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**SOLICITATION AMENDMENT
MODIFICATION DE L'INVITATION**

The referenced document is hereby revised; unless otherwise
indicated, all other terms and conditions of the Solicitation
remain the same.

Ce document est par la présente révisé; sauf indication contraire,
les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

Vendor/Firm Name and Address

Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Clothing and Textiles Division / Division des vêtements
et des textiles

L'Esplanade Laurier,

East Tower 7th Floor

Tour est 7e étage

140 O'Connor, rue O'Connor,

Ottawa

Ontario

K1A 0R5

Title - Sujet Managed Clothing Solution for CBSA	
Solicitation No. - N° de l'invitation 47419-238945/A	Amendment No. - N° modif. 002
Client Reference No. - N° de référence du client 1000348945	Date 2021-06-07
GETS Reference No. - N° de référence de SEAG PW-\$\$PR-766-80020	
File No. - N° de dossier pr766.47419-238945	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM Eastern Daylight Saving Time EDT on - le 2021-06-22 Heure Avancée de l'Est HAE	
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Baker, Johanne	Buyer Id - Id de l'acheteur pr766
Telephone No. - N° de téléphone (613) 854-9253 ()	FAX No. - N° de FAX (613) 943-7970
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction:	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

The Solicitation Amendment #002 is raised in regards to the following:

1. To respond to the industry questions:

Question 004

Spec-155: long/short sleeve Hybrid shirt is missing a sleeve length; will the measurement chart need revising?

Answer 004

The long sleeve hybrid shirt will be a new item offered to CBSA employees. The measurement chart has not been confirmed; however, the shirts will be required in sleeve lengths ranging from 30/31, 32/33, 34/35, and 36/37.

Question 005

Specs-114 / 134 / 150: long/short sleeve blue and white shirts; please clarify the note found in the specifications below the measurement charts: Clarification is needed as a change in sizing could impact the overall unit price of the item.

Answer 005

Modification to the sizing and dimension of the long/short sleeve blue and white shirts **Specs - 114 / 134 / 150** as noted in the measurement chart will be as follows:

- Size designation – modified to reflect commercial sizing for neck and sleeve (i.e. 16½ – 32/33)
- Long sleeve, white/blue – modified to include commercial sleeve lengths in ranges 30/31, 32/33, 34/35, and 36/37
- Female shirts white/blue – modified to provide a slightly looser fit body, and longer torso.

Question 006

Spec-124: Parka Unisex: In Appendix B, all items with crests have two lines for pricing - one for French and one for English with different quantities but for the parka there is only one line with no indication of French or English.

Answer 006

At the current time, the CBSA does not have any Designated Northern locations requiring French identification. Should the needs change, individual requests will be made to have the parka re-crested from an English crest to a French crest.

Question 007

Spec-124 Parka: This item is the only item with extra short and extra tall heights; confirming that these unique heights are indeed required?

Answer 007

The extra short and extra tall parkas would only be required as custom orders.

Question 008

Spec-153 Unisex rain pant: There is no measurement chart in the specification for sizing.

Answer 008

This is an oversight; please find attached the amended specification for CBSA/ASFC-153 Rain Pants, Unisex that includes the measurement chart.

Question 009

In **Annex G (Evaluation Criteria)** we are given the ratings scale for the following resources:

R4 – Contract Manager
R5 – Inventory/Purchasing Manager
R6 – Customer Service Manager
R7 – Project Manager

However, in **Annex A (Statement of Work) Section 8: Resource Categories**, we find questions related to these positions as well as many other positions (such as Textile Technologist, Warehouse Manager, etc.) but these questions regarding each position are not found in the **Annex G: Evaluation Criteria**.

Are we to answer the questions from **Annex A Section 8: Resource Categories** in our response?

Answer 009

As per Part 4 – Evaluation Procedures and Basis of Selection of the Request for Proposal, the bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation Criteria. However, please note that in the Statement of Work, under Section 8 – Contractor Resource Categories, for the resources that are not assessed under the Annex G – Evaluation Criteria, the line identified as “Rated Requirements” under their respective table should have read “Minimum Requirements”.

All other terms and conditions of the solicitation remain the same.

A proposal already submitted may be amended prior to closing time by sending the amended correspondence to Bid Receiving, the envelope/fax bearing the Request for proposal No. 47419-238945/A and the closing date of June 22, 2021.

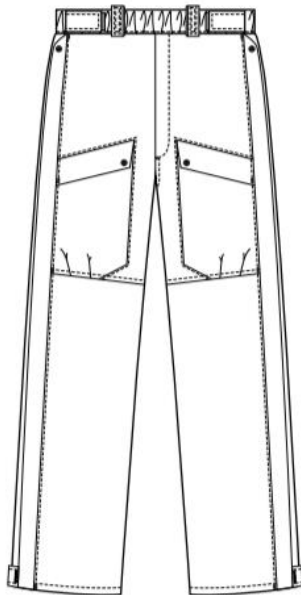


Canada Border
Services Agency

Agence des services
frontaliers du Canada



Pants, Rain, Unisex



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Specification no. CBSA/ASFC-153
Date of issue: 2020-12-01

PROTECTION • SERVICE • INTEGRITY

Canada

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SPECIFICATION

PANTS, RAIN, UNISEX

1.0 Scope

This specification describes the requirements to manufacture the Pants, Rain, Unisex for the Canada Border Services Agency (CBSA).

This specification supersedes all previous specifications for the Pants, Rain, Unisex. This specification has been translated into French from this original English specification.

This document will include the following information for the Pants, Rain, Unisex:

- Applicable Publications
- General requirements
- Sealed sample requirements
- Detailed description
- Quality Assurance
- Appendix A - Drawings

2.0 Applicable Publications

Canadian General Standards Board (CAN/CGSB):

- CAN/CGSB, 4.2, Textile Test Methods
- CAN/CGSB 4.131-93, Polyester-Covered Polyester Thread
- CAN/CGSB-86.1-M91, Care Labelling of Textiles

American Society for Testing and Materials (ASTM):

- ASTM, American Society for Testing and Materials, Method D 3776-96, D2097-69 (1980), D 3886-99, D413 and F 392-93
- American Association of Textile Chemists and Colorists (AATCC):
- AATCC-135, American Association of Textile Chemists and Colorists – Technical Manual

Federal Standard (FED-STD):

- FED-STD-191A, Federal Standard, Textile Test Methods

British Standards Institution (BS):

- BS 3424-26:1990, Method 29A, British Standards Institution

3.0 General Requirements

The article(s) covered in this specification must be free from manufacture defects that may affect its appearance or serviceability. Any particulars not covered within this specification or accompanying documentation must be equivalent to the sealed sample. The finished article must match the sealed sample in production, shade, shape, and appearance. Failure to meet these requirements set out in this specification will lead to the rejection of the sample.

The Pants, Rain, Unisex has requirements for its material(s), shape, size, and finish. These details are important as they provide a collective set of standards for all Pants, Rain, Unisex used within the CBSA.

4.0 Sealed Sample

A sealed sample, identified by the specification number noted in the contract, will be supplied to the successful tenderer when available. This will be the standard for any properties not identified in this specification. Variation from the specification may appear in the sealed sample in which case the specification will govern unless otherwise identified on the sealed sample tag.

5.0 Detailed Description

The detailed description outlines all the standards that need to be met for this specification.

5.1 Components

The Pants, Rain, Unisex must all be equivalent in material(s), size, shape, colour, and appearance. Each component for the Pants, Rain, Unisex will be broken down for its requirements to meet the standards set out within this specification.

5.1.1 Shell Material (FABRIC A)

Meeting testing outlined in TABLE I

- 100% Nylon
- Colour: Dark blue
- DWR (Durable Water Repellent) finish

5.1.2 Water Moisture Vapour Permeable (WMVP) Membrane

Meeting testing outlined in TABLE II (after lamination)

- Water resistant and breathable
- 3-layer laminated membrane
 - o Outer layer - shell material
 - o Middle layer – membrane
 - o Inside layer – black, 100% nylon warp tricot, 61 g/m² (max)
- All layers laminated together with a combined weight of no more than 205 g/m²

5.1.3 Interlining (Storm flap, waistband tab, pocket flap, hem tab)

- Transparent Thermoplastic Nylon Adhesive film
- 5 mm x 58"
- 100% Polyamide

5.1.4 Seam Sealing Tape

Meeting requirements outlined in Table II (after lamination)

- 3 layer seam sealing tape

Note: Any sealed seams showing any form of delamination or any non-bonded or peeling seams will be a cause for rejection.

5.1.5 Thread

- Polyester core, polyester wrap (meeting CAN/CGSB 4.131-93)
- Class B, Type 1 Soft
- R40 Tex
- Colour: Matching shell material

5.1.6 Snap Fasteners

- 24 Ligne
- Standard spring loaded brass snap fastener
- 15mm matte black cap

5.1.7 Elastic

- 5cm (2") wide
- Colour: Black
- Preshrunk polyester

5.1.8 Hook and Loop Tape

- Colour: Black
- Woven Nylon
- Length-wise shear strength: (combined performance)
 - o Initially (not less than): 8 P.S.I
 - o After 1000 cycles: 4 P.S.I
- Peel strength: (combined performance)
 - o Initially (not less than): 1 P.I.W
 - o After 1000 cycles: .5 P.I.W
- Side seam & storm flap – 1.59cm ($\frac{5}{8}$ ") wide
- Waistband tabs – 3.81cm (1½") wide
- Belt loops, Hem - 2.54cm (1") wide

5.1.9 Slide Fasteners

Location	Type of Slide Fastener
Front Closure	<ul style="list-style-type: none">• Coil close end, auto lock, Slider DA E 5/8, Polyester Tape• Colour – Black
Front Pockets	<ul style="list-style-type: none">• Coil close end, auto lock, Slider DA E 5/8, Polyester Tape• Colour – Black
Side Seams	<ul style="list-style-type: none">• Vislon Two-way, open end, auto lock, Slider VSMO 56 9/16, Polyester Tape• Colour – Black

5.2 Construction

5.2.1 Stitching and Seam Sealing

All stitching must be lockstitch. There must be not less than three or more than four stitches per centimetre. The beginning and ending of all stitching must be securely backstitched or tacked, unless secured by other stitching. Ball point needles must be used for stitching elastic components. All seams and points where stitching penetrates the shell materials must be permanently sealed on the inside with the appropriate seam-sealing tape. Care must be taken to ensure that the tape cross-over points where seams join are doubly covered and bonded securely so as to ensure water-resistance. Any sealed seams showing any form of delamination or any non-bonded or peeling seams must be a cause for rejection.

5.2.2 Waistband

The waistband constructed from shell material, must be 5 cm wide when finished. It must be fully elasticized with openings side seams. Both side seams at the waistband must be secured by means of tabs complete with hook and loop tape as specified in para. 5.1.8 for closure. Five (5) adjustable hook and loop tape secured belt loops must be sewn to the waistband. Two (2) loops on the front of the waistband and three (3) on the back as shown in the drawings. The waistband must be constructed and dimensioned as per the patterns and drawings.

5.2.3 Side Seams

Both side seams from waistband to hem must be equipped with a full length, slide fastener, lengths specified in the Scale of Measurements. There must be 2 sliders, applied in a back to back position. The end of the slide fastener with the stoppers must be placed at the waist and the bottom of the slide fastener must be sewn into the seam at the bottom of the trouser leg. The bottom slide fastener must open up towards the waist area and the top slider must open towards the hem. A 4.5cm (1¾") wide storm flap made from shell material must be applied to the front of the leg directly below the waistband from waistband to the hem. A continuous piece of hook must be applied to the outer edge of the storm flap, as per the drawings with a corresponding loop applied to the back of the leg. The top of the storm flap must have a snap fastener as specified in para. 5.1.6 positioned as per the drawings and viewing sample. The completed side-seam must conform in all respects to the drawings and sealed sample.

5.2.4 Hem

The hem must be 2 cm finished with the raw edge folded under 1.5 cm and stitched down on the folded edge using a 3 mm gauge. The back portion of the trouser hem must have a piece of loop tape sewn level with finished hem to secure the adjustment tab of the storm flap.

5.2.5 Slanted Thigh Pocket Flap

The slanted thigh pocket flap must be made from shell material with a snap fastener in the bottom corner of the pocket. The flap must be lined with the interlining as specified in para 5.1.3.

5.2.6 Thigh Bellow Pockets

The thigh bellow pockets, must be constructed from shell material (Fabric A). The shell must be folded to create pleat (bellow) which runs parallel to the storm flap. Incorporated into the bottom edge of the pocket must be two darts. Slide fasteners as specified in para 5.1.9 must be incorporated into the pocket. The completed thigh bellow pockets must be shaped and dimensioned as per the drawings and sealed sample.

5.3 Labelling

The Pants, Rain, Unisex must permanently identify in a bilingual format the size designation, fibre content, material master number, the manufacturers' name, and contract number. Labelling must withstand a minimum of 40 washes with permanent ink with contrasting colour.

5.4 Packaging

It is the responsibility of the contractor to ensure that goods are packaged in a suitable manner to be delivered in an undamaged condition. Any goods received in a damaged condition will be returned to the contractor.

The contractor will package the goods in accordance with the industry standards and best commercial packaging.

6.0 Quality Assurance

It is the contractor's responsibility to satisfy the CBSA, Uniform Program that the material and services being provided conform to the specification. The CBSA Uniform Program reserves the right to perform any inspections considered necessary to verify the material or services provided meet the requirements outlined within the specification.

TABLE I - Shell Material (Fabric A) Properties

	REQUIREMENT	TESTED BY CAN/CGSB-4.2
Colour	Dark Blue to match swatch sealed sample	
Fiber Content	100% nylon, Type 6.6	
Weave	Plain	
Mass	90 g/m ² (min.)	Method 5.1
Width	150 cm (min.)	Method 4.1
Yarns per 10 cm	Warp 440 (min.) Weft 285 (min.)	Method 6 Method 6
Breaking Strength	Warp 550 Newton (min.) Weft 550 Newton (min.)	Method 9.2 Grab Method 9.2 Grab
Tearing Strength	Warp 20 Newton (min.) Weft 20 Newton (min.)	Method 12.1
Colour Fastness		
To Light	Equal to AATCC Standard L5 or better	Method 18.3-97
To Crocking, Dry and Wet	Grey scale 4 or better	Method 22
To Washing	Grey scale 4 or better	Method 19.1 Test 2A (50°C - 45 min.)
Laminated Shell Material (3 layer WMVP membrane)		
Finish	REQUIREMENT	TESTED BY CAN/CGSB-4.2
DWR (durable water repellant)	- 100 spray rating. Initial - 80 spray rating. After 5 Permanent Press washing cycles (Washing Temp. 49°C ± 3°C) - Tumble Dry - Permanent Press for 30 minutes as per (AATCC Method 135- 2000)	Method 26.2

TABLE II – Properties of Shell Material (Fabric A) After Lamination

(With WMVP membrane & tricot backing)

Test	Test Method	Duration	Min. Value
Resistance of Materials to Water Vapour Diffusion	CAN CGSB 4.2 Method 49-M99, Option 1 *See test procedure #1*	- Initial - After 5 launderings - After ageing (70°C & 95% RH for 168 hrs)	13 mm max.
Hydrostatic Resistance	CAN CGSB 4.2 Method 26.5 *See test procedure #2*	- Initial - After 5 launderings	1240.2 kPa
Low Pressure Water Permeability	CAN CGSB 4.2 Method 26.3 * See test procedure #3*	- Initial	No Leakage
	ASTM D 2097-69 (1980) * See test procedure #4*	- After Cold Flex Warp Fill	No Leakage
	AATCC 135-1992/Test procedure 6 * See test procedure #5*	- After 100 hours of Continuous Wet Flex (Agitation)	No Leakage
High Pressure Water Permeability	BS 3424: Part 26: 1990 Method 29A * See test procedure #6*	- Initial	No Leakage
	BS 3424: Part 26: 1990 Method 29A * See test procedure #7*	- After Unleaded Gasoline	No Leakage
	BS 3424: Part 26: 1990 Method 29A * See test procedure #7*	- After DEET Insect Repellent	No Leakage
	BS 3424: Part 26: 1990 Method 29A * See test procedure #8*	- After Synthetic Perspiration	No Leakage
Abrasion Resistance	ASTM D 3886-99 Procedure: use No. 0 Emery Polishing Paper * See test procedure #9*	- 2500 Cycles	No failure
SEAMS			
Seam Tape Durability	CAN CGSB 4.2 Method 26.3 * See test procedure #10*	- Initial	No Leakage
	CAN CGSB 4.2 Method 26.3 ANSI/AATCC 135 *See test procedure #11*	- After 10 laundry cycles	No Leakage
	CAN CGSB 4.2 Method 26.3 *See test procedure #12*	- After 10 dry-clean cycles	No Leakage
Delamination	Visual	- During and after the above procedures in this table	No Delamination
Peel Strength N/23 mm	ASTM D 413		8 N/23mm minimum

NOTE: It will be the responsibility of the manufacturer to provide test data from a single certified independent testing facility meeting the approval of the CBSA in order to show compliance of their products to the requirements listed in Table II of this specification.

Testing for each Table shall:

- Be performed in its entirety on the same garment and/or piece of material after laminating as indicated.
- Adhere to all specified test methods and conditions.
- Contain test performed dates not predating the latest specification or amendment date with the exception of multiple contracts which may include different garments using the same fabric(s), at the discretion of the CBSA.
- Any amendments affecting Table II and Appendix 'A' requires new test data containing the same received dates and not predating the newest amendment date specific to these tables.
- If amendments to the specification do not affect Table II and/or Appendix 'A' the last specification date and/or amendment date would be acceptable provided they meet the above requirements.

The fabric should not show any visible signs of delamination*** or loss of film during the garment's useful life, (approximately 5 years). The fabric shall be capable of having its sewn seams, seam-sealed with an appropriate tape, in a waterproof, durable fashion. The tape on the sealed seams shall not peel off and/or wear during the projected life span of the garment. Not meeting these requirements will be a probable cause for rejection. ***Delamination is defined as any irreparable separation of the bonded layers of the Laminated Shell Material(s).

Test Procedures – WMVP Membrane

1. The knit side of the laminated cloth shall face the water. The tests shall be completed as outlined in CAN/CGSB 4.2 Method 49-99, Option #1. The samples shall be conditioned at $21^{\circ}\text{C} \pm 1^{\circ}\text{C}$ ($69.8^{\circ}\text{F} \pm 2^{\circ}\text{F}$) and relative humidity shall be $65 \pm 2\%$. The test specimen shall be placed approximately equidistant between the dry airflow and the water cell. Four specimens shall be tested per condition. The tests shall be completed initially, after 5 launderings according to ISO 6330-1984 (E) Method 2B-E and after ageing according to ASTM F392-93.
2. The water pressure shall be applied to the knit side of the laminated cloth. A taffeta fabric restraint conforming to MIL-C-21852F-TYPE III-CLASS1 PART#WJAAGNA should be placed on top of the sample against the face side of the laminated cloth.
3. The knit side of the laminated cloth shall contact the water. The hydrostatic head shall be 13.78 kPa (2.0 psi) and shall be held for 3 minutes. Leakage is defined as the appearance of water any place within the 11.43 cm (4.5") diameter test area. The test may be performed using any device which tests the same specimen area at the equivalent pressure. In case of dispute, the apparatus described in FED-STD-191A Method 5516 shall be used.
4. Ten warp and ten fill specimens 8.26 cm x 11.43 cm (3.25" x 4.5") shall be selected from each sample unit. The 8.26 cm (3.25") dimension is the test direction. Specimens shall be flexed for 20,000 cycles as specified in ASTM-D 2907 and as follows: Mark the knit side of each specimen with two lines 4.32 cm (1.7") apart and perpendicular to the test direction. The area between the lines is the test area and shall

be centered on the knit side of the specimen. Wrap the specimens around fully extended pistons with the knit side out. The test area lines shall meet evenly and shall line up with the edges of the pistons. Clamp in place making sure the clamps are not in the test area. Check specimen for smoothness and tautness (wrinkles cause improper flexing). The distance between the pistons shall be 4.32 cm (1.7") in the open position and 1.27 cm (0.5") in the closed position as measured from the bottom of the upper piston and top of the lower piston. Place the test apparatus with mounted specimens in a test chamber at $-31.67^{\circ}\text{C} \pm 1^{\circ}\text{C}$ ($-25^{\circ}\text{F} + 2^{\circ}\text{F}$) for a one hour conditioning period and then flex in the test chamber at $-31.67^{\circ}\text{C} \pm 1^{\circ}\text{C}$ ($-25^{\circ}\text{F} + 2^{\circ}\text{F}$). After flexing, test for water permeability as in test procedure #3 except that the orifice of the tester shall be modified to accommodate the smaller specimen size.

5. One 35.56 cm (14") by full width specimen shall be selected from each sample unit. The specimens shall be agitated using the 'normal' cycle in an automatic home laundering as specified in AATCC 135-1992, except that the machine shall be capable of continuous agitation. The water level shall be maintained at $72.74\text{ l} \pm 4.55\text{ l}$ (16 + 1 gallons), and the water temperature shall be $32^{\circ}\text{C} + 9^{\circ}\text{C}$. The load shall be $.91\text{ kg} \pm .09\text{ kg}$ (2 lbs + 0.2 lbs). The specimen shall be removed from the washer after 100 hours of continuous agitation. The specimen shall be air dried and then tested for water permeability at three sites across the width of the specimen according to test procedure #3.
6. The water pressure shall be applied to the knit side of the laminated cloth from below the test specimen. The maximum pressure of 172.25 kPa (25 psi) shall be attained in 2 minutes \pm 20 seconds and shall be applied for 5 minutes. Leakage is defined as the appearance of water any place within the test area.
7. Place a 15.24 cm x 15.24 cm (6" x 6") piece of blotting paper on a flat surface and cover with a 25.4 cm x 25.4 cm (10" x 10") test specimen with the face side up. Weigh out $2.0\text{ gm} \pm 0.1\text{ gm}$ (.07 oz \pm .004 oz) of solid contaminant or pipette 2.0 ml (.07 f.oz) of a liquid contaminant. Place the contaminant on the center of the specimen and cover with a 15.24 cm x 15.24 cm (6" x 6") piece of glassine paper. Place a 1.81 kg (4 lbs) weight on the glassine paper directly over the contaminated area. Allow the weight to remain on the specimen for 30 minutes. Remove the weight and glassine paper and allow the specimen to sit undisturbed for an additional 30 minutes. Wipe off any excess contaminant using a fresh piece of blotting paper and test for water permeability as per procedure #6 except that the water pressure shall be applied for 3 minutes.
8. One specimen per sample unit shall be tested for water permeability after exposure to synthetic perspiration. The specimen shall be not less than 15.24 cm (6") in diameter. The test cups shall accommodate this size specimen and shall have a depth of at least 2.5 cm (1"). The cups shall be sealed to prevent leakage. The solution shall contact the knit side of the laminate.

Synthetic perspiration shall be prepared by stirring the following ingredients into 500 ml of distilled water:

- 3 grams sodium chloride
- 1 gram predigested protein
- 1 gram n-propyl propionate
- 0.5 gram lecithin (phosphatidyl choline)

The predigested protein shall contain the following amino acids:

Ingredient	Milligrams (mg)
Lysine	82.5
Histidine	27.5
Arginine	40.0
Aspartic acid	72.5
Threonine	42.5
Serine	50.0
Glutamic acid	197.5
Proline	92.5
Glycine	22.5
Alanine	28.7
Cystine	4.7
Valine	66.2
Methionine	30.0
Isoleucine	53.8
Leucine	87.5
Tyrosine	51.3
Phenylalanine	48.8
Tryptophane	18.8

The solution shall be stirred continuously and heated to $50 \pm 1^{\circ}\text{C}$, then covered and cooled to approximately 35°C .

The solution shall be stirred such that any solid particles are suspended in solution and poured into the test cup. The cup shall be inverted to allow the synthetic perspiration to evaporate through the specimen.

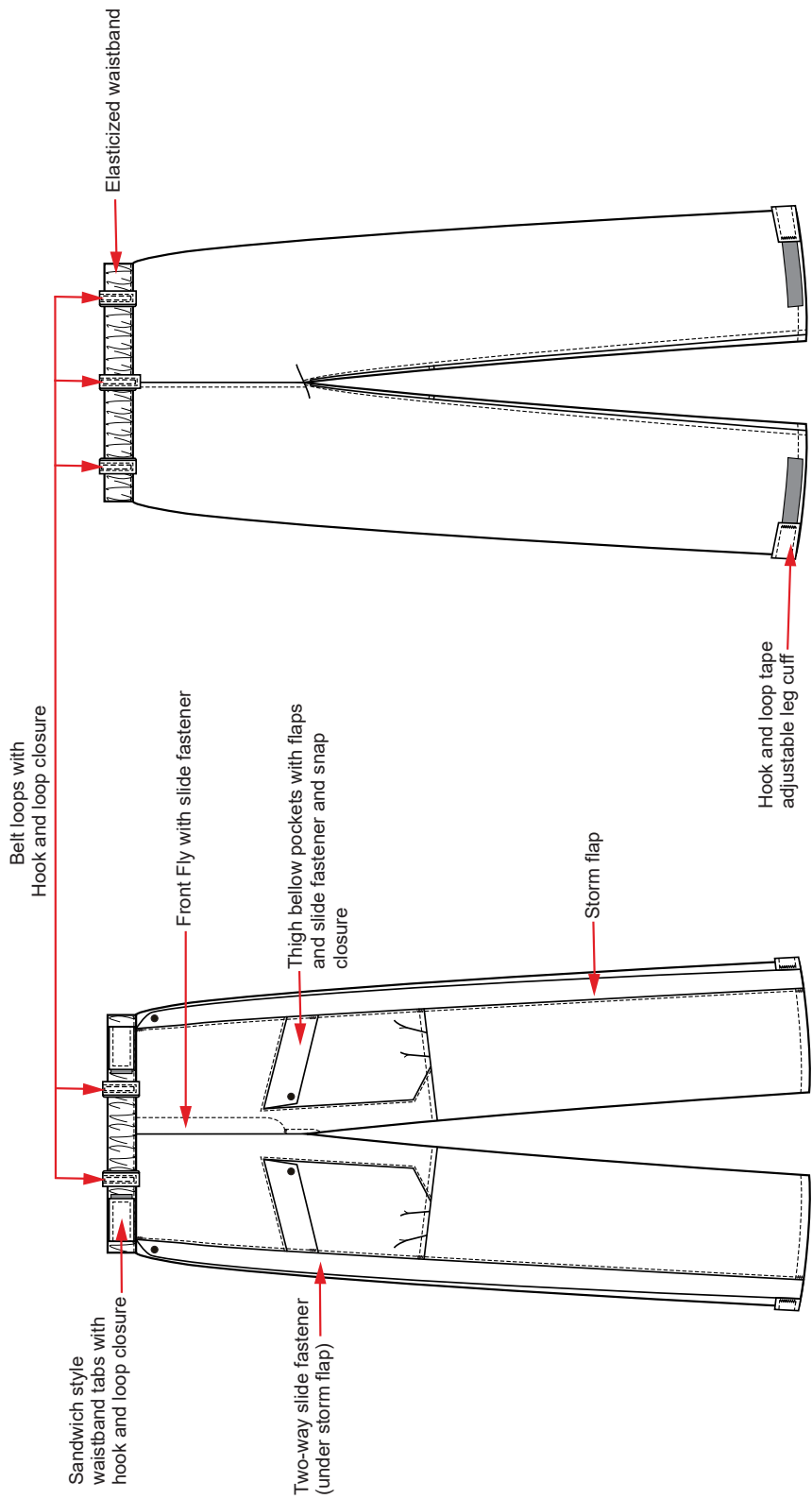
After the solution has evaporated through the specimen, such that no more than .32 cm (0.125") of solution remains, the specimen shall be removed from the cup, rinsed in warm water, dried and tested for water permeability as specified in test procedure #6 except that the water pressure shall be applied for 3 minutes.

9. Method ASTM D 3886-99 Procedure: Use No. 0 Emery Polishing Paper. Side abraded shall be the knit side, with a multidirectional abrasion motion. Change abradant after each 300 cycles or specimen failure. The air pressure under the diaphragm should be 4 psi, and the load on the abradant plate should be 1 lb. Failure is determined by breaking of the electrical contact.
10. A minimum of 3 straight seams and 2 cross-over seams shall be tested prior to laundry cycle testing and remain waterproof (no leakage) when tested at 13.78 kPa (2 psi) for 3 minutes with the seam tape side facing up, away from the water challenge. Leakage is defined as the appearance of water any place within the 11.43 cm (4.5") diameter test area since the seam tape process can damage the fabric adjacent to the tape. Test for water permeability as in procedure #3 except the face fabric shall face the water challenge.
11. A minimum of 3 straight seams and 2 cross-over seams shall be tested after ten (10) home laundry cycles and remain waterproof (no leakage) when tested at 13.78 kPa (2 psi) for 3 minutes with the seam tape side facing up, away from the water challenge. Leakage is defined as the appearance of water any place within the 11.43 cm (4.5") diameter test area since the seam tape process can damage the fabric adjacent to the tape. Test for water permeability as in procedure #3 except the face fabric shall face the water

challenge. Laundry testing should be performed in accordance with procedure specified in Machine Cycle 3, Wash Temperature 111, and Drying Procedure Aiii of ANSI/AATCC 135.

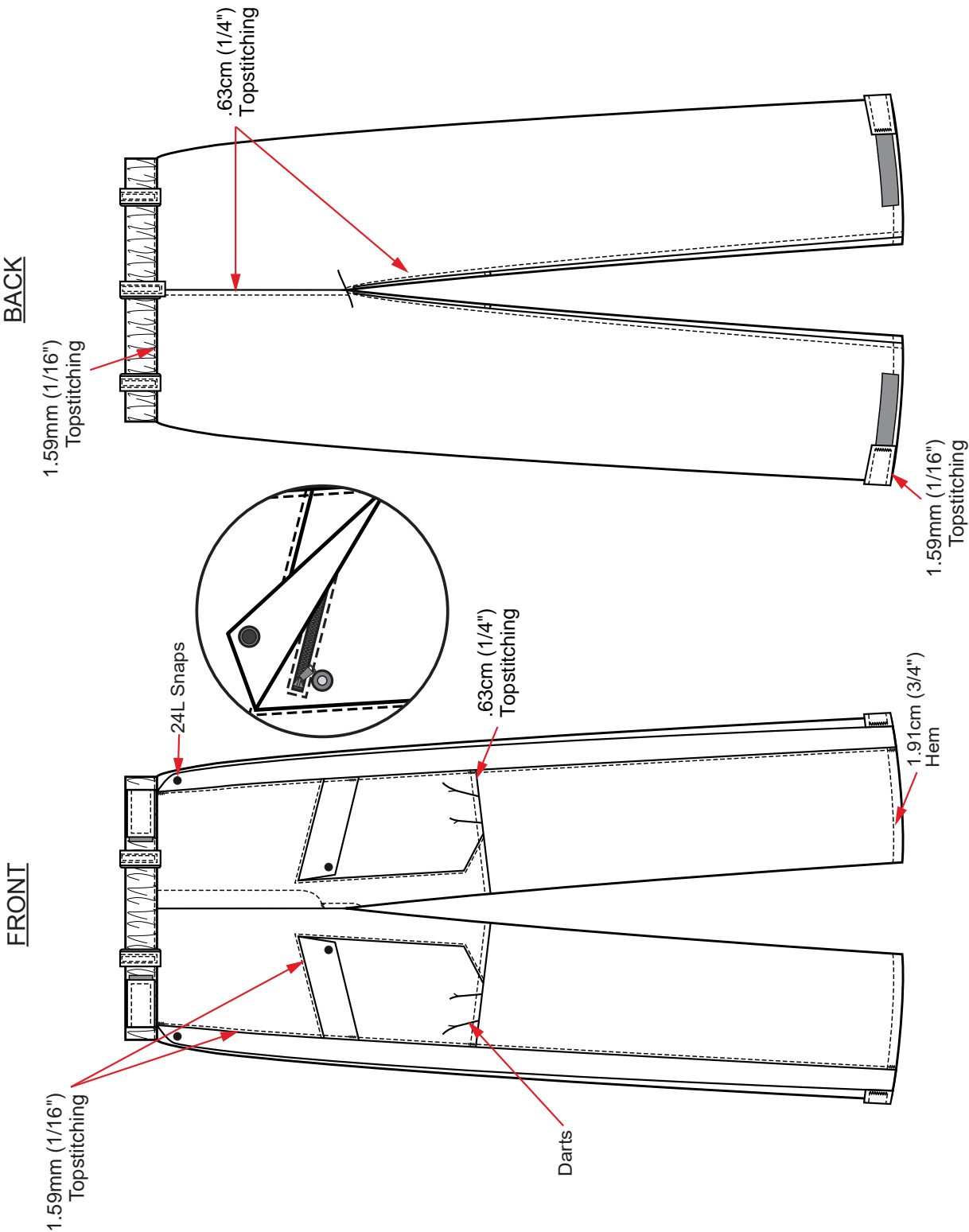
12. A minimum of 3 straight seams and 2 cross-over seams shall be tested after ten(10) dry clean cycles and remain waterproof (no leakage) when tested a 13.78 kPa (2 psi) for 3 minutes with the seam tape side facing up, away from the water challenge. Leakage is defined as the appearance of water any place within the 11.43 cm (4.5") diameter test area since the seam tape process can damage the fabric adjacent to the tape. Test for water permeability as in procedure #3 except the face fabric shall face the water challenge.

Appendix – Drawings

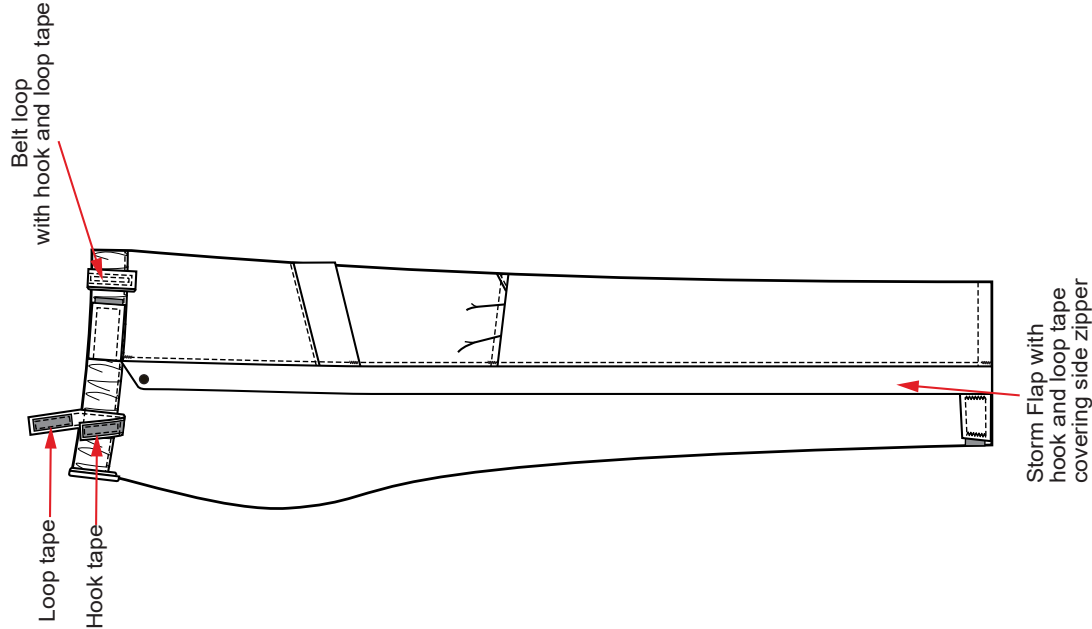


FRONT

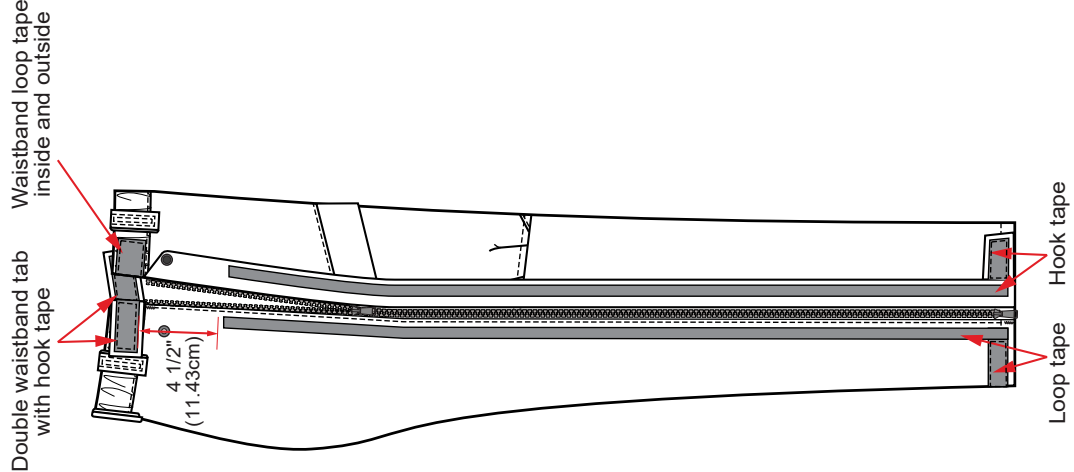
BACK



RIGHT SIDE VIEW



RIGHT SIDE VIEW
OPEN FLAP



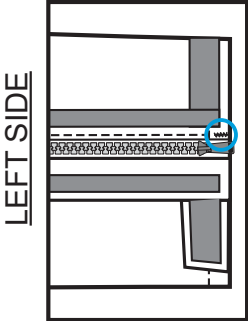
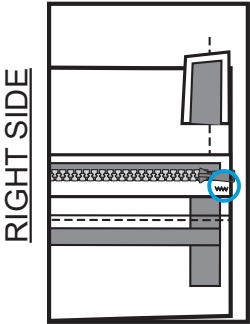
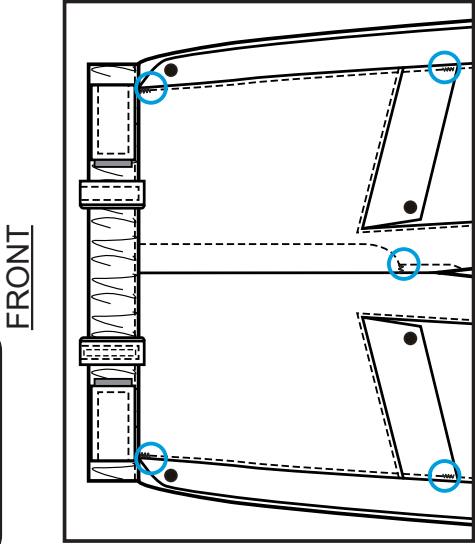
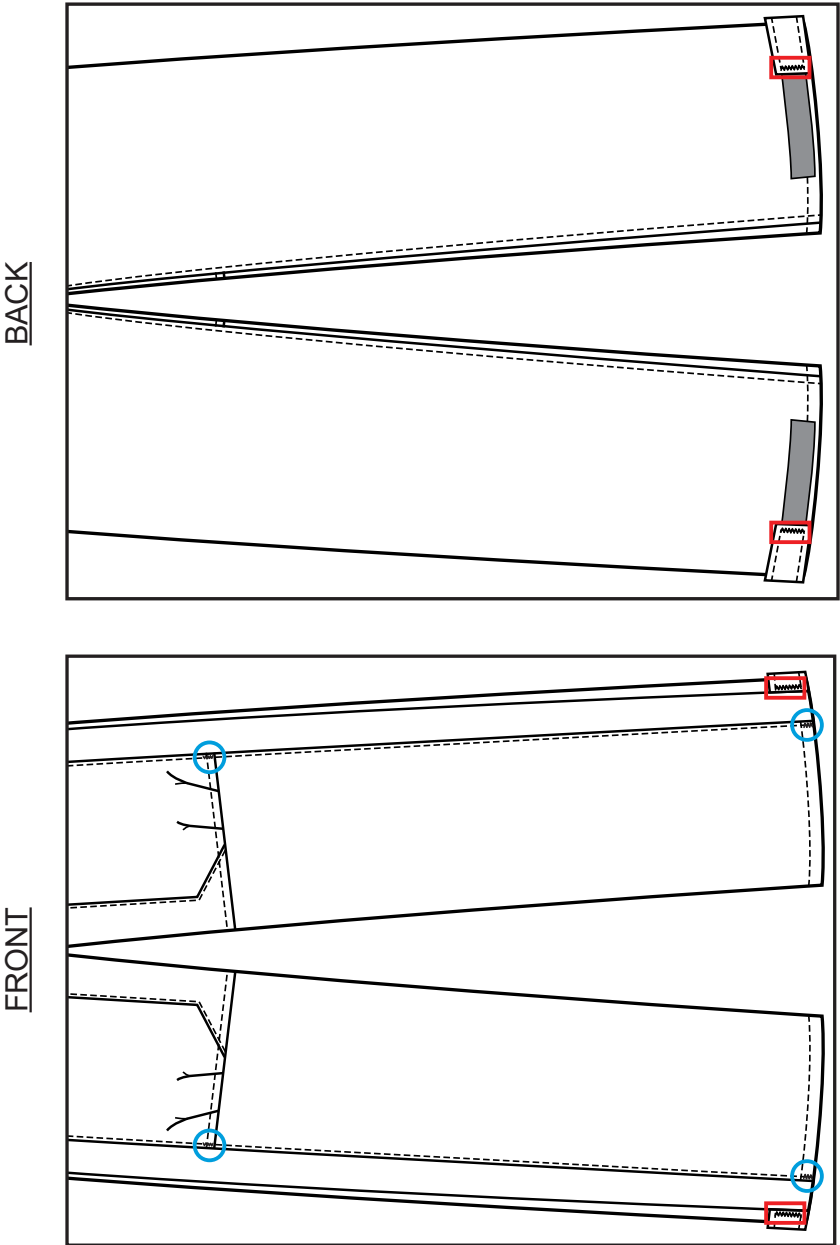
Legend

○

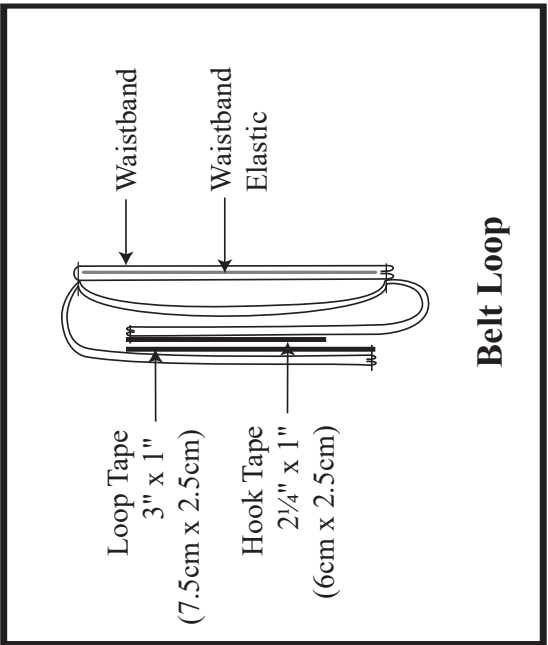
3/8" Bartack

◻

3/4" Bartack



BELT LOOP VIEW
(Hook & Loop placement)



WAISTBAND CLOSURE - CLOSE UP VIEW
(Hook tape applied to the tabs & Loop applied to both
sides of the front waistband)



STORM FLAP BOTTOM VIEW



Loop Tape

Loop Tape sewn
on back adjacent
to the zipper

Hook Tape
sewn on storm
flap

Hook Tape
sewn on leg tab

APPENDIX A
CBSA/ASFC-153
Pants, Rain, Unisex
Dwg 7

GRADING CHART													
		To/ (+/-)	R-XS/ R-TP T-XS/ L-TP	R-S/ R-P T-S/ L-P	R-M/ R-M T-M/ L-M	R-L/ R-G T-L/ L-G	R-XL/ R-TG T-XL/ L-TG	R-2XL/ R-2TG T-2XL/ L-2TG	R-3XL/ R-3TG T-3XL/ L-3TG	R-4XL/ R-4TG T-4XL/ L-4TG	R-5XL/ R-5TG T-5XL/ L-5TG	R-6XL/ R-6TG T-6XL/ L-6TG	
All measurements are FLAT & units are inches	Waist width	(relaxed)	1	13 1/2	14 3/4	16	17 1/2	19	20 1/2	22	24	26	28
	Waist width	(extended)	1	16 1/2	17 3/4	19	20 1/2	22	23 1/2	25	27	29	31
	Front waistband	(relaxed)	1/2	12 1/2	13 3/4	15	16 1/2	18	19 1/2	21	23	25	27
	Front waistband	(extended)	1/2	14 1/2	15 3/4	17	18 1/2	20	21 1/2	23	25	27	29
	Back waistband	(relaxed)	1/2	14 1/2	15 3/4	17	18 1/2	20	21 1/2	23	25	27	29
	Back waistband	(extended)	1/2	18 1/2	19 3/4	21	22 1/2	24	25 1/2	27	29	31	33
	Hips level_ From top of waist	Reg - [At center front		9 1/8	9 3/8	9 5/8	10	10	10 1/4	10 3/8	10 3/4	10 7/8	11 1/4
	Hips level_ From top of waist	Tall - [At center front		9 5/8	9 7/8	10 1/8	10 1/2	10 1/2	10 3/4	10 7/8	11 1/4	11 3/8	11 3/4
	Hips width	At hips level	1/4	21	22	23	24 1/2	26	27 1/2	29	30 3/4	32 1/2	34 1/4
	Thigh width at crotch		1/4	13 7/8	14 3/8	14 7/8	15 3/4	16 5/8	17 1/2	18 3/8	19 1/4	20 1/8	21
Hem opening width		1/8	8 1/2	8 3/4	9	9 1/4	9 1/2	9 3/4	10	10 1/4	10 1/2	10 3/4	
LENGTHS		REG											
Inseam_ Finished		1/4	32	32	32	32	32	32	32	32	32	32	
Front rise_ From top of waistband		1/4	13 1/2	14	14 1/2	15	15 1/2	16	16 1/2	17	17 1/2	18	
Back rise_ From top of waistband		1/4	16 1/8	16 3/4	17 1/4	17 3/4	18 1/4	18 3/4	19 1/4	19 7/8	20 1/2	21 1/8	
LENGTHS		TALL											
Inseam_ Finished		1/4	35	35	35	35	35	35	35	35	35	35	
Front rise_ From top of waistband		1/4	14	14 1/2	15	15 1/2	16	16 1/2	17	17 1/2	18	18 1/2	
Back rise_ From top of waistband		1/4	16 5/8	17 1/4	17 3/4	18 1/4	18 3/4	19 1/4	19 3/4	20 3/8	21	21 5/8	
POCKET													
Pocket width at bottom		1/8	4 7/8	4 7/8	4 7/8	4 7/8	5 1/8	5 1/8	5 1/8	5 1/8	5 1/8	5 1/8	
Pocket width at middle		1/8	7 3/4	8 1/2	8 1/2	8 1/2	9	9	9	9	9	9	
Pocket width at top		1/8	9 1/8	9 3/8	9 3/8	9 3/8	9 5/8	9 5/8	9 5/8	9 5/8	9 5/8	9 5/8	
Pocket height at side		1/8	8 3/8	8 3/8	8 3/8	8 3/8	8 3/8	8 3/8	8 3/8	8 3/8	8 3/8	8 3/8	
Pocket height at crotch		1/8	10 1/4	10 1/4	10 1/4	10 1/4	10 1/4	10 1/4	10 1/4	10 1/4	10 1/4	10 1/4	
DETAILS													
Waistband height		1/8	2	2	2	2	2	2	2	2	2	2	
ZIPPER LENGTHS		Stopper to stopper											
Center front zipper	Reg		7 1/2	7 1/2	8	8	8	8	8	8 1/2	8 1/2	8 1/2	
Center front zipper	Tall		8	8	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	9	9	9	
On sides (hidden under side placket)	Reg		40 3/4	40 3/4	41 1/4	41 1/4	41 3/4	41 3/4	42 3/8	42 5/8	43 1/4	43 3/4	
On sides (hidden under side placket)	Tall		44 1/4	44 1/4	44 7/8	45 1/8	45 3/8	45 5/8	45 7/8	46 1/8	46 5/8	47 1/8	
Front pocket (hidden under flap)			6 1/2	6 1/2	7	7	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	