

INVITATION TO BID

**TOWN OF WARREN
Protective Jacket and Pants
(for Structural Fire Fighting)**

The Town of Warren is seeking bids for Protective Jacket and Pants for Structural Fire Fighting.

Specifications are available in the Warren Town Clerk's Office between the hours of 9:00 AM to 4:00 PM, Monday through Friday, 514 Main Street, Warren, RI 02885.

Proposals must be submitted in a sealed envelope marked "Protective Jacket and Pants", to the Town Clerk's Office no later than 11:00 AM, July 23, 2015, at which time the bids will be opened publicly.

The Town of Warren reserves the right to reject any or all bids and to waive any informality and accepts the proposal deemed in the best interest of the Town.

Persons requesting interpreter services for the hearing-impaired must notify the Town Clerk's Office at least forty-eight (48) hours prior to bid opening at (401) 245-7340.

Warren is an equal opportunity provider and employer.

Alexander R. Galinelli
Fire Chief

July 8, 15 & 22, 2015

Warren Fire Department
Warren, Rhode Island
Chief Alexander Galinelli
Proposals for Protective Jacket and Pants
For Structural Fire Fighting

July 2015

Instruction to Bidders

20 Sets of Turnout Gear

All specifications herein contained are considered minimum. No exceptions to this minimum standard shall be allowed relating to type, quality, size and design. Bidders shall state the brand of any item being proposed.

Exceptions must be listed on a separate page. All exceptions listed shall be referenced to the particular page and paragraph to which compliance is questionable. Proposals that take total exception to this specification **WILL NOT** be acceptable. All protective clothing will be inspected upon delivery for compliance with specifications. Deviations from specifications that are not noted on the EXCEPTION TO SPECIFICATION page will not be tolerated and will be cause for rejection of the completed protective clothing.

NO-OVERSIZE charges will be allowed in bid proposal, all net prices shall include oversize charges including Women pattern sizes. All bid prices shall include delivery charges to Warren Fire Department, 1 Joyce Street, Warren, RI.

A bid sample may be requested to determine compliance with specification, bid sample must be made available upon request.

Delivery shall be stated in days from date order is received to delivery to satisfaction to the Warren Fire Department, for each item that is proposed.

Bid proposals must be submitted in a sealed envelope marked "Protective Jacket and Pants", to the Town Clerk's Office no later than 11:00 AM, July 23, 2015.

Contact Chief Galinelli at (401) 245-7600 or AGalinelli@townofwarren-ri.gov with questions or concerns.

OUTER SHELL MATERIAL - JACKETS AND PANTS

The outer shell shall be constructed of TENCATE "BLACK ADVANCE™ PCA (Producer Colored Aramid)" 50/50 Kevlar®/Nomex® blend material with an approximate weight of 7.0 oz. per square yard. The shell material must be treated with SST™ (SUPER SHELLTITE) which is a durable water-repellent finish that also enhances abrasion resistance. Color of the garments shall be black. **Bids offering this shell material without the SST™ will not be considered. An alternate bid of black Advance in place of the black Advance™ PCA will not be considered.**

Comply Exception

THERMAL INSULATING LINER - JACKET AND PANTS

The thermal liner shall be constructed of 7.2 oz. per square yard TENCATE "ARALITE® NP"; one layer of 3.8 oz. per square yard aramid blend non-woven needle-punch batt, quilt stitched to a 3.4 oz. per square yard spun meta-aramid face cloth, teal in color, with Wickwell™ Plus finish. A 7 inch by 9 inch pocket, constructed of self material and lined with moisture barrier material, shall be affixed to the inside of the jacket thermal liner on the left side by means of a lock stitch. The thermal liner shall be attached to the moisture barrier and bound together by bias-cut neoprene coated cotton/polyester around the perimeter. This provides superior abrasion resistance to the less expensive, less durable, "stitch and turn" method. Further mention of "Thermal Liner" in this specification shall refer to this section.

Comply Exception

MOISTURE BARRIER - JACKETS AND PANTS

The moisture barrier material shall be STEDFAST (STEDAIR® 3000) ePTFE moisture barrier is engineered using an E-89™ substrate and BHA Technologies ePTFE membrane, with an approximate weight of 5.5 oz. per square yard. The Stedair bi-component ePTFE membrane is a combination of microporous and monolithic technologies. The moisture barrier material shall meet all moisture barrier requirements of NFPA 1971-2007 edition, which includes water penetration resistance, viral penetration resistance and common chemical penetration resistance. The moisture barrier shall be sewn to the thermal liner at the edges only and bound with bias-cut neoprene-coated cotton/polyester binding. Further mention of "Specified Moisture Barrier" in this specification shall refer to this section.

Comply Exception

SEALED MOISTURE BARRIER SEAMS

All moisture barrier seams shall be sealed with a minimum 1 inch wide sealing tape. One side of the tape shall be coated with a heat activated glue adhesive. The adhesive side of the tape shall be oriented toward the moisture barrier seam. The adhesive shall be activated by heat and the sealing tape shall be applied to the moisture barrier seams by means of pressure exerted by rollers for that purpose.

Comply Exception

METHOD OF THERMAL LINER/MOISTURE BARRIER ATTACHMENT FOR JACKETS AND PANTS

The thermal liner and moisture barrier shall be completely removable from the jacket shell. Two strips of 5/8 inch wide FR Velcro® fastener tape shall secure the thermal liner/moisture barrier to the outer shell along the length of the neck line under the collar (see Collar section). The remainder of the thermal liner/moisture barrier shall be secured with snap fasteners appropriately spaced on each jacket facing and Ara-Shield® snap fasteners at each sleeve end. One of the Ara-shield® snap tabs shall be a different color in the liner to correspond with color coded snap tabs for ease of matching the liner system to the outer shell after inspection or cleaning is completed.

The thermal liner and moisture barrier shall be completely removable from the pant shell. Nine snap fasteners shall be spaced along the waistband to secure the thermal liner to the shell. The legs of the thermal liner/moisture barrier shall be secured to the shell by means of Ara-Shield® snap fasteners, 2 per leg. The Ara-shield® snap tabs shall be color coded to a corresponding snap tab in the liner for ease of matching the liner system to the outer shell after inspection or cleaning is completed.

_____ Comply _____ Exception

THERMAL PROTECTIVE PERFORMANCE

The assembled garment, consisting of an outer shell, moisture barrier and thermal liner, shall exhibit a TPP (Thermal Protective Performance) rating of not less than 35.

_____ Comply _____ Exception

STITCHING

The outer shell shall be assembled using stitch type #301, #401, #514 and #516. The thermal liners and moisture barriers shall be assembled using stitch type #301, #401, #504, #514, and #516. Stitching in all seams shall be continuous. Major A outer shell structural seams and major B structural liner seams, shall have a minimum of 8 to 10 stitches per inch. All major A seams shall be sewn with ball point needles only. All seams shall be continuously stitched only.

_____ Comply _____ Exception

JACKET CONSTRUCTION

BODY

The body of the shell and AXTION® liner system shall be constructed of three separate panels consisting of two front panels and one back panel. The body panels shall be shaped so as to provide a tailored fit thereby enhancing body movement and shall be joined together by double stitching with Nomex® thread. One-piece outer shells shall not be acceptable.

_____ Comply _____ Exception

AXTION® BACK

The jackets shall include inverted pleats to afford enhanced mobility and freedom of movement in addition to that provided by the AXTION® sleeves. The outer shell shall have two inverted pleats (one each side) installed on either side of the back body panel. The inverted pleats shall begin at the top of each shoulder and extend vertically down the sides of the jacket to the hem. Maximum expansion of the pleats shall occur at the shoulder area and taper toward the hem.

The thermal liner shall have a single inverted pleat located at the upper middle of the back, corresponding to the added length in the shell provided by the AXTION® back pleats. It will be designed to expand with the outer shell pleats to provide maximum expansion.

The moisture barrier shall be designed with darts corresponding to the added length in the shell provided by the AXTION® back pleats. The darts are positioned at the shoulder blades of the moisture barrier, outside of

the SCBA straps and work together with the outer shell and the thermal liner pleats in the AXTION® back providing maximum expansion. The moisture barrier darts will be seam sealed to assure liquid resistance integrity.

_____Comply _____Exception

LOGOS

The garment brand shall be identified by means of red FR Nomex thread embroidery on the top of the right collar denoting "GLOBE" as the manufacturer. There shall be a reflective label specific to the garment style, measuring 1 inch wide by 4 inches long, installed on the left pocket flap.

_____Comply _____Exception

DRAG RESCUE DEVICE (DRD)

A Firefighter Drag Rescue Device shall be installed in each jacket. The ends of a 1½ inch wide strap, constructed of black Kevlar® with a red Nomex® center stripe, will be sewn together to form a continuous loop. The strap will be installed in the jacket between the liner system and outer shell such that when properly installed will loop around each arm. The strap will be accessed through a portal between the shoulders on the upper back where it is secured in place by an FR strap. The DRD shall be removable for laundering. The access port will be covered by an outside flap of shell material, with beveled corners designed to fit between the shoulder straps of an SCBA. The flap will have a NFPA-compliant 3M Scotchlite™ reflective logo patch sewn to the outside to clearly identify the feature as the DRD (Drag Rescue Device). The DRD shall not extend beyond the outside flap. This device provides a quickly deployed means of rescuing a downed firefighter. Flimsy, rope-style DRD straps will not be considered.

_____Comply _____Exception

LINER ACCESS OPENING (JACKET)

The thermal liner and moisture barrier shall be completely removable from the jacket shell. Two strips of ¾ inch wide FR Velcro® fastener tape shall secure the thermal liner/moisture barrier to the outer shell along the length of the neckline under the collar. This opening shall run the full length of the collar for the purpose of inspecting the inner surfaces of the jacket liner system. The remainder of the thermal liner/moisture barrier shall be secured with a minimum of four snap fasteners appropriately spaced on each jacket facing and four Ara-Shield® snap fasteners at each sleeve end. The outside perimeter of the AXTION® liner moisture barrier and thermal liner layers shall be bound together along the side and bottom edges with a bias-cut neoprene coated cotton/polyester binding for a finished appearance that prevents fraying and wicking of contaminants. Stitching used to secure the thermal liner and moisture barrier in place of the neoprene shall not be considered, since stitching is not able to provide the same level of abrasion resistance.

_____Comply _____Exception

RETROREFLECTIVE FLUORESCENT TRIM

The retroreflective fluorescent trim shall be lime/yellow 3M Scotchlite™ Triple Trim (L/Y borders with silver center). Each jacket shall have an adequate amount of retroreflective fluorescent trim affixed to the outside of the outer shell to meet the requirements of NFPA 1971 and OSHA.. The trim shall be in the following widths and shall be NYC style; 3 inch wide stripes - around the bottom of the jacket within approximately 1 inch of the hem, around the back and chest area approximately 3 inches below the armpit, around each sleeve below the elbow, around each sleeve above the elbow.

_____Comply _____Exception

REINFORCED TRIM STITCHING

All reflective trim is secured to the outer shell with Nomex[®] thread, using a locking chainstitch protected by our exclusive TrimTrax[®] system. Developed exclusively by Globe Manufacturing Co., LLC. this strip of 3/32-inch strong, durable, flame resistant black Kevlar[®] cording provides a bed for the stitching along each edge of the retroreflective fluorescent trim surface and affords extra protection for the thread from abrasion. TrimTrax[®] has been proven to be 5 to 7 times more durable than single or even double rows of stitching, significantly reducing maintenance costs and providing more value and a longer service life. Two rows of stitching used to attach the trim in place of the TrimTrax[®] shall be considered an unacceptable alternative, since it has been proven that the two rows of stitching has insignificant impact on wear life. All trim ends shall be securely sewn into a seam for a clean finished appearance.

_____ Comply _____ Exception

SEWN ON RETROREFLECTIVE LETTERING

Each jacket shall have 3" lime/yellow 3M Scotchlite[™] lettering on Row A reading: W F D. There shall be a option for 2" or 3" lime/yellow 3M Scotchlite[™] lettering on the hanging letter patch reading (ff name).

_____ Comply _____ Exception

LETTER PATCH

Hanging Letter Patch

The hanging letter patch shall be constructed of a double layer of outer shell material. The letter patch will attach to the rear inside hem of the jacket with a combination of snap fasteners and FR Velcro[®] hook & loop fastener tape.

_____ Comply _____ Exception

COLLAR & FREE HANGING THROAT TAB

The collar shall consist of a four-layer construction and be of two-piece design. The collar shall have a minimum of 3 rows of quilting. The outer layers shall consist of outer shell material, with a minimum of two-layers of specified moisture barrier sandwiched in between (see Moisture Barrier section). The rear inside ply of moisture barrier shall be sewn to the collar's back layer of outer shell at the edges only. The forward inside ply of moisture barrier shall be sewn to the inside of the collar at the edges only. The multi-layered configuration shall provide protection from water and other hazardous elements. The collar shall be of two piece design with the left and right halves of all component materials joined in the center by stitching, thereby permitting the collar to retain its proper shape and roll. The collar shall be minimum 3½ inches high and graded to size. The leading edges of the collar shall extend up evenly from the leading edges of the jacket front body panels so that no gap occurs at the throat area. The collar's back layers of outer shell and moisture barrier shall be joined to the body panels with two rows of stitching. Inside the collar, above the rear seam where it is joined to the shell shall be a strip of 5/8 inch wide FR Velcro[®] hook fastener tape running the full length of the collar. The collar's front layers of moisture barrier and outer shell shall have an additional strip of 5/8 inch wide hook fastener tape stitched to the inside lower edge and running the full length of the collar. These two inside strips of 5/8 inch wide FR Velcro[®] hook fastener tape sewn to the underside of the collar shall engage corresponding pieces of FR Velcro[®] loop fastener tape at the front and back neck area of the liner system.

The throat tab shall be a scoop type design and constructed of two plies of outer shell material with two center plies of moisture barrier material. The throat tab shall measure not less than 3 inches wide at the center tapering to 2 inches at each end with a total length of approximately 9 inches. The throat tab will be

attached to the right side of the collar by a 1 inch wide by 1 inch long piece of Nomex[®] twill webbing. The throat tab shall be secured in the closed and stowed position with FR Velcro[®] hook and loop fastener tape. The FR Velcro[®] hook and loop fastener tape shall be oriented to prevent exposure to the environment when the throat tab is in the closed position. Two 1½ inch by 3 inch pieces of FR Velcro[®] loop fastener tape shall be sewn vertically to the inside of each end of the throat tab. Corresponding pieces of FR Velcro[®] hook fastener tape measuring 1 inch by 3 inches shall be sewn horizontally to the leading outside edge of the collar on each side, for attachment and adjustment when in the closed position and wearing a breathing apparatus mask. In order to provide a means of storage for the throat tab when not in use, a 1 inch by 3 inch piece of FR Velcro[®] hook fastener tape shall be sewn horizontally to the inside of the throat tab immediately under the 1½ inch by 3 inch pieces of FR Velcro[®] loop fastener tape. The collar closure strap shall fold in half for storage with the FR Velcro[®] loop fastener tape engaging the FR Velcro[®] hook fastener tape.

A hanger loop constructed of a double layer of outer shell material shall be sewn to the top of the collar at the center.

____ Comply ____ Exception

JACKET FRONT

The jacket shall incorporate separate facings to ensure there is no interruption in thermal or moisture protection in the front closure area. The facings shall measure approximately 3 inches wide, extend from collar to hem, and be double stitched to the underside of the outer shell at the leading edges of the front body panels. A breathable moisture barrier material shall be sewn to the jacket facings and configured such that it is sandwiched between the jacket facing and the inside of the respective body panel. The breathable film side shall face inward to protect it. There shall be wicking barrier constructed of Crosstech 2F moisture barrier material installed on the front closure system on the left and right side directly below the front facings to ensure continuous protection and overlap. The wicking barrier shall extend no more than a maximum of ¾" beyond the inner facing and false facing shall be unacceptable. The thermal liner and moisture barrier assembly shall be attached to the jacket facings by means of snap fasteners.

____ Comply ____ Exception

STORM FLAP

A rectangular storm flap measuring approximately 3 inches (6 inches for hook and dee inside/FR Velcro[®] outside closure; aka #7C) wide and a minimum of 23 inches long (based on a 32" jacket) shall be centered over the left and right body panels to ensure there is no interruption in thermal or moisture protection in the front of the jacket. The outside storm flap shall be constructed of two plies of outer shell material with a center ply of breathable moisture barrier material. The outside storm flap shall be double stitched to the right side body panel and shall be reinforced at the top and bottom with bartacks.

____ Comply ____ Exception

STORM FLAP AND JACKET FRONT CLOSURE SYSTEM

The jacket shall be closed by means of a 22 inch size #10 heavy duty high-temp smooth-gliding YKK Vislon® zipper on the jacket fronts and FR Velcro® fastener tape on the storm flap. The teeth of the zipper shall be mounted on black Nomex® tape and shall be sewn into the respective jacket facings. The storm flap shall close over the left and right jacket body panels and shall be secured with FR Velcro® fastener tape. A 1½ inch piece of FR Velcro® loop fastener tape shall be installed along the leading edge of the storm flap on the underside with four rows of stitching. A corresponding 1½ inch piece of FR Velcro® hook fastener tape shall be sewn with four rows of stitching to the front body panel and positioned to engage the loop fastener tape when the storm flap is closed over the front of the jacket.

_____ Comply _____ Exception

CARGO/HANDWARMER EXPANSION (BELLOWS) POCKETS

Each jacket front body panel shall have a 2 inch deep by 8 inch wide by 8 inch high expansion pocket, double stitched to it and shall be located such that the bottom of the pockets are at the bottom of the jacket for full functionality when used with an SCBA. Retroreflective trim shall run over the bottom of the pockets so as not to interrupt the trim stripe. Two rust resistant metal drain eyelets shall be installed in the bottom of each expansion pocket to facilitate drainage of water. *The expansion pocket shall be reinforced with a layer of Kevlar® approximately 5 inches up on the inside of the pocket.* The pocket flaps shall be rectangular in shape, constructed of two layers of outer shell material and shall measure 3 inches deeper than the pocket expansion and ½ inch wider than the pocket. The upper pocket comers shall be reinforced with proven backtacks and pocket flaps shall be reinforced with bartacks. The pocket flaps shall be closed by means of FR Velcro® fastener tape. Two pieces of 1 ½ inch by 3 inch FR Velcro® hook fastener tape shall be installed vertically on the inside of each pocket flap (one piece on each end). Two corresponding pieces of 1 ½ inch by 3 inch FR Velcro® loop fastener tape shall be installed horizontally on the outside of each pocket near the top (one piece on each end) and positioned to engage the hook fastener tape.

Additionally, a separate hand warmer pocket compartment will be provided under the expandable cargo pocket. This compartment will be accessed from the rear of the pocket and shall be lined with Nomex® Fleece for warmth and comfort. Shell material linings shall not be considered acceptable.

(32" or shorter length) Retroreflective trim shall run over the bottom of the pockets so as not to interrupt the trim stripe.

26" length jacket – standard size pockets are not available, expansion pockets are available in either 2 inch deep by 10 inch wide by 6 inch high or 2 inch deep by 8 inch wide by 6 inch high.

_____ Comply _____ Exception

SEMI-EXPANSION (BELLOWS) POCKETS

Each jacket front body panel shall have a 8 inch wide by 8 inch high semi-expansion pocket double stitched to it and shall be located to provide accessibility. The leading edge of the pockets shall be sewn flush with the jacket. The rear of the pockets shall expand to a depth of 2 inches. The lower half of each semi- expansion pocket shall be reinforced with an extra layer of outer shell material on the inside. Two rust resistant metal drain eyelets shall be installed in the bottom of each semi-expansion pocket to facilitate drainage of water. The pocket flaps shall be rectangular in shape, constructed of two layers of outer shell material and shall measure 3 inches deeper than the pocket expansion and ½ inch wider than the pocket. The upper pocket comers shall be reinforced with proven backtacks and pocket flaps shall be reinforced with bartacks. The pocket flaps shall be closed by means of FR Velcro® fastener tape. Two pieces of 1½ inch by 3 inch FR Velcro® hook fastener tape shall be installed vertically on the inside of each pocket flap (one piece on each end). Two corresponding pieces of 1½ inch by 3 inch FR Velcro® loop fastener tape shall be installed

horizontally on the outside of each pocket near the top (one piece on each end) and positioned to engage the hook fastener tape.

____ Comply ____ Exception

AXTION® SLEEVES

The sleeves shall be of two piece construction and contoured, having an upper and a lower sleeve. Both the under and upper sleeve shall be graded in proportion to the chest size. For unrestricted movement, on the underside of each sleeve there shall be two outward facing pleats located on the front and back portion of the sleeve on the shell and thermal liner. On the moisture barrier, the system will consist of two darts, rather than pleats, to allow added length in the under sleeve. The moisture barrier darts will be seam sealed to assure liquid resistance integrity.

The pleats shall expand in response to upper arm movement and shall fold in on themselves when the arms are at rest. This expansion shall allow for greater multi-directional mobility and flexibility in the shoulder and arm areas, with little restriction or jacket rise. Neither stove-pipe nor raglan-style sleeve designs will be considered acceptable.

____ Comply ____ Exception

SLEEVE CUFF REINFORCEMENTS

The sleeve cuffs shall be reinforced with a layer of black Dragonhide® material.

The cuff reinforcements shall not be less than 2 inch in width and folded in half, approximately one half inside and one half outside the sleeve end for greater strength and abrasion resistance. The cuff reinforcement shall be double stitched to the sleeve end; a single row of stitching shall be considered unacceptable. This independent cuff provides an additional layer of protection as compared to a turned and stitched cuff. Jackets finished with a turned and stitched cuff do not provide the same level of abrasion resistance and will be considered unacceptable.

____ Comply ____ Exception

WRISTLETS / ELASTICIZED ADJUSTABLE SLEEVE WELLS

Each jacket shall be equipped with **Nomex® hand and wrist guards** (over the hand) not less than 7 inches in length and of double thickness. A separate thumbhole with an approximate diameter of 2 inches shall be recessed approximately 1 inch from the leading edge. Nomex® knit is constructed of 96% Nomex® and 4% Spandex for shape retention. The color of the wristlets shall be white.

The wristlets shall be sewn to the end of the liner sleeves. Flame resistant neoprene coated cotton/polyester impermeable barrier material shall be sewn to the inside of the sleeve shell approximately 5 inches from the sleeve end and extending toward the cuff forming the sleeve well. The neoprene sleeve well shall form an elasticized cuff end with an FR Velcro® tab providing a snug fit at the wrist and covering the knit wristlet. This sleeve well configuration serves to prevent water and other hazardous elements from entering the sleeves when the arms are raised. The neoprene barrier material shall also line the inside of the sleeve shell from the cuff to a point approximately 5 inches back, where it joins the sleeve well and is double stitched to the shell. Four Ara-shield® snap tabs will be sewn into the juncture of the sleeve well and wristlet. The tabs will be spaced equidistant from each other and shall be fitted with female snap fasteners to accommodate corresponding male snaps in the liner sleeves. One of the Ara-shield® snap tabs shall be a different color in the liner to correspond with color coded snap tabs for ease of matching the liner system to the outer shell after inspection or cleaning is completed. This configuration will ensure there is no interruption in protection between the sleeve liner and wristlet.

____ Comply ____ Exception

LINER SHOULDER AND UPPER BACK THERMAL ENHANCEMENT

A minimum of one additional layer of thermal liner material shall be used to increase thermal insulation in the upper back, front and shoulder area of the liner system. This full-cut thermal enhancement layer shall drape over the top of each shoulder extending from the collar to the sleeve/shoulder seam, down the front approximately 5 inches from the juncture of the collar down the back to a depth of 7 inches to provide greater CCHR protection in this high compression area. The upper back, front and shoulder thermal enhancement layers shall be sandwiched between the thermal liner and moisture barrier layers of the liner system and shall be stitched to the thermal liner layer only. The thermal enhancement layer shall have finished edges by means of overedging. Raw or unfinished edges shall be considered unacceptable. Thermal scraps shall not be substituted for full-cut fabric padding. Smaller CCHR reinforcements shall not be considered acceptable since they provide far less area of coverage.

Comply Exception

RADIO POCKET

Each jacket shall have a pocket designed for the storage of a portable radio. This pocket shall be of box type construction, double stitched to the jacket and shall have one drainage eyelet in the bottom of the pocket. The pocket flap shall be constructed of two layers of outer shell material measuring approximately 5 inches deep and ¼ inch wider than the pocket. The pocket flap shall be closed by means of FR Velcro® fastener tape. A 1½ inch by 3 inch piece of FR Velcro® hook fastener tape shall be installed on the inside of the pocket flap beginning at the center of the bottom of the flap. A 1½ inch by 3 inch piece of FR Velcro® loop fastener tape shall be installed horizontally on the outside of the pocket near the top center and positioned to engage the hook fastener tape. In addition, the entire inside of the pocket shall be lined with neoprene coated cotton/polyester impermeable barrier material to ensure that the radio is protected from the elements. The impermeable barrier material shall also be sandwiched between the two layers of outer shell material in the pocket flap for added protection. The radio pocket shall measure approximately 3 inches deep by 3.5 inches wide by 9 inches high and shall be installed on the left chest.

Note: radio pocket 6-inch and over in height requires trim.

Note: Radio pockets on the sleeves will be fully lined with neoprene to comply with the NFPA 2013 Stored Energy Test.

Comply Exception

MICROPHONE STRAP

A strap shall be constructed to hold a microphone for a portable radio. It shall be sewn to the jacket at the ends only. The size of the microphone strap shall be 1 inch x 3 inches above the radio pocket on the left chest and shall be constructed of double layer outer shell material.

Comply Exception

SURVIVOR FLASHLIGHT HOLDER

Each jacket shall be equipped with a "Survivor" flashlight holder. An inward facing metal safety coat hook shall be triple riveted in a vertical position to the upper chest. The inward facing coat hook will accommodate the clip portion of the flashlight. Below the coat hook will be a strap constructed of outer shell material measuring approximately 2½ inches high and 9 inches wide, and will hold the barrel of the flashlight. The lower strap will be equipped with a 1½ inch by 2½ inch FR Velcro® closure at the front of the strap to facilitate easy removal of the flashlight. There shall be approximately 3 inches between the upper coat hook and lower strap. The "Survivor" flashlight holder shall be sewn to the jacket on the right chest.

_____ Comply _____ Exception

EMBROIDERED AMERICAN FLAG – RIGHT SLEEVE

Each jacket shall have a Nomex® embroidered American flag that measures approximately 2½ inches high by 3½ inches wide. Per Military protocol the field of stars shall be to the top right corner for installation on the right sleeve. Flags made of fabric other than Nomex® shall be considered unacceptable.

_____ Comply _____ Exception

PANT CONSTRUCTION

BODY

The body of the shell shall be constructed of four separate body panels consisting of two front panels and two back panels. The body panels shall be shaped so as to provide a tailored fit, thereby enhancing body movement and shall be joined together by double stitching with Nomex® thread. The body panels and seam lengths shall be graded to size to assure accurate fit in a broad range of sizes.

The front body panels will be wider than the rear body panels to provide more fullness over the knee area. This is accomplished by rolling the side leg seams (inside and outside) to the rear of the pant leg beginning at the knee. The slight taper will prevent premature wear of the side seams by pushing them back and away from the primary high abrasion areas encountered on the sides of the lower legs.

_____ Comply _____ Exception

AXTION® SEAT

The rise of the rear pant center back seam, from the top back of the waistband to where it intersects the inside leg seams at the crotch, shall exceed the rise at the front of the pant by 8 inches. The longer rear center back seam provides added fullness to the seat area for extreme mobility without restriction when stepping up or crouching and will be graded to size. This feature in combination with other design elements will maintain alignment of the knee directly over the knee pads when kneeling and crawling.

_____ Comply _____ Exception

LINER ACCESS OPENING (PANT)

The thermal liner and moisture barrier layers of the pant liner system shall be constructed in such a way as to allow an access opening for interior inspection, service and replacement. The thermal liner and moisture

barrier layers shall be stitched together at the front fly for security and prevention of inadvertent use of one layer without the other. The liner system shall have a reinforcement of black Nomex® twill webbing sewn to the bottom of the fly opening. This reinforcement will serve to prevent the liner from tearing in that area from the constant donning and doffing of the pants.

The liner system of the pant shall incorporate a full length opening along the entire waistline for ease in inspecting the inner layers as well as performing the complete Liner Inspection. The thermal liner and moisture barrier shall be individually bound with a neoprene coated bias cut tape, and joined together with a snap at the center back. There shall be a minimum of 4 snap tabs sewn to the underside of the waistband, with corresponding snaps in the moisture barrier layer to secure the barrier to the shell. As described previously, the pant thermal layer snaps directly to the independent waistband by means of nine snap fasteners. There shall be no hook and loop used to close the liner access opening.

Comply Exception

RETROREFLECTIVE FLUORESCENT TRIM

The pants shall have a stripe of retroreflective fluorescent trim encircling each leg below the knee to comply with the requirements of NFPA #1971 in 3 inch lime/yellow 3M Scotchlite™ Triple Trim (L/Y borders with silver center). Bottom of trim band shall be located approximately 3" above cuff.

Comply Exception

REINFORCED TRIM STITCHING

All reflective trim is secured to the outer shell with Nomex® thread, using a locking chainstitch protected by our exclusive TrimTrax® system. Developed exclusively by Globe Manufacturing Co., LLC. this strip of 3/32-inch strong, durable, flame resistant black Kevlar® cording provides a bed for the stitching along each edge of the retroreflective fluorescent trim surface and affords extra protection for the thread from abrasion. TrimTrax® has been proven to be 5 to 7 times more durable than single or even double rows of stitching, significantly reducing maintenance costs and providing more value and a longer service life. Two rows of stitching used to attach the trim in place of the TrimTrax® shall be considered an unacceptable alternative, since it has been proven that the two rows of stitching has insignificant impact on wear life. All trim ends shall be securely sewn into a seam for a clean finished appearance.

Comply Exception

ELASTICIZED WAISTBAND

The pant design facilitates the transfer of the weight of the pant to the hips instead of the shoulders and suspenders. The two rear outer-shell body panels, beginning at the pant side seams, shall incorporate an elasticized waistband. The rear elasticized waistband shall be integral to the shell of the pant and the elasticized portion shall be covered in an aramid fabric.

The waist area of the pants shall incorporate an independent stretch waistband on the inside with a separate piece of black aramid outer shell material cut on the bias (diagonally) measuring not less than 2 inches in width. Neoprene coated cotton/polyester shall be sewn to the back of the waistband as a reinforcement to create a three-layer protection. The top edge of the waistband reinforcement shall be double stitched to the outer shell at the top of the pants. The lower edge of the waistband shall be serged and unattached to the shell to accept the thermal liner and moisture barrier. The top of the thermal liner and moisture barrier shall be secured to the underside of the waistband reinforcement so as to be sandwiched between the waistband reinforcement and outer shell to reduce the possibility of liner detachment while donning and to avoid pass through of snaps from the outer shell to the inner liner. The independent waistband construction affords greater comfort and fit than a turned and stitched method. Pants that do not include an independent waistband only serve to save the manufacturer both money and

labor and shall be considered unacceptable.

Comply Exception

EXTERNAL / INTERNAL FLY FLAP

The pants will have a vertical outside fly flap constructed of two layers of outer shell material, with a layer of moisture barrier material sandwiched between. The fly flap shall be double stitched to the left front body panel and shall measure approximately 2 ½ inches wide, with a length graded to size based on waist measurement and reinforced with bartacks at the base. An internal fly flap constructed of one layer of outer shell material, thermal liner and specified moisture barrier, measuring approximately 2 inches wide, with a length graded to size based on waist, shall be sewn to the leading edge of the right front body panel. The inside of the right front body panel shall be thermally enhanced directly under the outside fly with a layer of moisture barrier and thermal liner material.

The underside of the outside fly flap shall have a 1½ inch wide piece of FR Velcro® loop fastener tape quadruple stitched along the full length and through the shell material only; stitching shall not penetrate the moisture barrier insert between the two layers to insure greater thermal protection and reduced water penetration. A corresponding strip of 1½ inch wide piece of FR Velcro® hook fastener tape shall be quadruple stitched to the outside right front body panel securing the fly in a closed position.

Appropriate snap fastener halves shall be installed at the leading edge of the waistband for the purpose of further securing the pants in the closed position.

Comply Exception

BELT

Each pant shall include a 2 inch wide black aramid belt with an adjustable hi-temp thermoplastic buckle serving as the exterior primary positive locking closure. Sizing adjustments shall be provided by a self locking 2 inch thermoplastic buckle; this buckle shall also provide a quick-release mechanism for donning and doffing. The belt shall be attached to the two front body panels of the pant beginning at the side seams. The belt shall run through tunnels constructed of black 7½ oz aramid outer shell material protecting it from damage. The tunnels will begin at the side seams and terminate at the front of the pant exposing the buckle. A single belt loop constructed of a double layer of black 7½ oz aramid measuring approximately ½ inch by 3 inches shall be attached to the topside of the right side tunnel. The belt loop will be located approximately 2 inches from the tunnel opening for storage of the belt tab.

Comply Exception

AXTION® KNEE

The outer shell of the pant legs shall be constructed with horizontal expansion pleats in the knee area with corresponding darts in the liner to provide added fullness for increased freedom of movement and maximum flexibility. The pleats shall be folded to open outwardly towards the side seams to insure no restriction of movement. The AXTION® knee will be installed proportionate to the pant inseam, in such a manner that it falls in an anatomically correct knee location.

The thermal liner shall be constructed with four pleats per leg in the front of the knee. Two will be located above the knee (one on each side) and two will be located below the knee (one on each side). On the moisture barrier, the system will consist of two darts, rather than pleats, to allow added length in the

under knee. The darts in the liner provide a natural bend at the knee. The pleats and darts in the liner work in conjunction with the expansion panels in the outer shell to increase freedom of movement when kneeling, crawling, climbing stairs or ladders, etc.

____ Comply ____ Exception

LINER KNEE THERMAL ENHANCEMENT

A minimum of one additional layer of specified thermal liner and one additional layer of moisture barrier material, measuring a minimum of 9 inches by 11 inches, will be sewn to the knee area of the liner system for added CCHR protection and increased thermal insulation in this high compression area. The knee thermal enhancement layers shall be sandwiched between the thermal liner and moisture barrier layers of the liner system and shall be stitched to the thermal liner layer only. The thermal enhancement layer shall have finished edges by means of overedging. Raw or unfinished edges shall be considered unacceptable. Thermal scraps shall not be substituted for full-cut fabric padding. Smaller CCHR reinforcements shall not be considered acceptable since they provide far less area of coverage.

____ Comply ____ Exception

KNEE REINFORCEMENTS

The knee area shall be reinforced with a layer of black Dragonhide[®] material.

The knee reinforcement shall be centered on the leg to insure proper coverage when bending, kneeling and crawling. The knee reinforcements shall measure 9 inches wide by 12 inches high and shall be double stitched to the outside of the outer shell in the knee area for greater strength and abrasion resistance. The knee reinforcement specified shall be removable without opening up any seams of the outer shell of the pant. Knee reinforcements of a smaller size do not provide the same protective coverage and shall be considered unacceptable.

____ Comply ____ Exception

PADDING UNDER KNEE REINFORCEMENTS

Padding for the knees shall be accomplished with one layer of Silizone[®] foam sewn to the liner, sandwiched between the thermal liner and moisture barrier.

____ Comply ____ Exception

EXPANSION (BELLOWS) POCKETS

An expansion pocket, measuring approximately 2 inches deep by 10 inches wide by 10 inches high shall be double stitched to the side of each leg straddling the outseam above the knee and positioned to provide accessibility. *The lower half of each expansion pocket shall be reinforced with an additional layer of Kevlar[®] twill material on the inside.* Two rust resistant metal drain eyelets shall be installed on the underside of each expansion pocket to facilitate drainage of water. The pocket flaps shall be rectangular in shape, constructed of two layers of outer shell material and shall measure 3 inches deeper than the

pocket expansion and ½ inch wider than the pocket. The upper pocket corners shall be reinforced with proven bartacks and pocket flaps shall be reinforced with bartacks. The pocket flaps shall be closed by means of FR Velcro® fastener tape. Two pieces of 1½ inch by 3 inch FR Velcro® hook fastener tape shall be installed vertically on the inside of each pocket flap (one piece on each end). Two corresponding pieces of 1½ inch by 3 inch FR Velcro® loop fastener tape shall be installed horizontally on the outside of each pocket near the top (one piece on each end) and positioned to engage the hook fastener tape.

_____ Comply _____ Exception

6 PACK TOOL COMPARTMENT

A tool pocket constructed of Kevlar® material and measuring approximately 8 inches high by 10 inches wide will be installed on the inside of the right pocket with double stitching. The front pockets will measure 6 inches high. Two separate rows of stitching will divide the tool pocket into six compartments, three in front (6 inches high) and three in back (8 inches high), measuring approximately 3 inches wide and set side-by-side.

_____ Comply _____ Exception

PANT CUFF REINFORCEMENTS

The cuff area of the pants shall be reinforced with a layer of black Dragonhide® material

The cuff reinforcement shall not be less than 2 inch in width and folded in half, approximately one half inside and one half outside the end of the legs for greater strength and abrasion resistance. The cuff reinforcement shall be double stitched to the outer shell for a minimum of two rows of stitching. This independent cuff provides an additional layer of protection over a hemmed cuff. Pants that are turned and stitched at the cuff, as opposed to an independent cuff reinforcement, do not provide the same level of abrasion resistance and shall be considered unacceptable.

_____ Comply _____ Exception

PADDED RIP-CORD SUSPENDERS & ATTACHMENT

On the inside waistband shall be attachments for the standard "H" style "Padded Rip-Cord" suspenders. There will be four attachments total – 2 front, 2 back. The suspender attachments shall be constructed of a double layer of black aramid measuring approximately ½ inch wide by 3-inches long. They shall be sewn in a horizontal position on the ends only to form a loop. The appearance will be much like a horizontal belt loop to capture the suspender ends.

A pair of "H" style "Padded Rip-Cord" suspenders shall be specially configured for use with the pants. The main body of the suspenders shall be constructed of 2 inch wide black webbing straps. The suspenders shall run over each shoulder to a point approximately shoulder blade high on the back, where they shall be joined by a 2 inch wide horizontal piece of webbing measuring approximately 8-inches long, forming the "H". This shall prevent the suspenders from slipping off the shoulders. The shoulder area of the suspenders will be padded for comfort by fully encasing the webbing with aramid batting and wrap-around black aramid.

The rear ends of the suspenders will be sewn to 2-inch wide elasticized webbing extensions measuring approximately 8-inches in length and terminating with thermoplastic loops. The forward ends of the suspender straps shall be equipped with specially configured black powder coat non-slip metal slides with teeth. Through the metal slides will be the 9 inch lengths of strap webbing "Rip-Cords" terminating with thermoplastic loops on each end. Pulling on the "Rip-Cords" shall allow for quick adjustment of the suspenders.

Threaded through and attached to the thermoplastic loops on the forward and rear ends of the suspenders will be black aramid suspender attachments incorporating two snap fasteners. The aramid suspender attachments are to be threaded through the suspender attachment loops on the inside waistband of the pants. The aramid suspender attachments will then fold over and attach to themselves securing the suspender to the pants.

____ Comply ____ Exception

REVERSE BOOT CUT

The outer shell pant leg cuffs will be constructed such that the back of the leg is approximately 1 inch shorter than the front. The liner will also have a reverse boot cut at the rear of the cuff and a concave cut at the front to keep the liner from hanging below the shell. This construction feature will minimize the chance of premature wear of the cuffs and injuries due to falls as a result of "walking" on the pant cuffs. Pants that have "cut-outs" in the back panel rather than a contoured boot cut shall be considered unacceptable.

____ Comply ____ Exception

THIRD PARTY TESTING AND LISTING PROGRAM

All components used in the construction of these garments shall be tested for compliance to NFPA Standard #1971 by Underwriters Laboratories (UL). Underwriters Laboratories shall certify and list compliance to that standard. Such certification shall be denoted by the Underwriters Laboratories certification label.

____ Comply ____ Exception

LABELS

Appropriate warning label(s) shall be permanently affixed to each garment. Additionally, the label(s) shall include the following information.

Compliance to NFPA Standard #1971
Underwriters Laboratories classified mark
Manufacturer's name
Manufacturer's address
Manufacturer's garment identification number
Date of manufacture
Size

____ Comply ____ Exception

ISO CERTIFICATION / REGISTRATION

The protective clothing manufacturer shall be certified and registered to ISO Standard 9001 to assure a satisfactory level of quality. Indicate below whether the manufacturer is so certified and registered by checking either "Yes" or "No" in the space provided.

____ Yes ____ No

BETTER BUSINESS BUREAU:

The manufacturer is accredited by the Better Business Bureau, showing a commitment to ethical and principled business practices.

_____Comply _____Exception

WARRANTY:

The manufacturer shall warrant these jackets and pants to be free from defects in materials and workmanship for their serviceable life when properly used and cared for.

_____Comply _____Exception

HOOK AND LOOP SUPPORT PROGRAM

Support program shall cover hook or loop tape that has begun to fray or otherwise degrade from normal wear. This program shall remain in effect for a period of five years from the original date of manufacture of the garment. This support program shall cover the repair or replacement, without charge, of any hook and/or loop on the garments produced by the manufacturer providing the garments are otherwise serviceable.

This support program does NOT cover damage from fire, heat, chemicals, misuse, accident or negligence. Failure to properly care for garments will serve to void this support program.

_____Comply _____Exception

SIZING BY VENDOR:

Both male and female sizing samples shall be available.

_____Comply _____Exception

BAR-CODE/RECORD KEEPING INTERFACE

A 1 dimensional barcode, in the interleaved 2 of 5 format shall be printed on the label of each separable layer of the garment.

This barcode shall represent the serial number of the garment. The manufacturer shall be able to provide a detailed list of each asset of a drop-shipped order, and shall include the following:

- Brand
- Order Number
- Serial Number
- Style Number
- Color
- Description
- Chest/Waist Size
- Jacket/pant Length
- Sleeve Length
- Date of Manufacture
- Mark-For Data

This information shall be able to be imported into the manufacturers web-based system designed to facilitate the organization and tracking of assests in accordance with the cleaning and inspection requirements of OSHA and NFPA 1851.

Comply Exception

PPE RECORD KEEPING

The manufacturer shall make available and no-charge, a password protected data based backed website that does not care whose brand of PPE assets are being recorded. The website shall have the functionality to allow the manufacturer to import all of the pertinent data into the department's account so that the initial data entry by fire department personnel is eliminated.

The website shall allow for the department to use a barcode scanner, if desired, to scan the Interleaved 2 of 5 barcode found in the gear by going to the Search the Serial Number page in PPE record keeping program, and scanning the asset's barcoded serial number.

Comply Exception

EXCEPTIONS TO SPECIFICATIONS

Any and all exceptions to the above specifications must be clearly stated for each heading. Use additional pages for exceptions, if necessary.

COUNTRY OF ORIGIN

Jackets and Pants shall be manufactured in the United States.