

ATTACHMENT 1 to APPENDIX 2 to ANNEX B

C21 MULTI-CALIBER SNIPER WEAPON (MCSW) SYSTEM

ENGINEERING DRAWINGS AND ASSOCIATED LISTS



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NOTICE

This documentation has been reviewed by the technical authority and does not contain controlled goods. Disclosure notices and handling instructions originally received with the document shall continue to apply.

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1. **GENERAL**

1.1. Engineering Drawings, Associated Lists and Reference Documents must be provided in accordance with the following requirements and in the final form specified below.

1.1.1. TECHNICAL DATA ACTION NOTICE (TDAN) NUMBER

1.1.1.1. TDAN Number XXXXXXXXXX has been assigned to control the acquisition of all Engineering Drawings and Associated Lists produced under this contract. A block of 400 drawing numbers (XXXXXXX to XXXXXXXX) has also been assigned to this contract.

1.1.2. APPLICABLE DOCUMENTS

1.1.2.1. D-01-400-002/SF-000 dated **2011-03-01**, Drawings, Engineering and Associated Lists;

1.1.2.2. D-LM-008-022/SG-000 dated **1981-01-16**, Standard for Packaging of Documentation;

1.1.2.3. American Society of Mechanical Engineers (AMSE) Y14.100, Engineering Drawing Practices;

1.1.2.4. ASME Y14.24, Types and Applications of Engineering Drawings;

1.1.2.5. ASME Y14.34M, Associated Lists;

1.1.2.6. ISO 9660, Information Processing - Volume and File Structure of CDROM for Information Interchange;

1.1.2.7. CAN/CSA Z234.1-00(2011) Canadian Metric Practices Guide; and

1.1.2.8. TIFF Revision 6, Adobe Systems Incorporated, dated June 3, 1992.

1.1.3. NEW AND EXISTING DRAWINGS

1.1.3.1. When required, the Contractor must prepare and deliver Engineering Drawings and Associated Lists which meet the design disclosure and legibility requirements of the specified level as defined by the Canadian Forces Engineering Drawings and Associated Lists specification D-01-400-002/SF-000.

1.1.3.2. Existing Contractor Drawings being provided as part of the Engineering Drawing Package must meet the requirements of paragraph 3.2 of D-01-400-002/SF-000.

1.1.3.3. In the event that Contractor Drawings do not meet the specified requirements the Contractor must rework the drawings to ensure that the requirements are met.

1.1.3.4. Drawing Levels:

- a. Level 1 Design Concept;
- b. Level 2 Limited Production / Prototype; and
- c. Level 3 Production.

1.1.4. **DRAWING PRACTICES**

1.1.4.1. Drawing practices must be in accordance with ASME Y14.100.

2. **DATA LISTS**

2.1. Data Lists complete with Cover Sheets are required and must be prepared in accordance with ASME Y14.34M and supplied as part of the Engineering Drawings.

2.2. Data Lists must be prepared at the item level of assembly (and/or end item) declared for future production by the Technical Authority.

2.3. Cover sheets must be prepared as sheet one (1) of the Data List.

2.4. Cover Sheets must include the Contract Number and a note which details the Intellectual Property Rights that apply to the data identified on the Data List (see para 15).

3. **REFERENCE DOCUMENTS**

3.1. Reference documents called up on the Engineering Drawings (excepting those, which are government, society and readily available industrial specifications or standards) must be included as part of the Engineering Drawings and Associated Lists.

4. **TECHNICAL DATA ACTION NOTICE (TDAN)**

4.1. A TDAN must be prepared listing all Drawings and Associated Lists delivered as a result of the contract. A sample TDAN can be provided upon request.

5. **DRAWING SYSTEM**

5.1. The mono-detail drawing system must be used.

6. **DRAWING TYPES**

6.1. The Contractor must provide the necessary types of drawings that will satisfy the sophistication of the specified drawing level.

6.2. Drawing types selected must be in accordance with ASME Y14.24.

6.3. Type selection must be subject to the approval of both the DND Technical Authority and DSCO 4-6.

7. **PARTS LISTS**

7.1. New parts lists must be prepared integral with the drawings.

7.2. On multi-sheet drawings, the parts list must be placed on sheet one (1). For existing parts lists, separate parts lists are acceptable.

8. **CONTROL DRAWINGS**

- 8.1. Control Drawings as defined in ASME Y14.24 must be prepared for commercial items approved for use in the design, which are not defined by Government or nationally recognized industrial specifications and standards.
- 9. **FAMILY TREE DRAWING(S)**
 - 9.1. When required, the Contractor must prepare a Family-Tree Drawing(s) of the complete configuration of the Engineering Drawing Package.
 - 9.2. The Family-Tree Drawing(s) of the Engineering Drawing Package must be subject to the approval of both the DND Technical Authority and DSCO 4-6.
- 10. **UNITS OF MEASURE**
 - 10.1. The DND Technical Authority will determine the units of measure (metric or Imperial). Metric drawings must comply with CAN/CSA Z234.1-00 (2011) Canadian Metric Practices Guide.
- 11. **LANGUAGE**
 - 11.1. All drawings must be submitted in unilingual English unless otherwise agreed to with the Technical Authority and DSCO 4-6.
- 12. **CONTROLLED GOODS IDENTIFICATION**
 - 12.1. All drawings and Associated Lists must be marked with the appropriate Controlled Goods Identification. These e-stamps can be obtained from DSCO 4-6. The DND Technical Authority will determine the Controlled Goods status of the drawings and lists. Controlled Goods Identification stamps are as shown in Figures 2-4.
- 13. **INTEGRATION**
 - 13.1. The prime Contractor must be fully responsible for the integration of the new and existing drawings to form a complete Engineering Drawing Package.
- 14. **DATA RIGHTS**
 - 14.1. The Government of Canada must have rights in data as detailed in the Terms and Conditions of the contract.
- 15. **DATA RIGHTS LEGEND**
 - 15.1. The Contractor must mark all Foreground & Background Engineering Drawings & Associated Lists delivered under this contract with a complete notation as detailed at "Intellectual Property Rights" and/or "Data Rights" clause(s) of the contract.
- 16. **QUALITY ASSURANCE PROVISIONS**
 - 16.1. Quality of the Engineering Drawings and Associated Lists delivered on this contract is the responsibility of the Contractor and subject to the quality requirements of the contract.

- 16.2. ACCEPTANCE
- 16.2.1. Acceptance of the Engineering Drawings, Associated Lists and Reference Documents for technical content requirements will be the responsibility of the DND Technical Authority. Acceptance of the Engineering Drawings, Associated Lists, Reference Documents and Electronic Data Deliverables for format requirements will be DSCO 4-6.
- 16.3. INTERIM DELIVERABLES FOR ACCEPTANCE PURPOSES
- 16.3.1. One soft copy of the Engineering Drawings, Associated Lists and Reference Data must be delivered in hard copy form for acceptance purposes. If the package cannot be accepted, for reasons of either technical content or format, it may be necessary to resubmit the soft copy.
- 16.4. LEVEL 1 - DESIGN CONCEPT
- 16.4.1. The Level 1 Engineering Drawings, Associated Lists and Reference Documents must be forwarded to the Technical Authority upon completion.
- 16.5. LEVEL 2 - PROTOTYPE / LIMITED PRODUCTION
- 16.5.1. Following acceptance of the Level 1 Engineering Drawings, Associated Lists and Reference Documents, the Level 2 Engineering Drawings, Associated Lists and Reference Documents must be forwarded to the Technical Authority.
- 16.6. LEVEL 3 - PRODUCTION
- 16.6.1. Following acceptance of the Level 2 Engineering Drawings, Associated Lists and Reference Documents, the Level 3 Engineering Drawings, Associated Lists and Reference Documents must be forwarded to DSCO 4-6.
- 17. **FINAL DELIVERABLES**
- 17.1. Upon acceptance, the Level 3 Engineering Drawings, Associated Lists and Reference Data must be delivered in soft copy form as outlined herein.
- 17.2. SOFT COPY DELIVERABLE
- 17.2.1. Soft copy deliverables must include the Engineering Drawings, Associated Lists, Reference Data and the associated Metadata in electronic form.
- 17.3. ENGINEERING DRAWINGS
- 17.3.1. Engineering Drawings must be delivered as Raster files as detailed herein. Multi-sheet drawings must be delivered one sheet per file.
- 17.4. ASSOCIATED LISTS
- 17.4.1. Associated Lists must be delivered as a PDF file or in a format deemed acceptable by DSCO 4-6.
- 17.5. REFERENCE DOCUMENTS

- 17.5.1. Reference Documents must be delivered as a PDF file or in a format deemed acceptable by DSCO 4-6.
- 17.6. TDAN
- 17.6.1. The TDAN must be delivered in the native Microsoft Word file and a PDF file. Alternate file formats may be acceptable provided they have been discussed and approved in writing by DSCO 4-6.
- 17.6.2. NOTE: One (1) hard copy of the TDAN complete with Contractor's signatures must be provided with the final deliverables.
- 17.7. METADATA (CAPTURE OF RELATED INFORMATION)
- 17.7.1. Metadata (the data that describes data objects) must be provided for all Engineering Drawings, Associated Lists and Reference Data deliverables.
- 17.7.2. Metadata records must contain the information in the order shown in Table 1.
- 17.7.3. Metadata must be delivered as a Microsoft Access 2010 database shown at Figure 1.
- 17.8. DATABASE TABLE
- 17.8.1. Each delivered image must have a corresponding database record.
- 17.8.2. All records must be entered into a single Microsoft Access 2010 database table.
- 17.8.3. Fields without corresponding information must remain blank.
- 17.8.4. The Microsoft Access 2010 database file must be named with the "batch#.mdb".
- 18. **FILE FORMATS FOR RASTER DATA**
- 18.1. Raster data must be Tagged Image File (TIF) or PDF format.
- 18.2. Files must be wholly raster (i.e. no hybrid files delivered).
- 18.3. PIXEL DENSITY
- 18.3.1. Raster image pixel density must be at least 200 dpi.
- 18.4. IMAGE SIZE
- 18.4.1. Image sizes as outlined in Table 3 are provided as a guide and sizes may vary slightly, but no more than plus or minus one inch (25 mm) in either width or length.
- 18.5. IMAGE FOREGROUND/BACKGROUND
- 18.5.1. Images must be black on white background
- 18.6. FILE NAMES/BATCH NUMBER ALLOCATION
- 18.6.1. File names must be made up from the document number by adding a prefix (LZ for LAND, AZ for AIR and MZ for MARITIME).

- 18.6.2. Batch numbers must be assigned as a block.
- 18.6.3. Batch numbers must be requested in writing to DSCO 4-6. (See Fig. 1 and explanation on file naming).
- 18.7. **MEDIA OF DELIVERY**
- 18.7.1. The media form for final delivery of electronic data must be CD or DVD.
- 18.7.2. Each CD or DVD and its case must be labeled or marked in a method of the Contractor's choosing.
- 18.7.3. Each label or marking must display the TDAN number, the Contract/Task number and the date of creation.
19. **PACKAGING/MARKING/LOSS/DAMAGE**
- 19.1. Reproducible and non-reproducible data must be preserved packaged and marked in accordance with CF Standard D-LM-008-022/SG-000.
- 19.2. Exterior shipping containers must be marked with the contract and TDAN number.
- 19.3. In the event of loss or damage while in shipment, the responsibility for replacement of the data must be that of the primary Contractor and must be at the primary Contractor's expense.
- 19.4. **MAIL OR COURIER DELIVERY**
- 19.4.1. Deliverables must be forwarded to:
- Department of National Defence
National Defence Headquarters,
MGen George R. Pearkes Building,
Ottawa ON K1A 0K2
Attention: DSCO 4-6, NPB
20. **INQUIRIES OR VISITS**
- 20.1. DSCO 4-6 may be contacted by phone at (819) 939-9058 or by fax at (819) 994-9561.
- 20.2. The address is

Department of National Defence
National Printing Bureau Building
45 Boul. Sacré Coeur
Gatineau QC J8X 1C6
Attention: DSCO 4-6

20.3. Our positional mailbox address is:

DND.DSCO4.ENGINEERINGDRAWINGS-DOCA4.DESSINS D'INGENIERIE.MDN@FORCES.GC.CA

TABLE 1 Title and Revision Block Entries

Title Block	Insert
DESIGN AGENT / CONCEPTION	The Contractor must insert their company name or NSCM.
NSCM / CAO F	The Contractor must insert "35907".
INSPECT/INSPECTE	The Contractor must insert "DSCO 4-6"
CF APPVL / APP FC	The Contractor must insert the DND Technical Authority's designation.
APPVL DATE D'APPROB	The Contractor must insert the date of Approval (yyyy/mm/dd).
Revision Block for New Drawings/Data Lists	Insert
ZONE	The Contractor must insert a dash "-".
LTR / LET	The Contractor must insert the next sequential alpha character "A".
REVISION	The Contractor must insert the TDAN number in this block (see para 1.1).
DATE	The Contractor must insert the date (yyyy/mm/dd)
DWN / DES	The Contractor must insert the Draftsperson's initials
CKD / VER	The Contractor must insert the Checker's initials
APPVL / APP	The Contractor must insert the initials of the CAF approval.

TABLE 2 INDEX FIELDS

Order	Field Name	Max Field Length	Field Definition / Description	Example Entry
1	FILENAME <i>(all one word)</i>	12 (8.3)	Name of electronic file - unique filename for uploading in database. File names will be issued by DSCO 4-6. Alpha characters must be uppercase.	LZ000235.TIF
2	BATCHNO <i>(all one word)</i>	8	Batch number - used for uploading files in database. Batch number will be assigned with filenames. Alpha characters must be uppercase.	LZ001
3	DOCUMENTNO <i>(all one word)</i>	25	This field must contain the document number.	9775458
4	REVISION	3	Letter or number indicating the revision level. If there is no rev, indicate with dash ("-")	B
5	SHEETNO <i>(all one word)</i>	3	Sheet number x of y. Enter the value of x.	1
6	NOOFSHEETS <i>(all one word)</i>	3	Sheet number x of y. Enter the value of y.	1
7	FRAMENO <i>(all one word)</i>	3	Frame number x of y. Enter the value of x. (This field is applicable only when capturing data from aperture cards.) When field is not applicable, leave blank.	
8	NOOFFRAMES <i>(all one word)</i>	3	Frame number x of y. Enter the value of y. (This field is applicable only when capturing data from aperture cards.) When field is not applicable, leave blank.	
9	NSCM	5	This field must contain the NATO Supply Code for Manufacturers (NSCM) of the Owner of the data. (Also known as FSCM, CAGE or NCAGE code.)	35907
10	SIZE	2	This field contains the document size. -For imperial sizes use A, B, C, D, E, F, G, H, J, K and LE (for legal)	A2

			-For metric sizes use A4, A3, A2, A1, A0 and B1.	
11	ADDITIONALIDENTIFIER <i>(all one word)</i>	10	This open field must be used when two (2) or more documents have the same document number but are different documents. e.g. Document 12345, Document 12345 DCR 001, then "DCR 001" would be entered in this field. When field is not applicable, leave blank.	DCR 001
12	DATARIGHTS <i>(all one word)</i>	1	The data rights as specified in the contract. "L" for "LIMITED" or "U" for "UNLIMITED"	U
13	DOCUMENTTITLE <i>(all one word)</i>	240	Title of document. (i.e. Drawing title)	BRACKET ASSY
14	TDANNO <i>(all one word)</i>	12	This field must be used to enter the TDAN number assigned for the project.	144471046
15	ERN	12	This field must be used for the Equipment Registration Number. Information must be provided if required, otherwise the field must be left blank.	
16	EAC	8	This field must be used for the Equipment Application Code. Information must be provided if required, otherwise the field must be left blank.	
17	EQUIPMENT	75	Name of the Equipment. Information must be provided if required, otherwise the field must be left blank.	
18	CTAT	1	If the data is "Controlled Goods", DM Code "D" must be entered, otherwise the field must be left blank	D
19	PROJECTNAME	30	This field must be used for "Controlled Goods" data and will be filled in by DSCO 4-6. This field must be left blank.	

TABLE 3 DRAWING SIZES

METRIC DRAWING SIZES			
Drawing Size	W x L (max) (mm)	Pixels Per Line	Number of Lines
A4	210 X 297	1656	2344
A3	297 X 420	2344	3312
A2	420 X 594	3312	4680
A1	594 X 841	4680	6624
A0	841 X 1189	6624	9368
B1	707 X 1000	5567	7875
NORTH AMERICAN / IMPERIAL DRAWING SIZES			
Drawing Size	W x L (max) (inches)	Pixels Per Line	Number of Lines
A	8.5 x 11	1704	2200
B	11 x 17	2200	3400
C	17 x 22	3400	4400
D	22 x 34	4400	6800
E	34 x 44	6800	8800
F	28 x 40	5600	8000
G	11 x 90	2200	18000
H	28 x 143	5600	28600
J	34 x 176	6800	35200
K	40 x 143	8000	28600
Legal	8.5 x 14	1704	2800

FIGURE 1 Sample record entries (Metadata) in database table:

(The following table is shown on three lines to suit page width.)

FILENAME	BATCHNO	DOCUMENTNO	REVISION	SHEETNO	NOOFSHEETS	FRAMENO	NOOFFRAMES
LZ000235.TIF	LZ001	9775458	B	1	1	1	1
LZ000236.TIF	LZ001	9775457	-	1	1		

NSCM	SIZE	ADDITIONALIDENTIFIER	DATARIGHTS	DOCUMENTTITLE	TDANNO	ERN	EAC	EQUIPMENT
35907	A2	DCR 001	U	BRACKET ASSY	144471046			
35907	A1		U	BRACKET	144471046			

CTAT	PROJECTNAME
D	
D	

FIGURE 2 Contains Controlled Goods

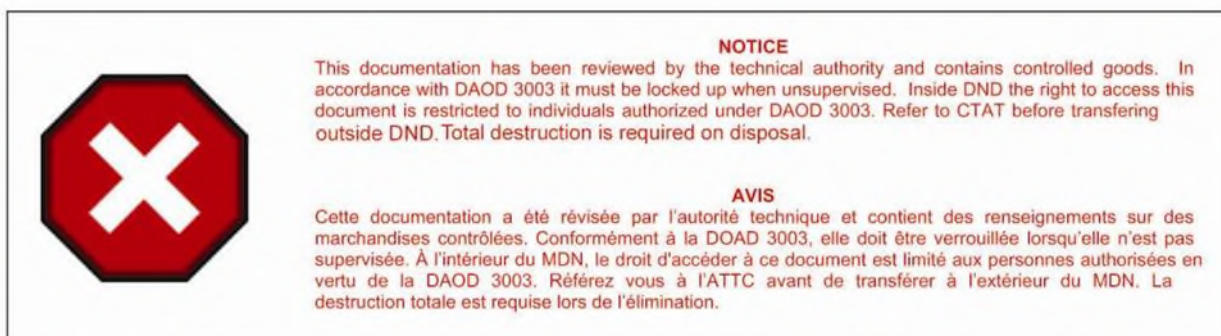


FIGURE 3 Does Not Contain Controlled Goods

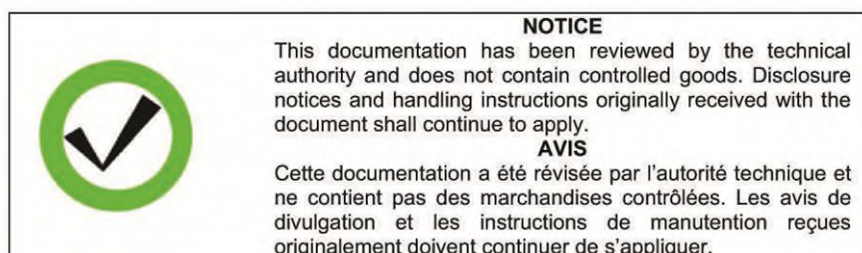


FIGURE 4 May Contain Controlled Goods

