PREFACE 1

FURTHER CHANGES IN ACQUISITION REFORM: ELIMINATION OF THE WAIVER REQUIREMENT TO USE MIL-SPECS AND MIL-STDS

1998 – Acquisition Reform:

One of the major emphases added to the 10th edition was related to the "Acquisition Reform" policy of the Department of Defense (DoD) and its constituent government agencies. The intent of Acquisition Reform was to change the way government agencies defined the requirements for systems and materiel, and the associated engineering data (Technical Data Packages (TDPs)) to be procured by the government. In short, the overseeing government authority dictated that government agencies should "avoid government-unique requirements and rely more on the commercial marketplace." The intent was to move the definition of requirements to commercial and non-government sources where possible.

With regards to engineering drawing practices, the most significant impact of this reform was a new preference for the use of non-military specifications and standards in cases where they adequately met the needs of the project. That is, military specifications (MIL-SPECS) and military standards (MIL-STDS) were no longer the preferred standardization tools for defining engineering drawing requirements on government projects. Government agencies had to obtain a waiver to use certain MIL-SPECS and MIL-STDS on their procurement documents. Likewise, contractors also were restricted in their ability to use and reference certain MIL-SPECS and MIL-STDS without obtaining a waiver. If government-specific requirements were critical, a preference to use performance-based specifications (MIL-PRF) rather than MIL-SPECS and MIL-STDS was also stated.

The idea to use non-government specifications and standards was sound: it alleviated the government of the burden and associated expense of developing and maintaining specifications and standards which in many cases were almost identical in scope to non-government standards; it eliminated the sometimes overly-restrictive requirements imposed by MIL-SPECS and MIL-STDS, thereby reducing the cost to the government and ultimately the taxpayer; it required procuring agencies to very carefully consider how restrictive and costly the requirements they imposed in their contracts and purchase orders were; lastly, it made no sense to duplicate non-government specifications and standards merely to fit in with the government procurement model – upon closer inspection there was no real need to reinvent every wheel, so-to-speak. Indeed my first foray into the world of national standards development was as a member of the Drawing Practices Group (DRPRG) which was tasked with converting MIL-STD-100 into a non-government standard, which eventually led to the creation of ASME Y14.100, which is the foundation upon which the later revisions of the DRM is built.

2005 – A Change is in the Air: The Waiver Requirement is Waived.

In 2005 the Department of Defense reversed the waiver requirement to use MIL-SPECS and MIL-STDS on procurement documents – this change in stance can be found in DoD Policy Memo 05-3, the content of which is included below. The change was in response to the difficulty, extra work, and extra expense that government agencies had experienced when there was a real need for a MIL-SPEC or MIL-STD that fell under waiver requirements. People and agencies procuring systems for the government "got the message" about carefully considering the cost implications of every specification and standard referenced in a procurement document. According to sources in the defense community, the culture had changed, and Acquisition Reform had its desired effect. The time had come to move on. As stated in the memo, this was not a call to return to "the old way of doing business." The DoD had evolved, the beneficial changes brought about by Acquisition Reform had become part of the DoD culture, and it was time to lift a potentially unnecessary restriction. Of course, time will tell how this all plays out.

The material in Section 2 and the rest of the DRM has been revised to reflect the removal of the waiver requirement.

PREFACE 1 (continued)

Excerpt from DoD Policy Memo 05-3:

"MEMORANDUM FOR THE STANDARDIZATION EXECUTIVES OF THE MILITARY DEPARTMENTS AND DEFENSE AGENCIES

SUBJECT: Policy Memo 05-3, 'Elimination of Waivers to Cite Military Specifications and Standards in Solicitations and Contracts'

On October 14, 2004, the Under Secretary of Defense for Acquisition, Technology and Logistics signed the Defense Acquisition Guidance. Paragraph 11.6 of this Guidance states that "it is no longer required to obtain a waiver from the Milestone Decision Authority to cite military specifications and standards in solicitations and contracts."

We are in the process of preparing a formal change to DoD 4120.24-M, "Defense Standardization Program Policies and Procedures," to eliminate the waiver requirement from this document to be consistent with the Under Secretary's direction. Until such a formal change can be issued by the DoD Directives Office, this policy memorandum deletes Section C3.8 and all of its paragraphs and subparagraphs regarding waivers from DoD 4120.24-M.

I request that you take appropriate action to ensure that everyone in your acquisition and logistics communities is aware that a waiver to cite military specifications and standards in solicitations and contracts is no longer required. As noted in the Defense Acquisition Guidance, however, this waiver elimination should not be interpreted as returning to the "old way of doing business," but as recognition of the cultural change that took place in DoD regarding the proper application of specifications and standards. We need to ensure that those in the acquisition and logistics communities have the flexibility to assess program requirements, make good decisions, and where appropriate, require conformance to military specifications and standards."

Note:

As of April 2008 DoD 4120.24-M is still active; the revisions described above are in process. However, as stated above, the Policy Memo deletes the section in DoD 4120.24-M that mandates waivers for invoking MIL-SPECS and MIL-STDS.

The Preface detailing the history and effects of Acquisition Reform from Section 2 in the 10th Edition of the DRM has been moved to new Non-Mandatory Appendix C at the end of Section 2.

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PREFACE 2
CHANGES IN MIL-DTL-31000C AND THEIR EFFECT ON TDPS

General Description of Changes in MIL-DTL-31000C:

In July 2004 MIL-DTL-31000 was revised from revision B to revision C. In general, revision C of MIL-DTL-31000 includes material addressing four new topics:

1. New content supporting the use of 3D data as part or all of a Technical Data Package (TDP) has been added.
2. New content on special packaging instructions drawings/models has been added.
3. New content on the use of digital approval systems has been added.
4. New content in Appendix A instructs procurement officials to require software documentation in the TDP for *each* software product in a statement of work has been added.

Several other changes related to cancelled military standards and other government documents.

1. All references to the Dept. of Defense Index of Specifications and Standards (DODISS) have been removed and replaced by references to the Acquisition Streamlining and Standardization Information System (ASSIST) database.
2. Reference to the following MIL standards has been removed:
    a. MIL-STD-974
    b. MIL-E-5007
    c. MIL-E-8593
    d. MIL-M-38761/1
    e. MIL- HDBK-248

The major change to MIL-DTL-31000 was the addition of new material addressing three-dimensional (3D) digital data used as all or part of a TDP. With this recognition of the expanding role of 3D data, two new types of TDPs were required to differentiate between TDPs based on 2D and 3D data (Type 2D and Type 3D).

The coverage of 3D data in MIL-DTL-31000C parallels the shift in industry toward greater use of 3D data throughout the design-manufacturing-operation-decommissioning lifecycle of a product, and thus is consistent with general trends in industry. Accordingly, an attempt to standardize the use of 3D data in industry has been addressed by the standard ASME Y14.41-2003 Digital Product Definition Data Practices. Careful review of the changes related to 3D data in MIL-DTL-31000 reveals an alignment between MIL-DTL-31000C and ASME Y14.41-2003. In keeping with this trend, a new chapter (SECTION 26) has been added to this DRM, addressing the use of 3D digital data as a design deliverable and as part of a TDP. Thus a major emphasis of this revision of the DRM has been to address the use of 3D data as part of the design process.

MIL-DTL-31000C includes several additional requirements for using of 2D and 3D data that are not found in ASME Y14.41-2003. The following are quotes from MIL-DTL-31000C:

1. “In general, solid models shall be in accordance with (ISO) 10303 Standard for the Exchange of Product model data (STEP), or in a native 3D CAD format capable of being exported to ISO 10303 STEP format.”

    Note: ISO 10303 is not referenced in ASME Y14.41-2003, and adherence to the STEP format defined in ISO 10303 is not required by ASME Y14.41-2003.
2. “When 3D TDP data is used, the solid models shall display classification marking clearly visible when the solid model is first opened.”

PREFACE 2 (continued)

Note: ASME Y14.41-2003 states that "the security marking shall be constantly displayed for all mediums of views" which is slightly different than requiring the classification markings to be visible when the solid model is first opened. However, the requirements in ASME Y14.41-2003 seem to include the requirement above.

3. "A 3D TDP shall be of detail and content sufficient for the support of production, engineering and logistics support, and be based on fully parametric, computer based solid model and capable of generating, when specified, 2D engineering drawings."

   Note: ASME Y14.41-2003 does not explicitly require models to be fully-parametric.

4. "Both Type 2D and Type 3D TDPs shall open in the appropriate software without regeneration errors or warnings."

   Note: ASME Y14.41-2003 does not include this requirement.

5. "Data on 2D drawings based on the 3D solid models shall be sourced to the maximum extent possible from the 3D solid model. There shall be no conflict in data between the 3D solid model and its associated 2D drawing."

   Note: ASME Y14.41-2003 does not explicitly state that 2D drawings should be sourced to the maximum extent possible from the 3D solid model. However, ASME Y14.41-2003 does lead the reader to this conclusion.

MIL-DTL-31000B stated that TDPs based on digital data are preferred. MIL-DTL-31000C expands this preference by stating "3D based TDPs are generally preferred especially when the item is mostly mechanical in nature, is subject to a significant number of interfaces with other systems, or in which future design upgrades and changes are likely." Thus the recognition of the importance of 3D data and even a preference for its use has been stated in the document.

Several of the TDP Option Selection Worksheets in MIL-DTL-31000C have been modified and new worksheets have been added to address the use of models in a TDP.

The following material lists the major changes in MIL-DTL-31000 on a clause-by-clause basis.

Detail of Changes in MIL-DTL-31000C:

Clause	Description
1.2.1	TDP Types (New) Added section defining TDP types. Two types of TDPs now exist: 2D and 3D.
1.2.2	TDP Elements: Added item i: Special packaging instructions (SPI) drawings/model and associated lists.
2.2.1	Government Documents Deleted reference to MIL-STD-974.
2.2.2	Other Government documents and publications Deleted reference to DODISS.
2.2.3	Non-Government publications Added reference to ASME Y14.41 Digital Product Definition Data Practices and ASME information. Added reference to ISO 10303 Standard for the Exchange of Product model data (STEP) and US Product Model Data Association information.
3.1.2	General Requirements for 3D TDPs (New) Establishes the requirements for models when models are used as the basis for the product data element. Sets the requirements for model completeness, accuracy, etc.

PREFACE 2 (continued)

3.1.2.1 2D Data based on 3D model (New)
Establishes the requirements if 2D drawings are based on 3D solid models.

3.1.2.2 Format of 3D TDP
Establishes the requirement for 3D solid model data format. Requires conformance to ISO 10303 (STEP) or a native 3D CAD format capable of being exported into STEP format.

3.2.1 Use of Government and non-Government standardization documents
Replaced reference to DODISS with reference to ASSIST.

3.2.2.1 ASSIST and non-Government standardization documents
Replaced reference to DODISS with reference to ASSIST.

3.2.3.2 Exemption for commercial drawings/model
Added "/models."

3.3 Protecting classified information
Added statement requiring that models shall display clearly visible classification marking when the model is first opened.

3.4 Protecting information with restrictions (New)
Establishes requirements for protecting and marking restricted TDPs of all sorts (printed, 2D, 3D).

3.6.1 TDP Types (New)

3.6.1.1 Type 2D: 2-Dimensional Technical Data Package (2D TDP) (New)
Establishes required level of detail and content for 2D TDPs.

3.6.1.2 Type 3D: 3-Dimensional Technical Data Package (3D TDP) (New)
Establishes required level of detail and content for 3D TDPs. Requires that parametric models be created if a 3D TDP is used.

3.6.2.1 Conceptual design drawings/models
Added "/models."

3.6.2.2 Developmental design drawings/models and associated lists
Added "/models."

3.6.2.3 Product drawings/models and associated lists.
Added "/models."

3.6.2.4 Commercial drawings/models and associated lists.
Added "/models."

3.6.2.5 Special inspection equipment (SIE) drawings/models and associated lists.
Added "/models."

3.6.2.6 Special tooling drawings/models and associated lists.
Added "/models."

3.6.2.9 Special packaging instruction drawings/models and associated lists. (New)
Establishes requirements for special packaging instruction drawings and models.

3.7.1 Source control drawing approval request.
Added requirements that apply if a 3D TDP is provided in a source control context.

3.11 Digital approval systems (New)
Allows the use of digital approval systems with TDP elements.

4.1.h Verification
added clarification that a TDP must represent the configuration the government has approved.

PREFACE 2 (continued)

4.1.i Verification (NEW)
Requires that Type 2D and Type 3D TDPs shall open in the appropriate software without regeneration errors or warnings.

5 Packaging
Paragraph shortened considerably.

6.2b. Acquisition requirements.
Deleted reference to DODISS.

6.2c Acquisition requirements.
Added "type" to account for new distinction between 2D and 3D TDP types.

6.2f Acquisition requirements.
Added "models". Refers to figures 1 – 8 (instead of 1 – 7) which include the new TDP Options Worksheet for Special packaging instruction drawings/models and associated lists.

6.3 Data requirements
Revised but similar in content. Replaced reference to DODISS with reference to ASSIST. Added "/Models" to titles of TDP Options Worksheets. (Note: DID numbers in clause 6.3 were changed in MIL-DTL-31000B and revised in MIL-DTL-3100C to address models. See below:)

MIL-DTL-31000A & B DIDs:

DID Title:	MIL-DTL-31000A	MIL-DTL-31000B
Product Drawings & Associated Lists	DI-DRPR-81000A	DI-SESS-81000B
Conceptual Drawings & Associated Lists	DI-DRPR-81001A	DI-SESS-81001B
Developmental Drawings & Associated Lists	DI-DRPR-81002A	DI-SESS-81002B
Commercial Drawings & Associated Lists	DI-DRPR-81003A	DI-SESS-81003B
Special Inspection Equipment Drawings & Associated Lists	DI-DRPR-81004A	DI-SESS-81004B
Special Tooling Drawings & Associated Lists	DI-DRPR-81008A	DI-SESS-81008B
Source Control Drawing Approval Request	DI-DRPR-81010A	DI-SESS-81010B
Drawing Number Assignment Report	DI-DRPR-81011A	DI-SESS-81011B
Proposed Critical Manufacturing Process Description	DI-DRPR-81012A	DI-SESS-81012B

Mil-DTL-31000C DIDs with Updated Titles:

DID Title:	MIL-DTL-31000C
Product Drawings/Models & Associated Lists	DI-SESS-81000C
Conceptual Drawings/Models & Associated Lists	DI-SESS-81001C
Developmental Drawings/Models & Associated Lists	DI-SESS-81002D
Commercial Drawings/Models & Associated Lists	DI-SESS-81003C
Special Inspection Equipment Drawings/Models & Associated Lists	DI-SESS-81004C
Special Tooling Drawings/Models & Associated Lists	DI-SESS-81008C
Source Control Drawing Approval Request	DI-SESS-81010C
Drawing Number Assignment Report	DI-SESS-81011C
Proposed Critical Manufacturing Process Description	DI-SESS-81012C

(Note: DIDs DI-SESS-81000C, 810001C, 810002D, 81003C, 81004C and 81008C also apply to models.)

PREFACE 2 (continued)

6.3.2 DIDs for software documentation (New)
Establishes that commercial equivalents to DIDs are found in IEEE/EIA 12207.
Note: This clause is misnumbered MIL-DTL-31000C as there is already an existing 6.3.2 One of these clauses should be renumbered as 6.3.3.

6.4.5 Digital Product Definition Data (New)
Establishes that ISO 10303 sets the rules for content, format, and data exchange for 3D model data. Explains that the implications of changing the deliverables for a contract from hard-copy or 2D to 3D should be considered before requiring a contractor to make the change. Discusses contractual implications.

6.5.7 Computer Software. (New)
Defines computer software.

6.5.8 Computer Software Documentation. (New)
Defines computer software documentation.

6.5.9 Conceptual design data
Added reference to 3D solid models.

6.5.10 Cosmetic solid model (New)
Defines an incompletely defined or possibly non-parametric solid model.

6.5.16 Drawing (New)
Defines drawing (copies ASME Y14.100).

6.5.24 Product model data (New)
Defines product model data.

6.5.27 Special Packaging Instruction (SPI) (New)
Defines what qualifies as “special” and why an SPI may be needed.

6.5.32 Start Part or Template (New)
Defines the 3D solid model (or seed part) used by the solid modeling system as the basic building block / starting point for the solid model.

6.5.34 Technical data package (TDP)
Added “models.

Figure 4. (Revised TDP Options Worksheet) Now also address models

Figures 1a, 2a, 3a, 4, 5a, 6a, and 8a. (New TDP Options Worksheets strictly for models)

Figure 8. (New TDP Options Worksheet)

A.2.1.1 DoD Specifications, standards and handbooks
Deleted reference to MIL-E-5007, MIL-M-38761/1 and MIL-HDBK-248.
Added reference to MIL-STD-1840.

A.3.2 Selecting and ordering TDP types and elements
Was just a title. Now has paragraph explaining that it must be determined if 2D or 3D TDP is appropriate. Sets a preference for 3D TDPs where an item is mostly mechanical in nature.

A.3.2.1 Industry practice. Invokes ASME Y14.41.

A3.3 and subs
Added “models” in numerous places. Changed revision of DI-SESS-81002 to D.

A.3.3.8.b Software Documentation (New)
Requires software documentation for each software product in a TDP.

A.3.4.1 Source control drawing approval request
Deleted reference to MIL-E-5007 and MIL-E-8593.

PREFACE 2 (continued)

A.4.2.1.3 Digital data.
Simplified the last sentence in the paragraph. No essential change.

A.5.4 Digital approval system (New)
Requires that any digital approval system satisfy the requirements in ASME Y14.42.

2.1 SCOPE.

2.1.1 Purpose. This section establishes the essential requirements for the preparation and revisions of engineering drawings, requirements for drawing disclosure, hard copy drafting requirements, digital data files (2D and 3D) and associated lists prepared under the requirements of ASME Y14.100-2004. It is essential that ASME Y14.100 be used in close conjunction with ASME Y14.24, ASME Y14.34M and ASME Y14.35M for establishing the basic requirements for commercial applications. Department of Defense (DoD) needs and requirements often extend beyond commercial applications. To invoke these additional DoD requirements, drawings must be part of a Technical Data Package (TDP) per MIL-DTL-31000. Under the requirements of MIL-DTL-31000, drawings, models, and related documentation are required to adhere to default and selected specifications and standards. TDPs may be classified as Type 2D or Type 3D, and are composed of one or more TDP elements and related TDP Data Management Products. These requirements support all Departments and Agencies of the Department of Defense's Defense's policy of acquiring only those engineering drawings and associated lists that are needed. Note: "Drawing Categories" and "Forms", formerly defined in MIL-D-1000 and drawing "LEVELS" formerly defined in DOD-D-1000B no longer apply.

2.1.1.1 Language. Unless otherwise specified in the contract or by an international agreement, drawings and associated documents shall be in the English language.

2.1.1.2 Selective Application. Selection of the TDP elements and the TDP data management products to make up a TDP must be based on the Government's needs for technical data required to support the acquisition and life cycle support strategies for the product being documented. The Government's need for technical data varies greatly from program to program. It may range from conceptual design data for concept evaluation to a complete set of detailed design data for reprocurement of items essentially identical to the original item.

2.1.1.3 Tailoring Implementation. All contractual requirements, government or non-government, herein are subject to tailoring. These requirements, as well as the requirements of specific TDP elements and TDP data management products selected for inclusion in the TDP, should be tailored by the Government prior to release of the solicitation. This includes the requirements stated in data item descriptions, Government or non-Government standards and requirements for the media and methods of delivery. Furthermore, a contractor may recommend additional tailoring of TDP requirements as specified in a solicitation or contract using the guideline of MIL-HDBK-248

2.1.2 Classification. This SECTION 2 covers the following TDP elements and TDP data management products.

2.1.2.1 TDP elements for Drawings. (See PARAGRAPH 2.5) When MIL-DTL-31000 is applied to the contract or Purchase Order (PO) in order to obtain data, the referenced Data Item Descriptions (DIDs) must be listed as applicable on the Contract Data Requirements List (CDRL) (DD Form 1423). See APPENDIX A FIGURE 2A-9. This requirement is exempt when DOD FAR Supplement 27.475-1 is cited.

a. Conceptual design drawings. (Ref: DI-SESS-81001C)
b. Developmental design drawings and associated lists. (Ref: DI-SESS-81002D)
c. Product drawings and associated lists. (Ref: DI-SESS-81000C)
d. Commercial drawings and associated lists. (Ref: DI-SESS-81003C)
e. Special inspection equipment (SIE) drawings and associated lists. (Ref: DI-SESS-81004C)
f. Special tooling (ST) drawings and associated lists. (Ref: DI-SESS-81008C)
g. Specifications (Ref: MIL-STD-961 and IEEE 12207.0, 12207.1, and 12207.2)
h. Packaging (Ref: MIL-STD-2073-1)

2.1.2.2 TDP data management products. (See PARAGRAPH 2.5.5)

a. Source control drawing approval request. (Ref: DI-SESS-81010C)
b. Drawing number assignment. (Ref: DI-SESS-81011C)
c. Proposed critical manufacturing process description. (Ref: DI-SESS-81012C)

2.1.3 Reference to the Application of Non-Government Standards (NGSs). ASME Y14.100-2004 is the mandatory requirements document for engineering drawing practices. This move from MIL-STD-100 to ASME Y14.100 was part of Acquisition Reform Movement described in Non-Mandatory Appendix C at the end of SECTION 2 of the DRM. With the elimination of the waiver requirement for using MIL-SPECS and MIL-STDS discussed in Preface 1, MIL-SPECS and MIL-STDS may be used if a NGS is not available or fails to support basic document preparation requirements. The user may also detail the needed engineering drawing practice directly in the Statement of Work (SOW), Contract or Purchase Order (PO) if desired. Historically, canceled MIL-STD-100G and related applicable specifications were used to provide military requirements in excess of commercial applications. When MIL-STD-100G was canceled, those applicable military specifications and standards were moved to Appendices B thru E of ASME Y14.100-2004. To invoke these Appendices in a Statement of Work (SOW), contract or purchase order requires "tailoring" as described in Appendix "A" of ASME Y14.100-2004. The use of MIL-STD-100G will continue on current and on-going contracts. Switching from MIL-STD-100 to ASME Y14.100 will not be required unless economically feasible or otherwise justified.

2.1.4 Reference to the Application of the Appendices A thru E of ASME Y14.100. MIL-STD-100 has largely been replaced by Non-Government Standards (NGS) ASME Y14.100 including Appendices A thru E. Reasons for invoking the appendices in entirety, or in part, are listed as follows:

a. Contains only Government unique requirements and is restricted for use to those DoD activities.
b. Have DoD peculiar logistics requirements.
c. Have specific & fully justifiable requirement for TDP delivery & maintenance control by a DoD design activity.
d. Essential that drawings indicate a Government design activity CAGE Code.

2.1.4.1 Rule Regarding the Use of the Appendices B thru E of ASME Y14.100. ASME Y14.100 addresses engineering drawing practices in commercial applications or where DoD design requirements need not be under the change control authority of a DoD activity. All referenced documents and detail associated with basic drawing practices are contained in ASME Y14.100. Accordingly, the Appendices B thru E of ASME Y14.100 and appropriate revision as applicable, must always be used in conjunction with ASME Y14.100. In addition, since requirements for broad areas, of subject material are now addressed by individual ASME standards, ASME Y14.100 **must** be used in conjunction with:

ASME Y14.24	Types and Application of Engineering Drawings
ASME Y14.34M	Associated Lists
ASME Y14.35M	Revision to Drawings and Associated Lists

2.1.5 Tailoring Guidance for Checking Compliance With Contractual Requirements. To ensure proper application of ASME Y14.100 any tailoring provided by Appendix "A" including the Appendices B thru E must also be consistent with MIL-DTL-31000, TDP Option Selection Worksheets. Tailoring must exclude unnecessary requirements for invitations for bids, request for proposals and Contract Data Requirements Lists (CDRLs). See APPENDIX A FIGURE 2A-9. It is essential that the numerous referenced documents be reviewed to exclude unnecessary requirements in accordance with the program or end item requirements by tailoring. The following procedures must be reviewed to determine if a requirement is not a current operational procedure and an alternate procedure would be more economical in complying with the contract in the acquisition of documents. (See TAILORING that follows.)

TAILORING

(As presented in Appendix "A" of ASME Y14.100-2004)

A. Drawing Media (Choose all that apply)

(1) Non-digital (Specify_____)
(2) Digital Data (Specify_____)
(3) Other (Specify_____)

B. Drawing Format (Choose one)

(1) Contractor
(2) Government (forms supplied by the Government)
(3) Government (forms supplied by the contractor)

C. Drawing Sheet Size (and Format) (Choose one)

(1) ASME Y14.1
(2) ASME Y14.1M

D. Application Data (Choose all that apply)

(1) Contractor's option
(2) Required
  (a) On drawing
  (b) By reference. (Specify_____)
  (c) Contractor option
(3) General use or multi-use notations
  (a) allowed
  (b) not allowed

E. Drawing Detail (ASME Y14.24) (Choose all that apply)

(1) Monodetail
(2) Multidetail
(3) Tabulated

F. Dimensioning and Tolerancing (Choose all that apply)

(1) Metric
(2) Decimal-inch
(3) Application of ASME Y14.5M
  (a) Specific issue (revision) required (Specify issue_____)
  (b) Issue in effect (Specify issue_____)

G. Drawing Notes (Choose One)

(1) On drawing
(2) By reference (Specify_____)
(3) Contractors option

H. Types of Drawings (ASME Y14.24) (Choose one)

(1) Contractor selects
(2) Government selects

I. Maintenance of Multi-Sheet Drawings (ASME Y14.35M) (Choose all that apply)

(1) Drawing revision level (DoD preferred)
(2) All Sheets same revision level
(3) Sheet revision level

J. Redrawn Drawings (redrawing without change) (ASME Y14.35M) (Choose one)

(1) Advance revision level
(2) Revision level is not advanced

K. Maintenance of Revision History (Choose all that apply)

(1) Contractor's option
(2) Optional methods
  (a) Remove one or more revision record as required
  (b) Remove all previous revision history
  (c) Remove all revision history but retain line entry for revision authorization and date of revision
  (d) Remove all except revision preceding current
  (e) Maintain revision history in its entirety

L. Adding Sheets (ASME Y14.35M) (Choose all that apply)

(1) Contractor's option
(2) Optional methods
  (a) Renumber sheets using consecutive whole numbers
  (b) Number added sheets in decimal-number sequence
  (c) Number added sheets in alpha-numeric sequence

M. Deleting Sheets (ASME Y14,35M) (Choose all that apply)

(1) Contractor's option
(2) Optional methods
  (a) Renumber all affected remaining sheets
  (b) Affected remaining sheets not renumbered (revision status of sheets block is updated with notations such as CANC or DEL)

N. Markings on Engineering Drawings (Choose one)

(1) Special items and processes apply
  (a) Applicable symbols (Specify_____)
  (b) Applicable special notes (Specify_____)
(2) Special items and processes do not apply

O. Associated Lists (ASME Y14.34M) (Choose all that apply)

(1) Non-digital (Specify_____)
(3) Digital Data (Specify_____)
(3) Other (Specify_____)

P. Types of Associated Lists (ASME Y14.34M) (Choose all that apply)

(1) Parts Lists
  (a) Integral
  (b) Separate
  (c) Contractor's option
(2) Application List
(3) Data Lists
(4) Index Lists
(5) Indentured Data List
(6) Wire List
(7) Other (Specify_____)

Q. Angle of Projection (ASME Y14.3M) (Choose one)

(1) 3rd Angle
(2) 1st Angle

R. Language (Choose one)

(1) English required
(2) Other (Specify_____)

S. Applicability of Appendices

(1) Appendix B
  (a) as detailed herein
  (b) as modified_____

(2) Appendix C
  (a) as detailed herein
  (b) as modified_____

(3) Appendix D
  (a) as detailed herein
  (b) as modified_____

(4) Appendix E
  (a) as detailed herein
  (b) as modified_____

2.1.6 General Guidance for Checking the Completeness of Drawing Requirements of a Technical Data Package (TDP). (MIL-HDBK-288) The following topics should be reviewed on all developmental and product engineering drawings. (Formerly Level 2 AND 3 of DOD-D-1000) NOTE: MIL-DTL-31000 SUPERSEDES DOD-D-1000.

TOPIC	CONTROLLING DOCUMENT	DRM SECT
a. Drawing size and format	ASME Y14.1 & Y14.1M	6
b. Drawing title (nomenclature)	ASME Y14.100 including Appendix C, H6 Federal Item Name Directory (FIND)	6
c. Drawing number	ASME Y14.100 including Appendix D	7
d. Authorized signatures	ASME Y14.100	2
e. Scale	ASME Y14.100	3
f. Contract number in title block	MIL-DTL-31000	6
g. Applications blocks	ASME Y14.1 & Y14.1M	6
h. Sheet numbering	ASME Y14.1 & Y14.1M	6
i. Zoning	ASME Y14.1 & Y14.1M	6
j. Security classification	DoD 5220.22-M	6
k. Lettering/Spelling	ASME Y14.2M	3
l. Legibility	MIL-PRF-5480	3
m. Dimensions and tolerances	ASME Y14.5M-1994	5
n. Graphic symbols	ASME Y14.100 including Appendix B	3
o. Abbreviations	ASME Y14.38M	24
p. Items covered by Government or industry standards	ASME Y14.100 including Appendices B thru E	10
q. Identification of rights in data (limited rights legends)	DFARS 252.227	6
r. Reference dimensions	ANSI Y14.5M-1994	5
s. Existing drawings, use and submission	MIL-DTL-31000	2
t. Part numbers	ASME Y14.100 including Appendix D	7
u. Part marking	ASME Y14.100 including Appendix B, MIL-STD-130 & MIL-T-13231	7, 11
v. Parts List	ASME Y14.34M	10
w. Company standard documents	MIL-DTL-31000	1
x. Reference documents	MIL-DTL-31000	7
y. Standard supply system items used wherever possible	MIL-DTL-31000	2
z. Revision block	ASME Y14.35M	6
aa. Distribution statement marking	DoD D 5230.24	6

NOTES:

1. Appendices B thru E of ASME Y14.100-2004 occur as the result of MIL-STD-100G being canceled.

2.1.7 Check List of Detail Requirements for Engineering Drawings. Appendix B of this section may be used as a check list in preparing engineering drawings for Technical Data Package (TDP) elements for developmental and production phases of system acquisitions.

2.1.8 Specifications, Standards and Handbooks. The following Government and Non-Government applicable specifications, standards and handbooks form a part of this Drawing Requirements Manual (DRM) to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Acquisition Streamlining and Standardization Information System (ASSIST Database) and supplement thereto, cited in the solicitation. The status of the documents listed below was current when this DRM was published in 2008 together with ASSIST DATABASE as augmented by the ASSIST Update.

2.2 APPLICABLE DOCUMENTS. Note: DoD Policy Memo 05-3 "Elimination of Waivers to Cite Military Specifications and Standards in Solicitation and Contracts" has eliminated the need for waivers to use MIL-SPECS and MIL-STDS on DoD contracts. (See PREFACE 1, Section 2)

DOC. NO.	DOCUMENT TITLE
FED-STD-376B	Preferred Metric Units for Use by the Federal Government
DOD-D-1000	Drawing, Engineering & Associated Lists (Inactive For New Design) (Use MIL-DTL-31000C)
MIL-PRF-5480G	Data, Engineering Technical Reproduction, Requirements for
MIL-D-8510B	Drawings, Undimensioned, Reproducibles, Photographic and Contact: Preparation of (CNCLD Supsd by: MIL-PRF-5480)
MIL-DTL-31000C	Detail Specification Technical Data Packages (Supersedes: DOD-D-1000, MIL-T-47500 and MIL-T-31000B)
MIL-M-38761B	Microfilming and Photographing Engineering/Technical Data and Related Documents, Requirements for (Inactive For New Design after 6-1-95) (Use JEDMICS)
MIL-T-47500	Technical Data Package, General Specification for (Inactive For New Design) Use: MIL-DTL- 31000C)
MIL-S-83490	Specifications, Types and Forms (CNCLD Supsd by: MIL-STD-961)
MIL-STD-100G	Engineering Drawing Practice (Use in conjunction with ASME Y14.100) (CNCLD Supsd by: ASME Y14.100 & Appendices, ASME Y14.24, Y14.34M and Y14.35M)
MIL-STD-280A	Definitions of Item Levels, Item Exchange ability, Models, and Related Items (Redesignated as: MIL-HDBK-505)
MIL-STD-490A	Specification Practices (CNCLD Incorporated into: MIL-STD-961)
MIL-STD-961	Defense and Program – Unique Specifications Format and Content (Supersedes: MIL-STD-490)
MIL-STD-962	Defense Standards Format and Content
MIL-STD-974	Contractor Integrated Technical Information Service (CITIS) (CNCLD: No S/S)
MIL-STD-2073-1D	DoD Standard Practice for Military Packaging
DOD-STD-2167	Defense System Software Development (CNCLD Supsd by: MIL-STD-498)
MIL-HDBK-248 B	Acquisition Streamlining (CNCLD: No S/S)
MIL-HDBK-288B	Review and Acceptance of Engineering Drawing Packages

2.2 APPLICABLE DOCUMENTS. (Continued)

MIL-HDBK-505	Definitions of Items Levels Item Exchangeability, Models, and Related Items
DOD-5220-22-M	National Industrial Security Program Operating Manual (CANCELLING DODD 5220.22-S)
DOD 5230.24 (D)	Distribution Statements on Technical Documents
DoD D 5000.1 (D)	Defense Acquisition (INACTIVE)
DI-E-1126A	Notice of Revision/Specification Change Notice (INACTIVE: Supsd by: DI-CMAN-80643)
DI-L-2162	Input Data For Container Design Retrieval System (INACTIVE: Supsd by: DI-PACK-80684B)
DI-L-2163	Request Form, Container Design Retrieval Search (INACTIVE: Supsd by: DI-PACK-80683B)
DI-T-2181	Test Requirements Document (INACTIVE: CNCLD by: DOD 5010.12-L)
DI-E-3102A	Configuration Item Development Specification (INACTIVE: CNCLD by: DOD 5010.12-L)
DI-E-3103A	Configuration Item Product Fabrication Specification (INACTIVE: CNCLD by: DOD 5010.12-L)
DI-E-3105	Inventory Item Specification (INACTIVE: CNCLD by: DOD 5010.12-L)
DI-E-3128	Engineering Change Proposals (ECPS) (CNCLD Supsd by: DI-CMAN-80639, DI-CMAN-80644)
DI-E-3130	Process Specifications (INACTIVE: CNCLD by: DOD 5010.12-L)
DI-E-3131	Material Specification (INACTIVE: CNCLD by: DOD 5010.12-L)
DI-E-3132	Configuration Item Product Function Specification (INACTIVE: CNCLD by: DOD 5010.12-L)
DI-L-7135A	Preservation and Packing Data (INACTIVE: Supsd by: DI-PACK-80120)
DI-L-7136	Special Packaging Instruction (SPI) (INACTIVE: Supsd by: DI-PACK-80121)
DI-L-7137	Packaging Kit Contents List (Superseded by: DI-MISC-81499)
DI-E-21430A	Specification Revision Pages (INACTIVE: CNCLD by: DOD 5010.12-L)

2.2 APPLICABLE DOCUMENTS. (Continued)

DI-E-23159A	Changes to General Specifications for Ships of the U.S. Navy (INACTIVE: CNCLD by: DOD 5010.12-L)
DI-E-30132	Critical Item Product Fabrication Specification (INACTIVE: CNCLD by: DOD 5010.12-L)
DI-SDMP-80001A	Military Specification (INACTIVE)
DI-CMAN-80008A	System/Segment Specification (INACTIVE: Supsd by: DI-IPSC-81431A)
DI-MCCR-80012A	Software Design Document (SDD) (INACTIVE: Supsd by: DI-IPSC-81435A)
DI-MCCR-80013A	Version Description Document (VDD) (INACTIVE: Supsd by: DI-IPSC-81442A)
DI-MCCR-80014A	Software Test Plan (STP) (INACTIVE: Supsd by: DI-IPSC-81438A)
DI-MCCR-80015A	Software Test Description (STD) (INACTIVE: Supsd by: DI-IPSC-81439A)
DI-MCCR-80016	Software Test Procedure (INACTIVE: Supsd by: DI-MCCR-80015)
DI-MCCR-80017A	Software Test Report (STR) (INACTIVE: Supsd by: DI-IPSC-81440A)
DI-MCCR-80025A	Software Requirements Specification (SRS) (INACTIVE: Supsd by: DI-IPSC-81433A)
DI-MCCR-80026A	Interface Requirements Specification (IRS) (INACTIVE: Supsd by: DI-IPSC-81434A)
DI-MCCR-80027A	Interface Design Document (IDD) (INACTIVE: Supsd by: DI-IPSC-81436A)
DI-MCCR-80028	Data Base Design Document (INACTIVE: Supsd by: DI-MCCR-80012A & DI-IPSC-81435A)
DI-MCCR-80029A	Software Product Specification (SPS) (INACTIVE: Supsd by: DI-IPSC-81441A)
DI-MCCR-80030A	Software Development Plan (SDP) (INACTIVE: Supsd by: DI-IPSC-81427A)
DI-MCCR-80031	Software Detail Design Document (INACTIVE: Supsd by: DI-MCCR-80012A & DI-IPSC-81435A)
DI-ATTS-80041A	Test Requirements Document (TRD)
DI-PACK-80120B	Preservation and Packing Data (Supersedes DI-L-7135)

2.2 APPLICABLE DOCUMENTS. (Continued)

DI-PACK-80121B	Special Packaging Instructions (SPI) (Supersedes DI-L-7135)
DI-CMAN-80534	System/Segment Design Document (SSDD) (INACTIVE: Supsd by: DI-IPSC-81432A)
DI-SDMP-80578	Supplement to Military Specification (INACTIVE)
DI-SDMP-80579	Amendment to Military Specification (INACTIVE)
DI-SDMP-80580	Validation Notice (Superseded by: DI-SDMP-81470)
DI-SDMP-80581	Inactive for New Design Notice (Superseded by: DI-SDMP-81470)
DI-SDMP-80582	Cancellation Notice (Superseded by: DI-SDMP-81470)
DI-SDMP-80583	Reinstatement Notice (Superseded by: DI-SDMP-81470)
DI-SDMP-80584	Military Specification Sheet (INACTIVE)
DI-CMAN-80643C	Specification Change Notice 30 (SCN) (Supersedes DI-E-1126)
DI-CMAN-80644	Engineering Change Proposal (Short Form) (INACTIVE: CNCLD by: DOD 5010.12-L)
DI-PACK-80683B	Container Design Retrieval System (CDRS) Search Request (Supersedes DI-L-2163)
DI-PACK-80684B	Container Design Retrieval System (CDRS) Data Input (Supersedes DI-L-2162)
D-CMAN-80788	Quality Engineering Planning List
DI-DRPR-81000A	Product Drawings and Associated Lists (INACTIVE: Supsd by DI-SESS-81000B)
DI-SESS-81000C	Product Drawings/Models and Associated Lists
D-DRPR-81001A	Conceptual Design Drawings and Associated Lists (INACTIVE: Supsd by DI-SESS-81001B)
D-SESS-81001C	Conceptual Design Drawings/Models and Associated Lists
DI-DRPR-81002A	Developmental Design Drawings and Associated Lists (INACTIVE: Supsd by DI-SESS-81002B)
DI-SESS-81002D	Developmental Design Drawings/Models and Associated Lists
DI-DRPR-81003A	Commercial Drawings and Associated Lists (INACTIVE: Supsd by DI-SESS-81003B)

2.2 APPLICABLE DOCUMENTS. (Continued)

DI-SESS-81003C	Commercial Drawings/Models and Associated Lists
DI-DRPR-81004A	Special Inspection Equipment (SIE) (INACTIVE: Supsd by DI-SESS-81004B)
DI-SESS-81004C	Special Inspection Equipment Drawings/Models and Associated Lists (SIE)
DI-QCIC-81005	Special Inspection Equipment Operating Instructions (EOIs) (INACTIVE)
DI-QCIC-81006	Special Inspection Equip. Descriptive Documentations (EDs)
DI-QCIC-81007	Special Inspection Equipment Calibration Procedures (CP)
DI-DRPR-81008A	Special Tooling Drawings and Associated Lists (INACTIVE: Supsd by DI-SESS-81008B)
DI-SESS-81008C	Special Tooling Drawings/Models and Associated Lists
DI-QCIC-81009	Technical Data Package (TDP) Quality Control Program Plan
DI-DRPR-81010A	Source Control Drawing Approval Request (INACTIVE: Supsd by DI-SESS-81010B)
DI-SESS-81010C	Source Control Drawing Approval Request
DI-DRPR-81011A	Drawing Number Assignment Report (INACTIVE: Supsd by DI-SESS-81011B)
DI-SESS-81011C	Drawing Number Assignment Report
DI-CMAN-81012A	Proposed Critical Manufacturing Process Description (INACTIVE: Supsd by DI-SESS-81012B)
DI-SESS-81012C	Proposed Critical Manufacturing Process Description
DI-QCIC-81013	Technical Data Package (TDP) Validation Report
DI-IPSC-81431A	System/Segment Specification
DI- IPSC-81432A	System/Segment Design Document (SSDD)
DI-IPSC-81434A	Interface Requirements Specification (IRS)
DI-IPSC-81435A	Software Top Level Design Document (SDD)
DI-IPSC-81436A	Interface Design Document (IDD)
DI-IPSC-81438A	Software Test Plan (STP)
DI-IPSC-81439A	Software Test Description (STD)
DI-IPSC-81440A	Software Test Report (STR)
DI-IPSC-81441A	Software Product Specification (SPS)

2.2 APPLICABLE DOCUMENTS. (Continued)

DI-IPSC-81442A	Software Version Description (SVD)
DI-IPSC-81443A	Software Users Manual (SUM)
ASME Y14.24	Types and Applications of Engineering Drawings
ASME Y14.34M	Associated Lists
ASME Y14.100	Engineering Drawing Practices (Note: The "M" of Y14.100M has been deleted beginning with issue 2000)
ASTM SI 10	Standard for Use of the International System of Units (X-Ref: IEEE SI 10) (Replaces ASTM E 380)

TDP OPTION SELECTION WORKSHEET TITLES

Product Drawings and Associated Lists.
(Supersedes: DD FORM 2554-1)

Product Solid Models

Conceptual Design Drawings and Associated Lists
(Supersedes: DD FORM 2554-2)

Conceptual Design Solid Models

Developmental Design Drawings and Associated Lists
(Supersedes: DD FORM 2554-3)

Developmental Design Solid Models

Commercial Drawings/Models and Associated Lists
(Supersedes: DD FORM 2554-4)

Special Inspection Equipment Drawings and Associated Lists
(Supersedes: DD FORM 2554-5)

Special Inspection Equipment Solid Models

Special Tooling Drawings and Associated Lists
(Supersedes: DD FORM 2554-6)

Special Tooling Solid Models

Specifications
(Supersedes: DD FORM 2554-7)

Special Packaging Instructions Drawings and Associated Lists
(Supersedes: DD FORM 2554-5)

Special Packaging Instructions Solid Models

2.3 DEFINITIONS.

2.3.1 Associated Lists. An associated list is a tabulation of engineering information on a drawing or set of drawings pertinent to an item depicted in a Technical Data Package (TDP). (Ref: ASME Y14.34M)

2.3.2 Commercial And Government Entity (CAGE) Code. A five character code listed in Cataloging Handbook H4/H8 , Commercial and Government Entity (CAGE) Code, which is assigned to commercial and Government activities that manufacture or develop items, or provide services or supplies for the Government. When used with a drawing number or part number, the CAGE Code designates the design activity from whose series the drawing or part number is assigned, The CAGE Code was previous called manufacturer's code, code identification number or Federal Supply Code for Manufacturers (FSCM).

2.3.3 Commercial Drawings. Drawings prepared by a commercial design activity following its drawing format and standards for the development and manufacture of the product without government expense.

2.3.4 Commercial Inspection Equipment (CIE). Standard equipment of commercial design that has not been modified and has universal application without limitations to a specific commodity, item, or component which is advertised or cataloged as being available to the trade or to the public on an unrestricted basis and is used to determine compliance to Technical Data Package (TDP) requirements.

2.3.5 Commercial Item Description (CID). A simplified product description or specification that describes by salient functional or performance characteristics the available and acceptable commercial products that will satisfy the Government's needs. CIDs are prepared under guidelines issued by the General Services Administration's Federal Supply Service (GSA-FSS), and are listed in the ASSIST DATABASE.

2.3.6 Commercial Product. A product, material, component, subsystem or system sold or traded to the general public in the course of normal business operations at prices based on established catalog or market prices.

2.3.7 Company Standard. A company standard is a document that establishes uniform and preferred practices and techniques, and sets limitations for engineering and technical applications for items, materials, processes, methods, design and engineering practices unique to that company. (NOTE: Company standards are not considered to be non-Government standards.)

2.3.8 Competent Manufacturer. A manufacturer that has demonstrated the capability to produce similar products at the same state of the art in the same or similar lines of technology.

2.3.9 Conceptual Design Drawings. Drawings used to verify preliminary design and engineering. They are one of the factors used to determine that the technology is feasible and that the design concept has utility against stated military requirements in order to reduce technical uncertainty. These drawings may evolve into developmental design drawings.

2.3.10 Critical Manufacturing Process. A process is critical if it is the only known method which will result in the production of an acceptable item.

2.3.11 Design Maturity. The extent to which the final design or configuration of an item has been defined by the engineering process. For example, the design of a sheet metal cover having holes in its mounting hole pattern fully dimensioned and toleranced for final size, location and orientation would be considered to be more mature than the design of a similar cover having its mounting hole pattern defined as "Drill at Assembly".

2.3.12 Detail Design Data. Technical data that describes the physical configuration and performance characteristics of an item or component in sufficient detail to ensure that an item or component produced in accordance with the technical data will be essentially identical to the original item or component. (DFARS, Part 227).

2.3.13 Detail Specification. A specification that specifies design requirements, such as material to be used, how a requirement is to be achieved, or how an item is to be fabricated or constructed. A specification that contains both performance and detailed requirements is still considered a detail specification. (Ref: MIL-STD-961)

2.3.14 Design Disclosure Information. The complete description, including all specifications, standards, drawings, lists and critical processes necessary to manufacture an item without recourse to additional design or engineering services.

2.3.15 Design Drawings. Drawings of a conceptual or developmental nature prepared for use in evaluating proposed technology, design concept, design approach, and fabrication of hardware for test or experimentation in response to stated requirements. Although ideally design drawings would evolve to product drawings, the requirements of ASME Y14.100 may not be applicable.

2.3.16 Developmental Design Drawings. Drawings used to fabricate developmental hardware for test or experimentation of a prototype or experimental material and define a specific design approach. In addition, the data shall be suitable for evaluation of the inherent ability of the design to attain the required performance. These drawings may evolve into product drawings.

2.3.17 Drawing Form. A sheet of drafting material displaying the basic format features such as title block, general tolerance blocks and margins in accordance with ASME Y14.1 or ASME Y14.1M.

2.3.18 Drawing Format. The arrangement and organization of information within a drawing, including the size and arrangement of blocks, notes, lists, revisions, the use of optional or supplemental blocks, etc.

2.3.19 End Product. An end product is an item, such as an individual part or assembly, in its final or completed state. (ASME Y14.24). Also known as an end item.

2.3.20 Inspection Equipment. Equipment such as dimensional gauges, measurement equipment, test fixtures, electronic and physical test equipment, and other test equipment that is used for examination, evaluation and test of a product to determine its conformance to drawings, specifications, or other requirement documents.

2.3.21 Item (Item of Supply). An end item, component, or part, records for which are maintained for stock, storage, and issuance in support of military requirements. (Examples of items of supply are airplanes, ships, trucks, radar, radar components, hand tools, fasteners, uniforms, and food.)

2.3.22 Non-Government Standard (NGS). A Standardization document developed by a private sector association, organization, or technical society which plans, develops, establishes, or coordinates standards, specifications, handbooks, or related documents. Company standards are not considered as non-Government standardization documents.

2.3.23 Performance Specification. A specification that states requirements in terms of desired results with criteria for verifying compliance, but without stating the methods for achieving the required results. A performance specification defines the functional requirements for the item, the environment in which it must operate and interface and interchangeability characteristics. (Ref: MIL-STD-961)

2.3.24 Physical Configuration Audit (PCA). The formal examination of the “as built” configuration of an item against its technical documentation to establish or verify the configuration item’s product baseline.

2.3.25 Product Drawings. Engineering drawings which provide the design, engineering, manufacturing and quality support information necessary to permit a competent manufacturer to produce an interchangeable item which duplicates the physical and performance characteristics of the original design without additional design engineering or recourse to the design activity.

2.3.26 Reference Documents. Documents that contain required engineering data that is too voluminous to be placed upon the drawing or are applicable to more than one item, process, or material.

2.3.27 Shipping List. A shipping list is a tabulation of all documents included in a delivery or shipment.

2.3.28 Special Test Equipment (STE) (also called Special Inspection Equipment (SIE)). Either single or multipurpose integrated test units engineered, designed, fabricated, or modified to accomplish special purpose testing in performing a contract. It consists of items or assemblies of equipment that are interconnected and interdependent so as to become a new functional entity for testing purposes (FAR 45.101).

2.3.29 Special Tooling. Unique tooling which is mandatory to the manufacture of an acceptable item. It differs from tooling designed to increase manufacturing efficiency in that the use of the special tool imparts some characteristic to the item which is necessary for satisfactory performance and cannot be duplicated through other generally available manufacturing methods. Examples of special tooling would be jigs, dies, fixtures, molds, patterns and other equipment or manufacturing aids that absolutely must be used to produce a satisfactory item.

2.3.30 Specifications. A specification is a document prepared specifically to support acquisition which clearly and accurately describes the essential technical requirements for purchasing material. Procedures necessary to determine that the requirements for purchased items, materials, and processes covered by the specifications have been met shall also be included. (The term "specification" is also used to describe the requirements specified on a drawing or other contractually-binding document, such as the material, dimensions and tolerances, surface texture, finish, heat treatment, physical, and other requirements.)

2.3.31 Standard Microcircuit Drawing. A Government unique drawing type used to define the physical and performance characteristics of commercial microcircuits in Federal Supply Class 5962 used in military applications.

2.3.32 Standardization Directory (SD-1). A document issued quarterly that identifies standardization responsibility assignments by Federal Supply Classes and Standardization Areas and provides the addresses of the military offices, federal civil agencies, and non-Government standards bodies participating in the Defense Standardization and Specification Program (DSSP).

2.3.33 Standardization Document. A document, such as a specification, standard or handbook developed for the purpose of standardizing item, materials, processes or procedures.

2.3.34 Standards and Specifications. As used herein, includes all non-Government standards, Federal and Military Standards and Specifications, Commercial Item Descriptions (CIDs), Standardized Military Drawings (SMDs) and Purchase Descriptions (PDs) which describe the essential technical requirements for purchased items materials and processes.

2.3.35 Tailoring Of The Specification. A process of consideration by the procuring activity to determine the selection of data for the appropriate level and types with possible downward tailoring of engineering drawings and associated lists in order to minimize the government's need for drawings to support the following:

a. Exploratory Development (bread board)

b. Advanced Development (brass board)

c. Engineering Development (service test)

d. Production (prototype)

e. Production

2.3.36 Technical Data. Recorded information, regardless of the form or method of recording, of a scientific or technical nature (including computer software documentation). The term does not include computer software or data incidental to contract administration, such as financial or management information. (DFARS Part 227).

2.3.37 Technical Data Package (TDP). The technical description of an item adequate for supporting an acquisition strategy, production, engineering, and logistic support. The description defines the required design configuration and procedures to assure adequacy of item performance. It consists of all applicable technical data such as drawings, models, associated lists, specifications, standards, performance requirements, quality assurance provisions, and packaging details.

2.3.38 Technical Data Package Document. A document that is part of a TDP element or TDP data management product.

2.3.39 Technical Data Package (TDP) Element. A TDP element is a data product that is an actual component of the TDP. A TDP element provides all or part of the design disclosure information necessary to define the item being documented by the TDP.

2.3.40 Technical Data Package (TDP) Data Management Product. A data product used to monitor and control the development and maintenance of the TDP. A TDP data management product contains information about the TDP rather than the item being documented.

2.3.41 TDP Drawing/Model Elements. The provision of necessary design disclosure information to the degree required for the drawing/model element selected listed as follows:

2.3.41.1 TDP Element, Conceptual Design Drawings/Models. (per DI-SESS-81001C) Drawings/models that disclose engineering design information sufficient to enable the evaluation of an engineering concept as meeting stated requirements. Formerly LEVEL 1 of DOD-D-1000 (models were not addressed in DOD-D-1000).

2.3.41.2 TDP Element, Developmental Design Drawings/Models & Limited Production Design. (per DI-SESS-81002D) Drawings/models that disclose sufficient design information to support the manufacture of a production prototype or a limited production model. Formerly LEVEL 2 of DOD-D-1000 (models were not addressed in DOD-D-1000).

2.3.41.3 TDP Element, Product Drawings/Models. (per DI-SESS-81000C) Drawings/models that disclose sufficient engineering definitions to enable any competent manufacturer to produce a quantity of items which are interchangeable with the original design without the need for:

a. Additional product design effort.
b. Additional design data.
c. Recourse to the design activity.

(Formerly LEVEL 3 of DOD-D-1000 (models were not addressed in DOD-D-1000).

2.3.41.4 TDP Element, Commercial Drawings/Models. (per DI-SESS-81003C) Drawings/models that disclose information in support of end items that are commercially developed items, off-the-shelf items or items not developed at government expense.

2.3.41.5 TDP Element, Special Inspection Equipment (SIE) Drawings/Models. (per DI-SESS-81004C) Drawings/models prepared to provide the data required to permit the limited production of SIE which duplicates the physical and performance characteristics of the original SIE. SIE is also known as Special Test Equipment (STE).

2.3.41.6 TDP Element, Special Tooling Drawings/Models. (per DI-SESS-81008C) Drawings/models prepared to provide the data necessary to enable a competent manufacturer to produce an item which duplicates the physical and performance characteristics identical to those of the original tooling.

2.3.41.7 TDP Element, Specifications. (Per appropriate DID listed in MIL-STD-961) Specifications prepared as coordinated, limited coordination or “USED IN LIEU OF” limited coordination military specifications in accordance with MIL-STD-961.

2.3.41.8 TDP Element, Packaging. (Per appropriate DID listed in MIL-STD-2073-1.) Packaging requires the generation of a TDP containing packaging data in the Statement Of Work (SOW). See 2.3.41.9.

23.41.9 TDP Element, Special Packaging Instructions Drawings/Models. (New in MIL-DTL-31000C) Drawings/models prepared to provide the data required to manufacture special packaging which is mandatory to successfully produce and transport the item.

2.3.42 Verification. All examination tests and inspections necessary to verify that an item meets the physical and functional requirements for which it was designed, to verify that a component, part or subassembly will perform satisfactorily in its intended application, or that an item conforms to specified requirements.

2.4 DRAWING AND MODEL REQUIREMENTS.

2.4.1 Drawings and Models Prepared To Data Item Description (DID) Requirements. Engineering drawings and models are prepared to meet the requirements of specifications and standards referenced on Data Item Descriptions (DIDs) as required by the contract or purchase order as cited by Statement of Work (SOW). These

drawings and models are normally specified on the Contract Data Requirements List (CDRL) (FORM DD 1423) (See APPENDIX A FIGURE 2A-9) along with the Technical Data Package (TDP) elements for drawings required to provide the necessary design disclosure. Combination of TDP elements may be specified in the contract or purchase order.

2.4.1.1 If TDP Elements Are Not Specified. On a contract where the Technical Data Package (TDP) elements for drawings and models are not specified, or on design activity R&D and commercial work, use the following guide:

a. Prepare all work on the design activity standard engineering drawing format.

b. Use the design activity's drawing and part numbering system.

c. Company, government and industry association standards or specifications may be omitted for parts, processes and materials, but their use is encouraged when economically feasible.

d. Use of standard parts is recommended.

e. Freehand sketching is permissible and drawings need not be to an exact scale.

f. Drawings must be legible and reproducible.

g. Use of drafting standards for symbols and conventions is recommended.

h. Use of simplified drafting techniques is encouraged.

i. Drawings must contain sufficient information necessary for fabrication, installation, assembly, procurement and inspection.

j. 3D solid models and drawings based on 3D solid models should conform to SECTION 26 and paragraph 26.34 and sub-paragraphs in particular.

2.4.1.2 When TDP Elements Are Specified. If a contract specifies Technical Data Package (TDP) elements for engineering drawings, models, or associated lists, these elements shall be prepared to the disclosure level designated. When preparing an engineering drawing, model, or associated list, the contract or purchase order should list the following requirements of TDP element as listed:

a. Conceptual Design Drawings/Models and Associated Lists per paragraph 2.3.41.1.

b. Developmental Design Drawings/Models and Associated Lists per paragraph 2.3.41.2.

c. Product Drawings/Models and Associated Lists per paragraph 2.3.41.3.

Use the following guide for TABLE 2-1.

a. Whether a Government Design Activity or Contractor Design Activity designation and identity as assigned by Commercial And Government Entity (CAGE) 5-digit code is to be placed in the Title Block of the engineering drawing or associated list.

b. Whether a Government Design Activity or Contractor Design Activity drawing numbers will be assigned.

c. If Government Design Activity drawing numbers are to be assigned, identify the assigning activity. If Government drawing formats are to be supplied, identify the source.

d. Whether the mono-detail or multi-detail drawing system will be used.

e. Which kinds of associated lists are required.

f. Assembly level at which associated lists will be prepared.

g. Whether associated lists shall be integral with, or separate from, the engineering drawing.

h. Which drawing format, type, class and quality of stock are required.

REQUIREMENTS FOR THE PREPARATION OF ENGINEERING DRAWINGS AND ASSOCIATED LISTS PER MIL-DTL-31000 (WAS DOD-D-1000).

MIL-DTL-31000 TDP DRAWING ELEMENT	APPROPRIATE OPTION SELECTION WORKSHEET OF MIL-DTL-31000	*** MIL-HDBK-505 EQPT MODEL DEFINITION OF TDP ELEMENT	* REQUIREMENTS OF ASME Y14.100 APPLY	APPLICATIONS OF METRIC SYSTEM PER ASME SI 10	CAGE CODE COMPANY OR GOVERNMENT
DI-SESS-81000C (** WAS LEVEL 3)	FIGURE 1 △5.	PRODUCTION	YES	PER △3.	YES
DI-SESS-81002D (** WAS LEVEL 2)	FIGURE 3 △5.	DEVELOPMENTAL	NO △1.	PER △3.	NO △1.
DI-SESS-81001C (** WAS LEVEL 1)	FIGURE 2 △5.	CONCEPTUAL	NO	PER △3.	YES

(CONTINUED)

MIL-DTL-31000 TDP DRAWING ELEMENT	* ASME Y14.1 STD DWG FORMAT	* ASME Y14.100 DRAWING & PART NUMBER SYSTEM	USE OF FREE HAND SKETCHES	SIMPLIFIED DRAFTING PRACTICE	REPRODUCTION PER MIL-PRF-5480	SPECIFICATION USAGE FOR MAT'L & PROCESSES	DRAWING TITLES H6AB APPLY
DI-SESS-81000C (** WAS LEVEL 3)	YES △1.	YES △1.	NO	NO △4.	YES	YES	YES
DI-SESS-81002D (** WAS LEVEL 2)	NO △1.	NO △1.	YES △1.	YES	YES	YES	NO △1.
DI-SESS-81001C (** WAS LEVEL 1)	NO △2.	NO	YES	YES	NO	NO △2.	NO

(CONTINUED)

MIL-DTL-31000 TDP DRAWING ELEMENT	MICROFILM QUALITY	USE OF STD SYMBOLS, ABBREV & CONVENTIONS	DIMENSIONING PER ASME Y14.5M	SPECS SELECTION SEQUENCE PER MIL-STD-961	USE OF VENDOR CONTROL PART NOS.	* ASME Y14.34M PREPARATION OF PARTS, DATA AND INDEX LISTS	REVISIONS OF ENGRG DWGS APPLY
DI-SESS-81000C (** WAS LEVEL 3)	YES	YES	YES	YES	YES	YES	YES
DI-SESS-81002D (** WAS LEVEL 2)	YES	YES	NO △1.	YES	NO △1.	NO	NO △1.
DI-SESS-81001C (** WAS LEVEL 1)	NO	NO △2.	NO △2.	NO △2.	NO	NO	NO

TDP = Technical Data Package

* See PARAGRAPHS 2.1.3, 2.1.4 and 2.1.5.
** DOD -D-1000
*** MIL-HDBK-505 is a redesignation of MIL-STD-280A and used for guidance only.

△1. UNLESS OTHERWISE SPECIFIED IN CONTRACT OR PURCHASE ORDER.

△2. RECOMMENDED IF FEASIBLELY ECONOMICAL.

△3. APPLICABLE TO NEW DESIGN OR UNLESS INCH SYSTEMS IS STATED IN CONTRACT OR PURCHASE ORDER.

△4. EXCEPT SCREW THREAD REPRESENTATION.

△5. TAILORING PERMITTED TO MINIMIZE DATA REQUIREMENTS OF THE CONTRACT OR PURCHASE ORDER.

TABLE 2-1

2.4.1.3 Existing Engineering Drawings/Models And Associated Lists. Engineering drawings, models and associated lists prepared prior to the above requirement of PARAGRAPH 2.4.1.2 are acceptable if the engineering drawings, models and associated lists have been previously accepted by the Government, or if they meet the following requirements:

a. They are acceptable for entry into the government's repository system. (i.e. are identified by name and address of design activity, Commercial And Government Entity (CAGE) code, drawing nomenclature, drawing (part) number, in accordance with MIL-STD-100, and contract number).

b. The format, legibility requirements, drawing practices, modeling practices, and symbols used (including the use of legends/explanations for nonstandard symbols) are such that their intent and interpretation of all requirements are clear and unambiguous.

c. They provide the necessary design disclosure information for the drawing or model TDP element for which they are furnished.

2.5 TECHNICAL DATA PACKAGE (TDP) DRAWING/MODEL ELEMENTS.

2.5.1 TDP Elements. TDPs shall consist of one or more of the following TDP elements as specified on the contract or purchase order.

2.5.1.1 TPD DI-SESS-81001C Conceptual Design Drawings and Models. These drawings and models shall be legible and appropriate for the mode of presentation. Sketches, layout drawings and combinations of types of engineering drawings may be used to convey the engineering concept in such a manner that the engineering information is understandable to cognizant engineers and scientists. Unless otherwise specified, the requirements of ASME Y14.100 including Appendices A thru E do not apply. (Formerly LEVEL 1 of DOD-D-1000.)

2.5.1.2 TPD DI-SESS-81002D Developmental Design Drawings, Models and Associated Lists. These drawings, models and associated lists shall include, as applicable, parts lists, detail and assembly drawings, models, interface control data, logic diagrams, schematics, performance characteristics, critical manufacturing limits, and details of new materials and processes. Special inspection and test requirements necessary to determine compliance with requirements for the item shall be defined on the engineering drawings directly or by reference. If required by the TDP Option Selection Worksheet, contract or purchase order, developmental design drawings, models and associated lists shall be prepared in accordance with ASME Y14.100 and the appropriate Appendices A thru E. (Formerly LEVEL 2 of DOD-D-1000.)

2.5.1.3 TPD DI-SESS-81000C Product Drawings, Models and Associated Lists. These selected engineering drawing types shall include: details of unique processes when they are essential to design and manufacturing; detailed performance ratings; dimensional and tolerance data; critical manufacturing assembly sequences; tolerance input and output parameters; schematics; mechanical and electrical connections; physical characteristics, including form and finishes; details of material identification; inspection, test and evaluation criteria; necessary calibration information and quality control data to enable the procurement or manufacture of an item essentially identical to the original item. Product drawings and associated lists shall be prepared in accordance with ASME Y14.100 and the appropriate Appendices A thru E in conjunction with ASME Y14.24, ASME Y14.34M and ASME Y14.35M, unless these requirements are not included in the TDP Options Worksheet, contract or purchase order. Models shall be prepared in accordance with MIL-DTL-31000C and ASME Y14.41. (Formerly Level 3 of DOD-D-1000.)

2.5.1.4 TPD DI-SESS-81003C Commercial Drawings, Models and Associated Lists. Commercial drawings, models and associated lists shall provide engineering and technical information in support of end products, or designated portions thereof, which are commercially developed items, commercial off-the-shelf items (COTS), or items not developed at government expense. These drawings, models and lists are prepared in accordance with the commercial design documentation practices of the contractor or supplier of the item.

2.5.1.5 TPD DI-SESS-81004C Special Inspection Equipment (SIE) Drawings, Models and Associated Lists. SIE drawings, models and associated lists shall be prepared to provide the data required to permit the limited production of SIE which duplicates the physical and performance characteristics of the original SIE. SIE is also known as Special Test Equipment (STE).

2.5.1.6 TPD DI-SESS-81008C Special Tooling Drawings, Models and Associated Lists. Special tooling drawings, models and associated lists shall be prepared to provide the data required to manufacture special tooling which is mandatory to successfully produce the item. The special tooling shall be defined in detail to the extent necessary for a competent manufacturer to produce tooling which duplicates the performance characteristics of the original tooling.

2.5.1.7 Appropriate DID Listed for the Preparation of Military Specifications as Required in the Contract or Purchase Order. (See TABLE 2-6, Note 1.) These specifications shall be prepared as performance, detailed and program-unique specifications as required in the contract or purchase order. Included are fully coordinated, limited coordination or "USED IN LIEU OF" military specifications in accordance with MIL-STD-961.

2.5.1.7.1 Commercial Item Descriptions (CIDs). CIDs shall be prepared in accordance with Federal Standardization Manual to describe, by functional, performance, or essential physical requirements, available commercial products or services.

2.5.1.8 Appropriate DID Listed for the Preparation of Drawings, Models and Associated Lists for Preservation, Packaging, Packing and Marking Data. (See TABLE 2-3, Note 3.) Preservation, packaging, packing, and marking requirements for hardware shall be documented for each end item and repair in accordance with MIL-STD-2073-1. Detailed drawings, models and associated lists required to describe packaging requirements shall be prepared as product or commercial drawings, models and associated lists whichever was ordered for the item under contract.

2.5.1.9 Appropriate DID Listed for the Documentation of Software. (See TABLE 2-3, Note 4) Software and software documentation required for the operation of the hardware defined in the TDP shall be prepared in accordance with MIL-DTL-31000C, IEEE 12207.0, IEEE 12207.1 and IEEE 12207.2. (Formerly MIL-STD-498.)

2.5.1.10 Special Packaging Instructions Drawings/Models. (New in MIL-DTL-31000C) Special packaging instructions drawings/models shall be prepared to provide the data required to manufacture special packaging which is mandatory to successfully produce and transport the item.

2.5.2 Conditions Required For Preparing Developmental and Production Drawings, Models and Associated Lists. The following conditions for the preparation of engineering drawings, models and associated lists for Development and Production shall be governed by the contract or purchase order citing the appropriate DIDs and "TDP Option Selection Worksheets".

2.5.2.1 Application Of The Metric System. When the metric system (SI) is specified in the contract or purchase order for new design, TDP documents shall be identified as metric documents and conform to FED-STD- 376.

2.5.2.1.1 Metric Values. Metric values, when used on engineering drawings, shall be in accordance with ASTM SI 10 (X-Ref: IEEE SI 10). (Formerly ASTM E 280.)

2.5.2.2 CAGE Assignment Number Placement. If a Government Design Activity or Contractor Design Activity is named, the Commercial And Government Entity (CAGE) code and drawing number will be placed in the title block of each engineering drawing and its associated list and on each model as defined in ASME Y14.41 and SECTION 26 of the DRM. References on existing documents or preprinted document forms using the terms "FSCM" or Code Ident." need not be revised for the sole purpose of conversion to "CAGEC or "CAGE Code". Such conversion may be made concurrently with other needed changes.

2.5.2.3 Design Activity Assignment Identification. When Government Design Activity drawing numbers are to be assigned, drawings must identify the assigning activity and if government drawing formats are to be supplied, drawings must identify the source.

2.5.2.4 Associated Lists. Specify the kinds of associated lists required.

2.5.2.5 Associated Lists Assembly Level. Specify the drawing assembly level at which associated lists will be prepared.

2.5.2.6 Selection Of Drawing System. States whether the mono- or multi-detail drawing system will be used.

2.5.2.7 Placement Of Parts Lists. Specify if parts lists shall be integral with, or separate from, the engineering drawing or model.

2.5.2.8 Drawing and Model Format. The number and types of drawings, models and associated lists should be kept to a minimum. As the complexity of the item increases, different types of engineering drawings providing additional engineering description and controls may be required by the procuring activity, contract or purchase order.

2.5.3 Technical Data Package (TDP) Drawings/Models In Relation To Previous Drawing Forms. Comparison of the current MIL-DTL-31000, the former MIL-T-31000, DOD-D-1000B (AM4) and the "NO" revision MIL-D-1000 (1965). (See TABLE 2-2.)

WAS	WAS	APPROPRIATE DID FOR TDP ELEMENTS FOR DRAWINGS	TDP ELEMENTS	
			WAS	NOW
MIL-D-1000 (1965)	MIL-D-1000B (AM4) 1987		MIL-T-31000 (1989)	MIL-DTL-31000C (2004)
			TDP OPTION SELECTION WORKSHEET FOR DWGS	TDP OPTION SELECTION WORKSHEET FOR DWGS
FORM 1 FORM 2 FORM 3	LEVEL 1 LEVEL 2 LEVEL 3	DI-SESS-81000C DI-SESS-81002D DI-SESS-81001C	DD FORM 2554-1 DD FORM 2554-3 DD FORM 2554-2	PRODUCT FIG. 2A-1 DEVELOPMENTAL FIG. 2A-3 CONCEPTUAL FIG. 2A-2
		DI-SESS-81003C DI-SESS-81004C DI-SESS-81008C -	DD FORM 2554-4 DD FORM 2554-5 DD FORM 2554-6 -	COMMERCIAL FIG. 2A-4 SPCL INSPEC EQPT FIG. 2A-5 SPCL TOOLING FIG. 2A-6 SPCL PKG INSTR FIG. 2A-8
		TDP ELEMENTS (DIDs) FOR SPECIFICATIONS	TDP OPTION SELECTION WORKSHEET FOR SPECS	TDP OPTION SELECTION WORKSHEET FOR SPECS
		APPROPRIATE DID IN MIL-STD-961	DD FORM 2554-7	SPECIFICATIONS FIG. 7

EVOLUTIONARY PROGRESSION FOR TYPES OF DRAWINGS FOR DELIVERY.
TABLE 2-2

2.5.4 Verifying the Use of TDP Drawing/Model Elements. Inspection of TDP Drawing/Model elements including TDP documents prepared by subcontractors, shall be inspected for the following:

a. Compliance with the requirements of MIL-DTL-31000 and applicable Data Item Descriptions (DIDs) as tailored in the contract or purchase order.

b. Inclusion of all documents, including sub-tier references, required to meet the information content requirements of the TDP element except Acquisition Streamlining and Standardization Information System (ASSIST Database) and Non-Government Standardization (NGS) documents.

c. Accuracy of the assignment and identification of security markings, distribution statements, export control notices, rights-in-data legends and other special markings.

d. Inclusion of contract numbers and contractor identifications.

e. Legibility and reproducibility.

f. TDP components have not been prepared for requirements which could be met by existing standardization documents except as permitted for commercial drawings, models and associated lists.

g. References to other standardization documents, Government or non-Government, listed in the ASSIST DATABASE shall not be prepared or submitted as part of the TDP unless it is necessary to specify variations necessary to fulfill the design or performance requirements.

h. Completeness and accuracy of the TDP documents, including required quality assurance information, in describing the design of the item, its subassemblies, and component parts. When the Government has approved, tested or accepted a configuration of the item that is the design to be described by the TDP documents.

2.5.5 Technical Data Package (TDP) Elements for Drawings and Models With Reference to Supporting Documents. The contract or purchase order containing the Statement Of Work (SOW) will cite the appropriate DIDs on the Contract Data Requirements List (CDRL) DD FORM 1423 (See APPENDIX A FIGURE 2A-9) for selecting TDP Elements for preparing drawings, models and specifications. Included will be the appropriate TDP Option Selection Worksheet, FIGURES 2A-1 through 2A-8a, for determining what technical data is being acquired. See TABLE 2-3.

MIL-DTL-31000C TECHNICAL DATA PACKAGE (TDP) ELEMENT TO APPROPRIATE DID AND DD FORM AS RELATED TO DOD-D-1000 DRAWING LEVELS

TECHNICAL DATA PACKAGE (TDP) ELEMENTS TYPES OF DRAWINGS PREPARED WHEN CITED IN THE STATEMENT OF WORK (SOW) WITH THE APPLICABLE LIST	CITED IN THE CDRL DD FORM 1423		SUPERSEDED DATA ITEM DESCRIPTION (DID)	DRAWINGS, MODELS & ASSOCIATED LISTS SHALL CONFORM TO:	LEVEL OF DESIGN (SIMILAR TO DOD-D-1000 LEVELS 1, 2 & 3)	DRAWING FORMAT AS SPECIFIED ON APPLICABLE TDP OPTION SELECTION WORKSHEETS
	APPLICABLE DATA ITEM DESCRIPTION (DID)	TDP ELEMENTS SELECTION MADE FROM TDP OPTION SELECTION WORKSHEETS OR SPECIFICATION REFERENCED ON CDRL DD FORM 1423				
CONCEPTUAL DESIGN DRAWINGS, MODELS AND ASSOCIATED LISTS	DI-SESS-81001 RELATED DIDs: DI-SESS-81000 DI-SESS-81002, DI-SESS-81003	CONCEPTUAL ** FIGURES 2 & 2A	DI-E-7031 DI-CMAN-80778 DI-DRPR-81001	SKETCHES LAYOUT & VARIOUS DRAWINGS ACCORDING TO COM-PLEXITY OF DESIGN.	CONCEPTUAL AND DEVELOPMENTAL FOR ANALYSIS AND EVALUATION (LEVEL 1)	CONTRACTOR OR GOVERNMENT
DEVELOPMENTAL DESIGN DRAWINGS, MODELS AND ASSOCIATED LISTS	DI-SESS-81002 RELATED DIDs: DI-SESS-81000 DI-SESS-81001, DI-SESS-81003	DEVELOPMENTAL ** FIGURES 3 & 3A	DI-E-7031 DI-CMAN-80778 DI-DRPR-81002	* ASME Y14.100 UNLESS OTHERWISE SPECIFIED ON CONTRACT OR PURCHASE ORDER.	DEVELOPMENTAL DETAILS OF NEW MATERIALS & PROCESSES (LEVEL 2)	CONTRACTOR OR GOVERNMENT
PRODUCT DRAWINGS, MODELS AND ASSOCIATED LISTS	DI-SESS-81000 RELATED DIDs: DI-SESS-81001 DI-SESS-81002, DI-SESS-81003	PRODUCT ** FIGURES 1 & 1A	DI-E-7031 DI-CMAN-80779 DI-DRPR-81000	* ASME Y14.100	HIGHEST LEVEL OF DESIGN DISCLOSURE FOR REPROCUREMENT (LEVEL 3)	CONTRACTOR OR GOVERNMENT
COMMERCIAL DRAWINGS, MODELS AND ASSOCIATED LISTS	DI-SESS-81003 RELATED DIDs: DI-SESS-81000 DI-SESS-81001, DI-SESS-81002	COMMERCIAL ** FIGURE 4	DI-CMAN-80784 DI-DRPR-81003	* ASME Y14.100 WHEN SPECIFIED ON CONTRACT OR PURCHASE ORDER.	PROVIDE SUFFICIENT INFORMATION TO PERMIT GOVT MAINTENANCE, MODIFICATION AND ENGINEERING ANALYSIS. (LEVEL 2 OR 3)	CONTRACTOR OR ORIGINAL SUPPLIER
SPECIAL INSPECTION EQUIPMENT (SIE) DRAWINGS, MODLS AND ASSOCIATED LISTS	DI-SESS-81004	SPCL INSPEC EQPT ** FIGURES 5 & 5A	DI-CMAN-80781 DI-DRPR-81004	* ASME Y14.100	PROVIDE THE FOLLOWING: 1 (LEVEL 3)	CONTRACTOR OR GOVERNMENT
SPECIAL TOOLING (ST) DRAWINGS, MODELS AND ASSOCIATED LISTS	DI-SESS-81008	SPECIAL TOOLING ** FIGURES 6 & 6A	DI-CMAN-80782 DI-DRPR-81008	* ASME Y14.100	PROVIDE THE FOLLOWING: 2 (LEVEL 3)	CONTRACTOR OR GOVERNMENT
SPECIFICATIONS (EXISTING SPECS, WHOLLY OR IN PART)	APPROPRIATE DID CITED IN MIL-STD-961 FOR SELECTING SPECIFICATIONS.	SPECIFICATIONS ** FIGURE 7	NONE	NA	NA	GOVERNMENT
PRESERVATION, PACKAGING, PACKING AND MARKING 3	APPROPRIATE DID CITED IN MIL-STD-2073-1 APPENDIX J	MIL-STD-1367	DI-L-2162 DI-L-2163 DI-L-7135 DI-L-7136	NA	NA	CONTRACTOR OR GOVERNMENT
SOFTWARE AND SOFTWARE DOCUMENTATION 4	APPROPRIATE DID CITED IN DOD-STD-498	IN DOD-STD-498	DI-E-3128	NA	NA	CONTRACTOR
SPECIAL PACKAGING INSTRUCTIONS(SPI) DRAWINGS, MODELS AND ASSOCIATED LISTS	MIL-STD-2073-1	SPECIAL PACKAGING INSTR. ** FIGURES 8 & 8A	NA	* ASME Y14.100	AS REQUIRED BY CONTRACT OR ORDER	CONTRACTOR OR GOVERNMENT

CDRL = Contract Data Requirements list

* See PARAGRAPHS 2.1.3, 2.1.4 and 2.1.5.
** FIGURE NUMBERS REFERENCED ARE FROM MIL-DTL-31000A.

TABLE 2-3 (Continued on next page.)

NOTES: (For TABLE 2-3)

1. SIE (Special Inspection Equipment) drawings, models and associated lists shall provide:

a. Details of processes that are essential to achieving the engineering requirements of the item when these processes are not published or generally available to industry.
b. Performance ratings and tolerances.
c. Dimension and tolerances.
a. Critical manufacturing processes and assembly sequences.
b. Toleranced input and output characteristics.
c. Diagrams.
d. Mechanical and electrical connections.
e. Physical characteristics, including form and finish requirements.
f. Details of material identification, including heat treatment and protective coatings.
g. Inspection, test and evaluation criteria.
h. Calibration information.
i. Environmental requirements.
j. Reliability requirements.
k. Maintainability requirements.

1.1 Multi-detail and detail assembly drawings may be used at the discretion of the contractor. The mono-detail drawing system shall not be mandatory for SIE drawing packages.

2. ST (Special Tooling) drawings, models and associated list shall provide:

a. Details of processes that are not published or generally available to industry when these processes are mandatory to achieving the engineering requirements of the tooling.
b. Performance ratings and tolerances.
c. Dimension and tolerances.
d. Critical manufacturing processes and assembly sequences.
e. Toleranced input and output characteristics.
f. Diagrams.
g. Mechanical and electrical connections.
h. Physical characteristics, including form and finish requirements.
i. Details of material identification, including heat treatment and protective coatings.
j. Calibration information.
k. Environmental requirements.
l. Reliability requirements.
m. Maintainability requirements.

2.1 **Multi-detail and Detail Assembly Drawings.** Multi-detail and detail assembly drawings may be used at the discretion of the contractor. The mono-detail drawing system shall not be mandatory for ST packages.

2.2 **Cage Code and Document Numbers.** ST drawings, models and associated lists will be identified with the contractor's CAGE Code and contractor document numbers or with a Government CAGE Code and Government document numbers as specified in FIGS. 6 and 6A of MIL-DTL-31000C as incorporated in the contract. (See APPENDIX A, FIGS. 2A-6 and 2A-6a.)

2.3 **Control Drawings and Models.** Vendor items used in the ST without alteration, selection, or source qualification shall be identified on ST drawings and lists by the manufacturer's CAGE Code and part identifying number. A Vendor Item Control Drawing (VICD), formerly Specification Control Drawing, is not required for vendor items. When vendor items must be altered, selected, or require source qualification prior to use in the ST, they shall be documented on Altered Item, Selected Item, or Source Control Drawings (SOCDs) in accordance with ASME Y14.100 Appendix D.

TABLE 2-3 NOTES: (Continued)

3. Appropriate DIDs

	Superseded By
DI-L-2162	DI-PACK-80684
DI-L-2163	DI-PACK-80683
DI-L-7135	DI-PACK-80120
DI-L-7136	DI-PACK-80121
DI-L-7137	DI-MISC-81499

Note: Use latest revision of DIDs.

4. Appropriate DIDs

DI-IPSC-81432	DI- IPSC -81439	DI- IPSC -81436	Note: Use latest revision of DIDs.
DI- IPSC -81435	DI- IPSC -81440	DI- IPSC -81441	
DI- IPSC -81442	DI- IPSC -81443	DI- IPSC -81427	
DI- IPSC -81438	DI- IPSC -81434		

2.5.6 Conditions Required For Preparing TDP Data Management Products. When specified in the contract or purchase order, the following data products related to the management and control of TDPs shall be prepared. Only the TDP data management products that are listed on the Contract Data Requirements List (CDRL), DD FORM 1423 of the contract or purchase order are required to be delivered to the Government.

2.5.6.1 Source Control Drawing Approval Request. Source Control Drawing (SOCD) approval requests shall be prepared and submitted to the cognizant Government activity specified in the contract or purchase order as having approval authority. Each potential source control item shall be approved by the Government activity having source control drawing approval authority prior to including of the source control drawing in the TDP.

2.5.6.2 Drawing Number Assignment Report. A drawing number assignment report shall be prepared to identify and describe the use of Government drawing numbers by the contractor per DI-SESS-81011C.

2.5.6.3 Proposed Critical Manufacturing Process Description. Proposed critical manufacturing process descriptions shall be prepared to describe manufacturing processes which are critical to meeting the design requirements of the item per DI-SESS-81012C. The process shall be approved as critical by the Government activity cited in the contract or purchase order as having approval authority before it is designated as mandatory in TDP documents.

2.5.7 Verifying the Use of TDP Data Management Products. Inspection of TDP Data Management Products and the components thereof, including documents prepared by subcontractors, shall be inspected for the following:

a. Compliance with the requirements of MIL-DTL-31000 and applicable Data Item Descriptions (DIDs) as tailored in the contract or purchase order.

b. Inclusion of all documents, including sub-tier references, required to meet the information disclosure requirements of the TDP Data Management Product.

c. Accuracy of the assignment and identification of security markings, distribution statements, export control notices, right-in-data legends, and other special markings.

d. Inclusion of contract numbers and contractor identifications, when applicable.

e. Legibility and reproducibility.

2.5.8 Technical Data Package (TDP) Data Management Products with Reference to Supporting Documents The contract or purchase order containing the Statement of Work (SOW) will cite the appropriate DIDs on the Contract Data Requirements List (CDRL). (DD FORM 1423) (See APPENDIX A FIGURE 2A-9) for selecting TDP Management Data Products for preparing what types of data is being acquired. (See TABLE 2-4.)

MIL-DTL-31000C TECHNICAL DATA PACKAGE (TDP) FOR DATA MANAGEMENT PRODUCTS				
TECHNICAL DATA PACKAGE (TDP) DATA MANAGEMENT PRODUCTS TYPES OF DATA PREPARED WHEN CITED IN THE STATEMENT OF WORK (SOW) WITH THE APPLICABLE DID LISTED	CITED IN THE CDRL DD FORM 1423		SUPERSEDED DATA ITEM DESCRIPTION (DID)	DATA FORMAT
	APPLICABLE DATA ITEM DESCRIPTION (DID)	WORK TASK ASSIGNMENT		
SOURCE CONTROL DRAWING APPROVAL REQUEST	DI-SESS-81010 AND THE APPROVING ACTIVITY	MIL-DTL-31000 PARA 3.7.1	DI-CMAN-80783 DI-DRPR-81010	CONTRACTOR
DRAWING NUMBER ASSIGNMENT REPORT	DI-SESS-81011	MIL-DTL-31000 PARA 3.7.2	DI-CMAN-80055 DI-DRPR-81011	CONTRACTOR
PROPOSED CRITICAL MANUFACTURING PROCESS DESCRIPTION	DI-SESS-81012 AND THE APPROVING ACTIVITY	MIL-DTL-31000 PARA 3.7.3	DI-CMAN-80780 DI-CMAN-81012	CONTRACTOR

NOTE: Unless otherwise specified, Technical Data Package (TDP) Data Management Products require "DISTRIBUTION STATEMENT" notations applied to the document.

TECHNICAL DATA PACKAGE (TDP) MANAGEMENT DATA PRODUCTS SUPPORTING DOCUMENTS.
TABLE 2-4

2.6 RESPONSIBILITIES OF ENGINEERING DRAWING MANAGEMENT & RELATED FUNCTIONS.

2.6.1 Program Management.

2.6.1.1 Drawing and Data Management Products Requirements. Program management is responsible for informing applicable documentation activities of the requirements that drawings and Data Management Products must meet. These requirements are defined by the Program Directive, Work Statement, Statement of Work (SOW) Work Orders, etc. TABLE 2-1 lists the requirements for each of the drawing disclosure levels and technical data documentation. TDPs, except conceptual design and developmental design drawings, shall define the physical and functional characteristics of the approved, tested, and accepted configuration of the item and its subordinate assemblies, and parts thereof. These requirements apply to data prepared by either manual or automated methods, such as Computer Aided Design (CAD) and Computer Aided Manufacturing (CAM) systems, or combinations thereof. Furthermore, these requirements apply to data using U.S. customary units, the International System of Units (SI), or combination thereof.

2.6.2 Preparation and Management.

2.6.2.1 Use of Government and non-Government standardization documents. TDP documents shall not be prepared or submitted to indicate[1] document requirements which are defined by existing Government or non-Government standardization documents of the United States or international standardization documents listed in the ASSIST DATABASE or from the societies governing the documents (such as the American Society of Mechanical Engineers (ASME)). These requirements shall be specified by reference to the appropriate standardization document. When the requirements in such standardization documents do not completely fulfill the design or performance requirements of an item, TDP documents for the item may invoke the requirements of the standardization document and specify the variations necessary to fulfill the design or performance requirements.

1 Note: MIL-DTL-31000C corrected a typo in clause 3.2.1 of MIL-DTL-31000B, which is the source for paragraph 2.6.2.1 above. The word "indicate" was omitted in MIL-DTL-31000A and MIL-DTL-31000B, thus the sentence stated that existing standardization documents *were not to be used* in the preparation of a TDP. This omission in MIL-DTL-31000B reversed the meaning of this sentence and was incorrect; the corrected material in paragraph 2.6.2.1 reflects the actual requirement.

The purpose and intent of clause 3.2.1 in MIL-DTL-31000 is to clarify that approved existing standards (such as those listed in the ASSIST Database) *must be used* in the preparation of a TDP.

2.6.2.2 Use of International and Foreign Standardization Documents. International Standardization Organization / International Electrotechnical Commission (ISO/IEC) standardization documents adopted by the American National Standards Institute (ANSI) for use in the United States may be used to define requirements on TDP documents. National standardization documents of foreign countries and European Standards (NORMEs) (EN) shall not be used without the approval of the Government procuring activity. The use of international and foreign standardization documents in multinational programs subject to memorandum of understanding between governments shall be governed by the terms of that agreement.

2.6.2.3 Reference Documents. Except as specified in PARAGRAPH 2.6.2.4, documents referenced in a TDP element shall be furnished as an integral part of that element, when essential to meet the information content requirements of the TDP element. Technical manuals, procedural manuals, maintenance manuals, company drafting manuals and management plans shall not be considered as referenced documents. When information essential to meeting the information content requirements of a TDP element (such as default surface texture values) are contained in such documents, that information shall be delineated on the applicable TDP document or incorporated in a document acceptable for inclusion in the TDP element.

2.6.2.4 Existing Data. When existing data meets the following criteria, or can be modified or revised to meet the following criteria, it shall be used in lieu of preparing new data:

a. It is furnished with rights-in-data consistent with the contract stipulations regarding data rights.

b. It is furnished at a cost to the Government equal to or less than the cost of preparing new data.

c. It meets the legibility and reproducibility requirements for the TDP element of which it is to be a part.

d. It meets the information content requirements of the TDP of which it is to be a part.

e. It is identified by a Commercial and Government Entity (CAGE) Code, document number, title, and applicable contract number(s).

f. Any nonstandard symbols, drawing or documentation practices used are explained in the document or in a document referenced on the document containing the nonstandard symbol or practice.

g. It meets the language and clarity requirements. See PARAGRAPHS 2.1.1.1 and 2.6.2.7.

h. Any revisions to the existing data are made in accordance with one of the following:

    1) The revisions are made using the same preparation guidelines as were used in preparing the existing data, or

    2) All existing characteristics of the existing data are updated to the new preparation guidelines used in making the revisions.

2.6.2.5 Company Standards. When the use of company standards is permitted by the contract or purchase order, company standards shall meet the requirements of PARAGRAPH 2.6.2.4 for existing data plus the following:

a. If the company standard defines a vendor item, the standard shall provide the same information as a Vendor Item Control Drawing (VICD) for the identification and procurement of an interchangeable item, and

b. All documents referenced in the standard shall be supplied as required by PARAGRAPHS 2.6.2.1 , 2.6.2.2 and 2.6.2.3, and shall meet the same requirements as a company standard.

2.6.2.6 Commercial Drawings Exempted. Commercial drawings and associated lists are exempt from the requirements of PARAGRAPHS 2.6.2.4 and 2.6.2.5.

2.6.2.7 Language and Clarity. Unless otherwise specified by a multinational agreement, TDP documents shall be in the English language. People knowledgeable in the subject matter presented shall delineate requirements, including explanations of non-standard practices or symbols, clearly, concisely, and without ambiguity so that their correct interpretation is readily discernible.

2.6.2.8 Automated Document Presentation. TDP documentation, regardless of the method of preparation (for example computer, plotter, or photosetter), shall satisfy the format and content requirements of specifications and standards controlling those documents as invoked and tailored in the contract or purchase order. Hard copy deliverable of such documents shall be human readable without additional interpretation. Digital deliverables shall be human readable when processed by appropriate digital interpretation programs. Variations from the controlling specifications and standards that do not adversely affect the legibility and reproducibility of deliverable media or the integrity of the data content are permitted, unless otherwise prohibited by the contract or purchase order.

2.6.2.9 Database Access. When electronic, on-line access to contractor generated data is preferred to actual delivery of hard copy data, such access shall be through a Contractor Integrated Technical Information Service (CTIS) and the contractual application of MIL-STD-974 or commercial equivalent.

2.6.3 Protecting Classified Information. TDPs or parts thereof, containing classified information shall be protected and marked in accordance with the Department of Defense Industrial Security Manual for Safeguarding Classified Information (DoD 5220.22-M). When 3D TDP data is used, the solid models shall display classification marking clearly visible when the solid model is first opened.

2.6.4 Distribution Statements. All TDP documents prepared by or for the DoD will cite the appropriate distribution statement, and if applicable, export control notice, in accordance with DoD D 5230.24.

2.6.5 Contract Numbers and Contractor Identification. When required by the contract, purchase order or applicable Data Item Description (DID), TDP documents shall identify the contractor and contract number under which is prepared or delivered, or both.

2.6.5.1 Application of Contract Numbers and Contractor Identification. When contract numbers and contractor identifications are required on TDP documents, they shall be applied to document originals. The contract numbers shall meet the legibility and reproducibility requirements applicable to the document and be within the prescribed borders or margins of the document.

2.6.5.2 Contract Numbers in Data Rights Legends. The requirements of PARAGRAPHS 2.6.5 and 2.6.5.1 do not alter current Defense Federal Acquisition Regulation Supplement (DFARS) requirements for identifying contractors and prime contract numbers in rights-in-data legends. Furthermore, contractor identifications and contract numbers in rights-in-data legends do not satisfy the requirements of PARAGRAPHS 2.6.5 and 2.6.5.1.

2.6.6 Tailoring Of Specification (MIL-DTL-31000) Consideration. Program management shall work closely with the procuring activity in applying "Tailoring of the Specification" approach for providing the Government with the minimum essential engineering drawings and associated lists to satisfy a particular procurement. Consideration should be given to the following:

a. Identification of the equipment model as defined in MIL-HDBK-505. See TABLE 2-1.

b. Drawing selection as applicable in the preparation of drawings. See TABLE 2-1.

c. Acquisition of engineering drawings and associated lists to support use of the equipment. For example:

    3) Exploratory or advance models do not require delivery of engineering drawing when design evaluation or interface drawings to evaluate interrelated systems are adequate for delivery. Referred to as Conceptual Design Drawings.

    4) If procurement is an engineering development model(s), drawings to support installation, operation and maintenance should be adequate. Referred to as Developmental Design Drawings.

    5) Drawings to enable reprocurement and logistic support of the equipment without additional design recourse to the original design activity are generally required only for production programs. Referred to as Product Drawings.

2.6.6.1 Application Of Tailoring. The Contract, Purchase Order (PO) or Statement Of Work (SOW) shall be reviewed to the extent of the performance requirements to determine if "tailoring" can be expressed on the contract to impose that only the minimum essential needs be met to produce the item. Use the appropriate of TDP tailoring sheets (FIGURES 2A-1 through 2A-8a) TDP Option Selection Worksheets block "OTHER TAILORING" provided by the contract or purchase order to accomplish this task.

2.6.6.2 Responsibility For The Tailoring Of The Specification(s). While tailoring is primarily the responsibility of the procuring agency (government/military) it is none the less the responsibility of program management to accept, concur, reject or negotiate each requirement prior to acceptance of a contract or purchase order requiring engineering drawings and associated lists. TABLE 2-5 identifies these requirements, and also provides comments relating to conditions which should be considered for effective application and tailoring of the specifications. TABLE 2-5 has been updated from its previous use with DOD-D-1000 and MIL-T-31000 to reflect its use with MIL-DTL-31000. Furthermore Technical Data Package (TDP) elements requirements may be tailored by the contractor in response to a solicitation using the guidelines of MIL-HDBK-248. The results of all tailoring must be incorporated into the contract or purchase order.

2.6.6.3 Contractor Management of Technical Data Package (TDP) Elements. Prime contractors are not only responsible for reviewing any tailoring of the specifications by the procuring agency but are also responsible for preparing and managing TDPs of their own. This includes ensuring that TDPs and component parts thereof for items acquired from subcontractors and their lower-tier subcontractors meet the requirements of the government contract or purchase order.

2.6.6.4 Contractor Identification on TDP documents. When a TDP document is prepared under a Government contract, the Government contract number under which it is prepared shall appear on the first sheet of the document original. When a TDP document is delivered under a Government contract other than the one under which it was prepared, the Government contract number under which it is delivered shall appear on the first sheet of each copy submitted. If the document is prepared and submitted under the same contract, only the entry for the contract under which it is prepared is required. When a TDP document is prepared by a design activity other than the one represented by the CAGE Code assigned to the document, that design activity shall be identified on the document by its CAGE Code or name and the applicable contract numbers. Subcontractors preparing TDP documents shall be identified by CAGE Code or name and subcontract numbers to establish traceability to the applicable Government contract. When TDP documents or copies are to be delivered under a subsequent or other contract, apply contract numbers by using a rubber stamp (or equivalent) for paper copies, photographic overlays (or equivalent) for microfilm, or electronic application for digital data.

2.6.6.5 Technical Data Package (TDP). TDPs prepared in accordance with MIL-DTL-31000 shall contain engineering information sufficient for design evaluation or procurement of substantially identical items without additional design effort. If an item has been developed with no expense to the Government and/or unlimited rights-in-data have not been acquired, a TDP shall be prepared for the item which is adequate for procurement of the same item from the manufacturer. Additionally, the item must be functionally and physically interchangeable with items from other sources if other sources for a functionally and physically interchangeable item exist.

2.6.6.5.1 Requirement For A Technical Data Package (TDP). If a procuring agency (government/military) determines that they need technical data for the immediate planned or probable future use of a system or material, a TDP shall be prepared in accordance with MIL-DTL-31000 and include the appropriate DIDs for the level of disclosure for drawings, models, associated lists, data, and selection worksheets (See TABLE 2-6 and APPENDIX A). Appropriate FIGURES 1 through 8a from MIL-DTL-31000 shall be included in the contract or purchase order. See FIGURES 2A-1 through 2A-8a for copies of the TDP Options Selections Worksheets.

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GUIDE FOR APPLICATION AND TAILORING OF THE SPECIFICATION

THE CONTRACT OR PURCHASE ORDER WILL SPECIFY THE INFORMATION IN THE FIRST COLUMN FOR EACH ITEM(S) FOR THE DIFFERENT TDP ELEMENTS OF THE ENGINEERING DRAWINGS AND ASSOCIATED LISTS.

CODE:
A = REQUIREMENTS NOT SUBJECT TO TAILORING
T = REQUIREMENTS SUBJECT TO TAILORING
O = REQUIREMENTS SUBJECT TO OPTION
– = NOT APPLICABLE

REQUIREMENTS EXTRACTED FROM MIL-DTL-31000C & APPENDIX "A" PROCUREMENT REQUIREMENTS	TDP ELEMENTS	TAILORING CODE	COMMENTS
a.) Title, Number and Data of the specification.	1 2 3	A A A	• Must be specified for all procurement of drawings, models and associated lists. • Service implementing documents will not be substituted.
b.) The level of engineering required for specific items and for groups of items requiring different levels.	1 2 3	O O O	• Use guidelines set forth in HDBK - 505 (see table 2) to select the proper level of drawing to fit the hardware, program and life-cycle phase.
c.) Whether the Government Design Activity or Contractor Design Activity name, Commercial And Government Entity Code and drawing number will be placed in the title block of the engineering drawing(s) and associated list(s) or on the model.	1 2 3	O O O	• Government drawing number and Commercial And Government Entity (CAGE) Code should be specified when the original drawing is to be delivered to a DoD designated activity. When specified, the location of and the ordering instructions for obtaining government drawing numbers and government drawing forms must be specified. • Contractor drawing numbers and Commercial And Government Entity (CAGE) Code should usually be specified for procurement not meeting the criterion above and used for commercial off-the-shelf items.
d.) When Government Design Activity drawing numbers are to be assigned identify the assigning activity, and if government drawing formats are to be supplied, identify the source.	1 2 3	A A A	
e.) Whether any parts of ASME Y14.100 shall be applied to TDP ELEMENT 1.	1	T	• ASME Y14.100 requirements should not as a rule be called out for TDP ELEMENT 1 drawings if prepared prior to the application of MIL-DTL-31000C, however, a procuring agency may require that drawings and associated lists are acceptable if they meet the following: (a.) Are identified by name and address of design activity, CAGE (formally known as "FSCM identification") Code, drawing nomenclature, drawing (part) number in accordance with ASME Y14.100 and contract number. (b.) Drawing practices and symbols used (including the use of legends/explanations for non standard symbols) are such that their intent and interpretation are clear and unambiguous. (c.) Provide the necessary design disclosure information for the LEVEL for which they are furnished.
	2 3	– –	
f.) The applicable Data Item Description	1 2 3	T T T	• The applicable Data Item Description (DID), such as DI-SESS-81000, DI-SESS-81001, DI-SESS-81002, shall be listed on DD Form 1423 included in the contract or purchase order. The requirements of these DIDs may be tailored downward. • Service implementing documents are not permitted. • Addenda and appendices to the DD shall not contain more extensive or greater requirements.
g.) Whether the metric system shall be used in new design.	1 2 3	O O O	• Use of metrics per ASTM SI 10 is intended for application in design of new systems (ships. aircraft, missiles, etc.). It is more practical to design and produce "new" than convert existing designs and equipment.
h.) Whether tailoring of needs is required.	1 2 3	T T T	• A "single complete set" is normally specified for initial procurements whereas "new and revised" only is normally specified for follow on procurements. • Consideration should be given to permitting the delivery of drawing (TDP ELEMENTS) with outstanding change orders not incorporated but attached to affecting drawings. • Types and number of drawings to be delivered should be tailored to and use of hardware being procured. • Give consideration to accepting contractors advanced techniques of data preparation, (computer, plotter, etc.) and cost reduction techniques. • When procuring off-the-shelf items (Commercial procurement) consider waiving MIL-DTL-31000C.
i.) Whether Company Standards shall be accepted	1	–	
	2 3	T T	• Company Standards shall meet all the requirements of Government and Industry Specifications and standards, and shall not contain limited rights in technical data. Tailoring may also be adjusted downward as appropriate with other data submitted.
j.) Kinds of associated lists required.	1	–	
	2 3	T T	• Data lists should be specified for items destined for production. May not be required for TDP ELEMENT 2. • Parts Lists are usually generated when separate parts are required to be assembled. Usually prepared as a matter of course by most manufacturers. • Index Lists should be specified for complex equipment. • Associated Lists should be specified only to meet specific requirements.

1 = CONCEPTUAL DESIGN DRAWING (• WAS LEVEL 1)
2 = DEVELOPMENTAL DESIGN DRAWING (• WAS LEVEL 2)
3 = PRODUCTION DESIGN DRAWING (• WAS LEVEL 3)

NOTE: When ASME Y14.100 is cited, refer to PARAGRAPHS 2.1.3, 2.1.4 and 2.1.5.

TABLE 2-5 (Continued on next page.)

k.) Drawing assembly TDP ELEMENT at which associated lists will be prepared.	1	–	
	2 3	T T	● If lists are specified, the contractor must be furnished guidance on the level of assembly the list is to address.
l.) Identify whether the mono-detail system will be used.	1	–	
	2 3	T T	● The use of mono-detail or multi-detail drawings should be left to the option of the contractor unless mono-detail drawings are required to fulfill a specific requirement of the procuring agency. To change a contractor's drawing system without compelling reason may not be cost effective. ● Mono-detail drawings delineate a single part which shall define all features, dimensions, notes and references to other supporting documents to produce and procure the part. ● Multi-detail drawings delineate two (2) or more uniquely identified parts on the same drawing and shall otherwise meet the requirements of a mono-detail drawing. ● Existing multi-detail drawings should be used whenever possible without redraw.
m.) Selection of types of engineering drawings if different than those listed in this Table as a.) thru v.)	1	–	
	2 3	T T	● If the procuring agency has a special kind of drawing or will not permit the contractor to select the types of drawings necessary, then this must be set forth in the statement of work as an exception to the contractor being responsible for the selection of the TYPES of drawings and TDP ELEMENTS.
n.) Whether control drawings in accordance with MIL-STD-100 or ASME Y14.100-2004 Appendix D shall be prepared.	1	–	● Specification and Source Control Drawings are not usually required for TDP ELEMENTS.
	2 3	O O	Control Drawings are normally specified for commercial items if not covered by government or nationally recognized industry specifications and standards, or company standards and drawings prepared to the requirements of this table.
o.) Whether Parts Lists shall be integral with or separate from the drawings.	1	–	
	2 3	O O	● Unless a requirement exists for identifying whether the parts lists should be integral with or separate from the engineering drawing. The option should be left to the contractor. To change a contractor's system without compelling reason may not be cost effective.
p.) Drawing format material.	1	–	
	2 3	T T	● Specific material(s) on which originals (masters) are to be prepared should be specified only when: (a) Government drawing numbers and CAGEs are specified and (b) The originals are to be transferred to a DoD designated activity.
	1	–	
	2 3	A A	● When the material is specified, it should include the class, grade, type, applicable specification(s) etc.
q.) Quantity and type of reproduction.	1 2 3	T T T	● Nonreproducible copies normally are not specified. However, they may be suitable for use during design evaluation and in-process reviews. ● Reproducible copies, in a form other than microfilm, should be specified only when facilities for handling microfilm are not available or when a specific type document is needed for competitive or breakout procurements purposes (e.g. Stable Base Artwork).
	1 2 3	A A A	● When specified, the type, grade, class, etc. of the material must be specified.
r.) Whether microfilm is required.	1 2 3	T T T	● Microfilm and tabulating cards are normally specified when copies of the drawings and asociated lists are to be stored at a DoD designated activity. ● A data deck is normally ordered when microfilm copies are ordered and are to be stored at a DoD designated activity. ● The contractor may be given the option to submit microfiche film in lieu of microfilm.
	1 2 3	A A A	● If microfilm (microfiche) is ordered, the type, grade, class, card type, punching instructions, etc. must be specified.
s.) Whether delivery of original drawings and undimensioned drawings are required.	1 2 3	T T T	● Original (masters) drawings and undimensioned drawings should be specified only when such drawings are required for support of the system of equipment. If they are procured, an activity must be designated the responsibility to receive and maintain the original in a current status.
t.) What special packaging of originals, when ordered, is required.	1 2 3	T T T	● Dimensionally stable plastic master drawings are costly to prepare, ship or store. “Stability” is a relative concept and together with proper protection the probability of long term usefulness of stored "masters" should be equated in terms of real needs and cost. While microfilm (microfiche) blowback of undimensioned drawings may be dimensionally inadequate as "masters", they will normally provide the engineering data and sufficient dimensions that "masters" can be recreated without design or engineering effort. Consider also that different manufacturing techniques may result in "masters" being of little value as a tool when used for reprocurement.
	1 2 3	A A A	● Delivery schedule and destination must be specified. ● Special packing instructions when required shall be specified when ordering originals (masters) of engineering drawings and associated lists.
u.) Delivery schedule, and to whom the engineering drawings and supporting documents are to be delivered.	1 2 3	A A A	● Delivery of drawings must be coordinated with the entire program. To specify too early delivery will result in increased change control activity and increased costs. Too late delivery may be equally costly if it delays procurement, provisioning, etc. ● Techniques of deferred delivery and deferred ordering of drawings should be used to coincide with the actual needs of the government (2 years maximum) per ASPR/DAR 9-502 (b).
v.) Whether Standardized Military Drawings (SMDs) shall be prepared in lieu of Control Drawings.	1 2 3	– – T	● SMDs are prepared in response to MPCAG recommendation as a result of a Non-Standard Parts Approval request. ● SMDs are prepared for non-standard FSC 5962 micro-circuits (Class B, MIL-STD-883) not covered by existing MIL-STD-38510 specification sheets or DESC drawings.

TABLE 2-5 (Continued from previous page.)

MIL-DTL-31000C TECHNICAL DATA PACKAGE (TDP) DRAWINGS, MODELS, ASSOCIATED LISTS AND DATA REQUIREMENTS

CLASSIFICATION OF TDP ELEMENTS	CONCEPTUAL DESIGN	DEVELOPMENTAL DESIGN	PRODUCT	COMMERCIAL	TEST AND INSPECTION EQUIPMENT	TOOLING	SPECIFICATION COORDINATED	SPECIAL PACKAGING INSTRUCTIONS
UNLESS OTHERWISE SPECIFIED, DATA ITEM DESCRIPTION (DID) MUST BE LISTED AS APPLICABLE ON CONTRACT DATA REQUIREMENTS LIST (CDRL) DD FORM 1423 INCLUDING: • FULL COORDINATED • LIMITED COORDINATION • "USED IN LIEU OF"	DI-SESS-81001	DI-SESS-81002	DI-SESS-81000	DI-SESS-81003	DI-SESS-81004	DI-SESS-81004	APPROPRIATE DID IN MIL-STD-961 1.	APPROPRIATE DID IN MIL-STD-2073-1
APPLICABLE TDP OPTION SELECTION WORKSHEET DD FORMS FIGs.1 THROUGH 8A SUBMITTED WITH THE CONTRACT AND CITED IN THE CONTRACT DATA REQUIREMENTS LIST (CDRL) DD FORM 1423 DETERMINES WHAT TECHNICAL DRAWINGS, ASSOCIATED LISTS AND DATA ARE TO BE DELIVERED.	FIGS. 2 & 2A OF MIL-DTL-31000	FIGS. 3 & 3A OF MIL-DTL-31000	FIGS. 1 & 1A OF MIL-DTL-31000	FIG. 4 OF MIL-DTL-31000	FIGS. 5 & 5A OF MIL-DTL-31000	FIGS. 6 & 6A OF MIL-DTL-31000	FIG. 7 OF MIL-DTL-31000	FIG. 7 OF MIL-DTL-31000
EXISTING DRAWINGS, ASSOCIATED LISTS AND DATA PREPARED PRIOR TO APPLICATION OF MIL-DTL-31000 SHALL BE ACCEPTABLE WHEN SUBMITTED AS NOTED.	YES 2.	YES 2.	YES 2.	YES 2.	YES 2.	YES 2.	NA	YES 2.
DRAWING PREPARATION IN ACCORDANCE WITH ASME Y14.100 OR AS SPECIFIED.	NO 3.	YES	YES	YES 3.	YES	YES	MIL-STD 961	YES
AUTHORIZATION REQUIRED FOR USE OF CONTROL DRAWINGS.	YES 6.	YES 6.	YES 7.	NA	YES 6.	YES 6.	NA	YES 6.
USE OF COMPANY STANDARDS / SPECIFICATIONS.	YES 4.	YES 4.	4. YES 5.	NA 4.	YES 5.	YES 4.	YES 4.	YES 4.
SUBJECT TERM (KEY WORD) LISTING	CONCEPTUAL DESIGN DRAWINGS/ MODELS	DEVELOPMENTAL DESIGN DRAWINGS/ MODELS	PRODUCT DRAWINGS/ MODELS	COMMERCIAL DRAWINGS/ MODELS	SIE CALIBRATION PROCEDURES SIE DESCRIPTIVE DOCUMENTATION SIE DRAWINGS/ MODELS SIE OPERATING INSTRUCTIONS TEST REQUIREMENTS DOCUMENT	SPECIAL TOOLING DRAWING	SPECIFICATIONS COORDINATED	SPECIAL PACKAGING INSTRUCTIONS DRAWINGS

NOTE: When ASME Y14.100 is cited, refer to PARAGRAPHS 2.1.3, 2.1.4 and 2.1.5.

TABLE 2-6 (Continued on next Page.)

MIL-DTL-31000C TECHNICAL DATA PACKAGE (TDP) DRAWINGS, MODELS, ASSOCIATED LISTS AND DATA REQUIREMENTS (continued)

CLASSIFICATION OF TDP ELEMENTS	CONCEPTUAL DESIGN	DEVELOPMENTAL DESIGN	PRODUCT	COMMERCIAL	TEST AND INSPECTION EQUIPMENT	TOOLING	SPECIFICATION COORDINATED	SPECIAL PACKAGING INSTRUCTIONS
REQUIREMENTS COMMON TO ALL DRAWINGS / SPECIFICATIONS	APPLICABLE TO MIL-DTL-31000 AND THE APPROPRIATE DID AND RELATED OPTION SELECTION WORKSHEETS							
SELECTION OF DRAWINGS & MODELS	THE COMPLEXITY OF THE DESIGN SHALL DETERMINE THE TYPE AND QUANTITY OF DRAWINGS AND MODELS REQUIRED TO CONVEY THE ENGINEERING CONCEPT OR TO ENABLE THE CONTRACTOR TO FABRICATE DEVELOPMENTAL OR PROTOTYPE HARDWARE. UNLESS OTHERWISE SPECIFIED IN THE CONTRACT OR PURCHASE ORDER, THE GOVERNMENT IS RESPONSIBLE FOR THE SELECTION OF THE TYPES AND QUANTITY OF DRAWINGS, MODELS AND SPECIFICATIONS REQUIRED FOR COMPLETING TDP OPTION SELECTION WORKSHEETS AND FIGS. 1 THROUGH 8A.							
SAFEGUARDING CLASSIFIED INFORMATION	TDPs AND PARTS THEREOF CONTAINING CLASSIFIED INFORMATION SHALL BE MARKED IN ACCORDANCE WITH PROVISIONS OF DOD MANUAL 5220.22-M AND MIL-DTL-31000.							
METRIC APPLICATION	IF SPECIFIED IN THE CONTRACT OR PURCHASE ORDER, THE METRIC SYSTEM SHALL BE APPLIED IN ACCORDANCE WITH ASTM SI 10. (APPLIES TO NEW DESIGN)							
ASSOCIATED LISTS	ASSOCIATED LISTS SHALL BE PREPARED IN ACCORDANCE WITH THE INSTRUCTIONS CONTAINED IN ASME Y14.100.							
HARDWARE PACKAGING	PRESERVATION, PACKAGING AND MARKING REQUIREMENTS SHALL BE DOCUMENTED FOR EACH END ITEM AND REPAIR PART. PACKAGING REQUIREMENTS SHALL BE DOCUMENTED ON PRESERVATION AND PACKAGING DATA FORM AND THE SPECIAL PACKAGING INSTRUCTION FORMS, AS APPLICABLE IN ACCORDANCE WITH MIL-STD-2073-1. DETAIL DRAWINGS REQUIRED TO PROPERLY DESCRIBE PACKAGING REQUIREMENTS SHALL BE PREPARED IN ACCORDANCE WITH THE APPROPRIATE HEADING ABOVE FOR TDP ELEMENTS OPTION SELECTION WORKSHEETS AND FIGS. 1 THROUGH 8A.							
REFERENCE DOCUMENTS	DOCUMENTS REFERENCED ON A DRAWING OR OTHER PARTS OF THE TDP SHALL BE FURNISHED AS AN INTEGRAL PART OF THE TDP. COMPANY STANDARDS, WHEN AUTHORIZED BY THE CONTRACT OR PURCHASE ORDER, SHALL MEET THE REQUIREMENTS OF NOTES /4\ AND /5\. WHEN FIRST TIER REFERENCES DO NOT PROVIDE THE ESSENTIAL TECHNICAL INFORMATION, THE SUBORDINATE REFERENCE DOCUMENTS SHALL ALSO BE PROVIDED TO MEET THE TECHNICAL DISCLOSURE REQUIREMENTS. HOWEVER, TECHNICAL MANUALS, PROCEDURE MANUALS, MAINTENANCE MANUALS AND COMPANY DRAFTING MANUALS ARE NOT CONSIDERED REFERENCE DOCUMENTS.							
ITEMS COVERED BY GOVERNMENT AND NON-GOVERNMENT SPECIFICATIONS AND STANDARDS (ASME Y14.100)	EXCEPT FOR COMMERCIAL DRAWINGS COVERED BY DID DI-SESS-81003C AND FIG.4 OF TDP OPTION SELECTION WORK-SHEET, TDPs AND COMPONENT PARTS THEREOF, SHALL NOT BE PREPARED OR SUBMITTED FOR REQUIREMENTS THAT ARE DEFINED BY GOVERNMENT OR NATIONALLY RECOGNIZED INDUSTRY ASSOCIATION SPECIFICATIONS OR STANDARDS.							
COMPANY STANDARDS /A\	IF A COMPANY STANDARD IS TO BE CITED IN A TDP AS A REFERENCE DOCUMENT (EXCEPT FOR COMMERCIAL DRAWINGS), IT SHALL MEET THE REQUIREMENTS IN NOTE /A\.							
LEGIBILITY AND REPRODUCIBILTY	LEGIBILITY AND REPRODUCIBILITY IN ACCORDANCE WITH MIL-PRF-5480.							

TABLE 2-6 (Continued from previous page); (Continued on next page).

MIL-DTL-31000C TECHNICAL DATA PACKAGE (TDP) DRAWINGS, MODELS, ASSOCIATED LISTS AND DATA REQUIREMENTS (continued)

REQUIREMENTS COMMON TO ALL DRAWINGS / MODELS / SPECIFICATIONS	APPLICABLE TO MIL-DTL-31000 AND THE APPROPRIATE DID AND RELATED OPTION SELECTION WORKSHEETS (continued)
REPRODUCTIONS △B	REPRODUCTIONS SHALL BE AS SPECIFIED ON THE "OPTION SELECTION WORKSHEET" FIGURES 1 THROUGH 7. SEE APPENDIX A, FIGURES 2A -1 THROUGH 2A -8A
GOVERNMENT VERIFICATION	MIL-HDBK-288 MAY BE USED AS A GUIDE FOR TDP VERIFICATION
DELIVERY MEDIA AND PACKAGING OF THE TECHNICAL DATA PACKAGE (TDP) △C	DOCUMENT MEDIA PACKAGING SHALL BE AS REQUIRED BY THE SPECIFICATION OR STANDARD CONTROLLING THE DELIVERABLE MEDIA CITED IN THE CONTRACT. e.g. "MIL-DTL-31000 SELECTION WORKSHEETS" FIGURES 1 THROUGH 8A. SEE APPENDIX A, FIGURES 2A -1 THROUGH 2A -8A.
ACQUISITION REQUIREMENTS	ACQUISITION DOCUMENTS MUST SPECIFY THE FOLLOWING: a. TITLE NUMBER AND DATE OF MIL-DTL-31000 AND RELATED DIDs AND OPTION SELECTION WORKSHEETS WILL BE ACCOMPLISHED THROUGH THE USE OF APPENDIX A GUIDANCE OF MIL-DTL-31000. b. THE SPECIFIC ISSUE OF INDIVIDUAL DOCUMENTS REFERENCED IN THE ASSIST DATABASE. c. THE APPLICABLE "OPTION SELECTION WORKSHEETS" (REPRODUCED, COMPLETED AND INCLUDED WITH THE CONTRACT). SEE APPENDIX A, FIGURES 2A -1 THROUGH 2A -8A.
DISTRIBUTION STATEMENTS	ALL DRAWING AND SPECIFICATION TDP ELEMENTS PREPARED BY OR FOR DoD WILL CITE ON THE CONTRACT REQUIREMENT THE APPROPRIATE DISTRIBUTION STATEMENT, AND IF APPLICABLE, EXPORT CONTROL NOTICE, IN ACCORDANCE WITH DOD DIRECTIVE 5230.24. SEE SECTION 6 WITHIN THIS DRM.
TDP REQUIREMENTS PASS THROUGH TO SUBCONTRACTORS	PRIME CONTRACTORS AND THEIR SUBCONTRACTORS SHALL IMPOSE THE SAME REQUIREMENTS FOR TDP PREPARATION AND MANAGEMENT AS WERE IMPOSED ON THEM BY THE GOVERNMENT.
CAGE CODE IDENTIFICATION	CAGE CODE NUMBERS WILL BE USED TO IDENTIFY THE CONTRACTOR'S DOCUMENTS WHEN SPECIFIED ON TDP OPTION SELECTION WORKSHEETS FIGS. 1 THROUGH 8A. SEE APPENDIX A FIGURES 2A -1 THROUGH 2A - 8A. INCORPORATED IN THE CONTRACT OR PURCHASE ORDER.

NOTES: UNLESS OTHERWISE SPECIFIED

△A **COMPANY STANDARD, REQUIREMENTS OF.**

a. it shall be identified by name and address of the issuing company, CAGE code, document title and number, and delivery contract number.

b. It is furnished with unlimited rights.

c. It shall provide design disclosure information adequate for open competition.

d. It shall as a minimum, satisfy the same procurement requirements as a Vendor Control Drawing (VICD) when it defines a vendor item.

e. Where nonstandard drawing practices and symbols are used they shall have explanations provided on the drawing or in a document referenced on the drawing.

f. It shall meet the legibility and reproducibility requirements of MIL-PRF-5480 and JEDMICS.

Note: In those cases where a company standard includes the limited rights legend, a Government document will be developed to provide form, fit and function data (DFAR 227.472 - 5 (d)(2)).

TABLE 2-6 (Continued from previous page); (Continued on next page).

TABLE 2-6 (Continued from previous page.)

B REPRODUCTIONS, DELIVERABLE MEDIA.

a. **Document Originals.** When originals are a contractual delivery requirement, packaging shall conform to MIL-PRF-5480, Class 3, Type A.

b. **Reproducible and Non-Reproducible Copy.** When the delivery of reproducible and non-reproducible copies of drawings is a contractual requirement, packaging shall conform to MIL-PRF-5480, Class 1 or 2, as applicable, Type B.

c. **Magnetic Media.** When the delivery of magnetic media is a contractual requirement, the magnetic tape and packaging shall comply with the contract.

d. **Magnetic Media Exchange.** Automated Interchange of Technical Information shall conform to MIL-STD-1840.

e. **Aperture Cards.** When the delivery of aperture cards containing microfilm is a contractual requirement, packaging shall conform to MIL-M-38761. Note: MIL-M-38761 is inactive for new designs. New programs for which microfilming and photographing of engineering/technical data and related documents is required shall utilize digital media criteria based on current Joint Engineering Data Management and Information Control System (JEDMICS) requirements.

f. **Roll Microfilm.** When the delivery of roll microfilm is a contractual requirement, packaging shall conform to MIL-M-9868. Note: MIL-M-9868 is inactive for new designs. New programs for which microfilming and photographing of engineering/technical data and related documents is required shall utilize digital media criteria based on current Joint Engineering Data Management and Information Control System (JEDMICS) requirements.

g. **Undimensioned Drawings.** When the delivery of undimensioned drawings is a contractual requirement, packaging shall conform to MIL-PRF-5480, Class 3, Type A.

C DELIVERY MEDIA PACKAGING OF TECHNICAL DATA PACKAGE (TDP).

a. **Document Originals.** When originals are a contractual delivery requirement, packaging shall conform to MIL-PRF-5480, Class 3, Type A.

b. **Reproducible and Non-Producible Copy.** When delivery of reproducible and non-producible copies of drawings is a contractual requirement, packaging shall conform to MIL-PRF-5480, Class 1 or 2, as applicable, Type B.

c. **Magnetic Media.** When the delivery of magnetic media is a contractual requirement, packaging shall comply with contract requirements.

d. **Aperture Cards.** When the delivery of aperture cards containing microfilm is a contractual requirement, packaging shall conform to MIL-M-38761. Note: MIL-M-38761 is inactive for new designs. New programs for which microfilming and photographing of engineering/technical data and related documents is required shall utilize digital media criteria based on current Joint Engineering Data Management and Information Control System (JEDMICS) requirements.

e. **Roll Microfilm.** When the delivery of roll microfilm is a contractual requirement, packaging shall conform to MIL-M-9868. Note: MIL-M-9868 is inactive for new designs. New programs for which microfilming and photographing of engineering/technical data and related documents is required shall utilize digital media criteria based on current Joint Engineering Data Management and Information Control System (JEDMICS) requirements.

f. **Undimensioned Drawings.** When the delivery of undimensioned drawings is a contractual requirement, packaging shall conform to MIL-PRF-5480, Class 3, Type A.

TABLE 2-6 (Continued from previous page.)

1 SPECIFICATION CLASSIFICATION, TYPE AND FORM.

Classification	Type	Format
Coordinated MIL-STD-961	Fully coordinated Limited coordinated "USED IN LIEU OF"	*Government APPROPRIATE DIDs DI-SDMP-81464 DI-SDMP-81465 DI-SDMP-81493

*As specified on the TDP Selection Worksheet Figure 7 of MIL-DTL-31000C. See APPENDIX A FIGURE 2A-7.

2 EXISTING DATA. Existing data shall be submitted in lieu of new data if it meets all the following criteria:

a. It and referenced documents are furnished with rights-in-data consistent with the contract stipulations regarding data rights.

b. It is furnished with no increase in cost to the Government.

c. It does not reference Company Standards unless the documents and the referenced documents therein are provided as a part of the TDP.

d. It meets the legibility and reproducibility requirements of MIL-PRF-5480, MIL-M-9868 and JEDMICS.

e. It meets the disclosure requirements of the applicable associated detail specification(s).

f. Non-standard drawing practices or symbols are employed and explanations are provided on the drawing or in a document referenced on the drawing.

g. Documents are identified by Commercial And Government Entity (CAGE) Code, document title and number, and applicable contract numbers(s).

h. Revision of existing documents that can be revised to meet the requirements of the applicable detail specification shall be revised and furnished in lieu of preparing new documents provided the conform to the above.

3 DRAWING PREPARATION. The requirements of ASME Y14.100 do not apply unless otherwise specified in the contract or purchase order.

4 COMPANY STANDARDS, USE OF. Acceptable on "Design Drawings" provided:

a. They are identified by CAGE Code, document title and number, and contract number.

b. They do not duplicate existing Government specifications / standards or nationally recognized industry association specifications / standards.

c. They contain the necessary information for "Design Drawings".

d. They have legibility and reproducibility in accordance with MIL-PRF-5480.

e. All documents referenced in a Company Standard shall also be supplied and shall meet the same requirements as the Company Standard.

TABLE 2-6 (Continued from previous page.)

△5 **COMPANY STANDARDS/SPECIFICATIONS, USE OF.** Subject to Government approval.

△6 **CONTROL DRAWINGS.** Control Drawings as defined in ASME Y14.100 shall not be prepared as part of design drawings unless otherwise specified in the contract or purchase order.

△7 **CONTROL DRAWINGS, PREPARATION OF.** Control drawings approved by the procuring activity shall be prepared in those instances where on of the following applies:

a. Vendor or commercial items are approved for use to meet the Government's requirements in the design, and are not covered by Government or nationally recognized industry associated standards and specifications.

b. Items are not developed at Government expense.

c. Items which the Government has not acquired unlimited rights to the data.

d. Existing items are altered for use.

e. Existing items must undergo additional selection criteria other than that imposed by the designer of the item.

f. The physical and functional interfaces affect the design or operation of co-functioning items.

NOTE: See SECTION 4 for further details on Vendor Item Control Drawing (VICD) (Formerly Specification Control Drawing (SCD)) and Source Control Drawings (SOCD) (Formerly SCD). Also Altered and Selected Item Drawings included.

2.6.6.5.2 Grouping of Related Documents Required for Preparing a Technical Data Package (TDP). A TDP shall be prepared in accordance with MIL-DTL-31000C. The prime contractor shall levy the same contract requirements for the TDP on the subcontractor as those levied by the Government on the prime contractor. Drawings and associated lists shall be selected from the following:

a. **Conceptual Design Drawings/Models.** Conceptual design drawings/models shall be in accordance with MIL-DTL-31000C, the detail requirements of DI-SESS-81001C and FIGURES 2 and 2a. See TABLE 2-6 and APPENDIX A, FIGURES 2A-2 and 2A-2a.

b. **Developmental Design Drawings/Models.** Development design drawings/models shall be in accordance with MIL-DTL-31000C, the detail requirements of DI-SESS-81002D and FIGURES 3 and 3a. See TABLE 2-6 and APPENDIX A, FIGURES 2A-3 and 2A-3a.

c. **Product Drawings/Models.** Product drawings/models shall be in accordance with MIL-DTL-31000C, the detail requirements of DI-SESS-81000C and FIGURES 1 and 1a. See TABLE 2-6 and APPENDIX A, FIGURES 2A-1 and 2A-1a.

d. **Commercial Drawings/Models.** Commercial drawings/models shall be in accordance with MIL-DTL-31000C, the detail requirements of DI-SESS-81003C and FIGURE 4. See TABLE 2-6 and APPENDIX A, FIGURE 2A-4.

e. **Special Inspection Equipment Drawings/Models (SIE).** Special inspection drawings/models shall be in accordance with MIL-DTL-31000C, the detail requirements of DI-SESS-81004C and FIGURES 5 and 5a. See TABLE 2-6 and APPENDIX A, FIGURES 2A-5 and 2A-5a.

f. **Special Tooling Drawings.** Special tooling drawings/models shall be prepared in accordance with MIL-DTL-31000C, the detail requirements of DI-SESS-81008C and FIGURES 6 and 6a. See TABLE 2-6 and APPENDIX A, FIGURES 2A-6 and 2A-6a.

g. **Specifications.** Specifications shall be prepared in accordance with MIL-DTL-31000C and the detail requirements of applicable DIDS in MIL-STD-961 and FIGURE 7. See TABLE 2-6 and APPENDIX A FIGURE 2A-7.

h. **Special Packaging Instructions Drawings/Models.** Special tooling drawings/models shall be prepared in accordance with MIL-DTL-31000C and FIGURES 8 and 8a. See TABLE 2-6 and APPENDIX A, FIGURES 2A-8 and 2A-8a.

2.6.7 Contractual Interpretation Of Frequently Used Common Words And Phrases On Drawings/Specifications.

a. Referenced documents on drawings/specifications shall be cited by only one of the following methods throughout the drawing:

   (1) "per --------"

   (2) "conforming to ----------"

   (3) "as specified in ----------"

   (4) "in accordance with ----------" or "IAW"

b. **"Unless otherwise specified."** This phrase, when used, shall always precede the beginning of the note or sentence that makes the requirement. This phrase shall be used only when it is possible to clarify its meaning by providing a reference on the drawing or to another document that clearly specifies the exceptions.

2.6.8 Contract Binding or Non-binding Words.

a. **"Shall"** Expresses a provision that is binding. Occasionally "Must" is used

b. **"Will"** Expresses a declaration of purpose in cases when simple futurity is intended e.g. Power for the motor will be supplied by the auxiliary generator.

c. "**Should" and "May"** These words are used to express nonmandatory provisions

d. **"And/or", "etc.", "e.g."** and "i.e." Indefinite terms shall not be used on drawings.

2.6.9 Engineering And Engineering Management.

2.6.9.1 Responsible Engineer. The responsible engineer provides sufficient information such as: sketches, layouts, etc., or other pertinent instructions necessary for drafting to complete the assigned task.

2.6.9.2 Design Responsibility. Engineers are responsible for all features of design.

2.6.9.3 Design Comments. Engineers' comments on check prints may be in any color other than those reserved for the checkers (red, yellow and blue).

2.6.9.4 Design Approval. When the responsible engineer affixes his or her signature to a drawing, the signature certifies that the drawing satisfies design requirements.

2.6.10 Drafting And Drafting Management.

2.6.10.1 Drawing Preparation. The Drafting Group is responsible for the preparation of drawings and the method of presentation used to adequately describe the engineer's design requirements. Drafting Management is responsible for the interpretation of drawing standards, related specifications and specified drawing requirements, as well as the control of all original drawings in process.

2.6.10.2 Drawing Interpretation. Drawings must be clear, concise, complete, and capable of only one interpretation. The drawing should portray the final product without specifying the method of manufacture, unless it is required for clarity or is a specific process necessary to meet the design requirements.

2.6.10.3 Draftsperson Responsibility. Each draftsperson should thoroughly review his/her drawings to eliminate errors or omissions prior to submitting them for approval.

2.6.10.4 Drawings Submitted For Check. Applicable layouts, dimensional and other calculations, catalogs, design memoranda, reference prints, and other pertinent data should be provided to the checker together with the check prints.

2.6.10.5 Drawings Returned From Check. Correction of the drawing after checking should be made by the original draftsperson in order to avoid making the same or similar errors in the future. Final correction of the drawing should take precedence over other work. Design changes requested by the checker should be coordinated with the responsible engineer, prior to incorporation into the drawing.

2.6.10.6 Drawings With Post Check Changes. Additional changes made while correcting an unreleased drawing may be marked on the check print in a color other than red, yellow or blue (reserved for checkers) and initialed by the responsible engineer or draftsman. The corrected drawing and marked-up check print are resubmitted to the checker to verify all changes.

2.6.11 Checking And Checking Management.

2.6.11.1 Drawing Fulfillment. The checker shall ensure that the documentation requirements specified on the Program Directive, Work Order, etc., have been fulfilled.

2.6.11.2 Drawing Integrity. The checker shall verify the dimensional accuracy and completeness of drawings, and ensure conformance to the standard drafting procedures of applicable specifications and make certain that all documents called out on a drawing are released and currently in effect.

2.6.11.3 Checker's Approval. The checker's approval of correct dimensions, callouts, notes, etc., shall be indicated by a yellow check (✓) or line drawn through the applicable data.

2.6.11.4 Checker's Rejection. Incorrect data shall be either circled or marked in red and the correct information (if stated) located adjacent to the point in question. For extensive changes, a written note in red stating: "REVISE PER" (provide suitable explanation and references to support reasons for change).

2.6.11.5 Checker's Suggestions. Checker's suggestions, general comments on features of design, simplification possibilities, or notes for checker's own use may be shown in blue or black.

2.6.11.6 Checker's Records. The checking group should maintain a file of check prints for a minimum of six months to attest the information that has been checked and approved.

2.6.12 Checking Policy.

2.6.12.1 Check Prints. The engineering drawing checker shall be provided with a check print to convey his corrections and verifications. Using a check print avoids defacing the drawing and provides a record from which the checker can make a final check. The engineering drawing checker's print is the only one stamped "Check Print".

2.6.12.2 Check Print Routing. Check prints shall be returned to the checking department after the drawing is released.

2.6.12.3 Drawing Change Control Prior To Release. Drawings or change documents shall not be changed after the checker's approval, prior to release, without his cognizance.

2.6.13 Approval Requirements. Signature and initials are required on drawings to ensure the responsibility of those individuals who have reviewed the drawings and attest that their content fulfill contract requirements. Approval shall be signified in the appropriate signature block on the original by signature or approval indicator established by the design activity. An approval indicator may be any symbol adopted by the design activity. A signature or approval indicator may be either hand written or electronically affixed as long as it is unique to an individual, capable of verification, and under the individual's sole control.

2.6.13.1 "DRAWN BY" Approval Initials. The initials of the person who prepared the original drawing shall appear in the "DRAWN" Block.

2.6.13.2 "CHECKER'S" Approval Initials. Only an authorized checker's initials shall appear in the "CHECKER" Block.

2.6.13.3 "Engineer's" Approval Signature. The drawing shall be approved by the responsible engineer's signature in the "ENGR" Block and drafter's initials before a drawing check is initiated.

2.6.13.4 "DRAWING ACTIVITY" Signature. The signature of the authorized originating design activity representative responsible for drawing integrity and completeness shall appear in the "DRAWING ACTIVITY" Block when required by contract.

2.6.13.5 "DESIGN" Approval Signature. The signature of the authorized Government Design Activity representative responsible for design technical adequacy and conformance to the end item requirements shall appear in the "DESIGN" Block when required by contract.

2.6.13.6 "MATERIAL AND PROCESS" Engineer's Approval Initials. The initials of the authorized Government or contractor representative (or both) shall appear in the "MATERIAL PROCESS" Block, when applicable, to ensure adequacy of materials, heat treatment mechanical properties and protective finish.

2.6.13.7 "OTHER" Approval Signatures Or Initials. Additional approvals may be applicable or required by contract and may be added to supplemental blocks adjacent to the Title Block. (SEE SECTION 6).

2.6.13.8 Company Part And Design Standard Drawings Approvals. Company standard part drawings and/or standard design drawings shall be checked the same as product drawings.

2.6.13.9 Computer Aided Drafting (CAD) Prepared Drawing and Model Approval Signatures and Initials. Unless otherwise specified, the design activity shall have an effective verification and approval, or electronic authorization system for the detailed examination and review for technical accuracy of all engineering drawings, models (as applicable), associated lists, data bases, including microfilm or data transmission and referenced documents. This is normally a function of Configuration Management and the controls set forth by the individual design activity's procedures and methods of approving engineering drawings and associated documents. The system used shall be documented and subject to review for approval or disapproval by the Government.

2.6.13.10 Aperture Card Approval Signatures And Initials. The same approval requirements for drawing form title blocks apply to aperture cards. For aperture card approval block format, see SECTION 6.

2.6.14 Approval And Use Of Engineering Drawings Other Than Those Designed By The Design Activity.

2.6.14.1 Vendor Item Control Drawing (VICD). (Formerly referred to as Specification Control Drawing (SCD)). A vendor item control drawing (See SECTION 4) shall only be prepared for vendor-developed items when they are advertised or cataloged as available to the trade or the public on an unrestricted basis or procurable on order from a specialized segment of industry. Vendor item control drawings shall not be tailored to the characteristics of a single vendor's product to the exclusion of other equally suitable products. Conversely, vendor item control drawings shall not be so broad as to permit acceptance of products which will not perform in the equipment under all required conditions. Vendor item control drawings shall not be prepared for items developed at government expense.

2.6.14.2 Source Control Drawings (SOCD). (Formerly identified SCD). A source control drawing (See SECTION 4) shall be prepared only when the technological or other factors beyond the control of the contractor are evident which prevent the determination of performance, reliability and configuration control requirements needed to prepare a specification control drawing. Source control drawings shall not be prepared for items developed at government expense.

2.6.14.3 Item Covered By Existing Specifications And Standards. Engineering drawings shall not be prepared or submitted for items that are defined by government specifications, standards or nationally recognized industry association specifications or standards.

2.6.14.4 Company Standard. A Company Standard is a document that establishes the issuing company's engineering and technical information for describing items, materials, processes, methods, design and engineering practices without limited rights in technical data. All other requirements for their preparation shall be governed by MIL-DTL-31000 Developmental or Production design drawings and shall not be prepared or submitted for items that are identified by government or industry standards.

2.6.14.5 Reference Documents. Contractor documents referenced on engineering drawings are considered reference documents and shall be furnished as part of the level ordered as an integral part of the engineering drawing package. When first tier references do not provide the essential technical information, the contractor's subordinate reference shall be provided to the extent necessary to meet the technical disclosure requirements of the level ordered. However, technical manuals, procedural manuals, maintenance manuals and company drafting manuals are not considered reference documents.

2.6.14.6 Supplier Drawing. A Supplier drawing is acquired from a cognizant design activity, manufacturer, wholesaler, or agent when required for the performance of the contract.

NOTE: This DRM will identify vendors supplying commercial items and vendor-developed items as "SUPPLIERS" and those supplying services and/or items fabricated to company design drawings as "SUBCONTRACTORS".

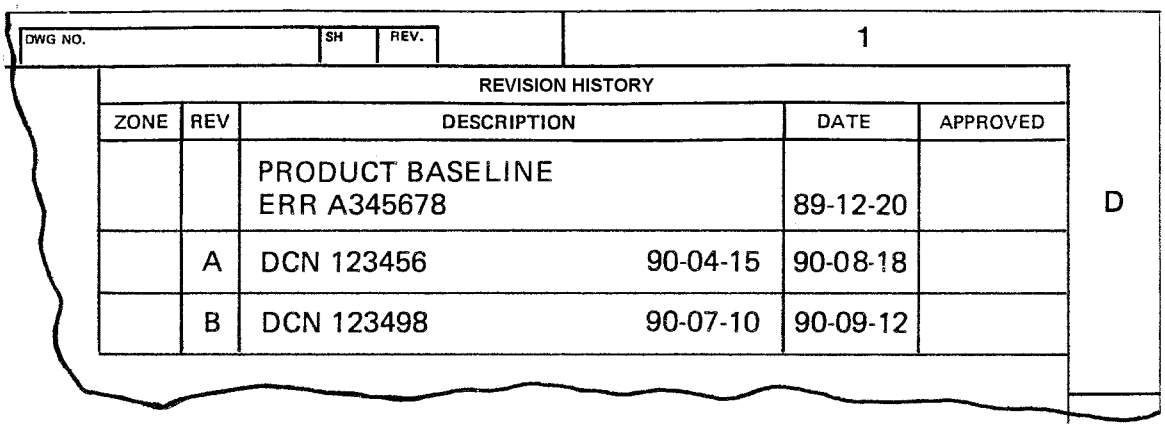
2.6.14.7 Supplier-Developed Item. Supplier-developed items are those products of industries which normally provide customer application engineering services for a commercial product line. These products are commercially available from a specialized segment of an industry. Typical examples of such items are: special motors, synchros, transformers, potentiometers, hydraulic valves, carburetors, potted servoamplifiers, keyboards and tape readers.

2.6.14.8 Redrawing Supplier Data On Company Format. In the event it becomes necessary to document a supplier's item(s) on other than a control drawing, altered or selected item drawing, the written permission of the supplier and the approval by the company's legal department is recommended prior to preparing the drawing.

2.7 ENGINEERING DOCUMENT RELEASE.

2.7.1 Release Of An Engineering Document From Design To Manufacturing. The process of transferring custody of an engineering document, or change thereto, from the preparing activity to a divisional control activity which is responsible for its production, distribution, storage, and maintenance of change history records.

2.7.2 PRODUCT BASELINE RELEASE. A product drawing classified in MIL-DTL-31000 as a Technical Data Package (TDP) element should be identified with a Product Baseline release located in the Revision Block and subsequent to formal engineering change revision letters. See FIGURE 2-1.



ERR = Engineering Release Record (A Configuration Management Function.)
DCN = Drawing Change Notice

PRODUCT BASELINE RELEASE.
FIGURE 2-1

2.8 DUPLICATE DRAWINGS.

2.8.1 Duplicate Drawing Restrictions. Two or more active identical drawings are not permitted.

2.8.2 Duplicate Drawing For Replacement. A duplicate drawing is permitted only to replace a worn or otherwise non-maintainable original. Upon verification of the duplicate, the original shall be destroyed and the duplicate will take its place. SEE SECTION 23.

2.8.3 Duplicate Drawing For Point Of Departure. A duplicate drawing may be used as a point of departure upon which changes are made to produce a new original drawing which will have a new identity and be separately maintained. See SECTION 23.

2.9 GOVERNMENT AND DEPARTMENT OF DEFENSE CONTRACTS.

2-9.1 Selection Of Specifications And Standards. Excluding construction or architect-service, the Department of Defense generally controls the selection of specifications and standards for the design of items, materials and processes.

2.9.2 Omission Of Selection Of Specifications And Standards. Whenever a contract does not explicitly state specifications or standards to be used, the choice of an applicable specification or standard is the responsibility of the design activity.

2.9.3 Transition from DOD-D-1000 or MIL-T-47500 to MIL-DTL-31000. If contractor drawings and commercial practices are acceptable and consistent with the contractual, design, and logistics intent, drawings in support of new programs may be required to conform to ASME Y14.100. The degree of conformance to ASME Y14.100 is a contractual issue guided for the most part by the program objectives. If there is a requirement for DoD unique practices, the Appendices A thru E of ASME Y14.100-2004, in part or in whole, shall be used in conjunction with ASME Y14.100. Requirements for format of specific drawing types (previously Chapter 200, MIL-STD-100) should refer to ASME Y14.24, requirements for associated lists (previously Chapter 700, MIL-STD-100) should make reference to ASME Y14.34M and requirements for revising Engineering Drawings and Associated Documents (previously Chapter 400, MIL-STD-100) should make reference to ASME Y14.35M, Although ASME Y14.24, ASME Y14.34M and ASME Y14.35M are referenced documents in ASME Y14.100, direct reference in response to the needed requirement is preferred.

2.9.4 Use of Government Standard (NGS) When a Non- Government Standard Does Not Exist. Broad areas of the subject matter of MIL-STD-100 have been incorporated into non-Government standard ASME Y14.100 as replacements. However, some needed NGSs are not available or fail to support basic document preparation requirements. To overcome this condition the DoD Program Office and buying commands may invoke a MIL-SPEC or MIL-STD as needed – the need to prepare a "Waiver" for approval to use a government specification or standard has been eliminated. Past issues of documents, such as superseded revisions to MIL-STD-100, may be used in attempting to establish the needed detail for entry into the statement of work. The now unnecessary "Waiver" form from the DRM 10th edition has been moved to non Mandatory APPENDIX C, FIGURE 2C-1. Also see PREFACE 1 to SECTION 2 for changes that led to the elimination of waiver requirements.

2.9.5 Alternative Method to Avoid Use of a Government Standard When a Replacement Non-Government Standard (NGS) Does Not Exist.

a. Document the needed requirements directly in the Statement of Work (SoW).

b. An existing government specification or standard can be cited by the buying commands for guidance only, or the contractor may submit the same request when a suitable replacement non-government standard does not yet exist.

APPENDIX A

TDP OPTION SELECTION WORKSHEET PRODUCT DRAWINGS AND ASSOCIATED LISTS			
A. CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.

1. DELIVERABLE PRODUCT *(X and complete as applicable .)*							
	a. ORIGINALS (Specify current design activity's full size reproducible drawing or digital data file(s) on which is kept the revision record recognized as official) (Identify specification, type, grade and class, etc.)						
	b. REPRODUCTIONS (Identify specifications, type, grade and class, etc., and quantity of each)						
	c. DIGITAL DATA (Identify specification, exchange media, etc. and specify original (master) or copy)						
2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)							
	a. CONTRACTOR						
	b. GOVERNMENT Complete (1) and (2) or (3)						
(1) Use CAGE Code		(2) Use Document Numbers			(3) To Be Assigned By:		
3. DRAWING FORMATS AND DRAWING FORMS (X one and complete as applicable)							
	a. CONTRACTOR FORMATS. Forms to be supplied by contractor.						
	b. GOVERNMENT FORMATS. Forms to be supplied by contractor. Samples supplied by (Specify)						
	c. GOVERNMENT FORMATS. Forms to be supplied as Government Furnished Material by (Specify)						
4. TYPES OF DRAWINGS SELECTION (X one)							
	a. CONTRACTOR SELECTS				b. GOVERNMENT SELECTS (Specify in Item 8)		
5. ASSOCIATED LISTS (X and complete as applicable)							
	a. PARTS LISTS (X one)		(1) Integral		(2) Separate		
	b. DATA LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	c. INDEX LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	d. WIRING LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	e. INDENTURED DATA LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	f. APPLICATION LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
6. DETAILS (X one)							
	a. MULTIDETAIL DRAWINGS PERMITTED				b. MONODETAIL DRAWINGS MANDATORY		
7. APPLICABILITY OF STANDARDS. The following Standards apply: (X as applicable)							
	a. ASME Y14.100, ENGINEERING DRAWING PRACTICES (COMMERCIAL)	B. C. D. E.	b. ASME Y14.100, WITH APPENDICES B, C, D, E		c. ASME Y14.34 ASSOCIATED LISTS		d. EXISTING STANDARDS DO NOT APPLY
8. OTHER TAILORING (Attach additional sheets as necessary)							

FIGURE 1 of MIL-DTL-31000C TDP OPTION SELECTION WORKSHEET:
PRODUCT DRAWINGS AND ASSOCIATED LISTS
FIGURE 2A-1

APPENDIX A

TDP OPTION SELECTION WORKSHEET PRODUCT SOLID MODELS			
A. CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.

1. DELIVERABLE PRODUCT (and complete X as applicable.)	
	a. 3-DIMENSIONAL SOLID MODELS (Specify format(s) (Native CAD, STEP, AP, IGES, etc.)
	b.3-D SOLID MODELS ASSOCIATED DRAWINGS (If 2-D drawings based on 3-D solid models are required, indicate here and fill out TDPOPTION SELECTION WORKSHEET-PRODUCT DRAWINGS AND ASSOCIATED LIST (FIGURE 1.)
2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)	
	a. CONTRACTOR
	b. GOVERNMENT (Complete (1) and (2) or (3)

(1) Use CAGE Code	(2) Use Document Numbers	(3) To Be Assigned By:

3. 3-D SOLID MODEL REQUIREMENTS (X one and complete as applicable)	
	a. CONTRACTOR FORMAT. Models built to contractor requirements.
	b. GOVERNMENT FORMAT. 3-D solid models built to government requirements and formats. (Specify government modeling applicable specifications or SOW paragraphs.)

4. APPLICABILITY OF STANDARDS (Apply an X as applicable)			
	a. ASME Y14.41, Digital Product Definition Data Practices		b. Existing Standards Do Not Apply

5. OTHER TAILORING (Attach additional sheets as necessary)

FIGURE 1A of MIL-DTL-31000C TDP OPTION SELECTION WORKSHEET:
PRODUCT SOLID MODELS
FIGURE 2A-1a

APPENDIX A

TDP OPTION SELECTION WORKSHEET CONCEPTUAL DESIGN DRAWINGS			
A. CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.

1. DELIVERABLE PRODUCT (and complete X as applicable .)	
	a. ORIGINALS (Specify current design activity's full size reproducible drawing or digital data file(s) on which is kept the revision record recognized as official) (Identify specification, type, grade and class, etc.)
	b. REPRODUCTIONS (Identify specifications, type, grade and class, etc., and quantity of each)
	c. DIGITAL DATA (Identify specification, exchange media, etc. and specify original (master) or copy)
2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)	
	a. CONTRACTOR
	b. GOVERNMENT (Complete (1) and (2) or (3)

(1) Use CAGE Code	(2) Use Document Numbers	(3) To Be Assigned By:

3. DRAWING FORMATS AND DRAWING FORMS (X one and complete as applicable)	
	a. CONTRACTOR FORMATS. Forms to be supplied by contractor.
	b. GOVERNMENT FORMATS. Forms to be supplied by contractor. Samples supplied by (Specify)
	c. GOVERNMENT FORMATS. Forms to be supplied as Government Furnished Material by (Specify)
4. TYPES OF DRAWINGS SELECTION (X one)	
	a. CONTRACTOR SELECTS
	b. GOVERNMENT SELECTS (Specify in Item 8)
5. APPLICABILITY OF STANDARDS. The following Standards apply: (X as applicable)	

	a. ASME Y14.100, ENGINEERING DRAWING PRACTICES (COMMERCIAL)	B. C. D. E.	b. ASME Y14.100, WITH APPENDICES B, C, D, E		c. ASME Y14.34 ASSOCIATED LISTS		d. EXISTING STANDARDS DO NOT APPLY

6. OTHER TAILORING (Attach additional sheets as necessary)

FIGURE 2 of MIL-DTL-31000C TDP OPTION SELECTION WORKSHEET:
CONCEPTUAL DESIGN DRAWINGS
FIGURE 2A-2

APPENDIX A

TDP OPTION SELECTION WORKSHEET CONCEPTUAL DESIGN SOLID MODELS			
A. CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.
1. DELIVERABLE PRODUCT (and complete X as applicable.)			
	a. 3-DIMENSIONAL SOLID MODELS (Specify format(s) (Native CAD, STEP, AP. IGES, etc.)		
	b.3-D SOLID MODELS ASSOCIATED DRAWINGS (If 2-D drawings based on 3-D solid models are required, indicate here and fill out TDPOPTION SELECTION WORKSHEET- CONCEPTUAL DESIGN DRAWINGS AND ASSOCIATED LIST (FIGURE 2.)		
2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)			
	a. CONTRACTOR		
	b. GOVERNMENT (Complete (1) and (2) or (3)		
(1) Use CAGE Code	(2) Use Document Numbers	(3) To Be Assigned By:	
3. 3-D SOLID MODEL REQUIREMENTS (X one and complete as applicable)			
	a. CONTRACTOR FORMAT. Models built to contractor requirements.		
	b. GOVERNMENT FORMAT. 3-D solid models built to government requirements and formats. (Specify government modeling applicable specifications or SOW paragraphs.)		
4. APPLICABILITY OF STANDARDS. (Apply an X as applicable)			
	a. ASME Y14.41, Digital Product Definition Data Practices		**b. Existing Standards Do Not Apply**
5. OTHER TAILORING (Attach additional sheets as necessary)			

FIGURE 2A of MIL-DTL-31000C TDP OPTION SELECTION WORKSHEET:
CONCEPTUAL DESIGN SOLID MODELS
FIGURE 2A-2a

APPENDIX A

TDP OPTION SELECTION WORKSHEET DEVELOPMENTAL DESIGN DRAWINGS AND ASSOCIATED LISTS								
A. CONTRACT NO.		B. EXHIBIT/ATTACHMENT NO.		C. CLIN		D. CDRL DATA ITEM NO.		
1. DELIVERABLE PRODUCT *(and complete X as applicable .)*								
	a. ORIGINALS (Specify current design activity's full size reproducible drawing or digital data file(s) on which is kept the revision record recognized as official) (Identify specification, type, grade and class, etc.)							
	b. REPRODUCTIONS (Identify specifications, type, grade and class, etc., and quantity of each)							
	c. DIGITAL DATA (Identify specification, exchange media, etc. and specify original (master) or copy)							
2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)								
	a. CONTRACTOR							
	b. GOVERNMENT (Complete (1) and (2) or (3)							
(1) Use CAGE Code		(2) Use Document Numbers		(3) To Be Assigned By:				
3. DRAWING FORMATS AND DRAWING FORMS (X one and complete as applicable)								
	a. CONTRACTOR FORMATS. Forms to be supplied by contractor.							
	b. GOVERNMENT FORMATS. Forms to be supplied by contractor. Samples supplied by (Specify)							
	c. GOVERNMENT FORMATS. Forms to be supplied as Government Furnished Material by (Specify)							
4. TYPES OF DRAWINGS SELECTION (X one)								
	a. CONTRACTOR SELECTS				b. GOVERNMENT SELECTS (Specify in Item 8)			
5. ASSOCIATED LISTS (X and complete as applicable)								
	a. PARTS LISTS (X one)		(1) Integral		(2) Separate		(3) Contractor's Option	
	b. DATA LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)			
	c. INDEX LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)			
	d. WIRING LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)			
	e. INDENTURED DATA LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)			
	f. APPLICATION LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)			
6. DETAILS (X one)								
	a. MULTIDETAIL DRAWINGS PERMITTED				b. MONODETAIL DRAWINGS MANDATORY			
7. APPLICABILITY OF STANDARDS. The following Standards apply: (X as applicable)								
	a. ASME Y14.100, ENGINEERING DRAWING PRACTICES (COMMERCIAL)	B. C. D. E.	b. ASME Y14.100, WITH APPENDICES B, C, D, E		c. ASME Y14.34 ASSOCIATED LISTS		d. EXISTING STANDARDS DO NOT APPLY	
8. OTHER TAILORING (Attach additional sheets as necessary)								

FIGURE 3 of MIL-DTL-31000C TDP OPTION SELECTION WORKSHEET:
DEVELOPMENTAL DESIGN DRAWINGS AND ASSOCIATED LISTS
FIGURE 2A-3

APPENDIX A

TDP OPTION SELECTION WORKSHEET DEVELOPMENTAL DESIGN SOLID MODELS			
.A. CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO	C. CLIN	D. CDRL DATA ITEM NO.
1. DELIVERABLE PRODUCT (and complete X as applicable.)			
a. 3-DIMENSIONAL SOLID MODELS (Specify format(s) (Native CAD, STEP, AP, IGES, etc.)			
b.3-D SOLID MODELS ASSOCIATED DRAWINGS (If 2-D drawings based on 3-D solid models are required, indicate here and fill out TDPOPTION SELECTION WORKSHEET-DEVELOPMENTAL DESIGN DRAWINGS AND ASSOCIATED LIST (FIGURE 3.)			
2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)			
a. CONTRACTOR			
b. GOVERNMENT (Complete (1) and (2) or (3)			
(1) Use CAGE Code:	(2) Use Document Numbers:	(3) To Be Assigned By:	
3. 3-D SOLID MODEL REQUIREMENTS (X one and complete as applicable)			
a. CONTRACTOR FORMAT. Models built to contractor requirements.			
b. GOVERNMENT FORMAT. 3-D solid models built to government requirements and formats. (Specify government modeling applicable specifications or SOW paragraphs.)			
4. APPLICABILITY OF STANDARDS (Apply an X as Applicable)			
	ASME Y14.41, Digital Product Definition Data Practices		**Existing Standards Do Not Apply**
5. OTHER TAILORING (Attach additional sheets as necessary)			

FIGURE 3A of MIL-DTL-31000C TDP OPTION SELECTION WORKSHEET:
DEVELOPMENTAL DESIGN SOLID MODELS
FIGURE 2A-3a

APPENDIX A

TDP OPTION SELECTION WORKSHEET COMMERCIAL DRAWINGS/MODELS AND ASSOCIATED LISTS			
A. CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.

1. DELIVERABLE PRODUCT *(and complete X as applicable .)*	
	a. MODEL PRODUCT DATA
	(1) MODELS (Specify formats) (Native CAD, STEP, AP, IGES, etc.)
	(2) MODELS WITH DRAWINGS (Identify specification type, grade, and class, etc.)
	b. 2D
	(1). ORIGINALS (Specify current design activity's full size reproducible drawing or digital data file(s) on which is kept the revision record recognized as official) (Identify specification, type, grade and class, etc.)
	(2). REPRODUCTIONS (Identify specifications, type, grade and class, etc., and quantity of each)
	(3). DIGITAL DATA (Identify specification, exchange media, etc. and specify original (master) or copy)
2. OTHER TAILORING (Attach additional sheets as necessary.	

FIGURE 4 of MIL-DTL-31000C TDP OPTION SELECTION WORKSHEET:
COMMERICAL DRAWINGS/MODELS AND ASSOCIATED LISTS
FIGURE 2A-4

APPENDIX A

TDP OPTION SELECTION WORKSHEET SPECIAL INSPECTION EQUIPMENT DRAWINGS AND ASSOCIATED LISTS			
A. CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.

1. DELIVERABLE PRODUCT *(and complete X as applicable .)*							
	a. ORIGINALS (Specify current design activity's full size reproducible drawing or digital data file(s) on which is kept the revision record recognized as official) (Identify specification, type, grade and class, etc.)						
	b. REPRODUCTIONS (Identify specifications, type, grade and class, etc., and quantity of each)						
	c. DIGITAL DATA (Identify specification, exchange media, etc. and specify original (master) or copy)						
2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)							
	a. CONTRACTOR						
	b. GOVERNMENT (Complete (1) and (2) or (3)						
(1) Use CAGE Code		(2) Use Document Numbers		(3) To Be Assigned By:			
3. DRAWING FORMATS AND DRAWING FORMS (X one and complete as applicable)							
	a. CONTRACTOR FORMATS. Forms to be supplied by contractor.						
	b. GOVERNMENT FORMATS. Forms to be supplied by contractor. Samples supplied by (Specify)						
	c. GOVERNMENT FORMATS. Forms to be supplied as Government Furnished Material by (Specify)						
4. TYPES OF DRAWINGS SELECTION (X one)							
	a. CONTRACTOR SELECTS				b. GOVERNMENT SELECTS (Specify in Item 7)		
5. ASSOCIATED LISTS (X and complete as applicable)							
	a. PARTS LISTS (X one)		(1) Integral		(2) Separate		(3) Contractor's Option
	b. DATA LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	c. INDEX LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	d. WIRING LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	e. INDENTURED DATA LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	f. APPLICATION LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		

6. APPLICABLITY OF STANDARDS. The following Standards apply: (X as applicable)							
	a. ASME Y14.100, ENGINEERING DRAWING PRACTICES (COMMERCIAL)	B. C. D. E.	b. ASME Y14.100, WITH APPENDICES B, C, D, E		c. ASME Y14.34 ASSOCIATED LISTS		d. EXISTING STANDARDS DO NOT APPLY
7. OTHER TAILORING (Attach additional sheets as necessary)							

FIGURE 5 of MIL-DTL-31000C TDP OPTION SELECTION WORKSHEET:
SPECIAL INSPECTION EQUIPMENT DRAWINGS AND ASSOCIATED LISTS
FIGURE 2A-5

APPENDIX A

TDP OPTION SELECTION WORKSHEET
SPECIAL INSPECTION EQUIPMENT SOLID MODELS

A. CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.

1. DELIVERABLE PRODUCT (and complete X as applicable.)

	a. 3-DIMENSIONAL SOLID MODELS (Specify format(s) (Native CAD, STEP, AP, IGES, etc.)
	b.3-D SOLID MODELS ASSOCIATED DRAWINGS (If 2-D drawings based on 3-D solid models are required, indicate here and fill out OPTION SELECTION WORKSHEET-SPECIAL INSPECTION EQUIPMENT DRAWINGS AND ASSOCIATED LIST (FIGURE 5.)

2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)

	a. CONTRACTOR
	b. GOVERNMENT (Complete (1) and (2) or (3)

(1) Use CAGE Code	(2) Use Document Numbers	(3) To Be Assigned By:

3. 3-D SOLID MODEL REQUIREMENTS (X one and complete as applicable)

	a. CONTRACTOR FORMAT. Models built to contractor requirements.
	b. GOVERNMENT FORMAT. 3-D solid models built to government requirements and formats. (Specify government modeling applicable specifications or SOW paragraphs.)

4.**OTHER TAILORING (attach additional sheets as necessary)**

FIGURE 5A of MIL-DTL-31000C TDP OPTION SELECTION WORKSHEET:
SPECIAL INSPECTION EQUIPMENT SOLID MODELS
FIGURE 2A-5a

APPENDIX A

TDP OPTION SELECTION WORKSHEET SPECIAL TOOLING DRAWINGS AND ASSOCIATED LISTS			
A.CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.

1. DELIVERABLE PRODUCT *(and complete X as applicable .)*							
	a. ORIGINALS (Specify current design activity's full size reproducible drawing or digital data file(s) on which is kept the revision record recognized as official) (Identify specification, type, grade and class, etc.)						
	b. REPRODUCTIONS (Identify specifications, type, grade and class, etc., and quantity of each)						
	c. DIGITAL DATA (Identify specification, exchange media, etc. and specify original (master) or copy)						
2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)							
	a. CONTRACTOR						
	b. GOVERNMENT (Complete (1) and (2) or (3)						
(1) Use CAGE Code		(2) Use Document Numbers		(3) To Be Assigned By:			
3. DRAWING FORMATS AND DRAWING FORMS (X one and complete as applicable)							
	a. CONTRACTOR FORMATS. Forms to be supplied by contractor.						
	b. GOVERNMENT FORMATS. Forms to be supplied by contractor. Samples supplied by (Specify)						
	c. GOVERNMENT FORMATS. Forms to be supplied as Government Furnished Material by (Specify)						
4. TYPES OF DRAWINGS SELECTION (X one)							
	a. CONTRACTOR SELECTS				b. GOVERNMENT SELECTS (Specify in Item 7)		
5. ASSOCIATED LISTS (X and complete as applicable)							
	a. PARTS LISTS (X one)		(1) Integral		(2) Separate		(3) Contractor's Option
	b. DATA LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	c. INDEX LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	d. WIRING LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	e. INDENTURED DATA LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	f. APPLICATION LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
6. APPLICABILITY OF STANDARDS. The following Standards apply: (X as applicable)							
	a. ASME Y14.100, ENGINEERING DRAWING PRACTICES (COMMERCIAL)	B. C. D. E.	b. ASME Y14.100, WITH APPENDICES B, C, D, E		c. ASME Y14.34 ASSOCIATED LISTS		d. EXISTING STANDARDS DO NOT APPLY
7. OTHER TAILORING (Attach additional sheets as necessary)							

FIGURE 6 of MIL-DTL-31000C TDP OPTION SELECTION WORKSHEET:
SPECIAL TOOLING DRAWINGS AND ASSOCIATED LISTS
FIGURE 2A-6

APPENDIX A

TDP OPTION SELECTION WORKSHEET SPECIAL TOOLING SOLID MODELS			
A. CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.

1. DELIVERABLE PRODUCT (and complete X as applicable.)	
	a. 3-DIMENSIONAL SOLID MODELS (Specify format(s) (Native CAD, STEP, AP, IGES, etc.)
	b.3-D SOLID MODELS ASSOCIATED DRAWINGS (If 2-D drawings based on 3-D solid models are required, indicate here and fill out TDPOPTION SELECTION WORKSHEET-SPECIAL TOOLING DRAWINGS AND ASSOCIATED LIST (FIGURE 3.)
2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)	
	a. CONTRACTOR
	b. GOVERNMENT (Complete (1) and (2) or (3)

(1) Use CAGE Code	(2) Use Document Numbers	(3) To Be Assigned By:

3. 3-D SOLID MODEL REQUIREMENTS (X one and complete as applicable)	
	a. CONTRACTOR FORMAT. Models built to contractor requirements.
	b. GOVERNMENT FORMAT. 3-D solid models built to government requirements and formats. (Specify government modeling applicable specifications or SOW paragraphs.)

4. APPLICABILITY OF STANDARDS (Apply an X as applicable)			
	ASME Y14.41, Digital Product Data Practices		Existing Standards Do Not Apply

5. OTHER TAILORING (attach additional sheets as necessary)

FIGURE 6A of MIL-DTL-31000C TDP OPTION SELECTION WORKSHEET:
SPECIAL TOOLING SOLID MODELS
FIGURE 2A-6a

APPENDIX A

TDP OPTION SELECTION WORKSHEET
SPECIFICATIONS

A. CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.

1. ITEM, PROCESS OR MATERIAL

2. COMMERCIAL ITEM DESCRIPTIONS

3. DEFENSE SPECIFICATIONS. (X one and complete as applicable)

	a. MIL-PRF		b. MIL-DTL		c. PROGRAM UNIQUE		
	(1) Coordinated		(1) Coordinated		(1) PERFORMANCE		(2) DETAIL
	(2) Limited Coordinated		(2) Limited Coordinated		a. System		a. System
	(3) Interim		(3) Interim		b. Item		b. Item
					c. Software		c. Software
					d. Material		d. Material
					e. Process		e. Process

4. ASSOCIATED DOCUMENTS PER MIL-STD-961. The Following documents associated with defense specifications are required under the CDRL data item number referenced herein. (X and complete as applicable)

	a. DOCUMENT	b. CDRL DATA ITEM NO.		a. DOCUMENT	b. CDRL DATA ITEM NO.
	(1) Supplements			(5) Cancellation Notice	
	(2) Amendments			(6) Reinstatement Notice	
	(3) Validation Notice			(7) Military Specification Sheets	
	(4) Inactive for New Design Notice				

5. DELIVERABLE PRODUCT (X and complete as applicable)

a. ORIGINALS

	(1) Camera Ready Master
	(2) Digital Data (Detail in item 6, including requirement for diskettes with Portable Document Format or Printer Description Language, and Word Processing Program.

6. OTHER TAILORING (Attach additional sheets as necessary)

FIGURE 7 of MIL-DTL-31000C TDP OPTION SELECTION WORKSHEET: SPECIFICATIONS (MILITARY)
FIGURE 2A-7

APPENDIX A

TDP OPTION SELECTION WORKSHEET
SPECIAL PACKAGING INSTRUCTIONS DRAWINGS AND ASSOCIATED LISTS

A.CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.

1. DELIVERABLE PRODUCT *(and complete X as applicable .)*

	a. ORIGINALS (Specify current design activity's full size reproducible drawing or digital data file(s) on which is kept the revision record recognized as official) (Identify specification, type, grade and class, etc.)
	b. REPRODUCTIONS (Identify specifications, type, grade and class, etc., and quantity of each)
	c. DIGITAL DATA (Identify specification, exchange media, etc. and specify original (master) or copy)

2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)

	a. CONTRACTOR
	b. GOVERNMENT (Complete (1) and (2) or (3)

(1) Use CAGE Code	(2) Use Document Numbers	(3) To Be Assigned By:

3. DRAWING FORMATS AND DRAWING FORMS (X one and complete as applicable)

	a. CONTRACTOR FORMATS. Forms to be supplied by contractor.
	b. GOVERNMENT FORMATS. Forms to be supplied by contractor. Samples supplied by (Specify)
	c. GOVERNMENT FORMATS. Forms to be supplied as Government Furnished Material by (Specify)

4. TYPES OF DRAWINGS SELECTION (X one)

	b. CONTRACTOR SELECTS		b. GOVERNMENT SELECTS (Specify in Item 7)

5. ASSOCIATED LISTS (X and complete as applicable)

	a. PARTS LISTS (X one)		(1) Integral		(2) Separate		(3) Contractor's Option
	b. DATA LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	c. INDEX LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	d. WIRING LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	e. INDENTURED DATA LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	f. APPLICATION LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		

6. APPLICABILITY OF STANDARDS. The following Standards apply: (X as applicable)

	a. ASME Y14.100, ENGINEERING DRAWING PRACTICES (COMMERCIAL)	B. C. D. E.	b. ASME Y14.100, WITH APPENDICES B, C, D, E		c. ASME Y14.34 ASSOCIATED LISTS		d. EXISTING STANDARDS DO NOT APPLY

7. OTHER TAILORING (Attach additional sheets as necessary)

FIGURE 8 of MIL-DTL-31000C TDP OPTION SELECTION WORKSHEET:
SPECIAL PACKAGING INSTRUCTIONS DRAWINGS AND ASSOCIATED LISTS
FIGURE 2A-8

APPENDIX A

TDP OPTION SELECTION WORKSHEET SPECIAL PACKAGING INSTRUCTIONS SOLID MODELS			
A. CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.
1. DELIVERABLE PRODUCT (and complete X as applicable.)			
	a. 3-DIMENSIONAL SOLID MODELS (Specify format(s) (Native CAD, STEP, AP, IGES, etc.)		
	b.3-D SOLID MODELS ASSOCIATED DRAWINGS (If 2-D drawings based on 3-D solid models are required, indicate here and fill out TDPOPTION SELECTION WORKSHEET-SPECIAL TOOLING DRAWINGS AND ASSOCIATED LIST (FIGURE 3.)		
2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)			
	a. CONTRACTOR		
	b. GOVERNMENT (Complete (1) and (2) or (3)		
(1) Use CAGE Code	(2) Use Document Numbers	(3) To Be Assigned By:	
3. 3-D SOLID MODEL REQUIREMENTS (X one and complete as applicable)			
	a. CONTRACTOR FORMAT. Models built to contractor requirements.		
	b. GOVERNMENT FORMAT. 3-D solid models built to government requirements and formats. (Specify government modeling applicable specifications or SOW paragraphs.)		
4. APPLICABILITY OF STANDARDS (Apply an X as applicable)			
	ASME Y14.41, Digital Product Data Practices		Existing Standards Do Not Apply
5. OTHER TAILORING (attach additional sheets as necessary)			

FIGURE 8A of MIL-DTL-31000C TDP OPTION SELECTION WORKSHEET:
SPECIAL PACKAGING INSTRUCTIONS SOLID MODELS
FIGURE 2A-8a

APPENDIX A

CONTRACT DATA REQUIREMENTS LIST *(1 Data Item)*	*Form Approved* *OMB No. 0704-0188*

The public reporting burden for this collection of information is estimated to average 110 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to the Department of Defense, Executive Services and Communications Directorate (0704-0188). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **Please do not return your form to the above organization. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed in Block E.**

A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP _____ TM _____ OTHER _____
D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE	17. PRICE GROUP
			18. ESTIMATED TOTAL PRICE

4. AUTHORITY *(Data Acquisition Document No.)*	5. CONTRACT REFERENCE	6. REQUIRING OFFICE

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
8. APP CODE		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION

16. REMARKS	14. DISTRIBUTION			
	a. ADDRESSEE	b. COPIES		
		Draft	Final	
			Reg	Repro
	15. TOTAL →	0	0	0

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE

DD FORM 1423-1, FEB 2001 PREVIOUS EDITION MAY BE USED. Page ____ of ____ Pages

CONTRACT DATA REQUIREMENTS LIST. (CDRL) (Front side)
FIGURE 2A-9

APPENDIX A

INSTRUCTIONS FOR COMPLETING DD FORM 1423

(See DoD 5010.12-M for detailed instructions.)

FOR GOVERNMENT PERSONNEL

Item A. Self-explanatory.

Item B. Self-explanatory.

Item C. Mark (X) appropriate category: TDP - Technical Data Package; TM - Technical Manual; Other - other category of data, such as "Provisioning,""Configuration Management," etc.

Item D. Enter name of system/item being acquired that data will support.

Item E. Self-explanatory (to be filled in after contract award).

Item F. Self-explanatory (to be filled in after contract award).

Item G. Signature of preparer of CDRL.

Item H. Date CDRL was prepared.

Item I. Signature of CDRL approval authority.

Item J. Date CDRL was approved.

Item 1. See DoD FAR Supplement Subpart 4.71 for proper numbering.

Item 2. Enter title as it appears on data acquisition document cited in Item 4.

Item 3. Enter subtitle of data item for further definition of data item (optional entry).

Item 4. Enter Data Item Description (DID) number, military specification number, or military standard number listed in DoD 5010.12-L (AMSDL), or one-time DID number, that defines data content and format requirements.

Item 5. Enter reference to tasking in contract that generates requirement for the data item (e.g., Statement of Work paragraph number).

Item 6. Enter technical office responsible for ensuring adequacy of the data item.

Item 7. Specify requirement for inspection/acceptance of the data item by the Government.

Item 8. Specify requirement for approval of a draft before preparation of the final data item.

Item 9. For technical data, specify requirement for contractor to mark the appropriate distribution statement on the data (ref. DoDD 5230.24).

Item 10. Specify number of times data items are to be delivered.

Item 11. Specify as-of date of data item, when applicable.

Item 12. Specify when first submittal is required.

Item 13. Specify when subsequent submittals are required, when applicable.

Item 14. Enter addressees and number of draft/final copies to be delivered to each addressee. Explain reproducible copies in Item 16.

Item 15. Enter total number of draft/final copies to be delivered.

Item 16. Use for additional/clarifying information for Items 1 through 15. Examples are: Tailoring of documents cited in Item 4; Clarification of submittal dates in Items 12 and 13; Explanation of reproducible copies in Item 14.; Desired medium for delivery of the data item.

FOR THE CONTRACTOR

Item 17. Specify appropriate price group from one of the following groups of effort in developing estimated prices for each data item listed on the DD Form 1423.

a. Group I. Definition - Data which is not otherwise essential to the contractor's performance of the primary contracted effort (production, development, testing, and administration) but which is required by DD Form 1423.

Estimated Price - Costs to be included under Group I are those applicable to preparing and assembling the data item in conformance with Government requirements, and the administration and other expenses related to reproducing and delivering such data items to the Government.

b. Group II. Definition - Data which is essential to the performance of the primary contracted effort but the contractor is required to perform additional work to conform to Government requirements with regard to depth of content, format, frequency of submittal, preparation, control, or quality of the data item.

Estimated Price - Costs to be included under Group II are those incurred over and above the cost of the essential data item without conforming to Government requirements, and the administrative and other expenses related to reproducing and delivering such data item to the Government.

c. Group III. Definition - Data which the contractor must develop for his internal use in performance of the primary contracted effort and does not require any substantial change to conform to Government requirements with regard to depth of content, format, frequency of submittal, preparation, control, and quality of the data item.

Estimated Price - Costs to be included under Group III are the administrative and other expenses related to reproducing and delivering such data item to the Government.

d. Group IV. Definition - Data which is developed by the contractor as part of his normal operating procedures and his effort in supplying these data to the Government is minimal.

Estimated Price - Group IV items should normally be shown on the DD Form 1423 at no cost.

Item 18. For each data item, enter an amount equal to that portion of the total price which is estimated to be attributable to the production or development for the Government of that item of data. These estimated data prices shall be developed only from those costs which will be incurred as a direct result of the requirement to supply the data, over and above those costs which would otherwise be incurred in performance of the contract if no data were required. The estimated data prices shall not include any amount for rights in data. The Government's right to use the data shall be governed by the pertinent provisions of the contract.

DD FORM 1423-1 (BACK), FEB 2001

CONTRACT DATA REQUIREMENTS LIST. (CDRL) (Back side)

FIGURE 2A-9

APPENDIX B

TECHNICAL DATA PACKAGE (TDP) ENGINEERING DRAWING CHECKLIST DETAILED REQUIREMENTS

2.10 Reviewing for correct material and mechanical specifications.

Note:

These checklists have historically pertained to drawings used as TDP elements. With the inclusion of 3D data and solid model datasets as design deliverables in MIL-DTL-31000C comes the need to properly prepare, format, annotate, store, and transfer 3D solid model datasets. Thus to a certain degree these checklists must pertain to solid models as well as drawings. The following paragraph applies to all sections of the checklist that follows:

If digital 3D solid models (3D digital datasets) are included in a TDP, ensure that all of the following requirements that may pertain to models are also applied to the models. Refer to SECTION 26 of the DRM for more specific information about and requirements for using 3D solid models as elements of a TDP.

2.10.1 Material Specifications. Reference ASME Y14.100.

a. Make sure that material specifications are listed on the drawing.

b. Check material specifications. Ensure requirements such as class, grade and type are specified. Ensure active specifications are used.

c. Where applicable, ensure that the material specification correctly identifies the shape required, such as bar, sheet, rod or tubing.

d. The tolerances and surface finishes given on specifications for commercial items must agree with those shown on the drawing for non-machined dimensions.

e. Evaluate qualities such as to plating, painting, welding, hardening, stress relief, tempering, etc.

f. Industry standard stock materials must be specified, when practical.

g. Ensure that proper material is used on die formed parts. Some heat treated materials are not practical for die forming. Other materials are suitable and aging will meet hardness requirements.

h. Ensure that material has been specified in the proper condition to facilitate processing operations.

i. Check the type of raw material for compatibility with processing and machining techniques, stress requirements, and direct contact with dissimilar materials.

j. Check the drawing notes for heat treatment and hardness specifications and requirements.

2.10.2 Cast, Forged and Molded Items. Check the following items.

a. Ensure that there are separate views of a rough casting or forging and the finished part.

b. Ensure that the drawings or contract documents specify the type of casting, forging, or molding process to be used.

c. Ensure the drawings specify draft allowances.

d. Specified tolerances must be compatible with the types of processes and the intended use of the item.

e. Appropriate datum reference frames must be specified.

f. Ensure that the location and dimensions of tooling points are specified.

g. Dimensions of draft surfaces must be taken from mold lines.

h. Generally, duplicate dimensions and tolerances should not be shown on both the rough and finished part drawing unless one of the dimensions is specified as a reference dimension, or it is critical that an as-cast or as-forged dimension and tolerance are maintained in the final machined condition of the item.

APPENDIX B

i. Ensure that the grain direction of forging is indicated on the drawing.

j. Ensure that all materials, including alloys are properly specified. Reference ASME Y14.100.

k. Ensure that drawings specify the parting lines of castings.

l. Ensure that the drawings show the location and dimensions of test coupons on forgings or castings.

m. Ensure that inspection procedures are specified for casting or forgings shown on drawings.

2.10.3 Mechanical Specifications. Reference ASME Y14.100.

2.10.3.1 General Requirements.

d. Check fits between all mating parts to ensure that maximum tolerance buildups will allow parts to assemble and operate without interference.

e. Check all dimensions to ensure that material may be machined with standard tools.

f. All machining requirements for features such as chamfers, countersinks, counterbores and radii must be properly defined and specified.

g. Check to ensure that all mating holes for connecting hardware such as rivets and bolts are within tolerance limits.

h. Ensure that lubrication fittings have been provided, as needed, at convenient and accessible places.

2.10.3.2 Thread Data. Reference ASME Y14.6. Check thread data for the following:

a. Ensure that pipe threads are not used as pressure seals.

b. Ensure adequate thread engagement. Fasteners must be long enough to provide sufficient thread engagement for washers, nuts and safety wire, as appropriate.

c. Countersink or chamfered first thread.

d. Check uniformity in depth of tap drills and thread depth for greater efficiency in production. If possible avoid thread requirements that dictate the need to use blind taps to thread holes.

2.10.3.3 Spring Data. Check spring data for the following information. Reference ASME Y14.13M.

a. Ensure that the drawings specify the type of springs to be used.

b. Wherever possible, springs that conform to an accepted Government or industry specification or standard should be used.

c. If nonstandard springs are used, ensure that the drawings depict their wire diameter, mean spring diameter, spring rate, unstressed length, stressed length and finish.

2.10.3.4 Gear Data. Reference ASME Y14.2M. Check gear data for the following:

a. Ensure that drawings specify the type of gears to be used.

b. Wherever possible, gears that conform to an accepted Government or industry specification or standard should be used.

c. When nonstandard gears are used, ensure that the drawings depict their pitch, pitch diameter, shaft diameter, thickness, material used, finish and any special lubrication requirements.

2.10.3.5 Bearing Data. Check bearing data for the following information:

a. Ensure that the drawings describe the types of bearing to be used and their rating life.

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b. Wherever possible, bearings that conform to an accepted Government or industry standard or specification should be used.

c. Wherever nonstandard bearings are used, ensure that the drawings describe their dimensions, load rating, speed and lubrication requirements.

2.10.4 Sheet Metal Data. Check for the minimum bend allowance and dimensions of parts formed from sheet metal. Drawings should be functionally dimensioned and toleranced; ensuring that a finished part or assembly will function properly is the most important design consideration. Reference ASME Y14.5M-1994. Consider using die or investment castings rather than complex sheet metal parts or inseparable assemblies if the design requirements could be met in a more cost-effective manner. Likewise evaluate stamping, extruding or fabricating in lieu of casting and forgings. Ensure that welding requirements conform to applicable standards.

2.10.5 Plating and Finishing Data. Check plating and finishing requirements for the following:

a. Ensure that tolerance and thickness of plating is in accordance with the applicable specification.

b. The drawings must specify the dimensions and surface finish requirements of plated parts.

c. Precious metal plating requirements should be eliminated where practical to reduce cost.

d. Avoid plating only selected portions of parts wherever possible.

e. Drawings must specify if metal parts will be deoxidized, anodized, chemically filmed, barrier coated, sacrificial coated or treated in some other manner. If more than one treatment method is specified, ensue that the treatments are applied in the proper order.

f. Check drawing notes to make sure that magnetic inspection is required for high stress heat treated parts and low microfinish parts.

2.20 Reviewing Assembly Drawings. Check the following:

a. Ensure that the locations of name plates are shown.

b. Assembly drawings must show all peculiar assembly or adjustment instructions.

c. Ensure that the assembly drawings refer to all associated documents and drawings.

d. There must be sufficient views to show the relationship between each part.

e. Assembly part numbers must be properly marked.

f. Assembly drawings must show tolerances for output and input connections.

g. Ensure that inspection and test requirements are specified for items depicted in the drawing. Reference MIL-DTL-31000.

h. Assembly drawings must identify inseparable assemblies.

i. Ensure that assembly drawings identify and depict attaching hardware such as nuts, bolts and rivets.

j. Location and orientation of parts must be shown.

k. Ensure that tolerance build-ups do not cause interference during assembly, disassembly and operation.

l. Ensure that required quantities are correct.

m. Assembly drawings must depict correct assembly and reference dimensions.

n. Ensure that the designators used on the assembly drawing are used consistently on all associated drawings and related lists.

o. The identification and quantity of parts shown on the assembly drawing must agree with the parts list.

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2.30 Reviewing Detailed Drawings. Reference ASME Y14.3M. Check the following:

a. Detailed drawings must completely depict the entire part or assembly shown.

b. Ensure that there are sufficient views to adequately define the item.

c. If directly tolerancing (+/-) is used, ensure that the origin for every dimension is clearly defined and taken from a (physical) feature. Generally, direct tolerancing methods (+/-) should only be used to define the size and form for features of size. Geometric Dimensioning and Tolerancing (GD&T) should be used to define all other features and feature relationships to avoid ambiguous specifications. Reference ASME Y14.5M-1994.

d. Dimensions and tolerances should not be directed to features depicted by hidden lines in a view. Dimensions and tolerances should be applied to true profile views where possible. Reference ASME Y14.5M-1994.

e. Ensure that datum reference frames are properly defined. Reference ASME Y14.5M-1994.

f. Ensure that mono-detail drawings depict only one item.

2.40 Reviewing Drawings of Electrical and Electronic Systems.

2.40.1 General. Reference ASME Y14.100 and ASME Y14.5M-1994. Review all drawings of electrical and electronic systems for the following information:

a. Ensure that wires are properly identified by size, specifications and coding.

b. Sleeving must be properly identified. Sleeve should cover connections to ensure adequate protection where a possibility of shorting exists.

c. Check notes for correct soldering specifications.

d. Check that floating connectors are used only where necessary.

e. Check for conformal coating, where required, to provide adequate resistance to leakage.

f. Check that the drawings show the polarity of diodes and crystals.

g. The orientation of transistors and other parts must be specified with respect to a fixed reference point.

h. Check for hermetic sealing of connectors, where required.

i. Check to see that requirements for lacing, sleeving or wrapping are identified.

j. Analyze and evaluate assembly drawings, wiring diagrams, printed wiring board drawings and schematic diagrams for compatibility. Each drawing or diagram should refer to all related drawings or diagrams. All reference designators must be consistent.

k. Analyze and evaluate the service rating on all connectors. Ensure that all connectors are compatible.

l. Analyze and evaluate all components for safety.

m. All levels of electrical or electronic assembly drawings must adequately describe the test requirements for the items they depict.

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2.40.2 Wiring Diagrams and Wiring Harness Drawings.

a. Wiring diagrams and wiring harness drawings should be used where appropriate. Reference ASME Y14.100.

b. The physical arrangement of wire routing components should be consistent with their layout in associated drawings.

c. Ensure that component terminals are identified in wiring diagrams. Drawings must conform to IPC-2221A & IPC-2222.

d. Ensure that the use of reference designators is consistent with related drawings.

e. Ensure that wiring diagrams identify all input and output signals.

f. Ensure that wiring diagrams identify the functions of all test points.

g. Ensure that the unit or subunit designator is noted on the drawing and is consistent with related documents.

h. Ensure that the drawing identifies grounds and shows their location.

i. Wiring diagrams must refer to associated assembly and schematic drawings.

j. Make sure that the drawings detail the use of wire numbers or color codes and that their use is consistent with that of related drawings and associated lists.

2.40.3 Schematic, Logic and Interconnection Diagrams. Check the following:

a. Ensure that diagrams are prepared for each subunit.

b. Diagrams must identify inputs and outputs and show their tolerances.

c. Ensure that parts are shielded where grounded.

d. Ensure that diagrams show the directional alignment of all components, and that it is consistent with what is shown on associated documents. This is especially important for components which are affected by polarity, such as batteries, diodes and rectifiers.

e. Ensure that all components are identified by reference designator and type number.

f. Ensure that schematic drawings show the capacity ratings of safety devices such as fuses and circuit breakers.

g. Values, ratings and tolerances must be shown for all components.

h. Ensure that schematic drawings identify the functions of test points.

i. Logic symbols must be used per IEEE STD 91 (X-Ref: ANSI Y32.14).

j. Reference designators must be used per ASME Y14.100.

k. Ensure that electronic symbols are used per ASME Y14.100.

l. Ensure that schematic drawings refer to associated drawings.

m. Ensure that terminals of relays, plugs and other connections are identified.

2.40.4 Printed Wiring Board Drawing. Check the following:

a. Analyze and evaluate the printed wiring design for conformity to applicable specifications.

b. Printed wiring fabrications must conform to applicable specifications.

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c. Ensure that drawings depict wiring boards in detail and identify all components. Drawings must conform to IPC-2221A and IPC-2222.

d. Drawings must be laid on a grid system.

e. Both sides of wiring board, including reduction dimensions, must be shown on the same wiring board dawing. Ensure that front-to-back registration points are defined, precisely located and adequately controlled.

f. Ensure that marking information depicted on the wiring board drawing is consistent with what is shown on associated drawings.

g. Ensure that the wiring board makes reference to the corresponding schematic and assembly drawing.

h. The board and assembly number must be the same as the numbers shown on the corresponding assembly drawing.

i. The drawing must specify and depict conformal coating, when required.

j. Reference designators shown on the board drawing must be consistent with those shown on the assembly drawing and associated lists.

k. Ensure that plug keys and terminals are identified.

l. Wiring board drawings should not contain subunit numbers.

m. Ensure that wiring board drawing notes include the subunit prefix.

n. Ensure that masking is not used a guide for hole locations.

o. Make sure that the dimensions and tolerances for all holes are shown. Reference ASME Y14.5M-1994.

p. Ensure that the master pattern drawing is laid out per ASME Y14.100.

q. Ensure that multilayer boards are depicted per IPC-2221A & IPC-2222.

r. When wiring board drawings are produced in digital form, ensure that their description and format are in accordance with ANSI/IPC D-350.

s. Separate views must be shown for double sided and multilayered boards.

t. Ensure that wiring board drawings include adequate Quality Assurance (QA) provisions for the manufacture of items they depict.

u. Ensure that the circuitry pattern agrees with the schematic drawing.

v. Ensure that fixed points on printed wiring boards are used as references to define the locations, width and dimensions of conductors.

w. Ensure that jumper wires are eliminated on production drawings.

APPENDIX B

2.50 Reviewing Control Drawings.

2.50.1 Vendor Item Control Drawing (VICD). (Formerly Specification Control Drawing (SCD.)

2.50.1.1 Criteria For Designation. To qualify as a VICD, the item depicted must meet the following criteria:

a. It must be of an unmodified commercial type, available to both Government and industry on an unrestricted basis.

b. The item must not have been developed for use in the equipment represented by the drawing package under review.

c. The manufacturer's name, addresses, identification codes and item identification numbers must be shown on the VICD.

d. The drawing must list two or more known sources.

2.50.1.2 Reviewing VICDs. Analyze VICDs for the following Information:

a. They shall disclose, as applicable, item configuration, envelope dimensions, mounting and mating dimensions, interface dimensional characteristics, and their limits.

b. The VICD must show inspection and acceptance test requirements, performance reliability, maintainability, environmental and other functional requirements as necessary to ensure identification and adequate competitive reprocurement of an interchangeable item.

c. If an electrical, electronic, or other engineering circuit is involved, a schematic connection or other appropriate drawing shall be included or referred to by the drawing to provide sufficient information to mark external connections.

d. VICD numbers are administrative control numbers and shall not be marked on the part. The VICD numbers are used to identify the item on other drawings or documents.

e. Qualification testing of items in advance of procurement action is not a prerequisite for including an item on a VICD.

f. If a decision cannot be made from the information available, the manufacturer of the item or activity submitting the drawing should be contracted to verify that the item meets the criteria for a VICD.

g. All sources of supply should be checked to verify that the part numbers listed on the drawing correspond to the item depicted on the drawing and are currently available.

h. The manufacturer's part number becomes the item's identification number.

i. The notations "VENDOR ITEM CONTROL DRAWING" and "IDENTIFICATION OF SUGGESTED SOURCES OF SUPPLY" must appear on the drawing per ASME Y14.100 and Appendix D.

j. VICD numbers are not marked on the parts.

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2.50.2 Source Control Drawings (SOCD).

2.50.2.1 Criteria for Designation. A SOCD defines an item which is procurable only from certain vendors for reasons such as the following:

a. A vendor has a special technique which will make the vendor's product work in a system where others will not. The key elements may be identifiable.

b. There is a specific critical application in which substitute vendors shall not be used without prior testing evaluation, and approval. Critical factors may include performance, installation, interchangeability or reliability and must be specified on the drawing.

c. The notation "SOURCE CONTROL DRAWING" must be on the drawing. See ASME Y14.100 and Appendix D.

2.50.2.2 Reviewing SOCDs. SOCD requirements are identical to those for VICDs except for the following differences.

a. Items must be tested and prequalified for inclusion in SOCDs.

b. The drawing shall include the following notes:

Note 1: ONLY THE ITEM DESCRIBED ON THIS DRAWING, WHEN PROCURED FROM THE VENDORS(S) LISTED HEREON IS APPROVED BY (Name and address of the cognizant design activity) FOR USE IN APPLICATIONS(s) SPECIFIED HEREON. A SUBSTITUTE ITEM SHALL NOT BE USED WITHOUT PRIOR APPROVAL BY (Name of cognizant design activity) OR BY (Name of Government procuring activity).

Note 2: IDENTIFICATION OF THE APPROVED SOURCES(S) HEREON IS NOT TO BE CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEMS DESCRIBED ON THE DRAWING.

c. The drawing shall list under the heading "APPROVED SOURCES OF SUPPLY", the manufacturer's name, address, and CAGE Code, as well as the part number of each item that has been tested and approved for use in the specific applications stated on the drawing.

d. Whenever another vendor's item is tested and is qualified for the stated applications or when a new critical application is found and all vendor items that are cited on the drawings are approved for use in the new critical application, the drawing may be revised to show the new vendor or application. Each new vendor added must be approved for all stated applications.

e. SOCD numbers become the part identification numbers and are subsequently used to identify the item on other drawings or documents. When more than one vendor is listed on a SOCD for items that are repairable and the repair parts are not interchangeable between one vendor's item and another, each vendor's item shall be assigned a unique suffix of the SOCD number.

f. Ensure that the "SOCD" and the drawing number are marked on the part. The SOCD number becomes the item's part number. Reference ASME Y14.100 and Appendix D.

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2.50.3 Selected Item Drawings. Selected item drawing disclosure requirements are identical to those of VICDs except for the differences listed below:

a. The drawing must contain the notation “SELECTED ITEM DRAWING”.

b. Complete details of the selection criteria shall be described, such as fit, tolerance, performance and reliability.

c. When a vendor document is referred to in the selected item drawing, it shall be submitted with the drawing package. If the document is unobtainable, the selected item drawing shall contain sufficient information to identify that item before selection.

d. The part number and the manufacturer’s name, address and identification number shall be included in the drawing package.

e. The original part number must be obliterated and the selected item drawing number shall become the part number of the selected item itself. See ASME Y14.100-2004 and Appendix D.

2.50.4 Altered Item Drawings. Altered item disclosure requirements are identical to those of VICDs and Selected Item Drawings except for the differences listed below:

a. The drawing shall include information necessary to identify the item prior to its alteration, including the original part number and the name and address of the original source. The name and address of the source need not be furnished if the original part is a Government or industry standard item.

b. When a vendor activity document is referred to, the vendor data shall be submitted along with the altered item drawing. If the vendor or original design data is unobtainable, the Altered Item Drawing shall contain sufficient information to identify that item prior to its alteration.

c. The notation “ALTERED ITEM DRAWING” must appear on the drawing.

d. The original part number must be obliterated.

e. Altered Item Drawing numbers shall become the part numbers of the altered items. Reference ASME Y14.100 and Appendix D.

2.60 Reviewing Associated Lists in the Technical Data Package (TDP).

2.60.1 Parts Lists (PLs) Reference ASME Y14.34M. Check the following:

a. If separate PLs are used, make sure their format is correct.

b. If separate PLs are used, ensure that the PL numbers are correct.

c. If an integral PL is used, ensure that the format is correct. Ref ASME Y14 .34M.

d. Ensure that part or identifying numbers are correct (including items controlled by military specifications).

e. “Find numbers” or “reference designators” used on the PL must be consistent with those shown on associated drawings.

f. PLs may be revised only in accordance with ASME Y14.35M.

g. PLs must specify quantities wherever possible.

APPENDIX B

h. Bulk items must be identified by a discrete identifier instead of quantity.

i. Ensure that “as required” (AR) quantities are used only where appropriate.

j. Items that are not adequately defined by a Government or industry specification must be depicted in a control or other type drawing.

k. Ensure that parts depicted on Vendor Item Control, Source Control, Altered Item and Selected Item drawings are properly identified per ASME Y14.100 and Appendix D.

l. When PLs are produced on an automatic data processing system (ADPS), ensure that their format complies with ASME Y14.34M.

m. Ensure that every item on a drawing is also on a PL.

n. Verify that military and industry standard part numbers correctly identify the parts being used.

2.60.2 Data Lists (DLs). Reference ASME Y14.34M. Check the following:

a. Ensure that the format is correct.

b. Ensure that the DL contains all drawings, documents and associated lists.

c. Ensure that DL numbers are correct.

d. Ensure that the DL is revised per ASME Y14.35M.

e. Ensure that documents are sequenced per ASME Y14.34M.

f. Ensure that DLs are prepared for each major assembly, subassembly or unit as required.

g. Ensure that DL nomenclature is consistent with that used on the assembly drawing.

2.60.3 Index Lists (ILs). Reference ASME Y14.34M. Check the following:

a. Ensure the format is correct.

b. Ensure that IL numbering is correct per ASME Y14.34M.

c. Ensure that documents are sequenced per ASME Y14.34M.

d. An IL must be prepared for each major assembly or system as required by the contractual instrument in effect.

e. Ensure that each IL contains all applicable DLs and ILs.18

f. Ensure that the nomenclatures on ILs agree with those on the assembly drawing.

NON-MANDATORY APPENDIX C

Historical: Acquisition Reform and Related Data from the DRM 10th Edition

The Preface and Figure 2-9A from Section 2 in the DRM 10th Edition have been relocated to this non-mandatory appendix. This information is for historical reference only and is no longer part of the DRM and its requirements.

PREFACE

A NEW WAY OF DOING BUSINESS
"BLUEPRINT FOR CHANGE"
"DoD's MilSpec Reform Initiative"
"Acquisition Reform"

BACKGROUND: The first (1st) edition of the IHS Drawing Requirements Manual (DRM) published in 1969 was truly a how-to manual for preparing engineering drawings to meet the requirements of Department of Defense (DoD) contracts. These contracts contained primarily applicable DoD MIL SPECS and MIL STDS in support of the requirements. Few if any commercial standards were used or even adopted for use in DoD contracts. Since that time, Industry specifications and standards for commercial applications have progressed in the state-of-the-art and quality to become eligible for approval and adoption for use in DoD applications.

TRANSITION: A point has been reached that due to DoD's, budget restraints and the continued increase of Industry's qualified commercial standards, DoD has been proceeding under the above headings to use non-government as the preferred specifications and standards by DoD and to institute a "Waiver" procedure to use a government specification or standard when no other exists to fill the government's need.

ON GOING PROCESS: Beginning in the mid-1990s government MIL-SPECS and MIL-STDS have been canceled when appropriate non-government standards can replace them. MIL-SPECS are being reclassified as Performance (MIL-PRF-XXXX) or Detail (MIL-DTL-XXXX) in which the Performance specifications are acceptable in a contract to permit the contractor latitude to meet the requirements of the end product while the Detail specifications which are specific in how the requirements are accomplished will require a "Waiver" procedure for their inclusion in the contract.

CURRENT GROUND: **F**rom the first edition, the IHS Drawing Requirements Manual (DRM) Tenth (10th) has progressed along the path above to arrive with this 11th edition as totally committed on how to prepare engineering drawings to meet the requirements of good commercial practices per ASME Y14.100-2000 and be acceptable to DoD by applying the "Waiver" procedures to implement the Appendices B thru E of ASME Y14.100-2000 for the use of government requirements that are in use in other than basic commercial applications. Appendices are applied on contract must be consistent with the principles of Acquisition Reform and associated existing reform Policy Memorandums, such as Acquisition Reform Policy Memo 98-2, Waivers for Use of Specifications and Standards. See Acquisition Reform Policy Memo 98-2 quoted in total below (Page 2-iii) for review.

HIGHLIGHTS THAT BROUGHT ABOUT CHANGE:

29 Jun, 94 SUBJECT: Specifications & Standards- A New Way of Doing Business.

To meet the needs, the Department of Defense (DoD) must increase access to commercial state-of-the-art technology and must facilitate the adoption by its suppliers of business processes characteristic of world class suppliers. Integration of commercial and military development and manufacturing facilities and development of dual-use processes and products capable of meeting defense needs at lower costs are also required.

Greater use of performance and commercial specifications and standards is one of the most important actions that DoD must take to ensure we are able to meet the military, economic, and policy objective in the future. Moreover, it is recommended that agencies avoid government-unique requirements and rely more on the commercial marketplace.

NON-MANDATORY APPENDIX C

To accomplish this objective, the Deputy under Secretary of Defense (Acquisition Reform) chartered a Process Action Team to develop a strategy and a specific plan of action to decrease reliance, to the maximum extent practicable, on military specifications and standards. The Process Action Team report, "Blueprint for Change" identifies the tasks necessary to achieve this objective. The Team reported the primary recommendation is to use performance and commercial specifications and standards in lieu of military specifications and standards, unless no practical alternative exists to meet the user's need.

Policy Changes

Listed below are a number of the most critical changes to current policy that are needed to implement the Process Action Team's recommendations. However it is not the intent to disrupt on-going solicitations or contract negotiations. Therefore, the Component Acquisition Executive (as defined in Part 15 of DoD Instruction 5000.2), or a designee, may waive the implementation of these changes for on-going solicitations or contracts. The Under Secretary of Defense (Acquisition and Technology) shall implement these policy changes in DoD Instruction 5000.2, the Defense Federal Acquisition Regulation Supplement (DFARS), and any other instructions, manuals, regulations, or policy documents, as appropriate.

Military Specifications and Standards: Performance specifications shall be used when purchasing new systems, major modifications, upgrades to current systems, and nondevelopmental and commercial items, for programs in any acquisition category. If it is not practical to use a performance specification, a non-government standard shall be used. Since there will be cases when military specifications are needed to define an exact design solution because there is no acceptable non-governmental standard or because the use of a performance specification or non-government standard is not cost effective, the use of military specifications and standards is authorized as a last resort, with an appropriate waiver that must be approved by procedures described in Policy Memo 98-2. Waivers for reprocurement of items already in the inventory are not required. Waivers may be made on a "class" or items basis for a period of time not to exceed two years.

Innovative Contract Management: The Under Secretary of Defense (Acquisition and Technology) shall develop language to encourage contractors to propose non-government standards and industry-wide practices that meet the intent of the military specifications and standards. This language will be developed for inclusion in both requests for proposal and in on-going contracts. This procedure has become known as "Tailoring". These standards and practices shall be considered as alternatives to those military specifications and standards cited in all new contracts expected to have a value of $100,000 or more, and in existing contracts of $500,000 or more having a substantial contract effort remaining to be performed.

Tiering Use of Specifications and Standards: During production, those systems specifications, subsystem specifications and equipment/product specifications (through and including the first-tier reference in the equipment/product specifications) cited in the contract shall be mandatory for use. Lower tier references will be for guidance only, and will not be contractually binding unless they are directly cited in the contract. Specifications listed on engineering drawings are to be considered as first-tier references. Exceptions to this policy must obtain approval from the appropriate Agency.

Management and Manufacturing Specifications and Standards: Program Managers shall use management and manufacturing specifications and standards for guidance only. The Under Secretary of Defense (Acquisition and Technology) shall develop a plan for canceling these specifications and standards, inactivating them for new designs, transferring the specifications and standards to non-government standards, converting them to performance-based specifications, or justifying their retention as military specifications and standards.

18 DEC, 97 SUBJECT: Policy Memo 98-2 "Waivers" for Use of Specifications and Standards" (Supersedes 95-1 22 Dec, 94.)

Procedures for Policy Memo 98-2 are presented below in total for review and the compliance made by the Tenth (10^{th}) edition 2000 update of the Drawing Requirements Manual (DRM) (Attachment to **Policy Memo 98-2**.)

NON-MANDATORY APPENDIX C

DEPARTMENT OF DEFENSE (DOD) POLICIES AND PROCEDURES ON WAIVERS FOR USE OF SPECIFICATIONS AND STANDARDS (Attachment of Policy Memo 98-2)

1. General. Performance specifications and standards and non-government standards shall be used instead of detail government specifications and standards. For those cases when a detail government specification or standard is needed, for Acquisition Category (ACAT programs I-IV, to define an exact design solution, the DoD program office or buying command may use a government specification or standard, but only if a waiver is granted. The Director, Naval Nuclear Propulsion shall determine the specifications and standards to be used for naval nuclear propulsion plants in accordance with Public Law 98-525 (42 U.S.C., section 7158 note).

2. Applicability. A waiver is required only when the DoD program office or buying activity cites a detail government specification or standard as a requirement in a solicitation, or any type of specification or standard that mandates management or manufacturing processes in a Major Defense Acquisition Program (MDAP). NOTE: Where a DoD activity intends to cite a management or manufacturing process standard in a MDAP contract, additional requirements in the USD (A&T) "Requiring Processes on Contract" memorandum of September 18, 1997, and related implementing Component instructions apply.)

3. Documents Requiring Waivers. DoD programs offices and buying commands shall obtain waivers when citing as requirements in solicitations, the types of documents listed below:

a. Military specifications and standards.
b. Program unique detail specifications and standards that define exact design solutions.
c. Federal specifications and standards.
d. Any type of government or non-government specification or standard that describes management or manufacturing processes in a MDAP.

4. Documents **Not** Requiring Waivers. The following types of documents do not require waivers.

a. Any document required by law, the Federal Acquisition Regulation, the Defense Federal Acquisition Regulation Supplement, DoD D 5000.1 or DoD 5000.2-R.
b. Non-government standards (except those that mandate the use of management or manufacturing processes in a MDAP).
c. Federal Information Processing Standards.
d. Government specifications designated in the DoD Index of Specifications and Standards (DoDISS) as performance specifications (MIL-PRF).
e. Commercial item descriptions listed in the DoDISS.
f. Guide specifications listed in the DoDISS.
g. Interface standards listed in the DoDISS.
h. Standard practices listed in the DoDISS. *(See TABLE 2-ia at end of this attachment to memo 98-2)*
i. Handbooks listed in the DoDISS.

5. Exemption to Waivers. Except as specified by the Component Acquisition Executive, it is not mandatory to obtain a waiver to use the types of documents identified in paragraph 3 above, for the following conditions:

a. For reprocurement of an item not requiring major modification or upgrade, as defined in DoD 5000.2-R.
b. If the offer or proposes the use of a specification or standard in response to a solicitation, except for management and manufacturing process specifications or standards in a MDAP, which do require a waiver to be cited in solicitations or contracts.
c. For specifications and standards under Federal Supply Group 11 for Nuclear Ordnance, Federal Supply Class 4470 for Nuclear Reactors, and Technical Manual Specifications and Standards (TMSS).
d. When a non-DoD customer requires the use of a specification or standard.
e. For combined or joint acquisition programs where another federal agency or another country has the lead in the design or acquisition of an item.
f. If the specification or standard is cited for guidance only.

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NOTE: It must be clearly stated in the solicitation what performance criteria will be used in evaluating proposals, and that the specification or standard represents only one possible acceptable solution. The waiver decision authority should challenge excessive listing of specifications and standards used for guidance only, since it may send the wrong message to potential contractors and does not promote acquisition cultural change.

6. Department-Wide or Agency-Wide Exemptions From Waiver Process. The Standards Improvement Executives (SIEs) for the Military Departments and Defense Logistics Agency may exempt any specification or standard from the waiver process for their use in the solicitation, as they deem necessary. DoD Components that do not have a SIE may request a similar exemption from the Chairman of the Defense Standards Improvement Council. These exemptions must be renewed at least every two years.

7. Waiver Approval Process. Program offices and buying commands shall submit waiver requests to the cognizant waiver decision authority. Waivers shall only be approved if:

a. An exact design solution is required and a technically-acceptable non-government standard does not exist;
or

b. The use of a performance specification or non-government standard would not meet user needs, be cost effective, or be practicable.

8. Tracking Waiver Approvals. The waiver decision authorities shall send a copy of the waiver approvals to an office designated by the cognizant Department Standardization Office (DepSO). This designated office shall send copies of approved waivers to the DoD Single System (ASSIST) data base. Only waiver approvals submitted by a DepSO designated office will be entered in the ASSIST data base.

END

STANDARD PRACTICES NOT SUBJECT TO WAIVER PROCEDURE	
DOCUMENT NUMBER	**TITLE**
MIL-STD-100 (Cancelled)[1]	Engineering Drawing Practices
MIL-STD-129N	Marking for Shipment & Storage
MIL-STD-130	Packaging Marking Equipment & Supplies
MIL-STD-961D	Standard Practice for Defense Specifications
MIL-STD-963	Data Item Descriptions DIDS
MIL-STD-1686	Electrostatic Discharge
MIL-STD-40051	Technical Manuals

MILITATARY STANDARDS (MIL-STDS) CONVERTED TO "STANDARD PRACTICES" THAT ARE EXEMPT FROM WAIVER REQUIREMENT *(See PARAGRAPH 4h of Attachment to Memo 98-2)*
TABLE 2-ia

[1] MIL-STD-100G was canceled. Its use on new projects is superseded by ASME Y14.100M-2004.

QUESTIONS WITH ANSWERS THAT ARE BOUND TO COME UP

Q. Why is it required to obtain a "Waiver" to use a government detail MIL-SPEC or MIL-STD in a government/DoD contract?

A. Policy Memo 98-2 dated Dec 18, 1997 directed to the Army, Navy, Air Force and Defense Logistic Agencies, became effective that "Performance specifications and standards and non-government standards **shall** be used instead of detail government specifications and standards. For those cases when a detail government specification or standard is needed, to define an exact design solution, the DoD program office or buying command may use a government specification or standard, but only if a waiver is granted."

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Q. Who is required to submit the request for a waiver for the use of a detail government specification or standard and who approves the waiver ?

A. Only the DoD must obtain a waiver when the DoD program office or buying command activity cites a detail government specification or standard as a requirement in a solicitation. Only the Component Acqusition Executive or the Milestone Decision Authority (MDA) may approve the waiver. Contact Departmental Standardization Office (DepSO) to get a copy of the Waiver request format and any specific instructions for submission.

Q. What conditions are likely for the Milestone Decision Authority (NDA) to approve the waiver request?

A. Waivers can only be granted when;

a. an exact design solution is required and an acceptable Non-Government Standard (NGS) does not exist.
b. the use of a performance specification or a NGS would not meet the user needs, be cost effective, or be practicable.

Q. When a contractor or a non-DoD customer requires the use of a detail government/military specification or standard, is a waiver needed?

A. No, but only after a responsible search for suitable non-government specification or standard has been exhausted, a waiver is not necessary.

Q. Is a waiver needed for referenced and/or tiered down government/military specifications cited in a solicitation?

A. No. A waiver is needed only for the government/military specification directly cited. Unless otherwise specified, they may be considered for guidance only documents. However, as part of the waiver request information, the Milestone Decision Authority (MDA) may request information on referenced documents within the military specification.

Q. When a waiver is granted, is it permanent?

A. No. The use of government/military detail specifications and standards granted by waiver need to be reviewed every two years for replacement by non-government standards and either be replaced or the wavier renewed.

Q. What happens when specification or standard is canceled during a current contract?

A. For existing contracts, cited specifications and standards remain if effect unless there is a contract change. However DoD encourages defense contractors to seek a change to;

a. Replace with a product performance specification.
b. Replace with a non-government standard.
c. Replace with a contractor-defined process.
d. Delete the canceled specification or standard from the contract without replacement.

For complete coverage of on-going and up-coming questions and answers to DoD Policies on Specification and Standards Reform Issues, the following Internet Web Site is recommended: www.dsp.dla.mil

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SPECIFICATION, STANDARD, PROCESS WAIVER

Program Name/Identifier: _____

_____
Description of Item/Services Being Procured

Acquisition Category (ACAT) Program: (Check One Below)
ACAT ID ____, ACAT IC ____, ACAT II ____, ACAT III ____, ACAT IV ____, Other ____

I, the requester of this waiver, certify to the best of my knowledge, that the list of contractually mandated specifications, standards, or documents that define management and manufacturing processes for this solicitation or contract, which must be approved for use, as listed on the attached sheet(s), complies with the Army Implementation Plan for the Blueprint for Change: Toward a National Production Base and subsequent Army guidance. As identified for each on the attached sheet(s), the specifications, standards, or other documents listed are required for this solicitation or contract because: (1) an exact design solution is required and a technically-acceptable non-government standard does not exist, or (2) the use of a performance specification or non-government standard would not meet user needs, be cost effective, or be practicable.

REQUESTER: _____ _____
Signature Date

_____ _____ _____
Printed Name Office Symbol Phone Extension

Based on the certification of the requester that this waiver complies with the pertinent sections of the Army Implementation Plan and subsequent Army guidance, I hereby approve this Specification, Standard, Process Waiver.

_____ _____
TACOM-ARDEC Standards Executive Date

AMSTA-AR FORM 4000, 10 Mar 98, Replaces AMSTA-AR FORM 4000, 25 Jun 96, Which May No Longer Be Used

"WAIVER" FOR USE OF GOVERNMENT SPECIFICATIONS AND STANDARDS.
FIGURE 2C-1

NOTES: