



# AFCTN Test Report 94-101

AFCTB-ID  
94-075



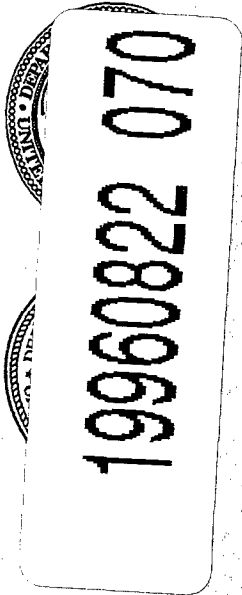
**Technical Publication Transfer Using:**

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T O 31R2-2U-433**

**(Contract #F19628-89-C-0131)**



- MIL-STD-1840A**
- MIL-D-28000A (IGES)**
- MIL-M-28001B (SGML)**
- MIL-R-28002A (Raster)**
- MIL-D-28003 (CGM)**

**Quick Short Test Report**

**02 July 1994**

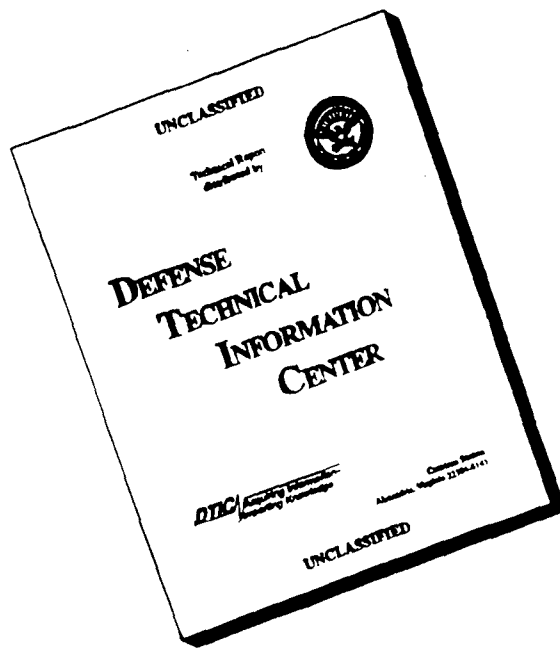


*Prepared for*  
*Electronic Systems Center*  
*Air Force CALS Program Office*  
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*4027 Colonel Glenn Hwy Suite 300*  
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**Quick Short Test Report**

**20 June 1994**

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# Air Force CALS Test Bed

## *Notification of Test Results*

20 June 1994

This notice documents the results of an Air Force CALS Test Bed (AFCTB) Quick Short Test Report (QSTR) evaluation of data submitted by:

### **O'Neil & Associates, Inc.**

Identified as follows:

Title:	Technical Publication T O 31R2-2U-433
Program:	MILSTAR
Program Office:	ESC/MSL
Contract No.:	F19628-89-C-0131
QSTR No.:	AFCTB-ID 94-075

Received on the following media: 9-Track Tape

The results of the QSTR evaluation are as follows:

MIL-STD-1840A Standard	Pass
MIL-STD-1840A Media Format:	Pass
MIL-D-28000A IGES:	Pass
MIL-M-28001B SGML:	Pass
MIL-R-28002A Raster:	Pass
MIL-D-28003 CGM:	Pass

Formal results with associated disclaimer are documented and available from the AFCTB.

Air Force CALS Test Bed  
HQ ESC/AV-2P  
4027 Colonel Glenn Highway, Suite 300  
Dayton, OH 45431-1672  
Phone: 513-257-3085 FAX: 513-257-5881

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## 1. Introduction

### 1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-cycle Support (CALs) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALs standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALs initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

## 1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze O'Neil & Associates' interpretation and use of the CALS standards in transferring technical publication data. O'Neil used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on a 9-track magnetic tape.

## 2. Test Parameters

**Test Plan:** AFCTB 94-075

**Date of Evaluation:** 20 June 1997

**Evaluator:** George Elwood  
Air Force CALS Test Bed  
DET 2 HQ ESC/AV-2P  
4027 Colonel Glenn Hwy  
Suite 300  
Dayton OH 45431-1672

**Data Originator:** Larry C. McKinley  
O'Neil & Associates, Inc.  
425 North Findlay Street  
Dayton OH 45404-2203  
(513) 461-1852

**Data Description:** Technical Manual Test

- 1 Document Declaration file
- 4 Document Type Definitions (DTDs)
- 26 Initial Graphics Exchange Specification (IGES) files
- 1 Text/Standard Generalized Markup Language (SGML) file
- 6 Raster files
- 2 Computer Graphics Metafile (CGM) files

**Data Source System:** 1840

**HARDWARE**

386 PC

**SOFTWARE**

AFCTN Tapetool v1.2.10

IGES

**HARDWARE**

Xerox 7650 Pro Imager  
Xerox 6085 Workstation

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**SOFTWARE**

Xerox Expert Drafting v5.0  
Conversion of IGES files v5.1

Text/SGML

**HARDWARE**

386 PC

**SOFTWARE**

WordPerfect Intellitag v1.2  
Exoterica Validator v1.1

Raster

**HARDWARE**

Xerox 7650 Pro Imager  
6085 Workstation

**SOFTWARE**

Xerox XTI v2.2  
Xerox XPI Image Conversion 2.6

CGM

**HARDWARE**

HP/Apollo 425T

**SOFTWARE**

Auto-trol S5000/CGM Converter 1.4

**Evaluation Tools Used:**

**MIL-STD-1840A (TAPE)**

SUN 3/280

AFCTN *Tapetool v1.2.10 UNIX*  
XSoft *CAPS/CALS v40.4*

**MIL-D-28000 (IGES)**

HP 735

Carberry *CADLeaf Plus v3.1.2*  
InterCAP *X-Change v7.82*  
Island Software *IslandDraw v3.0*

SGI Indigo2

Cadkey *Cadkey v6.0*  
IGES Data Analysis (IDA) *CALSVIEW*  
International TechneGroup Incorporated  
(ITI) *IGES/Works v2.0.0*

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Sun SparcStation 2

Carberry *CADLeaf Plus v3.1*  
IDA *Parser/Verifier v92*  
IDA *IGESView v3.05*  
ITI *IGES/Works v1.3*  
Rosetta Technologies *Prepare*  
Rosetta Technologies *Preview v3.2*

PC 486/50

AUTODESK *AutoCAD R12/IGES v5.1*  
AUTODESK *iges2ckm v6.0*

MIL-M-28001 (SGML)

PC 486/50

Exoterica *XGMLNormalizer v1.2e3.2*  
Exoterica *Validator v2.0 ex1*  
McAfee & McAdam *Sema Mark-it v2.3*  
Public Domain *sgmls*

MIL-R-28002 (Raster)

HP 735

AFCTN *xrastb.hp*  
InterCAP *X-Change v7.82*

SGI Indigo2

IDA *CALSVIEW*

SUN SparcStation 2

Carberry *CADLeaf Plus v3.1*  
AFCTN *validg4*  
AFCTN *xrastb.sun4*  
IDA *IGESView v3.0*

PC 486

IDA *IGESView Windows*  
Inset Systems *HiJaak Pro*  
Expert Graphics *RxHighlight v1.0*

MIL-D-28003 (CGM)

HP 735

InterCAP *X-Change v7.82*  
Island Software *IslandDraw v3.0*

SGI Indigo 2

IDA *CALSVIEW*

SUN SparcStation 2

Carberry *CADLeaf Plus v3.1*  
Island Software *IslandDraw v4.0*

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PC 486/50

Advanced Technology Center  
(ATC) *MetaCheck R 2.10*  
ATC *ForView 1.0*  
Software Publishing Corporation  
(SPC) *Harvard Graphics v3.05*  
Inset Systems *HiJaak Pro*  
Lotus *Freelance v2.01*  
Micrografx *Designer v4.0*  
Corel *Ventura Publisher*

**Standards  
Tested:**

MIL-STD-1840A  
MIL-D-28000A  
MIL-M-28001B  
MIL-R-28002A  
MIL-D-28003

### 3. 1840A Analysis

#### 3.1 External Packaging

The tape arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a box in accordance with ASTM D 3951. The exterior of the box was marked with a magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was enclosed in a barrier bag as required by MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reel showed the label indicating the recording density, as required by MIL-STD-1840A, para. 5.3.1. Enclosed in the box was a packing list showing all files recorded on the tape.

#### 3.2 Transmission Envelope

The 9-track tape received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

##### 3.2.1 Tape Formats

The tape was run through the AFCTN *Tapetool v1.2.10* utility. No errors were encountered while evaluating the contents of the tape labels.

The tape was read using XSoft's *CAPS read1840A* utility without any reported errors. However, this process resulted in the loss of three of the four DTDs. This occurred because the four DTDs had identical destination system document (dstdocid) record values, and the *CAPS read-1840A* utility renames the files using the dstdocid record values. (MIL-STD-1840A permits identical dstdocid values for multiple files; MIL-STD-1840B corrected this problem).

The physical structure of the tape meets the CALS MIL-STD-1840A requirements.

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### 3.2.2 Declaration and Header Fields

No errors were reported in the Document Declaration file and data file headers. This portion of the tape meets the CALS MIL-STD-1840A requirements.

## 4. IGES Analysis

The tape contained 26 IGES files. Because of the number of files submitted, a 10 percent sample was selected. These files were evaluated using IDA's *parser/verifier* set for CALS Class I. This utility reported all files tested meet the specification defined in MIL-D-28000A. While no CALS errors were reported, all files had basic IGES errors and/or warnings. These deficiencies were disjointed line segments, or disjointed arcs. When viewed in a technical publication these deficiencies were not apparent; however, when these areas were examined in detail they could be seen. In some cases these disjointed lines were thickened to hide the gaps and overlapping arcs.

A more critical error, displayed during the evaluation, was the use of entity 230, the sectioned areas used to make the arrowheads and circular connect points. All files displayed this property. For the most part it did not cause a problem. However, in files Q030 and Q031 this entity made the files unusable in several applications. The connect points were joined together resulting in sets of triangle shapes on the image.

It was also noted that the basic leader line was thickened. This made the arrowhead look different than the rest of the lines. The log files from IDA's *parser/verifier* and AUTODESK's *AutoCAD R12* with the 5.1 translator, for files D001Q030 and Q031, are included in Appendix B, Section 10 of this report.

Each file was viewed by at least one software application. The required basic conformance statement was found in the start section of the files. Files Q030 and Q031 were selected for the detailed analysis provided below.

The AFCTB has several tools for viewing IGES files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many

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of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The files were converted using AUTODESK's **5.1 IGES translator** in **AutoCAD R12**. While no errors were reported, many warning statements were issued. The statements addressed discontinuous line segments and non-closed sectioned areas.

The selected files were translated using the AUTODESK's **iges2ckm** utility without a reported error. The resulting files were read and displayed. The added 230 entities were noted as missing. The connecting circles and some arrowheads were also missing.

The selected files were translated using Cadkey's **ig2c** utility. Both files had reported errors. The message was "entity types do not match @ parameter index xxxx" (2911 was one parameter reported). Found entity type 102 expected entity type 106. When this was checked the parameter and directory entities were correct. When displayed and printed the images appeared to be complete.

The files were converted using a utility available within the AFCTB, with no reported errors. The resulting files were read into Island Software's **IslandDraw**, displayed and printed without a reported error. Files Q030 and Q031 displayed the sectioned area problem. These files would have been unusable in a technical publication. Also noted were text areas that appeared to be thickened.

The files were read using Carberry's **CADLeaf** software without a reported error. When displayed, the selected files showed sectioned areas between the connect points and arrowheads. By following the areas it was possible to see how the connect points had been completed.

The selected files were read and displayed using IDA's **CALSVIEW** without a reported error. The sectioned areas were visible as filled in triangles. Also noted were several text areas that appeared to be thicken lines.

The selected files were read and displayed using IDA's **IGES-View** and **IGESView for Windows** without a reported error. The sectioned areas appeared as cross hatched. All text appeared to be heavier than the rest of the image.

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The selected files were read into ITI's *IGESWorks* without a reported error. Noted as missing were the connect points created using the 230 entity.

The selected files were read and displayed using InterCAPS' *X-Change*. No errors were noted.

The IGES files were converted using Rosetta Technologies' *Prepare* without a reported error. The resulting files were read into Rosetta Technologies' *Preview*, displayed and printed. No errors were noted.

The IGES files meet the CALS MIL-D-28000A specification. However, the use of entity 230 to create the arrowheads and connect points, caused some systems to display unusable files. The reported IGES warnings were not critical for technical publication applications.

## 5. SGML Analysis

The tape contained one text and four DTD files. The basic DTD contained the graphic references and pointed to the basic ATOS DTD, which was named BSPEC. The BSPEC DTD pointed to two other subset DTDs; CALSFIGS (figure unique tags) and CALSTABS (table unique tags).

```
BASIC (G003) ---> BSPEC (G004)
                  |> CALSTABS (G005)
                  |> CALSFIGS (G006)
```

The AFCTB has several parsers available for evaluating submitted DTD and text files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. These products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings unless specified in the report. Changes to DTD or text files required by each system are not documented in the report.

The text and DTD files were evaluated using a utility available within the AFCTB. This utility could not parse the DTD files without a critical error. The initial problems were within the marked sections in the BSPEC.DTD file.

The text and DTD files were evaluated using Exoterica's **Validator ex1** parser. One warning, a mixed content model, was reported in the DTD.

```
<!-- **Warning** in "i:\94075\BSPEC.DTD" (entity "%BSPEC"), line 600,
      used in "\xgml\9475.dtd", line 176:
      An element with mixed content should permit data characters ("#PCDATA")
      everywhere.
      The element being declared is "WARNING".
      <!ELEMENT warning - - (title?, (%txt; | para | list)+) >
```

The text and DTD files were tested using Exoterica's **XGML-Normalizer** parser. No errors and no warnings were issued by this utility.

---

The text and DTD files were evaluated using the Public Domain *sgmls* parser. No errors or warnings were issued by this program.

The text and DTD files meet the CALS MIL-M-28001B specification.

## 6. Raster Analysis

The tape contained six Raster files. All files were evaluated using the AFCTN *validg4* utility. This program reported all six files meet the CALS MIL-R-28002A specification.

The files were read into the AFCTN *xrastb.sun4* viewing utility. No problems were encountered, but it was noted that the images were white on black. This made viewing difficult. For technical publications graphic images are normally black on white. File D001R038 displayed as an unusable image. It was also noted that the images were electronic schematics. When these files were expanded, they became very large. The sizes ranged from 1.1 Megabytes to over 2.2 Megabytes. The IGES files included with this test contained more data, were smaller, and contained intelligent information.

The AFCTB has several tools for viewing Raster files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The files were converted using a utility available within the AFCTB, without a reported error. The resulting files were read into Island Software's *IslandPaint* and displayed. File R038 was displayed as a black image.

The Raster files were read into Carberry's *CADLeaf* software and displayed without a reported error. File R038 was displayed as a black image.

The files were read using IDA's *CALSVIEW* and displayed without a reported error. File R038 was displayed as a black image.

The files were read and displayed using IDA's **IGESView** and **IGESView for Windows** without a reported error. File R038 was displayed as a black image.

The files were read and displayed using Inset Systems' **HiJaak for Windows** without a reported error. File R038 was displayed as a black image.

The files were read and displayed using InterCAP's **X-Change** without a reported error. File R038 was displayed as a black image.

The Raster files were converted using Rosetta Technologies' **Prepare** without a reported error. The resulting files were read into Rosetta Technologies' **Preview** and displayed. File R038 was displayed as a black image.

The Raster files were imported into Expert Graphics' **Rx-Highlight** and displayed without a reported error. File R038 was displayed as a black image.

The Raster files meet the CALS MIL-R-28002A specification. However, file D001R038 was displayed as a black image with nothing showing.

## 7. CGM Analysis

The tape contained two CGM files. The files were evaluated using ATC's **MetaCheck** with CALS options. No CALS or CGM errors or warnings were reported by this utility.

The CGM files were evaluated using the beta AFCTN **validcgm** utility. This utility reported no errors in either file.

The AFCTB has several tools for viewing CGM files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The CGM files were converted using a utility available within the AFCTB, without a reported error. The resulting files were read into Island Software's **IslandDraw v3.1** and displayed. In file C001, the text font was noted in error with the word "CAUTION" extending beyond the symbol toward the right.

The files were read into Carberry's **CADLeaf** software and displayed. File C001 had a problem with the text extending beyond the graphics to the right.

The files were read into IDA's **CALSVIEW**. File C001 had a text font problem with the text extending beyond the graphics to the right. The type font appeared to be wrong.

The files were imported into the Micrografx **Designer** without a reported error. File C001 displayed and printed correctly.

The files were read into ATC's **ForView** without a reported error. The text exceeded the length of the line to the right.

The files were imported into Lotus' **Freelance** and displayed. The text font in file C001 was incorrect. The text was displayed and printed in very small letters.

The files were imported into SPC's **Harvard Graphics v3.05** without a reported error. File C001 did not display the

---

line between the text and the graphics. The text exceeded the length of the graphics to the right.

The files were read into Inset Systems' *HiJaak Pro* without a reported error. File C001 had a problem in the text font. The text extended beyond the length of the line between the graphics and the text.

The files were imported directly into Island Software's *IslandDraw v4.0* without a reported error. The image appeared to be correct although the text was not centered on the line.

The files were read into InterCAP's *X-Change* without a reported error. The text font was in error, and the text exceeded the length of the line toward the right.

The files were imported into Corel's *Ventura Publisher* without a reported error. File C001 had a noted problem with the text. The displayed and printed text was very small and located on the left side of the line.

While both CGM files were reported without error most applications, in the AFCTB, had problems with the text in file C001. The text was normally too large and the words exceeded the length of the line to the right. The CGM files meet the CALS MIL-D-28003 specification.

## 8. Conclusions and Recommendations

The physical structure of the tape had no reported errors or warnings. The CALS headers were also correct. This portion of the tape meets the requirements defined in MIL-STD-1840A.

The IGES files had no reported CALS errors. All files reported basic IGES errors and/or warnings. These errors are not critical for files used in technical publications. The IGES files meet the CALS MIL-D-28000A specification.

The SGML files had no reported errors and meet the CALS MIL-M-28001B specification.

The Raster files meet the CALS MIL-R-28002A specification. However, file D001R038 contained unknown data.

The CGM files meet the CALS MIL-D-28003 specification, although most applications had problems with the text font in file C001.

The tape submitted by O'Neil & Associates, Inc. meets the CALS MIL-STD-1840A requirements.

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## 9. Appendix A - Tapetool Report Logs

### 9.1 Tape Catalog

CALS Test Network Catalog Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes  
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Mon Jun 20 12:18:06 1994

MIL-STD-1840A File Catalog

File Set Directory: /cals/u1210/Set075

Page: 1

File Name	File Type	Record Format/ Length	Block Length/Total	Selected/ Extracted
D001	Document Declaration	D/00260	02048/000001	Extracted
D001C001	CGM	F/00080	00800/000003	Extracted
D001C002	CGM	F/00080	00800/000003	Extracted
D001G003	DTD	D/00260	02048/000002	Extracted
D001G004	DTD	D/00260	02048/000013	Extracted
D001G005	DTD	D/00260	02048/000002	Extracted
D001G006	DTD	D/00260	02048/000002	Extracted
D001Q007	IGES	F/00080	02000/000324	Extracted

<<<< PART OF LOG FILE REMOVED HERE >>>>

D001Q032	IGES	F/00080	02000/000080	Extracted
D001R033	Raster	F/00128	02048/000021	Extracted

<<<< PART OF LOG FILE REMOVED HERE >>>>

D001R037	Raster	F/00128	02048/000021	Extracted
D001R038	Raster	F/00128	02048/000002	Extracted
D001T039	Text	D/00260	02048/000046	Extracted

Catalog Process terminated normally.

---

## 9.2 Tape Evaluation Log

CALS Test Network Tape Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes  
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Mon Jun 20 12:13:33 1994

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1ONA001

4

Label Identifier: VOL1

Volume Identifier: ONA001

Volume Accessibility:

Owner Identifier:

Label Standard Version: 4

HDR1D001

ONA00100010001000000 94168 00000 000000

Label Identifier: HDR1

File Identifier: D001

File Set Identifier: ONA001

File Section Number: 0001

File Sequence Number: 0001

Generation Number: 0000

Generation Version Number: 00

Creation Date: 94168

Expiration Date: 00000

File Accessibility:

Block Count: 000000

Implementation Identifier:

HDR2D0204800260

00

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

\*\*\*\*\* Tape Mark \*\*\*\*\*

\*\*\*\*\* Tape Mark \*\*\*\*\*

##### End of Volume ONA001 #####

##### End Of Tape File Set #####

Deallocating /dev/rmt0...

Tape Import Process terminated normally.

### 9.3 Tape File Set Validation Log

CALS Test Network File Set Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

Mon Jun 20 12:18:06 1994

MIL-STD-1840A File Set Evaluation Log

File Set: Set075

Found file: D001

Extracting Document Declaration Header Records...

Evaluating Document Declaration Header Records...

srcsys: O'Neil & Assoc. CAGE 83007

srcdocid: TO\_31R2-2U-433

srcrelid: NONE

chglvl: ORIGINAL

dteisu: 19940606

dstsys: RAYTHEON CAGE

dstdocid: TO\_31R2-2U-433

dstrelid: NONE

dtetrn: 19940617

dlvacc: NONE

filcnt: C2,G4,Q26,R6,T1

ttlcls: UNCLASSIFIED

doccls: UNCLASSIFIED

doctyp: Technical Publication

doctl: NONE

Found file: D001C001

Extracting CGM Header Records...

Evaluating CGM Header Records...

srcdocid: TO\_31R2-2U-433

dstdocid: TO\_31R2-2U-433

txtfilid: W

figid: INTRO-CAUTION-ESD

srcgph: ESDCAU

doccls: UNCLASSIFIED

notes: NONE

Saving CGM Header File: D001C001\_HDR  
Saving CGM Data File: D001C001\_CGM  
Found file: D001C002  
Extracting CGM Header Records...  
Evaluating CGM Header Records...

srcdocid: TO\_31R2-2U-433  
dstdocid: TO\_31R2-2U-433  
txtfilid: W  
figid: <caution><symbol>  
srcgph: TXTRES  
doccls: UNCLASSIFIED  
notes: NONE

Saving CGM Header File: D001C002\_HDR  
Saving CGM Data File: D001C002\_CGM

Found file: D001G003  
Extracting DTD Header Records...  
Evaluating DTD Header Records...

srcdocid: TO\_31R2-2U-433  
dstdocid: TO\_31R2-2U-433  
notes: 1 OF 4, Document-specific DTD

Saving DTD Header File: D001G003\_HDR  
Saving DTD Data File: D001G003\_DTD

Found file: D001G004  
Extracting DTD Header Records...  
Evaluating DTD Header Records...

srcdocid: TO\_31R2-2U-433  
dstdocid: TO\_31R2-2U-433  
notes: 2 OF 4, BSPEC.DTD (main DTD)

Saving DTD Header File: D001G004\_HDR  
Saving DTD Data File: D001G004\_DTD

Found file: D001G005  
Extracting DTD Header Records...  
Evaluating DTD Header Records...

srcdocid: TO\_31R2-2U-433  
dstdocid: TO\_31R2-2U-433  
notes: 3 OF 4, CALSFIGS.SGM

---

Saving DTD Header File: D001G005\_HDR  
Saving DTD Data File: D001G005\_DTD

Found file: D001G006  
Extracting DTD Header Records...  
Evaluating DTD Header Records...

srcdocid: TO\_31R2-2U-433  
dstdocid: TO\_31R2-2U-433  
notes: 4 OF 4, CALSTABS.SGM

Saving DTD Header File: D001G006\_HDR  
Saving DTD Data File: D001G006\_DTD

Found file: D001Q007  
Extracting IGES Header Records...  
Evaluating IGES Header Records...

srcdocid: TO\_31R2-2U-433  
dstdocid: TO\_31R2-2U-433  
txtfilid: W  
figid: 1-1  
srcgph: M0401  
doccls: UNCLASSIFIED  
notes: NONE

Saving IGES Header File: D001Q007\_HDR  
Saving IGES Data File: D001Q007\_IGS

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

Found file: D001R033  
Extracting Raster Header Records...  
Evaluating Raster Header Records...

srcdocid: TO\_31R2-2U-433  
dstdocid: TO\_31R2-2U-433  
txtfilid: W  
figid: FO-8(10F3)  
srcgph: T43339  
doccls: UNCLASSIFIED  
rtype: 1  
rorient: 000,270  
rpelcnt: 003900,002704  
rdensty: 0300  
notes: NONE

---

Saving Raster Header File: D001R033\_HDR  
Saving Raster Data File: D001R033\_GR4

<<<< PART OF LOG FILE REMOVED HERE >>>>

Found file: D001T039  
Extracting Text Header Records...  
Evaluating Text Header Records...

srcdocid: TO\_31R2-2U-433  
dstdocid: TO\_31R2-2U-433  
txtfilid: W  
doccls: UNCLASSIFIED  
notes: NONE

Saving Text Header File: D001T039\_HDR  
Saving Text Data File: D001T039\_TXT

Evaluating numbering scheme...  
No errors were encountered during numbering scheme evaluation.  
Numbering scheme evaluation complete.

Checking file count...  
No errors were encountered during file count verification.  
File Count verification complete.

No errors were encountered in Document D001.

No errors were encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

## 9.4 Other Tape Reading Logs

```
/cals/caps/Bin/read1840A: --- Read declaration file 'D001 ' ---  
/cals/caps/Bin/read1840A: writing data file 'aftb9475/TO31R2-2U-433/  
ESDCAU.C.cgm'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9475/TO31R2-2U-433/  
TXTRES.D.C.cgm'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9475/TO31R2-2U-433/  
TO31R22U433.G.dtd'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9475/TO31R2-2U-433/  
TO31R22U433.G.dtd'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9475/TO31R2-2U-433/  
TO31R22U433.G.dtd'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9475/TO31R2-2U-433/  
TO31R22U433.G.dtd'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9475/TO31R2-2U-433/  
M0401.Q.igs'.
```

<<<< PART OF LOG FILE REMOVED HERE >>>>

```
/cals/caps/Bin/read1840A: writing data file 'aftb9475/TO31R2-2U-433/  
T43337.Q.igs'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9475/TO31R2-2U-433/  
T43339.R.cci'.
```

<<<< PART OF LOG FILE REMOVED HERE >>>>

```
/cals/caps/Bin/read1840A: writing data file 'aftb9475/TO31R2-2U-433/  
W.T.sgm'.  
-- declaration file indicates 1 files of type T  
-- declaration file indicates 4 files of type G  
-- declaration file indicates 0 files of type H  
-- declaration file indicates 26 files of type Q  
-- declaration file indicates 6 files of type R  
-- declaration file indicates 2 files of type C  
-- declaration file indicates 0 files of type X  
-- declaration file indicates 0 files of type P  
-- declaration file indicates 0 files of type Z
```

## 10. Appendix B - Detailed IGES Analysis

### 10.1 File D001Q030

#### 10.1.1 Parser/Verifier Log

```
*****  
***** IGES PARSER/VERIFIER *****  
***** MARCH 1993 *****  
***** IGES Data Analysis *****  
***** (708) 344-1815 *****  
*****
```

Input file is q030.igs  
Checking conformance to CALS Class I (MIL-D-28000A 2/10/92)

Today is June 20, 1994 3:16 PM

```
*****  
***** CHECK FILE SYNTAX *****  
*****
```

Section	Records
Start	5
Global	3
Directory	3464 ( 1732 Entities)
Parameter	2814
Terminate	1

No syntax errors detected.

```
*****  
***** SUMMARY AND STATISTICS ****  
*****
```

\*\*\* File and Product Name Information \*\*\*

```
File name from sender = 'T433.33.dwg'  
File creation Date.Time = '940419.133847'  
Model change Date.Time = ''  
Author = 'Brian Keefe'  
Department = ''  
Product name from sender = 'Xerox Expert'  
Destination product name = ''
```

\*\*\* Parameter Delimiters \*\*\*

Delimiter = ','  
Terminator = ';'

\*\*\* Originating System Data \*\*\*

System ID = 'Xerox Expert version 5.0'  
Preprocessor version = '5.0'  
Specification version = 6 (IGES 4.0)

\*\*\* Precision levels \*\*\*

Integer bits = 16  
Floating point - Exponent = 38 Mantissa = 7  
Double precision - Exponent = 38 Mantissa = 7

\*\*\* Global Model Data \*\*\*

Model scale = 1.0000E+00  
Unit flag = 1  
Units = 'INCH'  
Line weights = 3  
Maximum line thickness = 4.166667E-02  
Minimum line thickness = 1.388889E-02  
Granularity = 1.000000E-05  
Maximum coordinate = 1.700001E+01

Drafting standard applicable to original data is not specified.

\*\*\* Status Flag Summary \*\*\*

Blank status:	Visible	1732
	Blanked	0
Independence:	Independent	1527
	Physically Subordinate	203
	Logically Subordinate	2
	Totally Subordinate	0
Entity use:	Geometry	1044
	Annotation	685
	Definition	2
	Other	1
	Logical/Positional	0
	2D parametric	0
	Construction geometry	0
	Not Specified	0

Hierarchy:    Structure DE applies            1732  
                  Subordinate DE applies            0  
                  Hierarchy property applies        0  
                  Not Specified                    0

\*\*\* Entity Occurrence Counts \*\*\*

Entity	Form	Level	Count	Type
-----	----	-----	-----	----
100	0	0	382	Circular arc
102	0	0	11	Composite curve
110	0	0	640	Line
212	0	0	685	General note
230	0	0	11	Sectioned area (Standard Crosshatching)
404	0	0	1	Drawing
406	16	0	1	Property - Drawing size
410	0	0	1	View - Orthographic parallel

\*\*\* Entity Count by Level \*\*\*

Level	Count
0	1732

\*\*\* Labeling Information \*\*\*

100% of the entities are labeled.

Unlabeled            0

Label	Count	Label	Count	Label	Count
View	1*	GNote	685*	Line	640*
Circle	290*	Arc	92*	Composit	11
Section	11*	Property	1	Drawing	1*

NITPICK 2327: One or more of the flagged entity labels are not right-justified.

\*\*\* Line Fonts Used in Data \*\*\*

100	102	104	106	108	110	112	114	
-	-	-	-	-	-	-	-	Undefined
382	11	-	-	-	636	-	-	Solid
-	-	-	-	-	4	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line

---

<<<< PART OF LOG FILE REMOVED HERE >>>>

\*\*\* Line Widths Used in Data \*\*\*

Weight	Count	Width
Defaulted	910	(0.0139)
1	710	(0.0139)
2	112	(0.0278)

\*\*\* Colors Used in Data \*\*\*

Defaulted	25
Green	1707

\*\*\*\*\*  
\*\*\*\*\* ENTITY ANALYSIS \*\*\*\*\*  
\*\*\*\*\*

\*\*\* Entity type: 100

ERROR 2242: Radii not equal at D 567; difference is 1.100000E-05.  
ERROR 2242: Radii not equal at D 581; difference is 1.100000E-05.  
ERROR 2242: Radii not equal at D 597; difference is 1.100000E-05.  
ERROR 2242: Radii not equal at D 603; difference is 1.100000E-05.  
ERROR 2242: Radii not equal at D 615; difference is 1.000000E-05.

\*\*\* Entity type: 102

ERROR 2033: End points of curves D 3025 and D 3027 disjoint by  
1.559251E+00 at D 3307.  
ERROR 2033: End points of curves D 3027 and D 3029 disjoint by  
8.662500E-02 at D 3307.  
ERROR 2033: Messages regarding disjoint composite curves suppressed.  
NOTE 2391: Start point D 3395 and D 3397 are the same, possible reversal  
of D 3397.

\*\*\* Entity type: 110

-- 640 lines averaging 5.711813E-01 units --

\*\*\* Entity type: 212

685 text strings in data file.  
Average text aspect ratio in file is 0.9025155.  
Minimum text aspect ratio in file is 0.9001241.  
Maximum text aspect ratio in file is 0.9032298.

FONTS USED IN FILE

FONT	COUNT	NAME
1	677	Default ASCII Style
1003	8	Drafting Font

\*\*\* Entity type: 230

NITPICK 2076: Entity does not have Annotation flag set at D 3309.  
NITPICK 2076: Entity does not have Annotation flag set at D 3325.  
NITPICK 2076: Messages regarding entity use (annotation) suppressed.

\*\*\* Entity type: 404

NITPICK 2074: Entity use flag must be 1 for Drawing entity at D 3463.  
Drawing at D 3463 contains 1 views.  
Drawing at D 3463 contains 0 annotation entities.

\*\*\* Entity type: 406

\*\*\* Entity type: 410

NITPICK 2073: Entity use flag must be 1 for View entity at D 1.  
Scale of view at D 1 is 1.000000E+00.  
Orthographic View entity at D 1 has 0 clipping planes specified.  
XMIN = Not Set XMAX = Not Set  
YMIN = Not Set YMAX = Not Set  
ZMIN = Not Set ZMAX = Not Set

\*\*\* Message Summary \*\*\*

2007: 171 Mathematical discontinuities.  
2015: 5 Mathematically incorrect definitions.  
2016: 13 Invalid entity use flag.

\*\*\* Error Summary \*\*\*

0 fatal errors  
0 severe errors  
176 errors  
0 warnings  
0 cautions  
14 nitpicks  
1 notes

\*\*\* End of Analysis of q030.igs \*\*\*

---

---

## 10.1.2 Parser Log - IGESWorks

IGES/Works v1.4.1  
International TechneGroup Incorporated  
Validation Logfile

Date: June 20, 1994  
Model: q030

\*\*\*\*\* Validation Parameters \*\*\*\*\*

TOLERANCE CONFIGURATION VALUES  
-----

ZERO_TOL	=	1.000000e-13
MODEL_SPACE_PNT_COIN_TOL	=	1.000000e-03
PARM_SPACE_PNT_COIN_TOL	=	1.000000e-08
ISO_PARM_CURVE_TOL	=	1.000000e-08
NON_CONV_TOL	=	1.000000e-12
KNOT_COIN_TOL	=	1.000000e-10
SAME_INTER_TOL	=	1.000000e-12
PARALLEL_LINES_TOL	=	1.000000e-07
ANGLE_COIN_TOL	=	1.000000e-05
PNT_PROJ_TOL	=	1.000000e-07
COLIN_TOL	=	1.000000e-07
COPLANAR_TOL	=	1.000000e-08
ZERO_NORMAL_TOL	=	1.000000e-06
SAME_TANGENT_TOL	=	1.000000e-04
SAME_CURVATURE_TOL	=	1.000000e-04
SAME_DERIVATIVE_TOL	=	1.000000e-03
MODEL_LINEAR_APPROX_TOL	=	2.220446e-16

\*\*\*\*\* Entity Listing Before Validation \*\*\*\*\*

Count	Type	Form	Description
----	----	----	-----
382	100	0	Circular Arc
11	102	0	Composite Curve
640	110	0	Line
685	212	0	General Note (Simple)
11	230	0	Section Area (Standard Fill)
1	404	0	Drawing (form 0)
1	406	16	Property (Drawing Size)
1	410	0	View

1732 - Number of entities in selection list

---

\*\*\*\*\* Entity Validation \*\*\*\*\*

\*\*\* Warning (IEVM\_LABEL\_NOT\_RJ) \*\*\*  
(DE 1, TF 410:0) The Label Display field in this entity's DE section was not set for right justification.  
Action taken: The Label Display field has been set to be right-justified.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

\*\*\* Warning (IEVM\_RADII\_NOT\_EQUAL\_100) \*\*\*  
(DE 567, TF 100:0) This circular arc entity's start point and end point radii are not equal in length. Start point radius: 2.7730000e-02.  
Terminate point radius: 2.7719000e-02.  
Action taken: Center point moved 7.7781745e-06 units from 1.4678650e+01, 4.5175510e+00 to 1.4678644e+01, 4.5175565e+00.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

\*\*\* Warning (IEVM\_NON\_CONTINUOUS\_102) \*\*\*  
(DE 3307, TF 102:0) This Composite Curve entity (102) is not continuous within the stated tolerance. The terminate point of the first curve does not equal the start point of the next curve.  
Action taken: The curve was made continuous by the following actions.  
A line, DE 3465, was added between DE's 3025 and 3027. A line, DE 3467, was added between DE's 3027 and 3029. A line, DE 3469, was added between DE's 3029 and 3031. A line, DE 3471, was added between DE's 3031 and 3033. A line, DE 3473, was added between DE's 3033 and 3035. A line, DE 3475, was added between DE's 3035 and 3037. A line, DE 3477, was added between DE's 3037 and 3039. A line, DE 3479, was added between DE's 3039 and 3041. A line, DE 3481, was added between DE's 3041 and 3043. A line, DE 3483, was added between DE's 3043 and 3045. A line, DE 3485, was added between DE's 3045 and 3047. A line, DE 3487, was added between DE's 3047 and 3049. A line, DE 3489, was added between DE's 3049 and 3051. A line, DE 3491, was added between DE's 3051 and 3053. A line, DE 3493, was added between DE's 3053 and 3055. A line, DE 3495, was added between DE's 3055 and 3057. A line, DE 3497, was added between DE's 3057 and 3059. A line, DE 3499, was added between DE's 3059 and 3061. A line, DE 3501, was added between DE's 3061 and 3063. A line, DE 3503, was added between DE's 3063 and 3065. A line, DE 3505, was added between DE's 3065 and 3067. A line, DE 3507, was added between DE's 3067 and 3069. A line, DE 3509, was added between DE's 3069 and 3071. A line, DE 3511, was added between DE's 3071 and 3073. A line, DE 3513, was added between DE's 3073 and 3075. A line, DE 3515, was added between DE's 3075 and 3077. A line, DE 3517, was added between DE's 3077 and 3079. A line, DE 3519, was added between DE's 3079 and 3081. A line, DE 3521, was added between DE's 3081 and 3083. A line, DE 3523, was added between DE's 3083 and 3085. A line, DE 3525, was added between DE's 3085 and 3087. A line, DE 3527, was added between DE's 3087 and 3089. A line, DE 3529, was added between DE's 3089 and 3091. A line, DE 3531, was added between DE's 3091 and 3093.

---

A line, DE 3533, was added between DE's 3093 and 3095. A line, DE 3535, was added between DE's 3095 and 3097. A line, DE 3537, was added between DE's 3097 and 3099. A line, DE 3539, was added between DE's 3099 and 3101. A line, DE 3541, was added between DE's 3101 and 3103. A line, DE 3543, was added between DE's 3103 and 3105. A line, DE 3545, was added between DE's 3105 and 3107. A line, DE 3547, was added between DE's 3107 and 3109. A line, DE 3549, was added between DE's 3109 and 3111. A line, DE 3551, was added between DE's 3111 and 3113. A line, DE 3553, was added between DE's 3113 and 3115. A line, DE 3555, was added between DE's 3115 and 3117. A line, DE 3557, was added between DE's 3117 and 3119. A line, DE 3559, was added between DE's 3119 and 3121. A line, DE 3561, was added between DE's 3121 and 3123. A line, DE 3563, was added between DE's 3123 and 3125. A line, DE 3565, was added between DE's 3125 and 3127. A line, DE 3567, was added between DE's 3127 and 3129. A line, DE 3569, was added between DE's 3129 and 3131. A line, DE 3571, was added between DE's 3131 and 3133. A line, DE 3573, was added between DE's 3133 and 3135. A line, DE 3575, was added between DE's 3135 and 3137. A line, DE 3577, was added between DE's 3137 and 3139. A line, DE 3579, was added between DE's 3139 and 3141. A line, DE 3581, was added between DE's 3141 and 3143. A line, DE 3583, was added between DE's 3143 and 3145. A line, DE 3585, was added between DE's 3145 and 3147. A line, DE 3587, was added between DE's 3147 and 3149. A line, DE 3589, was added between DE's 3149 and 3151. A line, DE 3591, was added between DE's 3151 and 3153. A line, DE 3593, was added between DE's 3153 and 3155. A line, DE 3595, was added between DE's 3155 and 3157. A line, DE 3597, was added between DE's 3157 and 3159. A line, DE 3599, was added between DE's 3159 and 3161. A line, DE 3601, was added between DE's 3161 and 3163. A line, DE 3603, was added between DE's 3163 and 3165. A line, DE 3605, was added between DE's 3165 and 3167. A line, DE 3607, was added between DE's 3167 and 3169. A line, DE 3609, was added between DE's 3169 and 3171. A line, DE 3611, was added between DE's 3171 and 3173. A line, DE 3613, was added between DE's 3173 and 3175. A line, DE 3615, was added between DE's 3175 and 3177. A line, DE 3617, was added between DE's 3177 and 3179. A line, DE 3619, was added between DE's 3179 and 3181. A line, DE 3621, was added between DE's 3181 and 3183. A line, DE 3623, was added between DE's 3183 and 3185. A line, DE 3625, was added between DE's 3185 and 3187. A line, DE 3627, was added between DE's 3187 and 3189. A line, DE 3629, was added between DE's 3189 and 3191. A line, DE 3631, was added between DE's 3191 and 3193. A line, DE 3633, was added between DE's 3193 and 3195. A line, DE 3635, was added between DE's 3195 and 3197. A line, DE 3637, was added between DE's 3197 and 3199. A line, DE 3639, was added between DE's 3199 and 3201. A line, DE 3641, was added between DE's 3201 and 3203. A line, DE 3643, was added between DE's 3203 and 3205. A line, DE 3645, was added between DE's 3205 and 3207. A line, DE 3647, was added between DE's 3207 and 3209. A line, DE 3649, was added between DE's 3209 and 3211. A line, DE 3651, was added between DE's 3211 and 3213. A line, DE 3653, was added between DE's 3213 and 3215. A line, DE 3655, was added between DE's 3215 and 3217. A line, DE 3657, was added between DE's 3217 and 3219. A line, DE 3659, was added between DE's 3223 and 3225.

---

A line, DE 3661, was added between DE's 3225 and 3227. A line, DE 3663, was added between DE's 3227 and 3229. A line, DE 3665, was added between DE's 3229 and 3231. A line, DE 3667, was added between DE's 3231 and 3233. A line, DE 3669, was added between DE's 3233 and 3235. A line, DE 3671, was added between DE's 3235 and 3237. A line, DE 3673, was added between DE's 3237 and 3239. A line, DE 3675, was added between DE's 3239 and 3241. A line, DE 3677, was added between DE's 3241 and 3243. A line, DE 3679, was added between DE's 3243 and 3245. A line, DE 3681, was added between DE's 3245 and 3247. A line, DE 3683, was added between DE's 3247 and 3249. A line, DE 3685, was added between DE's 3253 and 3255. A line, DE 3687, was added between DE's 3255 and 3257. A line, DE 3689, was added between DE's 3257 and 3259. A line, DE 3691, was added between DE's 3259 and 3261. A line, DE 3693, was added between DE's 3261 and 3263. A line, DE 3695, was added between DE's 3263 and 3265. A line, DE 3697, was added between DE's 3265 and 3267. A line, DE 3699, was added between DE's 3267 and 3269. A line, DE 3701, was added between DE's 3269 and 3271. A line, DE 3703, was added between DE's 3271 and 3273. A line, DE 3705, was added between DE's 3273 and 3275. A line, DE 3707, was added between DE's 3275 and 3277. A line, DE 3709, was added between DE's 3277 and 3279. A line, DE 3711, was added between DE's 3279 and 3281. A line, DE 3713, was added between DE's 3281 and 3283. A line, DE 3715, was added between DE's 3283 and 3285. A line, DE 3717, was added between DE's 3285 and 3287. A line, DE 3719, was added between DE's 3287 and 3289. A line, DE 3721, was added between DE's 3289 and 3291. A line, DE 3723, was added between DE's 3291 and 3293. A line, DE 3725, was added between DE's 3293 and 3295. A line, DE 3727, was added between DE's 3295 and 3297. A line, DE 3729, was added between DE's 3297 and 3299. A line, DE 3731, was added between DE's 3299 and 3301. A line, DE 3733, was added between DE's 3301 and 3303. A line, DE 3735, was added between DE's 3303 and 3305.

\*\*\* Warning (IEVM\_NON\_CONTINUOUS\_102) \*\*\*

(DE 3323, TF 102:0) This Composite Curve entity (102) is not continuous within the stated tolerance. The terminate point of the first curve does not equal the start point of the next curve.

Action taken: The curve was made continuous by the following actions.

DE 3311 was reversed. DE 3313 was reversed. A line, DE 3737, was added between DE's 3315 and 3317. A line, DE 3739, was added between DE's 3317 and 3319. A line, DE 3741, was added between DE's 3319 and 3321.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

Entity Validation Summary:

Type	Form	Entity Count	Number Valid	Number of Corrected		Number of Uncorrected	
				Warnings	Errors	Warnings	Errors
Global Section		1	1	0	0	0	0
100	0	382	0	382	5	0	0
102	0	11	0	0	11	0	0
110	0	799	159	640	0	0	0
212	0	685	0	685	0	0	0
230	0	11	0	11	0	0	0
404	0	1	0	1	0	0	0
406	16	1	1	0	0	0	0
410	0	1	0	1	0	0	0
Totals:		1892	161	1720	16	0	0

The following message was issued and suppressed 1715 times:

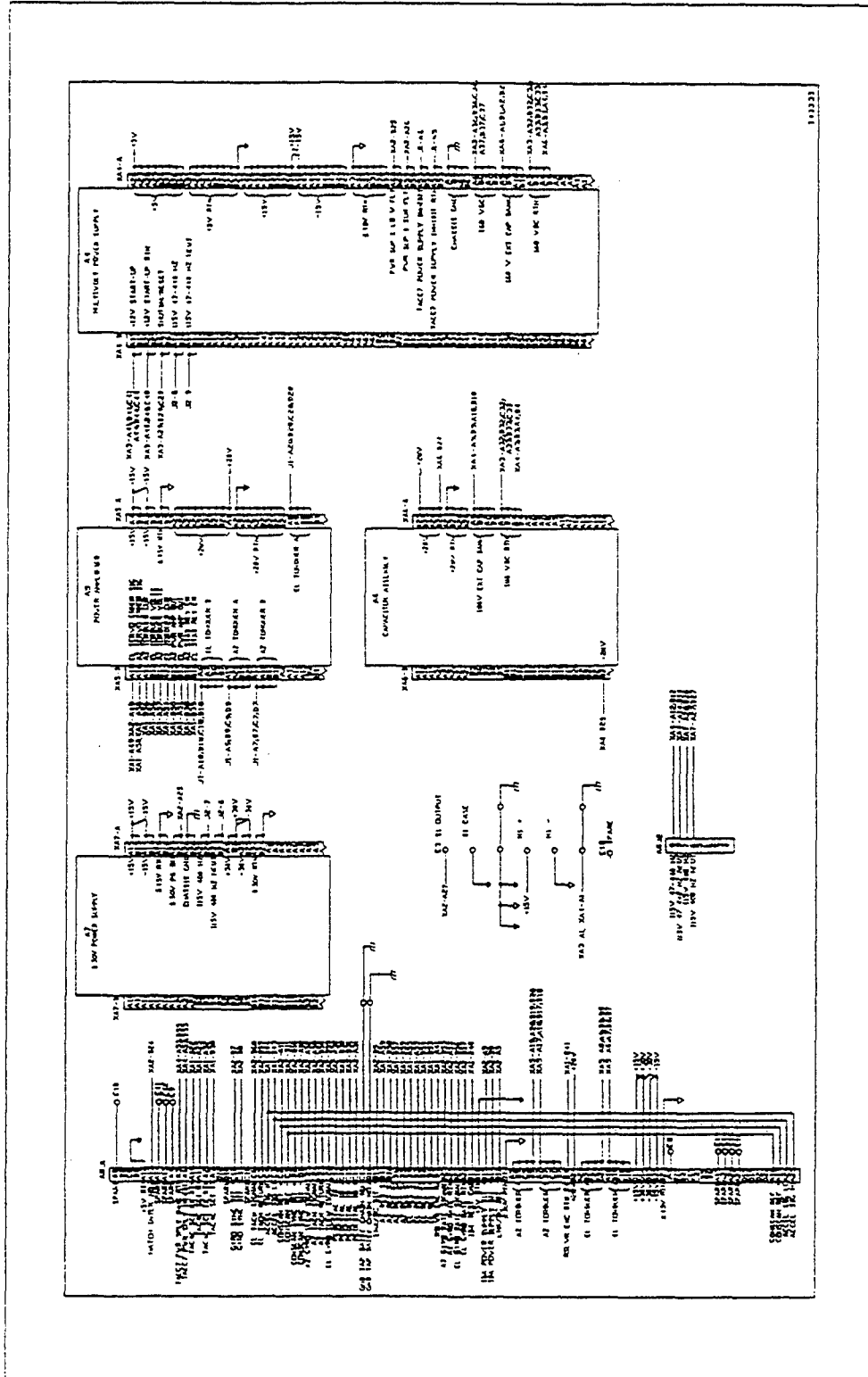
The Label Display field in this entity's DE section was not set for right justification.

The following message was issued and suppressed 6 times:

This Composite Curve entity (102) is not continuous within the stated tolerance. The terminate point of the first curve does not equal the start point of the next curve.

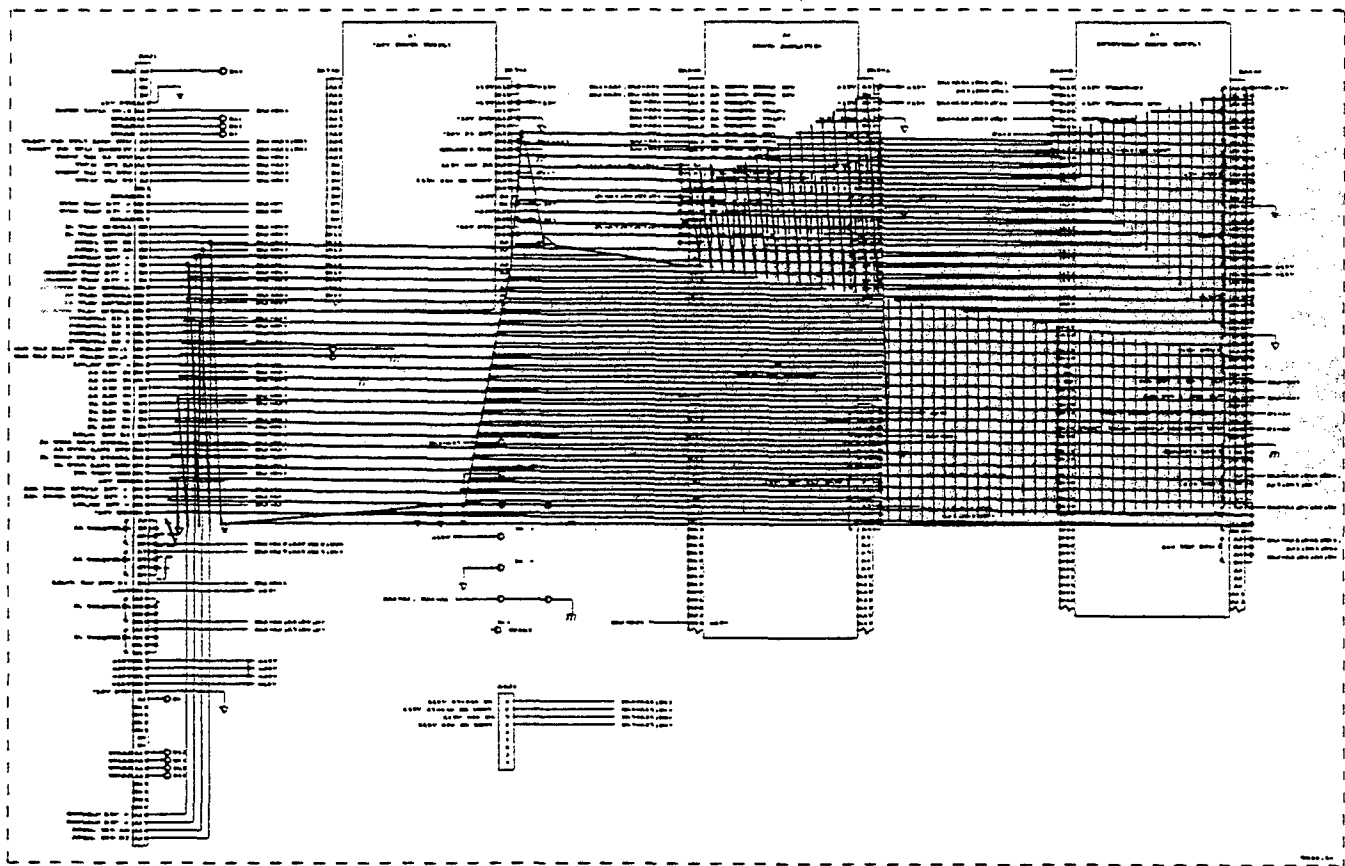
A message is suppressed when it has been issued more than 5 times. This value is controlled by the 'MAX\_MESSAGE' configuration parameter.  
\*\*\*\*\*

### 10.1.3 Output AutoCAD R12

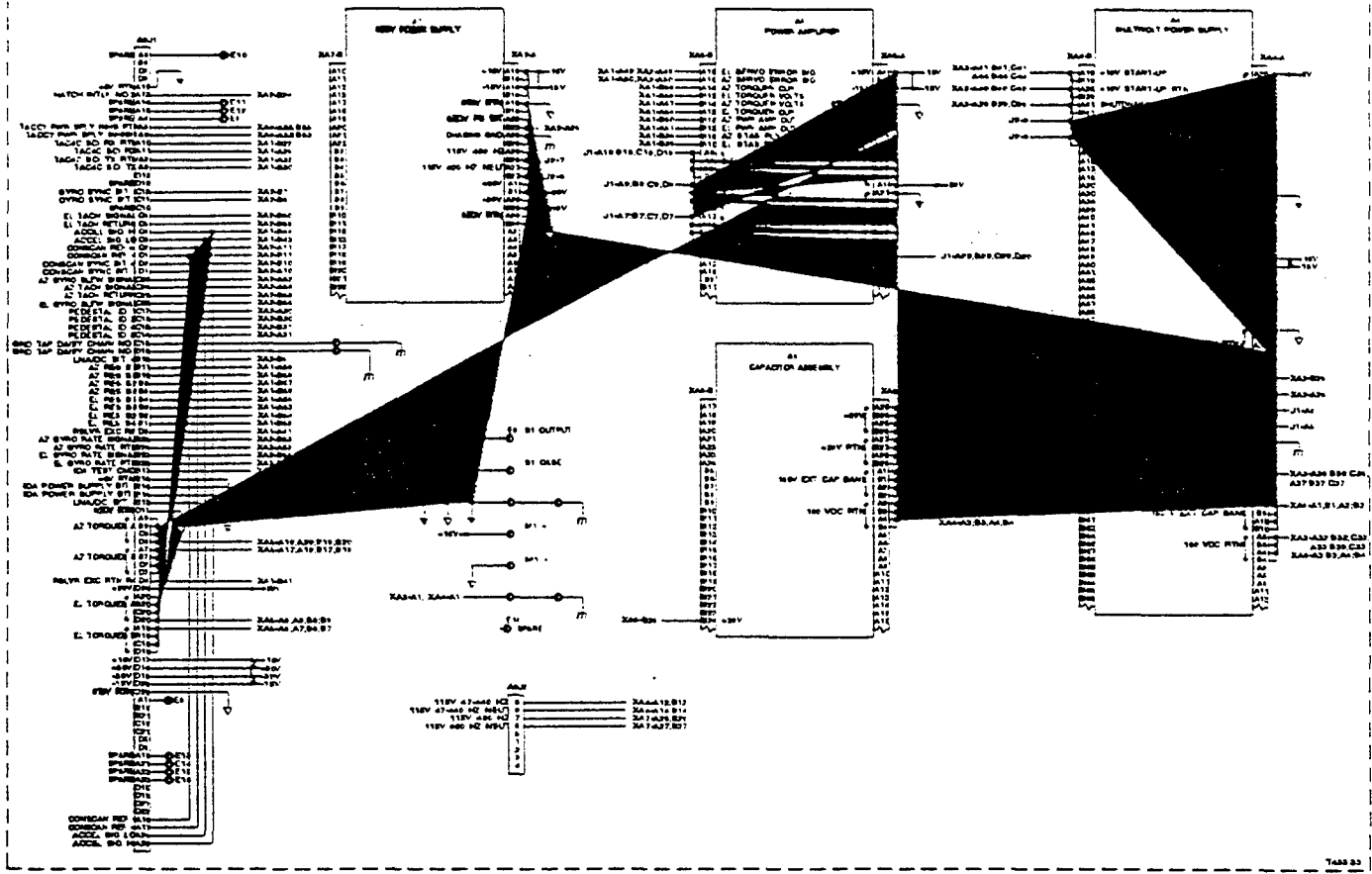




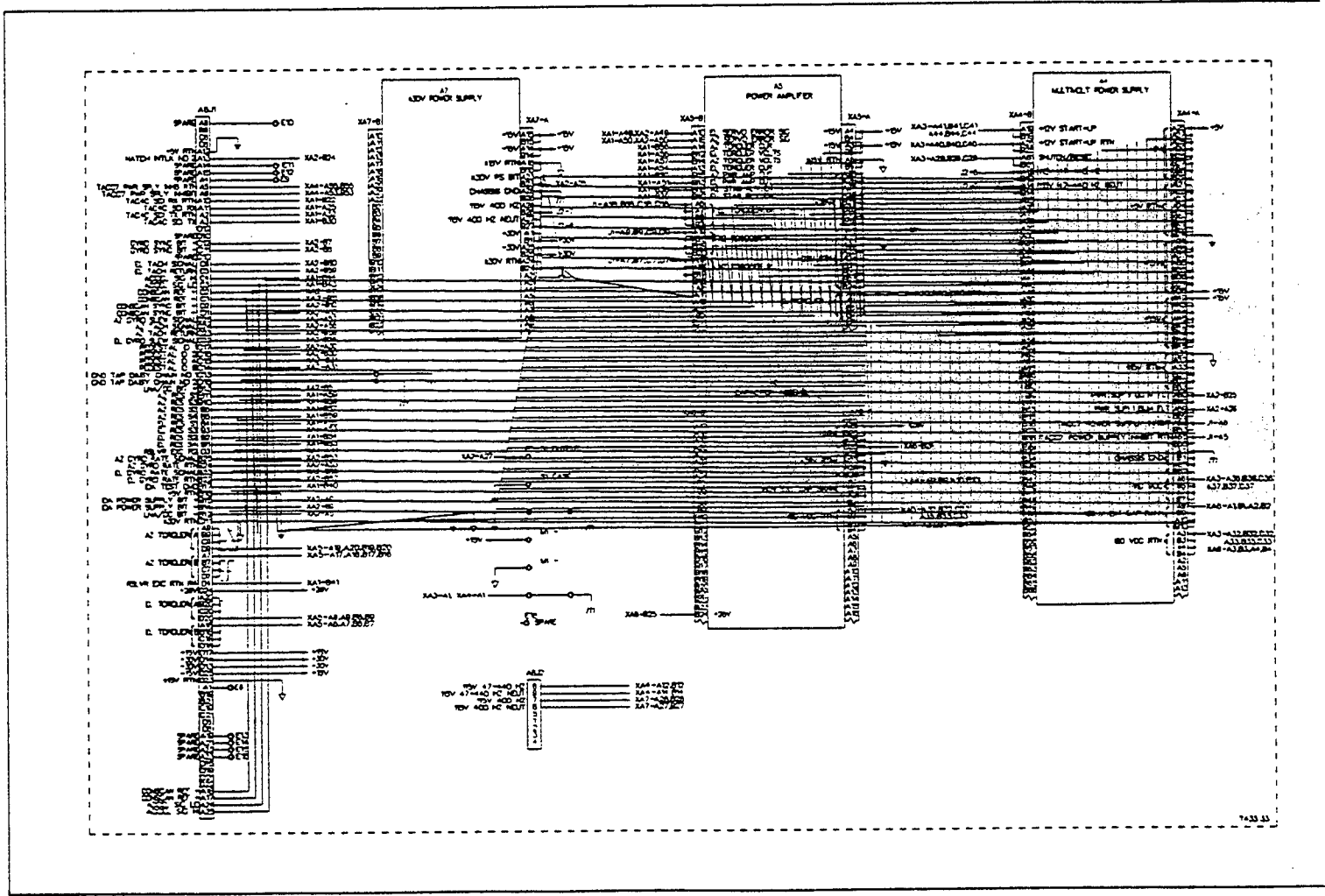
### 10.1.5 Output CADLeaf



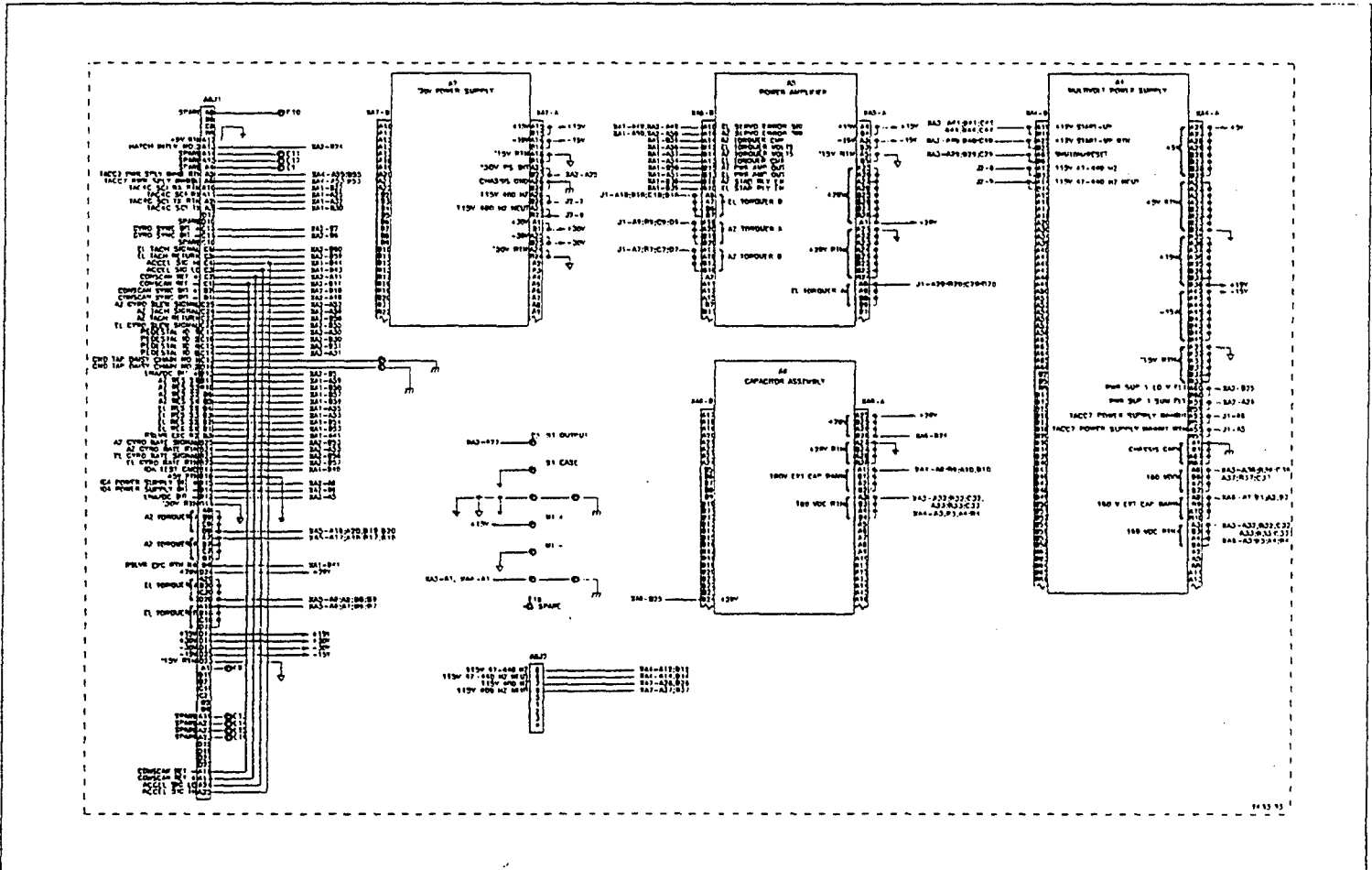
### 10.1.6 Output Island Draw



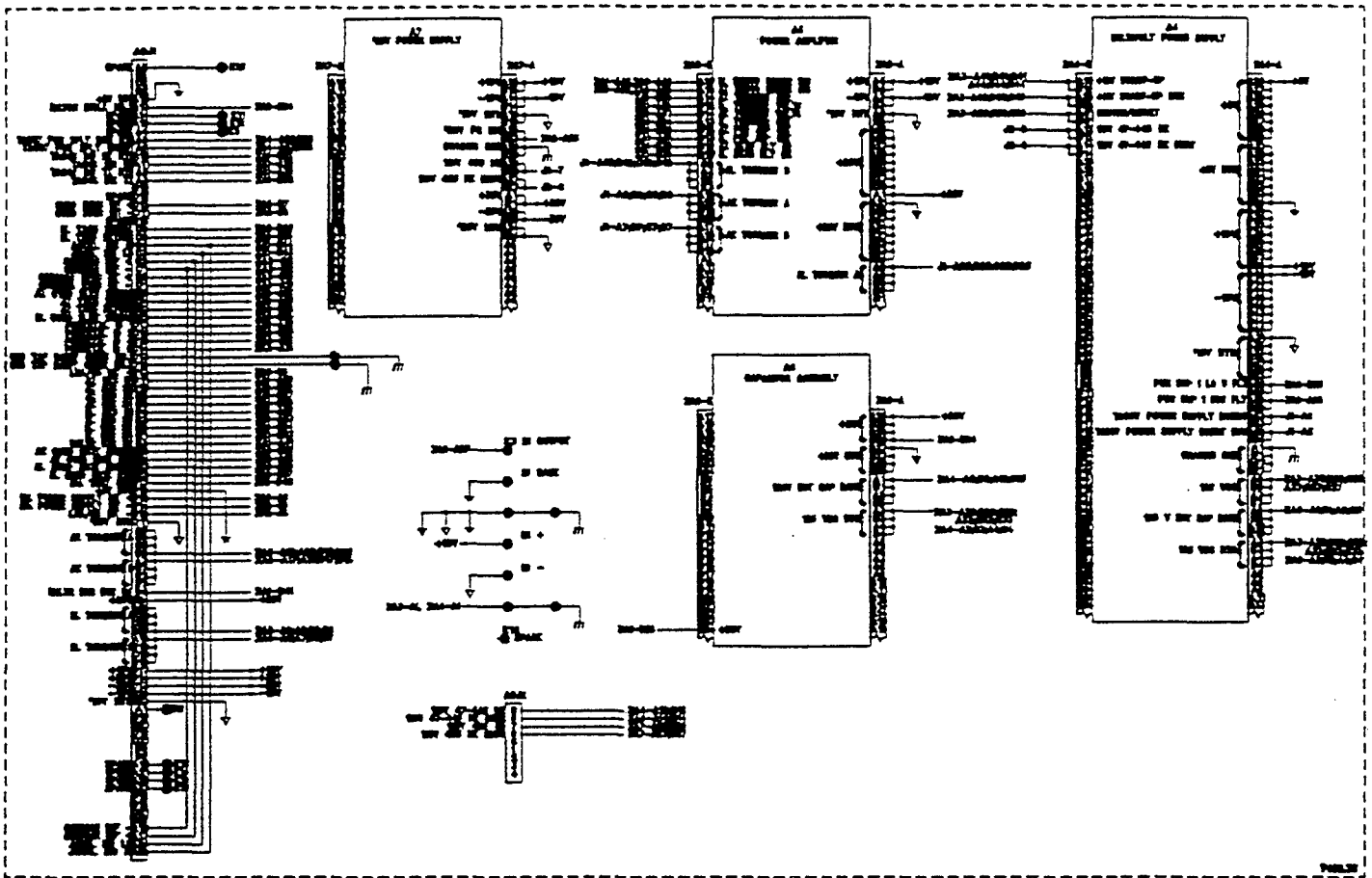
### 10.1.7 Output IGESView



### 10.1.8 Output Preview



### 10.1.9 Output X-Change



## 10.2 File D001Q031

### 10.2.1 Parser/Verifer Log

```
*****  
***** IGES PARSER/VERIFIER *****  
***** MARCH 1993 *****  
***** IGES Data Analysis *****  
***** (708) 344-1815 *****  
*****
```

Input file is q031.igs

Checking conformance to CALS Class I (MIL-D-28000A 2/10/92)

Today is June 20, 1994 3:16 PM

```
*****  
***** CHECK FILE SYNTAX *****  
*****
```

Section	Records
Start	5
Global	3
Directory	3760 ( 1880 Entities)
Parameter	3030
Terminate	1

No syntax errors detected.

```
*****  
***** SUMMARY AND STATISTICS *****  
*****
```

\*\*\* File and Product Name Information \*\*\*

```
File name from sender = 'T433.35.dwg'  
File creation Date.Time = '940419.134008'  
Model change Date.Time = ''  
Author = 'Brian Keefe'  
Department = ''  
Product name from sender = 'Xerox Expert'  
Destination product name = ''
```

\*\*\* Parameter Delimiters \*\*\*

Delimiter = ','  
Terminator = ';'

\*\*\* Originating System Data \*\*\*

System ID = 'Xerox Expert version 5.0'  
Preprocessor version = '5.0'  
Specification version = 6 (IGES 4.0)

\*\*\* Precision levels \*\*\*

Integer bits = 16  
Floating point - Exponent = 38 Mantissa = 7  
Double precision - Exponent = 38 Mantissa = 7

\*\*\* Global Model Data \*\*\*

Model scale = 1.0000E+00  
Unit flag = 1  
Units = 'INCH'  
Line weights = 3  
Maximum line thickness = 4.166667E-02  
Minimum line thickness = 1.388889E-02  
Granularity = 1.000000E-05  
Maximum coordinate = 1.700000E+01

Drafting standard applicable to original data is not specified.

\*\*\* Status Flag Summary \*\*\*

Blank status:	Visible	1880
	Blanked	0
Independence:	Independent	1672
	Physically Subordinate	206
	Logically Subordinate	2
	Totally Subordinate	0
Entity use:	Geometry	985
	Annotation	892
	Definition	2
	Other	1
	Logical/Positional	0
	2D parametric	0
	Construction geometry	0
	Not Specified	0

Hierarchy:    Structure DE applies            1880  
                  Subordinate DE applies            0  
                  Hierarchy property applies        0  
                  Not Specified                    0

\*\*\* Entity Occurrence Counts \*\*\*

Entity	Form	Level	Count	Type
-----	----	-----	-----	-----
100	0	0	399	Circular arc
102	0	0	7	Composite curve
110	0	0	572	Line
212	0	0	892	General note
230	0	0	7	Sectioned area (Standard Crosshatching)
404	0	0	1	Drawing
406	16	0	1	Property - Drawing size
410	0	0	1	View - Orthographic parallel

\*\*\* Entity Count by Level \*\*\*

Level	Count
0	1880

\*\*\* Labeling Information \*\*\*

100% of the entities are labeled.

Unlabeled            0

Label	Count	Label	Count	Label	Count
View	1*	GNote	892*	Line	572*
Circle	349*	Arc	50*	Composit	7
Section	7*	Property	1	Drawing	1*

NITPICK 2327: One or more of the flagged entity labels are not right-justified.

\*\*\* Line Fonts Used in Data \*\*\*

100	102	104	106	108	110	112	114	
-	-	-	-	-	-	-	-	Undefined
399	7	-	-	-	568	-	-	Solid
-	-	-	-	-	4	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

\*\*\* Line Widths Used in Data \*\*\*

Weight	Count	Width
Defaulted	916	(0.0139)
1	909	(0.0139)
2	55	(0.0278)

\*\*\* Colors Used in Data \*\*\*

Defaulted	17
Green	1863

\*\*\*\*\*  
\*\*\*\*\* ENTITY ANALYSIS \*\*\*\*\*  
\*\*\*\*\*

\*\*\* Entity type: 100

\*\*\* Entity type: 102

ERROR 2033: End points of curves D 3323 and D 3325 disjoint by  
9.095400E-02 at D 3667.  
ERROR 2033: End points of curves D 3325 and D 3327 disjoint by  
2.728710E-01 at D 3667.  
ERROR 2033: Messages regarding disjoint composite curves suppressed.  
NOTE 2391: Start point D 3733 and D 3735 are the same, possible reversal  
of D 3735.

\*\*\* Entity type: 110

-- 572 lines averaging 6.127860E-01 units --

\*\*\* Entity type: 212

892 text strings in data file.  
Average text aspect ratio in file is 0.9024015.  
Minimum text aspect ratio in file is 0.8404755.  
Maximum text aspect ratio in file is 0.9032298.

FONTS USED IN FILE

FONT	COUNT	NAME
1	887	Default ASCII Style
1003	5	Drafting Font

\*\*\* Entity type: 230

NITPICK 2076: Entity does not have Annotation flag set at D 3669.  
NITPICK 2076: Entity does not have Annotation flag set at D 3679.  
NITPICK 2076: Entity does not have Annotation flag set at D 3695.  
NITPICK 2076: Entity does not have Annotation flag set at D 3705.  
NITPICK 2076: Entity does not have Annotation flag set at D 3715.  
NITPICK 2076: Entity does not have Annotation flag set at D 3725.  
NITPICK 2076: Entity does not have Annotation flag set at D 3747.

\*\*\* Entity type: 404

NITPICK 2074: Entity use flag must be 1 for Drawing entity at D 3759.  
Drawing at D 3759 contains 1 views.  
Drawing at D 3759 contains 0 annotation entities.

\*\*\* Entity type: 406

\*\*\* Entity type: 410

NITPICK 2073: Entity use flag must be 1 for View entity at D 1.  
Scale of view at D 1 is 1.000000E+00.  
Orthographic View entity at D 1 has 0 clipping planes specified.  
XMIN = Not Set XMAX = Not Set  
YMIN = Not Set YMAX = Not Set  
ZMIN = Not Set ZMAX = Not Set

\*\*\* Message Summary \*\*\*

2007: 187 Mathematical discontinuities.  
2016: 9 Invalid entity use flag.

\*\*\* Error Summary \*\*\*

0 fatal errors  
0 severe errors  
187 errors  
0 warnings  
0 cautions  
10 nitpicks  
1 notes

\*\*\* End of Analysis of q031.igs \*\*\*

---

---

## 10.2.2 Post Processor Log - AutoCAD

Title: IGESIN Journal (v5.1 Nov 05 1992)

=====  
File: C:/TMP/Q031.xli

Date: Mon, Jun 20, 1994

Time: 15:51:04  
=====

EVALUATION VERSION -- NOT FOR RESALE

Translator S/N: 117-10075750

Translating from IGES file: C:/TMP/Q031.IGS

to AutoCAD Drawing: C:\Q031.dwg  
=====

Options obtained from: default settings

Curves Approximated to Tolerance of 0.01

Surfaces Approximated to Tolerance of 0.01

Text Font/Style mapping:

IGES Text font	Style Name	ACAD Font
0	SYMBOL0	iges0
1	STANDARD	txt
2	LEROY	txt
3	FUTURA	txt
6	COMP80	txt
12	GOTHICE	gothice
13	GOTHICI	gothici
14	ROMANS	romans
17	ROMANT	romant
18	ROMAND	romand
19	OCR	txt
1001	SYMBOL1	iges1001
1002	SYMBOL2	iges1002
1003	SYMBOL3	iges1003
2001	KANJI	bigfont

IGES Linefont/AutoCAD Linetype mapping

IGES Line Font	AutoCAD linetype	Shape file
0	BYLAYER	
1	CONTINUOUS	
2	DASHED	acad.lin
3	PHANTOM	acad.lin
4	CENTER	acad.lin
5	DOT	acad.lin

=====

---

Parse phase

\*\*\* Warning (IAFP\_LARGER\_SGL\_SIG) \*\*\*  
C:/TMP/Q031.IGS, line 8: IGES file has greater number of significant digits in single precision numbers than this system.

\*\*\* Warning (IEVM\_LABEL\_NOT\_RJ) \*\*\*  
(DE 1, TF 410:0) DE has an invalid label justification.

Action taken: Label has been right justified.

<<<< PART OF LOG FILE REMOVED HERE >>>>

\*\*\* Warning (IEVM\_RADII\_NOT\_EQUAL\_100) \*\*\*  
(DE 967, TF 100:0) Entity's radii are not equal. Start point radius: 2.9107000e-002. Terminate point radius: 2.9104000e-002.

Action taken: Start point moved 1.5000000e-006 units from 9.6424240e+000, 9.3436280e+000 to 9.6424225e+000, 9.3436280e+000. Terminate point moved 1.5000000e-006 units from 9.6133170e+000, 9.3727320e+000 to 9.6133170e+000, 9.3727335e+000.

<<<< PART OF LOG FILE REMOVED HERE >>>>

=====  
Start Section:

Drawing name: T433.35.DWG. This file was converted by Expert.  
Compliant with CALS class 1, per MIL-D-28000 Amendment 1.

DATE: 19-Apr-94 13:40:08

Global Section:

Parameter Delimiter: ,  
Record Delimiter: ;  
Sending Product ID: Xerox Expert  
File Name: T433.35.dwg  
System ID: Xerox Expert version 5.0  
Preprocessor Version: 5.0  
Size of Integer: 16  
Sgl. Precision Mag: 38  
Sgl. Precision Sig: 7  
Dbl. Precision Mag: 38  
Dbl. Precision Sig: 7  
Receiving Product ID:  
Model Space Scale: 1.000000  
Unit Flag: 1

---

Unit String: INCH  
# of Line Weights: 3  
Maximum Line Width: 0.041667  
Creation Date: 04/19/94 13:40:08  
Minimum Resolution: 0.000010  
Maximum Coordinate: 17.000000  
Author: Brian Keefe  
Organization:  
IGES Version Number: 6  
Drafting Standard: 0

Entity Summary:

Type	Form	Description	Count
100	0	Circular Arc	399
102	0	Composite Curve	7
110	0	Line	572
212	0	General Note (Simple)	892
230	0	Section Area (Standard Fill)	7
404	0	Drawing (form 0)	1
406	16	Property (Drawing Size)	1
410	0	View	1
Total			1880

---

Translation phase

\*\*\* Warning (IGEO\_DISCONTINUOUS) \*\*\*  
( DE: 3667 TF: 102:0 NAME: Composite Curve )  
The IGES entity is discontinuous between segment 1 and 2.  
A linear segment will be added at the discontinuity for approximation.

<<<< PART OF LOG FILE REMOVED HERE >>>>

\*\*\* Error (IGEO\_SECTAREANOTCLOSED) \*\*\*  
( DE: 3669 TF: 230:0 NAME: Section Area (Standard Fill) )  
The section area is not closed.

<<<< PART OF LOG FILE REMOVED HERE >>>>

Drawing Entity (404 Form 0) at DE 3759, with  
name = ,  
size = 17.000000, 11.000000,  
units = IN,  
was processed in the AutoCAD drawing file: C:\Q031.dwg

\*\*\* Warning (ACAD\_NEW\_VIEW\_VOLUME\_GENERATED) \*\*\*  
 ( DE: 1 TF: 410:0 )  
 A new view volume has been generated for the view with:  
 XMIN (-2.024844), XMAX (19.024846),  
 YMIN (-2.024846), YMAX (13.024846),  
 ZMIN (-2.024846), ZMAX (2.024846).

IGES Entity Summary

Type	Form	Description	Count	Processed	Errors
100	0	Circular Arc	571	571	0
102	0	Composite Curve	12	12	0
110	0	Line	545	545	0
212	0	General Note (Simple)	892	892	0
230	0	Section Area (Standard Fill)	7	7	0
404	0	Drawing (form 0)	1	1	0
406	16	Property (Drawing Size)	1	1	0
410	0	View	1	1	0
Totals			2030	2030	0

AutoCAD Entity Summary

Entity	Created	Errors
LINE	545	0
CIRCLE	521	0
TEXT	892	0
ARC	50	0
SOLID	2	0
INSERT	6	0
POLYLINE	4	0
BLOCK	7	0
Totals	2027	0

Error Summary:

The following message was issued 1 time(s)  
 IGES file has greater number of significant digits in single precision numbers  
 than this system.

The following message was issued 1872 time(s)  
DE has an invalid label justification.  
The following message was issued 35 time(s)  
Entity's radii are not equal. Start point radius: %.7e. Terminate point  
radius: %.7e.

The following message was issued 5 time(s)  
The section area is not closed.

The following message was issued 185 time(s)  
The IGES entity is discontinuous between segment %d and %d.  
A linear segment will be added at the discontinuity for approximation.

The following message was issued 1 time(s)  
A new view volume has been generated for the view with:  
XMIN (%lf), XMAX (%lf),  
YMIN (%lf), YMAX (%lf),  
ZMIN (%lf), ZMAX (%lf).

Status: 0  
Warning: 2094  
Error: 5  
Fatal: 0

Elapsed Time:

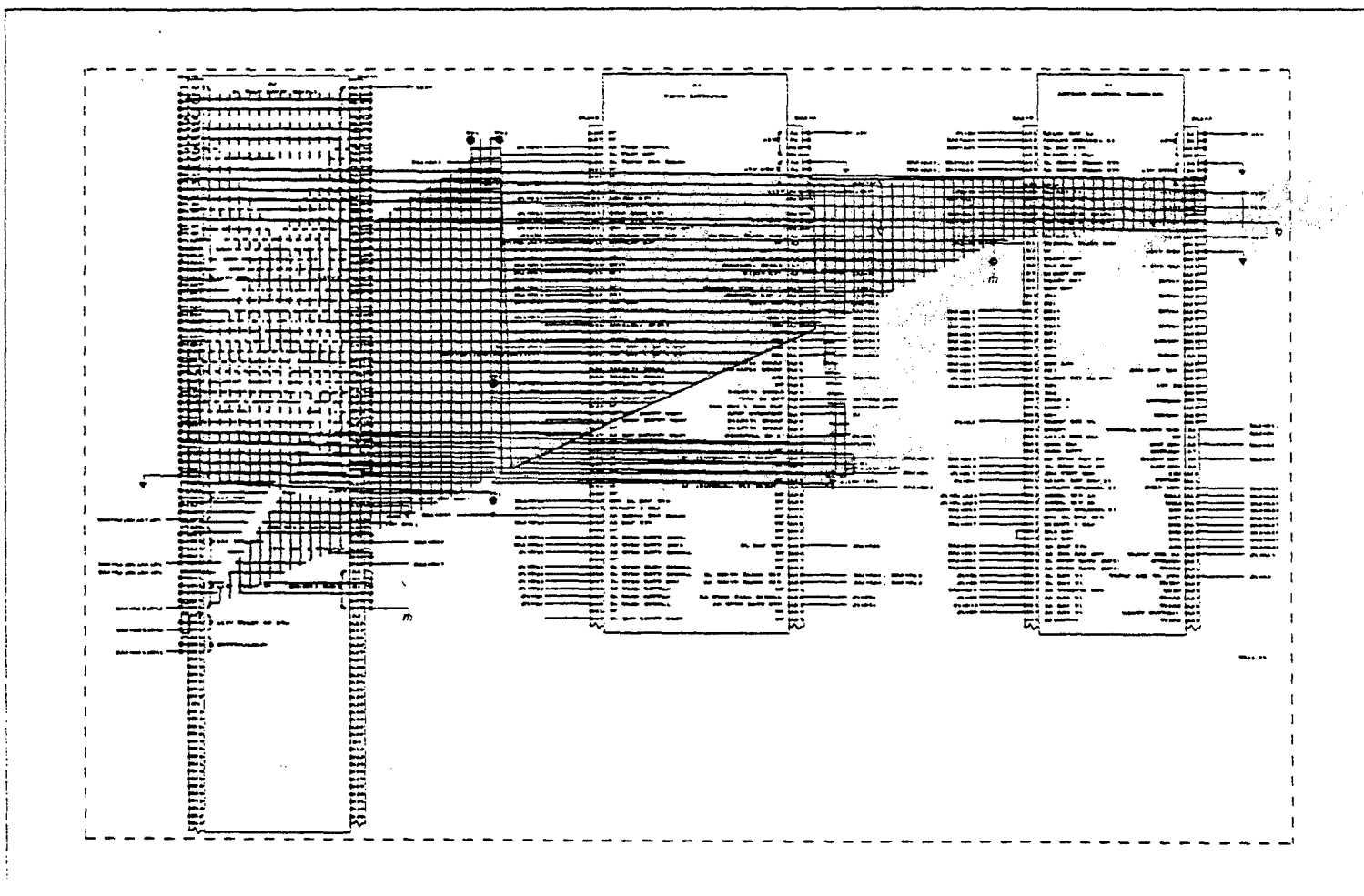
Processor: 00:01:07  
Clock: 00:01:08

=====

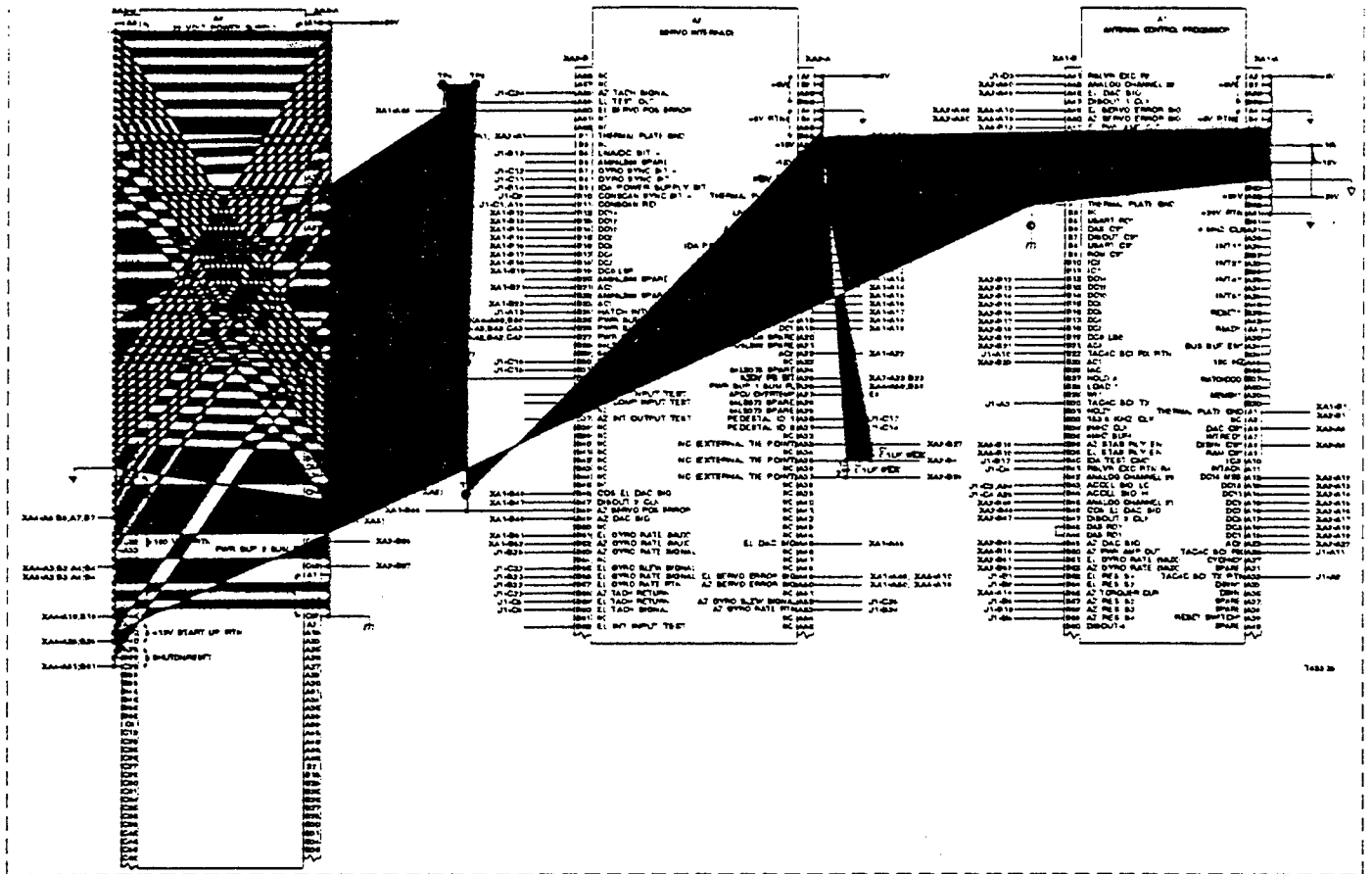




### 10.2.5 Output CADLeaf

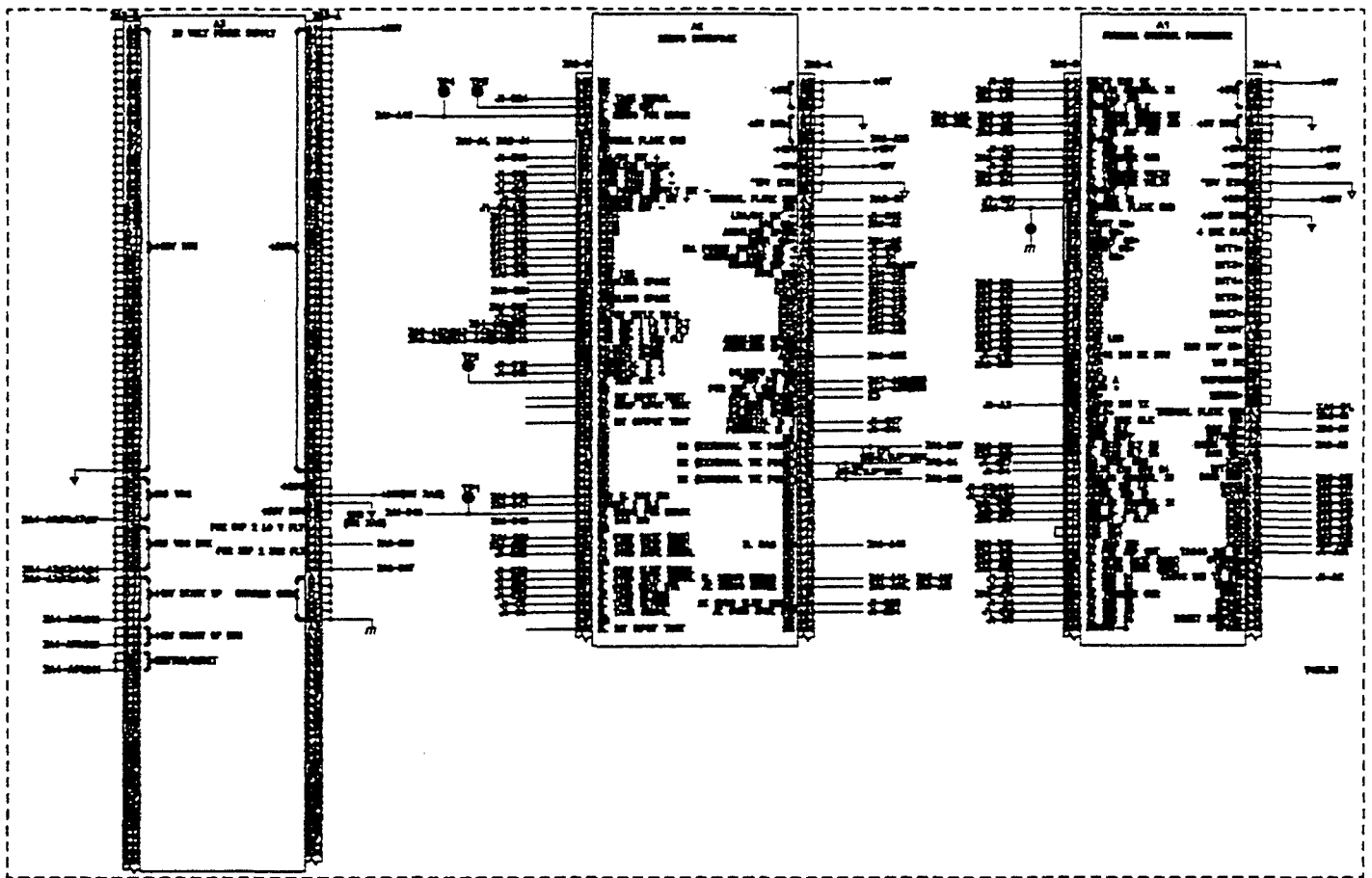


### 10.2.6 Output Island Draw





### 10.2.8 Output X-Change



## 11. Appendix C - Detailed SGML Analysis

### 11.1 Parser Log

#### 11.1.1 First Pass Log

SGML Document Type Definition Parser  
An SGML System Conforming to  
International Standard ISO 8879  
Standard Generalized Markup Language

Log file: '9475.LOG'  
SDO File: 'ctnddecl.sdo'  
Namecase General is yes.  
Namecase Entity is no.  
Parsing DTD file: '9475.dtd'  
Parsing DOCTYPE TM

DTD0137: Incorrect token ']]>'. Parser Ignoring Input Up To Next MDO.  
In declaration: '<![['.  
In declaration: '<!DOCTYPE'.  
in entity 'atos'  
in line 47 in file 'c:\xgml\bspec.dtd'  
in line 103 in file '9475.dtd'

DTD0019: DOCTYPE or LINKTYPE end found in external entity file.  
.DTO file not created due to parsing errors.

Program status code: 19.

## 11.2 Exoterica Validator Parser

```
<!-- **Warning** in "c:\xgml\bspec.dtd" (entity "%BSPEC"), line 1,
      used in "\xgml\9475.dtd", line 176:
      An element with mixed content should permit data characters ("#PCDATA")
      everywhere.
      The element being declared is "WARNING".
      <!ELEMENT warning - - (title?, (%txt; | para | list)+) >
<!ATTLIST (warni
                                                    /\
-->
<!-- Capacity points/limits:
      TOTALCAP =64335/200000
      ENTCAP    =13120/200000
      ENTCHCAP  =3729/70000
      ELEMCAP   =3840/70000
      GRPCAP    =23072/70000
      EXGRPCAP  =896/70000
      EXNMCAP   =3872/70000
      ATTCAP    =5984/200000
      ATTCHCAP  =315/70000
      AVGRPCAP  =9248/70000
      NOTCAP    =96/70000
      NOTCHCAP  =163/70000
      IDCAP     =0/70000
      IDREFCAP  =0/70000
      MAPCAP    =0/70000
      LKSETCAP  =0/70000
      LKNMCAP   =0/70000
--><!-- 1 warning reported. -->
```

## 12. Appendix D - Detailed CGM Analysis

### 12.1 File D001C001

#### 12.1.1 Parser Log MetaCheck

MetaCheck Version 2.10 -- CGM/MIL-D-28003 Conformance Analyzer  
Copyright 1988-93 CGM Technology Software  
Execution Date: 06/20/94 Time: 16:54:56

Metafile Examined : i:\94075\c001.cgm

Pictures Examined : All

Elements Examined : All

Bytes Examined : All

=====  
Trace Report  
=====

Tracing not selected.

=====  
CGM Conformance Violation Report  
=====

No Errors Detected

=====  
CAL S CGM Profile (MIL-D-28003) Report  
=====

No profile discrepancies detected.

=====  
Conformance Summary Report  
=====

MetaCheck Version 2.10 -- CGM/MIL-D-28003 Conformance Analyzer  
Copyright 1988-93 CGM Technology Software  
Execution Date: 06/20/94 Time: 16:54:58

Name of CGM under test: i:\94075\c001.cgm

Encoding : Binary

Pictures Examined : All

Elements Examined : All

Bytes Examined : All

BEGIN METAFILE string : >esdcau<

METAFILE DESCRIPTION : >AUTO-TROL/REL-1.0 MIL-D-28003/BASIC-<  
>1<

---

Picture 1 starts at octet offset 124: >esdcau<

Conformance Summary : This file conforms to the CGM specification.  
This file meets the CALS CGM Profile (MIL-D-28003).

Summary of Testing Performed and Errors Found:

1 Pictures Tested  
97 Elements Tested  
1528 Octets Tested

=====  
| No Errors Were Detected |  
=====

=====  
End of Conformance Report =====

## 12.1.2 validcgm Log

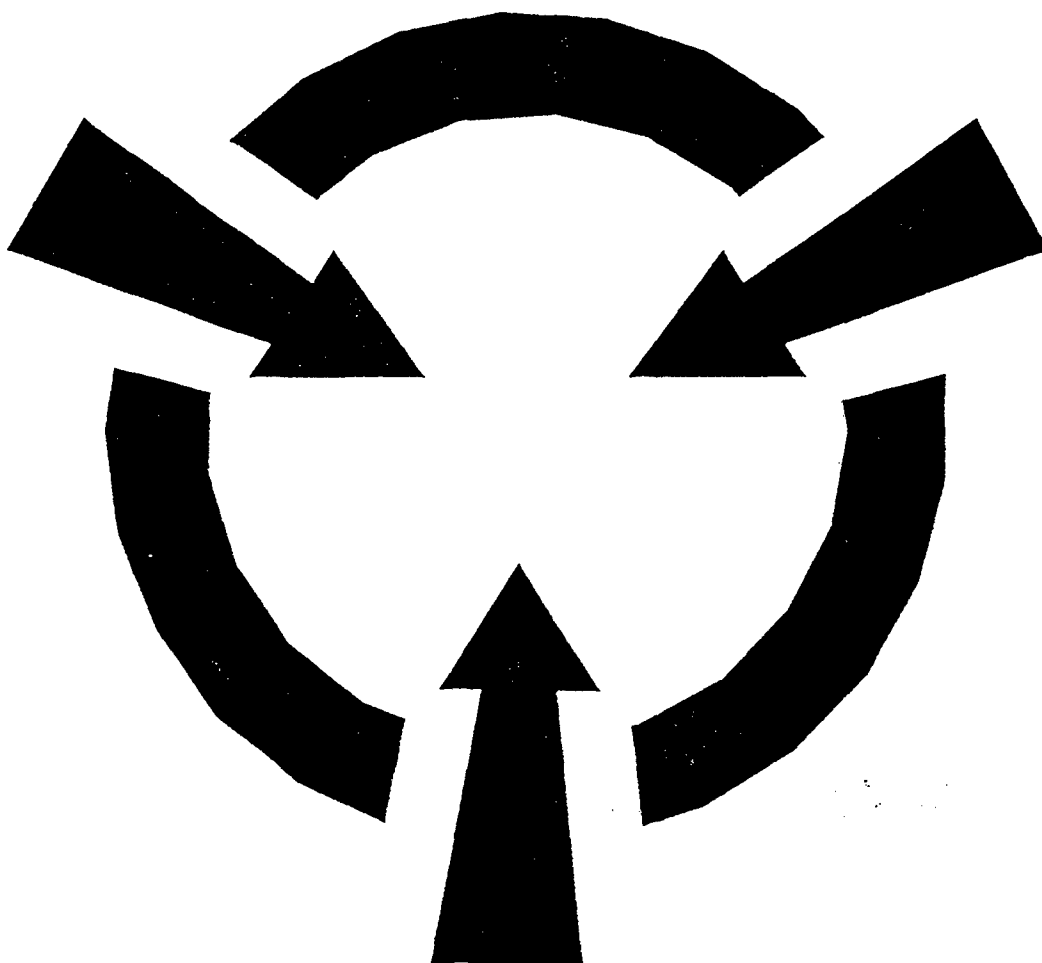
Analysis for file c001.cgm using table table

(0, 1) occurred 1 time  
(0, 2) occurred 1 time  
(0, 3) occurred 1 time  
(0, 4) occurred 1 time  
(0, 5) occurred 1 time  
(1, 1) occurred 1 time  
(1, 2) occurred 1 time  
(1, 7) occurred 1 time  
(1, 8) occurred 1 time  
(1, 9) occurred 1 time  
(1, 11) occurred 1 time  
(1, 13) occurred 1 time  
(2, 1) occurred 1 time  
(2, 3) occurred 1 time  
(2, 4) occurred 1 time  
(2, 5) occurred 1 time  
(2, 6) occurred 1 time  
(2, 7) occurred 1 time  
(4, 1) occurred 40 times  
(4, 4) occurred 1 time  
(4, 7) occurred 6 times  
(5, 3) occurred 2 times  
(5, 4) occurred 1 time  
(5, 10) occurred 1 time  
(5, 14) occurred 1 time  
(5, 15) occurred 1 time  
(5, 16) occurred 1 time  
(5, 18) occurred 1 time  
(5, 22) occurred 1 time  
(5, 23) occurred 1 time  
(5, 28) occurred 1 time  
(5, 30) occurred 1 time  
(5, 34) occurred 20 times

### 12.1.3 Output Freelance

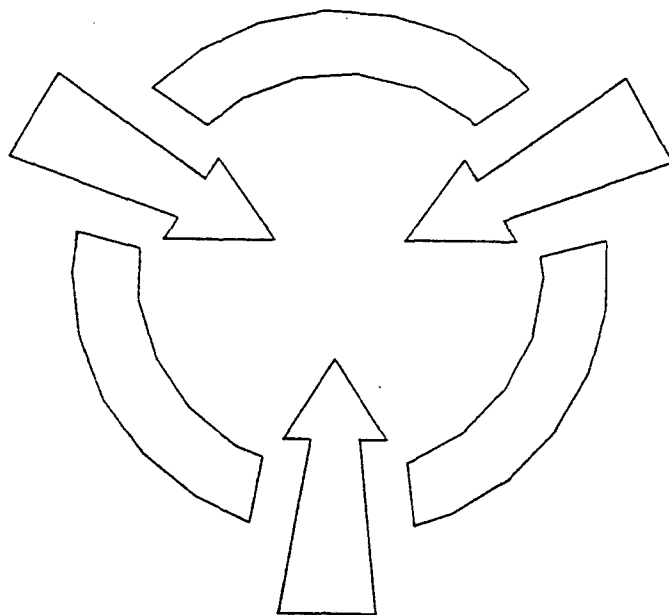
CAUTION

---



## 12.1.4 Output Harvard Graphics

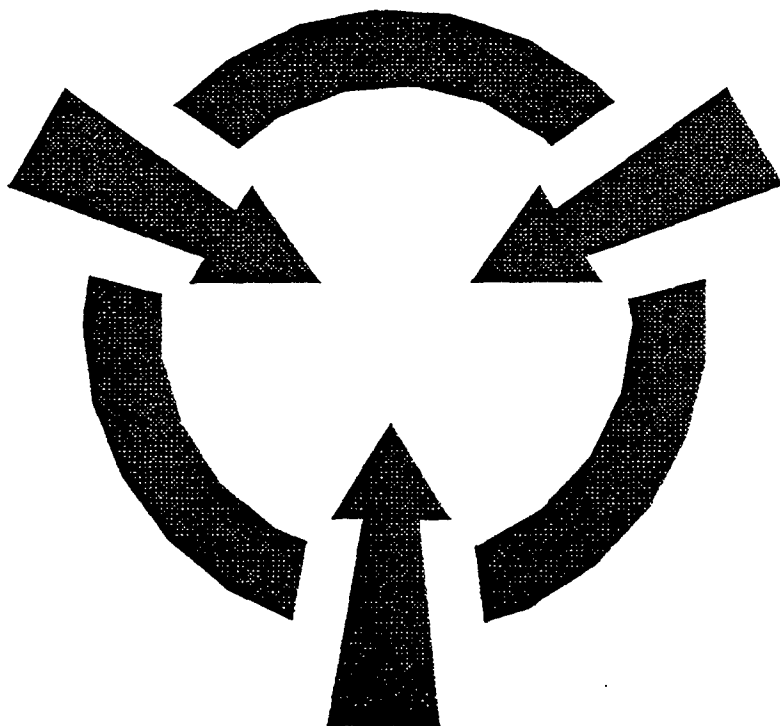
# *CAUTION*



## 12.1.5 Output HiJaak Pro

# CAUTION

---



## 12.1.6 Output Ventura Publisher

CAUTION

---

