



CITY OF KNOXVILLE
 OFFICE OF THE PURCHASING AGENT
 P.O. BOX 1631
 400 MAIN ST., ROOM 667
 KNOXVILLE, TN 37901

SEALED BID

THIS IS NOT AN ORDER

DATE: 10/20/2020 PAGE 1 Of 1

DOCUMENT NUMBER: **660689**

READ ALL INSTRUCTIONS AND CONDITIONS ON ATTACHED PAGES BEFORE BIDDING. BID ON THIS FORM ONLY. BID PRICE ON ITEMS LISTED OR EQUAL. NO BID RECEIVED AFTER CLOSING HOUR WILL BE ACCEPTED.

****ALL PRICES TO INCLUDE TRANSPORTATION CHARGES & NET TERMS UNLESS STATED OTHERWISE ****

Merchandise to be delivered to : See delivery instructions

BID will be received at: Office of the Purchasing Agent, Room 667, 400 Main St., Knoxville, TN 37902, until 11/03/2020 11:00:00 AM

ENVELOPE TO BE SEALED AND MARKED: **RESCUE TOOLS**

Special Instructions:
 All items are to be delivered to the basement area of the Knoxville Fire Station #9 located at 1625 Highland Avenue, Knoxville, TN 37916. Please contact Chris Foster at (865)740-9893 before all deliveries. Direct all questions to jtucker@knoxvilletn.gov.

No.	Quantity	Description	Brand	Unit	Unit Price	Total	Applicable Discount
1	1 Each	FIRE - Rescue Extrication Tools for Rescue One. See the attached specifications.					

IMPORTANT - State Merchandise

Delivery Date Here: _____

Buyer Name: Tucker, James
 Phone: 865-215-2064
 Fax: (865) 215-2277
 Email: jtucker@knoxvilletn.gov

(Company Name)

(Authorized Signature)

(Print Signed Name)

(Phone Number)

(Email Address)

In addition to submission procedures listed within this solicitation document, the City provides the option of electronic submission. To submit your proposal/bid electronically, please follow the detailed instructions below.

Electronic Submission Procedures:

Electronic submissions shall be submitted online through the City's Procurement website. **DO NOT EMAIL YOUR SUBMISSION.** All proposers/bidders must register as a vendor in order to submit an electronic file.

Step One: Register as a City of Knoxville vendor

(Vendors are encouraged to complete this step **now** to ensure seamless submission process prior to deadline.)

To register as a vendor:

Visit the website at www.knoxvilletn.gov/purchasing

Click the "Vendor Registration" tab; then "Click here to register as a City of Knoxville Vendor"

Follow the prompts to complete online registration.

Note: You will be asked for a PIN. This PIN will be emailed to you and may have been sent to your spam or junk folder.

DO NOT WAIT UNTIL SUBMISSION DEADLINE TO REGISTER AS A VENDOR. The electronic submission link will be disabled at 11:00:00 a.m. Eastern time. Vendors will not have the ability to submit any electronic files once the deadline has passed.

Step Two:

Submit all materials electronically as one (1) file to City's Procurement website **PRIOR to 11:00:00 a.m. (Eastern Time) on November 3, 2020.**

To submit electronic file:

Visit the procurement website at www.knoxvilletn.gov/bids

Click "Rescue Tools"

Click "Submit Bid" (red button located at top of screen)

Follow the prompts to upload and submit electronic file.

Submit only one (1) submission file (see notes below if must submit additional files)

Files **MUST** be named as the firm's name followed by the title of the project.

Example: BobsBurgers-AVSystemKFD.pdf

Should you need to merge multiple documents into one PDF, please utilize Google to download a free software intended for merging pdf documents

**CITY OF KNOXVILLE
INVITATION TO BID**

Rescue Tools

Sealed bids, invited by the City of Knoxville, will be received by the Purchasing Agent of the City of Knoxville, in Room 667-674, City County Building; 400 Main Street; Knoxville, Tennessee, until 11:00:00 a.m. (Eastern Time) on November 3, 2020, at which time they will be opened and publicly read aloud and a contract awarded as soon thereafter as practicable.

BID SUBMISSION REQUIREMENTS

Bidders must furnish the following information in writing with their submission:

1. Bid Form showing bidder's name, address, quoted price, business license number, date of expiration of business license. A copy of the bidder's current business license may be submitted in lieu of providing the license expiration date.
2. Non-Collusion Affidavit
3. Iran Divestment Act Certification of Non-inclusion

INVITATION TO BID – INSTRUCTIONS AND CONDITIONS

1. Sealed bids will be received by the Purchasing Agent of the City of Knoxville in Room 667-674, City/County Building; 400 Main Street; Knoxville, Tennessee 37902 until November 3, **2020 at 11:00:00 a.m.**, at which time they will be publicly opened and read aloud and the contract awarded as soon as practicable. **No bid will be received or accepted after the above-specified time for the opening of bids.** Bids that arrive late due to the fault of U. S. Postal Service, United Parcel Service, DHL, FEDEX, any delivery/courier service, or any other carrier of any sort are still considered late and shall not be accepted by the City. Such bids shall remain unopened and will be returned to the submitting entity upon request.
2. The City of Knoxville reserves the right to reject any or all bids, to accept or reject any items thereon, to waive technicalities or informalities, to split orders if in the best interest of the City, to evaluate bids by various criteria, and to accept any bid which, in its opinion, may be for the best interest of the City.
3. Included in the Invitation to Bid is an affidavit in proof that the undersigned has not entered into any collusion with any person in respect to this bid or any other bid. The Bidder will be required to execute and submit this affidavit with the sealed bid.
4. Each bid must be submitted in a sealed envelope, addressed to the Purchasing Agent, City of Knoxville, Room 667-674, City/County Building, 400 Main Street, Knoxville, Tennessee, 37902. Each sealed envelope containing a bid must be plainly marked on the outside as: "Rescue Tools."
5. **NO CONTACT POLICY:** After the posting of this solicitation to the Purchasing Division's website, any contact initiated by any proposer with any City of Knoxville representative concerning this proposal is strictly prohibited, unless such contact is made with the Purchasing Division representative listed

herein or with said representative's authorization. Any unauthorized contact may cause the disqualification of the proposer from this procurement transaction.

6. **INCLEMENT WEATHER:** During periods of inclement weather, the Purchasing Division will enact the following procedures with regard to solicitations and weather delays:
 - If City offices are closed due to inclement weather on the date that bids/proposals/qualifications/letters of interest are due into the Purchasing Office, all solicitations due that same day will be moved to the next operational business day.
 - The City of Knoxville shall not be liable for any commercial carrier's decision regarding deliveries during inclement weather.
7. All bids must be made on the Bid Form supplied with the contract documents, and no interlineations, excisions, or special conditions shall be made or included in the Bid Evaluation Sheet by the Bidder. **Any bid on which there is an alteration of or departure from the Bid Form may be considered irregular and may be rejected.** All bids must be signed in full by the Bidder or Bidders in their business name or style when submitted and must show his or their complete address.
8. No bidder may withdraw his bid for a period of 60 days after the actual date of the opening thereof.
9. Prior to submitting their bids, bidders are to be registered with the Purchasing Division through the City of Knoxville's online Vendor Registration system. Instructions for registering on-line are available at www.knoxvilletn.gov/purchasing.
10. **Bid submissions from un-registered bidders may be rejected.**
11. Payment for completed services delivered to and accepted by the City shall be at the contract price.
12. State makes or brand on each item. If quoting on other than the make, model, or brand specified, the manufacturer's name and catalog number must be given, along with warranty information and detailed specifications. Because the City is committed to environmentally sound practices, brands are expected to be procured with environmental responsibility in mind.
13. Time of delivery is part of the consideration and must be stated in definite terms; time of delivery is guaranteed by the bidder and must be adhered to upon award. If time varies on different items, the bidder shall so state.
14. All quotations must be signed with the firm name and by a responsible officer or employee. Obligations assumed by such signature must be fulfilled.
15. Samples of items, when required, must be furnished free of expense to the City and if not called for within fifteen (15) days from the date of bid opening, same will be disposed of in a manner deemed to be in the best interest of the City. Items shipped as a result of an Agreement to purchase (Purchase Order) must match the sample provided with Vendor's bid submission. The City of Knoxville will be the sole judge as to whether or not the shipped items match said supplied sample, and the City's decision will be final. Should shipped items not, in the City's judgment, be as represented by the sample provided, Vendor shall pay the City in full for all costs associated with returning shipped items to the Vendor. No restocking fee or other fees will be assessed against the City of Knoxville.
16. Bidders shall verify bids before submission, as bids cannot be withdrawn or corrected after being opened. Bids will be evaluated by unit price.

17. If federal excise tax applies, show amount of same and deduct. Bear in mind that the City is exempt from Tennessee sales tax.
18. Prices are considered FOB Knoxville unless otherwise stated in the Invitation to Bid.
19. By execution and delivery of a bid submission, the bidder agrees that any additional terms and conditions, whether submitted to the City purposely or inadvertently, shall have no force or effect.
20. Bidders must comply with the President's Executive Orders No. 11246 and 11375 which prohibit discrimination in employment regarding race, color, religion, sex or national origin. Bidders must not maintain or provide for their employees any facilities that are segregated on the basis of race, color, religion or national origin. Bidders must also comply with Title VI of the Civil Rights Act of 1964, Copeland Anti-Kick Back Act, the Contract Work Hours and Safety Standard Act, Section 402 of the Vietnam Veterans Adjustment Act of 1974 and Section 503 of the Rehabilitation Act of 1973, all of which are herein incorporated by reference.
21. All bidders must comply with Title VI of the Civil Rights Act of 1964, as codified in 42 U.S.C. 2000d. The successful bidder must follow Title VI guidelines in all areas including hiring practices, open facilities, insurance, and wages. The City of Knoxville reserves the right to review all compliance records by a contract compliance officer designated by the City.
22. No interpretation of the meaning of the plans, specifications, or other pre-bid documents will be made to any bidder orally. Each request for such interpretation should be in writing addressed to **James Tucker, Senior Buyer** for the City of Knoxville, 400 Main Street, Room 667, Knoxville, TN 37902, or emailed to him at jtucker@knoxvilletn.gov. To be given consideration, such requests/questions must be received at least five (5) business days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be posted to the City's website at www.knoxvilletn.gov/purchasing. Submitting organizations are strongly encouraged to view this website often to see if addenda are posted. Failure of any bidder to receive such addendum or interpretation shall not relieve such Bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract Documents.
23. Attention of all bidders is directed to the set off provision contained in Article II, Section 24-33, entitled, "Debts owed by persons receiving payments other than salary", and Section 2-1049 entitled "Receipt of benefits from City contracts by council members, employees, and officers of the City" of the Code of the City of Knoxville.
24. Before a Purchase Order is issued, the submitting entity, if selected, **must** provide the City Purchasing Division with a copy of its valid business license **or** with an affidavit explaining why it is exempt from the business licensure requirements of the city or county in which it is headquartered. If a contract is signed, the contractor's business license shall be kept current throughout the duration of the contract, and the contractor shall inform the City of changes in its business name or location. Any Agreement to purchase resulting from this Invitation to Bid shall be governed by and construed in accordance with the substantive laws of the State of Tennessee and its conflict of laws provisions. Venue for any action arising between the City and the Vendor from the Agreement shall lie in Knox County, Tennessee.
25. In compliance with Tennessee state law, bids must be accompanied by a certification attesting that, to the best of the bidder's knowledge, the bidder does not engage in investment activities in Iran. The Iran Divestment Act of 2014 Certification of Non-inclusion form may be found in this solicitation document.

26. By acceptance and delivery of the Purchase Order resulting from the award of this Invitation to Bid, the Vendor agrees to the following:

Contractor shall defend, indemnify and hold harmless the City, its officers, employees and agents from any and all liabilities which may accrue against the City, its officers, employees and agents or any third party for any and all lawsuits, claims, demands, losses or damages alleged to have arisen from an act or omission of Contractor in performance of this Agreement or from Contractor's failure to perform this Agreement using ordinary care and skill, except where such injury, damage, or loss was caused by the sole negligence of the City, its agents or employees.

Contractor shall save, indemnify and hold the City harmless from the cost of the defense of any claim, demand, suit or cause of action made or brought against the City alleging liability referenced above, including, but not limited to, costs, fees, attorney fees, and other expenses of any kind whatsoever arising in connection with the defense of the City; and Contractor shall assume and take over the defense of the City in any such claim, demand, suit, or cause of action upon written notice and demand for same by the City. Contractor will have the right to defend the City with counsel of its choice that is satisfactory to the City, and the City will provide reasonable cooperation in the defense as Contractor may request. Contractor will not consent to the entry of any judgment or enter into any settlement with respect to an indemnified claim without the prior written consent of the City, such consent not to be unreasonably withheld or delayed. The City shall have the right to participate in the defense against the indemnified claims with counsel of its choice at its own expense.

Contractor shall save, indemnify and hold City harmless and pay judgments that shall be rendered in any such actions, suits, claims or demands against City alleging liability referenced above.

The indemnification and hold harmless provisions of this Agreement shall survive termination of the Agreement.

CITY OF KNOXVILLE

BID FORM

TO: Purchasing Agent
City of Knoxville
Suite 667-674
City/County Building
400 Main Street
Knoxville, TN 37902

Having carefully examined the specifications for the "Rescue Tools" to open on November 3, 2020 at 11:00 a.m. and the other Contract Documents and addenda, we hereby propose to furnish the items requested as specified.

Total price (includes shipping): _____

GUARANTEE the items to be delivered no later than _____ days after receiving the order.
(Bidder must initial) _____

Firm Name: _____

Official Address: _____

(By)

(Name Typed)

(Title)

Date _____

Terms _____

Email address _____

Telephone _____

NON-COLLUSION AFFIDAVIT OF PRIME BIDDER

State of _____

County of _____

_____, being first duly sworn, deposes and says that:

- (1) He is owner, partner, officer, representative, or agent of _____ , the Bidder that has submitted the attached Bid;
- (2) He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;
- (3) Such Bid is genuine and is not a collusive or sham Bid;
- (4) Neither the said Bid nor any of its officers, partners, owners, agents, representatives, employees, or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from proposing in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm, or person to fix the price or prices in the attached Bid or of any other Bidder, firm, or person to fix any overhead, profit, or cost element of the bid price or the bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the City of Knoxville or any person interested in the proposed Contract; and
- (5) The price or prices quoted in that attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affidavit.

Signed: _____

Title: _____

Subscribed and sworn to before me this ____ day of _____, 2_____.

My commission expires: _____

IRAN DIVESTMENT ACT

Certification of Noninclusion

NOTICE: Pursuant to the Iran Divestment Act, Tenn. Code Ann. § 12-12-106 requires the State of Tennessee Chief Procurement Officer to publish, using credible information freely available to the public, a list of persons it determines engage in investment activities in Iran, as described in § 12-12-105. Inclusion on this list makes a person ineligible to contract with the state of Tennessee; if a person ceases its engagement in investment activities in Iran, it may be removed from the list. A list of entities ineligible to contract in the State of Tennessee Department of General Services or any political subdivision of the State may be found here:

[https://www.tn.gov/content/dam/tn/generalservices/documents/cpo/cpo-library/public-information-library/List of persons pursuant to Tenn. Code Ann. 12-12-106, Iran Divestment Act updated 7.7.17.pdf](https://www.tn.gov/content/dam/tn/generalservices/documents/cpo/cpo-library/public-information-library/List%20of%20persons%20pursuant%20to%20Tenn.%20Code%20Ann.%2012-12-106,%20Iran%20Divestment%20Act%20updated%207.7.17.pdf)

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not on the list created pursuant to T.C.A. § 12-12-106.

Vendor Name (Printed)	Address
By (Authorized Signature)	Date Executed
Printed Name and Title of Person Signing	

NOTARY PUBLIC:

Subscribed and sworn to before me this _____ day of _____, 2_____.

My commission expires: _____

DIVERSITY BUSINESS ENTERPRISE (DBE) PROGRAM

The City of Knoxville strongly encourages prime contractors to employ diverse businesses in the fulfillment of contracts/projects for the City of Knoxville.

The City of Knoxville's Fiscal Year 2017 goal is to conduct 3.33% of its business with minority-owned businesses, 9.21% of its business with women-owned businesses, and 45.5% with small businesses.

While the City cannot engage (pursuant to state law), in preferential bidding practices, the city does **strongly encourage** prime contractors to seek out and hire diverse businesses in order to help the city meet its goals as stated above. As such, the City encourages prime contractors to seek out and consider competitive sub-bids and quotations from diverse businesses.

For DBE tracking purposes, the City requests that prime contractors who are bidding, proposing, or submitting statements of qualifications record whether or not they plan to employ DBE's as sub-contractors or consultants. With that in mind, please fill out, sign and submit (with your bid/proposal) the following sub-contractor/consultant statement.

Subcontractor/Consultant Statement
(TO BE SUBMITTED IN THE BID/PROPOSAL ENVELOPE)

We _____ do certify that on the

 (Bidder/Proposer Company Name)

 (Project Name)
 (\$ _____)
 (Amount of Bid)

Please select one:

Option A: Intent to subcontract using Diverse Businesses

A Diversity business will be employed as subcontractor(s), vendor(s), supplier(s), or professional service(s). The estimated **dollar value** of the amount that we plan to pay is:

\$ _____
 Estimated Amount of Subcontracted Service

Diversity Business Enterprise Utilization			
Description of Work/Project	Amount	Diverse Classification (MOB, WOB, SB, SDOV)	Name of Diverse Business

Option B: Intent to perform work "without" using Diverse Businesses

We hereby certify that it is our intent to perform 100 % of the work required for the contract, work will be completed without subcontracting, or we plan to subcontract with non-Diverse companies.

DATE: _____ COMPANY NAME: _____

SUBMITTED BY: _____ TITLE: _____
 (Authorized Representative)

ADDRESS: _____

CITY/STATE/ZIP CODE: _____

TELEPHONE NO: _____

CITY OF KNOXVILLE DIVERSITY BUSINESS DEFINITIONS

Diversity Business Enterprise (DBE's) are minority-owned (MOB), women-owned (WOB), service-disabled veteran-owned (SDVO), and small businesses (SB), who are impeded from normal entry into the economic mainstream because of past practices of discrimination based on race or ethnic background. These persons must own at least 51% of the entity and operate or control the business on a daily basis.

Minority: A person who is a citizen or lawful admitted permanent resident of the United States and who is a member of one (1) of the following groups:

- a. African American, persons having origins in any of the Black racial groups of Africa;
- b. Hispanic American, persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race;
- c. Native American, persons who have origin in any of the original peoples of North America ;
- d. Asian American, person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands.

Minority-owned business (MOB) is a continuing, independent, for profit business that performs a commercially useful function, and is at least fifty-one percent (51%) owned and controlled by one (1) or more minority individuals.

Woman-owned business (WOB) is a continuing, independent, for profit business that performs a commercially useful function, and is at least fifty-one percent (51%) owned and controlled by one (1) or more women.

Service Disabled Veteran-owned business (SDOV) is a continuing, independent, for profit business that performs a commercially useful function, owned by any person who served honorably on active duty in the armed forces of the United States with at least a twenty percent (20%) disability that is service connected. Meaning such disability was incurred or aggravated in the line of duty in the active military, naval or air service, and is at least fifty-one percent (51%) owned and controlled by one (1) or more service disabled veteran.

Small Business (SB) is a continuing, independent, for profit business which performs a commercially useful function and has total gross receipts of not more than ten million dollars (\$10,000,000) average over a three-year period or employs no more than ninety-nine (99) persons on a full-time basis.

The Knoxville Fire Department is currently seeking bids on a rescue strut system to be used during structural collapse and other rescue scenarios. The rescue strut system shall include components designed to work together as a modular system to meet the needs of various rescue situations. The following individual components shall combine into a comprehensive, all-in-one, stabilization system for Urban Search and Rescue scenarios. The system consists of struts, strut extensions, interchangeable base plates, Raker accessories, and pneumatic control equipment.

1. Kit Stabilization Components

Stabilization equipment combines in various configurations to prevent load shifting during the rescue operation. The primary component of the stabilization equipment is the rescue struts; all other stabilization components modify the use of the struts. Stabilization components consist of rescue struts, rescue strut extensions, interchangeable base plates, and pneumatic control equipment. Pneumatic components use a compressed gas, either working air, carbon dioxide or nitrogen to actuate struts at a distance.

The Stabilization system must be connectable and reconfigurable through a series of struts, bases, and extensions that combine into an integrated force distribution system. The system must be expandable, adding more shores as needed. It must be able to cope with a variety of angles and placement surfaces

2. Longshore Rescue Strut

The Longshore Strut must consist of a minimum 3.5" diameter extruded aluminum alloy tube with an aluminum alloy movable shaft. Seamless tube as opposed to pipe with welded seam is required to ensure a monolithic structure with predictable, and superior strength best suited for the pressure applications found in shoring operations. The strut shall have a locking collar and square thread allowing infinite adjustment and full surface contact of the shaft through the collar and the collar full surface contact on the tube to transfer load directly to the ground. The strut design must allow for the collar to default to a locked position against the strut tube, ensuring that positive load support is always maintained regardless of user intervention. The locking collar shall be knurled with a non-aggressive textured surface providing enough grip to use with gloved hands, but not so much that it is uncomfortable to use with ungloved hands.

The struts must be made of a movable floating shaft and tube that can extend in size a significant proportion of its collapsed length. Individual struts should meet or exceed the following fully collapsed and fully extended lengths of at least 25" to 36", 36" to 50", 48" to 73", 71" to 116", 114" to 198", or longer. The struts shall be easily cleanable and repairable in the field. The screw shaft shall be removable without tooling by simply pulling it completely free from the tube housing to enable simple and straightforward cleaning after deployment.

No attachment system shall hinder the user from removing the screw shaft to perform equipment maintenance in the field. All struts must be hard coat anodized for protection and longevity. They shall extend manually, or be extended by Air, Carbon Dioxide, or Nitrogen. All pneumatic fittings shall be made of non-sparking corrosion resistant brass. The struts must have third party testing and verification meeting or exceeding the following loads at the corresponding lengths and safety factors.

All struts shall be labeled with a 2:1 and 4:1 safety load chart reflecting those third party tested buckling values. All struts must have a brightly colored label denoting strut size for easy strut

selection. Large colored labels to either side of the load chart will visually indicate the extension length of each strut, giving personnel a simple method of gauging how much extension remains when in use.

3. Acme Threaded Strut

The Acme Threaded Strut must consist of a minimum 3" diameter extruded aluminum alloy tube with a solid aluminum alloy movable shaft. Seamless tube as opposed to pipe with welded seam is required to ensure a monolithic structure with predictable, and superior strength best suited for the pressure applications found in shoring operations.

The strut shall have a locking collar and square thread allowing infinite adjustment and full surface contact of the shaft through the collar and the collar full surface contact on the tube to transfer load directly to the ground. The strut design must allow for the collar to default to a locked position against the strut tube, ensuring that positive load support is always maintained regardless of user intervention. The locking collar shall be knurled with a non-aggressive textured surface providing enough grip to use with gloved hands, but not so much that it is uncomfortable to use with ungloved hands.

The struts must be made of a movable floating shaft and tube that can extend in size a significant proportion of its collapsed length. Individual struts should meet or exceed the following fully collapsed and fully extended lengths of at least 12" to 15", 19" to 25", 25" to 36", 37" to 58", 56" to 88" or longer. The struts shall be easily cleanable and repairable in the field. The screw shaft shall be removable without tooling by simply pulling it completely free from the tube housing to enable simple and straightforward cleaning after deployment. No attachment system shall hinder the user from removing the screw shaft to perform equipment maintenance in the field.

All struts must be hard coat anodized for protection and longevity. They shall extend manually, or be extended by Air, Carbon Dioxide, or Nitrogen (except low insertion 12" to 15"). All pneumatic fittings shall be made of non-sparking corrosion resistant brass. The struts must have third party testing and verification meeting or exceeding the following loads at the corresponding lengths and safety factors. All struts shall be labeled with a 2:1 and 4:1 safety load chart reflecting those third party tested buckling values. All struts must have a colored label denoting strut size for easy strut selection. Large brightly colored labels to either side of the load chart will visually indicate the extension length of each strut, giving personnel a simple method of gauging how much extension remains when in use.

4. Acme Strut Extensions

The Acme Strut Extensions come in any of four fixed lengths: 6in, 12 in, 24 in, and 36 in. All Acme Strut Extensions must be compatible with the 3" diameter strut system. All Strut Extensions must be constructed of a minimum 3" diameter extruded alloy tube hard coat anodized for protection and longevity. Seamless tube as opposed to pipe with welded seam is required to ensure a monolithic structure with predictable and superior strength best suited for the pressure applications found in shoring operations. Each Strut Extension shall have a spring-loaded locking pin to permit simple and secure connection to the Strut. Each Strut Extension must include a simple, picture based usage and warning label. All Strut Extension labels will be clearly color-coded denoting strut extension size for easy extension selection.

5. Rigid Base Plates

Rigid Base Plates shall be designed to support the strut systems during operation and be hard coat anodized for protection and longevity. All bases shall be milled from solid blocks of aluminum to ensure a monolithic structure with predictable, superior strength. Bases shall not be cast or welded upon in any way, so as to avoid unpredictable failure points. They shall measure 6" x 6" and have a textured, aggressive ground contact surface. The Rigid Base Plates shall have 4 holes large enough to accept a 3" 16 penny nail for securing the bases to strongbacks and shoring lumber. The bases shall have a spring-loaded locking pin to permit simple and secure connection to the Struts.

6. Swivel Base Plates

Swivel Base Plates shall be designed to support the strut systems during operation and be hard coat anodized for protection and longevity. All bases shall be milled from solid blocks of aluminum to ensure a monolithic structure with predictable, superior strength. Bases shall not be cast or welded upon in any way, so as to avoid unpredictable failure points. They shall measure 6" x 6" and have a textured, aggressive ground contact surface. The cup connecting to the strut base shall be designed rotate and swivel up to 20° off vertical in any direction. The Swivel Base Plates shall have 4 holes large enough to accept a 3" 16 penny nail for securing the bases to strongbacks and shoring lumber. The bases shall have a spring-loaded locking pin to permit simple and secure connection to the Struts.

7. Shoring Hammer

The shoring hammer shall be multifunction with the following features: a standard hammer and claw, a tool-belt hole, a gas shutoff feature, multiple nail pulling features, a 9/16" open ended wrench and a spanner wrench designed to match with the locking collars of the struts. The shoring hammer shall be of a single unitary steel construction. The handle, hammer, claw, and all features shall be a single piece.

8. Load Indicator

The Load Indicator shall be designed to be integrated into the strut systems during operation and be hard coat anodized for protection and longevity. It shall be milled from a solid block of aluminum to ensure a monolithic structure with predictable, superior strength. It shall not be cast or welded upon in any way, so as to avoid unpredictable failure points. The load indicator shall include a large 2.5 inch gauge marked to 30,000 lbs with a 20,000 lb redline. The gauge shall have two indicator arms, one in black to show current load, and a second in red that shows the last heaviest load on the indicator since it has been reset. This system allows users to observe the indicator for instability or load shift. The gauge shall be jacketed in a rubber sheathe for protection.

9. Dual Deadman Strut Controller

The seller shall supply a dual deadman controller meeting these requirements. The controller shall be milled from a solid block of aluminum and hard coat anodized for durability and longevity. The controller shall be equipped with two multi-colored operating gauges, both fully encompassed within the controller housing for protection. The controller must have a self-resetting relief valve to prevent accidental over-pressurization of the strut which activates at 250 psi (17,2 bar). All fittings shall be of corrosion resistant, non-sparking brass construction. Both

the outlets shall be spring-loaded, female, quick-connect couplings. A secondary integral threaded safety lock system shall vent system air unless locked, ensuring the system can only be fully pressurized if all couplings have been properly secured. An internal check valve shall be provided to prevent air from escaping if inlet hose is cut or damaged. The inflation and deflation system will be controlled by a pair of anodized aluminum buttons, clearly colored green for inflation and red for deflation. All inflation and deflation will be controlled with deadman buttons, no twist-valve design shall be used in the controller to prevent accidental over inflation. The controller will also incorporate a simple push button lighting system, to illuminate the pressure gauges in the dark. To preserve batteries, the lighting system should have an auto shut off function after a few minutes. The light system and battery should be a single unit, easily and economically replaceable in the field.

10. Strut Pressure Regulator

The Pressure Regulator shall be equipped with one (1) operating gauge. The gauge shall monitor the outlet pressure with corresponding markings up to 400 psi (28 bar). The gauge shall be a minimum of 1.5" in diameter for clear viewing and must be housed by a tight-fitting protective shroud. Accuracy of the grade B gauge should be minimum 3%, 2%, 3% of span at 73.4°F.

The Pressure Regulator shall have a self-resetting relief valve to prevent accidental over-pressurization of the strut which activates at 300 psi (20,7 bar) with a flow rate of 9.55 SCFM (270.5 SLM).

The Pressure Regulator shall be equipped with a 0-300 psi (20,7 bar) manual adjusting knob and have the ability to vent pressure when adjusting down the pressure.

The Pressure Regulator output shall be a spring-loaded, female, quick-connect coupling. A secondary integral threaded safety lock system shall vent system air unless locked, ensuring the system can only be fully pressurized if all couplings have been properly secured.

The Pressure Regulator shall be equipped with a 90° lever shut-off valve to disengage the air flow to the outlet. The lever positions shall be clearly marked with color-coded labels to indicate on and off points.

11. Air Supply Hoses

The air supply hoses shall be supplied in the colors (1) black, (1) yellow, (1) red, 3/8" inch diameter and shall be no less than 32 feet long. The hoses shall be equipped with compatible fittings to provide connection to the Struts and control equipment and have a 300 PSI (20,7 bar) working pressure. The hose shall have a spring-loaded, female, quick-connect coupling. A secondary integral threaded safety lock system shall vent system air unless locked, ensuring the system can only be fully pressurized if all couplings have been properly secured. The entire assembly shall be made of non-sparking materials, and all fittings shall be made of corrosion resistant, non-sparking brass construction. All hose nipples and couplings must be field replaceable and repairable. If a hose is ruptured, a dismantling and reassembly of the coupling or nipple on the hose must be possible in the field with no additional parts and limited hand tooling.

12. Raker Kit

The following components combine into a mechanical Raker system, employing the principles of wooden Raker systems for wall support, but using expandable, modular, anodized aluminum componentry. The assembled mechanical Raker system must have third party testing and verification meeting or exceeding the following loads at the corresponding lengths and safety factors.

a. Longshore Rescue Strut

The Longshore Strut must consist of a minimum 3.5" (8,89 cm) diameter extruded aluminum alloy tube with an aluminum alloy movable shaft. Seamless tube as opposed to pipe with welded seam is required to ensure a monolithic structure with predictable, and superior strength best suited for the pressure applications found in shoring operations. The strut shall have a locking collar and square thread allowing infinite adjustment and full surface contact of the shaft through the collar and the collar full surface contact on the tube to transfer load directly to the ground. The strut design must allow for the collar to default to a locked position against the strut tube, ensuring that positive load support is always maintained regardless of user intervention. The locking collar shall be knurled with a non-aggressive textured surface providing enough grip to use with gloved hands, but not so much that it is uncomfortable to use with ungloved hands.

The struts must be made of a movable floating shaft and tube that can extend in size a significant proportion of its collapsed length. Individual struts should meet or exceed the following fully collapsed and fully extended lengths of at least 25" to 36", 36" to 50", 48" to 73", 71" to 116", 114" to 198", or longer. The struts shall be easily cleanable and repairable in the field. The screw shaft shall be removable without tooling by simply pulling it completely free from the tube housing to enable simple and straightforward cleaning after deployment.

No attachment system shall hinder the user from removing the screw shaft to perform equipment maintenance in the field. All struts must be hard coat anodized for protection and longevity. They shall extend manually, or be extended by Air, Carbon Dioxide, or Nitrogen. All pneumatic fittings shall be made of non-sparking corrosion resistant brass. The struts must have third party testing and verification meeting or exceeding the following loads at the corresponding lengths and safety factors.

All struts shall be labeled with a 2:1 and 4:1 safety load chart reflecting those third party tested buckling values. All struts must have a brightly colored label denoting strut size for easy strut selection. Large colored labels to either side of the load chart will visually indicate the extension length of each strut, giving personnel a simple method of gauging how much extension remains when in use.

b. Longshore Strut Extensions

The Strut Extensions will come in four fixed lengths: 1ft, 2 ft, 4 ft and 6 ft. All Strut Extensions must be compatible with the 3.5 inch Longshore strut system. All Strut Extensions must be constructed of a minimum 3.5" diameter extruded alloy tube hard coat anodized for protection and longevity. Seamless tube as opposed to pipe with welded seam is required to ensure a monolithic structure with predictable, and superior strength best suited for the pressure applications found in shoring operations. Each Strut Extension shall have a spring-loaded locking pin to permit simple and secure connection to the Strut. Each Strut Extension must include a simple, picture based usage and warning label. All Strut Extension labels will be clearly color-coded denoting strut extension size for easy extension selection.

c. Hinged Base Plates with Anchor Ring

Ground Base Plates shall be designed to support the strut systems during operation and be hard coat anodized for protection and longevity. All bases shall be milled from solid blocks of aluminum to ensure a monolithic structure with predictable, superior strength. Bases shall not be cast or welded upon in any way, so as to avoid unpredictable failure points. They shall measure 12" x 12" and have a textured, aggressive ground contact surface. They shall include an anchor ring to attach anchoring straps, ratchet belts or chains. The clevis shall have a spring-loaded locking pin to permit simple and secure connection to the Rescue Struts and hinged connector which will allow the clevis to move through a 90 degree range for proper placement and support. The base shall have four holes along each side for securing the base to the ground with rebar or steel pickets, one hole on either side to accept a 3" 16 penny nail for securing the bases to strongbacks and shoring lumber. Additionally, one hole on each side to secure the hinged base plate to concrete using concrete anchors.

d. Raker Rail

Raker Rails shall be produced of an extruded aluminum alloy, hard coat anodized for protection and longevity. The Raker Rail shall interconnect with Raker Rail Splices, and other componentry of the strut system to quickly assemble a functional Raker Support System. As such, the rails shall come in one of 4 sizes, 2 ft, 4 ft, 6 ft or 8 ft. The rails shall have indents on one or both sides to interface with a Raker rail splice component, allowing solid mechanical connection of two or more Raker rails into a single continuous piece for reaching high insertion points. The Raker Rail shall have Raker Rail Latch connection holes every 12 inches and holes every 12 inches for wall anchors. A sticker with instructional information shall be attached to the Raker Rail. It shall outline Raker assembly best practices and display recommended safe working load tables with height to point of insertion, Raker length, and loads for a fully assembled Raker with x-bracing at both 45 degrees and 60 degrees.

e. Raker Rail Splice

Raker Rails Splices shall be produced of an extruded aluminum alloy, hard coat anodized for protection and longevity. The Raker Rail Splice shall interconnect with Raker Rails at the indents allowing a solid mechanical connection of two or more Raker rails into a single continuous piece for reaching high insertion points. The Raker Rail Splice shall allow the Raker Rails to slide into position between two aluminum plates, and be locked in place with a heavy duty spring loaded locking pin.

f. Raker Rail Latch

Raker Rail latches shall be milled from solid blocks of aluminum to ensure a monolithic structure with predictable, superior strength. Latches shall not be cast or welded upon in any way, so as to avoid unpredictable failure points. Aluminum components shall be hard coat anodized for protection and longevity. The Raker Rail latch shall have a set of pins installed on either side of the steel shaft, sized to interconnect with and lock into the Raker Rail. The clevis shall be compatible with the strut system and be installed with a spring loaded locking pin to securely connect with the inserted strut.

g. Nailing Pad with Clamp

The nailing pad with clamp shall be compatible with the strut and Raker system. It will connect securely to the Raker strut to allow cross-bracing with a heavy duty steel clamp, tightened by a solid stainless steel puck with integrated washer, allowing quick and simple hand tightening of the system without the use of tools. The nailing pad shall be made out of a durable recycled composite plastic.

h. Raker Angle Base

Raker Angle Bases shall be produced of an extruded aluminum alloy, hard coat anodized for protection and longevity. The Raker Angle Base shall be placed behind the hinged base plate in front of the sole anchor, transferring horizontal load from the base plate and distributing it against the sole anchor. As such, the Raker Angle Base must be compatible with the hinged base plate. The Raker Angle Base shall have a L shape, the width of the hinged base plate, with a positioning bar securely attached to slot in the back of the hinged base plate and prevent slippage. The Raker Angle Base shall also have two notches, matched to the location of picket holes in the base plate, so that when the base plate is placed into position, the angle base does not interfere with driving pickets through the base plate. The Raker Angle Base shall have 4 holes on sole anchor face large enough to accept a 3" 16 penny nail for securing the bases to shoring lumber.

i. Raker Junction

Raker Junctions shall be milled from solid blocks of aluminum to ensure a monolithic structure with predictable, superior strength. Raker Junctions shall not be cast or welded upon in any way, so as to avoid unpredictable failure points. Aluminum components shall be hard coat anodized for protection and longevity. The Raker Junction shall come with two clevises attached together with a rotating solid steel shaft. The Raker Junction acts as the connection point between the Raker strut and the sole strut into the base plate, as such it must be compatible with the strut system. The sole clevis shall be clearly labeled, to ensure correct sole and Raker strut location. Both clevises shall have spring loaded locking pins to securely attach the sole and Raker struts.

j. Rail Latch Holder

The Rail Latch Holder shall be a compact storage container for the Raker Rail Latches. It will have properly spaced indentations to accept the locking pins of the Raker Rail Latch and a handle for easy transport and storage.

k. Shoring Hammer

The shoring hammer shall be multifunction with the following features: a standard hammer and claw, a tool-belt hole, a gas shutoff feature, multiple nail pulling features, a 9/16" open ended wrench and a spanner wrench designed to match with the locking collars of the struts. The shoring hammer shall be of a single unitary steel construction. The handle, hammer, claw, and all features shall be a single piece.

These purchase specifications cover the minimum requirements of a Rescue Strut System.

1. All components of the Rescue Strut System Kit must be cross compatible.
2. Respective individual components must meet minimum qualifications outlined in general system construction features.
3. All struts shall meet or exceed load capacities for their respective diameters and lengths as outlined in general system construction features.
4. All struts shall be of a locking collar on floating screw shaft and tube design, with clear color-coded labels and easy to read load tables.
5. Raker systems shall meet or exceed load capacities as outlined in general system construction features.
6. The Raker system shall be modular and reconfigurable, allowing multiple insertion points, Raker lengths, sole lengths, and split soles when needed.
7. Pneumatic control equipment shall use corrosion resistant non-sparking brass fittings, with push button deadman style inflation and deflation. The system shall have multiple self-resetting safety relief valves and shall employ an auto-venting function that prevents full pressurization of the system if all coupling safety locks are not engaged.
8. All hose nipples and couplings must be field replaceable and repairable. If a hose is ruptured, dismantling and reassembly of the coupling or nipple on the hose must be possible in the field with no additional parts and limited hand tooling.
9. No load bearing stabilization components (struts, extensions, base plates, Raker components etc) shall be cast or welded upon in any way to ensure monolithic, predictable structural rigidity and load capacity within the system.
10. Kit component quantities shall adhere the outlines given in the list below or equivalent.
11. The successful bidder must provide a minimum of four hours of factory authorized in service training at our location.

Quantity, Dimensions and Capacities

Quantity	Description
2	Acme Thread Strut 12-15 inches
2	Acme Thread Strut 19-25 inches
2	Acme Thread Strut 25-36 inches
2	Acme Thread Strut 37-58 inches
2	Acme Thread Strut 56-88 inches
2	Acme Strut Extension 12 inches
2	Acme Strut Extension 24 inches
2	Acme Strut Extension 36 inches
6	Long Shore Strut 72-116 inches
2	Long Shore Extension 24 inches
2	Long Shore Extension 48 inches
2	Long Shore Extension 67 inches
4	Raker Rail 6 foot
4	Raker Rail Latch
2	Raker Junction
2	Raker Rail Splice
2	Raker Angle Base
1	Latch Holder
2	Hinged Base Plate w/Anchor Ring 12 inches
15	Square Swivel Base 6 inches
15	Square Rigid Base 6 inches
2	Load Indicator 20,000 lbs

6	Nailing Pad w/ Clamp
8	Shoring Hammer
1	Dual Deadman Strut Controller 250 psi
1	Strut Regulator 5,500-0 psi
1	Air Hose 3/8 inch dia. x 32 ft Yellow
1	Air Hose 3/8 inch dia. x 32 ft Red
1	Air Hose 3/8 inch dia. x 32 ft Black