

**PART E**  
**SPECIFICATIONS**

## **PART E - SPECIFICATIONS**

### **GENERAL**

#### **E1. GENERAL**

E1.1 These Specifications shall apply to the Work.

E1.2 The following Drawings are applicable to the Work:

<u>Drawing No.</u>	<u>Drawing</u>
1	Front Figure 1
2	Shoulder Patches Figure 2
3	Sleeves Figure 3
4	Drawing 4
5	Drawing 5
Table 1	Men's Pullover, V Neck, Black
Table 11	Men's Pullover, V-Neck, Black

#### **E2. GOODS**

E2.1 The Contractor shall supply police issue sweaters in accordance with the requirements hereinafter specified.

E2.2 V neck shall be knitted as waistband tension on a 12 gauge machine same wales and courses. The yarn shall be shrink resistant treated tops. (see E3.1).

#### **E3. SHRINK RESIST TREATMENT**

E3.1 The garment shall have a shrink resist treatment which is approved by the International wool Secretariate (IWS), represented in Canada by The Woolmark Company, and which is of sufficiently good quality to meet IWS "Machine washable" or Category 5, standards. In order to determine whether the treatment meets IWS standards, samples must be submitted to the Woolmark Company for testing. Samples are to be tested at the pre-production stage of the contract. It is imperative that sweaters knit from every batch and/or dye lot of yarn receive be tested. In addition, intermittent testing of different sizes shall be carried out during the contract. The applicable IWS standard is Test Method TM-31. The Woolmark company will perform that test and report on conformance of the garments to "Machine washable" standards.

#### **E4. FABRICS**

E4.1 Yarn Shell Fabric

(a) Body and Sleeves

- (i) Fiber content: 100% virgin wool
- (ii) Quality: 64's
- (iii) Construction: Style:- Interlock stitch
- (iv) Yarn feed - 12 gauge 1 end
- (v) Yard size - 2-28-64 (plies :2, worsted count: 28, quality: 64)
- (vi) Fabric count: Wales:- 17-19
- (vii) Per inch: Courses:- 20-22
- (viii) Colour: Black

(b) Waistband and cuffs

- (i) Fiber content: 100% virgin wool
- (ii) Quality: 64's
- (iii) Construction: Style- 2x1 rib
- (iv) Yarn feed - 2 ends
- (v) Yard size - 2-28-64 (plies :2, worsted count: 28, quality: 64)
- (vi) Fabric count: Wales: - 13-15
- (vii) Per inch: Courses:- 24-26
- (viii) Finished Width Waistband:- 6.5 cm (2 ½")
- (ix) Sleeves Cuff: - 13.5 cm (5 ½")
- (x) Colour: Black

(c) Shoulder Straps, Shoulder Patches and Elbow Patches

- (i) Fiber content: 65% Wool / 35% Polyester
- (ii) Quality: Cloth Serge, Wool/Polyester (D-80-001-099/F-001)
- (iii) Construction: 2x2 "Z" serge
- (iv) Structure: warp: 25
- (v) Treads/cm: Weft: 23
- (vi) Weight: Wales: 285 g/m<sup>2</sup> 8.40 oz/yd<sup>2</sup>
- (vii) Width: 152 cm 59.8"
- (viii) Colour: Black

E4.2 Trims:

The component composition of these items shall meet or exceed the minimum requirements as detailed below.

(a) Buttons

- (i) Content: Plastic
- (ii) Type: four (4) hole
- (iii) Size: 30-Ligne
- (iv) Quality: 2
- (v) Button Colour: Black

(b) Reinforcing Tape (shoulder and underarm)

- (i) Content: 100% Cotton
- (ii) Quality: Woven Twill
- (iii) Size: 1/4" (6.4 mm) wide
- (iv) Colour: Black

(c) Badge Tape

- (i) Content: 100% Cotton
- (ii) Quality: Woven Twill
- (iii) Size: 1/2" (12.7 mm) wide
- (iv) Colour: Black

(d) Thread for the Looper

- (i) Fiber Content: 100% Virgin Wool
- (ii) Size: 2-28-64 (plies: 2, Worsted count: 28, quality: 64)
- (iii) Colour: Black

(e) For the Needle

- (i) Fiber Content: 100% Polyester (multifilament) (Ref CAN/CGSB-4.139-M-94)
  - (ii) Size: 50 Tex
  - (iii) Colour: Black
- OR
- (iv) Fiber Content: 100% Polyester Cotton-covered (Ref CAN/CGSB-4.131-M-93)
  - (v) Type: I
  - (vi) Size: R50 Tex (75)
  - (vii) Colour: Black

\*\*\*Only one of the above-mentioned thread shall be used for the needle\*\*\*

For cover seams, one of the above mentioned threads shall be used in the needle and the same yarn as used in the body shall be used in the looper.

## **E5. CUTTING**

- E5.1 The sweaters shall be cut so that the shoulder seam is centered on the shoulder when worn.
- E5.2 The shoulder & elbow patches and the shoulder straps shall be cut in the lengthwise or in the lengthwise or in the warp direction of the material.
- E5.3 The specified materials shall be cut in accordance with best commercial standards and practices.

## **E6. STITCHES AND SEAMS**

- E6.1 All stitches and seams shall be in accordance with CAN/CGSB-54.1-M90 Parts 1 and 2
- E6.2 The back neckband seam, shoulder seams and the roll back cuff seams shall be covered with a flat cover stitch Type 402 or 406 using the knitting yarn in the looper. The covering effect shall be on the underside and there shall be a minimum of 9 stitches, nor more than 12 stitches per inch (2.5 cm).
- E6.3 A reinforcing tape shall be inserted in the shoulder and underarm seam. The underarm tape shall measure 8cm (3 1/8").

## **E7. ALL SEAMS NOT SECURED BY ANOTHER SEAM BE BARTACKED OR BACKSTITCHED AT ENDS.**

- E7.1 Bartack shall be 3/8" (9.5mm) long with a minimum of 15 stitches per tack.
- E7.2 Care shall be taken to ensure that all knit stitches are secured in the sewing in order to prevent fraying.
- E7.3 Completed sweaters shall be neat and clean, with all loose threads and tread ends removed.

## **E8. SERGING**

- E8.1 All parts shall be joined with stitch type 504 using one (1) polyester cotton-covered thread for needle and two (2) matching body yarns for looper. Stitches shall be not less than 12 stitches per inch (2.5cm) (4-5 stitches per cm).

**E9. SHOULDER STRAPS**

E9.1 The shoulder straps shall be stitched with a single-needle lockstitch Type 301 at 1/16" (1.6mm) gauge, having not less than 10 stitches, nor more than 12 stitches per inch (2.5 cm).

**E10. SHOULDER AND ELBOW PATCHES**

E10.1 The elbow and shoulder patches shall be attached with one (1) row of stitches, using lockstitch type 501, having not less than 10 stitches nor more than 12 stitches per inch (2.5 cm). Stitch gauge shall be 1/16" (1.6mm).

**E11. BUTTONHOLES**

E11.1 The buttonholes shall be bartacked, cut after, with no less than 28 stitches per inch (2.5cm)

E11.2 Buttonholes shall be of sufficient length to accommodate a 30-ligne button.

E11.3 Buttonholes shall be of neat appearance with even, continuous, secure and compactly placed stitches.

**E12. CONSTRUCTION FRONT AND BACK**

Front figure 1

E12.1 Badge Tape

(a) One (1) badge tape shall be sewn on the right inner sweater front.

(b) The tape shall measure 1/2" (12.7mm) wide and 2 1/2" long.

(c) The badge tape shall be top stitched 1/16" (1.6mm) all around.

(d) The front edge of the stitching for the badge tape shall be aligned with the right shoulder patch and positioned 1 3/4" (4.45cm) down from its bottom edge.

E12.2 Shoulders

(a) The forepart and back shall be joined together at the shoulders.

(b) A reinforcing tape shall be inserted in the shoulder seams.

**E13. NECKBAND**

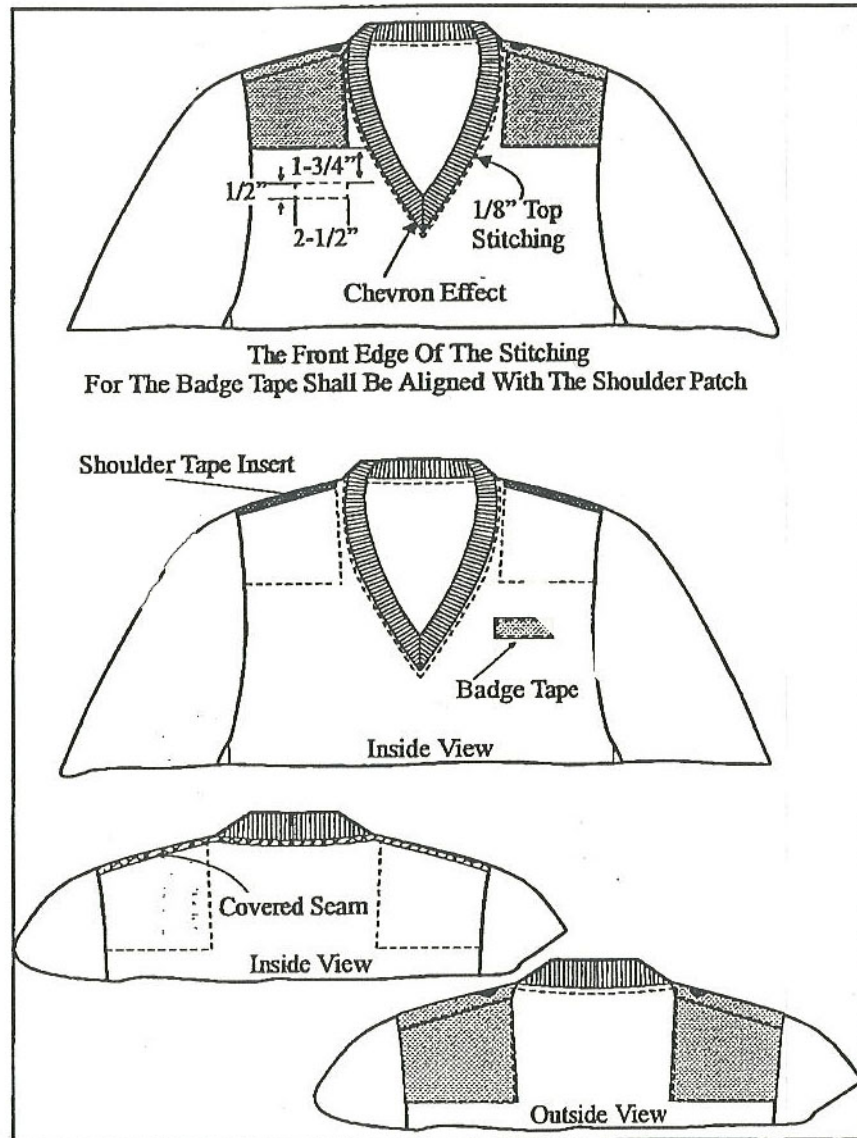
E13.1 The neckband piece shall be folded in half. The ends of the neckband shall be joined with a lockstitch seam to form an angle with the ribs properly matched to give a chevron effect.

E13.2 The neckband shall be joined to the neck opening with a lockstitch machine and the front neck shall be finished with an overlock stitching.

E13.3 The back neckband seam and the shoulder seam shall be covered as specified in E6.2 this seaming shall be done in one (1) continuous operation from shoulder point to shoulder point.

E13.4 The neckband shall be top stitched 1/8" along the "V"

## Front Figure 1



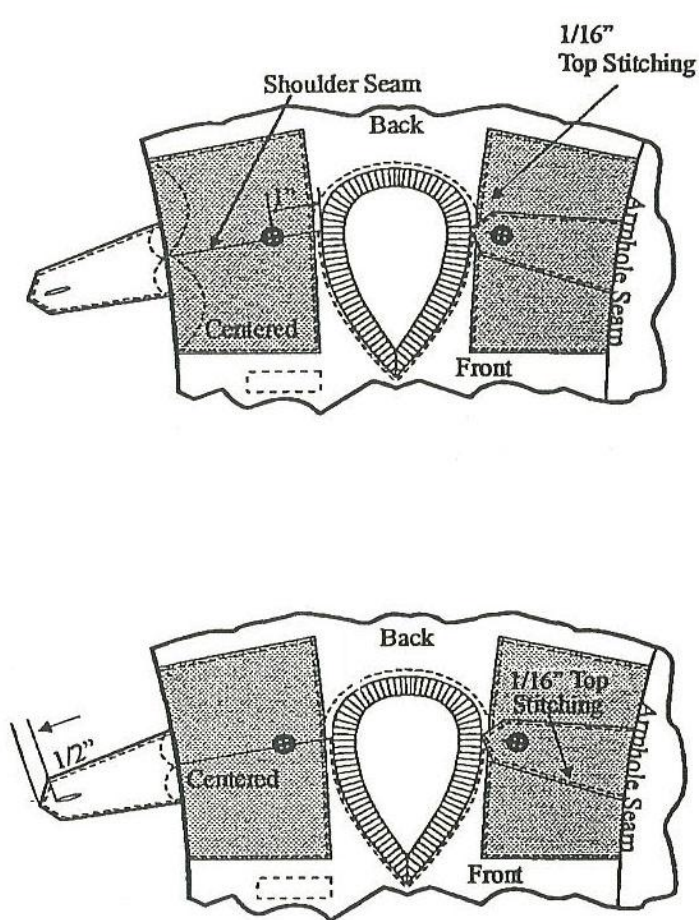
### E14. SHOULDERS PATCHES (FIGURE 2)

- E14.1 One (1) shoulder patch on each shoulder seam.
- E14.2 The raw edge shall be turned under 3/8" (9.5mm) and the corners of the shoulder patches shall be properly worked before stitching.
- E14.3 The shoulder patches shall be top stitched 1/16" (1.6mm) along the sides and pointed end through all plies (the sweater ribs shall be as near to a relaxed "unstretched" condition as practicable at the time of attaching the reinforcing shoulder patches. Attachment seams shall be smooth and free of puckering. Reinforcing patches shall be smooth and free of excess fullness).

## E15. SHOULDER STRAPS

- E15.1 Each shoulder strap shall be made of two (2) plies of shell fabric, seamed together and turned, or may be pre-creased.
- E15.2 The shoulder straps shall be top stitched  $1/16''$  (1.6mm) gauge along the sides and pointed end.
- E15.3 A buttonhole to fit a 30-ligne button shall be made at the pointed end on each shoulder strap at  $1/2''$  (12.7mm) from the pointed end, centered, and parallel to the length of the strap (the shoulder strap shall lie flat and straight when buttoned).
- E15.4 The shoulder straps shall be caught in the armhole seam.
- E15.5 To facilitate joining, the shoulder straps shall be basted in place (the raw ends centered over the shoulder seam).
- E15.6 The finished shoulder straps shapes and dimensions shall be in accordance with the measurements specified in Table II

## Shoulder Patches Figure 2



## **E16. SLEEVES (FIGURE 3)**

### **E16.1 Elbow Patches**

- (a) One (1) elbow patch shall be positioned on each sleeve.
- (b) The raw edge shall be turned under 3/8" (9.5mm) and the corners of the elbow patches shall be properly worked before stitching.
- (c) The elbow patches shall be top stitched 1/16" (1.6mm) on the front and side edges through all plies (the sweater ribs shall be as near to a relaxed "unstretched" condition as practicable at the time of attaching the reinforcing elbow patches. Attachment seams shall be smooth and free of puckering. Reinforcing patches shall be smooth and free of excess fullness).
- (d) The elbow patches shall be positioned 1 3/4" (4.4cm) from the cuff and caught in the sleeve seam as shown on drawing ( Sleeves Figure 3).
- (e) To facilitate joining, the elbows patches shall be basted in place.
- (f) The finished elbow patches shapes and dimensions shall be in accordance with the measurements specified in Table II

### **E16.2 Sleeve Seams**

- (a) Each sleeve shall be joined to their respective armhole. During this operation, the shoulder strap shall be centered and caught into the armhole seams.
- (b) A reinforcing tape shall be inserted in the armhole seams on the under part.
- (c) The sleeve seams and the side seams shall be joined together in a continuous operation to within 4" (10.16cm) of the cuff edge. At this point, the seaming shall be reversed to allow for a roll up cuff.
- (d) The elbow patches shall be caught in the sleeve seams.
- (e) A bartack shall be made parallel to the seam on the seams allowance on the cuffs hem and on the bottom hem to secure the seams.
- (f) The cuff seams shall be covered as specified in specification E6.2.

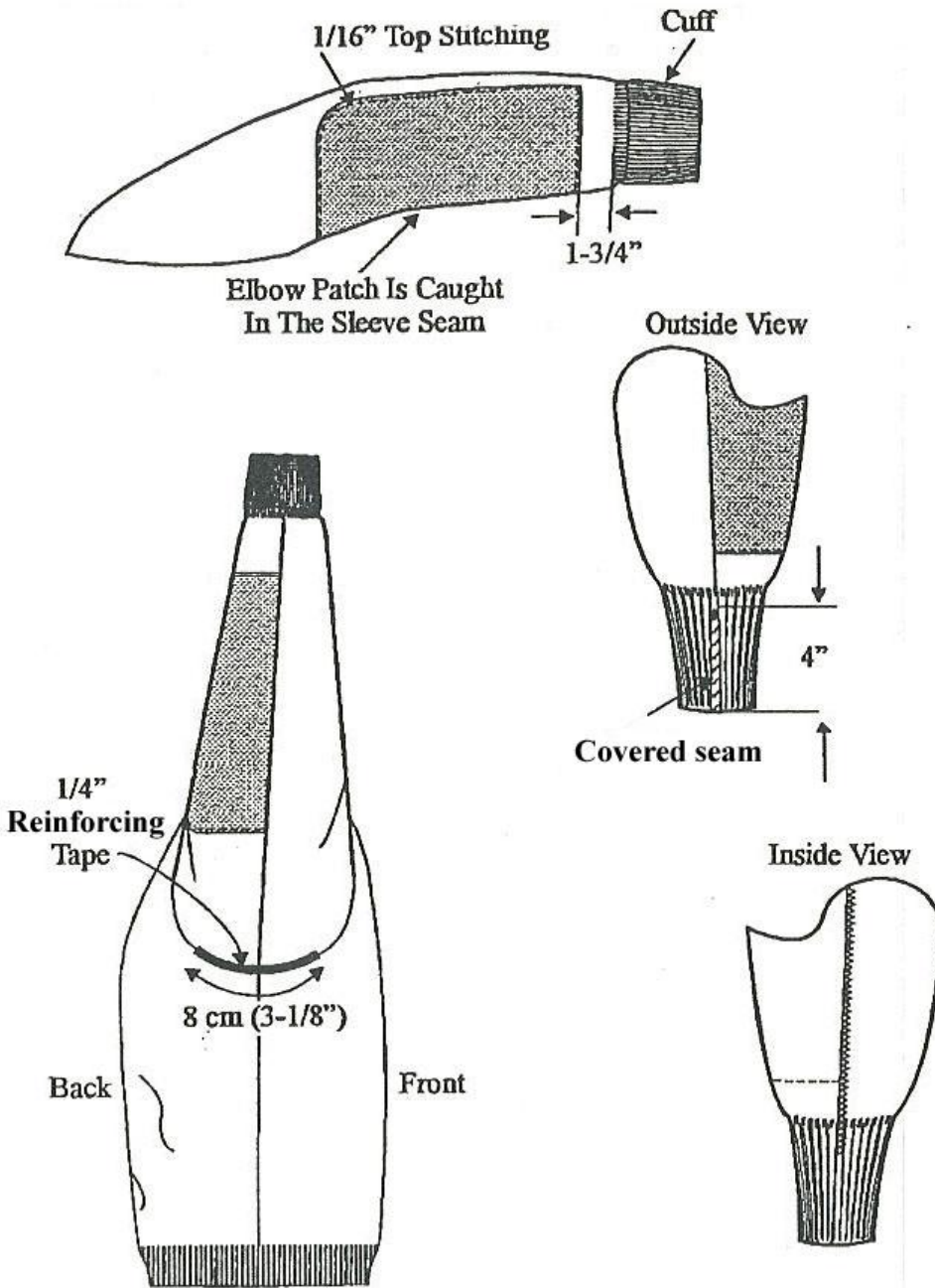
## **E17. SHOULDER FLASHES (WINNIPEG POLICE SERVICE CRESTS)**

E17.1 The City will provide Shoulder Flashes.

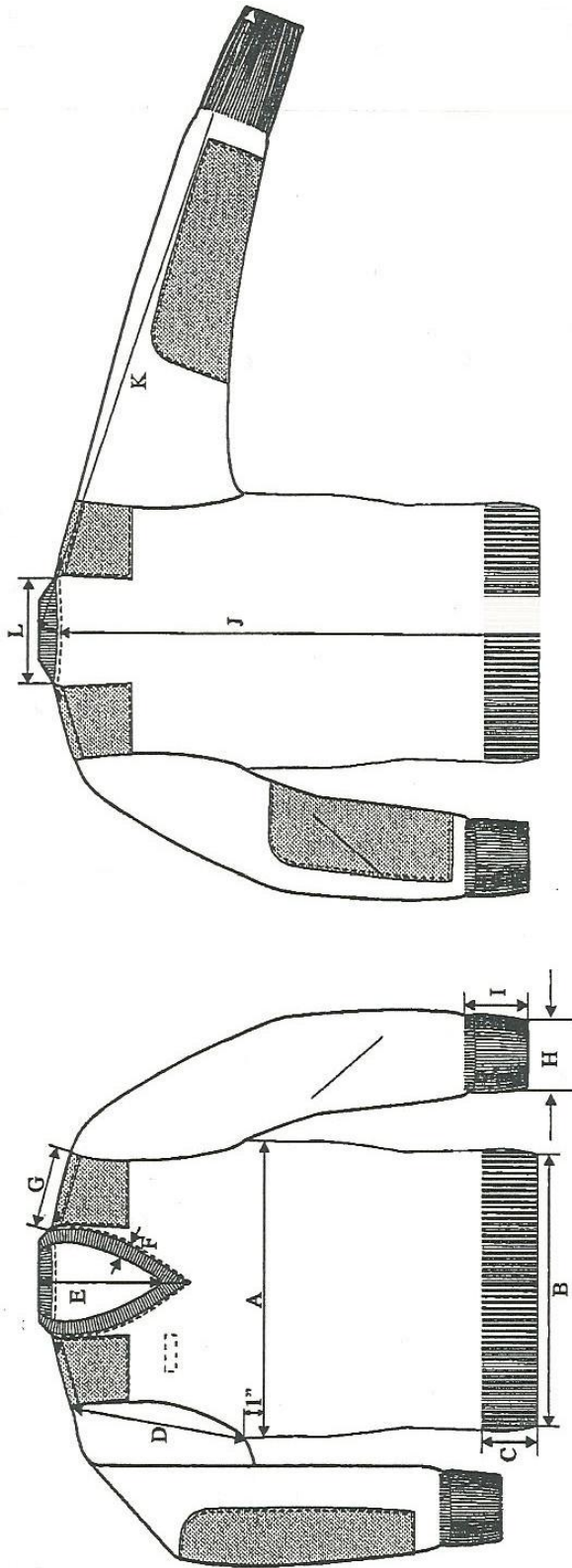
E17.2 Flashes shall be sewn on both sleeves 1/2" (12.7mm) below the seam that joins the sleeve to the shoulder, centered on the outside of the sleeve.



### Sleeves Figure 3

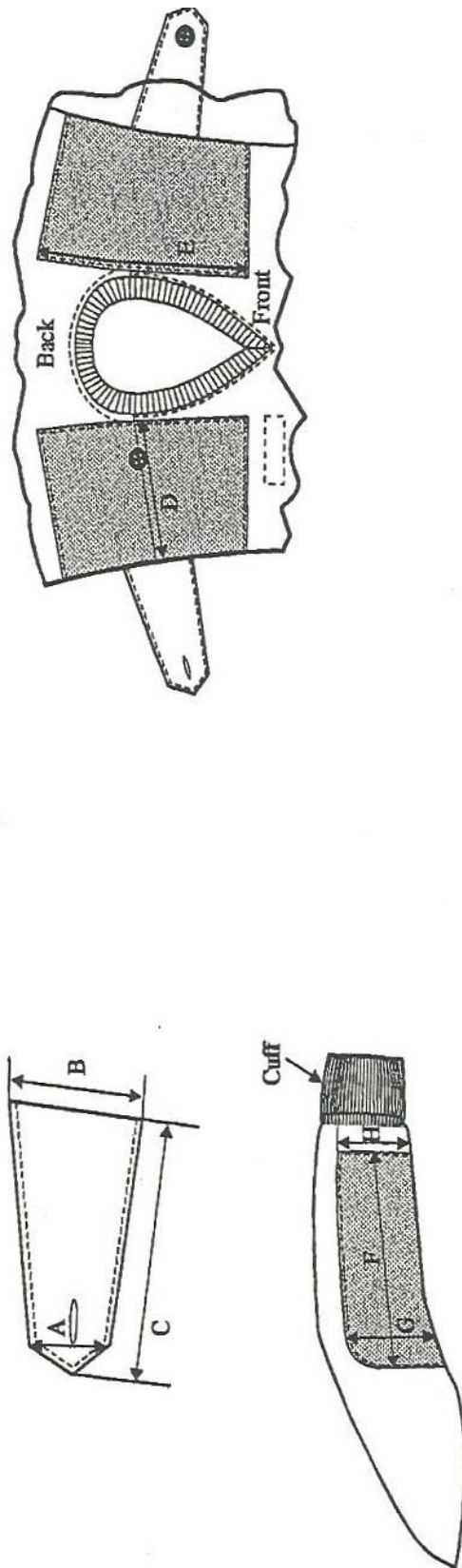


**Drawing 4**



COMPONENT	DESCRIPTION
A	1/2 CHEST (1" Below The Armhole)
B	1/2 WAISTBAND
C	WIDTH OF WAISTBAND
D	ARMHOLE (From Top Of Shoulder Seam To Armhole Seam)
E	V-NECK DEPTH (From Top Of Back Neck Rib To Top Of V Point)
F	WIDTH OF THE V-NECK RIB
G	SHOULDER (From Seam To Seam)
H	CUFF OPENING
I	WIDTH OF CUFF
J	CENTER BACK LENGTH (Neck Seam To Bottom)
K	SLEEVE LENGTH (From Center Back To Bottom Of Cuff)
L	BACK NECK (From Seam To Seam)

**Drawing 5**



COMPONENT	DESCRIPTION
A	POINT WIDTH (SHOULDER STRAPS)
B	BASE WIDTH (SHOULDER STRAPS)
C	LENGTH (SHOULDER STRAPS)
D	WIDTH AT SHOULDER SEAM ONLY (SHOULDER PATCHES)
E	LENGTH AT NECK EDGE ONLY (SHOULDER PATCHES)
F	LENGTH (ELBOW PATCHES)
G	WIDTH AT WIDEST POINT (ELBOW PATCHES)
H	WIDTH AT CUFF (ELBOW PATCHES)

**TABLE I**  
**MEN'S PULLOVER, V-NECK, BLACK**

SIZE	1/2 CHEST	1/2 WAISTBAND	WIDTH OF WAISTBAND	ARMHOLE	V-NECK DEPTH	WIDTH OF THE V-NECK RIB	SHOULDER	CUFF OPENING	WIDTH OF CUFF	CENTER BACK LENGTH	SLEEVE LENGTH	BACK NECK
XS (30-32)	19-1/2	12-1/2	2-1/2	9	8	1	5-1/4	3-1/4	5-1/2	24	33	6-1/4
S (34-36)	21	14	2-1/2	9-1/2	8	1	5-1/2	3-1/4	5-1/2	25	34	6-1/2
M (38-40)	22-1/2	15-1/2	2-1/2	10	8	1	5-3/4	3-1/4	5-1/2	26	35	6-3/4
L (42-44)	24	17	2-1/2	10-1/2	8	1	6	3-1/2	5-1/2	27	36	7
XL (46-48)	25-1/2	18-1/2	2-1/2	11	8	1	6-1/4	3-1/2	5-1/2	27-1/2	36-1/2	7-1/4
2XL (50-52)	27	20	2-1/2	11-1/2	8-1/2	1	6-3/4	4	5-1/2	28	37-1/2	7-1/2
M (38-40)	22-1/2	15-1/2	2-1/2	10	9	1	5-3/4	3-1/4	5-1/2	28	38	6-3/4
L (42-44)	24	17	2-1/2	10-1/2	9	1	6	3-1/2	5-1/2	29	38-1/2	7
XL (46-48)	26	19	2-1/2	11	9	1	6-3/8	3-3/4	5-1/2	29-1/2	39	7-1/4
2XL (50-52)	28	21	2-1/2	11-1/2	9-1/2	1	6-3/4	4	5-1/2	30	39-1/2	7-1/2
3XL (56-58)	30	23	2-1/2	12	9-1/2	1	7-1/8	4	5-1/2	30	40	7-3/4
TOLERANCE ±	1/2	1/2	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/2	1/2	1/4

**All measurements are in inches**  
**All measurements are for finished garment**

**5' TO 5'11" = REGULAR**  
**6' TO 6'6" = TALL**

**TABLE II**  
**MEN'S PULLOVER, V-NECK, BLACK**

SIZE	SHOULDER STRAPS			SHOULDER PATCHES		ELBOW PATCHES				
	POINT WIDTH	BASE WIDTH	LENGTH	WIDTH AT SHOULDER SEAM ONLY	LENGTH AT NECK EDGE ONLY	LENGTH	WIDTH AT WIDEST POINT	WIDTH AT CUFF		
REGULAR	XS	76-81 (30-32)	1-3/4	2-1/2	5	4-1/2	8-5/8	11	5-1/2	4
	S	86-91 (34-35)	1-3/4	2-1/2	5-1/4	4-3/4	9-1/2	11	5-1/2	4
	M	96-101 (38-40)	1-3/4	2-1/2	5-1/2	5	9-1/2	11	5-1/2	4
	L	106-112 (42-44)	1-3/4	2-1/2	5-3/4	5-3/8	10-1/4	11	5-1/2	4
	XL	127-132 (50-52)	1-3/4	2-1/2	6-1/8	5-5/8	10-1/4	11	5-1/2	4
	2XL	132-137 (52-54)	1-3/4	2-1/2	6-1/2	6	11	11	5-1/2	1
TALL	M	96-101 (38-40)	1-3/4	2-1/2	5-1/2	5	11	12-1/4	6-3/4	4-3/4
	L	106-112 (42-44)	1-3/4	2-1/2	5-3/4	5-1/4	11	12-1/4	6-3/4	4-3/4
	XL	112-127 (48-50)	1-3/4	2-1/2	6-1/8	5-5/8	11	12-1/4	6-3/4	4-3/4
	2XL	132-137 (52-54)	1-3/4	2-1/2	6-1/2	6	11	12-1/4	6-3/4	4-3/4
	3XL	142-147 (56-58)	1-3/4	2-1/2	6-7/8	6-3/8	11	12-1/4	6-3/4	4-3/4
TOLERANCE ±			1/16	1/16	1/8	1/8	1/8	1/8	1/8	1/8

**All measurements are in inches**  
**All measurements are for finished garment**

**E18. DELIVERY**

- E18.1 Goods shall be delivered on an "as required" basis during the term of the Contract, f.o.b. destination, freight prepaid, to various locations within the City.
- E18.1.1 Goods shall be delivered within sixty (60) Calendar Days of the placing of an order, except where otherwise agreed at the time of ordering.
- E18.2 Goods shall be delivered between 8:30 a.m. and 4:30 p.m. on Business Days.
- E18.3 The Contractor shall off-load goods as directed at the delivery location.