Addendum #1
ITB 220105
RANSOM CANYON VFD PERSONAL PROTECTIVE EQUIPMENT
Lubbock County

January 14, 2022

The following changes is incorporated in ITB 220105:

1. Replace Bid Table in its entirety with the attached updated Bid Table document.

The updated Bid Table is incorporated to add the quantities on Items 3-11 and to remove the Modern Style Fire Helmet and replace with the Jet Style/Euro Helmet as identified in Item 2. Furthermore, remove the requirement for Traditional Fire Helmet. Add the requirements for Tech Dual Certified Series Fire Fighter Protective Coat and Pant and Wildland Fire Fighting 10" Pull-On Boots.

2. Replace Attachment A in its entirety with the attached updated Attachment A document.

The updated Attachment A is identifying the specification for the following items: Jet Style/Euro Helmet, Dual Certified Series Fire Fighter Protective Coat and Pant and Wildland Fire Fighting 10" Pull-On Boots.

3. Replace Attachment B Exceptions to Specifications in its entirety with the attached updated Attachment B Exceptions to Specifications document.

The updated Attachment B is identifying the correct Personal Protective Equipment.

End of Addendum #1

Please acknowledge receipt of this addendum with your Vendor Acknowledgment Form.

Clint Wehrman
Director of Purchasing
ITB 220105
RANSOM CANYON
VOLUNTEER FIRE DEPARTMENT
PERSONAL PROTECTIVE EQUIPMENT
LUBBOCK COUNTY

BID TABLE

Lubbock County is seeking bids for Volunteer Fire Department Personal Protective Equipment (PPE). All equipment shall be new, unused and of manufacturer’s current production model or newer. All equipment shall meet all applicable local, state, and federal regulations. **Shipping shall be included in unit price.** All model numbers shall be applied, if applicable. This bid may be a multiple award with actual purchases based on the bid price of items. Ransom Canyon Volunteer Fire Department will coordinate fittings with vendor for sizes. In coordination with Ransom Canyon VFD, Lubbock County will review specification dimensions and allow for minimal size variances. All of the following items are identified as Brand Name or Equal per specifications.

VOLUNTEER FIRE DEPARTMENT PERSONAL PROTECTIVE EQUIPMENT:

1. **Particulate Blocking Protective Hoods (Per Attached Specifications)**
   
   State Make & Model Bid, if other than Brand Name, list on Attachment B: ______________________

   Quantity: 10 each

   Bid Price Each Hood: $_______

2. **Jet Style/Euro Fire Helmet (Per Attached Specifications)**
   
   State Make & Model Bid, if other than Brand Name, list on Attachment B: ______________________

   Quantity: 3 Each

   Bid Price Each Helmet: $_______

3. **Wildland Helmet (Per Attached Specifications)**
   
   State Make & Model Bid, if other than Brand Name, list on Attachment B: ______________________

   Quantity: 8 Each

   Bid Price Each Helmet: $_______
4. **Hot Shield Wildland Face Protector Mask, Model: HS-2 (Per Attached Specifications)**

   State Make & Model Bid, if other than Brand Name, list on Attachment B: _______________________

   Quantity: 10 Each

   Bid Price Each Mask: $______

5. **MSA G1 Face piece & CBRN APR (Per Attached Specifications)**

   State Make & Model Bid, if other than Brand Name, list on Attachment B: _______________________

   Quantity: 5 Each

   Bid Price Each Face Piece: $______

6. **Wildland Goggles (Per Attached Specifications)**

   State Make & Model Bid, if other than Brand Name, list on Attachment B: _______________________

   Quantity: 10 Each

   Bid Price Each Goggle: $______

7. **Structural Gloves (Per Attached Specifications)**

   State Make & Model Bid, if other than Brand Name, list on Attachment B: _______________________

   Quantity: 10 Sets

   Bid Price Set Gloves: $______

   Bid Price for Larger Glove Sizes: $______ Specify Sizes: ____

8. **Protective Jacket and Pants for Structural Fire Fighting (Per Attached Specifications)**

   State Make & Model Bid, if other than Brand Name, list on Attachment B: _______________________

   Jacket Quantity: 10 Each

   Bid Price Each Jacket: $______

   Bid Price for Larger Jacket Sizes: $______ Specify Sizes: ______

   Pant Quantity: 10 Each

   Bid Price Each Pant: $______
Bid Price for Larger Pant Sizes: $ Specify Sizes: 

9. Tech Rescue Dual certified Series Fire Fighter Protective Coat & Pant (Per Attached Specifications) State Make & Model Bid, if other than Brand Name, list on Attachment B: ______________________ Coat Quantity: 10 Each

Bid Price Each Coat: $_____

Bid Price for Larger Coat Sizes: $_______ Specify Sizes: ________

Pant Quantity: 10 Each

Bid Price Each Pant: $_____

Bid Price for Larger Pant Sizes: $_______ Specify Sizes: ________

10. Structural Fire Fighting 14” Pull-On Boots (Per Attached Specifications)

State Make & Model Bid, if other than Brand Name, list on Attachment B: ______________________

Quantity: 10 Sets

Bid Price Set Boots: $_____

11. 10” Station/Wildland Boot (Per Attached Specifications)

State Make & Model Bid, if other than Brand Name, list on Attachment B: ______________________

Quantity: 10 Sets

Bid Price Set Boots: $_____

Total Bid $_______________

Shipping shall be included in unit price.

All items will be shipped to the following address:

Ransom Canyon City Hall
24 LEE KITCHENS DR.
Ransom Canyon, TX 79366

Point of Contract: Angela Hill

Point of Contact Phone: 806-778-7918
PARTICULATE BLOCKING PROTECTIVE HOOD SPECIFICATIONS

Hoods shall be manufactured in the USA. All materials and construction meet or exceed NFPA Standard 1971 (2018 edition) requirements. Independent third-party product certification to NFPA 1971 is conducted by Underwriters Laboratory.

CONSTRUCTION
- Composed of two knit fabric layers around the face opening to no more than 1.5”, crown of head and bib.
- Shoulder gussets seamed at the sides to ensure complete shoulder coverage and a smooth lat drape of bib.
- Nape lock seam spans entire back of hood to provide a contoured fit.
- The bottom of the hood shall be finished with self-material.
- Face opening construction expands to 31” circumference to provide easy donning and doffing. Face opening retains its original shape after repeated use and laundering.
- Particulate barrier material coverage shall include all areas of the hood to at least 1.5” above the reference plane when measured at the coronal plane and all areas of the hood to at least 8” at the sides when measured at the coronal plane and 9” at the front and rear when measured at the midsagittal plane below the reference plane as measured when the hood is placed on an ISO Size J headform.

STITCH TYPES AND SEAMS
- All stitching shall conform to Federal Standard 751 Specifications.
- Major seams are serged with stitch type 504 and are reinforced with flat top and bottom cover stitch type 605.
- Elastic in face opening is secured with serge stitch type 504. Elastic is covered with self-material using cover stitch type 406.
- Bound bottom is cover stitched with cover stitch type 406.
- All seams shall be sewn with 100% Nomex thread size Tex 40.

FABRIC OPTIONS
- NOMEX/LENZING - 20% Nomex / 80% Lenzing, Rib Knit.
  - Color: Black Heather
- STEDAIR PREVENT barrier material
Materials must function in a way to prevent noise within the hood. Any hood deemed noisy by the wearer will be considered unacceptable.

FINISHED HOOD MEASUREMENTS
- Face opening is round and measures between 4.625” to 5.625” in diameter.
- Length of hood below face opening is approximately 14.0”. 

Attachment A
• Length of hood at the side from top to bottom is approximately 20”.
• Length of hood at the back from top to bottom is approximately 23”.
• Length of hood at the front from top to bottom is approximately 22”.

LABELING
• Each hood shall be labeled in accordance with NFPA 1971 labeling requirements; including material content, UL certification, date of manufacture. The label is a comfortable TAGLESS design.

_______ Comply _______ Exception
JET STYLE/EURO FIRE HELMET PRODUCT SPECIFICATION

PRODUCT TYPE:
Jet Style/Euro Structural Firefighting Helmet

PURPOSE:
To supply a uniform, standard product specification for a jet-style structural fire helmet.

SCOPE:
The scope of this product specification encompasses the performance criteria, design, construction and materials deemed necessary for helmets utilized for structural firefighting.

GENERAL:
Helmets manufactured in accordance with this specification are designed to mitigate adverse environmental effects to the firefighter’s head while providing the specifying authority with what are, in their opinion, essential requirements.

PERFORMANCE CRITERIA/STANDARDS:

All eye/face protection sold as part of the original helmet assembly shall be compliant with the impact requirements of the current editions of ANSI/ISEA Z87.1 and NFPA 1971.

PERFORMANCE VERIFICATION DATA REQUIREMENT:
Response to this specification shall include a complete and current NFPA 1971 test report from a recognized, accredited test facility detailing all performance data for the helmet(s) and compliant helmet components included in the original assembly. Certificates of conformance and/or letters of certification alone shall not be acceptable. Component testing is not acceptable. Certification testing is conducted every year to a random lot size, as per NFPA requirements.

MANUFACTURER’S WARRANTY:
Helmet should be warranted to be free from defects in materials and/or faulty workmanship for a period of ten (10) years from the date of manufacture.

HELMET SHELL:
Jet-Style Fire Helmets shall have a jet-style(Euro) shell with lime/yellow retroreflective trim and black edge bead that conforms to the perimeter of the shell’s edge.

The shell material shall be a high-temperature, flame-resistant thermoplastic that is injection molded to form a one-piece shell.

HELMET COLORS:
The exterior of the shell shall be completely coated with a color pigmented, abrasion, high heat, and chemical resistant paint finish. The shell color and matched paint finish shall be available in the standard colors of white, red, black, and yellow.

PAINT FINISHES:
All colors of the XF1 are available in both glossy and matte finishes. The standard finish is glossy. The matte finish is provided through an additional varnish process which is applied on top of the standard glossy paint. The addition of the matte finish shall not affect the fire helmet’s performance relative to any of the applicable standards.

The shell shall have black, high-temperature, flame-resistant edge trim. The edge-trim is secured around the perimeter of the shell’s edge through a series of friction joints.

The shell shall have a helmet hanger comprised of a 0.75” (19 mm), nickel plated “D” ring. The helmet hanger shall be attached to the chin strap at the center of the helmet and retract when the helmet is worn.

**FRONT PLATE:**
The helmet shell shall be furnished with a blank black front plate that is affixed to the helmet through friction tabs. The front plate shall be customizable and, in addition to black, and should be available in the following colors: white, blue, green, yellow, orange, red, hi-viz yellow, and photolum (photoluminescent).

**IMPACT CAP:**
The impact cap is designed to help provide increased thermal and impact protection. The impact cap shall be an impact-resistant, shock-absorbing polyurethane foam, with over molded aramide reinforcement. It is removable for inspection and replacement.

**HEAD SUSPENSION:**
Helmet shall consist of a six-way head suspension system. The head suspension system comprises three (3) fixed 0.75” (19 mm) wide nylon straps mounted at six points on the impact liner and fastened at their intersection to form the 6-way overhead strap assembly. A removable, washable crown pad shall be incorporated into the overhead strap assembly.

**SIZING AND ADJUSTMENT:**
Helmet shall be available in two sizes: Medium, which accommodates head sizes of 6 1/2 - 7 3/4 inches (52 - 62 cm) and Large, which accommodates head sizes of 7 1/8 - 8 1/8 inches (57 - 65 cm). The size of the headband may be adjusted to fit the wearer’s head by means of a ratchet adjustment system.

The rear ratchet arms shall have three (3) adjustable positions so that the angle of the ratchet may be set to accommodate the back of the wearer’s head. The headband height shall be adjustable at the front of the helmet via sliding friction tab to provide additional comfort to the wearer and maximize compatibility with the SCBA facepiece.

The multi-point chin strap shall be adjustable via a friction buckle, with multiple stops to help ensure a proper fit.

All interaction points should be made from a bright yellow material for easy visualization and identification.

**COMFORT LINER:**
Helmet shall have a removable comfort liner, consisting of a headband cushion and a ratchet pad. Both components made of a foam-core laminate system, comprised of a soft black flame-resistant nomex blend material against the user’s head backed by a soft loop material secured to the headband and ratchet with hook fastener. The comfort liner shall be removable and washable per NFPA 1851, as applicable.

**CHINSTRAP:**
The chinstrap shall be constructed of wide, spun-Nomex webbing, which are connected by a high-temperature, durable thermoplastic quick-release buckle. The multi-point chin strap shall incorporate hook and loop fasteners for cinching under the wearer’s jaw and include friction buckles for adjusting the straps comfortably along the back of the wearer’s head. The chinstrap shall be attached to the impact cap using a 1/4 quarter turn
locking mechanism. The mechanism allows both for proper retention (per the Standards) as well as easy removal for cleaning or replacement, as applicable.

**EAR/NECK PROTECTION:**
Jet-Style Fire Helmet shall provide ear and neck protection with a 8.5" (216 mm) wide, 24" (610 mm) long, full-cut earlap (not including installation clips). The earlap consists of black colored Nomex and secured via six (6) tabs located along the top of the earlap. These tabs shall be inserted into corresponding slots molded into the impact cap liner to ensure a secure connection.

The earlap shall be washable and shall be removable without interfering with the overhead strap assembly in any way and without removing any part of the helmet suspension.

**RETRO-REFLECTIVE TRIM:**
Helmet shall have four (4) pieces of retroreflective trim around the exterior crown of the helmet shell for maximum visibility, per the Standards. Lime/yellow Scotchlite trim shall be available.

**EYE PROTECTION:**
Helmet NFPA compliant ensemble offers a full face shield. An additional ocular visor is also available as secondary protection.

Full Face Shield  High-temperature polycarbonate visor with anti-fog and anti-scratch coatings. The full face shield shall meet the performance requirements of NFPA-1971 (current edition) and be retractable between the helmet shell and impact cap. The full face shield shall be replaceable without the use of tools.

Ocular Visor:
The optional, ocular visor is compliant to ANSI/ISEA Z87.1 (current edition). This visor shall feature a patented pivot adjustment system that allows the visor to articulate to and away from the face, helping to provide gap-free protection even when the user is wearing corrective lenses. This visor must be replaceable without the use of tools.

**Integrated Lighting Module**
The lighting module shall consist of twin housings inserted on either side of the interior helmet shell. Powered by three (3) AAA alkaline batteries that are accessible via a T-10 torx screwdriver, the lighting module shall carry ATEX Zone-1, IP56 rating and offer a up to 10 hours of continuous operation. The unit shall have a large, yellow button made from a tactile material so that it is found with a gloved hand while the helmet is worn. The weight of the module shall be approximately 3.5 oz (99 g) with batteries.

Battery life shall be indicated by a series of flashes once the unit is powered on; three (3) flashes to indicate full power, two (2) flashes to indicate ±50% power, and one (1) flash to indicate <25% power.
WILDLAND HELMET SPECIFICATIONS

COMPLIANCE:
Helmet shall meet or exceed all performance standards and specifications under NFPA 1977-2011, ANSI/ISEA Z89.1, Type I, Class E & G, Cal-OSHA, State of California Class A, and US-OSHA.

HELMET CONSTRUCTION:
Outer Shell - Helmet shall be constructed of heat-resistant thermoplastic and feature a distinctive three-rib design.

SUSPENSION:
Shock attenuation system shall consist of a 6-point crown strap suspension that is anchored to the outer shell and positioned to distribute energy over 3 cross straps that attach at 6 points. Helmet shall utilize ratchet adjustment incorporated into the headband suspension system. The helmet suspension shall contain vertical adjustments (2 Front, 2 side, 3 Rear). Suspension and headband shall contain no metal components.

ACCESSORIES:
Helmet shall include an adjustable chin strap, goggle clips (3), lime-yellow Scotchlite® strips (3), and Velcro® attachment strips (3) on inner shell. It features a replaceable padded cotton brow pad, and leather ratchet cover.

PHYSICAL CONFIGURATION:
Basic helmet shall feature a full-brim, hat-style design with the following specifications:
Length: 12-1/2”   Width: 10-3/4”
Extra-Large helmet shell feature:
Length: 13-1/4”   Width: 11”

HELMET COLORS:
Helmet shell shall be colorfast, not painted. Basic helmets shall be available in seven standard colors: White, Red, Yellow, Black, Orange, Blue, and Lime-Yellow. Extra-Large helmets shall be available in three standard colors: White, Red, and Yellow.

WARRANTY:
The manufacturer shall warrant to the original purchaser that the entire helmet will be free of defects in material and workmanship, under normal use and service, for a period of two years from the date of manufacture.

______ Comply   ______Exception
HOT SHIELD WILDLAND FACE PROTECTOR MASK
MODEL HS-2 SPECIFICATIONS

Hot Shield Face Protector Mask Model HS-2 is designed for and primarily used by the wildland firefighter. The US patented design provides for several benefits. Its primary benefit is a high degree of thermal protection to face & neck areas. This is accomplished by use of highly thermally resistant materials and adequate air-spacing, both of which are crucial to meet the goal of protecting the human skin. Hot Shield USA uses CarbonX materials from Tex Tech Industries. CarbonX is a proprietary material tested to withstand extreme temperatures, far exceeding the Radiant Protective Performance requirements of NFPA #1977 Standards for Wildland PPE (see charts on website). The interior CarbonX fabrics also absorb perspiration, adding to overall user comfort. The HS-2 is NOT a respirator but does provides a measure of respiratory relief by the reduction of smoke & ash particulate through an interior “pocket” that accommodates a respirator filter. Any low-level N-95 or EN respirator filter with exhalation valve centered in the middle will work. For USA sales/deliveries, one (1) activated carbon N-95 filter is included with each packaged HS-2. Deliveries outside USA may not include filters due to customs requirements/regulations on N-95 importation. Features 3M Scotchlite Reflective Trim for nighttime visibility. Velcro fasteners behind the neck. One size fits all. Machine washable.

KEY FEATURES
★ Patented CarbonX materials inside and out
★ Designed by firefighters for wildland firefighting operations
★ Moderately easy to breathe through...designed for intermittent use as needed
★ Filter pocket allows insertion of low-level, N-95 or EN respirator filter with exhalation valve
★ Very lightweight...only 5.8 oz / 162.4 grams
★ Comfortable and absorbs perspiration
★ Hangs loose around your neck until you need it (integral CarbonX hang strap) ★ One size fits all
★ 3M Reflective Trim for nighttime visibility
★ Wash and dry in any temperature and detergent

HS-2 SPECIFICATIONS

Name: Hot Shield Firefighter Face Mask
Model Number: HS-2
Weight: 5.8oz / 162.4 grams
Weight with Filter Installed: 6.5oz / 182 grams
Sizing: One size fits all (hook & loop fasteners behind neck)
Main Benefits: 1) Extreme thermal protection (radiant heat or direct flame) of major portions of the face and neck. 2) Reduction of inhalation of airborne particulate by means of a screening mesh and use of a disposable filter w/exhalation valve.

Description: A safety garment for the face. Can be classified as an interface component. Mask is designed with a filter pocket that allows insertion of nearly any type of disposable (N-95) filter. Mask can hang loosely around neck until ready for immediate use. Mask uses hook and loop fasteners to secure around back of neck of wearer. Nighttime visibility with 3M Scotchlite® reflective trim.

Main Users: Firefighters and other workers that are subject to direct flame, radiant heat, smoke and airborne particulate hazards in an outdoor environment and where use of a self-contained breathing apparatus is either impractical or impossible.

Limitations: Will not block gases, vapors or significant or fine airborne particulate. NOT A RESPIRATOR.

Coverage: Most areas of the face and neck. Leaves ears exposed.

Product Testing: Mask itself subjectively tested only. The performance of the two layer fabrics used in Hot Shield HS-2 exceed several critical NFPA #1977 tests, including the RPP (Radiant Protective Performance) ASTM F1939, the TPP (Thermal Protective Performance) ISO 17492, the Flame Resistance (Vertical Flame Test) ASTM D6413, the Cleaning/Shrinkage Resistance Test AA135, and the Seam Breaking Test ASTM 1683.

Care: Machine or hand wash mild soap, air dry.

Warranty: One year materials and workmanship

Filter Info: Activated carbon sandwiched by cotton media. A disposable (N-95) Respirator Filter Mask with Exhalation Valve

Comply

Exception
MSA G1 FACEPIECE & CBRN APR SPECIFICATIONS

The G1 Facepiece was designed without electronic components to minimize weight, reduce your stress and fatigue and improve your overall performance level. There are no electronic components on the outside of the facepiece that may result in snag and entanglement hazards. What’s more, by eliminating costly electronic components, the price is reduced substantially, allowing personal-issue facepieces to be a cost-effective measure. Cross-contamination prevents the contamination of shared mask-mounted regulators. But MSA didn’t stop there. The MSA G1 SCBA is also equipped with a speaking diaphragm to increase speech clarity while off air. Taking the preferred features of the Ultra Elite Facepiece - Comfort, Field of View, Superior Communications, and Fit, we’ve taken the G1 Facepiece to the next level with an Open Port that provides low breathing resistance in standby modes. The G1Facepiece can help you to conserve energy for when you need it most.

In December of 2018, MSA received NIOSH approval for the G1 CBRN APR. The G1 Facepiece can be easily adapted into a compliant CBRN Air Purifying Respirator with the installation of an APR Adapter, CBRN Canister, and CBRN Nosecup for use in atmospheres potentially contaminated with chemical, biological, radioactive and/or nuclear (CBRN) warfare.

G1 APR Single Adapter
The G1 Facepiece can be adapted for particulate respiratory protection using an APR Adapter. The G1 single port adapter snaps into place to cover a wide variety of respiratory applications. The single port adapter can be used with 40mm threaded particulate cartridges and canisters.

FILTERS:
40mm CARTRIDGES, OPTIFILTER XL, TYPE HE--99.97 percent efficient against 0.3 micron DOP

_________ Comply _________ Exception
WILDLAND GOGGLES SPECIFICATIONS

Goggles shall feature closed-cell face padding for maximum durability and ease of cleaning. The open-cell vent foam provides filtered ventilation, allowing the humid air to escape, but prevent airborne particles from getting in.

Components shall be heat and flame resistant, including the face padding and vent foam, and the lenses provide maximum impact protection and optical clarity.

The goggle frame shall be designed to fit over most eyeglasses.

One-piece wrap-around strap feature which shall adapt to all wildland and rescue helmets and facilitates quick strap adjustment, even with gloves on.

Goggles shall be compliant with ANSI Z87.1 2015, U.S. Federal OSHA and wildland fire equipment performance requirements, including the 350°F for a 5-minute oven test. This line is considered Primary Eye Protection by NFPA 1500.

Goggle lenses shall provide 100% UVA/UVB protection and distortion-free optical clarity. They meet and exceed ANSI Z87.1

_______ Comply _______ Exception
STRUCTURAL GLOVE SPECIFICATIONS

Gloves shall be of Gunn cut pattern. Gloves shall be made with (3.0 oz. - 3.5 oz.) Eversoft® cow leather tanned with additives to stay soft when wet and provide low water absorbance. Palm shall be black Eversoft® suede cow leather. Back shall be green Eversoft® suede cow leather. A layered nonrestrictive black Eversoft® leather knuckle guard shall be sewn across the knuckle area. Welts are sewn into the middle, ring fingers and thumb for extra seam strength. Thread shall be 100% Kevlar.

The moisture barrier shall be breathable and waterproof Gore® Crosstech® glove insert for unsurpassed durability. Barrier material shall be 100% waterproof and provide viral/chemical penetration resistance and blood borne pathogen protection. To provide greater liner retention, reduce bulk in finger tips, and improve haptic feedback, a breathable adhesive shall be used in place of tip-tape to ensure full liner/barrier glove bonding.

Liner shall be full sock design made of 6 oz. no drip, no melt, FR modacrylic.

Gloves shall be available in a gauntlet model. The gauntlet has a 1-inch leather cuff hemmed over the top of the glove.

The glove label shall include a bar code to facilitate tracking.

Gloves shall be available in the following stock sizes: (NFPA Standard 1971, 2018 Edition)
• 58N (normal) = X Small
• 64N (normal) = Small
• 70N (normal) = Medium
• 70W (wide) = Medium Wide
• 76N (normal) = Large
• 76W (wide) = Large Wide
• 82N (normal) = X Large
• 82W (wide) = XX Large

Gloves shall be warranted against liner pull out for one year.


Comply Exception
PROTECTIVE JACKET AND PANTS FOR
STRUCTURAL FIREFIGHTING SPECIFICATIONS

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 shall meet or exceed NFPA Standard #1971 and OSHA for structural fire fighters protective clothing.

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:

Jackets:
- Gender: Gender specific Men’s and Women’s patterns shall be available.
- Chest: Even sizes
- Back Length: Men’s 29”, 32” (STD), 35”
  Women’s 29”
- Sleeve: 1” increments

Pants:
- Gender: Gender specific Men’s and Women’s patterns shall be available.
- Waist: Even sizes
- Inseam: Even sizes

Comply

Exception

OUTER SHELL MATERIAL - JACKET AND PANTS
The Kombat™ Stretch (a.k.a. PBI® Stretch) outer shell shall be constructed of Kevlar®/PBI™/Stretch outer shell fabric with an approximate weight of 7.2 oz. per square yard and manufactured by TENCATE PROTECTIVE FABRICS. The shell material must be treated with a durable water-repellent finish that offers resistance to liquid absorption. The color of the garments shall be Gold.

Comply

Exception

THERMAL INSULATING LINER AND MOISTURE BARRIER - JACKET AND PANTS
The thermal liner shall be constructed of 6.7 oz. per square yard TENCATE CALDURA® ELITE NOMEX® NANO; with a double raschel 100% Kevlar® mesh insert. The Caldura® with Nomex® Nano is comprised of one layer of Nomex® Nano and one layer of 2.3 oz. per square yard Nomex® E-89™ spunlaced Nomex®/Kevlar® aramid
blend, quilt stitched to Kevlar filament and FR Rayon/meta-aramid/nylon inherently wicking Caldura® face cloth. Further mention of “Thermal Liner” in this specification shall refer to this section.

A pocket, constructed of thermal liner over-edged to a layer of 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 sewn to the moisture barrier and shall be independently bound around its perimeter. This provides superior abrasion resistance to the less expensive, less durable “stitch and turn” method.

For the jacket, there shall be a mesh insert extending from shoulder to shoulder along the annular tab insert at the collar, with a tapered shape, culminating at an approximate span of 11 inches, ending approximately 2 inches above the jacket liner hemline. This breathable insert shall not be installed over the thermal liner fabric, but rather serve as the thermal liner in the area of coverage.

For the pant, there shall be a mesh insert measuring approximately 4 inches wide, extending the entire length of the inseam, from inner cuff to inner cuff. As with the jacket, this breathable insert shall not be installed over the thermal liner fabric, but rather serve as the thermal liner in the area of coverage.

Comply Exception

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 Nomex® II A woven pajama check substrate. The CROSSTECH® membrane is an enhanced bi-component 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.

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 shall
not be able to contact the wearer’s skin. Corresponding snaps shall be installed through a moisture barrier leader measuring an approximate height of 1½ – 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 at the liner sleeve end shall be a different color to correspond with color-coded snap tabs on the shell sleeve end for ease of matching the liner system to the outer shell after inspection or cleaning is completed.

Additionally, there shall be two snap tabs at hem to secure liner to shell.

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 color-coded 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 liner access opening.

——— Comply ———— Exception

**THERMAL PROTECTIVE PERFORMANCE AND TOTAL HEAT LOSS**

The design shall incorporate two different liner fabrics in order to facilitate movement and compliment the stretch outer shell. The 2018 certification values as reported by Underwriters Laboratories on the section of the garment consisting of CALDURA® with NOMEX® NANO ELITE as the thermal liner is a TPP value of 42.1 and a THL value of 303.0. The section of the garment with the double raschel 100% Kevlar® mesh insert thermal liner is reported as having a TPP value of 39.6 and a THL value of 292.4.

——— Comply ———— Exception

**STITCHING**

The outer shell shall be assembled using stitch type #301, #514 and #516. The thermal liner and moisture barrier shall be assembled using stitch type #301, #401, #504, #514, and #516. 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 coat body outer shell shall be constructed of seven separate panels. Each jacket front shall have two panels, joined together from the top of the shoulder seam to the hemline and accentuated by FR fluorescent piping. The jacket back outer shell shall have three separate panels, with the middle back panel joined to smaller full length panels on either side, also accentuated by FR fluorescent piping. The outer shell panels shall all be joined by means of an over-edge on the underside of the body, with double needle stay stitching on the outermost surface. This method of seaming serves to eliminate heavy, bulky seams and was chosen specifically to facilitate the
stretch and freedom of movement afforded by the unique fabrics and design.

There shall also be two elastic inserts, one on either side of the lower jacket back, located just below the middle band of trim and situated between each of the two vertical seams joining the back panels. Each of the elastic inserts shall be installed on the inside of the outer shell, covering an approximate distance of 4 inches each, and shall be covered with an FR fabric on the interior of the shell.

The moisture barrier layer shall incorporate two vertical darts designed to work with the stretch provided in the liner mesh. The darts are positioned at the shoulder blades, outside of the SCBA straps and work together with the thermal liner mesh and stretch outer shell fabric providing maximum expansion. The moisture barrier darts shall be seam sealed to assure liquid resistance integrity.

| Comply | Exception |

**DRAG RESCUE DEVICE (DRD)**
A Firefighter Drag Rescue Device (DRD) shall be installed in each jacket. The ends of a 1 inch wide strap, constructed of Kevlar®, shall be sewn together to form a continuous loop. The strap shall be installed in the jacket between the liner system and outer shell such that when properly installed will loop around each arm. The strap shall 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 shall be covered by an outside flap of shell material, designed to fit between the shoulder straps of an SCBA. The flap shall have a NFPA- compliant 3M Scotchlite™ reflective logo patch sewn to the outside to clearly identify the feature as the DRD (Drag Rescue Device). The DRD shall not extend beyond the outside flap. This device provides a quickly deployed means of rescuing a downed firefighter. Flimsy, rope-style DRD straps shall not be considered.

| Comply | Exception |

**LINER ACCESS OPENING (JACKET)**
The liner system of the jacket shall incorporate an opening at the leading edge of the right front panel. This opening shall extend a minimum of 11 inches for the purpose of inspecting the integrity of the jacket liner system. When installed into the outer shell the Liner Access Opening shall be covered and protected by the overlap of the outer shell facing.

| Comply | Exception |

**RETROREFLECTIVE FLUORESCENT TRIM**
The retroreflective fluorescent trim shall belime/yellow 3M™ Scotchlite™ COMFORT Trim (Heat applied segmented L/Y borders with silver center).

**NOTE:** The use of 3M™ Scotchlite™ COMFORT trim negates the need for SET sleeve reinforcements.

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

**SEWN ON RETROREFLECTIVE LETTERING**
Each jacket shall have:

2" lime/yellow 3M Scotchlite™ lettering on Row A reading: **RANSOM CANYON**

3" red/orange 3M Scotchlite™ lettering on Row G reading: **First Initial, Last Name of FF**
Lettering on back may be arched in either 4 inch or 7.5 inch arch.

_______ Comply  __________ Exception

**HANGING LETTER PATCH RECEIVER**
The jacket shall be equipped with a combination of snap fasteners and FR hook & loop fastener tape at the hem of the jacket to accept a hanging letter patch.

_______ Comply  __________ Exception

**HANGING LETTER PATCH**
The hanging letter patch shall be constructed of a double layer of outer shell material. The letter patch shall attach to the rear inside hem of the jacket with a combination of snap fasteners and FR hook and loop fastener tape.

_______ Comply  __________ Exception.

**COLLAR AND INTEGRATED OVERLAPPING THROAT TAB**
The collar and integrated overlapping throat tab shall consist of a minimum four-layer construction and be of one-piece design. There shall be two layers of moisture barrier material sandwiched in between two layers of outer shell fabric. 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 in height and graded to chest size. The left leading edge of the collar shall extend up evenly from the leading edge of the jacket front body panel, while the right side of the collar incorporates the integrated overlapping throat tab 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 the lower edge of the collar. The top most collar shall be turned under and finished such that the snaps on the collar shall 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. This moisture barrier leader on the thermal liner system 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 integrated overlapping throat tab shall be an extension of the collar and constructed of a minimum of two
plies of outer shell material with two center plies of moisture barrier material. There shall be 1 piece of 1 inch by 3 inch FR hook fastener tape sewn horizontally to the integrated overlapping throat tab to secure the tab to the collar. There shall be a corresponding piece of FR loop fastener tape measuring approximately 1 ½ inch by 3 inches at the opposite end of the collar. There shall be an Ara-Shield® collar pull tab measuring approximately ¾ inches by 3 inches, folded in half to form a loop which shall be single stitched to the end of the throat tab.

A hanger loop constructed of a double layer of outer shell material shall be sewn to the top inside 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 4½ inches on the right side and approximately 3 inches on the left and shall extend from collar to hem. The facings shall 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. The thermal liner and moisture barrier assembly shall be attached to the jacket facings by means of snap fasteners. There shall be wicking barrier constructed of 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 inch beyond the inner facing. False facings shall be unacceptable.

Comply  Exception

STORMFLAP
A rectangular storm flap measuring approximately 3½ inches wide and a minimum of 27 inches long (based on a 32 inch length jacket) shall be sewn to the inside right front facing to ensure there is no interruption in thermal or moisture protection in the front of the jacket. The inside storm flap shall be constructed of two plies of outer shell material with a center ply of breathable moisture barrier material. The leading edge of this inner storm flap shall be turned forward approximately ½ inch and secured with five separate bartacks spaced equidistant, to form a full length gutter. This gutter serves to repel water or other liquids from entering the system.

Comply  Exception

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

Comply  Exception
CARGO/HANDWARMER EXPANSION (BELLOWS) POCKETS
Each jacket front body panel shall have a 2 inch deep by 8 inch wide by 8 inch high expansion pocket, stitched to it and shall be located such that the bottom of the pockets are at the bottom of the jacket for full functionality when used with an SCBA. Retroreflective trim shall run over the bottom of the pockets so as not to interrupt the trim stripe. Two rust resistant metal drain eyelets shall be installed in the bottom of each expansion pocket to facilitate drainage of water. The expansion pocket shall be reinforced with a layer of Kevlar® forming a full pouch 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 approximately ½ inch wider than the pocket. There shall be a row of minimum ½-inch trim at the bottom of the pocket flap, running the full length of the flap. The upper pocket corners and pocket flaps shall be reinforced with proven backtacks. The pocket flaps shall be closed by means of FR fastener tape. Two pieces of 1 ½ inch by 3 inch, FR 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 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.

For ease of opening the pocket with a gloved hand, each pocket flap shall be equipped with an Ara-Shield® pocket pull-tab. The tab shall be located towards the front of the flap and shall measure approximately 1 ¾ inches wide by 2 ½ inches, folded in half forming a loop and stitched into the pocket flap seam.

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

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

[Comply Exception]

SLEEVES
The sleeves shall be of three-piece construction, with a top sleeve consisting of one piece and the underside consisting of two pieces. The sleeve shall be graded in proportion to the chest size. For unrestricted movement, on the underside of each sleeve there shall be an outward facing dart located in the elbow area of the sleeve on the shell, thermal liner and moisture barrier. The moisture barrier dart shall be seam sealed to assure liquid resistance integrity. Neither stove-pipe, nor raglan-style sleeve designs shall be considered acceptable.

[Comply Exception]

SLEEVE CUFF REINFORCEMENTS
The sleeve cuffs shall be reinforced with a layer of black Dragonhide® or equivalent material. The cuff reinforcements shall not be less than 1 ½ inches in width and folded in half, approximately one half inside and one half outside the sleeve end for greater strength and abrasion resistance. The cuff reinforcement shall be double stitched to the sleeve end; a single row of stitching shall be considered unacceptable. This independent cuff provides an additional layer of protection as compared to a turned and stitched cuff. Jackets finished with a turned and stitched cuff do not provide the same level of abrasion resistance and shall be considered unacceptable. In addition, suede or Ara-Shield® shall be considered unacceptable.

[Comply Exception]
DOUBLE WRISTER SYSTEM
The jacket shall have a double wristlet system. The jacket shall have Nomex® knit wristlets not less than 4 inches in length and of double thickness. Nomex® knit is constructed of 96% Nomex® and 4% Spandex for shape retention. The color of the wristlets shall be grey and shall be sewn to flame resistant neoprene coated cotton/polyester material, which in turn shall be sewn to the inside of the sleeve shell approximately five inches from the sleeve cuff. This sleeve well configuration serves to prevent water and other hazardous elements from entering the sleeves when the arms are raised. The flame resistant neoprene coated cotton/poly material shall also line the inside of the sleeve shell from the cuff to a point approximately five inches up, where it joins the sleeve well and is double stitched to the shell. Four Ara-shield® snap tabs shall be sewn into the juncture of the sleeve well and wristlet. The tabs shall be spaced equidistant from each other and shall be fitted with female snap fasteners to accommodate corresponding male snaps in the liner sleeves. One of the Ara-shield® snap tabs shall be a different color in the liner to correspond with color-coded snap tabs for ease of matching the liner system to the outer shell after inspection or cleaning has been completed. This configuration shall ensure there is no interruption in protection between the sleeve liner and wristlet.

Nomex® knit wristlets sewn to the liner of the jacket. The wristlet shall be not less than 4 inches in length and of double thickness. Nomex® knit is constructed of 96% Nomex® and 4% Spandex for shape retention. The color of the wristlets shall be grey.

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

Comply

Exception

LINER SHOULDER AND UPPER BACK THERMAL ENHANCEMENT
A minimum of two additional layers of CALDURA® WITH NOMEX NANO ELITE thermal liner material shall be used to increase thermal insulation in the shoulder area of the liner system. These thermal enhancement layers shall run along the top of each shoulder extending downward on the front and back approximately 2 inches, complying with the NFPA CCHR requirement for protection in this high compression area. The 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 layers shall have finished edges by means of over-edging. Raw or unfinished edges shall be considered unacceptable. Thermal scraps shall not be substituted for full-cut fabricpadding.

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 3 inches longer than the depth of the pocket. The pocket flap shall be closed by means of FR fastener tape. A 1½ inch by 3 inch piece of FR hook fastener tape shall be installed on the inside of the pocket flap beginning at the center of the bottom of the flap. A 1½ inch by 3 inch piece of FR 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 flame resistant neoprene coated cotton/poly 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 9 inches high and shall be installed on the left chest. The radio pocket shall be trimmed for an uninterrupted trim band on the chest. Note: Radio pockets are not available for placement on sleeves.


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 constructed of double layer outer shell material. The microphone strap shall be mounted on the left chest.


Comply

Exception

FLASHLIGHT STRAP (1 ¾ by 9 inches)
Each jacket shall be equipped with a flashlight strap. The strap shall be constructed of outer shell material measuring approximately 1 ¾ inches high and 9 inches wide, and shall hold the barrel of the flashlight. The strap shall be equipped with a 1 ½ inch by 2 ½ inch FR hook and loop fastener tape shall be attached to the loose ends of the strap so that they may be joined together around the flashlight. The flashlight strap shall be sewn to the jacket on the right chest.


Comply

Exception

HELMET SNAP w/SELF STRAP
The jackets shall be equipped with a helmet strap. An inward facing safety hook, attached to a double layer self material strap, shall be double stitched in a vertical position to the upper chest. The helmet strap shall be located on the right chest.


Comply

Exception

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


Comply

Exception

EMBROIDERED TEXAS FLAG – LEFT SLEEVE
Each jacket shall have a Nomex® embroidered Texas flag that measures approximately 2½ inches high by 3½ inches wide affixed to the Left Sleeve. Flags made of fabric other than Nomex® shall be considered unacceptable.


Comply

Exception
PANT CONSTRUCTION

BODY
The body of the shell and liner shall be constructed of seven separate body panels, consisting of four front panels, two back panels and one full length continuous inseam 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. The body panels shall be graded to size to assure accurate fit in a broad range of sizes. The inseam panel shall measure approximately 4 inches in width, extending from inner cuff to inner cuff.

The front body panels shall be wider than the rear body panels to provide additional fullness over the knee area. This is accomplished by providing two separate sections on the front panels for shaping and is enhanced by rolling the outside leg seams to the rear of the pant. The slight taper shall prevent premature wear of the inseams by pushing them back and away from the primary high abrasion areas encountered on the sides of the lower legs.

The rise of the rear pant center back seam from the top back of the waistband to where it intersects the inside banded seam at the crotch, shall exceed the rise at the front of the pant by approximately 6 inches. The longer rear center back seam provides added length in the seat for mobility without restriction when stepping up, kneeling, or crawling and maintains proper alignment of the knee, directly over the knee pads without twisting.

________ Comply _______ Exception

LINER ACCESS OPENING (PANT)
The thermal liner and moisture barrier layers of the pant liner system shall be constructed in such a way as to allow an access opening for interior inspection, service and replacement. The thermal liner and moisture barrier layers shall be stitched together for security and prevention of inadvertent use of one layer without the other. The liner system shall be reinforced at the base of the crotch by means of a strip of additional material measuring approximately ¾ inches wide by 3 inches long. This reinforcing material shall be secured by the binding tape at the bottom of the fly opening, straddling the crotch seam. This reinforcement shall serve to prevent the liner from tearing in this high stress area, as a result of the constant donning and doffing of the pants.

The liner system of the pant shall incorporate an opening along the back of the waistline for ease in inspecting the inner layers and to facilitate performing the complete Liner Inspection. The thermal liner and moisture barrier shall be individually bound with a flame resistant neoprene coated cotton/poly material coated bias cut tape and joined together on each of the front panels, along the waistband from the front fly opening to side seam. The back of the liner system shall be allowed to remain open with two snaps on either side of the back seam to attach the moisture barrier layer to the thermal liner layer. As described previously, the pant thermal layer system snaps directly to the independent waistband by means of nine snap fasteners. There shall be no hook and loop used to close the liner access opening.

________ Comply _______ Exception
RETROREFLECTIVE FLUORESCENT TRIM
The pants shall have a stripe of retroreflective fluorescent trim encircling each leg below the knee to comply with the requirements of NFPA #1971 in lime/yellow 3M™ Scotchlite™ COMFORT Trim (Heat applied segmented L/Y borders with silver center).
NOTE: The use of 3M™ Scotchlite™ COMFORT trim negates the need for SET sleeve reinforcements. Additionally, since the trim is not sewn, there is no Trim Trax applied to this type of trim. Bottom of trim band shall be located approximately 3 inches above cuff.

_______ 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, cut on the bias (diagonally). The reinforcement shall be folded in half, for a finished bottom edge and shall have a finished width of not less than approximately 1½ inches. 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 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 by means of nine snaps, spaced equidistant along the length of the waistband reinforcement. Inserting the liner system between the waistband reinforcement and outer shell serves to reduce the possibility of liner detachment while donning and doffing. The independent waistband construction affords greater comfort and fit than a turned and stitched method. Pants that do not include an independent waistband or are not cut on the bias shall not provide the same amount of stretch to the garment and shall be considered unacceptable.

_______ Comply _______ Exception

EXTERNAL / INTERNAL FLY FLAP
The pants shall 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 sewn to the left front body panel and shall measure at the widest point approximately 2 ¾ inches wide, with a length graded to size based on waist measurement and reinforced with backtacks at the base. An internal fly flap constructed of one layer of outer shell material, thermal liner and specified moisture barrier, measuring approximately 3 inches wide, with a length graded to size based on waist, shall be sewn to the leading edge of the right front body panel.

The underside of the outer fly flap shall have a 1½ inch wide piece of FR loop fastener tape attached with with full perimeter stitching on the shell material only; stitching shall not penetrate the moisture barrier insert between the two shell fabric layers to insure greater thermal protection and reduced water penetration. A corresponding strip of 1½-inch wide piece of FR hook fastener tape shall be attached with full perimeter stitching to the outside right front body panel, for use of securing the fly in a closed position.

_______ Comply _______ Exception
BLACK ARAMID BELT WITH BELT LOOPS
If the IH Pant is ordered with either an Escape Belt or a Harness, that belt shall be installed as the positive pant closure. If neither an Escape Belt or a Harness is specified, the IH Pant shall include an approximate 2-inch wide belt constructed of aramid webbing material with an adjustable hi-temp thermoplastic Delrin buckle serving as the exterior primary positive locking closure. This buckle shall also provide a quick-release mechanism for donning and doffing.

The pants shall be equipped with a series of belt loops, spaced around the waist to accommodate an Escape Belt, a Harness or the aramid belt. One loop shall be located on the rear of the waist, centered over the rear seam, measuring approximately 2 inches by 4 inches. There shall be two additional wide loops at the front of each pant. The top of these two belt loops shall be angled, with the top measuring approximately 2 inches and the bottom measuring approximately 4 inches. Under each of the front belt loops there shall be a slit to accommodate an internal harness passing from the inside of the pant, to the outside. The slits shall be at the same angle as the front belt loops, reinforced with black Ara-Shield® material, and having an opening that measures approximately 3 inches.

There shall be 2-piece loops constructed of a double layer of black aramid material installed inside the shell in the hip area, which shall serve to hold the leg loops of an optional internal harness in place. The top and bottom of the loops shall attach to each other with an approximate 1 inch by 1 inch FR hook and loop fastener tape sew to the ends.

In addition to the 3 wide belt loops, there shall be two rappelling harness loops installed at the rear of the pant, just behind each side seam. The loops shall be constructed of a double layer of outer shell material and shall be of a 2-piece design – top and bottom. The top and bottom of each loop shall attach to each other with snap fasteners and FR hook and loop fastener:

_____ Comply       _____ Exception

CARABINER HOLD DOWN STRAP
The pant shall be equipped with a carabineer hold down strap. The strap shall be constructed of double layer black Ara-Shield® material, consisting of two separate portions to form a strap with an opening of approximately 3 inches. Each portion of the strap shall measure approximately 1¾ inches wide by 3½ inches long. The lower portion of the strap shall be double needle stitched in the vertical position, opening upwards. There shall be a piece of 1½ by 2½ inch hook FR fastener tape single needle stitched to the strap approximately ¼ inch up from the bottom. The upper portion of the strap shall be double needle stitched in the vertical position, opening downwards to interface with the lower portion of the strap. There shall be a piece of corresponding 1½ by 2½ inch loop FR fastener tape single needle stitched to the strap approximately ½ inch down from the top of the strap. On both the upper and lower portions of the strap, there shall be a bartack centered between the double needle stitching. The strap shall be located behind the left front belt loop.

In the event the IH Pant is ordered with the Escape Belt, there shall be an additional carabineer hold down strap, added to the right front belt loop.

_____ Comply       _____ Exception
LINER KNEE THERMAL ENHANCEMENT
A minimum of two additional layers of CALDURA® with NOMEX® NANO ELITE thermal liner material and one additional layer of moisture barrier material, measuring approximately 9 inches by 12 inches, shall 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 layers shall have finished edges by means of over-edging. 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

CATHEDRAL KNEE REINFORCEMENTS
The knee area shall be reinforced with a layer of black Dragonhide® or equivalent material. Suede or Ara-Shield® reinforcement will not be accepted. The cathedral shaped knee reinforcement shall be centered on the leg to ensure proper coverage when bending, kneeling and crawling. The knee reinforcements shall measure approximately 9 inches wide by 12 inches high and shall be double stitched to the outside of the outer shell in the knee area for greater strength and abrasion resistance. The articulated Dragonhide® or equivalent material cathedral knee shall be constructed by means of 2 horizontal full length darts, spaced equidistance over the height of the knee reinforcement and cut and stitched to the shell in such a way that there shall be an arch at the top of the reinforcement, tapering down the sides of the reinforcement with a squared off bottom. Knee reinforcements of a smaller size do not provide the same protective coverage and shall be considered unacceptable.

_______ Comply _______ Exception

PADDING UNDER KNEE REINFORCEMENTS
Padding for the knees shall be accomplished with one layer of cathedral shape, flame-resistant, nonabsorbent, flexible silicone closed cell foam material, sandwiched between the thermal liner and moisture barrier.

_______ Comply _______ Exception

ANGLED EXPANSION (BELLOWS) POCKETS
Two 2 inch deep by 10 inch wide by 8 inches to 11 inches angled bellows pockets shall be placed over the outer leg seams at thigh level. The pockets shall be stitched to the pant and shall provide two aluminum eyelets, installed at the bottom of each pocket, for water drainage. The expansion pocket shall be reinforced with a layer of Kevlar® forming a full pouch on the inside of the pocket. The pocket flaps shall be angled in shape, constructed of two layers of outer shell material and stitched to the outer shell. There shall be a row of minimum ½ inch trim at the bottom of the pocket flap, running the full length of the flap. One piece of 1½ inch by 3 inch FR hook fastener tape shall be installed on the inside of each pocket flap on each side. One piece of corresponding 1½ 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 shall be reinforced with proven backtails, and pocket flaps shall be reinforced with backtails in uppermost corners.

For ease of opening the pocket with a gloved hand, each pocket flap shall be equipped with an Ara-Shield®
pocket pull-tab. The tab shall be located towards the front of the flap and shall measure approximately 1 3/4 inches wide by 2 1/2 inches, looped and stitched into the pocket flap seam.

_______ Comply _______ Exception

PANT CUFF REINFORCEMENTS
The cuff area of the pants shall be reinforced with a layer of black Dragonhide® or equivalent material. Suede or Ara-Shield® reinforcement will not be accepted. The cuff reinforcement shall not be less than 2 inch in width and folded in half, approximately one half inside and one half outside the end of the legs for greater strength and abrasion resistance. The cuff reinforcement shall be double stitched to the outer shell for a minimum of two rows of stitching. This independent cuff provides an additional layer of protection over a hemmed cuff. Pants that are turned and stitched at the cuff, as opposed to an independent cuff reinforcement, do not provide the same level of abrasion resistance and shall be considered unacceptable.

_______ Comply _______ Exception

PADDED RIP-CORD SUSPENDERS & ATTACHMENT
On the inside waistband shall be attachments for "H" style "Padded Rip-Cord" suspenders. There shall be four attachments total – 2 front, 2 back. The suspender attachments shall be constructed of black Ara-Shield® material measuring approximately 1/2 inch wide by 3 inches long. They shall be sewn in a horizontal position on the ends only to form a loop. The appearance shall 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 shall be padded for comfort by fully encasing the webbing with aramid batting and wrap-around black aramid.

The rear ends of the suspenders shall 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 shall 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 shall 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 shall then fold over and attach to themselves securing the suspender to the pants.

_______ Comply _______ Exception

REVERSE BOOT CUT
The outer shell pant leg cuffs shall be constructed such that the back of the leg is approximately 1 inch shorter than the front. The liner shall 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 shall minimize the chance of premature wear of the cuffs and injuries due to falls as a result of "walking" on the pant cuffs. Pants that have "cut-outs" in the back panel rather than a contoured boot cut shall be considered unacceptable.

_______ Comply _______ Exception
THIRD PARTY TESTING AND LISTING PROGRAM
All components used in the construction of these garments shall be tested for compliance to NFPA Standard #1971 by Underwriters Laboratories (UL). Underwriters Laboratories shall certify and list compliance to that standard. Such certification shall be denoted by the Underwriters Laboratories certification mark.

LABELS
Appropriate warning label(s) shall be permanently affixed to each garment. Additionally, the NFPA certification label 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

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

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 shall serve to void this support program.

Comply Exception
SIZING BY VENDOR:
Both male and female sizing samples shall be available.

_______ Comply     _______ Exception

BAR-CODE/RECORD KEEPING INTERFACE
A 1 dimensional barcode, in the Interleaved 2 of 5 format shall be printed on the label of each separable layer of the garment. This barcode shall represent the serial number of the garment. The manufacturer shall be able to provide a detailed list of each asset of a drop-shipped order, and shall include the following:

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

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

_______ Comply     _______ Exception

COUNTRY OF ORIGIN
Jackets and Pants shall be manufactured in the United States.
Details and specifications are subject to change as necessary, without notification
SPECIFICATIONS FOR TECH RESCUE DUAL CERTIFIED SERIES FIRE FIGHTER PROTECTIVE COAT & PANT

This document specifies the materials and construction of protective clothing that helps protect the firefighter's upper body, excluding head and hands, from exposure temperature extremes, hot particles, and other hazards associated with Technical-Rescue Incidents and Wildland fire fighting activities. Unless specified, all materials and construction meet or exceed NFPA Standard 1977 /NFPA Standard 1951 (Current editions) and/or OSHA guidelines for wildland fire fighting protective clothing.

USER INFORMATION: Each garment shall be supplied with access to a User Information Guide that contains details on pre-use information, hazards, performance, warranty, size/adjustment, garment conditions, inspections and frequency, donning and doffing, storage, retirement, cleaning, decontamination and repairs.

MATERIALS AND LABELING

MATERIALS: For Coat and Pant

TenCate Brigade 600, 6.0 osy 93% Meta- Aramid/ 5% Paramid/ 2% Antistat, PlainWeave. Color to be Yellow, Red, Royal Blue, Tan, Navy Blue, Black.

THREAD: All thread shall be Nomex.

LABELS: Each garment shall have a permanently attached label containing the following information: name of manufacturer, NFPA compliance, warnings, care and maintenance, type of material, identification number, size, date of manufacture, and order number.

COAT DESIGN AND CONSTRUCTION

CONSTRUCTION: The outer shell shall be constructed using stitch types 301, 304, 401, and 516. Stress points are bar tacked.

BODY: The body of the coat shall be constructed of 4 separate panels and shall measure 32” from base of collar to coat hem.

TABLESS COLLAR: A contoured collar with extended stormflap to maintain required coverage comprised of two layers of shell material. Hook and loop is used to secure closure. A material loop made from outershell material is sewn into the center of the back collar for hanging.

SLEEVES: The sleeves shall be of two piece construction. There shall be a seamless underarm bellow to reduce rise of coat when arms are overhead, and the sleeves shall be contoured to follow the flex of the arm.

ELBOW REINFORCEMENT: The elbows will be reinforced with polymer coated Para-aramid material with a double-needle stitch. Reinforcements shall be in the shape of a trapizoid (graded according to coat size) allowing for contour of the sleeve and 2-needle lock stitched to the outer shell. Specify gray, black or gold.

CUFF REINFORCEMENT: The sleeve cuff shall be reinforced with an additional layer of outer shell material that encases the elastic. Sleeve shall have a tab sewn to cuff reinforcement to allow adjustment of sleeve opening. Adjustment shall be secured with hook and loop.
COAT CLOSURE AND STORMFLAP: Coat shall have zipper closure. The stormflap shall be comprised of two layers of outer shell and sewn to right front. Stormflaps shall be secured by hook and loop.

FLEX-WING DESIGN: The outer shell shall have two inverted pleats (one each side) installed at the shoulder seam extending the entire upper back panel to provide enhanced mobility and freedom of movement. The inverted pleats shall begin at the back of each shoulder reinforcement layer and extend vertically down to the middle of the jacket.

SEMI BELLOWS POCKETS: Two, 10" x 10" x 2" Semi bellows pockets, shall be made of outer shell material and double-needle locked stitched to the left and right front panel of the coat. Pockets shall have 2" x 3" hook positioned horizontally and stitched to each pocket. The 3" x 11"(finished) pocket flaps, made of two layers of outer shell material, shall be double-needle lock stitched to coat and secured with 2" x 3" loop on underside of flap. Each pocket shall have drainage at bottom of pocket. Each Bellows pocket shall have a handwarmer pocket located behind the bellows pocket and accessible from the rear.

BELLOWS RADIO POCKET: One, bellows-style radio pocket radio pocket shall be made of outer shell material and double-needle lock stitched to left body panel. Two-layer pocket flap shall be made of outer shell material and secure with 2" x 2" hook and loop. Drainage at bottom of pocket.

MIC TAB: A mic tab, ¾" x 3", shall be sewn to left chest above radio pocket.

Glove Strap: Glove Strap On stormflap 2" above chest trim

PATCH POCKET: 6.5" x 5.5" patch pocket located on right chest
Multipurpose Dee Ring centered just below patch pocket on right chest

RETROREFLECTIVE FLUORESCENT TRIMS: Lime/Yellow Triple Scotchlite (L/Y borders with silver center)

TRIM CONFIGURATIONS: Trim shall be 2-needle stitched to outer shell: one 2” band around coat hem, one 2” band around each sleeve between elbow and cuff.

LETTERING:
Letter Application Style: Name Patch Sewn--2in 3M Scotchlite Lime/Yellow Solid--Text: BUFFALO

Letter Application Style: Name Patch Velcro--3in 3M Scotchlite Lime/Yellow Solid--Text: First Initial, Last Name

Oversize charges will apply for chest sizes greater than 2XL. 56-58 inches add 10%. 60-62 inches add 15%. 64-66 inches add 20%. Over 68 inches add 25%

TROUSER DESIGN AND CONSTRUCTION


CONSTRUCTION: Trouser shall have four separate panels, two in front and two in back. The outer shell shall be constructed using stitch types 301, 304, 401, and 516. Rear half of waist shall have elastic sewn into band for snug fit. Waist also has 5 oversize belt loops and 8 suspender buttons (Option: Suspender Loops).

TROUSER CLOSURE: Front closure shall be brass zipper. A compression snap located on the waist just above zipper acts as additional closure. Hook and loop shall be used to close flap
CUFF REINFORCEMENT: The trouser cuff shall be reinforced with an additional layer of outer shell material. Pant leg shall have a tab sewn to cuff reinforcement to allow adjustment of the opening. Adjustment shall be secured with hook and loop.

PATCH-STYLE POCKETS: The trouser shall have one, 8” x 8” patch-style pockets that are 2-needle lock stitched to the right back panel. Corners shall be mitered for drainage and have six bar tacks for reinforcement.

FRONT-SLASH POCKETS: The trouser should have 2 Front slash pockets located on each side front panel.

CENTER BELLows POCKETS: Two, 9"H x 10"W x 2"D bellows pockets, shall be made of outer shell material and double-needle locked stitched to the left and right hip below front-slash pockets. Pockets shall contain a 2” vertical expansion seam directly in the center. Pockets shall have 2 - 1.5” x 3” hook and loop (hook side) positioned horizontally and double needle (4 rows) lock stitched to each side of the pocket. The 4” x 11” pocket flaps, made of two layers of outer shell material, shall be double-needle lock stitched to pant and secure with 2 - 1.5” x 3” hook and loop (loop side) double needle (4 rows) lock stitched on underside of flap, positioned vertically on each side. Each pocket shall have grommet free seam drainage technology at bottom of each pocket.

KNEE REINFORCEMENTS: Knees shall be reinforced with polymer coated Para-aramid material. Reinforcements shall be 8” x 11” rectangle attached with a 2-needle lock stitch to the outer shell. Specify gray, black or gold.

PADDING UNDER KNEE REINFORCEMENTS: Padding for the knees shall be accomplished with one (1) layer of moisture barrier material and three (3) layers of NFPA approved thermal barrier material. All layers shall be sandwiched between the shell and the knee reinforcement layers and sewn at the top and bottom to prevent bunching of materials.

ZIPPER LEG OPENING: A 12” leg zipper shall be placed on outside bottom of trouser leg to allow access to boots.

RETROREFLECTIVE FLUORESCENT TRIMS:
Lime/Yellow Triple Scotchlite (L/Y borders with silver center)

Oversize charges will apply for waist sizes greater than 2XL. 50-52 inches add 10%. 54-56 inches add 15%. 58-60 inches add 20%. Over 60 inches add 25%.

TRIM CONFIGURATION: Trim shall be NFPA configuration: 2” (5 cm) band of retroreflective fluorescent trim 2-needle stitched around outer shell of each trouser leg.

___Comply     ___Exception
STRUCTURAL FIRE FIGHTING 14" PULL-ON BOOTS

NFPA 1971 and NFPA 1992 Certified

______ Comply       ______ Exception

CSA Z195-14 Certified
Boots shall be certified in accordance with the requirements of CSA Z195-14 Protective Footwear.

______ Comply       ______ Exception

GENERAL DESIGN
14 inch Pull-On footwear (cement construction) boot, black flame-resistant and water-resistant leather, double-stitched leather joining seams, webbing pull straps, leather collar, padded leather flex joints in the shaft above vamp and heel, liquid and chemical resistant breathable bootie liner, cut-resistant and thermal protective bootie-shield liner, composite safety toe cap, composite shank, composite penetration-resistant insole barrier, molded shin guard, flame-resistant synthetic rubber molded cup outsole and toe bumper and heel guard, 3D lasting board, molded composite heel counter, internal heel fit system, and a removable molded footbed as well as an additional insert for use in conjunction with the footbed.

______ Comply       ______ Exception

SLIP RESISTANCE
Boots must exceed the minimum test values for slip resistance (average of left and right foot) as detailed below to provide superior performance in dry, wet, and frosted ice conditions. Boots that do not exceed these minimums in all conditions shall not be acceptable. Bidders must promptly supply a Technical Services Report from a recognized independent testing laboratory upon request showing the boots bid exceed this requirement.

Test Method: VUSA TT S&C 1-18 ED. 1 Rev. 0
Slip Resistance of Footwear and Floorings
Load = 500 N
Dry Clay Quarry Tile: Forpart > 1.00
       Heel > 1.00
Wet Clay Quarry Tile: Forpart > 0.60
       Heel > 0.60
Frosted Ice -7°C Run 1:Forpart = 0.28
       Heel = 0.28
Frosted Ice -7°C Run 4:Forpart > 0.12
       Heel > 0.12
For maximum slip resistance each outsole shall have Siping lines. Siping lines cut into flat areas open up when flexed to provide additional traction on water and ice. The boot shall also include self-cleaning lugs

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and an omni-direction tread pattern designed for superior performance in all terrains and when working on ladders.

_______ Comply _______ Exception

**FLEXIBILITY**

Boots must reach the Maximum Flex Angle of 48 degrees without exceeding the critical bending moment with a resulting stiffness index less than 10.0 as detailed below to provide maximum flexibility. Boots that do not meet this requirement shall not be acceptable. Bidders must promptly supply a Technical Services Report from a recognized independent testing laboratory upon request showing the boots bid meet this requirement.

Test Method: SATRA TM194:2004
Longitudinal stiffness of footwear

_______ Comply _______ Exception

**FIRESTORM LEATHER**

Boots shall be made from heavy-duty, flame-resistant and water-resistant full-grain cattle hide leather measuring 2.0 – 2.2 mm of thickness for durable tear and puncture resistance. Tumbled full-grain cattle hide leather shall be utilized in the collar and flex areas for mobility. The leather shall be chrome tanned to withstand high temperature with minimal shrinkage, re-tanned to impart water resistance and low water absorption, and finished to retain maximum breathability. Leather shall meet or exceed the following physical tests:

- Water Penetration ASTM D2099 15,000 flex minimum
- Dynamic Water Absorption ASTM D2099 15% maximum
- Static Water Absorption ASTM D6015 30% maximum
- Slit Tearing Strength ASTM D2212 30 pound minimum
- Moisture Vapor Transmission ASTM D5052 350 g/meter2/24 hours minimum
- Flame Resistance NFPA 1971 afterflame no more than 2.0 sec, not melt or drip, no burn through

_______ Comply _______ Exception

**CROSSTECH® FOOTWEAR FABRIC**

A full-height, full sock, bootie liner made from a package of Omaha lining fabric, 300g felt insulation, and CROSSTECH® moisture barrier shall be provided for a liquid resistant breathable moisture barrier as well as thermal protection as defined by the specified NFPA standards.

_______ Comply _______ Exception

**FOOTWEAR (CEMENT) CONSTRUCTION OUTSOLE**

For optimum flexibility, comfort, and weight reduction, the boot shall include a VIBRAM® Synthetic Rubber Sculpted, Contoured Cup Outsole cemented to the bottom and sides of the upper using a 2-part cross-linking adhesive that forms a bond stronger than the materials it attaches. The outsole must be made from a flame, abrasion, oil, acid, and slip resistant compound engineered for high-traction, cold-weather resistance, and durability. Goodyear welt or direct attach construction methods shall not be acceptable.
BOOTIE-SHEILD LINER
A protective bootie-shield of KEVLAR® fiber blend stitchbonded non-woven batting weighing 4.0 oz/yd² shall be positioned between the leather shell and the CROSSTEX® moisture barrier bootie to provide abrasion and cut resistance and additional thermal protection. Boots that do not have an additional FR protective bootie-shield between the leather shell and the CROSSTEX® moisture barrier bootie shall not be acceptable.

COMPOSITE SAFETY TOE CAP
The safety toe shall consist of a composite material that is lighter than steel, does not transmit heat or cold, and will spring back to shape after impact. Must exceed NFPA standards for safety. Metal toe caps shall not be acceptable.

PADDED LEATHER COLLAR
The padded collar shall have a rolled top edge formed by folding over the leather to help the boots slide against the pants liner and reduce the potential for the pants liner to hang up on the top of the boots as well as to reduce abrasion against the wearer's calf.

COMPOSITE PENETRATION RESISTANT INSOLE BARRIER Penetration resistance shall be provided by a composite insole to maximize flexibility and insulate from heat and cold transmission. Must exceed NFPA standards for safety. Metal plates shall not be acceptable.

3D COMPOSITE LASTING BOARD
Boot uppers shall be lasted to a molded and contoured lasting board with a built-in flex zone in the forefoot with a torsionally stable heel. Flat fiber board lasting boards shall not be acceptable.

COMPOSITE SHANK
The shank shall consist of a composite material that is lighter than steel, does not transmit heat or cold, and springs back to shape better. Metal shank shall not be acceptable.

MOLDED HEEL COUNTER
Boots shall have a molded heel counter of water-resistant composite material individually molded to fit each size perfectly. Leather or fiber board heel counters shall not be acceptable.
PADDED SHIN GUARD
Boots shall include a padded composite shin guard to provide extra protection when working on a ladder. Moisture absorbing natural fiber padding shall not be acceptable.

_____ Comply _____ Exception

SYNTHETIC RUBBER TOE BUMPER
Boots shall include a molded Flame Resistant (FR) synthetic rubber toe bumper to provide abrasion resistance when crawling. The toe bumper shall be cemented and 2-needle stitched to the vamp.

_____ Comply _____ Exception

SYNTHETIC RUBBER HEEL GUARD
Molded synthetic rubber heel guard provides abrasion resistance in high wear area. Cemented and 2-needle stitched to the vamp.

_____ Comply _____ Exception

WEBBING PULL STRAPS
Boots shall have NOMEX® webbing pull-straps securely attached to the leather uppers by inserting into to collar seam to minimize stitching through the leather.

_____ Comply _____ Exception

INTERNAL FIT SYSTEM
Boots shall have an anatomical foam insert that wraps around the top and sides of the heel with an opening to fit and hold the back of the heel securely while cushioning the ankle.

_____ Comply _____ Exception

3D MOLDED FOOTBED SYSTEM
Boots shall have a removable urethane foam footbed. The footbeds are contoured to cradle and cushion the bottom of the foot to provide arch support. The footbeds shall have a moisture-wicking and antimicrobial fabric top layer. A second pair of 3D molded footbeds that are thicker in the forefoot is provided with every pair for a custom fit. This thicker footbed provides a snugger fit.

_____ Comply _____ Exception

SIZES
Boots must be available in Men's full sizes 5 - 18 and half sizes 5½ - 15½ in Narrow, Medium, Wide, and X-Wide widths. Boots must also be available in a Wide Calf model in the same size range that will provide an additional 3 inches in circumference at the calf to fit those with larger calves. Boots must be available in Women's full sizes 5 - 12 and half sizes 5½ - 11½ in Narrow, Medium, Wide, and X-Wide widths.

_____ Comply _____ Exception

RESOLING SERVICES
The winning vendor shall have resoling services available at their factory as needed.

Comply Exception

COUNTRY OF ORIGIN
Boots shall be manufactured in the United States.

Comply Exception

THIRD PARTY TESTING AND LISTING PROGRAM
The footwear shall be tested for compliance to NFPA Standard 1971 and 1992 by a recognized independent testing lab which shall certify and list compliance to that standard. Such certification shall be denoted by the independent testing labs mark on the certification label affixed to the boots.

Comply Exception

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

- Compliance to applicable NFPA Standard(s), current edition(s).
- Independent Testing Lab mark
- Manufacturer’s name
- Manufacturer’s address
- Manufacturer’s boot identification number
- Date of manufacture
- Size

Comply Exception

ISO CERTIFICATION/REGISTRATION
The manufacturer shall be certified and registered to ISO Standard 9001 to assure a satisfactory level of quality.

Comply Exception

WARRANTY
The manufacturer shall warrant these boots to be free from defects in materials and workmanship for one year when properly used and cared for.

Comply Exception

SIZING BY VENDOR
The vendor shall be available to perform all sizing requirements.

Comply Exception

PPE RECORD KEEPING
The manufacturer shall make available at no-charge, a password protected data based backed website that allows all brands 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
10" STATION/WILDLAND BOOT SPECIFICATIONS

NFPA 1977 and ASTM F2413

Comply  Exception

GENERAL DESIGN
10 inch zipper front and speed lace fit adjustment, (cement construction) boot, black flame-resistant and water-resistant leather, double-stitched leather joining seams, composite safety toe cap, composite shank, composite penetration-resistant insole barrier, flame-resistant synthetic rubber molded cup outsole, molded composite heel counter, and a removable molded footbed as well as an additional insert for use in conjunction with the footbed.

Comply  Exception

SLIP RESISTANCE
Boots must exceed the minimum test values for slip resistance (average of left and right foot) as detailed below to provide superior performance in dry, wet, and frosted ice conditions. Boots that do not exceed these minimums in all conditions will not be acceptable. Bidders must promptly supply a Technical Services Report from a recognized independent testing laboratory upon request showing the boots bid exceed this requirement.

Test Method: VUSA TT S&C 1-18 Ed.1 Rev. 0
Slip Resistance of Footwear and Floorings
Load = 500 N
Dry Clay Quarry Tile: Forepart > 1.00
Heel > 1.00
Wet Clay Quarry Tile: Forepart > 0.60
Heel > 0.60
Frosted Ice -7°C Run 1: Forepart = 0.28
Heel = 0.28
Frosted Ice -7°C Run 4: Forepart > 0.12
Heel > 0.12

For maximum slip resistance each outsole shall have Siping lines. Siping lines cut into flat areas open up when flexed to provide additional traction on water and ice. The boot shall also include self-cleaning lugs and an omni-direction tread pattern designed for superior performance in all terrains and when working on ladders.

Comply  Exception

FLEXIBILITY
Boots must reach the Maximum Flex Angle of 48 degrees without exceeding the critical bending moment with a resulting stiffness Index less than 8.0 as detailed below to provide maximum flexibility. Boots that do not meet this requirement will not be acceptable. Bidders must promptly supply a Technical Services Report from a recognized independent testing laboratory upon request showing the boots bid meet this requirement.

Test Method: SATRA TM194:2004
Longitudinal stiffness of footwear

Comply  Exception

FIRESTORM LEATHER
Boots shall be made from heavy-duty, flame-resistant and water-resistant full-grain cattle hide leather measuring 2.0 – 2.2 mm of thickness for durable tear and puncture resistance. Tumbled full-grain cattle hide leather shall be utilized in the collar and flex point areas. The leather shall be chrome tanned to withstand high temperature with minimal shrinkage, re-tanned to impart water resistance and low water absorption, and finished to retain maximum breathability. Leather shall meet or exceed the following physical tests:

- Water Penetration —— ASTM D2099 15,000 flex minimum
- Dynamic Water Absorption —— ASTM D2099 15% maximum
- Static Water Absorption —— ASTM D6015 30% maximum
- Slit Tearing Strength —— ASTM D2212 30 pound minimum
- Moisture Vapor Transmission ASTM D5052 350 g/meter2/24 hours minimum
- Flame Resistance NFPA 1971 after flame no more than 2.0 sec, not melt or drip, no burn through

___Comply ______Exception

AEROSPACE® FOOTWEAR FABRIC
A full-height, full sock, bootie liner made from a package of AEROSPACE liner fabric shall be provided.

___Comply ______Exception

FOOTWEAR (CEMENT) CONSTRUCTION OUTSOLE
For optimum flexibility, comfort, and weight reduction, the boot shall include a VIBRAM® Synthetic Rubber Sculpted, Contoured Cup Outsole cemented to the bottom and sides of the upper using a 2-part cross-linking adhesive that forms a bond stronger than the materials it attaches. The outsole must be made from a flame, abrasion, oil, acid, and slip resistant compound engineered for high-traction, cold-weather resistance, and durability. Goodyear welt or direct attach construction methods shall not be acceptable.

___Comply ______Exception

COMPOSITE SAFETY TOE CAP
The safety toe shall consist of a composite material that is lighter than steel, does not transmit heat or cold, and will spring back to shape after impact. Must meet ASTM F2413 2011 edition Impact/Compression standards for safety. Metal toe caps shall not be acceptable.

___Comply ______Exception

COMPOSITE PENETRATION RESISTANT INSOLE BARRIER
Penetration resistance shall be provided by a composite insole to maximize flexibility and insulate from heat or cold transmission. Must meet ASTM F2413 2011 Edition PENETRATION RESISTANCE standard for safety. Metal plates shall not be acceptable.

___Comply ______Exception

COMPOSITE SHANK
The shank shall consist of a composite material that is lighter than steel, does not transmit heat or cold, and springs back to shape. Metal shank shall not be acceptable.

___Comply ______Exception

MOLDED HEEL COUNTER
Boots shall have a molded heel counter of water-resistant composite material individually molded to fit each size perfectly. Leather or fiber board heel counters shall not be acceptable.
Comply      Exception

MOLDED FOOTBED SYSTEM
Boots shall include removable dual density inserts, which shall be contoured to cradle and cushion the bottom of the foot and to provide arch support. The bottom layer shall be made of polyurethane foam for durable cushioning and support. The mid layer consists of a breathable microcellular foam with an anti-microbial fabric top layer which to wick moisture away from the foot. This layer molds to the foot to keep the foot cool.

Comply      Exception

QUICKZIP CLOSURE
Boots shall have a lace-in, flame-resistant front zipper closure which combines the advantages of a lace-up for a custom fit and the convenience and speed of a zipper closure.

Comply      Exception

SIZES
Boots must be available in Men’s full sizes 5 – 18 and half sizes 5½ – 15½ in Narrow, Medium, Wide, and X-Wide widths. Boots must be available in Women’s full size 5 – 12 and half sizes 5½ – 11½ in Narrow, Medium, Wide, and X-Wide widths.

Comply      Exception

THIRD PARTY TESTING AND LISTING PROGRAM
The footwear shall be tested for compliance to NFPA Standard 1971 and 1992 by a recognized independent testing lab which shall certify and list compliance to that standard. Such certification shall be denoted by the independent testing labs mark on the certification label affixed to the boots.

Comply      Exception

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

Compliance to applicable NFPA Standard(s), current edition(s).
Independent Testing Lab mark
Manufacturer’s name
Manufacturer’s address
Manufacturer’s boot identification number
Date of manufacture
Size
ASTM F2413 2011 edition Impact, Compression and Penetration Resistance

Comply      Exception

ISO CERTIFICATION/REGISTRATION
The manufacturer shall be certified and registered to ISO Standard 9001 to assure a satisfactory level of quality.

Comply      Exception

WARRANTY
The manufacturer shall warrant these boots to be free from defects in materials and workmanship for one year when properly used and cared for.
___Comply       ___Exception

**SIZING BY VENDOR**
The vendor shall be available to perform all sizing requirements.

___Comply       ___Exception

**COUNTRY OF ORIGIN**
The boots shall be manufactured in the United States and shall be Berry Compliant.

___Comply       ___Exception

**RESOLING SERVICE**
The manufacturer shall have resoling services available at their factory as needed.

___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.
EXCEPTIONS TO SPECIFICATIONS

All exceptions to the above specifications must be clearly stated below to include supporting documentation. Use additional pages for exceptions, if necessary.

1. Particulate Blocking Protective Hoods

2. Jet Style/Euro Fire Helmet

3. Wildland Helmet

4. Hot Shield Wildland Face Protector Mask, Model: HS-2

5. MSA G1 Face piece & CBRN APR

6. Wildland Goggles

7. Structural Gloves

8. Protective Jacket and Pants for Structural Fire Fighting

9. Tech Rescue Dual certified Series Fire Fighter Protective Coat & Pant

10. Structural Fire Fighting 14" Pull-On Boots

11. 10" Station/Wildland Boots