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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.

**AVIS**

Cette documentation a été révisée par l'autorité technique et ne contient pas de marchandises contrôlées. Les avis de divulgation et les instructions de manutention reçues originalement

**MANUFACTURING DATA  
FOR  
COVERALL, NAVAL BOARDING PARTY, FLAME RESISTANT (FR)**

**1. SCOPE**

**1.1 Scope.** This Manufacturing Data covers the materials, design, construction and inspection requirements for Coverall, Naval Boarding Party, FR.

**1.2 Classification.** The Coveralls covered by this Manufacturing Data shall be the following types:

**Type I** Coverall, Naval Boarding Party, Flame Resistant, Navy Blue  
NSN 8405-20-001-3600

**Type II** Coverall, Naval Boarding Party, Flame Resistant, Tan  
NSN 8405-20-001-0848

**2. APPLICABLE DOCUMENTS**

**2.1 Government documents.** The following documents form part of this Manufacturing Data to the extent specified herein. Unless otherwise specified, the issue or amendment of documents effective for a particular contract shall be that in effect on the date of the applicable invitation to tender or the contract.

**SPECIFICATIONS AND STANDARDS**

D-80-001-055/SF-001	Label, Clothing and Equipment
D-80-001-101/SF-001	Webbing, Cotton, Types I and II, Water And Rot Resistant
D-83-001-005/SF-001	Fasteners, Slide, Interlocking
D-LM-008-002/SF-001	Marking For Storage And Shipment

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OPI: DSSPM 2-6

**Canada** 

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**2.2 Other publications.** The following documents form part of this Manufacturing Data to the extent specified herein. Effective date shall be that in effect on the date of manufacture. Source is as shown:

**Canadian General Standards Board Sales Unit**  
**11 Laurier Street**  
**Place du Portage, Phase III**  
**Hull, Québec K1A 1G6**

CAN/CGSB-4.2-M	Textile Test Methods
CAN/CGSB-54.1-M	Stitches and Seams, Parts I and II
CAN/CGSB-86.1-2003	Care Labelling of Textiles
CAN/CGSB-155.1-2001	Firefighters' Protective Clothing For Protection Against Heat And Flame

**Defence Supply Centre Philadelphia**  
**Clothing and Textiles Directorate**  
**700 Robbins Avenue**  
**Philadelphia, PA 19111-5096**  
**Attention: DSCP-COCT**

A-A-55126A	Fasteners Tapes, Hook and Loop, Synthetic
A-A-55217	Thread, Arid, Spun Staple

**2.3 DSSPM documents.** The following documents form part of the Technical Data Package for Coverall, Naval Boarding Party, FR.

<b>Annex C - DSSPM 2-2-80-206</b>	Manufacturing Data for Cloth, Twill Weave, Flame Resistant, 50% Aramid/50% PFR Rayon
<b>Annex D - DSSPM 2-2-80-207</b>	Manufacturing Data for Cloth, Twill Weave, Flame Resistant, Aramid
<b>Annex E - DSSPM 2-2-80-217</b>	Specification for Cloth, Plain Weave, Flame Resistant, Aramid, 185 g/m <sup>2</sup>
<b>Annex J - CFTPO-GENERAL</b>	Canadian Forces Transportation Packaging Order

**2.4 Figures.** The following figures are included as part of this Specification. Figures are not to scale:

Figure I	Front and Back View
Figure II	Garment Components
Figure III	Garment Components
Figure IV	Garment Components
Figure V	Care and Marking Label

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## 2.5 Sealed patterns.

DSSPM 100-03	Coverall, Naval Boarding Party, FR (for construction only)
DCGEM 259-86	Cloth, Plain Weave, 65/35 PFR Rayon/Aramid, 290 g/m <sup>2</sup> (Sealed for colour Navy Blue)
DSSPM 254-03	Cloth, Plain Weave, Flame Resistant, Aramid (Sealed for colour Tan)

**2.6 Paper patterns.** DND will provide the paper patterns for all sizes under Style code **CNBP06**. Size 7040 (Reg/Med) will be used for tendering purposes.

## 2.7 Order of precedence.

**2.7.1** In the event of inconsistency between contract documents, such as contract, technical data, and sealed patterns, the order of precedence must be contract, technical data, and sealed patterns.

**2.7.2** In the event of a conflict between the text of this manufacturing data and the references cited herein, the text of this manufacturing data must take precedence.

**2.7.3** In the event of inconsistency within this manufacturing data, the Contracting Authority must be contacted for clarification.

**2.7.4** Nothing in this document supersedes applicable laws and regulations, unless a specific exemption has been obtained.

## 3. REQUIREMENTS

**3.1 Sealed patterns.** A sealed pattern, when available, will be supplied to the successful tenderer. The sealed pattern shall constitute the standard in regards to any properties not specified in this Manufacturing Data.

**3.2 Design.** The design shall be in accordance with Sealed Pattern 100-03 and shall incorporate the following features:

- a. Slide fastener front fly closure;
- b. Pointed collar;
- c. Action back;
- d. Two-piece set-in sleeves;
- e. Sleeve placket with hook and loop fastener closure;
- f. Pointed cuff with hook and loop fastener closure;
- g. Underarm venting system with two way slide fastener closure;
- h. Pencil pocket over semi-bellows pocket with slide fastener closure on each upper sleeve;
- i. Shoulder straps with hook and loop fastener closures;
- j. Quarter-top front side pockets;

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- k. Semi-bellows pockets with flaps and hook and loop fastener closures and incorporated holster channels on each upper thigh;
- l. Magazine clip holders in each semi-bellows calf pockets;
- m. Semi-bellows pockets with flap and hook and loop fastener closures on each side calves;
- n. Back hip pockets with flap and hook and loop closure;
- o. Back waist suppression, and;
- p. Back leg hem suppression.

**3.2.1** The garment components shall be shaped, dimensioned and positioned in accordance with the Government supplied paper Patterns, the applicable Figures and the Scale of measurements (see Table I).

**3.3 Preproduction sample.** When specified in the contract, preproduction samples shall be a requirement of this Manufacturing Data. Preproduction samples shall be completely representative of the final product, being made from parts and materials as specified and by equipment and processes which will be used in quantity production.

### **3.4 Materials**

**3.4.1 Shell for Type I – Navy Blue.** The shell material for Type I Coveralls shall be Cloth, Twill Weave, Flame Resistant, 260 g/m<sup>2</sup>, 50% Aramid/50% PFR (Permanently Flame Resistant) Rayon, in accordance with Type I fabric of DSSPM 2-2-80-206 (**Annex C**) or Cloth, Twill Weave, Flame Resistant, Aramid, 260 g/m<sup>2</sup>, in accordance with Type I fabric of DSSPM 2-2-80-207 (**Annex D**). The colour shall be Navy Blue in accordance with Sealed Pattern DCGEM 259-86.

**3.4.2 Shell for Type II – Tan.** The shell material for Type II Coveralls shall be Cloth, Plain Weave, Flame Resistant, Aramid, 185 g/m<sup>2</sup> in accordance with DSSPM 2-2-80-217 (**Annex E**). The colour shall be Tan in accordance with Sealed Pattern DSSPM 254-03.

**3.4.3 Mesh.** The mesh used for the underarm venting system shall be 100% aramid, tricot netting, 4.5 oz/yd<sup>2</sup> (tolerance  $\pm$  0.5 oz.). Style #72117 from SSM Industries, P.O. Box 602, Spring City, Tennessee 37381, tel (423) 265-4048, or similar, has been found to be acceptable. The colour shall match the shell. If applicable colour is not available, the Technical Authority shall approve another colour considered acceptable for the garment.

**3.4.4 Webbing for pencil pockets.** The webbing for the pencil pockets shall be water and rot resistant cotton webbing conforming to Type I of D-80-001-101/SF-001. The webbing shall be 2-inches (5.0 cm) wide. The colour shall match the shell.

**3.4.5 Slide fasteners.** All slide fasteners shall conform to D-83-001-005/SF-001. Metal components shall have a dull or antique finish. Regular pulls shall be used on all sliders. The slide fasteners tape shall be made with flame resistant fibre, shall be woven using a twill weave, and shall be fire resistant in accordance with CAN/CGSB-155.1-2001, para 5.1.2. The tape colour shall match the shell material. When tested in accordance with the applicable test methods mentioned in D-83-001-005/SF-001, the slide fasteners shall meet the requirements for colourfastness and strength. Detailed requirements are as follows:

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**Table II - Requirements for Slide Fasteners**

Application	Class	Type	Chain Type	Length
Front closure	3	13	Metal (brass)	See Scale of Measurements
Sleeve pockets	3	15	Metal (brass)	5-3/4" (14.6 cm)
Underarm venting system	2	11	Monofilament (coil) with automatic lock sliders	12" (30.5 cm)

**3.4.6 Suppression elastic.** The elastic braid for the back waist and back of leg bottom shall be cotton, rayon, or polyester covered neoprene rubber, 1-inch (2.5 cm) wide with 100% stretch and having 54 meters per kilogram (1 kg). The colour shall be black for Type I Coveralls and white for Type II Coveralls. The colour may also match the shell material.

**3.4.7 Hook and loop fastener tape.** The hook and loop fastener tape shall conform to Type II, Class 1 with a flame retardant finish in accordance with A-A-55126. The colour for both the hook and loop fastener tapes shall match the shell material. The lengths and widths are defined in the following table:

**Table III - Hook and Loop Fastener Tapes**

Location	Loop Tape Fastener		Hook Tape Fastener	
	Dimension	Location	Dimension	Location
Shoulder straps	1" x 1-1/4" (2.5 cm x 3.2 cm)	Shoulder seam	1" x 1-1/4" (2.5 cm x 3.2 cm)	Shoulder strap
Sleeve cuffs	1" x 3-1/2" (2.5 cm x 9.5 cm)	Cuff	1" x 1" (2.5 cm x 2.5 cm)	Cuff extension
Sleeve placket	1" x 3/4" (2.5 cm x 19.1 mm)	Under top placket	1" x 3/4" (2.5 cm x 19.1 mm)	Over bottom placket
Thighs – semi-bellows pocket	3/4" x 6-1/2" (19.1 mm x 16.4 cm)	Pocket	3/4" x 6-1/2" (19.1 mm x 16.4 cm)	Flap
Back hip patch pockets	3/4" x 5-1/4" (19.1 mm x 13.3 cm)	Pocket	3/4" x 5-1/4" (19.1 mm x 13.3 cm)	Flap
Calves – Semi-bellows pocket	3/4" x 2" (2 per pocket) (19.1 mm by 5 cm)	Pocket	3/4" x 2" (2 per flap) (19.1 mm)	Flap

### 3.4.8 Thread

**3.4.8.1 For seaming and stitching.** The thread shall be Thread, Aramid, Spun Staple, Tex 70, in accordance with Type II of A-A-55217. The colour shall match the components being sewn.

**3.4.8.2 For serging.** The thread shall be Thread, Aramid, Spun Staple, Tex 40, in accordance with Type I of A-A-55217. The colour shall match the components being sewn.

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**3.4.8.3 Thread for sewing of hook and loop fastener tape.** All hook and loop fastener tape shall be sewn with Thread, Aramid, Spun Staple thread, Tex 27, in accordance with Type II of A-A-55217. The colour shall match the components being sewn. See para 3.6.11 for detailed sewing instructions regarding the hook and loop fastener tape.

**3.4.9 Canada Flag.** A subdued Canadian flag shall be sewn to the upper left sleeve of each coverall. Unless otherwise specified, the following Canadian flags shall be **available from the Government**. One flag shall be provided for each coverall.

**Table IV – Canada Flag Details**

<b>Coverall Type</b>	<b>Canada Flag Detail</b>
<b>Type I Coverall</b>	<b>NSN 8455-21-855-4637</b> (Insignia, Canada Flag, CF, Attachment Method: Sew-On, Colour: Red and White)
<b>Type II Coverall</b>	<b>NSN 8455-20-001-7020</b> (Insignia, Canada Flag, CF, Attachment Method: Sew-On, Colour: Beige)

**3.4.10 Label.** A marking label in accordance with D-80-001-055/SF-001 and a care label in accordance with CAN/CGSB-86.1-2003 shall be centred on the inside of the back, directly below the collar seam and stitched around all edges (see 3.11 and 3.12). The colour for the labels shall be a good match to the shell material.

### **3.5 Cutting**

**3.5.1** The Coveralls will be cut using duplicates of Government supplied paper patterns. Paper patterns include seam allowance but do not include 'make-up' allowance. The contractor shall be responsible for any changes which may be required for 'make-up' allowance to suit his production methods, but the design, grade or the requirements specified herein shall not be changed

**3.5.2** The shell parts of the Coveralls shall be cut in the direction of the warp as shown on the paper patterns.

**3.5.3** The shell parts of each Coveralls shall be cut from the same piece of shell material.

**3.5.4** The specified materials shall be cut and used in accordance with the best commercial standards.

### **3.6 Sewing**

**3.6.1** All seams shall be in accordance with CAN/CGSB-54.1-M.

**3.6.2** The inherent properties of some FR materials render them prone to fraying. Care shall be taken to ensure that all seam allowances shall be adhered to without compromise to the shape and finished dimensions outlined in the scale of measurements.

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**3.6.3** Unless otherwise specified, all stitching shall be either lock stitch Type 301 or chain stitch Type 401 conforming to CAN/CGSB-54.1-M having not less than 9.5 stitches per inch (2.5 cm). The cut edges may be finished with any of the 500 series stitches and shall be no less than 10 stitches per inch (2.5 cm).

**3.6.4** Where double-lapped seams are specified, numerical designation 2.04.03 of CAN/CGSB-54.1-M shall be used. They may be lock stitch or chain stitched, with the needles set 1/4-inch (6.4 mm) apart. Other seams and stitches shall be Class 300 lockstitched series of CAN/CGSB-54.1-M.

**3.6.5** Seams shall be a minimum of 3/8-inch (9.5 mm) wide or as otherwise specified.

**3.6.6** When double-needle stitched is specified, needles shall be set 1/4-inch (6.4 mm) apart.

**3.6.7** The ends of all lock stitched seams and stitchings, also breaks in thread shall be securely backstitched.

**3.6.8** The stitches shall present a regular even appearance without fabric pucker and shall be free from skips that may result from faulty machine tension or other stitching malfunctions.

**3.6.9** Where seaming, turning and stitching is specified, the edges shall be properly worked out before stitching.

**3.6.10 Serging.** Serging shall be done using a three-thread serger with not less than 10 stitches per inch (2.5 cm).

**3.6.11** Where seaming and serging is specified, this may be done in one or two operations.

**3.6.12 Hook and loop fastener tape.** Hook and loop fastener tape shall be stitched around all edges 1/8-inch (3.2 mm) gauge. Care shall be taken to ensure stitching is formed into the hook and loop portion of the tape.

**3.6.12.1** When tapes wider than 1-inch (2.5 cm) are used, they shall be stitched around all edges and through the centre or have a 'X' enclosed in the box.

**3.6.12.2** For best results, a ball-point needle, size 110 (#18) should be used.

**3.6.13 Bartacks.** Bartacks shall be 1/2-inch (12.7 mm) long and shall have not less than 20 cover stitches or 3/8-inch (9.5 mm) long and shall have not less than 15 cover stitches.

### **3.7 Construction – upper body**

**3.7.1 Back.** The back shall be two pieces, joined together along the centre, serged and topstitched at 1/4-inch (6.4 mm) gauge. The left portion shall overlap the right on the outside.

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**3.7.1.1 Action Back.** The back portion shall have a release pleat directly behind each armhole to form an action back.

**3.7.1.2** Each pleat shall be folded and pressed toward the side seam on the outside and stitched 1/4-inch (6.4 mm) gauge. The bottom folded edge shall be stitched 1/8-inch (3.2 mm) gauge.

**3.7.1.3** The pleat shall be stitched across its full width, 2-inches (5 cm) below shoulder edge and 3-inches (7.5 cm) above waist edge.

**3.7.2 Shoulders.** The back and foreparts shall be seamed, serged and stitched 1/4-inch (6.4 mm) gauge. The back shall overlap the front on the outside.

**3.7.3 Shoulder straps.** Each shoulder strap shall be made of two layers of shell material, seamed together, turned and stitched 1/4-inch (6.4 mm) gauge along the sides and pointed end.

**3.7.3.1** A length of hook fastener tape measuring 1-1/4 inch (3.2 cm) by 1-inch (2.5 cm) wide shall be centred on the strap 1/2-inch (12.7 mm) from the pointed end and stitched around all edges.

**3.7.3.2** A length of loop fastener tape measuring 1-1/4 inch (3.2 cm) by 1-inch (2.5 cm) wide shall be centred and positioned on the shoulder seam to effect proper closure with the shoulder strap and around all-edges.

**3.7.3.3** To facilitate joining, the shoulder strap shall be centred over the shoulder seam and basted in place.

**3.7.4 Sleeve pocket.** A semi-bellows type pocket with slide fastener shall be positioned on each upper sleeve. The pockets shall be made from shell material.

**3.7.4.1** The two bellows cuts at the bottom shall be seamed.

**3.7.4.2** The front edge of the pocket shall be turned under 3/8-inch (9.5 mm) placed over the fastener tape and double-needle stitched. The pocket shall open from top to bottom.

**3.7.4.3** With raw edges folded under, a pocket assembly shall be positioned on each upper sleeve, as indicated on paper pattern. The pocket assemblies shall be stitched along top, side and bottom 1/16-inch (1.6 mm) gauge. With the ends of the fastener tape folded under in line with the pocket edge, the slide fastener tape shall be double-needle stitched along top, bottom and side.

**3.7.5 Pencil pocket.** A piece of webbing measuring 12-1/2 inches long by 2-inches wide (31.8 cm by 5.0 cm) shall be used for the pencil pocket. Both ends of the material shall be folded over 1-inch (2.5 cm) and stitched at 1/8-inch (3.2 mm) gauge to form a hem of 3/4-inch (1.9 cm).

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**3.7.5.1** The webbing shall be folded over to form a pocket, enclosing the hem, leaving a 1-inch (2.5 cm) extension at the top. The finished length of the pencil pocket shall be 6-inches (15.0 cm) as shown on the Sealed Pattern.

**3.7.5.2** The pencil pocket shall be positioned on the sleeve pocket, as indicated paper patterns, and stitched 1/8-inch (3.2 mm) gauge around all edges. One row of stitching shall be placed down the middle of the pencil pocket, parallel to the side seams, forming pencil slots.

### **3.7.6 Sleeves**

**3.7.6.1 Elbow seam.** The top and under sleeve shall be seamed together along the elbow seam from the upper edge of sleeve to sleeve placket markings.

**3.7.6.1.1 Sleeve placket.** The top and under sleeve plackets shall be folded under in line with elbow seam. The raw edge shall be folded under to form a finished placket, 3/4-inch (19.1 mm) wide.

**3.7.6.2** The raw edges of the elbow seam shall be serged together, pressed and stitched 1/4-inch (6.4 mm) gauge from the upper edge of sleeve to placket. The top of the sleeve placket shall be stitched across the full width, through all layers. The top sleeve shall overlap the under sleeve on the outside.

**3.7.6.3** The sleeves shall be seamed to their respective armholes. The raw edges shall be serged together, pressed and stitched 1/4-inch (6.4 mm) gauge. The body shall overlap the sleeve on the outside. The shoulder straps shall be included in this seam.

**3.7.6.4** A hook fastener tape shall be centred under the top placket and stitched around all edges.

**3.7.6.5** A loop fastener tape shall be centred over the bottom placket and stitched around all edges.

**3.7.6.6 Sleeve pleats.** One pleat shall be placed at the bottom of the under sleeve, as indicated on paper pattern. Two pleats shall be placed at the bottom of the top sleeve, as indicated on paper pattern. The bottom of the pleats shall be folded towards the sleeve placket, as shown on the sealed sample, and stitched across the bottom to facilitate the joining of the cuff.

**3.7.7 Side seams.** The front and back shall be seamed together along the underarm and side seam leaving an opening between markings for the underarm venting system. The seam shall be clipped at the opening. The raw edges shall be serged. The seam allowance shall be folded and topstitched above and below opening. The under sleeve and front panel shall overlap the top sleeve and back.

**3.7.8 Underarm venting system.** A two-way slide fastener with a layer of mesh material shall be inserted at the underarm opening.

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**3.7.8.1** The slide fastener shall be placed face down over the opening seam allowance, edges together and stitched in placed. The opening edges with slide fastener shall be folded under. The slide fastener shall be hidden under the opening.

**3.7.8.2** A gusset of mesh material shall be placed under the opening. With side edges wrapped around slide fastener tape and underarm seam edges, the mesh layer shall be stitched. **See cross-section view in Figure II.** Note that the measurement of the mesh gusset will be at its widest in the middle of the opening.

**3.7.8.3** Each end of the mesh shall have an inverted fold to reduce the piece to a 1-inch (2.5 cm) width. The raw end shall be folded under and stitched to create a finished edge.

**3.7.8.4** The underarm venting opening shall be seamed along each side 1/4-inch (6.4 mm) gauge.

**3.7.9 Sleeve cuffs.** Each cuff shall be made of one piece of shell material.

**3.7.9.1** With the pointed end of the cuff pointing towards the elbow seam, the cuff shall be stitched to the underside of the lower edge of the sleeve. The seam shall be pressed down toward the cuff.

**3.7.9.2** The cuff shall be folded in half, face to face and seamed across the straight end and along the pointed end.

**3.7.9.3** The cuff shall be turned outside out. The top raw edge of the cuff shall be folded under and stitched 1/8-inch (3.2 mm) gauge through all edges.

**3.7.9.4** The cuff shall be topstitched 1/4-inch (6.4 mm) across end, along bottom and pointed end.

**3.7.9.5** A piece of hook fastener tape shall be centred on the under side of the cuff, 1/2-inch (12.7 mm) from pointed end and stitched around all edges. A piece of loop fastener tape shall be centred over the cuff 1/4-inch (6.4 mm) behind the straight end, and stitched around all edges.

**3.7.9.6** The finished cuff shall be 2-1/4 inches (5.6 cm) wide.

### **3.8 Construction – lower body**

**3.8.1 Front pockets.** A quarter top pocket shall be positioned on the side of each forepart.

**3.8.1.1** Each pocket bag shall be made of one ply of shell material placed face down on the outside of their respective foreparts with the pocket opening edges aligned. The pocket opening edges shall be seamed, turned and topstitched 1/4-inch (6.4 mm) gauge.

**3.8.1.2** Each pocket bag shall be folded. The side and bottom edges shall be seamed, turned and stitched 1/4-inch (6.4 mm) gauge. The bottom ply of the pocket bag shall form the side front of the forepart.

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**3.8.1.3** The forepart at the bottom the pocket opening shall be double-needle stitched through all layers. A 3/8-inch (9.5 mm) diagonal bartack shall be placed at the bottom corner of the pocket opening, as shown on the Paper Pattern.

**3.8.1.4** The length of the finished pocket opening shall be 7-inches (12.5 cm).

**3.8.2 Thigh pockets.** A bellows pocket with holster channels shall be positioned on each front thigh. The pockets shall be made of shell material.

**3.8.2.1** The top edge of the pocket shall be turned in, with raw edges folded under to form a 3/4-inch (19.1 mm) wide finished hem. The top and bottom pocket hem shall be stitched 1/16-inch (1.6 mm).

**3.8.2.2** A piece of loop fastener tape shall be centred 1/2-inch (12.7mm) below pocket top and stitched around all edges.

**3.8.2.3** The bellows cuts at the bottom shall be seamed. The pocket sides and bottom edge shall be folded in line with the bellows cuts and parallel to the pocket outer edges. The fold edges shall be stitched 1/16-inch (1.6 mm) gauge to form walls on the pocket. The bellows pocket shall be placed face down on the bottom ply of the pocket. The pocket shall be seamed and serged along the sides and bottom and then turned inside out, with corners properly worked out.

**3.8.2.4 Holster channels.** Each side of the pocket shall be topstitched though all plies 1/16-inch (1.6 mm) gauge for a distance of 4-1/2 inches (11.4 cm), covering the holster channel opening.

**3.8.2.5 Thigh pocket flaps.** The flaps shall be folded in two and seamed at both ends and topstitched 1/4-inch (6.4 mm) gauge.

**3.8.2.5.1** A piece of hook fastener tape shall be centred on the flaps underside 1/4-inch (6.4 mm) above bottom fold and stitched around all edges.

**3.8.2.5.2** A flap shall be centred and positioned 1/4-inch (6.4 mm) above each pocket and seamed to the forepart, turned down and stitched 1/4-inch (6.4 mm) gauge. The raw edge of the flap and bottom pocket ply shall be enclosed in the seam.

**3.8.2.5.3 Bartacks.** A 3/8-inch (9.5 mm) horizontal bartack shall be placed along top and bottom of all holster channel openings.

**3.8.3 Back hip pockets.** Two patch pockets shall be positioned on the hip of each back hip. Each pocket shall be made of shell material.

**3.8.3.1** The top edge of the pocket shall be turned in, the raw edges folded under to form a 3/4-inch (19.1 mm) wide hem and stitched 1/16-inch (1.6 mm) gauge. The top fold shall be stitched 1/16-inch (1.6 mm) gauge.

**3.8.3.2** A piece of loop fastener, shall be centred 3/8-inch (9.5 mm) below top edge and stitched around all edges.

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**3.8.3.3** With edges turned under, a pocket shall be positioned on each back hip, as indicated on paper patterns and stitched 1/16-inch (1.6 mm) gauge.

**3.8.3.4 Hip pocket flaps.** The hip pocket flaps shall be made of two pieces of shell material, seamed together, turned and stitched 1/4-inch (6.4mm) gauge along the side and bottom edges.

**3.8.3.4.1** A piece hook fastener tape shall be centred 1/4-inch (6.4 mm) above bottom edge. The tape shall be shaped to accommodate the flap and stitched around all edges.

**3.8.3.4.2** The flap shall be centred 1/2-inch (12.7 mm) above the pocket, seamed, turned down and stitched 1/4-inch (6.4 mm) gauge. The raw edge of the flap shall be enclosed in the seam.

**3.8.4 Side seams.** The lower forepart and lower back portion shall be joined together, serged and stitched 1/4-inch (6.4 mm) gauge. The back shall overlap the front on the outside.

### **3.8.5 Calf semi-bellows and magazine pocket assemblies**

**3.8.5.1 Magazine pockets.** Two magazine pockets made of one ply of shell material shall be positioned over the side seam of each lower leg, as shown on corresponding Figure and as indicated on paper pattern. The right leg shall have a pocket 7-inches (17.5 cm) long and the left leg shall have a pocket 5-inches (12.5 cm) long.

**3.8.5.1.1** The top of the holder shall be turned in, raw edge folded under, and stitched 1/16-inch (1.6 mm) gauge to form a finished hem 5/8-inch (15.8 mm) wide. The top fold shall be stitched 1/16-inch (1.6 mm) gauge.

**3.8.5.1.2** Each half of the pocket shall have a 1-inch (2.5 cm) inverted pleat at the bottom, as shown on corresponding Figure and Sealed Pattern.

**3.8.5.1.3** The side and bottom edges shall be serged and turned under. The pockets shall be centred and positioned on each side seam, as indicated on paper pattern, and stitched 1/16-inch (1.6 mm) gauge.

**3.8.5.1.4** Two magazine slots shall be formed by placing a row of stitching in the centre of each pocket and parallel to the side edges of the pocket.

**3.8.5.1.5 Bartacks.** A 1/2-inch (12.7 mm) bartack shall be positioned on the top of each slot as shown on the figure.

**3.8.5.2 Calf semi-bellows pockets.** Two semi-bellows pockets of shell material shall be positioned over the magazine pockets on each lower leg.

**3.8.5.2.1** The top of the semi-bellows pocket shall be turned in, raw edge folded under, and stitched 1/16-inch (1.6 mm) gauge to form a 2-inch (5 cm) wide finished hem. The top fold shall be stitched 1/16-inch (1.6 mm) gauge.

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**3.8.5.2.2** The bellows cut shall be seamed. The edges of the pockets shall be serged.

**3.8.5.2.3** The outer side and bottom edge of each pocket shall be folded in line with the bellows cuts and parallel to the pocket edges. The folded edges shall be stitched 1/16-inch (1.6 mm) gauge to form walls on the pocket.

**3.8.5.2.4** Two pieces of loop fastener tape shall be positioned on the pocket, as indicated on paper pattern and stitched around all edges.

**3.8.5.2.5** The pockets shall be positioned on each lower leg, as indicated on paper pattern with bellows corner positioned on the back leg portion. The back side and bottom edge shall be stitched 1/16-inch (1.6 mm) gauge through all plies. The stitching shall begin 1-inch (2.5 cm) from the top of the pocket edge.

**3.8.5.2.6** The front side shall be stitched 1/16-inch (1.6 mm) beginning 1-inch (2.5 cm) from top corner. The bottom wall shall be pleated at the bottom front corner and front stitching shall continue 2-inches (5.0 cm) beyond front corner.

**3.8.5.3 Calf pocket flaps.** The flaps shall be made of two pieces of shell material, seamed together, turned and stitched 1/4-inch (6.4 mm) gauge.

**3.8.5.3.1** Two pieces of hook fastener tape shall be positioned on the flap, as indicated on paper pattern and stitched around all edges.

**3.8.5.3.2** The flap shall be centred 1/4-inch (6.4 mm) above pocket stitching, seamed, turned down and stitched 1/4-inch (6.4 mm) gauge. The raw edge of the flap shall be enclosed in this seam.

**3.8.5.4** The top front corner shall be stitched to the pocket flap.

**3.8.5.5** The sidewall shall be pleated front ply to back ply and stitched to the pocket flap. Two 1/2-inch (12.7 mm) vertical bartacks shall be positioned on each pocket as indicated on the paper pattern.

**3.8.6 Seat seam.** The lower back portions shall be joined at the back crotch seams, serged and stitched 1/4-inch (6.4 mm) gauge. The left panel shall overlap the right panel on the outside.

**3.8.7 Joining upper body and bottom body.** The upper and bottom shall be joined along the waist seam, serged and stitched 1/4-inch (6.4 mm) gauge. The upper body shall overlap the bottom body on the outside.

**3.8.8 Back waist suppression.** The back waist suppression shall consist of an elastic braid encased in a waistband casing, placed inside the Coverall.

**3.8.8.1 Waistband casing.** All raw edges shall be turned under. The casing shall be centred and positioned over the back waist seam, with top and bottom raw edges turned under. The end edges shall be turned under for 1-inch (2.5 cm) and stitched 1/16-inch (1.6 mm) gauge. The finished width of the casing shall be 1-1/2 inches (3.8 cm).

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**3.8.8.2** A length of elastic braid shall be threaded through the casing and secured at each end with double-needle stitching for the full width of the channel, through all plies.

**3.8.9 Front closure.** The front closure shall consist of a slide fastener, fly curtain (pattern piece: right fly) and fly cover (pattern piece: left fly).

**3.8.9.1** The front edges of the forepart shall be serged.

**3.8.9.2 Fly curtain.** The curtain shall be made of one piece of shell material, folded right sides together, seamed across the top, turned inside out and topstitched 1/4-inch (6.4 mm) gauge. The raw edges shall be serged together.

**3.8.9.2.1** The fly curtain shall be positioned on the right centre front, with top edge 1/4-inch (6.4 mm) below neck seam. The slide fastener shall be positioned with top stop 1/2-inch (12.7 mm) below neck seam and shall be sandwiched between fly curtain and front panel. With slide fastener and fly curtain in place, the centre front shall be seamed through all plies from neck to leg inseam. The slide fastener and fly curtain shall be folded over and centre front stitched 1/4-inch (6.4 mm) gauge from neck to leg inseam.

**3.8.9.3 Fly cover.** The fly cover shall be made of one piece of shell material, folded right sides together, seamed across top and bottom, turned out and topstitched 1/4-inch (6.4 mm) gauge. The raw edges shall be serged together.

**3.8.9.3.1** The fly cover shall be positioned on the left centre front, with top edge 1/4-inch (6.4 mm) below neck seam and shall be sandwiched between centre front and slide fastener. The slide fastener shall be positioned with top stop 1/2-inch (12.7 mm) below neck seam with slide fastener and cover in place, the centre front shall be seamed through all plies, from neck to bottom.

**3.8.9.3.2** The bottom free edge of the fly curtain shall be seamed with the left side of the crotch. The seam shall start at the bottom of the fly fastener through to the inseam. Approximately 3/8-inch (9.5 mm) of the fly cover shall be caught in this operation.

**3.8.9.3.3** The slide fastener and cover assembly shall be folded towards centre and right centre front shall be stitched 1/4-inch (6.4 mm) from neck seam to leg inseam, through all plies.

**3.8.9.3.4** The bottom of the cover shall be securely stitched to the garment 1/4-inch (6.4 mm) and 1/16-inch (1.6 mm) gauge across the full width of the cover. A diagonal bartack 3/8-inch (9.5 mm) long shall be placed at the outside bottom corner of the cover, as shown on sealed pattern.

**3.8.10 Joining inseams.** The legs shall be joined along the inseams serged and topstitched 1/4-inch (6.4 mm) gauge. The back shall overlap the front on the outside. The bottom of the curtain shall be included in this seam.

**3.8.11 Suppression at back leg bottom.** The bottom of each leg shall be turned up, with the raw edge folded under. A length of 1-inch (2.5 cm) wide elastic shall be inserted into the back hem. The elastic shall be pulled 1-inch (2.5 cm) over the inseam and side seam, and double-needle stitched across each end. The hem shall be stitched to the leg

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bottom, 1/16-inch (1.6 mm) gauge. To prevent the elastic from rolling or bending, the elastic shall be stretched, a row of stitching placed along the centre of the elastic, for the full length of the elastic.

**3.8.12 Collar.** The collar shall be made of two pieces of shell material.

**3.8.12.1** The upper and under collar shall be joined together along the ends and outer edge and turned right side out.

**3.8.12.2** The neck edge of the under collar shall be joined to the neck edge of the garment. The seam shall be pressed toward the collar.

**3.8.12.3** The neck edge of the top collar shall be folded under and stitched 1/16-inch (1.6 mm) gauge catching the under collar.

**3.8.12.4** The collar shall be stitched 1/4-inch (6.4 mm) gauge around the edges.

**3.9 Measurements.** Measurements shall be as shown on the applicable Figures and the Scale of Measurements (Table I).

**3.10 Pressing.** The Coveralls shall be properly pressed in accordance with good commercial practice.

**3.11 Marking label.** A marking label shall be centred on the inside of the back, directly below the collar seam and stitched around all edges. The marking must be printed in black on a white label for Coverall Type I and a green label for Coverall Type II. The label must give the following information printed in characters not less than 1/8-inch (3.2 mm) nor more than 1/4-inch (6.3 mm) in height, with the exception of the size identification which must be twice the height:

- a. NATO Stock Number (NSN) for each size (numbers will be designated in the contract);
- b. Size by height and chest (see the Scale of Measurements);
- c. NATO size (see the Scale of Measurements);
- d. Contract number;
- e. If applicable, the name of the sub contractor identified on the label as initial(s) after the contract number;
- f. Name of the prime contractor. No initials, logos, or trademarks must be used;
- g. Month and year of manufacture;
- h. Care symbols (see paragraph 3.12); and
- i. The following information:

**COVERALLS, NAVAL BOARDING PARTY, FIRE RESISTANT**

1. WASH NEW GARMENTS BEFORE WEARING.
2. WASH GARMENTS IN WARM WATER. A SECOND, CLEAN WATER RINSE IS RECOMMENDED. DO NOT USE CHLORINE BLEACH. DO NOT USE LIQUID FABRIC SOFTENER.

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**COMBINAISON IGNIFUGE DESTINÉES À L'ÉQUIPE D'ARRAISONNEMENT DE NAVIRES**

1. LAVER LE VÊTEMENT NEUF AVANT DE LE PORTER.
2. LAVER LE VÊTEMENT À L'EAU TIÈDE. ON RECOMMANDE D'EFFECTUER UN DEUXIÈME RINÇAGE À L'EAU CLAIRE. NE PAS UTILISER D'AGENTS DE BLANCHIMENT CHLORÉS. NE PAS UTILISER D'ASSOUPLEISSANT LIQUIDE.

**3.12 Care labelling.** Care symbols shall be included on the marking label. The following care symbols, as defined in CAN/CGSB-86.1-2003 shall be used:

- a. Table 1 – Washing - Symbol 6;
- b. Table 2 – Bleaching - Symbol 2;
- c. Table 3 – Drying - Symbol 2;
- d. Table 4 – Ironing/Pressing - Symbol 2;
- e. Table 5 – Professional Textile Care - Symbol 3.

**3.13 Finishing.** The Coveralls shall be cleaned, smoothed and folded. Packaging and barcoding shall be in accordance with **CFTPO-General (Annex J)**. The abbreviated nomenclature for the label on the bags should read:

Type I Coverall                      Coveralls, Naval Boarding Party, FR  
Combinaison ignifuge destinées a l'équipe  
d'arraisonnement de navires

Type II Coverall                      Coveralls, Naval Boarding Party, FR  
Combinaison ignifuge destinées a l'équipe  
d'arraisonnement de navires

#### **4. QUALITY CONTROL/INSPECTION**

**4.1** The contractor is responsible for the performance of all inspection requirements as specified herein. Contractors may utilize their own or any other inspection facility acceptable to the Government or its designated representative. The Government reserves the right to perform any of the inspections specified herein, where such inspections are deemed necessary to ensure materiel and services conform to the prescribed requirements. The contractor is responsible for ensuring that all materiel or services submitted to the government for acceptance comply with all requirements of the contract

#### **5. PACKAGING**

**5.1 Packaging and packing.** Packaging, packing and delivery must be in accordance with the terms of the contract.

#### **6. NOTES**

**6.1 Ordering data.** Procurement documents should specify the following:

- a. Title, number and date of this document;

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- b. NATO stock number, type, colour, and sizes required;
- c. Preproduction requirements;
- d. Packaging and packing requirements;
- e. The Design Authority.

## **6.2 Definition of Terms**

**6.2.1 Design Authority.** The Design Authority is the Government agency responsible for the technical aspects of design and changes to design. The Design Authority is the Directorate, Soldier Systems Program Management (DSSPM).

**6.2.2 Master sealed pattern.** A master sealed pattern is the authorised prototype of the item to be produced, and is held only by the Government.

**6.2.3 Sealed pattern.** A sealed pattern is an exact duplicate of the master sealed pattern and is available to the manufacturer to be used as a guide in production.

**6.3 DND green procurement.** The production of a product to this manufacturing data, or the evaluation of a product to this manufacturing data, may require the use of materials and/or equipment that could be hazardous. This manufacturing data does not purport to address all safety, health and environmental concerns, if any associated with its use. It is the responsibility of the user of this manufacturing data to establish appropriate safety, health and environmental practices and to determine the applicability of regulatory limitations prior to use.

**6.4 Enquiries.** Enquiries or recommendations for additions or deletions must be addressed to the Contracting Authority.

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Table V - Size Roll for Coverall, Naval Boarding Party,  
 Fire Retardant, Navy Blue (Type I Coverall)

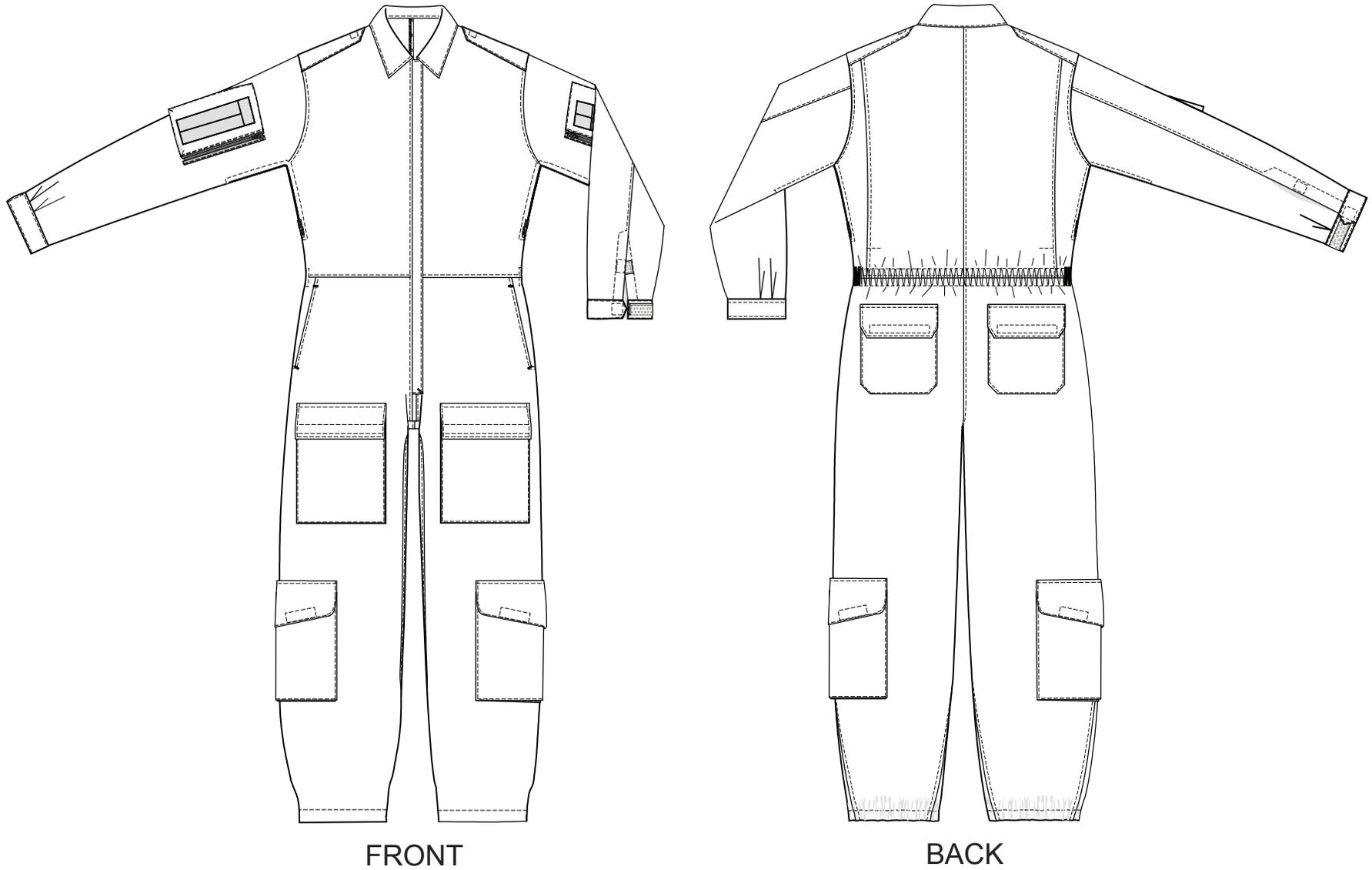
Size	NATO Stock Number
6736	8405-20-000-7257
6740	8405-20-000-7297
6744	8405-20-000-7298
7036	8405-20-000-7299
7040	8405-20-000-7300
7044	8405-20-000-7301
7048	8405-20-000-7302
7336	8405-20-000-7303
7340	8405-20-000-7304
7344	8405-20-000-7305
7348	8405-20-000-7306
7640	8405-20-000-7307
7644	8405-20-000-7308
Special Size	8405-20-001-3030

Table VI - Size Roll for Coverall, Naval Boarding Party,  
 Fire Retardant, Tan (Type II Coverall)

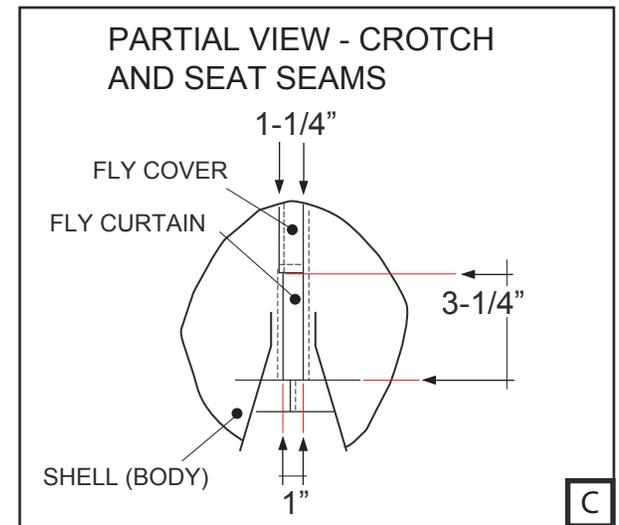
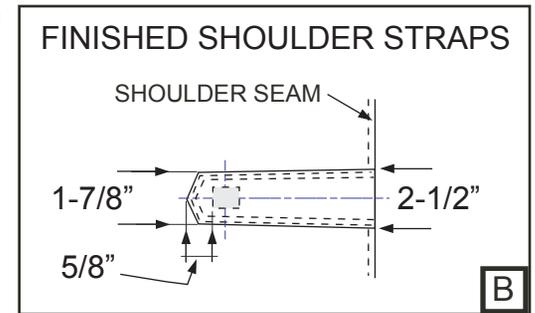
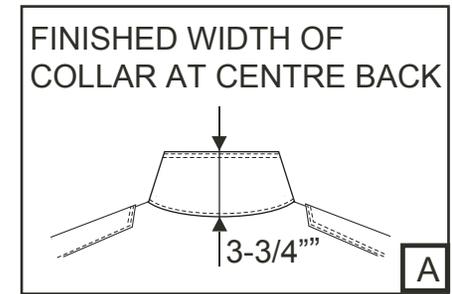
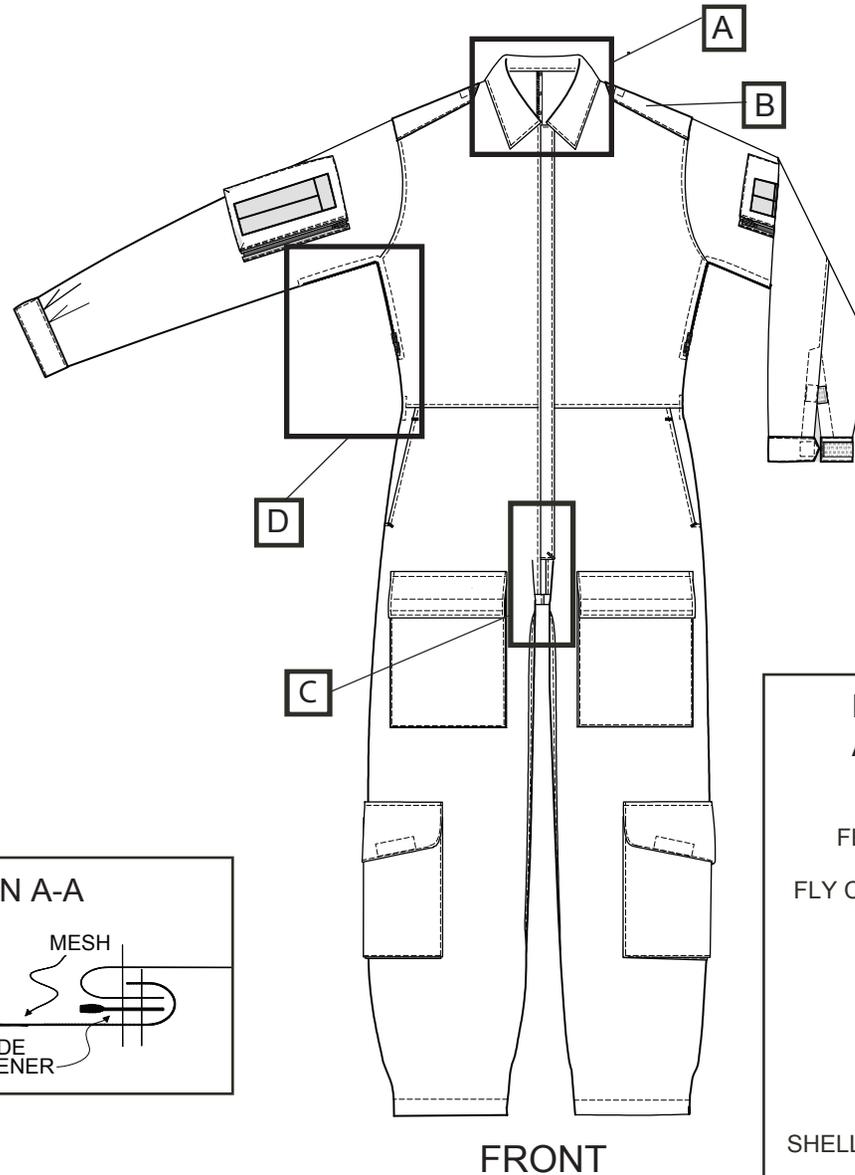
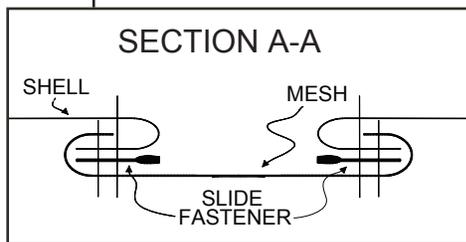
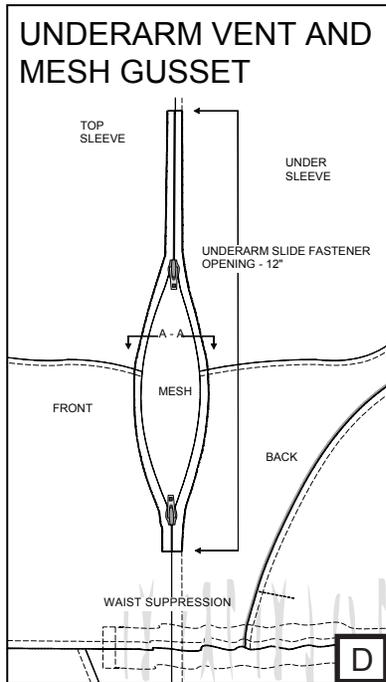
Size	NATO Stock Number
6736	8405-20-000-7310
6740	8405-20-000-7311
6744	8405-20-000-7312
7036	8405-20-000-7318
7040	8405-20-000-7319
7044	8405-20-000-7320
7048	8405-20-000-7323
7336	8405-20-000-7324
7340	8405-20-000-7325
7344	8405-20-000-7326
7348	8405-20-000-7327
7640	8405-20-000-7328
7644	8405-20-000-7329
Special Size	8405-20-000-7341

MEASUREMENTS OF BODY				MEASUREMENTS OF GARMENT																	
SIZES BY HEIGHT AND CHEST	NATO SIZE	HEIGHT WITHOUT SHOES	CHEST	GIRTH MEASUREMENTS WITH GARMENT CLOSED				BACK WIDTH (ACTION BACK CLOSED)	FROM COLLAR SEAM AT CENTRE		INSEAM	SLEEVE			THIGH 2" DOWN FROM CROTCH	KNEE	BOTTOM OPEN	BOTTOM CLOSED	LENGTH OF COLLAR NOTCH TO NOTCH	FRONT SLIDE FASTENER LENGTH	
				CHEST	WAIST EXTENDED	WAIST RELAXED	SEAT IN LINE WITH BOTTOM OF SLIDE FASTENER		BACK TO CROTCH SEAM	FRONT TO CROTCH SEAM		LENGTH AT UNDERARM SEAM INCLUDING CUFF	WIDTH AT SCYE	WIDTH AT CUFF							
6736	6070-8595	5' 4"	33-36	47	39	32	44	18 1/2	36 1/4	29	28 1/2	20	21	10 1/2	26 1/2	21	19 1/2	15 1/2	16 1/2	25	
6740	6070-9505	to	37-40	51	43	36	48	19 1/2	36 1/2				22	11	28 1/2	22	20	16	17 1/2		
6744	6070-0515	5' 6 1/2"	41-44	55	47	40	52	20 1/2	36 3/4				23	11 1/2	30 1/2	23	20 1/2	16 1/2	18 1/2		
7036	7080-8595	5' 7"	33-36	47	39	32	44	18 1/2	37 3/4	30 1/2	30 1/2	21	21 1/2	10 1/2	26 1/2	21	19 1/2	15 1/2	16 1/2	26 1/2	
7040	7080-9505		37-40	51	43	36	48	19 1/2	38				22 1/2	11	28 1/2	22	20	16	17 1/2		
7044	7080-0515		to	41-44	55	47	40	52	20 1/2				38 1/4	23 1/2	11 1/2	30 1/2	23	20 1/2	16 1/2		18 1/2
7048	7080-1525		45-48	59	51	44	56	21 1/2	38 1/2				24 1/2	12	32 1/2	24	21	17	19 1/2		
7052	7080-2535		5' 9 1/2"	49-52	63	55	48	60	22 1/2				38 3/4	25 1/2	12 1/2	34 1/2	25	21 1/2	17 1/2		20 1/2
7336	8090-8595	5' 10"	33-36	47	39	32	44	18 1/2	39 1/4	32	32 1/2	22	22	10 1/2	26 1/2	21	19 1/2	15 1/2	16 1/2	28	
7340	8090-9505		37-40	51	43	36	48	19 1/2	39 1/2				23	11	28 1/2	22	20	16	17 1/2		
7344	8090-0515		to	41-44	55	47	40	52	20 1/2				39 3/4	24	11 1/2	30 1/2	23	20 1/2	16 1/2		18 1/2
7348	8090-1525		45-48	59	51	44	56	21 1/2	40				25	12	32 1/2	24	21	17	19 1/2		
7352	8090-2535		6' 1/2"	49-52	63	55	48	60	22 1/2				40 1/4	26	12 1/2	34 1/2	25	21 1/2	17 1/2		20 1/2
7640	9000-9505	6' 1"	37-40	51	43	36	48	19 1/2	41	33 1/2	34 1/2	23	23 1/2	11	28 1/2	22	20	16	17 1/2	29 1/2	
7644	9000-0515		to	41-44	55	47	40	52	20 1/2				41 1/4	24 1/2	11 1/2	30 1/2	23	20 1/2	16 1/2		18 1/2
7648	9000-1525		45-48	59	51	44	56	21 1/2	41 1/2				25 1/2	12	32 1/2	24	21	17	19 1/2		
7652	9000-2535		6' 3 1/2"	49-52	63	55	48	60	22 1/2				41 3/4	26 1/2	12 1/2	34 1/2	25	21 1/2	17 1/2		20 1/2
TOLERANCE PLUS OR MINUS				1"	1"	1"	1"	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/4	1/2	

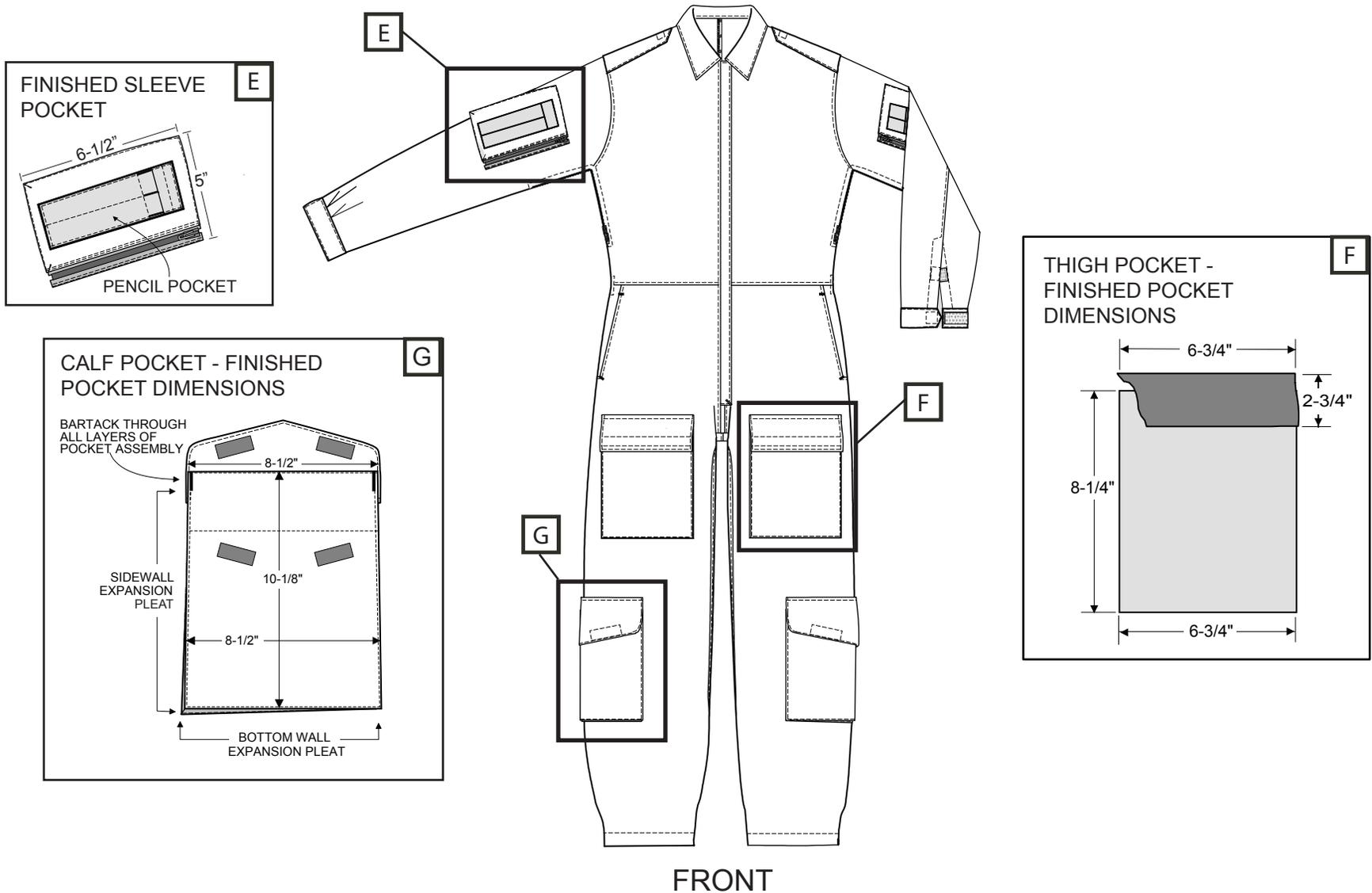
# FIGURE I - FRONT AND BACK VIEW



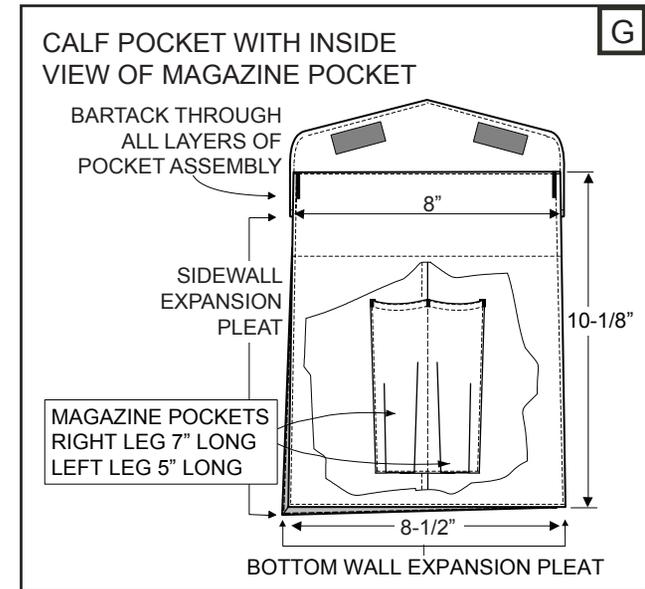
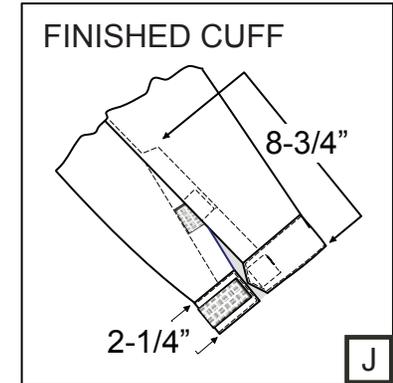
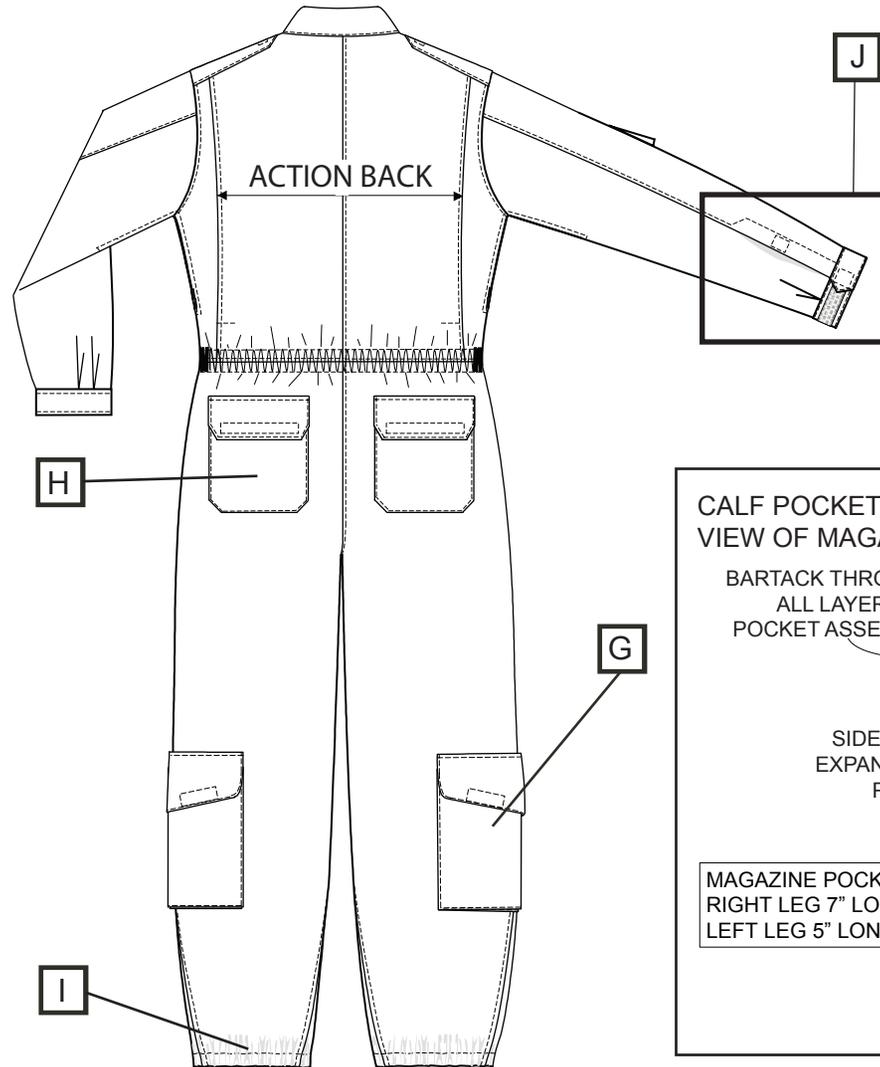
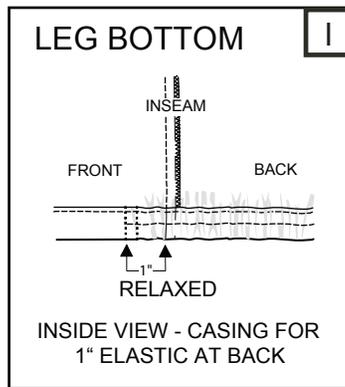
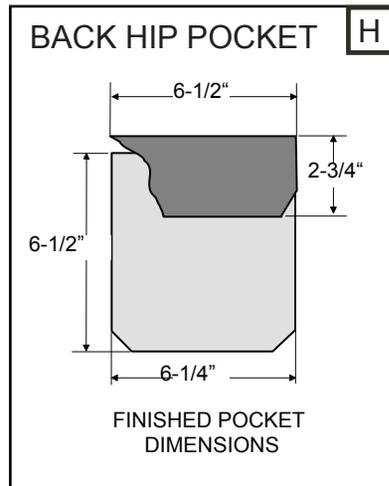
# FIGURE II - GARMENT COMPONENTS



# FIGURE III - GARMENT COMPONENTS



# FIGURE IV - GARMENT COMPONENTS



# FIGURE V - CARE AND MARKING LABEL

NOTE: Care symbols on figure are for illustration purposes only and may not be accurate. Refer to care symbols outlined in technical data for accuracy.

ITEM & CONTRACT INFO	ARTICLE ET INFO SUR LE CONTRAT	COVERALLS, NAVAL BOARDING PARTY COMBINAISONS DE L'ÉQUIPE D'ARRAISonnement DE NAVIRES NSN/NNO: 8415-20-XXX-XXXX  <b>SIZE/TAILLE : 7040</b> NATO SIZE / TAILLE OTAN : XXXX-XXX CONTRACT NO. / NO. DE CONTRAT: WXXXX-XXXXXX CONTRACTOR NAME/NOM D'ENTREPRENEUR: Jones & Company DATE OF / DE MANUFACTURE: MM/YY FIBRE CONTENT / TENEUR DE FIBRES: XXXXXXXXXXXXX				
CARE SYMBOLS	SYMBOLES D'ENTRETIEN	 50°C	 Tumble dry on medium. / Séchage par culbutage T/moyenne	 Iron at medium temperature. / Repasser à une température moyenne.	 Do not bleach. / Ne pas javeliser.	 Do not dry-clean. / Ne pas nettoyer à sec.
CARE INSTRUCTIONS	CONSIGNES D'ENTRETIEN	1. WASH GARMENTS BEFORE WEARING. 2. WASH GARMENTS IN WARM WATER. A SECOND, CLEAN WATER RINSE IS RECOMMENDED. DO NOT USE CHLORINE BLEACH. DO NOT USE LIQUID FABRIC SOFTENER. <hr/> 1. LAVER LE VÊTEMENT NEUF AVANT DE LE PORTER. 2. LAVER LE VÊTEMENT À L'EAU TIÈDE. ON RECOMMANDE D'EFFECTUER UN DEUXIÈME RINÇAGE À L'EAU CLAIRES. NE PAS UTILISER D'AGENTS DE BLANCHIMENT CHLORÉS. NE PAS UTILISER D'ASSOULISSANT LIQUIDE.				
USER ID	ID DE L'UTILISATEUR	I.D. _____				