

**DEPARTMENTAL INPUT**  
**CONTRACT/PROJECT MEASURE ANALYSIS AND RECOMMENDATION**

Rev 1

New contract   
  OTR   
  CO   
  SS   
  BW   
  Emergency   
 Previous Contract/Project No: 9186-0/15

Re-Bid   
  Other   
 LIVING WAGE APPLIES:  YES  NO

Solicitation No: FB-00654   
 TERM OF CONTRACT: 60 months with 0 options-to-renew  
 Upon Delivery

Requisition/Project Title: Firefighter Protective Uniforms

Description: Purchase of structural and wild fire protective gear.

User Department(s): Fire Rescue.   
 Issuing Department: ISD   
 Contact Person: A. Rodriguez   
 Phone: 305-375-4744  
 Estimated Cost: \$3,500,000.00   
 Funding Source: Fire District Funds

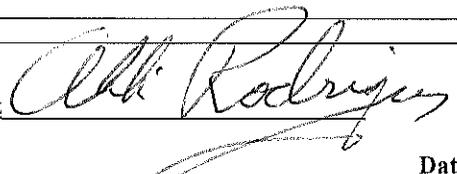
**ANALYSIS**

Commodity/Service No: <u>200-37, 340-34, and 345-56</u>			
<b>Trade/Commodity/Service Opportunities</b>			
Contract/Project History of Previous Purchases For Previous Three (3) Years Check Here <input type="checkbox"/> If this is a New Contract/Purchase with no Previous History			
	<u>EXISTING</u>	<u>2<sup>ND</sup> YEAR</u>	<u>3<sup>RD</sup> YEAR</u>
Contractor:	Lion Group, Bennett Fire Products, Municipal Equipment Co. Municipal Emergency Services	Same	Same
Small Business Enterprise:	No		
Contract Value:	\$3,100,000.00	\$	\$
Comments:			
Continued on another page (s): <input type="checkbox"/> Yes <input type="checkbox"/> No			

**RECOMMENDATIONS**

SBE	Set-Aside	Sub-Contractor Goal	Bid Preference	Selection Factor
		%	X	
		%		
		%		
		%		

**Basis of Recommendation:**  
 Very specialized coats, pants, helmets, boots and gloves made to exact specifications. Local companies are not distributors of this equipment because of low Demand and high cost.

Signed: A. Rodriguez    
 Date to SBD: 7/19/17  
 Date Returned to DPM: \_\_\_\_\_

**Section 2**  
**Special Terms and Conditions**

**2.1 PURPOSE**

The purpose of this solicitation is to establish a contract for the purchase of firefighter protective clothing in conjunction with the County's needs.

**2.2 TERM OF CONTRACT**

This contract shall commence on the first calendar day of the month succeeding approval of the contract by the Board of County Commissioners, or designee, unless otherwise stipulated in the Notice of Award Letter which is distributed by the County's Internal Services Department, Procurement Management Division. The contract shall expire on the last day of the sixtieth (60) month.

**2.3 METHOD OF AWARD**

Award of this contract will be made to the lowest priced responsive, responsible bidder on a group by group basis. To be considered for award of a group, the bidder shall offer prices for all items within a given group. Items that will be provided to the County at no cost must show a zero (0) in the price line. The County will then select the bidder for award of each group by totaling the prices for all items within each group. If a bidder fails to submit an offer for all items within the group, its offer for that specific group may be rejected.

Award of items five (5) through nine (9) will be made to the lowest priced responsive, responsible bidder on an item by item basis. An item is defined as the primary product and the auxiliary information required (i.e. Item 8 and 8a). Percentages requested (5a, 6a, and 7a) shall not be used in the evaluation of lowest bidder, unless there is a tie bid in which case the item will be awarded to the highest percentage.

If the awarded bidder fails to perform in accordance with the terms and conditions of the contract, The Bidder may be deemed in default of the contract. If the awarded Bidder defaults, the County shall have the right to negotiate with the next responsive, responsible Bidder

**QUALIFICATIONS**

a) **CERTIFICATION REQUIREMENT**

Bidders shall supply with the bid submittal a copy of the manufacturer's Insurance Service Office (ISO) Standard 9001 certification.

b) **AUTHORIZED DISTRIBUTOR**

Bidders must be the product manufacture or an authorized distributor of the manufacturer. Bidders shall supply a letter on manufactures letterhead acknowledging the distributor/reseller agreement. Manufacturers shall supply a signed letter explaining that they are the manufacturer of the brand being bid.

## 2.4 PRICES

The prices proposed by the awarded bidder(s) shall remain fixed for a period of no less than twelve (12) months after the commencement of the contract. The bidder may submit a price adjustment to the County based on documented price adjustments by the product manufacturer. Acceptable documentation for an adjustment shall be a Manufacturers revised price list, and/or a letter by the item Manufacturer to its distributors notifying them of an adjustment. Adjustments greater than five percent on any item will be dis-allowed. The County reserves the right to negotiate lower pricing based on market conditions or other factors that influence price.

It is the bidder's responsibility to request any price adjustment under this provision. The bidder's request for adjustment must be submitted to the County's Internal Services Department, Procurement Management Division for review no more than 90 days or less than 45 days prior to expiration of the then current contract year. The County reserves the right to reject any price adjustments submitted by the bidder or to negotiate lower pricing based on market research information or other factors that influence price.

## 2.5 PRODUCTS

Miami-Dade County has evaluated numerous materials in arriving at their technical specifications and feels the material(s) specified will best protect its employees.

The mention of a particular manufacturer's brand name in the specifications does not imply that this particular product is the only one that will be considered for purchase. This reference is intended solely to designate type or quality of material that will be acceptable. If an "equal" product is to be considered by the County in accordance with the Bid Submission Form, the product shall be equal in style, color, quality and standards of performance to the item specified in the solicitation.

The determination as to whether any alternate product is or is not equal shall be made solely by Miami-Dade County and such determination shall be final and binding upon all bidders. Miami-Dade County reserves the right to request and review additional information and samples to make such a determination.

Items must be clearly identified on the offer submittal pages(s) as to manufacturer and style number. Failure to provide this information with the offer may result in rejection of the offer.

### SAMPLES

Bidders may be required to submit a sample of the goods to be supplied for evaluation by, and at no cost to the County. This sample will become property of the County, and may or may not be returned to the bidder at the County's option. If samples are required, the County will notify the bidder of such in writing and will specify the deadline for submission of the samples. Each individual sample shall be clearly labeled with the bidder's name, bid number, bid title, manufacturer's name, brand name, and style number if applicable. If the bidder fails to submit the samples, properly labeled, by the specified date stipulated in the notice, the County may not consider the bidder's proposal for that item(s).

**Commented [PB(1)]:** I thought that in our last meeting with Fire, it was discussed that the specs of the gear is new and has never been built. How will samples be provided if this is something brand new?

**Commented [RA(2R1)]:** MDRF wants to see a sample of the gear, to insure it meets specs.

. Bidders must include a pre-paid return shipping document for return of samples not retained by the County. Failure to do so will mean the bidder does not wish the sample to be returned and it can be disposed of by the County in any way it deems fit.

Commented [PB(3)]: This statement is already listed above

## **2.6 DELIVERY**

The bidder shall make deliveries of ordered items within sixty (60) calendar days after the date of the order. Deliveries shall be made in accordance with good commercial practice and all required delivery time frames shall be adhered to by the bidder; except in such cases where the delivery will be delayed due to acts of nature, strikes, or other causes beyond the control of the bidder. In these cases, the bidder shall notify the County of the delays in advance of the original delivery date so that a revised delivery schedule can be appropriately considered by the County.

Should the bidder(s) to whom the contract is awarded fail to deliver in the number of days stated above, the County reserves the right to cancel the order on a default basis at no cost to the County. If the order is so terminated, it is hereby understood and agreed that the County has the authority to purchase the goods elsewhere and to charge the incumbent bidder with any re-procurement costs. If the bidder fails to honor these re-procurement costs, the County may terminate the contract for default. Repeated late delivery or failure to deliver complete order(s) may also result in default and contract termination.

## **2.7 PURCHASE OF OTHER ITEMS**

While the County has listed all major items within this solicitation which are utilized by County departments in conjunction with their operations, there may be similar items that must be purchased by the County during the term of this contract. Under these circumstances, a representative of the Internal Services Department, Procurement Management Division will contact the awarded bidders to obtain a price quote. Award of these items will be made as described in the request for quote. The County retains the right to reject any quote received and purchase the item through other means.

## **2.8 SUBSTITUTION OF ITEMS**

Substitute brands or models may be considered during the contract period for discontinued models or in the event of an emergency as dictated by the user department Director. The bidder shall not deliver any substitute item as a replacement to an awarded brand or model without expressed written consent from the Internal Services Department, Procurement Management Division, prior to such delivery. Substitute items must be of equal or better quality than the awarded item. Excessive substitution requests may be cause to cancel the contract.

## **2.9 MEASURING AND FITTING**

The awarded bidder(s) shall provide a site within Miami-Dade County where firefighters can be properly fitted for their uniform items. Alternately the bidder may arrange/coordinate with the ordering department to measure at the department site.

**2.10 INSURANCE REQUIREMENT**

The insurance requirement shown in Section 1.0 Paragraph 1.22 does not apply to this solicitation.

**2.11 WARRANTY**

In addition to the information listed in Section 1, Paragraphs 1.7 and 1.8 the awarded bidder shall provide a support program that 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 serviceable. This support program does NOT cover damage from fire, heat, chemicals, misuse, accident or negligence.

**2.12 BAR-CODE**

A one dimensional barcode as required by the National Fire Protection Act (NFPA) Standards shall be printed on the label of each separable layer of the garment. This barcode shall represent the serial number of the garment.

**Commented [PB(4)]:** Why are we so specific? Isn't this restrictive? Can't we just ask for one dimensional barcode?

The awarded bidder shall provide the following information with each item:

- 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 imported into the awarded bidder's web-based information system. The gathered information shall be made available in a format which the County can download and then manipulate this will facilitate the County's organization and tracking of gear in accordance with the cleaning and inspection requirements of OSHA and NFPA 1851.

**Section 3**  
**Technical Specifications**

**3.1 SCOPE**

The personal protective clothing ensemble addressed in these specifications shall be designed and manufactured to protect firefighters against adverse environmental effects during structural and wildland firefighting operations. The structural ensemble shall consist of: coat, pants, boots, hood, gloves, and helmet. All materials, design and constructions methods shall meet or exceed NFPA 1971, Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, 2013, or latest edition, OSHA (29 CFR 1910), and the requirements of structural firefighter's protective clothing.

**3.2 DESIGN REQUIREMENTS – COAT AND TROUSERS (Group 1)**

The ensemble shall be comprised of two (2) major components; a waist length coat, cut close to the body, but with ample room for freedom of movement and sufficient interface with the pants, gloves, boots and helmet. A trouser designed to cover the lower torso and legs with ample room for freedom of movement and sufficient interface with the coat and boots. The ensemble shall be designed to offer optimum protection and functional mobility, along with minimum weight.

**3.3 MATERIALS**

**3.3.1 Outer Shell Material – Jackets and Trousers**

The “**PbiMax™**” outer shell shall be manufactured by Safety Components and be constructed of 70/30 **Pbi™** dominant **Kevlar®** with **Kevlar®** filament Comfort Twill weave. This outer shell fabric shall have an approximate weight of 6.0 oz. per square yard and must be treated with a durable water-repellent finish. Color of the garments shall be natural/gold.

**3.3.2 Thermal Insulating Liner – Jackets and Trousers**

TENCATE “**QUANTUM 3D® SL2I™**”; a Kevlar filament and FR rayon/para-aramid/nylon, spun yarn Goldcheck™ face cloth quilted to one flat layer and one three dimensional layer of Nomex®/Kevlar® spun lace with a finished weight of approximately 7.7 oz. per square yard. 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. Further mention of “Thermal Insulation Liner, or Thermal Liner” in this specification shall refer to this section. Weight: 7.7 oz. per square yard

**3.3.3 Moisture Barrier – Jackets and Trouser**

The moisture barrier material shall be W.L. GORE **CROSSTECH® black moisture barrier** - Type 2F, which is comprised of a CROSSTECH® membrane laminated to a 3.3 ounce per square yard Nomex® IIIA woven pajama check substrate. The CROSSTECH® membrane is an enhanced bicomponent membrane comprised of an expanded PTFE (polytetrafluoroethylene, for example Teflon®) matrix having a continuous hydrophilic (i.e. water-loving) and oleophobic (i.e. oil-hating) coating that is impregnated into the matrix. CROSSTECH® moisture barrier seams shall be sealed with GORE-SEAM® tape using a Series 6000 (or higher) GORE-SEAM™ sealing machine to afford comparable bacteriophage penetration resistance performance. Further mention of “Specified Moisture Barrier” in this specification shall refer to this section. (NO SUBSTITUTE)

### **3.3.4 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. CROSSTECH® moisture barrier seams shall be sealed with GORE-SEAM® tape using a Series 6000 (or higher) GORE-SEAM™ sealing machine to afford comparable bacteriophage penetration resistance performance. (NO EXCEPTION)

### **3.3.5 Method of Thermal Liner I Moisture Barrier Attachment for Jackets.**

The thermal liner and moisture barrier shall be completely removable from the jacket shell. Two strips of 5/8 inch wide flame retardant (FR) hook and loop 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, Paragraph 3.4.9) or equal. 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 snap fasteners at each sleeve end. Additionally there shall be three snap tabs at hem to secure liner to shell or equal.

### **3.3.6 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 thirty-five (35). (NO EXCEPTION).

### **3.3.7 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. There shall be no joined stitching in mid seam. All major "A" outer shell structural seams and major "B" structural liner seams, shall have a minimum of eight (8) to ten (10) stitches per inch. All seams shall be continuously stitched only.

## **3.4 JACKET CONSTRUCTION**

### **3.4.1 Body**

The preferred body of the shell and 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.

### **3.4.2 Drag Rescue Device (DRD)**

A Firefighter Drag Rescue Device shall be installed in each jacket. The ends of a 1½ inch wide aramid strap will be sewn together to form a continuous loop or equal. 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 a hook and loop strap. The access port will be covered by an outside flap 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).

#### **3.4.3 Liner Access Opening – Jacket**

The liner system of the jacket shall incorporate an opening at the leading edge of the left front. This opening shall run approximately 12 inches along the perimeter for the purpose of inspecting the integrity of the jacket liner system. When installed into the outer shell the Liner Access Opening will be covered and protected by the overlap of the outer shell facing. Three snap tabs shall be sewn to the hem of the jacket to secure the shell to the liner.

#### **3.4.4 Sleeves**

The sleeves shall be of two piece construction, having an upper and a lower sleeve. The sleeve seams shall be of a double needle seam construction and shall be contoured to follow the natural flex of the arm at rest. 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 undersleeve. The moisture barrier darts will be seam sealed to assure liquid resistance integrity or equal construction. 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 coat rise or equal construction.

#### **3.4.5 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. 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 or equal construction.

#### **3.4.6 Fore Arm Reinforcements**

The Fore Arms of the outer shell sleeves shall be reinforced with a layer of Dragon Hide® or equal material.

The fore arm reinforcements design allows the fore arm reinforcement to follow the contour of the sleeve and shall be double stitched together into the outer sleeve seam. The remainder of the fore arm reinforcement shall be double stitched to the respective under sleeve panels. The overall dimensions of the elbow reinforcements shall measure approximately 6 inches wide and 8 inches high, or equal construction. Reinforcement material shall be a layer of Dragon Hide®, Black Polymer Aramid or a Gold Poly-coated Aramid, or an equivalent.

#### **3.4.7 Sleeve Cuff Reinforcement**

The sleeve cuffs shall be reinforced with a layer of Dragon Hide®, Black Polymer Aramid or a Gold Poly-coated Aramid, (or an equivalent).

The cuff reinforcements shall not be less than 3 inches in width and folded in half, approximately one half inside and one half outside the sleeve end. The cuff reinforcement shall be double stitched to the sleeve end.

#### **3.4.8 Wristlets / 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 be 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 a piece of self-material leader that is then stitched into the cuff. 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 snap tabs sewn onto 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.

#### **3.4.9 Collar & Free Hanging Throat Tab**

The collar shall consist of a four-layer construction and be of two-piece design. The outer layers shall consist of outer shell material on the outside and a layer of black ADVANCE™ PCA, or approved equal material, on the inside. There shall be a layer of specified moisture barrier and a layer of pajama-check material inserted in between (see Moisture Barrier – Jackets and Trouser, Paragraph 3.3.3). The rear inside ply of pajama-check 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 a minimum of 3 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 flame retardant (FR) loop 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 fastener tape sewn to the underside of the collar shall engage corresponding pieces of FR fastener tape on the neck extension of the liner system. A self-material fabric hanger loop shall be sewn at the top of collar or equal construction.

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 2½ inches wide at the center tapering to 2 inches at each end with a total length of approximately 7½ inches. The throat tab will be attached to the right side of the collar by a 1 inch wide by 1½ inch long piece of Nomex® twill webbing. The throat tab shall be secured in the closed and stowed position with FR hook and loop fastener tape. The FR hook and loop fastener tape shall be oriented to prevent exposure to the environment when the throat tab is in the closed position. A 1½ inch by 3 inch piece of FR loop fastener tape shall be sewn horizontally to the inside leading end of the throat tab and a 1½ inch by 3 inch piece of FR hook fastener tape shall be sewn horizontally to the opposite end of the throat tab. A corresponding piece of FR hook fastener tape measuring 1½ inches by 3 inches shall be sewn horizontally to the leading outside edge of the collar on the left side, for attachment and adjustment when in the closed position and wearing a breathing apparatus mask. The collar closure strap shall fold in half for storage with the FR loop fastener tape engaging the FR hook fastener tape, or equal construction.

#### **3.4.10 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 or equal construction.

#### **3.4.11 Storm Flap**

A rectangular storm flap measuring approximately 3¼ inches (6 inches for hook and loop inside/FR Velcro® outside closure) wide and a minimum of 21 inches long 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 bartack stitching.

#### **3.4.12 Storm Flap and Jacket front Closer System**

The jacket shall be closed by means of a 22 inch size #10 heavy duty high-temp polymer zipper on the jacket fronts and flame retardant (FR) hook and loop fastener tape on the storm flap. The teeth of the zipper shall be mounted on Nomex® cloth 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 hook and loop fastener tape. A 1½ inch by 24 inch piece of FR 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 by 23 inch piece of FR 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, or equal construction.

#### **3.4.13 Semi-Expansion (Bellows) Pockets**

Each jacket front body panel shall have a 10 inch wide by 6 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 semi-expansion pocket shall be reinforced with a layer of Kevlar® approximately 5 inches up on the inside of the pocket. 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 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 pocket flaps shall be angled with the front edge 1" shorter than the back edge, the upper pocket corners shall be reinforced with proven bartack, and pocket flaps shall be reinforced with bartack. The pocket flaps shall be closed by means of FR Velcro® hook and loop 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. Additionally the flap will be constructed with material to increase the thickness of the bottom end of the flap, to make flap easier to grab with gloved hand.

#### **3.4.14 Flashlight Holder**

The jackets shall be equipped with a flashlight retainer strap. A three (3) point riveted hook shall be mounted to a shell patch sewn to the right chest. Underneath the patch shall be a leather reinforcement to be included to the rivet process. An adjustable fabric strap (3inch by 9 inch) with

four (4) inches of hoop and loop closer is sewn to the coat approximately below the flash light hook and shall be located on the right chest.

#### **3.4.15 Radio Pocket**

Each jacket shall have a pocket designed for the storage of a portable radio. This pocket shall be a box type construction, double stitched to the coat, and shall have one drainage eyelet in the bottom of the pocket. The pocket flap shall be constructed of two layers outer shell material measuring approximately 5 inches deep and ¼ inch wider than the pocket. The pocket flap shall be closed by means of flame retardant (FR) hook and loop fasteners tape. A 1½ inch by 3 inch piece of FR hook and loop fastener tape shall be installed vertically 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 hook and 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 /polyester moisture barrier material to ensure that the radio is protected from the elements. The moisture barrier material shall also be sandwiched between the two layers of the outer shell material in the pocket flap for added protection. The radio pocket shall measure approximately two (2) inches deep by three and one half (3½) inches wide by (9) inches high and shall be installed on the left chest. On the radio pocket flap a Nomex® embroidered American Flag measuring approximately 2½ inches by 3½ inches shall be embroidered with the stars facing to the left. Flags made of materials other than Nomex® shall not be considered.

#### **3.4.16 Microphone Strap**

A strap shall be constructed to hold a microphone for a portable radio. It shall be sewn to the coat at ends only. The microphone strap shall be mounted on the collar on the left and right side and shall be constructed of double layer outer shell material.

#### **3.4.17 Retro Reflective Fluorescent Trim**

The following specification outlines the fluorescent and retro reflective trim requirements for NFPA 1971-2013, or latest edition, certified fire coats to enhance visibility while working in or adjacent to firefighting situations, moving traffic, heavy equipment, work zones or other endangering elements.

This specification is for the trim requirements per NFPA 1971-2013, or latest edition, to be worn during day and night work. The complete garment shall be in compliance with NFPA 1971-2013, or latest edition. The garment must be manufactured using NFPA 1971-2013 or latest edition, certified component materials and meet all NFPA 1971-2013, or latest edition, design requirements. Component materials in this specification shall be separately certified to NFPA 1971-2013, or latest edition, by an ISO Guide 65 accredited independent laboratory.

Material shall include:

- a. Reflective and fluorescent material shall be 3M™ Scotchlite™ or approved equal reflective material Series 5600 Fire Coat Comfort Trim.
- b. The reflective surface is composed of wide angle; an exposed retro reflective lens integrally centered on a fluorescent background color bonded to a heat-activated adhesive and is comprised of reflective patterned segments on a clear plastic liner.
- c. When tested in accordance with NFPA 1971-2013, or latest edition, Section 8.6 per ISO 17493 for five minutes at 260°C, the material shall meet all requirements for trim in Section 8.6.7.3 and shall maintain a minimum RA of 350 or greater when measured at 0.2° observation angle /5° entrance angle per the procedure defined in ASTM E808-01 and E809-08.

- d. When tested in accordance with NFPA 1971-2013, or latest edition, Section 8.1.3, Convective Heat Exposure Test, the material shall maintain a minimum RA of 350 or greater when measured as described above.
- e. When tested in accordance with NFPA 1971-2013, or latest edition, Section 8.71, Transmitted and Stored Thermal Energy Test, the material shall pass all requirements without any other modifications.
- f. Shall be made in America
- g. When washed 50 cycles in accordance with ISO-6330 Method 6N (60°C home wash), the retro reflective material shall maintain a minimum RA of 100 or greater when measured as described above.

Third party NFPA 1971-2013, or latest edition, certificate of compliance for the trim shall be kept on file at the manufacturer.

The retro reflective fluorescent trim shall be lime/yellow 3M™ Scotch lite™ or approved equal reflective material Series 5600 Fire Coat Trim. Each jacket shall have an adequate amount of retro reflective fluorescent trim affixed to the outside of the outer shell to meet the requirements of NFPA 1971-2013, or latest edition and OSHA (29 CFR 1910), and the requirements of Miami-Dade Fire Rescue . The trim shall be in the following widths and shall be three (3) inch wide stripes - around each sleeve below the elbow, around each sleeve above the elbow, around the bottom of the jacket within approximately one (1) inch of the hem, around the back and chest area approximately three (3) inches below the armpit.

#### **3.4.18 Sewn On Retro Reflective Lettering**

Each jacket shall have a 3inch lime yellow 3M™ Scotchlite™ or approved equal reflective material with lettering reading MIAMI-DADE.

#### **3.4.19 Letter Patch / Shoulder Patch**

Lettering will be on a Snap-on letter patch. The sewn-on letter patch shall be constructed layer of Black Nomex® / Kevlar® outer shell material with a 3 inch lime yellow 3M™ Scotchlite™ or approved equal reflective material with lettering for firefighter's first initial and last name.

Two flame retardant material (FRM) shoulder patches, Miami-Dade Fire Rescue logo and Miami-Dade County Crest will be attached with fire retardant sewing (FRS) thread and will have a hook and loop fastening system on each shoulder of coat. Shoulder patches will be centered approximately eight (8) inches above elbow of coat.

#### **3.4.20 Sizing**

The length of the jacket shall be measured from the collar and back panels to the hem of the jacket and shall measure:

- 27 inches in the front/31 inches long in the back. (Ladies)
- 29 inches in the front/33 inches long in the back. (Standard)
- 32 inches in the front/36 inches long in the back. (Tall)
- 35 inches in the front/39 inches long in the back.

The jacket shall be available in male and female patterns in even size chest measurements of two inch increments, and shall range from a small size of thirty (30) to a large size sixty-eight (68.) Generalized sizing, such as small, medium, large, etc., will not be considered acceptable.

### **3.5 TROUSERS**

#### **3.5.1 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 shall be graded to size to assure accurate fit in a broad range of sizes, or equal construction.

The front body panels will be wider than the rear body panels to provide more fullness over the knee area. 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, or equal construction.

#### **3.5.2 Liner Access Opening (Trouser)**

The thermal liner and moisture barrier layers of the trouser liner system shall be constructed in such a way as to allow the layers to separate for complete 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 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 trousers, or equal construction.

The liner system of the trouser shall incorporate an opening at the right side of the waist, a minimum of 11 inches, for the purpose of inspecting the integrity of the trouser liner system.

The thermal liner and moisture barrier shall be completely removable from the trouser shell. Nine snap fasteners shall be spaced along the waistband to secure the thermal liner/moisture barrier to the shell. The legs of the thermal liner/moisture barrier shall be secured to the shell by means of two snap fasteners per leg or equal.

#### **3.5.3 WAISTBAND AND INTERNAL HARNESS READY**

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. 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. Slots shall be located on the outer shell to allow for passage of leg loops if Department wants to upgrade to an internal harness at a later date.

#### **3.5.4 External / Internal Fly Flap**

The trousers 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 2½ inches wide

by 10 inches long 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 by 10 inches long, 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, or equal construction.

The underside of the outside fly flap shall have a 1½ inch wide piece of 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 by 9 inch long hook fastener tape shall be quadruple stitched to the outside right front body panel securing the fly in a closed position, or equal construction.

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

### **3.5.5 ESCAPE BELT**

The pant shall have an integrated escape belt, which is independently certified as meeting the belt requirements of NFPA 1983, Standard on Life Safety Rope and Equipment for Emergency Services. The escape belt shall be comprised of Kevlar® webbing with a hook and an adjustable D-ring closure, graded for the waist size of the pants. The hook and dee closure system of the escape belt also serves as the positive front closure for the pants, eliminating redundant closure systems.

### **3.5.6 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. These suspenders will have 3M™ Scotch lite™ yellow Reflective Material-Series 5600 Fire Coat Comfort Trim.

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.

### 3.5.7 Seat

The rise of the rear trouser 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 trouser 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, or equal construction.

### 3.5.8 Pockets

#### Full Bellow Pocket. Left Leg:

A bellows pocket, measuring approximately 10" X 10" X 2", shall be double stitched to the garment. A continuous layer of Kevlar twill shall be sewn to the entire inside of the pocket. Two rust resistant brass drainage eyelets shall be installed in the bottom of each pocket to provide the drainage of water. The pocket flaps shall be constructed of outer shell material and measure approximately 3" wide X 10" long. The pocket flaps shall be closed by means of hook and loop fastener tape. Three 1-1/2" X 3" pieces shall be located on the flap while a 1-1/2" X 9" rectangle shall be located on each pocket. Additionally, the flap will be constructed with a material to increase the thickness of the bottom end of the flap to make the flap easier to grab with a gloved hand. The upper corners of each pocket shall be bar tacked for reinforcement. This pocket will have lettering located on the body of the pocket containing: MDFR in 3" retro-reflective lettering. This pocket will be reinforced with a black Polymer Coated Aramid (PCA) or approved equal on the lower outside half of the pocket.

#### Full Bellow Pocket. Right Leg with 6 tool Compartment:

A bellows pocket, measuring approximately 10" X 10" X 2", shall be double stitched to the garment. A continuous layer of Kevlar twill shall be sewn to the entire inside of the pocket. Two rust resistant brass drainage eyelets shall be installed in the bottom of each pocket to provide the drainage of water. The pocket flaps shall be constructed of outer shell material and measure approximately 3" wide X 10" long. The pocket flaps shall be closed by means of hook and loop fastener tape. Three 1-1/2" X 3" pieces shall be located on the flap while a 1-1/2" X 9" rectangle shall be located on each pocket. Additionally, the flap will be constructed with a material to increase the thickness of the bottom end of the flap to make the flap easier to grab with a gloved hand. The upper corners of each pocket shall be bar tacked for reinforcement. This pocket shall have a 6 tool compartment sewn to the back (leg side) of the pocket. The slots will be achieved with 2 layers of outer shell material sewn to the back of the pocket. One shall be approximately 6" tall, the other 4" tall. Both will be sewn with 2 vertical stitches creating 3 evenly spaced slots each. This pocket will be reinforced with a black Polymer Coated Aramid (PCA) or approved equal on the lower outside half of the pocket.

### 3.5.9 Knee

The outer shell of the trouser 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. Two expansion pleats measuring approximately 1 inch deep, shall be installed along both the inseam and out seam on each leg in the knee area. The pleats shall be folded to open outwardly towards the side seams to insure no restriction of movement. The knee will be installed proportionate to the trouser inseam, in such a manner that it falls in an anatomically correct knee location, or equal construction

The liner system shall be constructed with four darts 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). Each dart will be approximately two (2) inches long. The darts in the liner provide a natural bend at the knee. The 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., or equal construction.

#### **3.5.10 Liner Knee Thermal Enhancement**

An additional layer of specified thermal liner and moisture barrier material will be sewn to the knee area of the liner system for added protection and increased thermal insulation at contact points. 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.

#### **3.5.11 Knee Reinforcements**

The knee area shall be reinforced with a layer of black Polymer Coated Aramid (PCA or equal material). The knee reinforcement shall be slightly offset to the outside of the leg to insure proper coverage when bending, kneeling and crawling. The knee reinforcements shall measure 10 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, or equal construction.

#### **3.5.12 Padding under Knee Reinforcements and additional Padding on Liner**

Padding for the knees shall be accomplished with one layer of fire-retardant closed cell foam or equal material sandwiched between the shell and the knee reinforcement layers. In addition two (2) layers of uninterrupted 1/8" thick Fire-retardant, closed-cell foam and one layer of silicone shall be also positioned between the reinforcement layer and the outer shell.

#### **3.5.13 Trouser Cuff Reinforcement**

The cuff area of the trousers shall be reinforced with a layer of black Polymer Coated Aramid (PCA) or equal material.

The cuff reinforcement shall not be less than 3 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. Two Nomex® snap tabs (one each side), measuring approximately 1 inch long shall be bartacked to the inside of each leg of the outer shell approximately three inches from the bottom of the trouser leg. A female half of the snap fastener shall be installed at the end of each tab and shall align with the male snap fastener halves installed at the bottom of the trouser thermal liner/moisture barrier. The tab mounted snap fasteners shall secure the trouser thermal liner/moisture barrier to the outer shell within three inches of the cuff..

#### **3.5.14 Reverse Boot Cut**

The outer shell trouser 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 trouser cuffs.

#### **3.5.15 Retro Reflective Fluorescent Trim, Sides, and Cuffs**

The trousers shall have a stripe of retro reflective fluorescent trim down the sides of the legs and encircling each leg below the knee in 3 inch lime yellow triple trim (LN borders with silver center). The retro reflective fluorescent trim shall be lime yellow 3M™ Scotch lite™ Reflective Material - Series 5600 Fire Coat Comfort Trim. (No exceptions)

### **3.5.16 Reflective Trim Bonding**

The reflective surface is composed of wide angle; an exposed retro reflective lens integrally centered on a fluorescent background color bonded to a heat-activated adhesive and is comprised of reflective patterned segments on a clear plastic liner.

### **3.5.17 Sizing**

The trousers shall be available in even size waist measurements of two inch increments and shall be available in a range of sizes from 24 to 56. The trouser inseam measurement shall be available in two inch increments. Generalized sizing, such as small, medium, large, etc., will not be considered acceptable. Sizing specifically for females shall also be available.

### **3.5.18 Third Party Testing and Listing Programs**

All components used in the construction of these garments shall be tested for compliance to NFPA 1971-2013, or latest edition, 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.

### **3.5.19 Labels**

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

- a. Compliant to NFPA1971-2013, or latest edition.
- b. Underwriters Laboratories classified mark.
- c. Manufacturer's name
- d. Manufacturer's address
- e. Manufacturer's garment identification number
- f. Date of manufacture
- g. Size
- h. Fiber contents

## **3.6 WILDLAND / EXTRACATION COAT AND PANTS (Group 2)**

The coat and trousers shall comply with both NFPA 1951-2013, or latest edition, Standard on Protective Ensembles for Technical Rescue Incidents and NFPA 1977-2016, or latest edition, Standard of Protective Clothing and Equipment for Wildland Fire Fighting (Dual Certified). The coat and pants shall be made from a high-density carbon shell with high levels of thermal protection ( $\geq 15.6$  TPP) and will be radiant heat protective ( $\geq 15$ +RPP) using a single layer construction. The garments shall be available in male and female patterns. The color of the dual certified garments will be black.

### **3.6.1 Coat**

The coat will be wing backed design for ease of movement. The coat will have a 3 inch by 8 inch radio pocket with microphone attachment on the left chest. The coat will have a 6 inch by 7 inch bellows pocket on the left chest and a 2 combination 8 inches by 7 ½ inches pockets on the left and right abdomen.

### **3.6.2 Collar**

The collar will possess a full width closure  $\geq 3$  inches and be secured with hook and loop type closures.

### **3.6.3 Storm Flap**

The storm flap on the coat will close with a zipper and hook and loop type closure system.

### **3.6.4 Reflective Trim**

The coat and pants will have New York style reflective 3M™ Scotchlite™. Reflective Triple Trim ( $\geq 2$  inches) on both wrists of the coat approximately 4 inches above the cuff and on both arms approximately 3 inches above the elbow crease. Reflective trim will also be placed on 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.

### **3.6.5 Pants**

The pants will be BDU style designs with 4 inch adjustable waste take up straps and belt loops large enough to accommodate a  $\geq 3$  inch belt. The pants will possess two, 8½ inch by 8½ inch cargo style pockets with closure flaps located on the outside of each leg. Front hand pockets will be installed in the pants. The rear of the pants will possess two, 6 inch by 6 inch pockets without a closure. The pants will have boot interface/leg take adjustments and a 15 inch zippered leg opening for easy donning over firefighters boots. The pants will have suspender loops for the addition of suspenders at the firefighter's discretion. The pants will have Stedshield® reinforced knees with padded inserts, or equal material.

### **3.6.6 Reflective Trim**

The pants will have New York style reflective 3M™ Scotchlite™ Reflective Triple Trim material ( $\geq 2$  inches) on both legs approximately 8 inches above the cuff and it will encompass the leg.

## **3.7 STRUCTURAL FIREFIGHTING HELMET**

### **3.7.1 Design**

The style helmet addressed in these specifications shall be a traditional style design. All materials and construction methods shall meet or exceed NFPA 1971-2013, or latest edition, Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, OSHA (29 CFR 1910), MBSIR 1977 and the requirements of Miami-Dade Fire Rescue.

### **3.7.2 Helmet**

The successful bidder shall provide Firefighter Helmets, Cairns and Brother, model #1044 (No Substitute). The helmet shall be equipped with (2) sets of flannel cushion liners, washable mesh bag, PBI® Kevlar® (or approved equal) earlap, six (6) inch carved brass eagle front holder, ratchet headband, Nomex® chinstrap with postman slide, Defender Tuff shield impact cap and reflective tetrahedrons 3M Scotchlite™. Tetrahedrons colors to be available based on rank in green, red, orange, and white. The helmet colors to be available in yellow, red, orange, white, black, and blue.

### **3.7.3 Parts**

Replacement will be purchased off the current year catalog at discount rate provided by the bidder.

### **3.8 SEARCH AND RESCUE HELMETS**

#### **3.8.1 Helmet**

The successful bidder shall provide "Pacific" brand Kevlar® rescue helmet, model R3K12 "Kiwi" (or equal) in colors white, yellow, orange, and red.

Helmet shall include:

- a. One piece removable impact liner
- b. Suspension, flannel covered fully adjustable dial ratchet system.
- c. Chinstrap, ANSI compliant with quick release polycarbonate buckles.
- d. Quick release goggle mounts to accommodate "ESS" brand, model "Inner zone 2 inch type goggle.

### **3.9 WILDLAND FIRE HELMETS**

#### **3.9.1 Design**

The style helmet shall be cap style with front peak. All materials and construction methods shall meet or exceed NFPA 1977-2016, or latest edition, and the requirements of Miami-Dade Fire Rescue (shown below). Documentation proving NFPA compliance will be required from the awarded bidder. The helmet colors to be available in yellow, red, orange, white, black, and blue.

#### **3.9.2 Suspension**

Helmet suspension system shall consist of a six (6) point crown strap suspension that is anchored to the outer shell and positioned to distribute energy over 3 cross straps that attach at six (6) points. Helmet shall utilize ratchet adjustment in the headband for size adjustment. The helmet suspension shall contain vertical adjustments. Suspension and adjustment shall contain no metal components.

#### **3.9.3 Helmet**

Helmet shall include:

- a. Nomex® chinstrap with postman slide
- b. Nomex® ear and neck protector
- c. Face protector Ratchet headband suspension system
- d. Defender tuff shield impact cap
- e. Two (2) sets of flannel cushion liners
- f. Reflective stripping 3M Scotchlite™ . Colors to be available based on rank in green, red, orange, and white. This material to be shipped with helmets however will be installed by Miami-Dade Fire Rescue.

### **3.10 FOOTWEAR**

#### **3.10.1 Description**

These specifications are intended to meet or exceed the requirements of NFPA 1500-2013 latest edition; Standard on Fire Department Occupational Safety and Health Program, and NFPA 1971-2013 or latest edition; Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting. These boots shall be designed to provide protection against foot and lower leg injuries to fire fighters. These specifications are intended to define the minimum requirements for waterproof leather, fourteen (14) inch pull-up structural firefighting boots.

#### **3.10.2 Design**

Footwear design shall include:

- a. The footwear specified herein shall be fourteen ( $\geq 14$ ) inches high, measured in accordance with the latest edition of NFPA 1971-2013 on a men's size ten (10) medium.
- b. The boot shall be bunker style.
- c. The outer shell of the footwear shall be waterproof, with a safety toe, electrical hazard rated soles, bottom penetration resistance barrier, and a steel shank.
- d. These boots shall be of the insulated type. The insulation shall be Micro Soft Light injected throughout the sole for cold/heat insulation.
- e. The insole shall be cushioned and removable.
- f. The midsole shall be one piece stainless steel
- g. The footwear shall have two (2) loops affixed at the top of the boot shaft, to assist in donning. The pull-up loops shall be internally reinforced and replaceable by design, double stitched and bar tacked.
- h. The outsole shall be constructed of an abrasion resistant, slip resistant, non-marking, salt resistant, oil and chemical resistant synthetic compound, feature replaceable, aggressive tread design. A bevel breasted heel design shall be employed to compliment a ladder rung notch in the shank area. The outsole shall be cemented in a way to prevent separation. If heel blocker is used it must be made of same materials. The outsole pattern shall be lug sole design.
- i. The outer shell of the footwear shall be a minimum of 5 ½ ounce per square foot, silicon impregnated cowhide leather, or be treated in a manner as to make the leather hydrophobic.
- j. The footwear shall have a silicone resin impregnated or synthetic rubber, scuff resistant material applied to the outer shell of the toe area.
- k. The steel toe area shall have a heavy outside toe cap reinforcement.
- l. At least one boot per pair will have in an accessible area a "code 128" barcode attached to the inside of the boot with a distinct serial number for that pair.
- m. The footwear shall be able to be resoled and toe cap replaced by a manufacturer approved repair center, or the sole and toe cap shall be warranted from wearing out before the upper. All materials used in resoling or repairing boot must be equal to the original materials used in producing the sole and toe cap and be approved by the boot manufacturer.
- n. There shall be a thermoplastic molded heel counter molded to fit each size perfectly, or equal heel counter construction
- o. The footwear shall have a full height, Cambrelle lined, Kevlar® /Nomex felt, thermal/cut/puncture resistant boot liner or be capable of providing the same protection. Footwear must have a CROSSTECH® (NO EXCEPTION) moisture barrier membrane-boot liner. The four (4) piece base boot liner with two (2) piece upper quarter patterns shall have all seams butt stitched and heat sealed with Gore-Seam® tape.

- p. Single needle may be used on stitching the side binding, side and back stays, however, double needle stitching shall be used on vamp/foxing to shaft connection
- q. Cement type construction on sole or equal to be used. Footwear must have an articulated foot bed insert so that when kneeling or crawling boot must be flexible so as to keep sole on ground and not drag toe.
- r. A nail-less installation of sole shall be accomplished with a high temperature adhesive to affix the blocker (If used) to the neoprene midsole. (NO EXCEPTIONS)
- s. The footwear shall allow a minimum of two grams of water vapor per hour to evaporate from the boot. (NO EXCEPTIONS) The whole boot Moisture Vapor Transmission Rate (MVTR) test results to be provided during County evaluations.
- t. The footwear shall be tested and certified for a minimum of thirty (30) minutes in a centrifuge with the boot completely filled with water and show no signs of leakage. Test results shall be provided during County product evaluation. (NO EXCEPTIONS
- a. )
  - uThe footwear shall be tested and certified to withstand a minimum of five hundred thousand (500,000) cycles in a flexor test vat filled with water and show no signs of leakage. (NO EXCEPTIONS) Test results to be provided during County product evaluation.
  - v. Results and product test samples of Heat and Thermal Shrinkage Resistance Test as required by NFPA 1971-2013 or latest edition, shall be provided during County evaluation of product.

### **3.10.3 Sizing**

Footwear sizing shall include:

- a. The successful bidder shall agree to initially size-fit all Miami-Dade Fire Rescue Department uniform personnel at each of the fourteen (14) Operations Battalion Stations, on each of three (3) shifts, and pertaining Divisions. Bidder shall also provide at least one (1) make-up day per shift per Division. New recruits shall be measured and fitted as a class by the bidder upon receiving two (2) weeks notification in writing.
- b. There shall be at least three (3) widths available as required by NFPA 1971-2013 or latest edition, and shall include an extra wide width equivalent to EEE. The extra wide (EEE) width shall be available in sizes five (5) through thirteen (13), including half (1/2) sizes as standard. The extra wide (EEE) width shall also be available in whole sizes 14, 15, and 16.
- c. A size conversion chart for men's to women's sizes based on toe length, arch length, and foot width as measured on a Brannock Device® or a similar foot measuring device shall be furnished.
- d. Any additional charges for sizes outside the NFPA 1971-2013, or latest edition, ranges shall be included in the bid proposal. Bidders shall also provide the limits of special order sizes and delivery period.

## **3.11 FIREFIGHTER GLOVES**

### **3.11.1 Specifications**

Outer Shell (from fingertips to wrist edge): Side split cowhide leather enhanced "eversoft" double-chrome tannage for thermal resistance, water resistance, and to stay soft and pliable when air-dried; 3 to 4 oz. thickness; color is black.

Moisture Barrier (from fingertips to hem seam at wrist): W.L. Gore & Associates, Inc. CROSSTECH® Insert with Film Technology.

Thermal Liner (from fingertips to wrist edge): 5.5 oz./sqyd Kovenex® non-woven proprietary fiber blend with fire retardant rayon stitch-bonding; color is yellow with white parallel (stitch-bonding) lines.

Thermal Insulation (back of thumb and back of hand from finger crotches to hem seam at wrist edge): Lite-N-Dri™; white-color 0.7 oz./sqyd meta-aramid textile laminated to charcoal-color 1/16" thick closed cell foam.

Wrist Elastic: 7/16" wide elastic braid; zig-zag shirr-sewn across inside of palm and back wrists to provide snugness.

Thread: All outer shell seams sewn with black 30/5 (TEX 90) 100% Kevlar thread. All thermal liner seams sewn with natural (yellow) 30/5 (TEX 90) 100% Kevlar thread. 45/3 (TEX 40) 100% Nomex gray thread is used to stitch the reflective label to the back of the right hand glove.

Hanger Loop: A 0.5" wide, 100% cotton (treated for fire retardancy), black hanger loop is sewn into the back inside wrist seam of each glove.

Labeling: Two durable labels, showing identifying and all other information required by the standard, are sewn into the inner palm wrist seam.

User Information Guide: A user information guide, containing all the information required by the standard and additional manufacturer's information, is securely attached to one glove of each pair.

Each glove shall be leak-tested, to ensure whole glove liquid integrity

### **SIZES**

XXS (extra-extra-small) through XXL (extra-extra-large), as required by the standard. Sizes 3XL (extra-extra-extra-large) and 4XL (extra-extra-extra-extra-large) should also be available.

In addition, versions with cadet style (shorter) length fingers in sizes S (small) through XXL (extra-extra-large) shall be provided.

### **3.11.2 Design and Construction**

Glove is designed for increased dexterity and added comfort, and is cut on an enhanced gunn pattern, with a keystone thumb and three-piece four-finger back. Each layer is individually graded per size. The gauntlet interface design enables full moisture barrier and thermal liner protection from the fingertips to the hem seam at the wrist edge.

Construction: Entire glove utilizes 2-thread lockstitch construction, minimum of 7 stitches per inch, with the following exception – the palm and back wrist elastic seams are sewn flat with a 2-thread lockstitch zig-zag pattern. All seams not secured in other seams or crossed by another row of stitching shall be securely backstitched. The thermal liner shall be permanently attached inside the moisture barrier insert at each of the five fingertips to prevent liner pullouts. The moisture barrier insert/thermal lining sub-assembly shall then be attached inside the shell at the five fingertips to prevent insert/liner pullouts. During the manufacturing process, the moisture barrier insert and thermal liner layers shall be laminated together. The moisture barrier and thermal liner layers are stitched together around the wrist opening, with hanger loop inserted in the seam, and the leather shell is turned back over the layers to finish the wrist opening with a hemmed edge.