STATE OF HAWAII
Department of Transportation · Airports Division
Kauai District
Lihue Airport
Airport Fire Fighting Station No. 4

General Overview

Furnish and deliver the following Firefighting Ensembles:
6 ea PPE Gear Bags: PPE Gear Bag, Red Deluxe, Lettered FIREFIGHTER, 506FFR

Structural Firefighting gear:
6 ea Structural Firefighting Turnout Jackets
6 ea Structural Firefighting Turnout Pants
6 ea Structural Firefighting Helmets
6 ea Structural Firefighting Gloves
6 ea Structural Firefighting Turnout Boots
6 ea Flash Hoods

Guarantee and Standards
The offer shall guarantee that the items being offered shall be clean, new, unused (no demonstration, sample, or display models), of the current production year and model. The items shall be in good working condition and free from defects in material, workmanship, and operation, and of the highest quality that is acceptable to the requesting agency. The construction and craftsmanship on each respective item shall be performed in accordance with the best standard industrial practice used in the manufacture of similar items. All items shall fit, match, and/or be compatible with the other items being offered without any alternations, modifications, or additional costs.

The Officer-In-Charge (O-I-C)
State of Hawaii, Department of Transportation · Airports Division, Airports Fire Chief or his designate.

Vendor Must Size Personnel on Site
Vendor must come to Lihue International Airport Fire Station, minimum two (2) days and provide sample gear for all firefighters to don and duff for correct size and fitting and to provide classes in the according stand NFPA 2113 & NFPA 1851 guidelines for the care use and maintenance of flame structural fire fighting ensembles; no exceptions.

Care and Maintenance
Vendor must train and demonstrate the proper care and maintenance of Protective Equipment for all Fire Personnel; Bunker Coat, Bunker Pants, Helmet, Structural Boots, Structural Gloves.

Payments
Payment will be paid for all items delivered in whole. There will be no partial payments rendered for items delivered in portions.

Delivery/Received Dates
All items will be delivered in whole (one shipment) and delivery address within 60 days from the date notification (letter to proceed) is received by vendor.
In the event that the entirety of order is not received within 60 days, the Airports Fire Chief

reserves the absolute right to rescind purchase from selected vendor and award bid to the next lower bidder.
Any delivery extensions must be approved by Airport Fire Chief or his designate.

Delivery Address:
All items will be delivered to the following address and in entirety (all items delivered in one shipment).
State of Hawaii
Department of Transportation - Airports Division
Kauai District
Lihue Airport
Airport Fire Station No. 4
3901 Mokulele Loop, #6
Lihue, Hawaii 96766-9706

Brand or Trade Name:
Brand or Trade Name: Whenever a brand or manufacturer's name, designation or material appears in connection with the specified item, such name or designation indicates the standard of quality desired and the reference shall be in compliance with applicable trademark or Copyright laws.

The items being offered shall have all pockets, openings, fasteners, trims, and lettering placed in the designated area(s) on the garment, appropriate to the size, as specified and in compliance with these Detailed Specifications.

The items being offered shall meet or exceed NFPA 1971, 2013 edition labeling requirements. All structural firefighting ensemble and ensemble elements shall meet or exceed NFPA 1971 "Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting", 2013 edition.

General Specifications for Turnout Jacket and Pants

Jacket: Drag Rescue Device (D.R.D.): A Drag Rescue Device (D.R.D.) shall be installed in each jacket. DRD shall meet or exceed NFPA 1971, 2013 edition design and construction requirements.

Outer Shell: Outer Shell Material: The outer shell shall be constructed of "PBI GEMINI® XT MATRIX™, trade name Gemini XT, which shall be manufactured by TENCATE and constructed of 60/40 Kevlar®/PBI ™ modified plain weave outer shell fabric featuring a patented high tech grid of composite filament & spun yarns in a "Matrix Technology" with an approximate weight of 7.5 oz. per square yard. The shell material must be treated with SST (SUPER SHELLTITE).

This outer shell shall come with a 5 year warranty.

Outer Shell Color: The items being offered shall be natural, yellow, tan, or gold in a shade to be approved by the agency. A sample of the color shall be available for inspection upon request.

Stitching: All stitching shall meet or exceed NFPA 1971, 2013 edition requirements.

The items being offered shall have continuous stitching in all seams, with no joined stitching in midstream. The garment stitching shall be constructed of 100% Nomex® thread.

Thread being offered shall be natural, yellow, tan, or gold in a shade to be approved by the agency. A sample of the color shall be available for inspection upon request.

Hook and Loop Fastener: The items being offered shall have durable, flame resistant hook and loop fasteners that are equal to or better than U.S.A. Velcro®. Hook and Loop fasteners shall

meet NFPA 1971, 2013 edition, minimum requirements for peel and shear strength, and minimum number of cycles. The fasteners shall be black in color.

Vendor shall provide a 5 year support program for the hook and loop fasteners. This support program will cover hook or loop tape that has begun to fray or otherwise degrade from normal wear, and will be in effect for a period of 5 years from the original date of manufacture of the garment. The support program will cover the repair or replacement, without charge, of any hook and/or loop on garments supplied by the vendor, and return shipping on repaired/replaced garments.

Reinforcement: The items being offered shall have outer shell stress points in the protective Coat/jackets and the trouser/pants, reinforced by bartacks. Rivets shall not be acceptable.

Moisture Barrier: The moisture barrier material shall be two-layer CROSSTECH® Black moisture barrier — Type 2F, which is comprised of a CROSSTECH®TM membrane laminated to a 3.3 ounce per square yard Nomex® IIIA woven pajama check substrate. The CROSSTECH®TM membrane is an enhanced bicomponent membrane comprised of an expanded PTFE (polytetrafluoroethylene, for example Teflon®) matrix having a continuous hydrophilic (i.e., water-loving) and oleophobic (i.e., oil-hating) coating that is impregnated into the matrix. CROSSTECH® Black moisture barrier seams shall be sealed with GORE-SEAM® tape using a Series 6000 (or higher) GORE-SEAMT™ sealing machine to afford comparable bacteriophage penetration resistance performance.

NLOTE: Further mention of "Moisture Barrier in this shall to this section.

Moisture Barrier shall have a minimum 3-year warranty on material and labor from W.L. Gore.
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.

Thermal Insulating Liner: The thermal liner shall be comprised of Glide™ high-lubricity, stress reducing, filament/spun face cloth weighing 3.6 oz/sq/yd. The high filament yarns, with superior wicking characteristics, shall represent no less than 60% of the face cloth's composition, and shall be positioned in the warp direction of the weave in order to optimize their slippery characteristics on the face, and promote superior moisture management within the microclimate of the garment. The Glide™ face cloth shall be quilted to two layers of E89™ spunlace aramid (85°A) NOMEX®/15% KEVLAR®).

NOTE: Further mention of "Thermal Liner" in this specification shall refer to this section.

Quilt Thermal Liner Construction: The moisture barrier shall be completely sewn to the thermal liner at its perimeter with the breathable membrane oriented inward toward the thermal liner and away from the outer shell. All moisture barrier seams shall be sealed as required by NFPA 1971 2013 edition. The moisture barrier/thermal liner shall finish no more than 1" from the cuffs and 3" from the hem.

The combined moisture barrier and the thermal liner shall be completely removable from the jacket. The thermal liner and moisture barrier layers of the liner system shall be constructed in such a way as to allow the layers to separate for improved airflow, drying and interior service and replacement. The thermal liner and moisture barrier layers shall be stitched together at the sleeve cuff ends and hem of the rear body panels only. The leading edges and hem of the left and right front body panels of the thermal liner and moisture barrier layers shall fasten together with snap fasteners. The snap fasteners shall be evenly spaced along the opening edge of the layers and set in bias-cut reinforcement fabric. The neck area of the liner system shall attach up inside the outer shell collar with two strips of 5/8 inch wide FR Velcro® fastener tape on the front and rear of the collar. Loop fastener tape installed along the neck of the thermal liner will secure

to hook fastener tape installed along the front inside edge of the top collar. Hook fastener tape installed along the neck of the moisture barrier layer of the liner system will extend upward into the underside of collar and attach to the loop fastener tape installed along the full length of the inside back layer of the collar. The outside perimeter of the moisture barrier and thermal liner layers shall be bound with a bias-cut neoprene coated cotton/polyester binding for a finished appearance that prevents fraying and wicking of contaminants. Stitching used to secure the thermal liner and moisture barrier in place of the neoprene shall not be considered, since thread alone is not able to provide the same level of abrasion resistance.

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

Pants: 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 snap fasteners per leg. The snap tabs shall be color coded to a corresponding snap tab in the liner for ease of matching the liner system to the outer shell after inspection or cleaning is completed.

Thermal Protective Performance: The items being offered shall have each assembled garment consisting of an outer shell, moisture barrier and thermal liner, exhibiting a Thermal Protective Performance (T.P.P.) composite rating of not less than thirty five (35) when tested to the N.F.P.A. 1971, 2013 Edition standards.

Retro-reflective Fluorescent Trim: The items being offered shall have retro-reflective fluorescent trim that shall be lime/yellow 3M Scotchlite Triple Trim # 9587R (lime/yellow borders with silver center).

Each garment shall have an adequate amount of retro-reflective fluorescent trim affixed to the outside of the outer shell to meet the requirements of N.F.P.A. No. 1971 (2013 edition) and 0.S.H.A.

Further mention of "Retro-reflective Fluorescent" in this specification shall refer to this section.

Jacket Logo : Jackets shall have sewn on 3 inch high, lime/yellow retro-reflective fluorescent 3M Scotchlite letters, centered on the upper back of the coat to read:

AIRPORT
FIRE

Jacket trim shall be in the following widths and shall be NFPA Basic 3 style: 3 inch wide stripes - around each sleeve below the elbow, around the bottom of the jacket, within approximately 1 inch of the hem, horizontally across the back and chest area, approximately 3 inches below the armpit.

Logo subject to change based on various municipalities needs.

Pants: Trouser pants shall have a stripe of retro-reflective fluorescent trim, encircling each leg below the knee. Bottom of trim band shall be located approximately 3" above the cuff.

Safety Requirements: All items being offered shall be in strict compliance with all applicable laws, statutes, ordinances and all other rules and regulations of the Federal, Hawaii State and City governments regarding safety and health, as applicable, including the National Fire Protection Association (N.F.P.A) and Underwriters Laboratories (U.L.) requirements.

Sizing: The manufacturer shall provide jackets and trousers in the size ranges and increments specified below by "Table 6.1.11 Available Coat/Trouser Size Ranges" of NFPA 1971, 2013 edition.

Table 6.1.11 Available Coat/Trouser Size Ranges

	Men		Women		Increment	
Dimension	mm	h	mm		mm	in.
Chest	865-1525	34-60	710-1270	28-50	50	2
Sleeve	820-965	32-38	710-865	28-34	25	1
Waist	760-1525	30-60	710-1270	28-50	50	2
Inseam	660-915	26-36	610-865	24-34	50	2

In addition to the above mentioned sizes, the manufacturer shall also provide: Jackets in men's size 30 and 32.

Trousers in men's waist size 28, 30, and 32. Trousers in men's inseam size 24

Generalized sizing, such as small, medium, large, etc., will not be considered acceptable.

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

Third Party Testing: The item being offered shall have each garment constructed of components tested for compliance to the National Fire Protection Association (N.F.P.A.) Standard No. 1971 "Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting 2013 Edition" by Underwriters Laboratories (U.L.) U.L. shall certify and list compliance to that standard and proof shall be denoted by the garment's certification label. Any garment offered under the standards of any prior edition of N.F.P.A. 1971, shall not be acceptable for this contract.

Tailoring and Modifications to Turnouts Jackets and Pants

Embroidered Flag: The items being offered shall have a Nomex® thread embroidered American flag, measuring approximately 2.5 inch high x 3.5 inch wide on each jacket. Per military protocol, the field of stars shall be to the top right corner for installation on the right sleeve.

Jacket Radio Pocket: A radio pocket shall be installed on the left chest of jacket. The pocket shall measure 2" inch deep x 3" wide x 7" high, with a 4" x 4" screen mesh window for MACOM P7100 radio speaker. The pocket flap shall be constructed with antenna slots on both sides of the flap.

A microphone tab of outer shell material measuring 1 inch x 3 inch shall be sewn, 2 inch above the radio pocket on left chest.

Jacket - Cargo/Hand warmer Semi-Bellows Pockets: Each jacket front body panel shall have a 2 inch deep by 8 inch wide by 8 inch high expansion pocket, double stitched to the body of the jacket 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. The lower half of the pocket shall be reinforced with a layer of Kevlar® on the inside.

Thermal liner: A 7 inch by 9 inch pocket, constructed of self material and lined with Moisture Barrier material, shall be affixed to the inside of the jacket thermal liner on the left side by means of a lock stitch. The thermal liner shall be attached to the moisture barrier and bound together by bias-cut neoprene coated cotton/polyester around the perimeter.

Liner Elbow Thermal Enhancement: An additional layer of thermal liner material shall be sewn to

the elbow area of the liner system for added protection at contact points and increased thermal insulation in this high compression area. The elbow thermal enhancement layers shall be sandwiched between the thermal liner and moisture barrier layers of the liner system and shall be stitched to the thermal liner layer only. Finished dimension shall be 5 inches by 7 inches. All edges shall be finished.

Liner Shoulder and Upper Back Thermal Enhancement: An additional layer of thermal liner material shall be used to increase thermal insulation in the upper back, front and shoulder area of the liner system. This full-cut thermal enhancement layer shall drape over the top of each shoulder extending from the collar to the sleeve/shoulder seam, down the front approximately 5 inches from the juncture of the collar down the back to a depth of 7 1/2 inches to provide greater CCHR (Conductive Compressive Heat Resistance) protection in this high compression area. The upper back, front and shoulder thermal enhancement layers shall be sandwiched between the thermal liner and moisture barrier layers of the liner system and shall be stitched to the thermal liner layer only. The thermal enhancement layer shall have finished edges.

Sleeve Cuff Reinforcements: The sleeve cuffs shall be reinforced with an extra layer of outer shell material. The cuff reinforcements shall not be less than 1 inch in width and folded in half, approximately one half inside and one half outside the sleeve end for greater strength and abrasion resistance. The cuff reinforcement shall be double stitched to the sleeve end for a total of four rows of stitching. This independent cuff provides an additional layer of protection over a turned and stitched cuff.

Jacket - Identification Extension Panel: Jacket shall be constructed with a rear tapered extension panel system or tail. Panel shall extend approximately 4" below the hemline. Panel shall have (2) strips of 2" wide x 19" long, or 4" wide x 19" long Velcro® loop fastener tape sewn on to receive a standard 5 ½ " x 19" name patch. The 4" x 19" Velcro® rectangle shall be centered in the panel. The panel shall be sewn to the jacket or attached with a combination of four (4) snaps, measuring 6" apart from each snap and Velcro® hook and loop fastener tape.

Identification Extension Panel Name Patch: Jacket shall include a blank, standard 5½ " x 19" name patch, which will be constructed of the same material as the jacket. Name patch MUST have (2) strips of 2" wide x 19" long, or 5½ " wide x 19" long Velcro® hook fastener tape sewn to the back. The outer edge of the Velcro® strips shall be aligned with the outer edge of the name patch so the Velcro® on the name patch and the Extension Panel are aligned. Identification Name Patch shall be installed on each garment to ensure a proper and secure fit.

Pants - Expansion (Bellows) Pockets: An expansion pocket, measuring approximately 2 inches Deep by 10 inches wide by 10 inches high shall be double stitched to the side of each leg straddling the out-seam above the knee and positioned to provide accessibility. The lower half of each expansion pocket shall be reinforced with a layer of Kevlar® material on the inside.

Pants - 3 Pack Tool Compartment (LEFT SIDE): A tool pocket constructed of Arashield material and measuring approximately 8 inches high by 10 inches wide will be installed on the inside of the Expansion (Bellows) pocket with double stitching. 3 pockets measuring (8 inches high), measuring approximately 3 inches wide and set side-by-side.

Pants - 6 Pack Tool Compartment (RIGHT SIDE): A tool pocket constructed of Arashield material and measuring approximately 8 inches high by 10 inches wide will be installed on the inside of the Expansion (Bellows) pocket with double stitching. The front pockets will measure 6 inches high. Two separate rows of stitching will divide the tool pocket into six compartments, three in front (6 inches high) and three in back (8 inches high), measuring approximately 3 inches wide and set side-by-side.

Pants - Liner Knee Thermal Enhancement: An additional layer of specified thermal liner and neoprene coated impermeable barrier material will be sewn to the knee area of the liner system for added protection and increased thermal insulation at contact points. The knee thermal enhancement layers shall be sandwiched between the thermal liner and moisture barrier layers

of the liner system and shall be stitched to the thermal liner layer only.

Pants - Knee Reinforcements: The knee area shall be reinforced with black Tencate Ara-shield fabric. The knee reinforcement shall be slightly offset to the outside of the leg to insure proper coverage when bending, kneeling and crawling. The knee reinforcements shall measure 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.

Pants - Internal Knee Padding: Padding for the knees shall be accomplished with one layer of Silicone foam padding sandwiched between the thermal liner and the moisture barrier. The silicone foam padding shall be a flame-resistant, medium density cellular silicone foam material. Color Gray, Thickness)/4 inch, Density 20 lb./ft^3.

Pant - Cuff Reinforcement: The cuff area of the pants shall be reinforced for abrasion resistance with an extra layer of outer shell material. The cuff reinforcements shall a minimum 2 inches in width.

Pants - Reverse Boot Cut: The outer shell pant leg cuffs will be constructed such that the back of the leg is approximately 1 inch shorter than the front. The liner will also have a reverse boot cut at the rear of the cuff and a concave cut at the front to keep the liner from hanging below the shell. a contoured boot cut shall be considered unacceptable.

Pants - Padded Quick Adjust Suspenders: A pair of "H" style padded quick-adjust, non-stretchable suspenders shall be specially configured for use with the pants. The main body of the suspenders shall be constructed of 2 inch wide black strap webbing. 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". The shoulder area of the suspenders will be padded for comfort by fully encasing the webbing with aramid batting and wrap-around black Nomex®.

Minimum Specifications for Structural Firefighting Helmets

General Design: The fire helmets are designed to provide protection and/or limit injury to a fire fighter's head and neck while performing fire-related activities. Helmets manufactured in accordance with this specification shall meet or exceed the requirements of NFPA 1971, 2013 edition, "Standard for Firefighter Helmets".

Complete: The fire helmets shall be fully assembled and complete as specified, in accordance with these minimum specifications herein. The helmets shall include all components including, but not limited to, its shell, compatible suspension systems, cushion liners, straps and securing devices, specified eye protection, and retro-reflective trims. The reflective ID crescent, ear/neck protector, and helmet front need not be attached to the helmet prior to shipping, but must be individually packaged within each helmet's shipping container.

Usage Manual(s): A complete copy of the manufacturer's instruction manual for usage of the equipment, in common English, shall be included with each helmet at no additional cost.

Safety and Health Requirements: The equipment shall meet all applicable Federal, Hawaii State and City safety and health requirements, especially in relation to meeting or exceeding the National Fire Protection Association standards. The helmet being offered shall meet or exceed the NFPA 1971, 2013 revision. Failure to comply with these regulations shall be sufficient cause for the rejection of bid and/or termination of the contract.

Assembly: The bidder shall be responsible for providing the equipment, fully assembled and complete, as specified in the General Description by experienced personnel, as requested by the ordering DOT/A agency and pursuant to these minimum specifications herein. Following the delivery of all equipment, the bidder shall be responsible for the cleanup and removal of all packing materials and debris.

Helmet Shell: The helmet shell shall of fiberglass or thermoplastic construction. The helmet shall have a flexible, aluminum reinforced, rubber brim edge secured around the entire brim of the helmet by crimping, secured at the ends with a high-temperature adhesive and clamped with a stainless steel helmet hangar clip with a nickel plated or stainless steel "D" ring at the rear.

Dimensions: The helmet being offered shall be no greater than 15 inches in length and no greater than 12 inches wide. The maximum crown depth shall not exceed 7 inches. The helmets offered shall be "modern" or "contemporary" in style. "Traditional" style helmets are not acceptable.

Colors: The helmet being offered shall be provided in white, black color and lime/green.

Shell Retention: The equipment being offered shall have a feature that retains the shell as provided in NFPA 1971, 2013 edition.

Ear and Neck Protection: The equipment being offered shall have full coverage ear and neck protection, measuring approximately 18 inches long x 6-1/2 inches wide. When properly attached, it shall provide minimum coverage of 6" from the sides of the helmet brim.

The ear and neck protection equipment shall have minimum 4.5 oz. per square yard Nomex® or Kevlar® material, lined with flame resistant cotton flannel for comfort, as approved by the authorized DOT/A personnel. The equipment being offered shall have said protection securely attached to the inner shell by Velcro® for easy removal and cleaning.

Suspension System: The equipment being offered shall have a six-way, overhead webbing suspension system, locked to the impact cap to eliminate shock. The helmet weight shall be evenly distributed over the liner and suspension system for a comfortable fit. The equipment being offered shall have a minimum of three (3) each, fixed 3/4 in. nylon webbing overhead straps mounted at six (6) points for a cradled fit.

Cushion Liner: The equipment being offered shall have a sateen cotton liner or approved substitute that is sewn to a foam-padded, high density polyethylene headband, joined at the top, allowing depth adjustment.

Adjustment System: The equipment being offered shall have a quick-adjustment system for the head liner, in 1/8 in. increments, with an adjustment turn knob that can loosen or tighten to accommodate head sizes 6 3/8" to 8 318".

Chinstrap: The equipment being offered shall have a chinstrap with a postman's slide on the right side and heavy-duty quick-release buckle on the left side for easy, one hand adjustment. The equipment being offered shall be constructed of 3/4" Nomex® webbing or better, with Velcro® hook and loop attached to secure the loose end.

Eye Protection: Eye protection shall be provided as part of the helmet assembly. An integral visor that retracts between the helmet shell and impact cap or minimum 4" face shield that can flip up over the front of the helmet, shall be included as part of the helmet assembly. The thermoplastic eye protection shall be a wrap around style. The lens shall be optically corrected to minimize, distortion and shall be able to be quickly and economically replaceable. Eye protection shall be in compliance with NFPA 1971-2013 requirements for heat and impact performance.

Helmet ID Front: A DOT/A leather helmet front approximately 5" wide x 3.75" tall, shall be attached to the front of the helmet (e.g. by means of a mounting adapter). Current "Airport Fire" "4" helmet fronts will be made available for comparison/duplication.

The helmet front shall come with a Velcro® company ID plate that reads "AIRPORT FIRE". Company ID # 12 Velcro® plates shall be made available in any 3-4 letter configurations, to match the current style, which shall attach to the helmet front with the intention of being

interchangeable with other Company ID plates.

The following front colors shall be made available: black and white. The vendor shall accommodate all reasonable requests made by the DOT/A for "other" helmet front configuration options to include, but not limited to, style, material, panel color, insert color, text font, text color, graphics, and company ID. Final configurations shall be approved the DOT/A prior to production.

Reflective ID Crescents: The equipment being offered shall have the ability to attach two reflective ID crescents (title tape) in Scotchlite™ material for high visibility during the day or night, and shall meet or exceed NFPA 1971-2013 Performance Requirement. One (1) each shall be located on the left and right exterior sides of the crown.

Reflective ID crescents shall be made available for this purpose, at additional expense, and shall be made available in the following configurations: "FIRE CHIEF", "CAPTAIN", and "LIEUTENANT". The vendor shall accommodate all reasonable requests made by the DOT/A for "other" reflective ID configurations options to include, but not limited to, style, material, color, text font, and text color. Final configurations shall be approved the DOT/A prior to production.

Retro-Reflective Trim: The equipment being offered shall have five retro-reflective fluorescent trim pieces for high visibility during the day or night. Four (4) pieces shall be located around the exterior of the crown and one on the exterior slope of the rear brim. Available reflective colors shall be lime-yellow and shall meet or exceed NFPA 1971-2013 Performance Requirement 7.4.1.5.

Manufacturing Date Label: A visible label shall be adhered to the inside of each helmet identifying the make, model, manufacturing date of that helmet, and certification that the helmet assembly meets the requirements of NFPA 1971, 2013 edition standards.

Minimum Specificationsfor Structural Firefighting Gloves

General Design: Structural Firefighting Gloves shall be of 3-layer construction, heat, moisture, and abrasion-resistant with dexterity and tactile capabilities that will allow the user to perform with their hands to include, but not limited to, fine and precise action such as picking up small objects such as nails, screws and washers, pressing buttons, handling hand tools, depressing trigger operated mechanisms such as reciprocating saws, gas and hydraulic pressure driven tools, flipping switches, pulling ropes and the operating the current existing inventory and compliment of DOT/A fire hoses, nozzles and shutoffs.. Structural firefighting gloves manufactured in accordance with this specification shall meet or exceed the requirements of NFPA 1971, 2013 edition.

Complete: Structural firefighting gloves shall be fully assembled and complete as specified, in accordance with these minimum specifications herein. The gloves shall include all components including, but not limited to, its sheath, and any required straps and/or securing devices. When worn properly, the structural firefighting glove shall provide thermal, abrasion and cut protection as required in NFPA 1971, 2013 edition.

Documentation: Manufacturer shall provide documentation, in common English, with all information required by NFPA 1971, 2013 edition, attached to each pair of gloves, such that the user cannot use the item without being aware of the availability of the information, at no additional cost. In addition, each pair of gloves shall be labeled in accordance with NFPA 1971, 2013 edition.

Safety and Health Requirements: The equipment shall meet all applicable Federal, Hawaii State and City safety and health requirements, especially in relation to meeting or exceeding the National Fire Protection Association standards. The gloves being offered shall meet or exceed

the NFPA 1971, 2013 revision.

Assembly: The bidder shall be responsible for providing the equipment, fully assembled and complete, as specified in the General Description, by experienced personnel, as requested by the ordering City agency and pursuant to these minimum specifications herein. Following the delivery of all equipment, the bidder shall be responsible for the cleanup and removal of all packing materials and debris.

Glove Outer Shell: Back-3.50-4.0 oz Elk Hide, abrasion-resistant brushed pigskin or equivalent for grip support. A thumb strap will be added for additional security.

Moisture Barrier: CROSSTECH® breathable moisture barrier shall be provided with all gloves in this offering. Gloves containing or using plastic, non-breathable moisture barriers shall be rejected.

Thermal liner: Thermal liner shall be of Kevlar®/Nomex® or Kovenex® make.

Wristlet: Gloves in this offering shall have a double-ply wristlet, constructed with a minimum 9 oz per yard Nomex®.

Hanger Loop: A minimum "4" fire retardant hanger loop shall be provided on all gloves.

Dimension: Gloves supplied in this offering shall be of two (2) dimensional construction.

Label: Shall be permanently attached to the glove and certifies that the gloves meet NFPA 1971 Standard on Protective Ensemble for Structural Fire Fighting, 2013 Edition and shall include the following information: name or designation of manufacture; model; name or style number; lot or serial number; size; date of certification tests; patent numbers; cleaning and care instructions.

Cleaning: The gloves being offered shall be able to be adequately cleaned and decontaminated for return to service via ordinary laundering (hand, machine or dry cleaning) methods, and shall not require special care or handling.

Sizing: The gloves being offered shall be provided in sizes S-XXL to fit all potential user dimensions, such that it can be worn and provide protection, as intended and designed.

Offeror: The Offeror shall be an authorized manufacturer's dealer or representative of the gloves being offered.

Samples: Prior to award the DOTA reserves the right to request a sample pair of all sizes that will be wear tested and cut to verify that the gloves and its components meet the specification stated herein.

Non-Compliance: If the Offeror's gloves do not meet the requirements and performance criteria specified herein the DOTA reserves the right to reject the offer and award to the next lowest responsive responsible bidder.

Minimum Specificationsfor Structural Firefighting Turnout Boots:

NFPA 1971 and NFPA 1992 Compliant: Meets or exceeds NFPA 1971-2013, Standard on Protective Ensembles for Structural Firefighting and Proximity Firefighting, 2013 Edition and NFPA 1992-2012, Standard on Liquid Splash-Protective Ensembles and Clothing for Hazardous Materials Emergencies, 2012 Edition.

General Design: 14" Pull-On boot, black flame-resistant and waterproof leather, leather pull straps or integrated pull handles, padded leather collar, liquid-resistant and breathable bootie liner, cut-resistant and thermal protective bootie-shield liner, composite safety toe, composite shank, composite penetration-resistant insole barrier, molded shin guard, flame-

resistant synthetic rubber molded cup outsole and toe bumper.

Leather Construction: Boots shall be of heavy-duty, flame-resistant and waterproof full-grain cattle hide leather.

CROSSTECH® Footwear Fabric: A full-height bootie liner made from a package of Cambrelle® or equal 300g insulation, and CROSSTECH® moisture barrier to provide waterproof protection and breathable barrier.

Shin Guard: Molded and padded polymer shin guard to provide protection while working on a ladder.

Composite Safety Toe Cap: Composite toe cap material is required so as not to transmit heat or cold. Steel shall not be acceptable.

Synthetic Rubber Contoured Cup Outsole: Molded outsole to wrap onto the upper. Outsole shall be flame, abrasion, oil, acid, and slip resistant, engineered for high-traction and durability. Outsole shall include self-cleaning lugs and omni-direction tread pattern or equal.

Synthetic Rubber Toe Bumper: Flame, abrasion, oil, acid, and slip resistant compound bumper shall be provided for abrasion resistance.

Puncture Protection: High performance LENZI® penetration protection shall be provided so as not to transmit heat or cold. Steel shall not be acceptable.

CompositeShank: shall be used so as not to transmit heat or cold. Steel shall not be acceptable.

Construction: Contoured outsoles shall be bonded to the bottom and sides of the upper using an adhesive that forms a bond stronger than the materials it attaches. Welted construction is not acceptable.

Molded Heel Counter: Non-fiber thermoplastic Heel counter shall be individually molded to fit each size.

Internal Fit System: Anatomical foam insert shall wrap 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.

Molded Foot bed: Removable footbed shall be contoured to cradle and cushion the bottom of the foot and to provide arch support. Built-in polymer strike pads or equal to be provided for extra impact protection at the heel, ball, and toe. Moisture-wicking and anti-microbial fabric shall be used for the top layer.

Pull-On Mechanism: Leather pull-straps shall be securely attached to the leather uppers. Pull straps, integrated into the boot, are also acceptable.

Sizes: Men's 5 — 12.5 (full and half sizes), 13 — 17 (full sizes only) in Medium, Wide, and X-Wide widths. Boots shall be made available in a Wide Calf model in the same size range.

Women's 5 —10 (full and half sizes) in Medium, Wide, and X-Wide widths. Boots shall be made available in a Wide Calf model in the same size range.

Sizing: The Contractor shall provide to the participating Departments prior to the initial order a minimum of 3 sets of sizing tools, sizing instructions, manuals and on-site training as needed. To properly fit the boots being offered to the fire personnel.

Any boots that are incorrectly sized after training shall be returned and replaced at no additional cost to the DOT/A or District Airport/ARFF Stations.

Resoling Service: Boots may be resoled at the factory with new outsoles.

Sizing of Garments and Boots
Vender will be on site for the minimum of two days to provide proper sizing and to provide classes in the according stand NFPA 2113 & NFPA 1851 guidelines for the care use and maintenance of flame structural fire fighting ensembles. All instructions will be resistant garments.

Delivery. Delivery Address
All items will be delivered to the following address and in entirety (all items delivered in one shipment).
State of Hawaii
Department of Transportation - Airports Division
Kauai District
Lihue Airport
Airport Fire Station No. 4
3901 Mokulele Loop, #6
Lihue, Hawaii 96766-9706

Delivery/Received Dates
All items will be delivered and received to delivery address within sixty days from the date payment is received by vender. In the event that the entirety of order is not received within sixty days, the Airports Fire Chief reserves the absolute right to regent purchase for selected vender and award bid to the next lower bidder.

Shelf Life of Garments
Structural firefighting turnouts (jackets, pants & thermal insulating linings) will not be older than sixty (60) days from manufacture date. Any garment order that sixty days from the date of manufacture, will be returned to vender. Cost covering the return postage of garments will be paid by the vender.

Payments
Payment will be paid for all items delivered in whole. There will be no partial payments rendered for items delivered in portions.

STATE OF HAWAII
Department of Transportation · Airports Division
Airport Fire Fighting Stations

GENERAL SPECIFICATIONS
PROTECTIVE JACKET AND PANTS
FOR STRUCTURAL FIRE FIGHTING

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 fire fighting. All materials and construction will meet or exceed NFPA Standard #1971 and OSHA for structural fire fighters protective clothing.

_____Comply _____Exception

OUTER SHELL MATERIAL - JACKETS AND PANTS

The **"PBI** GEMINI® XT **MATRIX™"** outer shell, trade name Gemini XT shall be manufactured by TENCATE and constructed of 60/40 Kevlar®/PBI™ modified plain weave outer shell fabric featuring a patented high tech grid of composite filament & spun yarns in a "Matrix Technology" with an approximate weight of 7.5 oz. per square yard. The shell material must be treated with **SST™ (SUPER SHELLTITE)** which is a durable water-repellent finish that also enhances abrasion resistance. Color of the garments shall be natural/gold, black. **Bids offering a 600 denier Matrix product and/or the Matrix shell without the SST™ will not be considered.**

_____Comply _____Exception

THERMAL INSULATING LINER - JACKET AND PANTS

The thermal liner shall be constructed of 7.6 oz. per square yard TENCATE **"CALDURA® SL2i"**; one layer of 1.5 oz. and one layer of 2.3 oz. per square yard Nomex® E-89™ spunlaced Nomex®/Kevlar® aramid blend, quilt stitched to a Kevlar® filament and FR rayon/para-aramid/nylon inherently wicking Caldura® face cloth. A 7 inch by 9-inch pocket, constructed of self material and lined with moisture barrier material, shall be affixed to the inside of the jacket thermal liner on the left side by means of a lock stitch. The thermal liner shall be attached to the moisture barrier and bound together by bias-cut neoprene coated cotton/polyester around the perimeter. This provides superior abrasion resistance to the less expensive, less durable, "stitch and turn" method. Further mention of "Thermal Liner" in this specification shall refer to this section. *NOTE: This thermal liner MUST be used exclusively with a minimum 7 oz. per square yard outer shell material or with Crosstech 4A moisture barrier.*

_____Comply _____Exception

MOISTURE BARRIER - JACKETS AND PANTS

The moisture barrier material shall be W.L. GORE **CROSSTECH® black moisture barrier** - Type 2F, which is comprised of a CROSSTECH® membrane laminated to a 3.3 ounce per square yard Nomex® IIIA woven pajama check substrate. The CROSSTECH® membrane is an enhanced bicomponent membrane comprised of an expanded PTFE (polytetrafluoroethylene, for example Teflon®) matrix having a continuous hydrophilic (i.e. water-loving) and oleophobic (i.e. oil-hating) coating that is impregnated into the matrix. CROSSTECH® moisture barrier seams shall be sealed with GORE-SEAM® tape using a Series 6000 (or higher) GORE-SEAM™ sealing machine to afford comparable bacteriophage penetration resistance performance. Further mention of "Specified Moisture Barrier" in this specification shall refer to this section.

_____Comply _____Exception

SEALED MOISTURE BARRIER SEAMS

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

_____Comply _____Exception

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

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

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

_____Comply _____Exception

THERMAL PROTECTIVE PERFORMANCE

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

_____Comply _____Exception

STITCHING

The outer shell shall be assembled using stitch type #301, #401, #514 and #516. The thermal liners and moisture barriers shall be assembled using stitch type #301, #401, #504, #514, and #516. Stitching in all seams shall be continuous. Major A outer shell structural seams, major B structural

liner seams and shall have a minimum of 8 to 10 stitches per inch. All Major A seams shall be sewn with ball point needles only. All seams shall be continuously stitched only.

_____Comply _____Exception

JACKET CONSTRUCTION

BODY

The body of the shell and AXTION® liner system shall be constructed of three separate panels consisting of two front panels and one back panel. The body panels shall be shaped so as to provide a tailored fit thereby enhancing body movement and shall be joined together by double stitching with Nomex® thread.

_____Comply _____Exception

LOGOS

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

_____Comply _____Exception

DRAG RESCUE DEVICE (DRD)

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

_____Comply _____Exception

LINER ACCESS OPENING - JACKET

The thermal liner and moisture barrier shall be completely removable from the jacket shell. Two strips of ⅝ inch wide FR Velcro® hook and loop fastener tape shall secure the thermal liner/moisture barrier to the outer shell along the length of the neckline under the collar. This opening shall run the full length of the collar for the purpose of inspecting the inner surfaces of the jacket liner system. The remainder of the thermal liner/moisture barrier shall be secured with a minimum of four snap fasteners appropriately spaced on each jacket facing and four Ara-Shield® snap fasteners at each sleeve end. The outside perimeter of the AXTION® liner moisture barrier and thermal liner layers shall be bound together along the side and bottom edges with a bias-cut Neoprene coated cotton/polyester binding for a finished appearance that prevents fraying and wicking of contaminants. Stitching used to secure the thermal liner and moisture barrier in place of the Neoprene shall not be considered since stitching is not able to provide the same level of abrasion resistance.

_____Comply _____Exception

SIZING

The jacket length shall be measured from the juncture of the collar and back panel to the hem of the jacket and shall measure

32 inches long. (standard)
29 inches long (women's).
35 inches long.

The jacket shall be available in even size chest measurements of two-inch increments, and shall range from a small size of 30 to a large size of 68. Generalized sizing, such as small, medium, large, etc., will not be considered acceptable. Sizing specifically for women shall also be available.

_____Comply _____Exception

RETROREFLECTIVE FLUORESCENT TRIM

The retroreflective fluorescent trim shall be lime/yellow 3M Scotchlite™Triple Trim (L/Y borders with silver center).

Each jacket shall have an adequate amount of retroreflective fluorescent trim affixed to the outside of the outer shell to meet the requirements of NFPA #1971 and OSHA.

The trim shall be in the following widths and shall be **NFPA Basic style**; 3-inch-wide stripes - around the bottom of the jacket within approximately 1 inch of the hem and around the back and chest area approximately 3 inches below the armpit, around each sleeve below the elbow.

_____Comply _____Exception

REINFORCED TRIM STITCHING

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

_____Comply _____Exception

SEWN ON RETROREFLECTIVE LETTERING

Each jacket shall have 3" lime/yellow 3M Scotchlite™ lettering on Rows A & B reading:

Row-A (Top Row Centered) AIRPORT
Row –B (Second Row Centered) FIRE

_____Comply _____Exception

LETTER PATCH

Hanging Letter Patch
The Hanging letter patch shall be constructed of a double layer of outer shell material. The letter patch will attach to the rear inside hem of the jacket with a combination of four (4) snap fasteners and FR Velcro® hook & loop fastener tape. Letter patch shall have firefighters last name sewn to it and spelled in 3 inch Scotchlite lime/yellow lettering. Than panel shall be 18"in length X 5 ½ "width. The four (4) snap fasteners shall be 6" apart.

_____Comply _____Exception

COLLAR & FREE HANGING THROAT TAB

The collar shall consist of a four-layer construction and be of two-piece design. The collar shall have a minimum of 3 rows of quilting. The outer layers shall consist of outer shell material on the outside and on the inside. There shall be a layer of specified moisture barrier and a layer of Nomex® pajama check material sandwiched in between (see Moisture Barrier section). The rear inside ply of Nomex® pajama check shall be sewn to the collar's back layer of outer shell at the edges only. The forward inside ply of moisture barrier shall be sewn to the inside of the collar at the edges only. The multi-layered configuration shall provide protection from water and other hazardous elements. The collar shall be a minimum of 3 inches high and graded to size. The leading edges of the collar shall extend up evenly from the leading edges of the jacket front body panels so that no gap occurs at the throat area. The collar's back layers of outer shell and moisture barrier shall be joined to the body panels with two rows of stitching. Inside the collar, above the rear seam where it is joined to the shell shall be a strip of ⅝ inch wide FR Velcro® loop fastener tape running the full length of the collar. The collar's front layers of moisture barrier and outer shell shall have an additional strip of ⅝ inch wide FR Velcro® hook fastener tape stitched to the inside lower edge and running the full length of the collar. These two inside strips of ⅝ inch wide FR Velcro® fastener tape sewn to the underside of the collar shall engage corresponding pieces of FR Velcro® fastener tape on the neck extension of the liner system.

A self-material fabric hanger loop shall be sewn at the top of collar.

The throat tab shall be a scoop type design and constructed of two plies of outer shell material with two center plies of moisture barrier material. The throat tab shall measure not less than 2½ inches wide at the center tapering to 2 inches at each end with a total length of approximately 7½ inches. The throat tab will be attached to the right side of the collar by a 1 inch wide by 1½ inch long piece of Nomex® twill webbing. The throat tab shall be secured in the closed and stowed position with FR Velcro® hook and loop fastener tape. The FR Velcro® hook and loop fastener tape shall be oriented

to prevent exposure to the environment when the throat tab is in the closed position. A 1½ inch by 3 inch piece of FR Velcro® loop fastener tape shall be sewn horizontally to the inside leading end of the throat tab and a 1½ inch by 3 inch piece of FR Velcro® hook fastener tape shall be sewn horizontally to the opposite end of the throat tab. A corresponding piece of FR Velcro® hook fastener tape measuring 1½ inches by 3 inches shall be sewn horizontally to the leading outside edge of the collar on the left side, for attachment and adjustment when in the closed position and wearing a breathing apparatus mask. The collar closure strap shall fold in half for storage with the FR Velcro® loop fastener tape engaging the FR Velcro® hook fastener tape.

_____Comply _____Exception

JACKET FRONT

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

_____Comply _____Exception

STORM FLAP

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

_____Comply _____Exception

STORM FLAP AND JACKET FRONT CLOSURE SYSTEM

The jacket shall be closed by means of

(zipper and FR Velcro® hook & loop tape; aka #8C) a 22-inch size #10 heavy duty brass zipper on the jacket fronts and FR Velcro® hook and loop fastener tape on the storm flap. The teeth of the zipper shall be mounted on black Nomex® tape and shall be sewn into the respective jacket facings. The storm flap shall close over the left and right jacket body panels and shall be secured with FR Velcro® hook and loop fastener tape. A 1½ inch by 24-inch piece of FR Velcro® loop fastener tape shall be installed along the leading edge of the storm flap on the underside with four rows of stitching. A corresponding 1½ inch by 23-inch piece of FR Velcro® hook fastener tape shall be sewn with four rows of stitching to the front body panel and positioned to engage the loop fastener tape when the storm flap is closed over the front of the jacket.

_____Comply _____Exception

DUAL ACTION POCKETS

CARGO/HANDWARMER EXPANSION POCKETS

Each jacket front body panel shall have a 2-inch-deep by 8-inch-wide by 8-inch-high expansion pocket double stitched to the shell and shall be located such that the bottom of the pockets is 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 lower half of the pocket shall be reinforced with a layer of Kevlar® material on the inside.* The pocket flaps shall be rectangular in shape, constructed of two layers of outer shell material and shall measure 3 inches deeper than the pocket expansion and ½ inch wider than the pocket. The pocket flaps shall be closed by means of FR Velcro® hook and loop fastener tape. Two pieces of 1½ inch by 3-inch FR Velcro® hook fastener tape shall be installed vertically on the inside of each pocket flap (one piece on each end). Two corresponding pieces of 1½ inch by 3-inch FR Velcro® loop fastener tape shall be installed horizontally on the outside of each pocket near the top (one piece on each end) and positioned to engage the hook fastener tape.

(lower pockets to hem) 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 two-panel construction, contoured, and of set in design. The outer and under sleeve panels shall be double stitched together with Nomex® thread. The sleeves shall be contoured (curved) to follow the natural shape of the human arm unlike straight, tubular sleeve configurations. An underarm gusset shall be incorporated between the underside of the sleeve and the body of the jacket, and shall be used in all layers of the garment (shell, moisture barrier, and thermal liner). The underarm gusset shall measure approximately 5 inches wide by 17 inches long (all layers) and graded to size, beginning at the front of the armpit and terminating approximately three inches from the top of the back of the shoulder, and shall provide for a high degree of uninhibited arm and shoulder movement.

_____Comply _____Exception

SLEEVE CUFF REINFORCEMENTS

The sleeve cuffs shall be reinforced with an extra layer of outer shell material.

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

_____Comply _____Exception

WRISTLETS / SLEEVE WELLS

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

The wristlets shall be sewn to

(Double Sleeve Well) flame resistant neoprene coated cotton/polyester impermeable barrier 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 neoprene barrier 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 will be sewn into the juncture of the sleeve well and wristlet. The tabs will be spaced equidistant from each other and shall be fitted with female snap fasteners to accommodate corresponding male snaps in the liner sleeves. One of the Ara-shield® snap tabs shall be a different color in the liner to correspond with color coded snap tabs for ease of matching the liner system to the outer shell after inspection or cleaning is completed. This configuration will ensure there is no interruption in protection between the sleeve liner and wristlet.

_____Comply _____Exception

LINER SHOULDER THERMAL ENHANCEMENT

A minimum of one additional layer of thermal liner material shall be used to increase thermal insulation in the shoulder area of the liner system. This thermal enhancement layer shall drape over the top of each shoulder extending from the collar to the sleeve/shoulder seam, down the front approximately 2 inches from the juncture of the collar down the back to a depth of 2 inches to provide greater CCHR protection in this high compression area. The upper back, front and shoulder thermal enhancement layers shall be sandwiched between the thermal liner and moisture barrier layers of the liner system and shall be stitched to the thermal liner layer only. The thermal enhancement layer shall have finished edges by means of overedging. Raw or unfinished edges shall be considered unacceptable. Thermal scraps shall not be substituted for full-cut fabric padding. Smaller CCHR reinforcements shall not be considered acceptable since they provide far less area of coverage.

_____Comply _____Exception

RADIO POCKET

Each jacket shall have a pocket designed for the storage of a portable radio. This pocket shall be of

box type construction, double stitched to the jacket and shall have one drainage eyelet in the bottom of the pocket. The pocket flap shall be constructed of two layers of outer shell material measuring approximately 5 inches deep and ¼ inch wider than the pocket. The pocket flap shall be closed by means of FR Velcro® fastener tape. A 1½ inch by 3-inch piece of FR Velcro® hook fastener tape shall be installed on the inside of the pocket flap beginning at the center of the bottom of the flap. A 1½ inch by 3-inch piece of FR Velcro® loop fastener tape shall be installed horizontally on the outside of the pocket near the top center and positioned to engage the hook fastener tape. In addition, the entire inside of the pocket shall be lined with neoprene coated cotton/polyester impermeable barrier material to ensure that the radio is protected from the elements. The impermeable barrier material shall also be sandwiched between the two layers of outer shell material in the pocket flap for added protection. The radio pocket shall measure approximately 2 inches deep by 3.5 inches wide by 7 inches high and shall be installed on the left chest.

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

_____Comply _____Exception

NOTCHED RADIO POCKET FLAP

The radio pocket flap shall be notched to accommodate the radio antenna on the both sides for a dual antenna notch.

_____Comply _____Exception

MICROPHONE STRAP

A strap shall be constructed to hold a microphone for a portable radio. It shall be sewn to the jacket at the ends only. The size of the microphone strap shall be 1-inch x 3 inches.

The microphone strap shall be mounted above the radio pocket and shall be constructed of double layer outer shell material.

_____Comply _____Exception

EMBROIDERED AMERICAN FLAG – RIGHT SLEEVE

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

_____Comply _____Exception

PANT CONSTRUCTION

BODY

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

_____Comply _____Exception

LINER ACCESS OPENING (PANT)

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

_____Comply _____Exception

SIZING

The pants shall be available in even size waist measurements of two inch increments and shall be available in a range of sizes from 24 to 68. The pant inseam measurement shall be available in two inch increments. Generalized sizing, such as small, medium, large, etc., will not be considered acceptable. Sizing specifically for women shall also be available.

_____Comply _____Exception

RETROREFLECTIVE FLUORESCENT TRIM

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

Bottom of trim band shall be located approximately 3" above cuff.

_____Comply _____Exception

REINFORCED TRIM STITCHING

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

_____Comply _____Exception

WAISTBAND

The waist area of the pants shall be reinforced on the inside with a separate piece of black aramid outer shell material not less than two inches in width. Neoprene coated cotton/polyester impermeable barrier shall be sewn to the back of the waistband as a reinforcement. The top edge of the waistband reinforcement shall be double stitched to the outer shell at the top of the pants. The lower edge of the waistband shall be serged and unattached to the shell to accept the thermal liner and moisture barrier. The top of the thermal liner and moisture barrier shall be secured to the underside of the waistband reinforcement so as to be sandwiched between the waistband reinforcement and outer shell to reduce the possibility of liner detachment while donning and to avoid pass through of snaps from the outer shell to the inner liner.

_____Comply _____Exception

TAKE UP STRAPS

The pants shall be equipped with two take up straps. The straps shall be constructed of 1-inch-wide black Aramid twill and be positioned in the waist area on the outside of the garment; one on each side. Each take up strap shall be comprised of two sub-component straps. The rear strap component shall be constructed of black twill Nomex®. The rear strap shall measure 1-inch-wide and 4 inches long, folded back to form a loop, and shall be bartacked to the pants. The loop shall hold a high temp thermoplastic buckle. The buckle shall point toward the front. The front strap component shall measure 1-inch-wide by approximately 9 inches long (finished dimension). One end shall be folded back on itself to form a loop. A high temp thermoplastic slide fastener shall be captured within the loop. The front strap component shall be inserted through the buckle on the rear strap component, back through the slide fastener, and the end shall be bartacked to the pants. A pull-tab of 1-inch black Aramid twill shall be affixed to the slide fastener. The take up strap pull-tabs shall pull toward the front to allow for adjustment.

_____Comply _____Exception

PANT CLOSURE SYSTEM

The exterior primary positive locking closure shall be an inward facing metal safety hook and dee ring. The safety hook shall be attached to a leather strap that is triple riveted to the right front

body panel in the waist area. A leather backed dee ring shall be riveted to the leading edge of the fly flap near the top. The snap hook shall engage the dee ring located on the fly flap when in the closed position.

The internal fly flap closure shall consist of **(standard FR Velcro®)** 1½ inch wide by full-length FR Velcro® hook and loop fastener tape. The FR Velcro® loop portion shall be sewn with four rows of stitching to the inside of the leading edge of the external fly flap. The corresponding portion of FR Velcro® hook fastener tape shall be sewn with four rows of stitching to the right front body panel positioned to engage the loop portion when the external fly flap is in the closed position.

_____Comply _____Exception

EXTERNAL / INTERNAL FLY FLAP

The fly flap shall be constructed of two pieces of outer shell material. A center ply of specified moisture barrier shall be sandwiched between the two outer shell pieces. The fly flap shall be double stitched to the left front body panel beginning at the waist and extending down to a depth of approximately 11 inches. The fly flap shall be approximately 6 inches wide at the top, tapering to approximately 1 inch in width at the crotch where it will be further reinforced with a bartack. A leather backed dee ring shall be riveted to the leading edge of the fly flap at the top and shall be positioned to engage the safety hook on the take-up strap when the fly flap is in the closed position.

An internal fly flap constructed of one ply of outer shell material, thermal liner and specified moisture barrier, measuring approximately 2 inches wide by 11 inches long, shall be sewn to the leading edge of the right front body panel in the fly area. The thermal liner and moisture barrier of the internal fly shall extend approximately 7 inches horizontally from the leading edge of the fly flap and will follow the shape of the outside large fly flap. The action of the external fly flap overlapping the internal fly flap lined with thermal liner and moisture barrier will ensure there is no interruption in protection.

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

_____Comply _____Exception

LINER KNEE THERMAL ENHANCEMENT

A minimum of one additional layer of specified thermal liner and one additional layer of moisture barrier material, measuring a minimum of 7 inches by 10 inches, will be sewn to the knee area of the liner system for added CCHR protection and increased thermal insulation in this high compression area. The knee thermal enhancement layers shall be sandwiched between the thermal liner and moisture barrier layers of the liner system and shall be stitched to the thermal liner layer only. The thermal enhancement layer shall have finished edges by means of overedging. Raw or unfinished edges shall be considered unacceptable. Thermal scraps shall not be substituted for full-cut fabric padding. Smaller CCHR reinforcements shall not be considered acceptable since they provide far less area of coverage.

_____Comply _____Exception

KNEE REINFORCEMENTS

The knee area shall be reinforced with black Ara-Shield® material.

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

The lower edge of the Ara-Shield® knee reinforcement shall be turned under so that the lower row of stitching is covered and protected from abrasion.

_____Comply _____Exception

PADDING UNDER KNEE REINFORCEMENTS

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

_____Comply _____Exception

EXPANSION POCKETS

An expansion pocket, measuring approximately 2 inches deep by 10 inches wide by 10 inches high shall be double stitched to the side of each leg straddling the out-seam above the knee and positioned to provide accessibility. The lower half of each expansion pocket shall be reinforced with a layer of outer shell material on the inside. Two rust resistant metal drain eyelets shall be installed on the underside of each expansion pocket to facilitate drainage of water. The pocket flaps shall be rectangular in shape, constructed of two layers of outer shell material and shall measure 3 inches deeper than the pocket expansion and ½ inch wider than the pocket. The pocket flaps shall be closed by means of FR Velcro® hook and loop fastener tape. Two pieces of 1½ inch by 3-inch FR Velcro® hook fastener tape shall be installed vertically on the inside of each pocket flap (one piece on each end). Two corresponding pieces of 1½ inch by 3-inch FR Velcro® loop fastener tape shall be installed horizontally on the outside of each pocket near the top (one piece on each end) and positioned to engage the hook fastener tape.

_____Comply _____Exception

3 pack tool compartment Left Side

A tool pocket constructed of Arashield material and measuring approximately 8 inches high by 10 inches wide will be installed on the inside of the pocket with double stitching. 3 pockets measuring (8 inches high), measuring approximately 3 inches wide and set side-by-side.

_____Comply _____Exception

6 pack tool compartment Right Side

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

_____Comply _____Exception

PANT CUFF REINFORCEMENTS

The cuff area of the pants shall be reinforced with black Ara-Shield® material.

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

_____Comply _____Exception

PADDED RIP-CORD SUSPENDERS & ATTACHMENT

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

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

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

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

_____Comply _____Exception

REVERSE BOOT CUT

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

_____Comply _____Exception

THIRD PARTY TESTING AND LISTING PROGRAM

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

_____Comply _____Exception

LABELS

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

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

_____Comply _____Exception

ISO CERTIFICATION / REGISTRATION

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

_____Yes _____No

BETTER BUSINESS BUREAU:

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

_____Comply _____Exception

WARRANTY

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

_____Comply _____Exception

HOOK AND LOOP SUPPORT PROGRAM

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

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

_____Comply _____Exception

SIZING BY VENDOR

Both male and female sizing samples shall be available.

Both male and female sizing samples shall be on hand for use when sizing. The vendor shall be available to perform all sizing requirements within an agreed upon time by the fire department. All sizing of firefighters must be done using individual sizing samples to determine accurate measurement and sizing. ***Measuring with a tape measure is not acceptable.***

_____Comply _____Exception

GARMENT TRAINING AND SUPPORT

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

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

An on-site OSHA 1910 132(1) mandated training class on the Knowing the Limits of Your PPE shall be provided at nó charge. The training shall include structural firefighting coat, pant and boots. Training to be conducted onsite at State of Hawaii Authority Fire Department.

_____Comply _____Exception

BAR-CODE/RECORD KEEPING INTERFACE

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

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

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

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

_____Comply _____Exception

PPE RECORD KEEPING

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

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

_____Comply _____Exception

EXCEPTIONS TO SPECIFICATIONS

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

COUNTRY OF ORIGIN

Jackets and Pants shall be manufactured in the United States.

STATE OF HAWAII
Department of Transportation · Airports Division
Airport Fire Fighting Stations

September 2, 2016

GENERAL SPECIFICATIONS
STRUCTURAL FIREFIGHTING HELMET AND GLOVES

SCOPE OF WORK:

Minimum Specifications for Structural Firefighting Helmets

General Design: The fire helmets are designed to provide protection and/or limit injury to a fire fighter's head and neck while performing fire-related activities. Helmets manufactured in accordance with this specification shall meet or exceed the requirements of NFPA 1971, 2013 edition, "Standard for Firefighter Helmets".

_____Comply _____Exception

Complete: The fire helmets shall be fully assembled and complete as specified, in accordance with these minimum specifications herein. The helmets shall include all components including, but not limited to, its shell, compatible suspension systems, cushion liners, straps and securing devices, specified eye protection, and retro-reflective trims. The reflective ID crescent, ear/neck protector, and helmet front need not be attached to the helmet prior to shipping, but must be individually packaged within each helmet's shipping container.

_____Comply _____Exception

Usage Manual(s): A complete copy of the manufacturer's instruction manual for usage of the equipment, in common English, shall be included with each helmet at no additional cost.

Safety and Health Requirements: The equipment shall meet all applicable Federal, Hawaii State and City safety and health requirements, especially in relation to meeting or exceeding the National Fire Protection Association standards. The helmet being offered shall meet or exceed the NFPA 1971, 2013 revision. Failure to comply with these regulations shall be sufficient cause for the rejection of bid and/or termination of the contract.

_____Comply _____Exception

Assembly: The bidder shall be responsible for providing the equipment, fully assembled and complete, as specified in the General Description by experienced personnel, as requested by the ordering DOT/A agency and pursuant to these minimum specifications herein. Following the delivery of all equipment, the bidder shall be responsible for the cleanup and removal of all packing materials and debris.

_____Comply _____Exception

Helmet Shell: The helmet shell shall of fiberglass or thermoplastic construction. The helmet shall have a flexible, aluminum reinforced, rubber brim edge secured around the entire brim of the helmet by crimping, secured at the ends with a high-temperature adhesive and clamped with a stainless steel helmet hangar clip with a nickel plated or stainless steel "D" ring at the rear.

_____Comply _____Exception

Dimensions: The helmet being offered shall be no greater than 15 inches in length and no greater than 12 inches wide. The maximum crown depth shall not exceed 7 inches. The helmets offered shall be "modern" or "contemporary" in style. "Traditional" style helmets are not acceptable.

_____Comply _____Exception

Colors: The helmet being offered shall be provided in black, lime green and white in color.

_____Comply _____Exception

Shell Retention: The equipment being offered shall have a feature that retains the shell as provided in NFPA 1971, 2013 edition.

_____Comply _____Exception

Ear and Neck Protection: The equipment being offered shall have full coverage ear and neck protection, measuring approximately 18 inches long x 6-1/2 inches wide. When properly attached, it shall provide minimum coverage of 6" from the sides of the helmet brim.

_____Comply _____Exception

The ear and neck protection equipment shall have minimum 4.5 oz. per square yard Nomex® or Kevlar® material, lined with flame resistant cotton flannel for comfort, as approved by the authorized DOT/A personnel. The equipment being offered shall have said protection securely attached to the inner shell by Velcro® for easy removal and cleaning.

_____Comply _____Exception

Suspension System: The equipment being offered shall have a six-way, overhead webbing suspension system, locked to the impact cap to eliminate shock. The helmet weight shall be evenly distributed over the liner and suspension system for a comfortable fit. The equipment being offered shall have a minimum of three (3) each, fixed 3/4 in. nylon webbing overhead straps mounted at six (6) points for a cradled fit.

_____Comply _____Exception

Cushion Liner: The equipment being offered shall have a sateen cotton liner or approved substitute that is sewn to a foam-padded, high density polyethylene headband, joined at the top, allowing depth adjustment.

_____Comply _____Exception

Adjustment System: The equipment being offered shall have a quick-adjustment system for the head liner, in 1/8 in. increments, with an adjustment turn knob that can loosen or tighten to accommodate head sizes 6 3/8" to 8 318".

_____Comply _____Exception

Chinstrap: The equipment being offered shall have a chinstrap with a postman's slide on the right side and heavy-duty quick-release buckle on the left side for easy, one hand adjustment. The equipment being offered shall be constructed of 3/4" Nomex® webbing or better, with Velcro® hook and loop attached to secure the loose end.

_____Comply _____Exception

Eye Protection: Eye protection shall be provided as part of the helmet assembly. An integral visor that retracts between the helmet shell and impact cap or minimum 4" face shield that can flip up over the front of the helmet, shall be included as part of the helmet assembly. The thermoplastic eye protection shall be a wrap around style. The lens shall be optically corrected to minimize, distortion and shall be able to be quickly and economically replaceable. Eye protection shall be in compliance with NFPA 1971-2013 requirements for heat and impact performance.

_____Comply _____Exception

Helmet ID Front: A DOT/A leather helmet front approximately 5" wide x 3.75" tall, shall be attached to the front of the helmet (e.g. by means of a mounting adapter). Current "Airport Fire" helmet fronts will be made available for comparison/duplication, upon request.

The helmet front shall come with a Velcro® company ID plate that reads "AIRPORT FIRE". Company ID Velcro® plates shall be made available in any 3-4 letter configurations, to match the current style, which shall attach to the helmet front with the intention of being interchangeable with other Company ID plates.

The following front colors shall be made available: black, lime green and white. The vendor shall accommodate all reasonable requests made by the DOT/A for "other" helmet front configuration options to include, but not limited to, style, material, panel color, insert color, text font, text color, graphics, and company ID (#12). Final configurations shall be approved the DOT/A prior to production.

_____Comply _____Exception

Reflective ID Crescents: The equipment being offered shall have the ability to attach two reflective ID crescents (title tape) in Scotchlite™ material for high visibility during the day or night, and shall meet or exceed NFPA 1971-2013 Performance Requirement. One (1) each shall be located on the left and right exterior sides of the crown.

Reflective ID crescents shall be made available for this purpose, at additional expense, and shall be made available in the following configurations: "FIRE CHIEF", "CAPTAIN", and "LIEUTENANT". The vendor shall accommodate all reasonable requests made by the DOT/A for "other" reflective ID configurations options to include, but not limited to, style, material, color, text font, and text color. Final configurations shall be approved the DOT/A prior to production.

Retro-Reflective Trim: The equipment being offered shall have five retro-reflective fluorescent trim pieces for high visibility during the day or night. Four (4) pieces shall be located around the exterior of the crown and one on the exterior slope of the rear brim. Available reflective colors shall be lime-yellow and shall meet or exceed NFPA 1971-2013 Performance Requirement 7.4.1.5.

_____Comply _____Exception

Manufacturing Date Label: A visible label shall be adhered to the inside of each helmet identifying the make, model, manufacturing date of that helmet, and certification that the helmet assembly meets the requirements of NFPA 1971, 2013 edition standards.

_____Comply _____Exception

Minimum Specifications for Structural Firefighting Gloves

General Design: Structural Firefighting Gloves shall be of 3-layer construction, heat, moisture, and abrasion-resistant with dexterity and tactile capabilities that will allow the user to perform with their hands to include, but not limited to, fine and precise action such as picking up small objects such as nails, screws and washers, pressing buttons, handling hand tools, depressing trigger operated mechanisms such as reciprocating saws, gas and hydraulic pressure driven tools, flipping switches, pulling ropes and the operating the current existing inventory and compliment of DOT/A fire hoses, nozzles and shutoffs.. Structural firefighting gloves manufactured in accordance with this specification shall meet or exceed the requirements of NFPA 1971, 2013 edition.

_____Comply _____Exception

Complete: Structural firefighting gloves shall be fully assembled and complete as specified, in accordance with these minimum specifications herein. The gloves shall include all components including, but not limited to, its sheath, and any required straps and/or securing devices. When worn properly, the structural firefighting glove shall provide thermal, abrasion and cut protection as required in NFPA 1971, 2013 edition.

_____Comply _____Exception

Documentation: Manufacturer shall provide documentation, in common English, with all information required by NFPA 1971, 2013 edition, attached to each pair of gloves, such that the user cannot use the item without being aware of the availability of the information, at no additional cost. In addition, each pair of gloves shall be labeled in accordance with NFPA 1971, 2013 edition.

_____Comply _____Exception

Safety and Health Requirements: The equipment shall meet all applicable Federal, Hawaii State and City safety and health requirements, especially in relation to meeting or exceeding the National Fire Protection Association standards. The gloves being offered shall meet or exceed the NFPA 1971, 2013 revision.

_____Comply _____Exception

Assembly: The bidder shall be responsible for providing the equipment, fully assembled and complete, as specified in the General Description, by experienced personnel, as requested by the ordering City agency and pursuant to these minimum specifications herein. Following the delivery of all equipment, the bidder shall be responsible for the cleanup and removal of all packing materials and debris.

_____Comply _____Exception

Glove Outer Shell: Back-3.50-4.0 oz Elk Hide, abrasion-resistant brushed pigskin or equivalent for grip support. A thumb strap will be added for additional security.

_____Comply _____Exception

Moisture Barrier: CROSSTECH® breathable moisture barrier shall be provided with all gloves in this offering. Gloves containing or using plastic, non-breathable moisture barriers shall be rejected.

_____Comply _____Exception

Thermal liner: Thermal liner shall be of Kevlar®/Nomex® or Kovenex® make.

_____Comply _____Exception

Wristlet: Gloves in this offering shall have a double-ply wristlet, constructed with a minimum 9 oz per yard Nomex®.

_____Comply _____Exception

Hanger Loop: A minimum "4" fire retardant hanger loop shall be provided on all gloves.

_____Comply _____Exception

Dimension: Gloves supplied in this offering shall be of two (2) dimensional construction.

_____Comply _____Exception

Label: Shall be permanently attached to the glove and certifies that the gloves meet NFPA 1971 Standard on Protective Ensemble for Structural Fire Fighting, 2013 Edition and shall include the following information: name or designation of manufacture; model; name or style number; lot or serial number; size; date of certification tests; patent numbers; cleaning and care instructions.

_____Comply _____Exception

Cleaning: The gloves being offered shall be able to be adequately cleaned and decontaminated for return to service via ordinary laundering (hand, machine or dry cleaning) methods, and shall not require special care or handling.

_____Comply _____Exception

Sizing: The gloves being offered shall be provided in sizes S-XXL to fit all potential user dimensions, such that it can be worn and provide protection, as intended and designed.

_____Comply _____Exception

Offeror: The Offeror shall be an authorized manufacturer's dealer or representative of the gloves being offered.

_____Comply _____Exception

Samples: Prior to award the DOTA reserves the right to request a sample pair of all sizes that will be wear tested and cut to verify that the gloves and its components meet the specification stated herein.

Non-Compliance: If the Offeror's gloves do not meet the requirements and performance criteria specified herein the DOTA reserves the right to reject the offer and award to the next lowest responsive responsible bidder.

STATE OF HAWAII
Department of Transportation · Airports Division
Airport Fire Fighting Stations

September 2, 2016

Specifications for Structural Fire Fighting 14" Pull-On Boots

NFPA 1971 and NFPA 1992 Compliant
Meets or exceeds NFPA 1971, *Standard on Protective Ensembles for Structural Firefighting and Proximity Firefighting, 2013 Edition* for Structural Fire Fighting and NFPA 1992, *Standard on Liquid Splash-Protective Ensembles and Clothing for Hazardous Materials Emergencies, 2012 Edition.*

_____Comply _____Exception

General Design
14" Pull-On athletic 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, 3D lasting board, molded heel counter, internal heel fit system, and removable molded footbeds including a second thicker pair.

_____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:	SATRA TM144:2011 Slip Resistance of Footwear and Floorings Load = 500 N
Dry Clay Quarry Tile:	Forepart = 1.00 Heel = 0.90
Wet Clay Quarry Tile:	Forepart = 0.60 Heel = 0.60
Frosted Ice:	Forepart = 0.25 Heel = 0.20

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 50 degrees without exceeding the critical bending moment with a resulting stiffness index not to exceed 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	after flame 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 waterproof and breathable moisture barrier as well as thermal protection as defined by the specified NFPA standards.

_____Comply _____Exception

Athletic Footwear (Cement) Construction Outsole
For optimum flexibility and comfort, boot shall include a VIBRAM® Synthetic Rubber 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

Bootie-Shield Liner
A protective bootie-shield of KEVLAR® fiber blend stitch bonded non-woven batting weighing 4.0 oz/yd^2 shall be positioned between the leather shell and the CROSSTECH® 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 CROSSTECH® moisture barrier bootie shall not be acceptable.

_____Comply _____Exception

Composite Safety Toe Cap
The safety toe shall consist of a composite material that is lighter than steel, doesn't 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.

_____Comply _____Exception

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.

_____Comply _____Exception

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.

_____Comply _____Exception

Composite Shank
The shank shall consist of a composite material that is lighter than steel, doesn't transmit heat or cold, and springs back to shape better. 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

Padded Shin Guard
Boots shall include a padded polymer 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

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. Pull strength must be a minimum of 120 lbs when tested with a single handle.

_____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
Boots shall have a removable urethane foam footbed contoured to cradle and cushion the bottom of the foot and to provide arch support. The footbed shall have a moisture-wicking and anti-microbial fabric top layer.

_____Comply _____Exception

Custom Fit System
Boots shall include a second pair of 3D Molded Footbeds that are thicker in the forefoot to provide a snugger fit if needed.

_____Comply _____Exception

Sizes
Boots must be available in Men's 5 – 16 (full and half sizes), 17 – 18 (full sizes only) 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 5 – 12 (full and half sizes) in Narrow, Medium, Wide, and X-Wide widths.

_____Comply _____Exception

Resoling Service
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