

**REPORT ON DRILLED SHAFT
LOAD TESTING (OSTERBERG METHOD)**

**Test Pile - Amelia Earhart Bridge
Atchison, KS (LT-9136)**



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**Test Pile - Amelia Earhart Bridge
Atchison, KS (LT-9136)**

Prepared for: Kansas Department of
Transportation

Bureau of Materials and Research
Materials and Research Center

2300 SW Van Buren
Topeka, KS 66611-1195

Attention: Mr. Robert Henthorne

PROJECT NUMBER: LT-9136, April 26, 2006

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Atchison, KS (LT-9136)

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Attention: Mr. Robert Henthorne

Load Test Report: Test Pile - Amelia Earhart Bridge
Location: Atchison, KS (LT-9136)

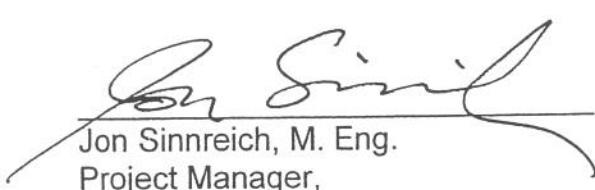
Dear Mr. Henthorne,

The enclosed report contains the data and analysis summary for the triple-level O-cell test performed on Test Pile - Amelia Earhart Bridge, on April 18, 2006. For your convenience, we have included an executive summary of the test results in addition to our standard detailed data report.

We would like to express our gratitude for the on-site and off-site assistance provided by your team and we look forward to working with you on future projects.

We trust that the information contained herein will suit your current project needs. If you have any questions or require further technical assistance, please do not hesitate to contact us at 800-368-1138.

Best Regards,



Jon Sinnreich, M. Eng.
Project Manager,
LOADTEST Inc.



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EXECUTIVE SUMMARY

On April 18, 2006, we tested a 60-inch diameter dedicated test pile constructed under the direction of LOADTEST, Inc. Mr. David J. Jakstis, Mr. William G. Ryan and Mr. Jon Sinnreich of LOADTEST, Inc. carried out the test. Midwest Foundations excavated the 159.97-foot deep shaft socketed in shale on April 6, 2006. Sub-surface conditions at the test shaft location consist primarily of shales. Representatives of the Kansas Department of Transportation observed construction and testing of the pile.

The maximum sustained composite load applied to the shaft was 35,600 kips. Unit shear data calculated from the isolated pile sections between the three levels of O-cells indicated a maximum net unit side shear of 20.3 ksf above the upper O-cell, 24.4 ksf between the upper and middle O-cells, and 18.3 ksf between the middle and lower O-cells.

Using the procedures described in the report text and in Appendix C, an equivalent top load curve for the test pile was constructed. For a top loading of 35,000 kips the analysis indicates this pile would settle approximately 3.57 inches.

LIMITATIONS OF EXECUTIVE SUMMARY

We include this executive summary to provide a very brief presentation of some of the key elements of this O-cell test. It is by no means intended to be a comprehensive or stand-alone representation of the test results. The full text of the report and the attached appendices contain important information which the engineer can use to come to more informed conclusions about the data presented herein.

OSTERBERG CELL TESTING

Pile Instrumentation: Test shaft instrumentation and assembly was carried out under the direction of Mr. David J. Jakstis of LOADTEST, Inc. starting on April 4, 2006. The loading assemblies consisted of one 34-inch O-cell each located 13.05, 44.97 and 68.97 feet above the tip of shaft, respectively. Calibrations of O-cells and instrumentation used for this test are included in Appendix B.

O-cell testing instrumentation included three Linear Vibrating Wire Displacement Transducers (LWVDTs) – (Geokon Model 4450 series) positioned between the lower and upper plates of each O-cell assembly to measure expansion (Appendix A, Pages 9 to 20). Two telltale casings (nominal ½-inch steel pipe) were attached to the carrying frame, diametrically opposed, extending from the top of the O-cell assembly to beyond the top of concrete. Compression of the shaft between the three O-cell assemblies was measured by two sections of Embedded Compression Telltales (ECTs), consisting of telltale rods in nominal ½-inch steel pipe casings, with an LWVDT attached (Appendix A, Pages 5 to 8). One section of traditional telltales was used to measure compression of the shaft above the upper O-cell assembly.

Test Arrangement: Throughout the load test, key elements of shaft response were monitored using the equipment and instruments described herein. Shaft compression was measured using ¼-inch telltales installed in the ½-inch steel pipes (described under Shaft Instrumentation) and monitored by LWVDTs. Two automated digital survey levels (Leica NA3000 series) were used to monitor the top of shaft movement from a distance of 20.8 feet (Appendix A, Pages 1 to 4).

Both a Bourdon pressure gage and a vibrating wire pressure transducer (Geokon Model 4500 series) were used to measure the pressure applied to the actively loaded O-cell at each load interval. We used the pressure transducer for automatically setting and maintaining loads and for real time plotting. The Bourdon gage was used as a check on the transducer readings and for data analysis. There was close agreement between the Bourdon gage and the pressure transducer.

Data Acquisition: All instrumentation were connected through a data logger (Data Electronics - Model 615 GeoLogger) to a laptop computer allowing data to be recorded and stored automatically at 30 second intervals and displayed in real time. The same laptop computer was used to acquire the Leica NA3000 data sets.

Testing Procedures: As with all of our tests, we begin each stage by pressurizing the O-cell in order to break the tack welds that hold it closed (for handling and for placement in the shaft) and to form the fracture plane in the concrete surrounding the base of the O-cell. After the break occurs, we immediately release the pressure and then begin the loading procedure. Zero readings for all instrumentation are taken prior to the preliminary weld-breaking load-unload cycle, which in this case involved a maximum applied pressure of 1,700 psi to the lower O-cell, 400 psi to the middle O-cell and 600 psi to the upper O-cell.

The test was carried out in five stages as follows:

Stage 1: In the first stage the 34-inch diameter lower O-cell was pressurized to assess the combined end bearing and shear of the pile section below the lower O-cell (combined shear & bearing pile section SB) using the side shear above as reaction. The O-cell was pressurized in 13 loading increments to 13,000 psi resulting in a bi-directional gross O-cell load of 8,000 kips. The loading was halted after load interval 1L-13 because the combined end bearing and lower side shear was not showing any indication of reaching ultimate load and had not displaced sufficiently in order to run the next stage of testing. The O-cell was then depressurized in four decrements, and the order of subsequent test stages was reversed.

Stage 2: After unloading the lower O-cell, the 34-inch upper O-cell was pressurized to assess the shear characteristics of the pile above upper O-cell (pile shear section SH-1) by using the side shear below as reaction. The upper O-cell was pressurized in 13 loading increments to 13,000 psi resulting in a bi-directional gross O-cell load of 8,008 kips. While attempting to reach the 14th load increment, the upper pile section shear capacity was exceeded, and a constant pressure could not be maintained. The O-cell was then depressurized in four decrements.

Stage 3: After unloading the upper O-cell, the 34-inch middle O-cell was pressurized to assess the shear characteristics of the isolated pile section between the middle and upper O-cells (pile shear section SH-2) by using the side shear below the middle O-cell as reaction. The upper O-cell was left free to drain (no load transfer through the O-cell to the pile section SH-1). The middle O-cell was pressurized in 15 loading increments to 15,000 psi resulting in a bi-directional gross O-cell load of 9,234 kips. Loading ended when the ultimate capacity of the loading system had been reached. The final load increment was held constant for one hour in order to expand the middle O-cell sufficiently to facilitate Stage 4 testing. The O-cell was then depressurized in four decrements.

Stage 4: After unloading the middle O-cell, the lower O-cell was re-pressurized to assess the shear characteristics of the isolated pile section between the lower and middle O-cells (pile shear section SH-3) and the combined end bearing and shear below the O-cell. The middle and upper O-cells were left free to drain (no load transfer through the O-cell to pile section SH-2). The lower O-cell was pressurized in 15 loading increments to 15,000 psi resulting in a bi-directional gross O-cell load of 9,228 kips. Loading ended when the ultimate capacity of the loading system had been reached. The O-cell was then depressurized in four decrements.

Stage 5: In the fifth stage all three O-cell assemblies were pressurized simultaneously to conduct a confined compression test on the middle pile sections. The O-cells were pressurized in four equal loading increments to 10,000 psi resulting in an average bi-directional gross O-cell load of 6,159 kips. The loading



was halted after load interval 5L-4, the O-cells were depressurized in one decrement and the test was concluded.

The following Table A below summarizes the five stages of loading:

TABLE A: Multi Level Testing Stages

Stage	Load Interval	Lower O-cell			Middle O-cell			Upper O-cell		
		O-cell Hydraulics System	Max. Q _{gross} (kips)	Total Exp. (in)	O-cell Hydraulics System	Max. Q _{gross} (kips)	Total Exp. (in)	O-cell Hydraulics System	Max. Q _{gross} (kips)	Total Exp. (in)
1	1L-1 to 1L-13	Pressurized	8,000	+0.13	Closed	0	+0.00	Closed	0	+0.00
2	2L-1 to 2L-13	Draining	0	+0.02	Closed	0	-0.01	Pressurized	8,008	+0.47*
3	3L-1 to 2L-15	Draining	0	+0.01	Pressurized	9,234	+0.82	Draining	0	+0.43
4	4L-1 to 2L-15	Pressurized	9,228	+0.14	Draining	0	+0.44	Draining	0	+0.52
5	5L-1 to 5L-4	Pressurized	6,156	+0.10	Pressurized	6,159	+0.58	Pressurized	6,161	+1.10

* - Upper O-cell expanded to approximately 1.4 inches after 2L-13

We applied the load increments using the Quick Load Test Method for Individual Piles (ASTM D1143 Standard Test Method for Piles Under Static Axial Load), holding each successive load increment constant for eight minutes by automatically adjusting the O-cell pressure. The data logger automatically recorded the instrument readings every 30 seconds, but herein we report only the 1, 2, 4 and 8 minute readings (where applicable) during each increment of maintained load.

TEST RESULTS AND ANALYSES

General: The loads applied by the O-cell act in two opposing directions, resisted by the capacity of the shaft above and below. Theoretically, the O-cell does not impose an additional upward load until its expansion force exceeds the buoyant weight of the shaft above the O-cell. Therefore, *net load*, which is defined as gross O-cell load minus the buoyant weight of the shaft above, is used to determine side shear resistance above the O-cells and to construct the equivalent top-loaded load-settlement curve. For this test we calculated an *isolated* buoyant weight of 55 kips for pile section SH-3, 42 kips for pile section SH-2 and 43 kips for pile section SH-1.

For the purposes of analyses herein, the 8-minute reading of load increment 3L-15 is used. The load was held for a total of 60 minutes but this was only done in order to expand the middle O-cell sufficiently to isolate the lower middle pile section and facilitate Stage 4 testing. Also, the upper pile section experienced significant movement (approximately 1 inch) during the application of load increment 2L-14.



However, due to the rapid expansion of the O-cell, the pressure was not maintained constant, and therefore the maximum sustained load is considered to be 2L-13.

Pile Section SH-1 Shear Resistance: The maximum upward applied *net load* to pile section SH-1 side shear during Stage 2 was 7,964 kips which occurred at load interval 2L-13 (Appendix A, Page 30, Figure 2). At this loading, the upward movement of the upper O-cell top was 0.35 inches. The maximum net unit side shear of the upper pile section is 20.3 ksf at the above-noted displacement.

Pile Section SH-2 Shear Resistance: The maximum upward applied *net load* to pile section SH-2 side shear during Stage 3 was 9,191 kips which occurred at load interval 3L-15 (Appendix A, Page 27, Figure 3). At this loading, the upward movement of the middle O-cell top was 0.42 inches. The maximum net unit side shear of the isolated upper middle pile section is 24.4 ksf at the above-noted displacement.

Pile Section SH-3 Shear Resistance: The maximum upward applied *net load* to pile section SH-1 side shear during Stage 4 was 9,173 kips which occurred at load interval 4L-15 (Appendix A, Page 24, Figure 1). At this loading, the upward movement of the lower O-cell top was 0.04 inches. The maximum net unit side shear of the isolated upper middle pile section is 18.3 ksf at the above-noted displacement.

Unit side shear curves for all three pile sections are presented in Figure 5.

Pile Section SB Shear & Bearing Resistance: The maximum O-cell load applied to pile section SB during Stage 4 was 9,228 kips which occurred at load interval 4L-15 (Appendix A, Page 24, Figure 1). At this loading, the average downward movement of the lower O-cell base was -0.10 inches.

Creep Limit: See Appendix D for our O-cell method for determining creep limit loading. Pile section SB creep data (Appendix A, Page 24) indicate no apparent creep limit was reached at a maximum movement of -0.10 inches (Figure 6). Pile section SH-3 shear creep data (Appendix A, Page 24) indicate that no apparent creep limit was reached at a maximum movement of 0.04 inches (Figure 7). Pile section SH-2 shear creep data (Appendix A, Page 27) indicate that a creep limit of 8,250 kips was reached at a movement of 0.30 inches (Figure 8). Pile section SH-1 shear creep data (Appendix A, Page 30) indicate that a creep limit of 7,300 kips was reached at a movement of 0.25 inches (Figure 9). A pile top loaded will not begin significant creep until all components begin creep movement. This will occur at the maximum of the movements required to reach the creep limit for each component. It is the opinion of LOADTEST Inc that significant creep for this pile will not begin until a top loading exceeds 35,600 kips by some unknown amount.

Pile Stiffness: On the day of the test, the concrete unconfined compressive strength was reported to be 6,470 psi. The ACI formula ($E_c = 57000\sqrt{f'_c}$) was used to calculate

an elastic modulus for the concrete. This, combined with the area of the carrying frame C-channels (two C5x9 sections) and nominal 60-inch pile diameter, yields a pile stiffness (AE) of 13,100,000 kips. The data collected during Stage 5 testing was used to perform a confined compression stiffness analysis of the upper middle pile section, and shows close agreement with the calculated ACI stiffness (Appendix F). The ACI stiffness is used for calculating the pile elastic compression in the equivalent top load analysis.

Equivalent Top Load: Figure 4 presents the equivalent top-loaded load-settlement curve, generated using the procedure described in Appendix C. The curve represents the output of a finite-element analysis (FEA). The input for the FEA program was the measured downward base of O-cell data (Figure 1) and computed upward unit shear data (Figure 5). Because of the relatively small measured lower O-cell displacements, the SH-3 section upward unit shear curve is extrapolated hyperbolically to 0.125 inches for load-displacement compatibility with the upper pile zones (Appendix G). Note that the FEA analysis includes additional elastic compression, assuming the top load is applied at ground elevation (+789 ft), and that the shear capacity between ground and the top of the SH-1 shale material (+728 ft) is assumed to be zero (free-standing column). The test pile was loaded to a combined side shear and end-bearing load of 35,600 kips. For a top loading of 35,000 kips the FEA indicates this pile would settle approximately 3.57 inches.

Note that, as explained previously, the equivalent top load curve applies to incremental loading durations of eight minutes. Creep effects will reduce the ultimate resistance of all components and increase pile top movement for a given loading over longer times. The Engineer can estimate such additional creep effects by suitable extrapolation of time effects using the creep data presented herein. However, our experience suggests that such corrections are small and perhaps negligible for top loadings below the maximum load indicated in Figure 4.

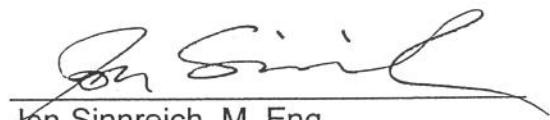
LIMITATIONS AND STANDARD OF CARE

The instrumentation, testing services and data analysis provided by LOADTEST, Inc., outlined in this report, were performed in accordance with the accepted standards of care recognized by professionals in the drilled shaft and foundation engineering industry.

Please note that some of the information contained in this report is based on data (i.e. shaft diameter, elevations and concrete strength) provided by others. The engineer, therefore, should come to his or her own conclusions with regard to the analyses as they depend on this information. In particular, LOADTEST, Inc. typically does not observe and record drilled shaft construction details to the level of precision that the project engineer may require. In many cases, we may not be present for the entire duration of shaft construction. Since construction technique can play a significant role in determining the load bearing capacity of a drilled shaft, the engineer should pay close attention to the drilled shaft construction details that were recorded elsewhere.

We trust that this information will meet your current project needs. If you have any questions, please do not hesitate to contact us at 800-368-1138.

Prepared for LOADTEST, Inc. by

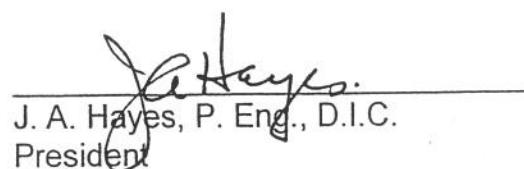


Jon Sinnreich, M. Eng.
Project Manager

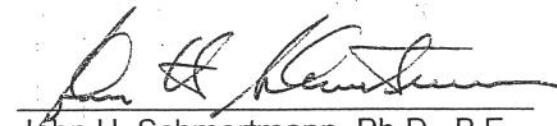
Reviewed by



Michael D. Ahrens, P.E.
Geotechnical Engineer



J. A. Hayes, P. Eng., D.I.C.
President



John H. Schmertmann, Ph.D., P.E.
for John H. Schmertmann, Inc.



TABLE B
SUMMARY OF DIMENSIONS, ELEVATIONS & PILE PROPERTIES

Pile:

Nominal pile diameter	=	60 inch
Upper O-cell: 5035-4	=	34 inch
Middle O-cell: 5035-3	=	34 inch
Lower O-cell: 5035-2	=	34 inch
Length of side shear above break at base of upper O-cell	=	25.02 ft
Length of side shear between middle and upper O-cells	=	24.00 ft
Length of side shear between lower and middle O-cells	=	31.92 ft
Length of side shear above break at base of lower O-cell	=	80.94 ft
Length of side shear below break at base of lower O-cell	=	13.05 ft
Side shear area above upper O-cell base	=	393.01 ft ²
Side shear area between middle and upper O-cells	=	376.99 ft ²
Side shear area between lower and middle O-cells	=	501.4 ft ²
Side shear area below lower O-cell base	=	204.99 ft ²
Pile base area	=	19.63 ft ²
Bouyant weight of pile above base of upper O-cell	=	43.3 kips
Bouyant weight of isolated pile section above base of middle O-cell	=	41.6 kips
Bouyant weight of isolated pile section above base of lower O-cell	=	55.3 kips
Estimated pile stiffness, AE	=	13,100,000 kips

Elevation of ground surface	=	+789.00 ft
Assumed elevation of natural water table	=	+762.20 ft
Elevation of top of pile concrete	=	+723.02 ft
Elevation of base of upper O-cell assembly <small>(The break between upward and downward movement)</small>	=	+698.00 ft
Elevation of base of middle O-cell assembly <small>(The break between upward and downward movement)</small>	=	+674.00 ft
Elevation of base of lower O-cell assembly <small>(The break between upward and downward movement)</small>	=	+642.08 ft
Elevation of pile tip	=	+629.03 ft

Casings:

Elevation of top of temporary casing (66 inch O.D.)	=	+791.52 ft
Elevation of bottom of temporary casing	=	+726.52 ft

Compression Sections:

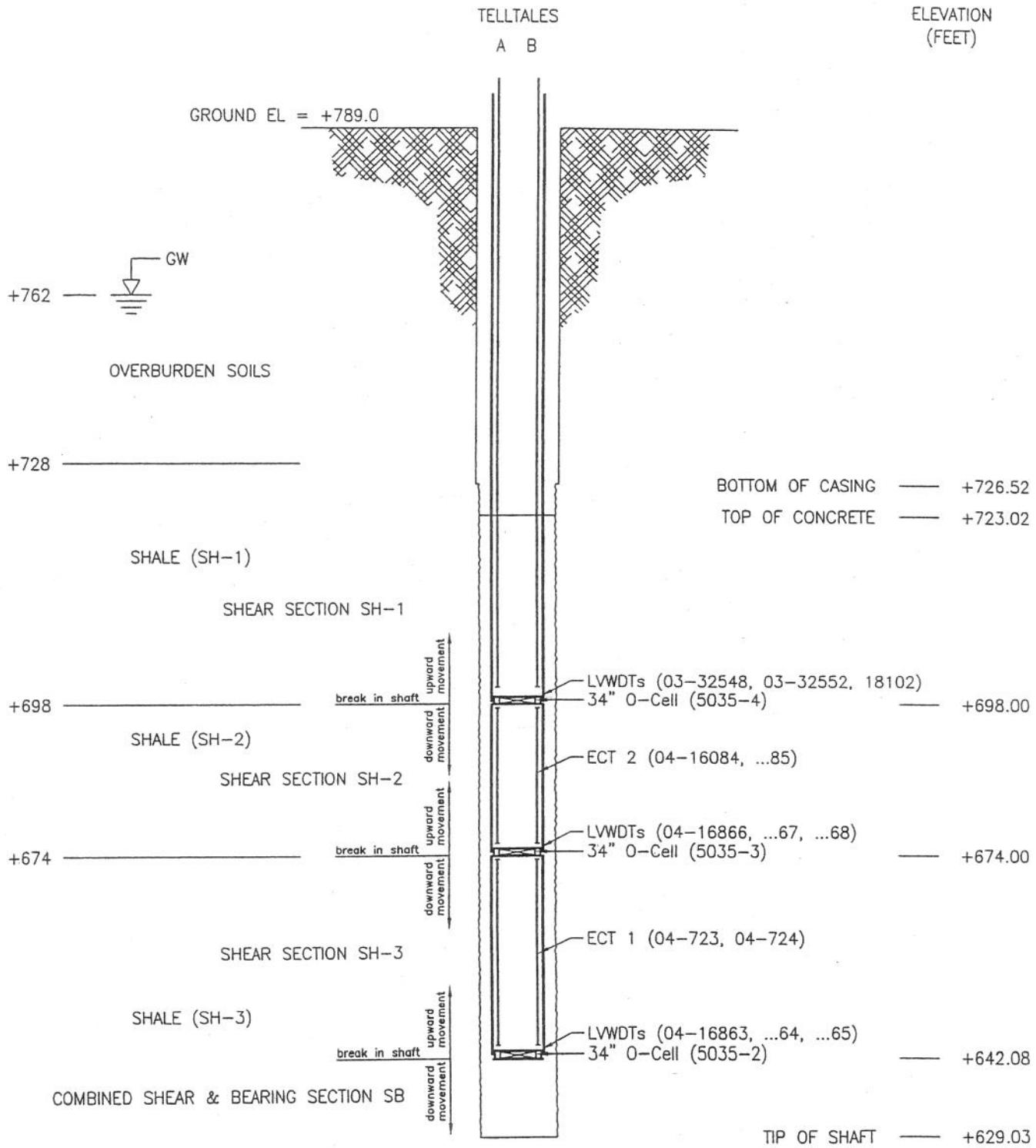
Elevation of top of telltale used for upper pile compression	=	+723.02 ft
Elevation of bottom of telltale used for upper pile compression	=	+699.20 ft
Elevation of top of telltale used for level 2 embedded pile compression	=	+698.00 ft
Elevation of bottom of telltale used for level 2 embedded pile compression	=	+675.20 ft
Elevation of top of telltale used for level 1 embedded pile compression	=	+674.00 ft
Elevation of bottom of telltale used for level 1 embedded pile compression	=	+643.28 ft

Miscellaneous:

Top plate diameter (2 inch thick)	=	54 inch
Bottom plate diameter (2 inch thick)	=	54 inch
Carrying Frame C-channel (two number)	=	C5x9
7 day unconfined compressive concrete strength	=	6470 psi
O-cell LVWDTs @ 0°, 180° and 270° with radius	=	22 inch

NOTE:

- NOMINAL CASING 66"Ø OD
 - NOMINAL SHAFT 60"Ø



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SCHEMATIC SECTION OF TEST SHAFT

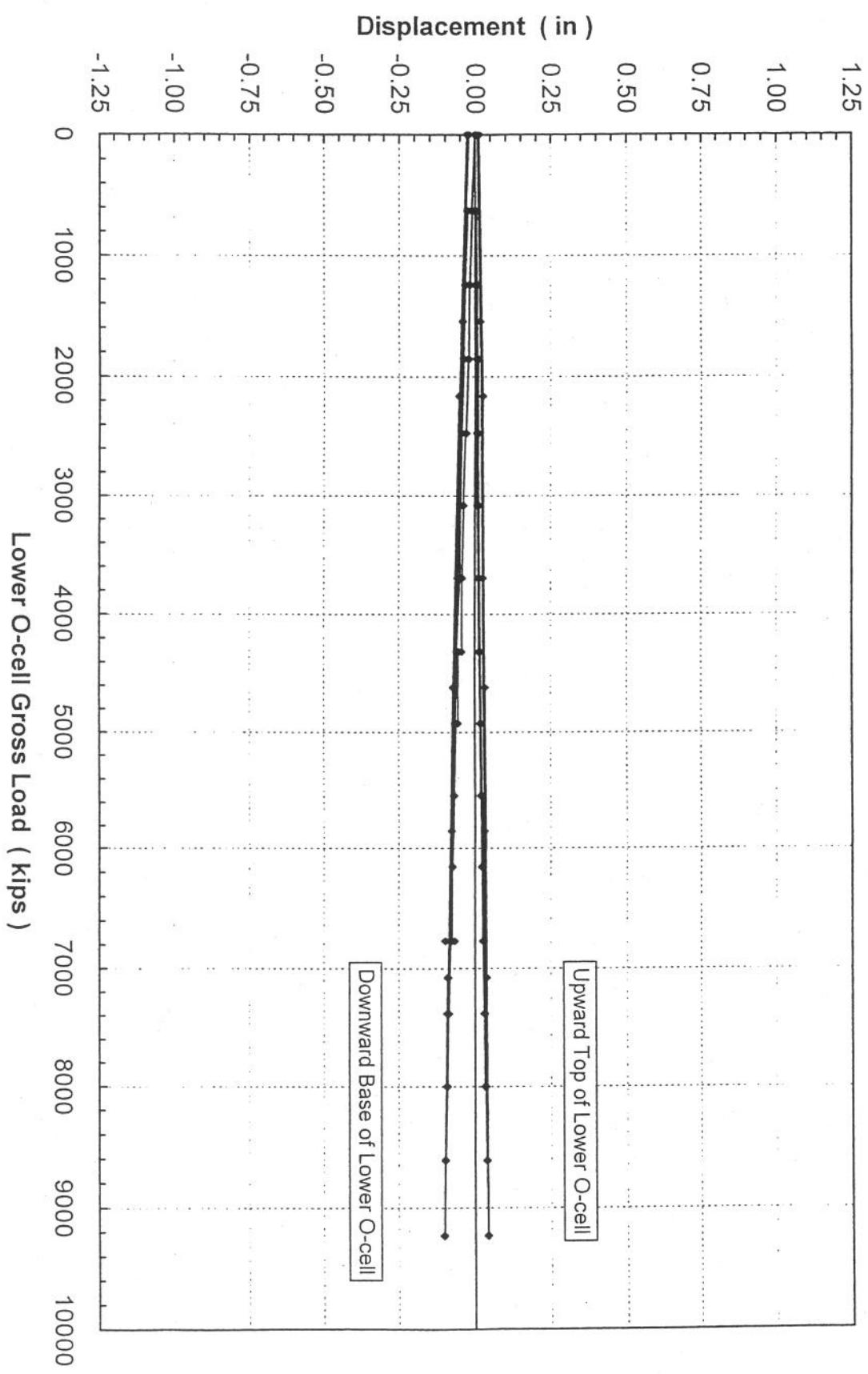
Amelia Earhart Bridge – Atchison, KS

DRAWN BY: JAG	DATE: 7/27/05	CHECKED BY:	LT-9136
REVISED BY: JS	DATE: 4/24/06	SCALE: NTS	FIGURE A



Lower O-cell Load-Movement Curves

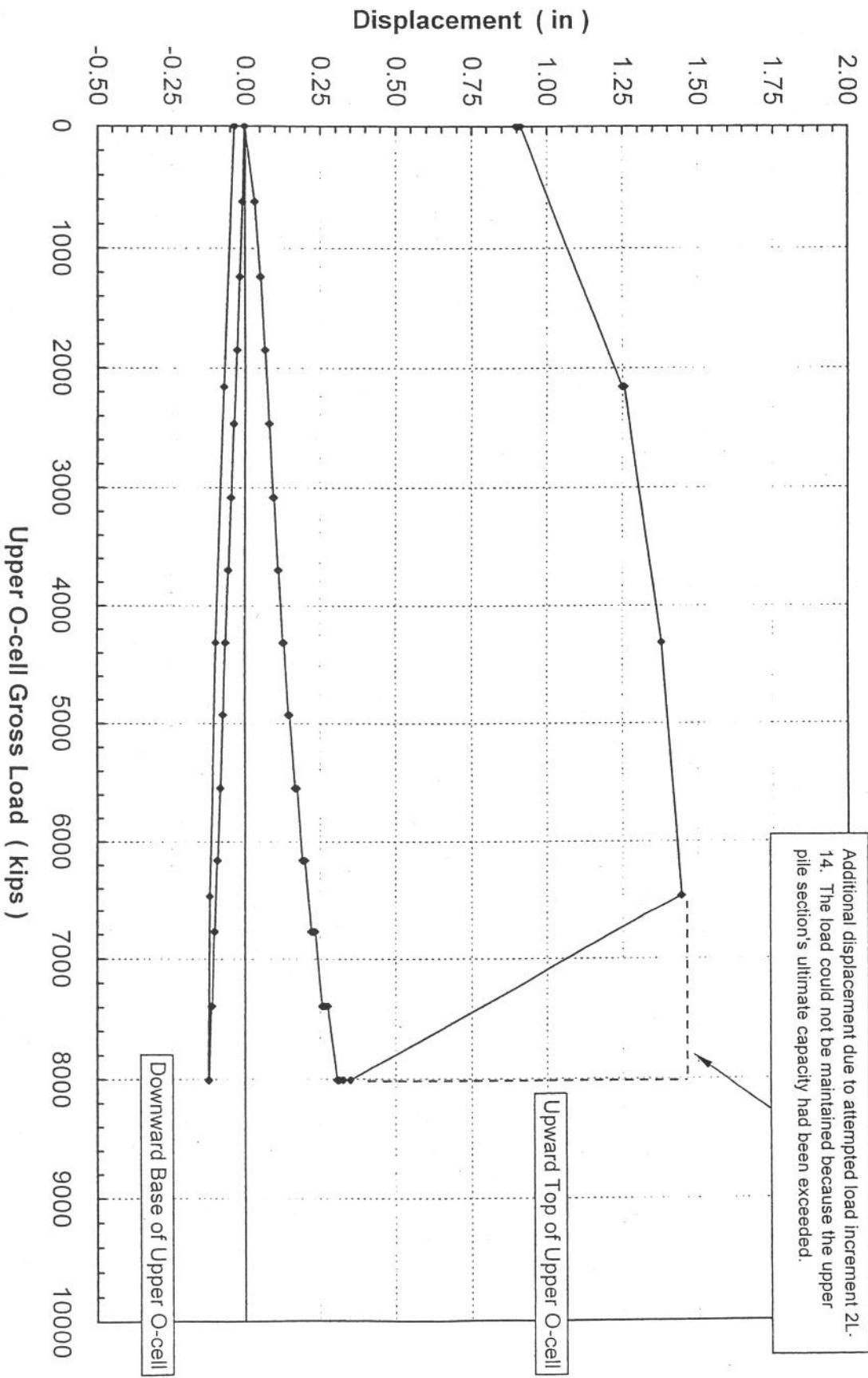
Stages 1 & 4
Test Pile - Amelia Earhart Bridge - Atchison, KS



LOADTEST

Upper O-cell Load-Movement Curves Stage 2

Test Pile - Amelia Earhart Bridge - Atchison, KS

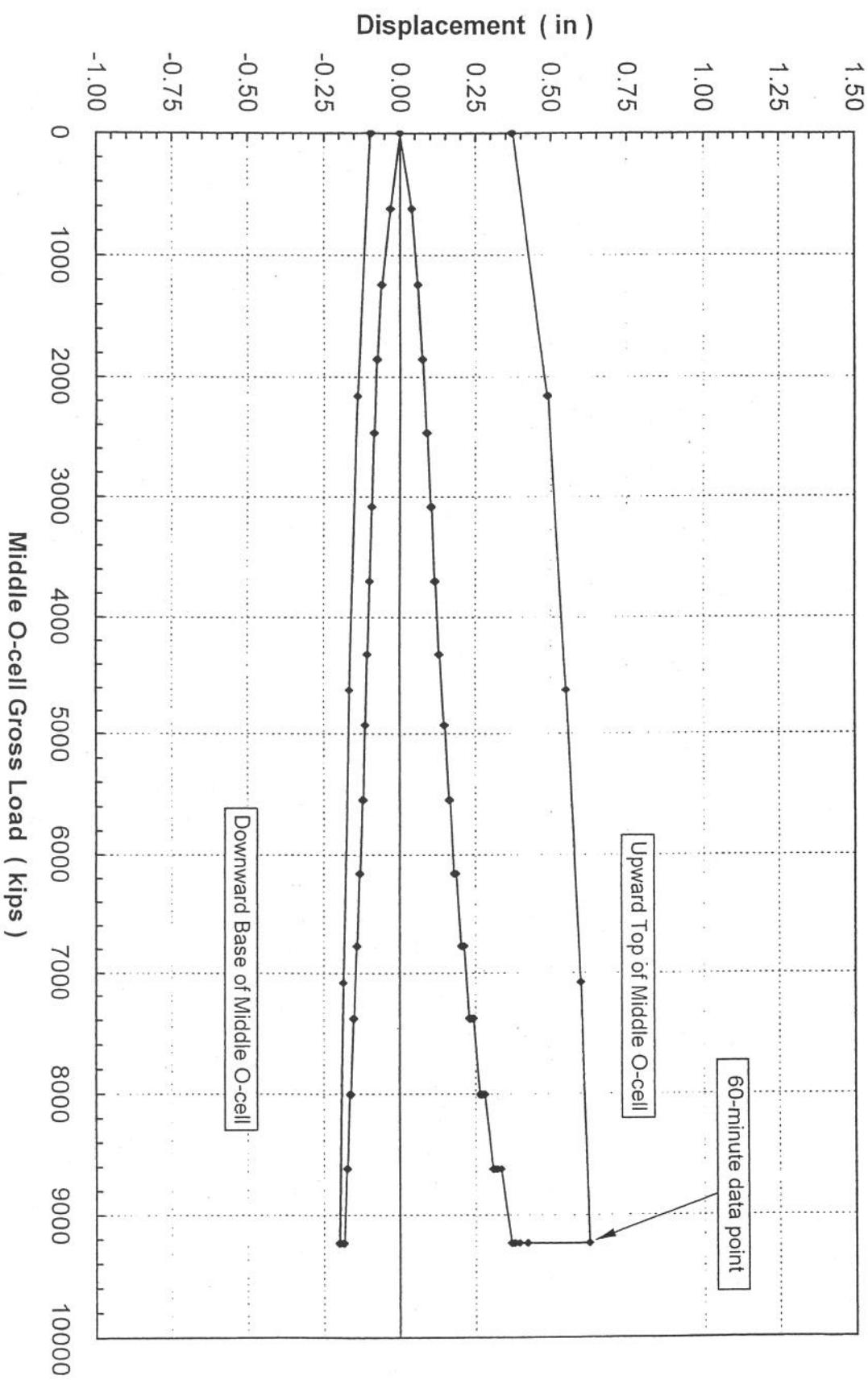




Middle O-cell Load-Movement Curves

Stage 3

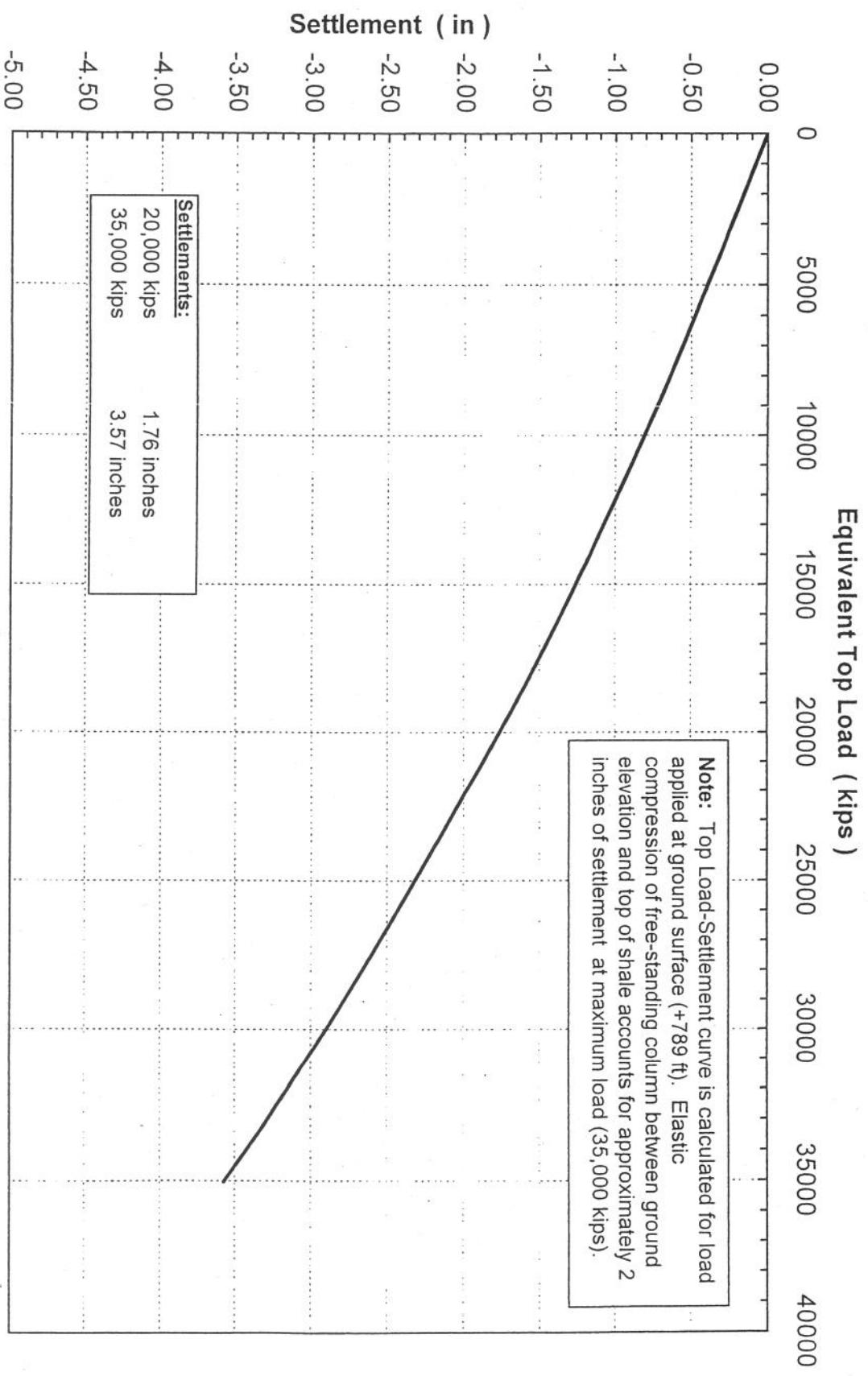
Test Pile - Amelia Earhart Bridge - Atchison, KS



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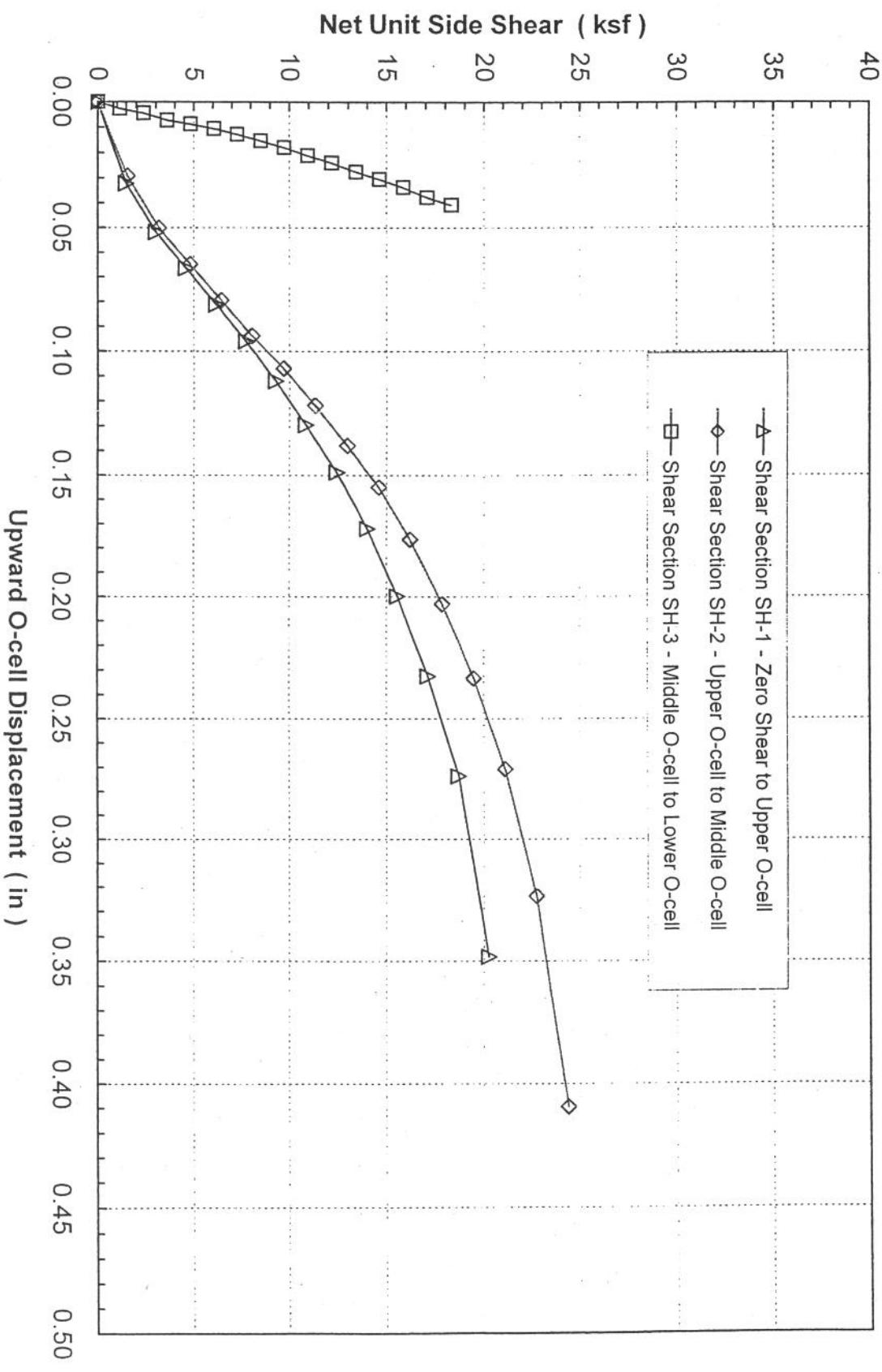
Equivalent Top Load-Settlement Curve

Test Pile - Amelia Earhart Bridge - Atchison, KS



LOADTEST

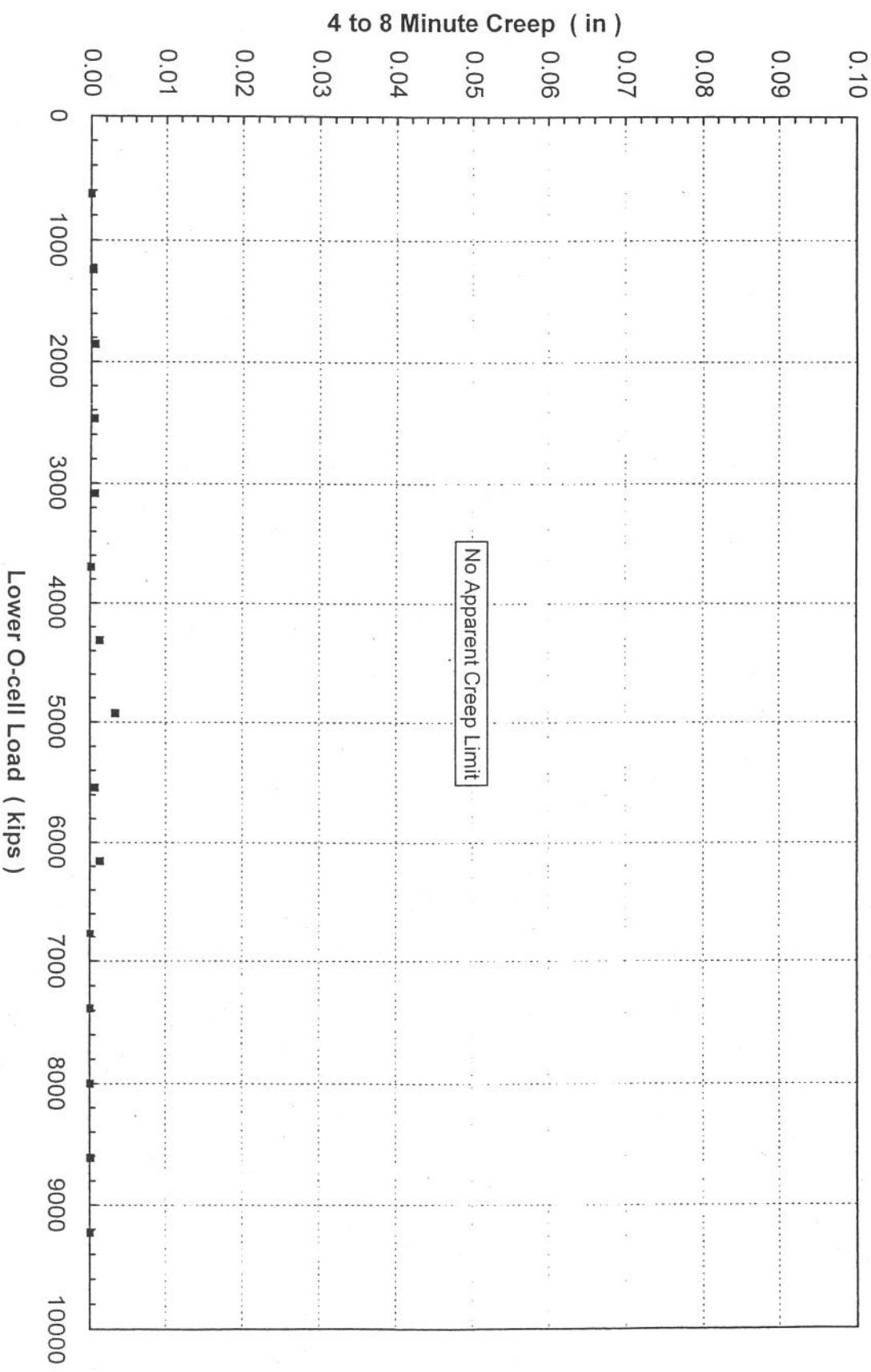
Net Unit Side Shear Curves Test Pile - Amelia Earhart Bridge - Atchison, KS



LOADTEST

Pile Shear & Bearing Section SB Creep Limit

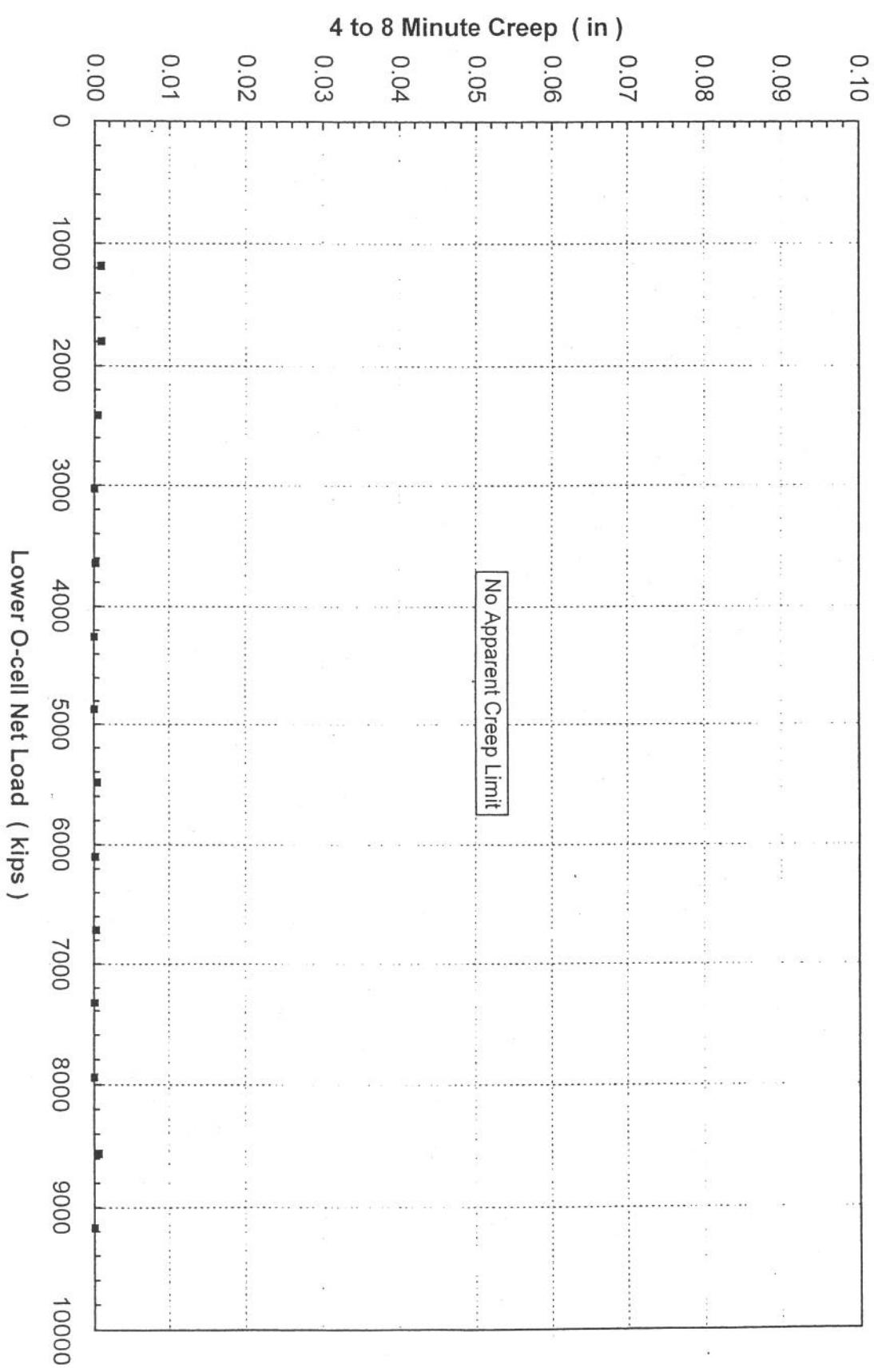
Test Pile - Amelia Earhart Bridge - Atchison, KS





Pile Shear Section SH-3 Creep Limit

Test Pile - Amelia Earhart Bridge - Atchison, KS



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Pile Shear Section SH-2 Creep Limit
Test Pile - Amelia Earhart Bridge - Atchison, KS

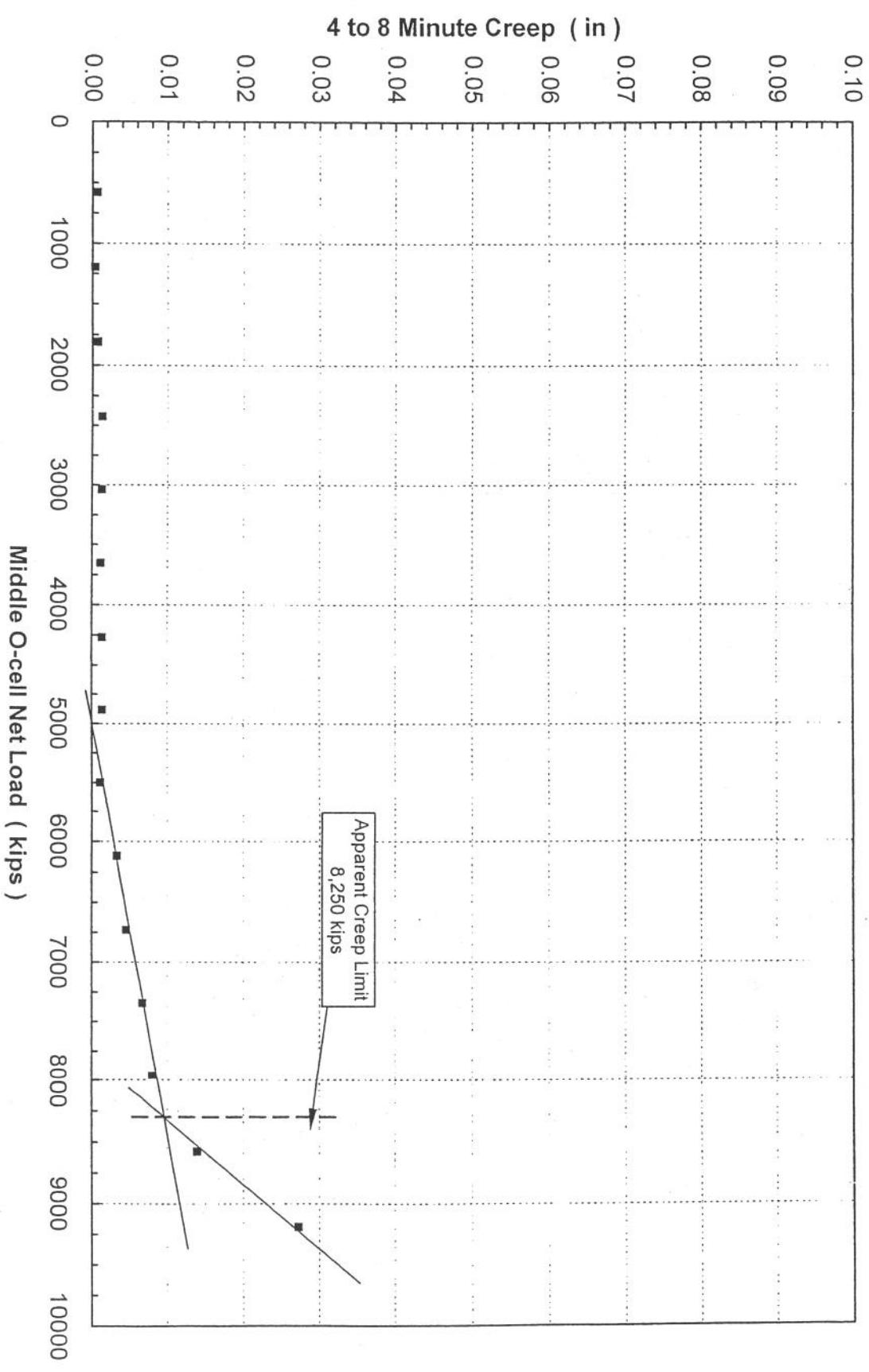
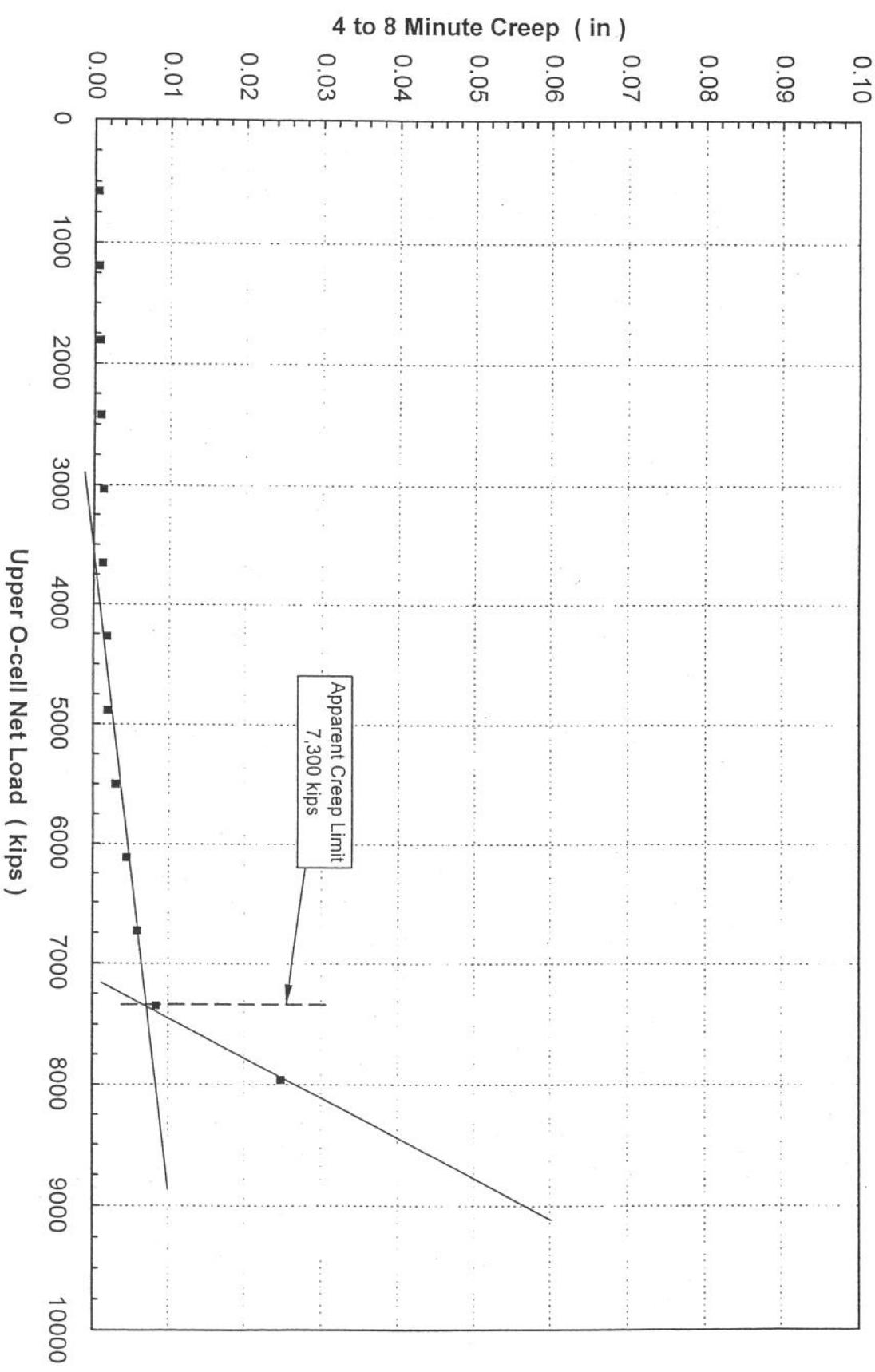


Figure 8 of 9



Pile Shear Section SH-1 Creep Limit

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FIELD DATA & DATA REDUCTION

APPENDIX A

Upward Top of Pile Movement and Pile Compression

Upward Top of File Movement and File Compression Test File - Amelia Earhart Bridge - Atchison, KS

Upward Top of Pile Movement and Pile Compression

Load	Hold	Upward Top of Pile Movement and Pile Compression Test									
		Time	Time	Time	Time	Time	Time	Time	Time	Time	Time
Initial		Lower O-cell	Middle O-cell	Upper O-cell	Top of Pile						
		(mm:ss)	(mm:ss)	(mm:ss)	(mm)						
4L-1	1	20:36:00	1,000	627	0	0	0	0	0	0	0
4L-1	2	20:39:00	1,000	627	0	0	0	0	0	0	0
4L-1	3	20:41:00	1,000	627	0	0	0	0	0	0	0
4L-1	4	20:45:00	1,000	627	0	0	0	0	0	0	0
4L-2	1	20:46:30	2,000	1,241	0	0	0	0	0	0	0
4L-2	2	20:47:30	2,000	1,241	0	0	0	0	0	0	0
4L-2	3	20:49:30	2,000	1,241	0	0	0	0	0	0	0
4L-2	4	20:51:30	3,000	1,956	0	0	0	0	0	0	0
4L-3	1	20:55:30	3,000	1,956	0	0	0	0	0	0	0
4L-3	2	20:56:30	3,000	1,956	0	0	0	0	0	0	0
4L-3	3	20:58:30	3,000	1,956	0	0	0	0	0	0	0
4L-4	1	21:04:30	4,000	2,470	0	0	0	0	0	0	0
4L-4	2	21:05:30	4,000	2,470	0	0	0	0	0	0	0
4L-4	3	21:07:30	4,000	2,470	0	0	0	0	0	0	0
4L-4	4	21:09:30	4,000	2,470	0	0	0	0	0	0	0
4L-5	1	21:11:30	5,000	3,599	0	0	0	0	0	0	0
4L-5	2	21:14:30	5,000	3,599	0	0	0	0	0	0	0
4L-5	3	21:16:30	5,000	3,599	0	0	0	0	0	0	0
4L-5	4	21:18:30	5,000	3,599	0	0	0	0	0	0	0
4L-6	1	21:20:30	5,000	3,599	0	0	0	0	0	0	0
4L-6	2	21:22:00	5,000	3,599	0	0	0	0	0	0	0
4L-6	3	21:23:30	5,000	3,599	0	0	0	0	0	0	0
4L-6	4	21:24:30	5,000	3,599	0	0	0	0	0	0	0
4L-6	5	21:25:30	5,000	3,599	0	0	0	0	0	0	0
4L-6	6	21:26:30	5,000	3,599	0	0	0	0	0	0	0
4L-6	7	21:27:30	5,000	3,599	0	0	0	0	0	0	0
4L-7	1	21:30:30	7,000	4,313	0	0	0	0	0	0	0
4L-7	2	21:31:30	7,000	4,313	0	0	0	0	0	0	0
4L-7	3	21:33:30	7,000	4,313	0	0	0	0	0	0	0
4L-7	4	21:34:30	7,000	4,313	0	0	0	0	0	0	0
4L-7	5	21:35:30	7,000	4,313	0	0	0	0	0	0	0
4L-8	1	21:39:30	8,000	4,928	0	0	0	0	0	0	0
4L-8	2	21:40:30	8,000	4,928	0	0	0	0	0	0	0
4L-8	3	21:42:30	8,000	4,928	0	0	0	0	0	0	0
4L-8	4	21:43:30	8,000	4,928	0	0	0	0	0	0	0
4L-8	5	21:45:30	8,000	4,928	0	0	0	0	0	0	0
4L-9	1	21:48:00	9,000	5,542	0	0	0	0	0	0	0
4L-9	2	21:49:00	9,000	5,542	0	0	0	0	0	0	0
4L-9	3	21:50:00	9,000	5,542	0	0	0	0	0	0	0
4L-9	4	21:51:00	9,000	5,542	0	0	0	0	0	0	0
4L-9	5	21:52:00	9,000	5,542	0	0	0	0	0	0	0
4L-9	6	21:53:00	9,000	5,542	0	0	0	0	0	0	0
4L-9	7	21:54:00	9,000	5,542	0	0	0	0	0	0	0
4L-10	1	21:55:00	9,000	5,542	0	0	0	0	0	0	0
4L-10	2	21:57:30	10,000	6,156	0	0	0	0	0	0	0
4L-10	3	21:59:30	10,000	6,156	0	0	0	0	0	0	0
4L-10	4	22:01:30	10,000	6,156	0	0	0	0	0	0	0
4L-11	1	22:03:30	11,000	6,771	0	0	0	0	0	0	0
4L-11	2	22:06:30	11,000	6,771	0	0	0	0	0	0	0
4L-11	3	22:08:30	11,000	6,771	0	0	0	0	0	0	0
4L-11	4	22:11:30	11,000	6,771	0	0	0	0	0	0	0
4L-11	5	22:12:30	11,000	6,771	0	0	0	0	0	0	0
4L-11	6	22:13:30	11,000	6,771	0	0	0	0	0	0	0
4L-11	7	22:15:30	11,000	6,771	0	0	0	0	0	0	0
4L-11	8	22:17:30	12,000	7,385	0	0	0	0	0	0	0
4L-12	1	22:20:00	13,000	8,000	0	0	0	0	0	0	0
4L-12	2	22:24:00	13,000	8,000	0	0	0	0	0	0	0
4L-12	3	22:28:00	13,000	8,000	0	0	0	0	0	0	0
4L-12	4	22:32:00	13,000	8,000	0	0	0	0	0	0	0
4L-12	5	22:35:00	13,000	8,000	0	0	0	0	0	0	0
4L-12	6	22:38:00	13,000	8,000	0	0	0	0	0	0	0
4L-12	7	22:41:00	14,000	8,614	0	0	0	0	0	0	0
4L-12	8	22:44:00	14,000	8,614	0	0	0	0	0	0	0
4L-13	1	22:48:00	14,000	8,614	0	0	0	0	0	0	0
4L-13	2	22:51:30	14,000	8,614	0	0	0	0	0	0	0
4L-13	3	22:55:00	14,000	8,614	0	0	0	0	0	0	0
4L-13	4	22:58:00	14,000	8,614	0	0	0	0	0	0	0
4L-13	5	22:59:00	14,000	8,614	0	0	0	0	0	0	0
4L-13	6	23:01:00	14,000	8,614	0	0	0	0	0	0	0
4L-13	7	23:04:00	14,000	8,614	0	0	0	0	0	0	0
4L-13	8	23:07:00	14,000	8,614	0	0	0	0	0	0	0
4L-14	1	23:11:00	14,000	8,614	0	0	0	0	0	0	0
4L-14	2	23:14:30	14,000	8,614	0	0	0	0	0	0	0
4L-14	3	23:18:00	14,000	8,614	0	0	0	0	0	0	0
4L-14	4	23:21:00	14,000	8,614	0	0	0	0	0	0	0
4L-14	5	23:24:00	14,000	8,614	0	0	0	0	0	0	0
4L-14	6	23:27:00	14,000	8,614	0	0	0	0	0	0	0
4L-14	7	23:30:00	14,000	8,614	0	0	0	0	0	0	0
4L-14	8	23:33:00	14,000	8,614	0	0	0	0	0	0	0
4L-15	1	23:36:00	14,000	8,614	0	0	0	0	0	0	0
4L-15	2	23:40:00	14,000	8,614	0	0	0	0	0	0	0
4L-15	3	23:43:00	14,000	8,614	0	0	0	0	0	0	0
4L-15	4	23:46:00	14,000	8,614	0	0	0	0	0	0	0
4L-15	5	23:49:00	14,000	8,614	0	0	0	0	0	0	0
4L-15	6	23:52:00	14,000	8,614	0	0	0	0	0	0	0
4L-15	7	23:55:00	14,000	8,614	0	0	0	0	0	0	0
4L-15	8	23:58:00	14,000	8,614	0	0	0	0	0	0	0
4L-16	1	24:01:00	14,000	8,614	0	0	0	0	0	0	0
4L-16	2	24:04:00	14,000	8,614	0	0	0	0	0	0	0
4L-16	3	24:07:00	14,000	8,614	0	0	0	0	0	0	0
4L-16	4	24:10:00	14,000	8,614	0	0	0	0	0	0	0
4L-16	5	24:13:00	14,000	8,614	0	0	0	0	0	0	0
4L-16	6	24:16:00	14,000	8,614	0	0	0	0	0	0	0
4L-16	7	24:19:00	14,000	8,614	0	0	0	0	0	0	0
4L-16	8	24:22:00	14,000	8,614	0	0	0	0	0	0	0
4L-17	1	24:25:00	14,000	8,614	0	0	0	0	0	0	0
4L-17	2	24:28:00	14,000	8,614	0	0	0	0	0	0	0
4L-17	3	24:31:00	14,000	8,614	0	0	0	0	0	0	0
4L-17	4	24:34:00	14,000	8,614	0	0	0	0	0	0	0
4L-17	5	24:37:00	14,000	8,614	0	0	0	0	0	0	0
4L-17	6	24:40:00	14,000	8,614	0	0	0	0	0	0	0
4L-17	7	24:43:00	14,000	8,614	0	0	0	0	0	0	0
4L-17	8	24:46:00	14,000	8,614	0	0	0	0	0	0	0
4L-18	1	24:49:00	14,000	8,614	0	0	0	0	0	0	0
4L-18	2	24:52:00	14,000	8,614	0	0	0	0	0	0	0
4L-18	3	24:55:00	14,000	8,614	0	0	0	0	0	0	0
4L-18	4	24:58:00	14,000	8,614	0	0	0	0	0	0	0
4L-18	5	25:01:00	14,000	8,614	0	0	0	0	0	0	0
4L-18	6	25:04:00	14,000	8,614	0	0	0	0	0	0	0
4L-18	7	25:07:00	14,000	8,614	0	0	0	0	0	0	0
4L											

Test Pile - Amelia Earhart Bridge - Anchors, KS											
Pile Compression		Test Pile - Amelia Earhart Bridge - Anchors, KS									
Load	Hold Time	Lower C-cell	Middle C-cell	Upper C-cell	Pressure Load	Pressure Load	Average Load	ETL-Grade 1	ETL-Grade 2	ETL-Grade 3	Average ETL
(kips)	(mm:ss)	(kips)	(kips)	(kips)	(psi)	(psi)	(psi)	44-724	1584	1585	1585
11L-0	-	10.500	0	0	0	0	0.000	0.000	0.000	0.000	0.000
11L-1	1	11.59:30	1,000	0	0	0	0.000	0.000	0.000	0.000	0.000
11L-1	2	12.00:30	1,000	627	0	0	0.001	0.000	0.000	0.000	0.000
11L-1	4	12.00:30	1,000	627	0	0	0.001	0.000	0.000	0.000	0.000
11L-2	1	12.00:00	2,000	1,241	0	0	0.004	0.001	0.000	0.000	0.000
11L-2	3	12.06:30	1,000	827	0	0	0.001	0.000	0.000	0.000	0.000
11L-2	4	12.11:00	2,000	1,241	0	0	0.004	0.001	0.000	0.000	0.000
11L-2	2	12.00:00	2,000	1,241	0	0	0.004	0.001	0.000	0.000	0.000
11L-3	1	12.11:00	3,000	1,585	0	0	0.008	0.004	0.000	0.000	0.000
11L-3	2	12.11:00	3,000	1,585	0	0	0.008	0.004	0.000	0.000	0.000
11L-3	4	12.20:00	3,000	1,585	0	0	0.008	0.004	0.000	0.000	0.000
11L-4	2	12.26:30	4,000	2,740	0	0	0.012	0.006	0.000	0.000	0.000
11L-4	4	12.26:30	4,000	2,740	0	0	0.012	0.006	0.000	0.000	0.000
11L-4	1	12.25:30	4,000	2,740	0	0	0.011	0.006	0.000	0.000	0.000
11L-4	8	12.25:30	4,000	2,740	0	0	0.016	0.006	0.000	0.000	0.000
11L-5	1	12.34:00	5,000	3,804	0	0	0.016	0.006	0.000	0.000	0.000
11L-5	2	12.34:00	5,000	3,804	0	0	0.016	0.006	0.000	0.000	0.000
11L-5	4	12.37:00	5,000	3,804	0	0	0.016	0.006	0.000	0.000	0.000
11L-5	6	12.41:00	5,000	3,804	0	0	0.016	0.006	0.000	0.000	0.000
11L-6	1	12.41:00	5,000	3,804	0	0	0.019	0.006	0.000	0.000	0.000
11L-6	2	12.44:00	5,000	3,804	0	0	0.020	0.006	0.000	0.000	0.000
11L-6	4	12.46:00	5,000	3,804	0	0	0.020	0.006	0.000	0.000	0.000
11L-6	8	12.50:00	5,000	3,804	0	0	0.020	0.006	0.000	0.000	0.000
11L-7	1	12.52:00	7,000	4,313	0	0	0.021	0.007	0.000	0.000	0.000
11L-7	2	12.53:00	7,000	4,313	0	0	0.022	0.007	0.000	0.000	0.000
11L-7	4	12.53:00	7,000	4,313	0	0	0.023	0.007	0.000	0.000	0.000
11L-7	8	12.59:00	7,000	4,313	0	0	0.023	0.007	0.000	0.000	0.000
11L-8	1	13.00:00	9,000	5,452	0	0	0.023	0.008	0.000	0.000	0.000
11L-8	2	13.01:30	8,000	4,926	0	0	0.026	0.008	0.000	0.000	0.000
11L-8	4	13.03:30	8,000	4,926	0	0	0.026	0.008	0.000	0.000	0.000
11L-8	8	13.07:30	8,000	4,926	0	0	0.027	0.008	0.000	0.000	0.000
11L-9	1	13.09:00	9,000	5,452	0	0	0.029	0.008	0.000	0.000	0.000
11L-9	2	13.10:00	9,000	5,452	0	0	0.029	0.008	0.000	0.000	0.000
11L-9	4	13.12:00	9,000	5,452	0	0	0.030	0.008	0.000	0.000	0.000
11L-9	8	13.16:00	10,000	6,156	0	0	0.032	0.010	0.001	0.000	0.000
11L-10	1	13.16:00	10,000	6,156	0	0	0.032	0.010	0.001	0.000	0.000
11L-10	2	13.19:00	10,000	6,156	0	0	0.033	0.010	0.001	0.000	0.000
11L-10	4	13.21:00	10,000	6,156	0	0	0.033	0.010	0.001	0.000	0.000
11L-10	8	13.25:30	11,000	6,771	0	0	0.036	0.012	0.001	0.000	0.000
11L-11	1	13.25:30	11,000	6,771	0	0	0.036	0.012	0.001	0.000	0.000
11L-11	2	13.27:30	11,000	6,771	0	0	0.036	0.012	0.001	0.000	0.000
11L-11	4	13.29:30	11,000	6,771	0	0	0.036	0.012	0.001	0.000	0.000
11L-11	8	13.33:30	11,000	6,771	0	0	0.036	0.012	0.001	0.000	0.000
11L-12	1	13.35:00	12,000	7,355	0	0	0.039	0.016	0.002	0.001	0.001
11L-12	2	13.38:00	12,000	7,355	0	0	0.039	0.016	0.002	0.001	0.001
11L-12	4	13.40:00	12,000	7,355	0	0	0.040	0.016	0.002	0.001	0.001
11L-12	8	13.42:00	12,000	7,355	0	0	0.040	0.016	0.002	0.001	0.001
11L-13	1	13.44:00	13,000	8,000	0	0	0.042	0.018	0.003	0.001	0.001
11L-13	2	13.50:00	13,000	8,000	0	0	0.042	0.018	0.003	0.001	0.001
11L-13	4	13.52:00	13,000	8,000	0	0	0.042	0.018	0.003	0.001	0.001
11L-13	8	13.54:00	13,000	8,000	0	0	0.042	0.018	0.003	0.001	0.001
11U-1	1	13.55:30	9,500	5,849	0	0	0.043	0.018	0.003	0.001	0.001
11U-1	2	13.59:30	9,500	5,849	0	0	0.043	0.018	0.003	0.001	0.001
11U-1	4	14.01:30	9,500	5,849	0	0	0.044	0.018	0.003	0.001	0.001
11U-2	1	14.03:30	9,500	5,849	0	0	0.044	0.018	0.003	0.001	0.001
11U-2	2	14.06:30	2,500	1,548	0	0	0.047	0.018	0.004	0.001	0.001
11U-2	4	14.09:30	2,500	1,548	0	0	0.047	0.018	0.004	0.001	0.001
11U-3	1	14.10:30	2,500	1,548	0	0	0.047	0.018	0.004	0.001	0.001
11U-3	2	14.13:30	2,500	1,548	0	0	0.047	0.018	0.004	0.001	0.001
11U-3	4	14.16:30	2,500	1,548	0	0	0.047	0.018	0.004	0.001	0.001
11U-4	1	14.17:30	2,500	1,548	0	0	0.047	0.018	0.004	0.001	0.001
11U-4	2	14.20:30	2,500	1,548	0	0	0.047	0.018	0.004	0.001	0.001
11U-4	4	14.23:30	2,500	1,548	0	0	0.047	0.018	0.004	0.001	0.001
11U-4	8	14.26:30	2,500	1,548	0	0	0.047	0.018	0.004	0.001	0.001
11U-5	1	14.27:30	2,500	1,548	0	0	0.047	0.018	0.004	0.001	0.001
11U-5	2	14.30:30	2,500	1,548	0	0	0.047	0.018	0.004	0.001	0.001
11U-5	4	14.33:30	2,500	1,548	0	0	0.047	0.018	0.004	0.001	0.001
11U-5	8	14.36:30	2,500	1,548	0	0	0.047	0.018	0.004	0.001	0.001
11U-6	1	14.37:30	2,500	1,548	0	0	0.047	0.018	0.004	0.001	0.001
11U-6	2	14.40:30	2,500	1,548	0	0	0.047	0.018	0.004	0.001	0.001
11U-6	4	14.43:30	2,500	1,548	0	0	0.047	0.018	0.004	0.001	0.001
11U-6	8	14.46:30	2,500	1,548	0	0	0.047	0.018	0.004	0.001	0.001
11U-7	1	14.47:30	2,500	1,548	0	0	0.047	0.018	0.004	0.001	0.001
11U-7	2	14.50:00	3,000	1,999	0	0	0.048	0.018	0.004	0.001	0.001
11U-7	4	14.53:00	3,000	1,999	0	0	0.048	0.018	0.004	0.001	0.001
11U-7	8	14.56:00	3,000	1,999	0	0	0.048	0.018	0.004	0.001	0.001
11U-8	1	14.59:00	3,000	1,999	0	0	0.048	0.018	0.004	0.001	0.001
11U-8	2	14.62:00	3,000	1,999	0	0	0.048	0.018	0.004	0.001	0.001
11U-8	4	14.65:00	3,000	1,999	0	0	0.048	0.018	0.004	0.001	0.001
11U-8	8	14.68:00	3,000	1,999	0	0	0.048	0.018	0.004	0.001	0.001
11U-9	1	14.71:00	3,000	1,999	0	0	0.048	0.018	0.004	0.001	0.001
11U-9	2	14.74:00	3,000	1,999	0	0	0.048	0.018	0.004	0.001	0.001
11U-9	4	14.77:00	3,000	1,999	0	0	0.048	0.018	0.004	0.001	0.001
11U-9	8	14.80:00	3,000	1,999	0	0	0.048	0.018	0.004	0.001	0.001
11U-10	1	14.83:00	3,000	1,999	0	0	0.048	0.018	0.004	0.001	0.001
11U-10	2	14.86:00	3,000	1,999	0	0	0.048	0.018	0.004	0.001	0.001
11U-10	4	14.89:00	3,000	1,999	0	0	0.048	0.018	0.004	0.001	0.001
11U-10	8	14.92:00	3,000	1,999	0	0	0.048	0.018	0.004	0.001	0.001
11U-11	1	14.95:00	3,000	1,999	0	0	0.048	0.018	0.004	0.001	0.001
11U-11	2	15.08:00	3,000	1,999	0	0	0.048	0.018	0.004	0.001	0.001
11U-11	4	15.11:00	3,000	1,999	0	0	0.048	0.018	0		

Load	Hold	Test Pile - Amelie Earhart Bridge - Attachment, Ks									
		Increment (minutes)	Time (mm:ss)	Pressure (kips)	Load (kips)	Pressure (psi)	Load (psi)	Average Load (kips)	0.4-T23	15084 (in)	1605 Average ECT Level 2
ZL-1	1	14:20:30	0	0	0	0	0	0	0.012	0.025	0.025
ZL-1	2	14:21:30	0	0	0	0	0	0	0.012	0.027	0.026
ZL-1	3	14:22:30	0	0	0	0	0	0	0.012	0.027	0.026
ZL-2	1	14:29:30	0	0	0	0	0	0	0.012	0.016	0.015
ZL-2	2	14:30:30	0	0	0	0	0	0	0.012	0.015	0.016
ZL-2	3	14:31:30	0	0	0	0	0	0	0.012	0.017	0.017
ZL-3	1	14:38:30	0	0	0	0	0	0	0.012	0.026	0.025
ZL-3	2	14:39:30	0	0	0	0	0	0	0.012	0.026	0.025
ZL-4	1	14:47:00	0	0	0	0	0	0	0.012	0.027	0.026
ZL-4	2	14:48:00	0	0	0	0	0	0	0.012	0.026	0.025
ZL-4	3	14:49:00	0	0	0	0	0	0	0.012	0.027	0.026
ZL-5	1	14:45:30	0	0	0	0	0	0	0.012	0.044	0.043
ZL-5	2	14:46:30	0	0	0	0	0	0	0.012	0.044	0.043
ZL-5	3	14:48:30	0	0	0	0	0	0	0.012	0.044	0.043
ZL-5	4	14:49:30	0	0	0	0	0	0	0.012	0.044	0.043
ZL-6	1	15:04:30	0	0	0	0	0	0	0.012	0.052	0.051
ZL-6	2	15:05:30	0	0	0	0	0	0	0.012	0.052	0.051
ZL-6	3	15:07:30	0	0	0	0	0	0	0.012	0.052	0.051
ZL-6	4	15:08:30	0	0	0	0	0	0	0.012	0.052	0.051
ZL-6	5	15:10:30	0	0	0	0	0	0	0.012	0.052	0.051
ZL-7	1	15:11:30	0	0	0	0	0	0	0.012	0.059	0.058
ZL-7	2	15:14:30	0	0	0	0	0	0	0.012	0.058	0.057
ZL-7	3	15:16:30	0	0	0	0	0	0	0.012	0.058	0.057
ZL-7	4	15:17:30	0	0	0	0	0	0	0.012	0.058	0.057
ZL-7	5	15:19:30	0	0	0	0	0	0	0.012	0.058	0.057
ZL-8	1	15:20:30	0	0	0	0	0	0	0.012	0.061	0.060
ZL-8	2	15:22:00	0	0	0	0	0	0	0.012	0.061	0.060
ZL-8	3	15:20:30	0	0	0	0	0	0	0.012	0.061	0.060
ZL-8	4	15:22:30	0	0	0	0	0	0	0.012	0.061	0.060
ZL-8	5	15:24:30	0	0	0	0	0	0	0.012	0.061	0.060
ZL-8	6	15:26:30	0	0	0	0	0	0	0.012	0.061	0.060
ZL-8	7	15:28:30	0	0	0	0	0	0	0.012	0.061	0.060
ZL-8	8	15:30:30	0	0	0	0	0	0	0.012	0.061	0.060
ZL-9	1	15:30:30	0	0	0	0	0	0	0.012	0.074	0.073
ZL-9	2	15:31:30	0	0	0	0	0	0	0.012	0.074	0.073
ZL-9	3	15:32:30	0	0	0	0	0	0	0.012	0.074	0.073
ZL-9	4	15:33:30	0	0	0	0	0	0	0.012	0.074	0.073
ZL-9	5	15:34:30	0	0	0	0	0	0	0.012	0.074	0.073
ZL-9	6	15:37:30	0	0	0	0	0	0	0.012	0.074	0.073
ZL-10	1	15:39:30	0	0	0	0	0	0	0.012	0.089	0.088
ZL-10	2	15:40:30	0	0	0	0	0	0	0.012	0.089	0.088
ZL-10	3	15:42:30	0	0	0	0	0	0	0.012	0.089	0.088
ZL-10	4	15:43:30	0	0	0	0	0	0	0.012	0.089	0.088
ZL-10	5	15:44:30	0	0	0	0	0	0	0.012	0.089	0.088
ZL-11	1	15:46:00	0	0	0	0	0	0	0.012	0.091	0.090
ZL-11	2	15:47:00	0	0	0	0	0	0	0.012	0.091	0.090
ZL-11	3	15:48:00	0	0	0	0	0	0	0.012	0.091	0.090
ZL-11	4	15:49:00	0	0	0	0	0	0	0.012	0.091	0.090
ZL-11	5	15:50:00	0	0	0	0	0	0	0.012	0.091	0.090
ZL-11	6	15:55:00	0	0	0	0	0	0	0.012	0.091	0.090
ZL-11	7	15:56:00	0	0	0	0	0	0	0.012	0.091	0.090
ZL-11	8	15:57:00	0	0	0	0	0	0	0.012	0.091	0.090
ZL-12	1	15:58:00	0	0	0	0	0	0	0.012	0.091	0.090
ZL-12	2	15:59:00	0	0	0	0	0	0	0.012	0.091	0.090
ZL-12	3	16:00:00	0	0	0	0	0	0	0.012	0.091	0.090
ZL-12	4	16:01:00	0	0	0	0	0	0	0.012	0.091	0.090
ZL-12	5	16:02:00	0	0	0	0	0	0	0.012	0.091	0.090
ZL-12	6	16:03:00	0	0	0	0	0	0	0.012	0.091	0.090
ZL-12	7	16:04:00	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	1	16:05:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	2	16:07:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	3	16:09:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	4	16:10:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	5	16:12:00	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	6	16:14:00	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	7	16:16:00	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	8	16:17:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	9	16:19:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	10	16:21:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	11	16:23:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	12	16:25:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	13	16:27:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	14	16:29:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	15	16:31:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	16	16:33:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	17	16:35:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	18	16:37:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	19	16:39:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	20	16:41:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	21	16:43:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	22	16:45:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	23	16:47:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	24	16:49:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	25	16:51:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	26	16:53:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	27	16:55:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	28	16:57:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	29	16:59:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	30	17:01:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	31	17:03:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	32	17:05:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	33	17:07:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	34	17:09:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	35	17:11:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	36	17:13:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	37	17:15:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	38	17:17:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	39	17:19:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	40	17:21:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	41	17:23:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	42	17:25:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	43	17:27:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	44	17:29:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	45	17:31:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	46	17:33:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	47	17:35:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	48	17:37:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	49	17:39:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	50	17:41:30	0	0	0	0	0	0	0.012	0.091	0.090
ZL-13	51	17:4									

Load	Height	Test Time (mm:ss)		Pressure (kips)	Load (kips)	Pressure (psi)	Load (psi)	Upper D-cell (in)	Middle D-cell (in)	Lower D-cell (in)	Test Pile - Amherst Bridge - Attachment, KS	
		Time	Time								ECT Level 1	ECT Level 2
3L-1	1	17:07:30	0	0	1,000	624	0	0.039	0.037	0.039	0.040	0.040
3L-1	2	17:08:30	0	0	1,000	624	0	0.040	0.038	0.039	0.040	0.040
3L-1	4	17:10:30	0	0	1,000	624	0	0.040	0.037	0.039	0.040	0.040
3L-1	8	17:14:30	0	0	1,000	624	0	0.040	0.039	0.039	0.040	0.040
3L-2	1	17:17:00	0	0	1,000	1,229	0	0.064	0.055	0.065	0.052	0.053
3L-2	8	17:24:00	0	0	2,000	1,229	0	0.067	0.066	0.067	0.044	0.044
3L-2	4	17:20:00	0	0	2,000	1,229	0	0.066	0.065	0.065	0.044	0.045
3L-2	2	17:18:00	0	0	2,000	1,229	0	0.065	0.066	0.065	0.044	0.044
3L-3	1	17:26:00	0	0	3,000	1,584	0	0.077	0.062	0.067	0.049	0.049
3L-3	4	17:27:00	0	0	3,000	1,584	0	0.077	0.062	0.067	0.049	0.048
3L-3	2	17:29:00	0	0	3,000	1,584	0	0.077	0.062	0.067	0.049	0.048
3L-3	4	17:30:00	0	0	3,000	1,584	0	0.077	0.062	0.067	0.049	0.048
3L-3	2	17:32:00	0	0	3,000	1,584	0	0.077	0.062	0.067	0.049	0.048
3L-3	4	17:34:00	0	0	3,000	1,584	0	0.077	0.062	0.067	0.049	0.048
3L-3	1	17:36:00	0	0	3,000	1,584	0	0.077	0.062	0.067	0.049	0.048
3L-4	2	17:38:00	0	0	4,000	2,649	0	0.067	0.066	0.067	0.051	0.053
3L-4	4	17:40:00	0	0	4,000	2,649	0	0.067	0.066	0.067	0.051	0.053
3L-4	1	17:44:00	0	0	4,000	2,649	0	0.067	0.066	0.067	0.051	0.053
3L-5	1	17:44:30	0	0	5,000	3,064	0	0.069	0.065	0.069	0.056	0.057
3L-5	2	17:45:30	0	0	5,000	3,064	0	0.069	0.065	0.069	0.056	0.057
3L-5	4	17:46:30	0	0	5,000	3,064	0	0.069	0.065	0.069	0.056	0.057
3L-5	8	17:50:30	0	0	5,000	3,064	0	0.069	0.065	0.069	0.056	0.057
3L-6	2	17:53:00	0	0	6,000	3,999	0	0.104	0.102	0.103	0.062	0.061
3L-6	4	17:55:00	0	0	6,000	3,999	0	0.105	0.103	0.104	0.062	0.061
3L-6	8	17:59:00	0	0	6,000	3,999	0	0.105	0.103	0.104	0.062	0.061
3L-7	1	18:01:00	0	0	7,000	4,134	0	0.111	0.108	0.110	0.066	0.066
3L-7	2	18:02:00	0	0	7,000	4,134	0	0.111	0.108	0.110	0.066	0.066
3L-7	4	18:04:00	0	0	7,000	4,134	0	0.111	0.108	0.110	0.066	0.066
3L-7	7	18:06:00	0	0	7,000	4,134	0	0.111	0.108	0.110	0.066	0.066
3L-8	1	18:08:00	0	0	7,000	4,134	0	0.111	0.108	0.110	0.066	0.066
3L-8	4	18:10:00	0	0	7,000	4,134	0	0.111	0.108	0.110	0.066	0.066
3L-8	8	18:16:30	0	0	8,000	4,293	0	0.117	0.115	0.117	0.069	0.071
3L-9	2	18:19:00	0	0	9,000	5,344	0	0.125	0.123	0.125	0.077	0.077
3L-9	4	18:21:00	0	0	9,000	5,344	0	0.125	0.123	0.125	0.077	0.077
3L-9	8	18:25:00	0	0	9,000	5,344	0	0.125	0.123	0.125	0.077	0.077
3L-10	1	18:27:00	0	0	10,000	6,159	0	0.139	0.137	0.141	0.083	0.083
3L-10	2	18:28:00	0	0	10,000	6,159	0	0.139	0.137	0.141	0.083	0.083
3L-10	4	18:34:00	0	0	10,000	6,159	0	0.139	0.137	0.141	0.083	0.083
3L-11	1	18:36:00	0	0	11,000	6,774	0	0.147	0.145	0.149	0.094	0.091
3L-11	2	18:37:00	0	0	11,000	6,774	0	0.147	0.145	0.149	0.094	0.091
3L-11	4	18:43:00	0	0	11,000	6,774	0	0.147	0.145	0.149	0.094	0.091
3L-11	8	18:51:30	0	0	12,000	7,309	0	0.159	0.157	0.161	0.105	0.103
3L-12	1	18:53:30	0	0	12,000	7,309	0	0.159	0.157	0.161	0.105	0.103
3L-12	2	18:57:30	0	0	12,000	7,309	0	0.159	0.157	0.161	0.105	0.103
3L-12	4	18:59:30	0	0	12,000	7,309	0	0.159	0.157	0.161	0.105	0.103
3L-12	8	19:01:30	0	0	12,000	7,309	0	0.159	0.157	0.161	0.105	0.103
3L-13	1	19:03:30	0	0	13,000	8,004	0	0.167	0.165	0.169	0.113	0.111
3L-13	2	19:05:30	0	0	13,000	8,004	0	0.167	0.165	0.169	0.113	0.111
3L-13	4	19:09:30	0	0	13,000	8,004	0	0.167	0.165	0.169	0.113	0.111
3L-13	8	19:15:30	0	0	15,000	9,234	0	0.190	0.188	0.192	0.134	0.131
3L-14	1	19:17:30	0	0	15,000	9,234	0	0.190	0.188	0.192	0.134	0.131
3L-14	2	19:21:30	0	0	15,000	9,234	0	0.190	0.188	0.192	0.134	0.131
3L-14	4	19:25:30	0	0	15,000	9,234	0	0.190	0.188	0.192	0.134	0.131
3L-14	8	19:29:30	0	0	15,000	9,234	0	0.190	0.188	0.192	0.134	0.131
3L-15	1	19:31:30	0	0	15,000	9,234	0	0.190	0.188	0.192	0.134	0.131
3L-15	2	19:35:30	0	0	15,000	9,234	0	0.190	0.188	0.192	0.134	0.131
3L-15	4	19:39:30	0	0	15,000	9,234	0	0.190	0.188	0.192	0.134	0.131
3L-15	8	19:43:30	0	0	15,000	9,234	0	0.190	0.188	0.192	0.134	0.131
3L-16	1	19:47:30	0	0	15,000	9,234	0	0.190	0.188	0.192	0.134	0.131
3L-16	2	19:51:30	0	0	15,000	9,234	0	0.190	0.188	0.192	0.134	0.131
3L-16	4	19:55:30	0	0	15,000	9,234	0	0.190	0.188	0.192	0.134	0.131
3L-16	8	19:59:30	0	0	15,000	9,234	0	0.190	0.188	0.192	0.134	0.131
3L-17	1	20:01:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-17	2	20:02:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-17	4	20:04:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-17	8	20:08:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-18	1	20:10:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-18	2	20:12:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-18	4	20:14:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-18	8	20:18:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-19	1	20:20:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-19	2	20:22:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-19	4	20:24:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-19	8	20:28:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-20	1	20:30:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-20	2	20:32:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-20	4	20:34:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-20	8	20:38:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-21	1	20:40:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-21	2	20:42:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-21	4	20:44:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-21	8	20:48:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-22	1	20:50:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-22	2	20:52:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-22	4	20:54:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-22	8	20:58:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077
3L-23	1	21:00:00	0	0	16,000	10,399	0	0.125	0.123	0.125	0.077	0.077

Test Pile - Amelia Earhart Bridge - Atchison, KS											
Load		HDL		Time		Pressure (kips)		Load (kips)		Average (in)	
Increment	minutes	Time	mm:ss	Lower O-cell	Middle O-cell	Upper O-cell	(psi)	(kips)	(psi)	(kips)	(in)
4L-1	1	20:38:00	1,000	572	0	0	0.098	0.093	0.095	0.094	0.054
4L-1	2	20:39:00	1,000	572	0	0	0.098	0.093	0.095	0.094	0.053
4L-1	4	20:41:00	1,000	627	0	0	0.098	0.101	0.095	0.094	0.053
4L-1	8	20:45:00	1,000	627	0	0	0.098	0.100	0.099	0.094	0.053
4L-2	1	20:46:30	2,000	1,241	0	0	0.099	0.100	0.095	0.095	0.053
4L-2	2	20:47:30	2,000	1,241	0	0	0.099	0.100	0.095	0.095	0.053
4L-2	4	20:49:30	2,000	1,241	0	0	0.099	0.100	0.095	0.095	0.053
4L-2	8	20:51:30	2,000	1,241	0	0	0.099	0.100	0.095	0.095	0.053
4L-3	1	20:55:30	3,000	1,855	0	0	0.099	0.099	0.095	0.094	0.053
4L-3	2	20:56:30	3,000	1,855	0	0	0.099	0.099	0.095	0.094	0.053
4L-3	4	20:58:30	3,000	1,855	0	0	0.099	0.099	0.095	0.094	0.053
4L-3	8	21:02:30	3,000	1,855	0	0	0.099	0.099	0.095	0.094	0.053
4L-4	1	21:04:30	4,000	2,470	0	0	0.099	0.099	0.095	0.094	0.052
4L-4	2	21:05:30	4,000	2,470	0	0	0.099	0.099	0.095	0.094	0.052
4L-4	4	21:07:30	4,000	2,470	0	0	0.099	0.099	0.095	0.094	0.052
4L-4	8	21:11:30	4,000	2,470	0	0	0.099	0.099	0.095	0.094	0.052
4L-5	1	21:13:30	5,000	3,041	0	0	0.099	0.099	0.095	0.094	0.052
4L-5	2	21:14:30	5,000	3,041	0	0	0.099	0.099	0.095	0.094	0.052
4L-5	4	21:16:30	5,000	3,041	0	0	0.099	0.099	0.095	0.094	0.052
4L-5	8	21:20:30	5,000	3,041	0	0	0.099	0.099	0.095	0.094	0.052
4L-6	1	21:22:00	6,000	3,569	0	0	0.099	0.099	0.095	0.094	0.052
4L-6	2	21:23:30	6,000	3,569	0	0	0.099	0.099	0.095	0.094	0.052
4L-6	4	21:25:00	6,000	3,569	0	0	0.099	0.099	0.095	0.094	0.052
4L-6	8	21:29:00	6,000	3,569	0	0	0.099	0.099	0.095	0.094	0.052
4L-7	1	21:31:30	7,000	4,313	0	0	0.099	0.099	0.095	0.094	0.052
4L-7	2	21:33:30	7,000	4,313	0	0	0.099	0.099	0.095	0.094	0.052
4L-7	4	21:35:30	7,000	4,313	0	0	0.099	0.099	0.095	0.094	0.052
4L-7	8	21:39:30	7,000	4,313	0	0	0.099	0.099	0.095	0.094	0.052
4L-8	1	21:43:30	8,000	4,926	0	0	0.102	0.100	0.102	0.102	0.052
4L-8	2	21:45:30	8,000	4,926	0	0	0.102	0.100	0.102	0.102	0.052
4L-8	4	21:48:00	8,000	4,926	0	0	0.102	0.100	0.102	0.102	0.052
4L-8	8	21:51:30	8,000	4,926	0	0	0.102	0.100	0.102	0.102	0.052
4L-9	1	21:55:30	9,000	5,521	0	0	0.104	0.102	0.105	0.104	0.052
4L-9	2	21:58:00	9,000	5,521	0	0	0.104	0.102	0.105	0.104	0.052
4L-9	4	21:59:00	9,000	5,521	0	0	0.104	0.102	0.105	0.104	0.052
4L-9	8	22:01:30	9,000	5,521	0	0	0.104	0.102	0.105	0.104	0.052
4L-10	1	22:05:30	10,000	6,155	0	0	0.105	0.104	0.105	0.104	0.052
4L-10	2	22:07:30	10,000	6,155	0	0	0.105	0.104	0.105	0.104	0.052
4L-10	4	22:09:30	10,000	6,155	0	0	0.105	0.104	0.105	0.104	0.052
4L-10	8	22:11:30	10,000	6,155	0	0	0.105	0.104	0.105	0.104	0.052
4L-11	1	22:15:30	11,000	6,771	0	0	0.106	0.105	0.106	0.105	0.052
4L-11	2	22:17:30	11,000	6,771	0	0	0.106	0.105	0.106	0.105	0.052
4L-11	4	22:19:30	11,000	6,771	0	0	0.106	0.105	0.106	0.105	0.052
4L-11	8	22:21:30	11,000	6,771	0	0	0.106	0.105	0.106	0.105	0.052
4L-12	1	22:25:30	12,000	7,385	0	0	0.111	0.109	0.110	0.109	0.052
4L-12	2	22:27:30	12,000	7,385	0	0	0.111	0.109	0.110	0.109	0.052
4L-12	4	22:29:30	12,000	7,385	0	0	0.111	0.109	0.110	0.109	0.052
4L-12	8	22:31:30	12,000	7,385	0	0	0.111	0.109	0.110	0.109	0.052
4L-13	1	22:35:30	13,000	8,000	0	0	0.114	0.113	0.112	0.111	0.051
4L-13	2	22:37:30	13,000	8,000	0	0	0.114	0.113	0.112	0.111	0.051
4L-13	4	22:39:30	13,000	8,000	0	0	0.114	0.113	0.112	0.111	0.051
4L-13	8	22:41:30	13,000	8,000	0	0	0.114	0.113	0.112	0.111	0.051
4L-14	1	22:45:30	14,000	8,614	0	0	0.115	0.114	0.113	0.112	0.051
4L-14	2	22:47:30	14,000	8,614	0	0	0.115	0.114	0.113	0.112	0.051
4L-14	4	22:49:30	14,000	8,614	0	0	0.115	0.114	0.113	0.112	0.051
4L-14	8	22:51:30	14,000	8,614	0	0	0.115	0.114	0.113	0.112	0.051
4L-15	1	22:55:30	15,000	9,226	0	0	0.116	0.115	0.114	0.113	0.051
4L-15	2	22:57:30	15,000	9,226	0	0	0.116	0.115	0.114	0.113	0.051
4L-15	4	22:59:30	15,000	9,226	0	0	0.116	0.115	0.114	0.113	0.051
4L-15	8	23:01:30	15,000	9,226	0	0	0.116	0.115	0.114	0.113	0.051
4L-16	1	23:05:30	16,000	9,841	0	0	0.117	0.116	0.115	0.114	0.051
4L-16	2	23:07:30	16,000	9,841	0	0	0.117	0.116	0.115	0.114	0.051
4L-16	4	23:09:30	16,000	9,841	0	0	0.117	0.116	0.115	0.114	0.051
4L-16	8	23:11:30	16,000	9,841	0	0	0.117	0.116	0.115	0.114	0.051
4L-17	1	23:15:30	17,000	10,455	0	0	0.118	0.117	0.116	0.115	0.051
4L-17	2	23:17:30	17,000	10,455	0	0	0.118	0.117	0.116	0.115	0.051
4L-17	4	23:19:30	17,000	10,455	0	0	0.118	0.117	0.116	0.115	0.051
4L-17	8	23:21:30	17,000	10,455	0	0	0.118	0.117	0.116	0.115	0.051
4L-18	1	23:25:30	18,000	11,069	0	0	0.119	0.118	0.117	0.116	0.052
4L-18	2	23:27:30	18,000	11,069	0	0	0.119	0.118	0.117	0.116	0.052
4L-18	4	23:29:30	18,000	11,069	0	0	0.119	0.118	0.117	0.116	0.052
4L-18	8	23:31:30	18,000	11,069	0	0	0.119	0.118	0.117	0.116	0.052
4L-19	1	23:35:30	19,000	11,683	0	0	0.120	0.119	0.118	0.117	0.052
4L-19	2	23:37:30	19,000	11,683	0	0	0.120	0.119	0.118	0.117	0.052
4L-19	4	23:39:30	19,000	11,683	0	0	0.120	0.119	0.118	0.117	0.052
4L-19	8	23:41:30	19,000	11,683	0	0	0.120	0.119	0.118	0.117	0.052
4L-20	1	23:45:30	20,000	12,241	0	0	0.121	0.120	0.119	0.118	0.052
4L-20	2	23:47:30	20,000	12,241	0	0	0.121	0.120	0.119	0.118	0.052
4L-20	4	23:49:30	20,000	12,241	0	0	0.121	0.120	0.119	0.118	0.052
4L-20	8	23:51:30	20,000	12,241	0	0	0.121	0.120	0.119	0.118	0.052
4L-21	1	23:55:30	21,000	12,856	0	0	0.122	0.121	0.120	0.119	0.052
4L-21	2	23:57:30	21,000	12,856	0	0	0.122	0.121	0.120	0.119	0.052
4L-21	4	23:59:30	21,000	12,856	0	0	0.122	0.121	0.120	0.119	0.052
4L-21	8	24:01:30	21,000	12,856	0	0	0.122	0.121	0.120	0.119	0.052
4L-22	1	24:05:30	22,000	13,470	0	0	0.123	0.122	0.121	0.120	0.052
4L-22	2	24:07:30	22,000	13,470	0	0	0.123	0.122	0.121	0.120	0.052
4L-22	4	24:09:30	22,000	13,470	0	0	0.123	0.122	0.121	0.120	0.052
4L-22	8	24:11:30	22,000	13,470	0	0	0.123	0.122	0.121	0.120	0.052
4L-23	1	24:15:30	23,000	14,084	0	0	0.124	0.123	0.122	0.121	0.052
4L-23	2	24:17:30	23,000	14,084	0	0	0.124	0.123	0.122	0.121	0.052
4L-23	4	24:19:30	23,000	14,084	0	0	0.124	0.123	0.122	0.121	0.052
4L-23	8	24:21:30</td									

Load	Held	Test Pile - Amelia Earhart Bridge - Atchison, KS										
		Lower-O-cell	Middle-O-cell	Upper-O-cell	Pressure (kips)	Load (kips)	Pressure (kips)	Load (kips)	Pressure (kips)	Load (kips)	Lower-O-cell Expansion	Upper-O-cell Expansion
1L-0	-	10.5700	0	0	0	0	0	0	0	0	0.000	0.000
1L-1	1	11.9530	1,000	0	0	0	0	0	0	0	0.000	0.000
1L-2	2	12.0030	1,000	627	0	0	0	0	0	0	0.007	0.012
1L-3	2	12.1530	2,000	0	0	0	0	0	0	0	0.015	0.022
1L-4	1	12.2030	2,000	0	0	0	0	0	0	0	0.015	0.022
1L-5	1	12.2330	4,000	2,470	0	0	0	0	0	0	0.036	0.029
1L-6	2	12.2830	4,000	2,710	0	0	0	0	0	0	0.036	0.030
1L-7	1	12.2520	4,000	2,470	0	0	0	0	0	0	0.032	0.028
1L-8	1	12.3030	4,000	2,470	0	0	0	0	0	0	0.032	0.028
1L-9	2	12.3530	7,000	4,313	0	0	0	0	0	0	0.061	0.078
1L-10	2	12.4030	7,000	4,313	0	0	0	0	0	0	0.060	0.069
1L-11	1	12.4530	7,000	4,313	0	0	0	0	0	0	0.060	0.068
1L-12	2	12.5030	7,000	4,313	0	0	0	0	0	0	0.060	0.068
1L-13	1	12.5530	7,000	4,313	0	0	0	0	0	0	0.060	0.068
1L-14	2	12.6030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-15	1	12.6530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-16	2	12.7030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-17	1	12.7530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-18	2	12.8030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-19	1	12.8530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-20	2	12.9030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-21	1	12.9530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-22	2	13.0030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-23	1	13.0530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-24	2	13.1030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-25	1	13.1530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-26	2	13.2030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-27	1	13.2530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-28	2	13.3030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-29	1	13.3530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-30	2	13.4030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-31	1	13.4530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-32	2	13.5030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-33	1	13.5530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-34	2	13.6030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-35	1	13.6530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-36	2	13.7030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-37	1	13.7530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-38	2	13.8030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-39	1	13.8530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-40	2	13.9030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-41	1	13.9530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-42	2	14.0030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-43	1	14.0530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-44	2	14.1030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-45	1	14.1530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-46	2	14.2030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-47	1	14.2530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-48	2	14.3030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-49	1	14.3530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-50	2	14.4030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-51	1	14.4530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-52	2	14.5030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-53	1	14.5530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-54	2	14.6030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-55	1	14.6530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-56	2	14.7030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-57	1	14.7530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-58	2	14.8030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-59	1	14.8530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-60	2	14.9030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-61	1	14.9530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-62	2	15.0030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-63	1	15.0530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-64	2	15.1030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-65	1	15.1530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-66	2	15.2030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-67	1	15.2530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-68	2	15.3030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-69	1	15.3530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-70	2	15.4030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-71	1	15.4530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-72	2	15.5030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-73	1	15.5530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-74	2	15.6030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-75	1	15.6530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-76	2	15.7030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-77	1	15.7530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-78	2	15.8030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-79	1	15.8530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-80	2	15.9030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-81	1	15.9530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-82	2	16.0030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-83	1	16.0530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-84	2	16.1030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-85	1	16.1530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-86	2	16.2030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-87	1	16.2530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-88	2	16.3030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-89	1	16.3530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-90	2	16.4030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-91	1	16.4530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-92	2	16.5030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-93	1	16.5530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-94	2	16.6030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-95	1	16.6530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-96	2	16.7030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-97	1	16.7530	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-98	2	16.8030	4,000	2,710	0	0	0	0	0	0	0.029	0.028
1L-99	1</											

Load	Hold	Test Pile - Amelita Earrhart Bridge - Attachment, KS									
		Lower O-cell Expansion		Upper O-cell Expansion		Lower O-cell		Middle O-cell		Upper O-cell	
Increment (minutes)	Time (hh:mm:ss)	Pressure (kips)	Load (kips)	Pressure (kips)	Load (kips)	Pressure (kips)	Load (kips)	Pressure (kips)	Load (kips)	A - 16863 C - 16865	Average
2L-1	1	1420:30	0	0	0	1,000	521	0.024	0.029	0.017	0.026
2L-1	2	1421:30	0	0	0	1,000	521	0.023	0.029	0.017	0.026
2L-1	4	1422:30	0	0	0	1,000	521	0.024	0.029	0.017	0.026
2L-2	1	1423:30	0	0	0	2,000	1,236	0.022	0.028	0.017	0.025
2L-2	2	1420:30	0	0	0	2,000	1,236	0.021	0.028	0.016	0.025
2L-2	4	1421:30	0	0	0	2,000	1,236	0.022	0.028	0.016	0.025
2L-3	1	1423:30	0	0	0	3,000	1,852	0.021	0.028	0.016	0.024
2L-3	2	1421:30	0	0	0	3,000	1,852	0.020	0.028	0.016	0.024
2L-3	4	1423:30	0	0	0	3,000	1,852	0.020	0.028	0.016	0.024
2L-4	2	1424:30	0	0	0	4,000	2,467	0.020	0.028	0.016	0.024
2L-4	4	1425:30	0	0	0	4,000	2,467	0.020	0.028	0.016	0.024
2L-5	1	1425:30	0	0	0	5,000	3,699	0.019	0.027	0.016	0.023
2L-5	2	1425:30	0	0	0	5,000	3,699	0.019	0.027	0.016	0.023
2L-5	4	1426:30	0	0	0	6,000	3,699	0.019	0.027	0.016	0.023
2L-6	1	1504:30	0	0	0	6,000	3,699	0.019	0.027	0.016	0.023
2L-6	2	1504:30	0	0	0	6,000	3,699	0.019	0.027	0.016	0.023
2L-6	4	1507:30	0	0	0	6,000	3,699	0.019	0.027	0.016	0.023
2L-6	6	1507:30	0	0	0	6,000	3,699	0.019	0.027	0.016	0.023
2L-6	8	1511:30	0	0	0	6,000	3,699	0.019	0.027	0.016	0.023
2L-7	1	1511:30	0	0	0	7,000	4,314	0.019	0.027	0.016	0.023
2L-7	2	1511:30	0	0	0	7,000	4,314	0.019	0.027	0.016	0.023
2L-7	4	1511:30	0	0	0	7,000	4,314	0.019	0.027	0.016	0.023
2L-8	1	1522:30	0	0	0	8,000	4,930	0.019	0.027	0.016	0.023
2L-8	2	1522:30	0	0	0	8,000	4,930	0.019	0.027	0.016	0.023
2L-8	4	1525:30	0	0	0	8,000	4,930	0.019	0.027	0.016	0.023
2L-8	6	1525:30	0	0	0	8,000	4,930	0.019	0.027	0.016	0.023
2L-8	8	1528:30	0	0	0	8,000	4,930	0.019	0.027	0.016	0.023
2L-9	1	1530:30	0	0	0	9,000	5,545	0.019	0.027	0.016	0.023
2L-9	2	1531:30	0	0	0	9,000	5,545	0.019	0.027	0.016	0.023
2L-9	4	1531:30	0	0	0	9,000	5,545	0.019	0.027	0.016	0.023
2L-9	6	1531:30	0	0	0	9,000	5,545	0.019	0.027	0.016	0.023
2L-9	8	1533:30	0	0	0	9,000	5,545	0.019	0.027	0.016	0.023
2L-10	1	1535:30	0	0	0	10,000	6,161	0.018	0.027	0.016	0.023
2L-10	2	1540:30	0	0	0	10,000	6,161	0.018	0.027	0.016	0.023
2L-10	4	1542:30	0	0	0	10,000	6,161	0.018	0.027	0.016	0.023
2L-11	1	1546:30	0	0	0	11,000	6,777	0.018	0.027	0.016	0.023
2L-11	2	1549:30	0	0	0	11,000	6,777	0.018	0.027	0.016	0.023
2L-11	4	1551:30	0	0	0	11,000	6,777	0.018	0.027	0.016	0.023
2L-11	6	1555:30	0	0	0	11,000	6,777	0.018	0.027	0.016	0.023
2L-12	1	1557:30	0	0	0	12,000	7,326	0.018	0.027	0.016	0.023
2L-12	2	1559:30	0	0	0	12,000	7,326	0.018	0.027	0.016	0.023
2L-12	4	1600:00	0	0	0	12,000	7,326	0.018	0.027	0.016	0.023
2L-13	1	1611:30	0	0	0	13,000	8,008	0.018	0.026	0.016	0.022
2L-13	2	1607:30	0	0	0	13,000	8,008	0.018	0.026	0.016	0.022
2L-13	4	1614:30	0	0	0	13,000	8,008	0.018	0.026	0.016	0.022
2L-14	1	1619:30	0	0	0	14,000	8,800	0.018	0.026	0.015	0.022
2L-14	2	1625:30	0	0	0	14,000	8,800	0.018	0.026	0.015	0.022
2L-14	4	1631:30	0	0	0	14,000	8,800	0.018	0.026	0.015	0.022
2L-15	1	1636:30	0	0	0	15,000	9,649	0.019	0.026	0.015	0.022
2L-15	2	1641:30	0	0	0	15,000	9,649	0.019	0.026	0.015	0.022
2L-15	4	1647:30	0	0	0	15,000	9,649	0.019	0.026	0.015	0.022
2L-16	1	1652:30	0	0	0	16,000	10,500	0.019	0.026	0.015	0.022
2L-16	2	1656:30	0	0	0	16,000	10,500	0.019	0.026	0.015	0.022
2L-16	4	1659:30	0	0	0	16,000	10,500	0.019	0.026	0.015	0.022
2L-17	1	1659:30	0	0	0	17,000	11,361	0.019	0.026	0.015	0.022
2L-17	2	1659:30	0	0	0	17,000	11,361	0.019	0.026	0.015	0.022
2L-17	4	1659:30	0	0	0	17,000	11,361	0.019	0.026	0.015	0.022
2L-18	1	1659:30	0	0	0	18,000	12,200	0.018	0.026	0.015	0.022
2L-18	2	1659:30	0	0	0	18,000	12,200	0.018	0.026	0.015	0.022
2L-18	4	1659:30	0	0	0	18,000	12,200	0.018	0.026	0.015	0.022
2L-19	1	1659:30	0	0	0	19,000	13,016	0.018	0.026	0.015	0.022
2L-19	2	1659:30	0	0	0	19,000	13,016	0.018	0.026	0.015	0.022
2L-19	4	1659:30	0	0	0	19,000	13,016	0.018	0.026	0.015	0.022
2L-20	1	1659:30	0	0	0	20,000	13,852	0.018	0.026	0.015	0.022
2L-20	2	1659:30	0	0	0	20,000	13,852	0.018	0.026	0.015	0.022
2L-20	4	1659:30	0	0	0	20,000	13,852	0.018	0.026	0.015	0.022
2L-21	1	1659:30	0	0	0	21,000	14,693	0.019	0.026	0.015	0.022
2L-21	2	1659:30	0	0	0	21,000	14,693	0.019	0.026	0.015	0.022
2L-21	4	1659:30	0	0	0	21,000	14,693	0.019	0.026	0.015	0.022
2L-22	1	1659:30	0	0	0	22,000	15,500	0.019	0.026	0.015	0.022
2L-22	2	1659:30	0	0	0	22,000	15,500	0.019	0.026	0.015	0.022
2L-22	4	1659:30	0	0	0	22,000	15,500	0.019	0.026	0.015	0.022
2L-23	1	1659:30	0	0	0	23,000	16,321	0.022	0.026	0.017	0.025
2L-23	2	1659:30	0	0	0	23,000	16,321	0.022	0.026	0.017	0.025
2L-23	4	1659:30	0	0	0	23,000	16,321	0.022	0.026	0.017	0.025
2L-24	1	1659:30	0	0	0	24,000	17,136	0.022	0.026	0.017	0.025
2L-24	2	1659:30	0	0	0	24,000	17,136	0.022	0.026	0.017	0.025
2L-24	4	1659:30	0	0	0	24,000	17,136	0.022	0.026	0.017	0.025
2L-25	1	1659:30	0	0	0	25,000	17,952	0.022	0.026	0.017	0.025
2L-25	2	1659:30	0	0	0	25,000	17,952	0.022	0.026	0.017	0.025
2L-25	4	1659:30	0	0	0	25,000	17,952	0.022	0.026	0.017	0.025
2L-26	1	1659:30	0	0	0	26,000	18,768	0.022	0.026	0.017	0.025
2L-26	2	1659:30	0	0	0	26,000	18,768	0.022	0.026	0.017	0.025
2L-26	4	1659:30	0	0	0	26,000	18,768	0.022	0.026	0.017	0.025
2L-27	1	1659:30	0	0	0	27,000	19,584	0.022	0.026	0.017	0.025
2L-27	2	1659:30	0	0	0	27,000	19,584	0.022	0.026	0.017	0.025
2L-27	4	1659:30	0	0	0	27,000	19,584	0.022	0.026	0.017	0.025
2L-28	1	1659:30	0	0	0	28,000	21,407	0.022	0.026	0.017	0.025
2L-28	2	1659:30	0	0	0	28,000	21,407	0.022	0.026	0.017	0.025
2L-28	4	1659:30	0	0	0	28,000	21,407	0.022	0.026	0.017	0.025
2L-29	1	1659:30	0	0	0	29,000	23,232	0.022	0.026	0.017	0.025
2L-29	2	1659:30	0	0	0	29,000	23,232	0.022	0.026	0.017	0.025
2L-29	4	1659:30	0	0	0	29,000	23,232	0.022	0.026	0.017	0.025
2L-30	1	1659:30	0	0	0	30,000	25,047	0.022	0.026	0.017	0.025
2L-30	2	1659:30	0</td								

Load	HDL	Test Time	Lower-O-cell		Middle-O-cell		Upper-O-cell		Lower-O-cell Expansion		Test Pile - Amherst Bridge - Attachment, KS	
			Increment (mm)	Time (min)	Pressure (kips)	Load (kips)	Pressure (kips)	Load (kips)	Pressure (kips)	Load (kips)	A - 16863 C - 18865	B - 16864 C - 18865
3L-1	1	17.07:30	0	0	1,000	624	0	0	0.019	0.026	0.015	0.023
3L-1	2	17.10:30	0	0	1,000	624	0	0	0.019	0.026	0.015	0.023
3L-1	4	17.10:30	0	0	1,000	624	0	0	0.019	0.026	0.015	0.023
3L-1	8	17.14:30	0	0	1,000	624	0	0	0.019	0.026	0.015	0.023
3L-2	1	17.17:00	0	0	2,000	1,229	0	0	0.019	0.026	0.015	0.022
3L-2	2	17.18:00	0	0	2,000	1,229	0	0	0.019	0.026	0.015	0.022
3L-2	4	17.20:00	0	0	2,000	1,229	0	0	0.019	0.026	0.015	0.022
3L-2	8	17.24:00	0	0	2,000	1,229	0	0	0.018	0.026	0.015	0.022
3L-3	1	17.25:00	0	0	3,000	1,684	0	0	0.018	0.026	0.015	0.022
3L-3	2	17.25:00	0	0	3,000	1,684	0	0	0.018	0.026	0.015	0.022
3L-3	4	17.25:00	0	0	3,000	1,684	0	0	0.018	0.026	0.015	0.022
3L-3	8	17.29:00	0	0	3,000	1,684	0	0	0.018	0.026	0.015	0.022
3L-4	2	17.36:00	0	0	4,000	2,469	0	0	0.018	0.026	0.015	0.022
3L-4	4	17.36:00	0	0	4,000	2,469	0	0	0.018	0.026	0.015	0.022
3L-4	8	17.41:30	0	0	5,000	3,084	0	0	0.017	0.026	0.015	0.022
3L-5	1	17.43:30	0	0	5,000	3,084	0	0	0.017	0.026	0.015	0.021
3L-5	2	17.44:30	0	0	5,000	3,084	0	0	0.018	0.026	0.015	0.022
3L-5	4	17.44:30	0	0	5,000	3,084	0	0	0.018	0.026	0.015	0.022
3L-5	8	17.49:00	0	0	6,000	3,699	0	0	0.017	0.025	0.015	0.021
3L-6	2	17.50:30	0	0	6,000	3,699	0	0	0.018	0.026	0.015	0.021
3L-6	4	17.50:30	0	0	6,000	3,699	0	0	0.018	0.026	0.015	0.021
3L-6	8	17.54:00	0	0	6,000	3,699	0	0	0.017	0.025	0.015	0.021
3L-7	1	17.59:00	0	0	7,000	4,374	0	0	0.018	0.026	0.015	0.021
3L-7	2	18.02:00	0	0	7,000	4,374	0	0	0.018	0.026	0.015	0.021
3L-7	4	18.02:00	0	0	7,000	4,374	0	0	0.018	0.026	0.015	0.021
3L-7	8	18.06:00	0	0	7,000	4,374	0	0	0.017	0.025	0.015	0.021
3L-8	1	18.10:00	0	0	8,000	5,544	0	0	0.019	0.026	0.014	0.022
3L-8	2	18.19:00	0	0	8,000	5,544	0	0	0.019	0.026	0.014	0.022
3L-8	4	18.19:00	0	0	8,000	5,544	0	0	0.019	0.026	0.014	0.022
3L-8	8	18.46:00	0	0	8,000	5,544	0	0	0.019	0.026	0.014	0.022
3L-9	1	18.44:30	0	0	12,000	7,399	0	0	0.018	0.022	0.013	0.020
3L-9	2	18.47:30	0	0	12,000	7,399	0	0	0.018	0.022	0.013	0.020
3L-9	4	18.47:30	0	0	12,000	7,399	0	0	0.018	0.022	0.013	0.020
3L-9	8	18.51:30	0	0	12,000	7,399	0	0	0.018	0.022	0.012	0.020
3L-10	1	18.57:00	0	0	10,000	6,159	0	0	0.019	0.024	0.014	0.021
3L-10	2	18.57:00	0	0	10,000	6,159	0	0	0.019	0.024	0.014	0.021
3L-10	4	18.57:00	0	0	10,000	6,159	0	0	0.019	0.024	0.014	0.021
3L-10	8	18.63:00	0	0	11,000	6,774	0	0	0.019	0.024	0.014	0.021
3L-11	1	18.63:00	0	0	11,000	6,774	0	0	0.019	0.024	0.014	0.021
3L-11	2	18.63:00	0	0	11,000	6,774	0	0	0.019	0.024	0.014	0.021
3L-11	4	18.63:00	0	0	11,000	6,774	0	0	0.019	0.024	0.014	0.021
3L-11	8	18.63:00	0	0	11,000	6,774	0	0	0.019	0.024	0.014	0.021
3L-12	1	18.64:30	0	0	12,000	7,399	0	0	0.018	0.022	0.013	0.020
3L-12	2	18.64:30	0	0	12,000	7,399	0	0	0.018	0.022	0.013	0.020
3L-12	4	18.64:30	0	0	12,000	7,399	0	0	0.018	0.022	0.013	0.020
3L-12	8	18.64:30	0	0	12,000	7,399	0	0	0.018	0.022	0.012	0.020
3L-13	1	18.65:30	0	0	13,000	8,004	0	0	0.018	0.022	0.012	0.020
3L-13	2	18.65:30	0	0	13,000	8,004	0	0	0.018	0.022	0.012	0.020
3L-13	4	18.65:30	0	0	13,000	8,004	0	0	0.018	0.022	0.012	0.020
3L-13	8	18.65:30	0	0	13,000	8,004	0	0	0.018	0.022	0.012	0.020
3L-14	1	18.66:30	0	0	14,000	8,619	0	0	0.018	0.022	0.011	0.018
3L-14	2	18.66:30	0	0	14,000	8,619	0	0	0.018	0.022	0.011	0.018
3L-14	4	18.66:30	0	0	14,000	8,619	0	0	0.018	0.022	0.011	0.018
3L-14	8	18.66:30	0	0	14,000	8,619	0	0	0.018	0.022	0.011	0.018
3L-15	1	19.13:30	0	0	15,000	9,224	0	0	0.015	0.017	0.010	0.015
3L-15	2	19.13:30	0	0	15,000	9,224	0	0	0.015	0.017	0.010	0.015
3L-15	4	19.13:30	0	0	15,000	9,224	0	0	0.015	0.017	0.010	0.015
3L-15	8	19.13:30	0	0	15,000	9,224	0	0	0.015	0.017	0.010	0.015
3L-16	1	19.14:30	0	0	15,000	9,224	0	0	0.015	0.017	0.010	0.015
3L-16	2	19.14:30	0	0	15,000	9,224	0	0	0.015	0.017	0.010	0.015
3L-16	4	19.14:30	0	0	15,000	9,224	0	0	0.015	0.017	0.010	0.015
3L-16	8	19.14:30	0	0	15,000	9,224	0	0	0.015	0.017	0.010	0.015
3L-17	1	19.17:00	0	0	2,000	1,229	0	0	0.019	0.026	0.015	0.022
3L-17	2	19.17:00	0	0	2,000	1,229	0	0	0.019	0.026	0.015	0.022
3L-17	4	19.17:00	0	0	2,000	1,229	0	0	0.019	0.026	0.015	0.022
3L-17	8	19.17:00	0	0	2,000	1,229	0	0	0.019	0.026	0.015	0.022
3L-18	1	19.20:00	0	0	2,000	1,229	0	0	0.019	0.026	0.015	0.022
3L-18	2	19.20:00	0	0	2,000	1,229	0	0	0.019	0.026	0.015	0.022
3L-18	4	19.20:00	0	0	2,000	1,229	0	0	0.019	0.026	0.015	0.022
3L-18	8	19.20:00	0	0	2,000	1,229	0	0	0.019	0.026	0.015	0.022
3L-19	1	19.23:00	0	0	3,000	1,684	0	0	0.018	0.026	0.015	0.022
3L-19	2	19.23:00	0	0	3,000	1,684	0	0	0.018	0.026	0.015	0.022
3L-19	4	19.23:00	0	0	3,000	1,684	0	0	0.018	0.026	0.015	0.022
3L-19	8	19.23:00	0	0	3,000	1,684	0	0	0.018	0.026	0.015	0.022
3L-20	1	19.24:00	0	0	4,000	2,469	0	0	0.018	0.026	0.015	0.022
3L-20	2	19.24:00	0	0	4,000	2,469	0	0	0.018	0.026	0.015	0.022
3L-20	4	19.24:00	0	0	4,000	2,469	0	0	0.018	0.026	0.015	0.022
3L-20	8	19.24:00	0	0	4,000	2,469	0	0	0.018	0.026	0.015	0.022
3L-21	1	19.25:00	0	0	5,000	3,084	0	0	0.017	0.025	0.015	0.022
3L-21	2	19.25:00	0	0	5,000	3,084	0	0	0.017	0.025	0.015	0.022
3L-21	4	19.25:00	0	0	5,000	3,084	0	0	0.017	0.025	0.015	0.022
3L-21	8	19.25:00	0	0	5,000	3,084	0	0	0.017	0.025	0.015	0.022
3L-22	1	19.26:00	0	0	6,000	3,699	0	0	0.018	0.026	0.015	0.022
3L-22	2	19.26:00	0	0	6,000	3,699	0	0	0.018	0.026	0.015	0.022
3L-22	4	19.26:00	0	0	6,000	3,699	0	0	0.018	0.026	0.015	0.022
3L-22	8	19.26:00	0	0	6,000	3,699	0	0	0.018	0.026	0.015	0.022
3L-23	1	19.27:00	0	0	7,000	4,374	0	0	0.018	0.026	0.015	0.022
3L-23	2	19.27:00	0	0	7,000	4,374	0	0	0.018	0.026	0.015	0.022
3L-23	4	19.27:00	0	0	7,000	4,374	0	0	0.018	0.026	0.015	0.022
3L-23	8	19.27:00	0	0	7,000	4,374	0	0	0.018	0.026	0.015	

Lower O-cell Expansion

Performance Metrics (hh:mm:ss)										Average of metrics A & B (ms)	
Load	Time	Pressure	Load	Pressure	Load	Pressure	Load	Pressure	Load	Average	(ms)
Hour	Min	(ps/s)	(kips)	(ps/s)	(kips)	(ps/s)	(kips)	(ps/s)	(kips)	C-16865	B-16864
51	4	2	23-30:30	10,000	6,156	10,000	6,159	10,000	6,159	0,103	0,072
51	4	1	23-29:30	10,000	6,156	10,000	6,159	10,000	6,159	0,103	0,072
51	3	2	23-24:30	7,500	4,620	7,500	4,622	7,500	4,622	0,090	0,059
51	3	1	23-23:30	5,000	3,044	5,000	3,044	5,000	3,044	0,071	0,044
51	2	2	23-19:30	5,000	3,044	5,000	3,044	5,000	3,044	0,071	0,044
51	2	1	23-18:30	5,000	3,044	5,000	3,044	5,000	3,044	0,071	0,044
51	1	2	23-15:30	2,500	1,547	2,500	1,547	2,500	1,547	0,022	0,015
51	1	1	23-14:30	2,500	1,547	2,500	1,547	2,500	1,547	0,022	0,015
44	4	4	23-08:30	0	0	0	0	0	0	0,075	0,045
44	4	2	23-00:30	3,500	2,153	3,500	2,153	3,500	2,153	0,076	0,045
44	3	2	22-59:30	3,500	2,153	3,500	2,153	3,500	2,153	0,076	0,045
44	2	2	22-57:30	7,500	4,620	7,500	4,620	7,500	4,620	0,067	0,040
44	2	1	22-54:30	7,500	4,620	7,500	4,620	7,500	4,620	0,067	0,040
44	1	2	22-52:30	11,500	7,070	11,500	7,070	11,500	7,070	0,087	0,052
44	1	1	22-50:30	11,500	7,070	11,500	7,070	11,500	7,070	0,087	0,052
44	1	4	22-28:30	11,500	7,070	11,500	7,070	11,500	7,070	0,087	0,052
44	4	4	22-24:00	15,000	9,228	15,000	9,228	15,000	9,228	0,105	0,066
44	4	2	22-22:00	15,000	9,228	15,000	9,228	15,000	9,228	0,105	0,066
44	4	1	22-21:30	15,000	9,228	15,000	9,228	15,000	9,228	0,105	0,066
44	3	8	22-28:30	16,000	9,514	16,000	9,514	16,000	9,514	0,100	0,069
44	3	2	22-24:30	14,000	8,564	14,000	8,564	14,000	8,564	0,100	0,069
44	3	1	22-22:30	14,000	8,564	14,000	8,564	14,000	8,564	0,100	0,069
44	2	8	22-31:30	14,000	8,564	14,000	8,564	14,000	8,564	0,100	0,069
44	2	2	22-30:00	13,000	8,000	13,000	8,000	13,000	8,000	0,100	0,069
44	2	1	22-29:00	13,000	8,000	13,000	8,000	13,000	8,000	0,100	0,069
44	1	8	22-21:30	12,000	7,355	12,000	7,355	12,000	7,355	0,100	0,069
44	1	2	22-21:30	12,000	7,355	12,000	7,355	12,000	7,355	0,100	0,069
44	1	1	22-20:30	12,000	7,355	12,000	7,355	12,000	7,355	0,100	0,069
44	0	4	22-24:00	13,000	8,000	13,000	8,000	13,000	8,000	0,100	0,069
44	0	2	22-22:00	13,000	8,000	13,000	8,000	13,000	8,000	0,100	0,069
44	0	1	22-21:30	13,000	8,000	13,000	8,000	13,000	8,000	0,100	0,069
44	-1	8	22-28:30	11,000	6,771	11,000	6,771	11,000	6,771	0,100	0,069
44	-1	2	22-26:30	11,000	6,771	11,000	6,771	11,000	6,771	0,100	0,069
44	-1	1	22-25:30	11,000	6,771	11,000	6,771	11,000	6,771	0,100	0,069
44	-1	4	22-22:30	11,000	6,771	11,000	6,771	11,000	6,771	0,100	0,069
44	-1	2	22-21:30	11,000	6,771	11,000	6,771	11,000	6,771	0,100	0,069
44	-1	1	22-20:30	11,000	6,771	11,000	6,771	11,000	6,771	0,100	0,069
44	-1	8	22-12:30	11,000	6,000	11,000	6,000	11,000	6,000	0,100	0,069
44	-1	2	22-11:30	11,000	6,000	11,000	6,000	11,000	6,000	0,100	0,069
44	-1	1	22-10:30	11,000	6,000	11,000	6,000	11,000	6,000	0,100	0,069
44	-2	8	21-16:30	8,000	4,928	8,000	4,928	8,000	4,928	0,087	0,065
44	-2	2	21-14:30	8,000	4,928	8,000	4,928	8,000	4,928	0,087	0,065
44	-2	1	21-13:30	8,000	4,928	8,000	4,928	8,000	4,928	0,087	0,065
44	-3	8	21-11:30	4,000	2,470	4,000	2,470	4,000	2,470	0,077	0,054
44	-3	2	21-07:30	4,000	2,470	4,000	2,470	4,000	2,470	0,077	0,054
44	-3	1	21-02:30	3,000	1,856	3,000	1,856	3,000	1,856	0,077	0,054
44	-4	8	20-58:30	3,000	1,856	3,000	1,856	3,000	1,856	0,077	0,054
44	-4	2	20-56:30	3,000	1,856	3,000	1,856	3,000	1,856	0,077	0,054
44	-4	1	20-55:30	3,000	1,856	3,000	1,856	3,000	1,856	0,077	0,054
44	-5	8	20-53:30	2,000	1,241	2,000	1,241	2,000	1,241	0,076	0,054
44	-5	2	20-51:30	2,000	1,241	2,000	1,241	2,000	1,241	0,076	0,054
44	-5	1	20-49:30	2,000	1,241	2,000	1,241	2,000	1,241	0,076	0,054
44	-6	8	20-46:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-6	2	20-44:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-6	1	20-43:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-7	8	20-40:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-7	2	20-38:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-7	1	20-37:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-8	8	20-34:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-8	2	20-32:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-8	1	20-31:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-9	8	20-28:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-9	2	20-26:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-9	1	20-25:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-10	8	20-22:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-10	2	20-21:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-10	1	20-20:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-11	8	20-17:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-11	2	20-16:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-11	1	20-15:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-12	8	20-12:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-12	2	20-11:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-12	1	20-10:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-13	8	20-07:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-13	2	20-06:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-13	1	20-05:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-14	8	20-02:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-14	2	20-01:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-14	1	20-00:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-15	8	20-29:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-15	2	20-28:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-15	1	20-27:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-16	8	20-24:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-16	2	20-23:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-16	1	20-22:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-17	8	20-19:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-17	2	20-18:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-17	1	20-17:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-18	8	20-14:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-18	2	20-13:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-18	1	20-12:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-19	8	20-09:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-19	2	20-08:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-19	1	20-07:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-20	8	20-04:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-20	2	20-03:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-20	1	20-02:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-21	8	20-09:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-21	2	20-08:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-21	1	20-07:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-22	8	20-04:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-22	2	20-03:30	1,000	627	1,000	627	1,000	627	0,076	0,054
44	-22</										

Test Pile - Amelia Earhart Bridge - Attachment, KS									
Load	Hold	Time	Time	Pressure	Load	Pressure	Load	Middle O-cell	Middle O-cell Expansion
		Lower O-cell	Upper O-cell	(psi)	(kips)	(psi)	(kips)	(in)	(in)
1L-0	-	10.5700	0	0	0	0	0	0.000	0.000
1L-1	1	11.5300	1,000	627	0	0	0	0.000	0.000
1L-1	2	12.0030	1,000	627	0	0	0	0.000	0.000
1L-1	4	12.0230	1,000	627	0	0	0	0.000	0.000
1L-2	1	12.0600	2,000	1,421	0	0	0	0.000	0.000
1L-2	2	12.0900	2,000	1,421	0	0	0	0.000	0.000
1L-2	4	12.1100	2,000	1,421	0	0	0	0.000	0.000
1L-2	8	12.1500	2,000	1,241	0	0	0	0.000	0.000
1L-3	1	12.1700	3,000	1,456	0	0	0	0.000	0.000
1L-3	2	12.1800	3,000	1,456	0	0	0	0.000	0.000
1L-3	4	12.2000	3,000	1,456	0	0	0	0.000	0.000
1L-4	1	12.2300	4,000	2,710	0	0	0	0.000	0.000
1L-4	2	12.2630	4,000	2,710	0	0	0	0.000	0.000
1L-4	4	12.2830	4,000	2,710	0	0	0	0.000	0.000
1L-4	8	12.2530	4,000	2,710	0	0	0	0.000	0.000
1L-5	1	12.2300	4,000	2,710	0	0	0	0.000	0.000
1L-5	2	12.2530	5,000	3,084	0	0	0	0.000	0.000
1L-5	4	12.2300	5,000	3,084	0	0	0	0.000	0.000
1L-5	8	12.2300	5,000	3,084	0	0	0	0.000	0.000
1L-6	1	12.2500	6,000	3,699	0	0	0	0.000	0.000
1L-6	2	12.2400	6,000	3,699	0	0	0	0.000	0.000
1L-6	4	12.2400	6,000	3,699	0	0	0	0.000	0.000
1L-6	8	12.2500	6,000	3,699	0	0	0	0.000	0.000
1L-7	1	12.2520	7,000	4,131	0	0	0	0.000	0.000
1L-7	2	12.2550	7,000	4,131	0	0	0	0.000	0.000
1L-7	4	12.2410	5,000	3,084	0	0	0	0.000	0.000
1L-7	8	12.2500	7,000	4,131	0	0	0	0.000	0.000
1L-8	1	12.2530	8,000	4,226	0	0	0	0.000	0.000
1L-8	2	12.2530	8,000	4,226	0	0	0	0.000	0.000
1L-8	4	12.2530	8,000	4,226	0	0	0	0.000	0.000
1L-8	8	12.2530	8,000	4,226	0	0	0	0.000	0.000
1L-9	1	12.2500	9,000	5,424	0	0	0	0.000	0.000
1L-9	2	12.2500	9,000	5,424	0	0	0	0.000	0.000
1L-9	4	12.2120	9,000	5,424	0	0	0	0.000	0.000
1L-9	8	12.1500	9,000	5,424	0	0	0	0.000	0.000
1L-10	1	12.1800	10,000	6,156	0	0	0	0.000	0.000
1L-10	2	13.1930	10,000	6,156	0	0	0	0.000	0.000
1L-10	4	13.2120	10,000	6,156	0	0	0	0.000	0.000
1L-11	1	13.2830	11,000	6,771	0	0	0	0.000	0.000
1L-11	2	13.2730	11,000	6,771	0	0	0	0.000	0.000
1L-11	4	13.2930	11,000	6,771	0	0	0	0.000	0.000
1L-11	8	13.3330	11,000	6,771	0	0	0	0.000	0.000
1L-12	1	13.3400	13,000	8,000	0.001	0	0	0.000	0.000
1L-12	2	13.3530	12,000	7,385	0	0	0	0.000	0.000
1L-12	4	13.3830	12,000	7,385	0	0	0	0.000	0.000
1L-12	8	13.4220	12,000	7,385	0	0	0	0.000	0.000
1L-13	1	13.4700	13,000	8,000	0.001	0	0	0.000	0.000
1L-13	2	13.4530	13,000	8,000	0.001	0	0	0.000	0.000
1L-13	4	13.4730	13,000	8,000	0.001	0	0	0.000	0.000
1L-13	8	13.5100	13,000	8,000	0.001	0	0	0.000	0.000
1L-14	1	13.5430	9,500	5,949	0	0	0	0.000	0.000
1L-14	2	13.5430	9,500	5,949	0	0	0	0.000	0.000
1L-14	4	14.0630	2,500	1,548	0	0	0	0.000	0.000
1L-14	8	14.0830	2,500	1,548	0	0	0	0.000	0.000
1L-15	1	14.1030	2,500	1,548	0	0	0	0.000	0.000
1L-15	2	13.9530	6,000	3,699	0	0	0	0.000	0.000
1L-15	4	14.0430	2,500	1,548	0	0	0	0.000	0.000
1L-15	8	14.1130	0	0	0	0	0	0.000	0.000
1L-16	1	14.1130	0	0	0	0	0	0.000	0.000
1L-16	2	14.0930	0	0	0	0	0	0.000	0.000
1L-16	4	14.0630	2,500	1,548	0	0	0	0.000	0.000
1L-16	8	14.0830	2,500	1,548	0	0	0	0.000	0.000
1L-17	1	14.1030	2,500	1,548	0	0	0	0.000	0.000
1L-17	2	13.9530	6,000	3,699	0	0	0	0.000	0.000
1L-17	4	14.0430	2,500	1,548	0	0	0	0.000	0.000
1L-17	8	14.1130	0	0	0	0	0	0.000	0.000
1L-18	1	14.1130	0	0	0	0	0	0.000	0.000
1L-18	2	14.0930	0	0	0	0	0	0.000	0.000
1L-18	4	14.0630	2,500	1,548	0	0	0	0.000	0.000
1L-18	8	14.0830	2,500	1,548	0	0	0	0.000	0.000
1L-19	1	14.1030	2,500	1,548	0	0	0	0.000	0.000
1L-19	2	13.9530	6,000	3,699	0	0	0	0.000	0.000
1L-19	4	14.0430	2,500	1,548	0	0	0	0.000	0.000
1L-19	8	14.1130	0	0	0	0	0	0.000	0.000
1L-20	1	14.1130	0	0	0	0	0	0.000	0.000
1L-20	2	14.0930	0	0	0	0	0	0.000	0.000
1L-20	4	14.0630	2,500	1,548	0	0	0	0.000	0.000
1L-20	8	14.0830	2,500	1,548	0	0	0	0.000	0.000
1L-21	1	14.1030	2,500	1,548	0	0	0	0.000	0.000
1L-21	2	13.9530	6,000	3,699	0	0	0	0.000	0.000
1L-21	4	14.0430	2,500	1,548	0	0	0	0.000	0.000
1L-21	8	14.1130	0	0	0	0	0	0.000	0.000
1L-22	1	14.1130	0	0	0	0	0	0.000	0.000
1L-22	2	14.0930	0	0	0	0	0	0.000	0.000
1L-22	4	14.0630	2,500	1,548	0	0	0	0.000	0.000
1L-22	8	14.0830	2,500	1,548	0	0	0	0.000	0.000
1L-23	1	14.1030	2,500	1,548	0	0	0	0.000	0.000
1L-23	2	13.9530	6,000	3,699	0	0	0	0.000	0.000
1L-23	4	14.0430	2,500	1,548	0	0	0	0.000	0.000
1L-23	8	14.1130	0	0	0	0	0	0.000	0.000
1L-24	1	14.1130	0	0	0	0	0	0.000	0.000
1L-24	2	14.0930	0	0	0	0	0	0.000	0.000
1L-24	4	14.0630	2,500	1,548	0	0	0	0.000	0.000
1L-24	8	14.0830	2,500	1,548	0	0	0	0.000	0.000
1L-25	1	14.1030	2,500	1,548	0	0	0	0.000	0.000
1L-25	2	13.9530	6,000	3,699	0	0	0	0.000	0.000
1L-25	4	14.0430	2,500	1,548	0	0	0	0.000	0.000
1L-25	8	14.1130	0	0	0	0	0	0.000	0.000
1L-26	1	14.1130	0	0	0	0	0	0.000	0.000
1L-26	2	14.0930	0	0	0	0	0	0.000	0.000
1L-26	4	14.0630	2,500	1,548	0	0	0	0.000	0.000
1L-26	8	14.0830	2,500	1,548	0	0	0	0.000	0.000
1L-27	1	14.1030	2,500	1,548	0	0	0	0.000	0.000
1L-27	2	13.9530	6,000	3,699	0	0	0	0.000	0.000
1L-27	4	14.0430	2,500	1,548	0	0	0	0.000	0.000
1L-27	8	14.1130	0	0	0	0	0	0.000	0.000
1L-28	1	14.1130	0	0	0	0	0	0.000	0.000
1L-28	2	14.0930	0	0	0	0	0	0.000	0.000
1L-28	4	14.0630	2,500	1,548	0	0	0	0.000	0.000
1L-28	8	14.0830	2,500	1,548	0	0	0	0.000	0.000
1L-29	1	14.1030	2,500	1,548	0	0	0	0.000	0.000
1L-29	2	13.9530	6,000	3,699	0	0	0	0.000	0.000
1L-29	4	14.0430	2,500	1,548	0	0	0	0.000	0.000
1L-29	8	14.1130	0	0	0	0	0	0.000	0.000
1L-30	1	14.1130	0	0	0	0	0	0.000	0.000
1L-30	2	14.0930	0	0	0	0	0	0.000	0.000
1L-30	4	14.0630	2,500	1,548	0	0	0	0.000	0.000
1L-30	8	14.0830	2,500	1,548	0	0	0	0.000	0.000
1L-31	1	14.1030	2,500	1,548	0	0	0	0.000	0.000
1L-31	2	13.9530	6,000	3,699	0	0	0	0.000	0.000
1L-31	4	14.0430	2,500	1,548	0	0	0	0.000	

Middle O-cell Expansion

Test Pile - Amelita Earhart Bridge - Anchison, KS									
Load	Hold	Lower-D-cell	Middle-D-cell	Upper-D-cell	Pressure-D-cell	Midcell-D-cell Expansion	B-A-15866	C-15866	Average
Increment (minutes)	(hh:mm:ss)	(hh:mm:ss)	(hh:mm:ss)	(hh:mm:ss)	(hh:mm:ss)	(hh:mm:ss)	(m)	(m)	(m)
3L-1	1	17:07:30	0	0	1,000	624	0	0.067	0.071
3L-1	2	17:08:30	0	0	1,000	624	0	0.068	0.073
3L-1	3	17:10:30	0	0	1,000	624	0	0.064	0.065
3L-1	4	17:11:30	0	0	1,000	624	0	0.065	0.070
3L-1	5	17:12:30	0	0	1,000	624	0	0.066	0.071
3L-2	1	17:17:00	0	0	2,000	1,239	0	0.114	0.117
3L-2	2	17:18:00	0	0	2,000	1,239	0	0.115	0.122
3L-2	3	17:19:00	0	0	2,000	1,239	0	0.116	0.123
3L-2	4	17:20:00	0	0	2,000	1,239	0	0.116	0.120
3L-2	5	17:21:00	0	0	2,000	1,239	0	0.115	0.118
3L-2	6	17:22:00	0	0	2,000	1,239	0	0.117	0.121
3L-3	1	17:23:00	0	0	3,000	1,854	0	0.140	0.147
3L-3	2	17:24:00	0	0	3,000	1,854	0	0.141	0.148
3L-3	3	17:25:00	0	0	3,000	1,854	0	0.141	0.149
3L-3	4	17:26:00	0	0	3,000	1,854	0	0.142	0.149
3L-3	5	17:27:00	0	0	3,000	1,854	0	0.143	0.150
3L-3	6	17:28:00	0	0	3,000	1,854	0	0.140	0.146
3L-4	1	17:29:00	0	0	4,000	2,469	0	0.168	0.172
3L-4	2	17:30:00	0	0	4,000	2,469	0	0.165	0.170
3L-4	3	17:31:00	0	0	4,000	2,469	0	0.165	0.169
3L-4	4	17:32:00	0	0	4,000	2,469	0	0.165	0.174
3L-4	5	17:33:00	0	0	4,000	2,469	0	0.164	0.171
3L-4	6	17:34:00	0	0	4,000	2,469	0	0.165	0.171
3L-5	1	17:35:00	0	0	5,000	3,064	0	0.180	0.187
3L-5	2	17:36:00	0	0	5,000	3,064	0	0.181	0.189
3L-5	3	17:37:00	0	0	5,000	3,064	0	0.181	0.191
3L-5	4	17:38:00	0	0	5,000	3,064	0	0.181	0.194
3L-5	5	17:39:00	0	0	5,000	3,064	0	0.181	0.193
3L-5	6	17:40:00	0	0	5,000	3,064	0	0.180	0.191
3L-6	1	17:41:00	0	0	6,000	4,134	0	0.223	0.225
3L-6	2	17:42:00	0	0	6,000	4,134	0	0.223	0.227
3L-6	3	17:43:00	0	0	6,000	4,134	0	0.223	0.228
3L-6	4	17:44:00	0	0	6,000	4,134	0	0.223	0.229
3L-6	5	17:45:00	0	0	6,000	4,134	0	0.223	0.230
3L-6	6	17:46:00	0	0	6,000	4,134	0	0.223	0.230
3L-7	1	17:47:00	0	0	7,000	4,929	0	0.264	0.265
3L-7	2	17:48:00	0	0	7,000	4,929	0	0.264	0.267
3L-7	3	17:49:00	0	0	7,000	4,929	0	0.264	0.268
3L-7	4	17:50:00	0	0	7,000	4,929	0	0.264	0.269
3L-7	5	17:51:00	0	0	7,000	4,929	0	0.264	0.270
3L-7	6	17:52:00	0	0	7,000	4,929	0	0.264	0.271
3L-8	1	17:53:00	0	0	8,000	5,544	0	0.275	0.275
3L-8	2	17:54:00	0	0	8,000	5,544	0	0.275	0.276
3L-8	3	17:55:00	0	0	8,000	5,544	0	0.275	0.276
3L-8	4	17:56:00	0	0	8,000	5,544	0	0.275	0.277
3L-8	5	17:57:00	0	0	8,000	5,544	0	0.275	0.278
3L-8	6	17:58:00	0	0	8,000	5,544	0	0.275	0.279
3L-9	1	17:59:00	0	0	9,000	6,159	0	0.312	0.312
3L-9	2	18:00:00	0	0	9,000	6,159	0	0.312	0.313
3L-9	3	18:01:00	0	0	9,000	6,159	0	0.312	0.314
3L-9	4	18:02:00	0	0	9,000	6,159	0	0.312	0.315
3L-9	5	18:03:00	0	0	9,000	6,159	0	0.312	0.316
3L-9	6	18:04:00	0	0	9,000	6,159	0	0.312	0.317
3L-10	1	18:05:00	0	0	10,000	7,389	0	0.338	0.338
3L-10	2	18:06:00	0	0	10,000	7,389	0	0.338	0.339
3L-10	3	18:07:00	0	0	10,000	7,389	0	0.338	0.339
3L-10	4	18:08:00	0	0	10,000	7,389	0	0.338	0.339
3L-10	5	18:09:00	0	0	10,000	7,389	0	0.338	0.339
3L-10	6	18:10:00	0	0	10,000	7,389	0	0.338	0.339
3L-11	1	18:11:00	0	0	11,000	8,004	0	0.342	0.342
3L-11	2	18:12:00	0	0	11,000	8,004	0	0.342	0.343
3L-11	3	18:13:00	0	0	11,000	8,004	0	0.342	0.343
3L-11	4	18:14:00	0	0	11,000	8,004	0	0.342	0.344
3L-11	5	18:15:00	0	0	11,000	8,004	0	0.342	0.345
3L-11	6	18:16:00	0	0	11,000	8,004	0	0.342	0.346
3L-12	1	18:17:00	0	0	12,000	7,389	0	0.338	0.339
3L-12	2	18:18:00	0	0	12,000	7,389	0	0.338	0.339
3L-12	3	18:19:00	0	0	12,000	7,389	0	0.338	0.339
3L-12	4	18:20:00	0	0	12,000	7,389	0	0.338	0.339
3L-12	5	18:21:00	0	0	12,000	7,389	0	0.338	0.339
3L-12	6	18:22:00	0	0	12,000	7,389	0	0.338	0.339
3L-13	1	18:23:00	0	0	12,000	7,389	0	0.338	0.339
3L-13	2	18:24:00	0	0	12,000	7,389	0	0.338	0.339
3L-13	3	18:25:00	0	0	12,000	7,389	0	0.338	0.339
3L-13	4	18:26:00	0	0	12,000	7,389	0	0.338	0.339
3L-13	5	18:27:00	0	0	12,000	7,389	0	0.338	0.339
3L-13	6	18:28:00	0	0	12,000	7,389	0	0.338	0.339
3L-14	1	18:29:00	0	0	12,000	7,389	0	0.338	0.339
3L-14	2	18:30:00	0	0	12,000	7,389	0	0.338	0.339
3L-14	3	18:31:00	0	0	12,000	7,389	0	0.338	0.339
3L-14	4	18:32:00	0	0	12,000	7,389	0	0.338	0.339
3L-14	5	18:33:00	0	0	12,000	7,389	0	0.338	0.339
3L-14	6	18:34:00	0	0	12,000	7,389	0	0.338	0.339
3L-15	1	18:35:00	0	0	12,000	7,389	0	0.338	0.339
3L-15	2	18:36:00	0	0	12,000	7,389	0	0.338	0.339
3L-15	3	18:37:00	0	0	12,000	7,389	0	0.338	0.339
3L-15	4	18:38:00	0	0	12,000	7,389	0	0.338	0.339
3L-15	5	18:39:00	0	0	12,000	7,389	0	0.338	0.339
3L-15	6	18:40:00	0	0	12,000	7,389	0	0.338	0.339
3L-16	1	18:41:00	0	0	12,000	7,389	0	0.338	0.339
3L-16	2	18:42:00	0	0	12,000	7,389	0	0.338	0.339
3L-16	3	18:43:00	0	0	12,000	7,389	0	0.338	0.339
3L-16	4	18:44:00	0	0	12,000	7,389	0	0.338	0.339
3L-16	5	18:45:00	0	0	12,000	7,389	0	0.338	0.339
3L-16	6	18:46:00	0	0	12,000	7,389	0	0.338	0.339
3L-17	1	18:47:00	0	0	12,000	7,389	0	0.338	0.339
3L-17	2	18:48:00	0	0	12,000	7,389	0	0.338	0.339
3L-17	3	18:49:00	0	0	12,000	7,389	0	0.338	0.339
3L-17	4	18:50:00	0	0	12,000	7,389	0	0.338	0.339
3L-17	5	18:51:00	0	0	12,000	7,389	0	0.338	0.339
3L-17	6	18:52:00	0	0	12,000	7,389	0	0.338	0.339
3L-18	1	18:53:00	0	0	12,000	7,389	0	0.338	0.339
3L-18	2	18:54:00	0	0	12,000	7,389	0	0.338	0.339
3L-18	3	18:55:00	0	0	12,000	7,389	0	0.338	0.339
3L-18	4	18:56:00	0	0	12,000	7,389	0	0.338	0.339
3L-18	5	18:57:00	0	0	12,000	7,389	0	0.338	0.339
3L-18	6	18:58:00	0	0	12,000	7,389	0	0.338	0.339
3L-19	1	18:59:00	0	0	12,000	7,389	0	0.338	0.339
3L-19	2	19:00:00	0	0	12,000	7,389	0	0.338	0.339
3L-19	3	19:01:00	0	0	12,000	7,389	0	0.338	0.339
3L-19	4	19:02:00	0	0	12,000	7,389	0	0.338	0.339
3L-19	5	19:03:00	0	0	12,000	7,389	0	0.338	0.339
3L-19	6	19:04:00	0	0	12,000	7,389	0	0.338	0.339
3L-20	1	19:05:00	0	0	12,000	7,389	0	0.338	0.339
3L-20	2	19:06:00	0	0	12,000	7,389	0	0.338	0.339
3L-20	3	19:07:00	0	0	12,000	7,389	0	0.338	0.339
3L-20	4	19:08:00	0	0	12,000</td				

Load	Hold	Time	Test Pile - Amelita Earhart Bridge - Atchison, KS		Middle O-cell Expansion		Test Pile - Amelita Earhart Bridge - Atchison, KS		Middle O-cell Expansion	
			Pressures (kips)	Pressures (kips)	Pressures (kips)	Pressures (kips)	Pressures (kips)	Pressures (kips)	Pressures (kips)	Pressures (kips)
Incentment (minutes) (inches)										
4L-1	1	20-30:00	1,000	627	0	0	0	0	0	0
4L-1	2	20-30:00	1,000	627	0	0	0	0	0	0
4L-1	4	20-41:00	1,000	627	0	0	0	0	0	0
4L-1	8	20-55:00	1,000	627	0	0	0	0	0	0
4L-2	1	20-46:30	2,000	1,241	0	0	0	0	0	0
4L-2	2	20-47:30	2,000	1,241	0	0	0	0	0	0
4L-2	4	20-49:30	2,000	1,241	0	0	0	0	0	0
4L-2	8	20-54:30	2,000	1,241	0	0	0	0	0	0
4L-3	1	20-55:30	3,000	1,956	0	0	0	0	0	0
4L-3	2	20-56:30	3,000	1,956	0	0	0	0	0	0
4L-3	4	20-58:30	3,000	1,956	0	0	0	0	0	0
4L-3	8	21-02:30	5,000	3,084	0	0	0	0	0	0
4L-4	1	21-04:30	4,000	2,710	0	0	0	0	0	0
4L-4	2	21-07:30	4,000	2,710	0	0	0	0	0	0
4L-4	4	21-09:30	4,000	2,710	0	0	0	0	0	0
4L-4	8	21-11:30	4,000	2,710	0	0	0	0	0	0
4L-5	1	21-13:30	5,000	3,084	0	0	0	0	0	0
4L-5	2	21-14:30	5,000	3,084	0	0	0	0	0	0
4L-5	4	21-16:30	5,000	3,084	0	0	0	0	0	0
4L-5	8	21-18:30	5,000	3,084	0	0	0	0	0	0
4L-6	1	21-20:30	5,000	3,084	0	0	0	0	0	0
4L-6	2	21-22:00	5,000	3,084	0	0	0	0	0	0
4L-6	4	21-24:20	8,000	4,926	0	0	0	0	0	0
4L-6	8	21-26:30	7,000	4,926	0	0	0	0	0	0
4L-7	1	21-28:30	7,000	4,926	0	0	0	0	0	0
4L-7	2	21-31:30	7,000	4,926	0	0	0	0	0	0
4L-7	4	21-33:30	7,000	4,926	0	0	0	0	0	0
4L-7	8	21-35:30	7,000	4,926	0	0	0	0	0	0
4L-8	1	21-36:30	8,000	4,926	0	0	0	0	0	0
4L-8	2	21-40:30	8,000	4,926	0	0	0	0	0	0
4L-8	4	21-44:00	8,000	4,926	0	0	0	0	0	0
4L-8	8	21-45:30	8,000	4,926	0	0	0	0	0	0
4L-9	1	21-46:30	8,000	4,926	0	0	0	0	0	0
4L-9	2	21-49:00	8,000	4,926	0	0	0	0	0	0
4L-9	4	21-51:00	8,000	4,926	0	0	0	0	0	0
4L-9	8	21-55:00	8,000	4,926	0	0	0	0	0	0
4L-10	1	21-56:30	10,000	6,156	0	0	0	0	0	0
4L-10	2	21-57:30	10,000	6,156	0	0	0	0	0	0
4L-10	4	21-59:30	10,000	6,156	0	0	0	0	0	0
4L-10	8	22-00:30	11,000	6,156	0	0	0	0	0	0
4L-11	1	22-01:30	11,000	6,771	0	0	0	0	0	0
4L-11	2	22-03:30	11,000	6,771	0	0	0	0	0	0
4L-11	4	22-05:30	11,000	6,771	0	0	0	0	0	0
4L-11	8	22-07:30	11,000	6,771	0	0	0	0	0	0
4L-12	1	22-11:30	12,000	7,385	0	0	0	0	0	0
4L-12	2	22-15:30	12,000	7,385	0	0	0	0	0	0
4L-12	4	22-17:30	12,000	7,385	0	0	0	0	0	0
4L-12	8	22-21:30	12,000	7,385	0	0	0	0	0	0
4L-13	1	22-22:30	13,000	8,000	0	0	0	0	0	0
4L-13	2	22-24:00	13,000	8,000	0	0	0	0	0	0
4L-13	4	22-26:00	13,000	8,000	0	0	0	0	0	0
4L-13	8	22-28:00	13,000	8,000	0	0	0	0	0	0
4L-14	1	22-29:30	14,000	8,614	0	0	0	0	0	0
4L-14	2	22-31:30	14,000	8,614	0	0	0	0	0	0
4L-14	4	22-34:00	14,000	8,614	0	0	0	0	0	0
4L-14	8	22-36:00	14,000	8,614	0	0	0	0	0	0
4L-15	1	22-41:00	15,000	9,226	0	0	0	0	0	0
4L-15	2	22-42:00	15,000	9,226	0	0	0	0	0	0
4L-15	4	22-44:00	15,000	9,226	0	0	0	0	0	0
4L-15	8	22-46:00	15,000	9,226	0	0	0	0	0	0
4L-16	1	22-49:30	11,000	7,078	0	0	0	0	0	0
4L-16	2	22-51:30	11,000	7,078	0	0	0	0	0	0
4L-16	4	22-54:00	7,500	4,620	0	0	0	0	0	0
4L-16	8	22-55:00	7,500	4,620	0	0	0	0	0	0
4L-17	1	22-57:00	11,000	7,078	0	0	0	0	0	0
4L-17	2	22-59:00	11,000	7,078	0	0	0	0	0	0
4L-17	4	22-59:00	11,000	7,078	0	0	0	0	0	0
4L-17	8	22-59:00	11,000	7,078	0	0	0	0	0	0
4L-18	1	22-61:30	14,000	8,614	0	0	0	0	0	0
4L-18	2	22-63:30	14,000	8,614	0	0	0	0	0	0
4L-18	4	22-64:00	14,000	8,614	0	0	0	0	0	0
4L-18	8	22-65:00	14,000	8,614	0	0	0	0	0	0
4L-19	1	22-67:00	14,000	8,614	0	0	0	0	0	0
4L-19	2	22-68:00	14,000	8,614	0	0	0	0	0	0
4L-19	4	22-69:00	14,000	8,614	0	0	0	0	0	0
4L-19	8	22-70:00	14,000	8,614	0	0	0	0	0	0
4L-20	1	22-71:30	12,000	7,385	0	0	0	0	0	0
4L-20	2	22-73:30	12,000	7,385	0	0	0	0	0	0
4L-20	4	22-75:30	12,000	7,385	0	0	0	0	0	0
4L-20	8	22-77:30	12,000	7,385	0	0	0	0	0	0
4L-21	1	22-79:30	12,000	7,385	0	0	0	0	0	0
4L-21	2	22-81:30	12,000	7,385	0	0	0	0	0	0
4L-21	4	22-83:30	12,000	7,385	0	0	0	0	0	0
4L-21	8	22-85:30	12,000	7,385	0	0	0	0	0	0
4L-22	1	22-87:30	12,000	7,385	0	0	0	0	0	0
4L-22	2	22-89:30	12,000	7,385	0	0	0	0	0	0
4L-22	4	22-91:30	12,000	7,385	0	0	0	0	0	0
4L-22	8	22-93:30	12,000	7,385	0	0	0	0	0	0
4L-23	1	22-95:30	12,000	7,385	0	0	0	0	0	0
4L-23	2	22-97:30	12,000	7,385	0	0	0	0	0	0
4L-23	4	22-99:30	12,000	7,385	0	0	0	0	0	0
4L-23	8	22-10:30	12,000	7,385	0	0	0	0	0	0
4L-24	1	22-11:30	4,000	2,710	0	0	0	0	0	0
4L-24	2	22-12:30	4,000	2,710	0	0	0	0	0	0
4L-24	4	22-14:30	4,000	2,710	0	0	0	0	0	0
4L-24	8	22-16:30	4,000	2,710	0	0	0	0	0	0
4L-25	1	22-18:30	4,000	2,710	0	0	0	0	0	0
4L-25	2	22-20:30	4,000	2,710	0	0	0	0	0	0
4L-25	4	22-22:30	4,000	2,710	0	0	0	0	0	0
4L-25	8	22-24:30	4,000	2,710	0	0	0	0	0	0
4L-26	1	22-26:30	3,000	1,956	0	0	0	0	0	0
4L-26	2	22-28:30	3,000	1,956	0	0	0	0	0	0
4L-26	4	22-30:30	3,000	1,956	0	0	0	0	0	0
4L-26	8	22-32:30	3,000	1,956	0	0	0	0	0	0
4L-27	1	22-34:30	2,000	1,241	0	0	0	0	0	0
4L-27	2	22-36:30	2,000	1,241	0	0	0	0	0	0
4L-27	4	22-38:30	2,000	1,241	0	0	0	0	0	0
4L-27	8	22-40:30	2,000	1,241	0	0	0	0	0	0
4L-28	1	22-42:30	2,000	1,241	0	0	0	0	0	0
4L-28	2	22-44:30	2,000	1,241	0	0	0	0	0	0
4L-28	4	22-46:30	2,000	1,241	0	0	0	0	0	0
4L-28	8	22-48:30	2,000	1,241	0	0	0	0	0	0
4L-29	1	22-50:30	1,000	627	0	0	0	0	0	0
4L-29	2	22-52:30	1,000	627	0	0	0	0	0	0
4L-29	4	22-54:30	1,000	627	0	0	0	0	0	0
4L-29	8	22-56:30	1,000	627	0	0	0	0	0	0
4L-30	1	22-58:30	1,000	627	0	0	0	0	0	0
4L-30	2	22-60:30	1,000	627</td						

Load	Hold	Time	Lower-D-cell	Middle-D-cell	Upper-D-cell	Upper-D-cell Expansion	Lower-D-cell Expansion	Test Pile - Amella Earthen Bridge - Attachment, KS
		Increment (minutes)	(hh:mm:ss)	(psi)	(kips)	(psi)	(kips)	A - 03-22548 B - 03-22552 C - 18102 Average**
1L-0	-	10:57:00	0	0	0	0.000	0.000	0.000
1L-1	1	11:53:30	1,000	627	0	0.000	0.000	0.000
1L-1	2	12:00:30	1,000	627	0	0.000	0.000	0.000
1L-1	4	12:02:30	1,000	627	0	0.000	0.000	0.000
1L-2	1	12:08:00	2,000	1,241	0	0.000	0.000	0.000
1L-2	2	12:18:00	3,000	1,956	0	0.000	0.000	0.000
1L-3	1	12:21:00	3,000	1,956	0	0.000	0.000	0.000
1L-3	2	12:22:00	3,000	1,956	0	0.000	0.000	0.000
1L-3	4	12:24:00	3,000	1,956	0	0.000	0.000	0.000
1L-4	2	12:28:30	4,000	2,470	0	0.000	0.000	0.000
1L-4	4	12:30:30	4,000	2,470	0	0.000	0.000	0.000
1L-4	8	12:32:30	4,000	2,470	0	0.000	0.000	0.000
1L-5	1	12:33:00	5,000	3,084	0	0.000	0.000	0.000
1L-5	2	12:35:00	5,000	3,084	0	0.000	0.000	0.000
1L-5	4	12:37:00	5,000	3,084	0	0.000	0.000	0.000
1L-6	2	13:01:30	3,000	4,926	0	0.000	0.000	0.000
1L-6	4	13:03:30	3,000	4,926	0	0.000	0.000	0.000
1L-6	8	13:07:30	3,000	4,926	0	0.000	0.000	0.000
1L-7	1	13:09:00	3,000	5,542	0	0.000	0.000	0.000
1L-7	2	13:12:00	3,000	5,542	0	0.000	0.000	0.000
1L-7	4	13:15:00	3,000	5,542	0	0.000	0.000	0.000
1L-7	8	13:16:00	3,000	5,542	0	0.000	0.000	0.000
1L-8	1	13:20:00	3,000	5,542	0	0.000	0.000	0.000
1L-8	2	13:22:30	1,000	6,771	0	0.000	0.000	0.000
1L-8	4	13:24:30	1,000	6,771	0	0.000	0.000	0.000
1L-9	1	13:25:30	1,000	6,771	0	0.000	0.000	0.000
1L-9	2	13:28:00	1,000	6,771	0	0.000	0.000	0.000
1L-9	4	13:31:00	1,000	6,771	0	0.000	0.000	0.000
1L-10	2	13:43:30	1,000	6,771	0	0.000	0.000	0.000
1L-10	4	13:47:30	1,000	6,771	0	0.000	0.000	0.000
1L-11	2	13:51:00	1,000	6,771	0	0.000	0.000	0.000
1L-11	4	13:54:00	1,000	6,771	0	0.000	0.000	0.000
1L-12	1	13:57:30	1,000	6,771	0	0.000	0.000	0.000
1L-12	2	13:59:30	1,000	6,771	0	0.000	0.000	0.000
1L-12	4	14:01:30	1,000	6,771	0	0.000	0.000	0.000
1L-13	1	14:03:30	2,500	1,948	0	0.000	0.000	0.000
1L-13	2	14:06:30	2,500	1,948	0	0.000	0.000	0.000
1L-13	4	14:09:30	2,500	1,948	0	0.000	0.000	0.000
1U-1	1	14:11:30	0	0	0	0.000	0.000	0.000
1U-1	2	14:19:30	0	0	0	0.000	0.000	0.000
1U-1	4	14:46:30	2,500	1,948	0	0.000	0.000	0.000
1U-2	1	14:50:30	2,500	1,948	0	0.000	0.000	0.000
1U-2	2	14:53:30	6,000	3,699	0	0.000	0.000	0.000
1U-2	4	14:57:30	6,000	3,699	0	0.000	0.000	0.000
1U-3	1	15:01:30	9,500	5,049	0	0.000	0.000	0.000
1U-3	2	15:04:30	9,500	5,049	0	0.000	0.000	0.000
1U-3	4	15:07:30	9,500	5,049	0	0.000	0.000	0.000
1U-4	1	15:11:30	0	0	0	0.000	0.000	0.000
1U-4	2	15:19:30	0	0	0	0.000	0.000	0.000
1U-4	4	15:46:30	2,500	1,948	0	0.000	0.000	0.000
1U-5	1	15:50:30	6,000	3,699	0	0.000	0.000	0.000
1U-5	2	15:53:30	6,000	3,699	0	0.000	0.000	0.000
1U-5	4	15:57:30	6,000	3,699	0	0.000	0.000	0.000
1U-6	1	16:01:30	9,500	5,049	0	0.000	0.000	0.000
1U-6	2	16:04:30	9,500	5,049	0	0.000	0.000	0.000
1U-6	4	16:07:30	9,500	5,049	0	0.000	0.000	0.000
1U-7	1	16:11:30	0	0	0	0.000	0.000	0.000
1U-7	2	16:19:30	0	0	0	0.000	0.000	0.000
1U-7	4	16:46:30	2,500	1,948	0	0.000	0.000	0.000
1U-8	1	16:50:30	5,000	3,699	0	0.000	0.000	0.000
1U-8	2	16:53:30	5,000	3,699	0	0.000	0.000	0.000
1U-8	4	16:57:30	5,000	3,699	0	0.000	0.000	0.000
1U-9	1	17:01:30	9,500	5,049	0	0.000	0.000	0.000
1U-9	2	17:04:30	9,500	5,049	0	0.000	0.000	0.000
1U-9	4	17:07:30	9,500	5,049	0	0.000	0.000	0.000
1U-10	1	17:11:30	0	0	0	0.000	0.000	0.000
1U-10	2	17:19:30	0	0	0	0.000	0.000	0.000
1U-10	4	17:46:30	2,500	1,948	0	0.000	0.000	0.000
1U-11	1	17:50:30	10,000	6,156	0	0.000	0.000	0.000
1U-11	2	17:53:30	10,000	6,156	0	0.000	0.000	0.000
1U-11	4	17:57:30	10,000	6,156	0	0.000	0.000	0.000
1U-12	1	18:01:30	0	0	0	0.000	0.000	0.000
1U-12	2	18:04:30	0	0	0	0.000	0.000	0.000
1U-12	4	18:07:30	0	0	0	0.000	0.000	0.000
1U-13	1	18:11:30	0	0	0	0.000	0.000	0.000
1U-13	2	18:14:30	0	0	0	0.000	0.000	0.000
1U-13	4	18:17:30	0	0	0	0.000	0.000	0.000
1U-14	1	18:21:30	0	0	0	0.000	0.000	0.000
1U-14	2	18:24:30	0	0	0	0.000	0.000	0.000
1U-14	4	18:27:30	0	0	0	0.000	0.000	0.000
1U-15	1	18:31:30	0	0	0	0.000	0.000	0.000
1U-15	2	18:34:30	0	0	0	0.000	0.000	0.000
1U-15	4	18:37:30	0	0	0	0.000	0.000	0.000
1U-16	1	18:41:30	0	0	0	0.000	0.000	0.000
1U-16	2	18:44:30	0	0	0	0.000	0.000	0.000
1U-16	4	18:47:30	0	0	0	0.000	0.000	0.000
1U-17	1	18:51:30	0	0	0	0.000	0.000	0.000
1U-17	2	18:54:30	0	0	0	0.000	0.000	0.000
1U-17	4	18:57:30	0	0	0	0.000	0.000	0.000
1U-18	1	19:01:30	0	0	0	0.000	0.000	0.000
1U-18	2	19:04:30	0	0	0	0.000	0.000	0.000
1U-18	4	19:07:30	0	0	0	0.000	0.000	0.000
1U-19	1	19:11:30	0	0	0	0.000	0.000	0.000
1U-19	2	19:14:30	0	0	0	0.000	0.000	0.000
1U-19	4	19:17:30	0	0	0	0.000	0.000	0.000
1U-20	1	19:21:30	0	0	0	0.000	0.000	0.000
1U-20	2	19:24:30	0	0	0	0.000	0.000	0.000
1U-20	4	19:27:30	0	0	0	0.000	0.000	0.000
1U-21	1	19:31:30	0	0	0	0.000	0.000	0.000
1U-21	2	19:34:30	0	0	0	0.000	0.000	0.000
1U-21	4	19:37:30	0	0	0	0.000	0.000	0.000
1U-22	1	19:41:30	0	0	0	0.000	0.000	0.000
1U-22	2	19:44:30	0	0	0	0.000	0.000	0.000
1U-22	4	19:47:30	0	0	0	0.000	0.000	0.000
1U-23	1	19:51:30	0	0	0	0.000	0.000	0.000
1U-23	2	19:54:30	0	0	0	0.000	0.000	0.000
1U-23	4	19:57:30	0	0	0	0.000	0.000	0.000
1U-24	1	20:01:30	1,000	627	0	0.000	0.000	0.000
1U-24	2	20:04:30	1,000	627	0	0.000	0.000	0.000
1U-24	4	20:07:30	1,000	627	0	0.000	0.000	0.000
1U-25	1	20:11:30	0	0	0	0.000	0.000	0.000
1U-25	2	20:14:30	0	0	0	0.000	0.000	0.000
1U-25	4	20:17:30	0	0	0	0.000	0.000	0.000
1U-26	1	20:21:30	1,000	627	0	0.000	0.000	0.000
1U-26	2	20:24:30	1,000	627	0	0.000	0.000	0.000
1U-26	4	20:27:30	1,000	627	0	0.000	0.000	0.000
1U-27	1	20:31:30	0	0	0	0.000	0.000	0.000
1U-27	2	20:34:30	0	0	0	0.000	0.000	0.000
1U-27	4	20:37:30	0	0	0	0.000	0.000	0.000
1U-28	1	20:41:30	0	0	0	0.000	0.000	0.000
1U-28	2	20:44:30	0	0	0	0.000	0.000	0.000
1U-28	4	20:47:30	0	0	0	0.000	0.000	0.000
1U-29	1	20:51:30	0	0	0	0.000	0.000	0.000
1U-29	2	20:54:30	0	0	0	0.000	0.000	0.000
1U-29	4	20:57:30	0	0	0	0.000	0.000	0.000
1U-30	1	21:01:30	0	0	0	0.000	0.000	0.000
1U-30	2	21:04:30	0	0	0	0.000	0.	

Upper O-cell Expansion

Load	Hold	Time	Test	Lower O-cell		Middle O-cell		Upper O-cell		Upper O-cell Expansion		Average	
				Pressure (psi)	Time (min:m:s)	Pressure (psi)	Time (min:m:s)	Pressure (psi)	Time (min:m:s)	Load (kips)	Load (kips)	C - 1102	A - 03-2252
3L-1 1	17-07-30	0	0	1,000	624	0	0	0,830	0	0,999	0,999	0,915	0,915
3L-1 2	17-08-30	0	0	1,000	624	0	0	0,829	0	0,996	0,996	0,914	0,914
3L-1 3	17-09-30	0	0	1,000	624	0	0	0,828	0	0,996	0,996	0,912	0,912
3L-1 4	17-10-30	0	0	1,000	624	0	0	0,828	0	0,996	0,996	0,904	0,904
3L-2 1	17-11-00	0	0	2,000	1,239	0	0	0,821	0	0,989	0,989	0,905	0,905
3L-2 2	17-11-00	0	0	2,000	1,239	0	0	0,820	0	0,987	0,987	0,904	0,904
3L-2 3	17-12-00	0	0	2,000	1,239	0	0	0,819	0	0,985	0,985	0,902	0,902
3L-3 1	17-12-00	0	0	3,000	1,854	0	0	0,815	0	0,981	0,981	0,896	0,896
3L-3 2	17-12-00	0	0	3,000	1,854	0	0	0,814	0	0,980	0,980	0,897	0,897
3L-3 3	17-12-00	0	0	3,000	1,854	0	0	0,814	0	0,980	0,980	0,896	0,896
3L-4 1	17-12-00	0	0	4,000	2,469	0	0	0,808	0	0,974	0,974	0,891	0,891
3L-4 2	17-12-00	0	0	4,000	2,469	0	0	0,808	0	0,974	0,974	0,891	0,891
3L-4 3	17-12-00	0	0	4,000	2,469	0	0	0,808	0	0,974	0,974	0,891	0,891
3L-5 1	17-12-00	0	0	5,000	3,064	0	0	0,803	0	0,966	0,966	0,884	0,884
3L-5 2	17-12-00	0	0	5,000	3,064	0	0	0,803	0	0,966	0,966	0,884	0,884
3L-5 3	17-12-00	0	0	5,000	3,064	0	0	0,803	0	0,966	0,966	0,884	0,884
3L-6 1	17-12-00	0	0	6,000	3,699	0	0	0,799	0	0,955	0,955	0,877	0,877
3L-6 2	17-12-00	0	0	6,000	3,699	0	0	0,799	0	0,955	0,955	0,876	0,876
3L-6 3	17-12-00	0	0	6,000	3,699	0	0	0,799	0	0,955	0,955	0,876	0,876
3L-7 1	18-01-00	0	0	7,000	4,314	0	0	0,787	0	0,949	0,949	0,867	0,867
3L-7 2	18-02-00	0	0	7,000	4,314	0	0	0,787	0	0,949	0,949	0,867	0,867
3L-7 3	18-03-00	0	0	7,000	4,314	0	0	0,786	0	0,949	0,949	0,867	0,867
3L-8 1	18-10-30	0	0	8,000	4,929	0	0	0,779	0	0,943	0,943	0,852	0,852
3L-8 2	18-11-00	0	0	8,000	4,929	0	0	0,779	0	0,943	0,943	0,851	0,851
3L-8 3	18-11-00	0	0	8,000	4,929	0	0	0,779	0	0,943	0,943	0,851	0,851
3L-9 1	18-16-00	0	0	9,000	5,544	0	0	0,770	0	0,934	0,934	0,849	0,849
3L-9 2	18-19-00	0	0	9,000	5,544	0	0	0,769	0	0,933	0,933	0,848	0,848
3L-9 3	18-19-00	0	0	9,000	5,544	0	0	0,769	0	0,933	0,933	0,848	0,848
3L-10 1	18-27-00	0	0	10,000	6,159	0	0	0,759	0	0,922	0,922	0,841	0,841
3L-10 2	18-28-00	0	0	10,000	6,159	0	0	0,759	0	0,922	0,922	0,841	0,841
3L-10 3	18-30-00	0	0	10,000	6,159	0	0	0,758	0	0,921	0,921	0,840	0,840
3L-11 1	18-34-00	0	0	11,000	6,774	0	0	0,746	0	0,916	0,916	0,835	0,835
3L-11 2	18-35-00	0	0	11,000	6,774	0	0	0,746	0	0,916	0,916	0,835	0,835
3L-11 3	18-35-00	0	0	11,000	6,774	0	0	0,746	0	0,916	0,916	0,835	0,835
3L-12 1	18-43-00	0	0	11,000	6,774	0	0	0,738	0	0,909	0,909	0,829	0,829
3L-12 2	18-45-00	0	0	11,000	6,774	0	0	0,738	0	0,909	0,909	0,829	0,829
3L-12 3	18-45-00	0	0	11,000	6,774	0	0	0,738	0	0,909	0,909	0,829	0,829
3L-13 1	18-56-30	0	0	13,000	8,004	0	0	0,700	0	0,855	0,855	0,782	0,782
3L-13 2	18-56-30	0	0	13,000	8,004	0	0	0,700	0	0,855	0,855	0,782	0,782
3L-13 3	18-56-30	0	0	13,000	8,004	0	0	0,700	0	0,855	0,855	0,782	0,782
3L-14 1	19-03-00	0	0	14,000	8,619	0	0	0,672	0	0,821	0,821	0,756	0,756
3L-14 2	19-04-00	0	0	14,000	8,619	0	0	0,672	0	0,821	0,821	0,756	0,756
3L-14 3	19-05-00	0	0	14,000	8,619	0	0	0,672	0	0,821	0,821	0,756	0,756
3L-15 1	19-11-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-15 2	19-11-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-15 3	19-11-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-16 1	19-12-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-16 2	19-12-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-16 3	19-12-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-17 1	19-16-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-17 2	19-17-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-17 3	19-17-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-18 1	19-21-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-18 2	19-22-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-18 3	19-22-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-19 1	19-27-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-19 2	19-28-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-19 3	19-28-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-20 1	19-31-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-20 2	19-32-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-20 3	19-32-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-21 1	19-35-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-21 2	19-36-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-21 3	19-36-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-22 1	19-39-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-22 2	19-40-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-22 3	19-40-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-23 1	19-42-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-23 2	19-43-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-23 3	19-43-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-24 1	19-46-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-24 2	19-47-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-24 3	19-47-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-25 1	19-50-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-25 2	19-51-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-25 3	19-51-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-26 1	19-53-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-26 2	19-54-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-26 3	19-54-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-27 1	19-56-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-27 2	19-57-30	0	0	15,000	9,234	0	0	0,642	0	0,815	0,815	0,751	0,751
3L-27 3	19-57-30	0	0	15,000	9,234	0							

Load	Hold	Time	Increment (minutes)	Time (mm:ss)	Pressure (psi)	Load (kips)	Lower D-cell Pressure (psi)	Upper D-cell Pressure (psi)	Load (kips)	Upper D-cell Expansion (in)	Upper D-cell Expansion (in)	Test Pile - Amerilia Earhart Bridge - Acheson, KS				
												A - 03-32548	B - 03-32552	C - 18102	Average	
4L-1	1	20-30:00	1,000	527	0	0	0	0	0	0.464	0.000	0.575	0.519	0.575	0.520	0.520
4L-1	2	20-30:00	1,000	627	0	0	0	0	0	0.464	0.000	0.575	0.519	0.575	0.520	0.520
4L-2	1	20-30:00	2,000	1,221	0	0	0	0	0	0.465	0.000	0.576	0.521	0.576	0.521	0.521
4L-2	2	20-30:00	2,000	1,221	0	0	0	0	0	0.465	0.000	0.576	0.521	0.576	0.521	0.521
4L-3	1	20-55:30	3,000	1,356	0	0	0	0	0	0.466	0.000	0.577	0.522	0.577	0.522	0.522
4L-3	2	20-55:30	3,000	1,356	0	0	0	0	0	0.466	0.000	0.577	0.522	0.577	0.522	0.522
4L-4	1	21-04:30	4,000	2,470	0	0	0	0	0	0.466	0.000	0.577	0.522	0.577	0.522	0.522
4L-4	2	21-04:30	4,000	2,470	0	0	0	0	0	0.466	0.000	0.577	0.522	0.577	0.522	0.522
4L-5	1	21-11:30	5,000	3,084	0	0	0	0	0	0.467	0.000	0.578	0.523	0.578	0.523	0.523
4L-5	2	21-11:30	5,000	3,084	0	0	0	0	0	0.467	0.000	0.578	0.523	0.578	0.523	0.523
4L-6	1	21-20:30	5,000	3,699	0	0	0	0	0	0.467	0.000	0.578	0.523	0.578	0.523	0.523
4L-6	2	21-20:30	5,000	3,699	0	0	0	0	0	0.467	0.000	0.578	0.523	0.578	0.523	0.523
4L-7	1	21-30:30	7,000	4,131	0	0	0	0	0	0.467	0.000	0.578	0.523	0.578	0.523	0.523
4L-7	2	21-30:30	7,000	4,131	0	0	0	0	0	0.467	0.000	0.578	0.523	0.578	0.523	0.523
4L-8	1	21-37:30	8,000	4,926	0	0	0	0	0	0.467	0.000	0.578	0.523	0.578	0.523	0.523
4L-8	2	21-37:30	8,000	4,926	0	0	0	0	0	0.467	0.000	0.578	0.523	0.578	0.523	0.523
4L-9	1	21-46:30	9,000	5,542	0	0	0	0	0	0.467	0.000	0.578	0.523	0.578	0.523	0.523
4L-9	2	21-46:30	9,000	5,542	0	0	0	0	0	0.467	0.000	0.578	0.523	0.578	0.523	0.523
4L-10	1	21-56:30	9,000	5,942	0	0	0	0	0	0.467	0.000	0.578	0.523	0.578	0.523	0.523
4L-10	2	21-56:30	10,000	6,156	0	0	0	0	0	0.467	0.000	0.578	0.523	0.578	0.523	0.523
4L-11	1	22-05:30	11,000	6,771	0	0	0	0	0	0.467	0.000	0.579	0.523	0.579	0.523	0.523
4L-11	2	22-05:30	11,000	6,771	0	0	0	0	0	0.467	0.000	0.579	0.523	0.579	0.523	0.523
4L-12	1	22-14:30	11,000	6,771	0	0	0	0	0	0.467	0.000	0.579	0.523	0.579	0.523	0.523
4L-12	2	22-14:30	11,000	6,771	0	0	0	0	0	0.467	0.000	0.579	0.523	0.579	0.523	0.523
4L-13	1	22-23:30	13,000	8,000	0	0	0	0	0	0.468	0.000	0.579	0.523	0.579	0.523	0.523
4L-13	2	22-23:30	13,000	8,000	0	0	0	0	0	0.468	0.000	0.579	0.523	0.579	0.523	0.523
4L-14	1	22-33:30	14,000	8,514	0	0	0	0	0	0.468	0.000	0.579	0.523	0.579	0.523	0.523
4L-14	2	22-33:30	14,000	8,514	0	0	0	0	0	0.468	0.000	0.579	0.523	0.579	0.523	0.523
4L-15	1	22-41:00	15,000	9,228	0	0	0	0	0	0.468	0.000	0.579	0.523	0.579	0.523	0.523
4L-15	2	22-41:00	15,000	9,228	0	0	0	0	0	0.468	0.000	0.579	0.523	0.579	0.523	0.523
4L-16	3	22-48:00	15,000	9,228	0	0	0	0	0	0.468	0.000	0.579	0.523	0.579	0.523	0.523
4L-16	4	22-48:00	15,000	9,228	0	0	0	0	0	0.468	0.000	0.579	0.523	0.579	0.523	0.523
4U-1	2	22-51:30	11,000	7,076	0	0	0	0	0	0.469	0.000	0.579	0.523	0.579	0.523	0.523
4U-1	4	22-51:30	11,000	7,076	0	0	0	0	0	0.469	0.000	0.579	0.523	0.579	0.523	0.523
4U-2	1	22-54:30	11,000	7,076	0	0	0	0	0	0.469	0.000	0.579	0.523	0.579	0.523	0.523
4U-2	2	22-54:30	11,000	7,076	0	0	0	0	0	0.469	0.000	0.579	0.523	0.579	0.523	0.523
4U-3	1	22-59:00	7,500	2,163	0	0	0	0	0	0.469	0.000	0.579	0.523	0.579	0.523	0.523
4U-3	2	22-59:00	7,500	2,163	0	0	0	0	0	0.469	0.000	0.579	0.523	0.579	0.523	0.523
4U-4	1	23-01:30	2,500	1,548	2,500	1,547	2,500	1,544	0.527	0.000	0.579	0.524	0.579	0.524	0.524	
4U-4	2	23-01:30	2,500	1,548	2,500	1,547	2,500	1,544	0.527	0.000	0.579	0.524	0.579	0.524	0.524	
4U-5	1	23-03:30	10,000	6,156	10,000	6,156	10,000	6,156	0.527	0.000	0.579	0.524	0.579	0.524	0.524	
4U-5	2	23-03:30	10,000	6,156	10,000	6,156	10,000	6,156	0.527	0.000	0.579	0.524	0.579	0.524	0.524	
4U-6	1	23-06:30	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-6	2	23-06:30	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-7	1	23-09:30	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-7	2	23-09:30	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-8	1	23-17:30	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-8	2	23-17:30	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-9	1	23-23:30	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-9	2	23-23:30	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-10	1	23-29:00	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-10	2	23-29:00	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-11	1	24-04:30	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-11	2	24-04:30	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-12	1	24-11:30	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-12	2	24-11:30	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-13	1	24-20:30	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-13	2	24-20:30	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-14	1	24-24:30	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-14	2	24-24:30	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-15	1	24-41:00	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-15	2	24-41:00	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-16	1	24-46:30	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-16	2	24-46:30	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-17	1	24-51:30	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-17	2	24-51:30	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-18	1	24-56:30	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-18	2	24-56:30	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-19	1	24-59:30	0	0	0	0	0	0	0	0.469	0.000	0.579	0.524	0.579	0.524	0.524
4U-19	2	24-59:30	0	0	0	0</td										

Upward and Downward Lower O-cell Plate Movement and Creep (calculated) Test Pile - Amelita Earthart Bridge - Atchison, KS

Jpward and Downward Lower-O-cell Plate Movement and Creep (calculated) Test Pile - Amelie Earthart Bridge - Atchison, KS

Upward and Downward Lower O-cell Plate Movement and Creep (calculated) TestPile - Amelie Earhart Bridge - Atchison, KS

Upward and Downward Lower-D-cell Plate Movement and Creep (calculated) Test Pile - Amelita Earhart Bridge - Atchison, KS

Load	Hold	Time	Test	Test Plate - Amelie Eerhart Bridge - Attachment									
				Lower O-cell	Middle O-cell	Upper O-cell	Pile Head	Pile	Upward	O-cell	Downward	O-cell	Creep Up
				Element	Time (minutes)	(mm:ss)	Pressure (kips)	Pressure (kips)	Load (kips)	Measurements	Expansion (in)	Movement (in)	Per Hold
11-U-0	-	10:57:00	-	0	0	0	0	0	0.000	0.000	0.000	0.000	0.000
11-U-1	1	11:59:30	1000	627	0	0	0	0	0.000	0.000	0.000	0.000	0.000
11-U-2	2	12:00:30	1000	627	0	0	0	0	0.000	0.000	0.000	0.000	0.000
11-U-3	1	12:17:00	3000	1,056	0	0	0	0	0.000	0.000	0.000	0.001	0.000
11-U-4	2	12:24:00	3000	1,056	0	0	0	0	0.000	0.000	0.000	0.001	0.000
11-U-5	1	12:24:00	4,000	2,470	0	0	0	0	0.000	0.000	0.000	0.001	0.000
11-U-6	2	12:28:30	4,000	2,470	0	0	0	0	0.000	0.000	0.000	0.001	0.000
11-U-7	3	12:30:00	4,000	2,470	0	0	0	0	0.000	0.000	0.000	0.001	0.000
11-U-8	4	12:34:00	4,000	2,470	0	0	0	0	0.000	0.000	0.000	0.001	0.000
11-U-9	5	12:39:00	4,000	2,470	0	0	0	0	0.000	0.000	0.000	0.001	0.000
11-U-10	6	12:46:00	5,000	3,699	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-11	7	12:53:00	5,000	3,699	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-12	8	12:59:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-13	9	13:05:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-14	10	13:11:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-15	11	13:16:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-16	12	13:21:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-17	13	13:26:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-18	14	13:32:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-19	15	13:38:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-20	16	13:42:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-21	17	13:48:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-22	18	13:54:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-23	19	13:59:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-24	20	14:04:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-25	21	14:09:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-26	22	14:15:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-27	23	14:20:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-28	24	14:26:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-29	25	14:31:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-30	26	14:37:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-31	27	14:42:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-32	28	14:48:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-33	29	14:53:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-34	30	15:09:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-35	31	15:14:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-36	32	15:20:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-37	33	15:25:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-38	34	15:31:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-39	35	15:36:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-40	36	15:42:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-41	37	15:47:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-42	38	15:53:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-43	39	15:58:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-44	40	16:04:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-45	41	16:09:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-46	42	16:15:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-47	43	16:20:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-48	44	16:26:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-49	45	16:31:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-50	46	16:37:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-51	47	16:42:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-52	48	16:48:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-53	49	16:53:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-54	50	17:09:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-55	51	17:14:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-56	52	17:20:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-57	53	17:25:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-58	54	17:31:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-59	55	17:36:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-60	56	17:42:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-61	57	17:47:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-62	58	17:53:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-63	59	17:58:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-64	60	18:04:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-65	61	18:09:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-66	62	18:15:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-67	63	18:20:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-68	64	18:26:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-69	65	18:31:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-70	66	18:37:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-71	67	18:42:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-72	68	18:48:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-73	69	18:53:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-74	70	19:09:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-75	71	19:14:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-76	72	19:20:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-77	73	19:25:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-78	74	19:31:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-79	75	19:36:30	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-80	76	19:42:00	5,000	4,131	0	0	0	0	0.000	0.000	0.000	0.002	0.000
11-U-81	77	19:47:30	5,000	4,									

Upward and Downward Middle-O-cell Plate Movement and Creep (Calculated) Test Pile - Amelia Earhart Bridge - Atchison, KS

Upward and Downward Middle O-cell Plate Movement and Creep (calculated)

Upward and Downward Middle O-cell Plate Movement and Creep (calculated)

Load	Hold	Test Pile - Amerilia Earthart Bridge - Atchison, KS												
		Time	Lower O-cell	Middle O-cell	Upper O-cell	Load (kips)	Pressure (psi)	Load (kips)	Pressure (psi)	Load (kips)	Pressure (psi)	Creep Up (in)	Creep Downward (in)	Creep Up Hold (in)
Compressive stress above middle O-cell, includes expansion above as negative compression														
4-L-1	1	20-38:00	1,000	627	0	0	0.823	0	0.823	0	0.456	0.464	0.092	0.009
4-L-1	2	20-45:00	1,000	627	0	0	0	0.822	0	0.822	0	0.456	0.458	0.090
4-L-1	3	20-50:00	1,000	627	0	0	0	0.823	0	0.823	0	0.456	0.459	0.091
4-L-1	4	20-41:00	1,000	627	0	0	0	0.822	0	0.822	0	0.456	0.458	0.090
4-L-1	5	20-38:00	1,000	627	0	0	0	0.823	0	0.823	0	0.456	0.459	0.091
4-L-2	1	20-46:30	2,000	1,241	0	0	0	0.823	0	0.823	0	0.456	0.456	0.089
4-L-2	2	20-51:30	2,000	1,241	0	0	0	0.822	0	0.822	0	0.456	0.456	0.089
4-L-2	3	20-47:30	2,000	1,241	0	0	0	0.823	0	0.823	0	0.456	0.456	0.089
4-L-2	4	20-49:30	2,000	1,241	0	0	0	0.822	0	0.822	0	0.456	0.456	0.089
4-L-2	5	20-55:30	2,000	1,241	0	0	0	0.823	0	0.823	0	0.456	0.456	0.089
4-L-3	1	20-55:30	3,000	1,865	0	0	0	0.823	0	0.823	0	0.457	0.457	0.087
4-L-3	2	20-56:30	3,000	1,865	0	0	0	0.823	0	0.823	0	0.457	0.457	0.087
4-L-3	3	20-56:30	3,000	1,865	0	0	0	0.823	0	0.823	0	0.457	0.457	0.087
4-L-3	4	20-58:30	3,000	1,865	0	0	0	0.823	0	0.823	0	0.457	0.457	0.087
4-L-3	5	21-01:30	4,000	2,470	0	0	0	0.822	0	0.822	0	0.458	0.458	0.085
4-L-4	1	21-01:30	4,000	2,470	0	0	0	0.823	0	0.823	0	0.458	0.458	0.085
4-L-4	2	21-05:30	4,000	2,470	0	0	0	0.822	0	0.822	0	0.458	0.458	0.085
4-L-4	3	21-07:30	4,000	2,470	0	0	0	0.823	0	0.823	0	0.458	0.458	0.085
4-L-4	4	21-09:30	4,000	2,470	0	0	0	0.822	0	0.822	0	0.458	0.458	0.085
4-L-4	5	21-11:30	4,000	2,470	0	0	0	0.823	0	0.823	0	0.458	0.458	0.085
4-L-5	1	21-11:30	5,000	3,064	0	0	0	0.822	0	0.822	0	0.449	0.449	0.085
4-L-5	2	21-14:30	5,000	3,064	0	0	0	0.822	0	0.822	0	0.449	0.449	0.084
4-L-5	3	21-16:30	5,000	3,064	0	0	0	0.822	0	0.822	0	0.449	0.449	0.084
4-L-5	4	21-18:30	5,000	3,064	0	0	0	0.822	0	0.822	0	0.449	0.449	0.084
4-L-5	5	21-20:30	5,000	3,064	0	0	0	0.822	0	0.822	0	0.449	0.449	0.084
4-L-6	1	21-22:00	6,000	3,699	0	0	0	0.822	0	0.822	0	0.458	0.458	0.083
4-L-6	2	21-22:00	6,000	3,699	0	0	0	0.822	0	0.822	0	0.458	0.458	0.083
4-L-6	3	21-22:00	6,000	3,699	0	0	0	0.822	0	0.822	0	0.458	0.458	0.083
4-L-6	4	21-23:30	6,000	3,699	0	0	0	0.822	0	0.822	0	0.458	0.458	0.083
4-L-6	5	21-23:30	6,000	3,699	0	0	0	0.822	0	0.822	0	0.458	0.458	0.083
4-L-7	1	21-30:30	7,000	4,131	0	0	0	0.822	0	0.822	0	0.466	0.466	0.083
4-L-7	2	21-31:30	7,000	4,131	0	0	0	0.822	0	0.822	0	0.466	0.466	0.083
4-L-7	3	21-33:30	7,000	4,131	0	0	0	0.822	0	0.822	0	0.466	0.466	0.083
4-L-7	4	21-35:30	7,000	4,131	0	0	0	0.822	0	0.822	0	0.466	0.466	0.083
4-L-7	5	21-39:30	8,000	4,932	0	0	0	0.822	0	0.822	0	0.466	0.466	0.082
4-L-8	1	21-40:30	8,000	4,932	0	0	0	0.822	0	0.822	0	0.466	0.466	0.082
4-L-8	2	21-40:30	8,000	4,932	0	0	0	0.822	0	0.822	0	0.466	0.466	0.082
4-L-8	3	21-41:30	8,000	4,932	0	0	0	0.822	0	0.822	0	0.466	0.466	0.082
4-L-8	4	21-45:30	8,000	4,932	0	0	0	0.822	0	0.822	0	0.466	0.466	0.082
4-L-8	5	21-49:30	8,000	4,932	0	0	0	0.822	0	0.822	0	0.466	0.466	0.082
4-L-9	1	21:08:00	9,000	5,542	0	0	0	0.822	0	0.822	0	0.444	0.444	0.081
4-L-9	2	21:19:00	9,000	5,542	0	0	0	0.822	0	0.822	0	0.444	0.444	0.081
4-L-9	3	21:31:00	9,000	5,542	0	0	0	0.822	0	0.822	0	0.444	0.444	0.081
4-L-9	4	21:45:00	9,000	5,542	0	0	0	0.822	0	0.822	0	0.444	0.444	0.081
4-L-9	5	21:59:00	9,000	5,542	0	0	0	0.822	0	0.822	0	0.444	0.444	0.081
4-L-10	1	21:56:30	10,000	6,156	0	0	0	0.822	0	0.822	0	0.456	0.456	0.080
4-L-10	2	22:15:30	12,000	7,355	0	0	0	0.821	0	0.821	0	0.440	0.440	0.077
4-L-10	3	22:22:30	12,000	7,355	0	0	0	0.821	0	0.821	0	0.440	0.440	0.077
4-L-10	4	22:30:30	12,000	7,355	0	0	0	0.821	0	0.821	0	0.440	0.440	0.077
4-L-10	5	22:38:00	12,000	7,355	0	0	0	0.821	0	0.821	0	0.440	0.440	0.077
4-L-11	1	22:31:30	13,000	8,164	0	0	0	0.821	0	0.821	0	0.441	0.441	0.075
4-L-11	2	22:34:30	14,000	8,164	0	0	0	0.820	0	0.820	0	0.441	0.441	0.075
4-L-11	3	22:38:30	14,000	8,164	0	0	0	0.820	0	0.820	0	0.441	0.441	0.075
4-L-11	4	22:41:30	14,000	8,164	0	0	0	0.820	0	0.820	0	0.441	0.441	0.075
4-L-11	5	22:48:00	14,000	8,164	0	0	0	0.820	0	0.820	0	0.441	0.441	0.075
4-L-12	1	22:51:30	15,000	9,226	0	0	0	0.821	0	0.821	0	0.442	0.442	0.074
4-L-12	2	22:54:30	15,000	9,226	0	0	0	0.821	0	0.821	0	0.442	0.442	0.074
4-L-12	3	22:57:30	15,000	9,226	0	0	0	0.821	0	0.821	0	0.442	0.442	0.074
4-L-12	4	22:44:30	15,000	9,226	0	0	0	0.820	0	0.820	0	0.441	0.441	0.074
4-L-12	5	22:47:30	15,000	9,226	0	0	0	0.820	0	0.820	0	0.441	0.441	0.074
4-L-13	1	22:51:30	16,000	9,944	0	0	0	0.821	0	0.821	0	0.442	0.442	0.073
4-L-13	2	22:54:30	16,000	9,944	0	0	0	0.821	0	0.821	0	0.442	0.442	0.073
4-L-13	3	22:57:30	16,000	9,944	0	0	0	0.821	0	0.821	0	0.442	0.442	0.073
4-L-13	4	22:44:30	16,000	9,944	0	0	0	0.820	0	0.820	0	0.441	0.441	0.073
4-L-13	5	22:47:30	16,000	9,944	0	0	0	0.820	0	0.820	0	0.441	0.441	0.073
4-L-14	1	22:51:30	17,000	10,662	0	0	0	0.821	0	0.821	0	0.442	0.442	0.072
4-L-14	2	22:54:30	17,000	10,662	0	0	0	0.821	0	0.821	0	0.442	0.442	0.072
4-L-14	3	22:57:30	17,000	10,662	0	0	0	0.821	0	0.821	0	0.442	0.442	0.072
4-L-14	4	22:44:30	17,000	10,662	0	0	0	0.820	0	0.820	0	0.441	0.441	0.072
4-L-14	5	22:47:30	17,000	10,662	0	0	0	0.820	0	0.820	0	0.441	0.441	0.072
4-L-15	1	22:51:30	18,000	11,381	0	0	0	0.821	0	0.821	0	0.442	0.442	0.071
4-L-15	2	22:54:30	18,000	11,381	0	0	0	0.821	0	0.821	0	0.442	0.442	0.071
4-L-15	3	22:57:30	18,000	11,381	0	0	0	0.821	0	0.821	0	0.442	0.442	0.071
4-L-15	4	22:44:30	18,000	11,381	0	0	0	0.820	0	0.820	0	0.441	0.441	0.071
4-L-15	5	22:47:30	18,000	11,381	0	0	0	0.820	0	0.820	0	0.441	0.441	0.071
4-L-16	1	22:51:30	19,000	12,099	0	0	0	0.821	0	0.821	0	0.442	0.442	0.070
4-L-16	2	22:54:30	19,000	12,099	0	0	0	0.821	0	0.821	0	0.442	0.442	0.070
4-L-16	3	22:57:30	19,000	12,099	0	0	0	0.821	0	0.821	0	0.442	0.442	0.070
4-L-16	4	22:44:30	19,000	12,099	0	0</								

Load	Hold	Time	Lower O-cell	Middle O-cell	Upper O-cell	Pressure Load	Pressure (psi)	Load (kips)	Comp.	Movement	Upper	Lower	O-cell	Downward	Ceep Up	Ceep Up Hold
Upward and Downward Upper O-cell Plate Movement and Creep (calculated)																
Increments (minutes) (in/mm:ss) (psi) (kips) (in)																
11L-0	-	10:57:00	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-1	1	11:59:30	1,000	627	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-2	2	12:00:30	1,000	627	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-3	2	12:18:00	3,000	1,241	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-4	2	12:26:30	4,000	2,470	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-4	1	12:25:30	4,000	2,470	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-5	1	12:34:00	5,000	3,044	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-5	2	12:35:00	5,000	3,044	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-6	2	12:44:00	5,000	3,599	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-6	1	12:43:00	5,000	3,599	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-7	1	12:52:00	7,000	4,131	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-7	2	12:53:00	7,000	4,131	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-8	1	13:00:30	8,000	4,282	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-8	2	13:01:30	8,000	4,282	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-8	3	13:07:30	8,000	4,282	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-9	1	13:09:30	9,000	5,424	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-9	2	13:10:30	9,000	5,424	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-10	2	13:19:30	10,000	6,156	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-10	4	13:21:30	10,000	6,156	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-11	2	13:27:30	11,000	6,771	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-11	4	13:29:30	11,000	6,771	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-12	1	13:33:30	11,000	6,771	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-12	8	13:42:00	12,000	7,385	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-12	2	13:36:00	12,000	7,385	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-13	2	13:44:00	13,000	8,000	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-13	4	13:47:00	13,000	8,000	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-13	8	13:51:00	13,000	8,000	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-14	1	13:54:30	13,500	9,549	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-14	2	13:56:30	13,500	9,549	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-15	1	13:58:30	13,500	9,549	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-15	4	14:01:30	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-15	8	14:03:30	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-16	1	14:06:30	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-16	2	14:09:30	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-17	1	14:11:30	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-17	4	14:13:30	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-18	1	14:16:30	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-18	4	14:19:30	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-19	1	14:21:30	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-19	4	14:24:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-20	1	14:26:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-20	4	14:29:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-21	1	14:31:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-21	4	14:34:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-22	1	14:36:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-22	4	14:39:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-23	1	14:41:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-23	4	14:44:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-24	1	14:46:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-24	4	14:49:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-25	1	14:51:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-25	4	14:54:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-26	1	14:56:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-26	4	14:59:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-27	1	15:01:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-27	4	15:04:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-28	1	15:06:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-28	4	15:09:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-29	1	15:11:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-29	4	15:14:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-30	1	15:16:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-30	4	15:19:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-31	1	15:21:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-31	4	15:24:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-32	1	15:26:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-32	4	15:29:00	14,000	10,546	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
11L-33	1	15:31:00	14,000	10,546	0	0	0.000	0.000	0.000							

Test Pie - Amella Eather Bridge - Attachment, Ks											
Load	Hold	Time	Time	Lower Q-cell	Middle Q-cell	Upper Q-cell	Pile Head	Pile Base	Load	Pressure	Time
Increment	(minutes)	(hh:mm:ss)	(hh:mm:ss)	(psi)	(kips)	(psi)	(kips)	(psi)	(kips)	(psi)	(min)
2L-1	1	14:20:30	0	0	0	0	1,000	621	0.029	0.003	0.002
2L-1	2	14:21:30	0	0	0	0	1,000	621	0.029	0.006	0.004
2L-1	4	14:22:30	0	0	0	0	1,000	621	0.029	0.005	0.003
2L-1	8	14:27:30	0	0	0	0	1,000	621	0.029	0.006	0.004
2L-2	1	14:29:30	0	0	0	0	2,000	1,256	0.038	0.001	0.001
2L-2	2	14:30:30	0	0	0	0	2,000	1,256	0.039	0.001	0.001
2L-2	4	14:32:30	0	0	0	0	2,000	1,256	0.041	0.004	0.002
2L-2	8	14:36:30	0	0	0	0	2,000	1,256	0.045	0.006	0.002
2L-3	1	14:39:30	0	0	0	0	3,000	1,852	0.045	0.006	0.001
2L-3	2	14:40:30	0	0	0	0	3,000	1,852	0.046	0.006	0.001
2L-3	4	14:41:30	0	0	0	0	3,000	1,852	0.046	0.005	0.001
2L-3	8	14:45:30	0	0	0	0	3,000	1,852	0.047	0.007	0.001
2L-4	2	14:48:00	0	0	0	0	4,000	2,467	0.053	0.006	0.001
2L-4	4	14:50:00	0	0	0	0	4,000	2,467	0.054	0.006	0.001
2L-4	8	14:54:00	0	0	0	0	4,000	2,467	0.055	0.006	0.001
2L-5	1	14:55:30	0	0	0	0	5,000	3,083	0.061	0.006	0.001
2L-5	2	14:56:30	0	0	0	0	5,000	3,083	0.062	0.006	0.001
2L-5	4	14:58:30	0	0	0	0	5,000	3,083	0.063	0.006	0.001
2L-5	8	14:59:30	0	0	0	0	5,000	3,083	0.064	0.006	0.001
2L-6	1	15:04:30	0	0	0	0	5,000	3,699	0.065	0.006	0.001
2L-6	2	15:05:30	0	0	0	0	5,000	3,699	0.066	0.006	0.001
2L-6	4	15:07:30	0	0	0	0	5,000	3,699	0.067	0.006	0.001
2L-6	8	15:11:30	0	0	0	0	5,000	3,699	0.068	0.006	0.001
2L-7	1	15:13:30	0	0	0	0	5,000	3,699	0.069	0.006	0.001
2L-7	2	15:14:30	0	0	0	0	5,000	3,699	0.070	0.006	0.001
2L-7	4	15:16:30	0	0	0	0	5,000	3,699	0.071	0.006	0.001
2L-7	8	15:20:30	0	0	0	0	5,000	3,699	0.072	0.006	0.001
2L-8	1	15:22:00	0	0	0	0	6,000	4,330	0.098	0.008	0.002
2L-8	2	15:23:00	0	0	0	0	6,000	4,330	0.100	0.008	0.002
2L-8	4	15:25:00	0	0	0	0	6,000	4,330	0.100	0.008	0.002
2L-8	8	15:29:00	0	0	0	0	6,000	4,330	0.101	0.008	0.002
2L-9	1	15:30:30	0	0	0	0	6,000	5,454	0.113	0.008	0.002
2L-9	2	15:31:30	0	0	0	0	6,000	5,454	0.115	0.008	0.002
2L-9	4	15:33:30	0	0	0	0	6,000	5,454	0.115	0.008	0.002
2L-9	8	15:37:30	0	0	0	0	6,000	5,454	0.115	0.008	0.002
2L-10	1	15:37:30	0	0	0	0	9,000	5,454	0.116	0.008	0.003
2L-10	2	15:39:30	0	0	0	0	9,000	5,454	0.116	0.008	0.003
2L-10	4	15:41:30	0	0	0	0	9,000	5,454	0.116	0.008	0.003
2L-10	8	15:45:30	0	0	0	0	9,000	5,454	0.116	0.008	0.003
2L-11	1	15:48:00	0	0	0	0	11,000	6,777	0.124	0.008	0.004
2L-11	2	15:49:00	0	0	0	0	11,000	6,777	0.125	0.008	0.004
2L-11	4	15:51:00	0	0	0	0	11,000	6,777	0.125	0.008	0.004
2L-11	8	15:55:00	0	0	0	0	11,000	6,777	0.125	0.008	0.004
2L-12	1	15:57:00	0	0	0	0	12,000	7,322	0.126	0.008	0.004
2L-12	2	15:59:00	0	0	0	0	12,000	7,322	0.126	0.008	0.004
2L-12	4	16:00:00	0	0	0	0	12,000	7,322	0.126	0.008	0.004
2L-12	8	16:04:00	0	0	0	0	12,000	7,322	0.126	0.008	0.004
2L-13	1	16:06:30	0	0	0	0	13,000	7,926	0.127	0.008	0.004
2L-13	2	16:07:30	0	0	0	0	13,000	7,926	0.127	0.008	0.004
2L-13	4	16:09:30	0	0	0	0	13,000	7,926	0.127	0.008	0.004
2L-13	8	16:13:30	0	0	0	0	13,000	7,926	0.127	0.008	0.004
2L-14	1	16:41:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-14	2	16:43:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-14	4	16:45:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-14	8	16:49:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-15	1	16:52:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-15	2	16:54:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-15	4	16:57:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-15	8	16:59:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-16	1	17:01:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-16	2	17:03:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-16	4	17:05:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-16	8	17:09:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-17	1	17:11:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-17	2	17:13:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-17	4	17:15:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-17	8	17:19:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-18	1	17:21:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-18	2	17:23:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-18	4	17:25:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-18	8	17:29:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-19	1	17:31:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-19	2	17:33:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-19	4	17:35:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-19	8	17:39:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-20	1	17:42:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-20	2	17:44:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-20	4	17:46:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-20	8	17:49:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-21	1	17:51:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-21	2	17:53:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-21	4	17:55:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-21	8	17:59:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-22	1	18:01:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-22	2	18:03:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-22	4	18:05:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-22	8	18:09:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-23	1	18:11:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-23	2	18:13:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-23	4	18:15:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-23	8	18:19:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-24	1	18:21:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-24	2	18:23:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-24	4	18:25:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-24	8	18:29:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-25	1	18:31:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-25	2	18:33:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-25	4	18:35:30	0	0	0	0	10,500	6,649	0.119	0.019	0.005
2L-25	8	18:39:30	0	0	0	0	10,500	6,649	0.119	0.0	

Upward and Downward Upper-D-cell Plate Movement and Creep (calculated) Test Pile - Amelia Earhart Bridge - Atchison, KS

Load	Hold	Time	Test	Time	Lower D-cell	Middle D-cell	Load	Pressure	Load	Upper D-cell	Pile Head	Comps.	Movement	Expansion	D-cell	Downward	Upward	Creep Up	Creep Down	Creep Hold
Upward and Downward Upper D-cell Plate Movement and Creep (calculated)																				
4L-1	1	20:38:00	1,000	627	0	0	0	0.823	0.012	0.834	0.519	0.315	0.520	0.520	0.520	0.520	0.520	0.314	0.314	
4L-2	1	20:46:30	2,000	1,241	0	0	0	0	0	0.823	0.012	0.834	0.521	0.521	0.521	0.521	0.521	0.314	0.314	
4L-3	1	20:55:30	3,000	1,956	0	0	0	0	0	0.823	0.012	0.834	0.521	0.521	0.521	0.521	0.521	0.313	0.313	
4L-4	1	21:04:30	4,000	2,470	0	0	0	0	0	0.822	0.012	0.834	0.522	0.522	0.522	0.522	0.522	0.312	0.312	
4L-5	2	21:13:30	5,000	3,084	0	0	0	0	0	0.822	0.012	0.834	0.522	0.522	0.522	0.522	0.522	0.312	0.312	
4L-6	2	21:22:00	6,000	3,699	0	0	0	0	0.822	0.012	0.834	0.522	0.522	0.522	0.522	0.522	0.312	0.312		
4L-7	2	21:31:30	7,000	4,313	0	0	0	0	0.822	0.012	0.834	0.523	0.523	0.523	0.523	0.523	0.312	0.312		
4L-8	2	21:40:30	8,000	4,928	0	0	0	0	0.822	0.012	0.834	0.523	0.523	0.523	0.523	0.523	0.312	0.312		
4L-9	1	21:48:00	9,000	5,542	0	0	0	0	0.822	0.012	0.834	0.523	0.523	0.523	0.523	0.523	0.311	0.311		
4L-10	1	21:56:30	10,000	6,156	0	0	0	0	0.822	0.012	0.834	0.523	0.523	0.523	0.523	0.523	0.311	0.311		
4L-11	1	22:05:30	11,000	6,771	0	0	0	0	0.821	0.012	0.834	0.523	0.523	0.523	0.523	0.523	0.311	0.311		
4L-12	2	22:14:30	12,000	7,395	0	0	0	0	0.820	0.012	0.834	0.523	0.523	0.523	0.523	0.523	0.311	0.311		
4L-13	2	22:23:00	13,000	8,000	0	0	0	0	0.820	0.012	0.834	0.523	0.523	0.523	0.523	0.523	0.311	0.311		
4L-14	1	22:31:30	14,000	8,614	0	0	0	0	0.820	0.012	0.834	0.523	0.523	0.523	0.523	0.523	0.311	0.311		
4L-15	1	22:40:00	15,000	9,226	0	0	0	0	0.819	0.012	0.834	0.523	0.523	0.523	0.523	0.523	0.311	0.311		
4L-16	2	22:42:00	15,000	9,838	0	0	0	0	0.819	0.012	0.834	0.523	0.523	0.523	0.523	0.523	0.311	0.311		
4L-17	2	22:50:30	15,500	10,076	0	0	0	0	0.820	0.012	0.834	0.523	0.523	0.523	0.523	0.523	0.311	0.311		
4L-18	1	22:58:00	16,500	11,500	0	0	0	0	0.820	0.012	0.834	0.523	0.523	0.523	0.523	0.523	0.311	0.311		
4L-19	1	23:06:30	17,500	12,078	0	0	0	0	0.820	0.012	0.834	0.523	0.523	0.523	0.523	0.523	0.311	0.311		
4L-20	1	23:14:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-21	1	23:22:00	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-22	1	23:30:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-23	1	23:38:00	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-24	1	23:46:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-25	1	23:54:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-26	1	24:02:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-27	1	24:10:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-28	1	24:18:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-29	1	24:26:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-30	1	24:34:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-31	1	24:42:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-32	1	24:50:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-33	1	24:58:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-34	1	25:06:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-35	1	25:14:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-36	1	25:22:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-37	1	25:30:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-38	1	25:38:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-39	1	25:46:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-40	1	25:54:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-41	1	26:02:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-42	1	26:10:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-43	1	26:18:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-44	1	26:26:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-45	1	26:34:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-46	1	26:42:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-47	1	26:50:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-48	1	26:58:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-49	1	27:06:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-50	1	27:14:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-51	1	27:22:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-52	1	27:30:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-53	1	27:38:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-54	1	27:46:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-55	1	27:54:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-56	1	28:02:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-57	1	28:10:30	20,000	14,947	2,500	1,548	0	0	0.820	0.012	0.834	0.524	0.524	0.524	0.524	0.524	0.310	0.310		
4L-58	1	28:18:30	20,000	14,947	2,500	1,548	0													



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O-CELL AND INSTRUMENTATION
CALIBRATION SHEETS

APPENDIX B

SERVICE ENGINEER: John Doe DATE: 22-Feb-2024

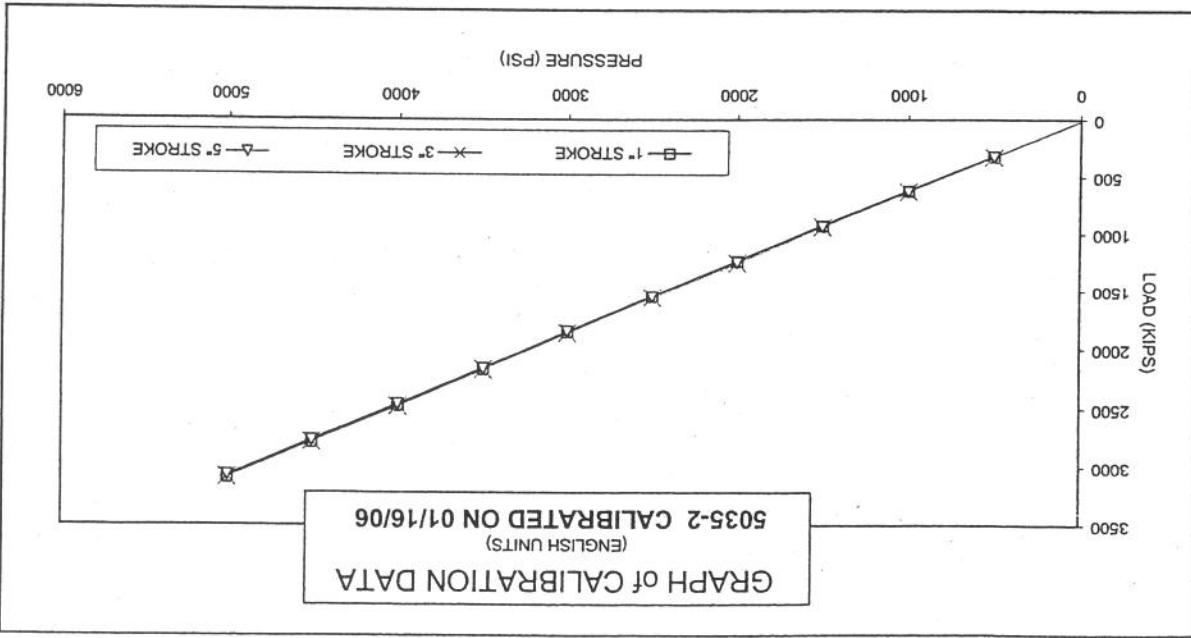
* AE & FC CUSTOMER: LOADTEST Inc
* CONTRACCTOR: MIDWEST FOUNDATION
* JOB LOCATION: JOPLIN, MO
* DATED: 02/03/06
* CUSTOMER P.O. NO.: LT-9136
* AE & FC JOB NO: 8173

All data presented are derived from 5" dia, certified hydraulic pressure gauges and electronic load transducer, manufactured and calibrated by the University of Illinois at Champaign, Illinois and certified by the National Bureau of Standards and certifications are traceable through the Laboratory Master Deadweight Gauges directly to the National Institute of Standards and Technology. No specific guidelines exist for calibration of load test jacks and equipment but procedures comply with similar guidelines for calibration of gauges, ANSI specifications B40.1.

CALIBRATION STANDARDS:

PRESSURE	LOAD	LOAD	LOAD	KIPS	KIPS	KIPS	LOAD	LOAD CONVERSION FORMULA
0	0	0	0	(KIPS)	(KIPS)	(KIPS)	LOAD = PRESSURE * 0.6144 + (12.47)	
500	318	322	322	322	322	322	Regressions Output:	
1000	619	625	628	936	936	936	Constant	12.4747 kips
1500	928	936	936	1249	1245	1245	X Coefficient	0.6144 kip / psi
2000	1236	1249	1249	1548	1552	1550	R Square	0.6144 kip / psi
2500	1548	1552	1552	1854	1862	1848	No. of Observations	1.0000
3000	1854	1862	1862	2163	2165	2162	Degrees of Freedom	28
3500	2163	2165	2162	2471	2479	2462	Std Err of Y Est	5.34
4000	2471	2479	2462	2784	2783	2770	Std Err of X Coeff	0.0007
4500	2784	2783	2770	3088	3087	3072		5000

STROKE: 1 INCH 3 INCH 5 INCH 34" O-CELL, SERIAL # 5035-2



SE

DATE: 7-28-2022

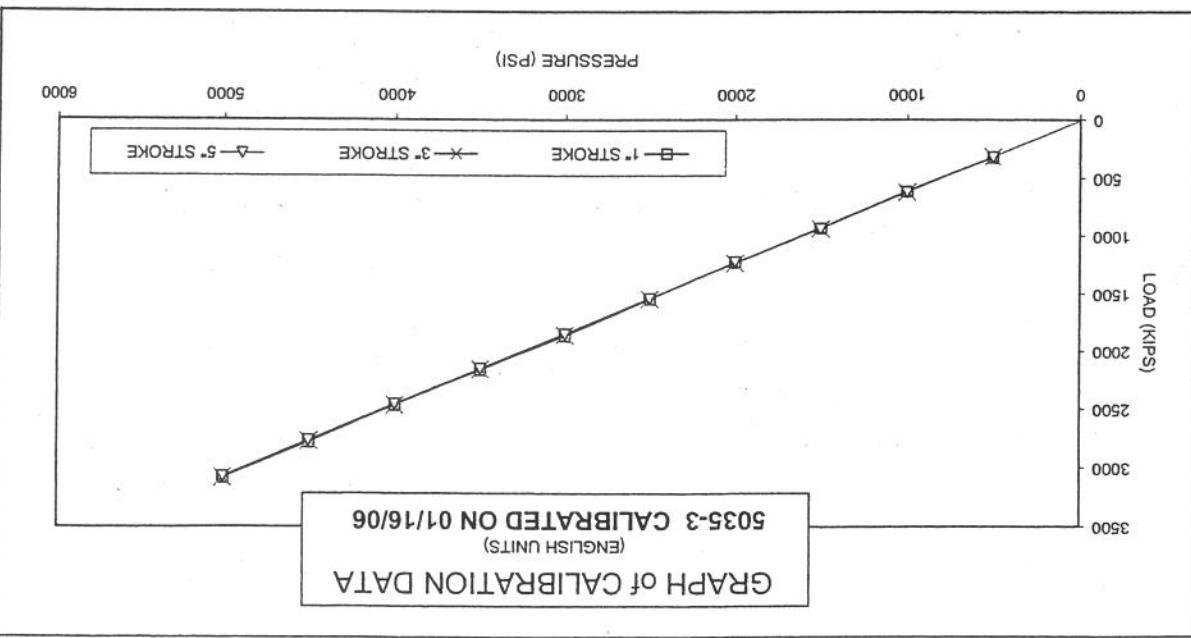
138

* CUSTOMER P.O. NO.: LT-9136
* DATED: 02/03/96
* AE & FC JOB NO: 873
* JOB LOCATION: JOPLIN, MO
* CONTRACTOR: 3G DRILLING
* AE & FC CUSTOMER: LOADIESI Inc

All data presented are derived from 6" dia, certified hydraulic pressure gauges and electronic load transducer, manufactured and calibrated by the University of Illinois at Champaign, Illinois. All calibrations and certifications are traceable through the Laboratory Master Deadweight Gauges directly to the National Institute of Standards and Technology. No specific guidelines exist for calibration of load test jacks and equipment but procedures comply with similar guidelines for calibration of gauges, ANSI Specifications B40.1.

CALIBRATION STANDARDS:

STROKE: 1 INCH 3 INCH 5 INCH 34-O-CELL, SERIAL # 5035-3



SER

SERVICE ENGINEER: *JAD* DATE: *22/06/06*

* AE & FC CUSTOMER: LOADTEST Inc	* CONTRACTOR: 3C DRILLING	* JOB LOCATION: JOPLIN, MO	* DATE: 02/03/06
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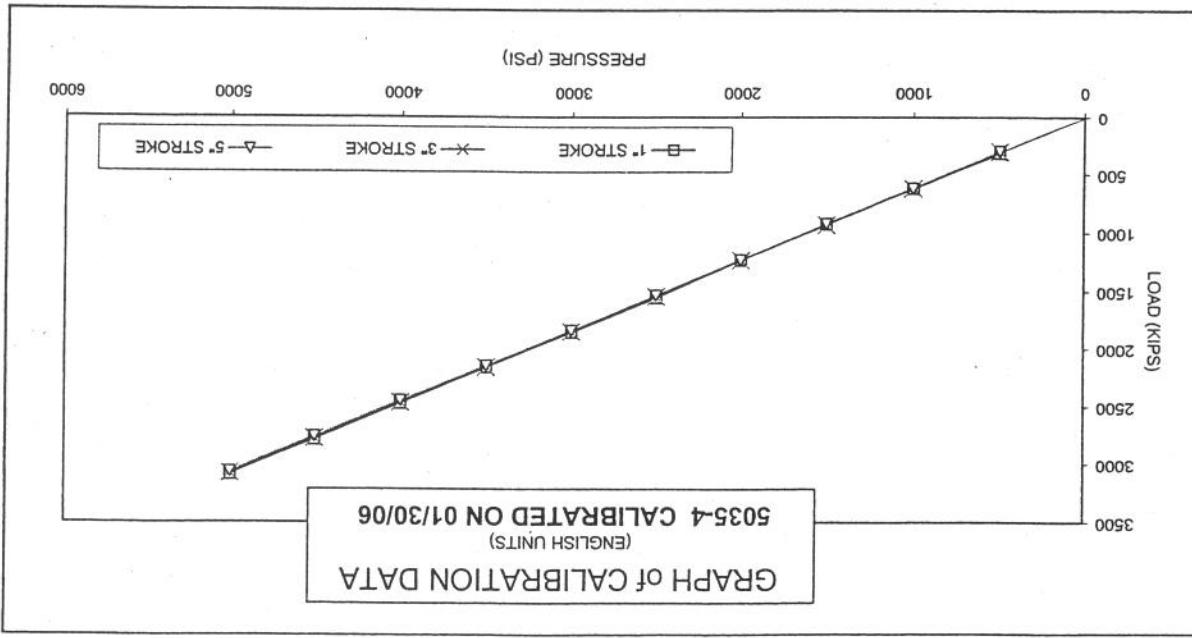
All data presented are derived from 6" dia. certified hydraulic pressure gauges and electronic load transducer, manufactured and calibrated by the University of Illinois at Champaign, Illinois. All calibrations and certifications are traceable through the Laboratory Master Deadweight Gauge directly to the National Institute of Standards and Technology. No specific guidelines exist for calibration of load test jacks and equipment but procedures comply with similar guidelines for calibration of gauges, ANSI specifications B40.1.

CALIBRATION STANDARDS:

PRESSURE PSI	LOAD KIPS	LOAD KIPS	LOAD KIPS	REGRESSION OUTPUT: (KIPS)	X COEFFICIENT	R SQUARED	NO. OF OBSERVATIONS	DEGREES OF FREEDOM	STD. ERR. OF Y EST.	STD. ERR. OF X COEFF.	DATA POINTS
0	0	0	0	4.9663 kips	0.6156 kip / psi	0.9999	30	28	8.38	0.0011	2167 2161 1861 1562 1239 928 318 500 1000 1500 2000 2500 3000 3500 4000 4500 5000
500	622	620	621	4.9663 kips	0.6156 kip / psi	0.9999	30	28	8.38	0.0011	2789 2777 2479 2470 2161 1843 1852 1540 1237 924 933 620 302 303 0 0
1000	1237	1234	1234	4.9663 kips	0.6156 kip / psi	0.9999	30	28	8.38	0.0011	2167 2161 1861 1562 1239 928 318 500 1000 1500 2000 2500 3000 3500 4000 4500 5000
1500	1843	1840	1843	4.9663 kips	0.6156 kip / psi	0.9999	30	28	8.38	0.0011	2789 2777 2479 2470 2161 1843 1852 1540 1237 924 933 620 302 303 0 0
2000	1234	1234	1234	4.9663 kips	0.6156 kip / psi	0.9999	30	28	8.38	0.0011	2167 2161 1861 1562 1239 928 318 500 1000 1500 2000 2500 3000 3500 4000 4500 5000
2500	1540	1540	1540	4.9663 kips	0.6156 kip / psi	0.9999	30	28	8.38	0.0011	2789 2777 2479 2470 2161 1843 1852 1540 1237 924 933 620 302 303 0 0
3000	1237	1234	1234	4.9663 kips	0.6156 kip / psi	0.9999	30	28	8.38	0.0011	2167 2161 1861 1562 1239 928 318 500 1000 1500 2000 2500 3000 3500 4000 4500 5000
3500	1852	1852	1852	4.9663 kips	0.6156 kip / psi	0.9999	30	28	8.38	0.0011	2789 2777 2479 2470 2161 1843 1852 1540 1237 924 933 620 302 303 0 0
4000	1562	1562	1562	4.9663 kips	0.6156 kip / psi	0.9999	30	28	8.38	0.0011	2789 2777 2479 2470 2161 1843 1852 1540 1237 924 933 620 302 303 0 0
4500	1239	1237	1234	4.9663 kips	0.6156 kip / psi	0.9999	30	28	8.38	0.0011	2167 2161 1861 1562 1239 928 318 500 1000 1500 2000 2500 3000 3500 4000 4500 5000
5000	928	924	924	4.9663 kips	0.6156 kip / psi	0.9999	30	28	8.38	0.0011	2789 2777 2479 2470 2161 1843 1852 1540 1237 924 933 620 302 303 0 0

$$\text{LOAD CONVERSION FORMULA} \quad \text{LOAD} = \text{PRESSURE} * 0.6156 + (4.97)$$

STROKE: 1 INCH 3 INCH 5 INCH 34" O-CELL, SERIAL # 5035-4



This report shall not be reproduced except in full without written permission of Geokon Inc.
 The above instrument has been calibrated by comparison with standards traceable to the NIST, in compliance with ANSI Z540-1.

The above instrument was found to be in tolerance in all operating ranges.
 GK-401 Pos. B: 4979 Temp(T_0): 23.8 °C Date: February 27, 2006

Function Test at Shipment:

Refer to manual for temperature correction information.

$$\text{Polynomial, } D = AR_i^2 + BR_i + C$$

$$\text{Linear, } D = G(R_i - R_0)$$

Polynomial Gauge Factors: A: 3.53789E-09 B: 0.001173 C: -3.0059

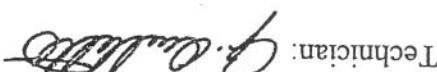
(inches) Linear Gauge Factor (G): 0.001209 (inches/digit)

Polynomial Gauge Factors: A: 8.98624E-08 B: 0.02980 C: -76.350

(mm) Linear Gauge Factor (G): 0.03070 (mm/digit) Regression Zero: 2552

Actual Displacement (mm)	Gage Reading (mm)	1st Cycle Displacement (mm)	2nd Cycle Displacement (mm)	Calculated Linear Error (%)FS)	Calculated Displacement (mm)	Reading (mm)	Average Gage Reading (mm)	1st Cycle Displacement (mm)	Calculated Linear Error (%)FS)	Regression Zero: 2552
0.0	2542	2540	2541	-0.22	-0.038	-0.038	-0.038	30.07	0.09	-0.03
30.0	3534	3532	3533	0.09	0.13	0.13	0.13	30.07	0.09	0.05
60.0	4516	4511	4514	0.15	0.23	0.23	0.15	60.00	0.00	0.00
90.0	5490	5489	5490	0.15	0.19	0.19	0.13	89.97	0.13	-0.02
120.0	6462	6461	6462	0.13	0.19	0.19	0.02	89.97	0.13	-0.02
150.0	7429	7429	7429	0.02	0.18	0.18	-0.02	120.0	0.02	-0.01

GK-401 Reading Position B

 Technician:

Cal. Std. Control Numbers: 529, 406, 344, 057 Calibration Instruction: CI-4400 Rev: C

Temperature: 23 °C

Serial Number: 05-16864

Range: 150 mm Calibration Date: January 24, 2006

Vibration Wire Displacement Transducer Calibration Report

Vibration Wire Displacement Transducer Calibration Report

Actual Displacement (mm)	Gage Reading	Reading 1st Cycle	Gage Reading 2nd Cycle	Error	Calculated Displacement (Limear)	Error (%)	Calculated Displacement (Polynomial)	(mm) Limear Gage Factor (G):	Polynomial Gage Factors:		
									A: 2.65284E-09	B: 0.001176	C: -3.0317
0.0	2562	2560	-0.257	-0.17	-0.039	-0.03	-0.039	0.03056	6.73822E-08	0.02988	-77.005
30.0	3555	3555	30.12	0.08	30.07	0.05	30.07	0.03056	6.73822E-08	0.02988	-77.005
60.0	4540	4537	60.17	0.11	60.00	0.00	60.00	0.001203	(inches/digit)		
90.0	5520	5519	90.15	0.10	89.97	0.02	89.97				
120.0	6498	6496	120.0	0.01	120.0	0.02	120.0				
150.0	7468	7476	1472	149.8	-0.13	0.02	150.0				

GK-401 Reading Position B

g. a. williams
Technician:

Cal. Std. Control Numbers:	529, 406, 344, 057	Calibration Instruction:	CI-4400 Rev: C
Serial Number:	05-16865	Temperature:	23 °C
Range:	150 mm	Calibration Date:	January 24, 2006

The above instrument was found to be in tolerance in all operating ranges.
The above named instrument has been calibrated by comparison with standards traceable to the NIST, in compliance with ANSI Z540-1.
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Vibration Wire Displacement Transducer Calibration Report

418 Spencer St., Lebanon, N.H. 03766 USA

GEOKON

Range: 150 mm Serial Number: 05-16866
Calibration Date: January 24, 2006
Calibration Temperature: 23 °C
Cal. Std. Control Numbers: 529, 406, 344, 057
Calibration Instruction: CI-440 Rev: C
Technician: G. Alvarado

Actual Displacement (mm)	Gage Reading	Average Gage	Calculated Gage	Calculated Displacement	Error Linear	Error Polynomial	Error (%FS)
1st Cycle	2nd Cycle	Reading	Calculated	Displacement	Linear Displacement	Polyynomial Displacement	(%FS)
0.0	2497	2491	-0.293	-0.20	-0.012	-0.01	
30.0	3490	3485	30.08	0.05	30.02	0.01	
60.0	4474	4474	60.23	0.15	60.01	0.00	
90.0	5457	5453	90.22	0.14	89.99	0.00	
120.0	6432	6429	120.0	0.02	120.0	-0.01	
150.0	7403	7401	149.7	-0.18	150.0	0.01	

GK-401 Reading Position B

Technician:

(m) Linear Gage Factor (G):	<u>0.03057</u>	(mm/digit)	Regression Zero:	<u>2504</u>
Polynomial Gage Factors:	A: <u>8.72701E-08</u>	B: <u>0.02970</u>	C: <u>-74.635</u>	
(inches) Linear Gage Factor (G):	<u>0.001203</u>	(inches/digit)		
Polynomial Gage Factors:	A: <u>3.43583E-09</u>	B: <u>0.001169</u>	C: <u>-2.9384</u>	
Calculated Displacement:	$L_{\text{linear}}, D = G(R_i - R_0)$			
Polymer, $D = AR_i^2 + BR_i + C$				
Refer to manual for temperature correction information.				
Function Test at Shipmate:				
GK-401 Pos. B : 4889	Temp(T_0):	<u>24.6</u> °C	Date:	<u>February 27, 2006</u>
The above instrument was found to be in tolerance in all operating ranges.				
The above instrument has been calibrated by comparison with standards traceable to the NIST, in compliance with ANSI Z540-1.				

Vibrating Wire Displacement Transducer Calibration Report

48 Spencer St., Lebanon, N.H. 03766 USA

GEOKON

Range:	150 mm	Calibration Date:	January 24, 2006
Serial Number:	05-16867	Temperature:	23 °C
Cal. Std. Control Numbers:	529, 406, 344, 057	Calibration Instruction:	CI-4400 Rev. C
Technician:	<i>G. Allard</i>		

Function Test at Shipment:	(inches) Linear Gauge Factor (G):	0.001210	(inches/digit)
Polynomial Gauge Factors:	A: 2.55164E-09	B: 0.001185	C: -3.0134
Calculated Displacement:	Limear, $D = G(R_i - R_0)$		
Polynomial, $D = AR_i^2 + BR_i + C$			Refer to manual for temperature correction information.

GK-401 Pos. B : 4835

Temp(T_0): 24.6 °C

Date: February 27, 2006

Function Test at Shipments:

Refer to manual for temperature correction information.

$$\text{Polynomial, } D = AR_i^2 + BR_i + C$$

$$\text{Linear, } D = G(R_i - R_0)$$

Calculated Displacement:

$$\text{Polynomial Gauge Factors: } A: 2.9458E-09 \quad B: 0.001182 \quad C: -2.9613$$

$$(\text{inches}) \text{ Linear Gauge Factor (G): } 0.001211 \text{ (inches/digit)}$$

$$\text{Polynomial Gauge Factors: } A: 7.48233E-08 \quad B: 0.03003 \quad C: -75.217$$

$$(\text{mm}) \text{ Linear Gauge Factor (G): } 0.03077 \text{ (mm/digit)} \quad \text{Regression Zero: } 2497$$

Actual Displacement (mm)	Gage Reading	1st Cycle	2nd Cycle	Average Gage Reading	Calculated Displacement (Linear)	Calculated Displacement (Linear)	Error (%)FS)	Calculated Displacement (Polynomial) (%)FS)
0.0	2490	2489	2490	-0.234	-0.16	0.004	0.00	0.00
30.0	3475	3471	3473	30.02	0.02	29.98	0.02	0.02
60.0	4456	4453	4455	60.22	0.15	60.03	0.02	0.02
90.0	5430	5428	5429	90.20	0.14	90.01	0.01	0.01
120.0	6399	6396	6398	120.0	0.00	120.0	0.03	0.03
150.0	7366	7365	7366	149.8	-0.15	150.0	0.01	0.01

GK-401 Reading Position B

Technician: 

Cal. Std. Control Numbers: 529, 406, 344, 057 Calibration Instruction: CI-4400 Rev: C

Serial Number: 05-16868 Temperature: 23 °C

Range: 150 mm Calibration Date: January 24, 2006

Vibrating Wire Displacement Transducer Calibration Report

Vibrating Wire Displacement Transducer Calibration Report

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The above instrument was found to be in tolerance in all operating ranges.

820

Range: 150 mm Calibration Date: January 15, 2004

Serial Number: 03-32548 Temperature: 22.7 °C

Cal. Std. Control Numbers: 529, 373, 344 Technician:

Actual Displacement (mm)	Gage Reading (mm)	Reading 1st Cycle	Reading 2nd Cycle	Average Gage Displacement	Calculated Error	Calculated Displacement (Linear)	Calculated Displacement (Polynomial)	(mm) Linear Gage Factor (G): 0.02936 (mm/digit)	Regression Zero: 2433	(inches) Linear Gage Factor (G): 0.0011560 (inches/digit)	Polynomial Gage Factors: A: 1.06738E-07 B: 0.02830 C: -69.118
0.0	2421	2418	-0.395	-0.26	-0.021	-0.04	0.08	30.04	-0.021	-0.02	0.01
30.0	3460	3457	3459	30.11	0.20	0.08	0.08	60.00	0.00	0.00	0.00
60.0	4488	4485	4487	60.30	0.20	0.11	0.11	90.29	0.19	0.00	0.00
90.0	5509	5507	5508	90.29	0.19	0.11	0.11	120.0	0.02	0.00	0.00
120.0	6522	6520	6521	120.0	0.02	0.02	0.02	149.6	-0.24	120.0	-0.02
150.0	7530	7529	7530	149.6	-0.24	149.6	0.02	150.0	0.01	150.0	0.01

GK-401 Reading Position B

Calculated Displacements:			Linear, D = G(R ₀ - R ₁)			Polynomial, D = AR ₁ ² + BR ₁ + C			Refer to manual for temperature correction information.		
GK-401 Pos. B : 5037			Temp(T ₀): 23.3 °C			Date: January 27, 2004			Function Test at Shipment:		

Calculated Displacements:			Linear, D = G(R ₀ - R ₁)			Polynomial, D = AR ₁ ² + BR ₁ + C		
A: 4.2023E-09	B: 0.00111142	C: -2.7212						

GK-401 Pos. B : 5078

Temp(T_0): 24.1 °C

Date: January 27, 2004

Function Test at Shipment:

Refer to manual for temperature correction information.

$$\text{Polynomial, } D = AR_1^2 + BR_1 + C$$

$$\text{Linear, } D = G(R_0 - R_1)$$

Calculated Displacements:

Polynomial Gauge Factors: A: 3.96811E-09 B: 0.0011241 C: -2.7473

(inches) Linear Gauge Factor (G): 0.0011635 (inches/digit)

Polynomial Gauge Factors: A: 1.0079E-07 B: 0.02855 C: -69.781

(mm) Linear Gauge Factor (G): 0.02955 (mm/digit) Regression Zero: 2435

Actual Displacement (mm)	Gage Reading (mm)	1st Cycle Reading (mm)	2nd Cycle Reading (mm)	Average Displacement (mm)	Calculated Displacement (mm)	Error (%)	Calculated Polynomial (Polynomial) (mm)	Regression Zero (mm)	Linear Gauge Factor (G) (mm/digit)	Polynomial Gauge Factor (G) (inches/digit)	Linear Gauge Factor (G) (inches/digit)	Polynomial Gauge Factor (G) (inches/digit)
0.0	2422	2422	-0.386	-0.26	-0.26	-0.26	-0.386	-0.26	0.02	0.01	0.06	-0.02
30.0	3453	3453	30.08	0.06	0.06	0.06	30.01	0.01	30.01	0.01	0.06	-0.02
60.0	4480	4476	60.37	0.25	0.25	0.25	60.10	0.10	60.10	0.01	0.06	-0.02
90.0	5491	5489	90.28	0.19	0.19	0.19	90.01	0.01	90.01	0.01	0.06	-0.02
120.0	6492	6492	119.9	-0.07	119.9	-0.07	119.8	0.01	119.8	0.01	0.11	-0.11
150.0	7503	7501	149.7	-0.17	149.7	-0.17	150.1	0.06	150.1	0.06	0.11	-0.11

GK-401 Reading Position B

800

Cal. Std. Control Numbers: 529, 373, 344 Technician:

Temperature: 22.7 °C

Serial Number: 03-32552

Range: 150 mm Calibration Date: January 15, 2004

Vibrating Wire Displacement Transducer Calibration Report

Vibration Wire Displacement Transducer Calibration Report

48 Spencer St., Lebanon, N.H. 03766 USA

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Range: 50 mm Calibration Date: February 05, 2004 Serial Number: 04-723 Temperature: 24.7 °C Cal. Std. Control Numbers: 373, 344, 529 Technician: 800 GK-401 Reading Position B

Polyynomial Gage Factors:	A: <u>3.79905E-08</u>	B: <u>0.01027</u>	C: <u>-25.608</u>
(inches) Linear Gage Factor (G):	<u>0.0004186</u>	(inches/digit)	
Polyynomial Gage Factors:	A: <u>1.49569E-09</u>	B: <u>0.0004042</u>	C: <u>-1.0082</u>
Calculated Displacement:	Linear, D = $G(R_i - R_j)$		
Polyynomial, D = $AR_i^2 + BR_i + C$			
Refer to manual for temperature correction information.			

GK-401 Pos. B : 4731 Function Test at Shipment:
Temp(T_0): 23.3 °C Date: February 19, 2004

GK-401 Pos. B: 4729

Temp(T₀): 24.5 °C

Date: February 19, 2004

Function Test at Shipments:

Refer to manual for temperature correction information.

$$\text{Polynomial, } D = AR_i^2 + BR_i + C$$

$$\text{Linear, } D = G(R_0 - R_i)$$

Calculated Displacement:

$$\text{Polynomial Gauge Factors: } A: 1.10807E-09 \quad B: 0.0003965 \quad C: -0.9511$$

$$(\text{inches}) \text{ Linear Gauge Factor (G): } 0.0004071 \quad (\text{inches/digit})$$

$$\text{Polynomial Gauge Factors: } A: 2.8145E-08 \quad B: 0.01007 \quad C: -24.158$$

$$(\text{mm}) \text{ Linear Gauge Factor (G): } 0.01034 \quad (\text{mm/digit}) \quad \text{Regression Zero: } 2391$$

(mm)	Actual Displacement	Gage Reading	Reading 1st Cycle	Average Displacement	Calculated Error	Linear Displacement	Calculated Error	Linear Displacement	Calculated Error	Polynomial (FS)
0.0	2384	2381	2383	-0.092	-0.18	-0.003	-0.003	-0.001	-0.001	
10.0	3363	3359	3361	10.03	0.06	10.01	0.06	0.01	0.01	
20.0	4333	4330	4332	20.06	0.13	19.99	0.13	0.01	0.01	
30.0	5300	5297	5299	30.06	0.13	30.00	0.13	0.01	0.01	
40.0	6263	6260	6262	40.02	0.05	40.01	0.05	0.01	0.01	
50.0	7219	7216	7218	49.91	-0.18	50.00	-0.18	0.00	0.00	

ZK-401 Reading Position B*QwO*

Cal. Std. Control Numbers: 373, 344, 529

Serial Number: 04-724

Technician:

Temperature: 24.7 °C

Range: 50 mm

Calibration Date: February 05, 2004

Vibrating Wire Displacement Transducer Calibration Report

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Vibration Wire Displacement Transducer Calibration Report

48 Spencer St. Lebanon, N.H. 03766 USA



Actual Displacement (mm)	Gage Reading	Reading 1st Cycle	Calculated Linear Displacement	Error (%)	Calculated Displacement (Linear) (FS)	Error (%)	Calibration Data		
							Calibrated Gage Factor	Calibrated Linear Displacement (mm)	Calibrated Gage Factor (FS)
0.0	2283	2282	-0.057	-0.23	-0.005	-0.02	1.20846E-08	0.00442	(mm) Linear Gage Factor (G):
5.0	3426	3424	3425	0.07	5.008	0.03	1.20846E-08	0.004319	(mm) Linear Gage Factor (G):
10.0	4557	4556	4557	0.18	10.00	0.02	1.20846E-08	0.004319	(mm) Linear Gage Factor (G):
15.0	5680	5679	5680	0.13	14.99	0.02	1.20846E-08	0.004319	(mm) Linear Gage Factor (G):
20.0	6799	6799	6799	0.02	20.00	0.03	1.20846E-08	0.004319	(mm) Linear Gage Factor (G):
25.0	7913	7912	7913	-0.19	25.00	0.01	1.20846E-08	0.004319	(mm) Linear Gage Factor (G):
							A: 4.75773E-10	B: 0.000170	C: -0.3908
							(inches) Linear Gage Factor (G):	0.0001749	(inches/digit)
							Polyynomial Gage Factors:		
							A: 4.75773E-10	B: 0.000170	C: -0.3908
							Linerar, D = G(R ₁ - R ₀)		Calculated Displacement:
							Polynomial, D = A R ₁ ² + B R ₁ + C		Refer to manual for temperature correction information.
							Temp(T ₀): 22.0 °C	Date: January 21, 2005	GK-401 Pos. B: 4875
							Function Test at Shipments:		

GK-401 Reading Position B

Technician: *John Williams*

Range: 25 mm
 Calibration Date: December 20, 2004
 Serial Number: 04-16084
 Temperature: 23 °C
 Cal. Std. Control Numbers: 529, 057, 373, 344
 Calibration Instruction: CI-4400 Rev: C

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 The above instrument was found to be in tolerance in all operating ranges.

Function Test at Shipment:

Refer to manual for temperature correction information.

$$\text{Polynomial, } D = AR_i^2 + BR_i + C$$

$$\text{Linear, } D = G(R_i - R_0)$$

$$\text{Polynomial Gauge Factors: } A: 4.559E-10 \quad B: 0.000170 \quad C: -0.4249$$

$$(\text{inches}) \text{ Linear Gauge Factor (G): } 0.0001746 \quad (\text{inches/digit})$$

$$\text{Polynomial Gauge Factors: } A: 1.15799E-08 \quad B: 0.004311 \quad C: -10.791$$

$$(\text{mm}) \text{ Linear Gauge Factor (G): } 0.004434 \quad (\text{mm/digit}) \quad \text{Regression Zero: } 2498$$

Actual Displacement (mm)	Gage Reading 1st Cycle	Gage Reading 2nd Cycle	Average Gage Displacement	Calculated Linear Displacement	Error (mm)	Calculated Linear Displacement (mm)	Error (%)	(Polynomial) (%FS)	(Polynomial) (%FS)
0.0	2486	2485	-0.055	-0.22	-0.006	5.009	0.08	5.019	3630
5.0	3631	3629	5.019	5.009	0.02	0.04	0.17	10.04	4762
10.0	4764	4762	10.04	10.00	0.04	0.01	0.13	14.99	5889
15.0	5889	5888	15.03	15.03	0.03	0.01	0.02	20.00	7010
20.0	7011	7009	20.00	20.00	0.02	0.03	0.02	25.00	8127
25.0	8127	8126	24.95	24.95	0.02	0.02	0.02	25.00	

GK-401 Reading Position B

Techician: *John Williams*

Cal. Std. Control Numbers: 529, 057, 373, 344 Calibration Instruction: CI-4400 Rev: C

Temperature: 23 °C

Calibration Date: December 20, 2004 Range: 25 mm

Serial Number: 04-16085

Vibrating Wire Displacement Transducer Calibration Report



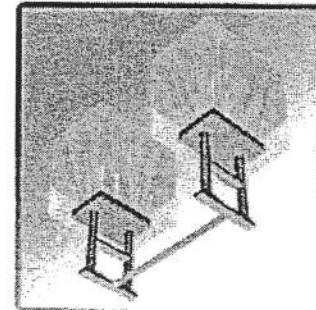
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TOP-LOADED LOAD-SETTLEMENT CURVE CONSTRUCTION OF THE EQUIVALENT

APPENDIX C



The FB-MultiPier analysis program is a nonlinear finite element analysis system for coupled bridge pier structures and foundation systems. FB-MultiPier performs the generation of the finite element model directly with the design parameters and lessens the need for the engineer to work directly with the graphical input system. This allows the structure and foundation system as input graphically given the geometric definition of the structure and foundation system. FB-MultiPier performs robust system of analysis for coupled bridge pier axial, lateral and torsional soil behavior to provide a finite element analysis with nonlinear static soil models supported on a pile cap and piles/shafts with nonlinear structural soil. This analysis program couples nonlinear soil structures with nonlinear soil. Each pier structure is composed of pier columns and cap supported on a pile cap and piles/shafts with nonlinear soil. The FB-MultiPier analysis is capable of analyzing multiple bridge pier structures interconnected by bridge spans.



FB-MultiPier Overview:

1. The load-movement curves generated by the O-cell test accurately represent the various soil layers' load-bearing capacity, and are similar to load-movement curves which would be generated by a traditional compression or tension load test. For upward O-cell loading, the net load (subtract buoyant weight of pile above the O-cell) is used to compute the t-z curve.
 2. The combined lower side shear and end-bearing load-movement curve developed at the bottom of the O-cell may be combined into an equivalent q-z tip curve where the bottom of the O-cell is assumed to be the tip of pile.
 3. When measured axial load-displacement behavior generated by an O-cell t-z and q-z curves for axial loading is assumed to be the tip of pile.
- any loading condition (in this case, loads at the pile head).
- the software can use the information to accurately model pile behavior for element program (in this case FB-MultiPier, developed by the Bridge Software Institute at the University of Florida, <http://bsi-web.ce.ufl.edu/>), element stiffness, diameter, etc.) are supplied to an appropriate finite-element program (in this case FB-MultiPier, developed by the Bridge Software Institute at the University of Florida, <http://bsi-web.ce.ufl.edu/>), supports the finite element analysis of the pile system.

Assumptions: We make the following assumptions, which we consider both reasonable and usually conservative:

Introduction: Some engineers find it useful to see the results of an O-cell load test in the form of a curve showing the load versus settlement of a top-loaded driven or bored pile (drilled shaft). We believe that an O-cell test can provide a good estimate of this curve when using the method described herein.

1. Brown, D., Morrison, C., and Reese, L. (1988), "Lateral Load Behavior of a Pile Group in Sand," ASCE Journal of Geotechnical Engineering, Vol. 114, No. 11, pp. 1261-1276.
2. Gazioğlu, S. M., and O'Neill, M. W. "Evaluation of P-Y Relationships in Cohesive Soils," Sand, "ASCE Journal of Geotechnical Engineering, Vol. 114, No. 11, pp. 1261-1276.
3. Georgiadis, M. "Development of P-Y Curves for Layered Soils," Proceedings, 536-545.
4. Kulhawy, F. and Mayne, P. "Manual for Estimating Soil Properties for Foundation Design," Electric Power Research Institute (EPRI) Report, EPRI EL-6800, Project 1493-6, Aug. 1990, pp. 5-17.
5. Matlock, H. "Correlations for Design of Laterally Loaded Piles in Soft Clay," Paper No. OTC 1204, Proceedings, Second Annual Offshore Technology Conference, Houston, Texas, Vol. 1, 1970, pp. 577-594.
6. McVay, M. C., O'Brien, M., Townsend, F. C., Bloomquist, D. G., and Caliendo, J. A. "Numerical Analysis of Vertically Loaded Piles in Soft Clay," Paper No. OTC 2080, Proceedings, Fifth Annual Offshore Technology Conference, Houston, Texas, 1974 (GEOSA Report No. D-8).
7. Murchison, J. M. and O'Neill, M. W. "Evaluation of P-Y Relationships in Cohesive Soils," from Analysis and Design of Pile Foundations, proceedings of a symposium sponsored by the ASCE Geotechnical Engineering Division, ASCE National Convention, San Francisco, CA, pp. 174-191.
8. Reese, L. C., Cox, W. R. and Koop, F. D. "Analysis of Laterally Loaded Piles in Sand," Paper No. OTC 2080, Proceedings, Fifth Annual Offshore Technology Conference, Houston, Texas, 1974 (GEOSA Report No. D-75-9).
9. Reese, L. C., Cox, W. R. and Koop, F. D. "Field Testing and Analysis of Laterally Loaded Piles in Soft Clay," Paper No. OTC 2312, Proceedings, Seventh Offshore Technology Conference, Houston, Texas, 1975.
10. Reese, L. C. and Welch, R. C. "Lateral Loading of Deep Foundations in Stiff Clay," Journal of the Geotechnical Engineering Division, American Society of Civil Engineers, Vol. 101, No. GT7, Proceedings Paper 11456, 1975, pp. 633-649 (GEOSA Report No. D-74-10).
11. Sayed, S. M. and Baker, R. M. "Efficiency Formula For Pile Groups," Journal of the Geotechnical Engineering, American Society of Civil Engineers, Vol. 118, No. 2, Paper No. 26553, 1992, pp. 278-299.

References:

The BSI is headquartered at the University of Florida in Gainesville, Florida. It was established in January 2000 to oversee the development of bridge related software products at UF. The goals of the BSI include enhancement, maintenance, and dissemination of bridge software to address the increasing demands on the transportation industry.

LOADTEST



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O-CELL METHOD FOR DETERMINING CREEP LIMIT LOADING

APPENDIX D

Procedure if only M_{Cl1} available: If we cannot determine a creep limit in the second component before it reaches its maximum movement M_x , we treat M_x as some unknown amount, that obtained when using $M_{Cl2} = M_x$.

Procedure if both M_{Cl1} and M_{Cl2} available: Creep cannot begin until the shaft movement exceeds the M_{Cl1} values. A conservative approach would assume that creep begins when movements exceed the lesser of the M_{Cl} values. However, creep can occur freely only when the shaft has moved the greater of the two M_{Cl} values. Although less conservative, we believe the latter to match behavior better and therefore set the creep limit as that load on the equivalent top-loaded movement curve that matches the greater M_{Cl} .

We usually indicate such a creep limit in the O-cell test for either one, or both, of the side shear and end bearing components, and herein designate the creep limit corresponding movements as M_{Cl1} and M_{Cl2} . We then combine the creep limit data to predict a creep limit load for the equivalent top loaded shaft.

Definition: Similarly with O-cell testing using the ASTM Quick Method, one can conveniently measure the additional movement occurring over the final time interval at each constant load step, typically 4 to 8 minutes. A break in the curve of load vs. movement (as at P_c with the PMT) indicates the creep limit.

To our knowledge, Housel (1959) first proposed the method described below for determining the creep limit. Stoll (1961), Bourges and Levillain (1988), and Fellinius (1996) provide additional references. This method also follows from long experience with the pressurometer test (PMT). Figure 8 and section 9.4 from ASTM D4719-94, reproduced below, show and describe the creep curve routinely obtained over a fixed time interval, 30 to 60 seconds, changes versus the movement determined from the PMT. The creep curve shows how the movement of strain determined from the PMT increases with time. Figure 8 and section 9.4 from ASTM D4719-94, reproduced below, show and describe the creep curve routine and progressively more severe creep can occur.

Figure 8. Plastic deformations may become significant beyond this break load pressure. One can often detect a distinct break in the curve at the pressure P_c in pressure. This method also follows from long experience with the pressurometer test (PMT). Figure 8 and section 9.4 from ASTM D4719-94, reproduced below, show and describe the creep curve routine and progressively more severe creep can occur.

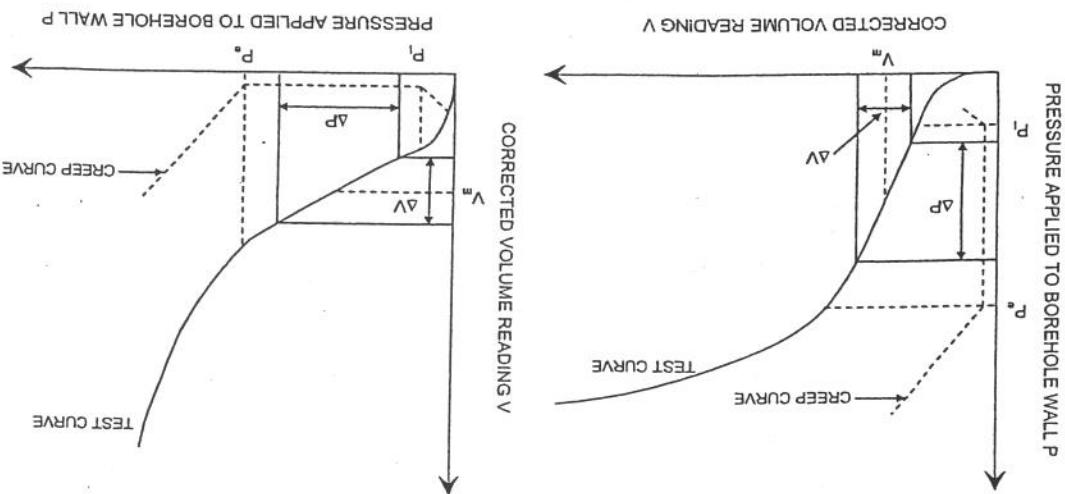
O-CELL METHOD FOR DETERMINING A CREEP LIMIT LOAD ON THE EQUIVALENT TOP-LOADED SHAFT (September, 2000)



- Fellenius, Bengt H. (1996), *Basics of Foundation Design*, Bitech Publishers Ltd., p.79.
- Bouguer, F. and Levillain, J-P (1988), "Force portante des deux plans métalliques chargés verticalement", Bull. No. 158, Nov.-Dec., des laboratoires des ponts et chaussées, p. 24.
- Stoll, M.U.W. (1961), *Discussion, Proc. 5th ICMSFE*, Paris, Vol. III, pp. 279-281.
- Housel, W.S. (1959), "Dynamic & Static Resistance of Cohesive Soils", ASTM STP 254, pp. 22-23.

References

FIG. 8 Pressuremeter Test Curves for Procedure A



9.4 For Procedure A, plot the volume increase readings (V_60) between the 30 s and 60 s reading on a separate graph. Generally, a part of the same graph is used, see Fig. 8. For Procedure B, plot the pressure decrease reading between the 30 s and 60 s reading on a separate graph. The test curve shows an almost straight line section within the range of either low volume increase readings (V_60) for fine soil or low pressure decrease for Procedure B. In this range, a constant soil deformation modulus can be measured. Past the so-called creep pressure, plastic deformations become prevalent.

"Standard Test Method for Pressuremeter Testing in Soils"

Excerpts from ASTM D4719

Limits: The accuracy in estimating creep limits depends, in part, on the scatter of the data in the creep limit plots. The more scatter, the more difficult to define a limit. The user should make his or her own interpretation if he or she obtains excessive scatter of the creep limit interpretations. Sometimes we intend to make important use of the creep limit interpretation for a creep limit and will indicate this in the report.

Procedure if no creep limit observed: Then, according to the above, the creep limit for the equivalent top-loaded shaft will exceed, again by some unknown amount, that load on the equivalent curve that matches the movement of the component with the maximum movement.

LOG OF BORING											
BORING NO.		SHEET		OF		2		3			
PROJECT US 59 Bridge Replacement over the Missouri River											
STATION 28+77											
OFFSET 145 ft.											
EXPLORATION CONTRACTOR Geotechnology											
ENGINEERS REP. S. Preston LOGGED BY S. Preston COMPLETED 12-3-2004											
STARTED 12-2-2004											
NAD 88 ELEV. DATAUM											
TEST RESULTS											
SOIL DESCRIPTION											
(Color, Consistency, Modifier, MATERIAL Moisture, Classification)											
Soil Classification System Unfilled (Visual) ELEM. (feet)											
POCKET PENETROMETER(P) Blows per Interval (inches) "N"											
0-6 6-12 12-18 Value											
TEST RESULTS											
DEPTH BELOW SURFACE(feet)											
NUMBER											
ROD(%)											
RECOVERY(in) CORE RECOVERY(%)											
36.0 27.0 75.2											
Gary, Very Loose, Fine To Medium SAND, Moist (SP)											
Some Gravel, Moist To Coarse SAND, Gary, Medium Dense, Fine To Coarse SAND, Moist (ML)											
Dark Gray, Loose SILT, Some Fine Sand, Moist (ML)											
43.0 74.2 46.0											
Gray, Medium Dense, GRAVEL, With Clay, Moist (GC)											
45.0 46.2											
Gray, Medium Dense, Fine To Coarse SAND, Little Gravel, Moist (SP)											
50.0 53.2											
Gray, Medium Dense, Fine To Coarse SAND, Moist (SP)											
55.0											
REMARKS:											

HNTB

HN
TB

PROJECT	US 59 Bridge Replacement over the Missouri River	STATION	28+77	SOIL DESCRIPTION				TEST RESULTS				TEST RESULTS POCKET PENETROMETER(P) TORVANEK (inches)	Blows per interval N=	POCKET PENETROMETER Value	RECOVERY(%) CORE RECOVERY (%)	NUMBER	DEPTH BELOW SURFACE(feet)	INTERVAL AND TYPE
				SAMPLE	PENETRATION	TEST RESULTS SOIL CLASSIFICATION SYSTEM Unfilled (Visual)	TEST RESULTS SOIL CLASSIFICATION SYSTEM Unfilled (Visual)											
EXPLORATION CONTRACTOR	Geotechnology	S. Preston	LOGGED BY	LOGGED BY	S. Preston	COMPLETED	12-3-2004	145 ft.	OFFSET	145 ft.	145 ft.	57.0	61.5	727.7	60	65	70	
PROJECT ENGINEERS REP.	Atchison, Kansas	28+77	STATION	28+77	STATION	COMPLETED	12-2-2004	145 ft.	OFFSET	145 ft.	145 ft.	57.0	61.5	727.7	60	65	70	
12-3-2004	732.2	727.7	722.2	722.2	722.2	722.2	722.2	722.2	722.2	722.2	722.2	722.2	722.2	722.2	722.2	722.2	722.2	
12-3-2004	717.0	717.0	717.0	717.0	717.0	717.0	717.0	717.0	717.0	717.0	717.0	717.0	717.0	717.0	717.0	717.0	717.0	
Boring Discardied @ 72.2	12/3/2004	Boring Backfilled With Bentontite Hole Plug														75	80	85

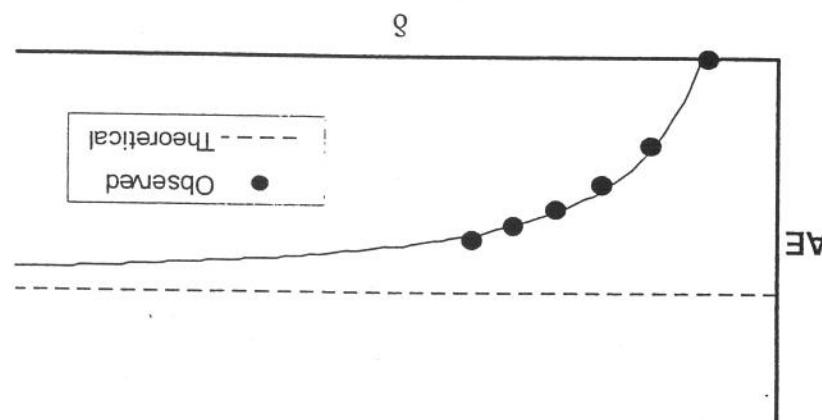
REMARKS:



PILE STIFFNESS ESTIMATION
CONFINED COMPRESSION

APPENDIX F

Atchison, KS (LT-9136)
Test Pile - Amelia Earhart Bridge

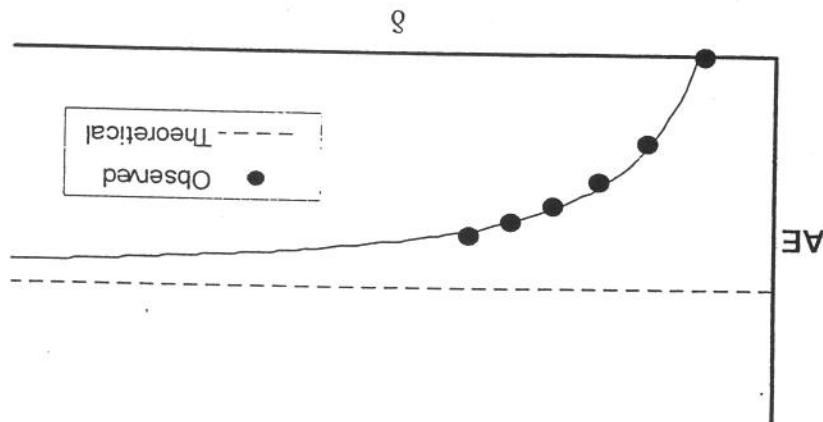
Figure 1 – Theoretical and Observed AE vs. δ 



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PILE STIFFNESS ESTIMATION
CONFINED COMPRESSION

APPENDIX E

Figure 1 – Theoretical and Observed AE vs. δ 

In theory, the stiffness AE could be easily extracted from a single compression measurement at any positive load P using Equation 1, since the ratio $P/8$ should always carry out at the end of a load test, there is likely to be non-zero residual compression constant. However, because the confined compression test is almost always carried out in the Embedded Compression Test (ECTs) which remains constant. In fact, the ratio $P/8$ should be used to measure the value of the expected theoretical behavior (dashed line).

$$\delta = \frac{AE}{PL} \quad [Equation 1]$$

Procedure: This analytical method requires that the test pile has two levels of O-cells™ embedded within it, which are both pressurized simultaneously. The stiffness AE of the pile section between the O-cells is then determined directly, using the familiar formula for axial deformation from elastic theory:

This confined compression stiffness analysis computes the stiffness AE directly as opposed to computing the modulus E and then multiplying by area A. In many cases A is also a variable which in general cannot be separated from the analytically determined AE (unless a very detailed caliper reading of the shaft is available).

Introduction: Estimated pile stiffness values based on empirical relationships such as the ACI formula result in a single value of stiffness (AE) . The calculations are based on many assumptions, including average concrete strength and pile diameter, which may be only nominally correct. In addition, confinement effects are not considered.

CONFINED COMPRESSION STIFFNESS METHOD DETERMINATION OF PILE STIFFNESS BY THE

[Equation 5]

$$AE_{\infty} = \frac{\alpha}{L}$$

It is assumed that a proper curve-fit through the observed data points in Figure 1 will approach the theoretical value asymptotically. Therefore, to calculate the desired stiffness AE , the function is evaluated at infinity. As δ becomes very large (β remains constant), the last term of Equation 4 approaches 1, and therefore:

[Equation 4]

$$AE = \frac{PL}{L(\delta - \beta)} = \frac{\delta}{\delta - \beta} = \left(\frac{\alpha}{L} \right) \left(1 - \frac{\beta}{\delta} \right)$$

The values α (slope) and β (offset) can be extracted from the observed data using linear regression. Combining Equations 1 and 3, AE is computed as:

[Equation 3]

$$\beta = \frac{\alpha}{\delta - \beta}$$

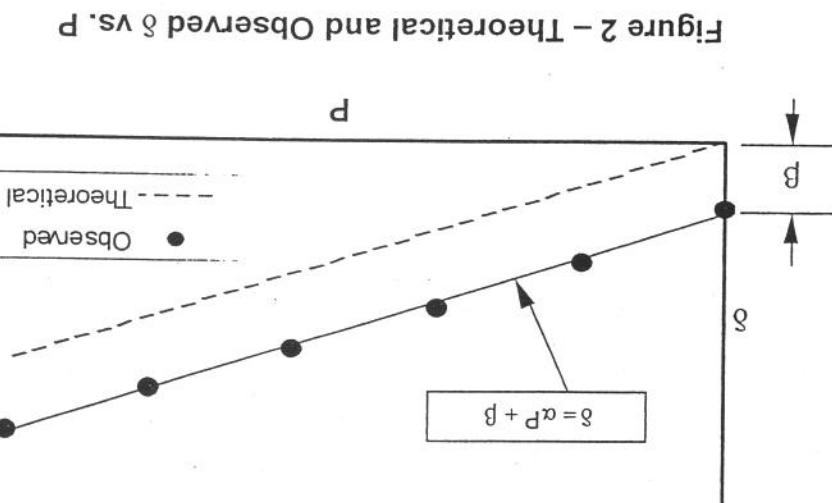
and therefore:

[Equation 2]

$$\delta = \alpha P + \beta$$

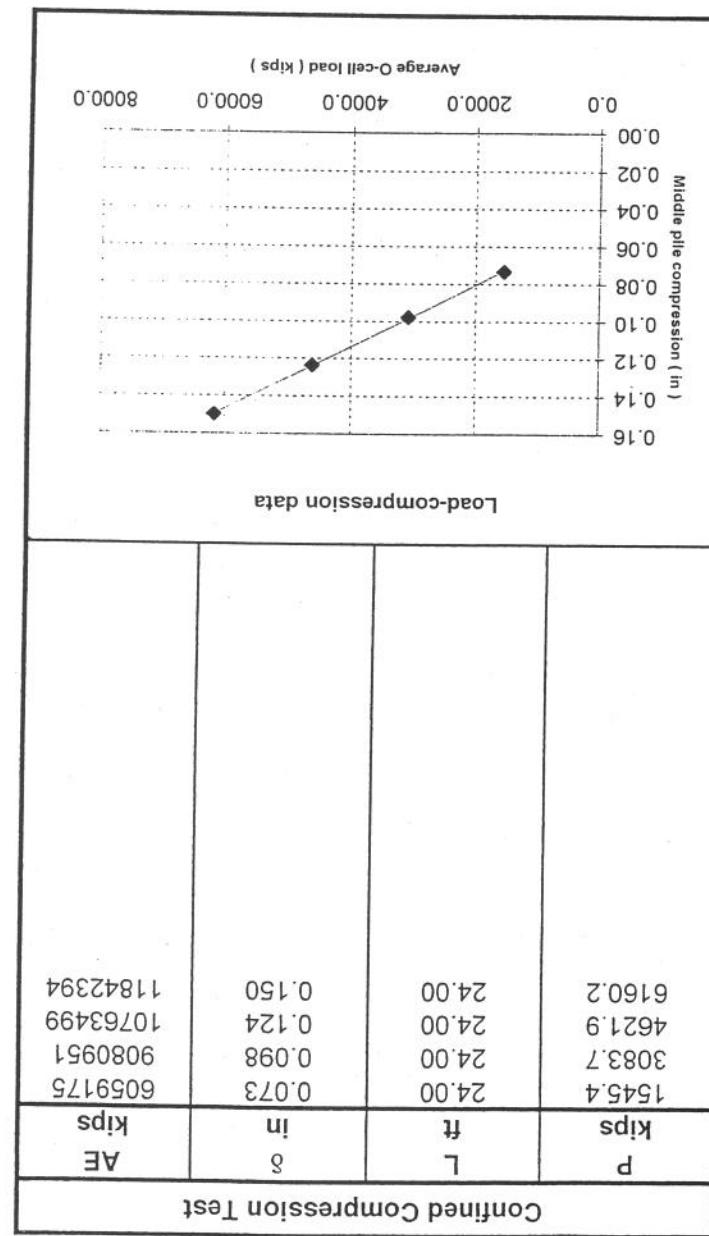
Assuming that the stress-strain relationship is linear (elastic range), δ can be defined as:

P



If the same data is plotted as δ vs. P (Figure 2, below), the effect of the residual compression β becomes obvious:

Appendix F



LOADTEST

Compression Pile Stiffness Analysis

Test Pile - Amelia Earhart Bridge - Atchison, KS

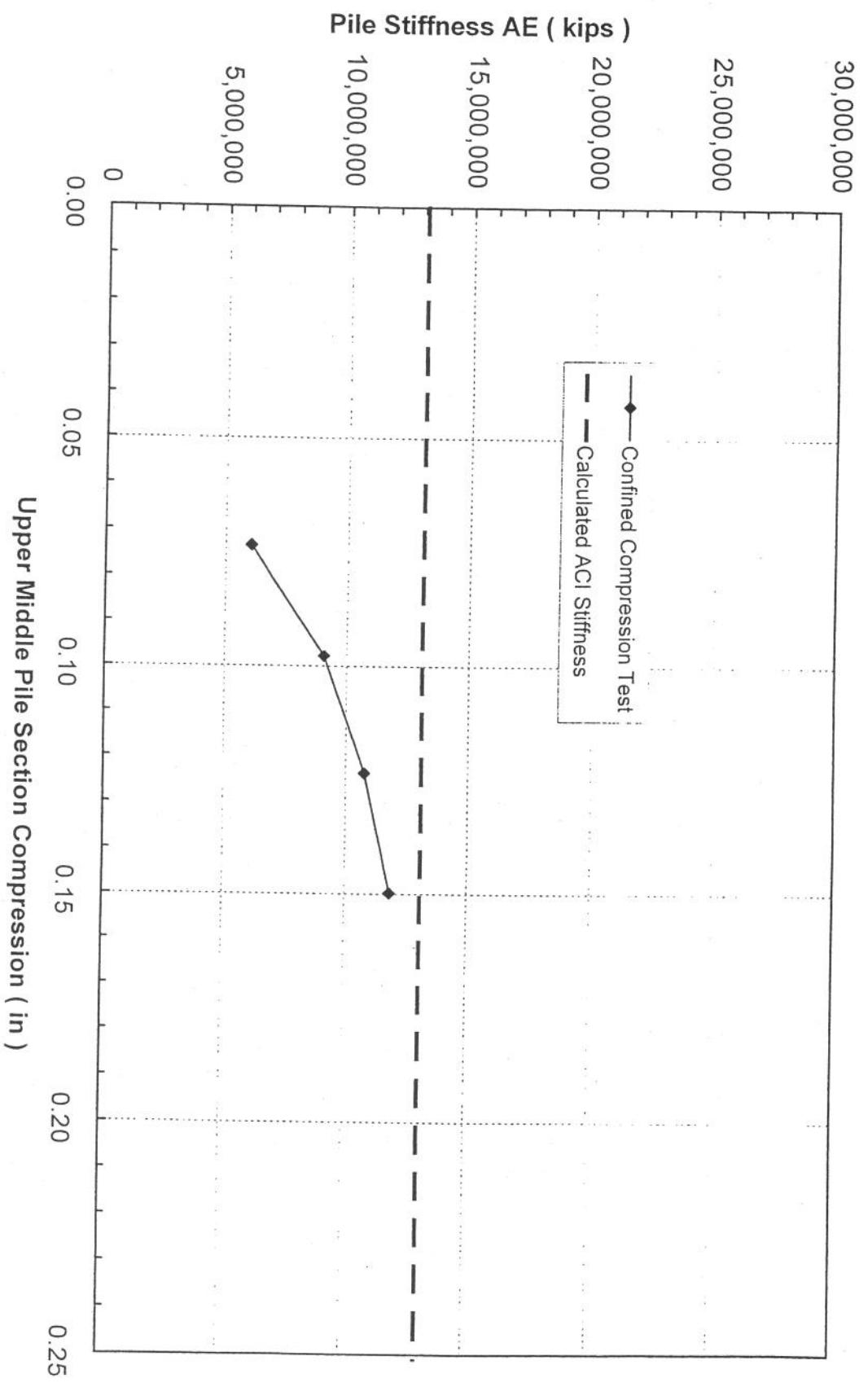


Figure F-1



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HYPERBOLIC CURVE FITTING
PILE SHEAR SECTION SH-3

APPENDIX G

Appendix G

Table G-1: Hyperbolic Curve Fit of Upward Top of Lower O-cell Movement

Net Unit	Shear (ksf)	Up***	y_u^*	(in)	y_u^* calc	(in/ksf)	Net Unit	Shear calc (ksf)
0.00	0.0000	-	-	-	-	-	-	-
1.14	0.0027	0.0023606	0.0015985	1.68	0.0016303	2.76	3.59	0.0072
2.37	0.0045	0.0019036	0.0019970	4.28	0.0016771	5.13	4.82	0.0087
3.69	0.0105	0.0017450	0.0017746	6.07	0.0017363	7.17	7.27	0.0127
6.04	0.0211	0.0018408	0.0018198	8.41	0.0018651	9.59	9.72	0.0179
10.94	0.0240	0.0019324	0.0019324	11.00	0.0019223	12.15	12.17	0.0240
13.39	0.0276	0.0019687	0.0019716	13.57	0.0020358	14.65	14.62	0.0306
15.84	0.0339	0.0021385	0.0021458	15.79	0.0020878	17.10	17.07	0.0379
17.07	0.0022192	0.0022192	0.0022159	17.10	-	-	-	-

* Values in bold are used in the curve fit.

**

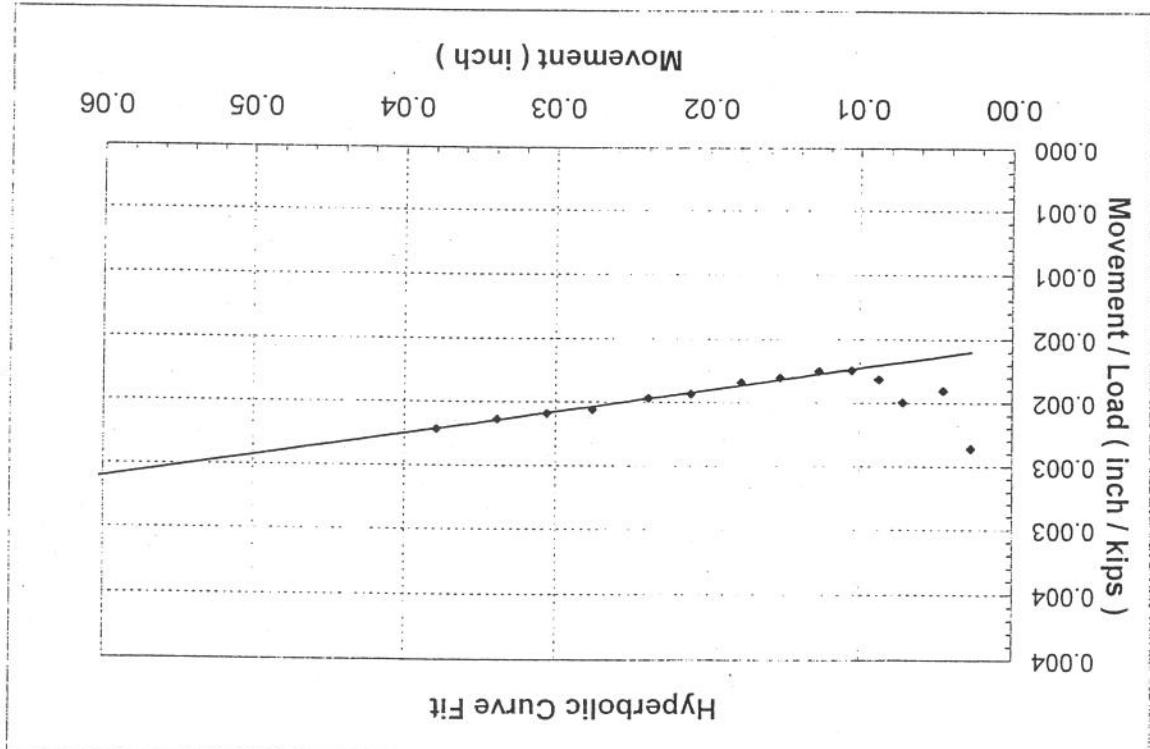
Corrected Movement

Appendix G

Regression Statistics						
	df	SS	MS	F	Significance F	
Regression	1	8.229E-09	8.229E-09	103.10787	0.0624937	
Residual	1	7.981E-11	7.981E-11			
Total	2	8.309E-09				
Observation	3					
R Square	0.9903946					
Adjusted R	0.9807892					
Multiple R	0.9951857					
Regression Statistics						
Observation						
Standard Error	8.934E-06					
Adjussted R	0.9807892					
Multiple R	0.9951857					
R Square	0.9903946					
Adjusted R	0.9807892					
Observation	3					
Total	2	8.309E-09				
Residual	1	7.981E-11	7.981E-11			
Regression	1	8.229E-09	8.229E-09	103.10787	0.0624937	
ANOVA						
df						
SS						
MS						
F						
Significance F						
Coefficients Standard Error				t Stat	P-value	Lower 95% Upper 95%
Intercept	0.0015513	5.917E-05	26.217741	0.0242703	0.0007995	0.0023031
X Variable	0.0175447	0.0017278	10.154205	0.0624937	-0.004409	0.0394987

SUMMARY OUTPUT

Figure G-1





Pile Shear Section SH-3 Hyperbolic Curve Fit
Test Pile - Amelia Earhart Bridge - Atchison, KS

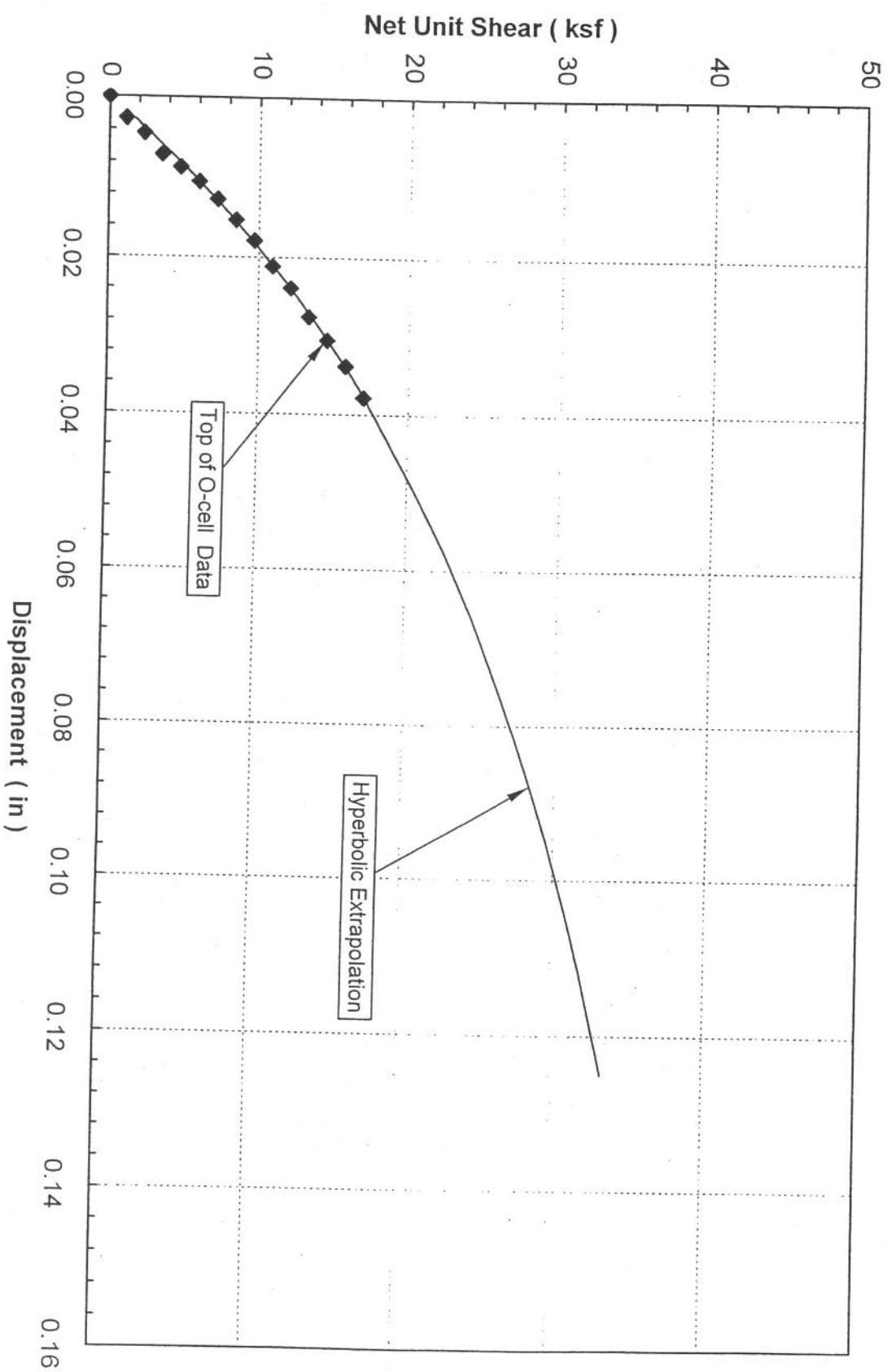


Figure G-2