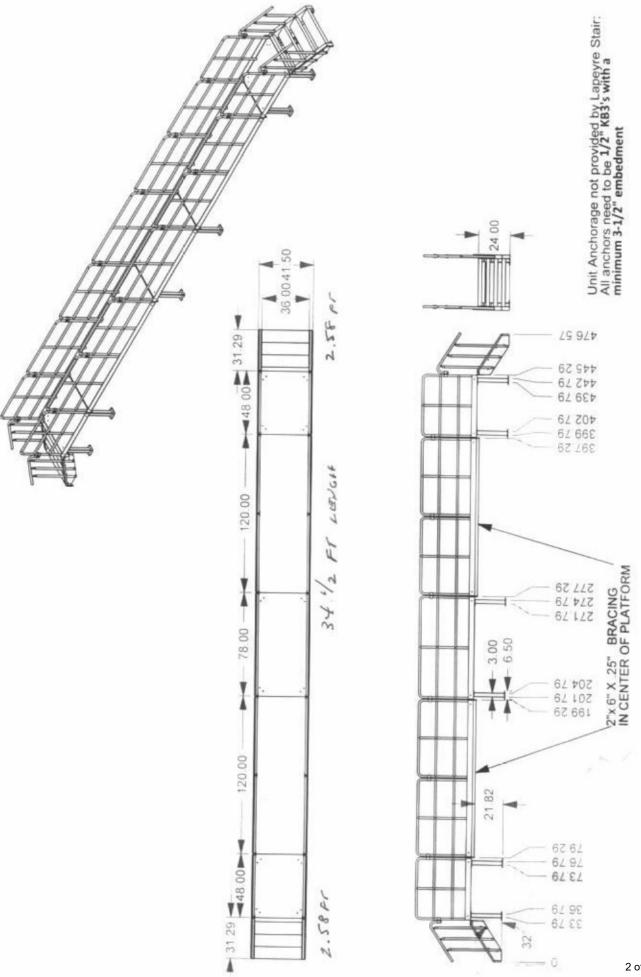
Lapeyre Stair, Inc. P.O. BOX 50699, NEW ORLEANS, LA 70150 (800) 535-7631, Fox: (504) 733-4393



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# **Engineering Change**

0000077583R0

EF-9189-A Open Riser Stair 24 Inch Model 01AA Stair, 31.29 Inch Floor Space Stair Angle: 32.47 Degree Tread Width: 36 Inches Stringers: Carbon Steel/Yellow Risers 4 Risers - Diamond tread - Carbon Steel/Yellow - Open Risers Rails: Both Rails, Left and Right Rails have CC/OSHA Terminations, Carbon Steel/Yellow, 32 inch height, 3 Balusters spaced at 6.80 Assembly Not Assembled Lead Time 15 Working Days This stair is designed based on building code(s) OSHA-N/A (Occupancy Type N/A) requirements as outlined in the code. Please check with your local building code official to verify complete compliance with your local code. Weights Class 50: 259 0 lbs. Class 70: 223 9 lbs. EF-9189-B Formed Platform/Landing For Stair In Line Item A 42" X 48" Carbon Steel Platform with Yellow Paint Platform Type Crossover Deck Type Lead Time 15 Working Days Unit Product Weight 285 3 lbs Total Shipping Weights: Class 85 670.5 lbs -EF-9149-C Formed Platform/Landing For Stair In Line Item A 42" X 120" Carbon Steel Platform with Yellow Paint Platform Type: Crossover Deck Type Lead Time 15 Working Days Unit Product Weight 713 2 lbs Total Shipping Weights Class 85: 1526.3 lbs Formed Platform/Landing For Stair In Line Item A 42" X 78" Carbon Steel Platform with Yellow Paint Platform Type: Crossover Deck Type Lead Time: 15 Working Days Unit Product Weight: 463.6 lbs Total Shipping Weights Class 85, 563.6 lbs --EF-9149-E Legs for Platform

24" 3X3 Square Tubing Carbon Steel Leg With Yellow Paint

Lead Time 15 Working Days Unit Product Weight 27.2 lbs

Total Shipping Weight: 426.0 lbs Class 85

# Lapeyre Stair Dimensional Print

Page 1 of 4

Date 08/22/2012

Quote Number:

EF-9189-A

Stair Model:

01AA

Building Code(s): OSHA-N/A (Occupancy Type: N/A)

#### **Building Code Comments:**

This stair is designed based on building code(s) OSHA-N/A (Occupancy Type: N/A) requirements as outlined in the code. Please check with your local building code official to verify complete compliance with your local code.

### GENERAL BUILDING CODE POLICY STATEMENT:

"As Lapeyre Stair expands its product line to provide you with more options to meet your access requirements, we are striving to incorporate into our engineering design the flexibility and interchangeability of components needed to selectively meet the requirements of the various laws, standards, and building codes in operation in all parts of the world.

We also strive to provide you with real value in your access device purchase. To achieve the goal of providing you with real value, we will endeavor to provide you with design alternatives that will meet your local requirements. Because of the infinite complexity of knowledge required to understand the diverse requirements of all local political and geographic regions we have decided to offer products that in general can be selectively configured to meet the requirements of several of the primary United States, and International laws, standards, and building codes as described in their current or most recently issued editions.

And although we can not guarantee that a particular stair configuration will be accepted by your local authorities; we stand at the ready to quickly provide you with detailed drawings of our access devices, prior to your purchase, that you may submit for compliance approval. Your local architect, local building code officials, and your local codes are your best source of compliance specifications/recommendations at your location.

All capacity ratings for Lapeyre Stair conventional tread stairs are stated in terms of the live load capacity of the stair system with a given safety factor. Local wind, snow, and seismic rating requirements are not included in this capacity rating. Local requirements for these loadings, where applicable, must be considered by your local architectural or engineering professional."

# Lapeyre Stair

**Dimensional Print** 

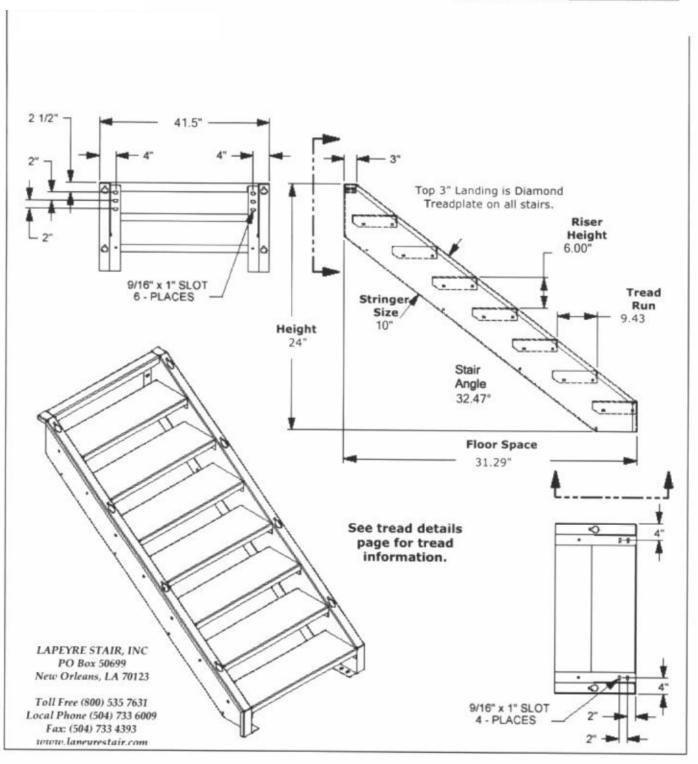
STAIR QUOTE ITEM#: EF-9189-A

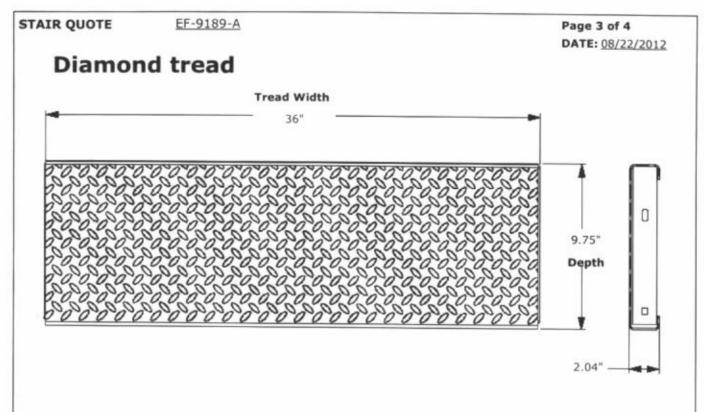
Page 2 of 4
Date: 08/22/2012

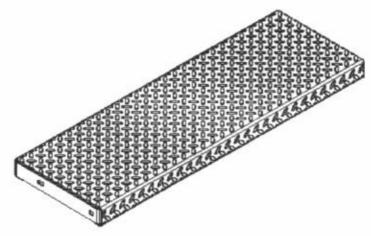
Quantity Required: 2 Estimated Unit Shipping Weight: 241

lbs.

Material & Finish: Carbon Steel/Yellow





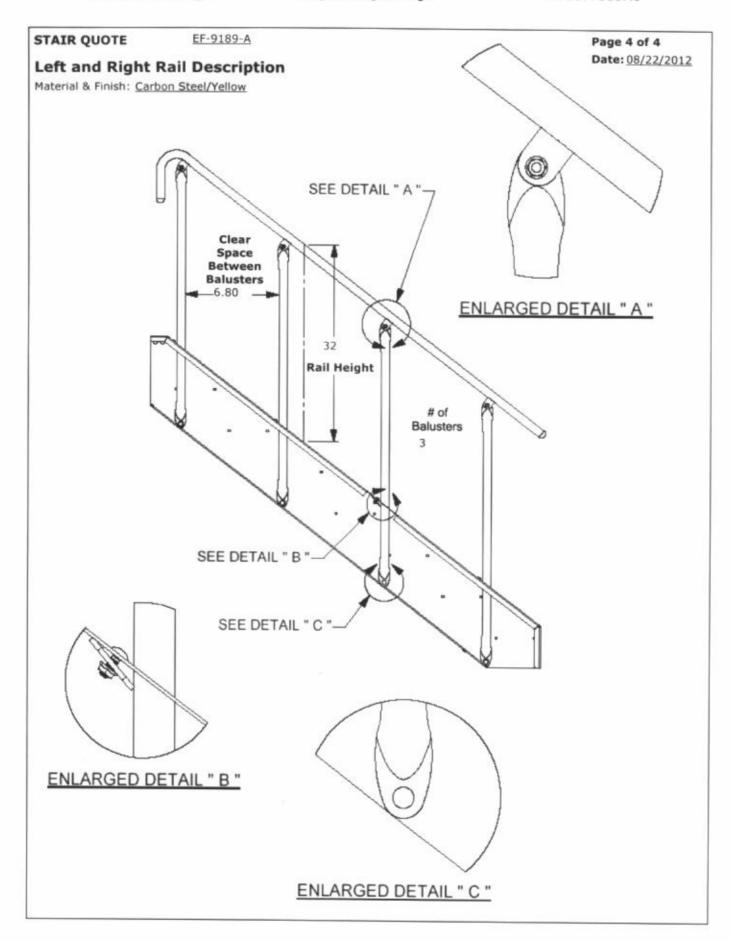


Quantity Required Per Stair: 3

Material & Finish: Carbon Steel/Yellow

LAPEYRE STAIR, INC PO Box 50699 New Orleans, LA 70123

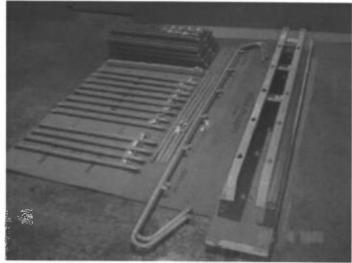
Toll Free (800) 535 7631 Local Phone (504) 733 6009 Fax: (504) 733 4393 www.lapeyrestair.com

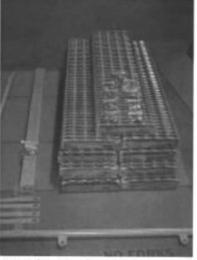


# INSTALLATION INSTRUCTIONS

#### Prior to Assembling and Installing:

- Field Check and verify that all components of the structure required for installation are in place per the approved shop drawings. Report any discrepancies to the Architect or contractor for corrective action by responsible parties prior to erection of stair.
- Insure that stairwell or mounting location is clear of obstructions.
- Unload and handle materials in a manner that will not strain, bend, deform or otherwise damage materials.
- 4) Inspect stringers for damage during shipment, if either stringer is pierced, creased, bent or permanently deformed do not erect the stair until replacement stringers are obtained. Slight bowing or crowning of stringers is acceptable if it is corrected by the assembly process.
- Inspect stair rails and balusters for damage during shipment. Stair rails that are damaged, bent, defaced, or deformed, that are still functional, (or can be made to be functional) and can be assembled, may be utilized on a temporary basis until replacement components are obtained. If any stair rail components are found to be damaged beyond the ability to function per the stair rail requirements, the stair may be erected but must be roped off or otherwise protected from use until such components are replaced.
- 6) Where possible, retain cardboard packing material or obtain other suitable material and use it to cover any rough concrete floor surface that might damage the stair surface during pre-assembly; or it may be used to protect any soft floor surface that might be damaged during the stair pre-assembly process.





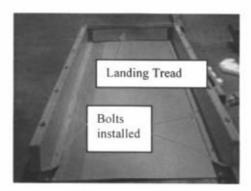
BOCA style stair with X bracing and Grip treads as shown.

#### Assembly Steps:

#### Note:

All tread, stair rail, X-brace, and/or back pan fasteners should be tightened to a minimum torque value of 25-35 foot-pounds, and they should never be tightened in excess of 35 foot-pounds.

- If your stair was ordered with back pans instead of X-bracing (covered in step 9) the back pans should be installed loosely prior to installing the treads.
  - a) Insert carriage bolts through the bottom flange of the stair stringer from the bottom side of the stringer.

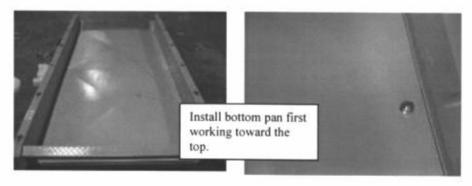




Note: Install the Landing tread with one bolt on each side to hold stringers vertical.

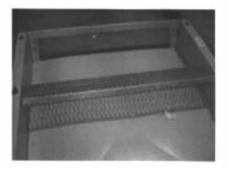
b) Lay the back pans in place starting from the bottom and overlapping each section.

Note: Short stairs will typically have only one pan, mid-size stairs will have two pans (both being the same), and large stairs will have a top and bottom pan (both being the same part) and one or more middle sections (also the same part).



c) Install the 3/8-16 flange nuts hand tight. Do not tighten until after the treads are installed. 2) Assemble all treads to stringers, utilizing the 3/8-16 X 1" carriage bolts and 3/8-16 serrated flange nuts shipped with the unit. Attach all treads with fasteners loosely prior to tightening any single tread to maintain assembly clearance until all treads are placed. Top and bottom treads may be left out at pre-assembly to allow clearance for installation of stair mounting fasteners during erection. After all treads are installed, torque all fasteners (including back pan fasteners if so equipped) to 25-35 foot-pounds.



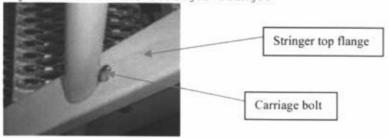


Note: All tread attachment carriage bolts should be installed from the outside such that the bolt heads are visible and appear on the outside/outboard sides of the stair stringer.



- 3) Assemble stair rail components, utilizing the fasteners shipped with the unit.
  - a) Place all 3/8-16 X 1" carriage bolts for the baluster clamps in the rectangular slots at each baluster hole through the stringer top flange prior to inserting balusters in the holes on the top of the stringer.

Note: Baluster clamp carriage bolts heads should appear on the top surface of the stringer flange.

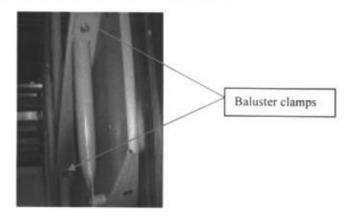


b) Insert balusters through the holes in the top flange of the stringer then attach the baluster at bottom anchor point with the 3/8-16 X 2" carriage bolt, baluster spacer and serrated flange nut, and torque to 25-35 foot-pounds.

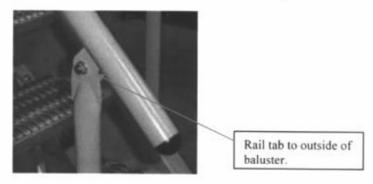




c) Install the baluster clamps to the underside of the top stringer flange; be sure to orient the clamp so that the radius on the clamp contacts the baluster. Install 3/8-16 serrated flange nut and torque to 25-35 foot-pounds.

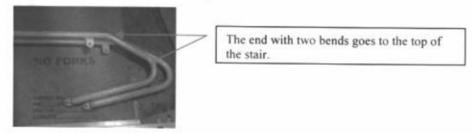


d) Install the stair rail to each baluster with the tab on the rail to the outside of the baluster using the 3/8-16 X %" carriage bolts and serrated flange nuts. Insert the carriage bolt from the inside of the stair (walking surface) with the serrated nut to the outside of the stair rail. Torque to 25-35 foot-pounds.

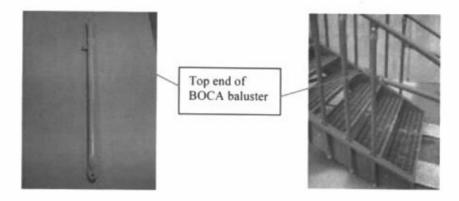


#### Note:

 If stair has BOCA style rails, be sure that the rail end with 2 bends is placed to the top of the stair.



• For stairs with BOCA style stair rails, the four end balusters are of a different design. Balusters with an extra tab welded to the side should be placed in the top two and bottom two baluster holes in the stringers with the tab parallel to the stringers and pointing away from the stair in the direction of approach to the stair.



- 4) Prepare stair mount location.
- Position stair with top landing tread at same elevation as upper finished floor surface.
- 6) Erect stairs square, plumb, straight, and true to line and level.
- 7) Secure stair assembly with the required hardware but with never less than four fasteners at the top and bottom-mounting surfaces. A minimum of two fasteners at each end of each respective stringer.
- Remove top or bottom tread if required to access bolts or nuts for tightening.
- Install and fasten X-bracing components. Insure the installation is secure and rigid.

Note: If purchased with back pan this step is not required.

a) Pre-assemble the X-braces by inserting a 3/8-16 X 1" carriage bolt through the center holes connecting two braces to make one X-brace and install the 3/8-16 serrated flange. Leave the nut hand tight until all braces are installed on the stair.



b) Install the X-bracing starting from the bottom of the stair. Where the X-braces meet they share mounting holes so you may require assistance installing these components. The bracing should be installed to the inside of the bottom stringer flange to avoid having protrusions on the bottom of the stair.



Install bottom X-Brace inside of stringer attaching nut to bolt hand tight using upper mounting holes.



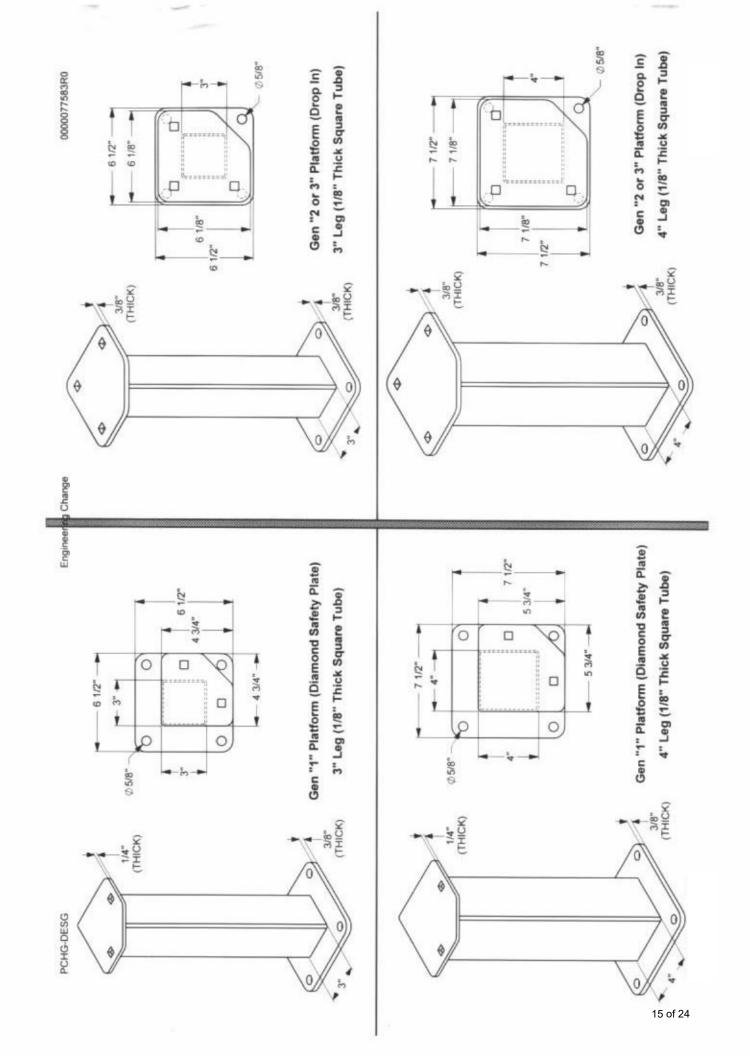
Install bottom fasteners hand tight.



Remove top fasteners and insert next section of X-Bracing. Hand-tighten all fasteners until all sections are installed then tighten to 25-35 foot-pounds.

7

- c) After X-bracing is installed tighten all fasteners to 25-35 foot-pounds.
- 10) Re-install top and bottom tread at their respective locations if removed for installation. A spreader jack may be used to gain some assembly clearance for reinstallation of top and bottom treads but great care must be taken not to scar or permanently deform the stringers.
- 11) Touch up with matching paint any chipped or abraded damage to factory finish or touch up any damage to galvanized surfaces using galvanized repair paint in accordance with ASTM A780.



Lapeyre Stair

**OHSA Stair** 

Load Test Report

Client: Project: Lapeyre Stair

OHSA Stair: Summary of Field Load Test

Date:

April 18, 2007

By:

R. Bagnetto, Lapeyre Stair Inc.

Introduction

Lapeyre Stair Inc. produces equipment access (OHSA) type stairs as part of their regular product line. A physical load test was performed in November 2003 at the Lapeyre Stair factory, prior to the release of the OHSA stair. The stair tested was approximately 12 ft high, 48 inches wide at an angle of 29°. The load test was performed using buckets filled with steel blasting shot placed on the stair treads as shown in the picture in Attachment 2. The weight of the buckets amounted to approximately 220 psf on the stair. The stair was first loaded to approximately 110 psf and deflection measurements taken, and then loaded to 174 psf and deflection measurements taken, before fully loading the stair to 220 psf. The load test results are indicated in Attachment 1. The stair was equipped with gauges on the bottom of each stringer to measure deflection. A picture of the gauges is also shown in Attachment 2. The deflection was measured perpendicular to the stringer. The deflection was measured shortly after placing the 220 psf load on the stair, and then again after 1 and 2 days. The load was then removed from the stair. Deflection measurements were taken on both stringers for the 110 psf loading, but only the right side ascending stringer for the 174 and 220 psf loadings.

#### Description of Stair:

The stairs have bar grating treads, Z12 stringers and 1-1/2" diameter balusters and top rail. Specifications for the stair are contained in LS-S04-OHSA-STAIR.

#### Summary of Results:

Attachment A shows the deflections measured by the load test. At 110 psf loading the test indicated stringer deflections of 0.729 and 0.762 inches, for the right side ascending and left side ascending stringers, respectively. At 174 psf the right side ascending stringer deflection measured 1.138 inches. At 220 psf loading the right side ascending stringer deflection measured 1.509, 1.519 and 1.533 for the immediate, 1 day and 2 day results, respectively. The stair satisfactorily passed the test. There were no signs of any type of failure such as yielding, buckling or flexural torsional buckling. Nor were there any signs of permanent deformation of any of the stair members.

#### Attachments:

Attachment A: Stair Load Test Results and Diagram

Attachment B: Stair Pictures

2 pages 5 pages Attachment A

Lapeyre Stair

**OHSA Stair** 

Load Test Report

&

Diagrams

Indicator Reading for Conventional Stair Test			
	Left Side Ascending	Right Side Ascending	Photo #
No Load - Dead Load Only (Grip tread treads)	0	0	
Total Load 8,360 (100#/sq foot) 1st Row	0.762	0.729	1,2,3
Total Laod 14,558 (173.99#/Sq Ft.) 2nd Row 20.82#/sq, ft. Of this load represents delta concrete	N/A	1.138	4,5
Total Load 18,480 (220,876#/Sq. Ft.) 3rd Row 20,82#/sq, ft. Of this load represents delta concrete	N/A	1.509	7,8
After 1 Day	N/A	1.519	-
After 2 Days After 4 Days	N/A	1.533	
Unloaded			

Actual Bucket Load Configuration

1st Row of Buckets 88 @ 95 pounds/bucket 2nd Row of Buckets 69 @ 70 and 19 @ 72 3rd Row of Buckets 69 @ 45 and 19 @ 43

The Buckets of equal number and weights are stacked on one another to give correct tread loading

Stair Area = 48° wide treads X 251° projected area = 12,048 sq" / 144 = 83.8687 sq"

Load @ 100# per sq' = 83.6867 X 100# per sq' = 8,366.6667 pounds

100% safety factor = 83.6867 X 100# per sq' = 8,366.6667 pounds

Total Load with safety factor = 16,733.333 pounds

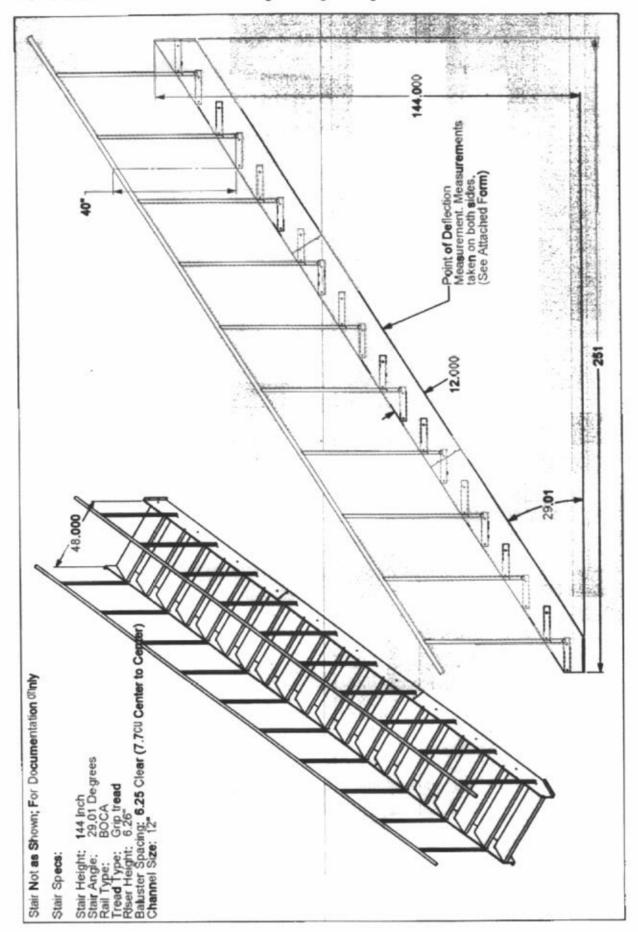
Added load for concrete:

22 treads X .493 cubic feet of concrete per tread = 10.846 cubic feet of concrete required

Concrete load =  $10.848 \times 1378$  per cubic foot = 1486 pounds total for concrete load Difference in tread weight between Pan and Grip tread = 32.5 (pan)- 20.85(grip) ×  $11.85 \times 22 = 256.3$  pounds

The total required load for the test stair will be 18,475.63. This load is 5,575.63 pounds greater than the pervious prototype stair load.

This total equates to 828.1515 pounds per tread.



Attachment B

Stair Pictures

