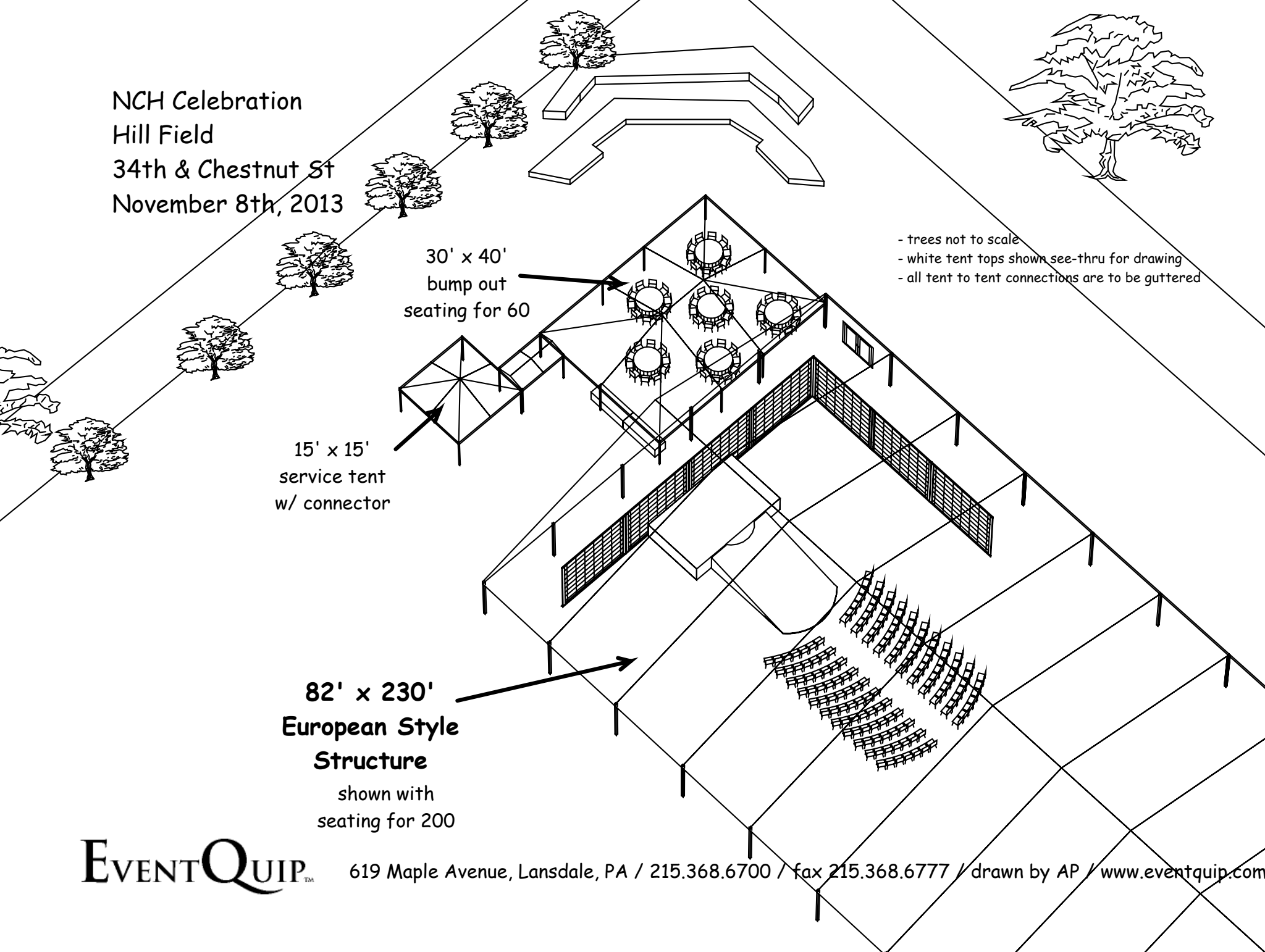
NCH Celebration
Hill Field
34th & Chestnut St
November 8th, 2013



- trees not to scale
- white tent tops shown see-thru for drawing
- all tent to tent connections are to be guttered

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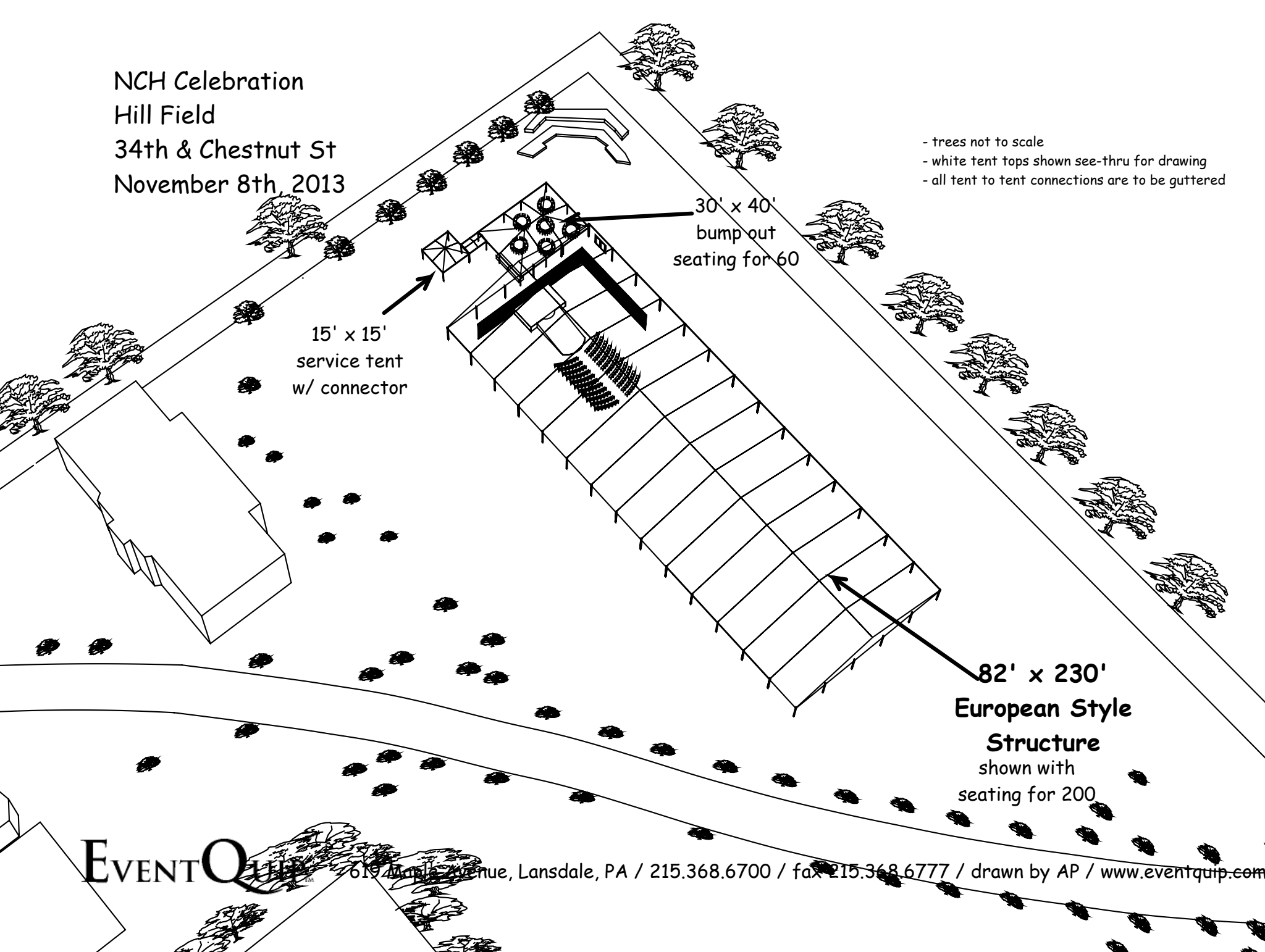

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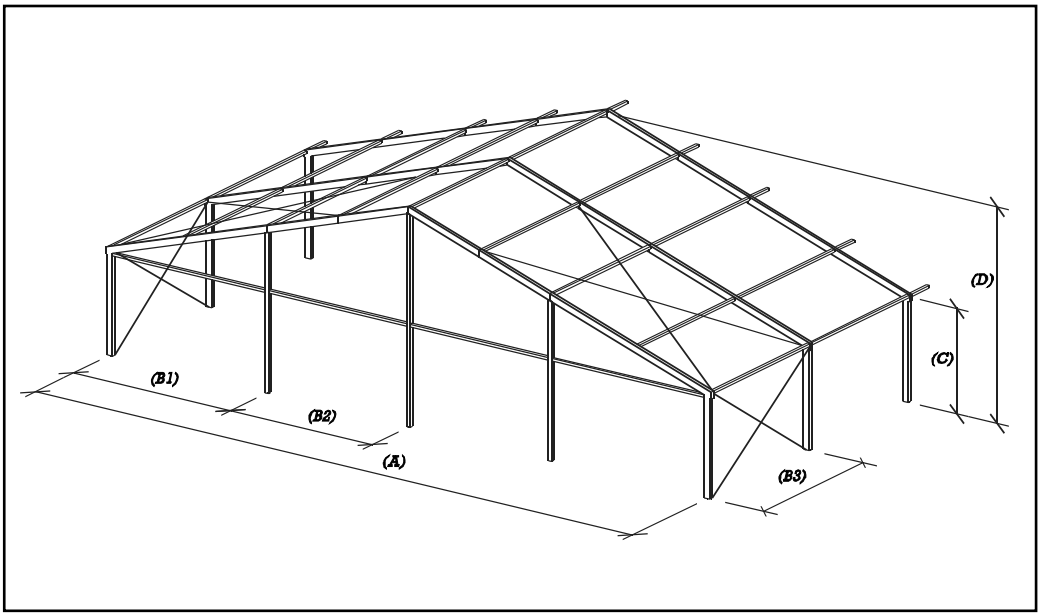
uniflex Party and Exhibition Hall
Type: 20,3/340 · Model: 248



Measures/Weights

Width	(A)	20,08	m
Eave height	(C)	3,24	m
Ridge height	(D)	6,50	m
Gable truss	(B1)	5,04	m
Gable truss	(B2)	5,00	m
Distance between trusses	(B3)	5,00	m
Membrane peak			m
Roof slope		18,00	degrees
Longest frame component		10,71	m
Truss profile		200 x 120	mm
Ridge and eave purlin		100 x 80	mm
Intermediate purlin		60 x 60	mm
Frame and PVC-fabrics		5,00	sqm

Technical description

Aluminium Profiles
out of solid, hard pressed
4-groove aluminium hollow profile
Steel parts
hot-dip galvanized according to DIN 50976,
extremely corrosion-resistant
Ground anchoring
Ground stakes

Load requirements/Technical data

Wind load	0,50	kN/sqm
Wind speed	100,00	m/h
Minimum assembly length	10,00	m
Maximum assembly length	unlimited in 5 m increments	

Losberger Intertent GmbH
Gottlieb-Daimler-Ring 14
D-74906 Bad Rappenau
Tel.: +49(0)7066/980-0 · Fax: 980232
eMail: Losberger@Losberger.com
www.Losberger.com

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FTL DESIGN ENGINEERING STUDIO

157 Chambers Street · New York, NY 10007
212 732 4691 FAX: 212 385 1025 www.ftlstudio.com

LOSBERGER FRAME TENT

STRUCTURAL EVALUATION

(20 M H3.84 – 25 M H3.24)

7-7-03

Prepared for:

Sean Rembsberg
Losberger U.S. LLC
95 Monocacy Boulevard, B20
Frederick, MD 21705
July 7, 2003

25 M LOSBERGER FRAME TENT STRUCTURAL EVALUATION

Prepared for:
Losberger U.S LLC
June 24, 2003

EVALUATION SUMMARY

This report documents the structural evaluation of the 25 meter Losberger Frame Tent (25 meter H3.24 down to 20 meter H3.84) in accordance with applicable U.S. building codes. This study is based on the technical background information provided by Losberger U.S. LLC. The structure is intended for temporary use only and any of the following load assumptions should not be exceeded at any time for the conclusions of this report to remain valid.

FTL Design Engineering Studio compiled this report based on the existing tent system with reference to the applicable building codes in the U.S. This report includes the loading used in the analysis and gives an indication as to what wind exposure the structure is suitable for. Certification of this document only shows that the Professional Engineer of that particular state is in agreement with the report's contents. It does not, however, imply that the structure is generally suitable for use within that state, or that every installation is covered by the report.

WIND SPEED RATING

Wind Speed	:	90 mph (3-second gust Wind Speed)
Exposure	:	Class C (Open Country or Terrain)
Return Period	:	2 Years (Accounts for the Temporary Nature of the Structure)

It has been found that for the above mentioned wind speed, exposure class and return period, the structure satisfies the requirements of the American Society of Civil Engineers: Minimum Design Loads for Buildings and Other Structures (ANSI/ASCE 7-98). In addition, for the above wind speed, exposure class and return period, the structure is also in accordance with the following building code standards in the U.S.:

International Building Code (IBC)
Uniform Building Code (UBC)
Building Officials and Code Administrators (BOCA)
Southern Building Code Congress Int'l: Standard Building Code (SBCCI-SBC)
South Florida Building Code (SFBC)

As for the other wind speeds and exposure classes, refer to Table 0-1 for rating and allowable installation parameters.

BASE REACTIONS

The maximum forces at the foundations / supports due to the rated load and exposure class are as follows:

Maximum Vertical Down Load	:	1.21 K (Class C, 90 mph)
Maximum Vertical Uplift	:	3.08 K (Class C, 90 mph)
Maximum Shear	:	2.62 K (Class C, 90 mph)

The values given are per base plate.

ALLOWABLE HANGING LOADS ON FRAMES

The maximum allowable live load hung from the rafters is 1000 lbs distributed as follows:

Left Rafter Centerspan	:	250 lbs
Ridge	:	500 lbs
Right Rafter Centerspan	:	250 lbs

ALLOWABLE UNIFORM LIVE LOAD

The 25 meter version can sustain an additional 2.5 psf plan projected download in addition to its dead weight.

ADDITIONAL EXPOSURE AND WIND SPEED COMBINATIONS

The 25 meter version is suitable for up to a Class C, 90 mph (3-secong gust) wind exposure. For other exposures and wind speed combinations refer to the following chart (where the stricken values are the unsuitable pressures for the tent):

25 METER LOSBERGER FRAME TENT (24.00 FT MAXIMUM HEIGHT)
ANSI/ASCE 7-98 WIND PRESSURES, q (psf)

Exposure	90 mph	95 mph	100 mph
Class A	3.09	3.44	3.81
Class B	5.41	6.02	6.67
Class C	8.02	~~8.94~~	~~9.90~~
Class D	~~9.60~~	~~10.70~~	~~19.48~~

Table 0-1: 25 meter Losberger Frame Tent Allowable Exposure Chart

Exposure classes according to ANSI/ASCE 7-98, p. 28 are defined as follows:

Exposure A

Large city centers with at least 50% of the buildings having a height in excess of 70 feet. Use of this exposure category shall be limited to those areas for which terrain representative of Exposure A prevails in the upwind direction for a distance of at least one-half mile or 10 times the height of the building or structure, whichever is greater. Possible channeling effects or increased velocity pressures due to the building or structure being located in the wake of adjacent buildings shall be taken into account.

Exposure B

Urban or sub-urban areas, wooded areas or other terrain with numerous closely spaced obstructions having the size of single-family dwellings or larger. Use of this exposure category shall be limited to those areas for which terrain representative of Exposure B prevails in the upwind direction for a distance of at least 1500 feet or 10 times the height of the building or structure, whichever is greater.

Exposure C

Open terrain with scattered obstructions having heights generally less than 30 feet. This category includes flat, open country and grasslands.

Exposure D

Flat, unobstructed areas exposed to wind flowing over large bodies of water. This exposure shall apply only to those buildings and other structures exposed to the wind coming from over the water. Exposure D extends inland from the shoreline a distance of 1500 feet or 10 times the height of the building or structure, whichever is greater.


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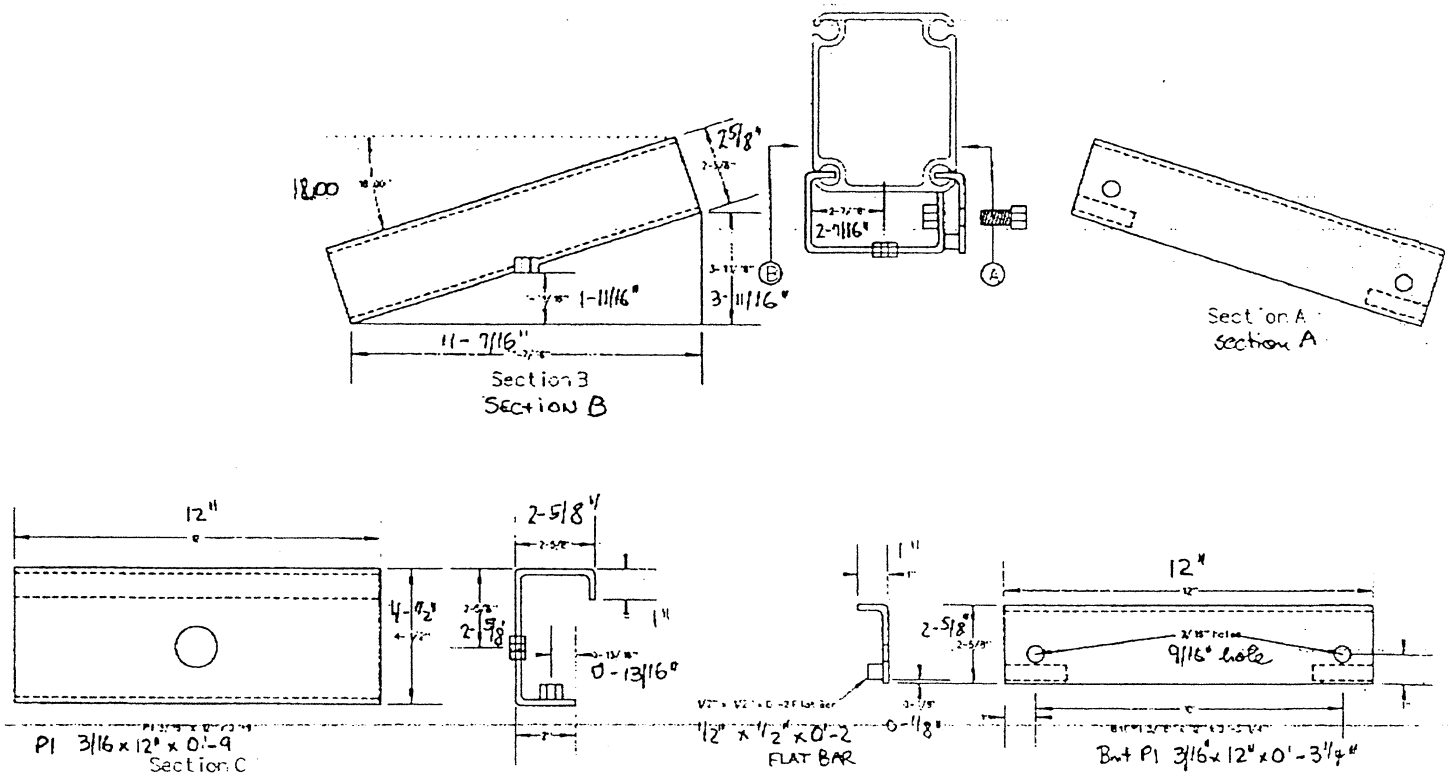
Beam Clamp

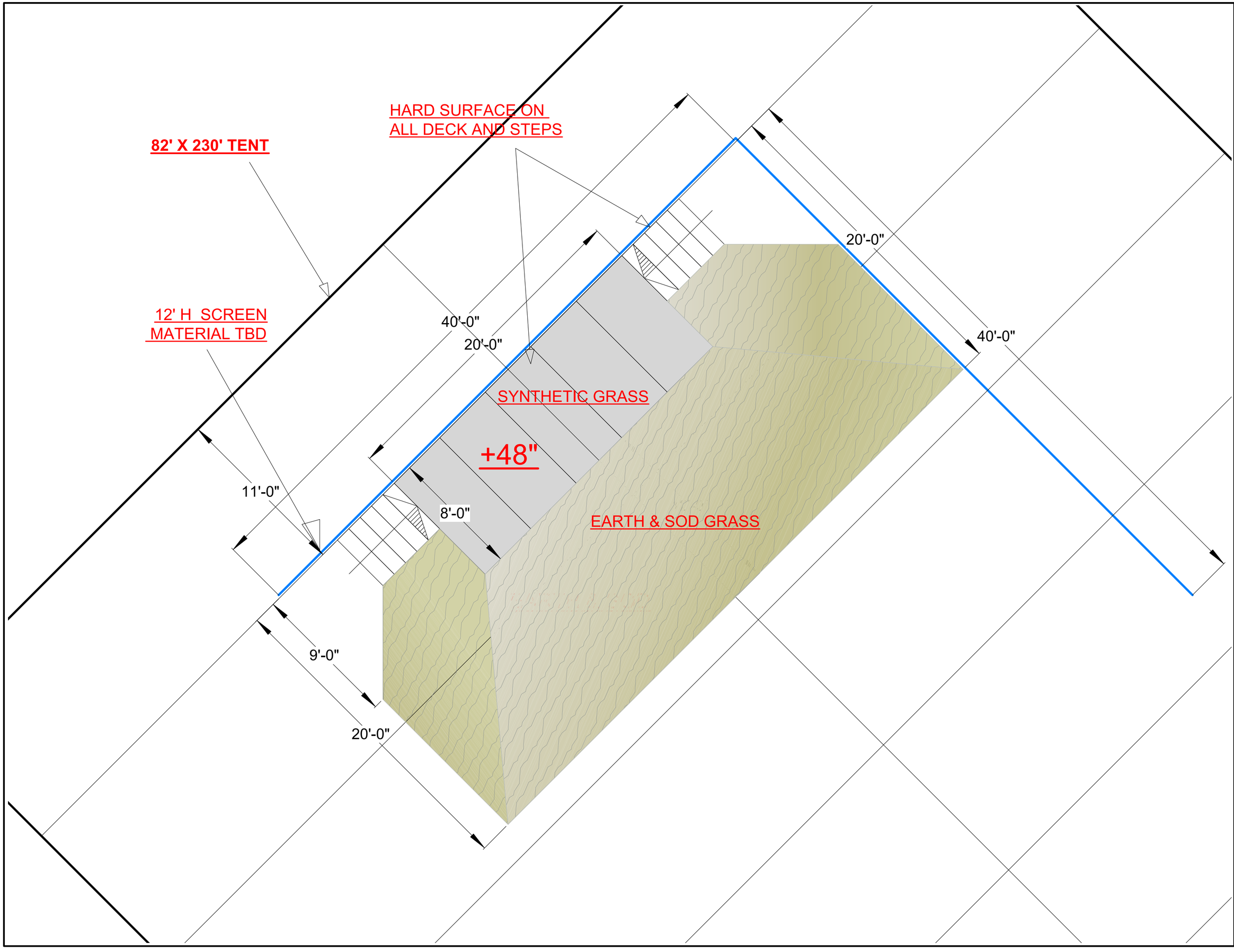


Hanging Loads

uniflex profile 120x 200	
10m	1,500 lbs. *
15m	1,200 lbs. *
20m	900 lbs. *
25m	600 lbs. *

maxiflex profile 120 x 300	
30m	1,450 lbs. *
40m	1,100 lbs. *
50m	900 lbs. *

*** Weights are per arch. Weight has to be equally distributed over the complete width of the arch. All figures are theoretical calculation, based on a fully enclosed structure. Hanging live loads can affect the stability of the structure. Any alteration to the structure is the sole responsibility of the owner of the structure. Losberger US or any of its affiliates can not be help responsible for any action taken by a third party. Information provided is without obligation for Losberger US or any of its affiliates.**



Proof Productions, Inc.

599 Mantua BLVD.
Sewell, NJ, 08080
Phn: 856-442-0700
Fax: 856-442-0701
info@proofproductionsinc.com

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Employer of ETCP Certified Technicians

Stephen McEntee:
#0629 (Rigger: Theater)
Matt Levy:
#00076 (Rigger: Arena)
Alan Belcher:
1063
(Electrician)
Brad Helm:
#1196 (Rigger: Theater)
Chuck Otto:
#1553 (Rigger: Arena)
John Chasmar:
#1639 (Rigger: Arena)

Certified Applicator
GA-1394.01

Certificate #
85293223

U OF PA HILL FIELD EVENT
STAGE

Approved By:J.W

Paper Size: Arch C

Date: 10/14/2013

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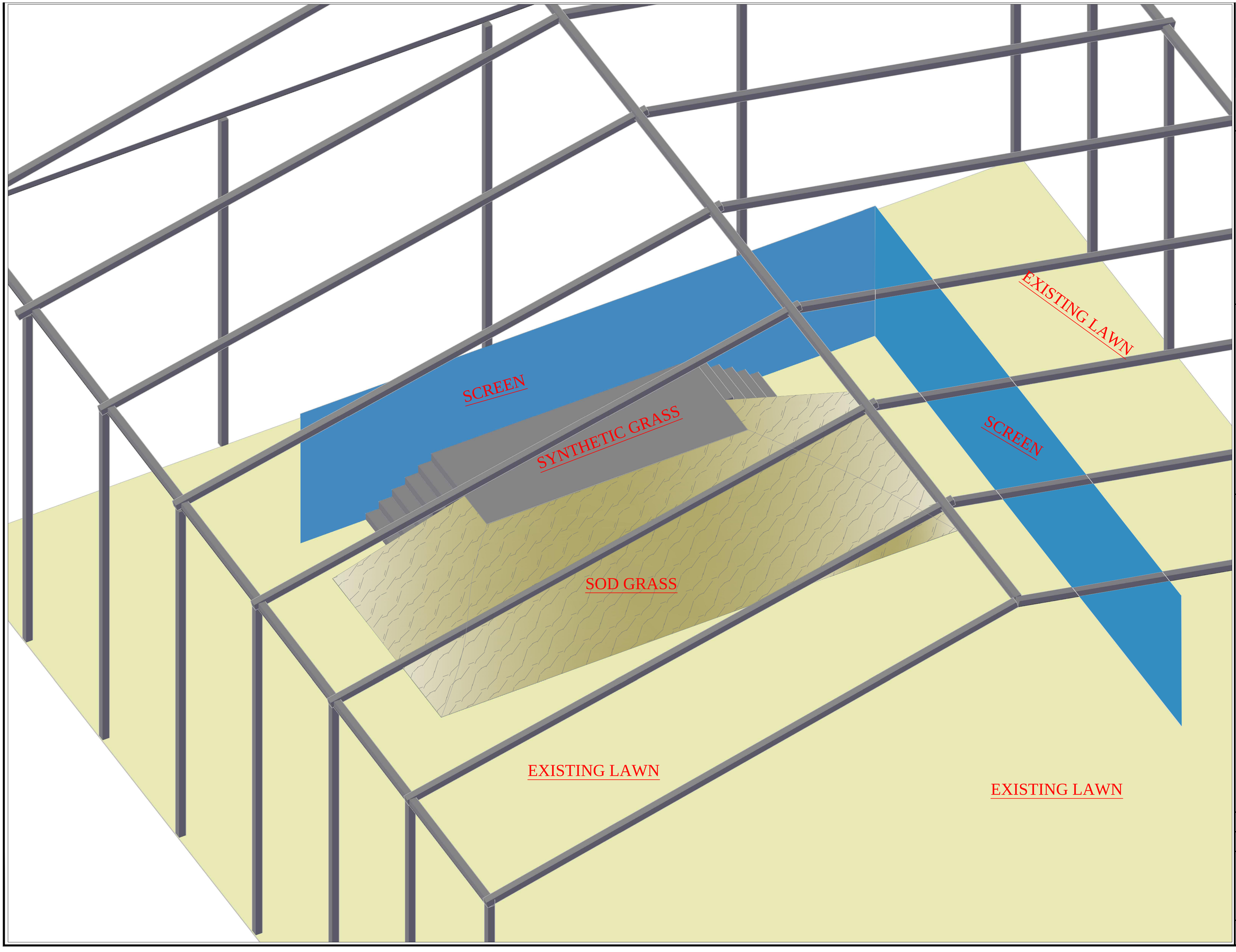
Plate #
1

Revision # 0



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Approved By:I.W

Paper Size: Arch C

Date: 10/16/2013

A131028

Plate #
2

Revision # 0