GENERAL SPECIFICATIONS

PROTECTIVE JACKET AND PANTS

FOR STRUCTURAL FIRE FIGHTING

April 2016

Introduction

The City of Gallatin Fire Department is seeking bids for a purchase of Turnout Gear. Bids will be due on April 14th 2016 at 3:00 p.m.in a sealed envelope marked: **BID: Turnout Gear.**

SCOPE

This specification details design and materials criteria to afford protection to the upper and lower body, excluding head, hands, feet, against adverse environmental effects during structural firefighting. All materials and construction will meet or exceed NFPA Standard #1971 and OSHA for structuralfire fighters protectiveclothing.

_____Comply _____Exception

SIZING

In order to insure that every member of the department can safely perform to the maximum of their ability without extra bulk and without restriction, Jackets and Pants shall be available in all sizes and dimensions as follows:

Pants:

Gender:	Gender Specific Men and Women patterns
Waist:	Even sizes
Body Shape:	Men: Relaxed and Regular *Note*: Relaxed is a fuller cut in the hips and thighs, like relaxed jeans
Inseam:	Even sizes

Jackets:

Gender: Gender specific Men and Women patterns will be available.

Chest:	Even sizes
Back Length:	Men: 29”, 32”, 35”, 40” Women: 26”, 29”
Body Shape:	Men: Straight and Tapered *Note*: The straight cut offers more fullness at the hips (i.e. jacket sweep) and is recommended when an IH Ready trouser is being specified Women: Straight
Sleeve:	1” increments

Jackets and Pants available in only one standard shape will not be acceptable.

_____Comply _____Exception

OUTER SHELL MATERIAL- JACKETS AND PANTS

The "ARMOR" outer shell shall be manufactured by Safety Components and constructed of 75/25 Para-Aramid/Meta-Aramid twill weave with an approximate weight of 7.0 oz. per square yard. The shell material must be treated with a durable water-repellent finish and the color of the garments shall be black.

_____Comply _____Exception

THERMAL INSULATING LINER –JACKET AND PANTS

The thermal liner shall be constructed of 7.4 oz. per square yard Safety Components GLIDE™ GOLD 2L- E89; one layer of 1.5 oz. and one layer of 2.3 oz. per square yard E-89™ spunlaced Nomex®/Kevlar® aramid blend, quilt stitched to a 60% Kevlar® Filament/40% Nomex®/Lenzing spun yarn Face Cloth. 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 single needle 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. *NOTE: It is suggested that this thermal liner be used with a minimum 7 oz. per square yard outer shell material.*

_____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. A total of six snap fasteners shall secure the thermal liner/moisture barrier to the outer shell along the length of the neck line under the top most collar. The top most collar shall be turned under and finished such that the snaps on the collar will not be able to contact the wearer's skin. Corresponding snaps shall be installed through a moisture barrier leader measuring an approximate height of 1.75 – 2 inches and shall not penetrate through to the outer shell on the backside of the collar. 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 on the shell shall be color coded to corresponding snap tabs in the liner for ease of matching the liner system to the outer shell after inspection or cleaning is completed. There shall be no hook and loop used to close the access opening.

_____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 AXTIQN® 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 or Equivalent

The jacket outer shell shall include inverted pleats to afford enhanced mobility and freedom of movement in addition to that provided by the AXTION® or equivalent 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. Pleats that do not extend to the hem will not be considered since they do not provide true AXTION® or equivalent back.
The moisture barrier and thermal liner layers shall be designed with darts corresponding to the added length in the shell provided by the AXTION® or equivalent back pleats. The darts are positioned at the shoulder blades, outside of the SCBA straps and work together with the corresponding outer shell pleats in the AXTION® or equivalent 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 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 $1^{1/2}$ inchwide strap: constructed of black Kevlar® with a red Nomex® 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 designer to fit between the shoulder straps of an SCBA. The flap will have a NFPA-compliant 3M Scotchlite™ reflectivelogo 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 deviceprovides 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 liner system of the jacket shall incorporate an opening at each of the leading edges of the left and right front panels. This opening shall run a minimum of 12 inches along the perimeters for the purpose of inspecting integrity of the jacket liner system. When installed into the outershell the Liner Access Opening will be covered and protected by the overlap of the outer shellfacing

_____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 outer shell with Nomex® thread, using a locking chain stitch protected by our exclusive Trim Trax System or equivalent. 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. Trim Trax® or equivalent 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 Trim Trax or equivalent shall be considered an unacceptable alternative since it has been proven that the two rows of stitching has significant 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 3inch lime/yellow 3M Scotchlite™ lettering on Row Breading: G F D (new logo)
Each jacket shall have an option for either 2 inch or 3 inch lime/yellow 3M Scotchlite™ lettering a Hanging Letter Patch reading: (FF NAME)

_____Comply _____Exception

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 &loo fastener tape.

_____Comply _____Exception

COLLAR & FREE HANGING THROAT TAB

The collar shall consist of a minimum four-layer construction and be of one-piece design. There shall be two layers of specified moisture barrier material sandwiched in between two layers of outer shell fabric (see Moisture Barrier section). The forward inside ply of moisture barrier shall be sewn to the inside of the collar along the edges only. The multi-layered configuration shall provide protection from water and other hazardous elements while maintaining thermal protection. The collar shall be a minimum of 3 inches high and graded to chest 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 back layers of outer shell and moisture barrier shall be joined to the body panels with a minimum of two rows of stitching. The collar front layers of outer shell and moisture barrier fabric shall have a series of 6 snap fasteners spaced equidistant to minimize gaps on lower edge of the collar. The top most collar shall be turned under and finished such that the snaps on the collar will not be able to contact the wearer's skin. There shall be 6 corresponding snap fasteners on a moisture barrier leader which is sewn to the thermal liner system to engage the snaps on the collar. The snaps on the thermal liner system leader will be installed such that they do not penetrate from shall be sandwiched between the underside of the top collar shell fabric and moisture barrier material and the bottom collar shell fabric and moisture barrier material so as to reduce the possibility of liner detachment while donning and doffing.

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 $1^{1/2}$ 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 2 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 3/4" 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 wide and a minimum of 23 inches long (based on a 33" 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 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 Vision® zipper on the jacket fronts and hook and dee rings 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 by means of four non-ferrous inward facing hook and dee rings. The dee rings shall be secured to the leading edge of the storm flap with two rivets. The dee rings shall be spaced evenly along the storm flap. Four inward facing hooks shall be attached to the left front body panel with three rivets for each hook. The rivets shall be reinforced on the inside if the body panel with a single circular piece of leather for each hook. The inward facing hooks shall be positioned in such a manner that they engage the dee rings when the storm flap is closed over the front of the jacket.

_____Comply _____Exception

OPTIONAL ZIPPERGRIPPER™ or Equivalent

There shall be a ZIPPERGRIPPER™ or equivalent feature integrated into the zipper closure of the jacket. The ZIPPERGRIPPER™ or equivalent shall facilitate donning and shall provide additional room at the base of the jacket when sitting otherwise engaged. The ZIPPERGRlPPER™ or equivalent will be comprised of black Ara-Shield® and with the opposite side double stitched to the left coat front. The ZIPPERGRIPPER™ or equivalent will be wedged shaped, measuring approximately 4 inches high and finished 1 1/2 inches wide at the bottom. There will be a single row of stitching, approximately 2 inches high to Ensure the ZIPPERGRIPPER™ or Equivalent is held in place beneath the storm flap.

_____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 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 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 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® 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 provide under the expandable cargo pocket. This cornpartment 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.

Retroreflective trim shall run over the bottom of the pockets so as not to interrupt the trim stripe.

_____Comply _____Exception

EXPANSION POCKET REINFORCEMENTS

The lower half of the expansion pockets shall be reinforced on the outside with a layer of black Dragonhide® material.

_____Comply _____Exception

AXTION® SLEEVES or Equivalent

The sleeves shall be of two piece construction and contoured, having an upper and 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 al rest. This expansion shall allow for greater multi-directional mmobility and flexibility in the shoulder and arm areas, with little restriction or jacket rise. Neither stove-pipe nor raglan-style sleeve design will be considered acceptable.

_____Comply _____Exception

SLEEVE CUFF REINFORCEMNETS

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 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® knit wristlets with thumb loop** not less than 4 inches in length and of double thickness. A loop of 5/8 inch wide black Nomex® twill shall installed on each wristlet. This loop is designed to slip over the thumb and hold the wristlets from riding up the arm. The color of the wristlets shall be grey.

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 eachother 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 ELBOW THERMAL ENHANCEMENT

An additional layer of thermal liner material shall be sewn to the elbow area of the liner system for added protection at contact points and increased thermal insulation in this high compression area. The elbow 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 finished dimension shall be approximately 5 inches by 8 inches. All edges shall be finished by means of overedging. Raw or unfinished edges shall be considered unacceptable. Thermal scraps shall not be substituted for full-cut fabric padding.

_____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 craps 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 1/4 inch wider than the pocket. The pocket flap shall be closed by means of FR Velcro® fastener tape. A 1 ½ 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 1 ½ 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 2 inches deep by 3.5 inches wide by 8 inches high and shall be installed on the left chest. *Note: Radio pocket 6-inch and over in height requires trim.*

_____Comply _____Exception

NOTCHED RADIO POCKET FLAP

The radio pocket flap shall be notched to accommodate the radio antenna on the left side as worn.

_____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. The microphone strap shall be mounted above the radio pocket and shall be constructed of double layer outer shell material. There shall be a second microphone strap mounted on the right 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 2 ½ inches high and 9 inches wide, and will hold the barrel of the flashlight. The lower strap will be equipped with a 1 ½ inch by 2 ½ 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

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 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

PANT LINER SYSTEM

The combined moisture barrier and the thermal liner shall be completely removable for the pant. The thermal liner and moisture barrier layers of the liner system shall be stitched together and bound around the top waist and cuffs with Bias-Cut neoprene coated cotton/polyester binding for a finished appearance that prevents fraying and wicking of contaminants.

The body of the liner system (thermal liner & moisture barrier) shall be of a four piece design to match the cut of the shell to include the rolled back side seams. The design of the liner system will incorporate darts in the knee area providing a contour to the leg and will also have a reverse boot cut at the rear of the liner cuff and a concave at the front to keep the liner from hanging below the shell.

The liner system shall have a reinforcement of black Nomex® twill 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.

_____Comply _____Exception

LINER ACCESS OPENING- PANT

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

WAISTBAND

The pant design facilitates the transfer of the weight of the pant to the hips instead of the shoulders and suspenders. The waist area of the pants shall be reinforced on the inside with a separate piece of black aramid outer shell material not less than two inches in width. Neoprene coated cotton/polyester shall be sewn to the back of the waistband as a reinforcement, impermeable barrier shall be sewn to the back of the waistband as a reinforcement. The aramid/Neoprene waistband shall be cut on the bias to allow the waistband to stretch for unrestricted movement and increased comfort. 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.

_____Comply _____Exception

BELT LOOPS

The pants shall be equipped with a minimum of 3 outer shell material belt loops, spaced around the waist to accommodate a belt.

_____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 grade 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 grade 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 1 ½ 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 1 ½ 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

RETROREFLECTIVE FLUORESCENT TRIM

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

_____Comply _____Exception

RINFORCED TRIM STITCHING SYSTEM or Equivalent

All reflective trim is secured to outer shell with Nomex® thread, using a locking chain stitch protected by our exclusive Trim Trax System or equivalent. 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. Trim Trax® or equivalent 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 Trim Trax® or equivalent shall be considered an unacceptable alternative since it has been proven that the two rows of stitching has significant impact on wear life. All trim ends shall be securely sewn into a seam for a clean finished appearance.

_____Comply _____Exception

INTERNAL SEAT HARNESS SERIES 2

The internal seat harness shall be independently certified to NFPA 1983, Standard on Life Safety Rope and Equipment for Emergency Services, as a Class II harness. The harness shall consist of a 1 ¾" Kevlar® waist belt with an external hardware loop made from 2 inch wide black Kevlar® webbing. All ends of webbing will be reinforced with a coated fabric to prevent raveling. The waist belt, which is graded to waist size,shall secure at the front with a hook and an adjustable D-ring closure. This closure system is also the positive front closure for the pants. Attached to the waist belt are a left and a right 2 inch Kevlar® webbing leg loop, constructed without hardware, and graded for the circumference of the pant legs. The external hardware loop connecting each individual leg loop is constructed from two combined layers of webbing which form an A-frame and a connection point for the hardware. The leg loops shall be secured to the waist belt by means of a slot formed by an opening in the stitching combining the layers. This construction allow the leg loops to rest lower on the legs for less restriction when the harness is not loaded: but with the ability to snug up higher against the body when the harness is loaded. The slot openings also allow the waist belt to be adjusted in size with the leg loops properly positioned between the front belt loops and the front harness closure. The right and left leg loops shall be installed between the outer shell fabric of the pants and the pants liner, and the strap from each leg loop shall exit the outer shell behind the front belt loops on each side of the pants front closure. The center of the hardware loop shall be sewn to narrow the width at its center and reinforced on the outside with a layer of Arashield® fabric. Sewn to the inside of the center of the hardware loop shall be a 1" webbing which forms a ring to secure the pin of the specified ladder hook. The A- frame hardware loop shall be sized to permit the ladder hook to be secured to the keeper strap located on the front left side of the pants. This hardware loop must be positioned so as to allow the use of the ladder hook without deploying the escape system, and to accommodate donning and doffing of the pants with all hardware installed. A D-ring with a sliding bar shall be attached to the hardware loop to connect to the escape system in the right pocket.

_____Comply _____Exception

CMC CARABINEER

The ladder hook shall be a **CMC** ProSeries XL Aluminum Manual-Lock D Carabineer (red in color) and shall be third party certified to NFPA 1983. The gate shall open by pulling the gate towards self and twisting the gate 45 degrees. The escape system (locking carabineer, rope, descender, and hook) is not supplied with the pants.

_____Comply _____Exception

AXTION® SEAT or Equivalent

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

EXPANSION (BELLOWS) POCKETS (LEFT)

One 2 inch deep by 10 inch wide by 10 inch bellows pockets shall be placed over the outer leg seams at thigh level. The pockets shall be sewn to the pant with two rows of lock stitching and shall provide two aluminum eyelets,installed at the bottom of each pocket, for water drainage. Each pocket shall be reinforced with an additional layer of outer shell material sewn to the inside. The pocket flaps shall be rectangular in shape, constructed of two layers of outer shell material and double stitched to the outer shell. One piece of 1 ½ inch by 3 inch FR hook fastener tape on the inside of each pocket flap on each side. One piece of corresponding 1 ½ inch by 3 inch FR loop fastener tape shall be installed horizontally on the outside of each side of pocket near the top and positioned to engage the hook fastener tape. Each pocket flap shall be reinforced with bartacks at the uppermost corners.

_____Comply _____Exception

EXPANSION (BELLOWS) POCKETS (RIGHT)

One 2 inch deep by 10 inch wide by 10 inch bellows pockets shall be placed over the outer leg seams at thigh level. The pockets shall be sewn to the pant with two rows of lock stitching and shall provide two aluminum eyelets,installed at the bottom of each pocket, for water drainage. Each pocket shall be reinforced with an additional layer of outer shell material sewn to the inside. The pocket flaps shall be rectangular in shape and measure a minimum of 6 inches by a minimum of 11 inches, constructed of two layers of outer shell material and double stitched to the outer shell. Three pieces of 1 ½ inch by approximately 5 inch FR Velcro® hook fastener tape shall be installed vertically on the inside of each pocket flap (one each side and one in the middle. One continuous piece of corresponding approximately 1 ½ inch by 9 inch FR loop fastener tape shall be installed horizontally on the outside of the pocket near the top and positioned to engage the hook fastener tape. The pocket flap shall be reinforce with bartacks at the uppermost corners. A 2-piece loop constructed of a double layer of outer shell material will be installed under the front edge of the pocket flap. The top and bottom of the loop will attach to each other with a 1 inch by 1 inch FR Velcro® hook and loop fastener tape sewn to ends. Inside the pocket, a strap measuring 1 ½ inches by 12 9 ½ inches shall run the full vertical height of the pocket where it will secure at the top with hook and loop fastener tape, A second strap shall be sewn at one end and attach at the other end with hook and loop fastener tape. The straps are specially designed to secure the contents of the pocket and aloe for quick release.

Pockets shall be divide 50/50

_____Comply _____Exception

EXPANSION POCKET REINFORCEMENTS

The lower half of the expansion pockets shall be reinforced on the outside with a layer of black Dragonhide® material.

_____Comply _____Exception

AXTION® KNEE or Equivalent

The outer shell of the pant legs shall be constructed with horizontal expansion pleats ill the knee area with corresponding darts in the liner to provide added fullness for increased freedom of moven1ent and 1naximu m flexibility. The pleats shall be folded to open outwardly towards the side seams to insure no restriction of n1ovement. The AXTION® or equivalent 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. Knee reinforcements of a smaller size do not provide the same protective coverage and shall be considered unacceptable. The knee reinforcements specified shall be removed without opening up any seams of the outer shell of the pant.

_____Comply _____Exception

PADDING UNDER KNEE REINFORCEMENTS

Padding for the knees shall be accomplished with one layer of Silizone® foam, sandwiched between the outer shell and knee reinforcement.

_____Comply _____Exception

PANT CUT OFF 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 inches 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 independent cuff reinforcement, do not provide the same level of abrasion resistance and shall be considered unacceptable.

_____Comply _____Exception

PADDED RIP CORD SUSSPENDERS & 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.

_____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.

Both male and female sizing samples shall be on hand for use when sizing. The vendor shall be available to perform all sizing requirements within 96 hours of written notice. Measuring with a tape measure is not acceptable.

_____Comply _____Exception

GARMENT TRAINING AND SUPPORT

OSHA requires employees be trained on the capabilities and limitations of their Personal Protective Equipment. The selected vendor shall provide the following:

On-site care and maintenance training shall be provided by the manufacturer. Training shall be in compliance with NFPA 1851, current edition, at the conclusion of which each participant shall receive a certificate of completion.

An on-site OSHA mandated training class on the Knowing the Limits of Your PPE shall be provided at no charge. The training shall include structural firefighting coat, pant and boots.

_____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 assets 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 ORGIN

Jackets and Pants shall be manufactured in the United States.

Evaluation of Proposals

The City of Gallatin will award the contract to lowest responsible and responsive bidder meeting specifications, quality, and performance standards pursuant to the Municipal Purchasing Act of 1983. Response will be based on the following factors;

- Completeness of response
- Cost
- Vendor track record, including references
- Quality of service
- Quality of product

Contract Award

The City of Gallatin reserves the right to reject any or all proposals and to waive any information found therein. The City of Gallatin will award a contract based on evaluations described above.

6.0 Question Submissions

Gallatin Fire Department
Attn: Tommy Dale
119 GFD Memorial BLVD.
Gallatin, TN 37066
Telephone: 615-452-2771
Email: walter.dale@gallatin-tn.gov

7.0 Proposal Submissions

ALL SUBMISSIONS MUST BE SEALED AND CLEARLY MARKED

"Turnout GEAR"

BID DUE DATE: April 14th, 2016 @ 3:00pm

Proposals shall be directed to the attention of:

Finance Department
Attn: J.R. Smith, Jr
Direct Purchase Uniform Program
132 West Main Street
Gallatin, TN 37066
Telephone: 615-451-5899

PRICE SHEET

Price per SET : $_____

***Pricing is good for 1 year**

Name of Company: _____

Address: _____

Telephone: _____

Signature: _____

Print Name: _____

Title: _____

Email: _____

Date: _____