

Private Fuel Storage, L.L.C.

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John L. Donnell, P.E., Project Director

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

June 2, 2000

COMMITMENT RESOLUTION LETTER #34
DOCKET NO. 72-22 / TAC NO. L22462
PRIVATE FUEL STORAGE FACILITY
PRIVATE FUEL STORAGE L.L.C.

A meeting was held on May 25, 2000 in San Antonio, Texas between Private Fuel Storage (PFS), Stone and Webster (S&W), and the NRC/CNWRA to discuss several open issues remaining with the Private Fuel Storage Facility (PFSF) Safety Analysis Report (SAR). The topics discussed and the PFS actions necessary to resolve these issues are outlined below.

GEOTECHNICAL

Several issues were discussed relating to bearing capacity and sliding stability analyses of the cask storage pads and the Canister Transfer Building.

1. The NRC indicated that PFS has not demonstrated that the total stress strength parameters were determined for ranges of stresses applicable to the final stresses that are expected under the pads and the Canister Transfer Building due to the design basis ground motion. The NRC indicated that there were three approaches that they would consider acceptable to resolve this concern. PFS could remove the bearing capacity analyses that were based on the total-stress parameters. Alternatively, PFS could test additional samples at stresses that are high enough to demonstrate that the total-stress strength parameters being used in the analyses do not overshoot the undrained strength that is applicable for these partially saturated soils when they are loaded to stresses high enough to result in complete saturation. Finally, PFS could perform additional tests on saturated specimens of these soils to determine their effective-stress strength and use that strength in the analyses.

KLMSOI Public

PFS Response

PFS agreed to remove the portions of the static bearing capacity analyses that were based on the total-stress strengths.

2. The analyses of the sliding stability of the cask storage pads indicate that sufficient sliding resistance will be provided by the soil cement that will be constructed above the base of the pads if the soil cement has an unconfined compressive strength that exceeds 250 psi. The NRC requested that this compressive strength of 250 psi and QA testing during construction to verify the strength of the soil cement must be made part of the licensing commitments for the facility.

PFS Response

PFS concurred with the requirement that the soil cement beneath and surrounding the cask storage pads will be designed and constructed to have a minimum unconfined compressive strength of 250 psi and that QA testing will be performed during construction to demonstrate that this minimum strength is achieved. This commitment will be clarified in SAR Chapter 2, Section 2.6.4.11, which currently discusses "Soil-Cement Mix and Procedure Development".

3. The NRC suggested that PFS revise the dynamic bearing capacity analyses of the Canister Transfer Building to use only the undrained strength of the clayey soils, rather than using the total-stress strength. They indicated that it is reasonable to use an average value of the strength for the soils within a depth equal to the width of the foundation. They suggested that PFS justify using an increase in the value of the undrained strength that was measured in the laboratory tests on specimens from the weakest zones within the profile based on the relative increase in the undrained strength of the underlying soils that was observed in the cone penetration test results.

PFS Response

PFS agreed to remove the portions of the dynamic bearing capacity analyses that were based on the total-stress strengths. PFS will reanalyze the dynamic bearing capacity using an average undrained strength that is applicable for a depth equal to the width of the foundation, basing this strength on the relative difference between the strength measured in the laboratory tests performed on samples obtained from the weakest portion of the profile and the undrained strengths measured in the CPT tests.

4. The NRC indicated that PFS must construct an engineered mechanism (i.e., a shear key) in order to rely on the cohesive strength of the in situ clayey soils to resist sliding of the Canister Transfer Building. In addition, PFS cannot rely on published results of dynamic tests performed on similar clays to justify using an increase in static strength of the clay to resist sliding due to the dynamic loads due to the design basis ground motion. In order to justify such an increase, PFSF must perform dynamic laboratory tests on soils obtained from the site near the base of the building. Alternatively, they suggested that PFS include the passive resistance acting on the edge of the mat to demonstrate that there is sufficient resistance to sliding without relying on the 50% increase in static strength of the clay to resist the dynamic horizontal load due to the design basis ground motion.

PFS Response:

PFS will add a one-foot deep key to the perimeter of the Canister Transfer Building mat to address concerns the NRC expressed about using the cohesive strength of the clayey soils to resist sliding. This key will force any potential sliding failure to pass within the clayey soils, guaranteeing that the resistance to sliding will be provided by the cohesive portion of the strength of the soils enclosed within the box defined by the perimeter key. PFS will revise the sliding stability analyses to use the shear strength measured in the direct shear tests for the stress levels existing under the Canister Transfer Building. PFS will also add the passive resistance acting on the Canister Transfer Building mat to the sliding stability analysis. Preliminary analyses indicate that these changes will result in acceptable factors of safety for all loading cases without relying on the increase in the static strength that is applicable for rates of strain associated with dynamic loadings due to the design basis ground motion.

The calculation package addressing bearing capacity and sliding stability analyses of the cask storage pads and the Canister Transfer Building will be revised as discussed above and submitted to the NRC by June 16, 2000. The PFSF license application will be updated as required and submitted to the NRC by June 23, 2000.

CANISTER TRANSFER BUILDING CRANES AND SEISMIC SUPPORT STRUTS

NRC Questions/Comments

1. The seismic ground accelerations in the new probabilistic design basis are lower, however the dynamic soil properties resulted in increased accelerations at the crane rail elevations in the building. PFS needs to provide additional information on the

evaluations that were performed to demonstrate that stresses are within allowable limits and design safety factors are appropriate.

PFS Response

The PFSF overhead and semi-gantry cranes have been seismically analyzed in accordance with ASME NOG-1 to ensure they will remain in place and support the load during and after a seismic event. The analyses were performed for both cranes by the crane vendor, Ederer Incorporated, to qualify the crane designs for the PFSF deterministic design earthquake (0.67g horizontal, 0.69g vertical). The cranes were subsequently reviewed by Ederer for their seismic stability based on the current PFSF probabilistic design basis ground motion of 0.53g horizontal and 0.53g vertical and resulting response spectra curves. The Ederer evaluation is summarized in SAR Chapter 4, Section 4.7.2.5.3. A copy of the Ederer evaluation (SAR Reference 63) is included as Attachment 1 and should provide the additional information requested.

2. The load cases and supporting discussion presented in the SAR for the design of the Canister Transfer Building are adequate for the overall building evaluation. PFS has stated that during the detailed design phase, all load cases as described in SAR Chapter 3 and all areas will be addressed in detail. The NRC needs additional information (drawings referenced in calculation SC-10) on the design of the seismic support struts used in the canister transfer cells.

PFS Response

The drawings included in the reference section of S&W calculation 0599602-SC-10, Revision 0, "Seismic Restraints for Spent Fuel Handling Casks" are included as Attachment 2. Please note that drawing 0599601-EM-4-B is not included. This is a general arrangement drawing of the Intermodal Transfer Point and should not have been referenced in calculation 0599602-SC-10.

CASK TRANSPORTER/ONSITE EXPLOSIONS/ONSITE FIRE HAZARDS

NRC Questions/Comments

1. PFS should assess the affect of a seismic event and the impact from a tornado driven missile on a storage cask that is being transported to the storage pad using the cask transporter.

PFS Response

PFS will assess the affect of a seismic event as well as the affect of the impact from a tornado driven missile on a storage cask that is being transported to the storage pad using the cask transporter.

The results of this assessment will be provided to the NRC by June 16, 2000. The PFSF license application will be updated as required and submitted to the NRC by June 23, 2000.

2. The current evaluation for onsite explosions in SAR Chapter 8 considers the rupture of the entire contents of the propane storage tank (20,000 gallons), mixing with air before ignition, and a subsequent explosion equivalent to a detonation of TNT. The explosion is assumed to occur at a distance of 1,384-ft from the Canister Transfer Building and the nearest storage cask and it demonstrates that the resulting overpressure will not exceed 1.0 psi. PFS should evaluate possible movement of the propane vapor cloud combined with delayed ignition and determine the resulting overpressure on the Canister Transfer Building and the nearest storage cask. The potential for buildup of propane vapor and possible ignition in the Canister Transfer Building should also be evaluated.

PFS Response

PFS will assess the scenarios of delayed ignition with vapor cloud dispersion for both an instantaneous tank failure (release of 20,000 gal) and a break of the largest pipe attachment to the tank. The wind speeds and atmospheric stability conditions used will be the worst realistic case based on the meteorological data for the site. Software programs U.S. EPA SCREEN3 and TSCREEN will be used for these calculations. The results will be used to evaluate the impact on the Canister Transfer Building (including possible propane concentration at or around the building) and the storage casks.

The evaluation as discussed above will be submitted to the NRC by June 16, 2000. The PFSF license application will be updated as required and submitted to the NRC by June 23, 2000.

3. Do the fire scenarios evaluated and presented in SAR Chapter 8 for the Canister Transfer Building consider the effects of flame height on SSCs important to safety?

PFS Response

Yes. The calculations made for the fire scenarios presented in the SAR calculated a flame height of 3.74 m from the tire fire. Based on the work of Blinov and

Khudiakov, as reported in Figure 3-11.2 of the SFPE Handbook of Fire Protection Engineering, Second Edition (p3-199), the flame height for the diesel fuel spill would be 5.1 m. The low bay ceiling is 9.1 m. With this ceiling height, the estimated flame heights and the worst-case plume temperatures calculated, it is unlikely that there would be any flame impingement on the ceiling, even directly above the pool fire. The crane is more than 16.7 m above the floor and at least 5 m horizontally from the worst case fire scenario. Therefore, no flame or plume impingement should effect the structural integrity of the crane or its supports.

The PFSF license application will be updated as required and submitted to the NRC by June 23, 2000.

AIRCRAFT AND ORDINANCE CRASH HAZARD ASSESSMENT

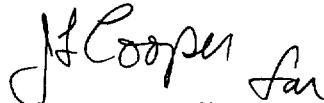
PFS provided a summary update of new information obtained from the U.S. Air Force with regard to the following issues:

- Hazards posed by aircraft flights into and out of Michael Army Air Field
- Hazards posed by aircraft flying to and from Hill Air Force Base and over the UTTR
- Hazards posed by the firing of air delivered munitions on the UTTR
- Cumulative impact of aircraft accident potential

The "Aircraft Crash Impact Hazard at the Private Fuel Storage Facility" dated February 2, 2000 will be revised to include this new information and submitted to the NRC by June 2, 2000.

If you have any questions regarding this response, please contact me at 303-741-7009.

Sincerely



John L. Donnell
Project Director
Private Fuel Storage L.L.C.

Enclosure

Copy to:

Mark Delligatti-1/1
John Parkyn-1/0
Jay Silberg-1/1
Sherwin Turk-1/0
Asadul Chowdhury-1/1
Murray Wade-1/0
Scott Northard-1/0
Denise Chancellor-1/1
Richard E. Condit-1/0
John Paul Kennedy-1/0
Joro Walker-1/0

ATTACHMENT 1

EDERER Evaluation

(25 pages)

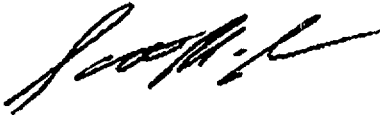
EDERER INCORPORATED ISO 9001 Certified		FAX	
Sent:	September 1, 1999 (12:36PM)	Pages {including this page}:	(26 pages)
From:	SCOTT ANDERSON	Project:	F-2621/22
To:	JERRY COOPER / STAN MACIE, STONE & WEBSTER 303 741 7806		
Subject:	SKULL VALLEY: HIGHER SEISMIC ACCELERATIONS		

Dear Mr. Cooper,

Here is our engineering dept. preliminary review of the estimated effects which the new seismic response spectra will have on the 2 cranes for the Skull Valley Project. I hope that this work is timely and to your satisfaction, and please let me know immediately if you require anything additional.

For tracking purpose we have about 8 hours of engineering time into this investigation. In the future at a convenient time both Ederer and SWEC will have to discuss any possible cost price increases which there may or may not be.

Sincerely,



Scott Anderson
Project Manager

cc: Randy James, Anatol H. 619 455 1094



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The Phase I, Initial Detailed Engineering for Ederer Job Nos. F2621 (200T Bridge Crane) and F2622 (150T Semi Gantry Crane) was carried out using the response spectra curves per the original specification attachment 9, and are included in Appendix A. Revised curves are dated 8/30/99 and are also included in Appendix A. Table 1 gives a comparison between the original and revised curves on the basis of peak acceleration, frequency and percent increase (or decrease) in peak acceleration. Tables 2 and 3 list the maximum percentages of allowable stress for the various components analyzed in the seismic analysis that was originally done on these cranes. Since the peak accelerations occur at relatively low frequencies ($\approx 3-4$ hz horizontal, and $\approx 6-7$ hz vertical) and, these frequencies are close to typical crane structural natural frequencies, a dynamic analysis would have to be done to really define how the structural loading might vary. This would be especially true if a particular mode were close to either the increasing or decreasing side of the response curve. Comparison of the static peak accelerations will however, give an indication of the results of a dynamic analysis.

For the 200T bridge crane, the vertical peak change is +14%. The N-S lateral forces are governed by wheel slip and will remain constant. Since the bridge girders, trolley trucks, trolley girder and equalizing sill are at approximately 90% or more of the allowable stress and this margin should be maintained, the section moduli would have to increase approximately 14%. The bridge trucks will be also affected by the large E-W horizontal peak change (+100%). They are however at a lower % allowable stress of $\approx 72\%$. The section modulus for the trucks would then have to increase approximately 10%. See Appendix A for a sample calculation. Our conclusion is that the bridge crane will still fit in the same envelope as shown on PA-2189, Rev. B but will be somewhat heavier.

For the 150T gantry crane the vertical peak change is +14% on the west end and +8% on the east end. The N-S lateral forces are governed by wheel slip and will remain constant. The E-W lateral peak change is +100% on the west end and -17% on the east end. The equalizing sill, end tie, and gantry trusses are at low enough % allowable stress that they should remain unchanged. The bridge girder, trolley truck and trolley girder section moduli would increase by approximately 12%. The gantry leg section modulus would increase approximately 50% at the top end and remain the same at the bottom. The joints at the girder/leg interface and the girder/truck interface would have to increase in strength to handle the increased E-W lateral loading. The bridge trucks will be affected by the vertical peak change and the large E-W horizontal peak change at elevation 170 ft. They are however at a % allowable stress of $\approx 75\%$, similar to the bridge crane. The section modulus for the trucks would then have to increase approximately 10%. See Appendix A for a similar sample calculation. In conclusion, we expect that the semi gantry crane will still fit in the same envelope as shown on PA-2190, Rev. C but will be somewhat heavier.

This analysis deals with technical issues, commercial issues will be dealt with in separate correspondence.

Fred Langford, C.E. Mechanical

By FEL Date 8/31/99Sheet No. of Chkd. Date Job No. E2621/22Subject: Table 1

		Attach 9		8/30/99		Δ
		Peak	f	Peak	f	%
Vertical peak	170'	2.9	6 hz	3.3	7 hz	14
N-S	170'	3.95	3 hz	4.6	4 hz	16
E-W	170'	6.8	3 hz	13.6	4 hz	100

Vertical peak	100'	2.7	6 hz	2.92	7 hz	8
N-S	100'	3.6	3 hz	3.9	4 hz	8
E-W	100'	4.1	3 hz	3.4	3 hz	-17

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Rev.	Description	Date	By	Chkd.

By FEL Date 8/31/99Sheet No. of Chkd. Date Job No. F2631/22Subject: Table 2 150T Jumi Gantry

<u>Report Page</u>	<u>Member</u>	<u>Truss</u>	<u>Load/Hook</u>	<u>Max % Allow.</u>
4-18	Bridge girder	midspan	150T/HI	86.2
4-13	Equalizing Sill	midspan	150T/HI	39.7
4-3	Trolley truck	1/4 span	150T/HI	96.3
4-3	Trolley girder	1/4 span	150T/HI	98.8
4-13	Bridge truck	1/4 span	150T/HI	75.3
4-13	End tie	1/4 span	150T/HI	55.9
4-13	Gantry leg	1/4 span	150T/HI	96.3
4-12	Gantry cross	1/4 span	No load	54.9

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Rev.	Description	Date	By	Chkd.

By FEL Date 9/31/99Sheet No. of Chkd. Date Job No. 10621/22Subject: Table 3

<u>Report</u> <u>Page</u>	<u>Member</u>	<u>Trolley</u>	<u>Load/hook</u>	<u>Max %</u> <u>Allow</u>
4-17	Bridge girder	midspan	200T/HI	96.2
4-17	Equalizing S.H	midspan	200T/HI	89.1
4-7	Trolley truck	w end	200T/HI	98.8
4-7	Trolley girder	w end	200T/HI	98.7
4-7	Bridge truck	w end	200T/HI	71.9

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Rev.	Description	Date	By	Chkd.

By _____ Date _____

Sheet No. ____ of ____

Chkd. _____ Date _____

Job No. _____

Subject: _____

APPENDIX

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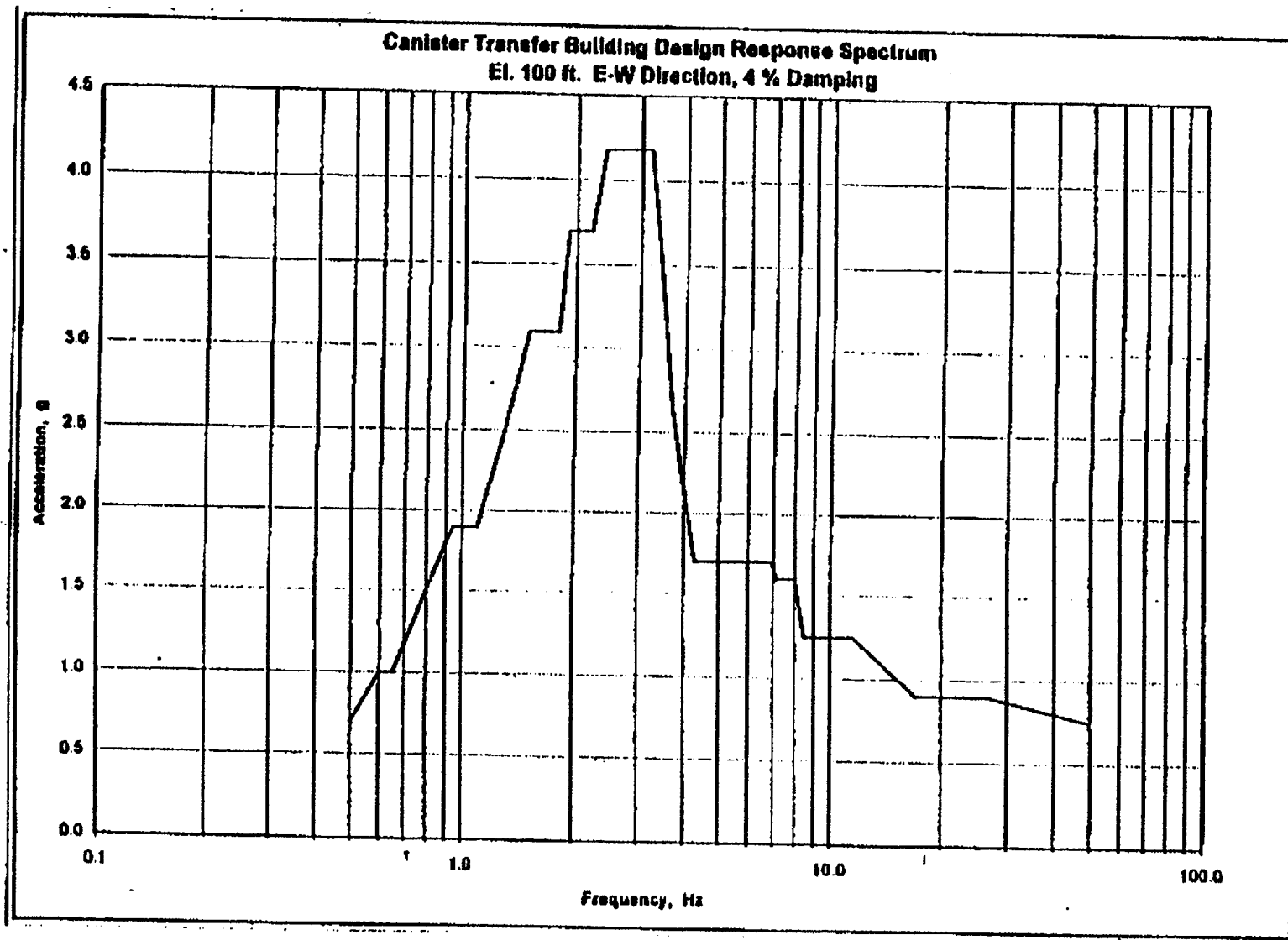
Rev.	Description	Date	By	Chkd.

ATTACHMENT 9

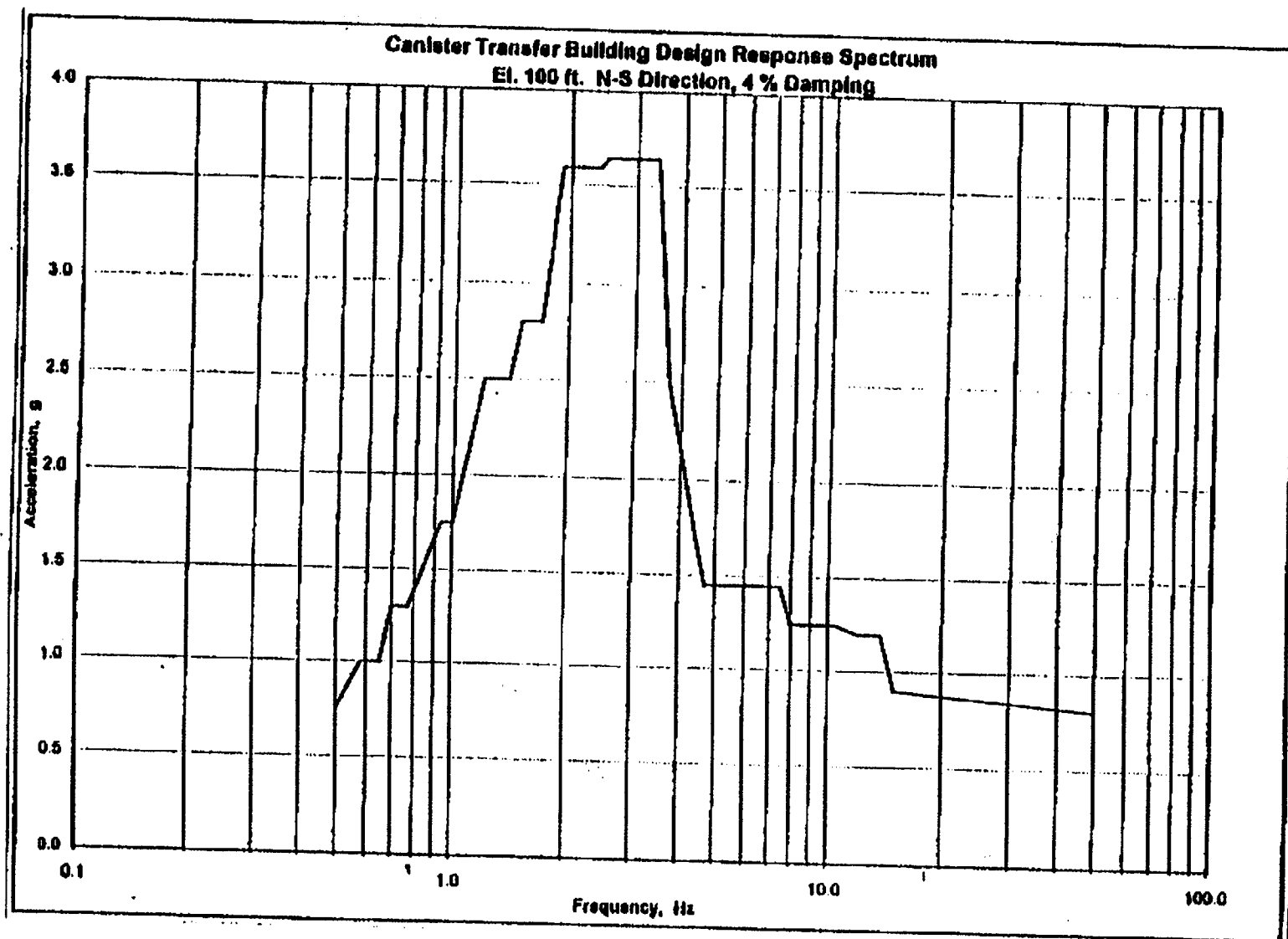
DESIGN RESPONSE SPECTRA

Canister Transfer Building Design Response Spectra, El. 100 ft, E-W Direction	A9-2
Canister Transfer Building Design Response Spectra, El. 100 ft, N-S Direction	A9-3
Canister Transfer Building Design Response Spectra, El. 100 ft, Vertical Direction	A9-4
Canister Transfer Building Design Response Spectra, El. 170 ft, E-W Direction	A9-5
Canister Transfer Building Design Response Spectra, El. 170 ft, N-S Direction	A9-6
Canister Transfer Building Design Response Spectra, El. 170 ft, Vertical Direction	A9-7

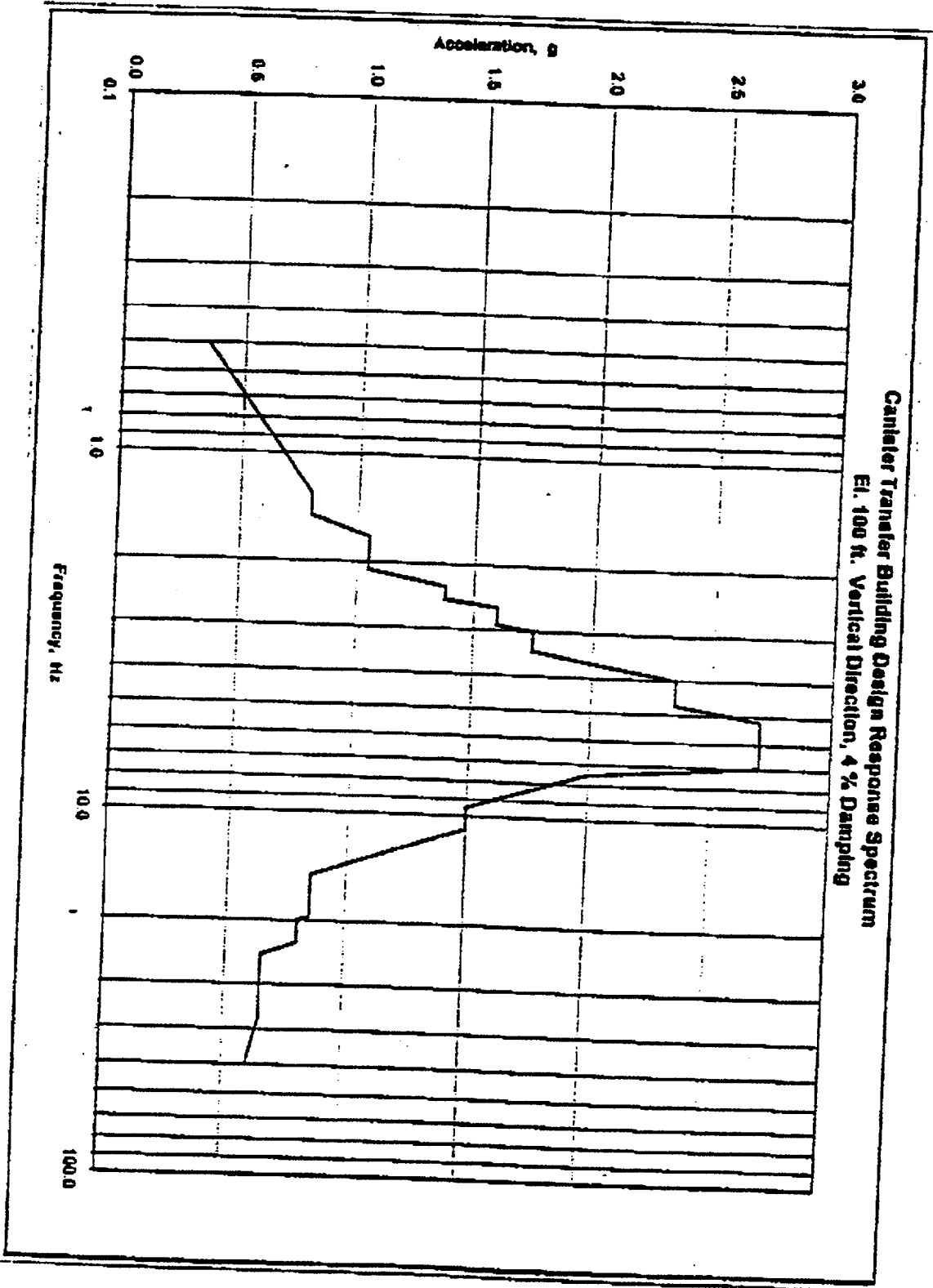
ATTACHMENT 9



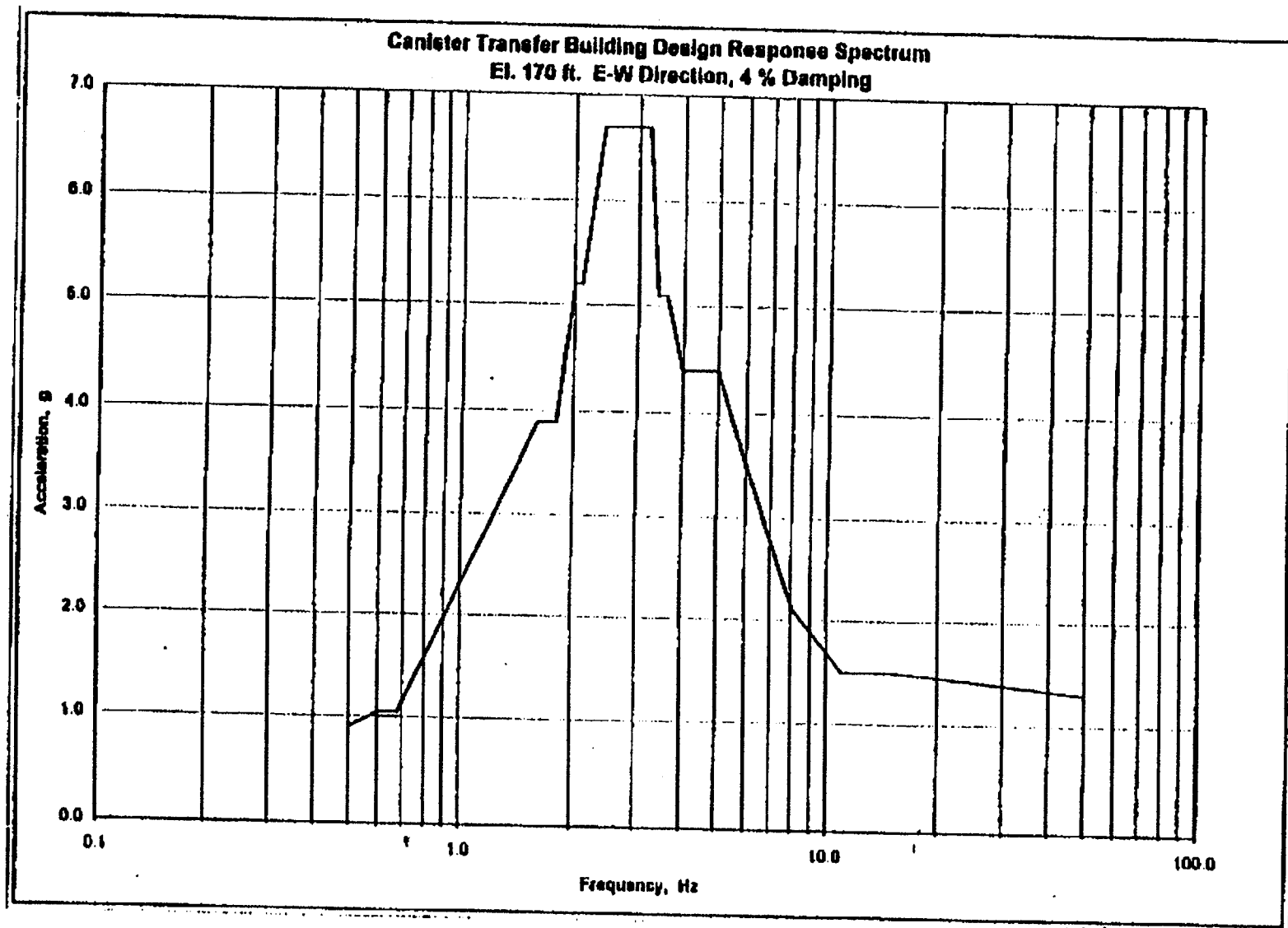
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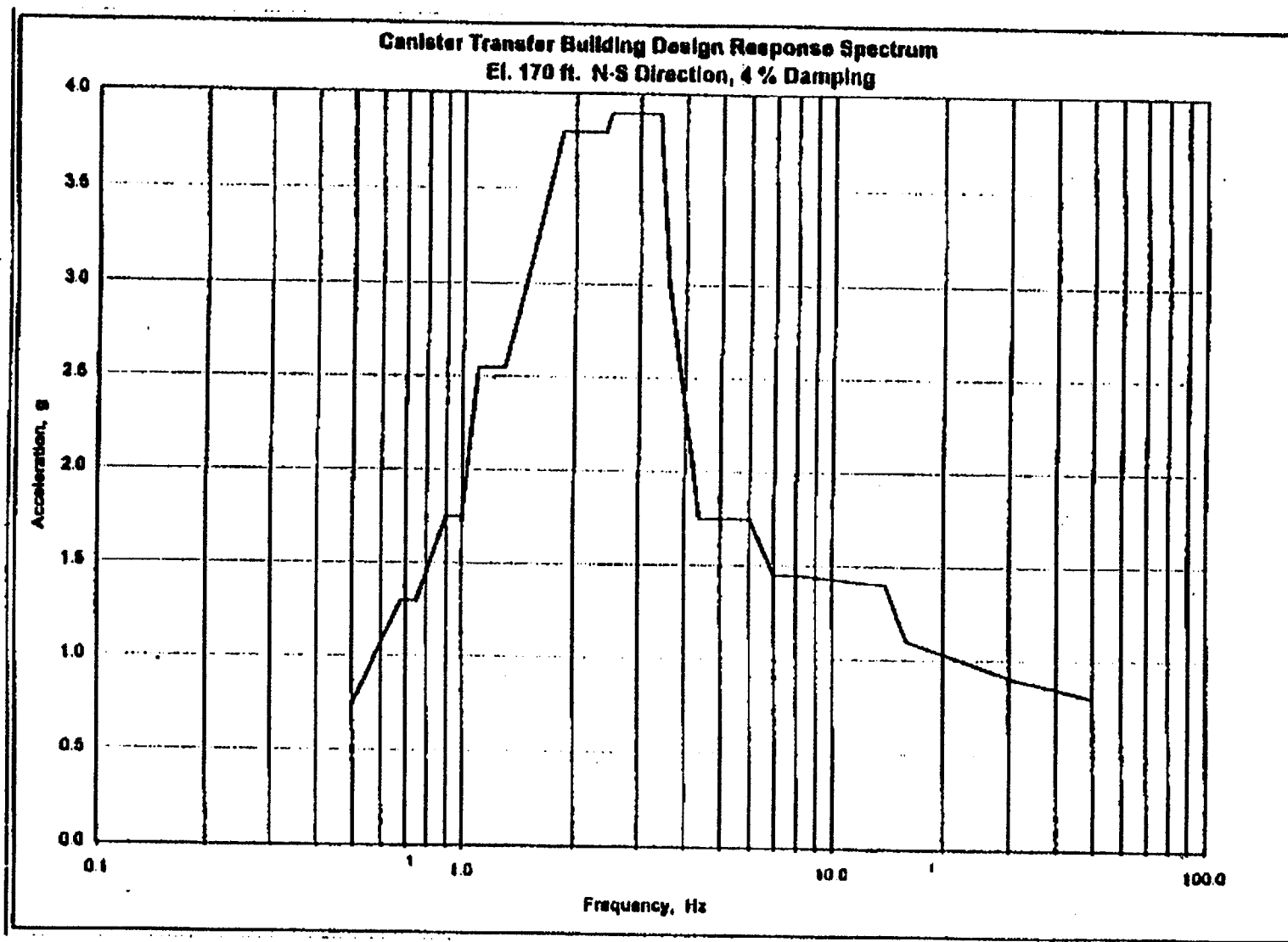
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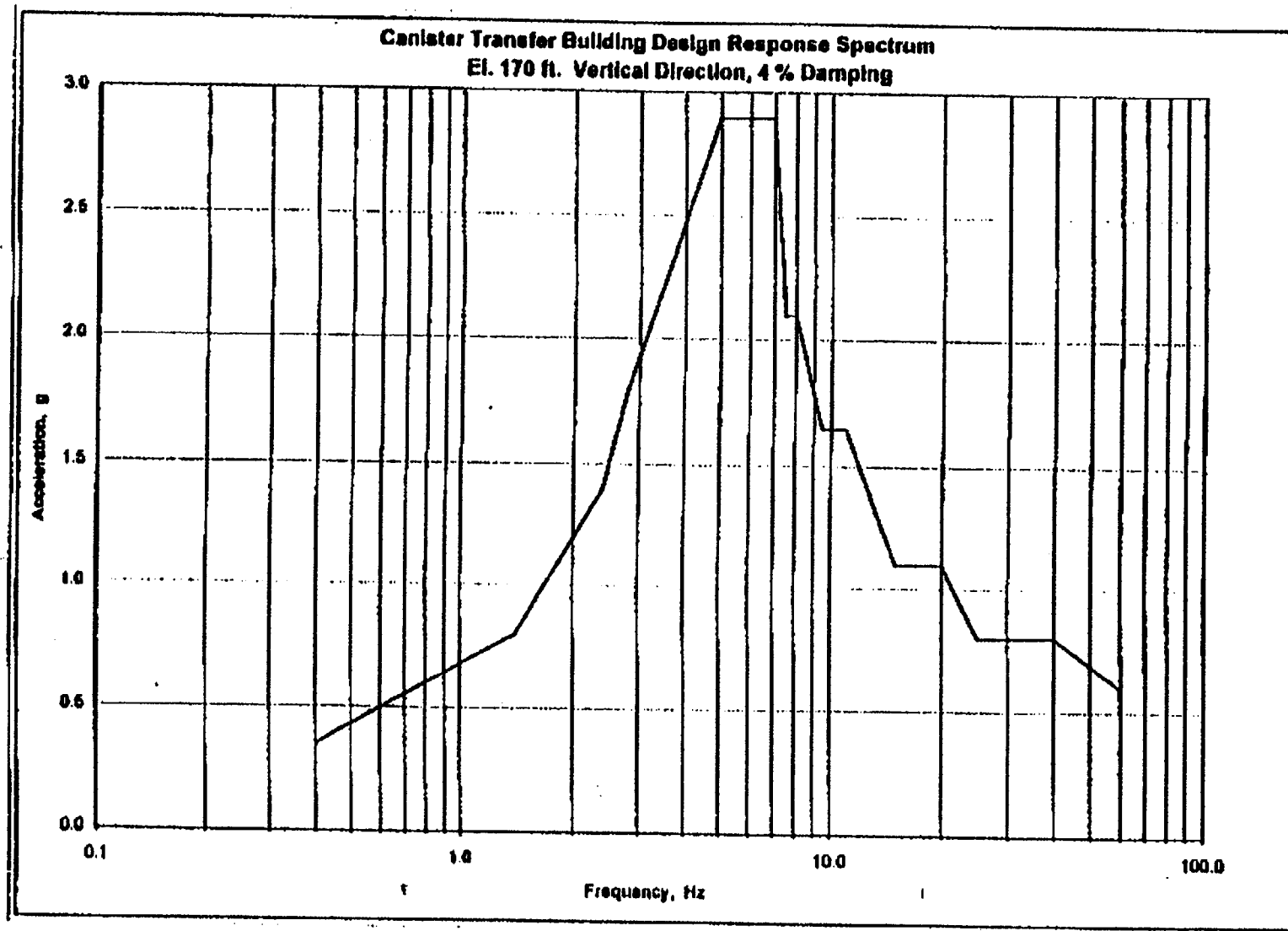
ATTACHMENT 9



ATTACHMENT 9



ATTACHMENT 9



By _____ Date _____
Chkd. _____ Date _____

Sheet No. ____ of ____
Job No. _____

Subject: _____

NEW SPECTRA

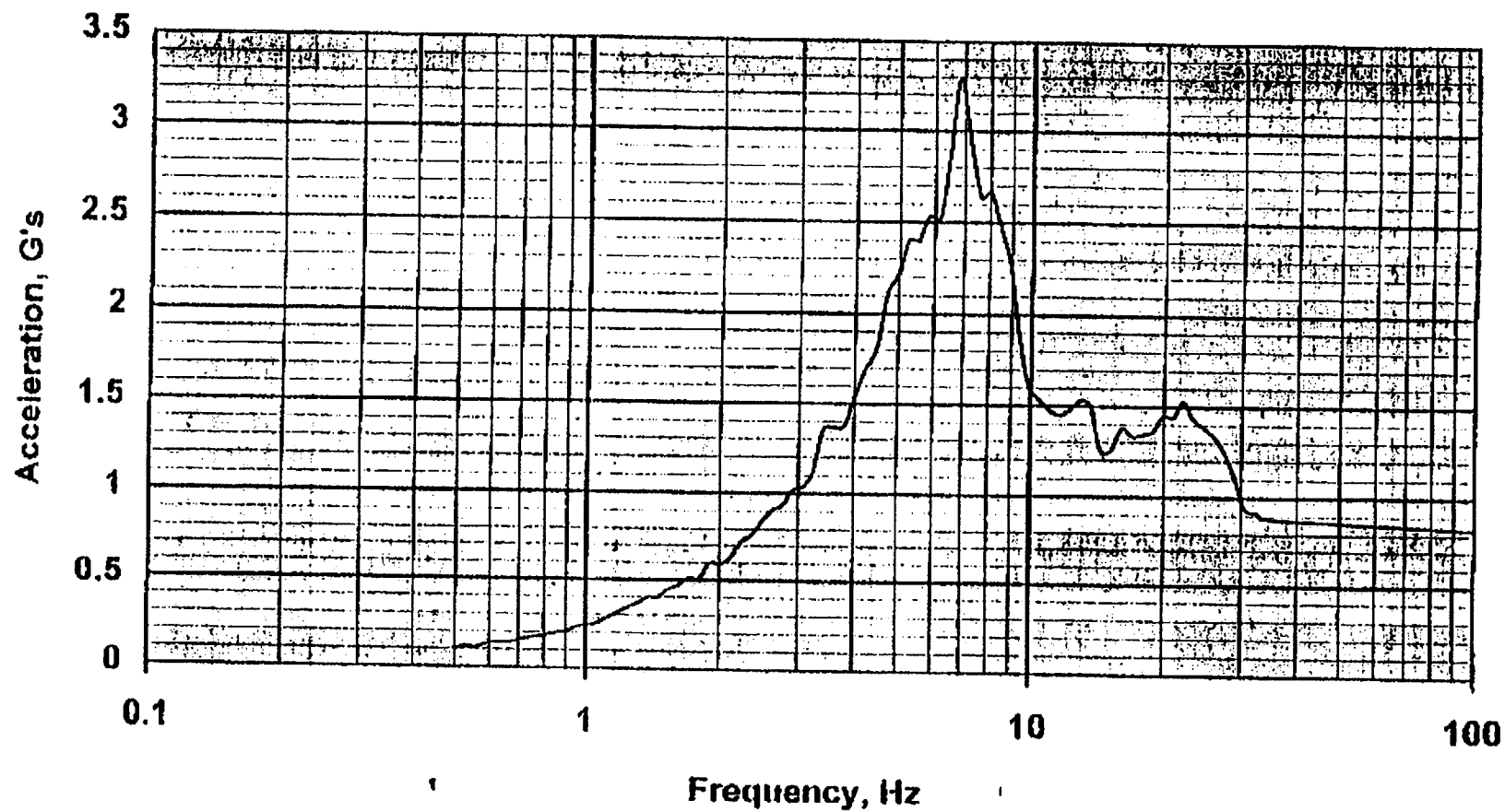
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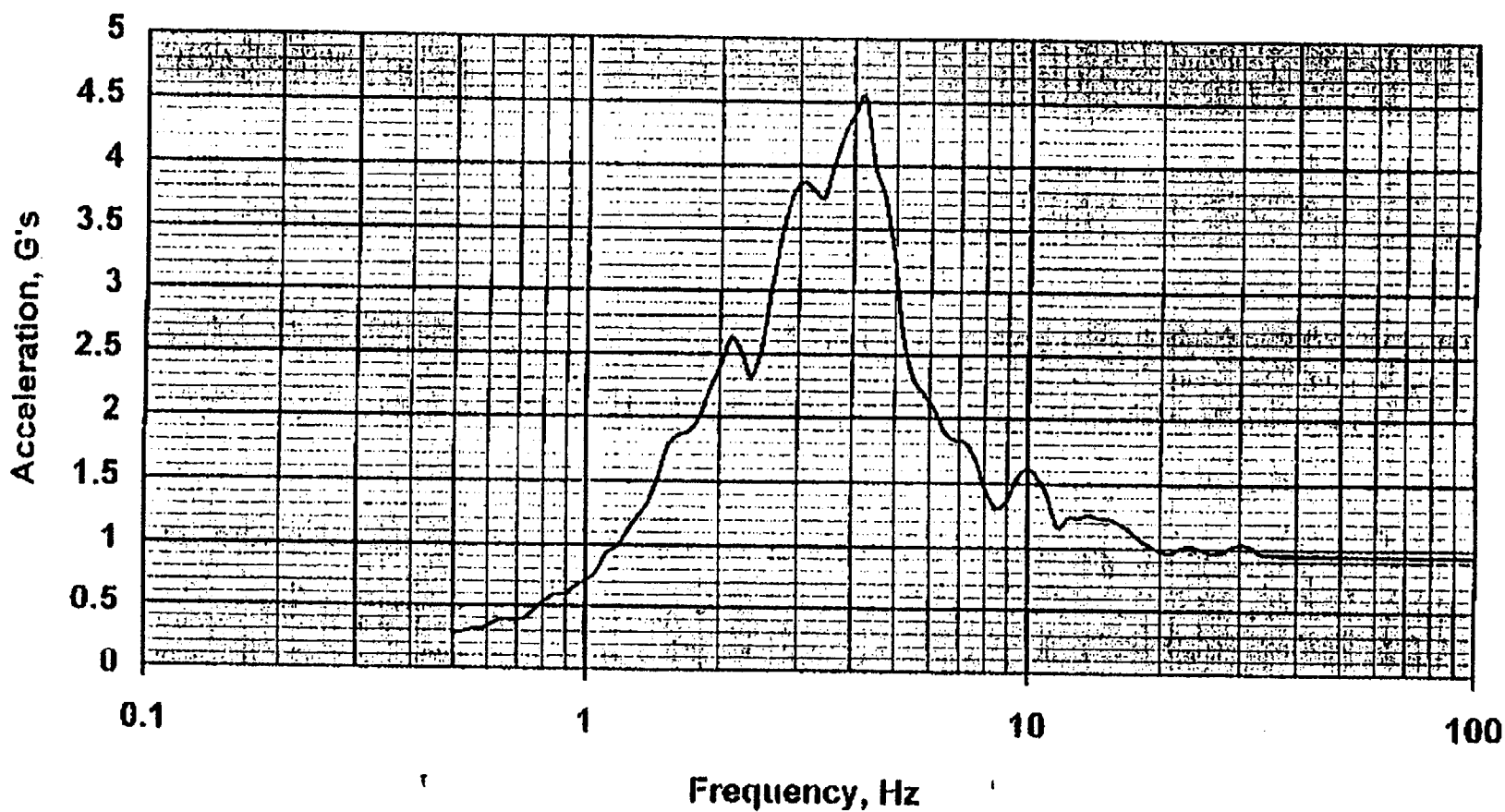
Rev.	Description	Date	By	Chkd.

Skull Valley - Max Vert. ARS, (Elev. 170), 4% Damping



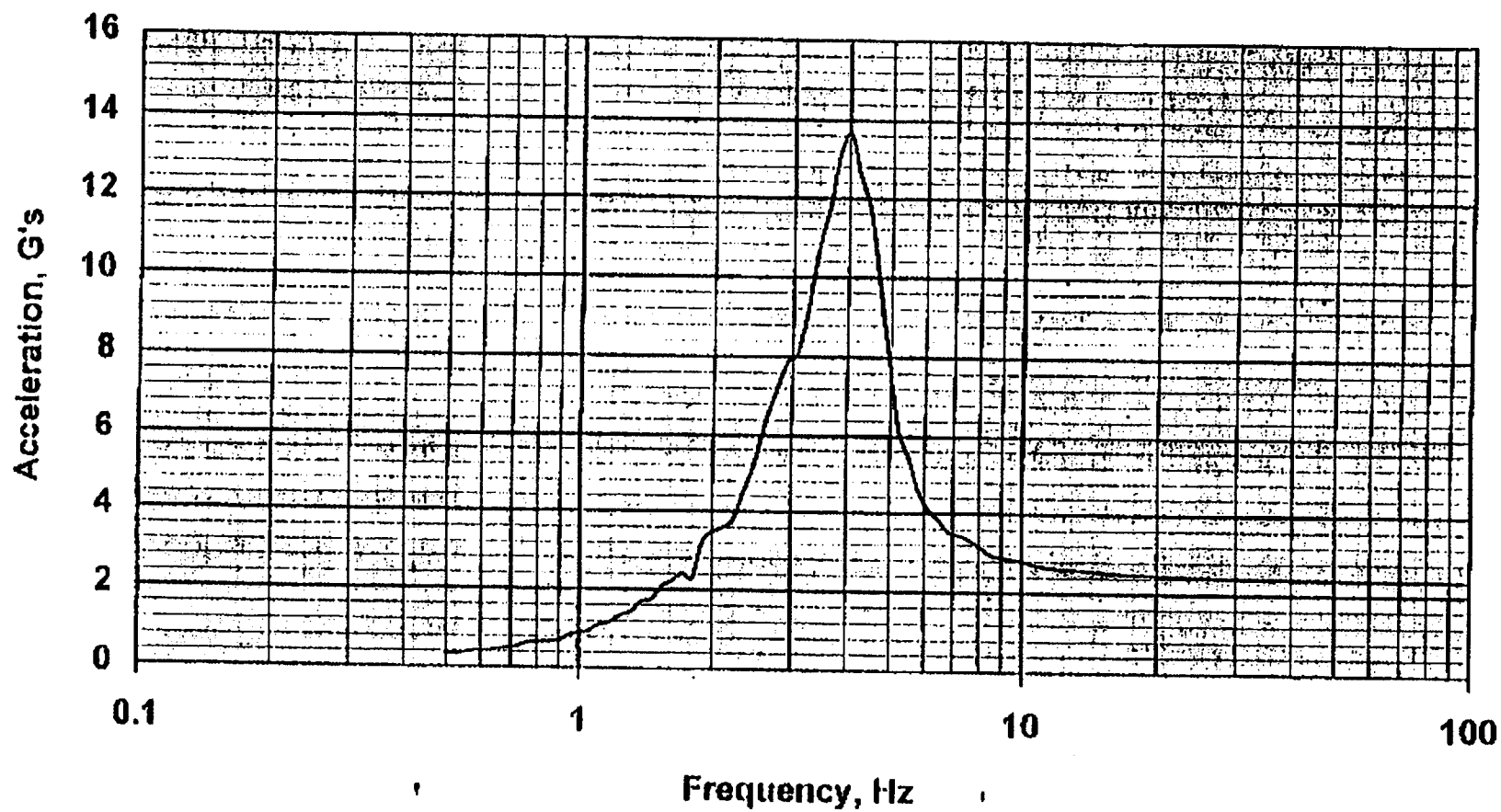
8/30/99

Skull Valley - Max (N-S) ARS, (El. 170), 4% Damping



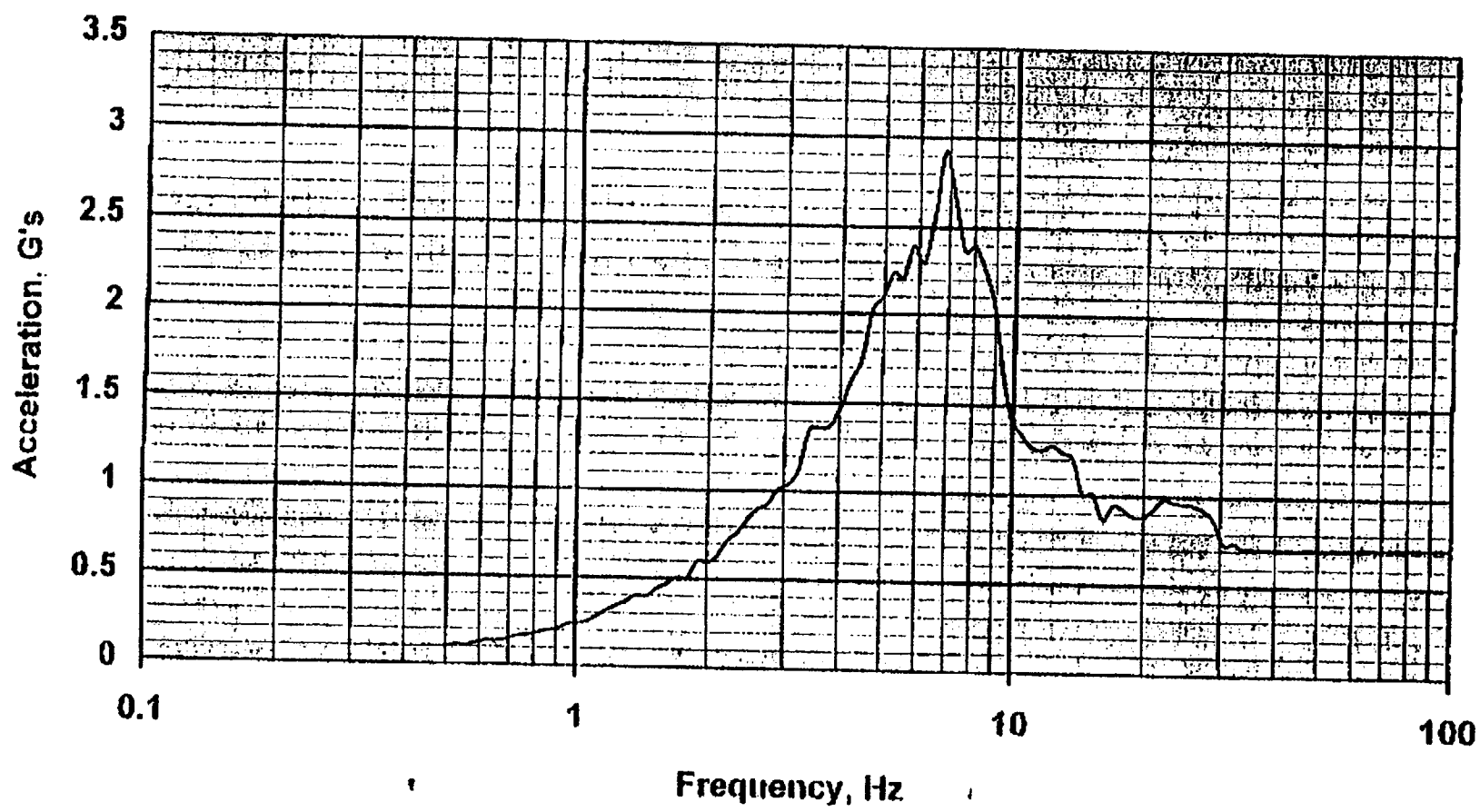
8/30/99

Skull Valley - Max E-W ARS, (Elev. 170), 4% Damping



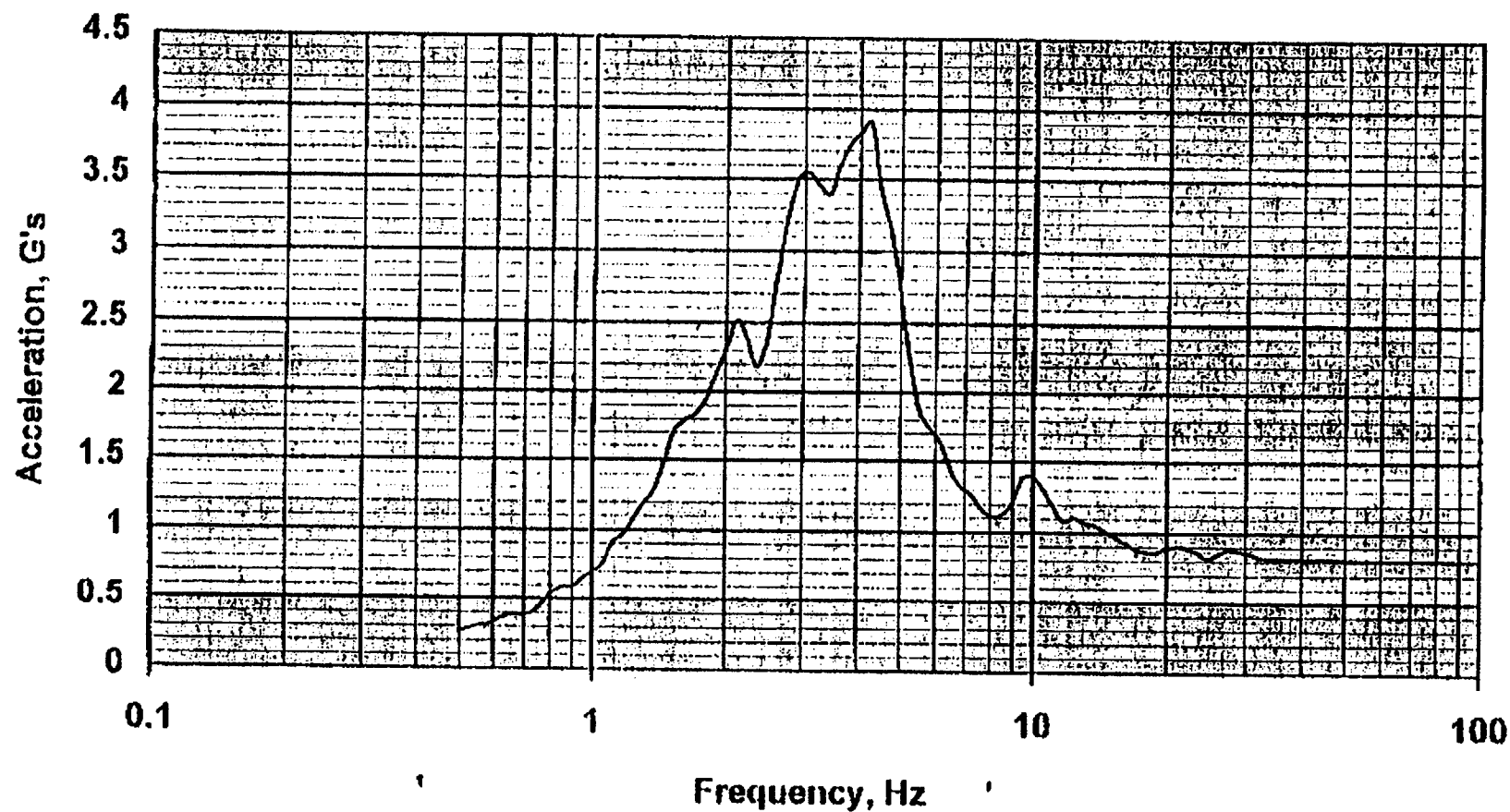
8/30/99

Skull Valley - Max Vert. ARS, (Elev. 100), 4% Damping



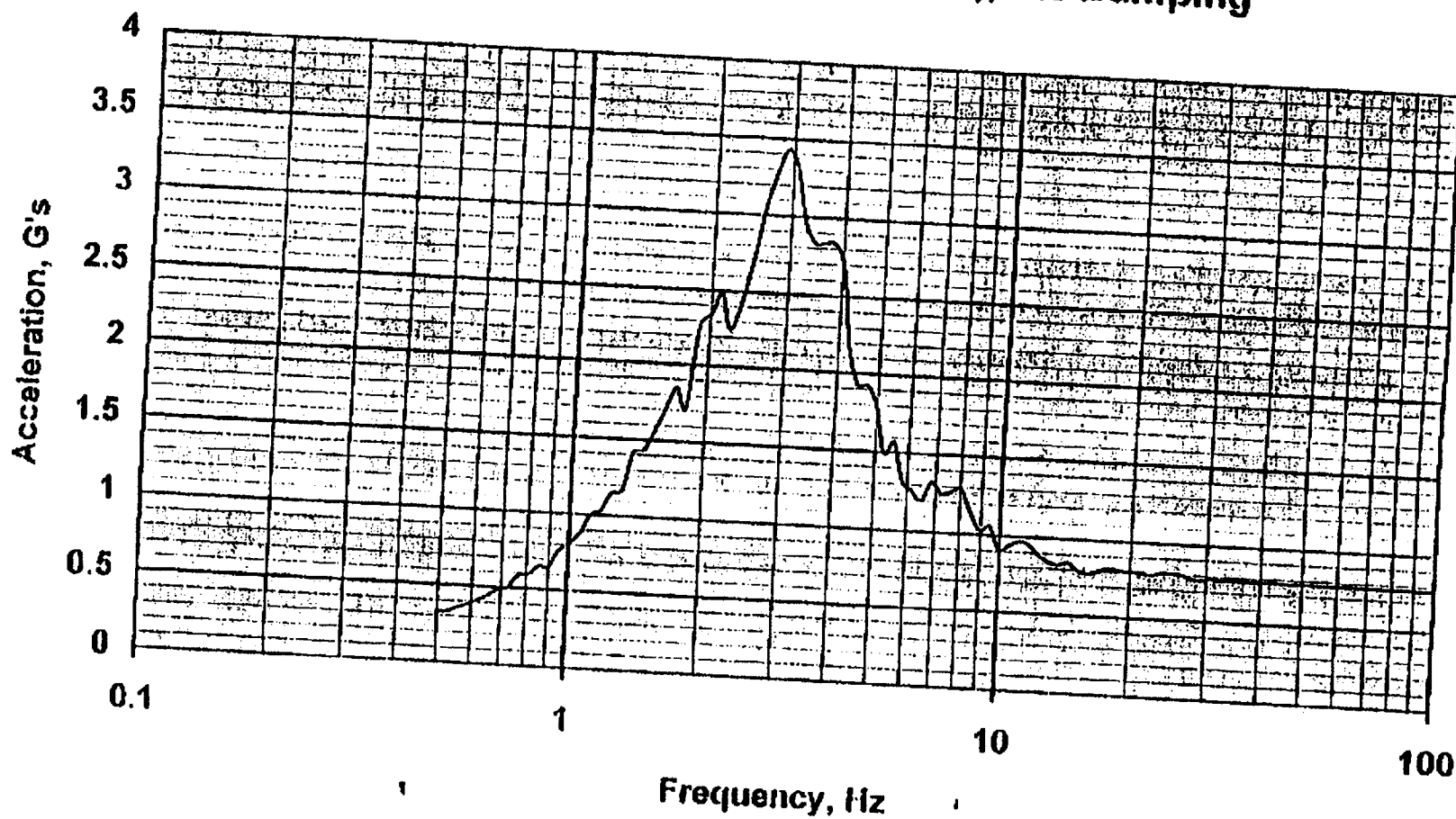
8/30/99

Skull Valley - Max (N-S) ARS, (El. 100), 4% Damping



8/30/99

Skull Valley - Max E-W ARS, (Elev. 100), 4% Damping



B/30/99

By FEL Date 8/31/99

Chkd. _____ Date _____

Sheet No. _____ of _____

Job No. F2621/22Subject: Appendix AF2621 Truck sectionReference - seismic analysis, 200T bridge crane
page 4-7, table 4-2Normal stressStatic = 5988Dynamic = 16549Wheel slip = 8462Estimate that the dynamic stress is equally
divided between vertical and horizontal
loadingincrease in vertical peak = 19%increase in E-W horizontal peak = 100%increase in dead load = 10%allowable stress = 34.2 ksi90% allowable = 30.8 ksiuse 10% increase in section modulus

$$\sigma = \frac{5988(1.1)}{1.1} + \left[\left(\frac{18250(1.19)}{1.1} + \frac{8250(2)}{1.1} \right)^2 + \left(\frac{8462}{1.1} \right)^2 \right]^{\frac{1}{2}}$$

$$\sigma = 30.8 \text{ ksi} \leq 30.8 \text{ ksi allow.}$$

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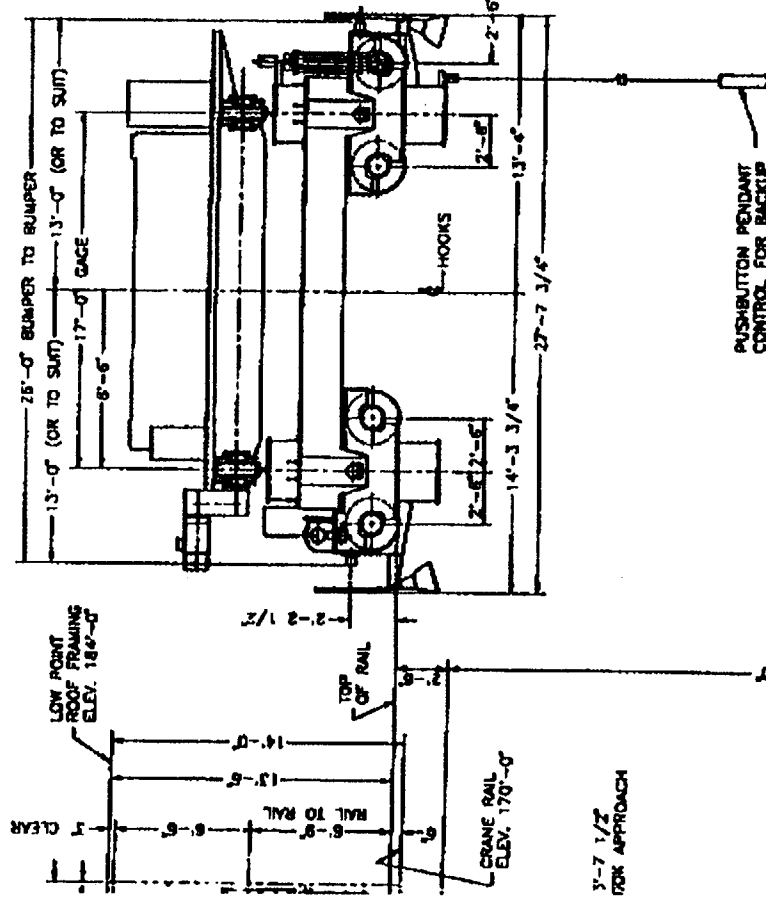
REVENUES									
LINE	DESCRIPTION	DATE	BY	AMT	DATE	BY	AMT	DATE	BY
A	GENERAL REVENUES	8-17-68	ORG						
B	GENERAL REVENUES	8-18-68	J.F						

CRANE DATA:

POWER:	480-3-50
ENGINE MODEL:	(3) 307 D5
MAXIMUM STATIC WHEEL LOAD:	147,000 LBS.
MAXIMUM DIA:	171 IN./4450
SERVICE:	ROADWORK
DUTY:	HDZ 1 TRUCK 1
COMMENTS:	ROAD REPAIR & PAVEMENT REPAIR

Index

GRIDER W/ CONTROL PANELS & WINCH	88 K		
GRIDER W/ RESTOCKS & WINCH	58 K		
TROLLEY	111.5 K		
MAIN HOIST LOWER BLOCK	19 K		
AUX HOIST LOWER BLOCK	3.5 K		
EQUALIZING SILLS	(EACH) 8 K		
END TRUCKS DRIVER	(EACH) 8 K		
END TRUCKS IDLER	(EACH) 8.7 K		
TOTAL CRANE WEIGHT	310 K		
SPEEDS (+/- 10%) 1 rpm	NO LOAD	RATED LOAD	
BARGE	-	40	
TROLLEY	-	25	
MAIN HOIST	5.7	3.8	
AUX HOIST	21	14	

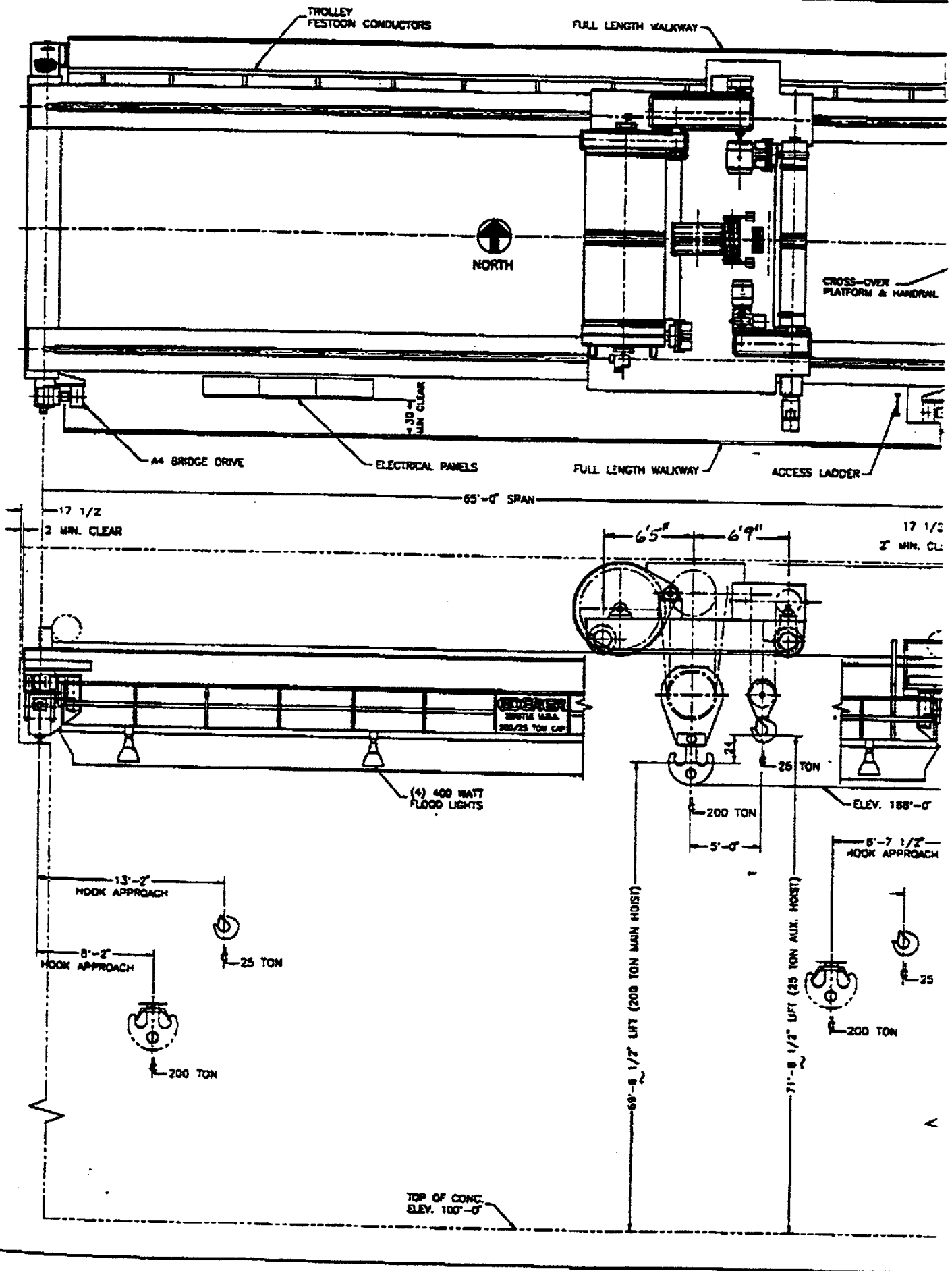


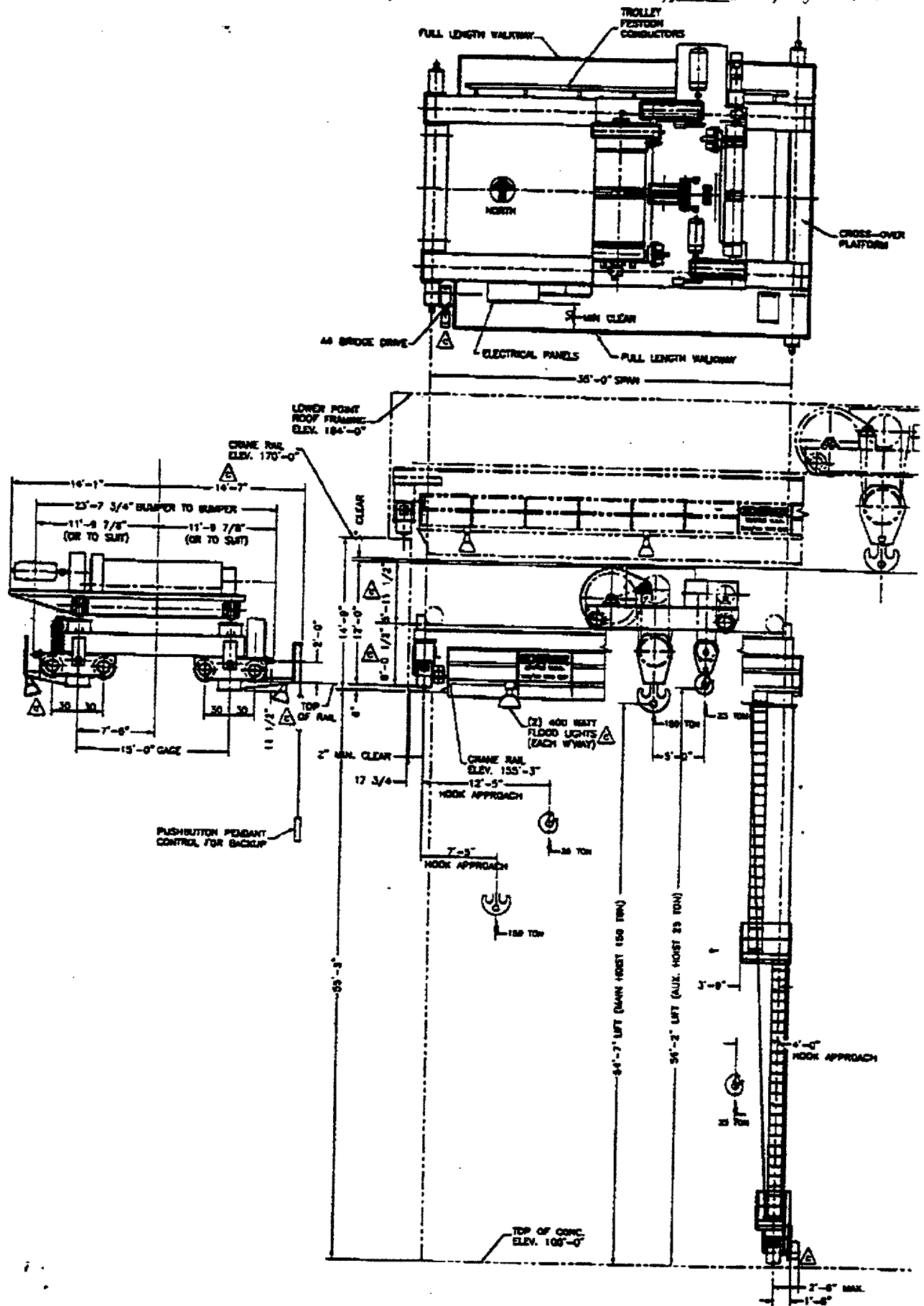
3'-7 1/2"
FROM APPROACH

**PUSHBUTTON PENDANT
CONTROL FOR BACKUP**

EDEKER INCORPORATED, 2000 73RD AVE SW, SUITE 100, WILSON, WA 98093 TEL: 206-435-4471 FAX: 206-435-4400		703	
DATE 10/1/88	COUNTRY USA	SPEC 100%	PA-2189
LIST OF MATERIALS			
TOTAL NET WEIGHT 0	TOTAL NET WEIGHT 1/2" x 12" x 12"	TOTAL NET WEIGHT 1/2" x 12" x 12"	TOTAL NET WEIGHT 1/2" x 12" x 12"
MATERIALS USED 1-3/4" x 12" x 12"	MATERIALS USED 1-3/4" x 12" x 12"	MATERIALS USED 1-3/4" x 12" x 12"	MATERIALS USED 1-3/4" x 12" x 12"
QUANTITY 1	QUANTITY 1	QUANTITY 1	QUANTITY 1
DATE 10/1/88	DATE 10/1/88	DATE 10/1/88	DATE 10/1/88
NAME J. J.	NAME J. J.	NAME J. J.	NAME J. J.
ADDRESS 1000 1st Ave SW	ADDRESS 1000 1st Ave SW	ADDRESS 1000 1st Ave SW	ADDRESS 1000 1st Ave SW
CITY Seattle	CITY Seattle	CITY Seattle	CITY Seattle
STATE WA	STATE WA	STATE WA	STATE WA
ZIP 98101	ZIP 98101	ZIP 98101	ZIP 98101
PHONE 206-435-4471	PHONE 206-435-4471	PHONE 206-435-4471	PHONE 206-435-4471
FAX 206-435-4400	FAX 206-435-4400	FAX 206-435-4400	FAX 206-435-4400
EDEKER INCORPORATED 2000 73RD AVE SW, SUITE 100 WILSON, WA 98093	EDEKER INCORPORATED 2000 73RD AVE SW, SUITE 100 WILSON, WA 98093	EDEKER INCORPORATED 2000 73RD AVE SW, SUITE 100 WILSON, WA 98093	EDEKER INCORPORATED 2000 73RD AVE SW, SUITE 100 WILSON, WA 98093
CLEARANCE DRAWING 200/73 TON CAPACITY BRIDGE CRANE PRIVATE FUEL STORAGE FACILITY SHELBY VALLEY, UTAH	CLEARANCE DRAWING 200/73 TON CAPACITY BRIDGE CRANE PRIVATE FUEL STORAGE FACILITY SHELBY VALLEY, UTAH	CLEARANCE DRAWING 200/73 TON CAPACITY BRIDGE CRANE PRIVATE FUEL STORAGE FACILITY SHELBY VALLEY, UTAH	CLEARANCE DRAWING 200/73 TON CAPACITY BRIDGE CRANE PRIVATE FUEL STORAGE FACILITY SHELBY VALLEY, UTAH

THE DISSENT AND THE CONVENTION THEREOF ARE THE NECESSARY PRELUDING OF ENOUGH INCORPORATED AND ARE NOT BE USED ON COMPLAINT BY OTHERS WITHOUT ADEQUATE PROTECTION OF ENOUGH INCORPORATED





ATTACHMENT 2

DRAWINGS REFERENCED IN CALCULATION 0599602-SC-10, REVISION 0

0599601-EA-8-D
0599601-EA-9-D
0599601-EA-12-C
0599601-EM-1-D
0599601-EM-2-D
0599601-EM-3-D
0599602-EC-2-A
0599602-EC-3-A
0599602-EC-4-A
0599602-EC-5-A
0599602-EC-6-A
0599602-EC-7-A

Vendor Catalog Information on Struts and Brackets (11 pages)

**THIS PAGE IS AN
OVERSIZED DRAWING
OR FIGURE,
THAT CAN BE VIEWED AT
THE RECORD TITLED:
0599601-EA-8-D, REV D:
CANISTER TRANSFER BUILDING
FLOOR PLAN**

**WITHIN THIS PACKAGE...OR,
BY SEARCHING USING THE
DOCUMENT/REPORT NUMBER:
0599601-EA-8-D, REV D**

NOTE: Because of this page's large file size, it may be more convenient to copy the file to a local drive and use the Imaging (Wang) viewer, which can be accessed from the Programs/Accessories menu.

D-1

**THIS PAGE IS AN
OVERSIZED DRAWING
OR FIGURE,
THAT CAN BE VIEWED AT
THE RECORD TITLED:
0599601-EA-9-D, REV D:
CANISTER TRANSFER BUILDING
ELEVATIONS - SH 1**

**WITHIN THIS PACKAGE...OR,
BY SEARCHING USING THE
DOCUMENT/REPORT NUMBER:
0599601-EA-9-D, REV D**

NOTE: Because of this page's large file size, it may be more convenient to copy the file to a local drive and use the Imaging (Wang) viewer, which can be accessed from the Programs/Accessories menu.

D-2

**THIS PAGE IS AN
OVERSIZED DRAWING
OR FIGURE,
THAT CAN BE VIEWED AT
THE RECORD TITLED:
0599601-EA-12-C, REV C:
CANISTER TRANSFER BUILDING
ELEVATIONS - SH 2**

**WITHIN THIS PACKAGE...OR,
BY SEARCHING USING THE
DOCUMENT/REPORT NUMBER:
0599601-EA-12-C, REV C**

NOTE: Because of this page's large file size, it may be more convenient to copy the file to a local drive and use the Imaging (Wang) viewer, which can be accessed from the Programs/Accessories menu.

D-3

**THIS PAGE IS AN
OVERSIZED DRAWING
OR FIGURE,
THAT CAN BE VIEWED AT
THE RECORD TITLED:
0599601-EM-1-D, REV D:
CANISTER TRANSFER BUILDING
GENERAL ARRANGEMENT - SH 1

WITHIN THIS PACKAGE...OR,
BY SEARCHING USING THE
DOCUMENT/REPORT NUMBER:
0599601-EM-1-D, REV D**

NOTE: Because of this page's large file size, it may be more convenient to copy the file to a local drive and use the Imaging (Wang) viewer, which can be accessed from the Programs/Accessories menu.

D-4

**THIS PAGE IS AN
OVERSIZED DRAWING
OR FIGURE,
THAT CAN BE VIEWED AT
THE RECORD TITLED:
0599601-EM-2-D, REV D:
CANISTER TRANSFER BUILDING
GENERAL ARRANGEMENT - SH 2**

**WITHIN THIS PACKAGE...OR,
BY SEARCHING USING THE
DOCUMENT/REPORT NUMBER:
0599601-EM-2-D, REV D**

NOTE: Because of this page's large file size, it may be more convenient to copy the file to a local drive and use the Imaging (Wang) viewer, which can be accessed from the Programs/Accessories menu.

D-5

**THIS PAGE IS AN
OVERSIZED DRAWING
OR FIGURE,
THAT CAN BE VIEWED AT
THE RECORD TITLED:
0599601-EM-3-D, REV D:
CANISTER TRANSFER BUILDING
GENERAL ARRANGEMENT - SH 3**

**WITHIN THIS PACKAGE...OR,
BY SEARCHING USING THE
DOCUMENT/REPORT NUMBER:
0599601-EM-3-D, REV D**

NOTE: Because of this page's large file size, it may be more convenient to copy the file to a local drive and use the Imaging (Wang) viewer, which can be accessed from the Programs/Accessories menu.

D-6

**THIS PAGE IS AN
OVERSIZED DRAWING
OR FIGURE,
THAT CAN BE VIEWED AT
THE RECORD TITLED:
0599602-EC-2-A, REV A:
CANISTER TRANSFER BUILDING
MAT FOUNDATION PLAN**

**WITHIN THIS PACKAGE...OR,
BY SEARCHING USING THE
DOCUMENT/REPORT NUMBER:
0599602-EC-2-A, REV A**

NOTE: Because of this page's large file size, it may be more convenient to copy the file to a local drive and use the Imaging (Wang) viewer, which can be accessed from the Programs/Accessories menu.

D-7

**THIS PAGE IS AN
OVERSIZED DRAWING
OR FIGURE,
THAT CAN BE VIEWED AT
THE RECORD TITLED:
0599602-EC-3-A, REV A:
CANISTER TRANSFER BUILDING
ROOF PLAN EL. 130 ft. - 0 in.**

**WITHIN THIS PACKAGE...OR,
BY SEARCHING USING THE
DOCUMENT/REPORT NUMBER:
0599602-EC-3-A, REV A**

NOTE: Because of this page's large file size, it may be more convenient to copy the file to a local drive and use the Imaging (Wang) viewer, which can be accessed from the Programs/Accessories menu.

D-8

**THIS PAGE IS AN
OVERSIZED DRAWING
OR FIGURE,
THAT CAN BE VIEWED AT
THE RECORD TITLED:
0599602-EC-4-A, REV A:
CANISTER TRANSFER BUILDING
ROOF PLAN EL. 190 ft. - 0 in.**

**WITHIN THIS PACKAGE...OR,
BY SEARCHING USING THE
DOCUMENT/REPORT NUMBER:
0599602-EC-4-A, REV A**

NOTE: Because of this page's large file size, it may be more convenient to copy the file to a local drive and use the Imaging (Wang) viewer, which can be accessed from the Programs/Accessories menu.

D-9

**THIS PAGE IS AN
OVERSIZED DRAWING
OR FIGURE,
THAT CAN BE VIEWED AT
THE RECORD TITLED:
0599602-EC-5-A, REV A:
CANISTER TRANSFER BUILDING
ELEVATIONS - SH 1**

**WITHIN THIS PACKAGE...OR,
BY SEARCHING USING THE
DOCUMENT/REPORT NUMBER:
0599602-EC-5-A, REV A**

NOTE: Because of this page's large file size, it may be more convenient to copy the file to a local drive and use the Imaging (Wang) viewer, which can be accessed from the Programs/Accessories menu.

D-10

**THIS PAGE IS AN
OVERSIZED DRAWING
OR FIGURE,
THAT CAN BE VIEWED AT
THE RECORD TITLED:
0599602-EC-6-A, REV A:
CANISTER TRANSFER BUILDING
ELEVATIONS - SH 2**

**WITHIN THIS PACKAGE...OR,
BY SEARCHING USING THE
DOCUMENT/REPORT NUMBER:
0599602-EC-6-A, REV A**

NOTE: Because of this page's large file size, it may be more convenient to copy the file to a local drive and use the Imaging (Wang) viewer, which can be accessed from the Programs/Accessories menu.

D-11

**THIS PAGE IS AN
OVERSIZED DRAWING
OR FIGURE,
THAT CAN BE VIEWED AT
THE RECORD TITLED:
0599602-EC-7-A, REV A:
CANISTER TRANSFER BUILDING
ELEVATIONS - SH 3**

**WITHIN THIS PACKAGE...OR,
BY SEARCHING USING THE
DOCUMENT/REPORT NUMBER:
0599602-EC-7-A, REV A**

NOTE: Because of this page's large file size, it may be more convenient to copy the file to a local drive and use the Imaging (Wang) viewer, which can be accessed from the Programs/Accessories menu.

D-12

**VENDOR CATALOG INFORMATION
ON STRUTS AND BRACKETS**

06/01/00 08:42
5-31-200 2:46PM781 938 0026
FROM STONE WEBSTERTPG
609 482 3171001/011
P. 1

FAX

Dated 5-31-2000

To W. Dunleavy
Bergen Power Pipe Support
Phone No. 781-935-9550
Fax No. 781-935-7664

From A. Cokonis/B. Ebbeson
SWEC
Cherry Hill, NJ
Phone No. 856-482-3136, 856-482-4654
Fax No. 856-482-3283, 856-482-3171

Bill, based on your prior conversation with Ozzie Bilgin (8-13-99), regarding the load capacity of struts to be used on Skull Valley Spent Fuel Casks, I am requesting that you fax the load capacity data that are specific to the size of the strut used in this application. The two Nuclear Service struts are:

Strut No. 1. Part 2252-Size 130, Pin to pin = 114.5" = 9'-6.5". Both ends with bracket
(no clamp). MAX LOAD 240,077* STRUT
238,000 BRACKET ← MAX. FAULTED

Strut No. 2. Part 2100-Size 200, Pin to pin = 90.7" = 7'-6.75". Both ends with bracket
(no clamp). MAX LOAD 351,000 STRUT ← MAX. FAULTED
376,000 BRACKET

Based on your conversation with Ozzie you mentioned that the Level D capacity for Strut No. 1 was 238 Kips and for Strut No. 2 was greater than 324 kips. These capacities must be met, otherwise please suggest alternate strut components.

Your prompt response will be appreciated.

Alex Cokonis/B. Ebbeson

REPLY:

STRUT LOADS HAVE BEEN ADJUSTED TO SUIT PIN TO PIN
DIMENSIONS.

LC D S FOR PART 2252, 1000 AND 2100, 2003
ARE ATTACHED

Wm. B. Dunleavy
BERGEN-POWER PIPE SUPPORTS

A circular professional seal for a registered professional engineer. The outer ring contains the text "THE STATE OF NEW YORK" at the top and "REGISTERED PROFESSIONAL ENGINEER" at the bottom. Inside the ring, the name "HAROLD L. MOORE, JR." is written in a larger font, and the number "No. 225" is written below it.

CONTROL REF. NO. 1000

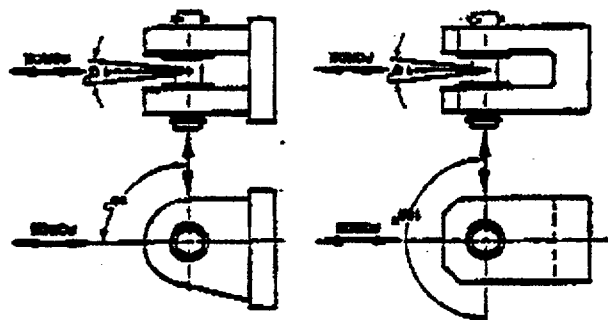
BERGEN-PATERSON
FURNITURE COMPANY
102

[illegible]

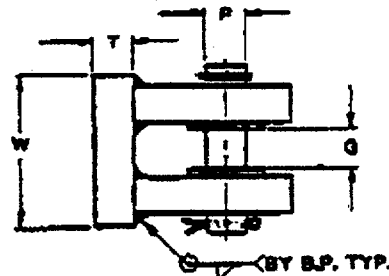
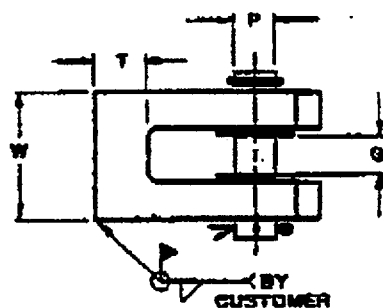
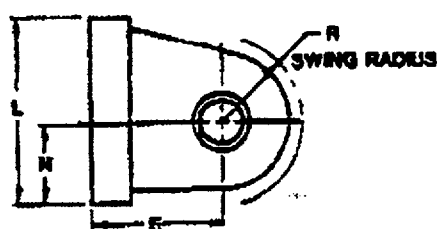
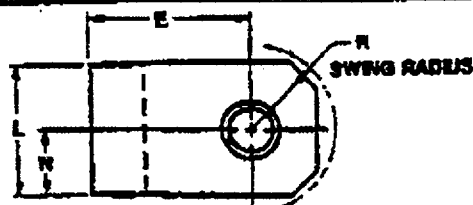
* (Code Case R-71)
 (ME-2121).
 Notations & Spacers Example
 PLN 545671930
 Place 545671930 Gx. 1018 *
 Notations:

SIZE	DESIGN CONDITION	LEVEL A & B NORMAL & UPSET	LEVEL C EMERGENCY	LEVEL D FAULTED
0.7	700	700	930	1200
1.5	1500	1500	2000	3000
4	4000	4000	5300	7300
7	7000	7000	9300	14000
12	12000	12000	15000	19000
25	25000	25000	33300	40400
35	35000	35000	46600	54000
60	60000	60000	80000	98200
80	80000	80000	96000	122700
130	130000	130000	172900	238000

DESIGNED BY: Load Rating & Analysis
LOAD RATING (lbs.)
CL 1, 2, 3, & MC
TEMPERATURE
350
of



LOAD CAPACITY DATA SHEET
for
NUCLEAR POWER PLANT COMPONENT STANDARD SUPPORTS
RESTRAINT END CONNECTION (notes w/ NHB)



SIZE 7 TO 4

SIZE 7 TO 130

KIP SIZE	E	G	L	N	P	R	T	W	K*
.7	$1\frac{7}{8}$	$\frac{1}{2}$	$1\frac{1}{8}$	$\frac{9}{16}$	$\frac{3}{8}$	$\frac{7}{8}$	$\frac{1}{2}$	$1\frac{1}{2}$	1.0
1.5	$2\frac{1}{4}$	$\frac{5}{8}$	$1\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$	$1\frac{1}{8}$	$\frac{1}{2}$	$1\frac{3}{4}$	2.5
4	$2\frac{1}{4}$	$\frac{5}{8}$	$1\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$	$1\frac{1}{8}$	$\frac{1}{2}$	$1\frac{3}{4}$	2.5
7	$2\frac{7}{8}$	$\frac{7}{8}$	$3\frac{1}{2}$	$1\frac{1}{2}$	$\frac{3}{4}$	$1\frac{1}{8}$	$\frac{3}{4}$	$3\frac{1}{4}$	3.0
12	$2\frac{7}{8}$	$\frac{7}{8}$	$3\frac{1}{2}$	$1\frac{1}{2}$	$\frac{3}{4}$	$1\frac{1}{8}$	$\frac{3}{4}$	$3\frac{1}{4}$	3.0
25	$3\frac{7}{8}$	$1\frac{3}{8}$	5	$2\frac{1}{8}$	1	$1\frac{5}{8}$	1	$4\frac{1}{4}$	3.0
35	$4\frac{1}{4}$	$1\frac{1}{2}$	$5\frac{3}{4}$	$2\frac{3}{8}$	$1\frac{1}{4}$	$1\frac{7}{8}$	$1\frac{1}{4}$	5	3.0
60	$5\frac{5}{8}$	$1\frac{11}{16}$	$7\frac{1}{4}$	3	$1\frac{1}{2}$	$2\frac{3}{8}$	$1\frac{1}{2}$	6	6.6
80	$6\frac{1}{4}$	$1\frac{13}{16}$	$9\frac{1}{4}$	$3\frac{5}{8}$	$1\frac{3}{4}$	$2\frac{5}{8}$	$1\frac{3}{4}$	$7\frac{3}{4}$	7.2
130	$8\frac{1}{2}$	$2\frac{1}{16}$	$11\frac{5}{8}$	$4\frac{5}{8}$	$2\frac{1}{2}$	$3\frac{3}{8}$	$1\frac{3}{4}$	$8\frac{7}{8}$	8.0

*x10³ lb/in

- NOTES: 1. All dimensions are in inches.
 2. Dimensions are provided for user application only.
 3. Spring rate (K) is for load applied perpendicular to the base plate.
 4. This assembly to be used with B-P Parts 2015, 2250, 2252, 2525, 2530, 2420, 2421, 2440

ORDERING INSTRUCTIONS:

Specify Part No.; Load Capacity Data Sheet Revision No., and Size Designation

EXAMPLE: 1000 - R/2 - 60

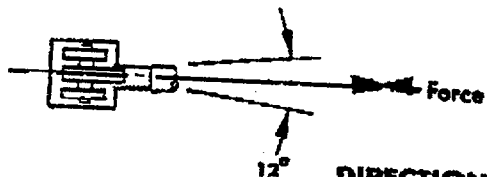
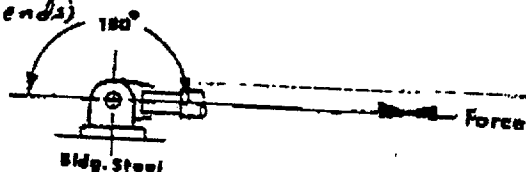
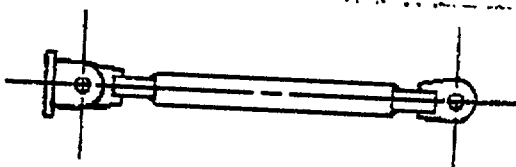
BERGEN-PATERSON PIPE SUPPORT CORP.

PART 1000

DATE 4-1-87

LOAD CAPACITY DATA SHEET for NUCLEAR POWER PLANT COMPONENT STANDARD SUPPORTS

RIGID TELESCOPING STRUT
(Torrington both ends)



DIRECTION
OF
LOADING

DESIGNED BY: Linear Analysis

LOAD RATING (lbs.)
Cl. 1, 2, 3, & MC

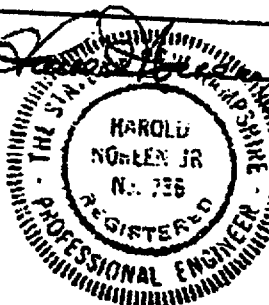
TEMPERATURE 350 of

SIZE	STRUT LENGTH *	OPERATING CONDITIONS		
		LEVEL A & B NORMAL & UPSET	LEVEL C EMERGENCY	LEVEL D FAULTED
2.5	8'-3"	2500	3300	4225
7	5'-6"	7000	9300	9940
12	7'-0"	12000	16000	17760
28	5'-0"	28000	35280	35280
38	6'-0"	38000	47880	47880
50	12'-0"	50000	66600	74500
70	14'-9"	70000	93300	106400
130	15'-9"	130000	173300	191100
200	20'-6"	200000	266600	302000

I certify this LCDS complies with the requirements of the applicable Code.

Lema Sandgopalhyay 11-5-91

* Maximum strut length for rated loads shown.
For greater lengths, see Load Chart Sheet 2.



Materials:
Plate SA-36
Rod SA-36
Pipe SA-106 Gr B or SA-53 Gr B
Pin SA-564 TX 630 or SA-193 Gr B7
Cotters & Retainers
(Exempt NF-2121)

Stress calculations or test data for this product were performed in accordance with:
A.S.M.E. SECTION III - SUBSECTION NF
COMPONENT SUPPORTS (date of issue 7-1-77)
and are on file at:

BERGEN-PATERSON
PIPE SUPPORT CORPORATION
Hackensack, NJ 07601 USA

Control Ref. No. 2100

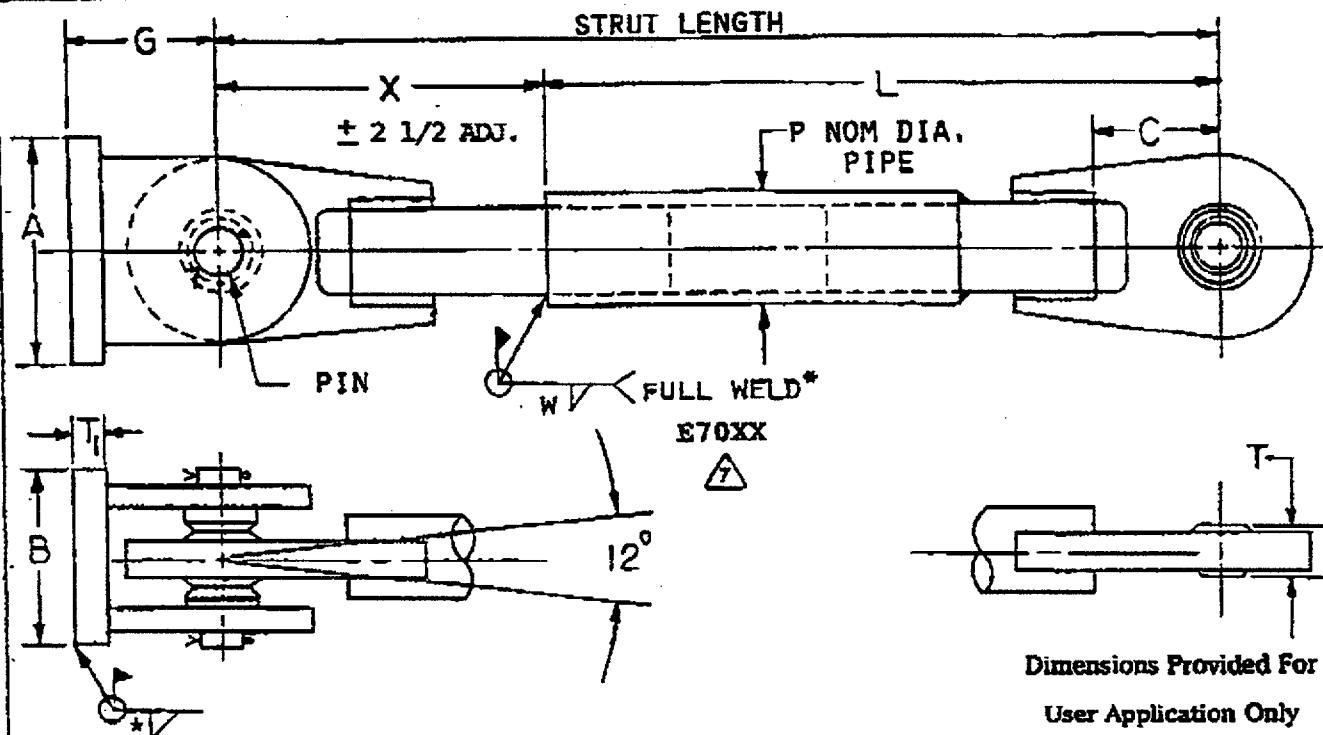
BERGEN-PATERSON PIPESUPPORT CORP.
LOAD CAPACITY DATA SHEET

SHEET 1 of 2
REV. 7
PART NO. 2100

Discontinued 7-5-81
Typing Error 12/3/81
Address 5-12-81
CEN, Nat'l, Lev C&D lds. 5-12-78
Add Faulted Conditions 9-2-76
Reinstated, rev'd mat'l, added fld weld strength 11-5-91

ORIG. ISSUE
3-26-76

SEAL 3/26/76 SIGNED



W = PIPE WALL + GAP
*BY CUSTOMER

DATE	DESCRIPTION OF CHANGE	PART NO & SIZE	A	B	C	G	X	L MIN.	P	PIN DIA.	T	T ₁
2/2/82	Changed field weld 'W'	2100-2.5	3 $\frac{3}{4}$	2 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{3}{4}$	5 $\frac{3}{4}$	9 $\frac{3}{4}$	1 $\frac{1}{4}$ s/80	$\frac{1}{2}$	$\frac{7}{16}$	$\frac{3}{8}$
		-7	4 $\frac{1}{4}$	2 $\frac{1}{2}$	1 $\frac{3}{4}$	2 $\frac{3}{8}$	6 $\frac{1}{4}$	10 $\frac{1}{4}$	1 $\frac{1}{2}$ s/40	$\frac{3}{4}$	$\frac{21}{32}$	$\frac{1}{2}$
		-12	5 $\frac{5}{8}$	3 $\frac{1}{2}$	2 $\frac{3}{4}$	3 $\frac{1}{4}$	7 $\frac{1}{4}$	11 $\frac{1}{4}$	2 s/80	1	$\frac{7}{8}$	$\frac{3}{4}$
		-28	7 $\frac{1}{8}$	4 $\frac{1}{2}$	3 $\frac{1}{4}$	4 $\frac{1}{2}$	8	12	2 $\frac{1}{2}$ s/80	1 $\frac{1}{2}$	1 $\frac{5}{16}$	1
		-38	7 $\frac{5}{8}$	5	3 $\frac{3}{4}$	5 $\frac{1}{4}$	8 $\frac{3}{4}$	12 $\frac{3}{4}$	3 s/80	1 $\frac{3}{4}$	1 $\frac{17}{32}$	1 $\frac{1}{4}$
		-50	9 $\frac{3}{4}$	6 $\frac{1}{2}$	4 $\frac{1}{2}$	5 $\frac{3}{4}$	10 $\frac{1}{2}$	15	4 s/120	2	1 $\frac{3}{4}$	1 $\frac{1}{4}$
		-70	11 $\frac{1}{4}$	7 $\frac{1}{2}$	4 $\frac{3}{4}$	7	12	16 $\frac{1}{2}$	5 s/120	2 $\frac{1}{2}$	2 $\frac{3}{16}$	1 $\frac{1}{2}$
		-130	14 $\frac{1}{4}$	9 $\frac{1}{2}$	6 $\frac{3}{4}$	9	15	19 $\frac{1}{2}$	6 s/160	3 $\frac{1}{4}$	2 $\frac{27}{32}$	1 $\frac{3}{4}$
		-200	19	12 $\frac{3}{4}$	7 $\frac{1}{2}$	11	16 $\frac{3}{4}$	21 $\frac{1}{4}$	8 s/xx	4	3 $\frac{1}{2}$	2 $\frac{1}{4}$

ORDERING INSTRUCTIONS:

Specify Part No., Load Capacity Data Sheet Revision No., Size designation, and Strut Length (pin to pin).
Example: Part 2100 - R/4 -7-2'-10 5/8"

BERGEN-PATERSON PIPE SUPPORT CORP.

PART 2100

DATE 7-5-83

06/01/00 08:45

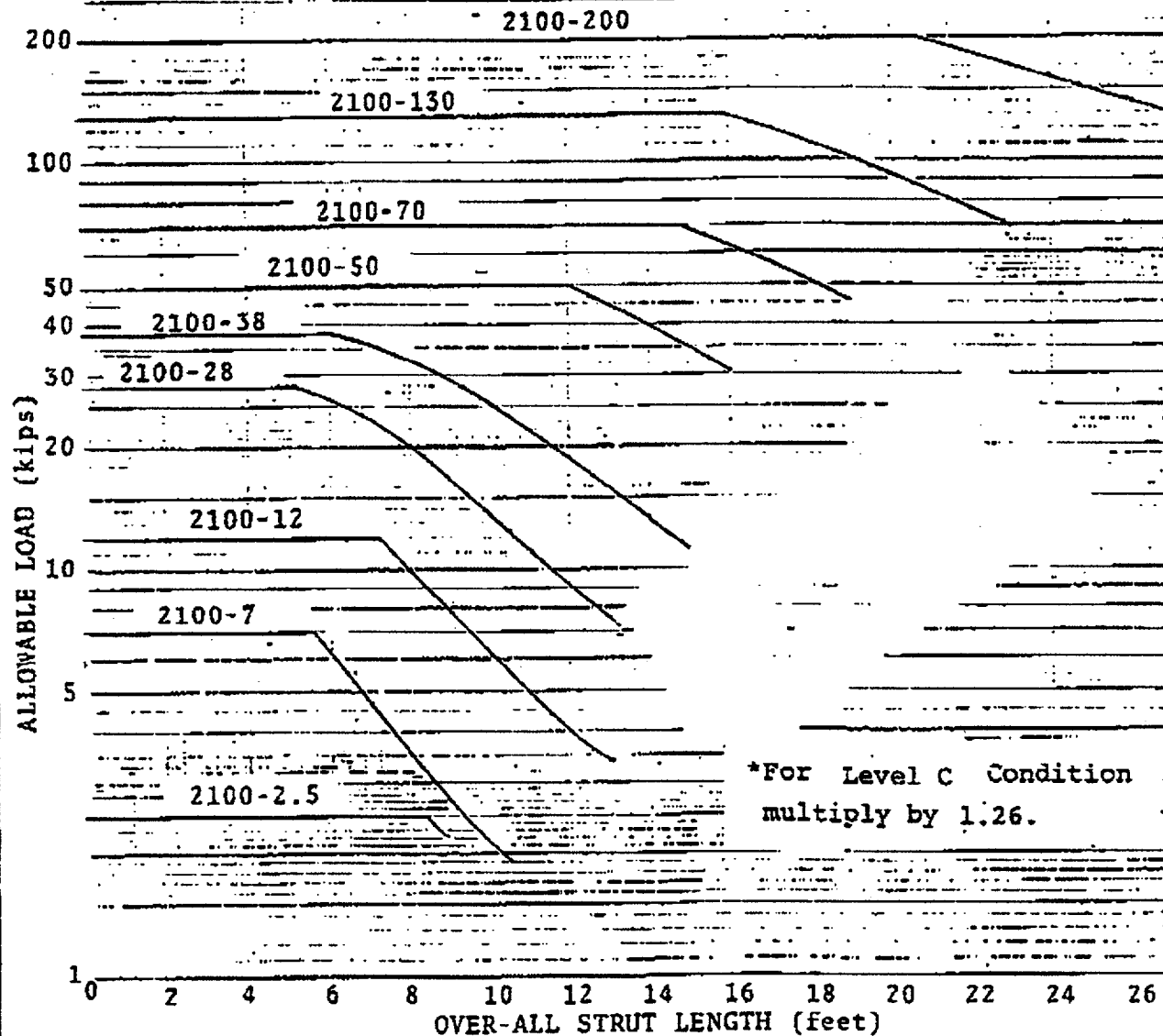
0781 938 0026

TPG

0008/011

LOAD CAPACITY DATA SHEET for NUCLEAR POWER PLANT COMPONENT STANDARD SUPPORTS

PART 2100 ALLOWABLE LOADS for LEVEL A & B*



*For Level C Condition
multiply by 1.26.

*For Level D Condition for Strut lengths greater than those shown on page 1, consult with your Bergen-Paterson Project Engineer.

See pg 1

Materials:

Stress calculations or test data for this product were performed in accordance with:
ASME SECTION III - SUBSECTION NF
COMPONENT SUPPORTS (date of issue 7-1-77)
and are on file at:



BERGEN-PATERSON

Backersack, NJ 07601 USA

Control Ref. No. 2100

SEAL

SIGNED

BERGEN-PATERSON PIPESUPPORT CORP.
LOAD CAPACITY DATA SHEET

SHEET
2 OF 2

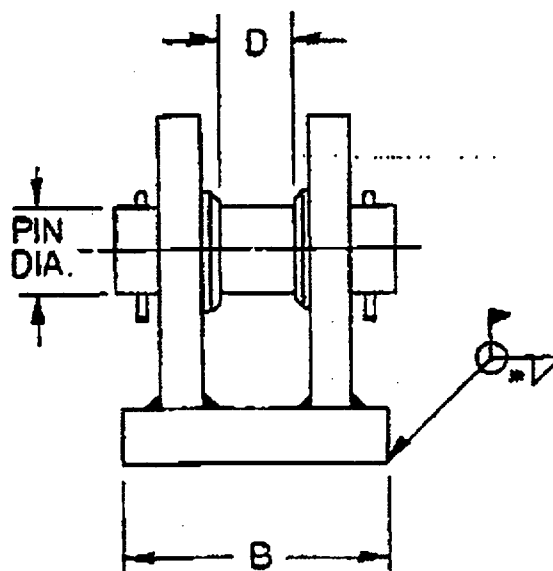
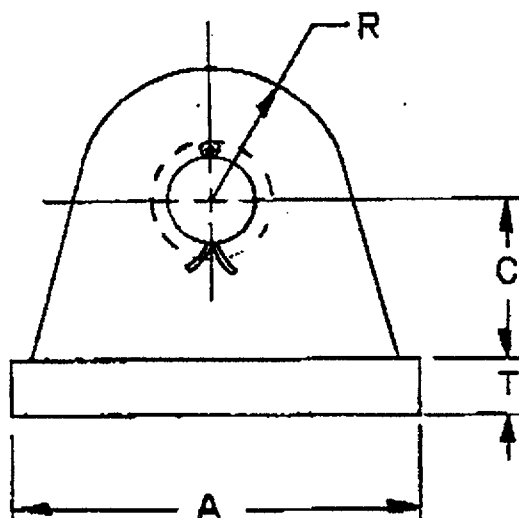
REV.
T

PART NO.
2100

ORIG. ISSUE
12-10-76

Dimensions Provided For

User Application Only



PART NO. & SIZE	A	B	C	D	PIN DIA.	R	T
2003-.65	2	2	$1\frac{1}{8}$	$\frac{13}{32}$	$\frac{3}{8}$	$\frac{5}{8}$	$\frac{1}{4}$
-1.5	$3\frac{3}{4}$	$2\frac{1}{4}$	$1\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{7}{8}$	$\frac{3}{8}$
-3	$4\frac{1}{4}$	$2\frac{1}{2}$	$1\frac{7}{8}$	$\frac{21}{32}$	$\frac{3}{4}$	$1\frac{1}{4}$	$\frac{1}{2}$
-10	$5\frac{5}{8}$	$3\frac{1}{2}$	$2\frac{1}{2}$	$\frac{7}{8}$	1	$1\frac{1}{2}$	$\frac{3}{4}$
-20	$7\frac{1}{8}$	$4\frac{1}{2}$	$3\frac{1}{2}$	$1\frac{5}{16}$	$1\frac{1}{2}$	$2\frac{1}{2}$	1
-30	$7\frac{5}{8}$	5	4	$1\frac{17}{32}$	$1\frac{3}{4}$	3	$1\frac{1}{4}$
-50	$9\frac{3}{4}$	$6\frac{1}{2}$	$4\frac{1}{2}$	$1\frac{3}{4}$	2	3	$1\frac{1}{4}$
-70	$11\frac{1}{4}$	$7\frac{1}{2}$	$5\frac{1}{2}$	$2\frac{3}{16}$	$2\frac{1}{2}$	$3\frac{1}{2}$	$1\frac{1}{2}$
-130	$14\frac{1}{4}$	$9\frac{1}{2}$	$7\frac{1}{4}$	$2\frac{27}{32}$	$3\frac{1}{4}$	$4\frac{1}{2}$	$1\frac{3}{4}$
-200	19	$12\frac{3}{4}$	$8\frac{3}{4}$	$3\frac{1}{2}$	4	$5\frac{1}{2}$	$2\frac{1}{4}$

*By Customer

ORDERING INSTRUCTIONS:

Specify Part No., Load Capacity Data Sheet Revision No. and Size Designation.

Example: Part 2003 - R/4-10

BERGEN-PATERSON PIPE SUPPORT CORP.

PART 2003

DATE 7-5-83

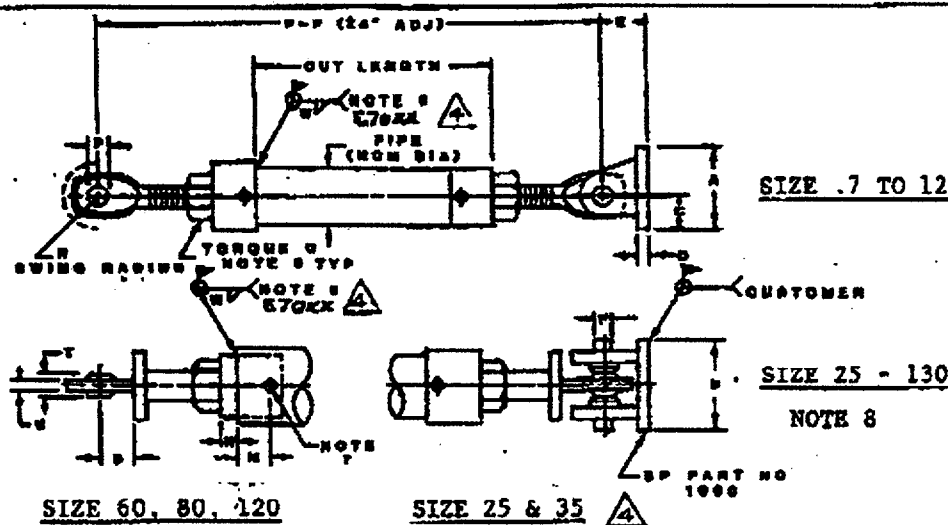
Engine R. Clinton

06/01/00 08:43

8781 938 0026


TPG

0003/011



KIP SIZE	A	B	C	D	E	P	P-P (MIN)	PIPE	Q/Q1 FT-LBS	R	S	T	U	W	X	N	M
.7	1 1/8	1 1/2	1/2	1/2	7/8	3/8	22	1 1/2" s/40	15 / 15	1	1 1/2	1/2	7/16	1/8	10 7/8	-	-
1.5	1 1/2	3/4	3/4	1/2	2 1/4	1/2	22	1 1/2" s/40	25 / 25	1 1/8	1 3/8	5/8	1/2	1/8	10 7/8	-	-
4	1 1/2	1 3/4	3/4	1/2	2 1/4	1/2	28	2" s/80	50 / 80	1 1/4	1 9/16	5/8	1/2	3/16	12 1/4	-	-
7	3 1/2	3 1/2	1 1/2	3/4	2 7/8	3/4	28	2 1/2" s/80	100/350	2	2 3/16	7/8	5/8	1/4	15	-	-
12	3 1/2	3 1/2	1 1/2	3/4	2 7/8	3/4	28	2 1/2" s/80	100/350	2	2 3/16	7/8	5/8	1/4	15	-	-
25	5	4 1/4	2 1/8	1	3 7/8	1	30	3" s/80	100/600	2 5/8	3	1 3/8	1	1/4	18	-	-
35	5 3/4	5	2 3/8	1 1/4	4 1/4	1 1/4	34	3 1/2" s/80	100/1000	2 5/8	3 1/2	1 1/2	1 1/4	5/16	20	-	-
60	7 1/4	6	3	1 1/2	5 5/8	1 1/2	36	5" s/80	100/500	3 5/8	3 1/2	1 11/16	1 1/4	3/8	14 9/16	5/8	2 3/4
80	9 1/4	7 3/4	3 5/8	1 3/4	6 1/4	1 3/4	40	6" s/80	100/500	4 1/8	4	1 13/16	1 1/2	3/8	15 11/16	5/8	3 1/2
130	11 5/8	8 7/8	4 5/8	1 3/4	8 1/2	2 1/2	46	8" s/80	100	6	5 1/4	2 1/16	1 1/2	1/2	19 11/16	3/4	4 1/8

Notes:

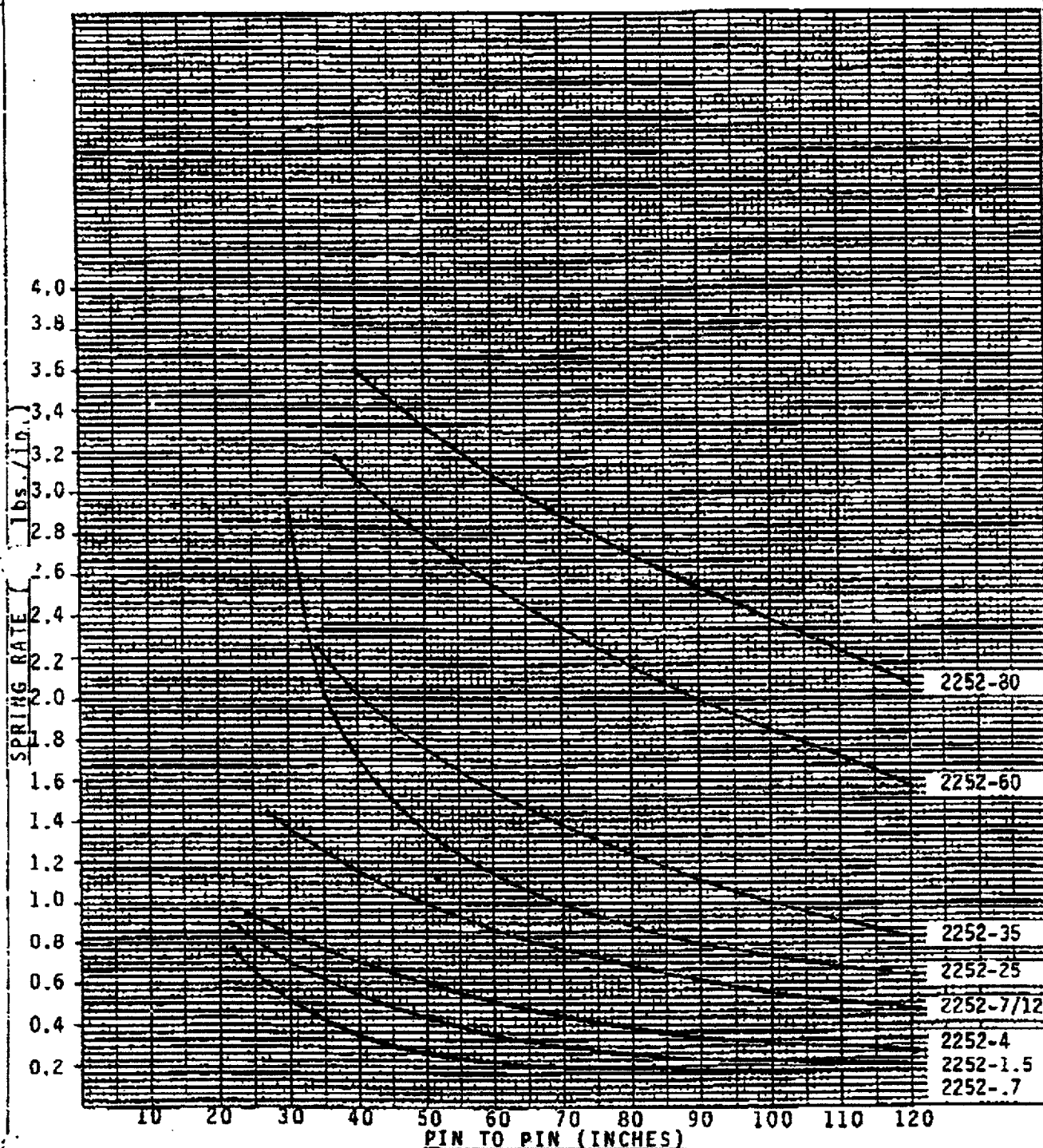
- All dimensions are in inches.
- Dimensions are provided for user application only.
- Cut Length = Desired "P-P" - X. All struts are supplied at max. P-P as shown on LCDS.
- This assembly is compatible with B-P Parts 6175, 6202, 6252, 6280, 6410, 6520, 6521, 6525, 6526.
- Set adjustment at desired P-P and tighten nuts to nominal torque value (Q) for locking. To achieve published spring rates, tighten nuts to higher torque value (Q1). (Refer to table above.)
- Weld 'W' performed by others following pipe cut.
- Drill 3/8" dia. sight hole, one side only, sizes 60 thru 130.
- Configuration for Sizes 25 thru 130 is the same both ends. 

ORDERING INSTRUCTIONS: Specify Part No: LCDS Rev No., and Size Designation.
Example: 2252-R/4-60

BERGEN-PATERSON PIPE SUPPORT CORP.

PART 2252

DATE 3-16-93

**CONTROLLED
COPY****PART 2252****SPRING RATE IN TENSION**

Note: Spring rate values given are for pin to pin lengths. For spring rate of structural bracket see part 1000. To achieve spring rates above, nuts must be tightened to torque value Q_1 . (Refer to dimensional table)

BERGEN-PATERSON PIPE SUPPORT CORP.**PART 2252****DATE .10/26/90**