DEPARTMENT OF FORESTRY AND FIRE PROTECTION
OFFICE OF THE STATE FIRE MARSHAL
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Date: October 14, 2022

To: Statewide Training and Education Advisory Committee
State Board of Fire Service

From: Chris Fowler, Deputy State Fire Marshal III, Supervisor, CAL FIRE
Joe Bunn, Fire Service Training Specialist III, (Retired), CAL FIRE

SUBJECT/AGENDA ACTION ITEM:
Trench Rescue Technician (2021) Update

Recommended Actions:
Motion to Approve

Background Information:
This is the second reading of the curriculum, with no request for edits following the July 2022 STEAC meeting.

Update and correlate State Fire Training's Trench Rescue Technician curriculum with National Fire Protection Association (NFPA) 1006: Standard for Technical Rescue Personnel Professional Qualifications, 2021 edition.

Analysis/Summary of Issue:

CTS Guide
SFT developed a CTS guide based on NFPA 1006 (2021) in anticipation of future conversion to a Technical Rescue certification.

Course Plan
- Overall
  - Course Plan updated to the new template.
- Course Details

    - Authority for the content changed from Office of the State Fire Marshal to NFPA 1006 (2021).
    - Prerequisites changed from only Rescue Systems 1 to Structural Collapse Specialist 1 **or** Rescue Systems 1 **and** Confined Space Rescue: Awareness.
    - Added standards for course completion.
    - Instructor Level changed from Senior/Primary Instructor to SFT Registered Trench Rescue Technician Instructor
    - Instructor/Student Ratio changed from:
        - 1 primary instructor per 12 students; 1-Squad Site: 12:1 (12 total students) with 1 Senior Instructor; 2-Squad Site: 12:1 (24 total students) with 1 Senior Instructor and 1 Primary Instructor, to
        - 1:24 (lecture) and 1:8 (application) and
        - Any instructor counted toward student ratios must be an SFT Registered Trench Rescue Technician Instructor.
    - Removed Restrictions content.
- Required Resources
    - Expanded requirements for Instructor and Student Resources.
    - Responsibility for a Trench Rescue Technician Training Site with the NFPA 1006 required facilities, structures, work areas, materials, props, tools, and equipment of adequate size, type, and quantity to fully and safely support the cognitive and psychomotor training required to deliver the Trench Rescue Technician curriculum shifted to AHJ delivering course.
    - Training props minimum adjusted to one “L” trench and one “T” trench excavated according to the trench diagram (provided in course plan).
- Time Table
    - Adjusted to accommodate adjusted course topics, but over-all course time (24 hours) did not change.
- Course Content (Units/Topics)
    - Content from NFPA 1006 (2021) incorporated into existing 2014 course content.

Instructor Task Book (Instructor Requirements)

- Overall
    - Primary and Senior Instructor roles and responsibilities combined into single SFT Registered Trench Rescue Technician Instructor.
- Completion Timeline
    - Changed from two years to ongoing if candidate consistently works to complete a document all requirements.
- Education
    - Removed Rescue Systems 1: Basic Rescue Skills.
    - Will accept Trench Rescue Technician (2014) or (2021).
    - Added Confined Space Rescue: Operations/Technician (2021).
- Experience
    - Changed from
        - Held the rank of Fire Fighter and/or performing suppression/rescue duties within a recognized fire agency in California for a minimum of two (2) years, to

- Have a minimum of three (3) years' full-time or six (6) years' part-time/volunteer experience as a fire fighter performing rescue duties within a recognized fire agency in California.

Training Record

- Created a Training Record for students to use as verification of skills practiced and completed during the course.

TRENCH RESCUE TECHNICIAN (2021)
Implementation Plan

Issued: XXXX 2022

OVERVIEW

This document is intended to provide information for all State Fire Training (SFT) stakeholders on the new Trench Rescue Technician curriculum requirements. Stakeholders are encouraged to study this information carefully and seek clarification from SFT if questions arise.

The Trench Rescue Technician curriculum is presented as a Fire Service Training and Education Program (FSTEP) series. SFT developed a new certification training standard (CTS) guide, course plan, instructor task book, and student training record based on the current National Fire Protection Association (NFPA) Standard, NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021).

IMPLEMENTATION

SFT recognizes that many candidates are vested in the current Trench Rescue Technician course and therefore, the existing Trench Rescue Technician (2014) curriculum will be available for those candidates during the transition period. Candidates entering the SFT system should enroll in the new Trench Rescue Technician (2021) course and comply with the new Trench Rescue Technician requirements.

New Curriculum	Hours
Trench Rescue Technician (2021)	**24 Hours**

New Trench Rescue Technician (2021) Curriculum……December 1, 2022

Retirement of Trench Rescue Technician (2014) Curriculum……June 30, 2023
Effective June 30, 2023, SFT will retire FSTEP Trench Rescue Technician (2014). On July 1, 2023, SFT will remove the curriculum from the SFT course catalog, and it will no longer be available.

INSTRUCTOR REQUIREMENTS

Instructor Registration……..Available December 1, 2022
Instructors for the Trench Rescue Technician (2021) course must meet the SFT requirements for Registered Instructor. Instructors must have appropriate education and practical experience relating to the specific course content.

Instructor Task Book and Application
Instructor candidates shall complete a comprehensive instructor task book that covers all the job performance requirements (JPRs) contained in the professional qualification standards and

CTS guide. The Fire Chief or authorized designee on file will verify the candidate's occupational experience by signing the task book upon completion.

Existing Trench Rescue Technician (2014) Registered Instructors:
SFT will authorize Primary and Senior Trench Rescue Technician (2014) Registered Instructors to teach the Trench Rescue Technician (2021) course. Current instructors do not need to take any action. SFT will update Acadis.

In Process Trench Rescue Technician (2014) Instructor Candidates ……..Deadline June 30, 2023

- Candidates actively working on a Trench Rescue Technician (2014) Primary Instructor Task Book must submit their completed task book postmarked on or before June 30, 2023. SFT will return any 2014 task book postmarked after June 30, 2023 and require the candidate to complete the 2021 version.
- Candidates actively working on a Trench Rescue Technician (2014) Senior Instructor Task Book should stop the process. SFT no longer registers Senior Instructors for Trench Rescue Technician courses.

New Trench Rescue Technician (2021) Instructor Candidates shall:

- Be an SFT Registered Instructor
- Complete an SFT Trench Rescue Technician course
- Complete an SFT Confined Space Rescue Technician: Operations/Technician
- Complete the Trench Rescue Technician (2021) Instructor Task Book
- Have a minimum of three (3) years' full-time or six (6) years' part-time/volunteer experience as a fire fighter performing rescue duties within a recognized fire agency in California
- Provide a letter signed by their Fire Chief or authorized designee that verifies qualification to deliver Trench Rescue Technician (2021) training

POTENTIAL AGENCY IMPACTS

Fire agencies desiring to use Trench Rescue Technician curriculum as a requirement for their recruitment/promotion activities need to review the curriculum requirements to be sure that all agency training needs are met. After review, fire agencies should update their job specifications and recruitment documentation to reflect these new courses and certification requirements.

Accredited Regional Training Programs (ARTP), Accredited Local Academies (ALA), community colleges, and all other local delivery venues need to review the curriculum and seek approval from their curriculum committee / program sponsor, as appropriate. ARTPs should review the new Trench Rescue Technician (2021) curriculum and discuss potential impacts with their advisory committees.

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Trench Rescue

(NFPA 1006: Trench Rescue Awareness/Operations/Technician)

Certification Training Standards Guide (2021)

California Department of Forestry and Fire Protection
Office of the State Fire Marshal
State Fire Training

Trench Rescue

Certification Training Standards Guide (2021)

Publication Date: Month Year

This CTS guide utilizes the following NFPA standards to provide the qualifications for State Fire Training's Trench Rescue (2021) certification:

- NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)

State Fire Training coordinated the development of this CTS guide. Before its publication, the Statewide Training and Education Advisory Committee (STEAC) and the State Board of Fire Services (SBFS) recommended this CTS guide for adoption by the Office of the State Fire Marshal (OSFM).

Cover photo courtesy of Chris Johns, Firefighter, Orange County Fire Authority.

Published by State Fire Training.

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State Fire Training appreciates the hard work and accomplishments of those who built the solid foundation on which this program continues to grow.

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- (Vacant), Chief of State Fire Training
- John Binaski, Chair, Statewide Training and Education Advisory Committee (STEAC); Chief, Clovis Fire Department

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- Robert Stine, Training Manager, San Bernardino County Fire Department

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How to Read a CTS Guide

Overview

A certification training standard (CTS) guide lists the requisite knowledge, skills, and job performance requirements an individual must complete to become certified in a specific job function.

It also documents and justifies the OSFM-approved revisions to the certification's NFPA standard and identifies where each certification training standard is taught (course plan), tested (skill sheets), and validated (task book).

Individuals aspiring to meet State Fire Training's certification training standards must do so in accordance with the codes, standards, regulations, policies, and standard operating procedures applicable within their own agency or jurisdiction.

Format

Each certification training standard is comprised of eight sections.

Section Heading
Training standards are grouped by section headings that describe a general category. For example, the Fire Fighter 1 CTS guide includes the following section headings: NFPA Requirements, Fire Department Communications, Fireground Operations, and Preparedness and Maintenance.

Training Standard Title
The training standard title provides a general description of the performance requirement contained within the individual standard.

Authority
The CTS guide references each individual standard with one or more paragraphs of the corresponding National Fire Protection Association (NFPA) Professional Qualifications. This ensures that each fire service function within California's certification system meets or exceeds NFPA standards.

When California requirements exceed the NFPA standard, the CTS guide cites the Office of the State Fire Marshal as the authority and prints the corresponding information in *italics*.

Job Performance Requirements
This segment includes a written statement that describes a specific job-related task, the items an individual needs to complete the task, and measurable or observable outcomes.

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Requisite Knowledge
This segment lists the knowledge that an individual must acquire to accomplish the job performance requirement.

Requisite Skills
This segment lists the skills that an individual must acquire to accomplish the job performance requirement.

Content Modification
This table documents and justifies any revisions to the NFPA standard that the development or validation cadres make during the development of a CTS guide.

Cross Reference
This table documents where each training standard is taught (course plan), tested (skill sheets), and validated (task book).

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Trench Rescue Technician

Section 1: Awareness

1-1: Interviewing Witnesses

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
   - Paragraph 12.1.1

Job Performance Requirement

Interview any witness or "competent person," given a specific trench collapse incident, so that potential for rapid, nonentry rescue or victim self-rescue is recognized.

Requisite Knowledge

1. *Describe* the need to secure "competent person" or witness
2. *Identify* signs and evidence of victim involvement, number, and location

Requisite Skills

1. Determine severe environmental conditions with implications for secondary collapse and victim survivability
2. *Use* interview techniques

Content Modification

Block	Modification	Justification
RS2	Added "use".	NFPA did not provide a verb.

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 4-3	Trench Rescue Technician (2021) • Skill 2	Trench Rescue Technician (2021) Instructor Task Book • JPR 10

Draft

1-2: Facilitating a Non-Entry Rescue or Victim Self-Rescue

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
    - Paragraph 12.1.2

Job Performance Requirement

Facilitate a non-entry rescue or victim self-rescue, given a trench collapse incident, tools used for self-rescue, and the rescue area and general area are made safe, so that the non-entry and self-rescue tactics can be initiated.

Requisite Knowledge

1. Understand mechanics and extent of collapse effects
2. *Describe the* need to brief rescuers
3. *Describe* criteria for rapid, non-entry rescues

Requisite Skills

1. Implement non-entry rescue and self-rescue tactics
2. Select and deploy tools used to facilitate non-entry and self-rescue
3. Reduce imposed loads at or near the lip of the trench

Content Modification

Block	Modification	Justification

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 6-1	N/A	Trench Rescue Technician (2021) Instructor Task Book • JPR 20

Draft

1-3: Identifying Hazardous Areas

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
    - Paragraph 12.1.3

Job Performance Requirement

Identify hazardous areas specific to a trench environment, given a trench collapse incident, so that the scene is secured, hazards are managed, and an approach path to the trench is identified.

Requisite Knowledge

1. *Identify* areas at risk for increased likelihood of collapse
2. *Identify* general collapse patterns of trenches
3. *Describe* methods of bridging and weight distribution
4. *Describe* securing of scenes
5. *Describe* tactics for approaching the trench while minimizing the likelihood of collapse

Requisite Skills

1. Identify areas of high risk for additional collapse
2. Select and deploy tools or materials for bridging or weight distribution
3. Communicate high-risk areas to other responders

Content Modification

Block	Modification	Justification

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 3-3 (RK1, RK2, RS1) • Topic 4-6 (RK3, RK4, RK5, RS2, RS3)	Trench Rescue Technician (2021) • Skill 5	Trench Rescue Technician (2021) Instructor Task Book • JPR 13

Draft

1-4: Sizing Up a Trench Rescue Incident

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
    - Paragraph 12.1.4

Job Performance Requirement

Size up a trench rescue incident, given background information and applicable reference materials, so that the scope of the rescue is determined, the number of victims is identified, the last reported location of all the victims is established, witnesses and reporting parties are identified and interviewed, resource needs are assessed, primary search parameters are identified, and information required to develop an initial incident action plan is obtained.

Requisite Knowledge

1. *Identify* types of reference materials and their uses
2. *Identify* availability and capability of the resources
3. *Identify* elements of an incident action plan and related information
4. *Describe the* relationship of the size-up to the incident management system
5. *Identify* information gathering techniques and how that information is used in the size-up process
6. *Describe* basic search criteria for trench rescue incidents

Requisite Skills

1. Read technical rescue reference materials
2. Gather information
3. Use interview techniques
4. Relay information
5. Use information-gathering sources

Content Modification

Block	Modification	Justification

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 4-4	Trench Rescue Technician (2021) • Skill 3	Trench Rescue Technician (2021) Instructor Task Book • JPR 11

Draft

1-5: Recognizing Incident Hazards and Initiating Isolation Procedures

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
    - Paragraph 12.1.5

Job Performance Requirement

Recognize incident hazards and initiate isolation procedures, given scene control barriers, personal protective equipment (PPE), requisite equipment, and available specialized resources, so that all hazards are identified; resource application fits the operational requirements; hazard isolation is considered; risks to rescuers, bystanders, and victims are minimized; and rescue time constraints are taken into account.

Requisite Knowledge

1. *Describe* resource capabilities and limitations
2. *Describe* types and nature of incident hazards
3. *Identify* equipment types and their use
4. *Describe* isolation terminology, methods, equipment, and implementation
5. *Identify* operational requirement concerns
6. *Describe* common types of rescuer and victim risks
7. *Describe* risk/benefit analysis methods and practices
8. *Describe* hazard recognition, isolation methods, and terminology
9. *Describe* methods for controlling access to the scene
10. *Identify* types of technical references

Requisite Skills

1. Identify resource capabilities and limitations
2. Identify incident hazards
3. Assess potential hazards to rescuers and bystanders
4. Place scene control barriers
5. Operate control and mitigation equipment

Content Modification

Block	Modification	Justification

Draft

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 4-1 (RK3, RS5) • Topic 4-4 (RK1, RK7, RK10, RS1) • Topic 4-5 (RK5) • Topic 4-6 (RK2, RK4, RK6, RK8, RK9, RS2, RS3, RS4)	Trench Rescue Technician (2021) • Skill 6 • Skill 7	Trench Rescue Technician (2021) Instructor Task Book • JPR 13

Draft

1-6: Recognizing the Need for Technical Rescue Resources

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
    - Paragraph 12.1.6

Job Performance Requirement

Recognize the need for technical rescue resources at an operations- or technician-level incident, given AHJ guidelines, so that the need for additional resources is identified, the response system is initiated, the scene is secured and rendered safe until additional resources arrive, and awareness-level personnel are incorporated into the operational plan.

Requisite Knowledge

1. *Describe* operational protocols
2. *Identify* specific planning forms
3. *Describe* types of incidents common to the AHJ
4. *Identify* hazards
5. Identify types of resources
6. Identify needed resources
7. *Describe* incident support operations and resources
8. *Describe* safety measures

Requisite Skills

1. Apply operational protocols
2. Select specific planning forms based on the types of incidents
3. Identify and evaluate various types of hazards within the AHJ
4. Request support and resources
5. Determine the required safety measures

Content Modification

Block	Modification	Justification
RK 5	Added new knowledge item.	Not addressed by NFPA. (2021)
RK 6	Added new knowledge item.	Not addressed by NFPA. (2021)

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 4-2 (RK3) • Topic 4-5 (RK1, RK2, RK5, RK6, RK7, RS1, RS2, RS4) • Topic 4-6 (RK4, RS3)	Trench Rescue Technician (2021) • Skill 4	Trench Rescue Technician (2021) Instructor Task Book • JPR 12

Draft

1-7: Supporting an Operations- or Technician-level Incident

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
   - Paragraph 12.1.7

Job Performance Requirement

Support an operations- or technician-level incident, given an incident, an assignment, an incident action plan, and resources from the tool kit, so that the assignment is carried out, progress is reported to command, environmental concerns are managed, personnel rehabilitation is facilitated, and the incident action plan is supported.

Requisite Knowledge

1. *Describe* AHJ operational protocols
2. *Describe* hazard recognition
3. *Describe* incident management
4. *Describe* PPE selection
5. *Describe* resource selection and use
6. *Describe* scene support requirements

Requisite Skills

1. Apply operational protocols
2. Function within an incident management system
3. Follow and implement an incident action plan
4. Report the task progress status to a supervisor or incident command

Content Modification

Block	Modification	Justification

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 4-1 (RK4) • Topic 4-5 (RK1, RK5) • Topic 4-6 (RK2) • Topic 4-8 (RK3, RK6, RS1, RS2, RS3, RS4)	Trench Rescue Technician (2021) • Skill 9	Trench Rescue Technician (2021) Instructor Task Book • JPR 15

Draft

1-8: Standards and Regulations

Authority

1. Office of the State Fire Marshal

Job Performance Requirement

Carry out trench rescue operations, given OSHA and Cal/OSHA standards and AHJ policies and procedures, so that trench rescue operations are completed in accordance with federal, state, and local standards, regulations, policies, and procedures.

Requisite Knowledge

1. *Identify* federal standard for trenching and excavations
2. *Describe* California standard for trenching and excavations
3. *Identify* other regulations that may impact trenching operations
4. *Identify* consequences related to regulatory non-compliance

Requisite Skills

1. None

Content Modification

Block	Modification	Justification
JPR	Added new job performance requirement.	California has specific standards and regulations for trench rescue operations.

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 2-2	N/A	Trench Rescue Technician (2021) Instructor Task Book • JPR 4

Draft

Section 2: Operations

2-1: Identifying Potential Hazards to Victims and Rescuers

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
    - Paragraph 12.2.1

Job Performance Requirement

Identify potential hazards to victims and rescuers in and around a trench excavation, given a trench collapse incident, a trench rescue toolkit so that potential areas of additional collapse in the trench are identified, utility lines are located, spoil piles are monitored, additional superimposed weight is identified, sources of atmospheric contamination are assessed, sources of water are identified, and environmental hazards are considered.

Requisite Knowledge

1. *Describe* methods to distinguish soil types, collapse mechanics, and other contributing factors such as severe environmental conditions and other general hazards
2. *Describe* effects and hazards of collapse and rescue efforts on utilities at the incident site
3. *Identify* jurisdictional and community resource lists and agreements
4. *Describe* atmospheric monitoring
5. *Describe* effects of additional superimposed weight and vibrations on trench walls
6. *Describe* effects of water in and around trench

Requisite Skills

1. Interpret tabulated data information and tables
2. Perform atmospheric monitoring
3. Monitor spoil piles
4. Assess and address the effects of water on trench stability

Content Modification

Block	Modification	Justification

Draft

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 3-1 (RK1) • Topic 4-4 (RS1) • Topic 4-5 (RK3) • Topic 4-6 (RK2, RK4, RK5, RK6, RS2, RS3, RS4) • Topic 5-2 (RS1)	Trench Rescue Technician (2021) • Skill 1 • Skill 5	Trench Rescue Technician (2021) Instructor Task Book • JPR 13

Draft

2-2: Implementing a Hazard Control Plan

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
    - Paragraph 12.2.2

Job Performance Requirement

Implement a hazard control plan given a trench collapse incident, hazard control plan and trench rescue tool kit so that provisions for ventilation, dewatering, energy control, air monitoring; and falls, and prevention of unplanned soil movement are accomplished.

Requisite Knowledge

1. *Describe* protocols on making the general area safe
2. *Describe* criteria for a safe zone within the trench
3. *Describe* atmospheric monitoring and ventilation
4. *Describe* types of collapses and techniques to stabilize
5. *Describe* emergency procedures
6. *Describe* selection of PPE
7. *Describe* consideration of selected stabilization tactics on extrication and victim safety

Requisite Skills

1. Employ hazard control plan to protect personnel inside and outside of trench
2. Establish safe zones
3. Perform atmospheric monitoring and initiate ventilation as needed
4. Initiate dewatering
5. Provide energy control
6. Select and use PPE
7. Apply fall prevention
8. Implement strategies to minimize unplanned soil movement

Content Modification

Block	Modification	Justification

Draft

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 3-3 (RK4) • Topic 4-1 (RK6, RS6) • Topic 4-6 (RK1, RK2, RK3, RK5, RS1, RS2, RS3, RS4, RS5, RS7, RS8) • Topic 5-2 (RK7)	Trench Rescue Technician (2021) • Skill 6	Trench Rescue Technician (2021) Instructor Task Book • JPR 13

Draft

2-3: Developing a Shoring Plan for a Nonintersecting Trench

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
   - Paragraph 12.2.3

Job Performance Requirement

Develop a shoring plan for a nonintersecting trench no more than 8 ft (2.4 m) deep, given a trench collapse incident and trench rescue tool kit, so that the methods of potential collapse are recognized, the mechanisms of entrapment are identified, areas of the trench that are blown out or undercut are addressed, related tabulated data is consulted, the weights and hazards associated with the soils are considered, and the location of the victim and projected path for removal are incorporated.

Requisite Knowledge

1. *Describe* shoring and shielding
2. *Describe how to interpret* tabulated data
3. *Describe* strategies and tactics
4. *Describe* protocols on making the general area safe
5. *Describe* criteria for a safe zone within the trench
6. *Describe* types of collapses and techniques to stabilize
7. *Describe* emergency procedure
8. *Describe* selection of personal protective equipment
9. *Describe* consideration of selected stabilization tactics on extrication and victim safety

Requisite Skills

1. Determine shoring strategies
2. Designate cut station location, and material and equipment needs
3. Establish safe zones
4. Pre-brief team on shoring strategies, victim release, and projected path for removal

Content Modification

Block	Modification	Justification

Draft

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 3-3 (RK6) • Topic 4-1 (RK8) • Topic 5-1 (RK1) • Topic 5-2 (RK2, RK3, RK9, RS1) • Topic 5-3 (RK4, RK5, RK7, RS2, RS3, RS4)	Trench Rescue Technician (2021) • Skill 10	Trench Rescue Technician (2021) Instructor Task Book • JPR 5 • JPR 6 • JPR 7 • JPR 8

Draft

2-4: Implementing a Trench Shoring Plan for a Nonintersecting Trench

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
   - Paragraph 12.2.4

Job Performance Requirement

Implement a trench shoring plan for a nonintersecting trench no more than 8 ft (2.4 m) deep, given a trench collapse incident, trench shoring plan, and a trench rescue tool kit, so that the victim is protected from additional collapse, the trench walls are supported, prior areas of collapse are addressed, shoring team members work from protected areas, and shoring systems are installed so they perform their intended function.

Requisite Knowledge

1. *Describe* shoring and shielding
2. *Describe* criteria for a safe zone within the trench
3. *Describe* types of collapse and techniques to stabilize
4. *Describe* emergency procedures
5. *Describe* selection of personal protective equipment
6. *Describe* consideration of selected stabilization tactics for extrication and victim safety

Requisite Skills

1. Place shoring and shielding systems
2. Install supplemental shoring
3. Use protocols
4. Choose methods to stabilize
5. Establish a cut station
6. Use personal protective equipment
7. Anticipate extrication logistics
8. Create systems in trenches 8 ft (2.4 m) deep

Content Modification

Block	Modification	Justification

Draft

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 3-3 (RK3) • Topic 4-1 (RK5, RS6) • Topic 5-1 (RK1) • Topic 5-2 (RK6, RS4) • Topic 5-3 (RK2, RK4, RS1, RS2, RS3, RS5, RS7, RS8)	Trench Rescue Technician (2021) • Skill 13 • Skill 14 • Skill 15 • Skill 16	Trench Rescue Technician (2021) Instructor Task Book • JPR 18

Draft

2-5: Releasing a Victim from Soil Entrapment in a Nonintersecting Trench

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
   - Paragraph 12.2.5

Job Performance Requirement

Release a victim from soil entrapment in a nonintersecting trench of 8 ft (2.4 m) or less in depth, given a trench collapse incident and a trench rescue tool kit, so that hazards to rescue personnel and victims are minimized; considerations are given to the victim's injuries, crush injuries related to compartment syndrome, and other injuries; techniques are used to enhance patient survivability; and techniques do not compromise the integrity of the existing trench shoring system.

Requisite Knowledge

1. *Describe* identification, utilization, and required care of personal equipment
2. *Describe* general hazards associated with each type of trench collapse
3. *Describe* methods of evaluating shoring systems and trench wall stability
4. *Describe* compartment syndrome protocols
5. *Describe* identification of collapse characteristics
6. *Describe* causes and associated effects of trench collapse
7. *Describe* potential signs of subsequent collapse
8. *Describe* selection and application of rescue tools and resources
9. *Describe* risk/benefit assessment techniques for extrication methods
10. *Describe* time constraints

Requisite Skills

1. Select, use, and care for PPE
2. Operate rescue tools and stabilization systems
3. Identify crush injuries related to compartment syndrome
4. Complete risk/benefit assessments for selected methods of rescue and time constraints

Content Modification

Block	Modification	Justification

Draft

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 3-3 (RK5, RK6, RK7) • Topic 4-1 (RK1, RK8, RS1, RS2) • Topic 4-6 (RK2) • Topic 6-2 (RK3, RK4, RK9, RK10, RS3, RS4)	Trench Rescue Technician (2021) • Skill 23 • Skill 24	Trench Rescue Technician (2021) Instructor Task Book • JPR 21

Draft

2-6: Removing a Victim from a Trench

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
   - Paragraph 12.2.6

Job Performance Requirement

Remove a victim from a trench, given a disentangled victim, a basic first aid kit, and victim packaging resources, so that basic life functions are supported as required; the victim is evaluated for signs of compartment syndrome; methods and packaging devices selected are compatible with intended routes of transfer; universal precautions are employed to protect personnel from blood-borne pathogens; and extraction times meet time constraints for medical management.

Requisite Knowledge

1. *Describe* medical protocols
2. *Describe* available medical resources
3. *Describe* transfer methods and time needed to execute
4. *Describe* universal precautions protocol
5. *Describe* rope rescue systems
6. *Describe* high-point anchor options
7. *Describe* patient ladder raise removal techniques

Requisite Skills

1. Select and use personal protective equipment
2. Provide basic medical care and immobilization techniques
3. Identify the need for advanced life support and compartment syndrome management
4. Use a removal system that matches logistical and medical management time frame concerns

Content Modification

Block	Modification	Justification

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 4-1 (RS1) • Topic 6-2 (RK1, RK2, RK3, RK4, RK5, RK6, RK7, RS2, RS3, RS4)	Trench Rescue Technician (2021) • Skill 25 • Skill 26 • Skill 27	Trench Rescue Technician (2021) Instructor Task Book • JPR 21

Draft

2-7: Disassembling Support Systems

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
   - Paragraph 12.2.7

Job Performance Requirement

Disassemble support systems at a trench emergency incident, given personal protective equipment, trench tool kit, and removal of victim(s), so that soil movement is minimized, all rescue equipment is removed from the trench, sheeting and shoring are removed in the reverse order of their placement, emergency protocols and safe zones in the trench are adhered to, rescue personnel are removed from the trench, the last supporting shores are pulled free with ropes, equipment is cleaned and serviced, reports are completed, and a post-briefing is performed.

Requisite Knowledge

1. *Describe* selection of personal protective equipment
2. *Describe* equipment used and its location
3. *Describe* shoring and shielding tactics and order of placement
4. *Describe* shoring removal protocols
5. *Describe* criteria for a “safe zone” within the trench
6. *Describe* personnel accountability
7. *Describe* emergency procedures
8. *Describe* manufacturer’s recommended care and maintenance procedures
9. *Describe* briefing protocols

Requisite Skills

1. Use personal protective equipment
2. Remove equipment and protective systems
3. Use trench safety protocols
4. Clean and service equipment
5. Perform an incident debriefing

Content Modification

Block	Modification	Justification

Draft

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 4-1 (RK1, RS1) • Topic 6-3 (RK2, RK3, RK4, RK5, RK6, RK7, RK8, RK9, RS2, RS3, RS4, RS5)	Trench Rescue Technician (2021) • Skill 28	Trench Rescue Technician (2021) Instructor Task Book • JPR 22

Draft

2-8: Terminating a Technical Rescue Operation

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
    - Paragraph 12.2.8

Job Performance Requirement

Terminate a technical rescue operation, given an incident scenario, assigned resources, and site safety data, so that rescuer risk and site safety are managed; scene security is maintained and custody transferred to a responsible party; personnel and resources are returned to a state of readiness; record-keeping and documentation occur; and post-event analysis is conducted.

Requisite Knowledge

1. *Describe* incident command functions and resources
2. *Describe* hazard identification and risk management strategies
3. *Describe* logistics and resource management
4. *Describe* personnel accountability systems
5. *Describe* AHJ-specific procedures or protocols related to personnel rehab

Requisite Skills

1. Recognize hazards
2. Analyze risk
3. Use site control equipment and methods
4. Use data collection and management systems
5. Use asset and personnel tracking systems

Content Modification

Block	Modification	Justification

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 6-3	Trench Rescue Technician (2021) • Skill 29 • Skill 30 • Skill 31 • Skill 32	Trench Rescue Technician (2021) Instructor Task Book • JPR 22

Draft

Section 3: Technician

3-1: Developing a Shoring Plan for an Intersecting Trench

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
   - Paragraph 12.3.1

Job Performance Requirement

Develop a shoring plan for an intersecting trench, given a trench collapse incident and trench rescue tool kit, so that the methods of potential collapse are recognized, the mechanisms of entrapment are identified, areas of the trench that are blown out or undercut are addressed, related tabulated data is consulted, the weights and hazards associated with the soils are considered, and the location of the victim and projected path for removal are incorporated.

Requisite Knowledge

1. *Describe* shoring and shielding
2. Describe how to interpret tabulated data
3. *Describe* strategies and tactics
4. *Describe* protocols on making the general area safe
5. *Describe* criteria for a safe zone within the trench
6. *Describe* types of collapses and techniques to stabilize
7. *Describe* emergency procedures
8. *Describe* selection of PPE
9. *Describe* consideration of selected stabilization tactics for extrication and victim safety

Requisite Skills

1. Determine shoring strategies
2. Designate cut station location and material and equipment needs
3. Establish safe zones
4. Pre-brief team on shoring strategies, victim release, and projected path for removal

Content Modification

Block	Modification	Justification

Draft

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 3-3 (RK6) • Topic 4-1 (RK8) • Topic 5-1 (RK1) • Topic 5-2 (RK2, RK3, RK9, RS1) • Topic 5-3 (RK4, RK5, RK7, RS2, RS3, RS4)	Trench Rescue Technician (2021) • Skill 11	Trench Rescue Technician (2021) Instructor Task Book • JPR 5 • JPR 6 • JPR 7 • JPR 17

Draft

3-2: Implementing a Trench Shoring Plan for an Intersecting Trench

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
   - Paragraph 12.3.2

Job Performance Requirement

Implement a trench shoring plan for intersecting trench, given a trench collapse incident, trench shoring plan, and a trench rescue tool kit, so that the victim is protected from additional collapse, the trench walls are supported, prior areas of collapse are addressed, shoring team members work from protected areas, and shoring systems are installed so they perform their intended function.

Requisite Knowledge

1. *Describe* shoring and shielding
2. *Describe* criteria for a safe zone within the trench
3. *Describe* types of collapses and techniques to stabilize
4. *Describe* emergency procedures
5. *Describe* selection of PPE
6. *Describe* consideration of selected stabilization tactics on extrication and victim safety.

Requisite Skills

1. Place shoring and shielding systems
2. Install supplemental shoring
3. Use protocols
4. Choose methods to stabilize
5. Establish a cut station
6. Use personal protective equipment
7. Anticipate extrication logistics
8. Create shoring systems in trenches 8 ft (2.4 m) deep

Content Modification

Block	Modification	Justification

Draft

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 3-3 (RK3) • Topic 4-1 (RK5, RS6) • Topic 5-1 (RK1) • Topic 5-2 (RK6, RS4) • Topic 5-3 (RK2, RK4, RS1, RS2, RS3, RS5, RS7, RS8)	Trench Rescue Technician (2021) • Skill 13 • Skill 14 • Skill 15 • Skill 17	Trench Rescue Technician (2021) Instructor Task Book • JPR 18

Draft

3-3: Developing a Shoring Plan for a Trench More than 8 Feet Deep

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
   - Paragraph 12.3.3

Job Performance Requirement

Develop a shoring plan for a trench more than 8 ft (2.4 m) deep, given a trench collapse incident, and trench rescue tool kit, so that the methods of potential collapse are recognized, the mechanisms of entrapment are identified, areas of the trench that are blown out or undercut are addressed, related tabulated data is consulted, the weights and hazards associated with the soils are considered, the location of the victim and projected path for removal are incorporated.

Requisite Knowledge

1. *Describe* shoring and shielding
2. Describe how to interpret tabulated data
3. *Describe* strategies and tactics
4. *Describe* protocols on making the general area safe
5. *Describe* criteria for a safe zone within the trench
6. *Describe* types of collapses and techniques to stabilize
7. *Describe* emergency procedures
8. *Describe* selection of PPE
9. *Describe* consideration of selected stabilization tactics on extrication and victim safety

Requisite Skill

1. Determine shoring strategies
2. Designate cut station location and material and equipment needs
3. Establish safe zones
4. Pre-brief team on shoring strategies, victim release, and projected path for removal

Content Modification

Block	Modification	Justification

Draft

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 3-3 (RK6) • Topic 4-1 (RK8) • Topic 5-1 (RK1) • Topic 5-2 (RK2, RK3, RK9, RS1) • Topic 5-3 (RK4, RK5, RK7, RS2, RS3, RS4)	Trench Rescue Technician (2021) • Skill 12	Trench Rescue Technician (2021) Instructor Task Book • JPR 5 • JPR 6 • JPR 7 • JPR 17

Draft

3-4: Implementing a Trench Shoring Plan for a Trench More than 8 Feet Deep

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
   - Paragraph 12.3.4

Job Performance Requirement

Implement a trench shoring plan for a trench more than 8 ft (2.4 m) deep, given a trench collapse incident, trench shoring plan, and a trench rescue tool kit, so that the victim is protected from additional collapse, the trench walls are supported, prior areas of collapse are addressed, shoring team members work from protected areas, and shoring systems are installed so they perform their intended function.

Requisite Knowledge

1. *Describe* shoring and shielding
2. *Describe* criteria for a safe zone within the trench
3. *Describe* types of collapses and techniques to stabilize
4. *Describe* emergency procedures
5. *Describe* selection of personal protective equipment
6. *Describe* consideration of selected stabilization tactics on extrication and victim safety

Requisite Skills

1. Place shoring and shielding systems
2. Install supplemental shoring
3. Use protocols
4. Choose methods to stabilize
5. Establish a cut station
6. Use personal protective equipment
7. Anticipate extrication logistics
8. Create systems in trenches more than 8 ft (2.4 m) deep

Content Modification

Block	Modification	Justification

Draft

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 3-3 (RK3) • Topic 4-1 (RK5, RS6) • Topic 5-1 (RK1) • Topic 5-2 (RK6, RS4) • Topic 5-3 (RK2, RK4, RS1, RS2, RS3, RS5, RS7, RS8)	Trench Rescue Technician (2021) • Skill 13 • Skill 14 • Skill 15 • Skill 18	Trench Rescue Technician (2021) Instructor Task Book • JPR 18

Draft

3-5: Supporting an Intersecting Trench as a Member of a Team

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
   - Paragraph 12.3.5

Job Performance Requirement

Support an intersecting trench as a member of a team, given size-up information and an action plan, a trench tool kit, and an assignment, so that strategies to minimize the further movement of soil are implemented effectively; trench walls, lip, and spoil pile are monitored continuously; rescue entry team(s) in the trench remains in a safe zone; any slough-in and wall shears are mitigated; emergency procedures and warning systems are established and understood by participating personnel; incident-specific personal protective equipment is utilized; physical hazards are identified and managed; victim protection is maximized; victim extrication methods are considered; and a rapid intervention team is staged.

Requisite Knowledge

1. *Describe* shoring and shielding
2. Describe how to interpret tabulated data
3. *Describe* strategies and tactics
4. *Describe* types of intersecting trenches and techniques to stabilize
5. *Describe* protocols on making the general area safe
6. *Describe* criteria for safe zones in the trench
7. *Describe* types of collapses and techniques to stabilize
8. *Describe* emergency procedures
9. *Describe* selection of personal protective equipment
10. *Describe* consideration of selected stabilization tactics on extrication and victim safety

Requisite Skills

1. Interpret tabulated data information and tables
2. Place shoring and shielding systems
3. Identify type of intersecting trench
4. Use trench rescue protocols
5. Identify types of collapse and methods to stabilize
6. Identify hazards in a trench
7. Use personal protective equipment
8. Anticipate extrication logistics

Content Modification

Block	Modification	Justification

Draft

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 3-2 (RK4) • Topic 3-3 (RK7, RS5) • Topic 4-1 (RK9, RS7) • Topic 4-6 (RS6) • Topic 5-1 (RK1, RS3) • Topic 5-2 (RK2, RK3, RK10, RS1) • Topic 5-3 (RK5, RK6, RK8, RS2, RS4, RS8)	Trench Rescue Technician (2021) • Skill 20	Trench Rescue Technician (2021) Instructor Task Book • JPR 19

Draft

3-6: Installing Supplemental Sheeting and Shoring Below an Existing Approved Shoring System

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
    - Paragraph 12.3.6

Job Performance Requirement

Install supplemental sheeting and shoring for each 2 ft (0.61 m) of depth dug below an existing approved shoring system, given size-up information, an action plan, and a trench tool kit, so that the movement of soil is minimized effectively, initial trench support strategies are facilitated, rescue entry team safe zones are maintained, excavation of entrapping soil is continued, victim protection is maximized, victim extrication methods are considered, and a rapid intervention team is staged.

Requisite Knowledge

1. *Describe* shoring and shielding
2. Describe how to interpret tabulated data
3. *Describe* strategies and tactics
4. *Describe* methods and techniques to install supplemental sheeting and shoring
5. *Describe* protocols on making the general area safe
6. *Describe* criteria for safe zones in the trench
7. *Describe* types of collapses and techniques to stabilize
8. *Describe* emergency procedures
9. *Describe* selection of personal protective equipment
10. *Describe* consideration of selected stabilization tactics on extrication and victim safety

Requisite Skills

1. Interpret tabulated data information and tables
2. Place shoring and shielding systems
3. Identify supplemental sheeting and shoring
4. Use all trench rescue protocols
5. Identify types of collapse and methods to stabilize
6. Identify exposure to hazards within the trench relative to existing safe zones
7. Select and use personal protective equipment
8. Anticipate extrication logistics

Content Modification

Block	Modification	Justification

Draft

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 3-3 (RK7, RS5) • Topic 4-1 (RK9, RS7) • Topic 5-1 (RK1) • Topic 5-2 (RK2, RK3, RK10, RS1) • Topic 5-3 (RK4, RK5, RK6, RK8, RS2, RS3, RS4, RS6, RS8)	Trench Rescue Technician (2021) • Skill 18	Trench Rescue Technician (2021) Instructor Task Book • JPR 18

Draft

3-7: Utilizing Spot Shoring Techniques to Support Soil

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
    - Paragraph 12.3.7

Job Performance Requirement

Utilize spot shoring techniques to support soil without incorporating uprights or panels as part of the shoring plan, given a trench incident, trench rescue toolbox, tabulated data, and trench shoring plan, so that the soil is prevented from collapse.

Requisite Knowledge

1. *Describe* shoring and shielding
2. Describe how to interpret tabulated data
3. *Describe* strategies and tactics
4. *Describe* methods and techniques to install supplemental sheeting and shoring
5. *Describe* protocols on making the general area safe
6. *Describe* criteria for safe zones in the trench
7. *Describe* types of collapses and techniques to stabilize
8. *Describe* emergency procedures
9. *Describe* selection of personal protective equipment
10. *Describe* consideration of selected stabilization tactics on extrication and victim safety

Requisite Skills

1. Interpret tabulated data information and tables
2. Place shoring and shielding systems
3. Identify supplemental sheeting and shoring
4. Use all trench rescue protocols
5. Identify types of collapse and methods to stabilize
6. Identify exposure to hazards within the trench relative to existing safe zones
7. Select and use personal protective equipment
8. Anticipate extrication logistics

Content Modification

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Cross Reference

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Trench Rescue Technician (2021) • Topic 3-3 (RK7, RS5) • Topic 4-1 (RK9, RS7) • Topic 5-1 (RK1) • Topic 5-2 (RK2, RK3, RK10, RS1) • Topic 5-3 (RK4, RK5, RK6, RK8, RS2, RS3, RS4, RS6, RS8)	Trench Rescue Technician (2021) • Skill 19	Trench Rescue Technician (2021) Instructor Task Book • JPR 18

Draft

3-8: Constructing Load Stabilization Systems

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
    - Paragraph 12.3.8

Job Performance Requirement

Construct load stabilization systems, given an assignment, personal protective equipment, and a trench tool kit, so that the stabilization system will support the load safely, the system is stable, and the assignment is completed.

Requisite Knowledge

1. *Describe* different types of stabilization systems and their construction methods
2. *Describe* limitations of the system
3. *Describe* load calculations
4. *Describe* principles of and applications for stabilization systems
5. *Describe* safety considerations

Requisite Skills

1. Select and construct stabilization systems
2. Evaluate structural integrity of the system
3. Determine stability, and calculate loads

Content Modification

Block	Modification	Justification

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 6-2	Trench Rescue Technician (2021) • Skill 21	Trench Rescue Technician (2021) Instructor Task Book • JPR 21

Draft

3-9: Lifting a Load with a Trench Tool Kit

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
    - Paragraph 12.3.9

Job Performance Requirement

Lift a load, given a trench tool kit, so that the load is lifted the required distance to gain access; settling or dropping of the load is prevented; control and stabilization are maintained before, during, and after the lift; and operational objectives are attained.

Requisite Knowledge

1. *Describe* applications of levers
2. *Describe* classes of levers
3. *Describe* principles of leverage, gravity, and load balance
4. *Describe* resistance force
5. *Describe* mechanics and types of load stabilization
6. *Describe* mechanics of load lifting
7. *Describe* application of pneumatic, hydraulic, mechanical, and manual lifting tools
8. *Describe* how to calculate the weight of the load
9. *Describe* safety protocols

Requisite Skills

1. Evaluate and estimate the weight of the load
2. Operate the tools correctly
3. Operate a lever
4. Apply load stabilization systems

Content Modification

Block	Modification	Justification

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 6-2	Trench Rescue Technician (2021) • Skill 22	Trench Rescue Technician (2021) Instructor Task Book • JPR 21

Draft

3-10: Coordinating Heavy Equipment Use

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
   - Paragraph 12.3.10

Job Performance Requirement

Coordinate the use of heavy equipment, given personal protective equipment, means of communication, equipment, operator, and an assignment, so that operator capabilities and limitations for task are evaluated, common communications are maintained, equipment usage supports the operational objectives, and hazards are avoided.

Requisite Knowledge

1. *Describe* types of heavy equipment
2. *Describe* capabilities, application, and hazards of heavy equipment and rigging
3. Describe how to confirm operator training
4. *Describe* types of communication
5. *Describe* methods to establish communications

Requisite Skills

1. Use hand signals
2. Use radio equipment
3. Recognize hazards
4. Assess operator for skill and calm demeanor
5. Assess heavy equipment for precision of movement and maintenance
6. Monitor rescuer and victim safety
7. Use personal protective equipment

Content Modification

Block	Modification	Justification

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 4-1 (RS7) • Topic 4-7 (RK1, RK2, RK3, RK4, RK5, RS1, RS2, RS3, RS4, RS5, RS6)	Trench Rescue Technician (2021) • Skill 8	Trench Rescue Technician (2021) Instructor Task Book • JPR 14

Draft

3-11: Releasing a Victim from Entrapment

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
   - Paragraph 12.3.11

Job Performance Requirement

Release a victim from entrapment by components of a collapsed trench, given personal protective equipment, a trench rescue tool kit, and specialized equipment, so that hazards to rescue personnel and victims are minimized, considerations are given to compartment syndrome related to crush injuries and other injuries, techniques are used to enhance patient survivability, tasks are accomplished within projected time frames, and techniques do not compromise the integrity of the existing trench shoring system.

Requisite Knowledge

1. *Describe* identification, utilization, and required care of personal equipment
2. *Describe* general hazards associated with each type of trench collapse
3. *Describe* methods of evaluating shoring systems and trench wall stability
4. *Describe* compartment syndrome protocols
5. *Describe* identification of collapse characteristics
6. *Describe* causes and associated effects of trench collapse
7. *Describe* potential signs of subsequent collapse
8. *Describe* selection and application of rescue tools and resources
9. *Describe* risk/benefit assessment techniques for extrication methods
10. *Describe* time constraints

Requisite Skills

1. Select, use, and care for personal protective equipment
2. Operate rescue tools and stabilization systems
3. Identify crush syndrome clinical settings
4. Complete risk/benefit assessments for selected methods of rescue and time constraints

Content Modification

Block	Modification	Justification
RK10	Changed “restraints” to “constraints”.	Inconsistent with other items in chapter.

Draft

Cross Reference

Course Plan	Training Record	Task Book
Trench Rescue Technician (2021) • Topic 3-3 (RK5, RK6, RK7) • Topic 4-1 (RK1, RK8, RS1, RS2) • Topic 4-6 (RK2) • Topic 6-2 (RK3, RK4, RK9, RK10, RS3, RS4)	Trench Rescue Technician (2021) • Skill 23	Trench Rescue Technician (2021) Instructor Task Book • JPR 21

Draft

Trench Rescue Technician (2021)

Course Plan

Course Details

CTS Guide: Trench Rescue (2021)

Description: This course provides the skills and knowledge needed for the trench rescue technician to work safely and efficiently in a trench rescue environment. This hands-on training program includes trench and excavation regulations, soil characteristics, trench configurations and hazards, rescue team preparation, incident response, initial on-scene and pre-entry operations, shoring systems and components, shoring system installation, victim rescue and recovery, and incident termination. This course incorporates awareness, operations, and technician training based on NFPA 1006 (2021).

Designed For: Personnel preparing to pursue technical rescue certification (pending) and all emergency personnel with responsibility for trench rescue operations

Prerequisites: Structural Collapse Specialist 1 **or** Rescue Systems 1

Confined Space Rescue: Awareness

Standard: Attend and participate in all course sections

Successful completion of all skills identified on the Training Record.

Hours (Total): 24 hours

(5.75 lecture / 18.25 application)

Maximum Class Size: 24

Instructor Level: SFT Registered Trench Rescue Technician Instructor

Instructor/Student Ratio: 1:24 (lecture)

1:8 (application)

Restrictions: See Equipment, Facilities, and Personnel requirements

SFT Designation: FSTEP

Draft

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How to Read a Course Plan 39

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Required Resources

Instructor Resources

To teach this course, instructors need:

- *Trench Rescue Technician Manual* (CMC Rescue, Inc., current edition)
- 29 CFR § 1926.650-652
- CCR Title 8 § 1504 and 1539-1543
- NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (physical or digital access to current edition)
- NFPA 1670: Standard on Operations and Training for Technical Search and Rescue Incidents (physical or digital access to current edition)
- AHJ policies and procedures
- Manufacturer videos, manuals, and directions for equipment use
- Personal protective equipment (minimum requirements: helmet and eye, hearing, respiratory, hand, and foot protection determined by AHJ)

Online Instructor Resources

The following instructor resources are available online at https://osfm.fire.ca.gov/divisions/state-fire-training/fstep-curriculum/

- None

Student Resources

To participate in this course, students need:

- Any textbook(s) selected by the instructor (recommended)
- Personal protective equipment (minimum requirements: helmet and eye, hearing, respiratory, hand, and foot protection determined by AHJ)

Facilities, Equipment, and Personnel

Facilities

The following facilities are required to deliver this course:

- Standard learning environment or facility, which may include:
    - Writing board or paper easel chart
    - Markers, erasers
    - Amplification devices
    - Projector and screen
    - Laptop or tablet with presentation or other viewing software
    - Internet access with appropriate broadband capabilities
- A Trench Rescue Training Site with the NFPA 1006 required facilities, structures, work areas, materials, props, tools, and equipment of adequate size, type, and quantity to fully and safely support the cognitive and psychomotor training required to deliver the Trench Rescue curriculum

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Equipment
Student safety is of paramount importance when conducting the type of high-risk training associated with this Trench Rescue course. The equipment listed below is the minimum for the delivery of this course. The student is responsible for providing all personal protective equipment and ensuring that it meets AHJ and site requirements.

The following equipment is required to deliver this course:

Per 12-Person Module	Equipment
14	Plywood 4’ x 8’ x 3/4”*
14	2” x 12” x 10’ (8’ is okay, 10’ preferred)*
10	2” x 4” x 8’*
14	4” x 4” x 8’*
4	4” x 4” x 12’ (walers)*
4	4” x 4” x 14’ (walers)*
1	6” x 6” x 12’ (walers)*
12 pair	18” x 4” x 4” wedges*
Optional	14 ply Artic birch 4’ x 8’ x ¾” (e.g., FinnForm)*
1	Wood pallet for cutting station
30 lbs.	Nails, 16D duplex
1	Hydraulic shores with extensions and appropriate equipment
2	Pneumatic shores with appropriate equipment
1	Trench air cushions with appropriate equipment
As needed	SCBA cylinders
4	Ellis post screw jacks; 4” x 4”
4	NFPA General Use rescue rope, appropriate lengths
6	Utility line, 25’
4	Webbing, 1” x 20’
1	Patient packaging device
1	Circular saw with appropriate equipment to operate
1	Palm nailer with appropriate equipment
1	Chain saw with appropriate equipment
As needed	Power source with appropriate equipment
4	Crow bars
2	Shovels; round point, long handle
2	Shovels; square point, long handle
2	Shovels; round point, short D handle or military type folding
2	Grubbing tools
1	Pike pole, 10’ - 12’

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4	Bucket (canvas or plastic with wire or rope handle)
6	Framing hammers
3	Single jack (short handled 3-4 lb. sledgehammer)
6	Tape measure, 25’
1	Speed square
6	Carpenter pencils
As needed	Sandbags
1	Duct tape
1	Salvage cover
4	Ladders, straight or roof
4	Ladder belts or escape belts with carabiners
1	Ventilation fan with appropriate equipment to operate
1	Atmospheric monitor with appropriate equipment
1	Manikin (mannequin)
1	Excavation equipment with operator
As needed	Trench Rescue Tactical Worksheets
3	Daily Trench Inspection Worksheets
2	Trench Rescue Site Safety Officer Worksheets
1	Incident Action Plan
* Depending on AHJ, lumber lengths may be longer	

Training Props

The following training props are required to deliver this course:

- One “L” trench and one “T” trench excavated according to the trench diagram
  - “L” Trench: Both legs of the trench to be 36” wide; each leg to be 20’ long; one leg 8’ deep; and one leg 10’ deep
  - “T” Trench: Top of the “T” to be 36” wide, 23’ long and 8’ deep; upright portion of the “T” to be 12’ long, 60” wide and 8’ deep
  - Trenches must be in suitable soil for training with no extreme hazards
  - Trenches will be collapsed with manikins for each scenario

The provider or agency assumes all responsibility, liability, and maintenance for the engineering design, strength, stability, and adequacy of all props, including anchor points and tie offs. The provider or agency further assumes all responsibility, liability, and maintenance for all tools, equipment, and supplies used at the site for the delivery of a Trench Rescue class. This includes, but is not limited to, ladders, ropes, rescue hardware, and software.

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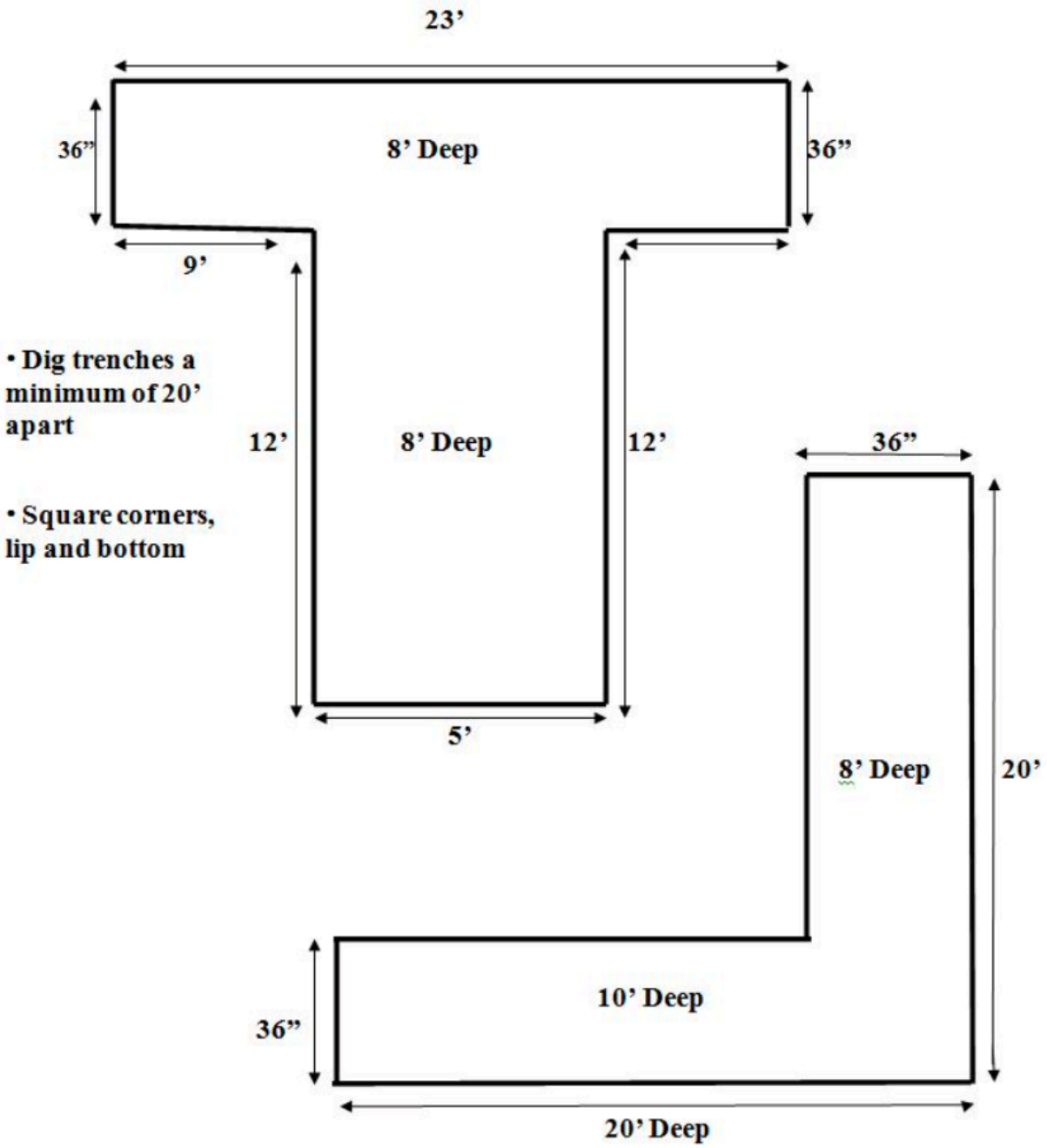
Required Trench Rescue Technician Trench Props



Personnel

The following personnel are required to deliver this course:

- Any instructor counted toward student ratios must be an SFT Registered Trench Rescue Technician Instructor.

Time Table

Segment	Lecture	Application	Unit Total
Unit 1: Introduction			
Topic 1-1: Orientation and Administration	0.5	0.0	
Unit 1 Totals	**0.5**	**0.0**	**0.5**
Unit 2: Background			
Topic 2-1: Introduction to Trench Rescue	0.25	0.0	
Topic 2-2: Standards and Regulations	0.25	0.0	
Unit 2 Totals	**0.5**	**0.0**	**0.5**
Unit 3: Soil and Trench Considerations			
Topic 3-1: Soil Characteristics	0.25	0.0	
Topic 3-2: Trench Types and Terminology	0.25	0.0	
Topic 3-3: Trench Collapse Patterns	0.25	0.0	
Unit 3 Totals	**0.75**	**0.0**	**0.75**
Unit 4: Emergency Response			
Topic 4-1: Rescue Team Preparation	0.25	0.75	
Topic 4-2: Incident Response	0.25	0.0	
Topic 4-3: Interviewing Witnesses	0.25	0.0	
Topic 4-4: Conducting Size Up	0.25	0.0	
Topic 4-5: Recognizing the Need for Technical Rescue Resources	0.25	0.0	
Topic 4-6: Identifying Hazards and Implementing a Hazard Control Plan	0.25	0.0	
Topic 4-7: Coordinating Heavy Equipment	0.25	0.0	
Topic 4-8: Supporting an Operations or Technician-Level Incident	0.25	0.0	
Topic 4-9: Pre-Entry Operations	0.25	0.0	
Unit 4 Totals	**2.25**	**0.75**	**3.0**
Unit 5: Protective Systems			
Topic 5-1: Protective Systems	0.25	0.0	
Topic 5-2: Shoring Systems and Components	0.25	0.0	
Topic 5-3: Installing Trench Shoring Systems	0.25	16.0	
Topic 5-4: Supporting an Intersecting Trench as a Member of a Team	0.25	0.0	
Unit 5 Totals	**1.0**	**16.0**	**17.0**
Unit 6: Rescue, Recovery, and Termination			
Topic 6-1: Non-Entry Rescue or Victim Self-Rescue	0.25	0.0	
Topic 6-2: Victim Rescue and Recovery	0.25	1.0	
Topic 6-3: Incident Termination	0.25	0.5	
Unit 6 Totals	**0.75**	**1.5**	**2.25**

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Formative Assessments			
Determined by AHJ or educational institution	**0.0**	**0.0**	**0.0**
Summative Assessment			
Determined by AHJ or educational institution	**0.0**	**0.0**	**0.0**
Course Totals	**5.75**	**18.25**	**24.0**

Time Table Key

1. The Time Table documents the amount of time required to deliver the content included in the course plan.

2. Time is documented using the quarter system: 15 min. = .25 / 30 min. = .50 / 45 min. = .75 / 60 min. = 1.0.

3. The Course Totals do not reflect time for lunch (1 hour) or breaks (10 minutes per each 50 minutes of instruction or assessment). It is the instructor's responsibility to add this time based on the course delivery schedule.

4. Application (activities, skills exercises, and formative testing) time will vary depending on the number of students enrolled. The Application time documented is based on the maximum class size identified in the Course Details section.

   The following is a breakdown of what a program might look like if there were fewer students. These estimates may need to be adjusted based on student abilities.
   - 40 – 50 Students = 260 hours
   - 30 – 40 Students = 180 hours
   - 20 – 30 Students = 120 hours
   - 1 – 20 Students = 60 hours

5. Summative Assessments are determined and scheduled by the authority having jurisdiction. These are not the written or psychomotor State Fire Training certification exams. These are in-class assessments to evaluate student progress and calculate course grades.

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Unit 1: Introduction

Topic 1-1: Orientation and Administration

Terminal Learning Objective

At the end of this topic, a student will be able to identify facility and classroom requirements and identify course objectives, events, requirements, assignments, activities, skills exercises, resources, evaluation methods, and participation requirements in the course syllabus.

Enabling Learning Objectives

1. Identify facility requirements
    - Restroom locations
    - Food locations
    - Smoking locations
    - Emergency procedures
2. Identify classroom requirements
    - Start and end times
    - Breaks
    - Electronic device policies
    - Special needs and accommodations
    - Other requirements as applicable
3. Review course syllabus
    - Course objectives
    - Calendar of events
    - Course requirements
    - Student evaluation process
    - Assignments
    - Activities
    - Required student resources
    - Class participation requirements

Discussion Questions

1. Determined by instructor

Application

1. Have students complete all required registration forms.

Draft

Unit 2: Background

Topic 2-1: Introduction to Trench Rescue

Terminal Learning Objective

At the end of this topic a student, given case studies and current events, will be able to apply historical knowledge to trench rescue operations to reduce victim and rescuer injuries and fatalities.

Enabling Learning Objectives

1. Understand fatality and injury statistics from case histories and recent trench rescue incidents

Discussion Questions

1. Why is it important to have historical knowledge of trench rescue incidents?
2. How can an understanding of past trench rescue failures and successes impact future operations?

Application

1. Determined by instructor

Instructor Resources

1. Potential courses for case studies and statistics include NIOSH, Cal/OSHA, U.S. Department of Labor, U.S. Bureau of Labor Statistics, and Firehouse.

CTS Guide Reference: None

Draft

Topic 2-2: Standards and Regulations

Terminal Learning Objective

At the end of this topic a student, given OSHA and Cal/OSHA standards and AHJ policies and procedures, will be able to carry out trench rescue operations in accordance with federal, state, and local standards, regulations, policies, and procedures.

Enabling Learning Objectives

1. Identify federal standard for trenching and excavations
   - 29 CFR § 1926.650-652
2. Describe California standard for trenching and excavations
   - CCR Title 8 § 1504
   - CCR Title 8 § 1539-1543
3. Identify other regulations that may impact trenching operations
   - CCR Title 8 § 1669 § 1675 (fall protection)
   - CCR Title 8 § 5144 (respiratory protection)
   - CCR Title 8 § 3314 (lockout/tagout)
   - CCR Title 8 § 341 (permit requirements)
   - CCR Title 8 § 5156, § 5157, §5158 (confined space)
   - CCR Title 8 § 3203 (injury and illness prevention program)
   - CCR Title 8 § 5194 (hazard communication)
   - AHJ policies and procedures
4. Identify consequences related to regulatory non-compliance
   - Personal liability
   - Potential for criminal prosecution
   - Fines
   - Injury
   - Death

Discussion Questions

1. Does your AHJ have trench rescue policies and procedures? What are they?
2. What safety regulations and standards apply to trench rescue incidents?
3. Where can you find specific state trench rescue standards?

Application

1. Determined by instructor

Instructor Notes

1. All regulations that apply to active trench rescue incidents also apply to trench rescue training exercises.

CTS Guide Reference: CTS 1-8

Draft

Unit 3: Soil and Trench Considerations

Topic 3-1: Soil Characteristics

Terminal Learning Objective

At the end of this topic a student, given soil and mechanical testing tools, will be able to describe soil characteristics that will impact trench stability and rescue operation decisions.

Enabling Learning Objectives

1. Describe soil types, characteristics, and concerns
   - Stable rock
   - Type A
   - Type B
   - Type C
     - C-60
     - C-80
2. Describe how to conduct soil testing to determine soil type
   - Visual testing
   - Manual testing
     - Plasticity test
     - Dry strength
     - Thumb penetration
     - Drying test
   - Mechanical testing
     - Penetrometer
     - Shear vane
3. Describe forces associated with soil
   - Vertical force
   - Horizontal force
4. Describe soil strength
   - Soil friction
   - Cohesion
   - Moisture content
   - Unconfined compression strength
5. Conduct soil tests

Discussion Questions

1. What are different methods for determining soil type?
2. What types of soil are present in your AHJ?
3. What can alter soil strength?
4. How does soil type impact operational decisions?
5. Why do we operate as if most rescue operations are Type C soil?

Application

1. Students will practice this skill on the drill ground and must perform it once for evaluation.

Draft

Instructor Notes

1. ELO 1: See CCR Title 8 § 1541.1 Appendix A.

CTS Guide Reference: CTS 2-1

Draft

Topic 3-2: Trench Types and Terminology

Terminal Learning Objective

At the end of this topic a student, given trench types and terminology, will be able to recognize types of trenches and excavations during a trench rescue incident.

Enabling Learning Objectives

1. Define
   - Trench
   - Excavation
2. Describe trench types
   - Straight
   - L
   - T
   - X
   - Box
   - Bell piers
   - Shaft
3. Describe trench terminology
   - Wall (belly)
   - Lip
   - Floor
   - Toe
   - Head
   - Spoil pile
   - Inside corner
   - Outside corner

Discussion Questions

1. What is the difference between a trench and an excavation?

Application

1. Determined by instructor

Instructor Notes

1. None

CTS Guide Reference: CTS 3-5

Draft

Topic 3-3: Trench Collapse Patterns

Terminal Learning Objective

At the end of this topic a student, given a trench rescue incident, will be able to describe trench collapse patterns and failure factors that will impact trench stability and rescue operation decisions.

Enabling Learning Objectives

1. Identify trench collapse points
   - Lip
   - Belly
   - Toe
2. Describe collapse patterns
   - Spoil pile slide
   - Shear
   - Slough
   - Wedge
   - Rotational
3. Describe factors that lead to trench failure
   - Water
   - Environmental conditions
   - Soil type
   - Disturbed soil
   - Gravity
   - Surcharged load
   - Vibration
4. Describe signs of impending collapse
   - Visible cracks
   - Visible bulging
   - Water
   - Undercut or blown out walls
   - Noises

Discussion Questions

1. What are some different types of trench collapse patterns?
2. What factors can lead to trench failure?
3. How do surcharged loads impact trench stability?
4. How does vibration impact trench stability?
5. How does the collapse pattern or cause of failure impact rescue operations?

Application

1. Determined by instructor

Instructor Notes

1. None

CTS Guide Reference: CTS 1-3 / 2-2 / 2-3 / 2-4 / 2-5 / 3-1 / 3-2 / 3-3 / 3-4 / 3-5 / 3-6 / 3-7 / 3-11

Draft

Unit 4: Emergency Response

Topic 4-1: Rescue Team Preparation

Terminal Learning Objective

At the end of this topic a student, given AHJ policies and procedures, best practices, personal protective equipment, and tools, will be able to prepare a team for trench rescue operations so that ongoing training is implemented; key positions are filled by qualified members; scene safety, discipline, and accountability are practiced; and personal protective equipment, tools, and equipment are selected, used, and cared for in accordance with AHJ policies and procedures and best practices.

Enabling Learning Objectives

1. Describe the importance of trench rescue training
    - Initial training
    - Recurrent training
    - Scenario-based training
    - Agency/regional training
    - NFPA 1006
    - NFPA 1670
2. Describe how to assemble an effective rescue team
    - Fill key positions with most qualified members
3. Describe the importance of scene safety, discipline, and accountability
4. Describe how to select and use personal protective equipment
    - Helmet
    - Eye protection
    - Hearing protection
    - Respiratory protection
    - Hand protection
    - Foot protection
    - Determined by AHJ
5. Describe how to select and use tools and equipment
6. Select and use personal protective equipment
7. Select and use tools and equipment

Discussion Questions

1. What personal protective equipment does your AHJ require for trench rescue?
2. What is your AHJ's trench rescue training policy?
3. Who is responsible for scene safety and accountability?

Application

1. Create an opportunity for students to select and use tools and equipment before operating them on the drill ground.

Instructor Notes

1. ELO 5: Students should know when to select and how to use the tools listed in the course Equipment list.

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2. Most instructors have extra (surgical type) masks on hand.

CTS Guide Reference: CTS 1-7 / 2-2 / 2-5 / 3-1 / 3-2 / 3-3

Draft

Topic 4-2: Incident Response

Terminal Learning Objective

At the end of this topic a student, given a trench rescue incident, will be able to outline trench rescue considerations when responding to a given trench rescue incident.

Enabling Learning Objectives

1. Describe factors to consider when responding to a trench rescue incident
    - Incident location
    - Time of day
    - Weather conditions
    - Incident access
    - Appropriate resources
2. Identify types of trench incidents common to the AHJ

Discussion Questions

1. What factors should you consider en route to a trench rescue incident?
2. How do weather conditions impact trench rescue operations?
3. What resources are available in your AHJ for technical rescue?

Application

1. Determined by instructor

Instructor Notes

1. None

CTS Guide Reference: None

Draft

Topic 4-3: Interviewing Witnesses

Terminal Learning Objective

At the end of this topic a student, given a trench rescue incident, will be able to interview a witness or "competent person" so that potential for rapid, non-entry rescue or victim self-rescue is recognized.

Enabling Learning Objectives

1. Describe the need to secure "competent person" or witness
   - Get immediate critical information to initiate operations
2. Identify questions to ask in an initial interview
   - What type of work was being performed?
   - What happened?
   - How many victims are there?
   - Where are victims located?
   - How long have victims been down there/buried?
   - Are there any known hazards?
   - What was the initial trench depth?
   - How long has the trench been there?
   - Is there a "competent person" on site?
3. Identify effective interview techniques
   - Don't assign blame
   - Use a calm voice
   - Use neutral body language
   - Maintain communication and accountability with witnesses
   - Document information
4. Understand how to identify the "competent person"
   - Individual responsible for job site
   - Should be able to give overview of work being done and incident underway
5. Identify visual evidence of victim involvement, number, and location
   - Personal objects (coffee cups, tools, lunch box, etc.)
   - Fresh collapse
   - Open trench
   - Visible body parts
6. Use interview techniques

Discussion Questions

1. What questions should you ask in an initial interview?
2. How will you use the information from the initial interview?
3. How can you gather information beyond an initial interview or when there are no witnesses?

Application

1. Students will practice this skill on the drill ground and must perform it once for evaluation.

Draft

Instructor Notes

1. Many initial incident activities happen simultaneously. The remaining topics in this Unit can be addressed in any order to fit the audience or course delivery needs.

CTS Guide Reference: CTS 1-1

Draft

Topic 4-4: Conducting Size Up

Terminal Learning Objective

At the end of this topic a student, given background information and applicable reference materials, will be able to size up a trench rescue incident so that the scope of the rescue is determined, the number of victims is identified, the last reported location of all the victims is established, witnesses and reporting parties are identified and interviewed, resource needs are assessed, primary search parameters are identified, and information required to develop an initial incident action plan is obtained.

Enabling Learning Objectives

1. Describe the importance of size up at a trench rescue incident
   - Serves as the foundation for operational decision making and risk assessment
   - Identifies availability, capability, and limitations of resources
   - Enables risk/benefit analysis methods and practices
2. Identify components to evaluate during size up
   - Witnesses or responsible party
   - Rescue vs. recovery
   - Trench configuration
   - Type of work occurring in trench
   - Type of emergency
     - Medical emergency in a trench
     - Trapped victim (collapse or failure)
   - Protection systems already in place
   - Known hazards
3. Describe basic search criteria for trench rescue incidents
4. Identify elements of a trench rescue incident action plan and related information
5. Describe the relationship of size-up to the incident management system
6. Identify information gathering techniques and how that information is used in the size-up process
7. Identify types of reference materials and their uses
   - Tabulated data sheets
   - *Emergency Response Guidebook* (DOT)
8. Gather information
   - Use interview techniques
   - Use information-gathering sources
   - Read technical rescue reference materials
9. Relay information

Discussion Questions

1. What information do you need to gather during size up at a trench rescue incident?
2. What response plans and resources are available in your AHJ?

Application

1. Students will practice this skill on the drill ground and must perform it once for evaluation.

Draft

Instructor Notes

1. Many initial incident activities happen simultaneously. The topics in this Unit can be addressed in any order to fit the audience or course delivery needs.

CTS Guide Reference: CTS 1-4

Draft

Topic 4-5: Recognizing the Need for Technical Rescue Resources

Terminal Learning Objective

At the end of this topic a student, given AHJ guidelines, will be able to recognize the need for technical rescue resources at an operations or technician-level incident so that the need for additional resources is identified, the response system is initiated, the scene is secured and rendered safe until additional resources arrive, and awareness-level personnel are incorporated into the operational plan.

Enabling Learning Objectives

1. Describe trench rescue operational protocols
2. Identify components of a Trench Rescue Tactical Worksheet
    - Determined by AHJ
    - Identify types of resources available
        - AHJ and community resource lists and agreements
    - Identify resources needed
        - Incident operations
        - Incident support
3. Apply operational protocols
4. Select and use a tactical worksheet
5. Request support and resources

Discussion Questions

1. What is the difference between operational resources and support resources?
2. Does your AHJ use a tactical worksheet for trench rescue operations? What should it include?

Application

1. Students will practice this skill on the drill ground and must perform it once for evaluation.

Instructor Notes

1. None

CTS Guide Reference: CTS 1-5 / 1-6

Draft

Topic 4-6: Identifying Hazards and Implementing a Hazard Control Plan

Terminal Learning Objective

At the end of this topic a student, given a trench collapse incident, a trench rescue tool cache and equipment, personal protective equipment, scene control barriers, a hazard control plan, and available specialized resources, will be able to identify incident hazards to victims and rescuers in and around a trench environment and implement a hazard control plan so that the scene is secured; hazards are identified and controlled; an approach path to the trench is identified; resource application fits operational requirements; risks to rescuers, bystanders, and victims are minimized; and rescue time constraints are taken into account.

Enabling Learning Objectives

1. Describe how to secure a scene and control access
2. Describe tactics for approaching the trench while minimizing the likelihood of collapse
3. Describe types and nature of surface and below grade trench hazards
    - Spoil in
    - Shear in
    - Slough in
    - Lip in
    - Shoring failure
    - Superimposed weight
    - Water
    - Vibration
    - Soil conditions
    - Hazardous materials
    - Utilities
    - Atmospheric contamination hazards
    - Environmental hazards
    - Fall hazards (people and objects)
    - Traffic
4. Describe conditions with implications for secondary collapse and victim survivability
5. Describe hazard isolation/control methods, equipment, and implementation
6. Describe criteria for a safe zone within the trench
7. Describe methods of bridging and weight distribution
8. Describe emergency procedures
9. Establish safe zones (surface and below grade)
10. Place scene control barriers
11. Identify incident hazards
12. Communicate high-risk areas to other responders
13. Employ hazard control plan to protect personnel inside and outside of trench
14. Select and deploy tools or materials
15. Operate control and mitigation equipment

Discussion Questions

1. What materials can you use for edge protection?
2. What are some examples of superimposed weight?

Draft

3. How can surface factors or conditions impact or create hazards within the trench?

Application

1. Students will practice this skill on the drill ground and must perform it once for evaluation.

Instructor Notes

1. None

CTS Guide Reference: CTS 1-3 / 1-5 / 2-2

Draft

Topic 4-7: Coordinating Heavy Equipment

Terminal Learning Objective

At the end of this topic a student, given personal protective equipment, means of communication, equipment, an operator, and an assignment, will be able to coordinate the use of heavy equipment so that operator capabilities and limitations for task are evaluated, common communications are maintained, equipment usage supports the operational objectives, and hazards are avoided.

Enabling Learning Objectives

1. Describe types of heavy equipment
2. Describe capabilities, application, and hazards of heavy equipment and rigging
3. Describe how to confirm operator training
4. Describe types and methods of communication
    - Hand signals
    - Radio
    - Sound devices
    - Interpretive dance
5. Use communication methods
6. Recognize hazards
7. Assess operator for skill and calm demeanor
8. Assess heavy equipment for precision of movement and maintenance
9. Monitor rescuer and victim safety

Discussion Questions

1. What type of heavy equipment might be available at a trench rescue incident?
2. How can you communicate with a heavy equipment operator?
3. Who qualifies to operate heavy equipment?

Application

1. Students will practice this skill on the drill ground and must perform it once for evaluation.

Instructor Notes

1. None

CTS Guide Reference: CTS 3-10

Draft

Topic 4-8: Supporting an Operations or Technician-Level Incident

Terminal Learning Objective

At the end of this topic a student, given an incident, an assignment, an incident action plan, and resources from the tool cache, will be able to support an operations or technician-level incident so that the assignment is carried out, progress is reported to command, environmental concerns are managed, personnel rehabilitation is facilitated, and the incident action plan is supported.

Enabling Learning Objectives

1. Describe non-entry support activities
    - Ventilation group
        - Monitor and ventilate personnel
    - Extrication group
        - Prepare for extrication methods and tactics
    - EMS group
        - Plan for ongoing patient care, transfer, and transport in coordination with the incident commander and receiving hospital
    - Support group
        - Handle lighting, power, and environmental management
        - Conduct site security
        - Documentation
    - Cut station
        - Construct and fabricate shoring materials
        - Transport materials
    - Other duties as assigned
2. Apply operational protocols
3. Function within an incident management system
4. Follow and implement an incident action plan
5. Report the task progress status to a supervisor or incident command

Discussion Questions

1. How can you support an operation in a non-entry capacity?

Application

1. Students will practice this skill on the drill ground and must perform it once for evaluation.

Instructor Notes

1. None

CTS Guide Reference: CTS 1-7

Draft

Topic 4-9: Pre-Entry Operations

Terminal Learning Objective

At the end of this topic a student, given a trench rescue incident and a trench rescue tool cache, will be able to safely perform in and around a given trench rescue incident so that a site safety officer is assigned, edge protection and ladders are placed, spoil is cleared, trench air is monitored and ventilated, hazards are identified and marked, and a pre-entry briefing is conducted.

Enabling Learning Objectives

1. Describe pre-entry operations essential to safely perform in and around a trench rescue incident
    - Assign site safety officer
    - Place edge protection around trench
    - Place ladders
    - Clear the spoil
    - Perform atmospheric monitoring
    - Begin ventilation (if applicable)
    - Identify and mark hazards
    - Conduct pre-entry briefing

Discussion Questions

1. Who should you assign as the safety officer?
2. What is the minimum distance from the lip to relocate the spoil?
3. What topics should you include in a pre-entry briefing?

Application

1. Determined by instructor

Instructor Notes

1. None

CTS Guide Reference: None

Draft

Unit 5: Protective Systems

Topic 5-1: Protective Systems

Terminal Learning Objective

At the end of this topic a student, given a trench rescue incident, will be able to identify types of protective systems used in trench rescue operations.

Enabling Learning Objectives

1. Describe when a protective system is required
2. Identify protective techniques or systems used in trench rescue operations
   - Sloping
   - Benching
   - Trench shields and boxes
   - Shoring
     - Timber
     - Mechanical (hydraulic, pneumatic, screw jacks)

Discussion Questions

1. When is a protective system required?
2. What are the benefits of trench shields or boxes?
3. What are the advantages and disadvantages of timber and mechanical shores?
4. What protective systems are used in your AHJ?

Application

1. Determined by instructor

Instructor Notes

1. None

CTS Guide Reference: CTS 2-3 / 2-4 / 3-1 / 3-2 / 3-3 / 3-4 / 3-6 / 3-7

Draft

Topic 5-2: Shoring Systems and Components

Terminal Learning Objective

At the end of this topic a student, given a trench collapse incident and a trench rescue tool cache, will be able to develop a shoring plan for a non-intersecting trench no more than 8 ft (2.4 m) deep, an intersecting trench, and a trench more than 8 ft (2.4 m) deep so that the methods of potential collapse are recognized, the mechanisms of entrapment are identified, areas of the trench that are blown out or undercut are addressed, related tabulated data is consulted, the weights and hazards associated with the soils are considered, and location of the victim and projected path for removal are incorporated.

Enabling Learning Objectives

1. Describe a shoring system and components
   - Sheeting and panels
   - Shores
     - Upright shore
     - Waler shore
     - End shore
   - Nail patterns and positive connections
2. Describe how to place shoring systems
3. Identify how many shoring systems to use
4. Describe how stabilization tactics impact extrication and victim safety
5. Describe criteria for a safe zone within the trench
6. Describe how to interpret tabulated data
7. Describe how to develop a shoring plan for:
   - A non-intersecting trench no more than 8 ft (2.4 m) deep
   - An intersecting trench
   - A trench more than 8 ft (2.4 m) deep
8. Develop shoring plans

Discussion Questions

1. What are the two primary variables included in a tabulated data sheet?
2. What is a _____ shore and when would you use it?
3. How does your shoring strategy impact victim extrication and safety?
4. How many times did your instructor say “tabulated data” during this course?

Application

1. Students will practice this skill on the drill ground and must perform it once for evaluation.

Instructor Notes

1. None

CTS Guide Reference: CTS 2-3 / 2-4 / 3-1 / 3-2 / 3-3 / 3-4 / 3-6 / 3-7

Draft

Topic 5-3: Installing Trench Shoring Systems

Terminal Learning Objective

At the end of this topic a student, given a trench collapse incident, trench shoring plan, and a trench rescue tool cache, will be able to implement a trench shoring plan for a non-intersecting trench no more than 8 ft (2.4 m) deep, an intersecting trench, and a trench more than 8 ft (2.4 m) deep so that the victim is protected from additional collapse, the trench walls are supported, prior areas of collapse are addressed, shoring team members work from protected areas, and shoring systems are installed so they perform their intended function.

Enabling Learning Objectives

1. Describe how to set-up a cutting station
   - Location
   - Materials
   - Equipment
2. Describe how to install a shoring system for
   - A non-intersecting trench no more than 8 ft (2.4 m) deep
   - An intersecting trench
   - A trench more than 8 ft (2.4 m) deep
     - Install supplemental sheeting and shoring for each 2 ft (0.61 m) of depth dug below an existing approved shoring system
3. Describe how to use backfill
4. Describe how to use spot shoring techniques to support soil without incorporating uprights or panels as part of the shoring plan
5. Describe emergency procedures
6. Set up and use a cutting station
7. Pre-brief team
   - Shoring strategies
   - Victim releasee
   - Projected removal pathway
8. Build shores
   - Upright shore
   - Waler shore
   - End shore
9. Install shoring systems
   - In a trench 8 ft (2.4 m) deep
   - In an intersecting trench
   - In a trench more than 8 ft (2.4 m) deep
10. Establish safe zones
11. Anticipate extrication logistics

Discussion Questions

1. What is a safe zone within a shored trench?
2. What are some potential issues you may encounter when shoring an intersecting trench?

Draft

3. What is the vertical strut spacing requirement in an 8 ft trench?

Application

1. Students will practice this skill on the drill ground and must build each type of shore and install a system in each type of trench once for evaluation.

Instructor Notes

1. None

CTS Guide Reference: CTS 2-3 / 2-4 / 3-1 / 3-2 / 3-3 / 3-4 / 3-6 / 3-7

Draft

Topic 5-4: Supporting an Intersecting Trench as a Member of a Team

Terminal Learning Objective

At the end of this topic a student, given size-up information and an action plan, a trench tool cache, and an assignment, will be able to support an intersecting trench as a member of a team so that strategies to minimize the further movement of soil are implemented effectively; trench walls, lip, and spoil pile are monitored continuously; rescue entry team(s) in the trench remains in a safe zone; any slough-in and wall shears are mitigated; emergency procedures and warning systems are established and understood by participating personnel; incident-specific personal protective equipment is utilized; physical hazards are identified and managed; victim protection is maximized; victim extrication methods are considered; and a rapid intervention team is staged.

Enabling Learning Objectives

1. Describe how to support an intersecting trench as a member of a team
    - Implement strategies to minimize further soil movement
    - Continuously monitor trench walls, lip, and spoil pile
    - Ensure rescue entry team(s) in trench remain in a safe zone
    - Mitigate slough-in and wall shears
    - Establish emergency procedures and warning systems and communicate to participating personnel
    - Utilize incident-specific personal protective equipment
    - Identify and manage physical hazards
    - Maximize victim protection
    - Consider victim extrication methods
    - Stage a rapid intervention team (if appropriate)
2. Support an intersecting trench operation

Discussion Questions

1. What ongoing support activities take place after a shoring system is installed?
2. What communication methods can you use to warn about potential danger?

Application

1. Students will practice this skill on the drill ground and must perform it once for evaluation.

Instructor Notes

1. None

CTS Guide Reference: CTS 3-5

Draft

Unit 6: Rescue, Recovery, and Termination

Topic 6-1: Non-Entry Rescue or Victim Self-Rescue

Terminal Learning Objective

At the end of this topic a student, given a trench collapse incident, tools used for self-rescue, and a rescue area and general area made safe, will be able to facilitate a non-entry rescue or victim self-rescue so that the non-entry and self-rescue tactics can be initiated.

Enabling Learning Objectives

1. Describe criteria for rapid, non-entry rescues
   - Victim with ability to assist with own rescue
2. Describe the need to brief rescuers
   - Assign roles
   - Understand tactics/operation
3. Identify non-entry rescue and self-rescue tactics
   - Establish communication with victim
   - Place edge protection in immediate area
   - Mitigate hazards (as needed)
   - Deploy equipment needed for rescue (ladder, rope, basket, etc.)
4. Implement non-entry rescue and self-rescue tactics
5. Select and deploy tools used to facilitate non-entry and self-rescue
6. Reduce imposed loads at or near the lip of the trench

Discussion Questions

1. What are some advantages to conducting a non-entry rescue?
2. How do you identify when a non-entry rescue is possible?
3. What safety precautions are important for a non-entry rescue?

Application

1. Determined by instructor

Instructor Notes

1. None

CTS Guide Reference: CTS 1-2

Draft

Topic 6-2: Victim Rescue and Recovery

Terminal Learning Objective

At the end of this topic a student, given a trench collapse incident, personal protective equipment, a trench tool cache, specialized equipment, a basic first aid kit, and victim packaging resources, will be able to remove a victim from a trench so that hazards to rescue personnel and victims are minimized; loads are stabilized or lifted; basic life functions are supported as required; the victim is evaluated for signs of compartment syndrome; techniques are used to enhance patient survivability; techniques do not compromise the integrity of the existing trench shoring system; methods and packaging devices selected are compatible with intended routes of transfer; universal precautions are employed to protect personnel from blood-borne pathogens; and extraction times meet time constraints for medical management.

Enabling Learning Objectives

1. Describe how to search for a victim in a trench
2. Describe types of victim entrapment
   - Soil
   - Bricks, sidewalks, etc.
   - Pipes, utilities, etc.
   - Equipment
3. Describe how to construct load stabilization systems
   - Types
   - Applications
   - Limitations
   - Load calculations
   - Safety considerations
4. Describe how to lift a load
   - Applications of levers
   - Classes of levers
   - Principles of leverage, gravity, and load balance
   - Resistance force
   - Mechanics and types of load stabilization
   - Mechanics of load lifting
   - Application of pneumatic, hydraulic, mechanical, and manual lifting tools
   - Load weight calculations
   - Safety protocols
5. Describe how to release a victim from entrapment
   - Type of entrapment
   - Available extrication options (risk/benefit assessment)
   - Extent of injury
   - Time constraints
6. Describe how to manage care for a compromised victim
   - Medical care

Draft

        - Crush injuries
        - Compartment syndrome
        - Advanced life support
    - Psychological care
7. Describe how to package a victim for removal
    - Medical protocols
    - Available medical resources
    - Universal precautions protocol
8. Describe how to remove a victim
    - Transfer methods
        - Rope rescue systems
        - Ladder slide
        - High-point anchor options
    - Time needed to execute
9. Select, construct, and apply stabilization systems
    - Evaluate system's structural integrity
    - Determine stability
    - Calculate loads
    - Operate levers
10. Release a victim from soil entrapment
11. Complete risk/benefit assessments for selected methods of rescue and time constraints
12. Provide basic medical care and immobilization techniques
13. Package a victim
14. Remove a packaged victim

Discussion Questions

1. How does the shoring system impact victim removal?
2. What are your AHJ's policies, procedures, or protocols for addressing crush injuries and/or compartment syndrome?
3. What materials or objects can trap a victim in a trench?

Application

1. Students will practice this skill on the drill ground and must perform it once for evaluation.

Instructor Notes

1. None

CTS Guide Reference: CTS 2-5 / 2-6 / 3-8 / 3-9 / 3-11

Draft

Topic 6-3: Incident Termination

Terminal Learning Objective

At the end of this topic a student, given an incident scenario, assigned resources, and site safety data, will be able to terminate a trench rescue operation so that rescuer risk and site safety are managed; support systems are disassembled; scene security is maintained; custody is transferred to a responsible party; personnel and resources are returned to a state of readiness; record-keeping and documentation occur; and post-event analysis is conducted.

Enabling Learning Objectives

1. Describe how to disassemble support systems
    - Shoring removal protocols
    - Equipment use and placement
    - Maintain safe zone
    - Personnel accountability
    - Emergency procedures
    - Manufacturer's recommended care and maintenance procedures
    - Briefing protocols
2. Describe how to terminate trench operations
    - Manage rescuer risk and site safety
    - Manage logistics and resource management
    - Maintain scene security
    - Transfer custody to a responsible party
    - Return personnel and resources to a state of readiness
    - Complete record-keeping, notifications, and documentation
    - Conduct incident debriefing
3. Identify the techniques to keep the scene safe upon leaving the area
4. Describe the overall goals of critical incident stress debriefing
5. Remove equipment and protective systems
6. Recognize hazards
7. Use trench safety protocols
8. Use site control equipment and methods
9. Clean and service equipment
10. Use asset and personnel tracking systems
11. Complete notification and documentation
12. Perform an incident debriefing

Discussion Questions

1. What is the proper procedure for removing shores?
2. Why do you need to keep incident notifications and documentation?
3. When are you required to notify OSHA?
4. What should be included in an incident debriefing?

Application

1. Students will practice this skill on the drill ground and must perform it once for evaluation.

Draft

Instructor Notes

1. Many catastrophic events occur during the end or termination stages of an incident when personnel are fatigued, and resources are in transition from active event participation to a return to service. Emphasize the importance of safety and situational awareness throughout this topic.

CTS Guide Reference: CTS 2-7 / 2-8

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How to Read a Course Plan

A course plan identifies the details, logistics, resources, and training and education content for an individual course. Whenever possible, course content is directly tied to a national or state standard. SFT uses the course plan as the training and education standard for an individual course. Individuals at fire agencies, academies, and community colleges use course plans to obtain their institution's consent to offer courses and provide credit for their completion. Instructors use course plans to develop syllabi and lesson plans for course delivery.

Course Details
The Course Details segment identifies the logistical information required for planning, scheduling, and delivering a course.

Required Resources
The Required Resources segment identifies the resources, equipment, facilities, and personnel required to deliver the course.

Unit
Each Unit represents a collection of aligned topics. Unit 1 is the same for all SFT courses. An instructor is not required to repeat Unit 1 when teaching multiple courses within a single instructional period or academy.

Topics
Each Topic documents a single Terminal Learning Objective and the instructional activities that support it.

Terminal Learning Objective
A Terminal Learning Objective (TLO) states the instructor's expectations of student performance at the end of a specific lesson or unit. Each TLO includes a task (what the student must be able to do), a condition (the setting and supplies needed), and a standard (how well or to whose specifications the task must be performed). TLOs target the performance required when students are evaluated, not what they will do as part of the course.

Enabling Learning Objectives
The Enabling Learning Objectives (ELO) specify a detailed sequence of student activities that make up the instructional content of a lesson plan. ELOs cover the cognitive, affective, and psychomotor skills students must master to complete the TLO.

Discussion Questions
The Discussion Questions are designed to guide students into a topic or to enhance their understanding of a topic. Instructors may add to or adjust the questions to suit their students.

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Application
The Application segment documents experiences that enable students to apply lecture content through cognitive and psychomotor activities, skills exercises, and formative testing. Application experiences included in the course plan are required. Instructors may add additional application experiences to suit their student population if time permits.

Instructor Notes
The Instructor Notes segment documents suggestions and resources to enhance an instructor's ability to teach a specific topic.

CTS Guide Reference
The CTS Guide Reference segment documents the standard(s) from the corresponding Certification Training Standard Guide upon which each topic within the course is based. This segment is eliminated if the course is not based on a standard.

Skill Sheet
The Skill Sheet segment documents the skill sheet that tests the content contained within the topic. This segment is eliminated if the course does not have skill sheets.

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Trench Rescue Technician (2021)
Training Record

Name: _____

SFT ID Number: _____

Unless otherwise specified by an asterisk (*) indicating that each student must complete a skill individually, students will complete these skills as a member of a team.

Skill		Course Plan Topic	Evaluator Initials
1.	Describe soil characteristics	3-1	
2.	Interview witness(s) and/or “competent person”	4-3	
3.	Size up a trench rescue operation	4-4	
4.	Initiate a trench rescue tactical worksheet	4-5	
5.	Identify incident hazards to victims and rescuers	4-6	
6.	Implement a hazard control plan	4-6	
7.	Place edge protection *	4-6	
8.	Communicate with a heavy equipment operator	4-7	
9.	Support a trench rescue operation	4-8	
10.	Develop a shoring plan for a nonintersecting trench no more than 8 ft (2.4 m) deep	5-2	
11.	Develop a shoring plan for an intersecting trench	5-2	
12.	Develop a shoring plan for a trench more than 8 ft (2.4 m) deep	5-2	
13.	Build an upright shore	5-3	
14.	Build a waler shore	5-3	
15.	Build an end shore	5-3	
16.	Install a shoring system in a trench 8 ft (2.4 m) deep	5-3	
17.	Install a shoring system in an intersecting trench	5-3	
18.	Install a shoring system in a trench more than 8 ft (2.4 m) deep	5-3	
19.	Use spot shoring techniques to support soil without incorporating uprights or panels as part of the shoring plan	5-3	

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20.	Support an intersecting trench as a member of a team	5-4	
21.	Construct and apply load stabilization systems	6-2	
22.	Lift a load	6-2	
23.	Release a victim from soil entrapment	6-2	
24.	Complete a risk/benefit assessment for rescue methods and time constraints	6-2	
25.	Describe how to provide basic medical care to a victim	6-2	
26.	Package a victim in a trench	6-2	
27.	Remove a victim from a trench	6-2	
28.	Remove equipment and protective systems	6-3	
29.	Use site control equipment and methods during termination	6-3	
30.	Clean and service equipment	6-3	
31.	Complete a trench rescue tactical worksheet	6-3	
32.	Conduct incident debriefing	6-3	

A candidate has successfully completed the skill when they perform it to the corresponding Terminal Learning Objective standard found in State Fire Training's Trench Rescue Technician (2021) course.

SFT Course ID: _____

Course Delivery Date: _____

Instructor of Record: _____

Instructor SFT ID Number: _____

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Trench Rescue Technician

(NFPA 1006: Trench Rescue Awareness/Operations/Technician)

Instructor Task Book (2021)

California Department of Forestry and Fire Protection
Office of the State Fire Marshal
State Fire Training

Overview

Authority

This instructor task book includes the training standards set forth in:

- NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)

Published: Month Year

Published by: State Fire Training, PO Box 944246, Sacramento, CA 94244-2460

Cover photo courtesy of Chris Johns, Firefighter, Orange County Fire Authority.

Purpose

The State Fire Training instructor task book is a performance-based document. It lists the minimum requirements a candidate must meet in order to teach a specific State Fire Training course or course series.

Assumptions

With the exception of Fire Fighter and Emergency Vehicle Technician (EVT) certifications, a candidate may begin the task book initiation process upon completion of all required education components (courses).

Each job performance requirement (JPR) shall be evaluated after the candidate initiates the task book.

State Fire Training task books do not count towards the NWCG task book limit. There is no limit to the number of State Fire Training task books a candidate may pursue at one time as long as the candidate meets the initiation requirements for each.

It is the candidate's responsibility to routinely check the State Fire Training website for updates to an initiated task book. All State Fire Training issued updates to an initiated task book are required for task book completion.

A candidate must complete their task book within three years of its initiation date. Otherwise, a candidate must initiate a new task book using the curriculum's current published version.

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Roles and Responsibilities

Candidate

The candidate is the individual pursuing instructor registration.

Initiation

The candidate shall:

1. Complete the Initiation Requirements section.
    - Please print.
2. Complete a block on the Signature Verification page with a handwritten signature.

Completion

The candidate shall:

1. Complete all Job Performance Requirements.
    - Ensure that an evaluator initials, signs, and dates each task to verify completion.
2. Complete the Completion Requirements section.
3. Sign and date the Candidate verification section on the Review and Approval page with a handwritten signature.
4. Obtain their fire chief's handwritten (not stamped) signature on the Fire Chief verification section on the Review and Approval page.
5. Create and retain a physical or high-resolution digital copy of the completed task book.

Submission

The candidate shall:

1. Submit a copy (physical or digital) of the completed task book and any supporting documentation to State Fire Training.
    - See Submission and Review below.

A candidate should not submit a task book until they have completed all requirements and obtained all signatures. State Fire Training will reject and return an incomplete task book.

Evaluator

An evaluator is any individual who verifies that the candidate can satisfactorily execute a job performance requirement (JPR).

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A qualified evaluator is a Registered Trench Rescue Technician Instructor designated by the candidate's fire chief (or authorized designee). If no such evaluator is present within the organization, the fire chief (or authorized designee) shall designate an individual with more experience than the candidate and a demonstrated ability to execute the job performance requirements. For instructor task books that do not require fire chief initiation, academy instructors serve as or designate evaluators.

An instructor task book may have more than one evaluator.

All evaluators shall:

1. Complete a block on the Signature Verification page with a handwritten signature.
2. Review and understand the candidate's instructor task book requirements and responsibilities.
3. Verify the candidate's successful completion of one or more job performance requirements through observation.
   - Do not evaluate any job performance requirement (JPR) until after the candidate initiates the task book.
   - Sign all appropriate lines in the instructor task book with a handwritten signature or approved digital signature (e.g., DocuSign or Adobe Sign; a scanned copy of a signature is not acceptable) to record demonstrated performance of tasks.

Fire Chief

The fire chief is the individual who initiates (when applicable) and then reviews and confirms the completion of a candidate's instructor task book.

A fire chief may identify an authorized designee already on file with State Fire Training to fulfill any task book responsibilities assigned to the fire chief. (See *State Fire Training Procedures Manual*, 4.2.2: Authorized Signatories)

Initiation

The fire chief shall:

1. Review and understand the candidate's instructor task book requirements and responsibilities.
2. Complete a block on the Signature Verification page with a handwritten signature.
3. Designate qualified evaluators.

Completion

The fire chief shall:

1. Confirm that the candidate has obtained the appropriate signatures to verify successful completion of each job performance requirement.

    - Ensure that all job performance requirements were evaluated after the initiation date.
2. Confirm that the candidate meets the Completion Requirements.
3. Sign and date the Fire Chief verification statement under Review and Approval with a handwritten signature.
    - If signing as an authorized designee, verify that your signature is on file with State Fire Training.

Submission and Review

A candidate should not submit a task book until they have completed all requirements and obtained all signatures. State Fire Training will reject and return an incomplete task book.

To submit a completed task book, please send the following items to the address below:

1. A copy of the completed task book (candidate may retain the original)
2. All supporting documentation
3. Payment

State Fire Training
Attn: Instructor Registration
PO Box 944246
Sacramento, CA 94244-2460

State Fire Training reviews all submitted task books.

- If the task book is complete, State Fire Training will authorize the task book and retain a digital copy of the authorized task book in the candidate's career file.
- If the task book is incomplete, State Fire Training will return the task book with a notification indicating what needs to be completed prior to resubmission.

Completion of this instructor task book is one step in the instructor registration process. Please refer to the *State Fire Training Procedures Manual* for the complete list of qualifications required to teach Trench Rescue Technician.

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Initiation Requirements

The following requirements must be completed prior to initiating this task book.

Candidate Information

Name: _____

SFT ID Number: _____

Fire Agency: _____

Initiation Date: _____

Prerequisites

The candidate meets the following prerequisites.

1. OSFM Instructor 1, Training Instructor I, **or** Fire Instructor I certification or an SFT Registered Instructor

Include documentation to verify prerequisite requirements when you submit your instructor task book unless verification is already documented in your SFT User Portal.

Education

The candidate has completed the following courses.

1. Trench Rescue Technician (2021) **or** (2014)
2. Confined Space Rescue: Operations/Technician (2021) **or** Confined Space Rescue Technician (2008)

Include documentation to verify education requirements when you submit your instructor task book unless verification is already documented in your SFT User Portal.

Fire Chief Approval

State Fire Training confirms that a fire chief's approval is not required to initiate this task book.

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Signature Verification

The following individuals have the authority to verify portions of this instructor task book using the signature recorded below.

Please print except for the Signature line where a handwritten signature is required.
Add additional signature pages as needed.

Name: _____
Job Title: _____
Organization: _____
Signature: _____

Name: _____
Job Title: _____
Organization: _____
Signature: _____

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Job Title: _____
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Job Performance Requirements

Job Performance Requirements

The candidate must complete each job performance requirement (JPR) in accordance with the standards of the authority having jurisdiction (AHJ) or the National Fire Protection Association (NFPA), whichever is more restrictive.

When California requirements exceed or require revision to the NFPA standard, the corresponding Office of the State Fire Marshal approved (OSFM) additions or revisions appear in italics.

All JPRs must be completed within a California fire agency or State Fire Training Accredited Regional Training Programs (ARTP).

Each JPR shall be evaluated after the candidate initiates the task book.

Each task must be performed twice.

- The two instances must occur during two different courses.
- The same evaluator cannot sign off on the same task twice.

Examples of correct and incorrect evaluation:

Correct: Task completed during two separate courses and evaluated by two separate individuals.

1. Assemble a comprehensive burn plan ("burn book") that contains all documentation necessary to conduct a live fire training evolution in accordance with NFPA standards and the policies and procedures of State Fire Training (SFT) and the authority having jurisdiction (AHJ).	**1st Evaluation**			**2nd Evaluation**		
	Course Code	**Date**	**Initials**	**Course Code**	**Date**	**Initials**
a. Describe purpose of a live fire burn plan	AAA123	2/8/18	JAS	BBB123	5/15/18	CWJ
b. Identify components of a live fire burn plan ("burn book")	AAA123	2/8/18	JAS	BBB123	5/15/18	CWJ
c. Identify records-retention requirements for burn plans	AAA123	2/8/18	JAS	BBB123	5/15/18	CWJ

Draft

Incorrect: Task completed twice during one course but evaluated by two separate individuals.

1. Assemble a comprehensive burn plan ("burn book") that contains all documentation necessary to conduct a live fire training evolution in accordance with NFPA standards and the policies and procedures of State Fire Training (SFT) and the authority having jurisdiction (AHJ).	**1st Evaluation**			**2nd Evaluation**		
	Course Code	**Date**	**Initials**	**Course Code**	**Date**	**Initials**
a. Describe purpose of a live fire burn plan	AAA123	2/8/18	JAS	AAA123	2/8/18	CWJ
b. Identify components of a live fire burn plan ("burn book")	AAA123	2/8/18	JAS	AAA123	2/8/18	CWJ
c. Identify records-retention requirements for burn plans	AAA123	2/8/18	JAS	AAA123	2/8/18	CWJ

Incorrect: Task completed during two separate courses but evaluated by the same individual.

1. Assemble a comprehensive burn plan ("burn book") that contains all documentation necessary to conduct a live fire training evolution in accordance with NFPA standards and the policies and procedures of State Fire Training (SFT) and the authority having jurisdiction (AHJ).	**1st Evaluation**			**2nd Evaluation**		
	Course Code	**Date**	**Initials**	**Course Code**	**Date**	**Initials**
a. Describe purpose of a live fire burn plan	AAA123	2/8/18	JAS	BBB123	5/15/18	JAS
b. Identify components of a live fire burn plan ("burn book")	AAA123	2/8/18	JAS	BBB123	5/15/18	JAS
c. Identify records-retention requirements for burn plans	AAA123	2/8/18	JAS	BBB123	5/15/18	JAS

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Trench Rescue Technician Instructor

Course Administration and Orientation

1. Complete course administration activities.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Confirm prop set up and safety						
b. Confirm excavation equipment availability						
c. Contact Underground Service Alert						
d. Confirm facilities set up and safety						
e. Complete and submit course scheduling request						
f. Order student textbooks (if applicable)						
g. Confirm equipment (based on number of students)						
h. Order lumber and other supplies						
i. Complete instructor assignments						
j. Complete Training Action Plan						
k. Organize scenarios (location, equipment, timing, complexity)						
l. Complete Trench Daily Inspection Worksheet						
m. Complete class rosters						
n. Confirm facilities for off-site instruction						
o. Confirm travel to off-site facilities						

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p. Secure trench site at end of day/class						
q. Review OSHA, Cal/OSHA, ASTM, ANSI, NIOSH, NFPA (1670, 1006, 1951, 1500)						
2. Identify facility and classroom requirements and course objectives, events, requirements, assignments, activities, skills exercises, resources, evaluation methods, and participation requirements.	**1st Evaluation**			**2nd Evaluation**		
	Course Code	**Date**	**Initials**	**Course Code**	**Date**	**Initials**
a. Identify facility requirements						
b. Identify classroom requirements						
c. Review course syllabus						

Background

3. Apply historical knowledge to trench rescue operations.	**1st Evaluation**			**2nd Evaluation**		
	Course Code	**Date**	**Initials**	**Course Code**	**Date**	**Initials**
a. Understand fatality and injury statistics from case histories and recent trench rescue incidents						
4. Carry out trench rescue operations in accordance with federal, state, and local standards, regulations, policies, and procedures.	**1st Evaluation**			**2nd Evaluation**		
	Course Code	**Date**	**Initials**	**Course Code**	**Date**	**Initials**
a. Identify federal standard for trenching and excavations						
b. Describe California standards for trenching and excavation						
c. Identify other regulations that may impact trenching operations						
d. Identify consequences related to regulatory non-compliance						

Soil and Trench Considerations

5. Describe soil characteristics.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe soil types, characteristics, and concerns						
b. Describe how to conduct soil testing to determine soil type						
c. Describe forces associated with soil						
d. Describe soil strength						

6. Recognize types of trenches and excavations.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Define “trench”						
b. Define “excavation”						
c. Describe trench types						
d. Describe trench terminology						

7. Describe trench collapse patterns and failure factors.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Identify trench collapse points						
b. Describe collapse patterns						
c. Describe factors that lead to trench failure						
d. Describe signs of impending collapse						

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Emergency Response

8. Prepare a team for trench rescue operations.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe the importance of trench rescue training						
b. Describe how to assemble an effective rescue team						
c. Describe the importance of scene safety, discipline, and accountability						
d. Describe how to select and use personal protective equipment						
e. Describe how to select and use tools and equipment						
f. Select and use personal protective equipment						
g. Select and use tools and equipment						

9. Outline trench rescue considerations when responding to a given trench rescue incident.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe factors to consider when responding to a trench rescue incident						

10. Interview a witness or "competent person".	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe the need to secure "competent person" or witness						
b. Identify questions to ask in an initial interview						
c. Identify effective interview techniques						

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d. Understand how to identify the "competent person"						
e. Identify visual evidence of victim involvement, number, and location						
f. Use interview techniques						
11. Size up a trench rescue incident.	**1st Evaluation**			**2nd Evaluation**		
	Course Code	**Date**	**Initials**	**Course Code**	**Date**	**Initials**
a. Describe the importance of size up at a trench rescue incident						
b. Identify components to evaluate during size up						
c. Describe basic search criteria for trench rescue incidents						
d. Identify elements of a trench rescue incident action plan and related information						
e. Describe the relationship of size-up to the incident management system						
f. Identify information gathering techniques and how that information is used in the size-up process						
g. Identify types of reference materials and their uses						
h. Gather information						
i. Relay information						
12. Recognize the need for technical rescue resources.	**1st Evaluation**			**2nd Evaluation**		
	Course Code	**Date**	**Initials**	**Course Code**	**Date**	**Initials**
a. Describe trench rescue operational protocols						
b. Identify components of a Trench Rescue Tactical Worksheet						

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c. Apply operational protocols						
d. Select and use a tactical worksheet						
e. Request support and resources						
13. Identify incident hazards and implement a hazard control plan.	**1st Evaluation**			**2nd Evaluation**		
	Course Code	**Date**	**Initials**	**Course Code**	**Date**	**Initials**
a. Describe how to secure a scene and control access						
b. Describe tactics for approaching the trench while minimizing the likelihood of collapse						
c. Describe types and nature of surface and below grade trench hazards						
d. Describe conditions with implications for secondary collapse and victim survivability						
e. Describe hazard isolation/control methods, equipment, and implementation						
f. Describe criteria for a safe zone within the trench						
g. Establish safe zones (surface and below grade)						
h. Place scene control barriers						
i. Identify incident hazards						
j. Communicate high-risk areas to other responders						
k. Employ hazard control plan to protect personnel inside and outside of trench						
l. Select and deploy tools or materials						
m. Operate control and mitigation equipment						

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14. Coordinate the use of heavy equipment.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe types of heavy equipment						
b. Describe capabilities, application, and hazards of heavy equipment and rigging						
c. Describe how to confirm operator training						
d. Describe types and methods of communication						
e. Use communication methods						
f. Recognize hazards						
g. Assess operator for skill and calm demeanor						
h. Assess heavy equipment for precision of movement and maintenance						
i. Monitor rescuer and victim safety						

15. Support an operations or technician-level incident.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe non-entry support activities						
b. Apply operational protocols						
c. Function within an incident management system						
d. Follow and implement an incident action plan						
e. Report the task progress status to a supervisor or incident command						

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16. Safely perform in and around a given trench rescue incident.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe pre-entry operations essential to safely perform in and around a trench rescue incident						

Protective Systems

17. Identify types of protective systems used in trench rescue operations.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe when a protective system is required						
b. Identify protective techniques or systems used in trench rescue operations (sloping, benching, trench shields, trench boxes, timber shoring, mechanical shoring)						

18. Implement a trench shoring plan.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe how to set up a cutting station						
b. Describe how to install a shoring system for a nonintersecting trench no more than 8 ft (2.4 m) deep						
c. Describe how to install a shoring system for an intersecting trench						
d. Describe how to install a shoring system for a trench more than 8 ft (2.4 m) deep						
e. Describe how to use backfill						

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f. Describe how to use spot shoring techniques to support soil without incorporating uprights or panels as part of the shoring plan						
g. Describe emergency procedures						
h. Set-up a cutting station						
i. Build an upright shore						
j. Build a waler shore						
k. Build an end shore						
l. Install a shoring system for a nonintersecting trench no more than 8 ft (2.4 m) deep						
m. Install a shoring system for an intersecting trench						
n. Install a shoring system for a trench more than 8 ft (2.4 m) deep						
o. Use spot shoring techniques to support soil without incorporating uprights or panels as part of the shoring plan						
p. Establish safe zones						
q. Anticipate extrication logistics						
19. Support an intersecting trench as a member of a team.	**1st Evaluation**			**2nd Evaluation**		
	Course Code	**Date**	**Initials**	**Course Code**	**Date**	**Initials**
a. Describe how to support an intersecting trench as a member of a team						
b. Support an intersecting trench operation						

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Rescue, Recovery, and Termination

20. Facilitate a non-entry rescue or victim self-rescue.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe criteria for rapid, non-entry rescues						
b. Describe the need to brief rescuers						
c. Identify non-entry rescue and self-rescue tactics						
d. Implement non-entry rescue and self-rescue tactics						
e. Select and deploy tools used to facilitate non-entry and self-rescue						
f. Reduce imposed loads at or near the lip of the trench						

21. Remove a victim from a trench.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe how to search for a victim in a trench						
b. Describe types of victim entrapment						
c. Describe how to construct load stabilization systems						
d. Describe how to lift a load						
e. Describe how to release a victim from entrapment						
f. Describe how to manage care for a compromised victim						
g. Describe how to package a victim for removal						
h. Describe how to remove a victim						

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i. Release a victim from soil entrapment						
j. Complete risk/benefit assessments for selected methods of rescue and time constraints						
k. Provide basic medical care and immobilization techniques						
l. Package a victim						
m. Remove a packaged victim						
22. Terminate a trench rescue operation.	**1st Evaluation**			**2nd Evaluation**		
	Course Code	**Date**	**Initials**	**Course Code**	**Date**	**Initials**
a. Describe how to disassemble support systems						
b. Describe how to terminate trench operations						
c. Identify the techniques to keep the scene safe upon leaving the area						
d. Describe the overall goals of a critical incident stress debriefing						
e. Remove equipment and protective systems						
f. Use trench safety protocols						
g. Use site control equipment and methods						
h. Clean and service equipment						
i. Complete notification and documentation						
j. Perform an incident debriefing						

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Completion Requirements

The following requirements must be completed prior to submitting this task book.

Experience

The candidate meets the following experience requirement.

- Have a minimum of three years' full-time or six years' part-time/volunteer experience as a fire fighter performing rescue duties within a recognized fire agency in California

Agency	Experience	Start Date	End Date

Position

State Fire Training confirms that there are no position requirements for instructor registration.

Updates

The candidate has completed and enclosed all updates to this instructor task book released by State Fire Training since its initial publication.

Number of enclosed updates: _____

Completion Timeframe

The candidate has completed this task book within three years of its initiation date. Otherwise, a candidate must initiate a new task book using the curriculum's current published version.

Initiation Date (see Initiation Date under Initiation Requirements): _____

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Review and Approval

Candidate

Candidate (please print): _____

I, the undersigned, am the person applying to teach Trench Rescue Technician. I hereby certify under penalty of perjury under the laws of the State of California, that the completion of all requirements documented herein is true in every respect. I understand that misstatements, omissions of material facts, or falsification of information or documents may be cause for rejection or revocation.

Signature: _____ Date: _____

Fire Chief

Candidate's Fire Chief (please print): _____

I, the undersigned, am the person authorized to verify the candidate's qualifications to teach Trench Rescue Technician. I hereby certify under penalty of perjury under the laws of the State of California, that the completion of all requirements documented herein are true in every respect. I understand that misstatements, omissions of material facts, or falsification of information or documents may be cause for rejection.

Signature: _____ Date: _____

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Trench Rescue Technician (2021) Interim Procedures

Issued: Month 2022

Procedure Changes

Edition: May 2022 edition of the State Fire Training Procedures Manual

Effective Date: Month, ##, 2022 (anticipated)

Section Changes: Modify and update the following sections:

- 6.11.11: Fire Fighting and Rescue Instructor
  - 6.11.11.1 and 6.11.11.5
- 6.11.25: Trench Rescue Technician (TRT) – Instructor Levels (all)
- 6.11.26: Trench Rescue Technician (TRT) – Primary Instructor (all)

Delete the following sections:

- 6.11.27: Trench Rescue Technician (TRT) – Senior Instructor (all)

Justification: Following approval by the State Board of Fire Services (SBFS), the new Trench Rescue Technician (2021) will go into effect on December 1, 2022, and the existing Trench Rescue Technician (2014) curriculum will retire on June 30, 2023. The new curriculum provides directive for Instructor qualifications that creates a single Registered Instructor level thereby repealing the existing Senior Instructor level.

SFT Contact: SFT Staff assigned to Instructor Registration.

Note: Using the May 2022 edition of the State Fire Training Procedures Manual:

- Update Section 6.11.11.
  - To ensure alignment with SFT terminology and business practices, the word "Technician" has been added for accuracy of curriculum and instructor qualification titling.
  - Technician level training now requires three years of experience instead of two years in a specific rank.
- Repeal Sections 6.11.25 and 6.11.26 and replace with the text shown below with the projected Year regulatory language.
- Remove Section 6.11.27.

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6.11.11: FIRE FIGHTING AND RESCUE INSTRUCTOR

6.11.11.1: Eligible Courses

Table 6.11.11.1: Fire Fighting and Rescue Instructor Eligible Courses

CFSTES Courses	FSTEP Courses
• None	• Aircraft Rescue and Firefighting Awareness • Confined Space Rescue Awareness • Fire Fighter Survival • Incident Safety Awareness for Hired Vendors • Low Angle Rope Rescue Operational (LARRO) • Open Water Rescuer – Basic • Open Water Rescue Boat Operator – Small Vessel • Open Water Rescue Boat Operator – Large Vessel • Personal Watercraft Operations • Rapid Intervention Crew (RIC) Operations • Rescue Boat Operations • River and Flood Water Rescue • River/Flood Rescue Technician • River and Flood Rescue Boat Technician (2019) • Trench Rescue Technician • Vehicle Extrication

6.11.11.2: General Qualifications

A. A Registered Primary Instructor for a Fire Service Training and Education Program (FSTEP) Fire Fighting and Rescue course shall meet the following the qualifications required of all State Fire Training (SFT) Registered Primary Instructors.
    1. See **6.2.1: Qualifications**.

6.11.11.3: Course Work

A. Attending and passing SFT's Confined Space Rescue Technician course meets the requirement for attending and passing Confined Space Rescue Awareness.

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B. Registered Low Angle Rope Rescue Operational Instructors must have attended and passed ICS-200: Basic ICS.

C. Attending and passing SFT's Auto Extrication (1996) course meets the requirement for attending and passing Vehicle Extrication.

D. Incident Safety Awareness for Hired Vendors instructors must have attended and passed Incident Safety Awareness for Hired Vendors (2018); Introduction to Incident Command System (ICS-100); Firefighter Training (S-130); Introduction to Wildland Fire Behavior (S-190); Intermediate Wildland Fire Behavior (S-290); Human Factors in the Wildland Fire Service (L-180); ICS for Single Resources and Initial Action Incidents (IS-200.B); and National Incident Management System - An Introduction (NIIMS 700.A).

6.11.11.4: Teaching Experience

A. It is recommended that a new instructor for SFT's Incident Safety Awareness for Hired Vendors co-teach with a primary instructor during their first course presentation.

6.11.11.5: Professional Experience

A. A Registered Primary Instructor for an FSTEP Fire Fighting and Rescue course shall meet the professional experience qualifications listed below.
    1. Performing in an "acting" capacity does not qualify.

Table 6.11.11.5: Fire Fighting and Rescue Instructor Professional Experience

FSTEP Course	Experience
• Aircraft Rescue and Firefighting Awareness	• Held the rank of Fire Fighter and/or performed rescue duties within a recognized fire agency in California for a minimum of three (3) years; or worked in a volunteer position or paid call firefighter with a Recognized Fire Agency in California for a minimum of five (5) years. • Have a minimum of three years' experience within a recognized fire agency in California in the field of aircraft rescue and fire fighting

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• Confined Space Rescue Awareness • Low Angle Rope Rescue Operational	• Held the rank of Fire Fighter and/or performed rescue duties within a recognized fire agency in California for a minimum of two (2) years
• Low Angle Rope Rescue Operational • Open Water Rescuer - Basic • Personal Watercraft Operations • Rescue Boat Operations • River and Flood Water Rescue	• Held the rank of Fire Fighter and/or performing suppression/rescue duties within a recognized fire agency in California for a minimum of two (2) years
• Trench Rescue Technician	• Have a minimum of three (3) years' full-time or six (6) years' part-time/volunteer experience as a fire fighter performing rescue duties within a recognized fire agency in California
• Incident Safety Awareness for Hired Vendors	Letter verifying the following experience: • Minimum of five (5) years' full-time paid experience in a federal, state, local, or provincial fire agency and holds the rank of Company Officer • Has responded as a Single Resource or Overhead assignment which has gone through a check-in, briefing, and demobilization (completed a Shift Ticket) process on a campaign fire • Has working knowledge, skills, and abilities performing within Incident Command • Has been assigned to an incident within the last five (5) years (Red Card currency)
• Rapid Intervention Crew (RIC) Operations • Fire Fighter Survival	• Have five (5) years suppression/rescue experience, of which two (2) years must be while holding the rank of Fire Fighter performing suppression/rescue duties within a recognized fire agency in California

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• Open Water Rescue Boat Operator – Small Vessel • Open Water Rescue Boat Operator – Large Vessel • River and Flood Rescue Boat Technician	• Held the rank of Fire Fighter and/or performed rescue duties within a recognized fire agency in California for a minimum of three (3) years; **or** worked in a volunteer position or paid call Fire Fighter with a Recognized Fire Agency in California for a minimum of five (5) years. • Specific expertise in Technical Rescue as it relates to Open Water Search and Rescue Boat Operations and Seamanship. Expertise must be relative to the size of the vessel and power configuration and qualify based on the scope required for the curriculum chosen to facilitate.
• River and Flood Rescue Technician	• Held the rank of Fire Fighter and/or performed rescue duties within a recognized fire agency in California for a minimum of two (2) years; **or** worked in a volunteer position or paid call Fire Fighter with a Recognized Fire Agency in California for a minimum of four (4) years.
• Vehicle Extrication	• Have three (3) year's suppression/rescue experience performing suppression/rescue duties within a recognized fire agency in California

6.11.11.6: Task Book

A. Fire Fighter Survival
   1. An Instructor applicant for Fire Fighter Survival shall complete the appropriate instructor trainee task book.
   2. A Registered Fire Fighter Survival Primary Instructor must sign off on the applicant's task book within two (2) years of its initiation.

B. Low Angle Rope Rescue Operational
   1. An Instructor applicant for Low Angle Rope Rescue Operational (LARRO) shall complete the appropriate Instructor Trainee Task Book.
   2. A Registered LARRO Primary Instructor must sign off on the applicant's Task Book within two (2) years of its initiation.

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C. Rapid Intervention Crew Operations
    1. An Instructor applicant for Rapid Intervention Crew Operations shall complete the appropriate Instructor Trainee Task Book.
    2. A Registered Rapid Intervention Crew Operations Primary Instructor must sign off on the applicant's Task Book within two (2) years of its initiation.

6.11.25: TRENCH RESCUE TECHNICIAN (TRT) – INSTRUCTOR LEVELS

6.11.25.1: Instructor Trainee

A. Instructor Trainee is the entry level for becoming a Registered TRT Instructor.

B. An individual is considered a Instructor Trainee while they complete the TRT Instructor Task Book.
    1. An Instructor Trainee candidate must consistently work to complete all requirements documented in Instructor Task Book since its initiation date. Significant gaps between JPR sign offs may result in disqualification from teaching Trench Rescue Technician as a registered instructor or a candidate must initiate a new task book using State Fire Training's current published version.
    2. The applicant must submit the Instructor Task Book for instructor registration within one (1) year of completing it.

C. Under direct supervision of a Registered TRT Instructor, the Instructor Trainee shall:
    1. Assist in classroom and field exercise setup
    2. Support the logistics of the component(s) they are training to teach
    3. Carry out all other related tasks as assigned by the Registered Instructor
    4. Satisfactorily complete the Instructor Task Book

D. State Fire Training (SFT) does not register TRT Instructor Trainees.

6.11.25.2: Registered Instructor

A. A Registered TRT Instructor is qualified to deliver the cognitive (lecture) portions of the class to up to 24 students and teach the psychomotor (application) portions to one (1) squad (up to eight (8) students) in a TRT course.
    1. Any instructor counted toward student ratios must be an SFT Registered TRT Instructor.

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B. In addition to the responsibilities required of all SFT Registered Instructors (See **6.2.7: Responsibilities**.), Registered TRT Instructors-are also required to:
    1. Set up the classroom and field exercises
    2. Ensure all objectives and minimum requirements of the course curriculum are met
    3. Evaluate student/team performance and sign each student's Training Record
    4. Function as the safety officer to coordinate and monitor all safety aspects of the course
    5. Comply with **5.1.11: Record Keeping**
    6. Complete and maintain an Incident Action Plan and a daily trench inspection worksheet

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6.11.26: TRENCH RESCUE TECHNICIAN (TRT) – INSTRUCTOR

6.11.26.1: Eligible Courses

Table 6.11.26.1: TRT – Instructor Eligible Courses

CFSTES Courses	FSTEP Courses
• None	• Trench Rescue Technician

6.11.26.2: General Qualifications

A. A TRT Instructor Trainee or Registered Instructor shall meet the qualifications required of all State Fire Training (SFT) Registered Instructors.
    1. See **6.2.1: Qualifications**.

6.11.26.3: Course Work

A. A TRT Instructor Trainee or Registered Instructor must have attended and passed:
    1. Trench Rescue Technician
    2. Confined Space Rescue: Operations/Technician (2021)

6.11.26.4: Instructor Requirements

A. See **6.2.1.2: Instructor Requirements**.

6.11.26.5: Teaching Experience

A. None

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6.11.26.6: Task Book

A. A TRT Instructor Trainee candidate must consistently work to complete all requirements documented in Instructor Task Book since its initiation date. Significant gaps between JPR sign offs may result in disqualification from teaching Trench Rescue Technician as a registered instructor or a candidate must initiate a new task book using State Fire Training's current published version.

B. A TRT Instructor Trainee must satisfy all instructor requirements and become a Registered TRT Instructor within one (1) year of completing their Instructor Task Book.

6.11.26.7: Professional Experience

A. A TRT Instructor Trainee or Registered Instructor shall meet the professional experience qualifications listed below.
   1. Performing in an "acting" capacity does not qualify.

Table 6.11.26.7: TRT – Instructor Professional Experience

FSTEP Courses	Experience
• Trench Rescue Technician	• Have a minimum of three (3) years' full-time or six (6) years' part-time/volunteer experience as a fire fighter performing rescue duties within a recognized fire agency in California

6.11.26.~~9~~8: Application – Instructor

A. See **6.2.3: Application Process**.

6.11.26.~~10~~9: Maintenance

A. A Registered TRT Instructor shall teach at least one (1) SFT Trench Rescue Technician course every two (2) years.

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6.~~7~~11.~~9~~11: FIRE FIGHTING AND RESCUE INSTRUCTOR

6.~~7~~11.~~9~~11.1: Eligible Courses

Table 6.~~7~~11.~~9~~11.1: Fire Fighting and Rescue Instructor Eligible Courses

CFSTES Courses	FSTEP Courses
☐ None	☐ Aircraft Rescue and Firefighting Awareness ☐ ~~Command and Control of the RIC Deployment~~ ☐ Confined Space Rescue Awareness ☐ ~~Emergency Response to Alternative Fuels~~ ☐ Fire Fighter Survival ☐ ~~Fireline Safety for the Hired Vendor~~ ☐ Incident Safety Awareness for Hired Vendors ☐ ~~Large Animal Rescue Operational~~ ☐ Low Angle Rope Rescue Operational (LARRO) ☐ Open Water Rescuer – Basic ☐ Open Water Rescue Boat Operator – Small Vessel ☐ Open Water Rescue Boat Operator – Large Vessel ☐ Personal Watercraft Operations ☐ Rapid Intervention Crew (RIC) Operations ☐ Rescue Boat Operations ☐ River and Flood Water Rescue ☐ River/Flood Rescue Technician ☐ River and Flood Rescue Boat Technician (2019) ☐ ~~Tire Fire Prevention and Suppression~~ ☐ Trench Rescue Technician ☐ Vehicle Extrication

6.~~7~~11.~~9~~11.2: General Qualifications

A. A Registered Primary Instructor for a Fire Service Training and Education Program (FSTEP) Fire Fighting and Rescue course shall meet the following the qualifications required of all State Fire Training (SFT) Registered Primary Instructors.

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1. See **6.2.1: Qualifications**.

6.~~7~~11.~~9~~11.3: Course Work

A. Attending and passing SFT's Confined Space Rescue Technician course meets the requirement for attending and passing Confined Space Rescue Awareness.

B. Registered Low Angle Rope Rescue Operational Instructors must have attended and passed ICS-200: Basic ICS.

C. Attending and passing SFT's Auto Extrication (1996) course meets the requirement for attending and passing Vehicle Extrication.

D. Incident Safety Awareness for Hired Vendors instructors must have attended and passed Incident Safety Awareness for Hired Vendors (2018); Introduction to Incident Command System (ICS-100); Firefighter Training (S-130); Introduction to Wildland Fire Behavior (S-190); Intermediate Wildland Fire Behavior (S-290); Human Factors in the Wildland Fire Service (L-180); ICS for Single Resources and Initial Action Incidents (IS-200.B); and National Incident Management System - An Introduction (NIIMS 700.A).

6.~~7~~11.~~9~~11.4: Teaching Experience

~~A. In order to teach Command and Control of the RIC Deployment, the Registered Instructor must have previously assisted another Registered Instructor in teaching the course at least once.~~

~~1. The Registered Instructor applicant shall submit to SFT a letter from a Registered Instructor verifying this requirement.~~

A. It is recommended that a new instructor for SFT's Incident Safety Awareness for Hired Vendors co-teach with a primary instructor during their first course presentation.

6.~~7~~11.~~9~~11.5: Professional Experience

A. A Registered Primary Instructor for an FSTEP Fire Fighting and Rescue course shall meet the professional experience qualifications listed below.
   1. Performing in an "acting" capacity does not qualify.

Table 6.~~7~~11.~~9~~11.5: Fire Fighting and Rescue Instructor Professional Experience

FSTEP Course	Experience
☐ Aircraft Rescue and Firefighting Awareness	☐ Held the rank of Fire Fighter and/or performed rescue duties within a recognized fire agency in California for a minimum of three (3) years; or worked

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FSTEP Course	Experience
	☐ in a volunteer position or paid call firefighter with a Recognized Fire Agency in California for a minimum of five (5) years. ☐ Have a minimum of three years' experience within a recognized fire agency in California in the field of aircraft rescue and fire fighting
☐ Confined Space Rescue Awareness ☐ Low Angle Rope Rescue Operational ☐ ~~Personal Watercraft Operations~~ ☐ ~~Rescue Boat Operations~~ ☐ ~~River and Flood Water Rescue~~ ☐ ~~Trench Rescue~~	☐ Held the rank of Fire Fighter and/or performed rescue duties within a recognized fire agency in California for a minimum of two (2) years
☐ ~~Emergency Response to Alternative Fuels~~ ☐ ~~Fireline Safety for the Hired Vendor~~ ☐ ~~Large Animal Rescue Operational~~ ☐ Low Angle Rope Rescue Operational ☐ Open Water Rescuer - Basic ☐ Personal Watercraft Operations ☐ Rescue Boat Operations ☐ River and Flood Water Rescue ☐ ~~Tire Fire Prevention and Suppression~~ ☐ ~~Trench Rescue~~	☐ Held the rank of Fire Fighter and/or performing suppression/rescue duties within a recognized fire agency in California for a minimum of two (2) years
☐ Trench Rescue Technician	☐ Have a minimum of three (3) years' full-time or six (6) years' part-time/volunteer experience as a fire fighter performing rescue duties within a recognized fire agency in California
☐ ~~Command and Control of~~	~~One of the following:~~

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FSTEP Course	Experience
~~RIC Deployment~~	~~Held the rank of Suppression Officer within a recognized fire agency in California for a minimum of three years~~ ~~Worked as a volunteer Suppression Officer or paid Call Officer within a recognized fire agency in California for a minimum of five years~~
Incident Safety Awareness for Hired Vendors	Letter verifying the following experience: Minimum of five (5) years' full-time paid experience in a federal, state, local, or provincial fire agency and holds the rank of Company Officer Has responded as a Single Resource or Overhead assignment which has gone through a check-in, briefing, and demobilization (completed a Shift Ticket) process on a campaign fire Has working knowledge, skills, and abilities performing within Incident Command Has been assigned to an incident within the last five (5) years (Red Card currency)
Rapid Intervention Crew (RIC) Operations Fire Fighter Survival	**Have five (5) years suppression/rescue experience, of which two (2) years must be while holding the rank of Fire Fighter performing suppression/rescue duties within a recognized fire agency in California**
Open Water Rescue Boat Operator – Small Vessel Open Water Rescue Boat Operator – Large Vessel River and Flood Rescue Boat Technician	Held the rank of Fire Fighter and/or performed rescue duties within a recognized fire agency in California for a minimum of three (3) years; **or** worked in a volunteer position or paid call Fire Fighter with a Recognized Fire Agency in California for a minimum of five (5) years. Specific expertise in Technical Rescue as it relates to Open Water Search and Rescue Boat Operations and Seamanship. Expertise must be relative to the size of the vessel and power

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FSTEP Course	Experience
	configuration and qualify based on the scope required for the curriculum chosen to facilitate.
River and Flood Rescue Technician	Held the rank of Fire Fighter and/or performed rescue duties within a recognized fire agency in California for a minimum of two (2) years; **or** worked in a volunteer position or paid call Fire Fighter with a Recognized Fire Agency in California for a minimum of four (4) years.
Vehicle Extrication	**Have three (3) year's suppression/rescue experience performing suppression/rescue duties within a recognized fire agency in California**

6.~~7~~11.~~9~~11.6: Task Book

A. Fire Fighter Survival
   1. An Instructor applicant for Fire Fighter Survival shall complete the appropriate instructor trainee task book.
   2. A Registered Fire Fighter Survival Primary Instructor must sign off on the applicant's task book within two (2) years of its initiation.

B. Low Angle Rope Rescue Operational
   1. An Instructor applicant for Low Angle Rope Rescue Operational (LARRO) shall complete the appropriate ~~i~~Instructor ~~t~~Trainee ~~t~~Task ~~b~~Book.
   2. A Registered LARRO Primary Instructor must sign off on the applicant's ~~t~~Task ~~b~~Book within two (2) years of its initiation.

C. Rapid Intervention Crew Operations
   1. An Instructor applicant for Rapid Intervention Crew Operations shall complete the appropriate ~~i~~Instructor ~~t~~Trainee ~~t~~Task ~~b~~Book.
   2. A Registered Rapid Intervention Crew Operations Primary Instructor must sign off on the applicant's ~~t~~Task ~~b~~Book within two (2) years of its initiation.

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6.~~7~~11.~~22~~25: TRENCH RESCUE TECHNICIAN (TRT) – INSTRUCTOR LEVELS

6.~~7~~11.~~22~~25.1: ~~Primary~~ Instructor Trainee

A. ~~Primary~~ Instructor Trainee is the entry level for becoming a Registered TRT ~~Primary~~ Instructor.

B. An individual is considered an ~~Primary~~ Instructor Trainee while ~~he or she~~ they completes the TRT ~~Primary~~ Instructor ~~Trainee~~ Task Book.
   1. An Instructor Trainee candidate must consistently work to complete all requirements documented in Instructor Task Book since its initiation date. Significant gaps between JPR sign offs may result in disqualification from teaching Trench Rescue Technician as a registered instructor or a candidate must initiate a new task book using State Fire Training's current published version.~~Trainees have two (2) years after beginning the tTask bBook to complete its requirements.~~
   2. The applicant must submit the Instructor ~~t~~Task ~~b~~Book for instructor registration within one (1) year of completing it.

C. Under direct supervision of a Registered TRT ~~Senior~~ Instructor, the ~~Primary~~ Instructor Trainee shall:
   1. Assist in classroom and field exercise setup
   2. Support the logistics of the component(s) ~~he or she is~~ they are training to teach
   3. ~~Instruct no more than 50% of a single course delivery~~
   4. Carry out all other related tasks as assigned by the Registered ~~Senior~~ Instructor
   5. Satisfactorily complete the ~~Primary~~ Instructor ~~Trainee~~ Task Book

D. State Fire Training (SFT) does not register TRT ~~Primary~~ Instructor Trainees.

6.~~7~~11.~~22~~25.2: ~~Primary~~ Registered Instructor

A. A Registered TRT ~~Primary~~ Instructor is qualified to deliver the cognitive (lecture) portions of the class to up to 24 students and teach the psychomotor (application) portions to one (1) squad (up to ~~12~~ eight (8) students) in a TRT course ~~with one or two squads~~.
   1. Any instructor counted toward student ratios must be an SFT Registered TRT Instructor.

B. In addition to the responsibilities required of all SFT Registered ~~Primary~~ Instructors (See **6.2.7: Responsibilities**.), Registered TRT ~~Primary~~ Instructors~~, under the supervision of a Registered TRT Senior Instructor,~~ are also required to:
   1. Set up the classroom and field exercises
   2. Ensure all objectives and minimum requirements of the course curriculum are met
   3. ~~Administer any psychomotor skills exams~~
   4. Evaluate student/team performance and sign each student's ~~task book~~ Training Record

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5. Function as the safety officer to c~~C~~oordinate and monitor all safety aspects of the course
6. Comply with **5.1.11: Record Keeping**
7. Complete and maintain an i~~I~~ncident a~~A~~ction p~~P~~lan and a daily trench inspection worksheet

~~6.711.2225.3: Senior Instructor Trainee~~

~~A. Senior Instructor Trainee is the entry level for becoming a Registered TRT Senior Instructor.~~

~~B. An individual is considered a Senior Instructor Trainee while he or she they completes the TRT Senior Instructor Trainee Task Book.~~
   ~~1. Trainees have two (2) years after beginning the task book to complete its requirements.~~
   ~~2. The applicant must submit the tTask bBook for instructor registration within one (1) year of completing it.~~

~~C. Under direct supervision of a Registered TRT Senior Instructor, the Senior Instructor Trainee shall:~~
   ~~1. Ensure all objectives and minimum requirements of the course curriculum are met~~
   ~~2. Function as the safety officer and monitor all safety aspects of the course~~
   ~~3. Supervise and evaluate any pPrimary iInstructor~~
   ~~4. Carry out all other related tasks as assigned by the Registered sSenior iInstructor~~
   ~~5. Satisfactorily complete the Senior Instructor Trainee Instructor Task Book~~

~~D. SFT does not register TRT Senior Instructor Trainees.~~

~~6.711.2225.4: Senior Instructor~~

~~A. A Registered TRT Senior Instructor is required for any delivery of a TRT course.~~

~~B. In addition to the responsibilities required of all SFT Registered Senior Instructors (See **6.3.6: Responsibilities**.), Registered TRT Senior Instructors are also required to:~~
   ~~1. Comply with **5.1.11: Record Keeping**~~
   ~~2. Complete and maintain an iIncident aAction pPlan and a daily trench inspection worksheet~~

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6.~~7~~11.~~23~~26: TRENCH RESCUE TECHNICIAN (TRT) – ~~PRIMARY~~ INSTRUCTOR

6.~~7~~11.~~23~~26.1: Eligible Courses

Table 6.~~710~~11.~~23~~26.1: TRT – ~~Primary~~ Instructor Eligible Courses

CFSTES Courses	FSTEP Courses
☐ None	☐ Trench Rescue Technician

6.~~7~~11.~~23~~26.2: General Qualifications

A. A TRT ~~Primary~~ Instructor Trainee or Registered ~~Primary~~ Instructor shall meet the qualifications required of all State Fire Training (SFT) Registered ~~Primary~~ Instructors.
   1. See **6.2.1: Qualifications**.

6.~~7~~11.~~23~~26.3: Course Work

A. A TRT ~~Primary~~ Instructor Trainee or Registered ~~Primary~~ Instructor must have attended and passed:
   ~~1. Rescue Systems 1: Basic Rescue Skills~~
   2. Trench Rescue Technician
   3. Confined Space Rescue: Operations/Technician (2021)

~~B. A Registered Instructor who has taught a trench rescue course since January 15, 2009, is eligible to attend a Trench Rescue Technician update course.~~

~~C. A Registered Instructor who has not taught a trench rescue course since January 15, 2009 is required to take the Trench Rescue Technician course.~~

6.~~7~~11.~~23~~26.4: Instructor Requirements

A. See **6.2.1.2: Instructor Requirements**.

6.~~7~~11.~~23~~26.5: Teaching Experience

A. None

6.~~7~~11.~~23~~26.6: Task Book

A. A TRT Instructor Trainee candidate must consistently work to complete all requirements documented in Instructor Task Book since its initiation date. Significant gaps between JPR sign offs may result in disqualification from teaching Trench Rescue Technician as a registered instructor or a candidate must initiate a new task book using State Fire Training's current published version. ~~A TRT Primary Instructor Trainee has two (2) years after starting his or her their TRT Primary Instructor Trainee Task Book to complete the tTask bBook requirements.~~

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B. A TRT ~~Primary~~ Instructor Trainee must satisfy all instructor requirements and become a Registered TRT ~~Primary~~ Instructor within one (1) year of completing ~~his or her~~ their Instructor T~~t~~ask B~~b~~ook.
   ~~1. A minimum of one Registered TRT Senior Instructor evaluators is required.~~

6.~~7~~11.~~23~~26.7: Professional Experience

A. A TRT ~~Primary~~ Instructor Trainee or Registered ~~Primary~~ Instructor shall meet the professional experience qualifications listed below.
   1. Performing in an "acting" capacity does not qualify.

Table 6.~~7~~11.~~23~~26.7: TRT – ~~Primary~~ Instructor Professional Experience

FSTEP Courses	Experience
☐ Trench Rescue Technician	☐ Have a minimum of three (3) years' full-time or six (6) years' part-time/volunteer experience as a fire fighter performing rescue duties within a recognized fire agency in California ☐ ~~Held the rank of Fire Fighter within a recognized fire agency in California performing rescue duties for a minimum of three (3) years (e.g., being a member of an identifiable rescue team)~~

~~**6.711.2326.8: Application – Primary Instructor Trainee**~~

~~A. The applicant shall submit the following items to the Registered TRT Senior Instructor who will oversee the evaluation:~~
   ~~1. A current resume listing education, position, and experience~~
   ~~2. A copy of a course completion certificate from SFT for Rescue Systems 1 and Trench Rescue Technician~~
   ~~3. A copy of SFT Instructor I1 and Instructor II2 certificates or verification of the qualifying equivalents~~
   ~~4. A verification letter signed by the Fire Chief, or his or her their authorized designee, describing the applicant's specific background as it relates to his or her their teaching experience and his or her their experience expertise.~~
      ~~i. See 4.1.1: Letters of Verification.~~
   ~~5. A blank Primary TRT Instructor Task Book~~

6.~~7~~11.~~23~~26.~~9~~8: Application – ~~Primary~~ Instructor

A. See **6.2.3: Application Process**.

6.~~7~~11.~~23~~26.~~10~~9: Maintenance

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A. A Registered TRT ~~Primary~~ Instructor shall teach at least one (1) SFT Trench Rescue Technician course~~s~~ every two (2) years.

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6.711.2427: TRENCH RESCUE TECHNICIAN (TRT) – SENIOR INSTRUCTOR

6.711.2427.1: Eligible Courses

Table 6.711.2427.1: TRT – Senior Instructor Eligible Courses

CFSTES Courses	FSTEP Courses
None	Trench Rescue Technician

6.711.2427.2: General Qualifications

A. A TRT Senior Instructor Trainee or Registered Senior Instructor shall meet the qualifications required of all State Fire Training (SFT) Registered Senior Instructors.
   1. See **6.3.1: Qualifications**.

6.711.2427.3: Course Work

A. Same as a Registered TRT Primary Instructor.
   1. See **6.7.2324.3: Course Work**.

6.711.2427.4: Instructor Requirements

A. A TRT Senior Instructor Trainee shall be currently registered as a TRT Primary Instructor in good standing.

6.711.2427.5: Teaching Experience

A. Taught at least one (1) SFT Trench Rescue Technician courses within the past two (2) years

6.711.2427.6: Task Book

A. A TRT Senior Instructor Trainee has two (2) years after starting his or her their TRT Senior Instructor Trainee Task Book to complete the tTask bBook requirements.

B. A TRT Senior Instructor Trainee must satisfy all instructor requirements and become a rRegistered TRT sSenior iInstructor within one (1) year of completing the tTask bBook.
   1. A minimum of two (2) Registered TRT Senior Instructor evaluators at two (2) separate courses are required.

6.711.2427.7: Professional Experience

A. Same as a Registered TRT Primary Instructor
   1. See **6.7.2327.7: Professional Experience**

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6.711. 2427.8: Application – Senior Instructor Trainee

A. The applicant shall submit the following items to the Registered TRT Senior Instructor who will oversee the evaluation:
   1. A current resume listing education, position, and experience
   2. Verification of Registered pPrimary iInstructor status
   3. Verification of Competent Person course certification
   4. Senior TRT Instructor Task Book

6.711. 2427.9: Application – Senior Instructor

A. See **6.3.3 Application Process**.

6.711. 2427.10: Maintenance

A. A Registered TRT Senior Instructor shall teach at least one (1) SFT Trench Rescue Technician courses every two (2) years.

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6.~~7~~11.~~9~~11: FIRE FIGHTING AND RESCUE INSTRUCTOR

6.~~7~~11.~~9~~11.1: Eligible Courses

Table 6.~~7~~11.~~9~~11.1: Fire Fighting and Rescue Instructor Eligible Courses

CFSTES Courses	FSTEP Courses
• None	• Aircraft Rescue and Firefighting Awareness • ~~Command and Control of the RIC Deployment~~ • Confined Space Rescue Awareness • ~~Emergency Response to Alternative Fuels~~ • Fire Fighter Survival • ~~Fireline Safety for the Hired Vendor~~ • Incident Safety Awareness for Hired Vendors • ~~Large Animal Rescue Operational~~ • Low Angle Rope Rescue Operational (LARRO) • Open Water Rescuer – Basic • Open Water Rescue Boat Operator – Small Vessel • Open Water Rescue Boat Operator – Large Vessel • Personal Watercraft Operations • Rapid Intervention Crew (RIC) Operations • Rescue Boat Operations • River and Flood Water Rescue • River/Flood Rescue Technician • River and Flood Rescue Boat Technician (2019) • ~~Tire Fire Prevention and Suppression~~ • Trench Rescue Technician • Vehicle Extrication

6.~~7~~11.~~9~~11.2: General Qualifications

A. A Registered Primary Instructor for a Fire Service Training and Education Program (FSTEP) Fire Fighting and Rescue course shall meet the following the qualifications required of all State Fire Training (SFT) Registered Primary Instructors.

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1. See **6.2.1: Qualifications**.

6.~~7~~11.~~9~~11.3: Course Work

A. Attending and passing SFT's Confined Space Rescue Technician course meets the requirement for attending and passing Confined Space Rescue Awareness.

B. Registered Low Angle Rope Rescue Operational Instructors must have attended and passed ICS-200: Basic ICS.

C. Attending and passing SFT's Auto Extrication (1996) course meets the requirement for attending and passing Vehicle Extrication.

D. Incident Safety Awareness for Hired Vendors instructors must have attended and passed Incident Safety Awareness for Hired Vendors (2018); Introduction to Incident Command System (ICS-100); Firefighter Training (S-130); Introduction to Wildland Fire Behavior (S-190); Intermediate Wildland Fire Behavior (S-290); Human Factors in the Wildland Fire Service (L-180); ICS for Single Resources and Initial Action Incidents (IS-200.B); and National Incident Management System - An Introduction (NIIMS 700.A).

6.~~7~~11.~~9~~11.4: Teaching Experience

~~A. In order to teach Command and Control of the RIC Deployment, the Registered Instructor must have previously assisted another Registered Instructor in teaching the course at least~~ once.

1. The Registered Instructor applicant shall submit to SFT a letter from a Registered ~~Instructor verifying this requirement.~~

A. It is recommended that a new instructor for SFT's Incident Safety Awareness for Hired Vendors co-teach with a primary instructor during their first course presentation.

6.~~7~~11.~~9~~11.5: Professional Experience

A. A Registered Primary Instructor for an FSTEP Fire Fighting and Rescue course shall meet the professional experience qualifications listed below.

1. Performing in an "acting" capacity does not qualify.

Table 6.~~7~~11.~~9~~11.5: Fire Fighting and Rescue Instructor Professional Experience

FSTEP Course	Experience
• Aircraft Rescue and Firefighting Awareness	• Held the rank of Fire Fighter and/or performed rescue duties within a recognized fire agency in California for a minimum of three (3) years; or worked

FSTEP Course	Experience
	in a volunteer position or paid call firefighter with a Recognized Fire Agency in California for a minimum of five (5) years. • Have a minimum of three years' experience within a recognized fire agency in California in the field of aircraft rescue and fire fighting
• Confined Space Rescue Awareness • Low Angle Rope Rescue Operational • ~~Personal Watercraft Operations~~ • ~~Rescue Boat Operations~~ • ~~River and Flood Water Rescue~~ • Trench Rescue	• Held the rank of Fire Fighter and/or performed rescue duties within a recognized fire agency in California for a minimum of two (2) years
• ~~Emergency Response to Alternative Fuels~~ • ~~Fireline Safety for the Hired Vendor~~ • ~~Large Animal Rescue Operational~~ • Low Angle Rope Rescue Operational • Open Water Rescuer - Basic • Personal Watercraft Operations • Rescue Boat Operations • River and Flood Water Rescue • ~~Tire Fire Prevention and Suppression~~ • ~~Trench Rescue~~	• Held the rank of Fire Fighter and/or performing suppression/rescue duties within a recognized fire agency in California for a minimum of two (2) years
• Trench Rescue Technician	• Have a minimum of three (3) years' full-time or six (6) years' part-time/volunteer experience as a fire fighter performing rescue duties within a recognized fire agency in California
• ~~Command and Control of~~	~~One of the following:~~

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FSTEP Course	Experience
~~RIC Deployment~~	• ~~Held the rank of Suppression Officer within a recognized fire agency in California for a minimum of three years~~ • ~~Worked as a volunteer Suppression Officer or paid Call Officer within a recognized fire agency in California for a minimum of five years~~
• Incident Safety Awareness for Hired Vendors	Letter verifying the following experience: • Minimum of five (5) years' full-time paid experience in a federal, state, local, or provincial fire agency and holds the rank of Company Officer • Has responded as a Single Resource or Overhead assignment which has gone through a check-in, briefing, and demobilization (completed a Shift Ticket) process on a campaign fire • Has working knowledge, skills, and abilities performing within Incident Command • Has been assigned to an incident within the last five (5) years (Red Card currency)
• Rapid Intervention Crew (RIC) Operations • Fire Fighter Survival	• Have five (5) years suppression/rescue experience, of which two (2) years must be while holding the rank of Fire Fighter performing suppression/rescue duties within a recognized fire agency in California
• Open Water Rescue Boat Operator – Small Vessel • Open Water Rescue Boat Operator – Large Vessel • River and Flood Rescue Boat Technician	• Held the rank of Fire Fighter and/or performed rescue duties within a recognized fire agency in California for a minimum of three (3) years; **or** worked in a volunteer position or paid call Fire Fighter with a Recognized Fire Agency in California for a minimum of five (5) years. • Specific expertise in Technical Rescue as it relates to Open Water Search and Rescue Boat Operations and Seamanship. Expertise must be relative to the size of the vessel and power

FSTEP Course	Experience
	configuration and qualify based on the scope required for the curriculum chosen to facilitate.
• River and Flood Rescue Technician	• Held the rank of Fire Fighter and/or performed rescue duties within a recognized fire agency in California for a minimum of two (2) years; **or** worked in a volunteer position or paid call Fire Fighter with a Recognized Fire Agency in California for a minimum of four (4) years.
• Vehicle Extrication	• Have three (3) year's suppression/rescue experience performing suppression/rescue duties within a recognized fire agency in California

6.~~7~~11.~~9~~11.6: Task Book

A. Fire Fighter Survival
   1. An Instructor applicant for Fire Fighter Survival shall complete the appropriate instructor trainee task book.
   2. A Registered Fire Fighter Survival Primary Instructor must sign off on the applicant's task book within two (2) years of its initiation.

B. Low Angle Rope Rescue Operational
   1. An Instructor applicant for Low Angle Rope Rescue Operational (LARRO) shall complete the appropriate ~~i~~Instructor ~~t~~Trainee ~~t~~Task ~~b~~Book.
   2. A Registered LARRO Primary Instructor must sign off on the applicant's tTask bBook within two (2) years of its initiation.

C. Rapid Intervention Crew Operations
   1. An Instructor applicant for Rapid Intervention Crew Operations shall complete the appropriate ~~i~~Instructor ~~t~~Trainee ~~t~~Task ~~b~~Book.
   2. A Registered Rapid Intervention Crew Operations Primary Instructor must sign off on the applicant's ~~t~~Task ~~b~~Book within two (2) years of its initiation.

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6.~~7~~11.~~22~~25: TRENCH RESCUE TECHNICIAN (TRT) – INSTRUCTOR LEVELS

6.~~7~~11.~~22~~25.1: ~~Primary~~ Instructor Trainee

A. ~~Primary~~ Instructor Trainee is the entry level for becoming a Registered TRT ~~Primary~~ Instructor.

B. An individual is considered an ~~Primary~~ Instructor Trainee while ~~he or she~~ they completes the TRT ~~Primary~~ Instructor ~~Trainee~~ Task Book.
   1. An Instructor Trainee candidate must consistently work to complete all requirements documented in Instructor Task Book since its initiation date. Significant gaps between JPR sign offs may result in disqualification from teaching Trench Rescue Technician as a registered instructor or a candidate must initiate a new task book using State Fire Training's current published version.Trainees have two (2) years after beginning the tTask bBook to complete its requirements.
   2. The applicant must submit the Instructor ~~t~~Task ~~b~~Book for instructor registration within one (1) year of completing it.

C. Under direct supervision of a Registered TRT ~~Senior~~ Instructor, the ~~Primary~~ Instructor Trainee shall:
   1. Assist in classroom and field exercise setup
   2. Support the logistics of the component(s) ~~he or she is~~ they are training to teach
   3. ~~Instruct no more than 50% of a single course delivery~~
   4. Carry out all other related tasks as assigned by the Registered ~~Senior~~ Instructor
   5. Satisfactorily complete the ~~Primary~~ Instructor ~~Trainee~~ Task Book

D. State Fire Training (SFT) does not register TRT ~~Primary~~ Instructor Trainees.

6.~~7~~11.~~22~~25.2: ~~Primary~~ Registered Instructor

A. A Registered TRT ~~Primary~~ Instructor is qualified to deliver the cognitive (lecture) portions of the class to up to 24 students and teach the psychomotor (application) portions to one (1) squad (up to ~~__~~ _____ students) in a TRT course ~~_____~~.
   1. Any instructor counted toward student ratios must be an SFT Registered TRT Instructor.

B. In addition to the responsibilities required of all SFT Registered ~~Primary~~ Instructors (See **6.2.7: Responsibilities**.), Registered TRT ~~Primary~~ Instructors~~, under the supervision of a Registered TRT Senior Instructor,~~ are also required to:
   1. Set up the classroom and field exercises
   2. Ensure all objectives and minimum requirements of the course curriculum are met
   3. ~~Administer any psychomotor skills exams~~
   4. Evaluate student/team performance and sign each student's ~~_____~~ _____ Record

5. Function as the safety officer to c~~C~~oordinate and monitor all safety aspects of the course
6. Comply with **5.1.11: Record Keeping**
7. Complete and maintain an ~~i~~Incident ~~a~~Action ~~p~~Plan and a daily trench inspection worksheet

~~6.711.2225.3: Senior Instructor Trainee~~

~~A. Senior Instructor Trainee is the entry level for becoming a Registered TRT Senior Instructor.~~

~~B. An individual is considered a Senior Instructor Trainee while he or she they completes the TRT Senior Instructor Trainee Task Book.~~

~~1. Trainees have two (2) years after beginning the task book to complete its requirements.~~

~~2. The applicant must submit the tTask bBook for instructor registration within one (1) year of completing it.~~

~~C. Under direct supervision of a Registered TRT Senior Instructor, the Senior Instructor Trainee shall:~~

~~1. Ensure all objectives and minimum requirements of the course curriculum are met~~

~~2. Function as the safety officer and monitor all safety aspects of the course~~

~~3. Supervise and evaluate any pPrimary iInstructor~~

4. Carry out all other related tasks as assigned by the Registered sSenior iInstructor
5. Satisfactorily complete the Senior Instructor Trainee Instructor Task Book

~~D. SFT does not register TRT Senior Instructor Trainees.~~

~~6.711.2225.4: Senior Instructor~~

~~A. A Registered TRT Senior Instructor is required for any delivery of a TRT course.~~

~~B. In addition to the responsibilities required of all SFT Registered Senior Instructors (See~~ **6.3.6: Responsibilities**.), Registered TRT Senior Instructors are also required to:

1. Comply with **5.1.11: Record Keeping**
2. Complete and maintain an iIncident aAction pPlan and a daily trench inspection ~~worksheet~~

6.~~7~~11.~~23~~26: TRENCH RESCUE TECHNICIAN (TRT) – ~~PRIMARY~~ INSTRUCTOR

6.~~7~~11.~~23~~26.1: Eligible Courses

Table 6.~~710~~11.~~23~~26.1: TRT – ~~Primary~~ Instructor Eligible Courses

CFSTES Courses	FSTEP Courses
• None	• Trench Rescue Technician

6.~~7~~11.~~23~~26.2: General Qualifications

A. A TRT ~~Primary~~ Instructor Trainee or Registered ~~Primary~~ Instructor shall meet the qualifications required of all State Fire Training (SFT) Registered Primary Instructors.
   1. See **6.2.1: Qualifications**.

6.~~7~~11.~~23~~26.3: Course Work

A. A TRT ~~Primary~~ Instructor Trainee or Registered ~~Primary~~ Instructor must have attended and passed:
   ~~1. Rescue Systems 1: Basic Rescue Skills~~
   2. Trench Rescue Technician
   3. Confined Space Rescue: Operations/Technician (2021)

~~B. A Registered Instructor who has taught a trench rescue course since January 15, 2009, is eligible to attend a Trench Rescue Technician update course.~~

~~C. A Registered Instructor who has not taught a trench rescue course since January 15, 2009 is required to take the Trench Rescue Technician course.~~

6.~~7~~11.~~23~~26.4: Instructor Requirements

A. See **6.2.1.2: Instructor Requirements**.

6.~~7~~11.~~23~~26.5: Teaching Experience

A. None

6.~~7~~11.~~23~~26.6: Task Book

A. A TRT Instructor Trainee candidate must consistently work to complete all requirements documented in Instructor Task Book since its initiation date. Significant gaps between JPR sign offs may result in disqualification from teaching Trench Rescue Technician as a registered instructor or a candidate must initiate a new task book using State Fire Training's current published version. ~~A TRT Primary Instructor Trainee has two (2) years after starting his or her their TRT Primary Instructor Trainee Task Book to complete the tTask bBook requirements.~~

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B. A TRT ~~Primary~~ Instructor Trainee must satisfy all instructor requirements and become a Registered TRT ~~Primary~~ Instructor within one (1) year of completing ~~his or her~~ their Instructor T~~t~~ask B~~b~~ook.
   1. A minimum of one Registered TRT Senior Instructor evaluators is required.

6.~~7~~11.~~23~~26.7: Professional Experience

A. A TRT ~~Primary~~ Instructor Trainee or Registered ~~Primary~~ Instructor shall meet the professional experience qualifications listed below.

   1. Performing in an "acting" capacity does not qualify.

Table 6.~~7~~11.~~23~~26.7: TRT – ~~Primary~~ Instructor Professional Experience

FSTEP Courses	Experience
• Trench Rescue Technician	• Have a minimum of three (3) years' full-time or six (6) years' part-time/volunteer experience as a fire fighter performing rescue duties within a recognized fire agency in California • ~~Held the rank of Fire Fighter within a recognized fire agency in California performing rescue duties for a minimum of three (3) years (e.g., being a member~~ of an identifiable rescue team)

~~**6.711.2326.8: Application – Primary Instructor Trainee**~~

~~A. The applicant shall submit the following items to the Registered TRT Senior Instructor who~~ will oversee the evaluation:
   1. A current resume listing education, position, and experience
   2. A copy of a course completion certificate from SFT for Rescue Systems 1 and Trench Rescue Technician
   3. A copy of SFT Instructor I1 and Instructor II2 certificates or verification of the qualifying equivalents
   4. A verification letter signed by the Fire Chief, or his or her their authorized designee, describing the applicant's specific background as it relates to his or her their teaching experience and his or her their experience expertise.
      ~~i.~~ See 4.1.1: Letters of Verification.
   ~~5. A blank Primary TRT Instructor Task Book~~

6.~~7~~11.~~23~~26.~~9~~8: Application – ~~Primary~~ Instructor

A. See **6.2.3: Application Process**.

6.~~7~~11.~~23~~26.~~10~~9: Maintenance

A. A Registered TRT ~~Primary~~ Instructor shall teach at least one (1) SFT Trench Rescue Technician course~~s~~ every two (2) years.

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~~6.711.2427: TRENCH RESCUE TECHNICIAN (TRT) – SENIOR INSTRUCTOR~~

~~6.711.2427.1: Eligible Courses~~

~~**Table 6.711.2427.1: TRT – Senior Instructor Eligible Courses**~~

~~CFSTES Courses~~	~~FSTEP Courses~~
~~• None~~	~~• Trench Rescue Technician~~

~~6.711.2427.2: General Qualifications~~

~~A. A TRT Senior Instructor Trainee or Registered Senior Instructor shall meet the qualifications required of all State Fire Training (SFT) Registered Senior Instructors.~~

1. See **6.3.1: Qualifications**.

~~6.711.2427.3: Course Work~~

~~A. Same as a Registered TRT Primary Instructor.~~

1. See **6.7.2324.3: Course Work**.

~~6.711.2427.4: Instructor Requirements~~

~~A. A TRT Senior Instructor Trainee shall be currently registered as a TRT Primary Instructor in~~ good standing.

~~6.711.2427.5: Teaching Experience~~

~~A. Taught at least one (1) SFT Trench Rescue Technician courses within the past two (2) years~~

~~6.711.2427.6: Task Book~~

~~A. A TRT Senior Instructor Trainee has two (2) years after starting his or her their TRT Senior~~ Instructor Trainee Task Book to complete the tTask bBook requirements.

~~B. A TRT Senior Instructor Trainee must satisfy all instructor requirements and become a~~ rRegistered TRT sSenior iInstructor within one (1) year of completing the tTask bBook.

1. A minimum of two (2) Registered TRT Senior Instructor evaluators at two (2) separate courses are required.

~~6.711.2427.7: Professional Experience~~

~~A. Same as a Registered TRT Primary Instructor~~

1. See **6.7.2327.7: Professional Experience**.

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~~6.711. 2427.8: Application – Senior Instructor Trainee~~

~~A. The applicant shall submit the following items to the Registered TRT Senior Instructor who~~ will oversee the evaluation:

1. A current resume listing education, position, and experience
2. Verification of Registered pPrimary iInstructor status
3. Verification of Competent Person course certification
4. Senior TRT Instructor Task Book

~~6.711. 2427.9: Application – Senior Instructor~~

~~A. See **6.3.3 Application Process.**~~

~~6.711. 2427.10: Maintenance~~

~~A. A Registered TRT Senior Instructor shall teach at least one (1) SFT Trench Rescue Technician~~ courses every two (2) years.

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