

Additional Features and Options

Note: *Italic* statements to be edited to suit project. **Copy and paste to Additional Features and Options section of the tower specifications.**

Fire Escape

Exterior fire escape to the *roof deck (40' high)*. Stair widths shall be 3'-0" wide and hot-dipped galvanized. Constructed of formed stringers welded to bar grate treads with open risers. Hand rails to be manufactured from 1.25" I.D. (1.66" O.D.) schedule 40 round pipe and hot-dipped galvanized. To include swing doors at each upper floor.

Supported Balcony

Supported balcony to second deck level deck size is to be 3'-6" wide x 6'-0" long and include a swing door at the balcony level. To be constructed of tubular columns and 1.25" I.D. (1.66" O.D.) schedule 40 round pipe railings. To be hot-dipped galvanized. *Balcony to be located*

Ships Ladder

Provide a ship ladder that extends from the *attic floor to the roof deck*. The ships ladder shall be constructed from heavy gage steel stringers and welded steel bar grate treads and open risers. The ladder shall have hand rails on both sides and shall be provided hot-dipped galvanized.

Forged Swivel Rappelling Anchor

(0) Rappelling anchors shall be rated for an ultimate load of 10,000 lbs and working load of 1,000 lbs (exceeds OSHA load requirement 29 CFR 1926.502(d)(15) and meets NFPA 1402 standard 11.2.1). The anchor housing shall be galvanized aircraft quality alloy and capable of a 360 degree swivel and 180 degree pivot. Each anchor shall be 200% proof-load tested.

Roof Hatch 3'-0" x 2'-6"

Provide (0) Bilco 3'-0" x 2'-6" roof hatch(es) in the *tower* roof. The hatch shall be equipped with compression spring operators, positive latching mechanism, automatic hold open arm, and shall be galvanized steel with prime paint covering.

Roof Hatch 2'-6" x 4'-6"

Provide (0) Bilco 2'-6" x 4'-6" roof hatch in the *tower* roof. The hatch shall be equipped with compression spring operators, positive latching mechanism, automatic hold open arm, and shall be galvanized steel with prime paint covering.

Elevator Shaft (confined space rescue)

Elevator shaft shall extend from ground level to the *4th deck* level. It shall include an interior roll-up door at each deck level and a 2'-6" x 3'-0" Bilco hatch in the roof. The outside dimensions shall be 6'-0" x 8'-0" and the inside dimensions shall be 4'-0" x 4'-0".

Roll-up Door

The roll-up door shall consist of a continuously corrugated galvanized steel curtain with a siliconized polyester finish. The door shall slide on guides onto a top drum through the means of

a torsion spring. This door aids in the simulation of commercial training exercises though a larger access door.

Riser System

Brass siamese fire department connection (4" x 2 ½" x 2 ½"; NST thread) located at the exterior of the tower, with galv. interior 4" diameter riser (*34' high*). Include a connection (2.5" NST thread) on the towers interior at each deck level and a connection for future sprinklers at each floor.

Sprinkler System

A two head sprinkler system shall be located on the 1st floor. The system shall utilize galvanized 1" diameter pipes, galvanized elbows/tees, and a shutoff valve, along with the threaded rods/clamps required for attachment. – (0) total sprinkler system(s) required

Exhaust Fan

Fan/Belt driven sidewall exhauster, 1 ½ horsepower with a 24" x 24" damper and interior safety shield (*one speed, 240 volt single phase*) (*two speed, 208 volt, 3 phase*) – (0) fan(s) required

External Alarm Components

Audible and visual external alarm components shall act as an additional warning system via connection to a Scout Temperature Monitoring System. Buzzer and strobe light shall turn on when the burn room temperatures exceed the trip limits, which are preset in the Scout Temperature Monitoring System. Components shall be U.L. rated and consist of an amber strobe light with buzzer (85 decibels at 10 feet), 120 to 24 VAC transformer, relay (24 VAC input - rated for 120 VAC), momentary kill switch/button, and a lockable 10" x 10" x 6" NEMA 3R enclosure. 120 VAC electrical service, component assembly, and wiring materials are by others.

Cellular Texting Alarm

The cellular texting alarm shall act as a long distance real-time notification system when used in combination with the Scout Temperature Monitoring System. A cellular text message will be sent out to three separate mobile devices when the burn room temperatures exceed the trip limits (which are preset via the Scout Temperature Monitoring System). Cellular messages shall notify the user of both the time and date of when the temperatures are exceeded, when the temperatures return to normal, when a power outage occurs, when the power is reestablished, and when the backup batteries are low. The cellular alarm itself includes two inputs, a 100 decibel buzzer, and cellular programming capabilities. The alarm is contained in a gasketed aluminum 8 ¾" x 5 ¾" x 2 1/8" NEMA 4X enclosure. 120 VAC electrical service, component assembly, Verizon cellular activation/annual fee, backup batteries, and wiring materials are by others.

Please note that an additional relay is also required if used in combination with the Audible/Visual External Alarm components.

Fire Watchman Pyrometer

Temperature monitoring shall be sustained with a multiple input, backlit touch screen monitor. The pyrometer shall be connected to thermocouples, which are located within the burn areas for

temperature reading, and mounted in a locked NEMA weatherproof box. This pyrometer shall display all attached thermocouple temperatures simultaneously and have an onscreen programming menu via the monitor itself or via a mobile device. The pyrometer shall allow for connection of up to 16 thermocouples and shall be able to data log temperatures of each individual thermocouples. The data logging is also thermally activated and automatically starts recording at temperatures above 150 degrees Fahrenheit and is stored on a weather sealed USB drive or mobile cloud. The mobile cloud allows for access to current and stored data and also for viewing data graphs and widgets. The pyrometer shall also include an internal audio alarm and external visual alarm.

On screen information can also be displayed on an Android or Apple Phone or tablet via Wi-Fi or Cellular Service which shall also sends a mobile alert when the adjustable alarm temperature setting has been met. This unique application allows the training and safety officers to be away from the area where the pyrometer is installed, while still being able to monitor the temperatures within the burn rooms, and ensure that the operation of the burn room is conducted within a safe and controlled environment.

120 VAC electrical service, optional mobile cloud access fee, and wiring materials are by others. Mobile cloud/cellular service is only available in the continental lower 48 States and Hawaii.

Smoke Distribution System

The artificial smoke distribution system shall allow for runs of (6) interior smoke outlets and (1) exhaust outlet. This system includes two cabinets, 115 volt circulation blower, 3" gate valves, and 3" dia. schedule 40 PVC pipes. One of these cabinets shall allow for a separate compartment for holding a propellant tank for a standard smoke generator. The cabinets shall be hot-dipped galvanized, per ASTM A-924 and painted on both the interior and exterior of the cabinet. The base coat shall be a 0.2 to 0.25 mil coat of a polyurethane primer. The topcoat shall be a 0.7 to 0.8 mil coat of silicon protected polyester on the face side. The paint, on both sides of the panel, is to be baked on. The finished surfaces are to have a light wax coating applied after painting. Does not include smoke generator.

Smoke Generator

Provide a smoke generator that operates on a 100% duty cycle with a smoke output of 7,680 cfm. This generator shall use an oil based fluid with a maximum particle size of .7 microns to ensure long hang time and dense smoke (**maximum visibility of 3 ft in a 29' x 29' x 9' high area after one minute of use**). An automatic purging system shall be included to prevent the heat exchanger from premature failure and clogs. The generator shall include 4 gallons of a safe, nontoxic, and oil based fluid. Oil based fluids are recommended for fire training environments, over water based fluids, as oil based fluids have 20 to 25 times longer hang time and will not dissipate rapidly in high temperature environments. **The smoke generator shall have a 5 year warranty.**

Foldable Roof Guard Rails

Handrails to be manufactured from 1.25" I.D. (1.66" O.D.) schedule 40 round pipe and hot-dipped galvanized. Handrail system to be installed around the perimeter of the roof with the ability to fold down when in transport.

Caged Ladder

A caged ladder shall extend from *ground to the roof*. The unit shall be constructed of tubular rails and bar steps. The cage is to be made of steel strap and the entire unit is to be provided hot-dipped galvanized.

Movable Wall System/Maze

Each individual movable wall panel (3'-7" wide x full height) is constructed of 20 ga. galv. vertical and horizontal channel stiffeners with a 14 ga. galv. top track. This top track then attaches to a 14 ga. galv. hanging track. The whole system is then held into place with two compression clamps. This system shall allow the wall to slide on the top track, lock into place, and allow for total removal without the use of tools. – (0) movable wall panel(s) required

Movable Wall System With Working Door For Maze

Each individual movable wall panel (3'-7" wide x full height) is constructed of 20 ga. galv. vertical and horizontal channel stiffeners with a 14 ga. galv. top track. This top track then attaches to a 14 ga. galv. hanging track. The whole system is then held into place with two compression clamps/threshold assembly. This system shall allow the wall to slide on the top track, lock into place, and allow for total removal without the use of tools. The 2'6" x 6'-10" door shall consist 20 ga. galv. steel and includes a lockset. – (0) movable wall panel(s) with working door required

Forcible Entry Door

Heavy duty steel door equipped with a breakaway lock mechanism. Lock system is easily reset and force requirements are adjustable. Provides training for breaching a locked door. Approved manufacturer of this lock mechanism is Power Jamb. – (0) required

Ladder Hook Bar

The ladder hook bar is used on sloped roofs to ensure a safe attachment of the trainee's ladder hook when setting the ladder on the roof itself. This system consists of 10'-6" long schedule 80 pipe with 12 ga. pipe angles for attachment. This system shall be hot-dipped galvanized. – (0) ladder hook bars required

Class A Burn Prop

A solid stainless steel prop with dimensions 30" x 50" x 36" is designed to hold class "A" materials 18" up off of the floor surface. All welded construction with a removable stainless steel ash drawer to catch debris, yet let water pass through. This unit is designed to hold pallet lumber and straw. The unit includes heavy duty locking casters that allow easy relocation of the seat of the fire, yet will lock in place. Weighs 300 pounds. – (0) props required

Bilco Floor Door 3'-0" x 3'-0"

Provide a Bilco 3'-0" x 3'-0" floor door in the *2nd and 3rd floors*. The door shall be rated for 300 psf live load with a ¼" thick diamond plate cover. It shall be hot-dipped galvanized and

equipped with both a compression spring lifting mechanism and a hold open arm. – (0) total floor door(s) required

Rappel Railing System

Three rail rappelling railing system (prime painted) is 42" high and consists of (3) 3" diameter pipes (schedule 80) set horizontally at 12" on center. This system allows the rope to run from the rappelling ring tie off point, at the deck, overtop to the trainee. It is used to aid trainees in rappelling exercises by raising the rope up off of the roof deck to help with the initial roof edge situation. – (0) rappelling railing system(s) required

Movable Half Wall System/Maze

Each individual movable wall panel (36" wide x 45" tall x 1 5/8" thick) is constructed of 20 ga. galv. vertical stiffeners and 16 ga. galv. horizontal channels. The upper and lower horizontal channels allow for attachment of other wall panels to any point along either side of this panel or to either end. The whole system is self standing and allows the instructor to view trainees maneuvering the maze. – (0) movable half wall panel(s) required

Removable Vertical Confined Space Rescue Prop

This removable prop consists of utilizing four movable wall panels per floor along with a Milcor floor door at each desired level. These units are configured to form a vertical shaft through to the floor(s) below. Provide a Milcor 3'-0" x 3'-0" floor door in the *2nd and 3rd floors*. The door shall be equipped with counter balancing springs and shall be provided prime painted. Each individual movable wall panel (3'-7" wide x full height) is constructed of 20 ga. galv. vertical and horizontal channel stiffeners with a 14 ga. galv. top track. This top track then attaches to a 14 ga. galv. hanging track. The whole system is then held into place with two compression clamps. This system shall allow the wall to slide on the top track, lock into place, and allow for total removal without the use of tools.

Secondary Burn Room

Secondary burn room 12'-0" x 12'-0" to be located_____. The burn room shall incorporate two swing doors. Interior of room shall be protected with a stainless steel insulating system described in section 2.22. Room shall be capable of 1850°F burns.

Burn Crib

The burn crib provides a convenient means to protect concrete floors from premature spalling and cracking. This 49" x 49" prop elevates the fuel source of class "A" fires approximately 6" above the floor. This assembly is easily bolted together and consists of all 12 gage galvanized materials. – (0) crib(s) required

Foundation Design

The foundation shall be designed to handle the structural tower loads (loads designated by the tower manufacturer) along with the existing soil conditions (soil test/report by others). All ground floor columns and stud walls shall sit on a concrete curb and the interior of the ground floor slab shall be sloped to aid in removing the high volumes of water utilized in these types of structures.

Mortarless Brick Façade

Mortarless brick siding shall be attached to the outside of the structure through an exterior panel to vertical studs. Approved manufacturer of this system is Novabrik®.

Debris Catch Pan

The debris catch pan is designed to collect material left over from the fire fuel source (i.e., nails and unburned wood scraps) as the room is cleaned/sprayed-out through an exterior burn room door. This 16 ga. galvanized assembly is bolted together and shall be 42" wide x 33" long x 5" high. It shall incorporate weep holes for drainage, latches on each side for easy attachment and removal from the structure, four handles for moving, and the capability for accumulated materials to be discarded. – (0) pan(s) required

Durabak™ Slip-Resistant Paint Roof System

18 ga. galvanized roof panels covered with a three-coat paint system. The basecoat shall consist of an etch primer while the two topcoats will consist of a finishing polyurethane paint with embedded rubber aggregate. This paint shall be slip resistant, waterproof, abrasion, chemical, salt water, UV and corrosion resistant. Note: Paint does not cover recesses in panels, only the flats of the panels. Acceptable manufacturer of this paint system is The Durabak™ Company.

Slip-Resistant Tape

Slip-resistant tape shall be provided for the 18 ga. galvanized roof panels. This tape shall be 4" wide with a mineral coated surface (for light to heavy shoe-traffic) and have a pressure sensitive adhesive. Note: Tape should only be applied to the flats of the panels. Acceptable manufacturer of this tape system is 3M™.

Operating Lever Latch

Provide a heavy-duty operating lever latch for all tower shutters and burn room doors. This latch shall have interior and exterior padlocking handles. The latch case shall have 1/8" thick zinc plated steel with a black powder coated finish.

Heavy-Duty Spring Closer For Burn Room Doors

Heavy-duty spring action closer rated for swinging doors that exceed 200 pounds. The closer is fully adjustable for different force settings without the requirement of tools. The materials for this closure are both zinc plated steel and hot-dipped galvanized malleable iron. A roller guide is also included to ensure smooth operation.

Attic Burn Area

Attic burn area 4'-0" x 4'-0" lined on the three walls, floor, and ceiling with a stainless steel insulating system described in section 2.22. Area is to be capable of withstanding a 600°F burn.

Firefighter Combat Challenge Stair Tower

Designed to the same specifications as the Scott Firefighter Combat Challenge®. This 41'H x 12'L standalone structure is hot-dipped galvanized. Stair tower can be connected to new or existing fire training facility or placed as a stand alone unit. Stair widths shall be 2'-6" wide and shall be constructed of formed stringers welded to bar grate treads with open risers. Hand rails to be manufactured from 1.25" I.D. (1.66" O.D.) schedule 40 round pipe.

Roof Guard Rails

Handrails to be manufactured from 1.25" I.D. (1.66" O.D.) schedule 40 round pipe and hot-dipped galvanized. Handrail system to be installed around the perimeter of the residence roof and set back from the edge of the roof for additional safety.

Interior Ladder

An interior ladder is to extend from *the third floor to the attic*. It shall be constructed of tubular rails and bar steps and will be provided hot-dipped galvanized. It shall include a chain gate at the upper level.

Cantilevered Balcony

Cantilevered balcony shall be constructed of prime painted structural tube and hot-dipped galvanized bar grate deck and joists. Balcony to be approximately *4'-0" wide x 22'-0" long*. *Balcony to be located _____*. Balcony shall be totally cantilevered, no support columns may be used. Shall include *one* door to the interior. Perimeter railing shall be 1.25" I.D. (1.66" O.D.) schedule 40 hot-dipped galvanized round pipe.

Helicopter Skid Simulator

6' x 5'-11" 18 gage roof deck simulates a helicopter floor. Constructed of prime painted structural tube and pipe to form skids, hot-dipped galvanized joists, and is positioned on the tower roof. Simulator shall be totally cantilevered, no support columns may be used. Perimeter railing shall be 1.25" I.D. (1.66" O.D.) schedule 40 hot-dipped galvanized round pipe with chained gates on both sides.

Cantilevered Rappelling Platform 4'-0" x 4'-0"

Balcony constructed of prime painted structural tube and hot-dipped galvanized joists and bar grate deck - positioned on the tower roof. Balcony shall be totally cantilevered, no support columns may be used.

Multi-Level Platform

Supported multi-level platform shall consist of prime painted structural steel. Hot-dipped galvanized 1.25" I.D. (1.66" O.D.) schedule 40 round pipe perimeter railing, bar grate deck and joists shall also be included. Each level to be approximately *11'-8" wide x 21'-6" long* and shall include a swing door at each upper floor.

Corner/Inset Balcony

Recessed corner/inset balcony on the *4th* floor(s) with 1.25" I.D. (1.66" O.D.) schedule 40 hot-dipped galvanized round pipe perimeter railings and access door to interior.

Confined Space Rescue Prop

Tube/corrugated galvanized pipe (36" dia.) shall extend from *1st to 2nd* floor level. It shall include a 90 degree elbow and a 3'-0" x 3'-0" Milcor floor door at the top floor level for entrance and access to lower floor level.

Corner Burn Area

Corner burn area. 8'-0" x 8'-0" lined on two walls and the ceiling with a stainless steel insulating system described in section 2.22. Area is to be capable of withstanding a 600°F burn. Floor protection provided by others.

Basement Trainer

The fire-training trailer shall have a 4'-0" x 8'-6" balcony above the gooseneck with a perimeter railing and a removable exterior ladder. There shall be a fixed interior stair from this balcony down into the burn area to simulate basement fire scenarios. The exterior ladder, perimeter railing, and the interior stair shall be hot-dipped galvanized.

Trailer Length Upgrade/Increase

The overall length of the fire-training trailer shall be increased by an additional six feet. The increase in length shall also include an upgrade to (3) 10,000 lbs axles and a GVWR rating of 26,000 lbs.

Stove Simulator With Enclosed Overhead Hood - Class A Burn Prop

The stove simulator assembly consists of 1/4" thick prime painted angles and 12 gage stainless steel panels bolted together with 3/8" diameter bolts through pre-punched holes for ease of assembly. The prime painted 19W4 x 1 1/2" x 3/16" bar grate is designed to hold class "A" materials 1'-4" above the floor surface. Dimensions for this prop shall be approximately 4'-5 1/2" x 4'-5 1/2" x 6'-7" tall and shall resemble a commercial grade stove. The overhead hood of this unit is 2'-11" x 4'-5 1/2" and is enclosed by stainless steel panels. A sliding/removable stainless steel range top with large ventilation holes shall also be provided. The range top helps to limit the number of pallets trainees can place in the unit by covering approximately half of the unit. – (0) required

Stove Simulator With Overhead Burn Hood - Class A Burn Prop

The stove simulator assembly consists of 1/4" thick prime painted angles and 12 gage stainless steel panels bolted together with 3/8" diameter bolts through pre-punched holes for ease of assembly. The prime painted 19W4 x 1 1/2" x 3/16" bar grate is designed to hold class "A" materials 1'-4" above the floor surface. Dimensions for this prop shall be approximately 4'-5 1/2" x 4'-5 1/2" x 6'-7" tall and shall resemble a commercial grade stove. The overhead bar grate hood of this unit is 2'-11" x 4'-5 1/2" and provides another area to hold class "A" materials for a secondary fire. A sliding/removable stainless steel range top with large ventilation holes shall also be provided. The range top helps to limit the number of pallets trainees can place in the unit by covering approximately half of the unit. – (0) required

Bunk Bed Simulator With Enclosed Top Bunk - Class A Burn Prop

The bunk bed simulator assembly consists of 1/4" thick prime painted angles and 12 gage stainless steel panels bolted together with 3/8" diameter bolts through pre-punched holes for ease of assembly. The prime painted 19W4 x 1 1/2" x 3/16" bar grate is designed to hold class "A" materials 1'-4" above the floor surface. Dimensions for this prop shall be approximately 4'-5

1/2" x 4'-5 1/2" x 6'-7" tall and shall resemble a bunk bed. The overhead bunk of this unit is also 4'-5 1/2" x 4'-5 1/2" and is enclosed by stainless steel panels. – (0) required

Bunk Bed Simulator With Burnable Top Bunk - Class A Burn Prop

The bunk bed simulator assembly consists of 1/4" thick prime painted angles and 12 gage stainless steel panels bolted together with 3/8" diameter bolts through pre-punched holes for ease of assembly. The prime painted 19W4 x 1 1/2" x 3/16" bar grate is designed to hold class "A" materials 1'-4" above the floor surface. Dimensions for this prop shall be approximately 4'-5 1/2" x 4'-5 1/2" x 6'-7" tall and shall resemble a bunk bed. The overhead bar grate bunk of this unit is also 4'-5 1/2" x 4'-5 1/2" and provides another area to hold class "A" materials for a secondary fire. – (0) required

Bed Simulator - Class A Burn Prop

The bed simulator assembly consists of 1/4" thick prime painted angles and 12 gage stainless steel panels bolted together with 3/8" diameter bolts through pre-punched holes for ease of assembly. The prime painted 19W4 x 1 1/2" x 3/16" bar grate is designed to hold class "A" materials 1'-4" above the floor surface. Dimensions for this prop shall be approximately 4'-5 1/2" x 4'-5 1/2" x 4'-4" tall and shall resemble a bed with headboard. A sliding/removable stainless steel lid with large ventilation holes shall also be provided. The lid helps to limit the number of pallets trainees can place in the unit by covering approximately half of the entire unit. – (0) required

Manhole Frame/Cover

A 34" solid cast iron manhole cover with self sealing gasket shall be used to access floor below. A surrounding cast iron square base/frame shall be provided along with a concealed pick point in the cover. – (0) required

Annunciator Visual/Audio Alarm Panel

The 24 VDC annunciator panel allows for 16 switch inputs to light up separate alarm areas via LED lights. Audible and visual alarm components shall act as a warning system to indicate trouble and alarm situations with a keyed switch silence capability. These alarms are triggered to simulate fire/trouble for each floor or room via toggle switches. In order to simulate fire/trouble situations a separate instructor box is used to switch on the annunciator panel's indicator lights/alarm to allow the trainee to determine which area is in need of aid, similar to control rooms in larger buildings. Control box components shall consist of a 12" x 10" x 6" NEMA 12 enclosure, 120 VAC to 24 VDC transformer, terminal block, 16 toggle switches with boots. 120 VAC electrical service, component assembly, and wiring materials are by others. - (0) annunciator(s) required

Tactical Breach Door

The tactical breach door provides training for ram/kick breaching and shotgun breaching. The door frame and backer frame shall be AR-500 steel. The door shall have an easily replaceable plywood façade such that replacement can be accomplished using standard hand tools. The door

shall have two interchangeable mechanical breaching mechanisms which can simulate standard locks/deadbolts or multiple locking mechanisms. These mechanisms shall be easily reset (mechanically) and the force requirements are adjustable. The door shall also have an easily replaceable consumable breachpoint for use with shotgun breaching. The mechanical breaching mechanism may be used in tandem with the consumable breachpoint to simulate multiple lock situations. – (0) breach door(s) required