E+00	.3354E+00
81	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.4696E+00	.4696E+00	.3354E+00	.3354E+00
82	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.4696E+00	.4696E+00	.3354E+00	.3354E+00
83	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.4696E+00	.4696E+00	.3354E+00	.3354E+00
84	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.4696E+00	.4696E+00	.3354E+00	.3354E+00
85	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.4696E+00	.4696E+00	.3354E+00	.3354E+00
86	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.4696E+00	.4696E+00	.3354E+00	.3354E+00

HNF-2466, Rev. 0

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L O A D C A S E 1

LATERAL EARTH PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
87	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.4696E+00	.4696E+00	.3354E+00	.3354E+00
88	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.4696E+00	.4696E+00	.3354E+00	.3354E+00
89	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.3354E+00	.3354E+00	.2013E+00	.2013E+00
90	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.3354E+00	.3354E+00	.2013E+00	.2013E+00
91	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.3354E+00	.3354E+00	.2013E+00	.2013E+00
92	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.3354E+00	.3354E+00	.2013E+00	.2013E+00
93	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.3354E+00	.3354E+00	.2013E+00	.2013E+00
94	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.3354E+00	.3354E+00	.2013E+00	.2013E+00
95	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.3354E+00	.3354E+00	.2013E+00	.2013E+00
96	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.3354E+00	.3354E+00	.2013E+00	.2013E+00
97	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.3354E+00	.3354E+00	.2013E+00	.2013E+00
98	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.3354E+00	.3354E+00	.2013E+00	.2013E+00
99	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.3354E+00	.3354E+00	.2013E+00	.2013E+00
100	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2013E+00	.2013E+00	.1006E+00	.1006E+00
101	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2013E+00	.2013E+00	.1006E+00	.1006E+00
102	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2013E+00	.2013E+00	.1006E+00	.1006E+00
103	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2013E+00	.2013E+00	.1006E+00	.1006E+00
104	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2013E+00	.2013E+00	.1006E+00	.1006E+00
105	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2013E+00	.2013E+00	.1006E+00	.1006E+00
106	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2013E+00	.2013E+00	.1006E+00	.1006E+00

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Version 2.0 07/01/90

L O A D C A S E 1

LATERAL EARTH PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
----	----	----	----	----
107	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2013E+00	.2013E+00	.1006E+00	.1006E+00
108	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2013E+00	.2013E+00	.1006E+00	.1006E+00
109	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2013E+00	.2013E+00	.1006E+00	.1006E+00
110	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.2013E+00	.2013E+00	.1006E+00	.1006E+00
111	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1006E+00	.1006E+00	.1110E-15	.1110E-15
112	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1006E+00	.1006E+00	.1110E-15	.1110E-15
113	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1006E+00	.1006E+00	.1110E-15	.1110E-15
114	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1006E+00	.1006E+00	.1110E-15	.1110E-15
115	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1006E+00	.1006E+00	.1110E-15	.1110E-15
116	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1006E+00	.1006E+00	.1110E-15	.1110E-15
117	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1006E+00	.1006E+00	.1110E-15	.1110E-15
118	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1006E+00	.1006E+00	.1110E-15	.1110E-15
119	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1006E+00	.1006E+00	.1110E-15	.1110E-15
120	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1006E+00	.1006E+00	.1110E-15	.1110E-15
121	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1006E+00	.1006E+00	.1110E-15	.1110E-15

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LOAD CASE 2

OVERBURDEN PRESSURE

GRAVITY LOADING

Direction	Gravity Factor	Load Factor
-----	-----	-----
X	.0000E+00	.1000E+01
Y	.0000E+00	.1000E+01
Z	.0000E+00	.1000E+01

INERTIA LOADING

Direction	Translational Accel.	Rotational Accel.	Rotational Velocity	Origin
-----	-----	-----	-----	-----
X	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Y	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Z	.0000E+00	.0000E+00	.0000E+00	.0000E+00

Gravity Acceleration = .3864E+03

REFERENCE TEMPERATURE = .0000E+00

PLATE TEMPERATURES/PRESSURES

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
-----	-----	-----	-----	-----
1	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
2	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
3	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
4	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
5	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
6	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01

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Version 2.0 07/01/90

L O A D C A S E 2

OVERBURDEN PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
-----	-----	-----	-----	-----
7	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
8	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
9	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
10	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
11	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
12	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
13	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
14	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
15	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
16	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
17	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
18	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
19	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
20	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
21	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
22	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
23	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
24	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
25	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
26	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01

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Version 2.0 07/01/90

L O A D C A S E 2

OVERBURDEN PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
27	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
28	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
29	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
30	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
31	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
32	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
33	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
34	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
35	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
36	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
37	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
38	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
39	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
40	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
41	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
42	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
43	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
44	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
45	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
46	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01

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Version 2.0 07/01/90

L O A D C A S E 2

OVERBURDEN PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
----	----	----	----	----
47	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
48	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
49	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
50	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
51	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
52	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
53	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
54	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
55	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
56	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
57	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
58	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
59	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
60	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
61	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
62	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
63	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
64	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
65	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
66	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

L O A D C A S E 2

OVERBURDEN PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
----	----	----	----	----
67	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
68	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
69	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
70	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
71	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
72	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
73	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
74	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
75	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
76	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
77	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
78	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
79	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
80	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
81	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
82	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
83	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
84	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
85	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
86	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

L O A D C A S E 2

OVERBURDEN PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
87	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
88	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
89	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
90	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
91	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
92	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
93	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
94	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
95	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
96	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
97	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
98	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
99	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
100	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
101	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
102	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
103	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
104	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
105	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
106	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01

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Version 2.0 07/01/90

L O A D C A S E 2

OVERBURDEN PRESSURE

Plate/Temp	Node1	Node2	Node3	Node4
Plate/Pressure	Node1	Node2	Node3	Node4
Plate/Lat. load	Side	Dir.	Node1	Node2
-----	-----	-----	-----	-----
107	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
108	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
109	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
110	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
111	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
112	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
113	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
114	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
115	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
116	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
117	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
118	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
119	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
120	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01
121	.0000E+00	.0000E+00	.0000E+00	.0000E+00
	.1389E+01	.1389E+01	.1389E+01	.1389E+01

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

LOAD CASE 3
 OPERATING PIPE AND JUMPER LOADS

GRAVITY LOADING

Direction	Gravity Factor	Load Factor
-----	-----	-----
X	.0000E+00	.1000E+01
Y	.0000E+00	.1000E+01
Z	.0000E+00	.1000E+01

INERTIA LOADING

Direction	Translational Accel.	Rotational Accel.	Rotational Velocity	Origin
-----	-----	-----	-----	-----
X	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Y	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Z	.0000E+00	.0000E+00	.0000E+00	.0000E+00

Gravity Acceleration = .3864E+03

CONCENTRATED LOADS

Node	Fx	Fy	Fz	Mx	My	Mz
-----	-----	-----	-----	-----	-----	-----
94	.7650E+03	.9290E+03	.3849E+04	.7440E+04	.2963E+05	.4680E+04

REFERENCE TEMPERATURE = .0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

L O A D C A S E 4

COVER BLOCK DEAD LOAD

GRAVITY LOADING

Direction	Gravity Factor	Load Factor
-----	-----	-----
X	.0000E+00	.1000E+01
Y	.0000E+00	.1000E+01
Z	.0000E+00	.1000E+01

INERTIA LOADING

Direction	Translational Accel.	Rotational Accel.	Rotational Velocity	Origin
-----	-----	-----	-----	-----
X	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Y	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Z	.0000E+00	.0000E+00	.0000E+00	.0000E+00

Gravity Acceleration = .3864E+03

CONCENTRATED LOADS

Node	Fx	Fy	Fz	Mx	My	Mz
-----	-----	-----	-----	-----	-----	-----
109	.0000E+00	.2660E+04	.0000E+00	.0000E+00	.0000E+00	.0000E+00
115	.0000E+00	.4620E+04	.0000E+00	.0000E+00	.0000E+00	.0000E+00
120	.0000E+00	.1960E+04	.0000E+00	.0000E+00	.0000E+00	.0000E+00

REFERENCE TEMPERATURE = .0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

L O A D C A S E 1

LATERAL EARTH PRESSURE

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
1	.0000E+00	.0000E+00	.4662E+02	.0000E+00	.0000E+00	.0000E+00
2	.0000E+00	.0000E+00	.8548E+02	.0000E+00	.0000E+00	.0000E+00
3	.0000E+00	.0000E+00	.7770E+02	.0000E+00	.0000E+00	.0000E+00
4	.0000E+00	.0000E+00	.7770E+02	.0000E+00	.0000E+00	.0000E+00
5	.0000E+00	.0000E+00	.7770E+02	.0000E+00	.0000E+00	.0000E+00
6	.0000E+00	.0000E+00	.7770E+02	.0000E+00	.0000E+00	.0000E+00
7	.0000E+00	.0000E+00	.7382E+02	.0000E+00	.0000E+00	.0000E+00
8	.0000E+00	.0000E+00	.6993E+02	.0000E+00	.0000E+00	.0000E+00
9	.0000E+00	.0000E+00	.6605E+02	.0000E+00	.0000E+00	.0000E+00
10	.0000E+00	.0000E+00	.5828E+02	.0000E+00	.0000E+00	.0000E+00
11	.0000E+00	.0000E+00	.5439E+02	.0000E+00	.0000E+00	.0000E+00
12	.0000E+00	.0000E+00	.2720E+02	.0000E+00	.0000E+00	.0000E+00
13	.0000E+00	.0000E+00	.8654E+02	.0000E+00	.0000E+00	.0000E+00
14	.0000E+00	.0000E+00	.1587E+03	.0000E+00	.0000E+00	.0000E+00
15	.0000E+00	.0000E+00	.1442E+03	.0000E+00	.0000E+00	.0000E+00
16	.0000E+00	.0000E+00	.1442E+03	.0000E+00	.0000E+00	.0000E+00
17	.0000E+00	.0000E+00	.1442E+03	.0000E+00	.0000E+00	.0000E+00
18	.0000E+00	.0000E+00	.1442E+03	.0000E+00	.0000E+00	.0000E+00
19	.0000E+00	.0000E+00	.1370E+03	.0000E+00	.0000E+00	.0000E+00
20	.0000E+00	.0000E+00	.1298E+03	.0000E+00	.0000E+00	.0000E+00
21	.0000E+00	.0000E+00	.1226E+03	.0000E+00	.0000E+00	.0000E+00
22	.0000E+00	.0000E+00	.1082E+03	.0000E+00	.0000E+00	.0000E+00
23	.0000E+00	.0000E+00	.1010E+03	.0000E+00	.0000E+00	.0000E+00
24	.0000E+00	.0000E+00	.5048E+02	.0000E+00	.0000E+00	.0000E+00
25	.0000E+00	.0000E+00	.7647E+02	.0000E+00	.0000E+00	.0000E+00
26	.0000E+00	.0000E+00	.1402E+03	.0000E+00	.0000E+00	.0000E+00
27	.0000E+00	.0000E+00	.1275E+03	.0000E+00	.0000E+00	.0000E+00
28	.0000E+00	.0000E+00	.1275E+03	.0000E+00	.0000E+00	.0000E+00
29	.0000E+00	.0000E+00	.1275E+03	.0000E+00	.0000E+00	.0000E+00
30	.0000E+00	.0000E+00	.1275E+03	.0000E+00	.0000E+00	.0000E+00
31	.0000E+00	.0000E+00	.1211E+03	.0000E+00	.0000E+00	.0000E+00
32	.0000E+00	.0000E+00	.1147E+03	.0000E+00	.0000E+00	.0000E+00
33	.0000E+00	.0000E+00	.1083E+03	.0000E+00	.0000E+00	.0000E+00
34	.0000E+00	.0000E+00	.9559E+02	.0000E+00	.0000E+00	.0000E+00
35	.0000E+00	.0000E+00	.8922E+02	.0000E+00	.0000E+00	.0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

LOAD CASE 1
 LATERAL EARTH PRESSURE

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
36	.0000E+00	.0000E+00	.4461E+02	.0000E+00	.0000E+00	.0000E+00
37	.0000E+00	.0000E+00	.6641E+02	.0000E+00	.0000E+00	.0000E+00
38	.0000E+00	.0000E+00	.1218E+03	.0000E+00	.0000E+00	.0000E+00
39	.0000E+00	.0000E+00	.1107E+03	.0000E+00	.0000E+00	.0000E+00
40	.0000E+00	.0000E+00	.1107E+03	.0000E+00	.0000E+00	.0000E+00
41	.0000E+00	.0000E+00	.1107E+03	.0000E+00	.0000E+00	.0000E+00
42	.0000E+00	.0000E+00	.1107E+03	.0000E+00	.0000E+00	.0000E+00
43	.0000E+00	.0000E+00	.1052E+03	.0000E+00	.0000E+00	.0000E+00
44	.0000E+00	.0000E+00	.9962E+02	.0000E+00	.0000E+00	.0000E+00
45	.0000E+00	.0000E+00	.9408E+02	.0000E+00	.0000E+00	.0000E+00
46	.0000E+00	.0000E+00	.8302E+02	.0000E+00	.0000E+00	.0000E+00
47	.0000E+00	.0000E+00	.7748E+02	.0000E+00	.0000E+00	.0000E+00
48	.0000E+00	.0000E+00	.3874E+02	.0000E+00	.0000E+00	.0000E+00
49	.0000E+00	.0000E+00	.5635E+02	.0000E+00	.0000E+00	.0000E+00
50	.0000E+00	.0000E+00	.1033E+03	.0000E+00	.0000E+00	.0000E+00
51	.0000E+00	.0000E+00	.9392E+02	.0000E+00	.0000E+00	.0000E+00
52	.0000E+00	.0000E+00	.9392E+02	.0000E+00	.0000E+00	.0000E+00
53	.0000E+00	.0000E+00	.9392E+02	.0000E+00	.0000E+00	.0000E+00
54	.0000E+00	.0000E+00	.9392E+02	.0000E+00	.0000E+00	.0000E+00
55	.0000E+00	.0000E+00	.8922E+02	.0000E+00	.0000E+00	.0000E+00
56	.0000E+00	.0000E+00	.8453E+02	.0000E+00	.0000E+00	.0000E+00
57	.0000E+00	.0000E+00	.7983E+02	.0000E+00	.0000E+00	.0000E+00
58	.0000E+00	.0000E+00	.7044E+02	.0000E+00	.0000E+00	.0000E+00
59	.0000E+00	.0000E+00	.6574E+02	.0000E+00	.0000E+00	.0000E+00
60	.0000E+00	.0000E+00	.3287E+02	.0000E+00	.0000E+00	.0000E+00
61	.0000E+00	.0000E+00	.4429E+02	.0000E+00	.0000E+00	.0000E+00
62	.0000E+00	.0000E+00	.8120E+02	.0000E+00	.0000E+00	.0000E+00
63	.0000E+00	.0000E+00	.7382E+02	.0000E+00	.0000E+00	.0000E+00
64	.0000E+00	.0000E+00	.7382E+02	.0000E+00	.0000E+00	.0000E+00
65	.0000E+00	.0000E+00	.7382E+02	.0000E+00	.0000E+00	.0000E+00
66	.0000E+00	.0000E+00	.7382E+02	.0000E+00	.0000E+00	.0000E+00
67	.0000E+00	.0000E+00	.7013E+02	.0000E+00	.0000E+00	.0000E+00
68	.0000E+00	.0000E+00	.6644E+02	.0000E+00	.0000E+00	.0000E+00
69	.0000E+00	.0000E+00	.6275E+02	.0000E+00	.0000E+00	.0000E+00
70	.0000E+00	.0000E+00	.5536E+02	.0000E+00	.0000E+00	.0000E+00
71	.0000E+00	.0000E+00	.5167E+02	.0000E+00	.0000E+00	.0000E+00
72	.0000E+00	.0000E+00	.2584E+02	.0000E+00	.0000E+00	.0000E+00
73	.0000E+00	.0000E+00	.3351E+02	.0000E+00	.0000E+00	.0000E+00
74	.0000E+00	.0000E+00	.6143E+02	.0000E+00	.0000E+00	.0000E+00
75	.0000E+00	.0000E+00	.5585E+02	.0000E+00	.0000E+00	.0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

L O A D C A S E 1
 LATERAL EARTH PRESSURE

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
76	.0000E+00	.0000E+00	.5585E+02	.0000E+00	.0000E+00	.0000E+00
77	.0000E+00	.0000E+00	.5585E+02	.0000E+00	.0000E+00	.0000E+00
78	.0000E+00	.0000E+00	.5585E+02	.0000E+00	.0000E+00	.0000E+00
79	.0000E+00	.0000E+00	.5305E+02	.0000E+00	.0000E+00	.0000E+00
80	.0000E+00	.0000E+00	.5026E+02	.0000E+00	.0000E+00	.0000E+00
81	.0000E+00	.0000E+00	.4747E+02	.0000E+00	.0000E+00	.0000E+00
82	.0000E+00	.0000E+00	.4189E+02	.0000E+00	.0000E+00	.0000E+00
83	.0000E+00	.0000E+00	.3909E+02	.0000E+00	.0000E+00	.0000E+00
84	.0000E+00	.0000E+00	.1955E+02	.0000E+00	.0000E+00	.0000E+00
85	.0000E+00	.0000E+00	.2423E+02	.0000E+00	.0000E+00	.0000E+00
86	.0000E+00	.0000E+00	.4443E+02	.0000E+00	.0000E+00	.0000E+00
87	.0000E+00	.0000E+00	.4039E+02	.0000E+00	.0000E+00	.0000E+00
88	.0000E+00	.0000E+00	.4039E+02	.0000E+00	.0000E+00	.0000E+00
89	.0000E+00	.0000E+00	.4039E+02	.0000E+00	.0000E+00	.0000E+00
90	.0000E+00	.0000E+00	.4039E+02	.0000E+00	.0000E+00	.0000E+00
91	.0000E+00	.0000E+00	.3837E+02	.0000E+00	.0000E+00	.0000E+00
92	.0000E+00	.0000E+00	.3635E+02	.0000E+00	.0000E+00	.0000E+00
93	.0000E+00	.0000E+00	.3433E+02	.0000E+00	.0000E+00	.0000E+00
94	.0000E+00	.0000E+00	.3029E+02	.0000E+00	.0000E+00	.0000E+00
95	.0000E+00	.0000E+00	.2827E+02	.0000E+00	.0000E+00	.0000E+00
96	.0000E+00	.0000E+00	.1414E+02	.0000E+00	.0000E+00	.0000E+00
97	.0000E+00	.0000E+00	.1610E+02	.0000E+00	.0000E+00	.0000E+00
98	.0000E+00	.0000E+00	.2952E+02	.0000E+00	.0000E+00	.0000E+00
99	.0000E+00	.0000E+00	.2683E+02	.0000E+00	.0000E+00	.0000E+00
100	.0000E+00	.0000E+00	.2683E+02	.0000E+00	.0000E+00	.0000E+00
101	.0000E+00	.0000E+00	.2683E+02	.0000E+00	.0000E+00	.0000E+00
102	.0000E+00	.0000E+00	.2683E+02	.0000E+00	.0000E+00	.0000E+00
103	.0000E+00	.0000E+00	.2549E+02	.0000E+00	.0000E+00	.0000E+00
104	.0000E+00	.0000E+00	.2415E+02	.0000E+00	.0000E+00	.0000E+00
105	.0000E+00	.0000E+00	.2281E+02	.0000E+00	.0000E+00	.0000E+00
106	.0000E+00	.0000E+00	.2013E+02	.0000E+00	.0000E+00	.0000E+00
107	.0000E+00	.0000E+00	.1878E+02	.0000E+00	.0000E+00	.0000E+00
108	.0000E+00	.0000E+00	.9392E+01	.0000E+00	.0000E+00	.0000E+00
109	.0000E+00	.0000E+00	.9035E+01	.0000E+00	.0000E+00	.0000E+00
110	.0000E+00	.0000E+00	.1647E+02	.0000E+00	.0000E+00	.0000E+00
111	.0000E+00	.0000E+00	.1487E+02	.0000E+00	.0000E+00	.0000E+00
112	.0000E+00	.0000E+00	.1487E+02	.0000E+00	.0000E+00	.0000E+00
113	.0000E+00	.0000E+00	.1487E+02	.0000E+00	.0000E+00	.0000E+00
114	.0000E+00	.0000E+00	.1487E+02	.0000E+00	.0000E+00	.0000E+00
115	.0000E+00	.0000E+00	.1413E+02	.0000E+00	.0000E+00	.0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

L O A D C A S E 1

LATERAL EARTH PRESSURE

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
116	.0000E+00	.0000E+00	.1338E+02	.0000E+00	.0000E+00	.0000E+00
117	.0000E+00	.0000E+00	.1264E+02	.0000E+00	.0000E+00	.0000E+00
118	.0000E+00	.0000E+00	.1115E+02	.0000E+00	.0000E+00	.0000E+00
119	.0000E+00	.0000E+00	.1052E+02	.0000E+00	.0000E+00	.0000E+00
120	.0000E+00	.0000E+00	.5318E+01	.0000E+00	.0000E+00	.0000E+00
121	.0000E+00	.0000E+00	.4000E+01	.0000E+00	.0000E+00	.0000E+00
122	.0000E+00	.0000E+00	.7019E+01	.0000E+00	.0000E+00	.0000E+00
123	.0000E+00	.0000E+00	.6038E+01	.0000E+00	.0000E+00	.0000E+00
124	.0000E+00	.0000E+00	.6038E+01	.0000E+00	.0000E+00	.0000E+00
125	.0000E+00	.0000E+00	.6038E+01	.0000E+00	.0000E+00	.0000E+00
126	.0000E+00	.0000E+00	.6038E+01	.0000E+00	.0000E+00	.0000E+00
127	.0000E+00	.0000E+00	.5736E+01	.0000E+00	.0000E+00	.0000E+00
128	.0000E+00	.0000E+00	.5434E+01	.0000E+00	.0000E+00	.0000E+00
129	.0000E+00	.0000E+00	.5132E+01	.0000E+00	.0000E+00	.0000E+00
130	.0000E+00	.0000E+00	.4528E+01	.0000E+00	.0000E+00	.0000E+00
131	.0000E+00	.0000E+00	.4604E+01	.0000E+00	.0000E+00	.0000E+00
132	.0000E+00	.0000E+00	.2490E+01	.0000E+00	.0000E+00	.0000E+00
133	.0000E+00	.0000E+00	.7170E+00	.0000E+00	.0000E+00	.0000E+00
134	.0000E+00	.0000E+00	.1220E+01	.0000E+00	.0000E+00	.0000E+00
135	.0000E+00	.0000E+00	.1006E+01	.0000E+00	.0000E+00	.0000E+00
136	.0000E+00	.0000E+00	.1006E+01	.0000E+00	.0000E+00	.0000E+00
137	.0000E+00	.0000E+00	.1006E+01	.0000E+00	.0000E+00	.0000E+00
138	.0000E+00	.0000E+00	.1006E+01	.0000E+00	.0000E+00	.0000E+00
139	.0000E+00	.0000E+00	.9559E+00	.0000E+00	.0000E+00	.0000E+00
140	.0000E+00	.0000E+00	.9056E+00	.0000E+00	.0000E+00	.0000E+00
141	.0000E+00	.0000E+00	.8553E+00	.0000E+00	.0000E+00	.0000E+00
142	.0000E+00	.0000E+00	.7547E+00	.0000E+00	.0000E+00	.0000E+00
143	.0000E+00	.0000E+00	.8176E+00	.0000E+00	.0000E+00	.0000E+00
144	.0000E+00	.0000E+00	.4654E+00	.0000E+00	.0000E+00	.0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

LOAD CASE 2

OVERBURDEN PRESSURE

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
1	.0000E+00	.0000E+00	.4167E+02	.0000E+00	.0000E+00	.0000E+00
2	.0000E+00	.0000E+00	.7640E+02	.0000E+00	.0000E+00	.0000E+00
3	.0000E+00	.0000E+00	.6945E+02	.0000E+00	.0000E+00	.0000E+00
4	.0000E+00	.0000E+00	.6945E+02	.0000E+00	.0000E+00	.0000E+00
5	.0000E+00	.0000E+00	.6945E+02	.0000E+00	.0000E+00	.0000E+00
6	.0000E+00	.0000E+00	.6945E+02	.0000E+00	.0000E+00	.0000E+00
7	.0000E+00	.0000E+00	.6598E+02	.0000E+00	.0000E+00	.0000E+00
8	.0000E+00	.0000E+00	.6251E+02	.0000E+00	.0000E+00	.0000E+00
9	.0000E+00	.0000E+00	.5903E+02	.0000E+00	.0000E+00	.0000E+00
10	.0000E+00	.0000E+00	.5209E+02	.0000E+00	.0000E+00	.0000E+00
11	.0000E+00	.0000E+00	.4862E+02	.0000E+00	.0000E+00	.0000E+00
12	.0000E+00	.0000E+00	.2431E+02	.0000E+00	.0000E+00	.0000E+00
13	.0000E+00	.0000E+00	.8334E+02	.0000E+00	.0000E+00	.0000E+00
14	.0000E+00	.0000E+00	.1528E+03	.0000E+00	.0000E+00	.0000E+00
15	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
16	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
17	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
18	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
19	.0000E+00	.0000E+00	.1320E+03	.0000E+00	.0000E+00	.0000E+00
20	.0000E+00	.0000E+00	.1250E+03	.0000E+00	.0000E+00	.0000E+00
21	.0000E+00	.0000E+00	.1181E+03	.0000E+00	.0000E+00	.0000E+00
22	.0000E+00	.0000E+00	.1042E+03	.0000E+00	.0000E+00	.0000E+00
23	.0000E+00	.0000E+00	.9723E+02	.0000E+00	.0000E+00	.0000E+00
24	.0000E+00	.0000E+00	.4862E+02	.0000E+00	.0000E+00	.0000E+00
25	.0000E+00	.0000E+00	.8334E+02	.0000E+00	.0000E+00	.0000E+00
26	.0000E+00	.0000E+00	.1528E+03	.0000E+00	.0000E+00	.0000E+00
27	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
28	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
29	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
30	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
31	.0000E+00	.0000E+00	.1320E+03	.0000E+00	.0000E+00	.0000E+00
32	.0000E+00	.0000E+00	.1250E+03	.0000E+00	.0000E+00	.0000E+00
33	.0000E+00	.0000E+00	.1181E+03	.0000E+00	.0000E+00	.0000E+00
34	.0000E+00	.0000E+00	.1042E+03	.0000E+00	.0000E+00	.0000E+00
35	.0000E+00	.0000E+00	.9723E+02	.0000E+00	.0000E+00	.0000E+00

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Version 2.0 07/01/90

LOAD CASE 2

OVERBURDEN PRESSURE

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
36	.0000E+00	.0000E+00	.4862E+02	.0000E+00	.0000E+00	.0000E+00
37	.0000E+00	.0000E+00	.8334E+02	.0000E+00	.0000E+00	.0000E+00
38	.0000E+00	.0000E+00	.1528E+03	.0000E+00	.0000E+00	.0000E+00
39	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
40	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
41	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
42	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
43	.0000E+00	.0000E+00	.1320E+03	.0000E+00	.0000E+00	.0000E+00
44	.0000E+00	.0000E+00	.1250E+03	.0000E+00	.0000E+00	.0000E+00
45	.0000E+00	.0000E+00	.1181E+03	.0000E+00	.0000E+00	.0000E+00
46	.0000E+00	.0000E+00	.1042E+03	.0000E+00	.0000E+00	.0000E+00
47	.0000E+00	.0000E+00	.9723E+02	.0000E+00	.0000E+00	.0000E+00
48	.0000E+00	.0000E+00	.4862E+02	.0000E+00	.0000E+00	.0000E+00
49	.0000E+00	.0000E+00	.8334E+02	.0000E+00	.0000E+00	.0000E+00
50	.0000E+00	.0000E+00	.1528E+03	.0000E+00	.0000E+00	.0000E+00
51	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
52	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
53	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
54	.0000E+00	.0000E+00	.1389E+03	.0000E+00	.0000E+00	.0000E+00
55	.0000E+00	.0000E+00	.1320E+03	.0000E+00	.0000E+00	.0000E+00
56	.0000E+00	.0000E+00	.1250E+03	.0000E+00	.0000E+00	.0000E+00
57	.0000E+00	.0000E+00	.1181E+03	.0000E+00	.0000E+00	.0000E+00
58	.0000E+00	.0000E+00	.1042E+03	.0000E+00	.0000E+00	.0000E+00
59	.0000E+00	.0000E+00	.9723E+02	.0000E+00	.0000E+00	.0000E+00
60	.0000E+00	.0000E+00	.4862E+02	.0000E+00	.0000E+00	.0000E+00
61	.0000E+00	.0000E+00	.7917E+02	.0000E+00	.0000E+00	.0000E+00
62	.0000E+00	.0000E+00	.1452E+03	.0000E+00	.0000E+00	.0000E+00
63	.0000E+00	.0000E+00	.1320E+03	.0000E+00	.0000E+00	.0000E+00
64	.0000E+00	.0000E+00	.1320E+03	.0000E+00	.0000E+00	.0000E+00
65	.0000E+00	.0000E+00	.1320E+03	.0000E+00	.0000E+00	.0000E+00
66	.0000E+00	.0000E+00	.1320E+03	.0000E+00	.0000E+00	.0000E+00
67	.0000E+00	.0000E+00	.1254E+03	.0000E+00	.0000E+00	.0000E+00
68	.0000E+00	.0000E+00	.1188E+03	.0000E+00	.0000E+00	.0000E+00
69	.0000E+00	.0000E+00	.1122E+03	.0000E+00	.0000E+00	.0000E+00
70	.0000E+00	.0000E+00	.9897E+02	.0000E+00	.0000E+00	.0000E+00
71	.0000E+00	.0000E+00	.9237E+02	.0000E+00	.0000E+00	.0000E+00
72	.0000E+00	.0000E+00	.4618E+02	.0000E+00	.0000E+00	.0000E+00
73	.0000E+00	.0000E+00	.7501E+02	.0000E+00	.0000E+00	.0000E+00
74	.0000E+00	.0000E+00	.1375E+03	.0000E+00	.0000E+00	.0000E+00
75	.0000E+00	.0000E+00	.1250E+03	.0000E+00	.0000E+00	.0000E+00

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Version 2.0 07/01/90

LOAD CASE 2

OVERBURDEN PRESSURE

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
76	.0000E+00	.0000E+00	.1250E+03	.0000E+00	.0000E+00	.0000E+00
77	.0000E+00	.0000E+00	.1250E+03	.0000E+00	.0000E+00	.0000E+00
78	.0000E+00	.0000E+00	.1250E+03	.0000E+00	.0000E+00	.0000E+00
79	.0000E+00	.0000E+00	.1188E+03	.0000E+00	.0000E+00	.0000E+00
80	.0000E+00	.0000E+00	.1125E+03	.0000E+00	.0000E+00	.0000E+00
81	.0000E+00	.0000E+00	.1063E+03	.0000E+00	.0000E+00	.0000E+00
82	.0000E+00	.0000E+00	.9376E+02	.0000E+00	.0000E+00	.0000E+00
83	.0000E+00	.0000E+00	.8751E+02	.0000E+00	.0000E+00	.0000E+00
84	.0000E+00	.0000E+00	.4375E+02	.0000E+00	.0000E+00	.0000E+00
85	.0000E+00	.0000E+00	.7084E+02	.0000E+00	.0000E+00	.0000E+00
86	.0000E+00	.0000E+00	.1299E+03	.0000E+00	.0000E+00	.0000E+00
87	.0000E+00	.0000E+00	.1181E+03	.0000E+00	.0000E+00	.0000E+00
88	.0000E+00	.0000E+00	.1181E+03	.0000E+00	.0000E+00	.0000E+00
89	.0000E+00	.0000E+00	.1181E+03	.0000E+00	.0000E+00	.0000E+00
90	.0000E+00	.0000E+00	.1181E+03	.0000E+00	.0000E+00	.0000E+00
91	.0000E+00	.0000E+00	.1122E+03	.0000E+00	.0000E+00	.0000E+00
92	.0000E+00	.0000E+00	.1063E+03	.0000E+00	.0000E+00	.0000E+00
93	.0000E+00	.0000E+00	.1004E+03	.0000E+00	.0000E+00	.0000E+00
94	.0000E+00	.0000E+00	.8855E+02	.0000E+00	.0000E+00	.0000E+00
95	.0000E+00	.0000E+00	.8265E+02	.0000E+00	.0000E+00	.0000E+00
96	.0000E+00	.0000E+00	.4132E+02	.0000E+00	.0000E+00	.0000E+00
97	.0000E+00	.0000E+00	.6667E+02	.0000E+00	.0000E+00	.0000E+00
98	.0000E+00	.0000E+00	.1222E+03	.0000E+00	.0000E+00	.0000E+00
99	.0000E+00	.0000E+00	.1111E+03	.0000E+00	.0000E+00	.0000E+00
100	.0000E+00	.0000E+00	.1111E+03	.0000E+00	.0000E+00	.0000E+00
101	.0000E+00	.0000E+00	.1111E+03	.0000E+00	.0000E+00	.0000E+00
102	.0000E+00	.0000E+00	.1111E+03	.0000E+00	.0000E+00	.0000E+00
103	.0000E+00	.0000E+00	.1056E+03	.0000E+00	.0000E+00	.0000E+00
104	.0000E+00	.0000E+00	.1000E+03	.0000E+00	.0000E+00	.0000E+00
105	.0000E+00	.0000E+00	.9445E+02	.0000E+00	.0000E+00	.0000E+00
106	.0000E+00	.0000E+00	.8334E+02	.0000E+00	.0000E+00	.0000E+00
107	.0000E+00	.0000E+00	.7778E+02	.0000E+00	.0000E+00	.0000E+00
108	.0000E+00	.0000E+00	.3889E+02	.0000E+00	.0000E+00	.0000E+00
109	.0000E+00	.0000E+00	.5938E+02	.0000E+00	.0000E+00	.0000E+00
110	.0000E+00	.0000E+00	.1080E+03	.0000E+00	.0000E+00	.0000E+00
111	.0000E+00	.0000E+00	.9723E+02	.0000E+00	.0000E+00	.0000E+00
112	.0000E+00	.0000E+00	.9723E+02	.0000E+00	.0000E+00	.0000E+00
113	.0000E+00	.0000E+00	.9723E+02	.0000E+00	.0000E+00	.0000E+00
114	.0000E+00	.0000E+00	.9723E+02	.0000E+00	.0000E+00	.0000E+00
115	.0000E+00	.0000E+00	.9237E+02	.0000E+00	.0000E+00	.0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

LOAD CASE 2

OVERBURDEN PRESSURE

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
116	.0000E+00	.0000E+00	.8751E+02	.0000E+00	.0000E+00	.0000E+00
117	.0000E+00	.0000E+00	.8265E+02	.0000E+00	.0000E+00	.0000E+00
118	.0000E+00	.0000E+00	.7292E+02	.0000E+00	.0000E+00	.0000E+00
119	.0000E+00	.0000E+00	.6910E+02	.0000E+00	.0000E+00	.0000E+00
120	.0000E+00	.0000E+00	.3507E+02	.0000E+00	.0000E+00	.0000E+00
121	.0000E+00	.0000E+00	.5625E+02	.0000E+00	.0000E+00	.0000E+00
122	.0000E+00	.0000E+00	.9792E+02	.0000E+00	.0000E+00	.0000E+00
123	.0000E+00	.0000E+00	.8334E+02	.0000E+00	.0000E+00	.0000E+00
124	.0000E+00	.0000E+00	.8334E+02	.0000E+00	.0000E+00	.0000E+00
125	.0000E+00	.0000E+00	.8334E+02	.0000E+00	.0000E+00	.0000E+00
126	.0000E+00	.0000E+00	.8334E+02	.0000E+00	.0000E+00	.0000E+00
127	.0000E+00	.0000E+00	.7917E+02	.0000E+00	.0000E+00	.0000E+00
128	.0000E+00	.0000E+00	.7501E+02	.0000E+00	.0000E+00	.0000E+00
129	.0000E+00	.0000E+00	.7084E+02	.0000E+00	.0000E+00	.0000E+00
130	.0000E+00	.0000E+00	.6251E+02	.0000E+00	.0000E+00	.0000E+00
131	.0000E+00	.0000E+00	.6459E+02	.0000E+00	.0000E+00	.0000E+00
132	.0000E+00	.0000E+00	.3542E+02	.0000E+00	.0000E+00	.0000E+00
133	.0000E+00	.0000E+00	.3021E+02	.0000E+00	.0000E+00	.0000E+00
134	.0000E+00	.0000E+00	.5105E+02	.0000E+00	.0000E+00	.0000E+00
135	.0000E+00	.0000E+00	.4167E+02	.0000E+00	.0000E+00	.0000E+00
136	.0000E+00	.0000E+00	.4167E+02	.0000E+00	.0000E+00	.0000E+00
137	.0000E+00	.0000E+00	.4167E+02	.0000E+00	.0000E+00	.0000E+00
138	.0000E+00	.0000E+00	.4167E+02	.0000E+00	.0000E+00	.0000E+00
139	.0000E+00	.0000E+00	.3959E+02	.0000E+00	.0000E+00	.0000E+00
140	.0000E+00	.0000E+00	.3750E+02	.0000E+00	.0000E+00	.0000E+00
141	.0000E+00	.0000E+00	.3542E+02	.0000E+00	.0000E+00	.0000E+00
142	.0000E+00	.0000E+00	.3125E+02	.0000E+00	.0000E+00	.0000E+00
143	.0000E+00	.0000E+00	.3438E+02	.0000E+00	.0000E+00	.0000E+00
144	.0000E+00	.0000E+00	.1979E+02	.0000E+00	.0000E+00	.0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

L O A D C A S E 3
OPERATING PIPE AND JUMPER LOADS

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
94	.7650E+03	.9290E+03	.3849E+04	.7440E+04	.2963E+05	.4680E+04

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

L O A D C A S E 4

COVER BLOCK DEAD LOAD

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
109	.0000E+00	.2660E+04	.0000E+00	.0000E+00	.0000E+00	.0000E+00
115	.0000E+00	.4620E+04	.0000E+00	.0000E+00	.0000E+00	.0000E+00
120	.0000E+00	.1960E+04	.0000E+00	.0000E+00	.0000E+00	.0000E+00

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COMBINE RESULTS

Version 2.0 07/01/90

Combined Plate Stresses

Load Combination Method
 $1.4 * F[1,4] + 1.7 * (F[1,1] + F[1,2]) + 1.7 * F[1,3]$

Plate		Sigma-X	Sigma-Y	Tau-XY	Tau-XZ	Tau-YZ
1	T	-9.550E+00	-1.099E+01	-6.131E+00		
1	M	6.294E-01	8.099E-01	4.224E-01	1.069E+00	1.767E+00
1	B	1.081E+01	1.260E+01	6.976E+00		
2	T	-7.395E+00	-2.672E+01	-9.888E+00		
2	M	6.128E-01	1.809E+00	6.143E-01	-5.841E-01	7.200E+00
2	B	8.621E+00	3.034E+01	1.112E+01		
3	T	-8.774E+00	-4.268E+01	-9.520E+00		
3	M	6.364E-01	2.481E+00	6.710E-01	-1.073E+00	1.353E+01
3	B	1.005E+01	4.764E+01	1.086E+01		
4	T	-1.076E+01	-5.656E+01	-6.411E+00		
4	M	6.475E-01	3.051E+00	6.056E-01	-9.181E-01	1.783E+01
4	B	1.205E+01	6.267E+01	7.623E+00		
5	T	-1.201E+01	-6.419E+01	-2.010E+00		
5	M	6.391E-01	3.454E+00	4.303E-01	-3.501E-01	1.999E+01
5	B	1.329E+01	7.110E+01	2.870E+00		
6	T	-1.192E+01	-6.389E+01	2.823E+00		
6	M	6.151E-01	3.614E+00	1.691E-01	3.419E-01	1.985E+01
6	B	1.315E+01	7.112E+01	-2.485E+00		
7	T	-1.070E+01	-5.636E+01	7.071E+00		
7	M	5.866E-01	3.487E+00	-1.129E-01	8.668E-01	1.759E+01
7	B	1.187E+01	6.334E+01	-7.296E+00		
8	T	-9.049E+00	-4.366E+01	9.905E+00		
8	M	5.612E-01	3.070E+00	-3.542E-01	1.014E+00	1.351E+01
8	B	1.017E+01	4.980E+01	-1.061E+01		
9	T	-7.947E+00	-2.934E+01	1.060E+01		
9	M	5.507E-01	2.425E+00	-5.049E-01	6.623E-01	8.322E+00
9	B	9.048E+00	3.419E+01	-1.161E+01		
10	T	-8.222E+00	-1.762E+01	8.744E+00		
10	M	5.678E-01	1.663E+00	-5.280E-01	-1.141E-01	3.221E+00
10	B	9.357E+00	2.095E+01	-9.800E+00		
11	T	-1.065E+01	-7.969E+00	5.456E+00		
11	M	6.361E-01	7.187E-01	-4.476E-01	-1.436E+00	4.207E-01
11	B	1.192E+01	9.407E+00	-6.351E+00		
12	T	-2.266E+01	-7.353E+00	-9.759E+00		
12	M	1.240E+00	8.116E-01	6.902E-01	5.450E+00	-2.049E-01
12	B	2.514E+01	8.976E+00	1.114E+01		

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COMBINE RESULTS

Version 2.0 07/01/90

Combined Plate Stresses

Plate		Sigma-X	Sigma-Y	Tau-XY	Tau-XZ	Tau-YZ
-----		-----	-----	-----	-----	-----
13	T	-4.515E+00	-6.683E+00	-1.451E+01		
13	M	9.270E-01	1.688E+00	7.114E-01	1.710E+00	2.750E+00
13	B	6.369E+00	1.006E+01	1.593E+01		
14	T	3.374E+00	-9.343E+00	-1.463E+01		
14	M	7.260E-01	2.486E+00	7.623E-01	5.160E-02	8.010E+00
14	B	-1.922E+00	1.432E+01	1.615E+01		
15	T	7.299E+00	-1.276E+01	-1.018E+01		
15	M	5.332E-01	3.171E+00	7.060E-01	-4.525E-01	1.143E+01
15	B	-6.233E+00	1.910E+01	1.159E+01		
16	T	8.946E+00	-1.511E+01	-3.508E+00		
16	M	3.561E-01	3.687E+00	5.223E-01	-2.518E-01	1.317E+01
16	B	-8.233E+00	2.248E+01	4.553E+00		
17	T	9.051E+00	-1.532E+01	4.022E+00		
17	M	2.361E-01	3.926E+00	2.254E-01	1.334E-01	1.306E+01
17	B	-8.579E+00	2.317E+01	-3.571E+00		
18	T	7.416E+00	-1.352E+01	1.069E+01		
18	M	2.102E-01	3.816E+00	-1.181E-01	2.278E-01	1.124E+01
18	B	-6.996E+00	2.115E+01	-1.092E+01		
19	T	3.262E+00	-1.060E+01	1.510E+01		
19	M	3.081E-01	3.347E+00	-4.372E-01	-3.090E-01	7.958E+00
19	B	-2.646E+00	1.730E+01	-1.597E+01		
20	T	-4.062E+00	-8.077E+00	1.605E+01		
20	M	5.134E-01	2.599E+00	-6.798E-01	-1.634E+00	3.753E+00
20	B	5.088E+00	1.327E+01	-1.741E+01		
21	T	-1.423E+01	-7.154E+00	1.305E+01		
21	M	8.102E-01	1.705E+00	-8.253E-01	-3.593E+00	-4.104E-01
21	B	1.585E+01	1.056E+01	-1.470E+01		
22	T	-2.873E+01	-8.269E+00	9.306E+00		
22	M	1.202E+00	7.958E-01	-9.479E-01	-6.365E+00	-1.177E+00
22	B	3.113E+01	9.861E+00	-1.120E+01		
23	T	-3.815E+01	-8.140E+00	-1.026E+01		
23	M	1.559E+00	8.325E-01	9.798E-01	1.126E+01	-1.217E+00
23	B	4.127E+01	9.805E+00	1.222E+01		
24	T	-5.583E+00	2.324E+00	-1.602E+01		
24	M	1.236E+00	1.641E+00	1.002E+00	6.675E+00	1.478E-02
24	B	8.054E+00	9.588E-01	1.803E+01		
25	T	1.145E+01	8.079E+00	-1.663E+01		
25	M	9.005E-01	2.479E+00	1.034E+00	3.844E+00	4.038E+00
25	B	-9.653E+00	-3.121E+00	1.870E+01		
26	T	2.116E+01	1.122E+01	-1.202E+01		
26	M	5.621E-01	3.300E+00	9.731E-01	1.958E+00	6.627E+00
26	B	-2.004E+01	-4.620E+00	1.396E+01		

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COMBINE RESULTS

Version 2.0 07/01/90

Combined Plate Stresses

Plate		Sigma-X	Sigma-Y	Tau-XY	Tau-XZ	Tau-YZ
27	T	2.587E+01	1.231E+01	-4.572E+00		
27	M	2.538E-01	3.973E+00	7.426E-01	5.773E-01	8.010E+00
27	B	-2.536E+01	-4.367E+00	6.057E+00		
28	T	2.628E+01	1.164E+01	4.066E+00		
28	M	4.294E-02	4.337E+00	3.298E-01	-7.659E-01	8.026E+00
28	B	-2.619E+01	-2.968E+00	-3.407E+00		
29	T	2.217E+01	9.536E+00	1.192E+01		
29	M	1.413E-02	4.283E+00	-1.759E-01	-2.373E+00	6.691E+00
29	B	-2.214E+01	-9.700E-01	-1.228E+01		
30	T	1.232E+01	6.034E+00	1.720E+01		
30	M	1.736E-01	3.779E+00	-6.821E-01	-4.426E+00	4.156E+00
30	B	-1.197E+01	1.524E+00	-1.857E+01		
31	T	-3.449E+00	1.205E+00	1.835E+01		
31	M	5.227E-01	2.937E+00	-1.104E+00	-6.943E+00	8.100E-01
31	B	4.494E+00	4.668E+00	-2.055E+01		
32	T	-2.412E+01	-4.789E+00	1.481E+01		
32	M	9.394E-01	1.959E+00	-1.393E+00	-9.674E+00	-2.469E+00
32	B	2.600E+01	8.706E+00	-1.760E+01		
33	T	-5.010E+01	-1.212E+01	1.018E+01		
33	M	1.400E+00	9.381E-01	-1.562E+00	-1.276E+01	-1.978E+00
33	B	5.290E+01	1.400E+01	-1.330E+01		
34	T	-5.400E+01	-1.103E+01	-8.493E+00		
34	M	1.786E+00	8.232E-01	1.237E+00	1.540E+01	-1.602E+00
34	B	5.757E+01	1.267E+01	1.097E+01		
35	T	-9.012E+00	4.754E+00	-1.396E+01		
35	M	1.487E+00	1.566E+00	1.325E+00	1.023E+01	-1.434E+00
35	B	1.199E+01	-1.622E+00	1.661E+01		
36	T	1.634E+01	1.511E+01	-1.503E+01		
36	M	1.126E+00	2.456E+00	1.415E+00	6.608E+00	1.484E+00
36	B	-1.409E+01	-1.020E+01	1.787E+01		
37	T	3.162E+01	2.215E+01	-1.130E+01		
37	M	6.887E-01	3.449E+00	1.373E+00	3.777E+00	3.419E+00
37	B	-3.025E+01	-1.525E+01	1.404E+01		
38	T	3.940E+01	2.552E+01	-4.907E+00		
38	M	2.608E-01	4.352E+00	1.075E+00	1.340E+00	4.586E+00
38	B	-3.888E+01	-1.682E+01	7.056E+00		
39	T	4.059E+01	2.489E+01	2.691E+00		
39	M	-3.196E-02	4.935E+00	5.029E-01	-1.175E+00	4.884E+00
39	B	-4.066E+01	-1.502E+01	-1.686E+00		
40	T	3.470E+01	2.026E+01	9.849E+00		
40	M	-1.280E-01	4.987E+00	-2.554E-01	-4.160E+00	4.133E+00
40	B	-3.496E+01	-1.029E+01	-1.036E+01		

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COMBINE RESULTS

Version 2.0 07/01/90

Combined Plate Stresses

Plate		Sigma-X	Sigma-Y	Tau-XY	Tau-XZ	Tau-YZ
41	T	2.017E+01	1.262E+01	1.541E+01		
41	M	1.048E-01	4.466E+00	-1.019E+00	-7.634E+00	2.234E+00
41	B	-1.996E+01	-3.685E+00	-1.745E+01		
42	T	-4.468E+00	3.042E+00	1.710E+01		
42	M	4.789E-01	3.491E+00	-1.668E+00	-1.137E+01	-5.662E-01
42	B	5.426E+00	3.940E+00	-2.044E+01		
43	T	-3.540E+01	-6.930E+00	1.405E+01		
43	M	1.042E+00	2.337E+00	-2.092E+00	-1.485E+01	-3.403E+00
43	B	3.749E+01	1.160E+01	-1.823E+01		
44	T	-7.386E+01	-1.790E+01	9.677E+00		
44	M	1.565E+00	1.094E+00	-2.294E+00	-1.821E+01	-2.335E+00
44	B	7.699E+01	2.008E+01	-1.427E+01		
45	T	-6.763E+01	-1.462E+01	-6.230E+00		
45	M	1.912E+00	7.580E-01	1.430E+00	1.798E+01	-1.594E+00
45	B	7.145E+01	1.613E+01	9.091E+00		
46	T	-1.350E+01	3.423E+00	-1.085E+01		
46	M	1.705E+00	1.405E+00	1.614E+00	1.268E+01	-2.001E+00
46	B	1.691E+01	-6.137E-01	1.408E+01		
47	T	1.875E+01	1.613E+01	-1.203E+01		
47	M	1.382E+00	2.346E+00	1.824E+00	8.600E+00	-9.101E-03
47	B	-1.598E+01	-1.144E+01	1.568E+01		
48	T	3.883E+01	2.552E+01	-9.281E+00		
48	M	9.102E-01	3.580E+00	1.885E+00	5.160E+00	1.387E+00
48	B	-3.701E+01	-1.836E+01	1.305E+01		
49	T	4.922E+01	3.094E+01	-4.535E+00		
49	M	3.370E-01	4.880E+00	1.546E+00	2.085E+00	2.361E+00
49	B	-4.854E+01	-2.118E+01	7.627E+00		
50	T	5.139E+01	3.139E+01	7.865E-01		
50	M	-5.617E-02	5.763E+00	7.030E-01	-9.830E-01	3.029E+00
50	B	-5.150E+01	-1.986E+01	6.195E-01		
51	T	4.564E+01	2.665E+01	6.123E+00		
51	M	-6.848E-02	6.013E+00	-2.840E-01	-4.601E+00	3.451E+00
51	B	-4.578E+01	-1.463E+01	-6.691E+00		
52	T	2.762E+01	1.554E+01	1.063E+01		
52	M	-4.112E-02	5.474E+00	-1.402E+00	-1.002E+01	2.506E+00
52	B	-2.770E+01	-4.595E+00	-1.344E+01		
53	T	-2.501E+00	2.189E+00	1.459E+01		
53	M	5.845E-01	4.315E+00	-2.347E+00	-1.559E+01	9.608E-03
53	B	3.670E+00	6.440E+00	-1.928E+01		
54	T	-4.744E+01	-1.147E+01	1.295E+01		
54	M	1.011E+00	2.819E+00	-2.902E+00	-2.054E+01	-3.158E+00
54	B	4.946E+01	1.711E+01	-1.875E+01		

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COMBINE RESULTS

Version 2.0 07/01/90

Combined Plate Stresses

Plate		Sigma-X	Sigma-Y	Tau-XY	Tau-XZ	Tau-YZ
55	T	-9.739E+01	-2.459E+01	9.311E+00		
55	M	1.778E+00	1.327E+00	-3.212E+00	-2.404E+01	-2.456E+00
55	B	1.009E+02	2.724E+01	-1.574E+01		
56	T	-7.822E+01	-1.801E+01	-4.464E+00		
56	M	1.882E+00	6.464E-01	1.530E+00	1.944E+01	-1.421E+00
56	B	8.198E+01	1.930E+01	7.524E+00		
57	T	-1.784E+01	4.935E-01	-8.113E+00		
57	M	1.792E+00	1.153E+00	1.777E+00	1.424E+01	-2.032E+00
57	B	2.143E+01	1.812E+00	1.167E+01		
58	T	1.966E+01	1.410E+01	-9.008E+00		
58	M	1.661E+00	2.089E+00	2.140E+00	9.910E+00	-6.901E-01
58	B	-1.633E+01	-9.919E+00	1.329E+01		
59	T	4.342E+01	2.481E+01	-6.739E+00		
59	M	1.224E+00	3.575E+00	2.445E+00	6.113E+00	2.475E-01
59	B	-4.097E+01	-1.766E+01	1.163E+01		
60	T	5.572E+01	3.219E+01	-3.164E+00		
60	M	5.146E-01	5.506E+00	2.204E+00	2.725E+00	9.704E-01
60	B	-5.469E+01	-2.118E+01	7.572E+00		
61	T	5.831E+01	3.525E+01	-5.574E-02		
61	M	-1.335E-01	7.051E+00	9.646E-01	-4.359E-01	1.690E+00
61	B	-5.857E+01	-2.114E+01	1.985E+00		
62	T	5.357E+01	3.251E+01	2.186E+00		
62	M	2.079E-02	7.064E+00	-7.217E-01	-3.425E+00	3.213E+00
62	B	-5.353E+01	-1.838E+01	-3.630E+00		
63	T	3.986E+01	2.619E+01	6.865E+00		
63	M	8.650E-01	6.715E+00	-1.395E+00	-8.179E+00	6.635E+00
63	B	-3.813E+01	-1.276E+01	-9.656E+00		
64	T	-3.546E+00	5.400E+00	7.035E+00		
64	M	-9.215E-02	5.512E+00	-2.900E+00	-2.230E+01	4.335E+00
64	B	3.362E+00	5.624E+00	-1.283E+01		
65	T	-4.543E+01	-1.596E+01	1.073E+01		
65	M	1.249E+00	3.536E+00	-3.974E+00	-2.710E+01	-1.933E+00
65	B	4.793E+01	2.303E+01	-1.867E+01		
66	T	-1.259E+02	-3.467E+01	1.290E+01		
66	M	1.694E+00	1.384E+00	-4.122E+00	-3.214E+01	-1.800E+00
66	B	1.293E+02	3.743E+01	-2.115E+01		
67	T	-8.654E+01	-2.088E+01	-3.477E+00		
67	M	1.608E+00	4.829E-01	1.533E+00	2.047E+01	-1.131E+00
67	B	8.976E+01	2.184E+01	6.543E+00		
68	T	-2.149E+01	-2.502E+00	-6.235E+00		
68	M	1.655E+00	9.002E-01	1.816E+00	1.522E+01	-1.659E+00
68	B	2.480E+01	4.302E+00	9.867E+00		

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COMBINE RESULTS

Version 2.0 07/01/90

Combined Plate Stresses

Plate		Sigma-X	Sigma-Y	Tau-XY	Tau-XZ	Tau-YZ
-----		-----	-----	-----	-----	-----
69	T	1.978E+01	1.093E+01	-6.785E+00		
69	M	1.696E+00	1.661E+00	2.149E+00	1.065E+01	-7.766E-01
69	B	-1.639E+01	-7.611E+00	1.108E+01		
70	T	4.674E+01	2.178E+01	-4.358E+00		
70	M	1.856E+00	3.174E+00	2.861E+00	6.648E+00	-3.052E-01
70	B	-4.303E+01	-1.544E+01	1.008E+01		
71	T	6.017E+01	3.077E+01	-6.941E-01		
71	M	8.532E-01	6.070E+00	3.255E+00	3.160E+00	7.142E-02
71	B	-5.846E+01	-1.863E+01	7.205E+00		
72	T	6.260E+01	3.716E+01	1.364E+00		
72	M	-3.242E-01	9.096E+00	1.473E+00	8.804E-02	5.303E-01
72	B	-6.325E+01	-1.897E+01	1.583E+00		
73	T	5.756E+01	3.882E+01	1.109E+00		
73	M	-7.714E-02	9.306E+00	-1.747E+00	-2.234E+00	1.359E+00
73	B	-5.771E+01	-2.021E+01	-4.603E+00		
74	T	5.148E+01	3.570E+01	3.281E+00		
74	M	1.895E+00	5.807E+00	-3.239E+00	-1.823E+00	6.617E+00
74	B	-4.769E+01	-2.409E+01	-9.759E+00		
75	T	6.770E+01	3.222E+01	2.289E+01		
75	M	4.520E+00	7.662E+00	-2.293E-01	8.526E+00	1.797E+01
75	B	-5.866E+01	-1.690E+01	-2.335E+01		
76	T	-9.763E+01	-9.564E+00	3.875E+01		
76	M	-1.812E+00	5.374E+00	-4.928E+00	-3.391E+01	8.737E+00
76	B	9.400E+01	2.031E+01	-4.860E+01		
77	T	-1.621E+02	-3.057E+01	1.145E+01		
77	M	-4.839E-01	3.811E-01	-4.397E+00	-3.546E+01	-3.577E+00
77	B	1.611E+02	3.133E+01	-2.025E+01		
78	T	-9.345E+01	-2.262E+01	-2.938E+00		
78	M	1.057E+00	3.186E-01	1.477E+00	2.166E+01	-5.570E-01
78	B	9.557E+01	2.326E+01	5.891E+00		
79	T	-2.454E+01	-4.149E+00	-5.446E+00		
79	M	1.195E+00	6.298E-01	1.713E+00	1.578E+01	-7.446E-01
79	B	2.693E+01	5.409E+00	8.872E+00		
80	T	2.000E+01	8.387E+00	-5.689E+00		
80	M	1.457E+00	1.446E+00	2.031E+00	1.087E+01	-4.182E-01
80	B	-1.708E+01	-5.495E+00	9.750E+00		
81	T	4.870E+01	1.735E+01	-3.391E+00		
81	M	1.766E+00	2.139E+00	2.350E+00	6.823E+00	-4.930E-01
81	B	-4.516E+01	-1.308E+01	8.091E+00		
82	T	6.526E+01	2.660E+01	2.153E+00		
82	M	2.799E+00	5.657E+00	4.564E+00	3.329E+00	-5.188E-01
82	B	-5.966E+01	-1.529E+01	6.976E+00		

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COMBINE RESULTS

Version 2.0 07/01/90

Combined Plate Stresses

Plate		Sigma-X	Sigma-Y	Tau-XY	Tau-XZ	Tau-YZ

83	T	6.565E+01	3.746E+01	5.429E+00		
83	M	-8.817E-01	1.277E+01	3.562E+00	3.088E-01	-4.811E-01
83	B	-6.742E+01	-1.192E+01	1.696E+00		
84	T	6.038E+01	4.100E+01	2.256E+00		
84	M	-8.059E-01	1.295E+01	-4.390E+00	-1.849E+00	-4.560E-01
84	B	-6.200E+01	-1.509E+01	-1.104E+01		
85	T	5.768E+01	3.469E+01	3.754E+00		
85	M	3.486E+00	6.247E+00	-6.013E+00	-3.100E-01	-4.580E+00
85	B	-5.070E+01	-2.220E+01	-1.578E+01		
86	T	7.470E+01	5.100E+01	-2.140E+01		
86	M	3.751E+00	-1.454E+00	-3.650E+00	1.057E+01	-2.622E+01
86	B	-6.720E+01	-5.391E+01	1.410E+01		
87	T	-9.894E+01	9.603E+00	-2.524E+01		
87	M	-3.170E+00	-2.982E+00	-9.074E+00	-3.852E+01	-1.945E+01
87	B	9.260E+01	-1.557E+01	7.097E+00		
88	T	-1.743E+02	-3.339E+01	-8.741E+00		
88	M	-1.977E+00	8.534E-01	-5.852E+00	-4.032E+01	2.425E+00
88	B	1.703E+02	3.510E+01	-2.962E+00		
89	T	-1.007E+02	-2.191E+01	-2.806E+00		
89	M	7.813E-02	1.389E-01	1.352E+00	2.227E+01	5.558E-01
89	B	1.009E+02	2.219E+01	5.509E+00		
90	T	-2.463E+01	-2.250E+00	-6.974E+00		
90	M	5.197E-01	5.226E-01	1.458E+00	1.582E+01	7.970E-01
90	B	2.567E+01	3.295E+00	9.890E+00		
91	T	2.037E+01	6.170E+00	-5.309E+00		
91	M	8.699E-01	9.712E-01	1.762E+00	1.112E+01	1.344E-01
91	B	-1.863E+01	-4.227E+00	8.834E+00		
92	T	4.985E+01	1.441E+01	-2.707E+00		
92	M	1.160E+00	2.500E+00	2.203E+00	7.082E+00	-3.927E-01
92	B	-4.753E+01	-9.406E+00	7.112E+00		
93	T	6.683E+01	1.715E+01	8.383E-01		
93	M	1.914E+00	9.987E-01	2.331E+00	3.236E+00	-7.069E-01
93	B	-6.301E+01	-1.515E+01	3.823E+00		
94	T	7.242E+01	3.858E+01	1.303E+01		
94	M	2.945E+00	1.964E+01	9.970E+00	-4.229E-01	-9.835E-01
94	B	-6.653E+01	7.092E-01	6.913E+00		
95	T	6.787E+01	3.961E+01	-3.459E+00		
95	M	2.879E+00	1.995E+01	-1.151E+01	-3.420E+00	-2.082E+00
95	B	-6.212E+01	2.763E-01	-1.956E+01		
96	T	5.319E+01	2.298E+01	5.100E+00		
96	M	1.579E+00	9.253E-01	-3.625E+00	-7.281E+00	-6.547E+00
96	B	-5.003E+01	-2.113E+01	-1.235E+01		

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COMBINE RESULTS

Version 2.0 07/01/90

Combined Plate Stresses

Plate		Sigma-X	Sigma-Y	Tau-XY	Tau-XZ	Tau-YZ
97	T	4.471E+00	1.099E+01	7.691E+00		
97	M	6.000E-01	9.734E-01	-3.564E+00	-2.216E+01	-7.505E+00
97	B	-3.271E+00	-9.040E+00	-1.482E+01		
98	T	-5.719E+01	-9.730E+00	9.077E-01		
98	M	5.123E-01	-8.744E-01	-4.668E+00	-3.446E+01	-2.392E+00
98	B	5.821E+01	7.981E+00	-1.024E+01		
99	T	-1.667E+02	-3.840E+01	-1.073E+01		
99	M	-2.265E+00	-9.715E-01	-6.258E+00	-4.212E+01	8.553E-02
99	B	1.621E+02	3.645E+01	-1.784E+00		
100	T	-8.241E+01	-2.422E+01	-7.835E+00		
100	M	-9.827E-01	4.839E-01	1.516E+00	1.905E+01	3.818E+00
100	B	8.044E+01	2.519E+01	1.087E+01		
101	T	-1.768E+01	-6.008E+00	-7.829E+00		
101	M	-1.962E-01	3.786E-01	1.890E+00	1.349E+01	1.954E+00
101	B	1.728E+01	6.766E+00	1.161E+01		
102	T	1.837E+01	1.279E+01	-5.375E+00		
102	M	3.943E-01	1.444E+00	2.370E+00	9.918E+00	2.989E-01
102	B	-1.758E+01	-9.898E+00	1.011E+01		
103	T	4.369E+01	2.474E+01	-1.991E+00		
103	M	8.645E-01	2.037E+00	3.301E+00	6.456E+00	-6.844E-01
103	B	-4.196E+01	-2.067E+01	8.593E+00		
104	T	5.746E+01	3.730E+01	2.507E+00		
104	M	2.645E-01	7.427E+00	3.433E+00	2.899E+00	-1.135E+00
104	B	-5.693E+01	-2.245E+01	4.359E+00		
105	T	6.201E+01	1.877E+01	1.815E+01		
105	M	3.920E-01	-1.441E+01	1.339E+01	-6.742E-01	-1.788E+00
105	B	-6.122E+01	-4.759E+01	8.621E+00		
106	T	5.751E+01	1.770E+01	-5.840E+00		
106	M	1.426E-01	-1.477E+01	-1.524E+01	-4.406E+00	-3.361E+00
106	B	-5.723E+01	-4.724E+01	-2.464E+01		
107	T	3.825E+01	2.856E+01	6.577E+00		
107	M	-4.719E-01	6.501E+00	-5.097E+00	-1.080E+01	-4.322E+00
107	B	-3.919E+00	-1.555E+01	-1.677E+01		
108	T	4.442E+00	2.900E+00	3.218E+00		
108	M	4.806E-02	7.858E-01	-5.582E+00	-1.871E+01	-2.012E+00
108	B	-4.346E+00	-1.328E+00	-1.438E+01		
109	T	-5.160E+01	-2.259E+01	1.655E+00		
109	M	-8.639E-01	3.166E-03	-5.686E+00	-2.505E+01	2.930E+00
109	B	4.987E+01	2.260E+01	-1.303E+01		
110	T	-1.268E+02	-3.665E+01	1.856E+00		
110	M	-2.180E+00	1.257E+00	-6.096E+00	-3.020E+01	6.637E+00
110	B	1.225E+02	3.916E+01	-1.405E+01		

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COMBINE RESULTS

Version 2.0 07/01/90

Combined Plate Stresses

Plate		Sigma-X	Sigma-Y	Tau-XY	Tau-XZ	Tau-YZ
-----		-----	-----	-----	-----	-----
111	T	-7.824E+01	-1.870E+01	-4.101E+00		
111	M	-1.994E+00	2.381E-01	1.098E+00	1.097E+01	2.743E+00
111	B	7.425E+01	1.918E+01	6.296E+00		
112	T	-1.682E+01	-1.207E+00	1.444E-01		
112	M	-1.073E+00	2.313E-01	1.434E+00	7.700E+00	9.261E-01
112	B	1.468E+01	1.670E+00	2.724E+00		
113	T	1.791E+01	9.877E+00	-5.904E-01		
113	M	-2.318E-01	7.734E-01	2.039E+00	6.031E+00	-1.352E+00
113	B	-1.837E+01	-8.331E+00	4.669E+00		
114	T	4.438E+01	1.931E+01	7.646E-01		
114	M	5.568E-01	2.433E+00	2.718E+00	4.066E+00	-2.092E+00
114	B	-4.327E+01	-1.444E+01	4.671E+00		
115	T	5.853E+01	2.365E+01	6.575E+00		
115	M	-4.282E-01	2.194E+00	5.872E+00	1.973E+00	-2.584E+00
115	B	-5.939E+01	-1.926E+01	5.169E+00		
116	T	6.772E+01	1.583E+01	1.067E+01		
116	M	4.484E+00	-7.052E+00	6.556E+00	-2.015E-01	-3.148E+00
116	B	-5.875E+01	-2.993E+01	2.444E+00		
117	T	6.055E+01	1.226E+01	-1.306E+00		
117	M	4.309E+00	-7.637E+00	-7.381E+00	-3.006E+00	-3.777E+00
117	B	-5.193E+01	-2.753E+01	-1.346E+01		
118	T	3.413E+01	1.298E+01	-3.251E+00		
118	M	-1.152E+00	1.351E+00	-7.348E+00	-6.896E+00	-3.508E+00
118	B	-3.643E+01	-1.028E+01	-1.144E+01		
119	T	-1.738E+00	1.002E+00	-5.765E+00		
119	M	-6.884E-01	1.708E+00	-4.857E+00	-1.070E+01	-1.387E+00
119	B	3.609E-01	2.414E+00	-3.950E+00		
120	T	-4.703E+01	-1.298E+01	-8.666E+00		
120	M	-1.484E+00	-1.408E-02	-5.064E+00	-1.320E+01	3.165E+00
120	B	4.406E+01	1.296E+01	-1.461E+00		
121	T	-1.119E+02	-2.688E+01	-4.350E-01		
121	M	-3.045E+00	1.062E+00	-4.642E+00	-1.518E+01	4.970E+00
121	B	1.058E+02	2.900E+01	-8.849E+00		
122	T	-7.073E+01	-1.354E+01	-3.051E+00		
122	M	-3.250E+00	3.645E-02	6.917E-01	7.836E+00	2.344E+00
122	B	6.423E+01	1.361E+01	4.435E+00		
123	T	-2.058E+01	2.345E-01	-5.686E-01		
123	M	-2.231E+00	3.354E-02	9.124E-01	6.564E+00	4.727E-01
123	B	1.611E+01	-1.674E-01	2.393E+00		
124	T	1.580E+01	5.317E+00	-1.840E+00		
124	M	-9.830E-01	4.685E-01	1.245E+00	5.559E+00	-1.894E+00
124	B	-1.776E+01	-4.380E+00	4.331E+00		

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COMBINE RESULTS

Version 2.0 07/01/90

Combined Plate Stresses

Plate		Sigma-X	Sigma-Y	Tau-XY	Tau-XZ	Tau-YZ
125	T	4.352E+01	9.894E+00	3.287E-01		
125	M	1.992E-01	1.175E+00	2.604E+00	3.760E+00	-2.292E+00
125	B	-4.312E+01	-7.545E+00	4.879E+00		
126	T	6.168E+01	1.168E+01	5.349E+00		
126	M	2.661E+00	5.948E-01	4.697E+00	1.762E+00	-2.764E+00
126	B	-5.635E+01	-1.049E+01	4.045E+00		
127	T	6.873E+01	8.577E+00	7.221E+00		
127	M	5.983E+00	-2.774E+00	3.219E+00	-5.009E-01	-3.071E+00
127	B	-5.676E+01	-1.412E+01	-7.823E-01		
128	T	5.965E+01	6.070E+00	2.050E+00		
128	M	5.891E+00	-3.048E+00	-3.510E+00	-3.233E+00	-3.116E+00
128	B	-4.787E+01	-1.217E+01	-9.071E+00		
129	T	3.231E+01	4.635E+00	-1.734E+00		
129	M	2.161E+00	1.090E-01	-5.546E+00	-6.336E+00	-2.547E+00
129	B	-2.799E+01	-4.417E+00	-9.358E+00		
130	T	-6.711E+00	-1.276E-01	-4.701E+00		
130	M	-9.422E-01	8.526E-01	-4.357E+00	-8.787E+00	-1.140E+00
130	B	4.827E+00	1.833E+00	-4.012E+00		
131	T	-4.819E+01	-6.229E+00	-6.346E+00		
131	M	-2.850E+00	6.529E-02	-3.790E+00	-9.463E+00	2.747E+00
131	B	4.249E+01	6.359E+00	-1.234E+00		
132	T	-9.430E+01	-1.805E+01	-6.868E-01		
132	M	-5.092E+00	4.658E-01	-3.310E+00	-9.656E+00	4.066E+00
132	B	8.412E+01	1.898E+01	-5.934E+00		
133	T	-6.422E+01	-8.347E+00	-1.253E+00		
133	M	-4.755E+00	-1.439E-01	2.985E-01	3.886E+00	1.519E+00
133	B	5.471E+01	8.059E+00	1.850E+00		
134	T	-2.493E+01	1.376E+00	-2.447E+00		
134	M	-3.508E+00	3.625E-02	2.450E-01	8.950E+00	5.167E-01
134	B	1.791E+01	-1.304E+00	2.937E+00		
135	T	1.330E+01	1.190E+00	-2.704E+00		
135	M	-2.344E+00	8.634E-02	4.430E-01	7.621E+00	-8.714E-01
135	B	-1.799E+01	-1.018E+00	3.590E+00		
136	T	4.301E+01	2.644E+00	-1.163E+00		
136	M	1.053E-01	2.336E-01	1.107E+00	5.078E+00	-9.343E-01
136	B	-4.279E+01	-2.177E+00	3.377E+00		
137	T	6.358E+01	3.119E+00	2.115E+00		
137	M	4.832E+00	1.023E-01	2.007E+00	1.826E+00	-1.230E+00
137	B	-5.392E+01	-2.914E+00	1.899E+00		
138	T	7.199E+01	2.512E+00	3.959E+00		
138	M	9.844E+00	-5.119E-01	1.292E+00	-1.923E+00	-1.291E+00
138	B	-5.230E+01	-3.536E+00	-1.374E+00		

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COMBINE RESULTS

Version 2.0 07/01/90

Combined Plate Stresses

Plate		Sigma-X	Sigma-Y	Tau-XY	Tau-XZ	Tau-YZ
-----		-----	-----	-----	-----	-----
139	T	6.193E+01	1.737E+00	2.779E+00		
139	M	9.945E+00	-5.710E-01	-1.330E+00	-5.525E+00	-1.139E+00
139	B	-4.204E+01	-2.879E+00	-5.440E+00		
140	T	3.228E+01	9.936E-01	1.302E+00		
140	M	4.923E+00	-8.054E-03	-2.288E+00	-8.371E+00	-7.185E-01
140	B	-2.243E+01	-1.010E+00	-5.878E+00		
141	T	-9.305E+00	-5.943E-01	-3.330E-01		
141	M	-4.670E-01	1.568E-01	-1.820E+00	-9.965E+00	-3.499E-01
141	B	8.371E+00	9.079E-01	-3.308E+00		
142	T	-5.067E+01	-7.953E-01	-1.047E+00		
142	M	-4.379E+00	4.718E-02	-1.465E+00	-9.295E+00	1.765E+00
142	B	4.192E+01	8.896E-01	-1.883E+00		
143	T	-8.293E+01	-9.822E+00	-1.645E+00		
143	M	-8.876E+00	-1.179E-01	-1.532E+00	-2.518E+00	2.210E+00
143	B	6.518E+01	9.586E+00	-1.420E+00		

KAISER ENGINEERS
HANFORD

DESIGN ANALYSIS

Calc. No. W320-24-016

Revision 0

Page No. 1 of 2

Client: Westinghouse Hanford Company

WO/Job No. W-320/ER4319

Subject Sluice Pit AY-02E Analysis

Date 02/22/95

By JW Funk

Checked 3/10/95

By

Location: 241-AY-102 Tank

Revised

By

ATTACHMENT 4
CGI for Nonshrink Epoxy Grout
2 pages including this page

KAISER ENGINEERS
HANFORD

Calc. No. W320-24-D16

Revision 0

Page No. 2 of 2

DESIGN ANALYSIS

Client WHC

Subject Engineering Evaluation of Commercial
Grade Items

Location 200E

WO/Job No. ER4319/W-320

Date 2/22/95 By JR Booth

Checked 3/10/95

Revised

By

By

Commercial Grade Item (CGI): Nonshrink Epoxy Grout (ASTM C 827)

1. What would cause the part/item to fail (what are the credible failure modes)?
 - a. Volume change as a result of shrinkage or excessive expansion.
 - b. Compressive failure due to applied loads.
 - c. Thermal expansion as a result of excessive heat.
 - d. Creep as a result of excessive loading over time.
2. What characteristics does the item have which are critical to the predictability of its performance? (Critical characteristics are identifiable and/or measurable attributes of a part/item which provides assurance that the part/item will perform as predicted.)
 - a. Volume change.
 - b. Compressive strength.
 - c. Thermal expansion.
 - d. Creep Resistance.
3. What type of acceptance testing, when required, (load tests, Brinell hardness tests, nondestructive examination (NDE) tests, destructive physical tests, etc.) is required to be performed by ICF KH to provide confidence that the part/item has the necessary critical characteristics?
 - a. Grout shall show no shrinkage (0.0%) and a maximum 2.0% expansion from time of placement when tested according to ASTM C 827, modified to use a ball with a specific gravity between 0.9 and 1.1.
 - b. Grout shall show a minimum 7-day compressive strength of 16,000 psi when tested according to ASTM C 579.
 - c. Grout shall show a maximum coefficient of thermal expansion of 30×10^{-6} in/in/°F when tested according to ASTM C 531.
 - d. Grout shall show creep equal to or less than 5.0×10^{-3} in/in at 180°F for one year with a load of 400 psi when tested according to CPR Creep Test.
4. What manufacturing controls are required, if any, in addition to receipt inspection and/or acceptance testing (such as ICF KH witnessing test, ICF KH shop inspection, etc.)?

None
5. Is part/item identifiable to a manufacturer's published product description which meet the critical characteristics?

Product description is Nonshrink Epoxy Grout (ASTM C 827): U.S. Grout Corporation "Five Star Epoxy Grout" or approved substitute.

DESIGN ANALYSIS

Calc. No. W320-24-016

Revision 0

Page No. 1 of 10

Client WHC

WO/Job No. ER4319 / W-320

Subject Sluice Pit AY-02E Analysis

Date 2/22/95

By JR Rmth

Checked 3/30/95

By RJA/Sander

Location 241-AY

Revised

By

VERIFICATION OF FREQUENCY (RIGID RANGE)

A unit load of 1000 lbs was applied at node 94 to determine the deflection of the wall for calculating the stiffness. The load is applied at the same location as the penetration for the sluice line. The max deflection will be used to approximate the stiffness.

$$\delta = 7.107 \times 10^{-4}$$

(Deflection due to concentrated 1 Kip load)
applied at node 94.

$$S = \frac{1}{\delta} \times 1000 \text{ lb} = 1.4 \times 10^6 \text{ lb/in (Stiffness.)}$$

$$W = ((8' \times 7' \times 1') \cdot 150 \text{ lb/ft}) = 8400 \text{ lb}$$

$$g = 384 \text{ in/s}^2$$

(Gravity)

$$f = \frac{1}{2\pi} \sqrt{\frac{S}{\text{mass}}} = \frac{1}{2\pi} \sqrt{\frac{1.4 \times 10^6 \text{ lb/in}}{8400 \text{ lb} / 384 \text{ in/s}^2}} = 40 \text{ Hz}$$

A frequency of 40 Hz is within the rigid range for acceleration of 0.2g which validates the assumption stated in the front of the calculation.

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CHECK GEOMETRY

Version 2.0 07/01/90

MATERIAL PROPERTIES

Material No	Modulus of Elasticity	Weight Density	Coeff of Thermal Exp.	Poisson's Ratio	Shear Web Modulus
1	3.46000E+05	8.6800E-02	5.5000E-06	2.50E-01	0.0000E+00
2	4.1000E+05	8.6800E-02	5.5000E-06	2.50E-01	0.0000E+00

NODE COORDINATES

Node	X-Coord.	Y-Coord.	Z-Coord.
1	6.0000E+00	0.0000E+00	0.0000E+00
2	1.8000E+01	0.0000E+00	0.0000E+00
3	2.8000E+01	0.0000E+00	0.0000E+00
4	3.8000E+01	0.0000E+00	0.0000E+00
5	4.8000E+01	0.0000E+00	0.0000E+00
6	5.8000E+01	0.0000E+00	0.0000E+00
7	6.8000E+01	0.0000E+00	0.0000E+00
8	7.7000E+01	0.0000E+00	0.0000E+00
9	8.6000E+01	0.0000E+00	0.0000E+00
10	9.4000E+01	0.0000E+00	0.0000E+00
11	1.0100E+02	0.0000E+00	0.0000E+00
12	1.0800E+02	0.0000E+00	0.0000E+00
13	6.0000E+00	1.0000E+01	0.0000E+00
14	1.8000E+01	1.0000E+01	0.0000E+00
15	2.8000E+01	1.0000E+01	0.0000E+00
16	3.8000E+01	1.0000E+01	0.0000E+00
17	4.8000E+01	1.0000E+01	0.0000E+00
18	5.8000E+01	1.0000E+01	0.0000E+00
19	6.8000E+01	1.0000E+01	0.0000E+00
20	7.7000E+01	1.0000E+01	0.0000E+00
21	8.6000E+01	1.0000E+01	0.0000E+00
22	9.4000E+01	1.0000E+01	0.0000E+00
23	1.0100E+02	1.0000E+01	0.0000E+00
24	1.0800E+02	1.0000E+01	0.0000E+00
25	6.0000E+00	2.0000E+01	0.0000E+00
26	1.8000E+01	2.0000E+01	0.0000E+00
27	2.8000E+01	2.0000E+01	0.0000E+00
28	3.8000E+01	2.0000E+01	0.0000E+00
29	4.8000E+01	2.0000E+01	0.0000E+00

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CHECK GEOMETRY

Version 2.0 07/01/90

Node	X-Coord.	Y-Coord.	Z-Coord.
30	5.8000E+01	2.0000E+01	0.0000E+00
31	6.8000E+01	2.0000E+01	0.0000E+00
32	7.7000E+01	2.0000E+01	0.0000E+00
33	8.6000E+01	2.0000E+01	0.0000E+00
34	9.4000E+01	2.0000E+01	0.0000E+00
35	1.0100E+02	2.0000E+01	0.0000E+00
36	1.0800E+02	2.0000E+01	0.0000E+00
37	6.0000E+00	3.0000E+01	0.0000E+00
38	1.8000E+01	3.0000E+01	0.0000E+00
39	2.8000E+01	3.0000E+01	0.0000E+00
40	3.8000E+01	3.0000E+01	0.0000E+00
41	4.8000E+01	3.0000E+01	0.0000E+00
42	5.8000E+01	3.0000E+01	0.0000E+00
43	6.8000E+01	3.0000E+01	0.0000E+00
44	7.7000E+01	3.0000E+01	0.0000E+00
45	8.6000E+01	3.0000E+01	0.0000E+00
46	9.4000E+01	3.0000E+01	0.0000E+00
47	1.0100E+02	3.0000E+01	0.0000E+00
48	1.0800E+02	3.0000E+01	0.0000E+00
49	6.0000E+00	4.0000E+01	0.0000E+00
50	1.8000E+01	4.0000E+01	0.0000E+00
51	2.8000E+01	4.0000E+01	0.0000E+00
52	3.8000E+01	4.0000E+01	0.0000E+00
53	4.8000E+01	4.0000E+01	0.0000E+00
54	5.8000E+01	4.0000E+01	0.0000E+00
55	6.8000E+01	4.0000E+01	0.0000E+00
56	7.7000E+01	4.0000E+01	0.0000E+00
57	8.6000E+01	4.0000E+01	0.0000E+00
58	9.4000E+01	4.0000E+01	0.0000E+00
59	1.0100E+02	4.0000E+01	0.0000E+00
60	1.0800E+02	4.0000E+01	0.0000E+00
61	6.0000E+00	5.0000E+01	0.0000E+00
62	1.8000E+01	5.0000E+01	0.0000E+00
63	2.8000E+01	5.0000E+01	0.0000E+00
64	3.8000E+01	5.0000E+01	0.0000E+00
65	4.8000E+01	5.0000E+01	0.0000E+00
66	5.8000E+01	5.0000E+01	0.0000E+00
67	6.8000E+01	5.0000E+01	0.0000E+00
68	7.7000E+01	5.0000E+01	0.0000E+00
69	8.6000E+01	5.0000E+01	0.0000E+00
70	9.4000E+01	5.0000E+01	0.0000E+00
71	1.0100E+02	5.0000E+01	0.0000E+00

Attach 5
4 of 10

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KAISER ENGINEERS HANFORD S/N:801854
PAGE 4
RUN ID=1177162
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CHECK GEOMETRY

Node	X-Coord.	Y-Coord.	Z-Coord.
114	5.80000E+01	8.40000E+01	0.00000E+00
115	6.80000E+01	8.40000E+01	0.00000E+00
116	7.70000E+01	8.40000E+01	0.00000E+00
117	8.60000E+01	8.40000E+01	0.00000E+00
118	9.40000E+01	8.40000E+01	0.00000E+00
119	1.01000E+02	8.40000E+01	0.00000E+00
120	1.08000E+02	8.40000E+01	0.00000E+00
121	1.15000E+02	9.00000E+01	0.00000E+00
122	1.22000E+02	9.00000E+01	0.00000E+00
123	1.29000E+02	9.00000E+01	0.00000E+00
124	1.36000E+02	9.00000E+01	0.00000E+00
125	1.43000E+02	9.00000E+01	0.00000E+00
126	1.50000E+02	9.00000E+01	0.00000E+00
127	1.57000E+02	9.00000E+01	0.00000E+00
128	1.64000E+02	9.00000E+01	0.00000E+00
129	1.71000E+02	9.00000E+01	0.00000E+00
130	1.78000E+02	9.00000E+01	0.00000E+00
131	1.85000E+02	9.00000E+01	0.00000E+00
132	1.92000E+02	9.00000E+01	0.00000E+00
133	2.00000E+02	9.00000E+01	0.00000E+00
134	1.80000E+01	9.60000E+01	0.00000E+00
135	2.80000E+01	9.60000E+01	0.00000E+00
136	3.80000E+01	9.60000E+01	0.00000E+00
137	4.80000E+01	9.60000E+01	0.00000E+00
138	5.80000E+01	9.60000E+01	0.00000E+00
139	6.80000E+01	9.60000E+01	0.00000E+00
140	7.80000E+01	9.60000E+01	0.00000E+00
141	8.80000E+01	9.60000E+01	0.00000E+00
142	9.80000E+01	9.60000E+01	0.00000E+00
143	1.01000E+02	9.60000E+01	0.00000E+00
144	1.11000E+02	9.60000E+01	0.00000E+00
145	1.50000E+02	1.20200E+02	0.00000E+00
146	1.80000E+02	1.20200E+02	0.00000E+00
147	2.80000E+01	1.20200E+02	0.00000E+00
148	3.80000E+01	1.20200E+02	0.00000E+00
149	4.80000E+01	1.20200E+02	0.00000E+00
150	5.80000E+01	1.20200E+02	0.00000E+00
151	6.80000E+01	1.20200E+02	0.00000E+00
152	7.70000E+01	1.20200E+02	0.00000E+00
153	8.60000E+01	1.20200E+02	0.00000E+00
154	9.40000E+01	1.20200E+02	0.00000E+00
155	1.01000E+02	1.20200E+02	0.00000E+00

Page 3 of 9

KAISER ENGINEERS HANFORD S/N:801854
PAGE 3
RUN ID=1177162
I M A G E S 3 D
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Version 2.0 07/01/90
CHECK GEOMETRY

Node	X-Coord.	Y-Coord.	Z-Coord.
72	1.08000E+02	5.90000E+01	0.00000E+00
73	6.00000E+00	5.90000E+01	0.00000E+00
74	1.80000E+01	5.90000E+01	0.00000E+00
75	2.80000E+01	5.90000E+01	0.00000E+00
76	3.80000E+01	5.90000E+01	0.00000E+00
77	4.80000E+01	5.90000E+01	0.00000E+00
78	5.80000E+01	5.90000E+01	0.00000E+00
79	6.80000E+01	5.90000E+01	0.00000E+00
80	7.70000E+01	5.90000E+01	0.00000E+00
81	8.60000E+01	5.90000E+01	0.00000E+00
82	9.40000E+01	5.90000E+01	0.00000E+00
83	1.01000E+02	5.90000E+01	0.00000E+00
84	1.08000E+02	6.80000E+01	0.00000E+00
85	1.80000E+01	6.80000E+01	0.00000E+00
86	2.80000E+01	6.80000E+01	0.00000E+00
87	3.80000E+01	6.80000E+01	0.00000E+00
88	4.80000E+01	6.80000E+01	0.00000E+00
89	5.80000E+01	6.80000E+01	0.00000E+00
90	6.80000E+01	6.80000E+01	0.00000E+00
91	7.70000E+01	6.80000E+01	0.00000E+00
92	8.60000E+01	6.80000E+01	0.00000E+00
93	9.40000E+01	6.80000E+01	0.00000E+00
94	1.01000E+02	6.80000E+01	0.00000E+00
95	1.08000E+02	6.80000E+01	0.00000E+00
96	1.80000E+01	6.80000E+01	0.00000E+00
97	2.80000E+01	6.80000E+01	0.00000E+00
98	3.80000E+01	6.80000E+01	0.00000E+00
99	4.80000E+01	6.80000E+01	0.00000E+00
100	5.80000E+01	6.80000E+01	0.00000E+00
101	6.80000E+01	6.80000E+01	0.00000E+00
102	7.70000E+01	6.80000E+01	0.00000E+00
103	8.60000E+01	6.80000E+01	0.00000E+00
104	9.40000E+01	6.80000E+01	0.00000E+00
105	1.01000E+02	6.80000E+01	0.00000E+00
106	1.08000E+02	7.60000E+01	0.00000E+00
107	1.80000E+01	7.60000E+01	0.00000E+00
108	2.80000E+01	7.60000E+01	0.00000E+00
109	3.80000E+01	7.60000E+01	0.00000E+00
110	4.80000E+01	7.60000E+01	0.00000E+00
111	5.80000E+01	7.60000E+01	0.00000E+00
112	6.80000E+01	7.60000E+01	0.00000E+00
113	7.70000E+01	7.60000E+01	0.00000E+00
114	8.60000E+01	7.60000E+01	0.00000E+00
115	9.40000E+01	7.60000E+01	0.00000E+00
116	1.01000E+02	7.60000E+01	0.00000E+00
117	1.08000E+02	8.40000E+01	0.00000E+00
118	1.80000E+01	8.40000E+01	0.00000E+00
119	2.80000E+01	8.40000E+01	0.00000E+00
120	3.80000E+01	8.40000E+01	0.00000E+00
121	4.80000E+01	8.40000E+01	0.00000E+00
122	5.80000E+01	8.40000E+01	0.00000E+00
123	6.80000E+01	8.40000E+01	0.00000E+00
124	7.70000E+01	8.40000E+01	0.00000E+00
125	8.60000E+01	8.40000E+01	0.00000E+00
126	9.40000E+01	8.40000E+01	0.00000E+00
127	1.01000E+02	8.40000E+01	0.00000E+00
128	1.08000E+02	9.40000E+01	0.00000E+00
129	1.80000E+01	9.40000E+01	0.00000E+00
130	2.80000E+01	9.40000E+01	0.00000E+00
131	3.80000E+01	9.40000E+01	0.00000E+00
132	4.80000E+01	9.40000E+01	0.00000E+00
133	5.80000E+01	9.40000E+01	0.00000E+00
134	6.80000E+01	9.40000E+01	0.00000E+00
135	7.70000E+01	9.40000E+01	0.00000E+00
136	8.60000E+01	9.40000E+01	0.00000E+00
137	9.40000E+01	9.40000E+01	0.00000E+00
138	1.01000E+02	9.40000E+01	0.00000E+00
139	1.08000E+02	1.01000E+02	0.00000E+00
140	1.80000E+01	1.01000E+02	0.00000E+00
141	2.80000E+01	1.01000E+02	0.00000E+00
142	3.80000E+01	1.01000E+02	0.00000E+00
143	4.80000E+01	1.01000E+02	0.00000E+00
144	5.80000E+01	1.01000E+02	0.00000E+00
145	6.80000E+01	1.01000E+02	0.00000E+00
146	7.70000E+01	1.01000E+02	0.00000E+00
147	8.60000E+01	1.01000E+02	0.00000E+00
148	9.40000E+01	1.01000E+02	0.00000E+00
149	1.01000E+02	1.01000E+02	0.00000E+00
150	1.08000E+02	1.01000E+02	0.00000E+00
151	1.80000E+01	1.01000E+02	0.00000E+00
152	2.80000E+01	1.01000E+02	0.00000E+00
153	3.80000E+01	1.01000E+02	0.00000E+00
154	4.80000E+01	1.01000E+02	0.00000E+00
155	5.80000E+01	1.01000E+02	0.00000E+00

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CHECK GEOMETRY Version 2.0 07/01/90

Node	X-Coord.	Y-Coord.	Z-Coord.
156	1.12500E+02	1.02000E+02	0.00000E+00
157	0.00000E+00	1.08000E+02	0.00000E+00
158	1.80000E+01	1.08000E+02	0.00000E+00
159	2.80000E+01	1.08000E+02	0.00000E+00
160	3.80000E+01	1.08000E+02	0.00000E+00
161	4.80000E+01	1.08000E+02	0.00000E+00
162	5.80000E+01	1.08000E+02	0.00000E+00
163	6.80000E+01	1.08000E+02	0.00000E+00
164	7.70000E+01	1.08000E+02	0.00000E+00
165	8.60000E+01	1.08000E+02	0.00000E+00
166	9.40000E+01	1.08000E+02	0.00000E+00
167	1.01000E+02	1.08000E+02	0.00000E+00
168	1.14000E+02	1.08000E+02	0.00000E+00

PLATE ELEMENT CONNECTIVITY

Plate No.	Nodes I J K	Mat L No.	Thickness	Area	Shear Web Thickness	Aspect Ratio	Plate Type
QUAD 1	1 2 16	13	1.1200E+01	1.200E+02	1.200E+00	M+B	
QUAD 2	2 3 15	14	1.1200E+01	1.000E+02	1.000E+00	M+B	
QUAD 3	3 4 16	15	1.1200E+01	1.000E+02	1.000E+00	M+B	
QUAD 4	4 5 17	16	1.1200E+01	1.000E+02	1.000E+00	M+B	
QUAD 5	5 6 18	17	1.1200E+01	1.000E+02	1.000E+00	M+B	
QUAD 6	6 7 19	18	1.1200E+01	1.000E+02	1.000E+00	M+B	
QUAD 7	7 8 20	19	1.1200E+01	9.000E+01	9.000E-01	M+B	
QUAD 8	8 9 21	20	1.1200E+01	9.000E+01	9.000E-01	M+B	
QUAD 9	9 10 22	21	1.1200E+01	8.000E+01	8.000E-01	M+B	
QUAD 10	10 11 23	22	1.1200E+01	7.000E+01	7.000E-01	M+B	
QUAD 11	11 12 24	23	1.1200E+01	7.000E+01	7.000E-01	M+B	
QUAD 12	12 13 25	24	1.1200E+01	1.200E+02	1.200E+00	M+B	
QUAD 13	13 14 26	25	1.1200E+01	1.000E+02	1.000E+00	M+B	
QUAD 14	14 15 27	26	1.1200E+01	1.000E+02	1.000E+00	M+B	
QUAD 15	15 16 28	27	1.1200E+01	1.000E+02	1.000E+00	M+B	
QUAD 16	16 17 29	28	1.1200E+01	1.000E+02	1.000E+00	M+B	
QUAD 17	17 18 30	29	1.1200E+01	1.000E+02	1.000E+00	M+B	
QUAD 18	18 19 31	30	1.1200E+01	1.000E+02	1.000E+00	M+B	
QUAD 19	19 20 32	31	1.1200E+01	9.000E+01	9.000E-01	M+B	
QUAD 20	20 21 33	32	1.1200E+01	9.000E+01	9.000E-01	M+B	
QUAD 21	21 22 34	33	1.1200E+01	8.000E+01	8.000E-01	M+B	
QUAD 22	22 23 35	34	1.1200E+01	7.000E+01	7.000E-01	M+B	

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CHECK GEOMETRY Version 2.0 07/01/90

Plate No.	Nodes I J K	Mat L No.	Thickness	Area	Shear Web Thickness	Aspect Ratio	Plate Type
QUAD 22	23 24 36	35	1.200E+01	7.000E+01	7.000E-01	M+B	
QUAD 23	25 26 38	37	1.200E+01	1.200E+02	1.200E+00	M+B	
QUAD 24	26 27 39	38	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 25	27 28 40	39	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 26	28 29 41	40	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 27	29 30 42	41	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 28	30 31 43	42	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 29	31 32 44	43	1.200E+01	9.000E+01	9.000E-01	M+B	
QUAD 30	32 33 45	44	1.200E+01	9.000E+01	9.000E-01	M+B	
QUAD 31	33 34 46	45	1.200E+01	8.000E+01	8.000E-01	M+B	
QUAD 32	34 35 47	46	1.200E+01	7.000E+01	7.000E-01	M+B	
QUAD 33	35 36 48	47	1.200E+01	7.000E+01	7.000E-01	M+B	
QUAD 34	37 38 50	49	1.200E+01	1.200E+02	1.200E+00	M+B	
QUAD 35	38 39 51	50	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 36	39 40 52	51	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 37	40 41 53	52	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 38	41 42 54	53	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 39	42 43 55	54	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 40	43 44 56	55	1.200E+01	9.000E+01	9.000E-01	M+B	
QUAD 41	44 45 57	56	1.200E+01	9.000E+01	9.000E-01	M+B	
QUAD 42	45 46 58	57	1.200E+01	8.000E+01	8.000E-01	M+B	
QUAD 43	46 47 59	58	1.200E+01	7.000E+01	7.000E-01	M+B	
QUAD 44	47 48 60	59	1.200E+01	7.000E+01	7.000E-01	M+B	
QUAD 45	49 50 62	61	1.200E+01	1.200E+02	1.200E+00	M+B	
QUAD 46	50 51 63	62	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 47	51 52 64	63	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 48	52 53 65	64	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 49	53 54 66	65	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 50	54 55 67	66	1.200E+01	1.000E+02	1.000E+00	M+B	
QUAD 51	55 56 68	67	1.200E+01	9.000E+01	9.000E-01	M+B	
QUAD 52	56 57 69	68	1.200E+01	9.000E+01	9.000E-01	M+B	
QUAD 53	57 58 70	69	1.200E+01	8.000E+01	8.000E-01	M+B	
QUAD 54	58 59 71	70	1.200E+01	7.000E+01	7.000E-01	M+B	
QUAD 55	59 60 72	71	1.200E+01	7.000E+01	7.000E-01	M+B	
QUAD 56	61 62 74	73	1.200E+01	1.080E+02	1.333E+00	M+B	
QUAD 57	62 63 75	74	1.200E+01	9.000E+01	1.111E+00	M+B	
QUAD 58	63 64 76	75	1.200E+01	9.000E+01	1.111E+00	M+B	
QUAD 59	64 65 77	76	1.200E+01	9.000E+01	1.111E+00	M+B	
QUAD 60	65 66 78	77	1.200E+01	9.000E+01	1.111E+00	M+B	
QUAD 61	66 67 79	78	1.200E+01	9.000E+01	1.111E+00	M+B	
QUAD 62	67 68 80	79	1.200E+01	8.100E+01	1.000E+00	M+B	

KAISER ENGINEERS HANFORD S/N:801854

PAGE 7

RUN ID=T177162

03/28/95

13:07:11

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CHECK GEOMETRY Version 2.0 07/01/90

Plate No.	Nodes				Mat No.	Thickness	Area	Shear Web Thickness	Aspect Ratio	Plate Type
	I	J	K	L						
QUAD 63	68	69	81	80	1	1.200E+01	8.100E+01	1.000E+00	M#8	
QUAD 64	69	70	82	81	1	1.200E+01	7.200E+01	8.889E-01	M#8	
QUAD 65	70	71	83	82	1	1.200E+01	6.300E+01	7.778E-01	M#8	
QUAD 66	71	72	84	83	1	1.200E+01	6.300E+01	7.778E-01	M#8	
QUAD 67	73	74	86	85	1	1.200E+01	1.080E+02	1.333E+00	M#8	
QUAD 68	74	75	87	86	1	1.200E+01	9.000E+01	1.111E+00	M#8	
QUAD 69	75	76	88	87	1	1.200E+01	9.000E+01	1.111E+00	M#8	
QUAD 70	76	77	89	88	1	1.200E+01	9.000E+01	1.111E+00	M#8	
QUAD 71	77	78	90	89	1	1.200E+01	9.000E+01	1.111E+00	M#8	
QUAD 72	78	79	91	90	1	1.200E+01	9.000E+01	1.111E+00	M#8	
QUAD 73	79	80	92	91	1	1.200E+01	8.100E+01	1.000E+00	M#8	
QUAD 74	80	81	93	92	1	1.200E+01	8.100E+01	1.000E+00	M#8	
QUAD 75	81	82	94	93	1	1.200E+01	7.200E+01	8.889E-01	M#8	
QUAD 76	82	83	95	94	1	1.200E+01	6.300E+01	7.778E-01	M#8	
QUAD 77	83	84	96	95	1	1.200E+01	6.300E+01	7.778E-01	M#8	
QUAD 78	85	86	98	97	1	1.200E+01	9.600E+01	1.500E+00	M#8	
QUAD 79	86	87	99	98	1	1.200E+01	8.000E+01	1.250E+00	M#8	
QUAD 80	87	88	100	99	1	1.200E+01	8.000E+01	1.250E+00	M#8	
QUAD 81	88	89	101	100	1	1.200E+01	8.000E+01	1.250E+00	M#8	
QUAD 82	89	90	102	101	1	1.200E+01	8.000E+01	1.250E+00	M#8	
QUAD 83	90	91	103	102	1	1.200E+01	8.000E+01	1.250E+00	M#8	
QUAD 84	91	92	104	103	1	1.200E+01	7.200E+01	1.125E+00	M#8	
QUAD 85	92	93	105	104	1	1.200E+01	7.200E+01	1.125E+00	M#8	
QUAD 86	93	94	106	105	1	1.200E+01	6.400E+01	1.000E+00	M#8	
QUAD 87	94	95	107	106	1	1.200E+01	5.600E+01	8.750E-01	M#8	
QUAD 88	95	96	108	107	1	1.200E+01	5.600E+01	8.750E-01	M#8	
QUAD 89	97	98	110	109	1	1.200E+01	9.600E+01	1.500E+00	M#8	
QUAD 90	98	99	111	110	1	1.200E+01	8.000E+01	1.250E+00	M#8	
QUAD 91	99	100	112	111	1	1.200E+01	8.000E+01	1.250E+00	M#8	
QUAD 92	100	101	113	112	1	1.200E+01	8.000E+01	1.250E+00	M#8	
QUAD 93	101	102	114	113	1	1.200E+01	8.000E+01	1.250E+00	M#8	
QUAD 94	102	103	115	114	1	1.200E+01	8.000E+01	1.250E+00	M#8	
QUAD 95	103	104	116	115	1	1.200E+01	7.200E+01	1.125E+00	M#8	
QUAD 96	104	105	117	116	1	1.200E+01	7.200E+01	1.125E+00	M#8	
QUAD 97	105	106	118	117	1	1.200E+01	6.400E+01	1.000E+00	M#8	
QUAD 98	106	107	119	118	1	1.200E+01	5.600E+01	8.750E-01	M#8	
QUAD 99	107	108	120	119	1	1.200E+01	5.600E+01	8.750E-01	M#8	
QUAD 100	109	110	122	121	2	7.630E+00	7.650E+01	2.109E+00	M#8	
QUAD 101	110	111	123	122	2	7.630E+00	6.000E+01	1.667E+00	M#8	
QUAD 102	111	112	124	123	2	7.630E+00	6.000E+01	1.667E+00	M#8	
QUAD 103	112	113	125	124	2	7.630E+00	6.000E+01	1.667E+00	M#8	

KAISER ENGINEERS HANFORD S/N:801854

PAGE 8

RUN ID=T177162

03/28/95

13:07:11

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CHECK GEOMETRY Version 2.0 07/01/90

Plate No.	Nodes				Mat No.	Thickness	Area	Shear Web Thickness	Aspect Ratio	Plate Type
	I	J	K	L						
QUAD 104	113	114	126	125	2	7.630E+00	6.000E+01	1.667E+00	M#8	
QUAD 105	114	115	127	126	2	7.630E+00	6.000E+01	1.667E+00	M#8	
QUAD 106	115	116	128	127	2	7.630E+00	5.400E+01	1.500E+00	M#8	
QUAD 107	116	117	129	128	2	7.630E+00	5.400E+01	1.500E+00	M#8	
QUAD 108	117	118	130	129	2	7.630E+00	4.800E+01	1.333E+00	M#8	
QUAD 109	118	119	131	130	2	7.630E+00	4.200E+01	1.167E+00	M#8	
QUAD 110	119	120	132	131	2	7.630E+00	4.650E+01	1.282E+00	M#8	
QUAD 111	121	122	134	133	2	7.630E+00	8.550E+01	2.357E+00	M#8	
QUAD 112	122	123	135	134	2	7.630E+00	6.000E+01	1.667E+00	M#8	
QUAD 113	123	124	136	135	2	7.630E+00	6.000E+01	1.667E+00	M#8	
QUAD 114	124	125	137	136	2	7.630E+00	6.000E+01	1.667E+00	M#8	
QUAD 115	125	126	138	137	2	7.630E+00	6.000E+01	1.667E+00	M#8	
QUAD 116	126	127	139	138	2	7.630E+00	6.000E+01	1.667E+00	M#8	
QUAD 117	127	128	140	139	2	7.630E+00	5.400E+01	1.500E+00	M#8	
QUAD 118	128	129	141	140	2	7.630E+00	5.400E+01	1.500E+00	M#8	
QUAD 119	129	130	142	141	2	7.630E+00	4.800E+01	1.333E+00	M#8	
QUAD 120	130	131	143	142	2	7.630E+00	4.200E+01	1.167E+00	M#8	
QUAD 121	131	132	144	143	2	7.630E+00	5.550E+01	1.530E+00	M#8	
QUAD 122	133	134	146	145	2	7.630E+00	9.450E+01	2.605E+00	M#8	
QUAD 123	134	135	147	146	2	7.630E+00	6.000E+01	1.667E+00	M#8	
QUAD 124	135	136	148	147	2	7.630E+00	6.000E+01	1.667E+00	M#8	
QUAD 125	136	137	149	148	2	7.630E+00	6.000E+01	1.667E+00	M#8	
QUAD 126	137	138	150	149	2	7.630E+00	6.000E+01	1.667E+00	M#8	
QUAD 127	138	139	151	150	2	7.630E+00	6.000E+01	1.667E+00	M#8	
QUAD 128	139	140	152	151	2	7.630E+00	5.400E+01	1.500E+00	M#8	
QUAD 129	140	141	153	152	2	7.630E+00	5.400E+01	1.500E+00	M#8	
QUAD 130	141	142	154	153	2	7.630E+00	4.800E+01	1.333E+00	M#8	
QUAD 131	142	143	155	154	2	7.630E+00	4.200E+01	1.167E+00	M#8	
QUAD 132	143	144	156	155	2	7.630E+00	6.450E+01	1.778E+00	M#8	
QUAD 133	145	146	158	157	2	7.630E+00	1.035E+02	2.853E+00	M#8	
QUAD 134	146	147	159	158	2	7.630E+00	6.000E+01	1.667E+00	M#8	
QUAD 135	147	148	160	159	2	7.630E+00	6.000E+01	1.667E+00	M#8	
QUAD 136	148	149	161	160	2	7.630E+00	6.000E+01	1.667E+00	M#8	
QUAD 137	149	150	162	161	2	7.630E+00	6.000E+01	1.667E+00	M#8	
QUAD 138	150	151	163	162	2	7.630E+00	5.400E+01	1.500E+00	M#8	
QUAD 139	151	152	164	163	2	7.630E+00	5.400E+01	1.500E+00	M#8	
QUAD 140	152	153	165	164	2	7.630E+00	5.400E+01	1.500E+00	M#8	
QUAD 141	153	154	166	165	2	7.630E+00	4.800E+01	1.333E+00	M#8	
QUAD 142	154	155	167	166	2	7.630E+00	4.200E+01	1.167E+00	M#8	
QUAD 143	155	156	168	167	2	7.630E+00	7.350E+01	2.026E+00	M#8	

HNF-266, Rev.0

Attach 5
6 of 10

10/24/2000

KAISER ENGINEERS HANFORD S/N:801854
 PAGE 10
 03/28/95 13:07:53
 =====
 * Copyright (c) 1984 Celestial Software Inc. *
 IMAGES 3D
 Run ID=177162
 Version 2.0 07/01/90
 SOLVE DISPLACEMENTS
 LOAD CASE 1

GRAVITY LOADING

Load	Gravity Factor	Direction	X	Y	Z
			.0000E+00	.0000E+00	.0000E+00
			.0000E+01	.0000E+00	.0000E+00

INERTIA LOADING

Direction	Translational Accel.	Rotational Accel.	Rotational Velocity	Origin
X	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Y	.0000E+00	.0000E+00	.0000E+00	.0000E+00
Z	.0000E+00	.0000E+00	.0000E+00	.0000E+00

Gravity Acceleration = .3864E+03

CONCENTRATED LOADS

Node	Fx	Fy	Fz	Mx	My	Mz
94	.0000E+00	.0000E+00	.1000E+04	.0000E+00	.0000E+00	.0000E+00

REFERENCE TEMPERATURE = .0000E+00

KAISER ENGINEERS HANFORD S/N:801854
 PAGE 9
 03/28/95 13:07:11
 =====
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 IMAGES 3D
 Run ID=177162
 Version 2.0 07/01/90
 CHECK GEOMETRY

RESTRAINTS

Node	Global/Local	Restraints
------	--------------	------------

1	GLOBAL	X Y Z RX RY RZ
2	GLOBAL	X Y Z RX RY RZ
3	GLOBAL	X Y Z RX RY RZ
4	GLOBAL	X Y Z RX RY RZ
5	GLOBAL	X Y Z RX RY RZ
6	GLOBAL	X Y Z RX RY RZ
7	GLOBAL	X Y Z RX RY RZ
8	GLOBAL	X Y Z RX RY RZ
9	GLOBAL	X Y Z RX RY RZ
10	GLOBAL	X Y Z RX RY RZ
11	GLOBAL	X Y Z RX RY RZ
12	GLOBAL	X Y Z RX RY RZ
13	GLOBAL	X Y Z RX RY RZ
24	GLOBAL	X Y Z RX RY RZ
25	GLOBAL	X Y Z RX RY RZ
36	GLOBAL	X Y Z RX RY RZ
37	GLOBAL	X Y Z RX RY RZ
48	GLOBAL	X Y Z RX RY RZ
49	GLOBAL	X Y Z RX RY RZ
60	GLOBAL	X Y Z RX RY RZ
61	GLOBAL	X Y Z RX RY RZ
72	GLOBAL	X Y Z Z Z Z Z Z
73	GLOBAL	X Y Z Z Z Z Z Z
84	GLOBAL	X Y Z RX RY RZ
85	GLOBAL	X Y Z RX RY RZ
96	GLOBAL	X Y Z RX RY RZ
97	GLOBAL	X Y Z RX RY RZ
108	GLOBAL	X Y Z RX RY RZ
109	GLOBAL	X Y Z RX RY RZ
120	GLOBAL	X Y Z RX RY RZ
121	GLOBAL	X Y Z RX RY RZ
132	GLOBAL	X Y Z RX RY RZ
133	GLOBAL	X Y Z RX RY RZ
144	GLOBAL	X Y Z RX RY RZ
145	GLOBAL	X Y Z RX RY RZ
156	GLOBAL	X Y Z Z Z Z Z Z
157	GLOBAL	X Y Z Z Z Z Z Z
168	GLOBAL	X Y Z RX RY RZ

KAISER ENGINEERS HANFORD S/N:801854

PAGE 11

Run ID=TI77162

I W A G E S 3 D

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

03/28/95

13:07:54

LOAD CASE 1
STIFFNESS AT NODE 94

APPLIED LOAD VECTOR

Node	Fx	Fy	Fz	Mx	My	Mz
94	.0000E+00	.0000E+00	.1000E+04	.0000E+00	.0000E+00	.0000E+00

KAISER ENGINEERS HANFORD S/N:801854

PAGE 12

Run ID=TI77162

I W A G E S 3 D

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

03/28/95

13:07:56

LOAD CASE 1
STIFFNESS AT NODE 94

DISPLACEMENTS

Node	Translations			Rotations		
	X	Y	Z	X	Y	Z
1	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
2	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
3	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
4	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
5	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
6	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
7	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
8	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
9	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
10	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
11	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
12	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
13	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
14	.0000E+00	.0000E+00	.6549E-06	.3894E-06	.3709E-06	.0000E+00
15	.0000E+00	.0000E+00	.4348E-05	.9152E-06	.6388E-06	.0000E+00
16	.0000E+00	.0000E+00	.9685E-05	.1635E-05	.7394E-06	.0000E+00
17	.0000E+00	.0000E+00	.1498E-04	.2346E-05	.6142E-06	.0000E+00
18	.0000E+00	.0000E+00	.1838E-04	.2826E-05	.2582E-06	.0000E+00
19	.0000E+00	.0000E+00	.1821E-04	.2669E-05	.2533E-06	.0000E+00
20	.0000E+00	.0000E+00	.1444E-04	.2453E-05	.9655E-06	.0000E+00
21	.0000E+00	.0000E+00	.8194E-05	.1697E-05	.9030E-06	.0000E+00
22	.0000E+00	.0000E+00	.2615E-05	.9602E-06	.7643E-06	.0000E+00
23	.0000E+00	.0000E+00	-.2706E-06	.4594E-06	.4218E-06	.0000E+00
24	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
25	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
26	.0000E+00	.0000E+00	.4982E-05	.7545E-06	.9418E-06	.0000E+00
27	.0000E+00	.0000E+00	.1722E-04	.1666E-05	.1531E-05	.0000E+00
28	.0000E+00	.0000E+00	.3372E-04	.2882E-05	.1759E-05	.0000E+00
29	.0000E+00	.0000E+00	.5022E-04	.4122E-05	.1519E-05	.0000E+00
30	.0000E+00	.0000E+00	.6165E-04	.5077E-05	.7631E-06	.0000E+00
31	.0000E+00	.0000E+00	.6297E-04	.5391E-05	.4174E-06	.0000E+00
32	.0000E+00	.0000E+00	.5309E-04	.4885E-05	.1540E-05	.0000E+00
33	.0000E+00	.0000E+00	.3446E-04	.3648E-05	.2216E-05	.0000E+00
34	.0000E+00	.0000E+00	.1586E-04	.2244E-05	.2054E-05	.0000E+00
35	.0000E+00	.0000E+00	.3747E-05	.1145E-05	.1249E-05	.0000E+00
36	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
37	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
38	.0000E+00	.0000E+00	.1190E-04	.9985E-06	.1797E-05	.0000E+00
39	.0000E+00	.0000E+00	.3626E-04	.2161E-05	.2814E-05	.0000E+00
40	.0000E+00	.0000E+00	.6808E-04	.3714E-05	.3240E-05	.0000E+00

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PAGE 13

Run ID=T177162

03/28/95

13:07:56

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LOAD CASE 1
 STIFFNESS AT NODE 94

Node	Translations			Rotations		
	X	Y	Z	X	Y	Z
41	.0000E+00	.0000E+00	.1006E-03	.5383E-05	-.2941E-05	.0000E+00
42	.0000E+00	.0000E+00	.1256E-03	.6890E-05	-.1787E-05	.0000E+00
43	.0000E+00	.0000E+00	.1334E-03	.7822E-05	-.2393E-06	.0000E+00
44	.0000E+00	.0000E+00	.1189E-03	.7658E-05	.2480E-05	.0000E+00
45	.0000E+00	.0000E+00	.8394E-04	.6241E-05	.4198E-05	.0000E+00
46	.0000E+00	.0000E+00	.4375E-04	.4143E-05	.4342E-05	.0000E+00
47	.0000E+00	.0000E+00	.1354E-04	.2231E-05	.2905E-05	.0000E+00
48	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
49	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
50	.0000E+00	.0000E+00	.2009E-04	.1097E-05	-.2807E-05	.0000E+00
51	.0000E+00	.0000E+00	.5860E-04	.2366E-05	-.4317E-05	.0000E+00
52	.0000E+00	.0000E+00	.3442E-04	.4192E-05	.5006E-05	.0000E+00
53	.0000E+00	.0000E+00	.1605E-03	.6008E-05	.4778E-05	.0000E+00
54	.0000E+00	.0000E+00	.2050E-03	.8003E-05	.3460E-05	.0000E+00
55	.0000E+00	.0000E+00	.2288E-03	.9813E-05	-.7742E-06	.0000E+00
56	.0000E+00	.0000E+00	.2181E-03	.1073E-04	.2801E-05	.0000E+00
57	.0000E+00	.0000E+00	.1680E-03	.9843E-05	.6471E-05	.0000E+00
58	.0000E+00	.0000E+00	.9709E-04	.7287E-05	.7779E-05	.0000E+00
59	.0000E+00	.0000E+00	.3442E-04	.4192E-05	.5744E-05	.0000E+00
60	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
61	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
62	.0000E+00	.0000E+00	.2847E-04	.1075E-05	-.3848E-05	.0000E+00
63	.0000E+00	.0000E+00	.8146E-04	.2302E-05	.5859E-05	.0000E+00
64	.0000E+00	.0000E+00	.1495E-03	.3951E-05	.6835E-05	.0000E+00
65	.0000E+00	.0000E+00	.2225E-03	.5831E-05	.6774E-05	.0000E+00
66	.0000E+00	.0000E+00	.2899E-03	.7900E-05	.5568E-05	.0000E+00
67	.0000E+00	.0000E+00	.1387E-03	.1029E-05	.1029E-05	.0000E+00
68	.0000E+00	.0000E+00	.3514E-03	.1249E-04	.1504E-05	.0000E+00
69	.0000E+00	.0000E+00	.3031E-03	.1410E-04	.7747E-05	.0000E+00
70	.0000E+00	.0000E+00	.1992E-03	.1178E-04	.1216E-04	.0000E+00
71	.0000E+00	.0000E+00	.8209E-04	.7923E-05	.1063E-04	.0000E+00
72	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
73	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
74	.0000E+00	.0000E+00	.3356E-04	.9859E-06	-.4725E-05	.0000E+00
75	.0000E+00	.0000E+00	.1006E-03	.2092E-05	.7132E-05	.0000E+00
76	.0000E+00	.0000E+00	.1836E-03	.3474E-05	-.8314E-05	.0000E+00
77	.0000E+00	.0000E+00	.2732E-03	.5002E-05	.8369E-05	.0000E+00
78	.0000E+00	.0000E+00	.3590E-03	.6600E-05	.7286E-05	.0000E+00
79	.0000E+00	.0000E+00	.4301E-03	.8358E-05	.4940E-05	.0000E+00
80	.0000E+00	.0000E+00	.4723E-03	.1051E-04	.1437E-05	.0000E+00
81	.0000E+00	.0000E+00	.8405E-03	.1361E-04	.6496E-05	.0000E+00

KAISER ENGINEERS HANFORD S/N:801854

PAGE 14

Run ID=T177162

03/28/95

13:07:56

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LOAD CASE 1
 STIFFNESS AT NODE 94

Node	Translations			Rotations		
	X	Y	Z	X	Y	Z
82	.0000E+00	.0000E+00	.3549E-03	.1726E-04	.1600E-04	.0000E+00
83	.0000E+00	.0000E+00	.1835E-03	.9188E-05	.1674E-04	.0000E+00
84	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
85	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
86	.0000E+00	.0000E+00	.4201E-04	.8625E-06	.5498E-05	.0000E+00
87	.0000E+00	.0000E+00	.1173E-03	.1747E-05	.8200E-05	.0000E+00
88	.0000E+00	.0000E+00	.2122E-03	.2815E-05	.9475E-05	.0000E+00
89	.0000E+00	.0000E+00	.3139E-03	.3815E-05	.9487E-05	.0000E+00
90	.0000E+00	.0000E+00	.4114E-03	.4555E-05	.8289E-05	.0000E+00
91	.0000E+00	.0000E+00	.4941E-03	.4846E-05	.5809E-05	.0000E+00
92	.0000E+00	.0000E+00	.5483E-03	.4537E-05	.2387E-05	.0000E+00
93	.0000E+00	.0000E+00	.4230E-03	.3645E-05	.1044E-05	.0000E+00
94	.0000E+00	.0000E+00	.7107E-03	.2384E-05	.1853E-04	.0000E+00
95	.0000E+00	.0000E+00	.2499E-03	.1326E-05	.2561E-04	.0000E+00
96	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
97	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
98	.0000E+00	.0000E+00	.4726E-04	.6943E-06	.6073E-05	.0000E+00
99	.0000E+00	.0000E+00	.1298E-03	.1432E-05	.8970E-05	.0000E+00
100	.0000E+00	.0000E+00	.2324E-03	.2525E-05	.1020E-04	.0000E+00
101	.0000E+00	.0000E+00	.3404E-03	.2819E-05	.1000E-04	.0000E+00
102	.0000E+00	.0000E+00	.4407E-03	.2815E-05	.8373E-05	.0000E+00
103	.0000E+00	.0000E+00	.5199E-03	.1742E-05	.5138E-05	.0000E+00
104	.0000E+00	.0000E+00	.5616E-03	.1011E-05	.5681E-06	.0000E+00
105	.0000E+00	.0000E+00	.5623E-03	.6126E-05	.8438E-05	.0000E+00
106	.0000E+00	.0000E+00	.4220E-03	.1264E-04	.1908E-04	.0000E+00
107	.0000E+00	.0000E+00	.2131E-03	.6532E-05	.1935E-04	.0000E+00
108	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
109	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
110	.0000E+00	.0000E+00	.5152E-04	.3046E-06	.6608E-05	.0000E+00
111	.0000E+00	.0000E+00	.1402E-03	.1139E-05	.9474E-05	.0000E+00
112	.0000E+00	.0000E+00	.2485E-03	.1824E-05	.1064E-04	.0000E+00
113	.0000E+00	.0000E+00	.3598E-03	.2173E-05	.1023E-04	.0000E+00
114	.0000E+00	.0000E+00	.4575E-03	.1764E-05	.8173E-05	.0000E+00
115	.0000E+00	.0000E+00	.5232E-03	.6015E-07	.1935E-05	.0000E+00
116	.0000E+00	.0000E+00	.5353E-03	.3537E-05	.2018E-05	.0000E+00
117	.0000E+00	.0000E+00	.4624E-03	.8848E-05	.1166E-04	.0000E+00
118	.0000E+00	.0000E+00	.3054E-03	.1032E-04	.1963E-04	.0000E+00
119	.0000E+00	.0000E+00	.1269E-03	.8626E-05	.1829E-04	.0000E+00
120	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
121	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
122	.0000E+00	.0000E+00	.5537E-04	.6735E-06	.7422E-05	.0000E+00

Page B-157

HNF-2466, Rev 0

Attach 5
9 of 10

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

LOAD CASE 1

STIFFNESS AT NODE 94

Node	Translations			/	Rotations		
	X	Y	Z		X	Y	Z
123	.0000E+00	.0000E+00	.1470E-03	/	.9965E-06	-.1018E-04	.0000E+00
124	.0000E+00	.0000E+00	.2576E-03	/	.1208E-05	-.1118E-04	.0000E+00
125	.0000E+00	.0000E+00	.3689E-03	/	.9756E-06	-.1025E-04	.0000E+00
126	.0000E+00	.0000E+00	.4610E-03	/	-.2072E-06	-.7240E-05	.0000E+00
127	.0000E+00	.0000E+00	.5111E-03	/	-.2844E-05	-.1755E-05	.0000E+00
128	.0000E+00	.0000E+00	.4957E-03	/	-.6371E-05	.5807E-05	.0000E+00
129	.0000E+00	.0000E+00	.3975E-03	/	-.8826E-05	.1474E-04	.0000E+00
130	.0000E+00	.0000E+00	.2447E-03	/	-.7719E-05	.1970E-04	.0000E+00
131	.0000E+00	.0000E+00	.9581E-04	/	.4403E-05	.1729E-04	.0000E+00
132	.0000E+00	.0000E+00	.0000E+00	/	.0000E+00	.0000E+00	.0000E+00
133	.0000E+00	.0000E+00	.0000E+00	/	.0000E+00	.0000E+00	.0000E+00
134	.0000E+00	.0000E+00	.6054E-04	/	.6313E-06	-.7485E-05	.0000E+00
135	.0000E+00	.0000E+00	.1525E-03	/	.7845E-06	-.1032E-04	.0000E+00
136	.0000E+00	.0000E+00	.2634E-03	/	.7760E-06	-.1118E-04	.0000E+00
137	.0000E+00	.0000E+00	.3722E-03	/	.3013E-06	-.9830E-05	.0000E+00
138	.0000E+00	.0000E+00	.4558E-03	/	-.1125E-05	-.6085E-05	.0000E+00
139	.0000E+00	.0000E+00	.4883E-03	/	.7030E-05	.2423E-06	.0000E+00
140	.0000E+00	.0000E+00	.4521E-03	/	-.6292E-05	.7801E-05	.0000E+00
141	.0000E+00	.0000E+00	.3438E-03	/	-.7296E-05	.1490E-04	.0000E+00
142	.0000E+00	.0000E+00	.2038E-03	/	-.5518E-05	.1739E-04	.0000E+00
143	.0000E+00	.0000E+00	.8293E-04	/	-.2904E-05	.1404E-04	.0000E+00
144	.0000E+00	.0000E+00	.0000E+00	/	.0000E+00	.0000E+00	.0000E+00
145	.0000E+00	.0000E+00	.0000E+00	/	.0000E+00	.0000E+00	.0000E+00
146	.0000E+00	.0000E+00	.6445E-04	/	.2654E-06	-.7433E-05	.0000E+00
147	.0000E+00	.0000E+00	.1563E-03	/	.5061E-06	-.1042E-04	.0000E+00
148	.0000E+00	.0000E+00	.2673E-03	/	.5703E-06	-.1113E-04	.0000E+00
149	.0000E+00	.0000E+00	.3731E-03	/	.1647E-06	-.9340E-05	.0000E+00
150	.0000E+00	.0000E+00	.4479E-03	/	-.1126E-05	-.4925E-05	.0000E+00
151	.0000E+00	.0000E+00	.4653E-03	/	.3302E-05	.1924E-05	.0000E+00
152	.0000E+00	.0000E+00	.4148E-03	/	.5257E-05	.9102E-05	.0000E+00
153	.0000E+00	.0000E+00	.3744E-03	/	.5907E-05	.1465E-04	.0000E+00
154	.0000E+00	.0000E+00	.1738E-03	/	.4657E-05	.1543E-04	.0000E+00
155	.0000E+00	.0000E+00	.7219E-04	/	-.2950E-05	.1159E-04	.0000E+00
156	.0000E+00	.0000E+00	.0000E+00	/	.0000E+00	.0000E+00	.0000E+00
157	.0000E+00	.0000E+00	.0000E+00	/	.0000E+00	.0000E+00	.0000E+00
158	.0000E+00	.0000E+00	.6470E-04	/	.4205E-06	-.7292E-05	.0000E+00
159	.0000E+00	.0000E+00	.1584E-03	/	.2306E-06	-.1044E-04	.0000E+00
160	.0000E+00	.0000E+00	.2706E-03	/	.5743E-06	-.1109E-04	.0000E+00
161	.0000E+00	.0000E+00	.3746E-03	/	.4831E-06	.9149E-05	.0000E+00
162	.0000E+00	.0000E+00	.4425E-03	/	-.4660E-06	-.4515E-05	.0000E+00
163	.0000E+00	.0000E+00	.4477E-03	/	-.2297E-05	.2469E-05	.0000E+00

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SOLVE DISPLACEMENTS

Version 2.0 07/01/90

LOAD CASE 1

STIFFNESS AT NODE 94

Node	Translations			/	Rotations		
	X	Y	Z		X	Y	Z
164	.0000E+00	.0000E+00	.3861E-03	/	.4115E-05	.9469E-05	.0000E+00
165	.0000E+00	.0000E+00	.2693E-03	/	-.5114E-05	.1451E-04	.0000E+00
166	.0000E+00	.0000E+00	.1459E-03	/	-.4744E-05	.1472E-04	.0000E+00
167	.0000E+00	.0000E+00	.5471E-04	/	-.4000E-05	.1057E-04	.0000E+00
168	.0000E+00	.0000E+00	.0000E+00	/	.0000E+00	.0000E+00	.0000E+00

DESIGN ANALYSIS

Client: WHC

Subject: Sluice Pit AY-02E Analysis

Location: 241-AY-102 Tank

WO/Job No. W-320/ER4319

Date: 8/3/95

Checked: 8/1/95

Revised:

By:

By:

By:

8/2
8/2
8/2

ATTACHMENT 6

Revised, Encasement, Pipe, and Jumper Loads
4 pages including cover.

Pages 3a & 4a Added in Rev 2.

10/24/94
10/24/94

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HANFORD COMPANY**

DESIGN ANALYSIS

Client WESTINGHOUSE HANFORD CO. WO/Job No. ER4319
Subject PROJECT W-320 WASTE RETRIEVAL Date 7/27/95
ENCASEMENT PIPE STRESS ANALYSIS Checked 8/8/95
Location C TANK FARM 200 EAST AREA Revised

Calc. No. Pg. 2 of 4
W-320-27-014
Revision No. 1
Page No. 13 of 13
Filename ANCH-LDS.XLS
By D. L. STONE
By *cd Jones*

ENCASEMENT PIPE ANCHOR LOADS AT PIT WALLS

Anchor Locations	Pipe Length 'L'	SEISMIC		THERMAL	
		Friction Force	Total Axial	Friction Force	Total Axial
		F1	LOAD = F1 x L	F2	LOAD = F2 x L
		(Ref. 4)		(Ref. 4)	
	(inches)	(lb/in)	(lb)	(lb/in)	(lb)
Pump Pit 241-C-06A Nozzle 17	(Ref. DWG # ES-320-M3) 206.88	24.48	5064	23.18	4795
Sluice Pit 241-C-06C Nozzle 6	(Ref. DWG # ES-320-M3) 201.48	24.48	4932	23.18	4670
Pump Pit 241-AY-02A Nozzle U 11	(Ref. DWG # ES-320-M8) 108	24.48	2644	23.18	2503
Sluice Pit 241-AY-02E Nozzle 2	(Ref. DWG # ES-320-M8) 120	24.48	2938	23.18	2782

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DESIGN ANALYSIS

Calc. No. W-320-27-013

Revision No. 1

Page No. 70 of 70

Client WESTINGHOUSE HANFORD CO.
 Subject PROCESS PIPE STRESS ANALYSIS
 PROJECT W-320 WASTE RETRIEVAL for TANK 241-C-106
 Location C TANK FARM 200 EAST AREA

WO/Job No. ER4319
 Date 8/4/1995
 Checked 8/7/95
 Revised

Filename ANCOR-SP.xls
 By D.L. STONE
 By CD Jones

ANCHOR LOADS AT PIT WALLS

Nozzle: 6 Location: 241-C-06C Sluice Pit	Pipe Loads	Pipe Length (*2) (in.)	Friction Force (*3) (lb/in)	Fx (lbs)	Fy (lbs)	Fz (lbs)	Mx (in-lb)	My (in-lb)	Mz (in-lb)
Identification: W-320 Supernate Line Nozzle Node #: A00 Orientation:	Inner Pipe								
	(Seismic)			264	0	207	0	5424	0
	(Thermal)			378	-45	30	288	-3456	432
	(*1)								
	Encasement								
	(Seismic)	L = 201	F1 = 24.48	4932.23					
	(*4)								
	(Thermal)	L = 201	F2 = 23.18	4670.31					
	(*5)								
	Absolute Sum			10245	45	237	288	8880	432

Nozzle: U-2 Location: 241-AY-02 <i>RE</i> <i>Sluice Pump</i> Pit	Pipe Loads	Pipe Length (*2) (in.)	Friction Force (*3) (lb/in)	Fx (lbs)	Fy (lbs)	Fz (lbs)	Mx (in-lb)	My (in-lb)	Mz (in-lb)
Identification: W-320 AY Supernate Line Nozzle Node #: A167 Orientation:	Inner Pipe								
	(Seismic)			0	0	0	0	0	0
	(Thermal)			-633	-67	964	-972	33396	-36
	(*1)								
	Encasement								
	(Seismic)	L = 120	F1 = -24.48			-2937.60			
	(*4)								
	(Thermal)	L = 120	F2 = -23.18			-2781.60			
	(*5)								
	Absolute Sum			633	67	6683	972	33396	36

(*1) (Ref. Appendix B, Autopipe Filename: TRAN-SP)

(*2) L = Length of pipe immediately preceding anchor as per DWGS # ES-320-M3 and # ES-320-M6: (Ref. Appendix D)

(*3) For underground pipe:

(For SEISMIC: Ref. Calculation W320-27-014, Appendix. AO, Page 5, Soil Friction)

(For THERMAL: Ref. Calculation W320-27-014, Appendix. AP, Page 5, Static Soil Friction)

(*4) LOAD = F1 x L

(*5) LOAD = F2 x L

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HANFORD COMPANY**

DESIGN ANALYSIS

Calc. No. W-320-27-013
Revision No. 2
Page No. 72 of 72

Client WESTINGHOUSE HANFORD CO.
Subject PROCESS PIPE STRESS ANALYSIS
PROJECT W-320 WASTE RETRIEVAL for TANK 241-C-106
Location C TANK FARM 200 EAST AREA

WO/Job No. ER4319
Date 9/3/1996
Checked 9/25/96
Revised

Filename ANCOR-SP.xls
By D.L. STONE
By CD Jones

ANCHOR LOADS AT PIT WALLS

Nozzle: 6 Location: 241-C-06C Sluice Pit	Pipe Loads	Pipe Length (*2) (in.)	Friction Force (*3) (lb/in)	Fx (lbs)	Fy (lbs)	Fz (lbs)	Mx (in-lb)	My (in-lb)	Mz (in-lb)
Identification: W-320 Supernate Line Nozzle Node #: A00 Orientation: <div style="text-align: center;"> </div>	Inner Pipe								
	(Seismic)			264	0	207	0	5424	0
	(Thermal)			378	-45	30	288	-3456	432
	(*1)								
	Encasement								
	(Seismic)	L = 201	F1 = 24.48	4932.23					
	(Thermal)	L = 201	F2 = 23.18	4670.31					
	(*5)								
	Absolute Sum			10245	45	237	288	8880	432

Nozzle: U-2 Location: 241-AY-02E Sluice Pit	Pipe Loads	Pipe Length (*2) (in.)	Friction Force (*3) (lb/in)	Fx (lbs)	Fy (lbs)	Fz (lbs)	Mx (in-lb)	My (in-lb)	Mz (in-lb)
Identification: W-320 AY Supernate Line Nozzle Node #: A167 Orientation: <div style="text-align: center;"> </div>	Inner Pipe								
	(Seismic)			0	0	0	0	0	0
	(Thermal)			-633	-67	964	-972	33396	-36
	(*1)								
	Encasement								
	(Seismic)	L = 120	F1 = 24.48			2937.60			
	(Thermal)	L = 120	F2 = 23.18			2781.60			
	(*5)								
	Absolute Sum			633	67	6683	972	33396	36

- (*) (Ref. Appendix B, Autopipe Filename: TRAN-SP)
 (*) L = Length of pipe immediately preceding anchor as per DWGS # ES-320-M3 and # ES-320-M6: (Ref. Appendix D)
 (*) For underground pipe:
 [For SEISMIC: Ref. Calculation W320-27-014, Appendix. AO, Page 5, Soil Friction]
 [For THERMAL: Ref. Calculation W320-27-014, Appendix. AP, Page 5, Static Soil Friction]
 (*) LOAD = F1 x L
 (*) LOAD = F2 x L

ICF KAISER
HANFORD COMPANY

Calc. No. W-320-27-029

Revision No. 0

Page No. of

DESIGN ANALYSIS

Client WESTINGHOUSE HANFORD CO.
 Subject AY FARM JUMPER STRESS ANALYSIS
 PROJECT W-320 WASTE RETRIEVAL for TANK 241-C-106
 Location C TANK FARM 200 EAST AREA

WO/Job No. ER4319
 Date 8/4/95
 Checked *2/1/95*
 Revised

Filename U2-A.xls
 By RS ULBRICHT
 By *Dr. S. S. S.*

ANCHOR LOADS AT PIT WALLS

(Inside Pit)		Jumper Loads			Fx (lbs)	Fy (lbs)	Fz (lbs)	Mx (in-lb)	My (in-lb)	Mz (in-lb)
Identification: Nozzle U2-A		(Seismic)			104	373	148	2280	1308	1032
		(*)								
Node #:	Dwg. H-2-818503	(Thermal)			116	1222	300	6912	1164	-1308
	B20	(*)								
	Orientation:
		Absolute Sum			220	1595	448	9192	2472	2340
Seismic Stabilizer		(Seismic)			701	0	542	0	0	0
		(*)								
Node #:	D01	(Thermal)			412	0	-123	0	0	-36
	Dwg. H-2-818503	(*)								
		Absolute Sum			1113	0	665	0	0	36
Node #:	E01	(Seismic)			457	3	711	36	0	24
	Dwg. H-2-818503	(*)								
		(Thermal)			-240	0	328	-144	0	-84
		(*)								
		Absolute Sum			697	3	1039	180	0	108

(*) (Ref. Autopipe Calc. # W-320-27-029)

Filename: AY02E-R1

Pg. 4a of 4

ICF KAISER
HANFORD COMPANY
DESIGN ANALYSIS

Calc. No. W-320-27-029

Revision No: 0

Page No. 7 of 8

Client: WESTINGHOUSE HANFORD CO.
 Subject: AY FARM JUMPER STRESS ANALYSIS
 PROJECT W-320 WASTE RETRIEVAL for TANK 241-C-106
 Location: C TANK FARM 200 EAST AREA

WO/Job N ER4319
 Date 9/1/95
 Checked 9/11/95
 Revised

Filename U2-A.xls
 By M. M. AHMED
 By M.K. Pal
 By

Rev-1 By: *M. Ahmed* 7-12-96
 Checked By: *D. Lister* 7-15-96

ANCHOR LOADS AT PIT WALLS

NOTE: THESE ARE THE JUMPER PIPING LOADS EXERTED ON PIT WALL FROM INSIDE THE PIT. DOES NOT INCLUDE THE TRANSFER .
 PIPE LINE LOADS FROM OUT SIDE THE PIT.

(Inside Pit) JUMPER LOADS		F _x (lbe)	F _y (lbe)	F _z (lbe)	M _x (in-lb)	M _y (in-lb)	M _z (in-lb)
Identification: Jumper U2-A ECN #W-320-380 NOZZLE: U2	(Seismic) (*1)	102	86	124	1128	636	816
AutoPipe File: MA-AY02E Node #: B12 Orientation: (*3) ABSOLUTE SUM	(Thermal) (*2)	125	863	158	5376	-768	-4656
		227	949	282	6504	1404	5472

Rev-1
LOADS

NOTES:

- (*1): SEISMIC LOADS COULD BE POSITIVE OR NEGATIVE.
 (*2): THERMAL LOADS SPECIFIED ARE THE ALGEBRIC SUM OF GRAVITY AND THERMAL LOADS.
 (*3): ABSOLUTE SUM IS THE TOTAL OF THERMAL AND SEISMIC DISREGARDING THE SIGNS.

ICF KAISER
HANFORD COMPANY
DESIGN ANALYSIS

Calc No. W320-27-029

Revision No. 0

Page No. 8 of 10

Client WESTINGHOUSE HANFORD COMPANY
 Subject AY FARM - JUMPER STRESS ANALYSIS
 PROJECT W-320 WASTE RETRIEVAL for TANK 241-C-106
 Location: C TANK FARM - 200 W.

WO/Job No. ER4319
 Date 8/31/95
 Checked 9/11/95
 Revised
 By: M.M. Ahmed
 By: M. K. Pal
 By:

Rev-2. By: *M. Ahmed*
 Checked By: 4-12-97

PIT WALL ANCHOR LOADS 1 Rev-2

NOZZLE	ORIENTATION	LOAD CASES	LOADS (FORCES IN POUNDS & MOMENTS IN FT-LBS)						REF:
			Fx	Fy	Fz	Mx	My	Mz	
U-11 PUMP PIT AY-02A		Thermal	63	390	52	182	20	35	AY02A1R2 A00
		Seismic	205	182	90	209	200	27	AY02A2R2 A00
		Total	268	492	142	392	220	62	
U-2 SLUICE PIT AY-02E		Thermal	125	865	157	449	63	387	AY02E-R2 B12
		Seismic	102	86	125	94	53	68	SAME
		Total	227	951	282	543	116	455	

Notes:

1. Seismic Loads could be positive or negative.
2. Thermal loads specified are the algebraic sum of gravity and thermal loads.
3. Total loads specified are the absolute sum of thermal and seismic loads disregarding the signs.

W320-24-017

Pump Pit AY-02A Analysis and
Cover Block Design

FLUOR DANIEL NORTHWEST
INTEROFFICE CORRESPONDENCE

To: C. B. Organ Date: July 14, 1998
Location: Richland, E6-28 Reference: IOC-98-TWRS-040
From: D. T. Chou *DT*
Location: Richland, H5-57 Client: Lockheed Martin Hanford Corporation
Telephone: 376-3123 Subject: W-320 INDEPENDENT DESIGN VERIFICATION ON CALCULATION W-320-24-017, REV. 3, "PUMP PIT AY-02A ANALYSIS AND COVER BLOCK DESIGN"
c: S. K. Farnworth, E6-46 Engineering Document Control, B4-67
A. S. Langevin, S2-47 LMHC Project Files, B4-57
T. C. Oten, G3-12

- References:
1. Structural calculation W-320-24-016, Rev. 2
 2. Kaiser practice ES-7 (per TWRS Project Execution Plan, Attachment 3, use existing procedure for Project W-320)
 3. Drawings H-2-818504 sheets 1 & 2

This memo, and the attached Design Verification Record, reports the design verification results for the above mentioned subject. The design verification used the "Design Review Method" as defined in Reference 2.

The revision involved the addition of one new jumper to the pit. The jumper connected to two existing nozzles at the walls. The Structural Engineer evaluated the overall integrity of the pit/walls for the loads. The Piping Engineer checked/designed the wall local effects from the piping loads, and the pipe anchors.

Were design inputs correctly selected? **Yes. They were the structures, and the loads, including piping loads.**

Were all necessary conditions considered in the design. **Yes**

Are required assumptions adequately described; are sources identified and reasonable for the design? **Yes. Loads from the buried pipe at nozzle U3 were estimated.**

Where necessary, are the assumptions reverified when the design is complete? **NA**

Was an appropriate design method used? **Yes**

Were design inputs correctly incorporated? **Yes**

Is design output reasonable compared to design input? **Yes**

Are necessary design inputs and verification for interfacing organizations specified in design documents or in supporting procedures or instructions? **Yes.**

DTC:sst

Attachment

DESIGN VERIFICATION RECORD

Project/Document Number W320 TANK 241-C-106 SLUICING
CALC W320-24-017, REV 3

Prepared By DAVID T CHOU : _____ : _____
 (Print) (Print) (Print)

Verifier Name D. T. CHOU Initial DTL Date 7/14/98
 (Print)

Verifier Name _____ Initial _____ Date _____
 (Print)

Verifier Name _____ Initial _____ Date _____
 (Print)

Formal Design Verification is determined to be necessary per the Design Verification Screening Criteria and was performed by the following method(s).

- Alternate Calculation Method YES ☒ NO (Circle One)
 Calculation Number _____ Revision _____
- Testing Method YES ☒ NO (Circle One)
 Test Number _____ Revision _____
 Test Title _____
- Identical Method YES ☒ NO (Circle One)
 Document Number _____ Revision _____
 Title _____ Date _____
- Design Review Method ☒ YES NO (Circle One)
 Design Review Chairman D. T. CHOU
 Finding or Attached Memo Report Number SEE THE ATTACHED IOC OF 7-14-98
FROM D. T. CHOU TO C.B. ORGAN
 _____ Date _____

Formal design verification is complete and acceptable:

Design Verification Officer Date 7/16/98

ATTACH ALL DOCUMENTATION RELATED TO THE DESIGN VERIFICATION CONDUCTED.

ICF Kaiser Hanford Company

INTEROFFICE MEMORANDUM

TO C. B. Organ E6-01
Design Verification Officer

DATE August 14, 1995

FROM G. L. Hopkins G3-17

COPIES TO R. W. Davidson S3-07
M. A. Haq G3-17
M. S. Ruben E6-46
Eng Doc Control G3-11

JOB NO. ER4319

SUBJECT REVISION OF STRUCTURAL ANALYSIS OF SLUICING PIT AY-02E

REFERENCES 1. Design Calculation Numbers W320-24-016 and -017, Rev. 1.0
2. InterOffice Memo to C. B. Organ from G. L. Hopkins, "Structural Analysis of Sluicing Pit AY-02E," dated March 31, 1995.

This memo and attached form KEH 1980.00 (16/91) are to perform a design verification of revised subject calculations. This design verification is in accordance with "Design Review Method" as defined by ICF Kaiser Hanford Company (ICF KH) Procedure ES 7, Rev. 3, Section 6.2.

Responses to the questions of Section 6.2.1.4 of Procedure ES 7 are as follows:

- 1) Were the design inputs correctly selected?
YES This conclusion is based on the review of the original calculations.
- 2) Were all necessary conditions considered in the design?
YES
- 3) Are required assumptions adequately described? Are sources identified reasonable for the design?
YES
- 4) Was appropriate design method used?
YES
- 5) Where necessary, are the assumptions reverified when the design is complete?
YES

WORKING TOWARD VPP "STAR" S

KEH 0008.00 (12/94) KEF065

HNF-2466, Rev. 0
Page C-4

EMPLOYEE INVOLVEMENT

ICF Kaiser Hanford Company

INTEROFFICE MEMORANDUM

C. B. Organ

E6-01

2

August 14, 1995

- 6) Were the design inputs correctly incorporated?

YES

- 7) Is the design output reasonable compared to the design input?

YES

- 8) Are necessary design input and verification requirements for interfacing organizations specified in design documents or in supporting procedures or instructions?

YES

- 9) Was the applicable Hanford Plant Standards (HPS) followed? If not, is documented approval included from DOE-RL?

YES SDC 4.1, Rev. 12 was followed.

DESIGN VERIFICATION RECORD

Project/Document Number W320 TANK GLUING, PIT #102E CALCS W320-24-016,
017 REV 1.0Prepared By G. L. Hopkins ; _____ ; _____
(Print) (Print) (Print)Verifier Name G. L. Hopkins Initial GLH Date 8/14/95
(Print)Verifier Name _____ Initial _____ Date _____
(Print)Verifier Name _____ Initial _____ Date _____
(Print)

Formal Design Verification is determined to be necessary per the Design Verification Screening Criteria and was performed by the following method(s).

1. Alternate Calculation Method YES ☒ NO (Circle One)
Calculation Number _____ Revision _____2. Testing Method YES ☒ NO (Circle One)
Test Number _____ Revision _____
Test Title _____3. Identical Method YES ☒ NO (Circle One)
Document Number _____ Revision _____
Title _____ Date _____4. Design Review Method YES ☒ NO (Circle One)
Design Review Chairman G. L. Hopkins
Finding or Attached Memo Report Number SEE ATTACHED FORM #1
8-14-95 FROM G. L. HOPKINS TO C. B. ORCAD.
Date _____

Formal design verification is complete and acceptable:

Design Verification Officer CB Date 8/14/95

ATTACH ALL DOCUMENTATION RI

VERIFICATION CONDUCTED.

This sheet shows the status and description of the attached Design Analysis sheets.

Discipline *Civil/Structural*

WO/Job No. *ER 4319/W320*

Calculation No. *W320-24-017*

Project No. & Name *W320 Tank 241-C-106 Sluicing*

Calculation Item *Pump Pit AY-02A Analysis and Cover Block Design*

These calculations apply to:

Dwg. No. *H-2-818453 shts 1, 2 and 3.* Rev. No. *1/1/0*

Dwg. No. Rev. No.

Other (Study, CDR) *N/A*

Rev. No. *N/A*

The status of these calculations is:

☐ Preliminary Calculations

☒ Final Calculations

☐ Check Calculations (On Calculation Dated)

☐ Void Calculation (Reason Voided)

Incorporated in Final Drawings?

☒ Yes ☐ No

This calculation verified by independent "check" calculations?

☐ Yes ☒ No

Original and Revised Calculation Approvals:

	Rev. 0 Signature/Date	Rev. 1 Signature/Date	Rev. 2 Signature/Date
Originator	<i>John W. Funk 03/08/95</i>	<i>James R. Booth 8/8/95</i>	<i>Ronald W. Davidson 3/1/96</i> <i>Michael B. Lasota 3/19/97</i>
Checked by	<i>James R. Booth 3/8/95</i>	<i>Ronald W. Davidson 8/9/95</i>	<i>William J. Magruder 4/2/96</i> <i>Ronald W. Davidson 3/25/97</i>
Approved by	<i>Ronald W. Davidson 3/10/95</i>	<i>Ronald W. Davidson 8/9/95</i>	<i>Ronald W. Davidson 3/25/97</i>
Checked Against Approved Vendor Data			<i>3/25/97</i>

INDEX

Design Analysis
Page No.

Description

<i>1</i>	<i>Objective, Criteria, Methods, References, Assumptions.</i>
<i>2-5</i>	<i>Weight of Cover Blocks and Pipe Loading.</i>
<i>6</i>	<i>Discussion, Conclusion.</i>
<i>6a, 6b, 6c</i>	<i>Weight and Analysis of New Center Cover Block.</i>
<i>Attach 1</i>	<i>Pipe Loads.</i>
<i>Attach 2</i>	<i>Revised Encasement, Pipe and Jumper Loads.</i>
<i>Attach 3</i>	<i>IOM - As-Found Condition of AY-02A Center Cover Block.</i>
<i>Attach 4</i>	<i>Nozzle Loads from New Supernate Jumper</i>
<i>6a, 6b, 6c</i>	<i>New Supernate Jumper</i>

**FLUOR DANIEL
NOTRHWEST INC**

CALCULATION IDENTIFICATION AND INDEX

Continuation Sheet

Page ~~ii~~ of ~~iii~~

Date _____

03/08/1995

Discipline *Civil/Structural*

WO/Job No. **ER 4319/W320**

Calculation No. **W320-24-017**

	Rev. 0 Signature/Date	Rev. 1 Signature/Date	Rev. 2 Signature/Date
Originator	John W. Funk 03/08/95	James R. Booth 8/8/95	Ronald W. Davidson 3/1/96 Michael B. Lasota 3/19/97
Checked by	James R. Booth 03/08/95	Ronald W. Davidson 8/9/95	William J. Magruder 4/2/96 Ronald W. Davidson 3/25/97

INDEX

Design Analysis
Page No.

Description

[illegible]

REVISION

Revision No.

Description

[illegible]

CALCULATION CROSS INDEX (Typical)

Subject Calculation No. W320 - 2'4-017

Page 66 of 66

[illegible]

DESIGN VERIFICATION SCREENING CRITERIA

Project/Document No. CALC W320-24-017

When the design or design change affects hardware, formal design verification must be performed if one or more of the following questions must be answered affirmatively (YES).

YES

NO

✓

1. Does the design or design change involved meet the established criteria to be considered Safety Class 1 or 2?

^a $n = 10$.

✓

2. Does this design or design change cause or permit changes to Safety Class 1 or 2 instrument or alarm setpoints outside of previously approved operational limits?

✓

3. Does this design or design change significantly affect the nuclear safety consequences of a malfunction or failure of the structure, system, or component?

✓

4. Does this design or design change involve or change design that has previously undergone formal design verification?

Rob Davidson

Assigned Lead Engineer

3/10/95

Date: _____

Per Davidson

Responsible Discipline Manager

3/10/95

Date _____

Original Design Package Distribution:

Project Manager

Design Verification Officer

Engineering Document Control

Design Change Distribution:

Attach to Engineering Change Notice

DESIGN VERIFICATION SCREENING CRITERIA

Calculation

Project/Document No. W320-24-017, Rev 3

When the design or design change affects hardware, independent design verification must be performed if one or more of the following questions must be answered affirmatively (YES).

YES

NO

☒

☐

1. Does the design or design change involved meet the established criteria to be considered Safety Class?

☒

2. Does this design or design change cause or permit changes to Safety Class instrument or alarm setpoints outside of previously approved operational limits?

☒

3. Does this design or design change significantly affect the nuclear or environmental safety consequences of a malfunction or failure of the structure, system, or component?

☒

4. Does this design or design change involve or change design that has previously undergone formal design verification?

Ann S. Langerin

Assigned Lead Engineer

4/16/98

Date

J. Kasnet

Engineering Manager

4/16/98

Date

Original Design Package Distribution:

Project Manager

Engineering Manager

Technical Document Control

Design Change Distribution:

Attach to Design Change Notice

DESIGN ANALYSIS

Client: WHC
Subject: Pump Pit Ay-02A Analysis

Location: 241-AY-102 Tank

WO/Job No. W-320 /ER4319

Date: 03/08/95 By: JW FUNK

Checked: 3/8/95 By: JRB

Revised: 7/13/98 By: Ann S. Langerin

OBJECTIVE:

The purpose of this evaluation is to determine that the existing walls of 241-AY-102 Pump Pit are adequately designed to take the new pipe loads, jumper loads, seismic loads and also existing soil loads without affecting the structural integrity of the pit. This pit will be compared with the sluice pit in Calc. W320-24-016 which was determined to have the worst loading conditions.

CRITERIA:

The criteria for evaluation of pit walls is outlined in SDC 4.1 Rev 11. The existing walls will be analyzed as Safety Class 1 walls.

Functional Design Criteria(FDC) for Tank 241-C-106 Waste Retrieval,
Project W-320 Rev 2

METHODS:

MATCAD 4.0 (A474) was used for load case calculations, modulus of elasticity calculations and evaluation of the pit walls.

REFERENCES:

1. Calculation W320-24-016
2. Dwg's H-2-64313 and H-2-64314

3. See piping calc W320-27-055 "Pit Wall Anchor Analysis" ³
for design of the pipe anchorage to the wall.

ASSUMPTIONS:

1. Due to relatively small overall dimensions of the pit, and a thick (12") reinforced concrete walls, rigid response of the pit is assumed. As a consequence the ground acceleration is used as a seismic input.

CONCLUSION:

See page 6 of this calculation.

DESIGN ANALYSIS

Calc. No. W320-24-017

Revision 0

Page No. 2 of 6

Client: WHC

Subject: Pump Pit Cover Block Wt

Location: 241-AY-102 Tank

WO/Job No. W-320 /ER4319

Date: 03/08/95

By: JW FJUNK

Checked: 3/8/95

By: JRB

Revised:

By:

WEIGHT OF COVER BLOCKS

BLOCK1

SAY CONCRETE WEIGHS 150 LBS PER CUBIC FOOT.

$$A_1 = \frac{55.25 \cdot 30 \cdot 108}{12^3}$$

$$A_1 = 103.59 \text{ ft}^3$$

$$WT_1 = A_1 \cdot 150$$

$$WT_1 = 15539.06 \text{ lbs}$$

Client: WHC
Subject: Pump Pit AY-02A Analysis
and Cover Block Design.
Location: Tank 241-AY-102, Pump Pit.

WO/Job No.: ER4319/W320
Date: 5/15/1996
Checked:
Revised:

By: M.B. Lasota
By: R.W. Davidson
By:

WEIGHT OF CENTER COVER BLOCK, the cover block consist of five distinct layers:

For the reference, see the following sketches.

CENTER COVER BLOCK - SECTION LOOKING EAST

CENTER COVER BLOCK - SECTION LOOKING NORTH

ICF KAISER HANFORD COMPANY

DESIGN ANALYSIS

Calc. No.: W320-24-017

Revision: 2

Page No.: 3a of

Client: WHC

Subject: Pump Pit AY-02A Analysis
and Cover Block Design.

Location: Tank 241-AY-102, Pump Pit.

WO/Job No.: ER4319/W320

Date: 05/15/1996

Checked:

Revised:

By: M.B. Lasota

By: R.W. Davidson

By:

The following are parameters for each of five distinct layers.

$$b_1 := 56.5\text{-in} \quad h_1 := 3\text{-in} \quad l_1 := 107\text{-in} \quad b_{2u} := 56.5\text{-in} \quad b_{2m} := 54.5\text{-in} \quad b_{2l} := 52.5\text{-in}$$

$$l_{2u} := 107\text{-in} \quad l_{2m} := 105.88\text{-in} \quad l_{2l} := 104.75\text{-in} \quad h_2 := 10.5675\text{-in} \quad b_{3u} := 48.5\text{-in} \quad d_{23} := 2\text{-in}$$

$$b_{3m} := 46.25\text{-in} \quad b_{3l} := 44\text{-in} \quad l_{3u} := 104.32\text{-in} \quad l_{3m} := 102.91\text{-in} \quad l_{3l} := 101.5\text{-in} \quad h_3 := 13.25\text{-in}$$

$$d_{3l} := 2\text{-in}$$

Volume of the west cover block is:

$$V_1 := b_1 \cdot l_1 \cdot h_1 \quad V_1 = 10.496 \cdot \text{ft}^3$$

$$A_{2u} := b_{2u} \cdot l_{2u} \quad A_{2u} = 6045.500 \cdot \text{in}^2$$

$$A_{2m} := b_{2m} \cdot l_{2m} \quad A_{2m} = 5770.460 \cdot \text{in}^2 \quad A_{2l} := b_{2l} \cdot l_{2l} \quad A_{2l} = 5499.375 \cdot \text{in}^2$$

$$V_2 := \frac{h_2 \cdot (A_{2u} + 4 \cdot A_{2m} + A_{2l})}{6} \quad V_2 = 35.293 \cdot \text{ft}^3$$

$$V_3 := b_{2l} \cdot d_{23} \cdot \frac{l_{2l} + l_{3u}}{2} \quad V_3 = 6.352 \cdot \text{ft}^3$$

$$A_{3u} := b_{3u} \cdot l_{3u} \quad A_{3u} = 5059.520 \cdot \text{in}^2$$

$$A_{3m} := b_{3m} \cdot l_{3m} \quad A_{3m} = 4759.587 \cdot \text{in}^2 \quad A_{3l} := b_{3l} \cdot l_{3l} \quad A_{3l} = 4466.000 \cdot \text{in}^2$$

$$V_4 := \frac{h_3 \cdot (A_{3u} + 4 \cdot A_{3m} + A_{3l})}{6} \quad V_4 = 36.504 \cdot \text{ft}^3$$

$$V_5 := b_{3l} \cdot l_{3l} \cdot d_{3l} \quad V_5 = 5.169 \cdot \text{ft}^3$$

Gross volume of concrete cover block is:

$$V_g := V_1 + V_2 + V_3 + V_4 + V_5 \quad V_g = 93.813 \cdot \text{ft}^3$$

Length of framing angles is:

$$l_{2x2} := 2 \cdot (l_{3l} + b_{3l}) + 2 \cdot l_{2l} \quad l_{2x2} = 41.708 \cdot \text{ft} \quad A_{2x2} := 0.938 \cdot \text{in}^2$$

$$l_{3x2} := 2 \cdot (l_1 + b_1) \quad l_{3x2} = 27.250 \cdot \text{ft} \quad A_{3x2} := 1.19 \cdot \text{in}^2$$

Volume of penetrations:

3" penetrations:

$$h_{p3u} := 4.8125\text{-in} \quad od_{p3u} := 4.5\text{-in} \quad id_{p3u} := 4.026\text{-in}$$

$$h_{p3l} := 25.75\text{-in} \quad od_{p3l} := 3.5\text{-in} \quad id_{p3l} := 3.068\text{-in}$$

$$t_{p3} := 0.25\text{-in} \quad od_{p3} := 6\text{-in} \quad id_{p3} := 3.0625\text{-in}$$

ICF KAISER HANFORD COMPANY

DESIGN ANALYSIS

Calc. No.: W320-24-017

Revision: 2

Page No.: 3b of

Client: WHC

Subject: Pump Pit AY-02A Analysis
and Cover Block Design.

Location: Tank 241-AY-102, Pump Pit.

WO/Job No.: ER4319/W320

Date: 05/15/1996

Checked:

Revised:

By: M.B. Lasota

By: R.W. Davidson

By:

$$V_{p3} := h_{p3u} \cdot \frac{\pi}{4} \cdot od_{p3u}^2 + h_{p3f} \cdot \frac{\pi}{4} \cdot od_{p3f}^2 + t_{p3} \cdot \frac{\pi}{4} \cdot od_{p3}^2 \quad V_{p3} = 0.192 \cdot ft^3$$

$$V_{p3s} := h_{p3u} \cdot \frac{\pi}{4} \cdot (od_{p3u}^2 - id_{p3u}^2) + h_{p3f} \cdot \frac{\pi}{4} \cdot (od_{p3f}^2 - id_{p3f}^2) + t_{p3} \cdot \frac{\pi}{4} \cdot (od_{p3}^2 - id_{p3}^2)$$

$$V_{p3s} = 0.045 \cdot ft^3$$

12" penetration (valve port):

$$h_{p12u} := 4.8125 \cdot in \quad od_{p12u} := 14 \cdot in \quad id_{p12u} := 13.124 \cdot in$$

$$h_{p12f} := 25.75 \cdot in \quad od_{p12f} := 12.75 \cdot in \quad id_{p12f} := 11.938 \cdot in$$

$$t_{p12} := 0.25 \cdot in \quad od_{p12} := 16 \cdot in \quad id_{p12} := 12 \cdot in$$

$$V_{p12} := h_{p12u} \cdot \frac{\pi}{4} \cdot od_{p12u}^2 + h_{p12f} \cdot \frac{\pi}{4} \cdot od_{p12f}^2 + t_{p12} \cdot \frac{\pi}{4} \cdot od_{p12}^2 \quad V_{p12} = 2.360 \cdot ft^3$$

$$V_{p12s} := h_{p12u} \cdot \frac{\pi}{4} \cdot (od_{p12u}^2 - id_{p12u}^2) + h_{p12f} \cdot \frac{\pi}{4} \cdot (od_{p12f}^2 - id_{p12f}^2) + t_{p12} \cdot \frac{\pi}{4} \cdot (od_{p12}^2 - id_{p12}^2)$$

$$V_{p12s} = 0.299 \cdot ft^3$$

12" matching penetration @ north side of cover block.

Volume of penetration in upper layer (3"):

$$d_{12u} := 4.25 \cdot in \quad d_{12f} := 2.25 \cdot in$$

$$R_o := 8 \cdot in \quad h_1 := 3.000 \cdot in$$

$$A_{10} := R_o^2 \cdot \arccos\left(\frac{d_{12u}}{R_o}\right) - d_{12u} \cdot \sqrt{R_o^2 - d_{12u}^2}$$

$$V_{10} := (\pi \cdot R_o^2 - A_{10}) \cdot h_1 \quad V_{10} = 0.287 \cdot ft^3$$

$$R_i := 7.5 \cdot in \quad A_{1f} := R_i^2 \cdot \arccos\left(\frac{d_{12u}}{R_i}\right) - d_{12u} \cdot \sqrt{R_i^2 - d_{12u}^2}$$

$$V_{1f} := (\pi \cdot R_i^2 - A_{1f}) \cdot h_1 \quad V_{1f} = 0.258 \cdot ft^3$$

$$V_{1s} := V_{10} - V_{1f} \quad V_{1s} = 0.029 \cdot ft^3$$

The expression for the distance from the center of the penetration to the north surface of the cover block in the upper inclined area in terms of the depth is:

$$d_{12u} := 4.25 \cdot in \quad d_{12f} := 2.25 \cdot in$$

$$y := 0 \cdot in \dots h_2$$

$$d(y) := d_{12u} - \frac{d_{12u} - d_{12f}}{h_2} \cdot y \quad d(0 \cdot in) = 4.250 \cdot in \quad d(h_2) = 2.250 \cdot in$$

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DESIGN ANALYSIS

Calc. No.: W320-24-017

Revision: 2

Page No.: 3c of

Client: WHC

Subject: Pump Pit AY-02A Analysis
and Cover Block Design.

Location: Tank 241-AY-102, Pump Pit.

WO/Job No.: ER4319/W320

Date: 05/15/1996

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The expression for the volume of the cylinder cut by the plane inclined with respect to cylinder vertical axis is as follow (16" sch 40 pipe):

$$R_o := 8\text{-in}$$

$$A(y) := R_o^2 \cdot \arccos\left(\frac{d(y)}{R_o}\right) - d(y) \cdot \sqrt{R_o^2 - d(y)^2}$$

$$y_o := 0\text{-in} \quad y_{11} := 2.8125\text{-in}$$

$$V_{2o} := \pi R_o^2 (y_{11} - y_o) - \int_{y_o}^{y_{11}} A(y) dy \quad V_{2o} = 0.263 \cdot \text{ft}^3$$

$$R_i := 7.5\text{-in}$$

$$A(y) := R_i^2 \cdot \arccos\left(\frac{d(y)}{R_i}\right) - d(y) \cdot \sqrt{R_i^2 - d(y)^2}$$

$$y_o := 0\text{-in} \quad y_{11} := 2.8125\text{-in}$$

$$V_{2i} := \pi R_i^2 (y_{11} - y_o) - \int_{y_o}^{y_{11}} A(y) dy \quad V_{2i} = 0.236 \cdot \text{ft}^3$$

$$V_{2s} := V_{2o} - V_{2i} \quad V_{2s} = 0.027 \cdot \text{ft}^3$$

Volume of penetration in layer 3 (1/4" plate):

$$R_{3o} := 9\text{-in} \quad t_3 := 0.25\text{-in} \quad y_3 := y_{11} + 0.5 \cdot t_3 \quad y_3 = 2.938\text{-in}$$

$$d_3 := d(y_3) \quad d_3 = 3.694\text{-in} \quad d_{12u} := 4.25\text{-in} \quad d_{12l} := 2.25\text{-in}$$

$$A_{3o} := R_{3o}^2 \cdot \arccos\left(\frac{d_3}{R_{3o}}\right) - d_3 \cdot \sqrt{R_{3o}^2 - d_3^2} \quad A_{3o} = 62.659\text{-in}^2$$

$$V_{3o} := (\pi R_{3o}^2 - A_{3o}) \cdot t_3 \quad V_{3o} = 0.028 \cdot \text{ft}^3$$

$$R_{3i} := 6\text{-in}$$

$$A_{3i} := R_{3i}^2 \cdot \arccos\left(\frac{d_3}{R_{3i}}\right) - d_3 \cdot \sqrt{R_{3i}^2 - d_3^2} \quad A_{3i} = 15.206\text{-in}^2$$

$$V_{3i} := (\pi R_{3i}^2 - A_{3i}) \cdot t_3 \quad V_{3i} = 0.014 \cdot \text{ft}^3$$

$$V_{3s} := V_{3o} - V_{3i} \quad V_{3s} = 0.014 \cdot \text{ft}^3$$

Client: WHC
Subject: Pump Pit AY-02A Analysis
and Cover Block Design.
Location: Tank 241-AY-102, Pump Pit.

WO/Job No.: ER4319/W320
Date: 05/15/1996
Checked:
Revised:

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By:

The expression for the volume of the cylinder cut by the plane inclined with respect to cylinder vertical axis is as follows, layer 4 (12" std pipe):

$$R_o := 6.375 \cdot \text{in}$$

$$A(y) := R_o^2 \cdot \arccos\left(\frac{d(y)}{R_o}\right) - d(y) \cdot \sqrt{R_o^2 - d(y)^2}$$

$$y_o := 3.0625 \cdot \text{in} \quad y_{11} := 10.5625 \cdot \text{in}$$

$$V_{4o} := \pi R_o^2 \cdot (y_{11} - y_o) - \int_{y_o}^{y_{11}} A(y) dy \quad V_{4o} = 0.434 \cdot \text{ft}^3$$

$$R_i := 6 \cdot \text{in}$$

$$A(y) := R_i^2 \cdot \arccos\left(\frac{d(y)}{R_i}\right) - d(y) \cdot \sqrt{R_i^2 - d(y)^2}$$

$$y_o := 3.0625 \cdot \text{in} \quad y_{11} := 10.5625 \cdot \text{in}$$

$$V_{4i} := \pi R_i^2 \cdot (y_{11} - y_o) - \int_{y_o}^{y_{11}} A(y) dy \quad V_{4i} = 0.393 \cdot \text{ft}^3$$

$$V_{4s} := V_{4o} - V_{4i} \quad V_{4s} = 0.042 \cdot \text{ft}^3$$

Volume of penetration in layer 5 (mid angle L2x2x1/4"):

$$R_{5o} := 6.375 \cdot \text{in} \quad t_5 := 2 \cdot \text{in} \quad y_5 := h_2 \quad y_5 = 10.568 \cdot \text{in}$$

$$d_5 := d(y_5) \quad d_5 = 2.250 \cdot \text{in}$$

$$A_{5o} := R_{5o}^2 \cdot \arccos\left(\frac{d_5}{R_{5o}}\right) - d_5 \cdot \sqrt{R_{5o}^2 - d_5^2} \quad A_{5o} = 0.248 \cdot \text{ft}^2$$

$$V_{5o} := (\pi R_{5o}^2 - A_{5o}) \cdot t_5 \quad V_{5o} = 0.106 \cdot \text{ft}^3$$

$$R_{5i} := 6 \cdot \text{in}$$

$$A_{5i} := R_{5i}^2 \cdot \arccos\left(\frac{d_5}{R_{5i}}\right) - d_5 \cdot \sqrt{R_{5i}^2 - d_5^2} \quad A_{5i} = 0.210 \cdot \text{ft}^2$$

$$V_{5i} := (\pi R_{5i}^2 - A_{5i}) \cdot t_5 \quad V_{5i} = 0.096 \cdot \text{ft}^3$$

$$V_{5s} := V_{5o} - V_{5i} \quad V_{5s} = 0.010 \cdot \text{ft}^3$$

Client: WHC

Subject: Pump Pit AY-02A Analysis
and Cover Block Design.

Location: Tank 241-AY-102, Pump Pit.

WO/Job No.: ER4319/W320

Date: 05/15/1996

Checked:

Revised:

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The expression for the distance from the center of the penetration to the north surface of the cover block in the lower inclined area in terms of the depth is:

$$d_{u2u} := 0.25 \cdot \text{in} \quad d_{u2l} := -2 \cdot \text{in}$$

$$y := 0 \cdot \text{in} \dots h_3$$

$$d(y) := d_{u2u} - \frac{d_{u2u} - d_{u2l}}{h_3} \cdot y \quad d(0 \cdot \text{in}) = 0.250 \cdot \text{in} \quad d(h_3) = -2.000 \cdot \text{in}$$

$$\text{root}(d(y), y) = 1.472 \cdot \text{in} \quad h_6 := \text{root}(d(y), y) \quad h_6 = 1.472 \cdot \text{in} \quad y_6 := h_6$$

The expression for the volume of the cylinder cut by the plane inclined with respect to cylinder vertical axis is as follows layer 6 (12" std pipe):

$$R_o := 6.375 \cdot \text{in}$$

$$A(y) := R_o^2 \cdot \arccos\left(\frac{d(y)}{R_o}\right) - d(y) \cdot \sqrt{R_o^2 - d(y)^2}$$

$$y_o := 0 \cdot \text{in} \quad y_6 = 1.472 \cdot \text{in}$$

$$V_{6o} := \pi R_o^2 (y_6 - y_o) - \int_{y_o}^{y_6} A(y) dy \quad V_{6o} = 0.056 \cdot \text{ft}^3$$

$$R_i := 6 \cdot \text{in}$$

$$A(y) := R_i^2 \cdot \arccos\left(\frac{d(y)}{R_i}\right) - d(y) \cdot \sqrt{R_i^2 - d(y)^2}$$

$$y_o := 0 \cdot \text{in} \quad y_6 = 1.472 \cdot \text{in}$$

$$V_{6i} := \pi R_i^2 (y_6 - y_o) - \int_{y_o}^{y_6} A(y) dy \quad V_{6i} = 0.049 \cdot \text{ft}^3$$

$$V_{6s} := V_{6o} - V_{6i} \quad V_{6s} = 0.006 \cdot \text{ft}^3$$

The expression for the volume of the cylinder cut by the plane inclined with respect to cylinder vertical axis is as follows layer 7 (12" std pipe):

$$R_o := 6.375 \cdot \text{in}$$

$$A(y) := R_o^2 \cdot \arccos\left(\frac{d(y)}{R_o}\right) - d(y) \cdot \sqrt{R_o^2 - d(y)^2}$$

$$y_6 = 1.472 \cdot \text{in} \quad y_7 := h_3 \quad y_7 = 13.250 \cdot \text{in}$$

$$V_{7o} := \int_{y_6}^{y_7} A(y) dy \quad V_{7o} = 0.521 \cdot \text{ft}^3$$

Client: WHC
Subject: Pump Pit AY-02A Analysis
and Cover Block Design.
Location: Tank 241-AY-102, Pump Pit.

WO/Job No.: ER4319/W320
Date: 05/15/1996 By: M.B. Lasota
Checked: By: R.W. Davidson
Revised: By:

$$R_i := 6\text{-in}$$

$$A(y) := R_i^2 \cdot \arccos\left(\frac{d(y)}{R_i}\right) - d(y) \cdot \sqrt{R_i^2 - d(y)^2}$$

$$y_6 := 1.472\text{-in} \quad y_7 := h_3 \quad y_7 := 13.250\text{-in}$$

$$V_{7i} := \int_{y_6}^{y_7} A(y) dy$$

$$V_{7i} = 0.486 \cdot \text{ft}^3$$

$$V_{7s} := V_{7o} - V_{7i}$$

$$V_{7s} = 0.055 \cdot \text{ft}^3$$

Volume of penetration in layer 8 (lower angle L2x2x1/4"):

$$R_o := 6.375\text{-in} \quad t_8 := 2\text{-in}$$

$$A(y) := R_o^2 \cdot \arccos\left(\frac{d(y)}{R_o}\right) - d(y) \cdot \sqrt{R_o^2 - d(y)^2}$$

$$A_{8o} := A(h_3) \quad A_{8o} = 88.913 \cdot \text{in}^2$$

$$V_{8o} := A_{8o} \cdot t_8$$

$$V_{8o} = 0.103 \cdot \text{ft}^3$$

$$R_i := 6\text{-in}$$

$$A(y) := R_i^2 \cdot \arccos\left(\frac{d(y)}{R_i}\right) - d(y) \cdot \sqrt{R_i^2 - d(y)^2}$$

$$A_{8i} := A(h_3) \quad A_{8i} = 80.097 \cdot \text{in}^2$$

$$V_{8i} := A_{8i} \cdot t_8$$

$$V_{8i} = 0.093 \cdot \text{ft}^3$$

$$V_{8s} := V_{8o} - V_{8i}$$

$$V_{8s} = 0.010 \cdot \text{ft}^3$$

Finally, for 12" matching penetration @ north side of cover block, volume of displaced concrete & the steel is.

$$V_{cm12} := V_{1o} + V_{2o} + V_{3o} + V_{4o} + V_{5o} + V_{6o} + V_{7o} + V_{8o} \quad V_{cm12} = 1.798 \cdot \text{ft}^3$$

$$V_{sm12} := V_{1s} + V_{2s} + V_{3s} + V_{4s} + V_{5s} + V_{6s} + V_{7s} + V_{8s} \quad V_{sm12} = 0.193 \cdot \text{ft}^3$$

Volume of the concrete for the cover block:

$$V_c := V_g - 2 \cdot V_{p3} - V_{p12} - V_{cm12} - I_{2x2} \cdot A_{2x2} - I_{3x2} \cdot A_{3x2} \quad V_c = 88.774 \cdot \text{ft}^3$$

Volume of the steel for the cover block (other than rebar):

$$V_s := 2 \cdot V_{p3s} + V_{p12s} + V_{sm12} + I_{2x2} \cdot A_{2x2} + I_{3x2} \cdot A_{3x2} \quad V_s = 1.079 \cdot \text{ft}^3$$

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COMPANY**

DESIGN ANALYSIS

Calc. No.: W320-24-017
Revision: 2
Page No.: 3g of

Client: WHC
Subject: Pump Pit AY-02A Analysis
and Cover Block Design.
Location: Tank 241-AY-102, Pump Pit.

WO/Job No.: ER4319/W320
Date: 05/15/1996 By: M.B. Lasota
Checked: By: R.W. Davidson
Revised: By:

The density of normal weight plain concrete is 150pcf. Increased by 8%, to account for reinforcement, yields:

$$\gamma_{rc} := 1.08 \cdot 150 \cdot \text{pcf} \quad \gamma_{rc} = 162.000 \cdot \text{pcf}$$

The density of steel is 490pcf.

$$\gamma_s := 490 \cdot \text{pcf}$$

Total weight of concrete cover block. Not including penetration plug is:

$$W_{ccb} := V_c \cdot \gamma_{rc} \quad W_{ccb} = 14381 \cdot \text{lbf}$$

Weight of the openings/penetrations and framing angles:

$$W_{scb} := V_s \cdot \gamma_s \quad W_{scb} = 528.706 \cdot \text{lbf}$$

Weight of the concrete block is:

$$W_{cb} := W_{ccb} + W_{scb} \quad W_{cb} = 14910.163 \cdot \text{lbf}$$

In further design use:

$$W_{cb} := 15000 \cdot \text{lbf}$$

Weight of the plugs.

Since there is no special geometric condition, the weight of the each individual plug should be approximately equal to that of the displaced concrete (the shielding properties are proportional to the material density).

Location of the Center of Gravity of the Center Cover Block without plugs.

x - is defined in N-S direction z - is defined in W-E direction

Origin of the coordinate system is located at north-west upper corner of the cover block. Penetrations are numbered as follows: 1 - matching 12"φ penetration, 2 - 12"φ valve port, 3 - 3"φ west penetration and 4 - 3"φ east penetration.

$$x_1 := 4.25 \cdot \text{in} \quad z_1 := 53.5 \cdot \text{in} \quad x_2 := 17.5 \cdot \text{in} \quad z_2 := 32.5 \cdot \text{in} \quad x_3 := 35.75 \cdot \text{in} \quad z_3 := 15.5 \cdot \text{in}$$

$$x_4 := 49.25 \cdot \text{in} \quad z_4 := 41.5 \cdot \text{in} \quad x_g := 28.25 \cdot \text{in} \quad z_g := 53.5 \cdot \text{in} \quad W_{cb1} := W_{ccb} + W_{scb}$$

$$W_{cb1} = 14910.163 \cdot \text{lbf}$$

$$x_o := \frac{[V_g \cdot x_g - V_{cm12} \cdot x_1 - V_{p12} \cdot x_2 - V_{p3} \cdot (x_3 + x_4)] \cdot \gamma_{rc} + [V_{sm12} \cdot x_1 + V_{p12s} \cdot x_2 + V_{p3s} \cdot (x_3 + x_4)] \cdot \gamma_s}{(V_g - V_{cm12} - V_{p12} - V_{p3}) \cdot \gamma_{rc} + (V_{sm12} + V_{p12s} + V_{p3s}) \cdot \gamma_s}$$

$$x_o = 28.707 \cdot \text{in}$$

$$z_o := \frac{[V_g \cdot z_g - V_{cm12} \cdot z_1 - V_{p12} \cdot z_2 - V_{p3} \cdot (z_3 + z_4)] \cdot \gamma_{rc} + [V_{sm12} \cdot z_1 + V_{p12s} \cdot z_2 + V_{p3s} \cdot (z_3 + z_4)] \cdot \gamma_s}{(V_g - V_{cm12} - V_{p12} - V_{p3}) \cdot \gamma_{rc} + (V_{sm12} + V_{p12s} + V_{p3s}) \cdot \gamma_s}$$

$$z_o = 53.833 \cdot \text{in}$$

**ICF KAISER HANFORD
COMPANY****DESIGN ANALYSIS**Calc. No.: W320-24-017
Revision: 2
Page No.: 3h ofClient: WHC
Subject: Pump Pit AY-02A Analysis
and Cover Block Design.
Location: Tank 241-AY-102, Pump Pit.WO/Job No.: ER4319/W320
Date: 05/15/1996
Checked:
Revised:By: M.B. Lasota
By: R.W. Davidson
By:Cover Block Design:**Dead Load:**Recall: $W_{cb} = 15.000 \cdot \text{kips}$ - weight of the cover block excluding plugs $V_{cd} := 2 \cdot V_{p3} + V_{p12} + V_{cm12}$ - volume of displaced concrete at penetrations. $V_{cd} = 4.542 \cdot \text{ft}^3$ $W_{cb} + V_{cd} \cdot \gamma_{rc} = 15.736 \cdot \text{kips}$ - increased weight used for calculation of the uniformly distributed load. $I_{3l} = 101.500 \cdot \text{in}$ $w_{d1} := \frac{W_{cb} + V_{cd} \cdot \gamma_{rc}}{I_{3l}}$ - Maximum weight per linear foot of cover block: $w_{d1} = 1.860 \cdot \frac{\text{kips}}{\text{ft}}$ **Live Load:** $q_{ll} := 50 \cdot \text{psf}$ recall width of the top of cover block: $b_1 = 56.500 \cdot \text{in}$ $w_l := b_1 \cdot q_{ll}$ $w_l = 0.235 \cdot \text{kips} \cdot \text{ft}^{-1}$ Floor load is conservative since access on top of pit is restricted.**Seismic Load:**

An equivalent static evaluation will be used in lieu of a dynamic analysis for a simplified and conservative approach. The lateral cover block load must be multiplied by 1.5 per reference 9. In the equivalent static evaluation the fundamental frequency is not calculated but is assumed to be such that response acceleration is the peak of the response spectrum.

 $z := 0.47$ Response Spectrum Acceleration (Ref 1, pg 24, Table 6)
@ 7% of Critical Damping (Conservative) $F_{H1} := 1.5 \cdot z \cdot w_{d1}$ $F_{H1} = 1.312 \cdot \frac{\text{kips}}{\text{ft}}$

The vertical seismic load is 2/3 of the horizontal load (REF 1).

 $w_{e1} := \frac{2}{3} \cdot F_{H1}$ $w_{e1} = 0.874 \cdot \frac{\text{kips}}{\text{ft}}$ **Environmental Loads:**

Ashfall and snow loading will be combined as stated in SDC 4.1, Rev. 11, page 8 and substituted for tornado loads as stated in the SDC and ACI 349, sec. 9.2.1, load case 5. By inspection, a wind blown object as described in SDC 4.1 will not penetrate the cover blocks.

Ashfall loading: $w_{ash} := 24 \cdot \text{psf}$ Snow loading: $w_{sn} := 20 \cdot \text{psf}$ recall width of the top of cover block: $b_1 = 56.500 \cdot \text{in}$ $w_a := (w_{ash} + w_{sn}) \cdot b_1$ $w_a = 0.207 \cdot \frac{\text{kips}}{\text{ft}}$ Combined distributed load from snow and ashfall.

Client: WHC
Subject: Pump Pit AY-02A Analysis
and Cover Block Design.
Location: Tank 241-AY-102, Pump Pit.

WO/Job No.: ER4319/W320
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Checked: By: R.W. Davidson
Revised: By:

Combined Loading: The following load cases were determined to be valid load combinations from ACI 349, sec 9.2.1 which will be compared to determine the Ultimate Moment.

$$\begin{aligned} w_1 &:= 1.4 \cdot w_{d1} + 1.7 \cdot w_l & w_1 &= 3.005 \cdot \frac{\text{kips}}{\text{ft}} & w_7 &:= w_{d1} + w_l & w_7 &= 2.096 \cdot \frac{\text{kips}}{\text{ft}} \\ w_2 &:= 1.4 \cdot w_{d1} + 1.7 \cdot w_l & w_2 &= 3.005 \cdot \frac{\text{kips}}{\text{ft}} & w_8 &:= w_{d1} + w_l + w_{e1} & w_8 &= 2.970 \cdot \frac{\text{kips}}{\text{ft}} \\ w_3 &:= 1.4 \cdot w_{d1} + 1.7 \cdot w_l + 1.7 \cdot w_a & w_3 &= 3.357 \cdot \frac{\text{kips}}{\text{ft}} & w_9 &:= 1.05 \cdot w_{d1} + 1.3 \cdot w_l & w_9 &= 2.259 \cdot \frac{\text{kips}}{\text{ft}} \\ w_4 &:= w_{d1} + w_l + w_{e1} & w_4 &= 2.970 \cdot \frac{\text{kips}}{\text{ft}} & w_{10} &:= 1.05 \cdot w_{d1} + 1.3 \cdot w_l & w_{10} &= 2.259 \cdot \frac{\text{kips}}{\text{ft}} \\ w_5 &:= w_{d1} + w_l + w_a & w_5 &= 2.303 \cdot \frac{\text{kips}}{\text{ft}} & w_{11} &:= 1.05 \cdot w_{d1} + 1.3 \cdot w_l + 1.3 \cdot w_a & w_{11} &= 2.529 \cdot \frac{\text{kips}}{\text{ft}} \\ w_6 &:= w_{d1} + w_l & w_6 &= 2.096 \cdot \frac{\text{kips}}{\text{ft}} \end{aligned}$$

Load combination 3 is a controlling combination, hence ultimate moment can be computed using the following loads:

$$w_3 = 3.357 \cdot \frac{\text{kips}}{\text{ft}}$$

$$L := 131 \quad L = 8.458 \cdot \text{ft}$$

- Length of the beam, see drawing ECN-W320-319, sh.7.

$$a := \frac{L}{2} \quad a = 50.750 \cdot \text{in}$$

- Distance from East end of beam to critical section.

$$x := \frac{L}{2} \quad x = 50.750 \cdot \text{in}$$

- location of the max Moment ($V(x)=0$)

$$M_{umax} := \frac{w_3 \cdot x \cdot (L - x)}{2}$$

$$M_{umax} = 30.021 \cdot \text{kips} \cdot \text{ft}$$

- maximum moment in the cover block.

$$M_u := M_{umax}$$

$$M_u = 30.021 \cdot \text{ft} \cdot \text{kips}$$

**ICF KAISER HANFORD
COMPANY****DESIGN ANALYSIS**

Calc. No.: W320-24-017

Revision: 2

Page No.: 3j of

Client: WHC

Subject: Pump Pit AY-02A Analysis
and Cover Block Design.

Location: Tank 241-AY-102, Pump Pit.

WO/Job No.: ER4319/W320

Date: 05/15/1996

Checked:

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MD
RD**Determine required flexural reinforcement:**

$$f_c := 4000 \text{ psi}$$

$$f_y := 60000 \text{ psi}$$

$$h := 30.8125 \text{ in}$$

$$d := h - (1.5 \text{ in} + 0.3125 \text{ in}) \quad \text{Assume \#5 bars.}$$

$$d = 29.000 \text{ in}$$

$$b := 39.5 \text{ in}$$

Approximate width of beam

$$F := \frac{b \cdot d^2}{12000} \cdot \text{in}^{-3}$$

$$F = 2.768$$

$$K_n := \frac{M_u}{F} \cdot (\text{ft} \cdot \text{kips})^{-1} \quad K_n = 10.845 \quad \text{Use} \quad K_n := 175 \quad \text{Ref ACI 340.1R-91, FLEXURE 2.2.}$$

$$a_n := 4.37$$

$$A_s := \frac{M_u}{d \cdot a_n} \cdot \frac{\text{in}^3}{\text{ft} \cdot \text{kips}}$$

$$A_s = 0.237 \cdot \text{in}^2$$

$$A_{smin} := \frac{4}{3} \cdot A_s$$

$$A_{smin} = 0.316 \cdot \text{in}^2$$

controls.

Check minimum steel required ref ACI 10.5

$$A_{smin} := 0.0033 \cdot b \cdot d$$

$$A_{smin} = 3.780 \cdot \text{in}^2$$

Use #5 bar @ 7 in for a steel area of 0.53 sq. inches /ft top and bottom of cover block.**Determine shear reinforcement requirements due to shear at the critical section at the 12" penetration.**

Determine shear and reinforcement requirements due to shear at a distance from the support equal to the depth of the beam.

$$V_{ud} := \frac{w \cdot 3 \cdot L}{2} \cdot \frac{L - 2 \cdot d}{L}$$

$$V_{ud} = 6.084 \cdot \text{kips}$$

Allowable Shear: (consider least width of the cover block).

$$b = 3.292 \cdot \text{ft}$$

$$V_c := 2 \cdot \sqrt{f_c \cdot \text{psi} \cdot b \cdot d}$$

$$V_c = 144.896 \cdot \text{kips} \quad \phi := 0.85$$

$$V_n := \phi \cdot V_c$$

$$V_n = 123.161 \cdot \text{kips}$$

$$0.5 \cdot V_n = 61.581 \cdot \text{kips}$$

Since $V_{ud} < 0.5 \cdot V_n$ Design for shear reinforcement not required per ACI 349, Sec. 11.5.5.1.

Development Length: Development length for number 5 bars is 12 inches. Bars will be bent and overlapped in the proximity of penetration openings.

Conclusion.

Design of the cover block as shown on the ECN-W320- 319 is adequate.

Client: NHC
Subject: Pump Pit AY-02A Analysis
and Cover Block Design.
Location: Tank 241-AY-102, Pump Pit.

WO/Job No.: ER4319/W320
Date: 2/26/1997
Checked:
Revised:

By: M.B. Lasota
By: R.W. Davidson
By:

WEIGHT OF SOUTH COVER BLOCK - the cover block consist of five distinct layers:

For the reference, see the following sketches:

SOUTH COVER BLOCK - SECTION LOOKING EAST

SOUTH COVER BLOCK - SECTION LOOKING NORTH

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Let i denote a layer numbered in sequence from the top of the cover block.

b_{t_i} - width of the top surface of the layer.

b_{m_i} - width of the middle surface of the layer.

b_{b_i} - width of the bottom surface of the layer.

L_{t_i} - length of the top surface of the layer.

L_{m_i} - length of the middle surface of the layer.

L_{b_i} - length of the bottom surface of the layer.

h_i - thickness of the layer.

$i := 0, 1 \dots 4$

$b_{t_i} :=$	$b_{m_i} :=$	$b_{b_i} :=$	$L_{t_i} :=$	$L_{m_i} :=$	$L_{b_i} :=$	$h_i :=$
49-in	49-in	49-in	107-in	107-in	107-in	2-in
49-in	49.35-in	49.7-in	107-in	105.7-in	104.4-in	11.25-in
49.7-in	49.59-in	49.47-in	104.4-in	104.17-in	103.94-in	2-in
51.22-in	51.74-in	52.25-in	103.94-in	102.47-in	101-in	12.75-in
52.25-in	52.25-in	52.25-in	101-in	101-in	101-in	2-in

$$V_i := \frac{h_i (b_{t_i} L_{t_i} + 4 b_{m_i} L_{m_i} + b_{b_i} L_{b_i})}{6}$$

$$\frac{V}{ft^3} = \begin{bmatrix} 6.068 \\ 33.959 \\ 5.979 \\ 39.116 \\ 6.108 \end{bmatrix}$$

Gross volume of concrete cover block is:

$$V_g := \sum_i V_i \quad V_g = 91.230 \cdot ft^3$$

Length of framing angles is:

$$l_{2x2} := 2 \cdot (b_{t_1} + L_{t_1} + b_{b_4} + L_{b_4}) + L_{m_3} \quad l_{2x2} = 60.081 \cdot ft \quad A_{2x2} = 0.938 \cdot in^2$$

Client: NHC

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WO/Job No.: ER4319/W320

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By: R.W. Davidson

By:

Since there is no special geometric condition, the weight of the each individual plug should be approximately equal to that of the displaced concrete (the shielding properties are proportional to the material density).

Volume of the concrete for the cover block:

$$V_c := V_g$$

$$V_c = 91.230 \cdot \text{ft}^3$$

Volume of the steel for the cover block (other than rebar):

$$V_s := 1 \cdot 2 \times 2 \cdot A \cdot 2 \times 2$$

$$V_s = 0.391 \cdot \text{ft}^3$$

Volume of the lead shielding on the top of the cover block:

$$t_l := 0.75 \cdot \text{in} \quad V_l := b_{t_0} \cdot L \cdot t_0 \cdot t_l$$

$$V_l = 2.276 \cdot \text{ft}^3$$

The density of normal weight plain concrete is 150pcf. Increased by 8%, to account for reinforcement, yields:

$$\gamma_{rc} := 1.08 \cdot 150 \cdot \text{pcf} \quad \gamma_{rc} = 162.00 \cdot \text{pcf}$$

The density of steel γ_s and lead γ_{pb} is:

$$\gamma_s := 490 \cdot \text{pcf} \quad \gamma_{pb} := 0.4097 \cdot \text{pci} \quad \gamma_{pb} = 708 \cdot \text{pcf}$$

Total weight of concrete cover block.

$$W_{ccb} := V_c \cdot \gamma_{rc} \quad W_{ccb} = 14779 \cdot \text{lbf}$$

Weight of the lead shielding and framing angles:

$$W_{scb} := V_s \cdot \gamma_s + V_l \cdot \gamma_{pb} \quad W_{scb} = 1803 \cdot \text{lbf}$$

Weight of the concrete block is:

$$W_{cb} := W_{ccb} + W_{scb} \quad W_{cb} = 16582 \cdot \text{lbf}$$

In further design use:

$$W_{cb} := 17000 \cdot \text{lbf}$$

Location of the Center of Gravity of the South Cover Block including plugs.

x - is defined in east direction y - is defined in north direction

Origin of the coordinate system is located at southwest upper corner of the cover block. Penetrations are numbered as follows: 1 - 4" ϕ existing penetration, 2 - 3" ϕ existing core drill, 3 - 3" ϕ new core drill.

Client: NHC

Subject: Pump Pit AY-02A Analysis
and Cover Block Design.

Location: Tank 241-AY-102, Pump Pit.

WO/Job No.: ER4319/W320

Date: 2/28/1997

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Revised:

By: M.B. Lasota

By: R.W. Davidson

By:

SOUTH COVER BLOCK - PLAN

$$x_1 := \frac{L_{t_0}}{2} \quad y_0 := \frac{b_{m_0}}{2} \quad \Delta_1 := \frac{3\text{-in}}{2.5\text{-ft} - 2 \cdot 2\text{-in}} \cdot \frac{h_1}{2} \quad \Delta_2 := \frac{3\text{-in}}{2.5\text{-ft} - 2 \cdot 2\text{-in}} \cdot \left(h_1 + \frac{h_2}{2} \right)$$

$$\Delta_3 := \frac{3\text{-in}}{2.5\text{-ft} - 2 \cdot 2\text{-in}} \cdot \left(h_1 + h_2 + \frac{h_3}{2} \right) \quad \Delta_4 := \frac{3\text{-in}}{2.5\text{-ft} - 2 \cdot 2\text{-in}} \cdot (h_1 + h_2 + h_3)$$

$$y_1 := \frac{b_{m_1}}{2} + \Delta_1 \quad y_2 := \frac{b_{m_2}}{2} + \Delta_2 \quad y_3 := \frac{b_{m_3}}{2} + \Delta_3 \quad y_4 := \frac{b_{m_4}}{2} + \Delta_4$$

$$\frac{y}{\text{in}} = \begin{bmatrix} 24.500 \\ 25.324 \\ 26.208 \\ 28.134 \\ 29.125 \end{bmatrix} \quad \frac{x}{\text{in}} = \begin{bmatrix} 53.500 \\ 53.500 \\ 53.500 \\ 53.500 \\ 53.500 \end{bmatrix} \quad x_o := \frac{\gamma_{rc} \sum_i V_i \gamma_i x_i + V_i \gamma_o \gamma_{pb} + V_s \gamma_o \gamma_s}{V_g \gamma_{rc} + V_i \gamma_{pb} + V_s \gamma_s}$$

$$y_o := \frac{\gamma_{rc} \sum_i V_i \gamma_i y_i + V_i \gamma_o \gamma_{pb} + \left[2 \cdot (b_{t_1} + L_{t_1}) \cdot y_0 + 2 \cdot (b_{t_4} + L_{t_4}) \cdot \left(\frac{b_{m_4}}{2} + \Delta_4 \right) + L_{m_3} \cdot y_3 \right] \gamma_s \cdot A_{2x2}}{V_g \gamma_{rc} + V_i \gamma_{pb} + V_s \gamma_s}$$

$$x_o = 53.500\text{-in} \quad y_o = 26.567\text{-in}$$

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WO/Job No.: ER4319/W320

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By: M.B. Lasota

By: R.W. Davidson

By:

Cover Block Design:

Dead Load:

Recall: $W_{cb} = 17.000 \cdot \text{kips}$ - weight of the cover block including plugs

$$L_{t_0} = 107.00 \cdot \text{in}$$

$$w_{d1} = \frac{W_{cb}}{L_{t_0}} \quad \text{- Maximum weight per linear foot of cover block: } w_{d1} = 1.91 \cdot \frac{\text{kips}}{\text{ft}}$$

Live Load: $q_{ll} = 50 \cdot \text{psf}$ recall width of the top of cover block: $b_{b_0} = 49.00 \cdot \text{in}$

$$w_l = b_{b_0} \cdot q_{ll} \quad w_l = 0.20 \cdot \frac{\text{kips}}{\text{ft}} \quad \text{Floor load is conservative since access on top of pit is restricted.}$$

Seismic Load:

An equivalent static evaluation will be used in lieu of a dynamic analysis for a simplified and conservative approach. The lateral cover block load must be multiplied by 1.5 per reference 9. In the equivalent static evaluation the fundamental frequency is not calculated but is assumed to be such that response acceleration is the peak of the response spectrum.

$$z = 0.47$$

Response Spectrum Acceleration (Ref 1, pg 24, Table 6)
@ 7% of Critical Damping (Conservative)

$$F_{H1} = 1.5 \cdot z \cdot w_{d1}$$

$$F_{H1} = 1.344 \cdot \frac{\text{kips}}{\text{ft}}$$

The vertical seismic load is 2/3 of the horizontal load (Ref 1).

$$w_{e1} = \frac{2}{3} \cdot F_{H1}$$

$$w_{e1} = 0.896 \cdot \frac{\text{kips}}{\text{ft}}$$

Environmental Loads:

Ashfall and snow loading will be combined as stated in SDC 4.1, Rev. 11, page 8 and substituted for tornado loads as stated in the SDC and ACI 349, sec. 9.2.1, load case 5. By inspection, a wind blown object as described in SDC 4.1 will not penetrate the cover blocks.

$$\text{Ashfall loading: } w_{ash} = 24 \cdot \text{psf}$$

$$\text{Snow loading: } w_{sn} = 20 \cdot \text{psf} \quad \text{recall width of the top of cover block: } b_{b_0} = 49.00 \cdot \text{in}$$

$$w_a = (w_{ash} + w_{sn}) \cdot b_{b_0} \quad w_a = 0.18 \cdot \frac{\text{kips}}{\text{ft}} \quad \text{Combined distributed load from snow and ashfall.}$$

Client: NHC
Subject: Pump Pit AY-02A Analysis
and Cover Block Design.
Location: Tank 241-AY-102, Pump Pit.

WO/Job No.: ER4319/W320
Date: 2/28/1997
Checked:
Revised:

By: M.B. Lasota
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Combined Loading: The following load cases were determined to be valid load combinations from ACI 349, sec 9.2.1 which will be compared to determine the Ultimate Moment.

$$\begin{aligned} w_1 &:= 1.4 \cdot w_{d1} + 1.7 \cdot w_l & w_7 &:= w_{d1} + w_l & w_7 &:= 2.111 \cdot \frac{\text{kips}}{\text{ft}} \\ w_2 &:= 1.4 \cdot w_{d1} + 1.7 \cdot w_l & w_8 &:= w_{d1} + w_l + w_{e1} & w_8 &:= 3.007 \cdot \frac{\text{kips}}{\text{ft}} \\ w_3 &:= 1.4 \cdot w_{d1} + 1.7 \cdot w_l + 1.7 \cdot w_a & w_9 &:= 1.05 \cdot w_{d1} + 1.3 \cdot w_l & w_9 &:= 2.267 \cdot \frac{\text{kips}}{\text{ft}} \\ w_4 &:= w_{d1} + w_l + w_{e1} & w_{10} &:= 1.05 \cdot w_{d1} + 1.3 \cdot w_l & w_{10} &:= 2.267 \cdot \frac{\text{kips}}{\text{ft}} \\ w_5 &:= w_{d1} + w_l + w_a & w_{11} &:= 1.05 \cdot w_{d1} + 1.3 \cdot w_l + 1.3 \cdot w_a & w_{11} &:= 2.501 \cdot \frac{\text{kips}}{\text{ft}} \\ w_6 &:= w_{d1} + w_l & w_6 &:= 2.111 \cdot \frac{\text{kips}}{\text{ft}} \end{aligned}$$

Load combination 3 is a controlling combination, hence ultimate moment can be computed using the following loads:

$$w_3 = 3.322 \cdot \frac{\text{kips}}{\text{ft}}$$

$$L := L_{b4} - 2 \cdot 1 \cdot \text{in} \quad L = 8.250 \cdot \text{ft}$$

- Length of the beam, see plan.

$$x_0 := \frac{L}{2} \quad x_0 = 49.500 \cdot \text{in}$$

- Distance from East end of beam to critical section.

$$x := \frac{L}{2} \quad x = 49.500 \cdot \text{in}$$

- location of the max Moment ($V(x)=0$)

$$M_{umax} := \frac{w_3 \cdot x \cdot (L - x)}{2}$$

$$M_{umax} = 28.26 \cdot \text{kips} \cdot \text{ft}$$

- maximum moment in the cover block.

$$M_u := M_{umax}$$

$$M_u = 28.26 \cdot \text{ft} \cdot \text{kips}$$

Client: NHC

 Subject: Pump Pit AY-02A Analysis
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Location: Tank 241-AY-102, Pump Pit.

WO/Job No.: ER4319/W320

Date: 3/03/1997

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By: M.B. Lasota

By: R.W. Davidson

By:

Determine strength of the cover block:

Properties of the concrete and the reinforcing steel can be found on the drawing H-2-64322 rev. 3 and are:

Concrete 28 day strength is:

$$f_c := 3000 \text{ psi}$$

ASTM A-15 intermediate grade billet steel, min. yield strength is:

$$f_y := 40000 \text{ psi}$$

$$E_s := 29000 \text{ ksi}$$

Bar sizes: main bars - #5, stirrups - #4

$$h := 30 \text{ in} \quad d := h - (1.5 \text{ in} + 0.5 \text{ in} + 0.3125 \text{ in})$$

$$d = 27.688 \text{ in}$$

$$b := b_{m2} \quad b = 49.6 \text{ in} \quad \text{Average width of beam}$$

From the plan of the Cover Block it is quite clear that between existing and the new core drill the only one tension bar can be cut. Under those circumstances the nominal flexural strength of the cover block in flexure (neglecting compression reinforcement) is:

$$A_s := 4 \cdot 0.31 \text{ in}^2 \quad A_s = 1.240 \text{ in}^2$$

Assuming steel yields when the nominal strength is reached:

$$C(a) := 0.85 \cdot f_c \cdot b \cdot a$$

$$T := A_s \cdot f_y \quad T = 49.60 \text{ kips}$$

 Since from equilibrium: $C(a) := T$

$$a := \frac{T}{0.85 \cdot f_c \cdot b} \quad a = 0.392 \text{ in}$$

$$\beta_1 := 0.85 \quad \text{for } f_c = 4000 \text{ psi}$$

The neutral axis position is

$$x := \frac{a}{\beta_1} \quad x = 0.461 \text{ in}$$

The strain in the tension steel when the strain of 0.003 in the concrete is reached can be determined by straight line proportion.

$$\epsilon_s := \frac{d - x}{x} \cdot 0.003 \quad \epsilon_s = 0.177$$

$$\epsilon_y := \frac{f_y}{E_s} \quad \epsilon_y = 0.00138$$

 Since actual strain ϵ_s is much larger than the yield strain ϵ_y , it proves true the assumption that the steel yields before the nominal strength is reached, which indicates ductile condition.

$$M_n := T \cdot \left(d - \frac{a}{2} \right) \quad M_n = 1363.6 \text{ in-kips}$$

$$\phi := 0.9 \quad \frac{M_u}{\phi} = 376.8 \text{ in-kips} \quad \text{so} \quad M_n \geq \frac{M_u}{\phi}$$

Client: NHC

Subject: Pump Pit AY-02A Analysis
and Cover Block Design.

Location: Tank 241-AY-102, Pump Pit.

WO/Job No.: ER4319/W320

Date: 3/03/1997

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By: M.B. Lasota

By: R.W. Davidson

By:

Determine shear reinforcement requirements due to shear at the critical section.

Determine shear and reinforcement requirements due to shear at a distance from the support equal to the depth of the beam.

$$V_{ud} := \frac{w_s \cdot L}{2} \cdot \frac{L - 2 \cdot d}{L} \quad V_{ud} = 6.038 \cdot \text{kips}$$

Allowable Shear: (consider least width of the cover block). $b = 49.6 \cdot \text{in}$

$$V_c = 2 \cdot \sqrt{f_c} \cdot \text{psi} \cdot b \cdot d \quad V_c = 150.4 \cdot \text{kips} \quad \phi = 0.85 \quad V_n = \phi \cdot V_c \quad V_n = 127.8 \cdot \text{kips}$$

$$0.5 \cdot V_n = 63.9 \cdot \text{kips}$$

Since $V_{ud} < 0.5 \cdot V_n$ Design for shear reinforcement not required per ACI 349, Sec. 11.5.5.1.

Conclusion.

Design of the cover block with one tension and one compression bar cut is still adequate.

DESIGN ANALYSIS

Calc. No. W320-24-017

Revision No.: 2

Page No. 5 of

Client NHC
Subject Pump Pit AY-02A Analysis
and Cover Block Design.
Location Tank 241-AY-102, Pump Pit

WO/Job No.
Date: 3/18/1997
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Revised:

W320/ER4319
By: M.B. Lasota
By: R.W. Davidson
By:

U-11 OPERATING LOADS 241-AY-02A Pump Pit

	F _x lbf	F _y lbf	F _z lbf	M _x in-lbf	M _y in-lbf	M _z in-lbf
Pipe rev. 0	223	59	425	780	3684	48
Pipe rev. 1	236	46	452	480	1776	24
Pipe rev. 2	305	78	536	1344	12720	108
Encasement rev. 0	0	0	2503	0	0	0
Encasement rev. 1	0	0	2503	0	0	0
Encasement rev. 2	0	0	3199	0	0	0
Jumper rev. 0	1329	19	424	144	3540	9600
Jumper rev. 1	1328	33	427	204	4812	9624
Jumper rev. 2	63	390	52	2196	240	420
Total rev. 0	1552	78	3352	924	7224	9648
Total rev. 1	1564	79	3382	684	6588	9648
Total rev. 2	368	468	3787	3540	12960	528
Total des basis	765	929	4187	7440	29630	4680
Total rev0/des basis	2.03	0.08	0.80	0.12	0.24	2.06
Total rev1/des basis	2.04	0.09	0.81	0.09	0.22	2.06
Total rev2/des basis	0.48	0.50	0.90	0.48	0.44	0.11

ref calc W320-24-16 rev. 2

U-11 SEISMIC LOADS 241-AY-02A Pump Pit

	F _x lbf	F _y lbf	F _z lbf	M _x in-lbf	M _y in-lbf	M _z in-lbf
Encasement rev. 0	0	0	2644	0	0	0
Encasement rev. 1	0	0	2644	0	0	0
Encasement rev. 2	0	0	3378	0	0	0
Jumper rev. 0	19	19	13	84	48	168
Jumper rev. 1	31	21	12	120	108	252
Jumper rev. 2	205	102	90	2508	2400	324
Total rev. 0	19	19	2657	84	48	168
Total rev. 1	31	21	2656	120	108	252
Total rev. 2	205	102	3468	2508	2400	324
Total des basis	765	929	4187	7440	29630	4680
Total rev0/des basis	0.02	0.02	0.63	0.01	0.00	0.04
Total rev1/des basis	0.04	0.02	0.63	0.02	0.00	0.05
Total rev2/des basis	0.27	0.11	0.83	0.34	0.08	0.07

ref calc W320-24-16 rev. 2

DESIGN ANALYSISClient **NHC**WO/Job No.: **W-320/ER4319**Subject **Pump Pit AY-02A Analysis**Date: **03/08/95**By: **J.W. Funk**

Checked:

By: **R.W. Davidson**Location **241-AY-102 Tank**Revised: **3/24/97**By: **M.B. Lasota** *me***DISCUSSION**

The Sluice Pit and Pump Pit of AY-102 were both looked at to see which one had the worst loading conditions. It was determined that the Sluice Pit had the worst loading conditions and that it would be analyzed. The Pump Pit in this calculation will be compared with the Sluice Pit in Calculation W320-24-016 to show the structural adequacy of the Pump Pit.

Walls

The size, thickness and reinforcement of the walls in the Pump and Sluice Pit will be compared first. The walls in both pits are of the same thickness (12.0"). Reinforcement however in the pump pit is greater than that of the sluice pit. The pump pit has #5 at 12 in on center each way, where as the sluice pit has #5 at 12 in and #4 at 12 in for reinforcement (H-2-64313 and H-2-64314). The Pump Pit wall is also not as high 7.59 ft versus 8.96 ft for the Sluice Pit which reduces acting soil pressures on the walls. The length of the wall in the pump pit is 12' and the length of the wall in the sluice pit is 8'. this however is negligible and will be explained next with pipe and jumper loads.

Pipe and Jumper Loads

The length of the Pump Pit wall is negligible due to the loads on the Sluice Pit wall being considerably larger than the ones applied to the Pump Pit wall. The larger loads on the Sluice Pit wall will cause considerably higher stresses than the loads on the 12' wall in the Pump Pit. The U-2 loads can be seen in Attachment 1 and the U-11 loads can be seen on page 5 of this calculation, which has tables showing the loads in two groups operating this seismic. The loads acting on the south wall (U-2) of the Sluice Pit are greater than the loads acting on the west wall (U-11) of the Pump Pit in the most critical directions Fy, Fz, Mx and My.

CONCLUSION

The strength of the Pump Pit walls is adequate to carry all the additional loads from the piping, jumper and encasement when subject to an earthquake. This was determined by a comparison to the walls of the Sluice Pit. The Pump Pit walls are of the same thickness, reinforcement in the Pump Pit, however is greater than in the Sluice Pit indicating higher nominal strength. The depth of in the Pump Pit is smaller than the depth of Sluice Pit resulting in smaller internal forces. The preceding comparison suggests that the conclusions regarding seismic qualification of the Sluice Pit, contained in Calc W320-24-016 rev. 2, can be extrapolated on the Pump Pit.

Based on the revised Encasement, Pipe, and Jumper loads presented in Attachment 2, the above conclusion is still valid.

See Attachment 3 for an evaluation of AY-02A center cover block based on as-found condition. Evaluation recommends new center block be provided. Adjacent blocks should also be examined for similar problems.

Camera port locations an adjacent blocks should be adjusted to avoid cutting any rebar, if as-found condition found to be satisfactory. Analysis provided in Rev. 0 of this calculation for SC 1 pit walls envelopes any modifications provided by Rev. 1 & Rev. 2 of this calculation. No further analysis of pit walls is required here.

Based on revised pipe and encasement loads shown on page 5 and Attachment 2, page 3a and 3b the above conclusion is still valid.

DESIGN ANALYSIS

Client Numatec
Subject Pump Pit AY-02A Analysis

WO/Job No. W-320

Date 4/2/98

By A. S. Langevin

Checked 4/9/98

By *jsl*

Location 241-AY-102 Tank

Revised

By

DISCUSSION - NEW SUPERNATE JUMPER

New Scope was added to project W-320 in October 1997 (Reference FDNW Engineering and Construction Statement of Work, Task Order N-09). Part of this new scope was the design of a new supernate jumper for pit AY-102-02A. This jumper is to be installed after the completion of project W-320. Results from the piping analysis for this jumper (calculation W320-27-053) are included in attachment 4. This new jumper ties into existing nozzles U-11 and U-3. These new loads will be compared to loads used in the previous analyses to show the structural adequacy of the Pump pit.

U-11 Nozzle Loads

The U-11 nozzle loads due to the new supernatant jumper (Attachment 4 page 2) are all less than the U-11 nozzle loads previously evaluated (Attachment 2 page 3b), so for the west pump pit wall the previous conclusion still holds.

U-3 Nozzle Loads

Project W-320 did not previously analyze loads on this nozzle. (The jumper provided by the project tying into nozzles U-8 and U-3 is a replacement of an existing jumper.) The new supernate jumper configuration must be evaluated for new loads on the south pit wall.

The load on the U-3 Nozzle originates from two sources. The first source, inside the pit wall, is a result of jumper reactions and is available from the piping analysis - Attachment 4 pages 4 and 5. The balance of the wall load comes from the second source ie. buried pipe within an encasement. Unfortunately, the loads from the second source were not derived. The only reasonable estimate of these loads are pipe and encasement loads at the U-11 nozzle. Configuration of the buried piping at both nozzles suggests lower thrust and bending moments at nozzle U-3. However, reactions in the direction parallel to the wall along with torsional moment are expected to be somewhat higher. From the behavior of the pit wall, as a plate in bending, reduction of the loads resulting in plate bending will improve the safety of the wall. The wall is less sensitive to a variation of the load resulting in plate membrane forces. Based on the preceding discussion, one can conclude that using buried pipe loads from U-11 in evaluation of nozzle U-3 is conservative.

The U-3 wall loads are evaluated in the table shown on page 6b. The loads are less than the design loads for the sluice pit.

DESIGN ANALYSIS

Client Numatec

WO/Job No. W-320

Subject Pump Pit AY-02A Analysis

Date 4/2/98

By A. S. Langevin

Checked 4/9/98

By *ASL*

Location 241-AY-102 Tank

Revised

By

U-3 Nozzle Loads (cont)

The south pump pit wall is the same width (8 ft) as the sluice pit wall analyzed in calc W320-24-016. The U-3 nozzle location (near center of wall) differs from the U-2 location (near wall edge) of the sluice pit analysis. This would tend to create higher end wall moments due to the nozzle axial load. In this case, however, the axial operational load of 428 lb is in a direction towards the wall, (See attachment 4) and therefore going opposite of the soil loadings. This makes the sluice pit analysis conservative in comparison. (The axial seismic load of 56 lb can act in either direction but is very small in comparison to all other loads. The other force directions and moments are all less than half the design basis values.)

CONCLUSION - NEW SUPERNATE JUMPER

The strength of the pump pit walls is adequate to carry the loads from the new supernate jumper.

Client **NHC**
 Subject **Pump Pit AY-02A Analysis and Cover Block Design.**
 Location **Tank 241-AY-102, Pump Pit**

WO/Job No. **W320/ER4319**
 Date: 4/2/1998 By: **A.S. Langevin**
 Checked: **4/9/98** By: **[Signature]**
 Revised: By:

U-3 OPERATING LOADS

241-AY-02A Pump Pit

	F_x lbf	F_y lbf	F_z lbf	M_x in-lbf	M_y in-lbf	M_z in-lbf
Pipe	305	78	536	1344	12720	108
Encasement	0	0	3199	0	0	0
Jumper	43	137	428	354	15	31
Total	348	215	4163	1698	12735	139
Total des basis	765	929	4187	7440	29630	4680
Total /des basis	0.45	0.23	0.99	0.23	0.43	0.03

see page 5.

ref calc W320-24-16 rev. 2

U-3 SEISMIC LOADS

241-AY-02A Pump Pit

	F_x lbf	F_y lbf	F_z lbf	M_x in-lbf	M_y in-lbf	M_z in-lbf
Encasement	0	0	3378	0	0	0
Jumper	46	54	56	28	27	7
Total	46	54	3434	28	27	7
Total des basis	765	929	4187	7440	29630	4680
Total /des basis	0.06	0.06	0.82	0.00	0.00	0.00

see page 5.

ref calc W320-24-16 rev. 2

Client: WHC
Subject: Pump Pit AY-02A Analysis

Location: 241-AY-102 Tank

WO/Job No. W-320 /ER4319
Date: 03/08/95 By: JW FUNK
Checked: 3/8/95 By: GRB
Revised: By:

ATTACHMENT 1

Pipe and Jumper Loads

3 pgs including this pg

ICF KAISER
HANFORD COMPANY

DESIGN ANALYSIS

Calc. No. W-320-27-029

Revision No. 0

Page No. of

Client WESTINGHOUSE HANFORD CO.
 Subject AY FARM JUMPER STRESS ANALYSIS
 PROJECT W-320 WASTE RETRIEVAL for TANK 241-C-106
 Location C TANK FARM 200 EAST AREA

WO/Job No. ER4319
 Date 2/22/95
 Checked
 Revised

Filename U11-A.xls
 By D. L. STONE
 By M. M. AHMED

ANCHOR LOADS AT PIT WALLS

Nozzle: U11 Location: 241-AY-02A Pump Pit	Pipe Loads	Pipe Length (*2) (in.)	Friction Force (*3) (lb/in)	Fx (lbs)	Fy (lbs)	Fz (lbs)	Mx (in-lb)	My (in-lb)	Mz (in-lb)
(Outside Pit)	Inner Pipe								
Identification: W-320 Slurry Transfer Line Nozzle Node #: A172 Orientation:	(Seismic)			0	0	0	0	0	0
	(Thermal)			-425	-59	-223	-48	-3684	-780
	(*1)								
	Encasement								
	(Seismic)	L = 108	F1 = -24.48	-2644					
	(Thermal)	L = 108	F2 = -23.18	-2503					
	(*5)								
Absolute Sum				5572	59	223	48	3684	780

(Inside Pit)	Jumper Loads								
Identification: Jumper U11-A Dwg. H-2-818501 Node #: A00 Orientation:	(Seismic)			19	19	13	84	48	168
	(Thermal)			-1329	-19	-424	144	-3540	-9600
	(*6)								
	Absolute Sum			1348	38	437	228	3588	9768

(*1) (Ref. Autopipe Calc. # W-320-27-013)

(*2) Length of pipe immediately preceding anchor. (Ref. DWG # ES-320-M07)

(*3) For underground pipe. (Ref. STAB Calc. # W-320-27-014)

(*4) LOAD = F1 x L

(*5) LOAD = F2 x L

(*6) (Ref. Autopipe Calc. # W-320-27-029) Filename: AY02A-J2

ICF KAISER HANFORD**DESIGN ANALYSIS**

Calc. No. W320-24-016
Revision 0
Page No. 5 of 17

Page 3 of 3

Client: WHC
Subject: Sluice Pit AY-02E Analysis

Location: 241-AY-102 Tank

WO/Job No. W-320/ER4319
Date: 02/22/95 By: JW FUNK
Checked: 3/8/95 By: *GRB*
Revised: By:

U-2 OPERATING LOADS

241-AY-02E Sluice Pit

	Fx lb	Fy lb	Fz lb	Mx in-lb	My in-lb	Mz in-lb
Pipe	499	77	859	1284	28656	60
Encasement			2782			
Jumper	266	852	208	6156	972	4620
TOTAL	765	929	3849	7440	29628	4680

U-2 SEISMIC LOADS

241-AY-02E Sluice Pit

	Fx lb	Fy lb	Fz lb	Mx in-lb	My in-lb	Mz in-lb
Encasement			2938			
Jumper	756	973	1249	6072	7320	5556
TOTAL	756	973	4187	6072	7320	5556

ICF KAISER HANFORD

DESIGN ANALYSIS

Calc. No. W320-24-017

Revision *01/2*

Page No. 1 of 4

Client: WHC
Subject: Pump Pit AY-02A Analysis

Location: 241-AY-102 Tank

WO/Job No. W-320 /ER4319

Date: 8/30/95

By: JR Booth

Checked: 8/4/95

By:

Revised: 10/24/95

By:

ATTACHMENT 2

Revised Encasement, Pipe and Jumper Loads

4 pgs including this pg

Page 3a Added.

2

10/24/95

**ICF KAISER
HANFORD COMPANY**

DESIGN ANALYSIS

Client WESTINGHOUSE HANFORD CO.
Subject PROJECT W-320 WASTE RETRIEVAL
ENCASEMENT PIPE STRESS ANALYSIS
Location C TANK FARM 200 EAST AREA

WO/Job No. ER4319
Date 7/27/95
Checked 9/8/95
Revised

Calc. No. Pg. 2 of 4
Revision No. W-320-27-014
Page No. 13 of 13
Filename ANCH-LDS.XLS
By D. L. STONE
By *ed Jones*

ENCASEMENT PIPE ANCHOR LOADS AT PIT WALLS

Anchor Locations	Pipe Length 'L'	SEISMIC		THERMAL	
		Friction Force	Total Axial	Friction Force	Total Axial
		F1	LOAD = F1 x L	F2	LOAD = F2 x L
		(Ref. 4)		(Ref. 4)	
	(inches)	(lb/in)	(lb)	(lb/in)	(lb)
Pump Pit 241-C-06A Nozzle 17	(Ref. DWG # ES-320-M3) 206.88	24.48	5064	23.18	4795
Sluice Pit 241-C-06C Nozzle 6	(Ref. DWG # ES-320-M3) 201.48	24.48	4932	23.18	4670
Pump Pit 241-AY-02A Nozzle U 11	(Ref. DWG # ES-320-M6) 108	24.48	2644	23.18	2503
Sluice Pit 241-AY-02E Nozzle 2	(Ref. DWG # ES-320-M6) 120	24.48	2938	23.18	2782

ICF KAISER
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DESIGN ANALYSIS

Calc. No. W-320-27-013

Revision No. 1

Page No. 69 of 70

Client WESTINGHOUSE HANFORD CO.
 Subject PROCESS PIPE STRESS ANALYSIS
 PROJECT W-320 WASTE RETRIEVAL for TANK 241-C-106
 Location C TANK FARM 200 EAST AREA

WO/Job No. ER4319
 Date 8/4/1995
 Checked 8/7/95
 Revised

Filename ANCOR-SL.xls
 By D. L. STONE
 By C.D. Sandoz

ANCHOR LOADS AT PIT WALLS

Nozzle: 17 Location: 241-C-06A Pump Pit	Pipe Loads	Pipe Length (*2) (in.)	Friction Force (*3) (lb/in)	Fx (lbs)	Fy (lbs)	Fz (lbs)	Mx (in-lb)	My (in-lb)	Mz (in-lb)
Identification: W-320 Pump Pit Slurry Line Nozzle Node #: A00 Orientation: (Elevation View) 	Inner Pipe								
	(Seismic)			63	0	72	0	2004	0
	(Thermal)			986	142	-545	2412	-15252	-4848
	(*1)								
	Encasement								
	(Seismic) (*4)	L = 207	F1 = 24.48	5064.42					
	(Thermal) (*5)	L = 207	F2 = 23.18	4795.48					
Absolute Sum				10909	142	617	2412	17256	4848

Nozzle: U-11 Location: 241-AY-02A Pump Pit	Pipe Loads	Pipe Length (*2) (in.)	Friction Force (*3) (lb/in)	Fx (lbs)	Fy (lbs)	Fz (lbs)	Mx (in-lb)	My (in-lb)	Mz (in-lb)
Identification: W-320 AY Slurry Line Nozzle Node #: A171 Orientation: (Elevation View) 	Inner Pipe								
	(Seismic)			0	0	0	0	0	0
	(Thermal)			-452	-46	236	-24	-1776	-480
	(*1)								
	Encasement								
	(Seismic) (*4)	L = 108	F1 = -24.48	-2643.84					
	(Thermal) (*5)	L = 108	F2 = -23.18	-2503.44					
Absolute Sum				5599	46	236	24	1776	480

(*1) (Ref. Appendix A, Autopipe Filename: TRAN-SL)

(*2) L = Length of pipe immediately preceding anchor as per DWGS # ES-320-M3 and # ES-320-M6: (Ref. Appendix D)

(*3) For underground pipe:

(For SEISMIC: Ref. Calculation W320-27-014, Appendix. A, Page 5, Soil Friction)

(For THERMAL: Ref. Calculation W320-27-014, Appendix. B, Page 5, Static Soil Friction)

(*4) LOAD = F1 x L

(*5) LOAD = F2 x L

ICF KAISER
HANFORD COMPANY

DESIGN ANALYSIS

 Calc. No. W-320-27-013
 Revision No. 2
 Page No. 71 of 72

 Client WESTINGHOUSE HANFORD CO.
 Subject PROCESS PIPE STRESS ANALYSIS
 PROJECT W-320 WASTE RETRIEVAL for TANK 241-C-105
 Location C TANK FARM 200 EAST AREA

 WO/Job No. ER4319
 Date 9/13/1996
 Checked 9/25/96
 Revised

 Filename ANCOR-SL.xls
 By D. L. STONE
 By *CD Jones*

ANCHOR LOADS AT PIT WALLS

Nozzle: 17 Location: 241-C-06A Pump Pit	Pipe Loads	Pipe Length (*2) (in.)	Friction Force (*3) (lb/in)	Fx (lbs)	Fy (lbs)	Fz (lbs)	Mx (in-lb)	My (in-lb)	Mz (in-lb)
Identification: W-320 Pump Pit Slurry Line Nozzle Node #: A00 Orientation:	Inner Pipe								
	(Seismic)			57	0	74	0	876	0
	(Thermal)			990	156	-564	2676	-15804	-5244
	(*1)								
	Encasement								
	(Seismic)	L = 217	F1 = 24.48	5305.31					
	(*4)								
	(Thermal)	L = 217	F2 = 23.18	5023.57					
	(*5)								
	Absolute Sum			11376	156	638	2676	16680	5244

Nozzle: U-11 Location: 241-AY-02A Pump Pit	Pipe Loads	Pipe Length (*2) (in.)	Friction Force (*3) (lb/in)	Fx (lbs)	Fy (lbs)	Fz (lbs)	Mx (in-lb)	My (in-lb)	Mz (in-lb)
Identification: W-320 AY Slurry Line Nozzle Node #: A171 Orientation:	Inner Pipe								
	(Seismic)			0	0	0	0	0	0
	(Thermal)			-536	-78	305	-108	-12720	-1344
	(*1)								
	Encasement								
	(Seismic)	L = 138	F1 = -24.48	-3378.24					
	(*4)								
	(Thermal)	L = 138	F2 = -23.18	-3198.84					
	(*5)								
	Absolute Sum			7113	78	305	108	12720	1344

(*1) (Ref. Appendix A, Autopipe Filename: TRAN-SL)

(*2) L = Length of pipe immediately preceding anchor as per DWGS # ES-320-M3 and # ES-320-M6: (Ref. Appendix D)

(*3) For underground pipe:

(For SEISMIC: Ref. Calculation W320-27-014, Appendix A, Page 5, Soil Friction)

(For THERMAL: Ref. Calculation W320-27-014, Appendix B, Page 5, Static Soil Friction)

(*4) LOAD = F1 x L

(*5) LOAD = F2 x L

ICF KAISER
HANFORD COMPANY
DESIGN ANALYSIS

Calc No. W320-27-029

Revision No. 0

Page No. 8 of 10

Client WESTINGHOUSE HANFORD COMPANY
 Subject AY FARM - JUMPER STRESS ANALYSIS
 PROJECT W-320 WASTE RETRIEVAL for TANK 241-C-106
 Location: C TANK FARM - 200 W.

WO/Job No. ER4319
 Date 8/31/95
 Checked 9/11/95
 Revised
 File name: AY02E.WP
 By: M.M. Ahmed
 By: M. K. Pal
 By:

Rev-2. By:
 Checked By:

M. Ahmed
 4-12-97

PIT WALL ANCHOR LOADS 1 Rev-2

NOZZLE	ORIENTATION	LOAD CASES	LOADS (FORCES IN POUNDS & MOMENTS IN FT.-LBS)						REF:
			Fx	Fy	Fz	Mx	My	Mz	
U-11 PUMP PIT AY-02A		Thermal	63	390	52	183	20	35	AY02A1R2 A00
		Seismic	205	102	90	209	200	27	AY02A2R2 A00
		Total	268	492	142	392	220	62	
U-2 SLUICE PIT AY-02E		Thermal	125	865	157	449	63	287	AY02E-R2 B12
		Seismic	102	86	125	94	53	68	SAME
		Total	227	951	282	543	116	455	

Notes:

1. Seismic Loads could be positive or negative.
2. Thermal loads specified are the algebraic sum of gravity and thermal loads.
3. Total loads specified are the absolute sum of thermal and seismic loads disregarding the signs.

ICF KAISER
HANFORD COMPANY

DESIGN ANALYSIS

Calc. No. W-320-27-029

Revision No. #

Page No. of

Client WESTINGHOUSE HANFORD CO.
 Subject AY FARM JUMPER STRESS ANALYSIS
 PROJECT W-320 WASTE RETRIEVAL for TANK 241-C-106
 Location C TANK FARM 200 EAST AREA

WO/Job No. ER4319
 Date 8/4/95
 Checked
 Revised

Filename U11-A.xls
 By RS Ulbricht
 By *DL*
 By

ANCHOR LOADS AT PIT WALLS

(Inside Pit)	Jumper Loads			Fx (lbf)	Fy (lbf)	Fz (lbf)	Mx (in-lbf)	My (in-lbf)	Mz (in-lbf)
Identification: Jumper U11-A	(Seismic) (*1)			31	21	12	120	108	252
Dwg. H-2-818501	(Thermal)			1328	-33	427	-204	-4812	-9624
Node #: A00	(*1)								
Orientation:
(Plan View)	Absolute Sum			1359	54	439	324	4920	9876

(*1) (Ref. Autopipe Calc. # W-320-27-029) Filename: JUMPER

INTEROFFICE MEMORANDUM

PAGE 1 OF 1

TO James T. Lilly, PM

DATE 03-04-96

FROM Ronald W. Davidson, LE

COPIES TO Danny L. Evans, PLE

JOB NO. W-320

SUBJECT AS-FOUND CONDITION OF EXISTING AY-02A CENTER COVER BLOCK

The center cover block is a one-way 2'-6" thick slab with main reinforcement (#5 bars @ 12" O/C, T & B) longitudinally and transverse ties (#4 bars at 12" O/C, T & B). Rebar specified is 40,000 ksi and concrete 28 day strength, 3000 psi. Project B-131, provided core drills through the center block altering the structural integrity of block considerably. Two of the four bottom main tension face rebars have been confirmed to have been cut as well as both longitudinal edge angles. The bottom face has been scanned, visually inspected and video-taped and several transverse tension cracks are visible as well as major deterioration of concrete surfaces at core drill locations and corners.

A lead top plate (3/4" thick) was installed by Project B-220 on the top surface of the center and adjacent cover blocks.

The W-320 Project needs to provide (1) additional core drill through the center block for a valve port. It has been confirmed through scanning that at least one additional main and transverse bar will be cut. Only, (1) main tension face rebar will remain intact, with continuity along bottom north face of the cover block. Due to the lack of continuity of main flexure reinforcement at critical sections, the center block is essentially a plain concrete member containing less reinforcement than the minimum amount required by the code for flexure strength. In accordance with ACI 349, 12.10, flexure reinforcement shall not be terminated in a tension zone unless continuing reinforcement provides double the area for flexure. The member cannot be designed per ACI 318.1 as a plain concrete member, because of the limitations on the use of plain concrete as a structural member that is not continuously supported. See UBC-1994 Section 1923. Additionally, the cracking along the bottom face of the center block runs transversely entirely across the width of the bottom surface of the cover block approximately mid-span, extending along both sides of the block. The cracks appear to be excessively wide, well beyond tolerable limits set by ACI 224R to limit flexure cracking of reinforced concrete members, indicating loss or near loss of cover block structural integrity.

I strongly recommend that a new center block be constructed as a safety class 3/1 item and that the adjacent blocks be examined as well, for similar deterioration. Further, it is apparent that further maneuvers/lifting of the center cover block using lifting balls may cause catastrophic failure.

Fluor Daniel Northwest

Calc. No. W320-24-017

Revision 3

Page No. 1 of 6

DESIGN ANALYSIS

client Numatec

WO/Job No. W-320

Subject Pump Pit AY-02A Analysis

Date 4/2/98

By A. S. Langevin

Checked 4/9/98

By *ASL*

Location 241-AY-102 Tank

Revised

By

ATTACHMENT 4

Loads due to New Supernate Jumper

6 pages including this page

HNF-2466, Rev. 0

Page C-48

Calc. No.: W320-27-053

Revision: 0

Page No.: 5 of 15

DESIGN ANALYSIS

Client: Numatec

WO/Job No.: ER4319/W-320

Subject: New Supernate Jumper Analysis

Date: 1/12/98

By: Kelly Hayase

Checked: 1/20/98

By: K Cleveland

Location: 241-AY

Revised:

By:

Table 3: Total Nozzle/Wall Anchor Loads

Node	Orientation	Fx lb	Fy lb	Fz lb	Mx ft-lb	My ft-lb	Mz ft-lb
A00		58	289	76	258	19	8
B09		89	192	485	381	42	37

DESIGN ANALYSIS

Calc. No.: W320-27-053

Revision: 0

Page No.: 6 of 15

Client: Numatec

Subject: New Supernate Jumper Analysis

WO/Job No.: ER4319/W-320

Date: 1/12/98

Checked: 1/20/98

Revised:

By: Kelly Hayase

By: K. Cleveland

By:

Location: 241-AY

JUMPER AY-02A-U3-U11-B
AUTOTYPE MODEL "U3U11B"

RESTRAINT REACTIONS

Point name	Load combination	FORCES (lb)			Result	MOMENTS (ft-lb)			Result
		X	Y	Z		X	Y	Z	

A00	Anchor								
	GR	18	-212	-8	212	-9	10	-109	109
	T1	-40	-25	-4	47	7	-13	-117	118
	R1	54	53	46	88	6	16	32	36
	GR+T1	-22	-236	-12	238	-2	-3	-226	226
	TOTAL	76	289	58	305	8	19	258	259

A16	Anchor								
	GR	-21	-76	90	120	56	-3	7	57
	T1	85	-71	-506	518	-97	9	-35	104
	R1	18	17	40	47	20	3	6	21
	GR+T1	65	-147	-416	446	-40	6	-28	50
	TOTAL	83	164	456	492	61	9	34	70

B09	Anchor								
	GR	3	-233	-82	247	-114	8	-2	115
	T1	-46	95	510	521	-239	7	-29	241
	R1	47	55	57	92	28	27	7	39
	GR+T1	-43	-137	428	451	-354	15	-31	355
	TOTAL	89	192	485	529	381	42	37	386

GLOBAL FORCES & MOMENTS

Point name	Load combination	FORCES (lb)			Result	MOMENTS (ft-lb)			Result
		X	Y	Z		X	Y	Z	

*** Segment A begin ***

A00	GR	-18	212	8	212	9	-10	109	109
	T1	40	25	4	47	-7	13	117	118
	R1	54	52	45	88	6	16	32	36
	GR+T1	22	236	12	238	2	3	226	226
	TOTAL	76	289	57	304	8	19	258	259

A01	GR	-18	87	8	89	9	-8	50	51
	T1	40	25	4	47	-7	14	111	112
	R1	38	34	26	57	6	8	29	31
	GR+T1	22	112	12	114	2	6	160	160
	TOTAL	60	145	37	161	8	14	189	190

A02	GR	-18	87	8	89	9	-7	42	44
	T1	40	25	4	47	-7	14	109	110
	R1	28	19	10	36	6	8	29	31
	GR+T1	22	112	12	114	2	7	152	152
	TOTAL	50	131	22	142	8	15	181	182

A03 N	GR	-18	87	8	89	9	-7	41	43
	T1	40	25	4	47	-7	14	109	110
	R1	28	19	10	35	6	8	29	31
	GR+T1	22	111	12	114	2	7	150	150
	TOTAL	50	130	22	141	8	15	179	180

A03 M	GR	-18	82	8	84	10	-5	23	26
	T1	40	25	4	47	-7	15	99	101
	R1	28	19	9	35	5	10	28	31
	GR+T1	22	107	12	110	3	10	122	123
	TOTAL	50	126	21	137	8	20	151	152

A03 F	GR	-18	78	8	80	12	-5	19	23
	T1	40	25	4	47	-6	15	88	89
	R1	27	18	9	34	4	11	23	26
	GR+T1	22	102	12	105	6	11	107	108
	TOTAL	49	120	21	132	10	22	130	132

A04 N	GR	-18	58	8	61	21	-5	40	46
	T1	40	25	4	47	-1	15	41	44
	R1	26	17	8	32	11	11	16	22
	GR+T1	22	82	12	86	20	11	81	84
	TOTAL	48	100	20	112	31	22	96	104

GLOBAL FORCES & MOMENTS

Point name	Load combination	FORCES (lb)				MOMENTS (ft-lb)			
		X	Y	Z	Result	X	Y	Z	Result
B05 F	GR	3	-90	-82	122	-73	10	-4	74
	T1	-46	95	510	521	119	-24	9	122
	R1	16	23	27	39	24	14	7	28
	GR+T1	-43	5	428	430	-46	-14	5	48
	TOTAL	59	28	454	459	70	28	12	76
B06 N	GR	3	-99	-82	129	-32	10	-3	34
	T1	-46	95	510	521	-134	-24	-13	137
	R1	17	23	27	40	14	14	2	20
	GR+T1	-43	-3	428	430	-166	-14	-16	168
	TOTAL	60	27	455	459	181	28	18	184
B06 M	GR	3	-103	-82	132	-23	10	-2	25
	T1	-46	95	510	521	-245	-19	-24	247
	R1	17	24	27	40	14	15	5	21
	GR+T1	-43	-8	428	430	-268	-9	-26	269
	TOTAL	60	32	455	460	282	25	32	285
B06 F	GR	3	-108	-82	135	-40	9	-2	41
	T1	-46	95	510	521	-272	-8	-29	274
	R1	17	24	27	40	17	7	7	26
	GR+T1	-43	-12	428	430	-312	1	-31	314
	TOTAL	60	36	455	461	329	19	37	332
B07	GR	3	-228	-82	242	-41	9	-2	42
	T1	-46	95	510	521	-271	-8	-29	273
	R1	28	37	39	61	17	7	7	26
	GR+T1	-43	-133	428	450	-312	1	-31	314
	TOTAL	71	169	467	502	329	20	37	332
B08	GR	3	-228	-82	242	-50	9	-2	50
	T1	-46	95	510	521	-266	-5	-29	268
	R1	46	54	56	91	18	20	7	28
	GR+T1	-43	-133	428	450	-316	3	-31	317
	TOTAL	89	187	484	527	334	23	37	337
B09	GR	3	-233	-82	247	-114	8	-2	115
	T1	-46	95	510	521	-239	7	-29	241
	R1	46	54	56	91	28	27	7	39
	GR+T1	-43	-137	428	451	-354	15	-31	355
	TOTAL	89	192	484	528	381	42	37	386

*** Segment B end ***

ASME B31.3c (1992) CODE COMPLIANCE

Point name	Load combination	(Moments in ft.-lb)			(Stress in psi)				
		In-Pl. Moment	Out-Pl. Moment	Torsion Moment	S.I.F. In Out	Eq. Load no. type	Code Stress	Code Allow.	
*** Segment A begin ***									
A00	Max P					(3a) HOOP	3350	20000	
	GR + Max P	109	10		1.00 1.00	(18) SUST	1926	20000	
	Cold to T1 Sus. + R1	117 141	13 26		7 1.00 1.00 1.00 1.00	(17) DISP (18) OCC	442 2059	30000 26600	
A01	Max P					(3a) HOOP	3350	20000	
	GR + Max P	50	8		1.00 1.00	(18) SUST	1707	20000	
	Cold to T1 Sus. + R1	111 79	14 16		7 1.00 1.00 1.00 1.00	(17) DISP (18) OCC	417 1819	30000 26600	
A02	Max P					(3a) HOOP	3350	20000	
	GR + Max P	42	7		1.00 1.00	(18) SUST	1680	20000	
	Cold to T1 Sus. + R1	109 72	14 15		7 1.00 1.00 1.00 1.00	(17) DISP (18) OCC	412 1793	30000 26600	
A03 N-	Max P					(3a) HOOP	3350	20000	
	GR + Max P	41	7		1.00 1.00	(18) SUST	1675	20000	
	Cold to T1 Sus. + R1	109 70	14 15		7 1.00 1.00 1.00 1.00	(17) DISP (18) OCC	411 1789	30000 26600	
A03 N+	Max P					(3a) HOOP	3350	20000	
	GR + Max P	41	7		2.56 2.13	(18) SUST	1917	20000	
	Cold to T1 Sus. + R1	109 70	14 15		7 2.56 2.13 2.56 2.13	(17) DISP (18) OCC	1047 2204	30000 26600	
A03 M	Max P					(3a) HOOP	3350	20000	
	GR + Max P	23	3		2.56 2.13	(18) SUST	1741	20000	
	Cold to T1 Sus. + R1	99 51	6 8		16 2.56 2.13 2.56 2.13	(17) DISP (18) OCC	951 2014	30000 26600	
A03 F-	Max P					(3a) HOOP	3350	20000	
	GR + Max P	19	12		2.56 2.13	(18) SUST	1726	20000	
	Cold to T1 Sus. + R1	88 42	6 16		15 2.56 2.13 2.56 2.13	(17) DISP (18) OCC	840 1951	30000 26600	
A03 F+	Max P					(3a) HOOP	3350	20000	
	GR + Max P	12	19		1.00 1.00	(18) SUST	1604	20000	
	Cold to T1 Sus. + R1	6 16	88 42		15 1.00 1.00 1.00 1.00	(17) DISP (18) OCC	333 1692	30000 26600	
A04 N-	Max P					(3a) HOOP	3350	20000	
	GR + Max P	21	40		1.00 1.00	(18) SUST	1689	20000	
	Cold to T1 Sus. + R1	1 33	41 56		15 1.00 1.00 1.00 1.00	(17) DISP (18) OCC	163 1760	30000 26600	

W320-24-018

241-AY-102, Dome Load Summary Report

This sheet shows the status and description of the attached Design Analysis sheets.

 Discipline **Structural**

 WO/Job No. **ER4319/W-320**

 Calculation No. **W320-24-018**

 Project No. & Name **Project W-320, Tank 241-C-106 Sluicing**

 Calculation Item **241-AY-102, Dome Load Summary Report**

These calculations apply to:

 Dwg. No. **N/A**

Rev. No.

 Dwg. No. **N/A**

Rev. No.

 Other (Study, CDR) **N/A**

Rev. No.

The status of these calculations is:

☐ Preliminary Calculations

☒ Final Calculations

☐ Check Calculations (On Calculation Dated)

☐ Void Calculation (Reason Voided)

Incorporated in Final Drawings?

☐ Yes ☒ No

This calculation verified by independent "check" calculations?

☐ Yes ☒ No

Original and Revised Calculation Approvals:

	Rev. 0 Signature/Date	Rev. 1 Signature/Date	Rev. 2 Signature/Date
Originator	James R. Booth/6-21-94	Rev. 1 Signature/Date	Rev. 2 Signature/Date
Checked by	Rev. 0 Signature/Date	Rev. 1 Signature/Date	Rev. 2 Signature/Date
Approved by	Rev. 0 Signature/Date	Rev. 1 Signature/Date	Rev. 2 Signature/Date
Checked Against Approved Vendor Data	Rev. 0 Signature/Date	Rev. 1 Signature/Date	Rev. 2 Signature/Date

INDEX

 Design Analysis
 Page No.

Description

1	Objective, Criteria, Data, Assumptions, Method, References, and Conclusion.
2-4	Dome Load Summary Calculations
5	Dome Load Table
Attachment A	In-Pit Cooling System Vendor Data
Attachment B	Pump Vendor Data

Rev 1: Revised pages 1,2,3,4 & 5 for as-documented W-320 dome load additions.

CALCULATION CROSS INDEX (Typical)

Subject Calculation No. W320-24-018

Page ii of iii[illegible]

DESIGN VERIFICATION SCREENING CRITERIA

iii of iii

Project/Document No. W-320 / W320-24-018

When the design or design change affects hardware, formal design verification must be performed if one or more of the following questions must be answered affirmatively (YES).

YES

NO

_____ _____ _____ _____	✓ _____ ✓ ✓	1. Does the design or design change involved meet the established criteria to be considered Safety Class 1? 2. Does this design or design change cause or permit changes to Safety Class 1 instrument or alarm setpoints outside of previously approved operational limits? 3. Does this design or design change significantly affect the nuclear or environmental safety consequences of a malfunction or failure of the structure, system, or component? 4. Does this design or design change involve or change design that has previously undergone formal design verification?

Assigned Lead Engineer

6/15/95

Date

Responsible Discipline Manager

6/15/95

Date

Original Design Package Distribution:

Project Manager

Design Verification Officer

Engineering Document Control

Design Change Distribution:

Attach to Engineering Change Notice

DESIGN ANALYSIS

Client WHC

Subject 241-AY-102, Dome Load Summary

Location 200E AY-Farm, Tank 241-AY-102

WO/Job No. ER4319/W-320

Date 6/21/94

Checked *W.H. K.*Revised *Spurlock*

By J.R. Booth

By *W.H. K.*By *W.H. K.***OBJECTIVE:**

The objective of this calculation is to determine the net addition to tank 241-AY-102 dome loading as a result of sluicing activities. This calculation is intended to be used by Tank Farm Operation personnel to monitor the cumulative loading on Tank 241-AY-102.

CRITERIA:

1. Summation of all gravity forces, directly above 241-AY-102 Tank Dome resulting from addition of equipment due to activities of the Project W-320.
2. Specification, "Operating Specification for Aging Waste Operations 241-AY & 241-AZ," prepared by Westinghouse Hanford Company, Document No. OSD-T-00017, Rev 0, February 1988.

GIVEN DATA:

1. Weight added by W-320, Tank 241-C-106 Sluicing.

ASSUMPTIONS:

1. Estimates of added equipment weights are based on input from W-320 project drawings, calculations, or vendor data.
2. Concrete = 150 pcf
3. Soil = 120 pcf

METHOD USED: Hand Calculation**REFERENCES:**

1. Report, TANK 241-C-106 SLUICING DOME LOADS AND CIVIL UTILITY INTERFACE TANKS 241-C-106 AND 241-AY-102, by Kaiser Engineers Hanford, Doc. #W320LR.
2. Report, DOME LOAD CONTROL DOCUMENT TANK 241-SY-101, by Westinghouse Hanford Company, Doc # WHC-SD-WM-TA-141, Rev. 0, October 1992.

CONCLUSION:

W.H. K.
9/10/94
A table summarizing the loading activity as a result of project W-320 is shown on page 5. Based on the following calculations additional net dome load as a result of project W-320 is: **44111 lbs**. The allowable dome loading over Tank 241-AY-102 is 40 psf and 50 tons concentrated. Refer to reference 1 for weights of existing equipment.

DESIGN ANALYSIS

Client WHC

Subject 241-AY-102, Dome Load Summary

WO/Job No. ER4319/W-320

Date 6/21/94

By J.R. Booth

Checked *UM/95*By *Reed Derwing*

Location 200E AY-Farm, Tank 241-AY-102

Revised *8/24/94*By *Pat Sauer***CRANE LOAD SURCHARGE**

A surcharge will be added to the dome load summary as a recommended in Ref. 1. Instead of adding a 28 Ton crane load acting directly over the tank, a 150 Ton Linkbelt crane, with its inside track loading the tank dome at a 90 degree orientation, with the closet track to the tank centered on the 20 ft LCEA boundary around the tank will be added similar to Ref. 1, page 7.

Based on the Pump Pit cover block weight, including lead covering, of 17,000 lbs, the surcharge imposed on the tank calculated in Ref. 2 will be reduced by a factor of 28,425/30,925 (see bottom of page A-11 and replace Wpump with 17,000 lbs) and a surcharge load of 12,767 lbs can be conservatively added to the summary.

See H-2-818432 for outline of Exclusion Zone around Tank 241-AY-102.

SLUICING EQUIPMENTPump Pit (241-AY-02A) H-2-818544, SH. 1

Jumper Assembly U11-A-(C) = 456 lbs (H-2-818501)

Jumper Assembly U3-U8-B = 350 lbs (H-818502)

Distributor Assembly 1250 + 700 = 1950 lb (H-2-818537, SH.1 & 2)

Total = 456 + 350 + 1950 = 2756 lbsSluice Pit (241-AY-02E) H-2-818545

New Cover Blocks: An average of 8" additional thickness of concrete is required. To account for higher ratio of steel embedments a 10% weight increase factor is used.

8.5' x 10.5' x 0.67' x 150 pcf x 1.10 = 9867 lbs

Winch/Immersible pump: = 5480 lbs (H-2-818495)

Booster Pump/Motor & Misc.: = 4170 lbs (H-2-818503)

In-Pit Cooling Fan Coil Assembly: = 300 lbs (H-2-818490)

Sub-Total Equipment = 5480 + 4170 + 300 = 9950 lbs

Plug/Penetration Adjustments: (H-2-818454 SH 4)

Pump Penetration, approx = $\pi/4(2.875^2 \times 1.625' + 3.0^2 \times .96') \times 150 \text{ pcf} = -2600 \text{ lbs}$ Slots, approx = $1.52' \times .5' \times .67' \times 150 \text{ pcf} \times 3 = -229 \text{ lbs}$

Slot Plugs = 365 lbs x 3 = 1095 lbs

Pump Penetration Plug = 2780 lbs

Total = 2780 + 1095 - 229 - 2600 = 1046 lbs

Total for 02E pit: 9867 + 9950 + 1046 = 20863 lbs

HNF-2466, Rev. 0

Page D-5

DESIGN ANALYSIS

Client WHC

Subject 241-AY-102, Dome Load Summary

Location 200E AY-Farm, Tank 241-AY-102

WO/Job No. ER4319/W-320

Date 6/21/94

Checked *W/14/94*

Revised *8/2/94*

By J.R. Booth

By *[Signature]*

By *[Signature]*

Transfer Lines

Determine weight of Transfer Lines over tank: (See dwg. H-2-818434)

Length of Supernate Line = 45.63 ft (from 4"-225# Steam line)

WT./ft of 4" steel line = 10.79 lb/ft

WT./ft of 6" encasement = 18.97 lb/ft

45.63'(10.79 lb/ft + 18.97 lb/ft) = 1358 lbs

Length of Slurry Line = 62.75 ft (from 4"-225# Steam line)

WT./ft of 4" steel line = 10.79 lb/ft

WT./ft of 6" encasement = 18.97 lb/ft

62.75' (10.79 lb/ft + 18.97 lb/ft) = 1867 lbs

Total = 1358 + 1867 = 3225 lbs

Note: Weight of liquids in Transfer Lines not included since weight of displaced soil more than balances the difference.

with 1/16/94

DESIGN ANALYSIS

Client WHC

Subject 241-AY-102, Dome Load Summary

Location 200E AY-Farm, Tank 241-AY-102

WO/Job No. ER4319/W-320

Date 6/21/94

Checked U/14/94

Revised 8/20/94

By J.R. Booth

By [Signature]

By [Signature]

HVAC Equipment

W-320 HVAC equipment at AY-Farm will be In-Pit Cooling Equipment which will consist of a In-Pit Cooling Coil and a pac mounted Chiller. **H-2-818489)**

Chiller Assembly = 1150 lbs

Pad = 7.5' x 4' x 8" thk x 150 pcf = 3000 lbs (H-2-818461)

Displaced Soil = 7.5' x 4' x 7" x 120 pcf = 2100 lbs

Sub-Total = 1150 + 3000 - 2100 = 2050 lbs

Misc. Equip. Pads:

CTB, ITB, & PTBX- 0621 : Say 500 lbs equip x 3 pads = 1500 lbs

Pads: 3.0' x 3.0' x 8" thk x 150 pcf x 3 = 2700 lbs

Displaced Soil = 3.0' x 3.0' x 7" x 120 pcf x 3 = 1890 lbs

Sub-Total = 1500 + 2700 - 1890 = 2310 lbs

Total = 2050 + 2310 = 4360 lbs Say 4500 lbs

DESIGN ANALYSIS

Client WHC

Subject 241-AY-102, Dome Load Summary

WO/Job No. ER4319/W-320

Date 6/21/94

By J.R. Booth

Checked *6/14/95*By *Reed D. Smith*

Location 200E AY-Farm, Tank 241-AY-102

Revised *8/24/95*By *Reed D. Smith***TANK 241-AY-102 DOME LOAD SUMMARY**

Crane Load Surcharge	12767
Pump Pit (02A)	2756
Sluice Pit (02E)	20863
Transfer Lines	3225
Equip Pads	4500
Total:	44111 lbs

WJM
7/16/96

ATTACHMENT A

| cover + 6 pages

DAN KREIN

A-1, W320-24-01B

1 of 6

INDEPENDENT INSTRUMENT and CONTROL SYSTEM SERVICES, Inc.

Edwards Engineering Corp. - Specialty Chiller Systems

SALES & SERVICE ON ANALYTICAL & PROCESS INSTRUMENTATION

P.O. BOX 9215 • YAKIMA, WASHINGTON 98909 • PHONE and FAX (509) 965-9253

To KAISER ENGINEERS FAX No. 373-3343 No. of Pages 6
P.O. Box 888 S3-02 Tele. No. 373-5296 Including this sheet 6
RICHLAND, WA. 99352 Attn: DAN Date 1-17 19 95

Subject CHILLER & FAN/COIL APPLICATION, DETAILS & PRICING

1 EA FAN/COIL UNIT P/N 120 VAC ONLY CSB-1B-4-600-H \$1,713.00

(AS PER ATTACHED FAN/COIL DESIGN SPEC)

1 EA CHILLER UNIT P/N CE-2-AHP (ROUND STYLE) \$9,134.00

TEMPERATE OUTDOOR LOCATIONS, EXPOSED PUMPS & NEMA 1 CONTROLS

OR

1 EA CHILLER UNIT P/N CE-2-AHP (WHITE EXTERIOR COLOR) \$15,434.00
(OUTDOOR WALK-IN ENCLOSURE)

SEVERE OUTDOOR LOCATIONS - CAN SURVIVE EXTREME WINTER& SUMMER CONDITIONS. REQUIRES CONCRETE PAD. SEE ATTACHEDSPEC FOR DETAILS. COMPLETE CHILLER UNIT AND ALL SYSTEMCOMPONENTS WITH-IN WALK-IN ENCLOSURE, "PAINTIGHT" CONTROLPANEL IS NEMA 1 & INSIDE-OUT OF WEATHER EXPOSURE.

NOTE: IF IT IS A HELP BOTH CHILLERS DELIVERY 6-8WK

CAN BE LOCATED WITH-IN ONE COMMON TAX & FREIGHT NOT ENCL

ENCLOSURE AT A REDUCED COST, IF TERMS NET 30 DAY

BOTH COOLING LOADS ARE IN CLOSE TO ORDER SEE ADDRESS AND

PROXIMITY. THIS MODEL WOULD BE A

E-2-AHP (DUAL MODIFIED OUTDOOR WALK-IN ENCLOSURE)

THE PRICE WOULD BE SOMEWHAT LESS THAN

THE SUM OF TWO INDIVIDUAL UNITS.

PLEASE ADVISE
 THANKS
 EDWARDS/EE
 EDWARDS/EE

NO PART OF THIS CAN ALLOW NO

INDEPENDENT INSTRUMENT and CONTROL SYSTEM SERVICES, Inc.

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To: KAISER ENGINEERS

FAX No. 373-3343

No. of Pages 1

Tele. No. 373 5296

Including this sheet 1

Attn: DAN

Date 1-13 1995

Subject BOTH ARE BASED ON LOCAL AMBIENT CONDITIONS 110°F @ 20% RH

THIS REPRESENTS A NORMAL CONDITION

COILS WOULD BE DRY

----- Tubes -----
 Stock: 3/8 x .025 Cu
 Pattern: 1.50 x 1.293 staggered

Fluid: PROPYLENE GLYCOL Wt: 40.00 %
 Fluid Flowrate (GPM) 4 GPM GPM
 Entering Fluid Temp (deg F) 60 F
 Fluid Press. Drop (PSI) 10 PSI
 Header Inside Dia. (in) 1/ Cu 'L'

----- Fins -----
 Finned Height (inches): 12 in.
 Finned Length (inches): 36 in.
 Material x Thickness: .01 Al
 Max Fin Spacing (FPI): 5
 Configuration: Waffle/Ripple

Fouling Factor, inside: 0
 Fouling Factor, outside: 0

Capacity (CFM) 600 CFM
 Location : Standard Air
 Elevation (MSL, ft): 0 ft
 Connections: (S) same or (O) opposite: S
 Entering Air Dry Bulb (deg F): 110 F
 Entering Air Wet Bulb (deg F): 75 F
 Solution
 Face Velocity (FPM) 200
 Number of Rows/F.P.I. 2/5
 Feeds/Passes/Tubes Dropped 1/16/0
 Calculated Total BTUH 15565
 Calculated Sensible BTUH 15562
 Sensible Heat Ratio 1
 Lv Air Dry/Wet Bulb (F) 86.4/68.3
 Air Pressure Drop (inwg) .027
 Leaving Fluid Temp (F) 68.5
 Fluid Vel (fpm) / PD (psi) 4.3/7.1

----- Tubes -----
 Stock: 3/8 x .025 Cu
 Pattern: 1.50 x 1.293 staggered

Fluid: PROPYLENE GLYCOL Wt: 40.00 %
 Fluid Flowrate (GPM) 4 GPM GPM
 Entering Fluid Temp (deg F) 60 F
 Max Fluid Press. Drop (PSI) 10 PSI
 Header Inside Dia. (in) 1/ Cu 'L'

----- Fins -----
 Finned Height (inches): 12 in.
 Finned Length (inches): 36 in.
 Material x Thickness: .01 Al
 Max Fin Spacing (FPI): 5
 Configuration: Waffle/Ripple

Fouling Factor, inside: 0
 Fouling Factor, outside: 0

Capacity (CFM) 1200 CFM
 Location : Standard Air
 Elevation (MSL, ft): 0 ft
 Connections: (S) same or (O) opposite: S
 Entering Air Dry Bulb (deg F): 110 F
 Entering Air Wet Bulb (deg F): 75 F
 Solution
 Face Velocity (FPM) 400
 Number of Rows/F.P.I. 2/5
 Feeds/Passes/Tubes Dropped 1/16/0
 Calculated Total BTUH 21701
 Calculated Sensible BTUH 21698
 Sensible Heat Ratio 1
 Lv Air Dry/Wet Bulb (F) 93.6/71
 Air Pressure Drop (inwg) .088
 Leaving Fluid Temp (F) 71.7
 Fluid Vel (fpm) / PD (psi) 4.5/7.1

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To KAISER ENGINEERS FAX No. _____ No. of Pages _____
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 _____ Attn: DAN Date _____ 19 ____

Subject BOTH ARE BASED ON ABNORMAL CONDITIONS OF 110°F @ 50% RH
COIL WOULD BE WET BUT STILL ABLE TO COMPLETE HEAT TRANSFER.

----- Tubes -----
 Stock: 5/8 x .025 Cu
 Pattern: 1.50 x 1.299 staggered
 Fluid: PROPYLENE GLYCOL:WT: 40.00 %
 Fluid Flowrate (GPM): 4 GPM
 Entering Fluid Temp (degF): 60 F
 Max Fluid Press. Drop (PSI): 10 PSI
 Header Inside Dia. (in) 1/ Cu "L"
 ----- Fins -----
 Finned Height (inches): 12 in.
 Finned Length (inches): 36 in.
 Material x Thickness: .01 Al
 Max Fin Spacing (FPI): 5
 Configuration: Waffle/Ripple
 Fouling Factor, inside: 0
 Fouling Factor, outside: 0

Capacity (CFM): 600 CFM
 Location: Standard Air
 Elevation (MSL, ft): 0 ft
 Connections: (S) same or (O) opposite: S
 Entering Air Dry Bulb (degF): 110 F
 Entering Air Wet Bulb (degF): 91 F
 Solution -----
 Face Velocity (FPM) -----> 200
 Number of Rows/F.P.I. -----> 2/5
 Feeds/Passes/Tubes Dropped -----> 1/16/0
 Calculated Total BTUH -----> 24536
 Calculated Sensible BTUH -----> 11990
 Sensible Heat Ratio -----> .49
 Lv Air Dry/Wet Bulb (F) -----> 92.3/83.
 Air Pressure Drop (inHg) -----> .044
 Leaving Fluid Temp (F) -----> 73.2
 Fluid Vel (fps) / PD (psi) -----> 4.5/7.1

----- Tubes -----
 Stock: 5/8 x .025 Cu
 Pattern: 1.50 x 1.299 staggered
 Fluid: PROPYLENE GLYCOL:WT: 40.00 %
 Fluid Flowrate (GPM): 4 GPM
 Entering Fluid Temp (degF): 60 F
 Max Fluid Press. Drop (PSI): 10 PSI
 Header Inside Dia. (in) 1/ Cu "L"
 ----- Fins -----
 Finned Height (inches): 12 in.
 Finned Length (inches): 36 in.
 Material x Thickness: .01 Al
 Max Fin Spacing (FPI): 5
 Configuration: Waffle/Ripple
 Fouling Factor, inside: 0
 Fouling Factor, outside: 0

Capacity (CFM): 1200 CFM
 Location: Standard Air
 Elevation (MSL, ft): 0 ft
 Connections: (S) same or (O) opposite: S
 Entering Air Dry Bulb (degF): 110 F
 Entering Air Wet Bulb (degF): 91 F
 Solution -----
 Face Velocity (FPM) -----> 400
 Number of Rows/F.P.I. -----> 2/5
 Feeds/Passes/Tubes Dropped -----> 1/16/0
 Calculated Total BTUH -----> 23273
 Calculated Sensible BTUH -----> 16374
 Sensible Heat Ratio -----> .56
 Lv Air Dry/Wet Bulb (F) -----> 98/86.
 Air Pressure Drop (inHg) -----> .144
 Leaving Fluid Temp (F) -----> 75.9
 Fluid Vel (fps) / PD (psi) -----> 4.5/7.1

EDWARDS PACKAGED WATER CHILLERS, AIR COOLED AND WATER-COOLED

CD-2

Air-Cooled Model CD-2-A

Capacity in 1000's of B.T.U./Hr.

Leaving

Coolant	Ambient Temperature, °F				
Temp °F	75°	85°	95°	105°	115°*
60	31.0	28.0	24.5	21.5	18.0
55	27.0	24.5	21.5	18.5	15.5
50	24.0	21.0	18.5	16.0	13.4
45	21.2	18.5	16.2	13.5	11.2
40	18.2	16.0	13.5	11.5	9.1
35	15.5	13.2	11.5	9.2	7.2
30	13.0	11.1	9.2	7.5	5.5
25	10.6	9.0	7.3	5.7	4.0
20	8.5	7.0	5.6	4.2	-

Water-Cooled Model CD-2-W

Capacity in 1000's of B.T.U./Hr.

Leaving Condenser

Coolant	Water Temperature, °F				
Temp °F	75°	85°	95°	105°	115°
60	33.2	31.0	28.0	24.5	21.5
55	30.0	27.0	24.5	21.5	18.5
50	26.5	24.0	21.0	18.5	16.0
45	23.5	21.2	18.5	16.2	13.5
40	20.1	18.2	16.0	13.5	11.5
35	17.5	15.5	13.2	11.5	9.2
30	15.0	13.0	11.1	9.2	7.5
25	12.0	10.6	9.0	7.3	5.7
20	10.5	8.5	7.0	5.6	4.2

The above are net ratings with allowance made for the heat input of the recirculation (by-pass) pump, but not for the system pump.

* For ambient temperatures above 110°F, consult factory for special design and pricing.

ELECTRICAL DATA

(Main Disconnect Optional)

(Main disconnect Optional)										Customer Supplied Field Wiring and Main Disconnect Fuse			
Volts	Phase	Hertz	Compressor(s)		Fan(s)		By-Pass Pump		System Pump		Total Unit FLA	Size Circuit Breaker	Size (Time Lag)
			FLA Each	HP	FLA Each	HP	FLA Each	HP	FLA Each	HP			
CD-2-A Air Cooled													
230	1	60	(1) 2 HP	15.6	(1) 1/2	4.9	1/2	4.9	1 1/2	10.0	35.4	60 AMP	30 AMP
200	3	60	(1) 2 HP	10.0	(1) 1/2	2.3	1/2	2.3	1 1/2	5.9	20.5	30 AMP	30 AMP
230	3	60	(1) 2 HP	10.0	(1) 1/2	2.0	1/2	2.0	1 1/2	5.2	19.2	30 AMP	25 AMP
480	3	60	(1) 2 HP	3.5	(1) 1/2	1.0	1/2	1.0	1 1/2	2.6	8.1	30 AMP	12 AMP
CD-2-W Water Cooled													
230	1	60	(1) 2 HP	15.6	-	-	1/2	4.9	1 1/2	10.0	30.5	60 AMP	40 AMP
200	3	60	(1) 2 HP	10.0	-	-	1/2	2.3	1 1/2	5.9	18.2	30 AMP	25 AMP
230	3	60	(1) 2 HP	10.0	-	-	1/2	2.0	1 1/2	5.2	17.2	30 AMP	25 AMP
480	3	60	(1) 2 HP	3.5	-	-	1/2	1.0	1 1/2	2.6	7.1	30 AMP	10 AMP

H.P. RATINGS

Models	Compressor(s)		Condenser Fan		By-Pass Pump		System Pump	
	No.	HP	No.	HP	HP	HP	Ft. Hd.	GPH
CD-2-A	1	2	1	1/2	1/2	1.5	65	10
CD-2-W	1	2	-	-	1/2	1.5	65	10

DATA AND DESCRIPTION

Model CD-2	Type of Condenser:	Round Model		Walk-in Enclosure	
		Air	Water	Air	Water
Physical Width		3'8"	3'8"	4'6"	4'6"
Dimensions Length		3'6"	3'6"	8'0"	8'0"
Height		4'7"	3'11"	7'8"	7'3"
Condensing Air Required (CFM)		1600	-	1600	-
Condenser Water Pipe Size		-	3/4"	-	3/4"
Piping Size Supply		1 1/2"	1 1/2"	1 1/2"	1 1/2"
Return		1 1/2"	1 1/2"	1 1/2"	1 1/2"
Reservoir Capacity (approx. gal.)		25	25	25	25
Operating Weight (lbs.)		1150	1100	1768	1700
Crating: Width		4'0"	4'0"	-	-
Length		4'0"	4'0"	-	-
Height		5'1"	4'5"	No Crating	-
Shipping Weight lbs.		940	888	1560	1492

Exposed Pumps

HNF-2466, Rev.0

Page D-13

CONSTRUCTION FEATURES

TYPICAL SCHEMATIC OF WALK-IN ENCLOSURE MODEL

WARRANTY (Limited)

The manufacturer warrants to the dealer the products described herein to be free of original defects in material and workmanship, and will, within one year from the date of factory shipment, repair or replace, at its option, F.O.B. factory, any parts which upon inspection at its factory are found to be defective. Any such defective parts are to be returned through the dealer from whom purchased, transportation charges prepaid. The manufacturer shall not be liable for any charges involved in the removal or replacement of material at the point of operation, or for any damages which anyone may allege to have suffered as a result

of any defect. The manufacturer's liability is limited to repair or replacement as aforesaid, and is further limited to the dealer. The manufacturer makes no guaranty or warranty of any kind, express or implied, in any other person. This guaranty and warranty negates all warranties and conditions implied by any applicable statutes or rules of law. A competent service organization must be engaged by owner to maintain the equipment. The manufacturer retains the right to change prices, design, and material without notice. (W-1)

Edwards Gun Sail Part Number

CSB-18-4-600-H

1-24-95

PER SCOTT HIGHWAY (PHONE)

OVERALL OUTSIDE LENGTH WILL
BE 43"

Support RDS

A-63 W22024-D18

PER SCOTT

1" NPT MALE CONN

WEIGHT = 145 LBS

GALVANIZED STEEL 18 GA

1" M.P.T. 1" M. COPPER CONN

120/100 HZ 100 VARIABLE SPD

1/2 HP T.E.F.C.

DATE 1-16-95

ATTACHMENT B

1 cover + 3 pages,

CONNECTIONS

CONNECTIONS:
[H] MAIN POWER LEADS TO MOTOR

WEIGHTS

150

MOTOR 150

TOTAL 200

~~DRIVER DATA~~

NOTES:

MIN. SUBMERGENCE LENGTH

ELECTRIC MOTOR

SCREENED SECTION

PRELIMINARY

P075A-E		2	1-11-86	3	30-99-004-G
P075A-I	16047-311-E	1	1-11-86	3	30-99-004-G
PLANT SYSTEM INSTRUMENTS	CHUCK WATSON	GILL WATSON	LAWRENCE WATSON	LAWRENCE WATSON	

CHUCK W.

PROJECT

OF DATE		DESCRIPTION	
3X4X13		PROVISION	
NO.	QTY	UNIT	PRICE
1	1	EA	1.00
TOTAL		1	1.00
SUB TOTAL		1.00	
TAX		0.00	
TOTAL DUE		1.00	
PAID		0.00	
BALANCE DUE		1.00	

LAWRENCE
 PUMP INC.
 LAWRENCE, MA
 01840
 499-1414

DISTRIBUTION SHEET

To	From	Page 1 of 1				
Distribution	JW Bailey	Date 19 July 1998				
Project Title/Work Order		EDT No. 622224				
Project W-320 Tank 106-C, HNF-2466, Civil/Structural Calculations, Vol. 6		ECN No. n/a				
Name	MSIN	Text With All Attach.	Text Only	Attach./Appendix Only	EDT/ECN Only	
JW Bailey	S2-48					
W-320 Project Files	RI-29					