

**GUILFORD TECHNICAL COMMUNITY COLLEGE**  
**EMERGENCY RESPONSE TRAINING CENTER**  
**GUIDELINES FOR BURN BUILDING-ERTC 1 USAGE**  
**REVISED AUGUST 8, 2018**

**GENERAL GUIDELINES:**

- The Burn Building shall be reserved in advance and the department and/or lead instructor's name placed on the ERTC calendar. Reservations are made by contacting any of the following ERTC Staff members and asking for the event to be placed on the calendar: Fire Occupational Extension Director(ext. 50195), Fire Academy Coordinator(ext. 50194), or the Fire Occupational Extension Administrative Assistant(ext. 50223).
- Any evolution utilizing GTCC resources (hay, sheetrock, OSB, smoke fluid, etc.) must be run as a class through GTCC in order to recoup funds to cover the cost of the resources.
- Before any exercise using live fire evolutions in the burn building, the air quality for our region must be checked at <http://www.wunderground.com/US/NC/Greensboro.html> . Live fire evolutions are allowed only on Code Green or Yellow days. All live fire evolutions must be suspended on Code Orange days or worse.
- When using real smoke and fire evolutions in the burn building, the lead instructor shall be a NC Live Fire Qualified training instructor. Assistant instructors shall be a minimum of a NC Fire Instructor I. Any personnel acting in an assisting role shall possess a minimum of FFII certification and must act under the supervision of the lead instructor. Any personnel acting in an unpaid (from the college)/assisting role must be acting under the auspices and with permission of the Fire Chief of his/her fire department so that they are covered by Workers Compensation insurance in case of injury.
- No visitors or non-instructors/students shall be allowed in the burn building or any hazard zone. Private tours for non-fire/rescue personnel can be scheduled through ERTC Staff personnel.
- No alterations (additions, holes cut/drilled, brackets installed, sections removed, etc) may be made to the burn building without approval by the Fire Occupational Extension Director or the Fire Academy Coordinator.

**ADHERANCE TO STANDARDS:**

- All appropriate national and state standards shall be adhered to at all times when using the burn building.

- NFPA Standard 1403, *Standard on Live Fire Training Evolutions*, shall be followed at all times. It is the responsibility of the instructor(s) to have a full knowledge and understanding of NFPA 1403.
- The lead instructor shall use the Live Fire Evolution Check list contained in Annex B of NFPA 1403 to prepare for live burn exercises in the burn building. A burn plan must be submitted/and approved by the Fire Occupational Extension Director prior to the class if any part of the set-up falls outside of these standard guidelines.

#### **COMMAND/SAFETY STRUCTURE:**

- One person shall be designated and function as Command during each evolution. This person shall be certified with a minimum of FFII level training.
- A Command system shall be utilized in accordance with NIMS guidelines.
- At least one Safety Officer shall be appointed for each evolution conducted at the burn building.
- Accountability of personnel shall be practiced at all times.

#### **COMMUNICATIONS:**

- Two-way communications via portable radios must be maintained between Command, the appointed Safety Officer, and each group of instructors.
- Each functional group of students (5 students or less) working in the burn building shall be observed/supervised by at least one instructor. In smoke conditions, this means that each floor of the burn building being utilized shall have a minimum of two instructors with two-way communications capability to Command/Safety via portable radio.

#### **MEDICAL STANDBY:**

- At least two certified EMT-B personnel must be on-site during evolutions. A first-aid bag equipped to the EMT level and an AED must be on-site during evolutions. Personnel must have 2-way communications capability(portable radio, mobile radio, or cell phone)with the 911 Center on-site during evolutions.

## EXERCISE GUIDELINES:

- Prior to beginning evolutions, the instructor(s) shall pre-plan the exercise with the group and explain all goals and directives regarding the training.
- Students and instructors shall wear appropriate PPE and SCBA at all times.
- When using real smoke and fire evolutions in the burn building, a NC Live Fire Qualified training instructor shall be inside the building while the evolutions are taking place. This instructor shall monitor the heat being produced by all fires and shall supervise the heat versus ventilation to keep the temperatures at a safe level for humans and the facility.
- A primary and secondary hose line shall be in place when conducting live fire evolutions.
- No Class B fuels (flammable or combustible liquids) shall ever be utilized inside the burn building. Only Class A materials (wooden pallets, straw, hay, cardboard, paper) may be used. A hand-held propane torch will be allowed to initiate and re-kindle fires. If utilized, this torch must be immediately removed from the building after ignition.
- Fires shall only be built in the burn pans located on the designated burn pads (with the exception of the burn pan/pad on the 2<sup>nd</sup> (top) level; no fires may be built on the 2<sup>nd</sup> (top) level except in 55-gallon metal drums). No fires (except in 55 gallon metal drums) are allowed in any areas that do not have burn pads. No fires are permitted in any stairwell, doorway, or other means of egress at any time.
- The maximum number of wooden pallets allowed on a burn pan at the beginning of an exercise is 4. After the initial 4 pallets, additional pallets shall only be added after the pallets in the burn pan have been reduced to embers. The maximum number of pallets that may be added at one time is two. The maximum amount of straw/hay per burn pan at one time is ½ bale.
- No fires shall be built (except in 55 gallon metal drums) out on floors. Any burning material that falls out of the burn pans is to be placed immediately back into the burn pan.
- NO FIRES shall be set in the stairwells, even in 55 gallon drums. No fires shall be set in any designated exit paths.
- The ONLY fires allowed on the 2<sup>nd</sup> (top) floor will be from burning hay in 55 gallon metal drums. Only hay may be burned in the metal drums, not pallets. Due to prior thermal structural damage, this is the ONLY way to provide smoke/heat on this floor.

- Drums on the 2<sup>nd</sup> (top floor) to provide smoke shall be kept a minimum of 10 feet away from combustible walls or the wooden maze.
- It is recommended that whole sheets of OSB be placed over the metal grate on the first floor to help prevent overheating from heat being produced by fires in the basement.
- Portable equipment such as lights, movable partitions, pallets/hay staged to be used, etc. shall be kept a safe distance away from burn pads and 55-gallon metal drums.
- No more than two bales of hay or four pallets may be staged for use per burn pad. Staged bales of hay SHALL NOT be staged in the fire room. Hay must be staged just outside of the fire room in either an outside location or in a room in which there is no fire (even in burn barrels).
- Fire hose streams are NOT to be flowed during live smoke/fire evolutions in the burn building to prevent damage to the structural elements by thermal shocking.
- Fire hose streams are NOT to be flowed against the structural elements of the burn building during ANY TYPE of evolutions to prevent damage to props, brick, mortar joints, electrical system components, etc.
- No flowing of water is allowed in the burn building; hose management evolutions shall be conducted to a window or door and streams must be flowed OUT of the building.

**AFTER THE EXERCISE:**

- Cleanup of any equipment used shall be done prior to leaving.
- All windows are to be opened to allow smoke/heat to dissipate naturally. The fan system can be used to assist in removing smoke/heat but must be turned off prior to leaving. The exception to this is that the inner and outer stairwell doors must be left closed during freezing weather to protect the standpipe system.
- Fire hose streams are NOT to be used to extinguish fires in the burn pans. All debris is to be swept/shoveled into a burn pan and left to burn down to ash. All fires are to be left to burn out completely and allow the building to cool down naturally to avoid thermal shock to the structural elements.
- Any full bales of hay not used shall be placed back into the outside hay storage container.
- Any partial bales of hay not used shall be placed into the wooden boxes located in the basement near the double exterior doors.

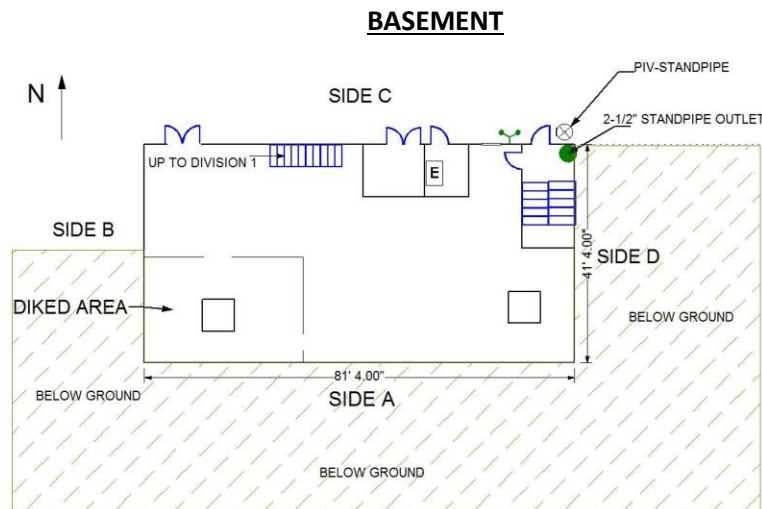
- Instructors are to report any damage/problems noted to ERTC Staff as soon as possible.

**CLEANING AFTER BUILDING HAS COOLED DOWN:**

- Burn pans/burn barrels are to be emptied **ONLY IN THE DUMPSTER** due to the amount of nails usually present. If any burning material is placed in the dumpster, it shall be extinguished before leaving.

**BURN MATRIX FOR EACH ROOM:**

The following is a description/diagram of each room in each level of the GTCC Burn Building, ERTC 1. It is to be noted that several rooms are totally off-limits to fire/smoke, several may only have smoke, and several have been designed to have fires set only in metal pans located on specially constructed burn pads. **UNDER NO CIRCUMSTANCES** are fires to be set on floors that do not have the specially constructed burn pads; the regular concrete flooring is not designed for heat and will receive thermal damage easily.



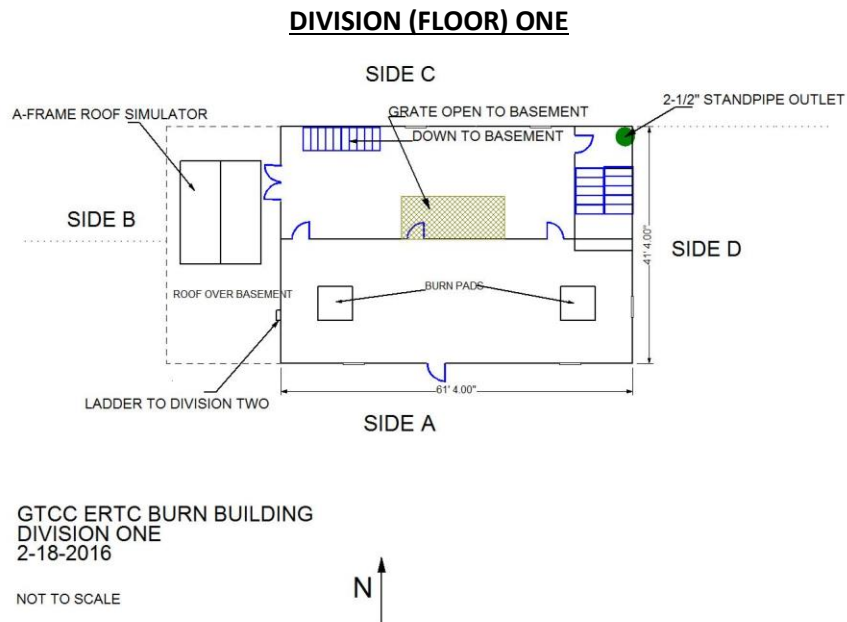
GTCC ERTC BURN BUILDING  
BASEMENT  
2-18-2016

NOT TO SCALE

There are two burn pads located in the main room of the basement. Fires may be set in the steel burn pans located on the burn pads. A maximum of 4 pallets on each burn pan may be used to start the fires. A maximum of 2 pallets may be added to each burn pad as the pallets on the fire turn to embers. A maximum of ½ bale of hay may be used to start the fire or be added to an existing fire. Wet or damp hay

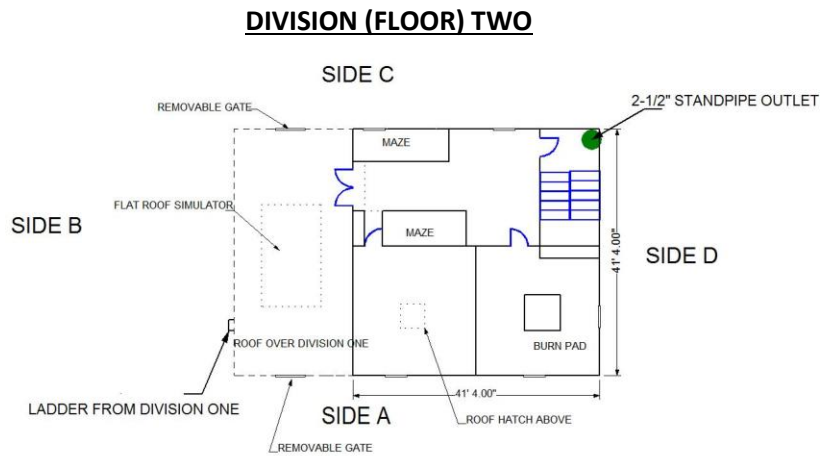
should be added to an existing fire if smoke production is desired. The maximum number of times that fuel may be added to the fire in a 4 hour-period is 8.

Also located in the basement are two closets accessed from the outside of the building on Side C. No fires may be set under any conditions in either of these two rooms. Fires shall not be set in any stairwell at any level. If smoke is desired to enter the stairwell for the exercise, the door from the large room in the basement to the stairwell should be propped in the open position.



There are two burn pads located in the front room (Side A) of Division 1. A maximum of 4 pallets on each burn pan may be used to start the fires. A maximum of 2 pallets may be added to each burn pad as the pallets on the fire turn to embers. A maximum of ½ bale of hay may be used to start the fire or be added to an existing fire. Wet or damp hay should be added to an existing fire if smoke production is desired. The maximum number of times that fuel may be added to the fire in a 4 hour-period is 8. There is another room on the C side of Division 1. This room has an open stairway between Division 1 and the basement. This room also has a metal grate in the floor which allows smoke/heat from the basement to rise to Division 1. 4 x8 sheets of OSB are to be kept on this grate during live burn exercises to prevent the metal grate from becoming a thermal hazard. No fires are to be set in this room; with the exception of hay being burned in metal 55-gallon drums to produce smoke. Drums shall have bricks or sheetrock placed between the bottom of the drum and the floor to protect the concrete floor from thermal damage. The door(s) from this room to the front room of Division 1 may be propped open to allow smoke/heat to move into the rear room.

Fires shall not be set in any stairwell at any level. If smoke is desired to enter the stairwell for the exercise, the door from Division 1 to the stairwell should be propped in the open position.



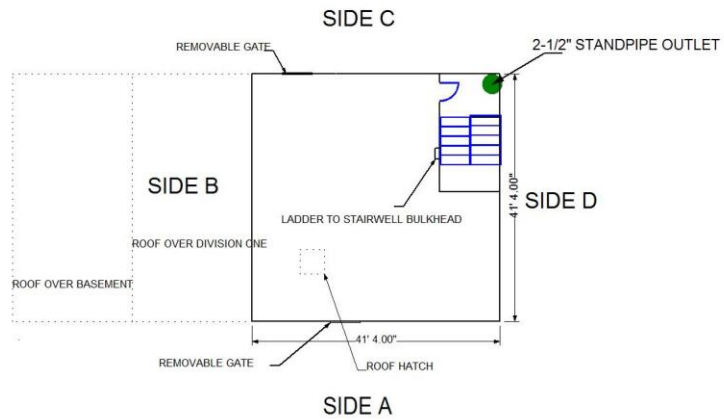
GTCC ERTC BURN BUILDING  
DIVISION TWO  
2-18-2016

NOT TO SCALE



On Division(Floor) 2, there are three rooms. Due to previous thermal damage, no pallet fires may be set under any conditions on this floor. Since no pallet fires may be set on this floor, a maze(wood) has been constructed in the rear(Side C) room and a wall(wood) has been constructed in the front(Side A) room to make two bedroom-size rooms. In each of these rooms, only hay fires in metal 55-gallon drums may be burned to produce smoke. Drums shall have bricks or sheetrock placed between the bottom of the drum and the floor to protect the concrete floor from thermal damage. Any drums used for smoke shall be kept a minimum of 10 feet away from any combustibles.

### **DIVISION THREE (ROOF)**



GTCC ERTC BURN BUILDING  
DIVISION THREE  
2-18-2016



NOT TO SCALE

Division 3 is the top-most roof portion of the burn building. No fires may be set anywhere on Division 3 under any conditions. On Division 3 there is a roof hatch which can be opened to ventilate Division (Floor) 2. There is also a vertical ladder to the top of the bulkhead over the enclosed stairwell.