



**CTN Report**  
**90-008**

**UCID 21899**



# **The CALS Test Network**

## **MIL-D-28000 Class I**

### **Reference Illustration Packet**

### **Revision A**

**January 19, 1990**



**Prepared for**  
**Air Force Logistics Command**  
**AITI Project**



**Lawrence Livermore National Laboratory**

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90-008**

**UCID--21899  
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**The CALS Test Network  
MIL-D-28000 Class I  
Reference Illustration Packet  
Revision A**

**January 19, 1990**

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**MASTER**

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### Preface

This CALS Test Network MIL-D-28000 Class I Reference Illustration Packet is a document which will have periodic updates. This will occur as the reference illustrations and their associated procedures, scripts, and files are corrected for oversights and/or are updated to new versions of the standards.

I acknowledge Ben Kassel of the CALS Navy Test Bed at the David Taylor Research Center for preparing the initial versions of the IENTITY test case and scripts. I also acknowledge McDonnell Aircraft Company for allowing the CALS Test Network to modify and use the LGTABLE illustration.

Please use the information contained in this packet at your own risk. Send recommendations for change or comments about the content to:

Jill Farrell  
CALS Test Network, IGES Lead Analyst  
Lawrence Livermore National Laboratory  
P.O. Box 808 L-542  
Livermore, CA 94550

## Abstract

This CALS Test Network MIL-D-28000 Class I Reference Illustration Packet contains the information needed to conduct tests of the Technical Publication Subset, Class I, of the military specification MIL-D-28000 using IGES processors. The material is intended to demonstrate industry and government's use of MIL-D-28000 in accordance with the CALS initiative. The CALS Test Network (CTN) is the organization tasked with demonstrating this digital data interchange among industry and government and uses this packet during CTN testing. The packet is, furthermore, used by CTN members to conduct self-tests of their companies' abilities to utilize CALS data. The results derived from this testing will allow the CTN to suggest modifications to drafting techniques, vendors' IGES processors, the IGES specification, and most importantly, the MIL-D-28000 military specification.

## The CALS Test Network MIL-D-28000 Class I Reference Illustration Packet

### 1.0 Introduction

The DoD Computer-aided Acquisition and Logistic Support (CALS) Test Network (CTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A (1840A) and its companion suite of military specifications. The CTN is a DoD sponsored confederation of voluntary participants from industry and government, managed jointly by the technical staff at Air Force Logistics Command (AFLC) and Lawrence Livermore National Laboratory (LLNL). The objective of the CTN tests is to demonstrate and evaluate the interchange and functional use of digital technical information between industry and government using the CALS Standards.

The IENTITY and the LGTABLE reference illustrations described herein are used by the CALS Test Network during user application testing of IGES data. They, furthermore, are used by CTN members during self-tests of their digital data transfer abilities. IGES is the Initial Graphics Exchange Specification used for interchanging graphical data between dissimilar computer aided design (CAD) and technical publication systems. Specifically, these reference illustrations demonstrate the use of the IGES entities identified in the Technical Publication Subset, Class I, of the military specification, MIL-D-28000. In addition to demonstrating the use of this military specification and subset, these illustrations also allow the CTN to demonstrate the use of MIL-D-28000's parent document, MIL-STD-1840A. MIL-STD-1840A standardizes the delivery "envelope" used by organizations to exchange digital forms of technical information.

### 2.0 Content of the Reference Illustration Packet

The CTN MIL-D-28000 Class I Reference Illustration Packet you are currently reading contains a set of reference material. This packet contains the pieces of information needed to execute a test using a vendor's IGES processors. It contains:

1. Procedures to follow to conduct a pre-processor test; pre-processing is the translation from a graphics system to an IGES file.
2. A generation script (a set of instructions) to follow to create the IENTITY illustration on any graphics system.

3. Procedures to follow to conduct a post-processor test; post-processing is the translation from an IGES file to a graphics system.
4. The IGES files on a 9-track tape in MIL-STD-1840A format of both the IENTITY and LGTABLE reference illustrations to post-process into the graphics system.
5. Evaluation scripts (sets of questions) to complete after the IENTITY and LGTABLE illustrations have appeared on the screen after post-processing.
6. Plots of the IENTITY and LGTABLE illustrations.
7. A paper printout of the IGES files for both the IENTITY and LGTABLE illustrations.
8. Entity listing and counts for both the IENTITY and LGTABLE illustrations.

The above-mentioned pieces of information are contained in the attachments labeled A through K which follow this general introduction.

### 3.0 Content and Creation of the Reference Material

#### 3.1 The IENTITY Illustration

The IENTITY illustration is comprised of all the geometric, annotation, and structure IGES entities identified in the MIL-D-28000 Class I subset. The illustration is organized such that the entities reside individually by entity and form number within one box of a grid. This box is then labeled to show which entity it should contain. All entities are model mode entities, two-dimensional, and contained on layer zero as MIL-D-28000 Class I requires. The drawing, containing a single view, is B-sized.

#### 3.2 The LGTABLE Illustration

The LGTABLE graphic is an example of an actual technical publication illustration that completely complies to MIL-D-28000 Class I. It does not contain every entity identified in MIL-D-28000 Class I, however, it does contain a good sampling of the frequently used entities such as lines, circles, splines, text, and fill. Again, all entities are model mode, two-dimensional, and located on layer zero. The single view is contained on an A-sized drawing.

The LGTABLE illustration is included in this packet to be used during post-processor testing only. Although very useful as a sample illustration, pre-processor testing information was not deemed appropriate for LGTABLE because of the illustration's size and complexity.

### 3.3 Development of the IGES Files

The IENTITY and LGTABLE illustrations were drafted on a CAD system, then pre-processed into IGES files. Because the pre-processed IGES files did not completely conform to IGES Version 4.0 and MIL-D-28000, did not include all desired Class I entities, and included unwanted volunteer entities, the files were hand edited. During this hand editing, the criteria discussed in the "Guide to Developing IGES Test Cases" written by the IGES Test Case Subcommittee of the National IGES/PDES Committee was adhered to where ever possible. This hand editing produced IGES files that incorporate all MIL-D-28000 Class I entities and pass several IGES analyzers with no accountable errors. The analyzers referred to are the IGES Model Testing System, the IGES Data Analysis Company Parser/Verify/View packages, and the Rosetta Technologies, Inc. PreVIEW software.

After the IGES files were thoroughly checked, MIL-STD-1840A headers were placed on the IGES files. Next, MIL-STD-1840A declaration files were written for each file. Lastly, all files were copied to a 9-track tape at MIL-STD-1840A-required formats.

### 3.4 The Scripts

This reference illustration packet contains two different sets of scripts. The generation script describes how to create the reference illustration on a graphics system during the pre-processor test. It is designed to be generic enough to allow illustration generation on any system. The evaluation scripts describe how to evaluate the graphical model that appears during a post-processor test. These scripts ask questions that try to address DoD's present requirements for a technical publication illustration digital transfer.

### 3.5 The Procedures

The CTN's test procedures contained herein discuss running tests on the pre-processors and post-processors separately. These procedures follow one proposed by the National IGES/PDES Organization's Testing Subcommittee. Other procedures were derived from available hardware and software resources and past experience.

Deviations and expansions from these procedures are encouraged as required by one's needs. An example of a deviation is to perform an end-to-end test with this reference data. These procedures do not address end-to-end testing because this type of testing is usually conducted with a user's actual illustrations, not reference illustrations. An end-to-end test with this packet's reference data could easily be conducted by, first,

following the pre-processor procedures and, second, sending that pre-processed IGES file through the post-processor procedures. As stated, deviations of this type are possible and should be used as experience and requirements dictate.

#### 4.0 Conclusion

By following the procedures described in this CTN MIL-D-28000 Class I Reference Illustration Packet and by referring to the scripts, plots, and data lists also contained within, one can examine technical publication illustration digital transfers using IGES and MIL-D-28000. This packet does not validate a vendor's conformance to MIL-D-28000 Class I, but instead allows the CTN analysts and CTN members to demonstrate industry/government's use of the MIL-D-28000 specification in accordance with the CALS initiative.

**Attachment A**

**Procedures for Executing the CTN Reference  
Illustration IGES Pre-processor Test**

Procedures for Executing the CTN Reference  
Illustration IGES Pre-processor Test

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1. Follow the "Generation Script" to create the IENTITY reference illustration on your native graphics system to the system's best abilities. Record any problems encountered or deviations taken while following the generic script on the attached incident report sheets. Use additional sheets if necessary.

Try to create the entities on the graphics system so that the desired IGES entity is pre-processed into the IGES file. The scripts specify which entities are the desired entities. To accomplish this, we recommend that these scripts be followed in the presence of both a knowledgeable system operator and an experienced IGES person, both people preferably supplied by the graphics system vendor itself. This will insure the best transfer possible with a particular vendor's software.

Furthermore, although the graphics system may not support the "desired" IGES entity, try to match the appearance of the illustration using other entities allowed in MIL-D-28000 Class I.

2. Pre-process the illustration into the IGES format using any available switches to create a MIL-D-28000 Class I file. Place the required MIL-D-28000 Class I Start Section information into the file. Record any errors the system reports.
3. Prepare a MIL-STD-1840A compliant 9-track tape containing the IENTITY IGES file and its corresponding declaration file. Be sure to include the proper MIL-STD-1840A header information to the IGES file and copy all files to the tape at the appropriate MIL-STD-1840A format. Record any difficulties experienced.
4. If you are conducting a self-test, collect the tape and all incident reports from steps 1, 2, and 3 for evaluation. If you pre-arranged a formal CTN test and obtained CTN approval, send the tape and all incident reports from steps 1, 2, and 3 to:

CALS Test Network, IGES Testing  
Lawrence Livermore National Laboratory  
P.O. Box 808, 7000 East Ave., L-542  
Livermore, CA 94550

Refer questions to Jill Farrell at (415) 423-6348.

5. Evaluate the data. We at the CALS Test Network will and anyone conducting a self-test should:
  - a. Check the tape for proper MIL-STD-1840A formats.
  - b. Check the tape for appropriate MIL-STD-1840A declaration information.
  - c. Check the IGES file for appropriate MIL-STD-1840A header information.
  - d. Examine the IGES file visually for format and content.
  - e. Parse and verify the IGES file using various IGES analyzers to check for IGES syntax errors and illegal MIL-D-28000 Class I constructs.
  - f. View the graphics the IGES file generated with IGES viewing packages.
  - g. Pinpoint any file, IGES processor, IGES standard, and/or military standard inefficiencies using the above software and personal knowledge.
  - h. Bring the findings to the appropriate parties for correction (either vendor, graphics system operator, IGES Committee, or the military standard's sponsor).
  - i. CTN will publicly publish results of CTN findings.

**Attachment B**

**IDENTITY Generation Script**

## I-ENTITY Generation Script

Part) Create a part named "IENTITY".

Drawing) If the CAD system allows for a separate drawing file within the part, create a B-sized drawing with its origin in the lower left-hand corner.

INSERT ALL ENTITIES WHILE WORKING IN THE TOP VIEW CONSTRUCTION PLANE. THIS CONSTRUCTION PLANE OR REQUIRED COORDINATE ORIENTATION IS SHOWN ON THE B-SIZED I-ENTITY PLOT. ALL MODEL COORDINATES (X,Y,Z) REFERRED TO IN THIS SCRIPT ARE BASED ON THIS COORDINATE ORIENTATION. ALL UNITS ARE INCHES.

CREATE THE FOLLOWING ENTITIES ON LEVEL ZERO AND IN THE DEFAULT COLOR OF THE CAD SYSTEM. INSERT ALL ENTITIES IN MODEL MODE. IN EVERY INSTANCE, TRY TO CREATE THE ENTITY ON THE CAD SYSTEM SUCH THAT UPON PRE-PROCESSING THE PART INTO IGES, THE DESIRED ENTITY AND FORM NUMBER APPEAR IN THE IGES FILE. THE DESIRED ENTITY AND FORM NUMBERS ARE THOSE NUMBERS ALONG THE LEFT-HAND MARGIN PRECEDING THE CREATION OR INSERTION COMMAND.

Grid lines)

Insert the following grid lines:

a)	from (0.5,10.5,0.0)	to (0.5,0.5,0.0)
b)	(2.5,10.5,0.0)	(2.5,0.5,0.0)
c)	(4.5,10.5,0.0)	(4.5,0.5,0.0)
d)	(6.5,10.5,0.0)	(6.5,0.5,0.0)
e)	(8.5,10.5,0.0)	(8.5,0.5,0.0)
f)	(10.5,10.5,0.0)	(10.5,0.5,0.0)
g)	(12.5,10.5,0.0)	(12.5,0.5,0.0)
h)	(14.5,10.5,0.0)	(14.5,0.5,0.0)
i)	(16.5,10.5,0.0)	(16.5,0.5,0.0)
j)	(0.5,0.5,0.0)	(16.5,0.5,0.0)
k)	(0.5,2.5,0.0)	(16.5,2.5,0.0)
l)	(0.5,4.5,0.0)	(16.5,4.5,0.0)
m)	(0.5,6.5,0.0)	(16.5,6.5,0.0)
n)	(0.5,8.5,0.0)	(16.5,8.5,0.0)
o)	(0.5,10.5,0.0)	(16.5,10.5,0.0)

100) Create a circular arc centered at (1.5,9.5,0.0) with a radius of 0.5 inches and traced out counterclockwise from 270 to 180 degrees.

102) a) Insert a line from (3.0,9.5,0.0) to (3.0,10.0,0.0).  
b) Insert a line from (3.0,10.0,0.0) to (3.5,9.5,0.0).  
c) Insert a cubic parametric spline through the points (3.5,9.5,0.0), (4.0,9.25,0.0), and (4.25,9.25,0.0).  
d) Group the 2 lines and the spline together to form one entity. Use the composite curve entity (IGES entity 102) if your system supports it.

104 F0) a) Insert a conic with the general equation in standard form:

$$4x^2 + 16y^2 - 1 = 0$$

b) Rotate this conic 90 degrees clockwise and center it around (5.5, 9.5, 0.0). This conic is then an ellipse with a major axis of 1.0 inches (paralleling the vertical axis) and a minor axis of 0.5 inches.

104 F1) Insert an ellipse centered at (7.5, 9.5, 0.0) with a major axis of 1.0 inches and a minor of 0.5 inches. Position the ellipse so that the major axis parallels the horizontal axis. The general equation of this conic centered at (7.5, 9.5, 0.0) in standard form is:

$$4x^2 + 16y^2 - 1 = 0$$

104 F2) Insert a horizontal hyperbola centered at (9.75, 9.5, 0.0) such that only the left side is visible and that it sweeps 0.25 inches on either side of the axis of symmetry toward the negative x-direction. The hyperbola's transverse axis length is 0.5 inches and conjugate axis length is 0.25 inches. Refer to the plot for a pictorial description. The general equation of this conic rotated 180 degrees about its tip with its tip at (9.5, 9.5, 0.0) in standard form is:

$$16x^2 - 64y^2 - 1 = 0$$

104 F3) Insert a vertical parabola with a vertex of (11.5, 9.5, 0.0) and the focus point at (11.5, 9.75, 0.0). Extend the parabola into the positive y-direction to make it 0.25 inches tall. Refer to the plot for a pictorial description. The general equation of this conic rotated 90 degrees counterclockwise about (11.5, 9.5, 0.0) in standard form is:

$$y^2 - x = 0$$

106 F11) a) Insert a circular arc centered at (13.5, 9.25, 0.0) with a radius of 0.5 and traced out counterclockwise from 0 to 180 degrees.

b) Transform the circular arc into a "linear planar curve" entity (IGES entity 106 Form 11) - a curved string of many short straight segments.

106 F63) Create a rectangle or a "simple closed area" entity (106 Form 63) consisting of one entity between the points:

(15.0,9.25,0.0)  
(15.0,10.0,0.0)  
(16.0,10.0,0.0)  
(16.0,9.25,0.0)

110) Create a line from (1.5,7.0,0.0) to (1.5,8.0,0.0).

112) Create a cubic parametric spline curve through the points:

(3.0,8.0,0.0)  
(3.75,7.75,0.0)  
(4.0,7.5,0.0)  
(4.0,7.25,0.0)  
(3.75,7.0,0.0)  
(3.5,7.0,0.0)  
(3.25,7.25,0.0)  
(3.25,7.5,0.0)  
(4.0,8.0,0.0).

124 F0) a) Create a temporary coordinate system (construction plane) defined by the transformation matrix shown below. This coordinate system corresponds to a construction plane rotated 90 degrees counterclockwise with its origin at (5.5,7.5,0.0).

0.0	1.0	0.0	5.5
-1.0	0.0	0.0	7.5
0.0	0.0	1.0	0.0

b) Insert an arc centered at (0.0,0.0,0.0) swept between 0 and 180 degrees with a radius of 0.5 inches.

c) Return to the original coordinate system.

126 F0) Insert a rational b-spline curve through the points:  
(7.0,7.0,0.0), (7.0,7.5,0.0), (7.0,8.0,0.0),  
(7.5,8.0,0.0), (8.0,8.0,0.0), (8.0,7.5,0.0),  
(8.0,7.0,0.0).

126 F1) Insert a rational b-spline curve through the points:  
(9.0,7.5,0.0), (10.0,8.0,0.0). This curve approximates a line.

126 F2) Insert a rational b-spline curve through the points:  
(12.0,7.5,0.0), (11.9045,7.79389,0.0),  
(11.6545,7.97553,0.0), (11.3455,7.97553,0.0),  
(11.0955,7.79389,0.0), (11.0,7.5,0.0). This curve approximates an arc.

126 F3) Insert a rational b-spline curve through the points:  
(14.0,7.5,0.0), (13.8528,7.67713,0.0),  
(13.6208,7.74259,0.0), (13.3792,7.74259,0.0),  
(13.1472,7.67713,0.0), (13.0,7.5,0.0). This curve approximates an elliptical arc.

126 F4) Insert a rational b-spline curve through the points:  
(16.0,7.75,0.0), (15.8231,7.60439,0.0),  
(15.6138,7.51295,0.0), (15.3862,7.51295,0.0),  
(15.1769,7.60439,0.0), (15.0,7.75,0.0). This curve approximates a parabolic arc.

126 F5) Insert a rational b-spline curve through the points:  
(1.25,5.71651,0.0), (1.36619,5.64544,0.0),  
(1.4722,5.56046,0.0), (1.47214,5.43958,0.0),  
(1.36622,5.35451,0.0), (1.25,5.28349,0.0). This curve approximates an hyperbolic arc.

FOR THE FOLLOWING GENERAL NOTE ENTITIES (212), USE THE STANDARD BLOCK (OR DEFAULT) TEXT FONT, A TEXT HEIGHT OF 0.125 INCHES, AND A TEXT WIDTH OF 0.1 INCHES. SELECT THE TEXT ORIGIN (OF THE FIRST TEXT LINE) BOTTOM-LEFT-JUSTIFIED UNLESS OTHERWISE STATED.

212 F0) a) Insert the text string "SIMPLE" horizontally at (3.0,5.625,0.0).

b) Insert the text string "SIMPLE" vertically at (4.0,6.0,0.0). Change the text slant 30 degrees clockwise from the vertical axis. Change the text width to 0.147 inches for this text string.

212 F1) Insert the text "DUAL" and "STACK" as one text string such that the words are both left justified and the second word is displayed below the first. Place the origin of the text at (5.0,5.625,0.0).

212 F2) a) Insert the text "IMBEDDED" with the origin of the text string at (7.0,5.625,0.0).

b) Change the font of the middle three letters, "BED", of the text string to the IGES Font 1002. This will change the letters "BED" to the symbols " ".

212 F3) Insert the text string "SSUPER" such that the origin is at (9.0,5.625,0.0) and the word "SUPER" is a superscript of "S".

212 F4) Insert the text string "SSUB" such that the origin is at (11.0,5.625,0.0) and the word "SUB" is a subscript of "S".

212 F5) Insert the text "S", "SUPER", and "SUB" as one text string such that the origin is at (13.0,5.625,0.0) and the word "SUPER" is a superscript of "S" and "SUB" is a subscript of "S".

212 F6) Insert the text "M", "STACK", and "LEFT" as one multi-lined text string such that the origin of the text string is at (15.0,5.75,0.0) and all words are left-justified to a common margin.

212 F7) Insert the text "M", "STACK", and "CENTER" as one multi-lined text string that is bottom-center-justified with the origin at (1.5,3.75,0.0).

212 F8) Insert the text "M", "STACK", and "RIGHT" as one multi-lined text string that is bottom-right-justified with the origin at (4.0,3.75,0.0).

212 F100) Insert a multi-lined text string that is bottom-left-justified with the origin at (5.0,3.5625,0.0) as follows:

FRAC  
S ----  
TION

There are two spaces between the whole number part and the fractional part. The second string "FRAC" is a superscript of the first string "S", the third string "TION" is a subscript of the first string, and "----" is the fourth string.

212 F101) Insert a multi-lined text string with the origin of the first string at (7.0,3.8125,0.0) as follows:

TO  
DUAL ---  
P  
  
BOT  
STACK ----  
TOM

There are two spaces between the whole number part and the fractional part. The second string "TO" is a superscript of the first string "DUAL", the third string "P" is a subscript of the first string, and "----" is the fourth string. The mixed numeral expression is positioned such that the fifth string "STACK" is displayed below the first string. The sixth string "BOT" is a superscript of the fifth string, and the seventh string is a subscript of the fifth string, and "----" is the eighth string.

212 F102) Insert a multi-lined text string with the origin at (8.65625,3.5625,0.0) as follows:

```
BED      ACT
IM  ---- =  FR  ----
      DED      ION
```

There are two spaces between the whole number part and the fractional part. The second string "BED" is a superscript of the first string "IM", the third string "DED" is a subscript of the first string, and "----" is the fourth string. The fifth string " = " is a special character "i" using the IGES Font 1002. The mixed numeral is positioned such that the sixth string "FR" is displayed two spaces to the right of the fifth string. The seventh string "ACT" is a superscript of the fifth string, and the eighth string "ION" is a subscript of the fifth string, and "----" is the ninth string.

212 F105) Insert a multi-lined text string with the origin at (10.625,3.625,0.0) as follows:

```
          O
T  ---  P
      SUP
FR  ----
      SUB
          TT
      BO  ---  OM
```

There are two spaces between the whole number part and the fractional part. The second string "SUP" is a superscript of the first string "FR", the third string "SUB" is a subscript of the first string, and "----" is the fourth string. The second mixed numeral is a superscript of the first, and consists of the following strings: The sixth string "O" is a superscript of the fifth string "T", and the seventh string "P" is a subscript of the fifth string, and "----" is the eighth string. The third mixed numeral is a subscript of the first, and consists of the following strings: The tenth string "TT" is a superscript of the ninth string "BO", the eleventh string "OM" is a subscript of the ninth string, and the twelfth string is "----"

230) a) Insert four lines from:

(13.0,3.0,0.0) to (14.0,3.0,0.0)  
(14.0,3.0,0.0) (14.0,4.0,0.0)  
(14.0,4.0,0.0) (13.0,4.0,0.0)  
(13.0,4.0,0.0) (13.0,3.0,0.0).

b) Utilize the "sectioned area entity" (230) to crosshatch between the lines. The fill should be solid parallel line segments from section edge to edge. They should be angled 45 degrees counterclockwise from the x-axis and spaced 0.2 inches apart.

406 F18) Insert the text "SPACING" with its bottom-left-justified origin at (14.8,3.5,0.0). Each character shall be 0.125 high and 0.1 wide, the spacing between each character shall be 0.1. This is 80 percent of the character height.

308) Create a subfigure named "PERSON" of a shaped figure composed of five lines from:

(-0.125,0.0,0.0) to (0.0,0.25,0.0)  
(0.0,0.25,0.0) (0.125,0.0,0.0)  
(0.0,0.25,0.0) (0.0,0.4375,0.0)  
(0.0,0.375,0.0) (0.09375,0.28125,0.0)  
(0.0,0.375,0.0) (-0.09375,0.28125,0.0)

and a circle of radius 0.0625 centered at (0.0,0.5,0.0).

408) Insert the subfigure "PERSON" into the IENTITY model at the model location (1.5,1.5,0.0).

412) Insert a rectangular array subfigure of "PERSON" consisting of 2 columns and 2 rows. The bottom left corner of the array is at (3.0,1.0,0.0). The horizontal distance between columns is 1.0 and the vertical distance between rows is 0.75.

414) Insert a circular array subfigure of "PERSON" consisting of 3 instances centered at (5.5,1.5,0.0). The first instance is at a radius of 0.5 and an angle of 30 degrees, the other two instances are at an incremental angle of 120 degrees.

Title block) Insert the title block "CALS TEST NETWORK  
MIL-D-28000  
CLASS I  
REFERENCE DRAWING  
I-ENTITY".

This multi-lined text should be  
bottom-center-justified with the text origin at  
(15.5,1.75,0.0). The text height and width should  
both be 0.09 inches.

**Incident Report**

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**Attachment C**

**Procedures for Executing the CTN Reference  
Illustration IGES Post-processor Test**

Procedures for Executing the CTN Reference  
Illustration IGES Post-processor Test.

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1. Receive a 9-track, MIL-STD-1840A formatted tape from the CALS Test Network containing both the IENTITY and LGTABLE IGES files in MIL-D-28000 Class I format.
2. Read the MIL-STD-1840A declaration information and load the IGES files onto your graphics system storage. The file names are shown in the 1840A declaration files and header fields.
3. Read and then strip the MIL-STD-1840A headers from the IGES files.
4. Post-process the IGES files into your graphics system, noting all errors the system reports.
5. Inspect the resulting graphics and answer the questions listed in the evaluation scripts. If you answer "no" to any of the questions, please explain why on the incident report sheets which follow the script. Attach additional sheets if necessary.
6. Generate a hard copy plot of each illustration.
7. If you are conducting a self-test, collect the evaluation scripts, plots, and any incident reports for evaluation. If you pre-arranged a formal CTN test and obtained CTN approval, send the completed evaluation scripts, plots, and any incident reports to:

CALS Test Network, IGES Testing  
Lawrence Livermore National Laboratory  
P.O. Box 808, 7000 East Ave., L-542  
Livermore, CA 94550

Refer questions to Jill Farrell at (415) 423-6348.

8. Evaluate the data. We at the CALS Test Network will and anyone conducting a self-test should:
  - a. Examine the incident reports, plots, and evaluation scripts.
  - b. Pinpoint processor, IGES standard, and/or military standard inefficiencies.
  - c. Bring the findings to the appropriate parties for correction (either vendor, graphics system operator, IGES Committee, or the military standard's sponsor).
  - d. CTN will publicly publish results of CTN findings.

**Attachment D**

**IDENTITY Evaluation Script**

## IENTITY Evaluation Script

Answer the following questions:

100)

- a) Is the circular arc centered at (1.5,9.5,0.0)?
- b) Is the arc radius 0.5 inches?
- c) Is the arc traced out from 270 to 180 degrees counterclockwise?

102)

- a) Is the composite curve made up of 2 lines and a spline?
- b) Does one line extend from (3.0,9.5,0.0) to (3.0,10.0,0.0)?
- c) Does the second line extend from (3.0,10.0,0.0) to (3.5,9.5,0.0)?
- d) Does the spline curve between the end points (3.5,9.5,0.0) and (4.25,9.25,0.0)?
- e) Does the composite curve behave as a single entity (selectable by one touch)?

104 Form 0)

- a) Is the general conic arc an ellipse centered at (5.5,9.5,0.0)?
- b) Is the major axis 1.0 inches?
- c) Is the minor axis 0.5 inches?
- d) Is the ellipse positioned so that the long axis parallels the vertical axis (is the ellipse skinny and tall)?

104 Form 1)

- a) Is the ellipse centered at (7.5,9.5,0.0)?
- b) Is the major axis 1.0 inches?
- c) Is the minor axis 0.5 inches?
- d) Is the ellipse positioned so that the long axis parallels the horizontal axis (is the ellipse short and fat)?

104 Form 2)

- a) Is the hyperbola a horizontal hyperbola (shaped like a backwards "C")?
- b) Is the right most part of the hyperbola at (9.5,9.5,0.0)?
- c) Do the ends of the hyperbola extend toward the negative x-direction 0.25 inches?
- d) Does the conic visually resemble the hyperbola on the IENTITY plot?

104 Form 3)

- a) Is the parabola a vertical parabola (shaped like a wide "U")?
- b) Is the parabola's vertex (lowest point) at (11.5, 9.5, 0.0)?
- c) Do the ends of the parabola extend 0.25 inches into the positive y-direction?
- d) Does the conic visually resemble the parabola on the IENTITY plot?

106 Form 11)

- a) Does the linear planar curve look like a circular arc of radius 0.5 inches, centered at (13.5, 9.25, 0.0) and traced out from 0 to 180 degrees counterclockwise?
- b) Is the linear planar curve made up of short straight segments combined to form a single entity?

106 Form 63)

- a) Is a rectangle present between the points (15, 9.25, 0.0), (15.0, 10.0, 0.0), (16.0, 10.0, 0.0), and (16, 9.25, 0)?
- b) Is this rectangle a closed area (can it be filled by a pattern)?
- c) Does this simple closed area behave as a single entity (selectable by one touch)?

110)

- Is a line present from (1.5, 8.0, 0.0) to (1.5, 7.0, 0.0)?

112)

- a) Does the spline start at the upper left near (3.0, 8.0, 0.0), trace out toward the lower right, move toward the lower left to create a loop, and cross back over itself as it moves to the upper right near (4.0, 8.0, 0.0)?
- b) Does the parametric spline curve visually resemble the spline on the IENTITY plot?

124 Form 0)

- a) Did a semi-circle appear?
- b) Is the semi-circle open toward the right side, in other words, is it shaped like a "C"?

126 Form 0)

- a) Does a rational b-spline curve pass through the points (7.0, 7.0, 0.0), (7.0, 7.5, 0.0), (7.0, 8.0, 0.0), (7.5, 8.0, 0.0), (8.0, 8.0, 0.0), (8.0, 7.5, 0.0), (8.0, 7.0, 0.0)?
- b) Does the rational b-spline curve visually resemble the curve on the IENTITY plot?

126 Form 1)

- a) Does a rational b-spline curve pass through the points? (9.0,7.5,0.0), (10.0,8.0,0.0)? This curve approximates a line.
- b) Does the rational b-spline curve visually resemble the curve on the IENTITY plot?

126 Form 2)

- a) Place the following points on the illustration:  
(12.0,7.5,0.0), (11.9045,7.79389,0.0),  
(11.6545,7.97553,0.0), (11.3455,7.97553,0.0),  
(11.0955,7.79389,0.0), (11.0,7.5,0.0). Does the rational b-spline curve pass through these points? This curve approximates an arc.
- b) Does the rational b-spline curve visually resemble the curve on the IENTITY plot?

126 Form 3)

- a) Place the following points on the illustration:  
(14.0,7.5,0.0), (13.8528,7.67713,0.0),  
(13.6208,7.74259,0.0), (13.3792,7.74259,0.0),  
(13.1472,7.67713,0.0), (13.0,7.5,0.0). Does the rational b-spline curve pass through these points? This curve approximates an elliptical arc.
- b) Does the rational b-spline curve visually resemble the curve on the IENTITY plot?

126 Form 4)

- a) Place the following points on the illustration:  
(16.0,7.75,0.0), (15.8231,7.60439,0.0),  
(15.6138,7.51295,0.0), (15.3862,7.51295,0.0),  
(15.1769,7.60439,0.0), (15.0,7.75,0.0). Does the rational b-spline curve pass through these points? This curve approximates a parabolic arc.
- b) Does the rational b-spline curve visually resemble the curve on the IENTITY plot?

126 Form 5)

- a) Place the following points on the illustration:  
(1.25,5.71651,0.0), (1.36619,5.64544,0.0),  
(1.4722,5.56046,0.0), (1.47214,5.43958,0.0),  
(1.36622,5.35451,0.0), (1.25,5.28349,0.0). Does the rational b-spline curve pass through these points? This curve approximates an hyperbolic arc.
- b) Does the rational b-spline curve visually resemble the curve on the IENTITY plot?

212 Form 0)

- a) Does the lower left corner of the horizontal text block "SIMPLE" reside at (3.0,5.625,0.0)?
- b) Does a second text string also say "SIMPLE"?
- c) Is this second text string vertical in orientation?
- d) Are the letters of this second text string slanted 30 degrees clockwise from the vertical axis?
- e) Is the lower left corner of the letter "S" at (4.0,6.0,0.0)?
- f) Is the text height for both text strings 0.125 inches?
- g) Does the vertical text have a wider character width than the horizontal text?

212 Form 1)

- a) Does the text say "DUAL STACK"?
- b) Is the lower left corner of the text "DUAL" at (5.0,5.625,0.0)?
- c) Is the text "STACK" left justified directly below "DUAL"?
- d) Is the text height 0.125 inches?
- e) Does the entire text string act as a single entity?

212 Form 2)

- a) Do the first and second letters say "IM" and the sixth through eighth say "DED"?
- b) Do the third through the fifth letters say " " ?
- c) Is the lower left corner of the text block at (7.0,5.625,0.0)?
- d) Is the text height 0.125 inches?
- e) Does the entire text string act as a single entity?

212 Form 3)

- a) Are the words of the general note "S" and "SUPER"?
- b) Is the word "SUPER" a superscript of the letter "S"?
- c) Is the lower left corner of the letter "S" at (9.0,5.625,0.0)?
- d) Is the text height 0.125 inches?
- e) Does the entire text string act as a single entity?

212 Form 4)

- a) Are the words of the general note "S" and "SUB"?
- b) Is the word "SUB" a subscript of the letter "S"?
- c) Is the lower left corner of the letter "S" at (11.0,5.625,0.0)?
- d) Is the text height 0.125 inches?
- e) Does the entire text string act as a single entity?

212 Form 5)

- a) Are the words of the general note "S", "SUPER", and "SUB"?
- b) Is the word "SUPER" a superscript of "S"?
- c) Is the word "SUB" a subscript of "S"?
- d) Is the lower left corner of the letter "S" at (13.0,5.625,0.0)?
- e) Is the text height 0.125 inches?
- f) Does the entire text string act as a single entity?

212 Form 6)

- a) Are the words of the general note "M", "STACK", and "LEFT"?
- b) Are the words stacked one below the other ("M" then "STACK" then "LEFT")?
- c) Are the words left justified to a common margin?
- d) Is the lower left corner of the letter "M" at (15.0,5.75,0.0)?
- e) Is the text height 0.125 inches?
- f) Does the entire text string act as a single entity?

212 Form 7)

- a) Are the words of the general note "M", "STACK", and "CENTER"?
- b) Are the words stacked one below the other?
- c) Are the words center justified?
- d) Is the lower center location of the letter "M" at (1.5,3.75,0.0)?
- e) Is the text height 0.125 inches?
- f) Does the entire text string act as a single entity?

212 Form 8)

- a) Are the words of the general note "M", "STACK", and "RIGHT"?
- b) Are the words stacked one below the other?
- c) Are the words right justified to a common margin?
- d) Is the lower right corner of the letter "M" at (4.0,3.75,0.0)?
- e) Is the text height 0.125 inches?
- f) Does the entire text string act as a single entity?

212 Form 100)

- a) Does the text appear as shown?

FRAC  
S -----  
TION

- b) Is the lower left corner of the letter "S" at (5.07,3.56,0.0)?
- c) Does the entire text string act as a single entity?

**Attachment J**

**IDENTITY Entity Listing and Count**

\*\* Entity Occurrence Counts \*\*

Entity	Form	Level	Count	Type
0	0	0	37	Null entity
100	0	0	3	Circular arc
102	0	0	2	Composite curve
104	0	0	1	Conic arc - general form
104	1	0	1	Conic arc - ellipse
104	2	0	1	Conic arc - hyperbola
104	3	0	1	Conic arc - parabola
106	11	0	1	Copious data - Piecewise planar, linear string
106	63	0	1	Simple closed area
110	0	0	27	Line
112	0	0	2	Parametric spline curve
124	0	0	5	Transformation matrix
126	0	0	1	Rational B-spline curve
126	1	0	1	Rational B-spline curve - Line
126	2	0	1	Rational B-spline curve - Circular arc
126	3	0	1	Rational B-spline curve - Elliptical arc
126	4	0	1	Rational B-spline curve - Parabolic arc
126	5	0	1	Rational B-spline curve - Hyperbolic arc
212	0	0	39	General note
212	1	0	1	General note - dual stack dimension
212	2	0	1	General note - imbedded font change dimension
212	3	0	1	General note - superscripted dimension
212	4	0	1	General note - subscripted dimension
212	5	0	1	General note - super-/sub-scripted dimension
212	6	0	1	General note - multiple stack/left justified
212	7	0	1	General note - multiple stack/center justified
212	8	0	1	General note - multiple stack/right justified
212	100	0	1	General note - simple fractional dimension
212	101	0	1	General note - dual stack fractional dimension
212	102	0	1	General note - imbedded font change/double frac
212	105	0	1	General note - super-/sub-scripted fractional
230	0	0	1	Sectioned area
308	0	0	1	Subfigure definition
404	0	0	1	Drawing
406	16	0	1	Property - Drawing size
406	18	0	1	Intercharacter Spacing
408	0	0	1	Single subfigure instance
410	0	0	1	View - Orthographic parallel
412	0	0	1	Rectangular subfigure instance
414	0	0	1	Circular subfigure instance

**Attachment K**

**LGTABLE Entity Listing and Count**

\*\* Entity Occurrence Counts \*\*

Entity	Form	Level	Count	Type
-----	-----	-----	-----	-----
0	0	0	4	Null entity
100	0	0	85	Circular arc
102	0	0	2	Composite curve
104	0	0	5	Conic arc - general form
110	0	0	116	Line
112	0	0	12	Parametric spline curve
124	0	0	3	Transformation matrix
212	0	0	37	General note
230	0	0	5	Sectioned area
404	0	0	1	Drawing
406	16	0	1	Property - Drawing size
410	0	0	1	View - Orthographic parallel

212 Form 101)

a) Does the text appear as shown?

DUAL TO  
---  
P

STACK BOT  
-----  
TOM

b) Is the lower left corner of "DUAL" at (7.0,3.81,0.0)?  
 c) Does the entire text string act as a single entity?

212 Form 102)

a) Does the text appear as shown?

IM BED ACT  
--- = FR ---  
DED ION

b) Is the lower left corner of "IM" at (8.66,3.56,0.0)?  
 c) Does the entire text string act as a single entity?

212 Form 105)

a) Does the text appear as shown?

FR T O  
--- P  
SUP  
---  
SUB  
BO TT  
---  
OM

b) Is the lower left corner of "FR" at (10.625,3.625,0)?  
 c) Does the entire text string act as a single entity?

230)

a) Do four lines form a square?  
 b) Is the square crosshatched with solid parallel line segments from edge to edge?  
 c) Is the crosshatching spacing 0.2 inches?  
 d) Is the crosshatching angled at 45 degrees?

406 F18)

- a) Does the text say "SPACING"?
- b) Is the lower left corner of the text at (14.8,3.5,0.0)?
- c) Is the text height 0.125 inches?
- d) Is the text width 0.1 inches?
- e) Is the spacing between each character 0.1 inches so that the text is unusually widely spaced?
- f) Does the text end at approximately (16.1,3.5,0.0)?

308)

- a) Does a subfigure named "PERSON" exist?
- b) Does the subfigure named "PERSON" consist of five lines from:  
(-0.125,0.0,0.0) to (0.0,0.25,0.0)  
(0.0,0.25,0.0) (0.125,0.0,0.0)  
(0.0,0.25,0.0) (0.0,0.4375,0.0)  
(0.0,0.375,0.0) (0.09375,0.28125,0.0)  
(0.0,0.375,0.0) (-0.09375,0.28125,0.0)
- c) and a circle of radius 0.0625 centered at (0.0,0.5,0.0)?

408)

- a) Does an instance of "PERSON" appear with its origin at (1.5,1.5,0.0)? The origin of "PERSON" is a point exactly between the person's feet.

412)

- Does an instance of "PERSON" appear at:
  - a) (3.0,1.0,0.0)?
  - b) (4.0,1.0,0.0)?
  - c) (3.0,1.75,0.0)?
  - d) (4.0,1.75,0.0)?

414) Does an instance of "PERSON" appear at:

- a) (5.933,1.75,0.0)?
- b) (5.067,1.75,0.0)?
- c) (5.5,1.0,0.0)?

Grid Lines)

- a) Are there 9 vertical grid lines?
- b) Are there 6 horizontal grid lines?

Entity Identifiers)

- Is every entity identified by a name and an IGES number placed beneath the entity within the grid box?

Title Block)

- Does the title block in the lower right hand grid box say, "CALS TEST NETWORK  
MIL-D-28000  
CLASS I  
REFERENCE DRAWING  
I-ENTITY"?

## Incident Report

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## **Incident Report**

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**Attachment E**

**LGTABLE Evaluation Notes**

## LGTABLE Evaluation Notes

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Does the post-processed illustration visually resemble the plot of the LGTABLE illustration?

Things to look for:

- \* Solid fill in circles in table
- \* Solid fill in arrowheads
- \* Dashed lines between circles in table
- \* Properly justified text in tables
- \* Correct arc and conic orientations around airplane wheel
- \* Relative line thicknesses
- \* Text "CALS Test Network LGTABLE Reference Illustration" in lower right hand corner of illustration

## **Incident Report**

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**Incident Report**

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**Attachment F**

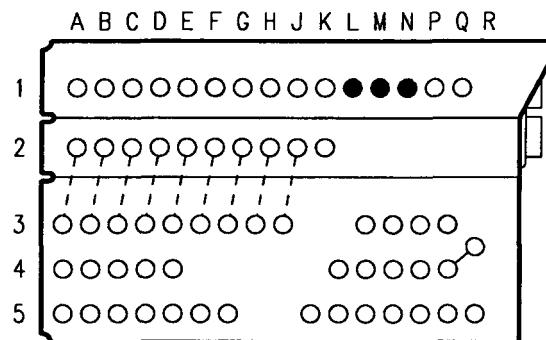
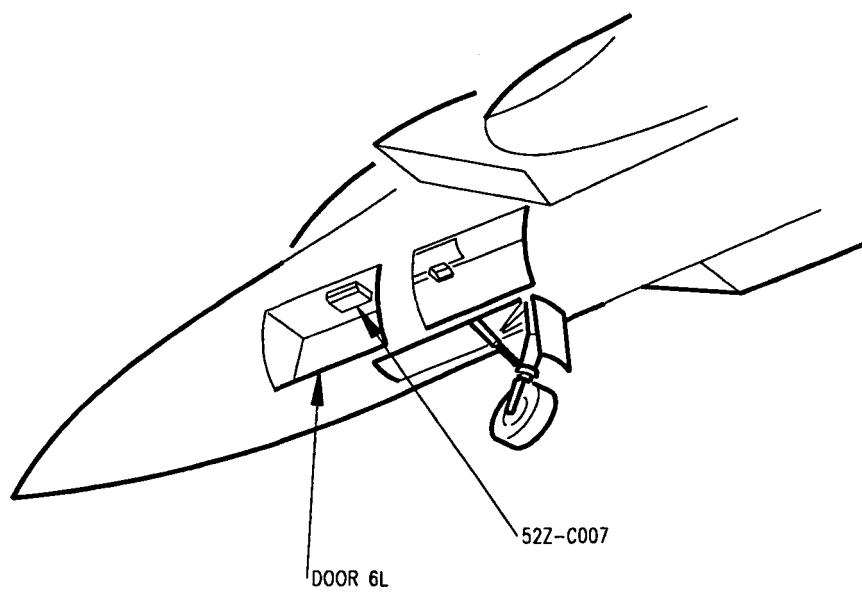
**ENTITY B-sized Plot**

CIRCULAR ARC (100)	COMPOSITE CURVE (102)	CONIC ARC - GENERAL (104 FORM 0)	CONIC ARC - ELLIPSE (104 FORM 1)	CONIC ARC - HYPERBOLA (104 FORM 2)	CONIC ARC - PARABOLA (104 FORM 3)	LINEAR PLANAR CURVE (106 FORM 1)	SIMPLE CLOSED AREA (106 FORM 63)
LINE (110)	PARAMETRIC SPLINE CURVE (112)	TRANSFORMATION MATRIX D=1 (124 FORM 0)	RATIONAL B-SPLINE CURVE (126 FORM 0)	RATIONAL B-SPLINE CURVE LINE (126 FORM 1)	RATIONAL B-SPLINE CURVE CIRCULAR ARC (126 FORM 2)	RATIONAL B-SPLINE CURVE ELLIPTICAL ARC (126 FORM 3)	RATIONAL B-SPLINE CURVE PARABOLIC ARC (126 FORM 4)
	SIMPLE <i>S I M P L E</i>	DUAL STACK	IMBEDDED	SUPER	S <sub>SUB</sub>	SUPER <sub>SUB</sub>	M STACK LEFT
RATIONAL B-SPLINE CURVE HYPERBOLIC ARC (126 FORM 5)	GENERAL NOTE - SIMPLE (212 FORM 0)	NOTE - DUAL STACK (212 FORM 1)	NOTE - IMBEDDED FONT CHANGE (212 FORM 2)	NOTE - SUPERSCRIPT (212 FORM 3)	NOTE - SUBSCRIPT (212 FORM 4)	NOTE - SUPER/SUBSCRIPT (212 FORM 5)	NOTE - MULTI STACK LEFT JUST (212 FORM 6)
M STACK CENTER	M STACK RIGHT	S <sub>FRAC</sub> TION	DUAL <sub>STACK</sub> <sup>TO</sup> <sub>BOT</sub> <sup>TOP</sup>	IM <sub>BED</sub> <sup>DED</sup> ≠ FR <sub>ACT</sub> <sup>ION</sup>	T <sub>P</sub> <sup>0</sup> FR <sub>SUB</sub> <sup>SUP</sup> BO <sub>OM</sub> <sup>TT</sup>		SPACING
NOTE - MULTI STACK CENTER JUST (212 FORM 7)	NOTE - MULTI STACK RIGHT JUST (212 FORM 8)	NOTE - SIMPLE FRACTION (212 FORM 100)	NOTE - DUAL STACK FRACTION (212 FORM 101)	NOTE - FONT/DOUBLE FRACTION (212 FORM 102)	NOTE - SUPER/SUB FRACTION (212 FORM 105)	SECTIONED AREA (230)	INTERCHARACTER SPACING (406 FORM 18)
							CALS TEST NETWORK MIL-D-28000 CLASS I REFERENCE DRAWING I-ENTITY
SINGLE SUBFIGURE INSTANCE (408)	RECTANGULAR SUBFIGURE INSTANCE (412)	CIRCULAR SUBFIGURE INSTANCE (414)					

CIRCULAR ARC (1001)	COMPOSITE CURVE (102)	CONIC ARC - GENERAL (104 FORM 0)	CONIC ARC - ELLIPSE (104 FORM 1)	CONIC ARC - HYPERBOLA (104 FORM 2)	CONIC ARC - PARABOLA (104 FORM 3)	LINEAR PLANAR CURVE (106 FORM 11)	SIMPLE CLOSED AREA (106 FORM 63)
LINE (110)	PARAMETRIC SPLINE CURVE (112)	TRANSFORMATION MATRIX D=I (124 FORM 0)	RATIONAL B-SPLINE CURVE (126 FORM 0)	RATIONAL B-SPLINE CURVE LINE (126 FORM 1)	RATIONAL B-SPLINE CURVE CIRCULAR ARC (126 FORM 2)	RATIONAL B-SPLINE CURVE ELLIPTICAL ARC (126 FORM 3)	RATIONAL B-SPLINE CURVE PARABOLIC ARC (126 FORM 4)
	SIMPLE SIMPLE GENERAL NOTE - SIMPLE (212 FORM 01)	DUAL STACK NOTE - DUAL STACK (212 FORM 1)	IMBEDDED IM+DED NOTE - IMBEDDED FONT CHANGE (212 FORM 2)	SUPER NOTE - SUPERSCRIPT (212 FORM 3)	S <sub>SUB</sub> NOTE - SUBSCRIPT (212 FORM 4)	S <sub>SUPER</sub> S <sub>SUB</sub> NOTE - SUPER/SUBSCRIPT (212 FORM 5)	M STACK LEFT NOTE - MULTI STACK LEFT JUST (212 FORM 6)
M STACK CENTER NOTE - MULTI STACK CENT JUST (212 FORM 7)	M STACK RIGHT NOTE - MULTI STACK RIGHT JUST (212 FORM 8)	FRACTION NOTE - SIMPLE FRACTION (212 FORM 100)	DUAL - STACK TO BOT P TOM NOTE - DUAL STACK FRACTION (212 FORM 101)	IMBEDDED DED ACT FR TION NOTE - FONT/DOUBLE FRACTION (212 FORM 102)	FR SUP SUB BO TT OM NOTE - SUPER/SUB FRACTION (212 FORM 105)		SPACING INTERCHARACTER SPACING (1406 FORM 181)
							CALS TEST NETWORK MIL-D-28000 CLASS I REFERENCE DRAWING I-ENTITY
SINGLE SUBFIGURE INSTANCE (1408)	RECTANGULAR SUBFIGURE INSTANCE (1412)	CIRCULAR SUBFIGURE INSTANCE (414)					

**Attachment G**

**LGTABLE A-sized Plot**



52Z-C007

52Z-C007 ESSENTIAL CIRCUIT BREAKER PANEL NO. 1 (24-50-12)			
REF DES	ZONE	NOMENCLATURE	BUS
41CBC033	L1	R MLG WOW PWR	28VDC
41CBC034	M1	L MLG WDW PWR	28VDC
42CBC005	N1	LOG GR POS IND	28VDC
			ESS 28VDC
			ESS 28VDC
			ESS 28VDC

**Attachment H**

**IDENTITY IGES File Printout**



0	0	1	1	0	0	0	0	D	48
0	0	25	1	0	0	0	0	D	49
0	0	26	1	0	0	0	0	D	50
0	0	27	1	0	0	0	0	D	51
0	0	28	1	0	0	0	0	D	52
410	410	29	1	0	0	0	0	D	53
110	110	30	2	1	0	0	0	D	54
110	110	31	1	1	0	0	0	20101D	55
124	124	32	0	0	1	0	0	D	56
104	104	33	1	1	1	0	0	10001D	57
124	124	34	0	0	1	0	0	D	58
104	104	35	1	1	0	0	0	10001D	59
124	124	36	0	0	1	0	0	D	60
104	104	37	1	1	1	0	0	1D	61
110	110	38	2	1	1	0	0	D	62
124	124	39	1	0	1	0	0	1D	63
104	104	40	2	1	1	0	0	D	64
100	100	41	1	1	1	0	0	1D	65
110	110	42	0	2	1	0	0	D	66
110	110	43	1	2	1	0	0	10001D	67
110	110	44	0	2	1	0	0	D	68
110	110	45	1	2	1	0	0	1D	69
110	110	46	0	2	1	0	0	D	70
110	110	47	1	2	1	0	0	1D	71
110	110	48	1	2	1	0	0	D	72
110	110	49	0	2	1	0	0	1D	73
110	110	50	1	2	1	0	0	D	74
110	110	51	1	2	1	0	0	10001D	75
110	110	52	0	2	1	0	0	D	76
110	110	53	1	2	1	0	0	10001D	77
110	110	54	0	2	1	0	0	D	78
110	110	55	1	2	1	0	0	1D	79
110	110	56	0	2	1	0	0	D	80
110	110	57	1	2	1	0	0	1D	81

110	0	2	1	0				D	114
110	58	1	1	0	0	0	0	1D	115
110	0	2	1	0				D	116
110	59	1	1	0	0	0	0	1D	117
110	0	2	1	0				D	118
0	60			1				D	119
0	61			1				D	120
0	62			1				D	121
0	63			1				D	122
0	64			1				D	123
0	65			1				D	124
0	66			1				D	125
0	67			1				D	126
0	68			1				D	127
0	69	1	1	0	0	0	0	1D	128
106	0	2	8	11				D	129
106	77	1	1	0	0	0	0	1D	130
106	0	2	1	63				D	131
112	78	1	1	0	0	0	0	10001D	132
112	0	2	4	0				D	133
112	82	1	1	0	0	0	0	1D	134
112	0	2	14	0				D	135
126	96	1	1	0	0	0	0	1D	136
126	0	2	2	1				D	137
126	98	1	1	0	0	0	0	1D	138
126	0	2	4	2				D	139
126	102	1	1	0	0	0	0	1D	140
126	0	2	5	0				D	141
126	107	1	1	0	0	0	0	D	142
126	0	2	4	3				D	143
126	111	1	1	0	0	0	0	D	144
126	0	2	2	4				D	145
126	113	1	1	0	0	0	0	1D	146
126	0	2	4	5				D	147
102	117	1	1	0	0	0	0	1D	148
102	0	0	1	0				D	149
230	118	1	1	0	0	0	0	101D	150
230	0	2	1	0				D	151
212	119	1	0	0	0	0	0	101D	152
212	0	2	1	0				D	153
212	120	1	0	0	0	0	0	101D	154
212	0	2	9	102				D	155
212	129	1	0	0	0	0	0	101D	156
212	0	2	12	105				D	157
212	141	1	0	0	0	0	0	101D	158
212	0	2	8	101				D	159
212	149	1	0	0	0	0	0	101D	160
212	0	2	4	100				D	161
212	153	1	0	0	0	0	0	101D	162
212	0	2	3	8				D	163
212	156	1	0	0	0	0	0	101D	164
212	0	2	3	7				D	165
212	159	1	0	0	0	0	0	101D	166
212	0	2	3	6				D	167
212	162	1	0	0	0	0	0	101D	168
212	0	2	3	5				D	169
212	165	1	0	0	0	0	0	101D	170

212	0	2	2	0	0	0	0	0	D	180
212	167	1	0	0	0	0	0	101D	181	
212	0	2	3	0	0	0	0	D	182	
212	170	1	0	0	0	0	0	101D	183	
212	0	2	3	0	0	0	0	D	184	
212	173	1	0	0	0	0	0	101D	185	
212	0	2	3	0	0	0	0	D	186	
212	176	1	0	0	0	0	0	101D	187	
212	0	2	3	0	0	0	0	D	188	
212	179	1	0	0	0	0	0	101D	189	
212	0	2	3	0	0	0	0	D	190	
212	182	1	0	0	0	0	0	101D	191	
212	0	2	3	0	0	0	0	D	192	
212	185	1	0	0	0	0	0	101D	193	
212	0	2	3	0	0	0	0	D	194	
212	188	1	0	0	0	0	0	101D	195	
212	0	2	3	0	0	0	0	D	196	
212	191	1	0	0	0	0	0	101D	197	
212	0	2	3	0	0	0	0	D	198	
212	194	1	0	0	0	0	0	101D	199	
212	0	2	3	0	0	0	0	D	200	
212	197	1	0	0	0	0	0	101D	201	
212	0	2	3	0	0	0	0	D	202	
212	200	1	0	0	0	0	0	101D	203	
212	0	2	2	0	0	0	0	D	204	
212	202	1	0	0	0	0	0	101D	205	
212	0	2	3	0	0	0	0	D	206	
212	205	1	0	0	0	0	0	101D	207	
212	0	2	3	0	0	0	0	D	208	
212	208	1	0	0	0	0	0	101D	209	
212	0	2	3	0	0	0	0	D	210	
212	211	1	0	0	0	0	0	101D	211	
212	0	2	3	0	0	0	0	D	212	
212	214	1	0	0	0	0	0	101D	213	
212	0	2	3	0	0	0	0	D	214	
212	217	1	0	0	0	0	0	101D	215	
212	0	2	3	0	0	0	0	D	216	
212	220	1	0	0	0	0	0	101D	217	
212	0	2	2	0	0	0	0	D	218	
212	222	1	0	0	0	0	0	101D	219	
212	0	2	2	0	0	0	0	D	220	
212	224	1	0	0	0	0	0	101D	221	
212	0	2	1	0	0	0	0	D	222	
212	225	1	0	0	0	0	0	101D	223	
212	0	2	3	0	0	0	0	D	224	
212	228	1	0	0	0	0	0	101D	225	
212	0	2	3	0	0	0	0	D	226	
212	231	1	0	0	0	0	0	101D	227	
212	0	2	3	0	0	0	0	D	228	
212	234	1	0	0	0	0	0	101D	229	
212	0	2	3	0	0	0	0	D	230	
212	237	1	0	0	0	0	0	101D	231	
212	0	2	3	0	0	0	0	D	232	
212	240	1	0	0	0	0	0	101D	233	
212	0	2	3	0	0	0	0	D	234	
212	243	1	0	0	0	0	0	101D	235	
212	0	2	3	0	0	0	0	D	236	
212	246	1	0	0	0	0	0	101D	237	
212	0	2	3	0	0	0	0	D	238	
212	249	1	0	0	0	0	0	101D	239	
212	0	2	3	0	0	0	0	D	240	
212	252	1	0	0	0	0	0	101D	241	
212	0	2	6	0	0	0	0	D	242	
212	258	1	0	0	0	0	0	101D	243	
212	0	2	3	2	0	0	0	D	244	
212	261	1	0	0	0	0	0	101D	245	

212	0	2	2	4	0	0	0	101D	246
212	263	1	0	0	0	0	0	D	247
212	0	2	2	3	0	0	0	D	248
212	265	1	0	0	0	0	0	101D	249
212	0	2	2	1	0	0	0	D	250
212	267	1	0	0	0	0	0	101D	251
212	0	2	3	0	0	0	0	D	252
212	270	1	0	0	0	0	0	101D	253
212	0	2	3	0	0	0	0	D	254
212	273	1	0	0	0	0	0	101D	255
212	0	2	3	0	0	0	0	D	256
212	276	1	0	0	0	0	0	101D	257
212	0	2	3	0	0	0	0	D	258
212	279	1	0	0	0	0	0	101D	259
212	0	2	3	0	0	0	0	D	260
212	282	1	0	0	0	0	0	101D	261
212	0	2	3	0	0	0	0	D	262
408	285	1	1	0	0	0	0	1D	263
408	0	0	1	0				D	264
0	286			1				D	265
0			1					D	266
0	287			1				D	267
0			1					D	268
0	288			1				D	269
0			1					D	270
0	289			1				D	271
0			1					D	272
0	290			1				D	273
0			1					D	274
0	291			1				D	275
0			1					D	276
0	292			1				D	277
0			1					D	278
102	293	1	1	0	0	0	0	201D	279
102	0	0	1	0				D	280
0	294	1	0	0	0	0	0	10201D	281
0	0	0	1	0				D	282
0	295	1	0	0	0	0	0	10201D	283
0	0	0	1	0				D	284
406	296	1	0	0	0	0	0	20001D	285
406	0	0	1	16				D	286
404	297	1	0	0	0	0	0	101D	287
404	0	0	1	0				D	288
406	298	0	1	0	0	0	0	20001D	289
406	0	0	1	18				D	290
412	299	1	1	0	0	0	0	1D	291
412	0	0	1	0				D	292
414	300	1	1	0	0	0	0	1D	293
414	0	0	1	0				D	294
100	301	1	1	0	0	37	0	1D	295
100	0	2	1	0				D	296

```

0; 1P 1
0; 3P 2
0; 5P 3
0; 7P 4
0; 9P 5
0; 11P 6
110,-0.125,0.0,0.0,0.0,0.25,0.0; 13P 7
110,0.0,0.25,0.0,0.125,0.0,0.0; 15P 8
110,0.0,0.25,0.0,0.0,0.4375,0.0; 17P 9
110,0.0,0.375,0.0,0.09375,0.28125,0.0; 19P 10
110,0.0,0.375,0.0,-0.09375,0.28125,0.0; 21P 11
100,0.0,0.0,0.5,0.0625,0.5,0.0625,0.5; 23P 12
308,0,6HPERSON,6,13,15,17,19,21,23; 25P 13
0; 27P 14
0; 29P 15

```

0;	31P	16
0;	33P	17
0;	35P	18
124,0.0,1.0,0.0,5.5,-1.0,0.0,0.0,7.5,0.0,0.0,1.0,0.0;	37P	19
0;	39P	20
0;	41P	21
0;	43P	22
0;	45P	23
0;	47P	24
0;	49P	25
0;	51P	26
0;	53P	27
410,5,1.0,0,0,0,0,0,0,0;	55P	28
110,3.0,10.0,0.0,3.5,9.5,0.0;	57P	29
110,3.0,9.5,0.0,3.0,10.0,0.0;	59P	30
124,-1.0,0.0,0.0,9.75,0.0,-1.0,0.0,9.5,0.0,0.0,1.0,0.0;	61P	31
104,16.0,0.0,-64.0,0.0,0.0,-1.0,0.0,0.5,-0.216506,0.5,0.216506;	63P	32
124,0.0,-1.0,0.0,11.5,1.0,0.0,0.0,9.5,0.0,0.0,1.0,0.0;	65P	33
104,0.0,0.0,1.0,-1.0,0.0,0.0,0.0,0.25,-0.5,0.25,0.5;	67P	34
124,0.0,-1.0,0.0,5.5,1.0,0.0,0.0,9.5,0.0,0.0,1.0,0.0;	69P	35
104,0.0625,0.0,0.25,0.0,0.0,-0.015625,0.0,0.0,-0.25,0.0,-0.25;	71P	36
110,1.5,8.0,0.0,1.5,7.0,0.0;	73P	37
124,1.0,0.0,0.0,7.5,0.0,1.0,0.0,9.5,0.0,0.0,1.0,0.0;	75P	38
104,0.0625,0.0,0.25,0.0,0.0,-0.015625,0.0,0.5,0.0,0.5,0.0;	77P	39
100,0.0,1.5,9.5,1.5,9.0,1.0,9.5;	79P	40
110,13.0,3.0,0.0,13.0,4.0,0.0;	81P	41
110,13.0,4.0,0.0,14.0,4.0,0.0;	83P	42
110,14.0,4.0,0.0,14.0,3.0,0.0;	85P	43
110,14.0,3.0,0.0,13.0,3.0,0.0;	87P	44
110,0.5,0.5,0.0,16.5,0.5,0.0;	89P	45
110,0.5,2.5,0.0,16.5,2.5,0.0;	91P	46
110,0.5,4.5,0.0,16.5,4.5,0.0;	93P	47
110,0.5,6.5,0.0,16.5,6.5,0.0;	95P	48
110,0.5,8.5,0.0,16.5,8.5,0.0;	97P	49
110,0.5,10.5,0.0,16.5,10.5,0.0;	99P	50
110,0.5,0.5,0.0,0.5,10.5,0.0;	101P	51
110,2.5,0.5,0.0,2.5,10.5,0.0;	103P	52
110,4.5,0.5,0.0,4.5,10.5,0.0;	105P	53
110,6.5,0.5,0.0,6.5,10.5,0.0;	107P	54
110,8.5,0.5,0.0,8.5,10.5,0.0;	109P	55
110,10.5,0.5,0.0,10.5,10.5,0.0;	111P	56
110,12.5,0.5,0.0,12.5,10.5,0.0;	113P	57
110,14.5,0.5,0.0,14.5,10.5,0.0;	115P	58
110,16.5,0.5,0.0,16.5,10.5,0.0;	117P	59
0;	119P	60
0;	121P	61
0;	123P	62
0;	125P	63
0;	127P	64
0;	129P	65
0;	131P	66
0;	133P	67
0;	135P	68
106,1,26,0.0,14.0,9.25,13.9961,9.3127,13.9843,9.3743,	137P	69
13.9649,9.4341,13.9382,9.4909,13.9045,9.5439,	137P	70
13.8645,9.5923,13.8187,9.6353,13.7679,9.6722,	137P	71
13.7129,9.7024,13.6545,9.7255,13.5937,9.7411,	137P	72
13.5314,9.749,13.4686,9.749,13.4063,9.7411,13.3455,	137P	73
9.7255,13.2871,9.7024,13.2321,9.6722,13.1813,9.6353,	137P	74
13.1355,9.5923,13.0955,9.5439,13.0618,9.4909,	137P	75
13.0351,9.4341,13.0157,9.3743,13.0039,9.3127,13.0,9.25;	137P	76
106,1,5,0.0,15.0,10.0,16.0,10.0,16.0,9.25,15.0,9.25,15.0,10.0;	139P	77
112,3,1,2,2,0.0,1.0,2.0,3.5,0.5625,0.0,-0.0625,9.5,-0.3125,	141P	78
0.0,0.0625,0.0,0.0,0.0,0.0,4.0,0.375,-0.1875,0.0625,	141P	79
9.25,-0.125,0.1875,-0.0625,0.0,0.0,0.0,0.0,4.25,0.1875,0.0,	141P	80
0.375,9.25,0.0625,0.0,-0.375,0.0,0.0,0.0,0.0,0.0;	141P	81

112,3,1,2,8,0.0,1.0,2.0,3.0,4.0,5.0,6.0,7.0,8.0,3.0,0.870858,	143P	82
0.0,-0.120858,8.0,-0.249075,0.0,0.0,0.0,0.0,	143P	83
0.0,0.0,3.75,0.508284,-0.362575,0.10429,7.75,-0.251843,	143P	84
0.0,0.0,0.0,0.0,0.0,0.0,4.0,0.0.0960054,	143P	85
-0.0497036,-0.0463009,7.5,-0.243556,0.0110455,-0.0174891,0.0,	143P	86
0.0,0.0,0.0,4.0,-0.142304,-0.188606,0.0809104,7.25,-0.273932,	143P	87
-0.0414219,0.065354,0.0,0.0,0.0,0.0,3.75,-0.276786,0.0541248,	143P	88
-0.0273387,7.0,-0.160714,0.15464,0.0,0.0,0.0,0.0,0.0,	143P	89
3.5,-0.250552,-0.0278912,0.0284429,7.0,0.16679,0.172863,	143P	90
-0.0896533,0.0,0.0,0.0,0.0,3.25,-0.221006,0.0574377,0.163568,	143P	91
7.25,0.243557,-0.0960965,0.10254,0.0,0.0,0.0,0.0,3.25,0.384573,	143P	92
0.548141,-0.182714,7.5,0.358985,0.211525,-0.0705097,0.0,0.0,0.0,	143P	93
0.0,4.0,0.932714,0.0,-1.09628,8.0,0.570505,	143P	94
0.0,-0.423058,0.0,0.0,0.0,0.0;	143P	95
126,1,1,1,0,1,0,0.0,0.0,1.0,1.0,1.0,1.0,9.0,7.5,0.0,10.0,8.0,	145P	96
0.0,0.0,1.0,0.0,0.0,1.0;	145P	97
126,5,5,1,0,1,0,0.0,0.0,0.0,0.0,0.0,0.0,1.0,1.0,1.0,1.0,1.0,	147P	98
1.0,1.0,1.0,1.0,1.0,1.0,12.0,7.5,0.0,12.0,7.8341,0.0,11.721,	147P	99
8.13295,0.0,11.279,8.13295,0.0,11.0,7.8341,0.0,11.0,7.5,0.0,0.0,	147P	100
1.0,0.0,0.0,1.0;	147P	101
126,8,3,1,0,1,0,0.0,0.0,0.0,0.0,1.0,2.0,3.0,4.0,5.0,6.0,6.0,6.0,	149P	102
6.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,7.0,7.0,0.0,7.01111,	149P	103
7.15385,0.0,7.03333,7.46154,0.0,6.86667,8.15385,0.0,7.5,7.92308,	149P	104
0.0,8.13333,8.15385,0.0,7.96667,7.46154,0.0,7.98889,7.15385,0.0,	149P	105
8.0,7.0,0.0,0.0,6.0,0.0,0.0,1.0;	149P	106
126,5,5,1,0,1,0,0.0,0.0,0.0,0.0,0.0,0.0,1.0,1.0,1.0,1.0,1.0,	151P	107
1.0,1.0,1.0,1.0,1.0,1.0,14.0,7.5,0.0,14.0,7.66705,0.0,13.721,	151P	108
7.81647,0.0,13.279,7.81647,0.0,13.0,7.66705,0.0,13.0,7.5,0.0,	151P	109
0.0,1.0,0.0,0.0,1.0;	151P	110
126,2,2,1,0,1,0,0.0,0.0,0.0,1.0,1.0,1.0,1.0,1.0,1.0,16.0,7.75,	153P	111
0.0,15.5,7.25,0.0,15.0,7.75,0.0,0.0,1.0,0.0,0.0,0.0,1.0;	153P	112
126,6,6,1,0,1,0,0.0,0.0,0.0,0.0,0.0,0.0,1.0,1.0,1.0,1.0,1.0,	155P	113
1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.0,1.25,5.71651,0.0,1.49816,	155P	114
5.57323,0.0,1.52537,5.52714,0.0,1.49104,5.50133,0.0,1.51981,	155P	115
5.4700,0.0,1.5040,5.4302,0.0,1.25,5.2835,0.0,0.0,1.0,0.0,0.0,1.;	155P	116
102,4,81,83,85,87;	157P	117
230,157,1,13.7172,2.99,0.0,0.2,0.785385,0;	159P	118
212,1,6,1.0,0.125,1,1.0461,4.71,0,1,4.0,6.0,0.0,6HSIMPLE;	161P	119
212,9,2,0.22,0.125,1,1.5708,0.0,0,0,8.65625,3.5625,0.0,2HIM,	163P	120
3.0.35,0.125,1,1.5708,0.0,0,0,9.03125,3.65625,0.0,3HBED,	163P	121
3.0.34,0.125,1,1.5708,0.0,0,0,9.03125,3.46875,0.0,3HDED,	163P	122
4.0.44,0.125,1,1.5708,0.0,0,0,8.96875,3.5625,0.0,4H----,	163P	123
1.0.1,0.125,1002,1.5708,0.0,0,0,9.53125,3.5625,0.0,1Hi,	163P	124
2.0.24,0.125,1,1.5708,0.0,0,0,9.71875,3.5625,0.0,2HFR,	163P	125
3.0.35,0.125,1,1.5708,0.0,0,0,10.0938,3.65625,0.0,3HACT,	163P	126
3.0.32,0.125,1,1.5708,0.0,0,0,10.0938,3.46875,0.0,3HION,	163P	127
4.0.44,0.125,1,1.5708,0.0,0,0,10.0313,3.5625,0.0,4H----;	163P	128
212,12,2,0.24,0.125,1,1.5708,0.0,0,0,10.625,3.625,0.0,2HFR,	165P	129
3.0.34,0.125,1,1.5708,0.0,0,0,11.0313,3.71875,0.0,3HSUP,	165P	130
3.0.35,0.125,1,1.5708,0.0,0,0,11.0313,3.53125,0.0,3HSUB,	165P	131
4.0.44,0.125,1,1.5708,0.0,0,0,10.9688,3.625,0.0,4H----,	165P	132
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1.0.12,0.125,1,1.5708,0.0,0,0,11.8125,4.28125,0.0,1HO,	165P	134
1.0.11,0.125,1,1.5708,0.0,0,0,11.8125,4.09375,0.0,1HP,	165P	135
3.0.33,0.125,1,1.5708,0.0,0,0,11.6875,4.1875,0.0,3H---,	165P	136
2.0.24,0.125,1,1.5708,0.0,0,0,11.4375,3.0625,0.0,2HBO,	165P	137
2.0.24,0.125,1,1.5708,0.0,0,0,11.7813,3.15625,0.0,2HTT,	165P	138
2.0.26,0.125,1,1.5708,0.0,0,0,11.7813,2.96875,0.0,2HOM,	165P	139
3.0.33,0.125,1,1.5708,0.0,0,0,11.75,3.0625,0.0,3H---;	165P	140
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3.0.33,0.125,1,1.5708,0.0,0,0,7.5625,3.8125,0.0,3H---,	167P	144
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4,0.44,0.125,1,1.5708,0.0,0,0,5.1875,3.5625,0.0,4H----;	169P	152
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212,3,1,0.1133,0.125,1,1.5708,0.0,0,0,13.0,5.625,0.0,1HS,5,	177P	162
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C - ELLIPSE,12,0.812,0.07,1,1.5708,0.0,0,0,7.094,8.645,0.0,12H(1	213P	215
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212,2,23,1.792,0.07,1,1.5708,0.0,0,0,6.604,6.75,0.0,23HRATIONAL	223P	225
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B-SPLINE CURVE,27,1.974,0.07,1,1.5708,0.0,0,0,12.513,6.645,0.0,	229P	235
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**Attachment I**

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1H,,1H;,7HLGTABLE,7HLGTABLE,4HNONE,4HTEST,32,38,6,308,15, G 1  
 7HLGTABLE,1.0,1,2HIN,25,0.1, G 2  
 13H890707.090000,0.0001,20.0, G 3  
 7HFARRELL,17HCALS TEST NETWORK,6,0; G 4

410	1	0	0	0	0	0	000020100D	1
410	0	0	1	0	0	0	OVIEW 1D	2
406	2	0	0	0	0	0	000020001D	3
406	0	0	1	16	0	0	2D	4
404	3	0	0	0	0	0	000000101D	5
404	0	0	1	0	0	0	ODRAWING 3D	6
212	4	0	0	0	0	0	000000101D	7
212	0	0	2	0	0	0	OTX0044 4D	8
110	6	0	1	0	0	0	000000101D	9
110	0	0	2	0	0	0	OTX0044 5D	10
110	8	0	1	0	0	0	000010101D	11
110	0	0	2	0	0	0	OTX0044 6D	12
110	10	0	1	0	0	0	000010101D	13
110	0	0	2	0	0	0	OTX0044 7D	14
110	12	0	1	0	0	0	000010101D	15
110	0	0	2	0	0	0	OTX0044 8D	16
212	14	0	0	0	0	0	000000101D	17
212	0	0	2	0	0	0	OTX0045 9D	18
110	16	0	1	0	0	0	000000101D	19
110	0	0	2	0	0	0	OTX0045 10D	20
110	18	0	1	0	0	0	000010101D	21
110	0	0	2	0	0	0	OTX0045 11D	22
110	20	0	1	0	0	0	000010101D	23
110	0	0	2	0	0	0	OTX0045 12D	24
110	22	0	1	0	0	0	000010101D	25
110	0	0	2	0	0	0	OTX0045 13D	26
110	24	0	1	0	0	0	000000001D	27
110	3	4	2	0	0	0	OLN0141 14D	28
110	26	0	1	0	0	0	000000001D	29
110	3	4	2	0	0	0	OLN0142 15D	30
110	28	0	1	0	0	0	000000001D	31
110	2	0	2	0	0	0	OLN0143 16D	32
110	30	0	1	0	0	0	000000001D	33
110	3	4	2	0	0	0	OLN0144 17D	34
110	32	0	1	0	0	0	000000001D	35
110	2	0	2	0	0	0	OLN0145 18D	36
110	34	0	1	0	0	0	000000001D	37
110	3	4	2	0	0	0	OLN0146 19D	38
110	36	0	1	0	0	0	000000001D	39
110	4	7	2	0	0	0	OLN0147 20D	40
112	38	0	1	0	0	0	000000001D	41
112	4	7	6	0	0	0	OPC0013 21D	42
112	44	0	1	0	0	0	000000001D	43
112	4	7	5	0	0	0	OPC0014 22D	44
112	49	0	1	0	0	0	000000001D	45
112	4	7	6	0	0	0	OPC0015 23D	46
112	55	0	1	0	0	0	000000001D	47
112	2	0	5	0	0	0	OPC0016 24D	48
112	60	0	1	0	0	0	000000001D	49
112	3	4	6	0	0	0	OPC0017 25D	50
112	66	0	1	0	0	0	000000001D	51
112	4	7	6	0	0	0	OPC0018 26D	52
112	72	0	1	0	0	0	000000001D	53
112	3	4	6	0	0	0	OPC0019 27D	54

112	78	0	1	0	0	0	000000001D	55
112	4	7	6	0	0	OPC0020	28D	56
112	84	0	1	0	0	0	000000001D	57
112	3	4	6	0	0	OPC0021	29D	58
112	90	0	1	0	0	0	000000001D	59
112	4	7	6	0	0	OPC0022	30D	60
110	96	0	1	0	0	0	000000001D	61
110	4	7	2	0	0	OLN0148	31D	62
110	98	0	1	0	0	0	000000001D	63
110	4	7	2	0	0	OLN0149	32D	64
0	100	0	0	0	0	0	000000001D	65
0	0	0	2	0	0	OMATRIX	33D	66
100	102	0	1	0	0	0	000000001D	67
100	4	7	2	0	0	OCR0093	34D	68
110	104	0	1	0	0	0	000000001D	69
110	2	0	2	0	0	OLN0150	35D	70
110	106	0	1	0	0	0	000000001D	71
110	2	0	2	0	0	OLN0151	36D	72
110	108	0	1	0	0	0	000000001D	73
110	4	7	2	0	0	OLN0152	37D	74
110	110	0	1	0	0	0	000000001D	75
110	4	7	2	0	0	OLN0153	38D	76
110	112	0	1	0	0	0	000000001D	77
110	4	7	2	0	0	OLN0154	39D	78
110	114	0	1	0	0	0	000000001D	79
110	4	7	2	0	0	OLN0155	40D	80
110	116	0	1	0	0	0	000000001D	81
110	4	7	2	0	0	OLN0156	41D	82
110	118	0	1	0	0	0	000000001D	83
110	4	7	2	0	0	OLN0157	42D	84
0	120	0	0	0	0	0	000000001D	85
0	0	0	3	0	0	OMATRIX	43D	86
0	123	0	1	0	0	0	000000001D	87
0	2	0	3	0	0	OLC0007	44D	88
124	126	0	0	0	0	0	000000001D	89
124	0	0	3	0	0	OMATRIX	45D	90
104	129	0	1	0	0	89	000000001D	91
104	3	4	3	0	0	OLC0008	46D	92
124	132	0	0	0	0	0	000000001D	93
124	0	0	3	0	0	OMATRIX	47D	94
104	135	0	1	0	0	93	000000001D	95
104	4	7	3	0	0	OLC0009	48D	96
104	138	0	1	0	0	89	000000001D	97
104	2	0	3	0	0	OLC0010	49D	98
112	141	0	1	0	0	0	000000001D	99
112	4	7	5	0	0	OPC0023	50D	100
100	146	0	1	0	0	0	000000001D	101
100	2	0	2	0	0	OCR0094	51D	102
110	148	0	1	0	0	0	000000001D	103
110	4	7	2	0	0	OLN0158	52D	104
110	150	0	1	0	0	0	000000001D	105
110	2	0	2	0	0	OLN0159	53D	106
110	152	0	1	0	0	0	000000001D	107
110	2	0	2	0	0	OLN0160	54D	108
110	154	0	1	0	0	0	000000001D	109
110	2	0	2	0	0	OLN0161	55D	110
110	156	0	1	0	0	0	000000001D	111
110	2	0	2	0	0	OLN0162	56D	112
110	158	0	1	0	0	0	000000001D	113
110	2	0	2	0	0	OLN0163	57D	114
110	160	0	1	0	0	0	000000001D	115
110	2	0	2	0	0	OLN0164	58D	116
110	162	0	1	0	0	0	000000001D	117
110	3	4	2	0	0	OLN0165	59D	118
110	164	0	1	0	0	0	000000001D	119
110	3	4	2	0	0	OLN0166	60D	120

110	166	0	1	0	0	0	000000001D	121
110	3	4	2	0	0	OLN0167	61D	122
110	168	0	1	0	0	0	000000001D	123
110	3	4	2	0	0	OLN0168	62D	124
100	170	0	1	0	0	0	000000001D	125
100	4	7	2	0	0	OCR0095	63D	126
110	172	0	1	0	0	0	000000001D	127
110	4	7	2	0	0	OLN0169	64D	128
110	174	0	1	0	0	0	000000001D	129
110	4	7	2	0	0	OLN0170	65D	130
100	176	0	1	0	0	0	000000001D	131
100	4	7	2	0	0	OCR0096	66D	132
110	178	0	1	0	0	0	000000001D	133
110	4	7	2	0	0	OLN0171	67D	134
110	180	0	1	0	0	0	000000001D	135
110	2	0	2	0	0	OLN0172	68D	136
110	182	0	1	0	0	0	000000001D	137
110	2	0	2	0	0	OLN0173	69D	138
110	184	0	1	0	0	0	000000001D	139
110	2	0	2	0	0	OLN0174	70D	140
110	186	0	1	0	0	0	000000001D	141
110	2	0	2	0	0	OLN0175	71D	142
110	188	0	1	0	0	0	000000001D	143
110	3	4	2	0	0	OLN0176	72D	144
110	190	0	1	0	0	0	000000001D	145
110	3	4	2	0	0	OLN0177	73D	146
110	192	0	1	0	0	0	000000001D	147
110	2	0	2	0	0	OLN0178	74D	148
100	194	0	1	0	0	0	000000001D	149
100	2	0	2	0	0	OCR0097	75D	150
110	196	0	1	0	0	0	000000001D	151
110	3	4	2	0	0	OLN0179	76D	152
110	198	0	1	0	0	0	000000001D	153
110	3	4	2	0	0	OLN0180	77D	154
124	200	0	0	0	0	0	000000001D	155
124	0	0	3	0	0	OMATRIX	78D	156
104	203	0	1	0	0	155	000000001D	157
104	2	0	4	0	0	OLC0011	79D	158
110	207	0	1	0	0	0	000000001D	159
110	2	0	2	0	0	OLN0181	80D	160
110	209	0	1	0	0	0	000000001D	161
110	2	0	2	0	0	OLN0182	81D	162
110	211	0	1	0	0	0	000000001D	163
110	3	4	2	0	0	OLN0183	82D	164
110	213	0	1	0	0	0	000000001D	165
110	3	4	2	0	0	OLN0184	83D	166
110	215	0	1	0	0	0	000000001D	167
110	3	4	2	0	0	OLN0185	84D	168
110	217	0	1	0	0	0	000000001D	169
110	2	0	2	0	0	OLN0186	85D	170
110	219	0	1	0	0	0	000000001D	171
110	2	0	2	0	0	OLN0187	86D	172
100	221	0	1	0	0	0	000000001D	173
100	2	0	2	0	0	OCR0098	87D	174
100	223	0	1	0	0	0	000000001D	175
100	4	7	2	0	0	OCR0099	88D	176
110	225	0	1	0	0	0	000000001D	177
110	3	4	2	0	0	OLN0188	89D	178
110	227	0	1	0	0	0	000000001D	179
110	3	4	2	0	0	OLN0189	90D	180
110	229	0	1	0	0	0	000000001D	181
110	2	0	2	0	0	OLN0190	91D	182
110	231	0	1	0	0	0	000000001D	183
110	2	0	2	0	0	OLN0191	92D	184
110	233	0	1	0	0	0	000000001D	185
110	2	0	2	0	0	OLN0192	93D	186

110	235	0	1	0	0	0	000000001D	187
110	3	4	2	0	0	0LN0193	94D	188
100	237	0	1	0	0	0	000000001D	189
100	4	7	2	0	0	0CR0100	95D	190
110	239	0	1	0	0	0	000000001D	191
110	2	0	2	0	0	0LN0194	96D	192
112	241	0	1	0	0	0	000000001D	193
112	4	7	6	0	0	0PC0024	97D	194
110	247	0	1	0	0	0	000000001D	195
110	4	7	2	0	0	0LN0195	98D	196
110	249	0	1	0	0	0	000000001D	197
110	4	7	2	0	0	0LN0196	99D	198
100	251	0	1	0	0	0	000000001D	199
100	2	0	2	0	0	0CR0101	100D	200
110	253	0	1	0	0	0	000000001D	201
110	4	7	2	0	0	0LN0197	101D	202
110	255	0	1	0	0	0	000000001D	203
110	4	7	2	0	0	0LN0198	102D	204
104	257	0	1	0	0	155	000000001D	205
104	4	7	3	0	0	0LC0012	103D	206
110	260	0	1	0	0	0	000000001D	207
110	4	7	2	0	0	0LN0199	104D	208
100	262	0	1	0	0	0	000000001D	209
100	4	7	2	0	0	0CR0102	105D	210
0	264	0	1	0	0	0	000000001D	211
0	3	4	2	0	0	0LN0200	106D	212
110	266	0	1	0	0	0	000000001D	213
110	4	7	2	0	0	0LN0201	107D	214
110	268	0	1	0	0	0	000000001D	215
110	4	7	2	0	0	0LN0202	108D	216
110	270	0	1	0	0	0	000000001D	217
110	4	7	2	0	0	0LN0203	109D	218
100	272	0	1	0	0	0	000000001D	219
100	4	7	2	0	0	0CR0103	110D	220
100	274	0	1	0	0	0	000000001D	221
100	2	0	2	0	0	0CR0104	111D	222
110	276	0	1	0	0	0	000000001D	223
110	4	7	2	0	0	0LN0204	112D	224
100	278	0	1	0	0	0	000000001D	225
100	4	7	2	0	0	0CR0105	113D	226
100	280	0	1	0	0	0	000000001D	227
100	2	0	2	0	0	0CR0106	114D	228
100	282	0	1	0	0	0	000000001D	229
100	2	0	2	0	0	0CR0107	115D	230
110	284	0	1	0	0	0	000000001D	231
110	2	0	2	0	0	0LN0205	116D	232
110	286	0	1	0	0	0	000000001D	233
110	2	0	2	0	0	0LN0206	117D	234
110	288	0	1	0	0	0	000000001D	235
110	2	0	2	0	0	0LN0207	118D	236
110	290	0	1	0	0	0	000000001D	237
110	2	0	2	0	0	0LN0208	119D	238
110	292	0	1	0	0	0	000000001D	239
110	2	0	2	0	0	0LN0209	120D	240
110	294	0	1	0	0	0	000000001D	241
110	4	7	1	0	0	0LN0210	121D	242
110	295	0	1	0	0	0	000000001D	243
110	4	7	1	0	0	0LN0211	122D	244
110	296	0	1	0	0	0	000000001D	245
110	2	0	1	0	0	0LN0212	123D	246
110	297	0	1	0	0	0	000000001D	247
110	2	0	1	0	0	0LN0213	124D	248
110	298	0	1	0	0	0	000000001D	249
110	2	0	1	0	0	0LN0214	125D	250
110	299	0	1	0	0	0	000000001D	251
110	2	0	1	0	0	0LN0215	126D	252

110	300	0	1	0	0	0	000000001D	253
110	2	0	1	0	0	0LN0216	127D	254
110	301	0	1	0	0	0	000000001D	255
110	4	7	1	0	0	0LN0217	128D	256
212	302	0	0	0	0	0	000000101D	257
212	0	0	2	0	0	0TX0046	129D	258
212	304	0	0	0	0	0	000000101D	259
212	0	0	3	0	0	0TX0047	130D	260
212	307	0	0	0	0	0	000000101D	261
212	0	0	2	0	0	0TX0048	131D	262
212	309	0	0	0	0	0	000000101D	263
212	0	0	2	0	0	0TX0049	132D	264
212	311	0	0	0	0	0	000000101D	265
212	0	0	2	0	0	0TX0050	133D	266
212	313	0	0	0	0	0	000000101D	267
212	0	0	2	0	0	0TX0051	134D	268
212	315	0	0	0	0	0	000000101D	269
212	0	0	6	0	0	0TX0052	135D	270
110	321	0	1	0	0	0	000000001D	271
110	4	7	1	0	0	0LN0218	136D	272
212	322	0	0	0	0	0	000000101D	273
212	0	0	6	0	0	0TX0053	137D	274
212	328	0	0	0	0	0	000000101D	275
212	0	0	6	0	0	0TX0054	138D	276
212	334	0	0	0	0	0	000000101D	277
212	0	0	6	0	0	0TX0055	139D	278
212	340	0	0	0	0	0	000000101D	279
212	0	0	6	0	0	0TX0056	140D	280
212	346	0	0	0	0	0	000000101D	281
212	0	0	2	0	0	0TX0057	141D	282
110	348	0	1	0	0	0	000000001D	283
110	4	7	2	0	0	0LN0219	142D	284
110	350	0	1	0	0	0	000000001D	285
110	4	7	2	0	0	0LN0220	143D	286
100	352	0	1	0	0	0	000000001D	287
100	4	7	2	0	0	0CR0108	144D	288
110	354	0	1	0	0	0	000000001D	289
110	4	7	2	0	0	0LN0221	145D	290
110	356	0	1	0	0	0	000000001D	291
110	2	0	2	0	0	0LN0222	146D	292
110	358	0	1	0	0	0	000000001D	293
110	2	0	2	0	0	0LN0223	147D	294
110	360	0	1	0	0	0	000000001D	295
110	2	0	2	0	0	0LN0224	148D	296
110	362	0	1	0	0	0	000000001D	297
110	2	0	2	0	0	0LN0225	149D	298
110	364	0	1	0	0	0	000000001D	299
110	2	0	2	0	0	0LN0226	150D	300
110	366	0	1	0	0	0	000000001D	301
110	4	7	2	0	0	0LN0227	151D	302
110	368	0	1	0	0	0	000000001D	303
110	2	0	2	0	0	0LN0228	152D	304
100	370	0	1	0	0	0	000000001D	305
100	4	7	2	0	0	0CR0109	153D	306
110	372	0	1	0	0	0	000000001D	307
110	2	0	2	0	0	0LN0229	154D	308
100	374	0	1	0	0	0	000000001D	309
100	2	0	2	0	0	0CR0110	155D	310
110	376	0	1	0	0	0	000000001D	311
110	2	0	2	0	0	0LN0230	156D	312
110	378	0	1	0	0	0	000000001D	313
110	4	7	2	0	0	0LN0231	157D	314
100	380	0	1	0	0	0	000000001D	315
100	4	7	2	0	0	0CR0111	158D	316
110	382	0	1	0	0	0	000000001D	317
110	2	0	2	0	0	0LN0232	159D	318

100	384	0	1	0	0	0	000000001D	319
100	2	0	2	0	0	0CR0112	160D	320
100	386	0	1	0	0	0	000000001D	321
100	2	0	2	0	0	0CR0113	161D	322
100	388	0	1	0	0	0	000010001D	323
100	2	0	2	0	0	0CR0114	162D	324
100	390	0	1	0	0	0	000010001D	325
100	2	0	2	0	0	0CR0115	163D	326
100	392	0	1	0	0	0	000010001D	327
100	2	0	2	0	0	0CR0116	164D	328
100	394	0	1	0	0	0	000000001D	329
100	2	0	2	0	0	0CR0117	165D	330
100	396	0	1	0	0	0	000000001D	331
100	2	0	2	0	0	0CR0118	166D	332
100	398	0	1	0	0	0	000000001D	333
100	2	0	2	0	0	0CR0119	167D	334
100	400	0	1	0	0	0	000000001D	335
100	2	0	2	0	0	0CR0120	168D	336
100	402	0	1	0	0	0	000000001D	337
100	2	0	2	0	0	0CR0121	169D	338
100	404	0	1	0	0	0	000000001D	339
100	2	0	2	0	0	0CR0122	170D	340
100	406	0	1	0	0	0	000000001D	341
100	2	0	2	0	0	0CR0123	171D	342
100	408	0	1	0	0	0	000000001D	343
100	2	0	2	0	0	0CR0124	172D	344
110	410	0	1	0	0	0	000000001D	345
110	4	7	2	0	0	OLN0233	173D	346
110	412	0	1	0	0	0	000000001D	347
110	4	7	2	0	0	OLN0234	174D	348
100	414	0	1	0	0	0	000000001D	349
100	2	0	2	0	0	0CR0125	175D	350
100	416	0	1	0	0	0	000000001D	351
100	2	0	2	0	0	0CR0126	176D	352
110	418	0	1	0	0	0	000000001D	353
110	4	7	2	0	0	OLN0235	177D	354
100	420	0	1	0	0	0	000000001D	355
100	2	0	2	0	0	0CR0127	178D	356
100	422	0	1	0	0	0	000000001D	357
100	2	0	2	0	0	0CR0128	179D	358
100	424	0	1	0	0	0	000000001D	359
100	2	0	2	0	0	0CR0129	180D	360
100	426	0	1	0	0	0	000000001D	361
100	2	0	2	0	0	0CR0130	181D	362
100	428	0	1	0	0	0	000000001D	363
100	2	0	2	0	0	0CR0131	182D	364
100	430	0	1	0	0	0	000000001D	365
100	2	0	2	0	0	0CR0132	183D	366
100	432	0	1	0	0	0	000000001D	367
100	2	0	2	0	0	0CR0133	184D	368
100	434	0	1	0	0	0	000000001D	369
100	2	0	2	0	0	0CR0134	185D	370
100	436	0	1	0	0	0	000000001D	371
100	2	0	2	0	0	0CR0135	186D	372
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100	2	0	2	0	0	0CR0136	187D	374
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100	2	0	2	0	0	0CR0137	188D	376
100	442	0	1	0	0	0	000000001D	377
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100	2	0	2	0	0	0CR0140	191D	382
100	448	0	1	0	0	0	000000001D	383
100	2	0	2	0	0	0CR0141	192D	384

100	450	0	1	0	0	0	000000001D	385
100	2	0	2	0	0	0CR0142	193D	386
100	452	0	1	0	0	0	000000001D	387
100	2	0	2	0	0	0CR0143	194D	388
100	454	0	1	0	0	0	000000001D	389
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100	2	0	2	0	0	0CR0146	197D	394
100	460	0	1	0	0	0	000000001D	395
100	2	0	2	0	0	0CR0147	198D	396
110	462	0	1	0	0	0	000000001D	397
110	4	7	2	0	0	0LN0236	199D	398
100	464	0	1	0	0	0	000000001D	399
100	2	0	2	0	0	0CR0148	200D	400
100	466	0	1	0	0	0	000000001D	401
100	4	7	2	0	0	0CR0149	201D	402
212	468	0	0	0	0	0	000000101D	403
212	0	0	2	0	0	0TX0058	202D	404
212	470	0	0	0	0	0	000000101D	405
212	0	0	2	0	0	0TX0059	203D	406
100	472	0	1	0	0	0	000000001D	407
100	2	0	2	0	0	0CR0150	204D	408
100	474	0	1	0	0	0	000000001D	409
100	2	0	2	0	0	0CR0151	205D	410
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100	2	0	2	0	0	0CR0152	206D	412
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100	2	0	2	0	0	0CR0155	209D	418
212	484	0	0	0	0	0	000000101D	419
212	0	0	2	0	0	0TX0060	210D	420
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100	2	0	2	0	0	0CR0156	211D	422
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100	2	0	2	0	0	0CR0157	212D	424
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100	2	0	2	0	0	0CR0161	217D	434
100	500	0	1	0	0	0	000000001D	435
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110	2	0	2	0	0	0LN0238	219D	438
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110	2	0	2	0	0	0LN0239	220D	440
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110	2	0	2	0	0	0LN0241	222D	444
110	510	0	2	0	0	0	000000001D	445
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100	2	0	2	0	0	0CR0171	232D	464
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110	2	0	2	0	0	0LN0244	234D	468
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100	4	7	2	0	0	0CR0172	235D	470
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100	2	0	2	0	0	0CR0173	236D	472
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110	540	0	1	0	0	0	000000001D	475
110	4	7	2	0	0	0LN0246	238D	476
212	542	0	0	0	0	0	000000101D	477
212	0	0	2	0	0	0TX0061	239D	478
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110	4	7	2	0	0	0LN0247	240D	480
212	546	0	0	0	0	0	000000101D	481
212	0	0	2	0	0	0TX0062	241D	482
100	548	0	1	0	0	0	000000001D	483
100	4	7	2	0	0	0CR0174	242D	484
212	550	0	0	0	0	0	000000101D	485
212	0	0	2	0	0	0TX0063	243D	486
212	552	0	0	0	0	0	000000101D	487
212	0	0	2	0	0	0TX0064	244D	488
212	554	0	0	0	0	0	000000101D	489
212	0	0	2	0	0	0TX0065	245D	490
212	556	0	0	0	0	0	000000101D	491
212	0	0	2	0	0	0TX0066	246D	492
212	558	0	0	0	0	0	000000101D	493
212	0	0	2	0	0	0TX0067	247D	494
212	560	0	0	0	0	0	000000101D	495
212	0	0	2	0	0	0TX0068	248D	496
212	562	0	0	0	0	0	000000101D	497
212	0	0	2	0	0	0TX0069	249D	498
212	564	0	0	0	0	0	000000101D	499
212	0	0	2	0	0	0TX0070	250D	500
212	566	0	0	0	0	0	000000101D	501
212	0	0	2	0	0	0TX0071	251D	502
212	568	0	0	0	0	0	000000101D	503
212	0	0	2	0	0	0TX0072	252D	504
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212	0	0	2	0	0	0TX0073	253D	506
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212	0	0	2	0	0	0TX0074	254D	508
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212	0	0	2	0	0	0TX0077	257D	514
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7.68554,0,0;	131P	177
110,3.87129598587,7.44432656031,0.0,3.76453118153,	133P	178
7.55908587333,0.0,0,0;	133P	179
110,3.49579919375,7.80996154339,0.0,3.43391875704,	135P	180
7.78487678624,0.0,0,0;	135P	181
110,3.61173116388,7.85695741917,0.0,3.68781308514,	137P	182
7.88779909741,0.0,0,0;	137P	183
110,3.56391021322,7.77480031082,0.0,3.63419635854,	139P	184
7.80181971906,0.0,0,0;	139P	185
110,3.5429504875,7.80785282197,0.0,3.61323663282,	141P	186
7.83487223022,0.0,0,0;	141P	187
110,3.61323663282,7.83487223022,0.0,3.63419635854,	143P	188
7.80181971906,0.0,0,0;	143P	189
110,3.58846120814,7.85853390854,0.0,3.61323663282,	145P	190
7.83487223022,0.0,0,0;	145P	191
110,3.44655848055,7.9032114258,0.0,3.64863928831,	147P	192
7.98769935274,0.0,0,0;	147P	193
100,0.0,3.79164605621,7.98614574695,3.64863928831,	149P	194
7.98769935274,3.68781308514,7.88779909741,0,0;	149P	195
110,3.51737299954,7.8322805079,0.0,3.58846120814,	151P	196
7.85853390854,0.0,0,0;	151P	197
110,3.50974491599,7.80075221456,0.0,3.51660449459,	153P	198
7.83301446573,0.0,0,0;	153P	199
124,-0.822707872405,0.568464384709,0.0,3.95000949597,	155P	200
0.568464384709,0.822707872405,0.0,7.07740599738,0.0,0.0,-1.0,	155P	201
0.0,0,0;	155P	202
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-0.875702038597E-01,0.389627241056E-01,-0.296209303115E-01,0,	157P	205
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110,3.56074136658,7.75989646145,0.0,3.56391021322,	159P	207
7.77480031082,0.0,0,0;	159P	208
110,3.5429504875,7.80785282197,0.0,3.56391021322,	161P	209
7.77480031082,0.0,0,0;	161P	210
110,3.56074136658,7.75989646145,0.0,3.50974491599,	163P	211
7.80075221456,0.0,0,0;	163P	212
110,3.6310275119,7.78691586969,0.0,3.63419635854,	165P	213
7.80181971906,0.0,0,0;	165P	214
110,3.56074136658,7.75989646145,0.0,3.6310275119,	167P	215
7.78691586969,0.0,0,0;	167P	216
110,3.51660449459,7.83301446573,0.0,3.5429504875,	169P	217
7.80785282197,0.0,0,0;	169P	218
110,3.43848054238,7.7494813944,0.0,3.50351606543,	171P	219
7.77779989847,0.0,0,0;	171P	220
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7.84802615234,3.28991368897,7.43079825623,0,0;	175P	224
110,3.21789628276,7.70232322644,0.0,3.21514800111,	177P	225
7.66175689384,0.0,0,0;	177P	226
110,3.13908420749,7.75972706862,0.0,3.21789628276,	179P	227
7.70232322644,0.0,0,0;	179P	228
110,3.13908420749,7.75972706862,0.0,3.14293088214,	181P	229
7.73443788188,0.0,0,0;	181P	230
110,3.14293088214,7.73443788188,0.0,3.15515681409,	183P	231
7.70789590155,0.0,0,0;	183P	232
110,3.15515681409,7.70789590155,0.0,3.21530576581,	185P	233
7.66408559811,0.0,0,0;	185P	234
110,2.98904985523,7.67129767228,0.0,3.00127578718,	187P	235
7.64475569194,0.0,0,0;	187P	236

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110,3.35462033211,7.23622222335,0.0,3.80689330111,	191P	239
7.42531294398,0.0,0,0;	191P	240
112,3,1,2,1,0.0,0.566967445147,3.35844725991,0.896023700235,	193P	241
0.189061626394E-01,-0.505639148805E-02,7.16184893794,	193P	242
0.430469723276,-0.100897997044E-01,0.120118614437E-02,0.0,0.0,	193P	243
0.0,0.0,3.87161941156,0.517406493338,0.331279984627E-02,	193P	244
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110,3.72106974823,7.53865353232,0.0,3.83915311129,	195P	247
7.41845353075,0.0,0,0;	195P	248
110,3.85125966664,7.42464415858,0.0,3.94934753956,	197P	249
7.31982290233,0.0,0,0;	197P	250
100,0,0,3.86003,7.42542,3.87130,7.44433,3.83915,	199P	251
7.41845,0,0;	199P	252
110,3.95698275944,7.28491912962,0.0,3.9660157186,	201P	253
7.31469474646,0,0,0,0;	201P	254
110,3.94305108978,7.08883230568,0.0,4.0000202755,	203P	255
7.24875144207,0.0,0,0;	203P	256
104,2.45896973343,0.0,0.541030266572,0.0,0.0,	205P	257
-0.168305862822E-01,0.0,-0.977458223411E-02,-0.175140407723,	205P	258
0.744538135736E-01,0.769019752249E-01,0,0;	205P	259
110,3.94562263552,6.88529094846,0.0,3.85849003761,	207P	260
6.9277601033,0.0,0,0;	207P	261
100,0,0,3.92411966591,7.0854407431,3.90581867241,	209P	262
7.09135472175,3.94305108978,7.08883230568,0,0;	209P	263
0,	211P	264
0;	211P	265
110,4.03398901889,7.25798734429,0.0,4.0254312987,	213P	266
7.23519035191,0.0,0,0;	213P	267
110,4.0451687493,7.22549365752,0.0,4.13230134722,	215P	268
7.18302450269,0.0,0,0;	215P	269
110,4.0000202755,7.24875144207,0.0,4.02518272537,	217P	270
7.23272876551,0.0,0,0;	217P	271
100,0,0,3.98286,7.19347,4.00002,7.24875,3.94921,	219P	272
7.24056,0,0;	219P	273
100,0,0,3.99344,7.22586,4.03399,7.25799,3.96946,	221P	274
7.27171,0,0;	221P	275
110,4.07677224176,7.37196531398,0.0,4.05098529205,	223P	276
7.29763238281,0.0,0,0;	223P	277
100,0,0,3.99163,7.22216,4.06232,7.28713,3.96602,	225P	278
7.31469,0,0;	225P	279
100,0,0,3.98493,7.19223,4.05562,7.25720,3.95931,	227P	280
7.28476,0,0;	227P	281
100,0,0,3.96037,7.32726,3.96923,7.33718,3.94935,	229P	282
7.31982,0,0;	229P	283
110,4.01902893587,7.48574291856,0.0,4.0609114388,	231P	284
7.48290546921,0.0,0,0;	231P	285
110,3.8841884276,7.46215355187,0.0,3.98787037609,	233P	286
7.50889366307,0.0,0,0;	233P	287
110,3.98325607226,7.54426773316,0.0,3.88608011562,	235P	288
7.49007603416,0.0,0,0;	235P	289
110,3.98384175892,7.65643306664,0.0,3.8730658563,	237P	290
7.50498181613,0.0,0,0;	237P	291
110,3.99962157337,7.61328683199,0.0,3.88221575107,	239P	292
7.50202499018,0.0,0,0;	239P	293
110,6.4,2.73753929138,0.0,0.6,2.73753929138,0.0,0,0;	241P	294
110,6.4,1.63753986359,0.0,6.4,2.73753929138,0.0,0,0;	243P	295
110,0.6,2.46003929138,0.0,6.4,2.46003929138,0.0,0,0;	245P	296
110,5.4,1.63753986359,0.0,5.4,2.46003929138,0.0,0,0;	247P	297
110,0.6,2.21953929138,0.0,6.4,2.21953929138,0.0,0,0;	249P	298
110,2.1,1.63753986359,0.0,2.1,2.46003929138,0.0,0,0;	251P	299
110,1.6,1.63753986359,0.0,1.6,2.46003929138,0.0,0,0;	253P	300
110,0.6,2.73753929138,0.0,0.6,1.63753986359,0.0,0,0;	255P	301
212,1,3,0.167733333333,0.737499967217E-01,1,1.57079648972,0.0,	257P	302

0,0,5.80224479251,2.30822540447,0.0,3HBUS,0,0;	257P	303
212,1,37,3.13194430967,0.97222205665E-01,1,1.57079648972,0.0,	259P	304
0,0,1.93479881667,2.5579686703,0.0,37HESSENTIAL CIRCUIT BREAKER	259P	305
PANEL NO. 1,0,0;	259P	306
212,1,12,0.670833333333,0.737499967217E-01,1,1.57079648972,	261P	307
0,0,0,0,3.44232238346,2.30822254345,0.0,12HNOMENCLATURE,0,0;	261P	308
212,1,7,0.39137777778,0.737499967217E-01,1,1.57079648972,0.0,	263P	309
0,0,0.910783360534,2.30822635815,0.0,7HREF DES,0,0;	263P	310
212,1,4,0.22364444444,0.737499967217E-01,1,1.57079648972,0.0,	265P	311
0,0,1.72757781559,2.30822540447,0.0,4HZONE,0,0;	265P	312
212,1,8,0.753955526416,0.97222205665E-01,1,1.57079648972,0.0,	267P	313
0,0,0.695005950663,2.55797248499,0.0,8H52Z-C007,0,0;	267P	314
212,3,13,0.726744444444,0.737499967217E-01,1,1.57079648972,	269P	315
0,0,0,0,2.23292983585,2.05118633434,0.0,13HR MLG WOW PWR,13,	269P	316
0.726744444444,0.737499967217E-01,1,1.57079648972,0.0,0,0,	269P	317
2.23292983585,1.91229744545,0.0,13HL MLG WOW PWR,14,	269P	318
0.782755555556,0.737499967217E-01,1,1.57079648972,0.0,0,0,	269P	319
2.23292983585,1.77340855656,0.0,14HLDG GR POS IND,0,0;	269P	320
110,0.6,1.63753986359,0.0,6.4,1.63753986359,0.0,0,0;	271P	321
212,3,2,0.11182222222,0.737499967217E-01,1,1.57079648972,	273P	322
0,0,0,0,1.77439464145,2.05118633434,0.0,2HL1,2,	273P	323
0.11182222222,0.737499967217E-01,1,1.57079648972,0.0,0,0,	273P	324
1.77439464145,1.91229744545,0.0,2HM1,2,0.11182222222,	273P	325
0.737499967217E-01,1,1.57079648972,0.0,0,0,1.77439464145,	273P	326
1.77340855656,0.0,2HN1,0,0;	273P	327
212,3,8,0.447288888889,0.737499967217E-01,1,1.57079648972,0.0,	275P	328
0,0,0.851796756321,2.05118633434,0.0,8H41CBC033,8,	275P	329
0.447288888889,0.737499967217E-01,1,1.57079648972,0.0,0,0,	275P	330
0.851796756321,1.91229744545,0.0,8H41CBC034,8,0.447288888889,	275P	331
0.737499967217E-01,1,1.57079648972,0.0,0,0,0.851796756321,	275P	332
1.77340855656,0.0,8H42CBC005,0,0;	275P	333
212,3,5,0.279655555556,0.737499967217E-01,1,1.57079648972,0.0,	277P	334
0,0,4.99522365146,2.05118633434,0.0,5H28VDC,5,0.279655555556,	277P	335
0.737499967217E-01,1,1.57079648972,0.0,0,0,4.99522365146,	277P	336
1.91229744545,0.0,5H28VDC,5,0.279655555556,0.737499967217E-01,	277P	337
1,1.57079648972,0.0,0,0,4.99522365146,1.77340855656,0.0,5H28VDC,	277P	338
0,0;	277P	339
212,3,9,0.5031,0.737499967217E-01,1,1.57079648972,0.0,0,0,	279P	340
5.64113391452,2.05118633434,0.0,9HESS 28VDC,9,0.5031,	279P	341
0.737499967217E-01,1,1.57079648972,0.0,0,0,5.64113391452,	279P	342
1.91229744545,0.0,9HESS 28VDC,9,0.5031,0.737499967217E-01,1,	279P	343
1.57079648972,0.0,0,0,5.64113391452,1.77340855656,0.0,9HESS 28VD	279P	344
C,0,0;	279P	345
212,1,10,0.559011111111,0.737499967217E-01,1,1.57079648972,	281P	346
0,0,0,0,5.62985862308,2.56970764324,0.0,10H(24-50-12),0,0;	281P	347
110,4.70588709214,5.27583267886,0.0,4.87115087145,	283P	348
5.59221722308,0.0,0,0;	283P	349
110,4.87796913147,5.65999675751,0.0,4.87796913147,	285P	350
5.61999675751,0.0,0,0;	285P	351
100,0.0,4.81797,5.62000,4.87115,5.59222,4.87797,	287P	352
5.62000,0,0;	287P	353
110,4.87796913147,5.65999675751,0.0,2.30484413147,	289P	354
5.65999675751,0.0,0,0;	289P	355
110,4.80796913147,5.25999675751,0.0,4.80796913147,	291P	356
5.04999675751,0.0,0,0;	291P	357
110,4.72796913147,5.30999675751,0.0,4.80796913147,	293P	358
5.30999675751,0.0,0,0;	293P	359
110,4.72796913147,5.25999675751,0.0,4.80796913147,	295P	360
5.25999675751,0.0,0,0;	295P	361
110,4.72796913147,5.3181070113,0.0,4.72796913147,	297P	362
5.01499675751,0.0,0,0;	297P	363
110,4.80796913147,5.04999675751,0.0,4.72796913147,	299P	364
5.04999675751,0.0,0,0;	299P	365
110,4.69796913147,5.24229165919,0.0,4.69796913147,	301P	366
4.07333267886,0.0,0,0;	301P	367
110,4.69796913147,4.94333267886,0.0,2.31796913147,	303P	368

4.94333267886,0.0,0,0;	303P	369
100,0.0,4.77297,5.24239,4.70589,5.27583,4.69797,	305P	370
5.24229,0,0;	305P	371
110,4.70296913147,4.98999675751,0.0,4.69796913147,	307P	372
4.98999675751,0.0,0,0;	307P	373
100,0.0,4.70297,5.01500,4.70297,4.99000,4.72797,	309P	374
5.01500,0,0;	309P	375
110,2.31796913147,5.25583267886,0.0,4.69920165363,	311P	376
5.25583267886,0.0,0,0;	311P	377
110,2.25796913147,5.23583267886,0.0,2.25796913147,	313P	378
4.96333267886,0.0,0,0;	313P	379
100,0.0,2.29797,5.25583,2.29797,5.23583,2.29797,	315P	380
5.27583,0,0;	315P	381
110,4.80796913147,5.30999675751,0.0,4.80796913147,	317P	382
5.47126073709,0.0,0,0;	317P	383
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5.41365748358,4.44919134108,5.41365748358,0,0;	319P	385
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5.41365748358,4.30896118325,5.41365748358,0,0;	321P	387
100,0.0,4.12073102542,5.41365748358,4.16873102542,	323P	388
5.41365748358,4.16873102542,5.41365748358,0,0;	323P	389
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5.41365748358,4.02850086759,5.41365748358,0,0;	325P	391
100,0.0,3.84027070976,5.41365748358,3.88827070976,	327P	392
5.41365748358,3.88827070976,5.41365748358,0,0;	327P	393
100,0.0,3.70004055193,5.41365748358,3.74804055193,	329P	394
5.41365748358,3.74804055193,5.41365748358,0,0;	329P	395
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3.6078103941,5.41365748358,0,0;	331P	397
100,0.0,3.41958023627,5.41365748358,3.46758023627,	333P	398
5.41365748358,3.46758023627,5.41365748358,0,0;	333P	399
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5.41365748358,3.18711992062,5.41365748358,0,0;	337P	403
100,0.0,2.99888976279,5.41365748358,3.04688976279,	339P	404
5.41365748358,3.04688976279,5.41365748358,0,0;	339P	405
100,0.0,2.85865960496,5.41365748358,2.90665960496,	341P	406
5.41365748358,2.90665960496,5.41365748358,0,0;	341P	407
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2.6261992893,5.41365748358,0,0;	343P	409
110,2.29796913147,5.27583267886,0.0,2.25796913147,	345P	410
5.27583267886,0.0,0,0;	345P	411
110,2.29796913147,5.23583267886,0.0,2.25796913147,	347P	412
5.23583267886,0.0,0,0;	347P	413
100,0.0,2.43796913147,5.41365748358,2.48596913147,	349P	414
5.41365748358,2.48596913147,5.41365748358,0,0;	349P	415
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5.41365748358,2.76642944713,5.41365748358,0,0;	351P	417
110,4.69796913147,4.07333267886,0.0,2.30484413147,	353P	418
4.07333267886,0.0,0,0;	353P	419
100,0.0,4.33107626217,4.22333267886,4.37907626217,	355P	420
4.22333267886,4.37907626217,4.22333267886,0,0;	355P	421
100,0.0,4.19084610434,4.22333267886,4.23884610434,	357P	422
4.22333267886,4.23884610434,4.22333267886,0,0;	357P	423
100,0.0,3.91038578868,4.22333267886,3.95838578868,	359P	424
4.22333267886,3.95838578868,4.22333267886,0,0;	359P	425
100,0.0,3.77015563085,4.22333267886,3.81815563085,	361P	426
4.22333267886,3.81815563085,4.22333267886,0,0;	361P	427
100,0.0,4.05061594651,4.22333267886,4.09861594651,	363P	428
4.22333267886,4.09861594651,4.22333267886,0,0;	363P	429
100,0.0,3.62992547302,4.22333267886,3.67792547302,	365P	430
4.22333267886,3.67792547302,4.22333267886,0,0;	365P	431
100,0.0,4.05061594651,4.45833267886,4.09861594651,	367P	432
4.45833267886,4.09861594651,4.45833267886,0,0;	367P	433
100,0.0,4.19084610434,4.45833267886,4.23884610434,	369P	434

4.45833267886,4.23884610434,4.45833267886,0,0;	369P	435
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4.57583267886,4.51907626217,4.57583267886,0,0;	371P	437
100,0.0,4.33107626217,4.69333267886,4.37907626217,	373P	438
4.69333267886,4.37907626217,4.69333267886,0,0;	373P	439
100,0.0,4.19084610434,4.69333267886,4.23884610434,	375P	440
4.69333267886,4.23884610434,4.69333267886,0,0;	375P	441
100,0.0,4.05061594651,4.69333267886,4.09861594651,	377P	442
4.69333267886,4.09861594651,4.69333267886,0,0;	377P	443
100,0.0,3.77015563085,4.45833267886,3.81815563085,	379P	444
4.45833267886,3.81815563085,4.45833267886,0,0;	379P	445
100,0.0,4.33107626217,4.45833267886,4.37907626217,	381P	446
4.45833267886,4.37907626217,4.45833267886,0,0;	381P	447
100,0.0,3.91038578868,4.45833267886,3.95838578868,	383P	448
4.45833267886,3.95838578868,4.45833267886,0,0;	383P	449
100,0.0,3.20923499953,4.22333267886,3.25723499953,	385P	450
4.22333267886,3.25723499953,4.22333267886,0,0;	385P	451
100,0.0,3.0690048417,4.22333267886,3.1170048417,4.22333267886,	387P	452
3.1170048417,4.22333267886,0,0;	387P	453
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4.22333267886,2.97677468387,4.22333267886,0,0;	389P	455
100,0.0,2.78854452604,4.22333267886,2.83654452604,	391P	456
4.22333267886,2.83654452604,4.22333267886,0,0;	391P	457
100,0.0,2.64831436821,4.22333267886,2.69631436821,	393P	458
4.22333267886,2.69631436821,4.22333267886,0,0;	393P	459
100,0.0,2.50808421038,4.22333267886,2.55608421038,	395P	460
4.22333267886,2.55608421038,4.22333267886,0,0;	395P	461
110,2.25796913147,4.92333267886,0.0,2.25796913147,	397P	462
4.12020767886,0.0,0,0;	397P	463
100,0.0,2.36785405256,4.22333267886,2.41585405256,	399P	464
4.22333267886,2.41585405256,4.22333267886,0,0;	399P	465
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4.12021,0,0;	401P	467
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100,0.0,2.36785405256,4.45833267886,2.41585405256,	407P	472
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4.45833267886,2.69631436821,4.45833267886,0,0;	409P	475
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4.45833267886,2.83654452604,4.45833267886,0,0;	411P	477
100,0.0,2.92877468387,4.45833267886,2.97677468387,	413P	478
4.45833267886,2.97677468387,4.45833267886,0,0;	413P	479
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4.45833267886,2.55608421038,4.45833267886,0,0;	415P	481
100,0.0,2.36785405256,4.69333267886,2.41585405256,	417P	482
4.69333267886,2.41585405256,4.69333267886,0,0;	417P	483
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100,0.0,2.50808421038,4.69333267886,2.55608421038,	421P	486
4.69333267886,2.55608421038,4.69333267886,0,0;	421P	487
100,0.0,2.64831436821,4.69333267886,2.69631436821,	423P	488
4.69333267886,2.69631436821,4.69333267886,0,0;	423P	489
110,2.7102657769,5.05228199717,0.0,2.65647803844,	425P	490
4.74063336055,0.0,0,0;	425P	491
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4.69333267886,2.97677468387,4.69333267886,0,0;	427P	493
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4.69333267886,3.39746515736,4.69333267886,0,0;	429P	495
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4.69333267886,3.25723499953,4.69333267886,0,0;	431P	497
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3.1170048417,4.69333267886,0,0;	433P	499
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110,2.85049593473,5.05228199717,0.0,2.79670819627,	437P	502
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110,2.99072609256,5.05228199717,0.0,2.9369383541,	439P	504
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110,3.13095625039,5.05228199717,0.0,3.07716851193,	441P	506
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110,3.27118640822,5.05228199717,0.0,3.21739866976,	443P	508
4.74063336055,0.0,0,0;	443P	509
110,3.41141656605,5.05228199717,0.0,3.35762882759,	445P	510
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5.09958267886,3.74804055193,5.09958267886,0,0;	447P	513
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3.6078103941,5.09958267886,0,0;	449P	515
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5.09958267886,3.46758023627,5.09958267886,0,0;	451P	517
100,0.0,3.27935007845,5.09958267886,3.32735007845,	453P	518
5.09958267886,3.32735007845,5.09958267886,0,0;	453P	519
100,0.0,3.13911992062,5.09958267886,3.18711992062,	455P	520
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110,2.42980546124,5.05228199717,0.0,2.37601772278,	467P	532
4.74063336055,0.0,0,0;	467P	533
100,0.0,2.29797,4.94333,2.29797,4.92333,2.29797,	469P	534
4.96333,0,0;	469P	535
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110,2.29796913147,4.96333267886,0.0,2.25796913147,	473P	538
4.96333267886,0.0,0,0;	473P	539
110,2.29796913147,4.92333267886,0.0,2.25796913147,	475P	540
4.92333267886,0.0,0,0;	475P	541
212,1,1,0.719000000000E-01,0.901388848821E-01,1,1.57079648972,	477P	542
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110,2.25796913147,5.27583267886,0.0,2.25796913147,	479P	544
5.61312175751,0.0,0,0;	479P	545
212,1,1,0.719000000000E-01,0.901388848821E-01,1,1.57079648972,	481P	546
0.0,0,0,2.10804553986,5.36858774597,0.0,1H1,0,0;	481P	547
100,0.0,2.25796913147,5.65999675751,2.25796913147,	483P	548
5.61312175751,2.30484413147,5.65999675751,0,0;	483P	549
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0.0,0,0,2.40055274963,5.71786238129,0.0,1HA,0,0;	485P	551
212,1,1,0.719000000000E-01,0.901388848821E-01,1,1.57079648972,	487P	552
0.0,0,0,2.54078197479,5.71786238129,0.0,1HB,0,0;	487P	553
212,1,1,0.719000000000E-01,0.901388848821E-01,1,1.57079648972,	489P	554
0.0,0,0,2.68101215363,5.71786238129,0.0,1HC,0,0;	489P	555
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0.0,0,0,2.82124233246,5.71786238129,0.0,1HD,0,0;	491P	557
212,1,1,0.719000000000E-01,0.901388848821E-01,1,1.57079648972,	493P	558
0.0,0,0,2.96147251129,5.71786238129,0.0,1HE,0,0;	493P	559
212,1,1,0.719000000000E-01,0.901388848821E-01,1,1.57079648972,	495P	560
0.0,0,0,3.10170269012,5.71786238129,0.0,1HF,0,0;	495P	561
212,1,1,0.719000000000E-01,0.901388848821E-01,1,1.57079648972,	497P	562
0.0,0,0,3.24193286896,5.71786238129,0.0,1HG,0,0;	497P	563
212,1,1,0.719000000000E-01,0.901388848821E-01,1,1.57079648972,	499P	564
0.0,0,0,4.50377368927,5.71786238129,0.0,1HR,0,0;	499P	565
212,1,1,0.719000000000E-01,0.901388848821E-01,1,1.57079648972,	501P	566

0.0,0,0,4.36377429962,5.71786238129,0.0,1HQ,0,0;	501P	567
212,1,1,0.719000000000E-01,0.901388848821E-01,1,1.57079648972,	503P	568
0.0,0,0,4.22354412079,5.71786238129,0.0,1HP,0,0;	503P	569
212,1,1,0.719000000000E-01,0.901388848821E-01,1,1.57079648972,	505P	570
0.0,0,0,4.08331394196,5.71786238129,0.0,1HN,0,0;	505P	571
212,1,1,0.719000000000E-01,0.901388848821E-01,1,1.57079648972,	507P	572
0.0,0,0,3.94308376312,5.71786238129,0.0,1HM,0,0;	507P	573
212,1,1,0.719000000000E-01,0.901388848821E-01,1,1.57079648972,	509P	574
0.0,0,0,3.80285358429,5.71786238129,0.0,1HL,0,0;	509P	575
212,1,1,0.719000000000E-01,0.901388848821E-01,1,1.57079648972,	511P	576
0.0,0,0,3.66262340546,5.71786238129,0.0,1HK,0,0;	511P	577
212,1,1,0.719000000000E-01,0.901388848821E-01,1,1.57079648972,	513P	578
0.0,0,0,3.52239322662,5.71786238129,0.0,1HJ,0,0;	513P	579
212,1,1,0.719000000000E-01,0.901388848821E-01,1,1.57079648972,	515P	580
0.0,0,0,3.38216304779,5.71786238129,0.0,1HH,0,0;	515P	581
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4.69333267886,3.95838578868,4.69333267886,0,0;	517P	583
110,4.36784302635,4.4891904988,0.0,4.43430949798,	519P	584
4.54497485892,0.0,0,0;	519P	585
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212,1,8,0.759000026226,0.901388848821E-01,1,1.57079648972,0.0,	523P	588
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4.74063336055,0.0,0,0;	525P	591
100,0,0,3.48969531519,4.69333267886,3.53769531519,	527P	592
4.69333267886,3.53769531519,4.69333267886,0,0;	527P	593
212,1,48,2.853333333333,0.737566644812E-01,1,1.57079648972,	529P	594
0.0,0,0,3.4963709259,0.179828651249,0.0,48HCALS Test Network LGT	529P	595
ABLE Reference Illustration,0,0;	529P	596
102,3,21,23,	531P	597
25,0,0;	531P	598
102,3,11,13,	533P	599
15,0,0;	533P	600
230,327,1,3.84,5.41,0.0,0.005,0.7854,0,0,0;	535P	601
230,325,1,3.98,5.41,0.0,0.005,0.7854,0,0,0;	537P	602
230,323,1,4.12,5.41,0.0,0.005,0.7854,0,0,0;	539P	603
230,531,1,2.91,7.11,0.0,0.005,0.7854,0,0,0;	541P	604
230,533,1,3.22,7.46,0.0,0.005,0.7854,0,0,0;	543P	605
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